FIRE STATION #2, FORMER SEWAGE TREATMENT PLANT #17, AND TOWWAY AREA SWMU 114 PFAS SITE ASSESSMENT PROGRESS REPORT KENNEDY SPACE CENTER, FLORIDA

Prepared for:

National Aeronautics and Space Administration
Kennedy Space Center, Florida

January 2023
Revision 0

Prepared by:

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PFAS SITE ASSESSMENT PROGRESS REPORT

(REVISION 0)

KENNEDY SPACE CENTER, FLORIDA

Prepared for:
Environmental Assurance Branch
National Aeronautics and Space Administration
John F. Kennedy Space Center
Kennedy Space Center, FL 32899

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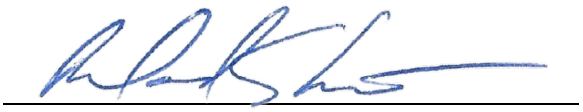
January 2023

I hereby certify that in my professional judgment this document entitled: *Fire Station #2, Former Sewage Treatment Plant #17, and Towway SWMU 114, PFAS Site Assessment Progress Report, Revision 0,* satisfies the requirements set forth in Chapter 471, Florida Statutes. I have completed and have been in responsible charge of work completed by qualified professionals working directly under my supervision and the applicable portions of this document and associated work comply with Chapter 62-780, Florida Administrative Code (FAC) and Rule 62-780.400(1), FAC.



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LIST OF ABBREVIATIONS AND ACRONYMS

ng/L	nanograms per liter
ADP	Advanced Data Package
AFFF	Aqueous Film Forming Form
bgs	below ground surface
DPT	direct-push technology
FDEP	Florida Department of Environmental Protection
GCTL	groundwater cleanup target level
GenX	Hexafluoropropylene oxide dimer acid
GSA	Government Services Administration
HDPE	high density polyethylene
HGL	HydroGeoLogic, Inc.
IDW	Investigation-derived waste
KSC	Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
LOC	Locations of Concern
NASA	National Aeronautics and Space Administration
PAH	polynuclear aromatic hydrocarbons
PFAS	perfluoroalkyl and polyfluoroalkyl substances
PFBS	perfluorobutanesulfonic acid
PFHxS	perfluorohexanesulfonic acid
PFNA	perfluorononanoic acid
PFOA	perfluorooctanoic acid
PFOS	perfluorooctanesulfonic acid
pGCTL	provisional groundwater cleanup target level
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RPD	relative percent difference
RSL	Regional Screening Level

LIST OF ABBREVIATIONS AND ACRONYMS

SAPR	Site Assessment Progress Report
SCTL	soil cleanup target level
SGS	SGS North America Inc.
SL	screening level
SOP	Standard Operating Procedure
SW	surface water
SWMU	Solid Waste Management Unit
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

This Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Site Assessment Progress Report (SAPR) presents the finding of the 2022 PFAS investigation conducted from November 2021 through August 2022 at Solid Waste Management Unit (SWMU) 114 located within Kennedy Space Center (KSC), Florida. SWMU 114 includes area around Fire Station #2, Former Sewage Treatment Plant (STP) #17, the southern portion of the Shuttle Landing Facility (SLF) Runway, Remote Launch Vehicle (RLV) Hangar, and the Towway area. Fire Station #2 was constructed in 2008 and is currently active, housing fire station personnel and equipment, including aqueous film forming foam (AFFF). Fire Station #2 replaced the former fire station located in the Vehicle Assembly Building area to the southeast.

Previous environmental assessments have been performed at SWMU 114, including soil, groundwater, and surface water sampling for volatile organic compounds, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, and metals. No active remediation has been performed at the SWMU 114.

On February 6, 2020, a spill of five to eight (5 to 8) gallons of AFFF was reported on the SLF tarmac during a fire training exercise. The spill was reportedly rinsed off the tarmac with water and impacted tow areas, southeast and northwest of the tarmac. Additionally, AFFF was reportedly discharged into the stormwater pond to the west of Fire Station #2 during annual testing of equipment. During confirmation sampling for a 2019 Center-wide PFAS assessment, perfluorooctanesulfonic acid (PFOS) concentrations were detected in groundwater and surface water samples above the Florida Department of Environmental Protection (FDEP) provisional groundwater cleanup target level (pGCTL) and surface water screening level (SW SL) throughout the SWMU 114, including at one location where PFOS concentrations were greater than 10,000 nanograms per liter (ng/L).

Objectives of the PFAS investigation were modified as regulations evolved. The initial objectives of the 2021-2022 investigation were to delineate perfluorooctanoic acid (PFOA) and PFOS laterally and vertically to the pGCTL (70 ng/L separately or combined based on the U.S. Environmental Protection Agency (USEPA) lifetime health advisory levels issued in 2016) and to develop a general understanding of the surface water and groundwater interactions at SWMU 114. The objective of the groundwater investigation was made more stringent by KSC due to concerns of groundwater discharging to surface water, with the revised objective to delineate PFAS compounds in groundwater to the SW SL of 10 ng/L for PFOS in April 2022. The objective of the groundwater investigation was changed again by KSC to delineate to the USEPA Regional Screening Levels (RSLs) of 4 ng/L for PFOS; 6 ng/L for PFOA, perfluorononanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (GenX); 39 ng/L for perfluorohexanesulfonic acid (PFHxS); and 601 ng/L for perfluorobutanesulfonic acid (PFBS) in June 2022.

Site assessment field activities were conducted at SWMU 114 from November 2021 through August 2022. During the 2021-2022 Site Assessment, 124 direct-push technology (DPT) samples were collected from 27 locations, 17 surface water samples were collected from 15 locations, 41 groundwater samples were collected from 37 newly installed monitoring wells, five concrete samples were collected from four locations, and one asphalt sample was collected. Additionally,

two soil borings were advanced to 60 feet for lithologic descriptions, ten staff gauges were installed, and one round of water level measurements were collected from monitoring wells and staff gauges for groundwater flow determination. All groundwater and surface water samples were analyzed for 25 PFAS analytes by USEPA Method 537M. Concrete, and asphalt samples were analyzed by synthetic precipitation leaching procedure (SPLP) PFAS analysis by USEPA Modified Method 537M.

Groundwater results were compared to the most recent RSLs published by USEPA for residential tap water (USEPA, 2022a) to determine the extent of PFAS contamination at SWMU 114 for six PFAS analytes (PFOA, PFNA, PFBS, PFHxS, PFOS, and GenX). Surface water results were compared to the FDEP SW SLs (FDEP, 2020) for PFOA and PFOS.

The PFAS investigation concluded that groundwater exceeding RSLs extends east and south to Banana Creek and west to approximately the center of the SLF runway. The extent of PFAS is approximated to the north, to an area between Sharkey Road and Astronaut Road, where samples below the RSLs do not fully bound SWMU 114. At least two distinct PFAS source areas are apparent from high concentrations of PFAS (PFOS > 4,000 ng/L) located near Fire Station #2 and along Towway, at S114-MW0007S, within SWMU 114. PFAS observed near Fire Station #2 is the result of equipment testing that resulted in AFFF discharge to the stormwater retention pond northeast of the fire station and from a spill of five to eight gallons of AFFF to the SLF tarmac on February 6, 2020, that was rinsed off the tarmac to the southeast and northwest. PFAS observed along the Towway is associated with reported releases of AFFF in the area. These two areas of high PFAS concentrations are separated by lower groundwater concentrations in DPTs samples along Towway near RLF Hangar.

Surface water samples indicated concentrations of PFOS above the SW SL in surface water bodies across the site. Further assessment and sampling are required to better understand the interaction between groundwater and surface water at SWMU 114.

Groundwater head measurements from August 3, 2022, indicate that flow at SWMU 114 is generally similar for the two intervals sampled, the shallow water table and intermediate groundwater screened between 25 feet (ft) below ground surface (bgs) and 35 ft bgs. A northeast to southwest trending groundwater divide is located near the middle of Towway where groundwater southeast of the divide flows to the south and groundwater northwest of the divide flows to the west. The groundwater divide generally separates the two areas of higher PFAS concentrations and corresponds to an area of higher surface water elevations in staff gauge SG7.

Concrete and asphalt samples collected in May 2022 confirm that a significant release of AFFF occurred near the stormwater pond northwest of Fire Station #2. Asphalt PFOS concentrations near the stormwater pond, in S114-AS0005, were 5,340 ng/L. Additional concrete samples surrounding Fire Station #2 and at the northwest and southeast edges of the SLF tarmac indicate elevated PFOS concentrations. These results indicate that discharges of AFFF in these locations have infiltrated into asphalt and concrete and may act as a continuing source of PFAS to groundwater and surface water after rain events.

A brief summary of the number of samples collected, number of detections, number of detections exceeding RSLs, and number of detection limits exceeding RSLs by media is provided below:

Parameter	PFOA	PFNA	PFBS	PFHxS	PFOS	GenX
Groundwater DPT (RSLs shown in ng/L)	6	6	601	39	4	6
Number of Samples	124	124	124	124	124	124
Number of Detections	48	6	63	72	56	0
Number of Detections Exceeding RSL	26	1	0	38	49	0
Number of Detection Limits Exceeding RSL	0	1	0	0	20	124
Groundwater Monitoring Wells (RSLs shown in ng/L)	6	6	601	39	4	6
Number of Samples	41	41	41	41	41	41
Number of Detections	22	6	21	26	24	0
Number of Detections Exceeding RSL	15	5	2	15	24	0
Number of Detection Limits Exceeding RSL	0	0	0	0	2	41
Surface Water (SWSLs shown in ng/L)	500	N/A	N/A	N/A	10	N/A
Number of Samples	17	17	17	17	17	17
Number of Detections	16	1	16	17	17	0
Number of Detections Exceeding SW SL	0	N/A	N/A	N/A	16	N/A
Number of Detection Limits Exceeding RSL	0	N/A	N/A	N/A	0	N/A
Concrete/Asphalt (RSLs shown in ng/L)	6	6	601	39	4	6
Number of Samples	6	6	6	6	6	6
Number of Detections	4	1	5	6	6	0
Number of Detections Exceeding RSL	1	1	0	2	6	0
Number of Detection Limits Exceeding RSL	0	0	0	0	0	0

Additional DPT samples are required to delineate PFAS at SWMU 114 using the USEPA RSLs in groundwater. DPT samples should be located to the west and north. Samples may need to extend beyond the Former SLF Rescue Building and Morpheous Test Site to delineate PFAS in groundwater using the USEPA RSLs. Monitoring wells should be sampled and gauged quarterly to determine if seasonal impacts are observable, especially in shallow wells near surface water features.

Furthermore, surface water samples should be collected from additional ditches to further define the extent of surface water impacts at SWMU 114 and extending along the SLF runway. Staff gauges should be gauged quarterly with groundwater gauging to determine surface water flow and interaction with groundwater.

The results and path forward were presented to the KSC Remediation Team (KSCRT) in October 2022 (Meeting Minute 2210-M11). The draft meeting minutes are included in Appendix A.

1. INTRODUCTION

This Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Site Assessment Progress Report (SAPR) presents the findings from the 2021-2022 investigation activities, completed between November 15, 2021, and August 19, 2022, at Solid Waste Management Unit (SWMU) 114 located within Kennedy Space Center (KSC), Florida. KSC is located on the northern portion of Merritt Island, between the Indian and Banana River Lagoons in Brevard County, Florida. SWMU 114 includes area around Fire Station #2, Former Sewage Treatment Plant (STP) #17, the southern portion of the Shuttle Landing Facility (SLF) Runway, Remote Launch Vehicle (RLV) Hangar, and the Towway area. During a 2019 Center-wide PFAS site assessment, perfluorooctanesulfonic acid (PFOS) concentrations were detected at concentrations greater than 10,000 nanograms per liter (ng/L) at SWMU 114 and additional investigation was recommended (GeoSyntec, 2019). During the 2021-2022 Site Assessment, 124 direct-push technology (DPT) samples were collected from 27 locations, 17 surface water samples were collected from 15 locations, 41 groundwater samples were collected from 37 newly installed monitoring wells, five concrete samples were collected from four locations, and one asphalt sample was collected. Additionally, two soil borings were advanced to 60 feet for lithologic descriptions, ten staff gauges were installed, and one round of water level measurements were collected from monitoring wells and staff gauges for groundwater flow determination. This PFAS SAPR was prepared by HydroGeoLogic, Inc. (HGL) for the National Aeronautics and Space Administration (NASA) under Task Order 4 of Indefinite Delivery Indefinite Quantity Contract 80KSC019D0012, Task Order 80KSC021F0168.

1.1 Overview

This document presents a summary of activities completed between November 15, 2021, and August 19, 2022, at SWMU 114, located at KSC, Florida. The activities conducted at SWMU 114 included the following:

- Advancing lithologic borings;
- DPT groundwater investigation;
- Monitoring well installation and sampling;
- Collection of water level data for groundwater flow determination;
- Surface water sampling investigation;
- Concrete sampling investigation; and
- Asphalt sampling investigation.

Fire Station #2, Former STP #17, the southern portion of the SLF Runway, RLV Hangar, and the Towway area were designated SWMU 114 under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. KSC's operating permit (0026028-009-HO) issued by the Florida Department of Environmental Protection (FDEP) under the Hazardous and Solid Waste Amendment portion of RCRA requires KSC to investigate all known SWMUs and Locations of Concern (LOC) at KSC.

An Advanced Data Package (ADP) with the elements of this report for SWMU 114 PFAS SAPR was presented to the KSC Remediation Team (KSCRT) at the October 6, 2022, KSCRT meeting.

Meeting minutes are included in **Appendix A**. A copy of the PFAS SAPR ADP for SWMU 114 is provided in **Appendix B**.

1.2 Purpose

This PFAS SAPR presents the results of the site assessment activities conducted between November 15, 2021, and August 19, 2022, at SWMU 114. Objectives of the PFAS investigation were to delineate perfluorooctanoic acid (PFOA) and PFOS laterally and vertically to the FDEP provisional groundwater cleanup target level (pGCTL) of 70 ng/L separately or combined, and to develop a general understanding of the surface water and groundwater interactions at KSC. The objective of the groundwater investigation was made more stringent by KSC due to concerns of groundwater discharging to surface water, with the revised objective to delineate PFAS compounds in groundwater to the FDEP surface water screening level (SW SL) of 10 ng/L for PFOS in April 2022. The objective of the groundwater investigation was changed again by KSC to delineate to the U.S. Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) of 4 ng/L for PFOS; 6 ng/L for PFOA, perfluorononanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (GenX); 39 ng/L for perfluorohexanesulfonic acid (PFHxS); and 601 ng/L for perfluorobutanesulfonic acid (PFBS) in June 2022.

1.3 Report Organization

The remainder of this SAPR is organized as follows:

Section 2.0: Site Description – This section details the site location, previous investigations, lithology, and hydrology and hydrogeology.

Section 3.0: PFAS Site Assessment Methodologies and Activities – This section provides a summary of the field activities completed from November 2021 through August 2022 in support of the PFAS site assessment.

Section 4.0: Data Evaluation and Screening Process – This section details a summary of the groundwater, surface water, concrete, and asphalt results.

Section 5.0: Conclusion and Recommendations – This section details the conclusion of the 2021-2022 PFAS investigation and presents recommendations based upon the results.

Section 6.0: References – This section provides a listing of the documents used in preparing this report.

2. SITE DESCRIPTION

SWMU 114 is located at the southern end of the SLF runway, near Banana Creek. SWMU 114 includes area around Fire Station #2, STP #17, the southern portion of the SLF Runway, RLV Hangar, and the Towway area. Fire Station #2 was constructed in 2008 and currently houses fire station personnel and equipment, including aqueous film forming foam (AFFF). STP #17 was built around 1975 and was demolished in 1998. STP #17 consisted of a small package treatment plant and percolation pond used for effluent disposal. The SLF Runway consists of a 15,000-foot long concrete runway, built in 1975 to serve as the primary end-of-mission landing site for the space shuttle orbiter and as a fully functional airport. The RLV Hangar and Flight Vehicle Facility was built in 2000 and currently houses Starfighters, Inc. aircraft (GeoSyntec, 2019). The Towway connects the southern end of the SLF to Kennedy Parkway.

2.1 Site Location

KSC is centrally located on the east coast of Florida, to the north and west of Cape Canaveral Space Force Station (**Figure 2-1**). It is situated in Brevard and Volusia Counties between the Merritt Island Barge Canal to the south, the town of Oak Hill to the north, the Atlantic Ocean and Cape Canaveral Space Force Station to the east, and the Indian River Lagoon to the west. A large portion of the area, between the Indian River Lagoon and the Atlantic Ocean, is in the northern part of Brevard County on Merritt Island, with the extreme north boundary extending about 7 miles into Volusia County.

SWMU 114 is located on the central portion of KSC, just north of Banana Creek (**Figure 2-2**). The site is located within Sections 1, 2, 11, and 12 of Township 22S, Range 36E which is in the Orsino Quadrangle.

2.2 Previous Investigations

A KSC Center-Wide PFAS SWMU Assessment and Confirmatory Sampling Report was finalized in September 2019 (Geosyntec, 2019). According to interviews with Fire Station #2 facility personnel, AFFF product has been discharged into the stormwater pond to the west of the building during annual testing of equipment.

During Center-Wide PFAS Confirmatory Sampling activities (Geosyntec, 2019) in the vicinity of SWMU #114 (October 2018 through November 2021), 141 groundwater samples were collected from 36 locations, 23 surface water samples were collected from 22 locations, 16 soil samples were collected from 8 locations and 16 sediment samples were collected. Groundwater sample results were compared to FDEP pGCTLs, surface water samples were compared to FDEP Surface Water Screening Levels, and soil samples were compared to FDEP Provisional Soil Cleanup Target Levels. Sediment samples were not compared to a screening level.

No soil samples exceeded the FDEP Provisional Soil Cleanup Target Levels. Widespread exceedances of the screening criteria were reported in groundwater and surface water samples. The highest PFAS concentrations detected were reported in samples collected west of Fire Station #2, north of the SLF Apron and along the Towway.

On February 6, 2020, a spill of 5 to 8 gallons of AFFF was reported on the SLF tarmac during a fire training exercise. The spill was reportedly rinsed off the tarmac with water and impacted two areas southeast and northwest of the tarmac. Fourteen soil samples were collected from the northwest and southeast corners of the SLF tarmac. No soil samples exceeded the FDEP Provisional Soil Cleanup Target Levels.

2.3 Lithology

The subsurface lithology consists of fine to medium sand with interbedded shell hash and some silt to a depth of about 40 feet (ft) below ground surface (bgs). Below 40 ft bgs, a grey green clayey silt is present. Based on previous boring logs in the area, the grey green clayey silt extends to a depth of greater than 100 ft bgs (KSC, 2010). To the southeast and closer to Banana Creek, the grey green clayey silt is encountered at a greater depth of about 60 ft bgs.

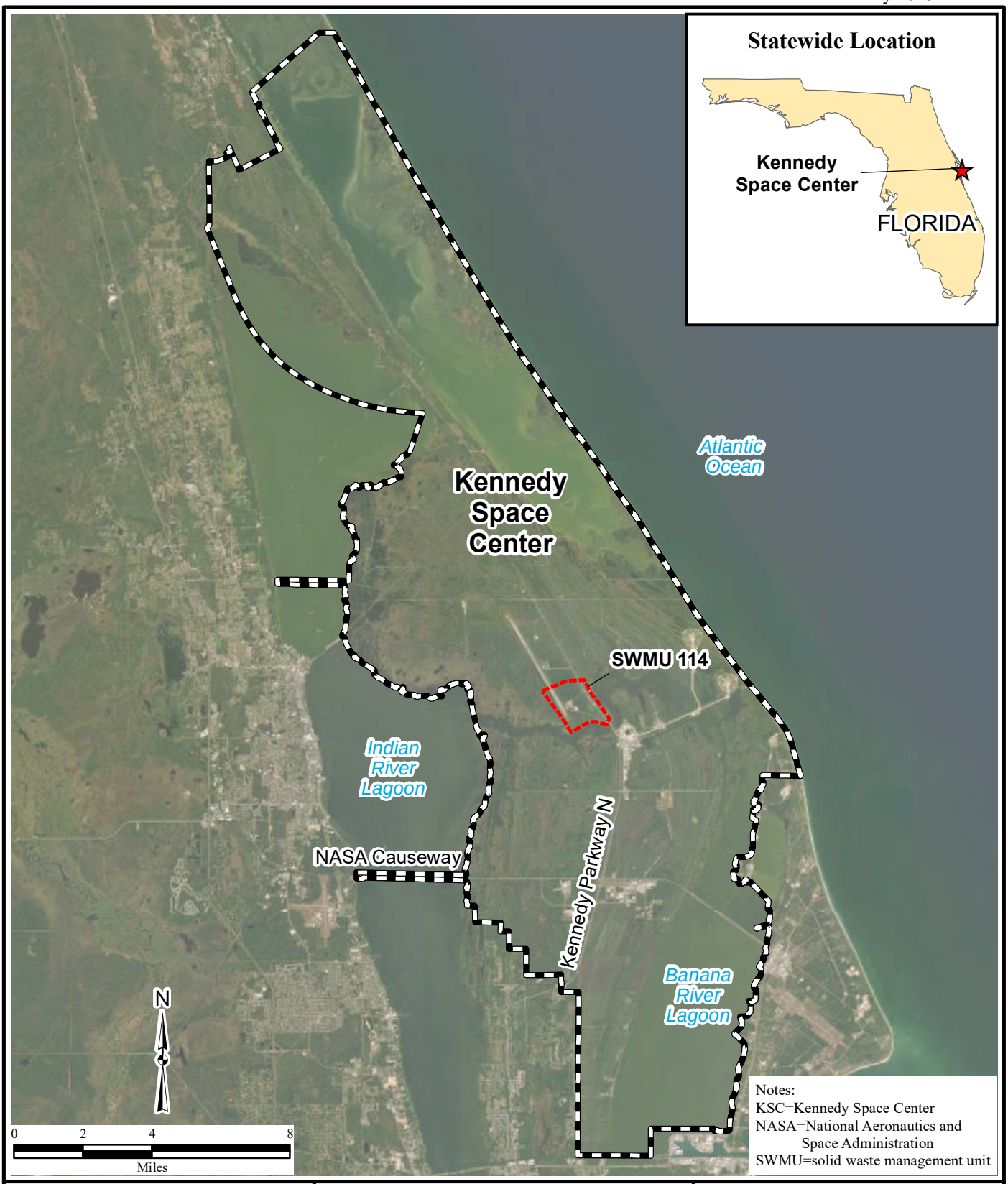
Two soil borings were advanced as part of the current PFAS Site Investigation activities (**Figure 2-3**). The borings were located west of Fire Station #2, adjacent to the stormwater retention pond and approximately midway along Towway just to the north. Soil borings were continuously logged to a depth of 60 ft bgs. Both borings included alternating layers of sands and shells with some silt until the grey green clay/silt was encountered. S114-LB02, closer to Fire Station #2, encountered the grey green clay/silt approximately 20 ft higher than S114-LB01 at a depth of 40 ft bgs (-33 ft amsl). This suggests that the grey green clayey silt was eroded closer to Banana Creek from the ancestral St. Johns River.

2.4 Hydrology and Hydrogeology

Surface water drains to interconnected ditches along Towway, Astronaut Road, Kennedy Parkway, and the runway. Runoff from paved lots is directed to these ditches through curb cuts. Culverts between these ditches are slightly elevated above the bottom, causing water to be contained within each ditch until the level is high enough to flow through culverts. Between rain events, water within these ditches evaporates or infiltrates into the subsurface. When surface water flow does occur through these ditches, it is directed to the southeast towards Banana Creek, primarily at the southern end of the runway. Surface water discharging at the southern end of the runway is a combination of surface water from SWMU 114, and areas surrounding the runway including Sharkey Road. Surface water staff gauges were installed at several locations as part of this SWMU 114 investigation. Details of surface water staff gauge installation and gauging results are presented in **Section 3.7** and **Section 4.3**.

Historical groundwater data is not available for the area. Center-wide synoptic groundwater gauging performed by AECOM in October 2020 and February 2021 indicate that the Fire Station #2 is located at a groundwater high with groundwater flowing radially from the Shuttle Landing Facility Apron (AECOM, 2021). **Figure 2-4** depicts the potentiometric surface from AECOM's Prism Report.

As part of the SWMU 114 investigation, newly installed groundwater wells were gauged to determine shallow and intermediate groundwater potentiometric surfaces. Groundwater flow directions were to the west and south with a groundwater divide trending northeast to southwest and intersecting Towway. Additional details on groundwater gauging activities and results are presented in **Section 3.5** and **Section 4.3**.



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Source: HGL, 3E Consultants
ArcGIS Online Imagery

Legend

- Site Location
- SWMU 114 Boundary
- Kennedy Space Center

Figure 2-1
SWMU 114
Fire Station #2
Site Location Map

Figure 2-2
SWMU 114 Fire Station #2
Site Layout

Legend

- Monitoring Well
- Space Florida Dewatering System Effluent Discharge Location
- SWMU 114 Boundary

Notes:
AFFF=aqueous film-forming foam
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

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Source: HGL, ArcGIS Online Imagery

Figure 2-3
SWMU 114 Fire Station #2
Lithologic Boring Location Map

Legend

- Lithologic Boring
- SWMU 114 Boundary

GW	Well graded gravel
GM	Gravel with silt
GC	Gravel with clay
SW	Well graded sand
SP	Poorly graded sand
SM	Sand with silt
SC	Sand with clay
ML	Inorganic silt with low plasticity
CL	Inorganic clay with low plasticity
CH	Inorganic clay with high plasticity

Notes:
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

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Source: HGL, ArcGIS Online Imagery

Figure 2-4
SWMU 114 Fire Station #2
Groundwater Flow Direction Map
October 2020

Legend

—2— Groundwater Contour Elevation October 2020 (ft NAVD 88) Source: AECOM Prism Report, 2021

Groundwater Flow Direction

SWMU 114 Boundary

Kennedy Space Center

Notes:
NAVD 88=North American Vertical Datum of 1988
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

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Source: HGL, ArcGIS Online Imagery

3. PFAS SITE ASSESSMENT METHODOLOGIES AND ACTIVITIES

Based upon the results of the 2019 Center-wide PFAS site assessment, additional groundwater and surface water sampling was conducted between November 2021 and August 2022 to further investigate the PFAS concentrations at the site. Additionally, concrete and asphalt sampling was performed to investigate suspected release locations. The objective of the sampling was to delineate concentrations in groundwater and surface water using the RSLs for PFOS (4 ng/L), PFOA (6 ng/L), PFNA (6 ng/L), GenX (6 ng/L), PFHxS (39 ng/L), and PFBS (601 ng/L). Sampling locations for samples collected between November 2021 and August 2022 are shown on **Figure 3-1**. The PFAS sampling activities included the following:

- Advancement of two lithologic borings to 60 ft bgs;
- Collection of 124 DPT groundwater samples from 27 locations in and around SWMU 114 for PFAS analysis;
- Advancement and completion of 37 monitoring wells (18 shallow water table wells with screens ranging from 2-12 ft bgs and 5-15 ft bgs and 19 intermediate wells screened between 25 ft bgs and 35 ft bgs);
- Collection of 41 groundwater samples from newly installed monitoring wells for PFAS analysis;
- Gauging of the shallow and intermediate groundwater potentiometric surface;
- Collection of 17 surface water samples from 15 locations from swales and surface water bodies throughout SWMU 114 for PFAS analysis;
- Installation and gauging of 10 staff gauges; and
- Collection of 5 concrete samples from four locations and 1 asphalt sample around Fire Station #2 for synthetic precipitation leaching procedure (SPLP) PFAS analysis.

Field documentation is provided in **Appendix C** and a photographic log is provided in **Appendix D**.

3.1 Soil Core Sampling Activities

Two soil borings were advanced to 60 ft bgs using rotosonic drilling technology in February 2022 at SWMU 114. Lithologic borings were performed to identify site lithology, specifically to identify the depth when the grey-green clay and silt was encountered, and to confirm that DPT samples were collected from the correct horizons. The subsurface materials encountered were characterized using the Unified Soil Classification System. Boring logs are provided in **Appendix C** and a brief description of each boring log is provided below.

- S114-LB01
  - Land surface to 50 ft bgs: sand and shell hash
  - 50 ft bgs to 59 ft bgs: shell hash with greenish grey clayey silt
  - 59 ft bgs to 60 ft bgs: greenish grey silt with minor clay

- S114-LB02
  - Land surface to 43 ft bgs: sand and shell hash
  - 43 ft bgs to 60 ft bgs: grey green clayey silt and silty clay

The grey-green clay and silt is anticipated to act as a semi-confining unit across much of Merrit Island and prevent the downward migration of PFAS. Grey-green clay and silt was encountered in the two borings at a depth of about 40 ft bgs to 60 ft bgs. The semi-confining grey-green clay and silt was encountered at a deeper depth in S114-LB01, closer to Banana Creek. Soil samples were not collected from soil boring locations since deep PFAS impacts were not anticipated in the area.

3.2 PFAS Sampling Protocol

PFAS has been found to be present in many consumer products, including some typically used sampling equipment. Therefore, special precautions were followed to avoid compromising sample integrity during collection. Field sampling methodologies were conducted in accordance with applicable portions of the Standard Operating Procedure (SOP) for Groundwater Sampling with DPT and Analysis of Per- and Polyfluoroalkyl Substances (NASA, 2019a) prepared to guide PFAS sampling activities at NASA sites and HGL's SOP for PFAS Sampling Procedures (HGL, 2020).

The methods and protocols in the SOPs used for collecting and handling PFAS samples were followed to prevent cross-contamination of PFAS from consumer items and field sampling equipment to the samples. Tubing was replaced with new high density polyethylene (HDPE) tubing at each DPT location and interval to prevent cross-contamination. Field quality control samples were also collected to evaluate potential PFAS cross-contamination in the site samples, as discussed in Section 3.6.

3.3 DPT Groundwater Sampling

Ten days of DPT groundwater sampling was performed from November 15 through 19, 2021, from February 21 through 22, 2022, and from June 14 through 16, 2022 to delineate PFAS contamination to the screening criteria. One hundred twenty-four (124) groundwater samples were collected from 27 boring locations (DPT1000 through DPT1026), as presented on **Figure 3-1**. Samples were collected at four depths (3 to 7, 13 to 17, 23 to 27, and 33 to 37 ft bgs) at each location using a peristaltic pump through HDPE tubing from the midpoint of the screen. Two deeper samples (43-47 ft bgs) were collected in June 2022 from DPT1014, DPT1017, DPT1021, DPT1022, and DPT1024 for vertical delineation of PFAS.

Prior to using DPT tooling, the borehole was started using a stainless-steel hand auger to a depth of 5 ft to verify the absence of underground utilities. Groundwater samples were collected by DPT methods using a 4-ft-long stainless-steel retractable screen. New HDPE tubing was used at each sampling depth and location. When the desired sampling depth was reached, the tubing was placed into the borehole through the sampling rods at mid-screen, and the groundwater was purged with a peristaltic pump until the water was visually relatively free of sediment. DPT groundwater samples were then collected and placed in laboratory-provided sample containers. The sample containers were sealed, labeled, packed on ice, and transferred by courier under proper chain-of-custody protocol to the laboratory. The DPT groundwater samples were analyzed for the 25 PFAS analytes by SGS North America Inc. (SGS) by USEPA Method 537M.

3.4 Monitoring Well Installation

Eighteen shallow and intermediate monitoring well pairs (S114-MW0001 through S114-MW0003, S114-MW0005 through S114-MW0013 and S114-MW0015 through S114-MW0020) were installed to monitor groundwater elevations and the PFAS groundwater plume. Planned monitoring well pair S114-MW004 could not be installed due to construction activities in the vicinity and at S114-MW0014 only an intermediate well was installed since records indicated that a shallow monitoring well was present at this location. In general, shallow monitoring wells were constructed so that their well screens intersected the water table and intermediate wells were screened approximately 25 ft to 35 feet bgs. Monitoring well locations are shown on **Figure 2-2** and the screened intervals are shown on the **Table 3-1**.

The monitoring wells were constructed with 1-inch-diameter schedule 40 flush-joint PVC casing and 10-ft of PVC pre-packed well screen. A 20/30 silica sand filter pack was placed in the annular space around the well screens and extended 1-ft above the top of the screen. A 2-ft well seal of 30/65 silica sand was placed above the filter pack. The remaining annular space around the well casing from the top of the well seal to 0.5-ft bgs was filled with Portland cement grout. The wells were completed flush-to-grade in 8-inch diameter bolt-down vaults encased in 2-ft by 2-ft concrete pad. The well construction logs are included in **Appendix C**.

The monitoring wells were surveyed on July 27 and July 28, 2022 by Kugelmann Land Surveying, Inc. to establish the coordinates and vertical elevation of each well. The survey report is included in **Appendix C**.

3.5 Monitoring Well Sampling and Gauging

Forty-one (41) groundwater samples were collected from 37 monitoring wells (18 shallow water table wells with screened intervals ranging from 2 to12 ft bgs and 5 to15 ft bgs; and 19 intermediate wells screened between 25 ft bgs and 35 ft bgs). Samples were collected between August 16 and 19, 2022. Each monitoring well was gauged in a synoptic round on August 3, 2022.

Groundwater samples were collected in accordance with the FDEP's SOPs for Field Activities (FDEP, 2014) and the KSC Sampling and Analysis Plan for the RCRA Corrective Action Program (NASA, 2017b). The depth to water, dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, temperature, and turbidity were measured at each well. Prior to sampling, groundwater was purged via low-flow techniques until geochemical parameters were stable. Monitoring well sample logs are included in **Appendix C**. The groundwater samples were submitted to SGS for PFAS analysis by USEPA Method 537M.

3.6 Surface Water Sampling

Seventeen (17) surface water samples were collected from 15 locations across SWMU #114, as identified on **Figure 3-1**. Grab samples were collected from the swales and culvert openings. Surface water samples were collected near the water surface. Surface water samples were collected using a decontaminated HDPE dipper sampler following FDEP SOP guidance. The surface water samples were submitted to SGS for PFAS analysis by USEPA Method 537M.

3.7 Staff Gauge Installation and Measurement Recording

Ten staff gauges were installed on July 27 and 28, 2022 by Kugelmann Land Surveying. Staff gauge readings were recorded on August 3, 2022, in conjunction with the monitoring well gauging event.

3.8 Concrete and Asphalt Sampling

Five concrete samples (four parent and one duplicate) and one asphalt sample were collected on May 5, 2022, around Fire Station #2. Concrete and asphalt samples were collected using a hammer and chisel and were collected from the upper two inches of material. The concrete and asphalt samples were submitted to SGS for SPLP PFAS analysis by USEPA Method 537M.

3.9 PFAS Laboratory Analysis

Following collection, all groundwater, surface water, concrete, and asphalt samples were transferred by courier under proper chain-of-custody protocol to SGS of Orlando, Florida, a National Environmental Laboratory Accreditation Program-certified laboratory for analysis of PFAS using modified USEPA Method 537. All samples were analyzed for the 25 PFAS analytes listed in the tables presented in **Section 4**.

3.10 Investigation Derived Waste

Investigation-derived waste (IDW) generated during the investigation included purge water generated during soil boring advancement, DPT sampling, monitoring well installation and sampling, and decontamination water. The IDW water was added to 15-gallon poly tanks prior to being transferred with the soil cuttings into multiple Department of Transportation-approved 55-gallon drums that were staged on spill pallets at the Components Cleaning Facility IDW storage. Each drum was sampled for PFAS analysis. Analytical results were submitted to the NASA Remediation Project Manager to be used for disposal.

3.11 Field Data Quality

Field quality control samples were collected to ensure sample concentrations are representative of the parent sample concentrations. Field duplicate samples were collected at the same time and location as the parent sample. Field duplicates are collected to assess field and analytical precision as well as sample heterogeneity. One equipment blank sample was collected per day from decontaminated reusable field sampling equipment (DPT temporary screen and rods, dipper and unused tubing). One field blank per day also was collected to assess ambient contamination within the field for potential cross-contamination during sample collection.

Table 3-1
SWMU 114
Water Level Elevation Summary

Shallow Wells								
Location ID	Northing (M)	Easting (M)	Well Depth (ft)	Screened Interval (ft)	TOC EL	Date	DTW	Elevation (ft NAVD88)
MW0001S	473392	230859	11.8	1.8 - 11.8	0.96	8/3/2022	1.45	-0.49
MW0002S	473155	231858	14.1	4.1 - 14.1	5.70	8/3/2022	4.69	1.01
MW0003S	472969	232204	12.6	2.6 - 12.6	4.47	8/3/2022	2.95	1.52
MW0005S	472238	232802	12.9	2.9 - 12.9	4.23	8/3/2022	4.36	-0.13
MW0006S	471824	233154	12.3	2.3 - 12.3	1.99	8/3/2022	2.33	-0.34
MW0007S	472017	232772	14.4	4.4 - 14.4	5.93	8/3/2022	6.07	-0.14
MW0008S	472186	232355	12.9	2.9 - 12.9	5.07	8/3/2022	4.72	0.35
MW0009S	472028	231845	12.8	2.8 - 12.8	5.08	8/3/2022	4.20	0.88
MW0010S	471605	231504	14.9	4.9 - 14.9	7.11	8/3/2022	7.21	-0.10
MW0011S	472298	231840	14.7	4.7 - 14.7	5.73	8/3/2022	5.69	0.04
MW0012S	472102	231319	12.1	2.1 - 12.1	0.66	8/3/2022	0.98	-0.32
MW0013S	472445	230878	12.1	2.1 - 12.1	1.21	8/3/2022	1.35	-0.14
MW0015S	472795	231269	13.1	3.1 - 13.1	2.68	8/3/2022	2.42	0.26
MW0016S	472807	231684	14.6	4.6 - 14.6	4.71	8/3/2022	3.72	0.99
MW0017S	472458	231559	13.9	3.9 - 13.9	4.94	8/3/2022	4.51	0.43
MW0018S	472423	231345	14.9	4.9 - 14.9	5.99	8/3/2022	6.03	-0.04
MW0019S	472577	231358	14.0	4.0 - 14.0	3.48	8/3/2022	3.33	0.15
MW0020S	472627	231410	13.1	3.1 - 13.1	2.54	8/3/2022	2.05	0.49

Intermediate Wells								
Location ID	Northing (M)	Easting (M)	Well Depth (ft)	Screened Interval (ft)	TOC EL	Date	DTW	Elevation (ft NAVD88)
MW0001I	473392	230858	34.6	24.6 - 34.6	0.74	8/3/2022	1.18	-0.44
MW0002I	473156	231858	34.3	24.3 - 34.3	5.69	8/3/2022	4.70	0.99
MW0003I	472967	232204	34.5	24.5 - 34.5	4.43	8/3/2022	2.81	1.62
MW0004I	472619	232592	34.4	24.4 - 34.4	3.44	8/3/2022	3.40	0.04
MW0005I	472237	232803	34.4	24.4 - 34.4	4.25	8/3/2022	4.53	-0.28
MW0006I	471825	233153	34.7	24.7 - 34.7	2.09	8/3/2022	2.67	-0.58
MW0007I	472018	232771	34.4	24.4 - 34.4	5.95	8/3/2022	6.15	-0.20
MW0008I	472187	232354	34.3	24.3 - 34.3	5.11	8/3/2022	4.70	0.41
MW0009I	472028	231844	34.7	24.7 - 34.7	5.30	8/3/2022	4.75	0.55
MW0010I	471606	231505	34.4	24.4 - 34.4	6.93	8/3/2022	7.18	-0.25
MW0011I	472299	231839	34.7	24.7 - 34.7	5.94	8/3/2022	5.95	-0.01
MW0012I	472104	231318	34.8	24.8 - 34.8	0.49	8/3/2022	0.74	-0.25
MW0013I	472444	230879	34.8	24.8 - 34.8	1.10	8/3/2022	1.23	-0.13
MW0015I	472795	231268	34.8	24.8 - 34.8	2.68	8/3/2022	2.48	0.20
MW0016I	472808	231684	34.5	24.5 - 34.5	4.78	8/3/2022	3.82	0.96
MW0017I	472457	231557	34.6	24.6 - 34.6	4.94	8/3/2022	4.59	0.35
MW0018I	472423	231347	34.7	24.7 - 34.7	6.08	8/3/2022	6.16	-0.08
MW0019I	472575	231358	34.7	24.7 - 34.7	3.61	8/3/2022	3.43	0.18
MW0020I	472626	231408	34.7	24.7 - 34.7	2.57	8/3/2022	2.13	0.44

Table 3-1
SWMU 114
Water Level Elevation Summary

Staff Gauges				
Location ID	Northing (M)	Easting (M)	Date	Elevation (ft NAVD88)
S114-SG01	472672	231036	8/3/2022	-0.08
S114-SG02	472579	231350	8/3/2022	-0.12
S114-SG03	472413	231439	8/3/2022	-0.13
S114-SG04	472096	231345	8/3/2022	-0.05
S114-SG05	471417	231636	8/3/2022	-0.52
S114-SG06	472032	231843	8/3/2022	1.14
S114-SG07	472217	232145	8/3/2022	1.01
S114-SG08	471910	233078	8/3/2022	-0.11
S114-SG09	472456	232518	8/3/2022	0.29
S114-SG10	473313	232019	8/3/2022	2.18

Notes:
Coordinates are referenced to the Florida State Plane Coordinate System, East Zone, North American Datum of 1983 (NAD83)
Elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88)

(M)=	Meter
(ft)=	Feet
TOC=	Tof of Casing
EL=	Elevation
MW=	Monitoring Well
ID=	Identification
DTW =	Depth to water

Table 3-2
SWMU 114
Vertical Flow Direction at Monitoring Well Pairs
August 3, 2022

Shallow Wells			Intermediate Wells			Groundwater Elevation Difference	Vertical Flow Direction
Location ID	Screened Interval (ft)	Groundwater Elevation (ft NAVD88)	Location ID	Screened Interval (ft)	Groundwater Elevation (ft NAVD88)		
MW0001S	1.8 - 11.8	-0.49	MW0001I	24.6 - 34.6	-0.44	-0.05	Upwards
MW0002S	4.1 - 14.1	1.01	MW0002I	24.3 - 34.3	0.99	0.02	Downwards
MW0003S	2.6 - 12.6	1.52	MW0003I	24.5 - 34.5	1.62	-0.10	Upwards
MW0005S	2.9 - 12.9	-0.13	MW0005I	24.4 - 34.4	-0.28	0.15	Downwards
MW0006S	2.3 - 12.3	-0.34	MW0006I	24.7 - 34.7	-0.58	0.24	Downwards
MW0007S	4.4 - 14.4	-0.14	MW0007I	24.4 - 34.4	-0.20	0.06	Downwards
MW0008S	2.9 - 12.9	0.35	MW0008I	24.3 - 34.3	0.41	-0.06	Upwards
MW0009S	2.8 - 12.8	0.88	MW0009I	24.7 - 34.7	0.55	0.33	Downwards
MW0010S	4.9 - 14.9	-0.10	MW0010I	24.4 - 34.4	-0.25	0.15	Downwards
MW0011S	4.7 - 14.7	0.04	MW0011I	24.7 - 34.7	-0.01	0.05	Downwards
MW0012S	2.1 - 12.1	-0.32	MW0012I	24.8 - 34.8	-0.25	-0.07	Upwards
MW0013S	2.1 - 12.1	-0.14	MW0013I	24.8 - 34.8	-0.13	-0.01	Upwards
MW0015S	3.1 - 13.1	0.26	MW0015I	24.8 - 34.8	0.20	0.06	Downwards
MW0016S	4.6 - 14.6	0.99	MW0016I	24.5 - 34.5	0.96	0.03	Downwards
MW0017S	3.9 - 13.9	0.43	MW0017I	24.6 - 34.6	0.35	0.08	Downwards
MW0018S	4.9 - 14.9	-0.04	MW0018I	24.7 - 34.7	-0.08	0.04	Downwards
MW0019S	4.0 - 14.0	0.15	MW0019I	24.7 - 34.7	0.18	-0.03	Upwards
MW0020S	3.1 - 13.1	0.49	MW0020I	24.7 - 34.7	0.44	0.05	Downwards

Notes:
Elevations are referenced to the North American Vertical Datum of 1988 (NAVD 88)
(ft)= Feet
MW= Monitoring Well
ID= Identification

Figure 3-1
SWMU 114 Fire Station #2
Sample Location Map

Legend

- Monitoring Well
- DPT Groundwater Sample
- Surface Water Sample
- Asphalt Sample
- Concrete Sample
- SWMU 114 Boundary

Notes:
DPT=direct push technology
SW=surface water
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

\\srv-gst-01\hglgis\KSC_NS1002\SWMU114\Annual_Update\2022_ADP\(3-01)SWMU114_SampleLocMap.mxd
12/23/2022 TB
Source: HGL, ArcGIS Online Imagery

4. DATA EVALUATION AND SCREENING PROCESS

The PFAS site assessment data evaluation consisted of determining USEPA RSL exceedances for groundwater at each sample location and depth interval for PFOA, PFNA, PFBS, PFHxS, PFOS, and GenX for groundwater and FDEP SW SL exceedances at each surface water sample location for PFOA and PFOS. Previous investigations included samples from groundwater, surface water, soil, and sediment. These previous samples collected between 2019 and 2021 were compared to current RSLs and FDEP SW SLs. Results for groundwater were compared to the resident tap water RSLs released in May 2022 (USEPA, 2022a). Results for surface water were compared to the FDEP SW SLs developed in April 2020 (FDEP, 2020). Results for soil were compared to the resident soil RSLs released in May 2022 (USEPA, 2022b).

Additional PFAS assessment included comparing the ratios of the 25 analyzed PFAS detected in each sample to assess migration pathways and potential sources. The PFAS analytes, acronyms, and Chemical Abstracts Service numbers are presented in **Table 4-1**. These PFAS ratios are used to develop fingerprints for source areas and track migration from source areas to groundwater and between groundwater and surface water.

Analytical data results collected between November 2021 and August 2022 are presented in **Tables 4-2** through **4-10**. Analytical data results from previous investigations collected between 2019 and 2021 are presented in **Appendix E** in **Tables E-1** through **E-4** and laboratory analytical data packages are provided in **Appendix F**.

4.1 Groundwater

One hundred twenty-four (124) DPT groundwater samples were collected at SWMU 114 from 27 locations. Four depth intervals were sampled at each DPT location to a total depth of approximately 37 ft bgs. DPT locations were selected to delineate the extent of PFAS in groundwater based on previous DPT sample results collected in 2019 and 2021 (**Appendix E, Table E-1**). Results of the DPT PFAS samples are presented in **Table 4-2**. **Table 4-3** presents the frequencies of detections, maximum detected concentrations for all PFAS analyzed, and the number of detections above RSLs. Results of DPT groundwater samples collected between November 2021 and June 2022 are shown in **Figure 4-1**. Additional figures depicting the extent of PFAS compounds in groundwater exceeding RSLs are provided in the Site Assessment Report ADP (**Appendix B**).

Of the 25 PFAS analytes, twelve were detected in groundwater at SWMU 114. The most frequently detected PFAS analyte was PFHxS, which was detected in 72 of 124 samples (58%) with 38 of 124 samples exceeding the PFHxS tap water RSL (39 ng/L). PFOS had more samples exceeding the tapwater RSL than PFHxS, 49 of 124 samples exceeded the PFHxS tap water RSL (4 ng/L), but PFOS was detected in fewer samples than PFHxS (56 samples compared to 72 samples). PFBS was detected in 63 samples, but all samples were below the RSL (601 ng/L). GenX was not detected in any samples; although, it should be noted that the method detection limit for GenX exceeded the tap water RSL of 6 ng/L.

S114-DPT1017, located at the southeast end of Towway, had the highest detected concentrations of most PFAS analytes, including PFOS (14,800 ng/L or 3,700 times higher than the RSL) at a

depth between 13 and 17 ft bgs. DPT samples were not collected adjacent to Fire Station #2 where AFFF was discharged and high PFOS concentrations had been detected previously in PFAS-DPT0003 (60,000 ng/L). These two locations, near Fire Station #2 and at the southeast end of Towway, are separated by multiple DPT sample locations with lower concentrations of PFOS along Towway and are suspected to be associated with separate source areas. PFOS and PFHxS generally make up the largest percentage of PFAS in each sample at SWMU 114.

Forty-one (41) groundwater samples were collected at SWMU 114 from 37 monitoring wells (18 shallow water table wells with screens ranging from 2 to 12 ft bgs and 5 to 15 ft bgs; and 19 intermediate wells screened between 25 and 35 ft bgs). Monitoring well locations were selected based on DPT results and to provide enough spatial coverage to develop groundwater elevation contours for SWMU 114. Results of monitoring well samples are presented in **Table 4-4**. **Table 4-5** presents the frequencies of detections, maximum detected concentrations for all PFAS analyzed, and the number of detections above RSLs. Results of groundwater samples collected in August 2022 are shown in **Figure 4-2**.

Of the 25 PFAS analytes, sixteen were detected in groundwater at SWMU 114. Similarly to the DPT samples, PFHxS was the most frequently detected PFAS (26 of 41 samples) and PFOS had the most number of RSL exceedances (24 of 41). The highest PFAS concentration was detected in S114-MW0015S, located north of the SLF tarmac (28,000 ng/L PFOS or 7,000 times the RSL). Monitoring wells S114-MW0007S, S114-MW0019I, and S114-MW0020S also had PFOS concentrations exceeding 1,000 times the RSL. The highest PFOS concentrations were generally observed in the shallow water table wells, with the exception of S114-MW0019I located near the storm water pond where AFFF was discharged during equipment testing at Fire Station #2.

PFAS ratios in DPT and groundwater samples tend to have higher concentrations of PFOS and PFHxS with lower concentrations of other PFAS. Generally, carboxylates, such as PFOA, make up less than one quarter of the total PFAS concentration in DPT samples. The typical ratios of PFAS observed in groundwater samples are representative of clusters identified by AECOM (2021) for legacy AFFF. Fewer groundwater samples may have been representative of modern AFFF, having a higher PFHxS concentration than PFOS concentration. Modern AFFF samples tended to be located farther from suspected sources near Fire Station #2 and along Towway as well as north of the SLF tarmac. Samples with higher PFHxS than PFOS that were located farther from source areas may be attributed to smaller chain PFAS such as PFHxS (six carbons) moving more rapidly in the environment than longer chain PFAS such as PFOS (eight carbons). Samples with higher PFHxS than PFOS north of the SLF tarmac are likely associated with the AFFF spill of 5 to 8 gallons on February 6, 2020.

4.2 Surface Water

Seventeen (17) surface water samples were collected at SWMU 114 from 15 locations. Surface water sample locations were selected to define the extent of PFAS migration within ditches along roads and to confirm PFAS surface water concentrations observed in previous sampling events (**Appendix E, Table E-2**). Results of surface water PFAS samples are presented in **Table 4-6**. **Table 4-7** presents the frequencies of detections, maximum detected concentrations for all PFAS analyzed, and the number of detections above SW SLs.

Thirteen of the 25 PFAS analytes were detected in surface water at SWMU 114. Of the 13 detected PFAS analytes, PFBA, PFHxS, and PFOS were detected in all 17 surface water samples. Sixteen of 17 surface water samples had FDEP SW SL exceedances of PFOS. Surface water samples had no SW SL exceedances of PFOA. Results of surface water samples collected between November 2021 and June 2022 are depicted in **Figure 4-3**. Additional figures depicting the extent of PFAS compounds in surface water exceeding SW SLs are provided in the Site Assessment Report ADP (**Appendix B**).

S114-SW0003, within the stormwater retention pond west of Fire Station #2, had the highest concentration of detected PFAS. The largest PFAS concentration analyzed in surface water was PFOS (1,740 ng/L in February 2022). PFOS constituted the largest percentage of PFAS at 12 of 15 locations and PFHxS constituted the largest percentage of PFAS at three of 15 locations.

Similar to PFAS ratios for groundwater, surface water ratios tend to have higher concentrations of PFOS and PFHxS with carboxylates comprising less than a quarter of the total PFAS concentration. Surface water samples along Towway and south of the SLF, matched clusters identified by AECOM (2021) for legacy AFFF. Samples north of the SLF tarmac more closely matched modern AFFF clusters with higher PFHxS than PFOS concentrations, likely resulting from the 2020 AFFF spill.

4.3 Water Level Elevations

Eighteen shallow water table wells and seventeen intermediate wells screened between 25 ft bgs and 35 ft bgs were gauged to develop a shallow and intermediate groundwater potentiometric surface on August 3, 2022. **Table 3-1** presents the locations, screened intervals, and water elevations in monitoring wells and read from staff gauges on August 3, 2022. Groundwater potentiometric contours are shown in **Figure 4-4** and **Figure 4-5**. Groundwater flow was similar between the shallow and intermediate depth intervals, generally indicating that groundwater flow is from the northeast corner of the site radially towards the west, southwest, south, and southeast. A groundwater divide appears to be present perpendicular to the center of Towway, approximately coinciding with an area of lower PFAS concentrations.

Vertical groundwater gradients were determined at each monitoring well pair by subtracting the water level in shallow monitoring wells from the level in intermediate wells and dividing by the difference in screen center elevation. Vertical gradients were generally downward across SWMU 114, with upward gradients located near some ditches. Areas with upward vertical gradients may indicate that groundwater is discharging to surface water. **Table 3-2** summarizes the vertical flow direction at each of the monitoring well pairs measured on August 3, 2022.

Ten staff gauges were installed and gauged to determine surface water flow directions and interaction with groundwater. **Figure 4-4** depicts staff gauge readings from August 3, 2022 along with the shallow groundwater table. Surface water elevations within ditches throughout SWMU 114 generally agree with the interpolated shallow potentiometric surface, indicating that surface water and shallow groundwater are in direct communication across the site.

4.4 Concrete and Asphalt

Five concrete samples (four parent and one duplicate) and one asphalt sample were collected for SPLP PFAS analysis from five locations around Fire Station #2 and the Shuttle Landing Facility Apron where AFFF releases were known or suspected . Results of concrete and asphalt samples are presented in **Table 4-8**. **Table 4-9** presents the frequencies of detections, maximum detected concentrations for all PFAS analyzed, and the number of detections above RSLs. Results of concrete and asphalt samples collected in May 2022 are depicted in **Figure 4-6**.

Seventeen (17) of the 25 PFAS analytes were detected in concrete and asphalt samples at SWMU 114. PFOS exceeded tap water RSLs in all six samples and had the highest PFAS concentration in all samples. The asphalt sample, S114-AS0005 had the highest PFAS concentrations, with PFOS detected at 5,340 ng/L. S114-AS0005 is located at the approximate location where AFFF was routinely discharged to the stormwater retention pond. Samples collected closer to Fire Station #2 had lower, but elevated concentrations of PFOS, with higher concentrations on the western portion of Fire Station #2 than on the eastern portion. S114-CS001, at the northwest corner of the Shuttle Landing Facility tarmac, had higher PFOS concentrations than S114-CS0002, located at the southern end of the tarmac.

4.5 Quality Control Samples

Field quality control samples were collected to ensure sample concentrations are representative of the parent sample concentrations. One equipment blank and one field blank per day were collected to assess ambient contamination within the field for potential cross-contamination during sample collection.

Twenty-five equipment and field blanks were collected. All results were below detection limits which indicates no evidence of cross-contamination. Thirteen field duplicate samples were collected. Two analytes exceeded the relative percent difference (RPD) goal of 30% in the one duplicate SPLP concrete sample. All analytes met the RPD goal in all the groundwater and surface water duplicate samples. **Table 4-10** shows the field quality control samples for the PFAS SAPR.

Table 4-1
SWMU 114
PFAS Acronyms

Analyte	Acronym	CAS Number
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanesulfonic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorodecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTriA	72629-94-8
Perfluorotetradecanoic acid	PFTeA	376-06-7
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorododecanoic acid	PFDS	335-77-3
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methylperfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethylperfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
4:2 Fluorotelomer sulfonate	4:2 FTS	757124-72-4
6:2 Fluorotelomer sulfonate	6:2 FTS	27619-97-2
8:2 Fluorotelomer sulfonate	8:2 FTS	39108-34-4
Hexafluoropropylene oxide dimer acid	GenX	13252-13-6

CAS = Chemical Abstracts Service

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1000		S114-DPT1000		S114-DPT1000		S114-DPT1000		S114-DPT1001		S114-DPT1001		S114-DPT1001		S114-DPT1001		S114-DPT1001	
Sample ID:			S114-DPT1000-007.0-20211115		S114-DPT1000-015.0-20211115		S114-DPT1000-025.0-20211115		S114-DPT1000-035.0-20211115		S114-DPT1001-005.0-20211115		S114-DPT1001-015.0-20211116		S114-DPT1001-025.0-20211116		S114-DPT1001-035.0-20211116		S114-FD-20211116-01	
Depth Interval:			5 - 9 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs	
Sample Date:			11/15/2021		11/15/2021		11/15/2021		11/15/2021		11/15/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Duplicate	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8.4	J	8	U	8	U	8.3	U	8	U	18.7		4.4	J	7.4	J	7.2	J
PFPeA	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	9.2		2.8	J	5.4	J	5.5	J
PFHxA	N/A	ng/L	4.2	U	2.8	J	4	U	4.2	U	4	U	9.7		5.5	J	10.6		10.2	
PFHpA	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	3.8	J	4	U	2.5	J	2.9	J
PFOA	6	ng/L	4.2	U	4	U	4	U	3.9	J	4	U	4.1	J	4	U	3.1	J	2.9	J
PFNA	6	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	21	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	21	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	21	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4.2	U	20	U	4	U	4.2	U	4	U	4	U	20	U	4	U	20	U
PFBS	601	ng/L	10.9		14.2		4	U	4.2	U	4.2	J	22.6		18.2		21.4		21.4	
PFPeS	N/A	ng/L	3.2	J	7.2	J	4	U	4.2	U	4.8	J	23.5		17.7		19.7		19.2	
PFHxS	39	ng/L	17		25.2		4	U	2.5	J	**47.2**		**150**		**94.4**		**79**		**73**	
PFHpS	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	2.7	J	4	U	4	U	4	U
PFOS	4	ng/L	**4.8**	**J**	2.3	J	3.9	J	**7.6**	**J**	**5.5**	**J**	**41**		2.9	J	**5.2**	**J**	**6.3**	**J**
PFNS	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	21	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4.2	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**8.3**	**U**	**8**	**U**	**8**	**U**	**8.3**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:

(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)

J = The analyte was positively identified, and the associated numerical value is the approximate concentration.

N/A = not established

ng/L = nanograms per liter

RSL = Regional Screening Level

U = The analyte was not detected and is reported at the laboratory limit of detection.

UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit

RSL < PFAS <= 10x RSL

10x RSL < PFAS <= 100x RSL

100x RSL < PFAS <= 1000x RSL

1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1002		S114-DPT1002		S114-DPT1002		S114-DPT1002		S114-DPT1003		S114-DPT1003		S114-DPT1003		S114-DPT1003		S114-DPT1004	
Sample ID:			S114-DPT1002-005.0-20211116		S114-DPT1002-015.0-20211116		S114-DPT1002-025.0-20211116		S114-DPT1002-035.0-20211116		S114-DPT1003-005.0-20211116		S114-DPT1003-015.0-20211116		S114-DPT1003-025.0-20211116		S114-DPT1003-035.0-20211116		S114-DPT1004-005.0-20211116	
Depth Interval:			3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs	
Sample Date:			11/16/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021		11/16/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	17.2		8	U	8	U	8	U	8	U	8	U	8	U	8	U	22.9	
PFPeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHpA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	20	U	4	U	4	U	4	U	4	U	4	U	20	U	4	U	4	U
PFBS	601	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFPeS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxS	39	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHpS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1004	S114-DPT1004	S114-DPT1004	S114-DPT1005	S114-DPT1005	S114-DPT1005	S114-DPT1005	S114-DPT1006	S114-DPT1006
Sample ID:			S114-DPT1004-015.0-20211116	S114-DPT1004-025.0-20211116	S114-DPT1004-035.0-20211116	S114-DPT1005-005.0-20211117	S114-DPT1005-015.0-20211117	S114-DPT1005-025.0-20211117	S114-DPT1005-035.0-20211117	S114-DPT1006-005.0-20211117	S114-DPT1006-015.0-20211117
Depth Interval:			13 - 17 ft bgs	23 - 27 ft bgs	33 - 37 ft bgs	3 - 7 ft bgs	13 - 17 ft bgs	23 - 27 ft bgs	33 - 37 ft bgs	3 - 7 ft bgs	13 - 17 ft bgs
Sample Date:			11/16/2021	11/16/2021	11/16/2021	11/17/2021	11/17/2021	11/17/2021	11/17/2021	11/17/2021	11/17/2021
Sample Type:			Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Acronym	RSL [(1)]	Units	Results	Results	Results	Results	Results	Results	Results	Results	Results
PFBA	N/A	ng/L	8 U	8 U	8 U	47.1	8.3 U	8.3 U	8.3 U	8.3 U	8 U
PFPeA	N/A	ng/L	4 U	4 U	4 U	45	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFHxA	N/A	ng/L	4 U	4 U	4 U	86.5	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFHpA	N/A	ng/L	4 U	4 U	4 U	10.8	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFOA	6	ng/L	4 U	4 U	4 U	**7.1 J**	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFNA	6	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFDA	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFUnA	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFDoA	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFTriA	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFTeA	N/A	ng/L	20 U	4 U	20 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFBS	601	ng/L	4 U	4 U	4 U	320	3.5 J	4.2 U	4.2 U	4.2 U	4 U
PFPeS	N/A	ng/L	4 U	4 U	4 U	243	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFHxS	39	ng/L	4 U	4 U	4 U	**782**	4.2 U	4.3 J	4.2 U	4.2 U	4 U
PFHpS	N/A	ng/L	4 U	4 U	4 U	5.3 J	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFOS	4	ng/L	4 U	4 U	4 U	**8.8**	**4.2 U**	**4.2 U**	**4.2 U**	**4.2 U**	4 U
PFNS	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFDS	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
PFOSA	N/A	ng/L	4 U	4 U	4 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4 U
NMeFOSAA	N/A	ng/L	8 U	8 U	8 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8 U
NEtFOSAA	N/A	ng/L	8 U	8 U	8 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8 U
4:2 FTS	N/A	ng/L	8 U	8 U	8 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8 U
6:2 FTS	N/A	ng/L	8 U	8 U	8 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8 U
8:2 FTS	N/A	ng/L	8 U	8 U	8 U	8.3 U	8.3 U	8.3 U	8.3 U	8.3 U	8 U
GenX	6	ng/L	**8 U**	**8 U**	**8 U**	**8.3 U**	**8.3 U**	**8.3 U**	**8.3 U**	**8.3 U**	**8 U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1006		S114-DPT1006		S114-DPT1006		S114-DPT1007		S114-DPT1007		S114-DPT1007		S114-DPT1007		S114-DPT1007		S114-DPT1008	
Sample ID:			S114-DPT1006-025.0-20211117		S114-DPT1006-035.0-20211117		S114-FD-20211117-01		S114-DPT1007-005.0-20211117		S114-DPT1007-015.0-20211117		S114-FD-20211117-02		S114-DPT1007-025.0-20211117		S114-DPT1007-035.0-20211117		S114-DPT1008-005.0-20211117	
Depth Interval:			23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs	
Sample Date:			11/17/2021		11/17/2021		11/17/2021		11/17/2021		11/17/2021		11/17/2021		11/17/2021		11/17/2021		11/17/2021	
Sample Type:			Normal		Normal		Duplicate		Normal		Normal		Duplicate		Normal		Normal		Normal	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8	U	8	U	8	U	8	U	37.1		36.1		10.6	J	8	U	11.2	J
PFPeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	J	4	U
PFHxA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	8.3		4	U
PFHpA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	3.8	J	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	20	U	20	U
PFBS	601	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	12		6.6	J
PFPeS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	10.5		3.4	J
PFHxS	39	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	**45.8**		9.5	
PFHpS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	**9.9**		4	U
PFNS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1008		S114-DPT1008		S114-DPT1008		S114-DPT1009		S114-DPT1009		S114-DPT1009		S114-DPT1009		S114-DPT1009		S114-DPT1010	
Sample ID:			S114-DPT1008-015.0-20211117		S114-DPT1008-025.0-20211117		S114-DPT1008-035.0-20211117		S114-DPT1009-007.0-20211118		S114-FD-20211118-01		S114-DPT1009-015.0-20211118		S114-DPT1009-025.0-20211118		S114-DPT1009-035.0-20211118		S114-DPT1010-005.0-20211118	
Depth Interval:			13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		5 - 9 ft bgs		5 - 9 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs	
Sample Date:			11/17/2021		11/17/2021		11/17/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021	
Sample Type:			Normal		Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	7.6	J	37.1		8	U	10.1	J	10.7	J	18.3	J	31.6		8.3	U	21.2	
PFPeA	N/A	ng/L	4	U	15.4		4	U	7.4	J	8.1	J	40.9		99.5		4.2	U	3.9	J
PFHxA	N/A	ng/L	5.2	J	33.8		4	U	10		10.7		50.6		106		2.3	J	3.6	J
PFHpA	N/A	ng/L	4	U	6.4	J	4	U	4.7	J	4.6	J	16.5		28.5		4.2	U	2.2	J
PFOA	6	ng/L	4	U	**6.3**	**J**	4	U	3.1	J	3.5	J	**14.7**		**29.9**		4.2	U	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFTeA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFBS	601	ng/L	10.2		88.3		6.5	J	8.7	J	8.5	J	40.1		81.1		2.8	J	4.7	J
PFPeS	N/A	ng/L	7.6	J	77.7		4.4	J	5.2	J	6.2	J	45.6		90.4		4.2	U	3.1	J
PFHxS	39	ng/L	23.5		**239**		13.3		29.8		33.8		**271**		**584**		9.9		10.5	
PFHpS	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	9.1	J	24.3		4.2	U	4	U
PFOS	4	ng/L	4	U	**9**		4	U	**4.9**	**U**	2.7	J	**68.3**		**248**		2.1	J	**4.9**	**J**
PFNS	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
PFOSA	N/A	ng/L	4	U	4	U	4	U	4.9	U	4.8	U	4.9	U	4.5	U	4.2	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	9.8	U	9.5	U	9.8	U	8.9	U	8.3	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	9.8	U	9.5	U	9.8	U	8.9	U	8.3	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	9.8	U	9.5	U	9.8	U	8.9	U	8.3	U	8	U
6:2 FTS	N/A	ng/L	8	U	8	U	8	U	9.8	U	9.5	U	62		247		8.3	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	9.8	U	9.5	U	9.8	U	8.9	U	8.3	U	8	U
GenX	6	ng/L	**8**	**U**	**8**	**U**	**8**	**U**	**9.8**	**U**	**9.5**	**U**	**9.8**	**U**	**8.9**	**U**	**8.3**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1010		S114-DPT1010		S114-DPT1010		S114-DPT1011		S114-DPT1011		S114-DPT1011		S114-DPT1011		S114-DPT1012		S114-DPT1012	
Sample ID:			S114-DPT1010-015.0-20211118		S114-DPT1010-025.0-20211118		S114-DPT1010-035.0-20211118		S114-DPT1011-005.0-20211118		S114-DPT1011-015.0-20211118		S114-DPT1011-025.0-20211118		S114-DPT1011-035.0-20211118		S114-DPT1012-005.0-20211119		S114-DPT1012-015.0-20211119	
Depth Interval:			13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs	
Sample Date:			11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/18/2021		11/19/2021		11/19/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	11.6	J	9.2	J	8.3	U	45		8	U	8.3	U	8.3	U	46.1		90.3	
PFPeA	N/A	ng/L	20.3		14.3		3.9	J	5.2	J	4	U	4.2	U	4.2	U	23.4		181	
PFHxA	N/A	ng/L	34.3		22.1		8	J	3.7	J	4	U	3.7	J	4.2	U	21.6		418	
PFHpA	N/A	ng/L	9.7		6.8	J	2.2	J	5.3	U	4	U	4.2	U	4.2	U	8.4		86.6	
PFOA	6	ng/L	**12**		**7.4**	**J**	3.8	J	5.3	U	4	U	4.2	U	4.2	U	**7.7**	**J**	**93.2**	
PFNA	6	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	2.1	J
PFDA	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFUnA	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFDoA	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFTriA	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFTeA	N/A	ng/L	4.2	U	21	U	4.2	U	26	U	20	U	4.2	U	4.2	U	4.2	U	4.2	U
PFBS	601	ng/L	34.9		19.8		5.1	J	3.3	J	4	U	2.7	J	4.2	U	85.9		585	
PFPeS	N/A	ng/L	37.4		23.4		6	J	5.3	U	4	U	4.2	U	4.2	U	51.6		774	
PFHxS	39	ng/L	**207**		**153**		30.4		3.9	J	4	U	10.1		4.2	U	**284**		**6100**	
PFHpS	N/A	ng/L	7	J	5.5	J	4.2	U	5.3	U	4	U	4.2	U	4.2	U	7.9	J	110	
PFOS	4	ng/L	**66.5**		**117**		3.8	J	**5.3**	**U**	4	U	**4.2**	**U**	**4.2**	**U**	**165**		**774**	
PFNS	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFDS	N/A	ng/L	4.2	U	4.2	U	4.2	U	5.3	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
PFOSA	N/A	ng/L	4.2	U	21	U	4.2	U	26	U	4	U	4.2	U	4.2	U	4.2	U	4.2	U
NMeFOSAA	N/A	ng/L	8.3	U	8.3	U	8.3	U	11	U	8	U	8.3	U	8.3	U	8.3	U	8.3	U
NEtFOSAA	N/A	ng/L	8.3	U	8.3	U	8.3	U	11	U	8	U	8.3	U	8.3	U	8.3	U	8.3	U
4:2 FTS	N/A	ng/L	8.3	U	8.3	U	8.3	U	11	U	8	U	8.3	U	8.3	U	8.3	U	8.3	U
6:2 FTS	N/A	ng/L	8.3	U	8.3	U	8.3	U	11	U	8	U	8.3	U	8.3	U	8.3	U	5.9	J
8:2 FTS	N/A	ng/L	8.3	U	8.3	U	8.3	U	11	U	8	U	8.3	U	8.3	U	8.3	U	8.3	U
GenX	6	ng/L	**8.3**	**U**	**8.3**	**U**	**8.3**	**U**	**11**	**U**	**8**	**U**	**8.3**	**U**	**8.3**	**U**	**8.3**	**U**	**8.3**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1012		S114-DPT1012		S114-DPT1013		S114-DPT1013		S114-DPT1013		S114-DPT1013		S114-DPT1013		S114-DPT1014		S114-DPT1014	
Sample ID:			S114-DPT1012-025.0-20211119		S114-DPT1012-035.0-20211119		S114-DPT1013-005.0-20211119		S114-DPT1013-015.0-20211119		S114-DPT1013-025.0-20211119		S114-DPT1013-035.0-20211119		S114-FD-20211119-01		S114-DPT1014-005.0-20220221		S114-DPT1014-015.0-20220221	
Depth Interval:			23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs	
Sample Date:			11/19/2021		11/19/2021		11/19/2021		11/19/2021		11/19/2021		11/19/2021		11/19/2021		2/21/2022		2/21/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	90.3		58.7		32.9		44.5		50.8		8.3	U	10	U	10.5	J	28.8	J
PFPeA	N/A	ng/L	156		94.4		108		142		143		5.2	J	6.1	J	2.2	J	2.3	J
PFHxA	N/A	ng/L	357		223		97.5		151		165		6.5	J	8.1	J	3.6	J	8.6	
PFHpA	N/A	ng/L	70.6		47.1		29		38.7		41.7		4.2	U	5	U	4	U	4.2	U
PFOA	6	ng/L	**129**		**79.7**		**20.3**		**37.2**		**38.3**		4.2	U	5	U	4	U	4.3	J
PFNA	6	ng/L	4.1	J	2.4	J	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFDA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFUnA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFDoA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFTriA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFTeA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	21	U	5	U	4	U	21	U
PFBS	601	ng/L	302		271		66.4		139		178		6.4	J	6.8	J	3.3	J	5.9	J
PFPeS	N/A	ng/L	462		370		75.2		152		185		5.3	J	6.9	J	3.8	J	7.1	J
PFHxS	39	ng/L	**6100**		**4290**		**390**		**786**		**898**		28.7		34.7		21.3		**82.8**	
PFHpS	N/A	ng/L	191		102		11.7		31.1		28.3		4.2	U	5	U	4	U	3.3	J
PFOS	4	ng/L	**2490**		**778**		**179**		**336**		**324**		**6.5**	**J**	**8.3**	**J**	2.6	J	**94.9**	
PFNS	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFDS	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	4.2	U
PFOSA	N/A	ng/L	4.2	U	4	U	4.2	U	4	U	4.5	U	4.2	U	5	U	4	U	21	U
NMeFOSAA	N/A	ng/L	8.3	U	8	U	8.3	U	8	U	9.1	U	8.3	U	10	U	8	U	8.3	U
NEtFOSAA	N/A	ng/L	8.3	U	8	U	8.3	U	8	U	9.1	U	8.3	U	10	U	8	U	8.3	U
4:2 FTS	N/A	ng/L	8.3	U	8	U	8.3	U	8	U	9.1	U	8.3	U	10	U	8	U	8.3	U
6:2 FTS	N/A	ng/L	5.7	J	8	U	169		358		327		5.3	J	6.6	J	8	U	8.3	U
8:2 FTS	N/A	ng/L	8.3	U	8	U	8.3	U	8	U	9.1	U	8.3	U	10	U	8	U	8.3	U
GenX	6	ng/L	**8.3**	**U**	**8**	**U**	**8.3**	**U**	**8**	**U**	**9.1**	**U**	**8.3**	**U**	**10**	**U**	**8**	**U**	**8.3**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1014		S114-DPT1014		S114-DPT1014		S114-DPT1015		S114-DPT1015		S114-DPT1015		S114-DPT1015		S114-DPT1016	
Sample ID:			S114-DPT1014-025.0-20220221		S114-DPT1014-035.0-20220221		S114-DPT1014-045.0-20220616		S114-DPT1015-005.0-20220221		S114-DPT1015-015.0-20220221		S114-DPT1015-025.0-20220221		S114-FD-20220221-01		S114-DPT1015-035.0-20220221		S114-DPT1016-007.0-20220221	
Depth Interval:			23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		5 - 9 ft bgs	
Sample Date:			2/21/2022		2/21/2022		6/16/2022		2/21/2022		2/21/2022		2/21/2022		2/21/2022		2/21/2022		2/21/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	23.3	J	5.6	J	8	U	19.4		23.8		16.1		9.1	U	9.1	U	10.7	J
PFPeA	N/A	ng/L	21	U	6.8	J	14.8		3.9	J	2.7	J	12.1		4.5	U	4.5	U	5.3	J
PFHxA	N/A	ng/L	10.3		16.4		17.9		7.8	J	8.4	J	42.5		4.5	U	4.5	U	5.8	J
PFHpA	N/A	ng/L	3.2	J	3.8	J	3.2	J	2.2	J	5	U	7.1	J	4.5	U	4.5	U	4.4	J
PFOA	6	ng/L	**9.9**		5.6	J	2.6	J	4.9	J	4.4	J	**17.8**		4.5	U	4.5	U	**12.4**	
PFNA	6	ng/L	4.2	U	4.5	U	4	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFDA	N/A	ng/L	4.2	U	4.5	U	4	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFUnA	N/A	ng/L	4.2	U	4.5	U	4	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFDoA	N/A	ng/L	4.2	U	4.5	U	4	U	4.8	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFTriA	N/A	ng/L	4.2	U	4.5	U	4	U	4.8	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFTeA	N/A	ng/L	4.2	U	4.5	U	20	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFBS	601	ng/L	9		14.5		13.4		3.7	J	3.7	J	27.2		4.5	U	4.5	U	2.7	J
PFPeS	N/A	ng/L	11.7		17.8		12.8		4.3	J	5	J	40.3		4.5	U	4.5	U	4.2	U
PFHxS	39	ng/L	**155**		**112**		**62.3**		**85.1**		**84.5**		**456**		2.6	J	3.5	J	**52.3**	
PFHpS	N/A	ng/L	10.6		4.5	U	4	U	4.5	J	3	J	9.7		4.5	U	4.5	U	13.3	
PFOS	4	ng/L	**101**		**4.5**	**J**	4	U	**338**		**330**		**40.2**		**7.2**	**J**	**5.4**	**J**	**47**	
PFNS	N/A	ng/L	4.2	U	4.5	U	4	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFDS	N/A	ng/L	4.2	U	4.5	U	4	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
PFOSA	N/A	ng/L	4.2	U	4.5	U	20	U	4.2	U	5	U	4	U	4.5	U	4.5	U	4.2	U
NMeFOSAA	N/A	ng/L	8.3	U	9.1	U	8	U	8.3	U	10	U	8	U	9.1	U	9.1	U	8.3	U
NEtFOSAA	N/A	ng/L	8.3	U	9.1	U	8	U	8.3	U	10	U	8	U	9.1	U	9.1	U	8.3	U
4:2 FTS	N/A	ng/L	8.3	U	9.1	U	8	U	8.3	U	10	U	8	U	9.1	U	9.1	U	8.3	U
6:2 FTS	N/A	ng/L	8.3	U	9.1	U	8	U	8.3	U	10	U	8	U	9.1	U	9.1	U	8.3	U
8:2 FTS	N/A	ng/L	8.3	U	9.1	U	8	U	8.3	U	10	U	8	U	9.1	U	9.1	U	8.3	U
GenX	6	ng/L	**8.3**	**U**	**9.1**	**U**	**8**	**U**	**8.3**	**U**	**10**	**U**	**8**	**U**	**9.1**	**U**	**9.1**	**U**	**8.3**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1016		S114-DPT1016		S114-DPT1016		S114-DPT1016		S114-DPT1017		S114-DPT1017		S114-DPT1017		S114-DPT1017		S114-DPT1017	
Sample ID:			S114-DPT1016-015.0-20220221		S114-DPT1016-025.0-20220221		S114-DPT1016-035.0-20220221		S114-DPT1016-045.0-20220614		S114-DPT1017-007.0-20220222		S114-DPT1017-015.0-20220222		S114-DPT1017-025.0-20220222		S114-DPT1017-035.0-20220222		S114-DPT1017-045.0-20220614	
Depth Interval:			13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		5 - 9 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			2/21/2022		2/21/2022		2/21/2022		6/14/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		6/14/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	12.9	J	30.6		15	J	8	U	131	J	169		48.9		8	U	8	U
PFPeA	N/A	ng/L	16		30.7		13.7		4	U	216		296		75.5		4	J	4	U
PFHxA	N/A	ng/L	28.8		48.5		29.6		4	U	507		669		207		8.3		4	U
PFHpA	N/A	ng/L	13.3		19.2		9.9		4	U	311		326		31.9		2.5	J	4	U
PFOA	6	ng/L	**10.7**	**J**	**18.3**		**21.1**		4	U	**1100**		**610**		**46.1**		**8**		4	U
PFNA	6	ng/L	5.9	U	3.3	J	4.2	U	4	U	2.6	J	**46.8**		4	U	4	U	4	U
PFDA	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	5.6	U	5	U	21	U	4	U	45	U	4	U	20	U	20	U	4	U
PFBS	601	ng/L	8.8	J	20		23.5		4	U	172		193		210		5.2	J	4	U
PFPeS	N/A	ng/L	12.1		23.4		35.5		4	U	411		471		261		7.4	J	4	U
PFHxS	39	ng/L	**257**		**275**		**400**		4	U	**12100**		**11300**		**1490**		**114**		4	U
PFHpS	N/A	ng/L	6.5	J	17.2		34.6		4	U	307		567		37		6.6	J	4	U
PFOS	4	ng/L	**153**		**990**		**636**		4	U	**747**		**14800**		**238**		**108**		4	U
PFNS	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	5.9	U	5	U	4.2	U	4	U	4.5	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	5.6	U	5	U	4.2	U	4	U	45	U	200	U	20	U	4	U	4	U
NMeFOSAA	N/A	ng/L	12	U	10	U	8.3	U	8	U	9.1	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	12	U	10	U	8.3	U	8	U	9.1	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	11	U	10	U	8.3	U	8	U	9.1	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	12	U	10	U	8.3	U	8	U	1140		537		19.8		6.2	J	8	U
8:2 FTS	N/A	ng/L	12	U	10	U	8.3	U	8	U	9.1	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**11**	**U**	**10**	**U**	**8.3**	**U**	**8**	**U**	**91**	U	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:

(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)

J = The analyte was positively identified, and the associated numerical value is the approximate concentration.

N/A = not established

ng/L = nanograms per liter

RSL = Regional Screening Level

U = The analyte was not detected and is reported at the laboratory limit of detection.

UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit

RSL < PFAS <= 10x RSL

10x RSL < PFAS <= 100x RSL

100x RSL < PFAS <= 1000x RSL

1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1018		S114-DPT1018		S114-DPT1018		S114-DPT1018		S114-DPT1018		S114-DPT1019		S114-DPT1019		S114-DPT1019		S114-DPT1019	
Sample ID:			S114-DPT1018-005.0-20220222		S114-DPT1018-015.0-20220222		S114-DPT1018-025.0-20220222		S114-FD-20220222-01		S114-DPT1018-035.0-20220222		S114-DPT1019-005.0-20220222		S114-DPT1019-015.0-20220222		S114-DPT1019-025.0-20220222		S114-DPT1019-035.0-20220222	
Depth Interval:			3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs	
Sample Date:			2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022	
Sample Type:			Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	18.3		10.7	J	8	U	8	U	8	U	8	U	8	U	8	U	8	U
PFPeA	N/A	ng/L	4	U	2.5	J	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHpA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	20	U	20	U	4	U	4	U	4	U	4	U	20	U	4	U	4	U
PFBS	601	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFPeS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxS	39	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	6.3	J	4	U
PFHpS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	4	U	**9.7**		4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	20	U	4	U	20	U	4	U	4	U	20	U	20	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1020		S114-DPT1020		S114-DPT1020		S114-DPT1020		S114-DPT1021		S114-DPT1021		S114-DPT1021		S114-DPT1021		S114-DPT1021	
Sample ID:			S114-DPT1020-005.0-20220222		S114-DPT1020-015.0-20220222		S114-DPT1020-025.0-20220222		S114-DPT1020-035.0-20220222		S114-DPT1021-005.0-20220615		S114-DPT1021-015.0-20220615		S114-DPT1021-025.0-20220615		S114-DPT1021-035.0-20220615		S114-DPT1021-045.0-20220615	
Depth Interval:			3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			2/22/2022		2/22/2022		2/22/2022		2/22/2022		6/15/2022		6/15/2022		6/15/2022		6/15/2022		6/15/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	13.9	J	8.1	J	5.3	J	8	U	24		6.8	J	8	U	8	U	8	U
PFPeA	N/A	ng/L	3.1	J	11.4		17.8		4	U	6.8	J	8.2	J	4	U	4	U	4	U
PFHxA	N/A	ng/L	3.2	J	26.6		29.5		4	U	4.3	J	3.1	J	4	U	4	U	4	U
PFHpA	N/A	ng/L	2.1	J	6	J	14.2		4	U	2.6	J	4.8	U	4	U	4	U	4	U
PFOA	6	ng/L	2.1	J	**17**		**18.1**		4	U	**7.4**	**J**	4.8	U	2	J	4	U	4	U
PFNA	6	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFBS	601	ng/L	4	U	19		7.5	J	4	U	3.4	J	4.4	J	4	U	4	U	4	U
PFPeS	N/A	ng/L	4	U	29.8		9.9		4	U	3.3	J	5.3	J	4	U	4	U	4	U
PFHxS	39	ng/L	23.1		**251**		**56.1**		4	U	**47.5**		**39.1**		4	U	4	U	4	U
PFHpS	N/A	ng/L	4	U	19.4		4.3	U	4	U	3.1	J	4.8	U	4	U	4	U	4	U
PFOS	4	ng/L	**8.2**		**225**		**4.6**	**J**	4	U	4	U	**4.8**	**U**	4	U	4	U	4	U
PFNS	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4	U	4.8	U	4.3	U	4	U	4	U	4.8	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	9.5	U	8.6	U	8	U	8	U	9.6	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	9.5	U	8.6	U	8	U	8	U	9.6	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	9.5	U	8.6	U	8	U	8	U	9.6	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8	U	9.5	U	8.6	U	8	U	8	U	9.6	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	9.5	U	8.6	U	8	U	8	U	9.6	U	8	U	8	U	8	U
GenX	6	ng/L	**8**	**U**	**9.5**	**U**	**8.6**	**U**	**8**	**U**	**8**	**U**	**9.6**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
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SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1022		S114-DPT1022		S114-DPT1022		S114-DPT1022		S114-DPT1022		S114-DPT1023		S114-DPT1023		S114-DPT1023	
Sample ID:			S114-FD-20220615-01		S114-DPT1022-005.0-20220615		S114-DPT1022-015.0-20220615		S114-DPT1022-025.0-20220615		S114-DPT1022-035.0-20220615		S114-DPT1022-045.0-20220615		S114-DPT1023-005.0-20220616		S114-DPT1023-015.0-20220616		S114-DPT1023-025.0-20220616	
Depth Interval:			3 - 7 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs	
Sample Date:			6/15/2022		6/15/2022		6/15/2022		6/15/2022		6/15/2022		6/15/2022		6/16/2022		6/16/2022		6/16/2022	
Sample Type:			Duplicate		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	5.2	J	60		9.6	J	7.1	J
PFPeA	N/A	ng/L	3.3	J	3.5	J	3.3	J	8.1		3.4	J	9.4		3.9	J	3.1	J	7.8	J
PFHxA	N/A	ng/L	6.1	J	5.5	J	5.4	J	7.9	J	4.6	J	16		4	U	4	U	4	U
PFHpA	N/A	ng/L	5.3	U	4.5	U	4	U	2.2	J	4	U	4.2	J	4	U	4	U	4	U
PFOA	6	ng/L	5.3	U	4.5	U	2.3	J	3.4	J	2.3	J	5.4	J	4	U	4	U	4	U
PFNA	6	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	20	U	20	U
PFBS	601	ng/L	4.3	J	4.2	J	3.8	J	6.4	J	3.1	J	19.4		4	U	4	U	4	U
PFPeS	N/A	ng/L	4.5	J	4.1	J	4.3	J	6.4	J	3	J	17.6		4	U	4	U	4	U
PFHxS	39	ng/L	22.9		24		24.9		38.3		19.8		**73.1**		4	U	4	U	4	U
PFHpS	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	**6.3**	**J**	**5.1**	**J**	**6.7**	**J**	**9.6**		4	U	**4.7**	**J**	4	U	4	U	4	U
PFNS	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	5.3	U	4.5	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	11	U	9.1	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**11**	**U**	**9.1**	**U**	**8**	**U**	**40**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1023		S114-DPT1023		S114-DPT1024		S114-DPT1024		S114-DPT1024		S114-DPT1024		S114-DPT1025		S114-DPT1025	
Sample ID:			S114-DPT1023-035.0-20220616		S114-FD-20220616-01		S114-DPT1024-005.0-20220614		S114-DPT1024-015.0-20220614		S114-DPT1024-025.0-20220614		S114-DPT1024-035.0-20220614		S114-DPT1024-045.0-20220614		S114-DPT1025-005.0-20220614		S114-DPT1025-015.0-20220614	
Depth Interval:			33 - 37 ft bgs		33 - 37 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		3 - 7 ft bgs		13 - 17 ft bgs	
Sample Date:			6/16/2022		6/16/2022		6/14/2022		6/14/2022		6/14/2022		6/14/2022		6/14/2022		6/14/2022		6/14/2022	
Sample Type:			Normal		Duplicate		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	40	U	40	U	25.4		38.7		14.6	J	8.3	U	9.1	U	8.7	U	9.1	U
PFPeA	N/A	ng/L	5.1	J	20	U	11.2		17.1		4.6	J	4.2	U	4.5	U	4.3	U	4.5	U
PFHxA	N/A	ng/L	4	U	4	U	16.1		23.3		6.1	J	7.2	J	4.5	U	4.3	U	4.5	U
PFHpA	N/A	ng/L	4	U	4	U	7.4	J	8.8	J	2.9	J	4.2	U	4.5	U	4.3	U	4.5	U
PFOA	6	ng/L	4	U	4	U	5.1	J	4.4	J	3.7	J	4.2	U	4.5	U	4.3	U	4.5	U
PFNA	6	ng/L	4	U	4	U	4.2	U	**8.2**	**U**	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFDA	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFUnA	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFDoA	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFTriA	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFTeA	N/A	ng/L	4	U	20	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFBS	601	ng/L	4	U	4	U	2.5	J	8.2	U	2.8	J	4.2	J	4.5	U	4.3	U	4.5	U
PFPeS	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	2.5	J	4.6	J	4.5	U	4.3	U	4.5	U
PFHxS	39	ng/L	4	U	4	U	31.9		**39.9**		28.5		30.3		2.4	J	4.3	U	4.5	U
PFHpS	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFOS	4	ng/L	4	U	4	U	**4.2**	**U**	**8.2**	**U**	**4.2**	**U**	**4.2**	**U**	**4.5**	**U**	**4.3**	**U**	**4.5**	**U**
PFNS	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFDS	N/A	ng/L	4	U	4	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
PFOSA	N/A	ng/L	4	U	20	U	4.2	U	8.2	U	4.2	U	4.2	U	4.5	U	4.3	U	4.5	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8.3	U	16	U	8.3	U	8.3	U	9.1	U	8.7	U	9.1	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8.3	U	16	U	8.3	U	8.3	U	9.1	U	8.7	U	9.1	U
4:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	16	U	8.3	U	8.3	U	9.1	U	8.7	U	9.1	U
6:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	16	U	8.3	U	8.3	U	9.1	U	8.7	U	9.1	U
8:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	16	U	8.3	U	8.3	U	9.1	U	8.7	U	9.1	U
GenX	6	ng/L	**8**	**U**	**8**	**U**	**8.3**	**U**	**16**	**U**	**8.3**	**U**	**8.3**	**U**	**9.1**	**U**	**8.7**	**U**	**9.1**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-2
SWMU 114
DPT Groundwater Analytical Results

DPT Sample Location:			S114-DPT1025		S114-DPT1025	S114-DPT1025	S114-DPT1026	S114-DPT1026	S114-DPT1026	S114-DPT1026
Sample ID:			S114-FD-20220614-01		S114-DPT1025-025.0-20220614	S114-DPT1025-035.0-20220614	S114-DPT1026-005.0-20220614	S114-DPT1026-015.0-20220615	S114-DPT1026-025.0-20220615	S114-DPT1026-035.0-20220615
Depth Interval:			23 - 27 ft bgs		23 - 27 ft bgs	33 - 37 ft bgs	3 - 7 ft bgs	13 - 17 ft bgs	23 - 27 ft bgs	33 - 37 ft bgs
Sample Date:			6/14/2022		6/14/2022	6/14/2022	6/14/2022	6/15/2022	6/15/2022	6/15/2022
Sample Type:			Duplicate		Normal	Normal	Normal	Normal	Normal	Normal
Acronym	RSL [1]	Units	Results		Results	Results	Results	Results	Results	Results
PFBA	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
PFPeA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	4 J	4.5 U	4 U
PFHxA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFHpA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFOA	6	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFNA	6	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFDA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFUnA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFDoA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFTriA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFTeA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFBS	601	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFPeS	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFHxS	39	ng/L	5.5	U	4.2 U	4 U	20.8	9.4 J	4.5 U	4 U
PFHpS	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFOS	4	ng/L	**5.5**	**U**	**4.2** U	4 U	**179**	**5.2** U	**4.5** U	4 U
PFNS	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFDS	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
PFOSA	N/A	ng/L	5.5	U	4.2 U	4 U	4.2 U	5.2 U	4.5 U	4 U
NMeFOSAA	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
NEtFOSAA	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
4:2 FTS	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
6:2 FTS	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
8:2 FTS	N/A	ng/L	11	U	8.3 U	8 U	8.3 U	10 U	9.1 U	8 U
GenX	6	ng/L	**11**	**U**	**8.3** U	**8** U	**8.3** U	**10** U	**9.1** U	**8** U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
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U = The analyte was not detected and is reported at the laboratory limit of detection.
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SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-3
SWMU 114
DPT Groundwater Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	Depth Interval of Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL	Number of Detection Limits Exceeding RSL
Carboxylates	PFBA	124	57	4.4	169	S114-DPT1017	13 - 17 ft bgs	N/A		
	PFPeA	124	60	2.2	296	S114-DPT1017	13 - 17 ft bgs	N/A		
	PFHxA	124	60	2.3	669	S114-DPT1017	13 - 17 ft bgs	N/A		
	PFHpA	124	42	2.1	326	S114-DPT1017	13 - 17 ft bgs	N/A		
	PFOA	124	48	2	1100	S114-DPT1017	5 - 9 ft bgs	6	26	0
	PFNA	124	6	2.1	46.8	S114-DPT1017	13 - 17 ft bgs	6	1	1
	PFDA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFUnA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFDoA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFTriA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFTeA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
Sulfonates	PFBS	124	63	2.5	585	S114-DPT1012	13 - 17 ft bgs	601	0	0
	PFPeS	124	57	2.5	774	S114-DPT1012	13 - 17 ft bgs	N/A		
	PFHxS	124	72	2.4	12100	S114-DPT1017	5 - 9 ft bgs	39	40	0
	PFHpS	124	28	2.7	567	S114-DPT1017	13 - 17 ft bgs	N/A		
	PFOS	124	56	2.1	14800	S114-DPT1017	13 - 17 ft bgs	4	49	20
	PFNS	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFDS	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
Precursors / Fluorotelomers	PFOSA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	NMeFOSAA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	NEtFOSAA	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	4:2 FTS	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	6:2 FTS	124	13	5.3	1140	S114-DPT1017	5 - 9 ft bgs	N/A		
	8:2 FTS	124	0	No Detections	No Detections	No Detections	No Detections	N/A		
	GenX	124	0	No Detections	No Detections	No Detections	No Detections	6	0	124

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
RSL = Regional Screening Level
N/A = not established
ng/L = nanograms per liter

Table 4-4
SWMU 114
Monitoring Wells Groundwater Analytical Results

Sample Location:			S114-MW0001S	S114-MW0001I	S114-MW0001I	S114-MW0002S	S114-MW0002I	S114-MW0003S	S114-MW0003I	S114-MW0004I	S114-MW0005S
Sample ID:			S114-MW0001S-007.0-20220817	S114-MW0001I-003.0-20220817	S114-FD-20220817-01	S114-MW0002S-009.0-20220818	S114-MW0002I-029.0-20220818	S114-MW0003S-008.0-20220818	S114-MW0003I-030.0-20220818	S114-MW0004I-029.0-20220818	S114-MW0005S-008.0-20220819
Depth Interval:			1.8 - 11.8	24.6 - 34.6	24.6 - 34.6	4.1 - 14.1	24.3 - 34.3	2.6 - 12.6	24.5 - 34.5	24.4 - 34.4	2.9 - 12.9
Sample Date:			8/17/2022	8/17/2022	8/17/2022	8/18/2022	8/18/2022	8/18/2022	8/18/2022	8/18/2022	8/19/2022
Sample Type:			Normal	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Acronym	RSL [1]	Units	Results	Results	Results	Results	Results	Results	Results	Results	Results
PFBA	N/A	ng/L	8 U	8 U	4.1 J	27.9	8 U	8 U	8 U	8 U	66.8
PFPeA	N/A	ng/L	3.8 J	4.1 J	5.1 J	9.7	4 U	4 U	4 U	4 U	4 U
PFHxA	N/A	ng/L	6.8 J	8.1	8.3	8	4 U	4 U	4 U	4 U	4 U
PFHpA	N/A	ng/L	4 U	2.4 J	2.4 J	3.5 J	4 U	4 U	4 U	4 U	4 U
PFOA	6	ng/L	2.6 J	3 J	3.1 J	4 U	4 U	4 U	4 U	4 U	4 U
PFNA	6	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFDA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFUnA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFDoA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFTriA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFTeA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFBS	601	ng/L	4.6 J	5.5 J	5.2 J	3.1 J	4 U	4 U	4 U	4 U	4 U
PFPeS	N/A	ng/L	5.4 J	6.4 J	6.3 J	4.9 J	4 U	4 U	4 U	4 U	4 U
PFHxS	39	ng/L	29	33.9	34.6	35.4	4 U	4 U	4 U	4 U	4.9 J
PFHpS	N/A	ng/L	4 U	4 U	4 U	3.7 J	4 U	4 U	4 U	4 U	4 U
PFOS	4	ng/L	4 U	**7.7 J**	**7.3 J**	**117**	4 U	4 U	4 U	4 U	4 U
PFNS	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFDS	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
PFOSA	N/A	ng/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	20 U
NMeFOSAA	N/A	ng/L	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
NEtFOSAA	N/A	ng/L	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
4:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
6:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
8:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U	8 U
GenX	6	ng/L	**8 U**	**8 U**	**8 U**	**8 U**	**8 U**	**8 U**	**8 U**	**8 U**	**8 U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
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10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-4
SWMU 114
Monitoring Wells Groundwater Analytical Results

Sample Location:			S114-MW0005I	S114-MW0006S	S114-MW0006S	S114-MW0006I	S114-MW0007S	S114-MW0007I	S114-MW0008S	S114-MW0008I	S114-MW0009S
Sample ID:			S114-MW0005I-029.0-20220819	S114-MW0006S-007.0-20220819	S114-FD-20220819-01	S114-MW0006I-030.0-20220819	S114-MW0007S-009.0-20220819	S114-MW0007I-029.0-20220819	S114-MW0008S-008.0-20220819	S114-MW0008I-029.0-20220819	S114-MW0009S-008.0-20220819
Depth Interval:			24.4 - 34.4	2.3 - 12.3	2.3 - 12.3	24.7 - 34.7	4.4 - 14.4	24.4 - 34.4	2.9 - 12.9	24.3 - 34.3	2.8 - 12.8
Sample Date:			8/19/2022	8/19/2022	8/19/2022	8/19/2022	8/19/2022	8/19/2022	8/19/2022	8/19/2022	8/19/2022
Sample Type:			Normal	Normal	Duplicate	Normal	Normal	Normal	Normal	Normal	Normal
Acronym	RSL [1]	Units	Results	Results	Results	Results	Results	Results	Results	Results	Results
PFBA	N/A	ng/L	8 U	68.1 J	75.5	8 U	72.9	40 U	31.3	45 U	9.1 U
PFPeA	N/A	ng/L	4 U	18.3	20.2	4 U	155	4 U	34.2	23 U	4.5 U
PFHxA	N/A	ng/L	4 U	51.6	55.9	4 U	235	4 U	95.7	23 U	4.5 U
PFHpA	N/A	ng/L	4 U	23.5	26	4 U	127	4 U	24.7	23 U	4.5 U
PFOA	6	ng/L	4 U	**35**	**38**	4 U	**126**	4 U	**32.9**	4.5 U	2.7 J
PFNA	6	ng/L	4 U	4 U	4 U	4 U	**28.1**	4 U	4 U	4.5 U	4.5 U
PFDA	N/A	ng/L	4 U	4 U	4 U	4 U	4.8 J	4 U	4 U	4.5 U	4.5 U
PFUnA	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	4.5 U
PFDoA	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	23 U
PFTriA	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	23 U
PFTeA	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	23 U
PFBS	601	ng/L	4 U	23.4	24.1	4 U	47.7	4 U	44.7	23 U	4.5 U
PFPeS	N/A	ng/L	4 U	39.9	42.2	4 U	82.7	4 U	63.3	23 U	4.5 U
PFHxS	39	ng/L	4 U	**765**	**809**	4 U	**1710**	4 U	**611**	3.7 J	6.1 J
PFHpS	N/A	ng/L	4 U	80	93.1	4 U	233	4 U	47.6	4.5 U	4.5 U
PFOS	4	ng/L	4 U	**1550**	**1700**	4 U	**16300**	4 U	**1740**	**4.5 U**	**5.5 J**
PFNS	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	4.5 U
PFDS	N/A	ng/L	4 U	4 U	4 U	4 U	4.2 U	4 U	4 U	4.5 U	4.5 U
PFOSA	N/A	ng/L	4 U	4 U	20 U	20 U	5.3 J	4 U	4 U	23 U	23 U
NMeFOSAA	N/A	ng/L	8 U	8 U	8 U	8 U	8.3 U	8 U	8 U	9.1 U	9.1 U
NEtFOSAA	N/A	ng/L	8 U	8 U	8 U	8 U	8.3 U	8 U	8 U	9.1 U	9.1 U
4:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	8.3 U	8 U	8 U	45 U	9.1 U
6:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	204	8 U	4.2 J	9.1 U	9.1 U
8:2 FTS	N/A	ng/L	8 U	8 U	8 U	8 U	8.3 U	8 U	8 U	9.1 U	9.1 U
GenX	6	ng/L	**8 U**	**8 U**	**8 U**	**8 U**	**8.3 U**	**8 U**	**8 U**	**9.1 U**	**9.1 U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-4
SWMU 114
Monitoring Wells Groundwater Analytical Results

Sample Location:			S114-MW0009I		S114-MW0010S		S114-MW0010I		S114-MW0011S		S114-MW0011I		S114-MW0012S		S114-MW0012I		S114-MW0013S		S114-MW0013I	
Sample ID:			S114-MW0009I-030.0-20220819		S114-MW0010S-010.0-20220819		S114-MW0010I-029.0-20220819		S114-MW0011S-010.0-20220819		S114-MW0011I-030.0-20220819		S114-MW0012S-007.0-20220818		S114-MW0012I-030.0-20220818		S114-MW0013S-007.0-20220818		S114-MW0013I-030.0-20220818	
Depth Interval:			24.7 - 34.7		4.9 - 14.9		24.4 - 34.4		4.7 - 14.7		24.7 - 34.7		2.1 - 12.1		24.8 - 34.8		2.1 - 12.1		24.8 - 34.8	
Sample Date:			8/19/2022		8/19/2022		8/19/2022		8/19/2022		8/19/2022		8/18/2022		8/18/2022		8/18/2022		8/18/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	45	U	8	U	26.3		14.4	J	18.7		8	U	8	U	42.7		6.6	J
PFPeA	N/A	ng/L	23	U	4	U	6.3	J	5.2	J	29.3		4	U	4	U	12.4		2.8	J
PFHxA	N/A	ng/L	15.4		4	U	13.2		4.1	J	32.7		4	U	4	U	4.6	J	4	U
PFHpA	N/A	ng/L	3.5	J	4	U	3.4	J	4.2	U	11.6		4	U	4	U	3	J	4	U
PFOA	6	ng/L	5.3	J	4	U	**6.3**	**J**	2.3	J	**9.8**		4	U	4	U	3.4	J	4	U
PFNA	6	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4.5	U	4	U	21	U	4.2	U	4.5	U	20	U	4	U	20	U	4	U
PFBS	601	ng/L	14.3		4	U	6.9	J	4.2	U	15.7		4	U	4	U	3	J	4	U
PFPeS	N/A	ng/L	17.4		4	U	9.9		4.2	U	19		4	U	4	U	4	U	4	U
PFHxS	39	ng/L	**116**		4	U	**135**		13		**140**		4	U	4	U	4.3	J	4	U
PFHpS	N/A	ng/L	4.4	J	4	U	4.9	J	4.2	U	6.8	J	4	U	4	U	4	U	4	U
PFOS	4	ng/L	**115**		4	U	**221**		**16.5**		**196**		4	U	4	U	**5.3**	**J**	4	U
PFNS	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4.5	U	4	U	4.2	U	4.2	U	4.5	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	23	U	20	U	21	U	21	U	4.5	U	4	U	20	U	20	U	4	U
NMeFOSAA	N/A	ng/L	9.1	U	8	U	8.3	U	8.3	U	9.1	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	9.1	U	8	U	8.3	U	8.3	U	9.1	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	9.1	U	8	U	8.3	U	8.3	U	9.1	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	9.1	U	8	U	8.3	U	8.3	U	9.1	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	9.1	U	8	U	8.3	U	8.3	U	9.1	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	**9.1**	**U**	**8**	**U**	**8.3**	**U**	**8.3**	**U**	**9.1**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-4
SWMU 114
Monitoring Wells Groundwater Analytical Results

			Sample Location:		S114-MW0015S		S114-MW0015I		S114-MW0015I		S114-MW0016S		S114-MW0016I		S114-MW0017S		S114-MW0017S		S114-MW0017I		S114-MW0018S	
			Sample ID:		S114-MW0015S-008.0-20220818		S114-MW0015I-030.0-20220818		S114-FD-20220818-01		S114-MW0016S-010.0-20220818		S114-MW0016I-030.0-20220818		S114-MW0017S-009.0-20220816		S114-FD-20220816-01		S114-MW0017I-030.0-20220816		S114-MW0018S-010.0-20220817	
			Depth Interval:		3.1 - 13.1		24.8 - 34.8		24.8 - 34.8		4.6 - 14.6		24.5 - 34.5		3.9 - 13.9		3.9 - 13.9		24.6 - 34.6		4.9 - 14.9	
			Sample Date:		8/18/2022		8/18/2022		8/18/2022		8/18/2022		8/18/2022		8/16/2022		8/16/2022		8/16/2022		8/17/2022	
			Sample Type:		Normal		Normal		Duplicate		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units			Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L			65.7		22.7		21.1		211		8	U	8	U	8	U	8	U	20.8	
PFPeA	N/A	ng/L			157		49.8		40.2		17.9		4	U	4	U	4	U	4	U	25.6	
PFHxA	N/A	ng/L			263		61.7		56.7		13.5		4	U	4	U	4	U	4	U	23.3	
PFHpA	N/A	ng/L			79		18.6		17.8		11.9		4	U	4	U	4	U	4	U	14	
PFOA	6	ng/L			**112**		**14.9**		**13.8**		**12**		4	U	4	U	4	U	4	U	**7.1**	**J**
PFNA	6	ng/L			**20.5**		4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	4.2	U
PFDA	N/A	ng/L			4	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	4.2	U
PFUnA	N/A	ng/L			4	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	4.2	U
PFDoA	N/A	ng/L			4	U	4.5	U	4.2	U	20	U	4	U	4	U	4	U	4	U	4.2	U
PFTriA	N/A	ng/L			4	U	4.5	U	4.2	U	20	U	4	U	4	U	4	U	4	U	4.2	U
PFTeA	N/A	ng/L			4	U	4.5	U	4.2	U	20	U	4	U	4	U	4	U	4	U	4.2	U
PFBS	601	ng/L			54.4		23		20.5		7.6	J	4	U	4	U	4	U	4	U	3.6	J
PFPeS	N/A	ng/L			84.3		40.3		37.4		3	J	4	U	4	U	4	U	4	U	5.1	J
PFHxS	39	ng/L			**3560**		**314**		**295**		10.4		4	U	4	U	4	U	4	U	**49**	
PFHpS	N/A	ng/L			477		29.4		25.8		4	U	4	U	4	U	4	U	4	U	4.2	U
PFOS	4	ng/L			**28000**		**393**		**309**		**5.2**	**J**	4	U	**4.3**	**J**	**4.3**	**J**	4	U	**66.5**	
PFNS	N/A	ng/L			4	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	4.2	U
PFDS	N/A	ng/L			4	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	4.2	U
PFOSA	N/A	ng/L			4	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U	4	U	21	U
NMeFOSAA	N/A	ng/L			8	U	9.1	U	8.3	U	8	U	8	U	8	U	8	U	8	U	8.3	U
NEtFOSAA	N/A	ng/L			8	U	9.1	U	8.3	U	8	U	8	U	8	U	8	U	8	U	8.3	U
4:2 FTS	N/A	ng/L			8	U	9.1	U	8.3	U	8	U	8	U	8	U	8	U	8	U	8.3	U
6:2 FTS	N/A	ng/L			5.5	J	26.9		24.7		8	U	8	U	8	U	8	U	8	U	8.3	U
8:2 FTS	N/A	ng/L			8	U	9.1	U	8.3	U	8	U	8	U	8	U	8	U	8	U	8.3	U
GenX	6	ng/L			**8**	**U**	**9.1**	**U**	**8.3**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8.3**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
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UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-4
SWMU 114
Monitoring Wells Groundwater Analytical Results

Sample Location:			S114-MW0018I		S114-MW0019S		S114-MW0019I		S114-MW0020S		S114-MW0020I	
Sample ID:			S114-MW0018I-030.0-20220817		S114-MW0019S-009.0-20220816		S114-MW0019I-030.0-20220816		S114-MW0020S-008.0-20220816		S114-MW0020I-030.0-20220816	
Depth Interval:			24.7 - 34.7		4 - 14		24.7 - 34.7		3.1 - 13.1		24.7 - 34.7	
Sample Date:			8/17/2022		8/16/2022		8/16/2022		8/16/2022		8/16/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8.3	U	2720		613		772		42.3	
PFPeA	N/A	ng/L	4.2	U	9950		2470		3140		65.1	
PFHxA	N/A	ng/L	4.2	U	9420		1930		1770		109	
PFHpA	N/A	ng/L	4.2	U	1930		625		780		35.2	
PFOA	6	ng/L	4.2	U	**1880**		**615**		**191**		**55**	
PFNA	6	ng/L	4.2	U	**40.2**		**96.1**		**24.3**		2.2	J
PFDA	N/A	ng/L	4.2	U	4	U	3.6	J	4	U	4	U
PFUnA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFBS	601	ng/L	4.2	U	**3860**		**1390**		37.7		55.4	
PFPeS	N/A	ng/L	4.2	U	4340		1430		148		120	
PFHxS	39	ng/L	5	J	**21700**		**8410**		**3540**		**1930**	
PFHpS	N/A	ng/L	4.2	U	615		607		248		47.1	
PFOS	4	ng/L	**4.2**	**U**	**2880**		**13400**		**5860**		**227**	
PFNS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	21	U	160	U	20	U	1000	U	4	U
NMeFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8.3	U	154		21.4		8	U	8	U
6:2 FTS	N/A	ng/L	4.4	J	22800		6020		4560		28.7	
8:2 FTS	N/A	ng/L	8.3	U	8	U	54		8	U	8	U
GenX	6	ng/L	**8.3**	**U**	**8**	**U**	**8**	**U**	**8**	**U**	**8**	**U**

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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SL < Detection Limit
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-5
SWMU 114
Monitoring Well Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	Depth Interval of Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL	Number of Detection Limits Exceeding RSL
Carboxylates	PFBA	41	21	4.1	2720	S114-MW0019S	4 - 14	N/A		
	PFPeA	41	22	2.8	9950	S114-MW0019S	4 - 14	N/A		
	PFHxA	41	22	4.1	9420	S114-MW0019S	4 - 14	N/A		
	PFHpA	41	20	2.4	1930	S114-MW0019S	4 - 14	N/A		
	PFOA	41	22	2.3	1880	S114-MW0019S	4 - 14	6	15	0
	PFNA	41	6	2.2	96.1	S114-MW0019I	24.7 - 34.7	6	5	0
	PFDA	41	2	3.6	4.8	S114-MW0007S	4.4 - 14.4	N/A		
	PFUnA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFDoA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFTriA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFTeA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
Sulfonates	PFBS	41	21	3	3860	S114-MW0019S	4 - 14	601	2	0
	PFPeS	41	20	3	4340	S114-MW0019S	4 - 14	N/A		
	PFHxS	41	26	3.7	21700	S114-MW0019S	4 - 14	39	15	0
	PFHpS	41	15	3.7	615	S114-MW0019S	4 - 14	N/A		
	PFOS	41	24	4.3	28000	S114-MW0015S	3.1 - 13.1	4	24	2
	PFNS	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	PFDS	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
Precursors / Fluorotelomers	PFOSA	41	1	5.3	5.3	S114-MW0007S	4.4 - 14.4	N/A		
	NMeFOSAA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	NEtFOSAA	41	0	No Detections	No Detections	No Detections	No Detections	N/A		
	4:2 FTS	41	2	21.4	154	S114-MW0019S	4 - 14	N/A		
	6:2 FTS	41	10	4.2	22800	S114-MW0019S	4 - 14	N/A		
	8:2 FTS	41	1	54	54	S114-MW0019I	24.7 - 34.7	N/A		
	GenX	41	0	No Detections	No Detections	No Detections	No Detections	6	0	41

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
RSL = Regional Screening Level
N/A = not established
ng/L = nanograms per liter

Table 4-6
SWMU 114
Surface Water Analytical Results

DPT Sample Location:			S114-SW0001		S114-SW0002		S114-SW0003		S114-SW0004		S114-SW0005		S114-SW0006		S114-SW0007		S114-SW0008		S114-SW0009	
Sample ID:			S114-SW0001-000.0-20220222		S114-SW0002-000.0-20220222		S114-SW0003-000.0-20220222		S114-SW0004-000.0-20220222		S114-SW0005-000.0-20220222		S114-SW0006-000.0-20220222		S114-SW0007-000.0-20220222		S114-SW0008-000.0-20220222		S114-SW0009-000.0-20220222	
Sample Date:			2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	SW SL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	62.1		26.5		114		23.1		23.8		19.7		14.9	J	25.3		10.2	J
PFPeA	N/A	ng/L	84.2		38		462		27.1		42.7		29.3		19.3		35.8		4	U
PFHxA	N/A	ng/L	77.5		30.8		312		33.7		33.4		21.1		13.3		28.9		4	U
PFHpA	N/A	ng/L	22.9		14.6		107		13.1		13.6		9.2		6.5	J	13.4		4	U
PFOA	500	ng/L	16.4		7.5	J	77.3		11.1		8.5		6.6	J	3.9	J	7.6	J	4	U
PFNA	N/A	ng/L	4	U	4	U	10.9		4	U	4.2	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	3.8	J	4	U	4.2	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	20	U
PFBS	N/A	ng/L	92.2		27		119		20		24.3		15.4		9.4		24.6		4.2	J
PFPeS	N/A	ng/L	92.2		25.5		141		25.2		25.5		15.7		8.8		24.2		3.3	J
PFHxS	N/A	ng/L	536		152		935		229		160		107		56.8		147		12.8	
PFHpS	N/A	ng/L	16.3		5.9	J	67.9		10.6		5.9	J	5.7	J	4	U	5.6	J	4	U
PFOS	10	ng/L	**344**		**133**		**1740**		**456**		**193**		**204**		**62.4**		**149**		6.2	J
PFNS	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4	U	4	U	4	U	4	U	4.2	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8.8	J	8	U	573		4.1	J	8.3	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U
GenX	N/A	ng/L	8	U	8	U	8	U	8	U	8.3	U	8	U	8	U	8	U	8	U

Notes:
(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
SW SL = Surface Water Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SW SL < PFAS <= 10x SW SL
10x SW SL < PFAS <= 100x SW SL
100x SW SL < PFAS <= 1000x SW SL
1000x SW SL < PFAS

Table 4-6
SWMU 114
Surface Water Analytical Results

DPT Sample Location:			S114-SW0010		S114-SW0010		S114-SW0011		S114-SW0012		S114-SW0013		S114-SW0014		S114-SW0015		S114-SW0015	
Sample ID:			S114-SW0010-000.0-20220222		S114-FD-20220222-02		S114-SW0011-000.0-20220222		S114-SW0012-000.0-20220222		S114-SW0013-000.0-20220222		S114-SW0014-000.0-20220222		S114-SW0015-000.0-20220223		S114-FD-20220223-01	
Sample Date:			2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/22/2022		2/23/2022		2/23/2022	
Sample Type:			Normal		Duplicate		Normal		Normal		Normal		Normal		Normal		Duplicate	
Acronym	SW SL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	21.5		21.4		19.3		16		18		17.7		23	J	23.1	J
PFPeA	N/A	ng/L	33.8		34.1		20.4		10.4		14.2		5.4	J	21	U	3.6	J
PFHxA	N/A	ng/L	30.3		28.7		32.3		15.3		19.9		6.7	J	8.2	J	8.3	
PFHpA	N/A	ng/L	11.9		12.2		12.4		8.6		8.2		2.2	J	2.2	J	2.7	J
PFOA	500	ng/L	7.5	J	7.3	J	11.6		6.5	J	7.6	J	4.2	J	4.6	J	5	J
PFNA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFDA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFUnA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFDoA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFTriA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFTeA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFBS	N/A	ng/L	17		15.8		20.5		9.9		10.4		4.8	J	21	U	5.1	J
PFPeS	N/A	ng/L	19		18.2		26.8		13.2		14		3.9	J	21	U	5	J
PFHxS	N/A	ng/L	119		115		237		125		165		58.2		82.4		88.7	
PFHpS	N/A	ng/L	4.8	J	5.3	J	11.1		5.9	J	8.4		2.5	J	4	J	4.6	J
PFOS	10	ng/L	**162**		**153**		**466**		**224**		**314**		**353**		**330**		**394**	
PFNS	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFDS	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	4.2	U
PFOSA	N/A	ng/L	4	U	4	U	4.2	U	4	U	4	U	4.2	U	4.2	U	21	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U
4:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U
6:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U
8:2 FTS	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U
GenX	N/A	ng/L	8	U	8	U	8.3	U	8	U	8	U	8.3	U	8.3	U	8.3	U

Notes:
(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
SW SL = Surface Water Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SW SL < PFAS <= 10x SW SL
10x SW SL < PFAS <= 100x SW SL
100x SW SL < PFAS <= 1000x SW SL
1000x SW SL < PFAS

Table 4-7
SWMU 114
Surface Water Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	SW SL [(1)]	Number of Detections Exceeding SW SL
Carboxylates	PFBA	17	17	10.2	114	S114-SW0003	N/A	
	PFPeA	17	15	3.6	462	S114-SW0003	N/A	
	PFHxA	17	16	6.7	312	S114-SW0003	N/A	
	PFHpA	17	16	2.2	107	S114-SW0003	N/A	
	PFOA	17	16	3.9	77.3	S114-SW0003	500	0
	PFNA	17	1	10.9	10.9	S114-SW0003	N/A	
	PFDA	17	1	3.8	3.8	S114-SW0003	N/A	
	PFUnA	17	0	No Detections	No Detections	No Detections	N/A	
	PFDoA	17	0	No Detections	No Detections	No Detections	N/A	
	PFTriA	17	0	No Detections	No Detections	No Detections	N/A	
	PFTeA	17	0	No Detections	No Detections	No Detections	N/A	
Sulfonates	PFBS	17	16	4.2	119	S114-SW0003	N/A	
	PFPeS	17	16	3.3	141	S114-SW0003	N/A	
	PFHxS	17	17	12.8	935	S114-SW0003	N/A	
	PFHpS	17	15	2.5	67.9	S114-SW0003	N/A	
	PFOS	17	17	6.2	1740	S114-SW0003	10	16
	PFNS	17	0	No Detections	No Detections	No Detections	N/A	
	PFDS	17	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	17	0	No Detections	No Detections	No Detections	N/A	
	NMeFOSAA	17	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	17	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	17	0	No Detections	No Detections	No Detections	N/A	
	6:2 FTS	17	3	4.1	573	S114-SW0003	N/A	
	8:2 FTS	17	0	No Detections	No Detections	No Detections	N/A	
	GenX	17	0	No Detections	No Detections	No Detections	N/A	

Notes:

(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.

SW SL = Surface Water Screening Level

N/A = not established

ng/L = nanograms per liter

Table 4-8
SWMU 114
Concrete and Asphalt SPLP Analytical Results

Sample Location:			**S114-CS0001**		**S114-CS0001**		**S114-CS0002**		**S114-CS0003**		**S114-CS0004**		**S114-AS0005**	
Sample ID:			**S114-CS0001-0.002-20220505**		**S114-CS0001-0.002-20220505-DUP01**		**S114-CS0002-0.002-20220505**		**S114-CS0003-0.002-20220505**		**S114-CS0004-0.002-20220505**		**S114-AS0005-0.002-20220505**	
Depth Interval:			**0 - 2 inches**		**0 - 2 inches**		**0 - 2 inches**		**0 - 2 inches**		**0 - 2 inches**		**0 - 2 inches**	
Sample Date:			**5/5/2022**		**5/5/2022**		**5/5/2022**		**5/5/2022**		**5/5/2022**		**5/5/2022**	
Sample Type:			**Normal**		**Duplicate**		**Normal**		**Normal**		**Normal**		**Normal**	
Acronym	**RSL [1]**	**Units**	**Results**		**Results**		**Results**		**Results**		**Results**		**Results**	
PFBA	N/A	ng/L	14.1		12.2		11.6		6.9	J	24.9		134	
PFPeA	N/A	ng/L	31.1		24.6		33.3		7.6		24.2		566	
PFHxA	N/A	ng/L	48.3		63.7		16.5		13.2		48.2		319	
PFHpA	N/A	ng/L	3.7	J	5.8		2	J	2	J	4.1		93.7	
PFOA	6	ng/L	2.5	J	3	J	3	U	3	U	5.9		**116**	
PFNA	6	ng/L	3	U	3	U	3	U	3	U	3	U	**8.8**	
PFDA	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	8.3	
PFUnA	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	3	U
PFDoA	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	3	U
PFTriA	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	3	U
PFTeA	N/A	ng/L	15	U	30	U	15	U	3	U	3	U	3	U
PFBS	601	ng/L	3.2	J	3.7	J	3	U	3.4	J	38.2		122	
PFPeS	N/A	ng/L	5		3	J	3	U	3	U	24.8		154	
PFHxS	39	ng/L	21.2		19		2.3	J	5.5		**63.3**		**910**	
PFHpS	N/A	ng/L	3	U	2.3	J	3	U	3	U	4.1		173	
PFOS	4	ng/L	**74.2**		**122**		**5.4**		**5.8**		**83.8**		**5340**	
PFNS	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	25.7	
PFDS	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	3	U
PFOSA	N/A	ng/L	3	U	3	U	3	U	3	U	3	U	49.6	J
NMeFOSAA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
NEtFOSAA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
4:2 FTS	N/A	ng/L	6.4	J	9		4	U	4	U	4	U	4.5	J
6:2 FTS	N/A	ng/L	1140		1840		272		56.4		120		1130	
8:2 FTS	N/A	ng/L	2.4	J	4.2	J	4	U	4	U	4	U	178	
GenX	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
SPLP = synthetic precipitation leaching procedure
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table 4-9
SWMU 114
Concrete and Asphalt Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL
Carboxylates	PFBA	6	6	6.9	134	S114-AS0005	N/A	
	PFPeA	6	6	7.6	566	S114-AS0005	N/A	
	PFHxA	6	6	13.2	319	S114-AS0005	N/A	
	PFHpA	6	6	2	93.7	S114-AS0005	N/A	
	PFOA	6	4	2.5	116	S114-AS0005	6	1
	PFNA	6	1	8.8	8.8	S114-AS0005	6	1
	PFDA	6	1	8.3	8.3	S114-AS0005	N/A	
	PFUnA	6	0	No Detections	No Detections	No Detections	N/A	
	PFDoA	6	0	No Detections	No Detections	No Detections	N/A	
	PFTriA	6	0	No Detections	No Detections	No Detections	N/A	
	PFTeA	6	0	No Detections	No Detections	No Detections	N/A	
Sulfonates	PFBS	6	5	3.2	122	S114-AS0005	601	0
	PFPeS	6	4	3	154	S114-AS0005	N/A	
	PFHxS	6	6	2.3	910	S114-AS0005	39	2
	PFHpS	6	3	2.3	173	S114-AS0005	N/A	
	PFOS	6	6	5.4	5340	S114-AS0005	4	6
	PFNS	6	1	25.7	25.7	S114-AS0005	N/A	
	PFDS	6	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	6	1	49.6	49.6	S114-AS0005	N/A	
	NMeFOSAA	6	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	6	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	6	3	4.5	9	S114-CS0001	N/A	
	6:2 FTS	6	6	56.4	1840	S114-CS0001	N/A	
	8:2 FTS	6	3	2.4	178	S114-AS0005	N/A	
	GenX	6	0	No Detections	No Detections	No Detections	6	0

Notes:

(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)

RSL = Regional Screening Level

N/A = not established

ng/L = nanograms per liter

Table 4-10
SWMU 114
Equipment Blank and Field Blank Analytical Results

Sample ID:			S114-EB-20211115-01		S114-FB-20211115-01		S114-EB-20211116-02		S114-FB-20211116-02		S114-EB-20211117-01		S114-FB-20211117-01		S114-EB-20211118-01		S114-FB-20211118-01		S114-EB-20211119-01	
Sample Date:			11/15/2021		11/15/2021		11/16/2021		11/16/2021		11/17/2021		11/17/2021		11/18/2021		11/18/2021		11/19/2021	
Sample Type:			Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
PFPeA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFHxA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFHpA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFOA	6	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFNA	6	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFDA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFUnA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFDoA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFTriA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFTeA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFBS	601	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFPeS	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFHxS	39	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFHpS	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFOS	4	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFNS	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFDS	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
PFOSA	N/A	ng/L	4.2	U	4.2	U	4	U	4	U	4	U	4	U	4.3	U	4.2	U	4.2	U
NMeFOSAA	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
NEtFOSAA	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
4:2 FTS	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
6:2 FTS	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
8:2 FTS	N/A	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U
GenX	6	ng/L	8.3	U	8.3	U	8	U	8	U	8	U	8	U	8.7	U	8.3	U	8.3	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per lier
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

Table 4-10
SWMU 114
Equipment Blank and Field Blank Analytical Results

Sample ID:			S114-FB-20211119-01		S114-EB-20220221-01		S114-FB-20220221-01		S114-EB-20220222-02		S114-EB-20220222-01		S114-FB-20220222-01		S114-EB-20220223-01		S114-FB-20220223-01		S114-EB-20220505-01	
Sample Date:			11/19/2021		2/21/2022		2/21/2022		2/22/2022		2/22/2022		2/22/2022		2/23/2022		2/23/2022		5/5/2022	
Sample Type:			Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank		Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
PFPeA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFHxA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFHpA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFOA	6	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFNA	6	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFDA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFUnA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFDoA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFTriA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFTeA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFBS	601	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFPeS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFHxS	39	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFHpS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFOS	4	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFNS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFDS	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	2.1	U
PFOSA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.2	U
NMeFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
NEtFOSAA	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
4:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
6:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
8:2 FTS	N/A	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U
GenX	6	ng/L	8.3	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	4.2	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per lier
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

Table 4-10
SWMU 114
Equipment Blank and Field Blank Analytical Results

Sample ID:			S114-FB-20220505-01		S114-EB-20220614-01		S114-FB-20220614-01		S114-EB-20220615-01		S114-FB-20220615-01		S114-EB-20220616-01		S114-FB-20220616-01		S114-FB-20220816-01		S114-EB-20220816-01	
Sample Date:			5/5/2022		6/14/2022		6/14/2022		6/15/2022		6/15/2022		6/16/2022		6/16/2022		8/16/2022		8/16/2022	
Sample Type:			Field Blank - Soil		Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equpment Blank		Field Blank - Water		Field Blank - Water		Equipment Blank	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
PFPeA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHpA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNA	6	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFBS	601	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFPeS	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHxS	39	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFHpS	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFNS	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	2.1	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4.2	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	4.2	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U	8	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
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Table 4-10
SWMU 114
Equipment Blank and Field Blank Analytical Results

Sample ID:			S114-FB-20220817-01		S114-EB-20220817-01		S114-FB-20220818-01		S114-EB-20220818-01		S114-FB-20220819-01		S114-EB-20220819-01	
Sample Date:			8/17/2022		8/17/2022		8/18/2022		8/18/2022		8/19/2022		8/19/2022	
Sample Type:			Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank		Field Blank - Water		Equipment Blank	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
PFPeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFHxA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFHpA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFBS	601	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFPeS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFHxS	39	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFHpS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFOS	4	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFNS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFDS	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
PFOSA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U
NMeFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
4:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
6:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
8:2 FTS	N/A	ng/L	8	U	8	U	8	U	8	U	8	U	8	U
GenX	6	ng/L	8	U	8	U	8	U	8	U	8	U	8	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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Figure 4-1
SWMU 114 Fire Station #2
DPT Groundwater
Analytical Results

S114-DPT1022
6/15/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4.5 U	4.5 U	24	5.1 J	4.3 J
3 - 7 DUP	5.3 U	5.3 U	22.9	6.3 J	4.3 J
13 - 17	2.3 J	4 U	24.9	6.7 J	3.8 J
23 - 27	3.4 J	4 U	38.3	9.6	6.4 J
33 - 37	2.3 J	4 U	19.8	4 U	3.1 J
43 - 47	5.4 J	4 U	73.1	4.7 J	19.4

PFAS-DPT0002
10/29/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.7 U	1.3 U	26	2.6 U	17
23 - 27	7.4 U	1.7 U	66	94	9.3
23 - 27 DUP	7.5 U	1.8 U	77	92	7.4
33 - 37	6.9 U	1.3 U	92	9.8 U	33
43 - 47	1.3 U	1.3 U	1.8 U	6.8 U	0.89 U

S114-DPT1013
11/19/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	20.3	4.2 U	390	179	66.4
13 - 17	37.2	4 U	786	336	139
23 - 27	38.3	4.5 U	898	324	178
33 - 37	4.2 U	4.2 U	28.7	6.5 J	6.4 J
33 - 37 DUP	5 U	5 U	34.7	8.3 J	6.8 J

S114-DPT1012
11/19/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	7.7 J	4.2 U	284	165	85.9
13 - 17	53.2	2.1 J	6,100	774	585
23 - 27	129	4.1 J	6,100	2,490	302
33 - 37	79.7	2.4 J	4,290	778	271

PFAS-DPT0088
12/17/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.8	1.4 U	120	59	74
23 - 27	0.74 J	1.4 U	5.1	1.3 J	2.1
33 - 37	4.6	1.4 U	31	2.5 J	4.6
43 - 47	3.6	1.5 U	14	5.4	3.6

PFAS-DPT0157
1/12/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	47.6	7.7	741	2,900	31.5
6 - 10 DUP	46.6	8.2	700	3,050	57.1
21 - 25	210	9.7	4,060	4,190	31.2
31 - 35	3.5 I	4.5 U	37.9	33.5	7.4
41 - 45	4.2 U	4.2 U	4.2 U	10.5	4.2 U

S114-DPT1011
11/18/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	5.3 U	5.3 U	3.9 J	5.3 U	3.3 J
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4.2 U	4.2 U	10.1	4.2 U	2.7 J
33 - 37	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U

S114-DPT1010
11/18/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	10.5	4.9 J	4.7 J
13 - 17	12	4.2 U	207	66.5	34.9
23 - 27	7.4 J	4.2 U	153	117	19.8
33 - 37	3.9 J	4.2 U	30.4	3.8 J	5.1 J

S114-DPT1005
11/17/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	7.1 J	4.2 U	782	8.8	320
13 - 17	4.2 U	4.2 U	4.2 U	4.2 U	3.5 J
23 - 27	4.2 U	4.2 U	4.3 J	4.2 U	4.2 U
33 - 37	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U

S114-DPT1023
6/15/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U
33 - 37 DUP	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0001
10/29/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.8 U	1.3 U	43	2.6 U	16
23 - 27	7.5 U	1.8 U	120	31	20
33 - 37	4.4 U	1.3 U	40	4.8 U	6.3
43 - 47	1.3 U	1.3 U	1.7 U	3.5 U	0.87 U

PFAS-DPT0158
1/12/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	4 U	4 U	4 U	4 U	5.1
21 - 25	4 U	4 U	4 U	4 U	4 U
31 - 35	4 U	4 U	4 U	4 U	4 U
41 - 45	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0160
1/13/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	6.2 I	7.6 U	41.6	11.3	24.3
21 - 25	8.5	4.4 U	76.5	4.4 U	4.4
31 - 35	2.4 I	4 U	19.1	2.2 I	4
41 - 45	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0127
3/22/2019

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	0.96 J	1.5 U	2.4	3.9 U	0.97 J
23 - 27	0.76 J	1.5 U	2 U	3.1 U	0.7 J
23 - 27 DUP	0.74 J	1.5 U	2 U	4 U	0.63 J
33 - 37	1.5 U	1.5 U	1 U	3.1 U	1 U
43 - 47	1.6 U	1.6 U	1.1 U	3.2 U	1.1 U

S114-DPT1004
11/16/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U

S114-DPT1008
11/17/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	9.5	4 U	6.6 J
13 - 17	4 U	4 U	23.5	4 U	10.2
23 - 27	6.3 J	4 U	239	9	88.3
33 - 37	4 U	4 U	13.3	4 U	6.5 J

S114-DPT1009
11/18/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
5 - 9	3.1 J	4.9 U	29.8	4.9 U	8.7 J
5 - 9 DUP	3.5 J	4.8 U	33.8	2.7 U	8.5 J
13 - 17	14.7	4.9 U	271	68.3	40.1
23 - 27	29.9	4.5 U	584	248	81.1
33 - 37	4.2 U	4.2 U	9.9	2.1 J	2.8 J

S114-DPT1007
11/17/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
13 - 17 DUP	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	3.8 J	4 U	45.8	9.9	12

S114-DPT1006
11/17/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U
33 - 37 DUP	4 U	4 U	4 U	4 U	4 U

S114-DPT1003
11/16/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U

S114-DPT1002
11/16/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U

S114-DPT1000
11/15/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
5 - 9	4.2 U	4.2 U	17	4.8 J	10.9
13 - 17	4 U	4 U	25.2	2.3 J	14.2
23 - 27	4 U	4 U	4 U	3.9 J	4 U
33 - 37	3.9 J	4.2 U	2.5 J	7.6 J	4.2 U

S114-DPT1001
11/15/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	47.2	5.5 J	4.2 J
13 - 17	4.1 J	4 U	150	41	22.6
23 - 27	4 U	4 U	94.4	2.9 J	18.2
33 - 37	3.1 J	4 U	79	5.2 J	21.4
33 - 37 DUP	2.9 J	4 U	73	6.3 J	21.4

PFAS-DPT0076
3/29/2019

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.4 U	1.4 U	2.3	2.8 U	0.92 U
8 - 12 DUP	0.7 U	1.4 U	2	2.8 U	0.48 J
23 - 27	1.4 U	1.4 U	3.2	2.8 U	1.9
33 - 37	1.4 U	1.4 U	0.37 J	2.8 U	0.93 U
43 - 47	1.4 U	1.4 U	0.59 J	2.8 U	0.93 U

S114-DPT1026
6/14/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4.2 U	4.2 U	20.8	179	4.2 U
13 - 17	5.2 U	5.2 U	9.4 J	5.2 U	5.2 U
23 - 27	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
33 - 37	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0146
1/5/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	14.6	5.6 U	3.1 I	110	5.6 U
21 - 25	2.7 I	4.2 U	4.2 U	34.5	4.2 U
31 - 35	7.2	4.2 U	116	6.1	16
41 - 45	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0159
1/13/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
21 - 25	7.6 U	7.6 U	16.5	7.6 U	7.6 U
31 - 35	9.2	4 U	224	36.5	40.2
41 - 45	4 U	4 U	4 U	3.7 I	4 U
41 - 45 DUP	4 U	4 U	3.8 I	2.3 I	4 U

PFAS-DPT0147
1/5/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	4.2 U	4.2 U	7.2	3.5 I	4.2 U
21 - 25	4.2 U	4.2 U	22.5	4.2 U	5
31 - 35	7.3	6.3 U	464	35.4	45.4
41 - 45	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U

PFAS-DPT0021
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	35	4.7 U	350	720	11
23 - 27	85	1.3 U	3,300	87	46
33 - 37	30 U	1.7 U	1,060	50	92
43 - 47	1.9 U	1.3 U	15	9.8 U	1.7 J

PFAS-DPT0148
1/6/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	4.2 U	4.2 U	2.4 I	12.6	4.2 U
21 - 25	5 U	5 U	2.8 I	12.3	5 U
31 - 35	4 U	4 U	2.4 I	16.5	4 U
41 - 45	5.2 U	5.2 U	7.5	5.2 U	5.2 U
41 - 45 DUP	4 U	4 U	7.4	4 U	4 U

S114-DPT1025
6/14/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4.3 U	4.3 U	4.3 U	4.3 U	4.3 U
13 - 17	4.5 U	4.5 U	4.5 U	4.5 U	4.5 U
23 - 27	4.2 U	4.2 U	4.2 U	4.2 U	5.5 U
23 - 27 DUP	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U
33 - 37	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0005
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	2.6 U	1.3 U	2.2	3.5 U	2.3
23 - 27	9.1 U	1.8 U	1.8 U	3.5 U	1.5 J
33 - 37	1.8 U	1.3 U	1.8 U	2.7 U	0.57 J
33 - 37 DUP	1.8 U	1.4 U	1.8 U	2.7 U	0.71 J
43 - 47	1.8 U	1.3 U	1.8 U	3.6 U	0.9 U

S114-DPT1019
2/22/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	6.3 J	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0019
3/21/2019

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.4 U	1.4 U	2.1	3.7 U	0.93 U
23 - 27	160	1.4 U	3,000	990	1,100
33 - 37	1.2 J	1.4 U	29	17	11
43 - 47	1.6 J	1.3 U	38	23	16

PFAS-DPT0222
8/18/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	2.3 I	4 U	33.5	6.8	6.1
21 - 25	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U
31 - 35	4 U	4 U	4 U	3.8 I	4 U
31 - 35 DUP	4 U	4 U	4 U	3.1 I	4 U
41 - 45	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0221
8/18/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	5.3	4 U	13.3	216	4 U
21 - 25	26.2	4 U	450	486	37.6
31 - 35	4 U	4 U	4 U	22	4 U
41 - 45	4 U	4 U	4 U	5.9	4 U

S114-DPT1020
2/22/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	2.1 J	4 U	23.1	8.2	4 U
13 - 17	17	4.8 U	251	225	19
23 - 27	18.1	4.3 U	56.1	4.6 J	7.5 J
33 - 37	4 U	4 U	4 U	4 U	4 U

S114-DPT1021
6/15/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	7.4 J	4 U	47.5	4 U	3.4 J
13 - 17	4.8 U	4.8 U	39.1	4.8 U	4.4 J
23 - 27	2 J	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U
43 - 47	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0018
11/9/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.6 J	1.4 U	6.9	45	0.87 J
23 - 27	13	1.4 U	63	9.2	7
33 - 37	0.61 J	1.4 U	0.91 U	2.7 U	0.91 U
43 - 47	1.4 U	1.4 U	0.94 U	2.8 U	0.94 U

S114-DPT1017
2/22/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
5 - 9	1,100	2.6 J	12,100	747	172
13 - 17	610	46.8	11,300	14,800	193
23 - 27	46.1	4 U	1,490	238	210
33 - 37	8	4 U	114	108	5.2 J
43 - 47	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0012
11/9/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	3.3	0.75 J	12	59	1.8
23 - 27	7	1.5 U	16	3.9 U	3.3
33 - 37	0.53 J	1.4 U	1.8 U	2.8 U	0.92 U
43 - 47	1.4 U	1.4 U	1.9 U	2.8 U	0.93 U
43 - 47 DUP	1.3 U	1.3 U	1.7 U	2.6 U	0.86 U

PFAS-DPT0020
11/1/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	50	1.6 J	42	28	5.2
23 - 27	1.9 U	1.4 U	1 J	4.6	0.96 U
23 - 27 DUP	1.9 U	1.4 U	0.93 J	4.7	0.94 U
33 - 37	1.9 U	1.4 U	0.85 J	1.7 J	0.96 U
43 - 47	1.9 U	1.5 U	1.3 J	8.7	0.97 U

PFAS-DPT0003
10/29/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1,300	270	9,000	43,000	900
23 - 27	4,300	1,300	28,000	60,000	2,700
33 - 37	77	22	720	3,000	200
43 - 47	38 U	12	300	1,900	41

PFAS-DPT0161
1/13/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
21 - 25	9.9	3.3 I	86.3	1.10	6.1
31 - 35	9.5	4 U	51.7	17.3	5.9
41 - 45	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0004
10/29/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	2.5 U	1.3 U	73	5.9 U	99
23 - 27	47	1.3 U	1,100	110	210
23 - 27 DUP	44 U	1.3 U	1,100	110	210
33 - 37	2.2 U	1.3 U	14	27	3.5
43 - 47	1.7 U	1.3 U	5.1	22	1.7

PFAS-DPT0022
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	42 U	3.4	1,200	150	260
23 - 27	2.2 U	1.3 U	46	8 U	8.3
33 - 37	1.9 U	1.3 U	44	8.9	7.5
43 - 47	1.7 U	1.3 U	3.1	67	0.82 J

S114-DPT1018
2/22/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	4 U	4 U	4 U
13 - 17	4 U	4 U	4 U	4 U	4 U
23 - 27	4 U	4 U	4 U	4 U	4 U
33 - 37	4 U	4 U	4 U	4 U	4 U
33 - 37 DUP	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0149
1/6/2021

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
6 - 10	5 U	5 U	3.4 I	2.6 I	5 U
21 - 25	4 U	4 U	2.3 I	4 U	4 U
31 - 35	4 U	4 U	4 U	4 U	4 U
41 - 45	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U

PFAS-DPT0100
3/22/2019

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.5 U	1.5 U	8.3	8.2	1.2 J
23 - 27	1.5 U	1.5 U	13	120	2.8
33 - 37	5.6	1.5 U	85	25	10
43 - 47	4.2	2.4 U	24	50	1.7 J

PFAS-DPT0013
11/6/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
10 - 14	1.5 U	1.5 U	1.7 J	1.3 J	0.53 J
23 - 27	1.5 U	1.5 U	0.61 J	2.9 U	0.97 U
23 - 27 DUP	1.4 U	1.4 U	0.53 J	1.7 J	0.95 U
33 - 37	2.6 J	1.5 U	13 J	3.6 J	1.7 J
43 - 47	1.4 U	1.4 U	0.64 J	2.6 J	0.96 U

PFAS-DPT0014
11/6/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
10 - 14	1.5 U	1.5 U	0.53 J	1.8 J	0.98 U
23 - 27	0.96 J	1.5 U	2.7 J	1.1 J	1 U
33 - 37	5.6 J	1.4 J	14 J	12 J	1.8 J

S114-DPT1014
2/21/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4 U	4 U	21.3	2.6 J	3.3 J
13 - 17	4.3 J	4.2 U	82.8	94.9	5.9 J
23 - 27	9.9	4.2 U	155	101	9
33 - 37	5.6 J	4.5 U	112	4.5 J	14.5
43 - 47	2.6 J	4 U	62.3	4 U	13.4

PFAS-DPT0015
11/6/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	2.9 J	1.4 U	5.5 J	2.8 U	1.9 J
23 - 27	1.5 U	1.5 U	0.48 J	5.3 J	0.97 U
33 - 37	1.4 U	1.4 U	0.41 J	2.9 U	0.96 U
43 - 47	1.4 U	1.4 U	0.55 J	2.4 J	0.95 U

PFAS-DPT0006
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.7 U	1.3 U	5.8	24	1.3 J
23 - 27	1.7 U	1.3 U	3.1	4.4 U	0.78 J
33 - 37	1.9 U	1.3 U	29	5.1 U	3.6
43 - 47	1.3 U	1.3 U	1.7 U	12	0.86 U

PFAS-DPT0024
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	7.8 U	1.7 U	1.7 U	3.4 U	1.7
8 - 12 DUP	5.8 U	1.7 U	1.7 U	3.3 U	1.7
23 - 27	1.7 U	1.3 U	1.7 U	2.5 U	2.3
33 - 37	1.8 U	1.3 U	31	8.2	4.4
43 - 47	1.2 U	1.2 U	7.8	2.5 U	1.4 J

PFAS-DPT0023
10/30/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.8 U	1.3 U	1.8 U	3.6 U	0.54 J
23 - 27	2.3 U	1.7 U	1.7 U	3.5 U	0.91 J
33 - 37	1.8 U	1.3 U	0.88 U	2.6 U	0.59 J
43 - 47	4.4 U	1.3 U	3.3	2.7 U	1.1 J

S114-DPT1024
6/14/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	5.1 J	4.2 U	31.9	4.2 U	2.5 J
13 - 17	4.4 J	4.2 U	39.9	8.2 U	8.2 U
23 - 27	3.7 J	4.2 U	28.5	4.2 U	2.8 J
33 - 37	4.2 U	4.2 U	30.3	4.2 U	4.2 J
43 - 47	4.5 U	4.5 U	2.4 J	4.5 U	4.5 U

PFAS-DPT0016
11/2/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	1.9 U	1.5 U	1.8 J	2.9 U	0.84 J
23 - 27	2 U	1.5 U	38	3.2 J	2.3
33 - 37	19	1.5 U	410	15	67
43 - 47	1.9 U	1.5 U	22	4.6	4.5

PFAS-DPT0010
11/5/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	24	1.8 J	1,100	1,400	91
23 - 27	32 J	0.6 J	910	120	100
33 - 37	0.72 J	1.4 U	14	7	1.3 J
43 - 47	1.6 J	1.4 U	87	18	8

PFAS-DPT0017
11/2/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	5.7	1.3 J	110	750	5.9
23 - 27	8	1.5 U	200	90	25
33 - 37	2.8	1.4 U	49	24	7.1
33 - 37 DUP	3.1	1.4 U	51	22	7.8
43 - 47	1.9 U	1.5 U	7.4	48	0.49 J

S114-DPT1015
2/21/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
3 - 7	4.9 J	4.2 U	85.1	338	3.7 J
13 - 17	4.4 J	5 U	84.5	330	3.7 J
23 - 27	17.8	4 U	456	40.2	27.2
33 - 37	4.5 U	4.5 U	3.5 J	5.4 J	4.5 U
33 - 37 DUP	4.5 U	4.5 U	2.6 J	7.2 J	4.5 U

S114-DPT1016
2/21/2022

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
5 - 9	12.4	4 U	52.3	47	2.7 J
13 - 17	10.7 J	5.9 U	257	153	8.8 J
23 - 27	18.3	3.3 J	275	990	20
33 - 37	21.1	4.2 U	400	636	23.5
43 - 47	4 U	4 U	4 U	4 U	4 U

PFAS-DPT0008
11/5/2018

DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS
8 - 12	18	9.8	180	190	11
23 - 27	32 J	5.7	490	1,800	25
33 - 37	0.86 J	1.3 U	24	9.7	4.4
43 - 47	1.3 U	1.3 U	0.99 J	3 J	0.89 U

Former Sewage Treatment Plant #17 and Percolation Pond

4-43/4-44

SLF Apron Area

Fire Station #2

Remote Launch Vehicle (RLV) Hangar

TOWWAY

Legend

- DPT Sample Detection Limit > RSL
- DPT Sample < RSL
- DPT Sample > RSL
- DPT Sample > 10 x RSL
- DPT Sample > 100 x RSL
- DPT Sample > 1000 x RSL
- SWMU 114 Boundary

Notes:
Yellow=concentration greater than SLs
Orange=concentration greater than 10 x SLs
Red=concentration greater than 100 x SLs
Purple=concentration greater than 1000 x SLs
Results in nanograms per liter (ng/L)

DPT=direct push technology
I=estimated value
J=estimated value
PFOA=perfluorooctanoic acid
PFNA=perfluorononanoic acid
PFHxS=perfluorohexanesulfonic acid
PFOS=perfluorooctanesulfonic acid
PFBS=perfluorobutanesulfonic acid
RSL=regional screening level
SWMU=solid waste management unit
U=not detected

SAMPLE LOCATION					
SAMPLE DATE					
DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS

RSLs				
PFOA	PFNA	PFHxS	PFOS	PFBS
6	6	39	4	601

N

0 250 500 1,000
Feet

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1/27/2023 TB
Source: HGL,
ArcGIS Online Imagery

HGL

4-43/4-44

Figure 4-2
SWMU 114 Fire Station #2
Monitoring Wells Groundwater Analytical Results

Legend

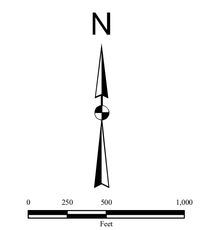
- Monitoring Well Sample Detection Limit > RSL
- Monitoring Well Sample < RSL
- Monitoring Well Sample > RSL
- Monitoring Well Sample > 10 x RSL
- Monitoring Well Sample > 100 x RSL
- Monitoring Well Sample > 1000 x RSL
- SWMU 114 Boundary

Notes:
Yellow=concentration greater than SLs
Orange=concentration greater than 10 x SLs
Red=concentration greater than 100 x SLs
Purple=concentration greater than 1000 x SLs
Results in nanograms per liter (ng/L)

DPT=direct push technology
I=estimated value
J=estimated value
PFOA=perfluorooctanoic acid
PFNA=perfluorononanoic acid
PFHxS=perfluorohexanesulfonic acid
PFOS=perfluorooctanesulfonic acid
PFBS=perfluorobutanesulfonic acid
RSL=regional screening level
SWMU=solid waste management unit
U=not detected

SAMPLE LOCATION
SAMPLE DATE
DEPTH | PFOA | PFNA | PFHxS | PFOS | PFBS

RSLs				
PFOA	PFNA	PFHxS	PFOS	PFBS
6	6	39	4	601



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HGL

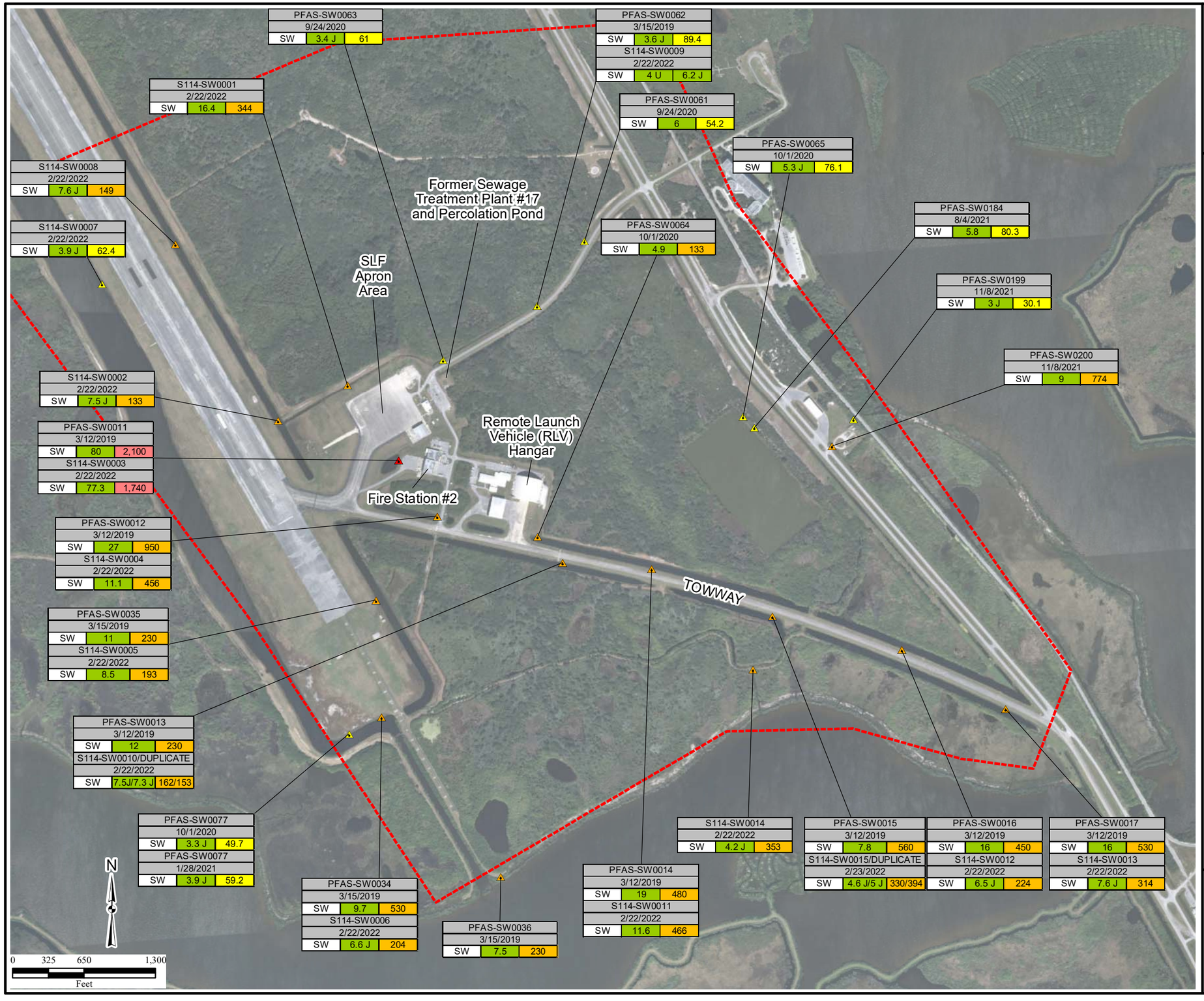

Figure 4-3
SWMU 114 Fire Station #2
Surface Water
Analytical Results

Legend

- PFOS >10 ng/L
- PFOS > 100 ng/L
- PFOS > 1,000 ng/L
- SWMU 114 Boundary

Notes:
Green=PFOS < 10 ng/L, PFOA < 500 ng/L
Yellow=PFOS >10 ng/L
Orange=PFOS > 100 ng/L
Red=PFOS > 1,000 ng/L
Results in nanograms per liter (ng/L)
PFOS=perfluorooctanesulfonic acid
PFOA=perfluorooctanoic acid
SWMU=solid waste management unit
SW SL=surface water screening level

Sample Location		
Sample Date		
Depth	PFOA Concentration	PFOS Concentration

Surface Water Screening Level	
PFOA	500 ng/L
PFOS	10 ng/L

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Source: HGL, ArcGIS Online Imagery

Figure 4-4
SWMU 114 Fire Station #2
Groundwater Elevation Map
Shallow Zone
(August 2022)

Legend

- Staff Gauge Location
- Shallow Zone Monitoring Well
- MW0001S (1.8 - 11.8) -0.49 — Monitoring Well Identification, Screened Interval (ft), Groundwater Elevation (ft amsl, NAVD88)
- Generalized Groundwater Flow Direction
- −1.50− Groundwater Elevation Contour (ft amsl, NAVD88)
- SWMU 114 Boundary

Notes:
*=Anomalous data. Not used for contouring.
ft amsl=feet above mean sea level
NAVD88=North American Vertical Datum of 1988
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

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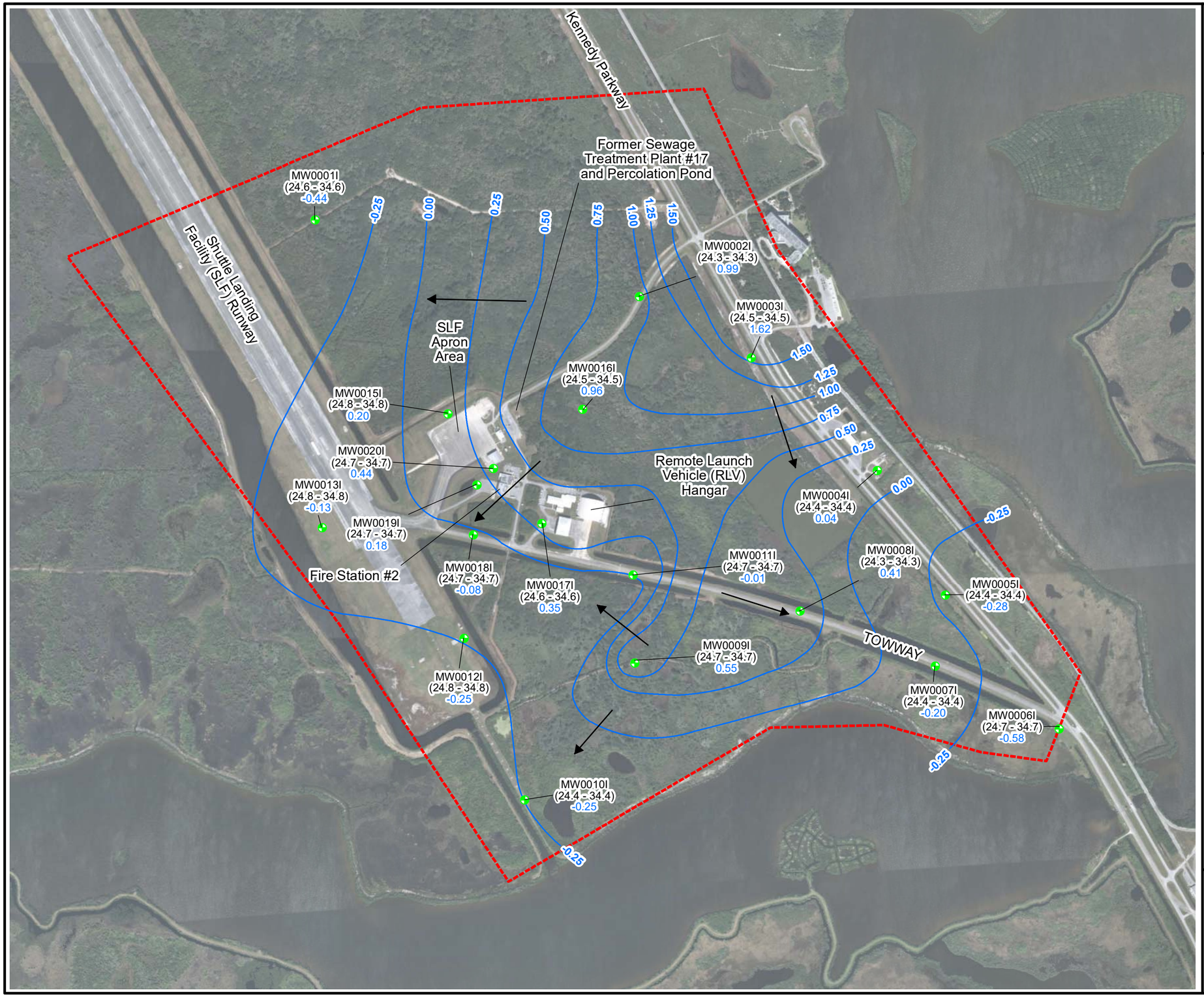

Figure 4-5
SWMU 114 Fire Station #2
Groundwater Elevation Map
Intermediate Zone
(August 2022)

Legend

- Intermediate Zone Monitoring Well
- MW0001I (24.6 - 34.6) -0.44 — Monitoring Well Identification, Screened Interval (ft), Groundwater Elevation (ft amsl, NAVD88)
- Generalized Groundwater Flow Direction
- −1.50− Groundwater Elevation Contour (ft amsl, NAVD88)
- SWMU 114 Boundary

Notes:
ft amsl=feet above mean sea level
NAVD88=North American Vertical Datum of 1988
SWMU=solid waste management unit

N

0 500 1,000 2,000
Feet

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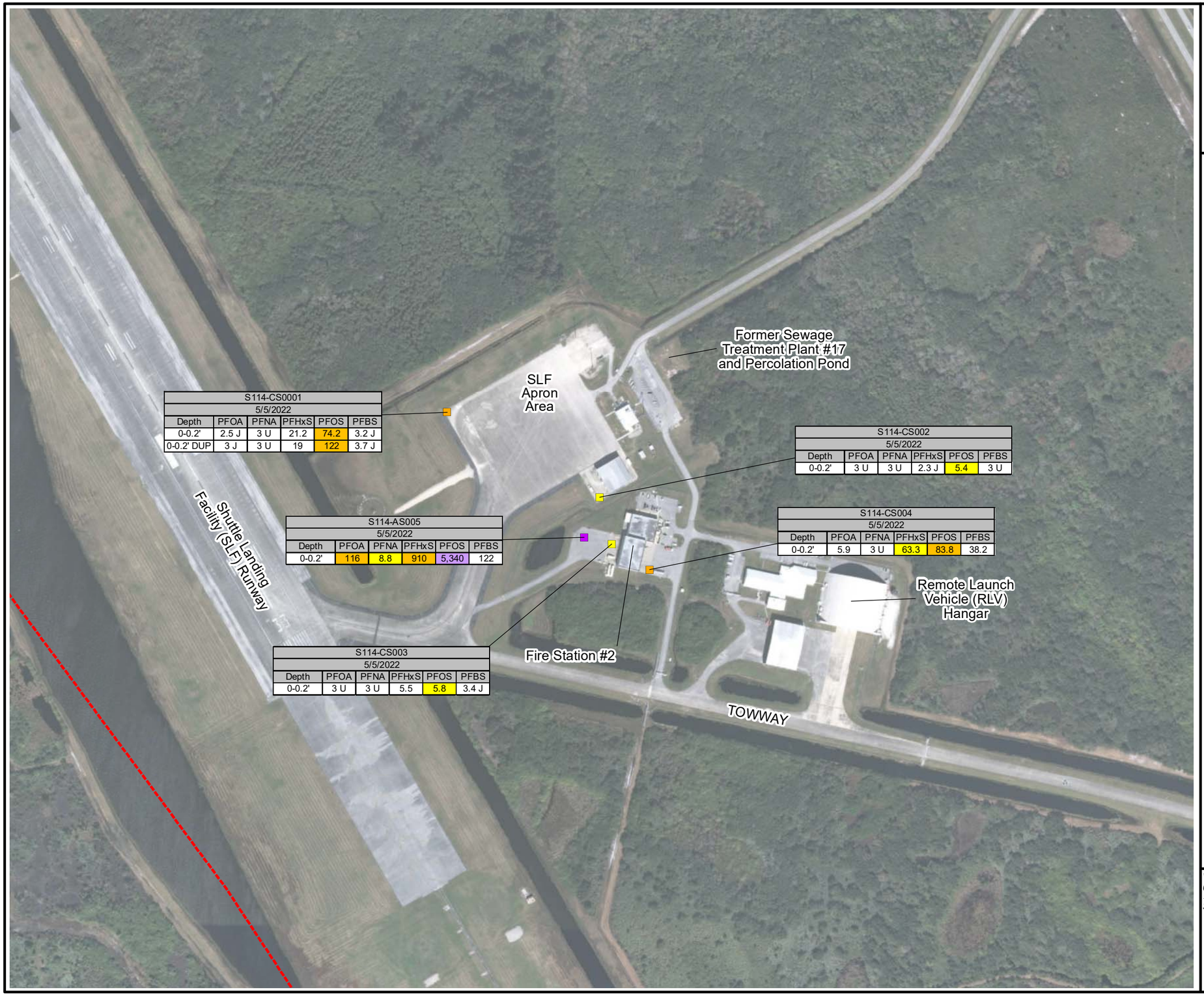

Figure 4-6
SWMU 114 Fire Station #2 Concrete/Asphalt Analytical Results

Legend

- Asphalt/Concrete Sample > RSL
- Asphalt/Concrete Sample > 10 x RSL
- Asphalt/Concrete Sample > 1000 x RSL
- SWMU 114 Boundary

Notes:
Yellow=concentration greater than RSL
Orange=concentration greater than 10 x RSL
Purple=concentration greater than 1000 x RSL
Results in nanograms per liter (ng/L)

Asphalt/Concrete samples were analyzed for SPLP analysis.
ft bls=feet below land surface
I=estimated value
J=estimated value
PFOA=perfluorooctanoic acid
PFNA=perfluorononanoic acid
PFHxS=perfluorohexanesulfonic acid
PFOS=perfluorooctanesulfonic acid
PFBS=perfluorobutanesulfonic acid
pSCTL = provisional soil cleanup target level
RSL=regional screening level
SPLP=synthetic precipitation leaching procedure
SWMU=solid waste management unit
U=not detected

SAMPLE LOCATION					
SAMPLE DATE					
DEPTH	PFOA	PFNA	PFHxS	PFOS	PFBS

RSLs				
PFOA	PFNA	PFHxS	PFOS	PFBS
6	6	40	4	600

N

0 200 400 800
Feet

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Source: HGL, ArcGIS Online Imagery

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Site assessment field activities were conducted at SWMU 114 from November 2021 through August 2022. During the 2021-2022 Site Assessment, 124 direct-push technology (DPT) samples were collected from 27 locations, 17 surface water samples were collected from 15 locations, 41 groundwater samples were collected from 37 newly installed monitoring wells, five concrete samples were collected from four locations, and one asphalt sample was collected. Additionally, two soil borings were advanced to 60 feet for lithologic descriptions, ten staff gauges were installed, and one round of water level measurements were collected from monitoring wells and staff gauges for groundwater flow determination. All groundwater and surface water samples were analyzed for the 25 PFAS analytes by PFAS analysis by USEPA Method 537M. Concrete and asphalt samples were analyzed for the 25 PFAS analytes by SPLP PFAS analysis. The objectives of the PFAS site assessment were to (1) delineate PFAS in groundwater exceeding the RSLs and in surface water exceeding the SW SLs, and (2) better understand the interaction between groundwater and surface water at SWMU 114. This data will be used to support further site investigation activities to improve the understanding of the stated objectives.

Groundwater results were compared to the most recent RSLs published by USEPA for residential tap water (USEPA, 2022a) to determine the extent of PFAS contamination at SWMU 114 for six PFAS analytes (PFOA, PFNA, PFBS, PFHxS, PFOS, and GenX). Surface water results were compared to the FDEP SW SLs (FDEP, 2020) for PFOA and PFOS.

PFAS in groundwater exceeding RSLs extend east and south to Banana Creek and west to approximately the center of the SLF runway (**Figure 4-1** and **Figure 4-2**). The extent of PFAS is approximated to the north, to an area between Sharkey Road and Astronaut Road, where samples below the RSLs do not fully bound SWMU 114. At least two distinct PFAS source areas are apparent from high concentrations of PFAS (PFOS > 4,000 ng/L) located near Fire Station #2 and along Towway, at S114-MW0007S, within SWMU 114. PFAS observed near Fire Station #2 is the result of equipment testing that resulted in AFFF discharge to the stormwater retention pond northeast of the fire station and from a spill five to eight gallons of AFFF to the SLF tarmac on February 6, 2020, that was rinsed off the tarmac to the southeast and northwest. PFAS observed along the Towway is associated with reported releases of AFFF in the area. These two areas of high PFAS concentrations are separated by lower groundwater concentrations in DPTs along Towway near RLF Hangar.

Surface water samples indicated concentrations of PFOS above the SW SL in surface water bodies across the site (**Figure 4-3**). Further assessment and sampling are required to better understand the interaction between groundwater and surface water at SWMU 114.

Groundwater measurements from August 3, 2022, indicate that flow at SWMU 114 is generally similar for the two intervals sampled, the shallow water table and intermediate groundwater screened between 25 ft bgs and 35 ft bgs. A northeast to southwest trending groundwater divide is located near the middle of Towway where groundwater southeast of the divide flows to the south and groundwater northwest of the divide flows to the west (**Figure 4-4** and **Figure 4-5**). The

groundwater divide generally separates the two areas of higher PFAS concentrations and corresponds to an area of higher surface water elevations in staff gauge SG7.

Concrete and asphalt samples collected in May 2022 confirm that a significant release of AFFF occurred near the stormwater pond northwest of Fire Station #2. Asphalt PFOS concentrations near the stormwater pond, in S114-AS0005, were 5,340 ng/L. Additional concrete samples surrounding Fire Station #2 and at the northwest and southeast edges of the SLF tarmac indicate elevated PFOS concentrations (**Figure 4-6**). These results indicate that discharges of AFFF in these locations have infiltrated into asphalt and concrete and may act as a continuing source of PFAS to groundwater and surface water after rain events.

5.2 Recommendations

Additional DPT samples are required to delineate PFAS at SWMU 114 using the USEPA RSLs in groundwater. DPT samples should be located to the west and north of SWMU 114. Samples may need to extend beyond the Former SLF Rescue Building and Morpheous Test Site to delineate PFAS in groundwater using the USEPA RSLs. Select monitoring wells and surface water sample locations should be sampled and gauged quarterly to understand if seasonal impacts are observable, especially in shallow wells near surface water features.

Surface water samples should be collected from additional ditches to further define the extent of surface water impacts at SWMU 114 and extending along the SLF runway. Staff gauges should be gauged quarterly with groundwater gauging to determine surface water flow and interaction with groundwater.

Proposed DPT groundwater sample locations to be used to delineate PFAS to the USEPA RSLs are shown in **Figure 5-1**. Proposed quarterly surface water and monitoring well sampling locations are shown on **Figure 5-2**. Additional DPT groundwater and surface water sample locations will be proposed subsequent to the DPT sampling at SWMU 114 and following the initial sampling results at the Morpheus Test Site, Former SLF Rescue Building Site, and Contractor Support Building #7.

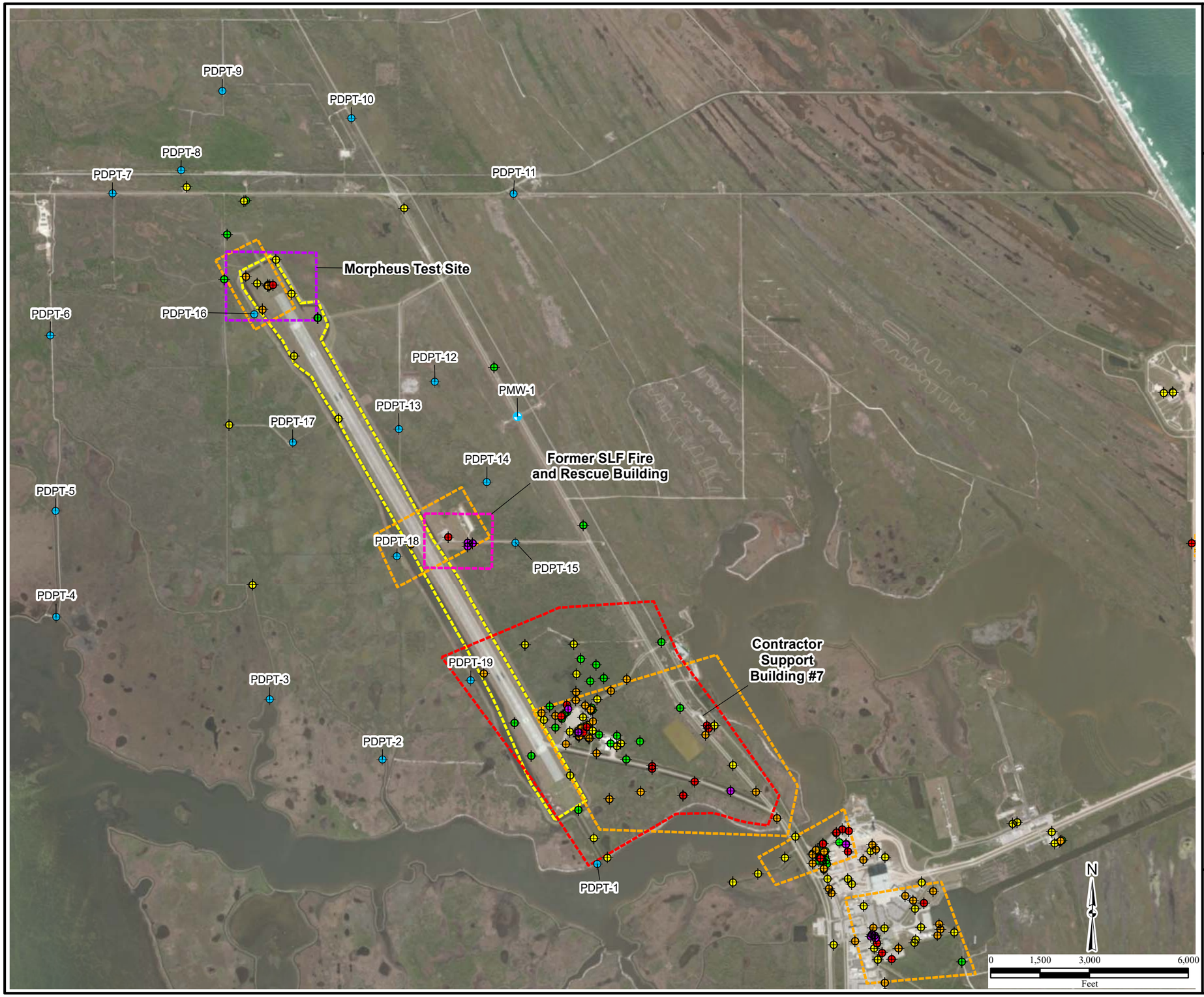

Figure 5-1
SWMU 114 Fire Station #2
Proposed DPT Sample Locations

Legend

- DPT Sample Concentration Less than RSLs
- DPT Sample Concentration Greater than RSLs
- DPT Sample Concentration Greater than 10 x RSLs
- DPT Sample Concentration Greater than 100 x RSLs
- DPT Sample Concentration Greater than 1000 x RSLs
- Proposed DPT Sample
- Proposed Monitoring Well
- SWMU 114 Boundary
- PRL 186
  SLF Runway & Lighting SLF Runway
- PRL 237
  PFOS and PFOA Areas of Concern
- Former SLF Fire and Rescue Building Site
- Morpheus Test Site

Notes:
PRL=potential release location
RSL=regional screening level
SLF=Shuttle Landing Facility

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Source: HGL, ArcGIS Online Imagery

Figure 5-2
Proposed Quarterly Monitoring Well and Surface Water Sample Locations

Legend

- Proposed Monitoring Well
- Proposed Surface Water Samples for Quarterly Sampling
- SWMU 114 Boundary
- Former SLF Fire and Rescue Building Site
- Morpheus Test Site

Notes:
PRL=potential release location
RSL=regional screening level
SLF=Shuttle Landing Facility

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Source: HGL, ArcGIS Online Imagery

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APPENDIX A

Meeting Minutes

Revision 0 Meeting Minutes for June 6th and 7th, 2019
Attendees:

John Armstrong/FDEP
John Winters/FDEP
Anne Chrest/NASA
Mike Deliz/NASA
Lindsay Morgan/NASA
Dinh Vo/NASA
Ryan O'Meara/NASA
Dan Heggen/NASA
Michelle Moore/KEMCON
Deda Johansen/Jacobs
Patrick Lawler/Jacobs
Craig Kish/Jacobs
Jason Glasgow/Jacobs
Harlan Faircloth/CORE
Jim Langenbach/Geosyntec
Melissa Hensley/Geosyntec
Eric Sager/Geosyntec
Rebecca Daprato/Geosyntec
Mike Burcham/Geosyntec
Olivia Cain/Geosyntec
Audrey Batzer/Geosyntec
Davis Lofton/Geosyntec
Joe Bartlett/Geosyntec
Mark Speranza/Tetra Tech
Chris Pike/Tetra Tech
Mark Jonnet/Tetra Tech
Jen Buel/Tetra Tech
Sarah Damphousse/Tetra Tech
Alex Murphy/Tetra Tech
Chris Neumann/Tetra Tech
Scott Anderson/Tetra Tech (phone)
Krista Sommerfeldt/AECOM
Matt Zenker/AECOM
Richard Smith/HGL
Tim Jellett/HGL

1906-M01	Team	<u>Meeting Minutes and Miscellaneous Items</u> Team consensus reached that revision 1 meeting minutes for the April 2019 Team meeting are final. Team members acknowledged and did not object to the fact that the meeting minutes may become public as part of a final report at a later date. CAMP: please update and get any revised dates to NASA. **Action Item:** Per FDEP correspondence letter dated (March 22, 2019) RPM Ryan O'Meara will provide a site history of the Visitor Center Maintenance Area (SWMU 099) at a future team meeting. **Result**: Decision item 1906-D01, Action Item 1906-A01.
1906-M02	Harlan Faircloth/ CORE	<u>Components Cleaning Facility (CCF) (SWMU 030)</u> **Goal**: Present October 2018 direct push technology (DPT) sampling results, discuss air sparge system expansion activities, present Year 2 Operations, Maintenance and Monitoring (OM&M), present performance monitoring event number 5 and obtain consensus on path forward.

Discussion: The overall corrective action objective for CCF is to reduce concentrations of the contaminants of concern (COC) to below Florida Department of Environmental Protection (FDEP) Groundwater Cleanup Target Levels (GCTL). The objective of the Hot Spot 1 Interim Measure (IM) is to treat the chlorinated volatile organic compounds (CVOC) high concentration plume where concentrations exceed their respective Natural Attenuation Default Concentration (NADC) to support transition to Monitored Natural Attenuation (MNA).

Hot Spot 1 site background and original air sparge system operations were presented at the meeting and in the provided advanced data package.

Year 1 Performance Monitoring:
Twelve monitoring wells were sampled quarterly. A reduction of COCs below NADCs was observed at all wells in the air sparge radius of influence at 9 months.
Periodic DPT sampling was conducted to ensure a full picture of contaminant distribution and concentration.

- July 2018 DPT sampling showing trans-1,2-dichloroethene (tDCE) and vinyl chloride (VC) above NADCs in the gap between the north and south arrays of air sparge wells.
- Additional DPT sampling in August 2018 was conducted to collect deeper samples and refine understanding of contamination in and around the air sparge well gap.

October 2018 DPT Sampling:
The National Aeronautics and Space Administration (NASA) decided to expand the CCF Hot Spot 1 air sparge system to address the High Concentration Plume between treatment lobes and treat deeper intervals in some areas (within the capacity of sparge trailer #3).
Supplemental DPT groundwater sampling in October 2018 to support design of air sparge system expansion.
Areas where cDCE, tDCE, and VC results were above NADCs were delineated (High Concentration Plume).

Hot Spot 1 Air Sparge System Expansion:
Expansion design included 14 new air sparge wells in the area between the lobes of the original air sparge wells and on the upgradient side of the southern lobe. These air sparge wells were

installed in December 2018 using a sonic drill rig and top of screen was set between 44.8 and 54.6 feet (ft) below land surface (BLS).
Eight new performance monitoring wells (IW0063 to IW0070) were installed using a sonic drill rig in February 2019.
The air sparge system expansion was completed in March 2019 (delayed due to government shutdown) and Hot Spot 1 air sparge system was restarted on 13 March 2019.

Year 2 System Performance:
The system has runtime efficiency of 76% from August 2018 through April 2019.

- Actively sparged for approximately 5,568 hours.
- System was down for 1,728.
- All shutdowns have been planned. There has been no downtime for mechanical issues since July 2018.

Performance Monitoring Event 5 was conducted in March 2019.
Twenty monitoring wells sampled for VOCs. Water level measurements were collected from 20 additional monitoring wells.
There were no NADC exceedances for any COC.
TCE detected in seven monitoring wells (1.1 to 16 µg/L); four results exceeded GCTL with the highest concentration in IW0045 in southern air sparge lobe.
cDCE was detected in 18 monitoring wells (0.86 to 250 µg/L); four results exceeded the GCTL with the highest concentration at IW0062 to the east of air sparge system.
tDCE was detected in 17 monitoring wells (2.7 to 200 µg/L); three results exceeded the GCTL with the highest concentration at IW0039 just east of expansion air sparge wells.
VC was detected in 14 monitoring wells (0.96 to 89 µg/L); 13 detections exceeded the GCTL, with the highest concentration at IW0069 on east side within southern expanded system.
Total molar sums for all four COCs were calculated for each of the original 12 performance monitoring wells:

- Baseline Total Molar Sum: 120.7 umol/L
- Performance Monitoring 5 Total Molar Sum: 15.3 umol/L
- 87% reduction in COC total molar sums

Two performance monitoring wells had increase in total molar sums when baseline and performance monitoring 5 sampling events compared (IW0025IS and IW0044).

- IW0025IS is outside of the air sparge system influence, and generally downgradient of the southern lobe.

- IW0044 is on the upgradient edge of the air sparge system, and reflects dissolved VOCs migrating into the system from the east.

Total mass for all four COCs were calculated for the baseline and performance monitoring 5 sampling events.

- Baseline Total Mass: 3.9 pounds
- Performance Monitoring 5 Total Mass: 0.01 pounds
- 3.89 pounds of mass have been removed

Conclusions:

The air sparge system operated reliably over the past 22 months.
Design pressures have been met during Year 2 operations.
Design airflow has been met with the exception of Zone 2, which generally receives 3.5-4 cfm rather than 5 cfm (new Pressure Relief Valve installed earlier this month is intended to improve Zone 2 flow).
COC concentrations are below respective NADCs in monitoring wells within the air sparge system influence.

DPT sampling showed some NADC exceedances, which led to the system expansion.
Mann Kendall statistics for monitoring wells up-, down-, and cross-gradient to the air sparge system identified no increasing trends.

The first post-expansion performance monitoring event will occur the first week of June 2019.
Recommend that air sparge system operations continue until COC concentrations are consistently below NADCs or GCTL exceedances begin to become asymptotic.
To evaluate the effectiveness of the expanded air sparge system, the same network of 20 performance monitoring wells should to be sampled quarterly for the remainder of 2019, after which continued operation should be evaluated. Concurrent water level measurement for 20 additional wells.

NASA anticipates that after sparging is completed at this site, the air sparge system will be excessed.

Team consensus reached to continue OM&M of the expanded CCF Hot Spot 1 air sparge system.

Team consensus on performance monitoring as follows:

- Quarterly 8260B analysis at IW0025IS, IW0037, IW0039, IW0041, IW0042, IW0044, IW0045, IW0046, IW0059 to IW0070.
- Quarterly water level measurements at IW0025IS, IW0037, IW0039, IW0041, IW0042, IW0044, IW0045, IW0046, IW0059 to IW0070, IW0003S, IW0003D, IW0031S, IW0031D, IW0004S, IW0041S, IW0004D, IW0011IS, IW0011ID, IW0011D, IW0021S, IW0017S, IW0026D, IW0036, IW005S, IW0051S, IW0051D, IW0005D, IW0012S, and IW0012D.

Results: Decision items 1906-D02 to D03

1906-M03 Eric Sager/ Geosyntec

Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237)

Goal: Present Phase I Solid Waste Management Unit (SWMU) assessment and confirmatory sampling results for per-and polyfluoralkyl substances (PFAS), present data gaps and proposed sampling locations for additional investigations, and obtain Team consensus on a path forward.

Discussion: A center-wide investigation was conducted for potential PFAS contamination in groundwater and surface water. Sample areas were divided into regions (Northern, Central, and Southern) and samples were collected from suspect source areas and for the purpose of general large-scale delineation. As part of the Phase I assessment, initial Locations of Concern (LOCs) associated with the storage, use, or release of PFAS-containing materials were identified. 464 direct push technology (DPT) groundwater, 3 monitoring well, and 37 surface water samples were collected by Geosyntec within select LOCs to evaluate the presence or absence of affected media. Note that one surface water location was sampled by two methods (direct grab and peristaltic pump); results were similar. Additional activities included:

- Reviewing readily available information and reports related to the use of aqueous film forming foam (AFFF), sewage treatment plants (STPs), and sludge disposal areas (SDAs);
- Completing site reconnaissance and conducting limited interviews with KSC personnel and facility managers at select LOCs; and
- Photographing AFFF storage and use locations.

The strategies for assessment were to:

- Identify a supply well for a decontamination source;

- Evaluate if perfluorooctanoic acid (PFOA) and/or perfluorooctane sulfonate (PFOS) are present in surface water and groundwater at the identified LOCs;
- Evaluate if the concentrations of PFOA, PFOS, and summation of PFOA/PFOS in groundwater exceeded the Florida Department of Environmental Protection (FDEP) provisional groundwater cleanup target level (GCTL) of 70 nanograms per liter (ng/L);
- Evaluate if the concentrations of PFOS, PFOA, and summation of PFOA/PFOS in surface water represent a potential exposure pathway and/or source of constituents to groundwater. There are currently no provisional surface water cleanup target levels.

Sources investigated include fire training facilities, fire stations, suspected AFFF release locations, Kennedy Space Center (KSC) STPs and SDAs, and KSC landfills. Domestic Treatment Plants (DTPs) and production and manufacturing facilities were identified as potential source areas but were not included in Phase I Assessment activities. Limited information was also reviewed on the construction of Ransom Road and Schwartz Road landfills.

Field activities were performed in accordance with FDEP Standard Operating Procedures (SOPs) and project-specific SOPs developed by Geosyntec to limit cross-contamination from consumer products and environmental conditions. Quality Assurance and Quality Control (QA/QC) samples were collected to evaluate laboratory precision, assess sampling equipment for potential sources of PFAS contamination, and evaluate potential impacts from cross-contamination. Duplicate samples and equipment blank samples were collected at an approximate rate of 10 percent. Matrix spike (MS) and MS duplicate samples were collected at an approximate ratio of 5 percent. Field blanks were collected at a rate of 1 per shipping container. A Stage 2A data validation was completed for all collected samples. Groundwater and surface water results were compared to the QA/QC sample results and the following information was reviewed to determine if data was usable to meet project objectives:

- Holding times
- Method blanks
- Laboratory control samples
- Isotope dilution standard

- Equipment sensitivity
- Equipment calibration
- Electronic data deliverable compared to Level IV report
- Reporting limit compared to provisional GCTLs

Validated groundwater data was screened against the FDEP provisional GCTL developed by the University of Florida. Validated surface water data was compared to the provisional GCTLs to identify potential exposure pathways and/or sources that could be contributing PFOA/PFOS to groundwater (or the reverse).

Summary of Center-Wide Results:

As presented during the April 2019 Meeting, Tetra Tech collected samples for PFAS at the Hydrocarbon Burn Facility and Schwartz Road Landfill. Including data collected by both Geosyntec and Tetra Tech, groundwater results exceeded the provisional GCTL in approximately 29 percent of samples. Of the samples collected by Geosyntec in the Northern and Southern regions of KSC, results exceeded the provisional GCTL in approximately 33 percent of groundwater samples. The highest concentrations observed were associated with fire stations and known or likely releases of AFFF. Some STPs and SDAs had concentrations that exceeded 10 times the provisional GCTL. PFOS was generally greater than PFOA, and both PFOS and PFOA were detected in all surface water samples collected.

Based on these results, additional CS activities are warranted to better understand the risks and conceptual site model. Additional sampling locations are proposed for each of the 33 identified LOCs. All surface water and sediment samples proposed are co-located and proposed sediment sample depths are from 0 to 0.5 feet (ft) below land surface (BLS). All soil samples are proposed from 0 to 0.5 ft BLS and 0.5 to 2 ft BLS, unless otherwise stated. DPT groundwater samples depths are proposed at screen centerpoints of 10, 25, 35, and 45 ft BLS.

Summary of Northern Region Results and Proposed Work Plans:

301 DPT groundwater samples from 37 locations, 27 surface water samples, and 3 monitoring well samples were collected. Provisional GCTL exceedances were observed in approximately 32 percent of

samples collected. The groundwater and surface water samples with the highest summation of PFOA/PFOS concentrations were from LOC 2. The highest number of exceedances were observed in the 25 ft BLS samples, but the maximum detected concentration of summation of PFOA/PFOS in the northern area was collected from 10 ft BLS.

LOC 1 – Flight Crew Rescue Training Area (SWMU 005): Used as a heavy equipment yard and materials storage area from 1962 to 1966. From 1984 to 2004, the KSC Fire and Rescue used LOC 1 as a training area for the Space Transportation System rescue procedure. Limited information was reviewed, and no samples were collected for PFAS.

Team consensus reached to continue Solid Waste Management Unit (SWMU) Assessment (SA) activities at LOC 1 to identify potential sources and spills of AFFF associated with the area's use as a KSC Fire and Rescue training area.

LOC 2 – Fire Station #2 (Potential Release Location [PRL] 187): Constructed in 2008 and is used for housing fire station personnel and storing AFFF and equipment. The fire station is currently operational and there have been known releases of AFFF into the retention pond to the west of the building. Groundwater sample results were greater than 100 times the provisional GCTL and surface water detections were more than 700 ng/L. The National Aeronautics and Space Administration (NASA) is working to revise procedures at KSC to no longer release AFFF to the environment.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from AFFF usage at LOC 2 (4 soil, 8 DPT groundwater, and 2 sediment samples at the previous collected surface water locations).

LOC 12 – Former STP #17 and Percolation Pond (PRL 087): Constructed in 1975 to treat domestic waste from the Landing Aids Control Building from the mid-1970s to the 1990s. The building was demolished in 1998 and the percolation pond was abandoned in place. Limited information reviewed on construction/abandonment of the pond (data gap). One groundwater sample was collected near LOC 12 and exceeded the provisional GCTL for summation of PFOA/PFOS.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from STP operations and sludge disposal activities at LOC 12 [4 soil (depths to be determined [TBD]), 1 DPT groundwater, 3 surface water, and 3 sediment samples].

LOC 15 – Remote Launch Vehicle Hanger (PRL 187): Constructed in 2000 to accommodate aircraft. An interview with facility personnel indicated that a foam suppression system was inside the hangar and discharged, but information could not be verified. Past reporting for the hangar indicates a water-supplied system was used for fire suppression within the facility. DPT sampling results surrounding the facility were below the provisional GTCLs.

Team consensus was reached for No Further Action (NFA) at LOC 15.

South Shuttle Landing Facility: Groundwater samples collected were greater than 10 and 100 times the provisional GCTL, and surface water samples had detections above 70 ng/L.

Team consensus reached for sampling plan to further investigate extent of PFAS contamination in the South Shuttle Landing Facility area (10 sediment and 2 surface water samples).

LOC 3 – Former Fire Station #2 (SWMU 105): Constructed in 1967 as the base for crews in VAB, SLF, and LC39 areas. A spill report indicated 2.5 gallons of Class A foam entered a floor drain in the highbay that discharges to grade approximately 30 feet east of the building. Groundwater results near LOC 3 exceeded 10, 100, and 1,000 times the provisional GCTL and concentrations were above the provisional GCTL at all sample depths.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from AFFF usage/discharge at LOC 3 (5 soil, 2 DPT groundwater, and 1 surface water, and 1 sediment samples).

South Vehicle Assembly Building (VAB) Area: Groundwater samples collected exceeded the provisional GCTL at many locations. Surface water samples had detections above 70 ng/L.

Team consensus reached to implement proposed sampling work plan to further investigate extent of PFAS contamination in the South VAB area (3 DPT groundwater, 6 sediment, and 2 surface water samples).

LOC 4 – Fire Station #3 (SWMU 106): Constructed in 1991 and formerly known as Fire Station #6. The facility is currently active and houses fire-fighting equipment and personnel. No known storage, spills, or discharges of AFFF. Groundwater sample results exceeded 100 times the provisional GCTL, and the surface water sample had a detection of 1,593 ng/L.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from potential AFFF usage at LOC 4 (7 soil, 5 DPT groundwater, 5 sediment, and 4 surface water samples).

LOC 5 – Former STP #4 and SDA: Constructed in 1966 and converted to a lift station in 2001. Effluent was discharged into several locations including a polishing pond before discharge into Banana Creek. Land application of effluent occurred in and around KSC from 1986 to 2001 and residuals were reportedly used as cover for Schwartz Road Landfill and transported to Cocoa Beach Wastewater Treatment Plant. Limited information reviewed on the location of all SDAs. Some DPT samples collected exceeded 10 times the provisional GCTL. The highest concentrations were in potential SDAs. Some surface water detections were greater than 70 ng/L.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from STP operations and effluent and sludge disposal activities at LOC 5 (17 soil, 2 DPT groundwater, 2 sediment, and 2 surface water samples) and continue SA to identify locations of SDAs associated with STP #4.

Northern Vehicle Assembly Building: One groundwater sample was greater than the provisional GCTL and PFOS/PFOA was detected above 70 ng/L in some surface water samples.

Team consensus reached to implement proposed sampling work plan to further investigate extent of PFAS contamination in the Northern Vehicle Assembly Building area (6 sediment samples).

LOC 6 – Former STP #5 and Percolation Pond (SWMU 008): Formerly located in within the Launch Complex (LC) 39A area. The STP discharged treated effluent to the swale adjacent to the western perimeter fence and to the evaporation/ percolation pond west of the launch tower. Limited information was reviewed on the construction/abandonment of the pond (data gap). No samples were collected for PFAS at LOC 6.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 6 [5 soil (depths TBD), 2 DPT groundwater, 1 surface water, and 1 sediment samples].

LC39A Area: Four Domestic Treatment Plants were identified, but limited information was reviewed. The surface water sample collected north of LC39A was greater than 70 ng/L.

Team consensus reached to implement proposed sampling work plan (3 sediment and 2 surface water samples) and to continue SA activities to investigate Domestic Treatment Plant operations in the LC39A area.

LOC 7 – Former STP #6 and Percolation Pond (SWMU 009): Formerly located within LC39B to serve structures in and around the pad. The STP discharge treated effluent to the swale adjacent to the western perimeter fence and evaporation/percolation pond west of launch tower. Limited information was reviewed on the construction/abandonment of the pond (data gap). Monitoring well groundwater samples collected north of LOC 7 had detections less than the provisional GCTL.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 7 [5 soil (depths TBD), 1 monitoring well, and 2 DPT groundwater samples].

LC 39B Area: Two Domestic Treatment Plants were identified, but limited information was reviewed. No samples were collected in the LC39B area.

Team consensus reached to continue SA activities to investigate DTPs in the LC39B area.

LOC 8 – Former STP #7 (SWMU 074): Likely located in the Press Site Area, but limited information was reviewed on the historical operations and effluent disposal activities. No samples were collected for PFAS at LOC 8.

Team consensus reached to continue SA activities to further investigate location of former STP #7 and area of effluent and/or sludge disposal.

LOC 9 – Former STP #8 and Drainfield: Constructed in 1978 and replaced with a lift station in 2002. Treated wastewater from operations and logistics building at LC39A and released effluent to drainfield near the STP building. Limited information was reviewed on the construction/abandonment of the pond (data gap). No samples were collected for PFAS at LOC 9.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 9 [5 soil (depths TBD), 1 DPT groundwater, 3 sediment, and 3 surface water samples].

LOC 10 – Former STP #9 and Abandoned Treatment Pond (SWMU 030): Located in the Components Cleaning Facility (CCF) area and constructed in 1967 to support the propellants storage and service area. Operated until 1991 when influent was rerouted to STP #4 (LOC 5). Exact location of former STP building and treatment pond unknown (data gap). One groundwater sample collected near LOC 10 was below the provisional GCTL.

Team consensus reached to continue SA activities to further investigate exact location of former STP #9 and abandoned treatment pond.

LOC 11 – Former STP #12 and Percolation Pond (PRL 074): Formerly located adjacent to the Hazardous Waste Staging Area and

removed some time between 1985 and 1990. The percolation pond was filled and the STP was replaced with a lift station. No samples were collected for PFAS at LOC 11.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 11 [4 soil (depths TBD), 2 DPT groundwater, 1 surface water, and 1 sediment samples].

LOC 13 – Former STP #18 (PRL 216): Constructed in 1973 and used to store fire equipment. Closed in place and demolished by fire in 1991. No information reviewed on effluent or sludge disposal, or storage/use of AFFF. No samples were collected for PFAS at LOC 13.

Team consensus reached to implement proposed sampling work plan (1 soil and 1 DPT groundwater samples) and to continue SA activities to investigate sludge and/or effluent disposal at STP #18 (LOC 13).

LOC 14 – Shuttle Landing Facility Runway (PRL 186): Primary end-of-mission landing site for space shuttle orbiters. Former Microwave Scanning Beam Landing System located at northwest end of the runway and stores fire suppression equipment. Morpheus crash which occurred at the north end was extinguished with AFFF. A vehicle caught fire in 2018 on the west side of the runway, but no additional information was reviewed. Groundwater samples collected near the Morpheus crash were greater than the provisional GCTL and detections in surface water around the north end of the runway were greater than 70 ng/L.

Team consensus reached to implement proposed sampling work plan at (5 soil, 3 DPT groundwater, and 5 sediment samples) and continue SA activities to identify location of former Microwave Scanning Beam Landing System and location of vehicle fire (potential use of AFFF) at LOC 14.

<u>Summary of Central Region Results and Proposed Work Plan</u>:

Approximately 231 DPT groundwater samples, 34 surface water samples, and 66 monitoring well samples were collected by Tetra Tech as of April 2019.

LOC 16 – Hydrocarbon Burn Facility: Results from sampling at LOC 16 were presented by Tetra Tech at the April 2019 KSC Remediation Team meeting.

LOC 17 – Former STP #15 and Polishing Pond (SWMU 016): Used to treat wastewater from the Former Printed Circuit Board Shop and Warehouse Office at Contractor's Road Heavy Equipment Area from 1971 to 1986 and a grease treatment plant from 1986 to 1996. Building abandoned and limited information reviewed on the construction or abandonment of the pond (data gap). No samples were collected for PFAS at LOC 17.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 17 [5 soil (depths TBD) and 2 DPT groundwater samples].

LOC 18 – Schwartz Road Landfill: Results from sampling at LOC 16 were presented by Tetra Tech at the April 2019 KSC Remediation Team meeting.

Summary of Southern Region Results and Proposed Work Plans:

163 DPT groundwater samples from 41 locations and, 10 surface water samples from 9 locations were collected. Provisional GCTL exceedances were observed in approximately 34 percent of samples collected. The groundwater sample collected with the highest summation of PFOA/PFOS concentrations were from LOC 19 and the highest surface water sample was collected in the Region I Stormwater pond located in the eastern Industrial Area. PFOA was greater than PFOS in the two surface water samples collected from LOC 30.

LOC 19 – Fire Station #1 (PRL 122): Formerly Fire Station #4 and constructed in 1964. Active and used as the primary fire/emergency response in the Industrial Area. Houses crews and acts as storage and repair facility for spent or expired fire extinguishers. There were no documented releases of AFFF. Groundwater results exceeded 10, 100, and 1,000 times the provisional GCTL. Step-out samples were collected a large distance from the fire station and results were below the provisional GCTL.

Team consensus reached to implement proposed sampling work plan at LOC 19 (4 soil and 3 DPT groundwater samples).

LOC 20 – STP #1 and SDA (PRL 063): Constructed in 1983. Located within SWMU 067 and received solids from all of KSC from 1986 to 1991. Numerous sewage spills were reported. Soil surrounding STP #1 building was excavated in the past, but limited information was reviewed (data gap). Limited information was reviewed on the construction/abandonment of the polishing pond (data gap). Groundwater sample results were greater than the provisional GCTL, with the highest concentration in the SDA (greater than 10 times the provisional GCTL). Detections in surface water near LOC 20 were greater than 70 ng/L. Team suggested looking at the existing monitoring well network in the area to propose sample collection from monitoring wells.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 20 [17 soil (depths TBD at STP #1 building and former polishing pond), 4 DPT groundwater, 8 surface water, and 9 sediment samples).

LOC 21 – Former STP #2 and Effluent Disposal Area (PRL 086): Treated domestic water and other operation discharges from the Hypergol Maintenance Facility from 1964 to 1985. Effluent was discharged into the borrow pit to the east. One surface water sample was collected within LOC 21 and summation of PFOA/PFOS was 27 ng/L.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 21 (1 soil, 1 DPT groundwater, 2 sediment, and 1 surface water samples).

LOC 22 – Former STP #3 and Percolation Pond (PRL 090): Constructed in 1998 and treated photo-processing wastewater from the TEL-4 Central Telemetry Site. Discharged effluent into to contiguous percolation ponds. Limited information was reviewed on the construction/abandonment of the ponds (data gap). No samples were collected for PFAS at LOC 22.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 22 [5 soil (depths TBD in percolation pond); 2 DPT groundwater, 2 sediment, and 2 surface water samples].

LOC 23 – Former STP #10 and Effluent Disposal Area (SWMU 009): Constructed in 1967 and treated wastewater from the Visitors Information Center Maintenance area and discharged effluent to retention pond, wash water holding pond, and drainage swale. Removed in 1997. Excavated and disturbed areas in the western portion of LOC 23. No samples were collected for PFAS at LOC 23.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 23 (8 soil, 5 DPT groundwater, 2 sediment, and 2 surface water samples).

LOC 24 – Former STP #11 and Percolation Pond (SWMU 086): Located at the former Spaceflight Tracking and Data Network Station and constructed in 1970 to treat wastewater from the former Operations and Support Building. Effluent was discharged into a percolation pond and sludge was hauled off site to an unknown location. Limited information was reviewed on the construction/abandonment of the pond (data gap). No samples were collected for PFAS at LOC 24.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 24 [5 soil (depths TBD in percolation pond) and 2 DPT groundwater samples].

LOC 25 – Former STP #13 and Effluent Disposal Area (SWMU 077): Constructed in 1972 to treat wastewater from Vertical Processing Facility Area. Effluent piped to disposal pond (data gap - construction/abandonment of pond). Facility demolished and removed in late 1970s. No samples were collected for PFAS at LOC 25 but DPT groundwater samples collected in eastern industrial area greater than the provisional GCTLs.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent disposal at LOC 25 (6 soil and 2 DPT groundwater samples).

Eastern Industrial Area: Groundwater results greater than provisional GCTLs (greater than 10 times the provisional GCTL at one location).

Team consensus reached to implement proposed sampling work plan to further investigate extent of PFAS contamination in Eastern Industrial Area (5 sediment samples).

LOC 26 – Former STP #14 and Abandoned Treatment Pond (SWMU 021): Constructed in 1971 to process wastewater from Ransom Road Sandblast Facility and Industrial Area. Drainage ditch adjacent to STP may have impacted site. STP and treatment pond abandoned in place in 1986. No information was reviewed on construction and abandonment of pond (data gap). No samples were collected for PFAS at LOC 26.

Team consensus reached to implement proposed sampling work plan to investigate impacts of STP operations and effluent/sludge discharge at LOC 26 (3 soil, 2 DPT groundwater, 1 sediment, and 1 surface water samples).

LOC 27 – Former STP #16 and Abandoned Treatment Pond: Treated domestic waste from former Bus Maintenance Facility and Former Pass and Identification Building. Effluent was discharged into pond which only received effluent from STP #16. Exact location of former STP and treatment pond unknown (data gap) and additional investigation is warranted. No samples were collected for PFAS at LOC 27.

Team consensus reached to implement proposed sampling work plan to investigate impacts from STP operations and effluent discharge at LOC 27 (1 surface water and 1 sediment sample).

LOC 28 – Central Instrumentation Facility Former Residuals Application Area (PRL 077): Used for disposal of domestic waste sludge from early 1960s to 1986. Received sludge from STP #1 and was reportedly used most frequently in comparison with other disposal sites. One DPT groundwater sampling result was greater than provisional GCTL.

Team consensus reached to implement proposed sampling work plan to further investigate impacts from sludge disposal activities at LOC 28 (2 soil samples).

LOC 29 – Operations and Checkout Building Former Residuals Application Area (PRL 077): Used for disposal of domestic waste sludge from early 1960s to 1986. Land application primarily in grassy areas east and west of parking lot. Received sludge from STP #1. DPT groundwater sampling results were below provisional GCTLs.

Team reached consensus to implement proposed sampling work plan to further investigate impacts from sludge disposal activities at LOC 29 (2 soil samples).

LOC 30 – Kennedy Athletic, Recreation, and Social Park II (PRL 140): Includes recreational facilities, restroom, sanitary leaching field, and pavilion. Site used to stage construction materials, borrow pits for road construction, solid waste containers, landscaping materials, and former underground storage tanks (UST). Spill of fire suppressant foam reported in 1992. Volume and location of spill were not identified, and continued SA is warranted. DPT groundwater sampling results were above the provisional GCTL. PFOA concentrations were greater than PFOS concentrations in surface water samples.

Team consensus reached to implement proposed sampling work plan to further investigate extent of PFAS contamination at LOC 30 (3 DPT groundwater, 4 soil, 3 sediment, and 1 surface water samples) and to continue SA activities to determine the location of reported AFFF spill.

LOC 31 – Ransom Road Sandblast Yard (SWMU 021): Used by NASA as a sandblasting area and painting facility since 1967. Objects are degreased and steam-cleaned prior to delivery. Spill reported in 2008 of approximately 0.25 gallons of 3% Ansulite Firefighting foam from portable tank onto the painted/sealed cement pad in covered garage. Limited information reviewed regarding spill details-continued SA warranted. No samples were collected at LOC 31.

Team consensus reached to continue SA activities to investigate building/location of AFFF spill at LOC 31.

LOC 32 – Base Support Building (SWMU 014): Also known as Maintenance and Operations Building. Constructed in 1964 and includes electrical, mechanical, carpentry, metal, and paint shops, steam cleaning, maintenance area, oil/water separator and treatment pond. Also served as vehicle wash down area. Spill reported in 2006: 20 gallons of foam and water from fire engine plumbing discharged during repairs/maintenance. DPT groundwater sampling results greater than 100 times the provisional GCTL in and around LOC 32.

Team consensus reached to implement proposed sampling work plan to further investigate extent of foam spill impacts at LOC 32 (1 soil, 1 sediment, and 1 surface water sample).

Western Industrial Area: One groundwater sample was collected that was greater than 100 times the provisional GCTL.

Team consensus reached to implement proposed sampling work plan to further investigate extent of PFAS contamination in Western Industrial area (7 DPT groundwater, 1 sediment, and 1 surface water samples).

LOC 33 – Ransom Road Landfill (SWMU 003): Operated from 1964 to 1970 during KSC construction phase. Unlined trenches exposing shallow aquifer were present during landfilling. Information regarding landfill construction was not reviewed. DPT groundwater sampling results were above the provisional GCTL.

Team consensus reached to continue SA activities to investigate landfill construction/trenching at LOC 33.

<u>Conclusions</u>:

The maximum observed concentrations of the summation of PFOA/PFOS were associated with Fire Stations. Generally, concentrations of PFOS and PFOA decreased with depth, with the fewest number of provisional GCTL exceedances were observed in the 45 ft BLS interval. Continued SA and CS activities are recommended and include:

- Investigating additional facilities that were not included under the Phase I assessment or where limited information was reviewed;
- Investigating the identified data gaps from Phase I SA; and
- Identifying existing monitoring wells within the initial LOCs.

Team discussed resampling at previous surface water sample locations to assess potential temporary changes in concentrations. Team also discussed tracking drainage patterns to determine where surface water is coming from for different stormwater ponds, basins, and other water bodies.

NASA discussed the proposed response to the detected exceedances of PFOS and PFOA provisional GCTLs: new KSC policy to no longer discharge AFFF to grade at KSC facilities, except to put out hydrocarbon fires. If AFFF needs to be used, a spill report will be submitted, and an investigation will be conducted. NASA is identifying and responding to PFAS concerns. Non-potable well sampling has been recently conducted on KSC.

Results: Decision item 1906-D04 to D41

1906-M04 Craig Kish/ Jacobs

Unnumbered Operational Area (UNOA) (PRL 229)
Goal: Summarize confirmation sampling (CS) activities, results, and obtain Team consensus on path forward.

Discussion: This Solid Waste Management Unit (SWMU) Assessment included three non-contiguous areas:
east yard and railroad tie disposal area (RTDA) east of Phillips Parkway and North of Launch Complex 39A, and the Communications Distribution Center & Switching Center (CD&SC) Siding in northwest quadrant of Kennedy Space Center (KSC) Industrial area, adjacent to M6-0138.
The KSC Remediation Team decided to perform a CS at RTDA. There were no concerns identified for the East Yard or CD&SC Siding.

There is no active facility and there are no personnel on site. The area is considered ecological habitat, but screening will be done to human health risk values first. The SWMU assessment identified two large piles of discarded railroad (RR) ties. Those piles were designated as Location of Concern 1 (LOC 1).

Revision 2 Meeting Minutes for the KSCRT Meeting - September 15, 16, and 17 , 2021

Attendees:

1. Bruce Moore/FDEP
2. Jennifer Farrell/FDEP
3. Mike Deliz/NASA
4. Ryan O'Meara/NASA
5. Deda Johansen/NASA
6. Anne Chrest/NASA
7. Natasha Darre/NASA
8. Dinh Vo/NASA
9. Michelle Moore/NEMCON
10. Mark Speranza/Tetra Tech
11. Mark Jonnet/Tetra Tech
12. Jennifer Buel/Tetra Tech
13. Alex Murphy/Tetra Tech
14. Chris Neumann/Tetra Tech
15. James Lloyd/Tetra Tech
16. Sarah Damphousse/Tetra Tech
17. Chris Pike/Tetra Tech
18. Debbie Wilson/Tetra Tech
19. Jennifer Joyal/AECOM
20. Linnea King Clark/AECOM
21. Josh Lerch/AECOM
22. Brittany Follett/AECOM
23. Randy Sillan/AECOM
24. Matthew Zenker/AECOM
25. Chad Lee/AECOM
26. Richard Smith/HGL
27. Scott Starr/HGL
28. Howard Fowler/HGL
29. Brad Mitchell/HGL
30. Cady Carol/HGL

2109-M01 Team

Meeting Minutes and Miscellaneous Items

Team consensus was reached that Revision 0 of the meeting minutes and action/decision items for the June 2021 Team meeting will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public as part of a final report at a later date **(2109-D01).**

Open action items were reviewed by the Team. The following action item was closed out:

Review of Site Status and Deliverables, December 2020: Mike will summarize the look ahead and send a detailed version to Florida Department of Environmental Protection (FDEP) that will provide site histories, what NASA has completed, and where their path forward (including plume maps). FDEP inquired if they could also obtain a copy of the slides being presented today. NASA confirmed they would provide the slides via large file transfer.

Look ahead and maps have been provided to FDEP by NASA **(Closed 2012-A03).**

Area South of K7-0516 and Eastern Component Cleaning Facility Solid Waste Management Unit (SWMU) #030, Interim Measure, Operation, Maintenance, & Monitoring, and Performance Monitoring and Interim Groundwater Monitoring, April 2021: FDEP requested that the sampling plans for 2021 be documented in a

2109-M09 Jennifer Joyal/AECOM

KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021

Goal: The goal of the ADP is to present the Phase II SWMU Assessment sampling results for per- and polyfluoroalkyl substances (PFAS) and test consensus on a path forward for many of the LOCs and AOPCs. Decisions will be deferred pending further evaluation for some LOCs and AOPCs.

Discussion: The Center-wide PFAS Phase II SWMU Assessment was divided into the northern, central, and southern regions for sampling and recommendations on a path forward. Thirty-three locations of concern (LOCs) and nineteen areas of potential concern (AOPCs) have been identified. There are a total of 52 LOCs and AOPCs plus the Towway Area.

NASA noted that there are 10 LOCs that are in the process of being contracted for investigation as Solid Waste Management Units (SWMUs). The investigations will follow the Site Assessment (SA) procedure under Chapter 62-780.600 of the Florida Administrative Code. NASA plans to move additional LOCs into SA in the future as funding becomes available. Sites are generally prioritized based on PFAS concentrations.

Potential surface water impacts were noted at several LOCs. Note that surface water impacts will be evaluated regionally as well as locally

Sediment samples were collected at several locations and the results are included in the Advance Data Package for reference. Since there are not established or provisional cleanup target levels for sediment, the results retained for future use.

LOC 1 is the former Flight Crew Rescue Training Area. Phase 1 SWMU Assessment and Confirmatory Sampling Report recommended continued SWMU Assessment activities. The area was potentially used to spread residuals from Sewage Treatment Plant #4 (STP #4) (LOC 5). Phase III confirmatory sampling (CS) will include groundwater and soil sampling. Phase III CS is underway and results will be presented at a future meeting. Surface

water samples contained perfluorooctanesulfonic acid (PFOS) concentrations greater than Florida's surface water screening level (SWSL).

LOC 2 is the area of current Fire Station #2 adjacent to the Shuttle Landing Facility (SLF) with its Towway. Phase I and II CS results determined that perfluorooctanoic acid (PFOA) and PFOS concentrations in groundwater exceed Florida's provisional groundwater cleanup target level (pGCTL). Groundwater impacts may be commingled with PFOA and PFOS affected groundwater associated with adjacent LOC 12, Former STP#17, and Percolation Pond. PFOA and PFOS concentrations in soil are greater than Florida's provisional soil cleanup target levels (pSCTLs) for leachability. PFOS concentrations in surface water are greater than the SWSL. Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12) **(2109-D14).**

LOC 3 is Former Fire Station #2. Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater exceeded the pGCTL. PFOA concentrations in soil were below the pSCTL; however, PFOS concentrations in soil were greater than pSCTLs for leachability. PFOS concentrations in surface water were greater than SWSL.

NASA added that there is a permitted stormwater basin in the area of LOC 3. Team consensus was reached to proceed with SA activities under SWMU #105, Former Fire Station #2 Area (includes PRL #237 LOC 3) **(2109-D15).**

LOC 4 is Fire Station #3, formerly known as Fire Station #6. Two of four surface water samples planned for the Phase II CS were collected. One proposed location was dry and the other required clearing for access; sampling was deferred. Phase 1 and 2 CS results determined PFOA and PFOS concentrations in groundwater exceeded the pGCTL. In soils, PFOA concentrations were below pSCTL and PFOS concentrations were greater than the leachability pSCTL. PFOS concentrations in surface water was greater than SWSL.

Team consensus was reached to proceed with site assessment activities under SWMU #106, Fire Station #3 Area (formerly known as Fire Station #6; includes PRL #237 LOC 4) **(2109-D16).**

LOC 5 is the former Sewage Treatment Plant #4 and Sludge Disposal Area and the surrounding area north of the Vehicle Assembly Building (VAB). Three additional DPT groundwater sample locations were added to the CS Work Plan to address FDEP's Phase 1 PFAS SWMU Assessment and Confirmatory Sampling Report review letter dated August 25, 2020. Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater exceed the pGCTL. PFOA and PFOS concentrations in soil were below the pSCTL. PFOS concentrations in surface water were greater than SWSL.

Phase III CS (now underway) will investigate the mosquito impoundment area to the north where treated water was discharged and an area where residuals from STP#4 may have been spread. AECOM recommended that LOC 5 be moved under SA for SWMU #115, VAB North Area. AECOM is still finishing out sampling in this area as part of this current investigation.

Team consensus was reached to proceed with SA activities for LOC 5 under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10) **(2109-D17).**

LOC 6 is the location for the Former Sewage Treatment Plant #5 and Percolation Pond at Launch Complex 39A (LC39A). Groundwater and soil Phase II CS activities were deferred due to site constraints; sampling will be conducted during the Phase III CS. For surface water, one sample was collected and PFOA and PFOS concentrations were less than SWSLs. After the surface water sampling discussion for LOC 7 (below), Team consensus was reached to collect one surface water sample at LOC 6 from the former percolation pond **(2109-D18).** Phase III CS sampling is underway; the requested surface water sample will be collected during this field event.

LOC 7 is the location of the Former Sewage Treatment Plant #6 and Percolation Pond at LC39B. PFOA and PFOS concentrations in groundwater were below pGCTLs. In the 1 of 5 planned soil

locations sampled, PFOA and PFOS concentrations were below pSCTLS. Four proposed locations were within the former percolation pond, which had standing water. No surface water samples were collected.

FDEP inquired why a surface water sample wasn't collected at this location and a discussion ensued. The pond sometimes contains water and sometimes not. It is believed that some sediment is present.

FDEP stated the surface water sample would be sufficient for now.

Team consensus was reached to collect one surface water sample from the former percolation pond at LOC 7 **(2109-D19).** Phase III CS sampling is currently underway; the requested surface water sample will be collected during this field event. For consistency, a surface water sample was also added for the pond at LOC 6, as described above. NASA asked Tetra Tech to share that PFAS sampling data from site wells in the launch pad areas.

LOC 8 is the Former Sewage Treatment Plant #7 in the Press Site area. SWMU assessment activities were continued to investigate sludge and/or effluent disposal locations associated with former STP #7. Data gap investigations did not reveal where the STP may have discharged to. PFOS concentrations in groundwater exceed the pGCTL. PFOS concentrations in surface water were greater than the SWSL.

Phase III CS recommendations include additional groundwater sampling to further evaluate if the impacts are associated with SWMU #105, Former Fire Station #2 area or an unknown aqueous film-forming foam (AFFF) release location. Forensics indicate a likely AFFF source. Phase III CS includes soil sampling and is underway.

LOC 9 is the Former Sewage Treatment Plant #8 and Drainfield Area in the LC39A Operations Support Building Area. PFOA concentrations in groundwater were less than pGCTL; PFOS concentrations exceed the pGCTL. PFOA and PFOS concentrations in soil were below the pSCTL. For surface water, PFOA

concentration were less than SWSL and PFOS concentrations were greater than SWSL.

Team consensus was reached to proceed with site assessment activities under SWMU #111, LC39 Observation Support Building Area (includes PRL #237 LOC 9) **(2109-D20).**

LOC 10 is the location of the Former Sewage Treatment Plant #9 and Abandoned Treatment Pond north of Converter Compressor Road. Phase II activities identified the abandoned treatment pond location west of where the Phase I CS groundwater sample was collected. Groundwater PFOA and PFOS concentrations there were below the pGCTL. Results from one of two nearby monitoring wells at Components Cleaning Facility (CCF, SWMU #030) exceeded the pGCTL. Recent CCF investigative derived waste (IDW) samples were above pGCTLs. Phase III CS sampling is underway and will include an evaluation of potential data gaps for the groundwater exceedance at CCF.

LOC 11 is the Former Sewage Treatment Plant #12 and Percolation Pond southeast of the intersection of Saturn Causeway and Fluid Servicing Road. The planned DPT location at the former STP was not sampled. The sample conducted at the former percolation pond had results below the pGCTL. In soils (3 of 4 planned locations sampled), PFOA and PFOS concentrations were below pSCTLs. A sample was not collected from the former STP area due to concrete and multiple utilities. For surface water, PFOS concentrations were greater than SWSL. The concentration (PFOS 54.80 ng/L) is similar to other samples collected from the Turn Basin. STP #12 is unlikely to be the source of PFAS detections in the Turn Basin. The source is likely the former Fire Station #2 (PRL #237 LOC 3) due to stormwater conveyance in this region. Surface water impacts will continue to be evaluated regionally to better understand the fate and transport of PFAS in groundwater and surface water. The groundwater sampling at the former STP #12 will be collected and the results will be presented to the Team.

LOC 12 is the Former Sewage Treatment Plant #17 and Percolation Pond near the SLF, which is adjacent to LOC 2. Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater exceeded pGCTLs. Groundwater impacts may be

commingled with PFAS-affected groundwater associated with LOC 2, Fire Station #2. PFOA and PFOS concentrations in soil were below pSCTLs. PFOS concentrations in surface water were greater than the SWSL.

Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12) **(2109-D21).**

LOC 13 is the area of the Former Sewage Treatment Plant #18 on Beach Road. SWMU assessment activities were continued to investigate sludge and/or effluent disposal locations associated with former STP #18. Phase II CS groundwater sampling has been delayed due to clearing requirements; groundwater samples will be collected under the Phase III CS effort. For soils, PFOA and PFOS concentrations were below pSCTLs. No surface water was observed and no sampling was recommended. Phase III CS sampling is currently underway.

LOC 14 encompasses the portion of the SLF Runway north of 30th Street NW. It includes the area where the Morpheus lander fire occurred, and possibly the location of the reported vehicle fire. AECOM is continuing to look for information regarding the location of the former Microwave Scanning Beam Landing System which reportedly was on the north end of the SLF and had fire suppression equipment. Multiple Phase I and II CS groundwater samples contained PFOA and PFOS concentrations greater than pGCTLs. In soils, PFOA and PFOS concentrations were above the leachability pSCTL. Multiple surface water samples had PFOS concentrations greater than the SWSL.

The Team discussed the surface water results. The Morpheus test area is a source on the north, but AOPC 1 (Former SLF Fire Rescue Vehicle Building) is near midfield and Fire Station #2 and the Towway (SWMU #114) is at the south. The surface water around the SLF will be evaluated on a regional basis. FDEP agreed this was a good approach.

The Team reached consensus to proceed with site assessment activities for LOC 14 under SWMU #119, Morpheus Test Area (included PRL #237 LOC 14 North) **(2109-D22).**

The central area of the SLF will be further evaluated in conjunction with AOPC 1, Former SLF Fire Rescue Vehicle Building. Phase III CS sampling is underway.

According to interviews. AOPC 1 was used for emergency vehicle parking, former pump testing area for fire rescue activities, and former AFFF storage area. Phase III CS will include groundwater and soil sampling. Team consensus was reached to add two surface water sampling locations. One sample location will be north of the former facility, and the other sample will be collected from the eastern swale along the SLF Runway **(2109-D23).**

LOC 15 is the area of the Remote Launch Vehicle Hangar on the southeast side of the SLF. (Note: sampling results not discussed during the presentation; additional information provided for completeness.)

Sixteen DPT groundwater samples were collected from four locations around the hangar (one from each side) during the Phase I CS. Concentrations of PFOA and PFOS were below the pGCTL in all samples. The maximum detection at 10 ft below land surface (bls) was 24 ng/L at DPT0006; all other samples reported concentrations below detection limits. There were no PFOA or PFOS detections at 25 ft bls. Maximum detection at 35 ft bls was 8.2 ng/L at DPT0024; all other samples reported concentrations below detection limits. Maximum detection at 45 ft bls was 12 ng/L at DPT0006; all other samples reported concentrations below detection limits. Team consensus was reached for no further action during the June 2019 KSCRT meeting (decision item 1906-D07). The area is being further evaluated under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12).

Towway Area (referred to as South SLF in the Phase I SWMU Assessment and Confirmatory Sampling Report) did not have a LOC or AOPC number assigned. Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater exceed the pGCTL. The highest detection was near the mid-point of the Towway. Groundwater impacts may be commingled with PFOA and PFOS affected groundwater associated with LOC 2, Fire Station #2. PFOA and PFOS concentrations in soil were less than pSCTLs. PFOS concentrations in surface water were greater than the SWSL.

Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12) **(2109-D24).**

The Hydrocarbon Burn Facility (SWMU #007) includes **LOC 16** (Hydrocarbon Burn Facility, SWMU #007) and **LOC 18**, Schwartz Road Landfill (SWMU #002). These areas are being evaluated under a separate contract.

LOC 17 is the Former Sewage Treatment Plant #15 and Polishing Pond (SWMU #016). This site is located within the footprint of SWMU #055 (Contractors Road Heavy Equipment Area [CRHE]). Groundwater (1 of 2 planned DPT locations sampled) revealed PFOS concentrations exceeded the pGCTL at the LOC. The eastern DPT location was within an area requiring clearing; sampling deferred. Two CRHE monitoring wells were sampled; results came in below pGCTLs. In soil (1 of 5 planned locations sampled), PFOA and PFOS concentrations were below pSCTLs. The eastern soil sampling locations were within an area requiring clearing; sampling deferred. NASA is having liquid IDW sampled for PFAS; one purpose is to discover the potential presence at existing sites. When the potential for PFAS is found, NASA has begun selecting a set of site monitoring wells to investigate a site further for PFAS.

Team consensus was reached to proceed with LOC 17 site assessment activities under SWMU #055, Contractors Road Heavy Equipment Area **(2109-D25).**

LOC 19 is Fire Station #1 in the Industrial Area. The Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater exceed the pGCTLs. In soils, PFOA concentrations were below pSCTLs and PFOS concentrations were greater than pSCTLs for leachability. There is no surface water in the immediate vicinity of the fire station. Center-wide surface water sampling was conducted within the Industrial Area and the results will be presented at a future meeting.

The briefing made note that a spill of the herbicide Hyvar® had been reported near Fire Station #1. FDEP noted that surfactants are also added as an ingredient to prepare herbicides for application and may not be called out in the herbicide ingredient list. AECOM's research

into this matter concluded that there was one herbicide additive that contains PFAS, but that additive was not used by KSC or Brevard County in herbicide applications.

The Team reached consensus to proceed with site assessment activities under SWMU #116, Fire Station #1 Area (formerly known as Fire Station #4; includes PRL #237 LOC 19); site assessment activities are under contract **(2109-D26).**

LOC 20 is Sewage Treatment Plant #1 and Sludge Disposal Area in the KSC Industrial Area. Soil and groundwater samples were not collected at the former spray field area as planned; sampling was deferred due to clearing being required. Phase I and II CS results from the treatment plant area determined that PFOA and PFOS concentrations in groundwater exceeded the pGCTLs. In soils, PFOA concentrations were below pSCTLs but PFOS concentrations were greater than pSCTL for leachability. PFOS concentrations in surface water were greater than the SWSL. The Team reached consensus to proceed with site assessment activities under SWMU #117, Sewage Treatment Plant #1 and Sludge Disposal Area (includes PRL #237 LOC 20 and PFAS impacts at SWMU #067 [POL Area, M6-0894]) **(2109-D27).**

LOC 21 is the former Sewage Treatment Plant #2 and Effluent Disposal Area in the former Hypergol Maintenance area. Planned surface water sampling was not presented; added here for completeness. PFOA and PFOS concentrations in groundwater were below the pGCTLs. PFOA and PFOS concentrations in soil were below pSCTLs. Phase II work plan included a surface water sample location near the effluent discharge. Sampling was deferred due to physical access constraints. A surface water sample will be collected during the Center-Wide surface water sampling event planned for October 2021. A surface water sample was collected ~800 feet north of this LOC from the adjacent borrow pit; the PFOA result was below and the PFOS result above the SWSL. NASA withdrew the no further action recommendation for this site pending the results of regional surface water sampling in its vicinity.

LOC 22 is the former Sewage Treatment Plant #2 and Percolation Pond at the Central Telemetry (TEL-4) facility. PFOA and PFOS concentrations in groundwater were below the pGCTLs. PFOA and

PFOS concentrations in soil were below pSCTLs. PFOS concentrations in both surface water samples were greater than its SWSL, and increased with proximity to the Banana River. Results are comparable to detections reported elsewhere in the Banana River. The groundwater and soil results indicate STP #2 is unlikely to be the source of PFAS detections in the Banana River. Surface water impacts will continue to be evaluated regionally to better understand the fate and transport of PFAS in groundwater and surface water. Team consensus was reached for no further action for LOC 22 **(2109-D28).**

FDEP sought clarification for LOCs/AOPCs adjacent to a surface water body where soil and groundwater samples were collected but not surface water samples; would surface water sampling be performed if soil and groundwater results were below provisional CTLs? NASA stated that it expects regional surface water sampling to fill in potential data gaps. Swales, ditches, and canals intersect with the lagoons and may be pathways for PFAS exchange with the lagoons. More investigation will be performed. NASA and FDEP both recognized there are potential sources of PFAS in the lagoon systems other than KSC, and acknowledged that there is currently only a small set of screening levels to guide an investigation.

LOC 23 is the former Sewage Treatment Plant #10 and Effluent Disposal Area within the boundary of SWMU #099 (Visitors Center Maintenance Area). PFOS and PFOA concentrations in groundwater were above the pGCTLs. PFOA and PFOS concentrations in soil were below pSCTLs. PFOS concentrations in surface water were below SWSL. Team consensus reached to proceed with site assessment activities under SWMU #099, Visitors Center Maintenance Area **(2109-D29).**

LOC 24 is former Sewage Treatment Plant #11 and Percolation Pond (SWMU #016) on S Band Road. PFOS concentrations in groundwater exceeded the pGCTLs. PFOA and PFOS concentrations in soil were below pSCTLs. PFOS concentrations in surface water was above the SWSL. Team consensus was reached to proceed with site assessment activities under SWMU #120, Former Treatment Plant #11 and Percolation Pond **(2109-D30).**

LOC 25 is former Sewage Treatment Plant #13 and Effluent Disposal Area on the southeast side of the Industrial Area. Groundwater results from one location were below PFOA and PFOS pGCTLs. Soil samples results were below pSCTLs. Phase III CS includes groundwater and soil sampling to further evaluate the effluent disposal pond area.

LOC 26 is former Sewage Treatment Plant #14 and Abandoned Treatment Pond. This location is currently part of SWMU #021 (Ransom Road Sandblast Yard), which is also PRL #237 LOC 31. Groundwater samples from 1 of 2 planned locations had PFOA and PFOS concentrations below the pGCTLs. A sample location within the pond was dropped due to standing water. The sample location at the former STP was shifted to the west to be representative of both site features. For soils, PFOA and PFOS concentrations were below pSCTLs for the one location sampled. Two sample locations within the pond were not collected due to standing water. The PFOS concentration in surface water was above the SWSL. Team consensus was reached for no further action for LOC 26 with further surface water assessment proceeding as part of LOC 31 **(2109-D31).**

LOC 27 is the Former Sewage Treatment Plant #16 and Abandoned Treatment Pond at the former badging facility on the west side of the Indian River . The surface water PFOS result was greater than the SWSL. Phase III CS recommendations include groundwater and soil sampling, which will help evaluate whether STP #16 is a source for the surface water PFOS.

FDEP inquired if there are other NASA surface water data for the Indian River. NASA confirmed there were three samples that came back under 10 ng/L. There is an action item to give FDEP the surface water sample results for the Indian River **(2109-A02).**

LOC 28 is the former Residuals Application Area near the former Central Instrumentation Facility. Phase I and II CS results determined that PFOA and PFOS in groundwater exceeded pGCTLs. Forensics indicate a likely AFFF source. PFOA and PFOS concentrations in soil were below pSCTLs.

Phase III CS groundwater sampling is currently underway.

LOC 29 is the former Residuals Application Area near the Operations and Checkout Facility. Phase I and II CS results determined PFOA and PFOS concentrations in groundwater were below pGCTLs. PFOA and PFOS concentrations in soils were below pSCTLs. Phase III CS recommendations include groundwater sampling, which is currently underway.

LOC 30 is KARS Park II. SWMU assessment activities were continued to determine the location of the reported AFFF spill there; a spill location could not be confirmed. One additional DPT groundwater sample location was added to Phase II to address FDEP's Phase 1 PFAS SWMU Assessment and Confirmatory Sampling Report review letter dated August 25, 2020. Phase I and II CS results determined that PFOA and PFOS concentrations in groundwater were above the pGCTLs. PFOA and PFOS concentrations in soils were below pSCTLs. PFOS concentrations were above the SWSL in surface water. Team consensus was reached to proceed with site assessment activities under SWMU #118, KARS Park II Area **(2109-D32).**

LOC 31 is Ransom Road Sandblast Yard (SWMU #021), a documented AFFF spill location. LOC 26 (Former STP #14) is at the southwest corner of LOC 31. SWMU assessment activities were continued to further investigate the location of the AFFF spill. No Phase II sampling was conducted in the Sandblast Yard, but two groundwater monitoring wells were sampled at adjacent SWMU #010 (GSA Reclamation Yard). PFOA exceeded pGCTL in one of those samples. Phase III CS includes groundwater, soil, surface water and sediment. The SWSL exceedance at LOC 26 will be addressed under LOC 31. The investigation will also help confirm whether the PFAS exceedance at SWMU #010 is associated with LOC 31. Phase III sampling is underway.

NASA added that site groundwater was previously closed out for SWMU #021 (Ransom Road Sandblast Yard), and wells at this location had been abandoned based on that. Soil land use controls remain in place.

LOC 32 is the location of Base Support Building (SWMU #014; formerly known as Maintenance & Operations Building). This location is a known AFFF spill location. The seven DPT

groundwater locations, the two sediment sample locations, and the two surface water sample locations were sampled during the Phase II CS. Phase I and II CS results determined PFOA and PFOS concentrations in groundwater were above the pGCTLs. In soils, PFOA was below pSCTLs; PFOS was above the leachability pSCTL. PFOS concentrations were above its SWSL in surface water. Team consensus was reached to proceed with site assessment activities under SWMU #014, Base Support Building (includes PRL #237 AOPC 12 and LOC 32) **(2109-D33).**

LOC 33 is Ransom Road Landfill (SWMU #003). SWMU assessment activities were continued to further investigate landfill construction and trenching. No Phase II sampling was performed. PFOA and PFOS concentrations in the Phase I groundwater samples exceeded the pGCTLs. No soil or surface water samples have been collected at this site to date.

Team consensus was reached to proceed with site assessment activities under SWMU #003, Ransom Road Landfill **(2109-D34).**

FDEP inquired about potential dewatering at leased facilities.

NASA responded that they have instituted LUCs at all the PFAS LOCs and AOPCs with PFAS data so that construction activities receive environmental review. In some cases, NASA has reached out to FDEP to coordinate and gain approval to percolate fluids back into site groundwater during construction projects. In one such case, former FDEP representative John Winters asked that a construction discharge area near the Mobil Station be identified as an AOPC, which was done. NASA is working to make sure the construction contractors are not discharging to surface water. FDEP expressed their appreciation for these efforts.

Results: Decision Items 2109-D14 through D34
Action Item 2109-A02

DAY 3

2109-M10 – Randy Sillan/AECOM

Mobile Launch Platform Rehabilitation (MLP) Sites and VAB Area Hot Spot #3 (SWMU 056), September 2021

Goal: The goal is to present 2021 direct push technology (DPT) groundwater sampling results from the Hot Spot 3 area and gain Team concurrence of the path forward. Field efforts summarized in the ADP include sampling for chlorinated volatile organic compound (CVOC) analysis. The objective of the ADP is to present current site conditions that support additional interim measures.

Discussion: Taking advantage of a lull in construction activities at the MLP, 188 DPT groundwater samples were collected at 62 locations and analyzed for CVOCs to evaluate current site conditions. A subset of samples was also analyzed for parameters useful in evaluating bioremediation. CVOC results confirm that the 2017 emulsified vegetable oil injections and bioaugmentation interim measure (IM) has decreased CVOC mass and shrunken the plume footprint. A small area with elevated trichloroethene (TCE) concentrations indicate a source is likely still present. The geochemical parameters indicate that aquifer conditions may be limiting enhanced reductive dechlorination. The recommended path forward is to utilize in situ chemical reduction (ISCR) by emplacing a product that enhances biotic and abiotic reduction of CVOCs for a long period (5 or more years), and maintains optimal conditions by limiting methanogenesis and managing sulfate reduction and sulfide accumulation. Preparation of an IM Work Plan is the next step.

FDEP requested clarification regarding the footprint and depths of the 2017 IM and conceptual treatment area for additional treatment. AECOM stated that concentrations above NADC are in similar locations now as prior to the 2017 IM, but the CVOC concentrations are lower compared to 2017. Since the groundwater flow is toward an Outstanding Florida Water, FDEP asked if a consideration had been given to expanding the existing air sparge system, which might be more quickly implemented since there is an infrastructure in place. NASA described the difficulties with accessibility and construction in the adjacent crawlerway and the highly compacted ground around the MLP. FDEP noted that the underground injection

control component of the proposed ISCR IM may require public notice.

The Team reached consensus to proceed with an IM Work Plan to implement ISCR to treat key CVOCs (TCE, cis-1,2-dichloroethene [cDCE], and VC) exceeding their respective NADC (TCE greater than 300 ug/L, cDCE greater than 700 ug/L, and VC greater than 100 ug/L) **(2109-D35).**

Results: Decision Item 2109-D35

2109-M11 Jennifer Joyal/AECOM

KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021

As a general note, NASA stated that the confirmation sampling that was performed or is planned at these AOPCs is for purposes of determining the presence or absence of PFAS. If there are detections, then the location will move into site assessment (SA) and at that time the extents of the PFAS will be determined. If media were not sampled prior, the SA is where that would get picked up.

Center-wide surface water sampling was conducted within the Industrial Area and other regional areas. The regional results will be presented at a future meeting.

AOPC 1 is the former Fire and Rescue Building at the Shuttle Landing Facility (SLF). It was used for emergency vehicle parking during landings, former fire pump testing, and former aqueous film-forming foam (AFFF) storage according to interviews. Phase III CS will include groundwater and soil sampling at this location. FDEP requested that a surface water sample be collected from the ditch by the AOPC on the east side of the landing strip. NASA inquired if a sample should also be collected for the swale north of Sharkey Road? FDEP concurred. The Phase III sampling results will be presented to the Team.

AOPC 2 is the former Contractor Support Building #7 north of the VAB area. According to interviews, this location was a former storage area for AFFF materials. A groundwater sample collected from this area during the Phase I CS revealed PFOA and PFOS

concentrations in groundwater exceeded Florida's provisional groundwater cleanup target level (pGCTL). Phase III CS includes groundwater and soil sampling in the direct area of the former facility.

The Team agreed to add a surface water sample immediately adjacent to the former Contractor Support Building #7. Team consensus reached to proceed with site assessment activities at AOPC 2 based upon the Phase I CS results. A SWMU name and number will be assigned **(2109-D36).**

AOPC 3 is the Orbiter Processing Facilities (OPF) 1 and 2. Aerosol cans of Scotchgard, a chemical containing PFAS, were utilized as part of the orbiter thermal protection system. Over 5,000 cans were used for each orbiter from approximately 1981-1986. Phase III CS includes groundwater and soil sampling and is underway.

FDEP inquired if the Team has PFAS results for investigative derived waste (IDW) from the AOPC 3 area? NASA stated that they have had detections of PFAS in IDW from this vicinity. As will be discussed for OPF 3, there were PFAS exceedances from monitoring wells.

Team consensus was reached to proceed with site assessment activities for AOPC 3 under SWMU #115, VAB North Area (includes PRL #237 Location of Concern [LOC] 5, AOPC 3, AOPC 4, and AOPC 10) **(2109-D37).**

AOPC 4 is OPF 3. This location was investigated for the potential use of Scotchgard™ on the orbiters. Interviews indicated Scotchgard™ and other PFAS-containing materials were not used at this facility. A shallow OPF 3 monitoring well, OPF-IW006S, was sampled in June 2021 and reported elevated detections of PFOS. The source of the PFAS is unknown; a forensics evaluation will be performed on the groundwater samples to be collected under AOPC 10, Crawlerway Residuals Disposal Area. The AOPC 10 boundary includes a portion of AOPC 4 and the area of monitoring well OPF-IW006S.

FDEP inquired if the footprint for AOPC 10 has now expanded to include AOPC 4? AECOM responded that both AOPC 4 and AOPC

10 will be investigated under the larger SWMU #115. Team consensus was reached to proceed with AOPC 4 site assessment activities under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10) **(2109-D38).**

AOPC 5 is the Thermal Protection Facility. This location was investigated for the potential use of Scotchgard™. Interviews indicated Scotchgard™ and other PFAS-containing materials were not used at this facility. A groundwater sample was collected in June 2021 from a shallow monitoring well located near the northeast corner of the facility from monitoring well WCPC-IW0013S. Results showed PFOA and PFOS concentrations were less than pGCTLs.

Team consensus was reached for no further action at this AOPC 5 **(2109-D39).** Note: Area is within the SWMU Boundary for SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10). The overall area will be further evaluated under SWMU #115.

AOPC 6 is the location of the current Logistics Facility (K6-1547). According to interviews, this facility was a former AFFF storage location and may have stored other PFAS-containing materials. No samples have been collected to date. Phase III CS includes groundwater, soil, surface water, and sediment sampling and is underway.

AOPC 7 is the location of the current Components Refurbishment and Chemical Analysis Facility (SWMU #041). The site was investigated for the potential use of PFAS-containing chemicals. The chemical database indicates potential PFAS precursors are utilized. The PFOS concentration in a groundwater monitoring well sample (CRCA-MW0003) exceeded the pGCTL. No soil or surface water samples have been collected to date at this location. Team consensus was reached to proceed with AOPC 7 site assessment activities under SWMU #041, Components Refurbishment and Chemical Analysis Facility **(2109-D40).**

AOPC 8 is the Central Supply Warehouse in the Industrial Area. Fire Station #1 (PFAS SWMU #116) is adjacent to the east and Sewage Treatment Plant #1 is on the block southeast of the

warehouse. According to interviews, this is a current and former storage area for AFFF materials. For groundwater, portions of the AOPC were previously investigated under PRL #237 LOC 19, and monitoring well sampling was conducted nearby at the Communications, Maintenance, and Storage Facility (SWMU #082). PFOA and PFOS concentrations in groundwater were less than pGCTLs in those samples. Additional groundwater samples will be collected during the Phase III CS.

This area is within the SWMU Boundary for SWMU #116, Fire Station #1 Area (formerly known as Fire Station #4; includes PRL #237 LOC 19). PFAS above the provisional groundwater cleanup target levels (pGCTL) have been confirmed at SWMU #116.

FDEP requested clarification on the distinction between AOPC 8 and SWMU #116. NASA explained there were groundwater exceedances associated with the fire station, and direct push technology step-out samples on the north side of the supply warehouse had results under provisional values. The SWMU #082 well that was sampled is to the west of the warehouse. The Phase II sampling is focused on the loading dock where it is believed PFAS-containing materials may have been located. The area to the south of the fire station and Central Supply Warehouse is being investigated under SWMU #117, Sewage Treatment Plant #1.

AOPC 9 is Weather Site 509, reportedly used for testing fire engine pumps. Phase III CS recommendations include groundwater, soil, and surface water sampling. Phase III CS sampling is underway.

AOPC 10 is the former Crawlerway Residuals Disposal Area. From the 1960s until 1986, the area north of the VAB was used for disposal of domestic waste residuals from STP #4 (LOC 5). Phase III CS includes groundwater and soil sampling, and sampling is underway. PFAS-affected groundwater is present within the AOPC boundary. A shallow OPF 3 monitoring well, OPF-IW006S, was sampled in June 2021 and reported elevated detections of PFOS. The source of the PFAS is unknown and a forensics evaluation will be performed on the groundwater samples to be collected under AOPC 10. This area is within the SWMU Boundary for SWMU #115. Team consensus was reached to proceed with AOPC 10 site

assessment activities under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10) **(2109-D41).**

AOPC 11 is the Bus Wash Station within KSC Visitors Center. This area was investigated due to the potential that PFAS-containing chemicals may have been used at the bus wash station. Phase III CS recommendations include groundwater sampling, which is currently underway. This area is within the SWMU boundary for SWMU #099, Visitor Complex Maintenance Area (includes PRL #237 LOC 23 and AOPC 11). Site Assessment activities at AOPC 11 will proceed under SWMU #099.

AOPC 12 is the Vehicle Wash Station at the former GSA Automotive Facility. This area was investigated due to the potential that PFAS-containing chemicals may have been used at the vehicle wash station. Phase III CS includes groundwater sampling and results will be presented at a future meeting; sampling is currently underway. This area is within the SWMU boundary for SWMU #014, Base Support Building Area (formerly known as M&O Building; includes PRL #237 LOC 32 and AOPC 12). PFOA and PFOS concentrations above the pGCTL are present in the groundwater in the vicinity of AOPC 12.

NASA stated that the elevated PFAS in this area and most likely will get wrapped up into SWMU #014. Team consensus was reached to proceed with AOPC 12 site assessment activities under SWMU #014, Base Support Building (includes PRL #237 AOPC 12 and LOC 32) **(2109-D42).**

AOPC 13 is the Q6 Radar Station (SWMU #113). Potential concerns were identified based on presence of PFAS in investigative derived waste (IDW). SWMU assessment activities were conducted and no PFAS sources were identified. Phase III CS recommendations include groundwater and surface water sampling and results will be presented at a future meeting; sampling is currently underway.

AOPC 14 is the Security Training Center on west Schwartz Road. This area was investigated based on a study showing this area had the highest concentrations of PFOA in KSC alligator blood samples. Records reviews and interviews did not confirm the use or storage of

potential PFAS containing chemicals or materials at the Training Center. Two Center-wide surface water samples were collected from the surface water bodies surrounding this facility and results were below SWSLs. FDEP inquired if anything else was located around the training center? NASA responded that it is isolated. Center-wide sampling is developing regional information for surface water, and more data will be collected. The Team reached consensus for no further action at AOPC14 **(2109-D43).**

AOPC 15 is the former Crawlerway Residuals Disposal Area near Saturn Causeway. From the 1960s until 1986, an area south of the Saturn Causeway west of Pad A was used for disposal of domestic waste residuals from STP #4 (LOC 5). Phase III CS recommendations include groundwater and soil sampling. Phase III CS results will be presented at a future meeting; sampling is underway.

AOPC 16 is KARS Park 1 (SWMU #084). SWMU assessment activities were conducted to identify PFAS sources due to elevated PFOS detections in surface water samples collected by Brevard County near KARS Park 1. No PFAS sources have been identified. Phase III CS recommendations include surface water sampling and results will be presented at a future meeting; sampling is currently underway.

AOPC 17 encompasses the Merritt Island National Wildlife Refuge Visitors Information Center Pump House (Abbreviated information was verbally conveyed during the presentation; additional information provided here for completeness.) Eleven non-potable water supply wells were sampled at KSC for the presence of PFAS in 2019. All analytes were below laboratory detection limits in five wells. A PFOS concentration of 10.55 ng/L was reported in the Pump House well. This non-potable well had the highest PFOS detection, so NASA designated it as an Area of Potential Concern to determine if PFAS containing chemicals were utilized or stored in the vicinity of this well. Forensics review indicate the source was likely not site-related; probably an artifact of well construction.

FDEP inquired if the source was Teflon™ casing in the wells, and NASA confirmed that to be the fact. NASA stated that the original wells installed at this location had Teflon casing. FDEP stated they

presume the construction materials for sampled wells are being recorded for this investigation A site may be revisited at a later date, and we want to be sure pertinent information is carried forward.

The Team reached consensus for No Further Action at AOPC 17 **(2109-D44).**

AOPC 18 is the Citgo Service Station. A manhole, located on the west side of the service station, was dewatered by a NASA contractor to complete tasks under their Safety & Reliability Upgrades contract. PFAS affected groundwater is present to the west and southwest of the manhole. A dewatering work plan was provided to FDEP for their concurrence, and the discharge area was designated an AOPC at FDEP's request based on their review. Phase III CS includes groundwater and soil sampling, and Phase III CS results will be presented at a future meeting; sampling is currently underway. This area is within the SWMU Boundary for SWMU #116, Fire Station #1 Area (formerly known as Fire Station #4; includes PRL #237 LOC 8 and LOC 19).

FDEP and NASA discussed dewatering activities in general. Dewatering manholes is a common practice. Where NASA is aware of PFAS, they disclose this information to the contractors for protection of both human health and the environment. NASA confirmed that the Remediation Program reviews environmental checklists in advance of construction activities that produce Records of Environmental Consideration (RECs) to provide necessary information to the construction projects.

AOPC 19 is the Contractor Support Building #6, located in the Roads and Grounds Facility (SWMU #073) immediately south of the Contractors Road Heavy Equipment Area (SWMU #055). Records reviews and interviews did not substantiate storage of AFFF or other potential PFAS source, including fluorinated pesticide products. FDEP asked about the level of certainty that no PFAS-containing materials had been stored or used at the Support Building. NASA replied that the Roads and Grounds personnel who use the facility have no recollection of any suspect materials being stored here. FDEP inquired surrounding facilities and whether there were PFAS investigations nearby. There is a PFAS assessment slated for the Contractors Road Heavy Equipment area, and if results lead the

investigation toward the Support Building the investigation will expand in that direction. Team consensus was reached for no further action at AOPC 19 **(2109-D45).**

Regional
Additional DPT groundwater samples and surface water samples were collected outside of these LOC or AOPC areas to evaluate extents of PFOA and PFOS affected groundwater and surface water. Notable findings include DPT0130 north of the OPF 3 (AOPC 4) and the Crawlerway, which had a PFOA and PFOS concentration of 5,160 ng/L at 25 ft below land surface. The source of PFAS-affected groundwater is unknown at this time. This result prompted NASA to investigate the use of aviation grade hydraulic fluid at KSC. Skydrol™, or similar hydraulic fluids, were not used per interviews and Material Safety Data Sheet search. Also noted was an area on the east side of the VAB (DPT0107) that has increasing PFOS and PFOA concentrations with depth. This area will be further evaluated under PRL #237. Now that we have seen PFAS increasing in depth at this location, we have incorporated deeper wells into the assessment program.

Results: Decision Items 2109-D36 through D45

2109-M12 Mark Jonnet/Tetra Tech

Converter Compressor Building (SWMU #089), DPT Update and Proposed Monitoring Wells, September 2021

Goal: The presentation goal is to provide the results of the direct push technology (DPT) sampling and consequent proposed monitoring well locations associated with February 2021 KSCRT Decisions 2102-D28, D30, D35, and D36, which are listed in the discussion below:

Discussion: DPT sampling was conducted in March 2021 at the areas of MWs 56, 96, and 133. DPT sampling was proposed the area of MW0114 but the area was flooded during the 2021 DPT event; therefore, sampling was postponed in that area.

In February 2021, the Team reached consensus to conduct DPT downgradient of MW056 to determine the extents of the LCP and

September 2021 Decision Items Rev 2		
Decision No.	**Minutes Reference**	**Decision**
2109-D08	2109-M06	**C-5 Electrical Substation (C5ES) (SWMU 066) Year 1 Performance Monitoring Results, September 2021:** The Team reached consensus to transition the site back into the VAB LTM program after the April 2022 event, and until the GCTLs are attained for two consecutive events at each sampling location.
2109-D09	2109-M07	**Components Cleaning Facility West (SWMU 030) Air Sparge System Status and Proposed Natural Attenuation Monitoring Path Forward, September 2021:** The Team reached consensus on the proposed NAM monitoring well network presented on Slides 40 and 43 of the ADP (proposed monitoring wells IW00A, IW00B, IW00C, IW00D, IW00E, IW00F, IW00G, IW00H, IW00I, IW00J, IW00K, IW00L, IW00M, IW00N, IW00O, IW00P, IW00Q, and existing monitoring wells IW0003ID, IW003IS, IW003S, IW0004IS, IW0004S, IW005ID, IW005IS, IW0011ID, IW0011IS, IW0012IS, IW0017S, IW0025IS, IW0017S, IW0025IS, IW0036, IW0041, IW0042, IW0046, IW0059, IW0060, IW0061, IW0062, IW0063, IW0064, IW0066, IW0067, and IW0068.
2109-D10	2109-M07	**Components Cleaning Facility West (SWMU 030) Air Sparge System Status and Proposed Natural Attenuation Monitoring Path Forward, September 2021:** The Team reached consensus to conduct the semi-annual sampling events in December 2021 (dry season) and June 2022 (wet season).
2109-D11	2109-M07	**Components Cleaning Facility West (SWMU 030) Air Sparge System Status and Proposed Natural Attenuation Monitoring Path Forward, September 2021:** The Team reached consensus to abandon the twelve (12) redundant groundwater monitoring wells listed on Slide 40 (IW0004S, IW0041, IW05S, IW05IS, IW05D, IW11D, IW12IS, IW12D, IW0026D, IW0060, IW0065, IW66).
2109-D12	2109-M08	**Components Cleaning Facility East (SWMU 030) High Concentration Plume Site Characterization, September 2021:** The Team reached consensus that the High Concentration Plume (HCP) is delineated horizontally and vertically.
2109-D13	2109-M08	**Components Cleaning Facility East (SWMU 030) High Concentration Plume Site Characterization, September 2021:** Team consensus was reached for the revised air sparging layout and performance monitoring plan.
2109-D14	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12).
2109-D15	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with SA activities under SWMU #105, Former Fire Station #2 Area (includes PRL #237 LOC 3).

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Decision No.	**Minutes Reference**	**Decision**
2109-D16	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #106, Fire Station #3 Area (formerly known as Fire Station #6; includes PRL #237 LOC 4).
2109-D17	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with SA activities for LOC 5 under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10).
2109-D18	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** After the surface water sampling discussion for LOC 7, Team consensus was reached to collect one surface water sample at LOC 6 from the former percolation pond.
2109-D19	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to collect one surface water sample from the former percolation pond at LOC 7.
2109-D20	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #111, LC39 Observation Support Building Area (includes PRL #237 LOC 9).
2109-D21	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12).
2109-D22	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** The Team reached consensus to proceed with site assessment activities for LOC 14 under SWMU #119, Morpheus Test Area (included PRL #237 LOC 14 North).
2109-D23	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to add two surface water sampling locations. One sample location will be north of the former facility, and the other sample will be collected from the eastern swale along the SLF Runway.
2109-D24	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #114, Fire Station #2 and Towway Area (includes PRL #237 LOC 2 and LOC 12).
2109-D25	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with LOC 17 site assessment activities under SWMU #055, Contractors Road Heavy Equipment Area.

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Decision No.	**Minutes Reference**	**Decision**
2109-D26	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** The Team reached consensus to proceed with site assessment activities under SWMU #116, Fire Station #1 Area (formerly known as Fire Station #4; includes PRL #237 LOC 19); site assessment activities are under contract.
2109-D27	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** The Team reached consensus to proceed with site assessment activities under SWMU #117, Sewage Treatment Plant #1 and Sludge Disposal Area (includes PRL #237 LOC 20 and PFAS impacts at SWMU #067 [POL Area, M6-0894]).
2109-D28	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached for no further action for LOC 22.
2109-D29	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus reached to proceed with site assessment activities under SWMU #099, Visitors Center Maintenance Area.
2109-D30	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #120, Former Treatment Plant #11 and Percolation Pond.
2109-D31	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached for no further action for LOC 26 with further surface water assessment proceeding as part of LOC 31.
2109-D32	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #118, KARS Park II Area (2109-D33).
2109-D33	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021:** Team consensus was reached to proceed with site assessment activities under SWMU #014, Base Support Building (includes PRL #237 AOPC 12 and LOC 32).
2109-D34	2109-M09	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PRL 237) Locations of Concern, September 2021**: Team consensus was reached to proceed with site assessment activities under SWMU #003, Ransom Road Landfill.
2109-D35	2109-M10	**Mobile Launch Platform Rehabilitation (MLP) Sites and VAB Area Hot Spot #3 (SWMU 056), September 2021:** The Team reached consensus to proceed with an IM Work Plan to implement ISCR to treat key CVOCs (TCE, cDCE, and VC) exceeding their respective NADC (TCE greater than 300 ug/L, cDCE greater than 700 ug/L, and VC greater than 100 ug/L).
2109-D36	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus reached to proceed with site assessment activities at AOPC 2 based upon the Phase I CS results. A SWMU name and number will be assigned.

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Decision No.	**Minutes Reference**	**Decision**
2109-D37	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached to proceed with AOPC 3 site assessment activities under SWMU #115, VAB North Area (includes PRL #237 Location of Concern [LOC] 5, AOPC 3, AOPC 4, and AOPC 10).
2109-D38	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached to proceed with site assessment activities for AOPC 4 under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10).
2109-D39	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached for no further action at this AOPC 5.
2109-D40	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached to proceed with AOPC 7 site assessment activities under SWMU #041, Components Refurbishment and Chemical Analysis Facility.
2109-D41	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached to proceed with AOPC 10 site assessment activities under SWMU #115, VAB North Area (includes PRL #237 LOC 5, AOPC 3, AOPC 4, and AOPC 10).
2109-D42	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached to proceed with AOPC 12 site assessment activities under SWMU #014, Base Support Building (includes PRL #237 AOPC 12 and LOC 32).
2109-D43	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** The Team reached consensus for no further action at AOPC14.
2109-D44	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** The Team reached consensus for No Further Action at AOPC 17.
2109-D45	2109-M11	**KSC Center-Wide Per- and Polyfluoroalkyl Substances (PFAS) Investigation, Areas of Potential Concern (AOPC), September 2021:** Team consensus was reached for no further action at AOPC 19.
2109-D46	2109-M12	**Converter Compressor Building (SWMU #089), DPT Update and Proposed Monitoring Wells, September 2021:** The Team reached consensus to install a downgradient monitoring well screened 40-50 ft bls south of MW056 to delineate the low concentration plume (LCP).
2109-D47	2109-M12	**Converter Compressor Building (SWMU #089), DPT Update and Proposed Monitoring Wells, September 2021:** Team consensus was reached for a new side gradient monitoring well co-located with DPT462 (north of MW133) screened from 20 to 30 ft bls.
2109-D48	2109-M12	**Converter Compressor Building (SWMU #089), DPT Update and Proposed Monitoring Wells, September 2021:** The Team reached consensus that monitoring well MW096 is compromised and should be abandoned properly. A well screened 60-70' bls will be installed, to be sampled in December 2021.
2109-D49	2109-M13	**Fluid Servicing Road Area Sites, September 2021:** The Team reached consensus on the 2021-2022 Sampling Plan to include biennial sampling event of 8 annual wells (MW0005, MW0015, MW0019, MW0031, MW0034, MW0035, MW0036, MW0037) and 14 additional biennial wells (MW0006, MW0007, MW0009, MW0010, MW0012, MW0014, MW0020, MW0024, MW0025, MW0026, MW0027, MW0028, MW0029, MW0030) to be sampled in December 2021 for TCE, cDCE, tDCE and VC; collecting depth to water measurements from 37 site-wide monitoring wells; conducting the 5-year plume monitoring DPT event in 2022; and installing potential new wells depending on DPT results. Recommendations from the sampling will be brought back to Team.

Revision 1 Meeting Minutes for January 11, 2022

Attendees:

1. Bruce Moore/FDEP
2. Mike Deliz/NASA
3. Ryan O'Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Natasha Darre/NASA
7. Michelle Moore/NEMCON
8. Mark Speranza/Tetra Tech
9. Chris Hook/Tetra Tech
10. Alex Murphy/Tetra Tech
11. Mark Jonnet/Tetra Tech
12. Jennifer Joyal/AECOM
13. Linnea King Clark/AECOM
14. Matthew Zenker/AECOM
15. Brittany Follet/AECOM
16. Richard Smith/HGL

2201-M01 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Team consensus was reached on January 6, 2022 (via email to all members of the Kennedy Space Center Remediation Team [KSCRT]), that Revision 1 of the meeting minutes and action/decision items for the November 2021 Team meeting would become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public as part of a final report at a later date. The minutes were finalized and sent by email to all parties on January 6, 2022.

Open action items were reviewed by the Team. The following action item was closed out:

Wilson Corners (Solid Waste Management Unit [SWMU] 001) High Concentration Plume (HCP) Site Characterization and Revised Air Sparge (AS) System Layout, September 2021: NASA will send historic groundwater sampling data to the Florida Department of Environmental Protection (FDEP).

This data was provided by the National Aeronautics and Space Administration (NASA) to FDEP on November 9, 2021, during the last KSCRT meeting **(Closed 2109-A01).**

General Services Administration Reclamation Yard (GSRY) SWMU 010, May/June Groundwater Monitoring Results September 2021: NASA requested the pre-Interim Measure Underground Injection Control (UIC) sample results be added to the applicable figure and

2201-M04 Jennifer Joyal/AECOM

Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022

Goal: The purpose of the ADP is to summarize Phase III site assessment activities and results.

Discussion:

The Center-Wide Phase I Solid Waste Management Unit (SWMU) Assessment of per- and polyfluoroalkyl substances (PFAS) was completed in 2018-2019. At that time, 33 Locations of Concern (LOCs) were identified and Confirmatory Sampling (CS) of groundwater (GW) and surface water (SW) only were completed. KSC was divided into three different regions for the purpose of future discussions (northern, central, and southern).

Results presented from the Phase I investigation led to a recommendation of No Further Action (NFA) for one LOC, and CS activities for the remaining 32 LOCs. NFA was recommended for LOC 15, the Remote Launch Vehicle Area.

Center-wide Phase II SWMU Assessment and CS of PFAS was completed in 2020-2021 with the continued assessment of 30 LOCs (assessment of the other two LOCs is continuing under another project). Phase II addressed data gaps, and focused on identifying other PFAS sources. Surface water and sediment sampling were conducted within watersheds spread throughout KSC; direct push technology (DPT) GW and soil sampling were conducted within selected LOCs; and additional DPT sampling was completed in areas to the east and south to determine if a PFAS contamination plume is present near the KSC secure boundary. These data were used to identify Areas of Potential Concern (AOPCs), LOCs where NFA was warranted, LOCs where additional CS was warranted, and LOCs where proceeding to Site Assessment (SA) was warranted. Data collected during PRedictive Integrated Stratigraphic Modeling (PRISM™) were used to make additional observations. Results were presented in the Center-Wide PFAS PRL #237 Phase II Solid Waste Management Unit Assessment and Confirmatory Sampling Report Summary presented to the KSC Remediation Team (KSCRT) in September 2021 with additional CS recommended for selected LOCs and AOPCs.

Three LOCs and four AOPCs were approved for No Further Action following the Phase I/Phase II Assessment and CS. They are LOC #15 (Remote Launch Vehicle Area), LOC #22 Former Sewage Treatment Plant (STP) #3 and Percolation Pond, LOC #26 Former STP #14 and Abandoned Treatment Pond, AOPC #5 Thermal Protection Facility, AOPC #14: Security Training Center, AOPC #17: Merritt Island National Wildlife Refuge Visitors Information Center Pump House, and AOPC #19 Contractor Support Building #6. Note that LOC 16 - Hydrocarbon Burn Facility (HBF) and LOC 18 - Schwartz Road Landfill (SRLF) are being evaluated by Tetra Tech and not covered in this ADP.

Fifteen LOCs and six AOPCs proceeded to site assessment following the Phase I/ Phase II SWMU Assessment and CS. Phase III CS included sampling at 14 LOCs, 11 AOPCs, and 14 monitoring wells outside AOPCs and LOCs.

For those locations for which no further action (NFA) is recommended in this presentation, a Site Rehabilitation Completion Order (SRCO) will not be requested. The intent of an NFA recommendation is that the Team just will not be pursuing any additional assessment at that particular location.

LOC #13 is the location of the Former Sewage Treatment Plant #18. CS activities included four groundwater samples (different intervals) collected from one DPT location in the apparent location of the former facility. Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) concentrations were below Florida's provisional Groundwater Cleanup Target Levels (pGCTLs) in all sampled intervals. In Phase I/II, a soil sample from that location had no detections of PFAS.

FDEP inquired if there was any surface water nearby this location. AECOM confirmed no surface water was nearby. A ditch runs along Beach Road, but NASA confirmed this ditch is not co-located with the area that we are concerned with.

The Team reached consensus for No Further Action (NFA) at LOC #13, Former Sewage Treatment Plant #18 **(2201-D02).**

AOPC #1 is the location of the Former Shuttle Landing Facility (SLF) Fire and Rescue Vehicle Building. Activities included 16 groundwater samples collected at four DPT locations. Concentrations were above pGCTLs in all DPT locations, with the maximum concentrations in PFAS-DPT0217 at 8 ft bls. Six soil samples were collected from three soil boring locations. PFOA

concentrations were below provisional Soil Cleanup Target Levels (pSCTLs) in all samples and depths. PFOS concentration were above pSCTLs in all samples and depths, with the maximum PFOS concentration at SB0100 (0-0.5 ft bls). Two surface water samples were collected from this area, as requested by FDEP in the September 2021 KSCRT meeting. PFOA concentrations were below Florida's surface water screening levels (SWSLs) and PFOS concentrations were above SWSLs in both locations.

FDEP inquired if this location is proximal to the Space Florida activities that are taking place for the satellite manufacturing location. NASA stated this is north of that location currently, by approximately 1.5 miles. Construction is approximately 6,500 ft away. The reality is that some construction could migrate in this direction. In addition, the utility corridor work is extending up to Sharkey Road. However, it is far east of this location.

NASA has shared PFAS sampling results and DPT concentrations with Space Florida so they can work together on the dewatering and make sure we are on the same page. Their contractor also has experience with this contaminant and are trying to avoid dewatering if at all possible. We will discuss further in the future once they come up with their construction plan.

The Team reached consensus that AOPC #1 -Former SLF Fire and Rescue Vehicle Building (J5-1299) will move to SWMU Assessment **(2201-D03).**

AOPC #2 is the location of Contractor Support Building #7. Eight groundwater samples were collected from two DPT locations. Concentrations were below pGCTLs in all intervals for DPT0222. Maximum concentrations in PFAS-DPT0221 at 23 ft bls were PFOA+PFOS 512.2 ng/L. Four soil samples were collected from two soil boring locations. PFOA and PFOS concentrations were below pSCTLs in both depth intervals in both locations. Two surface water samples were collected with PFOS concentrations above SWSL in both locations.

The Team reached consensus that AOPC #2 -Contractor Support Building #7 will move to SWMU Assessment activities **(2201-D04).**

LOC #5 is the location of the Former STP #4 and Sludge Disposal Area. Concentrations at this location in groundwater and surface water samples were above pGCTLs and SWSLs. The site will be advancing to SWMU Assessment under SWMU #115 (Northern VAB), which is currently underway.

FDEP inquired where we are with the work plan for SWMU #115?

NASA inquired if it is FDEP's expectation to get formal work plans for these locations? NASA wanted to get these investigations moving, but can retroactively submit work plans if needed. The intent is to bringing data to FDEP incrementally. The most important thing was to start and work is following a 62-780 approach.

FDEP stated by going this route, you run the risk of the State arriving at an endpoint different than what you assume it is now. As an example, what if the GCTL ultimately was 30 ng/L instead of 70 ng/L? NASA responded that they are just trying to get a big picture view using a 70 ng/L line and see what kind of regulations come along. Either the data will be good or will require fine-tuning. NASA recognizes that this will not likely be a final delineation. NASA believes this is what the agency will do as a whole. Proximity to surface water bodies is an additional consideration. FDEP welcomes the information gathering, but cautioned that the regulatory pathway hasn't been established.

AOPC #3 is the location of the OPF 1 and 2. Sixteen groundwater samples were collected from four DPT locations. Concentrations were below pGCTLs in three locations. Maximum concentration of PFOA+PFOS at PFAS-DPT0258 was 261.8 ng/L. Eight soil samples were collected from four soil borings with no$ perfluorooctanesulfonamide (PFOSA) detected in the samples. (PFOSA was a key ingredient in Scotchguard™, which is known to have been used at the OPFs in the past.) PFOA and PFOS concentrations below the pSCTLS for all locations and depth intervals. AOPC #3 will be assessed under SWMU #115 (northern VAB), which is currently underway. Concrete samples will be collected during SWMU Assessment activities.

AOPC #10 is the location of the Crawlerway Residuals Disposal Area. Sixteen groundwater samples were collected from four DPT locations. Concentration were below pGCTLs in three locations, but the pGCTL was exceeded at PFAS-DPT0229 (8 ft bls) with the result of PFOA+PFOS of 100.2 ng/L. No PFOSA was detected in select samples. AOPC #10 will be assessed under SWMU #115 (northern VAB), which is currently underway.

LOC #1 is the location of the Flight Crew Rescue Training Area (FCRTA). Eight groundwater samples were collected from two DPT locations; both locations contained exceedances of pGCTLs. Four soil samples were collected from two soil boring locations. PFOA

and PFOS concentrations were below pSCTLs in both depth intervals at both locations. The Team reached consensus that LOC #1 (FCRTA) will move to SWMU Assessment activities **(2201-D05).**

FDEP asked about the additional surface water samples that were to be collected at this location. NASA stated the samples were obtained with a boat, and regional surface water information will be presented to FDEP. They have also since learned when the fire trucks were parked out here their trucks sometimes leaked and they will sample at those locations. Mike Deliz will send to Anne Chrest where the fire trucks parked north of LOC #1 for launches.

LOC #8 is the location of the Former STP #7 site. Three groundwater samples were collected from one DPT location. PFOS and PFOA concentrations were below pGCTLs in each depth interval for this location. Two soil samples were collected from one soil boring location (SB0113). PFOA and PFOS concentrations were below pSCTLs in both depth intervals.

The Team reached consensus that LOC #8 – Former STP #7, will move to SWMU Assessment activities **(2201-D06).**

LOC #10 is the location of the Former STP #9 and Abandoned Treatment Pond. Four groundwater samples were collected from one DPT location. Concentrations were below pGCTLs in all depth intervals. Eight soil samples were collected from four soil boring locations. Concentrations were below pSCTLs in both depth intervals.

The Team reached consensus for No Further Action at LOC #10 – Former STP #9 and Abandoned Treatment Pond. PFAS at the Components Cleaning Facility (CCF) will be further investigated under existing SWMU #030 (CCF) **(2201-D07).**

LOC #11 is the location of Former STP #12 and percolation pond. Eight groundwater samples were collected from two DPT locations. PFOS and PFOA concentrations were below pGCTLs in all depth intervals for both locations. The Team reached consensus for No Further Action at LOC #11 – Former STP #2 and percolation pond **(2201-D08).**

LOC #6 is the location of the Former STP #5 and percolation pond at Launch Complex (LC) 39A. Seven groundwater samples were collected from two DPT locations. PFOS and PFOA concentrations exceeded the pGCTL in one location at DPT 0257 (PFOA + PFOS = 123.4 ng/l). Four soil samples were also collected from two soil

boring locations; concentrations were below pSCTLs in both intervals for PFOA and PFOS. A surface water sample was collected from within the pond at the request of FDEP (September 2021 KSCRT meeting). PFOA concentration was below SWSL and PFOS results were 44.9 ng/L. The Team reached consensus for LOC #6 – Former STP #5 and percolation pond to be further investigated under existing SWMU #008 (LC 39A) **(2201-D09).**

LOC #7 is the location of the Former STP #6 and percolation pond at LC 39B. NFA had previously been requested for this LOC on the basis of groundwater and soil results, but FDEP recommended surface water samples. Surface water samples were collected from within the pond in Phase III. PFOA concentration was below SWSL and PFOS results were 20.5 ng/l.

The Team reached consensus for No Further Action at LOC #7 – Former STP #6 and percolation pond. PFAS is being further investigated under existing SWMU #009 (LC 39B) **(2201-D10).**

AOPC #15 is the location of the Crawlerway Residuals Disposal Area Saturn Causeway Site. Eight groundwater samples were collected from two DPT locations. PFOA and PFOS concentrations were below pGCTLs for all depth intervals in both samples. FDEP requested clarification if only groundwater was sampled at this location. AECOM confirmed only groundwater was sampled at this AOPC; there had been no earlier sampling during Phases I and II.

The Team reached consensus for No Further Action at AOPC #15 – Crawlerway Residuals Disposal Area Saturn Causeway **(2201-D11).**

AOPC #6 is the location of the Logistics Building. Twelve groundwater samples were collected from three DPT locations. PFOA and PFOS concentrations were below pGCTLs at two of the three locations. Maximum concentration of PFOA + PFOS (161.8 ng/l) was identified at PFAS-DPT0248 at 8 ft bls.

The Team reached consensus that AOPC #6 – Logistics Facility will move to SWMU Assessment activities **(2201-D12).**

AOPC #9 is the location of Weather Site 509, where fire truck pumps were reportedly tested. Three groundwater samples were collected from one DPT location and identified exceedances at two intervals. Two soil samples were collected from one soil boring location. Concentrations at the shallow interval were below pSCTLs. PFOA did not exceed pSCTL in the deeper interval. The PFOS result was 0.0076 mg/kg at the deeper interval, which is above the

leachability pSCTL. One surface water sample was collected with the results of PFOA below SWSL and PFOS at 31.9 ng/l.

The Team reached consensus that AOPC #9 – Weather Site #509 will move to SWMU Assessment activities **(2201-D13).**

DPT locations outside of LOC and AOPC boundaries consisted of 20 groundwater samples from five DPT locations. These samples were intended to help identify potential sources for prior pGCTL exceedances with no clear source. Maximum PFOS concentrations were identified in PFAS-DPT0252 (east of the VAB) and PFAS-DPT0255 (east of the Flight Crew Rescue Training Area).

The Team reached consensus that DPT 0252 and DPT0255 will be incorporated into SWMU boundaries for nearby sites and will advance to SWMU Assessment activities **(2201-D14).**

LOC #28 is the location of the Central Instrumentation Facility former residuals application area. Four groundwater samples were collected from one DPT location. Maximum concentrations at 8 ft bls were PFOA + PFOS at 165.6 ng/l. One surface water sample was collected north of this LOC. PFOA concentrations were below SWSL, and PFOS result was 108 ng/l.

The Team reached consensus that LOC #28 – Central Instrumentation Facility Former Residuals Application Area will move to SWMU Assessment activities **(2201-D15).**

LOC #29 is the location of the Operations and Checkout Former Residuals Application Area. Four groundwater samples were collected from one DPT location. PFOA and PFOS were below pGCTLs in all sampled intervals.

The Team reached consensus for No Further Action at LOC #29 – O&C Former Residuals Application Area **(2201-D16).**

AOPC #8 is the location of the Central Supply Warehouse. Four groundwater samples were collected from one DPT location. PFOA and PFOS were below pGCTLs in all sampled intervals. Two soil samples were collected from one soil boring location. Concentrations were below pSCTLs in both intervals.

NASA stated that the red boundary (PFAS LOC) in the figure on slide 90 is for the fire station, and not for Central Supply. We can get you the figures we are investigating. We will put that together and get it to you **(2201-A01).**

The Team reached consensus for No Further Action at AOPC #8 – Central Supply Warehouse **(2201-D17).**

AOPC #12 is the location of the Vehicle Wash Station at the Former General Services Administration (GSA) Automotive Facility. Four groundwater samples were collected from one DPT location. Maximum concentrations of PFOA + PFOS are located at the 43 ft bls interval at 5,327 ng/l. Site assessment activities at this location are already underway under SWMU #014 (Base Support Building), which encompasses this area.

AOPC #18 is the location of the Dewatering at Mobil Service Station site. Four groundwater samples were collected from one DPT location. PFOA and PFOS were below pGCTLs for all depth intervals. Two soil samples were collected from SB0125. Concentrations were below pSCTLs.

FDEP inquired if any existing monitoring wells around this location were sampled as part of this investigation. NASA stated they were only looking at the dewatering area, and it was a concern due to the proximity to the fire station. FDEP approval for dewatering as long as we sampled afterward to confirm no migration. There are no monitoring wells in the vicinity of where the discharge took place. Monitoring well MW0012 is the closest and located underneath the service station canopy. Total PFAS at this monitoring well at last sample was 19 ng/L. Total PFAS at the monitoring well located at the intersection of the two roads close by was 16.2 ng/L. Another monitoring well MW0029 located across the road has a result of 16.5 ng/L.

The Team reached consensus for No Further Action at AOPC #18 – Dewatering at Mobil Service Station **(2201-D18).**

LOC #27 is the location of the STP #16 and Abandoned Treatment Pond on the west side of the Indian River Bridge. Four groundwater samples were collected from one DPT location. PFOA and PFOS were below pGCTLs for all depth intervals. Eight soil samples were collected from four soil borings. Concentrations were below pSCTLs in all samples and depth intervals.

FDEP inquired how the Team is incorporating the exceedance of the SWSL in a Phase 1?ii surface water sample from this site? NASA responded that they are noting the exceedance and waiting as the State develops additional guidance on PFAS in surface water. The surface water result seems unlikely to be related to the former STP based on the soil and groundwater results.

The Team reached consensus for No Further Action at LOC #27 – STP #16 and Abandoned Treatment Pond **(2201-D19).**

LOC #31 is the location of the Ransom Road Sandblast Yard (RRSY), which had a small, reported spill of aqueous film-forming foam in 2008. Twelve groundwater samples were collected from three DPT locations. PFOA and PFOS were below pGCTLs for all locations and depth intervals. Six soil samples were collected from three boring locations. Concentrations were below pSCTLs in all samples and depth intervals. Surface water samples were collected in four locations around this LOC. PFOA concentrations were below SWSL in all surface water samples collected. Maximum PFOS concentration above the SWSL at PFAS-SW0136 with a concentration of 76.6 ng/l. That location is at the southwest side of the GSA Reclamation Yard (SWMU #10), which is immediately west of the RRSY. Three sediment samples were collected and co-located with the surface water samples taken. Maximum PFOA and PFOS concentrations were located in PFAS-SD0088.

FDEP inquired if that surface water exceedance falls within SWMU #10 boundary. NASA stated they have to update the SWMU boundary to the south to cover this area.

The Team reached consensus for No Further Action at LOC #31 – RRSY. PFAS at GSA Reclamation Yard (GSRY) to be further investigated under existing SWMU #010 (GSRY) **(2201-D20).**

LOC #26 is the location of the Former STP #14 and Abandoned Treatment Pond. While NFA had previously been approved, surface water samples were collected from within the pond as requested by FDEP at the September 2021 KSCRT meeting. PFOA concentrations were below SWSL; PFOS concentrations were 23.2 ng/l.

The Team reached consensus for No Further Action at LOC #26 – Former STP #14 and Abandoned Treatment Pond. PFAS at GSA Reclamation Yard (GSRY) to be further investigated under existing SWMU #010 (GSRY) **(2201-D21).**

LOC #21 is the location of the Former STP #2 and Effluent Disposal Area in the far southwest of the Industrial Area. One surface water sample was collected from this area. PFOA concentrations were below SWSL; PFOS concentrations were 13 ng/l. One sediment sample was collected from this area as well. PFOA and PFOS concentrations were less than 0.00032 mg/kg.

FDEP inquired what will be done with the surface water sample result? NASA doesn't believe the STP is associated with the

exceedance. The location will remain as part of the center-wide surface water investigation. FDEP asked if there are any plans for resampling going forward for orphan sites? NASA stated they will keep this holistic view of the center and these "orphan" locations. When the State releases surface water CTLs the path forward will be clearer.

The Team reached consensus for No Further Action at LOC #21 – Former STP #2 and Effluent Disposal Area **(2201-D22).**

LOC #25 is the location of the Former STP #13 and Effluent Disposal Area also in the far southwest of the Industrial Area. Eight groundwater samples were collected from two DPT locations. Concentrations within all intervals at one location were below pGCTLs. Maximum concentrations within PFAS-DPT0240 at 23 ft bls were PFOA + PFOS at 76.8 ng/l. Four soil samples were collected from two soil boring locations. Concentrations were below pSCTLs in all samples and depth intervals. One surface water sample was collected at LOC #25. Results were below the SWSLs.

The Team reached consensus that LOC #25 – Former STP #13 and Effluent Disposal Area will move to SWMU Assessment activities **(2201-D23).**

AOPC #16 is the location of KARS Park I. Three surface water samples were collected. PFOA concentrations were below SWSL; maximum PFOS concentrations were located in SW0108 at 46.6 ng/l.

FDEP inquired what is the interpretation of the results of SW108? SW108 was collected northeast of the ballfields from an east-west ditch. NASA noted to the west there is a subdivision, and also the river can come up into this area when it is high because it is tidally connected. Sometimes this ditch is dry. FDEP inquired if the other locations sampled that came in lower were also tidally connected to the river. NASA confirmed they were; SW106 and SW107 were collected from the east-west ditch that is north of Hall Road. All the samples were collected that same day. There is no industrial activity at this site, the most intense use is camping and launching boats. FDEP stated that it would make sense to go back and collect another sample. NASA agreed they could take another sample at SW108 and samples to the east and to the west. That may help identify the source of the PFAS. NASA will update the summary table for KARS Park I and email back out to the Team **(2201-A02).**

The Team reached consensus for additional SWMU Assessment at AOPC #16 – KARS Park I **(2201-D24).**

AOPC #13 is the location of the Q6 Radar Station. Two monitoring wells were sampled at Q6 Radar Station following detection of PFAS in an investigative derived waste (IDW) sample. The results for the shallower well (MW0003) were below the pGCTLs. PFOA + PFOS at MW0001 was 296 ng/l. One surface water was collected from this area. PFOA and PFOS concentrations were below SWSLs. FDEP inquired about other investigations at the site. NASA owes FDEP an update on Q6 Radar Station (SWMU #112), so they will put together an ADP to review the RFI we completed **(2201-A03).**

The Team reached consensus that additional SWMU Assessment activities for AOPC #13 – Q6 Radar Station will be conducted to determine the source **(2201-D25).**

Monitoring wells SAEE-MW0002 (west of the Base Support Building) and A3RB-MW003 (near the South Repeater Building) were sampled. This was done because of prior results indicating the potential for PFAS impacts. Results were PFOA + PFOS at 1,122 ng/l and 1,763 ng/l at the two locations. Four groundwater samples were also taken from one DPT location outside of any PFAS LOC or AOPC; in this case at the South Repeater Building. The maximums concentrations of PFOA were below pGCTLs. PFOS results were PFOS was 252 ng/l.

FDEP inquired whether the PFAS is suspected to be related to the electrical equipment? NASA replied the source for SAEE-MW0002 is strongly suspected to be the Base Support Building, where there are high groundwater results for PFAS. The South Repeater Building is not co-located with the SAEE location. Confirmatory sampling was conducted under the site name of Area 3 Repeater Building (A3RB) and a soil interim measure was completed. After discovering PFAS in IDW and then groundwater at that site, the Fire Chief was contacted. He reported that during a wildfire, AFFF was applied here to protect the asset. The site closure request that was pending under the site name of A3RB is being withdrawn because of the discovery of PFAS. A PFAS site assessment is a high priority at the South Repeater Building/A3RB because it is near KSC's boundary.

FDEP asked how this information gets put into the conceptual site model. AECOM stated it has not been incorporated yet.

The Team reached consensus that the PFAS assessment at the South Repeater Building (formerly known as Area 3 Repeater Building) will be investigated under SWMU #122 South Repeater Building **(2201-D26).**

NASA noted that because there are so many PFAS sites, further assessment is being prioritized. We will first fund the highest concentrations (sites with groundwater results currently over 1,000 ng/L are under contract), and the others will be addressed as we have funding available. NASA believes there are 39 sites that require additional assessments.

Results: Decision Items 2201-D02 through D26
Action Items 2201-A01 through A03

2201-M05 Mark Jonnet/ Tetra Tech

<u>Launch Complex 39A Operations Support Building Area (AOSB) SWMU #111 Construction Completion, January 2022</u>

Goal: The purpose is to summarize site history along with an overview of the Interim Measure Work Plan, air sparge system installation activities timeline, lessons learned, and path forward.

Discussion:
The ADP provided a brief summary of AOSB's history as well as the plume delineation (per KSCRT Decision 1806-D05), the Interim Measure Work Plan (IMWP) that was approved by FDEP May 2021, and activities associated with the air sparge system installation, startup, and first quarter operations and monitoring. The area of groundwater contaminated by trichloroethene (TCE), cis-1,2-dichloroethene (cDCE) and vinyl chloride (VC) above Florida's groundwater cleanup target levels (GCTLs) is the target of the IM. Cleanup to GCTLs is the objective of the IM in order to protect the adjacent Outstanding Florida Water (OFW).

Field activities associated with installation began February 9, 2021 and concluded June 2, 2021. System startup began June 8, 2021 and full-scale operations began July 12, 2021. Baseline sampling was conducted in May 2021 and first quarter sampling was conducted in October 2021.

January 2022 Decision Items Rev 1		Decision
Decision No.	Minutes Reference	
2201-D01	2201-M03	**Hypergol Maintenance Facility North(HMFN) (SWMU #090) Performance Monitoring Report, January 2022:** The Team reached consensus to continue operation, maintenance and monitoring (OM&M) of the AS IM, which includes: maintenance and operation of the AS system; discontinuation of the AS system operation at Zone 1 comprising 17 ASWs screened from 25-27 feet bls in the western portion of the AS network; removal of monitoring wells MW0035 and MW0036 from performance sampling (based on two consecutive rounds of sampling results below GCTLs); reduction in the performance sampling schedule frequency of MW0046 and MW0047 to annually (based on the two consecutive rounds of sampling results below GCTLs), continuing this annual sampling to monitor the observed groundwater flow direction reversal away from the borrow lake toward these two wells; sampling remaining wells semi-annually in accordance with October 2017 Interim Measure Work Plan (IMWP); and the completion of one annual round of ambient air sampling. Monitoring wells and their respective groundwater monitoring schedule for Year 2 is provided on Slide 63 of the ADP. These include monitoring wells MW0002, MW0004, MW0008, MW0009, MW0011, MW0016, MW0024, MW0027, MW0028, MW0029, MW0030, MW0031, MW0032, MW0033, MW0034, MW0037, MW0038, MW0039, MW0040, MW0041, MW0042, MW0043, MW0044, MW0045, MW0046, and MW0047.
2201-D02	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action (NFA) at LOC #13, Former Sewage Treatment Plant #18.
2201-D03	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that AOPC #1 -Former SLF Fire and Rescue Vehicle Building (J5-1299) will move to SWMU Assessment.
2201-D04	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that AOPC #2 -Contractor Support Building #7 will move to SWMU Assessment activities.
2201-D05	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that LOC #1 (FCRTA) will move to SWMU Assessment activities.
2201-D06	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that LOC #8 – Former STP #7, will move to SWMU Assessment activities.
2201-D07	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #10 – Former STP #9 and Abandoned Treatment Pond. PFAS at the Components Cleaning Facility (CCF) will be further investigated under existing SWMU #030 (CCF).
2201-D08	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #11 – Former STP #2 and percolation pond.

January 2022 Decision Items Rev 1		Decision
Decision No.	Minutes Reference	
2201-D09	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for LOC #6 – Former STP #5 and percolation pond to be further investigated under existing SWMU #008 (LC 39A).
2201-D10	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #7 – Former STP #6 and percolation pond. PFAS is being further investigated under existing SWMU #009 (LC 39B).
2201-D11	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at AOPC #15 – Crawlerway Residuals Disposal Area Saturn Causeway.
2201-D12	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that AOPC #6 – Logistics Facility will move to SWMU Assessment activities.
2201-D13	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that AOPC #9 – Weather Site #509 will move to SWMU Assessment activities.
2201-D14	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that DPT 0252 and DPT0255 will be incorporated into SWMU boundaries for nearby sites and will advance to SWMU Assessment activities.
2201-D15	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that LOC #28 – Central Instrumentation Facility Former Residuals Application Area will move to SWMU Assessment activities.
2201-D16	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #29 – O&C Former Residuals Application Area.
2201-D17	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at AOPC #8 – Central Supply Warehouse.
2201-D18	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at AOPC #18 – Dewatering at Mobil Service Station.
2201-D19	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #27 – STP #16 and Abandoned Treatment Pond.

January 2022 Decision Items Rev 1		Decision
Decision No.	Minutes Reference	
2201-D20	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #31 – RRSY. PFAS at GSA Reclamation Yard (GSRY) to be further investigated under existing SWMU #010 (GSRY).
2201-D21	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #26 – Former STP #14 and Abandoned Treatment Pond. PFAS at GSA Reclamation Yard (GSRY) to be further investigated under existing SWMU #010
2201-D22	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for No Further Action at LOC #21 – Former STP #2 and Effluent Disposal Area.
2201-D23	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that LOC #25 – Former STP #13 and Effluent Disposal Area will move to SWMU Assessment activities.
2201-D24	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus for additional SWMU Assessment at AOPC #16 – KARS Park I.
2201-D25	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that additional SWMU Assessment activities for AOPC #13 – Q6 Radar Station will be conducted to determine the source.
2201-D26	2201-M04	**Center-Wide Per- and Polyfluoroalkyl Substances (PRL #237) Phase III Solid Waste Management Unit Site Assessment and Confirmatory Sampling Report Summary, January 2022:** The Team reached consensus that the PFAS assessment at the South Repeater Building (formerly known as Area 3 Repeater Building) will be investigated under SWMU #122 South Repeater Building.

Revision 1 Meeting Minutes for October 5th and 6th, 2022

Attendees:

1. Bruce Moore/FDEP
2. Mike Deliz/NASA
3. Ryan O'Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Natasha Darre/NASA
7. Chris Adkison/NASA
8. Tim Appleman/NASA
9. Michelle Moore/NEMCON
10. Mark Jonnet/Tetra Tech
11. Alex Murphy/Tetra Tech
12. Chris Pike/ Tetra Tech
13. Mark Speranza/Tetra Tech
14. Andrew Walters/Tetra Tech
15. Jennifer Gootee/AECOM
16. Linnea King Clark/AECOM
17. Richard Smith/HGL
18. Howard Fowler/HGL
19. James (Jim) Montague/HGL

2210-M01 Bruce Moore/FDEP

Program Update

Discussion: The #1 issue at the Florida Department of Environmental Protection (FDEP) is the staffing situation. There are fourteen positions in the federal facilities program currently available. Some hires are imminent. Environmental Administrator Laura Barrett resigned. The goal is to fill the Environmental Administrator position by the end of October. Billy Hessman joined in May as a professional geologist (PG) II position. A variety of positions are open and need to be filled. If there is an urgent matter, please call Bruce directly and he can talk in the moment about it. The routine review process may take a while.

NASA inquired if funding was the issue or just not enough people were applying. FDEP stated it has been hard to attract and retain staff. FDEP is still using the three contractors for outside review and will lean heavily on them in the short term.

to groundwater has been observed through the comparison of the ratios of PFAS analytes.

2023 Investigation Focus

The 2023 SLF PFAS investigation will treat KARS Park II and the Base Support Building a single study area (Western Industrial Area). The primary focus of the 2023 investigation will be on groundwater/surface water interactions. 2023 activities will include DPT groundwater sampling, monitoring well installation and sampling, staff gauge installations and surface water sampling. Water level measurements, staff gauge readings, surface water and groundwater samples will be collected on a quarterly basis from select locations.

FDEP inquired if we are sampling the water body north of the borrow pit? HGL responded that there is not a sample there. FDEP inquired if the water body is intermittent?

HGL stated that there is a surface water body. It was a difficult area to reach. NASA stated that clearing is an option if necessary. NASA took an action item to add a surface water sample there **(2210-A10).**

Regarding the overall Industrial Area, HGL did see a hydraulic divide between the Base Support Building and the Fire Station1/Sewage Treatment Plant 1 area. NASA added that there is commingling and we will likely have one Industrial Area program eventually.

Results: Action Items 2210-A08, A09, A10

2210-M11 Howard Fowler/HGL

<u>Fire Station #2, Former Sewage Treatment Plant #17, and Towway Area (SWMU 114)</u>

Goal:

The objective of the advance data package (ADP) is to summarize the site history and per- and polyfluoroalkyl substances (PFAS) Site Assessment activities and results for the Fire Station #2, Former Sewage Treatment Plant #17, and Towway Area. These locations are in the Shuttle Landing Facility (SLF) area.

Discussion:

Space Florida is building a road on the east side of the SLF which required dewatering. The dewatering plan was coordinated with FDEP. FDEP inquired if dewatering from the construction operations encroach on the SWMU boundary?

NASA called attention to the site layout on Slide 4. North of the apron area is where the dewatering occurred previously, and the effluent discharge locations are shown. Further north, at Sharkey Road, there is a PFAS release location where construction is planned. NASA will provide a dewatering plan for that area to FDEP in the near future. The dewatering of PFAS-containing groundwater is not affecting any area that FDEP is not already aware of.

NASA added there were sample locations with PFAS results above screening levels further to the east and west. This group of sites may eventually become one site under the SLF.

Site History Overview

Solid Waste Management Unit (SWMU) 114 is located at the southern end of the SLF near Banana Creek. SWMU 114 includes Fire Station #2 (Center-wide PFAS Investigation Location of Concern [LOC] 2), Former Sewage Treatment Plant (STP) #17 (LOC 12), the southern portion of the SLF Runway (LOC 14), Remote Launch Vehicle (RLV) Hangar (LOC 15) and Towway area.

Fire Station #2 was constructed in 2008 and has been active since. As of 2019, the building housed fire station personnel and equipment, including aqueous film-forming foam (AFFF). AFFF was reportedly discharged into the stormwater pond west of Fire Station #2 during annual equipment testing.

STP #17 was built around 1975 and demolished around 1998. STP #17 consisted of a small package treatment plant and percolation pond used for effluent disposal.

The SLF Runway consists of a 15,000-foot-long concrete runway. The runway was built in 1975 and serves as the primary end-of-mission landing site for the space shuttle orbiter. It is a fully functional airport. Potential uses of AFFF along the SLF Runway may have occurred during fire response efforts. On February 6, 2020, a spill of 5 to 8

gallons of AFFF was reported on the SLF apron area tarmac during a fire training exercise. The spill was reportedly rinsed off the tarmac with water and impacted two areas southeast and northwest of the tarmac.

The RLV Hangar-Flight Vehicle Facility was built in 2000 and is a 52,000 square foot (ft^2) active facility that currently houses Starfighters, Inc. aircraft. Anecdotal information was obtained that indicated a foam suppression system inside the hangar discharged; however, information obtained from the Landing Aids Control Building Confirmatory Sampling Report indicated that the fire suppression system at the RLV Hangar is water-based.

Groundwater and surface water sampling during the Center-wide PFAS investigation indicated widespread PFAS impacts to groundwater and surface water at SWMU 114 with the greatest concentrations detected behind Fire Station #2.

2022 Investigation Objectives

Investigation objectives were modified as PFAS screening levels evolved. The initial objectives of the 2022 investigation were to delineate perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) laterally and vertically to the State of Florida provisional groundwater cleanup level (pGCTL) (70 ng/L separately or combined) and to develop a general understanding of the surface water and groundwater interactions at this area of KSC. The objective of the groundwater investigation was changed to delineating PFAS compounds in groundwater to the Surface Water Screening Level (SWSL) of 10 ng/L for PFOS. When EPA released Regional Screening Levels (RSLs) in May 2022, the objective of the groundwater investigation was changed again to delineating to the RSLs of 4 ng/L for PFOS; 6 ng/L for PFOA, perfluorononanoic acid (PFNA), and hexafluoropropylene oxide dimer acid (HFPF-DA, trade name GenX); 40 ng/L for perfluorohexanesulfonic acid (PFHxS); and 600 ng/L for perfluorobutanesulfonic acid (PFBS).

2022 Site Assessment Activities

The 2022 Site Assessment Activities included: advancing 2 lithologic borings to a depth of 60 feet using a rotosonic drill rig; collecting 114 DPT groundwater samples from 27 locations at screen centerpoint

depths of 5', 15', 25', and 35', with 45' samples also collected at 6 locations; collecting 15 surface water samples from 15 locations using a dipper sampler; collecting 4 concrete samples and 1 asphalt sample from known release locations with a hammer and chisel (0 to 2 inches); installing 18 shallow water table monitoring wells and 19 intermediate wells screened 25'-35' using a direct push technology (DPT) drill rig; installing 10 staff gauges; and collecting 1 round of water level measurements.

Twenty-five equipment and field blanks were collected. All results were below detection limits. Thirteen field duplicate samples were collected. Two analytes exceeded the relative percent difference (RPD) goal of 30% in the one duplicate synthetic precipitation leaching procedure (SPLP) concrete sample. All analytes met the RPD goal in all of the groundwater and surface water duplicate samples.

Lithologic Borings

Two lithologic borings were advanced to a depth of 60 feet using a rotosonic drill rig. The space between boring locations is 3,300 feet. The lithology of the two borings was highly variable. In general sand and shell was observed from land surface to a depth of 43 to 48 feet. The sand and shell layers were underlain by silt, shell and/or clay to a depth of 60 feet. The silt, shell and/or clay layer may serve as a retarding unit. Soil samples were not collected for laboratory analysis since the borings were placed in locations where deep PFAS impacts were not expected.

Monitoring Well and Staff Gauge Installations

Eighteen shallow monitoring wells (screened to intersect the water table) and 19 intermediate monitoring wells (screened 25'-35') were installed using a DPT drill rig. Ten staff gauges were installed in canals and ponds across the site. Water level measurements were made on August 3, 2022. Groundwater flow is similar between the shallow and intermediate depths. In general, groundwater flows from the northern corner of the site radially towards the west, southwest, south, and southeast. A groundwater divide appears to be present in the central portion of the towway.

Concrete and Asphalt Sampling

Four concrete samples and 1 asphalt sample were collected. PFOS concentrations in SPLP samples exceeded 4 ng/L in all of the samples. A PFOS concentration of 5,340 ng/L was detected in asphalt sample S114-AS0005.

NASA noted this is the only asphalt sample collected on center to date.

DPT Groundwater Sampling

Including center-wide PFAS investigation samples, 124 DPT groundwater samples were collected. Forty-nine exceeded the RSL for PFOS, 38 exceeded the RSL for PFHxS, 26 exceeded the RSL for PFOA and 1 exceeded the RSL for PFNA. The estimated areal extent of groundwater with PFAS concentrations above the RSLs is 704 acres. The estimated areal extent of groundwater with PFAS concentrations 1000 times the RSLs is 11 acres.

It is assumed the groundwater plume extends to Banana Creek to the east and south. To the north the plume remains undelineated. To the west it is generally delineated except for southwest and northwest areas. Vertical delineation still needed at 22 of 63 DPT sample locations. Vertical delineation is needed below 35 feet at 7 locations and below 45 feet at 15 locations. No samples have been collected below 45 feet.

Space Florida sampled their effluent as dewatering to the north of the apron area progressed (referencing slide 25). PFOS was not detected until last week or two of the effort. Effluent was discharged to the east along Astronaut Road, which will be kept in mind in future sampling efforts DPTs along Astronaut Road predate the discharge so there is a baseline. Will have to investigate south of the new road, which is parallel to and east of the SLF runway. The effluent discharge area didn't have connectivity to the SLF ditches NASA and HGL took an action to make a figure to show where all the effluent sample locations are **(2210-A11).**

Surface Water Sampling

Seventeen surface water samples were collected. Sixteen exceeded the FDEP SWSL for PFOS. Nearly all sampled surface water bodies have

exceeded the SWSL (10 ng/L) for PFOS, including at points that connect to Banana Creek.

Summary

In summary, multiple PFAS groundwater plumes have been identified at SWMU 114. As-yet unidentified source areas may exist. In general, groundwater flows from the northern corner of the site radially towards the west, southwest, south, and southeast. The PFAS groundwater plume is assumed to extend to Banana Creek to the south and east. The plume remains undefined to the north and west. The plume has not been delineated vertically and extends to a depth of at least 45 feet. A silt, shell and/or clay layer is present from a depth of 43 to 48 feet to at least 60 feet. This layer may serve as a retarding unit.

Nearly all sampled surface water bodies exceeded the SWSL for PFOS and concentrations exceed the SWSL at points that connect to Banana Creek. The highest surface water PFOS concentrations were detected in the pond behind Fire Station #2. There may be tidal influence on surface water.

All concrete and asphalt SPLP samples exceeded the PFOS RSL.

There are currently large distances between some sampling points. With more data, we will get a better resolution of groundwater and surface water interaction.

2023 Investigation Focus

The 2023 SLF PFAS investigation will include the Morpheus Test Site on the North End of the SLF and the Former SLF Rescue Building Site located on Sharkey Road in the midfield area, combining the entire SLF Area into a single study area. The primarily focus of the 2023 investigation will be on groundwater/surface water interactions. 2023 activities will include soil sampling, DPT groundwater sampling, monitoring well installation and sampling, staff gauge installations and surface water sampling. Water level measurements and staff gauge readings will be made, and surface water and groundwater samples will be collected from select locations on a quarterly basis.

FDEP agrees with the focus on the 2023 focus on hydraulics. NASA observed that there are now quite a few wells in the area and are starting to see the groundwater flow patterns.

Results: Action Item 2209-A11

2210-M12 Alex Murphy/Tetra Tech

SWMU 067 POL and SWMU #088 SW3 ADP

Objective:
Present site history, sampling results, and present path forward for Team consensus for chlorinated volatile organic compounds (CVOCs) at the Paint and Oil Locker (POL) SWMU #067 and Storage Warehouse #3 (SW3) SWMU #088. There is active treatment via air sparging in the POL Southern Treatment Area. The northern portion of POL and all of SW3 are in long-term monitoring (LTM).

Discussion:

FDEP had some initial questions regarding surface water bodies in the general area. There is a canal at the southern end of the POL southern treatment area sparge wells and below the southern edge of the SW3 low concentration plume. Is discharge to surface water a concern? Tetra Tech noted that sampling has been conducted across the canal in the past with clean results on the other side to confirm there is no migration. Further, the air sparge wells serve as a sparge barrier in front of the canal to for the POL plume. Tetra Tech formerly collected surface water samples at two locations in the canal with no detections. NOTE: Following the meeting, surface water results for the southern ditch (POL-SW0001 and POL-SW0002) were reviewed. There were no detections of VOCs in the 2017 semi-annual sampling events, after which surface water sampling was suspended. Prior to 2017, vinyl chloride was detected periodically above its surface water cleanup target level (2.4 ug/L).

The canal is part of the permitted stormwater management system for much of the Industrial Area.

FDEP pointed out that it looks like the POL low concentration plume (LCP) intersects a surface water body north of the canal. NASA

APPENDIX B

SWMU-114 PFAS Site Assessment Report ADP

SWMU-114
Fire Station #2, Former Sewage Treatment Plant #17 and Towway Area
KENNEDY SPACE CENTER, FLORIDA

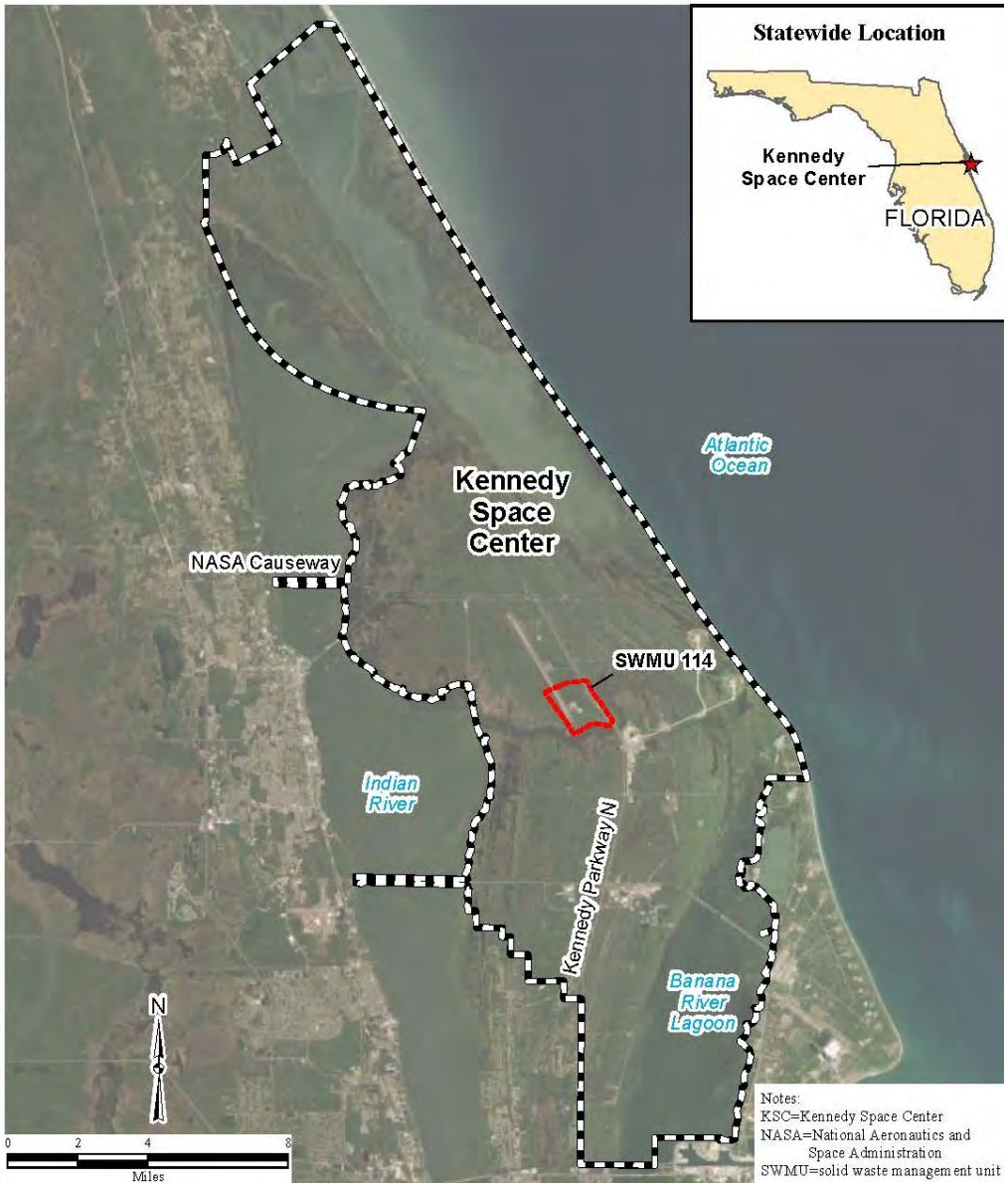
PFAS Site Assessment Report

October, 2022

Presentation Overview

- Summarize Site History
- 2022 Investigation Objectives
- Site Investigation Activities
- Sample Results by Media
- Site Conceptual Model
- Summary

SWMU 114
Site Location



SWMU 114
Site Layout

Site History Overview

- Solid Waste Management Unit (SWMU) 114 is located at the southern end of the Shuttle Landing Facility (SLF) near Banana Creek.
- SWMU 114 includes Fire Station #2 (LOC 2), Former Sewage Treatment Plant (STP) #17 (LOC 12), the southern portion of the Shuttle Landing Facility (SLF) Runway (LOC 14), Remote Launch Vehicle (RLV) Hangar (LOC 15) and Towway area.
- Fire Station #2 was constructed in 2008 and has been active since. As of 2019, the building housed fire station personnel and equipment, including aqueous film forming foam (AFFF).
- STP #17 was built around 1975 and demolished around 1998. STP #17 consisted of a small package treatment plant and percolation pond used for effluent disposal.

Site History Overview

- The SLF Runway (UK-0027) consists of a 15,000-foot long concrete runway. The runway was built in 1975 and serves as the primary end-of-mission landing site for the space shuttle orbiter and as a fully functional airport. Potential uses of AFFF along the SLF Runway may have occurred during fire response efforts.
  - On February 6, 2020, a spill of 5 to 8 gallons of AFFF was reported on the SLF tarmac during a fire training exercise. The spill was reportedly rinsed off the tarmac with water and impacted two areas southeast and northwest of the tarmac. Additionally, AFFF was reportedly discharged into the stormwater pond west of Fire Station #2 during annual equipment testing.

Site History Overview

- The RLV Hangar-Flight Vehicle Facility was built in 2000 and is a 52,000 square foot (ft2) active facility that currently houses Starfighters, Inc aircraft. Anecdotal information was obtained that indicated a foam suppression system inside the hangar discharged; however, information obtained from the LACB Confirmatory Sampling Report [IHA 2012] indicated that the fire suppression system at the RLV Hangar is water-based.
- Groundwater and surface water sampling during the Center-Wide PFAS Assessment indicated widespread Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) impacts to groundwater and surface water at SWMU 114 with the greatest concentrations detected behind Fire Station #2.

2022 Investigation Objectives

Investigation objectives were modified as regulations evolved

- The initial objectives of the 2022 investigation were to delineate Perfluorooctanoic acid (PFOA) and Perfluorooctanesulfonate (PFOS) laterally and vertically to the pGCTL (70 ng/L separately or combined) and to develop a general understanding of the surface water and groundwater interactions at KSC.
- The objective of the groundwater investigation was changed to delineating PFAS compounds in groundwater to the Surface Water Screening Level (SW SL) of 10 ng/L for PFOS)
- The objective of the groundwater investigation was changed to delineating to the EPA Regional Screening Levels (RSLs) of 4 ng/L for PFOS; 6 ng/L for PFOA, Perfluorononanoic acid (PFNA), and Hexafluoropropylene oxide dimer acid (GenX); 40 ng/L for Perfluorohexanesulfonic acid (PFHxS); and 600 ng/L for Perfluorobutanesulfonic acid (PFBS).

2022 Investigation Activities

- Advanced 2 lithologic borings to a depth of 60 feet using a rotosonic drill rig.
- Collected 114 DPT groundwater samples from 27 locations. Samples collected at 5’, 15’, 25’, 35’, 45’ (6 locations).
- Collected 15 surface water samples from 15 locations using a dipper sampler.
- Collected 4 concrete samples and 1 asphalt sample from known release locations. Samples collected with hammer and chisel (0 to 2 inches).
- Installed 18 shallow water table monitoring wells and 19 intermediate wells screened 25’-35’ using a DPT drill rig.
- Installed 10 staff gauges.
- Collected 1 round of water level measurements on August 3, 2022.

2022 Investigation QC Samples

- 25 equipment and field blanks were collected. All results were below detection limits.
- 13 field duplicate samples were collected.
  - 2 analytes exceeded the relative percent difference (RPD) goal of 30% in the one duplicate synthetic precipitation leaching procedure (SPLP) concrete sample.
  - All analytes met the RPD goal in all of the groundwater and surface water duplicate samples.

Lithologic Borings

- Two lithologic borings were advanced to a depth of 60 feet using a rotosonic drill rig.
- The space between boring locations are 3,300 feet.
- The lithology of the two borings was highly variable.
- In general sand and shell was observed from land surface to a depth of 43 to 48 feet.
- The sand and shell was underlain by silt, shell and/or clay to a depth of 60 feet.
- The silt, shell and/or clay layer may serve as a retarding unit.
- Soil samples were not collected for laboratory analysis since the borings were placed in locations where deep PFAS impacts were not expected.

LB-01 Soil Cores

S114-LB01

Depth (feet bls)	Brief Description
0-8'	Primarily Sand and Shell
8'-10'	Silt
10'-48'	Primarily Sand and Shell with Silt
48'-59'	Shell Hash with Clayey Silt
59'-60'	Silt

LB-02 Soil Cores

S114-LB02

Depth (feet bls)	Brief Description
0-1'	Sand
1-10'	Silt and sand
10-43'	Primarily Sand and Shell with Silt
43-60'	Silt and Clay

Lithologic Borings

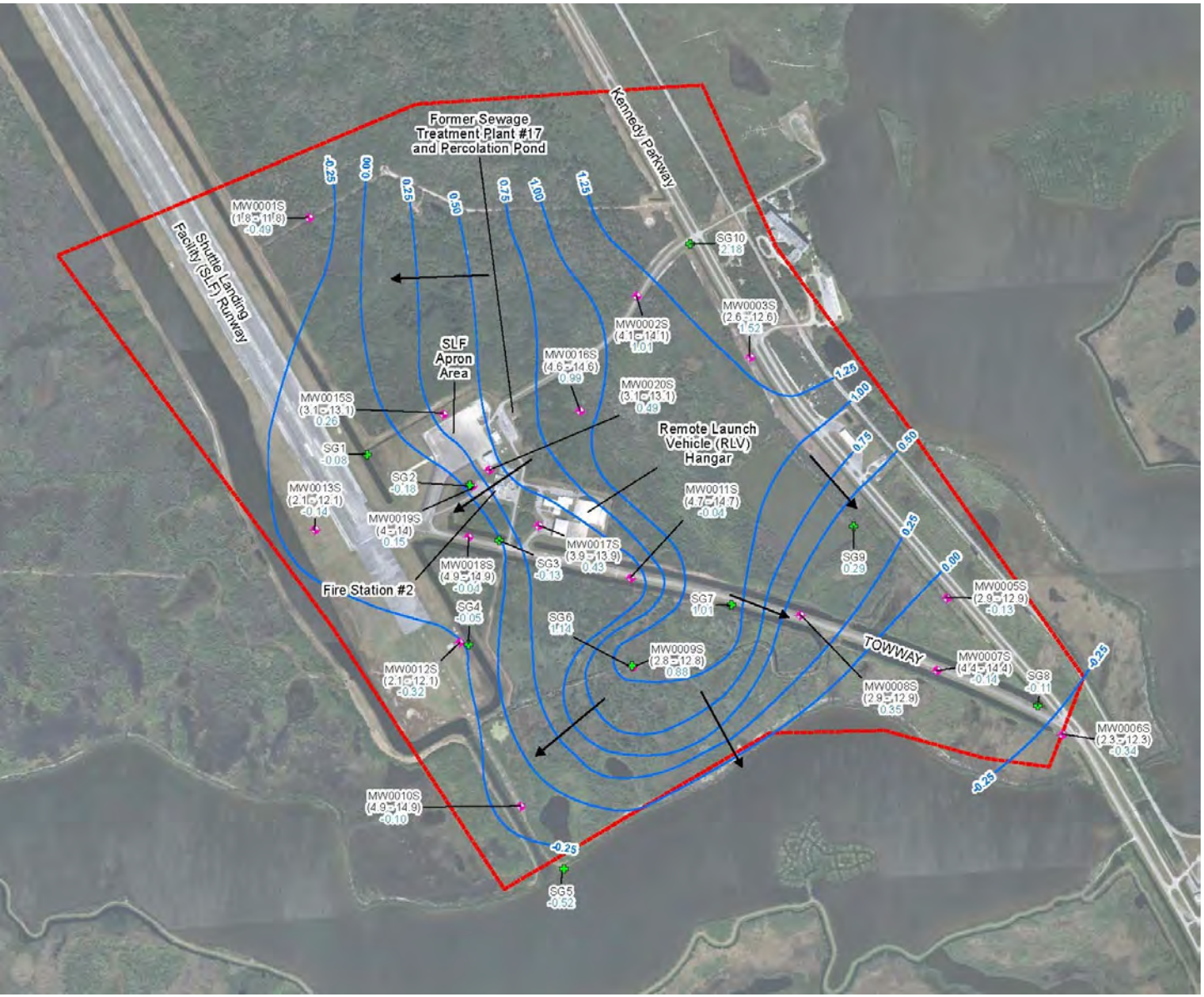
S114-LB02	
Depth (feet bls)	USCS Symbol
1	SP
2	ML
3	ML
4	ML
5	ML
6	SM
7	SM
8	SM
9	SM
10	SM
11	SW
12	SW
13	SW
14	SW
15	SW
16	SW
17	SW
18	SW
19	SP
20	SP
21	SW
22	SW
23	SW
24	GW
25	GW
26	GW
27	GW
28	GW
29	GW
30	SW
31	SW
32	SW
33	SW
34	SP
35	SP
36	SP
37	SP
38	SP
39	SP
40	SP
41	SM
42	SM
43	SM
44	GC
45	GC
46	GC
47	GC
48	CH
49	CH
50	CH
51	CL
52	CL
53	GC
54	CL
55	CL
56	CL
57	CH
58	CL
59	CL
60	CL

S114-LB01	
Depth (feet bls)	USCS Symbol
1	SP
2	SW
3	SW
4	SW
5	SW
6	SW
7	SP
8	SP
9	ML
10	ML
11	SW
12	SW
13	SW
14	SP
15	SP
16	SP
17	SP
18	SP
19	SP
20	SP
21	SP
22	SP
23	SP
24	SW
25	SW
26	SW
27	SW
28	SW
29	SW
30	SW
31	SP
32	SP
33	SP
34	SP
35	SP
36	SP
37	SP
38	SP
39	SP
40	SP
41	SP
42	SP
43	SM
44	SM
45	SM
46	SM
47	SM
48	GM
49	GW
50	GW
51	GC
52	GC
53	GC
54	GC
55	GC
56	GC
57	GC
58	GC
59	GC
60	ML

Legend	
GW	Well graded gravel
GM	Gravel with silt
GC	Gravel with clay
SW	Well graded sand
SP	Poorly graded sand
SM	Sand with silt
SC	Sand with clay
ML	Inorganic silt with low plasticity
CL	Inorganic clay with low plasticity
CH	Inorganic clay with high plasticity

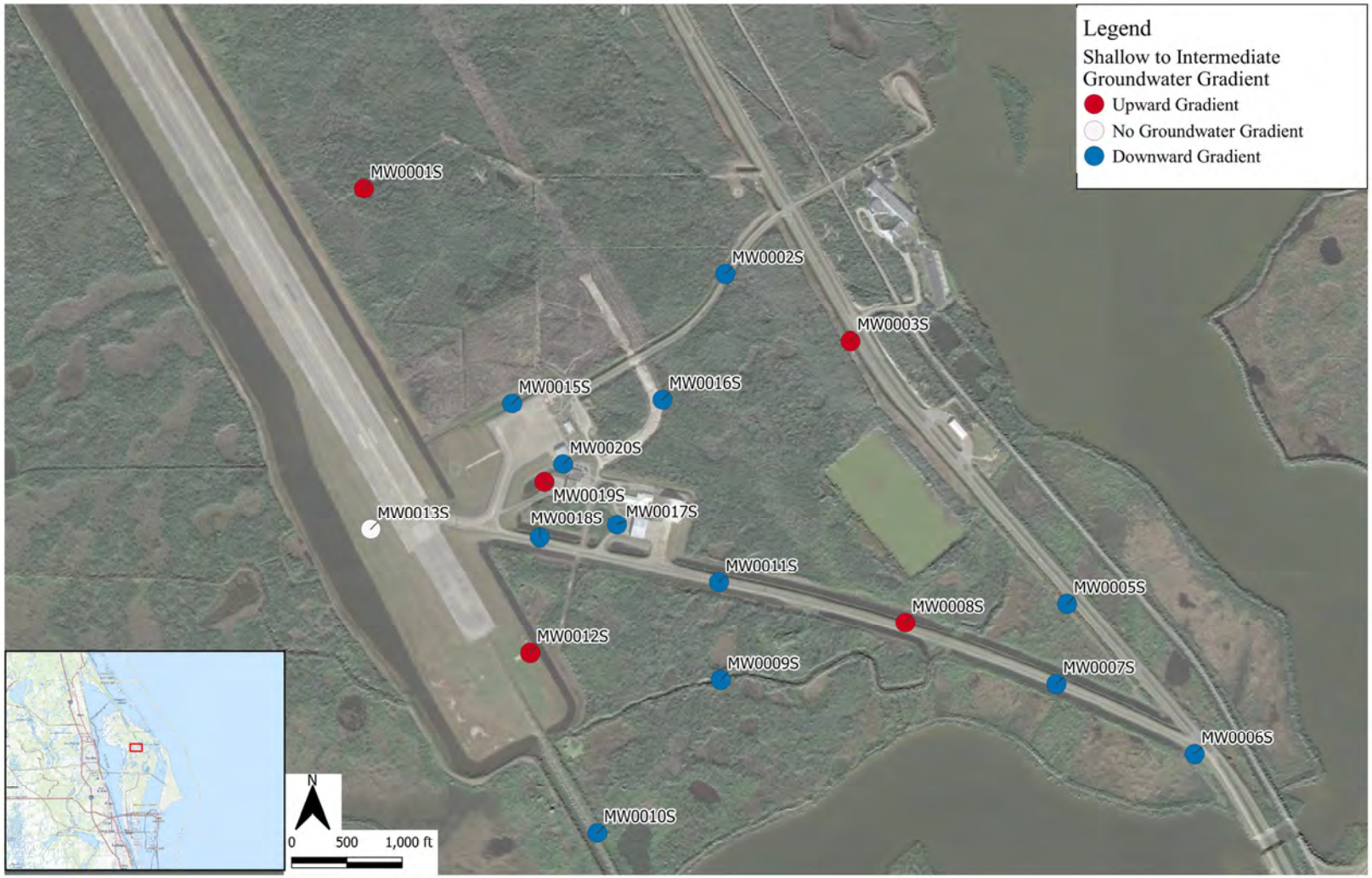
Monitoring Well and Staff Gauge Installations

- 18 shallow monitoring wells (screened to intersect the water table) and 19 intermediate monitoring wells (screened 25’-35’) were installed using a DPT drill rig.
- 10 Staff gauges were installed in canals and ponds across the site.
- Water level measurements were collected on August 3, 2022.
  - Groundwater flow is similar between the shallow and intermediate depths.
  - In general, groundwater flows from the northern corner of the site radially towards the west, southwest, south and southeast.
  - A groundwater divide appears to be present in the central portion of the towway.



Groundwater Elevation Map – Shallow Zone August 3, 2022

Groundwater Elevation Map – Intermediate Zone August 3, 2022

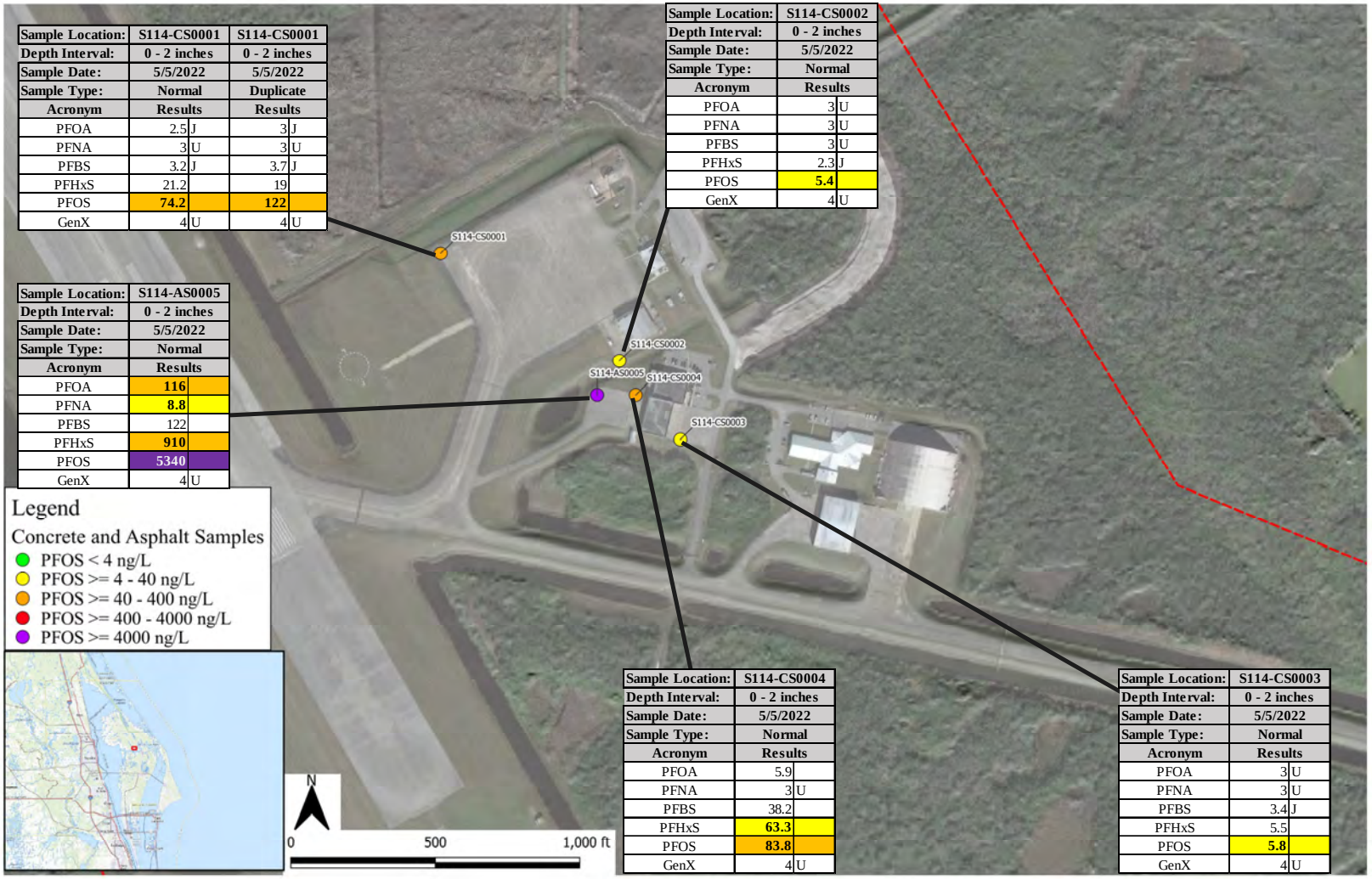


Groundwater Vertical Gradients August 3, 2022

Upward gradients (red circles) indicate areas where groundwater may be discharging to surface water.

Downward gradients (blue circles) indicate areas where precipitation and infiltration is causing downward groundwater flow or where surface water may be infiltrating to groundwater.

Concrete and Asphalt Sample Results



Sample Location:	S114-CS0001		S114-CS0001	
Depth Interval:	0 - 2 inches		0 - 2 inches	
Sample Date:	5/5/2022		5/5/2022	
Sample Type:	Normal		Duplicate	
Acronym	Results		Results	
PFOA	2.5	J	3	J
PFNA	3	U	3	U
PFBS	3.2	J	3.7	J
PFHxS	21.2		19	
PFOS	**74.2**		**122**	
GenX	4	U	4	U

Sample Location:	S114-CS0002	
Depth Interval:	0 - 2 inches	
Sample Date:	5/5/2022	
Sample Type:	Normal	
Acronym	Results	
PFOA	3	U
PFNA	3	U
PFBS	3	U
PFHxS	2.3	J
PFOS	**5.4**	
GenX	4	U

Sample Location:	S114-AS0005	
Depth Interval:	0 - 2 inches	
Sample Date:	5/5/2022	
Sample Type:	Normal	
Acronym	Results	
PFOA	**116**	
PFNA	**8.8**	
PFBS	122	
PFHxS	**910**	
PFOS	**5340**	
GenX	4	U

Sample Location:	S114-CS0004	
Depth Interval:	0 - 2 inches	
Sample Date:	5/5/2022	
Sample Type:	Normal	
Acronym	Results	
PFOA	5.9	
PFNA	3	U
PFBS	38.2	
PFHxS	**63.3**	
PFOS	**83.8**	
GenX	4	U

Sample Location:	S114-CS0003	
Depth Interval:	0 - 2 inches	
Sample Date:	5/5/2022	
Sample Type:	Normal	
Acronym	Results	
PFOA	3	U
PFNA	3	U
PFBS	3.4	J
PFHxS	5.5	
PFOS	**5.8**	
GenX	4	U

Concrete/ Asphalt Sample Statistics 5-5-2022

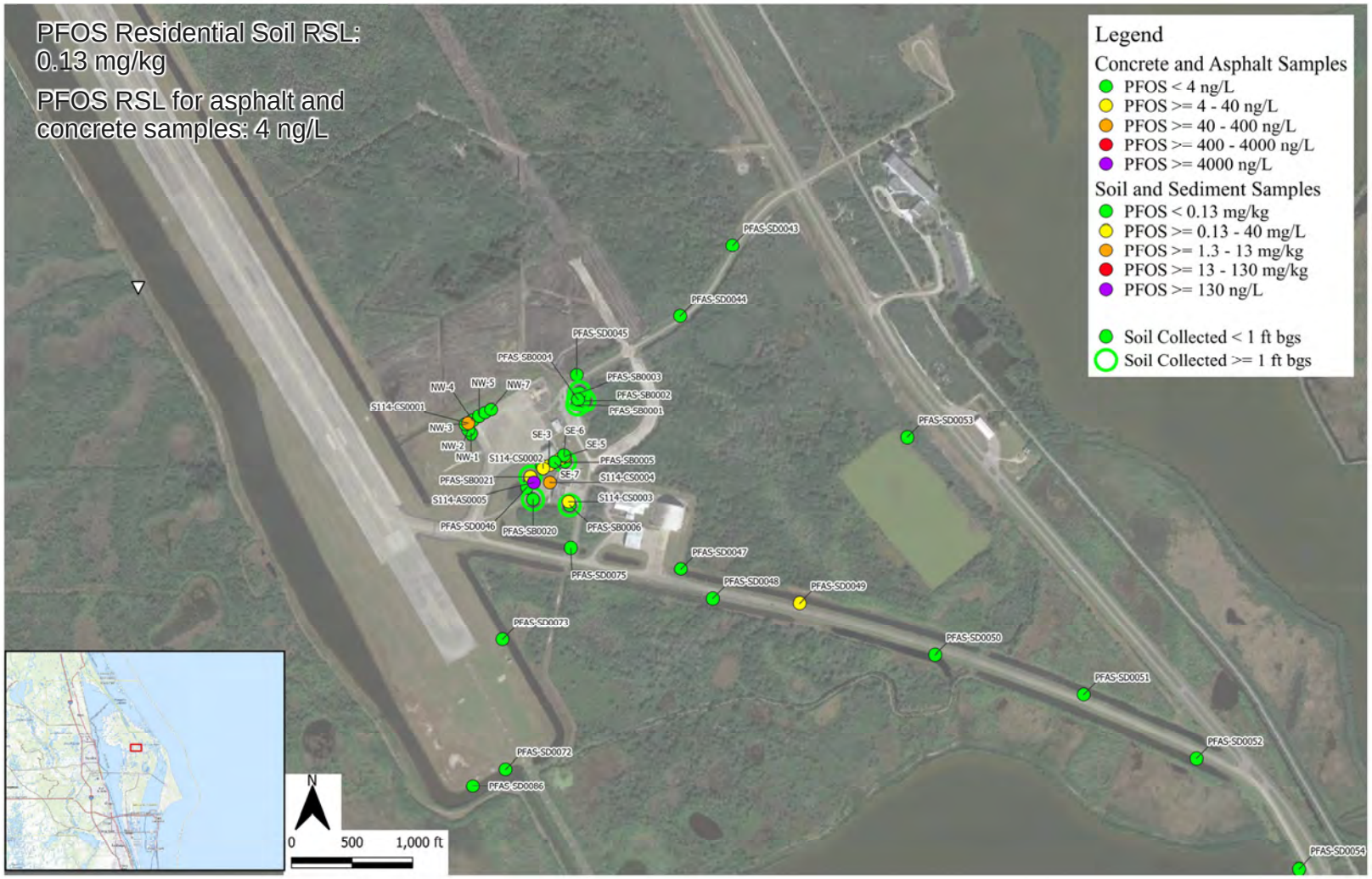
	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	RSL [1]	Number of Detections Exceeding RSL
Carboxylates	PFBA	6	6	6.9	134	S114-AS0005	N/A	
	PFPeA	6	6	7.6	566	S114-AS0005	N/A	
	PFHxA	6	6	13.2	319	S114-AS0005	N/A	
	PFHpA	6	6	2	93.7	S114-AS0005	N/A	
	PFOA	6	4	2.5	116	S114-AS0005	6	1
	PFNA	6	1	8.8	8.8	S114-AS0005	6	1
	PFDA	6	1	8.3	8.3	S114-AS0005	N/A	
	PFUnA	6	0	No Detections	No Detections	No Detections	N/A	
	PFDoA	6	0	No Detections	No Detections	No Detections	N/A	
	PFTriA	6	0	No Detections	No Detections	No Detections	N/A	
	PFTeA	6	0	No Detections	No Detections	No Detections	N/A	
Sulfonates	PFBS	6	5	3.2	122	S114-AS0005	600	0
	PFPeS	6	4	3	154	S114-AS0005	N/A	
	PFHxS	6	6	2.3	910	S114-AS0005	40	2
	PFHpS	6	3	2.3	173	S114-AS0005	N/A	
	PFOS	6	6	5.4	5340	S114-AS0005	4	6
	PFNS	6	1	25.7	25.7	S114-AS0005	N/A	
	PFDS	6	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	6	1	49.6	49.6	S114-AS0005	N/A	
	NMeFOSAA	6	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	6	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	6	3	4.5	9	S114-CS0001	N/A	
	6:2 FTS	6	6	56.4	1840	S114-CS0001	N/A	
	8:2 FTS	6	3	2.4	178	S114-AS0005	N/A	
	GenX	6	0	No Detections	No Detections	No Detections	6	0

Notes:

(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)

RSL = Regional Screening Level

N/A = not established



Concrete and Asphalt (5/5/2022), Soil (1/5/2021 – 1/12/2021), and Sediment (9/22/2020 – 10/1/2020)

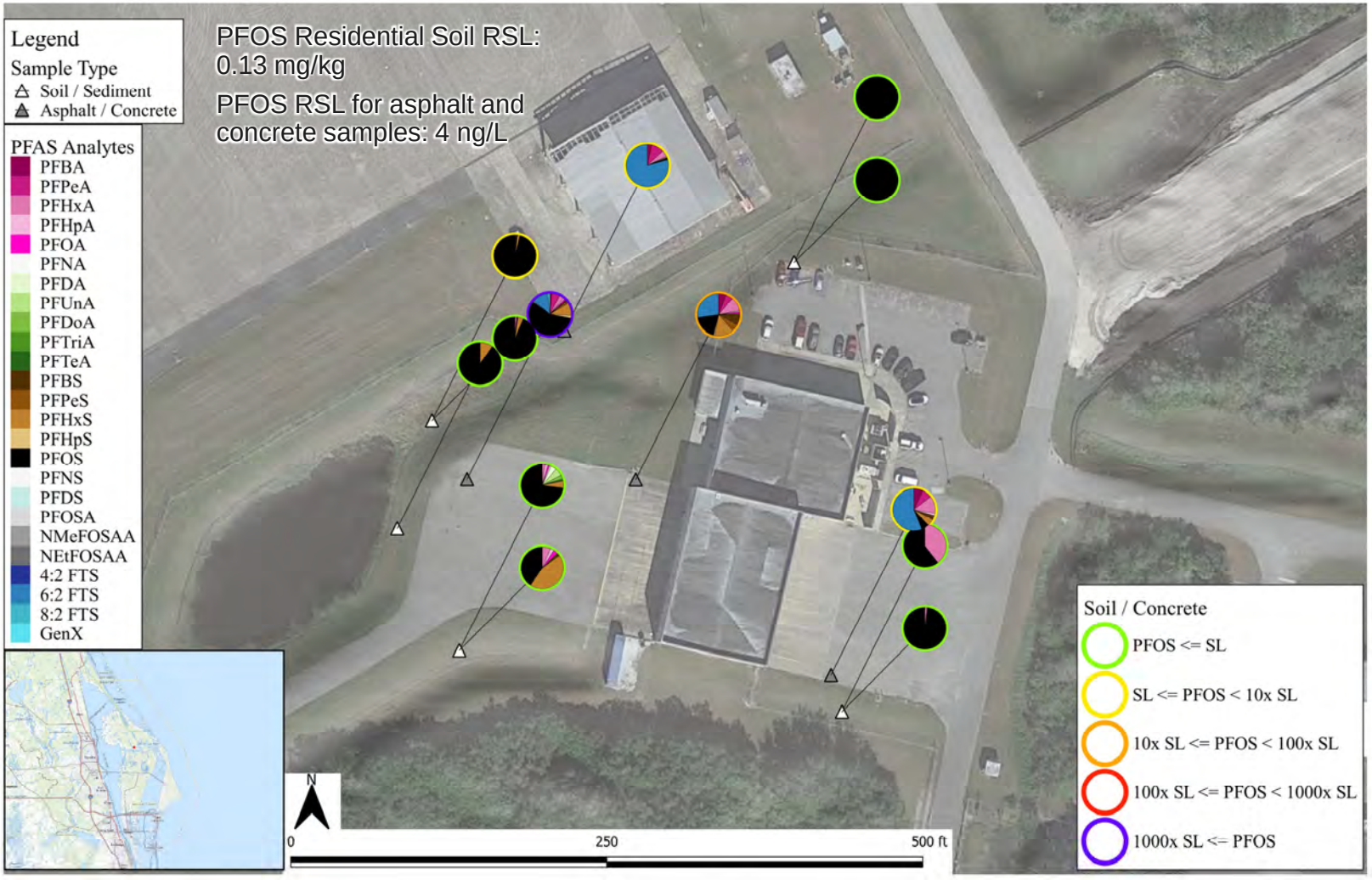
Soil Sample Statistics 1/5/2021 – 1/12/2021

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Location with Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL
Carboxylates	PFBA	0	0	No Detections	No Detections	No Detections	N/A	
	PFPeA	0	0	No Detections	No Detections	No Detections	N/A	
	PFHxA	32	22	0.00037	0.25	NW-4	N/A	
	PFHpA	32	20	0.00043	0.023	NW-4	N/A	
	PFOA	32	18	0.00019	0.0042	PFAS-SB0020	0.19	0
	PFNA	32	16	0.00021	0.0026	SE-2	0.19	0
	PFDA	32	19	0.00051	0.0073	NW-1	N/A	
	PFUnA	32	19	0.00043	0.0079	NW-1	N/A	
	PFDoA	32	20	0.00037	0.017	NW-1	N/A	
	PFTriA	32	17	0.0002	0.0082	SE-3	N/A	
	PFTeA	32	18	0.00025	0.0089	SE-3	N/A	
Sulfonates	PFBS	32	12	0.000058	0.0027	PFAS-SB0020	19	0
	PFPeS	0	0	No Detections	No Detections	No Detections	N/A	
	PFHxS	32	20	0.00075	0.0559	PFAS-SB0020	1.3	0
	PFHpS	0	0	No Detections	No Detections	No Detections	N/A	
	PFOS	32	26	0.00035	0.893	PFAS-SB0021	0.13	4
	PFNS	0	0	No Detections	No Detections	No Detections	N/A	
	PFDS	0	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	0	0	No Detections	No Detections	No Detections	N/A	
	NMeFOSAA	0	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	0	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	6:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	8:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	GenX	16	2	0.00053	0.0022	SE-2	0.23	0

Notes:
(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=0.1)
RSL = Regional Screening Level
N/A = not established

Sediment Sample Statistics 9/22/2020 – 10/1/2020

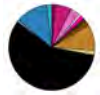
	Parameter	Number of Samples	Number of Detections	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Location with Maximum Concentration
Carboxylates	PFBA	0	0	No Detections	No Detections	No Detections
	PFPeA	0	0	No Detections	No Detections	No Detections
	PFHxA	17	0	No Detections	No Detections	No Detections
	PFHpA	17	0	No Detections	No Detections	No Detections
	PFOA	17	0	No Detections	No Detections	No Detections
	PFNA	17	0	No Detections	No Detections	No Detections
	PFDA	17	0	No Detections	No Detections	No Detections
	PFUnA	17	0	No Detections	No Detections	No Detections
	PFDoA	17	0	No Detections	No Detections	No Detections
	PFTriA	17	0	No Detections	No Detections	No Detections
	PFTeA	17	0	No Detections	No Detections	No Detections
Sulfonates	PFBS	17	0	No Detections	No Detections	No Detections
	PFPeS	0	0	No Detections	No Detections	No Detections
	PFHxS	17	8	0.00046	0.0104	PFAS-SD0049
	PFHpS	0	0	No Detections	No Detections	No Detections
	PFOS	17	16	0.00046	0.156	PFAS-SD0049
	PFNS	0	0	No Detections	No Detections	No Detections
	PFDS	0	0	No Detections	No Detections	No Detections
Precursors / Fluorotelomers	PFOSA	0	0	No Detections	No Detections	No Detections
	NMeFOSAA	0	0	No Detections	No Detections	No Detections
	NEtFOSAA	0	0	No Detections	No Detections	No Detections
	4:2 FTS	0	0	No Detections	No Detections	No Detections
	6:2 FTS	0	0	No Detections	No Detections	No Detections
	8:2 FTS	0	0	No Detections	No Detections	No Detections
	GenX	0	0	No Detections	No Detections	No Detections

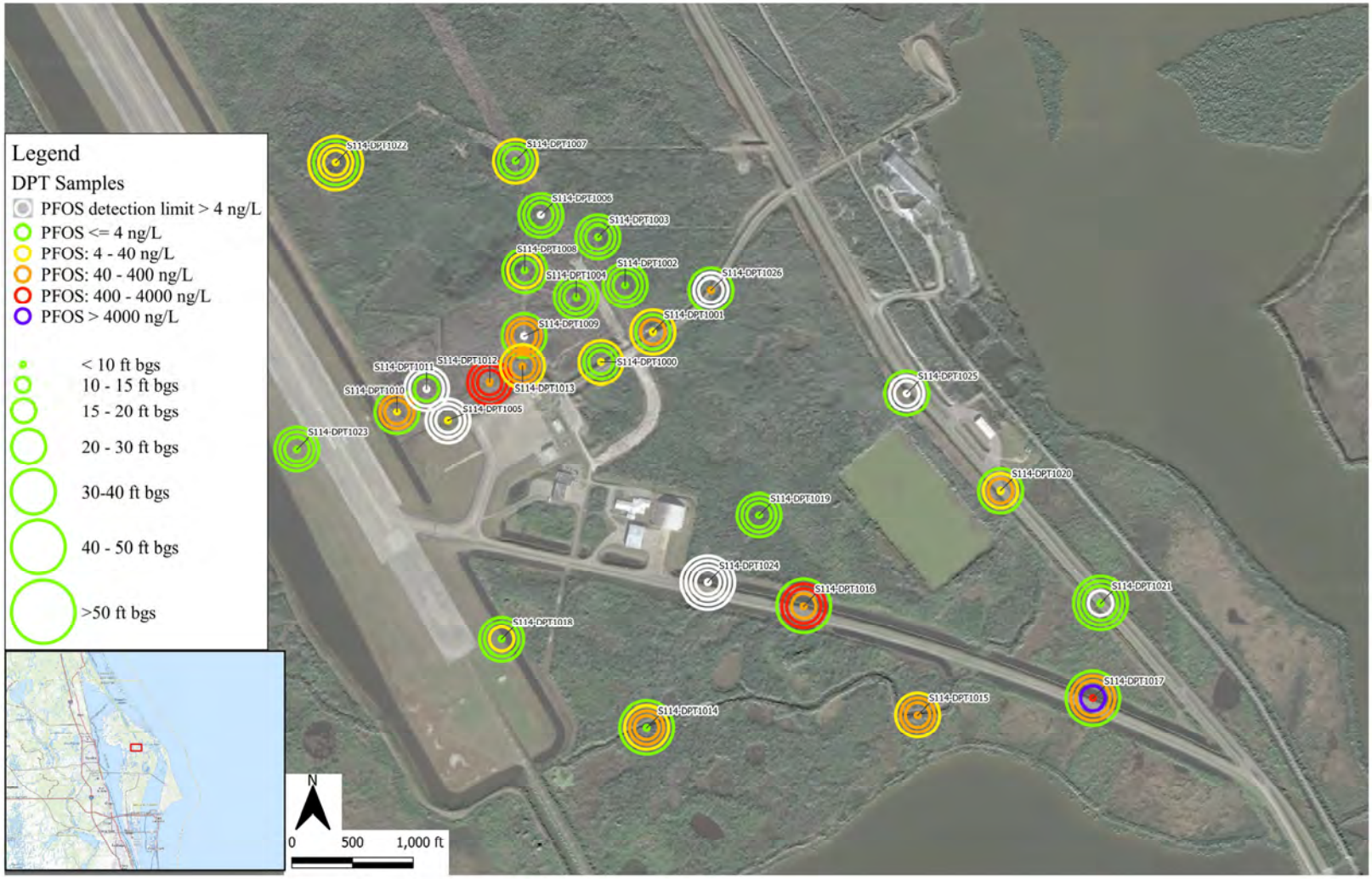


Concrete and Asphalt (5/5/2022), Soil (1/5/2021 – 1/12/2021), and Sediment (9/22/2020 – 10/1/2020)

PFAS Ratios are different in concrete samples adjacent to the SLF tarmac

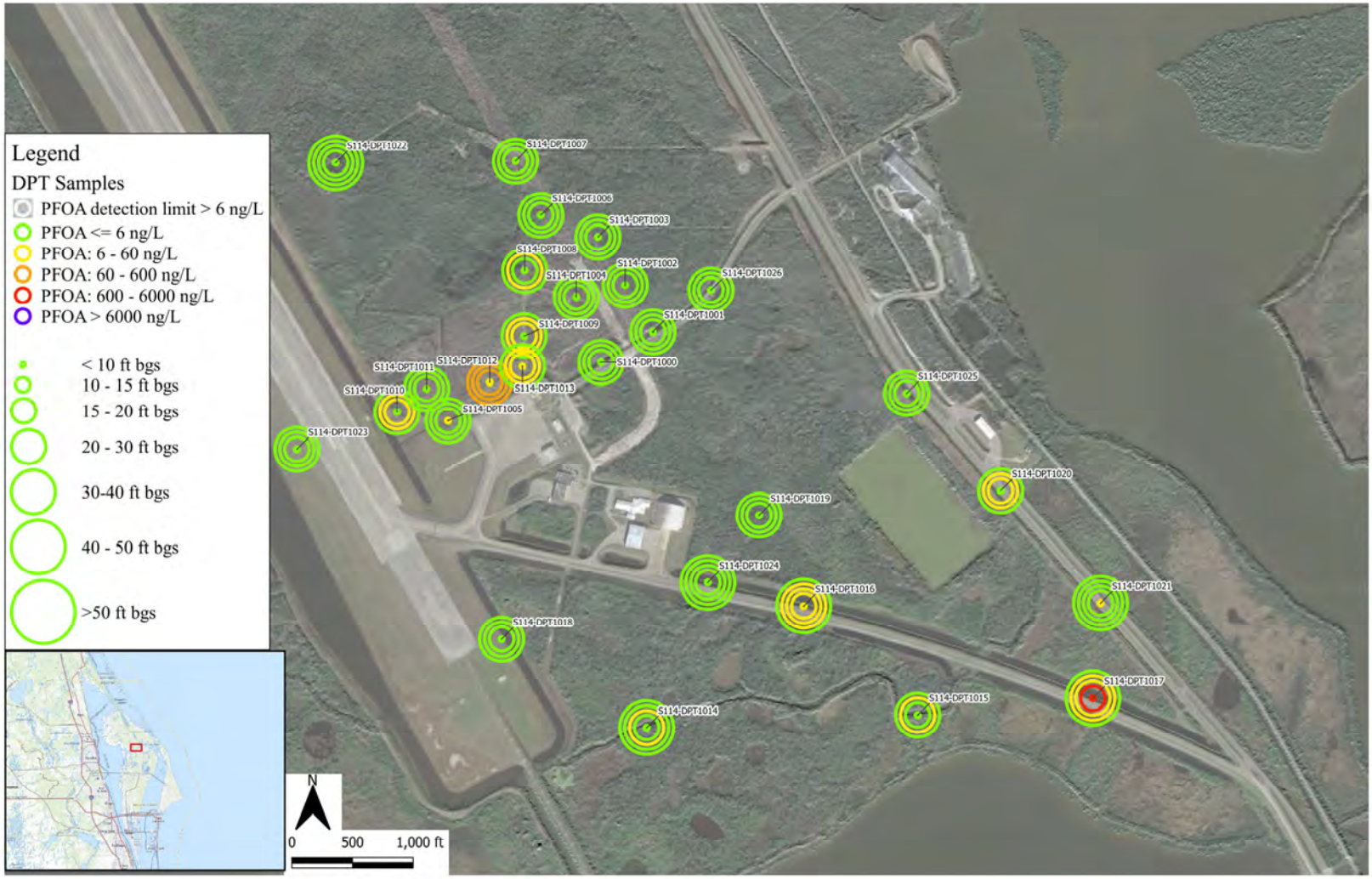
compared to samples where AFFF was discharged from Fire Station #2



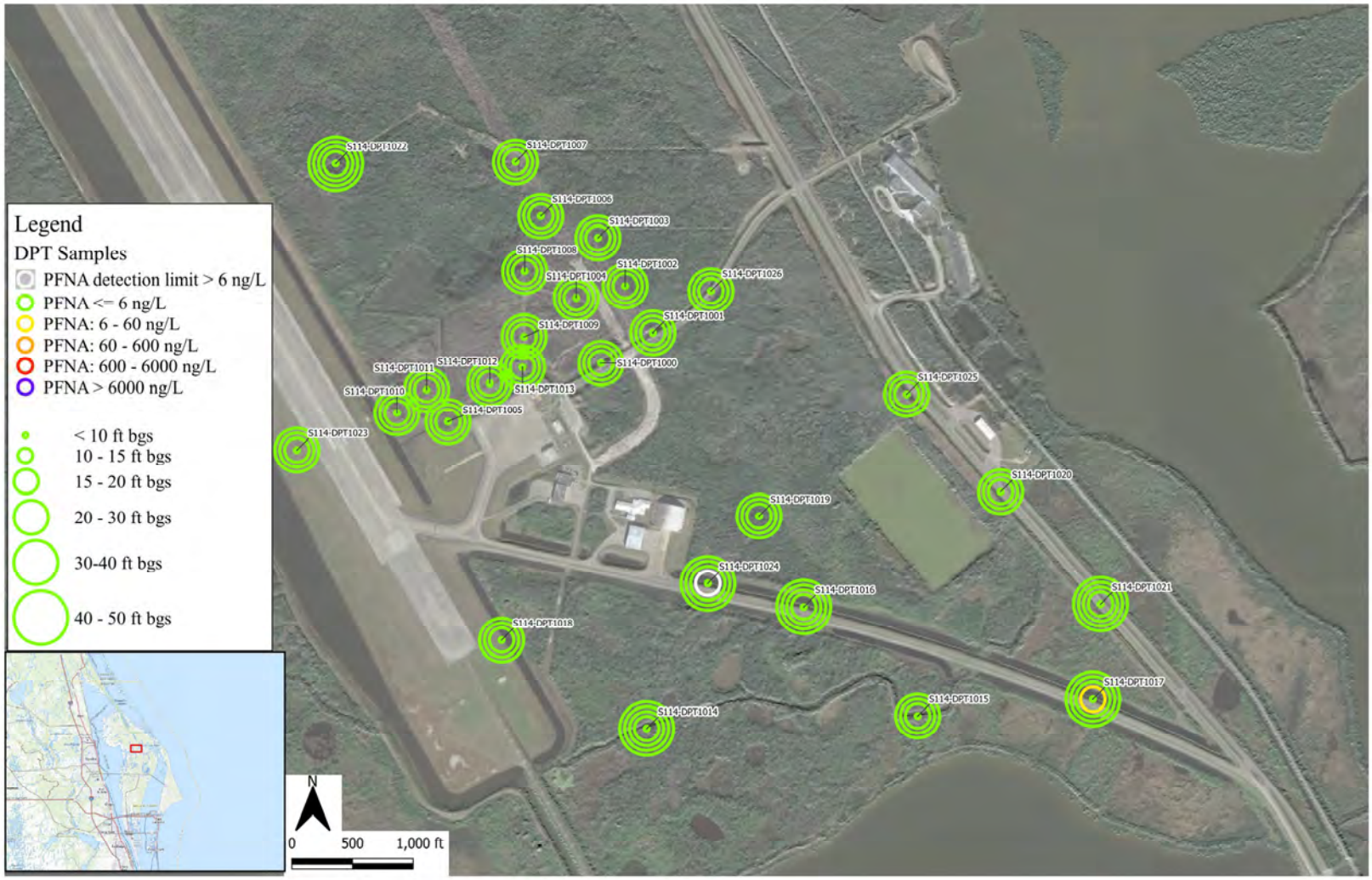


PFOS DPT Groundwater Results 11/15/2021 – 6/16/2022

- 20 samples had detection limits greater than 4 ng/L
- 10 of the samples had a detection limit of 4.2 ng/L
- 9 of the samples had detection limits between 4.3 and 5.5 ng/L
- 1 of the samples had a detection limit of 8.2 ng/L

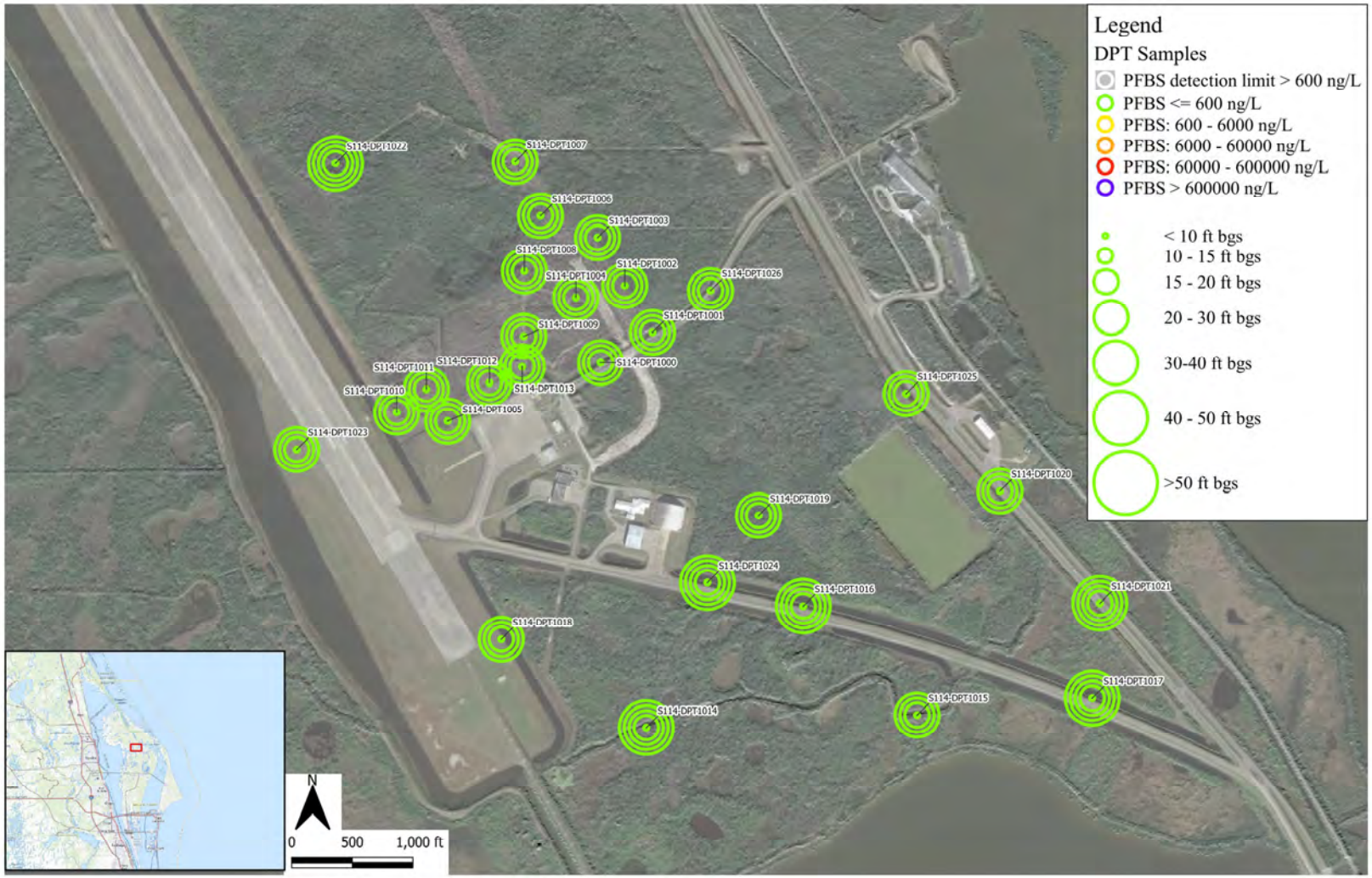


PFOA DPT Groundwater Results 11/15/2021 – 6/16/2022

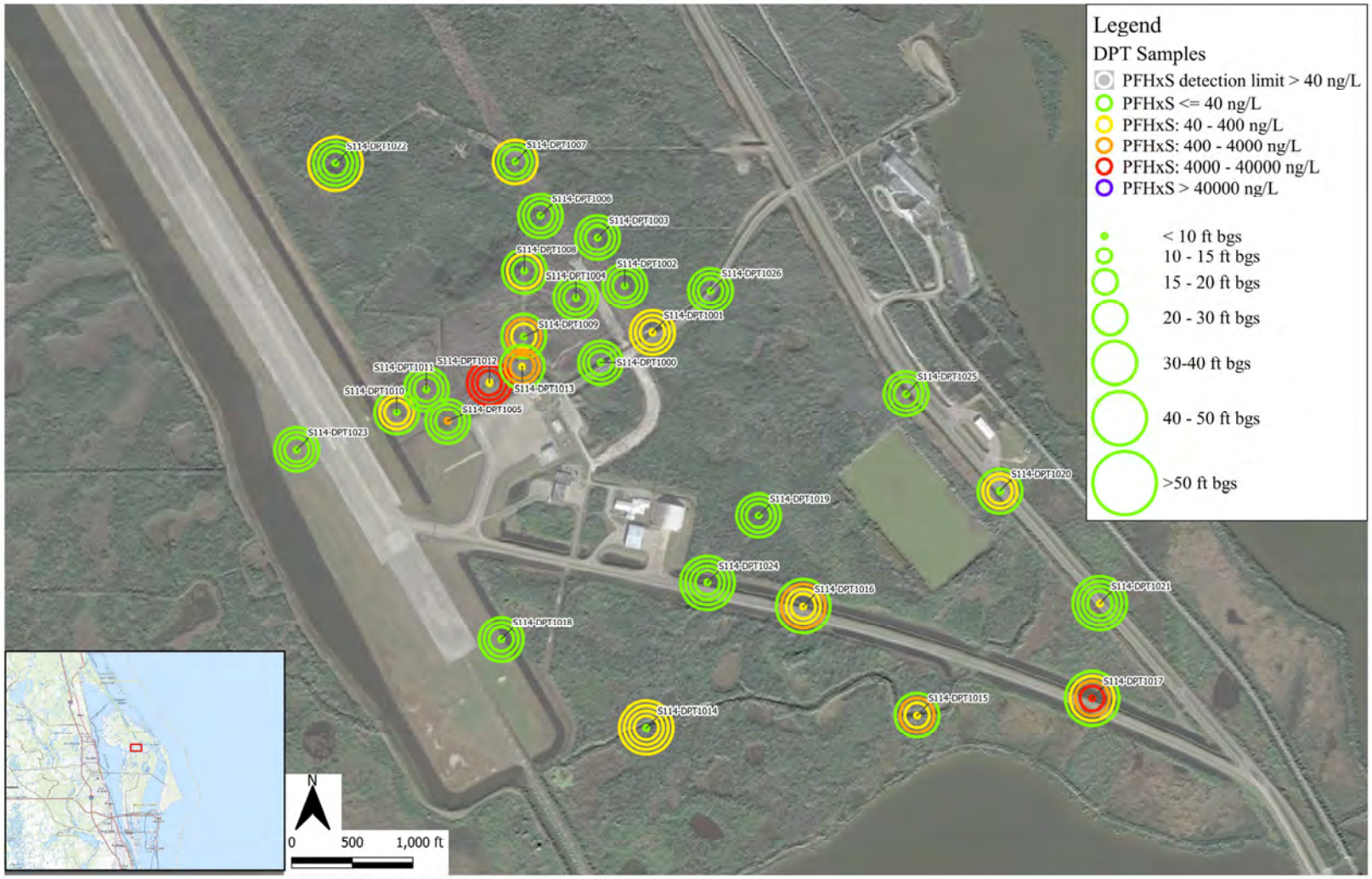


PFNA DPT Groundwater Results 11/15/2021 – 6/16/2022

- 1 sample had detection limits of 8.2 ng/L



PFBS DPT Groundwater Results 11/15/2021 – 6/16/2022

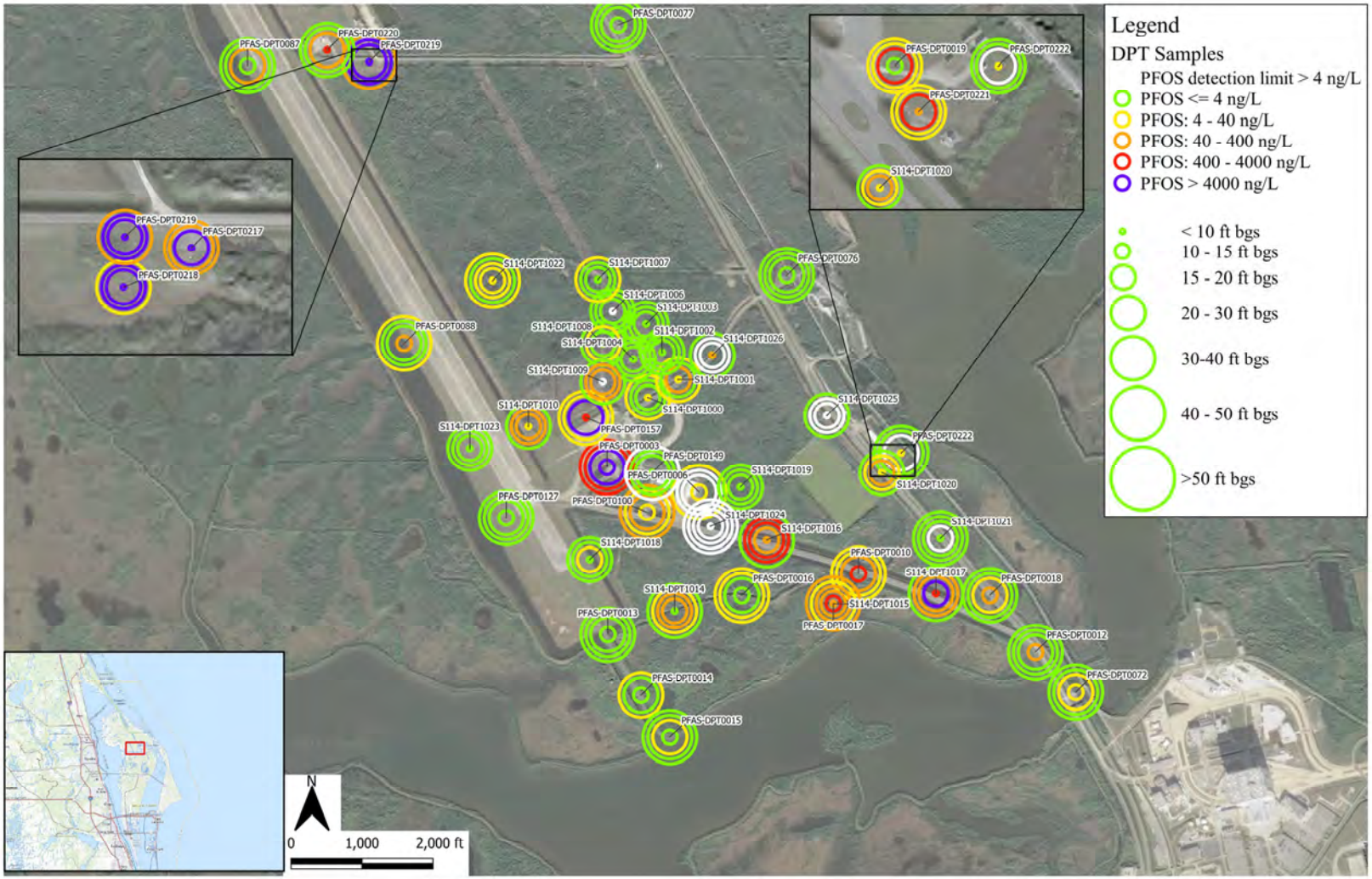


PFHxS DPT Groundwater Results 11/15/2021 – 6/16/2022

DPT Groundwater Sample Statistics 11/15/2021 – 6/16/2022

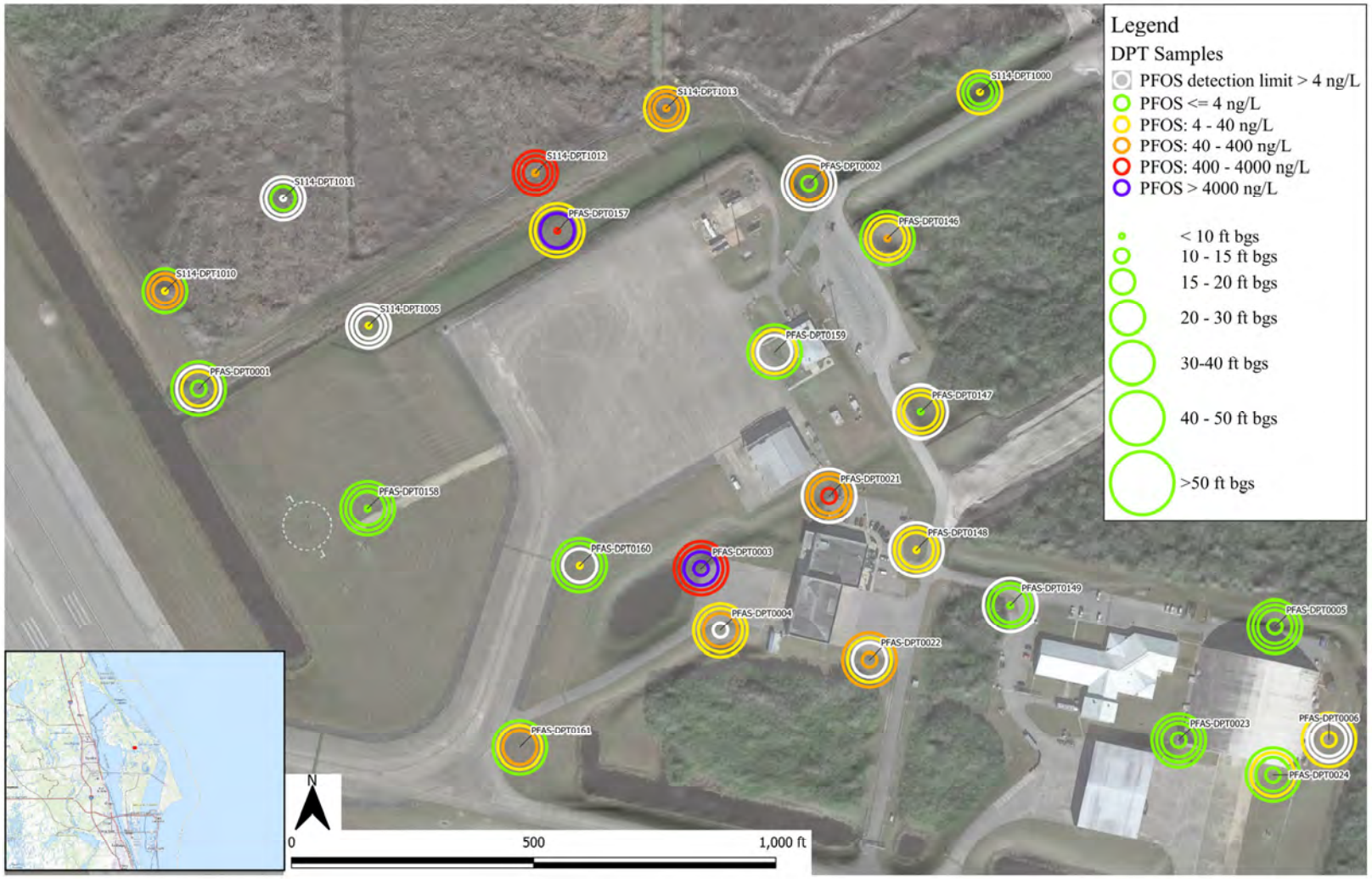
	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	Depth Interval of Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL
Carboxylates	PFBA	124	57	4.4	169	S114-DPT1017	13 - 17 ft bgs	N/A	
	PFPeA	124	60	2.2	296	S114-DPT1017	13 - 17 ft bgs	N/A	
	PFHxA	124	60	2.3	669	S114-DPT1017	13 - 17 ft bgs	N/A	
	PFHpA	124	42	2.1	326	S114-DPT1017	13 - 17 ft bgs	N/A	
	PFOA	124	48	2	1100	S114-DPT1017	5 - 9 ft bgs	6	26
	PFNA	124	6	2.1	46.8	S114-DPT1017	13 - 17 ft bgs	6	1
	PFDA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	PFUnA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	PFDoA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	PFTriA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	PFTeA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
Sulfonates	PFBS	124	63	2.5	585	S114-DPT1012	13 - 17 ft bgs	600	0
	PFPeS	124	57	2.5	774	S114-DPT1012	13 - 17 ft bgs	N/A	
	PFHxS	124	72	2.4	12100	S114-DPT1017	5 - 9 ft bgs	40	38
	PFHpS	124	28	2.7	567	S114-DPT1017	13 - 17 ft bgs	N/A	
	PFOS	124	56	2.1	14800	S114-DPT1017	13 - 17 ft bgs	4	49
	PFNS	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	PFDS	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	NMeFOSAA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	6:2 FTS	124	13	5.3	1140	S114-DPT1017	5 - 9 ft bgs	N/A	
	8:2 FTS	124	0	No Detections	No Detections	No Detections	No Detections	N/A	
	GenX	124	0	No Detections	No Detections	No Detections	No Detections	6	0

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
RSL = Regional Screening Level
N/A = not established

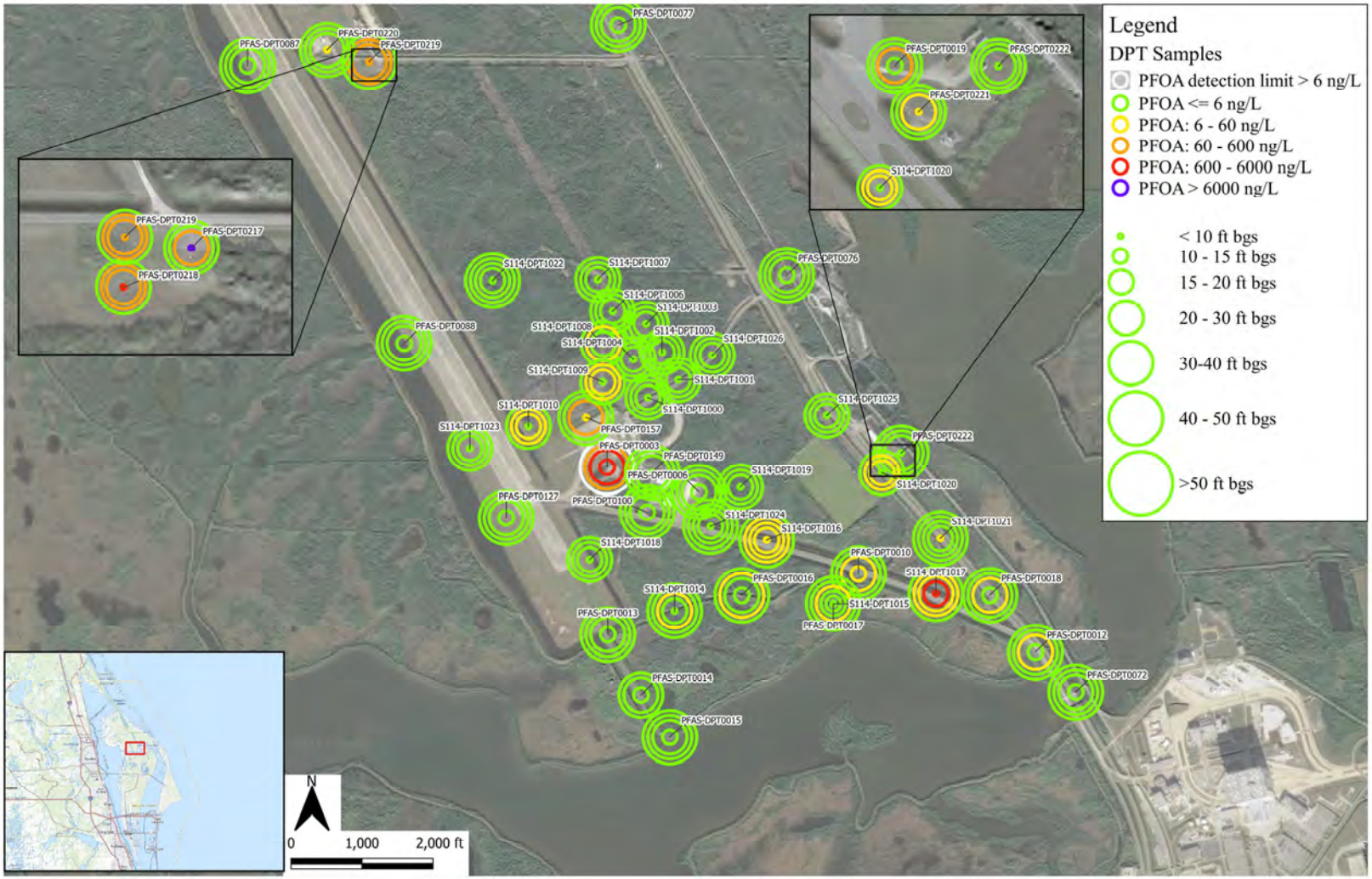


PFOS DPT Groundwater Results- All Samples (2019-2022)

- 34 samples had detection limits greater than 4 ng/L
- 11 of the samples had detection limits of 4.2 ng/L
- 11 of the samples had detection limits between 4.3 and 4.9 ng/L
- 12 of the samples had detection limits between 5.1 and 9.8 ng/L



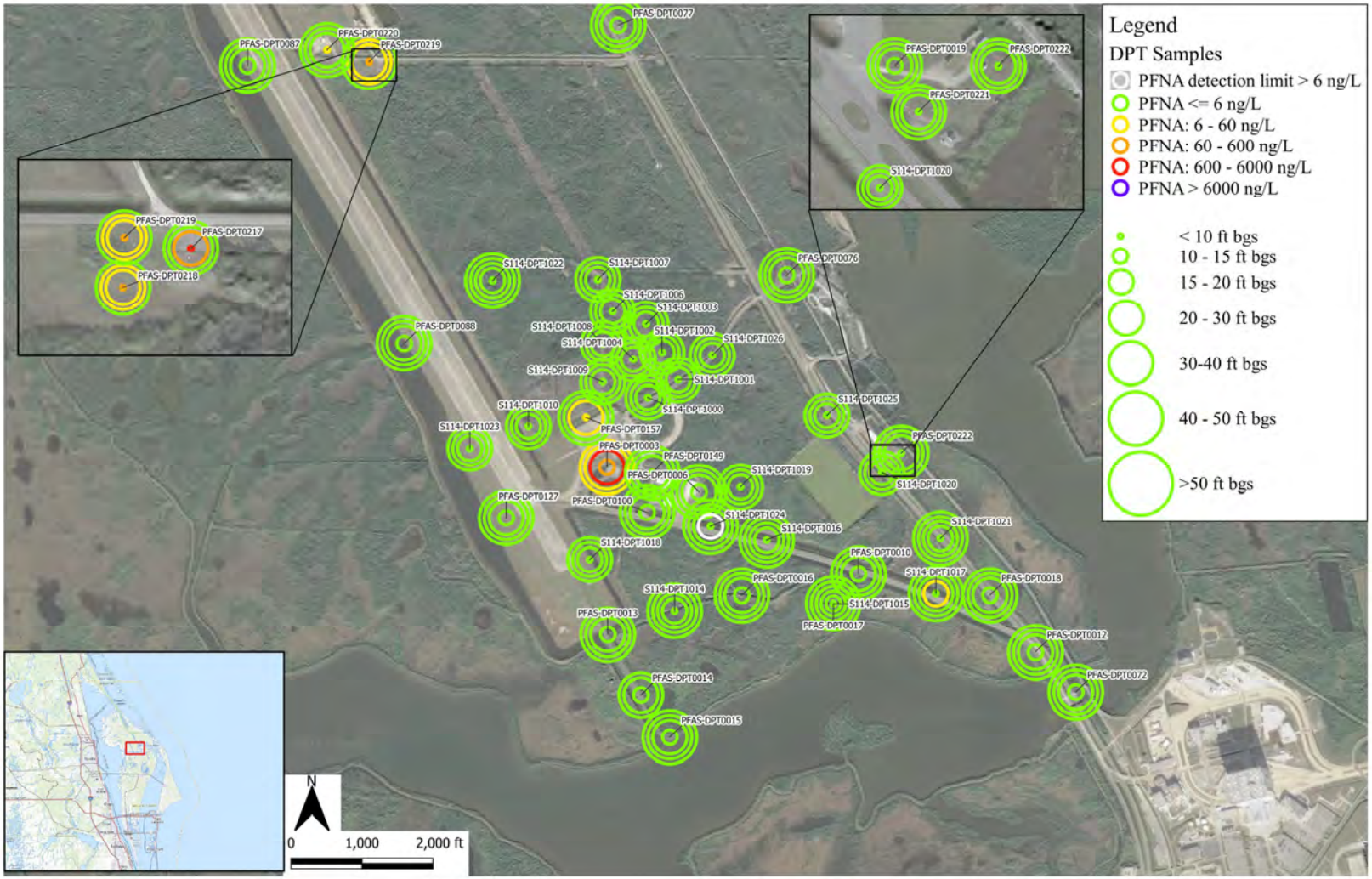
PFOS DPT Groundwater Results- All Samples (2019-2022)



PFOA DPT Groundwater Results- All Samples (2019-2022)

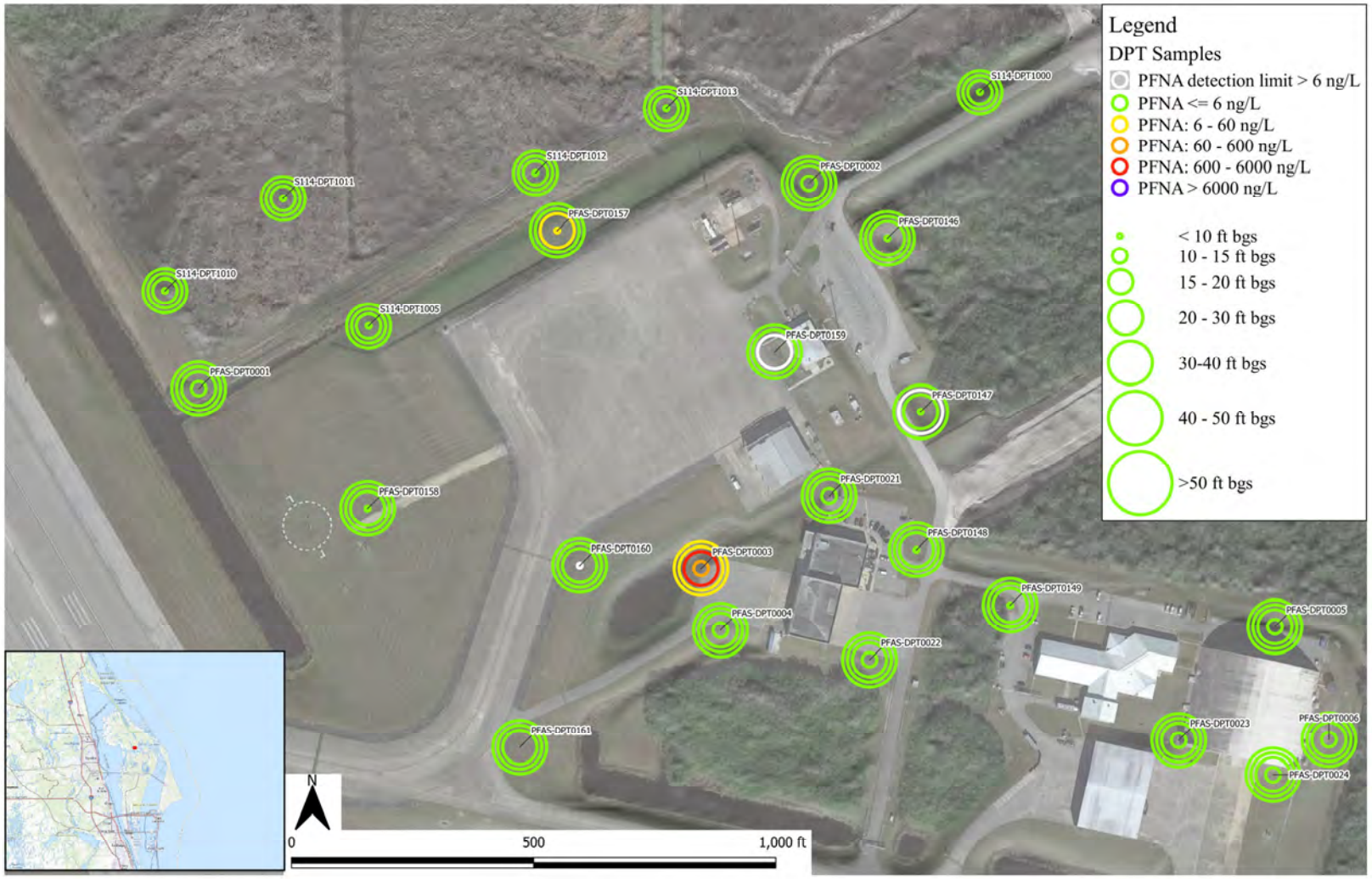
- 9 samples had detection limits greater than 6 ng/L
- 6 of the samples had detection limits between 6.9 and 9.1 ng/L
- 3 of the samples had detection limits between 30 ng/L and 44 ng/L

PFOA DPT Groundwater Results- All Samples (2019-2022)

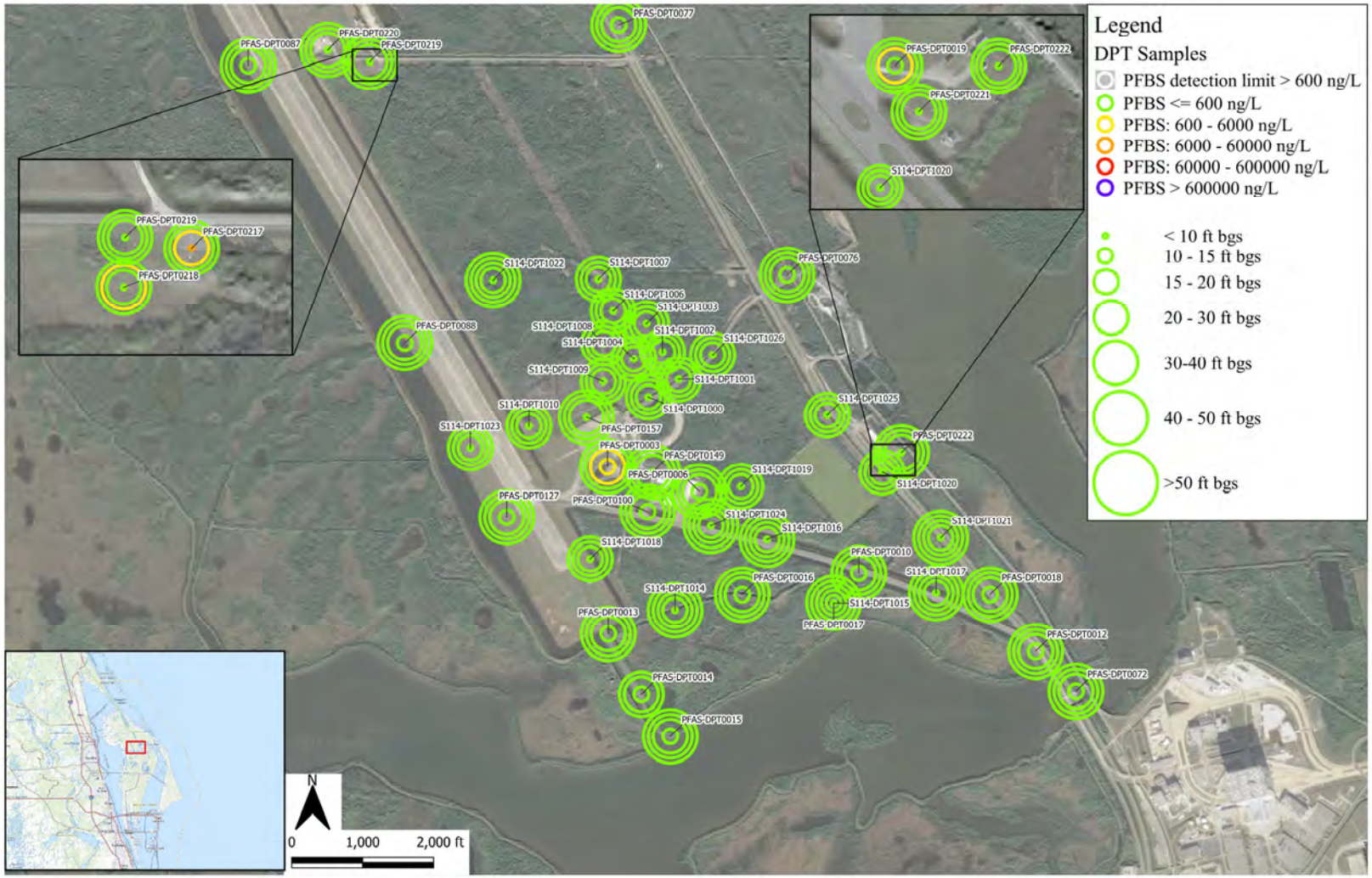


PFNA DPT Groundwater Results- All Samples (2019-2022)

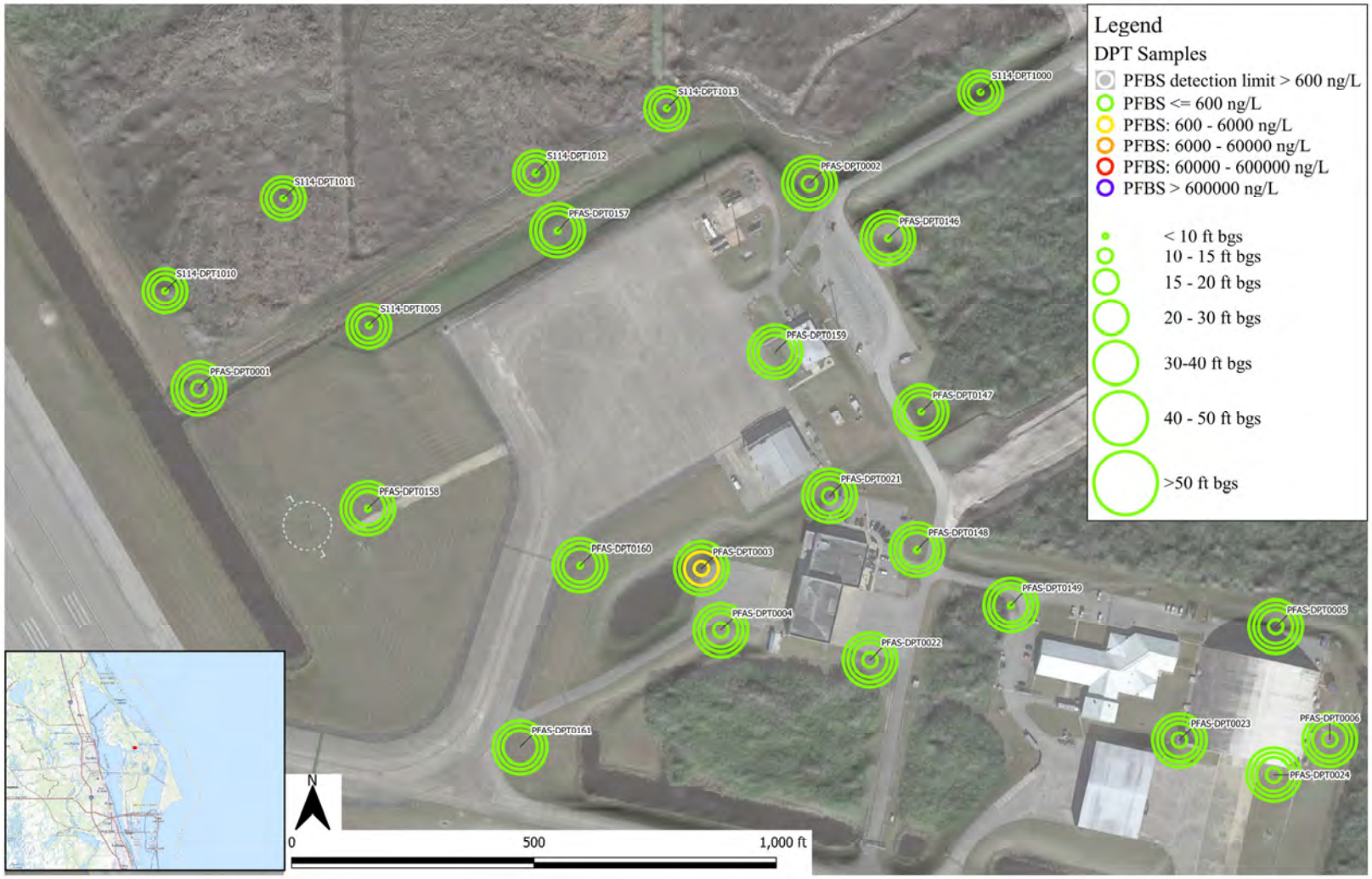
- 4 samples had detection limits greater than 6 ng/L
- 1 of the samples had a detection limit of 6.3 ng/L
- 3 of the samples had detection limits between 7.6 and 8.2 ng/L



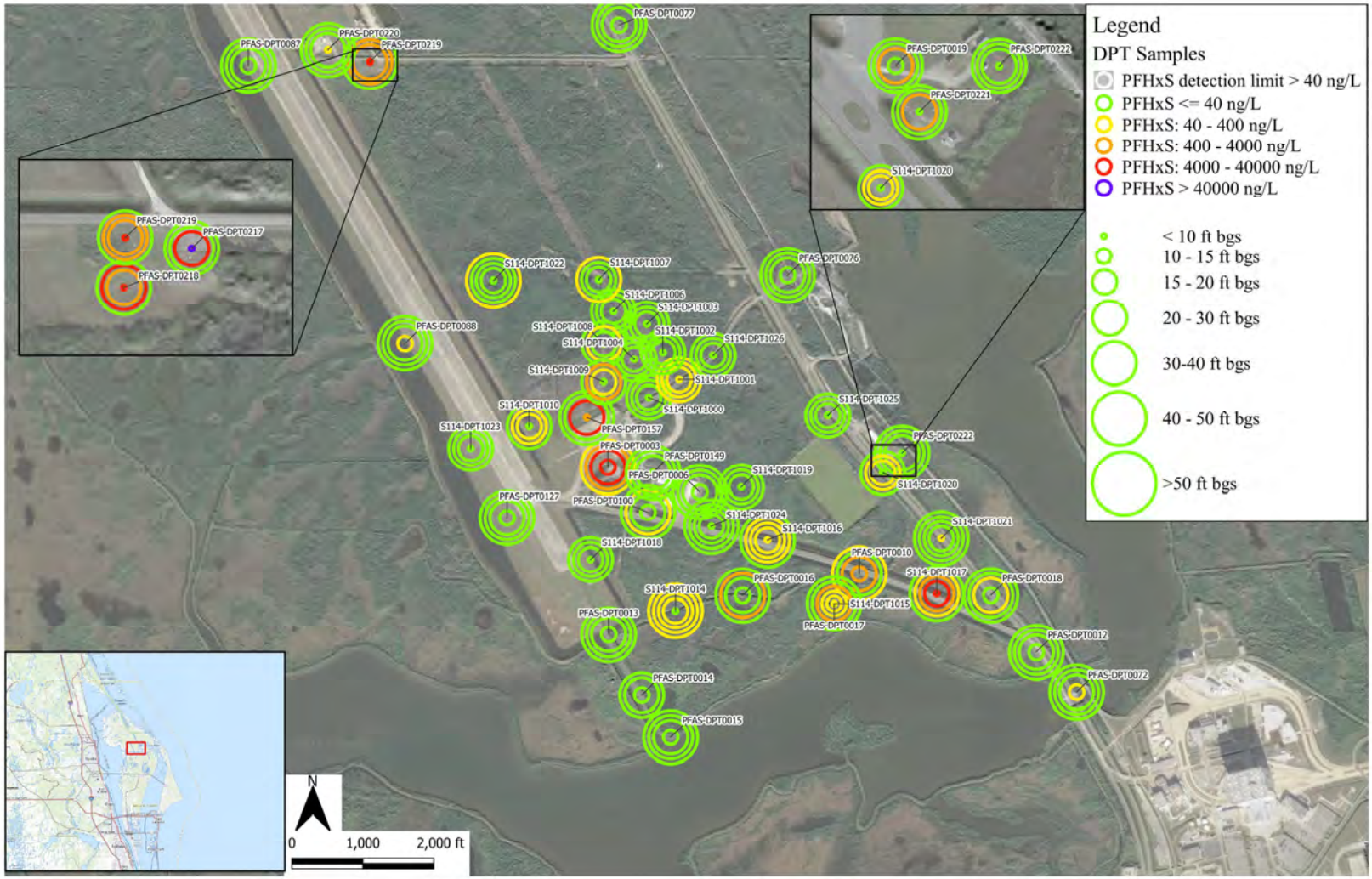
PFNA DPT Groundwater Results- All Samples (2019-2022)



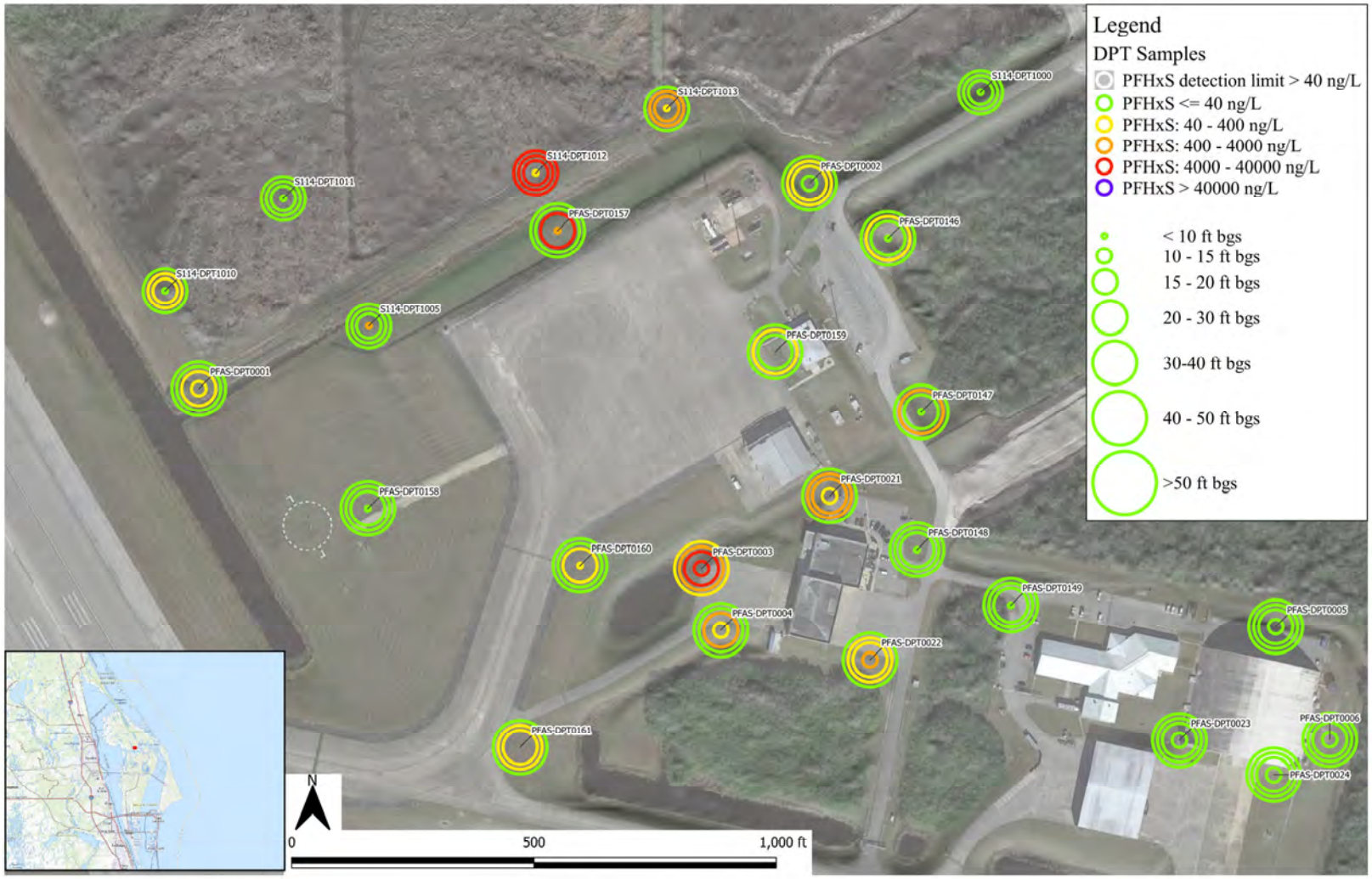
PFBS DPT Groundwater Results- All Samples (2019-2022)



PFBS DPT Groundwater Results- All Samples (2019-2022)



PFHxS DPT Groundwater Results- All Samples (2019-2022)



PFHxS DPT Groundwater Results- All Samples (2019-2022)

Groundwater Plume Delineation Status

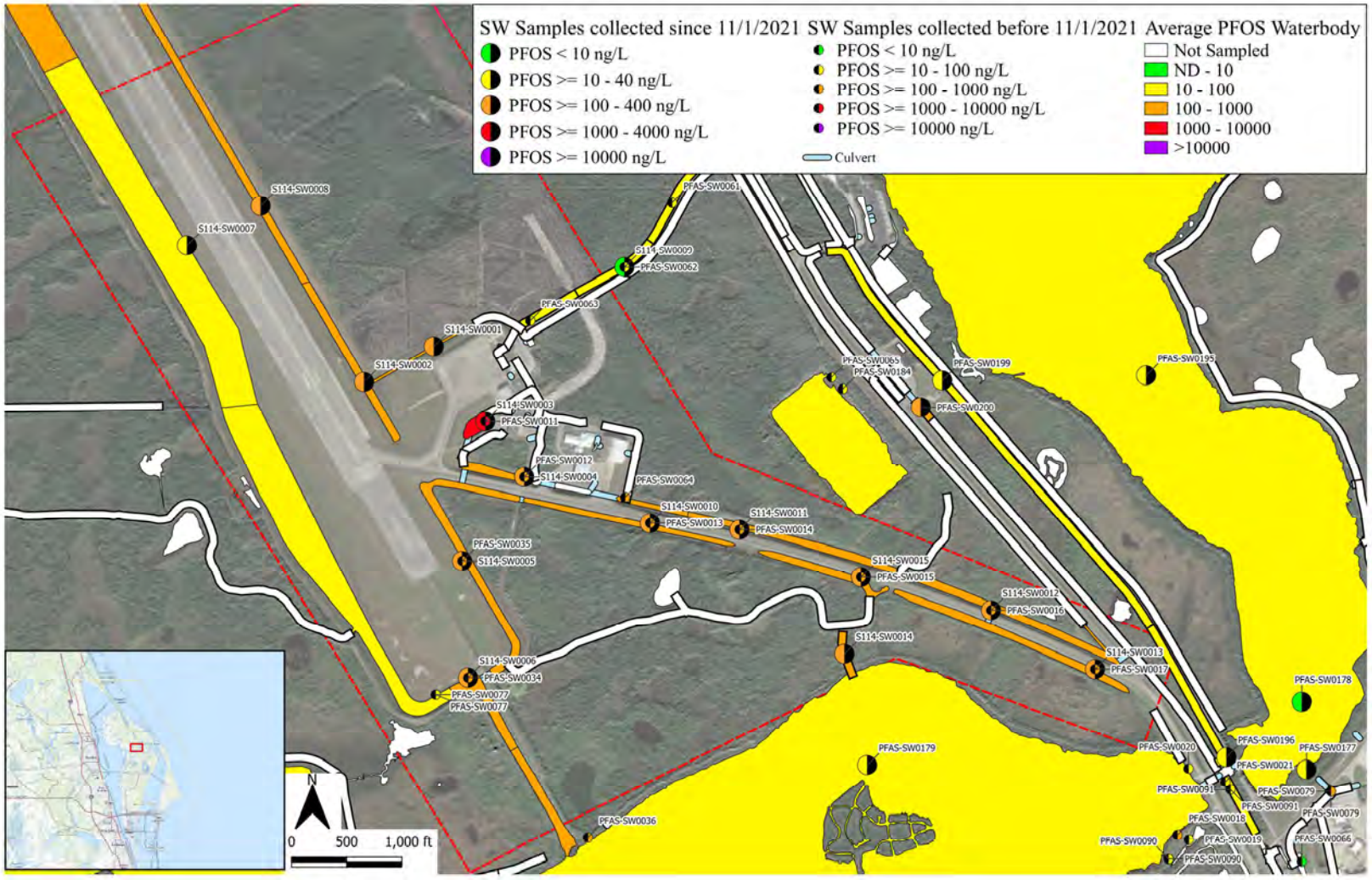
- The estimated areal extent of groundwater with PFAS concentrations above the RSLs is 704 acres.
- The estimated areal extent of groundwater with PFAS concentrations 1000 times the RSLs is 11 acres.

Lateral Delineation:

- South and East – Assume plume extends to Banana Creek.
- North – Remains undelineated. Additional SWMUs located to north.
- West – Generally delineated except for southwest and northwest areas.

Vertical Delineation:

- Vertical delineation still needed at 22 of 63 DPT sample locations.
  - Need vertical delineation below 35 feet at 7 locations.
  - Need vertical delineation below 45 feet at 15 locations.
  - No samples collected below 45 feet.



Surface Water PFOS Results

Note: PFOA did not exceed FDEP SW screening levels in any samples at SWMU 114

Surface Water Sample Statistics

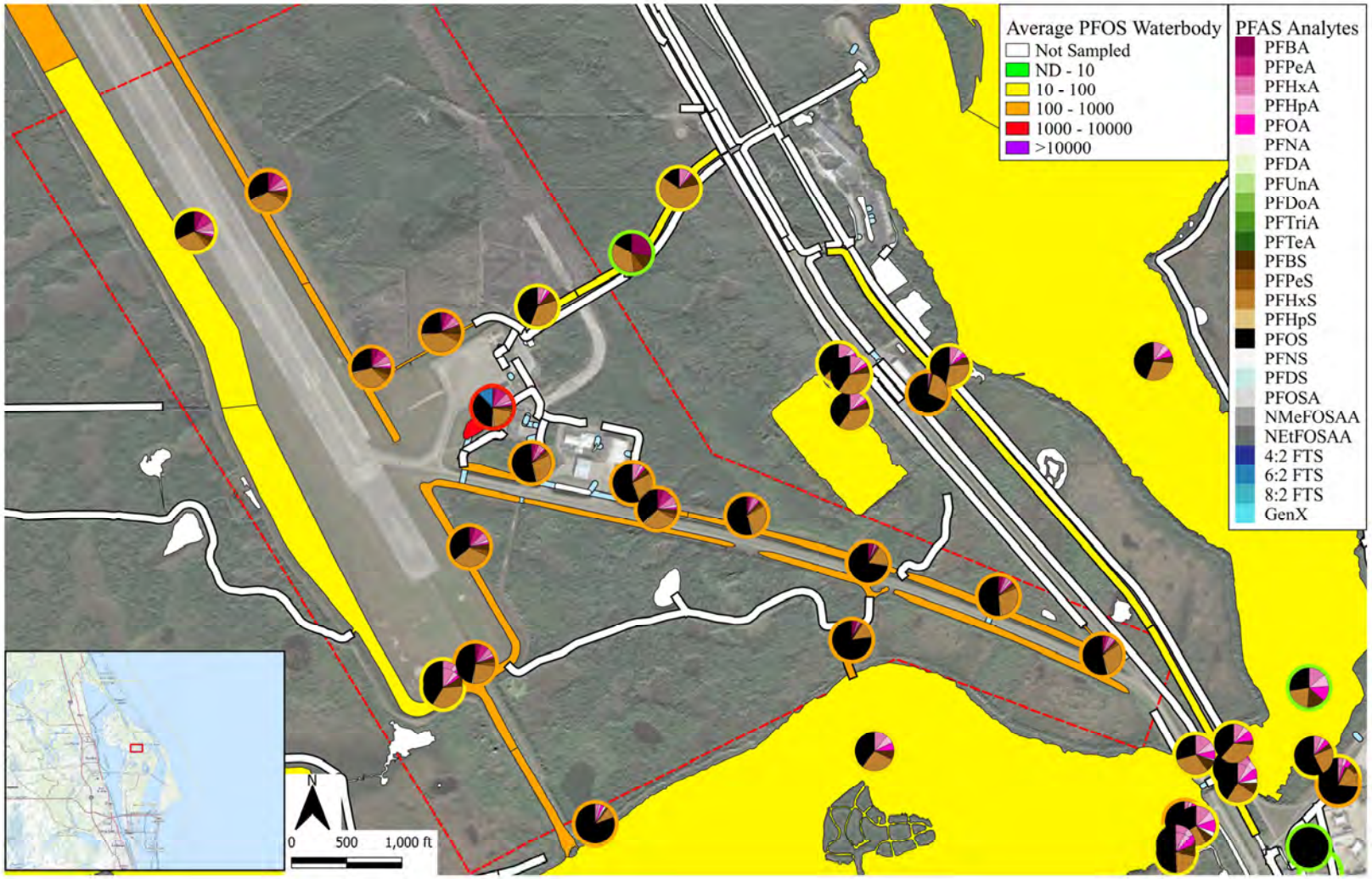
	Parameter	Number of Samples	Number of Detections	Minimum Concentration (ng/L)	Maximum Concentration (ng/L)	Location with Maximum Concentration	SW SL [(1)]	Number of Detections Exceeding SW SL
Carboxylates	PFBA	17	17	10.2	114	S114-SW0003	N/A	
	PFPeA	17	15	3.6	462	S114-SW0003	N/A	
	PFHxA	17	16	6.7	312	S114-SW0003	N/A	
	PFHpA	17	16	2.2	107	S114-SW0003	N/A	
	PFOA	17	16	3.9	77.3	S114-SW0003	500	0
	PFNA	17	1	10.9	10.9	S114-SW0003	N/A	
	PFDA	17	1	3.8	3.8	S114-SW0003	N/A	
	PFUnA	17	0	No Detections	No Detections	No Detections	N/A	
	PFDoA	17	0	No Detections	No Detections	No Detections	N/A	
	PFTriA	17	0	No Detections	No Detections	No Detections	N/A	
	PFTeA	17	0	No Detections	No Detections	No Detections	N/A	
Sulfonates	PFBS	17	16	4.2	119	S114-SW0003	N/A	
	PFPeS	17	16	3.3	141	S114-SW0003	N/A	
	PFHxS	17	17	12.8	935	S114-SW0003	N/A	
	PFHpS	17	15	2.5	67.9	S114-SW0003	N/A	
	PFOS	17	17	6.2	1740	S114-SW0003	10	16
	PFNS	17	0	No Detections	No Detections	No Detections	N/A	
	PFDS	17	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	17	0	No Detections	No Detections	No Detections	N/A	
	NMeFOSAA	17	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	17	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	17	0	No Detections	No Detections	No Detections	N/A	
	6:2 FTS	17	3	4.1	573	S114-SW0003	N/A	
	8:2 FTS	17	0	No Detections	No Detections	No Detections	N/A	
	GenX	17	0	No Detections	No Detections	No Detections	N/A	

Notes:

(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.

SW SL = Surface Water Screening Level

N/A = not established



Surface Water PFAS Ratios

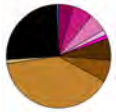
PFAS signatures are different in the areas

immediately around Fire Station #2

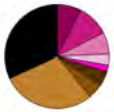
and Towway

when compared to locations

north of the SLF tarmac



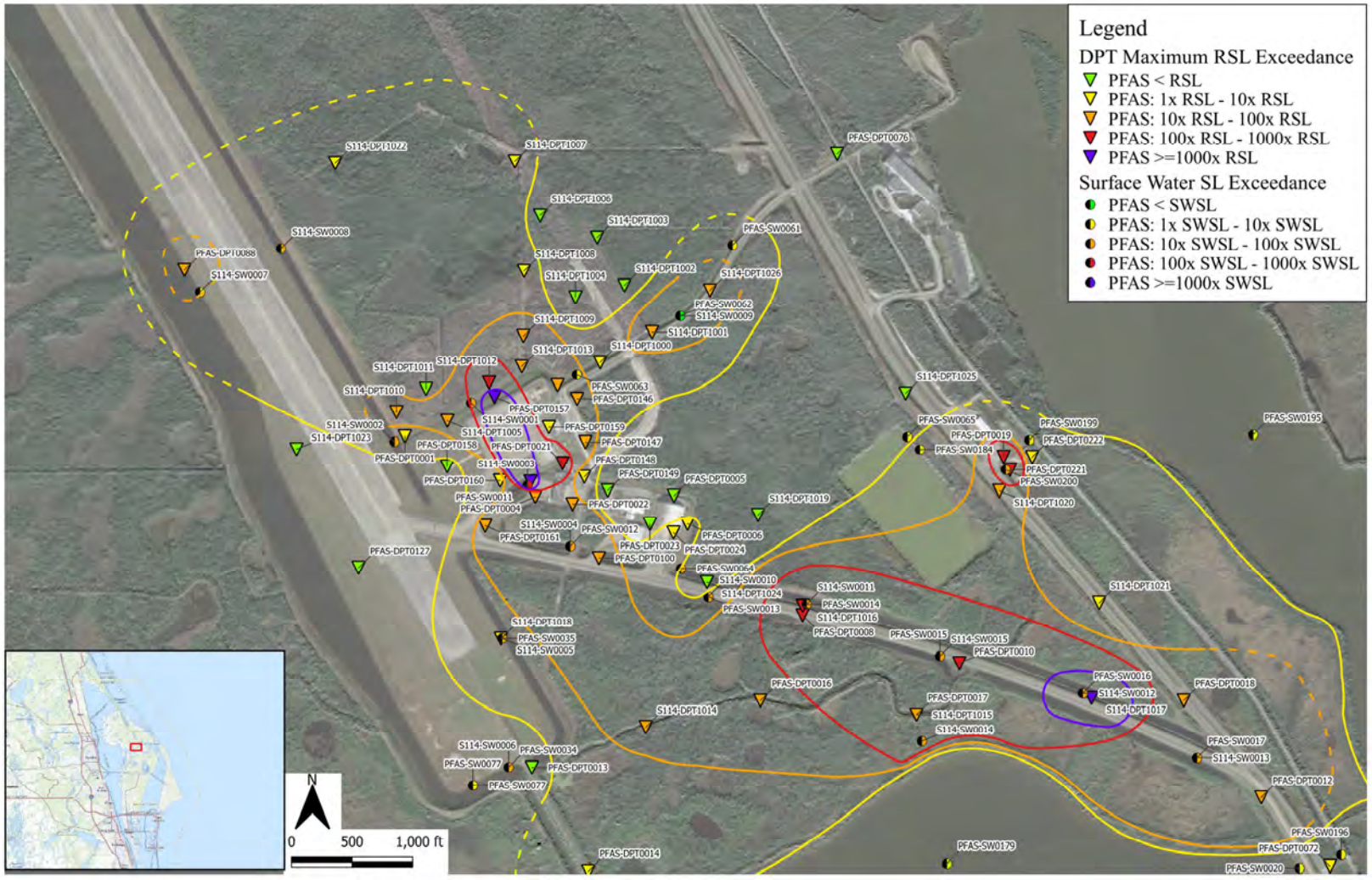
and along the runway



Surface water signatures tend to resemble clusters identified by AECOM, 2021 for legacy AFFF and modern AFFF. Locations with higher PFHxS than PFOS are similar to those for modern AFFF and locations with higher PFOS than PFHxS are similar to those for legacy AFFF.

Delineation of Surface Water Impacts Status

- Nearly all sampled surface water bodies have exceeded the SW SL (10 ng/L) for PFOS.
- PFAS concentrations exceed the SW SL at points that connect to Banana Creek.



PFAS Exceeding EPA RSLs and FDEP SW SLs

May 2022 EPA RSLs:

PFOA: 6 ng/L

PFNA: 6 ng/L

PFBS: 600 ng/L

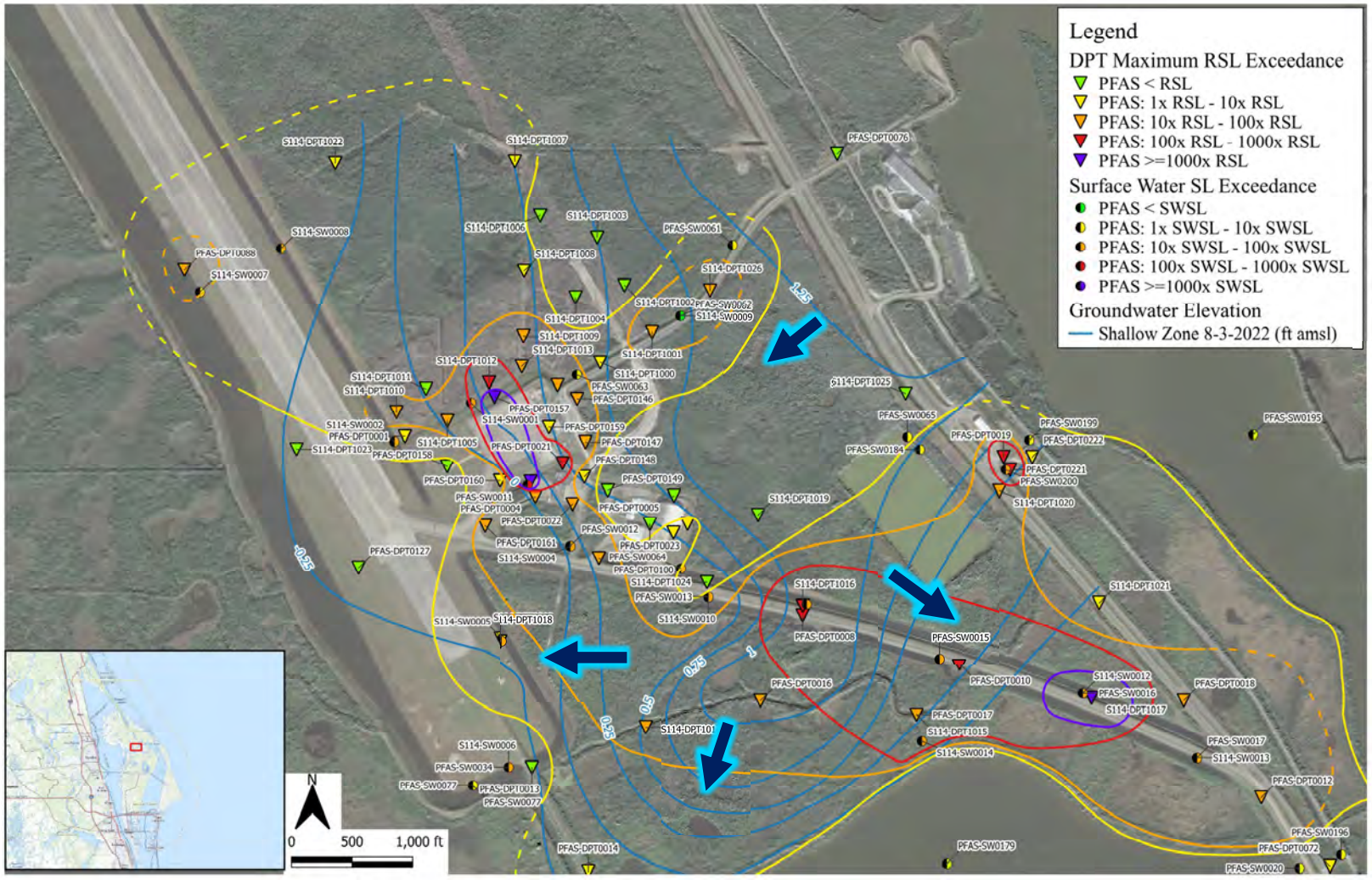
PFHxS: 40 ng/L

PFOS: 4 ng/L

FDEP 2020 Surface Water Screening Levels:

PFOA: 500 ng/L

PFOS: 10 ng/L



PFAS Exceeding EPA RSLs and FDEP SW SLs

GW flow direction

May 2022 EPA RSLs:

PFOA: 6 ng/L

PFNA: 6 ng/L

PFBS: 600 ng/L

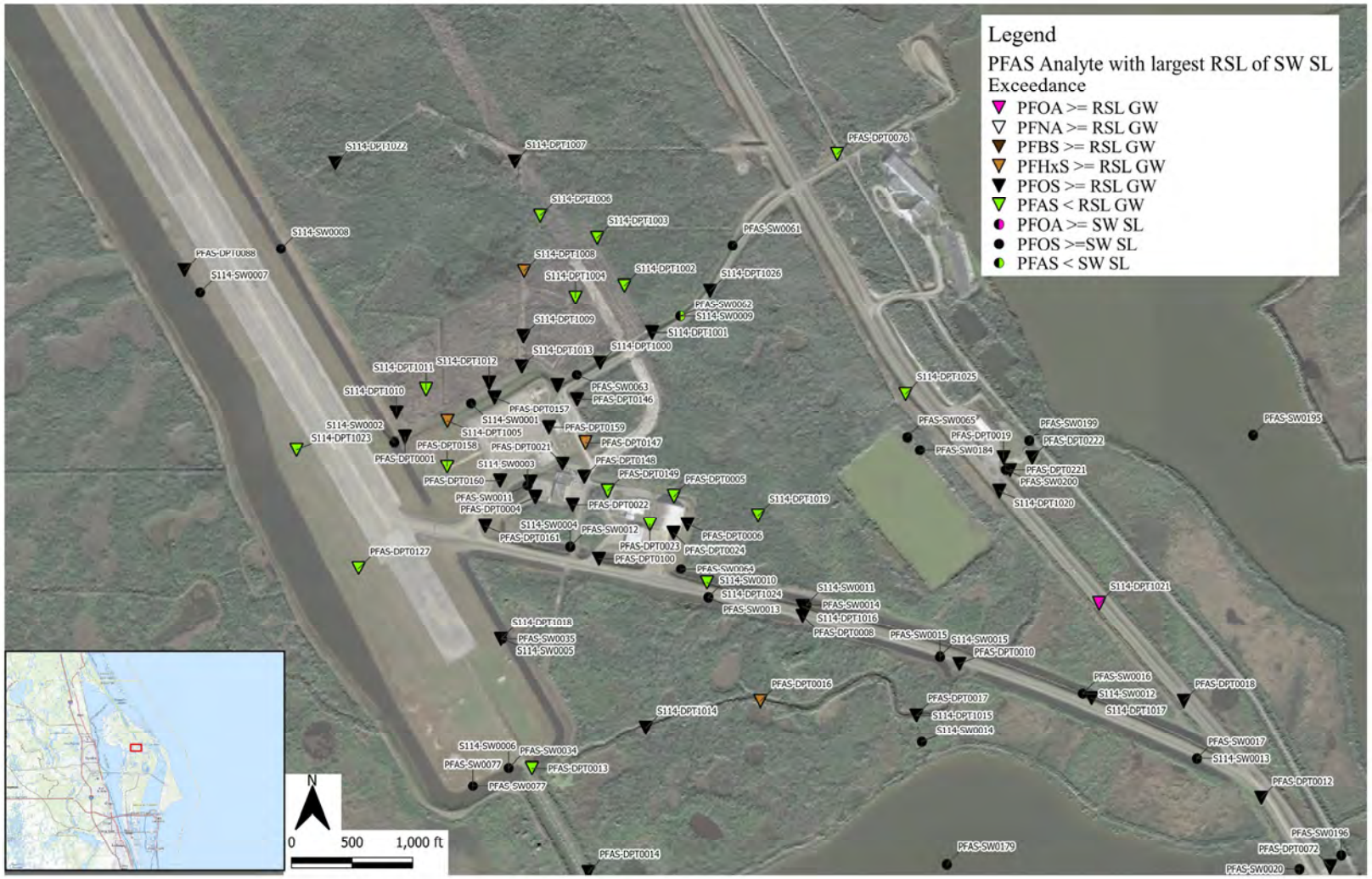
PFHxS: 40 ng/L

PFOS: 4 ng/L

FDEP 2020 Surface Water Screening Levels:

PFOA: 500 ng/L

PFOS: 10 ng/L



PFAS Exceeding EPA RSLs and FDEP SW SLs

May 2022 EPA RSLs:

PFOA: 6 ng/L

PFNA: 6 ng/L

PFBS: 600 ng/L

PFHxS: 40 ng/L

PFOS: 4 ng/L

FDEP 2020 Surface Water Screening Levels:

PFOA: 500 ng/L

PFOS: 10 ng/L

Summary

Groundwater:

- Multiple PFAS groundwater plumes have been identified at SWMU 114. Other potential source areas may exist.
- In general, groundwater flows from the northern corner of the site radially towards the west, southwest, south and southeast.
- The PFAS groundwater plume is assumed to extend to Banana Creek to the south and east. The plume remains undefined to the north and west. The plume has not been delineated vertically and extends to a depth of at least 45 feet. A silt, shell and/or clay layer is present from a depth of 43 to 48 feet to at least 60 feet. This layer may serve as a retarding unit.

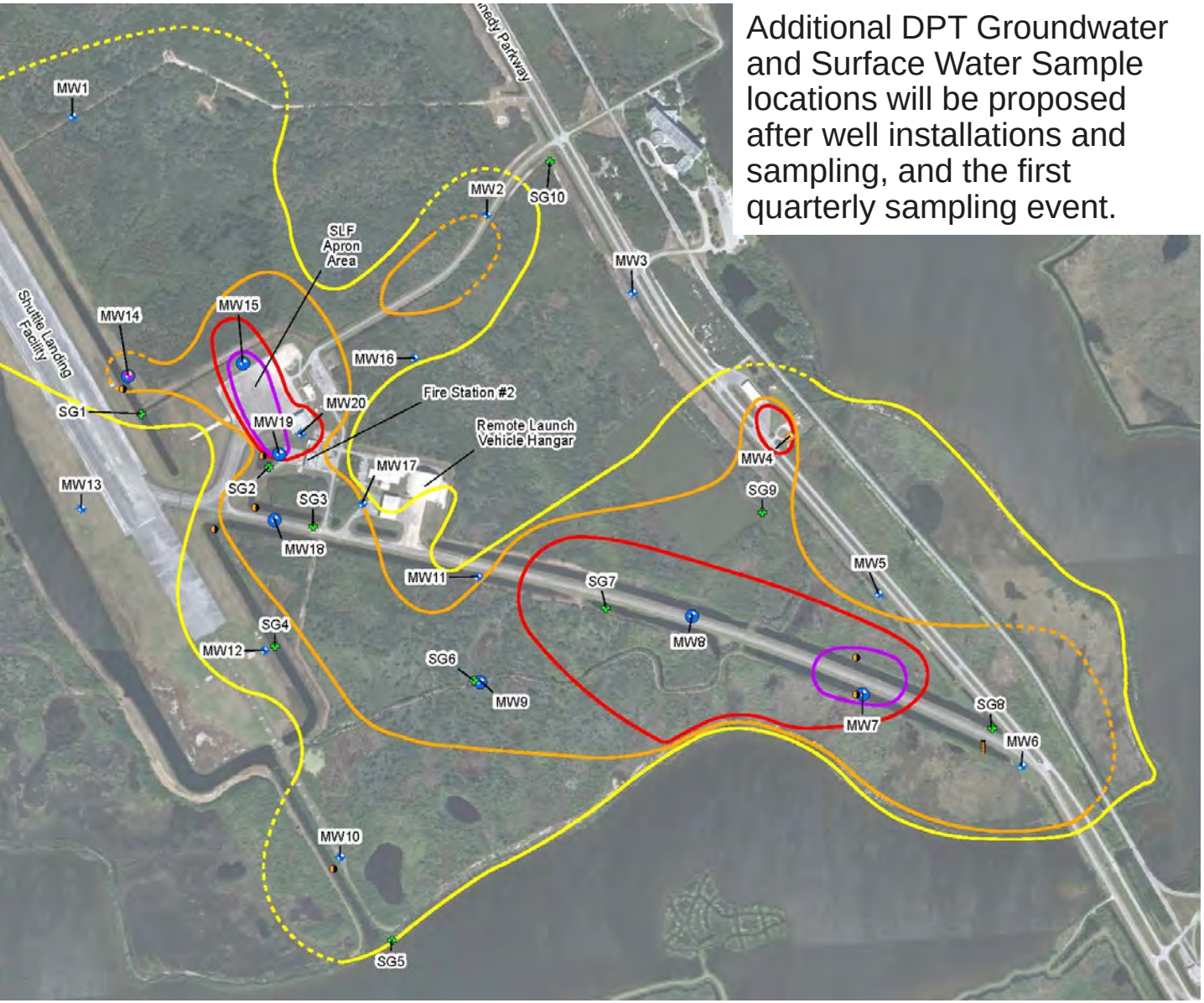
Surface Water:

- Nearly all sampled surface water bodies exceeded the SW SL for PFOS and concentrations exceed the SW SL at points that connect to Banana Creek.
- The highest surface water PFOS concentrations were detected in the pond behind Fire Station #2.

All concrete and asphalt SPLP samples exceeded the PFOS RSL.

2023 Investigation Focus

- The 2023 SLF PFAS investigation will include the Morpheus Test Site on the North End of the SLF and the Former SLF Rescue Building Site located in the midfield area, combining the entire SLF Area into a single study area.
- The primarily focus on the 2023 investigation will be on groundwater/surface water interactions.
- 2023 activities will include soil sampling, DPT groundwater sampling, monitoring well installation and sampling, staff gauge installations and surface water sampling.
- On a quarterly basis; water level measurements, staff gauge readings, surface water and groundwater samples will be collected from select locations

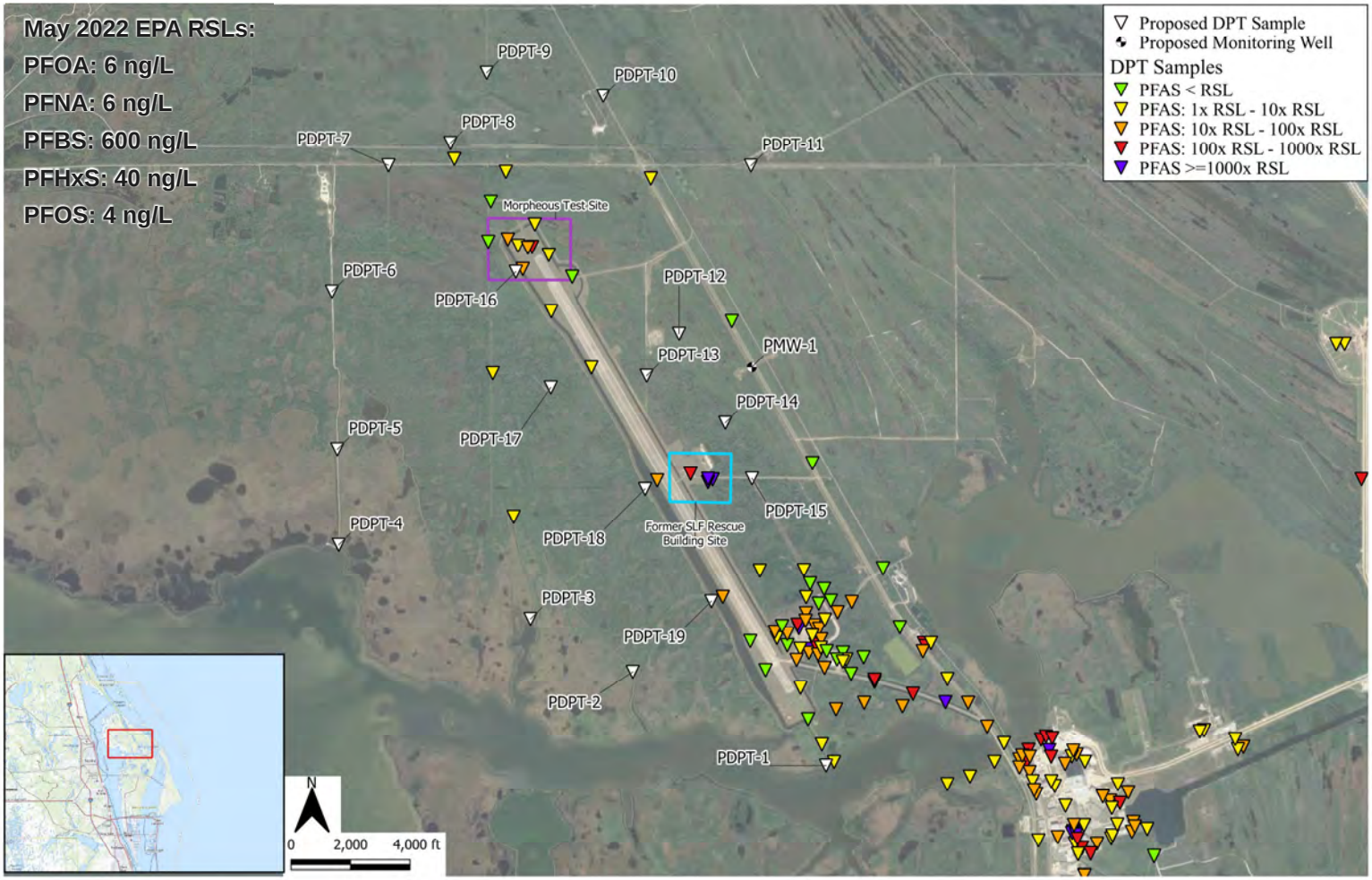


Additional DPT Groundwater and Surface Water Sample locations will be proposed after well installations and sampling, and the first quarterly sampling event.

2023 Sample Locations

Legend

- Existing Monitoring Well
- Staff Gauge Location
- Proposed Shallow (WT-1' + 10') and Intermediate Well (30'-35') Locations
- Proposed Shallow Well Location
- Proposed Shallow Well for Quarterly Sampling
- Proposed Quarterly Surface Water Sample
- Proposed Lithologic Boring Location
- Extent of Groundwater Above SLs (dashed where inferred)
- Extent of Groundwater Above 10 x SLs (dashed where inferred)
- Extent of Groundwater Above 100 x SLs
- Extent of Groundwater Above 1000 x SLs



2023 Sample Locations

Groundwater samples will be collected from 19 DPT sample locations to delineate PFAS compounds to the RSL at the SLF.

Work Plans for the Morpheus Test Site and Former SLF Rescue Building Site will be prepared.

- Questions?

APPENDIX C

Field Documentation

Daily Quality Control Report

Daily Quality Control Report	
Date:	**11/15/2021**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	**S**	**M**	**T**	**W**	**TH**	**F**	**S**
		X					

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	60	72

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SLF	7	0	7
Jason Bublitz	Environmental Scientist	SLF	8	0	8
Dustin Lupis	Field Technician	SLF	8	0	8
TOTAL HGL PERSONNEL ONSITE		**3**	**TOTAL HOURS WORKED**		**23**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
Ryan O'Meara	NASA RPM	SLF	0.5
Geoffrey Card	NASA Safety	SLF	0.5
TOTAL GOV PERSONNEL ONSITE	**2**		**1**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Angel Aquiro	Earth Tech Drilling	SLF	6.5	0	6.5
Aram Garcia	Earth Tech Drilling	SLF	6.5	0	6.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**13**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	11/15/2021	11/15/2021	6.5	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	11/15/21	N/A	N/A	N/A	3

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Begin DPT GW Sampling Collection	**S = Start**	Begin collection of GW samples from multiple locations to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1000-007.0-2021115	1255	PFAS/PFOA	Pending
S114-DPT1000-015.0-2021115	1338		
S114-DPT1000-025.0-2021115	1404		
S114-DPT1000-035.0-2021115	1434		
S114-DPT1000-005.0-2021115	1708		
S114-FB-20211115-01	1720		
S114-EB-20211115-01	1725		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls

6. Description of Work Completed

0930 - Jason B. and Howard F. on-site to meet locators to clear locations near roadway.

1100 - Ryan O. and Geoffrey C. on-site.

1115 - Drillers and Dustin L. on-site. Conducts Nuts and Bolts meeting with all personnel.

1130 - Ryan O. and Geoffrey C. off-site. Conduct TGSM and rig inspection.

1200 - Begin hand clearing S114-DPT1000 (location #16 on Figure 2A) to 5' bgs with hand auger.

1255-1434 - Collect S114-DPT1000-007.0-20211115, S114-DPT1000-015.0-20211115, S114-DPT1000-025.0-20211115, and S114-DPT1000-035.0-20211115.

1450 - Drill crew preps to pressure grout boring location.

Note: 1500-1530 - Drill crew got rod stuck while opening screen in boring.

1545 - Drill crew breaks for lunch.

1600 - Begin pressure grouting DPT1000 boring location.

1650 - Hand clear S114-DPT1001 (location #17 on Figure 2A) to 5' bgs.

1708 - Collect S114-DPT1001-005.0-20211115.

1720 - Collect S114-FB-20211115-01.

1725 - Collect S114-EB-20211115-01.

1730 - Clean up work area and stage drill rig.

1740 - Site secure. All personnel off-site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Jason Bublitz	**11/16/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2021.11.16 06:03:56 -05'00'	**11/16/2021**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**11/16/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2021.11.16 07:07:36 -05'00'	**11/16/2021**

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 11-15-2021 / 1130 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jasan Bublik

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): traffic

Specific Training Covered: Be mindful of moving traffic and stay at least 15' from roadway

Attendees

Name Printed and Employee Number:	Signature:
Jasan Bublik	
Howard Fowler	
Dustin Tupis	
Angel Aquino	
Aram Garcia	

SGS North America Inc - Orlando

Chain of Custody

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

4405

SGS - ORLANDO JOB # : **PAGE___1___OF___1____**

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: **SLF PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL											LAB USE ONLY
	S114-DPT1000-007.0-20211115	11/15/21	1255	DL	GW	2		X								X											
	S114-DPT1000-015.0-20211115	11/15/21	1338	DL	GW	2		X								X											
	S114-DPT1000-025.0-20211115	11/15/21	1404	DL	GW	2		X								X											
	S114-DPT1000-035.0-20211115	11/15/21	1434	DL	GW	2		X								X											
	S114-DPT1001-005.0-20211115	11/15/21	1708	DL	GW	2		X								X											
	S114-FB-20211115-01	11/15/21	1720	DL	GW	2		X								X											
	S114-EB-20211115-01	11/15/21	1725	DL	GW	2		X								X											

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
- ☐ **REDT1 (EPA LEVEL 3)**
- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation 6**	**Relinquished By/Affiliation 7**	**Date Time:**	**Received By/Affiliation 8**

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

http://www.sgs.com/en/terms-and-conditions

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7822DT

Equipment Number:

Hours/Mileage: 1063.0 hrs

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:	
Aram Garcia	11-15-21
Operator/Inspector:	Date:

Attachment A. Daily PFAS Sampling Checklist

Date: 11-15-2021

Site Name: SLF PFAS

Weather (*temperature/precipitation*): _____

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- ☑ No water- or stain-resistant clothing (e.g., GORE-TEX®)
- ☑ During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- ☑ Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- ☑ Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- ☑ Clothing has not been recently laundered with a fabric softener
- ☑ No coated HDPE suits (e.g., coated Tyvek® suits)
- ☑ Field crew has not used cosmetics, moisturizers, or other related products today
- ☑ Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- ☑ Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- ☑ Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- ☑ No materials containing Teflon™, Viton™, or fluoropolymers
- ☑ No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- ☑ No plastic clipboards, binders, or spiral hard cover notebooks
- ☑ No waterproof field books
- ☑ No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- ☑ No chemical (blue) ice, unless it is contained in a sealed bag
- ☑ No aluminum foil
- ☑ No sticky notes (e.g., certain Post-It® products)

Decontamination:

- ☑ Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- ☑ "PFAS-free" water is on-site for decontamination of field equipment – PFAS free water from tested source
- ☑ Alconox® or Liquinox® used as decontamination detergent

Contents

Page

NASA/KSC-SLF NS1010.01.03 11/15/21

Purpose - PFAS DPT Sampling/GW Sampling

Personnel - Jason B. (HGL), Howard F. (HGL), Dustin L. (HGL), Angel A. (Eartech), Aram G. (NASA), Ryan O. (NASA), Geoff C.

Equipment - GeoProbe, work trucks, sampling gear, Pecon equipment.

Weather - Hi - 72° Lo - 60° Sunny wind - 11 mph S precipitation - 0%

0930 - Jason B. & Howard F on site to meet with locators.

1100 - Ryan O., Geoff Card (NASA safety) on-site.

1115 - Drillers & Dustin L. on-site. Conduct Nuts & bolts meeting with all personnel.

1130 Ryan O. & Geoff Card off-site. Conduct TGSM and campfire inspection.

1200 - Begin hand clearing S114-DPT1000-007.0-20211105 (location # 16 on figure 2A).

1230 - Rod and screen installed from 3-7 ft bgs and insert HDPE tubing.

1235 - Begin purge S114-DPT1000-007.0-20211105

1255 - Collect sample S114-DPT1000-007.0-20211115 for PFAS

~~1310 - Began purge at S114-DPT1000-011.0-20211115 (R)~~

~~1317 - collect sample at S114-DPT1000-011.0-20211115 for PFAS (R)~~

1335 - Began purge at S114-DPT1000-015.0-20211115

1338 - collect sample at S114-DPT1000-015.0-20211115 for PFAS

1401 - Began purge at S114-DPT1000-025.0-20211115

1404 - Collect sample at S114-DPT1000-025.0-20211115 for PFAS

1431 - Began purge at S114-DPT1000-035.0-20211115

1434 - Collect sample at S114-DPT1000-035.0-20211115 for PFAS

1450 - Began to prep for pressure grouting.

1500 - Note - A rod got stuck while pulling out.

1530 - Drillers got the rod unstuck. Drillers taking lunch.

1545 - Drillers back from lunch.

1600 - Began pressure grouting S114-DPT1000 bore hole.

1650 - hand clear S114-DPT1001-005.0-20211115 (location #17 on figure 2A).

NASA - KSC - SLF NS1010.01.03

11/15/21

1720 - Collect S114-FB-20211115-01 (field blank)
1725 - Collect S114-EB-20211115-01 (equipment blank).
1730 - Clean up work area and stage drilling.
1740 - All personnel off-site.
Note - All samples collected following HCL SOPs & Geosynth DPT PFAS SOPs.
- Samples placed on ice following collection.

Photo 01. Photo of drill crew decontaminating sampling screen.

Photo 02. Photo of location #9, marked with pin flag.

Photo 03. Photo of site conditions near location #13.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**11/16/2021**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
			X				

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	60			77			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
		X					

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SLF	1.5	0	1.5
Jason Bublitz	Environmental Scientist	SLF	9	0	9
Dustin Lupis	Field Technician	SLF	11	0	11
TOTAL HGL PERSONNEL ONSITE		**3**	**TOTAL HOURS WORKED**		**21.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Angel Aquiro	Earth Tech Drilling	SLF	11	0	11
Aram Garcia	Earth Tech Drilling	SLF	11	0	11
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**22**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	11/15/2021	11/16/2021	11	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	11/15/21	N/A	N/A	N/A	3

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Continue DPT GW Sampling Collection	**C = Continuing**	Continue collection of GW samples from multiple locations to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1001-015.0-2021116	0716	PFAS/PFOA	Pending
S114-DPT1001-025.0-2021116	0742		
S114-DPT1001-035.0-2021116	0810		
S114-FD-20211116-01	0810		
S114-DPT1002-005.0-20211116	1001		
S114-DPT1002-015.0-2021116	1021		
S114-DPT1002-025.0-2021116	1041		
S114-DPT1002-035.0-2021116	1105		
S114-DPT1003-005.0-20211116	1218		
S114-DPT1003-015.0-2021116	1241		
S114-DPT1003-025.0-2021116	1306		
S114-DPT1003-035.0-2021116	1421		
S114-DPT1004-005.0-20211116	1548		
S114-DPT1004-015.0-2021116	1608		
S114-DPT1004-025.0-2021116	1628		
S114-DPT1004-035.0-2021116	1652		
S114-FB-20211116-02	1710		
S114-EB-20211116-02	1715		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls.

6. Description of Work Completed

0630 - All personnel on-site. Conduct TGSM and rig inspection.

0700 - Continue sampling DPT1001 (Location #17 on Figure 2A)

0716-0810 - Collect S114-DPT1001-015.0-20211116, S114-DPT1001-025.0-20211116, S114-DPT1001-035.0-20211116, S114-FD-20211116-01.

0820 - Remove rodding and pressure grout DPT1001 boring location.

0915 - Begin tracking drill rig DPT1002 (location #14 on Figure 2A).

0946 - Arrive at DPT1002 location and hand auger to 5' bgs.

Note: Difficult terrain which required extended time to get to boring location (deep ruts, tree ruts, slippery mud, and standing water).

1001-1105 - Collect S114-DPT1002-005.0-20211116, S114-DPT1002-015.0-20211116, S114-DPT1002-025.0-20211116, and S114-DPT1002-035.0-20211116.

1130 - Pressure grout DPT1002 boring location.

1200 - Mob drill rig to DPT1003 (location #8 on Figure 2A).

1208 - Hand auger to 5' bgs at DPT1003.

1238-1421 - Collect S114-DPT1003-005.0-20211116, S114-DPT1003-015.0-20211116, S114-DPT1003-025.0-20211116, and S114-DPT1003-035.0-20211116.

1425 - Pressure grout DPT1003 boring location and mob rig to Astronaut Road. Drillers fill water tank.

1515 - Mob to DPT1004 (location #13 on Figure 2A).

1530 - Hand auger to 5' bgs at DPT1004. Jason B. off-site for the day.

1548-1652 - Collect S114-DPT1004-005.0-20211116, S114-DPT1004-015.0-20211116, S114-DPT1004-025.0-20211116, and S114-DPT1004-035.0-20211116.

1659 - Pressure grout DPT1004 boring location and mob rig to Astronaut Road.

1710-1715 - Collect S114-FB-20211116-02 and S114-EB-20211116-02

1730 - Drillers off-site for the day.

1740 - Dustin L. secure site. All personnel off-site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

Daily Quality Control Report

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Jason Bublitz	**11/16/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2021.11.17 06:10:09 -05'00'	**11/16/2021**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**11/16/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2021.11.17 06:48:10 -05'00'	**11/16/2021**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 11-16-21 / 0630 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jasan Bublik

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Struck by

Specific Training Covered: Be mindful of moving equipment and traffic.
~~Always~~ always wear PPE when on-site

Attendees

Name Printed and Employee Number:	Signature:
Jasan Bublik	
Angel Aquino	
Aram Garcia	
Dustin Lupis	

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___1___OF___2____**

SGS - ORLANDO Quote # | **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: **SLF PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

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DW - Drinking Water
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SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes	LAB USE ONLY
	S114-DPT1001-015.0-20211116	11/16/21	0716	DL	GW	2		X								X	
	S114-DPT1001-025.0-20211116	11/16/21	0742	DL	GW	2		X								X	
	S114-DPT1001-035.0-20211116	11/16/21	0810	DL	GW	2		X								X	
	S114-FD-20211116-01	11/16/21	0810	DL	GW	2		X								X	
	S114-DPT1002-005.0-20211116	11/16/21	1001	JB	GW	2		X								X	
	S114-DPT1002-015.0-20211116	11/16/21	1021	JB	GW	2		X								X	
	S114-DPT1002-025.0-20211116	11/16/21	1041	JB	GW	2		X								X	
	S114-DPT1002-035.0-20211116	11/16/21	1105	JB	GW	2		X								X	
	S114-DPT1003-005.0-20211116	11/16/21	1218	DL	GW	2		X								X	
	S114-DPT1003-015.0-20211116	11/16/21	1241	DL	GW	2		X								X	
	S114-DPT1003-025.0-20211116	11/16/21	1306	DL	GW	2		X								X	
	S114-DPT1003-035.0-20211116	11/16/21	1421	DL	GW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

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- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
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- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

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		2	3		4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
		6	7		8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):** _____

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SGS North America Inc - Orlando

Chain of Custody

4405 SGS - ORLANDO JOB # : PAGE___2___OF___2____

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

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DW - Drinking Water
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SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes	LAB USE ONLY
	S114-DPT1004-005.0-20211116	11/16/21	1548	DL	GW	2		X								X	
	S114-DPT1004-015.0-20211116	11/16/21	1608	DL	GW	2		X								X	
	S114-DPT1004-025.0-20211116	11/16/21	1628	DL	GW	2		X								X	
	S114-DPT1004-035.0-20211116	11/16/21	1652	DL	GW	2		X								X	
	S114-FB-20211116-02	11/16/21	1710	DL	GW	2		X								X	
	S114-EB-20211116-02	11/16/21	1715	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe

Equipment Number:

Hours/Mileage: 1066.1 hrs

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

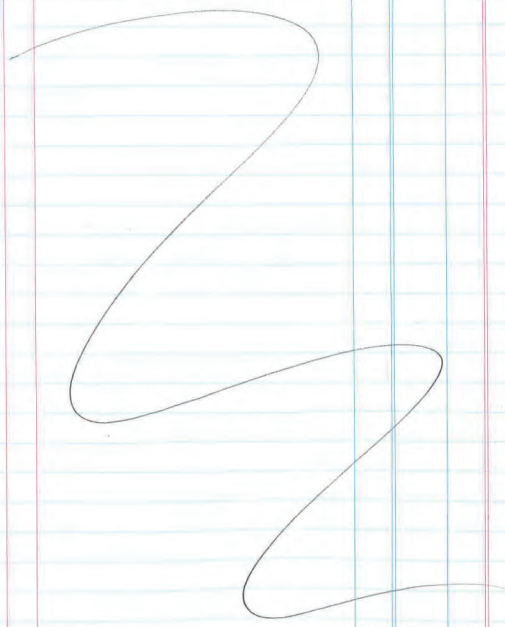
These items are to be checked each shift before operating this piece of equipment. Report all items requiring repair to supervisor.

Notes:	
	11-16-21
Operator/Inspector:	Date:

NASA - KSC - SLF NS1010.01.03

11/15/21

1720 - Collect S114-FB-20211115-01 (field blank)
1725 - Collect S114-EB-20211115-01 (equipment blank).
1730 - Clean up work area and stop drilling.
1740 - All personnel off-site.
Note: All samples collected following HGL SOPs & Geosyntec DPT PFAS SOPs.
- Samples placed on ice following collection.



NASA - KSC - SLF NS1010.01.03

11/16/21

~~0630 - All personnel on-site~~ JHS
Purpose: Continue collection of PFAS samples for dewatering assessment.
Personnel: Jason B & Dusha L (HGL) Angel A & Aram G (ETD)
Equipment: Geoprobe, work tasks, SSSP, Dig Permit, GPS
Weather: HI: 77 Lo: 60; clear; wind SE 8mph.
0630: All personnel on-site, conduct TGSM & rig inspection.
0700: Continue sampling DPT1001 (Location # 17).
0713: Begin purge DPT1001-015.0-20211116
0716: Collect DPT1001-015.0-20211116
0739: Begin purge DPT1001-025.0-20211116
0742: ~~Begin~~ Collect DPT1001-025.0-20211116
0807: Began Purge DPT1001-035.0-20211116
0810: Collect DPT1001-035.0-20211116, also collect S114-FD-20211116-01 (field duplicate).
0820: Remove rubber and pressure grout DPT1001 boring
0915: Begin trucking to DPT1002 (Location # 14)
0946: Arrive at DPT1002 (Location # 14). Hand clear boring location to 5' bgs.
note: Difficult terrain getting to location (drop cuts, tree roots and standing water).
0958: Begin purge at DPT1002-005.0-20211116
1001: Collect DPT1002-005.0-20211116.
1018: Begin purge at DPT1002-015.0-20211116
1021: Collect DPT1002-015.0-20211116.
1038: Begin purge at DPT1002-025.0-20211116
1041: Collect DPT1002-025.0-20211116
1102: Begin purge at DPT1002-035.0-20211116
1105: Collect DPT1002-035.0-20211116.
1130: Possum grout DPT1002 boring location.

NASA/KSC - SLF NS1010.01.03

11/16/21

1218 : collect DPT1003-005.0-20211116.
1238 : Begin purge at DPT1003-005.0-20211116
1241 : Collect DPT1003-015.0-20211116
1303 : Begin purge at DPT1003-025.0
1306 : Collect DPT1003-025.0-20211116.
1315 : Drill crew breaks for lunch.
1345 : Crew walks back out to work area.
1418 : Begin purge DPT1003-035.0-20211116.
1421 : Collect DPT1003-035.0-20211116.
1425 : Pressure grout DPT1003 boring location and mob rig back to Astronaut Road. Drillers filling with water
1515 : Mob to DPT 1004 (location #13).
1520 : Hand clear DPT1004 to 5' bgs. Jason B. off site.
1545 : Began purge DPT1004-005.0-20211116
1548 : Collect Sample DPT1004-005.0-20211116
1605 : Began purge DPT1004-015.0-20211116
1608 : Collect Sample DPT1004-015.0-20211116
1625 : Began purge DPT1004-025.0-20211116
1628 : Collect sample DPT1004-025.0-20211116
1649 : Began purge DPT1004-035.0-20211116
1652 : Collect Sample DPT1004-035.0-20211116
1710 : Collect S114-FB-20211116-02 (Field Blank).
1715 : Collect S114-EB-20211116-02 (Equipment Blank)
1659 : Pressure grout DPT1004 boring location and Mob rig back to Astronaut Rd.
1730 : Drillers off site.
1740 : Dustin L. Secured site. All employees offsite.

Photo 01. Photo of DPT1000 (location #16).

Photo 02. Photo of drill crew pressure grouting DPT1001.

Photo 03. Photo of tracking rig across crane mats to access DPT1002 (location 14).

Photo 04. Tracking rig through difficult terrain to access DPT1002 and DPT1003.

Photo 05. Photo of DPT1002.

Photo 06. Photo of terrain and rig staged at DPT1003.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**11/17/2021**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				

Temp	Min.		Max.	
	55		77	

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SLF	0	0	0
Jason Bublitz	Environmental Scientist	SLF	11	0	11
Dustin Lupis	Field Technician	SLF	11	0	11
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**22**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		**0**	**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Angel Aquiro	Earth Tech Drilling	SLF	11	0	11
Aram Garcia	Earth Tech Drilling	SLF	11	0	11
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**22**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	11/15/2021	11/17/2021	11	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	11/15/21	N/A	N/A	N/A	3

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Continue DPT GW Sampling Collection	**C = Continuing**	Continue collection of GW samples from multiple locations to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1005-005.0-20211117	0803	PFAS/PFOA	Pending
S114-DPT1005-015.0-20211117	0821		
S114-DPT1005-025.0-20211117	0843		
S114-DPT1005-035.0-20211117	0910		
S114-DPT1006-005.0-20211117	1053		
S114-DPT1006-015.0-20211117	1111		
S114-DPT1006-025.0-20211117	1133		
S114-DPT1006-035.0-20211117	1200		
S114-FD-20211117-02	1200		
S114-DPT1007-005.0-20211117	1328		
S114-DPT1007-015.0-20211117	1341		
S114-FD-20211117-03	1341		
S114-DPT1007-025.0-20211117	1404		
S114-DPT1007-035.0-20211117	1434		
S114-DPT1008-005.0-20211117	1535		
S114-DPT1008-015.0-20211117	1556		
S114-DPT1008-025.0-20211117	1618		
S114-DPT1008-035.0-20211117	1650		
S114-FB-20211117-03	1700		
S114-EB-20211117-03	1705		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls.

6. Description of Work Completed

0645 - All personnel on-site. Conduct TGSM and rig inspection.

0650 - Attempt to gain access into Apron area through gate. No answer on access phone.

0700 - SLF personnel arrives and grants us access to work area.

0730 - Mob rig through silt fence area (damaged area) to DPT1005 (location #15 on Figure 2A).

0745 - Hand auger to 5' bgs at DPT1005.

0803-0910 - Collect S114-DPT1005-005.0-20211117, S114-DPT1005-015.0-20211117, S114-DPT1005-025.0-20211117, and S114-DPT1005-035.0-20211117.

0920 - Pressure grout S114-DPT1005 boring location and load rig to trailer to access locations on north side of site.

1000 - Arrive at roadway near locations #1 and #2 on Figure 2A and stage trailer.

1020 - Mob drill rig down trail to access DPT1006 (location #2 on Figure 2A).

1045 - Hand auger to 5' bgs at DPT1006.

1053-1200 - Collect S114-DPT1006-005.0-20211117, S114-DPT1006-015.0-20211117, S114-DPT1006-025.0-20211117, S114-DPT1006-035.0-20211117 and S114-FD-20211117-02.

1205 - Pressure grout DPT1006 boring location and mob drill rig to DPT1007 (location #1 on Figure 2A).

1235-1305 - Driller break for lunch.

1305 - Hand auger to 5' bgs at DPT1007.

1328-1434 - Collect S114-DPT1007-005.0-20211117, S114-DPT1007-015.0-20211117, S114-FD-20211117-03 S114-DPT1007-025.0-20211117, and S114-DPT1007-035.0-20211117

1445 - Pressure grout S114-DPT1007 boring location and mob to DPT1008 (location #7 on Figure 2A).

1515 - Hand auger to 5' bgs at DPT1008.

1535-1650 - Collect S114-DPT1008-005.0-20211117, S114-DPT1008-015.0-20211117, S114-DPT1008-025.0-20211117, and S114-DPT1008-035.0-20211117.

1655 - Pressure grout DPT1008 boring location and stage drill rig.

1700 - Collect S114-FB-20211117-03

1705 - Collect S114-EB-20211117-03

1730 - All personnel off-site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

Daily Quality Control Report

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Jason Bublitz	**11/17/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2021.11.18 06:06:21 -05'00'	**11/17/2021**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**11/17/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2021.11.18 07:33:20 -05'00'	**11/17/2021**

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 11-17-21 / 0645 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jasun Bublith

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls, inclement weather, pinch points, biologicals, traffic, sun-exposure, heat stress, struck by, teamwork, PPE

Specific Safety Topic(s): Biologicals

Specific Training Covered: Be mindful of surroundings and watch for wildlife in/near work areas

Attendees

Name Printed and Employee Number:	Signature:
Jasun Bublith	
Angel Aquino	
Aram Garcia	
Dustin Lupis	

SGS North America Inc - Orlando

Chain of Custody

4405

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___1___OF___2____**

SGS - ORLANDO Quote # **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: **SLF PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
	S114-DPT1005-005.0-20211117	11/17/21	0803	DL	GW	2		X								X	
	S114-DPT1005-015.0-20211117	11/17/21	0821	DL	GW	2		X								X	
	S114-DPT1005-025.0-20211117	11/17/21	0843	DL	GW	2		X								X	
	S114-DPT1005-035.0-20211117	11/17/21	0910	DL	GW	2		X								X	
	S114-DPT1006-005.0-20211117	11/17/21	1053	DL	GW	2		X								X	
	S114-DPT1006-015.0-20211117	11/17/21	1111	DL	GW	2		X								X	
	S114-DPT1006-025.0-20211117	11/17/21	1133	DL	GW	2		X								X	
	S114-DPT1006-035.0-20211117	11/17/21	1200	DL	GW	2		X								X	
	S114-FD-2021117-02	11/17/21	1200	DL	GW	2		X								X	
	S114-DPT1007-005.0-20211117	11/17/21	1328	DL	GW	2		X								X	
	S114-DPT1007-015.0-20211117	11/17/21	1341	DL	GW	2		X								X	
	S114-FD-2021117-03	11/17/21	1341	DL	GW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
- ☐ **REDT1 (EPA LEVEL 3)**
- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		2	3		4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
		6	7		8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):** _____

http://www.sgs.com/en/terms-and-conditions

SGS North America Inc - Orlando

Chain of Custody

4405

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___2___OF___2____**

SGS - ORLANDO Quote # | **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: **SLF PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
	S114-DPT1007-025.0-20211117	11/17/21	1404	DL	GW	2		X								X	
	S114-DPT1007-035.0-20211117	11/17/21	1434	DL	GW	2		X								X	
	S114-DPT1008-005.0-20211117	11/17/21	1535	DL	GW	2		X								X	
	S114-DPT1008-015.0-20211117	11/17/21	1556	DL	GW	2		X								X	
	S114-DPT1008-025.0-20211117	11/17/21	1618	DL	GW	2		X								X	
	S114-DPT1008-035.0-20211117	11/17/21	1650	DL	GW	2		X								X	
	S114-FB-20211117-03	11/17/21	1700	DL	GW	2		X								X	
	S114-EB-20211117-03	11/17/21	1705	DL	GW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
- ☐ **REDT1 (EPA LEVEL 3)**
- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		2	3		4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
		6	7		8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):** _____

http://www.sgs.com/en/terms-and-conditions

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7822 DT

Equipment Number:

Hours/Mileage: 1073.0 hrs

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:

Operator/Inspector: [signature]

Date: 11-17-21

NASA/KSC - SLF NS1010.01.03

11/16/21

1218	:	collect DPT1003-005.0-20211116.
1238	:	Begin purge at DPT1003-005.0-20211116
1241	:	Collect DPT1003-015.0-20211116
1303	:	Begin purge at DPT1003-025.0
1306	:	Collect DPT1003-025.0-20211116.
1315	:	Drill crew breaks for lunch.
1345	:	Crew walks back out to work area.
1418	:	Begin purge DPT1003-035.0 20211116
1421	:	Collect DPT1003-035.0-20211116
1425	:	Pressure grout DPT1003 boring location and mob rig back to Astronaut Road. Drillers filling with water
1515	:	Mob to DPT 1004 (location #13).
1570	:	Hand Clear DPT1004 to 5' bgs. Jason B. off site.
1545	:	Began purge DPT1004-005.0-20211116
1548	:	Collect Sample DPT1004-005.0-20211116
1605	:	Began purge DPT1004-015.0-20211116
1608	:	Collect Sample DPT1004-015.0-20211116
1625	:	Began purge DPT1004-025.0-20211116
1628	:	Collect Sample DPT1004-025.0-20211116
1649	:	Began purge DPT1004-035.0-20211116
1652	:	Collect Sample DPT1004-035.0-20211116
1710	:	Collect S114-FB-20211116-02 (Field Blank)
1715	:	Collect S114-EB-20211116-02 (Equipment Blank)
1659	:	Pressure grout DPT1004 boring location and mob rig back to Astronaut Rd.
1730	:	Drillers off site.
1740	:	Dustin L. Secured site. All employees off site.

NASA/KSC - SLF NS1010.01.03

11/17/21

Purpose	:	Continue collection of DPT Groundwater samples for PFAS/PFOA.
Personnel	:	Jason B. & Dustin L. (HGL) Angel A. & Aram G (ETD).
Equipment	:	Geoprobe, GPS, work trucks, Dig Permit, SSSP, SOPs
Weather	:	Lo- 55 Hi- 77 clear
0645	:	All personnel on-site. Conduct TC-SM and rig inspection.
0650	:	Attempt to access boring inside gate, but no answer on phone.
0700	:	SLF personnel grants us access to work area inside gate.
0730	:	Mob rig through silt fence (damaged area) to DPT1005 (location # 15).
0745	:	hand clear to 5' bgs at DPT1005.
0800	:	Begin purge at DPT1005-005.0-20211117
0803	:	Collect DPT1005-005.0-20211117
0818	:	Begin purge at DPT1005-015.0-20211117
0821	:	Collect DPT1005-015.0-20211117
0840	:	Begin purge at DPT1005-025.0-20211117
0843	:	collect DPT1005-025.0-20211117
0907	:	Begin purge at DPT1005-035.0-20211117
0910	:	Collect sample DPT1005-035.0-20211117
0920	:	Pressure grout boring location and load rig into trailer to access other locations.
1000	:	Arrive at road near location #1 & #2. Stage drill rig.
1020	:	Mob drill rig down trail to DPT1006 (Location # 2).
1045	:	Hand clear to 5' bgs at DPT1006
1050	:	Began purge at DPT1006-005.0-20211117
1053	:	Collect at DPT1006-005.0-20211117
1108	:	Began purge at DPT1006-015.0-20211117
1111	:	Collect at DPT1006-015.0-20211117
1130	:	Began purge at DPT1006-025.0-20211117
1133	:	Collect at DPT1006-025.0-20211117
1157	:	Began purge at DPT1006-035.0-20211117

NASA/KSC - SLF NS1010.01.03 11/17/21

1205	:	Pressure grout DPT1006 ~~soil~~ boring. Mob rig to DPT 1007 (location 1).
1235	:	Duffres break for lunch.
1305	:	hand clear to 5' bgs at DPT1006?
1325	:	Begin purge DPT1007-005.0-20211117.
1328	:	Collect DPT1007-005.0-20211117
1338	:	Began purge DPT1007-015.0-20211117
1341	:	Collect DPT1007-015.0-20211117 & S814-FD-20211117-03 (Fd Duplicate)
1401	:	Begin purge DPT1007-025.0-20211117
1404	:	Collect DPT1007-025.0-20211117
1431	:	Begin purge DPT1007-035.0-20211117
1434	:	Collect DPT1007-035.0-20211117
1445	:	Pressure grout boring location and mob to DPT1008 (Location # 7).
1515	:	Hand clear DPT1008 TO 5' bgs
1532	:	Began purge at DPT1008-00.50-20211117
1535	:	Collect DPT1008-005.0-20211117
1553	:	Began purge at DPT1008-015.0-20211117
1556	:	Collect DPT1008-015.0-20211117
1615	:	Began purge at DPT1008-025.0-20211117
1618	:	Collect DPT1008-025.0-20211117
1647	:	Began purge at DPT1008-035.0-20211117
1650	:	Collect DPT1008-035.0-20211117
1655	:	Pressure grout boring location DPT1008. Stage rig.
1700	:	Collect S114-FB-20211117-03 (Field Blank).
1705	:	Collect S114-EB-20211117-03 (Equipment blank).
1730	:	All personnel off-sit for the day.

Photo 01. Photos of damaged silt fence where rig passed through to acess DPT1005.

Photo 02. Photo of DPT1005 location.

Photo 03. Photo of drill rig staged at DPT1006.

Photo 04. Photo of DPT1006 boring location.

Photo 05. Photo of DPT1007 location.

Photo 06. Photo of DPT1008 during drilling activities.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**11/18/2021**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun		Clear	Overcast	Rain	Fog
				X	X	

Temp	Min.	Max.
	66	81

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SLF	0	0	0
Jason Bublitz	Environmental Scientist	SLF	9.5	0	9.5
Dustin Lupis	Field Technician	SLF	9.5	0	9.5

TOTAL HGL PERSONNEL ONSITE	2	TOTAL HOURS WORKED	19

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours

TOTAL GOV PERSONNEL ONSITE	0		0

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Angel Aquiro	Earth Tech Drilling	SLF	9.5	0	9.5
Aram Garcia	Earth Tech Drilling	SLF	9.5	0	9.5

TOTAL SUBCONTRACTOR PERSONNEL ONSITE	2	TOTAL HOURS WORKED	19

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	11/15/2021	11/18/2021	9.5	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	11/15/21	N/A	N/A	N/A	2

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Continue DPT GW Sampling Collection	**C = Continuing**	Continue collection of GW samples from multiple locations to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1009-007.0-20211118	0742	PFAS/PFOA	Pending
S114-FD-20211118-01	0742		
S114-DPT1009-015.0-20211118	0805		
S114-DPT1009-025.0-20211118	0829		
S114-DPT1009-035.0-20211118	0855		
S114-DPT1010-005.0-20211118	0956		
S114-DPT1010-015.0-20211118	1017		
S114-DPT1010-025.0-20211118	1039		
S114-DPT1010-035.0-20211118	1104		
S114-DPT1011-005.0-20211118	1230		
S114-DPT1011-015.0-20211118	1249		
S114-DPT1011-025.0-20211118	1309		
S114-DPT1011-035.0-20211118	1333		
S114-FB-20211118-01	1540		
S114-EB-20211118-01	1545		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls.

6. Description of Work Completed

0645 - All personnel on-site. Conduct TGSM and rig inspection.

0700 - Mob to DPT1009 (location #12 on Figure 2A)

0716 - Hand auger to 5' bgs at DPT1009.

0720 - Push screen to 3'-7' and no groundwater encountered. Remove screen, decontaminated and push screen to 5'-9' bgs.

0742-0855 - Collect S114-DPT1009-007.0-20211118, S114-DPT1009-015.0-20211118, S114-DPT1009-025.0-20211118, S114-DPT1009-035.0-20211118 and FD-01.

0900 - Pressure grout DPT1009 boring location and mob drill rig to DPT1010 (location #9 on Figure 2A).

0938 - Arrive at DPT1010 location and hand auger to 5' bgs.

0956-1104 - Collect S114-DPT1010-005.0-20211118, S114-DPT1010-015.0-20211118, S114-DPT1010-025.0-20211118, and S114-DPT1010-035.0-20211118.

1110 - Pressure grout DPT1010 boring location and mob to DPT1011 (location #10 on Figure 2A).

1130-1200 - Drillers break for lunch.

1140 - Hand auger to 5' bgs at DPT1011.

1230-1333 - Collect S114-DPT1011-005.0-20211118, S114-DPT1011-015.0-20211118, S114-DPT1011-025.0-20211118, and S114-DPT1011-035.0-20211118.

1335-1430 - Phase II lightening warning in effect.

1440 - Heavy rain continues and all roads/trails become flooded and muddy. Due to site conditions mob vehicles and drill rig to trailer staging area.

1530 - Attempt to access location #11 on Figure 2A but due to standing water and thick mud the drill rig was unable to access the area.

1540-1545 - Collect S114-FB-20211118-01 and S114-EB-20211118-01.

1600 - Secure drill rig and all personnel depart site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

Daily Quality Control Report

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is	
accurate and representative of the work completed.	
Printed Name: Jason Bublitz	**11/18/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2021.11.18 19:44:21 -05'00'	**11/18/2021**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with	
all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**11/18/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2021.11.18 21:26:30 -05'00'	**11/18/2021**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 11-18-2021 / 0645 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jasm Bublitz

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls, inclement weather, pinch points, biologicals, traffic, sun exposure, heat stress, struck by, teamwork, PPE

Specific Safety Topic(s): Pinch Points

Specific Training Covered: Wear PPE and be mindful of pinch points when working with drill rig tooling and hand tools

Attendees

Name Printed and Employee Number:	Signature:
Jasm Bublitz	
Angel Aguino	
Aram Garcia	
Dustin Lupis	

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___1___OF___2____**

SGS - ORLANDO Quote # **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: **SLF PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
	S114-DPT1009-007.0-20211118	11/18/21	0742	DL	GW	2		X								X	
	S114-FD-20211118-01	11/18/21	0742	DL	GW	2		X								X	
	S114-DPT1009-015.0-20211118	11/18/21	0805	DL	GW	2		X								X	
	S114-DPT1009-025.0-20211118	11/18/21	0829	DL	GW	2		X								X	
	S114-DPT1009-035.0-20211118	11/18/21	0855	DL	GW	2		X								X	
	S114-DPT1010-005.0-20211118	11/18/21	0956	DL	GW	2		X								X	
	S114-DPT1010-015.0-20211118	11/18/21	1017	DL	GW	2		X								X	
	S114-DPT1010-025.0-20211118	11/18/21	1039	DL	GW	2		X								X	
	S114-DPT1010-035.0-20211118	11/18/21	1104	DL	GW	2		X								X	
	S114-DPT1011-005.0-20211118	11/18/21	1230	DL	GW	2		X								X	
	S114-DPT1011-015.0-20211118	11/18/21	1249	DL	GW	2		X								X	
	S114-DPT1011-025.0-20211118	11/18/21	1309	DL	GW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
- ☐ **REDT1 (EPA LEVEL 3)**
- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		2	3		4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation**	**Relinquished By/Affiliation**	**Date Time:**	**Received By/Affiliation**
		6	7		8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

http://www.sgs.com/en/terms-and-conditions

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SGS - ORLANDO JOB # : **PAGE___2___OF___2____**

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State:** FL **Zip:**32937

Project Contact: Denise Rivers **Email:**drivers@hgl.com

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1: Dustin Lupis **Sampler 2:**Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment

Street Kennedy Space Center

City Merritt Island **State** FL

Project # NS1010.01.06

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
	S114-DPT1011-035.0-20211118	11/18/21	1333	DL	GW	2		X								X	
	S114-FB-20211118-01	11/18/21	1540	DL	GW	2		X								X	
	S114-EB-20211118-01	11/18/21	1545	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) **Approved By: / Date:**
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

http://www.sgs.com/en/terms-and-conditions

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7822DT

Equipment Number:

Hours/Mileage: 1078.0 hrs

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: [signature] Date: 11-18-21

Purpose: Continue collection of DPT groundwater samples in dewatering area for PFAS/PFOA assessment

Personnel: Jason B. & Dustin L. (HGL) Angel A. & Aram G. (ETD).

Equipment: Geoprobe, work trucks, SSSP, Dig permit, GPS, flyers

Weather: Lo-66 Hi-81 clear (rain forecasted for late afternoon & tomorrow).

0645 : All personnel on-site. Conduct TGSM & rig inspection.

0700 : Mob to DPT1009 (Location # 12).

0716 : Hand auger to 5' bgs at DPT1009.

0720 : Push down to 7' bgs and no water in screen. Remove rods, decon and push to 8'-9' bgs.

0739 : Begin purge at DPT1009-007.0-20211118

0742 : Collect DPT1009-007.0-20211118 and S114-FD-20211118-01 (Field Duplicate)

0802 : Begin purge at DPT1009-015.0-20211118

0805 : Collect DPT1009-015.0-20211118.

0826 : Begin purge at DPT1009-025.0-20211118.

0829 : Collect DPT1009-025.0-20211118.

0852 : Begin purge at DPT1009-035.0-20211118

0855 : collect DPT1009-035.0-20211118

0900 : Pressure grout DPT1009 boring location & Mob to DPT1010 (Location # 9)

0938 : Arrive at DPT1010 and hand auger to 5' bgs.

0953 : Begin purge at DPT1010-005.0-20211118

0956 : Collect DPT1010-005.0-20211118

1014 : Begin purge at DPT1010-015.0-20211118

1017 : collect DPT1010-015.0-20211118

1036 : Begin purge at DPT1010-025.0-20211118

1039 : Collect DPT1010-025.0-20211118

1101 : Begin purge at DPT1010-035.0-20211118

1104 : Collect DPT1010-035.0-20211118

1110 : Pressure grout DPT1010 boring location & Mob to DPT1011 (Location #10)

1130-1200: Drillers break for lunch.

1140- : ~~Pressure grout DPT1010~~ Hand clear DPT011 to 5' bgs.

KSC/NASA - SLF

11/18/21

1227	:	Begin purge DPT1011-005.0-20211118
1230	:	Collect DPT1011-005.0-20211118.
1246	:	Begin purge DPT1011-015.0-20211118
1249	:	Collect DPT1011-015.0-20211118.
1306	:	Begin purge DPT1011-025.0-20211118.
1309	:	Collect DPT1011-025.0-20211118.
1330	:	Begin purge DPT1011-035.0-20211118.
1333	:	Collect DPT1011-035.0-20211118
1335	:	Phase II lightning warning issued. All personnel waits out storm in vehicles.
1430	:	Phase II terminated. Heavy rain continuing.
1440	:	all trails become flooded and drive truck vehicles to trailer staging area. ETD truck gets stuck and has to be pulled by drill rig to staging area.
1530	:	Attempt to access location H11 but due to standing water and thick mud drill rig unable to access. Stage rig back at staging area.
1540	:	Collect S114-FB-20211118-01 (field blank)
1545	:	Collect S114-EB-20211118-01 (equipment blank)
1600	:	Secure rig and all personnel depart site.
note	:	Heavy rain and flooded areas prevented crew from continuing to collect groundwater samples.

Photo 01. Photos of DPT1010 boring location (white flag on bottom left).

Photo 02. Photo of flooded access road after rain event.

Photo 03. Photo of muddy/flooded trail to access location #11.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**11/19/2021**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
						X	

Weather	Bright Sun		Clear	Overcast		Rain	Fog
				X		X	
Temp	Min.			Max.			
	66			81			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
		X					

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SLF	0	0	0
Jason Bublitz	Environmental Scientist	SLF	8	0	8
Dustin Lupis	Field Technician	SLF	8	0	8
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**16**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Angel Aquiro	Earth Tech Drilling	SLF	8	0	8
Aram Garcia	Earth Tech Drilling	SLF	8	0	8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**16**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	11/15/2021	11/19/2021	8	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	11/15/2021 / 11/19/2021	N/A	N/A	N/A	2

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
DPT GW Sampling Collection	**F = Finish**	Complete collection of GW samples from dewatering area to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1012-005.0-20211119	0924	PFAS/PFOA	Pending
S114-DPT1012-015.0-20211119	0942		
S114-DPT1012-025.0-20211119	1002		
S114-DPT1012-035.0-20211119	1038		
S114-DPT1013-005.0-20211119	1128		
S114-DPT1013-015.0-20211119	1146		
S114-DPT1013-025.0-20211119	1205		
S114-DPT1013-035.0-20211119	1232		
S114-FD-20211119-01	1232		
S114-FB-20211119-01	1305		
S114-EB-20211119-01	1310		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls.

6. Description of Work Completed

0600 - All personnel on-site. Conduct TGSM and rig inspection.

0630 - Fill water tank on drill rig and mob to location #11 on Figure 2A.

0715 - Drill rig gets stuck on trail attempting to get to location #11. Jason B. contacts Tom Sweet with Middlesex to get dozer operator to pull out drill rig.

0755 - Dozer operator brings dozer down trail to pull out drill rig.

0815 - Drill rig is removed from stuck location.

0820 - Dozer attempts to make trail more accessible for drill rig but trail is too flooded and muddy.

0845 - Location moved to grassy area along fence line in vicinity of location #101.

0900 - Hand auger to 5' bgs at DPT1012.

0924-1038 - Collect S114-DPT1012-005.0-20211119, S114-DPT1012-015.0-20211119, S114-DPT1012-025.0-20211119, and S114-DPT1012-035.0-20211119.

1045 - Pressure grout DPT1012 boring location and mob rig to DPT1013 (location #100).

1110 - Hand auger to 5' bgs at DPT1013.

1128-1232 - Collect S114-DPT1013-005.0-20211119, S114-DPT1013-015.0-20211119, S114-DPT1013-025.0-20211119, S114-DPT1013-035.0-20211119 and S114-FD-20211119-01

1245 - Pressure grout DPT1013 boring location.

1305-1310 - Collect S114-FB-20211119-01 and S114-EB-20211119-01.

1330 - Mob drill rig to trailer staging area and load rig and equipment for demobilization.

1410 - All employees off-site. Jason B. and Dustin L. mob to CCF IDW storage and add ~40 gallons of IDW into drum #224458 (pallet #216883). Drum ~65% filled

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

Daily Quality Control Report

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Jason Bublitz	**11/19/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2021.11.19 16:29:13 -05'00'	**11/19/2021**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**11/19/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2021.11.19 16:43:13 -05'00'	**11/19/2021**

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 11-19-2021 / 0600 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jason Bublitz

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Inclement weather.

Specific Training Covered: listen for lightening warnings and keep other personnel when Phase II warnings are issued. Trails become flooded after rain.

Attendees

Name Printed and Employee Number:	Signature:
Jason Bublitz	
Dustin Lewis	
Angel Aquino	
Aram Garcia	

SGS North America Inc - Orlando

Chain of Custody

4405

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___1___OF___1____**

SGS - ORLANDO Quote # | **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32937**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis **Sampler 2:Jason Bublitz**

Project Information

Project Name: SLF PFAS Assessment

Street Kennedy Space Center

City Merritt Island **State** FL

Project # NS1010.01.06

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
	S114-DPT1012-005.0-20211119	11/19/21	0924	DL	GW	2		X								X	
	S114-DPT1012-015.0-20211119	11/19/21	0942	DL	GW	2		X								X	
	S114-DPT1012-025.0-20211119	11/19/21	1002	DL	GW	2		X								X	
	S114-DPT1012-035.0-20211119	11/19/21	1038	DL	GW	2		X								X	
	S114-DPT1013-005.0-20211119	11/19/21	1128	DL	GW	2		X								X	
	S114-DPT1013-015.0-20211119	11/19/21	1146	DL	GW	2		X								X	
	S114-DPT1013-025.0-20211119	11/19/21	1205	DL	GW	2		X								X	
	S114-DPT1013-035.0-20211119	11/19/21	1232	DL	GW	2		X								X	
	S114-FD-20211119-01	11/19/21	1232	DL	GW	2		X								X	
	S114-FB-20211119-01	11/19/21	1305	DL	GW	2		X								X	
	S114-EB-20211119-01	11/19/21	1310	DL	GW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

http://www.sgs.com/en/terms-and-conditions

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7822 DT

Equipment Number:

Hours/Mileage: 1082.0 hrs

Rig clean and free of soils, oils, and other debris.	OK	Tracks in good condition.	OK
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK	Tires fully inflated and in good condition.	OK
Rig controls clearly labeled and in working condition.	OK	Back-up alarm working.	OK
Rig Kill Switch in working order.	OK	First Aid Kit accessible and stocked.	OK
All of the Rig's connections tightened and leak-free.	OK	Fire Extinguisher accessible and fully charged.	OK
Parking brake functions properly.	OK	Eye Wash full and accessible.	OK
Steering controls in working order and clear of obstacles.	OK	Hearing protection available and is being used during hammering.	OK
Copy of the manual for all drilling equipment available.	OK	All overhead and underground hazards identified.	OK

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Date: 11/15/21

KSC/NASA - SLF NSI010.01.05

11/18/21

1227	:	Begin purge DPT1011-005.0-20211118
1230	:	Collect DPT1011-005.0-20211118.
1246	:	Begin purge DPT1011-015.0-20211118
1249	:	Collect DPT1011-015.0-20211118.
1306	:	Begin purge DPT1011-025.0-20211118
1309	:	Collect DPT1011-025.0-20211118.
1330	:	Begin purge DPT1011-035.0-20211118
1333	:	Collect DPT1011-035.0-20211118
1335	:	Phase II lightening warning issued. All personnel waits out storm in vehicles.
1430	:	Phase II terminated. Heavy rain continuing.
1440	:	all trails become flooded and drive work vehicles to trailer staging area. ETD truck gets stuck and has to be pulled by drill rig to staging area.
1530	:	Attempt to access location #11 but due to standing water and thick mud drill rig unable to access. Stage rig back at staging area.
1540	:	Collect S114-FB-20211118-01 (field blank)
1545	:	Collect S114-EB-20211118-01 (equipment blank)
1600	:	Secure rig and all personnel depart site.
note	:	Heavy rain and flooded areas prevented crew from continuing to collect groundwater samples.

KSC/NASA - SLF NSI010.01.03

11/19/21

Purpose:	:	Continue collection of DPT groundwater samples from accessible locations in drainage area
Personnel	:	Jason B. & Dustin L (HGL) Angel A & Aram G (ETD)
Equipment	:	Geoprobe, work trucks, sampling equipment, GPS, SSSP.
Weather	:	LO-66 HI-75 overcast, rain forecasted.
0600	:	All personnel on-site, conduct TGSM & rig inspection.
0630	:	Fill rig with water and mob to location #11.
0715	:	Drill rig gets stuck about halt way down trail. Contact Tom Sweet (Middlesex supervisor) and he contacted operator to come pull rig out with bull dozer.
0755	:	Dozer operator brings dozer down trail to pull out stuck drill rig.
0815	:	Drill rig removed from stuck location.
0820	:	Dozer attempts to "clean" up trail to access location #11 but trail becomes more flooded from tracks and weight of dozer.
0845	:	location moved to grassy area along fence line
0900	:	hand clear DPT1012 boring location to 5' bgs. (101)
0921	:	Begin purge at DPT1012-005.0-20211119.
0924	:	Collect DPT1012-005.0-20211119
0939	:	Begin purge at DPT1012-015.0-20211119
0942	:	collect DPT1012-015.0-20211119
0959	:	Begin purge at DPT1012-025.0-20211119
1002	:	collect DPT1012-012.0-20211119
1035	:	Begin purge at DPT1012-035.0-20211119
1038	:	Collect DPT1012-035.0-20211119
1045	:	Passon grout DPT1012 boring location and mobe to DPT1013 (location #100)
1110	:	Hand auger to 5' bgs at DPT1013.
1125	:	Begin purge at DPT1013-005.0-20211119
1128	:	

KSC/NASA SLF NS1010.01.03 11/19/21

1202 : Begin purge at DPT1013-025.0-20211119
1205 : Collect sample DPT1013-025.0-20211119
1229 : Begin purge at DPT1013-035.0-20211119
1232 : Collect sample at DPT1013-035.0-20211119, also collected S114-FD-20211119-01 (field duplicate).
1245 : Passum grout borings location.
1305 : Collect ~~SS14~~ S114-FB-20211119-01 (field blank)
1310 : Collect S114-EB-20211119-01 (equipment blank).
1330 : Mob rig to trailer staging area and load rig and equipment for demobilization.
1410 : All employees off-site. Jason B. & Dustin L. mob to CCF drum storage area and unload ~40 gallons of IDW into drum # 224458, pallet 216883.

note : All sampling locations were recorded with thumbtr GPS. Samples were placed on ice immediately following collection.

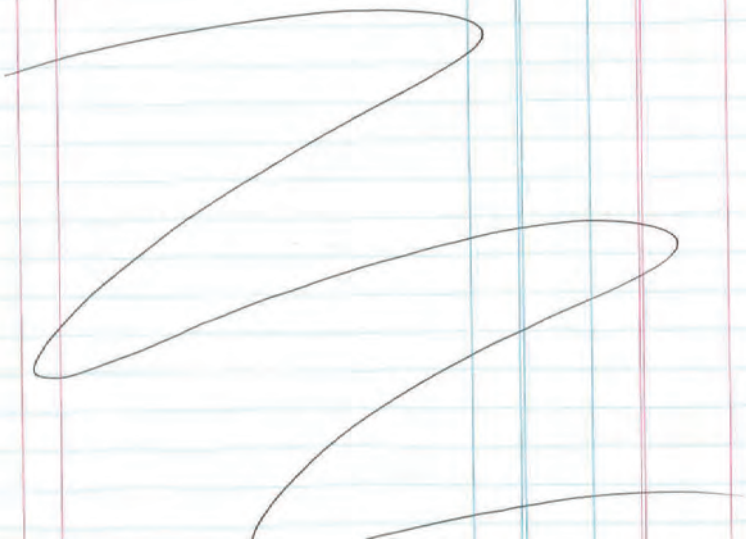


Photo 01. Photos of drill rig stuck attempting to access location #11

Photo 02. Photo of dozer attempting to make trail more accessible for the drill rig.

Photo 03. Photo of drill crew working at DPT1012 (location #101).

Photo 04. Photo of drill rig at DPT1013 (location #100).

Photo 05. Photo of DPT1013 boring location.

Daily Quality Control Report

HGL	Daily Quality Control Report
Date:	**2/16/2022**
NASA Remediation Project Manager	Deda Johansen
HGL Program Manager:	Richard Smith
HGL Project Manager:	Richard Smith
Prime Contract No.	80KSC019D0012
Project Name:	SWMU #114, #118
Project No.	NS1010.01.12

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	71	76

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SWMU 114/118	8		8
TOTAL HGL PERSONNEL ONSITE		3	TOTAL HOURS WORKED		8

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	1		0

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Jeff Zeigler	DrillPro	SWMU 114/118	8		8
Dave Longino	DrillPro	SWMU 114/118	8		8
Colten Hinsk	DrillPro	SWMU 114/118	8		8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	0	TOTAL HOURS WORKED			24

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
DPT Rig	02/16/22	02/16/22	8		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Soil Borings	S	Advanced 2 soil borings to 60' for lithologic description

Daily Quality Control Report

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

TGSM - Drill rig safety

6. Description of Work Completed

SWMU #114: Advanced 1 lithologic boring (S114-LB01) to 60 feet with sonic rig for lithologic description. IDW placed in drum.

SWMU #118: Advanced 1 lithologic boring (S118-LB01) to 60 feet with sonic rig for lithologic description. IDW placed in drum.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Howard Fowler — **2/16/2022**

Signature: — **2/16/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett — **2/16/2022**

Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2022.02.23 08:30:51 -05'00' — **2/16/2022**

Daily Quality Control Report

HGL HydroGeologic, Inc. Exceeding Expectations	Daily Quality Control Report
Date:	**2/18/2022**
NASA Remediation Project Manager	Deda Johansen
HGL Program Manager:	Richard Smith
HGL Project Manager:	Richard Smith
Prime Contract No.	80KSC019D0012
Project Name:	SWMU #114
Project No.	NS1010.01.12

Day	S	M	T	W	TH	F	S
						X	

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	68	75

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Howard Fowler	Senior Scientist	SWMU 114/118	4		4
TOTAL HGL PERSONNEL ONSITE		3	TOTAL HOURS WORKED		4

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		1		0

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Jeff Zeigler	DrillPro	SWMU 114	4		4
Dave Longino	DrillPro	SWMU 114	4		4
Colten Hinsk	DrillPro	SWMU 114	4		4
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		0	TOTAL HOURS WORKED		12

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
DPT Rig	2/16/2022-2/18/2022	02/18/22	4		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Soil Borings	F	Advanced 1 soil boring to 60' for lithologic description

Daily Quality Control Report

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

TGSM - Drill rig safety

6. Description of Work Completed

SWMU #114: Advanced 1 lithologic boring (S114-LB02) to 60 feet with sonic rig for lithologic description. IDW placed in drum.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Howard Fowler	**2/18/2022**
Signature:	**2/18/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**2/18/2022**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2022.02.23 08:27:46 -05'00'	**2/18/2022**

Direct-Push Rig Inspection Checklist

Project Name/Number: SWMU 114/118

Make/Model Number: Geoprobe 8140LS

Equipment Number: 1850

Hours/Mileage:

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.		Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	✓	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Date: 2/16/22

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: SWMU ~~224~~ 114

Make/Model Number: ~~Geoprobe~~ 8140LS

Equipment Number: 185

Hours/Mileage: _____

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	N/A
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	N/A
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	N/A	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	✓	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Date: 2/18/22

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7-18-22 6:00

Client: NASA/MSC

Location: SWMU 114

Job No.: NS1010.01.12

Meeting/training conducted by: Howard Fowler

Work Activities: Soil Borings

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Drill Rigg slips, trips & falls

Specific Safety Topic(s): Drill rig safety, slips, trips & falls

Specific Training Covered:

Attendees

Name Printed and Employee Number:	Signature:
Dark Longino	
Jeff Zeigler	
Colten Hiost	

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 2-16-22 10:20

Client: KSC/NASA

Location: SLWMU 114/118

Job No.: NS1010.01.12

Meeting/training conducted by: Howard Fowler

Work Activities: Soil Borings

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Drill Rig, Slips, Trips + Falls

Specific Safety Topic(s): Pinch points, PPE, lifting techniques

Specific Training Covered:

Attendees

Name Printed and Employee Number:	Signature:
Colton Hinst	
Dirk Longino	
Jeff Eagle	

BORING LOG

Boring/Well Number: S114-LB01	Permit Number:		FDEP Facility Identification Number:
Site Name: SWMU 114	Borehole Start Date: 02/16/22 End Date: 02/16/22	Borehole Start Time: 10:25 ☑ AM ☐ PM End Time: 12:00 ☐ AM ☑ PM	
Environmental Contractor: HGL	Geologist's Name: Howard Fowler		Environmental Technician's Name:
Drilling Company: DrillPro	Pavement Thickness (inches): NA	Borehole Diameter (inches): 4	Borehole Depth (feet): 60
Drilling Method(s):	Apparent Borehole DTW (in feet from soil moisture content): 11	Measured Well DTW (in feet after water recharges in well):	OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☑ Spread ☐ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☑ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Hand Auger	Cont.	Cont.					1	(0 - 1'): Dark brown sand	SP	D	
							2	(1' - 5'): Light brown sand and limerock fill	SW	D	
							3			D	
							4			D	
							5			D	
							6	(5' - 6'): Grey fine sand with rock fragments	SW	D	
Sonic Core	5'-10'	3'					7	(6' - 8'): Grading to grey fine sand	SP	D	
							8			D	
							9	(8' - 10'): Grey silt	ML	M	
							10			M	
Sonic Core	10'-20'	9.5'					11	(10' - 13'): Grey fine sand with shell and silt	SW	M	
							12			S	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number: S114-LB01	FDEP Facility Identification Number:	Site Name: SWMU 114	Borehole Start Date: 02/16/22 End Date: 02/16/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							13			S	
Sonic Core	10'-20'	9.5'					14	(13' - 23'): Grey fine sand with minor shell and silt. Abundant shell 19'-19.5'.	SP	W	
							15			W	
							16			W	
							17			W	
							18			W	
							19			W	
							20			W	
							21			S	
							22			S	
							23			S	
Sonic Core	20'-30'	10'					24	(23' - 30'): Grey fine sand with minor shell. Abundant shell 23.5'-24'.	SW	S	
							25			W	
							26			S	
							27			S	
							28			S	
							29			S	
							30			S	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:	02/16/22
S114-LB01		SWMU 114	End Date:	02/16/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Sonic Core	30'-40'	10'					31	(30' - 42'): Grey fine sand with minor shell and silt.	SP	W	
							32			S	
							33			W	
							34			W	
							35			W	
							36			W	
							37			S	
							38			S	
							39			W	
							40			W	
Sonic Core	40'-50'	10'					41			S	
							42			S	
							43	(42' - 47'): Grey silty sand with minor shell.	SM	W	
							44			W	
							45			W	
							46			W	
							47			S	
							48	(47' - 48'): Shell hash with grey silty sand.	GM	W	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number: S114-LB01	FDEP Facility Identification Number:	Site Name: SWMU 114	Borehole Start Date: 02/16/22 End Date: 02/16/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Sonic Core	40'-50'	10'					49	(48' - 50'): Shell hash with grey fine sand.	GW	W	
							50			W	
Sonic Core	50'-60'	10'					51	(50' - 59'): Shell hash with greenish grey clayey silt, very soft.	GC	W	
							52			W	
							53			W	
							54			W	
							55			W	
							56			W	
							57			W	
							58			W	
							59			W	
							60	(50' - 59'): Greenish grey silt with minor clay.	ML	W	
							61				
							62				
							63				
							64				
							65				
							66				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number: S114-LB02	Permit Number:		FDEP Facility Identification Number:
Site Name: SWMU 114	Borehole Start Date: 02/18/22 End Date: 02/18/22	Borehole Start Time: 8:05 ☑ AM ☐ PM End Time: 9:35 ☑ AM ☐ PM	
Environmental Contractor: HGL	Geologist's Name: Howard Fowler		Environmental Technician's Name:
Drilling Company: DrillPro	Pavement Thickness (inches): NA	Borehole Diameter (inches): 4	Borehole Depth (feet): 60
Drilling Method(s):	Apparent Borehole DTW (in feet from soil moisture content): 4	Measured Well DTW (in feet after water recharges in well):	OVA (list model and check type): ☐ FID ☐ PID

Disposition of Drill Cuttings [check method(s)]: ☑ Drum ☑ Spread ☐ Backfill ☐ Stockpile ☐ Other

(describe if other or multiple items are checked):

Borehole Completion (check one): ☐ Well ☑ Grout ☐ Bentonite ☐ Backfill ☐ Other (describe)

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Hand Auger	Cont.	Cont.					1	(0 - 1'): Light grey fine to medium sand	SP	D	
							2	(1' - 5'):Black silt (hardpan)	ML	D	
							3			D	
							4			D	
							5			D	
Sonic Core	5'-10'	3'					6	(5'-10'): Dark brown sandy silt	SM	S	
							7			S	
							8			S	
							9			S	
							10			S	
Sonic Core	10'-20'	9'					11	(10'-18'): Grey fine sand with shell and minor silt	SW	W	
							12			W	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:	02/18/22
S114-LB02		SWMU 114	End Date:	02/18/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Sonic Core	10'-20'	9'					13		SW	W	
							14			W	
							15			W	
							16			W	
							17			W	
							18			W	
							19	(18'-20'): Grey fine sand with minor shell and silt	SP	W	
							20			W	
Sonic Core	20'-30'	8'					21	(20'-23'): Grey fine sand with shell	SW	S	
							22			S	
							23			S	
							24	(23'-29'): Grey shell hash with grey fine sand	GW	W	
							25			W	
							26			S	
							27			S	
							28			W	
							29			W	
							30	(29'-33'): Grey fine sand with abundant shell	SW	W	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number: S114-LB02	FDEP Facility Identification Number:	Site Name: SWMU 114	Borehole Start Date: 02/18/22 End Date: 02/18/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
							31		SW	S	
							32			S	
							33			S	
							34	(33'-40'): Grey fine sand with minor shell and silt	SP	W	
Sonic Core	30'-40'	10'					35			W	
							36			W	
							37			W	
							38			W	
							39			W	
							40			W	
							41	(40' - 43'): Grey green sandy silt with abundant shell.	SM	S	
							42			S	
							43			S	
							44	(43' - 47'): Grey green clayey silt with abundant shell. Very soft	GC	S	
Sonic Core	40'-50'	8'					45			S	
							46			S	
							47			S	
							48	(47' - 50'): Grey green silty clay with abundant shell. Very soft	CH	S	

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

BORING LOG

Boring/Well Number:	FDEP Facility Identification Number:	Site Name:	Borehole Start Date:	02/18/22
S114-LB02		SWMU 114	End Date:	02/18/22

Sample Type	Sample Depth Interval (feet)	Sample Recovery (inches)	SPT Blows (per six inches)	Unfiltered OVA	Filtered OVA	Net OVA	Depth (feet)	Sample Description (include grain size based on USCS, odors, staining, and other remarks)	USCS Symbol	Moisture Content	Lab Soil and Groundwater Samples (list sample number and depth or temporary screen interval)
Sonic Core	40'-50'	8'					49		CH	S	
							50			S	
							51	(50' - 52'): Grey green clay with minor shell. Very stiff.	CL	W	
							52			W	
							53	(52' - 53'): Shell hash with grey green silt and clay.	GC	W	
Sonic Core	50'-60'	10'					54	(53' - 56'): Grey green clay with minor shell. Very stiff.	CL	W	
							55			W	
							56			W	
							57	(56' - 57'): Grey green clay with minor shell. Soft.	CH	W	
							58	(57' - 60'): Grey green clay with shell. Stiff.	CL	M	
							59			M	
							60			M	
							61				
							62				
							63				
							64				
							65				
							66				

Sample Type Codes: **PH** = Post Hole; **HA** = Hand Auger; **SS** = Split Spoon; **ST** = Shelby Tube; **DP** = Direct Push; **SC** = Sonic Core; **DC** = Drill Cuttings

Moisture Content Codes: **D** = Dry; **M** = Moist; **W** = Wet; **S** = Saturated

KSC/NASA SWMU 114

2-18-22

7:50 Howard Fowler and Drill Pro (Dave Lassing, Jeff Zeigler, Colten Hurst) on site to advance S114-LB02 to 60'.
70°, overcast, North wind

8:00 Conduct TSM. Discussed Drilling Safety

8:05 Begin hand clearing S114-LB02

8:15 Begin using Sonic rig to advance boring

8:55 Reach 30' depth

9:35 Reach 60' depth. Drillers begin grouting borehole. Lithology entered onto soil boring log.

10:00 Grouting complete. Drillers begin cleaning up site
½ drum of soil IDW generated

10:35 Place IDW drums on spill pallet in hangar Area behind Fire Station #2

10:50 off site

KSC/NASA SWMU 114 2-16-22

8:30 Howard Fowler At badging office to meet Drill Pro Drilling Crew (Dave Lansing, Cotten Hurst & Jeff Zeigler.

9:30 Leave badging office. Go to CCI to fill water tank.

10:00 At SWMU-LB01 to advance soil boring to 60' for Holocene description. 72°, partly cloudy west wind.

10:20 Conduct TSM. Discuss drill rig safety.

10:25 Begin hand clearing to 5'.

10:50 Begin advancing boring with sonic rig. Holocene data entered on soil boring log.

11:25 Reach 30' depth.

12:00 Reach 60' depth. Drillers take lunch.

12:50 Drillers return from lunch. Begin grouting borehole.

13:10 Grouting complete. Drillers begin cleaning up site.
½ drum of soil IDW generated.

13:35 off site.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**2/21/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SLF PFAS Assessment
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
		X					

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	54	75

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
		X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Jason Bublitz	Environmental Scientist	SLF	9	0	9

TOTAL HGL PERSONNEL ONSITE	1	TOTAL HOURS WORKED	9

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours

TOTAL GOV PERSONNEL ONSITE	0		0

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Aram Garcia	DrillPro LLC	SLF	9	0	9
Colton Wiegmann-Hinst	DrillPro LLC	SLF	9	0	9

TOTAL SUBCONTRACTOR PERSONNEL ONSITE	2	TOTAL HOURS WORKED	18

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	2/21/2022	2/21/2022	9	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
Trimble GPS	02/21/21	N/A	N/A	N/A	2

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
DPT GW Sampling Collection	**S = Start**	Complete collection of GW samples to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1014-005.0-20220221	1128	PFAS/PFOA	Pending
S114-DPT1014-015.0-20220221	1146		
S114-DPT1014-025.0-20220221	1202		
S114-DPT1014-035.0-20220221	1224		
S114-DPT1015-005.0-20220221	1305		
S114-DPT1015-015.0-20220221	1321		
S114-DPT1015-025.0-20220221	1339		
S114-DPT1015-035.0-20220221	1401		
S114-FD-20220221-01	1401		
S114-DPT1016-007.0-20220221	1520		
S114-DPT1016-015.0-20220221	1609		
S114-DPT1016-025.0-20220221	1631		
S114-DPT1016-035.0-20220221	1656		
S114-FB-20220221-01	1710		
S114-EB-20220221-01	1714		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls.

6. Description of Work Completed

0830 - All personnel arrives at KSC badging station. Drillers wait in line to be badged. Wait time longer than normal at 1-1.5 hrs.

1000 - Drillers receive badges and mob to CCF to fill water tank with water from PFAS tested hydrant.

1025 - Water tank filled and all personnel mobs to tow away area.

1035 - Conduct TGSM and rig inspection. Mob to S114-DPT1014 (**S114-DPT-9 on field figure**).

1055 - Arrive at boring location and hand auger to 5' bgs.

1128-1224 - Collect S114-DPT1014-005.0-20220221, S114-DPT1014-015.0-20220221, S114-DPT1014-025.0-20220221, and S114-DPT1014-035.0-20220221.

1230 - Pressure grout DPT1014 boring location and mob to DPT1015 (**PFAS-DPT-17 on field figure**).

1228 - Arrive at DPT1015 boring location and hand auger to 5' bgs.

1305-1401 - Collect S114-DPT1015-005.0-20220221, S115-DPT1014-015.0-20220221, S114-DPT1015-025.0-20220221, and S114-DPT1015-035.0-20220221 and FD.

1415-1445 - All personnel breaks for lunch.

1450 - Load drill rig on trailer and mob to DPT1016 (**S114-DPT-08 on field figure**).

1505 - Arrive at DPT1016 location and hand auger to 5' bgs.

1520-1656 - Collect S114-DPT1016-007.0-20220221, S114-DPT1016-015.0-20220221, S114-DPT1016-025.0-20220221, and S114-DPT1016-035.0-20220221.

1700 - Pressure grout DPT1016 boring location.

1710-1714 - Collect S114-FB-20220221-01 and S114-EB-20220221-01.

1730 - Drill rig and trailer secure. All personnel off-site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

Daily Quality Control Report

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Jason Bublitz	**2/22/2021**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2022.02.22 06:15:51 -05'00'	**2/22/2021**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**2/22/2021**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2022.02.22 07:14:14 -05'00'	**2/22/2021**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [x] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 2/21/22 - 1035 Client: KSC

Location: NASA/KSC - SLF/Industrial Area Job No.: NS1010.01.03

Meeting/training conducted by: Jasan Bublitz

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Slips, trips & falls

Specific Training Covered: Be mindful of foot placement when working in vegetated areas.

Attendees

Name Printed and Employee Number:	Signature:
Jasan Bublitz	
Aram Garcia	
Colton Hurst	

Attachment A. Daily PFAS Sampling Checklist

Date: 2/21/22

Site Name: KSC PFAS Assessment

Weather (*temperature/precipitation*): 70° clear

Please check all boxes that apply and describe any exceptions in the notes section below along with QA/QC methods used to assess potential sample cross-contamination as a result.

Field Clothing and PPE:

- ☑ No water- or stain-resistant clothing (e.g., GORE-TEX®)
- ☑ During collection of water and sediment samples, no water- or stain-resistant boots OR water- or stain-resistant boots covered by PFAS-free over-boots
- ☑ Field boots (or over-boots) are made of polyurethane, PVC, rubber, or untreated leather
- ☑ Waders or rain gear are made of polyurethane, PVC, vinyl, wax-coated or rubber
- ☑ Clothing has not been recently laundered with a fabric softener
- ☑ No coated HDPE suits (e.g., coated Tyvek® suits)
- ☑ Field crew has not used cosmetics, moisturizers, or other related products today
- ☑ Field crew has not used sunscreen or insect repellants today, other than products approved as PFAS-free

Field Equipment:

- ☑ Sample containers and equipment in direct contact with the sample are made of HDPE, polypropylene, silicone, acetate or stainless steel, not LDPE or glass
- ☑ Sample caps are made of HDPE or polypropylene and are not lined with Teflon™
- ☑ No materials containing Teflon™, Viton™, or fluoropolymers
- ☑ No materials containing LDPE in direct contact with the sample (e.g., LDPE tubing, Ziploc® bags)
- ☑ No plastic clipboards, binders, or spiral hard cover notebooks
- ☑ No waterproof field books
- ☑ No waterproof or felt pens or markers (e.g., certain Sharpie® products)
- ☑ No chemical (blue) ice, unless it is contained in a sealed bag
- ☑ No aluminum foil
- ☑ No sticky notes (e.g., certain Post-It® products)

Decontamination:

- ☑ Reusable field equipment (e.g., inner drill rods, samplers) decontaminated prior to reuse
- ☑ "PFAS-free" water is on-site for decontamination of field equipment
- ☑ Alconox® or Liquinox® used as decontamination detergent

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7720

Equipment Number:

Hours/Mileage:

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
02-21-22
Operator/Inspector: Date:

KSC / NASA - SWMU 114 (Fire Station #2) 2/21/22

NS 1010.01.03

Purpose: Collect DPT groundwater samples for PFAS analysis.
Personnel: Jason B. (HEC), Aram G. & Colton W. (GWP).
Equipment: Geoprobe, HDPE tubing, portland cement, DPT rods and temporary screen, expendable points, work trucks, SSSP, dig permit.
Weather: 70° HI-75 LO-54 clear
0830: All personnel arrive at KSC badging office. Longer than usually wait times (1-1.5 hours). Jason B. mobs to tow away area to verify no road blocks for launch activities.
1000: Drillers receive badges and mob to CCF to fill water tank w/ water from PFAS tested hydrant.
1025: Drillers fill water tank and mob to tow away area.
1035: Conduct TCSM & Rig inspection. Mob to S114-DPT1014 (S114-DPT-9 location on field map).
1055: arrive at boring location and hand clear to 5' bgs.
1125: Begin purge at DPT1014-005.0 (screen 3'-7')
1128: Collect DPT1014-005.0-20220221 (~~3'-7'~~ 3'-7')
1143: Begin purge at DPT1014-015.0 (screen 13'-17')
1146: Collect DPT1014-015.0-20220221
1159: Begin purge at DPT1014-025.0-20220221 (screen 23'-27')
1202: Collect DPT1014-025.0-20220221
1221 Begin purge at DPT1014-035.0 (screen 33'-37')
1224 Collect DPT1014-035.0-20220221
1230 Possum grout DPT1014 location and mob to DPT1015 (DPT-17' on field figure).
1258 hand auger DPT1015 boring location.
1302: Begin purge at DPT1015-005.0 (screen 3'-7' bgs)
1305: Collect DPT1015-005.0-20220221
1318 Begin purge at DPT1015-015.0 (screen 13'-17')
1321 Collect DPT1015-015.0-20220221
1336 Begin purge at DPT1015-025.0 (screen 23'-27')
1339 Collect DPT1015-025.0-20220221

KSC / NASA - SWMU 114 2/21/22

NS1010.01.03

1415-1445 - All personnel breaks for lunch.
1450 - load drilling and mob to S114-DPT1016 (DPT-8 on field figure).
1505: Hand auger to 5' bgs.
1517: Begin purge at DPT1016-007.0 (screen 5'-9' bgs).
1520: Collect DPT1016-007.0-20220221
note: Water table not encountered at 5' bgs. Water was intermittent at 5'-9' bgs.
1606 Begin purge at DPT1016-015.0 (screen 13'-17')
1609: Collect DPT1016-015.0-20220221.
1628: Begin purge at DPT1016-025.0 (screen 23'-27')
1631 Collect DPT1016-025.0-20220221
1653 Begin purge at DPT1016-035.0 (screen 33'-37')
1656 Collect DPT1016-035.0
1700 - Possum grout boring location and begin to screen s.te.
1710 - Collect S114-FB-20220221-01 (field blank)
1714 Collect S114-EB-20220221-01 (Equipment blank.)
1730 Drill rig and trailer secure. All personnel off-site for the day.

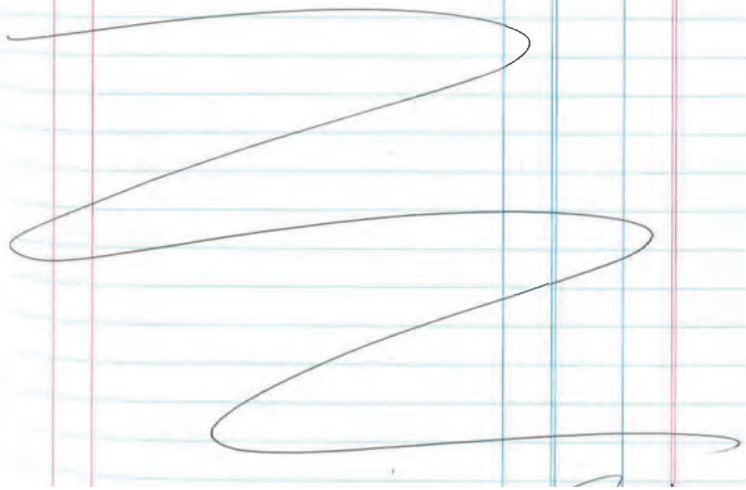


Photo 01. Photos of drill rig and crew at DPT1014.

Photo 02. Photo of drill rig and crew at DPT1016.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**2/22/22 - 2/23/22**
NASA Remediation Project Manager:	Ryan O'Meara / Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	KSC PFAS Assessment
Project No.	NS1010.01.13

Day	**S**	**M**	**T**	**W**	**TH**	**F**	**S**
			X	**X**			
Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	61			79			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
		X					

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Dustin Lupis	Field Technician	SLF/KP2/M&O	9.5	0	9.5
William Duttenhaver	Field Technician	SLF/KP2/M&O	8.5	0	8.5
Gary Parker	Field Technician	SLF	1	0	1
TOTAL HGL PERSONNEL ONSITE		**3**	**TOTAL HOURS WORKED**		**19**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**0**	**TOTAL HOURS WORKED**		**0**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Collected Surface Water Samples	**S/F**	Collected surface water samples from various locations at SWMU 114, 014, and 118.

Daily Quality Control Report

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-SW0001-000.0-20220222	0835	PFAS/PFOA	Pending
S114-SW0002-000.0-20220222	0900		
S114-SW0003-000.0-20220222	0930		
S114-SW0004-000.0-20220222	0940		
S114-SW0005-000.0-20220222	1000		
S114-SW0006-000.0-20220222	1020		
S114-SW0007-000.0-20220222	1040		
S114-SW0008-000.0-20220222	1050		
S114-SW0009-000.0-20220222	1115		
S114-SW0010-000.0-20220222	1140		
S114-FD-20220222-02	1140		
S114-SW0011-000.0-20220222	1155		
S114-SW0012-000.0-20220222	1205		
S114-SW0013-000.0-20220222	1220		
S114-SW0014-000.0-20220222	1255		
S114-EB-20220222	1300		
S118-SW0001-000.0-20220222	1345		
S118-SW0002-000.0-20220222	1435		
S118-FD-20220222-01	1435		
S118-SW0003-000.0-20220222	1450		
S118-SW0004-000.0-20220222	1500		
S118-FB-20220222-01	1505		
S118-EB-20220222-01	1510		
S014-SW0001-000.0-20220222	1530		
S014-SW0002.000.0-20220222	1535		
S014-SW0003-000.0-20220222	1550		
S014-FD-20220222-01	1550		
S014-SW0004-000.0-20220222	1600		
S014-SW0005-000.0-20220222	1615		
S014-FB-20220222-01	1620		
S014-EB-20220222-01	1625		
S114-SW0015-000.0-20220223	1600		
S114-FD-20220223-01	1600		
S114-FB-20220223-01	1610		
S114-EB-20220223-01	1615		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls, Struck By.

Daily Quality Control Report

6. Description of Work Completed

0730 - Arrive on site at SLF. Conducted TGSM. Gathered sampling gear from Jason B. Mob to SLF Apron Facility and retrieve radio before entering the landing strip.

0835 - Collected sample S114-SW0001-000.0-20220222 (Former SW-1). No water flow observed. Water is 2-3' deep upon collection (could not tell due to brackish water).

0900 - Collected sample S114-SW0002-000.0-20220222 (SW-7). Water flowing north. 3'+ deep upon collection (brackish water).

0930 - Collected sample S114-SW0003-000.0-20220222 (PFAS-SW0011). No water flow observed. 1-2' deep upon collection (brackish water).

0940 - Collected sample S114-SW0004-000.0-20220222 (PFAS-SW0012). Water flowing southwest. 3' deep upon collection (brackish water).

1000 - Collected sample S114-SW0005-000.0-20220222 (PFAS-SW0035). Water flowing to the north. 3' deep upon collection (brackish water). Contacted SLF tower for access to landing strip.

1020 - Collected sample S114-SW0006-000.0-20220222 (PFAS-SW0034). Water flowing to the north. 2' deep upon collection (brackish water).

1040 - Collected sample S114-SW0007-000.0-20220222 (SW-6). Water flowing to the north. 2' deep upon collection (brackish water). Noted: heavy vegetation near sample location.

1050 - Collected sample S114-SW0008-000.0-20220222 (SW-5). Water flowing to the northwest. 1-2' deep upon collection (brackish water). Noted: heavy vegetation near sample location.

1115 - Collected sample S114-SW0009-000.0-20220222 (PFAS-SW0062). No water flow observed. 1-2' deep upon collection (brackish water). Noted: vegetation near sample location.

1140 - Collected sample S114-SW0010-000.0-20220222 and FD-02 (PFAS-SW0013). Water flowing to the west. 1-2' deep upon collection (brackish water).

1155 - Collected sample S114-SW0011-000.0-20220222 (PFAS-SW0014). Water flowing to the west. 1-2' deep upon collection (brackish water).

1205 - Collected sample S114-SW0012-000.0-20220222 (PFAS-SW0016). Water flowing to the west. 1-2' deep upon collection (brackish water).

1220 - Collected sample S114-SW0013-000.0-20220222 (PFAS-SW0017). Water flowing to the west. 1-2' deep upon collection (brackish water).

1255 - Collected sample S114-SW0014-000.0-20220222 (SW-2). No water flow observed. 1' deep upon collection. Noted: could not access proposed sample location due to heavy vegetation overgrowth. Collected sample approximately 200' north of proposed location. Collected GPS location 30' north of sample location on pathway.

1300 - Collected sample S114-EB-20220222-01. Mob to KARS Park II (SWMU S118).

1345 - Collected sample S118-SW0001-000.0-20220222 (PFAS-SW0025). Water flowing to north. 4-5' deep upon collection (clear water).

1435 - Collected sample S118-SW0002-000.0-20220222 and FD-01 (SW-4). No water flow observed. 1' deep upon collection (brackish water).

1450 - Collected sample S118-SW0003-000.0-20220222 (PFAS-SW0059). Noted: no water flow and there was vegetation around the sample location.

1500 - Collected sample S118-SW0004-000.0-20220222 (SW-3). Noted: no water flow and there was vegetation around the sample location.

1505 - Collected sample S118-FB-20220222-01.

1510 - Collected sample S118-EB-20220222-01. Mob to SWMU 014.

1530 - Collected sample S014-SW0001-000.0-20220222 (SW-10). No water flow observed. 1' deep upon collection (brackish water).

1535 - Collected sample S014-SW0002-000.0-20220222 (SW-9). No water flow observed. 0.5' deep upon collection. Noted: vegetation and brackish water at sample location.

1550 - Collected sample S014-SW0003-000.0-20220222 and FD-01 (SW-8). No water flow observed. 0.5' deep upon collection. Noted: vegetation and brackish at sample location.

1600 - Collected sample S014-SW0004-000.0-20220222 (PFAS-SW0049). 0.5' deep upon collection. No water flow observed. Noted: heavy vegetation and brackish water at sample location.

1615 - Collected sample S014-SW0005-000.0-20220222 (PFAS-SW0048). No water flow observed. 0.5' deep upon collection. Noted: heavy vegetation and brackish water at sample location.

1620 - Collected sample S014-FB-20220222-01.

1625 - Collected sample S014-EB-20220222-01.

1600 - Collected sample S114-SW0015-000.0-20220223 and FD-01. Water flowing to the west. 2' deep upon collection (brackish water).

1610 - Collected sample S114-FB-20220223-01.

1615 - Collected sample S114-EB-20220223-01. All employees mob off site.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Dustin Lupis	**3/2/2022**
Signature: Dustin Lupis	**3/2/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**3/2/2022**
Signature:	**3/2/2022**

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- ☑ Tailgate (daily)
- ☐ Activity Hazard Analysis
- ☐ Pre-Task Hazard Analysis (prior to new task or operation)
- ☐ Site Safety Orientation (new personnel)
- ☐ Supervisor's (monthly)
- ☐ Supervisor's (weekly)
- ☐ UXO Awareness
- ☐ Asbestos Awareness
- ☐ Health and Safety Plan Addendum: ____
- ☐ Other: ____

Date/Time: 02/22/22 0730 Client: KSC/NASA

Location: SLF, M&O Fac, KARS Park II Job No.: NS1010.01.13

Meeting/training conducted by: Dustin Lupis

Work Activities: Conducted surface water sampling at various locations

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Pinch points, slips, trips, falls, biologicals, COVID-19, traversing to ~~wells~~ locations.

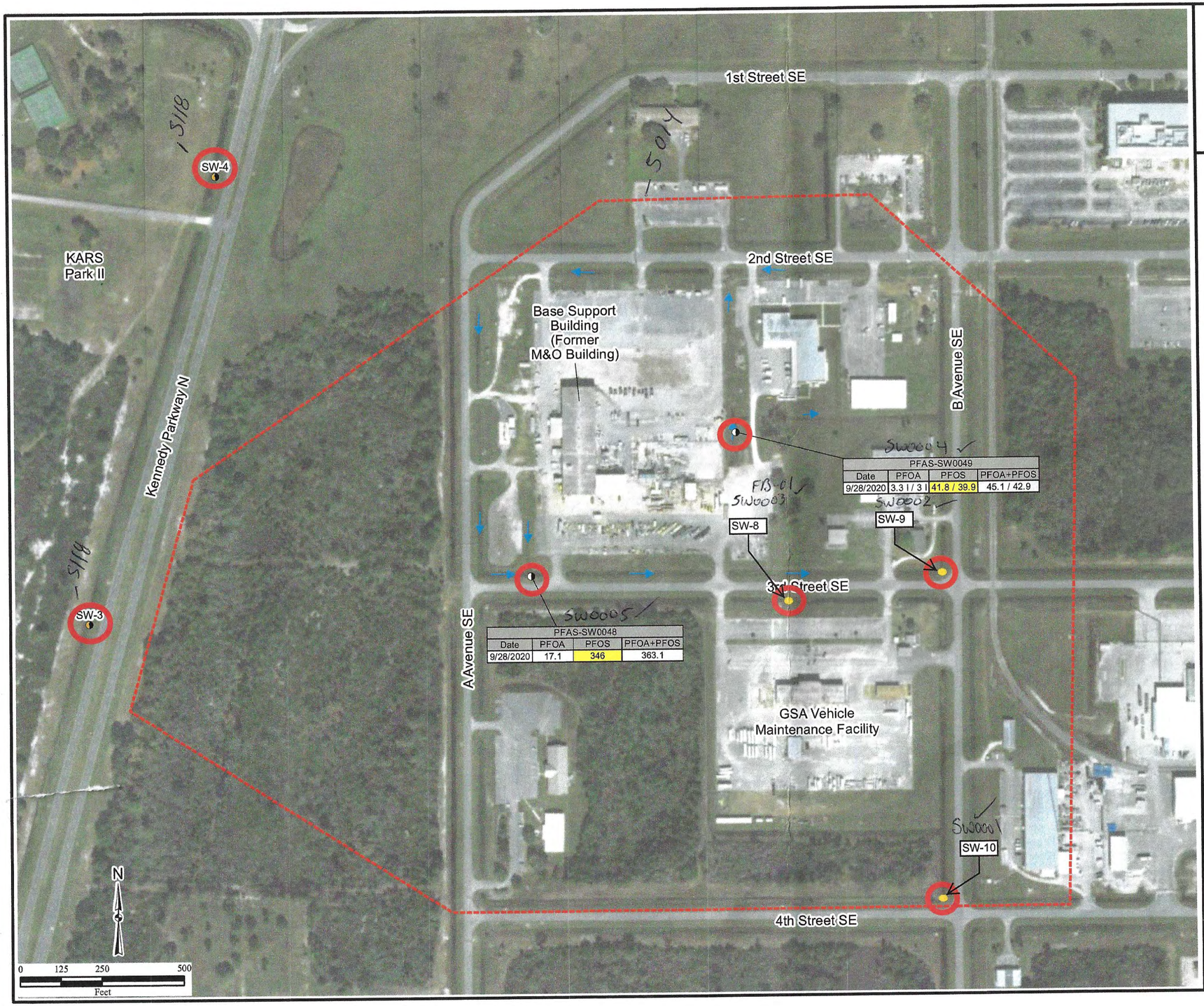
Specific Safety Topic(s): Traversing to surface water sampling locations

Specific Training Covered: Site and situational awareness, watch footing and be mindful of local traffic

Attendees

Name Printed and Employee Number:	Signature:
William Duttenhaver	
Dustin Lupis	

Figure 7
SWMU 014 Base Support Building Surface Water Sample Results Sample Locations



Legend

- Surface Water Sample
- Proposed Surface Water Sample
- Stormwater Flow Direction
- SWMU 014 Boundary

Notes:
Yellow=greater than SWSL
SWSL for PFOA=500 ng/L
SWSL for PFOS=10 ng/L
Results in nanograms per liter (ng/L)

I=estimated value
PFOS=perfluorooctanesulfonic acid
PFOA=perfluorooctanoic acid
SWSL=surface water screening level
SWMU=solid waste management unit

- Proposed Surface Water Sample Location

\\srv-gst-01\hglgis\KSC_NS1002_Misc_Figures\PFOS_Sites\(07)SWMU014_SW.mxd
10/26/2021 TB
Source: HGL,
ArcGIS Online Imagery

Figure 10
SWMU 118 KARS Park II
Surface Water Sample Results/ Proposed Surface Water Sample Locations

Legend

- Surface Water Sample
- Proposed Surface Water Sample
- Stormwater Flow Direction
- SWMU 118 Boundary

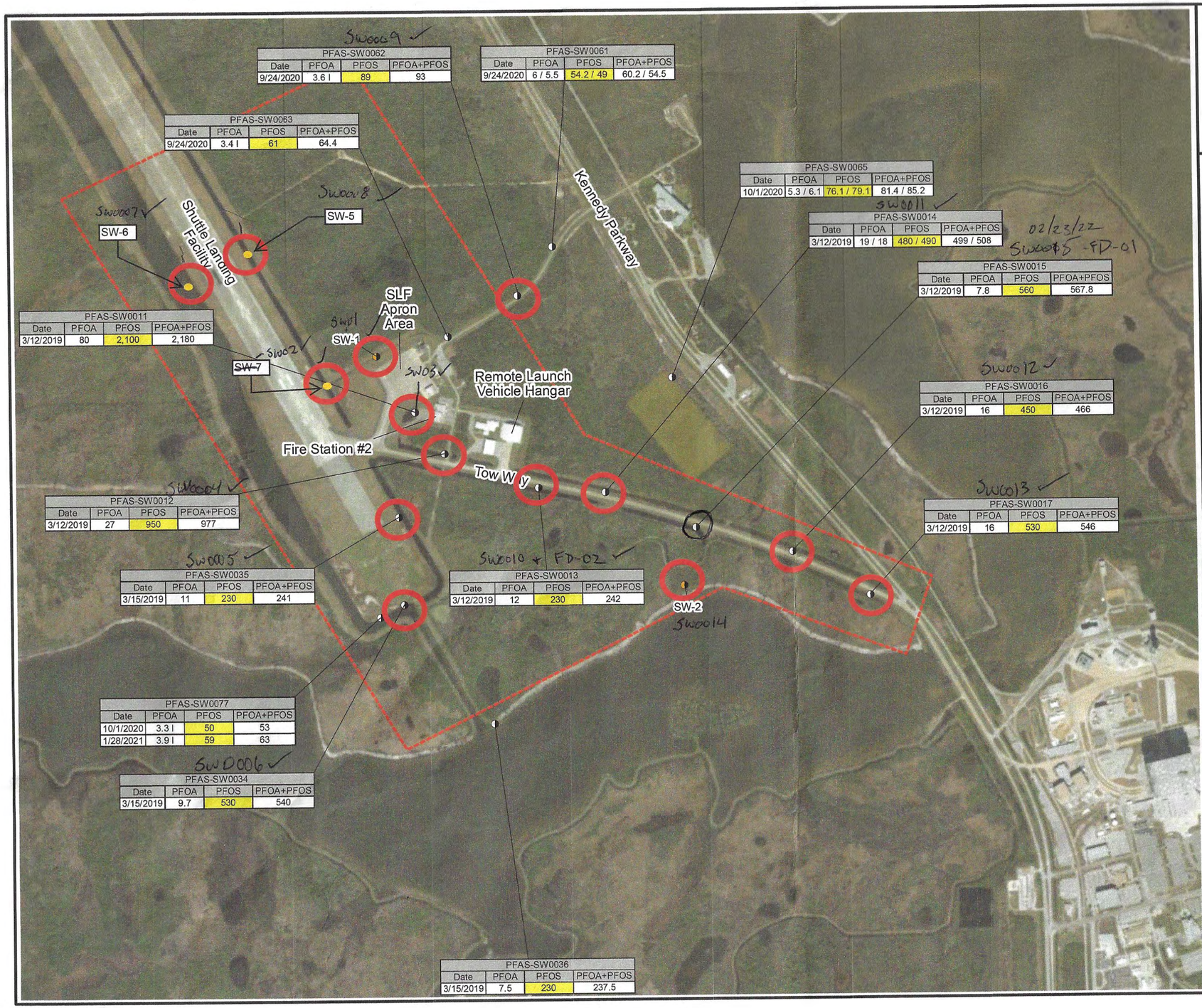
Notes:
Yellow=greater than SWSL
Results in nanograms per liter (ng/L)
SWSL for PFOA=500 ng/L
SWSL for PFOS=10 ng/L

I=estimated value
KARS=Kennedy Athletic, Recreation, and Social
PFOS=perfluorooctanesulfonic acid
PFOA=perfluorooctanoic acid
SWMU=solid waste management unit
SWSL=surface water screening level
U=not detected

- Proposed Surface Water Sample Location

\\srv-gst-01\hglgis\KSC_NS1002_Misc_Figures\PFOS_Sites\(10)SWMU118_SW.mxd
10/26/2021 TB
Source: HGL, ArcGIS Online Imagery

Figure 4
SWMU 114 Fire Station #2 Surrounding Area Surface Water Sample Results/ Proposed Surface Water Sample Locations



Legend

- Surface Water Sample
- Proposed Surface Water Sample
- Stormwater Flow Direction
- SWMU 114 Boundary

Notes:
Yellow=exceeds the SWSL
Results in nanograms per liter (ng/L)
SWSL for PFOA=500 ng/L
SWSL for PFOS=10 ng/L

I=Estimated Value
PFOS=perfluorooctanesulfonic acid
PFOA=perfluorooctanoic acid
SWMU=solid waste management unit
SWSL=surface water screening level

- Proposed Surface Water Sample Location

N

0 600 1,200 2,400
Feet

\\srv-gst-01\hglgis\KSC_NS1002_Misc_Figures\PFOS_Sites\(04)SWMU114_SW.mxd
10/19/2021 TB
Source: HGL, ArcGIS Online Imagery

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 1	Location: SLF SWMU 114 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S114-SW0001 surface water sample location. (SW-1).		

Photograph No.: 2	Location: SLF SWMU 114 Photographer: Dustin Lupis	Direction: Facing Northwest Date: 02/22/2022
Description: Photo of S114-SW0002 surface water sample location. (SW-7).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 3	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S114-SW0003 surface water sample location. (PFAS-SW0011).		

Photograph No.: 4	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing Southwest Date: 02/22/2022
Description: Photo of S114-SW0004 surface water sample location. (PFAS-SW0012).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 5	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 02/22/2022
Description: Photo of S114-SW0005 surface water sample location. (PFAS-SW0035).		

Photograph No.: 6	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 02/22/2022
Description: Photo of S114-SW0006 surface water sample location. (PFAS-SW0034).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 7	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing West Date: 02/22/2022
Description: Photo of S114-SW0007 surface water sample location. (SW-6).		

Photograph No.: 8	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 02/22/2022
Description: Photo of S114-SW0008 surface water sample location. (SW-5).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 9	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S114-SW0009 surface water sample location. (PFAS-SW0062).		

Photograph No.: 10	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing South Date: 02/22/2022
Description: Photo of S114-SW0010 surface water sample location. (PFAS-SW0013).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 11	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S114-SW0011 surface water sample location. (PFAS-SW0014).		

Photograph No.: 12	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S114-SW0012 surface water sample location. (PFAS-SW0016).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 13	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 02/22/2022
Description: Photo of S114-SW0013 surface water sample location. (PFAS-SW0017).		

Photograph No.: 14	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing South Date: 02/22/2022
Description: Photo of S114-SW0014 surface water sample location. (SW-2).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 15	Location: SLF SWMU S114 Photographer: Dustin Lupis	Direction: Facing South Date: 02/22/2022
Description: Photo of S114-SW0015 surface water sample location. (PFAS-SW0015).		

Photograph No.: 16	Location: KARS Park II SWMU S118 Photographer: Dustin Lupis	Direction: Facing West Date: 02/22/2022
Description: Photo of S118-SW0001 surface water sample location. (PFAS-SW0025).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 17	Location: KARS Park II SWMU S118 Photographer: Dustin Lupis	Direction: Facing Southwest Date: 02/22/2022
Description: Photo of S118-SW0002 surface water sample location. (SW-4).		

Photograph No.: 18	Location: KARS Park II SWMU S118 Photographer: Dustin Lupis	Direction: Facing West Date: 02/22/2022
Description: Photo of S118-SW0003 surface water sampling location. (PFAS-SW0059).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 19	Location: KARS Park II SWMU S118 Photographer: Dustin Lupis	Direction: Facing Southwest Date: 02/22/2022
Description: Photo of S118-SW0004 surface water sample location. (SW-3).		

Photograph No.: 20	Location: Former M&O Fac. SWMU S014 Photographer: Dustin Lupis	Direction: Facing South Date: 02/22/2022
Description: Photo of S014-SW0001 surface water sample location. (SW-10).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 21	Location: Former M&O Fac. S014 Photographer: Dustin Lupis	Direction: Facing Southwest Date: 02/22/2022
Description: Photo of S014-SW0001 surface water sampling location. (SW-10).		

Photograph No.: 22	Location: Former M&O Fac. SWMU S014 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S014-SW0002 surface water sampling location. (SW-9).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 23	Location: Former M&O Fac. S014 Photographer: Dustin Lupis	Direction: Facing West Date: 02/22/2022
Description: Photo of S014-SW0003 surface water sampling location. (SW-8).		

Photograph No.: 24	Location: Former M&O Fac. SWMU S014 Photographer: Dustin Lupis	Direction: Facing West Date: 02/22/2022
Description: Photo of S014-SW0004 surface water sampling location. (PFAS-SW0049).		

Kennedy Space Center Surface Water Sampling at Various Locations

Photograph No.: 23	Location: Former M&O Fac. S014 Photographer: Dustin Lupis	Direction: Facing North Date: 02/22/2022
Description: Photo of S014-SW0005 surface water sampling location. (PFAS-SW0048)		

Daily Quality Control Report

Daily Quality Control Report	
Date:	**2/22/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	KSC PFAS Assessment
Project No.	NS1010.01.03

Day	**S**	**M**	**T**	**W**	**TH**	**F**	**S**
			X				

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	61			79			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
		X					

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Jason Bublitz	Environmental Scientist	SLF	9	0	9
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**9**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		**0**	**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Aram Garcia	DrillPro LLC	SLF	9	0	9
Colton Wiegmann-Hinst	DrillPro LLC	SLF	9	0	9
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**18**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7720	2/21/2022	2/22/2022	9	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
DPT GW Sampling Collection	**C = Continuing**	Continue collection of GW samples to be analyzed for PFAS/PFOA

Daily Quality Control Report

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-DPT1017-007.0-20220222	0753	PFAS/PFOA	Pending
S114-DPT1017-015.0-20220222	0813		
S114-DPT1017-025.0-20220222	0831		
S114-DPT1017-035.0-20220222	0855		
S114-DPT1018-005.0-20220222	1013		
S114-DPT1018-015.0-20220222	1028		
S114-DPT1018-025.0-20220222	1046		
S114-DPT1018-035.0-20220222	1103		
S114-FD-20220222-01	1103		
S114-DPT1019-005.0-20220222	1231		
S114-DPT1019-015.0-20220222	1248		
S114-DPT1019-025.0-20220222	1310		
S114-DPT1019-035.0-20220222	1328		
S114-DPT1020-005.0-20220222	1450		
S114-DPT1020-015.0-20220222	1503		
S114-DPT1020-025.0-20220222	1520		
S114-DPT1020-035.0-20220222	1541		
S114-FB-20220221-01	1605		
S114-EB-20220221-01	1615		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Traversing to Wells, Slips, Trips and Falls

6. Description of Work Completed

0700 - All personnel on-site. Conduct TGSM and rig inspection.

0710 - Mob trucks and drill rig to DPT1017 (**S114-DPT-7 on field figure**).

0718 - Hand auger to 5' bgs at DPT1017.

0753-0855 - Collect S114-DPT1017-007.0-20220222, S114-DPT1017-015.0-20220222, S114-DPT1017-025.0-20220222, and S114-DPT1017-035.0-20220222.

0900 - Remove DPT rods, pressure grout boring and load drill rig on trailer to mob to next location.

0930 - Check-in with NASA flightline office and get radio to access DPT1018 (**S114-DPT-10 on field figure**) off of flightline.

0945 - Arrive at DPT1018, unload drill rig and hand auger to 5' bgs.

1013-1103 - Collect S114-DPT1018-005.0-20220222, S114-DPT1018-015.0-20220222, S114-DPT1018-025.0-20220222, S114-DPT1018-035.0-20220222 and FD.

1110 - Pressure grout boring and load drill rig on trailer to depart flightline.

1130 - Check-out with NASA tower and return radio to office.

1135 - Arrive at cleared entrance to DPT1019 (**S114-DPT-35 on field figure**). All personnel breaks for lunch.

1200 - Begin navigating down cleared trail to DPT1019 location.

1231-1328 - Collect S114-DPT1019-005.0-20220222, S114-DPT1019-015.0-20220222, S114-DPT1019-025.0-20220222, and S114-DPT1019-035.0-20220222.

1330 - Pressure grout DPT1019 boring and mob drill rig out of area to be loaded on trailer.

1350 - Jason B. stages drum #221931 on pallet #221932 and adds ~10 gallons of IDW purge water to drum.

1420 - Arrive at DPT1020 (**S114-DPT-36 on field figure**). Unload drill rig and hand auger to 5' bgs.

1450-1541 - Collect S114-DPT1020-005.0-20220222, S114-DPT1020-015.0-20220222, S114-DPT1020-025.0-20220222, and S114-DPT1020-035.0-20220222.

1545 - Pressure grout DPT1020 boring location and load drill rig on trailer.

1605-1615 - Collect S114-FB-20220222-01 and S114-EB-20220222-02.

1630 - Mob trucks, drill rig and trailer to S118-DPT-13 location on field figure.

1700 - Stage trailer, drill rig and trailer secure. All personnel off-site for the day.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Jason Bublitz	**2/23/2021**
Signature:	**2/23/2021**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**2/23/2021**
Signature:	**2/23/2021**

SGS North America Inc - Orlando

Chain of Custody

4405

Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___1___OF___3____**

SGS - ORLANDO Quote # **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32953**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Jason Bublitz **Sampler 2:**

Project Information

Project Name: **SWMU 114 PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX											LAB USE ONLY
	S114-DPT1014-005.0-20220221	2/21/22	1128	JB	GW	2		X								X											
	S114-DPT1014-015.0-20220221	2/21/22	1146	JB	GW	2		X								X											
	S114-DPT1014-025.0-20220221	2/21/22	1202	JB	GW	2		X								X											
	S114-DPT1014-035.0-20220221	2/21/22	1224	JB	GW	2		X								X											
	S114-DPT1015-005.0-20220221	2/21/22	1305	JB	GW	2		X								X											
	S114-DPT1015-015.0-20220221	2/21/22	1321	JB	GW	2		X								X											
	S114-DPT1015-025.0-20220221	2/21/22	1339	JB	GW	2		X								X											
	S114-DPT1015-035.0-20220221	2/21/22	1401	JB	GW	2		X								X											
	S114-FD-20220221-01	2/21/22	1401	JB	GW	2		X								X											
	S114-DPT1016-007.0-20220221	2/21/22	1520	JB	GW	2		X								X											
	S114-DPT1016-015.0-20220221	2/21/22	1609	JB	GW	2		X								X											
	S114-DPT1016-025.0-20220221	2/21/22	1631	JB	GW	2		X								X											

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
- ☐ **REDT1 (EPA LEVEL 3)**
- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation 6**	**Relinquished By/Affiliation 7**	**Date Time:**	**Received By/Affiliation 8**

Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

http://www.sgs.com/en/terms-and-conditions

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE___2___OF___3____**

SGS - ORLANDO Quote # **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway, STE 203

City: Merrit Island **State: FL** **Zip:32953**

Project Contact: Denise Rivers **Email:drivers@hgl.com**

Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Jason Bublitz **Sampler 2:**

Project Information

Project Name: **SWMU 114 PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX											LAB USE ONLY
	S114-DPT1016-035.0-20220221	2/21/22	1656	JB	GW	2		X								X											
	S114-FB-20220221-01	2/21/22	1710	JB	WW	2		X								X											
	S114-EB-20220221-01	2/21/22	1714	JB	GW	2		X								X											
	S114-DPT1017-007.0-20220222	2/22/22	0753	JB	GW	2		X								X											
	S114-DPT1017-015.0-20220222	2/22/22	0813	JB	GW	2		X								X											
	S114-DPT1017-025.0-20220222	2/22/22	0831	JB	GW	2		X								X											
	S114-DPT1017-035.0-20220222	2/22/22	0855	JB	GW	2		X								X											
	S114-DPT1018-007.0-20220222	2/22/22	1013	JB	GW	2		X								X											
	S114-DPT1018-015.0-20220222	2/22/22	1028	JB	GW	2		X								X											
	S114-DPT1018-025.0-20220222	2/22/22	1046	JB	GW	2		X								X											
	S114-DPT1018-035.0-20220222	2/22/22	1103	JB	GW	2		X								X											
	S114-FD-20220222-01	2/22/22	1103	JB	GW	2		X								X											

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

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- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
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- ☐ **FULLT1 (EPA LEVEL 4)**
- ☐ **EDD'S**

Comments / Remarks

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Relinquished by/Affiliation	**Date Time:**	**Received By/Affiliation 6**	**Relinquished By/Affiliation 7**	**Date Time:**	**Received By/Affiliation 8**

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SGS - ORLANDO JOB # : **PAGE___3___OF___3____**

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Phone #:910-233-8460

Sampler(s) Name(s) (Printed)
Sampler 1:Jason Bublitz **Sampler 2:**

Project Information

Project Name: **SWMU 114 PFAS Assessment**

Street **Kennedy Space Center**

City **Merritt Island** **State** **FL**

Project # **NS1010.01.06**

Fax #

Client Purchase Order #

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	S114-DPT1019-005.0-20220222	2/22/22	1231	JB	GW	2		X								X	
	S114-DPT1019-015.0-20220222	2/22/22	1248	JB	WW	2		X								X	
	S114-DPT1019-025.0-20220222	2/22/22	1310	JB	GW	2		X								X	
	S114-DPT1019-035.0-20220222	2/22/22	1328	JB	GW	2		X								X	
	S114-DPT1020-005.0-20220222	2/22/22	1450	JB	GW	2		X								X	
	S114-DPT1020-015.0-20220222	2/22/22	1503	JB	GW	2		X								X	
	S114-DPT1020-025.0-20220222	2/22/22	1520	JB	GW	2		X								X	
	S114-DPT1020-035.0-20220222	2/22/22	1541	JB	GW	2		X								X	
	S114-FB-20220222-01	2/22/22	1605	JB	WW	2		X								X	
	S114-EB-20220222-02	2/22/22	1615	JB	WW	2		X								X	

Turnaround Time (Business days)

X **10 Day (Business)** **Approved By: / Date:**

7 Day

5 Day

3 Day *RUSH* _____

2 Day *RUSH* _____

1 Day *RUSH* _____

Other _____

vailable VIA Email or Lablink

Data Deliverable Information

- ☐ **COMMERCIAL "A" (RESULTS ONLY)**
- ☐ **COMMERCIAL "B" (RESULTS PLUS QC)**
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Lab Use Only : **Cooler Temperature (s) Celsius (corrected):**_____

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HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 2-22-22 / 0700 Client: KSC

Location: NASA/KSC - SLF/Industrial Area Job No.: NS1010.01.03

Meeting/training conducted by: Jasun Bublitz

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Biologicals

Specific Training Covered: Be mindful of biologicals (snakes, bee, etc.) when working in vegetated areas.

Attendees

Name Printed and Employee Number:	Signature:
Jasun Bublitz	
Colten Hirst	
Aram Garcia	

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: Geoprobe 7720

Equipment Number: 286

Hours/Mileage: _____

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK ✓
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK ✓
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK ✓	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK ✓	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:	
Operator/Inspector:	Date:

KSC / NASA - SWMU 114 — 2/22/22
NS1010.01.03

Purpose : Continue collection of DPT GW samples for PFAS/PFOA assessment.

Personnel : Jason B. (HGL), Aram G. & Colten W. (GWP).

Equipment : Geoprobe, HDPE tubing, portland cement, expandable points, Alconox DPT rods, temporary screen, work trucks, drums, ~~Aguatrol~~, silicon tubing

Weather : 64° clear HI - 79 LO - 61

0700 : All personnel on-site. Conduct TGSM & rig inspection.

0710 : Mob trucks and drill rig to DPT1017 (S114-DPT-7 on field figure).

0718 : Hand auger to 5' bgs.

0750 : Begin purge S114-DPT1017-007.0 (screen 5'-9')

0753 : Collect S114-DPT1017-007.0-20220222

0810 : Begin purge S114-DPT1017-015.0 (screen 13'-17')

0813 : Collect S114-DPT1017-015.0-20220222

0826 : Begin purge S114-DPT1017-025.0 (screen 23'-27')

0831 : Collect S114-DPT1017-025.0-20220222

0852 : Begin purge at S114-DPT1017-035.0 (screen 33'-37')

0855 : Collect S114-DPT1017-035.0-20220222

0900 : Remove rodding, pressure grout boring and load trailer to mob to next location.

0930 : Check-in w/ KSC SLF office and get radio to access DPT1018 (DPT-10 on field figure).

0945 : Arrive at DPT1018 and unload drill rig and hand clear to 5' bgs.

1010 : Begin purge at S114-DPT1018-005.0 (screen 3'-7')

1013 : Collect S114-DPT1018-005.0-20220222

1025 : Begin purge S114-DPT1018-015.0 (screen 13'-17')

1028 : Collect S114-DPT1018-015.0-20220222

1043 : Begin purge at S114-DPT1018-025.0 (screen 23'-27')

1046 : Collect S114-DPT1018-025.0-20220222.

1100 : Begin purge at S114-DPT1018-035.0 (screen 33'-37')

1103 : Collect S114-DPT1018-035.0-20220222 & S114-FD-

KSC / NASA - SWMU 114 — 2/22/22
NS1010.01.03

1130 : Check-out w/ NASA Tower & tower office.

1135 : Arrive at entrance to DPT1019 (DPT-35 on field figure). All personnel breaks for lunch.

1200 : Begin navigating around trailer to DPT1019.

1228 : Begin purge at DPT1019-005.0-20220222

1231 : Collect DPT1019-005.0-20220222

1245 : Begin purge at DPT1019-015.0 (screen 13'-17')

1248 : Collect DPT1019-015.0-20220222

1307 : Begin purge at DPT1019-025.0 (screen 23'-27')

1310 : Collect DPT1019-025.0-20220222

1325 : Begin purge at DPT1019-035.0 (screen 33'-37')

1328 : Collect DPT1019-035.0-20220222

1330 : Pressure grout DPT1019 boring and demob rig from clear trail to load on trailer.

1350 : Jason B. stages drum # 221931 on pallet # 221932 and adds ~10 gallons of IDW to drum.

1420 : Arrive at DPT1020 (S114-DPT-36 on field figure). Unload drill rig and hand auger to 5' bgs.

1447 : Begin purge at S114-DPT1020-005.0 (screen 3'-7')

1450 : Collect DPT1020-005.0-20220222

1500 : Begin purge at S114-DPT1020-015.0 (screen 13'-17')

1503 : Collect S114-DPT1020-015.0-20220222

1517 : Begin purge at S114-DPT1020-025.0 (screen 23'-27')

1520 : Collect S114-DPT1020-025.0-20220222

1538 : Begin purge at S114-DPT1020-035.0 (screen 33'-37')

1541 : Collect S114-DPT1020-035.0-20220222

1545 : Drillers pressure grout DPT1020 boring location, and load drill rig on trailer

1605 : Collect S114-FB-20220222-01 (field blank)

1615 : Collect S114-EB-20220222-02 (equipment blank)

1630 : Mob trucks, drill rig & trailer to ~~S114-DPT1021~~ S114-DPT13 location.

Photo 01. Photo of drill rig, crew and box truck at DPT1017.

Photo 02. Photo of DPT1018.

Photo 03. Photo of drill rig and crew at DPT1019.

Photo 04. Photo of drill rig and crew at DPT1020.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**5/5/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SWMU S114 PFAS Assessment
Project No.	NS1010.01.14

Day	**S**	**M**	**T**	**W**	**TH**	**F**	**S**
					X		

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	71			87			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Dustin Lupis	Field Technician	SWMU S114	3.5	0	3.5
William Duttenhaver	Field Technician	SWMU S114	3.5	0	3.5
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**7**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		**0**	**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**0**	**TOTAL HOURS WORKED**		**0**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
TOPCON GPS Unit	05/05/22 - 05/05/22	Yes	Yes	Pass	3.5

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Collect Concrete/Asphalt Samples	**S/F**	Collected concrete/asphalt from multiple locations to be analyzed for PFAS/PFOA

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Sample Time	Analysis	Results - Detected / Not Detected
S114-CS0001-0.002-20220505, DUP01	920	PFAS/PFOA	Pending
S114-CS0002-0.002-20220505	1015		
S114-CS0003-0.002-20220505	1050		
S114-CS0004-0.002-20220505	1110		
S114-AS0005-0.002-20220505	1125		
S114-FB-20220505-01	1145		
S114-EB-20220505-01	1150		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, Chemical Exposure, COVID-19, Slips, Trips and Falls.

6. Description of Work Completed

0730 - Conducted TGSM at Cape field office. Loaded work truck with sampling gear and coolers.

0830 - Mob to site. Sign in at office before entering into SLF apron area.

0910 - Mob to S114-CS0001 location. Prep location to collect concrete sample. See attached pg. 42 log book entry for sample collections.

1215 - The areas that were sampled did not need to be repaired due to minimal damage to the areas. Secured site. All employees off site.

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Dustin Lupis	**5/5/2022**
Signature: Dustin Lupis	**5/5/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Howard Fowler	**5/5/2022**
Signature:	**5/5/2022**

SGS North America Inc - Orlando

Chain of Custody

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www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # SKIFF #

Client / Reporting Information

Company Name:
Address:
City: State: Zip:
Project Contact: Email:
Phone #:
Sampler(s) Name(s) (Printed)
Sampler 1: William D. Sampler 2: Dustin L.

Project Information

Project Name: SWMU S114 Fire Station #2
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

| SGS Orlando Sample # | Field ID / Point of Collection | COLLECTION DATE | TIME | SAMPLED BY: | CONTAINER INFORMATION MATRIX | TOTAL # OF BOTTLES | OTHER | NONE | HCl | NaOH | HNO3 | H2SO4 | NAOH+ZNAC | DI WATER | MEOH | LCID5375PLPLEST18, LCMSMSBNK | | |

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- ☑ Tailgate (daily)
- ☐ Activity Hazard Analysis
- ☐ Pre-Task Hazard Analysis (prior to new task or operation)
- ☐ Site Safety Orientation (new personnel)
- ☐ Supervisor's (monthly)
- ☐ Supervisor's (weekly)
- ☐ UXO Awareness
- ☐ Asbestos Awareness
- ☐ Health and Safety Plan Addendum: _____
- ☐ Other: ___

Date/Time: 05/05/22 0730 Client: NASA/KSC

Location: Fire Station #2 SWMU 114 Job No.: NS1010.01.14

Meeting/training conducted by: Dustin Lupis

Work Activities: Collect Concrete Samples for PFAS Analysis

Safety / Training Topics Presented

Chemical Hazards: PFAS/PFOA

Physical Hazards: pinch points, slips, trips, falls, biologicals, struck by, hand tools.

Specific Safety Topic(s): Hand tools - chisels, hammer, etc.

Specific Training Covered: wear proper PPE - leather gloves

Attendees

Name Printed and Employee Number:	Signature:
William Duttenhaver	
Dustin. Lupis	

NASA/KSC SWMU 0114 SLF/FS#2 05/05/22
NS1010.01.14

purpose: Conduct ~~PFAS~~ concrete sampling for PFAS.
Personnel - Dustin L., Parker D.
Equipment - Sampling gear, hand tools, decon equipment, work truck
Weather - Hi - 87° Lo - 71° sunny wind - 4mph W
0730 - conduct TGSM at cape field office. Load work truck with hand tools, coolers, decon equipment, sampling gear, etc.
0830 - Mob to SLF/Fire station #2/swmu 114. Sign in at office.
0910 - Mob to S114-0001 location. Prep to collect concrete sample.
0920 - Collect sample S114-CS0001-0.002-20220505 + Dup01 for PFAS analysis. Placed sample in cooler on ice. Collect location ~~Mob to~~ on GPS.
0955 - Mob to S114-CS0002 location. Prep location for sample collection.
1015 - Collect Sample S114-CS0002-0.002-20220505 for PFAS analysis Placed sample in cooler on ice. Collect location on GPS. Restored Sample location.
1030 - Mob to S114-CS0003 sample location. Prep location to sample.
1050 - Collect Sample S114-CS0003-0.002-20220505 for PFAS analysis. Placed sample in cooler on ice. Collect location on GPS.
1105 - Mob to S114-CS0004 sample location. Prep location to sample.
1110 - Collect sample S114-CS0004-0.002-20220505 for PFAS analysis Placed sample in cooler on ice. Collect location on GPS. Swept area and prep to Mob to S114-AS0005.
1120 - Mob to S114-AS0005 sample location. Prep location to sample.
1125 - Collect Sample S114-AS0005-0.002-20220505 for PFAS analysis. Placed sample in cooler on ice. Collect location on GPS.
1130 - Packed equipment ~~prepp~~ into work truck. Decon ~~tools~~ handtools and prep for Field blank and equipment blank.
1145 - Collect Field blank sample - S114-FB-20220505-01. Place sample in cooler on ice.
1150 - Collect equipment blank sample - on chisel used to chip Concrete / ~~Asph~~ Asphalt chunks for Samples. S114-EB-20220505-01.
1215 - ~~Packed~~ Secured Site. All employees off site.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 1	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing West Date: 05/05/2022
Description: Photo of sample location CS0001 on the northwest corner of the SLF apron area.		

Photograph No.: 2	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022
Description: Photo of the chipped concrete while the loose dirt is being removed with PFAS free water and a deconned wire brush.		

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 3	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of Parker D. breaking the concrete samples up into more manageable pieces with deconned hammer.

Photograph No.: 4	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of chipped concrete after being broken up and placed into sample jar.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 5	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 05/05/2022

Description: Photo of Parker D. digging out the southwest corner of the SLF apron to collect sample.

Photograph No.: 6	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 05/05/2022

Description: Photo of CS0002 with the edge of the concrete removed for sample collection.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 7	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing Northwest Date: 05/05/2022

Description: Photo of Parker D. restoring the grass over the sampled location CS0002.

Photograph No.: 8	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 05/05/2022

Description: Photo of Dustin L. collecting the sample location on the TOPCON GPS.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 9	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing West Date: 05/05/2022

Description: Photo of sample location CS0003 being collected. Collected sample from the southeast corner of the parking bay area located on the east side of the fire station.

Photograph No.: 10	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing South Date: 05/05/2022

Description: Photo of Parker D. chipping concrete from sample location CS0003.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 11	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing South Date: 05/05/2022

Description: Photo of sample location after sample was collected. Parker D. cleaned and swept area.

Photograph No.: 12	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing West Date: 05/05/2022

Description: Photo of sample location CS0003 after the sample was collected and the area cleaned.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 13	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing West Date: 05/05/2022

Description: Photo of Dustin L. collecting sample location CS0003 on the TOPCON GPS unit.

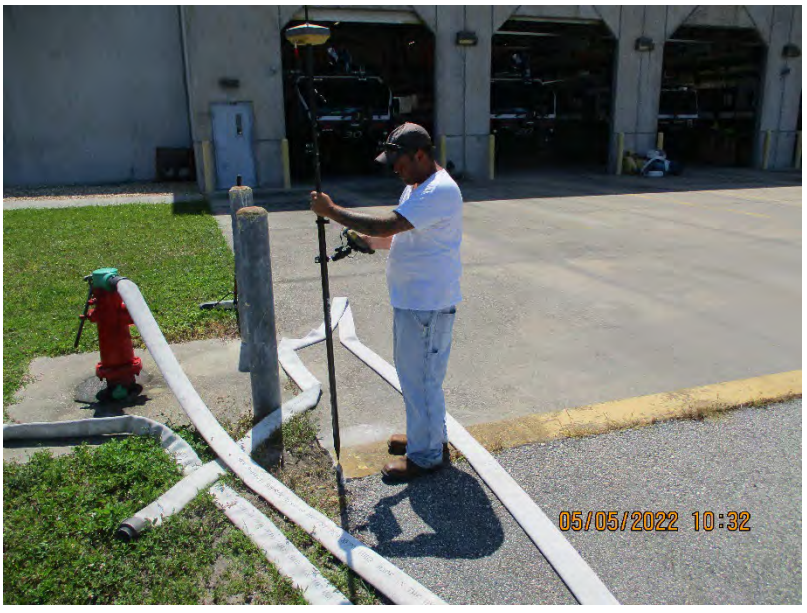
Photograph No.: 14	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of sample location CS0004 before chipping the corner for sample collection. Parker D. removed the paint with wire brush prior to sample collection. (Bottom of pic where yellow painted concrete meets asphalt)

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

Photograph No.: 15	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of sample location CS0004 after the sample was collected and the area was swept.



Photograph No.: 16	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of Dustin L. collecting sample location CS0004 on TOPCON GPS unit.

Kennedy Space Center SWMU S114 Concrete Samples
For PFAS Assessment

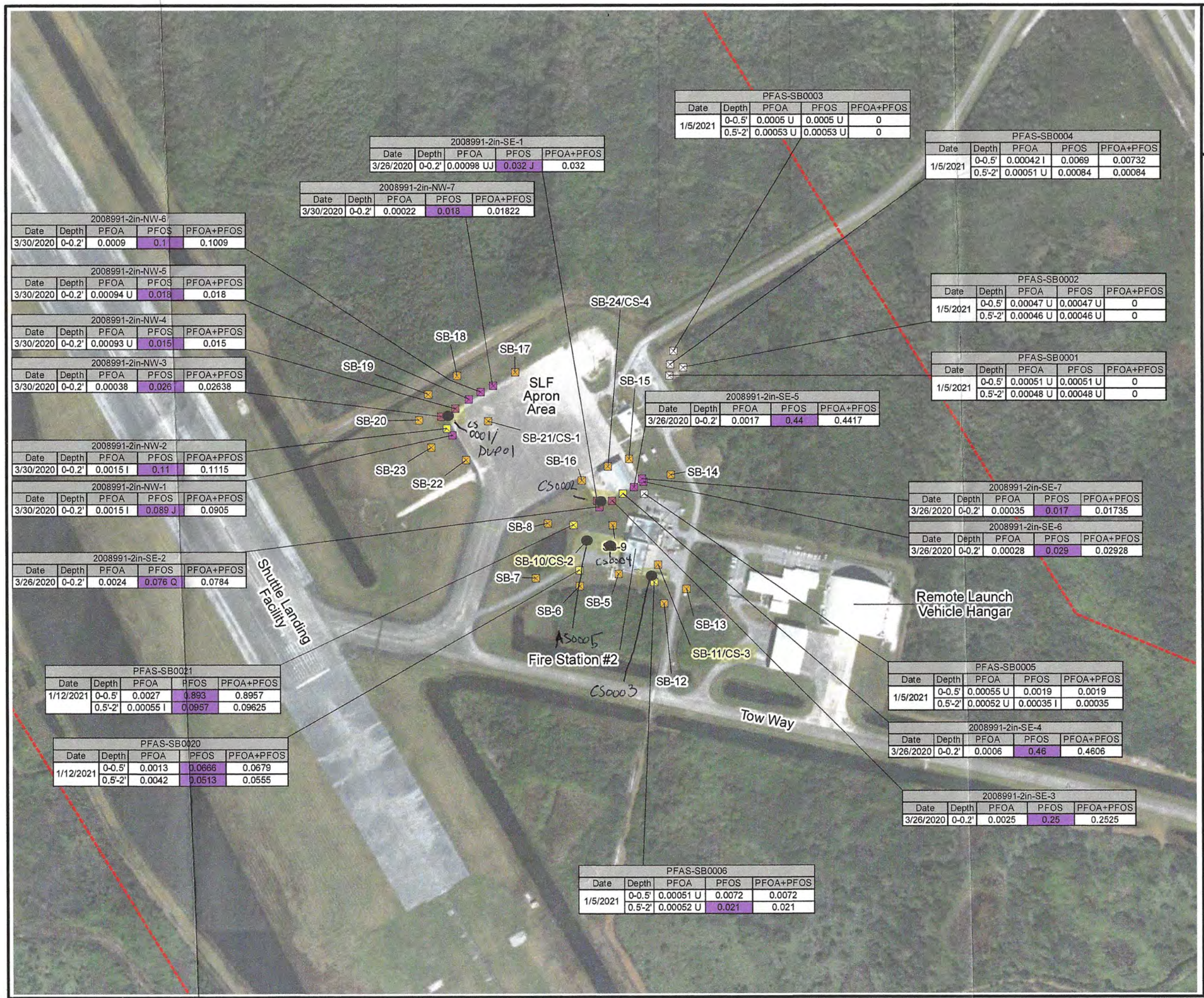
Photograph No.: 17	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing North Date: 05/05/2022

Description: Photo of sample location AS0005 after the asphalt was chipped up and placed in containers. (Chipped up area 1 ft. south of the PFAS free water jug)

Photograph No.: 18	Location: SWMU S114 Photographer: Dustin Lupis	Direction: Facing East Date: 05/05/2022

Description: Photo of Dustin L. collecting sample location AS0005 on TOPCON GPS unit.

Figure 1
SWMU 114 Fire Station #2
Soil Sample Results/
Proposed Soil Sample Locations



2008991-2in-NW-6				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.0009	0.1	0.1009

2008991-2in-NW-5				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.00094 U	0.018	0.018

2008991-2in-NW-4				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.00093 U	0.015	0.015

2008991-2in-NW-3				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.00038	0.026	0.02638

2008991-2in-NW-2				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.0015 I	0.11	0.1115

2008991-2in-NW-1				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.0015 I	0.089 J	0.0905

2008991-2in-SE-2				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.0024	0.076 Q	0.0784

2008991-2in-SE-1				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.00098 UJ	0.032 J	0.032

2008991-2in-NW-7				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/30/2020	0-0.2'	0.00022	0.018	0.01822

PFAS-SB0003				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.0005 U	0.0005 U	0
	0.5'-2'	0.00053 U	0.00053 U	0

PFAS-SB0004				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.00042 I	0.0069	0.00732
	0.5'-2'	0.00051 U	0.00084	0.00084

PFAS-SB0002				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.00047 U	0.00047 U	0
	0.5'-2'	0.00046 U	0.00046 U	0

PFAS-SB0001				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.00051 U	0.00051 U	0
	0.5'-2'	0.00048 U	0.00048 U	0

2008991-2in-SE-5				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.0017	0.44	0.4417

2008991-2in-SE-7				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.00035	0.017	0.01735

2008991-2in-SE-6				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.00028	0.029	0.02928

PFAS-SB0021				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/12/2021	0-0.5'	0.0027	0.893	0.8957
	0.5'-2'	0.00055 I	0.0957	0.09625

PFAS-SB0020				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/12/2021	0-0.5'	0.0013	0.0666	0.0679
	0.5'-2'	0.0042	0.0513	0.0555

PFAS-SB0005				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.00055 U	0.0019	0.0019
	0.5'-2'	0.00052 U	0.00035 I	0.00035

2008991-2in-SE-4				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.0006	0.46	0.4606

2008991-2in-SE-3				
Date	Depth	PFOA	PFOS	PFOA+PFOS
3/26/2020	0-0.2'	0.0025	0.25	0.2525

PFAS-SB0006				
Date	Depth	PFOA	PFOS	PFOA+PFOS
1/5/2021	0-0.5'	0.00051 U	0.0072	0.0072
	0.5'-2'	0.00052 U	0.021	0.021

Legend

- Soil Sample < Leachability pSCTL
- Soil Sample > Leachability pSCTL
- Proposed Soil Sample 0-0.5 ft bls, 0.5-2 ft bls
- Proposed Soil Sample 2-4 ft bls, 4 ft bls-Water Table
- SWMU 114 Boundary

Notes:
Purple=exceeds FDEP Leachability pSCTL
Results in milligrams per kilogram (mg/kg)

ft bls=feet below land surface
I=estimated value
J=estimated value
PFOA=perfluorooctanoic acid
PFOS=perfluorooctanesulfonic acid
pSCTL = provisional soil cleanup target level
SWMU=solid waste management unit
U=not detected

FDEP Provisional Soil Cleanup Target Levels (mg/kg)			
Compound	Residential	Industrial	Leachability
PFOA	1.3	25	0.003
PFOS	1.3	25	0.007

Concrete Sample

N

0 200 400 800
Feet

\\srv-gst-01\hglgis\KSC_NS1002_Misc_Figures\PFOS_Sites\(01)SWMU114_Bldgs_Soil.mxd
10/26/2021 TB
Source: HGL, ArcGIS Online Imagery

Daily Quality Control Report

Daily Quality Control Report	
Date:	**6/14/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
			X				

Weather	Bright Sun		Clear	Overcast	Rain / Fog
			X		
Temp	Min.			Max.	
	75			89	
Wind	Still	Moderate		High	Gust
		X			
Humidity	Dry	Moderate		High	Rainfall
				X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10.25	0	10.25
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10.25**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	PRL 217	9	0	9
Samuel Johnson	DrillPro	PRL 217	9	0	9
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**18**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	6/14/2022-	6/14/2022		0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Collect DPT Groundwater Samples	**S = Start**	Complete first mobilization of groundwater sample collection for plume delineation/assessment.

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-DPT1017-045.0-20220614	0916		
S114-DPT1016-045.0-20220614	1031		
S114-DPT1018-005.0-20220614	1114		
S114-DPT1018-015.0-20220614	1129		
S114-DPT1018-025.0-20220614	1144		
S114-DPT1018-035.0-20220614	1202		
S114-DPT1018-045.0-20220614	1219		
S114-DPT1019-005.0-20220614	1355		
S114-DPT1019-015.0-20220614	1407		
S114-DPT1019-025.0-20220614	1425		
S114-FD-20220614-01	1425		
S114-DPT1019-035.0-20220614	1440		
S114-DPT1020-005.0-20220614	1546		
S114-EB-20220614-01	1555		
S114-FB-20220614-01	1600		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0715- Arrive to site, safety meeting and rig inspection.
0725- Load rig and demobe from PRL217.
0810- Arrive to S114-DPT1017.
0910- Begin purge for S114-DPT1017
0916- Collect S114-DPT1017-045.0-20220614
0930- KSC safety officer onsite for ~ 5 minutes.
0937- Pressure grout boring DPT1017-045.0.
1025- Begin purge for S114-DPT1016-045.0
1031- Collect S114-DPT1016-045.0-20220614
1042- Pressure grout boring DPT1016-045.0
1108-1219: Purge and collect samples at S114-DPT1018 (Intervals: 5, 15, 25, 35, 45)
1235- Pressure grout boring DPT1018.
1349-1440: Purge and collect samples at S114-DPT1019 (Intervals: 5, 15, 25, 35)
1452- Pressure grout boring DPT1019.
1540-1546: Purge and collect sample at S114-DPT1020 (Interval: 5')
1555- Collect Equipment Blank
1600- Collect Field Blank
1640- Depart field office.
1700- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is	
accurate and representative of the work completed.	
Printed Name: Justin Vojak	**6/14/2022**
Signature: *Justin Vojak*	**6/14/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with	
all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**6/14/2022**
Signature:	**6/14/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 6/14/22 Client: NASA

Location: SLF Job No.: _____

Meeting/training conducted by: J. Vojak

Work Activities: PFAS DPT Sampling

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Wildlife, Heat stress, Sun Exposure, Slip, Trips, Falls.

Specific Safety Topic(s): Hydration, Proper Lifting Technique

Specific Training Covered: Using a spotter when loading/unloading rig

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Samuel Johnson	
Micky Ruff	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 0114

Make/Model Number: 7822

Equipment Number: MS

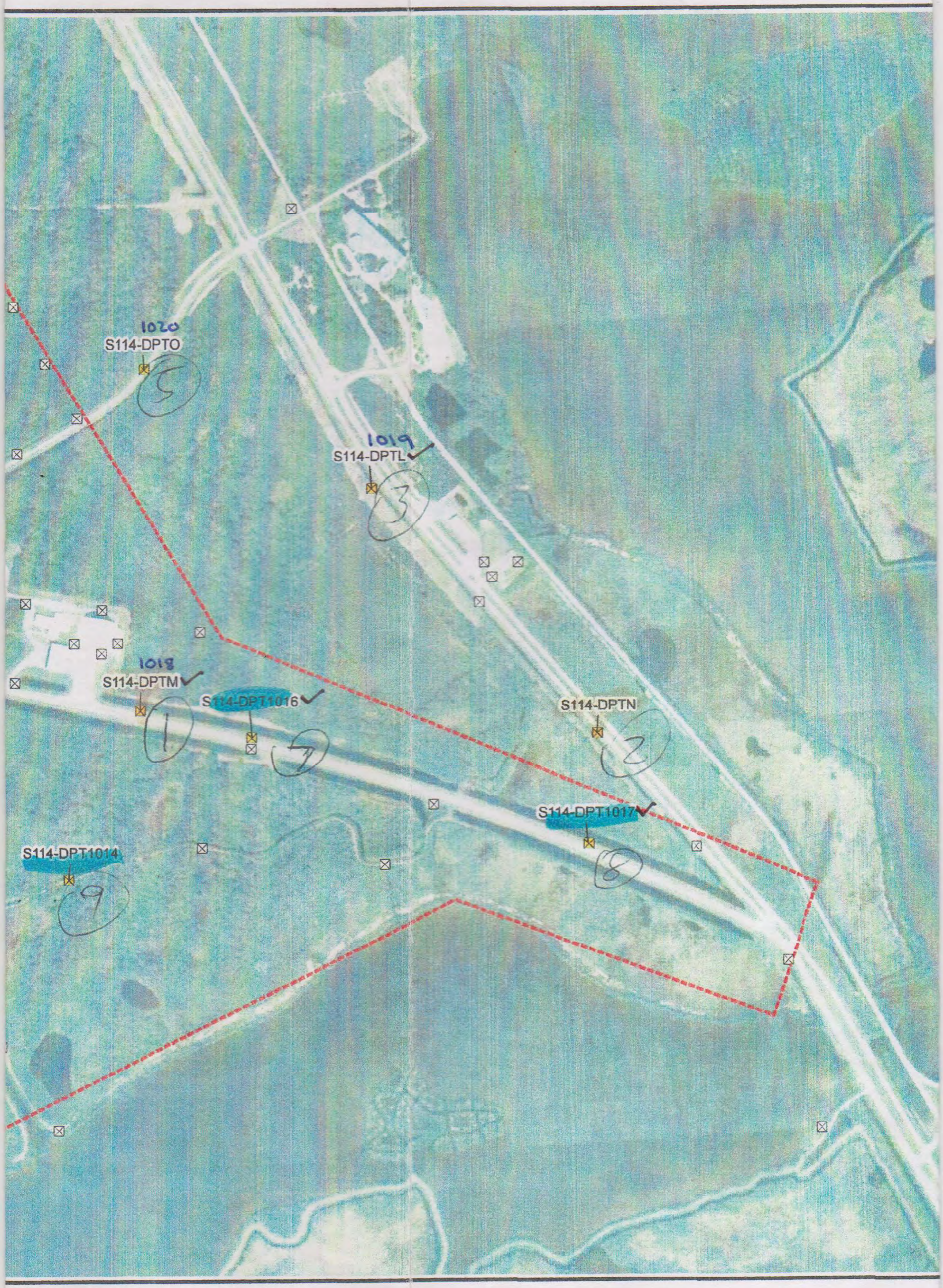
Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Nicky Rifford / J.Vojak Date: 6-14-22


1020
S114-DPTO
1019
S114-DPTL
1018
S114-DPTM
S114-DPT1016
S114-DPTN
S114-DPT1017
S114-DPT1014

1, 2 M, N (5)~

NASA/KSC SWMU 114 6/14/22

Scope: PFAS DPT Sampling
Crew: J. Vojak (HGL), M. Ritter, S. Johnson (GWP)
Equipment: Geoprobe DPT track rig, Perry Pump, HDPE Tubing, Work towels
Weather: 75-89°F, Possible afternoon thunderstorms

0645- Travel to KSC
0700- Stop for ice
0715- Arrive to PRL 217. Safety meeting / rig inspection.
0725- GWP track rig out of site & loads rig
0755- Mobe to SLF / Tow road.
0810- Arrive to S114-DPT1017. offload & rig up.
0822- Begin S114-DPT1017. Hand clear to 5' Boring location offset ≈ 20' toward road due to slope & utilitys.
0910- Begin purge for ~~S~~ JV S114-DPT1017-045.0 Screen 43-47'
0916- Collect S114-DPT1017-045.0-20220614
0930- KSC Safety on site. Reviews tailgate & rig inspection.
0935- KSC Safety departs.
0937- Pressure grout boring S114-DPT1017-045.0
0950- Mobe to S114-DPT1016
1002- Begin S114-DPT1016-045.0. Hand clear to 5'
1025- Begin purge for S114-DPT1016-045.0, Screen (43-47')
1031- Collect S114-DPT1016-045.0-20220614
1042- Pressure grout boring S114-DPT1016-045.0
1050- Mobe to S114-DPT10~~18~~ 24 JV (S114-DPTM) on Figure
1056- Begin S114-DPT1018. Hand clear to 5'
1108- Begin purge for S114-DPT10~~18~~ 24 JV -005.0. Screen (3-7')
1114- Collect S114-DPT10~~18~~ 24 JV -005.0-20220614
1123- Begin purge for S114-DPT10~~18~~ 24 JV -015.0. (Screen 17-13')
1129- Collect S114-DPT10~~18~~ 24 JV -015.0-20220614
1138- Begin purge for S114-DPT10~~18~~ 24 JV -025.0-20220614. Screen 23-27'
1144- Collect S114-DPT10~~18~~ 24 JV -025.0-20220614
1156- Begin purge for S114-DPT10~~18~~ 24 JV -035.0. Screen 33-37'
1202- Collect S114-DPT10~~18~~ 24 JV -035.0-20220614

NASA / KSC SWMU 114 6/14/22

1213 - Begin purge for S114-DPT10~~8~~[24JV] - 045.0, Screen 43-47'
1219 - Collect S114-DPT10~~8~~[24JV]-045.0-20220614
1235 - Pressure grout boring DPT10~~8~~[24JV]
1245 - Load rig / Rig down.
1305 - Mobe to DPT10~~4~~[25JV] @ S114-DPTL on Figure
1335 - Begin DPT10~~4~~[25JV]. Hand clear to 5'
1349 - Begin purge for DPT10~~4~~[25JV]-005.0- Screen (4-7')
1355 - Collect S114-DPT10~~4~~[25JV]-005.0-20220614
1401 - Begin purge for DPT10~~4~~[25JV]-015.0- Screen (13-17')
1407 - Collect S114-DPT10~~4~~[25JV]-015.0-20220614
1419 - Begin purge for DPT10~~4~~[25JV]-025.0- Screen (23-27')
1425 - Collect S114-DPT10~~4~~[25JV]-025.0-20220614 & S114-~~DPT10T4~~[JV]-FD-20220614-01
1434 - Begin purge for DPT10~~4~~[25JV]-035.0 - Screen (33-37')
1440 - Collect S114-DPT10~~4~~[25JV]-035.0-20220614
1452 - Pressure grout DPT10~~4~~[25JV]
1500 - Rig down
1515 - Mobe to DPT10~~20~~[26JV] @ location DPTO on Figure
1530 - Begin DPT10~~20~~[26JV]. Hand clear to 5'.
1540 - Begin purge for DPT10~~20~~[26JV]-005.0. Screen (3-7')
1546 - Collect S114-DPT10~~20~~[26JV]-005.0-20220614
1555 - Collect S114-FD-20220614-01
1600 - Collect S114-FB-20220614-01
1615 - Mobe to field office.
1630 - Drop of GPS unit.
1640 - Depart field office
1700 - End of day.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**6/15/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	75	91

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
			X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10.5	0	10.5
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	PRL 217	10.5	0	10.5
Samuel Johnson	DrillPro	PRL 217	10.5	0	10.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**21**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	6/14/2022-	6/15/2022		0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Collect DPT Groundwater Samples	**C = Continuing**	Complete first mobilization of groundwater sample collection for plume delineation/assessment.

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-DPT1020-015.0-20220615	0725		
S114-DPT1020-025.0-20220615	0750		
S114-DPT1020-035.0-20220615	0810		
S114-DPT1021-005.0-20220615	0950		
S114-DPT1021-015.0-20220615	1015		
S114-DPT1021-025.0-20220615	1105		
S114-DPT1021-035.0-20220615	1130		
S114-DPT1021-045.0-20220615	1158		
S114-DPT1022-005.0-20220615	1348		
S114-FD-20220615-01	1348		
S114-DPT1022-015.0-20220615	1406		
S114-DPT1022-025.0-20220615	1426		
S114-DPT1022-035.0-20220615	1442		
S114-DPT1012-045.0-20220615	1601		
S114-EB-20220614-01	1606		
S114-FB-20220614-01	1611		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0700- Arrive to site, safety meeting and rig inspection.
0705-Resume drillout of S114-DPT1020
0715- Begin purge at S114-DPT1020-0150 (Screen: 13' - 17')
0725- Collect S114-DTP1020-0150-20220615
0745- Begin purge for S114-DTP1020-0250 (Screen 23' - 27')
0750- Collect S114-DTP1020-0250-20220615
0803- Begin purge for S114DPT1020-0350 (Screen 33' - 37')
0810- Collect S114-DPT1020-0350-20220615
0825- Pressure grout boring DPT1020
0840- Rig down
0855- Load rig/mobe to DPTN
0920- Begin S114-DPT1021 at DPTN. Hard clear to 5'
0935- Begin purge for S114-DPT1021-0050 (Screen 3' - 7')
0950- Collect S114DPT1020-0050-20220615
1005- Begin purge for S114-DPT1021-0150 (Screen 13' - 17')
1015- Collect S114-DPT1021-0150-20220615
1050- Begin purge for S114-DPT1021-0250 (Screen 23' - 27')
1105- Collect S114-DPT1021-0250-20220615
1125- Begin purge for S114-DPT1021-0350 (Screen 33' - 37')
1130- Collect S114-DPT1021-0350-20220615
1153- Begin purge for S114-DPT1021-0450 (Screen 43' - 47')
1158- Collect S114-DPT1021-0450-20220615
1223- Rig down and laod rig
1243- Mobe to DPTJ. Extensive tracking with rig.
1330- Begin S114-DPT1022 at DPTJ on figure. HA to 5'.
1342- Begin purge for S114-DPT1021-005.0.
1348- Collect S114-DPT1022-005.0-20220615 and S114-FD-20220615-01
1359- Begin purge for S114-DPT1021-015.0 (Screen 3' - 7')
1406- Collect S114-DPT1022-015.0-20220615
1421- Begin purge for S114-DPT1021-025.0 (Screen 23' - 27')
1426- Collect S114-DPT1022-025.0-20220615
1437- Begin purge for S114-DPT1021-035.0 (Screen 33' - 37')

Daily Quality Control Report

1442- Collect S114-DPT1022-035.0-20220615
1455- Pressure grout boring DPT1022
1508- Load rig
1520- Mobe to S114-1012
1535- Begin S114-DPT1012. HA to 5'.
1555- Begin purge for S114-DPT1021-045.0 (Screen 43' - 47')
1601- Collect S114-DPT1022-045.0-20220615
1606- Collect S114-EB-20220615-01
1611- Collect S114-FB-20220615-01
1615- Pressure grout boring S114-DPT1012-045.0
1627- Rig down/loading rig
1645- Stage rig at SLF enterance road
1650- Mobe to CCF
1700- Arrive to CCF. Transfer approximately 25gal of IDW to drum #225817 on pallet #216883
1720- Mobe to field office
1733- Arrive to field office. QC and pack samples.
1815- Depart field office
1830- Refuel truck
1840- Arrive to Merrit Island office. Unload/prep vehicle for field personnel change.
1900- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**6/15/2022**
Signature: *Justin Vojak*	**6/15/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**6/15/2022**
Signature:	**6/15/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 6/15/22 Client: NASA

Location: SLF Job No.: NS1010.01.03

Meeting/training conducted by: J. Vojak

Work Activities: PFAS DAT Sampling

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Wildlife, Heat Stress, Sun Exposure, Slips, Trips, Falls

Specific Safety Topic(s): Proper Lifting, Hydration

Specific Training Covered: Traffic Awareness

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Micky Ritter	
Samuel Johnson	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 114

Make/Model Number: 7822-C

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Mickey Ritter / J. Vajk Date: 6-15-22

NASA/KSC SWMU 114 6/15/22

Scope: PFAS DPT Sampling
Crew: J. Vojak (H&L), M. Ritter, S. Johnson (CGWP)
Equipment: Geoprobe DPT tracking, Perry Pump, HDPE tubing, Work trucks
Weather: 75-91°F
0630 – Travel to KSC
0635 – Stop for ice
0640 – Continue to KSC
0704 – Arrive to site. Safety meeting & n/j inspection
0705 – Resume drillout @ S114-DPT1026-JV
0715 – Begin purge for S114-DPT1026-JV-015.0. Screen (13-17')
0725 – Collect S114-DPT1026-JV-015.0-20220615
0745 – Begin purge for S114-DPT1026-JV-025.0 - Screen (23-27')
0750 – Collect S114-DPT1026-JV-025.0-20220615
0803 – Begin purge for S114-DPT1026-JV-035.0. Screen (33-37')
0810 – Collect S114-DPT1026-JV-035.0-20220615
0825 – Pressure grout boring DPT1026-JV
0840 – Rig down
0855 – Load rig / Mobe to DPTN
0920 – Begin S114-DPT1021 @ DPTN. Hand clear 0' to 5'
0935 – Begin purge for S114-DPT1021-005.0. Screen (3-7')
0950 – Collect S114-DPT1021-005.0-20220615
1005 – Begin purge for S114-DPT1021-015.0- Screen (13-17')
1015 – Collect S114-DPT1021-015.0-20220615
1050 – Begin purge for S114-DPT1021-025.0 - Screen (23-27')
1105 – Collect S114-DPT1021-025.0-20220615
1125 – Begin purge for S114-DPT1021-035.0 - Screen (33-37')
1130 – Collect S114-DPT1021-035.0-20220615
1153 – Begin purge for S114-DPT1021-045.0- Screen (43-47')
1158 – Collect S114-DPT1021-045.0-20220615
1210 – Pressure grout S114-DPT1021 boring
1223 – Rig down & load rig.
1243 – Mobe to DPTJ. Extensive tracking w/
n/j.

NASA/KSC SWMU 114 6/15/22

1330 - Begin S114-DPT1022 @ DPT1 on figure. HA to 5'.
1342 - Begin purge for S114-DPT1022-005.0.
1348 - Collect S114-DPT1022-005.0-20220615 &
~~S114-DPT1022-015.0~~ S114-FD-20220615-01
1359 - Begin purge for S114-DPT1022-015.0 - Screen (3-7')
1406 - Collect S114-DPT1022-015.0-20220615
1421 - Begin purge for S114-DPT1022-025.0 - Screen (23-27')
1426 - Collect S114-DPT1022-025.0-20220615
1437 - Begin purge for S114-DPT1022-035.0 - Screen (33-37')
1442 - Collect S114-DPT1022-035.0-20220615
1455 - Pressure grout boring DPT1022
1508 - Load r/g
1520 - Mobe to S114-DPT1012
1535 - Begin S114-DPT1012. HA to 5'
1555 - Begin purge for S114-DPT1012-045.0 - Screen (43-47')
1601 - Collect S114-DPT1012-045.0-20220615
1606 - Collect S114-EB-20220615-01
1611 - Collect S114-FB-20220615-01
1615 - Pressure grout boring S114-DPT1012-045.0
1627 - Rig down / Load r/g.
1645 - Stage r/g @ SLF entrance road.
1650 - Mobe to CCF.
1700 - Arrive to CCF. Transfer ~25 gal of IDW
to drum # 225817 on pallett # 216883
1720 - Mobe to field office.
1733 - Arrive to field office. QC & pack samples.
1815 - Depart field office
1830 - Refuel truck.
1840 - Arrive to Merritt Island office. Unload / prep
vehicle for field personnel change
1900 - End of day.

Daily Quality Control Report

HGL HydroGeoLogic, Inc Exceeding Expectations	**Daily Quality Control Report**
Date:	**6/16/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0168
Project Name:	SWMU 114 & 118
Project No.	NS1010.01.03

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun		Clear	Overcast	Rain / Fog
			X		
Temp	Min.		Max.		
	75		90		
Wind	Still	Moderate	High	Gust	
		X			
Humidity	Dry	Moderate	High	Rainfall	
			X		

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Jason Bublitz	Staff Scientist	SWMU 114&118	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114&118	10	0	10
Samuel Johnson	DrillPro	SWMU 114&118	10	0	10
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**20**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	6/14/2022	6/16/2022	10	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Collect DPT Groundwater Samples	**C = Continuing**	Collect groundwater samples for plume delineation/assessment.

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-DPT1014-045.0-20220616	0820	LCQSM537DOD FL-24 analytes + GenX	Pending
S114-DPT1023-005.0-20220616	0949		
S114-DPT1023-015.0-20220616	1001		
S114-DPT1023-025.0-20220616	1016		
S114-DPT1023-035.0-20220616	1028		
S114-FD-20220616-01	1028		
S114-EB-20220616-01	1055		
S114-FB-20220616-01	1100		
S118-DPT1007-005.0-20220616	1239		
S118-DPT1007-015.0-20220616	1251		
S118-DPT1007-025.0-20220616	1308		
S118-DPT1007-035.0-20220616	1323		
S118-DPT1007-045.0-20220616	1343		
S118-DPT1008-005.0-20220616	1459		
S118-DPT1008-015.0-20220616	1510		
S118-DPT1008-025.0-20220616	1529		
S118-DPT1008-035.0-20220616	1543		
S118-DPT1008-045.0-20220616	1601		
S118-FD-20220616-01	1601		
S118-EB-20220616-01	1620		
S118-FB-20220616-01	1625		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0700- All personnel on-site. Conduct TGSM and rig inspection.

0705 - Mob to tow away to access trail where S114-DPT1014 is located.

0800 - Arrive at S114-DPT1014 location and hand auger to 5' bgs.

0820 - Collect S114-DPT1014-045.0-20220616.

0830 - Pressure grout S114-DPT1014 boring and mob rig back to tow away and load drill rig on trailer.

0900 - Check in with KSC flight line office and confirm access to S114-DPTK and check out radio.

0920 - Arrive at S114-DPT1023 (S114-DPTK) and unload drill rig.

0930 - Hand auger to 5' bgs.

0949-1028 - Collect S114-DPT1023-005.0-20220616 through S114-DPT1023-035.0-20220616.

1055-1100 - Collect S114-EB-20220616-01 and S114-FB-20220616-01.

1115 -Demob from flight line and return radio to office.

1130-1200 - All personnel breaks for lunch.

1210 - Unload drill rig and mob to S118-DPT1007 (S118-DPTF).

1225 - Hand auger to 5' bgs at S118-DPT1007.

1239-1343 - Collect S118-DPT1007-005.0-20220616 through S118-DPT1007-045.0-20220616.

1350 - Pressure grout boring and mob rig back to trailer to load.

1410 - Mob to KSC badging office and stage truck/trailer. Mob drill rig to S118-DPT1008 (S118-DPTG).

1459-1601 - Collect S118-DPT1008-005.0-20220616 through S118-DPT1008-045.0-20220616.

1610 - Pressure grout S118-DPT1008 boring.

1620-1625 - Collect S118-EB-20220616-01 and S118-FB-20220616-01.

1630 - Mob drill rig back to box truck and load rig on trailer.

1645 - Mob trucks and equipment to industrial area to stage trailer for the night.

1700 - Stage trailer in industrial area. Jason B. mobs to CCF IDW to unload contained purge water.

1730 - Add ~12 gallons of IDW to drum #226060 on pallet #216883. Drum is ~40% filled.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is

accurate and representative of the work completed.

Printed Name: Jason Bublitz	**6/16/2022**
Signature: Bublitz, Jason Digitally signed by Bublitz, Jason Date: 2022.06.17 06:29:58 -04'00'	**6/16/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with

all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**6/16/2022**
Signature: Jellett, Tim Digitally signed by Jellett, Tim Date: 2022.06.17 08:07:05 -04'00'	**6/16/2022**

HGL
HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 6-16-2022 / 0700 Client: KSC

Location: NASA/KSC - SLF Job No.: NS1010.01.03

Meeting/training conducted by: Jason Bublitz

Work Activities: DPT Groundwater Sampling

Safety / Training Topics Presented

Chemical Hazards: Possible PFAS/PFOA

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Heat Stress

Specific Training Covered: Drink plenty of fluids and take breaks when needed. Communicate with field leader if experiencing heat stress symptoms. All personnel has stop work authority.

Attendees

Name Printed and Employee Number:	Signature:
Jason Bublitz	
Mike Ritter	
Samuel Johnson	

HGL
HydroGeoLogic, Inc
Exceeding Expectations

Direct-Push Rig Inspection Checklist

Project Name/Number: PFAS Assessment/NS1010.01.03

Make/Model Number: 7822-

Equipment Number: 195

Hours/Mileage:

Rig clean and free of soils, oils, and other debris.	OK ✓	Tracks in good condition.	OK ✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	OK ✓	Tires fully inflated and in good condition.	OK N/A
Rig controls clearly labeled and in working condition.	OK ✓	Back-up alarm working.	OK N/A
Rig Kill Switch in working order.	OK ✓	First Aid Kit accessible and stocked.	OK ✓
All of the Rig's connections tightened and leak-free.	OK ✓	Fire Extinguisher accessible and fully charged.	OK ✓
Parking brake functions properly.	OK N/A	Eye Wash full and accessible.	OK ✓
Steering controls in working order and clear of obstacles.	OK N/A	Hearing protection available and is being used during hammering.	OK ✓
Copy of the manual for all drilling equipment available.	OK ✓	All overhead and underground hazards identified.	OK ✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Nicky R+V Date: 06.16.2022

NASA/KSC SWMU 114 6/15/22

1330 - Begin S114-DPT1022 @ DPT1 configure. HA to 5'.
1342 - Begin purge for S114-DPT1022-005.0.
1348 - Collect S114-DPT1022-005.0-20220615 &
~~S114-DPT1022-015.0~~ S114-FD-20220615-01
1359 - Begin purge for S114-DPT1022-015.0, -Screen (3-7')
1406 - Collect S114-DPT1022-015.0-20220615
1421 - Begin purge for S114-DPT1022-025.0 - Screen (23-27')
1426 - Collect S114-DPT1022-025.0-20220615
1437 - Begin purge for S114-DPT1022-035.0 - Screen (33-37')
1442 - Collect S114-DPT1022-035.0-20220615
1455 - Pressure grout boring DPT1022
1508 - Load rig
1520 - Mobe to S114-DPT1012
1535 - Begin S114-DPT1012 HA to 5'
1555 - Begin purge for S114-DPT1012-045.0-Screen (43-47')
1601 - Collect S114-DPT1012-045.0-20220615
1606 - Collect S114-EB-20220615-01
1611 - Collect S114-FB-20220615-01
1615 - Pressure grout boring S114-DPT1012-045.0
1627 - Rig down / Load rig.
1645 - Stage rig @ SLF entrance road.
1650 - Mobe to CCF.
1700 - Arrive to CCF. Transfer ~25 gal of IDW to drum # 225817 on pallett # 216883
1720 - Mobe to field office.
1733 - Arrive to field office. QC & pack samples.
1815 - Depart field office
1830 - Refuel truck.
1840 - Arrive to Merritt Island office. Unload / prep vehicle for field personnel change
1900 - End of day.

NASA / KSC - SWMU 114 (Fire Station #2) 6/16/22
NS1010 01.03

Purpose: Complete collection of groundwater samples near tow away and off flight line.
Personnel: Jason B. (HGL) Mickey R. & Sam J. (GWP)
Equipment: Geoprobe, HDPE tubing, master flex, peristaltic pump, DPT rods, tungsten (SS) screen, expendable points, inner rods, portland cement.
Weather: HI-90 Lo-75° sunny / humid.
0700: All personnel on-site. Conduct TGSM & rig inspection.
0705: Mob to tow away to access S114-DPT1014 (down trail)
0800: Arrive at S114-DPT1014 location and hand clear to 5' bgs.
0817: Begin purge at S114-DPT1014-045.0
0820: Collect S114-DPT1014-045.0-20220616.
0830: Pressure grout S114-DPT1014 boring and mob back to tow away to load rig.
0900: Check in with KSC flight line office and confirm access to S114-DPTK and check out radio
0920: Arrive at S114-DPT1023 (DPTK) and unload drill rig.
0930: Hand auger to 5' bgs at DPT1023.
0946: Begin purge at S114-DPT1023-005.0-20220616.
0949: Collect S114-DPT1023-005.0-20220616
0958: Begin purge at S114-DPT1023-015.0-20220616
1001: Collect S114-DPT1023-015.0-20220616
1013: Begin purge at S114-DPT1023-025.0
1016: Collect S114-DPT1023-025.0-20220616
1025: Begin purge at S114-DPT1023-035.0
1028: Collect S114-DPT1023-035.0-20220616 & S114-FD-20220616-01 (field duplicate).
1035: Pressure grout S114-DPT1023 boring
1055: Collect S114-EB-20220616-01 (equipment blank)
1100: Collect S114-FB-20220616-01 (field blank)
1115: Demob from flight line and return radio.
1130-1200: Lunch break.
1200: Arrive at SWMU 114.

NASA / KSC - SWMU 118 6/16/22

NS1010.01.03

Purpose: Collect PFAS delineation samples from SWMU 118
Personnel: Jasan B. (HGL) Mikey R & Sam J. (GWP)
Equipment: Geoprobe, outer/inner rods, temporary screen (SS), HDPE, master flex, bottleware, purflow cement, work trucks
Weather: Hi - 90 Lo - 75 sunny / humid.

1210: Unload drill rig and mob to SI18 - DPT1007 (DPTF)
1225: Load auger to 5' bgs at SI18 - DPT1007.
1236 Begin purge at SI18 - DPT1007 - 005.0
1239 Collect SI18 - DPT1007 - 005.0 - 20220616.
1248: Begin purge at SI18 - DPT1007 - 015.0
1251: Collect SI18 - DPT1007 - 015.0 - 20220616
1305: Begin purge at SI18 - DPT1007 - 025.0
1308: Collect SI18 - DPT1007 - 025.0 - 20220616.
1320 Begin purge at SI18 - DPT1007 - 035.0
1323 Collect SI18 - DPT1007 - 035.0 - 20220616.
1340 Begin purge at SI18 - DPT1007 - 045.0
1343 Collect SI18 - DPT1007 - 045.0 - 20220616
1350: Pressure grout bentonite and mob rig back to box truck to load on trailer.
1410: Mob to KSC badging office, stage truck and trailer. Mob rig to DPT1008 (DPTG).
1456: Begin purge at DPT1008 - 005.0 - 20220616
1459: Collect SI18 - DPT1008 - 005.0 - 20220616.
1507: Begin purge at SI18 - DPT1008 - 015.0
1510: Collect SI18 - DPT1008 - 015.0 - 20220616.
1526 Begin purge at SI18 - DPT1008 - 025.0 - 20220616.
1529 Collect SI18 - DPT1008 - 025.0 - 20220616
1540: Begin purge at SI18 - DPT1008 - 035.0
1543: Collect SI18 - DPT1008 - 035.0 - 20220616.
1558 Begin purge at SI18 - DPT1008 - 045.0
1601 Collect SI18 - DPT1008 - 045.0 - 20220616 & SI18 - FD - 20220616 - 01

NASA / KSC - SWMU 118 6/16/22

NS1010.01.03

1620 Collect SI18EB - 20220616 - 01 (equipment blank)
1625 Collect SI18 - FB - 20220616-01 (field blank)
1630: Mob drill rig to box truck staged at badging station and load rig on trailer.
1645: Mob to industrial area to stage trailer.
1700: Stage trailer in industrial area. Jasan B. mobs to CCF IDW to unload purge water.
1730: Add ~12 gallons of purge water to drum # 226060 on pallet # 216883. drum 40% filled.

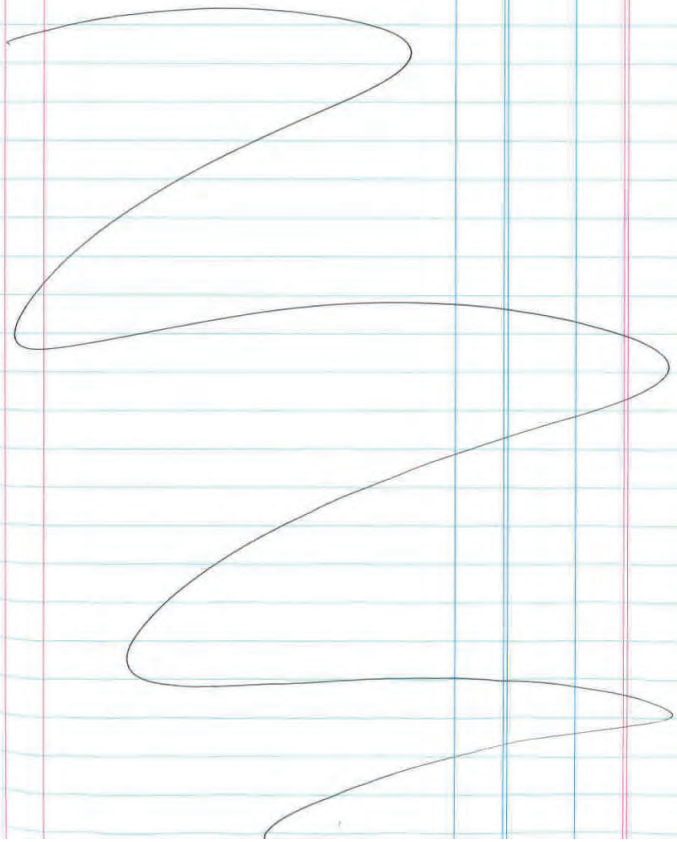


Photo 01. Photo of drill rig and crew at S114-DPT1014 boring location.

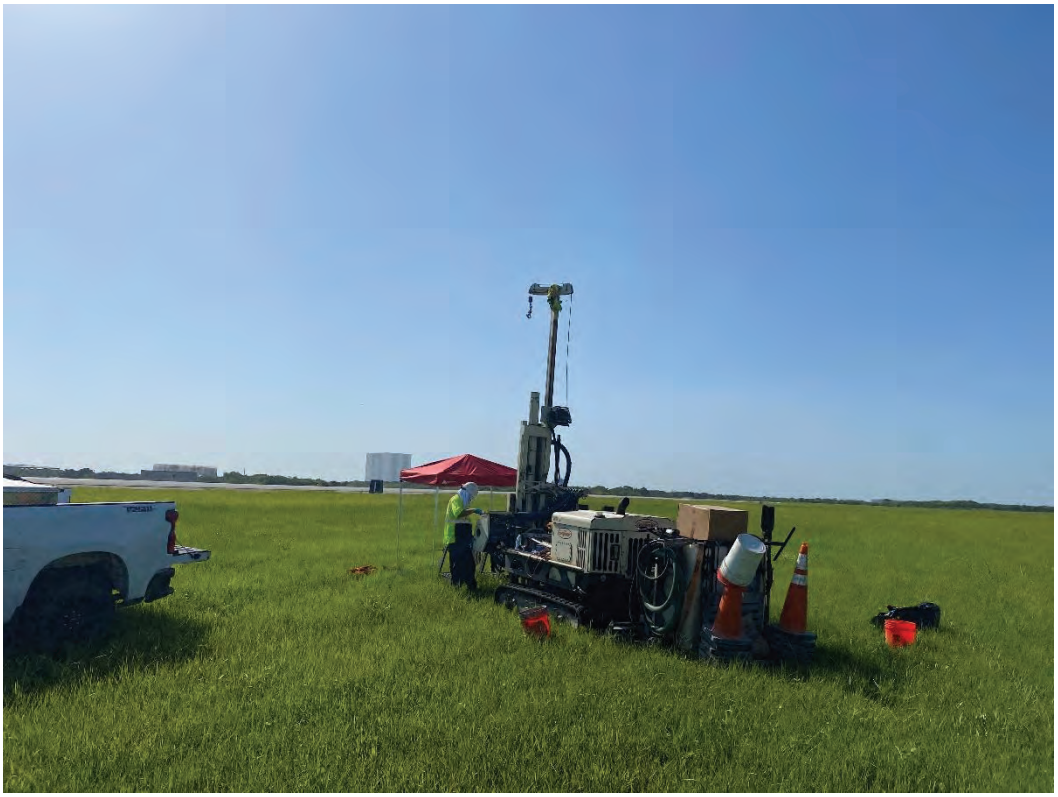


Photo 02. Photo of drill rig and crew at S114-DPT1023.

Photo 03. Photo of drill rig and crew at S118-DPT1007.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/5/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	75			88			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	9	0	9
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**9**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	8	0	8
Cameron Stevens	DrillPro	SWMU 114	8	0	8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**16**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/5/2022	8	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**S = Start**	Begin installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0830- All personnel onsite at KSC badging station.

0845- Informed that badging station does not have drill crews documentation. Discuss situation w/ J. Bublitz, badging paperwork resubmitted.

0930- Drill crew recieves base passes, mobe to CCF.

0945- Stage drums at CCF.

1000- Fill water tote.

1010- Mobe to SLF.

1025- Arrive to SLF, safety meeting & rig inspection.

1035- Begin SWMU114-MW0008S. Hand clear to 5'.

1105- TD @ 13', begin well installation. See field notes for installation details.

1120- Begin SWMU114-MW0008I. Hand clear to 5'.

1128- Begin development for SWMU114-MW0008S. See field notes for details.

1150- TD @ 35', begin well installation. See field notes for details.

1210- Begin development for SWMU114-MW0008I. See field notes for details.

1307- Begin SWMU114-MW0011S. Hand clear to 5'.

1355- TD @ 15', begin well installation. See field notes for details.

1411- Begin development for SWMU114-MW0011S, see field notes for details.

1435- Begin SWMU114-MW0011I. Hand clear to 5'.

1450- TD @ 35', begin well installation. See field notes for details.

1515- Begin development for SWMU114-MW0011I. See field notes for details.

1545- Rig down/load trailer.

1600- Mobe to CCF.

1610- Transfer IDW.

1640- Depart site.

1900- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/5/2022**
Signature: *Justin Vojak*	**7/5/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/5/2022**
Signature:	**7/5/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/5/22 Client: NASA

Location: SWMU 114 / SLF Job No.: _____

Meeting/training conducted by: J. Vojnic

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat stress

Specific Safety Topic(s): Vehicle / Traffic Awareness when working along roadsides.

Specific Training Covered: N/A

Attendees

Name Printed and Employee Number:	Signature:
J. Vojnic	
Carson Stevens	
Micky Rittel	

HydroGeoLogic, Inc
Exceeding Expectations

Drill Rig Inspection Checklist

Project Name/Number: SWMU 114

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Mitchell Ritter Date: 7/5/22

NASA/KSC SWMU114 7/5/22

3-27')

3-37')

13-47')

Scope: Monitor Well Installation

Crew: J. Vojak (HGL), M. Ritter, C. Stevens (GWP)

Equipment: Geoprobe track rig, Honda Pump for development, GPS unit, work trucks

Weather: 75-88°F, Clear

0750 - Travel to KSC.

0755 - Stop for fuel

0810 - Continue to KSC

0825 - Arrive to KSC Badging station

0830 - GWP arrives.

0845 - Informed badging station does not have drill crews badging information

0850 - Contact J. Bublitz, badging paperwork resubmitted.

0930 - Drill crew receives badges. Mobe to CCF.

0945 - Stage drums @ CCF yard.

1000 - Fill water tote. (from PFAS free hydrant)

1015 - Mobe to SWMU 114 / SLF.

1025 - Arrive to SWMU114-MW008. Safety meeting & rig inspection.

1030 - Rig up

1035 - Begin SWMU114-MW00085. Hand clear to 5'.

1050 - DTW @ ≈4'. Proceed to drill out to 13'.

1105 - TD @ 13'. Begin well installation.

Screen: (13-3')

20/30 Filter Pack: (3-2')

30/65 Pack Seal: (2-1')

Grout: (1'-surface)

1120 - Begin SWMU114-MW0008I. Hand clear to 5'.

1128 - Begin Development for SWMU114-MW00085. Honda pump, ≈ 0.75 gpm., Brown, No odor.

1130 - Drill out to 35' @ MW0008I.

1150 - TD @ 35'. Begin well installation

JV

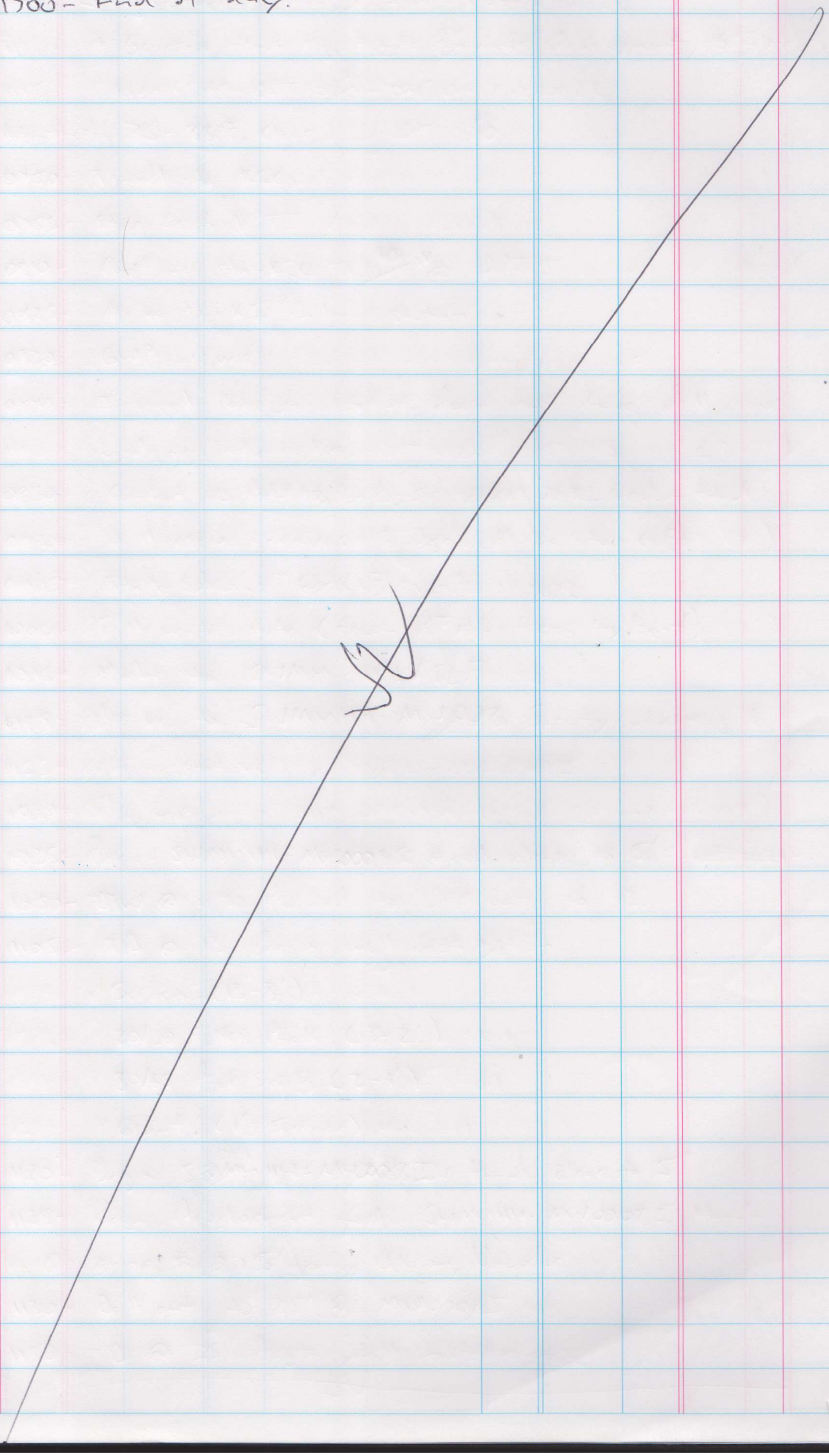
NASA/KSC SWMU114 7/5/22

1150... Screen (35-25')
20-30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
1210... Begin development for SWMU114-MW00081, Honda pump, 0.75 gpm, Drk Gry, No odor.
1240- Development complete for SWMU 114-MW0008I. Clear, N.O.
*1158 Development complete for SWMU114-MW00085. Clear, N.O.
1245- Rig down & mobe to SWMU114-MW00011.
1307- Begin SWMU114-MW00115. Hand clear to 5'.
1355- TD @ 15'. Begin well installation.
Screen (15-5')
20/30 Filter Pack (15-3')
30/65 Pack seal (3-1')
Grout (1-Surface)
1411- Begin development for SWMU114-MW00115. Honda pump, 0.75 gpm, OPQ, N.O.
1430- Development complete for SWMU114-MW00115.
Clear, N.O.
1435- Begin SWMU114-MW0011I. Hand clear to 5'
1450- TD @ 35'. Begin well installation
Screen (35-25')
20/30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
Grout (21-Surface)
1510- Installation complete
1515- Begin development for SWMU-MW0011I. Honda pump
0.75 gal, Drk Gry, N.O.
1540- Development complete. Clear, N.O.
1545- Rig down/Trailer rig
1600- Mobe to CCF
1610- Transfer IDW to spill pallett, Drum 226056
≈ 80% full (45 gallons) & Drum 226056 ≈ 60%
full (33 gallons)

SWMU 114 NASA/KSC 7/5/22

1640- Depart site.

1700- End of day.



Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU-MW00085	SWMU114	NA	7/5/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8"	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot Prepack	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		JV 11 feet from ~~13~~ JV feet to JV 2 feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Sand	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Sand	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/5/22	☐ Surge/Pump ☐ Pump ☐ Compressed Air ☑ Other (describe) Honda Pump

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Brown, No Odor	Clear, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0008I	Site Name: SWMU 114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/5/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet): 35	Well Depth (feet): 35	Borehole Diameter (inches): 3	Manhole Diameter (inches): 8"

Well Pad Size: 2 feet by 2 feet

Riser Diameter and Material: 1" Schd 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 25 feet from 25 feet to Surface feet

Screen Diameter and Material: 1", Schd 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet from 35 feet to 25 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet from ____ feet to ____ feet

2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet from ____ feet to ____ feet

3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size: 30/30 Sand

Prepacked Filter Around Screen (check one): ☑ Yes ☐ No

Filter Pack Length: 12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size: 30/65 Sand

Filter Pack Seal Length: 2 feet from 23 feet to 21 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/5/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda

Depth to Groundwater (before developing in feet):

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 22.5

Development Duration (minutes): 30

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development: Drk Gry, No Odor

Water Appearance (color and odor) At End of Development: Clear, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW00115	SWMU114	NA	7/5/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8"	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1", Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	5 feet from 5 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1", Schd 40 PVC	10 Slot	10 feet from 15 feet to 5 feet

1st Surface Gasing Material: (also check: ☐ Permanent ☐ Temporary)	1st Surface Casing I.D. (inches):	1st Surface Casing Length: ____ feet from ____ feet to ____ feet
2nd Surface Casing Material: (also check: ☐ Permanent ☐ Temporary)	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: ____ feet from ____ feet to ____ feet
3rd Surface Casing Material: (also check: ☐ Permanent ☐ Temporary)	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Sand	☑ Yes ☐ No	12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Sand	2 feet from 3 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)
7/5/22	

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	Depth to Groundwater (before developing in feet):

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one): ☐ Yes ☑ No
0.75	NA	

Pumping Condition (check one): ☑ Continuous ☐ Intermittent	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one): ☑ Yes ☐ No
	14.25	19	

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
OPQ, No Odor	Clear, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU 114-MW0011I	SWMU 114	NA	7/5/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8"	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
20/30 Sand	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
30/65 Sand	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/5/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75		☐ Yes ☐ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☐ Continuous ☐ Intermittent	18.75	25	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dk Gray, No Odor	Clear, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/6/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	74			87			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	9	0	9
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**9**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	8	0	8
Cameron Stevens	DrillPro	SWMU 114	8	0	8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**16**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/6/2022	8	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Begin installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0700- All personnel onsite. Safety meeting & rig inspection.
0725- Arrive to CCF.
0745- Begin SWMU114-MW0007I. Hand clear to 5'.
0820- TD @ 35', begin well installation. See field notes for installation details.
0910- Begin SWMU114-MW0007S. Hand clear to 5'.
0920- Begin development for SWMU114-MW0007I. See field notes for details.
0930- TD @ 15', begin well installation. See field notes for details.
0953- Begin development for SWMU114-MW0007S. See field notes for details.
1035- Begin SWMU114-MW0006I. Hand clear to 5'.
1058- TD @ 35', begin well installation. See field notes for details.
1125- Begin development for SWMU114-MW006I, see field notes for details.
1130- Begin SWMU114-MW0006S. Hand clear to 5'.
1147- TD @ 13', begin well installation. See field notes for details.
1205- Begin development for SWMU114-MW0006S. See field notes for details.
1320- Begin SWMU114-MW0009S. Hand clear to 5'.
1330- Lightning standown.
1400- Resume SWMU114-MW0009S
1415- TD @ 13', begin well installation. See field notes for details.
1430- Installation complete. Phase II issued.
1450- Depart KSC.
1900- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/6/2022**
Signature: *Justin Vojak*	**7/6/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/6/2022**
Signature:	**7/6/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- ☐ Tailgate (daily)
- ☐ Activity Hazard Analysis
- ☐ Pre-Task Hazard Analysis (prior to new task or operation)
- ☐ Site Safety Orientation (new personnel)
- ☐ Supervisor's (monthly)
- ☐ Supervisor's (weekly)
- ☐ UXO Awareness
- ☐ Asbestos Awareness
- ☐ Health and Safety Plan Addendum: _____
- ☐ Other: ___

Date/Time: 7/6/22 Client: NASA

Location: SWMU Job No.: _____

Meeting/training conducted by: J. Vojak

Work Activities: MW Installs

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Heat stress, Sun Exposure

Specific Safety Topic(s): Hydration

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Mickey Ritter	
Camron Stevens	

HydroGeoLogic, Inc
Exceeding Expectations

Drill Rig Inspection Checklist

Project Name/Number: [redacted]2

Make/Model Number: [redacted] 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Mickey Ritter / J. Vojak Date: 7-6-22

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMH-MW0007S	SWMH114	NA	7/6/21

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	5 feet from 5 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 15 feet to 5 feet

1st Surface Gasing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 3 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/6/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	5.23

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Brown, No Odor	Lt. Brn, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMW114-MW0007I	SWMW114	NA	7/6/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 10 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/6/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	6.10

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dark Gry, No Odor	Slt - OPQ, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW00065	SWMU114	NA	7/6/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/6/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	2.35

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	11.25	15	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, No Odor	Clear, Sulphur odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMW114-MW0006I	Site Name: SWMW114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/6/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/6/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	2.20

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dark Gray, No Odor	Clear, No Odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWM4114-MW00095	SWM4114	NA	7/6/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one): ☐ Surge/Pump ☐ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☐ Other (describe)	Depth to Groundwater (before developing in feet):

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one): ☐ Yes ☐ No

Pumping Condition (check one): ☐ Continuous ☐ Intermittent	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one): ☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of development activities at MW0007I.

Photo 02. View of installation activities at MW0007S.

Photo 03: View of rig at MW0009S.

Photo 04: View of installation activities at MW0009S.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/7/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	**Min.**			**Max.**			
	75			89			
Wind	**Still**	**Moderate**		**High**		**Gust**	
		X					
Humidity	**Dry**	**Moderate**		**High**		**Rainfall**	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	9.75	0	9.75
Cameron Stevens	DrillPro	SWMU 114	9.75	0	9.75
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**19.5**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/7/2022	8	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0725- All personnel onsite. Safety meeting & rig inspection.
0730- Transfer IDW. Drum 226056 ~80% full.
0745- Pick up more spill palllets.
0805- Continue IDW transfer.
0845- Track rig to MW10 location.
0910- Begin SWMU114-MW00010S. Hand clear to 5'.
0925- TD @ 15', begin well installation. See field notes for installation details.
0950- Begin SWMU114-MW0010I. Hand clear to 5'.
1010- Begin development for SWMU114-MW0010S. See field notes for details.
1015- TD @ 35', begin well installation. See field notes for installation details.
1042- Begin development for SWMU114-MW0010I. See field notes for details.
1150- Begin development for SWMU114-MW0009S. See field notes for details.
1300- Begin SWMU114-MW0009I. Hand clear to 5'.
1320- TD @ 35', begin well installation. See field notes for details.
1342- Begin development for SWMU114-MW0009I. See field notes for details.
1430-Mobe to MW04.
1500- Begin SWMU114-MW0004I. Hand clear to 5'.
1530- TD @ 35', begin well installation. See field notes for details.
1600-Installation complete. Mobe to CCF.
1610- Transfer IDW. Drum 226054 @ ~80% capacity.
1640- Depart site.
1700- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/7/2022**
Signature: *Justin Vojak*	**7/7/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/7/2022**
Signature:	**7/7/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/7/22 Client: NASA

Location: SWMU 114 Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojnic

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slip, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Hydration.

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojnic	
Caragh Stevens	
Mickey Ritter	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU PFAS MW Installation

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	✓	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Micky Ritter Date: 7/7/22

NASA/KSL SWMW114 7/7/22

Scope: MW Installation

Crew: J. Vojak (H&L), M. Ritter, C. Stevens (GWP)

Equipment: Geoprobe Track Rig, Honda Pump, GPS Unit, work trucks

Weather: 75-89°F, Possible Thunderstorms

0700 - Travel to site.

0715 - Arrive to CCF.

0725 - Safety meeting

0730 - Transfer IDW. Drum 226056 ≈ 80% Full (45 gal)

0745 - Mobe to pick up more spill pallets.

0805 - Resume IDW transfer. ≈ 18 gal to drum 226054 on Pallett 226053.

0825 - Mobe to SLF

0835 - Travel to rig (@ MW00095)

0845 - Track rig to MW10 location. Dig starts for Cut A location only. Unable to install well @ MW00091.

0910 - Begin SWMW114-MW00105. Hand clear to 5'

0925 - TD @ 15'. Begin well installation.
Screen (15'-5')
20/30 Filter Pack (15-3')
30/65 Pack Seal (3-1')
Grout (1'-Surface)

0940 - Installation complete.

0950 - Begin SWMW114-MW00101. Hand clear to 5'

1010 - Begin development for SWMW114-MW00105.
DTW: 6.84', Honda Pump, 0.75 gpm, Drk Brn, N.O.

1035 - Development complete for SWMW114-MW00101S
SI: - OPQ, N.O.

* 1045 - TD @ 35', Begin well installation.
Screen (35-25')
20/30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
Grout (21'-Surface)

JV

NASA/KSC SWMW114 7/7/22

1040 - Installation complete.

1042 - Begin development for SWMW114-MW0010I.
DTW: 5.07, Honda Pump, Drk Gry, N.O., 0.75 gpm.

1105 - Development complete for SWMW114-MW0010I.
Clear, N.O.

1110 - Rig down

1120 - Mobe to MW0009.

1140 - Arrive to MW0009. Drill crew mobe to fill water tote.

1150 - Begin development for SWMW114-MW0009S.
DTW 4.99', Drk Gry, NO, Honda Pump, 0.75 gpm.

1220 - Development Complete. Clear, N.O.

1245 - Drill crew back from CCF.

1300 - Begin SWMW114-MW0009I. Hand clear to 5'

1320 - TD @ 35'. Begin well installation.
Screen (35-25')
20/30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
Grout (21'- Surface)

1340 - Installation complete.

1342 - Begin development for SWMW114-MW0009I.
DTW 4.99', Drk Gray, N.O., Honda pump, 0.75 gpm.

1408 - Development complete for SWMW114-MW0009I.
OPQ, No odor

1410 - Rig down / truck & load rig.

1430 - Mobe to MW04.

1440 - Arrive to MW04. Heavy rain.

1500 - Begin SWMW114-MW0004I. Hand clear to 5'

1530 - TD @ 35'. Begin well installation.
Screen (35-25')
20/30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
Grout (21'-Surface)

NASA/KSC SWMU 114 7/7/22

1400- Installation complete. Mobe to CCF.
1610- Transfer IDW to drums 226054 & drum 226052. Drum 226054 @ 80% capacity.
1640- Depart site
1700- End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW0010S	SWMU114	NA	7/7/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	5 feet from 5 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 15 feet to 5 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 3 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/7/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	6.84

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75*	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	18.75	25	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
D-K Brn, N.O.	Sl. - OPQ, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW0010I	SWMU114	NA	7/7/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method:

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/7/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	5.67

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	17.25	23	☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dk Grey, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW0009I	SWMU114	NA	7/7/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/7/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	4.99

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	OPQ, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

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Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW0004I	SWMU	NA	7/7/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Sereen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
~~7/7/22~~ JV	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one): ☐ Yes ☐ No

Pumping Condition (check one): ☐ Continuous ☐ Intermittent	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one): ☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of development activities at MW0010S.

Photo 02. View of rig at SWMU114-MW0010I.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/8/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
						X	

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	76			90			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10.75	0	10.75
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10.75**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	7	0	7
Cameron Stevens	DrillPro	SWMU 114	7	0	7
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**14**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/8/2022	7	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

0700- All personnel onsite. Safety meeting & rig inspection.
0720- Track rig to MW3 location.
0730- Begin SWMU114-MW0003S. Hand clear to 5'.
0745- TD @ 13', begin well installation. See field notes for installation details.
0805- Begin SWMU114-MW0003I. Hand clear to 5'.
0830- Begin development for SWMU114-MW003S See field notes for details.
0857- TD @ 35', begin well installation. See field notes for installation details.
0903- Begin development for SWMU114-MW003I. See field notes for details.
1000- Begin SWMU114-MW0002S. Hand clear to 5'.
1012- TD @ 15', begin well installation. See field notes for details.
1030- Begin development for SWMU114-MW0002S. See field notes for details.
1032- Begin SWMU114-MW0002I. Hand clear to 5'.
1048- TD @ 35', begin well installation. See field notes for details.
1102- Begin development for SWMU114-MW0002I. See field notes for details.
1200- Begin SWMU114-MW0001S. Hand clear to 5'.
1215- TD @ 15', begin well installation. See field notes for details.
1235- Begin SWMU114-MW0001I. Hand clear to 5'.
1245- Begin development for SWMU114-MW0001S. See field notes for details.
1405- Begin development for SWMU114-MW0004I. See field notes for details.
1453- Begin development for SWMU114-MW0001I. See field notes for details.
1610- Transfer IDW. Drum 226052 @ ~80% capacity.
1645- Depart site/mobe to Merritt Island office.
1715- End of day.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/8/2022**
Signature: *Justin Vojak*	**7/8/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/8/2022**
Signature:	**7/8/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- ☑ Tailgate (daily)
- ☐ Activity Hazard Analysis
- ☐ Pre-Task Hazard Analysis (prior to new task or operation)
- ☐ Site Safety Orientation (new personnel)
- ☐ Supervisor's (monthly)
- ☐ Supervisor's (weekly)
- ☐ UXO Awareness
- ☐ Asbestos Awareness
- ☐ Health and Safety Plan Addendum: _____
- ☐ Other: ___

Date/Time: 7/8/22

Client: NASA

Location: SWMU 114

Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojnik

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Proper Lifting Technique

Specific Training Covered: N/A

Attendees

Name Printed and Employee Number:	Signature:
J. Vojnik	
Mickey Ritter	
Lauren Stevens	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: Summit

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Mickey Ritter / J. Wolfe Date: 7-8-22

NASA/KSC SWMU 114 7/18/22

Scope: MW Installs

Crew: J. Vojak (H&L), M. Ritter, C. Stevens (GWP)

Equipment: Geoprobe track rig, Honda Pump, GPS unit, Work trucks

Weather: 76-90°F, Possible thundershowers

0630 - Travel to site

0655 - Arrive to CCF.

0700 - Safety meeting & rig inspection

0710 - Mobe to MW3 location

0720 - Track rig to MW3

0730 - Begin SWMU114-MW00035. Hand clear to 5'

0745 - TD @ 13'. Begin well installation

Screen (13-3')

20/30 Filter Pack (3-2')

30/65 Pack Seal (2-1')

Grout (1'-Surface)

0800 - Installation complete.

0805 - Begin SWMU114-MW00031. Hand clear to 5'

0830 - Begin development for SWMU114-MW00035.

DTW: 2.69, Dk Brn, N.O., Honda Pump, 0.75 gpm.

0837 - TD @ 35'. Begin well installation.

Screen (25-35')

20/30 Filter Pack (35-23')

30/65 Pack Seal (23-21')

Grout (21'-Surface)

0900 - Development complete for SWMU114-MW00035.

~~Clear~~ JV, No Odor, Lt. Brn.

0903 - Begin development for SWMU114-MW00031.

DTW 2.65', Dk Gry, N.O., Honda Pump, 0.75 gpm.

0933 Development complete for SWMU114-MW00031.

Lt. Brn, N.O.

0935 Track/Mobe to MW02

1000 Begin SWMU114-MW00025. Hand clear to 5'

JV

NASA/KSC SWMW114 7/8/22

trucks

1012 - TD @ 15'. Begin well installation
Screen (15-5')
20/30 Filter Pack (15-3')
30/65 Pack Seal (3-1')
Grout (1'-Surface)

1025 - Installation complete.

1030 - Begin development for SWMW114-MW00025.
DTW: 4.70', Dk Brn, No odor, Honda Pump, 0.75 gpm

1032 - Begin SWMW114-MW00021. Hand clear to 5'

1048 - TD @ 35'. Begin well installation.

1050 - Development complete for SWMW114-MW00025.
Clear, N.O.

1100 - Installation complete

1102 - Begin development for SWMW114-MW00021.
DTW 4.75', Dk Gry, N.O., Honda Pump, 0.75 gpm.

1132 - Development for SWMW114-MW00021 complete.
DPQ, N.O.

1137 - Track & Land M's

1148 - Mobe to MW00001.

1200 - Begin SWMW114-MW00015. Hand clear to 5'
DTW ≈ 2'

1215 - TD @ 12', Begin well installation.
Screen (12-2')
20/30 Filter Pack (12'-1.5')
30/65 Pack Seal (1.5-1')
Grout (1'-Surface)

1230 - Installation Complete.

1235 - Begin SWMW114-MW00011. Hand clear to 5'

1245 - Begin Development for SWMW114-MW00015.
DTW: 1.57', Dk Brn, N.O., Honda pump, 0.75 gpm.

1315 - Development complete for SWMW114-MW00015.
Clear, No Odor.

NASA/KSC SWMW114 7/18/22

1318 - Installation for SWMW114-MW0001I complete.
See construction log for details.
1325 - Track back to truck
1340 - Sign daily's.
1350 - GWP departs.
1405 - Begin development for SWMW114-MW0004I.
DTW: 3.65, Drk Gry, N.O., Honda Pump, 0.75 gpm
1435 - Development complete for SWMW114-MW0004I
OPQ, N.O.
1453 - Begin development for SWMW114-MW0001I.
DTW: 1.65', Drk Gry, N.O., Honda Pump, 0.75 gpm.
1523 - Development complete for SWMW114-MW0001I.
Clear, N.O.
1530 - Mobe to CCF
1545 - Transfer IDW to drum 22605L. Drum @ 80% capacity
1615 - Mobe to Cape Field office.
1630 - Drop off equipment.
1645 - Mobe to Merritt Island office.
1705 - Unload vehicle.
1715 - End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWM114-MW0003I	SWM114-~~MW0003~~ JV	NA	7/8/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/8/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	2.65

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	225	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dk Gray, No odor	Lt. Brn, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMW114-MW00035	SWMW114	NA	7/8/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Sch 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 3 feet from 3 feet to Surface feet

Screen Diameter and Material: 1" Sch 40 PVC

Screen Slot Size: 10 Slot

Screen Length: 10 feet from 13 feet to 3 feet

1st Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet from ____ feet to ____ feet

2nd Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet from ____ feet to ____ feet

3rd Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one): ☑ Yes ☐ No

Filter Pack Length: 11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size: Sand 30/65

Filter Pack Seal Length: 1 feet from 2 feet to 1 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/8/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump

Depth to Groundwater (before developing in feet): 2.69

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 22.5

Development Duration (minutes): 30

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development: Dk Brn, No Odor

Water Appearance (color and odor) At End of Development: Lt. Brn, No odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMW114-MW00025

Site Name: SWMW114

FDEP Facility I.D. Number: NA

Well Install Date(s): 7/18/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Schd 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 5 feet from 5 feet to Surface feet

Screen Diameter and Material: 1" Schd 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet from 15 feet to 5 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet from ____ feet to ____ feet

2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet from ____ feet to ____ feet

3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one): ☐ Yes ☐ No

Filter Pack Length: 12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size: Sand 30/65

Filter Pack Seal Length: 2 feet from 3 feet to 1 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/18/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe)

Depth to Groundwater (before developing in feet): 4.70

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 15

Development Duration (minutes): 20

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development: Drk Brn, No Odor

Water Appearance (color and odor) At End of Development: Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0002I

Site Name: SWMU114

FDEP Facility I.D. Number: NA

Well Install Date(s): 7/8/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: N/A

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Sch 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 25 feet from 25 feet to Surface feet

Screen Diameter and Material: 1" Sch 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet from 35 feet to 25 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet from ____ feet to ____ feet

2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet from ____ feet to ____ feet

3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one): ☑ Yes ☐ No

Filter Pack Length: 12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size: Sand ~~20/30~~ 30/65

Filter Pack Seal Length: 2 feet from 23 feet to 21 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/8/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump

Depth to Groundwater (before developing in feet): 4.95

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 22.5

Development Duration (minutes): 30

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development: Drk Gry, No odor

Water Appearance (color and odor) At End of Development: Opq, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMH114-MW00015	SWMH114	NA	7/8/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Schd 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 2 feet, from 2 feet to Surface feet

Screen Diameter and Material: 1" Schd 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet, from 12 feet to 2 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet, from ____ feet to ____ feet

2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet, from ____ feet to ____ feet

3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet, from ____ feet to ____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one): ☑ Yes ☐ No

Filter Pack Length: 10.5 feet, from 12 feet to 1.5 feet

Filter Pack Seal Material and Size: Sand 30/65

Filter Pack Seal Length: 0.5 feet, from 1.5 feet to 1 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 1 feet, from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/8/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump

Depth to Groundwater (before developing in feet): 1.57

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 22.5

Development Duration (minutes): 30

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) **At Start of Development:** Drk Brn, N.O.

Water Appearance (color and odor) **At End of Development:** Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMW114-MW0001I	SWMW114	NA	7/18/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site
- ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG)
- ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Schl 40 PVC

Riser/Screen Connections:
- ☑ Flush-Threaded
- ☐ Other (describe)

Riser Length: 25 feet from 25 feet to Surface feet

Screen Diameter and Material: 1" Schl 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet from 35 feet to 25 feet

1st Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: _____ feet from _____ feet to _____ feet

2nd Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: _____ feet from _____ feet to _____ feet

3rd Surface Casing Material:
also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: _____ feet from _____ feet to _____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one):
- ☑ Yes
- ☐ No

Filter Pack Length: 12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size: Sand 30/65

Filter Pack Seal Length: 2 feet from 23 feet to 21 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/8/22

Well Development Method (check one):
- ☐ Surge/Pump
- ☑ Pump
- ☐ Compressed Air
- ☑ Other (describe)

Development Pump Type (check):
- ☐ Centrifugal
- ☐ Peristaltic
- ☐ Submersible
- ☑ Other (describe) Honda Pump

Depth to Groundwater (before developing in feet): 1.65

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one):
- ☐ Yes
- ☑ No

Pumping Condition (check one):
- ☑ Continuous
- ☐ Intermittent

Total Development Water Removed (gallons): 22.5

Development Duration (minutes): 30

Development Water Drummed (check one):
- ☑ Yes
- ☐ No

Water Appearance (color and odor) At Start of Development: Dk Gry, N.O.

Water Appearance (color and odor) At End of Development: Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of hand clearing activities @ MW0001S.

Photo 02. View of rig at SWMU114-MW0001S.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/11/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
		X					

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	75			91			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	8.25	0	8.25
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**8.25**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	7.25	0	7.25
Colton Hinst	DrillPro	SWMU 114	7.25	0	7.25
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**14.5**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/11/2022	7.25	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-DrillPro traveled to site from Orlando.

-Due to personnel change, new drillcrew member badges in.

-Drums were staged at the CCF IDW yard.

-(4) wells were drilled and installed to grout. Wells: SWMU114-MW0005S, SWMU114-MW0005I, SWMU114-MW0017S and SWMU114-MW0017I. See construction logs and field notes for details.

-(4) wells were developed. Wells: SWMU114-MW0005S, SWMU114-MW0005I, SWMU114-MW0017S and SWMU114-MW0017I. See development logs and field notes for details.

-IDW was transffered. Drum 2206053 on pallett 205148 is ~80% full.

-Work operations were ended at ~1535 for a lightning standown.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/11/2022**
Signature: *Justin Vojak*	**7/11/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/11/2022**
Signature:	**7/11/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/11/22 Client: NASA

Location: KSC-SWMU114 Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Hydration

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Colton Hirst	
Mikey Rifkin	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 114

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	NA	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: M. Ray R. Aud / J. Vojnik Date: 7/11/22

NASA/KSC SWMW114 7/11/22

Scope: MW Installs

Crew: J. Vojak (H&L), M. Ritter,

Equipment: DT Track Rig, Honda Pump, GPS unit, Work Trucks

Weather: 75-91°F, Possible Thundershowers

0800 - Travel to KSC.

0830 - Arrive to Badging station. New crew-member badges in.

0930 - Crew badged in. Mobe to CCF.

0945 - Load drums & pick up rig.

1005 - Arrive to MW-5.

1010 - Begin SWMW114-MW00055. Hand clear to 5'

1025 - TD @ 13'. Begin well installation.

Screen (13-3')

20/30 Filter Pack (3-2')

30/65 Pack Seal (2-1')

Grout (1'-Surface)

1040 - Installation complete.

1045 - Begin SWMW114-MW00051. Hand clear to 5'

1125 - TD @ 35'. Begin well installation.

Screen (35-25')

20/30 (35-23')

30/65 (23-21')

Grout (21'-Surface)

*1122 - Begin development for SWMW114-MW00055.

DTW: 3.65, Dark Brn, N.O., Honda pump, 0.75gpm.

1150 - Installation complete

1152 - Development complete @ SWMW114-MW00055. SI-OPQ, N.O.

1156 - Begin development for SWMW114-MW00051. See purge log for details.

1226 - Development complete, OPQ, N.O.

1235 - Mobe to MW17

1250 - Begin SWMW117-MW00175. Hand clear to 5'

1305 - TD @ 14'. Begin well installation.

JV

NASA/KSC SWMU114 7/11/22

1320 - Installation complete.
1330 - Begin SWMU114-MW00175I. Hand clear to 5'.
1338 - Begin development for SWMU114-MW00175.
DTW 305, Drk Gry, N.O., Hand pump, 0.75 gpm
1358 - Development complete for SWMU114-MW00175. Clear, N.O.
1410 - Installation complete.
1420 - Begin development for SWMU114-MW00217I.
DTW 3.65, Drk Gry, N.O., Honda Pump, 0.75 gpm.
1450 - Development complete. Clear, N.O.
1455 - Rig down & load r/s.
1507 - Mobe to CCF
1520 - Transfer FDW, Drum 276053 @ ≈ 80%.
(Pallett 205148)
1535 - Lightning standdown.
1545 - Crew depart.
1609 - End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMW114-00055	SWMW114	NA	7/11/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/11/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.65

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Brn, N.O.	Slt-OPQ, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMW114-MW0005I	SWMW114	NA	7/11/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 feet from 35 feet to Surface feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
1" Schd 40 PVC	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
1" Schd 40 PVC	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/11/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Hand Pump	4.05

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Ark Gry, N.O.	OPQ, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW00~~8~~175	Site Name: SWMU 114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/11/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
14	14	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	4 feet from 4 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 14 feet to 4 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary	1st Surface Casing I.D. (inches):	1st Surface Casing Length: ____ feet from ____ feet to ____ feet
2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: ____ feet from ____ feet to ____ feet
3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	____ feet from ____ feet to ____ feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	____ feet from ____ feet to ____ feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	____ feet from ____ feet to ____ feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/11/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.05

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	15	20	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW0017I	SWMU114	NA	7/11/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC		____ feet from ____ feet to ____ feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 80/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/11/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Hand Pump	3.65

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, No odor	Clear, No odor

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of hand clearing activities @ MW0017S.

Photo 02. View of rig at SWMU114-MW0017S.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/12/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
			X				

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	76			92			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
	KSC Safety Officer	SLF	<.25
TOTAL GOV PERSONNEL ONSITE	**0**		**<.25**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	8.5	0	8.5
Colton Hinst	DrillPro	SWMU 114	8.5	0	8.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**17**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/12/2022	8.5	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Wells installations continued at SLF.

-Met with Airfield Management before entering the airfield and discussed work to be preformed and work locations

-(6) wells were drilled and installed to grout. Wells: SWMU114-MW0018S, SWMU114-MW0018I, SWMU114-MW0019S, SWMU114-MW0019I and SWMU114-MW0020S, SWMU114-MW0020I . See construction logs and field notes for details.

-(6) wells were developed. Wells: SWMU114-MW0018S, SWMU114-MW0018I, SWMU114-MW0019S, SWMU114-MW0019I and SWMU114-MW0020S, SWMU114-MW0020I. See development logs and field notes for details.

-IDW was transferred. Drum 205149 on pallett 217975 is ~80% full.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/12/2022**
Signature: *Justin Vojak*	**7/12/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/12/2022**
Signature:	**7/12/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/12/22 Client: NASA

Location: SWMU 114 Job No.: N51010.01.04

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Transient Aircraft.

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Mickey Ritter	
Colton Hiatt	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 114/NS1010.01.04

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: N/A

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Micky Ritter Date: 7/12/22

NASA/KSC SWMW114 7/12/22

Scope: MW Installs

Crew: J. Vojak (HGL), M. Ritter, C. Hinston (GWP)

Equipment: DPT Track R's, Honda Pump, GPS Unit, Work Trucks

Weather: 76-92°F, Possible afternoon thunderstorms

0630 - Travel to KSC

0700 - Arrive to site. Safety meeting & R's inspection

0710 - Transfer IDW. Drum ZZ6051 ≈ 80% full on pallet # 205148

0745 - Mobe to SLF.

0800 - Check in w/ Base OPS/Airfield management.
Approved to drill @ MW18, MW19, & MW20

0815 - Arrive to MW18. Offload r's & well materials.

0825 - Begin SWMW114-MW00185. Hand clear to 5'.

0837 - TD @ 15'. Begin well installation.
Screen (15-5')
20/30 Filter Pack (15-3')
30/65 Pack Seal (3-1')
Grout (1'-Surface)

0850 - Installation complete.

0900 - Begin SWMW114-MW00181. Hand clear to 5'.

0913 - Begin development for SWMW114-MW00185.
DTW: 5.95', Drk Gry, N.O., Honda Pump, 0.75 gpm.

0925 - TD @ 35'. Begin well installation. See construction log.

0930 - KSC Safety officer onsite. Review tailgate & R's inspection.

0935 - Safety officer departs.

0943 - Development complete for SWMW114-MW00185.
Sl-opq. N.O.

0950 - Installation complete. Rig down.

1000 - Stop work for transient aircraft.

1007 - Begin development for SWMW114-MW00181.
DTW: 6.15', Drk Gry, N.O., Honda Pump, 0.75 gpm

JV

NASA/KSC SWMW114 7/12/22

1032- Development Complete for SWMW114-MW00185I.
Clear, N.O.
1040- Rig down & load rig.
1050- Mobe to MW19.
1100- Check in w/ Fire Chief; inform him of activities.
1105- Begin SWMW114-MW00195. Hand clear to 5'.
1120- TD @ 14'. Begin installation.
Screen (14'-4')
20/30 Filter Pack (14-~~12.5~~')
30/65 Pack Seal (2.5-1')
Grout (~~9~~ NV 1'-Surface)
1135- Installation complete.
1139- Begin SWMW114-MW00191I. Hand clear to 5'.
1145- Begin development for SWMW114-MW00195.
DTW: 3.51, Drk Brn, N.O., Honda Pump, 0.75 gpm.
1200- Development complete for SWMW114-MW00185
Clear, N.O.
1205- TD @ 35'. Begin Installation.
Screen (35-25')
20/30 Sand (35-23')
30/65 Filter Pack (23-21')
Portland (21'-Surface)
1220- Installation complete.
1223- Begin development for SWMW114-MW00191I.
DTW 3.66', Drk Gry, N.O., Honda pump, 0.75 gpm.
1250- Development complete for SWMW114-MW00191I.
Slt-OPQ, N.O.
1300- Begin SWMW114-MW00205. Hand clear to 5'.
1312- TD @ 13'. Begin well installation.
Screen (13-3')
20/30 Filter Pack (13-2')
30/65 Pack Seal (2-1')
Grout (1'-Surface)

NASA/KSC SWMW114 7/12/22

1325 - Installation complete.
1330 - Begin SWMW114-MW00201. Hand clear to 5'
1335 - Begin development for SWMW114-MW00205.
DTW: 1.75'; Drk Gry, N.O., Honda Pump, 0.75 gpm
1355 - Development complete. Clear, N.O.
1400 - TD @ 35'. Begin well installation.
Screen (35-25')
20/30 Filter Pack (35-23')
30/65 Pack Seal (23-21')
Grout (21'-Surface)
1425 - Installation complete.
1430 - Beg'n development for SWMW114-MW00201.
DTW 2.17'; Drk Gry, N.O., Honda Pump, 0.75 gpm.
1500 - Development complete. Clear, N.O.
1505 - R's down & load r/g.
1515 - Check out/notify Airfield Management that we have departed airfield.
1530 - Arrive to CCF. Transfer IDW. Drum 205149 on pallett 217975 @ 80% capacity.
1605 - Depart site.
1625 - End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW00185	Site Name: SWMU 114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	5 feet from 5 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 15 feet to 5 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 3 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	5.95

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Sl:-Opq, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMH114-MW0018I	SWMH114	NA	7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	6.15

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0095	Site Name: SWMU114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
14	14	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	4 feet from 4 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 feet from 14 feet to 4 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		~~11.5~~ feet from ~~4~~ JV feet to JV feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11.5 feet from 14 feet to 2.5 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1.5 feet from 2.5 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.51

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	11.25	15	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Brn, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMH114-MW0019I	SW MH 114	NA	7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary	1st Surface Casing I.D. (inches):	1st Surface Casing Length: ____ feet from ____ feet to ____ feet
2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: ____ feet from ____ feet to ____ feet
3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.66

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	20.25	27	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Sli-Opq, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW00205	SWMU114	NA	7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd-40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe)	1.75

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	15	20	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0020I	Site Name: SWMU114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/12/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/12/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	2.17

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of drilling activities at SWMU114-MW0019I.

Photo 02. View of development activities at SWMU114-MW0018S.

Daily Quality Control Report

HGL HydroGeoLogic, Inc Exceeding Expectations	Daily Quality Control Report
Date:	**7/13/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	75			91			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	8.5	0	8.5
Colton Hinst	DrillPro	SWMU 114	8.5	0	8.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**17**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/13/2022	8.5	1	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Wells installations continued at SLF.

-Met with Airfield Management before entering the airfield and discussed work to be preformed and work locations

-(5) wells were drilled and installed to grout. Wells: SWMU114-MW0016S, SWMU114-MW0016I, SWMU114-MW0012S, SWMU114-MW0012I and SWMU114-MW0013S. See construction logs and field notes for details.

-(5) wells were developed. Wells: SWMU114-MW0016S, SWMU114-MW0016I, SWMU114-MW0012S, SWMU114-MW0012I and SWMU114-MW0013S. See development logs and field notes for details.

-IDW was transferred. Drum 225831, 225832, 225833 on pallett 205148 are ~80% full.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/13/2022**
Signature: *Justin Vojak*	**7/13/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/13/2022**
Signature:	**7/13/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/13/22 Client: NASA

Location: Sumalia Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Heat Stress, Sun Exposure

Specific Safety Topic(s): Safe Driving, On-Base Speed Limits

Specific Training Covered: N/A.

Attendees

Name Printed and Employee Number:	Signature:
Colton Hilyard GDI	
Micky Ruth	
J. Vojak	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 114/NS1010.01.04

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: NA

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	–
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	NA
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	NA
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	NA	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	NA	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Micky Ratliff / J. Vogel Date: 5.13.22

KSC/NASA SWMW114 7/13/22

Scope: MW Installs

Crew: J. Vojak (CHGL), M. Ritter, C. Stevens, (GWP)

Equipment: Geoprobe Track Rig, Honda Pump, GPS Unit, Trucks

Weather: 75-91°F, Possible afternoon thunderstorms

0730- Travel to site.

0755- Pick up drum labels from D. Lupis @ CHREA.

0810- Mobe to SLF.

0820- Arrive to SLF. GWP onsite

0830- Arrive to MW-16. Safety meeting & rig inspection

0840- Begin SWMW114-MW0016I, Hand clear to 5'

0920- TD @ 35'. Begin installation.

Screen (35-25')

20/30 Filter Pack (35-23')

30/65 Pack Seal (23-21')

Grout (21'-Surface)

1000- Installation complete.

1005- Begin SWMW114-MW0016S. Hand Clear to 5'

1016- Begin development for SWMW114-MW0016I.

DTW 3.82', Ark Grey, N.O., Honda Pump, 0.6 gpm.

1021- TD @ 15', Begin well installation.

~~Screen~~ JV Screen (15-5')

20/30 Filter Pack (15-3')

30/65 Pack Seal (3-1')

Grout (1'-Surface)

1030- Installation complete

1032- Development complete for SWMW114 JV - MW0016I. 16 JV

Clear, N.O.

1036- Begin development for SWMW114 JV - MW0016S. 16 JV

DTW: 3.45, Dark Brn, N.O., Honda Pump, 0.6 gpm

1100- Development complete. Clear. N.O.

JV

KSC/NASA SWMW114 7/13/22

1105 - Load rig/Rig down. Graded & rake out tracks in swale.

1135 - Recieve Radio & Inform Airfield Management of work activities

1145 - Enter airfield

1150 - Arrive to MW12.

1200 - Begin SWMW114-MW00125. Hand clear to 5'

1214 - TD @ 12'. Begin well installation

Screen (12-2')

20/30 Filter Pack (12-1.5')

30/65 Pack Seal (1.5'-1)

Grout (1'-Surface)

1227 - Installation Complete

1230 - Begin development for SWMW114-MW00125.

DTW: 0.8', Drk Brn, N.O., Honda pump, 0.75 gpm.

1232 - Begin SWMW114-MW0012I. Hand clear to 5'

~~DTW:~~ JV

1255 - TD @ 35'. Begin well installation

Screen (35-25')

20/30 Sand (35-23')

30/65 Pack Seal (23-21')

Grout (21-Surface)

1310 - Installation complete.

*1250 - Development complete for SWMW114-MW00125.

Clear, N.O.

1312 - Begin development for SWMW114-MW0012I.

DTW: 0.95, Drk Gry, N.O., Honda Pump, 0.75 gpm

1342 - Development complete. OAQ, N.O.

JV

1355 - Box truck stuck in mud. Drill crew works to free vehicle

1450 - Vehicle freed & loaded. Preform FOD check before crossing runway. (Pressure washing tires)

JV

KSC/NASA SWMW114 7/13/22

1510 - Mobe to MW-13

1520 - Begin SWMW114-MW00135. Hand clear to 5'

1535 - TD @ 12'. Begin well installation

Screen (12-2')

20/30 Filter Pack (12-1.5')

30/65 Pack seal (1.5'-1')

Grout (1'-Surface)

1545 - Installation complete.

1547 - Begin development for SWMW114-MW00135.

DTW 0.5', Pink Brn, N.O., Honda Pump, 0.75 gpm

1607 - Development complete. Clear, N.O.

1615 + Depart airfield.

1627 - Arrive to CCF. Transfer IDW.

The following drums on pallet # 205148 are 80% full: 225831, 225832, 225833

1710 - Depart site.

1730 - End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW00135	SWMU114	NA	7/13/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Meth: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
12	12	3	8	2 feet by 2 feet

Riser Diameter and Material: 1" Schd 40 PVC

Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)

Riser Length: 2 feet from 2 feet to Surface feet

Screen Diameter and Material: 1" Schd 40 PVC

Screen Slot Size: 10 slot

Screen Length: 10 feet from 12 feet to 2 feet

1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary

1st Surface Casing I.D. (inches):

1st Surface Casing Length: ____ feet from ____ feet to ____ feet

2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

2nd Surface Casing I.D. (inches):

2nd Surface Casing Length: ____ feet from ____ feet to ____ feet

3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary

3rd Surface Casing I.D. (inches):

3rd Surface Casing Length: ____ feet from ____ feet to ____ feet

Filter Pack Material and Size: Sand 20/30

Prepacked Filter Around Screen (check one): ☑ Yes ☐ No

Filter Pack Length: 10.5 feet from 12 feet to 1.5 feet

Filter Pack Seal Material and Size: Sand 30/65

Filter Pack Seal Length: 0.5 feet from 1.5 feet to 1.0 feet

Surface Seal Material: Portland Cement

Surface Seal Length: 1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/13/22

Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump

Depth to Groundwater (before developing in feet): 0.5

Pumping Rate (gallons per minute): 0.75

Maximum Drawdown of Groundwater During Development (feet): NA

Well Purged Dry (check one): ☐ Yes ☑ No

Pumping Condition (check one): ☑ Continuous ☐ Intermittent

Total Development Water Removed (gallons): 15

Development Duration (minutes): 20

Development Water Drummed (check one): ☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development: Drk- Brn, N.O.

Water Appearance (color and odor) At End of Development: Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0016I	Site Name: SWMU114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/13/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Meth: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/13/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.82

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.6	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	9.6	16	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gy, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMH114-MW00165	Site Name: SWMH 114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/13/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Meth: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
15	15	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	5 feet from 5 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 15 feet to 5 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 15 feet to 3 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 3 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/13/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	3.45

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.6	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	14.4	24	☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk-Brn, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWM4114-MW0001S (12 to SV)	Site Name: SWM4114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/13/22

Well Location and Type (check appropriate boxes): ☐ On-Site ☐ Right-of-Way ☐ Off-Site Private Property ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose: ☐ Perched Monitoring ☑ Shallow (Water-Table) Monitoring ☐ Intermediate or Deep Monitoring ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet): 12	Well Depth (feet): 12	Borehole Diameter (inches): 3	Manhole Diameter (inches): 8	Well Pad Size: 2 feet by 2 feet

Riser Diameter and Material: 1" Schd 40 PVC	Riser/Screen Connections: ☑ Flush-Threaded ☐ Other (describe)	Riser Length: 2 feet from 2 feet to Surface feet
Screen Diameter and Material: 1" Schd 40 PVC	Screen Slot Size: 10 Slot	Screen Length: ____ feet from ____ feet to ____ feet
1st Surface Casing Material: also check: ☐ Permanent ☐ Temporary	1st Surface Casing I.D. (inches):	1st Surface Casing Length: ____ feet from ____ feet to ____ feet
2nd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length: ____ feet from ____ feet to ____ feet
3rd Surface Casing Material: also check: ☐ Permanent ☐ Temporary	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length: ____ feet from ____ feet to ____ feet
Filter Pack Material and Size: Sand 20/30	Prepacked Filter Around Screen (check one): ☑ Yes ☐ No	Filter Pack Length: 10.5 feet from 12 feet to 1.5 feet
Filter Pack Seal Material and Size: Sand 30/65		Filter Pack Seal Length: 0.5 feet from 1.5 feet to 1 feet
Surface Seal Material: Portland Cement		Surface Seal Length: 1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date: 7/13/22	Well Development Method (check one): ☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)	
Development Pump Type (check): ☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump		Depth to Groundwater (before developing in feet): 0.8
Pumping Rate (gallons per minute): 0.75	Maximum Drawdown of Groundwater During Development (feet): NA	Well Purged Dry (check one): ☐ Yes ☑ No
Pumping Condition (check one): ☑ Continuous ☐ Intermittent	Total Development Water Removed (gallons): 15	Development Duration (minutes): 20
Development Water Drummed (check one): ☑ Yes ☐ No		
Water Appearance (color and odor) At Start of Development: Drk Brn, N.O.	Water Appearance (color and odor) At End of Development: Clear, N.O.	

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0012I	Site Name: SWMU 114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/13/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 ~~15~~ JV feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 ~~35~~ JV feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/13/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	0.95

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	22.5	30	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
OPQ, N.O.	Drk Gry, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/14/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	76	93

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
			X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	5.5	0	5.5
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**5.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	5.5	0	5.5
Colton Hinst	DrillPro	SWMU 114	5.5	0	5.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**11**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/13/2022	0	0	1

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114 (Surface Completions)

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Surface completions were installed at SLF.

-After drilling activities were completed at GSA, the rig broke down. Afer troubleshooting, it was determined the rig blew two fuel injecters.

-Due to No Dig status, surface completions were installed at Category A locations only.

-(5) Well pads (2x2) concrete, were installed. The following well pads were installed: SWMU114-MW0004I, SWMU114-MW0010S, SWMU114-MW0010I, SWMU114-MW0002S and SWMU114-MW0002I.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/14/2022**
Signature: *Justin Vojak*	**7/14/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/14/2022**
Signature:	**7/14/2022**

KSC/NASA SWMW114 7/14/22

Scope: MW Installs

Crew: J. Vojak (HGL), M. Ritter, C. Hurst (GWP)

Equipment: DPT track rig, Honda Pump, GPS Unit, Work Trucks

Weather: 76-93°F

1100- Rig service.

1200- After troubleshooting. Rig was able to be loaded onto trailer. Mobe & stage Rig @ CCF.

1220- Due to No D's status, crew is ~~completing~~ completing surface completions @ Cat A locations.

1230- Set pad @ SWMW114-MW0004I.

1320- Mobe to MW0010 location

1340- Set Pads @ SWMW114-MW00105 & SWMW114-MW0010I

1450- Mobe to MW0002.

1505- Set Pads @ SWMW114-MW~~0002~~00025 & SWMW114-MW0002I.

1605- Pads complete.

1610- Depart site.

1630- End of day.

Photo 01. View of completed well pads at MW0010 location.

Photo 02. View of completed well pads at MW0002 location.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/15/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
						X	

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X			

Temp	Min.	Max.
	74	88

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
			X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	8	0	8
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**8**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	7.5	0	7.5
Colton Hinst	DrillPro	SWMU 114	7.5	0	7.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**15**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/13/2022	0	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114 (Surface Completions)

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Surface completions were installed at SLF.

-(12) Well pads (2x2) concrete, were installed. The following well pads were installed: SWMU114-MW0007S, SWMU114-MW0007I, SWMU114-MW0011S, SWMU114-MW0011I, SWMU114-MW0008S, SWMU114-MW0008I, SWMU114-MW0006S, SWMU114-MW0006I, SWMU114-MW00016S, SWMU114-MW00016I, SWMU114-

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/15/2022**
Signature: *Justin Vojak*	**7/15/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/15/2022**
Signature:	**7/15/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/15/22 Client: KSC

Location: NASA/KSC ~~- CM&S~~ JV Swamp 114 Job No.: ~~NS1009.01.03~~ ~~NS1004.01.JV~~ NS1010.01.04

Meeting/training conducted by: J. Vojak

Work Activities: ~~DPT Groundwater Sampling~~ JV MW Installation / Surface Completions

Safety / Training Topics Presented

Chemical Hazards: ~~VOCs~~ JV PFAS

Physical Hazards: Slips trips falls,inclement weather,pinch points,biologicals,traffic,sun exposure,heat stress,struck by,teamwork,PPE

Specific Safety Topic(s): Proper Lifting Technique

Specific Training Covered: N/A.

Attendees

Name Printed and Employee Number:	Signature:
Mickey Rhodes	
Colton Hinst	
J. Vojak	

KSC/NASA SWMW114 7/15/22

Scope: MW Installs

Crew: J. Vojak (HGL), M. Ritter, C. Hilst (GWP)

Equipment: Box truck, shovels

Weather: 74-88°F

0635- Travel to site.

0700- Arrive to SLF.

0710- Safety Meeting

0720- Set pads @ SWMW114-MW00075 & SWMW114-MW00071, (2x2' Flushmount)

0820- Set pads @ SWMW114-MW00115 & SWMW114-MW00111, (2x2' Flushmount)

0930- Set pads @ SWMW114-MW00085 & SWMW114-MW00081, (2x2 Flushmount)

1040- Set pads @ SWMW114-MW00065 & SWMW114-MW00061, (2x2 Flushmount)

1150- Set pads @ SWMW114-MW00165 & SWMW114-MW00161, (2x2 Flushmounts)

1237- Set pads @ SWMW114-MW00175 & SWMW114-MW00171, (2x2 Flushmount)

1340- Rig down.

1400- Depart site.

1415- Fuel vehicle.

1430- End of day

Photo 01. View of surface completion activities at MW0008 location.

Photo 02. View of completed well pads at MW0011 location.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/18/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
		X					

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	76			90			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	8	0	8
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**8**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	8	0	8
Colton Hinst	DrillPro	SWMU 114	8	0	8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**16**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/05/2022-	7/13/2022	0	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells at SWMU 114 (Surface Completions)

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Surface completions were installed at SLF.

-(12) Well pads (2x2) concrete, were installed. The following well pads were installed: SWMU114-MW0005S, SWMU114-MW0005I, SWMU114-MW0003S, SWMU114-MW0003I, SWMU114-MW0019S, SWMU114-MW0019I, SWMU114-MW0020S, SWMU114-MW0020I, SWMU114-MW00018S, SWMU114-MW00018I, SWMU114-MW0012S, and SWMU114-MW0012I.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/18/2022**
Signature: *Justin Vojak*	**7/18/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/18/2022**
Signature:	**7/18/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/18/22 Client: NASA

Location: KSC-SWMU114 Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Hydration

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Colton Hingst	
Mickey Rifle	

KSC/NASA SWMU114 7/18/22

Scope: MW Installs

Crew: J. Vojik (HGL), M. Ritter, C. Hirst (GWP)

Equipment: Trucks, Shovels

Weather: 76-90°F

0800 - Travel to site

0830 - Arrive to CCF. GWP onsite

0835 - Safety meetings

0850 - Set pads @ SWMU114-MW00055 &
SWMU114-MW00051. (2X2' Flushmount

0953 - Set pads @ SWMU114-MW00035 &
SWMU114-MW00031. (2X2' Flushmount)

1057 - Set pads @ SWMU114-MW00195 &
SWMU114-MW00191. (2X2' Flushmount)

1155 - Set pads @ SWMU114-MW00205 &
SWMU114-MW0020I. (2X2' Flushmount)

1306 - Set pads @ SWMU114-MW00185 &
SWMU114-MW0018I (2X2' Flushmount)

1416 - Set pads @ SWMU114-MW00125
& SMMU114-MW0012I. (2X2' Flushmount)

1528 - Rig down & Return airfield radio.

1540 - Depart site.

1600 - End of day.

Photo 01. View of completed well pads at MW0019 location.

Photo 02. View of a grouted manhole at SWMU114-MW0020S.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/19/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
			X				

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X		X	

Temp	Min.	Max.
	73	92

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
			X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	10	0	10
Colton Hinst	DrillPro	SWMU 114	10	0	10
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**20**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/19/2022-	7/19/2022	0	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**C = Continuing**	Installation of monitoring wells and surface completions at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Surface completions were installed at SLF.

-(4) Well pads (2x2) concrete, were installed. The following well pads were installed: SWMU114-MW0009S, SWMU114-MW0009I, SWMU114-MW0001S, SWMU114-MW0001I.

-(1) Monitoring well was installed at SWMU114-MW0013I.

-Phase II standown ended drilling operations for the day at ~1500.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/19/2022**
Signature: *Justin Vojak*	**7/19/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/19/2022**
Signature:	**7/19/2022**

HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/19/22 Client: NASA

Location: SWMU 114 Job No.: _____

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat stress

Specific Safety Topic(s): FOD on airfield

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
Mitty Rittel	
Samuel Johnson	

KSC/NASA SWMW114 7/19/22

Scope: MW Installs

Crew: J. Vojak (HGL), M. Ritter, C. Hirst (GWP)

Equipment: DPT Drill Rig, Honda Pump, Work Truck, Hand Tools

Weather: 73-92° F, Possible afternoon thunderstorms

0700 - Travel to site.

0730 - Arrive to CCF.

0735 - Safety meeting

0745 - Load truck w/ well pad materials.

0800 - Mobe to MW0009.

0815 - Set pads @ SWMW114-MW0009S &
SWMW114-MW0009I. (2X2 Flushmount)

0930 - Set pads @ SWMW114-MW0001S &
SWMW114-MW0001I. (2X2') Flushmount

1035 - Pads complete. Mobe to CCF.

1050 - Unload equipment.

1100 - Await rig arrival from Orlando. Drill crew to lunch.

1200 - Rig arrives to badging station.

1210 - Mobe to CCF.

1220 - Load equipment

1235 - Fill water tanks.

1245 - Mobe to SLF.

1300 - Check in w/ airfield managment & get radio.

1315 - Mobe to MW13

1330 - Arrive to MW13, offload rig.

1345 - Begin SWMW114-MW0013I. Hand clear to 5'.

1410 - Rig overheats.

1420 - Resume drilling / well installation.

1500 - Installation complete. See construction log for det

1505 - Phase II lightning standdown

1550 - Phase II suspended.

KSC/NASA SWMU 114 7/19/22

1530... - KSC Weather indicates that Phase II will be back in effect for the remainder of the evening. Proceed to load rig.

1600 - Depart airfield.

1610 - Return radio.

1630 - Rig staged @ CCF. Depart site.

1700 - End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0013I	Site Name: SWMU114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/19/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3"	8"	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/20/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	Surface - 0.0'

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	15	20	☐ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk-Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/20/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X			X	
Temp	Min.			Max.			
	74			93			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	10	0	10
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**10**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mikey Ritter	DrillPro	SWMU 114	9.5	0	9.5
Colton Hinst	DrillPro	SWMU 114	9.5	0	9.5
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**19**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Geoprobe 7822	07/19/2022-	7/20/2022	9.5	0	0

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Install Monitoring Wells	**F = Finish**	Installation of monitoring wells and surface completions at SWMU 114

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Surface completions and well installations occured at SLF

-(4) Well pads (2x2) concrete, were installed. The following well pads were installed: SWMU114-MW0015S, SWMU114-MW0015I, SWMU114-MW0013S, SWMU114-MW0013I.

-(2) Monitoring wells was installed at SWMU114-MW0015S and SWMU114-MW0015I

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/20/2022**
Signature: *Justin Vojak*	**7/20/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/20/2022**
Signature:	**7/20/2022**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/20/22 Client: NASA

Location: Summit 114 Job No.: _____

Meeting/training conducted by: J. Vojak

Work Activities: MW Installation

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): Mindful of Construction traffic

Specific Training Covered: N/A.

Attendees

Name Printed and Employee Number:	Signature:
Micky R.	J. Vojak
Sammy Johnson	

HydroGeoLogic, Inc
Exceeding Expectations

Daily Drill Rig Inspection Checklist

Project Name/Number: SWMU 114 - PFAS Wells Installs

Make/Model Number: 7822

Equipment Number: 195

Hours/Mileage: N/A

Rig clean and free of soils, oils, and other debris.	✓	Tracks in good condition.	✓
All hydraulic fittings and hoses free of damage, tightened, and not leaking.	✓	Tires fully inflated and in good condition.	N/A
Rig controls clearly labeled and in working condition.	✓	Back-up alarm working.	N/A
Rig Kill Switch in working order.	✓	First Aid Kit accessible and stocked.	✓
All of the Rig's connections tightened and leak-free.	✓	Fire Extinguisher accessible and fully charged.	✓
Parking brake functions properly.	N/A	Eye Wash full and accessible.	✓
Steering controls in working order and clear of obstacles.	N/A	Hearing protection available and is being used during hammering.	✓
Copy of the manual for all drilling equipment available.	✓	All overhead and underground hazards identified.	✓

√ = OK
N/A = Not Applicable
X = Defective

These items are to be checked each shift before operating this piece of equipment.
Report all items requiring repair to supervisor.

Notes:
Operator/Inspector: Molly Rutherford Date: 7/20/22

NASA/KSC SWMU114 7/20/22

Scope: MW Installs

Crew: J. Vojnik (HCL), M. Ritter, C. Johnson (GWP)

Equipment: DAT Drill Rig, Honda Pump, GPS, Work Trucks

Weather: 74-93°F

0800- Mobe to badging station

0820- Arrive to badging station

0825- GWP Arrives, S. Johnson badges in.

0830- KSC badging office does not have his paperwork. Contact J. Bublitz

0930- S. Johnson receives badge. Mobe to CCF

0945- Rig service. Drill crew completes maintence on tooling.

1095- Mobe to MW14

1030- Stage rig @ Middlesex yard. Necessary to track extensively due to wet & muddy conditions/ Load well supplies on rig.

1100- Informed by Middlesex construction supervisor that there are several unmarked utilities in our drilling area. 2 water mains on the construction side & 2 comm lines on the airfield side. After dissussion w/ H. Fowler the well was determined to be unsafe to drill.

1130- Mobe back to staging area.

1145- Inform airfield mangment of work activities & get radio.

1200- Begin MW0015S. Hand clear to 5'

1215- TD @ 13'. See construction log for installation details.

1230- Installation complete.

1235- Begin MW0015I. Hand clear to 5'

1240- Begin development for MW00155.
DTW: 1.2', Drk Gry, N.O., HP, 0.75 gpm.
1258- TD @ 35'. Begin well installation, See construction log for details.
1300- Development complete for MW00155.
Clear, N.O.
1315- Installation complete.
1320- Begin development for MW00151I.
DTW: 1.55', Drk Gry, N.O., HP, 0.75 gpm
1340- Development complete, N.O/Clear.
1345- Set pads @ MW15 (2X2' Flushmounts)
1453- Pads complete. Proceed to r/s down & load r/s.
1515- Check out radio.
1525- Mobe to MW13
1535- Set pad @ MW13S
1540- Begin development for MW13I.
DTW: Surface (0.0'), Drk Gry, N.O., HP, 0.75 gpm.
1600- Set pad @ MW13I. Development complete
Clear, N.O.
1630- Pad complete.
1640- Mobe off airfield / return radio
1700- Arrive to CCF. Transfer IDW.
Drum # on Pallet # ≈ 80% Full
Drum # on Pallet # ≈ Full
1735- Depart site
1800- End of day.

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number:	Site Name:	FDEP Facility I.D. Number:	Well Install Date(s):
SWMU114-MW00155	SWMU114	NA	7/20/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☑ Shallow (Water-Table) Monitoring
- ☐ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
13	13	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Sch 40 PVC	☑ Flush-Threaded ☐ Other (describe)	3 feet from 3 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Sch 40 PVC	10 slot	10 feet from 13 feet to 3 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		feet from feet to feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	11 feet from 13 feet to 2 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	1 feet from 2 feet to 1 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	1 feet from 1 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/20/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	1.2'

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	15	20	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Drk Gry, No Odor	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Florida Department of Environmental Protection - Division of Waste Management - Bureau of Petroleum Storage Systems

WELL CONSTRUCTION AND DEVELOPMENT LOG

WELL CONSTRUCTION DATA

Well Number: SWMU114-MW0015I	Site Name: SWMU114	FDEP Facility I.D. Number: NA	Well Install Date(s): 7/20/22

Well Location and Type (check appropriate boxes):
- ☐ On-Site ☐ Right-of-Way
- ☐ Off-Site Private Property
- ☐ Above Grade (AG) ☑ Flush-to-Grade

If AG, list feet of riser above land surface:

Well Purpose:
- ☐ Perched Monitoring
- ☐ Shallow (Water-Table) Monitoring
- ☑ Intermediate or Deep Monitoring
- ☐ Remediation or Other (describe)

Well Install Method: DPT

Surface Casing Install Method: NA

Borehole Depth (feet):	Well Depth (feet):	Borehole Diameter (inches):	Manhole Diameter (inches):	Well Pad Size:
35	35	3	8	2 feet by 2 feet

Riser Diameter and Material:	Riser/Screen Connections:	Riser Length:
1" Schd 40 PVC	☑ Flush-Threaded ☐ Other (describe)	25 feet from 25 feet to Surface feet

Screen Diameter and Material:	Screen Slot Size:	Screen Length:
1" Schd 40 PVC	10 Slot	10 feet from 35 feet to 25 feet

1st Surface Casing Material:	1st Surface Casing I.D. (inches):	1st Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

2nd Surface Casing Material:	2nd Surface Casing I.D. (inches):	2nd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

3rd Surface Casing Material:	3rd Surface Casing I.D. (inches):	3rd Surface Casing Length:
also check: ☐ Permanent ☐ Temporary		____ feet from ____ feet to ____ feet

Filter Pack Material and Size:	Prepacked Filter Around Screen (check one):	Filter Pack Length:
Sand 20/30	☑ Yes ☐ No	12 feet from 35 feet to 23 feet

Filter Pack Seal Material and Size:	Filter Pack Seal Length:
Sand 30/65	2 feet from 23 feet to 21 feet

Surface Seal Material:	Surface Seal Length:
Portland Cement	21 feet from 21 feet to Surface feet

WELL DEVELOPMENT DATA

Well Development Date:	Well Development Method (check one):
7/20/22	☐ Surge/Pump ☑ Pump ☐ Compressed Air ☐ Other (describe)

Development Pump Type (check):	Depth to Groundwater (before developing in feet):
☐ Centrifugal ☐ Peristaltic ☐ Submersible ☑ Other (describe) Honda Pump	1.55

Pumping Rate (gallons per minute):	Maximum Drawdown of Groundwater During Development (feet):	Well Purged Dry (check one):
0.75	NA	☐ Yes ☑ No

Pumping Condition (check one):	Total Development Water Removed (gallons):	Development Duration (minutes):	Development Water Drummed (check one):
☑ Continuous ☐ Intermittent	15	20	☑ Yes ☐ No

Water Appearance (color and odor) At Start of Development:	Water Appearance (color and odor) At End of Development:
Dark Gry, N.O.	Clear, N.O.

WELL CONSTRUCTION OR DEVELOPMENT REMARKS

Photo 01. View of rig at SWMU114-MW0015I.

Photo 02. View of development activities at SWMU114-MW0015S.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**7/28/2022**
NASA Remediation Project Manager:	Natasha Darre
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	80KSC019D0012
Task Order No.	80KSC021F0097
Project Name:	SWMU 114
Project No.	NS1010.01.04

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X			X	
Temp	Min.			Max.			
	73			91			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	8	0	8
TOTAL HGL PERSONNEL ONSITE		**1**	**TOTAL HOURS WORKED**		**8**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
Mason French	Kuguelmann Surveying	SWMU 114	8	0	8
Chase Raymond	Kuguelmann Surveying	SWMU 114	8	0	8
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**2**	**TOTAL HOURS WORKED**			**16**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
MW Surveys/Staff Gauges	**S = Start**	MW Surveys/Staff Gauges

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-All newly installed wells on the airfield were surveyed

-(4) staff gauges were installed on the airfield

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**7/28/2022**
Signature: Justin Vojak	**7/28/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**7/28/2022**
Signature:	**7/28/2022**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 7/28/22 Client: NASA

Location: SWMU 114 Job No.: NS1010.01.04

Meeting/training conducted by: J. Vojnic

Work Activities: Well Surveys & Staff Gauges

Safety / Training Topics Presented

Chemical Hazards: NA

Physical Hazards: Slips, Trips, Falls, Wildlife, Sun Exposure, Heat Stress

Specific Safety Topic(s): FOD Checks

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojnic	
CHASE RAYMOND	
MASON FRENCH 3333	

NASA/KSC SWMU114 7/28/22

Scope: Well Survey, Staff Gauges

Crew: J. Vojak (HGL), C. Raymond, M. French (Klugelman)

Equipment: Work Truck, GPS unit

Weather: 73-91°F

0800- Travel to site.

0805- Stop for fuel.

0830- Arrive to SLF. Surveyors onsite.

0835- Safety meeting.

0845- Check in w/ AFM & pick up radio. Surveyors set up GPS.

0900- Begin well surveys for: MW17, MW18, MW19, MW20, MW15, MW12, MW13

1338- Set staff gauge @ SG3 (Scale in 10ths)

1408- Set staff gauge @ SG4

1433- Set staff gauge @ SG2

1454- Set staff gauge @ SG1

1526- All wells surveyed & staff gauges installed on airfield.

1530- Survey crews continues work off airfield. JV returns radio.

1540- Depart KSC.

1500- End of day.

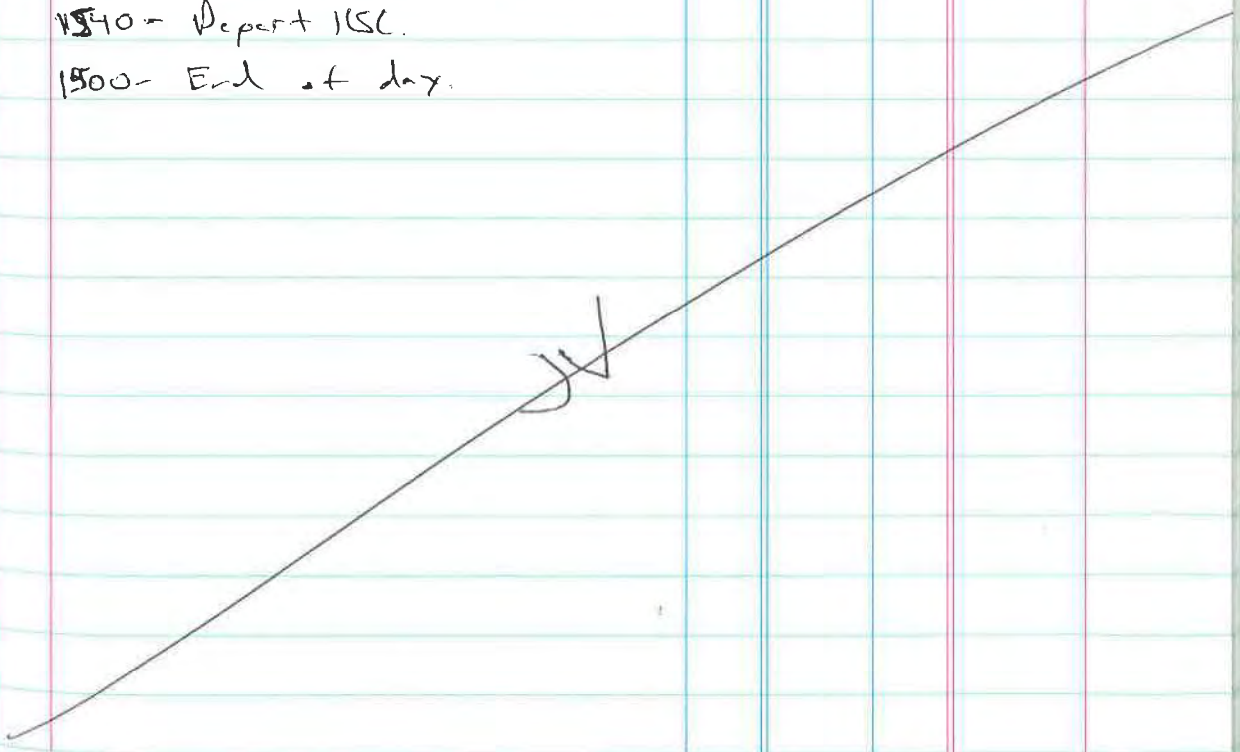


Photo 01. View of a staff gauge installation at location SG3.

Photo 02. View of a completed staff gauge at location SG1.

Daily Quality Control Report

Daily Quality Control Report	
Date:	**8/3/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	
Task Order No.	
Project Name:	SWMU114-PFAS Assesment
Project No.	NS1010.01.05

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	75			91			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU114	4.75		4.75
Howard Fowler	Senior Scientist	SWMU114	4.75		4.75
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**9.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**0**	**TOTAL HOURS WORKED**		**0**

2. List of Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
Water Level Meter	8/3/2022-8/3/2022	8/3/2022	4.75		
Water Level Meter	8/3/2022-8/3/2022	8/3/2022	4.75		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
Site Wide Static Water Levels	**S = Start**	Collect Site Wide Static Water Levels & Staff Gauge Readings
	F = Finish	

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

Collect site wide static water levels from (37) wells. See static water level forms for details.

Collect staff gauge readings from (10) locations. See static water level forms for details.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Justin Vojak	**8/3/2022**
Signature: *Justin Vojak*	**8/3/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**8/3/2022**
Signature:	**8/3/2022**

HGL
HydroGeologic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 8/3/22 – 0900 Client: NASA

Location: SWMU 114 Job No.: NS1010.01.05

Meeting/training conducted by: J. Vojak

Work Activities: Site wide Static Water Levels

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Sun Exposure, Heat Stress, Wildlife.

Specific Safety Topic(s): Hydration

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojak	
H. Fowler	

NASA/KSC SWMU 114 8/3/22

Scope: Site Wide Static Water Level Readings
Crew: J. Vojak, H. Fowler
Equipment: Hand Tools, WLMs, Work Trucks.
Weather: 75-91°F
0730 - ~~Load~~ JV Travel to Cape Field office
0750 - Load equipment.
0820 - Travel to KSC Airfield Management building.
0840 - Check in w/ AFM & pickup radio
0900 - Safety meeting & disscuss work plan.
0915 - JV & HF begin ganging & tagging wells.
See static water level forms for details.
Staff gauge readings also included.
1255 - All DTW & staff gauge readings complete.
1310 - Depart KSC
1330 - Arrive to Cape field office. Offload equipment.
1345 - Travel to Merritt Island office.
1415 - End of day.

JV

STATIC WATER LEVEL FORM

PROJECT NAME: SWMU #114 DATE: August 3, 2022

WATER LEVEL INDICATOR ID #: _____

LOCATION: Kennedy Space Center, Florida

Well ID	Time Gauged	PID Reading (BZ/TOC)	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
S114-MW0001S	9:34		1.45	11.8	
S114-MW0001I	9:35		1.18	34.6	
S114-MW0002S	10:07		4.69	14.1	
S114-MW0002I	10:08		4.70	34.3	
S114-MW0003S	9:57		2.95	12.6	
S114-MW0003I	9:58		2.81	34.5	
S114-MW0004I	10:17		3.40	34.1	
S114-MW0005S	10:38		4.36	12.9	
S114-MW0005I	10:39		4.53	34.4	
S114-MW0006S	10:50		2.33	12.3	
S114-MW0006I	10:51		2.67	34.7	
S114-MW0007S	11:04		6.07	14.4	
S114-MW0007I	11:05		6.15	34.4	
S114-MW0008S	11:12		4.72	12.9	
S114-MW0008I	11:13		4.70	34.3	
S114-MW0009S	12:07		4.20	12.8	
S114-MW0009I	12:11		4.75	34.7	
S114-MW0010S	12:30		7.21	14.9	
S114-MW0010I	12:35		7.18	34.4	
S114-MW0011S	11:25		5.69	14.7	

*Note: Total well depth to be measured at time of gauging.

Sampler Justin Vojak Observer Howard Fowler

STATIC WATER LEVEL FORM

PROJECT NAME: SWMU #114 DATE: August 3, 2022

WATER LEVEL INDICATOR ID #: _____

LOCATION: Kennedy Space Center, Florida

Well ID	Time Gauged	PID Reading (BZ/TOC)	DTW (ft BTOC)	Total Well Depth* (ft BTOC)	Notes
S114-MW0011I	11:26		5.95	34.7	
S114-MW0012S	11:07		0.98	12.1	
S114-MW0012I	11:15		0.74	34.8	
S114-MW0013S	11:33		1.35	12.1	
S114-MW0013I	11:39		1.23	34.8	
S114-MW0015S	10:32		2.42	13.1	
S114-MW0015I	10:38		2.48	34.8	
S114-MW0016S	9:22		3.72	14.6	
S114-MW0016I	9:23		3.82	34.5	
S114-MW0017S	9:22		4.51	13.9	
S114-MW0017I	9:25		4.59	34.6	
S114-MW0018S	9:41		6.03	14.9	
S114-MW0018I	9:46		6.16	34.7	
S114-MW0019S	9:55		3.33	14.0	
S114-MW0019I	9:59		3.43	34.7	
S114-MW0020S	10:11		2.05	13.1	
S114-MW0020I	10:17		2.13	34.7	

*Note: Total well depth to be measured at time of gauging.

Sampler Justin Vojak Observer Howard Fowler

STATIC WATER LEVEL FORM

PROJECT NAME: SWMU #114 DATE: August 3, 2022

WATER LEVEL INDICATOR ID #: _____

LOCATION: Kennedy Space Center, Florida

Well ID	Time Gauged	PID Reading (BZ/TOC)	Staff Gauge Reading	Total Well Depth* (ft BTOC)	Notes
S114-SG01	10:47		-0.08		
S114-SG02	10:03		-0.12		
S114-SG03	9:32		-0.13		
S114-SG04	11:20		-0.05		
S114-SG05	12:50		-0.52		
S114-SG06	12:15		1.14		
S114-SG07	11:17		1.01		
S114-SG08	10:56		-0.11		
S114-SG09	10:31		0.29		
S114-SG10	9:47		2.18		

*Note: Total well depth to be measured at time of gauging.

Sampler Justin Vojak Observer Howard Fowler

Daily Quality Control Report

Daily Quality Control Report	
Date:	**8/16/2022**
NASA Remediation Project Manager:	Ryan Omera
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	
Task Order No.	
Project Name:	SWMU114-GW Sampling
Project No.	NS1010.01.05

Day	S	M	T	W	TH	F	S
			X				

Weather	Bright Sun	Clear	Overcast	Rain	Fog
		X		X	

Temp	Min.	Max.
	73	93

Wind	Still	Moderate	High	Gust
		X		

Humidity	Dry	Moderate	High	Rainfall
			X	

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU 114	9.75	0	9.75
Pete Parker	Field Technician	SWMU 114	9.75		9.75
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**19.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**0**	**TOTAL HOURS WORKED**			**0**

2. List of Equipment

2.1 Heavy Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
YSI Pro Plus	8/16/2022	8/16/2022	9.75		
YSI Pro Plus	8/16/2022	8/16/2022	0		9.75
HACH 2100Q	8/16/2022	8/16/2022	9.75		
HACH 2100Q	8/16/2022	8/16/2022		9.75	
Heron Water Level Meter	8/16/2022	8/16/2022	9.75		
Heron Water Level Meter	8/16/2022	8/16/2022		9.75	
Peristaltic Pump	8/16/2022	8/16/2022	9.75		
Peristaltic Pump	8/16/2022	8/16/2022		8.75	1

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
GW Sampling	**S = Start**	GW Sampling

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Collect GW samples at SWMU114

-The following samples were collected: S114-MW0017S-009.0-20220816, S114-FD-20220816-01, S114-MW0017I-030.0-20220816, S114-MW0019S-009.0-20220816,

-S114-MW0019I-030.0-20220816, S114-MW0020I-030.0-20220816, S114-MW0020S-008.0-20220816, S114-FB-20220816-01, S114-EB-20220816-01 (See sampling logs for details)

- Inoperable sampling included a YSI and a peristalitic pump. HGL field manager (D. Lupis) was informed and new equipment was ordered.

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.	
Printed Name: Justin Vojak	**8/16/2022**
Signature: *Justin Vojak*	**8/16/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.	
Printed Name: Howard Fowler	**8/16/2022**
Signature:	**8/16/2022**

HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 8/16/22

Client: NASA

Location: SWMU 114

Job No.: NS1010.01.05

Meeting/training conducted by: J. Vojik

Work Activities: GW Sampling

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Sun Exposure, Heat Stress, Wildlife

Specific Safety Topic(s): Hydration

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
J. Vojik	
Pete Parker	

EQUIPMENT CALIBRATION LOG

Project Name: SWMU 114 GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
0914 8-16-2022	P Parker	YSI Pro Plus	PH 26C933	4.0	4.11	
0905			PH 26F083	7.0	7.09	
0916			PH 26D020	10.0	10.11	
0921			Conductivity 26C1180	1,413	1,416	
0925			ORP 26E596	240. M	242.6	
			DO NA	100% AA	0.02	FAIL
						Changed probe
						Factory reset

EQUIPMENT CALIBRATION LOG

Project Name: SWMU 114 GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
8/16/22 0900	J. Vojak	YSI Pro Plus	pH 26C933	4.0	4.04	Pass
0905			pH 26F083	7.0	7.04	
0910			pH 26D020	10.0	9.98	
0915			Conductivity 26C1180	1413 µs/cm	1404	
0920			ORP 26E596	240 mV	239.8	
0925			DO NA	100% AA	95.3	
8/14/22 0945		Hach 2100 Q	~~pH~~ TH A2091	800	785	Pass
0947			A2034	100	99.8	
0949			A2085	20	20.2	
0951			A2096	10	10.4	

KSC/NASA SWMU 114 8/16/22

Scope: Groundwater Sampling
Crew: J. Vojak, P. Parker
Equipment: YSIs, Turbidity Meters, Water Level Meters, hand tools, work trucks
Weather: 76-93°F
0715- Load vehicle @ Merritt Island office.
0730- Travel to Capc field office.
0747- Arrive to office. Load sampling equipment.
0820- Travel to Airfield Management @ SLF.
0840- Procure radio / Discuss work locations w/ AFM
0850- Travel to MW 17 Location
0900- Calibrate YSIs & Turbidity Meters. See cal logs for details.
0930- After troubleshooting & sensor replacement, DO on YSI # 0914 is non-functional. Inform field manager (D. Lupis)
0950- Calibration complete.
0955- Proceed to sample wells @ MW17 location. See sampling logs for purge & sampling details.
1130- Sample/Rig up on wells @ MW19 location. See sampling logs for purge & sampling details.
1255- Proceed to sample wells @ MW20 location. See sampling logs for purge & sampling details.
1420- Rig up on MW0018I. At start of purge peristaltic pump malfunctions. Use 2nd pump.
1430- 2nd pump also inoperable. Attempt to troubleshoot pumps.
1445- Both pumps inoperable. Inform D. Lupis.
1450- Collect SW14-FB-20220816-01
1455- Collect SW14-EB-20220816-01
1505- Return radio to AFM
1515- Travel to CCF

JV

NASA/KSC SLOMH 114 8/16/22

1525- Transfer ≈ 15 gallons of purge water ~~to~~
drum # 226831 on pallet # 221946.
Drum @ 27% capacity.
1540- Travel to Cape field office
1600 - Arrive to office / Unload equipment &
preform sample QC check
1635- Depart field office
1700 - End of day.

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS _ ORLANDO JOB #: **PAGE__1___OF__1___**

SGS - ORLANDO Quote: **SKIFF #**

Client / Reporting Information

Company Name: HGL, Inc.

Address: 2405 N. Courtney Parkway STE. 203

City: Merritt Island **State:** FL **Zip:** 32953

Project Contact: Denise Rivers **Email:** drivers@hgl.com

Phone #: 910-233-8460

Sampler(s) Name(s) (Printed)

Sampler 1: Justin Vojak **Sampler 2:**

Project Information

Project Name: SWMU114 GW Sampling

Street ICBM Rd.

City Cape Canaveral **State** FL

Project # NS1010.01.05

Fax #

Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL-24+GENX													LAB USE ONLY
	S114-MW0017S-009.0-20220816	8/16/22	1034	JV	GW	2	X								X													
	S114-FD-20220816-01	8/16/22	1034	JV	GW	2	X								X													
	S114-MW0017I-030.0-20220816	8/16/22	1113	JV	GW	2	X								X													
	S114-MW0019S-009.0-20220816	8/16/22	1207	JV	GW	2	X								X													
	S114-MW0019I-030.0-20220816	8/16/22	1241	JV	GW	2	X								X													
	S114-MW0020I-030.0-20220816	8/16/22	1330	JV	GW	2	X								X													
	S114-MW0020S-008.0-20220816	8/16/22	1403	JV	GW	2	X								X													
	S114-FB-20220816-01	8/16/22	1450	JV	WW	2	X								X													
	S114-EB-20220816-01	8/16/22	1455	JV	WW	2	X								X													

Turnaround Time (Business days)

Std. 10 Business Days **Approved By: / Date/Rush Code:**

7 Day *RUSH* _____

5 Day *RUSH* _____

3 Day *EMERGENCY* _____

2 Day *EMERGENCY* _____

1 Day *EMERGENCY* _____

Other _____

Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : **Custody Seal in Place: Y N** **Temp Blank Provided: Y N** **Preserved Where Applicable: Y N** **Total # of Coolers:_____Cooler Temperature (s) Celsius:_____**

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00175**	SAMPLE ID: **S114 – MW00175-009.0-20220816**	DATE: **8/16/22**

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: **3.9** feet to **13.9** feet	STATIC DEPTH TO WATER (feet): **4.62**	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.9 feet – 4.62 feet) X 0.04 gallons/foot = 0.37 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT:	PURGING ENDED AT:	TOTAL VOLUME PURGED (gallons):
9	9	1011	1033	1.22

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.05 gpl PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1011	—	—	200	4.62	—	—	—	—	—	—	—
1019	1600	1600	|	4.98	6.72	27.7	935	1.35	5.42	-48.0	clear/none
1021	600	2200	|	4.99	6.70	27.6	936	1.39	3.40	-63.7	|
1024	600	2800	|	4.99	6.69	27.6	938	1.23	2.55	-71.6	|
1027	600	3400	|	4.99	6.71	27.6	938	1.04	2.22	-77.8	|
1030	600	4000	|	4.99	6.72	27.6	938	0.96	2.14	-80.3	|
1033	600	4600	↓	4.99	6.75	27.6	938	0.91	1.68	-83.7	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT:	SAMPLING ENDED AT:
J. Vojak / HGL		1034	1039

PUMP OR TUBING DEPTH IN WELL (feet):
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N (replaced))
DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2 4	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS: Duplicate S114-FD-20220816-01 collected

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00** 17I	SAMPLE ID: **S114 – MW00** 17I-030.0-20220816	DATE: 8/16/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.6 feet to 34.6 feet	STATIC DEPTH TO WATER (feet): 4.69	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (34.6 feet – 4.69 feet) X 0.04 gallons/foot = 1.2 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1050	PURGING ENDED AT: 1117	TOTAL VOLUME PURGED (gallons): 2.62

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.12 PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1050	–	–	450	4.69	–	–	–	–	–	–	–
1100	4.5	4.5	↓	4.85	7.19	26.1	1785	0.40	4.43	-142.3	CLR/Slight odor
1103	1.35	5.85		4.89	7.19	26.1	1790	0.35	3.67	-143.7	↓
1106	1.35	7.20		↓	7.21	26.1	1802	0.32	2.35	-143.5	
1109	1.35	8.55			7.22	26.1	1805	0.31	3.31	-143.5	
1112	1.35	9.9	↓		7.17	26.1	1815	0.30	3.62	-143.7	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojnic / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1113	SAMPLING ENDED AT: 1117
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**195	SAMPLE ID: **S114 – MW00**195-009.0-20220916	DATE: 9/16/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 4 feet to 14 feet	STATIC DEPTH TO WATER (feet): 3.40	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14 feet – 3.40 feet) X 0.04 gallons/foot = 0.42 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9	PURGING INITIATED AT: 1145	PURGING ENDED AT: 1206	TOTAL VOLUME PURGED (gallons): 1.11

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.05 PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1145	–	–	200	3.40	–	–	–	–	–	–	–
1154	1.8	1.8	200	3.64	6.43	29.6	1120	0.71	4.35	-94.8	CLR/NO
1157	0.6	2.4	↓	3.64	6.41	29.6	1124	0.54	3.94	-98.5	↓
1200	0.6	3.0		↓	6.37	29.5	1119	0.49	3.47	-99.8	
1203	0.6	3.6			6.37	29.5	1132	0.42	2.56	-101.9	
1206	0.6	4.2	↓	↓	6.34	29.4	1127	0.39	1.99	-101.3	↓

JV

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojak / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1207	SAMPLING ENDED AT: 1301

PUMP OR TUBING DEPTH IN WELL (feet):
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N replaced)
DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

JV

REMARKS: * Petroleum sheen observed

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00** 19I	SAMPLE ID: **S114 – MW00** 19I-~~007~~ 0360 JV -20220816	DATE: 8/16/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.7 feet to 34.7 feet	STATIC DEPTH TO WATER (feet): 3.50	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 3.50 feet) X 0.04 gallons/foot = 1.25 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1217	PURGING ENDED AT: 1240	TOTAL VOLUME PURGED (gallons): 2.73

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.12 SLPM PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1217	—	—	450	3.50	—	—	—	—	—	—	—
1228	4.95	4.95		3.51	7.06	27.3	2569	0.26	9.59	-88.9	CLR/N.O.
1231	1.35	6.30			7.02	27.1	2553	0.24	7.38	-90.9	
1234	1.35	7.65			6.97	27.1	2537	0.23	5.66	-90.4	
1237	1.35	9.00			7.00	27.2	2519	0.20	5.14	-90.6	
1240	1.35	10.35			7.00	27.2	2127	0.21	4.59	-113.0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojak / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1241	SAMPLING ENDED AT: 1245
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00205**	SAMPLE ID: **S114 – MW00205-0008.0-20220816**	DATE: 8/16/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 3.1 feet to 13.1 feet	STATIC DEPTH TO WATER (feet): 2.13	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.1 feet – 2.13 feet) X 0.04 gallons/foot = 0.44 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1341	PURGING ENDED AT: 1402	TOTAL VOLUME PURGED (gallons): 1.11

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1341	–	–	200	2.13	–	–	–	–	–	–	–
1350	1.8	1.8	↓	2.27	6.58	28.3	372	0.25	16.8	-47.0	CLR/N.O.
1353	0.6	2.4		2.39	6.56	29.4	373.2	0.21	16.9	-53.1	↓
1356	0.6	3.0		2.48	6.53	29.7	373.5	0.19	11.2	-55.5	
1359	0.6	3.6		2.48	6.41	28.7	375.1	0.19	10.8	-56.7	
1402	0.6	4.2		2.48	6.42	28.6	373.2	0.17	9.99	-58.8	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Vojik/HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1403	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**20I	SAMPLE ID: **S114 – MW00**20I-030.0-20220816	DATE: 08/16/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.7 feet to 34.7 feet	STATIC DEPTH TO WATER (feet): 2.2	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 2.2 feet) X 0.04 gallons/foot = 1.3 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1306	PURGING ENDED AT: 1329	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.12 PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1306	—	—	450	2.2	—	—	—	—	—	—	—
1317	4.95	4.95	↓	2.33	6.99	26.0	1060	0.26	10.9	-147.5	CLR/IN...
1320	1.35	6.3		↓	6.99	26.0	1066	0.22	6.88	-152.5	↓
1323	1.35	7.65			6.99	25.9	1066	0.19	6.03	-156.1	
1326	1.35	9.0			7.04	26.0	1068	0.17	4.58	-158.2	
1329	1.35	10.35	↓	↓	7.04	25.9	1068	0.16	4.56	-161.5	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojak / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1333

PUMP OR TUBING DEPTH IN WELL (feet):
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type:
FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N (replaced))
DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Daily Quality Control Report

Daily Quality Control Report	
Date:	**8/17/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	
Task Order No.	
Project Name:	SWMU114-GW Sampling
Project No.	NS1010.01.05

Day	S	M	T	W	TH	F	S
				X			

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X			X	
Temp	Min.			Max.			
	74			94			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU114	5.5		5.5
Dustin Lupis	FieldT echnician	SWMU114	5.5		5.5
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**11**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**0**	**TOTAL HOURS WORKED**			**0**

2. List of Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
YSI Pro Plus	8/16/2022	8/17/2022	5.5		
YSI Pro Plus	8/17/2022	8/17/2022	5.5		
HACH 2100Q	8/16/2022	8/17/2022	5.5		
HACH 2100Q	8/16/2022	8/17/2022	5.5		
Heron Water Level Meter	8/16/2022	8/17/2022	5.5		
Heron Water Level Meter	8/16/2022	8/17/2022	5.5		
Peristaltic Pump	8/16/2022	8/17/2022	5.5		
Peristaltic Pump	8/17/2022	8/17/2022	5.5		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
YSIs	8/16&17/2022	Yes	Yes	Pass	
Turbidity Meters	08/16/22	Yes	Yes	Pass	

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
GW Sampling	**C = Continuing**	GW Sampling

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-MW0018S-010.0-20220817	1307	PFAS	Analysis Pending
S114-MW0001S-007.0-20220817	1322		
S114-MW0018I-030.0-20220817	1350		
S114-MW0001I-030.0-20220817	1405		
S114-FD-20220817-01	1405		
S114-FB-20220817-01	1405		
S114-EB-20220817-01	1410		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Replacement equipment arrived

-Continue GW sampling at SWMU114. (4) wells were sampled. See field notes and sampling logs for details

-A Phase II lightning standdown occurred at 1400, ending operations early for the day

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is	
accurate and representative of the work completed.	
Printed Name: Justin Vojak	**8/17/2022**
Signature: Justin Vojak	**8/17/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with	
all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**8/17/2022**
Signature:	**8/17/2022**

HGL HydroGeoLogic, Inc

CALIBRATION LOG

Project Name: SWMU 514 PFAS Assessment KSC/NASA By: Dustin Lupis

Project No.: NS100.01.05 Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
8/17/22 0950	YSI Pro 034641	DO%	Saturated Air	99.1%	DL
0953		cond.	1.413 ms/cm	1.42	
0956		PH	4	4.02	
1000		PH	7	7.05	
1003		PH	10	10.03	
1006		ORP	240.0 mV	239.9	
8/17/22 1009	Hach 2100Q 044492	NTU	10	10.2	
1010	Hach 2100Q		20	19.5	
1013			100	97.6	
1016			800	793	

EQUIPMENT CALIBRATION LOG

Project Name: SWMU 114 GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
8/16/22 0900	J. Vojak	YSI Pro Plus	pH 26C933	4.0	4.04	Pass
0905			pH 26F083	7.0	7.04	
0910			pH 26D020	10.0	9.98	
0915			Conductivity 26C1180	1.413 ms/cm	1404	
0920			ORP 26E596	240 mV	239.8	
0925			DO NA	100% AA	95.3	
8/16/22 0945		Hach 2100 a	~~8~~TH A2091	800	785	Pass
0947			A2034	100	99.8	
0949			A2085	20	20.2	
0951			A2090	10	10.4	
8/17/22 1100		YSI Pro Plus	pH 26F083	7.0	7.02	Pass
1105			pH 26C933	4.0	4.07	
1110			pH 26D020	10.0	9.98	
1115			Conductivity 26C1180	1.413 ms/cm	1412	
1118			ORP 26E596	240 mV	240.1	
1120			DO NA	100% AA	99.2%	
8/17/22 1121		Hach 2100Q	NTH A2091	800	800	Pass
1123			A2034	100	99.9	
1125			A2085	20	20.5	
1127			A2090	10	10.4	

NASA/KSC SWMU114 8/17/22

Scope: Groundwater sampling

Crew: J. Vojak, D. Lupis

Equipment: YSIs, Turbidity Meters, Water Level Meters, hand tools, work trucks

Weather: 74-94°F

1000 - Receive new YSI & peristaltic pump @ Merritt Island office.

1010 - Load vehicle

1020 - Travel to Cape field office.

1040 - Arrive to office / Load equipment

1100 - Calibrate YSI & Turbidity Meter. See cal logs for details.

1130 - Cal complete.

1145 - Travel to KSC/SLF

1205 - Check out radio / Discuss sampling locations w/ AFM.

1220 - JV makes to wells @ MW14 location

DL makes to wells @ MW01 location.

1235 - JV rigs up & samples wells @ MW18. See sampling logs for details.

1235 - DL rigs up & samples wells @ MW01. See sampling logs for details.

1400 - Phase II lightning standown. JV/DL rig down.

1405 - Collect S114-FB-20220817-01

1410 - Collect S114-EB-20220817-01

1435 - Crews arrive to Cape Field office / Unload equipment.

1450 - QC samples.

1510 - Depart base.

1530 - End of day

JV

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : **PAGE_____OF_____**

SGS - ORLANDO Quote # **SKIFF #**

Client / Reporting Information	Project Information
Company Name:	**Project Name:**
Address:	**Street**
City: **State:** **Zip:**	**City** **State**
Project Contact: **Email:**	**Project #**
Phone #:	**Fax #**
Sampler(s) Name(s) (Printed) **Sampler 1:** **Sampler 2:**	**Client Purchase Order #**

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	Analytical Information: LCQSM537DODFL +GENX	LAB USE ONLY
	S114-MW0001S-006.8-20220817	8/17/22	1322	DL	GW	2		X								X	
	S114-MW0001I-029.6-20220817	8/17/22	1405	DL	GW	2		X								X	
	S114-FD-20220817-01	8/17/22	1405	DL	GW	2		X								X	

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
10 Day (Business) Approved By: / Date:	☐ COMMERCIAL "A" (RESULTS ONLY)	
7 Day	☐ COMMERCIAL "B" (RESULTS PLUS QC)	
5 Day	☐ REDT1 (EPA LEVEL 3)	
3 Day *RUSH* _____	☐ FULLT1 (EPA LEVEL 4)	
2 Day *RUSH* _____	☐ EDD'S	
1 Day *RUSH* _____		
Other _____		
Rush T/A Data Available VIA Email or Lablink		

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation 1	Date Time:	Received By/Affiliation 2	Relinquished By/Affiliation 3	Date Time:	Received By/Affiliation 4
Relinquished by/Affiliation 5	Date Time:	Received By/Affiliation 6	Relinquished By/Affiliation 7	Date Time:	Received By/Affiliation 8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

EQUIPMENT CALIBRATION LOG

Project Name: SWMU 114 GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
8/16/22 0900	J. Vojak	YSI Pro Plus	pH 26C933	4.0	4.04	Pass
0905			pH 26F083	7.0	7.04	
0910			pH 26D020	10.0	9.98	
0915			Conductivity 26C1180	1.413 ms/cm	1404	
0920			ORP 26E596	240 mV	239.8	
0925			DO NA	100% AA	95.3	
8/16/22 0945		Hach 2100 a	~~8~~TH A2091	800	785	Pass
0947			A2034	100	99.8	
0949			A2085	20	20.2	
0951			A2090	10	10.4	
8/17/22 1100		YSI Pro Plus	pH 26F083	7.0	7.02	Pass
1105			pH 26C933	4.0	4.07	
1110			pH 26D020	10.0	9.98	
1115			Conductivity 26C1180	1.413 ms/cm	1412	
1118			ORP 26E596	240 mV	240.1	
1120			DO NA	100% AA	99.2%	
8/17/22 1121		Hach 2100Q	NTH A2091	800	800	Pass
1123			A2034	100	99.9	
1125			A2085	20	20.5	
1127			A2090	10	10.4	

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00185**	SAMPLE ID: **S114 – MW00185-010.0-20220817**	DATE: **8/17/22**

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: **4.9** feet to **14.9** feet	STATIC DEPTH TO WATER (feet): **6.20**	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.9 feet – 6.20 feet) X 0.04 gallons/foot = 0.35 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = ~~1.0~~ JV gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 1247	PURGING ENDED AT: 1306	TOTAL VOLUME PURGED (gallons): 1.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.05gpm PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1247	—	—	200	6.20	—	—	—	—	—	—	—
1254	1.4 ~~00~~ JV	1.4 ~~00~~ JV	↓	6.48	6.71	29.2	2104	0.29	5.14	-93.6	CLR/None
1257	0.6	2.0		↓	6.74	29.1	2044	0.20	3.38	-98.0	↓
1300	0.6	2.6			6.71	29.1	1903	0.11	2.05	-105.0	
1303	0.6	3.2			6.71	29.1	1885	0.11	2.01	-108.5	
1306	0.6	3.8	↓		6.71	29.1	1878	0.10	1.87	-112.9	↓

JV

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Vojnic/HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1307	SAMPLING ENDED AT: 1310

PUMP OR TUBING DEPTH IN WELL (feet):
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N (replaced))
DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

JV

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00 18I**	SAMPLE ID: **S114 – MW00 18I – 030.0 – 20220817**	DATE: **8/17/22**

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: **24.7** feet to **34.7** feet	STATIC DEPTH TO WATER (feet): **6.30**	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 6.30 feet) X 0.04 gallons/foot = 1.14 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): **30**	FINAL PUMP OR TUBING DEPTH IN WELL (feet): **30**	PURGING INITIATED AT: **1327**	PURGING ENDED AT: **1349**	TOTAL VOLUME PURGED (gallons): **2.62**

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.12gpm PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1327	—	—	450	6.30	—	—	—	—	—	—	—
1337	4.5	4.5	1	6.42	7.38	27.3	13378	0.53	8.50	-151.4	CLR/None
1340	1.35	5.85	↓	↓	7.38	27.2	13467	0.14	4.87	-157.7	↓
1343	1.35	7.2	↓	↓	7.35	27.0	13484	0.15	2.93	-158.4	↓
1346	1.35	8.55	↓	↓	7.42	27.1	13500	0.11	2.77	-158.2	↓
1349	1.35	9.90	↓	↓	7.41	27.0	13505	0.10	2.22	-158.3	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojak / H&L	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1350	SAMPLING ENDED AT: 1353

PUMP OR TUBING DEPTH IN WELL (feet):
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type:
FILTER SIZE: _____ µm

FIELD DECONTAMINATION: PUMP (Y) N TUBING Y N (replaced)
DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**01S	SAMPLE ID: **S114 – MW00**01S-006.8-20220817	DATE: 08/17/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 1.8 feet to 11.8 feet	STATIC DEPTH TO WATER (feet): 2.16	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.8 feet – 2.16 feet) X 0.04 gallons/foot = .39 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6.8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6.8	PURGING INITIATED AT: 1256	PURGING ENDED AT: 1320	TOTAL VOLUME PURGED (gallons): 1.27

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1308	2.4	2.4	200	2.18	7.24	26.6	8694	0.21	6.81	-146.5	clear/slight
1311	0.6	3.0	↓	2.18	7.29	26.7	8701	0.19	7.30	-146.4	↓
1314	0.6	3.6		2.18	7.35	26.9	8723	0.19	5.13	-145.9	
1317	0.6	4.2		2.18	7.41	26.8	8710	0.22	5.18	-145.1	
1320	0.6	4.8	↓	2.18	7.43	26.6	8701	0.24	2.72	-145.8	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1322	SAMPLING ENDED AT: 1325
PUMP OR TUBING DEPTH IN WELL (feet): 6.8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW0001I**	SAMPLE ID: **S114 – MW0001I-029.6-20220817**	DATE: 08/17/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.6 feet to 34.6 feet	STATIC DEPTH TO WATER (feet): 1.85	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.6 feet – 1.85 feet) X 0.04 gallons/foot = 1.31 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.6	PURGING INITIATED AT: 1330	PURGING ENDED AT: 1402	TOTAL VOLUME PURGED (gallons): 1.69

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1350	4.0	4.0	200	1.99	7.64	25.4	10189	0.21	5.86	-173.0	clear/slight
1353	0.6	4.6	|	1.99	7.63	25.3	10162	0.24	5.01	-174.0	|
1356	0.6	5.2	|	1.98	7.61	25.0	10114	0.25	4.93	-176.0	|
1359	0.6	5.8	|	1.98	7.59	24.9	~~10070~~ 10078	0.25	3.80	-177.3	|
1402	0.6	6.4	|	1.98	7.58	24.8	10068	0.24	2.64	-178.6	|

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1405	SAMPLING ENDED AT: 1410

PUMP OR TUBING DEPTH IN WELL (feet): 29.6
TUBING MATERIAL CODE: HDPE
FIELD-FILTERED: Y (N) Filtration Equipment Type: FILTER SIZE: _____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N (replaced))
DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS: collected Field Duplicate

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Daily Quality Control Report

Daily Quality Control Report	
Date:	**8/18/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	
Task Order No.	
Project Name:	SWMU114-GW Sampling
Project No.	NS1010.01.05

Day	S	M	T	W	TH	F	S
					X		

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X			X	
Temp	Min.			Max.			
	72			91			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU114	9.25		9.25
Dustin Lupis	Field Technician	SWMU114	9.25		9.25
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**18.5**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE	**0**		**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE	**0**	**TOTAL HOURS WORKED**			**0**

2. List of Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
YSI Pro Plus	8/16/2022	8/18/2022	9.25		
YSI Pro Plus	8/17/2022	8/18/2022	9.25		
HACH 2100Q	8/16/2022	8/18/2022	9.25		
HACH 2100Q	8/16/2022	8/18/2022	9.25		
Heron Water Level Meter	8/16/2022	8/18/2022	9.25		
Heron Water Level Meter	8/16/2022	8/18/2022	9.25		
Peristaltic Pump	8/16/2022	8/18/2022	9.25		
Peristaltic Pump	8/17/2022	8/18/2022	9.25		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
YSIs	8/16&17/2022	Yes	Yes	Pass	
Turbidity Meters	08/16/22	Yes	Yes	Pass	

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
GW Sampling	**C = Continuing**	GW Sampling

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-MW0015S-008.0-20220818	0957	PFAS	Analysis Pending
S114-MW0015I-030.0-20220818	1039		
S114-FD-20220818-01	1039		
S114-MW0012S-007.0-20220818	1147		
S114-MW0012I-030.0-20220818	1230		
S114-MW0013S-007.0-20220818	1401		
S114-MW0013I-030.0-20220818	1440		
S114-MW0002S-009.0-20220818	955		
S114-MW0002I-029.0-20220818	1035		
S114-MW0016I-030.0-20220818	1135		
S114-MW0016S-010.0-20220818	1215		
S114-MW0003S-008.0-20220818	1312		
S114-MW0003I-030.0-20220818	1358		
S114-MW0004I-029.0-20220818	1500		
S114-FB-20220818-01	1510		
S114-EB-20220818-01	1515		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Continue GW sampling at SWMU114. (13) wells were sampled. See field notes and sampling logs for details

-A Phase II lightning standdown occurred at 1500, ending operations early for the day

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)

Name of Inspection Held	Gov. Notified (Y/N)	Definable Feature of Work	Checklist Completed

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is accurate and representative of the work completed.

Printed Name: Justin Vojak	**8/18/2022**
Signature: Justin Vojak	**8/18/2022**

I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with all appropriate and approved Work Plan Statement of Work.

Printed Name: Tim Jellett	**8/18/2022**
Signature:	**8/18/2022**

HydroGeoLogic, Inc.
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: ____
- [ ] Other: ____

Date/Time: 08/18/22

Client: NASA

Location: SWMU 114

Job No.: NS1010.01.05

Meeting/training conducted by: J. Vojak

Work Activities: GW Sampling

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, trips, Falls, Sun Exposure, Heat stress

Specific Safety Topic(s): Safe Driving

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
Dustin Lupis	
J. Vojak	

EQUIPMENT CALIBRATION LOG

Project Name: SWMU 114 - GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
8/18/22 0745	J. Vujak	YSI Pro Plus	pH 26F083	7.0	7.07	Pass
0750			pH 26C933	4.0	4.05	
0755			pH 26D020	10.0	10.03	
0800			Conductivity 26C1180	1,413	1418	
0805			ORP 26E596	240 mV	240.9	
0810			DO NA	100%	99.5	
0817		Hach 2100 Q	NTU 800	800	804	
0820			100	100	100	
0823			20	20	20.2	
0825			10	10	10.3	

HGL
HydroGeologic, Inc

CALIBRATION LOG

Project Name: SWMU 5114 PFAS Sampling KSC/NASA By: Dustin Lupis

Project No.: NS1010.01.05 Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
08/18/22 0800	YSI Pro	DO %	Saturated Air	99.5%	DL
0803	↓	Cond.	1,413 ms/cm	1,39	↓
0806	↓	PH	4	3.95	↓
0809	↓	PH	7	7.00	↓
0812	↓	PH	10	10.00	↓
0815	↓	ORP	240.0 mV	239.8	↓
08/18/22 0800	Hach 2100 Q	NTU	20	19.9	PL
0803	↓	↓	100	100	↓
0806	↓	↓	800	808	↓
0809	↓	↓	10	10.2	↓

NASA/KSC SWMU114 8/18/22

Scope: Groundwater Sampling

Crew: J. Vojak, D. Lupis

Equipment: YSIs, Turbidity Meters, Water Level Meters, hand tools, work trucks.

Weather: 72-91°F

0715 - Depart Merritt Island office.

0735 - Arrive to Cape field office

0745 - Calibrate YSIs & turbidity meters. See cal logs for details.

0825 - Cal complete.

0835 - Mobe to SLF AFM building

0855 - Check out airfield radio

0910 - JV rigs up & procede to sample wells @ MW15 location. See sampling log for details.

0915 - DL rigs up & procede to sample wells @ MW02 location. See sampling log for details.

1100 - JV rigs up & procede to sample wells @ MW12 location. See sampling logs for details

DL rigs up & procede to sample wells @ MW16 location. See sampling logs for details.

1250 - DL rigs up & procede to sample wells @ MW 3 location. See sampling log for details.

1300 - JV rigs up & procede to sample wells @ MW 13 location.

1420 - DL rigs up & procede to sample 5114-MW00041. See sampling log for details.

1500 - Phase II lightning shutdown.

1515 - JV returns airfield radio.

1510 - Collect 5114-FB-20220818-01 (DL)

1515 - Collect 5114-EB-20220818-01 (DL)

1530 - Mobe to Cape field office

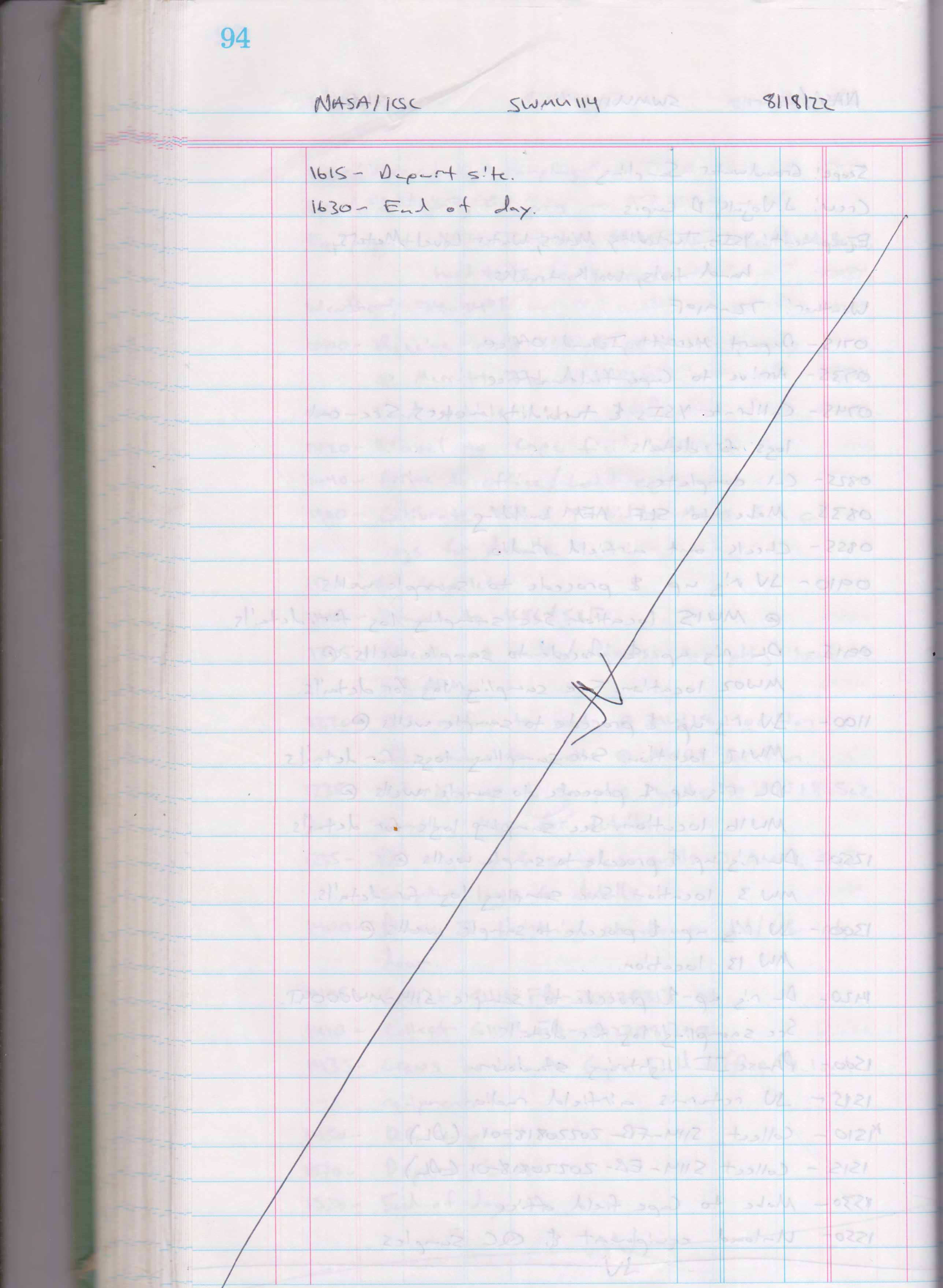
1550 - Unload equipment & QC samples

JV

NASA/ICSC SWMU 114 8/18/22

1615 - Depart site.

1630 - End of day.



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Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE_____OF_____

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information | **Project Information** | **Analytical Information** | **Matrix Codes**

Company Name: | Project Name:

Address: | Street

City: State: Zip: | City State

Project Contact: Email: | Project #

Phone #: | Fax #

Sampler(s) Name(s) (Printed)
Sampler 1: Sampler 2: | Client Purchase Order #

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	L608MS537P00RL24+6mX	LAB USE ONLY
	S114-MW00185-010.0-20220817	8/17/22	1307	JV	GW	2		X								X	
	S114-MW0018I-030.0-20220817	↓	1350	↓	GW	↓		↓								↓	
	S114-FB-20220817-01		1405		WW												
	S114-EB-20220817-01		1410		WW												
	S114-MW00015-007.0-20220817	8/17/22	1322	DL	GW	2		X								X	
	S114-MW0001I-030.0-20220817	8/17/22	1405	DL	GW	2		X								X	
	S114-FD-20220817-01	8/17/22	1405	DL	GW	2		X								X	
•	S114-MW155-009.0-20220818	8/18/22	0957	JV	GW	2		X								X	
•	S114-MW15I-030.0-20220818	↓	1039	↓	↓	↓		↓								↓	
•	S114-FD-20220918-01		1039														
•	S114-MW00125-007.0-20220818		1147														
•	S114-MW0012I-030.0-20220818	↓	1230	↓	↓	↓		↓								↓	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

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SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information	Project Information
Company Name:	Project Name:
Address:	Street
City: State: Zip:	City State
Project Contact: Email:	Project #
Phone #:	Fax #
Sampler(s) Name(s) (Printed) Sampler 1: Sampler 2:	Client Purchase Order #

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	Analytical Information: LLQSMS37D00FL24 +Ge	LAB USE ONLY
	S114-MW00135-007.0-20220818	8/18/22	1401	JV	GW	2		X								X	
	S114-MW0013I-030.0-20220818	11	1440	JV	11	2		X								X	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

Turnaround Time (Business days)	Data Deliverable Information	Comments / Remarks
10 Day (Business) Approved By: / Date:	☐ COMMERCIAL "A" (RESULTS ONLY)	
7 Day	☐ COMMERCIAL "B" (RESULTS PLUS QC)	
5 Day	☐ REDT1 (EPA LEVEL 3)	
3 Day *RUSH* _____	☐ FULLT1 (EPA LEVEL 4)	
2 Day *RUSH* _____	☐ EDD'S	
1 Day *RUSH* _____		
Other _____		
Rush T/A Data Available VIA Email or Lablink		

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

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SGS - ORLANDO Quote # SKIFF #

Client / Reporting Information

Company Name:
Address:
City: State: Zip:
Project Contact: Email:
Phone #:
Sampler(s) Name(s) (Printed)
Sampler 1: Sampler 2:

Project Information

Project Name:
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAc	DI WATER	MEOH	LL QSM 537 DODFL + GEN X
	5114-MW00025-009.0-20220818	8/18/22	0955	DL	GW	2		X								X
	5114-MW00021-029.0-20220818	8/18/22	1035	DL	GW	2		X								X
	5114-MW0016I-030.0-20220818	8/18/22	1135	DL	GW	2		X								X
	5114-MW0016S-010.0-20220818	8/18/22	1215	DL	GW	2		X								X
	5114-MW0035-008.0-20220818	8/18/22	1312	DL	GW	2		X								X
	5114-MW0003I-030.0-20220818	8/18/22	1358	DL	GW	2		X								X
	5114-MW0004I-029.0-20220818	8/18/22	1500	DL	GW	2		X								X
	5114-FB-20220818-01	8/18/22	1510	DL	GW	2		X								X
	5114-EB-20220818-01	8/18/22	1515	DL	GW	2		X								X

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

LAB USE ONLY

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2	3		4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):_____

http://www.sgs.com/en/terms-and-conditions

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00155	SAMPLE ID: S114 – MW00155 – 0080 – 20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 3.1 feet to 13.1 feet	STATIC DEPTH TO WATER (feet): 2.19	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (13.1 feet – 2.19 feet) X 0.04 gallons/foot = 0.44 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 0935	PURGING ENDED AT: 0956	TOTAL VOLUME PURGED (gallons): 1.11

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.05 gpm PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
0935	–	–	200	2.19	–	–	–	–	–	–	–
0944	1.9	1.9		2.51	6.62	27.1	884	0.34	4.48	-71.7	CLR/NO.
0947	0.6	2.4			6.69	27.0	883	0.25	3.88	-74.9	
0950	0.6	3.0			6.64	27.0	881	0.16	3.13	-78.5	
0953	0.6	3.6			6.64	27.1	881	0.13	2.49	-81.8	
0956	0.6	4.2			6.65	27.1	879	0.12	2.13	-83.3	

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vaj-K/HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0957	SAMPLING ENDED AT: 1001
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW0015I	SAMPLE ID: S114 – MW0015I – 030.0-20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.8 feet to 34.8 feet	STATIC DEPTH TO WATER (feet): 2.26	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (34.8 feet – 2.26 feet) X 0.04 gallons/foot = 1.30 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1038	TOTAL VOLUME PURGED (gallons): 27.3

TIME	VOLUME PURGED (Liters)	CUMUL VOLUME PURGED (Liters)	0.12 gpm PURGE RATE (mL/pm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1015	–	–	450	2.26	–	–	–	–	–	–	–
1026	4.95	4.95	↓	2.34	6.97	26.4	23,277	0.83	7.81	-107.7	cle/slo.
1029	1.35	6.30		↓	7.05	26.4	2380	0.18	5.40	-113.0	↓
1032	1.35	7.65			7.03	26.4	2380	0.13	3.89	-115.5	
1035	1.35	9.0			6.97	26.3	2385	0.12	3.58	-117.4	
1038	1.35	10.35	↓	↓	6.95	26.3	2387	0.12	3.37	-120.3	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojnik/H&L	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1039	SAMPLING ENDED AT: 1045
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	3 X 4	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS: Collect Duplicate S114-FD-20220818-01

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00125	SAMPLE ID: S114 – MW00125-007.0-20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 7.1 feet to 12.1 feet	STATIC DEPTH TO WATER (feet): 0.7	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.1 feet – 0.7 feet) X 0.04 gallons/foot = 0.46 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 1125	PURGING ENDED AT: 1146	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.05 gpm PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1125	–	–	200	0.7	–	–	–	–	–	–	–
1135	2.0	2.0	↓	0.93	6.90	27.6	5636	0.11	5.09	-50.6	CLEAR/N.O.
1136	0.6	2.6		↓	6.91	27.6	5634	0.08	3.32	-55.5	↓
1141	0.6	3.2			6.92	27.7	5629	0.09	2.40	-59.7	
1143	0.6	3.8			6.89	27.7	5636	0.06	2.28	-61.0	
1146	0.6	4.4	↓	↓	6.91	27.6	5631	0.05	2.14	-62.6	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojak / H&L	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1147	SAMPLING ENDED AT: 1150
PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00127I	SAMPLE ID: S114 – MW00127I – 030.0 – 20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH 24.8 feet to 34.8 feet	STATIC DEPTH TO WATER (feet) 0.65	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (24.8 feet – 0.65 feet) X 0.04 gallons/foot = 1.37 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1205	PURGING ENDED AT: 1229	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.125gpm PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1205	–	–	450	0.65	–	–	–	–	–	–	–
1217	5.4	5.4	↓	0.71	7.50	25.4	36770	0.10	3.11	-175.7	CLEAR
1220	1350	6.75		↓	7.45	25.9	36791	0.09	3.07	-174.4	↓
1223	1.35	8.1			7.43	25.8	36845	0.09	2.91	-171.3	
1226	1.35	9.45			7.36	25.8	36901	0.08	2.76	-166.3	
1229	1.35	10.8	↓	↓	7.37	25.8	36877	0.07	2.24	-164.0	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojik / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1230	SAMPLING ENDED AT: 1233
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00135	SAMPLE ID: S114 – MW00135-007.0-20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches) 1/4	WELL SCREEN INTERVAL DEPTH: 7.1 feet to 12.1 feet	STATIC DEPTH TO WATER (feet) 0.82	PURGE PUMP TYPE OR BAILER PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.1 feet – 0.82 feet) X 0.04 gallons/foot = 0.45 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7	PURGING INITIATED AT: 1315	PURGING ENDED AT: 1400	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1315	–	–	200	0.82	–	–	–	–	–	–	–
1324	1.8	1.8	↓	1.22	6.58	27.8	943	0.71	72.4	-51.1	SLIGHT/MOD.
1334	2.0	3.8		1.24	6.57	27.3	578	0.65	47.4	-95.1	↓
1344	2.0	5.8		↓	6.60	27.3	584	0.31	31.6	-105.9	
1354	2.0	7.8			6.57	27.2	593	0.15	15.6	-114.9	CLR/MOD.
1357	0.6	8.4			6.56	27.2	590	0.09	11.6	-118.5	↓
1400	0.6	9.0	↓	↓	6.50	27.2	586	0.08	9.6	-121.5	↓

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Vojak / ASL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1401	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 7	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00131	SAMPLE ID: S114 – MW00131 – 030D – 20220818	DATE: 8/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.8 feet to 34.8 feet	STATIC DEPTH TO WATER (feet): 0.74	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (34.8 feet – 0.74 feet) X 0.04 gallons/foot = 1.37 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1415	PURGING ENDED AT: 1439	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1415	–	–	450	0.74	–	–	–	–	–	–	–
1427	5.4	5.4	↓	0.86	7.11	25.1	946	0.09	5.01	-124.0	cl/N.o.
1430	1.35	6.75		↓	7.09	25.0	940	0.09	3.92	-125.0	↓
1433	1.35	8.1			7.09	24.9	936	0.08	4.19	-126.8	
1436	1.35	9.45			7.07	24.8	932	0.08	3.77	-127.6	
1439	1.35	10.8	↓	↓	7.07	24.9	931	0.07	4.02	-127.6	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.V.-J-IC/ HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1440	SAMPLING ENDED AT: 1444
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N TUBING Y (N (replaced)		DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00025	SAMPLE ID: S114 – MW00025 - 0910 - 20220818	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 4.1 feet to 14.1 feet	STATIC DEPTH TO WATER (feet): 4.87	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.1 feet – 4.87 feet) X 0.04 gallons/foot = 0.37 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = 0 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5+ 9.1	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5+ 9.1	PURGING INITIATED AT: 0930	PURGING ENDED AT: 0952	TOTAL VOLUME PURGED (gallons): 0.97

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
0940	2.0	2.0	200	5.01	6.38	28.1	330.6	0.44	10.6	-45.5	clear/none
0943	0.6	2.6	|	5.01	6.42	28.2	330.9	0.43	8.72	-48.9	|
0946	0.6	3.2	|	5.01	6.43	28.1	330.0	0.39	6.82	-51.2	|
0949	0.6	3.8	|	5.01	6.40	28.1	329.5	0.36	6.08	-53.0	|
0952	0.6	4.4	|	5.01	6.40	28.1	328.7	0.32	5.19	-54.7	|

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0955	SAMPLING ENDED AT: 0958
PUMP OR TUBING DEPTH IN WELL (feet): 5+ 9.1	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00[illegible]2I	SAMPLE ID: S114 – MW00[illegible]2I – 0729.0 – 20220818	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.3 feet to 34.3 feet	STATIC DEPTH TO WATER (feet): 4.85	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.3 feet – 4.85 feet) X 0.04 gallons/foot = 1.18 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	PURGING INITIATED AT: 1015	PURGING ENDED AT: 1032	TOTAL VOLUME PURGED (gallons): 1.80

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/pm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1020	2.0	2.0	400	4.91	7.19	27.4	556	0.29	23.2	-217.1	clear/none
1023	1.2	3.2	400	4.91	7.47	27.2	552	0.21	10.7	-222.1	"
1026	1.2	4.4	400	4.91	7.50	27.1	550	0.20	7.57	-223.4	"
1029	1.2	5.6	400	4.91	7.51	27.3	551	0.18	5.52	-221.8	"
1032	1.2	6.8	400	4.91	7.53	27.3	550	0.16	4.60	-224.0	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016
PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1035	SAMPLING ENDED AT: 1038
PUMP OR TUBING DEPTH IN WELL (feet): 29.4	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00 16I	SAMPLE ID: S114 – MW00 16I – 030.0. 2022 0818	DATE 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH 24.5 feet to 34.5 feet	STATIC DEPTH TO WATER (feet) 3.73	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.5 feet – 3.73 feet) X 0.04 gallons/foot = 1.23 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING INITIATED AT: 1108	PURGING ENDED AT: 1134	TOTAL VOLUME PURGED (gallons): 2.75

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (mS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1122	5.6	5.6	400	3.79	7.18	25.7	6261	0.15	12.7	-153.7	clear/none
1125	1.2	6.8	|	3.79	7.27	25.5	6247	0.13	11.1	-155.6	|
1128	1.2	8.0	|	3.79	7.33	25.8	6271	0.13	16.8	-157.2	|
1131	1.2	9.2	|	3.79	7.41	26.0	6309	0.11	19.9	-156.3	|
1134	1.2	10.4	|	3.79	7.[illegible]51	25.9	6309	0.11	16.3	-157.0	|

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1135	SAMPLING ENDED AT: 1138
PUMP OR TUBING DEPTH IN WELL (feet): 29.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00 (65-010.0-2022.08.18	SAMPLE ID: S114 – MW00 (65-010.0-2022.08.18	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 4.6 feet to 14.6 feet	STATIC DEPTH TO WATER (feet): 3.68	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.6 feet – ~~3.68~~ ~~4.01~~ 3.68 feet) X 0.04 gallons/foot = 0.44 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9.6	PURGING INITIATED AT: 1154	PURGING ENDED AT: 1212	TOTAL VOLUME PURGED (gallons): 0.95

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1200	1.2	1.2	200	4.20	6.61	27.3	4608	0.54	4.64	-105.1	Clear/Sulfur
1203	0.6	1.8	|	4.20	6.72	26.9	4564	0.41	1.91	-112.0	|
1206	0.6	2.4	|	4.20	6.87	27.1	4584	0.34	2.70	-117.2	|
1209	0.6	3.0	|	4.20	6.83	27.1	4531	0.31	2.42	-118.5	|
1212	0.6	3.6	|	4.20	6.87	26.9	4580	0.21	2.51	-124.0	|

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1215	SAMPLING ENDED AT: 1218
PUMP OR TUBING DEPTH IN WELL (feet): 9.6	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00035	SAMPLE ID: S114 – MW00035-008,0-20220818	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.6 feet to 12.6 feet	STATIC DEPTH TO WATER (feet): 3.18	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.6 feet – 3.18 feet) X 0.04 gallons/foot = 0.38 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = 0 gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.6	PURGING INITIATED AT: 1252	PURGING ENDED AT: 1310	TOTAL VOLUME PURGED (gallons): 0.79

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/pm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1258	1.2	1.2	200	3.23	5.14	28.4	147.1	0.52	7.44	89.9	clear/sulfur
1301	0.6	1.8	200	3.23	5.12	28.5	144.7	0.45	6.65	81.6	"
1304	0.6	2.4	200	3.22	5.04	28.4	143.0	0.47	7.92	67.7	"
1307	0.6	3.0	200	3.22	5.00	28.5	143.5	0.45	6.96	53.7	"
1310	0.6	3.6	200	3.22	4.99	28.3	143.1	0.42	5.77	43.6	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1312	SAMPLING ENDED AT: 1315
PUMP OR TUBING DEPTH IN WELL (feet): 7.6	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00D3I	SAMPLE ID: S114 – MW00D3I-0330-20220818	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.5 feet to 34.5 feet	STATIC DEPTH TO WATER (feet): 3.19	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.5 feet – 3.19 feet) X 0.04 gallons/foot = 1.25 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.5	PURGING INITIATED AT: 1335	PURGING ENDED AT: 1355	TOTAL VOLUME PURGED (gallons): 2.1(

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (mS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1343	3.2	3.2	400	3.28	7.63	26.5	714	0.19	13.7	-215.2	clear/slight
1346	1.2	4.4	400	3.28	7.67	26.5	706	0.17	14.6	-215.6	"
1349	1.2	5.6	400	3.28	7.68	26.5	702	0.14	6.34	-212.9	"
1352	1.2	6.8	400	3.28	7.68	26.5	697	0.13	5.25	-211.3	"
1355	1.2	8.0	400	3.28	7.67	26.7	700	0.12	4.97	-208.6	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1358	SAMPLING ENDED AT: 1401
PUMP OR TUBING DEPTH IN WELL (feet): 29.5	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00 04I	SAMPLE ID: S114 – MW00 04I – 029.0 – 20220818	DATE: 08/18/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.4 feet to 34.4 feet	STATIC DEPTH TO WATER (feet): 3.37	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.4 feet – 3.37 feet) X 0.04 gallons/foot = 1.24 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	PURGING INITIATED AT: 1436	PURGING ENDED AT: 1457	TOTAL VOLUME PURGED (gallons): 2.22

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
~~1445~~ 1445	3.6	3.6	400	3.48	7.52	27.5	14939	0.19	12.1	-147.4	clear/silt
1448	1.2	4.8	400	3.48	7.49	26.9	14999	0.13	4.57	-191.5	"
1451	1.2	6.0	400	3.48	7.47	26.7	14991	0.13	3.23	-187.9	"
1454	1.2	7.2	400	3.48	7.45	26.5	14897	0.12	2.72	-182.1	"
1457	1.2	8.4	400	3.48	7.44	26.4	14830	0.12	2.55	-175.0	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1503
PUMP OR TUBING DEPTH IN WELL (feet): 29.4	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; HDPE = High Density Polyethylene; LDPE = Low Density Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After (Through) Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Daily Quality Control Report

Daily Quality Control Report	
Date:	**8/19/2022**
NASA Remediation Project Manager:	Ryan O'Meara
HGL Program Manager	Janardan Patel
HGL Project Manager:	Howard Fowler
Contract No.	
Task Order No.	
Project Name:	SWMU114-GW Sampling
Project No.	NS1010.01.05

Day	S	M	T	W	TH	F	S
						X	

Weather	Bright Sun		Clear	Overcast		Rain	Fog
			X				
Temp	Min.			Max.			
	74			93			
Wind	Still	Moderate		High		Gust	
		X					
Humidity	Dry	Moderate		High		Rainfall	
				X			

1. List of On-Site Personnel:

1.1 List of HGL Personnel Onsite

HGL Employee Name	Position	Location	Hours	Non-Hours	Total Hours
Justin Vojak	Staff Scientist	SWMU114	10		10
Dustin Lupis	Field Technician	SWMU114	10		10
TOTAL HGL PERSONNEL ONSITE		**2**	**TOTAL HOURS WORKED**		**20**

1.2 List of GOV. Personnel Onsite

Personnel Onsite	Affiliation / Position	Location	Est. Total Hours
TOTAL GOV PERSONNEL ONSITE		**0**	**0**

1.3 Subcontractors Onsite

Employee Name	Company / Position	Location	Hours	Non-Hours	Total Hours
TOTAL SUBCONTRACTOR PERSONNEL ONSITE		**0**	**TOTAL HOURS WORKED**		**0**

2. List of Equipment

Equipment	Date Arrived/Departed	Date of Safety Check	Hours Used	Hours Idle	Hours Repair
YSI Pro Plus	8/16/2022-8/19/2022	8/19/2022	10		
YSI Pro Plus	8/17/2022-8/19/2022	8/19/2022	10		
HACH 2100Q	8/16/2022-8/19/2022	8/19/2022	10		
HACH 2100Q	8/16/2022-8/19/2022	8/19/2022	10		
Heron Water Level Meter	8/16/2022-8/19/2022	8/19/2022	10		
Heron Water Level Meter	8/16/2022-8/19/2022	8/19/2022	10		
Peristaltic Pump	8/16/2022-8/19/2022	8/19/2022	10		
Peristaltic Pump	8/17/2022-8/19/2022	8/19/2022	10		

2.2 Instrumentation & Equipment

Description Of Instrumentation	Date Arrived/Departed	Pre/Post Calibration Conducted	Cal Form Completed	Pass / Fail	Hours Used
YSIs	8/16&17/2022-8/19/2022	Yes	Yes	Pass	10
Turbidity Meters	8/16/2022-8/19/2022	Yes	Yes	Pass	10

Daily Quality Control Report

3. Field Activities

DFOW / ACTIVITY / DELIVERIES	S = Start C = Continuing F = Finish	Description of Work Actually Performed / Material Deliveries
GW Sampling	**F = Finish**	GW Sampling

4. Testing and Sampling Activities

4.1 Sampling Conducted

Location	Time	Analysis	Results - Detected / Not Detected
S114-MW0010S-010.0-20220819	0911	PFAS	Analysis Pending
S114-MW0010I-029.0-20220819	0950		
S114-FD-20220819-01	1115		
S114-MW0009S-008.0-20220819	1050		
S114-MW0009I-030.0-20220819	1138		
S114-MW0011I-030.0-20220819	1237		
S114-MW0011S-010.0-20220819	1318		
S114-MW0008I-029.0-20220819	1409		
S114-MW0005S-008.0-20220819	0930		
S114-MW0005I-029.0-20220819	1022		
S114-MW0006S-007.0-20220819	1115		
S114-MW0006I-003.0-20220819	1152		
S114-MW0007IS-009.0-20220819	1240		
S114-MW0007I-029.0-20220819	1305		
S114-MW0008S-008.0-20220819	1415		
S114-FB-20220819-01	1420		
S114-EB-20220819-01	1425		

5. Job Safety: (TGSM Topics, Report violations, instructions given, corrective action taken)

Biologicals, Pinch Points, COVID-19, Slips, Trips and Falls, Inclement Weather, Sun Exposure, Traffic, Struck by, Heat Stress, Team Work, PPE

6. Description of Work Completed

-Continue GW sampling at SWMU114. (14) wells were sampled. See field notes and sampling logs for details

-Final IDW: On pallett #221946 drum #226831 ~80% full and drum #227139 ~30% full

Daily Quality Control Report

7. 3-PHASE INSPECTION (Preparatory / Initial / Final Follow-Up)			
Name of Inspection Held	**Gov. Notified (Y/N)**	**Definable Feature of Work**	**Checklist Completed**

I Certify that I am the Contractor's Authorized Representative and that the above information stated in this Daily Activity Report is	
accurate and representative of the work completed.	
Printed Name: Justin Vojak	**8/19/2022**
Signature: Justin Vojak	**8/19/2022**
I Certify that I am the Contractor's Authorized Quality Control Representative and that this Daily Activity Report conforms with	
all appropriate and approved Work Plan Statement of Work.	
Printed Name: Tim Jellett	**8/19/2022**
Signature:	**8/19/2022**

HGL
HydroGeoLogic, Inc
Exceeding Expectations

SAFETY MEETING/TRAINING LOG

- [x] Tailgate (daily)
- [ ] Activity Hazard Analysis
- [ ] Pre-Task Hazard Analysis (prior to new task or operation)
- [ ] Site Safety Orientation (new personnel)
- [ ] Supervisor's (monthly)
- [ ] Supervisor's (weekly)
- [ ] UXO Awareness
- [ ] Asbestos Awareness
- [ ] Health and Safety Plan Addendum: _____
- [ ] Other: ___

Date/Time: 08/19/22 Client: NASA

Location: Summit Job No.: 15010.01.05

Meeting/training conducted by: J. Vojak

Work Activities: GW. Sampling

Safety / Training Topics Presented

Chemical Hazards: PFAS

Physical Hazards: Slips, Trips, Falls, Sun Exposure, Heat Stress, Wildlife

Specific Safety Topic(s): Proper Lifting

Specific Training Covered: NA

Attendees

Name Printed and Employee Number:	Signature:
Dustin Kuhns	
J. Vojak	

EQUIPMENT CALIBRATION LOG

Project Name: SWMM 114 - GW Sampling

Project No. NS1010.01.05

Date/Time	Calibrated by	Instrument	Standard/ Manufacturer Lot No.	Standard Concentration	Instrument Reading	Comments
8/18/22 0745	J. Vujak	YSI Pro Plus	pH 26F083	7.0	7.07	Pass
0750	↓	↓	pH 26C933	4.0	4.05	↓
0755	↓	↓	pH 26D020	10.0	10.03	↓
0800	↓	↓	Conductivity 26C1180	1.413	1418	↓
0805	↓	↓	ORP 26E596	240 mV	240.9	↓
0810	↓	↓	DO NA	100%	99.5	↓
0817	↓	Hach 2100 Q	NTU 800	800	804	↓
0820	↓	↓	100	100	100	↓
0823	↓	↓	20	20	20.2	↓
0825	↓	↓	10	10	10.3	↓
8/19/22 0755	↓	YSI Pro Plus	pH 26F083	7.0	7.01	Pass
0757	↓	↓	pH 26C933	4.0	3.98	↓
0800	↓	↓	pH 26D020	10.0	9.96	↓
0803	↓	↓	Conductivity 26C1180	1.413	1412	↓
0807	↓	↓	ORP 26E596	240 mV	241.0	↓
0810	↓	↓	DO NA	100%	99.7	↓
0812	↓	Hach 2100 Q	NTU 800	800	813	↓
0813	↓	↓	100	100	102	↓
0814	↓	↓	20	20	23.8	↓
0815	↓	↓	10	10	11.2	↓

HGL
HydroGeologic, Inc.

CALIBRATION LOG

Project Name: SWMU 5114 PFAS Assessment - KSC/NASA By: Dustin Lupis

Project No.: NS1010.01.05 Page 1 of 1

Date/Time	Instrument	STD	STD CONC ppm	Meter Reading	Comments
08/19/22 0800	YSI Pro	DO %	Saturated Air	99.7%	DL
0803	↓	Cond.	1.413 ms/cm	1.41	↓
0806		PH	4	4.07	
0809		PH	7	7.00	
08/2		PH	10	9.96	↓
0815	↓	ORP	240.0 mV	239.2	DL
08/19/22 0800	Hach 2100 Q	NTU	20	20.0	DL
0803	↓	NTU	100	101	↓
0806		NTU	800	796	
0809	↓	NTU	10	10.1	↓

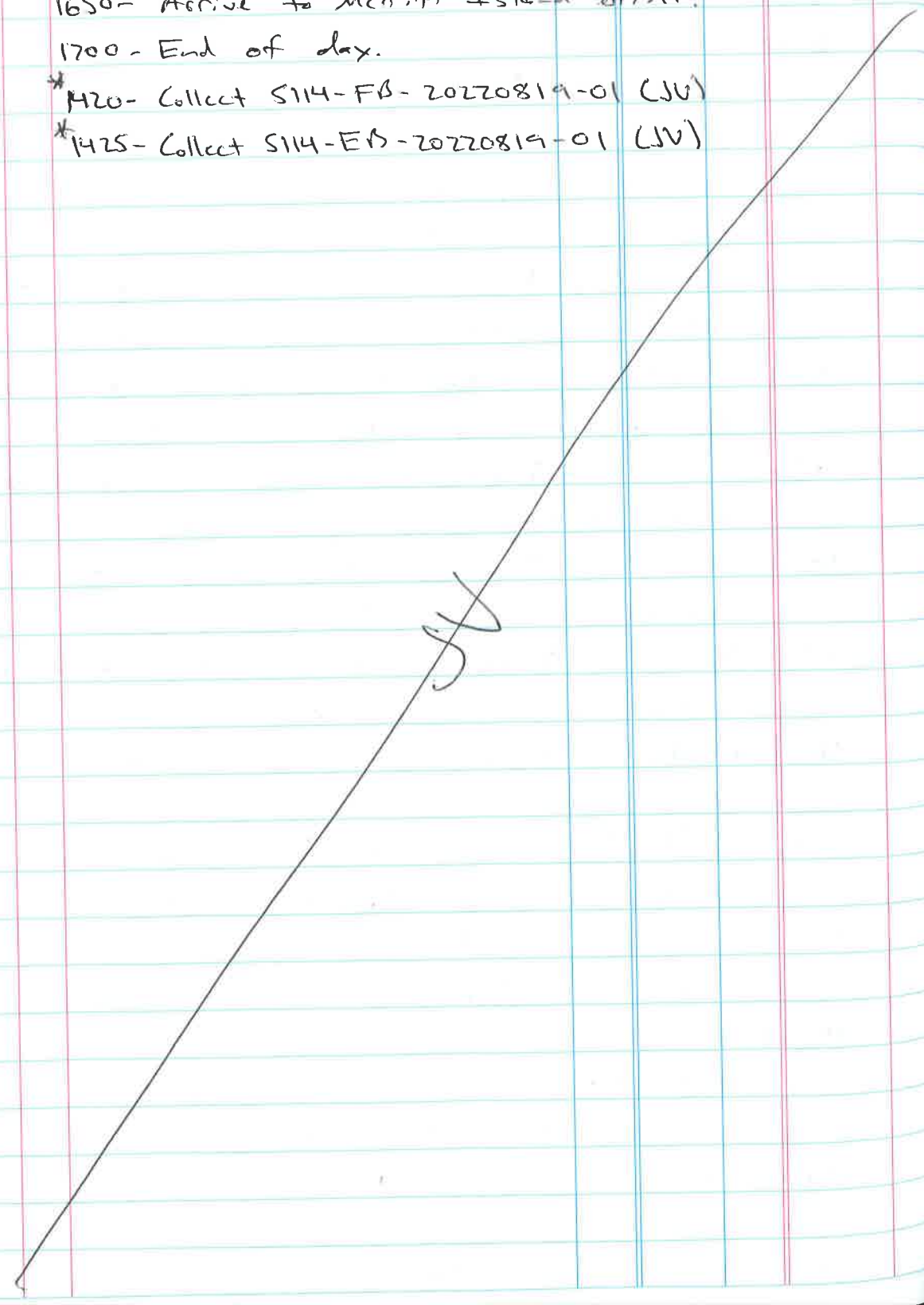
NASA/KSC SWMU114 8/19/22

Scope: GW Sampling
Crew: J. Vojak, D. Lupis
Equipment: YSIs, Turbidity Meters, Water Level Meters, Hand Tools, Work Trucks
Weather: 74-93°F
0700 - Travel to KSC.
0730 - Arrive to CCF IDW yard. Transfer IDW
0755 - Calibrate YSI/Turbidity Meter. See cal log for details.
0815 - Calibration complete.
0820 - Travel to SWMU114
0833 - JV rig up & proceed to sample wells @ MW10 ~~MW0405~~ location. See sampling log for details.
0900 - DL rig up & proceed to sample wells @ MW05 location. See sampling log for details
1015 - JV rig up & proceed to sample wells @ MW09 location. See sampling log for details.
1045 - DL rig up & proceed to sample wells @ MW06 location. See sampling log for details.
1157 - JV rig up & proceed to sample wells @ MW11 location. See sampling log for details.
1205 - DL rig up & proceed to sample wells @ MW07 location.
1335 - JV & DL rig up & sample wells @ MW08 location. See sampling log for details.
1430 - JV mobe to CCF IDW yard, DL mobe to Cape field office.
1445 - Transfer IDW. Drum # 226831 on pallett # 221946 ≈ 80% Full. Drum # 227139 on pallett # 221946 ≈ 30% full.
1505 - JV mobe to Cape field office
1520 - Arrive to office

JV

NASA/KSC SWMU114 8/19/22

1525 - JV/DL QC samples & pack coolers.
1600 - Mobe to badging station to meet SGS courier
1615 - Relinquish samples to SGS courier
1630 - Stop for fuel.
1650 - Arrive to Merritt Island office.
1700 - End of day.
*1420 - Collect S114-FB-20220819-01 (JV)
*1425 - Collect S114-EB-20220819-01 (JV)



DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00105**	SAMPLE ID: **S114 – MW00105-010.0-20220819**	DATE: 8/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 4.9 feet to 14.9 feet	STATIC DEPTH TO WATER (feet): 6.88	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.9 feet – 6.88 feet) X 0.04 gallons/foot = 0.32 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10	PURGING INITIATED AT: 0851	PURGING ENDED AT: 0910	TOTAL VOLUME PURGED (gallons): 0.98

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
0851	—	—	200	6.88	—	—	—	—	—	—	—
0858	1.4	1.4	↓	7.63	6.79	28.3	741	0.47	5.79	-32.0	CLR/NO
0901	0.6	2.0		7.65	6.79	28.4	740	0.42	5.72	-35.0	↓
0904	0.6	2.6		↓	6.79	28.4	740	0.26	6.22	-43.8	
0907	0.6	3.2			6.78	28.4	740	0.20	6.03	-46.3	
0910	0.6	3.8	↓	↓	6.80	28.4	738	0.15	5.91	-51.3	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Vojak/HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0911	SAMPLING ENDED AT: 0914
PUMP OR TUBING DEPTH IN WELL (feet): 10	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00 10I	SAMPLE ID: S114 – MW00 10I-0290-20220819	DATE: 8/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.4 feet to 34.4 feet	STATIC DEPTH TO WATER (feet): 6.72	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.4 feet – 6.72 feet) X 0.04 gallons/foot = 1.11 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING INITIATED AT: 0927	PURGING ENDED AT: 0949	TOTAL VOLUME PURGED (gallons): 262

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	0.12 PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
0927	—	—	450	6.72	—	—	—	—	—	—	—
0937	4.5	4.5	↓	6.78	7.29	27.2	31145	0.20	7.98	-139.9	clr/10.0
0940	1.35	5.85		↓	7.28	27.2	31223	0.16	5.71	-144.0	↓
0943	1.35	7.20			7.29	27.1	31226	0.09	4.59	-146.4	
0946	1.35	8.55			7.29	27.1	31226	0.09	4.28	-147.3	
0949	1.35	9.90	↓	↓	7.28	27.2	31357	0.09	3.45	-147.1	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Vojak/ITGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0950	SAMPLING ENDED AT: 0953
PUMP OR TUBING DEPTH IN WELL (feet):	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00095**	SAMPLE ID: **S114 – MW00095-0080-20220819**	DATE: 8/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.8 feet to 12.8 feet	STATIC DEPTH TO WATER (feet): 4.28	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.8 feet – 4.28 feet) X 0.04 gallons/foot = 0.34 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8	PURGING INITIATED AT: 1030	PURGING ENDED AT: 1049	TOTAL VOLUME PURGED (gallons): 1.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1030	–	–	200	4.28	–	–	–	–	–	–	–
1037	1.4	1.4	↓	4.70	6.41	25.9	3960	0.30	18.9	-17.8	CLEAR
1040	0.6	2.0		↓	6.41	26.0	3838	0.23	16.3	-22.6	↓
1043	0.6	2.6			6.38	26.1	3744	0.23	18.4	-25.1	
1046	0.6	3.2			6.39	26.2	3674	0.15	13.0	-27.4	
1049	0.6	3.8	↓	↓	6.39	26.1	3636	0.13	8.60	-29.5	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vojnik / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1050	SAMPLING ENDED AT: 1053
PUMP OR TUBING DEPTH IN WELL (feet): 8	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: SWMU S114	SITE LOCATION: NASA/KSC	
WELL NO: S114 – MW00095	SAMPLE ID: S114 – MW00095-030.0-20220819	DATE: 8/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.7 feet to 34.7 feet	STATIC DEPTH TO WATER (feet): 4.69	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 4.69 feet) X 0.04 gallons/foot = 1.20 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1115	PURGING ENDED AT: 1137	TOTAL VOLUME PURGED (gallons): 262

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1115	–	–	450	4.69	–	–	–	–	–	–	–
1125	4.5	4.5	↓	4.76	7.18	24.0	8861	0.19	10.5	-123.3	clr/odor JV
1128	1.35	5.85		↓	7.20	23.9	8882	0.19	8.22	-126.4	↓
1131	1.35	7.2			7.20	24.0	8879	0.12	4.70	-128.8	
1134	1.35	8.55			7.20	24.0	8890	0.10	4.22	-129.5	
1137	1.35	9.9	↓	↓	7.19	23.9	8894	0.09	3.85	-130.7	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J. Vogel / KGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1138	SAMPLING ENDED AT: 1141
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00 11I**	SAMPLE ID: **S114 – MW00 11I-030.0-20220819**	DATE: **8/19/22**

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 24.7 feet to 34.7 feet	STATIC DEPTH TO WATER (feet): 6.0	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 6.0 feet) X 0.04 gallons/foot = 1.15 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30	PURGING INITIATED AT: 1214	PURGING ENDED AT: 1236	TOTAL VOLUME PURGED (gallons): 2.62

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1214	–	–	450	6.0	–	–	–	–	–	–	–
1224	4.5	4.5		6.05	7.59	27.8	5168	0.11	3.24	-169.0	CLR/SI:-Sul
1227	1.35	5.85			7.55	27.7	5204	0.11	2.87	-170.0	
1230	1.35	7.2			7.56	27.7	5213	0.10	2.05	-171.3	
1233	1.35	8.55			7.53	27.8	5221	0.10	2.12	-171.4	
1236	1.35	9.9			7.58	27.7	5242	0.10	2.42	-171.0	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: J.Nagle/HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1237	SAMPLING ENDED AT: 1240
PUMP OR TUBING DEPTH IN WELL (feet): 30	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00115**	SAMPLE ID: **S114 – MW00115 – 010.0 – 20220819**	DATE: **8/19**

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: **4.7** feet to **14.7** feet	STATIC DEPTH TO WATER (feet): **5.78**	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (**14.7** feet – **5.78** feet) X 0.04 gallons/foot = **0.36** gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): **10**	FINAL PUMP OR TUBING DEPTH IN WELL (feet): **10**	PURGING INITIATED AT: **1257**	PURGING ENDED AT: **1317**	TOTAL VOLUME PURGED (gallons): **1.1**

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1257	—	—	200	5.78	—	—	—	—	—	—	—
1305	1.6	1.6	↓	6.46	6.61	29.8	590	0.31	10.2	-33.5	CLR/N.O.
1309	0.6	2.2		↓	6.65	29.6	591	0.21	6.88	-43.1	↓
1311	0.6	2.8			6.72	29.6	592	0.17	7.64	-47.0	
1314	0.6	3.4			6.68	29.7	592	0.15	6.29	-51.0	
1317	0.6	4.0	↓	↓	6.70	29.6	598	0.13	5.68	-62.0	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: **J. Vojak / HGL**	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: **1318**	SAMPLING ENDED AT: **1321**
PUMP OR TUBING DEPTH IN WELL (feet): **10**	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**08I	SAMPLE ID: **S114 – MW00**08I-029.0-20220819	DATE: 8/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.3 feet to 34.3 feet	STATIC DEPTH TO WATER (feet): 4.77	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.3 feet – 4.77 feet) X 0.04 gallons/foot = 1.18 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29	PURGING INITIATED AT: 1346	PURGING ENDED AT: 1408	TOTAL VOLUME PURGED (gallons):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1346	–	–	450	4.77	–	–	–	–	–	–	–
1356	4.5	4.5	↓	4.99	7.38	27.6	38444	0.11	8.99	-143.8	CLR/SLT-Sheen
1359	1.35	5.85		↓	7.29	27.3	39363	0.09	5.17	-144.6	↓
1402	1.35	7.2			7.23	27.3	39421	0.08	6.61	-148.3	
1405	1.35	8.55			7.18	27.3	39447	0.07	4.99	-154.9	
1408	1.35	9.9	↓	↓	7.15	27.3	39449	0.06	4.39	-160.6	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: JBolyk / HGL	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1409	SAMPLING ENDED AT: 1412
PUMP OR TUBING DEPTH IN WELL (feet): 29	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**055	SAMPLE ID: **S114 – MW00**055-008.0-20220819	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.9 feet to 12.9 feet	STATIC DEPTH TO WATER (feet): 4.25	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

= (12.9 feet – 4.25 feet) X 0.04 gallons/foot = 0.35 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

= 0 gallons + (gallons/foot X feet) + gallons = ~~0.35~~ gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.9	PURGING INITIATED AT: 0916	PURGING ENDED AT: 0927	TOTAL VOLUME PURGED (gallons): 0.90

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/m)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
0915	1.0	1.0	200	4.56	6.36	26.2	418.2	0.31	8.87	-49.4	clear/sulfur
0918	0.6	1.6	200	4.56	6.40	26.1	417.4	0.25	7.91	-47.5	"
0921	0.6	2.2	200	4.56	6.37	26.2	420.8	0.23	12.8	-45.0	"
0924	0.6	2.8	200	4.56	6.33	26.1	418.1	0.28	12.9	-42.2	"
0927	0.6	3.4	200	4.56	6.31	26.2	420.8	0.30	7.82	-41.3	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 0930	SAMPLING ENDED AT: 0933
PUMP OR TUBING DEPTH IN WELL (feet): 7.9	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**05I	SAMPLE ID: **S114 – MW00**05I - ~~030.0~~ 029.0 -2022 0819	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.4 feet to 34.4 feet	STATIC DEPTH TO WATER (feet): 4.38	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.4 feet – 4.38 feet) X 0.04 gallons/foot = 1.20 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	PURGING INITIATED AT: 1000	PURGING ENDED AT: 1020	TOTAL VOLUME PURGED (gallons): 2.11

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1008	3.2	3.2	400	4.43	7.34	25.1	57799	0.14	14.7	-165.3	Clear/Sulfur
1011	1.2	4.4	400	4.43	7.34	25.1	58267	0.09	9.87	-176.0	"
1014	1.2	5.6	400	4.43	7.31	25.2	58170	0.08	6.92	-181.3	"
1017	1.2	6.8	400	4.43	7.30	25.2	58281	0.07	5.20	-186.1	"
1020	1.2	8.0	400	4.43	7.29	25.4	58630	0.07	4.44	-192.2	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1022	SAMPLING ENDED AT: 1025
PUMP OR TUBING DEPTH IN WELL (feet): 29.4	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00065**	SAMPLE ID: **S114 – MW00065 – 007.0 – 20220819**	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 2.3 feet to 12.3 feet	STATIC DEPTH TO WATER (feet): 2.04	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.3 feet – 2.04 feet) X 0.04 gallons/foot = 0.41 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = ~~1.00~~ gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.3	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.3	PURGING INITIATED AT: 1055	PURGING ENDED AT: 1114	TOTAL VOLUME PURGED (gallons): 1.00

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mLpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1059	0.8	0.8	200	2.12	7.12	27.9	1745	0.16	7.11	-77.0	clear/SULFUR
1102	0.6	1.4	|	2.12	7.09	27.8	1630	0.17	5.25	-76.3	|
1105	0.6	2.0	|	2.12	7.05	27.8	1549	0.23	5.39	-75.5	|
1108	0.6	2.6	|	2.12	7.04	27.8	1472	0.27	3.71	-75.4	|
1111	0.6	3.2	|	2.12	7.03	27.7	1471	0.31	2.26	-76.3	|
1114	0.6	3.8	|	2.12	7.02	27.8	1485	0.29	1.49	-76.7	|

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1115	SAMPLING ENDED AT: 1120
PUMP OR TUBING DEPTH IN WELL (feet): 7.3	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: (Y) N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	**2**	**HDPE**	**125mL**	**None**	**N/A**	**N/A**	**LCQSM537DODFL-24 Analytes + GEN X**	**APP**	**<500**

REMARKS: Collected Field Duplicate

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00 06I**	SAMPLE ID: **S114 – MW00 06I – 0310 – 20220819**	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.7 feet to 34.7 feet	STATIC DEPTH TO WATER (feet): 2.35	PURGE PUMP TYPE OR BAILER: **PP**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.7 feet – 2.35 feet) X 0.04 gallons/foot = 1.29 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.7	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.7	PURGING INITIATED AT: 1132	PURGING ENDED AT: 1150	TOTAL VOLUME PURGED (gallons): 1.59

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/m)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1138	1.2	1.2	400	2.50	7.89	26.1	61505	0.20	9.69	-206.9	clear/none
1141	1.2	2.4	|	2.50	7.89	26.0	61512	0.16	4.35	-189.5	|
1144	1.2	3.6	|	2.50	7.86	26.0	61557	0.13	4.73	-190.5	|
1147	1.2	4.8	|	2.50	7.86	26.0	61564	0.12	4.40	-191.5	|
1150	1.2	6.0	|	2.50	7.85	25.9	61464	0.11	1.92	-190.4	|

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1152	SAMPLING ENDED AT: 1155
PUMP OR TUBING DEPTH IN WELL (feet): 29.7	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)					
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: **1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**07S	SAMPLE ID: **S114 – MW00** 07S - 009.0 - 20220819	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 4.4 feet to 14.4 feet	STATIC DEPTH TO WATER (feet): 6.15	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (14.4 feet – 6.15 feet) X 0.04 gallons/foot = 0.33 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9.4	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9.4	PURGING INITIATED AT: 1218	PURGING ENDED AT: 1238	TOTAL VOLUME PURGED (gallons): 1.06

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/m)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1226	~~3.2~~ 1.6	~~3.2~~ 1.6	200	6.48	7.03	30.7	698	0.22	3.02	-90.8	Clear/slight sulfur
1229	0.6	2.2	200	6.48	7.00	30.7	679	0.21	2.82	-91.1	
1232	0.6	2.8	200	6.48	6.95	30.3	665	0.18	1.41	-92.6	
1235	0.6	3.4	200	6.48	6.96	30.3	663	0.17	1.38	-94.9	
1238	0.6	4.0	200	6.48	6.97	30.4	661	0.16	1.30	-96.2	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1240	SAMPLING ENDED AT: 1243
PUMP OR TUBING DEPTH IN WELL (feet): 9.4	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced)	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**

2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW0007I**	SAMPLE ID: **S114 – MW0007I – 029.0 – 20220819**	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): **1**	TUBING DIAMETER (inches): **1/4**	WELL SCREEN INTERVAL DEPTH: 24.4 feet to 34.4 feet	STATIC DEPTH TO WATER (feet): 6.01	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (34.4 feet – 6.01 feet) X 0.04 gallons/foot = 1.14 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 29.4	PURGING INITIATED AT: 1245	PURGING ENDED AT: 1304	TOTAL VOLUME PURGED (gallons): 2.01

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/pm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1252	2.8	2.8	400	6.05	7.62	28.6	58799	0.15	10.0	-199.0	Clear/Sulfur
1255	1.2	4.0	|	6.05	7.62	28.7	58905	0.10	9.98	-206.3	|
1258	1.2	5.2	|	6.05	7.69	28.8	59159	0.09	8.59	-218.9	|
1301	1.2	6.4	|	6.05	7.67	28.7	59118	0.04	8.14	-228.4	|
1304	1.2	7.6	|	6.05	7.69	28.6	59124	0.08	7.90	-238.6	|

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014, **1/4"** = 0.0026, **5/16"** = 0.004; **3/8"** = 0.006, **1/2"** = 0.010, **5/8"** = 0.016
PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Dustin Lupis	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1305	SAMPLING ENDED AT: 1308
PUMP OR TUBING DEPTH IN WELL (feet): 29.4	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: **SWMU S114**	SITE LOCATION: **NASA/KSC**	
WELL NO: **S114 – MW00**085	SAMPLE ID: **S114 – MW00**085-008,0-20220819	DATE: 08/19/22

PURGING DATA

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): 1/4	WELL SCREEN INTERVAL DEPTH: 2.9 feet to 12.9 feet	STATIC DEPTH TO WATER (feet): 4.79	PURGE PUMP TYPE OR BAILER: PP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.9 feet – 4.79 feet) X 0.04 gallons/foot = 0.32 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= 0 gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 7.9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 7.9	PURGING INITIATED AT: 1344	PURGING ENDED AT: 1414	TOTAL VOLUME PURGED (gallons): 1.56

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mL/m)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or (µS/cm)	DISSOLVED OXYGEN (circle units) (mg/L) or % saturation	TURBIDITY (NTUs)	ORP (mV)	COLOR/ ODOR (describe)
1350	1.2	1.2	200	5.42	7.06	29.4	752	0.19	6.77	-107.8	Clear/sulfur
1353	0.6	1.8	200	5.42	6.99	29.4	693	0.21	3.66	-110.5	
1356	0.6	2.4	200	5.47	6.95	29.2	727	0.23	1.82	-114.6	
1359	0.6	3.0	200	5.47	6.96	29.2	887	0.18	1.57	-128.0	
1402	0.6	3.6	200	5.47	7.00	29.3	1172	0.16	1.44	-148.0	
1405	0.6	4.2	200	5.47	7.04	29.3	1585	0.14	2.04	-185.7	
1408	0.6	4.8	200	5.47	7.06	29.4	1885	0.13	6.66	-208.0	
1411	0.6	5.4	200	5.47	7.07	29.1	1905	0.14	8.99	-226.0	
1414	0.6	6.0	200	5.47	7.06	29.2	1936	0.14	11.4	-234.7	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: DvSHn LUPIS	SAMPLER(S) SIGNATURE(S):	SAMPLING INITIATED AT: 1415	SAMPLING ENDED AT: 1418
PUMP OR TUBING DEPTH IN WELL (feet): 7.9	TUBING MATERIAL CODE: HDPE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: ____ µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: Y (N)	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION (including wet ice)			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
1	2	HDPE	125mL	None	N/A	N/A	LCQSM537DODFL-24 Analytes + GEN X	APP	<500

REMARKS: Conductivity spiked after the third reading.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **HDPE** = High Density Polyethylene; **LDPE** = Low Density Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After (Through) Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. **The above do not constitute all of the information required by Chapter 62-160, F.A.C.**
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

KUGELMANN LAND SURVEYING, INC.
30 N TROPICAL TRL, STE B, MERRITT ISLAND, FL 32953
klsinc@cfl.rr.com KLS# 2022061 LB 6575

HYDROGEOLOGIC, INC.
FIRE STATION #2, KENNEDY SPACE CENTER

POINT #	NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)	TOC EL	GND EL	DESC	ID
81	1553119.09	757406.55	473391.650	230857.981	0.74	1.2	MW	MW0001I
83	1553121.30	757410.51	473392.324	230859.186	0.96	1.2	MW	MW0001S
73	1552346.38	760688.91	473156.128	231858.444	5.69	6.0	MW	MW0002I
71	1552342.55	760686.77	473154.960	231857.794	5.70	6.0	MW	MW0002S
67	1551727.44	761823.81	472967.475	232204.363	4.43	4.8	MW	MW0003I
65	1551730.93	761821.09	472968.538	232203.536	4.47	4.8	MW	MW0003S
59	1550584.72	763095.38	472619.173	232591.938	3.44	3.6	MW	MW0004I
61	1549331.17	763787.02	472237.089	232802.752	4.25	4.5	MW	MW0005I
63	1549334.72	763784.24	472238.171	232801.904	4.23	4.5	MW	MW0005S
9	1547978.84	764937.35	471824.899	233153.374	2.09	2.0	MW	MW0006I
8	1547975.34	764940.34	471823.833	233154.286	1.99	2.0	MW	MW0006S
53	1548610.93	763683.37	472017.561	232771.158	5.95	6.1	MW	MW0007I
54	1548609.20	763687.13	472017.033	232772.304	5.93	6.1	MW	MW0007S
57	1549166.08	762314.23	472186.770	232353.844	5.11	5.4	MW	MW0008I
56	1549164.42	762318.34	472186.265	232355.096	5.07	5.4	MW	MW0008S
13	1548644.70	760641.70	472027.852	231844.055	5.30	5.2	MW	MW0009I
12	1548646.54	760645.90	472028.414	231845.336	5.08	5.2	MW	MW0009S
18	1547259.60	759530.40	471605.673	231505.331	6.93	7.2	MW	MW0010I
17	1547257.21	759526.44	471604.945	231504.124	7.11	7.2	MW	MW0010S
5	1549533.56	760624.21	472298.780	231838.726	5.94	6.1	MW	MW0011I
4	1549532.61	760629.20	472298.489	231840.247	5.73	6.1	MW	MW0011S
39	1548893.25	758916.34	472103.612	231318.166	0.49	0.9	MW	MW0012I
38	1548888.80	758918.61	472102.256	231318.859	0.66	0.9	MW	MW0012S
42	1550010.87	757475.01	472444.263	230878.846	1.10	1.3	MW	MW0013I
41	1550014.41	757473.44	472445.343	230878.369	1.21	1.3	MW	MW0013S
35	1551160.06	758750.98	472794.535	231267.763	2.68	2.9	MW	MW0015I
36	1551162.18	758754.25	472795.183	231268.760	2.68	2.9	MW	MW0015S

77	1551203.87	760117.49	472807.889	231684.277	4.78	5.0	MW	MW0016I
75	1551199.40	760117.91	472806.526	231684.404	4.71	5.0	MW	MW0016S
23	1550053.88	759700.96	472457.371	231557.318	4.94	4.9	MW	MW0017I
24	1550056.95	759705.14	472458.309	231558.592	4.94	4.9	MW	MW0017S
26	1549940.08	759009.98	472422.687	231346.708	6.08	6.2	MW	MW0018I
27	1549941.17	759005.05	472423.017	231345.204	5.99	6.2	MW	MW0018S
30	1550440.77	759045.59	472575.296	231357.561	3.61	3.7	MW	MW0019I
28	1550445.05	759046.68	472576.602	231357.893	3.48	3.7	MW	MW0019S
32	1550607.78	759212.66	472626.202	231408.483	2.57	2.8	MW	MW0020I
33	1550609.64	759216.57	472626.769	231409.674	2.54	2.8	MW	MW0020S

POINT #	NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)	ID
51	1550759.49	757991.22	472672.444	231036.187	STAFFGAUGE#1
50	1550452.57	759019.24	472578.895	231349.530	STAFFGAUGE#2
46	1549908.31	759313.30	472413.001	231439.158	STAFFGAUGE#3
49	1548869.49	759004.42	472096.369	231345.013	STAFFGAUGE#4
20	1546639.82	759960.64	471416.764	231636.467	STAFFGAUGE#5
15	1548657.02	760638.52	472031.608	231843.087	STAFFGAUGE#6
11	1549265.42	761629.21	472217.049	232145.050	STAFFGAUGE#7
10	1548258.27	764689.50	471910.068	233077.827	STAFFGAUGE#8
84	1550048.17	762852.43	472455.632	232517.888	STAFFGAUGE#9
69	1552860.61	761215.71	473312.864	232019.016	STAFFGAUGE#10

ABBREVIATIONS	
(M)=	METER
(FT)=	FEET
TOC=	TOP OF CASING
EL=	ELEVATION
GND=	GROUND
MW=	MONITORING WELL
DESC=	DESCRIPTION
ID=	IDENTIFICATION

SURVEYOR'S NOTES:

1. THE SPECIFIC PURPOSE OF THIS SURVEY IS TO DETERMINE THE HORIZONTAL AND VERTICAL POSITION OF GROUNDWATER MONITORING WELLS AND THE INSTALLATION LOCATION OF STAFF GAUGES.
2. THE COORDINATES DEPICTED HEREON ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83), 1990 ADJUSTMENT AND ARE BASED ON UNITED STATES COAST AND GEODETIC SURVEY MONUMENT "WRIGHT", HAVING PUBLISHED COORDINATES OF NORTHING 1544816.33 FEET AND EASTING 768783.06 FEET.
3. THE ELEVATIONS DEPICTED HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE BASED ON UNITED STATES COAST AND GEODETIC SURVEY MONUMENT "WRIGHT", HAVING AN PUBLISHED ELEVATION OF 7.45 FEET.
4. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT(S) SHOWN HEREON AND COPIES ARE VALID ONLY WHEN SIGNED, DATED AND EMBOSSED WITH THE SURVEYOR'S SEAL.

MAP OF SPECIFIC PURPOSE SURVEY PREPARED FOR AND CERTIFIED TO:
HYDROGEOLOGIC, INC

POINT #	NORTHING (FT)	EASTING (FT)	NORTHING (M)	EASTING (M)	TOC EL	GND EL	DESC	ID
81	1553119.09	757406.55	473391.650	230857.981	0.74	1.2	MW	MW0001I
83	1553121.30	757410.51	473392.324	230859.186	0.96	1.2	MW	MW0001S
73	1552346.38	760688.91	473156.128	231858.444	5.69	6.0	MW	MW0002I
71	1552342.55	760686.77	473154.960	231857.794	5.70	6.0	MW	MW0002S
67	1551727.44	761823.81	472967.475	232204.363	4.43	4.8	MW	MW0003I
65	1551730.93	761821.09	472968.538	232203.536	4.47	4.8	MW	MW0003S
59	1550584.72	763095.38	472619.173	232591.938	3.44	3.6	MW	MW0004I
61	1549331.17	763787.02	472237.089	232802.752	4.25	4.5	MW	MW0005I
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53	1548610.93	763683.37	472017.561	232771.158	5.95	6.1	MW	MW0007I
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15	1548657.02	760638.52	472031.608	231843.087	STAFFGAUGE#6
11	1549265.42	761629.21	472217.049	232145.050	STAFFGAUGE#7
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84	1550048.18	762852.43	472455.632	232517.888	STAFFGAUGE#9
69	1552860.61	761215.71	473312.864	232019.016	STAFFGAUGE#10

LEGEND

- 4.5 GROUND ELEVATION
- MONITORING WELL
- STAFF GAUGE

SURVEYOR'S NOTES:

1. THE SPECIFIC PURPOSE OF THIS SURVEY IS TO DETERMINE THE HORIZONTAL AND VERTICAL POSITION OF GROUNDWATER MONITORING WELLS AND THE INSTALLATION LOCATION OF STAFF GAUGES.
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SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT THE SURVEY DEPICTED HEREON IS TRUE AND MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS & MAPPERS IN CHAPTER 5J-17.051, FLORIDA FLORIDA STATUTES.

DAVID J. KUGELMANN P.L.S. NO. 5117
STATE OF FLORIDA
NOT VALID UNLESS SIGNED, DATED AND STAMPED WITH EMBOSSED SEAL

DAVID J. KUGELMANN
LICENSE NUMBER
5117
STATE OF FLORIDA
PROFESSIONAL LAND SURVEYOR

KUGELMANN LAND
SURVEYING, INC.
30 NORTH TROPICAL TRAIL
SUITE B
MERRITT ISLAND,
FLORIDA 32953
(321) 459-0930
L.B. NO. 6575

SIGNATURES	DATE
DRAWN: KKW	08/02/2022
CHECKED: MJF	08/02/2022
CHECKED:	
SURVEYOR: DJK	08/02/2022

REVISIONS	DATE

WELLS & STAFF GAUGES
@ FIRE STATION #2
KENNEDY SPACE CENTER
BREVARD COUNTY, FL

FIELD DATE: 08/02/2022	
FIELD BOOK: KSC340061-64	
DRAWING NO. V8_2022061.DGN	
PROJECT NO. 2022061	SHEET 1 OF 1

APPENDIX D

Photographic Log

Photo 1: S114-LB01

Photo 2: S114-LB02

Photo 3: S114-AS0005

Photo 4: S114-CS0001

Photo 5: S114-CS0002

Photo 6: S114-CS0003

Photo 7: S114-CS0004

Photo 8: S114-DPT1000

Photo 9: S114-DPT1001

Photo 10: S114-DPT1002

Photo 11: S114-DPT1003

Photo 12: S114-DPT1004

Photo 13: S114-DPT1005

Photo 14: S114-DPT1006

Photo 15: S114-DPT1007

Photo 16: S114-DPT1008

Photo 17: S114-DPT1009

Photo 18: S114-DPT1010

Photo 19: S114-DPT1011

Photo 20: S114-DPT1012

Photo 21: S114-DPT1013

Photo 22: S114-DPT1014

Photo 23: S114-DPT1015

Photo 24: S114-DPT1016

Photo 25: S114-DPT1017

Photo 26: S114-DPT1018

Photo 27: S114-DPT1019

Photo 28: S114-DPT1020

Photo 29: S114-DPT1021

Photo 30: S114-DPT1022

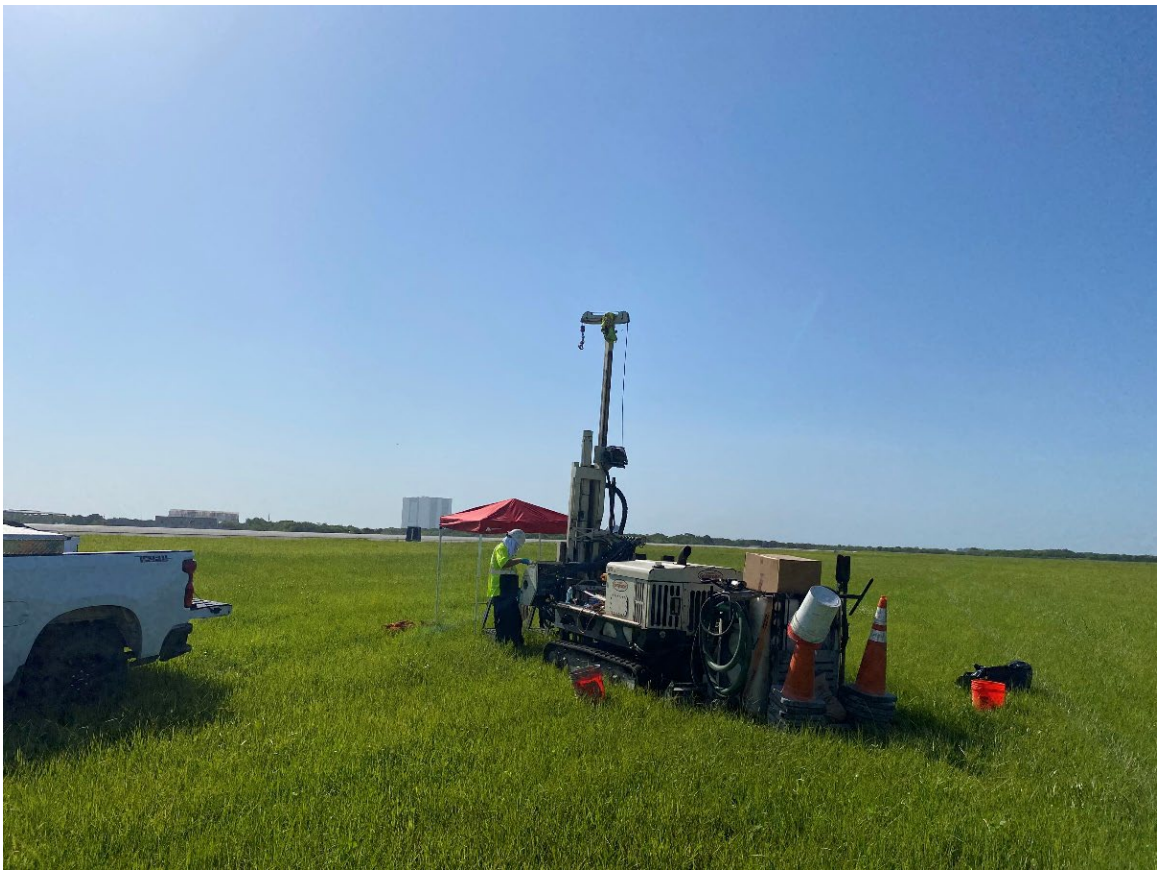

Photo 31: S114-DPT1023

Photo 32: S114-DPT1024

Photo 33: S114-DPT1025

Photo 34: S114-DPT1026

Photo 35: S114-SW0001

Photo 36: S114-SW0002

Photo 37: S114-SW0003

Photo 38: S114-SW0004

Photo 39: S114-SW0005

Photo 40: S114-SW0006

Photo 41: S114-SW0007

Photo 42: S114-SW0008

Photo 43: S114-SW0009

Photo 44: S114-SW0010

Photo 45: S114-SW0011

Photo 46: S114-SW0012

Photo 47: S114-SW0013

Photo 48: S114-SW0014

Photo 49: S114-SW0015

Photo 50: S114-SG01

Photo 51: S114-SG02

Photo 52: S114-SG03

Photo 53: S114-SG04

Photo 54: S114-SG05

Photo 55: S114-SG06

Photo 56: S114-SG07

Photo 57: S114-SG08

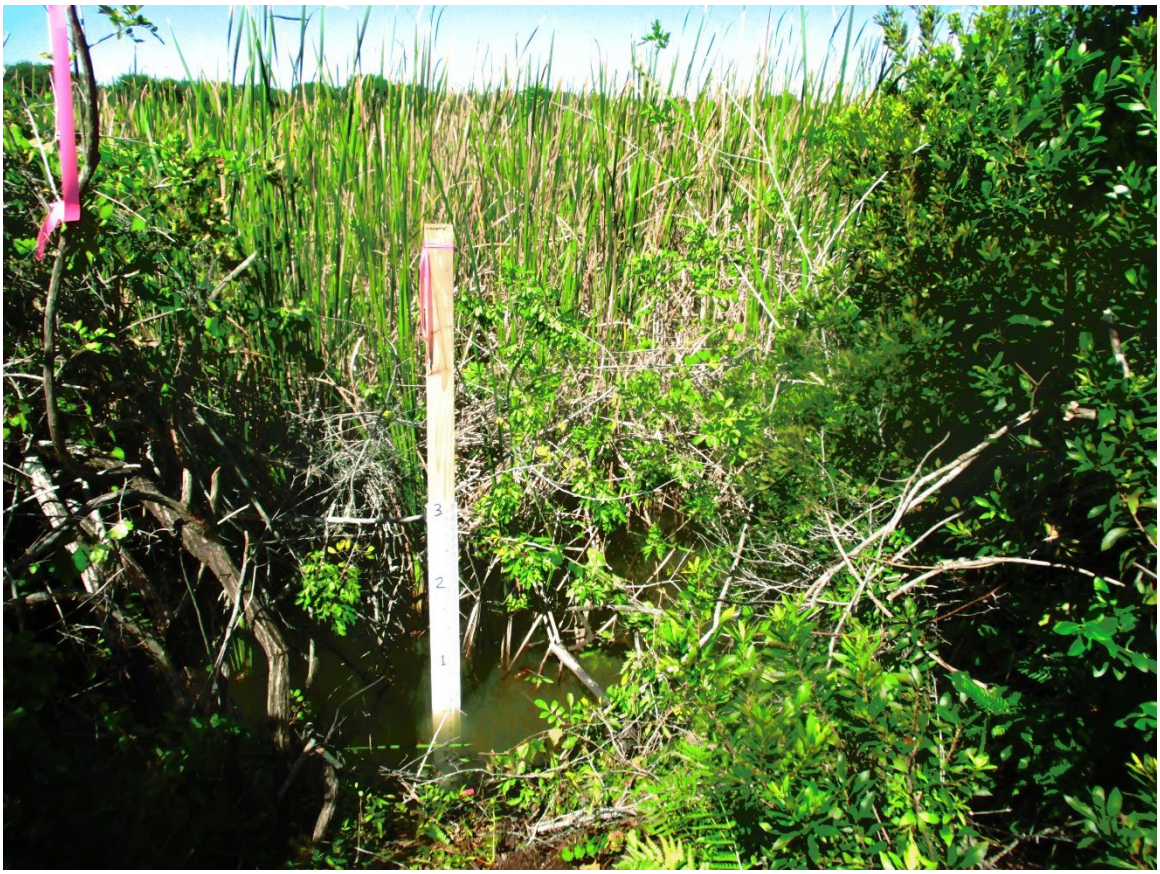

Photo 58: S114-SG09

Photo 59: S114-SG10

Photo 60: S114-MW0001S and MW0001I

Photo 61: S114-MW0002S and MW0002I

Photo 62: S114-MW0003S and MW0003I

Photo 63: S114-MW0004S and MW0004I

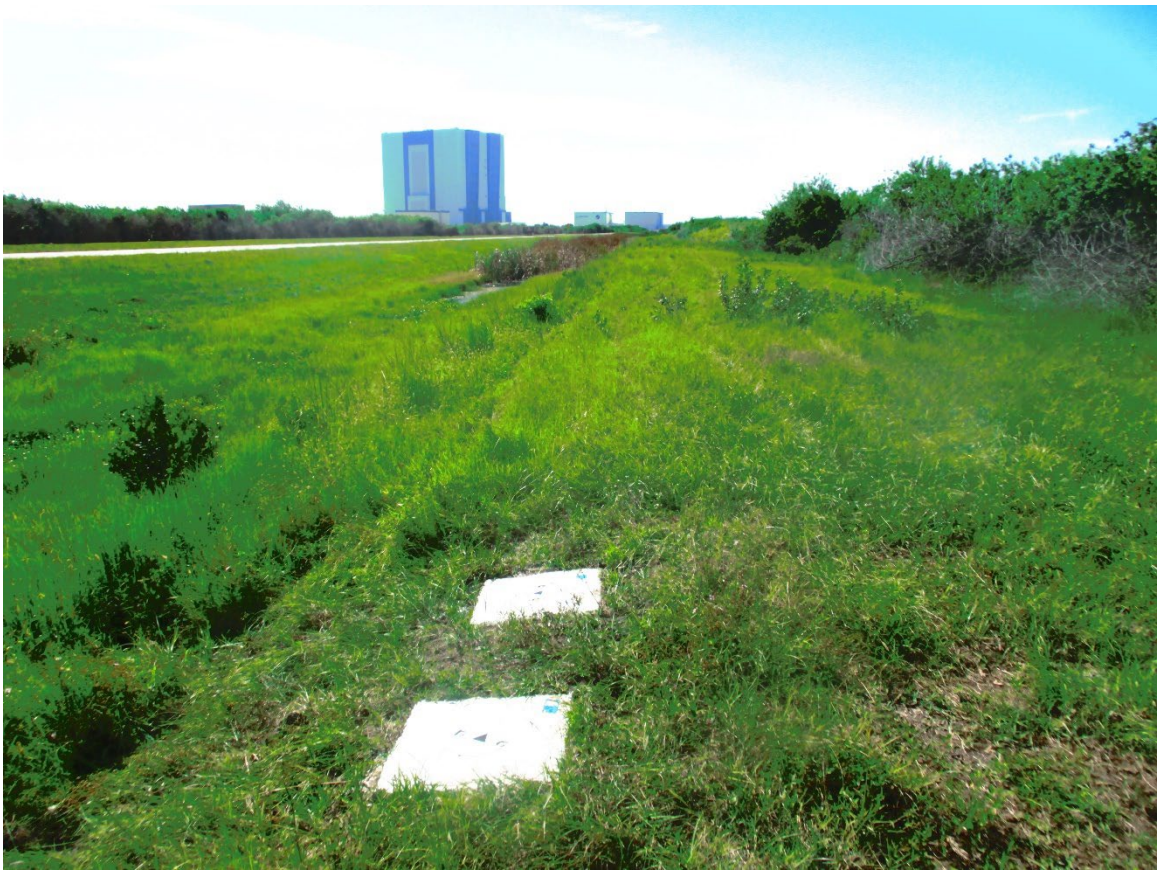

Photo 64: S114-MW0005S and MW0005I

Photo 65: S114-MW0006S and MW0006I

Photo 66: S114-MW0007S and MW0007I

Photo 67: S114-MW0008S and MW0008I

Photo 68: S114-MW0009S and MW0009I

Photo 69: S114-MW0010S and MW0010I

Photo 70: S114-MW00011S and MW00011I

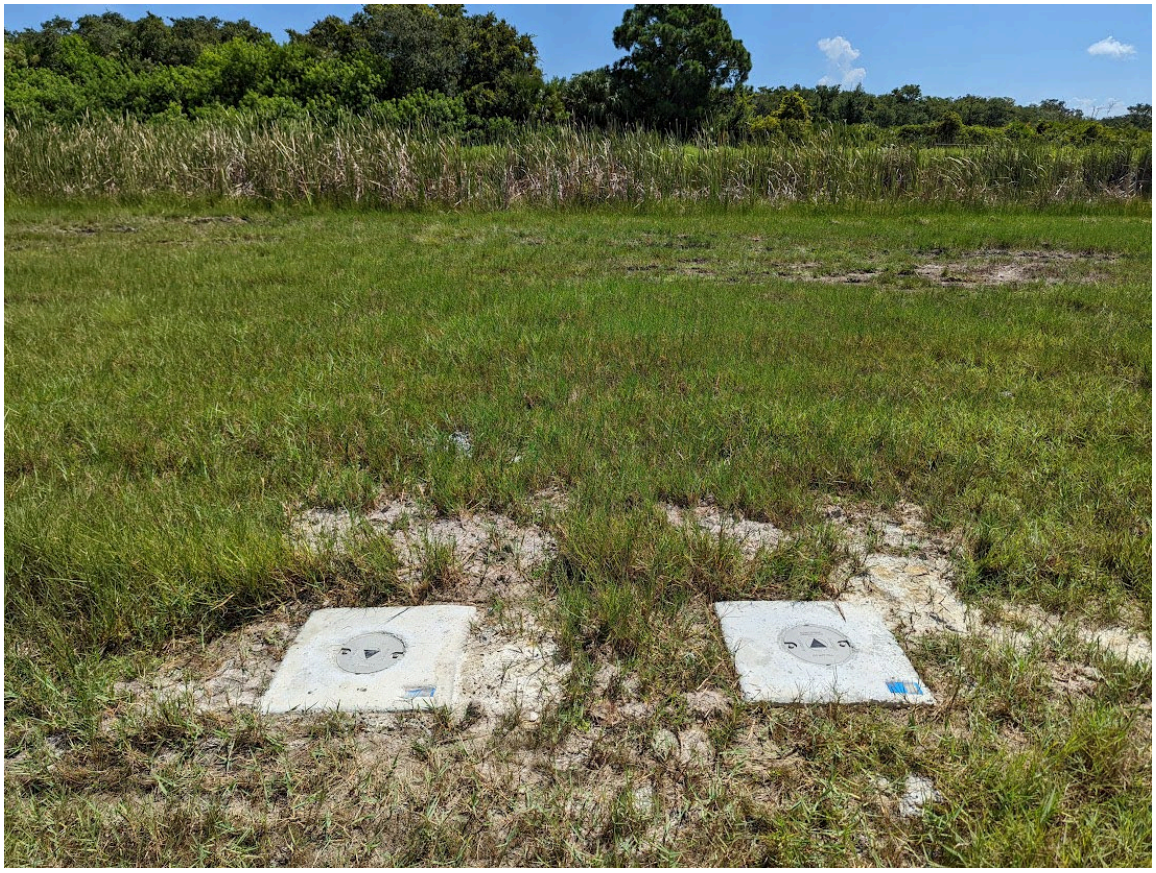

Photo 71: S114-MW0012S and MW0012I

Photo 72: S114-MW00013S and MW00013I

Photo 73: S114-MW00015S and MW00015I

Photo 74: S114-MW0016S and MW0016I

Photo 75: S114-MW00017S and MW00017I

Photo 76: S114-MW0018S and MW0018I

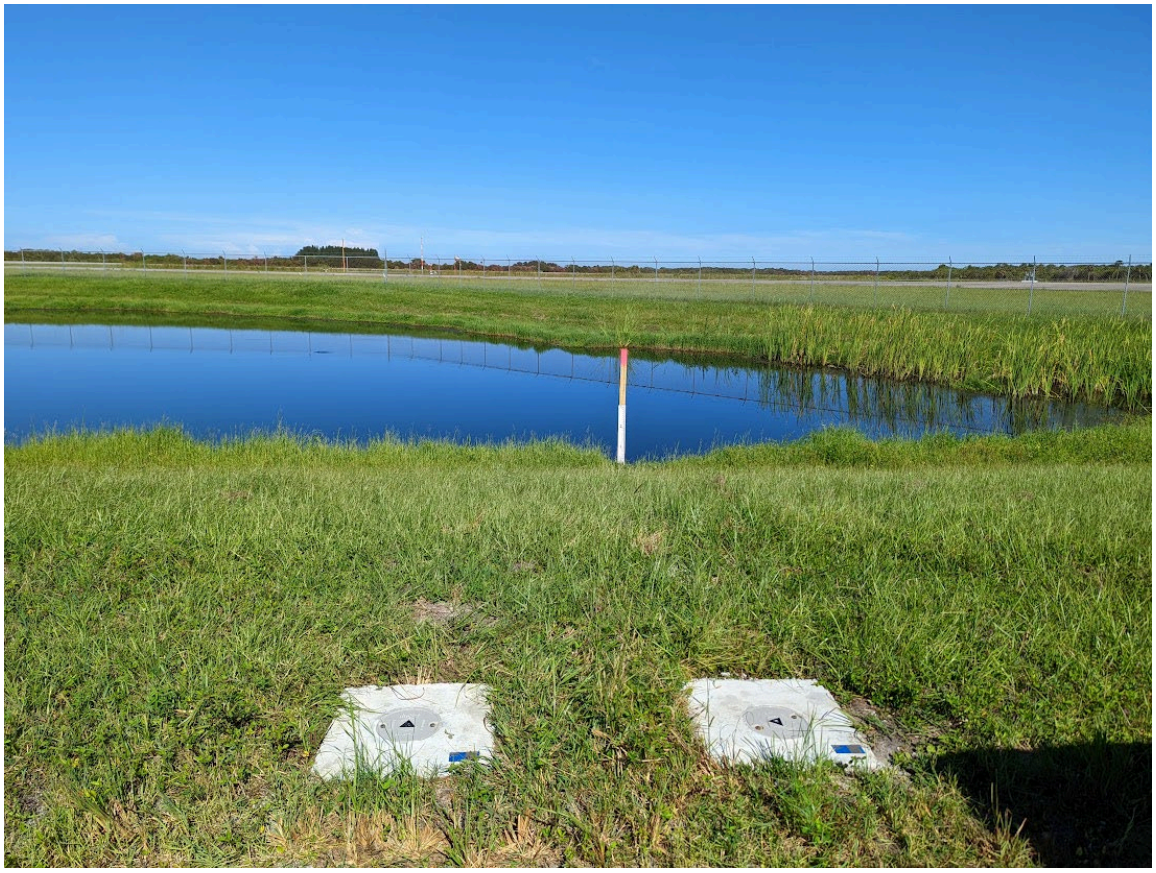

Photo 77: S114-MW00019S and MW00019I

Photo 78: S114-MW0020S and MW0020I

Photo 79: S114-LB01 5’ Soil Cores. 5’-10’ bls on bottom, 30’-35’ bls on top.

Photo 80: S114-LB01 5’ Soil Cores. 15’-20’ bls on bottom, 50’-55’ bls on top.

Photo 81: S114-LB01 5’ Soil Cores. 30’-35’ bls on bottom, 55’-60’ bls on top.

Photo 82: S114-LB02 5’ Soil Cores. 5’-10’ bls on right, 15’-20’ bls on left.

Photo 83: S114-LB02 5’ Soil Cores. 20’-25’ bls on right, 35’-40’ bls on left.

Photo 84: S114-LB02 5’ Soil Cores. 40’-45’ bls on right, 55’-60’ bls on left.

Photo 85: Advancing boring S114-LB02.

Photo 86: Grouted borehole S114-LB01.

Photo 87: Collecting concrete samples at S114-CS01.

Photo 88: Breaking the concrete samples up into more manageable pieces with deconned hammer.

Photo 89: Photo of drill rig stuck attempting to access location #11

Photo 90: Photo of DPT1008 during drilling activities.

Photo 91: Photo of drill crew pressure grouting DPT1001.

Photo 92: Surface Water Sampling

Photo 93: Monitoring Well Installation

Photo 94: Monitoring Well Development

Photo 95: Monitoring Well Surface Completion

APPENDIX E

Historical Analytical Results Tables

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0001		PFAS-DPT0001		PFAS-DPT0001		PFAS-DPT0001		PFAS-DPT0002		PFAS-DPT0002		PFAS-DPT0002		PFAS-DPT0002		PFAS-DPT0002	
Sample ID:			PFAS-DPT0001-010.0-20181029		PFAS-DPT0001-025.0-20181029		PFAS-DPT0001-035.0-20181029		PFAS-DPT0001-045.0-20181029		PFAS-DPT0002-010.0-20181029		PFAS-DPT0002-025.0-20181029		PFAS-DPT0002-025.0-20181029-D		PFAS-DPT0002-035.0-20181029		PFAS-DPT0002-045.0-20181029	
Depth Interval:			8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	20		22		12		0.87	U	3.9		9.5		10		25		0.89	U
PFHpA	N/A	ng/L	4.5		5.4		2.8		1.3	U	1.7	U	5.3	U	5.8	J+	5.7	J+	1.3	U
PFOA	6	ng/L	1.8	U	7.5	U	4.4	U	1.3	U	1.7	U	7.4	U	7.5	U	6.9	U	1.3	U
PFNA	6	ng/L	1.3	U	1.8	U	1.3	U	1.3	U	1.3	U	1.7	U	1.8	U	1.3	U	1.3	U
PFDA	N/A	ng/L	0.88	U	0.88	U	0.88	U	0.87	U	0.85	U	0.87	U	0.88	U	0.86	U	0.89	U
PFUnA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDoA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFTriA	N/A	ng/L	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.7	U
PFTeA	N/A	ng/L	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.6	U	2.7	U
PFBS	601	ng/L	16		20		6.3		0.87	U	17		9.3		7.4		33		0.89	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**43**		**120**		**40**		1.7	U	26		**86**		**77**		**92**		1.8	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	2.6	U	**31**		4.8	U	3.5	U	2.6	U	**94**		**92**		9.8	U	6.8	U
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0003		PFAS-DPT0003		PFAS-DPT0003		PFAS-DPT0003		PFAS-DPT0004		PFAS-DPT0004		PFAS-DPT0004		PFAS-DPT0004		PFAS-DPT0004	
Sample ID:			PFAS-DPT0003-010.0-20181029		PFAS-DPT0003-025.0-20181029		PFAS-DPT0003-035.0-20181029		PFAS-DPT0003-045.0-20181029		PFAS-DPT0004-010.0-20181029		PFAS-DPT0004-025.0-20181029		PFAS-DPT0004-025.0-20181029-D		PFAS-DPT0004-035.0-20181029		PFAS-DPT0004-045.0-20181029	
Depth Interval:			8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018		10/29/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	4900		8600		240		120		230		290		290		6.1		3.3	U
PFHpA	N/A	ng/L	1500		2600		57		27		13		47		45		1.7	U	1.7	U
PFOA	6	ng/L	**1300**		**4300**		**77**		38	U	2.5	U	**47**		44	U	2.2	U	1.7	U
PFNA	6	ng/L	**270**		**1300**		**22**		**12**		1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDA	N/A	ng/L	570		17	U	8.3		7.2		0.85	U	0.84	U	0.86	U	0.85	U	0.84	U
PFUnA	N/A	ng/L	13	U	13	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDoA	N/A	ng/L	13	U	13	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFTriA	N/A	ng/L	26	U	25	U	2.5	U	2.5	U	2.6	U	2.5	U	2.6	U	2.5	U	2.5	U
PFTeA	N/A	ng/L	26	U	25	U	2.5	U	2.5	U	2.6	U	2.5	U	2.6	U	2.5	U	2.5	U
PFBS	601	ng/L	**900**		**2700**		200		41		99		210		210		3.5		1.7	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**9000**		**28000**		**720**		**300**		**73**		**1100**		**1100**		14		5.1	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**43000**		**60000**		**3000**		**1900**		5.9	U	**110**		**110**		**27**		**22**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
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UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0005		PFAS-DPT0005		PFAS-DPT0005		PFAS-DPT0005		PFAS-DPT0005		PFAS-DPT0006		PFAS-DPT0006		PFAS-DPT0006		PFAS-DPT0006	
Sample ID:			PFAS-DPT0005-010.0-20181030		PFAS-DPT0005-025.0-20181030		PFAS-DPT0005-035.0-20181030		PFAS-DPT0005-035.0-20181030-D		PFAS-DPT0005-045.0-20181030		PFAS-DPT0006-010.0-20181030		PFAS-DPT0006-025.0-20181030		PFAS-DPT0006-035.0-20181030		PFAS-DPT0006-045.0-20181030	
Depth Interval:			8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018	
Sample Type:			Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	1.7	U	4.4	J+	2.3		1.9		0.9	U	2.1		1.7	U	4.9		1.7	U
PFHpA	N/A	ng/L	1.3	U	2.5	U	1.8	U	1.8	U	1.3	U	1.7	U	1.3	U	1.7	U	1.3	U
PFOA	6	ng/L	2.6	U	9.1	U	1.8	U	1.8	U	1.8	U	1.7	U	1.7	U	1.9	U	1.3	U
PFNA	6	ng/L	1.3	U	1.8	U	1.3	U	1.4	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDA	N/A	ng/L	0.87	U	0.88	U	0.9	U	0.9	U	0.9	U	0.87	U	0.84	U	0.87	U	0.86	U
PFUnA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.4	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDoA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.4	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFTriA	N/A	ng/L	2.6	U	2.6	U	2.7	U	2.7	U	2.7	U	2.6	U	2.5	U	2.6	U	2.6	U
PFTeA	N/A	ng/L	2.6	U	2.6	U	2.7	U	2.7	U	2.7	U	2.6	U	2.5	U	2.6	U	2.6	U
PFBS	601	ng/L	2.3		1.5	J	0.57	J	0.71	J	0.9	U	1.3	J	0.78	J	3.6		0.86	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	2.2		1.8	U	1.8	U	1.8	U	1.8	U	5.8		3.1		29		1.7	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	3.5	U	3.5	U	2.7	U	2.7	U	3.6	U	**24**		4.4	U	5.1	U	**12**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
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UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0008		PFAS-DPT0008		PFAS-DPT0008		PFAS-DPT0008		PFAS-DPT0010		PFAS-DPT0010		PFAS-DPT0010		PFAS-DPT0010		PFAS-DPT0012	
Sample ID:			PFAS-DPT0008-010.0-20181105		PFAS-DPT0008-025.0-20181105		PFAS-DPT0008-035.0-20181105		PFAS-DPT0008-045.0-20181105		PFAS-DPT0010-010.0-20181105		PFAS-DPT0010-025.0-20181105		PFAS-DPT0010-035.0-20181105		PFAS-DPT0010-045.0-20181105		PFAS-DPT0012-010.0-20181109	
Depth Interval:			8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs	
Sample Date:			11/5/2018		11/5/2018		11/5/2018		11/5/2018		11/5/2018		11/5/2018		11/5/2018		11/5/2018		11/9/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	27		62		5		0.89	U	94		140		1.4	J	6.7		13	
PFHpA	N/A	ng/L	14		16		1.3	U	1.3	U	12		17		1.4	U	0.98	J	3.5	
PFOA	6	ng/L	**18**		**32**	**J**	0.86	J	1.3	U	**24**		**32**	**J**	0.72	J	1.6	J	3.3	
PFNA	6	ng/L	**9.8**		5.7		1.3	U	1.3	U	1.8	J	0.6	J	1.4	U	1.4	U	0.75	J
PFDA	N/A	ng/L	0.87	U	0.98	U	0.86	U	0.89	U	0.98	U	0.82	U	0.93	U	0.92	U	0.92	U
PFUnA	N/A	ng/L	1.3	U	1.5	U	1.3	U	1.3	U	1.5	U	1.2	U	1.4	U	1.4	U	1.4	U
PFDoA	N/A	ng/L	1.3	U	1.5	U	1.3	U	1.3	U	1.5	U	1.2	U	1.4	U	1.4	U	1.4	U
PFTriA	N/A	ng/L	2.6	U	2.9	U	2.6	U	2.7	U	2.9	U	2.5	U	2.8	U	2.8	U	2.8	U
PFTeA	N/A	ng/L	2.6	U	2.9	U	2.6	U	2.7	U	2.9	U,J	2.5	U	2.8	U	2.8	U	2.8	U
PFBS	601	ng/L	11		25		4.4		0.89	U	91		100		1.3	J	8		1.8	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**180**		**490**		24		0.99	J	**1100**		**910**		14		**87**		12	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**190**		**1800**		**9.7**		3	J	**1400**		**120**		**7**		**18**		**59**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0012		PFAS-DPT0012		PFAS-DPT0012		PFAS-DPT0012		PFAS-DPT0013		PFAS-DPT0013		PFAS-DPT0013		PFAS-DPT0013		PFAS-DPT0013	
Sample ID:			PFAS-DPT0012-025.0-20181109		PFAS-DPT0012-035.0-20181109		PFAS-DPT0012-045.0-20181109		PFAS-DPT0012-045.0-20181109-D		PFAS-DPT0013-012.0-20181106		PFAS-DPT0013-025.0-20181106		PFAS-DPT0013-025.0-20181106-D		PFAS-DPT0013-035.0-20181106		PFAS-DPT0013-045.0-20181106	
Depth Interval:			23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		43 - 47 ft bgs		10 - 14 ft bgs		23 - 27 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs	
Sample Date:			11/9/2018		11/9/2018		11/9/2018		11/9/2018		11/6/2018		11/6/2018		11/6/2018		11/6/2018		11/6/2018	
Sample Type:			Normal		Normal		Normal		Duplicate		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	11		0.79	J	0.93	U	0.86	U	0.98	U	0.97	U	0.95	U	4.6	J	0.96	U
PFHpA	N/A	ng/L	5.5		1.4	U	1.4	U	1.3	U	1.5	U	1.5	U	1.4	U	1.4	J	1.4	U
PFOA	6	ng/L	7		0.53	J	1.4	U	1.3	U	1.5	U	1.5	U	1.4	U	2.6	J	1.4	U
PFNA	6	ng/L	1.5	U	1.4	U	1.4	U	1.3	U	1.5	U	1.5	U	1.4	U	1.5	U	1.4	U
PFDA	N/A	ng/L	0.98	U	0.92	U	0.93	U	0.86	U	0.98	U	0.97	U	0.95	U	1	U	0.96	U
PFUnA	N/A	ng/L	1.5	U	1.4	U	1.4	U	1.3	U	1.5	U	1.5	U	1.4	U	1.5	U	1.4	U
PFDoA	N/A	ng/L	1.5	U	1.4	U	1.4	U	1.3	U	1.5	U	1.5	U	1.4	U,J	1.5	U	1.4	U
PFTriA	N/A	ng/L	2.9	U	2.8	U	2.8	U	2.6	U	2.9	U	2.9	U	2.8	U	3	U	2.9	U
PFTeA	N/A	ng/L	2.9	U	2.8	U	2.8	U,J	2.6	U	2.9	U,J	2.9	U,J	2.8	U,J	3	U,J	2.9	U,J
PFBS	601	ng/L	3.3		0.92	U	0.93	U	0.86	U	0.53	J	0.97	U	0.95	U	1.7	J	0.96	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	16		1.8	U	1.9	U	1.7	U	1.7	J	0.61	J	0.53	J	13	J	0.64	J
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	3.9	U	2.8	U	2.8	U	2.6	U	1.3	J	2.9	U	1.7	J	3.6	J	2.6	J
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0014		PFAS-DPT0014		PFAS-DPT0014		PFAS-DPT0015		PFAS-DPT0015		PFAS-DPT0015		PFAS-DPT0015		PFAS-DPT0016		PFAS-DPT0016	
Sample ID:			PFAS-DPT0014-012.0-20181106		PFAS-DPT0014-025.0-20181106		PFAS-DPT0014-035.0-20181106		PFAS-DPT0015-010.0-20181106		PFAS-DPT0015-025.0-20181106		PFAS-DPT0015-035.0-20181106		PFAS-DPT0015-045.0-20181106		PFAS-DPT0016-010.0-20181102		PFAS-DPT0016-025.0-20181102	
Depth Interval:			10 - 14 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs	
Sample Date:			11/6/2018		11/6/2018		11/6/2018		11/6/2018		11/6/2018		11/6/2018		11/6/2018		11/2/2018		11/2/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	0.98	U	1	U	5.9	J	4.3	J	0.97	U	0.96	U	0.95	U	0.97	U	3.6	
PFHpA	N/A	ng/L	1.5	U	1.5	U	2.6	J	1.2	J	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U
PFOA	6	ng/L	1.5	U	0.96	J	5.6	J	2.9	J	1.5	U	1.4	U	1.4	U	1.9	U	2	U
PFNA	6	ng/L	1.5	U	1.5	U	1.4	J	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U
PFDA	N/A	ng/L	0.98	U	1	U	0.96	U	0.94	U	0.97	U	0.96	U	0.95	U	0.97	U	1	U
PFUnA	N/A	ng/L	1.5	U	1.5	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U
PFDoA	N/A	ng/L	1.5	U	1.5	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U	1.5	U	1.5	U,J
PFTriA	N/A	ng/L	2.9	U	3	U	2.9	U	2.8	U	2.9	U	2.9	U	2.8	U	2.9	U	3	U
PFTeA	N/A	ng/L	2.9	U	3	U	2.9	U	2.8	U,J	2.9	U,J	2.9	U,J	2.8	U,J	2.9	U,J	3	U,J
PFBS	601	ng/L	0.98	U	1	U	1.8	J	1.9	J	0.97	U	0.96	U	0.95	U	0.84	J	2.3	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	0.53	J	2.7	J	14	J	5.5	J	0.48	J	0.41	J	0.55	J	1.8	J	38	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	1.8	J	1.1	J	**12**	**J**	2.8	U	**5.3**	**J**	2.9	U	2.4	J	2.9	U	3.2	J
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0016		PFAS-DPT0016		PFAS-DPT0017		PFAS-DPT0017		PFAS-DPT0017		PFAS-DPT0017		PFAS-DPT0017		PFAS-DPT0018		PFAS-DPT0018	
Sample ID:			PFAS-DPT0016-035.0-20181102		PFAS-DPT0016-045.0-20181102		PFAS-DPT0017-010.0-20181102		PFAS-DPT0017-025.0-20181102		PFAS-DPT0017-035.0-20181102		PFAS-DPT0017-035.0-20181102-D		PFAS-DPT0017-045.0-20181102		PFAS-DPT0018-010.0-20181109		PFAS-DPT0018-025.0-20181109	
Depth Interval:			33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs	
Sample Date:			11/2/2018		11/2/2018		11/2/2018		11/2/2018		11/2/2018		11/2/2018		11/2/2018		11/9/2018		11/9/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	80		5.8		13		31		10		10		1.7	J	2.6		19	
PFHpA	N/A	ng/L	11		0.86	J	2.5		4.3		1.2	J	1.2	J	1.5	U	0.81	J	13	
PFOA	6	ng/L	**19**		1.9	U	5.7		**8**		2.8		3.1		1.9	U	1.6	J	**13**	
PFNA	6	ng/L	1.5	U	1.5	U	1.3	J	1.5	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U
PFDA	N/A	ng/L	0.98	U	0.97	U	1	U	0.99	U	0.96	U	0.96	U	0.97	U	0.93	U	0.96	U
PFUnA	N/A	ng/L	1.5	U	1.5	U	1.5	U	1.5	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U
PFDoA	N/A	ng/L	1.5	U	1.5	U	1.5	U	1.5	U	1.4	U	1.4	U	1.5	U	1.4	U	1.4	U
PFTriA	N/A	ng/L	3	U	2.9	U	3	U	3	U	2.9	U	2.9	U	2.9	U	2.8	U	2.9	U
PFTeA	N/A	ng/L	3	U	2.9	U,J	3	U,J	3	U,J	2.9	U,J	2.9	U,J	2.9	U	2.8	U,J	2.9	U
PFBS	601	ng/L	67		4.5		5.5		25		7.1		7.8		0.49	J	0.87	J	7	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**410**		22		**110**		**200**		**49**		**51**		7.4		6.9		**63**	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**15**		**4.6**		**750**		**90**		**24**		**22**		**48**		**45**		**9.2**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
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N/A = not established
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RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0018		PFAS-DPT0018		PFAS-DPT0019		PFAS-DPT0019		PFAS-DPT0019		PFAS-DPT0019		PFAS-DPT0020		PFAS-DPT0020		PFAS-DPT0020	
Sample ID:			PFAS-DPT0018-035.0-20181109		PFAS-DPT0018-045.0-20181109		PFAS-DPT0019-010.0-20190321		PFAS-DPT0019-025.0-20190321		PFAS-DPT0019-035.0-20190321		PFAS-DPT0019-045.0-20190321		PFAS-DPT0020-010.0-20181101		PFAS-DPT0020-025.0-20181101		PFAS-DPT0020-025.0-20181101-D	
Depth Interval:			33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		23 - 27 ft bgs	
Sample Date:			11/9/2018		11/9/2018		3/21/2019		3/21/2019		3/21/2019		3/21/2019		11/1/2018		11/1/2018		11/1/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Duplicate	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	0.91	U	0.94	U	0.93	U	650		5.5		7.6		31		0.81	J	0.59	J
PFHpA	N/A	ng/L	1.4	U	1.4	U	1.4	U	78		1.4	U	1.3	U	12		1.4	U	1.4	U
PFOA	6	ng/L	0.61	J	1.4	U	1.4	U	**160**		1.2	J	1.6	J	**50**		1.9	U	1.9	U
PFNA	6	ng/L	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U	1.6	J	1.4	U	1.4	U
PFDA	N/A	ng/L	0.91	U	0.94	U	0.93	U	0.93	U	0.92	U	0.9	U	1	U	0.96	U	0.94	U
PFUnA	N/A	ng/L	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U	1.5	U	1.4	U	1.4	U
PFDoA	N/A	ng/L	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.3	U	1.5	U	1.4	U	1.4	U
PFTriA	N/A	ng/L	2.7	U	2.8	U	2.8	U	2.8	U	2.8	U	2.7	U	3	U	2.9	U	2.8	U
PFTeA	N/A	ng/L	2.7	U	2.8	U	2.8	U	2.8	U	2.8	U	2.7	U	3	U,J	2.9	U,J	2.8	U,J
PFBS	601	ng/L	0.91	U	0.94	U	0.93	U	**1100**		11		16		5.2		0.96	U	0.94	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	0.91	U	0.94	U	2.1		**3000**		29		38		**42**		1	J	0.93	J
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	2.7	U	2.8	U	3.7	U	**990**		**17**		**23**		**28**		**4.6**		**4.7**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
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10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0020		PFAS-DPT0020		PFAS-DPT0021		PFAS-DPT0021		PFAS-DPT0021		PFAS-DPT0021		PFAS-DPT0022		PFAS-DPT0022		PFAS-DPT0022	
Sample ID:			PFAS-DPT0020-035.0-20181101		PFAS-DPT0020-045.0-20181101		PFAS-DPT0021-010.0-20181030		PFAS-DPT0021-025.0-20181030		PFAS-DPT0021-035.0-20181030		PFAS-DPT0021-045.0-20181030		PFAS-DPT0022-010.0-20181030		PFAS-DPT0022-025.0-20181030		PFAS-DPT0022-035.0-20181030	
Depth Interval:			33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs	
Sample Date:			11/1/2018		11/1/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	0.96	U	1.1	J	59		120		94		1.8	U	680		8.4		8.7	
PFHpA	N/A	ng/L	1.4	U	1.5	U	15		43		18		1.8	U	180		1.8	U	1.7	U
PFOA	6	ng/L	1.9	U	1.9	U	**35**		**85**		30	U	1.9	U	42	U	2.2	U	1.9	U
PFNA	6	ng/L	1.4	U	1.5	U	4.7	U	1.3	U	1.7	U	1.3	U	3.4		1.3	U	1.3	U
PFDA	N/A	ng/L	0.96	U	0.97	U	1	U	0.89	U	1.8	U	1.8	U	0.84	U	0.88	U	0.86	U
PFUnA	N/A	ng/L	1.4	U	1.5	U	1.5	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDoA	N/A	ng/L	1.4	U	1.5	U	1.5	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFTriA	N/A	ng/L	2.9	U	2.9	U	3	U	2.7	U	2.7	U	2.7	U	2.5	U	2.6	U	2.6	U
PFTeA	N/A	ng/L	2.9	U,J	2.9	U,J	3	U	2.7	U	2.7	U	2.7	U	2.5	U	2.6	U	2.6	U
PFBS	601	ng/L	0.96	U	0.97	U	11		46		92		1.7	J	260		8.3		7.5	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	0.85	J	1.3	J	**350**		**3300**		**1000**		15		**1200**		**46**		**44**	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	1.7	J	**8.7**		**720**		**87**		**50**		9.8	U	**150**		8	U	**8.9**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
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UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0022		PFAS-DPT0023		PFAS-DPT0023		PFAS-DPT0023		PFAS-DPT0023		PFAS-DPT0024		PFAS-DPT0024		PFAS-DPT0024		PFAS-DPT0024	
Sample ID:			PFAS-DPT0022-045.0-20181030		PFAS-DPT0023-010.0-20181030		PFAS-DPT0023-025.0-20181030		PFAS-DPT0023-035.0-20181030		PFAS-DPT0023-045.0-20181030		PFAS-DPT0024-010.0-20181030		PFAS-DPT0024-010.0-20181030-D		PFAS-DPT0024-025.0-20181030		PFAS-DPT0024-035.0-20181030	
Depth Interval:			43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs	
Sample Date:			10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018		10/30/2018	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	2.2		0.89	U	2.1		0.53	U	2.3		1.7	U	1.7	U	3.4		6.2	
PFHpA	N/A	ng/L	1.7	U	1.3	U	1.7	U	1.3	U	2.2		1.7	U	1.7	U	1.7	U	1.7	U
PFOA	6	ng/L	1.7	U	1.8	U	2.3	U	1.8	U	4.4	U	7.8	U	5.8	U	1.7	U	1.8	U
PFNA	6	ng/L	1.3	U	1.3	U	1.7	U	1.3	U	1.3	U	1.7	U	1.7	U	1.3	U	1.3	U
PFDA	N/A	ng/L	1.7	U	1.8	U	0.87	U	0.88	U	0.89	U	0.84	U	0.84	U	0.84	U	0.85	U
PFUnA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.8	U	1.8	U	1.3	U	1.3	U	1.3	U	1.3	U
PFDoA	N/A	ng/L	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U	1.3	U
PFTriA	N/A	ng/L	2.6	U	2.7	U	2.6	U	2.6	U	2.7	U	2.5	U	2.5	U	2.5	U	2.5	U
PFTeA	N/A	ng/L	2.6	U	2.7	U	2.6	U	2.6	U	2.7	U	2.5	U	2.5	U	2.5	U	2.5	U
PFBS	601	ng/L	0.82	J	0.54	J	0.91	J	0.59	J	1.1	J	1.7		1.7		2.3		4.4	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	3.1		1.8	U	1.7	U	0.88	U	3.3		1.7	U	1.7	U	1.7	U	31	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**67**		3.6	U	3.5	U	2.6	U	2.7	U	3.4	U	3.3	U	2.5	U	**8.2**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
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10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0024		PFAS-DPT0076		PFAS-DPT0076		PFAS-DPT0076		PFAS-DPT0076		PFAS-DPT0076		PFAS-DPT0088		PFAS-DPT0088		PFAS-DPT0088	
Sample ID:			PFAS-DPT0024-045.0-20181030		PFAS-DPT0076-010.0-20190329		PFAS-DPT0076-010.0-20190329-D		PFAS-DPT0076-025.0-20190329		PFAS-DPT0076-035.0-20190329		PFAS-DPT0076-045.0-20190329		PFAS-DPT0088-010.0-20181217		PFAS-DPT0088-025.0-20181217		PFAS-DPT0088-035.0-20181217	
Depth Interval:			43 - 47 ft bgs		8 - 12 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs	
Sample Date:			10/30/2018		3/29/2019		3/29/2019		3/29/2019		3/29/2019		3/29/2019		12/17/2018		12/17/2018		12/17/2018	
Sample Type:			Normal		Normal		Duplicate		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	1.9	U	0.92	U	1.9	U	0.93	U	0.93	U	0.93	U	12		1.4	J	10	
PFHpA	N/A	ng/L	1.2	J	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	4.3		1.4	U	2.8	
PFOA	6	ng/L	1.2	U	1.4	U	0.7	J	1.4	U	1.4	U	1.4	U	1.8		0.74	J	4.6	
PFNA	6	ng/L	1.2	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
PFDA	N/A	ng/L	0.83	U	0.92	U	0.93	U	0.93	U	0.93	U	0.93	U	0.91	U	0.95	U	0.9	U
PFUnA	N/A	ng/L	1.2	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
PFDoA	N/A	ng/L	1.2	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U	1.4	U
PFTriA	N/A	ng/L	2.5	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.7	U	2.9	U	2.7	U
PFTeA	N/A	ng/L	2.5	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U	2.7	U	2.9	U	2.7	U
PFBS	601	ng/L	1.4	J	0.92	U	0.48	J	1.9		0.93	U	0.93	U	74		2.1		4.6	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	7.8		2.3		2		3.2		0.37	J	0.59	J	**120**		5.1		31	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	2.5	U	2.8	U	2.8	U	2.8	U	2.8	U	2.8	U	**59**		1.3	J	2.5	J
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0088		PFAS-DPT0100		PFAS-DPT0100		PFAS-DPT0100		PFAS-DPT0100		PFAS-DPT0127		PFAS-DPT0127		PFAS-DPT0127		PFAS-DPT0127	
Sample ID:			PFAS-DPT0088-045.0-20181217		PFAS-DPT0100-010.0-20190322		PFAS-DPT0100-025.0-20190322		PFAS-DPT0100-035.0-20190322		PFAS-DPT0100-045.0-20190322		PFAS-DPT0127-010.0-20190322		PFAS-DPT0127-025.0-20190322		PFAS-DPT0127-025.0-20190322-D		PFAS-DPT0127-035.0-20190322	
Depth Interval:			43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs		43 - 47 ft bgs		8 - 12 ft bgs		23 - 27 ft bgs		23 - 27 ft bgs		33 - 37 ft bgs	
Sample Date:			12/17/2018		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019		3/22/2019	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	5.9		0.97	U	1	U	18		3.9		3.1		2.3		2.3		1	U
PFHpA	N/A	ng/L	1.2	J	1.5	U	1.5	U	3.7		1.1	J	1.5	U	1.5	U	1.5	U	1.5	U
PFOA	6	ng/L	3.6		1.5	U	1.5	U	5.6		4.2		0.96	J	0.76	J	0.74	J	1.5	U
PFNA	6	ng/L	1.5	U	1.5	U	1.5	U	1.5	U	2.4	U	1.5	U	1.5	U	1.5	U	1.5	U
PFDA	N/A	ng/L	1	U	0.97	U	1	U	1	U	1.6	U	0.98	U	1	U	1	U	1	U
PFUnA	N/A	ng/L	1.5	U	1.5	U	1.5	U	1.5	U	2.4	U	1.5	U	1.5	U	1.5	U	1.5	U
PFDoA	N/A	ng/L	1.5	U	1.5	U	1.5	U	1.5	U	2.4	U	1.5	U	1.5	U	1.5	U	1.5	U
PFTriA	N/A	ng/L	3.1	U	2.9	U	3	U	3.1	U	4.9	U	2.9	U	3.1	U	3	U	3.1	U
PFTeA	N/A	ng/L	3.1	U	2.9	U	3	U	3.1	U	4.9	U	2.9	U	3.1	U	3	U	3.1	U
PFBS	601	ng/L	3.6		1.2	J	2.8		10		1.7	J	0.97	J	0.7	J	0.63	J	1	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	14		8.3		13		**85**		24		2.4		2	U	2	U	1	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**5.4**		**8.2**		**120**		**25**		**50**		3.9	U	3.1	U	4	U	3.1	U
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
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RSL = Regional Screening Level
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10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0127		PFAS-DPT0146		PFAS-DPT0146		PFAS-DPT0146		PFAS-DPT0146		PFAS-DPT0147		PFAS-DPT0147		PFAS-DPT0147		PFAS-DPT0147	
Sample ID:			PFAS-DPT0127-045.0-20190322		PFAS-DPT0146-008.0-20210105		PFAS-DPT0146-023.0-20210105		PFAS-DPT0146-035.0-20210105		PFAS-DPT0146-045.0-20210105		PFAS-DPT0147-008.0-20210105		PFAS-DPT0147-023.0-20210105		PFAS-DPT0147-033.0-20210105		PFAS-DPT0147-043.0-20210106	
Depth Interval:			43 - 47 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs	
Sample Date:			3/22/2019		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/6/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	1.1	U	5.9		2.2	I	9.3		4	U	4.2	U	2.7	I	37.7		4.2	U
PFHpA	N/A	ng/L	1.6	U	4.9	I	4.2	U	3.2	I	4	U	4.2	U	4.2	U	8.4		4.2	U
PFOA	6	ng/L	1.6	U	**14.6**		2.7	I	**7.2**		4	U	4.2	U	4.2	U	**7.3**		4.2	U
PFNA	6	ng/L	1.6	U	5.6	U	4.2	U	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFDA	N/A	ng/L	1.1	U	5.6	U	3.2	I	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFUnA	N/A	ng/L	1.6	U	5.6	U	4.2	U	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFDoA	N/A	ng/L	1.6	U	5.6	U	4.2	U	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFTriA	N/A	ng/L	3.2	U	5.6	U	4.2	U	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFTeA	N/A	ng/L	3.2	U	5.6	U	4.2	U	4.2	U	4	U	4.2	U	4.2	U	6.3	U	4.2	U
PFBS	601	ng/L	1.1	U	5.6	U	4.2	U	16		4	U	4.2	U	5		45.4		4.2	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	1.1	U	3.1	I	4.2	U	**116**		4	U	7.2		22.5		**464**		4.2	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	3.2	U	**110**		**34.5**		**6.1**		4	U	3.5	I	**4.2**		**35.4**		4.2	U
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
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10x RSL < PFAS <= 100x RSL
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1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0148		PFAS-DPT0148		PFAS-DPT0148		PFAS-DPT0148		PFAS-DPT0148		PFAS-DPT0149		PFAS-DPT0149		PFAS-DPT0149		PFAS-DPT0149	
Sample ID:			PFAS-DPT0148-008.0-20210106		PFAS-DPT0148-023.0-20210106		PFAS-DPT0148-033.0-20210106		PFAS-DPT0148-043.0-20210106		PFAS-DPT0148-043.0-20210106-DUP		PFAS-DPT0149-008.0-20210106		PFAS-DPT0149-023.0-20210106		PFAS-DPT0149-033.0-20210106		PFAS-DPT0149-043.0-20210106	
Depth Interval:			6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs	
Sample Date:			1/6/2021		1/6/2021		1/6/2021		1/6/2021		1/6/2021		1/6/2021		1/6/2021		1/6/2021		1/6/2021	
Sample Type:			Normal		Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	3.1	I	5	U	4	U	5.2	U	2.1	I	5	U	3.8	I	2.4	I	4.8	U
PFHpA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFOA	6	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFNA	6	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFDA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFUnA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFDoA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFTriA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFTeA	N/A	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFBS	601	ng/L	4.2	U	5	U	4	U	5.2	U	4	U	5	U	4	U	4	U	4.8	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	2.4	I	2.8	I	2.4	I	7.5		7.4		3.4	I	2.3	I	4	U	4.8	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**12.6**		**12.3**		**16.5**		5.2	U	4	U	2.6	I	4	U	4	U	4.8	U
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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ng/L = nanograms per liter
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RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0157		PFAS-DPT0157		PFAS-DPT0157		PFAS-DPT0157		PFAS-DPT0157		PFAS-DPT0158		PFAS-DPT0158		PFAS-DPT0158		PFAS-DPT0158	
Sample ID:			PFAS-DPT0157-008.0-20210112		PFAS-DPT0157-008.0-20210112-DUP		PFAS-DPT0157-023.0-20210112		PFAS-DPT0157-033.0-20210112		PFAS-DPT0157-043.0-20210112		PFAS-DPT0158-008.0-20210112		PFAS-DPT0158-023.0-20210112		PFAS-DPT0158-033.0-20210112		PFAS-DPT0158-043.0-20210112	
Depth Interval:			6 - 10 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs	
Sample Date:			1/12/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021	
Sample Type:			Normal		Duplicate		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	292		297		154		12.2		4.2	U	4	U	4	U	4	U	4	U
PFHpA	N/A	ng/L	134		135		37.1		4.5		4.2	U	4	U	4	U	4	U	4	U
PFOA	6	ng/L	**47.6**		**46.6**		**210**		3.5	I	4.2	U	4	U	4	U	4	U	4	U
PFNA	6	ng/L	**7.7**		**8.2**		**9.7**		4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFDA	N/A	ng/L	4.2	U	4.2	U	4.5	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	4.2	U	4.2	U	4.5	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	4.2	U	4.2	U	4.5	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	4.2	U	4.2	U	4.5	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	4.2	U	4.2	U	4.5	U	4.5	U	4.2	U	4	U	4	U	4	U	4	U
PFBS	601	ng/L	31.5		31.2		133		7.4		4.2	U	5.1		4	U	4	U	4	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**741**		**700**		**4090**		37.9		4.2	U	4	U	4	U	4	U	4	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**2900**		**3050**		**4190**		**33.5**		**10.5**		4	U	4	U	4	U	4	U
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0159		PFAS-DPT0159		PFAS-DPT0159		PFAS-DPT0159		PFAS-DPT0160		PFAS-DPT0160		PFAS-DPT0160		PFAS-DPT0160		PFAS-DPT0161	
Sample ID:			PFAS-DPT0159-023.0-20210113		PFAS-DPT0159-033.0-20210113		PFAS-DPT0159-043.0-20210113		PFAS-DPT0159-043.0-20210113-DUP		PFAS-DPT0160-008.0-20210113		PFAS-DPT0160-023.0-20210113		PFAS-DPT0160-033.0-20210113		PFAS-DPT0160-043.0-20210113		PFAS-DPT0161-023.0-20210113	
Depth Interval:			21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		21 - 25 ft bgs	
Sample Date:			1/13/2021		1/13/2021		1/13/2021		1/13/2021		1/13/2021		1/13/2021		1/13/2021		1/13/2021		1/13/2021	
Sample Type:			Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	4.2	I	27.9		4	U	4	U	15.7		16.5		8.4		4	U	19.9	
PFHpA	N/A	ng/L	7.6	U	8		4	U	4	U	6	I	5.8		3.6	I	4	U	8.6	
PFOA	6	ng/L	7.6	U	**9.2**		4	U	4	U	**6.2**	**I**	**8.5**		2.4	I	4	U	**9.9**	
PFNA	6	ng/L	7.6	U	4	U	4	U	4	U	7.6	U	4.4	U	4	U	4	U	3.3	I
PFDA	N/A	ng/L	7.6	U	4	U	4	U	4	U	7.6	U	4.4	U	4	U	4	U	4	U
PFUnA	N/A	ng/L	7.6	U	4	U	4	U	4	U	38	U	4.4	U	4	U	4	U	4	U
PFDoA	N/A	ng/L	7.6	U	4	U	4	U	4	U	38	U	4.4	U	4	U	4	U	4	U
PFTriA	N/A	ng/L	7.6	U	4	U	4	U	20	U	38	U	22	U	4	U	4	U	4	U
PFTeA	N/A	ng/L	7.6	U	4	U	4	U	20	U	7.6	U	22	U	4	U	4	U	4	U
PFBS	601	ng/L	7.6	U	40.2		4	U	4	U	24.3		4.4		4		4	U	6.1	
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	16.5		**224**		4.1		3.8	I	**41.6**		**76.5**		19.1		4	U	**86.3**	
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	7.6	U	**36.5**		3.7	I	2.3	I	**11.3**		4.4	U	2.2	I	4	U	**110**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
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RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0161		PFAS-DPT0161		PFAS-DPT0221		PFAS-DPT0221		PFAS-DPT0221		PFAS-DPT0221		PFAS-DPT0222		PFAS-DPT0222		PFAS-DPT0222	
Sample ID:			PFAS-DPT0161-033.0-20210113		PFAS-DPT0161-043.0-20210113		PFAS-DPT0221-008.0-20210818		PFAS-DPT0221-023.0-20210818		PFAS-DPT0221-033.0-20210818		PFAS-DPT0221-043.0-20210818		PFAS-DPT0222-008.0-20210818		PFAS-DPT0222-023.0-20210818		PFAS-DPT0222-033.0-20210818	
Depth Interval:			31 - 35 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs		41 - 45 ft bgs		6 - 10 ft bgs		21 - 25 ft bgs		31 - 35 ft bgs	
Sample Date:			1/13/2021		1/13/2021		8/18/2021		8/18/2021		8/18/2021		8/18/2021		8/18/2021		8/18/2021		8/18/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	16.9		4	U	4	U	36.4		4	U	4	U	14.2		4.4	U	4	U
PFHpA	N/A	ng/L	9.6		4	U	4	U	12.3		4	U	4	U	4	U	4.4	U	4	U
PFOA	6	ng/L	**9.5**		4	U	**6.3**		**26.2**		4	U	4	U	2.3	I	4.4	U	4	U
PFNA	6	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFDA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFTeA	N/A	ng/L	4	U	4	U	4	U	4	U	4	U	4	U	4	U	4.4	U	4	U
PFBS	601	ng/L	5.9		4	U	4	U	37.6		4	U	4	U	61.1		4.4	U	4	U
PFPeS	N/A	ng/L																		
PFHxS	39	ng/L	**51.7**		4	U	13.3		**450**		4	U	4	U	33.5		4.4	U	4	U
PFHpS	N/A	ng/L																		
PFOS	4	ng/L	**17.3**		4	U	**216**		**486**		**22**		**5.9**		**6.8**		4.4	U	3.8	I
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L					8	U	8	U	8	U	8	U	8	U	8.7	U	8	U
NEtFOSAA	N/A	ng/L					8	U	8	U	8	U	8	U	8	U	8.7	U	8	U
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	6	ng/L																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-1
SWMU 114
Historical Groundwater Analytical Results

DPT Sample Location:			PFAS-DPT0222		PFAS-DPT0222	
Sample ID:			PFAS-DPT0222-033.0-20210818-D		PFAS-DPT0222-043.0-20210818	
Depth Interval:			31 - 35 ft bgs		41 - 45 ft bgs	
Sample Date:			8/18/2021		8/18/2021	
Sample Type:			Duplicate		Normal	
Acronym	RSL [1]	Units	Results		Results	
PFBA	N/A	ng/L				
PFPeA	N/A	ng/L				
PFHxA	N/A	ng/L	4	U	4	U
PFHpA	N/A	ng/L	4	U	4	U
PFOA	6	ng/L	4	U	4	U
PFNA	6	ng/L	4	U	4	U
PFDA	N/A	ng/L	4	U	4	U
PFUnA	N/A	ng/L	4	U	4	U
PFDoA	N/A	ng/L	4	U	4	U
PFTriA	N/A	ng/L	4	U	4	U
PFTeA	N/A	ng/L	4	U	4	U
PFBS	601	ng/L	4	U	4	U
PFPeS	N/A	ng/L				
PFHxS	39	ng/L	4	U	4	U
PFHpS	N/A	ng/L				
PFOS	4	ng/L	3.1	I	4	U
PFNS	N/A	ng/L				
PFDS	N/A	ng/L				
PFOSA	N/A	ng/L				
NMeFOSAA	N/A	ng/L	8	U	8	U
NEtFOSAA	N/A	ng/L	8	U	8	U
4:2 FTS	N/A	ng/L				
6:2 FTS	N/A	ng/L				
8:2 FTS	N/A	ng/L				
GenX	6	ng/L				

Notes:
(1): EPA, 2022. Regional Screening Level Resident Tapwater Table (TR=1E-06, HQ=0.1)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-2
SWMU 114
Historical Surface Water Analytical Results

Sample Location:			PFAS-SW0011		PFAS-SW0012		PFAS-SW0013		PFAS-SW0014		PFAS-SW0014		PFAS-SW0015		PFAS-SW0016		PFAS-SW0017		PFAS-SW0018	
Sample ID:			PFAS-SW0011-20190312		PFAS-SW0012-20190312		PFAS-SW0013-20190312		PFAS-SW0014-20190312		PFAS-SW0014-20190312-D		PFAS-SW0015-20190312		PFAS-SW0016-20190312		PFAS-SW0017-20190312		PFAS-SW0018-20190312	
Sample Date:			3/12/2019		3/12/2019		3/12/2019		3/12/2019		3/12/2019		3/12/2019		3/12/2019		3/12/2019		3/12/2019	
Sample Type:			Normal		Normal		Normal		Normal		Duplicate		Normal		Normal		Normal		Normal	
Acronym	SW SL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	400		140		50		74		71		20		55		50		9	
PFHpA	N/A	ng/L	100	J	47		22		27		26		3.9		20		18		6.2	
PFOA	500	ng/L	80		27		12		19		18		7.8		16		16		12	
PFNA	N/A	ng/L	11		5.8		2.9		3.6		3.7		0.97	J	3.1		3.1		4.9	
PFDA	N/A	ng/L	4.2		2.2		0.55	J	0.67	J	0.74	J	0.96	U	0.98	U	1	U	0.69	J
PFUnA	N/A	ng/L	1.5	J	0.9	J	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U	1.4	U
PFDoA	N/A	ng/L	0.65	J	1.5	U	1.4	U	1.4	U	1.4	U	1.4	U	1.5	U	1.5	U	1.4	U
PFTriA	N/A	ng/L	2.8	U	3	U	2.8	U	2.8	U	2.8	U	2.9	U	2.9	U	3	U	2.8	U
PFTeA	N/A	ng/L	2.8	U,J	3	U,J	2.8	U	2.8	U,J	2.8	U,J	2.8	U,J	2.9	U,J	3	U,J	2.8	U,J
PFBS	N/A	ng/L	140	J	48		19		30		30		8.9		30		23		5.7	
PFPeS	N/A	ng/L																		
PFHxS	N/A	ng/L	1000		350		150		310		320		210		310		330		34	
PFHpS	N/A	ng/L																		
PFOS	10	ng/L	**2100**		**950**		**230**		**480**		**490**		**560**		**450**		**530**		**160**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	N/A	ng/L																		

Notes:
(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
SW SL = Surface Water Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SW SL < PFAS <= 10x SW SL
10x SW SL < PFAS <= 100x SW SL
100x SW SL < PFAS <= 1000x SW SL
1000x SW SL < PFAS

Table E-2
SWMU 114
Historical Surface Water Analytical Results

Sample Location:			PFAS-SW0019		PFAS-SW0020		PFAS-SW0034		PFAS-SW0035		PFAS-SW0036		PFAS-SW0061		PFAS-SW0061		PFAS-SW0062		PFAS-SW0063	
Sample ID:			PFAS-SW0019-20190312		PFAS-SW0020-20190312		PFAS-SW0034-20190315		PFAS-SW0035-20190315		PFAS-SW0036-20190315		PFAS-SW0061-001.0-20200924		PFAS-SW0061-001.0-20200924-DUP		PFAS-SW0062-001.0-20200924		PFAS-SW0063-001.0-20200924	
Sample Date:			3/12/2019		3/12/2019		3/15/2019		3/15/2019		3/15/2019		9/24/2020		9/24/2020		9/24/2020		9/24/2020	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	SW SL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	9.5		8.4		44		52		8.3		24.2		24.9		8.5		8.2	
PFHpA	N/A	ng/L	5.7		4.8		19		22		5.3		6.2		6.1		3.6	J	3.9	
PFOA	500	ng/L	8.2		4.5		9.7		11		7.5		6		5.5		3.6	J	3.4	J
PFNA	N/A	ng/L	2.8		0.71	J	5.4		2.5		4.8		3.8	U	3.8	U	3.8	U	3.8	U
PFDA	N/A	ng/L	0.95	U	0.95	U	4.8		0.58	J	1.5	J	3.8	U	3.8	U	3.8	U	3.8	U
PFUnA	N/A	ng/L	1.4	U	1.4	U	1.8	J	1.4	U	1.4	U	3.8	U	3.8	U	3.8	U	3.8	U
PFDoA	N/A	ng/L	1.4	U	1.4	U	0.96	J	1.4	U	1.4	U	3.8	U	3.8	U	3.8	U	3.8	U
PFTriA	N/A	ng/L	2.9	U	2.8	U	2.8	U	2.8	U	2.8	U	3.8	U	3.8	U	3.8	U	3.8	U
PFTeA	N/A	ng/L	2.9	U,J	2.8	U,J	2.8	U,J	2.8	U,J	2.8	U,J	3.8	U	3.8	U	3.8	U	3.8	U
PFBS	N/A	ng/L	5.7		5.7		17		20		4.6		34.8		32.9		11.2		11.4	
PFPeS	N/A	ng/L																		
PFHxS	N/A	ng/L	19		19		120		140		23		204		206		60.7		50	
PFHpS	N/A	ng/L																		
PFOS	10	ng/L	**26**		**18**		**530**		**230**		**230**		**54.2**		**49**		**89.4**		**61**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L																		
NEtFOSAA	N/A	ng/L																		
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	N/A	ng/L																		

Notes:
(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
SW SL = Surface Water Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SW SL < PFAS <= 10x SW SL
10x SW SL < PFAS <= 100x SW SL
100x SW SL < PFAS <= 1000x SW SL
1000x SW SL < PFAS

Table E-2
SWMU 114
Historical Surface Water Analytical Results

Sample Location:			PFAS-SW0064		PFAS-SW0065		PFAS-SW0065		PFAS-SW0077		PFAS-SW0077		PFAS-SW0184		PFAS-SW0184		PFAS-SW0199		PFAS-SW0200	
Sample ID:			PFAS-SW0064-001.0-20201001		PFAS-SW0065-001.0-20201001		PFAS-SW0065-001.0-20201001-DUP		PFAS-SW0077-001.0-20201001		PFAS-SW0077-001.0-20210128		PFAS-SW0184-001.0-20210804		PFAS-SW0184-001.0-20210804-D		PFAS-SW0199-001.0-20211108		PFAS-SW0200-001.0-20211108	
Sample Date:			10/1/2020		10/1/2020		10/1/2020		10/1/2020		1/28/2021		8/4/2021		8/4/2021		11/8/2021		11/8/2021	
Sample Type:			Normal		Normal		Duplicate		Normal		Normal		Normal		Duplicate		Normal		Normal	
Acronym	SW SL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	ng/L																		
PFPeA	N/A	ng/L																		
PFHxA	N/A	ng/L	16		23.1		24.5		13.1		13.8		20.5		19.3		4.7		18.4	
PFHpA	N/A	ng/L	6.4		8.5		9.3		5.5		5.9		9.3		9		3	I	3.9	J
PFOA	500	ng/L	4.9		5.3		6.1		3.3	J	3.9	J	5.8		5.3	J	3	I	9	
PFNA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFDA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFUnA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFDoA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFTriA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFTeA	N/A	ng/L	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U	5.2	U	6	U	4	U	4	U
PFBS	N/A	ng/L	13.2		13.3		13.4		11.5		10.3		11.7		11.7		4.4		14.7	
PFPeS	N/A	ng/L																		
PFHxS	N/A	ng/L	64.5		75.5		82.1		43.8		50.9		72.6		71.3		19.1		321	
PFHpS	N/A	ng/L																		
PFOS	10	ng/L	**133**		**76.1**		**79.1**		**49.7**		**59.2**		**80.3**		**78.9**		**30.1**		**774**	
PFNS	N/A	ng/L																		
PFDS	N/A	ng/L																		
PFOSA	N/A	ng/L																		
NMeFOSAA	N/A	ng/L															8	U	8	U
NEtFOSAA	N/A	ng/L															8	U	8	U
4:2 FTS	N/A	ng/L																		
6:2 FTS	N/A	ng/L																		
8:2 FTS	N/A	ng/L																		
GenX	N/A	ng/L																		

Notes:
(1): FDEP, 2020. Surface Water Screening Levels for PFOA and PFOS Based on the Protection of Human Health Using Probabilistic Risk Assessment.
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
ng/L = nanograms per liter
SW SL = Surface Water Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

SW SL < PFAS <= 10x SW SL
10x SW SL < PFAS <= 100x SW SL
100x SW SL < PFAS <= 1000x SW SL
1000x SW SL < PFAS

Table E-3
SWMU 114
Historical Soil Analytical Results

Sample Location:			PFAS-SB0001		PFAS-SB0001		PFAS-SB0002		PFAS-SB0002		PFAS-SB0003		PFAS-SB0003		PFAS-SB0004		PFAS-SB0004		PFAS-SB0005	
Sample ID:			PFAS-SB0001-000.5-20210105		PFAS-SB0001-002.0-20210105		PFAS-SB0002-000.5-20210105		PFAS-SB0002-002.0-20210105		PFAS-SB0003-000.5-20210105		PFAS-SB0003-002.0-20210105		PFAS-SB0004-000.5-20210105		PFAS-SB0004-002.0-20210105		PFAS-SB0005-000.5-20210105	
Depth Interval:			0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs	
Sample Date:			1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021		1/5/2021	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	mg/kg																		
PFPeA	N/A	mg/kg																		
PFHxA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00062	U	0.00051	U	0.00055	U
PFHpA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00062	U	0.00051	U	0.00055	U
PFOA	0.19	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00042	I	0.00051	U	0.00055	U
PFNA	0.19	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00062	U	0.00051	U	0.00055	U
PFDA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00058	I	0.00051	U	0.00055	U
PFUnA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00043	I	0.00051	U	0.00055	U
PFDoA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.0019		0.00037	I	0.00055	U
PFTriA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00041	I	0.00051	U	0.00055	U
PFTeA	N/A	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00096		0.00051	U	0.00055	U
PFBS	19	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00062	U	0.00051	U	0.00055	U
PFPeS	N/A	mg/kg																		
PFHxS	1.3	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.00062	U	0.00051	U	0.00055	U
PFHpS	N/A	mg/kg																		
PFOS	0.13	mg/kg	0.00051	U	0.00048	U	0.00047	U	0.00046	U	0.0005	U	0.00053	U	0.0069		0.00084		0.0019	
PFNS	N/A	mg/kg																		
PFDS	N/A	mg/kg																		
PFOSA	N/A	mg/kg																		
NMeFOSAA	N/A	mg/kg																		
NEtFOSAA	N/A	mg/kg																		
4:2 FTS	N/A	mg/kg																		
6:2 FTS	N/A	mg/kg																		
8:2 FTS	N/A	mg/kg																		
GenX	0.23	mg/kg																		

Notes:
(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=1.0)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
mg/kg = milligrams per kilogram
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-3
SWMU 114
Historical Soil Analytical Results

Sample Location:			PFAS-SB0005		PFAS-SB0006		PFAS-SB0006		PFAS-SB0020		PFAS-SB0020		PFAS-SB0021		PFAS-SB0021		SE-1		SE-1	
Sample ID:			PFAS-SB0005-002.0-20210105		PFAS-SB0006-000.5-20210105		PFAS-SB0006-002.0-20210105		PFAS-SB0020-000.5-20210112		PFAS-SB0020-002.0-20210112		PFAS-SB0021-000.5-20210112		PFAS-SB0021-002.0-20210112		2008991-2in-SE-1		2008991-2in-SE-Dupe	
Depth Interval:			0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.5 ft bgs		0.5 - 2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs	
Sample Date:			1/5/2021		1/5/2021		1/5/2021		1/12/2021		1/12/2021		1/12/2021		1/12/2021		3/26/2020		3/26/2020	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Duplicate	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	mg/kg																		
PFPeA	N/A	mg/kg																		
PFHxA	N/A	mg/kg	0.00052	U	0.0047		0.00037	I	0.002		0.008		0.0031		0.0011		0.0054	Q	0.0045	
PFHpA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.002		0.0036		0.0017		0.00043	I	0.0017	Q	0.0014	
PFOA	0.19	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.0013		0.0042		0.0027		0.00055	I	0.00048	U Q	0.00019	I
PFNA	0.19	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.00098		0.00041	I	0.0024		0.00062	U	0.00039	U Q	0.00021	I
PFDA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.004		0.00057	U	0.0022		0.00062	U	0.00051	I Q	0.00058	
PFUnA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.0054		0.00057	U	0.0023		0.00062	U	0.00063	I Q	0.00065	
PFDoA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.0027		0.00057	U	0.0022		0.00062	U	0.00056	I Q	0.00047	
PFTriA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.00085		0.00057	U	0.00094		0.00062	U	0.00048	U Q J	0.0002	I
PFTeA	N/A	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.00067		0.00057	U	0.00077	I	0.00062	U	0.00053	U Q	0.00025	I
PFBS	19	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.0006	U	0.0027		0.00057	I	0.00038	I	0.00029	U Q	0.000059	U
PFPeS	N/A	mg/kg																		
PFHxS	1.3	mg/kg	0.00052	U	0.00051	U	0.00052	U	0.0048		0.0559		0.0163		0.0042		0.0011	I J3	0.00075	
PFHpS	N/A	mg/kg																		
PFOS	0.13	mg/kg	0.00035	I	0.0072		0.021		0.0666		0.0513		**0.893**		0.0957		0.032	J3	0.019	L
PFNS	N/A	mg/kg																		
PFDS	N/A	mg/kg																		
PFOSA	N/A	mg/kg																		
NMeFOSAA	N/A	mg/kg																		
NEtFOSAA	N/A	mg/kg																		
4:2 FTS	N/A	mg/kg																		
6:2 FTS	N/A	mg/kg																		
8:2 FTS	N/A	mg/kg																		
GenX	0.23	mg/kg															0.00053	U Q	0.00011	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=1.0)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
mg/kg = milligrams per kilogram
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-3
SWMU 114
Historical Soil Analytical Results

Sample Location:			SE-2		SE-3		SE-4		SE-5		SE-6		SE-7		NW-1		NW-1		NW-2	
Sample ID:			2008991-2in-SE-2		2008991-2in-SE-3		2008991-2in-SE-4		2008991-2in-SE-5		2008991-2in-SE-6		2008991-2in-SE-7		2008991-2IN-NW-1		2008991-2IN-NW-Dupe		2008991-2IN-NW-2	
Depth Interval:			0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs	
Sample Date:			3/26/2020		3/26/2020		3/26/2020		3/26/2020		3/26/2020		3/26/2020		3/30/2020		3/30/2020		3/30/2020	
Sample Type:			Normal		Normal		Normal		Normal		Normal		Normal		Normal		Duplicate		Normal	
Acronym	RSL [1]	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	N/A	mg/kg																		
PFPeA	N/A	mg/kg																		
PFHxA	N/A	mg/kg	0.051	Q	0.18		0.04	L	0.039	L	0.064	L	0.019		0.066	J3	0.06		0.049	L
PFHpA	N/A	mg/kg	0.0044	Q	0.013		0.0037		0.0039		0.0058		0.0035		0.0062	J3	0.0066		0.0033	
PFOA	0.19	mg/kg	0.0024		0.0025	U	0.0006		0.0017		0.00028	I	0.00035		0.0015	I	0.002	I	0.0017	
PFNA	0.19	mg/kg	0.0026		0.002	U	0.00081		0.0018		0.00057		0.00029	I	0.0014	I	0.0016	I	0.0017	
PFDA	N/A	mg/kg	0.0014	I Q	0.0037	I	0.0029		0.0022		0.0026		0.00094		0.0073	J3	0.007		0.0042	
PFUnA	N/A	mg/kg	0.0022	Q	0.0073	I	0.0045		0.0022		0.0026		0.00084		0.0064		0.0079		0.004	
PFDoA	N/A	mg/kg	0.0038	Q	0.014		0.0036		0.0024		0.0029		0.0011		0.016	J3	0.017		0.005	
PFTriA	N/A	mg/kg	0.0016	Q	0.0082		0.0019		0.0013		0.00094		0.00049		0.0055	J3	0.0059		0.0019	
PFTeA	N/A	mg/kg	0.0017	I Q	0.0089	I	0.0016		0.0016		0.00095		0.00099		0.0076	J3	0.0086		0.0023	
PFBS	19	mg/kg	0.0019	I	0.0015	U	0.00045		0.00083		0.00007	U	0.000072	I	0.00061	U	0.00062	U	0.0002	I
PFPeS	N/A	mg/kg																		
PFHxS	1.3	mg/kg	0.0054	Q	0.014		0.015	I	0.047	L	0.0028	J C	0.0015		0.0053	J3	0.0059		0.0067	J
PFHpS	N/A	mg/kg																		
PFOS	0.13	mg/kg	0.076	Q	**0.25**		**0.46**		**0.44**	**L**	0.03	L	0.017		0.089	J3	0.1		0.11	L
PFNS	N/A	mg/kg																		
PFDS	N/A	mg/kg																		
PFOSA	N/A	mg/kg																		
NMeFOSAA	N/A	mg/kg																		
NEtFOSAA	N/A	mg/kg																		
4:2 FTS	N/A	mg/kg																		
6:2 FTS	N/A	mg/kg																		
8:2 FTS	N/A	mg/kg																		
GenX	0.23	mg/kg	0.0022		0.0028	U	0.00012	U	0.00013	U	0.00013	U	0.00012	U	0.0011	U	0.0012	U	0.00011	U

Notes:
(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=1.0)
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
N/A = not established
mg/kg = milligrams per kilogram
RSL = Regional Screening Level
U = The analyte was not detected and is reported at the laboratory limit of detection.
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RSL < PFAS <= 10x RSL
10x RSL < PFAS <= 100x RSL
100x RSL < PFAS <= 1000x RSL
1000x RSL < PFAS

Table E-3
SWMU 114
Historical Soil Analytical Results

Sample Location:			NW-3		NW-4		NW-5		NW-6		NW-7	
Sample ID:			2008991-2IN-NW-3		2008991-2IN-NW-4		2008991-2IN-NW-5		2008991-2IN-NW-6		2008991-2IN-NW-7	
Depth Interval:			0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs		0 - 0.2 ft bgs	
Sample Date:			3/30/2020		3/30/2020		3/30/2020		3/30/2020		3/30/2020	
Sample Type:			Normal		Normal		Normal		Normal		Normal	
Acronym	RSL [(1)]	Units	Results		Results		Results		Results		Results	
PFBA	N/A	mg/kg										
PFPeA	N/A	mg/kg										
PFHxA	N/A	mg/kg	0.038	L	0.25	L	0.12		0.031		0.046	
PFHpA	N/A	mg/kg	0.0019		0.023		0.0062		0.0024		0.0022	
PFOA	0.19	mg/kg	0.00038		0.00093	U	0.00094	U	0.0009		0.00022	I
PFNA	0.19	mg/kg	0.00022	I	0.00075	U	0.00076	U	0.0004		0.00025	I
PFDA	N/A	mg/kg	0.0023		0.0012	I	0.0011	I	0.0023		0.00093	
PFUnA	N/A	mg/kg	0.0036		0.0021	I	0.0021	I	0.0036		0.0014	
PFDoA	N/A	mg/kg	0.0042		0.0025	I	0.002	I	0.0066		0.0015	
PFTriA	N/A	mg/kg	0.0013		0.00093	U	0.00094	U	0.0025		0.00057	
PFTeA	N/A	mg/kg	0.0016		0.001	U	0.0011	I	0.0025		0.00061	
PFBS	19	mg/kg	0.000086	I	0.00055	U	0.00056	U	0.0015		0.000058	U J
PFPeS	N/A	mg/kg										
PFHxS	1.3	mg/kg	0.0031	J	0.0044	I J C	0.0046	J	0.013		0.0021	J
PFHpS	N/A	mg/kg										
PFOS	0.13	mg/kg	0.026		0.015		0.018		0.1		0.018	
PFNS	N/A	mg/kg										
PFDS	N/A	mg/kg										
PFOSA	N/A	mg/kg										
NMeFOSAA	N/A	mg/kg										
NEtFOSAA	N/A	mg/kg										
4:2 FTS	N/A	mg/kg										
6:2 FTS	N/A	mg/kg										
8:2 FTS	N/A	mg/kg										
GenX	0.23	mg/kg	0.00011	U	0.001	U	0.001	U	0.00011	U	0.00011	U

Notes:

(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=1.0)

J = The analyte was positively identified, and the associated numerical value is the approximate concentration.

N/A = not established

mg/kg = milligrams per kilogram

RSL = Regional Screening Level

U = The analyte was not detected and is reported at the laboratory limit of detection.

UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.

RSL < PFAS <= 10x RSL

10x RSL < PFAS <= 100x RSL

100x RSL < PFAS <= 1000x RSL

1000x RSL < PFAS

SWMU 114
Soil Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Location with Maximum Concentration	RSL [(1)]	Number of Detections Exceeding RSL
Carboxylates	PFBA	0	0	No Detections	No Detections	No Detections	N/A	
	PFPeA	0	0	No Detections	No Detections	No Detections	N/A	
	PFHxA	32	22	0.00037	0.25	NW-4	N/A	
	PFHpA	32	20	0.00043	0.023	NW-4	N/A	
	PFOA	32	18	0.00019	0.0042	PFAS-SB0020	0.19	0
	PFNA	32	16	0.00021	0.0026	SE-2	0.19	0
	PFDA	32	19	0.00051	0.0073	NW-1	N/A	
	PFUnA	32	19	0.00043	0.0079	NW-1	N/A	
	PFDoA	32	20	0.00037	0.017	NW-1	N/A	
	PFTriA	32	17	0.0002	0.0082	SE-3	N/A	
	PFTeA	32	18	0.00025	0.0089	SE-3	N/A	
Sulfonates	PFBS	32	12	0.000058	0.0027	PFAS-SB0020	19	0
	PFPeS	0	0	No Detections	No Detections	No Detections	N/A	
	PFHxS	32	20	0.00075	0.0559	PFAS-SB0020	1.3	0
	PFHpS	0	0	No Detections	No Detections	No Detections	N/A	
	PFOS	32	26	0.00035	0.893	PFAS-SB0021	0.13	4
	PFNS	0	0	No Detections	No Detections	No Detections	N/A	
	PFDS	0	0	No Detections	No Detections	No Detections	N/A	
Precursors / Fluorotelomers	PFOSA	0	0	No Detections	No Detections	No Detections	N/A	
	NMeFOSAA	0	0	No Detections	No Detections	No Detections	N/A	
	NEtFOSAA	0	0	No Detections	No Detections	No Detections	N/A	
	4:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	6:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	8:2 FTS	0	0	No Detections	No Detections	No Detections	N/A	
	GenX	16	2	0.00053	0.0022	SE-2	0.23	0

Notes:

(1): EPA, 2022. Regional Screening Level Resident Soil Table (TR=1E-06, HQ=0.1)

mg/kg = milligrams per kilogram

RSL = Regional Screening Level

N/A = not established

Table E-4
SWMU 114
Historical Sediment Analytical Results

Sample Location:		PFAS-SD0043		PFAS-SD0044		PFAS-SD0045		PFAS-SD0046		PFAS-SD0047		PFAS-SD0048		PFAS-SD0049		PFAS-SD0050		PFAS-SD0051	
Sample ID:		PFAS-SD0043-001.0-20200924		PFAS-SD0044-001.0-20200924		PFAS-SD0045-001.0-20200924		PFAS-SD0046-001.0-20200924		PFAS-SD0047-001.0-20201001		PFAS-SD0048-001.0-20200922		PFAS-SD0049-001.0-20200922		PFAS-SD0050-001.0-20200922		PFAS-SD0051-001.0-20200922	
Depth Interval:		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs	
Sample Date:		9/24/2020		9/24/2020		9/24/2020		9/24/2020		10/1/2020		9/22/2020		9/22/2020		9/22/2020		9/22/2020	
Sample Type:		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	Units	Results		Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	mg/kg																		
PFPeA	mg/kg																		
PFHxA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFHpA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFOA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFNA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFDA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFUnA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFDoA	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFTriA	mg/kg	0.003	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFTeA	mg/kg	0.003	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFBS	mg/kg	0.0015	U	0.00078	U	0.0011	U	0.0007	U	0.00058	U	0.0014	U	0.005	U	0.0018	U	0.00063	U
PFPeS	mg/kg																		
PFHxS	mg/kg	0.0044		0.00078	U	0.0008	I	0.00051	I	0.00046	I	0.0014	U	0.0104		0.0027		0.00063	U
PFHpS	mg/kg																		
PFOS	mg/kg	0.0145		0.0009		0.0063		0.0047		0.0017		0.0138		0.156		0.0772		0.0008	
PFNS	mg/kg																		
PFDS	mg/kg																		
PFOSA	mg/kg																		
NMeFOSAA	mg/kg																		
NEtFOSAA	mg/kg																		
4:2 FTS	mg/kg																		
6:2 FTS	mg/kg																		
8:2 FTS	mg/kg																		
GenX	mg/kg																		

Notes:
J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
mg/kg = milligrams per kilogram

Table E-4
SWMU 114
Historical Sediment Analytical Results

Sample Location:		PFAS-SD0052		PFAS-SD0052		PFAS-SD0053		PFAS-SD0072		PFAS-SD0073		PFAS-SD0074		PFAS-SD0075		PFAS-SD0086	
Sample ID:		PFAS-SD0052-001.0-20200922		PFAS-SD0052-001.0-20200922-DUP		PFAS-SD0053-001.0-20201001		PFAS-SD0072-001.0-20200924		PFAS-SD0073-001.0-20200924		PFAS-SD0074-001.0-20200924		PFAS-SD0075-001.0-20200924		PFAS-SD0086-001.0-20201001	
Depth Interval:		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs		0 - 1 ft bgs	
Sample Date:		9/22/2020		9/22/2020		10/1/2020		9/24/2020		9/24/2020		9/24/2020		9/24/2020		10/1/2020	
Sample Type:		Normal		Duplicate		Normal		Normal		Normal		Normal		Normal		Normal	
Acronym	Units	Results		Results		Results		Results		Results		Results		Results		Results	
PFBA	mg/kg																
PFPeA	mg/kg																
PFHxA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFHpA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFOA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFNA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFDA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFUnA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFDoA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFTriA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFTeA	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFBS	mg/kg	0.0008	U	0.00082	U	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFPeS	mg/kg																
PFHxS	mg/kg	0.00056	I	0.00063	I	0.0006	U	0.00061	U	0.0008	U	0.00059	U	0.00073	U	0.00069	U
PFHpS	mg/kg																
PFOS	mg/kg	0.0072		0.006		0.0006	U	0.00078		0.0006	I	0.00046	I	0.0032		0.00058	I
PFNS	mg/kg																
PFDS	mg/kg																
PFOSA	mg/kg																
NMeFOSAA	mg/kg																
NEtFOSAA	mg/kg																
4:2 FTS	mg/kg																
6:2 FTS	mg/kg																
8:2 FTS	mg/kg																
GenX	mg/kg																

J = The analyte was positively identified, and the associated numerical value is the approximate concentration.
U = The analyte was not detected and is reported at the laboratory limit of detection.
UJ = The analyte was not detected and was reported with a quality control issue at the laboratory limit of detection.
mg/kg = milligrams per kilogram

SWMU 114
Soil Summary Statistics

	Parameter	Number of Samples	Number of Detections	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Location with Maximum Concentration
Carboxylates	PFBA	0	0	No Detections	No Detections	No Detections
	PFPeA	0	0	No Detections	No Detections	No Detections
	PFHxA	17	0	No Detections	No Detections	No Detections
	PFHpA	17	0	No Detections	No Detections	No Detections
	PFOA	17	0	No Detections	No Detections	No Detections
	PFNA	17	0	No Detections	No Detections	No Detections
	PFDA	17	0	No Detections	No Detections	No Detections
	PFUnA	17	0	No Detections	No Detections	No Detections
	PFDoA	17	0	No Detections	No Detections	No Detections
	PFTriA	17	0	No Detections	No Detections	No Detections
	PFTeA	17	0	No Detections	No Detections	No Detections
Sulfonates	PFBS	17	0	No Detections	No Detections	No Detections
	PFPeS	0	0	No Detections	No Detections	No Detections
	PFHxS	17	8	0.00046	0.0104	PFAS-SD0049
	PFHpS	0	0	No Detections	No Detections	No Detections
	PFOS	17	16	0.00046	0.156	PFAS-SD0049
	PFNS	0	0	No Detections	No Detections	No Detections
	PFDS	0	0	No Detections	No Detections	No Detections
Precursors / Fluorotelomers	PFOSA	0	0	No Detections	No Detections	No Detections
	NMeFOSAA	0	0	No Detections	No Detections	No Detections
	NEtFOSAA	0	0	No Detections	No Detections	No Detections
	4:2 FTS	0	0	No Detections	No Detections	No Detections
	6:2 FTS	0	0	No Detections	No Detections	No Detections
	8:2 FTS	0	0	No Detections	No Detections	No Detections
	GenX	0	0	No Detections	No Detections	No Detections

Notes:
mg/kg = milligrams per kilogram

APPENDIX F

Laboratory Analytical Reports

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SGS Job Number: FA90849

Sampling Date: 11/15/21

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: 36

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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Test results relate only to samples analyzed.

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA90849

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90849-1	11/15/21	12:55	DL	11/16/21	AQ	Ground Water	S114-DPT1000-007.0-20211115
FA90849-2	11/15/21	13:38	DL	11/16/21	AQ	Ground Water	S114-DPT1000-015.0-20211115
FA90849-3	11/15/21	14:04	DL	11/16/21	AQ	Ground Water	S114-DPT1000-025.0-20211115
FA90849-4	11/15/21	14:34	DL	11/16/21	AQ	Ground Water	S114-DPT1000-035.0-20211115
FA90849-5	11/15/21	17:08	DL	11/16/21	AQ	Ground Water	S114-DPT1001-005.0-20211115
FA90849-6	11/15/21	17:20	DL	11/16/21	AQ	Field Blank Water	S114-FB-20211115-01
FA90849-7	11/15/21	17:25	DL	11/16/21	AQ	Equipment Blank	S114-EB-20211115-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA90849

Site: NASA TQN 21- SLF PFAS Assessment **Report Date** 12/15/2021 1:24:12

On 11/16/2021, 6 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 0.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90849 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88674

Sample(s) FA90841-12MS, FA90841-12MSD were used as the QC samples indicated.

Sample(s) FA90849-1, FA90849-2 have surrogates outside control limits.

FA90849-1 for 13C2-PFDoDA: Outside control limits.

FA90849-1 for 13C7-PFUnDA: Outside control limits.

FA90849-1: Dilution required due to matrix interference (ID recovery standard failure).

FA90849-2 for 13C2-PFTeDA: Outside control limits.

FA90849-2: Dilution required due to matrix interference (ID recovery standard failure).

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90849
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/15/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90849-1	**S114-DPT1000-007.0-20211115**					
Perfluorobutanoic acid		0.0084 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0109	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0032 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0170	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0048 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90849-2	**S114-DPT1000-015.0-20211115**					
Perfluorohexanoic acid		0.0028 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0142	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0072 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0252	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0023 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90849-3	**S114-DPT1000-025.0-20211115**					
Perfluorooctanesulfonic acid		0.0039 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90849-4	**S114-DPT1000-035.0-20211115**					
Perfluorooctanoic acid		0.0039 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0025 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0076 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90849-5	**S114-DPT1001-005.0-20211115**					
Perfluorobutanesulfonic acid		0.0042 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0048 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0472	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0055 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90849-6	**S114-FB-20211115-01**					
No hits reported in this sample.						
FA90849-7	**S114-EB-20211115-01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1000-007.0-20211115
Lab Sample ID: FA90849-1 **Date Sampled:** 11/15/21
Matrix: AQ - Ground Water **Date Received:** 11/16/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50276.D	1	12/10/21 16:54	MV	12/06/21 09:00	OP88674	S3Q707
Run #2 [a]	3Q50375.D	5	12/13/21 16:03	MV	12/06/21 09:00	OP88674	S3Q708

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0084	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
307-55-1	Perfluorododecanoic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0109	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0032	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0170	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0048	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1000-007.0-20211115		
Lab Sample ID:	FA90849-1	**Date Sampled:**	11/15/21
Matrix:	AQ - Ground Water	**Date Received:**	11/16/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%	110%	50-150%
	13C5-PFPeA	87%	110%	50-150%
	13C5-PFHxA	86%	110%	50-150%
	13C4-PFHpA	93%	113%	50-150%
	13C8-PFOA	106%	119%	50-150%
	13C9-PFNA	113%	120%	50-150%
	13C6-PFDA	112%	115%	50-150%
	13C7-PFUnDA	24% [c]	99%	50-150%
	13C2-PFDoDA	12% [c]	91%	50-150%
	13C2-PFTeDA	56%	67%	50-150%
	13C3-PFBS	90%	112%	50-150%
	13C3-PFHxS	96%	116%	50-150%
	13C8-PFOS	105%	122%	50-150%
	13C8-FOSA	76%	97%	50-150%
	d3-MeFOSAA	136%	112%	50-150%
	d5-EtFOSAA	123%	97%	50-150%
	13C2-4:2FTS	86%	106%	50-150%
	13C2-6:2FTS	113%	115%	50-150%
	13C2-8:2FTS	118%	112%	50-150%
	13C3-HFPO-DA	82%	114%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1000-015.0-20211115
Lab Sample ID: FA90849-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50277.D	1	12/10/21 17:11	MV	12/06/21 09:00	OP88674	S3Q707
Run #2 [a]	3Q50376.D	5	12/13/21 16:19	MV	12/06/21 09:00	OP88674	S3Q708

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0028	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0142	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0072	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0252	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0023	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1000-015.0-20211115		
Lab Sample ID:	FA90849-2	**Date Sampled:**	11/15/21
Matrix:	AQ - Ground Water	**Date Received:**	11/16/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%	91%	50-150%
	13C5-PFPeA	95%	92%	50-150%
	13C5-PFHxA	93%	91%	50-150%
	13C4-PFHpA	100%	93%	50-150%
	13C8-PFOA	107%	96%	50-150%
	13C9-PFNA	110%	94%	50-150%
	13C6-PFDA	107%	90%	50-150%
	13C7-PFUnDA	94%	83%	50-150%
	13C2-PFDoDA	81%	75%	50-150%
	13C2-PFTeDA	38% [c]	53%	50-150%
	13C3-PFBS	92%	90%	50-150%
	13C3-PFHxS	101%	93%	50-150%
	13C8-PFOS	101%	93%	50-150%
	13C8-FOSA	79%	70%	50-150%
	d3-MeFOSAA	115%	82%	50-150%
	d5-EtFOSAA	105%	74%	50-150%
	13C2-4:2FTS	94%	84%	50-150%
	13C2-6:2FTS	114%	87%	50-150%
	13C2-8:2FTS	110%	84%	50-150%
	13C3-HFPO-DA	87%	94%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1000-025.0-20211115
Lab Sample ID: FA90849-3
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50278.D	1	12/10/21 17:27	MV	12/06/21 09:00	OP88674	S3Q707
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0039	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1000-025.0-20211115		
Lab Sample ID:	FA90849-3	**Date Sampled:**	11/15/21
Matrix:	AQ - Ground Water	**Date Received:**	11/16/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		50-150%
	13C5-PFPeA	95%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	105%		50-150%
	13C8-PFOA	114%		50-150%
	13C9-PFNA	120%		50-150%
	13C6-PFDA	123%		50-150%
	13C7-PFUnDA	116%		50-150%
	13C2-PFDoDA	91%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	95%		50-150%
	13C3-PFHxS	106%		50-150%
	13C8-PFOS	110%		50-150%
	13C8-FOSA	89%		50-150%
	d3-MeFOSAA	136%		50-150%
	d5-EtFOSAA	117%		50-150%
	13C2-4:2FTS	97%		50-150%
	13C2-6:2FTS	116%		50-150%
	13C2-8:2FTS	121%		50-150%
	13C3-HFPO-DA	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1000-035.0-20211115
Lab Sample ID: FA90849-4
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50279.D	1	12/10/21 17:44	MV	12/06/21 09:00	OP88674	S3Q707
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0039	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0025	0.0083	0.0042	0.0021	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0076	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1000-035.0-20211115
Lab Sample ID: FA90849-4 **Date Sampled:** 11/15/21
Matrix: AQ - Ground Water **Date Received:** 11/16/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		50-150%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	84%		50-150%
	13C2-PFDoDA	81%		50-150%
	13C2-PFTeDA	69%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	98%		50-150%
	d5-EtFOSAA	94%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	88%		50-150%
	13C3-HFPO-DA	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1001-005.0-20211115
Lab Sample ID: FA90849-5
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50280.D	1	12/10/21 18:01	MV	12/06/21 09:00	OP88674	S3Q707
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0048	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0472	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0055	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1001-005.0-20211115
Lab Sample ID: FA90849-5 **Date Sampled:** 11/15/21
Matrix: AQ - Ground Water **Date Received:** 11/16/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	116%		50-150%
	13C5-PFPeA	115%		50-150%
	13C5-PFHxA	114%		50-150%
	13C4-PFHpA	116%		50-150%
	13C8-PFOA	121%		50-150%
	13C9-PFNA	121%		50-150%
	13C6-PFDA	115%		50-150%
	13C7-PFUnDA	105%		50-150%
	13C2-PFDoDA	102%		50-150%
	13C2-PFTeDA	100%		50-150%
	13C3-PFBS	112%		50-150%
	13C3-PFHxS	115%		50-150%
	13C8-PFOS	112%		50-150%
	13C8-FOSA	112%		50-150%
	d3-MeFOSAA	119%		50-150%
	d5-EtFOSAA	111%		50-150%
	13C2-4:2FTS	111%		50-150%
	13C2-6:2FTS	118%		50-150%
	13C2-8:2FTS	110%		50-150%
	13C3-HFPO-DA	108%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211115-01
Lab Sample ID: FA90849-6
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50283.D	1	12/10/21 18:34	MV	12/06/21 09:00	OP88674	S3Q707
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211115-01
Lab Sample ID: FA90849-6 **Date Sampled:** 11/15/21
Matrix: AQ - Field Blank Water **Date Received:** 11/16/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		50-150%
	13C5-PFPeA	117%		50-150%
	13C5-PFHxA	117%		50-150%
	13C4-PFHpA	117%		50-150%
	13C8-PFOA	119%		50-150%
	13C9-PFNA	118%		50-150%
	13C6-PFDA	114%		50-150%
	13C7-PFUnDA	109%		50-150%
	13C2-PFDoDA	110%		50-150%
	13C2-PFTeDA	105%		50-150%
	13C3-PFBS	115%		50-150%
	13C3-PFHxS	115%		50-150%
	13C8-PFOS	108%		50-150%
	13C8-FOSA	114%		50-150%
	d3-MeFOSAA	121%		50-150%
	d5-EtFOSAA	117%		50-150%
	13C2-4:2FTS	109%		50-150%
	13C2-6:2FTS	112%		50-150%
	13C2-8:2FTS	108%		50-150%
	13C3-HFPO-DA	110%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211115-01
Lab Sample ID: FA90849-7
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/15/21
Date Received: 11/16/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50284.D	1	12/10/21 18:50	MV	12/06/21 09:00	OP88674	S3Q707
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211115-01
Lab Sample ID: FA90849-7 **Date Sampled:** 11/15/21
Matrix: AQ - Equipment Blank **Date Received:** 11/16/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	107%		50-150%
	13C5-PFPeA	122%		50-150%
	13C5-PFHxA	124%		50-150%
	13C4-PFHpA	123%		50-150%
	13C8-PFOA	124%		50-150%
	13C9-PFNA	121%		50-150%
	13C6-PFDA	120%		50-150%
	13C7-PFUnDA	115%		50-150%
	13C2-PFDoDA	111%		50-150%
	13C2-PFTeDA	106%		50-150%
	13C3-PFBS	121%		50-150%
	13C3-PFHxS	121%		50-150%
	13C8-PFOS	117%		50-150%
	13C8-FOSA	117%		50-150%
	d3-MeFOSAA	125%		50-150%
	d5-EtFOSAA	123%		50-150%
	13C2-4:2FTS	115%		50-150%
	13C2-6:2FTS	116%		50-150%
	13C2-8:2FTS	112%		50-150%
	13C3-HFPO-DA	115%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando

Chain of Custody

FA90849

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSM537DODFL – 24 analytes	LAB USE ONLY
1	S114-DPT1000-007.0-20211115	11/15/21	1255	DL	GW	2		X								X	
2	S114-DPT1000-015.0-20211115	11/15/21	1338	DL	GW	2		X								X	
3	S114-DPT1000-025.0-20211115	11/15/21	1404	DL	GW	2		X								X	
4	S114-DPT1000-035.0-20211115	11/15/21	1434	DL	GW	2		X								X	
5	S114-DPT1001-005.0-20211115	11/15/21	1708	DL	GW	2		X								X	
6	S114-FB-20211115-01	11/15/21	1720	DL	GW	2		X								X	
7	S114-EB-20211115-01	11/15/21	1725	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT

LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
HGL	11/16/21 1440	2	3	11/16/21 16:00	4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 0.6 1121

http://www.sgs.com/en/terms-and-conditions

SGS COC_11152021 Rev 031318

FA90849: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA90849 **Client:** HCL INC **Project:** SLF PFAS ASSESSMENT

Date / Time Received: 11/16/2021 4:00:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (0.4);

Cooler Temps (Corrected) °C: Cooler 1: (0.6);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: STEPHENP Date: 11/16/2021 4:00:00 P Reviewer: _____ Date: _____

5.1 5

FA90849: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90849
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/15/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88674	EPA 537M QSM5.3 B-15						
OP88674-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	84	%	73-129
OP88674-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	83	%	72-129
OP88674-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	82	%	72-129
OP88674-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	81	%	72-130
OP88674-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	79	%	71-133
OP88674-BS	375-95-1	Perfluorononanoic acid	BSP	REC	80	%	69-130
OP88674-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	80	%	71-129
OP88674-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	79	%	69-133
OP88674-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	81	%	72-134
OP88674-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	74	%	65-144
OP88674-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	84	%	71-132
OP88674-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	85	%	73-130
OP88674-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	84	%	71-127
OP88674-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	79	%	68-131
OP88674-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	84	%	69-134
OP88674-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	85	%	65-140
OP88674-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	87	%	69-127
OP88674-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	77	%	53-142
OP88674-BS	754-91-6	PFOSA	BSP	REC	82	%	67-137
OP88674-BS	2355-31-9	MeFOSAA	BSP	REC	82	%	65-136
OP88674-BS	2991-50-6	EtFOSAA	BSP	REC	84	%	61-135
OP88674-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	85	%	63-143
OP88674-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	83	%	64-140
OP88674-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	85	%	67-138
OP88674-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	88	%	73-129
OP88674-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	85	%	72-129
OP88674-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	83	%	72-129
OP88674-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	82	%	72-130
OP88674-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	80	%	71-133
OP88674-MS*	375-95-1	Perfluorononanoic acid	MS	REC	85	%	69-130
OP88674-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	87	%	71-129
OP88674-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	91	%	69-133
OP88674-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	94	%	72-134
OP88674-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	95	%	65-144
OP88674-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	92	%	71-132
OP88674-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	88	%	73-130
OP88674-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	86	%	71-127
OP88674-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	85	%	68-131
OP88674-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	95	%	69-134
OP88674-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	92	%	65-140
OP88674-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	90	%	69-127
OP88674-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	92	%	53-142

* Sample used for QC is not from job FA90849

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90849
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/15/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88674-MS*	754-91-6	PFOSA	MS	REC	90	%	67-137
OP88674-MS*	2355-31-9	MeFOSAA	MS	REC	92	%	65-136
OP88674-MS*	2991-50-6	EtFOSAA	MS	REC	92	%	61-135
OP88674-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	87	%	63-143
OP88674-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	85	%	64-140
OP88674-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	91	%	67-138
OP88674-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	94	%	73-129
OP88674-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	7	%	30
OP88674-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	91	%	72-129
OP88674-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	6	%	30
OP88674-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	88	%	72-129
OP88674-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	6	%	30
OP88674-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	89	%	72-130
OP88674-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	8	%	30
OP88674-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	87	%	71-133
OP88674-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	7	%	30
OP88674-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	92	%	69-130
OP88674-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	8	%	30
OP88674-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	95	%	71-129
OP88674-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	9	%	30
OP88674-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	98	%	69-133
OP88674-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	8	%	30
OP88674-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	102	%	72-134
OP88674-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	9	%	30
OP88674-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	103	%	65-144
OP88674-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	8	%	30
OP88674-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	100	%	71-132
OP88674-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	8	%	30
OP88674-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	94	%	73-130
OP88674-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	6	%	30
OP88674-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	92	%	71-127
OP88674-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	6	%	30
OP88674-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	91	%	68-131
OP88674-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	6	%	30
OP88674-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	106	%	69-134
OP88674-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	11	%	30
OP88674-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	105	%	65-140
OP88674-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	12	%	30
OP88674-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	98	%	69-127
OP88674-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	9	%	30
OP88674-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	98	%	53-142
OP88674-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	6	%	30
OP88674-MSD*	754-91-6	PFOSA	MSD	REC	94	%	67-137
OP88674-MSD*	754-91-6	PFOSA	MSD	RPD	4	%	30
OP88674-MSD*	2355-31-9	MeFOSAA	MSD	REC	100	%	65-136

* Sample used for QC is not from job FA90849

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90849
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/15/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88674-MSD*	2355-31-9	MeFOSAA	MSD	RPD	8	%	30
OP88674-MSD*	2991-50-6	EtFOSAA	MSD	REC	100	%	61-135
OP88674-MSD*	2991-50-6	EtFOSAA	MSD	RPD	8	%	30
OP88674-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	91	%	63-143
OP88674-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	5	%	30
OP88674-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	92	%	64-140
OP88674-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	8	%	30
OP88674-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	99	%	67-138
OP88674-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	8	%	30

* Sample used for QC is not from job FA90849

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q707-IBLK	3Q50267.D	1	12/10/21	MV	n/a	n/a	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	107%	50-150%
	13C5-PFPeA	108%	50-150%
	13C5-PFHxA	108%	50-150%
	13C4-PFHpA	109%	50-150%
	13C8-PFOA	112%	50-150%
	13C9-PFNA	110%	50-150%
	13C6-PFDA	111%	50-150%

Instrument Blank

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q707-IBLK	3Q50267.D	1	12/10/21	MV	n/a	n/a	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	108%	50-150%
	13C2-PFDoDA	108%	50-150%
	13C2-PFTeDA	108%	50-150%
	13C3-PFBS	107%	50-150%
	13C3-PFHxS	107%	50-150%
	13C8-PFOS	106%	50-150%
	13C8-FOSA	114%	50-150%
	d3-MeFOSA	117%	50-150%
	d3-MeFOSAA	117%	50-150%
	d5-EtFOSAA	114%	50-150%
	13C2-4:2FTS	101%	50-150%
	13C2-6:2FTS	105%	50-150%
	13C2-8:2FTS	104%	50-150%
	13C3-HFPO-DA	104%	50-150%

Instrument Blank

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q708-IBLK	3Q50371.D	1	12/13/21	MV	n/a	n/a	S3Q708

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2

CAS No.	Compound	Result	RL	MDL	Units	Q
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	108%	50-150%
	13C5-PFPeA	109%	50-150%
	13C5-PFHxA	109%	50-150%
	13C4-PFHpA	110%	50-150%
	13C8-PFOA	111%	50-150%
	13C9-PFNA	109%	50-150%
	13C6-PFDA	110%	50-150%
	13C7-PFUnDA	108%	50-150%
	13C2-PFDoDA	109%	50-150%
	13C2-PFTeDA	106%	50-150%
	13C3-PFBS	109%	50-150%
	13C3-PFHxS	110%	50-150%
	13C8-PFOS	109%	50-150%
	13C8-FOSA	102%	50-150%
	d3-MeFOSA	93%	50-150%
	d3-MeFOSAA	99%	50-150%
	d5-EtFOSAA	96%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	96%	50-150%
	13C3-HFPO-DA	121%	50-150%

Method Blank Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-MB	3Q50272.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	93%	50-150%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	97%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	98%	50-150%
	13C6-PFDA	98%	50-150%

Method Blank Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-MB	3Q50272.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	92%	50-150%
	13C2-PFDoDA	89%	50-150%
	13C2-PFTeDA	78%	50-150%
	13C3-PFBS	95%	50-150%
	13C3-PFHxS	96%	50-150%
	13C8-PFOS	92%	50-150%
	13C8-FOSA	87%	50-150%
	d3-MeFOSA	58%	50-150%
	d3-MeFOSAA	93%	50-150%
	d5-EtFOSAA	84%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	94%	50-150%
	13C2-8:2FTS	90%	50-150%

Blank Spike Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-BS	3Q50271.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0668	84	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0665	83	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0654	82	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0644	81	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0634	79	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0642	80	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0639	80	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0634	79	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0649	81	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0588	74	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0675	84	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0676	85	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0669	84	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0630	79	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0671	84	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0683	85	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0697	87	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0618	77	53-142
754-91-6	PFOSA	0.08	0.0655	82	67-137
2355-31-9	MeFOSAA	0.08	0.0658	82	65-136
2991-50-6	EtFOSAA	0.08	0.0672	84	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0677	85	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0667	83	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0679	85	67-138
13252-13-6	HFPO-DA (GenX)	0.08	0.0688	86	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	110%	50-150%
	13C5-PFPeA	117%	50-150%
	13C5-PFHxA	118%	50-150%
	13C4-PFHpA	118%	50-150%
	13C8-PFOA	120%	50-150%
	13C9-PFNA	118%	50-150%
	13C6-PFDA	120%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-BS	3Q50271.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	118%	50-150%
	13C2-PFDoDA	114%	50-150%
	13C2-PFTeDA	96%	50-150%
	13C3-PFBS	115%	50-150%
	13C3-PFHxS	118%	50-150%
	13C8-PFOS	113%	50-150%
	13C8-FOSA	107%	50-150%
	d3-MeFOSA	73%	50-150%
	d3-MeFOSAA	115%	50-150%
	d5-EtFOSAA	107%	50-150%
	13C2-4:2FTS	116%	50-150%
	13C2-6:2FTS	114%	50-150%
	13C2-8:2FTS	117%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-MS	3Q50274.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707
OP88674-MSD	3Q50275.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707
FA90841-12	3Q50273.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	Compound	FA90841-12 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.017	U	0.167	0.146	88	0.167	0.156	94	7	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0111		0.167	0.153	85	0.167	0.163	91	6	72-129/30
307-24-4	Perfluorohexanoic acid	0.0151		0.167	0.153	83	0.167	0.162	88	6	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0046	J	0.167	0.141	82	0.167	0.153	89	8	72-130/30
335-67-1	Perfluorooctanoic acid	0.0133		0.167	0.147	80	0.167	0.158	87	7	71-133/30
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.141	85	0.167	0.153	92	8	69-130/30
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.145	87	0.167	0.158	95	9	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.152	91	0.167	0.164	98	8	69-133/30
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.156	94	0.167	0.170	102	9	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.158	95	0.167	0.172	103	8	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.154	92	0.167	0.166	100	8	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0059	J	0.167	0.152	88	0.167	0.162	94	6	73-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0050	J	0.167	0.149	86	0.167	0.158	92	6	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0428		0.167	0.184	85	0.167	0.195	91	6	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0083	U	0.167	0.158	95	0.167	0.177	106	11	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0197		0.167	0.173	92	0.167	0.195	105	12	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0083	U	0.167	0.150	90	0.167	0.164	98	9	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0083	U	0.167	0.153	92	0.167	0.163	98	6	53-142/30
754-91-6	PFOSA	0.0083	U	0.167	0.150	90	0.167	0.156	94	4	67-137/30
2355-31-9	MeFOSAA	0.017	U	0.167	0.154	92	0.167	0.167	100	8	65-136/30
2991-50-6	EtFOSAA	0.017	U	0.167	0.154	92	0.167	0.167	100	8	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.017	U	0.167	0.145	87	0.167	0.152	91	5	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.017	U	0.167	0.141	85	0.167	0.153	92	8	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.017	U	0.167	0.152	91	0.167	0.165	99	8	67-138/30
13252-13-6	HFPO-DA (GenX)	0.017	U	0.167	0.154	92	0.167	0.161	97	4	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90841-12	Limits
	13C4-PFBA	113%	112%		50-150%
	13C5-PFPeA	111%	114%		50-150%
	13C5-PFHxA	111%	113%	108%	50-150%
	13C4-PFHpA	110%	111%	108%	50-150%
	13C8-PFOA	112%	111%	110%	50-150%
	13C9-PFNA	106%	105%	108%	50-150%
	13C6-PFDA	97%	94%	110%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90849
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88674-MS	3Q50274.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707
OP88674-MSD	3Q50275.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707
FA90841-12	3Q50273.D	1	12/10/21	MV	12/06/21	OP88674	S3Q707

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90849-1, FA90849-2, FA90849-3, FA90849-4, FA90849-5, FA90849-6, FA90849-7

CAS No.	ID Standard Recoveries	MS	MSD	FA90841-12	Limits
	13C7-PFUnDA	86%	85%	107%	50-150%
	13C2-PFDoDA	89%	84%	96%	50-150%
	13C2-PFTeDA	92%	90%	102%	50-150%
	13C3-PFBS	109%	110%	106%	50-150%
	13C3-PFHxS	105%	106%	107%	50-150%
	13C8-PFOS	93%	88%	106%	50-150%
	13C8-FOSA	96%	96%		50-150%
	d3-MeFOSA	63%	70%		50-150%
	d3-MeFOSAA	96%	92%	115%	50-150%
	d5-EtFOSAA	93%	87%	108%	50-150%
	13C2-4:2FTS	110%	113%		50-150%
	13C2-6:2FTS	109%	109%	104%	50-150%
	13C2-8:2FTS	97%	94%	102%	50-150%

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SGS Job Number: FA90892

Sampling Date: 11/16/21

Report to:

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Merritt Island, FL 32953
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ATTN: Denise Rivers

Total number of pages in report: **69**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA90892

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90892-1	11/16/21	07:16	DLJB	11/18/21	AQ	Ground Water	S114-DPT1001-015.0-20211116
FA90892-2	11/16/21	07:42	DLJB	11/18/21	AQ	Ground Water	S114-DPT1001-025.0-20211116
FA90892-3	11/16/21	08:10	DLJB	11/18/21	AQ	Ground Water	S114-DPT1001-035.0-20211116
FA90892-4	11/16/21	08:10	DLJB	11/18/21	AQ	Ground Water	S114-FD-20211116-01
FA90892-5	11/16/21	10:01	DLJB	11/18/21	AQ	Ground Water	S114-DPT1002-005.0-20211116
FA90892-6	11/16/21	10:21	DLJB	11/18/21	AQ	Ground Water	S114-DPT1002-015.0-20211116
FA90892-7	11/16/21	10:41	DLJB	11/18/21	AQ	Ground Water	S114-DPT1002-025.0-20211116
FA90892-8	11/16/21	11:05	DLJB	11/18/21	AQ	Ground Water	S114-DPT1002-035.0-20211116
FA90892-9	11/16/21	12:18	DLJB	11/18/21	AQ	Ground Water	S114-DPT1003-005.0-20211116
FA90892-10	11/16/21	12:41	DLJB	11/18/21	AQ	Ground Water	S114-DPT1003-015.0-20211116
FA90892-11	11/16/21	13:06	DLJB	11/18/21	AQ	Ground Water	S114-DPT1003-025.0-20211116
FA90892-12	11/16/21	14:21	DLJB	11/18/21	AQ	Ground Water	S114-DPT1003-035.0-20211116
FA90892-13	11/16/21	15:48	DLJB	11/18/21	AQ	Ground Water	S114-DPT1004-005.0-20211116

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA90892

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90892-14	11/16/21	16:08	DLJB	11/18/21	AQ	Ground Water	S114-DPT1004-015.0-20211116
FA90892-15	11/16/21	16:28	DLJB	11/18/21	AQ	Ground Water	S114-DPT1004-025.0-20211116
FA90892-16	11/16/21	16:52	DLJB	11/18/21	AQ	Ground Water	S114-DPT1004-035.0-20211116
FA90892-17	11/16/21	17:10	DLJB	11/18/21	AQ	Field Blank Water	S114-FB-20211116-02
FA90892-18	11/16/21	17:15	DLJB	11/18/21	AQ	Equipment Blank	S114-EB-20211116-02

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA90892

Site: NASA TQN 21- SLF PFAS Assessment **Report Date** 12/16/2021 5:32:23

On 11/18/2021, 17 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90892 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88672

Sample(s) FA90871-1MS, FA90871-1MSD were used as the QC samples indicated.

Sample(s) FA90892-11, FA90892-14, FA90892-16, FA90892-2, FA90892-4, FA90892-5 have surrogates outside control

FA90892-2 for 13C2-PFTeDA: Outside control limits.

FA90892-2: Dilution required due to matrix interference (ID recovery standard failure).

FA90892-4 for 13C2-PFTeDA: Outside control limits.

FA90892-4: Dilution required due to matrix interference (ID recovery standard failure).

FA90892-5 for 13C2-PFTeDA: Outside control limits.

FA90892-5: Dilution required due to matrix interference (ID recovery standard failure).

FA90892-11 for 13C2-PFTeDA: Outside control limits.

FA90892-11: Dilution required due to matrix interference (ID recovery standard failure).

FA90892-14 for 13C2-PFTeDA: Outside control limits.

FA90892-14: Dilution required due to matrix interference (ID recovery standard failure).

FA90892-16 for 13C2-PFTeDA: Outside control limits.

FA90892-16: Dilution required due to matrix interference (ID recovery standard failure).

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90892-1	**S114-DPT1001-015.0-20211116**					
Perfluorobutanoic acid		0.0187	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0092	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0097	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0041 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0226	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0235	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.150	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0027 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0410	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90892-2	**S114-DPT1001-025.0-20211116**					
Perfluorobutanoic acid		0.0044 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0028 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0055 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0182	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0177	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0944	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0029 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90892-3	**S114-DPT1001-035.0-20211116**					
Perfluorobutanoic acid		0.0074 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0054 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0106	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0025 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0214	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0197	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0790	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0052 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90892-4	**S114-FD-20211116-01**					
Perfluorobutanoic acid		0.0072 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0055 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0102	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0029 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0029 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0214	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0192	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0730	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanesulfonic acid		0.0063 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90892-5	**S114-DPT1002-005.0-20211116**					
Perfluorobutanoic acid		0.0172	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90892-6	**S114-DPT1002-015.0-20211116**					
No hits reported in this sample.						
FA90892-7	**S114-DPT1002-025.0-20211116**					
No hits reported in this sample.						
FA90892-8	**S114-DPT1002-035.0-20211116**					
No hits reported in this sample.						
FA90892-9	**S114-DPT1003-005.0-20211116**					
No hits reported in this sample.						
FA90892-10	**S114-DPT1003-015.0-20211116**					
No hits reported in this sample.						
FA90892-11	**S114-DPT1003-025.0-20211116**					
No hits reported in this sample.						
FA90892-12	**S114-DPT1003-035.0-20211116**					
No hits reported in this sample.						
FA90892-13	**S114-DPT1004-005.0-20211116**					
Perfluorobutanoic acid		0.0229	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90892-14	**S114-DPT1004-015.0-20211116**					
No hits reported in this sample.						
FA90892-15	**S114-DPT1004-025.0-20211116**					
No hits reported in this sample.						

Summary of Hits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method

FA90892-16 S114-DPT1004-035.0-20211116

No hits reported in this sample.

FA90892-17 S114-FB-20211116-02

No hits reported in this sample.

FA90892-18 S114-EB-20211116-02

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1001-015.0-20211116
Lab Sample ID: FA90892-1 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23608.D	1	12/14/21 19:17	MV	12/06/21 07:00	OP88672	S4Q324
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0187	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0092	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0097	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0041	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0226	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0235	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.150	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0027	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0410	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1001-015.0-20211116		
Lab Sample ID:	FA90892-1	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		50-150%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	70%		50-150%
	13C2-PFTeDA	58%		50-150%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	79%		50-150%
	d3-MeFOSAA	91%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	84%		50-150%
	13C3-HFPO-DA	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1001-025.0-20211116
Lab Sample ID: FA90892-2 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23609.D	1	12/14/21 19:34	MV	12/06/21 07:00	OP88672	S4Q324
Run #2 [a]	4Q23667.D	5	12/15/21 15:45	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0044	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0028	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0055	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0182	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0177	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0944	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0029	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1001-025.0-20211116		
Lab Sample ID:	FA90892-2	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%	75%	50-150%
	13C5-PFPeA	71%	79%	50-150%
	13C5-PFHxA	71%	76%	50-150%
	13C4-PFHpA	71%	77%	50-150%
	13C8-PFOA	73%	79%	50-150%
	13C9-PFNA	71%	81%	50-150%
	13C6-PFDA	69%	77%	50-150%
	13C7-PFUnDA	63%	74%	50-150%
	13C2-PFDoDA	59%	69%	50-150%
	13C2-PFTeDA	49% [c]	68%	50-150%
	13C3-PFBS	72%	78%	50-150%
	13C3-PFHxS	70%	80%	50-150%
	13C8-PFOS	68%	78%	50-150%
	13C8-FOSA	67%	69%	50-150%
	d3-MeFOSAA	74%	74%	50-150%
	d5-EtFOSAA	68%	74%	50-150%
	13C2-4:2FTS	71%	74%	50-150%
	13C2-6:2FTS	73%	74%	50-150%
	13C2-8:2FTS	68%	69%	50-150%
	13C3-HFPO-DA	70%	78%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1001-035.0-20211116
Lab Sample ID: FA90892-3 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23610.D	1	12/14/21 19:50	MV	12/06/21 07:00	OP88672	S4Q324
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0074	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0054	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0106	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0025	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0214	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0197	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0790	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0052	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1001-035.0-20211116		
Lab Sample ID:	FA90892-3	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	80%		50-150%
	13C2-PFDoDA	71%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	102%		50-150%
	d3-MeFOSAA	97%		50-150%
	d5-EtFOSAA	92%		50-150%
	13C2-4:2FTS	84%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	89%		50-150%
	13C3-HFPO-DA	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211116-01
Lab Sample ID: FA90892-4
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23611.D	1	12/14/21 20:07	MV	12/06/21 07:00	OP88672	S4Q324
Run #2 [a]	4Q23668.D	5	12/15/21 16:02	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0072	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0055	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0102	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0029	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0029	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0214	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0192	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0730	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0063	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FD-20211116-01		
Lab Sample ID:	FA90892-4	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%	82%	50-150%
	13C5-PFPeA	75%	89%	50-150%
	13C5-PFHxA	76%	89%	50-150%
	13C4-PFHpA	79%	90%	50-150%
	13C8-PFOA	82%	96%	50-150%
	13C9-PFNA	82%	97%	50-150%
	13C6-PFDA	83%	99%	50-150%
	13C7-PFUnDA	71%	90%	50-150%
	13C2-PFDoDA	62%	84%	50-150%
	13C2-PFTeDA	46% [c]	77%	50-150%
	13C3-PFBS	75%	93%	50-150%
	13C3-PFHxS	81%	94%	50-150%
	13C8-PFOS	76%	94%	50-150%
	13C8-FOSA	86%	90%	50-150%
	d3-MeFOSAA	88%	87%	50-150%
	d5-EtFOSAA	77%	87%	50-150%
	13C2-4:2FTS	77%	86%	50-150%
	13C2-6:2FTS	84%	91%	50-150%
	13C2-8:2FTS	81%	88%	50-150%
	13C3-HFPO-DA	75%	94%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1002-005.0-20211116		
Lab Sample ID:	FA90892-5	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23612.D	1	12/14/21 20:23	MV	12/06/21 07:00	OP88672	S4Q324
Run #2 [a]	4Q23669.D	5	12/15/21 16:18	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0172	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1002-005.0-20211116		
Lab Sample ID:	FA90892-5	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%	84%	50-150%
	13C5-PFPeA	61%	82%	50-150%
	13C5-PFHxA	67%	85%	50-150%
	13C4-PFHpA	77%	89%	50-150%
	13C8-PFOA	83%	97%	50-150%
	13C9-PFNA	85%	100%	50-150%
	13C6-PFDA	83%	93%	50-150%
	13C7-PFUnDA	69%	83%	50-150%
	13C2-PFDoDA	58%	78%	50-150%
	13C2-PFTeDA	48% [c]	79%	50-150%
	13C3-PFBS	66%	84%	50-150%
	13C3-PFHxS	76%	93%	50-150%
	13C8-PFOS	82%	94%	50-150%
	13C8-FOSA	76%	83%	50-150%
	d3-MeFOSAA	82%	84%	50-150%
	d5-EtFOSAA	76%	86%	50-150%
	13C2-4:2FTS	67%	83%	50-150%
	13C2-6:2FTS	86%	93%	50-150%
	13C2-8:2FTS	80%	86%	50-150%
	13C3-HFPO-DA	68%	86%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1002-015.0-20211116
Lab Sample ID: FA90892-6
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23672.D	1	12/15/21 17:08	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1002-015.0-20211116		
Lab Sample ID:	FA90892-6	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		50-150%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	100%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	89%		50-150%
	13C2-PFDoDA	83%		50-150%
	13C2-PFTeDA	54%		50-150%
	13C3-PFBS	75%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	93%		50-150%
	d5-EtFOSAA	90%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	94%		50-150%
	13C3-HFPO-DA	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1002-025.0-20211116
Lab Sample ID: FA90892-7
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23673.D	1	12/15/21 17:24	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1002-025.0-20211116
Lab Sample ID: FA90892-7 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	95%		50-150%
	13C7-PFUnDA	86%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	81%		50-150%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	97%		50-150%
	d3-MeFOSAA	91%		50-150%
	d5-EtFOSAA	88%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	90%		50-150%
	13C3-HFPO-DA	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1002-035.0-20211116
Lab Sample ID: FA90892-8 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23674.D	1	12/15/21 17:41	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1002-035.0-20211116
Lab Sample ID: FA90892-8 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	103%		50-150%
	13C6-PFDA	104%		50-150%
	13C7-PFUnDA	93%		50-150%
	13C2-PFDoDA	88%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	86%		50-150%
	d3-MeFOSAA	99%		50-150%
	d5-EtFOSAA	94%		50-150%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	100%		50-150%
	13C2-8:2FTS	98%		50-150%
	13C3-HFPO-DA	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1003-005.0-20211116
Lab Sample ID: FA90892-9 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23675.D	1	12/15/21 17:57	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1003-005.0-20211116		
Lab Sample ID:	FA90892-9	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		50-150%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	94%		50-150%
	13C8-PFOA	100%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	92%		50-150%
	13C2-PFDoDA	84%		50-150%
	13C2-PFTeDA	53%		50-150%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	100%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	99%		50-150%
	d5-EtFOSAA	94%		50-150%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	97%		50-150%
	13C3-HFPO-DA	85%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1003-015.0-20211116
Lab Sample ID: FA90892-10 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23676.D	1	12/15/21 18:14	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1003-015.0-20211116		
Lab Sample ID:	FA90892-10	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	93%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	79%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	52%		50-150%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	78%		50-150%
	d3-MeFOSAA	86%		50-150%
	d5-EtFOSAA	78%		50-150%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	88%		50-150%
	13C3-HFPO-DA	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1003-025.0-20211116
Lab Sample ID: FA90892-11 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23677.D	1	12/15/21 18:31	MV	12/06/21 07:00	OP88672	S4Q325
Run #2 [a]	4Q23743.D	5	12/16/21 12:49	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1003-025.0-20211116
Lab Sample ID: FA90892-11 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%	94%	50-150%
	13C5-PFPeA	92%	98%	50-150%
	13C5-PFHxA	96%	99%	50-150%
	13C4-PFHpA	100%	100%	50-150%
	13C8-PFOA	106%	105%	50-150%
	13C9-PFNA	107%	110%	50-150%
	13C6-PFDA	108%	106%	50-150%
	13C7-PFUnDA	89%	98%	50-150%
	13C2-PFDoDA	72%	92%	50-150%
	13C2-PFTeDA	31% [c]	67%	50-150%
	13C3-PFBS	90%	100%	50-150%
	13C3-PFHxS	101%	102%	50-150%
	13C8-PFOS	104%	101%	50-150%
	13C8-FOSA	93%	99%	50-150%
	d3-MeFOSAA	101%	106%	50-150%
	d5-EtFOSAA	91%	98%	50-150%
	13C2-4:2FTS	92%	96%	50-150%
	13C2-6:2FTS	107%	98%	50-150%
	13C2-8:2FTS	102%	98%	50-150%
	13C3-HFPO-DA	87%	107%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1003-035.0-20211116
Lab Sample ID: FA90892-12
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23678.D	1	12/15/21 18:47	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1003-035.0-20211116		
Lab Sample ID:	FA90892-12	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	98%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	89%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	81%		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	91%		50-150%
	d3-MeFOSAA	95%		50-150%
	d5-EtFOSAA	89%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1004-005.0-20211116
Lab Sample ID: FA90892-13 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23679.D	1	12/15/21 19:04	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0229	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1004-005.0-20211116		
Lab Sample ID:	FA90892-13	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		50-150%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	93%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	95%		50-150%
	13C7-PFUnDA	79%		50-150%
	13C2-PFDoDA	70%		50-150%
	13C2-PFTeDA	65%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	86%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	89%		50-150%
	d5-EtFOSAA	78%		50-150%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	89%		50-150%
	13C3-HFPO-DA	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1004-015.0-20211116		
Lab Sample ID:	FA90892-14	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23680.D	1	12/15/21 19:20	MV	12/06/21 07:00	OP88672	S4Q325
Run #2 [a]	4Q23744.D	5	12/16/21 13:06	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1004-015.0-20211116		
Lab Sample ID:	FA90892-14	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%	100%	50-150%
	13C5-PFPeA	80%	99%	50-150%
	13C5-PFHxA	86%	100%	50-150%
	13C4-PFHpA	94%	101%	50-150%
	13C8-PFOA	97%	108%	50-150%
	13C9-PFNA	98%	109%	50-150%
	13C6-PFDA	94%	105%	50-150%
	13C7-PFUnDA	82%	95%	50-150%
	13C2-PFDoDA	66%	86%	50-150%
	13C2-PFTeDA	22% [c]	57%	50-150%
	13C3-PFBS	81%	101%	50-150%
	13C3-PFHxS	93%	100%	50-150%
	13C8-PFOS	91%	99%	50-150%
	13C8-FOSA	66%	79%	50-150%
	d3-MeFOSAA	84%	99%	50-150%
	d5-EtFOSAA	74%	91%	50-150%
	13C2-4:2FTS	82%	99%	50-150%
	13C2-6:2FTS	96%	99%	50-150%
	13C2-8:2FTS	87%	95%	50-150%
	13C3-HFPO-DA	76%	108%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1004-025.0-20211116
Lab Sample ID: FA90892-15
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23681.D	1	12/15/21 19:37	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1004-025.0-20211116
Lab Sample ID: FA90892-15 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	94%		50-150%
	13C9-PFNA	97%		50-150%
	13C6-PFDA	94%		50-150%
	13C7-PFUnDA	87%		50-150%
	13C2-PFDoDA	81%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	90%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	67%		50-150%
	d3-MeFOSAA	89%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1004-035.0-20211116
Lab Sample ID: FA90892-16 **Date Sampled:** 11/16/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23685.D	1	12/15/21 20:43	MV	12/06/21 07:00	OP88672	S4Q325
Run #2 [a]	4Q23745.D	5	12/16/21 13:23	MV	12/06/21 07:00	OP88672	S4Q325

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1004-035.0-20211116		
Lab Sample ID:	FA90892-16	**Date Sampled:**	11/16/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%	100%	50-150%
	13C5-PFPeA	86%	100%	50-150%
	13C5-PFHxA	89%	100%	50-150%
	13C4-PFHpA	93%	102%	50-150%
	13C8-PFOA	98%	105%	50-150%
	13C9-PFNA	101%	110%	50-150%
	13C6-PFDA	97%	103%	50-150%
	13C7-PFUnDA	88%	97%	50-150%
	13C2-PFDoDA	82%	93%	50-150%
	13C2-PFTeDA	46% [c]	81%	50-150%
	13C3-PFBS	84%	102%	50-150%
	13C3-PFHxS	92%	100%	50-150%
	13C8-PFOS	95%	102%	50-150%
	13C8-FOSA	73%	86%	50-150%
	d3-MeFOSAA	91%	98%	50-150%
	d5-EtFOSAA	87%	94%	50-150%
	13C2-4:2FTS	87%	96%	50-150%
	13C2-6:2FTS	97%	100%	50-150%
	13C2-8:2FTS	92%	93%	50-150%
	13C3-HFPO-DA	76%	108%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211116-02
Lab Sample ID: FA90892-17
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23686.D	1	12/15/21 21:00	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211116-02
Lab Sample ID: FA90892-17 **Date Sampled:** 11/16/21
Matrix: AQ - Field Blank Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	87%		50-150%
	13C7-PFUnDA	81%		50-150%
	13C2-PFDoDA	77%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	81%		50-150%
	d3-MeFOSAA	79%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	81%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211116-02
Lab Sample ID: FA90892-18
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/16/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q23687.D	1	12/15/21 21:16	MV	12/06/21 07:00	OP88672	S4Q325
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211116-02
Lab Sample ID: FA90892-18 **Date Sampled:** 11/16/21
Matrix: AQ - Equipment Blank **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		50-150%
	13C5-PFPeA	99%		50-150%
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	104%		50-150%
	13C7-PFUnDA	101%		50-150%
	13C2-PFDoDA	99%		50-150%
	13C2-PFTeDA	96%		50-150%
	13C3-PFBS	98%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	102%		50-150%
	13C8-FOSA	106%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	100%		50-150%
	13C2-4:2FTS	92%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	96%		50-150%
	13C3-HFPO-DA	87%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA90892

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merrit Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MECH	LCQSM537DODFL-24 analytes	LAB USE ONLY
1	S114-DPT1001-015.0-20211116	11/16/21	0716	DL	GW	2		X								X	
2	S114-DPT1001-025.0-20211116	11/16/21	0742	DL	GW	2		X								X	
3	S114-DPT1001-035.0-20211116	11/16/21	0810	DL	GW	2		X								X	
4	S114-FD-20211116-01	11/16/21	0810	DL	GW	2		X								X	
5	S114-DPT1002-005.0-20211116	11/16/21	1001	JB	GW	2		X								X	
6	S114-DPT1002-015.0-20211116	11/16/21	1021	JB	GW	2		X								X	
7	S114-DPT1002-025.0-20211116	11/16/21	1041	JB	GW	2		X								X	
8	S114-DPT1002-035.0-20211116	11/16/21	1105	JB	GW	2		X								X	
9	S114-DPT1003-005.0-20211116	11/16/21	1218	DL	GW	2		X								X	
10	S114-DPT1003-015.0-20211116	11/16/21	1241	DL	GW	2		X								X	
11	S114-DPT1003-025.0-20211116	11/16/21	1306	DL	GW	2		X								X	
12	S114-DPT1003-035.0-20211116	11/16/21	1421	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

INITIAL ASSESSMENT

LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 HGL	11/17/21 13:37	2	3	11/17/21 17:0	4 11/17/21 1703
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 2.8 IR-4

http://www.sgs.com/en/terms-and-conditions

SGS COC_11162021 Rev 031318

FA90892: Chain of Custody
Page 1 of 3

FA90892

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNA	DI WATER	MEOH	LCQSM537DODFL-24 analytes	LAB USE ONLY
13	S114-DPT1004-005.0-20211116	11/16/21	1548	DL	GW	2		X								X	
14	S114-DPT1004-015.0-20211116	11/16/21	1608	DL	GW	2		X								X	
15	S114-DPT1004-025.0-20211116	11/16/21	1628	DL	GW	2		X								X	
16	S114-DPT1004-035.0-20211116	11/16/21	1652	DL	GW	2		X								X	
17	S114-FB-20211116-02	11/16/21	1710	DL	GW	2		X								X	
18	S114-EB-20211116-02	11/16/21	1715	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
RL HGL	11/17/21 1337	2	3	11/17/21 17:30	4 11/17/21 1700
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

SGS COC_11162021 Rev 031318

SGS Sample Receipt Summary

Job Number: FA90892 **Client:** HGL,INC **Project:** SLF PFAS ASSESSMENT

Date / Time Received: 11/18/2021 5:00:00 PM **Delivery Method:** ALSE **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH Date: 11/18/2021 5:00:00 P Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88672	EPA 537M QSM5.3 B-15						
OP88672-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	101	%	73-129
OP88672-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	112	%	73-129
OP88672-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	94	%	72-129
OP88672-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	104	%	72-129
OP88672-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	99	%	72-129
OP88672-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	94	%	72-129
OP88672-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	100	%	72-130
OP88672-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	91	%	72-130
OP88672-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	92	%	71-133
OP88672-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	96	%	71-133
OP88672-BS	375-95-1	Perfluorononanoic acid	BSP	REC	103	%	69-130
OP88672-BS	375-95-1	Perfluorononanoic acid	BSP	REC	93	%	69-130
OP88672-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	93	%	71-129
OP88672-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	99	%	71-129
OP88672-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	92	%	69-133
OP88672-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	96	%	69-133
OP88672-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	91	%	72-134
OP88672-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	99	%	72-134
OP88672-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	97	%	65-144
OP88672-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	95	%	65-144
OP88672-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	93	%	71-132
OP88672-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	99	%	71-132
OP88672-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	104	%	73-130
OP88672-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	94	%	73-130
OP88672-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	102	%	71-127
OP88672-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	93	%	71-127
OP88672-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	102	%	68-131
OP88672-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	94	%	68-131
OP88672-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	98	%	69-134
OP88672-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	96	%	69-134
OP88672-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	104	%	65-140
OP88672-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	92	%	65-140
OP88672-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	102	%	69-127
OP88672-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	99	%	69-127
OP88672-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	97	%	53-142
OP88672-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	89	%	53-142
OP88672-BS	754-91-6	PFOSA	BSP	REC	92	%	67-137
OP88672-BS	754-91-6	PFOSA	BSP	REC	102	%	67-137
OP88672-BS	2355-31-9	MeFOSAA	BSP	REC	89	%	65-136
OP88672-BS	2355-31-9	MeFOSAA	BSP	REC	101	%	65-136
OP88672-BS	2991-50-6	EtFOSAA	BSP	REC	93	%	61-135
OP88672-BS	2991-50-6	EtFOSAA	BSP	REC	100	%	61-135

* Sample used for QC is not from job FA90892

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88672-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	96	%	63-143
OP88672-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	99	%	63-143
OP88672-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	96	%	64-140
OP88672-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	97	%	64-140
OP88672-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	96	%	67-138
OP88672-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	99	%	67-138
OP88672-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	108	%	73-129
OP88672-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	107	%	72-129
OP88672-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	104	%	72-129
OP88672-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	106	%	72-130
OP88672-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	101	%	71-133
OP88672-MS*	375-95-1	Perfluorononanoic acid	MS	REC	106	%	69-130
OP88672-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	101	%	71-129
OP88672-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	101	%	69-133
OP88672-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	103	%	72-134
OP88672-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	109	%	65-144
OP88672-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	103	%	71-132
OP88672-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	108	%	73-130
OP88672-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	109	%	71-127
OP88672-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	104	%	68-131
OP88672-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	103	%	69-134
OP88672-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	106	%	65-140
OP88672-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	101	%	69-127
OP88672-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	101	%	53-142
OP88672-MS*	754-91-6	PFOSA	MS	REC	106	%	67-137
OP88672-MS*	2355-31-9	MeFOSAA	MS	REC	108	%	65-136
OP88672-MS*	2991-50-6	EtFOSAA	MS	REC	108	%	61-135
OP88672-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	101	%	63-143
OP88672-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	100	%	64-140
OP88672-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	106	%	67-138
OP88672-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	106	%	73-129
OP88672-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	2	%	30
OP88672-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	104	%	72-129
OP88672-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	3	%	30
OP88672-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	100	%	72-129
OP88672-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	4	%	30
OP88672-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	101	%	72-130
OP88672-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	4	%	30
OP88672-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	97	%	71-133
OP88672-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	4	%	30
OP88672-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	104	%	69-130
OP88672-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	2	%	30
OP88672-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	99	%	71-129
OP88672-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	1	%	30
OP88672-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	98	%	69-133

* Sample used for QC is not from job FA90892

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90892
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/16/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88672-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	3	%	30
OP88672-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	99	%	72-134
OP88672-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	4	%	30
OP88672-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	101	%	65-144
OP88672-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	8	%	30
OP88672-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	99	%	71-132
OP88672-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	4	%	30
OP88672-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	103	%	73-130
OP88672-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	5	%	30
OP88672-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	104	%	71-127
OP88672-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	5	%	30
OP88672-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	105	%	68-131
OP88672-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	1	%	30
OP88672-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	102	%	69-134
OP88672-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	1	%	30
OP88672-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	105	%	65-140
OP88672-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	1	%	30
OP88672-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	96	%	69-127
OP88672-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	6	%	30
OP88672-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	97	%	53-142
OP88672-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	4	%	30
OP88672-MSD*	754-91-6	PFOSA	MSD	REC	105	%	67-137
OP88672-MSD*	754-91-6	PFOSA	MSD	RPD	1	%	30
OP88672-MSD*	2355-31-9	MeFOSAA	MSD	REC	102	%	65-136
OP88672-MSD*	2355-31-9	MeFOSAA	MSD	RPD	5	%	30
OP88672-MSD*	2991-50-6	EtFOSAA	MSD	REC	103	%	61-135
OP88672-MSD*	2991-50-6	EtFOSAA	MSD	RPD	5	%	30
OP88672-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	98	%	63-143
OP88672-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	3	%	30
OP88672-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	96	%	64-140
OP88672-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	4	%	30
OP88672-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	101	%	67-138
OP88672-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	4	%	30

* Sample used for QC is not from job FA90892

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q324-IBLK	4Q23590.D	1	12/14/21	MV	n/a	n/a	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	99%	50-150%
	13C9-PFNA	100%	50-150%
	13C6-PFDA	100%	50-150%

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q324-IBLK	4Q23590.D	1	12/14/21	MV	n/a	n/a	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	102%	50-150%
	13C2-PFDoDA	100%	50-150%
	13C2-PFTeDA	97%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	101%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	107%	50-150%
	d3-MeFOSAA	101%	50-150%
	d5-EtFOSAA	99%	50-150%
	13C2-4:2FTS	91%	50-150%
	13C2-6:2FTS	92%	50-150%
	13C2-8:2FTS	94%	50-150%
	13C3-HFPO-DA	98%	50-150%

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23660.D	1	12/15/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-2, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	50-150%
	13C5-PFPeA	100%	50-150%
	13C5-PFHxA	100%	50-150%
	13C4-PFHpA	102%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	105%	50-150%
	13C6-PFDA	105%	50-150%

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23660.D	1	12/15/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-2, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	104%	50-150%
	13C2-PFDoDA	100%	50-150%
	13C2-PFTeDA	99%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	98%	50-150%
	13C8-PFOS	103%	50-150%
	13C8-FOSA	110%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	102%	50-150%
	13C2-4:2FTS	93%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	97%	50-150%
	13C3-HFPO-DA	96%	50-150%

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23741.D	1	12/16/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-2, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	100%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	99%	50-150%
	13C4-PFHpA	100%	50-150%
	13C8-PFOA	102%	50-150%
	13C9-PFNA	105%	50-150%
	13C6-PFDA	104%	50-150%

Instrument Blank

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q325-IBLK	4Q23741.D	1	12/16/21	MV	n/a	n/a	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-2, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	105%	50-150%
	13C2-PFDoDA	102%	50-150%
	13C2-PFTeDA	102%	50-150%
	13C3-PFBS	98%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	104%	50-150%
	13C8-FOSA	109%	50-150%
	d3-MeFOSAA	111%	50-150%
	d5-EtFOSAA	112%	50-150%
	13C2-4:2FTS	92%	50-150%
	13C2-6:2FTS	97%	50-150%
	13C2-8:2FTS	96%	50-150%
	13C3-HFPO-DA	97%	50-150%

Method Blank Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MB	4Q23604.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	88%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	83%	50-150%
	13C4-PFHpA	82%	50-150%
	13C8-PFOA	86%	50-150%
	13C9-PFNA	85%	50-150%
	13C6-PFDA	87%	50-150%

Method Blank Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MB	4Q23604.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	80%	50-150%
	13C2-PFDoDA	73%	50-150%
	13C2-PFTeDA	66%	50-150%
	13C3-PFBS	83%	50-150%
	13C3-PFHxS	79%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	96%	50-150%
	d3-MeFOSAA	90%	50-150%
	d5-EtFOSAA	80%	50-150%
	13C2-4:2FTS	81%	50-150%
	13C2-6:2FTS	81%	50-150%
	13C2-8:2FTS	84%	50-150%
	13C3-HFPO-DA	84%	50-150%

Method Blank Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MB	4Q23666.D	1	12/15/21	MV	12/06/21	OP88672	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	92%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	93%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	96%	50-150%
	13C6-PFDA	94%	50-150%

Method Blank Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MB	4Q23666.D	1	12/15/21	MV	12/06/21	OP88672	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	91%	50-150%
	13C2-PFDoDA	86%	50-150%
	13C2-PFTeDA	79%	50-150%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	93%	50-150%
	13C8-FOSA	93%	50-150%
	d3-MeFOSA	64%	50-150%
	d3-MeFOSAA	89%	50-150%
	d5-EtFOSAA	82%	50-150%
	13C2-4:2FTS	86%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	90%	50-150%

Blank Spike Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-BS	4Q23603.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.179	112	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.166	104	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.158	99	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.160	100	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.154	96	71-133
375-95-1	Perfluorononanoic acid	0.16	0.165	103	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.159	99	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.153	96	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.158	99	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.155	97	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.159	99	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.166	104	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.163	102	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.163	102	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.157	98	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.166	104	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.163	102	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.155	97	53-142
754-91-6	PFOSA	0.16	0.163	102	67-137
2355-31-9	MeFOSAA	0.16	0.162	101	65-136
2991-50-6	EtFOSAA	0.16	0.160	100	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.159	99	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.155	97	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.159	99	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.154	96	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	89%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	84%	50-150%
	13C4-PFHpA	84%	50-150%
	13C8-PFOA	86%	50-150%
	13C9-PFNA	85%	50-150%
	13C6-PFDA	87%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-BS	4Q23603.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	81%	50-150%
	13C2-PFDoDA	76%	50-150%
	13C2-PFTeDA	71%	50-150%
	13C3-PFBS	87%	50-150%
	13C3-PFHxS	84%	50-150%
	13C8-PFOS	87%	50-150%
	13C8-FOSA	92%	50-150%
	d3-MeFOSAA	92%	50-150%
	d5-EtFOSAA	85%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	87%	50-150%
	13C2-8:2FTS	91%	50-150%
	13C3-HFPO-DA	84%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-BS	4Q23665.D	1	12/15/21	MV	12/06/21	OP88672	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.162	101	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.151	94	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.151	94	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.146	91	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.147	92	71-133
375-95-1	Perfluorononanoic acid	0.16	0.148	93	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.148	93	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.147	92	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.146	91	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.152	95	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.148	93	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.151	94	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.149	93	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.151	94	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.153	96	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.147	92	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.159	99	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.142	89	53-142
754-91-6	PFOSA	0.16	0.147	92	67-137
2355-31-9	MeFOSAA	0.16	0.142	89	65-136
2991-50-6	EtFOSAA	0.16	0.148	93	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.153	96	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.153	96	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.154	96	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.139	87	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	97%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	99%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	99%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-BS	4Q23665.D	1	12/15/21	MV	12/06/21	OP88672	S4Q325

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	98%	50-150%
	13C2-PFDoDA	97%	50-150%
	13C2-PFTeDA	88%	50-150%
	13C3-PFBS	98%	50-150%
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	92%	50-150%
	d3-MeFOSA	72%	50-150%
	d3-MeFOSAA	98%	50-150%
	d5-EtFOSAA	93%	50-150%
	13C2-4:2FTS	97%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	98%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MS	4Q23606.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324
OP88672-MSD	4Q23607.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324
FA90871-1	4Q23605.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	Compound	FA90871-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.016	U	0.16	0.173	108	0.16	0.170	106	2	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0080	U	0.16	0.171	107	0.16	0.166	104	3	72-129/30
307-24-4	Perfluorohexanoic acid	0.0080	U	0.16	0.166	104	0.16	0.160	100	4	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0080	U	0.16	0.169	106	0.16	0.162	101	4	72-130/30
335-67-1	Perfluorooctanoic acid	0.0080	U	0.16	0.161	101	0.16	0.155	97	4	71-133/30
375-95-1	Perfluorononanoic acid	0.0080	U	0.16	0.170	106	0.16	0.167	104	2	69-130/30
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.161	101	0.16	0.159	99	1	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.161	101	0.16	0.156	98	3	69-133/30
307-55-1	Perfluorododecanoic acid	0.0080	U	0.16	0.165	103	0.16	0.159	99	4	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.16	0.175	109	0.16	0.162	101	8	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.16	0.165	103	0.16	0.159	99	4	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	0.16	0.173	108	0.16	0.165	103	5	73-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	0.16	0.175	109	0.16	0.166	104	5	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	0.16	0.166	104	0.16	0.168	105	1	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	0.16	0.165	103	0.16	0.163	102	1	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0080	U	0.16	0.169	106	0.16	0.168	105	1	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.162	101	0.16	0.153	96	6	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.161	101	0.16	0.155	97	4	53-142/30
754-91-6	PFOSA	0.0080	U	0.16	0.169	106	0.16	0.168	105	1	67-137/30
2355-31-9	MeFOSAA	0.016	U	0.16	0.172	108	0.16	0.163	102	5	65-136/30
2991-50-6	EtFOSAA	0.016	U	0.16	0.172	108	0.16	0.164	103	5	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.161	101	0.16	0.157	98	3	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.160	100	0.16	0.154	96	4	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.16	0.169	106	0.16	0.162	101	4	67-138/30
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.156	98	0.16	0.154	96	1	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA90871-1	Limits
	13C4-PFBA	80%	82%	82%	50-150%
	13C5-PFPeA	79%	82%	79%	50-150%
	13C5-PFHxA	79%	82%	79%	50-150%
	13C4-PFHpA	80%	83%	81%	50-150%
	13C8-PFOA	81%	86%	83%	50-150%
	13C9-PFNA	82%	84%	84%	50-150%
	13C6-PFDA	83%	83%	83%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90892
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88672-MS	4Q23606.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324
OP88672-MSD	4Q23607.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324
FA90871-1	4Q23605.D	1	12/14/21	MV	12/06/21	OP88672	S4Q324

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90892-1, FA90892-2, FA90892-3, FA90892-4, FA90892-5, FA90892-6, FA90892-7, FA90892-8, FA90892-9, FA90892-10, FA90892-11, FA90892-12, FA90892-13, FA90892-14, FA90892-15, FA90892-16, FA90892-17, FA90892-18

CAS No.	ID Standard Recoveries	MS	MSD	FA90871-1	Limits
	13C7-PFUnDA	75%	78%	77%	50-150%
	13C2-PFDoDA	71%	74%	70%	50-150%
	13C2-PFTeDA	64%	69%	67%	50-150%
	13C3-PFBS	80%	84%	81%	50-150%
	13C3-PFHxS	81%	82%	77%	50-150%
	13C8-PFOS	81%	85%	80%	50-150%
	13C8-FOSA	92%	94%	96%	50-150%
	d3-MeFOSA	69%	75%	46%* [a]	50-150%
	d3-MeFOSAA	84%	89%	87%	50-150%
	d5-EtFOSAA	78%	83%	80%	50-150%
	13C2-4:2FTS	84%	87%	79%	50-150%
	13C2-6:2FTS	84%	89%	81%	50-150%
	13C2-8:2FTS	84%	87%	81%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SGS Job Number: FA90938

Sampling Date: 11/17/21

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **68**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA90938

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90938-1	11/17/21	08:03	DLJB	11/18/21	AQ	Ground Water	S114-DPT1005-005.0-20211117
FA90938-2	11/17/21	08:21	DLJB	11/18/21	AQ	Ground Water	S114-DPT1005-015.0-20211117
FA90938-3	11/17/21	08:43	DLJB	11/18/21	AQ	Ground Water	S114-DPT1005-025.0-20211117
FA90938-4	11/17/21	09:10	DLJB	11/18/21	AQ	Ground Water	S114-DPT1005-035.0-20211117
FA90938-5	11/17/21	10:53	DLJB	11/18/21	AQ	Ground Water	S114-DPT1006-005.0-20211117
FA90938-6	11/17/21	11:11	DLJB	11/18/21	AQ	Ground Water	S114-DPT1006-015.0-20211117
FA90938-7	11/17/21	11:33	DLJB	11/18/21	AQ	Ground Water	S114-DPT1006-025.0-20211117
FA90938-8	11/17/21	12:00	DLJB	11/18/21	AQ	Ground Water	S114-DPT1006-035.0-20211117
FA90938-9	11/17/21	12:00	DLJB	11/18/21	AQ	Ground Water	S114-FD-20211117-01
FA90938-10	11/17/21	13:28	DLJB	11/18/21	AQ	Ground Water	S114-DPT1007-005.0-20211117
FA90938-11	11/17/21	13:41	DLJB	11/18/21	AQ	Ground Water	S114-DPT1007-015.0-20211117
FA90938-12	11/17/21	13:41	DLJB	11/18/21	AQ	Ground Water	S114-FD-20211117-02
FA90938-13	11/17/21	14:04	DLJB	11/18/21	AQ	Ground Water	S114-DPT1007-025.0-20211117

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA90938

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90938-14	11/17/21	14:34	DLJB	11/18/21	AQ	Ground Water	S114-DPT1007-035.0-20211117
FA90938-15	11/17/21	15:35	DLJB	11/18/21	AQ	Ground Water	S114-DPT1008-005.0-20211117
FA90938-16	11/17/21	15:56	DLJB	11/18/21	AQ	Ground Water	S114-DPT1008-015.0-20211117
FA90938-17	11/17/21	16:18	DLJB	11/18/21	AQ	Ground Water	S114-DPT1008-025.0-20211117
FA90938-18	11/17/21	16:50	DLJB	11/18/21	AQ	Ground Water	S114-DPT1008-035.0-20211117
FA90938-19	11/17/21	17:00	DLJB	11/18/21	AQ	Field Blank Water	S114-FB-20211117-01
FA90938-20	11/17/21	17:05	DLJB	11/18/21	AQ	Equipment Blank	S114-EB-20211117-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA90938

Site: NASA TQN 21- SLF PFAS Assessment **Report Date** 12/17/2021 4:45:02

On 11/18/2021, 19 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90938 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88735

Sample(s) FA90938-1MS, FA90938-7DUP were used as the QC samples indicated.

Sample(s) FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-3, FA90938-5, FA90938-7, FA90938-8, FA90938-9 have surrogates outside control limits.

FA90938-3 for 13C2-PFTeDA: Outside control limits.

FA90938-3 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-5 for 13C2-PFTeDA: Outside control limits.

FA90938-5 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-7 for 13C2-PFTeDA: Outside control limits due to matrix interference. Confirmed by batch QC.

FA90938-7 for 13C8-FOSA: Outside control limits.

FA90938-7 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-7 for PFOSA: Associated ID Standard outside control limits.

FA90938-8 for 13C2-PFTeDA: Outside control limits.

FA90938-8 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-9 for 13C2-PFTeDA: Outside control limits.

FA90938-9 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-10 for 13C2-PFTeDA: Outside control limits.

FA90938-10 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-11 for 13C2-PFTeDA: Outside control limits.

FA90938-11 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-12 for 13C2-PFTeDA: Outside control limits.

FA90938-12 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-13 for 13C2-PFTeDA: Outside control limits.

FA90938-13 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-14 for 13C2-PFTeDA: Outside control limits.

FA90938-14: Dilution required due to matrix interference (ID recovery standard failure).

FA90938-15 for 13C2-PFTeDA: Outside control limits.

FA90938-15: Dilution required due to matrix interference (ID recovery standard failure).

FA90938-16 for 13C2-PFTeDA: Outside control limits.

FA90938-16 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-17 for 13C2-PFTeDA: Outside control limits.

FA90938-17 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90938-18 for 13C2-PFTeDA: Outside control limits.

FA90938-18 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90938
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/17/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90938-1	**S114-DPT1005-005.0-20211117**					
Perfluorobutanoic acid		0.0471	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0450	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0865	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0108	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0071 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.320	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.243	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.782	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0053 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0088	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90938-2	**S114-DPT1005-015.0-20211117**					
Perfluorobutanesulfonic acid		0.0035 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90938-3	**S114-DPT1005-025.0-20211117**					
Perfluorohexanesulfonic acid		0.0043 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90938-4	**S114-DPT1005-035.0-20211117**					
No hits reported in this sample.						
FA90938-5	**S114-DPT1006-005.0-20211117**					
No hits reported in this sample.						
FA90938-6	**S114-DPT1006-015.0-20211117**					
No hits reported in this sample.						
FA90938-7	**S114-DPT1006-025.0-20211117**					
No hits reported in this sample.						
FA90938-8	**S114-DPT1006-035.0-20211117**					
No hits reported in this sample.						
FA90938-9	**S114-FD-20211117-01**					
No hits reported in this sample.						

Summary of Hits

Job Number: FA90938
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/17/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90938-10	**S114-DPT1007-005.0-20211117**					
No hits reported in this sample.						
FA90938-11	**S114-DPT1007-015.0-20211117**					
Perfluorobutanoic acid		0.0371	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90938-12	**S114-FD-20211117-02**					
Perfluorobutanoic acid		0.0361	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90938-13	**S114-DPT1007-025.0-20211117**					
Perfluorobutanoic acid		0.0106 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90938-14	**S114-DPT1007-035.0-20211117**					
Perfluoropentanoic acid		0.0044 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0083	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0120	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0105	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0458	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0099	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90938-15	**S114-DPT1008-005.0-20211117**					
Perfluorobutanoic acid		0.0112 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0066 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0034 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0095	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90938-16	**S114-DPT1008-015.0-20211117**					
Perfluorobutanoic acid		0.0076 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0052 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0102	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0076 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0235	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90938-17	**S114-DPT1008-025.0-20211117**					
Perfluorobutanoic acid		0.0371	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0154	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90938
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/17/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorohexanoic acid		0.0338	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0064 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0063 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0883	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0777	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.239	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0090	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90938-18	**S114-DPT1008-035.0-20211117**					
Perfluorobutanesulfonic acid		0.0065 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0044 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0133	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90938-19	**S114-FB-20211117-01**					
No hits reported in this sample.						
FA90938-20	**S114-EB-20211117-01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1005-005.0-20211117
Lab Sample ID: FA90938-1
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81591.D	1	12/14/21 17:09	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0471	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0450	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0865	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0108	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0071	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.320	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.243	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.782	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0053	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0088	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1005-005.0-20211117		
Lab Sample ID:	FA90938-1	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		50-150%
	13C5-PFPeA	60%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	68%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	50%		50-150%
	13C3-PFBS	61%		50-150%
	13C3-PFHxS	64%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	60%		50-150%
	d3-MeFOSAA	75%		50-150%
	d5-EtFOSAA	69%		50-150%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	69%		50-150%
	13C3-HFPO-DA	62%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1005-015.0-20211117
Lab Sample ID: FA90938-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81593.D	1	12/14/21 17:46	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0035	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1005-015.0-20211117
Lab Sample ID: FA90938-2 **Date Sampled:** 11/17/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	68%		50-150%
	13C2-PFTeDA	56%		50-150%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	62%		50-150%
	d3-MeFOSAA	83%		50-150%
	d5-EtFOSAA	78%		50-150%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1005-025.0-20211117		
Lab Sample ID:	FA90938-3	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81594.D	1	12/14/21 18:05	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0043	0.0083	0.0042	0.0021	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1005-025.0-20211117		
Lab Sample ID:	FA90938-3	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	62%		50-150%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	64%		50-150%
	13C4-PFHpA	69%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	66%		50-150%
	13C7-PFUnDA	57%		50-150%
	13C2-PFDoDA	50%		50-150%
	13C2-PFTeDA	39% b		50-150%
	13C3-PFBS	63%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	62%		50-150%
	d3-MeFOSAA	60%		50-150%
	d5-EtFOSAA	55%		50-150%
	13C2-4:2FTS	61%		50-150%
	13C2-6:2FTS	69%		50-150%
	13C2-8:2FTS	61%		50-150%
	13C3-HFPO-DA	63%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1005-035.0-20211117		
Lab Sample ID:	FA90938-4	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81595.D	1	12/14/21 18:23	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1005-035.0-20211117
Lab Sample ID: FA90938-4 **Date Sampled:** 11/17/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	74%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	74%		50-150%
	13C2-PFDoDA	67%		50-150%
	13C2-PFTeDA	55%		50-150%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	71%		50-150%
	d5-EtFOSAA	67%		50-150%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	70%		50-150%
	13C3-HFPO-DA	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1006-005.0-20211117		
Lab Sample ID:	FA90938-5	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81596.D	1	12/14/21 18:42	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1006-005.0-20211117		
Lab Sample ID:	FA90938-5	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		50-150%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	36% b		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	65%		50-150%
	d3-MeFOSAA	65%		50-150%
	d5-EtFOSAA	61%		50-150%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	71%		50-150%
	13C3-HFPO-DA	72%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1006-015.0-20211117
Lab Sample ID: FA90938-6
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81597.D	1	12/14/21 19:00	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1006-015.0-20211117		
Lab Sample ID:	FA90938-6	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		50-150%
	13C5-PFPeA	69%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	78%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	68%		50-150%
	d5-EtFOSAA	63%		50-150%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	74%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1006-025.0-20211117
Lab Sample ID: FA90938-7
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81600.D	1	12/14/21 19:56	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1006-025.0-20211117		
Lab Sample ID:	FA90938-7	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	60%		50-150%
	13C2-PFDoDA	52%		50-150%
	13C2-PFTeDA	38% [b]		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	41% [c]		50-150%
	d3-MeFOSAA	57%		50-150%
	d5-EtFOSAA	50%		50-150%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	64%		50-150%
	13C3-HFPO-DA	74%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits due to matrix interference. Confirmed by batch QC.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1006-035.0-20211117
Lab Sample ID: FA90938-8
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81602.D	1	12/14/21 20:33	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1006-035.0-20211117		
Lab Sample ID:	FA90938-8	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		50-150%
	13C5-PFPeA	79%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	43% b		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	63%		50-150%
	d3-MeFOSAA	67%		50-150%
	d5-EtFOSAA	62%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	74%		50-150%
	13C3-HFPO-DA	75%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211117-01
Lab Sample ID: FA90938-9
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81603.D	1	12/14/21 20:52	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FD-20211117-01		
Lab Sample ID:	FA90938-9	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		50-150%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	58%		50-150%
	13C2-PFTeDA	41% b		50-150%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	64%		50-150%
	d5-EtFOSAA	58%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	73%		50-150%
	13C3-HFPO-DA	76%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-005.0-20211117		
Lab Sample ID:	FA90938-10	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81604.D	1	12/14/21 21:10	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-005.0-20211117		
Lab Sample ID:	FA90938-10	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	86%		50-150%
	13C7-PFUnDA	74%		50-150%
	13C2-PFDoDA	58%		50-150%
	13C2-PFTeDA	37% b		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	83%		50-150%
	13C8-FOSA	58%		50-150%
	d3-MeFOSAA	69%		50-150%
	d5-EtFOSAA	61%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	75%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1007-015.0-20211117
Lab Sample ID: FA90938-11
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81605.D	1	12/14/21 21:29	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0371	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-015.0-20211117		
Lab Sample ID:	FA90938-11	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	71%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	65%		50-150%
	13C2-PFTeDA	42% b		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	69%		50-150%
	d3-MeFOSAA	81%		50-150%
	d5-EtFOSAA	72%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	80%		50-150%
	13C3-HFPO-DA	71%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211117-02
Lab Sample ID: FA90938-12
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81606.D	1	12/14/21 21:47	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0361	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211117-02
Lab Sample ID: FA90938-12 **Date Sampled:** 11/17/21
Matrix: AQ - Ground Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	101%		50-150%
	13C6-PFDA	100%		50-150%
	13C7-PFUnDA	88%		50-150%
	13C2-PFDoDA	71%		50-150%
	13C2-PFTeDA	39% b		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	76%		50-150%
	d3-MeFOSAA	93%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	81%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	81%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1007-025.0-20211117
Lab Sample ID: FA90938-13
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81607.D	1	12/14/21 22:06	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0106	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-025.0-20211117		
Lab Sample ID:	FA90938-13	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%		50-150%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	82%		50-150%
	13C7-PFUnDA	72%		50-150%
	13C2-PFDoDA	59%		50-150%
	13C2-PFTeDA	36% b		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	72%		50-150%
	d5-EtFOSAA	66%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	74%		50-150%
	13C3-HFPO-DA	72%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-035.0-20211117		
Lab Sample ID:	FA90938-14	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81608.D	1	12/14/21 22:24	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2 [a]	2Q81726.D	5	12/16/21 10:30	FS	12/09/21 08:30	OP88735	S2Q1154

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0044	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0083	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0120	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0105	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0458	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0099	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1007-035.0-20211117		
Lab Sample ID:	FA90938-14	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	81%	95%	50-150%
	13C5-PFPeA	82%	95%	50-150%
	13C5-PFHxA	84%	96%	50-150%
	13C4-PFHpA	90%	102%	50-150%
	13C8-PFOA	93%	103%	50-150%
	13C9-PFNA	96%	101%	50-150%
	13C6-PFDA	96%	99%	50-150%
	13C7-PFUnDA	84%	90%	50-150%
	13C2-PFDoDA	60%	81%	50-150%
	13C2-PFTeDA	16% [c]	67%	50-150%
	13C3-PFBS	81%	93%	50-150%
	13C3-PFHxS	88%	96%	50-150%
	13C8-PFOS	91%	97%	50-150%
	13C8-FOSA	55%	77%	50-150%
	d3-MeFOSAA	74%	82%	50-150%
	d5-EtFOSAA	64%	73%	50-150%
	13C2-4:2FTS	76%	93%	50-150%
	13C2-6:2FTS	88%	97%	50-150%
	13C2-8:2FTS	83%	87%	50-150%
	13C3-HFPO-DA	78%	80%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1008-005.0-20211117
Lab Sample ID: FA90938-15
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81609.D	1	12/14/21 22:43	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2 [a]	2Q81722.D	5	12/16/21 09:09	FS	12/09/21 08:30	OP88735	S2Q1154

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0112	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0066	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0034	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0095	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1008-005.0-20211117		
Lab Sample ID:	FA90938-15	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%	93%	50-150%
	13C5-PFPeA	90%	94%	50-150%
	13C5-PFHxA	92%	95%	50-150%
	13C4-PFHpA	97%	99%	50-150%
	13C8-PFOA	96%	98%	50-150%
	13C9-PFNA	95%	95%	50-150%
	13C6-PFDA	90%	88%	50-150%
	13C7-PFUnDA	79%	78%	50-150%
	13C2-PFDoDA	59%	70%	50-150%
	13C2-PFTeDA	22% [c]	66%	50-150%
	13C3-PFBS	89%	94%	50-150%
	13C3-PFHxS	92%	92%	50-150%
	13C8-PFOS	89%	90%	50-150%
	13C8-FOSA	78%	86%	50-150%
	d3-MeFOSAA	71%	71%	50-150%
	d5-EtFOSAA	66%	63%	50-150%
	13C2-4:2FTS	84%	91%	50-150%
	13C2-6:2FTS	91%	89%	50-150%
	13C2-8:2FTS	81%	74%	50-150%
	13C3-HFPO-DA	86%	75%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1008-015.0-20211117
Lab Sample ID: FA90938-16
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81613.D	1	12/14/21 23:57	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0076	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0052	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0102	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0076	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0235	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1008-015.0-20211117		
Lab Sample ID:	FA90938-16	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	77%		50-150%
	13C2-PFDoDA	69%		50-150%
	13C2-PFTeDA	45% b		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	68%		50-150%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	77%		50-150%
	13C3-HFPO-DA	70%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1008-025.0-20211117		
Lab Sample ID:	FA90938-17	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81614.D	1	12/15/21 00:15	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0371	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0154	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0338	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0064	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0063	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0883	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0777	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.239	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0090	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1008-025.0-20211117		
Lab Sample ID:	FA90938-17	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	87%		50-150%
	13C8-PFOA	91%		50-150%
	13C9-PFNA	95%		50-150%
	13C6-PFDA	90%		50-150%
	13C7-PFUnDA	77%		50-150%
	13C2-PFDoDA	63%		50-150%
	13C2-PFTeDA	40% b		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	61%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	68%		50-150%
	13C2-4:2FTS	69%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	81%		50-150%
	13C3-HFPO-DA	72%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1008-035.0-20211117
Lab Sample ID: FA90938-18
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81615.D	1	12/15/21 00:34	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0065	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0044	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0133	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1008-035.0-20211117		
Lab Sample ID:	FA90938-18	**Date Sampled:**	11/17/21
Matrix:	AQ - Ground Water	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		50-150%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	69%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	76%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	62%		50-150%
	13C2-PFDoDA	54%		50-150%
	13C2-PFTeDA	43% b		50-150%
	13C3-PFBS	66%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	55%		50-150%
	d3-MeFOSAA	56%		50-150%
	d5-EtFOSAA	51%		50-150%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	64%		50-150%
	13C3-HFPO-DA	63%		50-150%

(a) Associated ID Standard outside control limits.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211117-01
Lab Sample ID: FA90938-19
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81616.D	1	12/15/21 00:53	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211117-01
Lab Sample ID: FA90938-19 **Date Sampled:** 11/17/21
Matrix: AQ - Field Blank Water **Date Received:** 11/18/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	86%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	74%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	74%		50-150%
	13C8-FOSA	76%		50-150%
	d3-MeFOSAA	71%		50-150%
	d5-EtFOSAA	68%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	74%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211117-01
Lab Sample ID: FA90938-20
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/17/21
Date Received: 11/18/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81617.D	1	12/15/21 01:30	FS	12/09/21 08:30	OP88735	S2Q1153
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-EB-20211117-01		
Lab Sample ID:	FA90938-20	**Date Sampled:**	11/17/21
Matrix:	AQ - Equipment Blank	**Date Received:**	11/18/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		50-150%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	92%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	88%		50-150%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	94%		50-150%
	d5-EtFOSAA	86%		50-150%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	92%		50-150%
	13C3-HFPO-DA	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA90938

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merrit Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNA	DI WATER	MEOH	LCQSM537/DODFL-24 analytes + GenX	LAB USE ONLY
1	S114-DPT1005-005.0-20211117	11/17/21	0803	DL	GW	2		X								X	
2	S114-DPT1005-015.0-20211117	11/17/21	0821	DL	GW	2		X								X	
3	S114-DPT1005-025.0-20211117	11/17/21	0843	DL	GW	2		X								X	
4	S114-DPT1005-035.0-20211117	11/17/21	0910	DL	GW	2		X								X	
5	S114-DPT1006-005.0-20211117	11/17/21	1053	DL	GW	2		X								X	
6	S114-DPT1006-015.0-20211117	11/17/21	1111	DL	GW	2		X								X	
7	S114-DPT1006-025.0-20211117	11/17/21	1133	DL	GW	2		X								X	
8	S114-DPT1006-035.0-20211117	11/17/21	1200	DL	GW	2		X								X	
9	S114-FD-20211117-01	11/17/21	1200	DL	GW	2		X								X	
10	S114-DPT1007-005.0-20211117	11/17/21	1328	DL	GW	2		X								X	
11	S114-DPT1007-015.0-20211117	11/17/21	1341	DL	GW	2		X								X	
12	S114-FD-20211117-02	11/17/21	1341	DL	GW	2		X								X	

INITIAL ASSESSMENT SP

LABEL VERIFICATION JW

Bottle labeled as S114-FD-20211117-02

Bottle labeled as S114-FD-20211117-03

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Do not use sample IDs from bottles for FDs, EB, and FB. Use sample ID on Chain of Custody.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
RL HGL	11/18/21 1550	2	3	11/19/21 8:10	4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 2.2-1.0

http://www.sgs.com/en/terms-and-conditions

SGS COC_11172021 Rev 031318

FA90938: Chain of Custody
Page 1 of 3

FA90938

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NH4OH-ZNAC	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
13	S114-DPT1007-025.0-20211117	11/17/21	1404	DL	GW	2		X								X	
14	S114-DPT1007-035.0-20211117	11/17/21	1434	DL	GW	2		X								X	
15	S114-DPT1008-005.0-20211117	11/17/21	1535	DL	GW	2		X								X	
16	S114-DPT1008-015.0-20211117	11/17/21	1556	DL	GW	2		X								X	
17	S114-DPT1008-025.0-20211117	11/17/21	1618	DL	GW	2		X								X	
18	S114-DPT1008-035.0-20211117	11/17/21	1650	DL	GW	2		X								X	
19	S114-FB-20211117-01	11/17/21	1700	DL	GW	2		X								X	Bottle labeled as S114-FB-20211117-03
20	S114-EB-20211117-01	11/17/21	1705	DL	GW	2		X								X	Bottle labeled as S114-EB-20211117-03

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Do not use sample IDs from bottles for FDs, EB, and FB. Use sample ID on Chain of Custody.

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
RC HGL	11/18/21 1550	2	3	11/19/21 18:10	4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

SGS COC_11172021 Rev 031318

SGS Sample Receipt Summary

Job Number: FA90938 **Client:** HGL, INC. **Project:** SLF PFAS ASSESSMENT

Date / Time Received: 11/18/2021 6:10:00 PM **Delivery Method:** FX **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.0);

Cooler Temps (Corrected) °C: Cooler 1: (2.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: STEPHENP Date: 11/18/2021 6:10:00 P Reviewer: _____ Date: _____

5.1
5

FA90938: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90938
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/17/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88735	EPA 537M QSM5.3 B-15						
OP88735-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	106	%	73-129
OP88735-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	108	%	72-129
OP88735-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	105	%	72-129
OP88735-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	103	%	72-130
OP88735-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	103	%	71-133
OP88735-BS	375-95-1	Perfluorononanoic acid	BSP	REC	107	%	69-130
OP88735-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	101	%	71-129
OP88735-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	101	%	69-133
OP88735-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	105	%	72-134
OP88735-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	102	%	65-144
OP88735-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	108	%	71-132
OP88735-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	105	%	73-130
OP88735-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	105	%	71-127
OP88735-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	107	%	68-131
OP88735-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	107	%	69-134
OP88735-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	108	%	65-140
OP88735-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP88735-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	101	%	53-142
OP88735-BS	754-91-6	PFOSA	BSP	REC	110	%	67-137
OP88735-BS	2355-31-9	MeFOSAA	BSP	REC	108	%	65-136
OP88735-BS	2991-50-6	EtFOSAA	BSP	REC	108	%	61-135
OP88735-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	102	%	63-143
OP88735-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	99	%	64-140
OP88735-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	102	%	67-138
OP88735-MS	375-22-4	Perfluorobutanoic acid	MS	REC	105	%	73-129
OP88735-MS	2706-90-3	Perfluoropentanoic acid	MS	REC	113	%	72-129
OP88735-MS	307-24-4	Perfluorohexanoic acid	MS	REC	109	%	72-129
OP88735-MS	375-85-9	Perfluoroheptanoic acid	MS	REC	103	%	72-130
OP88735-MS	335-67-1	Perfluorooctanoic acid	MS	REC	103	%	71-133
OP88735-MS	375-95-1	Perfluorononanoic acid	MS	REC	107	%	69-130
OP88735-MS	335-76-2	Perfluorodecanoic acid	MS	REC	101	%	71-129
OP88735-MS	2058-94-8	Perfluoroundecanoic acid	MS	REC	98	%	69-133
OP88735-MS	307-55-1	Perfluorododecanoic acid	MS	REC	101	%	72-134
OP88735-MS	72629-94-8	Perfluorotridecanoic acid	MS	REC	101	%	65-144
OP88735-MS	376-06-7	Perfluorotetradecanoic acid	MS	REC	102	%	71-132
OP88735-MS	375-73-5	Perfluorobutanesulfonic acid	MS	REC	110	%	73-130
OP88735-MS	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	114	%	71-127
OP88735-MS	355-46-4	Perfluorohexanesulfonic acid	MS	REC	107	%	68-131
OP88735-MS	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	114	%	69-134
OP88735-MS	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	105	%	65-140
OP88735-MS	68259-12-1	Perfluorononanesulfonic acid	MS	REC	95	%	69-127
OP88735-MS	335-77-3	Perfluorodecanesulfonic acid	MS	REC	90	%	53-142

* Sample used for QC is not from job FA90938

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90938
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/17/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88735-MS	754-91-6	PFOSA	MS	REC	109	%	67-137
OP88735-MS	2355-31-9	MeFOSAA	MS	REC	104	%	65-136
OP88735-MS	2991-50-6	EtFOSAA	MS	REC	103	%	61-135
OP88735-MS	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	101	%	63-143
OP88735-MS	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	99	%	64-140
OP88735-MS	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	101	%	67-138
OP88735-DUP	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP88735-DUP	2706-90-3	Perfluoropentanoic acid	DUP	RPD	0	%	30
OP88735-DUP	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP88735-DUP	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP88735-DUP	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP88735-DUP	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP88735-DUP	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP88735-DUP	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP88735-DUP	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP88735-DUP	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP88735-DUP	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP88735-DUP	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP88735-DUP	754-91-6	PFOSA	DUP	RPD	0	%	30
OP88735-DUP	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP88735-DUP	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP88735-DUP	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP88735-DUP	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP88735-DUP	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30

* Sample used for QC is not from job FA90938

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1153-IBLK	2Q81584.D	1	12/14/21	FS	n/a	n/a	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	92%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	93%	50-150%
	13C8-PFOA	93%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	93%	50-150%

Instrument Blank

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1153-IBLK	2Q81584.D	1	12/14/21	FS	n/a	n/a	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	92%	50-150%
	13C2-PFDoDA	92%	50-150%
	13C2-PFTeDA	90%	50-150%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	93%	50-150%
	13C8-FOSA	95%	50-150%
	d3-MeFOSAA	94%	50-150%
	d5-EtFOSAA	91%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	85%	50-150%

Instrument Blank

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1154-IBLK	2Q81652.D	1	12/15/21	FS	n/a	n/a	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-14, FA90938-15

CAS No.	Compound	Result	RL	MDL	Units	Q
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	95%	50-150%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	100%	50-150%
	13C7-PFUnDA	96%	50-150%
	13C2-PFDoDA	96%	50-150%
	13C2-PFTeDA	97%	50-150%
	13C3-PFBS	94%	50-150%
	13C3-PFHxS	94%	50-150%
	13C8-PFOS	96%	50-150%
	13C8-FOSA	101%	50-150%
	d3-MeFOSAA	100%	50-150%
	d5-EtFOSAA	98%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	89%	50-150%

Method Blank Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-MB	2Q81590.D	1	12/15/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	73%	50-150%
	13C5-PFPeA	75%	50-150%
	13C5-PFHxA	75%	50-150%
	13C4-PFHpA	78%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	77%	50-150%
	13C6-PFDA	77%	50-150%

Method Blank Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-MB	2Q81590.D	1	12/15/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	73%	50-150%
	13C2-PFDoDA	68%	50-150%
	13C2-PFTeDA	65%	50-150%
	13C3-PFBS	75%	50-150%
	13C3-PFHxS	73%	50-150%
	13C8-PFOS	74%	50-150%
	13C8-FOSA	72%	50-150%
	d3-MeFOSAA	70%	50-150%
	d5-EtFOSAA	64%	50-150%
	13C2-4:2FTS	68%	50-150%
	13C2-6:2FTS	70%	50-150%
	13C2-8:2FTS	73%	50-150%

Blank Spike Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-BS	2Q81589.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.170	106	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.172	108	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.168	105	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.164	103	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.165	103	71-133
375-95-1	Perfluorononanoic acid	0.16	0.171	107	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.162	101	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.162	101	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.168	105	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.163	102	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.172	108	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.168	105	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.168	105	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.171	107	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.171	107	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.172	108	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.170	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.162	101	53-142
754-91-6	PFOSA	0.16	0.176	110	67-137
2355-31-9	MeFOSAA	0.16	0.173	108	65-136
2991-50-6	EtFOSAA	0.16	0.172	108	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.163	102	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.158	99	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.163	102	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.177	111	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	77%	50-150%
	13C5-PFPeA	78%	50-150%
	13C5-PFHxA	78%	50-150%
	13C4-PFHpA	79%	50-150%
	13C8-PFOA	78%	50-150%
	13C9-PFNA	77%	50-150%
	13C6-PFDA	79%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-BS	2Q81589.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	75%	50-150%
	13C2-PFDoDA	71%	50-150%
	13C2-PFTeDA	65%	50-150%
	13C3-PFBS	79%	50-150%
	13C3-PFHxS	76%	50-150%
	13C8-PFOS	76%	50-150%
	13C8-FOSA	71%	50-150%
	d3-MeFOSAA	73%	50-150%
	d5-EtFOSAA	70%	50-150%
	13C2-4:2FTS	76%	50-150%
	13C2-6:2FTS	78%	50-150%
	13C2-8:2FTS	80%	50-150%
	13C3-HFPO-DA	75%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-MS	2Q81592.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153
FA90938-1	2Q81591.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	Compound	FA90938-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0471		0.167	0.222	105	73-129
2706-90-3	Perfluoropentanoic acid	0.0450		0.167	0.234	113	72-129
307-24-4	Perfluorohexanoic acid	0.0865		0.167	0.268	109	72-129
375-85-9	Perfluoroheptanoic acid	0.0108		0.167	0.183	103	72-130
335-67-1	Perfluorooctanoic acid	0.0071	J	0.167	0.179	103	71-133
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.178	107	69-130
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.168	101	71-129
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.164	98	69-133
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.168	101	72-134
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.169	101	65-144
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.170	102	71-132
375-73-5	Perfluorobutanesulfonic acid	0.320		0.167	0.504	110	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.243		0.167	0.433	114	71-127
355-46-4	Perfluorohexanesulfonic acid	0.782		0.167	0.961	107	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0053	J	0.167	0.195	114	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0088		0.167	0.183	105	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0083	U	0.167	0.159	95	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0083	U	0.167	0.150	90	53-142
754-91-6	PFOSA	0.0083	U	0.167	0.181	109	67-137
2355-31-9	MeFOSAA	0.017	U	0.167	0.174	104	65-136
2991-50-6	EtFOSAA	0.017	U	0.167	0.171	103	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.017	U	0.167	0.168	101	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.017	U	0.167	0.165	99	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.017	U	0.167	0.168	101	67-138
13252-13-6	HFPO-DA (GenX)	0.017	U	0.167	0.188	113	60-140

CAS No.	ID Standard Recoveries	MS	FA90938-1	Limits
	13C4-PFBA	62%	59%	50-150%
	13C5-PFPeA	62%	60%	50-150%
	13C5-PFHxA	64%	63%	50-150%
	13C4-PFHpA	70%	69%	50-150%
	13C8-PFOA	73%	73%	50-150%
	13C9-PFNA	76%	76%	50-150%
	13C6-PFDA	73%	72%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-MS	2Q81592.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153
FA90938-1	2Q81591.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	ID Standard Recoveries	MS	FA90938-1	Limits
	13C7-PFUnDA	66%	68%	50-150%
	13C2-PFDoDA	61%	61%	50-150%
	13C2-PFTeDA	62%	50%	50-150%
	13C3-PFBS	64%	61%	50-150%
	13C3-PFHxS	68%	64%	50-150%
	13C8-PFOS	71%	70%	50-150%
	13C8-FOSA	65%	60%	50-150%
	d3-MeFOSAA	73%	75%	50-150%
	d5-EtFOSAA	69%	69%	50-150%
	13C2-4:2FTS	66%	60%	50-150%
	13C2-6:2FTS	79%	74%	50-150%
	13C2-8:2FTS	73%	69%	50-150%
	13C3-HFPO-DA	62%	62%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-DUP	2Q81601.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153
FA90938-7	2Q81600.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	Compound	FA90938-7 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.016 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0080 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0080 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0080 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0080 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0080 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0080 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0080 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0080 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0080 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0080 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0080 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080 U		ND		nc	30
754-91-6	PFOSA	0.0080 U		ND		nc	30
2355-31-9	MeFOSAA	0.016 U		ND		nc	30
2991-50-6	EtFOSAA	0.016 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA90938-7	Limits
	13C4-PFBA	69%	75%	50-150%
	13C5-PFPeA	69%	75%	50-150%
	13C5-PFHxA	70%	75%	50-150%
	13C4-PFHpA	74%	81%	50-150%
	13C8-PFOA	74%	80%	50-150%
	13C9-PFNA	73%	79%	50-150%
	13C6-PFDA	68%	72%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90938
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88735-DUP	2Q81601.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153
FA90938-7	2Q81600.D	1	12/14/21	FS	12/09/21	OP88735	S2Q1153

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90938-1, FA90938-2, FA90938-3, FA90938-4, FA90938-5, FA90938-6, FA90938-7, FA90938-8, FA90938-9, FA90938-10, FA90938-11, FA90938-12, FA90938-13, FA90938-14, FA90938-15, FA90938-16, FA90938-17, FA90938-18, FA90938-19, FA90938-20

CAS No.	ID Standard Recoveries	DUP	FA90938-7	Limits
	13C7-PFUnDA	60%	60%	50-150%
	13C2-PFDoDA	51%	52%	50-150%
	13C2-PFTeDA	33%* [b]	38%* [a]	50-150%
	13C3-PFBS	71%	74%	50-150%
	13C3-PFHxS	71%	78%	50-150%
	13C8-PFOS	67%	72%	50-150%
	13C8-FOSA	54%	41%* [b]	50-150%
	d3-MeFOSAA	57%	57%	50-150%
	d5-EtFOSAA	53%	50%	50-150%
	13C2-4:2FTS	65%	70%	50-150%
	13C2-6:2FTS	71%	76%	50-150%
	13C2-8:2FTS	61%	64%	50-150%
	13C3-HFPO-DA		74%	50-150%

(a) Outside control limits due to matrix interference. Confirmed by batch QC.
(b) Outside control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SGS Job Number: FA90987

Sampling Date: 11/19/21

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **58**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, UT, VT, WA, WV

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EHS.US.CustomerCare@sgs.com

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA90987

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90987-1	11/19/21	09:24	DL	11/19/21	AQ	Ground Water	S114-DPT1012-005.0-20211119
FA90987-2	11/19/21	09:42	DL	11/19/21	AQ	Ground Water	S114-DPT1012-015.0-20211119
FA90987-3	11/19/21	10:02	DL	11/19/21	AQ	Ground Water	S114-DPT1012-025.0-20211119
FA90987-4	11/19/21	10:38	DL	11/19/21	AQ	Ground Water	S114-DPT1012-035.0-20211119
FA90987-5	11/19/21	11:28	DL	11/19/21	AQ	Ground Water	S114-DPT1013-005.0-20211119
FA90987-6	11/19/21	11:46	DL	11/19/21	AQ	Ground Water	S114-DPT1013-015.0-20211119
FA90987-7	11/19/21	12:05	DL	11/19/21	AQ	Ground Water	S114-DPT1013-025.0-20211119
FA90987-8	11/19/21	12:32	DL	11/19/21	AQ	Ground Water	S114-DPT1013-035.0-20211119
FA90987-9	11/19/21	12:32	DL	11/19/21	AQ	Ground Water	S114-FD-20211119-01
FA90987-10	11/19/21	13:05	DL	11/19/21	AQ	Field Blank Water	S114-FB-20211119-01
FA90987-11	11/19/21	13:10	DL	11/19/21	AQ	Equipment Blank	S114-EB-20211119-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA90987

Site: NASA TQN 21- SLF PFAS Assessment **Report Date** 12/20/2021 8:50:50

On 11/19/2021, 10 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 2.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90987 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88791

Sample(s) FA91003-1MS, FA91003-4DUP were used as the QC samples indicated.

Matrix: AQ **Batch ID:** OP88792

Sample(s) FA91005-7MS, FA91005-7MSD were used as the QC samples indicated.

Sample(s) FA90987-8 have surrogates outside control limits.

FA90987-8: Dilution required due to matrix interference (ID recovery standard failure).

FA90987-8 for 13C2-PFTeDA: Outside control limits.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90987-1	**S114-DPT1012-005.0-20211119**					
Perfluorobutanoic acid		0.0461	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0234	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0216	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0084	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0077 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0859	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0516	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.284	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0079 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.165	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90987-2	**S114-DPT1012-015.0-20211119**					
Perfluorobutanoic acid		0.0903	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.181	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.418	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0866	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0932	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0021 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.585	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.774	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		6.10	0.083	0.042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.110	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.774	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0059 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
FA90987-3	**S114-DPT1012-025.0-20211119**					
Perfluorobutanoic acid		0.0903	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.156	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.357	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0706	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.129	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0041 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.302	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.462	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		6.10	0.083	0.042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.191	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		2.49	0.083	0.042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0057 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90987-4	**S114-DPT1012-035.0-20211119**					
Perfluorobutanoic acid		0.0587	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0944	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.223	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0471	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0797	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0024 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.271	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.370	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		4.29	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.102	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.778	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90987-5	**S114-DPT1013-005.0-20211119**					
Perfluorobutanoic acid		0.0329	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.108	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0975	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0290	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0203	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0664	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0752	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.390	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0117	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.179	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.169	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
FA90987-6	**S114-DPT1013-015.0-20211119**					
Perfluorobutanoic acid		0.0445	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.142	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.151	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0387	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0372	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.139	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.152	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.786	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0311	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.336	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.358	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA90987-7	**S114-DPT1013-025.0-20211119**					
Perfluorobutanoic acid		0.0508	0.018	0.0091	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoropentanoic acid		0.143	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.165	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0417	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0383	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.178	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.185	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.898	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0283	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.324	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.327	0.018	0.0091	ug/l	EPA 537M QSM5.3 B-15
FA90987-8	**S114-DPT1013-035.0-20211119**					
Perfluoropentanoic acid		0.0052 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0065 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0064 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0053 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0287	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0065 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0053 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
FA90987-9	**S114-FD-20211119-01**					
Perfluoropentanoic acid		0.0061 J	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0081 J	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0068 J	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0069 J	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0347	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0083 J	0.010	0.0050	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0066 J	0.020	0.010	ug/l	EPA 537M QSM5.3 B-15

FA90987-10 **S114-FB-20211119-01**

No hits reported in this sample.

FA90987-11 **S114-EB-20211119-01**

No hits reported in this sample.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1012-005.0-20211119
Lab Sample ID: FA90987-1 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50687.D	1	12/17/21 09:11	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0461	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0234	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0216	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0084	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0077	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0859	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0516	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.284	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0079	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.165	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1012-005.0-20211119		
Lab Sample ID:	FA90987-1	**Date Sampled:**	11/19/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	86%		50-150%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	91%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	108%		50-150%
	13C9-PFNA	111%		50-150%
	13C6-PFDA	111%		50-150%
	13C7-PFUnDA	107%		50-150%
	13C2-PFDoDA	105%		50-150%
	13C2-PFTeDA	106%		50-150%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	103%		50-150%
	13C8-FOSA	102%		50-150%
	d3-MeFOSAA	118%		50-150%
	d5-EtFOSAA	113%		50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	104%		50-150%
	13C2-8:2FTS	104%		50-150%
	13C3-HFPO-DA	90%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-015.0-20211119
Lab Sample ID: FA90987-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50689.D	1	12/17/21 09:44	MV	12/13/21 08:30	OP88791	S3Q711
Run #2	3Q50718.D	10	12/17/21 19:12	MV	12/13/21 08:30	OP88791	S3Q712

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0903	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.181	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.418	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0866	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0932	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0021	0.0083	0.0042	0.0021	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.585	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.774	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	6.10 [a]	0.083	0.042	0.021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.110	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.774	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0059	0.017	0.0083	0.0042	ug/l	J

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-015.0-20211119
Lab Sample ID: FA90987-2 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%	94%	50-150%
	13C5-PFPeA	67%	94%	50-150%
	13C5-PFHxA	67%	94%	50-150%
	13C4-PFHpA	67%	95%	50-150%
	13C8-PFOA	79%	99%	50-150%
	13C9-PFNA	81%	99%	50-150%
	13C6-PFDA	82%	100%	50-150%
	13C7-PFUnDA	72%	91%	50-150%
	13C2-PFDoDA	69%	83%	50-150%
	13C2-PFTeDA	69%	87%	50-150%
	13C3-PFBS	67%	95%	50-150%
	13C3-PFHxS	64%	93%	50-150%
	13C8-PFOS	74%	92%	50-150%
	13C8-FOSA	80%	101%	50-150%
	d3-MeFOSAA	88%	119%	50-150%
	d5-EtFOSAA	78%	102%	50-150%
	13C2-4:2FTS	64%	87%	50-150%
	13C2-6:2FTS	77%	96%	50-150%
	13C2-8:2FTS	78%	91%	50-150%
	13C3-HFPO-DA	69%	96%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-025.0-20211119
Lab Sample ID: FA90987-3
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50690.D	1	12/17/21 10:00	MV	12/13/21 08:30	OP88791	S3Q711
Run #2	3Q50719.D	10	12/17/21 19:29	MV	12/13/21 08:30	OP88791	S3Q712

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0903	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.156	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.357	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0706	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.129	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0041	0.0083	0.0042	0.0021	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.302	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.462	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	6.10 [a]	0.083	0.042	0.021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.191	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	2.49 [a]	0.083	0.042	0.021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0057	0.017	0.0083	0.0042	ug/l	J

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-025.0-20211119
Lab Sample ID: FA90987-3 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%	98%	50-150%
	13C5-PFPeA	79%	94%	50-150%
	13C5-PFHxA	79%	95%	50-150%
	13C4-PFHpA	78%	98%	50-150%
	13C8-PFOA	96%	101%	50-150%
	13C9-PFNA	99%	101%	50-150%
	13C6-PFDA	106%	107%	50-150%
	13C7-PFUnDA	99%	102%	50-150%
	13C2-PFDoDA	95%	99%	50-150%
	13C2-PFTeDA	88%	103%	50-150%
	13C3-PFBS	81%	98%	50-150%
	13C3-PFHxS	74%	97%	50-150%
	13C8-PFOS	91%	104%	50-150%
	13C8-FOSA	98%	108%	50-150%
	d3-MeFOSAA	118%	123%	50-150%
	d5-EtFOSAA	108%	119%	50-150%
	13C2-4:2FTS	75%	89%	50-150%
	13C2-6:2FTS	95%	96%	50-150%
	13C2-8:2FTS	100%	101%	50-150%
	13C3-HFPO-DA	80%	93%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
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Report of Analysis

Client Sample ID: S114-DPT1012-035.0-20211119
Lab Sample ID: FA90987-4
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50691.D	1	12/17/21 10:17	MV	12/13/21 08:30	OP88791	S3Q711
Run #2	3Q50720.D	10	12/17/21 19:45	MV	12/13/21 08:30	OP88791	S3Q712

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0587	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0944	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.223	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0471	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0797	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0024	0.0080	0.0040	0.0020	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.271	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.370	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	4.29 [a]	0.080	0.040	0.020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.102	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.778	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1012-035.0-20211119		
Lab Sample ID:	FA90987-4	**Date Sampled:**	11/19/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%	77%	50-150%
	13C5-PFPeA	81%	76%	50-150%
	13C5-PFHxA	82%	75%	50-150%
	13C4-PFHpA	83%	78%	50-150%
	13C8-PFOA	99%	78%	50-150%
	13C9-PFNA	103%	79%	50-150%
	13C6-PFDA	101%	77%	50-150%
	13C7-PFUnDA	91%	70%	50-150%
	13C2-PFDoDA	89%	71%	50-150%
	13C2-PFTeDA	91%	74%	50-150%
	13C3-PFBS	82%	79%	50-150%
	13C3-PFHxS	79%	80%	50-150%
	13C8-PFOS	91%	67%	50-150%
	13C8-FOSA	100%	81%	50-150%
	d3-MeFOSAA	109%	85%	50-150%
	d5-EtFOSAA	101%	84%	50-150%
	13C2-4:2FTS	77%	71%	50-150%
	13C2-6:2FTS	96%	77%	50-150%
	13C2-8:2FTS	94%	71%	50-150%
	13C3-HFPO-DA	82%	73%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1013-005.0-20211119
Lab Sample ID: FA90987-5 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81663.D	1	12/15/21 15:33	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0329	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.108	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0975	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0290	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0203	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0664	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0752	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.390	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0117	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.179	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.169	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1013-005.0-20211119		
Lab Sample ID:	FA90987-5	**Date Sampled:**	11/19/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	93%		50-150%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	97%		50-150%
	13C4-PFHpA	105%		50-150%
	13C8-PFOA	111%		50-150%
	13C9-PFNA	111%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	101%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	54%		50-150%
	13C3-PFBS	93%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	104%		50-150%
	13C8-FOSA	84%		50-150%
	d3-MeFOSAA	101%		50-150%
	d5-EtFOSAA	96%		50-150%
	13C2-4:2FTS	95%		50-150%
	13C2-6:2FTS	113%		50-150%
	13C2-8:2FTS	99%		50-150%
	13C3-HFPO-DA	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1013-015.0-20211119
Lab Sample ID: FA90987-6
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81664.D	1	12/15/21 15:52	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0445	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.142	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.151	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0387	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0372	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.139	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.152	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.786	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0311	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.336	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.358	0.016	0.0080	0.0040	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1013-015.0-20211119		
Lab Sample ID:	FA90987-6	**Date Sampled:**	11/19/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		50-150%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	109%		50-150%
	13C9-PFNA	111%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	99%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	55%		50-150%
	13C3-PFBS	90%		50-150%
	13C3-PFHxS	96%		50-150%
	13C8-PFOS	105%		50-150%
	13C8-FOSA	79%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	98%		50-150%
	13C2-4:2FTS	91%		50-150%
	13C2-6:2FTS	120%		50-150%
	13C2-8:2FTS	100%		50-150%
	13C3-HFPO-DA	78%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1013-025.0-20211119
Lab Sample ID: FA90987-7 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81668.D	1	12/15/21 16:46	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0508	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.143	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.165	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0417	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0383	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.178	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.185	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.898	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0283	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.324	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.327	0.018	0.0091	0.0045	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1013-025.0-20211119
Lab Sample ID: FA90987-7 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		50-150%
	13C5-PFPeA	89%		50-150%
	13C5-PFHxA	92%		50-150%
	13C4-PFHpA	101%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	108%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	96%		50-150%
	13C2-PFDoDA	89%		50-150%
	13C2-PFTeDA	68%		50-150%
	13C3-PFBS	88%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	91%		50-150%
	d3-MeFOSAA	100%		50-150%
	d5-EtFOSAA	95%		50-150%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	113%		50-150%
	13C2-8:2FTS	94%		50-150%
	13C3-HFPO-DA	77%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1013-035.0-20211119
Lab Sample ID: FA90987-8 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81669.D	1	12/15/21 17:05	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2 [a]	2Q81797.D	5	12/17/21 08:42	FS	12/13/21 08:00	OP88792	S2Q1155

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0052	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0065	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0064	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0053	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0287	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0065	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0053	0.017	0.0083	0.0042	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1013-035.0-20211119		
Lab Sample ID:	FA90987-8	**Date Sampled:**	11/19/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	109%	108%	50-150%
	13C5-PFPeA	109%	108%	50-150%
	13C5-PFHxA	112%	108%	50-150%
	13C4-PFHpA	120%	113%	50-150%
	13C8-PFOA	128%	119%	50-150%
	13C9-PFNA	130%	119%	50-150%
	13C6-PFDA	124%	112%	50-150%
	13C7-PFUnDA	112%	101%	50-150%
	13C2-PFDoDA	95%	89%	50-150%
	13C2-PFTeDA	44% [c]	77%	50-150%
	13C3-PFBS	108%	110%	50-150%
	13C3-PFHxS	117%	119%	50-150%
	13C8-PFOS	120%	108%	50-150%
	13C8-FOSA	98%	104%	50-150%
	d3-MeFOSAA	113%	97%	50-150%
	d5-EtFOSAA	104%	88%	50-150%
	13C2-4:2FTS	107%	105%	50-150%
	13C2-6:2FTS	124%	111%	50-150%
	13C2-8:2FTS	112%	97%	50-150%
	13C3-HFPO-DA	96%	93%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211119-01
Lab Sample ID: FA90987-9 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81670.D	1	12/15/21 17:23	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	100 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.010 U	0.020	0.010	0.0050	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0061	0.010	0.0050	0.0025	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0081	0.010	0.0050	0.0025	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
335-67-1	Perfluorooctanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
375-95-1	Perfluorononanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
335-76-2	Perfluorodecanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
307-55-1	Perfluorododecanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0068	0.010	0.0050	0.0025	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0069	0.010	0.0050	0.0025	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0347	0.010	0.0050	0.0025	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0083	0.010	0.0050	0.0025	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0050 U	0.010	0.0050	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0050 U	0.010	0.0050	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.010 U	0.020	0.010	0.0050	ug/l	
2991-50-6	EtFOSAA	0.010 U	0.020	0.010	0.0050	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.010 U	0.020	0.010	0.0050	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0066	0.020	0.010	0.0050	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211119-01
Lab Sample ID: FA90987-9 **Date Sampled:** 11/19/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.010 U	0.020	0.010	0.0050	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.010 U	0.020	0.010	0.0050	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	96%		50-150%
	13C5-PFPeA	97%		50-150%
	13C5-PFHxA	99%		50-150%
	13C4-PFHpA	106%		50-150%
	13C8-PFOA	110%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	78%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	96%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	89%		50-150%
	d5-EtFOSAA	83%		50-150%
	13C2-4:2FTS	94%		50-150%
	13C2-6:2FTS	104%		50-150%
	13C2-8:2FTS	89%		50-150%
	13C3-HFPO-DA	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211119-01
Lab Sample ID: FA90987-10
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81671.D	1	12/15/21 17:42	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211119-01
Lab Sample ID: FA90987-10 **Date Sampled:** 11/19/21
Matrix: AQ - Field Blank Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	106%		50-150%
	13C5-PFPeA	108%		50-150%
	13C5-PFHxA	110%		50-150%
	13C4-PFHpA	112%		50-150%
	13C8-PFOA	112%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	109%		50-150%
	13C7-PFUnDA	105%		50-150%
	13C2-PFDoDA	104%		50-150%
	13C2-PFTeDA	108%		50-150%
	13C3-PFBS	106%		50-150%
	13C3-PFHxS	107%		50-150%
	13C8-PFOS	105%		50-150%
	13C8-FOSA	105%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	103%		50-150%
	13C2-4:2FTS	101%		50-150%
	13C2-6:2FTS	102%		50-150%
	13C2-8:2FTS	99%		50-150%
	13C3-HFPO-DA	92%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211119-01
Lab Sample ID: FA90987-11
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/19/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q81672.D	1	12/15/21 18:01	FS	12/13/21 08:00	OP88792	S2Q1154
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211119-01
Lab Sample ID: FA90987-11 **Date Sampled:** 11/19/21
Matrix: AQ - Equipment Blank **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	100%		50-150%
	13C5-PFPeA	101%		50-150%
	13C5-PFHxA	103%		50-150%
	13C4-PFHpA	106%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	98%		50-150%
	13C2-PFDoDA	97%		50-150%
	13C2-PFTeDA	100%		50-150%
	13C3-PFBS	101%		50-150%
	13C3-PFHxS	99%		50-150%
	13C8-PFOS	98%		50-150%
	13C8-FOSA	98%		50-150%
	d3-MeFOSAA	99%		50-150%
	d5-EtFOSAA	97%		50-150%
	13C2-4:2FTS	97%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	95%		50-150%
	13C3-HFPO-DA	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando
Chain of Custody

FA 90987

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
1	S114-DPT1012-005.0-20211119	11/19/21	0924	DL	GW	2		X								X	
2	S114-DPT1012-015.0-20211119	11/19/21	0942	DL	GW	2		X								X	
3	S114-DPT1012-025.0-20211119	11/19/21	1002	DL	GW	2		X								X	
4	S114-DPT1012-035.0-20211119	11/19/21	1038	DL	GW	2		X								X	
5	S114-DPT1013-005.0-20211119	11/19/21	1128	DL	GW	2		X								X	
6	S114-DPT1013-015.0-20211119	11/19/21	1146	DL	GW	2		X								X	
7	S114-DPT1013-025.0-20211119	11/19/21	1205	DL	GW	2		X								X	
8	S114-DPT1013-035.0-20211119	11/19/21	1232	DL	GW	2		X								X	
9	S114-FD-20211119-01	11/19/21	1232	DL	GW	2		X								X	
10	S114-FB-20211119-01	11/19/21	1305	DL	GW	2		X								X	
11	S114-EB-20211119-01	11/19/21	1310	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT

LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 HGL	11-19-21 1528	2	3	11/19/21 17:17	4 11/19/21
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8 11/19/21 17:49

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 2.8 IR-4

http://www.sgs.com/en/terms-and-conditions

SGS COC_11192021 Rev 031318

FA90987: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA90987 **Client:** HGL,INC. **Project:** SLF PFAS

Date / Time Received: 11/19/2021 5:17:00 PM **Delivery Method:** ALSE **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6);

Cooler Temps (Corrected) °C: Cooler 1: (2.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH Date: 11/19/2021 5:17:00 P Reviewer: _____ Date: _____

FA90987: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88791	EPA 537M QSM5.3 B-15						
OP88791-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	102	%	73-129
OP88791-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	101	%	72-129
OP88791-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	101	%	72-129
OP88791-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	99	%	72-130
OP88791-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	101	%	71-133
OP88791-BS	375-95-1	Perfluorononanoic acid	BSP	REC	100	%	69-130
OP88791-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	100	%	71-129
OP88791-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	103	%	69-133
OP88791-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	103	%	72-134
OP88791-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	102	%	65-144
OP88791-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	101	%	71-132
OP88791-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	104	%	73-130
OP88791-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	106	%	71-127
OP88791-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	103	%	68-131
OP88791-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	102	%	69-134
OP88791-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	100	%	65-140
OP88791-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP88791-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	115	%	53-142
OP88791-BS	754-91-6	PFOSA	BSP	REC	101	%	67-137
OP88791-BS	2355-31-9	MeFOSAA	BSP	REC	103	%	65-136
OP88791-BS	2991-50-6	EtFOSAA	BSP	REC	101	%	61-135
OP88791-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	103	%	63-143
OP88791-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	101	%	64-140
OP88791-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	103	%	67-138
OP88791-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	102	%	73-129
OP88791-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	103	%	72-129
OP88791-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	104	%	72-129
OP88791-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	104	%	72-130
OP88791-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	103	%	71-133
OP88791-MS*	375-95-1	Perfluorononanoic acid	MS	REC	101	%	69-130
OP88791-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	103	%	71-129
OP88791-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	103	%	69-133
OP88791-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	100	%	72-134
OP88791-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	100	%	65-144
OP88791-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	101	%	71-132
OP88791-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	105	%	73-130
OP88791-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	105	%	71-127
OP88791-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	107	%	68-131
OP88791-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	109	%	69-134
OP88791-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	101	%	65-140
OP88791-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	103	%	69-127
OP88791-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	102	%	53-142

* Sample used for QC is not from job FA90987

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88791-MS*	754-91-6	PFOSA	MS	REC	103	%	67-137
OP88791-MS*	2355-31-9	MeFOSAA	MS	REC	104	%	65-136
OP88791-MS*	2991-50-6	EtFOSAA	MS	REC	104	%	61-135
OP88791-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	104	%	63-143
OP88791-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	104	%	64-140
OP88791-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	101	%	67-138
OP88791-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	3	%	30
OP88791-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	8	%	30
OP88791-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	754-91-6	PFOSA	DUP	RPD	0	%	30
OP88791-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP88791-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP88791-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP88791-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	1	%	30
OP88791-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP88792	EPA 537M QSM5.3 B-15						
OP88792-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	87	%	73-129
OP88792-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	89	%	72-129
OP88792-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	87	%	72-129
OP88792-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	85	%	72-130
OP88792-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	82	%	71-133
OP88792-BS	375-95-1	Perfluorononanoic acid	BSP	REC	87	%	69-130
OP88792-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	84	%	71-129
OP88792-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	82	%	69-133
OP88792-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	84	%	72-134
OP88792-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	83	%	65-144
OP88792-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	84	%	71-132
OP88792-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	88	%	73-130

* Sample used for QC is not from job FA90987

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88792-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	91	%	71-127
OP88792-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	88	%	68-131
OP88792-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	87	%	69-134
OP88792-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	88	%	65-140
OP88792-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	88	%	69-127
OP88792-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	80	%	53-142
OP88792-BS	754-91-6	PFOSA	BSP	REC	88	%	67-137
OP88792-BS	2355-31-9	MeFOSAA	BSP	REC	87	%	65-136
OP88792-BS	2991-50-6	EtFOSAA	BSP	REC	84	%	61-135
OP88792-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	83	%	63-143
OP88792-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	80	%	64-140
OP88792-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	84	%	67-138
OP88792-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	90	%	73-129
OP88792-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	90	%	72-129
OP88792-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	92	%	72-129
OP88792-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	90	%	72-130
OP88792-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	92	%	71-133
OP88792-MS*	375-95-1	Perfluorononanoic acid	MS	REC	91	%	69-130
OP88792-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	86	%	71-129
OP88792-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	88	%	69-133
OP88792-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	89	%	72-134
OP88792-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	90	%	65-144
OP88792-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	89	%	71-132
OP88792-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	98	%	73-130
OP88792-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	93	%	71-127
OP88792-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	90	%	68-131
OP88792-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	89	%	69-134
OP88792-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	83	%	65-140
OP88792-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	95	%	69-127
OP88792-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	85	%	53-142
OP88792-MS*	754-91-6	PFOSA	MS	REC	95	%	67-137
OP88792-MS*	2355-31-9	MeFOSAA	MS	REC	94	%	65-136
OP88792-MS*	2991-50-6	EtFOSAA	MS	REC	95	%	61-135
OP88792-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	91	%	63-143
OP88792-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	79	%	64-140
OP88792-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	91	%	67-138
OP88792-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	95	%	73-129
OP88792-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	4	%	30
OP88792-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	99	%	72-129
OP88792-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	4	%	30
OP88792-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	95	%	72-129
OP88792-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	1	%	30
OP88792-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	94	%	72-130
OP88792-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	3	%	30
OP88792-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	95	%	71-133

* Sample used for QC is not from job FA90987

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90987
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/19/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88792-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	1	%	30
OP88792-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	97	%	69-130
OP88792-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	6	%	30
OP88792-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	90	%	71-129
OP88792-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	5	%	30
OP88792-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	92	%	69-133
OP88792-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	5	%	30
OP88792-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	94	%	72-134
OP88792-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	5	%	30
OP88792-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	95	%	65-144
OP88792-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	5	%	30
OP88792-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	95	%	71-132
OP88792-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	6	%	30
OP88792-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	103	%	73-130
OP88792-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	3	%	30
OP88792-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	97	%	71-127
OP88792-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	2	%	30
OP88792-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	102	%	68-131
OP88792-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	2	%	30
OP88792-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	92	%	69-134
OP88792-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	2	%	30
OP88792-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	137	%	65-140
OP88792-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	7	%	30
OP88792-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	99	%	69-127
OP88792-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	4	%	30
OP88792-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	91	%	53-142
OP88792-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	7	%	30
OP88792-MSD*	754-91-6	PFOSA	MSD	REC	97	%	67-137
OP88792-MSD*	754-91-6	PFOSA	MSD	RPD	3	%	30
OP88792-MSD*	2355-31-9	MeFOSAA	MSD	REC	94	%	65-136
OP88792-MSD*	2355-31-9	MeFOSAA	MSD	RPD	1	%	30
OP88792-MSD*	2991-50-6	EtFOSAA	MSD	REC	98	%	61-135
OP88792-MSD*	2991-50-6	EtFOSAA	MSD	RPD	3	%	30
OP88792-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	93	%	63-143
OP88792-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	3	%	30
OP88792-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	85	%	64-140
OP88792-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	4	%	30
OP88792-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	93	%	67-138
OP88792-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	2	%	30

* Sample used for QC is not from job FA90987

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1154-IBLK	2Q81652.D	1	12/15/21	FS	n/a	n/a	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	95%	50-150%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	98%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	100%	50-150%

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1154-IBLK	2Q81652.D	1	12/15/21	FS	n/a	n/a	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	96%	50-150%
	13C2-PFDoDA	96%	50-150%
	13C2-PFTeDA	97%	50-150%
	13C3-PFBS	94%	50-150%
	13C3-PFHxS	94%	50-150%
	13C8-PFOS	96%	50-150%
	13C8-FOSA	101%	50-150%
	d3-MeFOSAA	100%	50-150%
	d5-EtFOSAA	98%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	89%	50-150%

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1155-IBLK	2Q81733.D	1	12/16/21	FS	n/a	n/a	S2Q1155

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-8

CAS No.	Compound	Result	RL	MDL	Units	Q
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	96%	50-150%
	13C4-PFHpA	99%	50-150%
	13C8-PFOA	99%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	98%	50-150%
	13C7-PFUnDA	98%	50-150%
	13C2-PFDoDA	97%	50-150%
	13C2-PFTeDA	99%	50-150%
	13C3-PFBS	95%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	102%	50-150%
	d3-MeFOSAA	89%	50-150%
	d5-EtFOSAA	83%	50-150%
	13C2-4:2FTS	92%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	86%	50-150%
	13C3-HFPO-DA	80%	50-150%

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q711-IBLK	3Q50634.D	1	12/16/21	MV	n/a	n/a	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	82%	50-150%
	13C5-PFPeA	82%	50-150%
	13C5-PFHxA	82%	50-150%
	13C4-PFHpA	83%	50-150%
	13C8-PFOA	83%	50-150%
	13C9-PFNA	84%	50-150%
	13C6-PFDA	85%	50-150%

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q711-IBLK	3Q50634.D	1	12/16/21	MV	n/a	n/a	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	84%	50-150%
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	84%	50-150%
	13C3-PFBS	81%	50-150%
	13C3-PFHxS	84%	50-150%
	13C8-PFOS	84%	50-150%
	13C8-FOSA	90%	50-150%
	d3-MeFOSAA	87%	50-150%
	d5-EtFOSAA	85%	50-150%
	13C2-4:2FTS	76%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	80%	50-150%
	13C3-HFPO-DA	81%	50-150%

Instrument Blank

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q712-IBLK	3Q50710.D	1	12/17/21	MV	n/a	n/a	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	Result	RL	MDL	Units	Q
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	50-150%
	13C5-PFPeA	103%	50-150%
	13C5-PFHxA	104%	50-150%
	13C4-PFHpA	104%	50-150%
	13C8-PFOA	107%	50-150%
	13C9-PFNA	107%	50-150%
	13C6-PFDA	108%	50-150%
	13C7-PFUnDA	109%	50-150%
	13C2-PFDoDA	113%	50-150%
	13C2-PFTeDA	119%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	103%	50-150%
	13C8-PFOS	102%	50-150%
	13C8-FOSA	119%	50-150%
	d3-MeFOSA	118%	50-150%
	d3-MeFOSAA	124%	50-150%
	d5-EtFOSAA	125%	50-150%
	13C2-4:2FTS	97%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	101%	50-150%
	13C3-HFPO-DA	98%	50-150%

Method Blank Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-MB	2Q81662.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	94%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	96%	50-150%
	13C6-PFDA	96%	50-150%

Method Blank Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-MB	2Q81662.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	92%	50-150%
	13C2-PFDoDA	87%	50-150%
	13C2-PFTeDA	87%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	92%	50-150%
	13C8-FOSA	89%	50-150%
	d3-MeFOSA	70%	50-150%
	d3-MeFOSAA	92%	50-150%
	d5-EtFOSAA	87%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	90%	50-150%
	13C3-HFPO-DA	77%	50-150%

Method Blank Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MB	3Q50679.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	74%	50-150%
	13C5-PFPeA	75%	50-150%
	13C5-PFHxA	75%	50-150%
	13C4-PFHpA	75%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	76%	50-150%

Method Blank Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MB	3Q50679.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	75%	50-150%
	13C2-PFDoDA	74%	50-150%
	13C2-PFTeDA	70%	50-150%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	73%	50-150%
	13C8-PFOS	73%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSA	57%	50-150%
	d3-MeFOSAA	82%	50-150%
	d5-EtFOSAA	76%	50-150%
	13C2-4:2FTS	70%	50-150%
	13C2-6:2FTS	73%	50-150%
	13C2-8:2FTS	73%	50-150%
	13C3-HFPO-DA	69%	50-150%

Blank Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-BS	2Q81661.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0692	87	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0713	89	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0696	87	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0681	85	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0654	82	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0698	87	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0669	84	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0659	82	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0668	84	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0663	83	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0675	84	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0704	88	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0724	91	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0702	88	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0696	87	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0706	88	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0705	88	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0640	80	53-142
754-91-6	PFOSA	0.08	0.0706	88	67-137
2355-31-9	MeFOSAA	0.08	0.0692	87	65-136
2991-50-6	EtFOSAA	0.08	0.0673	84	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0664	83	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0643	80	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0675	84	67-138
13252-13-6	HFPO-DA (GenX)	0.08	0.0718	90	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	109%	50-150%
	13C5-PFPeA	112%	50-150%
	13C5-PFHxA	113%	50-150%
	13C4-PFHpA	114%	50-150%
	13C8-PFOA	114%	50-150%
	13C9-PFNA	114%	50-150%
	13C6-PFDA	115%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-BS	2Q81661.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	109%	50-150%
	13C2-PFDoDA	103%	50-150%
	13C2-PFTeDA	101%	50-150%
	13C3-PFBS	110%	50-150%
	13C3-PFHxS	111%	50-150%
	13C8-PFOS	110%	50-150%
	13C8-FOSA	103%	50-150%
	d3-MeFOSA	79%	50-150%
	d3-MeFOSAA	109%	50-150%
	d5-EtFOSAA	107%	50-150%
	13C2-4:2FTS	111%	50-150%
	13C2-6:2FTS	110%	50-150%
	13C2-8:2FTS	111%	50-150%
	13C3-HFPO-DA	92%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-BS	3Q50678.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.163	102	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.162	101	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.162	101	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.159	99	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.161	101	71-133
375-95-1	Perfluorononanoic acid	0.16	0.160	100	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.160	100	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.164	103	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.164	103	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.163	102	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.161	101	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.166	104	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.169	106	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.164	103	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.163	102	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.160	100	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.170	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.184	115	53-142
754-91-6	PFOSA	0.16	0.161	101	67-137
2355-31-9	MeFOSAA	0.16	0.164	103	65-136
2991-50-6	EtFOSAA	0.16	0.161	101	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.164	103	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.162	101	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.165	103	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.154	96	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	51%	50-150%
	13C5-PFPeA	53%	50-150%
	13C5-PFHxA	55%	50-150%
	13C4-PFHpA	58%	50-150%
	13C8-PFOA	60%	50-150%
	13C9-PFNA	62%	50-150%
	13C6-PFDA	65%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-BS	3Q50678.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	68%	50-150%
	13C2-PFDoDA	75%	50-150%
	13C2-PFTeDA	82%	50-150%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	76%	50-150%
	13C8-PFOS	75%	50-150%
	13C8-FOSA	80%	50-150%
	d3-MeFOSA	66%	50-150%
	d3-MeFOSAA	78%	50-150%
	d5-EtFOSAA	80%	50-150%
	13C2-4:2FTS	58%	50-150%
	13C2-6:2FTS	64%	50-150%
	13C2-8:2FTS	68%	50-150%
	13C3-HFPO-DA	49%*	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MS	3Q50681.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-1	3Q50680.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	FA91003-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0115	J	0.167	0.181	102	73-129
2706-90-3	Perfluoropentanoic acid	0.0083	U	0.167	0.171	103	72-129
307-24-4	Perfluorohexanoic acid	0.0083	U	0.167	0.173	104	72-129
375-85-9	Perfluoroheptanoic acid	0.0083	U	0.167	0.173	104	72-130
335-67-1	Perfluorooctanoic acid	0.0051	J	0.167	0.176	103	71-133
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.168	101	69-130
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.172	103	71-129
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.171	103	69-133
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.167	100	72-134
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.167	100	65-144
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.168	101	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0024	J	0.167	0.177	105	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0083	U	0.167	0.175	105	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0083	U	0.167	0.179	107	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0083	U	0.167	0.182	109	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0083	U	0.167	0.168	101	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0083	U	0.167	0.171	103	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0083	U	0.167	0.170	102	53-142
754-91-6	PFOSA	0.0083	U	0.167	0.172	103	67-137
2355-31-9	MeFOSAA	0.017	U	0.167	0.174	104	65-136
2991-50-6	EtFOSAA	0.017	U	0.167	0.173	104	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.017	U	0.167	0.173	104	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.017	U	0.167	0.173	104	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.017	U	0.167	0.169	101	67-138
13252-13-6	HFPO-DA (GenX)	0.017	U	0.167	0.168	101	60-140

CAS No.	ID Standard Recoveries	MS	FA91003-1	Limits
	13C4-PFBA	106%	85%	50-150%
	13C5-PFPeA	106%	83%	50-150%
	13C5-PFHxA	105%	84%	50-150%
	13C4-PFHpA	103%	84%	50-150%
	13C8-PFOA	102%	86%	50-150%
	13C9-PFNA	99%	85%	50-150%
	13C6-PFDA	94%	85%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MS	3Q50681.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-1	3Q50680.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	ID Standard Recoveries	MS	FA91003-1	Limits
	13C7-PFUnDA	91%	82%	50-150%
	13C2-PFDoDA	96%	82%	50-150%
	13C2-PFTeDA	99%	85%	50-150%
	13C3-PFBS	103%	83%	50-150%
	13C3-PFHxS	99%	83%	50-150%
	13C8-PFOS	92%	80%	50-150%
	13C8-FOSA	98%	91%	50-150%
	d3-MeFOSA	80%	64%	50-150%
	d3-MeFOSAA	98%	94%	50-150%
	d5-EtFOSAA	98%	89%	50-150%
	13C2-4:2FTS	105%	77%	50-150%
	13C2-6:2FTS	100%	81%	50-150%
	13C2-8:2FTS	93%	79%	50-150%
	13C3-HFPO-DA	98%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-MS	2Q81799.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155
OP88792-MSD	2Q81800.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155
FA91005-7	2Q81684.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154
FA91005-7	2Q81798.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	Compound	FA91005-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0300		0.0714	0.0942	90	0.0714	0.0979	95	4	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0974		0.0714	0.162	90	0.0714	0.168	99	4	72-129/30
307-24-4	Perfluorohexanoic acid	0.172		0.0714	0.238	92	0.0714	0.240	95	1	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0450		0.0714	0.109	90	0.0714	0.112	94	3	72-130/30
335-67-1	Perfluorooctanoic acid	0.112		0.0714	0.178	92	0.0714	0.180	95	1	71-133/30
375-95-1	Perfluorononanoic acid	0.0038 U		0.0714	0.0650	91	0.0714	0.0691	97	6	69-130/30
335-76-2	Perfluorodecanoic acid	0.0038 U		0.0714	0.0611	86	0.0714	0.0645	90	5	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0038 U		0.0714	0.0630	88	0.0714	0.0660	92	5	69-133/30
307-55-1	Perfluorododecanoic acid	0.0038 U		0.0714	0.0637	89	0.0714	0.0670	94	5	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0038 U		0.0714	0.0640	90	0.0714	0.0675	95	5	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0038 U		0.0714	0.0639	89	0.0714	0.0679	95	6	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0563		0.0714	0.126	98	0.0714	0.130	103	3	73-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0624		0.0714	0.129	93	0.0714	0.132	97	2	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.352		0.0714	0.416	90	0.0714	0.425	102	2	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0168		0.0714	0.0803	89	0.0714	0.0822	92	2	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.465 [a]		0.0714	0.524	83	0.0714	0.563	137	7	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0038 U		0.0714	0.0679	95	0.0714	0.0707	99	4	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0038 U		0.0714	0.0609	85	0.0714	0.0653	91	7	53-142/30
754-91-6	PFOSA	0.0038 U		0.0714	0.0675	95	0.0714	0.0695	97	3	67-137/30
2355-31-9	MeFOSAA	0.0077 U		0.0714	0.0668	94	0.0714	0.0674	94	1	65-136/30
2991-50-6	EtFOSAA	0.0077 U		0.0714	0.0682	95	0.0714	0.0702	98	3	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.0077 U		0.0714	0.0648	91	0.0714	0.0666	93	3	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0402		0.0714	0.0969	79	0.0714	0.101	85	4	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.0077 U		0.0714	0.0651	91	0.0714	0.0663	93	2	67-138/30
13252-13-6	HFPO-DA (GenX)	0.0077 U		0.0714	0.0672	94	0.0714	0.0764	107	13	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA91005-7	FA91005-7	Limits
	13C4-PFBA	85%	102%	100%	93%	50-150%
	13C5-PFPeA	85%	103%	102%	94%	50-150%
	13C5-PFHxA	86%	105%	102%	94%	50-150%
	13C4-PFHpA	89%	107%	103%	97%	50-150%
	13C8-PFOA	89%	109%	104%	98%	50-150%
	13C9-PFNA	89%	108%	102%	99%	50-150%
	13C6-PFDA	89%	108%	101%	98%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88792-MS	2Q81799.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155
OP88792-MSD	2Q81800.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155
FA91005-7	2Q81684.D	1	12/15/21	FS	12/13/21	OP88792	S2Q1154
FA91005-7	2Q81798.D	5	12/17/21	FS	12/13/21	OP88792	S2Q1155

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-5, FA90987-6, FA90987-7, FA90987-8, FA90987-9, FA90987-10, FA90987-11

CAS No.	ID Standard Recoveries	MS	MSD	FA91005-7	FA91005-7	Limits
	13C7-PFUnDA	86%	103%	94%	93%	50-150%
	13C2-PFDoDA	82%	97%	88%	86%	50-150%
	13C2-PFTeDA	82%	96%	80%	82%	50-150%
	13C3-PFBS	85%	103%	101%	93%	50-150%
	13C3-PFHxS	86%	105%	98%	93%	50-150%
	13C8-PFOS	83%	98%	92%	89%	50-150%
	13C8-FOSA	91%	110%	99%	94%	50-150%
	d3-MeFOSAA	78%	96%			50-150%
	d5-EtFOSAA	71%	88%			50-150%
	13C2-4:2FTS	86%	104%			50-150%
	13C2-6:2FTS	91%	112%	99%	96%	50-150%
	13C2-8:2FTS	81%	98%	92%	83%	50-150%

(a) Result is from Run #2.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-DUP	3Q50688.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50684.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50715.D	5	12/17/21	MV	12/13/21	OP88791	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	Compound	FA91003-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.017 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0094		0.0091		3	30
307-24-4	Perfluorohexanoic acid	0.0039	J	0.0039	J	0	30
375-85-9	Perfluoroheptanoic acid	0.0083 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0050	J	0.0046	J	8	30
375-95-1	Perfluorononanoic acid	0.0083 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0083 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0083 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0083 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0083 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0083 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0083 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0083 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0083 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0083 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0032	J	0.0032	J	0	30
68259-12-1	Perfluorononanesulfonic acid	0.0083 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0083 U		ND		nc	30
754-91-6	PFOSA	0.0083 U		ND		nc	30
2355-31-9	MeFOSAA	0.017 U		ND		nc	30
2991-50-6	EtFOSAA	0.017 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.017 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0322		0.0319		1	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.017 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.017 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA91003-4	FA91003-4	Limits
	13C4-PFBA	97%	98%	77%	50-150%
	13C5-PFPeA	99%	101%	77%	50-150%
	13C5-PFHxA	101%	102%	77%	50-150%
	13C4-PFHpA	102%	104%	78%	50-150%
	13C8-PFOA	108%	107%	80%	50-150%
	13C9-PFNA	107%	104%	77%	50-150%
	13C6-PFDA	106%	104%	78%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90987
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-DUP	3Q50688.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50684.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50715.D	5	12/17/21	MV	12/13/21	OP88791	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90987-1, FA90987-2, FA90987-3, FA90987-4

CAS No.	ID Standard Recoveries	DUP	FA91003-4	FA91003-4	Limits
	13C7-PFUnDA	98%	95%	72%	50-150%
	13C2-PFDoDA	92%	85%	70%	50-150%
	13C2-PFTeDA	88%	59%	63%	50-150%
	13C3-PFBS	99%	99%	79%	50-150%
	13C3-PFHxS	102%	102%	78%	50-150%
	13C8-PFOS	99%	99%	72%	50-150%
	13C8-FOSA	80%	94%	74%	50-150%
	d3-MeFOSA	14%*	26%* [a]	34%* [a]	50-150%
	d3-MeFOSAA	115%	109%	89%	50-150%
	d5-EtFOSAA	105%	99%	80%	50-150%
	13C2-4:2FTS	96%	96%	73%	50-150%
	13C2-6:2FTS	103%	103%	79%	50-150%
	13C2-8:2FTS	100%	97%	74%	50-150%
	13C3-HFPO-DA	98%			50-150%

(a) Outside control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SGS Job Number: FA90990

Sampling Date: 11/18/21

Report to:

HGL, Inc
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Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: 70

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA90990

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90990-1	11/18/21	07:42	DLJB	11/19/21	AQ	Ground Water	S114-DPT1009-007.0-20211118
FA90990-2	11/18/21	07:42	DLJB	11/19/21	AQ	Ground Water	S114-FD-20211118-01
FA90990-3	11/18/21	08:05	DLJB	11/19/21	AQ	Ground Water	S114-DPT1009-015.0-20211118
FA90990-4	11/18/21	08:29	DLJB	11/19/21	AQ	Ground Water	S114-DPT1009-025.0-20211118
FA90990-5	11/18/21	08:55	DLJB	11/19/21	AQ	Ground Water	S114-DPT1009-035.0-20211118
FA90990-6	11/18/21	09:56	DLJB	11/19/21	AQ	Ground Water	S114-DPT1010-005.0-20211118
FA90990-7	11/18/21	10:17	DLJB	11/19/21	AQ	Ground Water	S114-DPT1010-015.0-20211118
FA90990-8	11/18/21	10:39	DLJB	11/19/21	AQ	Ground Water	S114-DPT1010-025.0-20211118
FA90990-9	11/18/21	11:04	DLJB	11/19/21	AQ	Ground Water	S114-DPT1010-035.0-20211118
FA90990-10	11/18/21	12:30	DLJB	11/19/21	AQ	Ground Water	S114-DPT1011-005.0-20211118
FA90990-11	11/18/21	12:49	DLJB	11/19/21	AQ	Ground Water	S114-DPT1011-015.0-20211118
FA90990-12	11/18/21	13:09	DLJB	11/19/21	AQ	Ground Water	S114-DPT1011-025.0-20211118
FA90990-13	11/18/21	13:33	DLJB	11/19/21	AQ	Ground Water	S114-DPT1011-035.0-20211118

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA90990

NASA TQN 21- SLF PFAS Assessment

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA90990-14	11/18/21	15:40	DLJB	11/19/21	AQ	Field Blank Water	S114-FB-20211118-01
FA90990-15	11/18/21	15:45	DLJB	11/19/21	AQ	Equipment Blank	S114-EB-20211118-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA90990

Site: NASA TQN 21- SLF PFAS Assessment **Report Date** 12/27/2021 3:17:05

On 11/19/2021, 14 Sample(s), 0 Trip Blank(s) were received at SGS North America Inc. at a maximum corrected temperature of 3.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. Job Number of FA90990 was Assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88775

Sample(s) FA91021-6MS, FA91021-6MSD were used as the QC samples indicated.

RPD(s) for MSD for Perfluorotridecanoic acid are outside control limits for sample OP88775-MSD. Probable cause is due to sample non-homogeneity.

Matrix: AQ **Batch ID:** OP88791

Sample(s) FA91003-1MS, FA91003-4DUP were used as the QC samples indicated.

Sample(s) FA90990-10, FA90990-11, FA90990-14, FA90990-8 have surrogates outside control limits.

FA90990-8 for 13C2-PFTeDA: Outside control limits.

FA90990-8 for 13C2-PFTeDA: Outside control limits.

FA90990-8 for 13C8-FOSA: Outside control limits.

FA90990-8 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90990-10 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA90990-10: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

FA90990-10: Dilution required due to matrix interference (ID recovery standard failure).

FA90990-11 for 13C2-PFTeDA: Outside control limits.

FA90990-14 for 13C2-8:2FTS: Outside control limits.

FA90990-14 for 13C2-PFDoDA: Outside control limits.

FA90990-14 for 13C7-PFUnDA: Outside control limits.

FA90990-14 for 8:2 Fluorotelomer sulfonate: Associated ID Standard outside control limits.

FA90990-14 for d3-MeFOSAA: Outside control limits.

FA90990-14 for d5-EtFOSAA: Outside control limits.

FA90990-14 for EtFOSAA: Associated ID Standard outside control limits.

FA90990-14 for MeFOSAA: Associated ID Standard outside control limits.

FA90990-14 for Perfluorodecanesulfonic acid: Associated ID Standard outside control limits.

FA90990-14 for Perfluorododecanoic acid: Associated ID Standard outside control limits.

FA90990-14 for Perfluorotridecanoic acid: Associated ID Standard outside control limits.

FA90990-14 for Perfluoroundecanoic acid: Associated ID Standard outside control limits.

FA90990-14: Confirmation run.

Matrix: AQ **Batch ID:** OP88937

The following samples were extracted outside of holding time for method EPA 537M QSM5.3 B-15: FA90990-8, FA90990-10, FA90990-14, FA90990-15,

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP88937

Sample(s) FA90990-10, FA90990-8 have surrogates outside control limits.

FA90990-8: Confirmation run.

FA90990-10: Confirmation run.

FA90990-14: Confirmation run.

FA90990-15: Confirmation run.

SGS North America Inc. certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc. is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____
Ariel Hartney, Client Services (signature on file)

Summary of Hits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA90990-1	**S114-DPT1009-007.0-20211118**					
Perfluorobutanoic acid		0.0101 J	0.020	0.0098	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0074 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0100	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0047 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0031 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0087 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0052 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0298	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
FA90990-2	**S114-FD-20211118-01**					
Perfluorobutanoic acid		0.0107 J	0.019	0.0095	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0081 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0107	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0046 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0035 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0085 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0062 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0338	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0027 J	0.0095	0.0048	ug/l	EPA 537M QSM5.3 B-15
FA90990-3	**S114-DPT1009-015.0-20211118**					
Perfluorobutanoic acid		0.0183 J	0.020	0.0098	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0409	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0506	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0165	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0147	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0401	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0456	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.271	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0091 J	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0683	0.0098	0.0049	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0620	0.020	0.0098	ug/l	EPA 537M QSM5.3 B-15
FA90990-4	**S114-DPT1009-025.0-20211118**					
Perfluorobutanoic acid		0.0316	0.018	0.0089	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0995	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.106	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0285	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0299	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0811	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoropentanesulfonic acid		0.0904	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.584	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0243	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.248	0.0089	0.0045	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.247	0.018	0.0089	ug/l	EPA 537M QSM5.3 B-15
FA90990-5	**S114-DPT1009-035.0-20211118**					
Perfluorohexanoic acid		0.0023 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0028 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0099	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0021 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90990-6	**S114-DPT1010-005.0-20211118**					
Perfluorobutanoic acid		0.0212	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0039 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0036 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0022 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0047 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0105	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0049 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA90990-7	**S114-DPT1010-015.0-20211118**					
Perfluorobutanoic acid		0.0116 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0203	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0343	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0097	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0120	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0349	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0374	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.207	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0070 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0665	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90990-8	**S114-DPT1010-025.0-20211118**					
Perfluorobutanoic acid		0.0092 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0143	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0221	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0068 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0074 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0198	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoropentanesulfonic acid		0.0234	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.153	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0055 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.117	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90990-9	**S114-DPT1010-035.0-20211118**					
Perfluoropentanoic acid		0.0039 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0080 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0022 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0038 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0051 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0060 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0304	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0038 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90990-10	**S114-DPT1011-005.0-20211118**					
Perfluorobutanoic acid [a]		0.0450	0.021	0.011	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid [a]		0.0052 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid [a]		0.0037 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid [a]		0.0033 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		0.0039 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
FA90990-11	**S114-DPT1011-015.0-20211118**					
No hits reported in this sample.						
FA90990-12	**S114-DPT1011-025.0-20211118**					
Perfluorohexanoic acid		0.0037 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0027 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0101	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA90990-13	**S114-DPT1011-035.0-20211118**					
No hits reported in this sample.						
FA90990-14	**S114-FB-20211118-01**					
No hits reported in this sample.						
FA90990-15	**S114-EB-20211118-01**					
No hits reported in this sample.						

Summary of Hits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1009-007.0-20211118
Lab Sample ID: FA90990-1
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50671.D	1	12/17/21 04:46	MV	12/11/21 10:30	OP88775	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	102 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0101	0.020	0.0098	0.0049	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0074	0.0098	0.0049	0.0025	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0100	0.0098	0.0049	0.0025	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0047	0.0098	0.0049	0.0025	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0031	0.0098	0.0049	0.0025	ug/l	J
375-95-1	Perfluorononanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
335-76-2	Perfluorodecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
307-55-1	Perfluorododecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0087	0.0098	0.0049	0.0025	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0052	0.0098	0.0049	0.0025	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0298	0.0098	0.0049	0.0025	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0098 U	0.020	0.0098	0.0049	ug/l	
2991-50-6	EtFOSAA	0.0098 U	0.020	0.0098	0.0049	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0098 U	0.020	0.0098	0.0049	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0098 U	0.020	0.0098	0.0049	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1009-007.0-20211118		
Lab Sample ID:	FA90990-1	**Date Sampled:**	11/18/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0098 U	0.020	0.0098	0.0049	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0098 U	0.020	0.0098	0.0049	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	74%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	99%		50-150%
	13C7-PFUnDA	94%		50-150%
	13C2-PFDoDA	92%		50-150%
	13C2-PFTeDA	91%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	96%		50-150%
	d3-MeFOSAA	108%		50-150%
	d5-EtFOSAA	102%		50-150%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211118-01
Lab Sample ID: FA90990-2 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50675.D	1	12/17/21 05:52	MV	12/11/21 10:30	OP88775	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	105 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0107	0.019	0.0095	0.0048	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0081	0.0095	0.0048	0.0024	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0107	0.0095	0.0048	0.0024	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0046	0.0095	0.0048	0.0024	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0035	0.0095	0.0048	0.0024	ug/l	J
375-95-1	Perfluorononanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
335-76-2	Perfluorodecanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
307-55-1	Perfluorododecanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0085	0.0095	0.0048	0.0024	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0062	0.0095	0.0048	0.0024	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0338	0.0095	0.0048	0.0024	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0027	0.0095	0.0048	0.0024	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0048 U	0.0095	0.0048	0.0024	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0048 U	0.0095	0.0048	0.0024	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0095 U	0.019	0.0095	0.0048	ug/l	
2991-50-6	EtFOSAA	0.0095 U	0.019	0.0095	0.0048	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0095 U	0.019	0.0095	0.0048	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0095 U	0.019	0.0095	0.0048	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20211118-01
Lab Sample ID: FA90990-2 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0095 U	0.019	0.0095	0.0048	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0095 U	0.019	0.0095	0.0048	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	96%		50-150%
	13C2-PFDoDA	93%		50-150%
	13C2-PFTeDA	90%		50-150%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	87%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	96%		50-150%
	d3-MeFOSAA	111%		50-150%
	d5-EtFOSAA	106%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	97%		50-150%
	13C3-HFPO-DA	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-015.0-20211118
Lab Sample ID: FA90990-3
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50676.D	1	12/17/21 06:09	MV	12/11/21 10:30	OP88775	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	102 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0183	0.020	0.0098	0.0049	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0409	0.0098	0.0049	0.0025	ug/l	
307-24-4	Perfluorohexanoic acid	0.0506	0.0098	0.0049	0.0025	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0165	0.0098	0.0049	0.0025	ug/l	
335-67-1	Perfluorooctanoic acid	0.0147	0.0098	0.0049	0.0025	ug/l	
375-95-1	Perfluorononanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
335-76-2	Perfluorodecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
307-55-1	Perfluorododecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0401	0.0098	0.0049	0.0025	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0456	0.0098	0.0049	0.0025	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.271	0.0098	0.0049	0.0025	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0091	0.0098	0.0049	0.0025	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0683	0.0098	0.0049	0.0025	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0049 U	0.0098	0.0049	0.0025	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0098 U	0.020	0.0098	0.0049	ug/l	
2991-50-6	EtFOSAA	0.0098 U	0.020	0.0098	0.0049	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0098 U	0.020	0.0098	0.0049	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0620	0.020	0.0098	0.0049	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-015.0-20211118
Lab Sample ID: FA90990-3 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0098 U	0.020	0.0098	0.0049	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0098 U	0.020	0.0098	0.0049	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	86%		50-150%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	92%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	97%		50-150%
	13C2-PFDoDA	95%		50-150%
	13C2-PFTeDA	99%		50-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	93%		50-150%
	13C8-FOSA	97%		50-150%
	d3-MeFOSAA	110%		50-150%
	d5-EtFOSAA	107%		50-150%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	98%		50-150%
	13C2-8:2FTS	97%		50-150%
	13C3-HFPO-DA	78%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-025.0-20211118
Lab Sample ID: FA90990-4
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50677.D	1	12/17/21 06:25	MV	12/11/21 10:30	OP88775	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	112 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0316	0.018	0.0089	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0995	0.0089	0.0045	0.0022	ug/l	
307-24-4	Perfluorohexanoic acid	0.106	0.0089	0.0045	0.0022	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0285	0.0089	0.0045	0.0022	ug/l	
335-67-1	Perfluorooctanoic acid	0.0299	0.0089	0.0045	0.0022	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0811	0.0089	0.0045	0.0022	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0904	0.0089	0.0045	0.0022	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.584	0.0089	0.0045	0.0022	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0243	0.0089	0.0045	0.0022	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.248	0.0089	0.0045	0.0022	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0089	0.0045	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0089	0.0045	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0089 U	0.018	0.0089	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0089 U	0.018	0.0089	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0089 U	0.018	0.0089	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.247	0.018	0.0089	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-025.0-20211118
Lab Sample ID: FA90990-4 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0089 U	0.018	0.0089	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0089 U	0.018	0.0089	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		50-150%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	95%		50-150%
	13C2-PFDoDA	90%		50-150%
	13C2-PFTeDA	83%		50-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	89%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	98%		50-150%
	d3-MeFOSAA	111%		50-150%
	d5-EtFOSAA	103%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	101%		50-150%
	13C2-8:2FTS	98%		50-150%
	13C3-HFPO-DA	77%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-035.0-20211118
Lab Sample ID: FA90990-5
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50721.D	1	12/17/21 20:02	MV	12/13/21 08:30	OP88791	S3Q712
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0023	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0028	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0099	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0021	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1009-035.0-20211118
Lab Sample ID: FA90990-5 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		50-150%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	95%		50-150%
	13C2-PFDoDA	89%		50-150%
	13C2-PFTeDA	75%		50-150%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	94%		50-150%
	13C8-PFOS	92%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	116%		50-150%
	d5-EtFOSAA	108%		50-150%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	100%		50-150%
	13C2-8:2FTS	96%		50-150%
	13C3-HFPO-DA	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-005.0-20211118
Lab Sample ID: FA90990-6 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50693.D	1	12/17/21 10:50	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0212	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0039	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0036	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0022	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0047	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0105	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0049	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-005.0-20211118
Lab Sample ID: FA90990-6 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		50-150%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	105%		50-150%
	13C9-PFNA	109%		50-150%
	13C6-PFDA	111%		50-150%
	13C7-PFUnDA	105%		50-150%
	13C2-PFDoDA	96%		50-150%
	13C2-PFTeDA	83%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	97%		50-150%
	13C8-PFOS	103%		50-150%
	13C8-FOSA	85%		50-150%
	d3-MeFOSAA	113%		50-150%
	d5-EtFOSAA	104%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	102%		50-150%
	13C2-8:2FTS	105%		50-150%
	13C3-HFPO-DA	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-015.0-20211118
Lab Sample ID: FA90990-7
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50694.D	1	12/17/21 11:06	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0116	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0203	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0343	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0097	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0120	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0349	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0374	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.207	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0070	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0665	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-015.0-20211118
Lab Sample ID: FA90990-7 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	69%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	80%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	73%		50-150%
	13C2-PFDoDA	63%		50-150%
	13C2-PFTeDA	52%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	73%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	69%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	75%		50-150%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	71%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1010-025.0-20211118		
Lab Sample ID:	FA90990-8	**Date Sampled:**	11/18/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50695.D	1	12/17/21 11:23	MV	12/13/21 08:30	OP88791	S3Q711
Run #2 [a]	3Q51091.D	1	12/23/21 06:10	NG	12/21/21 09:00	OP88937	S3Q714
Run #3	3Q50722.D	5	12/17/21 20:18	MV	12/13/21 08:30	OP88791	S3Q712

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml
Run #3	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0092	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0143	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0221	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0068	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0074	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid [b]	0.021 U [c]	0.042	0.021	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0198	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0234	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.153	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0055	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.117	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.021 U [c]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-025.0-20211118
Lab Sample ID: FA90990-8 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	82%	104%	94%	50-150%
	13C5-PFPeA	80%	100%	95%	50-150%
	13C5-PFHxA	83%	101%	95%	50-150%
	13C4-PFHpA	91%	112%	100%	50-150%
	13C8-PFOA	97%	119%	102%	50-150%
	13C9-PFNA	100%	117%	101%	50-150%
	13C6-PFDA	97%	102%	102%	50-150%
	13C7-PFUnDA	78%	54%	93%	50-150%
	13C2-PFDoDA	57%	19% d	78%	50-150%
	13C2-PFTeDA	17% d	3% d	38% d	50-150%
	13C3-PFBS	83%	103%	96%	50-150%
	13C3-PFHxS	89%	112%	99%	50-150%
	13C8-PFOS	91%	104%	96%	50-150%
	13C8-FOSA	40% d	40% d	52%	50-150%
	d3-MeFOSAA	96%	75%	119%	50-150%
	d5-EtFOSAA	79%	58%	100%	50-150%
	13C2-4:2FTS	78%	101%	89%	50-150%
	13C2-6:2FTS	97%	124%	99%	50-150%
	13C2-8:2FTS	90%	100%	95%	50-150%
	13C3-HFPO-DA	85%	105%	90%	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits.
(c) Result is from Run# 3
(d) Outside control limits.

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1010-035.0-20211118
Lab Sample ID: FA90990-9 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50696.D	1	12/17/21 11:39	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0039	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0080	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0022	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0038	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0051	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0060	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0304	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0038	0.0083	0.0042	0.0021	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1010-035.0-20211118		
Lab Sample ID:	FA90990-9	**Date Sampled:**	11/18/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	88%		50-150%
	13C5-PFPeA	87%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	94%		50-150%
	13C8-PFOA	101%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	103%		50-150%
	13C7-PFUnDA	92%		50-150%
	13C2-PFDoDA	89%		50-150%
	13C2-PFTeDA	93%		50-150%
	13C3-PFBS	87%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	96%		50-150%
	13C8-FOSA	99%		50-150%
	d3-MeFOSAA	109%		50-150%
	d5-EtFOSAA	100%		50-150%
	13C2-4:2FTS	83%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	98%		50-150%
	13C3-HFPO-DA	88%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1011-005.0-20211118		
Lab Sample ID:	FA90990-10	**Date Sampled:**	11/18/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	3Q51093.D	1	12/23/21 06:43	NG	12/21/21 09:00	OP88937	S3Q714
Run #2 [b]	3Q50699.D	1.32	12/17/21 12:29	MV	12/13/21 08:30	OP88791	S3Q711
Run #3 [c]	3Q51117.D	6.58	12/23/21 13:26	NG	12/13/21 08:30	OP88791	S3Q714

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0450 [d]	0.021	0.011	0.0053	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0052 [d]	0.011	0.0053	0.0026	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0037 [d]	0.011	0.0053	0.0026	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
335-67-1	Perfluorooctanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
375-95-1	Perfluorononanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
335-76-2	Perfluorodecanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
307-55-1	Perfluorododecanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
376-06-7	Perfluorotetradecanoic acid [e]	0.026 U [f]	0.053	0.026	0.013	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0033 [d]	0.011	0.0053	0.0026	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0039 [d]	0.011	0.0053	0.0026	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0053 U [d]	0.011	0.0053	0.0026	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.026 U [f]	0.053	0.026	0.013	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.011 U [d]	0.021	0.011	0.0053	ug/l	
2991-50-6	EtFOSAA	0.011 U [d]	0.021	0.011	0.0053	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-005.0-20211118
Lab Sample ID: FA90990-10 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.011 U [d]	0.021	0.011	0.0053	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.011 U [d]	0.021	0.011	0.0053	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.011 U [d]	0.021	0.011	0.0053	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.011 U [d]	0.021	0.011	0.0053	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	59%	75%	100%	50-150%
	13C5-PFPeA	59%	76%	98%	50-150%
	13C5-PFHxA	63%	81%	96%	50-150%
	13C4-PFHpA	70%	86%	97%	50-150%
	13C8-PFOA	82%	91%	96%	50-150%
	13C9-PFNA	84%	86%	88%	50-150%
	13C6-PFDA	81%	82%	83%	50-150%
	13C7-PFUnDA	69%	66%	72%	50-150%
	13C2-PFDoDA	56%	54%	61%	50-150%
	13C2-PFTeDA	20% [g]	31% [g]	49% [g]	50-150%
	13C3-PFBS	63%	77%	98%	50-150%
	13C3-PFHxS	70%	82%	90%	50-150%
	13C8-PFOS	80%	75%	83%	50-150%
	13C8-FOSA	52%	49% [g]	56%	50-150%
	d3-MeFOSAA	74%	82%	84%	50-150%
	d5-EtFOSAA	66%	69%	74%	50-150%
	13C2-4:2FTS	61%	75%	93%	50-150%
	13C2-6:2FTS	85%	89%	91%	50-150%
	13C2-8:2FTS	78%	76%	79%	50-150%
	13C3-HFPO-DA	64%	80%	105%	50-150%

(a) Confirmation run.
(b) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.
(c) Dilution required due to matrix interference (ID recovery standard failure).
(d) Result is from Run# 2
(e) Associated ID Standard outside control limits.
(f) Result is from Run# 3
(g) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-015.0-20211118
Lab Sample ID: FA90990-11
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50700.D	1	12/17/21 12:46	MV	12/13/21 08:30	OP88791	S3Q711
Run #2	3Q51118.D	5	12/23/21 13:45	NG	12/13/21 08:30	OP88791	S3Q714

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [a]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1011-015.0-20211118		
Lab Sample ID:	FA90990-11	**Date Sampled:**	11/18/21
Matrix:	AQ - Ground Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%	109%	50-150%
	13C5-PFPeA	94%	107%	50-150%
	13C5-PFHxA	94%	107%	50-150%
	13C4-PFHpA	99%	110%	50-150%
	13C8-PFOA	108%	112%	50-150%
	13C9-PFNA	110%	111%	50-150%
	13C6-PFDA	110%	110%	50-150%
	13C7-PFUnDA	98%	100%	50-150%
	13C2-PFDoDA	88%	92%	50-150%
	13C2-PFTeDA	40% b	67%	50-150%
	13C3-PFBS	94%	109%	50-150%
	13C3-PFHxS	100%	111%	50-150%
	13C8-PFOS	101%	110%	50-150%
	13C8-FOSA	83%	88%	50-150%
	d3-MeFOSAA	122%	110%	50-150%
	d5-EtFOSAA	110%	104%	50-150%
	13C2-4:2FTS	90%	103%	50-150%
	13C2-6:2FTS	106%	108%	50-150%
	13C2-8:2FTS	104%	106%	50-150%
	13C3-HFPO-DA	92%	117%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-025.0-20211118
Lab Sample ID: FA90990-12
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50701.D	1	12/17/21 13:02	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0037	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0027	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0101	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-025.0-20211118
Lab Sample ID: FA90990-12 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	95%		50-150%
	13C5-PFPeA	94%		50-150%
	13C5-PFHxA	94%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	108%		50-150%
	13C9-PFNA	109%		50-150%
	13C6-PFDA	110%		50-150%
	13C7-PFUnDA	103%		50-150%
	13C2-PFDoDA	100%		50-150%
	13C2-PFTeDA	89%		50-150%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	100%		50-150%
	13C8-PFOS	101%		50-150%
	13C8-FOSA	100%		50-150%
	d3-MeFOSAA	122%		50-150%
	d5-EtFOSAA	116%		50-150%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	104%		50-150%
	13C2-8:2FTS	102%		50-150%
	13C3-HFPO-DA	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-035.0-20211118
Lab Sample ID: FA90990-13
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q50702.D	1	12/17/21 13:19	MV	12/13/21 08:30	OP88791	S3Q711
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1011-035.0-20211118
Lab Sample ID: FA90990-13 **Date Sampled:** 11/18/21
Matrix: AQ - Ground Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	82%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	90%		50-150%
	13C8-PFOA	96%		50-150%
	13C9-PFNA	98%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	87%		50-150%
	13C2-PFDoDA	85%		50-150%
	13C2-PFTeDA	87%		50-150%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	88%		50-150%
	13C8-PFOS	89%		50-150%
	13C8-FOSA	96%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	96%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	93%		50-150%
	13C3-HFPO-DA	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FB-20211118-01		
Lab Sample ID:	FA90990-14	**Date Sampled:**	11/18/21
Matrix:	AQ - Field Blank Water	**Date Received:**	11/19/21
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q51115.D	1	12/23/21 12:53	NG	12/13/21 08:30	OP88791	S3Q714
Run #2 [a]	3Q51099.D	1	12/23/21 08:22	NG	12/21/21 09:00	OP88937	S3Q714
Run #3 [a]	3Q51076.D	5	12/23/21 02:02	NG	12/13/21 08:30	OP88791	S3Q714

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml
Run #3	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA [b]	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA [b]	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20211118-01
Lab Sample ID: FA90990-14 **Date Sampled:** 11/18/21
Matrix: AQ - Field Blank Water **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate [b]	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	98%	115%	95%	50-150%
	13C5-PFPeA	99%	115%	95%	50-150%
	13C5-PFHxA	98%	115%	94%	50-150%
	13C4-PFHpA	98%	115%	96%	50-150%
	13C8-PFOA	90%	117%	87%	50-150%
	13C9-PFNA	67%	115%	65%	50-150%
	13C6-PFDA	52%	111%	51%	50-150%
	13C7-PFUnDA	43% [c]	100%	42% [c]	50-150%
	13C2-PFDoDA	46% [c]	96%	44% [c]	50-150%
	13C2-PFTeDA	60%	82%	59%	50-150%
	13C3-PFBS	99%	114%	97%	50-150%
	13C3-PFHxS	88%	114%	89%	50-150%
	13C8-PFOS	52%	109%	50%	50-150%
	13C8-FOSA	54%	103%	53%	50-150%
	d3-MeFOSAA	47% [c]	103%	46% [c]	50-150%
	d5-EtFOSAA	42% [c]	100%	41% [c]	50-150%
	13C2-4:2FTS	92%	108%	90%	50-150%
	13C2-6:2FTS	84%	112%	81%	50-150%
	13C2-8:2FTS	47% [c]	103%	45% [c]	50-150%
	13C3-HFPO-DA	107%	122%	98%	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211118-01
Lab Sample ID: FA90990-15
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 11/18/21
Date Received: 11/19/21
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q51116.D	1	12/23/21 13:09	NG	12/13/21 08:30	OP88791	S3Q714
Run #2 [a]	3Q51100.D	1	12/23/21 08:38	NG	12/21/21 09:00	OP88937	S3Q714

	Initial Volume	Final Volume
Run #1	115 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0087 U	0.017	0.0087	0.0043	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
307-24-4	Perfluorohexanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-67-1	Perfluorooctanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-95-1	Perfluorononanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-76-2	Perfluorodecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
307-55-1	Perfluorododecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0087 U	0.017	0.0087	0.0043	ug/l	
2991-50-6	EtFOSAA	0.0087 U	0.017	0.0087	0.0043	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20211118-01
Lab Sample ID: FA90990-15 **Date Sampled:** 11/18/21
Matrix: AQ - Equipment Blank **Date Received:** 11/19/21
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0087 U	0.017	0.0087	0.0043	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%	106%	50-150%
	13C5-PFPeA	74%	104%	50-150%
	13C5-PFHxA	74%	105%	50-150%
	13C4-PFHpA	73%	105%	50-150%
	13C8-PFOA	73%	106%	50-150%
	13C9-PFNA	71%	104%	50-150%
	13C6-PFDA	72%	100%	50-150%
	13C7-PFUnDA	70%	87%	50-150%
	13C2-PFDoDA	68%	76%	50-150%
	13C2-PFTeDA	71%	54%	50-150%
	13C3-PFBS	73%	103%	50-150%
	13C3-PFHxS	70%	103%	50-150%
	13C8-PFOS	69%	96%	50-150%
	13C8-FOSA	73%	87%	50-150%
	d3-MeFOSAA	74%	89%	50-150%
	d5-EtFOSAA	72%	80%	50-150%
	13C2-4:2FTS	70%	98%	50-150%
	13C2-6:2FTS	71%	100%	50-150%
	13C2-8:2FTS	69%	93%	50-150%
	13C3-HFPO-DA	79%	110%	50-150%

(a) Confirmation run.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA 90990

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LCQSIM537DODFL-24 analytes + GenX	LAB USE ONLY
1	S114-DPT1009-007.0-20211118	11/18/21	0742	DL	GW	2		X								X	
2	S114-FD-20211118-01	11/18/21	0742	DL	GW	2		X								X	
3	S114-DPT1009-015.0-20211118	11/18/21	0805	DL	GW	2		X								X	
4	S114-DPT1009-025.0-20211118	11/18/21	0829	DL	GW	2		X								X	
5	S114-DPT1009-035.0-20211118	11/18/21	0855	DL	GW	2		X								X	
6	S114-DPT1010-005.0-20211118	11/18/21	0956	DL	GW	2		X								X	
7	S114-DPT1010-015.0-20211118	11/18/21	1017	DL	GW	2		X								X	
8	S114-DPT1010-025.0-20211118	11/18/21	1039	DL	GW	2		X								X	
9	S114-DPT1010-035.0-20211118	11/18/21	1104	DL	GW	2		X								X	
10	S114-DPT1011-005.0-20211118	11/18/21	1230	DL	GW	2		X								X	
11	S114-DPT1011-015.0-20211118	11/18/21	1249	DL	GW	2		X								X	
12	S114-DPT1011-025.0-20211118	11/18/21	1309	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT

LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
RL HGL	11-19-21 1524	2	3	11/19/21 17:17	4 11/19/21 17:17
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.8 IR#4

http://www.sgs.com/en/terms-and-conditions

SGS COC_11182021 Rev 031318

FA90990: Chain of Custody
Page 1 of 3

FA90990

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32937
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Dustin Lupis Sampler 2:Jason Bublitz

Project Information

Project Name: SLF PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	CONTAINER INFORMATION: TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MECH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
13	S114-DPT1011-035.0-20211118	11/18/21	1333	DL	GW	2		X								X	
14	S114-FB-20211118-01	11/18/21	1540	DL	GW	2		X								X	
15	S114-EB-20211118-01	11/18/21	1545	DL	GW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH* _____
2 Day *RUSH* _____
1 Day *RUSH* _____
Other _____
vailable VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
RL HGL	11-19-21 1528	2	3	11/19/21 17:17	4 11/19/21 1717
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): _____

http://www.sgs.com/en/terms-and-conditions

SGS COC_11182021 Rev 031318

SGS Sample Receipt Summary

Job Number: FA90990 **Client:** HGL INC. **Project:** SLF PFAS ASSESSMENT

Date / Time Received: 11/19/2021 5:17:00 PM **Delivery Method:** ALSE **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.2; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.6);

Cooler Temps (Corrected) °C: Cooler 1: (3.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: PETERH Date: 11/19/2021 5:17:00 P Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88775	EPA 537M QSM5.3 B-15						
OP88775-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	99	%	73-129
OP88775-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	101	%	72-129
OP88775-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	100	%	72-129
OP88775-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	99	%	72-130
OP88775-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	98	%	71-133
OP88775-BS	375-95-1	Perfluorononanoic acid	BSP	REC	99	%	69-130
OP88775-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	100	%	71-129
OP88775-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	101	%	69-133
OP88775-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	101	%	72-134
OP88775-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	106	%	65-144
OP88775-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	102	%	71-132
OP88775-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	102	%	73-130
OP88775-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	103	%	71-127
OP88775-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	102	%	68-131
OP88775-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	99	%	69-134
OP88775-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	97	%	65-140
OP88775-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	100	%	69-127
OP88775-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	97	%	53-142
OP88775-BS	754-91-6	PFOSA	BSP	REC	98	%	67-137
OP88775-BS	2355-31-9	MeFOSAA	BSP	REC	99	%	65-136
OP88775-BS	2991-50-6	EtFOSAA	BSP	REC	101	%	61-135
OP88775-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	102	%	63-143
OP88775-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	102	%	64-140
OP88775-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	102	%	67-138
OP88775-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	100	%	73-129
OP88775-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	104	%	72-129
OP88775-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	102	%	72-129
OP88775-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	102	%	72-130
OP88775-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	103	%	71-133
OP88775-MS*	375-95-1	Perfluorononanoic acid	MS	REC	100	%	69-130
OP88775-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	101	%	71-129
OP88775-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	103	%	69-133
OP88775-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	104	%	72-134
OP88775-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	133	%	65-144
OP88775-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	105	%	71-132
OP88775-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	105	%	73-130
OP88775-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	105	%	71-127
OP88775-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	104	%	68-131
OP88775-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	105	%	69-134
OP88775-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	97	%	65-140
OP88775-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	95	%	69-127
OP88775-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	94	%	53-142

* Sample used for QC is not from job FA90990

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88775-MS*	754-91-6	PFOSA	MS	REC	103	%	67-137
OP88775-MS*	2355-31-9	MeFOSAA	MS	REC	106	%	65-136
OP88775-MS*	2991-50-6	EtFOSAA	MS	REC	107	%	61-135
OP88775-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	104	%	63-143
OP88775-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	104	%	64-140
OP88775-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	104	%	67-138
OP88775-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	101	%	73-129
OP88775-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	13	%	30
OP88775-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	104	%	72-129
OP88775-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	14	%	30
OP88775-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	103	%	72-129
OP88775-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	12	%	30
OP88775-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	102	%	72-130
OP88775-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	14	%	30
OP88775-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	101	%	71-133
OP88775-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	14	%	30
OP88775-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	100	%	69-130
OP88775-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	12	%	30
OP88775-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	103	%	71-129
OP88775-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	12	%	30
OP88775-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	102	%	69-133
OP88775-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	15	%	30
OP88775-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	103	%	72-134
OP88775-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	15	%	30
OP88775-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	103	%	65-144
OP88775-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	40	%	30
OP88775-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	104	%	71-132
OP88775-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	15	%	30
OP88775-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	104	%	73-130
OP88775-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	16	%	30
OP88775-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	106	%	71-127
OP88775-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	14	%	30
OP88775-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	102	%	68-131
OP88775-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	15	%	30
OP88775-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	106	%	69-134
OP88775-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	14	%	30
OP88775-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	96	%	65-140
OP88775-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	13	%	30
OP88775-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	96	%	69-127
OP88775-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	14	%	30
OP88775-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	98	%	53-142
OP88775-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	10	%	30
OP88775-MSD*	754-91-6	PFOSA	MSD	REC	103	%	67-137
OP88775-MSD*	754-91-6	PFOSA	MSD	RPD	15	%	30
OP88775-MSD*	2355-31-9	MeFOSAA	MSD	REC	107	%	65-136

* Sample used for QC is not from job FA90990

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88775-MSD*	2355-31-9	MeFOSAA	MSD	RPD	14	%	30
OP88775-MSD*	2991-50-6	EtFOSAA	MSD	REC	106	%	61-135
OP88775-MSD*	2991-50-6	EtFOSAA	MSD	RPD	16	%	30
OP88775-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	104	%	63-143
OP88775-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	14	%	30
OP88775-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	105	%	64-140
OP88775-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	14	%	30
OP88775-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	104	%	67-138
OP88775-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	14	%	30
OP88791	EPA 537M QSM5.3 B-15						
OP88791-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	102	%	73-129
OP88791-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	101	%	72-129
OP88791-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	101	%	72-129
OP88791-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	99	%	72-130
OP88791-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	101	%	71-133
OP88791-BS	375-95-1	Perfluorononanoic acid	BSP	REC	100	%	69-130
OP88791-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	100	%	71-129
OP88791-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	103	%	69-133
OP88791-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	103	%	72-134
OP88791-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	102	%	65-144
OP88791-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	101	%	71-132
OP88791-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	104	%	73-130
OP88791-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	106	%	71-127
OP88791-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	103	%	68-131
OP88791-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	102	%	69-134
OP88791-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	100	%	65-140
OP88791-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP88791-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	115	%	53-142
OP88791-BS	754-91-6	PFOSA	BSP	REC	101	%	67-137
OP88791-BS	2355-31-9	MeFOSAA	BSP	REC	103	%	65-136
OP88791-BS	2991-50-6	EtFOSAA	BSP	REC	101	%	61-135
OP88791-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	103	%	63-143
OP88791-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	101	%	64-140
OP88791-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	103	%	67-138
OP88791-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	102	%	73-129
OP88791-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	103	%	72-129
OP88791-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	104	%	72-129
OP88791-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	104	%	72-130
OP88791-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	103	%	71-133
OP88791-MS*	375-95-1	Perfluorononanoic acid	MS	REC	101	%	69-130
OP88791-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	103	%	71-129
OP88791-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	103	%	69-133
OP88791-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	100	%	72-134

* Sample used for QC is not from job FA90990

QC Evaluation: DOD QSM5.x Limits

Job Number: FA90990
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 11/18/21

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP88791-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	100	%	65-144
OP88791-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	101	%	71-132
OP88791-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	105	%	73-130
OP88791-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	105	%	71-127
OP88791-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	107	%	68-131
OP88791-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	109	%	69-134
OP88791-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	101	%	65-140
OP88791-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	103	%	69-127
OP88791-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	102	%	53-142
OP88791-MS*	754-91-6	PFOSA	MS	REC	103	%	67-137
OP88791-MS*	2355-31-9	MeFOSAA	MS	REC	104	%	65-136
OP88791-MS*	2991-50-6	EtFOSAA	MS	REC	104	%	61-135
OP88791-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	104	%	63-143
OP88791-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	104	%	64-140
OP88791-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	101	%	67-138
OP88791-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	3	%	30
OP88791-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	8	%	30
OP88791-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP88791-DUP*	754-91-6	PFOSA	DUP	RPD	0	%	30
OP88791-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP88791-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP88791-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP88791-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	1	%	30
OP88791-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30

* Sample used for QC is not from job FA90990

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q711-IBLK	3Q50634.D	1	12/16/21	MV	n/a	n/a	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	82%	50-150%
	13C5-PFPeA	82%	50-150%
	13C5-PFHxA	82%	50-150%
	13C4-PFHpA	83%	50-150%
	13C8-PFOA	83%	50-150%
	13C9-PFNA	84%	50-150%
	13C6-PFDA	85%	50-150%

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q711-IBLK	3Q50634.D	1	12/16/21	MV	n/a	n/a	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	84%	50-150%
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	84%	50-150%
	13C3-PFBS	81%	50-150%
	13C3-PFHxS	84%	50-150%
	13C8-PFOS	84%	50-150%
	13C8-FOSA	90%	50-150%
	d3-MeFOSAA	87%	50-150%
	d5-EtFOSAA	85%	50-150%
	13C2-4:2FTS	76%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	80%	50-150%
	13C3-HFPO-DA	81%	50-150%

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q712-IBLK	3Q50710.D	1	12/17/21	MV	n/a	n/a	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	50-150%
	13C5-PFPeA	103%	50-150%
	13C5-PFHxA	104%	50-150%
	13C4-PFHpA	104%	50-150%
	13C8-PFOA	107%	50-150%
	13C9-PFNA	107%	50-150%
	13C6-PFDA	108%	50-150%

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q712-IBLK	3Q50710.D	1	12/17/21	MV	n/a	n/a	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-8

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	109%	50-150%
	13C2-PFDoDA	113%	50-150%
	13C2-PFTeDA	119%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	103%	50-150%
	13C8-PFOS	102%	50-150%
	13C8-FOSA	119%	50-150%
	d3-MeFOSA	118%	50-150%
	d3-MeFOSAA	124%	50-150%
	d5-EtFOSAA	125%	50-150%
	13C2-4:2FTS	97%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	101%	50-150%
	13C3-HFPO-DA	98%	50-150%

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q714-IBLK	3Q51066.D	1	12/22/21	NG	n/a	n/a	S3Q714

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-10, FA90990-11, FA90990-14, FA90990-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	103%	50-150%
	13C5-PFPeA	103%	50-150%
	13C5-PFHxA	104%	50-150%
	13C4-PFHpA	104%	50-150%
	13C8-PFOA	105%	50-150%
	13C9-PFNA	106%	50-150%
	13C6-PFDA	108%	50-150%

Instrument Blank

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q714-IBLK	3Q51066.D	1	12/22/21	NG	n/a	n/a	S3Q714

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-10, FA90990-11, FA90990-14, FA90990-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	105%	50-150%
	13C2-PFDoDA	104%	50-150%
	13C2-PFTeDA	104%	50-150%
	13C3-PFBS	104%	50-150%
	13C3-PFHxS	104%	50-150%
	13C8-PFOS	104%	50-150%
	13C8-FOSA	109%	50-150%
	d3-MeFOSAA	106%	50-150%
	d5-EtFOSAA	106%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	100%	50-150%
	13C3-HFPO-DA	104%	50-150%

Method Blank Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-MB	3Q50640.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	92%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	93%	50-150%
	13C4-PFHpA	91%	50-150%
	13C8-PFOA	91%	50-150%
	13C9-PFNA	90%	50-150%
	13C6-PFDA	93%	50-150%

Method Blank Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-MB	3Q50640.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	90%	50-150%
	13C2-PFDoDA	83%	50-150%
	13C2-PFTeDA	73%	50-150%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	88%	50-150%
	d3-MeFOSA	50%	50-150%
	d3-MeFOSAA	93%	50-150%
	d5-EtFOSAA	85%	50-150%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	86%	50-150%
	13C3-HFPO-DA	85%	50-150%

Method Blank Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MB	3Q50679.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	74%	50-150%
	13C5-PFPeA	75%	50-150%
	13C5-PFHxA	75%	50-150%
	13C4-PFHpA	75%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	76%	50-150%

Method Blank Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MB	3Q50679.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	75%	50-150%
	13C2-PFDoDA	74%	50-150%
	13C2-PFTeDA	70%	50-150%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	73%	50-150%
	13C8-PFOS	73%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSA	57%	50-150%
	d3-MeFOSAA	82%	50-150%
	d5-EtFOSAA	76%	50-150%
	13C2-4:2FTS	70%	50-150%
	13C2-6:2FTS	73%	50-150%
	13C2-8:2FTS	73%	50-150%
	13C3-HFPO-DA	69%	50-150%

Blank Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-BS	3Q50639.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0790	99	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0806	101	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0801	100	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0788	99	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0784	98	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0788	99	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0798	100	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0805	101	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0807	101	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0847	106	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0812	102	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0816	102	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0822	103	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0814	102	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0793	99	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0775	97	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0798	100	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0772	97	53-142
754-91-6	PFOSA	0.08	0.0787	98	67-137
2355-31-9	MeFOSAA	0.08	0.0789	99	65-136
2991-50-6	EtFOSAA	0.08	0.0807	101	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0813	102	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0813	102	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0815	102	67-138
13252-13-6	HFPO-DA (GenX)	0.08	0.0777	97	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	100%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	99%	50-150%
	13C4-PFHpA	100%	50-150%
	13C8-PFOA	100%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	100%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-BS	3Q50639.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	98%	50-150%
	13C2-PFDoDA	91%	50-150%
	13C2-PFTeDA	82%	50-150%
	13C3-PFBS	99%	50-150%
	13C3-PFHxS	98%	50-150%
	13C8-PFOS	100%	50-150%
	13C8-FOSA	86%	50-150%
	d3-MeFOSA	55%	50-150%
	d3-MeFOSAA	95%	50-150%
	d5-EtFOSAA	89%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	100%	50-150%
	13C3-HFPO-DA	93%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-BS	3Q50678.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.163	102	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.162	101	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.162	101	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.159	99	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.161	101	71-133
375-95-1	Perfluorononanoic acid	0.16	0.160	100	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.160	100	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.164	103	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.164	103	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.163	102	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.161	101	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.166	104	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.169	106	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.164	103	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.163	102	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.160	100	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.170	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.184	115	53-142
754-91-6	PFOSA	0.16	0.161	101	67-137
2355-31-9	MeFOSAA	0.16	0.164	103	65-136
2991-50-6	EtFOSAA	0.16	0.161	101	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.164	103	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.162	101	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.165	103	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.154	96	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	51%	50-150%
	13C5-PFPeA	53%	50-150%
	13C5-PFHxA	55%	50-150%
	13C4-PFHpA	58%	50-150%
	13C8-PFOA	60%	50-150%
	13C9-PFNA	62%	50-150%
	13C6-PFDA	65%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-BS	3Q50678.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	68%	50-150%
	13C2-PFDoDA	75%	50-150%
	13C2-PFTeDA	82%	50-150%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	76%	50-150%
	13C8-PFOS	75%	50-150%
	13C8-FOSA	80%	50-150%
	d3-MeFOSA	66%	50-150%
	d3-MeFOSAA	78%	50-150%
	d5-EtFOSAA	80%	50-150%
	13C2-4:2FTS	58%	50-150%
	13C2-6:2FTS	64%	50-150%
	13C2-8:2FTS	68%	50-150%
	13C3-HFPO-DA	49%*	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MS	3Q50681.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-1	3Q50680.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	Compound	FA91003-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0115	J	0.167	0.181	102	73-129
2706-90-3	Perfluoropentanoic acid	0.0083	U	0.167	0.171	103	72-129
307-24-4	Perfluorohexanoic acid	0.0083	U	0.167	0.173	104	72-129
375-85-9	Perfluoroheptanoic acid	0.0083	U	0.167	0.173	104	72-130
335-67-1	Perfluorooctanoic acid	0.0051	J	0.167	0.176	103	71-133
375-95-1	Perfluorononanoic acid	0.0083	U	0.167	0.168	101	69-130
335-76-2	Perfluorodecanoic acid	0.0083	U	0.167	0.172	103	71-129
2058-94-8	Perfluoroundecanoic acid	0.0083	U	0.167	0.171	103	69-133
307-55-1	Perfluorododecanoic acid	0.0083	U	0.167	0.167	100	72-134
72629-94-8	Perfluorotridecanoic acid	0.0083	U	0.167	0.167	100	65-144
376-06-7	Perfluorotetradecanoic acid	0.0083	U	0.167	0.168	101	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0024	J	0.167	0.177	105	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0083	U	0.167	0.175	105	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0083	U	0.167	0.179	107	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0083	U	0.167	0.182	109	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0083	U	0.167	0.168	101	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0083	U	0.167	0.171	103	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0083	U	0.167	0.170	102	53-142
754-91-6	PFOSA	0.0083	U	0.167	0.172	103	67-137
2355-31-9	MeFOSAA	0.017	U	0.167	0.174	104	65-136
2991-50-6	EtFOSAA	0.017	U	0.167	0.173	104	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.017	U	0.167	0.173	104	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.017	U	0.167	0.173	104	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.017	U	0.167	0.169	101	67-138
13252-13-6	HFPO-DA (GenX)	0.017	U	0.167	0.168	101	60-140

CAS No.	ID Standard Recoveries	MS	FA91003-1	Limits
	13C4-PFBA	106%	85%	50-150%
	13C5-PFPeA	106%	83%	50-150%
	13C5-PFHxA	105%	84%	50-150%
	13C4-PFHpA	103%	84%	50-150%
	13C8-PFOA	102%	86%	50-150%
	13C9-PFNA	99%	85%	50-150%
	13C6-PFDA	94%	85%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-MS	3Q50681.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-1	3Q50680.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	ID Standard Recoveries	MS	FA91003-1	Limits
	13C7-PFUnDA	91%	82%	50-150%
	13C2-PFDoDA	96%	82%	50-150%
	13C2-PFTeDA	99%	85%	50-150%
	13C3-PFBS	103%	83%	50-150%
	13C3-PFHxS	99%	83%	50-150%
	13C8-PFOS	92%	80%	50-150%
	13C8-FOSA	98%	91%	50-150%
	d3-MeFOSA	80%	64%	50-150%
	d3-MeFOSAA	98%	94%	50-150%
	d5-EtFOSAA	98%	89%	50-150%
	13C2-4:2FTS	105%	77%	50-150%
	13C2-6:2FTS	100%	81%	50-150%
	13C2-8:2FTS	93%	79%	50-150%
	13C3-HFPO-DA	98%		50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-MS	3Q50646.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711
OP88775-MSD	3Q50647.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711
FA91021-6	3Q50645.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	Compound	FA91021-6 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0131	J	0.211	0.224	100	0.182	0.197	101	13	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0080	J	0.211	0.226	104	0.182	0.197	104	14	72-129/30
307-24-4	Perfluorohexanoic acid	0.0079	J	0.211	0.222	102	0.182	0.196	103	12	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0071	J	0.211	0.222	102	0.182	0.192	102	14	72-130/30
335-67-1	Perfluorooctanoic acid	0.0220		0.211	0.238	103	0.182	0.206	101	14	71-133/30
375-95-1	Perfluorononanoic acid	0.0524		0.211	0.263	100	0.182	0.234	100	12	69-130/30
335-76-2	Perfluorodecanoic acid	0.012 U		0.211	0.212	101	0.182	0.188	103	12	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.012 U		0.211	0.216	103	0.182	0.186	102	15	69-133/30
307-55-1	Perfluorododecanoic acid	0.012 U		0.211	0.218	104	0.182	0.187	103	15	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.012 U		0.211	0.280	133	0.182	0.187	103	40*	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.012 U		0.211	0.220	105	0.182	0.189	104	15	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.012 U		0.211	0.221	105	0.182	0.189	104	16	73-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.012 U		0.211	0.221	105	0.182	0.192	106	14	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0121		0.211	0.230	104	0.182	0.197	102	15	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.012 U		0.211	0.221	105	0.182	0.193	106	14	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0394		0.211	0.244	97	0.182	0.214	96	13	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.012 U		0.211	0.201	95	0.182	0.174	96	14	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.012 U		0.211	0.197	94	0.182	0.178	98	10	53-142/30
754-91-6	PFOSA	0.012 U		0.211	0.217	103	0.182	0.187	103	15	67-137/30
2355-31-9	MeFOSAA	0.024 U		0.211	0.224	106	0.182	0.194	107	14	65-136/30
2991-50-6	EtFOSAA	0.024 U		0.211	0.226	107	0.182	0.192	106	16	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.024 U		0.211	0.219	104	0.182	0.190	104	14	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.024 U		0.211	0.219	104	0.182	0.191	105	14	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.024 U		0.211	0.219	104	0.182	0.190	104	14	67-138/30
13252-13-6	HFPO-DA (GenX)	0.024 U		0.211	0.214	102	0.182	0.191	105	11	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA91021-6	Limits
	13C4-PFBA	99%	97%		50-150%
	13C5-PFPeA	94%	92%		50-150%
	13C5-PFHxA	94%	93%	96%	50-150%
	13C4-PFHpA	96%	96%	97%	50-150%
	13C8-PFOA	98%	97%	95%	50-150%
	13C9-PFNA	98%	96%	90%	50-150%
	13C6-PFDA	97%	95%	89%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88775-MS	3Q50646.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711
OP88775-MSD	3Q50647.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711
FA91021-6	3Q50645.D	1	12/16/21	MV	12/11/21	OP88775	S3Q711

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-1, FA90990-2, FA90990-3, FA90990-4

CAS No.	ID Standard Recoveries	MS	MSD	FA91021-6	Limits
	13C7-PFUnDA	90%	92%	85%	50-150%
	13C2-PFDoDA	87%	90%	85%	50-150%
	13C2-PFTeDA	59%	91%	75%	50-150%
	13C3-PFBS	96%	96%	99%	50-150%
	13C3-PFHxS	96%	96%	91%	50-150%
	13C8-PFOS	93%	92%	82%	50-150%
	13C8-FOSA	89%	92%		50-150%
	d3-MeFOSA	30%*	56%		50-150%
	d3-MeFOSAA	93%	93%	90%	50-150%
	d5-EtFOSAA	90%	91%	85%	50-150%
	13C2-4:2FTS	93%	93%		50-150%
	13C2-6:2FTS	95%	98%		50-150%
	13C2-8:2FTS	97%	97%		50-150%
	13C3-HFPO-DA	86%	84%	87%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-DUP	3Q50688.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50684.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50715.D	5	12/17/21	MV	12/13/21	OP88791	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	Compound	FA91003-4 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.017 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0094		0.0091		3	30
307-24-4	Perfluorohexanoic acid	0.0039	J	0.0039	J	0	30
375-85-9	Perfluoroheptanoic acid	0.0083 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0050	J	0.0046	J	8	30
375-95-1	Perfluorononanoic acid	0.0083 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0083 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0083 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0083 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0083 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0083 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0083 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0083 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0083 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0083 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0032	J	0.0032	J	0	30
68259-12-1	Perfluorononanesulfonic acid	0.0083 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0083 U		ND		nc	30
754-91-6	PFOSA	0.0083 U		ND		nc	30
2355-31-9	MeFOSAA	0.017 U		ND		nc	30
2991-50-6	EtFOSAA	0.017 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.017 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0322		0.0319		1	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.017 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.017 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA91003-4	FA91003-4	Limits
	13C4-PFBA	97%	98%	77%	50-150%
	13C5-PFPeA	99%	101%	77%	50-150%
	13C5-PFHxA	101%	102%	77%	50-150%
	13C4-PFHpA	102%	104%	78%	50-150%
	13C8-PFOA	108%	107%	80%	50-150%
	13C9-PFNA	107%	104%	77%	50-150%
	13C6-PFDA	106%	104%	78%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA90990
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP88791-DUP	3Q50688.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50684.D	1	12/17/21	MV	12/13/21	OP88791	S3Q711
FA91003-4	3Q50715.D	5	12/17/21	MV	12/13/21	OP88791	S3Q712

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA90990-5, FA90990-6, FA90990-7, FA90990-8, FA90990-9, FA90990-10, FA90990-11, FA90990-12, FA90990-13, FA90990-14, FA90990-15

CAS No.	ID Standard Recoveries	DUP	FA91003-4	FA91003-4	Limits
	13C7-PFUnDA	98%	95%	72%	50-150%
	13C2-PFDoDA	92%	85%	70%	50-150%
	13C2-PFTeDA	88%	59%	63%	50-150%
	13C3-PFBS	99%	99%	79%	50-150%
	13C3-PFHxS	102%	102%	78%	50-150%
	13C8-PFOS	99%	99%	72%	50-150%
	13C8-FOSA	80%	94%	74%	50-150%
	d3-MeFOSA	14%*	26%* [a]	34%* [a]	50-150%
	d3-MeFOSAA	115%	109%	89%	50-150%
	d5-EtFOSAA	105%	99%	80%	50-150%
	13C2-4:2FTS	96%	96%	73%	50-150%
	13C2-6:2FTS	103%	103%	79%	50-150%
	13C2-8:2FTS	100%	97%	74%	50-150%
	13C3-HFPO-DA	98%			50-150%

(a) Outside control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SWMU S114 NS1010.01.06

SGS Job Number: FA93380

Sampling Date: 02/22/22

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **89**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA93380

NASA TQN 21- SLF PFAS Assessment
Project No: SWMU S114 NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA93380-1	02/22/22	08:35	PDDL	02/23/22	AQ	Surface Water	S114-SW0001-000.0-20220222
FA93380-2	02/22/22	09:00	PDDL	02/23/22	AQ	Surface Water	S114-SW0002-000.0-20220222
FA93380-3	02/22/22	09:30	PDDL	02/23/22	AQ	Surface Water	S114-SW0003-000.0-20220222
FA93380-4	02/22/22	09:40	PDDL	02/23/22	AQ	Surface Water	S114-SW0004-000.0-20220222
FA93380-5	02/22/22	10:00	PDDL	02/23/22	AQ	Surface Water	S114-SW0005-000.0-20220222
FA93380-6	02/22/22	10:20	PDDL	02/23/22	AQ	Surface Water	S114-SW0006-000.0-20220222
FA93380-7	02/22/22	10:40	PDDL	02/23/22	AQ	Surface Water	S114-SW0007-000.0-20220222
FA93380-8	02/22/22	10:50	PDDL	02/23/22	AQ	Surface Water	S114-SW0008-000.0-20220222
FA93380-9	02/22/22	11:15	PDDL	02/23/22	AQ	Surface Water	S114-SW0009-000.0-20220222
FA93380-10	02/22/22	11:40	PDDL	02/23/22	AQ	Surface Water	S114-SW0010-000.0-20220222
FA93380-11	02/22/22	11:40	PDDL	02/23/22	AQ	Surface Water	S114-FD-20220222-02
FA93380-12	02/22/22	11:55	PDDL	02/23/22	AQ	Surface Water	S114-SW0011-000.0-20220222
FA93380-13	02/22/22	12:05	PDDL	02/23/22	AQ	Surface Water	S114-SW0012-000.0-20220222

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA93380

NASA TQN 21- SLF PFAS Assessment
Project No: SWMU S114 NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA93380-14	02/22/22	12:20	PDDL	02/23/22	AQ	Surface Water	S114-SW0013-000.0-20220222
FA93380-15	02/22/22	12:55	PDDL	02/23/22	AQ	Surface Water	S114-SW0014-000.0-20220222
FA93380-16	02/22/22	13:00	PDDL	02/23/22	AQ	Equipment Blank	S114-EB-20220222-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA93380

Site: NASA TQN 21- SLF PFAS Assessment **Report Date:** 3/21/2022 4:44:57 PM

On 02/23/2022, 16 Sample(s), 0 Trip Blank(s) and 0 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA93380 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP89961

Sample(s) FA93380-2MS, FA93380-3DUP, FA93380-2MS were used as the QC samples indicated.

RPD(s) for Duplicate for Perfluorodecanoic acid, Perfluorononanoic acid are outside control limits for sample OP89961-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FA93380-4, FA93380-9 have surrogates outside control limits.

FA93380-9: Dilution required due to matrix interference (ID recovery standard failure).

FA93380-4 for 13C4-PFBA: Outside control limits.

FA93380-4 for 13C5-PFPeA: Outside control limits.

FA93380-4 for 13C8-FOSA: Outside control limits.

FA93380-9 for 13C2-PFTeDA: Outside control limits.

Matrix: AQ **Batch ID:** OP89962

Sample(s) FA93380-13MS, FA93380-14DUP, FA93380-13MS were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA93380-13, FA93380-14, FA93380-15 have surrogates outside control limits.

FA93380-13 for 13C2-PFTeDA: Outside control limits.

FA93380-13 for 13C4-PFBA: Outside control limits.

FA93380-13 for Perfluorobutanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FA93380-13 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FA93380-14 for 13C2-PFTeDA: Outside control limits.

FA93380-14 for 13C4-PFBA: Outside control limits.

FA93380-14 for 13C8-FOSA: Outside control limits.

FA93380-14 for Perfluorobutanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FA93380-14 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits, Confirmed by batch QC.

FA93380-14 for PFOSA: Associated ID Standard outside control limits, Confirmed by batch QC.

FA93380-15: Confirmation run.

Matrix: AQ **Batch ID:** OP90272

Sample(s) FA93948-1DUP, FA93948-2MS were used as the QC samples indicated.

Sample(s) FA93380-15 have surrogates outside control limits.

FA93380-15 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

FA93380-15 for 13C2-PFTeDA: Outside control limits.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

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Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA93380-1	**S114-SW0001-000.0-20220222**					
Perfluorobutanoic acid		0.0621	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0842	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0775	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0229	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0164	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0922	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0922	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.536	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0163	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.344	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0088 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA93380-2	**S114-SW0002-000.0-20220222**					
Perfluorobutanoic acid		0.0265	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0380	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0308	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0146	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0075 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0270	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0255	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.152	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0059 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.133	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-3	**S114-SW0003-000.0-20220222**					
Perfluorobutanoic acid		0.114	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.462	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.312	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.107	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0773	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0109	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.119	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.141	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.935	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0679	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		1.74	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.573	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA93380-4	**S114-SW0004-000.0-20220222**					
Perfluorobutanoic acid		0.0231	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0271	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0337	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0131	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0111	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0200	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0252	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.229	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0106	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.456	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0041 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA93380-5	**S114-SW0005-000.0-20220222**					
Perfluorobutanoic acid		0.0238	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0427	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0334	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0136	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0085	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0243	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0255	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.160	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0059 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.193	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA93380-6	**S114-SW0006-000.0-20220222**					
Perfluorobutanoic acid		0.0197	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0293	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0211	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0092	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0066 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0154	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0157	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.107	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0057 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.204	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-7	**S114-SW0007-000.0-20220222**					
Perfluorobutanoic acid		0.0149 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0193	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0133	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanoic acid		0.0065 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0039 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0094	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0088	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0568	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0624	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-8	**S114-SW0008-000.0-20220222**					
Perfluorobutanoic acid		0.0253	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0358	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0289	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0134	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0076 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0246	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0242	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.147	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0056 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.149	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-9	**S114-SW0009-000.0-20220222**					
Perfluorobutanoic acid		0.0102 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0042 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0033 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0128	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0062 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-10	**S114-SW0010-000.0-20220222**					
Perfluorobutanoic acid		0.0215	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0338	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0303	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0119	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0075 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0170	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0190	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.119	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0048 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.162	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-11	**S114-FD-20220222-02**					
Perfluorobutanoic acid		0.0214	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0341	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorohexanoic acid		0.0287	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0122	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0073 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0158	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0182	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.115	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0053 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.153	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-12	**S114-SW0011-000.0-20220222**					
Perfluorobutanoic acid		0.0193	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0204	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0323	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0124	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0116	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0205	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0268	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.237	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0111	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.466	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA93380-13	**S114-SW0012-000.0-20220222**					
Perfluorobutanoic acid [a]		0.0160	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0104	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0153	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0086	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0065 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0099	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0132	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.125	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0059 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.224	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-14	**S114-SW0013-000.0-20220222**					
Perfluorobutanoic acid [a]		0.0180	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0142	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0199	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0082	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0076 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0104	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0140	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.165	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanesulfonic acid		0.0084	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.314	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA93380-15	**S114-SW0014-000.0-20220222**					
Perfluorobutanoic acid		0.0177	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0054 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0067 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0022 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0042 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0048 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0039 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0582	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0025 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.353	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA93380-16	**S114-EB-20220222-01**					
No hits reported in this sample.						

(a) Associated ID Standard outside control limits, Confirmed by batch QC.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-SW0001-000.0-20220222
Lab Sample ID: FA93380-1
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26405.D	1	03/12/22 16:19	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0621	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0842	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0775	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0229	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0164	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0922	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0922	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.536	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0163	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.344	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0088	0.016	0.0080	0.0040	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0001-000.0-20220222
Lab Sample ID: FA93380-1 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	56%		50-150%
	13C5-PFPeA	61%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	93%		50-150%
	13C7-PFUnDA	84%		50-150%
	13C2-PFDoDA	79%		50-150%
	13C2-PFTeDA	66%		50-150%
	13C3-PFBS	65%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	111%		50-150%
	d5-EtFOSAA	115%		50-150%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	97%		50-150%
	13C3-HFPO-DA	59%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0002-000.0-20220222
Lab Sample ID: FA93380-2
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26406.D	1	03/12/22 16:35	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0265	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0380	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0308	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0146	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0075	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0270	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0255	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.152	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0059	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.133	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0002-000.0-20220222
Lab Sample ID: FA93380-2 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	89%		50-150%
	13C9-PFNA	89%		50-150%
	13C6-PFDA	96%		50-150%
	13C7-PFUnDA	91%		50-150%
	13C2-PFDoDA	84%		50-150%
	13C2-PFTeDA	70%		50-150%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	80%		50-150%
	13C8-PFOS	85%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	104%		50-150%
	d5-EtFOSAA	97%		50-150%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	93%		50-150%
	13C2-8:2FTS	95%		50-150%
	13C3-HFPO-DA	68%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0003-000.0-20220222
Lab Sample ID: FA93380-3
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26408.D	1	03/12/22 17:06	MV	02/25/22 07:15	OP89961	S4Q366
Run #2	3Q56384.D	10	03/15/22 08:49	NG	02/25/22 07:15	OP89961	S3Q775

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.114	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.462	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.312	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.107	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0773	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0109	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.119	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.141	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.935 [a]	0.080	0.040	0.020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0679	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	1.74 [a]	0.080	0.040	0.020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.573	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0003-000.0-20220222		
Lab Sample ID:	FA93380-3	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	57%	64%	50-150%
	13C5-PFPeA	68%	66%	50-150%
	13C5-PFHxA	72%	70%	50-150%
	13C4-PFHpA	74%	71%	50-150%
	13C8-PFOA	80%	74%	50-150%
	13C9-PFNA	77%	77%	50-150%
	13C6-PFDA	87%	74%	50-150%
	13C7-PFUnDA	81%	69%	50-150%
	13C2-PFDoDA	74%	61%	50-150%
	13C2-PFTeDA	61%	55%	50-150%
	13C3-PFBS	69%	70%	50-150%
	13C3-PFHxS	74%	75%	50-150%
	13C8-PFOS	69%	70%	50-150%
	13C8-FOSA	58%	54%	50-150%
	d3-MeFOSAA	92%	88%	50-150%
	d5-EtFOSAA	88%	83%	50-150%
	13C2-4:2FTS	72%	75%	50-150%
	13C2-6:2FTS	101%	83%	50-150%
	13C2-8:2FTS	83%	67%	50-150%
	13C3-HFPO-DA	65%	88%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0004-000.0-20220222		
Lab Sample ID:	FA93380-4	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26410.D	1	03/12/22 17:37	MV	02/25/22 07:15	OP89961	S4Q366
Run #2	3Q56386.D	1	03/15/22 09:24	NG	02/25/22 07:15	OP89961	S3Q775

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0231	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0271	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0337	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0131	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0111	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0200	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0252	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.229 [a]	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0106	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.456 [a]	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0041	0.016	0.0080	0.0040	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0004-000.0-20220222		
Lab Sample ID:	FA93380-4	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%	46% b	50-150%
	13C5-PFPeA	69%	49% b	50-150%
	13C5-PFHxA	73%	58%	50-150%
	13C4-PFHpA	77%	65%	50-150%
	13C8-PFOA	85%	72%	50-150%
	13C9-PFNA	84%	72%	50-150%
	13C6-PFDA	92%	75%	50-150%
	13C7-PFUnDA	84%	69%	50-150%
	13C2-PFDoDA	76%	59%	50-150%
	13C2-PFTeDA	53%	52%	50-150%
	13C3-PFBS	70%	54%	50-150%
	13C3-PFHxS	77%	65%	50-150%
	13C8-PFOS	82%	69%	50-150%
	13C8-FOSA	53%	46% b	50-150%
	d3-MeFOSAA	100%	85%	50-150%
	d5-EtFOSAA	92%	81%	50-150%
	13C2-4:2FTS	73%	66%	50-150%
	13C2-6:2FTS	90%	81%	50-150%
	13C2-8:2FTS	88%	66%	50-150%
	13C3-HFPO-DA	66%	67%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0005-000.0-20220222
Lab Sample ID: FA93380-5
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q87122.D	1	03/17/22 18:44	JB	03/16/22 08:30	OP90272	S2Q1227
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0238	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0427	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0334	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0136	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0085	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0243	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0255	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.160	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0059	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.193	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection
LOQ = Limit of Quantitation DL = Detection Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0005-000.0-20220222		
Lab Sample ID:	FA93380-5	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%		50-150%
	13C5-PFPeA	67%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	81%		50-150%
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	84%		50-150%
	13C2-PFDoDA	77%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	54%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	88%		50-150%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	89%		50-150%
	13C3-HFPO-DA	80%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0006-000.0-20220222
Lab Sample ID: FA93380-6
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26412.D	1	03/12/22 18:08	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0197	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0293	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0211	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0092	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0066	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0154	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0157	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.107	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0057	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.204	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0006-000.0-20220222
Lab Sample ID: FA93380-6 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	92%		50-150%
	13C7-PFUnDA	86%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	70%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	56%		50-150%
	d3-MeFOSAA	101%		50-150%
	d5-EtFOSAA	97%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	88%		50-150%
	13C2-8:2FTS	91%		50-150%
	13C3-HFPO-DA	67%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0007-000.0-20220222
Lab Sample ID: FA93380-7
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26413.D	1	03/12/22 18:24	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0149	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0193	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0133	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0065	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0039	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0094	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0088	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0568	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0624	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0007-000.0-20220222
Lab Sample ID: FA93380-7 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	90%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	98%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	82%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	86%		50-150%
	13C8-FOSA	61%		50-150%
	d3-MeFOSAA	105%		50-150%
	d5-EtFOSAA	98%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	92%		50-150%
	13C2-8:2FTS	96%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0008-000.0-20220222		
Lab Sample ID:	FA93380-8	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26414.D	1	03/12/22 18:39	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0253	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0358	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0289	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0134	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0076	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0246	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0242	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.147	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0056	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.149	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0008-000.0-20220222
Lab Sample ID: FA93380-8 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	91%		50-150%
	13C6-PFDA	97%		50-150%
	13C7-PFUnDA	90%		50-150%
	13C2-PFDoDA	83%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	72%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA	56%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	98%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	92%		50-150%
	13C2-8:2FTS	94%		50-150%
	13C3-HFPO-DA	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0009-000.0-20220222
Lab Sample ID: FA93380-9
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26417.D	1	03/12/22 19:26	MV	02/25/22 07:15	OP89961	S4Q366
Run #2 [a]	3Q56388.D	5	03/15/22 10:02	NG	02/25/22 07:15	OP89961	S3Q775

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0102	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0033	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0128	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0062	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0009-000.0-20220222		
Lab Sample ID:	FA93380-9	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%	60%	50-150%
	13C5-PFPeA	62%	64%	50-150%
	13C5-PFHxA	70%	71%	50-150%
	13C4-PFHpA	76%	75%	50-150%
	13C8-PFOA	83%	81%	50-150%
	13C9-PFNA	85%	80%	50-150%
	13C6-PFDA	86%	82%	50-150%
	13C7-PFUnDA	77%	77%	50-150%
	13C2-PFDoDA	63%	67%	50-150%
	13C2-PFTeDA	42% [c]	57%	50-150%
	13C3-PFBS	68%	72%	50-150%
	13C3-PFHxS	80%	86%	50-150%
	13C8-PFOS	78%	77%	50-150%
	13C8-FOSA	51%	59%	50-150%
	d3-MeFOSAA	88%	97%	50-150%
	d5-EtFOSAA	110%	97%	50-150%
	13C2-4:2FTS	69%	81%	50-150%
	13C2-6:2FTS	91%	93%	50-150%
	13C2-8:2FTS	86%	83%	50-150%
	13C3-HFPO-DA	64%	85%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0010-000.0-20220222
Lab Sample ID: FA93380-10
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26418.D	1	03/12/22 19:42	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0215	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0338	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0303	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0119	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0075	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0170	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0190	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.119	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0048	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.162	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0010-000.0-20220222
Lab Sample ID: FA93380-10 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	54%		50-150%
	13C5-PFPeA	60%		50-150%
	13C5-PFHxA	63%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	76%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	60%		50-150%
	13C3-PFBS	65%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	73%		50-150%
	13C8-FOSA	58%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	83%		50-150%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	85%		50-150%
	13C3-HFPO-DA	59%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220222-02
Lab Sample ID: FA93380-11 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q26419.D	1	03/12/22 19:57	MV	02/25/22 07:15	OP89961	S4Q366
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0214	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0341	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0287	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0122	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0073	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0158	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0182	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.115	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0053	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.153	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220222-02
Lab Sample ID: FA93380-11 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	57%		50-150%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	84%		50-150%
	13C7-PFUnDA	82%		50-150%
	13C2-PFDoDA	76%		50-150%
	13C2-PFTeDA	65%		50-150%
	13C3-PFBS	69%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	62%		50-150%
	d3-MeFOSAA	93%		50-150%
	d5-EtFOSAA	85%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	88%		50-150%
	13C3-HFPO-DA	64%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0011-000.0-20220222
Lab Sample ID: FA93380-12
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q87123.D	1	03/17/22 19:01	JB	03/16/22 08:30	OP90272	S2Q1227
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0193	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0204	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0323	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0124	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0116	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0205	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0268	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.237	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0111	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.466	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0011-000.0-20220222
Lab Sample ID: FA93380-12 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	69%		50-150%
	13C5-PFHxA	69%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	81%		50-150%
	13C6-PFDA	91%		50-150%
	13C7-PFUnDA	87%		50-150%
	13C2-PFDoDA	78%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	92%		50-150%
	d5-EtFOSAA	91%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	92%		50-150%
	13C3-HFPO-DA	82%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0012-000.0-20220222		
Lab Sample ID:	FA93380-13	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56233.D	1	03/12/22 02:23	MV	02/25/22 07:15	OP89962	S3Q774
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid [a]	0.0160	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0104	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0153	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0086	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0065	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0099	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0132	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.125	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0059	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.224	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0012-000.0-20220222		
Lab Sample ID:	FA93380-13	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	47% b		50-150%
	13C5-PFPeA	52%		50-150%
	13C5-PFHxA	61%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	76%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	59%		50-150%
	13C2-PFTeDA	46% b		50-150%
	13C3-PFBS	57%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	72%		50-150%
	13C8-FOSA	51%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	79%		50-150%
	13C3-HFPO-DA	53%		50-150%

(a) Associated ID Standard outside control limits, Confirmed by batch QC.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0013-000.0-20220222
Lab Sample ID: FA93380-14
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56235.D	1	03/12/22 02:58	MV	02/25/22 07:15	OP89962	S3Q774
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid [a]	0.0180	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0142	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0199	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0082	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0076	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0104	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0140	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.165	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0084	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.314	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-SW0013-000.0-20220222		
Lab Sample ID:	FA93380-14	**Date Sampled:**	02/22/22
Matrix:	AQ - Surface Water	**Date Received:**	02/23/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	49% b		50-150%
	13C5-PFPeA	54%		50-150%
	13C5-PFHxA	61%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	79%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	57%		50-150%
	13C2-PFTeDA	35% b		50-150%
	13C3-PFBS	59%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	74%		50-150%
	13C8-FOSA	23% b		50-150%
	d3-MeFOSAA	88%		50-150%
	d5-EtFOSAA	80%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	54%		50-150%

(a) Associated ID Standard outside control limits, Confirmed by batch QC.
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0014-000.0-20220222
Lab Sample ID: FA93380-15
Matrix: AQ - Surface Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q87124.D	1	03/17/22 19:18	JB	03/16/22 08:30	OP90272	S2Q1227
Run #2 [a]	3Q56240.D	1	03/12/22 04:26	MV	02/25/22 07:15	OP89962	S3Q774

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0177	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0054	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0067	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0022	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0042	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid [b]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0048	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0039	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0582	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0025	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.353	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0014-000.0-20220222
Lab Sample ID: FA93380-15 **Date Sampled:** 02/22/22
Matrix: AQ - Surface Water **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%	42% [c]	50-150%
	13C5-PFPeA	64%	41% [c]	50-150%
	13C5-PFHxA	64%	49% [c]	50-150%
	13C4-PFHpA	75%	57%	50-150%
	13C8-PFOA	78%	64%	50-150%
	13C9-PFNA	79%	67%	50-150%
	13C6-PFDA	89%	67%	50-150%
	13C7-PFUnDA	84%	61%	50-150%
	13C2-PFDoDA	73%	49% [c]	50-150%
	13C2-PFTeDA	48% [c]	28% [c]	50-150%
	13C3-PFBS	68%	46% [c]	50-150%
	13C3-PFHxS	76%	59%	50-150%
	13C8-PFOS	79%	61%	50-150%
	13C8-FOSA	58%	17% [c]	50-150%
	d3-MeFOSAA	84%	75%	50-150%
	d5-EtFOSAA	90%	68%	50-150%
	13C2-4:2FTS	63%	57%	50-150%
	13C2-6:2FTS	84%	74%	50-150%
	13C2-8:2FTS	89%	67%	50-150%
	13C3-HFPO-DA	81%	42% [c]	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220222-01
Lab Sample ID: FA93380-16
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/22/22
Date Received: 02/23/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56358.D	1	03/15/22 01:13	NG	02/25/22 07:15	OP89962	S3Q775
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220222-01
Lab Sample ID: FA93380-16 **Date Sampled:** 02/22/22
Matrix: AQ - Equipment Blank **Date Received:** 02/23/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	70%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	72%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	63%		50-150%
	13C2-PFTeDA	63%		50-150%
	13C3-PFBS	69%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	84%		50-150%
	d5-EtFOSAA	78%		50-150%
	13C2-4:2FTS	71%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	67%		50-150%
	13C3-HFPO-DA	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : FA93380 PAGE 1 OF 2

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney PKWY Ste 203
City: Merritt Island State: FL Zip: 32937
Project Contact: Dennis Rivers Email: drivers@HGL.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Perkin D. Sampler 2: Dustin Lupis

Project Information

Project Name: SWMU S114 PFAS
Street: Kennedy Space Center
City: Merritt Island State: FL
Project #: NS1010.01.06
Fax #:
Client Purchase Order #:

Analytical Information

LC/QSM 537 DOD FL_LCMS-Basic

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZNAC	DI WATER	MEOH	LC/QSM 537 DOD FL_LCMS-Basic	LAB USE ONLY
1	S114-SW00001-000.0-20220222	2/22/22	0835	PD	SW	2		X								X	
2	S114-SW00002-000.0-20220222	2/22/22	0900	PD	SW	2		X								X	
3	S114-SW00003-000.0-20220222	2/22/22	0930	PD	SW	2		X								X	
4	S114-SW00004-000.0-20220222	2/22/22	0940	PD	SW	2		X								X	
5	S114-SW00005-000.0-20220222	2/22/22	1000	PD	SW	2		X								X	
6	S114-SW00006-000.0-20220222	2/22/22	1020	PD	SW	2		X								X	
7	S114-SW00007-000.0-20220222	2/22/22	1040	PD	SW	2		X								X	
8	S114-SW00008-000.0-20220222	2/22/22	1050	PD	SW	2		X								X	
9	S114-SW00009-000.0-20220222	2/22/22	1115	PD	SW	2		X								X	
10	S114-SW00010-000.0-20220222	2/22/22	1140	PD	SW	2		X								X	
11	S114-FD-20220222-02	2/22/22	1140	PD	SW	2		X								X	
12	S114-SW00011-000.0-20220222	2/22/22	1155	PD	SW	2		X								X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

SM
INITIAL ASSESSMENT
FL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	2-23-22 1345	2	3	2/23/22 15:36	4
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time: 1536	8 Received By/Affiliation 2/23/22

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 2.0C, 3.8C (R) (SM)

http://www.sgs.com/en/terms-and-conditions

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SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

FA93380

SGS - ORLANDO JOB # : PAGE 2 OF 2

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name:
Address:
City: State: Zip:
Project Contact: Email:
Phone #:
Sampler(s) Name(s) (Printed)
Sampler 1: Sampler 2:

Project Information

Project Name:
Street
City State
Project #
Fax #
Client Purchase Order #

Analytical Information

LC GSM537 DDPFL LCMS+GCMS

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LAB USE ONLY
13	S114-SW0017-000.0-20220222	2/22/22	1205	PD	SW	2		X							X	
14	S114-SW0013-000.0-20220222	2/22/22	1220	PD	SW	2		X							X	
15	S114-SW0014-000.0-20220222	2/22/22	1255	PD	SW	2		X							X	
16	S114-EB-20220222-01	2/22/22	1300	PD	SW	2		X							X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	RC HGL	2-23-22 1345	2	3	2/23/22 15:20	4
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		8 2/23/22 15:36

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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FA93380: Chain of Custody
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SGS Sample Receipt Summary

Job Number: FA93380 **Client:** HGL INC **Project:** SWMV S114 PFAS

Date / Time Received: 2/23/2022 3:36:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.2);

Cooler Information	Y	N
1. Custody Seals Present	☑	☐
2. Custody Seals Intact	☑	☐
3. Temp criteria achieved	☑	☐
4. Cooler temp verification	IR Gun	
5. Cooler media	Ice (Bag)	

Trip Blank Information	Y	N	N/A
1. Trip Blank present / cooler	☐	☐	☑
2. Trip Blank listed on COC	☐	☐	☑

	W	S	N/A
3. Type Of TB Received	☐	☐	☑

Sample Information	Y	N	N/A
1. Sample labels present on bottles	☑	☐	
2. Samples preserved properly	☑	☐	
3. Sufficient volume/containers recvd for analysis:	☑	☐	
4. Condition of sample	Intact		
5. Sample recvd within HT	☑	☐	
6. Dates/Times/IDs on COC match Sample Label	☑	☐	
7. VOCs have headspace	☐	☐	☑
8. Bottles received for unspecified tests	☐	☑	
9. Compositing instructions clear	☐	☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐	☐	☑
11. % Solids Jar received?	☐	☐	☑
12. Residual Chlorine Present?	☐	☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS Date: 2/23/2022 3:36:00 PM Reviewer: _____ Date: _____

FA93380: Chain of Custody
Page 3 of 3

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP89961	EPA 537M QSM5.3 B-15						
OP89961-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	103	%	73-129
OP89961-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	107	%	72-129
OP89961-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	106	%	72-129
OP89961-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	104	%	72-130
OP89961-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	106	%	71-133
OP89961-BS	375-95-1	Perfluorononanoic acid	BSP	REC	106	%	69-130
OP89961-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	104	%	71-129
OP89961-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	104	%	69-133
OP89961-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	109	%	72-134
OP89961-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	101	%	65-144
OP89961-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	110	%	71-132
OP89961-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	106	%	73-130
OP89961-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	103	%	71-127
OP89961-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	104	%	68-131
OP89961-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	109	%	69-134
OP89961-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	99	%	65-140
OP89961-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP89961-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	99	%	53-142
OP89961-BS	754-91-6	PFOSA	BSP	REC	103	%	67-137
OP89961-BS	2355-31-9	MeFOSAA	BSP	REC	105	%	65-136
OP89961-BS	2991-50-6	EtFOSAA	BSP	REC	112	%	61-135
OP89961-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	108	%	63-143
OP89961-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	109	%	64-140
OP89961-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	106	%	67-138
OP89961-MS	375-22-4	Perfluorobutanoic acid	MS	REC	105	%	73-129
OP89961-MS	2706-90-3	Perfluoropentanoic acid	MS	REC	109	%	72-129
OP89961-MS	307-24-4	Perfluorohexanoic acid	MS	REC	106	%	72-129
OP89961-MS	375-85-9	Perfluoroheptanoic acid	MS	REC	106	%	72-130
OP89961-MS	335-67-1	Perfluorooctanoic acid	MS	REC	107	%	71-133
OP89961-MS	375-95-1	Perfluorononanoic acid	MS	REC	104	%	69-130
OP89961-MS	335-76-2	Perfluorodecanoic acid	MS	REC	100	%	71-129
OP89961-MS	2058-94-8	Perfluoroundecanoic acid	MS	REC	103	%	69-133
OP89961-MS	307-55-1	Perfluorododecanoic acid	MS	REC	111	%	72-134
OP89961-MS	72629-94-8	Perfluorotridecanoic acid	MS	REC	95	%	65-144
OP89961-MS	376-06-7	Perfluorotetradecanoic acid	MS	REC	110	%	71-132
OP89961-MS	375-73-5	Perfluorobutanesulfonic acid	MS	REC	106	%	73-130
OP89961-MS	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	110	%	71-127
OP89961-MS	355-46-4	Perfluorohexanesulfonic acid	MS	REC	106	%	68-131
OP89961-MS	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	109	%	69-134
OP89961-MS	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	99	%	65-140
OP89961-MS	68259-12-1	Perfluorononanesulfonic acid	MS	REC	104	%	69-127
OP89961-MS	335-77-3	Perfluorodecanesulfonic acid	MS	REC	96	%	53-142

* Sample used for QC is not from job FA93380

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP89961-MS	754-91-6	PFOSA	MS	REC	106	%	67-137
OP89961-MS	2355-31-9	MeFOSAA	MS	REC	106	%	65-136
OP89961-MS	2991-50-6	EtFOSAA	MS	REC	111	%	61-135
OP89961-MS	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	109	%	63-143
OP89961-MS	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	113	%	64-140
OP89961-MS	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	107	%	67-138
OP89961-DUP	375-22-4	Perfluorobutanoic acid	DUP	RPD	8	%	30
OP89961-DUP	2706-90-3	Perfluoropentanoic acid	DUP	RPD	7	%	30
OP89961-DUP	307-24-4	Perfluorohexanoic acid	DUP	RPD	1	%	30
OP89961-DUP	375-85-9	Perfluoroheptanoic acid	DUP	RPD	7	%	30
OP89961-DUP	335-67-1	Perfluorooctanoic acid	DUP	RPD	2	%	30
OP89961-DUP	375-95-1	Perfluorononanoic acid	DUP	RPD	200	%	30
OP89961-DUP	335-76-2	Perfluorodecanoic acid	DUP	RPD	200	%	30
OP89961-DUP	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP89961-DUP	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP89961-DUP	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP89961-DUP	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP89961-DUP	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	4	%	30
OP89961-DUP	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	6	%	30
OP89961-DUP	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	3	%	30
OP89961-DUP	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	13	%	30
OP89961-DUP	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	4	%	30
OP89961-DUP	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP89961-DUP	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP89961-DUP	754-91-6	PFOSA	DUP	RPD	0	%	30
OP89961-DUP	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP89961-DUP	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP89961-DUP	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP89961-DUP	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	8	%	30
OP89961-DUP	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP89962	EPA 537M QSM5.3 B-15						
OP89962-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	99	%	73-129
OP89962-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	99	%	72-129
OP89962-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	103	%	72-129
OP89962-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	101	%	72-130
OP89962-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	106	%	71-133
OP89962-BS	375-95-1	Perfluorononanoic acid	BSP	REC	110	%	69-130
OP89962-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	98	%	71-129
OP89962-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	104	%	69-133
OP89962-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	117	%	72-134
OP89962-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	115	%	65-144
OP89962-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	106	%	71-132
OP89962-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	106	%	73-130

* Sample used for QC is not from job FA93380

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP89962-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	100	%	71-127
OP89962-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	113	%	68-131
OP89962-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	114	%	69-134
OP89962-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	103	%	65-140
OP89962-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	108	%	69-127
OP89962-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	98	%	53-142
OP89962-BS	754-91-6	PFOSA	BSP	REC	104	%	67-137
OP89962-BS	2355-31-9	MeFOSAA	BSP	REC	102	%	65-136
OP89962-BS	2991-50-6	EtFOSAA	BSP	REC	111	%	61-135
OP89962-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	104	%	63-143
OP89962-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	107	%	64-140
OP89962-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	101	%	67-138
OP89962-MS	375-22-4	Perfluorobutanoic acid	MS	REC	103	%	73-129
OP89962-MS	2706-90-3	Perfluoropentanoic acid	MS	REC	102	%	72-129
OP89962-MS	307-24-4	Perfluorohexanoic acid	MS	REC	106	%	72-129
OP89962-MS	375-85-9	Perfluoroheptanoic acid	MS	REC	105	%	72-130
OP89962-MS	335-67-1	Perfluorooctanoic acid	MS	REC	108	%	71-133
OP89962-MS	375-95-1	Perfluorononanoic acid	MS	REC	114	%	69-130
OP89962-MS	335-76-2	Perfluorodecanoic acid	MS	REC	98	%	71-129
OP89962-MS	2058-94-8	Perfluoroundecanoic acid	MS	REC	104	%	69-133
OP89962-MS	307-55-1	Perfluorododecanoic acid	MS	REC	119	%	72-134
OP89962-MS	72629-94-8	Perfluorotridecanoic acid	MS	REC	150	%	65-144
OP89962-MS	376-06-7	Perfluorotetradecanoic acid	MS	REC	106	%	71-132
OP89962-MS	375-73-5	Perfluorobutanesulfonic acid	MS	REC	109	%	73-130
OP89962-MS	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	117	%	71-127
OP89962-MS	355-46-4	Perfluorohexanesulfonic acid	MS	REC	111	%	68-131
OP89962-MS	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	114	%	69-134
OP89962-MS	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	99	%	65-140
OP89962-MS	68259-12-1	Perfluorononanesulfonic acid	MS	REC	102	%	69-127
OP89962-MS	335-77-3	Perfluorodecanesulfonic acid	MS	REC	90	%	53-142
OP89962-MS	754-91-6	PFOSA	MS	REC	106	%	67-137
OP89962-MS	2355-31-9	MeFOSAA	MS	REC	106	%	65-136
OP89962-MS	2991-50-6	EtFOSAA	MS	REC	113	%	61-135
OP89962-MS	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	106	%	63-143
OP89962-MS	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	111	%	64-140
OP89962-MS	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	103	%	67-138
OP89962-DUP	375-22-4	Perfluorobutanoic acid	DUP	RPD	2	%	30
OP89962-DUP	2706-90-3	Perfluoropentanoic acid	DUP	RPD	2	%	30
OP89962-DUP	307-24-4	Perfluorohexanoic acid	DUP	RPD	1	%	30
OP89962-DUP	375-85-9	Perfluoroheptanoic acid	DUP	RPD	6	%	30
OP89962-DUP	335-67-1	Perfluorooctanoic acid	DUP	RPD	4	%	30
OP89962-DUP	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP89962-DUP	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP89962-DUP	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP89962-DUP	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30

* Sample used for QC is not from job FA93380

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP89962-DUP	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP89962-DUP	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP89962-DUP	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	3	%	30
OP89962-DUP	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	2	%	30
OP89962-DUP	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	5	%	30
OP89962-DUP	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	4	%	30
OP89962-DUP	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	3	%	30
OP89962-DUP	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP89962-DUP	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP89962-DUP	754-91-6	PFOSA	DUP	RPD	0	%	30
OP89962-DUP	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP89962-DUP	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP89962-DUP	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP89962-DUP	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP89962-DUP	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP90272	EPA 537M QSM5.3 B-15						
OP90272-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	98	%	73-129
OP90272-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	107	%	72-129
OP90272-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	104	%	72-129
OP90272-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	106	%	72-130
OP90272-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	104	%	71-133
OP90272-BS	375-95-1	Perfluorononanoic acid	BSP	REC	117	%	69-130
OP90272-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	102	%	71-129
OP90272-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	100	%	69-133
OP90272-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	107	%	72-134
OP90272-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	98	%	65-144
OP90272-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	111	%	71-132
OP90272-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	104	%	73-130
OP90272-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	105	%	71-127
OP90272-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	101	%	68-131
OP90272-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	106	%	69-134
OP90272-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	98	%	65-140
OP90272-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	106	%	69-127
OP90272-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	88	%	53-142
OP90272-BS	754-91-6	PFOSA	BSP	REC	107	%	67-137
OP90272-BS	2355-31-9	MeFOSAA	BSP	REC	105	%	65-136
OP90272-BS	2991-50-6	EtFOSAA	BSP	REC	106	%	61-135
OP90272-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	103	%	63-143
OP90272-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	103	%	64-140
OP90272-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	101	%	67-138
OP90272-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	93	%	73-129
OP90272-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	101	%	72-129
OP90272-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	98	%	72-129

* Sample used for QC is not from job FA93380

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93380
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/22/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP90272-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	101	%	72-130
OP90272-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	99	%	71-133
OP90272-MS*	375-95-1	Perfluorononanoic acid	MS	REC	113	%	69-130
OP90272-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	96	%	71-129
OP90272-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	94	%	69-133
OP90272-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	101	%	72-134
OP90272-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	98	%	65-144
OP90272-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	103	%	71-132
OP90272-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	98	%	73-130
OP90272-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	100	%	71-127
OP90272-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	97	%	68-131
OP90272-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	103	%	69-134
OP90272-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	90	%	65-140
OP90272-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	98	%	69-127
OP90272-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	87	%	53-142
OP90272-MS*	754-91-6	PFOSA	MS	REC	99	%	67-137
OP90272-MS*	2355-31-9	MeFOSAA	MS	REC	99	%	65-136
OP90272-MS*	2991-50-6	EtFOSAA	MS	REC	103	%	61-135
OP90272-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	98	%	63-143
OP90272-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	97	%	64-140
OP90272-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	98	%	67-138
OP90272-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP90272-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP90272-DUP*	754-91-6	PFOSA	DUP	RPD	0	%	30
OP90272-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP90272-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP90272-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP90272-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP90272-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30

* Sample used for QC is not from job FA93380

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q366-IBLK	4Q26304.D	1	03/11/22	MV	n/a	n/a	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	50-150%
	13C5-PFPeA	103%	50-150%
	13C5-PFHxA	103%	50-150%
	13C4-PFHpA	102%	50-150%
	13C8-PFOA	105%	50-150%
	13C9-PFNA	104%	50-150%
	13C6-PFDA	106%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q366-IBLK	4Q26304.D	1	03/11/22	MV	n/a	n/a	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	105%	50-150%
	13C2-PFDoDA	104%	50-150%
	13C2-PFTeDA	98%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	101%	50-150%
	13C8-PFOS	100%	50-150%
	13C8-FOSA	103%	50-150%
	d3-MeFOSA	99%	50-150%
	d3-MeFOSAA	107%	50-150%
	d5-EtFOSAA	105%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	96%	50-150%
	13C3-HFPO-DA	100%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56200.D	1	03/11/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	87%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	91%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	91%	50-150%
	13C6-PFDA	93%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56200.D	1	03/11/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	94%	50-150%
	13C2-PFDoDA	88%	50-150%
	13C2-PFTeDA	83%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	99%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	103%	50-150%
	13C2-4:2FTS	93%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	90%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56261.D	1	03/12/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	93%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	91%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56261.D	1	03/12/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	91%	50-150%
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	80%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	101%	50-150%
	d3-MeFOSAA	113%	50-150%
	d5-EtFOSAA	109%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	83%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q366-IBLK	4Q26389.D	1	03/12/22	MV	n/a	n/a	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	104%	50-150%
	13C5-PFPeA	105%	50-150%
	13C5-PFHxA	106%	50-150%
	13C4-PFHpA	106%	50-150%
	13C8-PFOA	107%	50-150%
	13C9-PFNA	111%	50-150%
	13C6-PFDA	114%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S4Q366-IBLK	4Q26389.D	1	03/12/22	MV	n/a	n/a	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	112%	50-150%
	13C2-PFDoDA	108%	50-150%
	13C2-PFTeDA	99%	50-150%
	13C3-PFBS	103%	50-150%
	13C3-PFHxS	105%	50-150%
	13C8-PFOS	106%	50-150%
	13C8-FOSA	113%	50-150%
	d3-MeFOSA	106%	50-150%
	d3-MeFOSAA	122%	50-150%
	d5-EtFOSAA	116%	50-150%
	13C2-4:2FTS	99%	50-150%
	13C2-6:2FTS	103%	50-150%
	13C2-8:2FTS	104%	50-150%
	13C3-HFPO-DA	99%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q775-IBLK	3Q56317.D	1	03/14/22	NG	n/a	n/a	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-3, FA93380-4, FA93380-9, FA93380-16

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	85%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	90%	50-150%
	13C6-PFDA	91%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q775-IBLK	3Q56317.D	1	03/14/22	NG	n/a	n/a	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-3, FA93380-4, FA93380-9, FA93380-16

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	94%	50-150%
	13C2-PFDoDA	86%	50-150%
	13C2-PFTeDA	82%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	87%	50-150%
	13C8-FOSA	92%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	101%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	85%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1227-IBLK	2Q87113.D	1	03/17/22	JB	n/a	n/a	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	113%	50-150%
	13C5-PFPeA	114%	50-150%
	13C5-PFHxA	110%	50-150%
	13C4-PFHpA	115%	50-150%
	13C8-PFOA	114%	50-150%
	13C9-PFNA	116%	50-150%
	13C6-PFDA	128%	50-150%

Instrument Blank

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S2Q1227-IBLK	2Q87113.D	1	03/17/22	JB	n/a	n/a	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	115%	50-150%
	13C2-PFDoDA	122%	50-150%
	13C2-PFTeDA	119%	50-150%
	13C3-PFBS	113%	50-150%
	13C3-PFHxS	116%	50-150%
	13C8-PFOS	120%	50-150%
	13C8-FOSA	127%	50-150%
	d3-MeFOSA	132%	50-150%
	d3-MeFOSAA	133%	50-150%
	d5-EtFOSAA	131%	50-150%
	13C2-4:2FTS	115%	50-150%
	13C2-6:2FTS	123%	50-150%
	13C2-8:2FTS	126%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-MB	3Q56232.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	78%	50-150%
	13C5-PFPeA	80%	50-150%
	13C5-PFHxA	80%	50-150%
	13C4-PFHpA	78%	50-150%
	13C8-PFOA	72%	50-150%
	13C9-PFNA	64%	50-150%
	13C6-PFDA	62%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-MB	3Q56232.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	61%	50-150%
	13C2-PFDoDA	58%	50-150%
	13C2-PFTeDA	59%	50-150%
	13C3-PFBS	79%	50-150%
	13C3-PFHxS	68%	50-150%
	13C8-PFOS	61%	50-150%
	13C8-FOSA	66%	50-150%
	d3-MeFOSAA	71%	50-150%
	d5-EtFOSAA	65%	50-150%
	13C2-4:2FTS	83%	50-150%
	13C2-6:2FTS	72%	50-150%
	13C2-8:2FTS	54%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-MB	4Q26394.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	79%	50-150%
	13C5-PFPeA	81%	50-150%
	13C5-PFHxA	81%	50-150%
	13C4-PFHpA	80%	50-150%
	13C8-PFOA	81%	50-150%
	13C9-PFNA	82%	50-150%
	13C6-PFDA	84%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-MB	4Q26394.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	81%	50-150%
	13C2-PFDoDA	80%	50-150%
	13C2-PFTeDA	75%	50-150%
	13C3-PFBS	80%	50-150%
	13C3-PFHxS	80%	50-150%
	13C8-PFOS	77%	50-150%
	13C8-FOSA	83%	50-150%
	d3-MeFOSAA	89%	50-150%
	d5-EtFOSAA	85%	50-150%
	13C2-4:2FTS	75%	50-150%
	13C2-6:2FTS	78%	50-150%
	13C2-8:2FTS	78%	50-150%
	13C3-HFPO-DA	75%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-MB	2Q87117.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	76%	50-150%
	13C5-PFPeA	77%	50-150%
	13C5-PFHxA	74%	50-150%
	13C4-PFHpA	79%	50-150%
	13C8-PFOA	76%	50-150%
	13C9-PFNA	77%	50-150%
	13C6-PFDA	85%	50-150%

Method Blank Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-MB	2Q87117.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	85%	50-150%
	13C2-PFDoDA	76%	50-150%
	13C2-PFTeDA	69%	50-150%
	13C3-PFBS	77%	50-150%
	13C3-PFHxS	78%	50-150%
	13C8-PFOS	77%	50-150%
	13C8-FOSA	83%	50-150%
	d3-MeFOSA	71%	50-150%
	d3-MeFOSAA	85%	50-150%
	d5-EtFOSAA	80%	50-150%
	13C2-4:2FTS	77%	50-150%
	13C2-6:2FTS	83%	50-150%
	13C2-8:2FTS	85%	50-150%
	13C3-HFPO-DA	86%	50-150%

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-BS	3Q56231.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.159	99	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.158	99	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.164	103	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.162	101	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.170	106	71-133
375-95-1	Perfluorononanoic acid	0.16	0.176	110	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.156	98	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.167	104	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.187	117	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.184	115	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.170	106	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.169	106	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.160	100	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.180	113	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.183	114	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.165	103	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.172	108	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.157	98	53-142
754-91-6	PFOSA	0.16	0.166	104	67-137
2355-31-9	MeFOSAA	0.16	0.163	102	65-136
2991-50-6	EtFOSAA	0.16	0.177	111	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.167	104	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.171	107	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.162	101	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.173	108	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	65%	50-150%
	13C5-PFPeA	67%	50-150%
	13C5-PFHxA	68%	50-150%
	13C4-PFHpA	66%	50-150%
	13C8-PFOA	65%	50-150%
	13C9-PFNA	62%	50-150%
	13C6-PFDA	63%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-BS	3Q56231.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	62%	50-150%
	13C2-PFDoDA	57%	50-150%
	13C2-PFTeDA	55%	50-150%
	13C3-PFBS	67%	50-150%
	13C3-PFHxS	58%	50-150%
	13C8-PFOS	60%	50-150%
	13C8-FOSA	66%	50-150%
	d3-MeFOSAA	77%	50-150%
	d5-EtFOSAA	70%	50-150%
	13C2-4:2FTS	69%	50-150%
	13C2-6:2FTS	69%	50-150%
	13C2-8:2FTS	61%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-BS	4Q26393.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.164	103	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.171	107	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.170	106	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.166	104	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.169	106	71-133
375-95-1	Perfluorononanoic acid	0.16	0.169	106	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.167	104	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.167	104	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.175	109	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.161	101	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.176	110	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.170	106	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.164	103	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.166	104	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.175	109	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.158	99	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.169	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.158	99	53-142
754-91-6	PFOSA	0.16	0.165	103	67-137
2355-31-9	MeFOSAA	0.16	0.168	105	65-136
2991-50-6	EtFOSAA	0.16	0.179	112	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.172	108	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.175	109	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.170	106	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.167	104	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	83%	50-150%
	13C5-PFPeA	85%	50-150%
	13C5-PFHxA	85%	50-150%
	13C4-PFHpA	85%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	82%	50-150%
	13C6-PFDA	83%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-BS	4Q26393.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	81%	50-150%
	13C2-PFDoDA	79%	50-150%
	13C2-PFTeDA	70%	50-150%
	13C3-PFBS	84%	50-150%
	13C3-PFHxS	83%	50-150%
	13C8-PFOS	80%	50-150%
	13C8-FOSA	82%	50-150%
	d3-MeFOSAA	87%	50-150%
	d5-EtFOSAA	84%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	86%	50-150%
	13C2-8:2FTS	83%	50-150%
	13C3-HFPO-DA	81%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-BS	2Q87116.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.156	98	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.171	107	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.166	104	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.170	106	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.166	104	71-133
375-95-1	Perfluorononanoic acid	0.16	0.187	117	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.163	102	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.160	100	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.171	107	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.156	98	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.178	111	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.166	104	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.168	105	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.162	101	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.170	106	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.157	98	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.169	106	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.140	88	53-142
754-91-6	PFOSA	0.16	0.171	107	67-137
2355-31-9	MeFOSAA	0.16	0.168	105	65-136
2991-50-6	EtFOSAA	0.16	0.170	106	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.165	103	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.164	103	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.162	101	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.164	103	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	86%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	83%	50-150%
	13C4-PFHpA	87%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	86%	50-150%
	13C6-PFDA	93%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-BS	2Q87116.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	93%	50-150%
	13C2-PFDoDA	85%	50-150%
	13C2-PFTeDA	75%	50-150%
	13C3-PFBS	86%	50-150%
	13C3-PFHxS	88%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	85%	50-150%
	d3-MeFOSA	50%	50-150%
	d3-MeFOSAA	93%	50-150%
	d5-EtFOSAA	84%	50-150%
	13C2-4:2FTS	91%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	100%	50-150%
	13C3-HFPO-DA	97%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-MS	3Q56234.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774
FA93380-13	3Q56233.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	Compound	FA93380-13 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0160		0.16	0.180	103	73-129
2706-90-3	Perfluoropentanoic acid	0.0104		0.16	0.174	102	72-129
307-24-4	Perfluorohexanoic acid	0.0153		0.16	0.185	106	72-129
375-85-9	Perfluoroheptanoic acid	0.0086		0.16	0.176	105	72-130
335-67-1	Perfluorooctanoic acid	0.0065	J	0.16	0.180	108	71-133
375-95-1	Perfluorononanoic acid	0.0080	U	0.16	0.182	114	69-130
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.157	98	71-129
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.167	104	69-133
307-55-1	Perfluorododecanoic acid	0.0080	U	0.16	0.190	119	72-134
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.16	0.240	150*	65-144
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.16	0.170	106	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0099		0.16	0.185	109	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0132		0.16	0.200	117	71-127
355-46-4	Perfluorohexanesulfonic acid	0.125		0.16	0.303	111	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0059	J	0.16	0.189	114	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.224		0.16	0.382	99	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.163	102	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.144	90	53-142
754-91-6	PFOSA	0.0080	U	0.16	0.170	106	67-137
2355-31-9	MeFOSAA	0.016	U	0.16	0.170	106	65-136
2991-50-6	EtFOSAA	0.016	U	0.16	0.181	113	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.169	106	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.178	111	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.16	0.165	103	67-138
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.199	124	60-140

CAS No.	ID Standard Recoveries	MS	FA93380-13	Limits
	13C4-PFBA	49%* [a]	47%* [a]	50-150%
	13C5-PFPeA	53%	52%	50-150%
	13C5-PFHxA	61%	61%	50-150%
	13C4-PFHpA	66%	67%	50-150%
	13C8-PFOA	73%	76%	50-150%
	13C9-PFNA	74%	78%	50-150%
	13C6-PFDA	75%	77%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-MS	3Q56234.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774
FA93380-13	3Q56233.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	ID Standard Recoveries	MS	FA93380-13	Limits
	13C7-PFUnDA	70%	71%	50-150%
	13C2-PFDoDA	60%	59%	50-150%
	13C2-PFTeDA	38%* [a]	46%* [a]	50-150%
	13C3-PFBS	57%	57%	50-150%
	13C3-PFHxS	68%	69%	50-150%
	13C8-PFOS	71%	72%	50-150%
	13C8-FOSA	54%	51%	50-150%
	d3-MeFOSAA	86%	87%	50-150%
	d5-EtFOSAA	82%	82%	50-150%
	13C2-4:2FTS	70%	71%	50-150%
	13C2-6:2FTS	81%	87%	50-150%
	13C2-8:2FTS	74%	79%	50-150%
	13C3-HFPO-DA		53%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-MS	4Q26407.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366
FA93380-2	4Q26406.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	FA93380-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0265		0.16	0.194	105	73-129
2706-90-3	Perfluoropentanoic acid	0.0380		0.16	0.212	109	72-129
307-24-4	Perfluorohexanoic acid	0.0308		0.16	0.200	106	72-129
375-85-9	Perfluoroheptanoic acid	0.0146		0.16	0.184	106	72-130
335-67-1	Perfluorooctanoic acid	0.0075	J	0.16	0.179	107	71-133
375-95-1	Perfluorononanoic acid	0.0080	U	0.16	0.167	104	69-130
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.160	100	71-129
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.164	103	69-133
307-55-1	Perfluorododecanoic acid	0.0080	U	0.16	0.177	111	72-134
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.16	0.152	95	65-144
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.16	0.176	110	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0270		0.16	0.196	106	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0255		0.16	0.201	110	71-127
355-46-4	Perfluorohexanesulfonic acid	0.152		0.16	0.322	106	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0059	J	0.16	0.180	109	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.133		0.16	0.291	99	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.166	104	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.153	96	53-142
754-91-6	PFOSA	0.0080	U	0.16	0.170	106	67-137
2355-31-9	MeFOSAA	0.016	U	0.16	0.170	106	65-136
2991-50-6	EtFOSAA	0.016	U	0.16	0.177	111	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.175	109	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.181	113	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.16	0.171	107	67-138
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.184	115	60-140

CAS No.	ID Standard Recoveries	MS	FA93380-2	Limits
	13C4-PFBA	59%	63%	50-150%
	13C5-PFPeA	67%	71%	50-150%
	13C5-PFHxA	71%	75%	50-150%
	13C4-PFHpA	75%	80%	50-150%
	13C8-PFOA	82%	89%	50-150%
	13C9-PFNA	83%	89%	50-150%
	13C6-PFDA	90%	96%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-MS	4Q26407.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366
FA93380-2	4Q26406.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries	MS	FA93380-2	Limits
	13C7-PFUnDA	86%	91%	50-150%
	13C2-PFDoDA	81%	84%	50-150%
	13C2-PFTeDA	66%	70%	50-150%
	13C3-PFBS	68%	72%	50-150%
	13C3-PFHxS	76%	80%	50-150%
	13C8-PFOS	82%	85%	50-150%
	13C8-FOSA	30%* [a]	74%	50-150%
	d3-MeFOSAA	97%	104%	50-150%
	d5-EtFOSAA	94%	97%	50-150%
	13C2-4:2FTS	76%	76%	50-150%
	13C2-6:2FTS	91%	93%	50-150%
	13C2-8:2FTS	92%	95%	50-150%
	13C3-HFPO-DA	64%	68%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-MS	2Q87119.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227
FA93948-2	2Q87118.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	Compound	FA93948-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.016	U	0.16	0.148	93	73-129
2706-90-3	Perfluoropentanoic acid	0.0080	U	0.16	0.162	101	72-129
307-24-4	Perfluorohexanoic acid	0.0080	U	0.16	0.157	98	72-129
375-85-9	Perfluoroheptanoic acid	0.0080	U	0.16	0.162	101	72-130
335-67-1	Perfluorooctanoic acid	0.0080	U	0.16	0.158	99	71-133
375-95-1	Perfluorononanoic acid	0.0080	U	0.16	0.180	113	69-130
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.153	96	71-129
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.151	94	69-133
307-55-1	Perfluorododecanoic acid	0.0080	U	0.16	0.162	101	72-134
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.16	0.157	98	65-144
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.16	0.165	103	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	0.16	0.156	98	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	0.16	0.160	100	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	0.16	0.155	97	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	0.16	0.165	103	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0080	U	0.16	0.144	90	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.157	98	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.139	87	53-142
754-91-6	PFOSA	0.0080	U	0.16	0.159	99	67-137
2355-31-9	MeFOSAA	0.016	U	0.16	0.158	99	65-136
2991-50-6	EtFOSAA	0.016	U	0.16	0.165	103	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.156	98	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.155	97	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.16	0.157	98	67-138
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.153	96	60-140

CAS No.	ID Standard Recoveries	MS	FA93948-2	Limits
	13C4-PFBA	95%	88%	50-150%
	13C5-PFPeA	95%	87%	50-150%
	13C5-PFHxA	92%	84%	50-150%
	13C4-PFHpA	97%	88%	50-150%
	13C8-PFOA	94%	86%	50-150%
	13C9-PFNA	95%	88%	50-150%
	13C6-PFDA	104%	95%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-MS	2Q87119.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227
FA93948-2	2Q87118.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	ID Standard Recoveries	MS	FA93948-2	Limits
	13C7-PFUnDA	95%	80%	50-150%
	13C2-PFDoDA	91%	44%* [a]	50-150%
	13C2-PFTeDA	88%	72%	50-150%
	13C3-PFBS	95%	87%	50-150%
	13C3-PFHxS	96%	88%	50-150%
	13C8-PFOS	99%	88%	50-150%
	13C8-FOSA	91%	88%	50-150%
	d3-MeFOSA	39%*	70%	50-150%
	d3-MeFOSAA	109%	98%	50-150%
	d5-EtFOSAA	104%	100%	50-150%
	13C2-4:2FTS	101%	88%	50-150%
	13C2-6:2FTS	106%	93%	50-150%
	13C2-8:2FTS	108%	96%	50-150%
	13C3-HFPO-DA	109%		50-150%

(a) Outside control limits. Insufficient sample for re-extraction.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-DUP	3Q56239.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774
FA93380-14	3Q56235.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	Compound	FA93380-14 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0180		0.0184		2	30
2706-90-3	Perfluoropentanoic acid	0.0142		0.0145		2	30
307-24-4	Perfluorohexanoic acid	0.0199		0.0202		1	30
375-85-9	Perfluoroheptanoic acid	0.0082		0.0087		6	30
335-67-1	Perfluorooctanoic acid	0.0076	J	0.0079	J	4	30
375-95-1	Perfluorononanoic acid	0.0080 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0104		0.0101		3	30
2706-91-4	Perfluoropentanesulfonic acid	0.0140		0.0137		2	30
355-46-4	Perfluorohexanesulfonic acid	0.165		0.174		5	30
375-92-8	Perfluoroheptanesulfonic acid	0.0084		0.0081		4	30
1763-23-1	Perfluorooctanesulfonic acid	0.314		0.306		3	30
68259-12-1	Perfluorononanesulfonic acid	0.0080 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080 U		ND		nc	30
754-91-6	PFOSA	0.0080 U		ND		nc	30
2355-31-9	MeFOSAA	0.016 U		ND		nc	30
2991-50-6	EtFOSAA	0.016 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA93380-14	Limits
	13C4-PFBA	43%* [a]	49%* [a]	50-150%
	13C5-PFPeA	47%* [a]	54%	50-150%
	13C5-PFHxA	53%	61%	50-150%
	13C4-PFHpA	57%	68%	50-150%
	13C8-PFOA	64%	77%	50-150%
	13C9-PFNA	65%	79%	50-150%
	13C6-PFDA	65%	80%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89962-DUP	3Q56239.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774
FA93380-14	3Q56235.D	1	03/12/22	MV	02/25/22	OP89962	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-13, FA93380-14, FA93380-16

CAS No.	ID Standard Recoveries	DUP	FA93380-14	Limits
	13C7-PFUnDA	61%	71%	50-150%
	13C2-PFDoDA	53%	57%	50-150%
	13C2-PFTeDA	40%* [a]	35%* [a]	50-150%
	13C3-PFBS	50%	59%	50-150%
	13C3-PFHxS	57%	72%	50-150%
	13C8-PFOS	64%	74%	50-150%
	13C8-FOSA	29%* [a]	23%* [a]	50-150%
	d3-MeFOSAA	76%	88%	50-150%
	d5-EtFOSAA	71%	80%	50-150%
	13C2-4:2FTS	60%	72%	50-150%
	13C2-6:2FTS	71%	90%	50-150%
	13C2-8:2FTS	66%	76%	50-150%
	13C3-HFPO-DA		54%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-DUP	3Q56385.D	10	03/15/22	NG	02/25/22	OP89961	S3Q775
FA93380-3	4Q26408.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366
FA93380-3	3Q56384.D	10	03/15/22	NG	02/25/22	OP89961	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	Compound	FA93380-3 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.114		0.105	J	8	30
2706-90-3	Perfluoropentanoic acid	0.462		0.430		7	30
307-24-4	Perfluorohexanoic acid	0.312		0.316		1	30
375-85-9	Perfluoroheptanoic acid	0.107		0.100		7	30
335-67-1	Perfluorooctanoic acid	0.0773		0.0792	J	2	30
375-95-1	Perfluorononanoic acid	0.0109		ND		200*	30
335-76-2	Perfluorodecanoic acid	0.0038	J	ND		200*	30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.119		0.114		4	30
2706-91-4	Perfluoropentanesulfonic acid	0.141		0.133		6	30
355-46-4	Perfluorohexanesulfonic acid	0.935 [a]		0.960		3	30
375-92-8	Perfluoroheptanesulfonic acid	0.0679		0.0596	J	13	30
1763-23-1	Perfluorooctanesulfonic acid	1.74 [a]		1.67		4	30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	ND		nc	30
754-91-6	PFOSA	0.0080	U	ND		nc	30
2355-31-9	MeFOSAA	0.016	U	ND		nc	30
2991-50-6	EtFOSAA	0.016	U	ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.573		0.620		8	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA93380-3	FA93380-3	Limits
	13C4-PFBA	78%	57%	64%	50-150%
	13C5-PFPeA	81%	68%	66%	50-150%
	13C5-PFHxA	82%	72%	70%	50-150%
	13C4-PFHpA	89%	74%	71%	50-150%
	13C8-PFOA	91%	80%	74%	50-150%
	13C9-PFNA	91%	77%	77%	50-150%
	13C6-PFDA	95%	87%	74%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP89961-DUP	3Q56385.D	10	03/15/22	NG	02/25/22	OP89961	S3Q775
FA93380-3	4Q26408.D	1	03/12/22	MV	02/25/22	OP89961	S4Q366
FA93380-3	3Q56384.D	10	03/15/22	NG	02/25/22	OP89961	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-1, FA93380-2, FA93380-3, FA93380-4, FA93380-6, FA93380-7, FA93380-8, FA93380-9, FA93380-10, FA93380-11

CAS No.	ID Standard Recoveries	DUP	FA93380-3	FA93380-3	Limits
	13C7-PFUnDA	93%	81%	69%	50-150%
	13C2-PFDoDA	80%	74%	61%	50-150%
	13C2-PFTeDA	74%	61%	55%	50-150%
	13C3-PFBS	88%	69%	70%	50-150%
	13C3-PFHxS	89%	74%	75%	50-150%
	13C8-PFOS	91%	69%	70%	50-150%
	13C8-FOSA	70%	58%	54%	50-150%
	d3-MeFOSAA	115%	92%	88%	50-150%
	d5-EtFOSAA	104%	88%	83%	50-150%
	13C2-4:2FTS	88%	72%	75%	50-150%
	13C2-6:2FTS	106%	101%	83%	50-150%
	13C2-8:2FTS	82%	83%	67%	50-150%
	13C3-HFPO-DA		65%	88%	50-150%

(a) Result is from Run #2.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-DUP	2Q87121.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227
FA93948-1	2Q87120.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	Compound	FA93948-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.016	U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0080	U	ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0080	U	ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0080	U	ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0080	U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0080	U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080	U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0080	U	ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	ND		nc	30
754-91-6	PFOSA	0.0080	U	ND		nc	30
2355-31-9	MeFOSAA	0.016	U	ND		nc	30
2991-50-6	EtFOSAA	0.016	U	ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA93948-1	Limits
	13C4-PFBA	89%	82%	50-150%
	13C5-PFPeA	88%	81%	50-150%
	13C5-PFHxA	85%	79%	50-150%
	13C4-PFHpA	89%	84%	50-150%
	13C8-PFOA	88%	82%	50-150%
	13C9-PFNA	89%	83%	50-150%
	13C6-PFDA	96%	89%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA93380
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90272-DUP	2Q87121.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227
FA93948-1	2Q87120.D	1	03/17/22	JB	03/16/22	OP90272	S2Q1227

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93380-5, FA93380-12, FA93380-15

CAS No.	ID Standard Recoveries	DUP	FA93948-1	Limits
	13C7-PFUnDA	83%	45%* [a]	50-150%
	13C2-PFDoDA	77%	59%	50-150%
	13C2-PFTeDA	77%	70%	50-150%
	13C3-PFBS	88%	82%	50-150%
	13C3-PFHxS	89%	83%	50-150%
	13C8-PFOS	89%	82%	50-150%
	13C8-FOSA	87%	85%	50-150%
	d3-MeFOSA		44%* [a]	50-150%
	d3-MeFOSAA	97%	94%	50-150%
	d5-EtFOSAA	98%	96%	50-150%
	13C2-4:2FTS	88%	83%	50-150%
	13C2-6:2FTS	95%	86%	50-150%
	13C2-8:2FTS	96%	92%	50-150%
	13C3-HFPO-DA		89%	50-150%

(a) Outside control limits. Insufficient sample for re-extraction.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

SWMU 114

SGS Job Number: FA93472

Sampling Date: 02/23/22

Report to:

HGL, Inc
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Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **33**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Jean Dent-Smith 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA93472

NASA TQN 21- SLF PFAS Assessment
Project No: SWMU 114

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA93472-1	02/23/22	16:00	DL	02/25/22	AQ	Ground Water	S114-SW0015-000.0-20220223
FA93472-2	02/23/22	16:00	DL	02/25/22	AQ	Ground Water	S114-FD-20220223-01
FA93472-3	02/23/22	16:10	DL	02/25/22	AQ	Field Blank Water	S114-FB-20220223-01
FA93472-4	02/23/22	16:15	DL	02/25/22	AQ	Equipment Blank	S114-EB-20220223-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA93472

Site: NASA TQN 21- SLF PFAS Assessment **Report Date:** 3/16/2022 1:20:36 PM

On 02/25/2022, 3 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.6 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA93472 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP90042

Sample(s) FA93432-2MS, FA93432-2MSD were used as the QC samples indicated.

Sample(s) FA93472-1, FA93472-2 have surrogates outside control limits.

FA93472-1 for 13C3-PFBS: Outside control limits.

FA93472-1 for 13C4-PFBA: Outside control limits.

FA93472-1 for 13C5-PFPeA: Outside control limits.

FA93472-1: Dilution required due to matrix interference (ID recovery standard failure).

FA93472-2 for 13C4-PFBA: Outside control limits.

FA93472-2 for 13C8-FOSA: Outside control limits.

FA93472-2 for PFOSA: Associated ID Standard outside control limits, Confirmed by re-analysis.

FA93472-2: Dilution required due to matrix interference (ID recovery standard failure).

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA93472
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/23/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA93472-1	**S114-SW0015-000.0-20220223**					
Perfluorobutanoic acid [a]		0.0230 J	0.083	0.042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0082 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0022 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0046 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0824	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0040 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.330	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA93472-2	**S114-FD-20220223-01**					
Perfluorobutanoic acid [a]		0.0231 J	0.083	0.042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0036 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0083	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0027 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0050 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0051 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0050 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0887	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0046 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.394	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA93472-3	**S114-FB-20220223-01**					
No hits reported in this sample.						
FA93472-4	**S114-EB-20220223-01**					
No hits reported in this sample.						

(a) Dilution required due to matrix interference (ID recovery standard failure).

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-SW0015-000.0-20220223
Lab Sample ID: FA93472-1 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/25/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56353.D	1	03/14/22 23:46	NG	03/02/22 08:30	OP90042	S3Q775
Run #2 [a]	3Q56354.D	5	03/15/22 00:03	NG	03/02/22 08:30	OP90042	S3Q775

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0230 [b]	0.083	0.042	0.021	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
307-24-4	Perfluorohexanoic acid	0.0082	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0022	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0046	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.021 U [b]	0.042	0.021	0.010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0824	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.330	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-SW0015-000.0-20220223
Lab Sample ID: FA93472-1 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/25/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	35% [c]	55%	50-150%
	13C5-PFPeA	43% [c]	67%	50-150%
	13C5-PFHxA	52%	73%	50-150%
	13C4-PFHpA	59%	77%	50-150%
	13C8-PFOA	66%	85%	50-150%
	13C9-PFNA	68%	85%	50-150%
	13C6-PFDA	72%	86%	50-150%
	13C7-PFUnDA	70%	83%	50-150%
	13C2-PFDoDA	62%	74%	50-150%
	13C2-PFTeDA	50%	61%	50-150%
	13C3-PFBS	49% [c]	75%	50-150%
	13C3-PFHxS	62%	81%	50-150%
	13C8-PFOS	65%	81%	50-150%
	13C8-FOSA	52%	67%	50-150%
	d3-MeFOSAA	86%	102%	50-150%
	d5-EtFOSAA	78%	91%	50-150%
	13C2-4:2FTS	57%	79%	50-150%
	13C2-6:2FTS	74%	89%	50-150%
	13C2-8:2FTS	64%	75%	50-150%
	13C3-HFPO-DA	60%	85%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220223-01
Lab Sample ID: FA93472-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/23/22
Date Received: 02/25/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56228.D	1	03/12/22 00:56	MV	03/02/22 08:30	OP90042	S3Q774
Run #2 [a]	3Q56355.D	5	03/15/22 00:21	NG	03/02/22 08:30	OP90042	S3Q775

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0231 [b]	0.083	0.042	0.021	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0036	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0083	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0027	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0050	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0051	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0050	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0887	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0046	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.394	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [c]	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220223-01
Lab Sample ID: FA93472-2 **Date Sampled:** 02/23/22
Matrix: AQ - Ground Water **Date Received:** 02/25/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	44% d	56%	50-150%
	13C5-PFPeA	57%	74%	50-150%
	13C5-PFHxA	67%	80%	50-150%
	13C4-PFHpA	75%	87%	50-150%
	13C8-PFOA	85%	94%	50-150%
	13C9-PFNA	87%	93%	50-150%
	13C6-PFDA	87%	97%	50-150%
	13C7-PFUnDA	81%	95%	50-150%
	13C2-PFDoDA	72%	82%	50-150%
	13C2-PFTeDA	59%	57%	50-150%
	13C3-PFBS	62%	83%	50-150%
	13C3-PFHxS	78%	88%	50-150%
	13C8-PFOS	82%	94%	50-150%
	13C8-FOSA	18% d	23% d	50-150%
	d3-MeFOSAA	96%	115%	50-150%
	d5-EtFOSAA	94%	106%	50-150%
	13C2-4:2FTS	76%	87%	50-150%
	13C2-6:2FTS	95%	105%	50-150%
	13C2-8:2FTS	82%	88%	50-150%
	13C3-HFPO-DA	59%	97%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Associated ID Standard outside control limits, Confirmed by re-analysis.
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220223-01
Lab Sample ID: FA93472-3
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/23/22
Date Received: 02/25/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56229.D	1	03/12/22 01:13	MV	03/02/22 08:30	OP90042	S3Q774
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220223-01
Lab Sample ID: FA93472-3 **Date Sampled:** 02/23/22
Matrix: AQ - Field Blank Water **Date Received:** 02/25/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	69%		50-150%
	13C7-PFUnDA	67%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	52%		50-150%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	65%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	71%		50-150%
	d3-MeFOSAA	81%		50-150%
	d5-EtFOSAA	77%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	65%		50-150%
	13C3-HFPO-DA	64%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220223-01
Lab Sample ID: FA93472-4
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 02/23/22
Date Received: 02/25/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q56356.D	1	03/15/22 00:38	NG	03/02/22 08:30	OP90042	S3Q775
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220223-01
Lab Sample ID: FA93472-4 **Date Sampled:** 02/23/22
Matrix: AQ - Equipment Blank **Date Received:** 02/25/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		50-150%
	13C5-PFPeA	82%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	88%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	82%		50-150%
	13C2-PFDoDA	76%		50-150%
	13C2-PFTeDA	78%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	84%		50-150%
	13C8-FOSA	87%		50-150%
	d3-MeFOSAA	102%		50-150%
	d5-EtFOSAA	95%		50-150%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	73%		50-150%
	13C3-HFPO-DA	99%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB #: FA93472 PAGE 1 OF 1

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL, Inc
Address: 2405 N. Courtney PKWY, Ste 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: Driverse@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Dustin Lyons Sampler 2:

Project Information

Project Name: SWMU 114 PFAS Assessment
Street: Kennedy Space Center
City: Merritt Island State: FL
Project #: NS1010.01.06
Fax #:
Client Purchase Order #:

Analytical Information

LCQSMS537 DOD-FCT-ENV 24 analytes

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	MeOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LAB USE ONLY
1	S114-SW0015-000.0-20220223	2/23/22	1600	DL	SW	2		X							X	
2	S114-FD-20220223-01	2/23/22	1600	DL	SW	2		X							X	
3	S114-FB-20220223-01	2/23/22	1610	DL	SW	2		X							X	
4	S114-EB-20220223-01	2/23/22	1615	DL	SW	2		X							X	

Turnaround Time (Business days)

- 10 Day (Business) — Approved By: / Date:
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

INITIAL ASSESSMENT JM

LABEL VERIFICATION JM

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		2/25 1510	2	3	2/25/22 16:20	4 2/25/22 1615
	Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5			6	7		2/26/22 0900

Lab Use Only: Cooler Temperature (s) Celsius (corrected): 3.1 (CTR) | 4.2 (CTR)

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

SGS Sample Receipt Summary

Job Number: FA93472 **Client:** HGL, INC **Project:** SLUMV 114 PFAS ASSESSMENT

Date / Time Received: 2/25/2022 4:20:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 2: (4.2); Cooler 1: (3.6);

Cooler Temps (Corrected) °C: Cooler 2: (4.6); Cooler 1: (4.0);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: NATHANS Date: 2/25/2022 4:20:00 PM Reviewer: _____ Date: _____

FA93472: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93472
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/23/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP90042	EPA 537M QSM5.3 B-15						
OP90042-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	91	%	73-129
OP90042-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	89	%	72-129
OP90042-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	93	%	72-129
OP90042-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	93	%	72-130
OP90042-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	94	%	71-133
OP90042-BS	375-95-1	Perfluorononanoic acid	BSP	REC	96	%	69-130
OP90042-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	87	%	71-129
OP90042-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	93	%	69-133
OP90042-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	99	%	72-134
OP90042-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	99	%	65-144
OP90042-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	94	%	71-132
OP90042-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	93	%	73-130
OP90042-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	90	%	71-127
OP90042-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	99	%	68-131
OP90042-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	98	%	69-134
OP90042-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	89	%	65-140
OP90042-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	91	%	69-127
OP90042-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	85	%	53-142
OP90042-BS	754-91-6	PFOSA	BSP	REC	94	%	67-137
OP90042-BS	2355-31-9	MeFOSAA	BSP	REC	94	%	65-136
OP90042-BS	2991-50-6	EtFOSAA	BSP	REC	96	%	61-135
OP90042-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	93	%	63-143
OP90042-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	96	%	64-140
OP90042-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	90	%	67-138
OP90042-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	94	%	73-129
OP90042-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	91	%	72-129
OP90042-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	94	%	72-129
OP90042-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	96	%	72-130
OP90042-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	97	%	71-133
OP90042-MS*	375-95-1	Perfluorononanoic acid	MS	REC	97	%	69-130
OP90042-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	91	%	71-129
OP90042-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	94	%	69-133
OP90042-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	102	%	72-134
OP90042-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	98	%	65-144
OP90042-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	94	%	71-132
OP90042-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	97	%	73-130
OP90042-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	94	%	71-127
OP90042-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	100	%	68-131
OP90042-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	109	%	69-134
OP90042-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	95	%	65-140
OP90042-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	92	%	69-127
OP90042-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	77	%	53-142

* Sample used for QC is not from job FA93472

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93472
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/23/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP90042-MS*	754-91-6	PFOSA	MS	REC	98	%	67-137
OP90042-MS*	2355-31-9	MeFOSAA	MS	REC	97	%	65-136
OP90042-MS*	2991-50-6	EtFOSAA	MS	REC	101	%	61-135
OP90042-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	95	%	63-143
OP90042-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	99	%	64-140
OP90042-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	93	%	67-138
OP90042-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	94	%	73-129
OP90042-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	0	%	30
OP90042-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	91	%	72-129
OP90042-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	0	%	30
OP90042-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	94	%	72-129
OP90042-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	1	%	30
OP90042-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	96	%	72-130
OP90042-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	0	%	30
OP90042-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	95	%	71-133
OP90042-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	1	%	30
OP90042-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	98	%	69-130
OP90042-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	1	%	30
OP90042-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	91	%	71-129
OP90042-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	0	%	30
OP90042-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	94	%	69-133
OP90042-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	1	%	30
OP90042-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	102	%	72-134
OP90042-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	0	%	30
OP90042-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	104	%	65-144
OP90042-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	6	%	30
OP90042-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	95	%	71-132
OP90042-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	1	%	30
OP90042-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	97	%	73-130
OP90042-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	0	%	30
OP90042-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	95	%	71-127
OP90042-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	1	%	30
OP90042-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	98	%	68-131
OP90042-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	2	%	30
OP90042-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	103	%	69-134
OP90042-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	6	%	30
OP90042-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	93	%	65-140
OP90042-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	2	%	30
OP90042-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	96	%	69-127
OP90042-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	4	%	30
OP90042-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	89	%	53-142
OP90042-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	14	%	30
OP90042-MSD*	754-91-6	PFOSA	MSD	REC	98	%	67-137
OP90042-MSD*	754-91-6	PFOSA	MSD	RPD	0	%	30
OP90042-MSD*	2355-31-9	MeFOSAA	MSD	REC	94	%	65-136

* Sample used for QC is not from job FA93472

QC Evaluation: DOD QSM5.x Limits

Job Number: FA93472
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 02/23/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP90042-MSD*	2355-31-9	MeFOSAA	MSD	RPD	4	%	30
OP90042-MSD*	2991-50-6	EtFOSAA	MSD	REC	97	%	61-135
OP90042-MSD*	2991-50-6	EtFOSAA	MSD	RPD	5	%	30
OP90042-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	97	%	63-143
OP90042-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	2	%	30
OP90042-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	98	%	64-140
OP90042-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	1	%	30
OP90042-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	95	%	67-138
OP90042-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	2	%	30

* Sample used for QC is not from job FA93472

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56200.D	1	03/11/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-2, FA93472-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	87%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	91%	50-150%
	13C8-PFOA	94%	50-150%
	13C9-PFNA	91%	50-150%
	13C6-PFDA	93%	50-150%

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56200.D	1	03/11/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-2, FA93472-3

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	94%	50-150%
	13C2-PFDoDA	88%	50-150%
	13C2-PFTeDA	83%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	99%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	103%	50-150%
	13C2-4:2FTS	93%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	90%	50-150%

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56261.D	1	03/12/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-2, FA93472-3

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	93%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	91%	50-150%

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q774-IBLK	3Q56261.D	1	03/12/22	MV	n/a	n/a	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-2, FA93472-3

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	91%	50-150%
	13C2-PFDoDA	84%	50-150%
	13C2-PFTeDA	80%	50-150%
	13C3-PFBS	90%	50-150%
	13C3-PFHxS	91%	50-150%
	13C8-PFOS	88%	50-150%
	13C8-FOSA	101%	50-150%
	d3-MeFOSAA	113%	50-150%
	d5-EtFOSAA	109%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	95%	50-150%
	13C2-8:2FTS	83%	50-150%

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q775-IBLK	3Q56317.D	1	03/14/22	NG	n/a	n/a	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	85%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	90%	50-150%
	13C8-PFOA	89%	50-150%
	13C9-PFNA	90%	50-150%
	13C6-PFDA	91%	50-150%

Instrument Blank

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q775-IBLK	3Q56317.D	1	03/14/22	NG	n/a	n/a	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-4

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	94%	50-150%
	13C2-PFDoDA	86%	50-150%
	13C2-PFTeDA	82%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	87%	50-150%
	13C8-PFOS	87%	50-150%
	13C8-FOSA	92%	50-150%
	d3-MeFOSAA	105%	50-150%
	d5-EtFOSAA	101%	50-150%
	13C2-4:2FTS	85%	50-150%
	13C2-6:2FTS	90%	50-150%
	13C2-8:2FTS	85%	50-150%

Method Blank Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-MB	3Q56205.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	71%	50-150%
	13C5-PFPeA	73%	50-150%
	13C5-PFHxA	75%	50-150%
	13C4-PFHpA	74%	50-150%
	13C8-PFOA	77%	50-150%
	13C9-PFNA	76%	50-150%
	13C6-PFDA	77%	50-150%

Method Blank Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-MB	3Q56205.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	74%	50-150%
	13C2-PFDoDA	65%	50-150%
	13C2-PFTeDA	59%	50-150%
	13C3-PFBS	73%	50-150%
	13C3-PFHxS	75%	50-150%
	13C8-PFOS	74%	50-150%
	13C8-FOSA	76%	50-150%
	d3-MeFOSAA	85%	50-150%
	d5-EtFOSAA	78%	50-150%
	13C2-4:2FTS	75%	50-150%
	13C2-6:2FTS	79%	50-150%
	13C2-8:2FTS	70%	50-150%

Blank Spike Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-BS	3Q56204.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.146	91	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.142	89	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.148	93	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.148	93	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.150	94	71-133
375-95-1	Perfluorononanoic acid	0.16	0.153	96	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.139	87	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.148	93	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.159	99	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.159	99	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.150	94	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.149	93	73-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.144	90	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.158	99	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.157	98	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.142	89	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.145	91	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.136	85	53-142
754-91-6	PFOSA	0.16	0.151	94	67-137
2355-31-9	MeFOSAA	0.16	0.150	94	65-136
2991-50-6	EtFOSAA	0.16	0.153	96	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.149	93	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.154	96	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.144	90	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.150	94	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	78%	50-150%
	13C5-PFPeA	81%	50-150%
	13C5-PFHxA	82%	50-150%
	13C4-PFHpA	80%	50-150%
	13C8-PFOA	82%	50-150%
	13C9-PFNA	83%	50-150%
	13C6-PFDA	82%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-BS	3Q56204.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	80%	50-150%
	13C2-PFDoDA	71%	50-150%
	13C2-PFTeDA	65%	50-150%
	13C3-PFBS	80%	50-150%
	13C3-PFHxS	79%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	76%	50-150%
	d3-MeFOSAA	87%	50-150%
	d5-EtFOSAA	82%	50-150%
	13C2-4:2FTS	84%	50-150%
	13C2-6:2FTS	83%	50-150%
	13C2-8:2FTS	74%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-MS	3Q56208.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
OP90042-MSD	3Q56209.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
FA93432-2	3Q56207.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
FA93432-2 [a]	3Q56351.D	5	03/14/22	NG	03/02/22	OP90042	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	Compound	FA93432-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.017 U		0.167	0.156	94	0.167	0.156	94	0	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0083 U		0.167	0.152	91	0.167	0.152	91	0	72-129/30
307-24-4	Perfluorohexanoic acid	0.0083 U		0.167	0.157	94	0.167	0.156	94	1	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0083 U		0.167	0.160	96	0.167	0.160	96	0	72-130/30
335-67-1	Perfluorooctanoic acid	0.0083 U		0.167	0.161	97	0.167	0.159	95	1	71-133/30
375-95-1	Perfluorononanoic acid	0.0083 U		0.167	0.162	97	0.167	0.163	98	1	69-130/30
335-76-2	Perfluorodecanoic acid	0.0083 U		0.167	0.151	91	0.167	0.151	91	0	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0083 U		0.167	0.157	94	0.167	0.156	94	1	69-133/30
307-55-1	Perfluorododecanoic acid	0.0083 U		0.167	0.170	102	0.167	0.170	102	0	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0083 U		0.167	0.164	98	0.167	0.174	104	6	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.042 U	[b]	0.167	0.157	94	0.167	0.159	95	1	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0083 U		0.167	0.162	97	0.167	0.162	97	0	73-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0083 U		0.167	0.156	94	0.167	0.158	95	1	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0083 U		0.167	0.166	100	0.167	0.163	98	2	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0083 U		0.167	0.181	109	0.167	0.171	103	6	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0083 U		0.167	0.158	95	0.167	0.155	93	2	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0083 U		0.167	0.153	92	0.167	0.160	96	4	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0083 U		0.167	0.128	77	0.167	0.148	89	14	53-142/30
754-91-6	PFOSA	0.0083 U		0.167	0.163	98	0.167	0.163	98	0	67-137/30
2355-31-9	MeFOSAA	0.017 U		0.167	0.162	97	0.167	0.156	94	4	65-136/30
2991-50-6	EtFOSAA	0.017 U		0.167	0.169	101	0.167	0.161	97	5	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.017 U		0.167	0.158	95	0.167	0.161	97	2	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.017 U		0.167	0.165	99	0.167	0.164	98	1	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.017 U		0.167	0.155	93	0.167	0.158	95	2	67-138/30
13252-13-6	HFPO-DA (GenX)	0.017 U		0.167	0.159	95	0.167	0.162	97	2	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA93432-2	FA93432-2	Limits
	13C4-PFBA	80%	76%	66%	80%	50-150%
	13C5-PFPeA	84%	77%	69%	83%	50-150%
	13C5-PFHxA	86%	77%	71%	87%	50-150%
	13C4-PFHpA	83%	75%	73%	88%	50-150%
	13C8-PFOA	83%	77%	72%	90%	50-150%
	13C9-PFNA	83%	77%	70%	90%	50-150%
	13C6-PFDA	79%	74%	76%	92%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA93472
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP90042-MS	3Q56208.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
OP90042-MSD	3Q56209.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
FA93432-2	3Q56207.D	1	03/11/22	MV	03/02/22	OP90042	S3Q774
FA93432-2 [a]	3Q56351.D	5	03/14/22	NG	03/02/22	OP90042	S3Q775

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA93472-1, FA93472-2, FA93472-3, FA93472-4

CAS No.	ID Standard Recoveries	MS	MSD	FA93432-2	FA93432-2	Limits
	13C7-PFUnDA	76%	73%	68%	91%	50-150%
	13C2-PFDoDA	66%	67%	56%	84%	50-150%
	13C2-PFTeDA	60%	62%	39%* [c]	91%	50-150%
	13C3-PFBS	84%	75%	70%	88%	50-150%
	13C3-PFHxS	82%	75%	71%	91%	50-150%
	13C8-PFOS	77%	73%	66%	87%	50-150%
	13C8-FOSA	58%	75%			50-150%
	d3-MeFOSAA	86%	86%	79%	110%	50-150%
	d5-EtFOSAA	80%	84%	73%	103%	50-150%
	13C2-4:2FTS	87%	77%	75%	89%	50-150%
	13C2-6:2FTS	86%	79%	75%	95%	50-150%
	13C2-8:2FTS	73%	70%	71%	79%	50-150%
	13C3-HFPO-DA			67%	108%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

SWMU 114 Fire Station 2; KSC, FL

NS1010..01.14

SGS Job Number: FA95502

Sampling Date: 05/05/22

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **1044**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA95502

SWMU 114 Fire Station 2; KSC, FL
Project No: NS1010..01.14

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA95502-1	05/05/22	09:20	WD	05/06/22	SO	Soil	S114-CS0001-0.002-20220505
FA95502-2	05/05/22	09:20	WD	05/06/22	SO	Soil	S114-CS0001-0.002-20220505-DUP01
FA95502-3	05/05/22	10:15	WD	05/06/22	SO	Soil	S114-CS0002-0.002-20220505
FA95502-4	05/05/22	10:50	WD	05/06/22	SO	Soil	S114-CS0003-0.002-20220505
FA95502-5	05/05/22	11:10	WD	05/06/22	SO	Soil	S114-CS0004-0.002-20220505
FA95502-6	05/05/22	11:25	WD	05/06/22	SO	Soil	S114-AS0005-0.002-20220505
FA95502-7	05/05/22	11:45	WD	05/06/22	AQ	Field Blank Soil	S114-FB-20220505-01
FA95502-8	05/05/22	11:50	WD	05/06/22	AQ	Equipment Blank	S114-EB-20220505-01

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA95502

Site: SWMU 114 Fire Station 2; KSC, FL **Report Date:** 6/1/2022 4:04:31 PM

On 05/06/2022, 7 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.2 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA95502 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M BY ID

Matrix: AQ **Batch ID:** OP91243

Sample(s) FA95500-2MS, FA95500-5DUP were used as the QC samples indicated.

Matrix: LEACHATE **Batch ID:** OP91274

Sample(s) FA95502-1MS, FA95502-2DUP were used as the QC samples indicated.

RPD(s) for Duplicate for Perfluorobutanesulfonic acid, Perfluoroheptanoic acid, Perfluorooctanoic acid are outside control limits for sample OP91274-DUP. Probable cause is due to sample non-homogeneity.

Sample(s) FA95502-1, FA95502-2, FA95502-3 have surrogates outside control limits.

FA95502-1 for 13C2-PFTeDA: Outside control limits.

FA95502-2 for 13C2-PFTeDA: Outside control limits.

FA95502-2: Dilution required due to matrix interference (ID recovery standard failure).

FA95502-3 for 13C2-PFTeDA: Outside control limits.

FA95502-3: Dilution required due to matrix interference (ID recovery standard failure).

General Chemistry By Method SM19 2540G

Matrix: SO **Batch ID:** GN91307

Sample(s) FA95489-4DUP were used as the QC samples for Solids, Percent.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA95502
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 05/05/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA95502-1	**S114-CS0001-0.002-20220505**					
Perfluorohexanoic acid		0.0483	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid		0.0037 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanoic acid		0.0025 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.0032 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0212	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0742	0.0040	0.0030	ug/l	EPA 537M BY ID
FA95502-2	**S114-CS0001-0.002-20220505-DUP01**					
Perfluorohexanoic acid		0.0637	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid		0.0058	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanoic acid		0.0030 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.0037 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0190	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.122	0.0040	0.0030	ug/l	EPA 537M BY ID
FA95502-3	**S114-CS0002-0.002-20220505**					
Perfluorohexanoic acid		0.0165	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid		0.0020 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0023 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0054	0.0040	0.0030	ug/l	EPA 537M BY ID
FA95502-4	**S114-CS0003-0.002-20220505**					
Perfluorohexanoic acid		0.0132	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid		0.0020 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.0034 J	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0055	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0058	0.0040	0.0030	ug/l	EPA 537M BY ID
FA95502-5	**S114-CS0004-0.002-20220505**					
Perfluorohexanoic acid		0.0482	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluoroheptanoic acid		0.0041	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanoic acid		0.0059	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.0382	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.0633	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		0.0838	0.0040	0.0030	ug/l	EPA 537M BY ID
FA95502-6	**S114-AS0005-0.002-20220505**					
Perfluorohexanoic acid		0.319	0.0040	0.0030	ug/l	EPA 537M BY ID

Summary of Hits

Job Number: FA95502
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 05/05/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanoic acid		0.0937	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorooctanoic acid		0.116	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorononanoic acid		0.0088	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorodecanoic acid		0.0083	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorobutanesulfonic acid		0.122	0.0040	0.0030	ug/l	EPA 537M BY ID
Perfluorohexanesulfonic acid		0.910	0.080	0.060	ug/l	EPA 537M BY ID
Perfluorooctanesulfonic acid		5.34	0.080	0.060	ug/l	EPA 537M BY ID

FA95502-7 **S114-FB-20220505-01**

No hits reported in this sample.

FA95502-8 **S114-EB-20220505-01**

No hits reported in this sample.

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-CS0001-0.002-20220505		
Lab Sample ID:	FA95502-1	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	94.1
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60373.D	1	05/27/22 22:44	MV	05/18/22 09:00	OP91274	S3Q824
Run #2	3Q60374.D	5	05/27/22 23:03	MV	05/18/22 09:00	OP91274	S3Q824

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.0483		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0037		0.0040	0.0030	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0025		0.0040	0.0030	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.015 U [a]		0.020	0.015	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.0032		0.0040	0.0030	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0212		0.0040	0.0030	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0742		0.0040	0.0030	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	92%	96%	50-150%
	13C4-PFHpA	93%	98%	50-150%
	13C8-PFOA	83%	94%	50-150%
	13C9-PFNA	80%	89%	50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-CS0001-0.002-20220505		
Lab Sample ID:	FA95502-1	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	94.1
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	73%	84%	50-150%
	13C7-PFUnDA	66%	80%	40-140%
	13C2-PFDoDA	53%	71%	40-140%
	13C2-PFTeDA	14% [b]	35%	30-130%
	13C3-PFBS	94%	99%	50-150%
	13C3-PFHxS	85%	94%	50-150%
	13C8-PFOS	67%	84%	50-150%
	d3-MeFOSAA	68%	83%	40-140%
	d5-EtFOSAA	61%	80%	40-140%
	13C3-HFPO-DA	87%	92%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-CS0001-0.002-20220505-DUP01		
Lab Sample ID:	FA95502-2	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	92.8
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60376.D	1	05/27/22 23:40	MV	05/18/22 09:00	OP91274	S3Q824
Run #2 [a]	3Q60377.D	10	05/27/22 23:58	MV	05/18/22 09:00	OP91274	S3Q824

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.0637		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0058		0.0040	0.0030	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0030		0.0040	0.0030	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.030 U [b]		0.040	0.030	0.020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.0037		0.0040	0.0030	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0190		0.0040	0.0030	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.122		0.0040	0.0030	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	93%	110%	50-150%
	13C4-PFHpA	95%	113%	50-150%
	13C8-PFOA	82%	110%	50-150%
	13C9-PFNA	86%	104%	50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-CS0001-0.002-20220505-DUP01		
Lab Sample ID:	FA95502-2	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	92.8
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	79%	102%	50-150%
	13C7-PFUnDA	66%	98%	40-140%
	13C2-PFDoDA	50%	88%	40-140%
	13C2-PFTeDA	7% [c]	46%	30-130%
	13C3-PFBS	97%	116%	50-150%
	13C3-PFHxS	91%	108%	50-150%
	13C8-PFOS	73%	103%	50-150%
	d3-MeFOSAA	73%	103%	40-140%
	d5-EtFOSAA	59%	99%	40-140%
	13C3-HFPO-DA	86%	110%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-CS0002-0.002-20220505		
Lab Sample ID:	FA95502-3	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	92.6
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60379.D	1	05/28/22 00:36	MV	05/18/22 09:00	OP91274	S3Q824
Run #2 [a]	4Q29416.D	5	05/31/22 21:19	MV	05/18/22 09:00	OP91274	S4Q422

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.0165		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0020		0.0040	0.0030	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.015 U [b]		0.020	0.015	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0023		0.0040	0.0030	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0054		0.0040	0.0030	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	97%	105%	50-150%
	13C4-PFHpA	97%	103%	50-150%
	13C8-PFOA	95%	107%	50-150%
	13C9-PFNA	91%	103%	50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-CS0002-0.002-20220505		
Lab Sample ID:	FA95502-3	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	92.6
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	87%	106%	50-150%
	13C7-PFUnDA	83%	96%	40-140%
	13C2-PFDoDA	71%	86%	40-140%
	13C2-PFTeDA	27% [c]	46%	30-130%
	13C3-PFBS	98%	107%	50-150%
	13C3-PFHxS	88%	103%	50-150%
	13C8-PFOS	86%	97%	50-150%
	d3-MeFOSAA	89%	104%	40-140%
	d5-EtFOSAA	84%	101%	40-140%
	13C3-HFPO-DA	94%	97%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-CS0003-0.002-20220505		
Lab Sample ID:	FA95502-4	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	94.1
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60380.D	1	05/28/22 00:54	MV	05/18/22 09:00	OP91274	S3Q824
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.0132		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0020		0.0040	0.0030	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.0034		0.0040	0.0030	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0055		0.0040	0.0030	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0058		0.0040	0.0030	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	100%		50-150%
	13C8-PFOA	100%		50-150%
	13C9-PFNA	94%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-CS0003-0.002-20220505		
Lab Sample ID:	FA95502-4	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	94.1
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	89%		50-150%
	13C7-PFUnDA	91%		40-140%
	13C2-PFDoDA	89%		40-140%
	13C2-PFTeDA	81%		30-130%
	13C3-PFBS	102%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	89%		50-150%
	d3-MeFOSAA	98%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C3-HFPO-DA	98%		50-150%

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-CS0004-0.002-20220505		
Lab Sample ID:	FA95502-5	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	96.3
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60383.D	1	05/28/22 01:50	MV	05/18/22 09:00	OP91274	S3Q824
Run #2							

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.0482		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0041		0.0040	0.0030	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0059		0.0040	0.0030	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.0382		0.0040	0.0030	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0633		0.0040	0.0030	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0838		0.0040	0.0030	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	100%		50-150%
	13C4-PFHpA	98%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	93%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-CS0004-0.002-20220505		
Lab Sample ID:	FA95502-5	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	96.3
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	92%		40-140%
	13C2-PFDoDA	88%		40-140%
	13C2-PFTeDA	75%		30-130%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	89%		50-150%
	d3-MeFOSAA	102%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C3-HFPO-DA	98%		50-150%

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-AS0005-0.002-20220505		
Lab Sample ID:	FA95502-6	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	98.8
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q60384.D	1	05/28/22 02:08	MV	05/18/22 09:00	OP91274	S3Q824
Run #2	3Q60385.D	20	05/28/22 02:27	MV	05/18/22 09:00	OP91274	S3Q824

	Initial Volume	Final Volume
Run #1	250 ml	1.0 ml
Run #2	250 ml	1.0 ml

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	Compound	Result	MCL	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS								
307-24-4	Perfluorohexanoic acid	0.319		0.0040	0.0030	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0937		0.0040	0.0030	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.116		0.0040	0.0030	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0088		0.0040	0.0030	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0083		0.0040	0.0030	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0030 U		0.0040	0.0030	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS								
375-73-5	Perfluorobutanesulfonic acid	0.122		0.0040	0.0030	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.910 [a]		0.080	0.060	0.040	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	5.34 [a]		0.080	0.060	0.040	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS								
2355-31-9	MeFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
NEXT GENERATION PFAS ANALYTES								
13252-13-6	HFPO-DA (GenX)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
919005-14-4	ADONA	0.0040 U		0.0080	0.0040	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0040 U		0.0080	0.0040	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0040 U		0.0080	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	78%	94%	50-150%
	13C4-PFHpA	77%	96%	50-150%
	13C8-PFOA	77%	97%	50-150%
	13C9-PFNA	66%	91%	50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
MCL = Maximum Contamination Level (not available) B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-AS0005-0.002-20220505		
Lab Sample ID:	FA95502-6	**Date Sampled:**	05/05/22
Matrix:	SO - Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	98.8
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List **SPLP Leachate method SW846 1312**

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	75%	90%	50-150%
	13C7-PFUnDA	94%	95%	40-140%
	13C2-PFDoDA	88%	90%	40-140%
	13C2-PFTeDA	76%	82%	30-130%
	13C3-PFBS	89%	100%	50-150%
	13C3-PFHxS	78%	102%	50-150%
	13C8-PFOS	57%	94%	50-150%
	d3-MeFOSAA	111%	103%	40-140%
	d5-EtFOSAA	77%	108%	40-140%
	13C3-HFPO-DA	79%	93%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection
MCL = Maximum Contamination Level (not available)
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FB-20220505-01
Lab Sample ID: FA95502-7
Matrix: AQ - Field Blank Soil
Method: EPA 537M BY ID EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 05/05/22
Date Received: 05/06/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q610.D	1	05/27/22 02:30	NG	05/16/22 08:30	OP91243	S6Q11
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

EPA 537.1 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
919005-14-4	ADONA	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	109%		50-150%
	13C4-PFHpA	109%		50-150%
	13C8-PFOA	104%		50-150%
	13C9-PFNA	101%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FB-20220505-01		
Lab Sample ID:	FA95502-7	**Date Sampled:**	05/05/22
Matrix:	AQ - Field Blank Soil	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	109%		50-150%
	13C7-PFUnDA	105%		40-140%
	13C2-PFDoDA	103%		40-140%
	13C2-PFTeDA	110%		30-130%
	13C3-PFBS	108%		50-150%
	13C3-PFHxS	101%		50-150%
	13C8-PFOS	103%		50-150%
	d3-MeFOSAA	97%		40-140%
	d5-EtFOSAA	94%		40-140%
	13C3-HFPO-DA	97%		50-150%

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-EB-20220505-01		
Lab Sample ID:	FA95502-8	**Date Sampled:**	05/05/22
Matrix:	AQ - Equipment Blank	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q611.D	1	05/27/22 02:45	NG	05/16/22 08:30	OP91243	S6Q11
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

EPA 537.1 Method List

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
307-24-4	Perfluorohexanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0021 U	0.0042	0.0021 [a]	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0042 U	0.0083	0.0042 [a]	0.0042	ug/l	
919005-14-4	ADONA	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0042 U	0.017	0.0042 [a]	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C5-PFHxA	112%		50-150%
	13C4-PFHpA	113%		50-150%
	13C8-PFOA	107%		50-150%
	13C9-PFNA	110%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-EB-20220505-01		
Lab Sample ID:	FA95502-8	**Date Sampled:**	05/05/22
Matrix:	AQ - Equipment Blank	**Date Received:**	05/06/22
Method:	EPA 537M BY ID EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

EPA 537.1 Method List

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C6-PFDA	116%		50-150%
	13C7-PFUnDA	115%		40-140%
	13C2-PFDoDA	111%		40-140%
	13C2-PFTeDA	116%		30-130%
	13C3-PFBS	113%		50-150%
	13C3-PFHxS	109%		50-150%
	13C8-PFOS	111%		50-150%
	d3-MeFOSAA	100%		40-140%
	d5-EtFOSAA	102%		40-140%
	13C3-HFPO-DA	108%		50-150%

(a) Value reported is laboratory DL (MDL).

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (DOD)
- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

Parameter Certification Exceptions

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
ADONA	919005-14-4	EPA 537M BY ID	LEAC	Certified by SOP MS014
ADONA	919005-14-4	EPA 537M BY ID	AQ	Certified by SOP MS014
11Cl-PF3OUdS (F-53B Minor)	763051-92-9	EPA 537M BY ID	LEAC	Certified by SOP MS014
11Cl-PF3OUdS (F-53B Minor)	763051-92-9	EPA 537M BY ID	AQ	Certified by SOP MS014
9Cl-PF3ONS (F-53B Major)	756426-58-1	EPA 537M BY ID	AQ	Certified by SOP MS014
9Cl-PF3ONS (F-53B Major)	756426-58-1	EPA 537M BY ID	LEAC	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	AQ	Certified by SOP MS014
EtFOSAA	2991-50-6	EPA 537M BY ID	LEAC	Certified by SOP MS014
HFPO-DA (GenX)	13252-13-6	EPA 537M BY ID	LEAC	Certified by SOP MS014
HFPO-DA (GenX)	13252-13-6	EPA 537M BY ID	AQ	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	AQ	Certified by SOP MS014
MeFOSAA	2355-31-9	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorobutanesulfonic acid	375-73-5	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorodecanoic acid	335-76-2	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorododecanoic acid	307-55-1	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluoroheptanoic acid	375-85-9	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorohexanesulfonic acid	355-46-4	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorohexanoic acid	307-24-4	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorononanoic acid	375-95-1	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorononanoic acid	375-95-1	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorooctanesulfonic acid	1763-23-1	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorooctanoic acid	335-67-1	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluorotetradecanoic acid	376-06-7	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluorotridecanoic acid	72629-94-8	EPA 537M BY ID	AQ	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	LEAC	Certified by SOP MS014
Perfluoroundecanoic acid	2058-94-8	EPA 537M BY ID	AQ	Certified by SOP MS014

Parameter Certification Exceptions

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

The following parameters included in this report are exceptions to DOD certification.
The certification status of each is indicated below.

Parameter	CAS#	Method	Mat	Certification Status
ADONA	919005-14-4	**EPA 537M BY ID**	LEAC	SGS is not certified for this parameter.
ADONA	919005-14-4	**EPA 537M BY ID**	AQ	SGS is not certified for this parameter.
11Cl-PF3OUdS (F-53B Minor)	763051-92-9	**EPA 537M BY ID**	LEAC	SGS is not certified for this parameter.
11Cl-PF3OUdS (F-53B Minor)	763051-92-9	**EPA 537M BY ID**	AQ	SGS is not certified for this parameter.
9Cl-PF3ONS (F-53B Major)	756426-58-1	**EPA 537M BY ID**	AQ	SGS is not certified for this parameter.
9Cl-PF3ONS (F-53B Major)	756426-58-1	**EPA 537M BY ID**	LEAC	SGS is not certified for this parameter.
HFPO-DA (GenX)	13252-13-6	**EPA 537M BY ID**	LEAC	SGS is not certified for this parameter.
HFPO-DA (GenX)	13252-13-6	**EPA 537M BY ID**	AQ	SGS is not certified for this parameter.

SGS North America Inc - Orlando

Chain of Custody

FA95502

SGS _ ORLANDO JOB #: PAGE 1 OF 1

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO Quote: SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460

Project Information

Project Name SWMU 114 Fire Station #2/SLF Apron
Street Astronaut Rd.
City Kennedy Space Center State FL
Project # NS1010.01.14
Fax #
Client Purchase Order #

Sampler(s) Name(s) (Printed)
Sampler 1: Dustin Lupis Sampler 2: William Duttenhaver

Analytical Information

LCID537SPLPLIST18, LCMS+GENX

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LAB USE ONLY
1	S114 - CS0001 - 0.002 - 20220505	5/5/22	9:20	WD	SOL	2	X							X	
2	S114 - CS0001 - 0.002 - 20220505 - DUP01	5/4/22	9:20	WD	SOL	2	X							X	
3	S114 - CS0002 - 0.002 - 20220505	5/4/22	10:15	WD	SOL	2	X							X	
4	S114 - CS0003 - 0.002 - 20220505	5/4/22	10:50	WD	SOL	2	X							X	
5	S114 - CS0004 - 0.002 - 20220505	5/4/22	11:10	WD	SOL	2	X							X	
6	S114 - AS0005 - 0.002 - 20220505	5/4/22	11:25	WD	SOL	2	X							X	
7	S114 - FB - 20220505 - 01	5/4/22	11:45	WD	WW	2	X							X	
8	S114 - EB - 20220505 - 01	5/4/22	11:50	WD	WW	2	X							X	

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Emergency or Rush T/A Data Available VIA Email or Labllnk

Approved By: / Date/Rush Code:

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT SM

LABEL VERIFICATION SM

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1 Dustin Lupis HGL	5/5/22/1430	2	3	5/6/22 17:00	4
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
5	-	6	7		8

Lab Use Only: Custody Seal In Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 3.8 CM

SGS Sample Receipt Summary

Job Number: FA95502 **Client:** HGL, INC. **Project:** SWMU 114 FIRE STATION #2/SLF APRON

Date / Time Received: 5/6/2022 5:00:00 PM **Delivery Method:** CORUER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 1

Cooler Temps (Raw Measured) °C: Cooler 1: (3.8);

Cooler Temps (Corrected) °C: Cooler 1: (4.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: CARLOSD Date: 5/6/2022 5:00:00 PM Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5.x Limits

Job Number: FA95502
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 05/05/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits

No DOD QSM5.x Limits Found.

* Sample used for QC is not from job FA95502

MS Semi-volatiles

6

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Method Blank Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-MB	6Q585.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0040	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	114%	35-135%
	13C5-PFPeA	113%	50-150%
	13C5-PFHxA	114%	50-150%
	13C4-PFHpA	113%	50-150%
	13C8-PFOA	109%	50-150%
	13C9-PFNA	110%	50-150%
	13C6-PFDA	121%	50-150%
	13C7-PFUnDA	111%	40-140%
	13C2-PFDoDA	106%	40-140%
	13C2-PFTeDA	104%	30-130%
	13C3-PFBS	111%	50-150%
	13C3-PFHxS	109%	50-150%
	13C8-PFOS	113%	50-150%
	13C8-FOSA	101%	30-130%

Method Blank Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-MB	6Q585.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	ID Standard Recoveries		Limits
	d3-MeFOSAA	105%	40-140%
	d5-EtFOSAA	96%	40-140%
	13C2-4:2FTS	101%	50-150%
	13C2-6:2FTS	98%	50-150%
	13C2-8:2FTS	102%	50-150%
	13C3-HFPO-DA	106%	50-150%

Instrument Blank

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q11-IBLK	6Q552.D	1	05/26/22	NG	n/a	n/a	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA95502-7, FA95502-8

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	108%	50-150%
	13C5-PFPeA	107%	50-150%
	13C5-PFHxA	107%	50-150%
	13C4-PFHpA	105%	50-150%
	13C8-PFOA	104%	50-150%
	13C9-PFNA	104%	50-150%
	13C6-PFDA	106%	50-150%
	13C7-PFUnDA	108%	50-150%
	13C2-PFDoDA	105%	50-150%
	13C2-PFTeDA	106%	50-150%
	13C3-PFBS	106%	50-150%
	13C3-PFHxS	104%	50-150%
	13C8-PFOS	109%	50-150%
	13C8-FOSA	107%	50-150%

Instrument Blank

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q11-IBLK	6Q552.D	1	05/26/22	NG	n/a	n/a	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA95502-7, FA95502-8

CAS No.	ID Standard Recoveries		Limits
	d3-MeFOSA	109%	50-150%
	d3-MeFOSAA	92%	50-150%
	d5-EtFOSAA	94%	50-150%
	13C2-4:2FTS	96%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	95%	50-150%
	13C3-HFPO-DA	102%	50-150%

Leachate Blank Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-LB	3Q60372.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

CAS No.	Compound	Result	RL	MDL	Units	Q
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	
919005-14-4	ADONA	ND	0.0080	0.0020	ug/l	
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND	0.0080	0.0020	ug/l	
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C5-PFHxA	101%	50-150%
	13C4-PFHpA	103%	50-150%
	13C8-PFOA	103%	50-150%
	13C9-PFNA	102%	50-150%
	13C6-PFDA	100%	50-150%
	13C7-PFUnDA	101%	40-140%
	13C2-PFDoDA	94%	40-140%
	13C2-PFTeDA	87%	30-130%
	13C3-PFBS	102%	50-150%
	13C3-PFHxS	102%	50-150%
	13C8-PFOS	100%	50-150%
	d3-MeFOSAA	99%	40-140%
	d5-EtFOSAA	97%	40-140%
	13C3-HFPO-DA	97%	50-150%

Blank Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-BS	6Q584.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.08	0.0640	80	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0658	82	70-130
335-67-1	Perfluorooctanoic acid	0.08	0.0676	85	70-130
375-95-1	Perfluorononanoic acid	0.08	0.0625	78	70-130
335-76-2	Perfluorodecanoic acid	0.08	0.0661	83	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0618	77	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0655	82	70-130
72629-94-8	Perfluorotridecanoic acid	0.08	0.0590	74	60-140
376-06-7	Perfluorotetradecanoic acid	0.08	0.0650	81	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0658	82	70-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0653	82	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0641	80	70-130
2355-31-9	MeFOSAA	0.08	0.0647	81	70-130
2991-50-6	EtFOSAA	0.08	0.0716	90	70-130
13252-13-6	HFPO-DA (GenX)	0.08	0.0667	83	70-130
919005-14-4	ADONA	0.08	0.0650	81	60-140
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.08	0.0617	77	60-140
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.08	0.0615	77	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	113%	35-135%
	13C5-PFPeA	110%	50-150%
	13C5-PFHxA	108%	50-150%
	13C4-PFHpA	109%	50-150%
	13C8-PFOA	104%	50-150%
	13C9-PFNA	108%	50-150%
	13C6-PFDA	109%	50-150%
	13C7-PFUnDA	114%	40-140%
	13C2-PFDoDA	108%	40-140%
	13C2-PFTeDA	102%	30-130%
	13C3-PFBS	108%	50-150%
	13C3-PFHxS	107%	50-150%
	13C8-PFOS	113%	50-150%
	13C8-FOSA	94%	30-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-BS	6Q584.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	ID Standard Recoveries	BSP	Limits
	d3-MeFOSAA	95%	40-140%
	d5-EtFOSAA	88%	40-140%
	13C2-4:2FTS	106%	50-150%
	13C2-6:2FTS	99%	50-150%
	13C2-8:2FTS	108%	50-150%
	13C3-HFPO-DA	111%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-LBS	3Q60371.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
307-24-4	Perfluorohexanoic acid	0.08	0.0795	99	70-130
375-85-9	Perfluoroheptanoic acid	0.08	0.0788	99	70-130
335-67-1	Perfluorooctanoic acid	0.08	0.0786	98	70-130
375-95-1	Perfluorononanoic acid	0.08	0.0792	99	70-130
335-76-2	Perfluorodecanoic acid	0.08	0.0791	99	70-130
2058-94-8	Perfluoroundecanoic acid	0.08	0.0769	96	70-130
307-55-1	Perfluorododecanoic acid	0.08	0.0788	99	70-130
72629-94-8	Perfluorotridecanoic acid	0.08	0.0821	103	60-140
376-06-7	Perfluorotetradecanoic acid	0.08	0.0795	99	70-130
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0796	100	70-130
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0791	99	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0805	101	70-130
2355-31-9	MeFOSAA	0.08	0.0806	101	70-130
2991-50-6	EtFOSAA	0.08	0.0800	100	70-130
13252-13-6	HFPO-DA (GenX)	0.08	0.0778	97	70-130
919005-14-4	ADONA	0.08	0.0906	113	60-140
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.08	0.0814	102	60-140
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.08	0.0789	99	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	95%	50-150%
	13C8-PFOA	95%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	90%	50-150%
	13C7-PFUnDA	93%	40-140%
	13C2-PFDoDA	91%	40-140%
	13C2-PFTeDA	88%	30-130%
	13C3-PFBS	97%	50-150%
	13C3-PFHxS	83%	50-150%
	13C8-PFOS	91%	50-150%
	d3-MeFOSAA	94%	40-140%
	d5-EtFOSAA	95%	40-140%
	13C3-HFPO-DA	92%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-MS	6Q595.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11
FA95500-2	6Q594.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	Compound	FA95500-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
307-24-4	Perfluorohexanoic acid	ND		0.0741	0.0620	84	70-130
375-85-9	Perfluoroheptanoic acid	ND		0.0741	0.0620	84	70-130
335-67-1	Perfluorooctanoic acid	ND		0.0741	0.0630	85	70-130
375-95-1	Perfluorononanoic acid	ND		0.0741	0.0580	78	70-130
335-76-2	Perfluorodecanoic acid	ND		0.0741	0.0613	83	70-130
2058-94-8	Perfluoroundecanoic acid	ND		0.0741	0.0602	81	70-130
307-55-1	Perfluorododecanoic acid	ND		0.0741	0.0627	85	70-130
72629-94-8	Perfluorotridecanoic acid	ND		0.0741	0.0590	80	60-140
376-06-7	Perfluorotetradecanoic acid	ND		0.0741	0.0602	81	70-130
375-73-5	Perfluorobutanesulfonic acid	ND		0.0741	0.0621	84	70-130
355-46-4	Perfluorohexanesulfonic acid	ND		0.0741	0.0623	84	70-130
1763-23-1	Perfluorooctanesulfonic acid	ND		0.0741	0.0602	81	70-130
2355-31-9	MeFOSAA	ND		0.0741	0.0617	83	70-130
2991-50-6	EtFOSAA	ND		0.0741	0.0577	78	70-130
13252-13-6	HFPO-DA (GenX)	ND		0.0741	0.0664	90	70-130
919005-14-4	ADONA	ND		0.0741	0.0596	80	60-140
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND		0.0741	0.0599	81	60-140
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND		0.0741	0.0559	75	60-140

CAS No.	ID Standard Recoveries	MS	FA95500-2	Limits
	13C4-PFBA	113%	110%	35-135%
	13C5-PFPeA	113%	110%	50-150%
	13C5-PFHxA	111%	112%	50-150%
	13C4-PFHpA	113%	109%	50-150%
	13C8-PFOA	107%	107%	50-150%
	13C9-PFNA	114%	104%	50-150%
	13C6-PFDA	113%	113%	50-150%
	13C7-PFUnDA	110%	99%	40-140%
	13C2-PFDoDA	105%	101%	40-140%
	13C2-PFTeDA	103%	96%	30-130%
	13C3-PFBS	115%	112%	50-150%
	13C3-PFHxS	112%	107%	50-150%
	13C8-PFOS	117%	112%	50-150%
	13C8-FOSA	96%	90%	30-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-MS	6Q595.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11
FA95500-2	6Q594.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	ID Standard Recoveries	MS	FA95500-2	Limits
	d3-MeFOSAA	102%	96%	40-140%
	d5-EtFOSAA	97%	95%	40-140%
	13C2-4:2FTS	112%	103%	50-150%
	13C2-6:2FTS	103%	99%	50-150%
	13C2-8:2FTS	111%	97%	50-150%
	13C3-HFPO-DA	112%	104%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-MS	3Q60375.D	5	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-1	3Q60373.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-1	3Q60374.D	5	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

CAS No.	Compound	FA95502-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
307-24-4	Perfluorohexanoic acid	0.0483		0.08	0.124	95	70-130
375-85-9	Perfluoroheptanoic acid	0.0037	J	0.08	0.0804	96	70-130
335-67-1	Perfluorooctanoic acid	0.0025	J	0.08	0.0797	97	70-130
375-95-1	Perfluorononanoic acid	0.0040	U	0.08	0.0792	99	70-130
335-76-2	Perfluorodecanoic acid	0.0040	U	0.08	0.0801	100	70-130
2058-94-8	Perfluoroundecanoic acid	0.0040	U	0.08	0.0785	98	70-130
307-55-1	Perfluorododecanoic acid	0.0040	U	0.08	0.0790	99	70-130
72629-94-8	Perfluorotridecanoic acid	0.0040	U	0.08	0.0815	102	60-140
376-06-7	Perfluorotetradecanoic acid	0.020	U [a]	0.08	0.0779	97	70-130
375-73-5	Perfluorobutanesulfonic acid	0.0032	J	0.08	0.0792	95	70-130
355-46-4	Perfluorohexanesulfonic acid	0.0212		0.08	0.0958	93	70-130
1763-23-1	Perfluorooctanesulfonic acid	0.0742		0.08	0.147	91	70-130
2355-31-9	MeFOSAA	0.0080	U	0.08	0.0800	100	70-130
2991-50-6	EtFOSAA	0.0080	U	0.08	0.0809	101	70-130
13252-13-6	HFPO-DA (GenX)	0.0080	U	0.08	0.0742	93	70-130
919005-14-4	ADONA	0.0080	U	0.08	0.0744	93	60-140
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0080	U	0.08	0.0763	95	60-140
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0080	U	0.08	0.0784	98	60-140

CAS No.	ID Standard Recoveries	MS	FA95502-1	FA95502-1	Limits
	13C5-PFHxA	107%	92%	96%	50-150%
	13C4-PFHpA	112%	93%	98%	50-150%
	13C8-PFOA	109%	83%	94%	50-150%
	13C9-PFNA	103%	80%	89%	50-150%
	13C6-PFDA	96%	73%	84%	50-150%
	13C7-PFUnDA	95%	66%	80%	40-140%
	13C2-PFDoDA	92%	53%	71%	40-140%
	13C2-PFTeDA	87%	14%* [b]	35%	30-130%
	13C3-PFBS	112%	94%	99%	50-150%
	13C3-PFHxS	110%	85%	94%	50-150%
	13C8-PFOS	94%	67%	84%	50-150%
	d3-MeFOSAA	102%	68%	83%	40-140%
	d5-EtFOSAA	100%	61%	80%	40-140%
	13C3-HFPO-DA	104%	87%	92%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-MS	3Q60375.D	5	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-1	3Q60373.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-1	3Q60374.D	5	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

(a) Result is from Run #2.
(b) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-DUP	6Q599.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11
FA95500-5	6Q598.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	Compound	FA95500-5 ug/l	Q	DUP ug/l	Q	RPD	Limits
307-24-4	Perfluorohexanoic acid	ND		ND		nc	30
375-85-9	Perfluoroheptanoic acid	ND		ND		nc	30
335-67-1	Perfluorooctanoic acid	ND		ND		nc	30
375-95-1	Perfluorononanoic acid	ND		ND		nc	30
335-76-2	Perfluorodecanoic acid	ND		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	ND		ND		nc	30
307-55-1	Perfluorododecanoic acid	ND		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	ND		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	ND		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	ND		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	ND		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	ND		ND		nc	30
2355-31-9	MeFOSAA	ND		ND		nc	30
2991-50-6	EtFOSAA	ND		ND		nc	30
13252-13-6	HFPO-DA (GenX)	ND		ND		nc	30
919005-14-4	ADONA	ND		ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	ND		ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	ND		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA95500-5	Limits
	13C4-PFBA	117%	118%	35-135%
	13C5-PFPeA	115%	115%	50-150%
	13C5-PFHxA	115%	117%	50-150%
	13C4-PFHpA	115%	117%	50-150%
	13C8-PFOA	111%	112%	50-150%
	13C9-PFNA	109%	109%	50-150%
	13C6-PFDA	120%	116%	50-150%
	13C7-PFUnDA	106%	100%	40-140%
	13C2-PFDoDA	104%	103%	40-140%
	13C2-PFTeDA	110%	107%	30-130%
	13C3-PFBS	116%	114%	50-150%
	13C3-PFHxS	110%	111%	50-150%
	13C8-PFOS	114%	105%	50-150%
	13C8-FOSA	103%	105%	30-130%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91243-DUP	6Q599.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11
FA95500-5	6Q598.D	1	05/26/22	NG	05/16/22	OP91243	S6Q11

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-7, FA95502-8

CAS No.	ID Standard Recoveries	DUP	FA95500-5	Limits
	d3-MeFOSAA	101%	96%	40-140%
	d5-EtFOSAA	89%	86%	40-140%
	13C2-4:2FTS	106%	102%	50-150%
	13C2-6:2FTS	101%	100%	50-150%
	13C2-8:2FTS	100%	99%	50-150%
	13C3-HFPO-DA	105%	109%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-DUP	3Q60378.D	10	05/28/22	MV	05/18/22	OP91274	S3Q824
FA95502-2	3Q60376.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-2 [a]	3Q60377.D	10	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

CAS No.	Compound	FA95502-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
307-24-4	Perfluorohexanoic acid	0.0637		0.0677		6	30
375-85-9	Perfluoroheptanoic acid	0.0058		ND		200*	30
335-67-1	Perfluorooctanoic acid	0.0030	J	ND		200*	30
375-95-1	Perfluorononanoic acid	0.0040	U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0040	U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0040	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0040	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0040	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.040	U [b]	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0037	J	ND		200*	30
355-46-4	Perfluorohexanesulfonic acid	0.0190		0.0209	J	10	30
1763-23-1	Perfluorooctanesulfonic acid	0.122		0.142		15	30
2355-31-9	MeFOSAA	0.0080	U	ND		nc	30
2991-50-6	EtFOSAA	0.0080	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.0080	U	ND		nc	30
919005-14-4	ADONA	0.0080	U	ND		nc	30
756426-58-1	9Cl-PF3ONS (F-53B Major)	0.0080	U	ND		nc	30
763051-92-9	11Cl-PF3OUdS (F-53B Minor)	0.0080	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA95502-2	FA95502-2	Limits
	13C5-PFHxA	95%	93%	110%	50-150%
	13C4-PFHpA	97%	95%	113%	50-150%
	13C8-PFOA	92%	82%	110%	50-150%
	13C9-PFNA	85%	86%	104%	50-150%
	13C6-PFDA	79%	79%	102%	50-150%
	13C7-PFUnDA	68%	66%	98%	40-140%
	13C2-PFDoDA	53%	50%	88%	40-140%
	13C2-PFTeDA	14%* [c]	7%* [c]	46%	30-130%
	13C3-PFBS	101%	97%	116%	50-150%
	13C3-PFHxS	96%	91%	108%	50-150%
	13C8-PFOS	80%	73%	103%	50-150%
	d3-MeFOSAA	69%	73%	103%	40-140%
	d5-EtFOSAA	62%	59%	99%	40-140%
	13C3-HFPO-DA	96%	86%	110%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91274-DUP	3Q60378.D	10	05/28/22	MV	05/18/22	OP91274	S3Q824
FA95502-2	3Q60376.D	1	05/27/22	MV	05/18/22	OP91274	S3Q824
FA95502-2 [a]	3Q60377.D	10	05/27/22	MV	05/18/22	OP91274	S3Q824

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA95502-1, FA95502-2, FA95502-3, FA95502-4, FA95502-5, FA95502-6

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M BY ID **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA95502-1	3Q60373.D	92	93	83	80	73	66	53	14* [a]
FA95502-1	3Q60374.D	96	98	94	89	84	80	71	35
FA95502-2	3Q60376.D	93	95	82	86	79	66	50	7* [a]
FA95502-2	3Q60377.D	110	113	110	104	102	98	88	46
FA95502-3	3Q60379.D	97	97	95	91	87	83	71	27* [a]
FA95502-3	4Q29416.D	105	103	107	103	106	96	86	46
FA95502-4	3Q60380.D	101	100	100	94	89	91	89	81
FA95502-5	3Q60383.D	100	98	97	93	88	92	88	75
FA95502-6	3Q60384.D	78	77	77	66	75	94	88	76
FA95502-6	3Q60385.D	94	96	97	91	90	95	90	82
FA95502-7	6Q610.D	109	109	104	101	109	105	103	110
FA95502-8	6Q611.D	112	113	107	110	116	115	111	116
OP91243-BS	6Q584.D	108	109	104	108	109	114	108	102
OP91243-DUP	6Q599.D	115	115	111	109	120	106	104	110
OP91243-MB	6Q585.D	114	113	109	110	121	111	106	104
OP91243-MS	6Q595.D	111	113	107	114	113	110	105	103
OP91274-DUP	3Q60378.D	95	97	92	85	79	68	53	14* [a]
OP91274-LB	3Q60372.D	101	103	103	102	100	101	94	87
OP91274-LBS	3Q60371.D	97	95	95	94	90	93	91	88
OP91274-MS	3Q60375.D	107	112	109	103	96	95	92	87

Isotope Dilution Standards	Recovery Limits
S1 = 13C5-PFHxA	50-150%
S2 = 13C4-PFHpA	50-150%
S3 = 13C8-PFOA	50-150%
S4 = 13C9-PFNA	50-150%
S5 = 13C6-PFDA	50-150%
S6 = 13C7-PFUnDA	40-140%
S7 = 13C2-PFDoDA	40-140%
S8 = 13C2-PFTeDA	30-130%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M BY ID **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14
FA95502-1	3Q60373.D	94	85	67	68	61	87
FA95502-1	3Q60374.D	99	94	84	83	80	92
FA95502-2	3Q60376.D	97	91	73	73	59	86
FA95502-2	3Q60377.D	116	108	103	103	99	110
FA95502-3	3Q60379.D	98	88	86	89	84	94
FA95502-3	4Q29416.D	107	103	97	104	101	97
FA95502-4	3Q60380.D	102	84	89	98	102	98
FA95502-5	3Q60383.D	79	81	89	102	102	98
FA95502-6	3Q60384.D	89	78	57	111	77	79
FA95502-6	3Q60385.D	100	102	94	103	108	93
FA95502-7	6Q610.D	108	101	103	97	94	97
FA95502-8	6Q611.D	113	109	111	100	102	108
OP91243-BS	6Q584.D	108	107	113	95	88	111
OP91243-DUP	6Q599.D	116	110	114	101	89	105
OP91243-MB	6Q585.D	111	109	113	105	96	106
OP91243-MS	6Q595.D	115	112	117	102	97	112
OP91274-DUP	3Q60378.D	101	96	80	69	62	96
OP91274-LB	3Q60372.D	102	102	100	99	97	97
OP91274-LBS	3Q60371.D	97	83	91	94	95	92
OP91274-MS	3Q60375.D	112	110	94	102	100	104

Isotope Dilution Standards	Recovery Limits
S9 = 13C3-PFBS	50-150%
S10 = 13C3-PFHxS	50-150%
S11 = 13C8-PFOS	50-150%
S12 = d3-MeFOSAA	40-140%
S13 = d5-EtFOSAA	40-140%
S14 = 13C3-HFPO-DA	50-150%

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICC824
Lab FileID: 3Q60351.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_052722_S3Q824.quantmethod.xml
Batch Name	D:\MassHunter\Data\052722_ID_S3Q824\QuantResults\s3q824.batch.bin
Last Calib Update	5/27/2022 7:56:58 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\052722_ID_S3Q824\3q60346.d	5/27/2022 2:19:32 PM	5/27/2022 7:56:58 PM
2	D:\MassHunter\Data\052722_ID_S3Q824\3q60347.d	5/27/2022 2:38:06 PM	5/27/2022 7:56:58 PM
3	D:\MassHunter\Data\052722_ID_S3Q824\3q60348.d	5/27/2022 2:56:40 PM	5/27/2022 7:56:58 PM
4	D:\MassHunter\Data\052722_ID_S3Q824\3q60349.d	5/27/2022 3:15:12 PM	5/27/2022 7:56:58 PM
5	D:\MassHunter\Data\052722_ID_S3Q824\3q60350.d	5/27/2022 3:33:45 PM	5/27/2022 7:56:58 PM
6	D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d	5/27/2022 3:53:16 PM	5/27/2022 7:56:58 PM
7	D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d	5/27/2022 4:15:10 PM	5/27/2022 7:56:58 PM
8	D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d	5/27/2022 4:33:43 PM	5/27/2022 7:56:58 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	5861	5896	5913	5998	6388	5978	6111	6209	6044	2.994
S 13C5-PFPeA	Linear	5596	5661	5686	5764	6100	5736	5876	5939	5795	2.872
S 13C3-PFBS	Linear	765.6	775.4	767.2	784.0	827.9	782.4	808.0	804.4	789.4	2.785
S 13C2-4:2FTS	Linear	544.6	543.0	539.1	559.9	600.7	560.2	567.8	567.7	560.4	3.529
S 13C5-PFHxA	Linear	7628	7676	7798	7890	8342	7838	7961	8008	7893	2.827
S 13C3-HFPO-DA	Linear	1087	1086	1105	1110	1201	1128	1122	1114	1119	3.241
S 13C4-PFHpA	Linear	9893	9833	9931	10000	10668	9974	10109	9991	10050	2.615
S 13C3-PFHxS	Linear	954.7	953.4	947.7	977.8	1030	953.7	966.2	968.3	969.0	2.751
S 13C8-FOSA	Linear	3864	3903	3949	3980	4154	3847	3733	3359	3848	6.031
S 13C8-PFOA	Linear	12479	12574	12523	12686	13693	12557	12603	11968	12635	3.801
S 13C2-6:2FTS	Linear	1300	1302	1328	1326	1400	1307	1282	1226	1309	3.737
S d3-MeFOSA	Linear	1223	1278	1267	1279	1342	1255	1208	1146	1250	4.651
S d3-MeFOSAA	Linear	3207	3271	3276	3297	3445	3269	3416	3345	3316	2.433
S d5-EtFOSAA	Linear	3077	3165	3054	3183	3364	3172	3158	3035	3151	3.299
S 13C8-PFOS	Linear	1534	1513	1584	1571	1648	1540	1577	1568	1567	2.616
S 13C9-PFNA	Linear	16016	15948	16003	16226	17133	16037	16219	15845	16178	2.512
S 13C6-PFDA	Linear	24332	24308	24664	25266	26246	24861	25070	24962	24964	2.477
S 13C2-8:2FTS	Linear	2273	2312	2339	2372	2452	2335	2337	2345	2346	2.206
S 13C7-PFUnDA	Linear	30056	30102	30234	30684	32743	30755	30955	31157	30836	2.819
S 13C2-PFDoDA	Linear	35629	35960	35901	36562	38681	36250	37047	37213	36655	2.698
S 13C2-PFTeDA	Linear	17302	17470	17519	17793	18948	17749	18116	18275	17896	2.992
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.4095	0.4209	0.4288	0.4047	0.3831	0.4066	0.3913	0.3889	0.4042	3.927
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	1.5024	1.5723	1.5763	1.5118	1.4659	1.5343	1.4817	1.4701	1.5144	2.859
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	0.8430	0.8849	0.8915	0.8549	0.8225	0.8676	0.8378	0.8343	0.8545	2.903

Generated at 7:58 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICC824
Lab FileID: 3Q60351.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.4876	1.5410	1.5481	1.5116	1.4541	1.5180	1.4680	1.4645	1.4991	2.391
I M8-PFOA						ISTD					
T PFOA	Linear	0.9293	0.9803	0.9954	0.9561	0.9030	0.9589	0.9289	0.9307	0.9478	3.215
I M9-PFNA						ISTD					
T PFNA	Linear	0.9339	0.9989	1.0138	0.9937	0.9397	1.0014	0.9517	0.9458	0.9724	3.343
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.0653	0.0730	0.0774	0.0699	0.0679	0.0703	0.0692	0.0693	0.0703	5.110
T PFDA	Linear	0.8376	0.8831	0.8915	0.8562	0.8301	0.8741	0.8354	0.8338	0.8552	2.878
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0389	0.0400	0.0420	0.0405	0.0378	0.0400	0.0381	0.0385	0.0395	3.574
T PFUnDA	Linear	0.9259	0.9745	0.9885	0.9619	0.9243	0.9519	0.9393	0.9384	0.9506	2.423
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.2260	0.2402	0.2415	0.2344	0.2287	0.2423	0.2315	0.2336	0.2348	2.585
T PFDoDA	Linear	0.8414	0.8789	0.9032	0.8711	0.8445	0.8704	0.8509	0.8498	0.8638	2.442
I M2-PFTeDA						ISTD					
T PFTrDA	Linear	1.5853	1.6571	1.6978	1.6490	1.5851	1.6571	1.5917	1.5831	1.6258	2.747
T PFTeDA	Linear	1.3565	1.3836	1.4009	1.3493	1.2989	1.3725	1.3045	1.3026	1.3461	2.956
I M8-FOSA						ISTD					
T FOSA	Linear	0.9541	0.9622	0.9654	0.9396	0.9047	0.9654	0.8989	0.9231	0.9392	2.901
I M3-PFBS						ISTD					
T PFBS	Linear	2.5672	2.6825	2.7568	2.5921	2.4959	2.6236	2.5255	2.5273	2.5964	3.403
T PFPeS	Linear	1.6030	1.8054	1.8292	1.7261	1.6624	1.7663	1.6855	1.6886	1.7208	4.424
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.1490	2.1548	2.2715	2.0803	2.0356	2.1615	2.1095	2.0797	2.1302	3.381
T ADONA	Linear	21.27	22.76	23.26	22.18	21.28	23.11	22.29	22.11	22.28	3.374
I M8-PFOS						ISTD					
T PFHpS	Linear	1.4276	1.4564	1.4243	1.3796	1.3233	1.3942	1.3278	1.2745	1.3760	4.531
T PFOS	Linear	1.6257	1.8150	1.7013	1.6755	1.5520	1.6385	1.5694	1.5611	1.6423	5.386
T PFNS	Linear	1.2852	1.2991	1.2676	1.2359	1.1759	1.2778	1.2058	1.1973	1.2431	3.694
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	8.7223	8.9142	9.1445	8.8059	8.3650	8.7734	8.5222	8.5551	8.7253	2.808
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	4.7887	4.9175	4.9150	4.9010	4.6739	4.9472	4.6645	4.6307	4.8048	2.745
I M2-8:2FTS						ISTD					

Generated at 7:58 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICC824
Lab FileID: 3Q60351.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 8:2FTS	Avg RF	4.6619	5.0059	4.9991	4.7096	4.6415	4.9065	4.6762	4.6014	4.7753	3.501
I M3-MeFOSAA				----------	----------	ISTD	----------	----------			
T MeFOSAA	Linear	0.8182	0.8219	0.8639	0.8338	0.7956	0.8557	0.7852	0.7947	0.8211	3.515
I M3-HFPO-DA				----------	----------	ISTD	----------	----------			
T HFPO-DA	Linear	2.8120	3.0162	2.9889	2.9092	2.6823	2.8358	2.8295	2.8381	2.8640	3.713
I M3-MeFOSA				----------	----------	ISTD	----------	----------			
T MeFOSA	Linear	1.0069	1.0585	1.0460	1.0452	0.9942	1.0345	0.9949	0.9887	1.0211	2.731
I M5-EtFOSAA				----------	----------	ISTD	----------	----------			
T EtFOSAA	Linear	0.7892	0.8161	0.8658	0.8178	0.7828	0.8172	0.7795	0.7756	0.8055	3.750

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 7:58 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICC824
Lab FileID: 3Q60351.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 6044.205969 * x	0.000000
T PFBA	Linear	y = 0.389887 * x	0.999889
S 13C5-PFPeA	Linear	y = 5794.815702 * x	0.000000
T PFPeA	Linear	y = 1.474381 * x	0.999900
S 13C3-PFBS	Linear	y = 789.358723 * x	0.000000
T PFBS	Linear	y = 2.529865 * x	0.999926
S 13C2-4:2FTS	Linear	y = 560.385955 * x	0.000000
S 13C5-PFHxA	Linear	y = 7892.837502 * x	0.000000
T PFHxA	Linear	y = 0.835947 * x	0.999920
T PFPeS	Linear	y = 1.690310 * x	0.999894
T HFPO-DA	Linear	y = 2.835366 * x	0.999960
S 13C3-HFPO-DA	Linear	y = 1119.101246 * x	0.000000
S 13C4-PFHpA	Linear	y = 10050.016422 * x	0.000000
T PFHpA	Linear	y = 1.466886 * x	0.999935
S 13C3-PFHxS	Linear	y = 969.017699 * x	0.000000
T PFHxS	Linear	y = 2.087638 * x	0.999881
T ADONA	Linear	y = 22.171743 * x	0.999879
S 13C8-FOSA	Linear	y = 3848.464364 * x	0.000000
T FOSA	Linear	y = 0.919675 * x	0.999714
T PFHpS	Linear	y = 1.289034 * x	0.999235
S 13C8-PFOA	Linear	y = 12635.430490 * x	0.000000
T PFOA	Linear	y = 0.931089 * x	0.999941
S 13C2-6:2FTS	Linear	y = 1308.925813 * x	0.000000
S d3-MeFOSA	Linear	y = 1249.681711 * x	0.000000
T MeFOSA	Linear	y = 0.991435 * x	0.999888
S d3-MeFOSAA	Linear	y = 3315.870506 * x	0.000000
T MeFOSAA	Linear	y = 0.794876 * x	0.999671
S d5-EtFOSAA	Linear	y = 3151.055918 * x	0.000000
T EtFOSAA	Linear	y = 0.777829 * x	0.999854
S 13C8-PFOS	Linear	y = 1566.955951 * x	0.000000
T PFOS	Linear	y = 1.565305 * x	0.999865
S 13C9-PFNA	Linear	y = 16178.279960 * x	0.000000
T PFNA	Linear	y = 0.948742 * x	0.999831
T 9Cl-PF3ONS	Linear	y = 0.069272 * x	0.999979
T PFNS	Linear	y = 1.201367 * x	0.999783
S 13C6-PFDA	Linear	y = 24963.672805 * x	0.000000
T PFDA	Linear	y = 0.835371 * x	0.999890
S 13C2-8:2FTS	Linear	y = 2345.598100 * x	0.000000
T PFDS	Linear	y = 0.038464 * x	0.999877
S 13C7-PFUnDA	Linear	y = 30835.907310 * x	0.000000
T PFUnDA	Linear	y = 0.938983 * x	0.999985
T 11Cl-PF3OUdS	Linear	y = 0.233410 * x	0.999907
T PFDoDA	Linear	y = 0.850621 * x	0.999969

Generated at 7:58 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICC824
Lab FileID: 3Q60351.D

Initial Calibration Report

S 13C2-PFDoDA	Linear	y = 36655.232910 * x	0.000000
T PFTrDA	Linear	y = 1.587226 * x	0.999892
S 13C2-PFTeDA	Linear	y = 17896.439468 * x	0.000000
T PFTeDA	Linear	y = 1.305169 * x	0.999864

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICV824
Lab FileID: 3Q60355.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S3Q824\3q60346.d
2:D:\MassHunter\Data\052722_ID_S3Q824\3q60347.d
3:D:\MassHunter\Data\052722_ID_S3Q824\3q60348.d
4:D:\MassHunter\Data\052722_ID_S3Q824\3q60349.d
5:D:\MassHunter\Data\052722_ID_S3Q824\3q60350.d
6:D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d
7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60355
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.100	-4.5	95.5
13C2-6:2FTS	20.000	19.124	-4.4	95.6
13C2-8:2FTS	20.000	19.049	-4.8	95.2
13C2-PFDoDA	20.000	18.928	-5.4	94.6
13C2-PFTeDA	20.000	18.964	-5.2	94.8
13C3-PFBS	20.000	18.836	-5.8	94.2
13C3-PFHxS	20.000	19.037	-4.8	95.2
13C4-PFBA	20.000	18.840	-5.8	94.2
13C4-PFHpA	20.000	18.969	-5.2	94.8
13C5-PFHxA	20.000	19.026	-4.9	95.1
13C5-PFPeA	20.000	18.936	-5.3	94.7
13C6-PFDA	20.000	19.027	-4.9	95.1
13C7-PFUnDA	20.000	18.893	-5.5	94.5
13C8-FOSA	20.000	18.957	-5.2	94.8
13C8-PFOA	20.000	18.934	-5.3	94.7
13C8-PFOS	20.000	18.779	-6.1	93.9
13C9-PFNA	20.000	18.859	-5.7	94.3
4:2FTS	20.000	19.814	-0.9	99.1
6:2FTS	20.000	19.760	-1.2	98.8
8:2FTS	20.000	20.916	4.6	104.6
d3-MeFOSAA	20.000	18.964	-5.2	94.8
EtFOSAA	20.000	22.324	11.6	111.6
FOSA	20.000	22.250	11.3	111.3
MeFOSAA	20.000	22.208	11.0	111.0
PFBA	20.000	22.031	10.2	110.2
PFBS	20.000	18.528	-7.4	92.6
PFDA	20.000	21.542	7.7	107.7
PFDoDA	20.000	23.172	15.9	115.9
PFDS	20.000	21.190	5.9	105.9
PFHpA	20.000	21.393	7.0	107.0
PFHpS	20.000	21.774	8.9	108.9
PFHxA	20.000	20.493	2.5	102.5
PFHxS	20.000	18.859	-5.7	94.3
PFNA	20.000	20.751	3.8	103.8
PFNS	20.000	21.239	6.2	106.2
PFOA	20.000	22.562	12.8	112.8
PFOS	20.000	22.101	10.5	110.5

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-ICV824
Lab FileID: 3Q60355.D

PFPeA	20.000	21.585	7.9	107.9
PFPeS	20.000	20.757	3.8	103.8
PFTeDA	20.000	21.266	6.3	106.3
PFTrDA	20.000	23.329	16.6	116.6
PFUnDA	20.000	22.295	11.5	111.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.707	3.5	103.5
13C3-HFPO-DA	20.000	18.326	-8.4	91.6
9Cl-PF3ONS	20.000	20.071	0.4	100.4
ADONA	20.000	20.310	1.6	101.6
HFPO-DA	20.000	22.181	10.9	110.9
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	19.680	-1.6	98.4
MeFOSA	20.000	0.000	# -100.0	0.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.793	-6.0	94.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60358.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S3Q824\3q60346.d
2:D:\MassHunter\Data\052722_ID_S3Q824\3q60347.d
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4:D:\MassHunter\Data\052722_ID_S3Q824\3q60349.d
5:D:\MassHunter\Data\052722_ID_S3Q824\3q60350.d
6:D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d
7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60358
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.305	-3.5	96.5
13C2-6:2FTS	20.000	19.700	-1.5	98.5
13C2-8:2FTS	20.000	19.428	-2.9	97.1
13C2-PFDoDA	20.000	19.362	-3.2	96.8
13C2-PFTeDA	20.000	19.371	-3.1	96.9
13C3-PFBS	20.000	19.130	-4.3	95.7
13C3-PFHxS	20.000	19.296	-3.5	96.5
13C4-PFBA	20.000	19.034	-4.8	95.2
13C4-PFHpA	20.000	19.382	-3.1	96.9
13C5-PFHxA	20.000	19.309	-3.5	96.5
13C5-PFPeA	20.000	19.106	-4.5	95.5
13C6-PFDA	20.000	18.975	-5.1	94.9
13C7-PFUnDA	20.000	19.019	-4.9	95.1
13C8-FOSA	20.000	20.137	0.7	100.7
13C8-PFOA	20.000	19.595	-2.0	98.0
13C8-PFOS	20.000	18.901	-5.5	94.5
13C9-PFNA	20.000	19.466	-2.7	97.3
4:2FTS	1.000	1.038	3.8	103.8
6:2FTS	1.000	1.042	4.2	104.2
8:2FTS	1.000	1.013	1.3	101.3
d3-MeFOSAA	20.000	19.672	-1.6	98.4
EtFOSAA	1.000	1.121	12.1	112.1
FOSA	1.000	1.105	10.5	110.5
MeFOSAA	1.000	1.078	7.8	107.8
PFBA	1.000	1.070	7.0	107.0
PFBS	1.000	1.058	5.8	105.8
PFDA	1.000	1.025	2.5	102.5
PFDoDA	1.000	1.046	4.6	104.6
PFDS	1.000	1.064	6.4	106.4
PFHpA	1.000	1.055	5.5	105.5
PFHpS	1.000	1.118	11.8	111.8
PFHxA	1.000	1.030	3.0	103.0
PFHxS	1.000	1.114	11.4	111.4
PFNA	1.000	1.083	8.3	108.3
PFNS	1.000	1.090	9.0	109.0
PFOA	1.000	1.041	4.1	104.1
PFOS	1.000	1.065	6.5	106.5

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60358.D

PFPeA	1.000	1.076	7.6	107.6
PFPeS	1.000	1.076	7.6	107.6
PFTeDA	1.000	1.096	9.6	109.6
PFTrDA	1.000	1.071	7.1	107.1
PFUnDA	1.000	1.042	4.2	104.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	1.030	3.0	103.0
13C3-HFPO-DA	20.000	18.339	-8.3	91.7
9Cl-PF3ONS	1.000	1.101	10.1	110.1
ADONA	1.000	1.010	1.0	101.0
HFPO-DA	1.000	1.033	3.3	103.3
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	20.250	1.3	101.3
MeFOSA	1.000	1.109	10.9	110.9
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.565	2.8	102.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60369.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
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7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60369
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.441	7.2	107.2
13C2-6:2FTS	20.000	20.976	4.9	104.9
13C2-8:2FTS	20.000	21.044	5.2	105.2
13C2-PFDoDA	20.000	21.138	5.7	105.7
13C2-PFTeDA	20.000	21.177	5.9	105.9
13C3-PFBS	20.000	21.002	5.0	105.0
13C3-PFHxS	20.000	21.148	5.7	105.7
13C4-PFBA	20.000	20.733	3.7	103.7
13C4-PFHpA	20.000	21.093	5.5	105.5
13C5-PFHxA	20.000	20.839	4.2	104.2
13C5-PFPeA	20.000	20.687	3.4	103.4
13C6-PFDA	20.000	20.984	4.9	104.9
13C7-PFUnDA	20.000	21.177	5.9	105.9
13C8-FOSA	20.000	21.241	6.2	106.2
13C8-PFOA	20.000	21.167	5.8	105.8
13C8-PFOS	20.000	20.929	4.6	104.6
13C9-PFNA	20.000	20.988	4.9	104.9
4:2FTS	20.000	20.141	0.7	100.7
6:2FTS	20.000	20.894	4.5	104.5
8:2FTS	20.000	20.430	2.1	102.1
d3-MeFOSAA	20.000	22.358	11.8	111.8
EtFOSAA	20.000	21.288	6.4	106.4
FOSA	20.000	21.169	5.8	105.8
MeFOSAA	20.000	20.908	4.5	104.5
PFBA	20.000	20.449	2.2	102.2
PFBS	20.000	20.801	4.0	104.0
PFDA	20.000	20.907	4.5	104.5
PFDoDA	20.000	20.507	2.5	102.5
PFDS	20.000	20.318	1.6	101.6
PFHpA	20.000	20.837	4.2	104.2
PFHpS	20.000	21.762	8.8	108.8
PFHxA	20.000	20.688	3.4	103.4
PFHxS	20.000	20.513	2.6	102.6
PFNA	20.000	20.900	4.5	104.5
PFNS	20.000	21.212	6.1	106.1
PFOA	20.000	20.473	2.4	102.4
PFOS	20.000	20.959	4.8	104.8

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60369.D

PFPeA	20.000	21.397	7.0	107.0
PFPeS	20.000	20.737	3.7	103.7
PFTeDA	20.000	20.950	4.8	104.8
PFTrDA	20.000	20.760	3.8	103.8
PFUnDA	20.000	20.373	1.9	101.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.568	2.8	102.8
13C3-HFPO-DA	20.000	20.172	0.9	100.9
9Cl-PF3ONS	20.000	20.549	2.7	102.7
ADONA	20.000	20.624	3.1	103.1
HFPO-DA	20.000	19.790	-1.0	99.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.044	5.2	105.2
MeFOSA	20.000	20.940	4.7	104.7
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.684	8.4	108.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60381.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
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6:D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d
7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60381
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.715	3.6	103.6
13C2-6:2FTS	20.000	20.793	4.0	104.0
13C2-8:2FTS	20.000	20.735	3.7	103.7
13C2-PFDoDA	20.000	21.062	5.3	105.3
13C2-PFTeDA	20.000	21.087	5.4	105.4
13C3-PFBS	20.000	21.039	5.2	105.2
13C3-PFHxS	20.000	21.047	5.2	105.2
13C4-PFBA	20.000	20.864	4.3	104.3
13C4-PFHpA	20.000	21.067	5.3	105.3
13C5-PFHxA	20.000	20.574	2.9	102.9
13C5-PFPeA	20.000	20.699	3.5	103.5
13C6-PFDA	20.000	21.076	5.4	105.4
13C7-PFUnDA	20.000	21.374	6.9	106.9
13C8-FOSA	20.000	21.659	8.3	108.3
13C8-PFOA	20.000	20.710	3.6	103.6
13C8-PFOS	20.000	20.963	4.8	104.8
13C9-PFNA	20.000	20.581	2.9	102.9
4:2FTS	20.000	20.796	4.0	104.0
6:2FTS	20.000	20.835	4.2	104.2
8:2FTS	20.000	20.643	3.2	103.2
d3-MeFOSAA	20.000	22.571	12.9	112.9
EtFOSAA	20.000	20.930	4.7	104.7
FOSA	20.000	20.600	3.0	103.0
MeFOSAA	20.000	21.093	5.5	105.5
PFBA	20.000	20.455	2.3	102.3
PFBS	20.000	20.713	3.6	103.6
PFDA	20.000	20.703	3.5	103.5
PFDoDA	20.000	20.462	2.3	102.3
PFDS	20.000	20.082	0.4	100.4
PFHpA	20.000	20.841	4.2	104.2
PFHpS	20.000	21.501	7.5	107.5
PFHxA	20.000	20.671	3.4	103.4
PFHxS	20.000	20.699	3.5	103.5
PFNA	20.000	21.364	6.8	106.8
PFNS	20.000	21.040	5.2	105.2
PFOA	20.000	20.679	3.4	103.4
PFOS	20.000	20.940	4.7	104.7

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60381.D

PFPeA	20.000	21.348	6.7	106.7
PFPeS	20.000	20.755	3.8	103.8
PFTeDA	20.000	20.782	3.9	103.9
PFTrDA	20.000	20.705	3.5	103.5
PFUnDA	20.000	20.245	1.2	101.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.684	3.4	103.4
13C3-HFPO-DA	20.000	20.226	1.1	101.1
9Cl-PF3ONS	20.000	20.827	4.1	104.1
ADONA	20.000	20.464	2.3	102.3
HFPO-DA	20.000	20.408	2.0	102.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.306	6.5	106.5
MeFOSA	20.000	21.409	7.0	107.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.320	11.6	111.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60393.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
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4:D:\MassHunter\Data\052722_ID_S3Q824\3q60349.d
5:D:\MassHunter\Data\052722_ID_S3Q824\3q60350.d
6:D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d
7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60393
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.500	2.5	102.5
13C2-6:2FTS	20.000	20.330	1.6	101.6
13C2-8:2FTS	20.000	19.808	-1.0	99.0
13C2-PFDoDA	20.000	20.950	4.8	104.8
13C2-PFTeDA	20.000	20.896	4.5	104.5
13C3-PFBS	20.000	20.727	3.6	103.6
13C3-PFHxS	20.000	20.689	3.4	103.4
13C4-PFBA	20.000	20.683	3.4	103.4
13C4-PFHpA	20.000	20.911	4.6	104.6
13C5-PFHxA	20.000	20.346	1.7	101.7
13C5-PFPeA	20.000	20.337	1.7	101.7
13C6-PFDA	20.000	20.762	3.8	103.8
13C7-PFUnDA	20.000	21.161	5.8	105.8
13C8-FOSA	20.000	21.369	6.8	106.8
13C8-PFOA	20.000	20.379	1.9	101.9
13C8-PFOS	20.000	20.722	3.6	103.6
13C9-PFNA	20.000	20.439	2.2	102.2
4:2FTS	20.000	20.552	2.8	102.8
6:2FTS	20.000	20.953	4.8	104.8
8:2FTS	20.000	20.870	4.4	104.4
d3-MeFOSAA	20.000	22.669	13.3	113.3
EtFOSAA	20.000	21.224	6.1	106.1
FOSA	20.000	21.193	6.0	106.0
MeFOSAA	20.000	21.175	5.9	105.9
PFBA	20.000	20.358	1.8	101.8
PFBS	20.000	20.948	4.7	104.7
PFDA	20.000	20.739	3.7	103.7
PFDoDA	20.000	20.449	2.2	102.2
PFDS	20.000	19.941	-0.3	99.7
PFHpA	20.000	20.930	4.6	104.6
PFHpS	20.000	21.719	8.6	108.6
PFHxA	20.000	20.355	1.8	101.8
PFHxS	20.000	20.606	3.0	103.0
PFNA	20.000	21.450	7.2	107.2
PFNS	20.000	20.945	4.7	104.7
PFOA	20.000	20.770	3.8	103.8
PFOS	20.000	20.833	4.2	104.2

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60393.D

PFPeA	20.000	21.652	8.3	108.3
PFPeS	20.000	20.962	4.8	104.8
PFTeDA	20.000	20.812	4.1	104.1
PFTrDA	20.000	20.726	3.6	103.6
PFUnDA	20.000	20.107	0.5	100.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.746	3.7	103.7
13C3-HFPO-DA	20.000	20.328	1.6	101.6
9Cl-PF3ONS	20.000	20.742	3.7	103.7
ADONA	20.000	20.493	2.5	102.5
HFPO-DA	20.000	20.576	2.9	102.9
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.663	8.3	108.3
MeFOSA	20.000	20.623	3.1	103.1
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.391	12.0	112.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q824-CC824
Lab FileID: 3Q60395.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S3Q824\s3q824.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S3Q824\3q60346.d
2:D:\MassHunter\Data\052722_ID_S3Q824\3q60347.d
3:D:\MassHunter\Data\052722_ID_S3Q824\3q60348.d
4:D:\MassHunter\Data\052722_ID_S3Q824\3q60349.d
5:D:\MassHunter\Data\052722_ID_S3Q824\3q60350.d
6:D:\MassHunter\Data\052722_ID_S3Q824\3q60351.d
7:D:\MassHunter\Data\052722_ID_S3Q824\3q60352.d
8:D:\MassHunter\Data\052722_ID_S3Q824\3q60353.d

Data File: 3q60395
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.187	0.9	100.9
13C2-6:2FTS	20.000	20.803	4.0	104.0
13C2-8:2FTS	20.000	19.587	-2.1	97.9
13C2-PFDoDA	20.000	20.783	3.9	103.9
13C2-PFTeDA	20.000	20.633	3.2	103.2
13C3-PFBS	20.000	20.279	1.4	101.4
13C3-PFHxS	20.000	20.387	1.9	101.9
13C4-PFBA	20.000	20.258	1.3	101.3
13C4-PFHpA	20.000	20.712	3.6	103.6
13C5-PFHxA	20.000	20.076	0.4	100.4
13C5-PFPeA	20.000	19.875	-0.6	99.4
13C6-PFDA	20.000	20.650	3.3	103.3
13C7-PFUnDA	20.000	21.313	6.6	106.6
13C8-FOSA	20.000	22.142	10.7	110.7
13C8-PFOA	20.000	20.569	2.8	102.8
13C8-PFOS	20.000	20.578	2.9	102.9
13C9-PFNA	20.000	20.306	1.5	101.5
4:2FTS	1.000	1.046	4.6	104.6
6:2FTS	1.000	1.051	5.1	105.1
8:2FTS	1.000	1.037	3.7	103.7
d3-MeFOSAA	20.000	22.348	11.7	111.7
EtFOSAA	1.000	1.075	7.5	107.5
FOSA	1.000	1.061	6.1	106.1
MeFOSAA	1.000	1.113	11.3	111.3
PFBA	1.000	1.046	4.6	104.6
PFBS	1.000	1.065	6.5	106.5
PFDA	1.000	1.046	4.6	104.6
PFDoDA	1.000	1.036	3.6	103.6
PFDS	1.000	1.018	1.8	101.8
PFHpA	1.000	1.046	4.6	104.6
PFHpS	1.000	1.100	10.0	110.0
PFHxA	1.000	1.036	3.6	103.6
PFHxS	1.000	1.062	6.2	106.2
PFNA	1.000	1.097	9.7	109.7
PFNS	1.000	1.025	2.5	102.5
PFOA	1.000	1.052	5.2	105.2
PFOS	1.000	1.068	6.8	106.8

Continuing Calibration Summary

Job Number: FA95502 **Sample:** S3Q824-CC824
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q60395.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	1.000	1.116	11.6	111.6
PFPeS	1.000	1.062	6.2	106.2
PFTeDA	1.000	1.058	5.8	105.8
PFTrDA	1.000	1.040	4.0	104.0
PFUnDA	1.000	1.005	0.5	100.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	1.039	3.9	103.9
13C3-HFPO-DA	20.000	19.733	-1.3	98.7
9Cl-PF3ONS	1.000	1.032	3.2	103.2
ADONA	1.000	1.026	2.6	102.6
HFPO-DA	1.000	1.043	4.3	104.3
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	22.335	11.7	111.7
MeFOSA	1.000	1.039	3.9	103.9
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.441	12.2	112.2

CC Criteria: +/- 30%

Initial Calibration Report

Method Path	D:\MassHunter\methods
Method File	ID_052722_S4Q419.quantmethod.xml
Batch Name	D:\MassHunter\Data\052722_ID_S4Q419\QuantResults\s4q419.batch.bin
Last Calib Update	5/27/2022 2:47:10 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d	5/27/2022 11:42:13 AM	5/27/2022 2:47:10 PM
2	D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d	5/27/2022 11:58:46 AM	5/27/2022 2:47:10 PM
3	D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d	5/27/2022 12:15:27 PM	5/27/2022 2:47:10 PM
4	D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d	5/27/2022 12:31:59 PM	5/27/2022 2:47:10 PM
5	D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d	5/27/2022 12:48:29 PM	5/27/2022 2:47:10 PM
6	D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d	5/27/2022 1:05:00 PM	5/27/2022 2:47:10 PM
7	D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d	5/27/2022 1:21:32 PM	5/27/2022 2:47:10 PM
8	D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d	5/27/2022 1:38:02 PM	5/27/2022 2:47:10 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	4554	4789	4827	4678	4839	4588	4617	4711	4700	2.346
S 13C5-PFPeA	Linear	7055	7431	7469	7288	7501	7205	7260	7462	7334	2.151
S 13C3-PFBS	Linear	530.5	556.8	562.9	548.1	562.6	544.5	539.0	559.4	550.5	2.165
S 13C2-4:2FTS	Linear	3045	3199	3225	3204	3365	3276	3634	4196	3393	10.797
S 13C5-PFHxA	Linear	8698	9193	9215	8993	9295	8788	8850	9021	9006	2.408
S 13C3-HFPO-DA	Linear	516.2	548.9	560.8	530.0	530.6	507.8	520.3	534.9	531.2	3.255
S 13C4-PFHpA	Linear	8346	8824	8800	8565	8801	8387	8336	8236	8537	2.841
S 13C3-PFHxS	Linear	534.7	556.1	562.4	549.9	562.7	541.1	532.4	527.4	545.9	2.543
S 13C2-6:2FTS	Linear	4907	5200	5269	5155	5341	5153	5343	5765	5267	4.645
S 13C8-PFOA	Linear	13646	14192	14223	13920	14253	13262	12745	12340	13573	5.354
S 13C8-PFOS	Linear	886.8	935.2	925.9	908.7	946.3	867.2	888.0	868.0	903.2	3.362
S 13C9-PFNA	Linear	14253	14746	14817	14478	14932	13872	13462	13306	14233	4.393
S 13C8-FOSA	Linear	3342	3535	3559	3358	3446	3189	3029	2769	3278	8.258
S 13C6-PFDA	Linear	10595	10963	11220	10835	10948	10251	9895	9208	10489	6.396
S 13C2-8:2FTS	Linear	4298	4508	4500	4364	4562	4313	4449	4688	4460	2.979
S d3-MeFOSA	Linear	810.8	840.8	850.6	821.6	836.7	763.9	687.5	626.0	779.7	10.518
S d3-MeFOSAA	Linear	3616	3834	3840	3696	3815	3523	3405	3317	3631	5.556
S d5-EtFOSAA	Linear	3138	3382	3398	3317	3360	3225	3220	3231	3284	2.849
S 13C7-PFUnDA	Linear	13929	14631	14863	14271	14826	13819	13513	13095	14118	4.544
S 13C2-PFDoDA	Linear	14842	15685	15821	15382	15896	15045	14940	14872	15310	2.888
S 13C2-PFTeDA	Linear	18361	19532	19611	19144	19875	18842	19210	19552	19266	2.528
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.3023	0.3074	0.3113	0.3226	0.3137	0.3231	0.3178	0.3161	0.3143	2.298
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.9097	0.8653	0.8773	0.8992	0.8875	0.9034	0.8942	0.8826	0.8899	1.645
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	1.0003	0.9437	0.9830	1.0293	1.0164	1.0419	1.0198	1.0190	1.0067	3.083

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICC419
Lab FileID: 4Q29177.D

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICC419
Lab FileID: 4Q29177.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.3552	1.3111	1.3389	1.4078	1.4061	1.3895	1.4114	1.3897	1.3762	2.685
I M8-PFOA						ISTD					
T PFOA	Linear	1.0808	1.0620	1.0636	1.1057	1.1150	1.1143	1.1169	1.1024	1.0951	2.098
I M9-PFNA						ISTD					
T PFNA	Linear	0.8457	0.8089	0.8208	0.8680	0.8569	0.8790	0.8710	0.8602	0.8513	2.912
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.6378	0.5995	0.6015	0.6395	0.6480	0.6948	0.6853	0.7377	0.6555	7.263
T PFDA	Linear	1.2274	1.2005	1.2120	1.2709	1.2769	1.3006	1.2793	1.2785	1.2558	2.940
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0848	0.0811	0.0824	0.0903	0.0832	0.0881	0.0892	0.0924	0.0864	4.760
T PFUnDA	Linear	0.9120	0.9128	0.9117	0.9465	0.9534	0.9513	0.9397	0.9599	0.9359	2.189
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.3880	0.3928	0.3979	0.4126	0.4016	0.4304	0.4117	0.4223	0.4072	3.604
T PFDoDA	Linear	0.9004	0.8761	0.8858	0.9418	0.9351	0.9388	0.9337	0.9300	0.9177	2.849
T PFTrDA	Linear	1.0087	0.9869	0.9952	1.0541	1.0486	1.0667	1.0700	1.0958	1.0407	3.774
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	0.9458	0.9275	0.9415	0.9816	0.9721	0.9863	0.9698	0.9575	0.9603	2.159
I M8-FOSA						ISTD					
T FOSA	Linear	0.9024	0.9336	0.8885	0.9613	0.9311	0.9629	0.9466	0.9258	0.9315	2.820
I M3-PFBS						ISTD					
T PFBS	Linear	3.2601	3.1718	3.2573	3.2760	3.2248	3.2382	3.2428	3.1439	3.2269	1.422
T PFPeS	Linear	2.0594	2.1588	2.1243	2.1440	2.0975	2.0834	2.0925	2.0705	2.1038	1.679
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.8938	2.5698	2.6708	2.6947	2.6755	2.6320	2.6205	2.5948	2.6690	3.755
T ADONA	Linear	24.65	24.60	24.94	26.08	25.67	25.13	25.99	26.51	25.45	2.818
I M8-PFOS						ISTD					
T PFHpS	Linear	1.6039	1.6462	1.5447	1.6589	1.5548	1.6135	1.5075	1.5008	1.5788	3.837
T PFOS	Linear	1.8746	1.8680	1.8549	1.9605	1.8335	1.9311	1.8401	1.8622	1.8781	2.377
T PFNS	Linear	1.4695	1.3935	1.4520	1.5651	1.5005	1.6042	1.5127	1.5201	1.5022	4.373
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.1687	1.1664	1.2234	1.2353	1.1963	1.1983	1.0798	0.9327	1.1501	8.690
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.1255	1.0128	1.0489	1.0849	1.0652	1.0665	0.9553	0.8488	1.0260	8.533
I M2-8:2FTS						ISTD					

Generated at 2:47 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICC419
Lab FileID: 4Q29177.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 8:2FTS	Avg RF	1.1011	1.1121	1.0631	1.0938	1.0614	1.0764	0.9633	0.8626	1.0417	8.231
I M3-MeFOSAA				----------	----------	ISTD	----------	----------			
T MeFOSAA	Linear	0.8989	0.8666	0.9193	0.9504	0.9067	0.9577	0.9297	0.9136	0.9179	3.168
I M3-HFPO-DA				----------	----------	ISTD	----------	----------			
T HFPO-DA	Linear	3.1457	3.0905	3.0486	3.2323	3.2241	3.2359	3.1752	3.1043	3.1571	2.265
I M3-MeFOSA				----------	----------	ISTD	----------	----------			
T MeFOSA	Linear	1.1165	1.1315	1.1604	1.1387	1.1280	1.1324	1.1547	1.0959	1.1323	1.804
I M5-EtFOSAA				----------	----------	ISTD	----------	----------			
T EtFOSAA	Linear	0.9358	0.9354	0.8931	0.9324	0.9403	0.9419	0.9132	0.9158	0.9260	1.841

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 2:47 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICC419
Lab FileID: 4Q29177.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.316646 * x	0.999971
S 13C4-PFBA	Linear	y = 4700.435037 * x	0.000000
S 13C5-PFPeA	Linear	y = 7333.806302 * x	0.000000
T PFPeA	Linear	y = 0.885512 * x	0.999939
S 13C3-PFBS	Linear	y = 550.468839 * x	0.000000
T PFBS	Linear	y = 3.166717 * x	0.999738
S 13C2-4:2FTS	Linear	y = 3392.899033 * x	0.000000
S 13C5-PFHxA	Linear	y = 9006.499714 * x	0.000000
T PFHxA	Linear	y = 1.019850 * x	0.999976
T PFPeS	Linear	y = 2.075491 * x	0.999968
T HFPO-DA	Linear	y = 3.123055 * x	0.999798
S 13C3-HFPO-DA	Linear	y = 531.172916 * x	0.000000
S 13C4-PFHpA	Linear	y = 8536.790710 * x	0.000000
T PFHpA	Linear	y = 1.393962 * x	0.999940
S 13C3-PFHxS	Linear	y = 545.861619 * x	0.000000
T PFHxS	Linear	y = 2.601708 * x	0.999956
T ADONA	Linear	y = 26.361794 * x	0.999794
S 13C2-6:2FTS	Linear	y = 5266.639743 * x	0.000000
T PFHpS	Linear	y = 1.506310 * x	0.999702
S 13C8-PFOA	Linear	y = 13572.636353 * x	0.000000
T PFOA	Linear	y = 1.105655 * x	0.999955
S 13C8-PFOS	Linear	y = 903.244563 * x	0.000000
T PFOS	Linear	y = 1.860027 * x	0.999886
S 13C9-PFNA	Linear	y = 14233.313910 * x	0.000000
T PFNA	Linear	y = 0.862842 * x	0.999945
S 13C8-FOSA	Linear	y = 3278.302409 * x	0.000000
T FOSA	Linear	y = 0.930998 * x	0.999822
T 9Cl-PF3ONS	Linear	y = 0.725368 * x	0.998538
T PFNS	Linear	y = 1.521202 * x	0.999845
S 13C6-PFDA	Linear	y = 10489.469058 * x	0.000000
T PFDA	Linear	y = 1.279297 * x	0.999985
S 13C2-8:2FTS	Linear	y = 4460.207979 * x	0.000000
S d3-MeFOSA	Linear	y = 779.737050 * x	0.000000
T MeFOSA	Linear	y = 1.108665 * x	0.999310
S d3-MeFOSAA	Linear	y = 3630.821957 * x	0.000000
T MeFOSAA	Linear	y = 0.918086 * x	0.999833
S d5-EtFOSAA	Linear	y = 3283.816950 * x	0.000000
T EtFOSAA	Linear	y = 0.916334 * x	0.999950
T PFDS	Linear	y = 0.091576 * x	0.999534
S 13C7-PFUnDA	Linear	y = 14118.325621 * x	0.000000
T PFUnDA	Linear	y = 0.955689 * x	0.999894
T 11Cl-PF3OUdS	Linear	y = 0.420292 * x	0.999801
S 13C2-PFDoDA	Linear	y = 15310.263156 * x	0.000000

Generated at 2:47 PM on 5/27/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICC419
Lab FileID: 4Q29177.D

Initial Calibration Report

T PFDoDA	Linear	y = 0.931042 * x	0.999991
T PFTrDA	Linear	y = 1.089468 * x	0.999824
S 13C2-PFTeDA	Linear	y = 19265.970174 * x	0.000000
T PFTeDA	Linear	y = 0.960861 * x	0.999924

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 2:47 PM on 5/27/2022

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICV419
Lab FileID: 4Q29181.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052722_ID_S4Q419\s4q419.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29181
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.560	-2.2	97.8
13C2-6:2FTS	20.000	19.589	-2.1	97.9
13C2-8:2FTS	20.000	19.461	-2.7	97.3
13C2-PFDoDA	20.000	19.589	-2.1	97.9
13C2-PFTeDA	20.000	19.734	-1.3	98.7
13C3-PFBS	20.000	19.881	-0.6	99.4
13C3-PFHxS	20.000	19.974	-0.1	99.9
13C4-PFBA	20.000	19.556	-2.2	97.8
13C4-PFHpA	20.000	19.549	-2.3	97.7
13C5-PFHxA	20.000	19.585	-2.1	97.9
13C5-PFPeA	20.000	19.593	-2.0	98.0
13C6-PFDA	20.000	19.992	0.0	100.0
13C7-PFUnDA	20.000	19.584	-2.1	97.9
13C8-FOSA	20.000	19.608	-2.0	98.0
13C8-PFOA	20.000	19.758	-1.2	98.8
13C8-PFOS	20.000	19.631	-1.8	98.2
13C9-PFNA	20.000	19.854	-0.7	99.3
4:2FTS	20.000	19.459	-2.7	97.3
6:2FTS	20.000	19.707	-1.5	98.5
8:2FTS	20.000	20.603	3.0	103.0
d3-MeFOSAA	20.000	20.531	2.7	102.7
EtFOSAA	20.000	20.664	3.3	103.3
FOSA	20.000	21.259	6.3	106.3
MeFOSAA	20.000	19.874	-0.6	99.4
PFBA	20.000	20.840	4.2	104.2
PFBS	20.000	17.744	-11.3	88.7
PFDA	20.000	19.843	-0.8	99.2
PFDoDA	20.000	22.012	10.1	110.1
PFDS	20.000	18.697	-6.5	93.5
PFHpA	20.000	20.134	0.7	100.7
PFHpS	20.000	20.806	4.0	104.0
PFHxA	20.000	19.629	-1.9	98.1
PFHxS	20.000	17.898	-10.5	89.5
PFNA	20.000	19.278	-3.6	96.4
PFNS	20.000	19.121	-4.4	95.6
PFOA	20.000	21.443	7.2	107.2
PFOS	20.000	20.822	4.1	104.1

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q419-ICV419
Lab FileID: 4Q29181.D

PFPeA	20.000	20.504	2.5	102.5
PFPeS	20.000	19.447	-2.8	97.2
PFTeDA	20.000	19.965	-0.2	99.8
PFTrDA	20.000	21.370	6.9	106.9
PFUnDA	20.000	21.299	6.5	106.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.451	-2.7	97.3
13C3-HFPO-DA	20.000	19.081	-4.6	95.4
9Cl-PF3ONS	20.000	17.968	-10.2	89.8
ADONA	20.000	18.287	-8.6	91.4
HFPO-DA	20.000	21.092	5.5	105.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.493	2.5	102.5
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.833	-0.8	99.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29381.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053122_ID_S4Q422\s4q422.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29381
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.282	-3.6	96.4
13C2-6:2FTS	20.000	19.894	-0.5	99.5
13C2-8:2FTS	20.000	19.970	-0.2	99.8
13C2-PFDoDA	20.000	21.259	6.3	106.3
13C2-PFTeDA	20.000	19.873	-0.6	99.4
13C3-PFBS	20.000	21.323	6.6	106.6
13C3-PFHxS	20.000	21.602	8.0	108.0
13C4-PFBA	20.000	21.054	5.3	105.3
13C4-PFHpA	20.000	21.406	7.0	107.0
13C5-PFHxA	20.000	21.375	6.9	106.9
13C5-PFPeA	20.000	21.478	7.4	107.4
13C6-PFDA	20.000	21.960	9.8	109.8
13C7-PFUnDA	20.000	21.771	8.9	108.9
13C8-FOSA	20.000	19.784	-1.1	98.9
13C8-PFOA	20.000	22.192	11.0	111.0
13C8-PFOS	20.000	20.841	4.2	104.2
13C9-PFNA	20.000	21.576	7.9	107.9
4:2FTS	1.000	1.054	5.4	105.4
6:2FTS	1.000	1.024	2.4	102.4
8:2FTS	1.000	1.055	5.5	105.5
d3-MeFOSAA	20.000	21.147	5.7	105.7
EtFOSAA	1.000	1.020	2.0	102.0
FOSA	1.000	1.009	0.9	100.9
MeFOSAA	1.000	1.018	1.8	101.8
PFBA	1.000	0.936	-6.4	93.6
PFBS	1.000	0.995	-0.5	99.5
PFDA	1.000	0.944	-5.6	94.4
PFDoDA	1.000	0.969	-3.1	96.9
PFDS	1.000	0.849	-15.1	84.9
PFHpA	1.000	0.952	-4.8	95.2
PFHpS	1.000	1.026	2.6	102.6
PFHxA	1.000	0.954	-4.6	95.4
PFHxS	1.000	0.997	-0.3	99.7
PFNA	1.000	0.959	-4.1	95.9
PFNS	1.000	1.024	2.4	102.4
PFOA	1.000	0.950	-5.0	95.0
PFOS	1.000	1.043	4.3	104.3

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29381.D

PFPeA	1.000	0.999	-0.1	99.9
PFPeS	1.000	0.935	-6.5	93.5
PFTeDA	1.000	0.994	-0.6	99.4
PFTrDA	1.000	0.920	-8.0	92.0
PFUnDA	1.000	0.942	-5.8	94.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.924	-7.6	92.4
13C3-HFPO-DA	20.000	21.945	9.7	109.7
9Cl-PF3ONS	1.000	0.841	-15.9	84.1
ADONA	1.000	0.919	-8.1	91.9
HFPO-DA	1.000	0.988	-1.2	98.8
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.426	-7.9	92.1
MeFOSA	1.000	1.007	0.7	100.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.347	6.7	106.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29393.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053122_ID_S4Q422\s4q422.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29393
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.745	3.7	103.7
13C2-6:2FTS	20.000	20.692	3.5	103.5
13C2-8:2FTS	20.000	20.326	1.6	101.6
13C2-PFDoDA	20.000	21.178	5.9	105.9
13C2-PFTeDA	20.000	20.374	1.9	101.9
13C3-PFBS	20.000	21.285	6.4	106.4
13C3-PFHxS	20.000	21.103	5.5	105.5
13C4-PFBA	20.000	21.456	7.3	107.3
13C4-PFHpA	20.000	21.162	5.8	105.8
13C5-PFHxA	20.000	21.224	6.1	106.1
13C5-PFPeA	20.000	21.252	6.3	106.3
13C6-PFDA	20.000	21.479	7.4	107.4
13C7-PFUnDA	20.000	21.406	7.0	107.0
13C8-FOSA	20.000	19.510	-2.4	97.6
13C8-PFOA	20.000	21.697	8.5	108.5
13C8-PFOS	20.000	20.883	4.4	104.4
13C9-PFNA	20.000	21.419	7.1	107.1
4:2FTS	20.000	20.529	2.6	102.6
6:2FTS	20.000	20.648	3.2	103.2
8:2FTS	20.000	20.777	3.9	103.9
d3-MeFOSAA	20.000	21.196	6.0	106.0
EtFOSAA	20.000	20.202	1.0	101.0
FOSA	20.000	20.784	3.9	103.9
MeFOSAA	20.000	20.864	4.3	104.3
PFBA	20.000	19.723	-1.4	98.6
PFBS	20.000	20.188	0.9	100.9
PFDA	20.000	19.165	-4.2	95.8
PFDoDA	20.000	20.325	1.6	101.6
PFDS	20.000	18.605	-7.0	93.0
PFHpA	20.000	20.357	1.8	101.8
PFHpS	20.000	21.092	5.5	105.5
PFHxA	20.000	20.401	2.0	102.0
PFHxS	20.000	20.463	2.3	102.3
PFNA	20.000	20.033	0.2	100.2
PFNS	20.000	19.858	-0.7	99.3
PFOA	20.000	19.878	-0.6	99.4
PFOS	20.000	20.119	0.6	100.6

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29393.D

PFPeA	20.000	20.818	4.1	104.1
PFPeS	20.000	19.970	-0.1	99.9
PFTeDA	20.000	20.673	3.4	103.4
PFTrDA	20.000	19.641	-1.8	98.2
PFUnDA	20.000	19.967	-0.2	99.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.045	0.2	100.2
13C3-HFPO-DA	20.000	21.497	7.5	107.5
9Cl-PF3ONS	20.000	18.609	-7.0	93.0
ADONA	20.000	19.440	-2.8	97.2
HFPO-DA	20.000	21.065	5.3	105.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	17.225	-13.9	86.1
MeFOSA	20.000	21.001	5.0	105.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.832	9.2	109.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29405.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053122_ID_S4Q422\s4q422.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29405
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.609	3.0	103.0
13C2-6:2FTS	20.000	20.633	3.2	103.2
13C2-8:2FTS	20.000	20.202	1.0	101.0
13C2-PFDoDA	20.000	21.181	5.9	105.9
13C2-PFTeDA	20.000	20.660	3.3	103.3
13C3-PFBS	20.000	21.030	5.2	105.2
13C3-PFHxS	20.000	21.028	5.1	105.1
13C4-PFBA	20.000	20.971	4.9	104.9
13C4-PFHpA	20.000	20.962	4.8	104.8
13C5-PFHxA	20.000	21.013	5.1	105.1
13C5-PFPeA	20.000	20.875	4.4	104.4
13C6-PFDA	20.000	21.351	6.8	106.8
13C7-PFUnDA	20.000	21.283	6.4	106.4
13C8-FOSA	20.000	20.203	1.0	101.0
13C8-PFOA	20.000	21.464	7.3	107.3
13C8-PFOS	20.000	20.687	3.4	103.4
13C9-PFNA	20.000	21.228	6.1	106.1
4:2FTS	20.000	20.544	2.7	102.7
6:2FTS	20.000	20.681	3.4	103.4
8:2FTS	20.000	20.421	2.1	102.1
d3-MeFOSAA	20.000	21.327	6.6	106.6
EtFOSAA	20.000	20.572	2.9	102.9
FOSA	20.000	20.919	4.6	104.6
MeFOSAA	20.000	20.934	4.7	104.7
PFBA	20.000	19.916	-0.4	99.6
PFBS	20.000	20.194	1.0	101.0
PFDA	20.000	19.464	-2.7	97.3
PFDoDA	20.000	20.425	2.1	102.1
PFDS	20.000	19.013	-4.9	95.1
PFHpA	20.000	20.437	2.2	102.2
PFHpS	20.000	21.172	5.9	105.9
PFHxA	20.000	20.063	0.3	100.3
PFHxS	20.000	20.144	0.7	100.7
PFNA	20.000	20.134	0.7	100.7
PFNS	20.000	19.979	-0.1	99.9
PFOA	20.000	19.864	-0.7	99.3
PFOS	20.000	20.378	1.9	101.9

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29405.D

PFPeA	20.000	20.593	3.0	103.0
PFPeS	20.000	20.338	1.7	101.7
PFTeDA	20.000	20.399	2.0	102.0
PFTrDA	20.000	19.578	-2.1	97.9
PFUnDA	20.000	20.025	0.1	100.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.025	0.1	100.1
13C3-HFPO-DA	20.000	20.184	0.9	100.9
9Cl-PF3ONS	20.000	18.218	-8.9	91.1
ADONA	20.000	19.291	-3.5	96.5
HFPO-DA	20.000	21.099	5.5	105.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.367	-8.2	91.8
MeFOSA	20.000	21.057	5.3	105.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.252	11.3	111.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29417.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053122_ID_S4Q422\s4q422.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29417
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.855	4.3	104.3
13C2-6:2FTS	20.000	21.247	6.2	106.2
13C2-8:2FTS	20.000	20.699	3.5	103.5
13C2-PFDoDA	20.000	21.565	7.8	107.8
13C2-PFTeDA	20.000	21.301	6.5	106.5
13C3-PFBS	20.000	21.074	5.4	105.4
13C3-PFHxS	20.000	21.527	7.6	107.6
13C4-PFBA	20.000	21.205	6.0	106.0
13C4-PFHpA	20.000	21.291	6.5	106.5
13C5-PFHxA	20.000	21.240	6.2	106.2
13C5-PFPeA	20.000	21.319	6.6	106.6
13C6-PFDA	20.000	21.865	9.3	109.3
13C7-PFUnDA	20.000	21.855	9.3	109.3
13C8-FOSA	20.000	21.154	5.8	105.8
13C8-PFOA	20.000	21.877	9.4	109.4
13C8-PFOS	20.000	21.962	9.8	109.8
13C9-PFNA	20.000	22.081	10.4	110.4
4:2FTS	20.000	20.659	3.3	103.3
6:2FTS	20.000	20.582	2.9	102.9
8:2FTS	20.000	20.772	3.9	103.9
d3-MeFOSAA	20.000	22.070	10.3	110.3
EtFOSAA	20.000	20.224	1.1	101.1
FOSA	20.000	20.548	2.7	102.7
MeFOSAA	20.000	20.982	4.9	104.9
PFBA	20.000	19.916	-0.4	99.6
PFBS	20.000	20.417	2.1	102.1
PFDA	20.000	19.721	-1.4	98.6
PFDoDA	20.000	20.311	1.6	101.6
PFDS	20.000	18.569	-7.2	92.8
PFHpA	20.000	20.342	1.7	101.7
PFHpS	20.000	20.179	0.9	100.9
PFHxA	20.000	20.300	1.5	101.5
PFHxS	20.000	20.004	0.0	100.0
PFNA	20.000	19.885	-0.6	99.4
PFNS	20.000	19.214	-3.9	96.1
PFOA	20.000	19.840	-0.8	99.2
PFOS	20.000	19.312	-3.4	96.6

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29417.D

PFPeA	20.000	20.520	2.6	102.6
PFPeS	20.000	20.420	2.1	102.1
PFTeDA	20.000	20.402	2.0	102.0
PFTrDA	20.000	19.221	-3.9	96.1
PFUnDA	20.000	19.953	-0.2	99.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.820	-0.9	99.1
13C3-HFPO-DA	20.000	19.545	-2.3	97.7
9Cl-PF3ONS	20.000	18.317	-8.4	91.6
ADONA	20.000	19.343	-3.3	96.7
HFPO-DA	20.000	21.147	5.7	105.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.177	0.9	100.9
MeFOSA	20.000	20.190	0.9	100.9
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.184	15.9	115.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29419.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\053122_ID_S4Q422\s4q422.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\052722_ID_S4Q419\4Q29172.d
2:D:\MassHunter\Data\052722_ID_S4Q419\4Q29173.d
3:D:\MassHunter\Data\052722_ID_S4Q419\4Q29174.d
4:D:\MassHunter\Data\052722_ID_S4Q419\4Q29175.d
5:D:\MassHunter\Data\052722_ID_S4Q419\4Q29176.d
6:D:\MassHunter\Data\052722_ID_S4Q419\4Q29177.d
7:D:\MassHunter\Data\052722_ID_S4Q419\4Q29178.d
8:D:\MassHunter\Data\052722_ID_S4Q419\4Q29179.d

Data File: 4Q29419
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.817	-0.9	99.1
13C2-6:2FTS	20.000	20.612	3.1	103.1
13C2-8:2FTS	20.000	20.693	3.5	103.5
13C2-PFDoDA	20.000	21.967	9.8	109.8
13C2-PFTeDA	20.000	21.195	6.0	106.0
13C3-PFBS	20.000	21.194	6.0	106.0
13C3-PFHxS	20.000	21.811	9.1	109.1
13C4-PFBA	20.000	21.512	7.6	107.6
13C4-PFHpA	20.000	21.843	9.2	109.2
13C5-PFHxA	20.000	21.534	7.7	107.7
13C5-PFPeA	20.000	21.553	7.8	107.8
13C6-PFDA	20.000	22.555	12.8	112.8
13C7-PFUnDA	20.000	22.267	11.3	111.3
13C8-FOSA	20.000	22.106	10.5	110.5
13C8-PFOA	20.000	22.599	13.0	113.0
13C8-PFOS	20.000	22.060	10.3	110.3
13C9-PFNA	20.000	22.442	12.2	112.2
4:2FTS	1.000	1.053	5.3	105.3
6:2FTS	1.000	1.046	4.6	104.6
8:2FTS	1.000	1.040	4.0	104.0
d3-MeFOSAA	20.000	23.595	18.0	118.0
EtFOSAA	1.000	0.953	-4.7	95.3
FOSA	1.000	0.990	-1.0	99.0
MeFOSAA	1.000	0.931	-6.9	93.1
PFBA	1.000	0.951	-4.9	95.1
PFBS	1.000	0.991	-0.9	99.1
PFDA	1.000	0.933	-6.7	93.3
PFDoDA	1.000	0.960	-4.0	96.0
PFDS	1.000	0.910	-9.0	91.0
PFHpA	1.000	0.943	-5.7	94.3
PFHpS	1.000	1.035	3.5	103.5
PFHxA	1.000	0.948	-5.2	94.8
PFHxS	1.000	0.971	-2.9	97.1
PFNA	1.000	0.898	-10.2	89.8
PFNS	1.000	1.023	2.3	102.3
PFOA	1.000	0.946	-5.4	94.6
PFOS	1.000	0.949	-5.1	94.9

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S4Q422-CC419
Lab FileID: 4Q29419.D

PFPeA	1.000	0.982	-1.8	98.2
PFPeS	1.000	0.992	-0.8	99.2
PFTeDA	1.000	0.977	-2.3	97.7
PFTrDA	1.000	0.913	-8.7	91.3
PFUnDA	1.000	0.942	-5.8	94.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.919	-8.1	91.9
13C3-HFPO-DA	20.000	20.224	1.1	101.1
9Cl-PF3ONS	1.000	0.860	-14.0	86.0
ADONA	1.000	0.910	-9.0	91.0
HFPO-DA	1.000	1.021	2.1	102.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.048	10.2	110.2
MeFOSA	1.000	1.063	6.3	106.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.018	15.1	115.1

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICC6
Lab FileID: 6Q248.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_051922_S6Q6.quantmethod.xml
Batch Name	D:\MassHunter\Data\051922_ID_S6Q6\QuantResults\s6q6.batch.bin
Last Calib Update	5/19/2022 2:52:32 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d	5/19/2022 10:52:50 AM	5/19/2022 2:52:32 PM
2	D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d	5/19/2022 11:07:53 AM	5/19/2022 2:52:32 PM
3	D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d	5/19/2022 11:22:56 AM	5/19/2022 2:52:32 PM
4	D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d	5/19/2022 11:37:59 AM	5/19/2022 2:52:32 PM
5	D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d	5/19/2022 11:53:02 AM	5/19/2022 2:52:32 PM
6	D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d	5/19/2022 12:08:05 PM	5/19/2022 2:52:32 PM
7	D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d	5/19/2022 12:23:08 PM	5/19/2022 2:52:32 PM
8	D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d	5/19/2022 12:38:11 PM	5/19/2022 2:52:32 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	7361	8164	8242	8277	8216	8403	8325	8268	8157	4.039
S 13C5-PFPeA	Linear	12694	13887	14150	14199	13970	14293	14157	13872	13903	3.679
S 13C3-PFBS	Linear	1622	1787	1804	1782	1760	1808	1800	1748	1764	3.471
S 13C2-4:2FTS	Linear	12416	13470	13875	14410	14347	15149	16163	17805	14704	11.382
S 13C5-PFHxA	Linear	19172	21095	21036	21246	21132	21557	21100	20788	20891	3.480
S 13C3-HFPO-DA	Linear	548.0	573.6	582.2	597.5	589.3	622.2	609.8	631.2	594.2	4.559
S 13C4-PFHpA	Linear	20641	22886	22840	23184	22545	23123	23142	22532	22612	3.697
S 13C3-PFHxS	Linear	1498	1652	1704	1670	1656	1707	1639	1615	1643	4.018
S 13C2-6:2FTS	Linear	14814	16408	16845	16609	16822	16821	18003	19908	17029	8.546
S 13C8-PFOA	Linear	34397	37600	38420	38545	37325	38253	37353	36235	37266	3.707
S 13C8-PFOS	Linear	2076	2175	2148	2150	2131	2283	2193	2088	2156	3.025
S 13C9-PFNA	Linear	39845	44200	43899	45196	43175	44773	43947	41107	43268	4.289
S 13C8-FOSA	Linear	9768	11169	10993	11056	10512	10984	10334	9393	10526	6.239
S 13C6-PFDA	Linear	34388	37624	35954	38354	34938	39229	38296	34601	36673	5.249
S 13C2-8:2FTS	Linear	10540	11261	11838	12276	11623	12627	13494	14748	12301	10.808
S d3-MeFOSA	Linear	2277	2578	2674	2706	2522	2609	2750	2511	2578	5.762
S d3-MeFOSAA	Linear	8763	9302	9089	9769	9342	9609	10245	9080	9400	4.942
S d5-EtFOSAA	Linear	7501	8358	8372	8437	8262	8702	8506	7683	8228	5.052
S 13C7-PFUnDA	Linear	39257	42672	44238	45592	43064	43806	43167	44490	43286	4.333
S 13C2-PFDoDA	Linear	42449	47203	45931	48054	46650	46653	47402	46822	46395	3.690
S 13C2-PFTeDA	Linear	49077	54851	55586	55565	54271	55705	51810	52434	53662	4.412
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.4121	0.4271	0.4360	0.4440	0.4195	0.4661	0.4646	0.4503	0.4400	4.535
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.8170	0.8734	0.8411	0.8512	0.8250	0.8888	0.8871	0.8706	0.8568	3.206
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	0.9796	1.0384	1.0653	1.0696	0.9855	1.0737	1.0937	1.0827	1.0486	4.171

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICC6
Lab FileID: 6Q248.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.2804	1.3017	1.3326	1.3138	1.2550	1.3844	1.3302	1.3249	1.3154	2.935
I M8-PFOA						ISTD					
T PFOA	Linear	0.9144	0.9875	0.9780	0.9929	0.9561	1.0305	1.0203	1.0095	0.9862	3.802
I M9-PFNA						ISTD					
T PFNA	Linear	0.7931	0.7977	0.8142	0.8135	0.7856	0.8382	0.8465	0.8540	0.8179	3.147
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.5144	0.5410	0.5459	0.5680	0.5719	0.5733	0.5431	0.6073	0.5581	5.033
T PFDA	Linear	1.1027	1.1508	1.2254	1.1613	1.2657	1.2216	1.2628	1.2770	1.2084	5.245
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0699	0.0786	0.0724	0.0699	0.0713	0.0821	0.0779	0.0730	0.0744	6.113
T PFUnDA	Linear	0.8563	0.8685	0.8714	0.9020	0.8792	1.0066	0.9852	0.9197	0.9111	6.179
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.3069	0.3057	0.3321	0.3323	0.3077	0.3516	0.3247	0.3345	0.3244	5.075
T PFDoDA	Linear	0.9012	0.8974	0.9534	0.8923	0.8952	1.0214	0.9537	0.9094	0.9280	4.886
T PFTrDA	Linear	1.0128	1.0103	1.0127	0.9961	0.9590	1.0614	1.0086	0.9960	1.0071	2.804
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	1.0927	1.0704	1.0477	1.0565	0.9766	1.1112	1.1090	1.0977	1.0702	4.165
I M8-FOSA						ISTD					
T FOSA	Linear	0.8876	0.9127	0.9030	0.8855	0.9004	0.9690	0.9568	0.9884	0.9254	4.316
I M3-PFBS						ISTD					
T PFBS	Avg RF	2.9230	3.0293	3.0204	3.1865	3.0006	3.2766	3.2176	3.2214	3.1094	4.195
T PFPeS	Linear	2.3657	2.5414	2.5060	2.5113	2.4482	2.6271	2.5734	2.6076	2.5226	3.406
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.5340	2.5016	2.5265	2.5631	2.4137	2.6274	2.7083	2.6535	2.5660	3.656
T ADONA	Linear	25.99	27.70	26.94	28.46	26.37	28.54	29.61	28.89	27.81	4.612
I M8-PFOS						ISTD					
T PFHpS	Linear	1.6338	1.7729	1.8065	1.8494	1.7304	1.7886	1.7851	1.8404	1.7759	3.867
T PFOS	Linear	1.6383	1.8248	1.8463	1.8092	1.7325	1.8211	1.8151	1.9018	1.7986	4.437
T PFNS	Linear	1.8740	1.8742	1.9353	2.1015	1.8940	1.9274	2.0082	1.9632	1.9472	3.970
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.1067	1.1616	1.1436	1.1327	1.0740	1.1303	1.0462	0.9012	1.0870	7.733
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.0419	1.0646	1.0117	1.0777	0.9684	1.1086	0.9780	0.8610	1.0140	7.742
I M2-8:2FTS						ISTD					

Generated at 2:53 PM on 5/19/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICC6
Lab FileID: 6Q248.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
T 8:2FTS	Avg RF	1.0276	1.0866	1.0663	1.0164	1.0156	0.9983	0.9271	0.7966	0.9918	9.282
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.7827	0.9131	0.9198	0.8997	0.8907	0.9425	0.8516	0.8994	0.8875	5.601
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	1.0860	1.1277	1.1273	0.9770	1.0228	1.0710	1.0261	0.9095	1.0434	7.226
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	1.1372	0.9510	0.9539	1.0403	1.0819	1.1255	1.0211	1.0363	1.0434	6.692
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.8819	0.9384	0.8717	0.9411	0.8971	0.9344	0.9843	0.9570	0.9257	4.190

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 2:53 PM on 5/19/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICC6
Lab FileID: 6Q248.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 8156.890575 * x	0.000000
T PFBA	Linear	y = 0.453278 * x	0.999665
S 13C5-PFPeA	Linear	y = 13902.915798 * x	0.000000
T PFPeA	Linear	y = 0.873917 * x	0.999864
S 13C3-PFBS	Linear	y = 1763.809548 * x	0.000000
S 13C2-4:2FTS	Linear	y = 14704.433655 * x	0.000000
S 13C5-PFHxA	Linear	y = 20890.690481 * x	0.000000
T PFHxA	Linear	y = 1.083761 * x	0.999874
T PFPeS	Linear	y = 2.600205 * x	0.999911
T HFPO-DA	Linear	y = 0.937881 * x	0.995142
S 13C3-HFPO-DA	Linear	y = 594.222643 * x	0.000000
S 13C4-PFHpA	Linear	y = 22611.614224 * x	0.000000
T PFHpA	Linear	y = 1.327193 * x	0.999874
S 13C3-PFHxS	Linear	y = 1642.739964 * x	0.000000
T PFHxS	Linear	y = 2.661157 * x	0.999786
T ADONA	Linear	y = 28.994636 * x	0.999743
S 13C2-6:2FTS	Linear	y = 17028.706433 * x	0.000000
S 13C8-PFOA	Linear	y = 37266.061998 * x	0.000000
T PFOA	Linear	y = 1.011796 * x	0.999921
T PFHpS	Linear	y = 1.827380 * x	0.999732
T PFOS	Linear	y = 1.881175 * x	0.999385
S 13C8-PFOS	Linear	y = 2155.516767 * x	0.000000
S 13C9-PFNA	Linear	y = 43267.705106 * x	0.000000
T PFNA	Linear	y = 0.851473 * x	0.999892
T 9Cl-PF3ONS	Linear	y = 0.593588 * x	0.997252
S 13C8-FOSA	Linear	y = 10526.067246 * x	0.000000
T FOSA	Linear	y = 0.980838 * x	0.999644
T PFNS	Linear	y = 1.970419 * x	0.999824
S 13C6-PFDA	Linear	y = 36672.806226 * x	0.000000
T PFDA	Linear	y = 1.272231 * x	0.999870
S 13C2-8:2FTS	Linear	y = 12300.964146 * x	0.000000
S d3-MeFOSA	Linear	y = 2578.448700 * x	0.000000
T MeFOSA	Linear	y = 1.036445 * x	0.999563
S d3-MeFOSAA	Linear	y = 9399.905167 * x	0.000000
T MeFOSAA	Linear	y = 0.891468 * x	0.999175
S d5-EtFOSAA	Linear	y = 8227.526271 * x	0.000000
T PFDS	Linear	y = 0.074195 * x	0.998418
T EtFOSAA	Linear	y = 0.960991 * x	0.999717
S 13C7-PFUnDA	Linear	y = 43285.575416 * x	0.000000
T PFUnDA	Linear	y = 0.934590 * x	0.998518
T 11Cl-PF3OUdS	Linear	y = 0.332914 * x	0.999582
S 13C2-PFDoDA	Linear	y = 46395.484501 * x	0.000000
T PFDoDA	Linear	y = 0.921252 * x	0.998870

Generated at 2:53 PM on 5/19/2022

Initial Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICC6
Lab FileID: 6Q248.D

Initial Calibration Report

T PFTrDA	Linear	y = 1.000156 * x	0.999763
S 13C2-PFTeDA	Linear	y = 53662.315150 * x	0.000000
T PFTeDA	Linear	y = 1.099215 * x	0.999820

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 2:53 PM on 5/19/2022

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICV6
Lab FileID: 6Q252.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\051922_ID_S6Q6\s6q6.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q252
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.120	0.6	100.6
13C2-6:2FTS	20.000	20.184	0.9	100.9
13C2-8:2FTS	20.000	20.108	0.5	100.5
13C2-PFDoDA	20.000	21.159	5.8	105.8
13C2-PFTeDA	20.000	20.534	2.7	102.7
13C3-PFBS	20.000	20.532	2.7	102.7
13C3-PFHxS	20.000	20.601	3.0	103.0
13C4-PFBA	20.000	20.876	4.4	104.4
13C4-PFHpA	20.000	20.628	3.1	103.1
13C5-PFHxA	20.000	20.594	3.0	103.0
13C5-PFPeA	20.000	20.888	4.4	104.4
13C6-PFDA	20.000	20.131	0.7	100.7
13C7-PFUnDA	20.000	20.848	4.2	104.2
13C8-FOSA	20.000	20.736	3.7	103.7
13C8-PFOA	20.000	20.110	0.6	100.6
13C8-PFOS	20.000	20.494	2.5	102.5
13C9-PFNA	20.000	20.613	3.1	103.1
4:2FTS	20.000	16.557	-17.2	82.8
6:2FTS	20.000	16.215	-18.9	81.1
8:2FTS	20.000	17.181	-14.1	85.9
d3-MeFOSAA	20.000	20.540	2.7	102.7
EtFOSAA	20.000	15.148	-24.3	75.7
FOSA	20.000	16.720	-16.4	83.6
MeFOSAA	20.000	17.628	-11.9	88.1
PFBA	20.000	17.248	-13.8	86.2
PFBS	20.000	14.644	-26.8	73.2
PFDA	20.000	16.500	-17.5	82.5
PFDoDA	20.000	17.938	-10.3	89.7
PFDS	20.000	15.764	-21.2	78.8
PFHpA	20.000	16.882	-15.6	84.4
PFHpS	20.000	16.081	-19.6	80.4
PFHxA	20.000	15.923	-20.4	79.6
PFHxS	20.000	14.384	-28.1	71.9
PFNA	20.000	15.524	-22.4	77.6
PFNS	20.000	16.539	-17.3	82.7
PFOA	20.000	18.194	-9.0	91.0
PFOS	20.000	16.516	-17.4	82.6

Initial Calibration Verification

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q6-ICV6
Lab FileID: 6Q252.D

PFPeA	20.000	16.668	-16.7	83.3
PFPeS	20.000	16.065	-19.7	80.3
PFTeDA	20.000	15.900	-20.5	79.5
PFTrDA	20.000	17.742	-11.3	88.7
PFUnDA	20.000	17.561	-12.2	87.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	15.266	-23.7	76.3
13C3-HFPO-DA	20.000	21.504	7.5	107.5
9Cl-PF3ONS	20.000	15.472	-22.6	77.4
ADONA	20.000	15.816	-20.9	79.1
HFPO-DA	20.000	19.091	-4.5	95.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.401	12.0	112.0
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.091	10.5	110.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q577.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052622_ID_S6Q11\s6q11.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q577
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.767	3.8	103.8
13C2-6:2FTS	20.000	19.323	-3.4	96.6
13C2-8:2FTS	20.000	20.008	0.0	100.0
13C2-PFDoDA	20.000	21.022	5.1	105.1
13C2-PFTeDA	20.000	21.924	9.6	109.6
13C3-PFBS	20.000	21.352	6.8	106.8
13C3-PFHxS	20.000	20.796	4.0	104.0
13C4-PFBA	20.000	22.162	10.8	110.8
13C4-PFHpA	20.000	21.383	6.9	106.9
13C5-PFHxA	20.000	21.189	5.9	105.9
13C5-PFPeA	20.000	21.592	8.0	108.0
13C6-PFDA	20.000	22.593	13.0	113.0
13C7-PFUnDA	20.000	21.433	7.2	107.2
13C8-FOSA	20.000	22.172	10.9	110.9
13C8-PFOA	20.000	20.844	4.2	104.2
13C8-PFOS	20.000	21.847	9.2	109.2
13C9-PFNA	20.000	21.090	5.4	105.4
4:2FTS	20.000	21.347	6.7	106.7
6:2FTS	20.000	21.218	6.1	106.1
8:2FTS	20.000	22.360	11.8	111.8
d3-MeFOSAA	20.000	20.052	0.3	100.3
EtFOSAA	20.000	20.334	1.7	101.7
FOSA	20.000	19.193	-4.0	96.0
MeFOSAA	20.000	20.501	2.5	102.5
PFBA	20.000	20.750	3.7	103.7
PFBS	20.000	20.641	3.2	103.2
PFDA	20.000	18.373	-8.1	91.9
PFDoDA	20.000	21.149	5.7	105.7
PFDS	20.000	21.484	7.4	107.4
PFHpA	20.000	20.090	0.4	100.4
PFHpS	20.000	19.350	-3.3	96.7
PFHxA	20.000	19.820	-0.9	99.1
PFHxS	20.000	20.263	1.3	101.3
PFNA	20.000	19.809	-1.0	99.0
PFNS	20.000	20.584	2.9	102.9
PFOA	20.000	20.117	0.6	100.6
PFOS	20.000	19.757	-1.2	98.8

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q577.D

PFPeA	20.000	19.787	-1.1	98.9
PFPeS	20.000	19.850	-0.7	99.3
PFTeDA	20.000	19.565	-2.2	97.8
PFTrDA	20.000	20.494	2.5	102.5
PFUnDA	20.000	21.367	6.8	106.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.144	0.7	100.7
13C3-HFPO-DA	20.000	21.501	7.5	107.5
9Cl-PF3ONS	20.000	18.013	-9.9	90.1
ADONA	20.000	19.801	-1.0	99.0
HFPO-DA	20.000	22.408	12.0	112.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.920	9.6	109.6
MeFOSA	20.000	19.815	-0.9	99.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.312	-3.4	96.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q579.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052622_ID_S6Q11\s6q11.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q579
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.528	-2.4	97.6
13C2-6:2FTS	20.000	18.438	-7.8	92.2
13C2-8:2FTS	20.000	19.092	-4.5	95.5
13C2-PFDoDA	20.000	21.307	6.5	106.5
13C2-PFTeDA	20.000	21.607	8.0	108.0
13C3-PFBS	20.000	21.010	5.0	105.0
13C3-PFHxS	20.000	20.664	3.3	103.3
13C4-PFBA	20.000	21.635	8.2	108.2
13C4-PFHpA	20.000	21.255	6.3	106.3
13C5-PFHxA	20.000	21.502	7.5	107.5
13C5-PFPeA	20.000	21.198	6.0	106.0
13C6-PFDA	20.000	21.615	8.1	108.1
13C7-PFUnDA	20.000	20.652	3.3	103.3
13C8-FOSA	20.000	22.089	10.4	110.4
13C8-PFOA	20.000	20.419	2.1	102.1
13C8-PFOS	20.000	21.326	6.6	106.6
13C9-PFNA	20.000	20.948	4.7	104.7
4:2FTS	1.000	1.036	3.6	103.6
6:2FTS	1.000	1.053	5.3	105.3
8:2FTS	1.000	1.043	4.3	104.3
d3-MeFOSAA	20.000	19.550	-2.2	97.8
EtFOSAA	1.000	0.868	-13.2	86.8
FOSA	1.000	0.936	-6.4	93.6
MeFOSAA	1.000	1.008	0.8	100.8
PFBA	1.000	0.969	-3.1	96.9
PFBS	1.000	0.994	-0.6	99.4
PFDA	1.000	0.923	-7.7	92.3
PFDoDA	1.000	1.023	2.3	102.3
PFDS	1.000	1.012	1.2	101.2
PFHpA	1.000	0.952	-4.8	95.2
PFHpS	1.000	0.962	-3.8	96.2
PFHxA	1.000	0.893	-10.7	89.3
PFHxS	1.000	0.956	-4.4	95.6
PFNA	1.000	0.934	-6.6	93.4
PFNS	1.000	0.957	-4.3	95.7
PFOA	1.000	0.984	-1.6	98.4
PFOS	1.000	0.990	-1.0	99.0

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q579.D

PFPeA	1.000	0.962	-3.8	96.2
PFPeS	1.000	0.970	-3.0	97.0
PFTeDA	1.000	0.962	-3.8	96.2
PFTrDA	1.000	0.968	-3.2	96.8
PFUnDA	1.000	1.021	2.1	102.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.871	-12.9	87.1
13C3-HFPO-DA	20.000	20.631	3.2	103.2
9Cl-PF3ONS	1.000	0.901	-9.9	90.1
ADONA	1.000	0.947	-5.3	94.7
HFPO-DA	1.000	1.111	11.1	111.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.358	11.8	111.8
MeFOSA	1.000	0.999	-0.1	99.9
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.493	-2.5	97.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q589.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052622_ID_S6Q11\s6q11.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q589
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.919	4.6	104.6
13C2-6:2FTS	20.000	19.813	-0.9	99.1
13C2-8:2FTS	20.000	22.139	10.7	110.7
13C2-PFDoDA	20.000	21.299	6.5	106.5
13C2-PFTeDA	20.000	21.606	8.0	108.0
13C3-PFBS	20.000	21.324	6.6	106.6
13C3-PFHxS	20.000	20.685	3.4	103.4
13C4-PFBA	20.000	22.518	12.6	112.6
13C4-PFHpA	20.000	21.410	7.0	107.0
13C5-PFHxA	20.000	21.241	6.2	106.2
13C5-PFPeA	20.000	21.617	8.1	108.1
13C6-PFDA	20.000	20.497	2.5	102.5
13C7-PFUnDA	20.000	20.862	4.3	104.3
13C8-FOSA	20.000	20.777	3.9	103.9
13C8-PFOA	20.000	20.383	1.9	101.9
13C8-PFOS	20.000	22.357	11.8	111.8
13C9-PFNA	20.000	20.897	4.5	104.5
4:2FTS	20.000	21.130	5.6	105.6
6:2FTS	20.000	20.460	2.3	102.3
8:2FTS	20.000	18.851	-5.7	94.3
d3-MeFOSAA	20.000	20.764	3.8	103.8
EtFOSAA	20.000	19.484	-2.6	97.4
FOSA	20.000	20.990	4.9	104.9
MeFOSAA	20.000	20.237	1.2	101.2
PFBA	20.000	20.081	0.4	100.4
PFBS	20.000	20.202	1.0	101.0
PFDA	20.000	19.792	-1.0	99.0
PFDoDA	20.000	20.613	3.1	103.1
PFDS	20.000	21.651	8.3	108.3
PFHpA	20.000	20.383	1.9	101.9
PFHpS	20.000	18.844	-5.8	94.2
PFHxA	20.000	19.887	-0.6	99.4
PFHxS	20.000	20.106	0.5	100.5
PFNA	20.000	20.002	0.0	100.0
PFNS	20.000	20.410	2.0	102.0
PFOA	20.000	20.634	3.2	103.2
PFOS	20.000	19.374	-3.1	96.9

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q589.D

PFPeA	20.000	19.797	-1.0	99.0
PFPeS	20.000	19.705	-1.5	98.5
PFTeDA	20.000	19.790	-1.1	98.9
PFTrDA	20.000	19.674	-1.6	98.4
PFUnDA	20.000	20.902	4.5	104.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.904	-0.5	99.5
13C3-HFPO-DA	20.000	19.329	-3.4	96.6
9Cl-PF3ONS	20.000	19.848	-0.8	99.2
ADONA	20.000	19.869	-0.7	99.3
HFPO-DA	20.000	22.973	14.9	114.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.858	4.3	104.3
MeFOSA	20.000	20.369	1.8	101.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.263	-3.7	96.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q601.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052622_ID_S6Q11\s6q11.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q601
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.503	2.5	102.5
13C2-6:2FTS	20.000	19.216	-3.9	96.1
13C2-8:2FTS	20.000	20.141	0.7	100.7
13C2-PFDoDA	20.000	20.765	3.8	103.8
13C2-PFTeDA	20.000	21.384	6.9	106.9
13C3-PFBS	20.000	21.183	5.9	105.9
13C3-PFHxS	20.000	20.664	3.3	103.3
13C4-PFBA	20.000	22.001	10.0	110.0
13C4-PFHpA	20.000	21.057	5.3	105.3
13C5-PFHxA	20.000	21.823	9.1	109.1
13C5-PFPeA	20.000	21.441	7.2	107.2
13C6-PFDA	20.000	22.143	10.7	110.7
13C7-PFUnDA	20.000	21.863	9.3	109.3
13C8-FOSA	20.000	21.962	9.8	109.8
13C8-PFOA	20.000	20.487	2.4	102.4
13C8-PFOS	20.000	21.631	8.2	108.2
13C9-PFNA	20.000	20.844	4.2	104.2
4:2FTS	20.000	21.596	8.0	108.0
6:2FTS	20.000	21.065	5.3	105.3
8:2FTS	20.000	21.174	5.9	105.9
d3-MeFOSAA	20.000	19.275	-3.6	96.4
EtFOSAA	20.000	19.316	-3.4	96.6
FOSA	20.000	18.980	-5.1	94.9
MeFOSAA	20.000	20.442	2.2	102.2
PFBA	20.000	20.405	2.0	102.0
PFBS	20.000	20.360	1.8	101.8
PFDA	20.000	18.795	-6.0	94.0
PFDoDA	20.000	20.961	4.8	104.8
PFDS	20.000	19.472	-2.6	97.4
PFHpA	20.000	20.445	2.2	102.2
PFHpS	20.000	19.120	-4.4	95.6
PFHxA	20.000	19.031	-4.8	95.2
PFHxS	20.000	20.109	0.5	100.5
PFNA	20.000	19.563	-2.2	97.8
PFNS	20.000	21.370	6.9	106.9
PFOA	20.000	20.784	3.9	103.9
PFOS	20.000	19.986	-0.1	99.9

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-CC6
Lab FileID: 6Q601.D

PFPeA	20.000	19.769	-1.2	98.8
PFPeS	20.000	19.669	-1.7	98.3
PFTeDA	20.000	19.873	-0.6	99.4
PFTrDA	20.000	20.300	1.5	101.5
PFUnDA	20.000	19.171	-4.1	95.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.819	4.1	104.1
13C3-HFPO-DA	20.000	21.220	6.1	106.1
9Cl-PF3ONS	20.000	19.218	-3.9	96.1
ADONA	20.000	19.530	-2.3	97.7
HFPO-DA	20.000	20.733	3.7	103.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.828	9.1	109.1
MeFOSA	20.000	19.629	-1.9	98.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.067	-4.7	95.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q11-ECC6
Lab FileID: 6Q612.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\052622_ID_S6Q11\s6q11.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\051922_ID_S6Q6\6Q243.d
2:D:\MassHunter\Data\051922_ID_S6Q6\6Q244.d
3:D:\MassHunter\Data\051922_ID_S6Q6\6Q245.d
4:D:\MassHunter\Data\051922_ID_S6Q6\6Q246.d
5:D:\MassHunter\Data\051922_ID_S6Q6\6Q247.d
6:D:\MassHunter\Data\051922_ID_S6Q6\6Q248.d
7:D:\MassHunter\Data\051922_ID_S6Q6\6Q249.d
8:D:\MassHunter\Data\051922_ID_S6Q6\6Q250.d

Data File: 6Q612
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.407	2.0	102.0
13C2-6:2FTS	20.000	19.268	-3.7	96.3
13C2-8:2FTS	20.000	20.703	3.5	103.5
13C2-PFDoDA	20.000	21.393	7.0	107.0
13C2-PFTeDA	20.000	21.518	7.6	107.6
13C3-PFBS	20.000	21.131	5.7	105.7
13C3-PFHxS	20.000	20.652	3.3	103.3
13C4-PFBA	20.000	21.782	8.9	108.9
13C4-PFHpA	20.000	21.185	5.9	105.9
13C5-PFHxA	20.000	21.455	7.3	107.3
13C5-PFPeA	20.000	21.231	6.2	106.2
13C6-PFDA	20.000	21.358	6.8	106.8
13C7-PFUnDA	20.000	21.803	9.0	109.0
13C8-FOSA	20.000	20.927	4.6	104.6
13C8-PFOA	20.000	20.354	1.8	101.8
13C8-PFOS	20.000	22.147	10.7	110.7
13C9-PFNA	20.000	20.695	3.5	103.5
4:2FTS	20.000	21.387	6.9	106.9
6:2FTS	20.000	21.294	6.5	106.5
8:2FTS	20.000	20.285	1.4	101.4
d3-MeFOSAA	20.000	19.269	-3.7	96.3
EtFOSAA	20.000	20.156	0.8	100.8
FOSA	20.000	19.864	-0.7	99.3
MeFOSAA	20.000	21.822	9.1	109.1
PFBA	20.000	20.390	1.9	101.9
PFBS	20.000	20.275	1.4	101.4
PFDA	20.000	18.549	-7.3	92.7
PFDoDA	20.000	21.184	5.9	105.9
PFDS	20.000	21.235	6.2	106.2
PFHpA	20.000	20.014	0.1	100.1
PFHpS	20.000	18.902	-5.5	94.5
PFHxA	20.000	19.326	-3.4	96.6
PFHxS	20.000	20.081	0.4	100.4
PFNA	20.000	19.710	-1.4	98.6
PFNS	20.000	20.353	1.8	101.8
PFOA	20.000	20.810	4.1	104.1
PFOS	20.000	19.454	-2.7	97.3

Continuing Calibration Summary

Job Number: FA95502 **Sample:** S6Q11-ECC6
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 6Q612.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.970	-0.1	99.9
PFPeS	20.000	19.732	-1.3	98.7
PFTeDA	20.000	19.877	-0.6	99.4
PFTrDA	20.000	19.549	-2.3	97.7
PFUnDA	20.000	19.062	-4.7	95.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.382	-3.1	96.9
13C3-HFPO-DA	20.000	21.179	5.9	105.9
9Cl-PF3ONS	20.000	19.002	-5.0	95.0
ADONA	20.000	19.746	-1.3	98.7
HFPO-DA	20.000	22.304	11.5	111.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.190	6.0	106.0
MeFOSA	20.000	21.762	8.8	108.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.209	-4.0	96.0

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q824 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S3Q824-IC824	3Q60345.D	05/27/22 14:00	n/a	Mass Calibration Verification
S3Q824-IC824	3Q60346.D	05/27/22 14:19	n/a	Initial cal 0.5
S3Q824-IC824	3Q60347.D	05/27/22 14:38	n/a	Initial cal 1
S3Q824-IC824	3Q60348.D	05/27/22 14:56	n/a	Initial cal 2
S3Q824-IC824	3Q60349.D	05/27/22 15:15	n/a	Initial cal 5
S3Q824-IC824	3Q60350.D	05/27/22 15:33	n/a	Initial cal 10
S3Q824-ICC824	3Q60351.D	05/27/22 15:53	n/a	Initial cal 20
S3Q824-IC824	3Q60352.D	05/27/22 16:15	n/a	Initial cal 50
S3Q824-IC824	3Q60353.D	05/27/22 16:33	n/a	Initial cal 100
S3Q824-IBLK	3Q60354.D	05/27/22 16:52	n/a	Instrument Blank
S3Q824-IBLK	3Q60354.D	05/27/22 16:52	n/a	Instrument Blank
S3Q824-ICV824	3Q60355.D	05/27/22 17:10	n/a	Initial cal verification 20
S3Q824-RT	3Q60356.D	05/27/22 17:29	n/a	Retention Time Marker
S3Q824-CC824	3Q60357.D	05/27/22 17:47	n/a	Continuing cal 20
S3Q824-CC824	3Q60358.D	05/27/22 18:06	n/a	Continuing cal 1.0LL
OP91345-BS	3Q60359.D	05/27/22 18:25	OP91345	Blank Spike
OP91345-MB	3Q60360.D	05/27/22 18:43	OP91345	Method Blank
ZZZZZZ	3Q60361.D	05/27/22 19:02	OP91345	(unrelated sample)
ZZZZZZ	3Q60362.D	05/27/22 19:20	OP91345	(unrelated sample)
ZZZZZZ	3Q60363.D	05/27/22 19:39	OP91345	(unrelated sample)
ZZZZZZ	3Q60364.D	05/27/22 19:57	OP91345	(unrelated sample)
ZZZZZZ	3Q60366.D	05/27/22 20:35	OP91345	(unrelated sample)
S3Q824-CC824	3Q60369.D	05/27/22 21:30	n/a	Continuing cal 20
OP91274-LBS	3Q60371.D	05/27/22 22:07	OP91274	Blank Spike
OP91274-LB	3Q60372.D	05/27/22 22:26	OP91274	Leachate Blank
FA95502-1	3Q60373.D	05/27/22 22:44	OP91274	S114-CS0001-0.002-20220505
FA95502-1	3Q60374.D	05/27/22 23:03	OP91274	S114-CS0001-0.002-20220505
OP91274-MS	3Q60375.D	05/27/22 23:21	OP91274	Matrix Spike
FA95502-2	3Q60376.D	05/27/22 23:40	OP91274	S114-CS0001-0.002-20220505-DUP01
FA95502-2	3Q60377.D	05/27/22 23:58	OP91274	S114-CS0001-0.002-20220505-DUP01
OP91274-DUP	3Q60378.D	05/28/22 00:17	OP91274	Duplicate
FA95502-3	3Q60379.D	05/28/22 00:36	OP91274	S114-CS0002-0.002-20220505
FA95502-4	3Q60380.D	05/28/22 00:54	OP91274	S114-CS0003-0.002-20220505
S3Q824-CC824	3Q60381.D	05/28/22 01:13	n/a	Continuing cal 20
FA95502-5	3Q60383.D	05/28/22 01:50	OP91274	S114-CS0004-0.002-20220505
FA95502-6	3Q60384.D	05/28/22 02:08	OP91274	S114-AS0005-0.002-20220505
FA95502-6	3Q60385.D	05/28/22 02:27	OP91274	S114-AS0005-0.002-20220505
OP91306-BS	3Q60386.D	05/28/22 02:45	OP91306	Blank Spike
OP91306-MB	3Q60387.D	05/28/22 03:04	OP91306	Method Blank
ZZZZZZ	3Q60388.D	05/28/22 03:23	OP91306	(unrelated sample)
ZZZZZZ	3Q60389.D	05/28/22 03:41	OP91306	(unrelated sample)
ZZZZZZ	3Q60390.D	05/28/22 04:00	OP91306	(unrelated sample)
ZZZZZZ	3Q60391.D	05/28/22 04:18	OP91306	(unrelated sample)
ZZZZZZ	3Q60392.D	05/28/22 04:37	OP91306	(unrelated sample)
S3Q824-CC824	3Q60393.D	05/28/22 04:56	n/a	Continuing cal 20
S3Q824-CC824	3Q60395.D	05/28/22 05:33	n/a	Continuing cal 1.0LL

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q824 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	3Q60396.D	05/28/22 05:51	OP91306	(unrelated sample)
ZZZZZZ	3Q60398.D	05/28/22 06:28	OP91306	(unrelated sample)
ZZZZZZ	3Q60399.D	05/28/22 06:47	OP91306	(unrelated sample)
ZZZZZZ	3Q60400.D	05/28/22 07:05	OP91306	(unrelated sample)
ZZZZZZ	3Q60401.D	05/28/22 07:24	OP91306	(unrelated sample)
ZZZZZZ	3Q60402.D	05/28/22 07:43	OP91306	(unrelated sample)
FA95585-33	3Q60403.D	05/28/22 08:01	OP91306	(used for QC only; not part of job FA95502)
OP91306-MS	3Q60404.D	05/28/22 08:20	OP91306	Matrix Spike
OP91306-MSD	3Q60405.D	05/28/22 08:38	OP91306	Matrix Spike Duplicate
S3Q824-CC824	3Q60406.D	05/28/22 08:57	n/a	Continuing cal 20
ZZZZZZ	3Q60408.D	05/28/22 09:34	OP91306	(unrelated sample)
ZZZZZZ	3Q60409.D	05/28/22 09:53	OP91306	(unrelated sample)
ZZZZZZ	3Q60410.D	05/28/22 10:11	OP91306	(unrelated sample)
S3Q824-ECC824	3Q60411.D	05/28/22 10:30	n/a	Ending cal 20

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S4Q419 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q419-IC419	4Q29171.D	05/27/22 11:25	n/a	Mass Calibration Verification
S4Q419-IC419	4Q29172.D	05/27/22 11:42	n/a	Initial cal 0.5
S4Q419-IC419	4Q29173.D	05/27/22 11:58	n/a	Initial cal 1
S4Q419-IC419	4Q29174.D	05/27/22 12:15	n/a	Initial cal 2
S4Q419-IC419	4Q29175.D	05/27/22 12:31	n/a	Initial cal 5
S4Q419-IC419	4Q29176.D	05/27/22 12:48	n/a	Initial cal 10
S4Q419-ICC419	4Q29177.D	05/27/22 13:05	n/a	Initial cal 20
S4Q419-IC419	4Q29178.D	05/27/22 13:21	n/a	Initial cal 50
S4Q419-IC419	4Q29179.D	05/27/22 13:38	n/a	Initial cal 100
S4Q419-IBLK	4Q29180.D	05/27/22 13:54	n/a	Instrument Blank
S4Q419-IBLK	4Q29180.D	05/27/22 13:54	n/a	Instrument Blank
S4Q419-ICV419	4Q29181.D	05/27/22 14:11	n/a	Initial cal verification 20
S4Q419-RT	4Q29182.D	05/27/22 14:31	n/a	Retention Time Marker
S4Q419-CC419	4Q29183.D	05/27/22 14:47	n/a	Continuing cal 20
S4Q419-CC419	4Q29184.D	05/27/22 15:05	n/a	Continuing cal 1.0LL
OP91275-BS	4Q29185.D	05/27/22 15:21	OP91275	Blank Spike
OP91275-MB	4Q29186.D	05/27/22 15:38	OP91275	Method Blank
ZZZZZZ	4Q29187.D	05/27/22 16:00	OP91275	(unrelated sample)
ZZZZZZ	4Q29188.D	05/27/22 16:17	OP91275	(unrelated sample)
ZZZZZZ	4Q29189.D	05/27/22 16:33	OP91275	(unrelated sample)
ZZZZZZ	4Q29190.D	05/27/22 16:50	OP91275	(unrelated sample)
OP91275-MS	4Q29191.D	05/27/22 17:06	OP91275	Matrix Spike
ZZZZZZ	4Q29192.D	05/27/22 17:23	OP91275	(unrelated sample)
FA95497-6	4Q29193.D	05/27/22 17:39	OP91275	(used for QC only; not part of job FA95502)
ZZZZZZ	4Q29194.D	05/27/22 17:56	OP91275	(unrelated sample)
S4Q419-CC419	4Q29195.D	05/27/22 18:12	n/a	Continuing cal 20
FA95497-7	4Q29197.D	05/27/22 18:45	OP91275	(used for QC only; not part of job FA95502)
OP91275-DUP	4Q29198.D	05/27/22 19:02	OP91275	Duplicate
ZZZZZZ	4Q29199.D	05/27/22 19:18	OP91275	(unrelated sample)
ZZZZZZ	4Q29200.D	05/27/22 19:35	OP91275	(unrelated sample)
ZZZZZZ	4Q29201.D	05/27/22 19:51	OP91275	(unrelated sample)
ZZZZZZ	4Q29202.D	05/27/22 20:08	OP91275	(unrelated sample)
ZZZZZZ	4Q29203.D	05/27/22 20:24	OP91275	(unrelated sample)
ZZZZZZ	4Q29204.D	05/27/22 20:41	OP91275	(unrelated sample)
ZZZZZZ	4Q29205.D	05/27/22 20:58	OP91275	(unrelated sample)
ZZZZZZ	4Q29206.D	05/27/22 21:14	OP91275	(unrelated sample)
S4Q419-CC419	4Q29207.D	05/27/22 21:31	n/a	Continuing cal 20
S4Q419-CC419	4Q29209.D	05/27/22 22:04	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q29210.D	05/27/22 22:20	OP91275	(unrelated sample)
ZZZZZZ	4Q29211.D	05/27/22 22:37	OP91275	(unrelated sample)
ZZZZZZ	4Q29212.D	05/27/22 22:53	OP91275	(unrelated sample)
ZZZZZZ	4Q29213.D	05/27/22 23:10	OP91275	(unrelated sample)
OP91384-BS	4Q29214.D	05/27/22 23:26	OP91384	Blank Spike
OP91384-MB	4Q29215.D	05/27/22 23:43	OP91384	Method Blank
ZZZZZZ	4Q29216.D	05/27/22 23:59	OP91384	(unrelated sample)
ZZZZZZ	4Q29217.D	05/28/22 00:16	OP91384	(unrelated sample)

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S4Q419 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q419-CC419	4Q29219.D	05/28/22 00:49	n/a	Continuing cal 20
FA95674-2	4Q29221.D	05/28/22 01:22	OP91384	(used for QC only; not part of job FA95502)
FA95674-2	4Q29222.D	05/28/22 01:38	OP91384	(used for QC only; not part of job FA95502)
FA95674-2	4Q29223.D	05/28/22 01:55	OP91384	(used for QC only; not part of job FA95502)
OP91384-MS	4Q29224.D	05/28/22 02:11	OP91384	Matrix Spike
OP91384-MSD	4Q29225.D	05/28/22 02:28	OP91384	Matrix Spike Duplicate
ZZZZZZ	4Q29226.D	05/28/22 02:44	OP91384	(unrelated sample)
ZZZZZZ	4Q29227.D	05/28/22 03:01	OP91384	(unrelated sample)
ZZZZZZ	4Q29228.D	05/28/22 03:17	OP91384	(unrelated sample)
ZZZZZZ	4Q29229.D	05/28/22 03:34	OP91384	(unrelated sample)
ZZZZZZ	4Q29230.D	05/28/22 03:50	OP91384	(unrelated sample)
S4Q419-CC419	4Q29231.D	05/28/22 04:07	n/a	Continuing cal 20
ZZZZZZ	4Q29233.D	05/28/22 04:40	OP91384	(unrelated sample)
ZZZZZZ	4Q29234.D	05/28/22 04:57	OP91384	(unrelated sample)
ZZZZZZ	4Q29235.D	05/28/22 05:13	OP91384	(unrelated sample)
ZZZZZZ	4Q29236.D	05/28/22 05:30	OP91384	(unrelated sample)
ZZZZZZ	4Q29237.D	05/28/22 05:46	OP91384	(unrelated sample)
ZZZZZZ	4Q29238.D	05/28/22 06:03	OP91384	(unrelated sample)
ZZZZZZ	4Q29239.D	05/28/22 06:19	OP91211	(unrelated sample)
ZZZZZZ	4Q29240.D	05/28/22 06:36	OP91211	(unrelated sample)
S4Q419-ECC419	4Q29241.D	05/28/22 06:52	n/a	Ending cal 20

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S4Q422 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S4Q422-IBLK	4Q29378.D	05/31/22 10:55	n/a	Instrument Blank
S4Q422-IBLK	4Q29378.D	05/31/22 10:55	n/a	Instrument Blank
S4Q422-RT	4Q29379.D	05/31/22 11:12	n/a	Retention Time Marker
S4Q422-CC419	4Q29380.D	05/31/22 11:28	n/a	Continuing cal 20
S4Q422-CC419	4Q29381.D	05/31/22 11:45	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q29383.D	05/31/22 12:08	OP91275	(unrelated sample)
ZZZZZZ	4Q29384.D	05/31/22 12:24	OP91384	(unrelated sample)
ZZZZZZ	4Q29385.D	05/31/22 12:41	OP91384	(unrelated sample)
ZZZZZZ	4Q29386.D	05/31/22 12:57	OP91384	(unrelated sample)
ZZZZZZ	4Q29387.D	05/31/22 13:14	OP91384	(unrelated sample)
ZZZZZZ	4Q29388.D	05/31/22 13:30	OP91305	(unrelated sample)
ZZZZZZ	4Q29389.D	05/31/22 13:48	OP91346	(unrelated sample)
ZZZZZZ	4Q29390.D	05/31/22 14:05	OP91346	(unrelated sample)
ZZZZZZ	4Q29391.D	05/31/22 14:23	OP91324	(unrelated sample)
ZZZZZZ	4Q29392.D	05/31/22 14:40	OP91324	(unrelated sample)
S4Q422-CC419	4Q29393.D	05/31/22 14:56	n/a	Continuing cal 20
ZZZZZZ	4Q29395.D	05/31/22 15:29	OP91324	(unrelated sample)
ZZZZZZ	4Q29396.D	05/31/22 15:46	OP91324	(unrelated sample)
ZZZZZZ	4Q29397.D	05/31/22 16:02	OP91324	(unrelated sample)
ZZZZZZ	4Q29398.D	05/31/22 16:19	OP91324	(unrelated sample)
ZZZZZZ	4Q29399.D	05/31/22 16:35	OP91324	(unrelated sample)
ZZZZZZ	4Q29400.D	05/31/22 16:52	OP91324	(unrelated sample)
ZZZZZZ	4Q29401.D	05/31/22 17:08	OP91324	(unrelated sample)
ZZZZZZ	4Q29402.D	05/31/22 17:25	OP91324	(unrelated sample)
ZZZZZZ	4Q29403.D	05/31/22 17:41	OP91324	(unrelated sample)
ZZZZZZ	4Q29404.D	05/31/22 17:58	OP91324	(unrelated sample)
S4Q422-CC419	4Q29405.D	05/31/22 18:15	n/a	Continuing cal 20
ZZZZZZ	4Q29407.D	05/31/22 18:50	OP91324	(unrelated sample)
ZZZZZZ	4Q29408.D	05/31/22 19:07	OP91324	(unrelated sample)
ZZZZZZ	4Q29409.D	05/31/22 19:23	OP91324	(unrelated sample)
ZZZZZZ	4Q29410.D	05/31/22 19:40	OP91345	(unrelated sample)
ZZZZZZ	4Q29411.D	05/31/22 19:56	OP91345	(unrelated sample)
ZZZZZZ	4Q29412.D	05/31/22 20:13	OP91342	(unrelated sample)
FA95871-28	4Q29413.D	05/31/22 20:29	OP91342	(used for QC only; not part of job FA95502)
OP91342-MS	4Q29414.D	05/31/22 20:46	OP91342	Matrix Spike
OP91342-MSD	4Q29415.D	05/31/22 21:02	OP91342	Matrix Spike Duplicate
FA95502-3	4Q29416.D	05/31/22 21:19	OP91274	S114-CS0002-0.002-20220505
S4Q422-CC419	4Q29417.D	05/31/22 21:35	n/a	Continuing cal 20
S4Q422-CC419	4Q29419.D	05/31/22 22:08	n/a	Continuing cal 1.0LL
ZZZZZZ	4Q29420.D	05/31/22 22:25	OP91306	(unrelated sample)
ZZZZZZ	4Q29422.D	05/31/22 22:58	OP91341	(unrelated sample)
ZZZZZZ	4Q29423.D	05/31/22 23:14	OP91341	(unrelated sample)
ZZZZZZ	4Q29424.D	05/31/22 23:31	OP91341	(unrelated sample)
ZZZZZZ	4Q29425.D	05/31/22 23:47	OP91341	(unrelated sample)
ZZZZZZ	4Q29426.D	06/01/22 00:04	OP91341	(unrelated sample)
ZZZZZZ	4Q29427.D	06/01/22 00:20	OP91341	(unrelated sample)

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S4Q422 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS4Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	4Q29428.D	06/01/22 00:37	OP91341	(unrelated sample)
ZZZZZZ	4Q29429.D	06/01/22 00:53	OP91341	(unrelated sample)
S4Q422-CC419	4Q29430.D	06/01/22 01:10	n/a	Continuing cal 20
ZZZZZZ	4Q29432.D	06/01/22 01:43	OP91341	(unrelated sample)
ZZZZZZ	4Q29433.D	06/01/22 02:00	OP91347	(unrelated sample)
ZZZZZZ	4Q29434.D	06/01/22 02:16	OP91347	(unrelated sample)
ZZZZZZ	4Q29435.D	06/01/22 02:33	OP91347	(unrelated sample)
ZZZZZZ	4Q29436.D	06/01/22 02:49	OP91347	(unrelated sample)
ZZZZZZ	4Q29437.D	06/01/22 03:06	OP91347	(unrelated sample)
ZZZZZZ	4Q29438.D	06/01/22 03:22	OP91347	(unrelated sample)
S4Q422-ECC419	4Q29439.D	06/01/22 03:39	n/a	Ending cal 20

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q11 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q11-IBLK	6Q552.D	05/26/22 11:57	n/a	Instrument Blank
S6Q11-IBLK	6Q552.D	05/26/22 11:57	n/a	Instrument Blank
S6Q11-RT	6Q553.D	05/26/22 12:12	n/a	Retention Time Marker
S6Q11-CC6	6Q554.D	05/26/22 12:27	n/a	Continuing cal 20
S6Q11-CC6	6Q555.D	05/26/22 12:42	n/a	Continuing cal 1.0LL
OP91303-BS	6Q556.D	05/26/22 12:57	OP91303	Blank Spike
OP91303-MB	6Q557.D	05/26/22 13:12	OP91303	Method Blank
ZZZZZZ	6Q558.D	05/26/22 13:27	OP91303	(unrelated sample)
ZZZZZZ	6Q559.D	05/26/22 13:42	OP91303	(unrelated sample)
ZZZZZZ	6Q560.D	05/26/22 13:57	OP91303	(unrelated sample)
ZZZZZZ	6Q561.D	05/26/22 14:12	OP91303	(unrelated sample)
ZZZZZZ	6Q562.D	05/26/22 14:27	OP91303	(unrelated sample)
ZZZZZZ	6Q563.D	05/26/22 14:42	OP91303	(unrelated sample)
ZZZZZZ	6Q564.D	05/26/22 14:58	OP91303	(unrelated sample)
S6Q11-CC6	6Q565.D	05/26/22 15:13	n/a	Continuing cal 20
FA95605-8	6Q567.D	05/26/22 15:43	OP91303	(used for QC only; not part of job FA95502)
OP91303-MS	6Q568.D	05/26/22 15:58	OP91303	Matrix Spike
OP91303-MSD	6Q569.D	05/26/22 16:13	OP91303	Matrix Spike Duplicate
ZZZZZZ	6Q570.D	05/26/22 16:28	OP91303	(unrelated sample)
ZZZZZZ	6Q571.D	05/26/22 16:43	OP91303	(unrelated sample)
ZZZZZZ	6Q572.D	05/26/22 16:58	OP91303	(unrelated sample)
ZZZZZZ	6Q573.D	05/26/22 17:13	OP91303	(unrelated sample)
ZZZZZZ	6Q574.D	05/26/22 17:28	OP91303	(unrelated sample)
ZZZZZZ	6Q575.D	05/26/22 17:43	OP91303	(unrelated sample)
ZZZZZZ	6Q576.D	05/26/22 17:58	OP91303	(unrelated sample)
S6Q11-CC6	6Q577.D	05/26/22 18:13	n/a	Continuing cal 20
S6Q11-CC6	6Q579.D	05/26/22 18:43	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q580.D	05/26/22 18:58	OP91303	(unrelated sample)
ZZZZZZ	6Q581.D	05/26/22 19:13	OP91303	(unrelated sample)
ZZZZZZ	6Q582.D	05/26/22 19:28	OP91303	(unrelated sample)
ZZZZZZ	6Q583.D	05/26/22 19:44	OP91303	(unrelated sample)
OP91243-BS	6Q584.D	05/26/22 19:59	OP91243	Blank Spike
OP91243-MB	6Q585.D	05/26/22 20:14	OP91243	Method Blank
ZZZZZZ	6Q586.D	05/26/22 20:29	OP91243	(unrelated sample)
ZZZZZZ	6Q587.D	05/26/22 20:44	OP91243	(unrelated sample)
ZZZZZZ	6Q588.D	05/26/22 20:59	OP91243	(unrelated sample)
S6Q11-CC6	6Q589.D	05/26/22 21:14	n/a	Continuing cal 20
ZZZZZZ	6Q591.D	05/26/22 21:44	OP91243	(unrelated sample)
ZZZZZZ	6Q592.D	05/26/22 21:59	OP91243	(unrelated sample)
ZZZZZZ	6Q593.D	05/26/22 22:14	OP91243	(unrelated sample)
FA95500-2	6Q594.D	05/26/22 22:29	OP91243	(used for QC only; not part of job FA95502)
OP91243-MS	6Q595.D	05/26/22 22:44	OP91243	Matrix Spike
ZZZZZZ	6Q596.D	05/26/22 22:59	OP91243	(unrelated sample)
ZZZZZZ	6Q597.D	05/26/22 23:14	OP91243	(unrelated sample)
FA95500-5	6Q598.D	05/26/22 23:29	OP91243	(used for QC only; not part of job FA95502)
OP91243-DUP	6Q599.D	05/26/22 23:44	OP91243	Duplicate

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q11 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	6Q600.D	05/26/22 23:59	OP91243	(unrelated sample)
S6Q11-CC6	6Q601.D	05/27/22 00:14	n/a	Continuing cal 20
ZZZZZZ	6Q603.D	05/27/22 00:45	OP91243	(unrelated sample)
ZZZZZZ	6Q604.D	05/27/22 01:00	OP91243	(unrelated sample)
ZZZZZZ	6Q605.D	05/27/22 01:15	OP91243	(unrelated sample)
ZZZZZZ	6Q606.D	05/27/22 01:30	OP91243	(unrelated sample)
ZZZZZZ	6Q607.D	05/27/22 01:45	OP91243	(unrelated sample)
ZZZZZZ	6Q608.D	05/27/22 02:00	OP91243	(unrelated sample)
ZZZZZZ	6Q609.D	05/27/22 02:15	OP91243	(unrelated sample)
FA95502-7	6Q610.D	05/27/22 02:30	OP91243	S114-FB-20220505-01
FA95502-8	6Q611.D	05/27/22 02:45	OP91243	S114-EB-20220505-01
S6Q11-ECC6	6Q612.D	05/27/22 03:00	n/a	Ending cal 20

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q6 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q6-IC6	6Q242.D	05/19/22 10:37	n/a	Mass Calibration Verification
S6Q6-IC6	6Q243.D	05/19/22 10:52	n/a	Initial cal 0.5
S6Q6-IC6	6Q244.D	05/19/22 11:07	n/a	Initial cal 1
S6Q6-IC6	6Q245.D	05/19/22 11:22	n/a	Initial cal 2
S6Q6-IC6	6Q246.D	05/19/22 11:37	n/a	Initial cal 5
S6Q6-IC6	6Q247.D	05/19/22 11:53	n/a	Initial cal 10
S6Q6-ICC6	6Q248.D	05/19/22 12:08	n/a	Initial cal 20
S6Q6-IC6	6Q249.D	05/19/22 12:23	n/a	Initial cal 50
S6Q6-IC6	6Q250.D	05/19/22 12:38	n/a	Initial cal 100
S6Q6-IBLK	6Q251.D	05/19/22 12:53	n/a	Instrument Blank
S6Q6-IBLK	6Q251.D	05/19/22 12:53	n/a	Instrument Blank
S6Q6-ICV6	6Q252.D	05/19/22 13:08	n/a	Initial cal verification 20
S6Q6-RT	6Q253.D	05/19/22 13:23	n/a	Retention Time Marker
S6Q6-CC6	6Q254.D	05/19/22 13:38	n/a	Continuing cal 1.0LL
OP91213-BS	6Q255.D	05/19/22 13:53	OP91213	Blank Spike
OP91213-MB	6Q256.D	05/19/22 14:08	OP91213	Method Blank
FA95583-18	6Q257.D	05/19/22 14:23	OP91213	(used for QC only; not part of job FA95502)
OP91213-MS	6Q258.D	05/19/22 14:38	OP91213	Matrix Spike
OP91213-MSD	6Q259.D	05/19/22 14:53	OP91213	Matrix Spike Duplicate
ZZZZZZ	6Q260.D	05/19/22 15:08	OP91213	(unrelated sample)
ZZZZZZ	6Q261.D	05/19/22 15:23	OP91213	(unrelated sample)
ZZZZZZ	6Q262.D	05/19/22 15:38	OP91213	(unrelated sample)
ZZZZZZ	6Q263.D	05/19/22 15:53	OP91213	(unrelated sample)
ZZZZZZ	6Q264.D	05/19/22 16:09	OP91213	(unrelated sample)
S6Q6-CC6	6Q265.D	05/19/22 16:24	n/a	Continuing cal 20
ZZZZZZ	6Q267.D	05/19/22 16:54	OP91213	(unrelated sample)
ZZZZZZ	6Q268.D	05/19/22 17:09	OP91213	(unrelated sample)
ZZZZZZ	6Q269.D	05/19/22 17:24	OP91213	(unrelated sample)
ZZZZZZ	6Q270.D	05/19/22 17:39	OP91213	(unrelated sample)
ZZZZZZ	6Q271.D	05/19/22 17:54	OP91213	(unrelated sample)
ZZZZZZ	6Q272.D	05/19/22 18:09	OP91213	(unrelated sample)
ZZZZZZ	6Q274.D	05/19/22 18:39	OP91213	(unrelated sample)
ZZZZZZ	6Q275.D	05/19/22 18:54	OP91213	(unrelated sample)
ZZZZZZ	6Q276.D	05/19/22 19:09	OP91213	(unrelated sample)
S6Q6-CC6	6Q277.D	05/19/22 19:24	n/a	Continuing cal 20
S6Q6-CC6	6Q279.D	05/19/22 19:54	n/a	Continuing cal 1.0LL
ZZZZZZ	6Q280.D	05/19/22 20:09	OP91213	(unrelated sample)
ZZZZZZ	6Q281.D	05/19/22 20:24	OP91213	(unrelated sample)
ZZZZZZ	6Q282.D	05/19/22 20:39	OP91213	(unrelated sample)
OP91222-BS	6Q283.D	05/19/22 20:55	OP91222	Blank Spike
OP91222-MB	6Q284.D	05/19/22 21:10	OP91222	Method Blank
ZZZZZZ	6Q285.D	05/19/22 21:25	OP91222	(unrelated sample)
ZZZZZZ	6Q286.D	05/19/22 21:40	OP91222	(unrelated sample)
ZZZZZZ	6Q287.D	05/19/22 21:55	OP91222	(unrelated sample)
ZZZZZZ	6Q288.D	05/19/22 22:10	OP91222	(unrelated sample)
ZZZZZZ	6Q289.D	05/19/22 22:25	OP91222	(unrelated sample)

Run Sequence Report

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q6 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q6-CC6	6Q290.D	05/19/22 22:40	n/a	Continuing cal 20
ZZZZZZ	6Q292.D	05/19/22 23:10	OP91222	(unrelated sample)
FA95595-6	6Q293.D	05/19/22 23:25	OP91222	(used for QC only; not part of job FA95502)
OP91222-MS	6Q294.D	05/19/22 23:40	OP91222	Matrix Spike
OP91222-MSD	6Q295.D	05/19/22 23:55	OP91222	Matrix Spike Duplicate
ZZZZZZ	6Q296.D	05/20/22 00:10	OP91222	(unrelated sample)
ZZZZZZ	6Q297.D	05/20/22 00:25	OP91222	(unrelated sample)
ZZZZZZ	6Q298.D	05/20/22 00:40	OP91222	(unrelated sample)
ZZZZZZ	6Q299.D	05/20/22 00:55	OP91222	(unrelated sample)
ZZZZZZ	6Q300.D	05/20/22 01:10	OP91222	(unrelated sample)
ZZZZZZ	6Q301.D	05/20/22 01:25	OP91222	(unrelated sample)
S6Q6-CC6	6Q302.D	05/20/22 01:40	n/a	Continuing cal 20
ZZZZZZ	6Q304.D	05/20/22 02:11	OP91222	(unrelated sample)
ZZZZZZ	6Q305.D	05/20/22 02:26	OP91222	(unrelated sample)
ZZZZZZ	6Q306.D	05/20/22 02:41	OP91222	(unrelated sample)
ZZZZZZ	6Q307.D	05/20/22 02:56	OP91222	(unrelated sample)
ZZZZZZ	6Q308.D	05/20/22 03:11	OP91222	(unrelated sample)
S6Q6-ECC6	6Q309.D	05/20/22 03:26	n/a	Ending cal 20

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60373.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 10:44:48 PM
Sample Name : fa95502-1
Vial : P3-B3
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

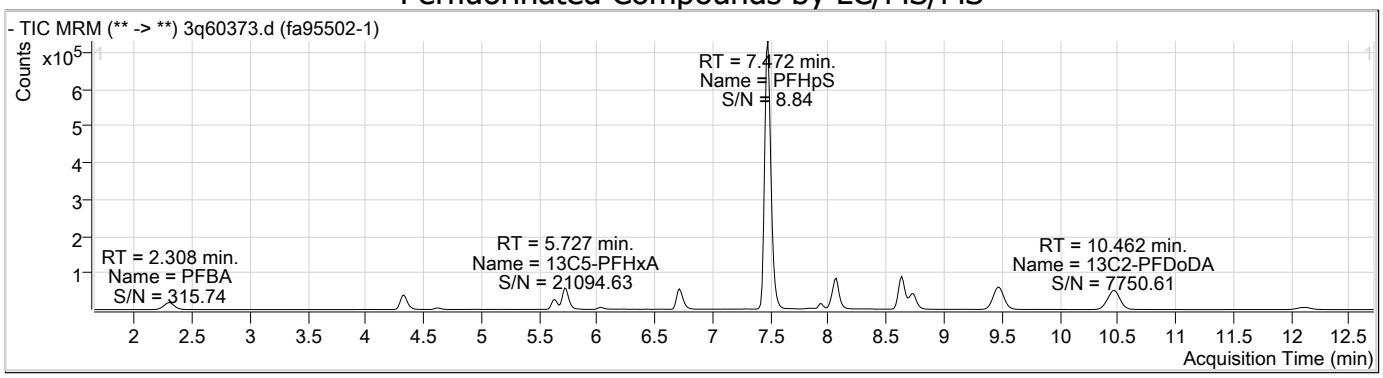
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.302	217.0 -> 172.0	115089	20.00	µg/L	-0.025
M5-PFPeA	4.337	268.0 -> 223.0	110004	20.00	µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	145394	20.00	µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	186389	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	209472	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	260060	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	364897	20.00	µg/L	0.000
M7-PFUnDA	9.480	570.0 -> 525.0	406189	20.00	µg/L	-0.025
M2-PFDoDA	10.462	615.0 -> 570.0	386633	20.00	µg/L	-0.050
M2-PFTeDA	12.114	715.0 -> 670.0	50459	20.00	µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	28752	20.00	µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	14784	20.00	µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	16504	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	20979	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11085	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	24766	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	31492	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	45044	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	19430	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	323	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	38295	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	11085	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-6:2FTS	7.485	429.0 -> 81.0	24766	18.92	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-8:2FTS	8.739	529.0 -> 81.0	31492	13.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.1%		
13C2-PFDoDA	10.462	615.0 -> 570.0	386633	10.55	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.7%		
13C2-PFTeDA	12.114	715.0 -> 670.0	50459	2.82	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C3-PFBS	4.617	302.0 -> 99.0	14784	18.73	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFHxS	6.738	402.0 -> 99.0	16504	17.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%		
13C4-PFBA	2.302	217.0 -> 172.0	115089	19.04	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C4-PFHpA	6.718	367.0 -> 322.0	186389	18.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C5-PFHxA	5.727	318.0 -> 273.0	145394	18.42	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C5-PFPeA	4.337	268.0 -> 223.0	110004	18.98	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C6-PFDA	8.639	519.0 -> 474.0	364897	14.62	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

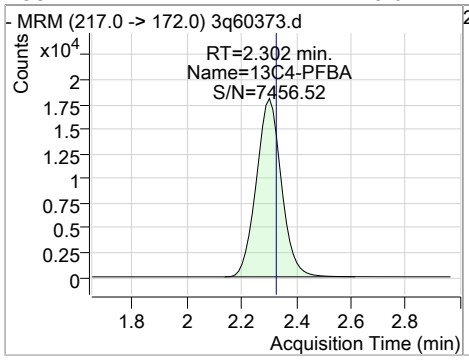
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%			
13C7-PFUnDA	9.480	570.0 -> 525.0	406189	13.17	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.9%			
13C8-FOSA	7.430	506.0 -> 78.0	28752	7.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 37.4%			
13C8-PFOA	7.487	421.0 -> 376.0	209472	16.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%			
13C8-PFOS	8.036	507.0 -> 99.0	20979	13.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%			
13C9-PFNA	8.075	472.0 -> 427.0	260060	16.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
d3-MeFOSAA	7.929	573.0 -> 419.0	45044	13.58	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	19424	17.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%			
d3-MeFOSA	7.793	515.0 -> 169.0	323	0.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.3%			
d5-EtFOSAA	8.029	589.0 -> 419.0	38252	12.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.7%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	7708	1.59	µg/L		97
6:2FTS	7.486	427.0 -> 407.0	1611397	270.83	µg/L		100
8:2FTS	8.740	527.0 -> 507.0	4500	0.60	µg/L		97
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.308	213.0 -> 169.0	7903	3.52	µg/L		100
PFBS	4.619	299.0 -> 80.0	1478	0.79	µg/L		99
PFDA	8.640	513.0 -> 469.0	3971	0.26	µg/L		97
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	12492	0.91	µg/L		99
PFHpS	7.472	449.0 -> 80.0	580	0.43	µg/L	m	97
PFHxA	5.728	313.0 -> 269.0	73395	12.08	µg/L		99
PFHxS	6.739	399.0 -> 80.0	9128	5.30	µg/L	m	97
PFNA	8.075	463.0 -> 419.0	1350	0.11	µg/L		93
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.487	413.0 -> 369.0	6003	0.62	µg/L	m	97
PFOS	8.049	499.0 -> 80.0	30464	18.55	µg/L	m	80
PFPeA	4.339	263.0 -> 219.0	62960	7.76	µg/L		100
PFPeS	5.845	349.0 -> 80.0	1559	1.25	µg/L	m	92
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

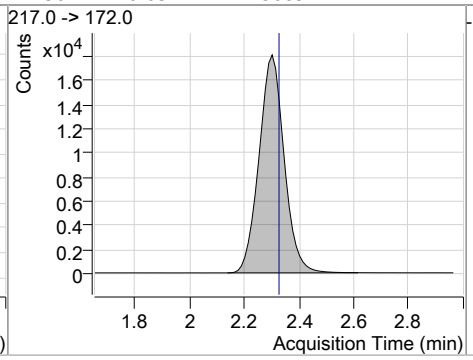
 # = Qualifier out of range, m = manually integrated, + = Area summed

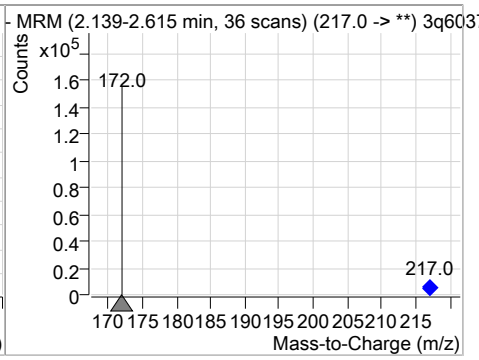
Perfluorinated Compounds by LC/MS/MS



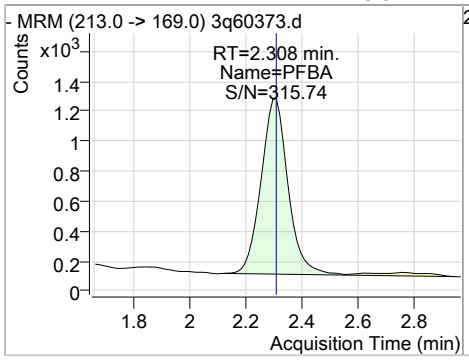
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.04	2.30	-0.03	115089				

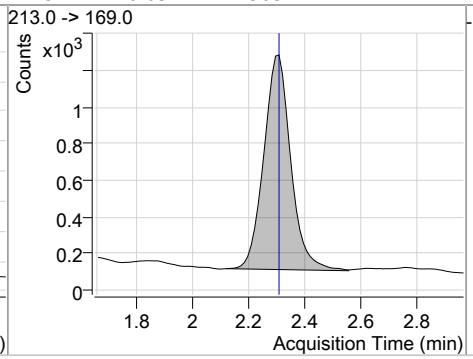


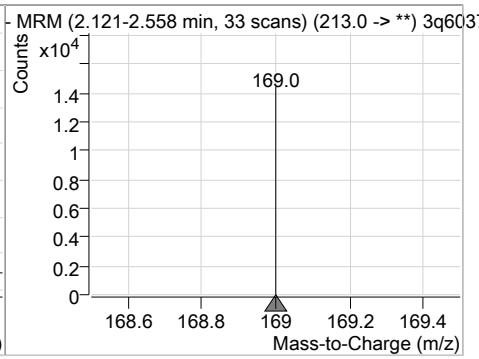




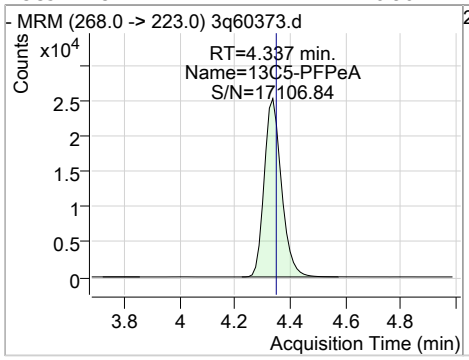
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.52	2.31	-0.03	7903				

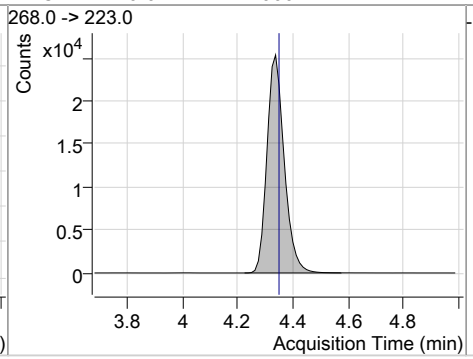


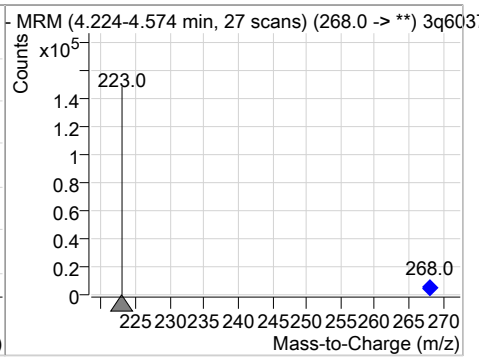




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.98	4.34	-0.01	110004				

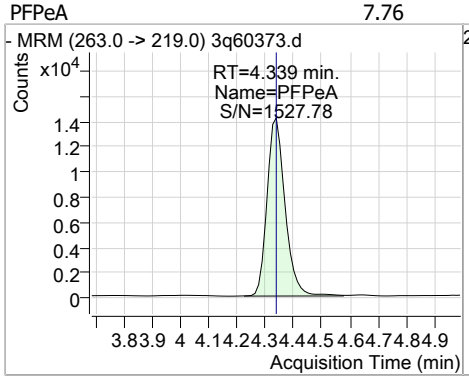


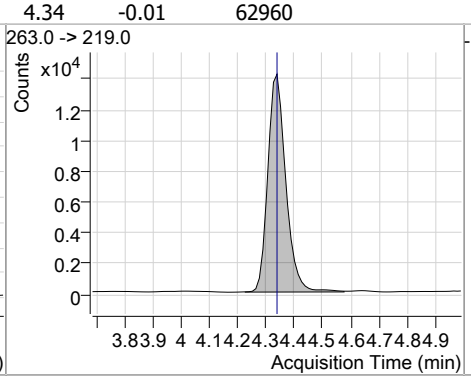


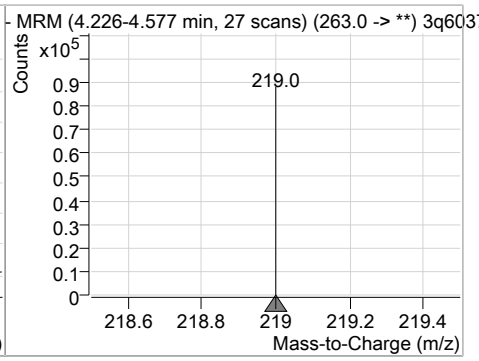


Perfluorinated Compounds by LC/MS/MS

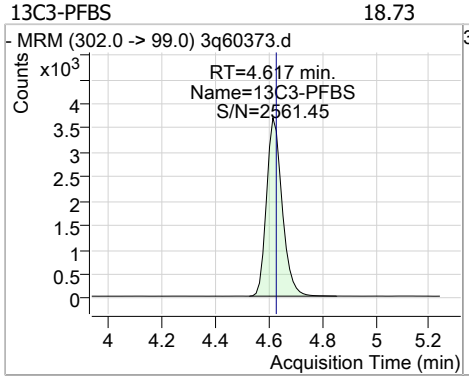
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	7.76	4.34	-0.01	62960				

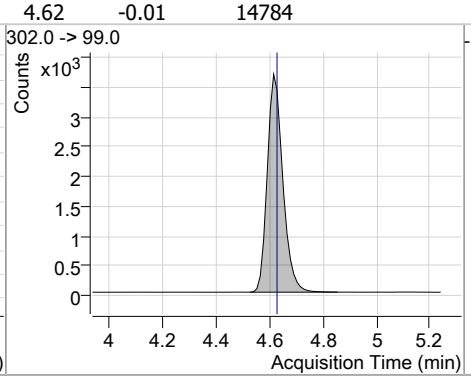


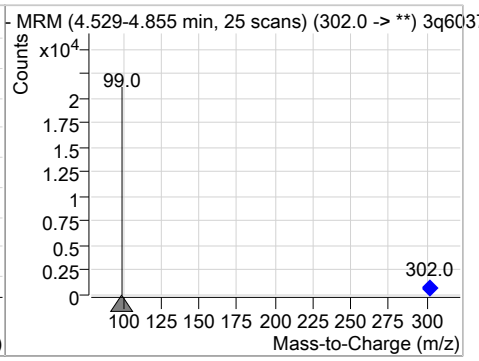




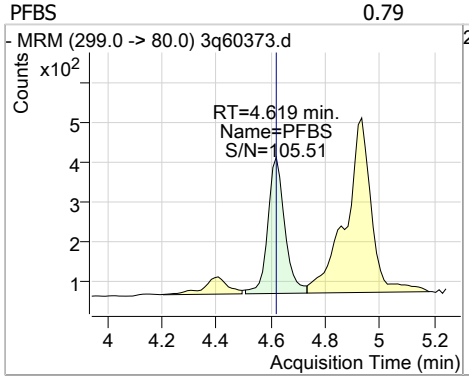
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.73	4.62	-0.01	14784				

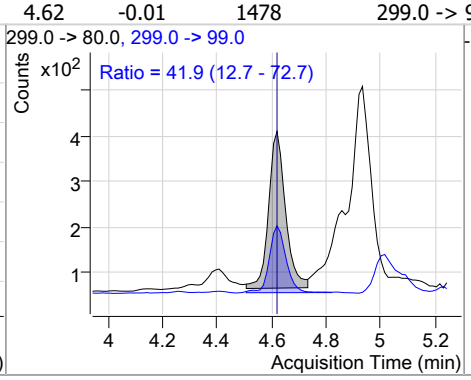


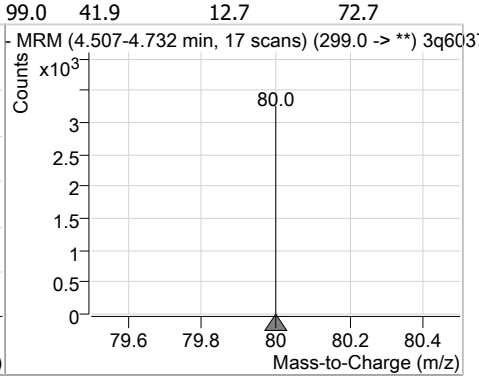




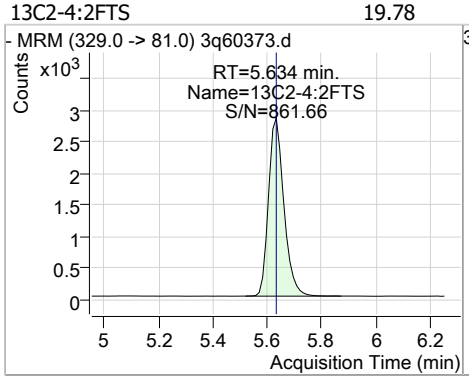
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.79	4.62	-0.01	1478	299.0 -> 99.0	41.9	12.7	72.7

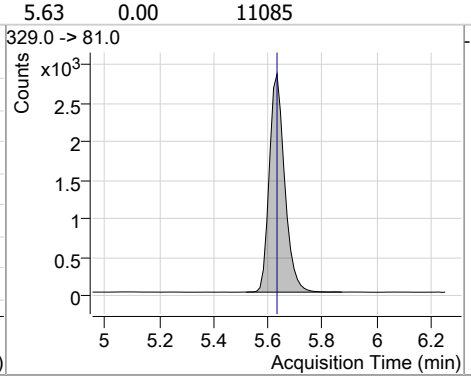


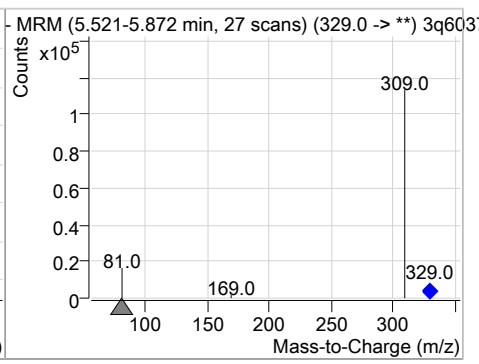




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.78	5.63	0.00	11085				

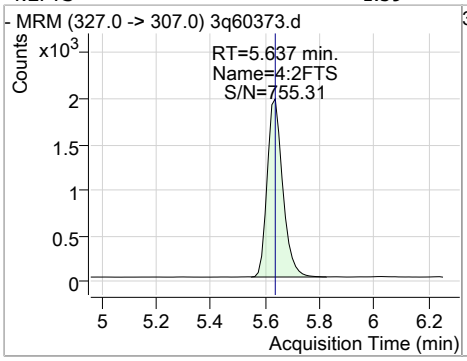


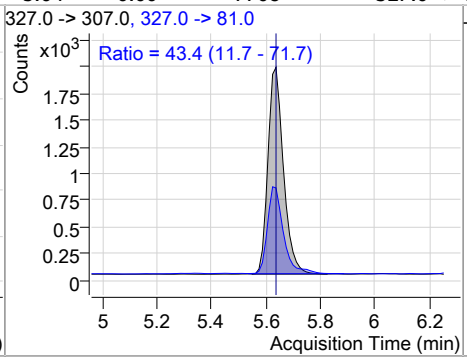


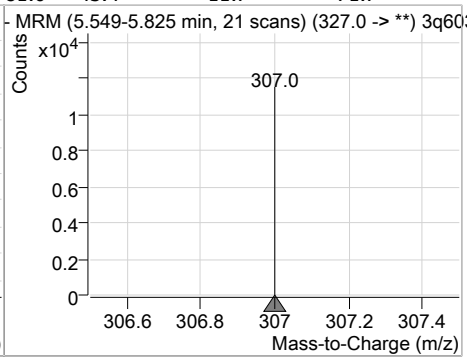


Perfluorinated Compounds by LC/MS/MS

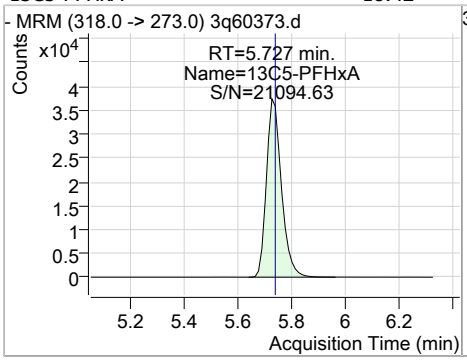
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.59	5.64	0.00	7708	327.0 -> 81.0	43.4	11.7	71.7

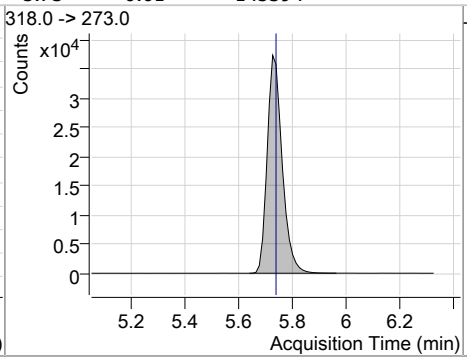


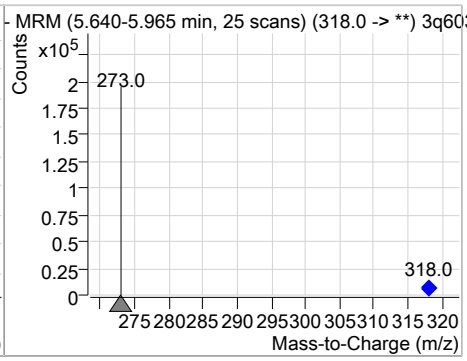




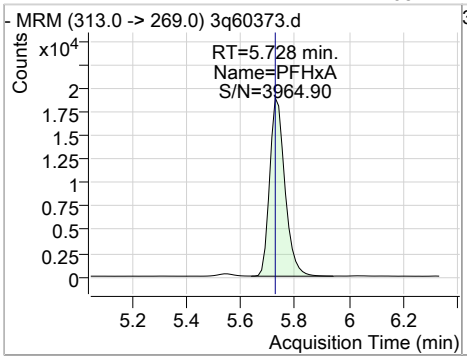
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.42	5.73	-0.01	145394				

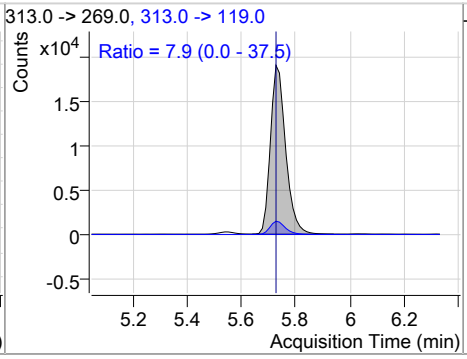


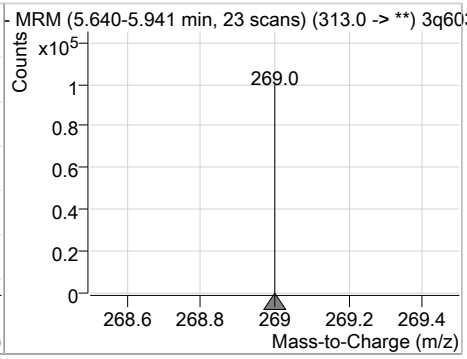




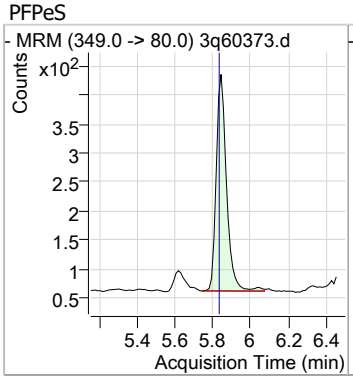
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.08	5.73	-0.01	73395	313.0 -> 119.0	7.9	0.0	37.5

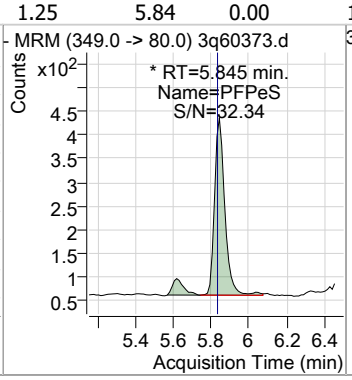


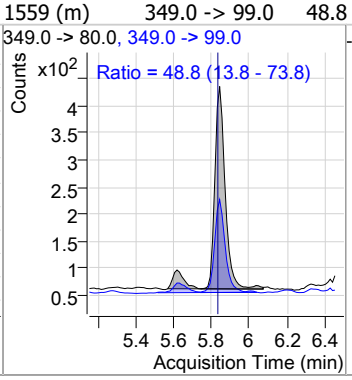


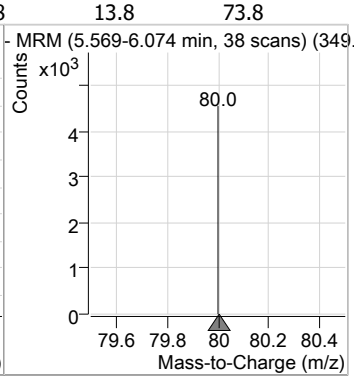


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.25	5.84	0.00	1559 (m)	349.0 -> 99.0	48.8	13.8	73.8



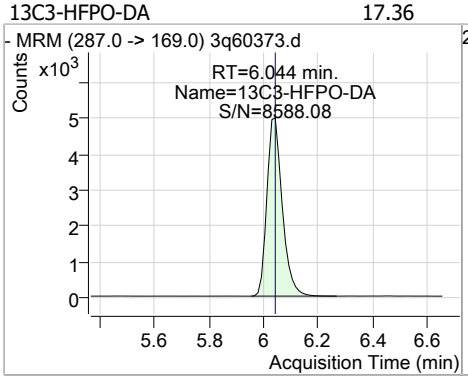


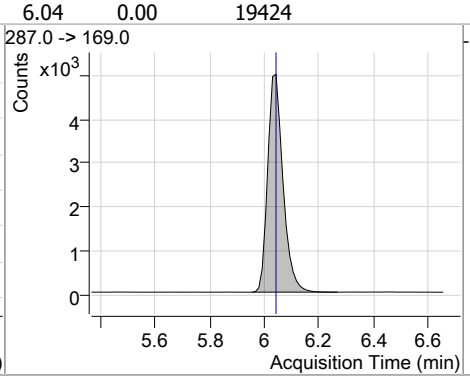


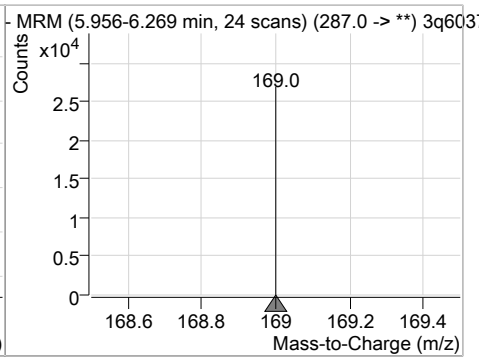


Perfluorinated Compounds by LC/MS/MS

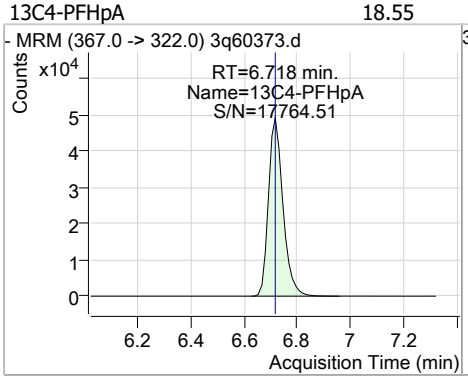
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.36	6.04	0.00	19424				

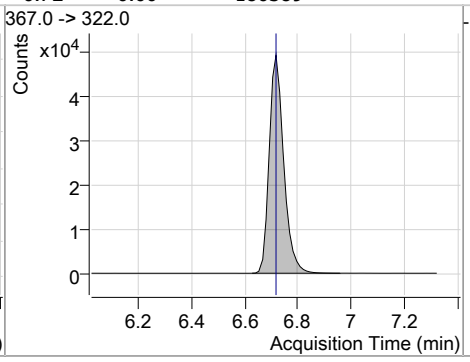


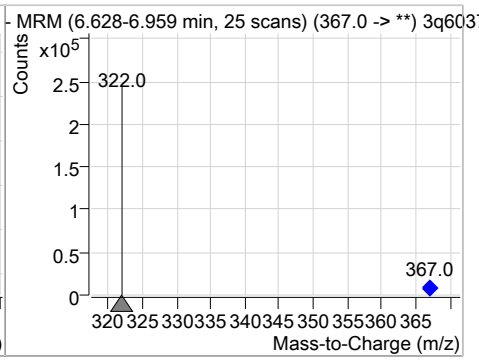




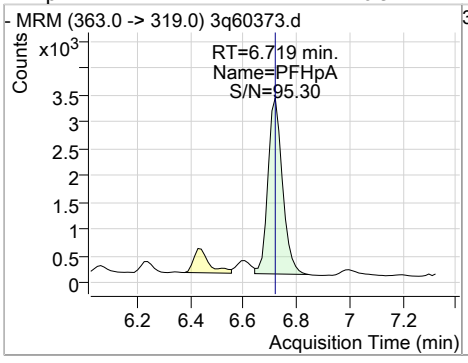
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.55	6.72	0.00	186389				

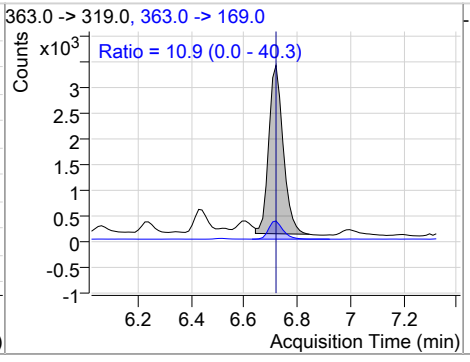


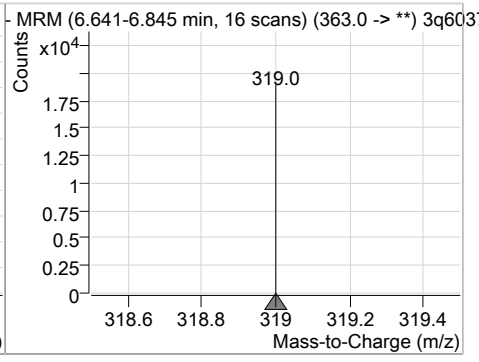




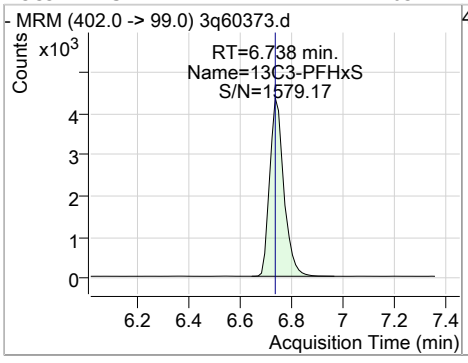
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.91	6.72	0.00	12492	363.0 -> 169.0	10.9	0.0	40.3

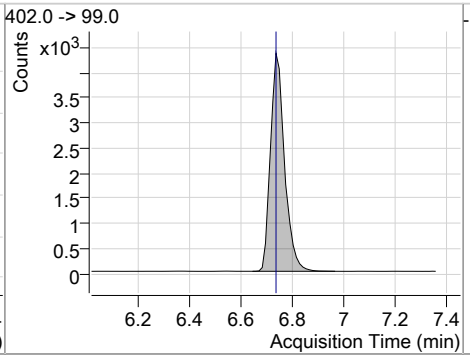


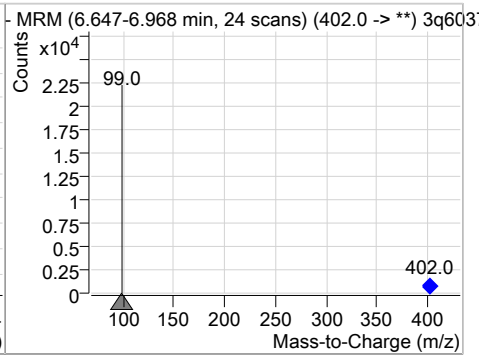




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.03	6.74	0.00	16504				

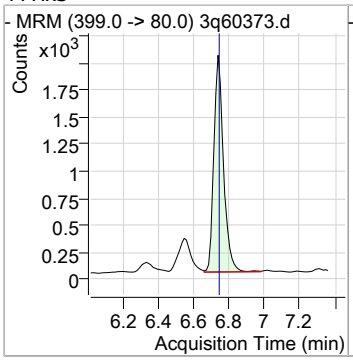


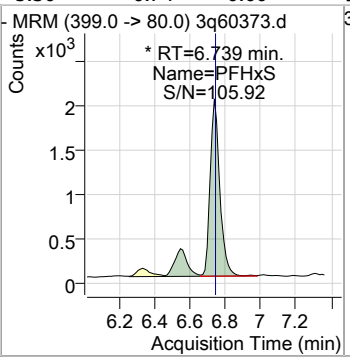


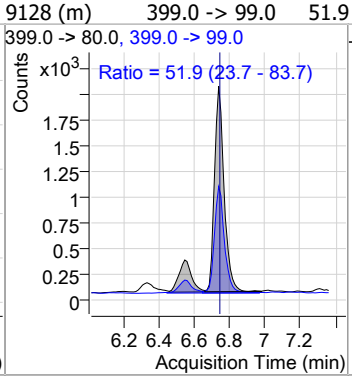


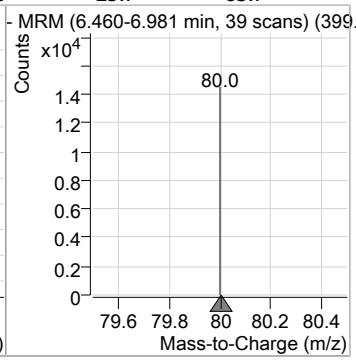
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.30	6.74	0.00	9128 (m)	399.0 -> 99.0	51.9	23.7	83.7

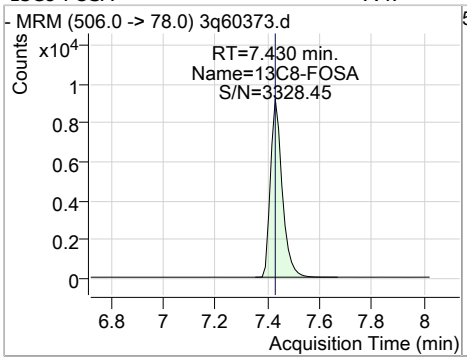


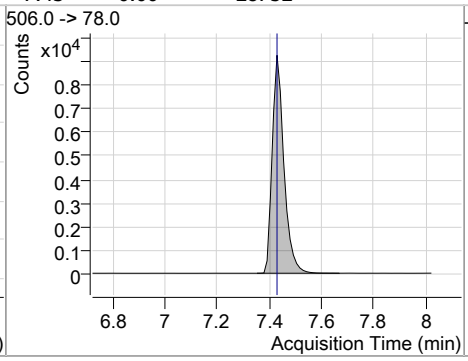


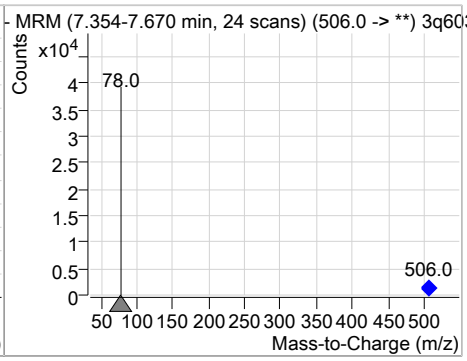




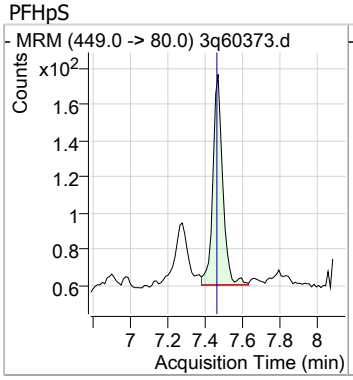
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.47	7.43	0.00	28752				

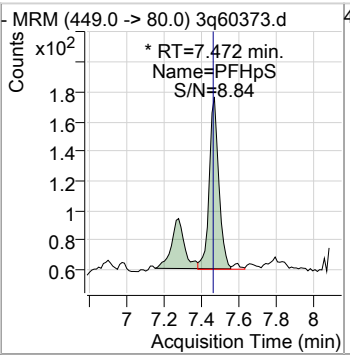


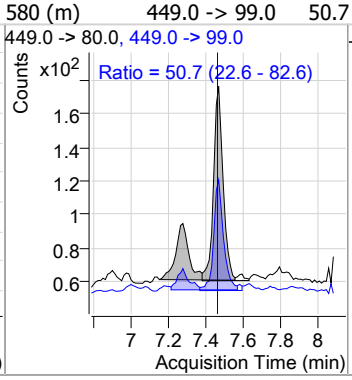


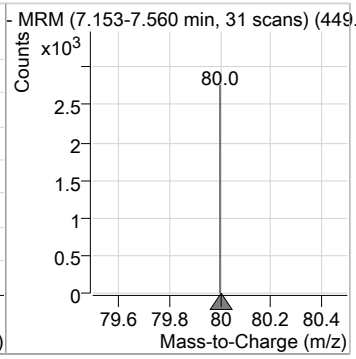


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.43	7.47	0.00	580 (m)	449.0 -> 99.0	50.7	22.6	82.6

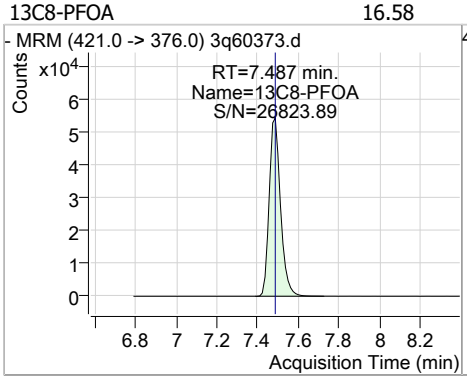


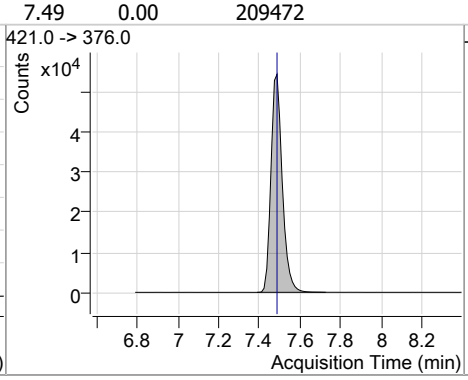


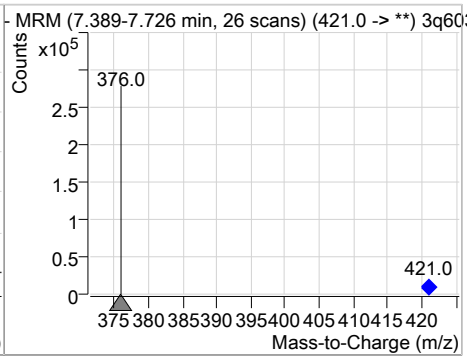




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.58	7.49	0.00	209472				

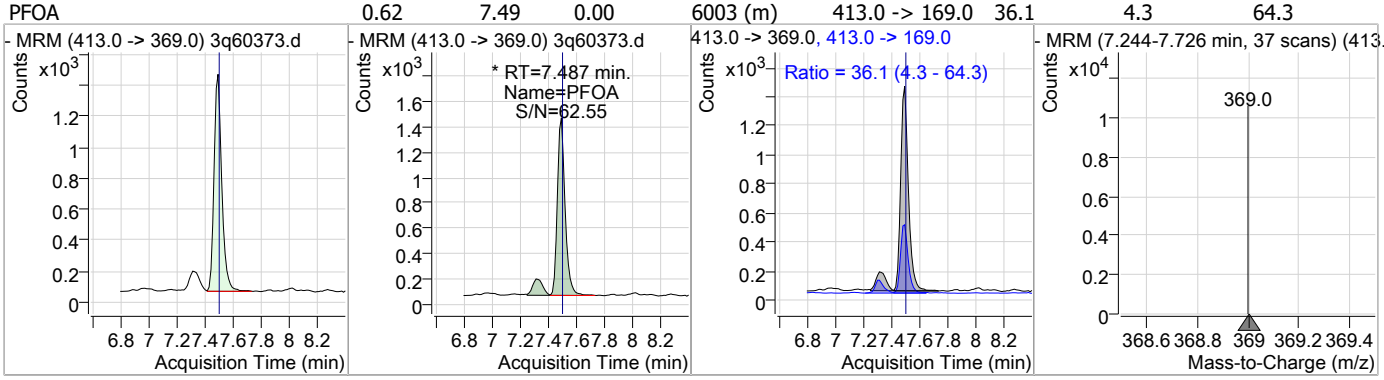




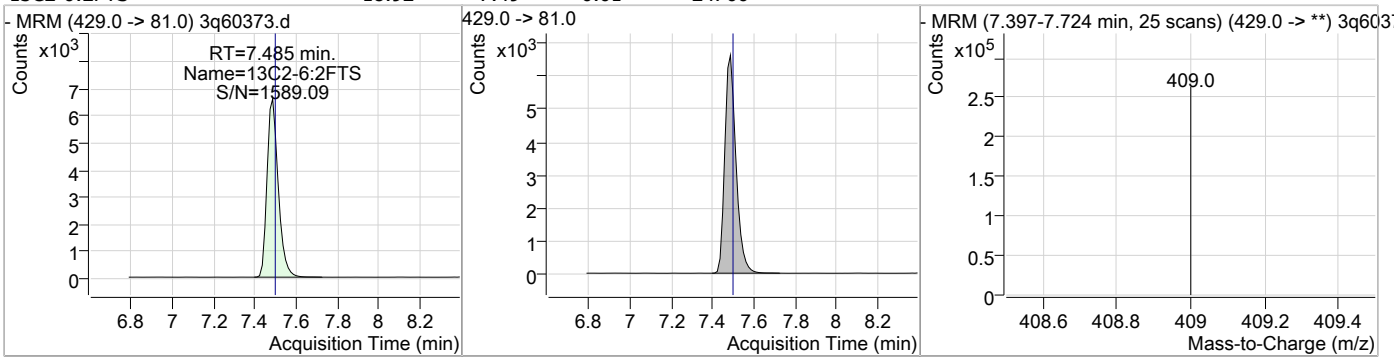


Perfluorinated Compounds by LC/MS/MS

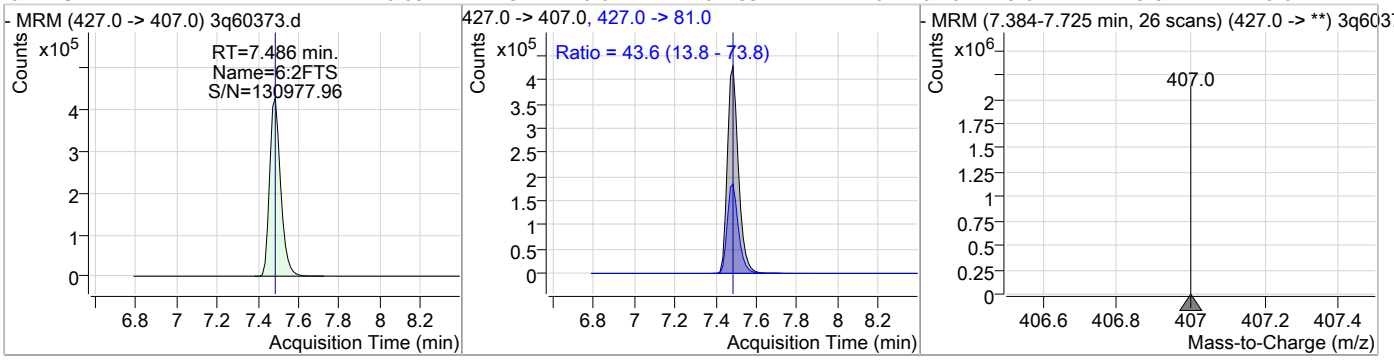
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.62	7.49	0.00	6003 (m)	413.0 -> 169.0	36.1	4.3	64.3



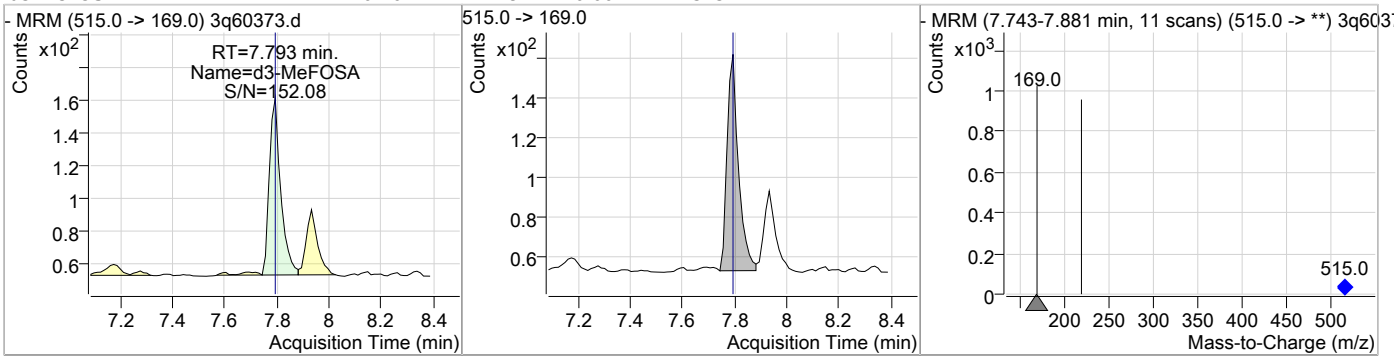
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.92	7.49	-0.01	24766				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	270.83	7.49	-0.01	1611397	427.0 -> 81.0	43.6	13.8	73.8

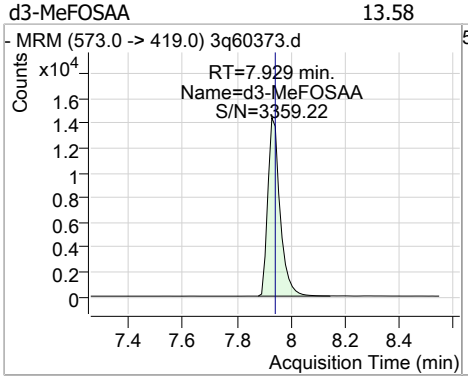


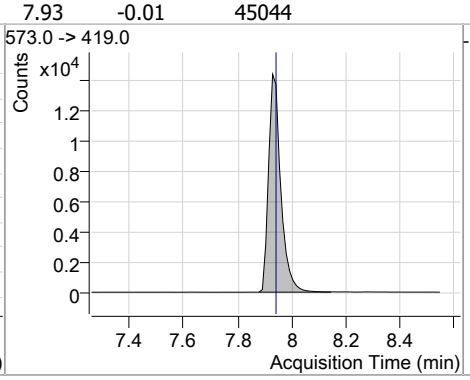
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.26	7.79	0.00	323				

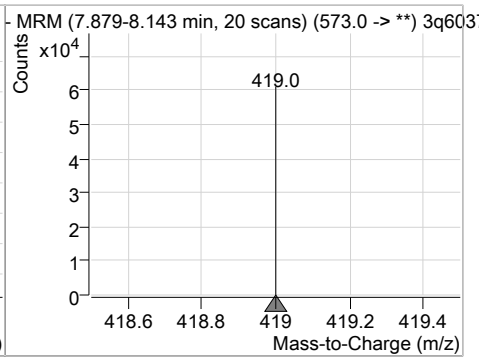


Perfluorinated Compounds by LC/MS/MS

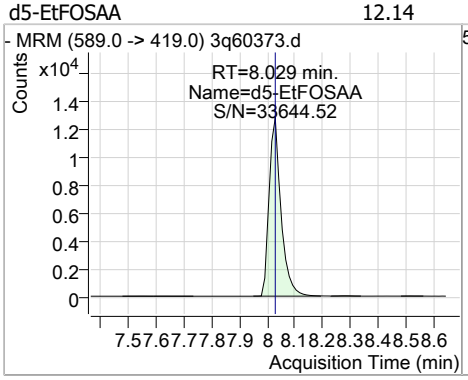
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.58	7.93	-0.01	45044				

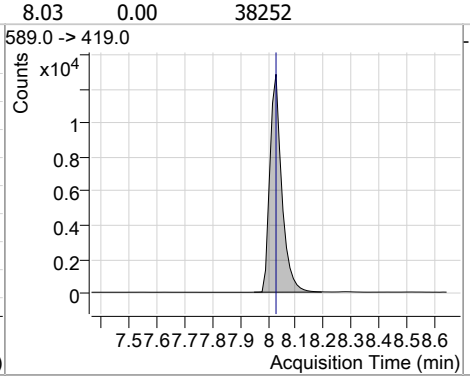


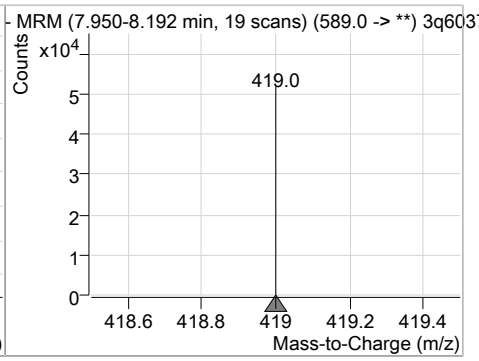




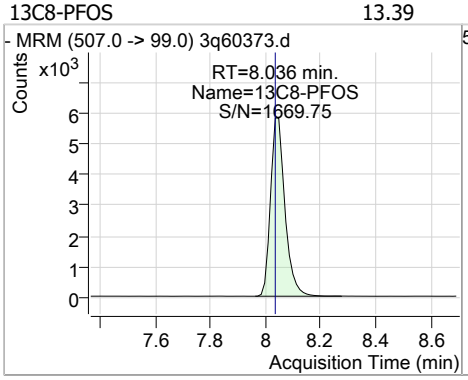
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.14	8.03	0.00	38252				

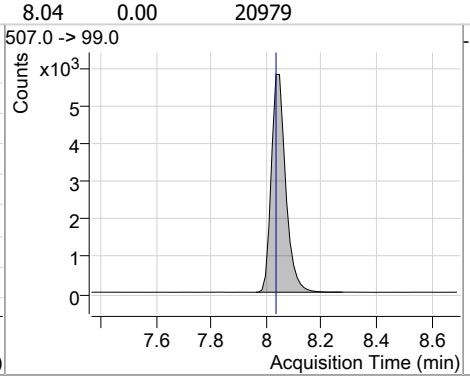


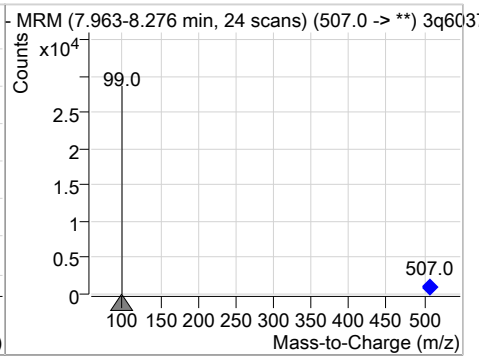




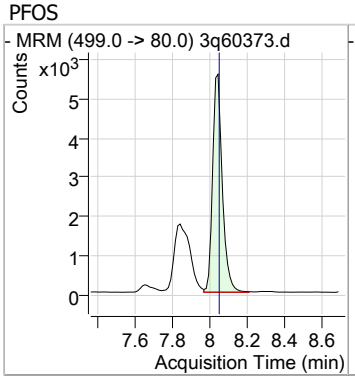
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.39	8.04	0.00	20979				

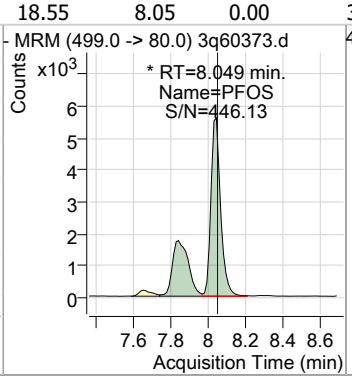


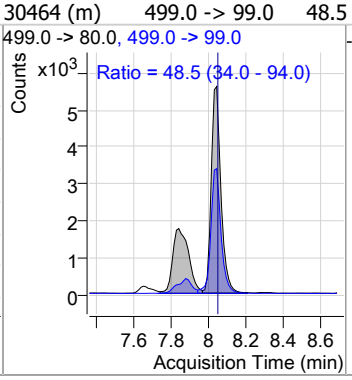


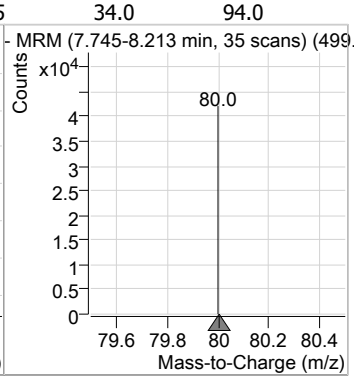


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.55	8.05	0.00	30464 (m)	499.0 -> 99.0	48.5	34.0	94.0



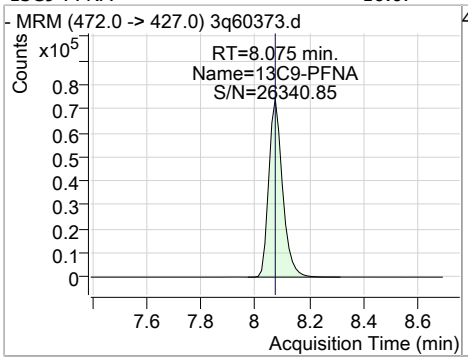


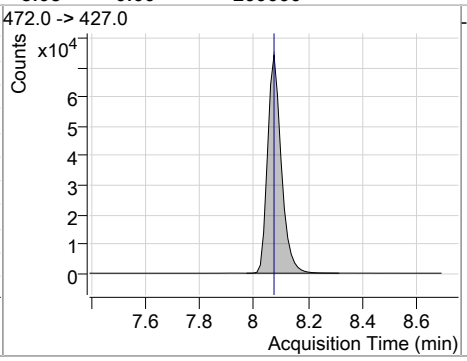


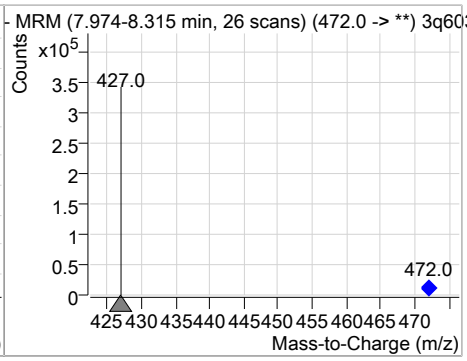


Perfluorinated Compounds by LC/MS/MS

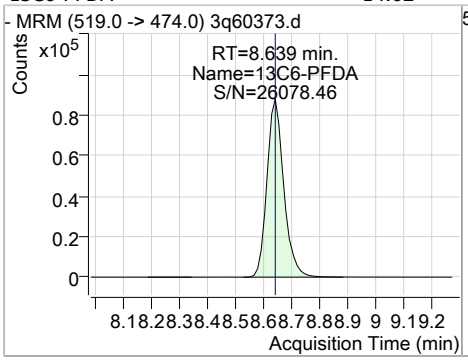
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.07	8.08	0.00	260060				

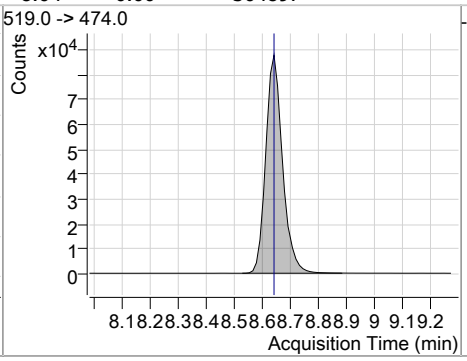


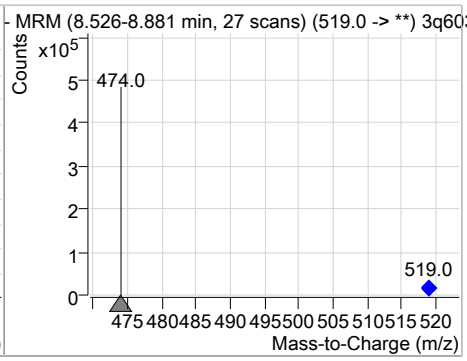




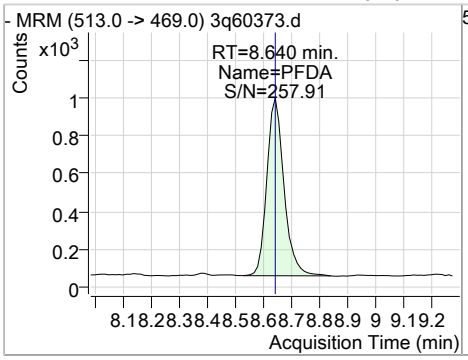
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.62	8.64	0.00	364897				

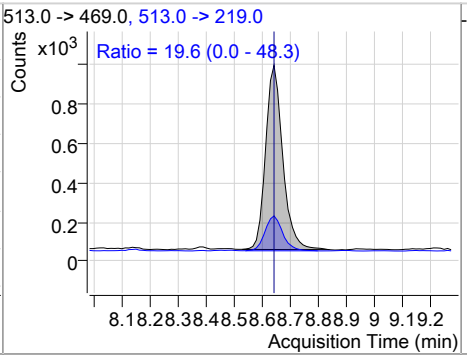


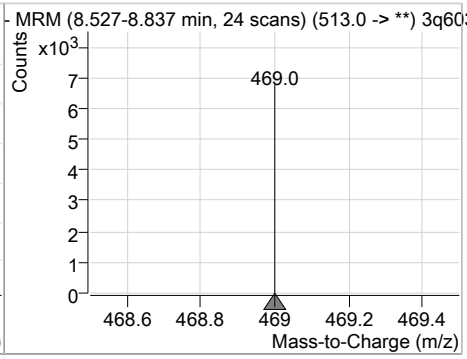




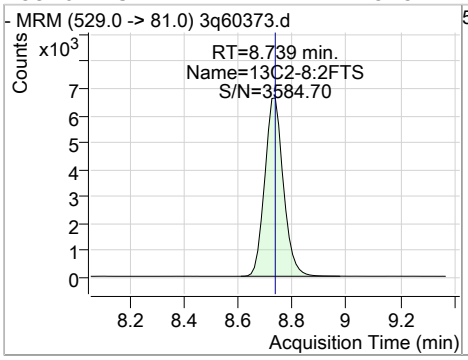
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.26	8.64	0.00	3971	513.0 -> 219.0	19.6	0.0	48.3

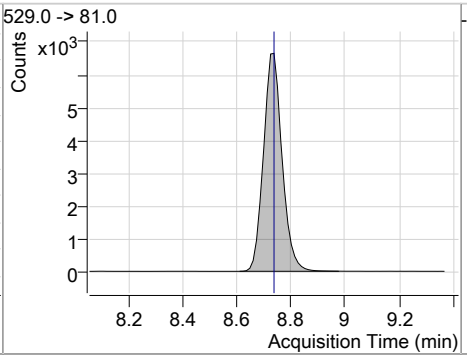


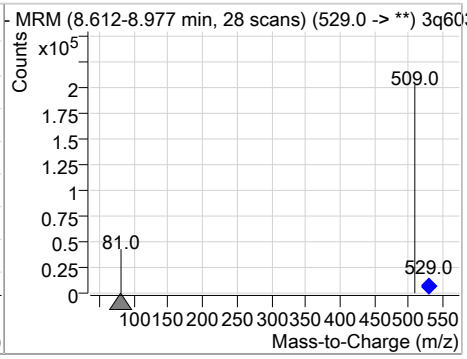




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.43	8.74	0.00	31492				

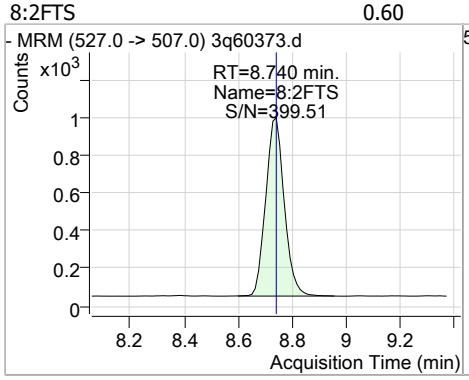


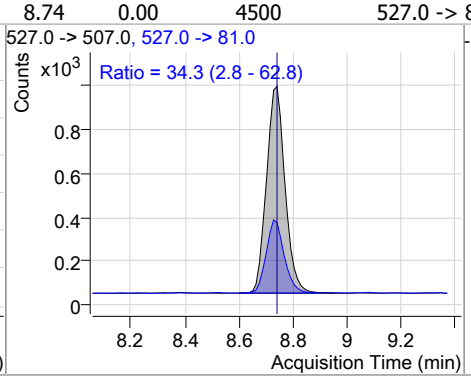


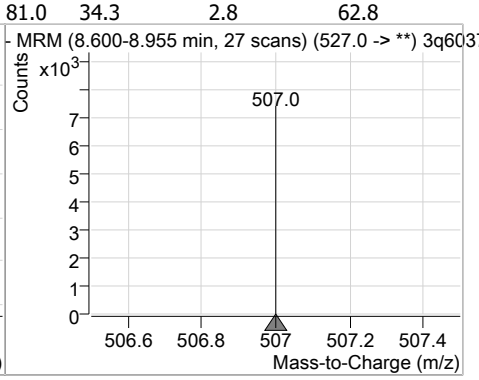


Perfluorinated Compounds by LC/MS/MS

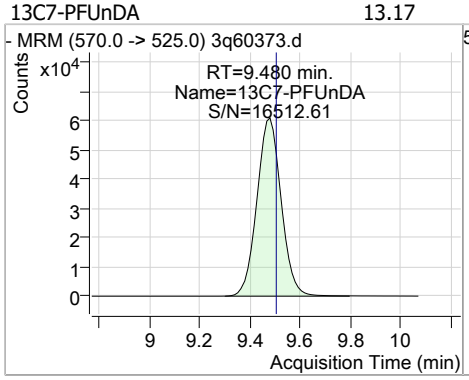
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.60	8.74	0.00	4500	527.0 -> 81.0	34.3	2.8	62.8

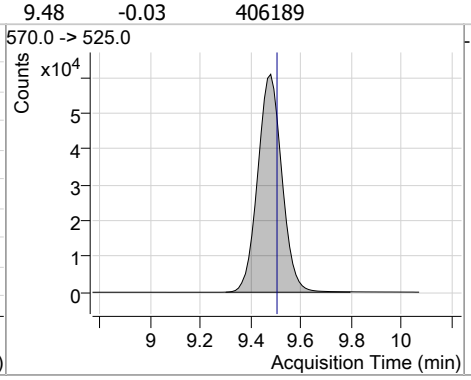


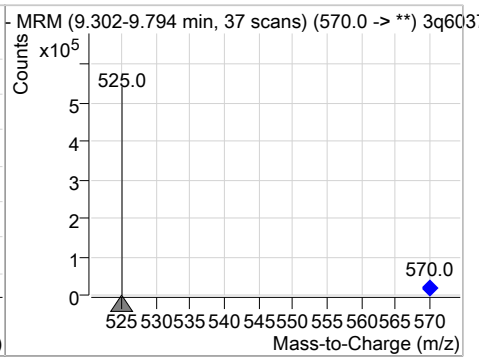




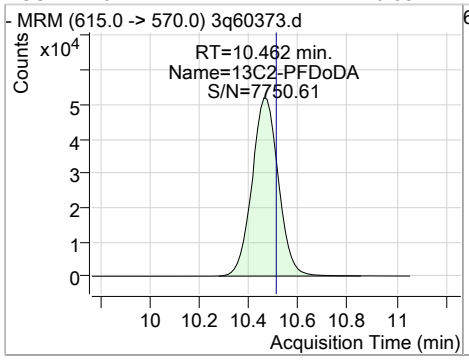
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.17	9.48	-0.03	406189				

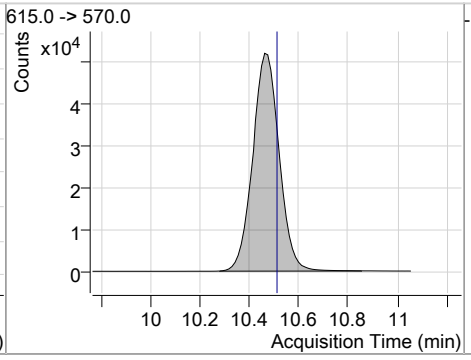


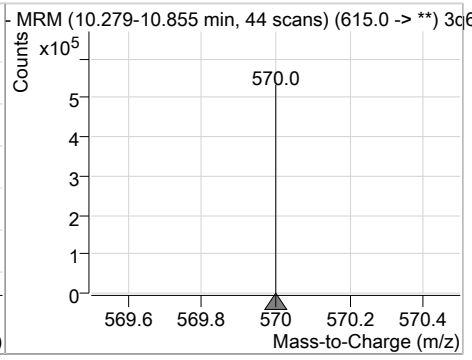




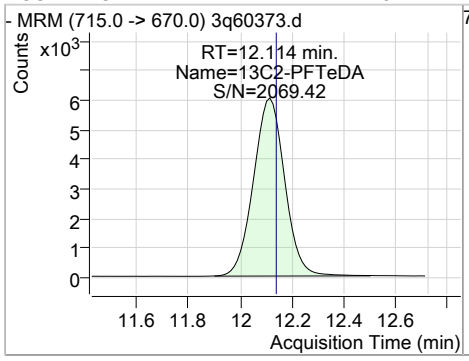
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.55	10.46	-0.05	386633				

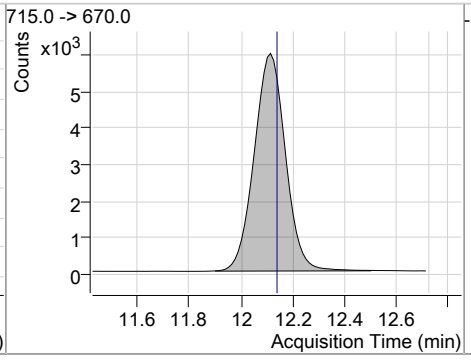


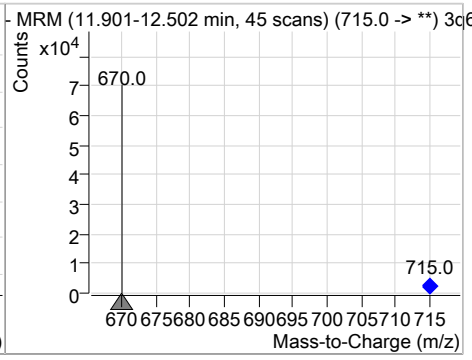




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.82	12.11	-0.03	50459				







Manual Integration Approval Summary

Sample Number: FA95502-1
Lab FileID: 3Q60373.D
Injection Time: 05/27/22 22:44
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:28 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.47	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60374.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:03:22 PM
Sample Name : fa95502-1
Vial : P3-B4
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,5,water

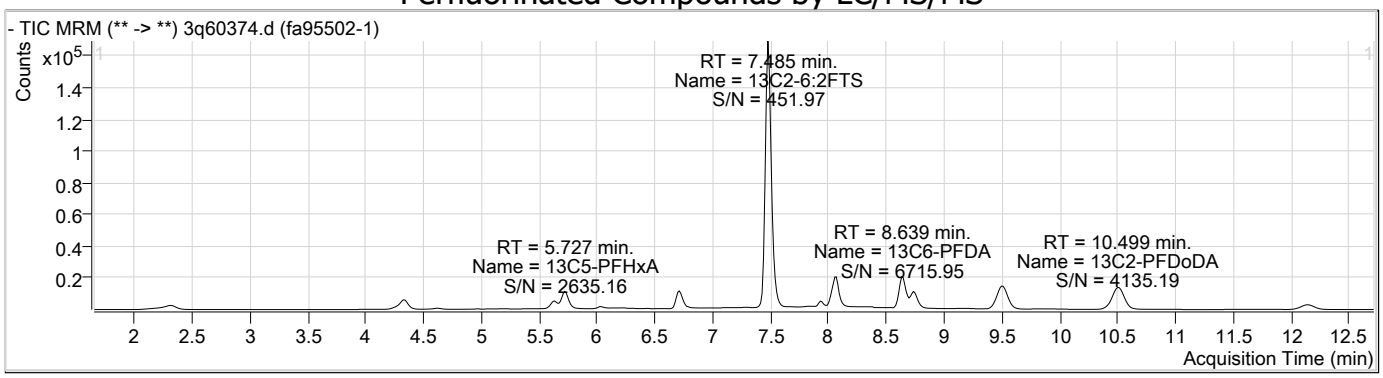
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.315	217.0 -> 172.0	23778	20.00	µg/L	-0.013
M5-PFPeA	4.337	268.0 -> 223.0	22354	20.00	µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	30337	20.00	µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	39338	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	47271	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	57546	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	83548	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	98079	20.00	µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	103576	20.00	µg/L	-0.013
M2-PFTeDA	12.139	715.0 -> 670.0	25030	20.00	µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	7323	20.00	µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	3137	20.00	µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	3658	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	5269	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	2267	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	5188	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	7978	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	10978	20.00	µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	4140	20.00	µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	218	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	10087	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	2267	4.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.2%		
13C2-6:2FTS	7.485	429.0 -> 81.0	5188	3.96	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.8%		
13C2-8:2FTS	8.739	529.0 -> 81.0	7978	3.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%		
13C2-PFDoDA	10.499	615.0 -> 570.0	103576	2.83	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C2-PFTeDA	12.139	715.0 -> 670.0	25030	1.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.0%		
13C3-PFBS	4.617	302.0 -> 99.0	3137	3.97	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.9%		
13C3-PFHxS	6.738	402.0 -> 99.0	3658	3.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.9%		
13C4-PFBA	2.315	217.0 -> 172.0	23778	3.93	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.7%		
13C4-PFHpA	6.718	367.0 -> 322.0	39338	3.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.6%		
13C5-PFHxA	5.727	318.0 -> 273.0	30337	3.84	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.2%		
13C5-PFPeA	4.337	268.0 -> 223.0	22354	3.86	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.3%		
13C6-PFDA	8.639	519.0 -> 474.0	83548	3.35	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

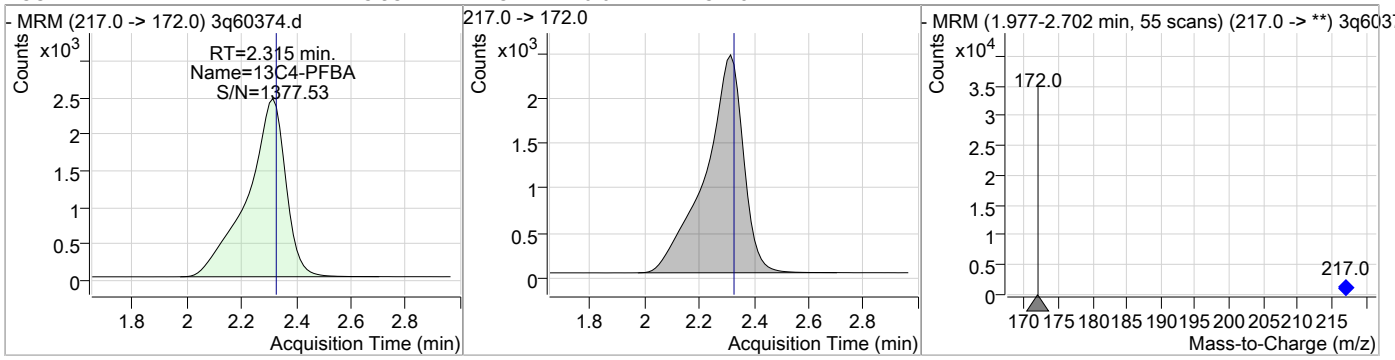
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%			
13C7-PFUnDA	9.505	570.0 -> 525.0	98079	3.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%			
13C8-FOSA	7.430	506.0 -> 78.0	7323	1.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%			
13C8-PFOA	7.487	421.0 -> 376.0	47271	3.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.7%			
13C8-PFOS	8.036	507.0 -> 99.0	5269	3.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
13C9-PFNA	8.075	472.0 -> 427.0	57546	3.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.8%			
d3-MeFOSAA	7.929	573.0 -> 419.0	10978	3.31	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%			
13C3-HFPO-DA	6.031	287.0 -> 169.0	4136	3.70	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.5%			
d3-MeFOSA	7.793	515.0 -> 169.0	218	0.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.9%			
d5-EtFOSAA	8.029	589.0 -> 419.0	10086	3.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
Target Compounds							QValue
4:2FTS	5.624	327.0 -> 307.0	1540	0.31	µg/L		93
6:2FTS	7.486	427.0 -> 407.0	354746	56.92	µg/L		100
8:2FTS	8.740	527.0 -> 507.0	1113	0.12	µg/L		86
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.321	213.0 -> 169.0	1526	0.66	µg/L		100
PFBS	4.619	299.0 -> 80.0	311	0.16	µg/L		95
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	2826	0.20	µg/L		98
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.728	313.0 -> 269.0	15225	2.40	µg/L		98
PFHxS	6.739	399.0 -> 80.0	2114	1.11	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.487	413.0 -> 369.0	1753	0.16	µg/L	m	99
PFOS	8.036	499.0 -> 80.0	7821	3.79	µg/L	m	81
PFPeA	4.339	263.0 -> 219.0	12831	1.56	µg/L		100
PFPeS	5.845	349.0 -> 80.0	348	0.26	µg/L	m	94
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

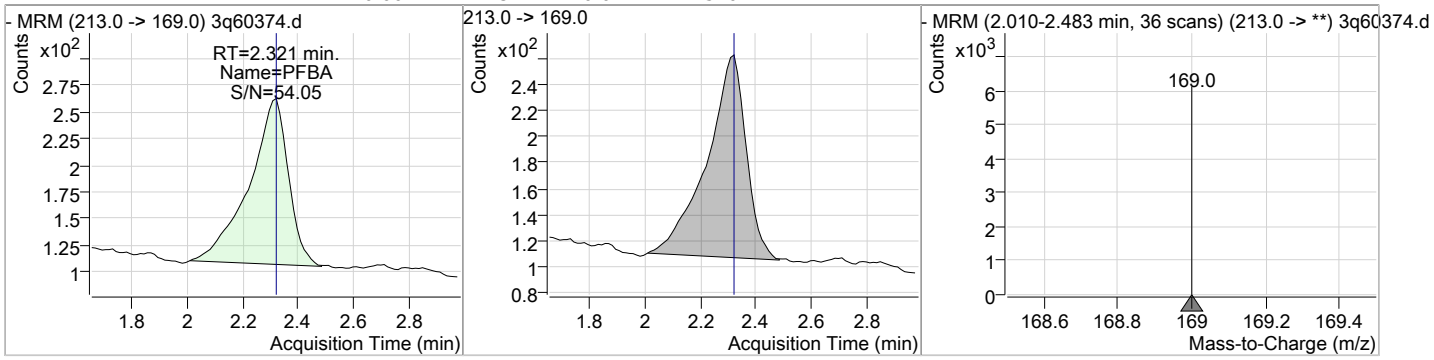
Perfluorinated Compounds by LC/MS/MS



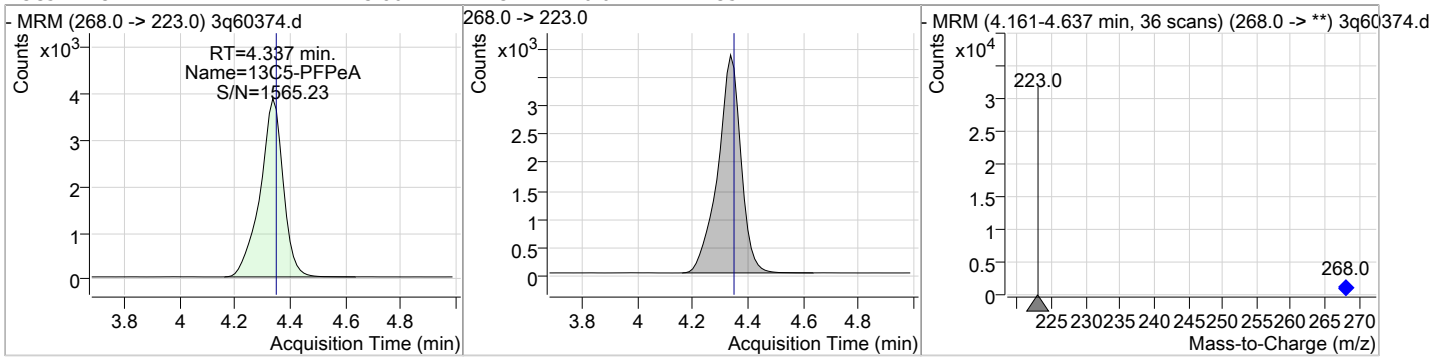
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.93	2.31	-0.01	23778				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.66	2.32	-0.01	1526				

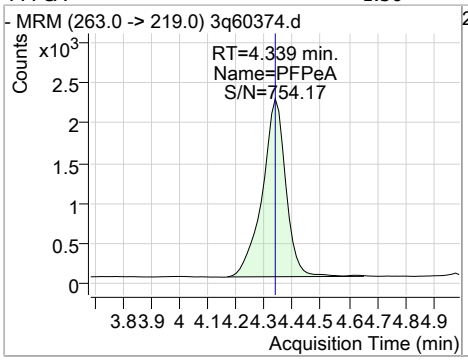


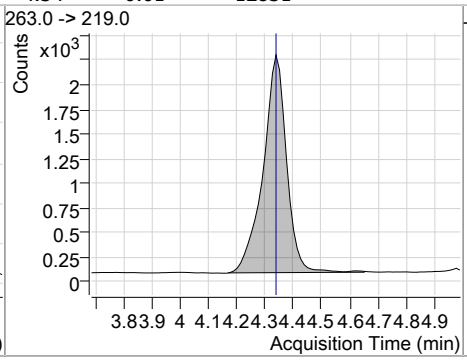
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.86	4.34	-0.01	22354				

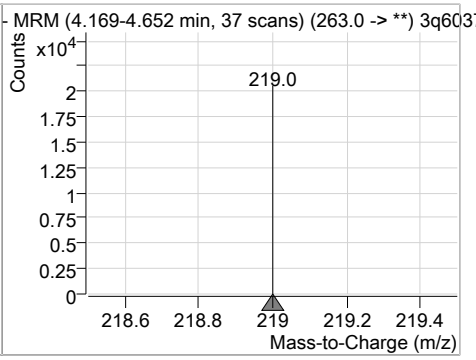


Perfluorinated Compounds by LC/MS/MS

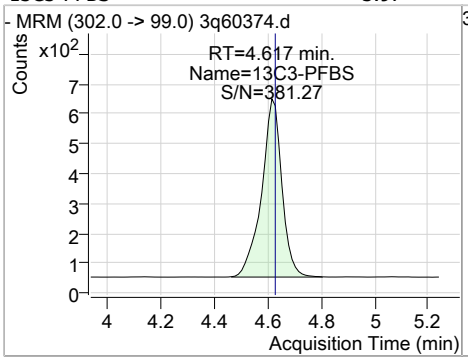
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.56	4.34	-0.01	12831				

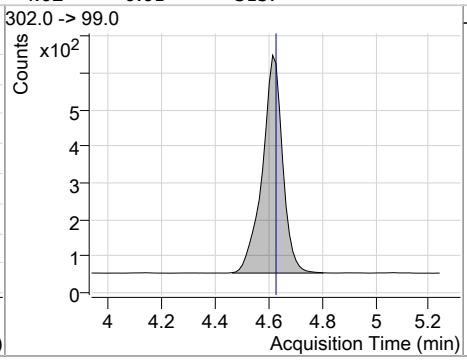


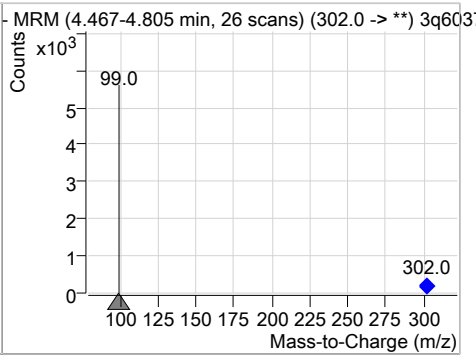




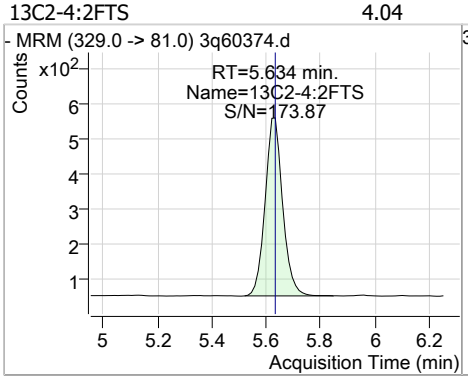
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.97	4.62	-0.01	3137				

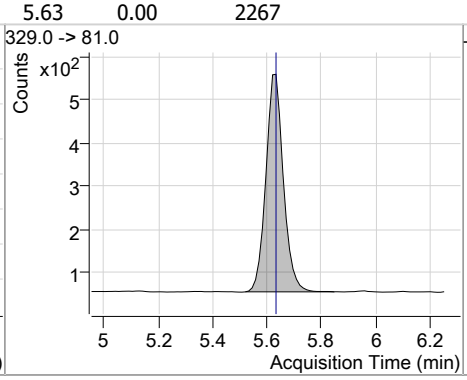


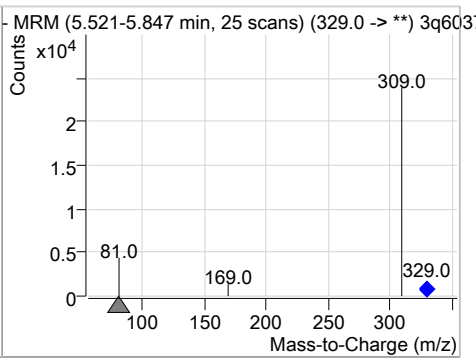




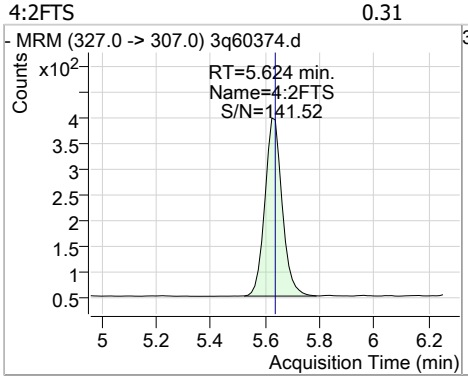
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.04	5.63	0.00	2267				

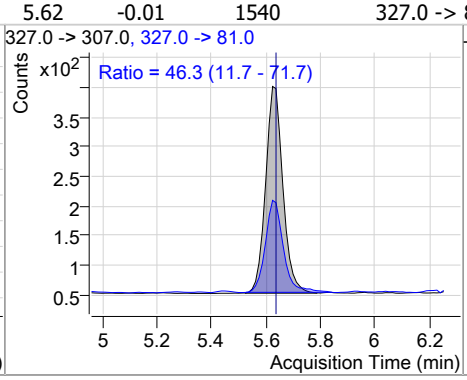


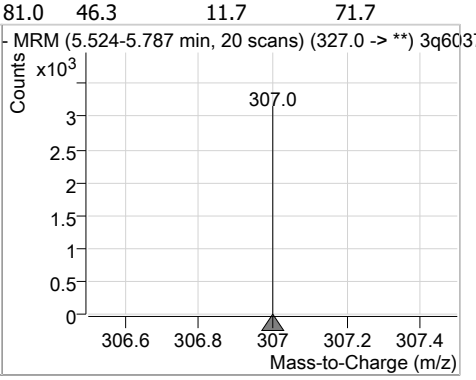




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.31	5.62	-0.01	1540	327.0 -> 81.0	46.3	11.7	71.7

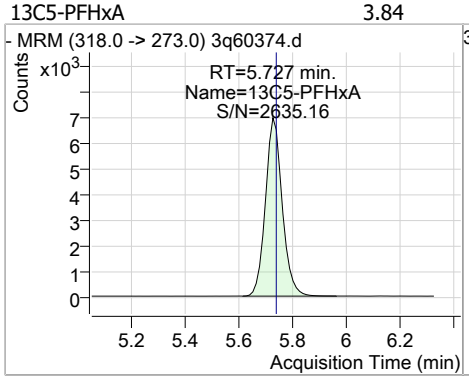


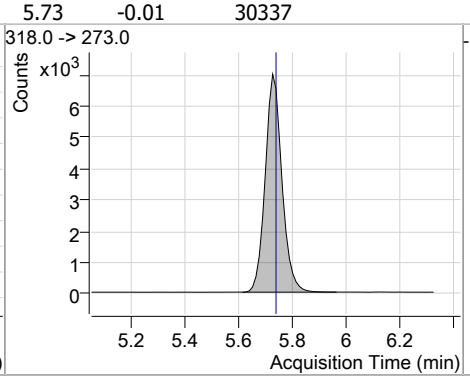


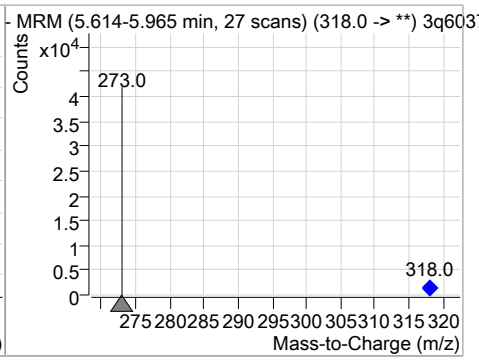


Perfluorinated Compounds by LC/MS/MS

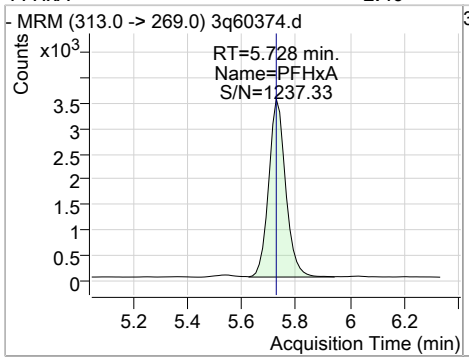
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.84	5.73	-0.01	30337				

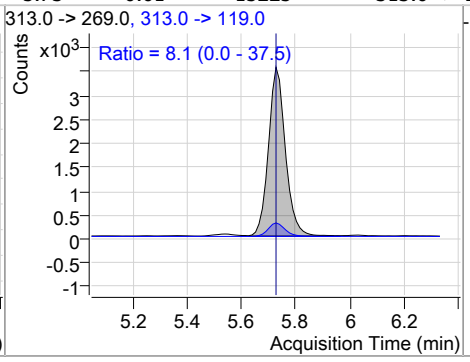


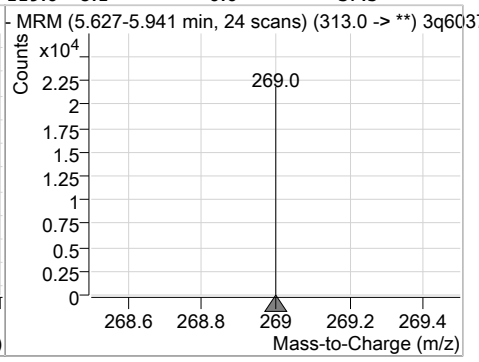




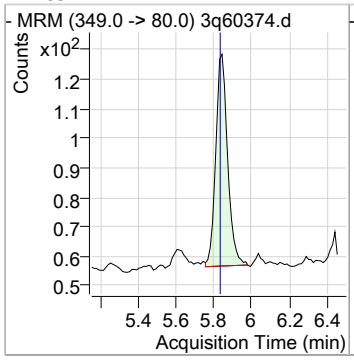
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.40	5.73	-0.01	15225	313.0 -> 119.0	8.1	0.0	37.5

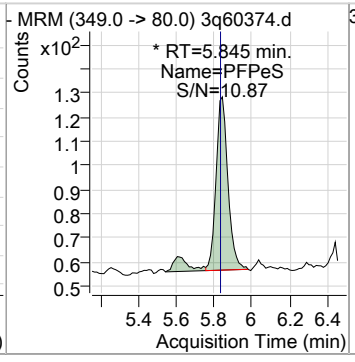


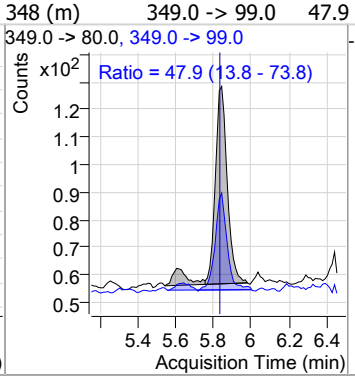


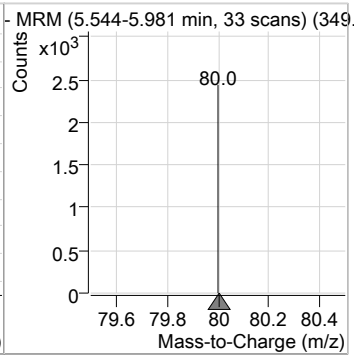


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.26	5.84	0.00	348 (m)	349.0 -> 99.0	47.9	13.8	73.8

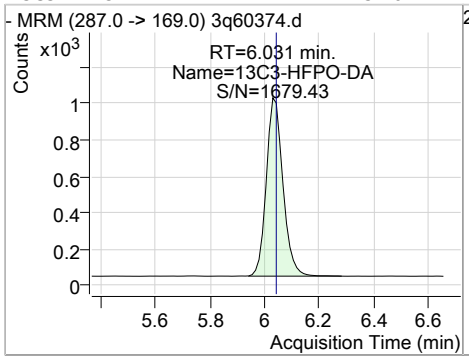


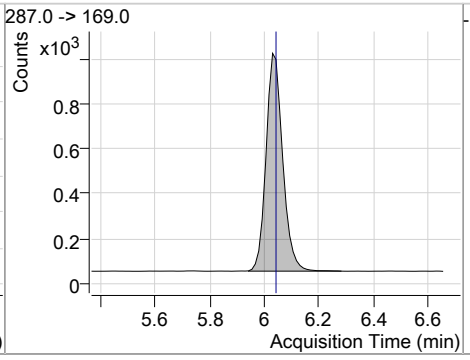


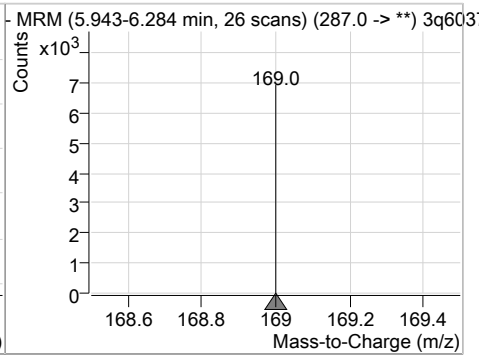




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.70	6.03	-0.01	4136				

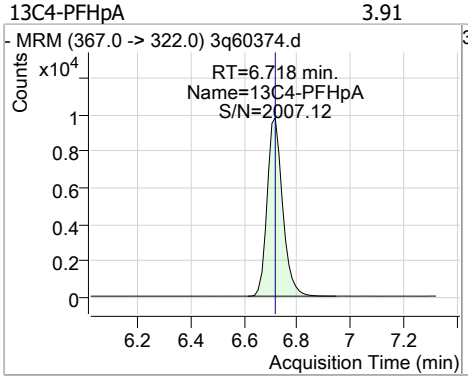


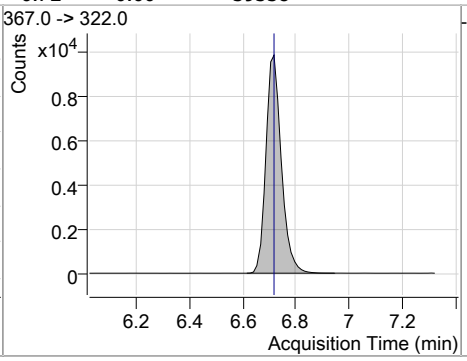


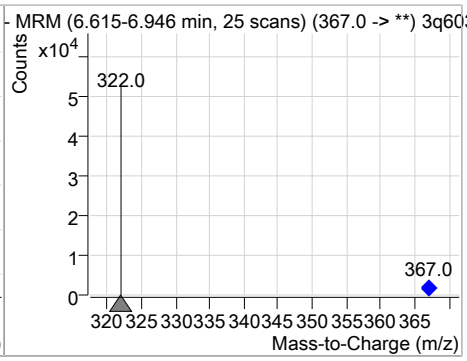


Perfluorinated Compounds by LC/MS/MS

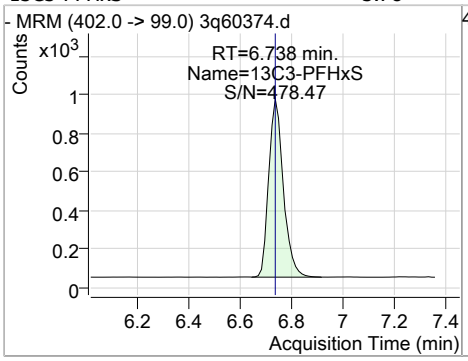
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.91	6.72	0.00	39338				

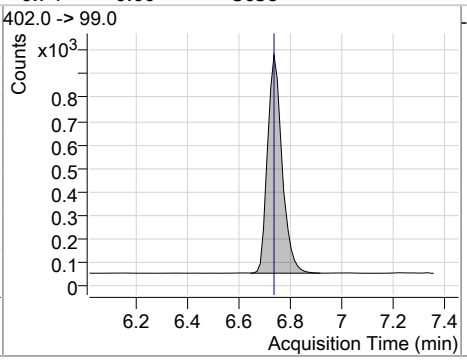


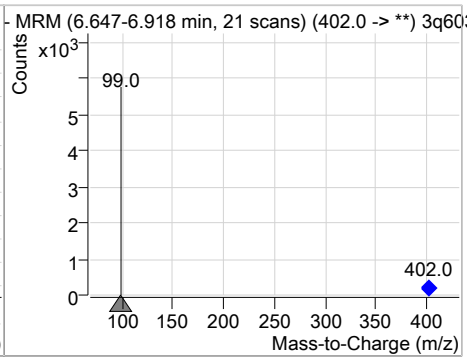




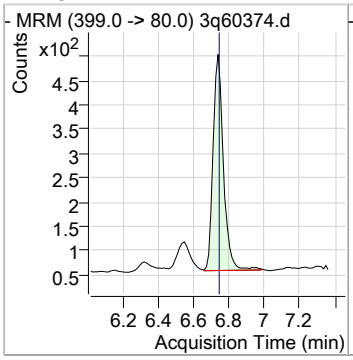
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.78	6.74	0.00	3658				

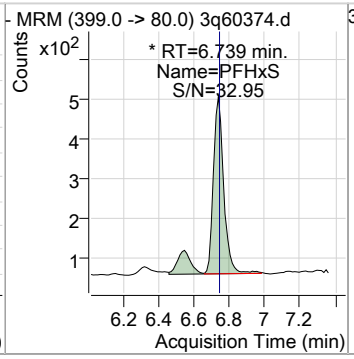


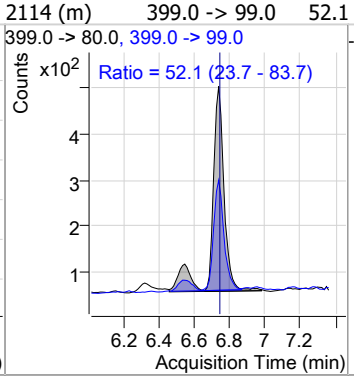


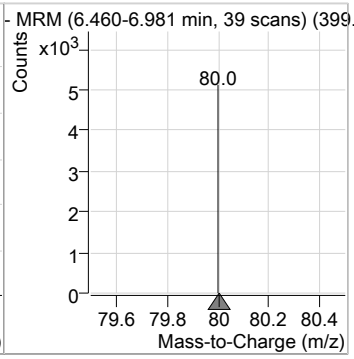


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.11	6.74	0.00	2114 (m)	399.0 -> 99.0	52.1	23.7	83.7

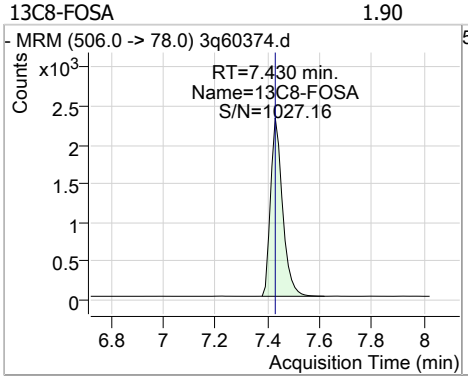


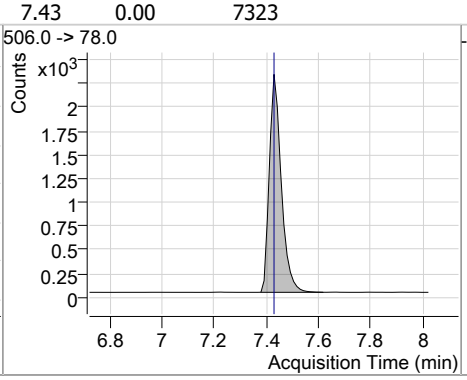


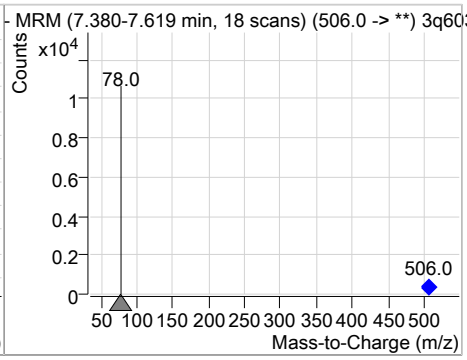




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.90	7.43	0.00	7323				

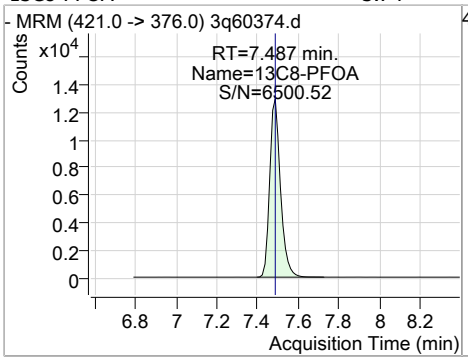


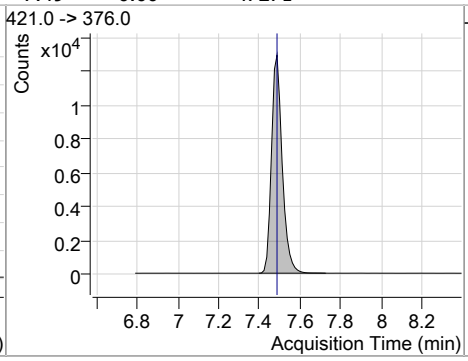


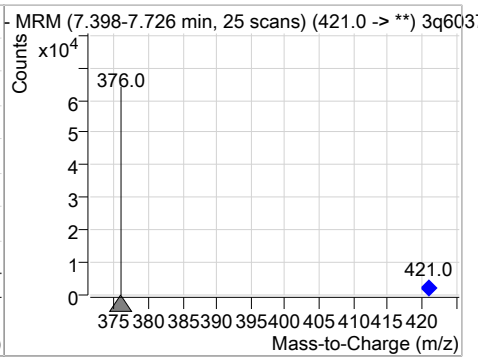


Perfluorinated Compounds by LC/MS/MS

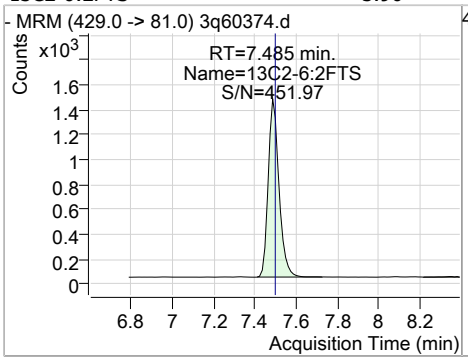
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.74	7.49	0.00	47271				

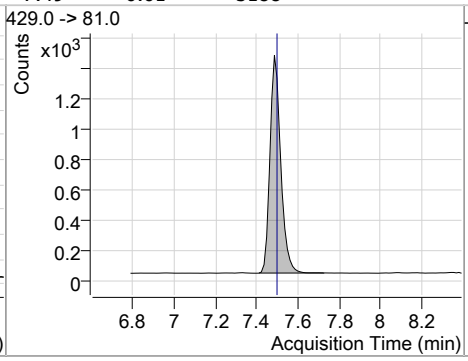


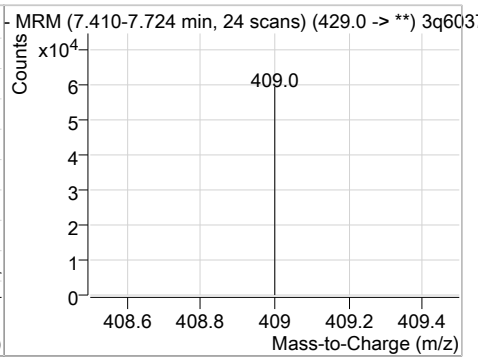




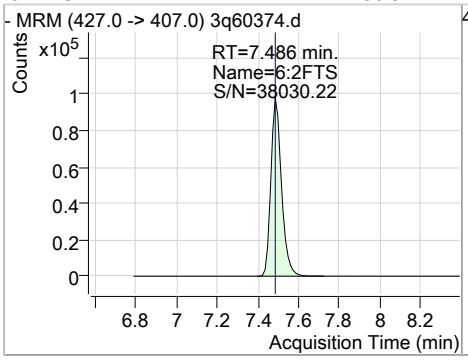
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.96	7.49	-0.01	5188				

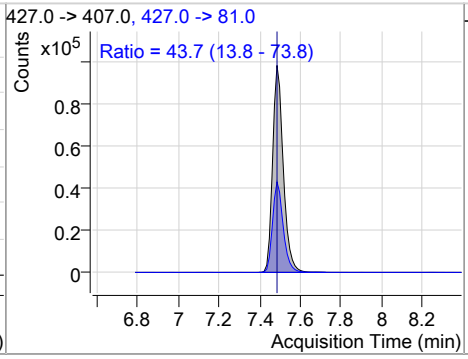


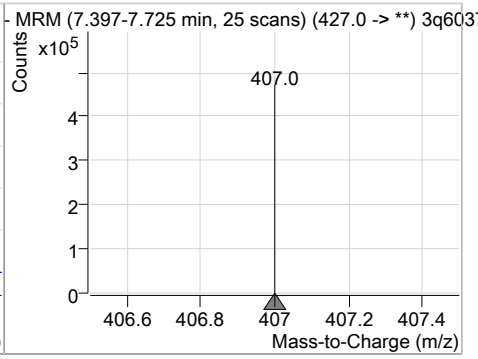




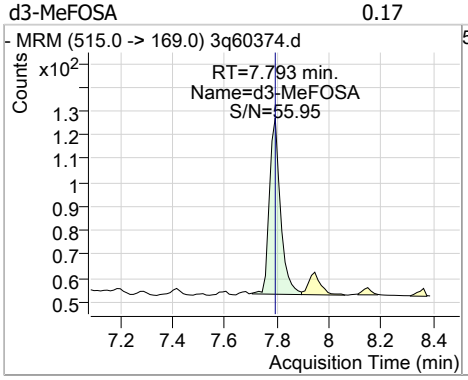
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	56.92	7.49	-0.01	354746	427.0 -> 81.0	43.7	13.8	73.8

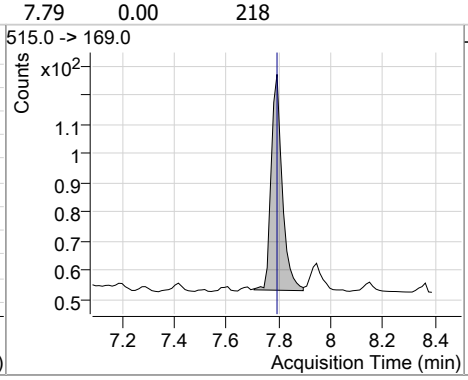


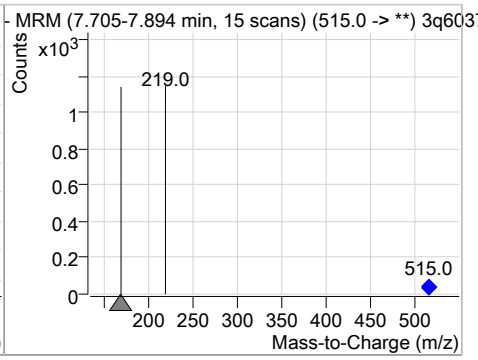




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.17	7.79	0.00	218				

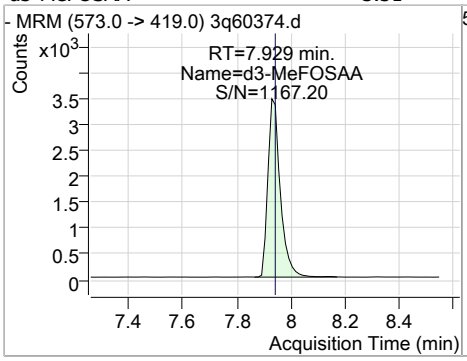


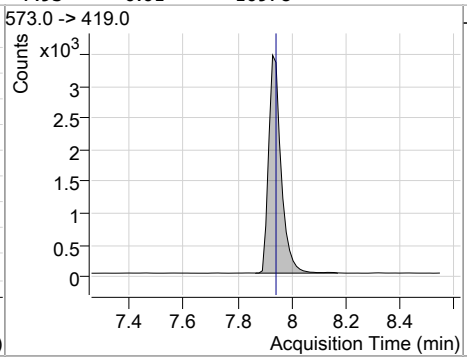


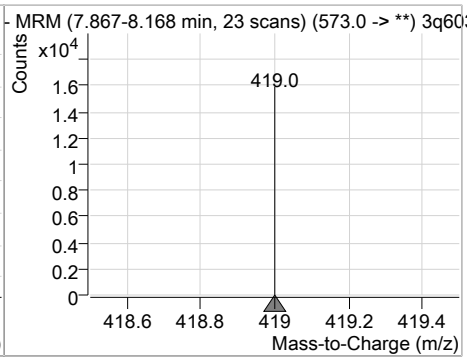


Perfluorinated Compounds by LC/MS/MS

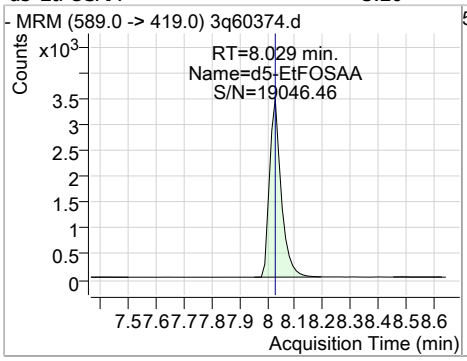
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.31	7.93	-0.01	10978				

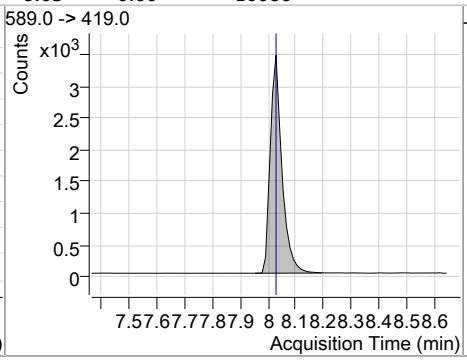


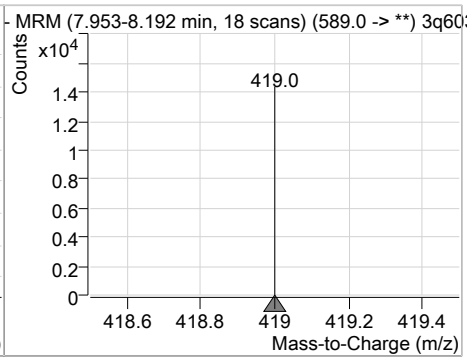




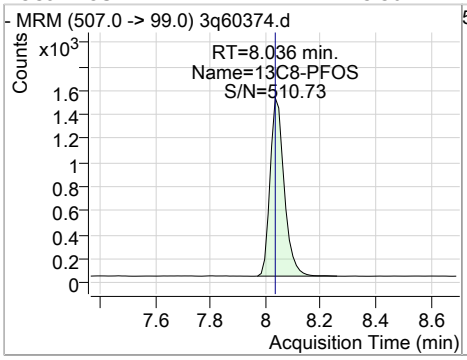
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.20	8.03	0.00	10086				

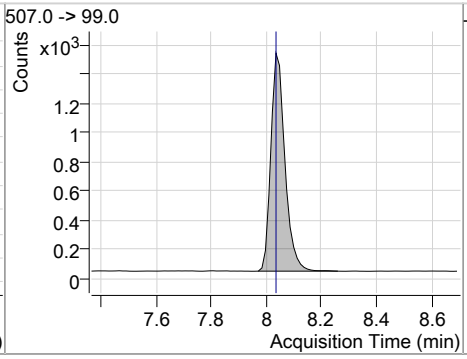


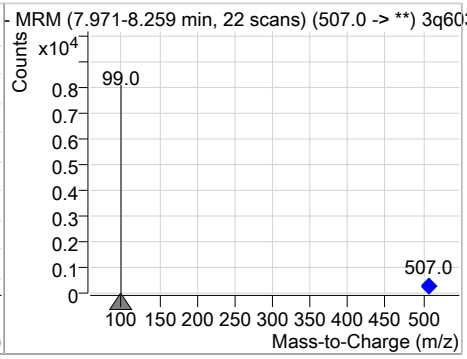




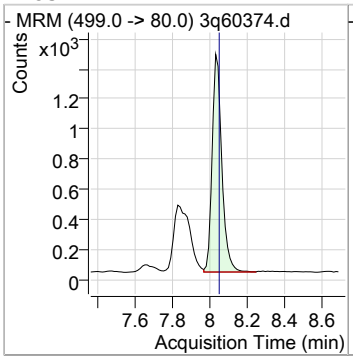
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.36	8.04	0.00	5269				

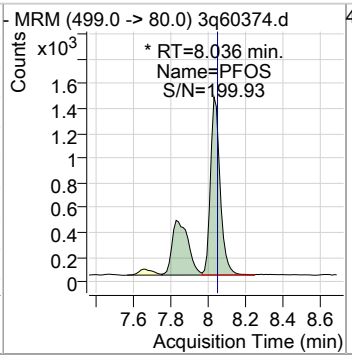


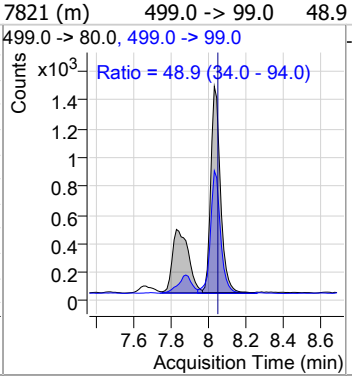


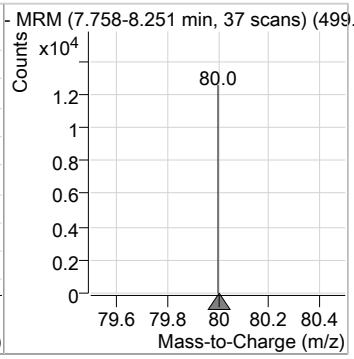


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.79	8.04	-0.01	7821 (m)	499.0 -> 99.0	48.9	34.0	94.0



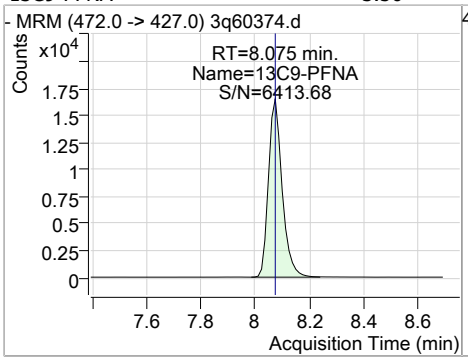


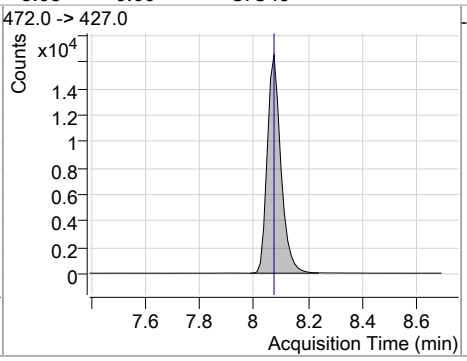


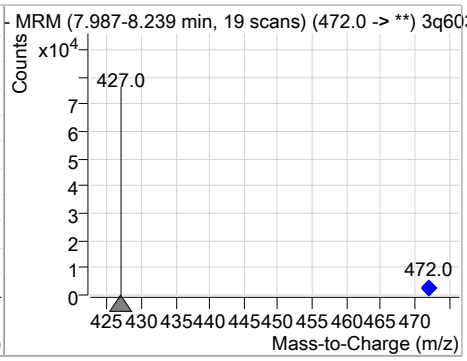


Perfluorinated Compounds by LC/MS/MS

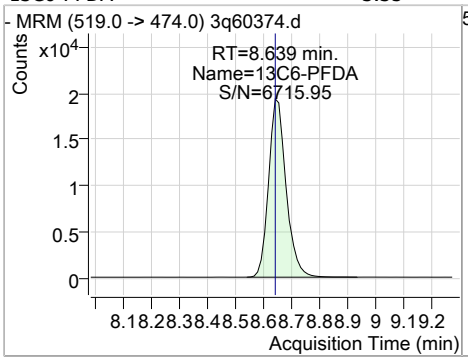
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.56	8.08	0.00	57546				

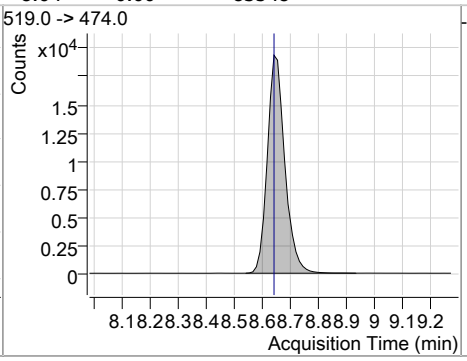


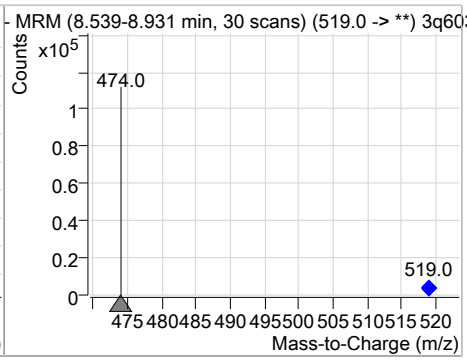




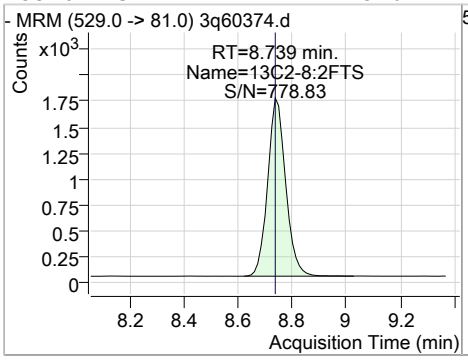
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.35	8.64	0.00	83548				

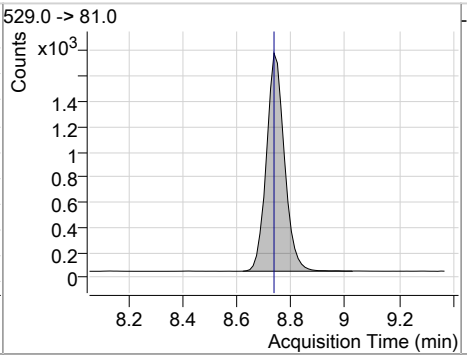


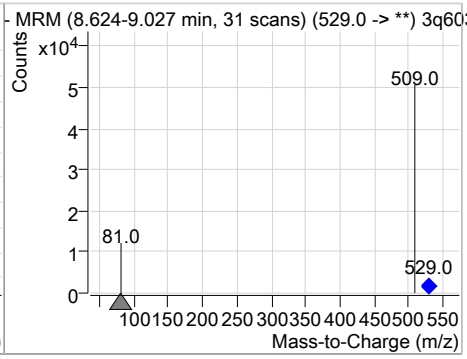




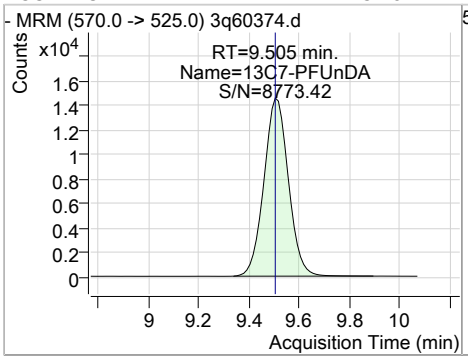
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.40	8.74	0.00	7978				

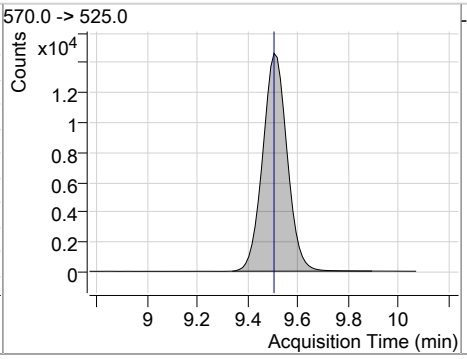


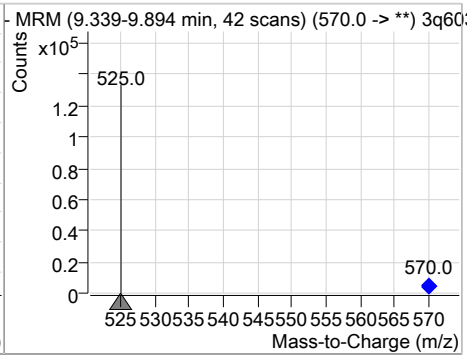




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	3.18	9.50	0.00	98079				

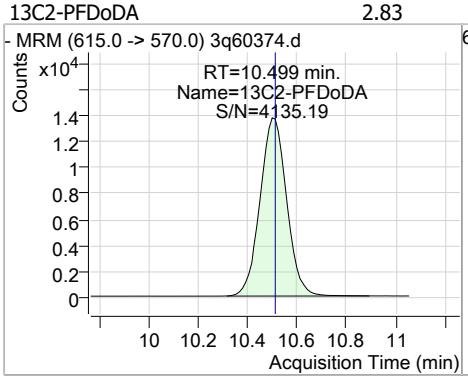


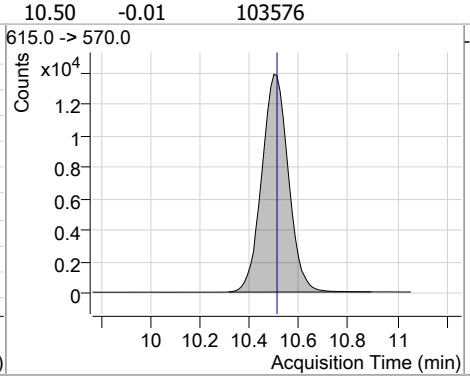


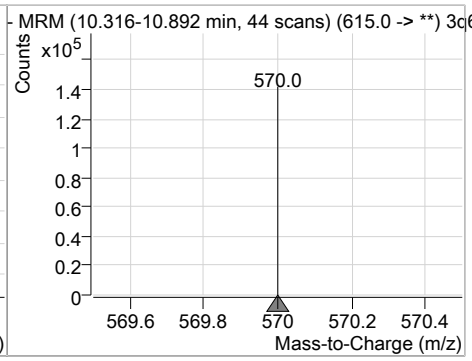


Perfluorinated Compounds by LC/MS/MS

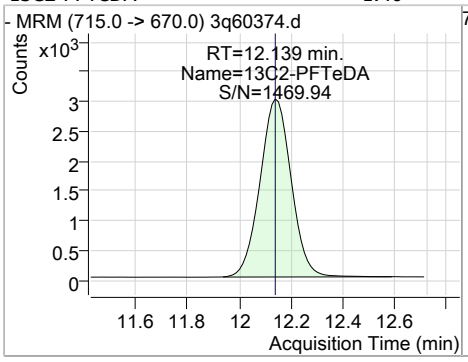
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.83	10.50	-0.01	103576				

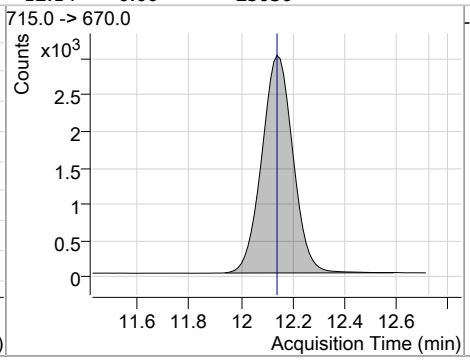


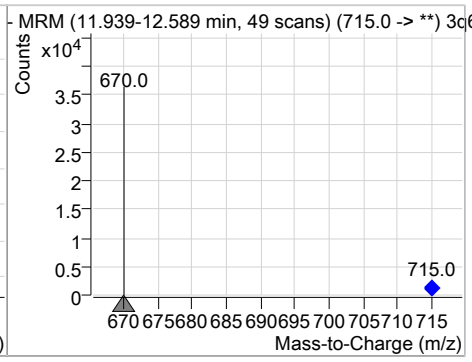




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.40	12.14	0.00	25030				







Manual Integration Approval Summary

Sample Number: FA95502-1
Lab FileID: 3Q60374.D
Injection Time: 05/27/22 23:03
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:28 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/31/22 20:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60376.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:40:27 PM
Sample Name : fa95502-2
Vial : P3-B6
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

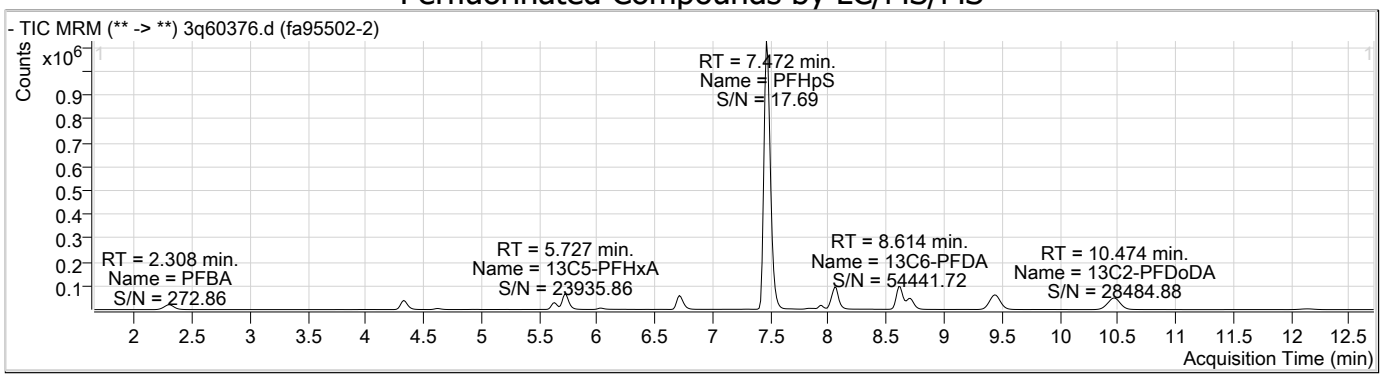
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.302	217.0 -> 172.0	117914	20.00 µg/L	-0.025
M5-PFPeA	4.337	268.0 -> 223.0	112376	20.00 µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	146606	20.00 µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	190083	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	207110	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	276733	20.00 µg/L	0.000
M6-PFDA	8.614	519.0 -> 474.0	395388	20.00 µg/L	-0.025
M7-PFUnDA	9.442	570.0 -> 525.0	409856	20.00 µg/L	-0.063
M2-PFDoDA	10.474	615.0 -> 570.0	363224	20.00 µg/L	-0.038
M2-PFTeDA	12.139	715.0 -> 670.0	25897	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	26235	20.00 µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	15259	20.00 µg/L	-0.013
M3-PFHxS	6.751	402.0 -> 99.0	17703	20.00 µg/L	0.013
M8-PFOS	8.036	507.0 -> 99.0	22943	20.00 µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	10941	20.00 µg/L	0.000
M2-6:2FTS	7.473	429.0 -> 81.0	24020	20.00 µg/L	-0.025
M2-8:2FTS	8.713	529.0 -> 81.0	32431	20.00 µg/L	-0.025
M3-MeFOSAA	7.929	573.0 -> 419.0	48173	20.00 µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	19207	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	163	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	37335	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	10941	19.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C2-6:2FTS	7.473	429.0 -> 81.0	24020	18.35 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
13C2-8:2FTS	8.713	529.0 -> 81.0	32431	13.83 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%	
13C2-PFDoDA	10.474	615.0 -> 570.0	363224	9.91 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.5%	
13C2-PFTeDA	12.139	715.0 -> 670.0	25897	1.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.2%	
13C3-PFBS	4.617	302.0 -> 99.0	15259	19.33 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%	
13C3-PFHxS	6.751	402.0 -> 99.0	17703	18.27 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%	
13C4-PFBA	2.302	217.0 -> 172.0	117914	19.51 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C4-PFHpA	6.718	367.0 -> 322.0	190083	18.91 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C5-PFHxA	5.727	318.0 -> 273.0	146606	18.57 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C5-PFPeA	4.337	268.0 -> 223.0	112376	19.39 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C6-PFDA	8.614	519.0 -> 474.0	395388	15.84 µg/L	-0.025

Perfluorinated Compounds by LC/MS/MS

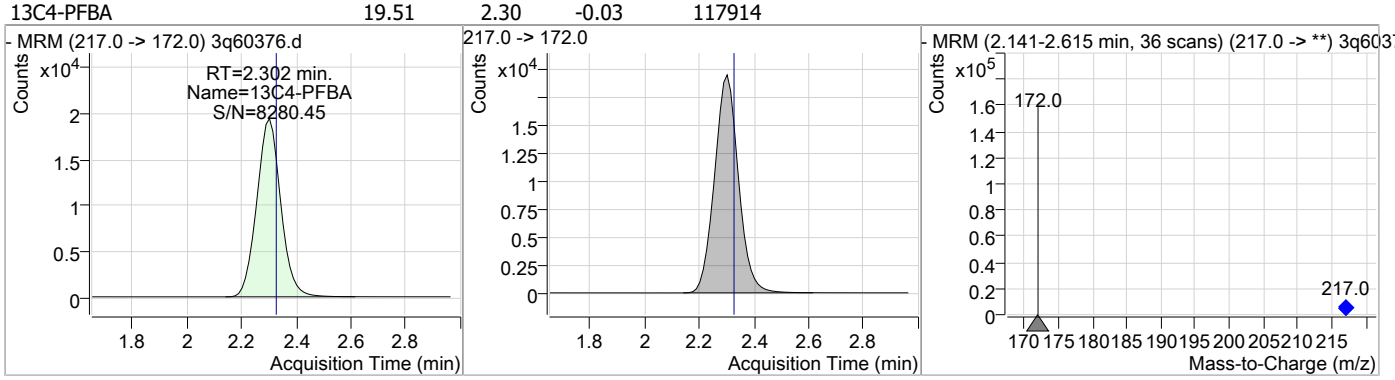
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%			
13C7-PFUnDA	9.442	570.0 -> 525.0	409856	13.29	µg/L		-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.5%			
13C8-FOSA	7.430	506.0 -> 78.0	26235	6.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.1%			
13C8-PFOA	7.487	421.0 -> 376.0	207110	16.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.0%			
13C8-PFOS	8.036	507.0 -> 99.0	22943	14.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%			
13C9-PFNA	8.075	472.0 -> 427.0	276733	17.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
d3-MeFOSAA	7.929	573.0 -> 419.0	48173	14.53	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	19212	17.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
d3-MeFOSA	7.793	515.0 -> 169.0	163	0.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.7%			
d5-EtFOSAA	8.029	589.0 -> 419.0	37329	11.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.2%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	10768	2.26	µg/L		98
6:2FTS	7.473	427.0 -> 407.0	2712452	470.04	µg/L		99
8:2FTS	8.715	527.0 -> 507.0	8043	1.04	µg/L		96
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	7.432	498.0 -> 78.0	472	0.39	µg/L	m	78
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.308	213.0 -> 169.0	7004	3.05	µg/L		100
PFBS	4.619	299.0 -> 80.0	1803	0.93	µg/L		92
PFDA	8.615	513.0 -> 469.0	4867	0.29	µg/L		97
PFDoDA	10.466	613.0 -> 569.0	3409	0.22	µg/L		100
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	20264	1.45	µg/L		100
PFHpS	7.472	449.0 -> 80.0	851	0.58	µg/L	m	94
PFHxA	5.728	313.0 -> 269.0	97567	15.92	µg/L		99
PFHxS	6.739	399.0 -> 80.0	8776	4.75	µg/L	m	98
PFNA	8.075	463.0 -> 419.0	1496	0.11	µg/L		99
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.487	413.0 -> 369.0	7181	0.74	µg/L	m	95
PFOS	8.036	499.0 -> 80.0	54900	30.57	µg/L	m	83
PFPeA	4.339	263.0 -> 219.0	50871	6.14	µg/L		100
PFPeS	5.845	349.0 -> 80.0	979	0.76	µg/L	m	92
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	9.444	563.0 -> 519.0	3803	0.20	µg/L		99
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

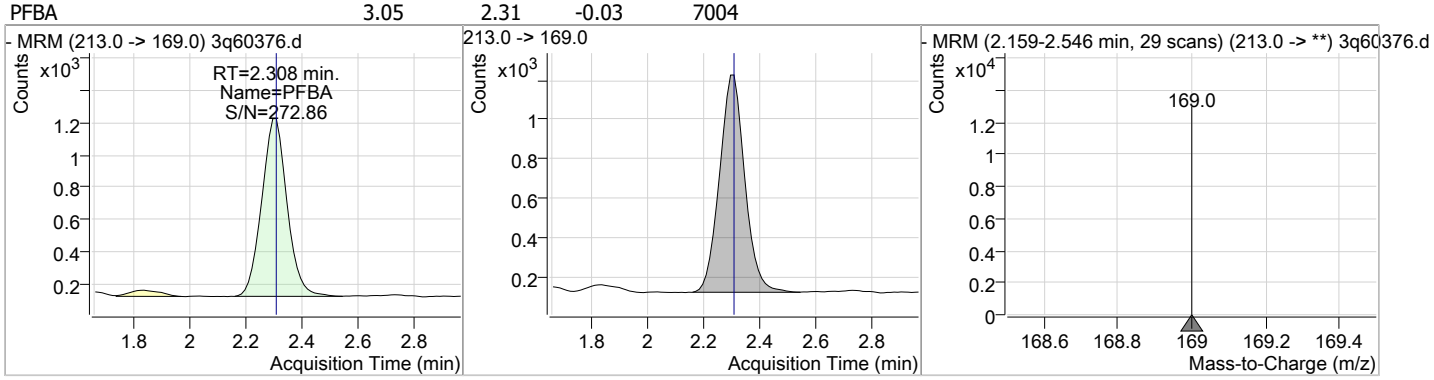
Perfluorinated Compounds by LC/MS/MS



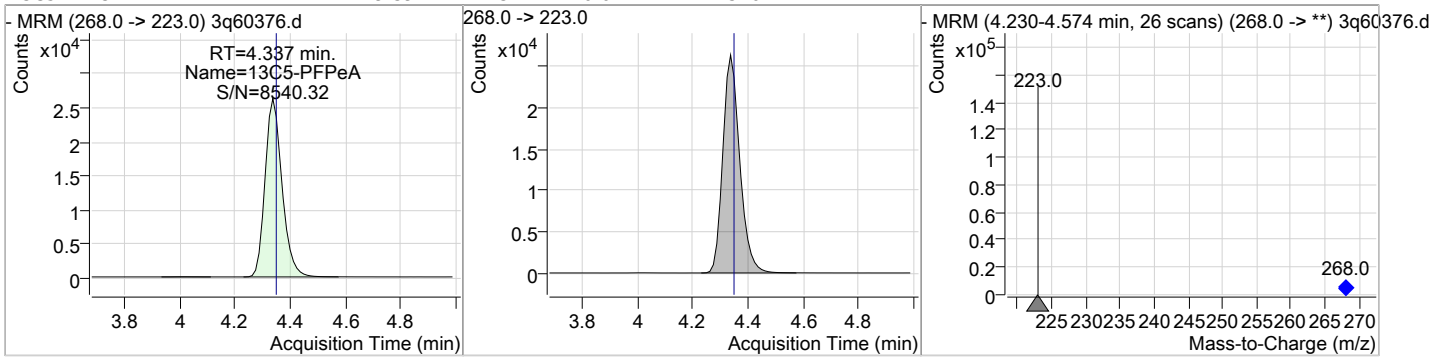
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.51	2.30	-0.03	117914				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.05	2.31	-0.03	7004				

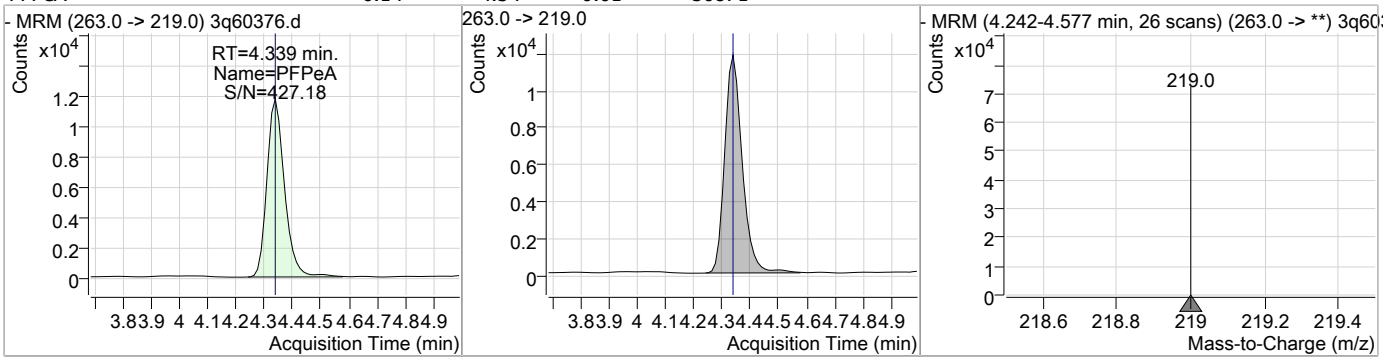


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.39	4.34	-0.01	112376				

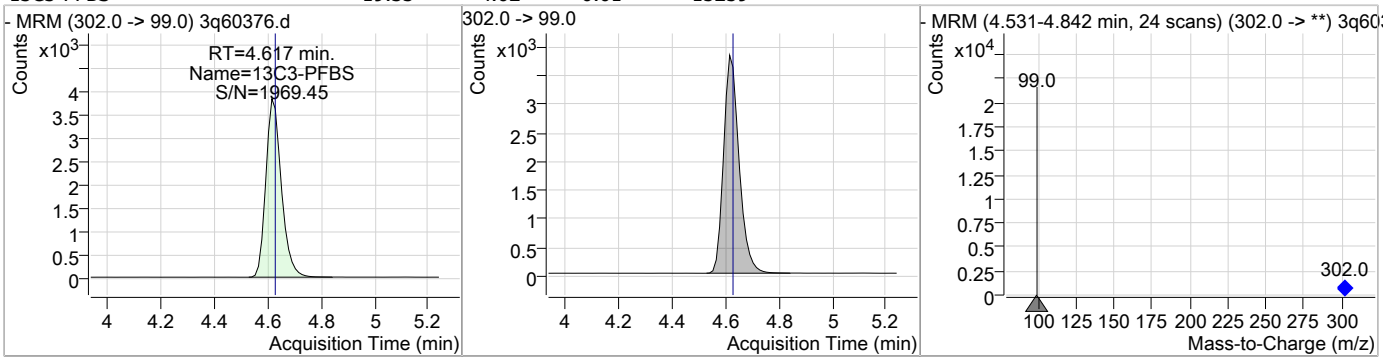


Perfluorinated Compounds by LC/MS/MS

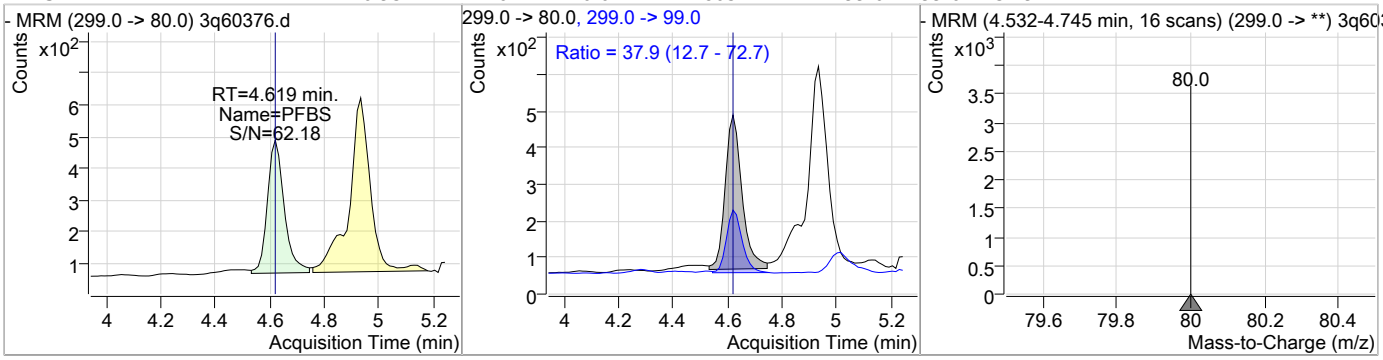
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	6.14	4.34	-0.01	50871				



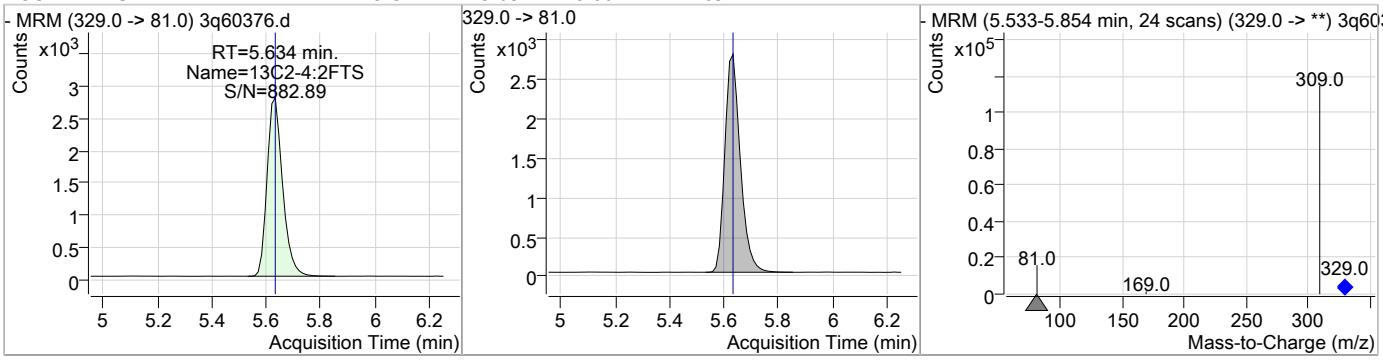
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.33	4.62	-0.01	15259				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.93	4.62	-0.01	1803	299.0 -> 99.0	37.9	12.7	72.7

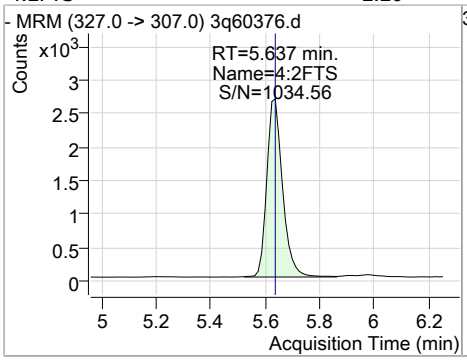


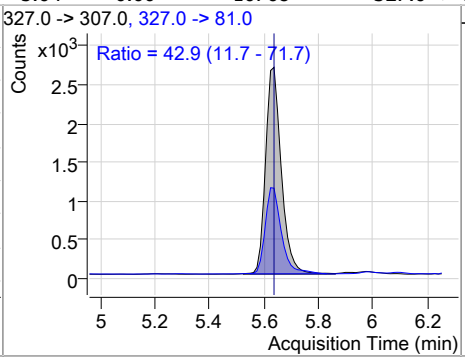
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.52	5.63	0.00	10941				

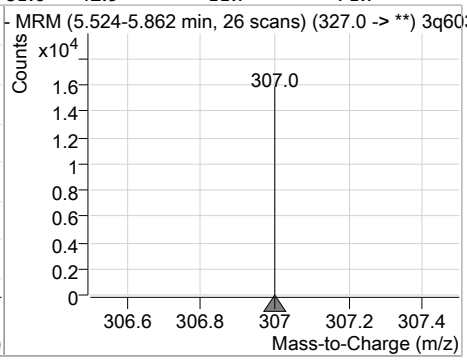


Perfluorinated Compounds by LC/MS/MS

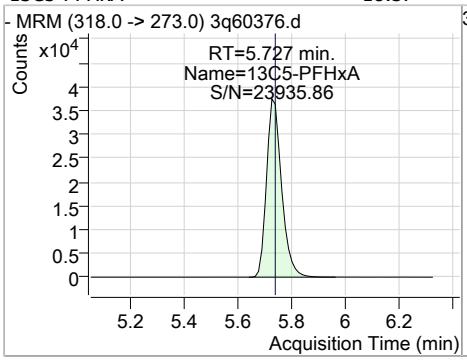
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.26	5.64	0.00	10768	327.0 -> 81.0	42.9	11.7	71.7

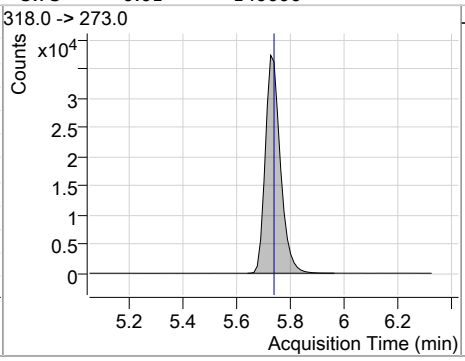


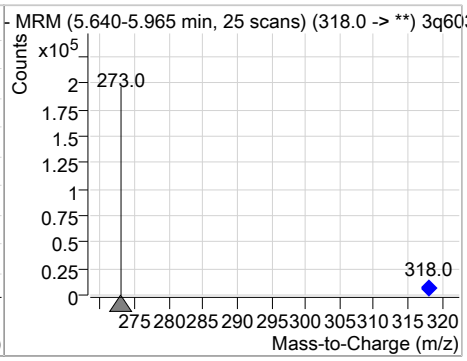




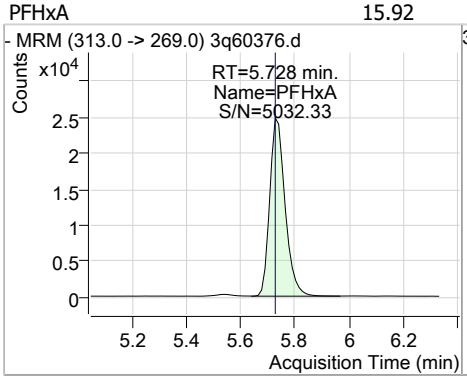
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.57	5.73	-0.01	146606				

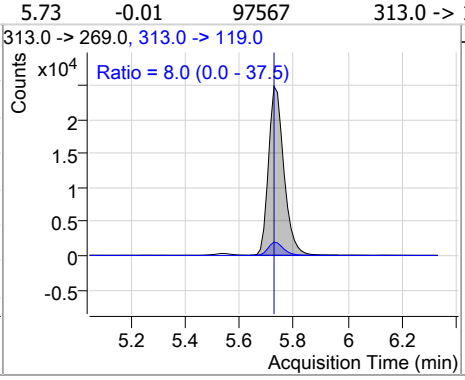


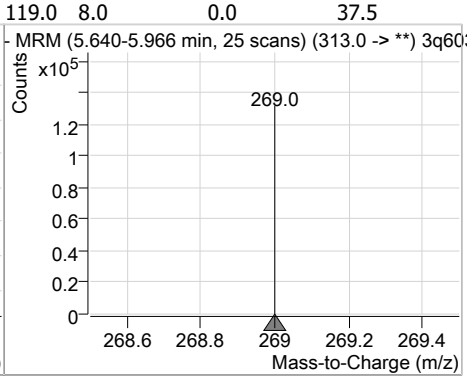




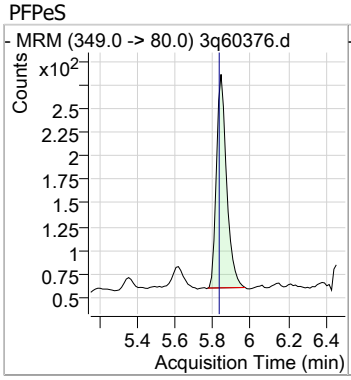
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.92	5.73	-0.01	97567	313.0 -> 119.0	8.0	0.0	37.5

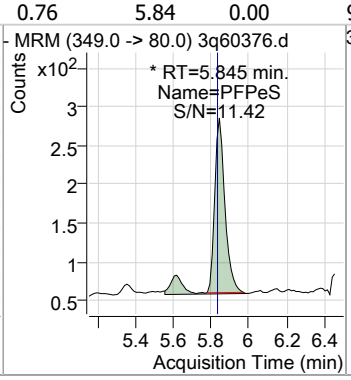


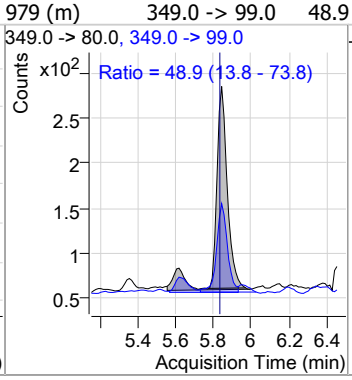


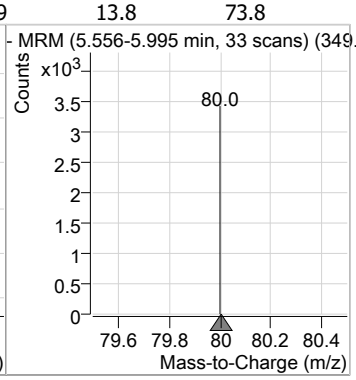


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.76	5.84	0.00	979 (m)	349.0 -> 99.0	48.9	13.8	73.8



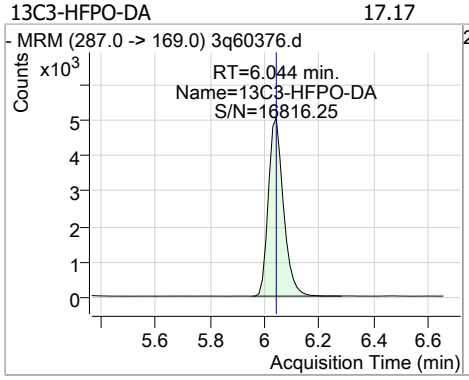


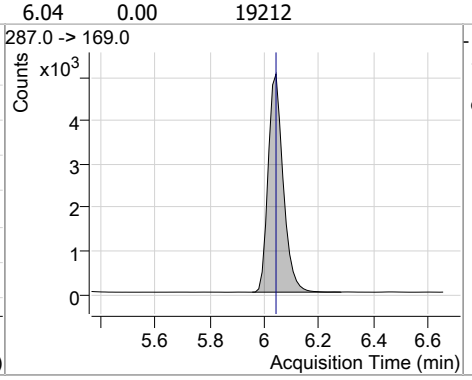


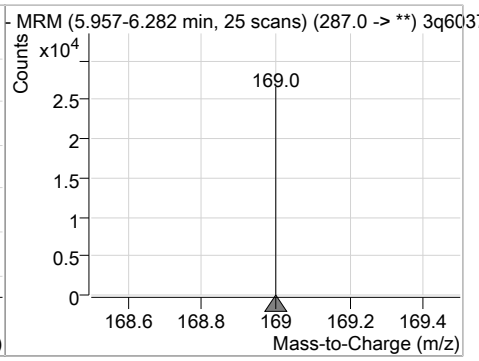


Perfluorinated Compounds by LC/MS/MS

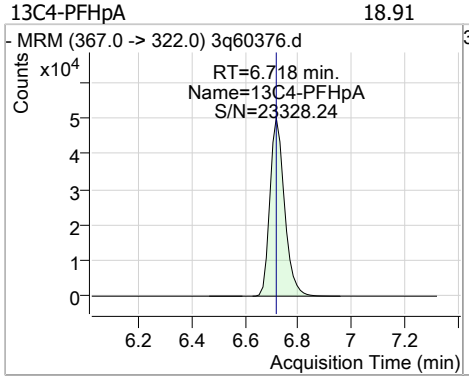
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.17	6.04	0.00	19212				

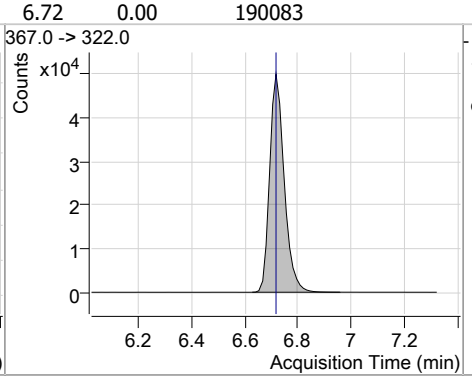


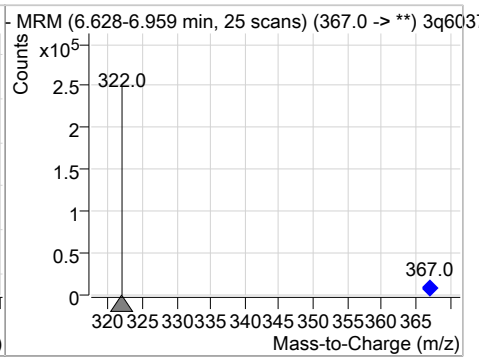




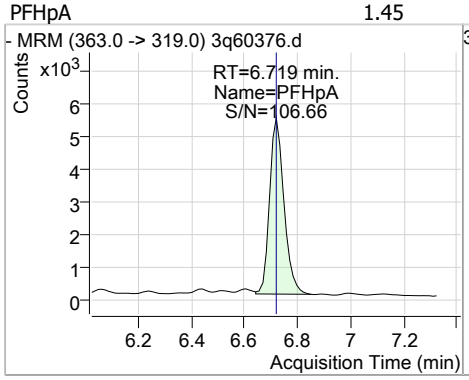
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.91	6.72	0.00	190083				

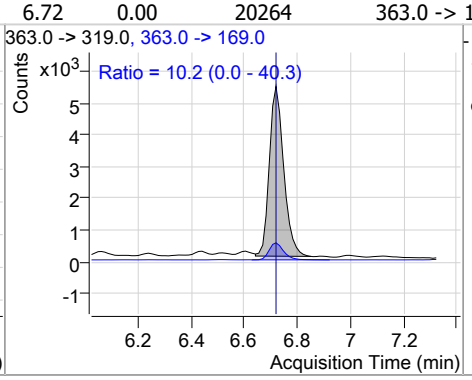


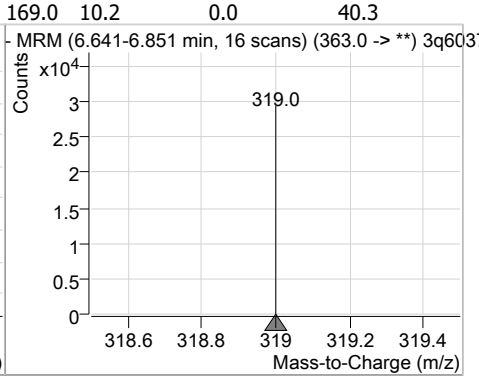




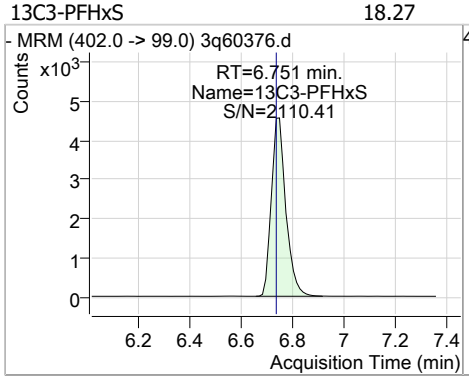
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.45	6.72	0.00	20264	363.0 -> 169.0	10.2	0.0	40.3

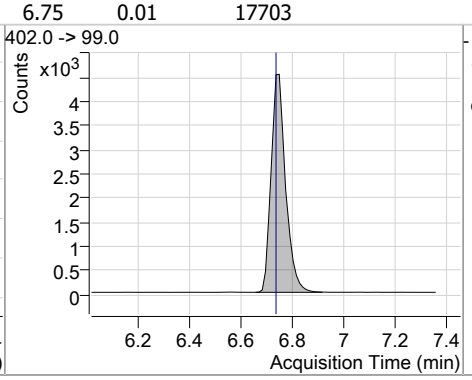


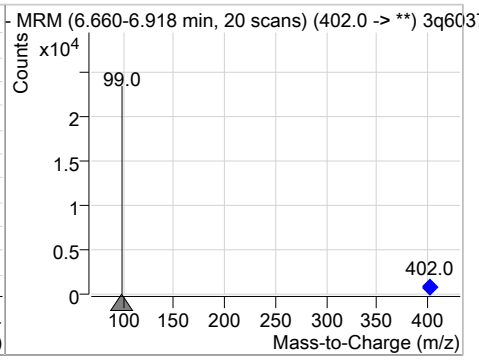




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.27	6.75	0.01	17703				

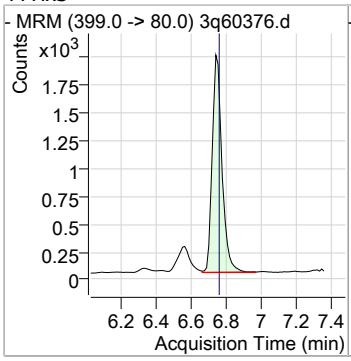


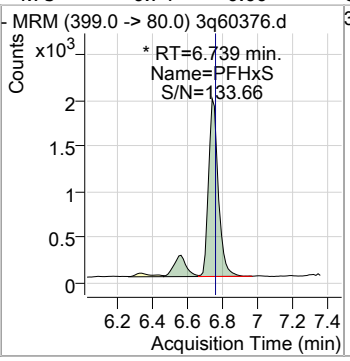


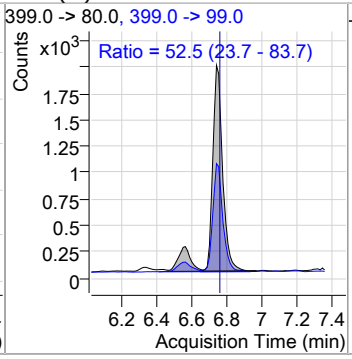


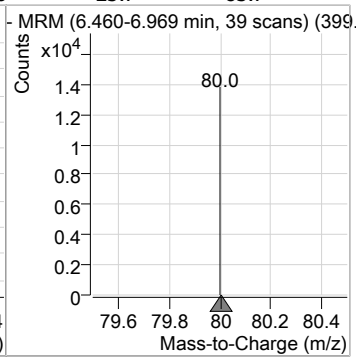
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.75	6.74	0.00	8776 (m)	399.0 -> 99.0	52.5	23.7	83.7

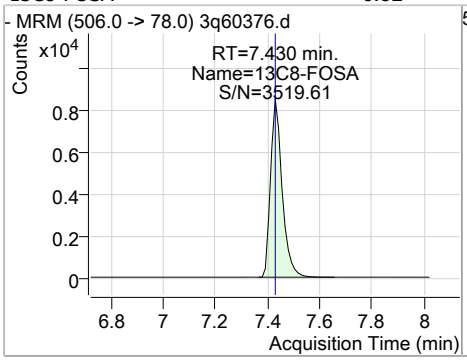


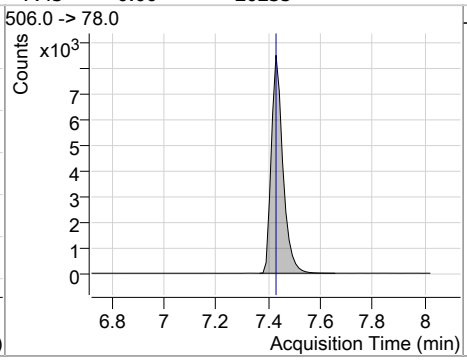


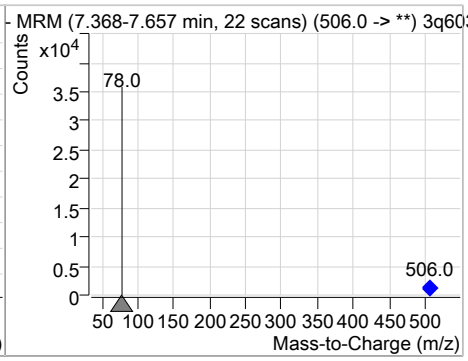




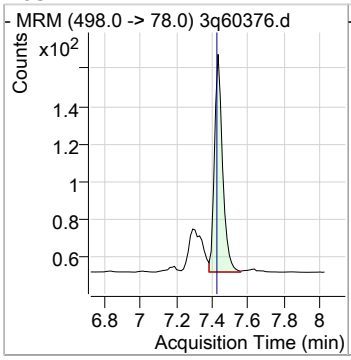
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	6.82	7.43	0.00	26235				

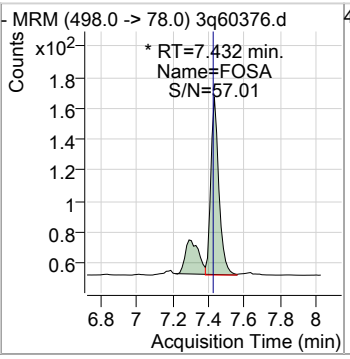


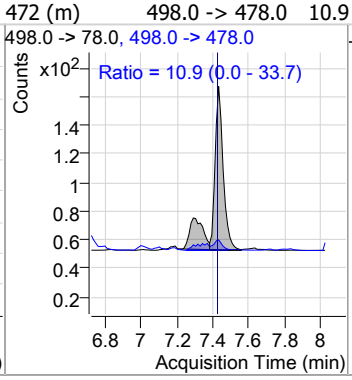


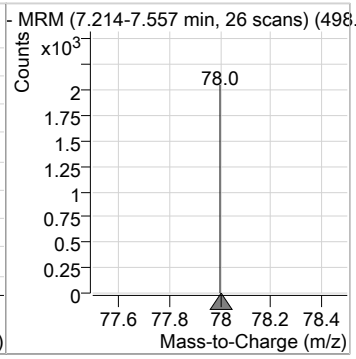


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.39	7.43	0.00	472 (m)	498.0 -> 478.0	10.9	0.0	33.7

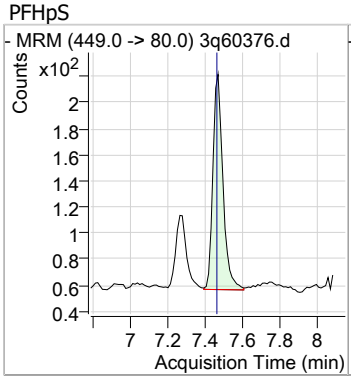


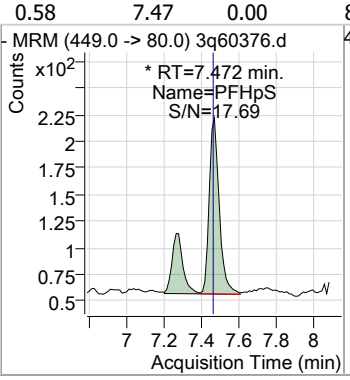


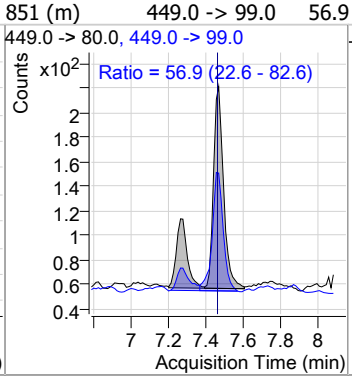


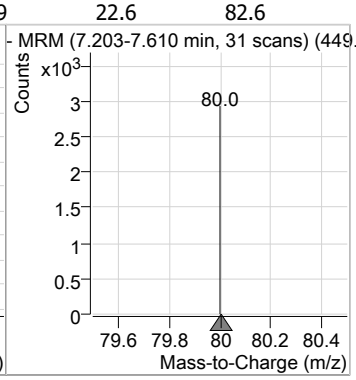


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.58	7.47	0.00	851 (m)	449.0 -> 99.0	56.9	22.6	82.6



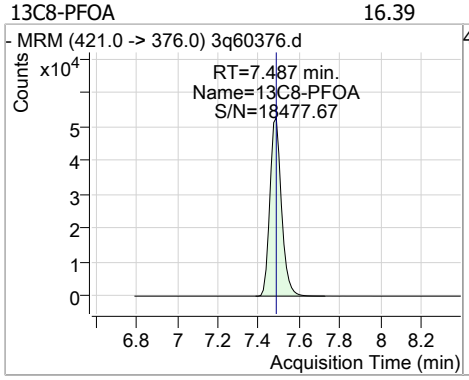


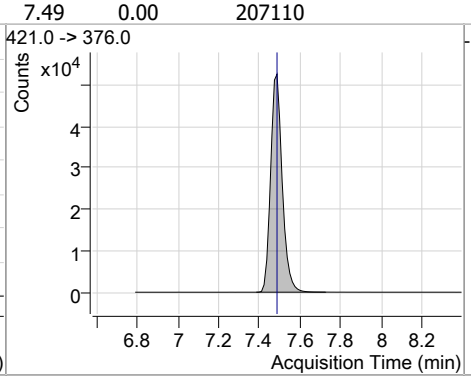


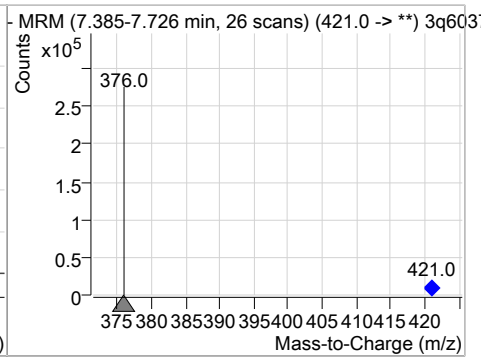


Perfluorinated Compounds by LC/MS/MS

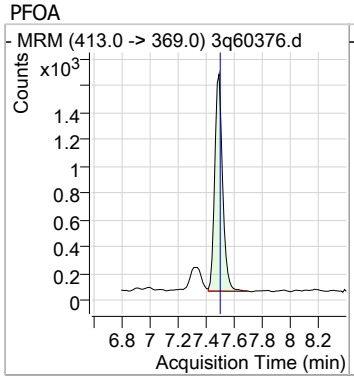
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.39	7.49	0.00	207110				

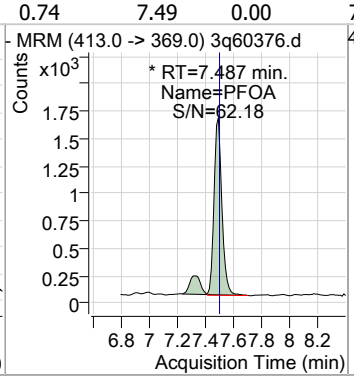


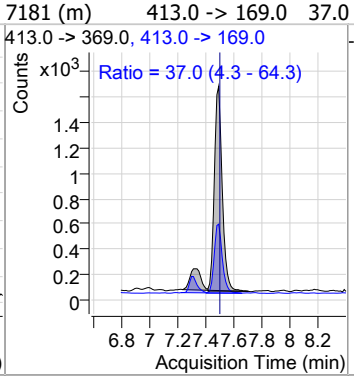


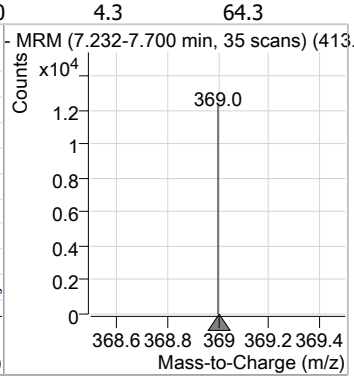


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.74	7.49	0.00	7181 (m)	413.0 -> 169.0	37.0	4.3	64.3

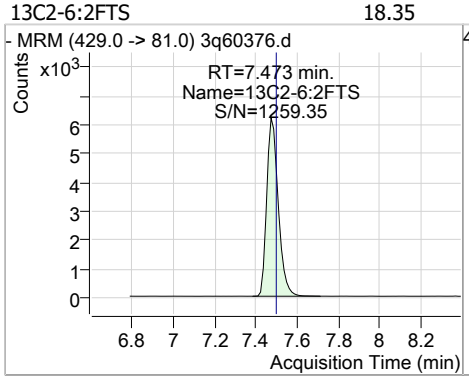


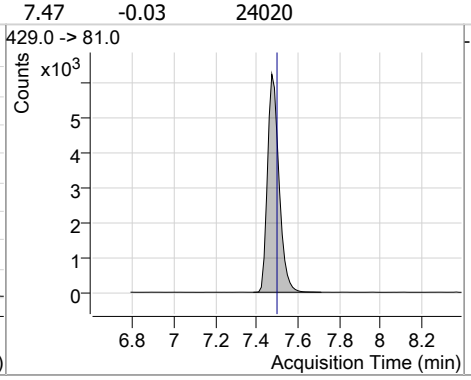


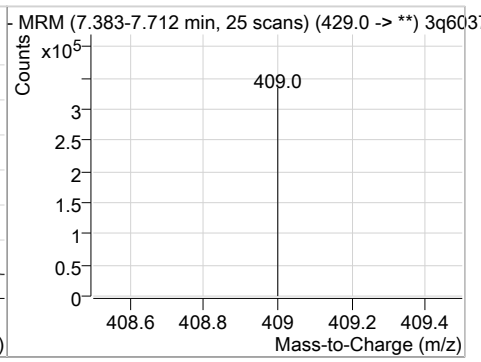




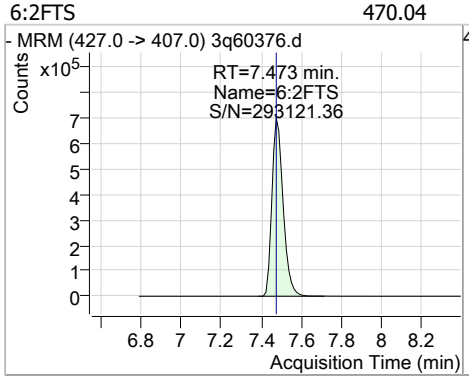
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.35	7.47	-0.03	24020				

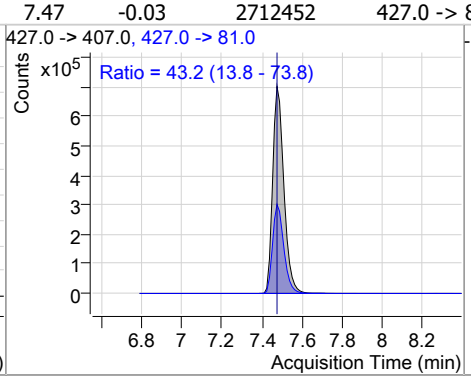


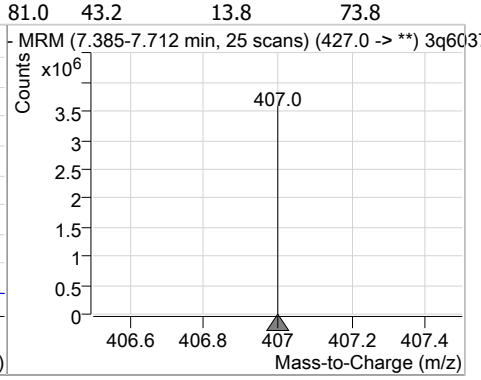




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	470.04	7.47	-0.03	2712452	427.0 -> 81.0	43.2	13.8	73.8

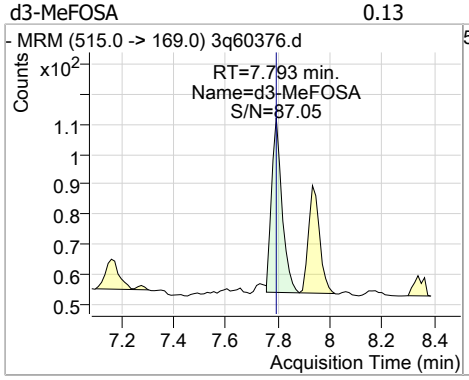


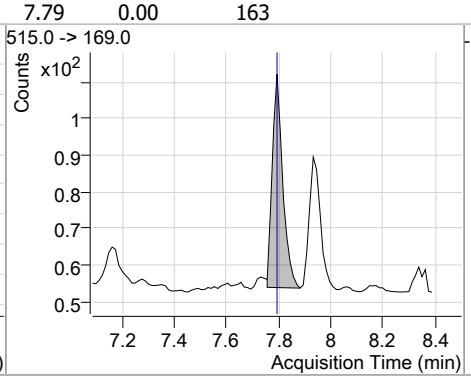


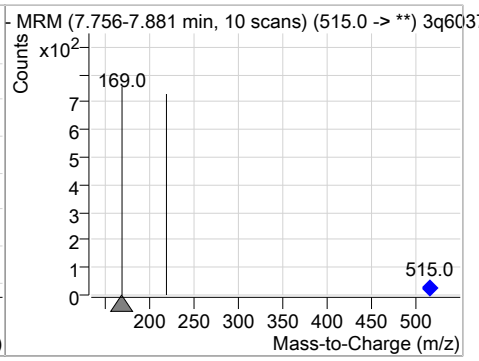


Perfluorinated Compounds by LC/MS/MS

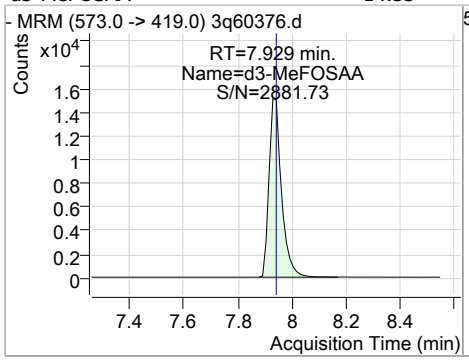
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.13	7.79	0.00	163				

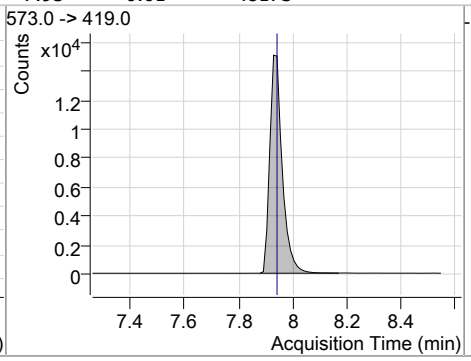


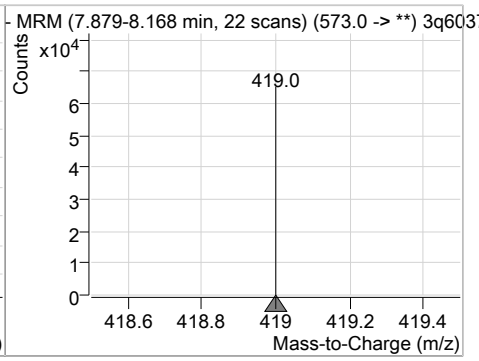




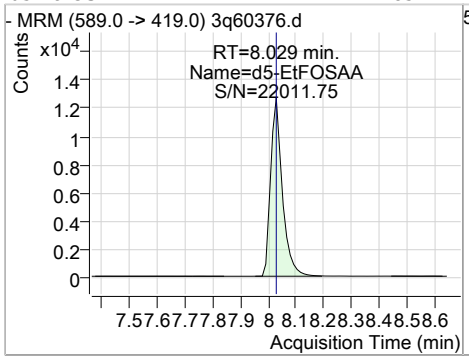
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.53	7.93	-0.01	48173				

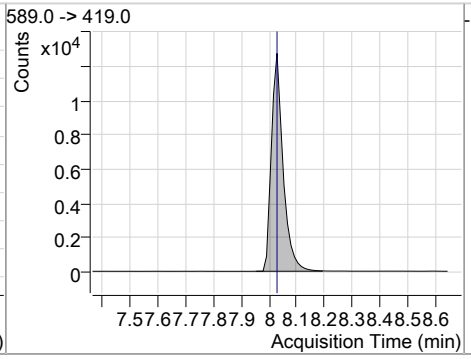


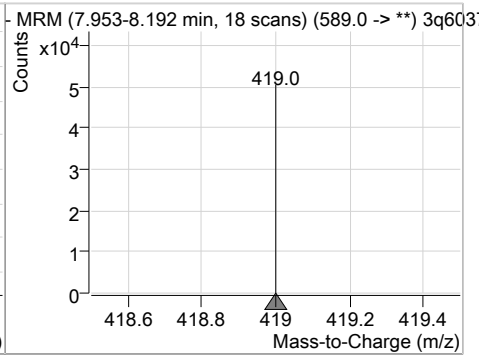




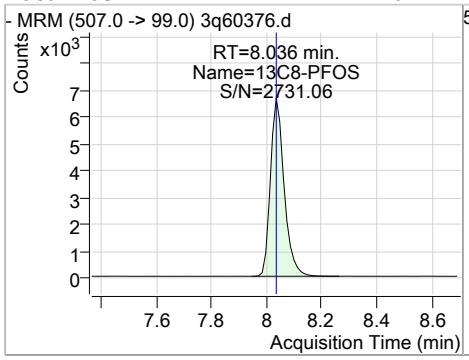
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.85	8.03	0.00	37329				

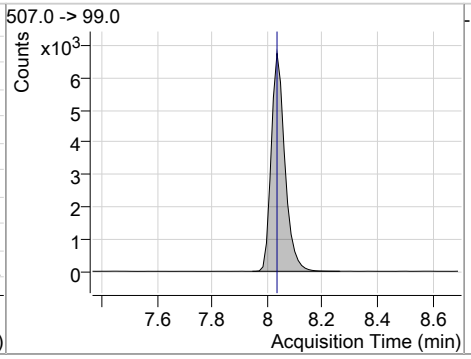


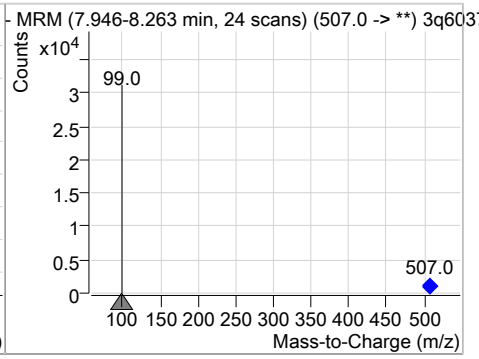




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.64	8.04	0.00	22943				

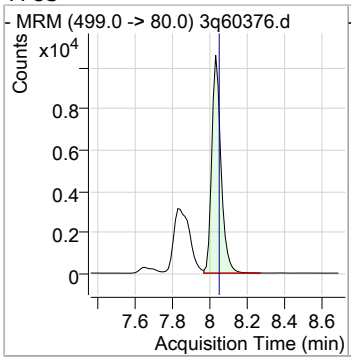


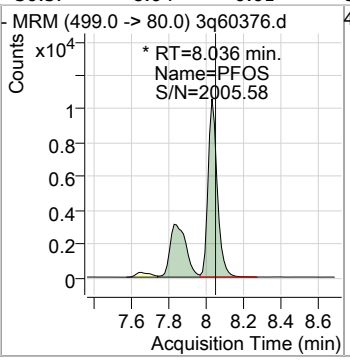


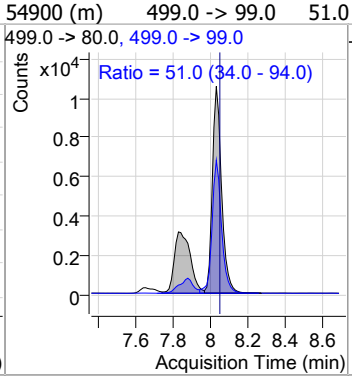


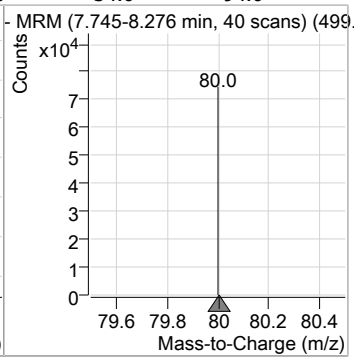
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	30.57	8.04	-0.01	54900 (m)	499.0 -> 99.0	51.0	34.0	94.0

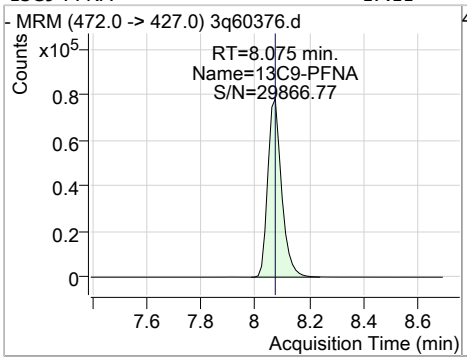


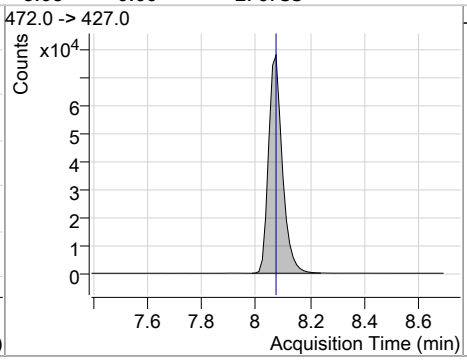


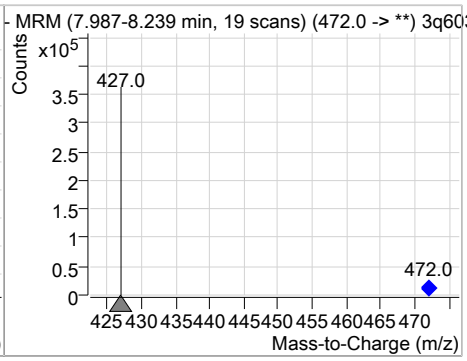




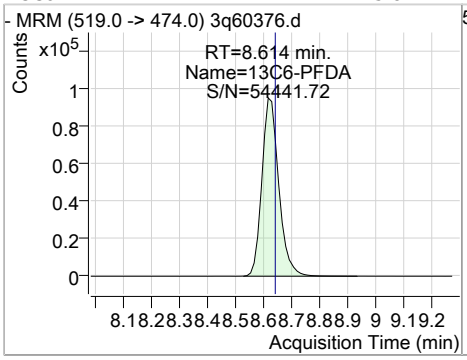
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.11	8.08	0.00	276733				

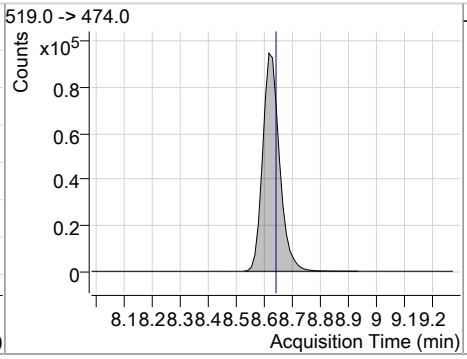


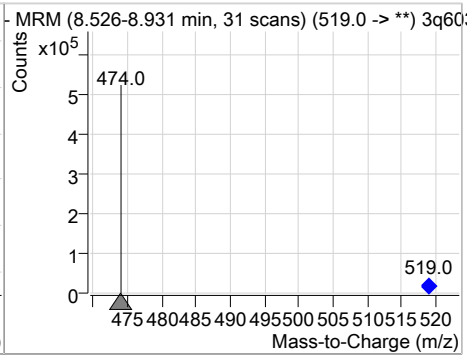




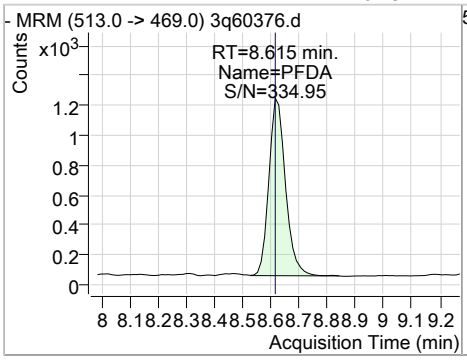
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.84	8.61	-0.03	395388				

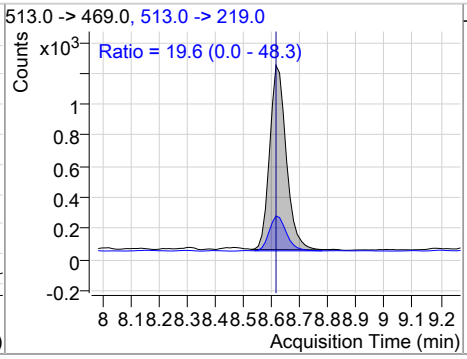


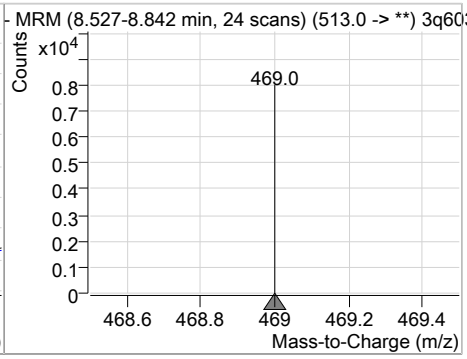




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.29	8.61	-0.03	4867	513.0 -> 219.0	19.6	0.0	48.3

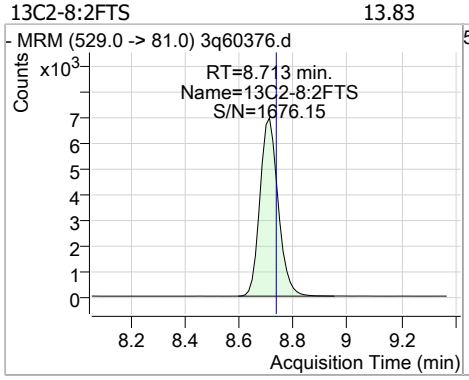


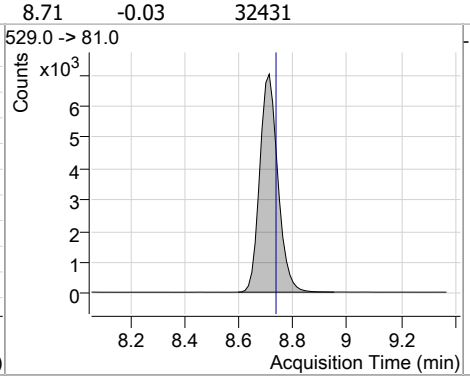


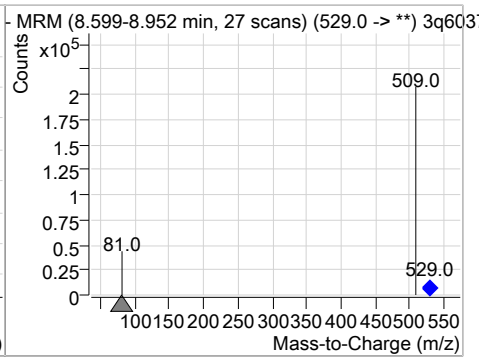


Perfluorinated Compounds by LC/MS/MS

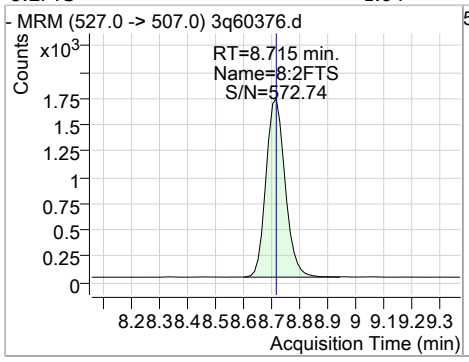
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.83	8.71	-0.03	32431				

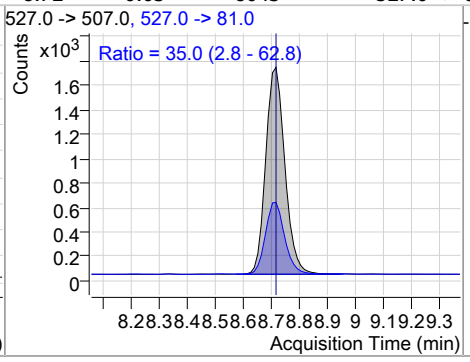


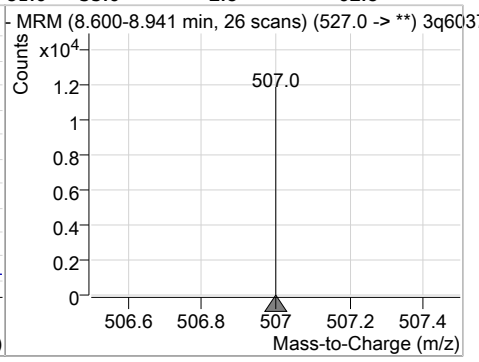




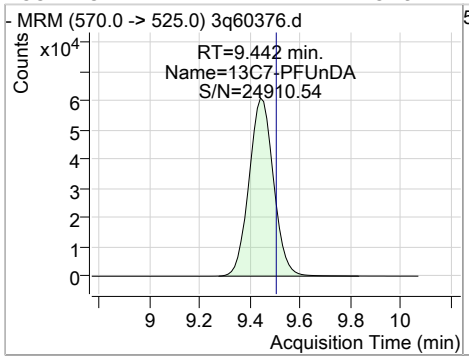
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.72	-0.03	8043	527.0 -> 81.0	35.0	2.8	62.8

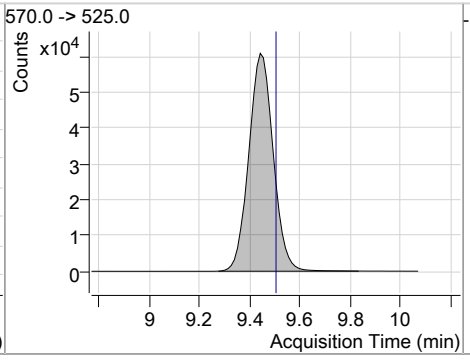


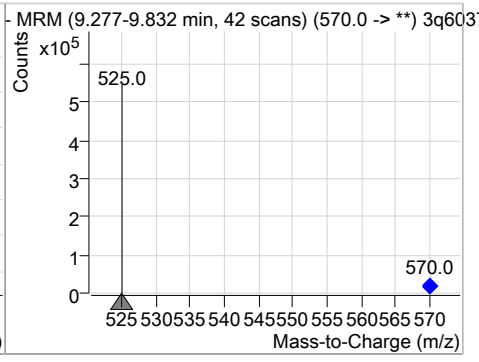




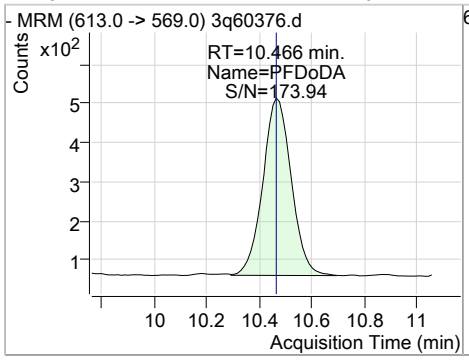
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.29	9.44	-0.06	409856				

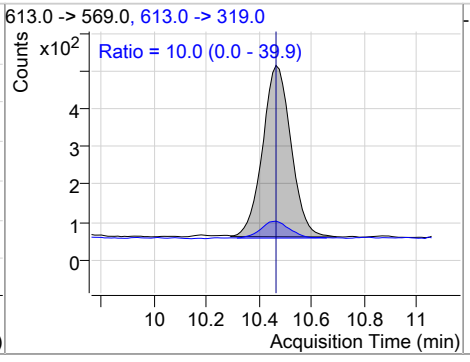


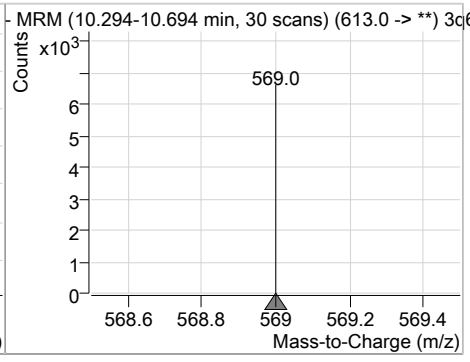




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.22	10.47	-0.04	3409	613.0 -> 319.0	10.0	0.0	39.9

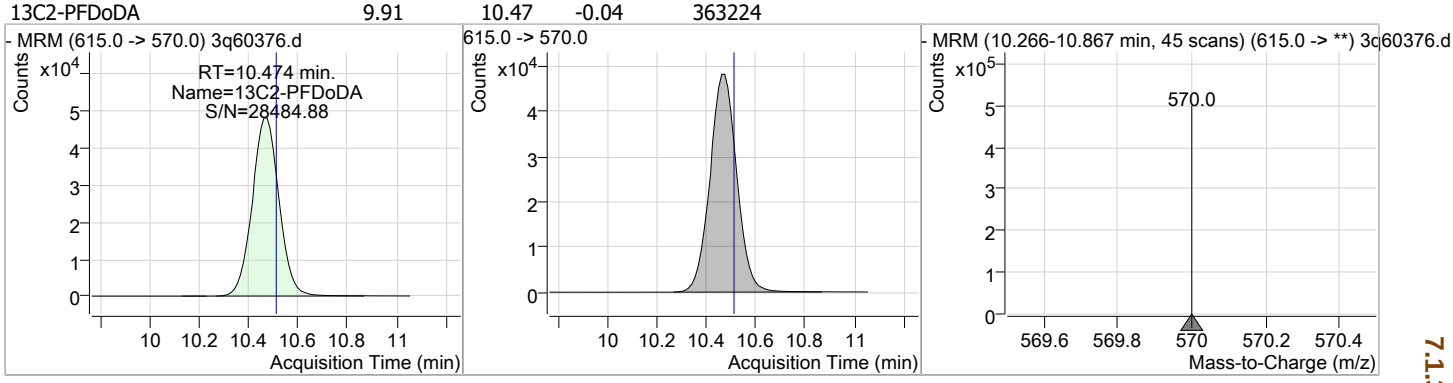




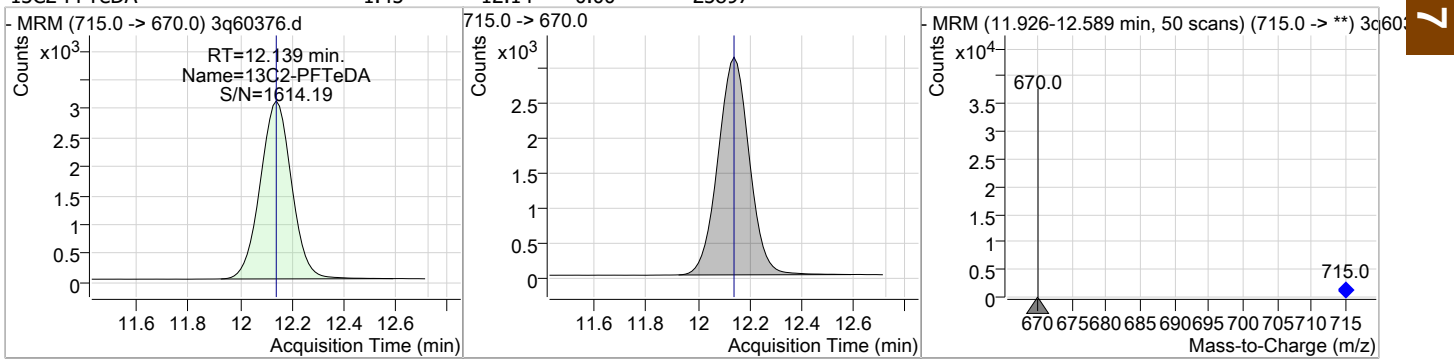


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.91	10.47	-0.04	363224				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.45	12.14	0.00	25897				



7.1.3

7

Manual Integration Approval Summary

Sample Number: FA95502-2
Lab FileID: 3Q60376.D
Injection Time: 05/27/22 23:40
Method: EPA 537M BY ID
Analyst approved: 05/31/22 14:45 Martha Valls
Supervisor approved: 05/31/22 20:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
PFOSA	754-91-6		7.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.47	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/31/22 20:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60377.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:58:59 PM
Sample Name : fa95502-2
Vial : P3-B7
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,10,water

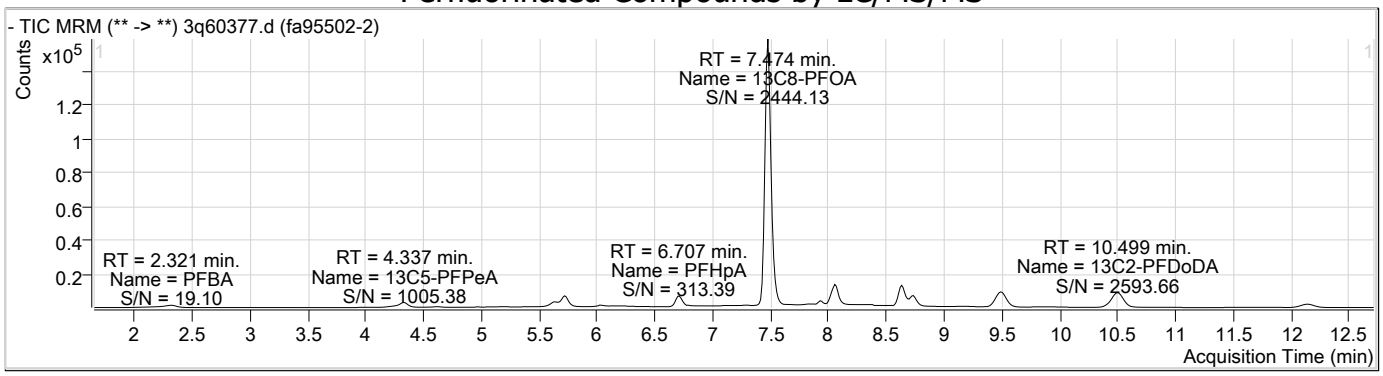
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.315	217.0 -> 172.0	13583	20.00 µg/L	-0.013
M5-PFPeA	4.337	268.0 -> 223.0	12807	20.00 µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	17325	20.00 µg/L	-0.013
M4-PFHpA	6.705	367.0 -> 322.0	22723	20.00 µg/L	-0.013
M8-PFOA	7.474	421.0 -> 376.0	27834	20.00 µg/L	-0.013
M9-PFNA	8.075	472.0 -> 427.0	33516	20.00 µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	50695	20.00 µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	60574	20.00 µg/L	-0.013
M2-PFDoDA	10.499	615.0 -> 570.0	64636	20.00 µg/L	-0.013
M2-PFTeDA	12.139	715.0 -> 670.0	16418	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	4299	20.00 µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	1824	20.00 µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	2102	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	3234	20.00 µg/L	0.000
M2-4:2FTS	5.621	329.0 -> 81.0	1320	20.00 µg/L	-0.013
M2-6:2FTS	7.485	429.0 -> 81.0	3252	20.00 µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	4672	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	6862	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	2470	20.00 µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	165	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	6263	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	1320	2.35 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.8%	
13C2-6:2FTS	7.485	429.0 -> 81.0	3252	2.48 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.4%	
13C2-8:2FTS	8.739	529.0 -> 81.0	4672	1.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%	
13C2-PFDoDA	10.499	615.0 -> 570.0	64636	1.76 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.8%	
13C2-PFTeDA	12.139	715.0 -> 670.0	16418	0.92 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.6%	
13C3-PFBS	4.617	302.0 -> 99.0	1824	2.31 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%	
13C3-PFHxS	6.738	402.0 -> 99.0	2102	2.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.8%	
13C4-PFBA	2.315	217.0 -> 172.0	13583	2.25 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.2%	
13C4-PFHpA	6.705	367.0 -> 322.0	22723	2.26 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.3%	
13C5-PFHxA	5.727	318.0 -> 273.0	17325	2.20 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%	
13C5-PFPeA	4.337	268.0 -> 223.0	12807	2.21 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%	
13C6-PFDA	8.639	519.0 -> 474.0	50695	2.03 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

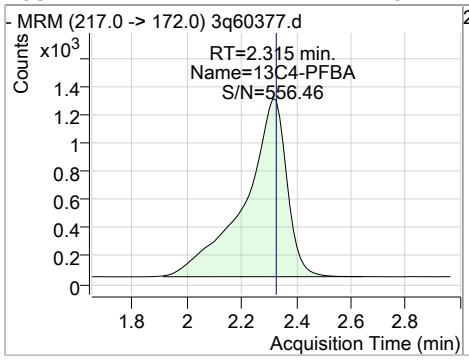
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%			
13C7-PFUnDA	9.492	570.0 -> 525.0	60574	1.96	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.8%			
13C8-FOSA	7.430	506.0 -> 78.0	4299	1.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.6%			
13C8-PFOA	7.474	421.0 -> 376.0	27834	2.20	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%			
13C8-PFOS	8.036	507.0 -> 99.0	3234	2.06	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.3%			
13C9-PFNA	8.075	472.0 -> 427.0	33516	2.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.4%			
d3-MeFOSAA	7.929	573.0 -> 419.0	6862	2.07	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.3%			
13C3-HFPO-DA	6.031	287.0 -> 169.0	2461	2.20	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%			
d3-MeFOSA	7.793	515.0 -> 169.0	165	0.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.7%			
d5-EtFOSAA	8.029	589.0 -> 419.0	6263	1.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.9%			
Target Compounds							**QValue**
4:2FTS	5.624	327.0 -> 307.0	1228	0.21	µg/L		95
6:2FTS	7.486	427.0 -> 407.0	359611	46.03	µg/L		99
8:2FTS	8.740	527.0 -> 507.0	1237	0.11	µg/L		97
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.321	213.0 -> 169.0	748	0.28	µg/L		100
PFBS	4.619	299.0 -> 80.0	221	0.10	µg/L		97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.707	363.0 -> 319.0	2647	0.16	µg/L		100
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.728	313.0 -> 269.0	11617	1.60	µg/L		98
PFHxS	6.739	399.0 -> 80.0	1147	0.52	µg/L	m	100
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	8.036	499.0 -> 80.0	7801	3.08	µg/L	m	82
PFPeA	4.339	263.0 -> 219.0	5760	0.61	µg/L		100
PFPeS	5.845	349.0 -> 80.0	129	0.08	µg/L		99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

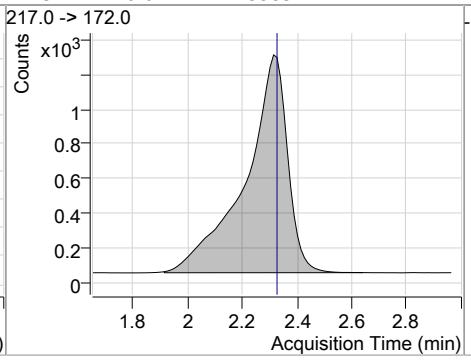
 # = Qualifier out of range, m = manually integrated, + = Area summed

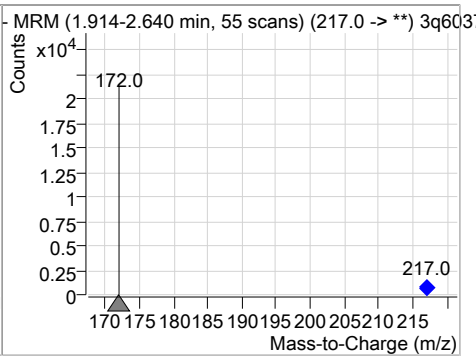
Perfluorinated Compounds by LC/MS/MS



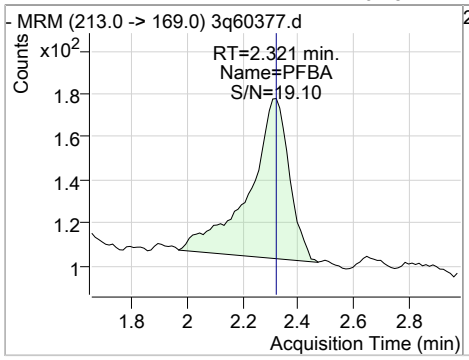
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.25	2.31	-0.01	13583				

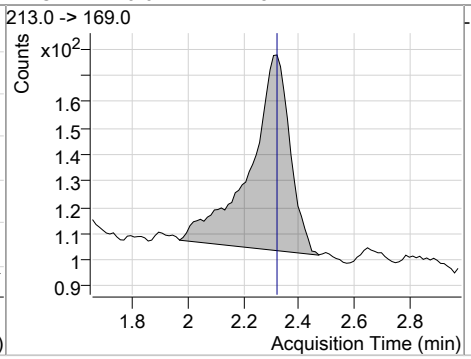


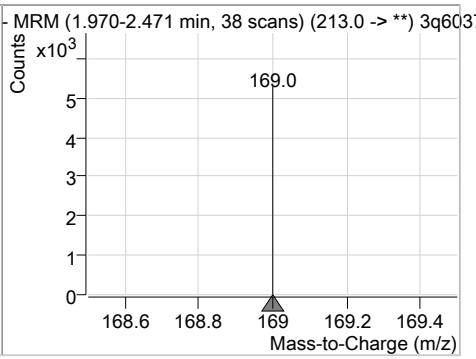




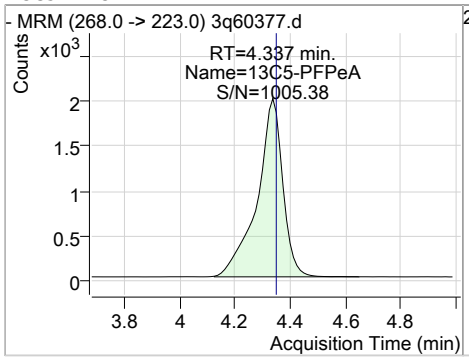
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.28	2.32	-0.01	748				

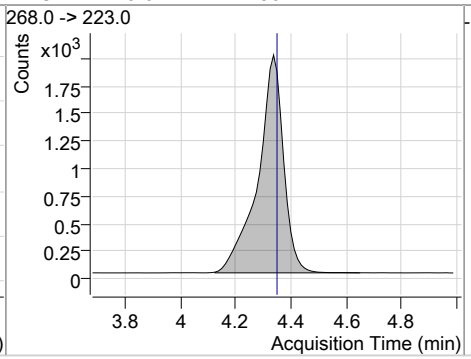


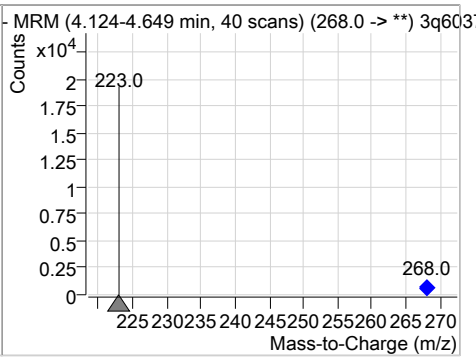




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.21	4.34	-0.01	12807				

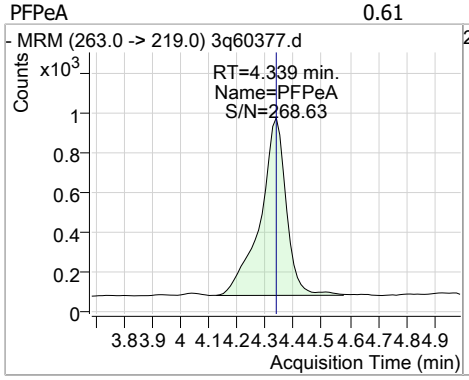


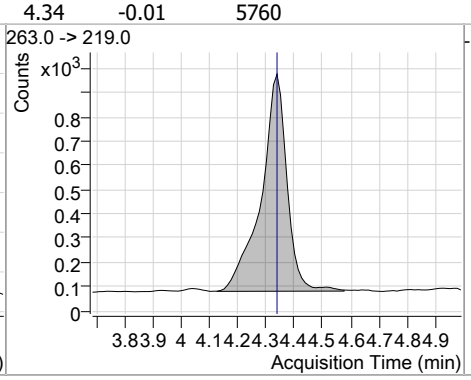


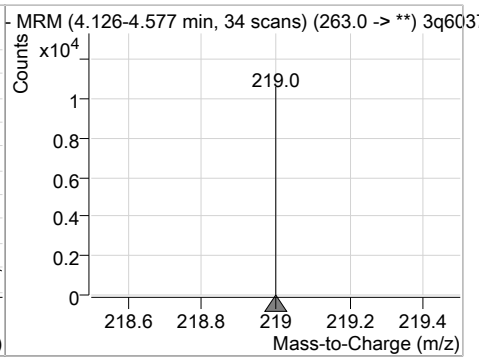


Perfluorinated Compounds by LC/MS/MS

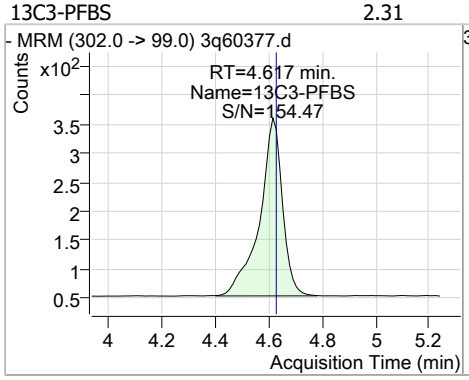
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.61	4.34	-0.01	5760				

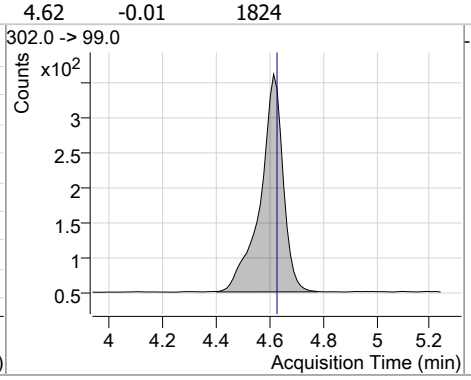


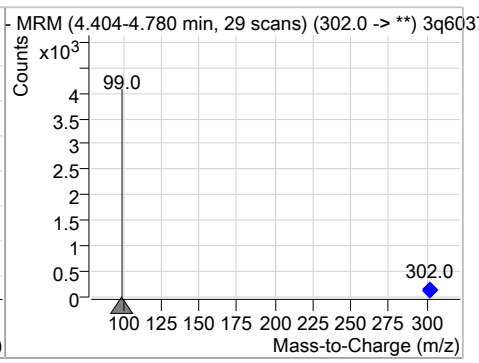




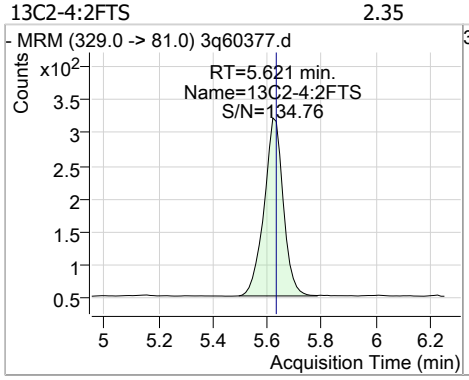
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.31	4.62	-0.01	1824				

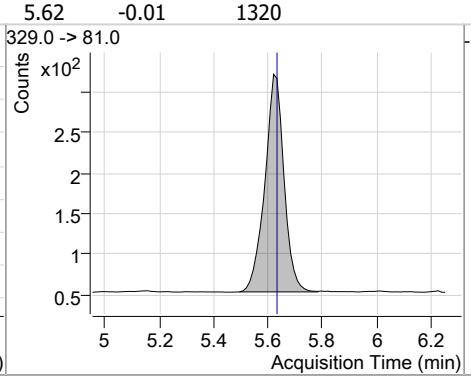


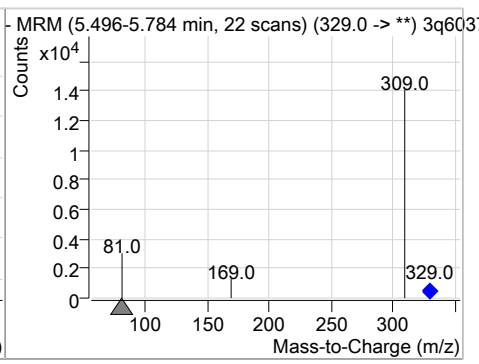




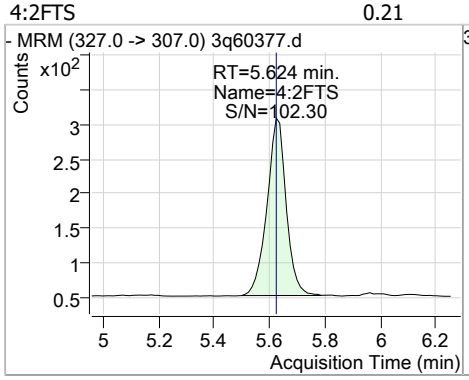
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.35	5.62	-0.01	1320				

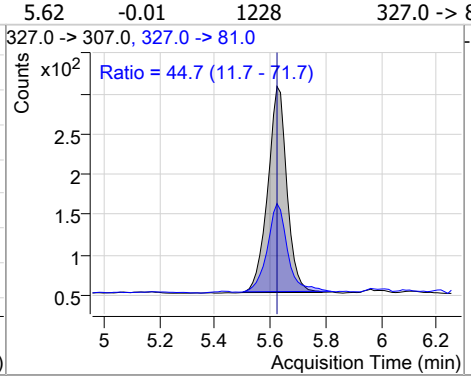


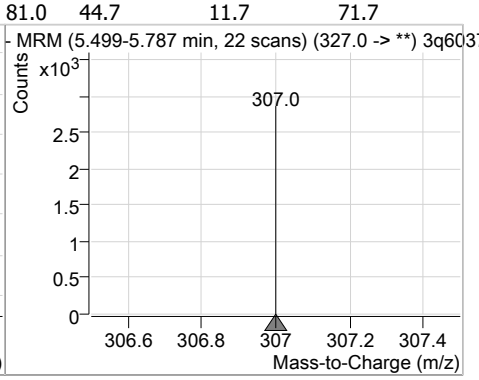




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.21	5.62	-0.01	1228	327.0 -> 81.0	44.7	11.7	71.7

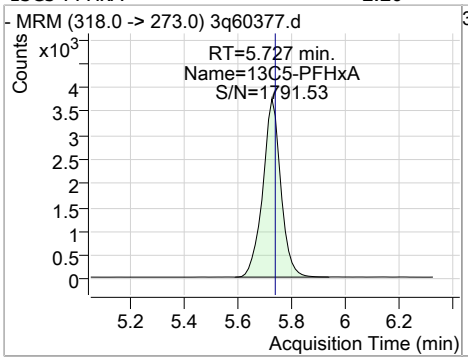


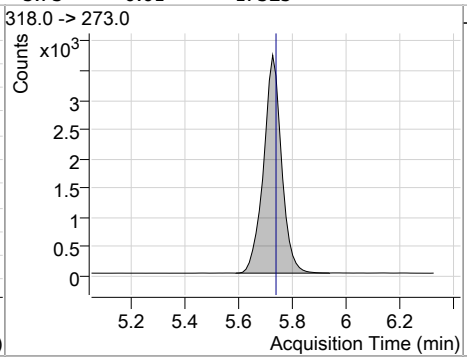


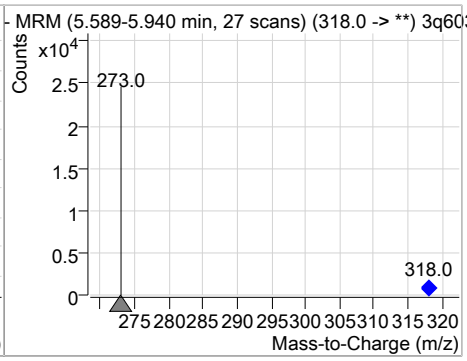


Perfluorinated Compounds by LC/MS/MS

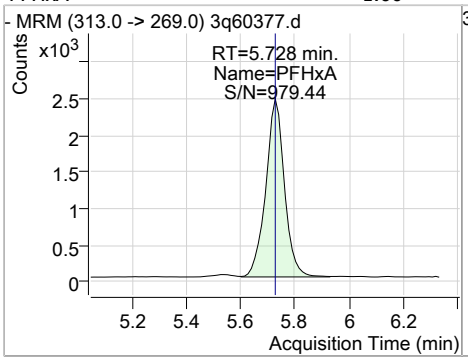
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.20	5.73	-0.01	17325				

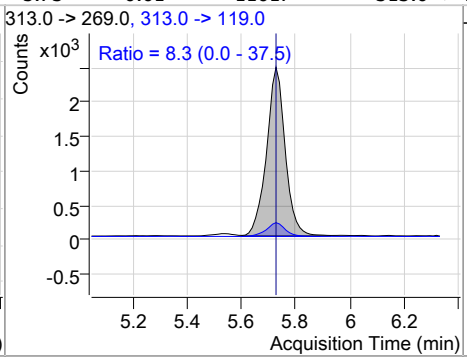


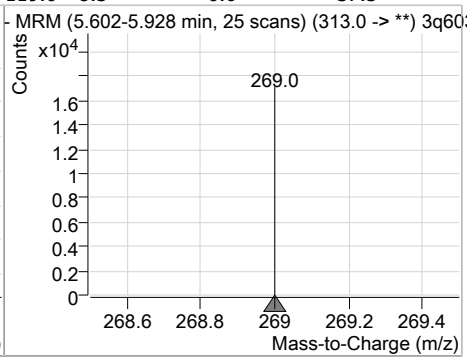




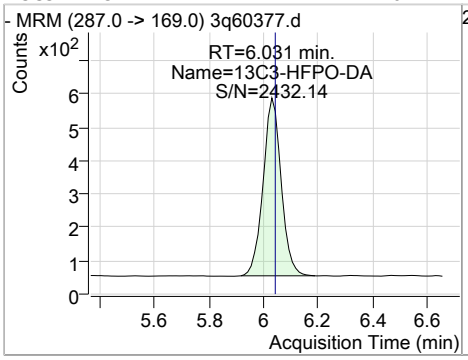
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.60	5.73	-0.01	11617	313.0 -> 119.0	8.3	0.0	37.5

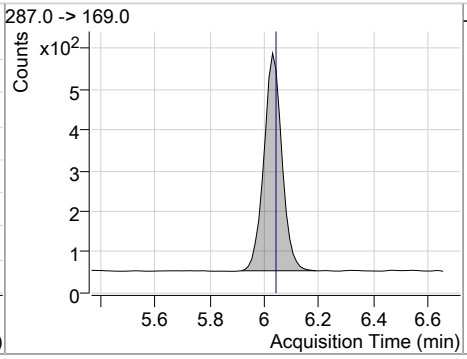


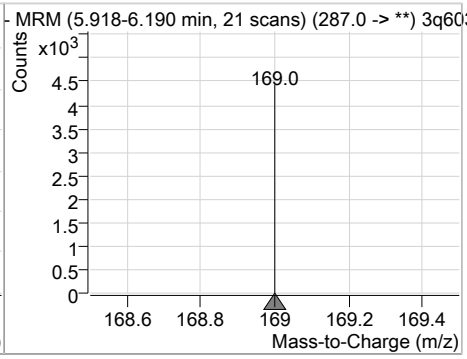




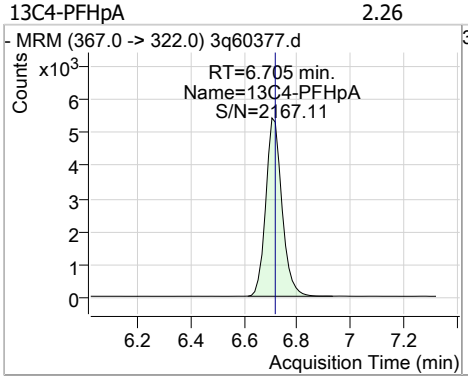
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.20	6.03	-0.01	2461				

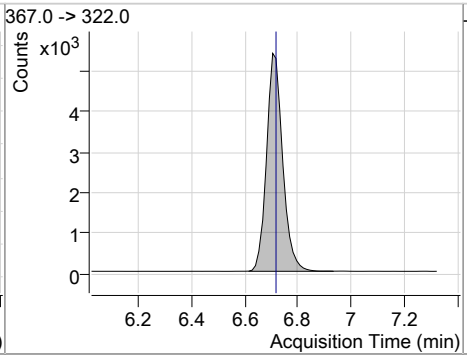


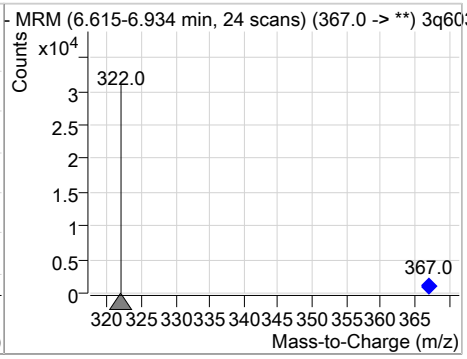




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.26	6.71	-0.01	22723				

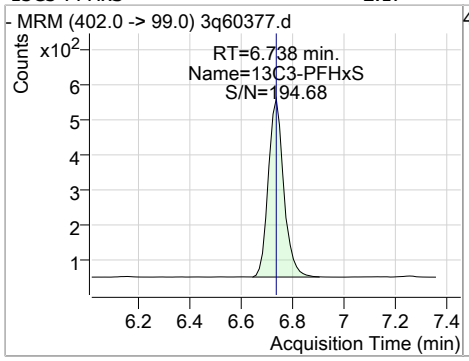


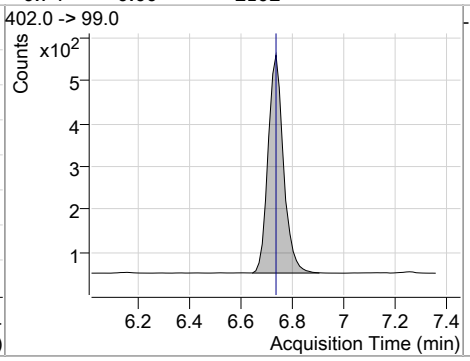


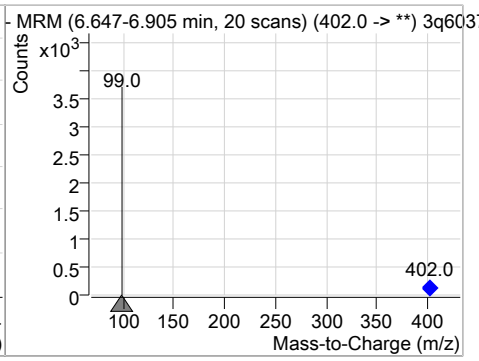


Perfluorinated Compounds by LC/MS/MS

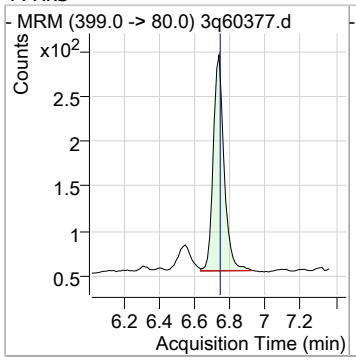
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.17	6.74	0.00	2102				

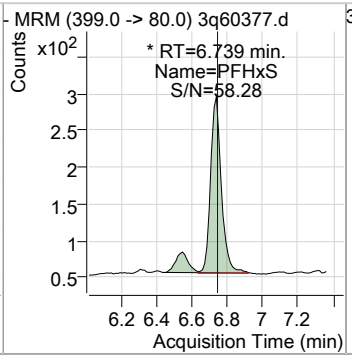


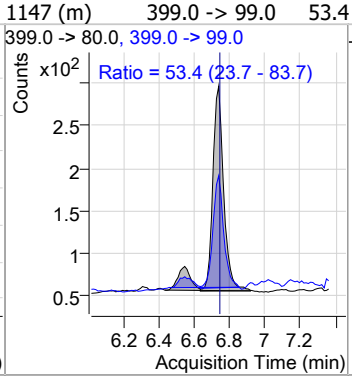


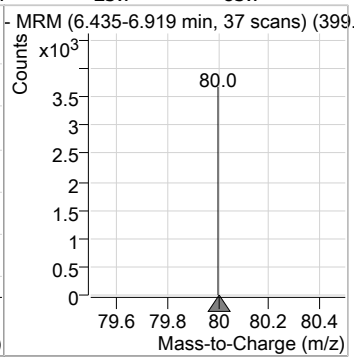


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.52	6.74	0.00	1147 (m)	399.0 -> 99.0	53.4	23.7	83.7

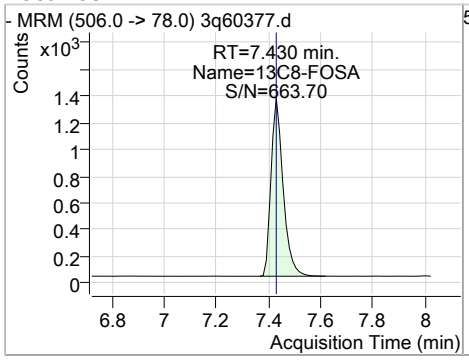


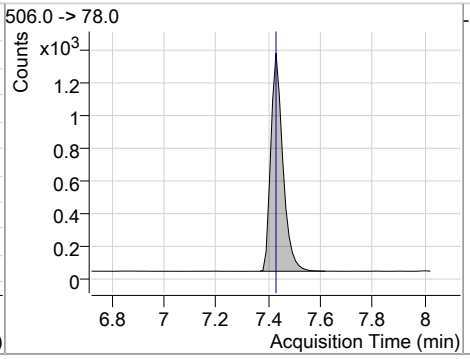


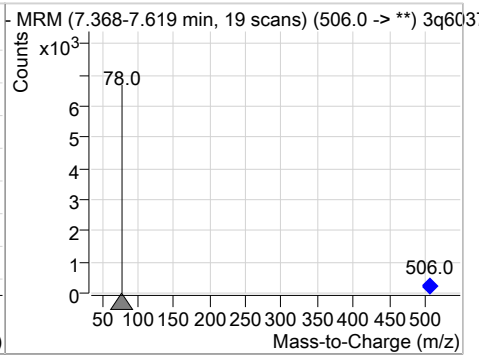




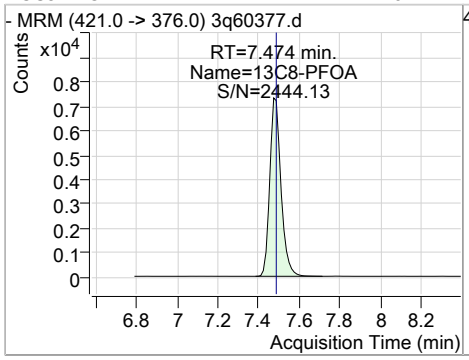
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.12	7.43	0.00	4299				

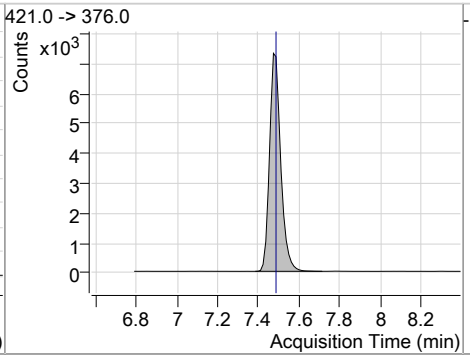


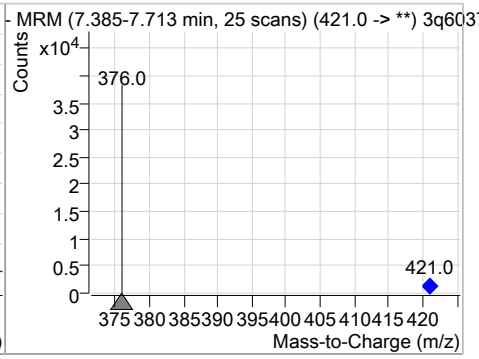




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.20	7.47	-0.01	27834				

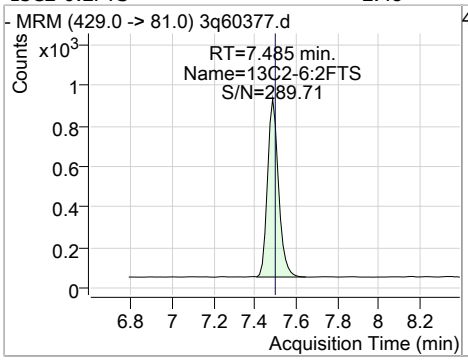


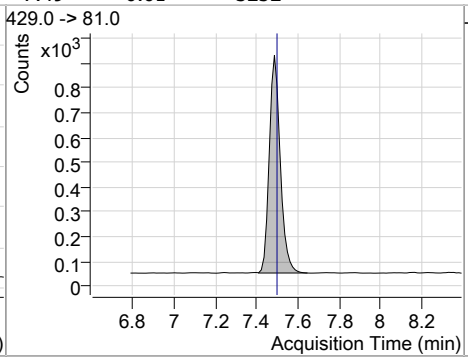


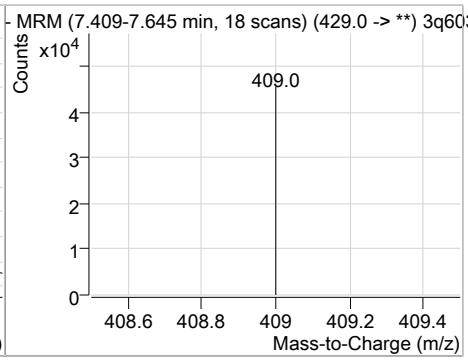


Perfluorinated Compounds by LC/MS/MS

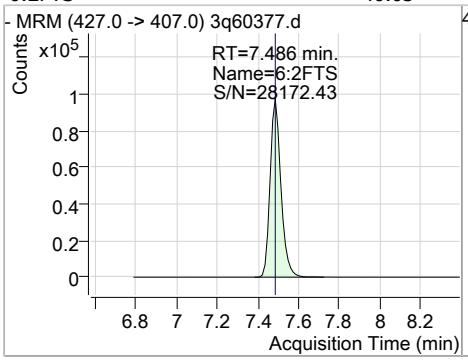
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.48	7.49	-0.01	3252				

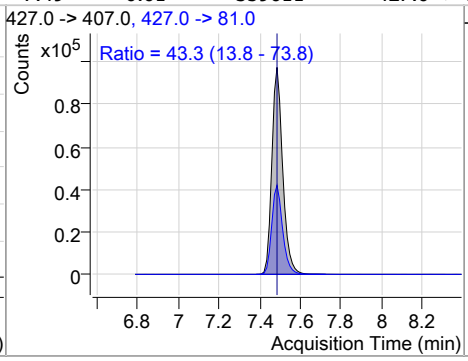


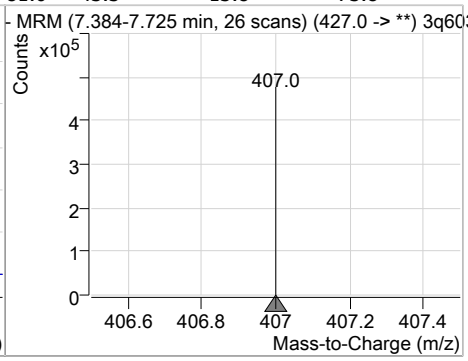




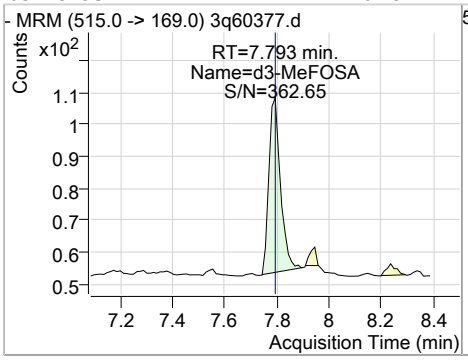
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	46.03	7.49	-0.01	359611	427.0 -> 81.0	43.3	13.8	73.8

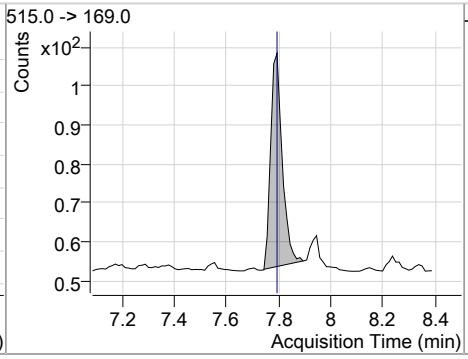


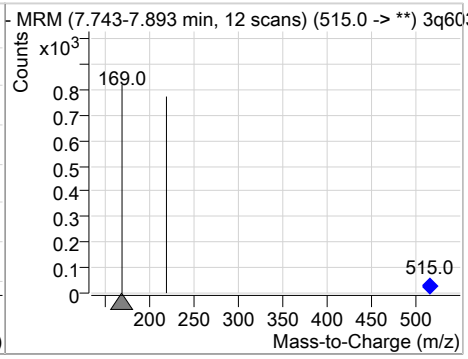




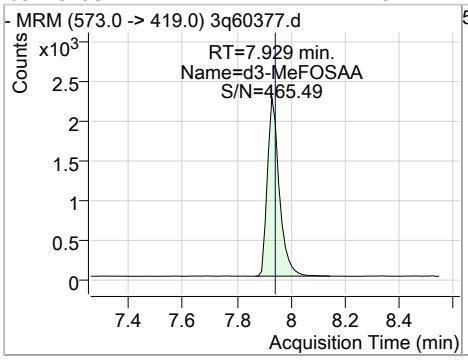
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.13	7.79	0.00	165				

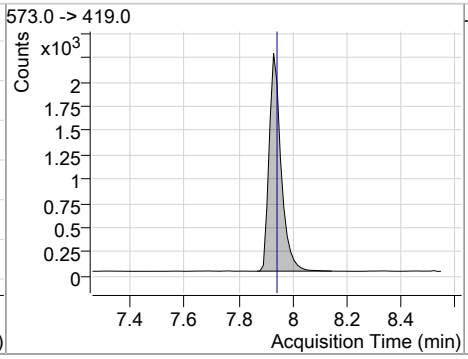


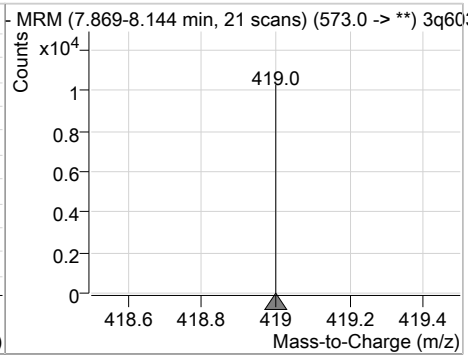




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.07	7.93	-0.01	6862				

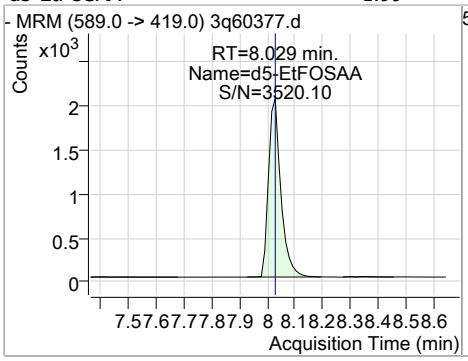


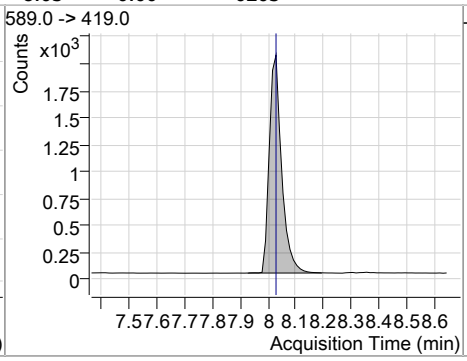


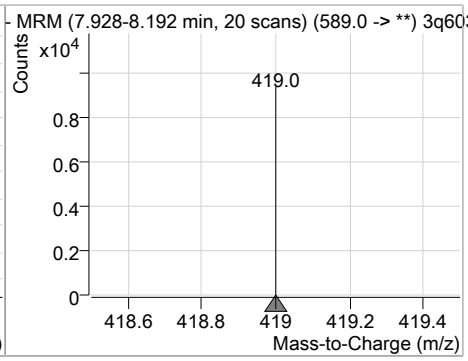


Perfluorinated Compounds by LC/MS/MS

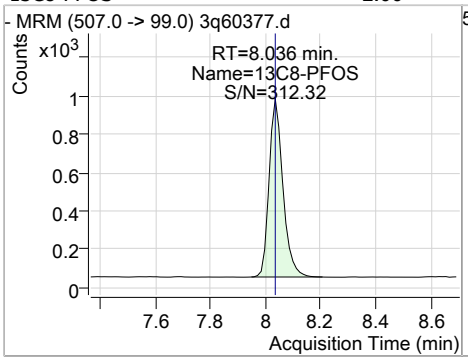
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.99	8.03	0.00	6263				

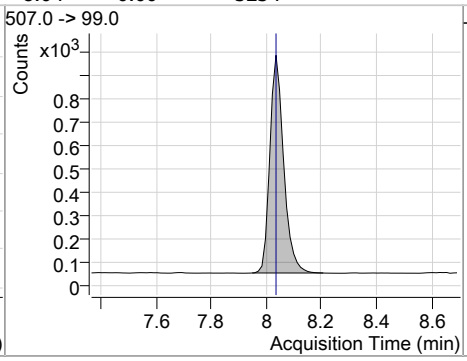


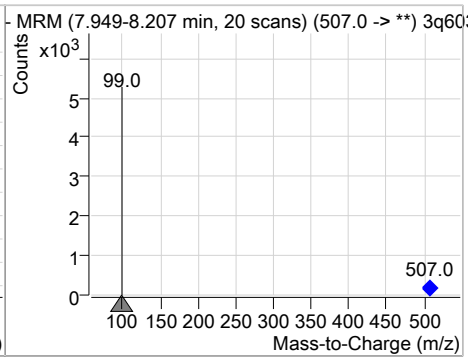




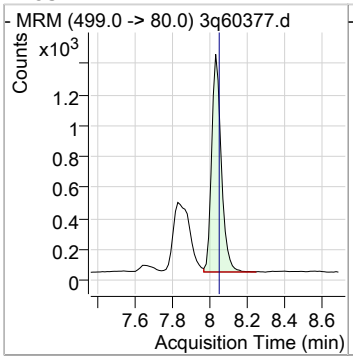
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.06	8.04	0.00	3234				

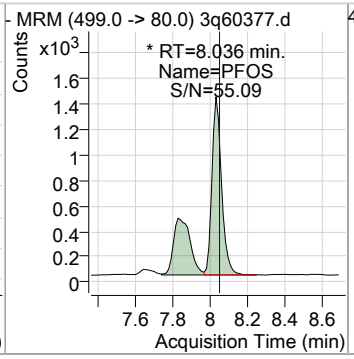


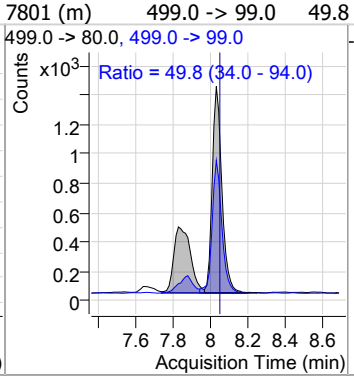


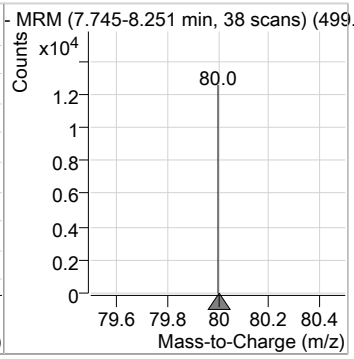


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.08	8.04	-0.01	7801 (m)	499.0 -> 99.0	49.8	34.0	94.0

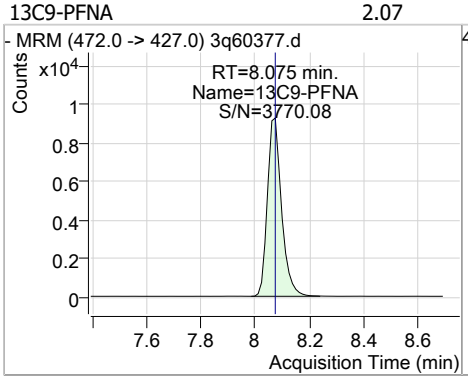


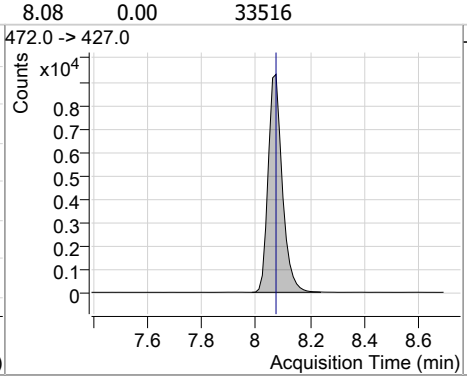


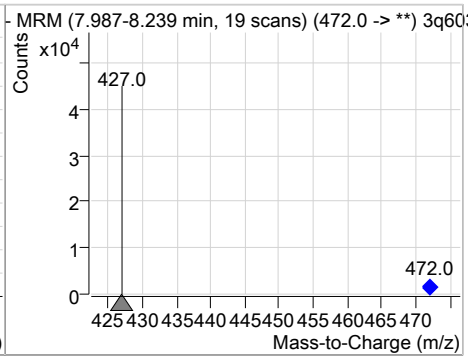




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.07	8.08	0.00	33516				

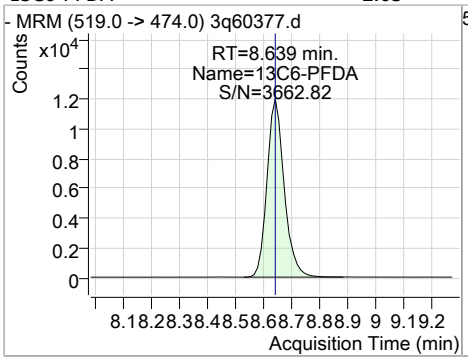


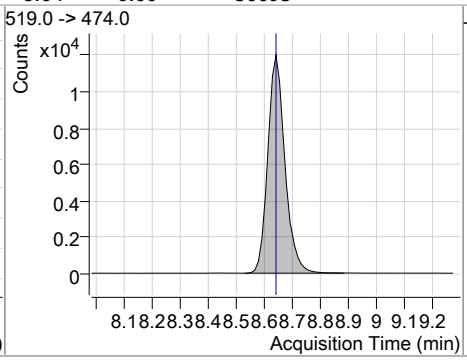


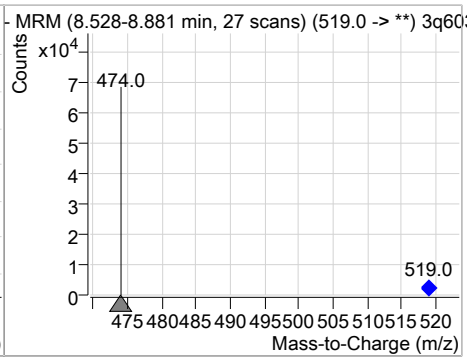


Perfluorinated Compounds by LC/MS/MS

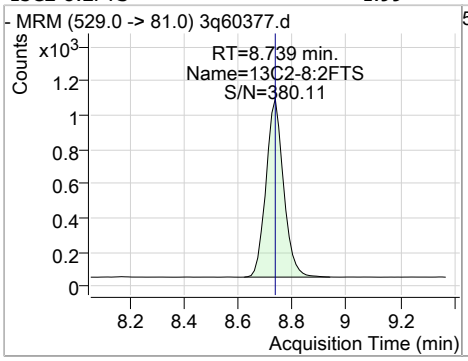
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.03	8.64	0.00	50695				

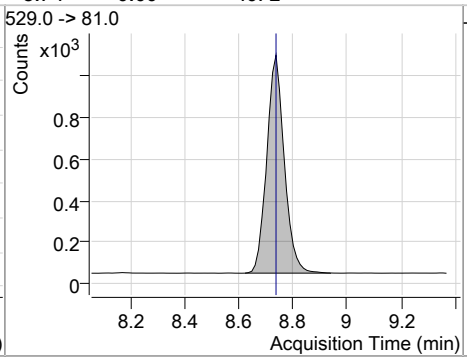


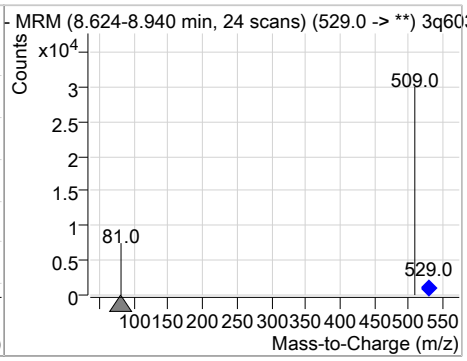




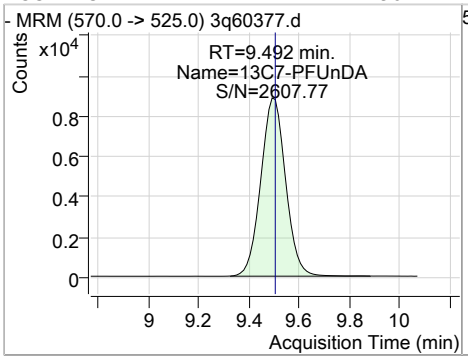
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.99	8.74	0.00	4672				

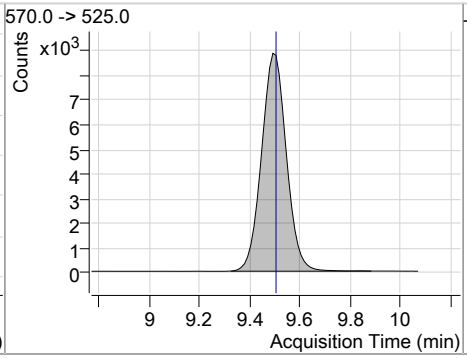


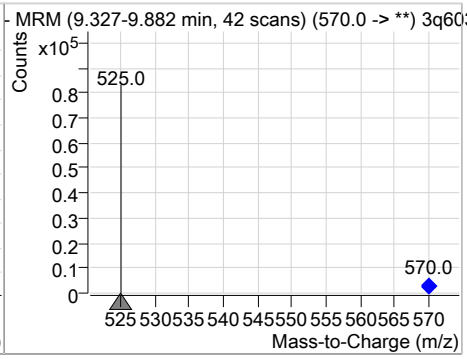




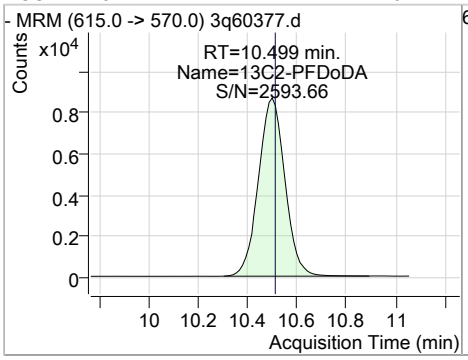
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.96	9.49	-0.01	60574				

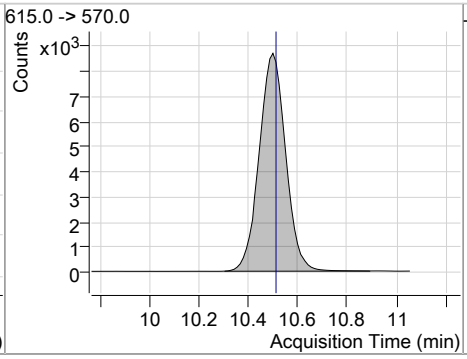


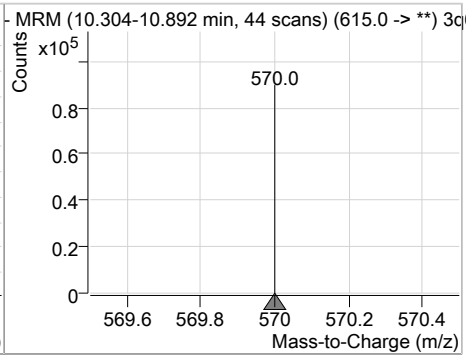




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.76	10.50	-0.01	64636				







Manual Integration Approval Summary

Sample Number: FA95502-2
Lab FileID: 3Q60377.D
Injection Time: 05/27/22 23:58
Method: EPA 537M BY ID
Analyst approved: 05/31/22 14:45 Martha Valls
Supervisor approved: 05/31/22 20:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 13:37

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60379.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 12:36:06 AM
Sample Name : fa95502-3
Vial : P3-B9
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

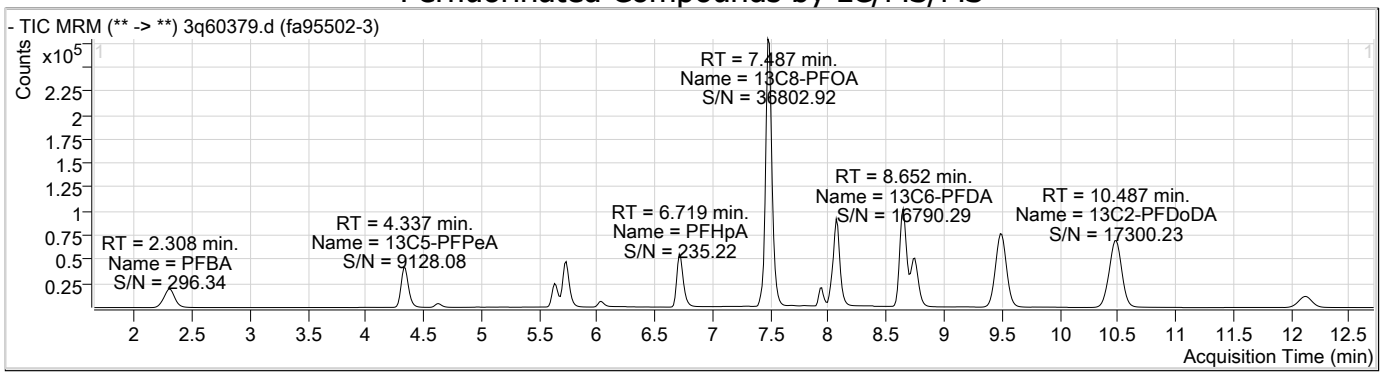
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.302	217.0 -> 172.0	120927	20.00 µg/L	-0.025
M5-PFPeA	4.337	268.0 -> 223.0	114988	20.00 µg/L	-0.013
M5-PFHxA	5.739	318.0 -> 273.0	153810	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	195502	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	240959	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	295474	20.00 µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	435617	20.00 µg/L	0.013
M7-PFUnDA	9.492	570.0 -> 525.0	512676	20.00 µg/L	-0.013
M2-PFDoDA	10.487	615.0 -> 570.0	522978	20.00 µg/L	-0.025
M2-PFTeDA	12.126	715.0 -> 670.0	96453	20.00 µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	52520	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15534	20.00 µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	16981	20.00 µg/L	0.000
M8-PFOS	8.048	507.0 -> 99.0	26845	20.00 µg/L	0.013
M2-4:2FTS	5.634	329.0 -> 81.0	10853	20.00 µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	26025	20.00 µg/L	0.000
M2-8:2FTS	8.751	529.0 -> 81.0	38331	20.00 µg/L	0.013
M3-MeFOSAA	7.942	573.0 -> 419.0	59316	20.00 µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	21108	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	712	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	53003	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	10853	19.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C2-6:2FTS	7.498	429.0 -> 81.0	26025	19.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C2-8:2FTS	8.751	529.0 -> 81.0	38331	16.34 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%	
13C2-PFDoDA	10.487	615.0 -> 570.0	522978	14.27 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%	
13C2-PFTeDA	12.126	715.0 -> 670.0	96453	5.39 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 26.9%	
13C3-PFBS	4.629	302.0 -> 99.0	15534	19.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C3-PFHxS	6.738	402.0 -> 99.0	16981	17.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%	
13C4-PFBA	2.302	217.0 -> 172.0	120927	20.01 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C4-PFHpA	6.718	367.0 -> 322.0	195502	19.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C5-PFHxA	5.739	318.0 -> 273.0	153810	19.49 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C5-PFPeA	4.337	268.0 -> 223.0	114988	19.84 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C6-PFDA	8.652	519.0 -> 474.0	435617	17.45 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

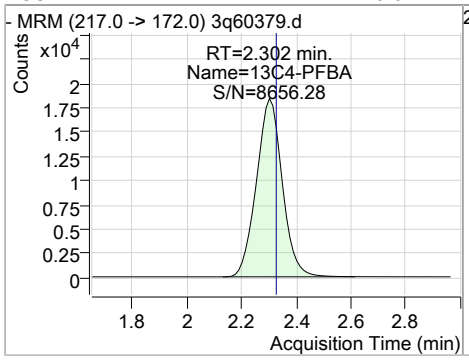
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
13C7-PFUnDA	9.492	570.0 -> 525.0	512676	16.63	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%			
13C8-FOSA	7.430	506.0 -> 78.0	52520	13.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.2%			
13C8-PFOA	7.487	421.0 -> 376.0	240959	19.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
13C8-PFOS	8.048	507.0 -> 99.0	26845	17.13	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%			
13C9-PFNA	8.075	472.0 -> 427.0	295474	18.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
d3-MeFOSAA	7.942	573.0 -> 419.0	59316	17.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	21113	18.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
d3-MeFOSA	7.793	515.0 -> 169.0	712	0.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.8%			
d5-EtFOSAA	8.029	589.0 -> 419.0	52995	16.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	766	0.16	µg/L		82
6:2FTS	7.499	427.0 -> 407.0	424764	67.94	µg/L		99
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.308	213.0 -> 169.0	6835	2.90	µg/L		100
PFBS	4.619	299.0 -> 80.0	487	0.25	µg/L		84
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	7303	0.51	µg/L		100
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.740	313.0 -> 269.0	26515	4.12	µg/L		98
PFHxS	6.739	399.0 -> 80.0	1015	0.57	µg/L	m	92
PFNA	8.075	463.0 -> 419.0	0	0.00	µg/L	m	1
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.487	413.0 -> 369.0	1794	0.16	µg/L	m	93
PFOS	8.049	499.0 -> 80.0	2847	1.35	µg/L	m	81
PFPeA	4.339	263.0 -> 219.0	70661	8.34	µg/L		100
PFPeS	5.845	349.0 -> 80.0	208	0.16	µg/L		93
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

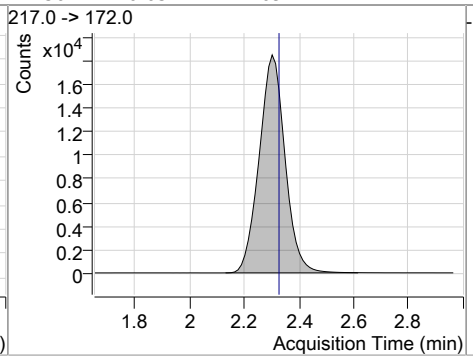
 # = Qualifier out of range, m = manually integrated, + = Area summed

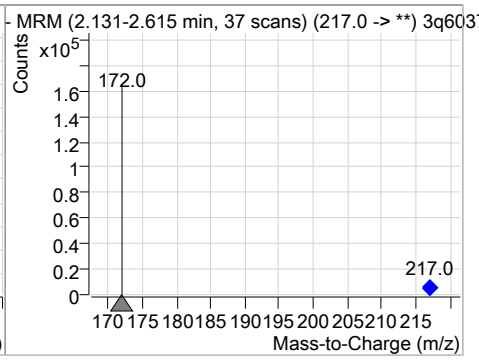
Perfluorinated Compounds by LC/MS/MS



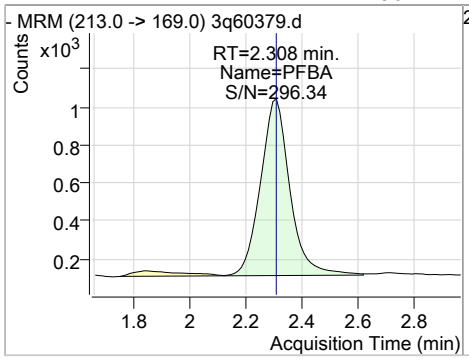
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.01	2.30	-0.03	120927				

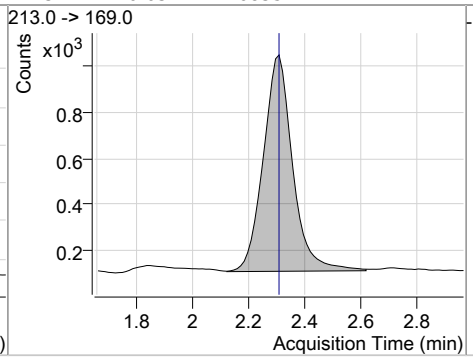


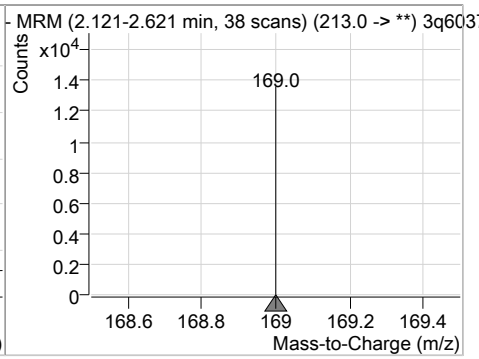




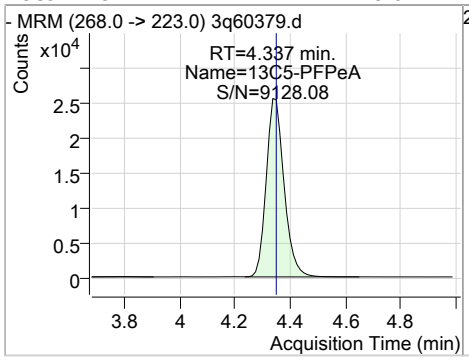
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.90	2.31	-0.03	6835				

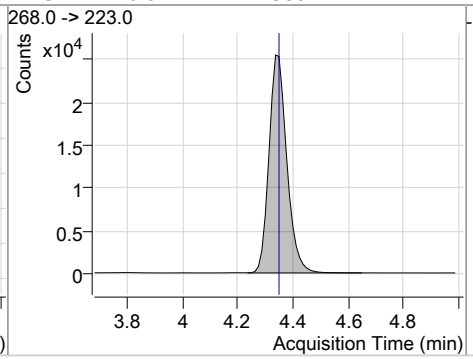


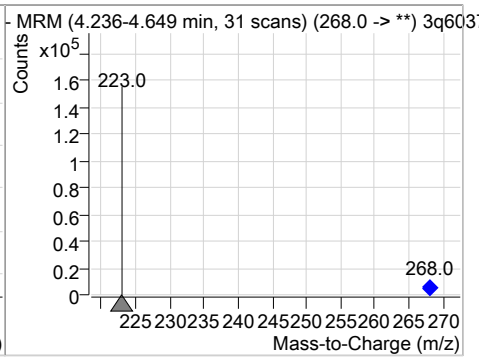




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.84	4.34	-0.01	114988				

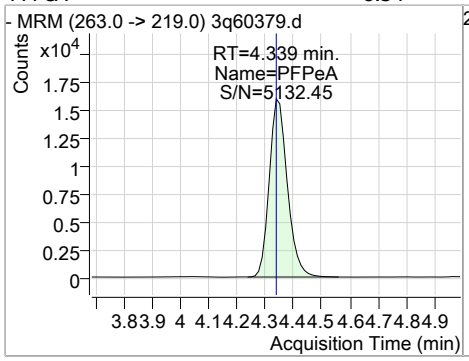


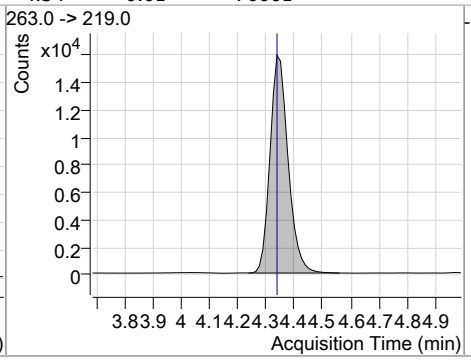


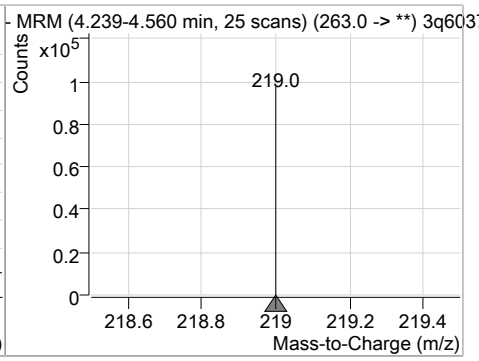


Perfluorinated Compounds by LC/MS/MS

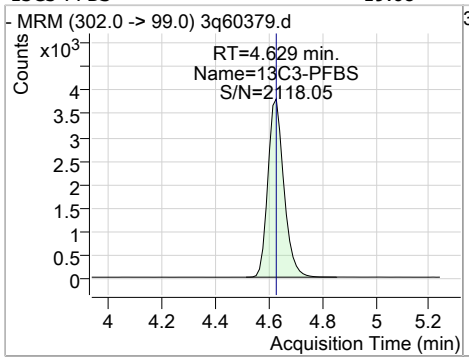
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	8.34	4.34	-0.01	70661				

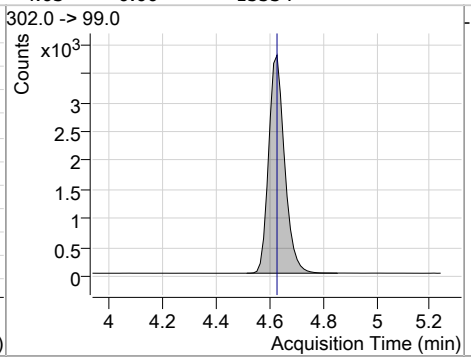


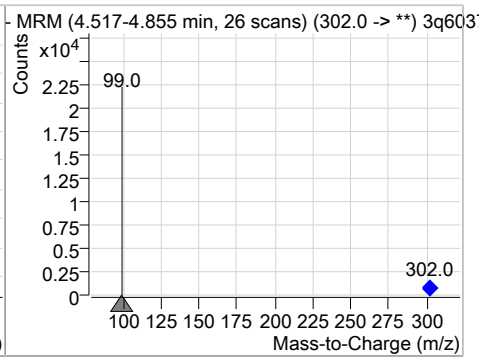




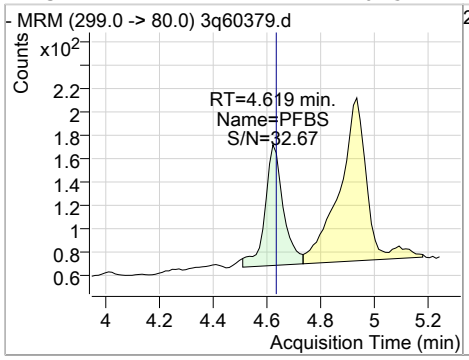
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.68	4.63	0.00	15534				

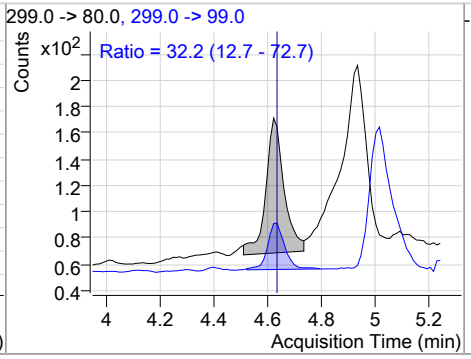


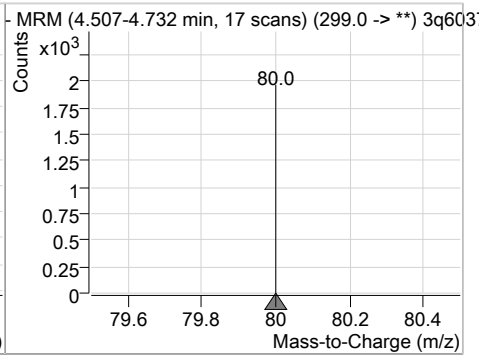




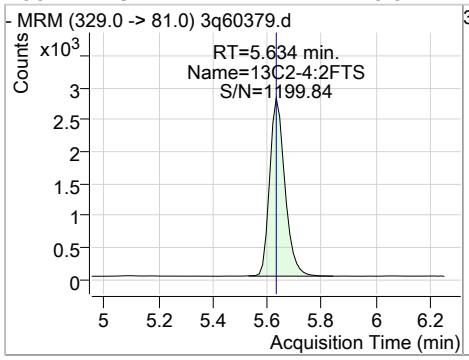
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.25	4.62	-0.01	487	299.0 -> 99.0	32.2	12.7	72.7

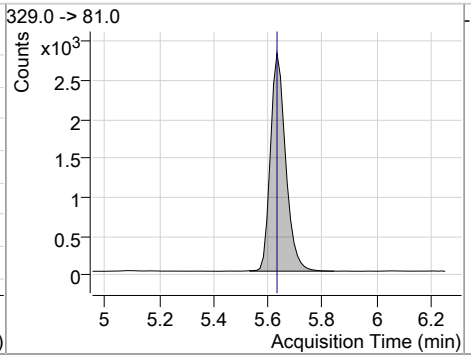


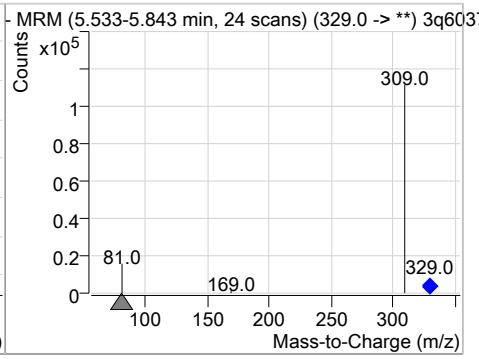




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.37	5.63	0.00	10853				

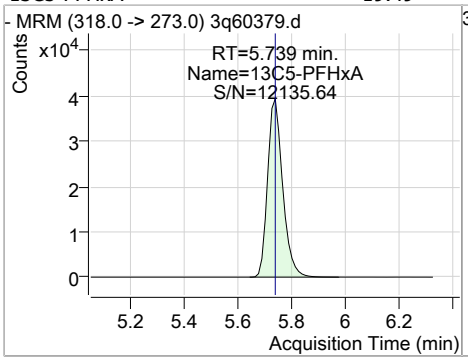


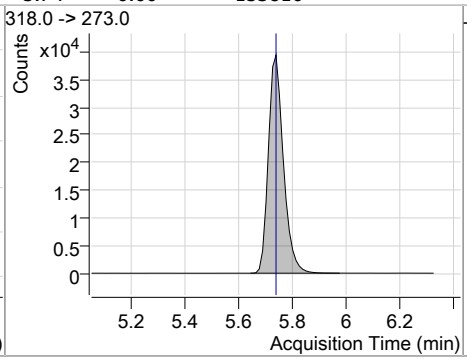


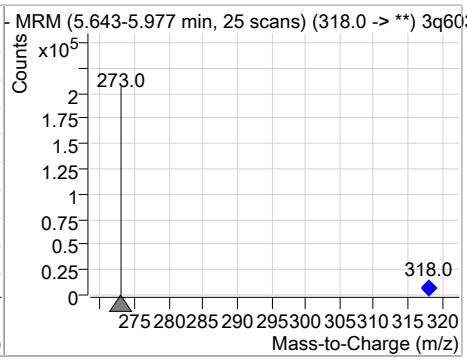


Perfluorinated Compounds by LC/MS/MS

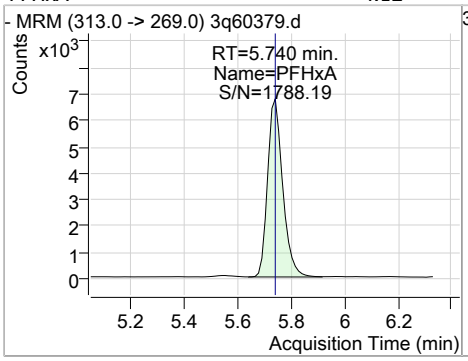
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.49	5.74	0.00	153810				

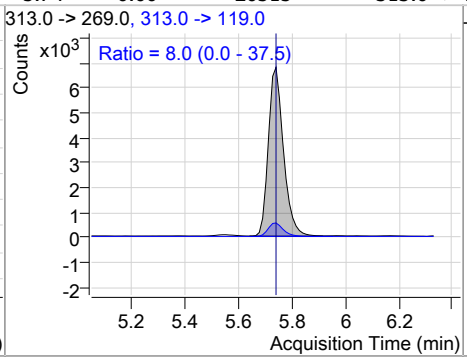


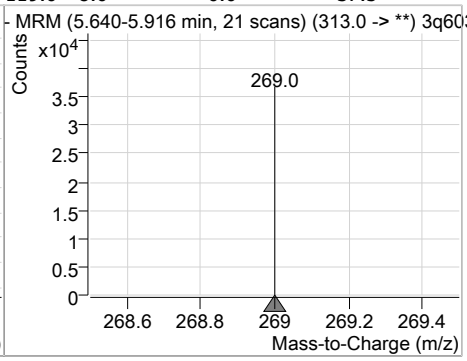




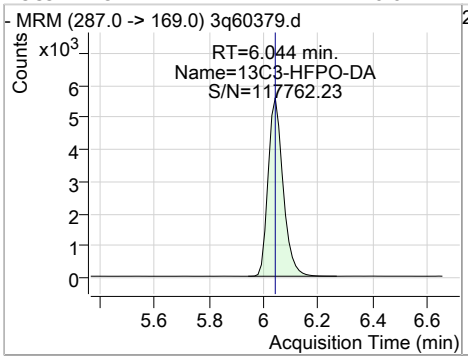
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.12	5.74	0.00	26515	313.0 -> 119.0	8.0	0.0	37.5

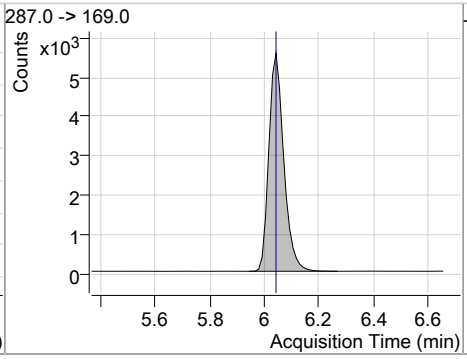


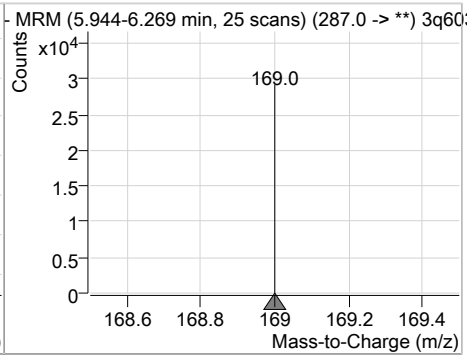




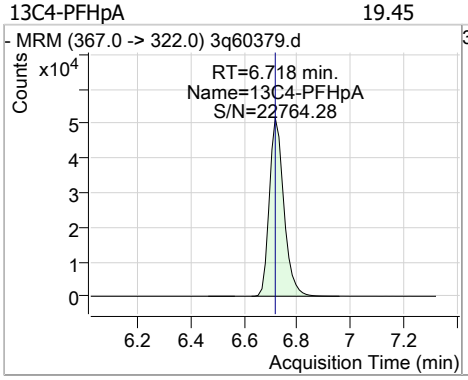
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.87	6.04	0.00	21113				

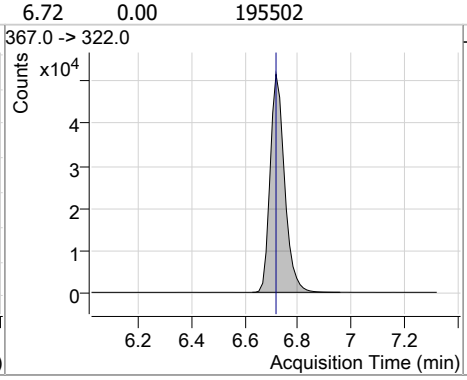


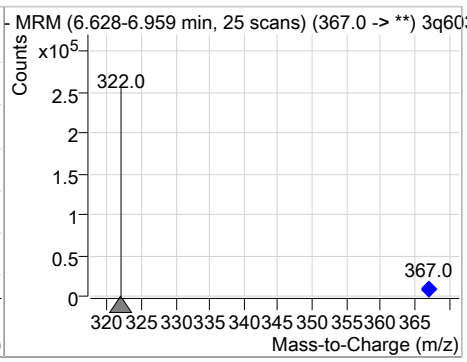




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.45	6.72	0.00	195502				

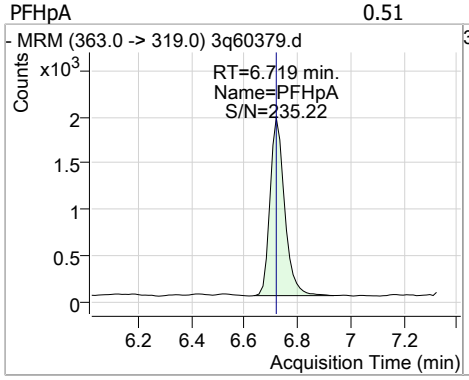


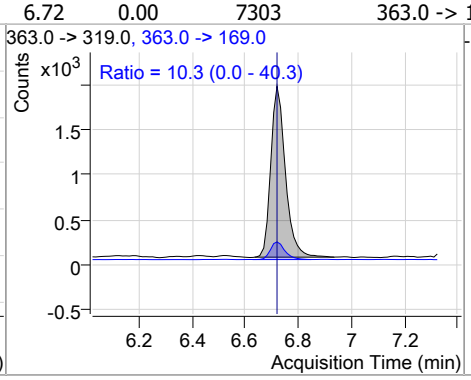


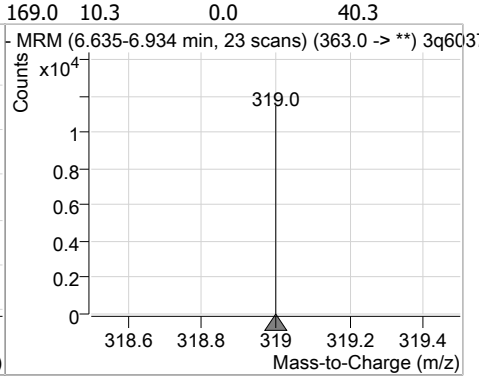


Perfluorinated Compounds by LC/MS/MS

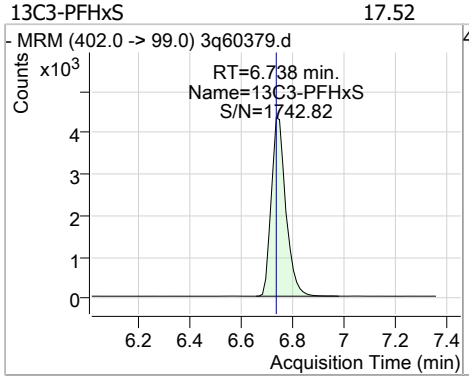
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.51	6.72	0.00	7303	363.0 -> 169.0	10.3	0.0	40.3

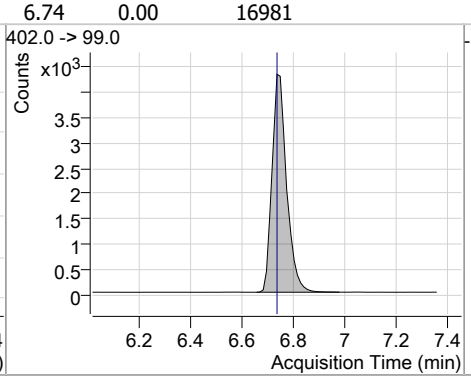


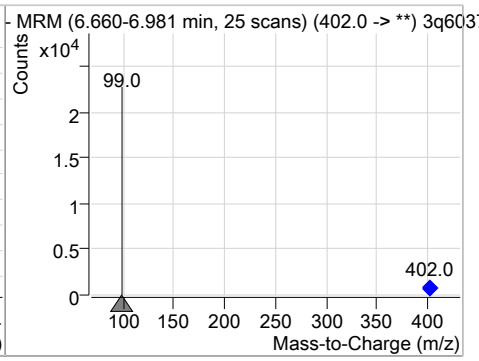




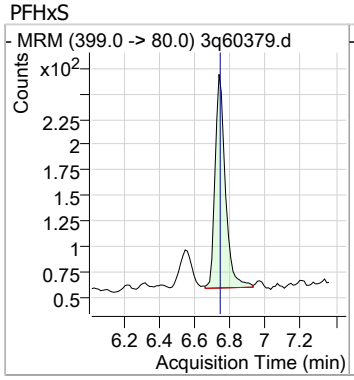
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.52	6.74	0.00	16981				

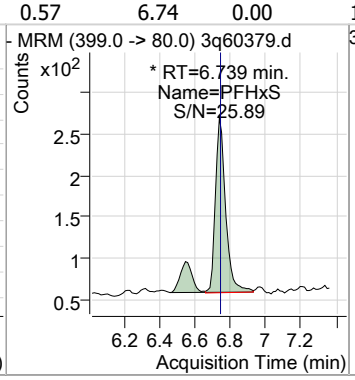


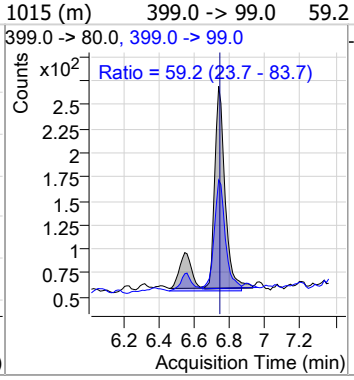


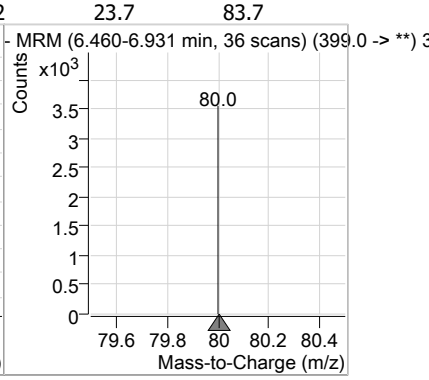


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.57	6.74	0.00	1015 (m)	399.0 -> 99.0	59.2	23.7	83.7

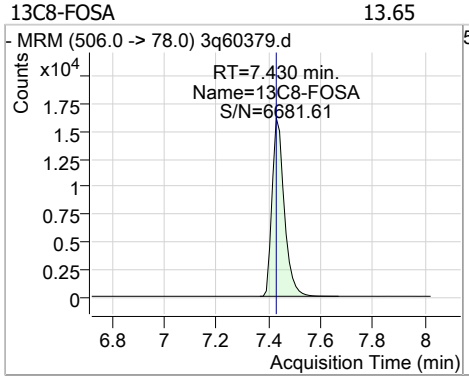


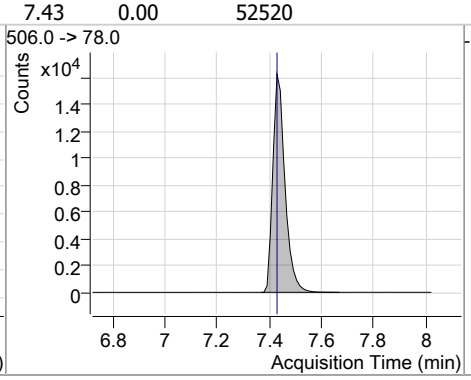


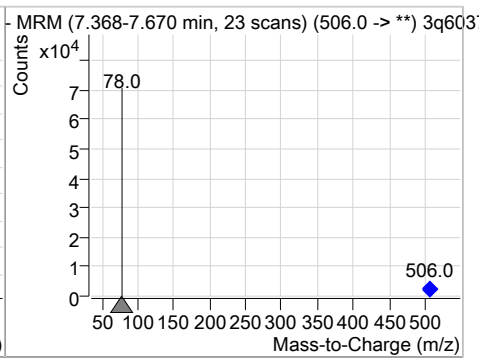




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.65	7.43	0.00	52520				

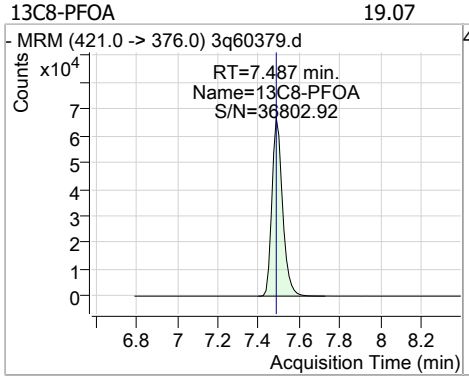


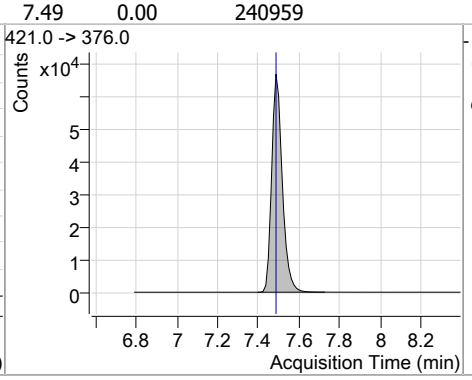


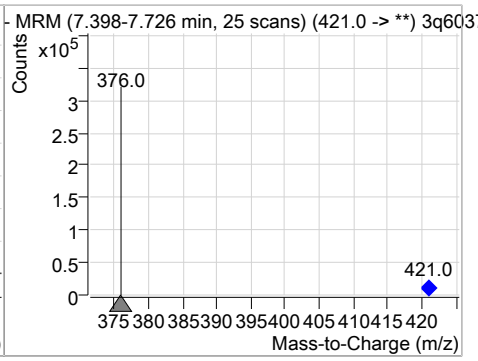


Perfluorinated Compounds by LC/MS/MS

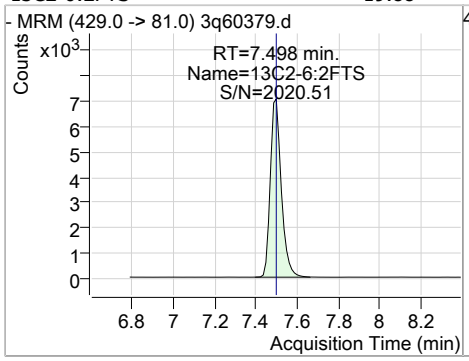
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.07	7.49	0.00	240959				

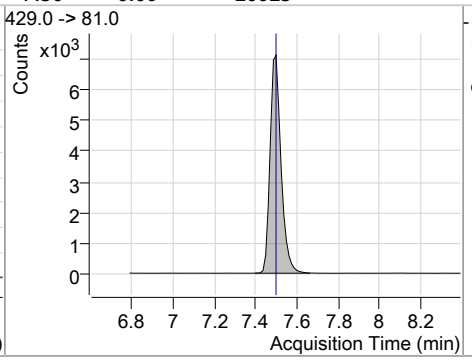


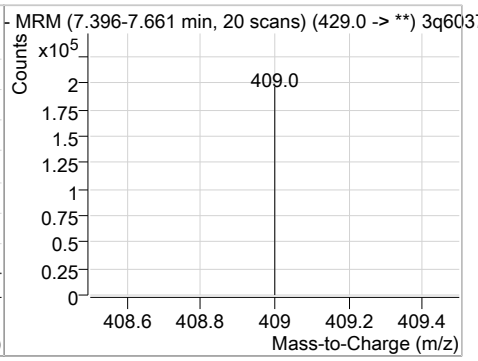




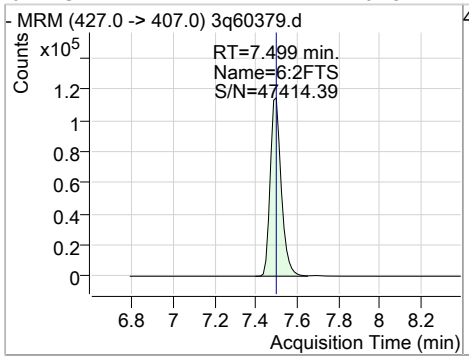
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.88	7.50	0.00	26025				

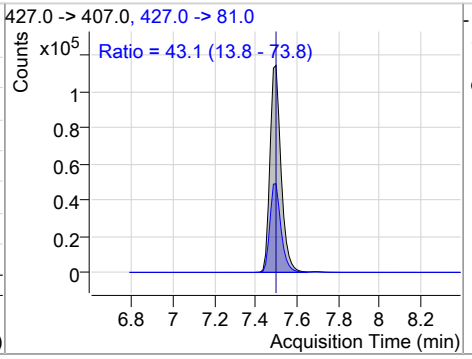


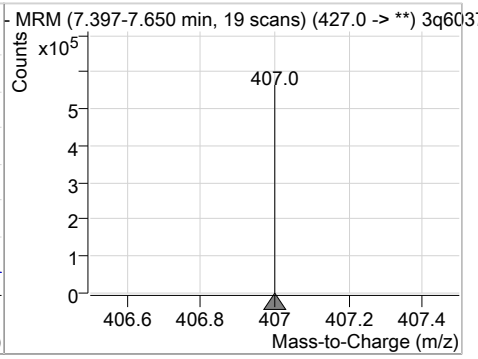




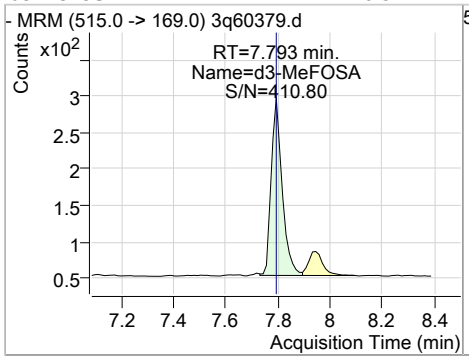
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	67.94	7.50	0.00	424764	427.0 -> 81.0	43.1	13.8	73.8

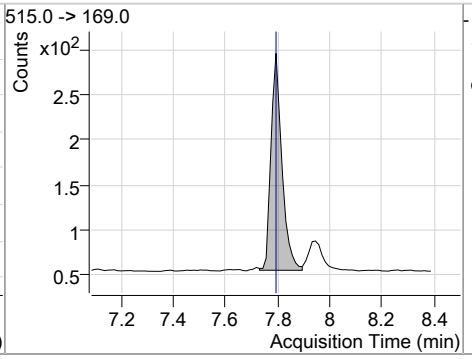


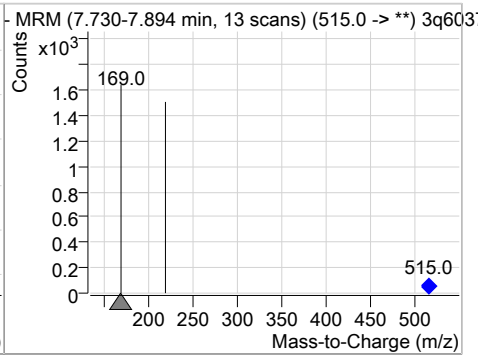




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.57	7.79	0.00	712				

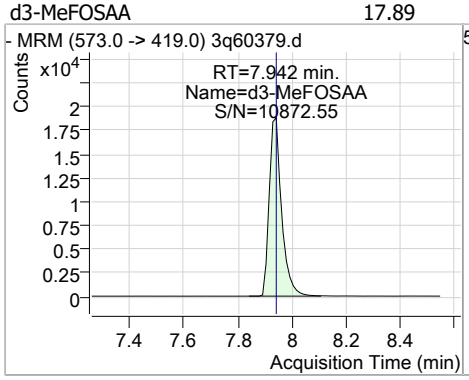


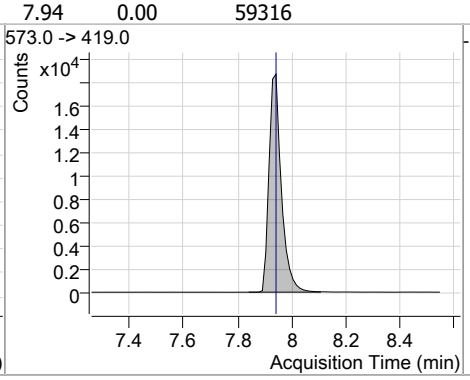


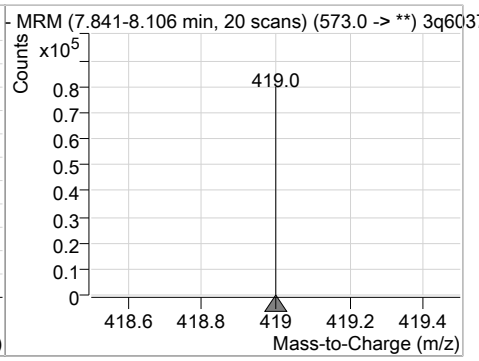


Perfluorinated Compounds by LC/MS/MS

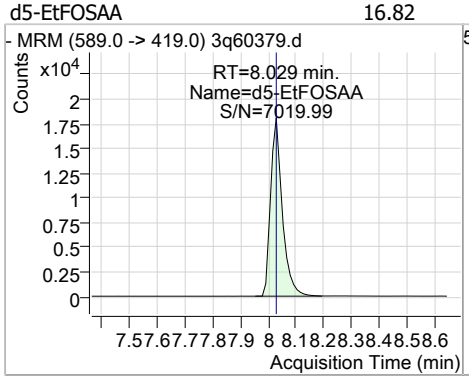
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.89	7.94	0.00	59316				

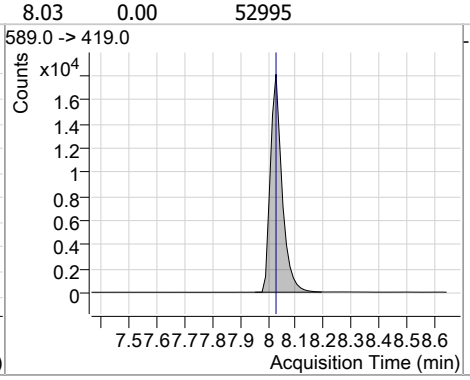


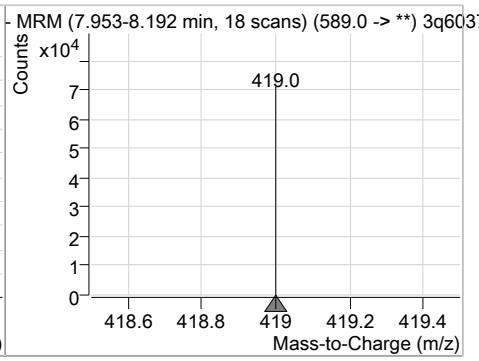




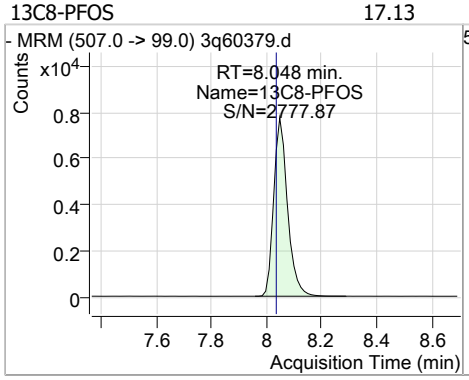
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.82	8.03	0.00	52995				

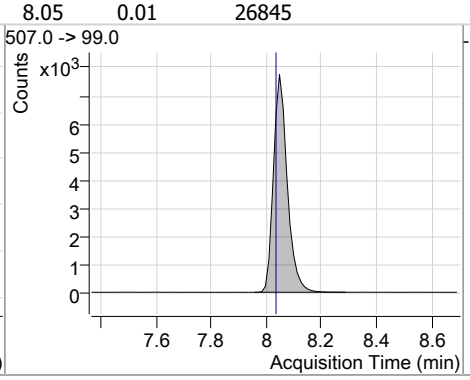


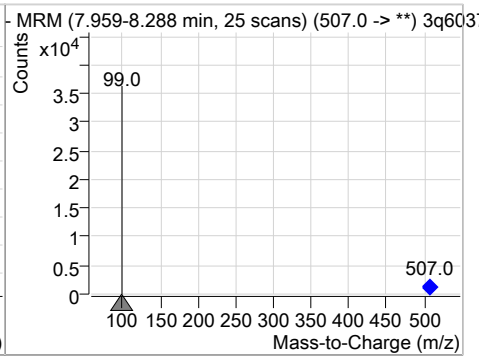




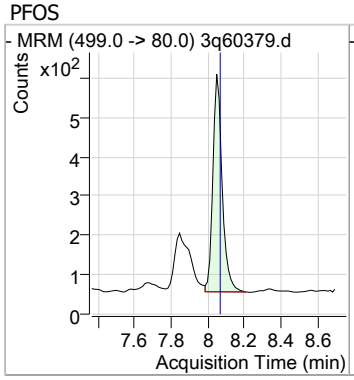
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.13	8.05	0.01	26845				

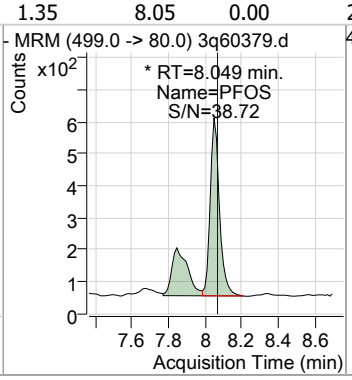


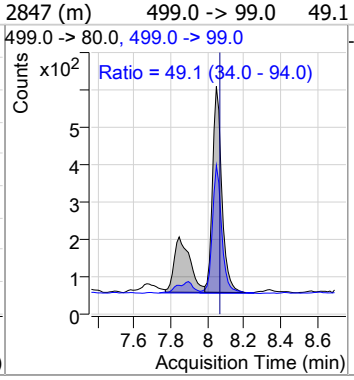


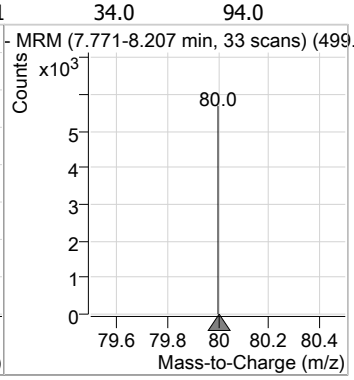


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.35	8.05	0.00	2847 (m)	499.0 -> 99.0	49.1	34.0	94.0



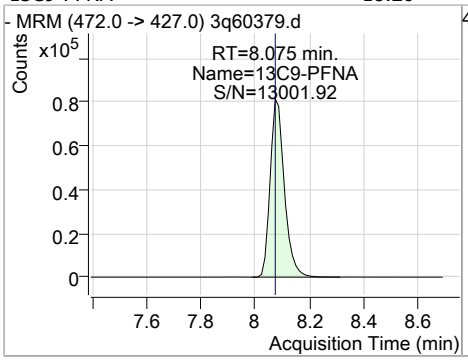


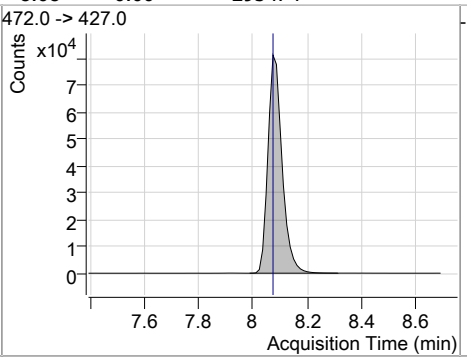


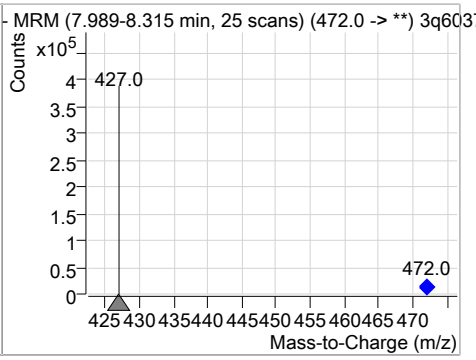


Perfluorinated Compounds by LC/MS/MS

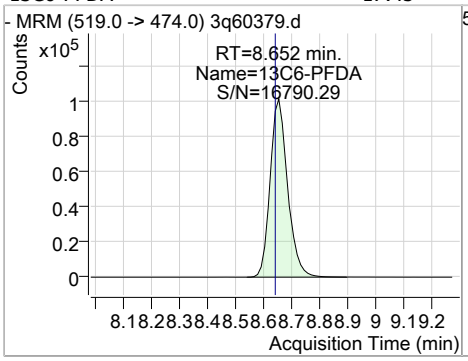
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.26	8.08	0.00	295474				

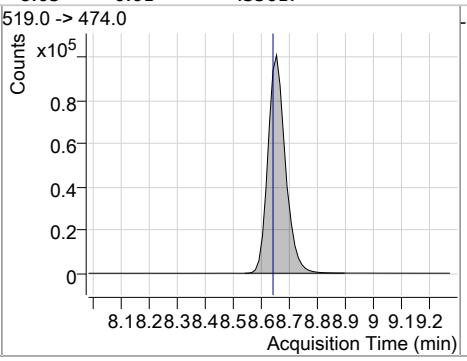


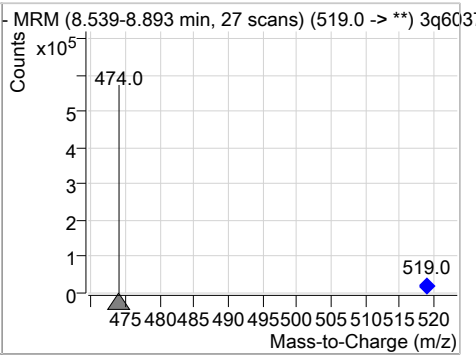




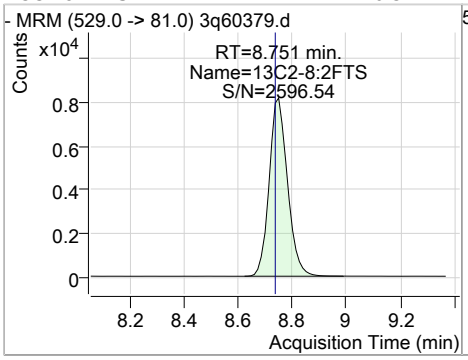
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.45	8.65	0.01	435617				

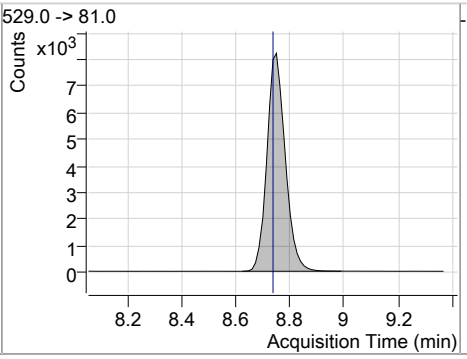


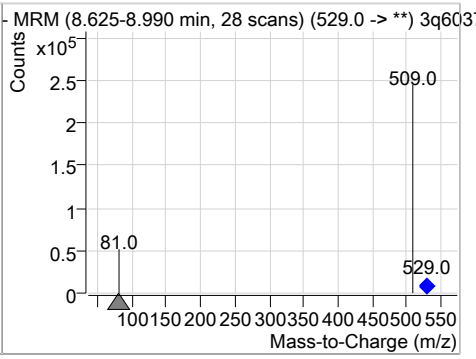




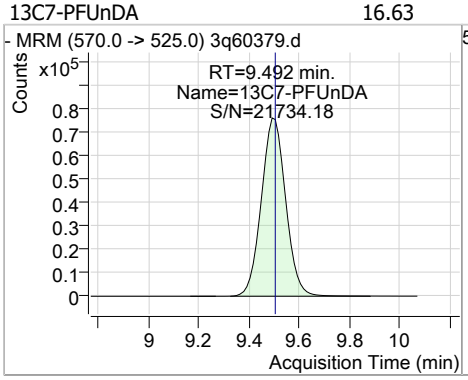
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.34	8.75	0.01	38331				

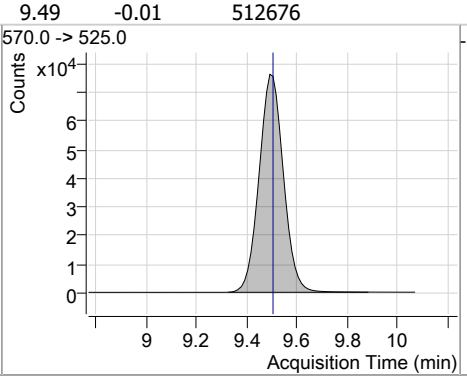


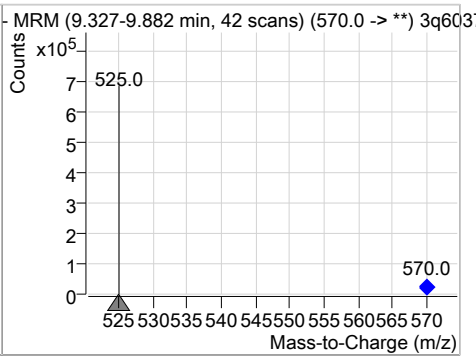




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.63	9.49	-0.01	512676				

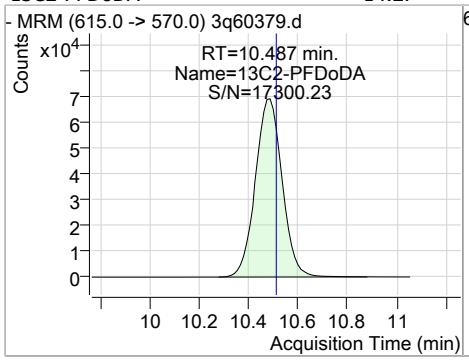


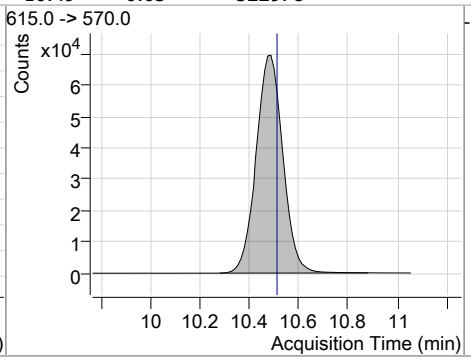


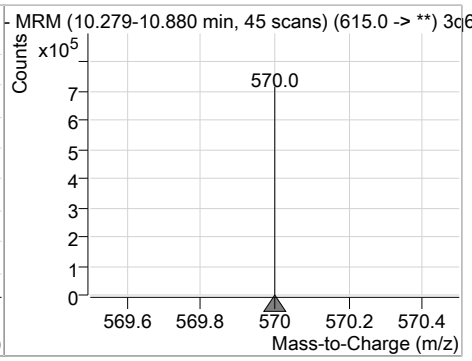


Perfluorinated Compounds by LC/MS/MS

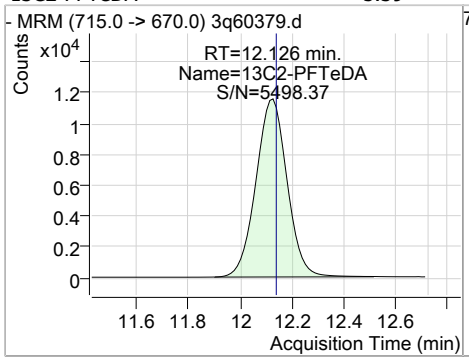
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.27	10.49	-0.03	522978				

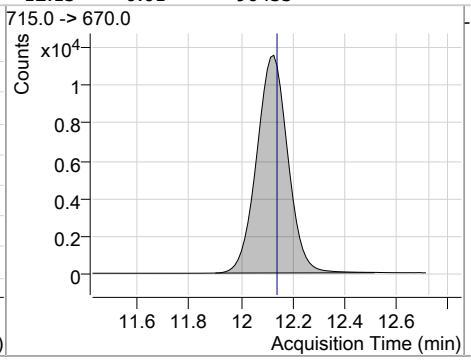


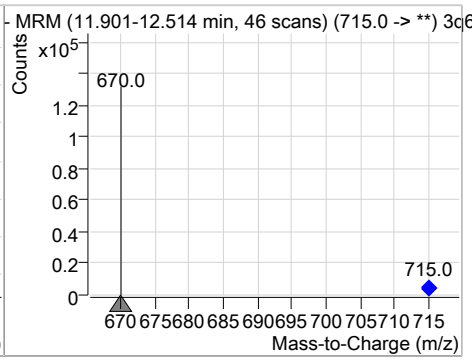




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	5.39	12.13	-0.01	96453				







Manual Integration Approval Summary

Sample Number: FA95502-3
Lab FileID: 3Q60379.D
Injection Time: 05/28/22 00:36
Method: EPA 537M BY ID
Analyst approved: 06/01/22 10:55 Martha Valls
Supervisor approved: 06/01/22 13:37 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 13:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29416.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 9:19:17 PM
Sample Name : fa95502-3
Vial : P1-F2
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91274,S4Q422,250,,,1.0,5,water

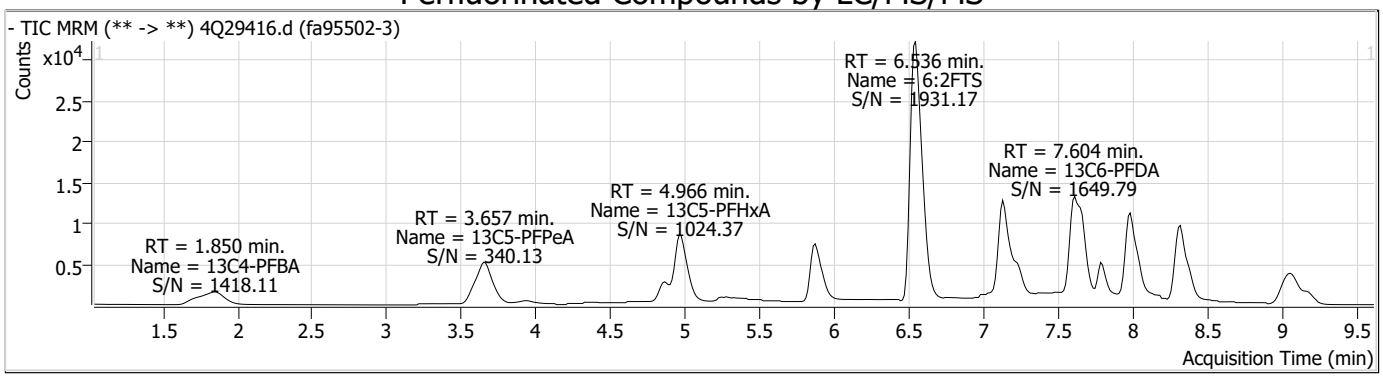
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.850	217.0 -> 172.0	18324	20.00	µg/L	-0.025
M5-PFPeA	3.657	268.0 -> 223.0	31174	20.00	µg/L	-0.025
M5-PFHxA	4.966	318.0 -> 273.0	37912	20.00	µg/L	-0.012
M4-PFHpA	5.877	367.0 -> 322.0	35074	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	57820	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	58387	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	44270	20.00	µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	53999	20.00	µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	52648	20.00	µg/L	0.012
M2-PFTeDA	9.052	715.0 -> 670.0	35617	20.00	µg/L	0.025
M8-FOSA	7.234	506.0 -> 78.0	10638	20.00	µg/L	-0.012
M3-PFBS	3.936	302.0 -> 99.0	2349	20.00	µg/L	-0.013
M3-PFHxS	5.898	402.0 -> 99.0	2246	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	3517	20.00	µg/L	0.013
M2-4:2FTS	4.862	329.0 -> 309.0	13491	20.00	µg/L	-0.012
M2-6:2FTS	6.535	429.0 -> 409.0	24944	20.00	µg/L	0.000
M2-8:2FTS	7.627	529.0 -> 509.0	17192	20.00	µg/L	0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	15163	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	2063	20.00	µg/L	-0.012
M3-MeFOSA	7.629	515.0 -> 169.0	503	20.00	µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	13230	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	13491	3.98	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.9%		
13C2-6:2FTS	6.535	429.0 -> 409.0	24944	4.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 23.7%		
13C2-8:2FTS	7.627	529.0 -> 509.0	17192	3.85	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.3%		
13C2-PFDoDA	8.319	615.0 -> 570.0	52648	3.44	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.2%		
13C2-PFTeDA	9.052	715.0 -> 670.0	35617	1.85	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.2%		
13C3-PFBS	3.936	302.0 -> 99.0	2349	4.27	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.3%		
13C3-PFHxS	5.898	402.0 -> 99.0	2246	4.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.6%		
13C4-PFBA	1.850	217.0 -> 172.0	18324	3.90	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.5%		
13C4-PFHpA	5.877	367.0 -> 322.0	35074	4.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.5%		
13C5-PFHxA	4.966	318.0 -> 273.0	37912	4.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.0%		
13C5-PFPeA	3.657	268.0 -> 223.0	31174	4.25	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.3%		
13C6-PFDA	7.604	519.0 -> 474.0	44270	4.22	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

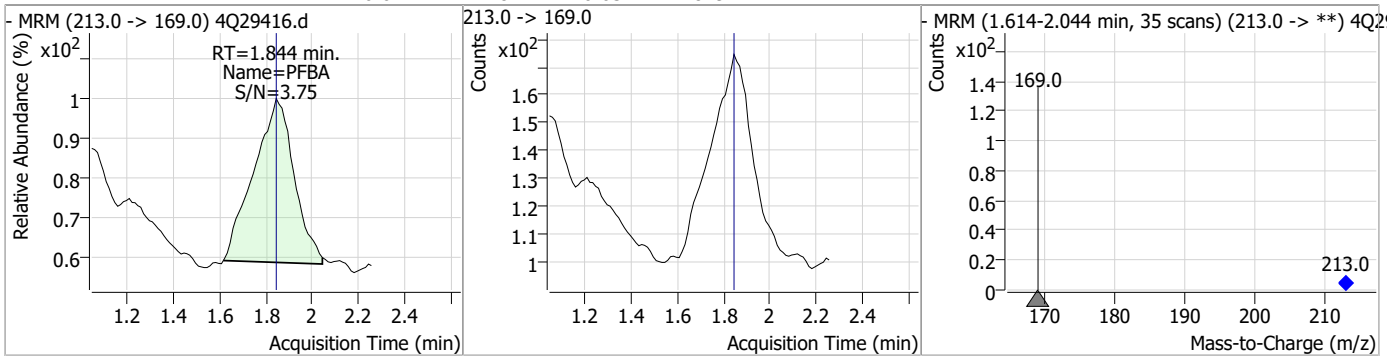
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.1%			
13C7-PFUnDA	7.986	570.0 -> 525.0	53999	3.82	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.1%			
13C8-FOSA	7.234	506.0 -> 78.0	10638	3.25	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.2%			
13C8-PFOA	6.564	421.0 -> 376.0	57820	4.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.3%			
13C8-PFOS	7.108	507.0 -> 99.0	3517	3.89	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.5%			
13C9-PFNA	7.135	472.0 -> 427.0	58387	4.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.5%			
d3-MeFOSAA	7.661	573.0 -> 419.0	15163	4.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.9%			
13C3-HFPO-DA	5.257	287.0 -> 169.0	2064	3.89	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.4%			
d3-MeFOSA	7.629	515.0 -> 169.0	503	0.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.2%			
d5-EtFOSAA	7.785	589.0 -> 419.0	13241	4.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.2%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.536	427.0 -> 407.0	74969	11.72	µg/L		99
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.844	213.0 -> 169.0	879	0.61	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.878	363.0 -> 319.0	1201	0.10	µg/L		99
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.968	313.0 -> 269.0	7486	0.77	µg/L		100
PFHxS	5.900	399.0 -> 80.0	208	0.14	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	7.109	499.0 -> 80.0	436	0.27	µg/L	m	97
PFPeA	3.659	263.0 -> 219.0	10377	1.50	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

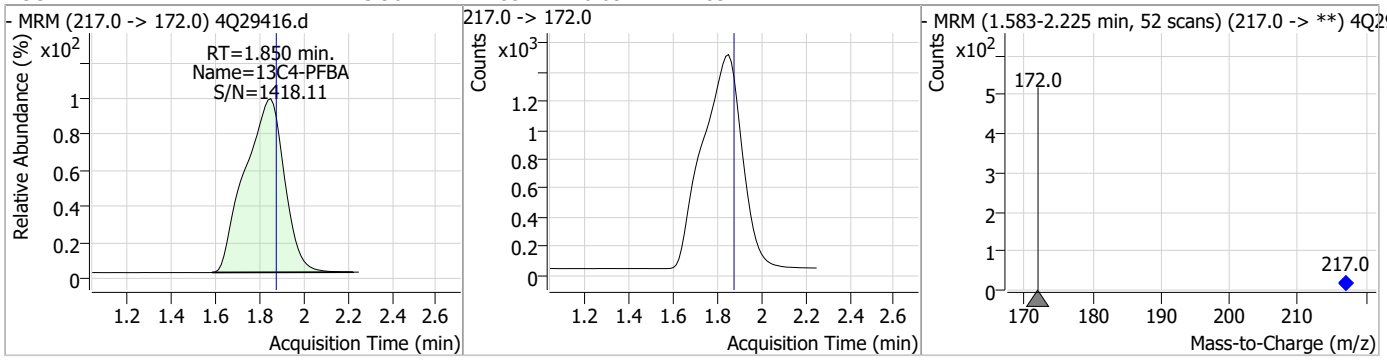
Perfluorinated Compounds by LC/MS/MS



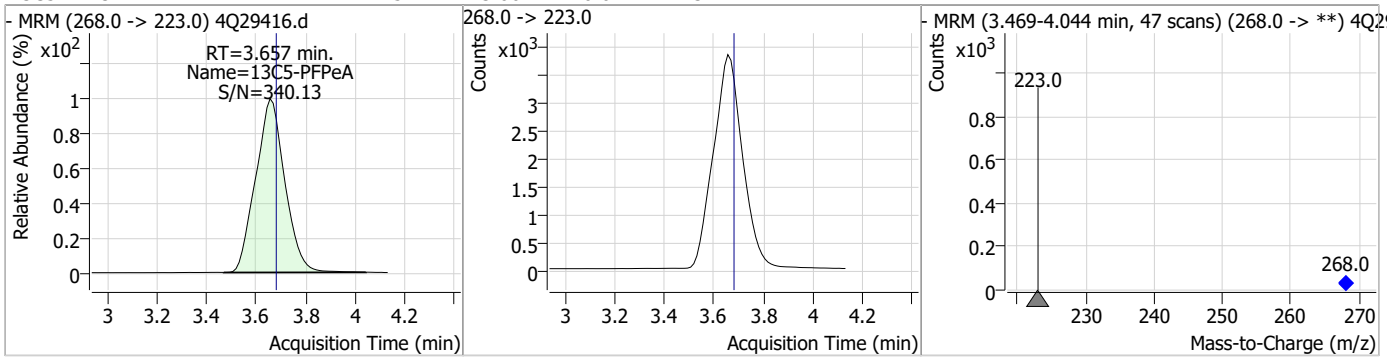
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.61	1.84	-0.03	879				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.90	1.85	-0.03	18324				

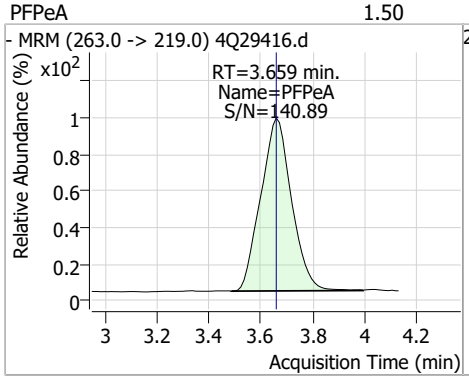


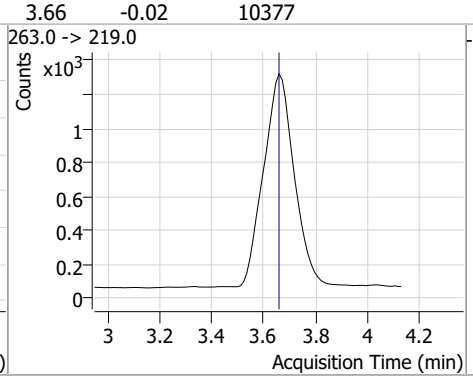
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.25	3.66	-0.02	31174				

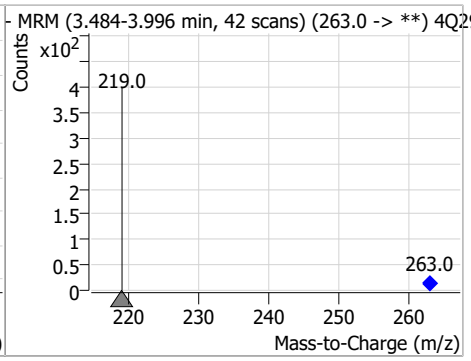


Perfluorinated Compounds by LC/MS/MS

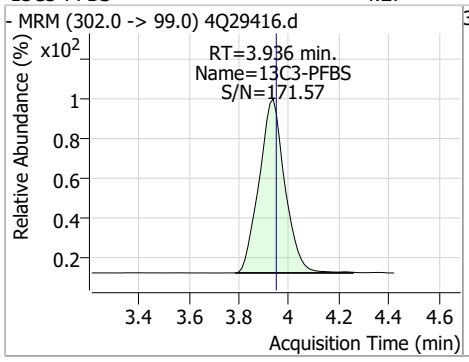
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.50	3.66	-0.02	10377				

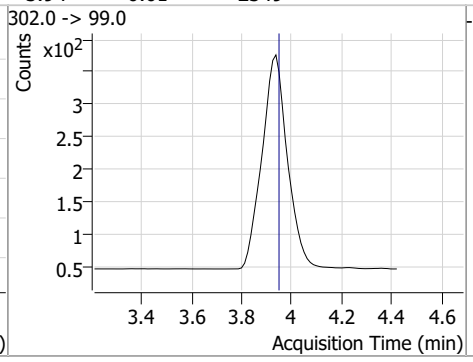


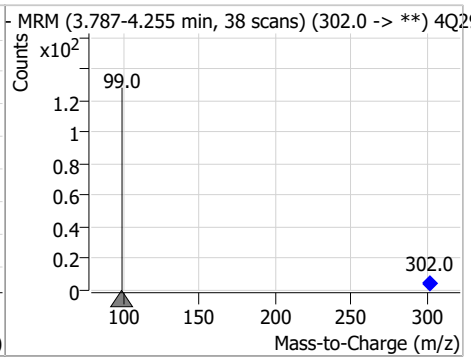




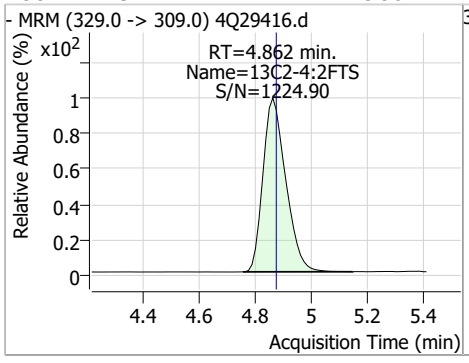
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	4.27	3.94	-0.01	2349				

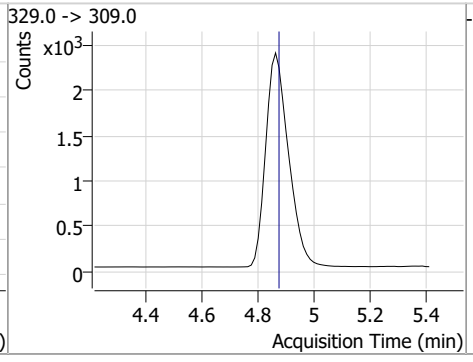


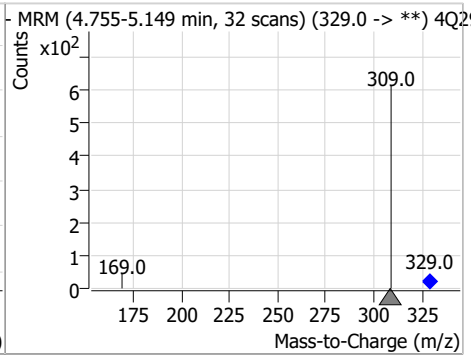




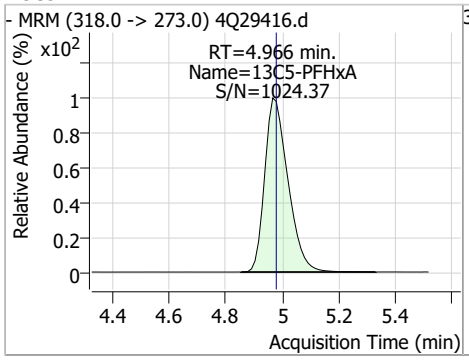
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.98	4.86	-0.01	13491				

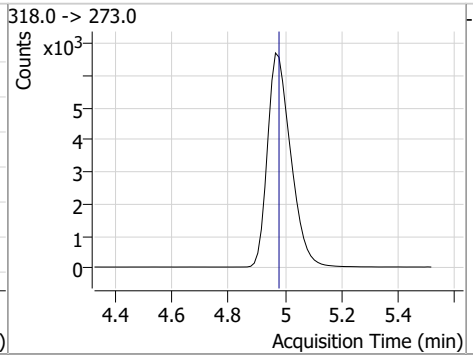


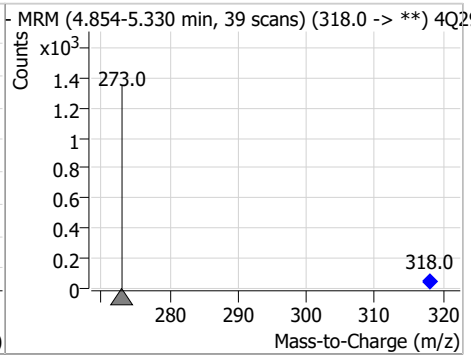




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	4.21	4.97	-0.01	37912				

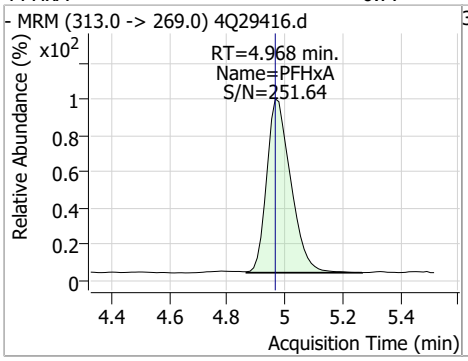


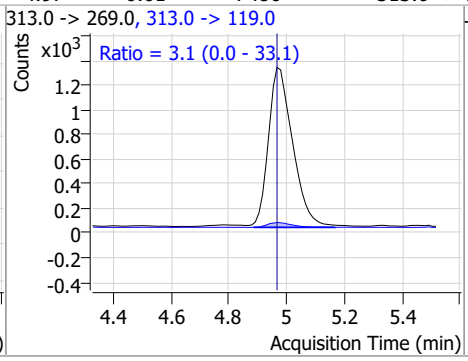


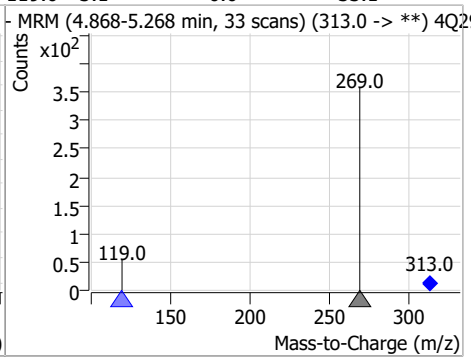


Perfluorinated Compounds by LC/MS/MS

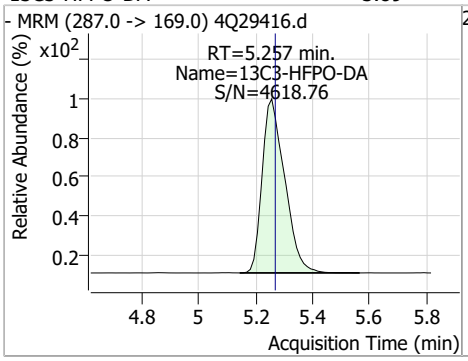
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.77	4.97	-0.01	7486	313.0 -> 119.0	3.1	0.0	33.1

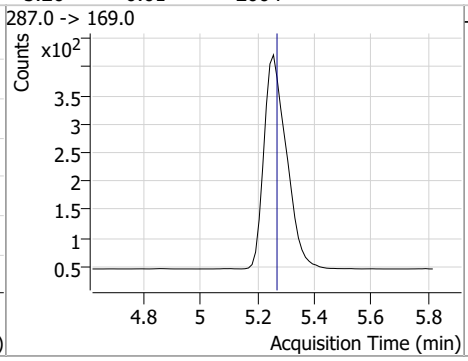


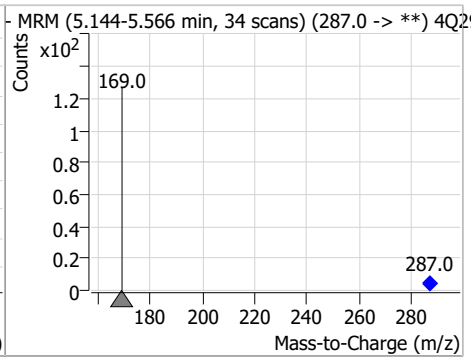




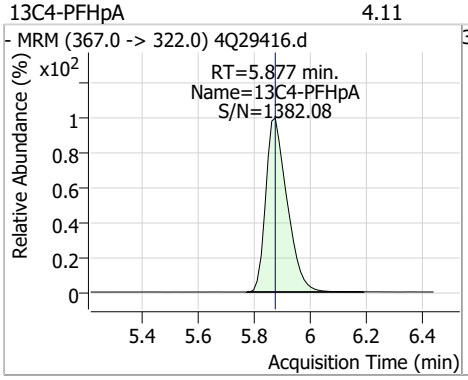
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.89	5.26	-0.01	2064				

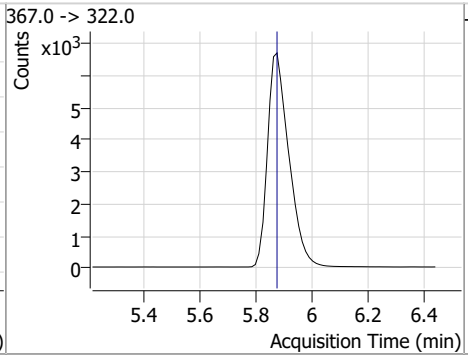


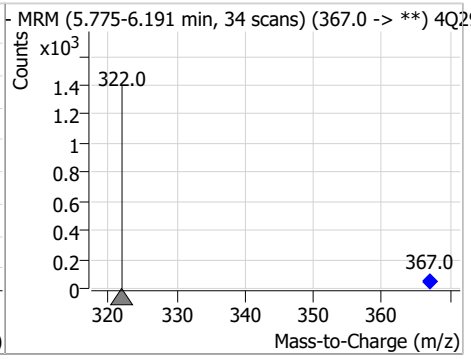




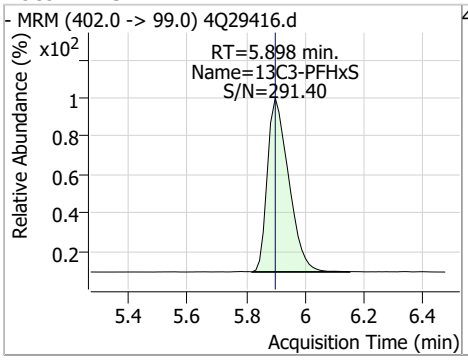
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	4.11	5.88	0.00	35074				

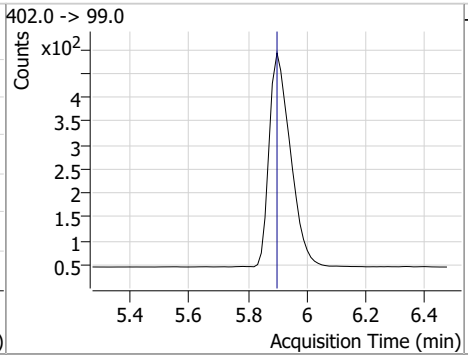


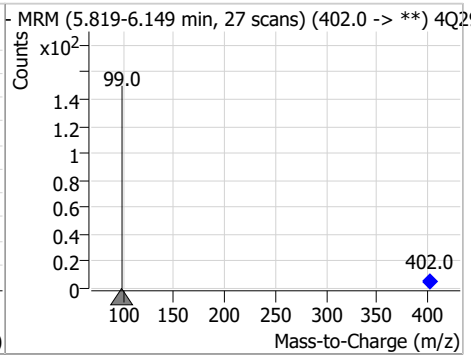




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	4.11	5.90	0.00	2246				

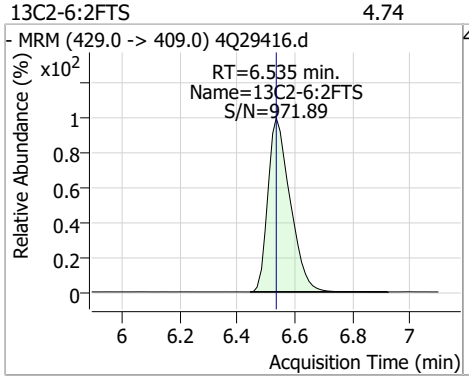


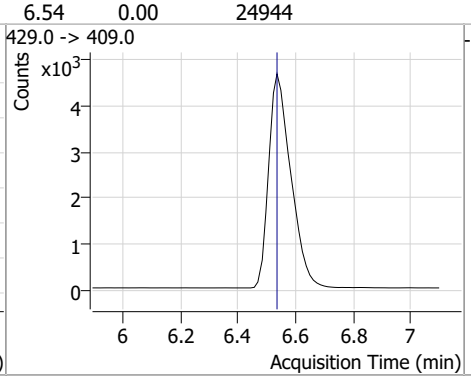


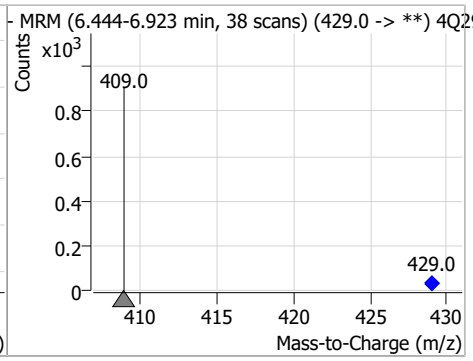


Perfluorinated Compounds by LC/MS/MS

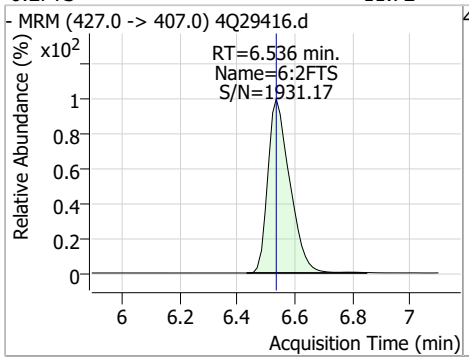
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.74	6.54	0.00	24944				

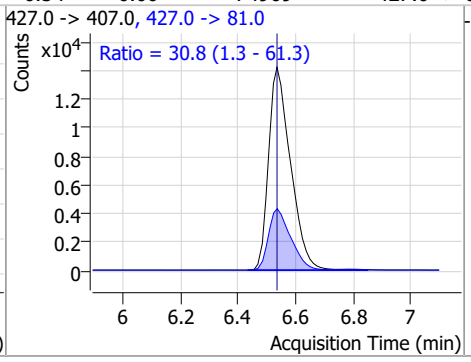


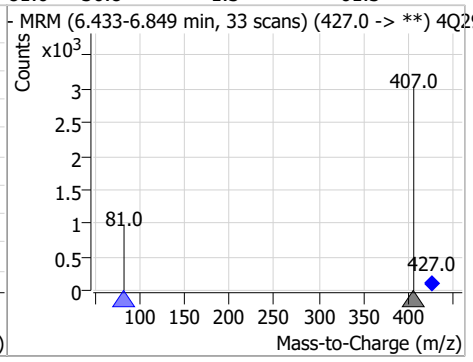




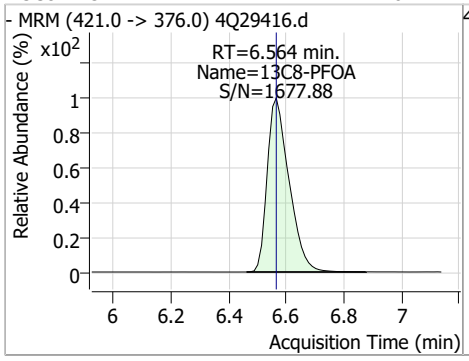
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	11.72	6.54	0.00	74969	427.0 -> 81.0	30.8	1.3	61.3

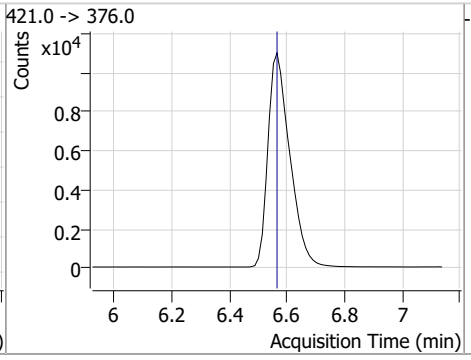


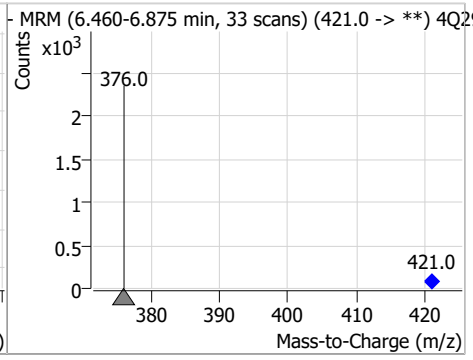




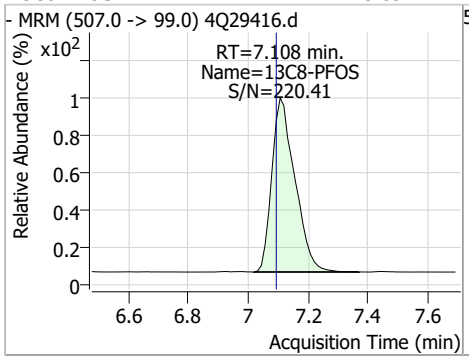
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	4.26	6.56	0.00	57820				

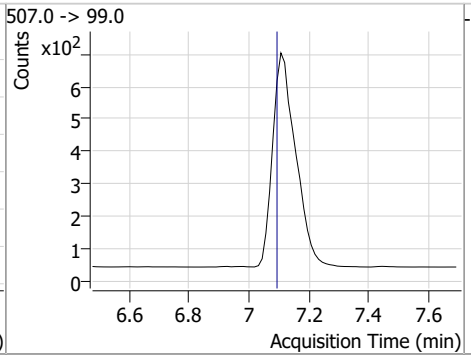


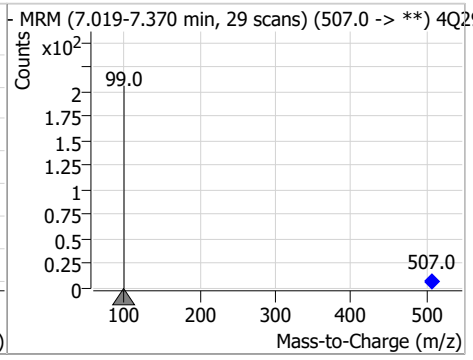




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.89	7.11	0.01	3517				

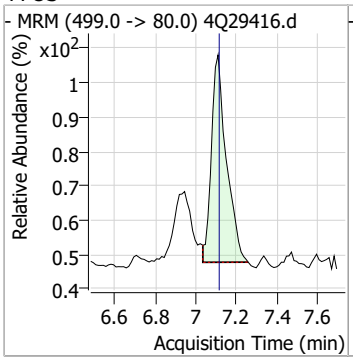


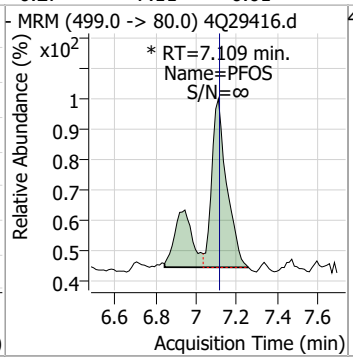


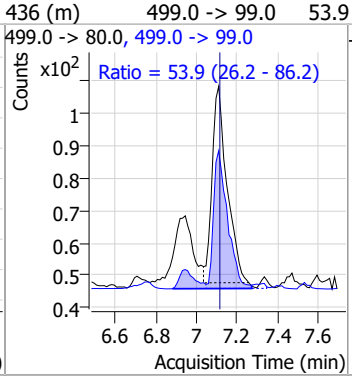


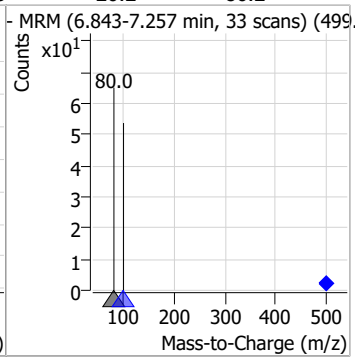
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.27	7.11	0.01	436 (m)	499.0 -> 99.0	53.9	26.2	86.2

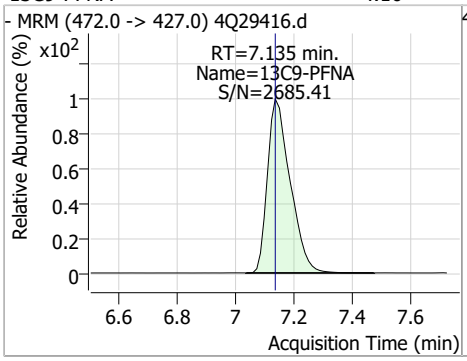


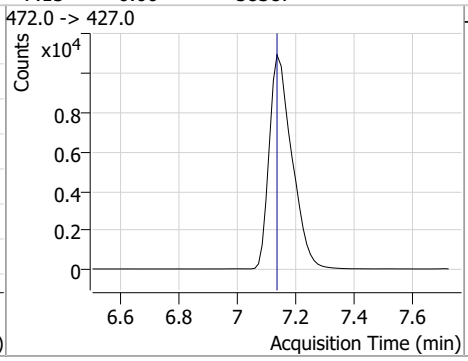


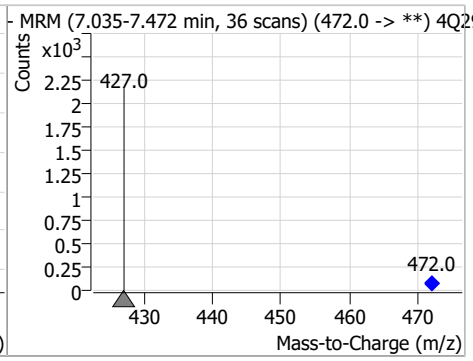




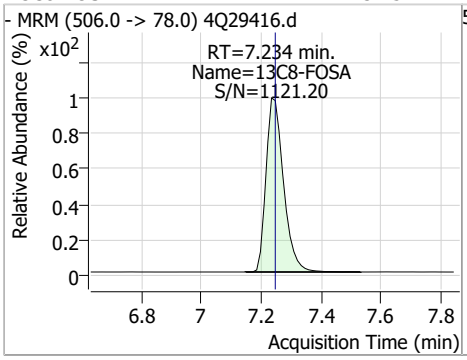
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	4.10	7.13	0.00	58387				

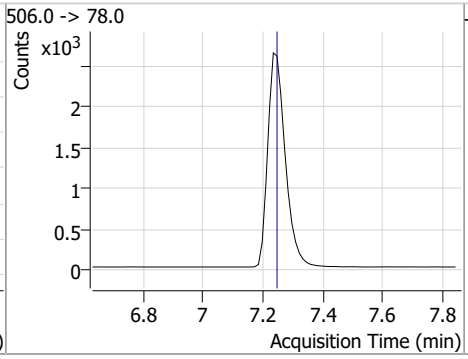


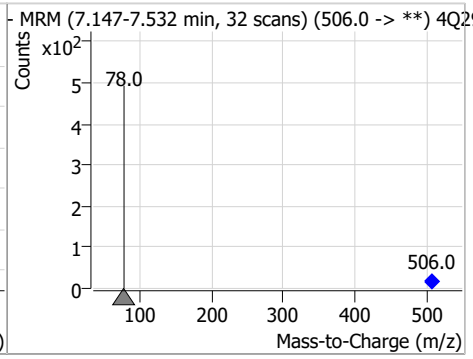




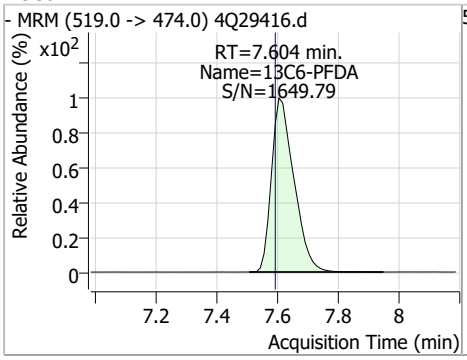
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	3.25	7.23	-0.01	10638				

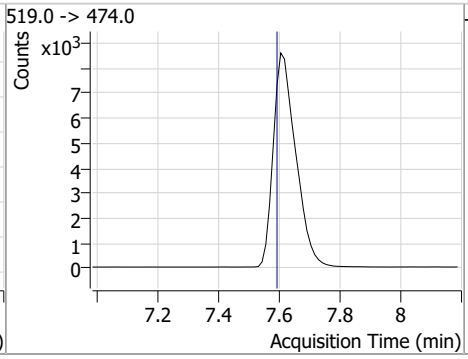


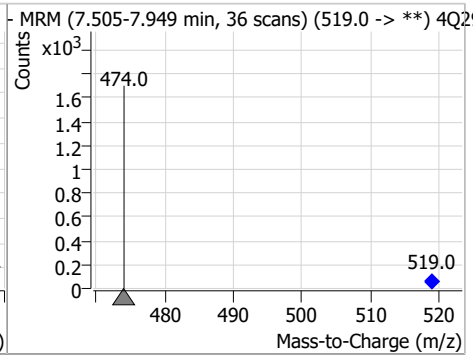




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	4.22	7.60	0.01	44270				

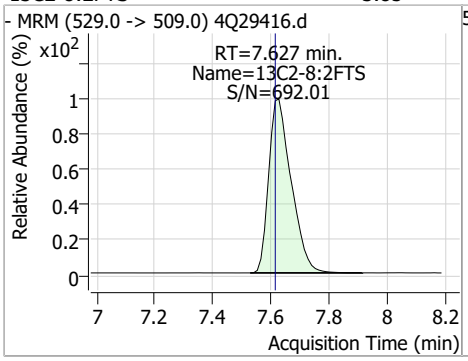


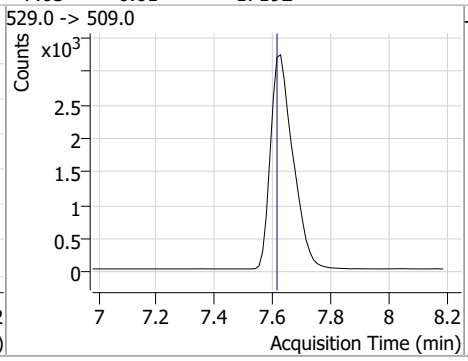


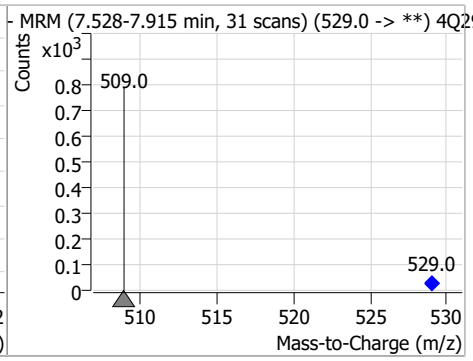


Perfluorinated Compounds by LC/MS/MS

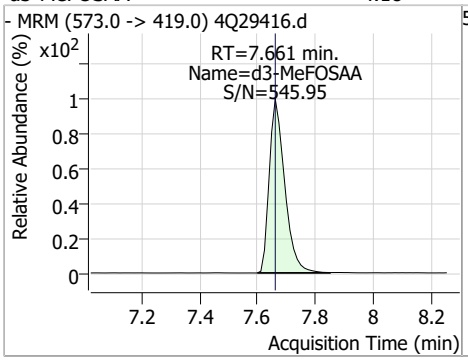
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.85	7.63	0.01	17192				

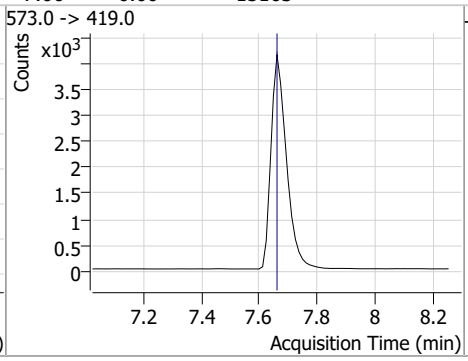


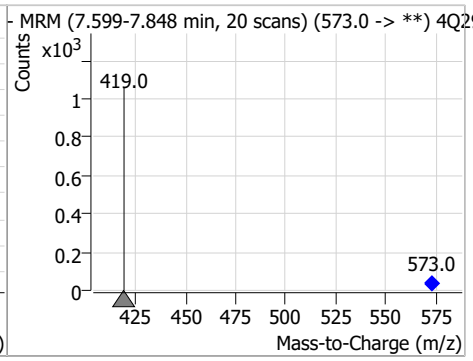




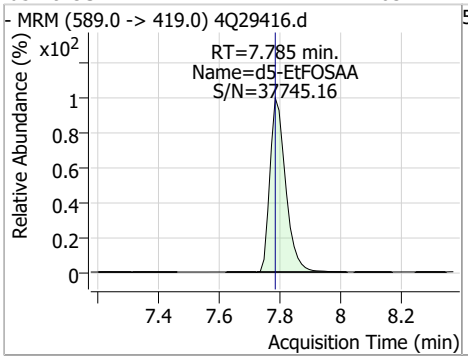
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.18	7.66	0.00	15163				

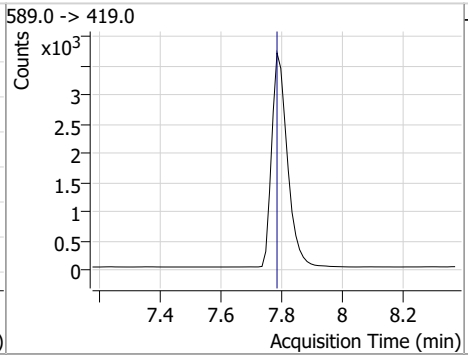


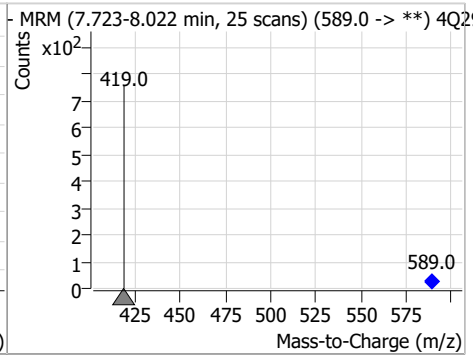




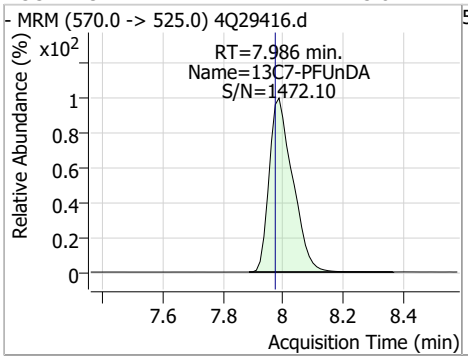
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	4.03	7.78	0.00	13241				

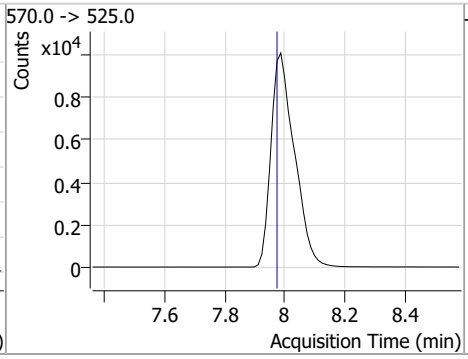


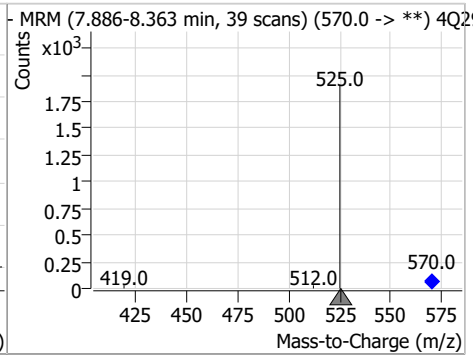




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	3.82	7.99	0.01	53999				

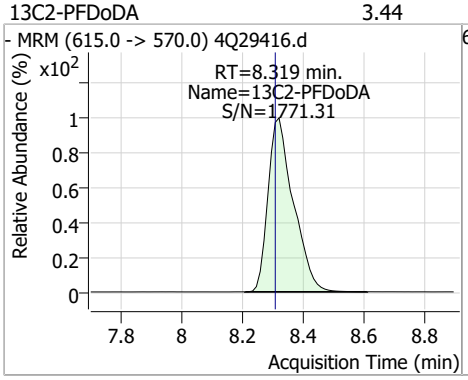


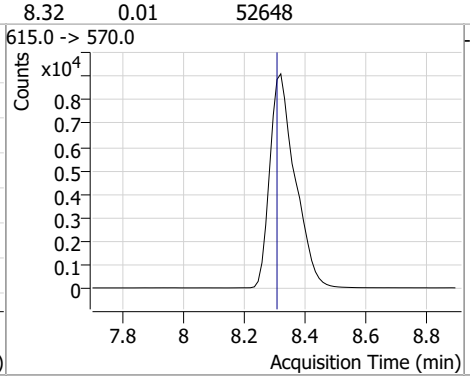


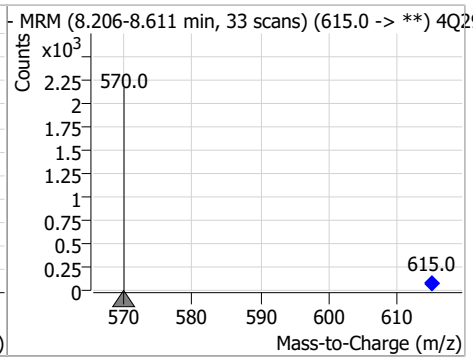


Perfluorinated Compounds by LC/MS/MS

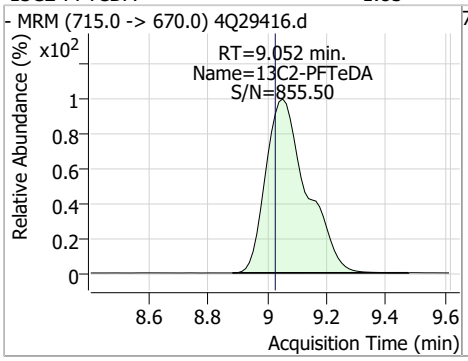
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	3.44	8.32	0.01	52648				

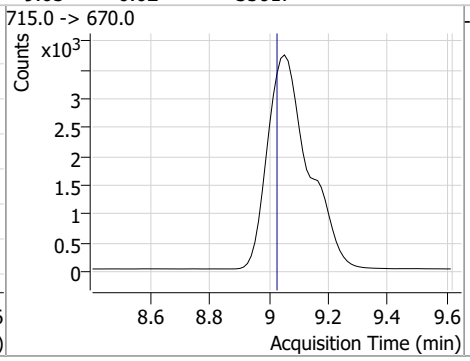


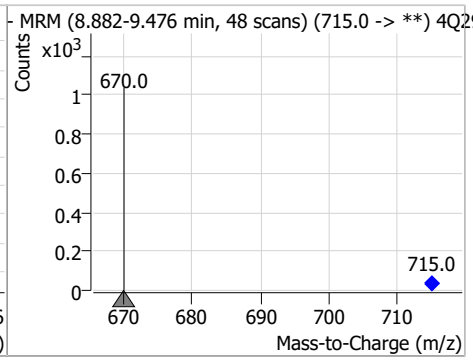




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.85	9.05	0.02	35617				







Manual Integration Approval Summary

Sample Number: FA95502-3
Lab FileID: 4Q29416.D
Injection Time: 05/31/22 21:19
Method: EPA 537M BY ID
Analyst approved: 06/01/22 13:21 Martha Valls
Supervisor approved: 06/01/22 13:37 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60380.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 12:54:39 AM
Sample Name : fa95502-4
Vial : P3-C1
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

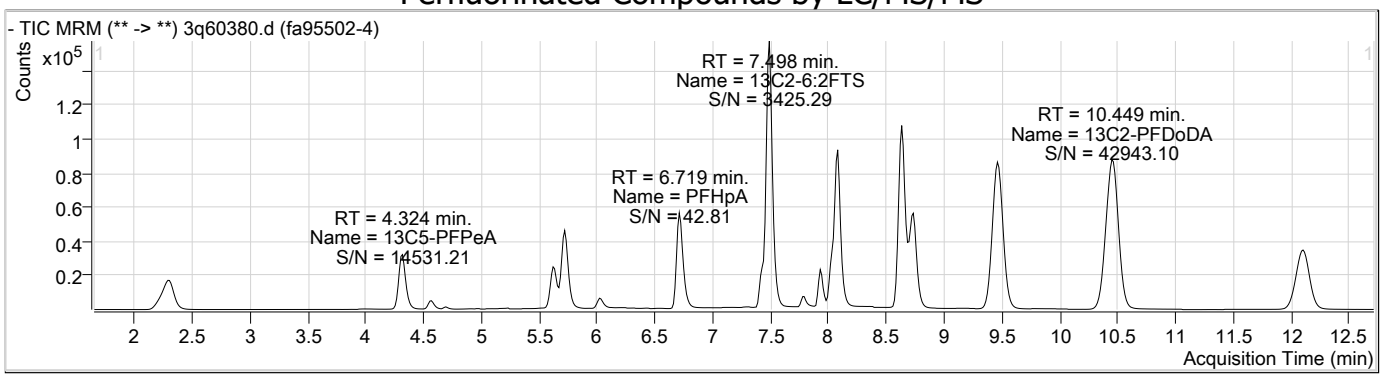
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.290	217.0 -> 172.0	125900	20.00 µg/L	-0.038
M5-PFPeA	4.324	268.0 -> 223.0	119787	20.00 µg/L	-0.025
M5-PFHxA	5.727	318.0 -> 273.0	159497	20.00 µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	200408	20.00 µg/L	0.000
M8-PFOA	7.499	421.0 -> 376.0	253539	20.00 µg/L	0.013
M9-PFNA	8.088	472.0 -> 427.0	304230	20.00 µg/L	0.013
M6-PFDA	8.639	519.0 -> 474.0	442758	20.00 µg/L	0.000
M7-PFUnDA	9.467	570.0 -> 525.0	563380	20.00 µg/L	-0.038
M2-PFDoDA	10.449	615.0 -> 570.0	651896	20.00 µg/L	-0.063
M2-PFTeDA	12.101	715.0 -> 670.0	288428	20.00 µg/L	-0.038
M8-FOSA	7.430	506.0 -> 78.0	68044	20.00 µg/L	0.000
M3-PFBS	4.567	302.0 -> 99.0	16106	20.00 µg/L	-0.063
M3-PFHxS	6.751	402.0 -> 99.0	16278	20.00 µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	27933	20.00 µg/L	0.013
M2-4:2FTS	5.621	329.0 -> 81.0	11760	20.00 µg/L	-0.013
M2-6:2FTS	7.498	429.0 -> 81.0	28643	20.00 µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	41355	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	64952	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	21943	20.00 µg/L	-0.013
M3-MeFOSA	7.781	515.0 -> 169.0	10573	20.00 µg/L	-0.013
M5-EtFOSAA	8.029	589.0 -> 419.0	64056	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	11760	20.98 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C2-6:2FTS	7.498	429.0 -> 81.0	28643	21.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C2-8:2FTS	8.739	529.0 -> 81.0	41355	17.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%	
13C2-PFDoDA	10.449	615.0 -> 570.0	651896	17.78 µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%	
13C2-PFTeDA	12.101	715.0 -> 670.0	288428	16.12 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%	
13C3-PFBS	4.567	302.0 -> 99.0	16106	20.40 µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C3-PFHxS	6.751	402.0 -> 99.0	16278	16.80 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.0%	
13C4-PFBA	2.290	217.0 -> 172.0	125900	20.83 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C4-PFHpA	6.718	367.0 -> 322.0	200408	19.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFHxA	5.727	318.0 -> 273.0	159497	20.21 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	4.324	268.0 -> 223.0	119787	20.67 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C6-PFDA	8.639	519.0 -> 474.0	442758	17.74 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

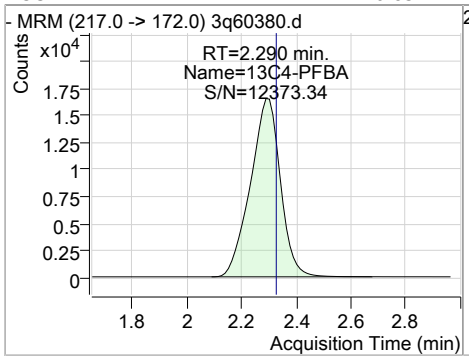
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%			
13C7-PFUnDA	9.467	570.0 -> 525.0	563380	18.27	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-FOSA	7.430	506.0 -> 78.0	68044	17.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
13C8-PFOA	7.499	421.0 -> 376.0	253539	20.07	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C8-PFOS	8.048	507.0 -> 99.0	27933	17.83	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
13C9-PFNA	8.088	472.0 -> 427.0	304230	18.80	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
d3-MeFOSAA	7.929	573.0 -> 419.0	64952	19.59	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C3-HFPO-DA	6.031	287.0 -> 169.0	21921	19.59	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSA	7.781	515.0 -> 169.0	10573	8.46	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.3%			
d5-EtFOSAA	8.029	589.0 -> 419.0	64066	20.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	7.499	427.0 -> 407.0	97061	14.11	µg/L		98
8:2FTS	8.740	527.0 -> 507.0	1838	0.19	µg/L		85
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.296	213.0 -> 169.0	4230	1.72	µg/L		100
PFBS	4.557	299.0 -> 80.0	1718	0.84	µg/L		98
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	7407	0.50	µg/L	m	100
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.728	313.0 -> 269.0	21927	3.29	µg/L		98
PFHxS	6.739	399.0 -> 80.0	2318	1.36	µg/L	m	94
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.500	413.0 -> 369.0	3521	0.30	µg/L	m	94
PFOS	8.049	499.0 -> 80.0	3176	1.45	µg/L	m	75
PFPeA	4.327	263.0 -> 219.0	16746	1.90	µg/L		100
PFPeS	5.845	349.0 -> 80.0	0	0.00	µg/L	m	1
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

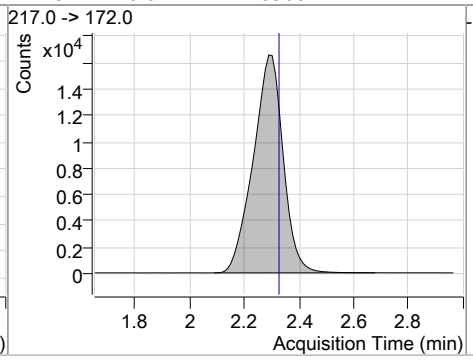
 # = Qualifier out of range, m = manually integrated, + = Area summed

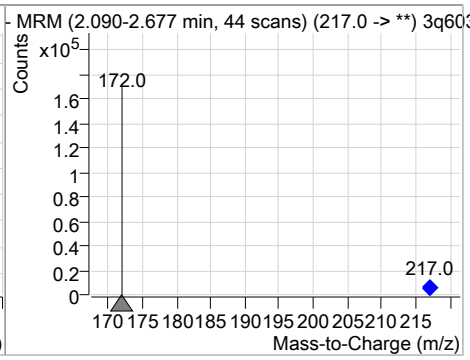
Perfluorinated Compounds by LC/MS/MS



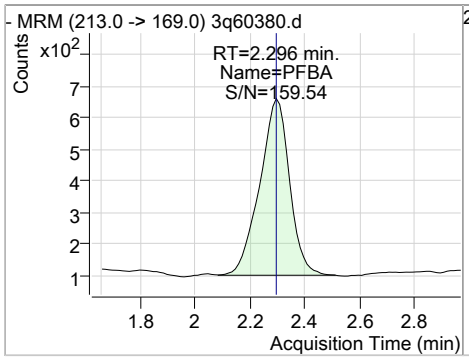
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.83	2.29	-0.04	125900				

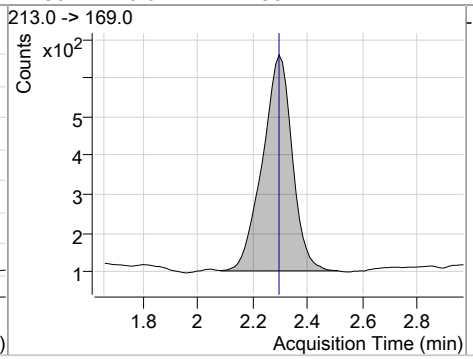


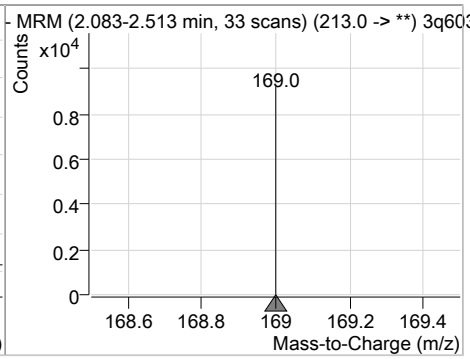




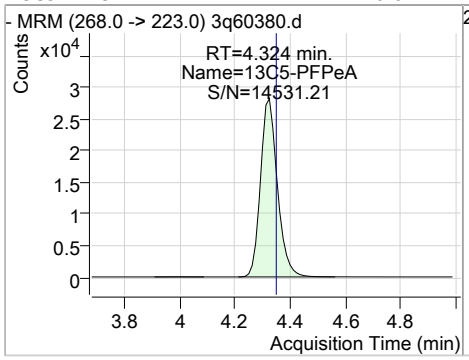
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.72	2.30	-0.04	4230				

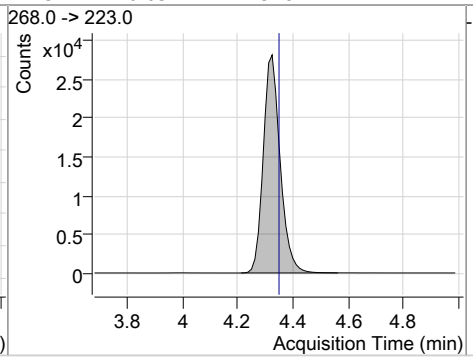


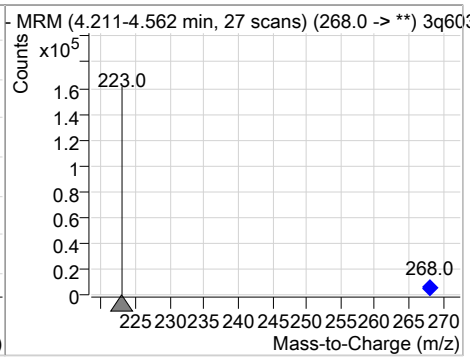




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.67	4.32	-0.03	119787				

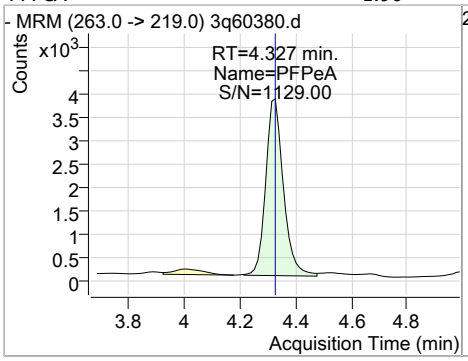


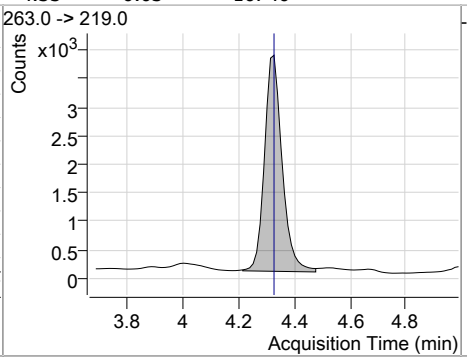


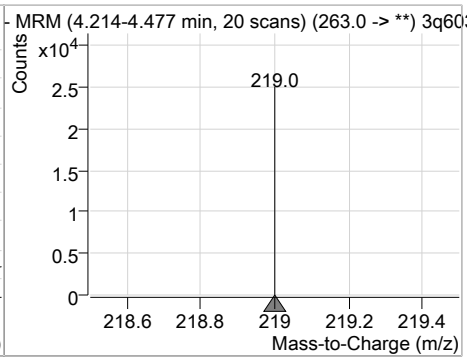


Perfluorinated Compounds by LC/MS/MS

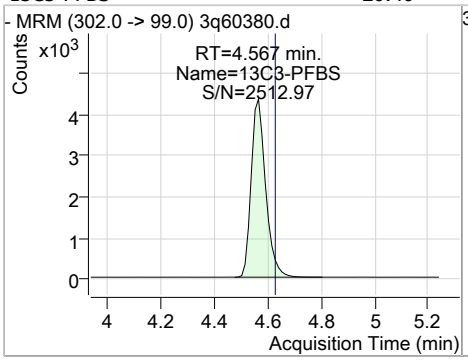
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.90	4.33	-0.03	16746				

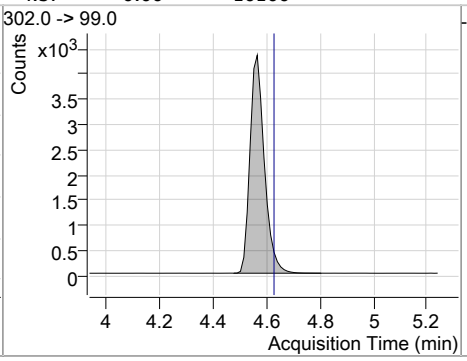


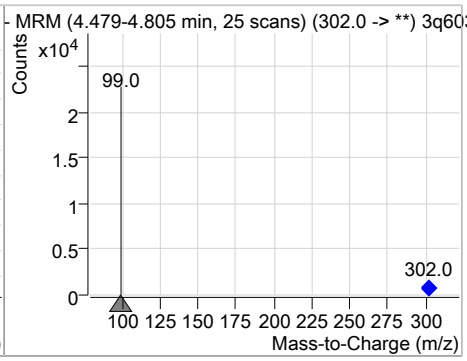




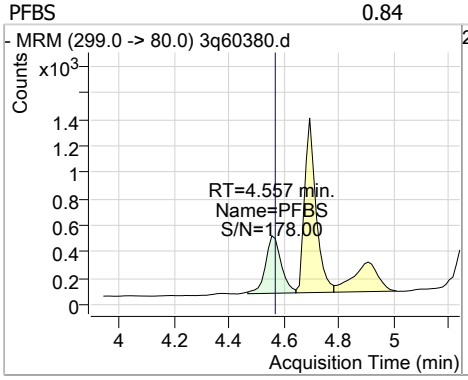
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.40	4.57	-0.06	16106				

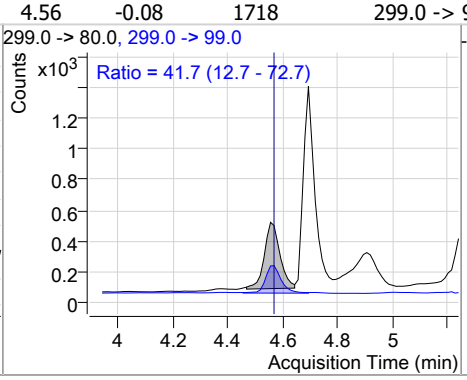


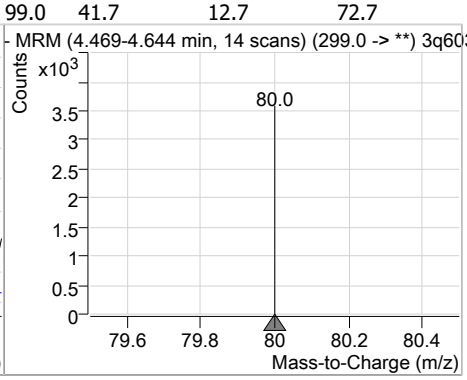




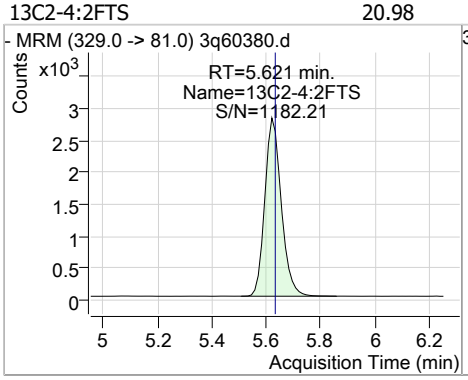
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.84	4.56	-0.08	1718	299.0 -> 99.0	41.7	12.7	72.7

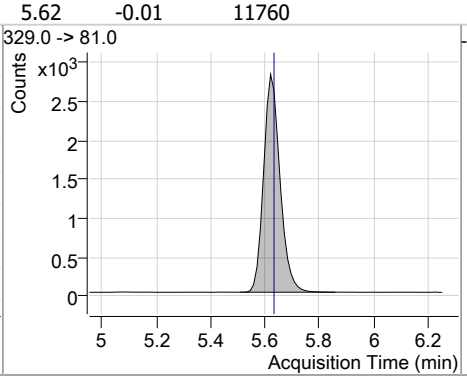


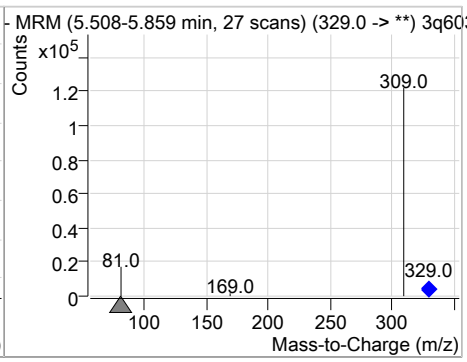




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.98	5.62	-0.01	11760				

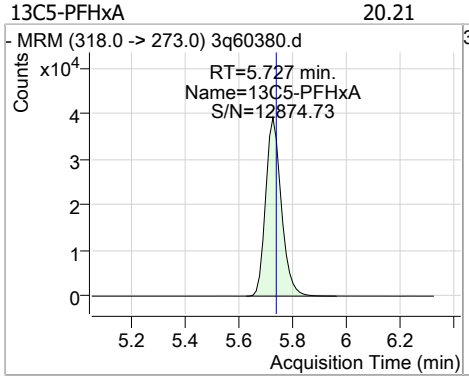


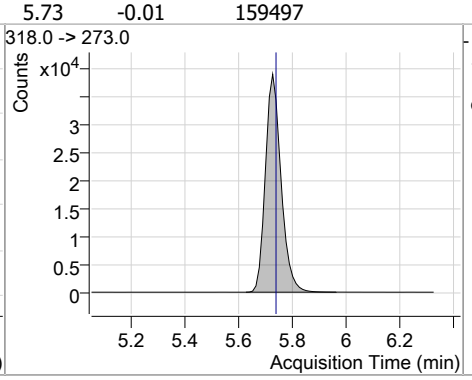


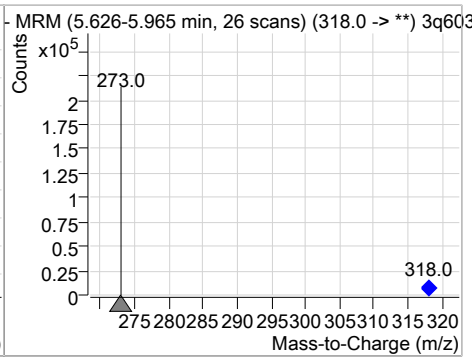


Perfluorinated Compounds by LC/MS/MS

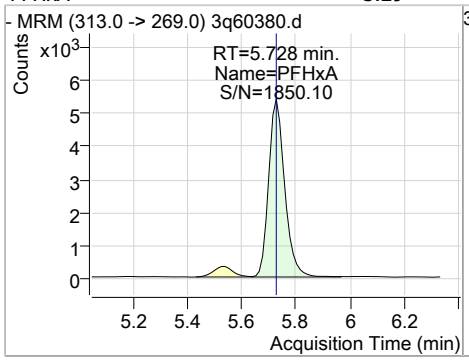
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.21	5.73	-0.01	159497				

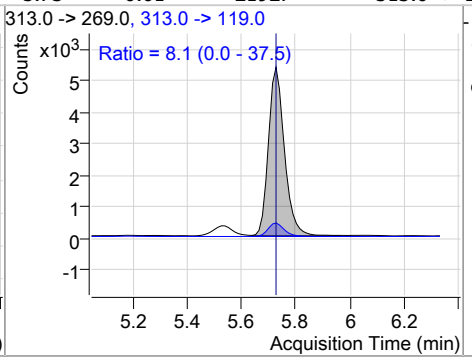


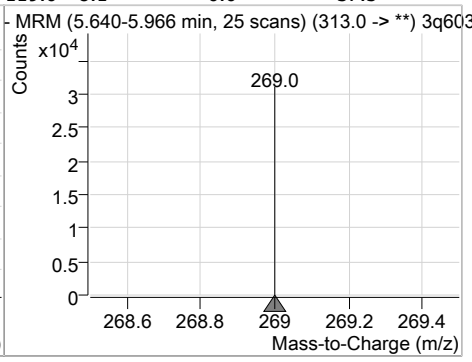




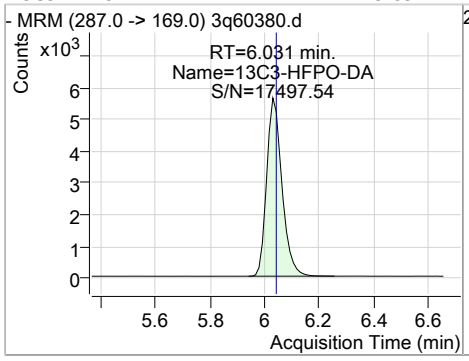
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.29	5.73	-0.01	21927	313.0 -> 119.0	8.1	0.0	37.5

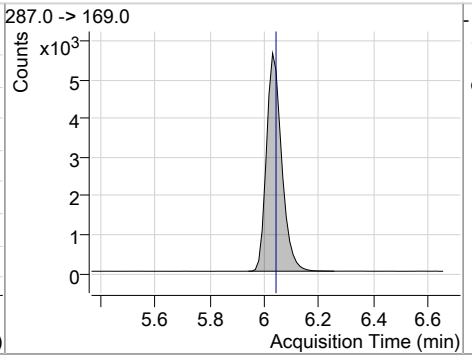


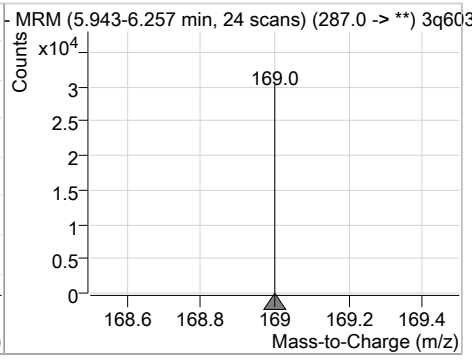




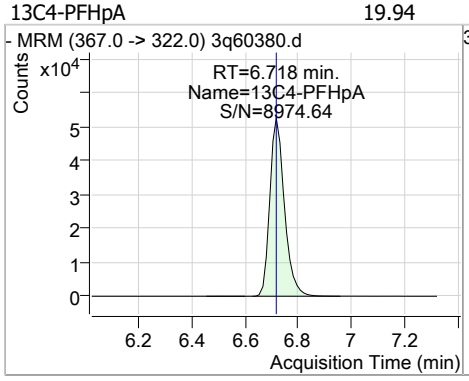
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.59	6.03	-0.01	21921				

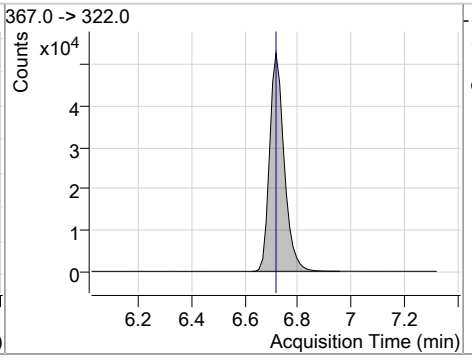


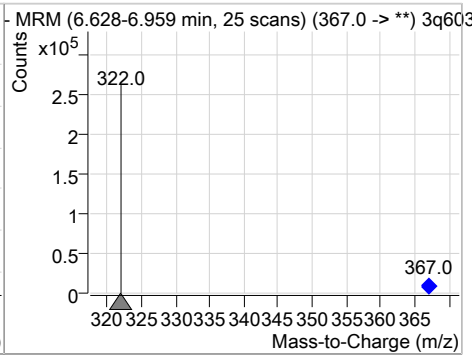




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.94	6.72	0.00	200408				

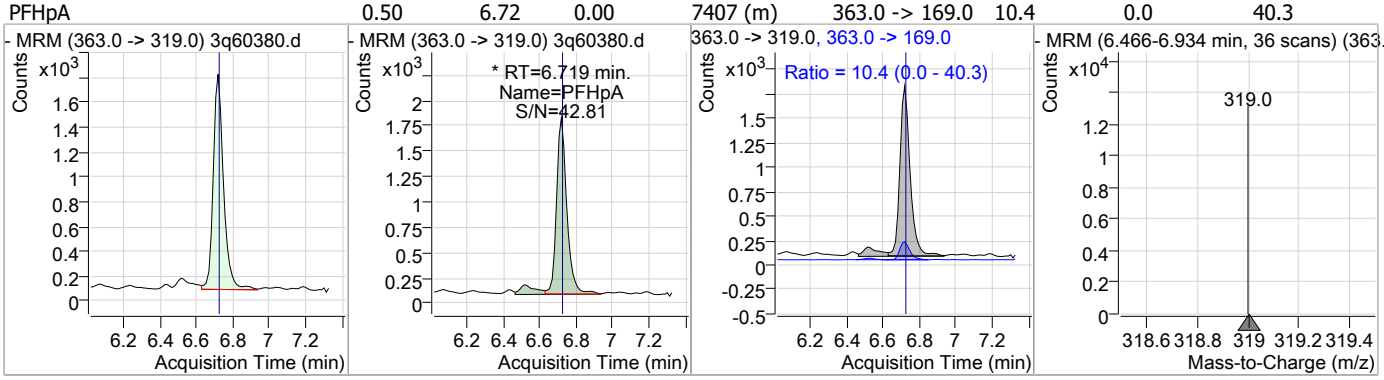




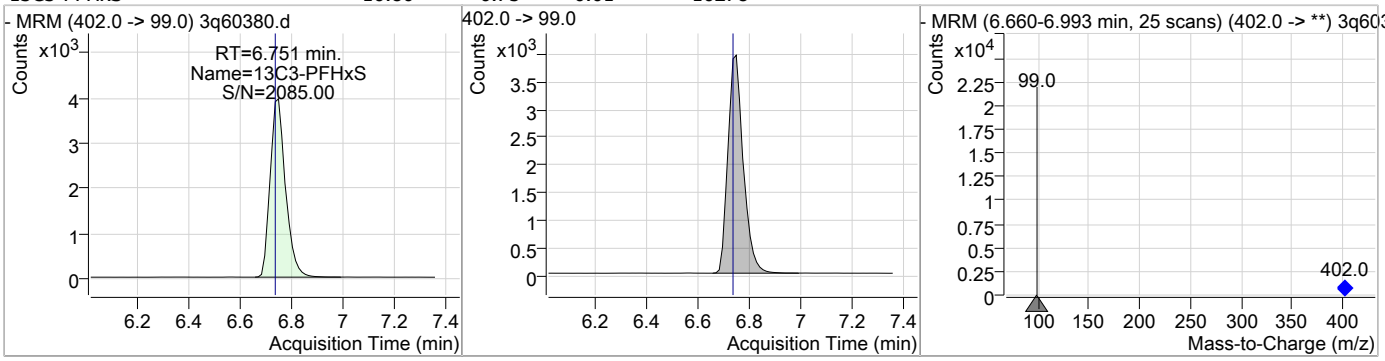


Perfluorinated Compounds by LC/MS/MS

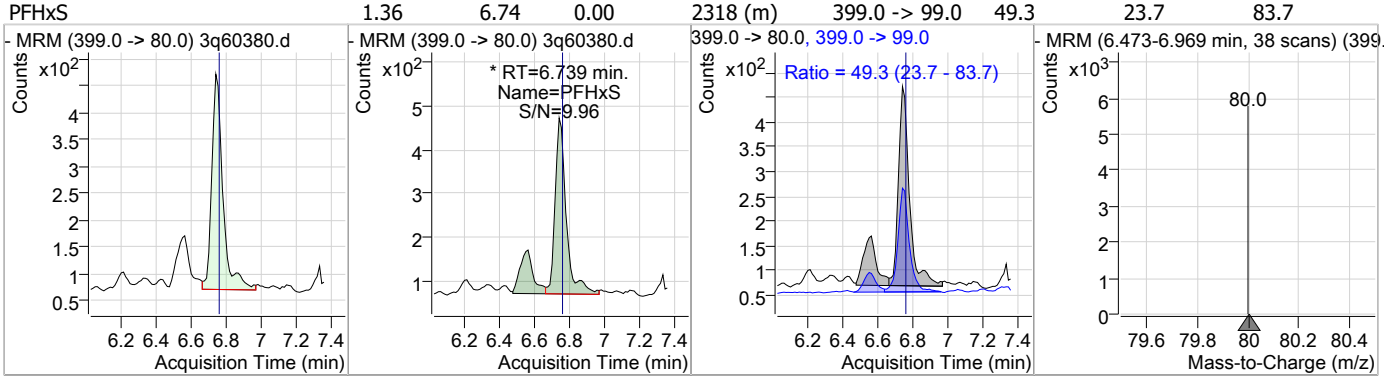
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.50	6.72	0.00	7407 (m)	363.0 -> 169.0	10.4	0.0	40.3



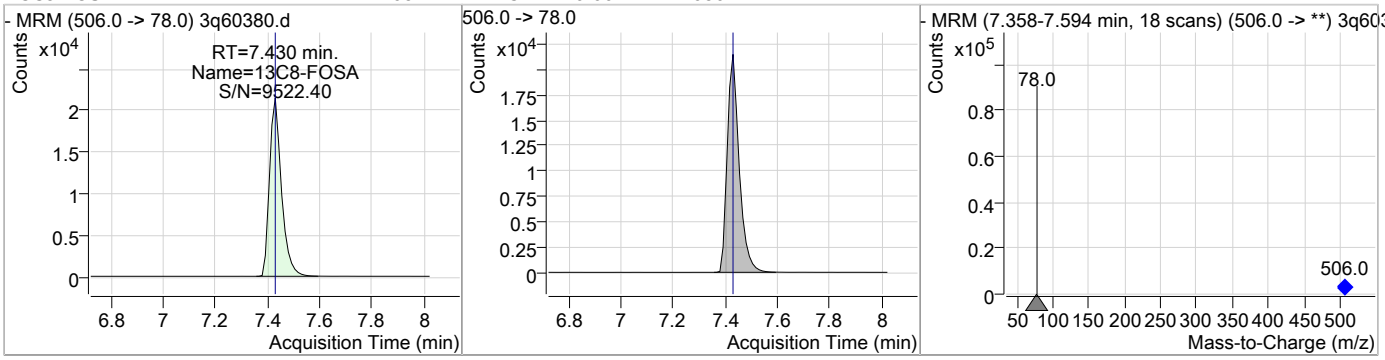
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.80	6.75	0.01	16278				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.36	6.74	0.00	2318 (m)	399.0 -> 99.0	49.3	23.7	83.7

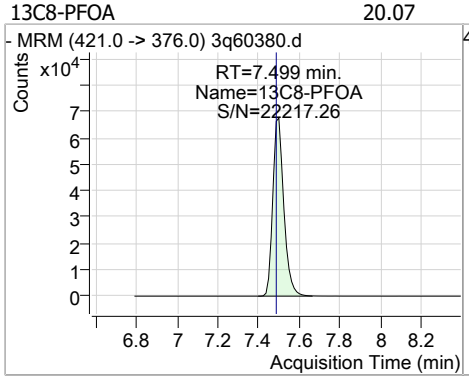


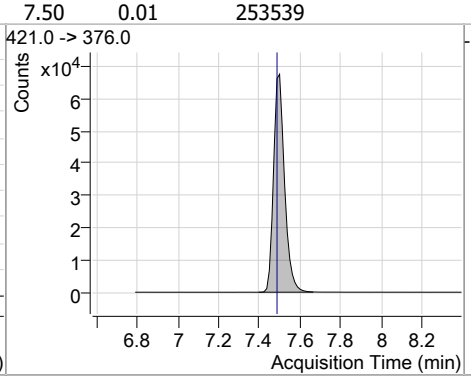
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.68	7.43	0.00	68044				

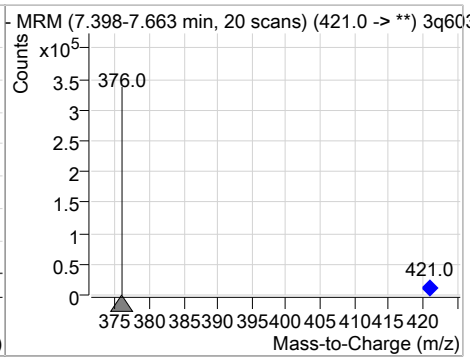


Perfluorinated Compounds by LC/MS/MS

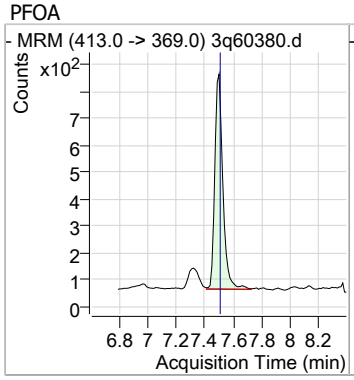
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.07	7.50	0.01	253539				

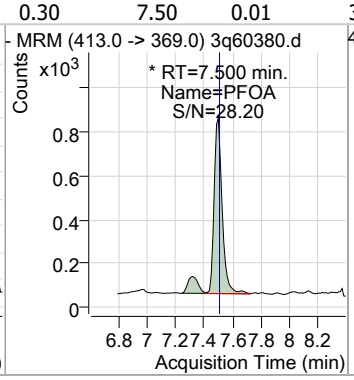


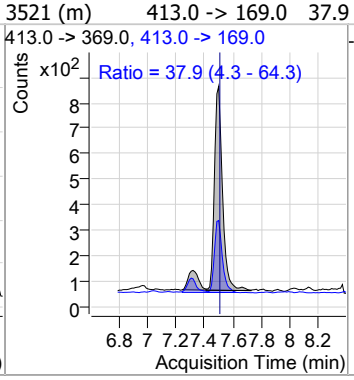


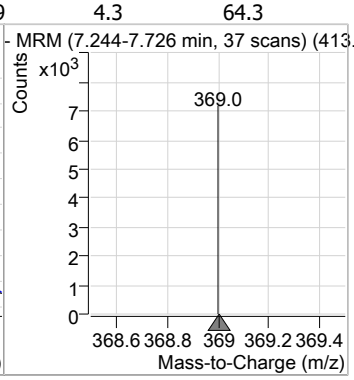


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.30	7.50	0.01	3521 (m)	413.0 -> 169.0	37.9	4.3	64.3

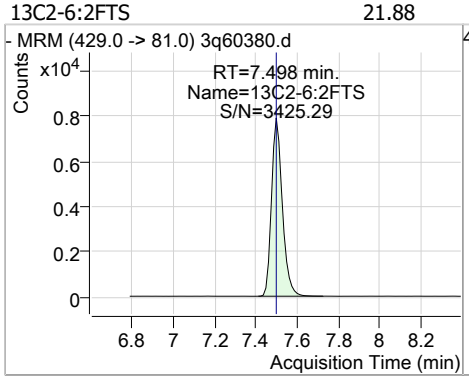


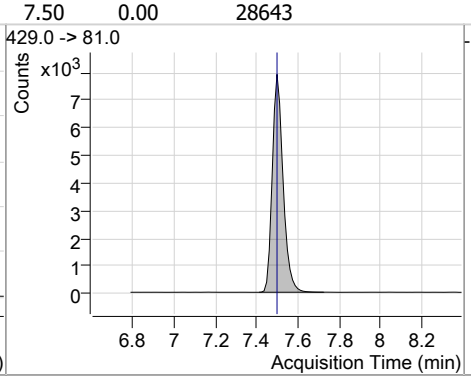


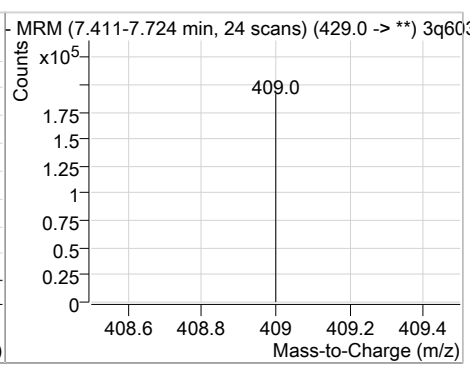




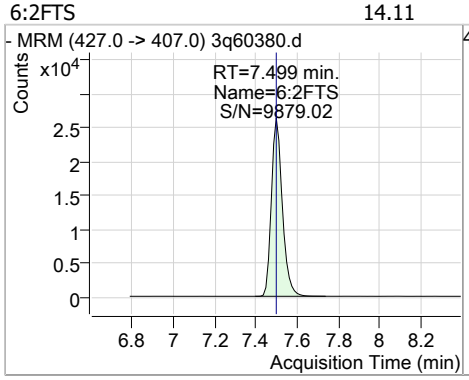
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.88	7.50	0.00	28643				

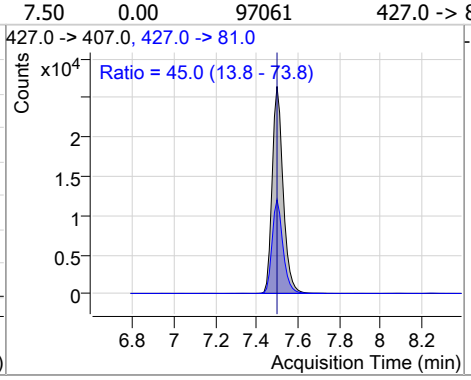


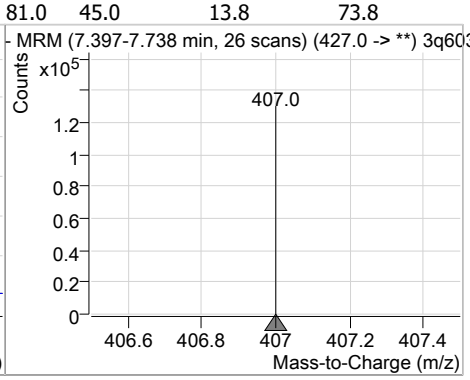




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	14.11	7.50	0.00	97061	427.0 -> 81.0	45.0	13.8	73.8

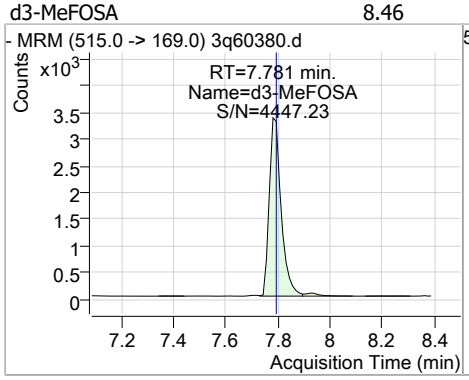


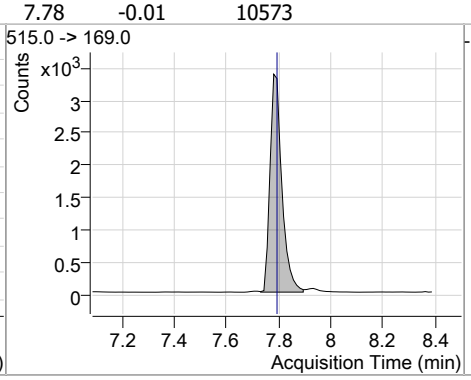


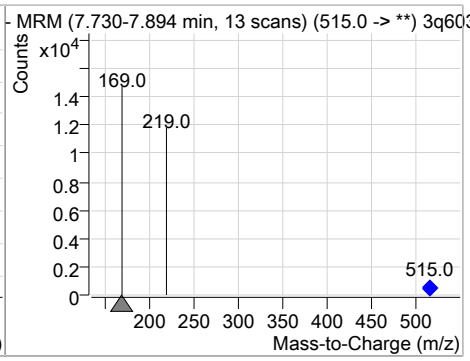


Perfluorinated Compounds by LC/MS/MS

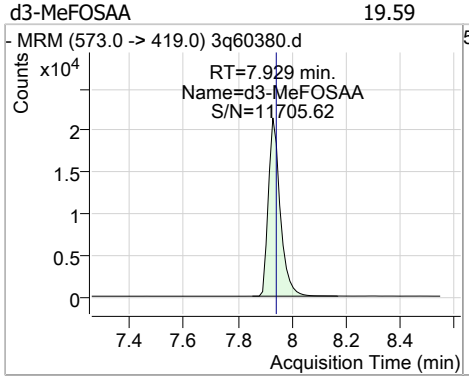
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.46	7.78	-0.01	10573				

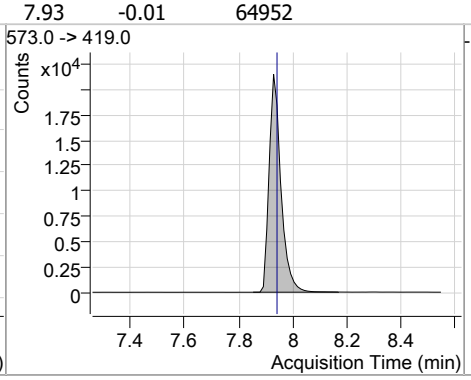


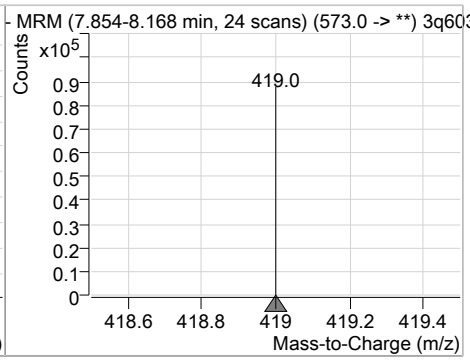




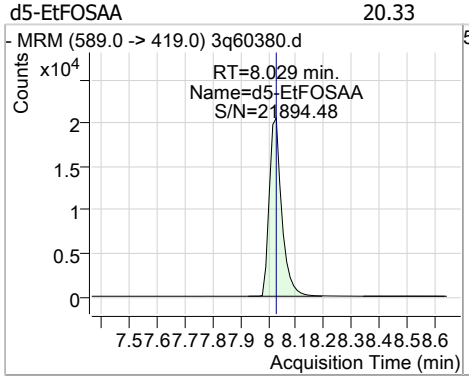
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.59	7.93	-0.01	64952				

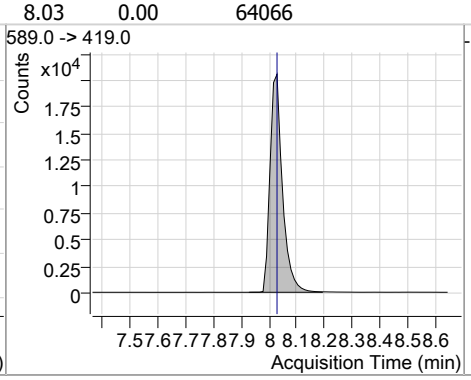


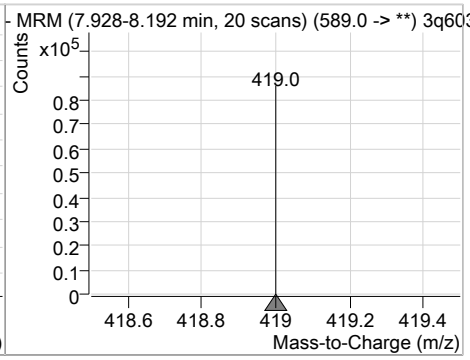




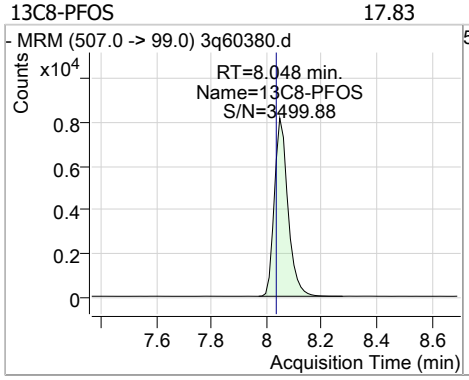
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.33	8.03	0.00	64066				

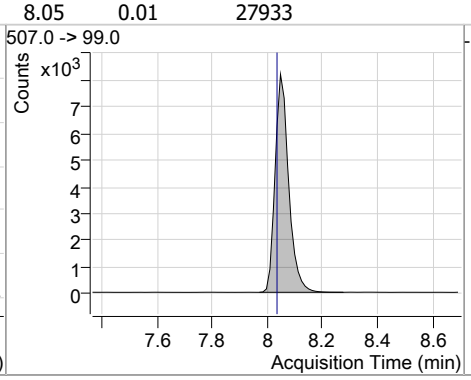


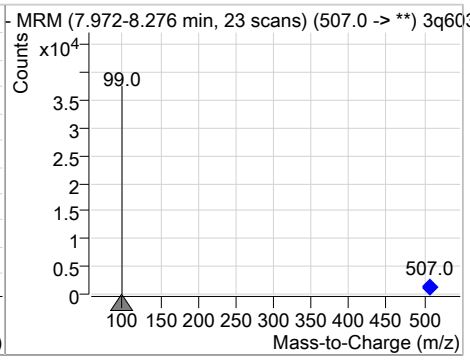




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.83	8.05	0.01	27933				

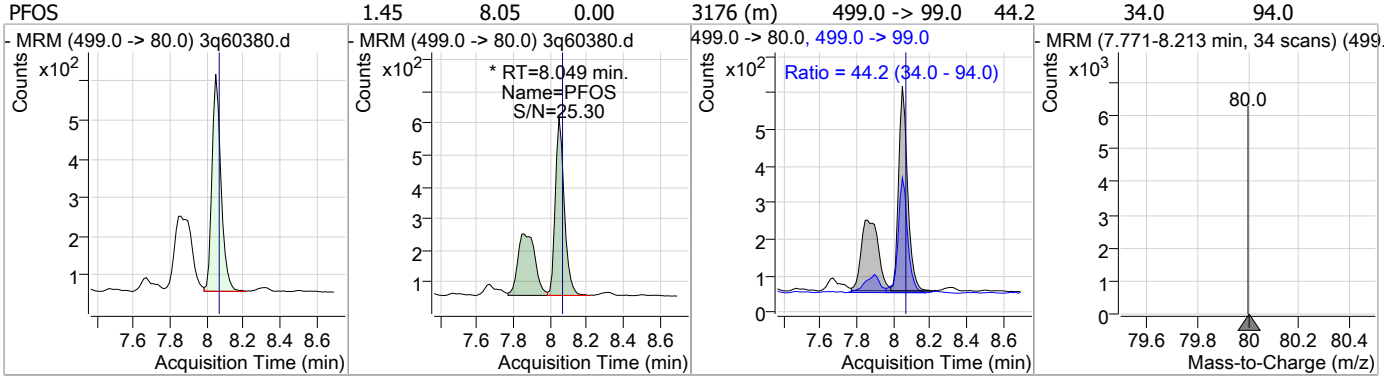




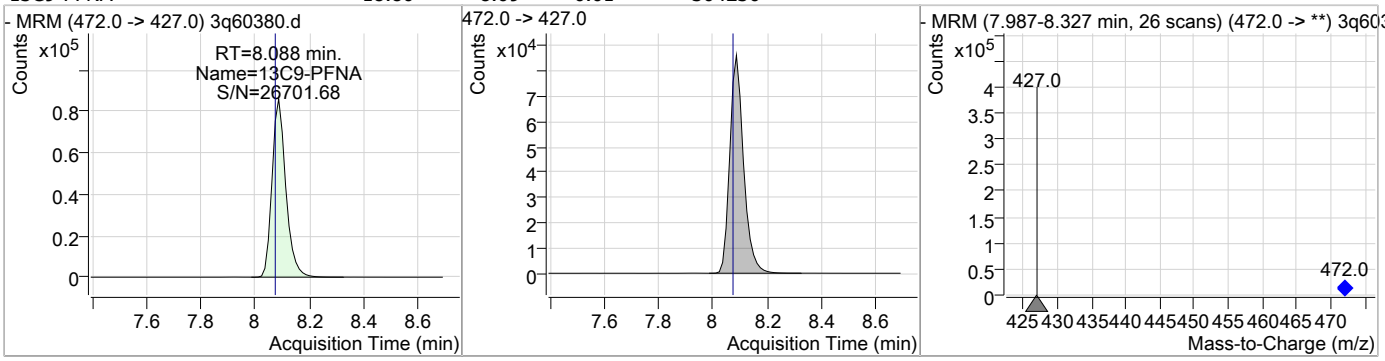


Perfluorinated Compounds by LC/MS/MS

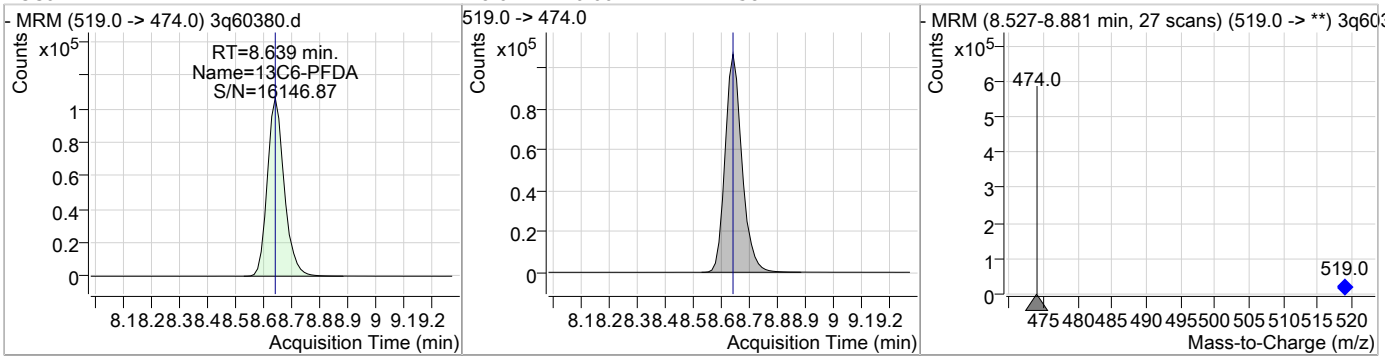
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.45	8.05	0.00	3176 (m)	499.0 -> 99.0	44.2	34.0	94.0



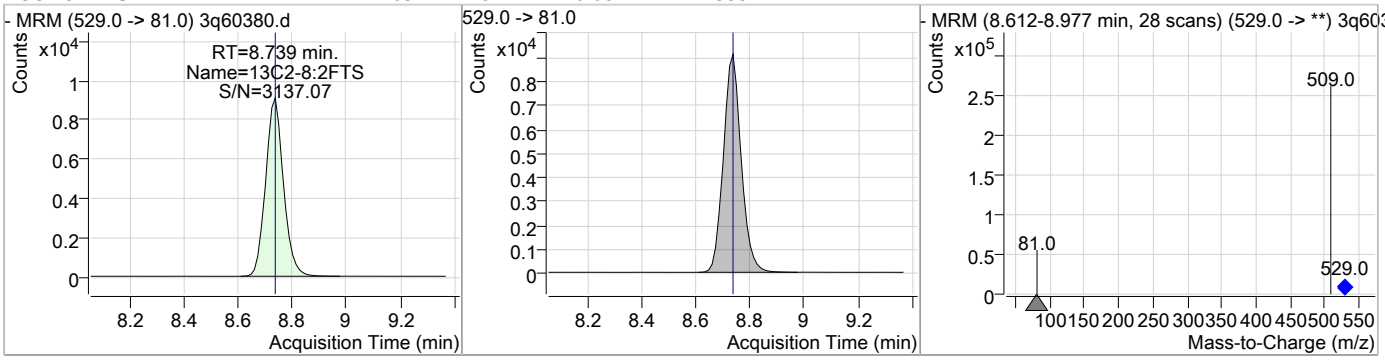
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.80	8.09	0.01	304230				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.74	8.64	0.00	442758				

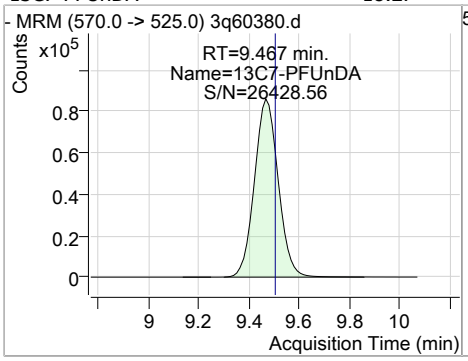


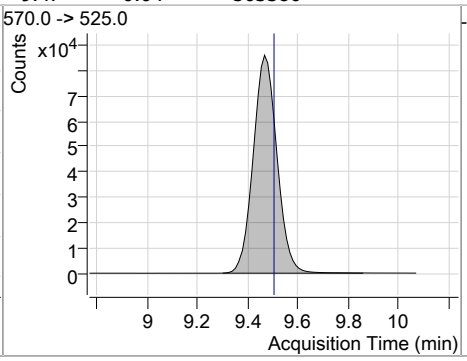
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.63	8.74	0.00	41355				

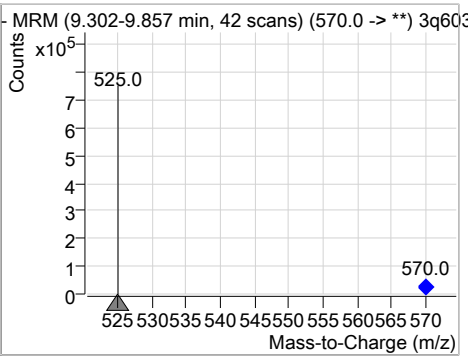


Perfluorinated Compounds by LC/MS/MS

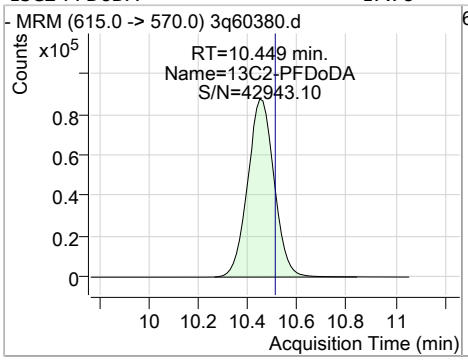
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.27	9.47	-0.04	563380				

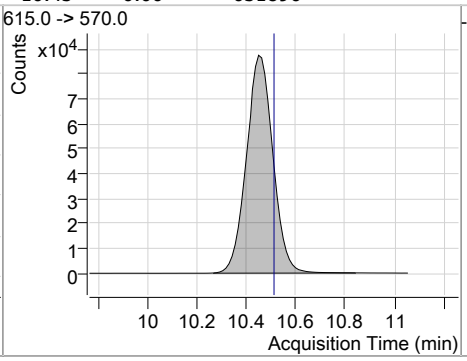


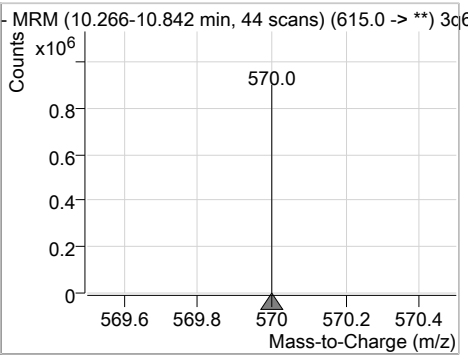




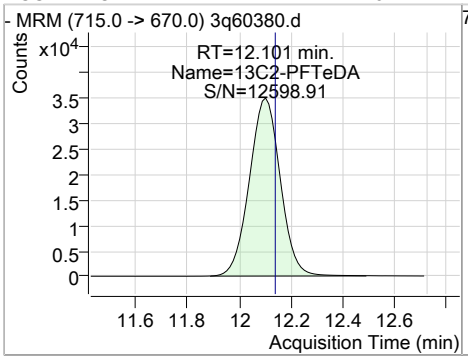
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.78	10.45	-0.06	651896				

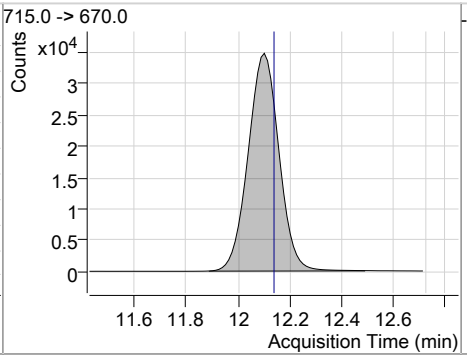


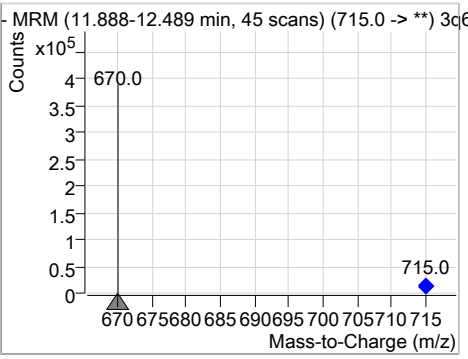




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.12	12.10	-0.04	288428				







Manual Integration Approval Summary

Sample Number: FA95502-4
Lab FileID: 3Q60380.D
Injection Time: 05/28/22 00:54
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:38 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		6.72	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanoic acid	335-67-1		7.50	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60383.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 1:50:22 AM
Sample Name : fa95502-5
Vial : P3-C2
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

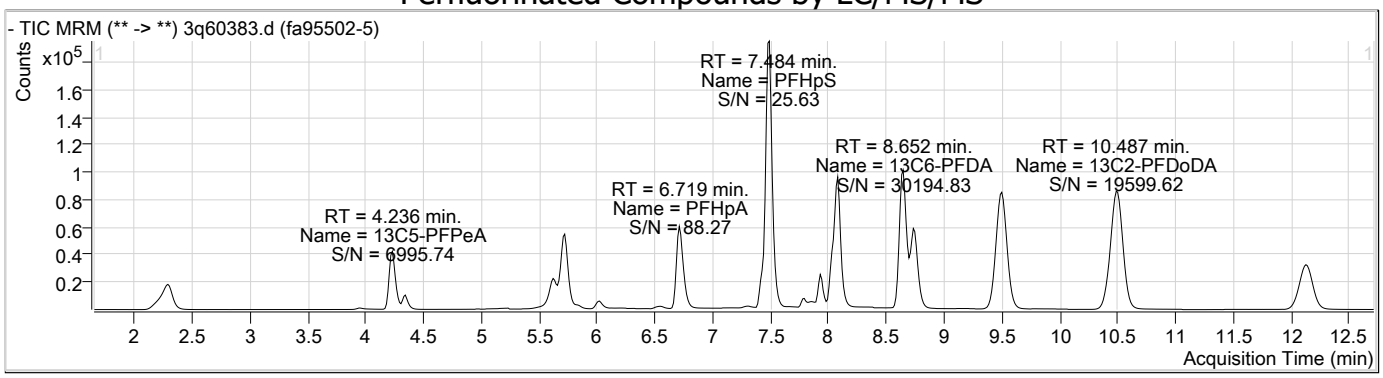
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.290	217.0 -> 172.0	121407	20.00 µg/L	-0.038
M5-PFPeA	4.236	268.0 -> 223.0	113237	20.00 µg/L	-0.113
M5-PFHxA	5.727	318.0 -> 273.0	157873	20.00 µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	196497	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	246010	20.00 µg/L	0.000
M9-PFNA	8.088	472.0 -> 427.0	299865	20.00 µg/L	0.013
M6-PFDA	8.652	519.0 -> 474.0	440921	20.00 µg/L	0.013
M7-PFUnDA	9.505	570.0 -> 525.0	568940	20.00 µg/L	0.000
M2-PFDoDA	10.487	615.0 -> 570.0	644489	20.00 µg/L	-0.025
M2-PFTeDA	12.126	715.0 -> 670.0	268700	20.00 µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	72020	20.00 µg/L	0.000
M3-PFBS	4.342	302.0 -> 99.0	12470	20.00 µg/L	-0.288
M3-PFHxS	6.738	402.0 -> 99.0	15690	20.00 µg/L	0.000
M8-PFOS	8.048	507.0 -> 99.0	27823	20.00 µg/L	0.013
M2-4:2FTS	5.621	329.0 -> 81.0	11889	20.00 µg/L	-0.013
M2-6:2FTS	7.498	429.0 -> 81.0	28469	20.00 µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	41909	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	67837	20.00 µg/L	-0.013
M3-HFPO-DA	6.018	287.0 -> 169.0	21868	20.00 µg/L	-0.026
M3-MeFOSA	7.793	515.0 -> 169.0	10714	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	64367	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	11889	21.22 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C2-6:2FTS	7.498	429.0 -> 81.0	28469	21.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C2-8:2FTS	8.739	529.0 -> 81.0	41909	17.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
13C2-PFDoDA	10.487	615.0 -> 570.0	644489	17.58 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%	
13C2-PFTeDA	12.126	715.0 -> 670.0	268700	15.01 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%	
13C3-PFBS	4.342	302.0 -> 99.0	12470	15.80 µg/L	-0.288
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%	
13C3-PFHxS	6.738	402.0 -> 99.0	15690	16.19 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.0%	
13C4-PFBA	2.290	217.0 -> 172.0	121407	20.09 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.718	367.0 -> 322.0	196497	19.55 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.727	318.0 -> 273.0	157873	20.00 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFPeA	4.236	268.0 -> 223.0	113237	19.54 µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C6-PFDA	8.652	519.0 -> 474.0	440921	17.66 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

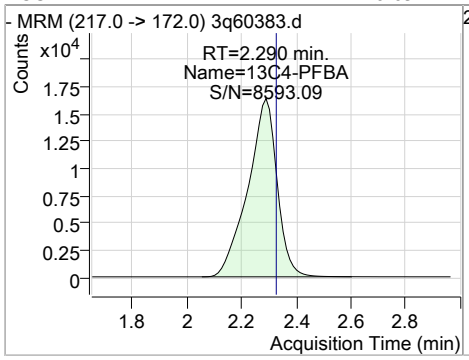
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%			
13C7-PFUnDA	9.505	570.0 -> 525.0	568940	18.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
13C8-FOSA	7.430	506.0 -> 78.0	72020	18.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-PFOA	7.487	421.0 -> 376.0	246010	19.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C8-PFOS	8.048	507.0 -> 99.0	27823	17.76	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C9-PFNA	8.088	472.0 -> 427.0	299865	18.54	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%			
d3-MeFOSAA	7.929	573.0 -> 419.0	67837	20.46	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C3-HFPO-DA	6.018	287.0 -> 169.0	21873	19.55	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
d3-MeFOSA	7.793	515.0 -> 169.0	10714	8.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.9%			
d5-EtFOSAA	8.029	589.0 -> 419.0	64287	20.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
Target Compounds							**QValue**
4:2FTS	5.624	327.0 -> 307.0	1729	0.33	µg/L		98
6:2FTS	7.499	427.0 -> 407.0	204747	29.94	µg/L		100
8:2FTS	8.740	527.0 -> 507.0	4310	0.43	µg/L		94
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	7.432	498.0 -> 78.0	1369	0.41	µg/L	m	99
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.296	213.0 -> 169.0	14721	6.22	µg/L		100
PFBS	4.344	299.0 -> 80.0	15073	9.56	µg/L		88
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.719	363.0 -> 319.0	14775	1.03	µg/L	m	98
PFHpS	7.484	449.0 -> 80.0	1823	1.02	µg/L	m	93
PFHxA	5.728	313.0 -> 269.0	79465	12.04	µg/L		99
PFHxS	6.739	399.0 -> 80.0	25921	15.83	µg/L	m	99
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.487	413.0 -> 369.0	16924	1.48	µg/L	m	95
PFOS	8.049	499.0 -> 80.0	45611	20.95	µg/L	m	77
PFPeA	4.239	263.0 -> 219.0	50535	6.05	µg/L		100
PFPeS	5.832	349.0 -> 80.0	6537	6.20	µg/L	m	92
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

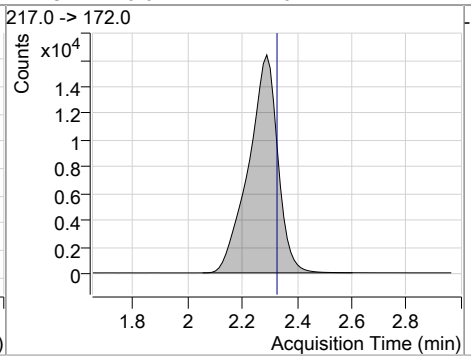
 # = Qualifier out of range, m = manually integrated, + = Area summed

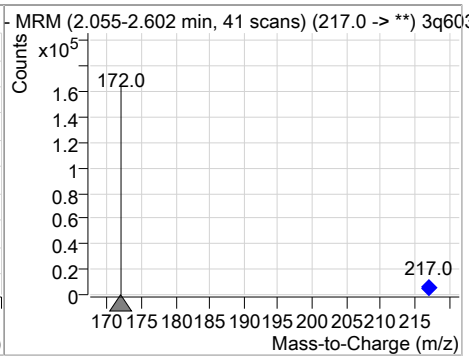
Perfluorinated Compounds by LC/MS/MS



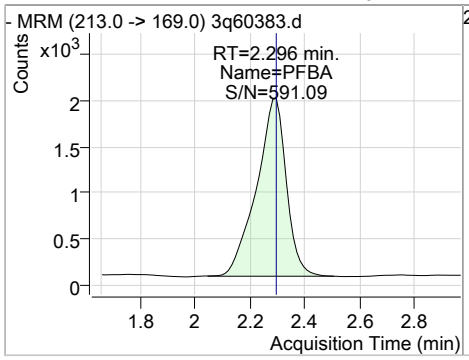
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.09	2.29	-0.04	121407				

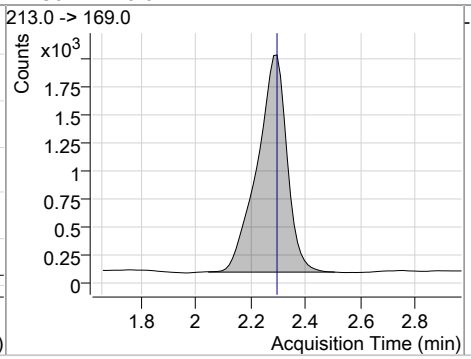


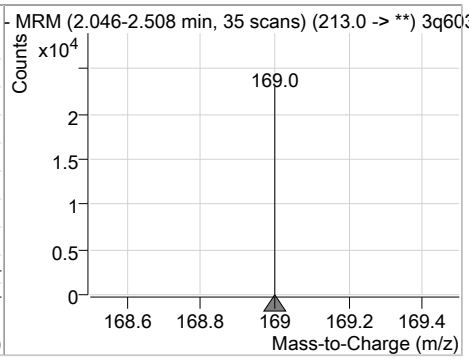




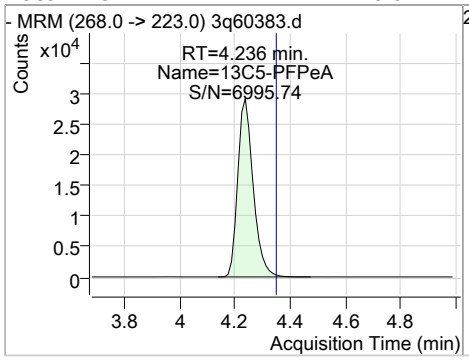
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	6.22	2.30	-0.04	14721				

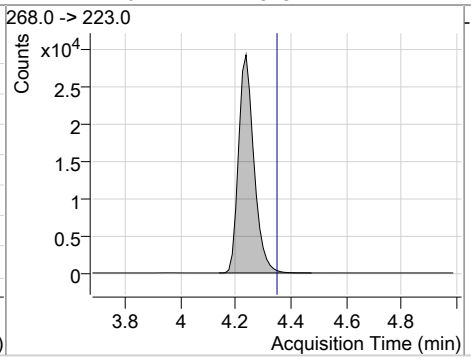


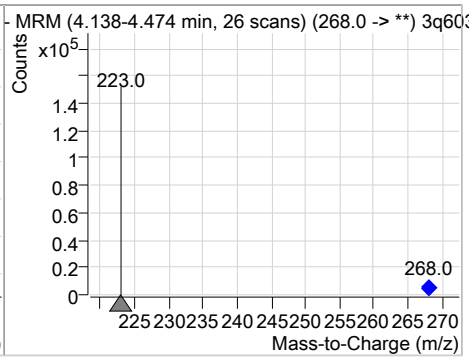




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.54	4.24	-0.11	113237				

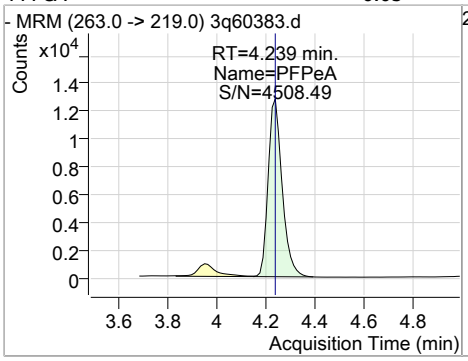


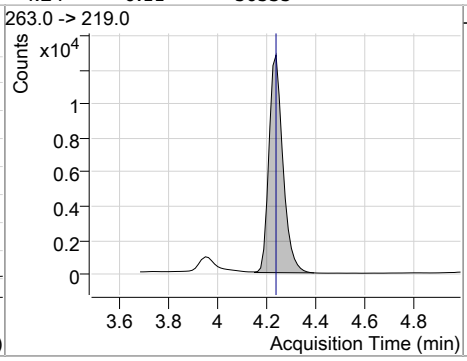


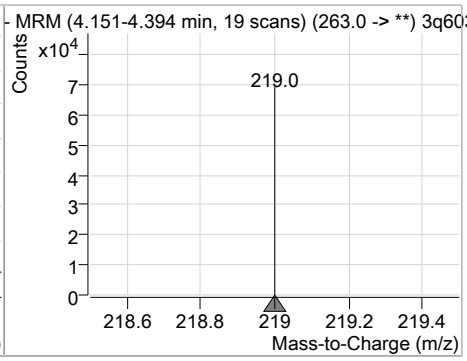


Perfluorinated Compounds by LC/MS/MS

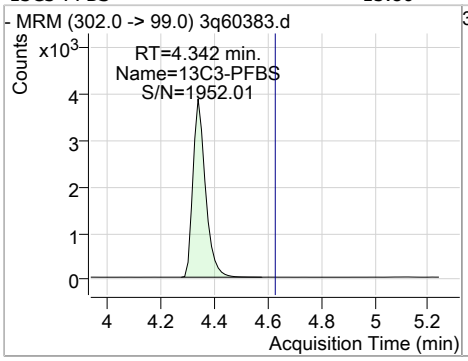
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	6.05	4.24	-0.11	50535				

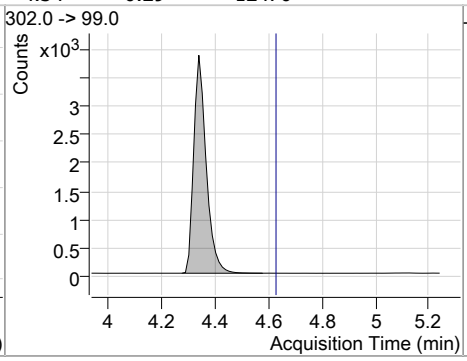


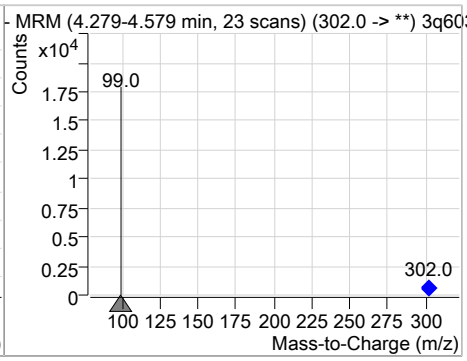




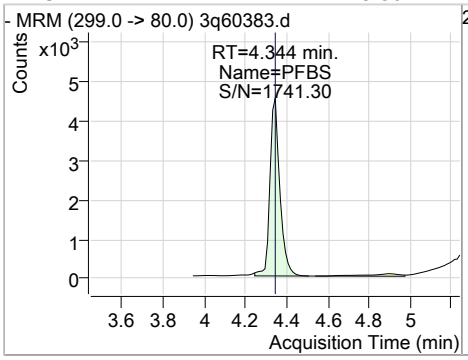
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.80	4.34	-0.29	12470				

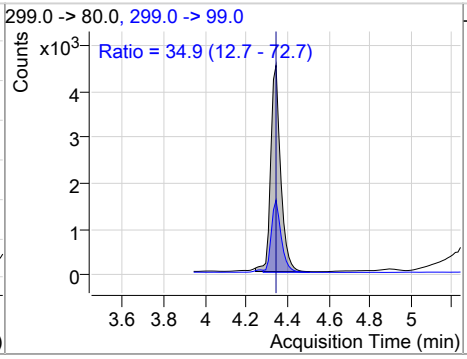


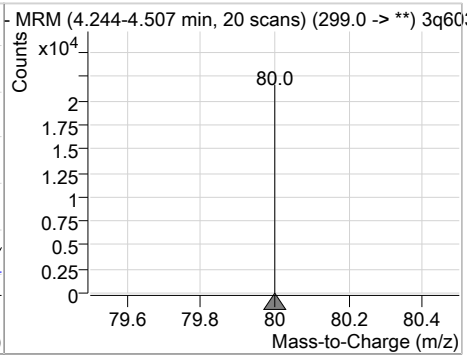




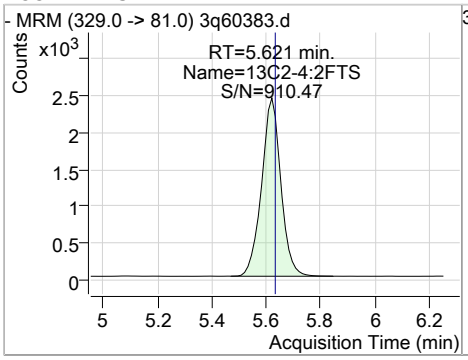
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.56	4.34	-0.29	15073	299.0 -> 99.0	34.9	12.7	72.7

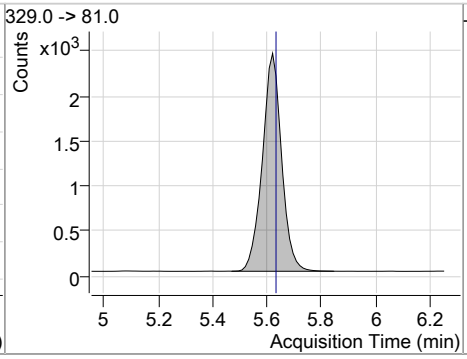


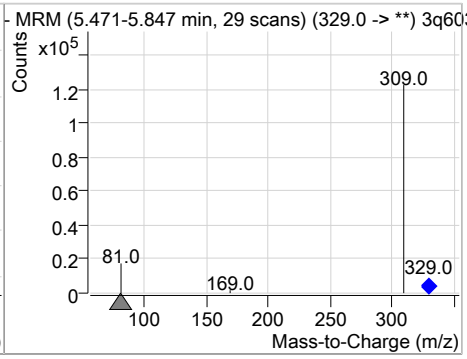




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.22	5.62	-0.01	11889				

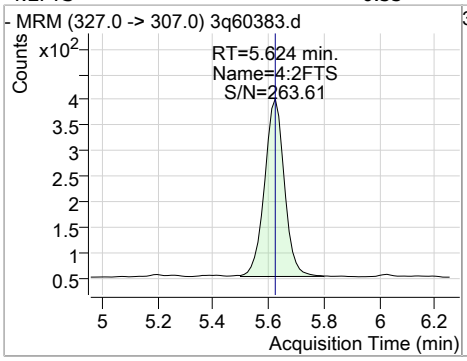


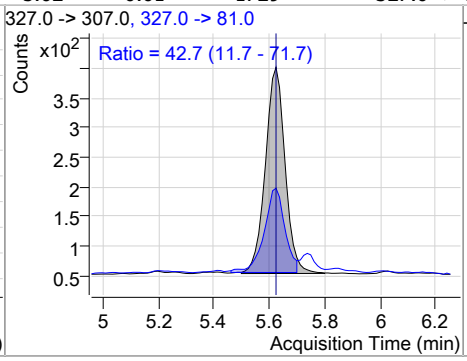


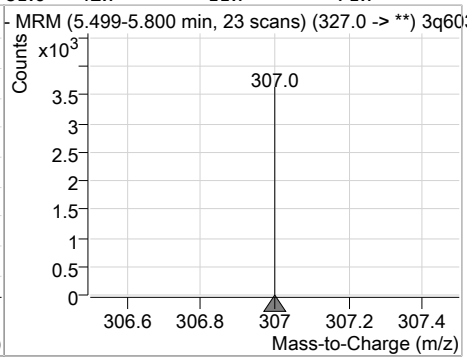


Perfluorinated Compounds by LC/MS/MS

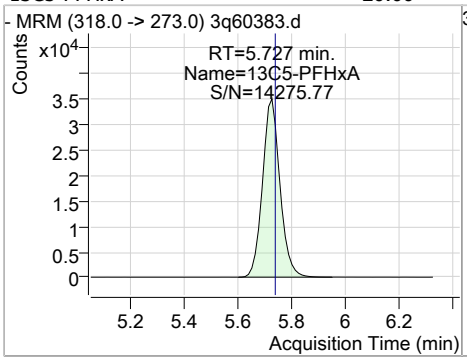
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.33	5.62	-0.01	1729	327.0 -> 81.0	42.7	11.7	71.7

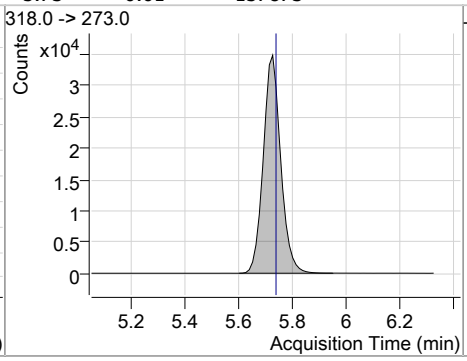


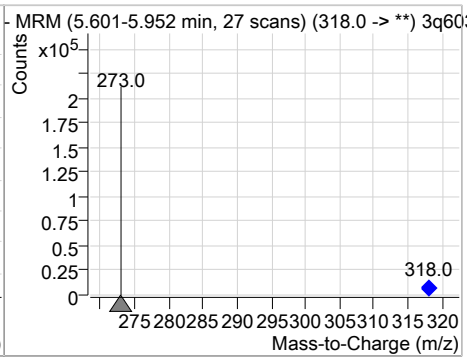




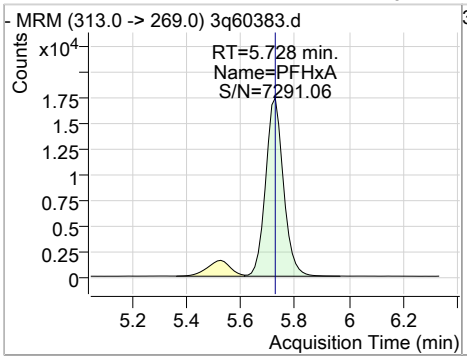
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.00	5.73	-0.01	157873				

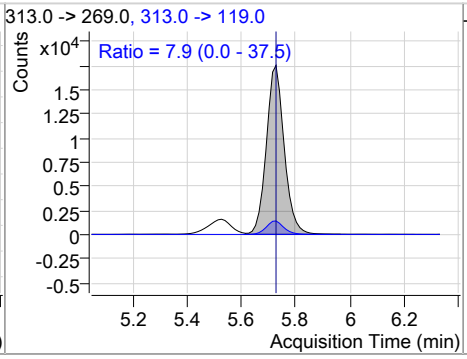


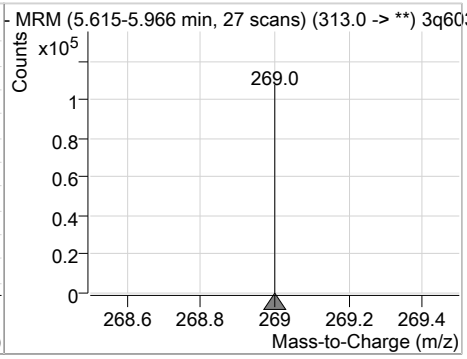




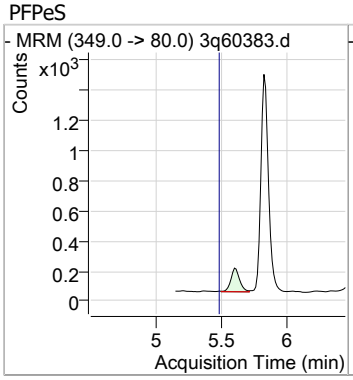
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	12.04	5.73	-0.01	79465	313.0 -> 119.0	7.9	0.0	37.5

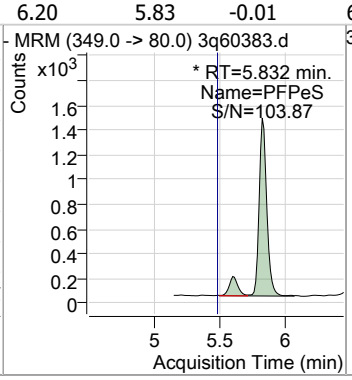


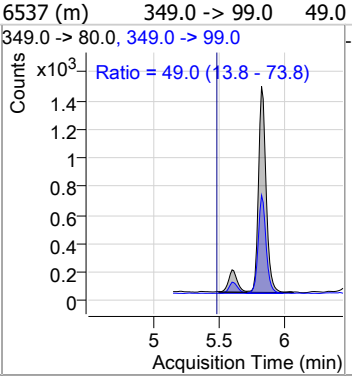


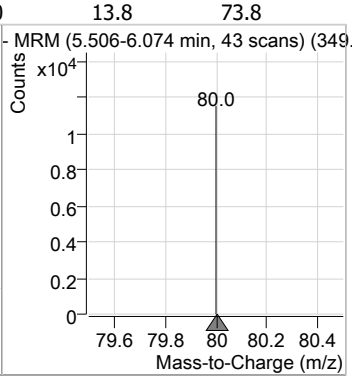


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	6.20	5.83	-0.01	6537 (m)	349.0 -> 99.0	49.0	13.8	73.8



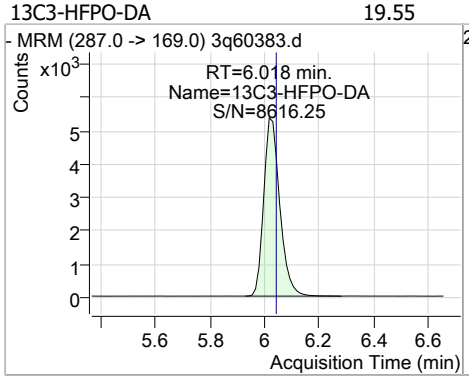


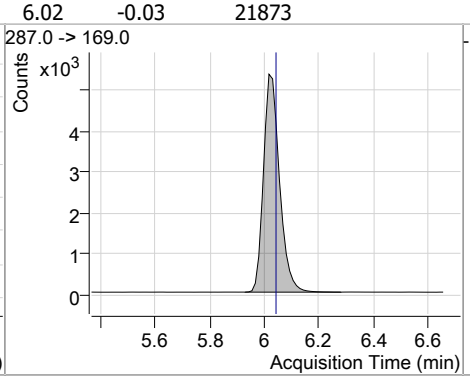


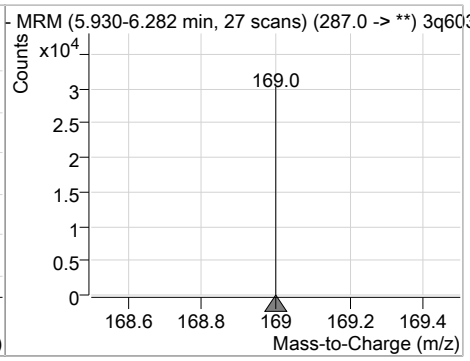


Perfluorinated Compounds by LC/MS/MS

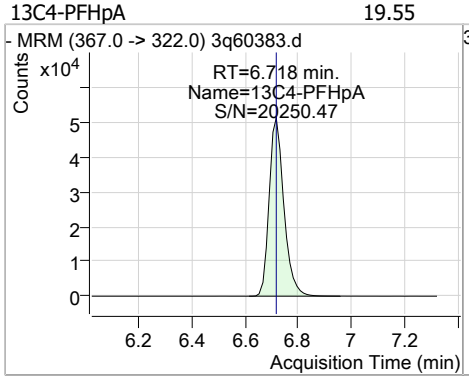
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.55	6.02	-0.03	21873				

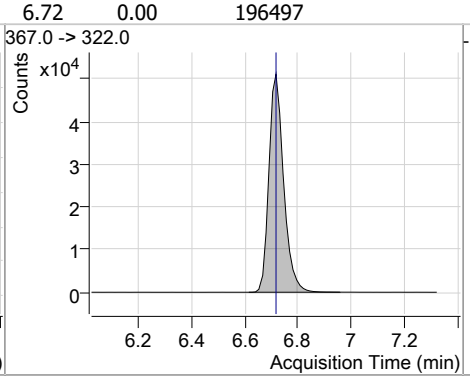


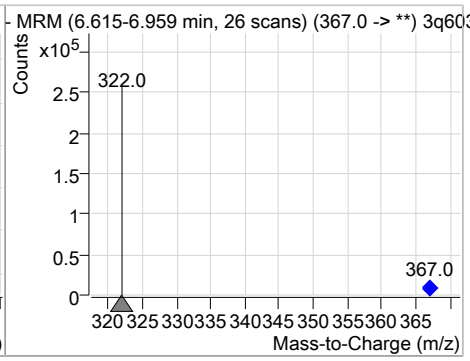




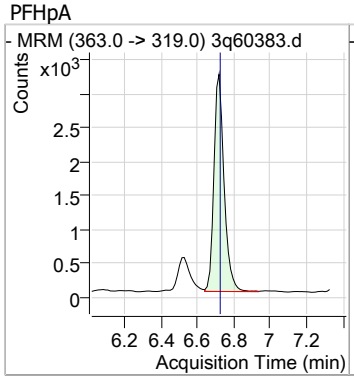
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.55	6.72	0.00	196497				

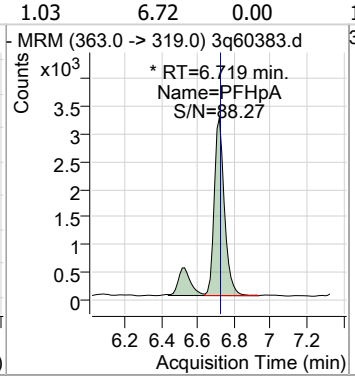


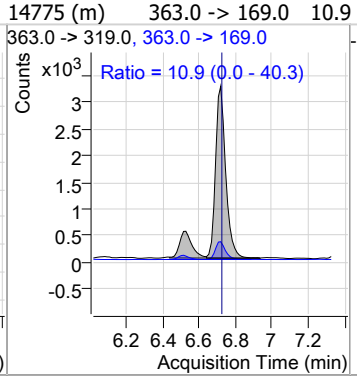


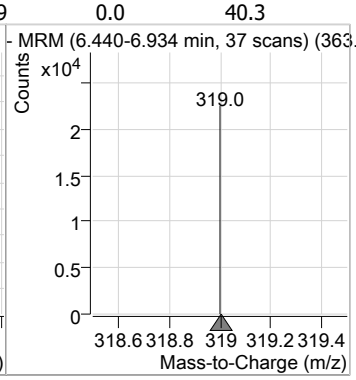


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.03	6.72	0.00	14775 (m)	363.0 -> 169.0	10.9	0.0	40.3

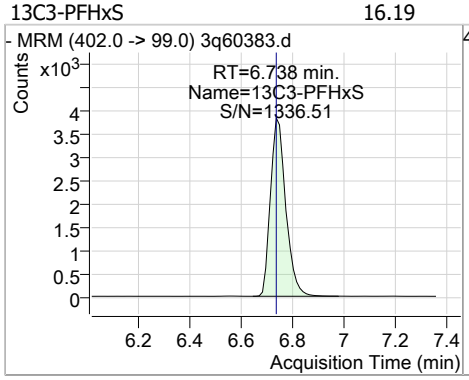


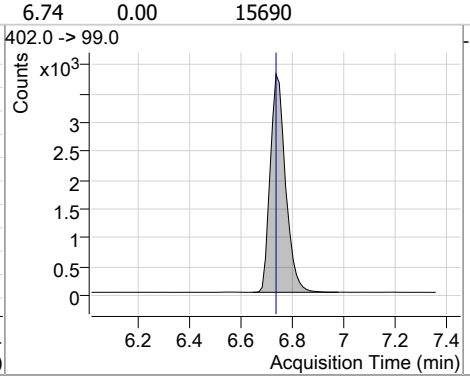


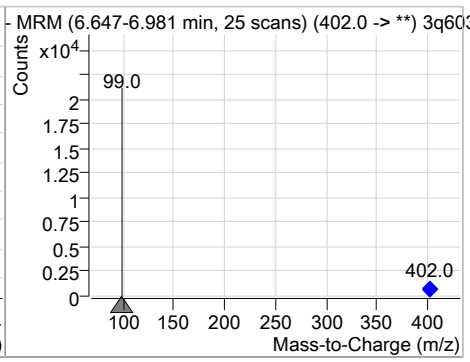




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.19	6.74	0.00	15690				

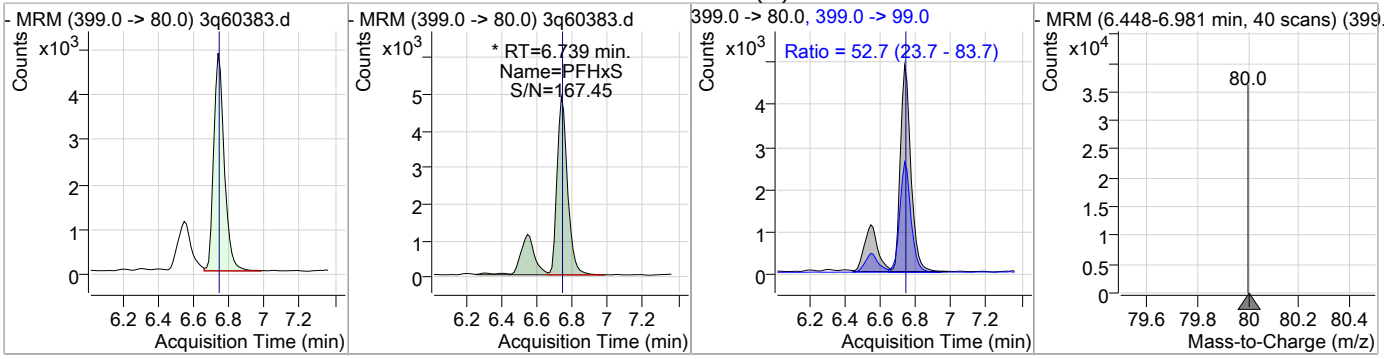




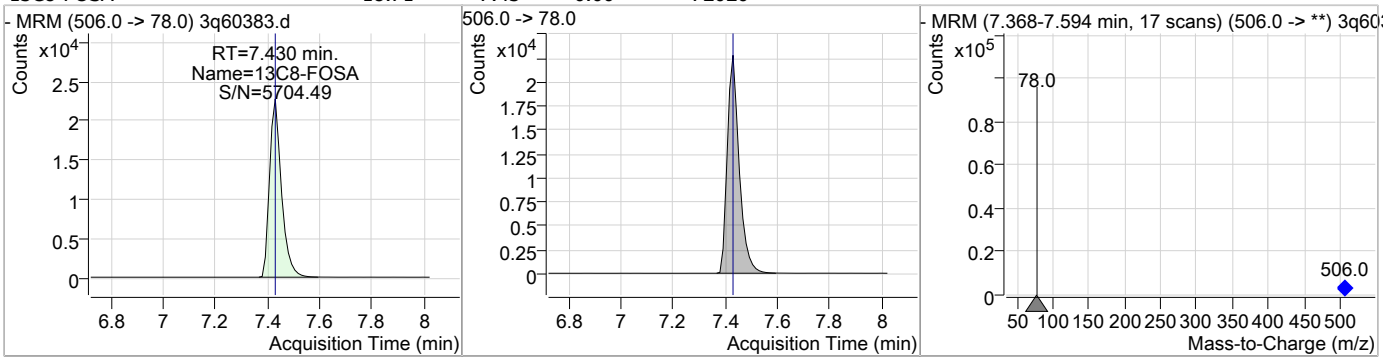


Perfluorinated Compounds by LC/MS/MS

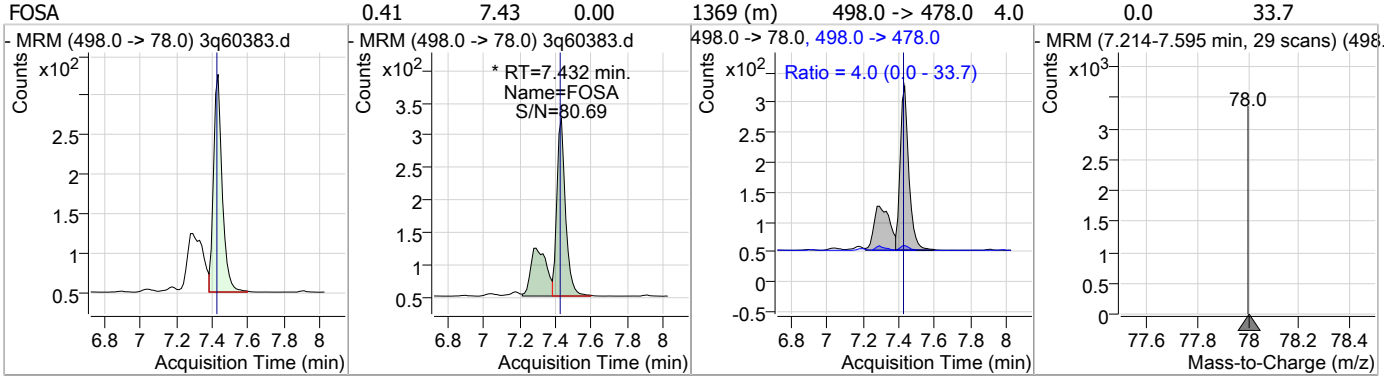
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.83	6.74	0.00	25921 (m)	399.0 -> 99.0	52.7	23.7	83.7



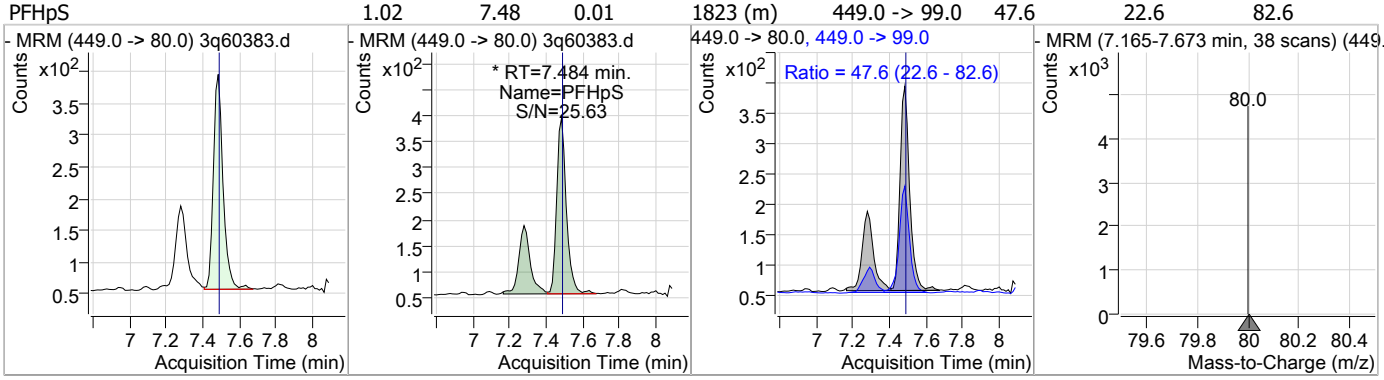
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.71	7.43	0.00	72020				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.41	7.43	0.00	1369 (m)	498.0 -> 478.0	4.0	0.0	33.7

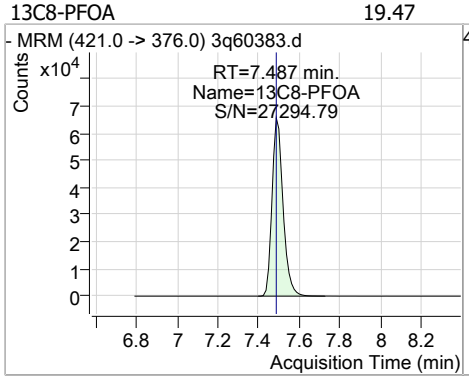


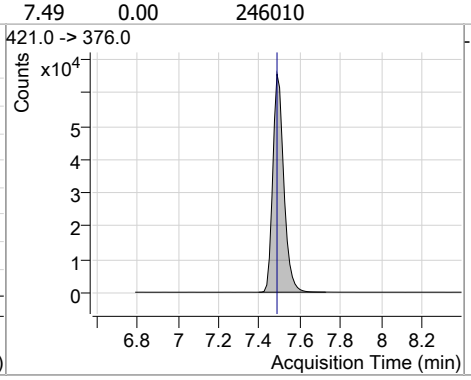
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.02	7.48	0.01	1823 (m)	449.0 -> 99.0	47.6	22.6	82.6

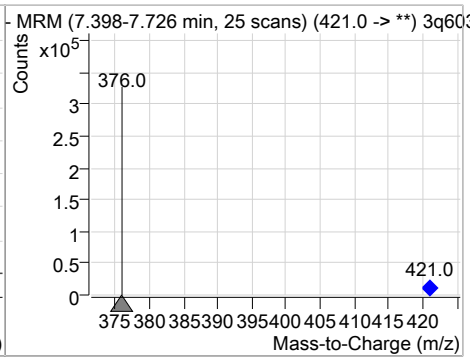


Perfluorinated Compounds by LC/MS/MS

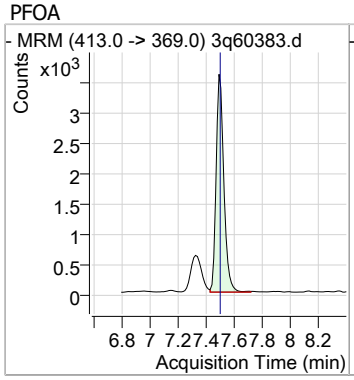
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.47	7.49	0.00	246010				

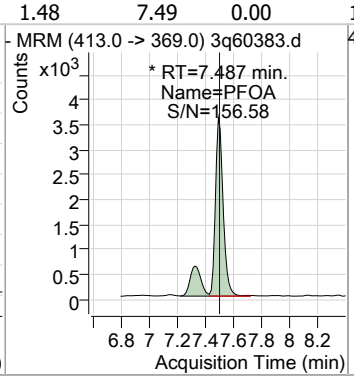


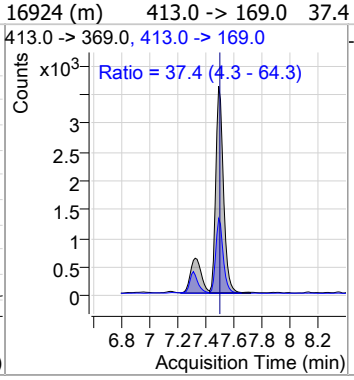


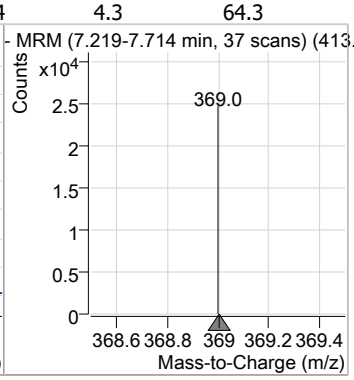


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.48	7.49	0.00	16924 (m)	413.0 -> 169.0	37.4	4.3	64.3

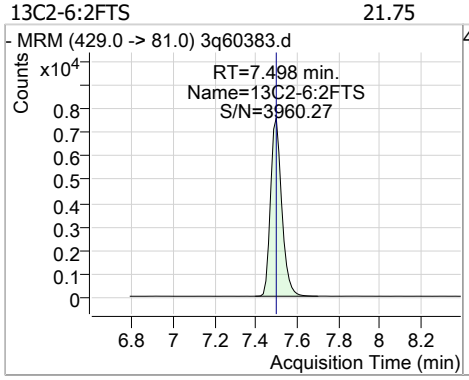


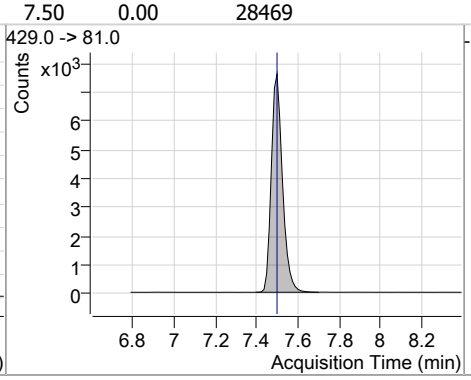


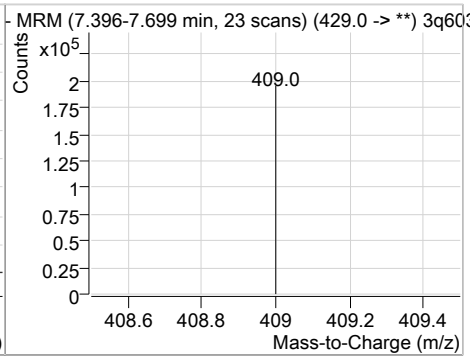




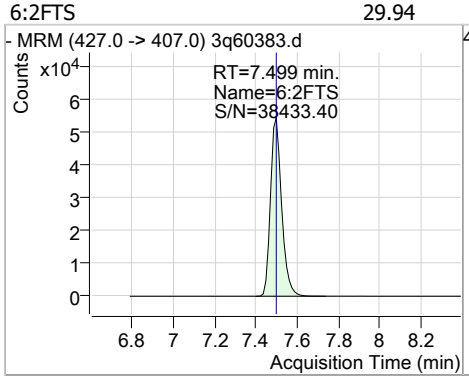
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.75	7.50	0.00	28469				

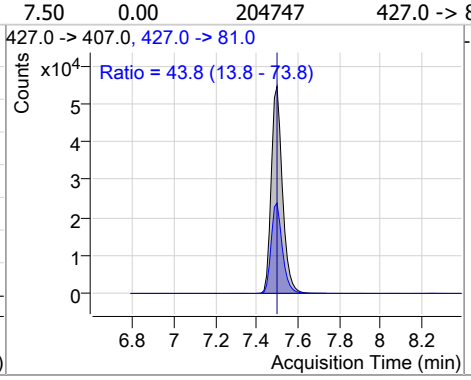


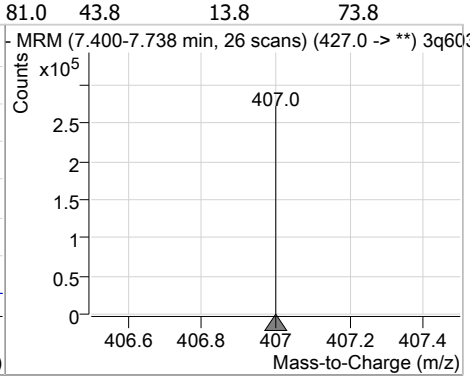




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	29.94	7.50	0.00	204747	427.0 -> 81.0	43.8	13.8	73.8

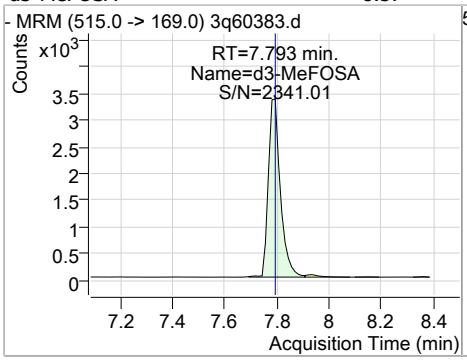


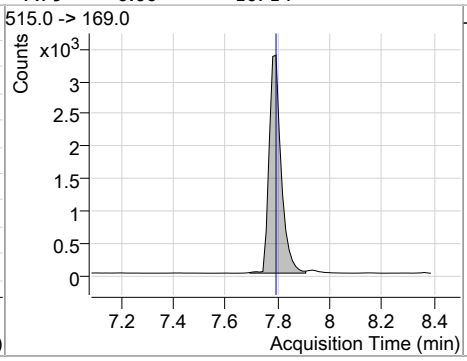


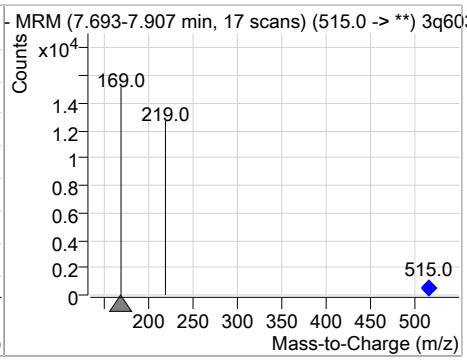


Perfluorinated Compounds by LC/MS/MS

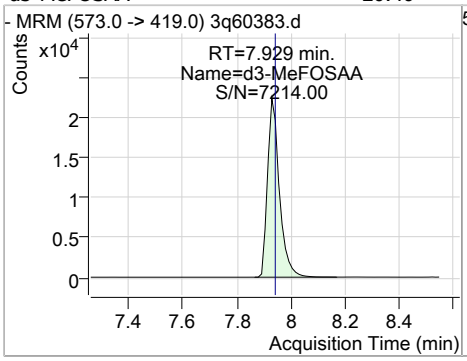
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.57	7.79	0.00	10714				

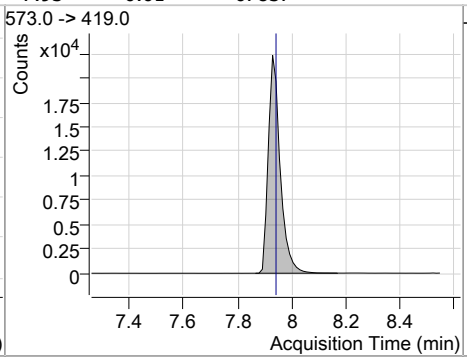


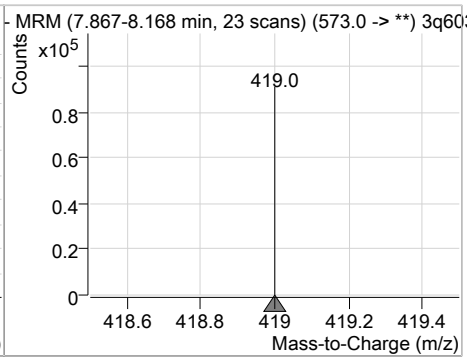




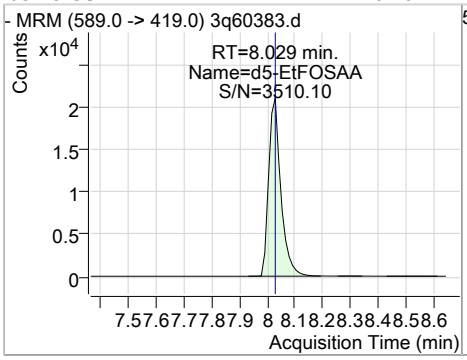
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.46	7.93	-0.01	67837				

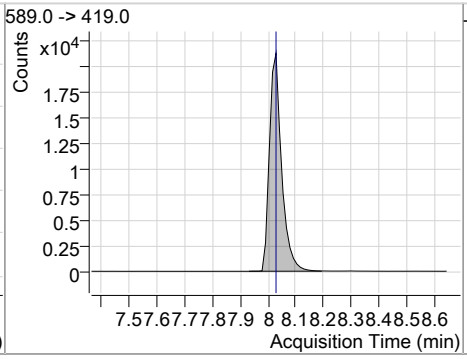


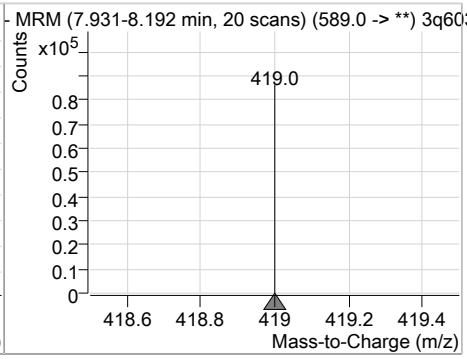




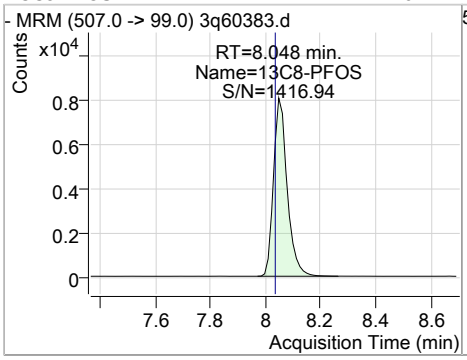
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.40	8.03	0.00	64287				

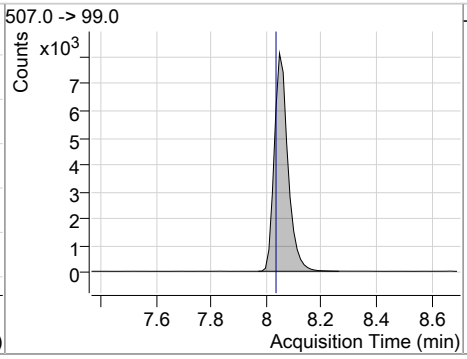


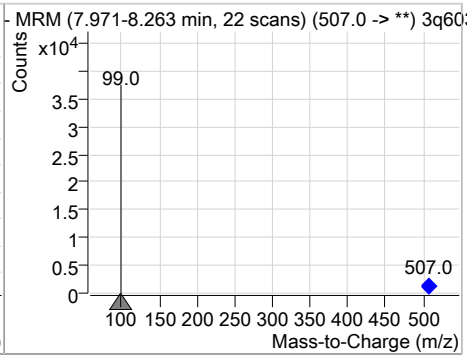




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.76	8.05	0.01	27823				

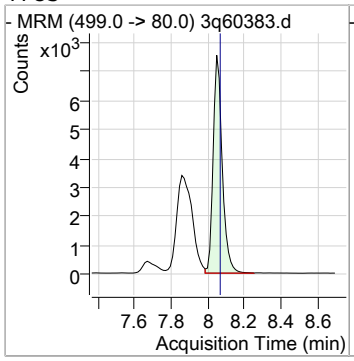


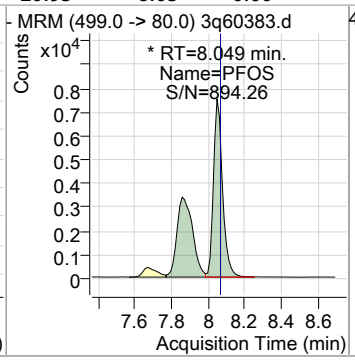


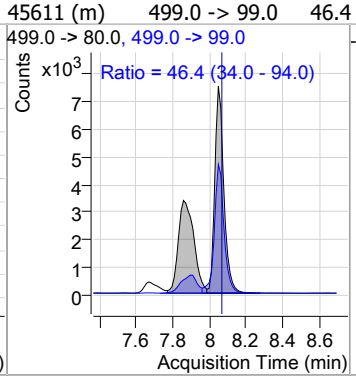


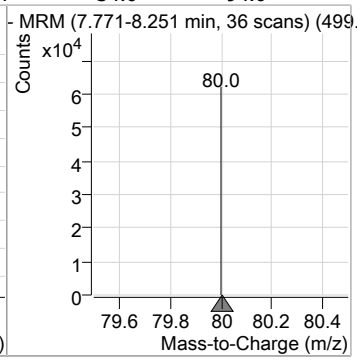
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.95	8.05	0.00	45611 (m)	499.0 -> 99.0	46.4	34.0	94.0

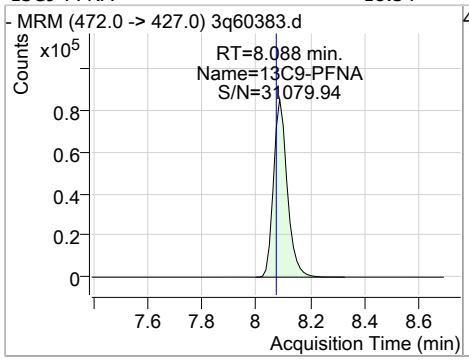


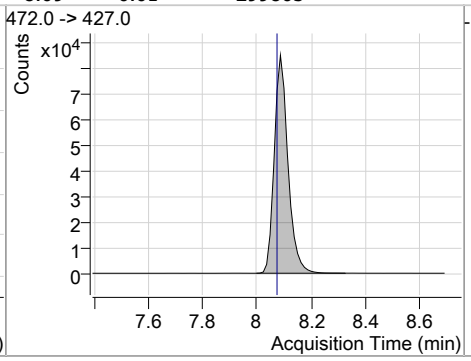


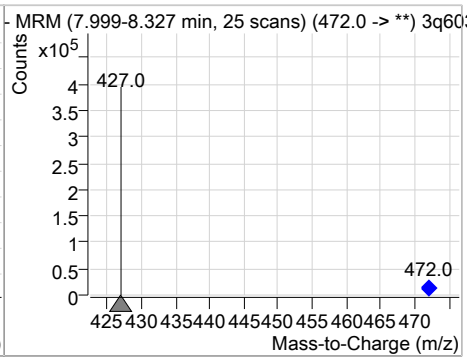




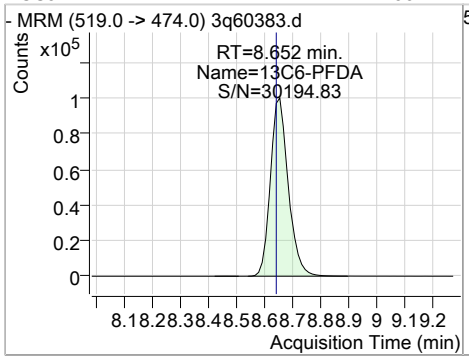
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.54	8.09	0.01	299865				

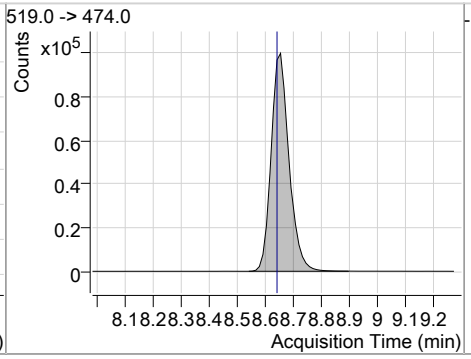


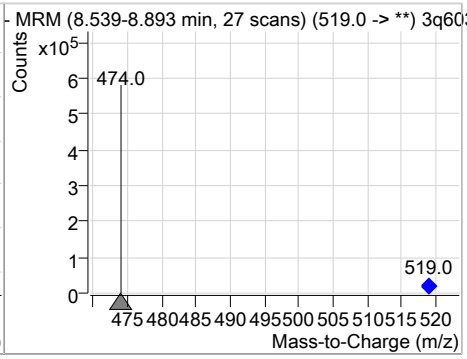




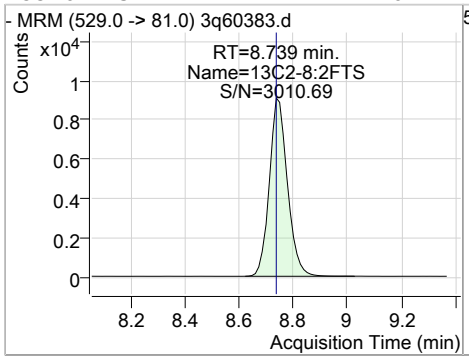
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.66	8.65	0.01	440921				

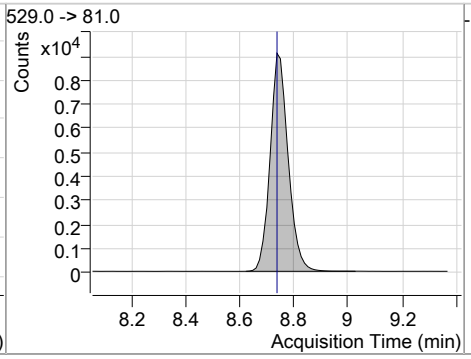


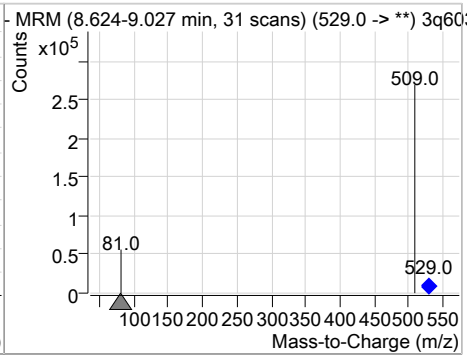




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.87	8.74	0.00	41909				

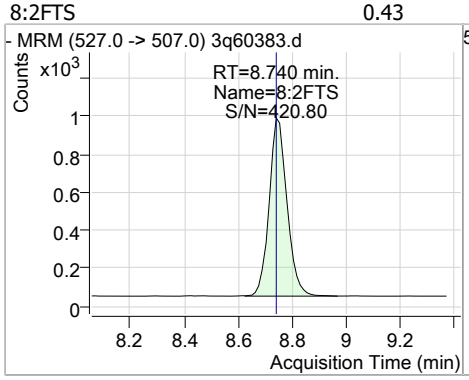


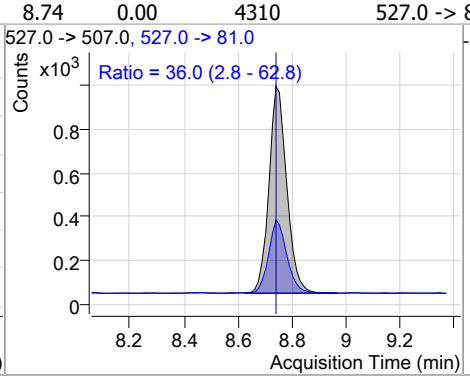


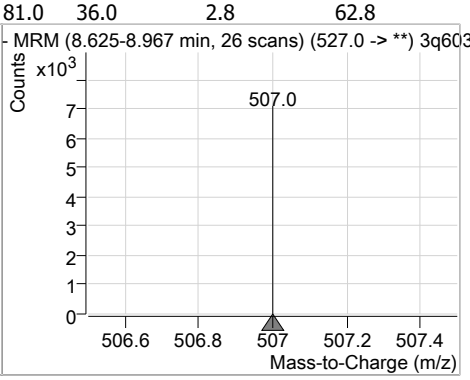


Perfluorinated Compounds by LC/MS/MS

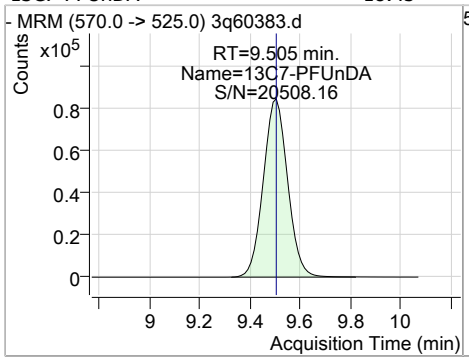
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.43	8.74	0.00	4310	527.0 -> 81.0	36.0	2.8	62.8

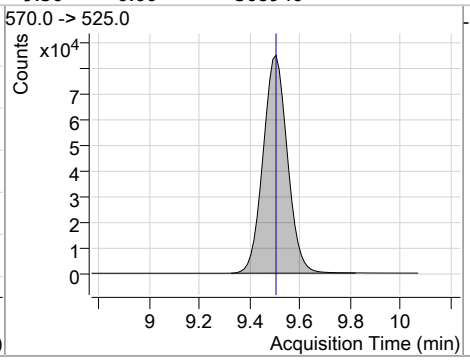


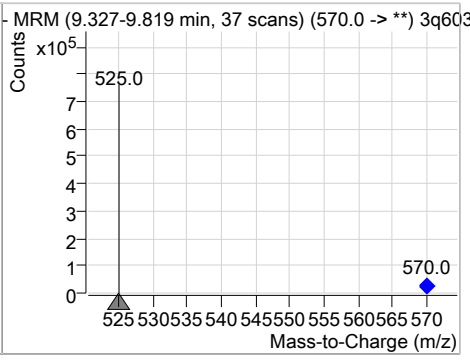




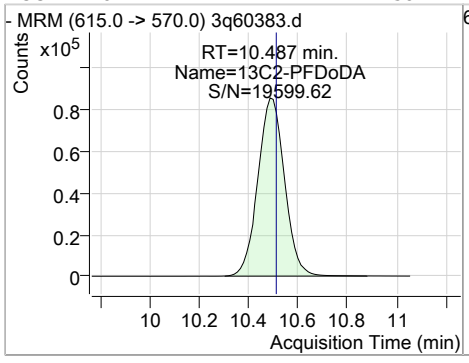
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.45	9.50	0.00	568940				

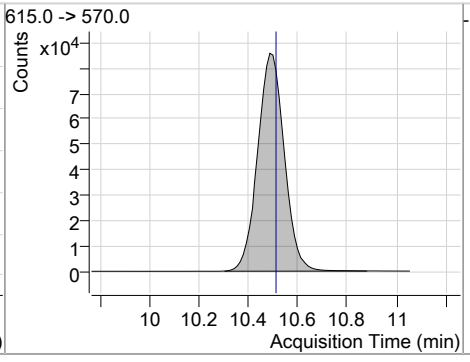


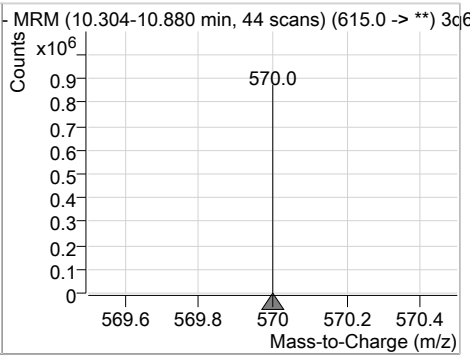




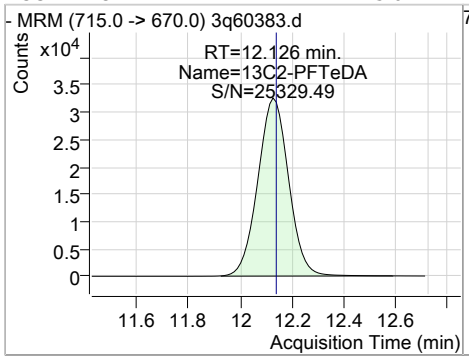
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.58	10.49	-0.03	644489				

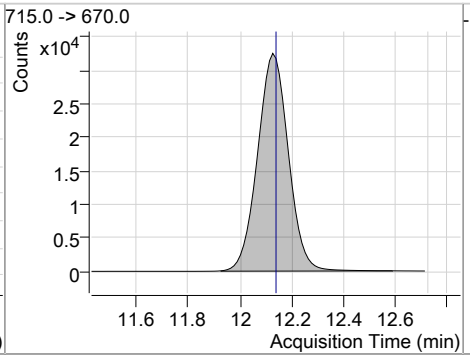


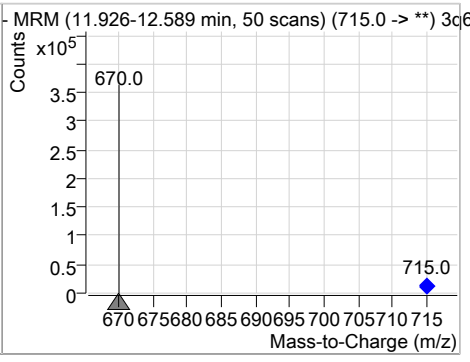




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.01	12.13	-0.01	268700				







Manual Integration Approval Summary

Sample Number: FA95502-5
Lab FileID: 3Q60383.D
Injection Time: 05/28/22 01:50
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:38 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.83	Split peak
Perfluoroheptanoic acid	375-85-9		6.72	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
PFOSA	754-91-6		7.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.48	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 14:50

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60384.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 2:08:54 AM
Sample Name : fa95502-6
Vial : P3-C3
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

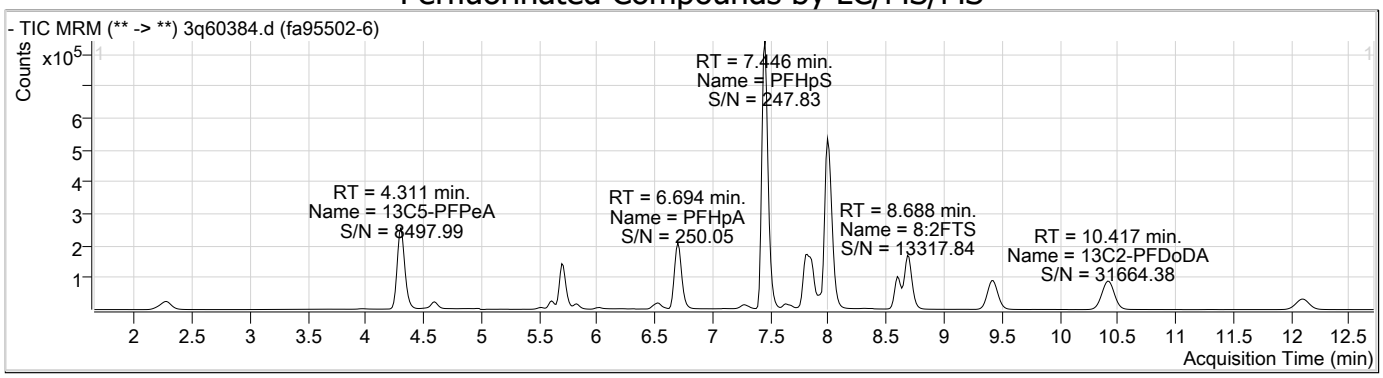
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.277	217.0 -> 172.0	112538	20.00	µg/L	-0.050
M5-PFPeA	4.311	268.0 -> 223.0	98251	20.00	µg/L	-0.038
M5-PFHxA	5.702	318.0 -> 273.0	122874	20.00	µg/L	-0.038
M4-PFHpA	6.693	367.0 -> 322.0	154145	20.00	µg/L	-0.025
M8-PFOA	7.462	421.0 -> 376.0	194357	20.00	µg/L	-0.025
M9-PFNA	8.037	472.0 -> 427.0	213202	20.00	µg/L	-0.038
M6-PFDA	8.602	519.0 -> 474.0	375635	20.00	µg/L	-0.038
M7-PFUnDA	9.430	570.0 -> 525.0	578530	20.00	µg/L	-0.075
M2-PFDoDA	10.417	615.0 -> 570.0	643063	20.00	µg/L	-0.095
M2-PFTeDA	12.101	715.0 -> 670.0	271574	20.00	µg/L	-0.038
M8-FOSA	7.430	506.0 -> 78.0	17383	20.00	µg/L	0.000
M3-PFBS	4.592	302.0 -> 99.0	14036	20.00	µg/L	-0.038
M3-PFHxS	6.710	402.0 -> 99.0	15049	20.00	µg/L	-0.029
M8-PFOS	7.997	507.0 -> 99.0	17869	20.00	µg/L	-0.038
M2-4:2FTS	5.609	329.0 -> 81.0	9938	20.00	µg/L	-0.025
M2-6:2FTS	7.460	429.0 -> 81.0	24426	20.00	µg/L	-0.038
M2-8:2FTS	8.687	529.0 -> 81.0	37355	20.00	µg/L	-0.052
M3-MeFOSAA	7.929	573.0 -> 419.0	73330	20.00	µg/L	-0.013
M3-HFPO-DA	6.018	287.0 -> 169.0	17724	20.00	µg/L	-0.026
M3-MeFOSA	7.793	515.0 -> 169.0	570	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	48357	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.609	329.0 -> 81.0	9938	17.73	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C2-6:2FTS	7.460	429.0 -> 81.0	24426	18.66	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-8:2FTS	8.687	529.0 -> 81.0	37355	15.93	µg/L	-0.052
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%		
13C2-PFDoDA	10.417	615.0 -> 570.0	643063	17.54	µg/L	-0.095
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C2-PFTeDA	12.101	715.0 -> 670.0	271574	15.17	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		
13C3-PFBS	4.592	302.0 -> 99.0	14036	17.78	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C3-PFHxS	6.710	402.0 -> 99.0	15049	15.53	µg/L	-0.029
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%		
13C4-PFBA	2.277	217.0 -> 172.0	112538	18.62	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C4-PFHpA	6.693	367.0 -> 322.0	154145	15.34	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C5-PFHxA	5.702	318.0 -> 273.0	122874	15.57	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%		
13C5-PFPeA	4.311	268.0 -> 223.0	98251	16.96	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C6-PFDA	8.602	519.0 -> 474.0	375635	15.05	µg/L	-0.038

Perfluorinated Compounds by LC/MS/MS

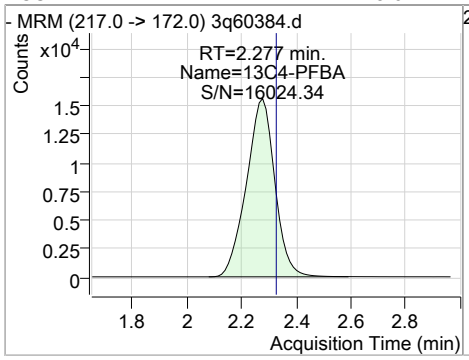
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%			
13C7-PFUnDA	9.430	570.0 -> 525.0	578530	18.76	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C8-FOSA	7.430	506.0 -> 78.0	17383	4.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.6%			
13C8-PFOA	7.462	421.0 -> 376.0	194357	15.38	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
13C8-PFOS	7.997	507.0 -> 99.0	17869	11.40	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%			
13C9-PFNA	8.037	472.0 -> 427.0	213202	13.18	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.9%			
d3-MeFOSAA	7.929	573.0 -> 419.0	73330	22.11	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%			
13C3-HFPO-DA	6.018	287.0 -> 169.0	17697	15.81	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%			
d3-MeFOSA	7.793	515.0 -> 169.0	570	0.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%			
d5-EtFOSAA	8.029	589.0 -> 419.0	48331	15.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%			
Target Compounds							**QValue**
4:2FTS	5.612	327.0 -> 307.0	4885	1.13	µg/L		98
6:2FTS	7.461	427.0 -> 407.0	1672283	284.98	µg/L		99
8:2FTS	8.688	527.0 -> 507.0	397909	44.61	µg/L		100
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	7.432	498.0 -> 78.0	11514	14.40	µg/L	m	96
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.271	213.0 -> 169.0	73421	33.47	µg/L		100
PFBS	4.594	299.0 -> 80.0	54283	30.57	µg/L	m	99
PFDA	8.602	513.0 -> 469.0	32389	2.06	µg/L		99
PFDoDA	10.419	613.0 -> 569.0	10943	0.40	µg/L		99
PFDS	9.337	599.0 -> 80.0	225	0.20	µg/L		88
PFHpA	6.694	363.0 -> 319.0	264954	23.44	µg/L	m	100
PFHpS	7.446	449.0 -> 80.0	49783	43.23	µg/L	m	94
PFHxA	5.703	313.0 -> 269.0	409648	79.76	µg/L		99
PFHxS	6.711	399.0 -> 80.0	385219	245.22	µg/L	m	98
PFNA	8.037	463.0 -> 419.0	22306	2.21	µg/L		99
PFNS	8.308	549.0 -> 80.0	6898	6.43	µg/L	m	65
PFOA	7.462	413.0 -> 369.0	263092	29.08	µg/L	m	96
PFOS	7.998	499.0 -> 80.0	2126656	1520.65	µg/L	m	78
PFPeA	4.314	263.0 -> 219.0	1061596	146.57	µg/L		100
PFPeS	5.820	349.0 -> 80.0	45741	38.56	µg/L	m	97
PFTeDA	12.093	713.0 -> 669.0	1921	0.11	µg/L		98
PFTrDA	11.300	663.0 -> 619.0	2352	0.11	µg/L		100
PFUnDA	9.431	563.0 -> 519.0	12689	0.47	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

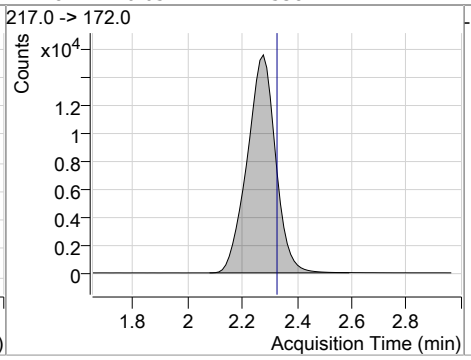
 # = Qualifier out of range, m = manually integrated, + = Area summed

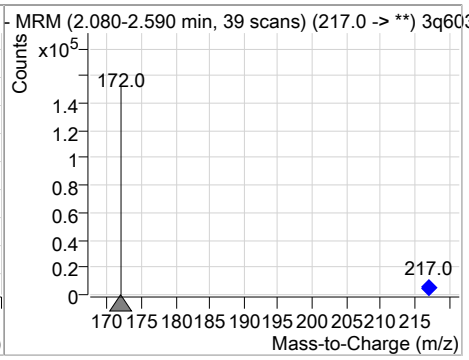
Perfluorinated Compounds by LC/MS/MS



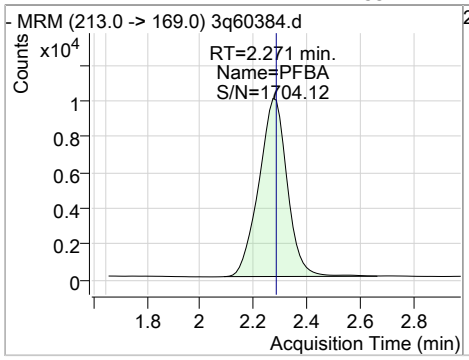
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.62	2.28	-0.05	112538				

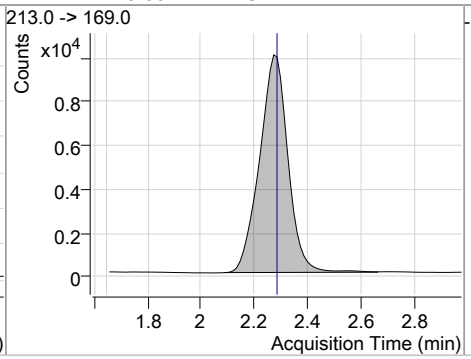


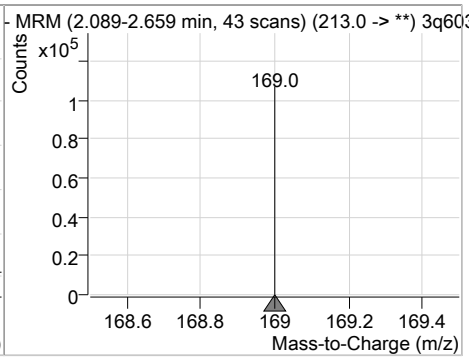




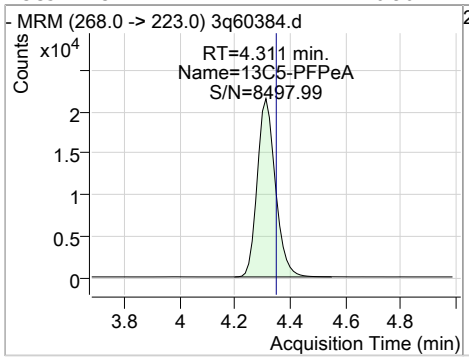
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	33.47	2.27	-0.06	73421				

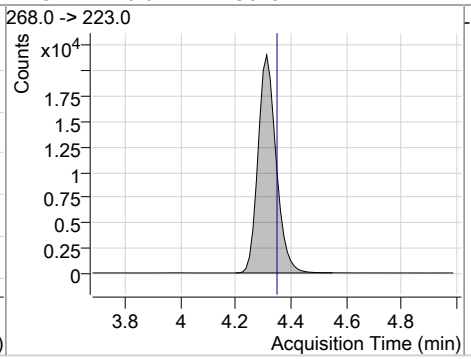


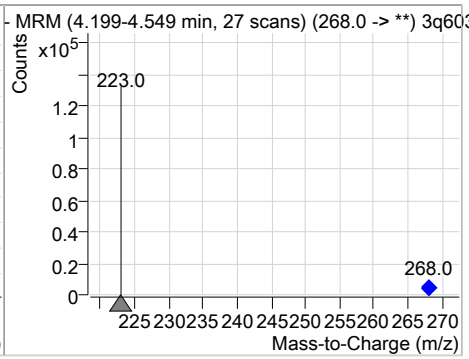




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.96	4.31	-0.04	98251				

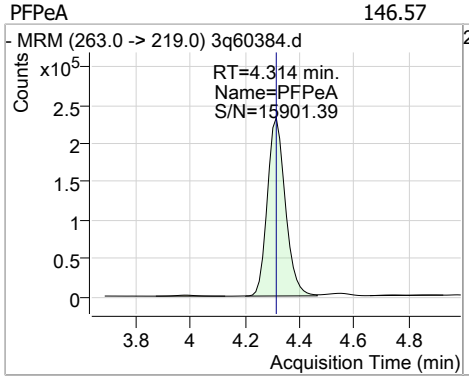


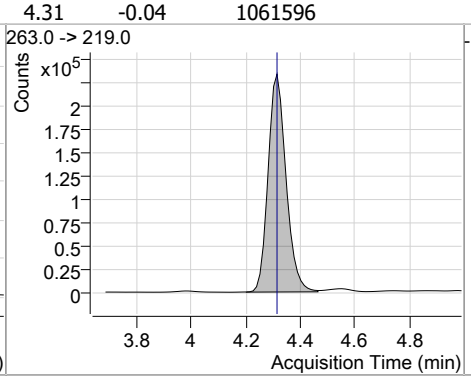


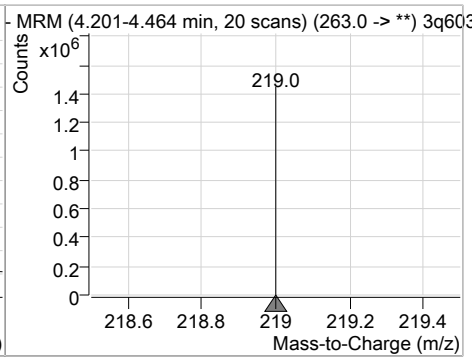


Perfluorinated Compounds by LC/MS/MS

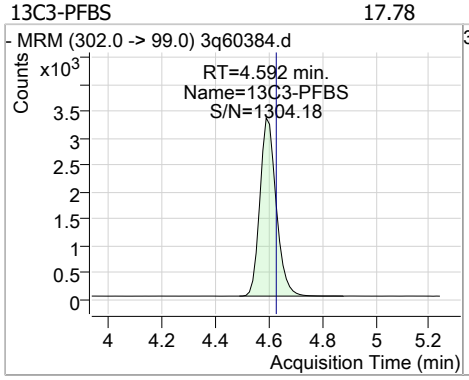
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	146.57	4.31	-0.04	1061596				

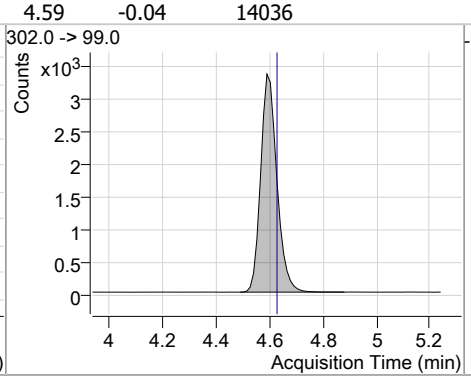


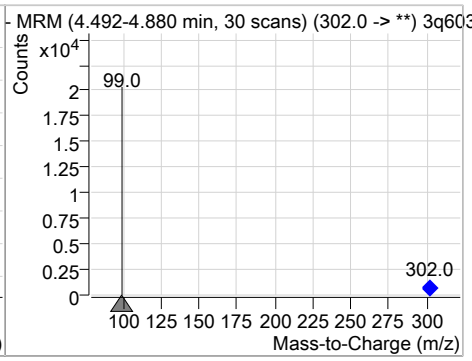




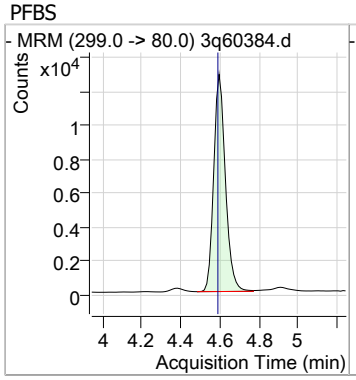
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.78	4.59	-0.04	14036				

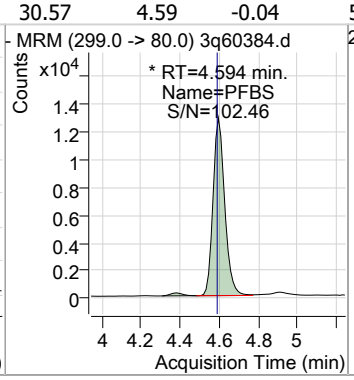


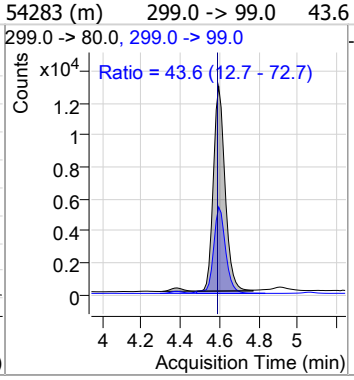


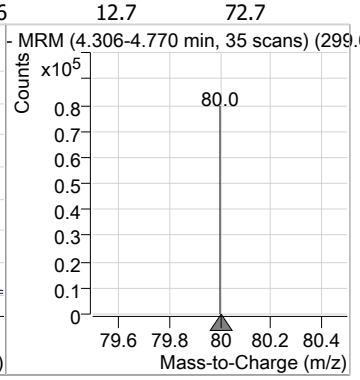


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	30.57	4.59	-0.04	54283 (m)	299.0 -> 99.0	43.6	12.7	72.7

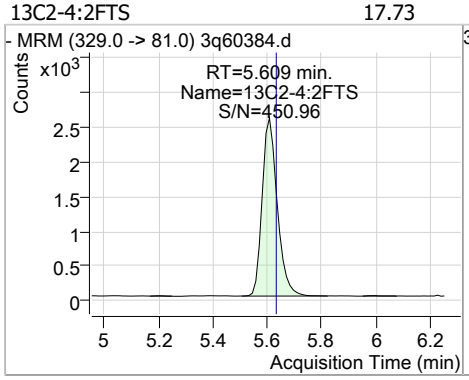


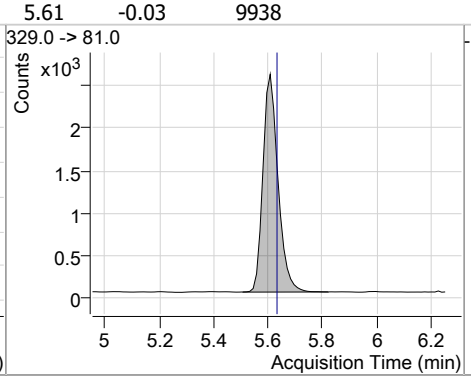


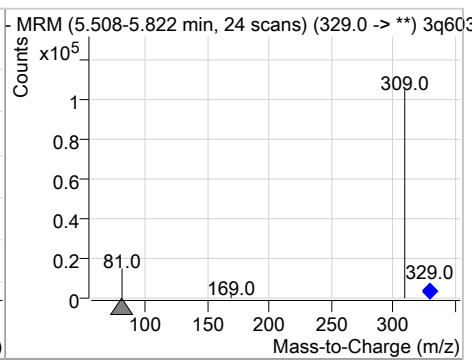




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.73	5.61	-0.03	9938				

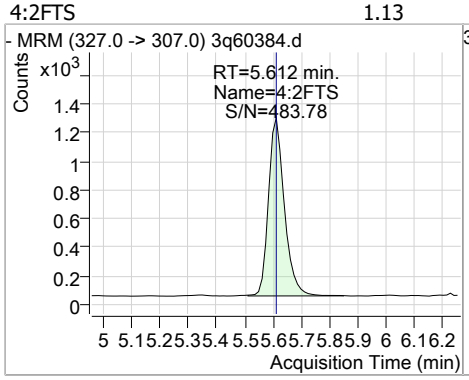


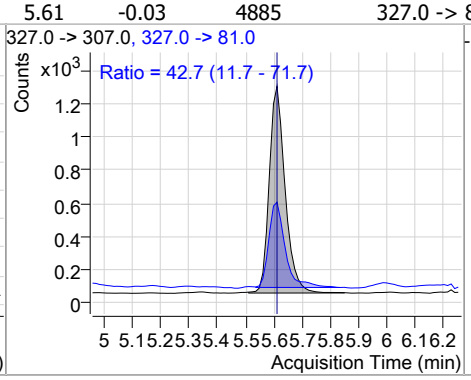


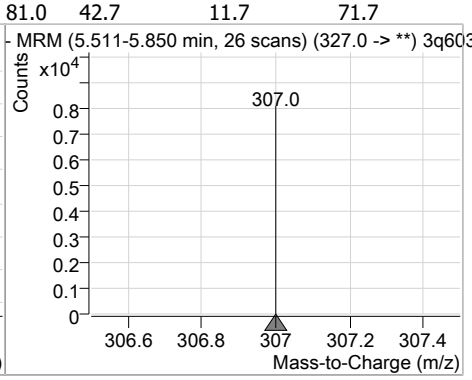


Perfluorinated Compounds by LC/MS/MS

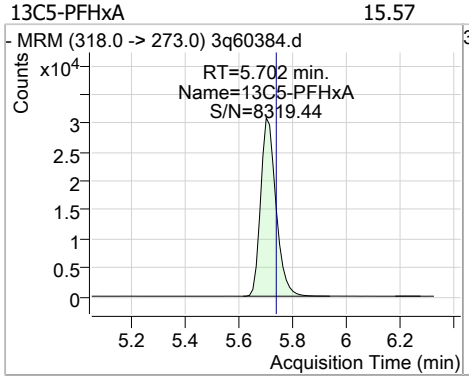
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.13	5.61	-0.03	4885	327.0 -> 81.0	42.7	11.7	71.7

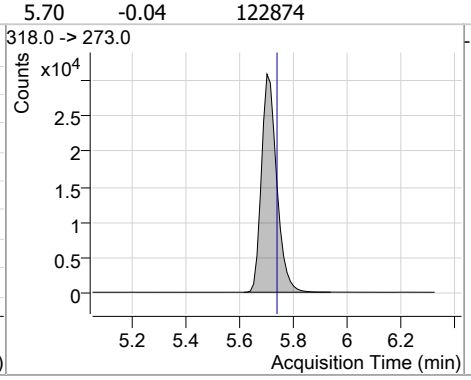


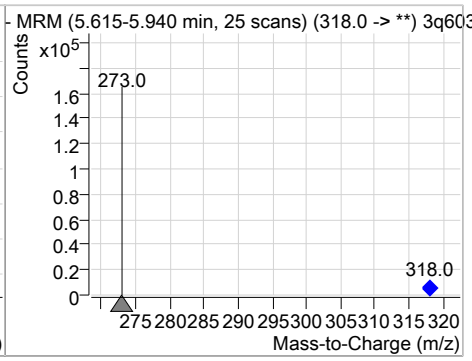




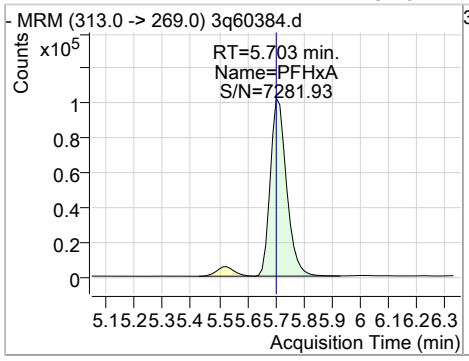
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.57	5.70	-0.04	122874				

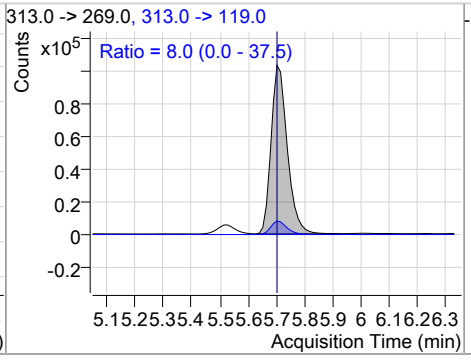


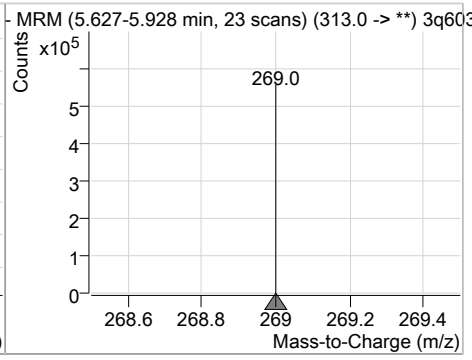




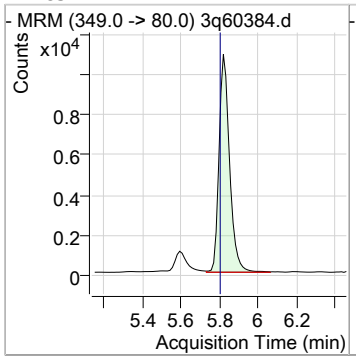
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	79.76	5.70	-0.04	409648	313.0 -> 119.0	8.0	0.0	37.5

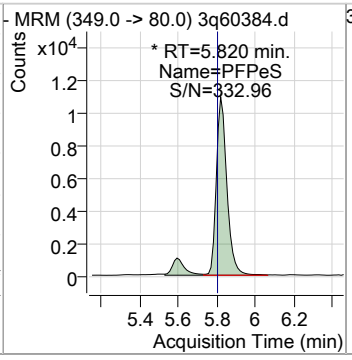


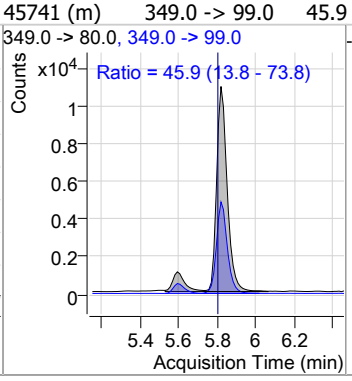


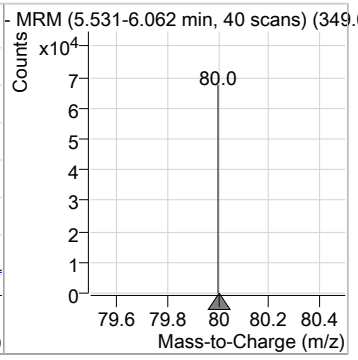


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	38.56	5.82	-0.03	45741 (m)	349.0 -> 99.0	45.9	13.8	73.8



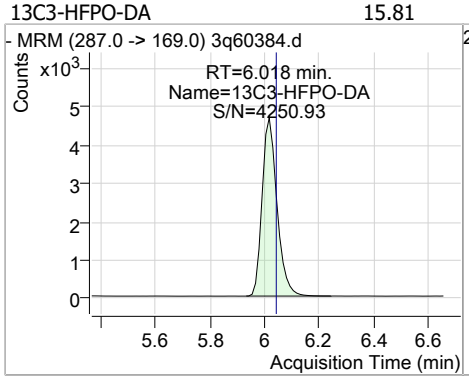


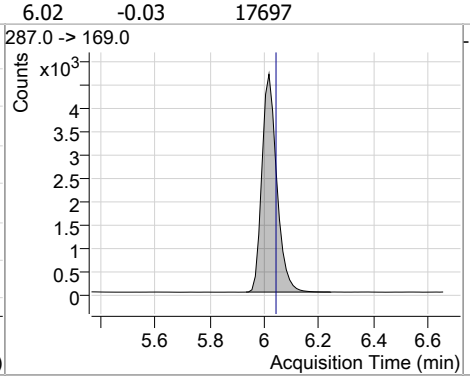


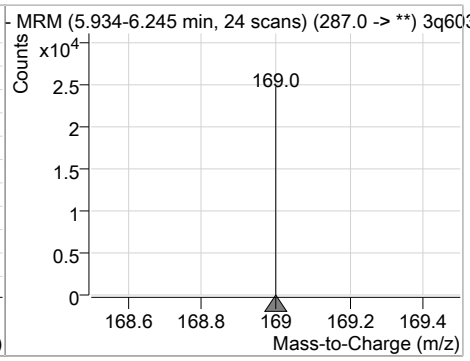


Perfluorinated Compounds by LC/MS/MS

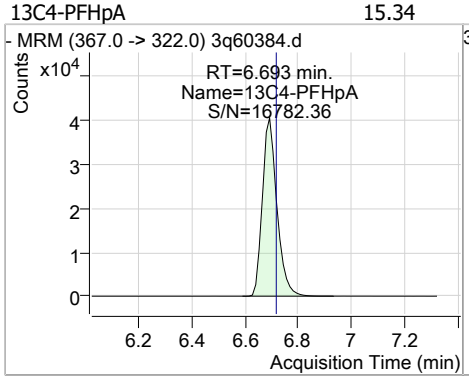
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.81	6.02	-0.03	17697				

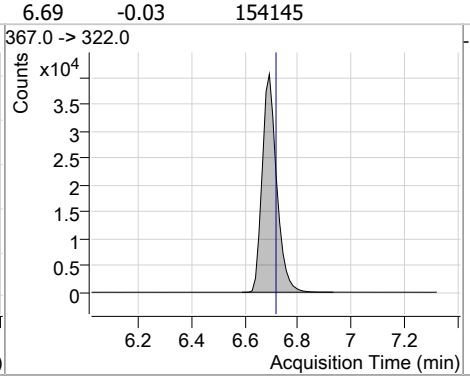


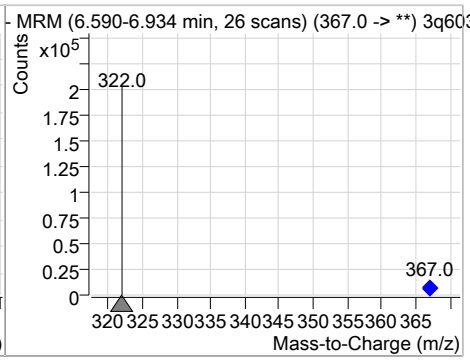




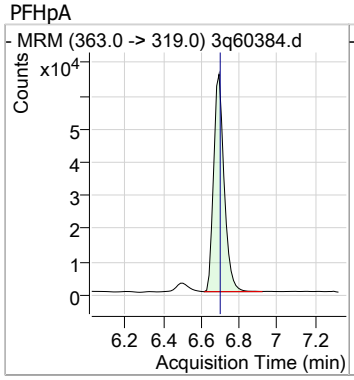
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.34	6.69	-0.03	154145				

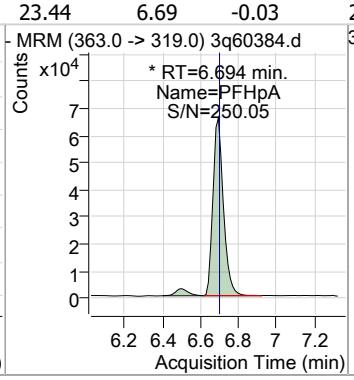


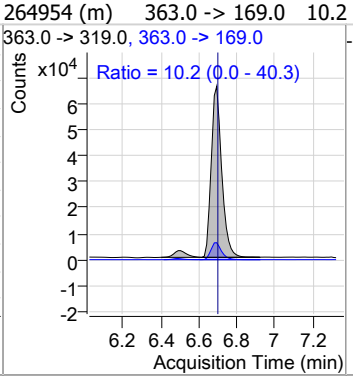


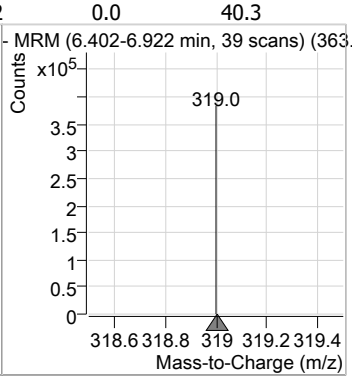


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	23.44	6.69	-0.03	264954 (m)	363.0 -> 169.0	10.2	0.0	40.3

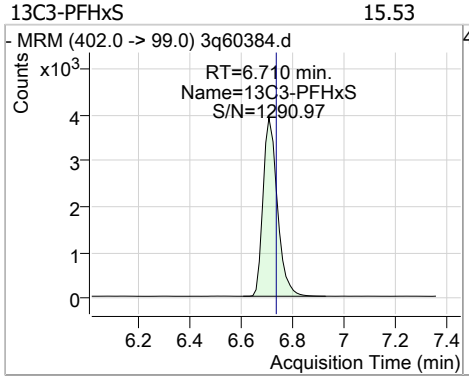


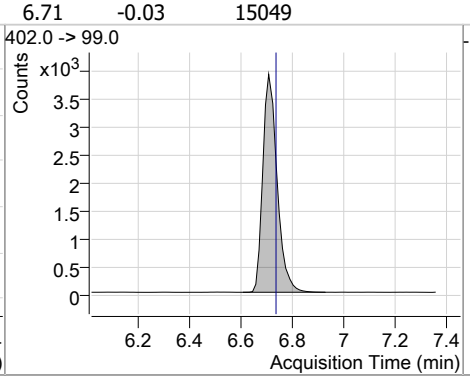


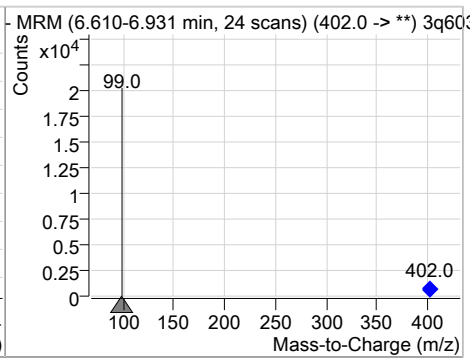




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.53	6.71	-0.03	15049				

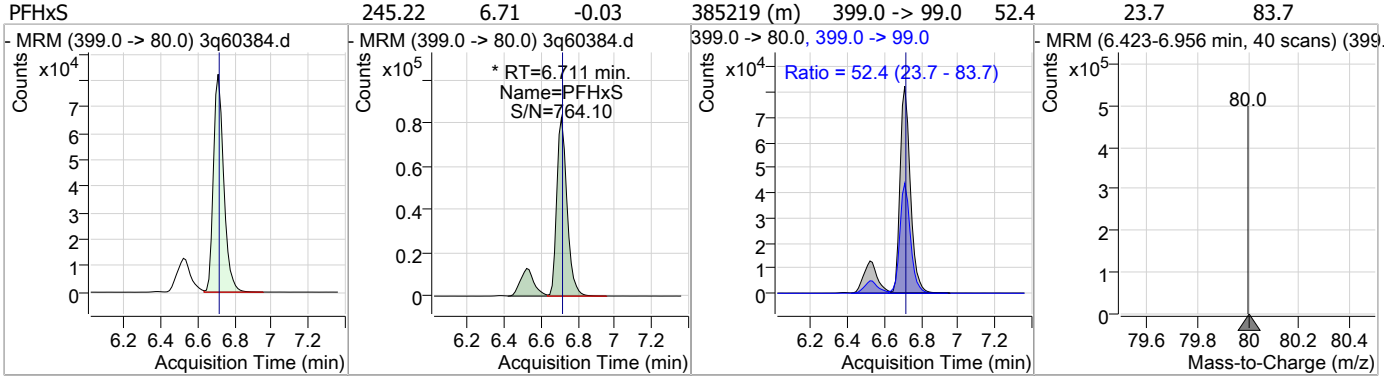




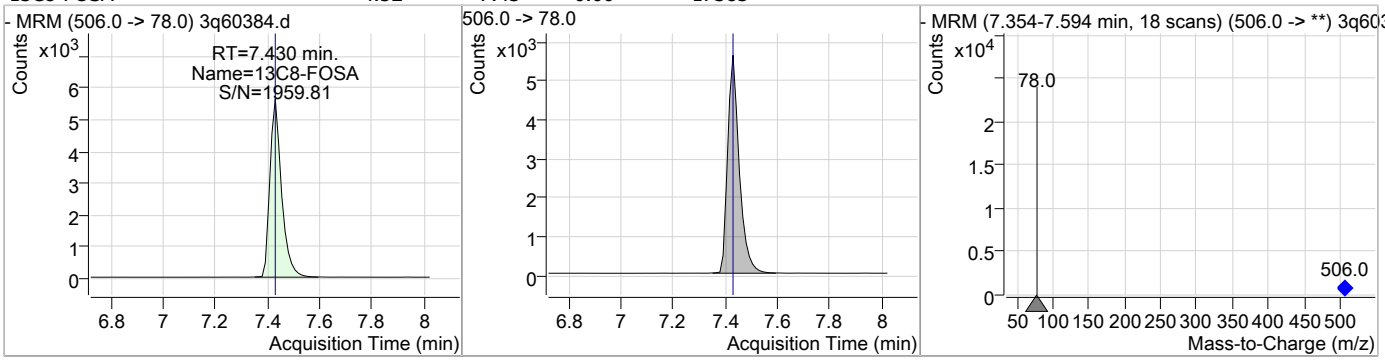


Perfluorinated Compounds by LC/MS/MS

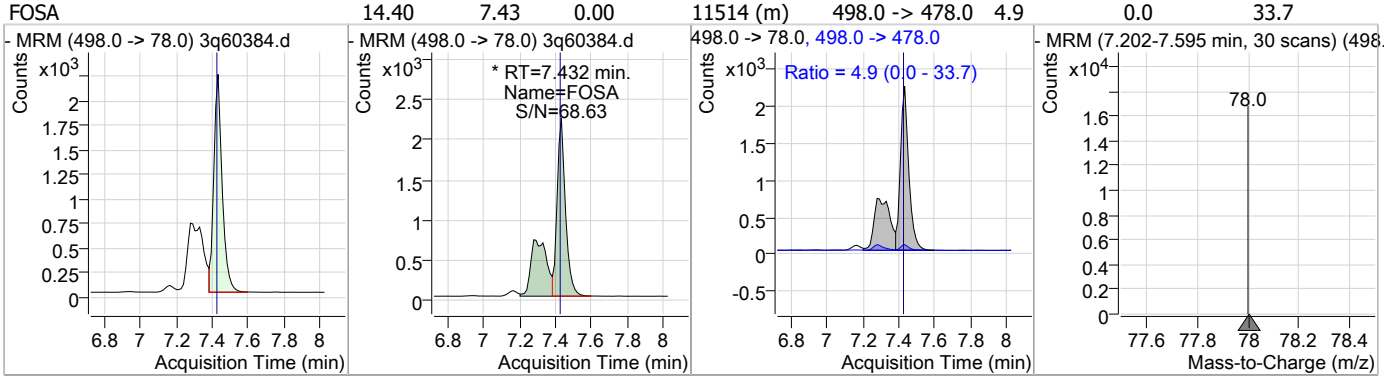
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	245.22	6.71	-0.03	385219 (m)	399.0 -> 99.0	52.4	23.7	83.7



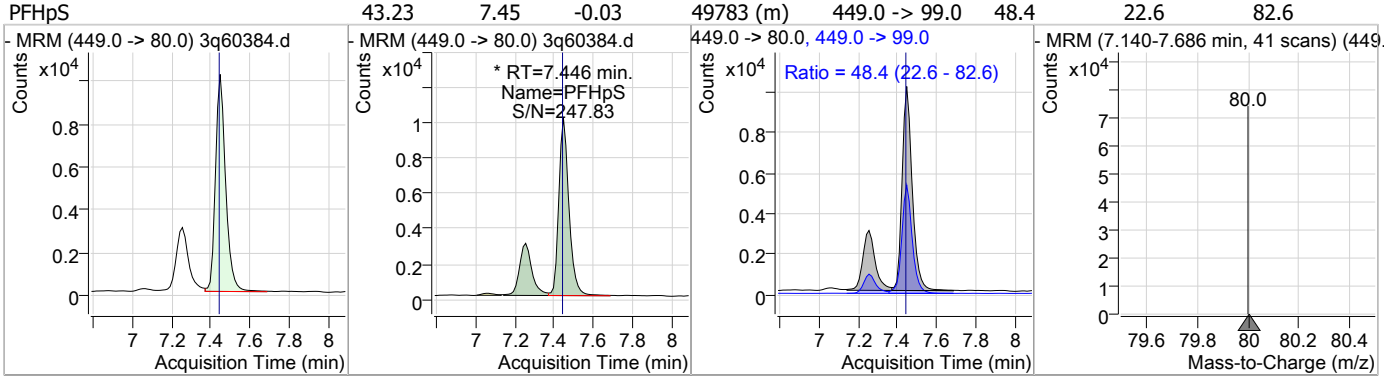
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.52	7.43	0.00	17383				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	14.40	7.43	0.00	11514 (m)	498.0 -> 478.0	4.9	0.0	33.7

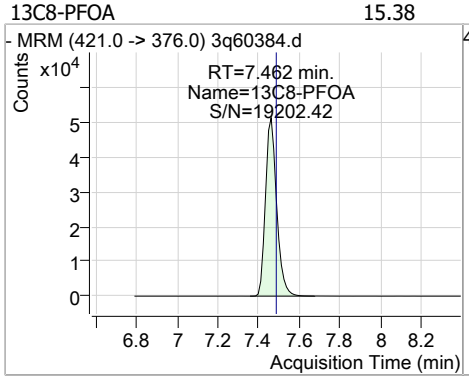


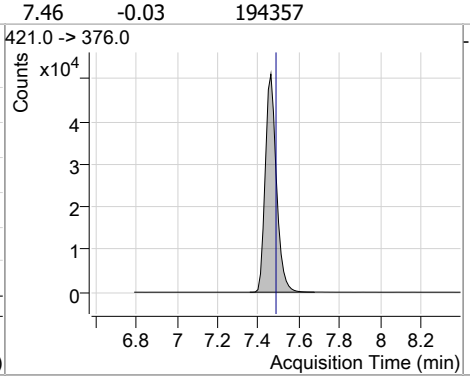
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	43.23	7.45	-0.03	49783 (m)	449.0 -> 99.0	48.4	22.6	82.6

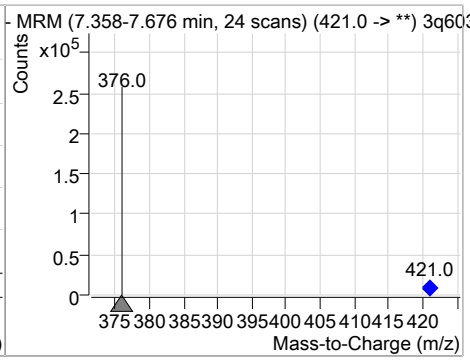


Perfluorinated Compounds by LC/MS/MS

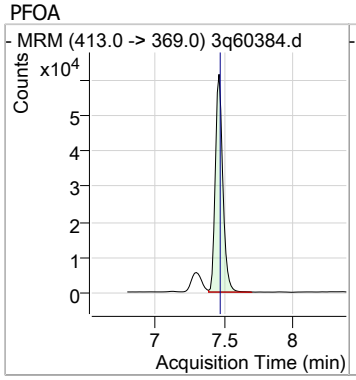
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.38	7.46	-0.03	194357				

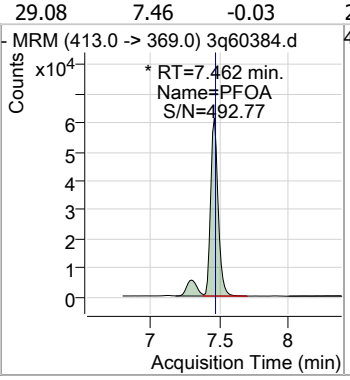


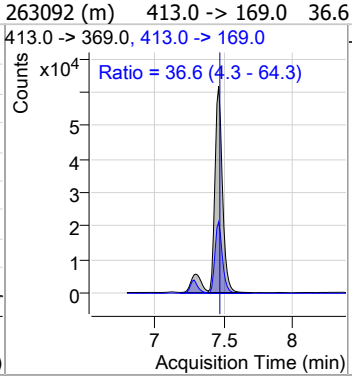


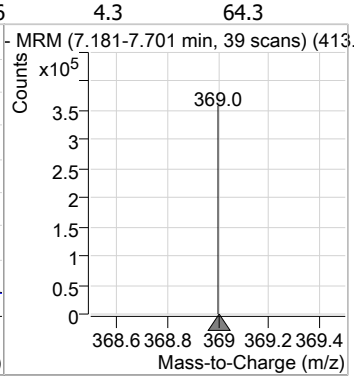


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	29.08	7.46	-0.03	263092 (m)	413.0 -> 169.0	36.6	4.3	64.3

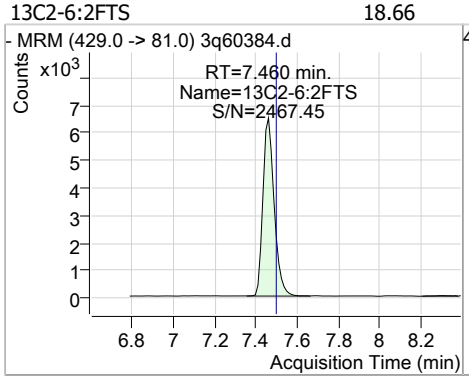


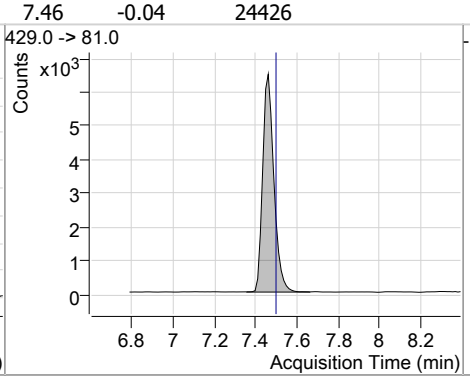


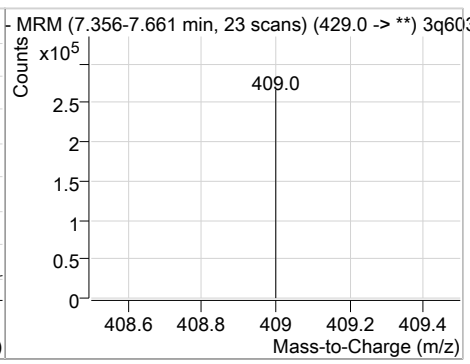




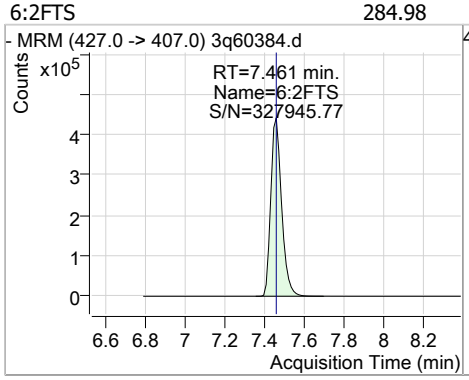
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.66	7.46	-0.04	24426				

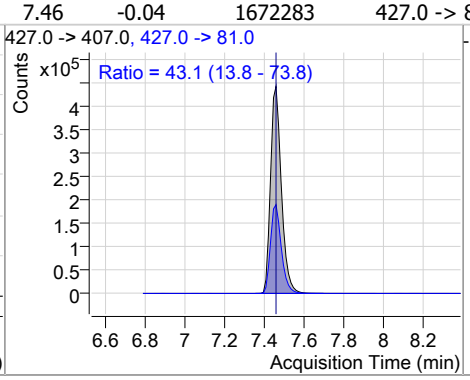


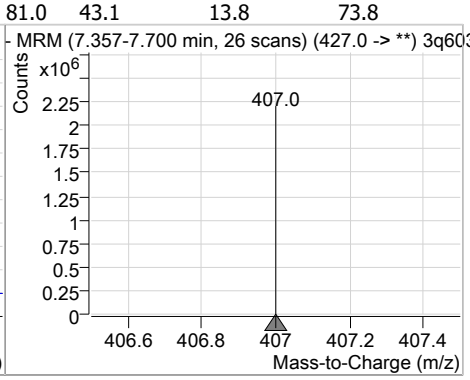




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	284.98	7.46	-0.04	1672283	427.0 -> 81.0	43.1	13.8	73.8

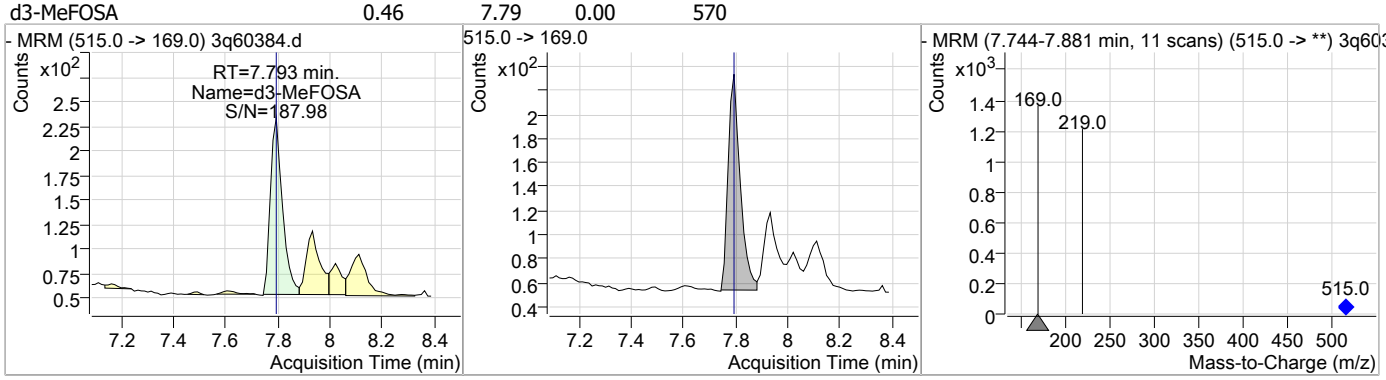




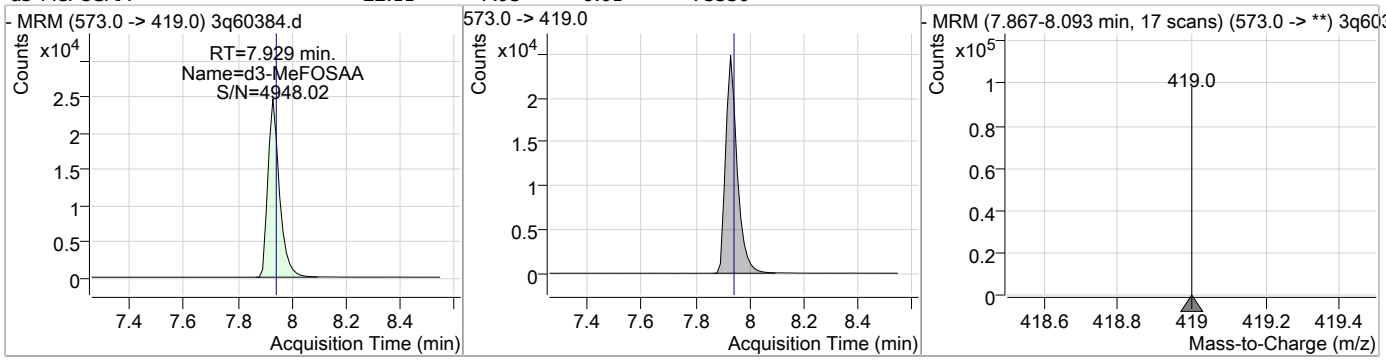


Perfluorinated Compounds by LC/MS/MS

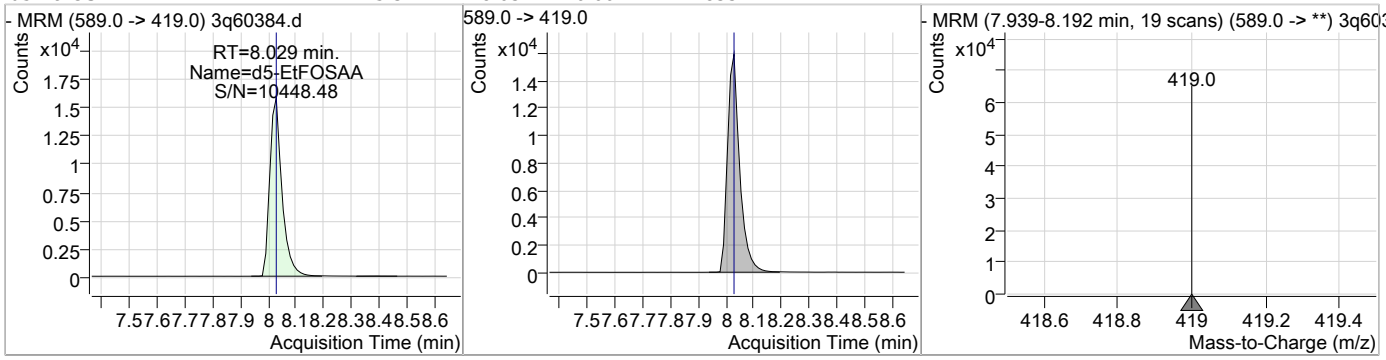
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.46	7.79	0.00	570				



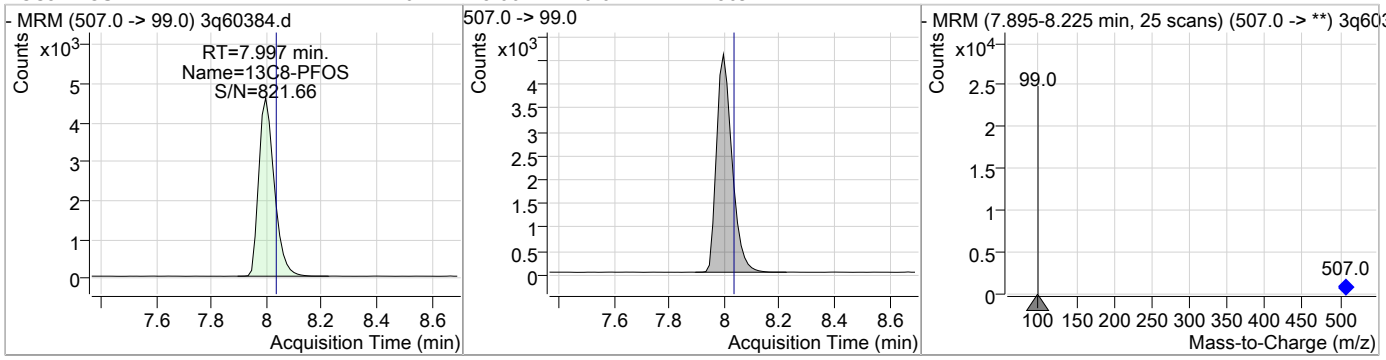
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.11	7.93	-0.01	73330				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.34	8.03	0.00	48331				

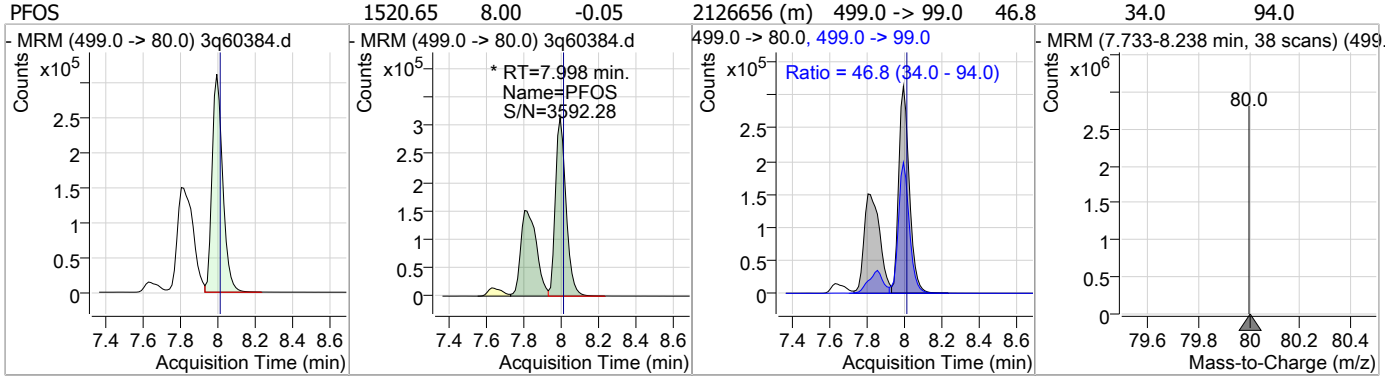


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.40	8.00	-0.04	17869				

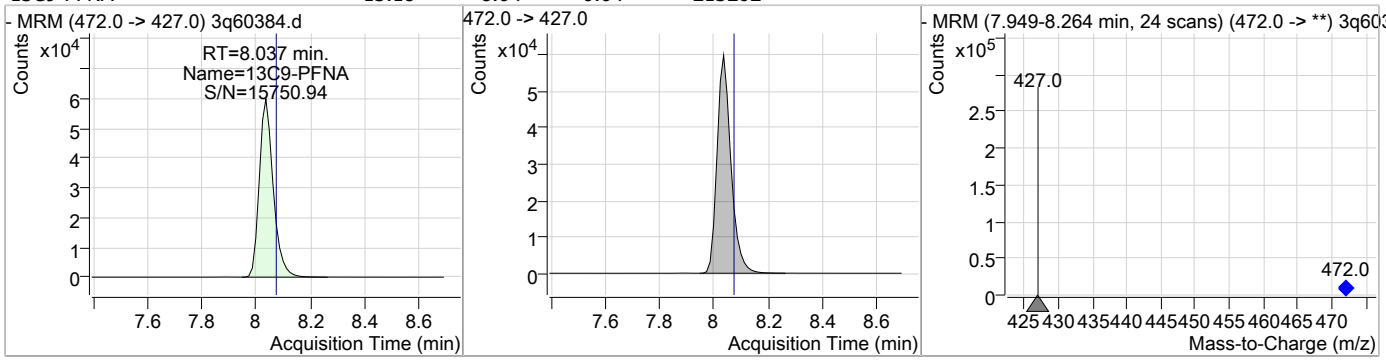


Perfluorinated Compounds by LC/MS/MS

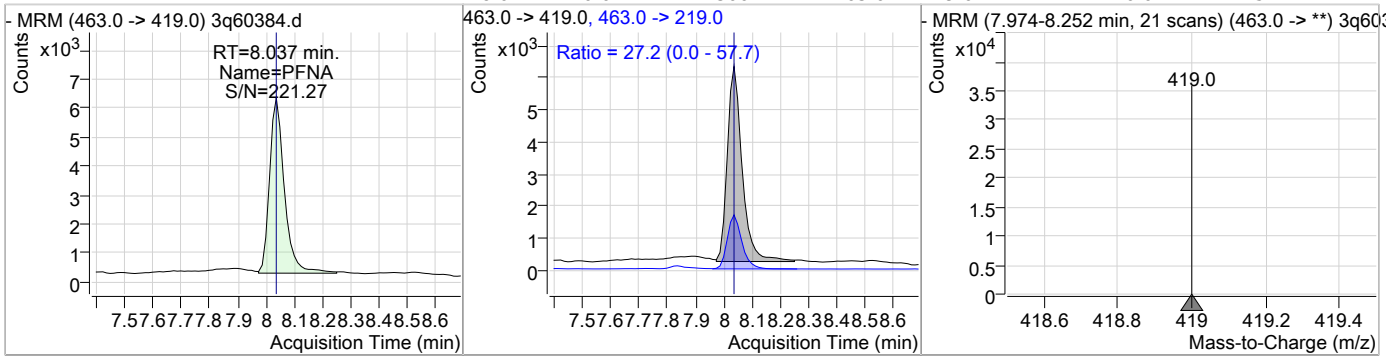
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1520.65	8.00	-0.05	2126656 (m)	499.0 -> 99.0	46.8	34.0	94.0



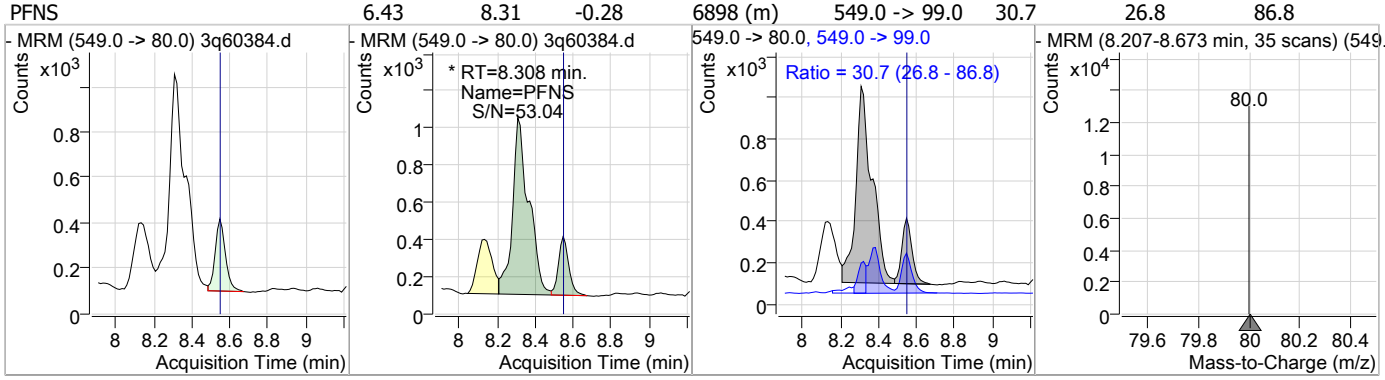
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.18	8.04	-0.04	213202				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.21	8.04	-0.04	22306	463.0 -> 219.0	27.2	0.0	57.7

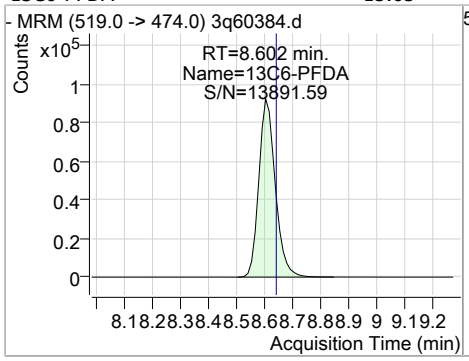


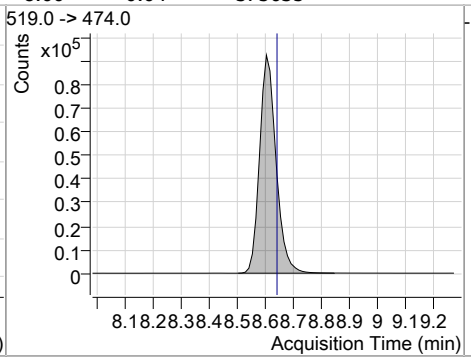
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	6.43	8.31	-0.28	6898 (m)	549.0 -> 99.0	30.7	26.8	86.8

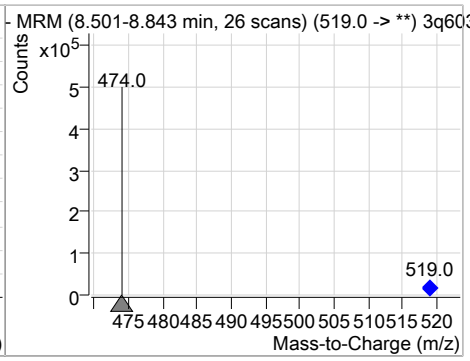


Perfluorinated Compounds by LC/MS/MS

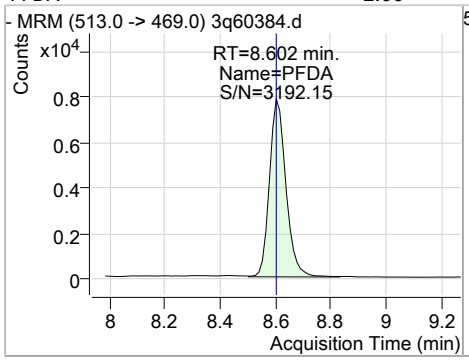
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.05	8.60	-0.04	375635				

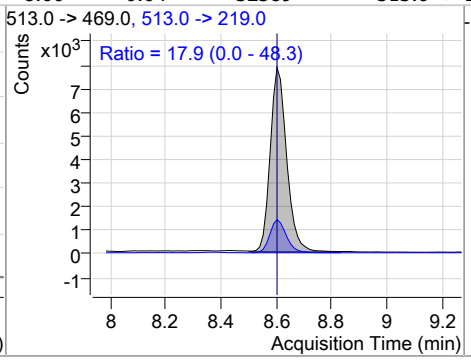


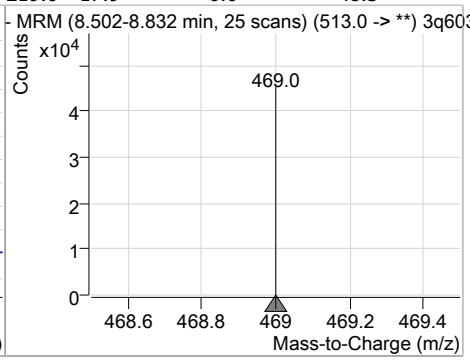




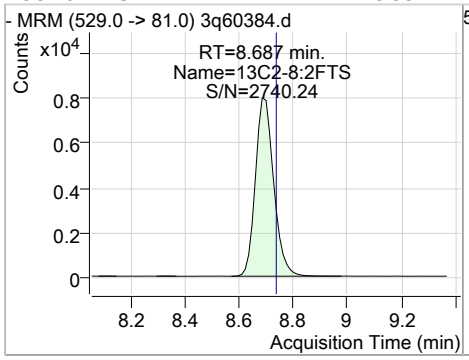
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.06	8.60	-0.04	32389	513.0 -> 219.0	17.9	0.0	48.3

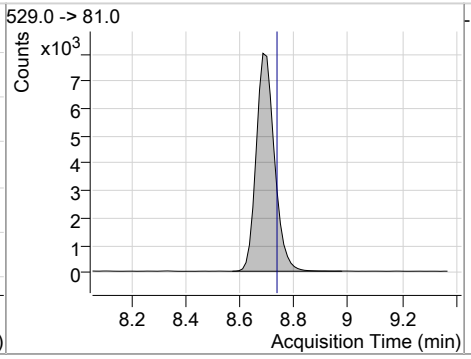


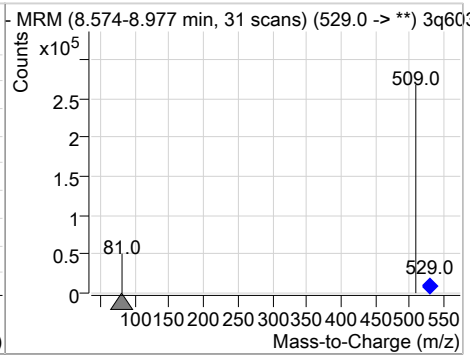




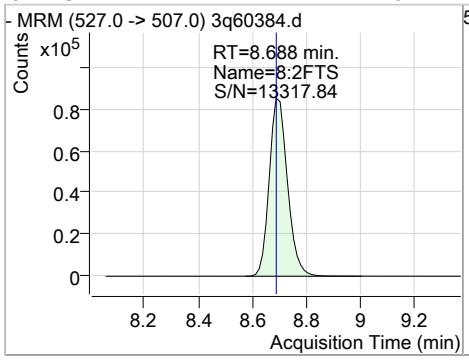
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.93	8.69	-0.05	37355				

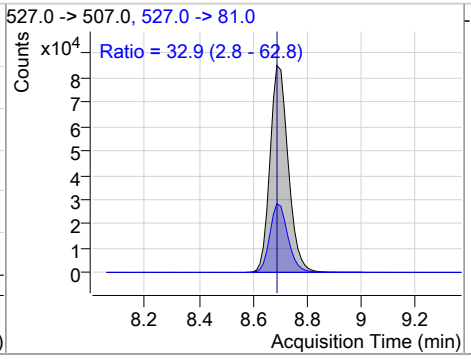


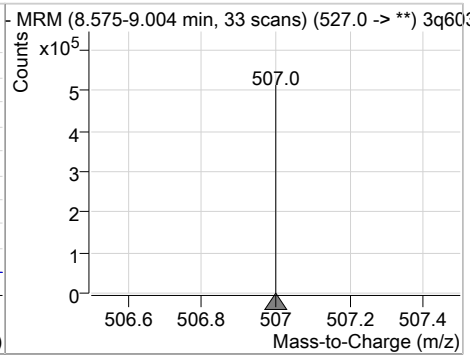




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	44.61	8.69	-0.05	397909	527.0 -> 81.0	32.9	2.8	62.8

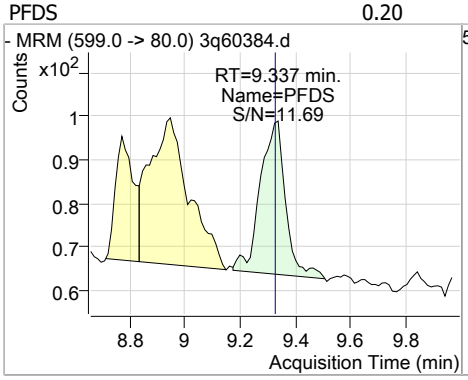


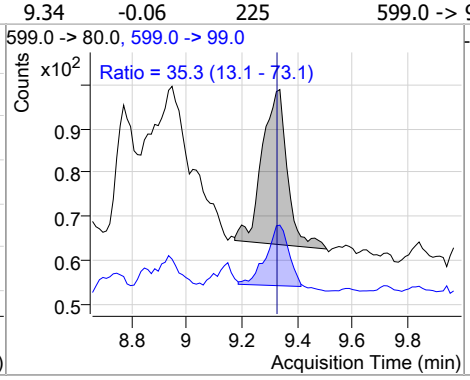


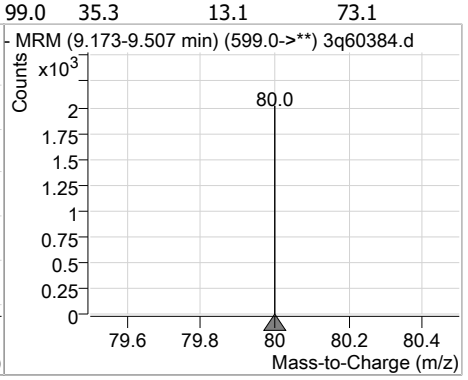


Perfluorinated Compounds by LC/MS/MS

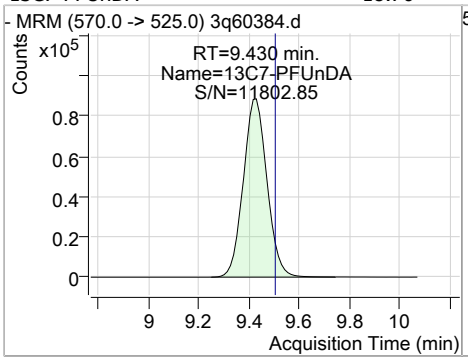
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.20	9.34	-0.06	225	599.0 -> 99.0	35.3	13.1	73.1

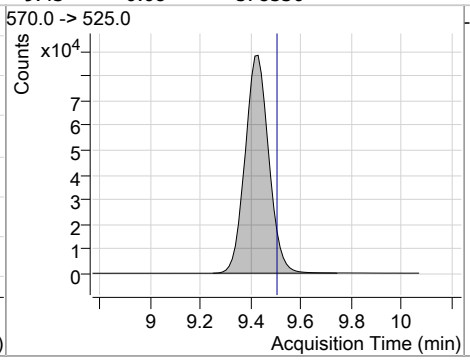


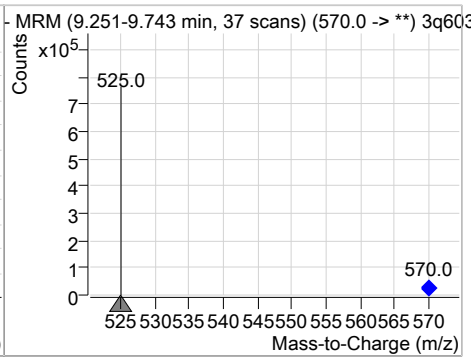




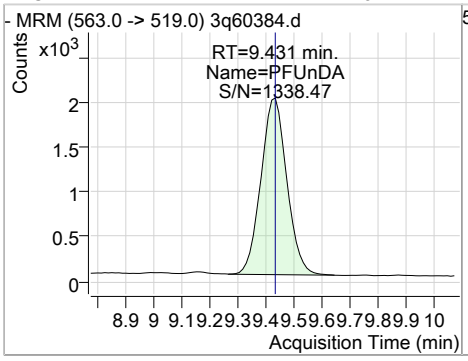
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.76	9.43	-0.08	578530				

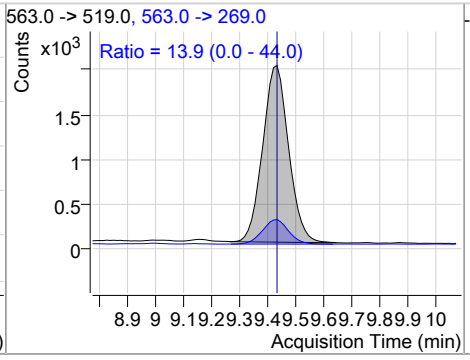


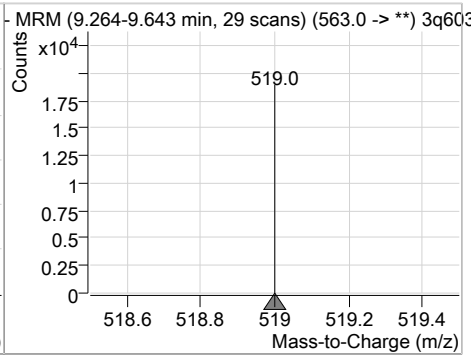




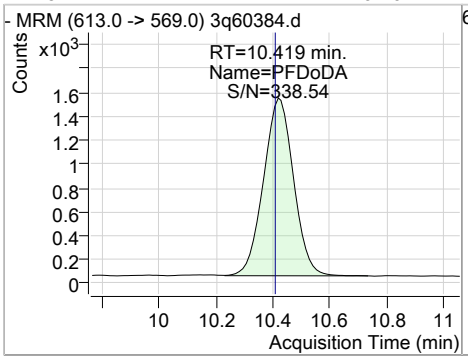
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.47	9.43	-0.08	12689	563.0 -> 269.0	13.9	0.0	44.0

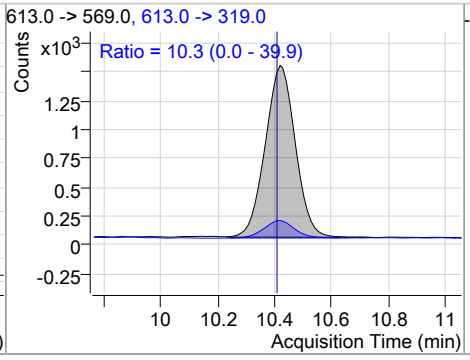


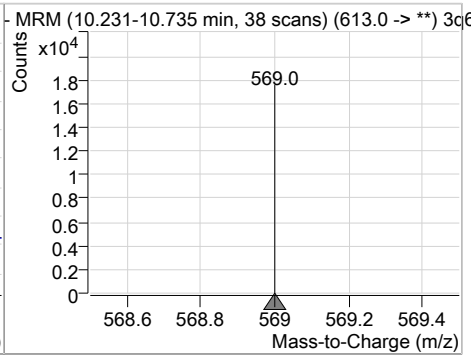




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.40	10.42	-0.08	10943	613.0 -> 319.0	10.3	0.0	39.9

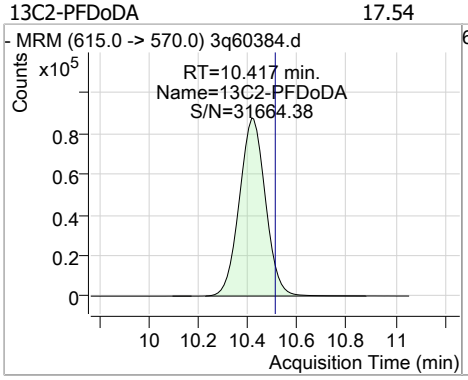


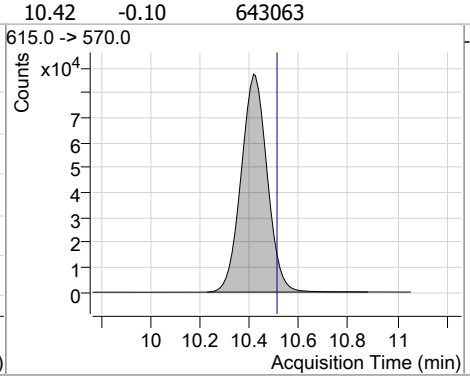


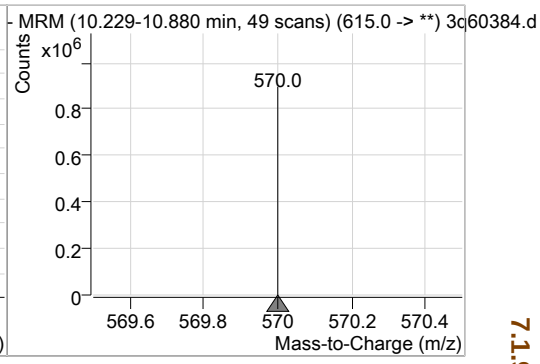


Perfluorinated Compounds by LC/MS/MS

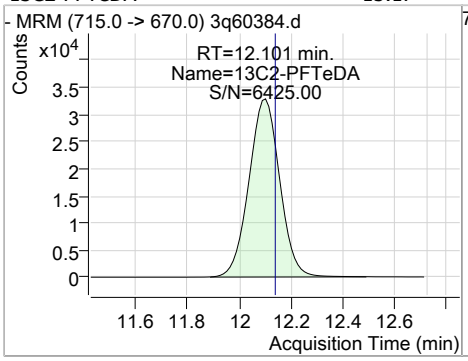
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.54	10.42	-0.10	643063				

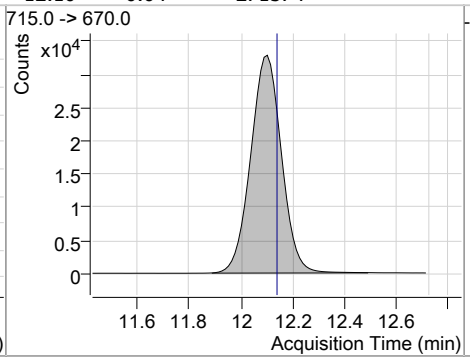


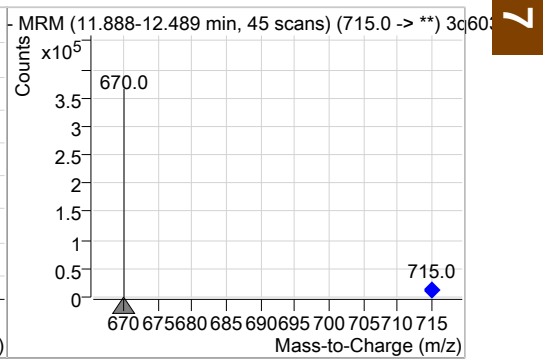




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.17	12.10	-0.04	271574				







Manual Integration Approval Summary

Sample Number: FA95502-6
Lab FileID: 3Q60384.D
Injection Time: 05/28/22 02:08
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:38 Martha Valls
Supervisor approved: 06/01/22 14:50 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.59	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.82	Split peak
Perfluoroheptanoic acid	375-85-9		6.69	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.71	Split peak
PFOSA	754-91-6		7.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.45	Split peak
Perfluorooctanoic acid	335-67-1		7.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.00	Split peak
Perfluorononanesulfonic acid	68259-12-1		8.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 14:50

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60385.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 2:27:27 AM
Sample Name : fa95502-6
Vial : P3-C4
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,20,water

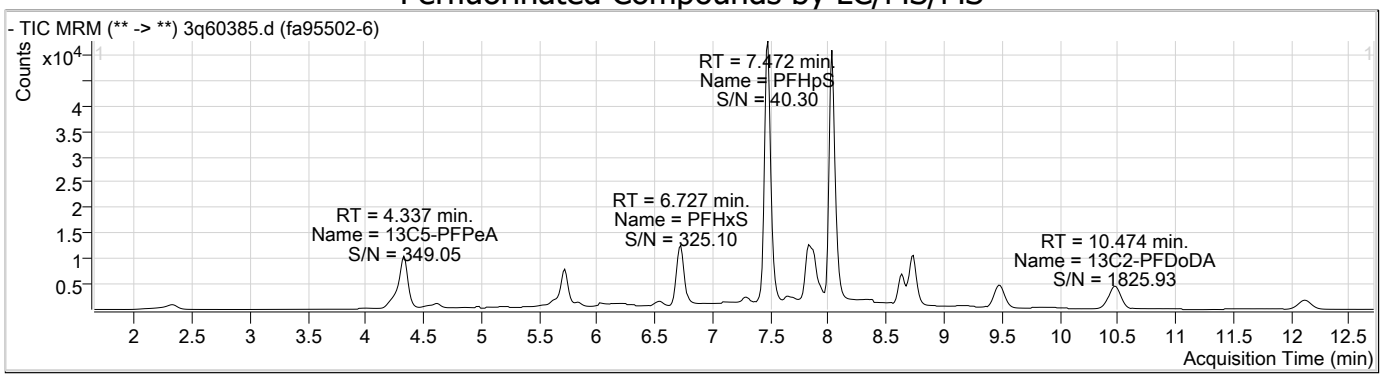
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	5744	20.00 µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	5434	20.00 µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	7416	20.00 µg/L	-0.013
M4-PFHpA	6.705	367.0 -> 322.0	9651	20.00 µg/L	-0.013
M8-PFOA	7.474	421.0 -> 376.0	12217	20.00 µg/L	-0.013
M9-PFNA	8.062	472.0 -> 427.0	14706	20.00 µg/L	-0.013
M6-PFDA	8.639	519.0 -> 474.0	22571	20.00 µg/L	0.000
M7-PFUnDA	9.480	570.0 -> 525.0	29367	20.00 µg/L	-0.025
M2-PFDoDA	10.474	615.0 -> 570.0	33087	20.00 µg/L	-0.038
M2-PFTeDA	12.114	715.0 -> 670.0	14592	20.00 µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	3070	20.00 µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	792	20.00 µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	987	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	1478	20.00 µg/L	0.000
M2-4:2FTS	5.621	329.0 -> 81.0	556	20.00 µg/L	-0.013
M2-6:2FTS	7.485	429.0 -> 81.0	1460	20.00 µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	2320	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	3413	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	1039	20.00 µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	306	20.00 µg/L	0.000
M5-EtFOSAA	8.016	589.0 -> 419.0	3416	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	556	0.99 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.0%	
13C2-6:2FTS	7.485	429.0 -> 81.0	1460	1.12 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.6%	
13C2-8:2FTS	8.739	529.0 -> 81.0	2320	0.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.9%	
13C2-PFDoDA	10.474	615.0 -> 570.0	33087	0.90 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%	
13C2-PFTeDA	12.114	715.0 -> 670.0	14592	0.82 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.1%	
13C3-PFBS	4.617	302.0 -> 99.0	792	1.00 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.0%	
13C3-PFHxS	6.738	402.0 -> 99.0	987	1.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.1%	
13C4-PFBA	2.327	217.0 -> 172.0	5744	0.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.8%	
13C4-PFHpA	6.705	367.0 -> 322.0	9651	0.96 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.8%	
13C5-PFHxA	5.727	318.0 -> 273.0	7416	0.94 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.7%	
13C5-PFPeA	4.337	268.0 -> 223.0	5434	0.94 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.7%	
13C6-PFDA	8.639	519.0 -> 474.0	22571	0.90 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

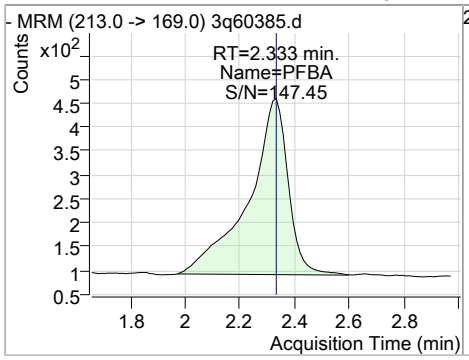
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%		
13C7-PFUnDA	9.480	570.0 -> 525.0	29367	0.95 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.8%		
13C8-FOSA	7.430	506.0 -> 78.0	3070	0.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.0%		
13C8-PFOA	7.474	421.0 -> 376.0	12217	0.97 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.8%		
13C8-PFOS	8.036	507.0 -> 99.0	1478	0.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.7%		
13C9-PFNA	8.062	472.0 -> 427.0	14706	0.91 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%		
d3-MeFOSAA	7.929	573.0 -> 419.0	3413	1.03 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.1%		
13C3-HFPO-DA	6.031	287.0 -> 169.0	1039	0.93 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.6%		
d3-MeFOSA	7.793	515.0 -> 169.0	306	0.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.2%		
d5-EtFOSAA	8.016	589.0 -> 419.0	3391	1.08 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.4%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	7.486	427.0 -> 407.0	98760	14.08 µg/L		100
8:2FTS	8.740	527.0 -> 507.0	24044	2.17 µg/L		99
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	7.432	498.0 -> 78.0	1751	0.62 µg/L	m	99
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	2.333	213.0 -> 169.0	3734	1.67 µg/L		100
PFBS	4.619	299.0 -> 80.0	2960	1.48 µg/L		98
PFDA	8.640	513.0 -> 469.0	2036	0.11 µg/L		98
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.707	363.0 -> 319.0	16847	1.19 µg/L	m	100
PFHpS	7.472	449.0 -> 80.0	2949	1.55 µg/L	m	97
PFHxA	5.728	313.0 -> 269.0	24228	3.91 µg/L		99
PFHxS	6.727	399.0 -> 80.0	23432	11.37 µg/L	m	98
PFNA	8.063	463.0 -> 419.0	2045	0.15 µg/L		90
PFNS	8.333	549.0 -> 80.0	534	0.30 µg/L	m	65
PFOA	7.475	413.0 -> 369.0	17078	1.50 µg/L	m	99
PFOS	8.036	499.0 -> 80.0	154457	66.78 µg/L	m	80
PFPeA	4.339	263.0 -> 219.0	56652	7.07 µg/L		100
PFPeS	5.832	349.0 -> 80.0	2635	1.97 µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		

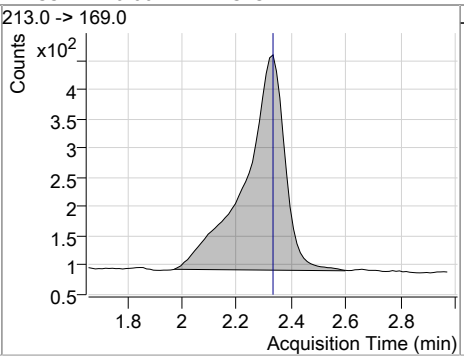
 # = Qualifier out of range, m = manually integrated, + = Area summed

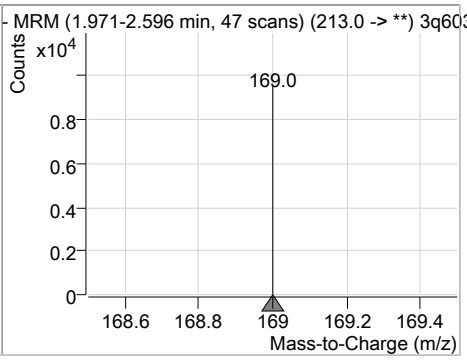
Perfluorinated Compounds by LC/MS/MS



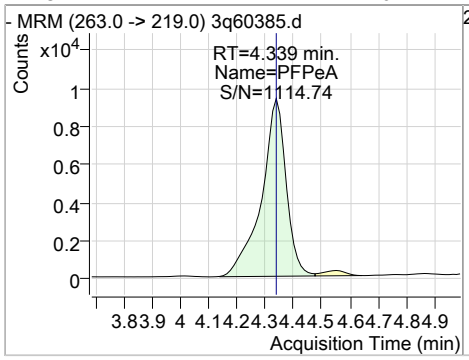
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.67	2.33	0.00	3734				

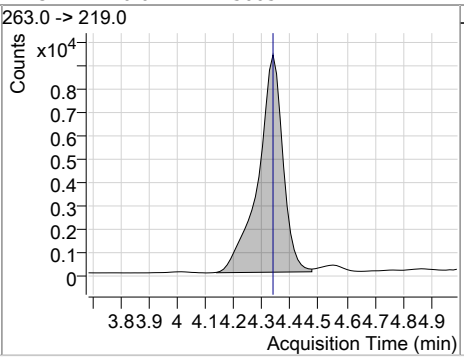


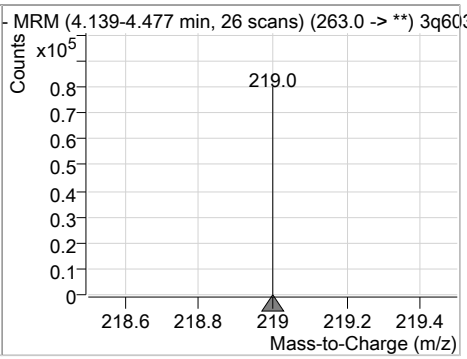




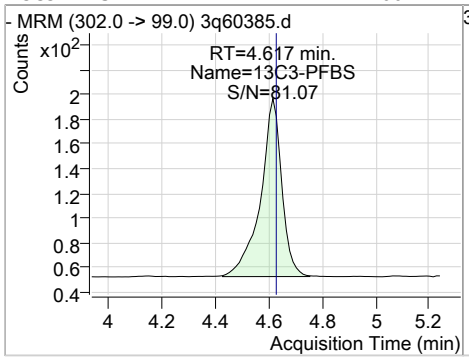
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	7.07	4.34	-0.01	56652				

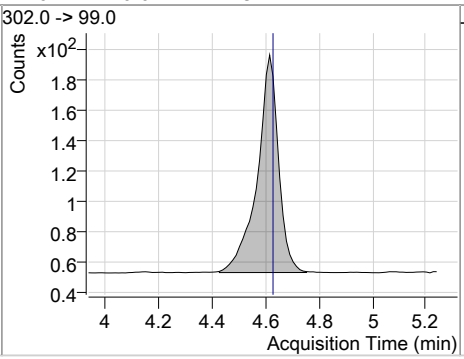


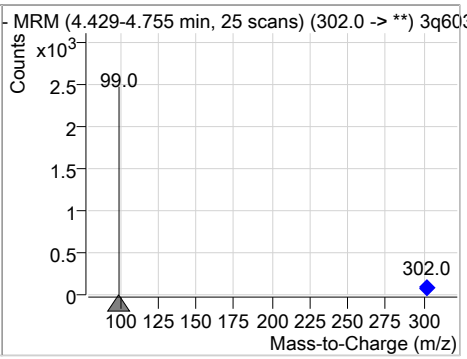




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.00	4.62	-0.01	792				

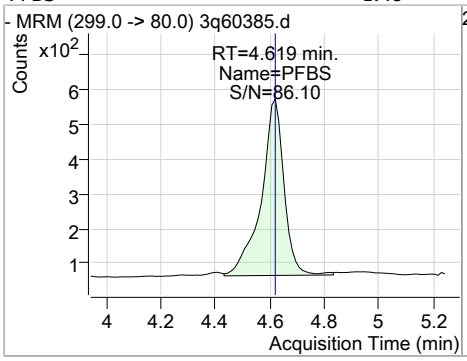


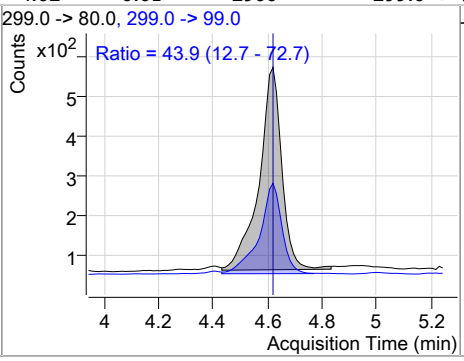


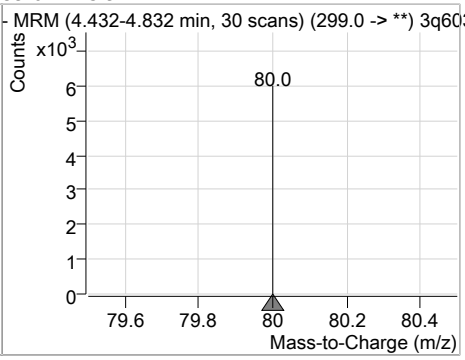


Perfluorinated Compounds by LC/MS/MS

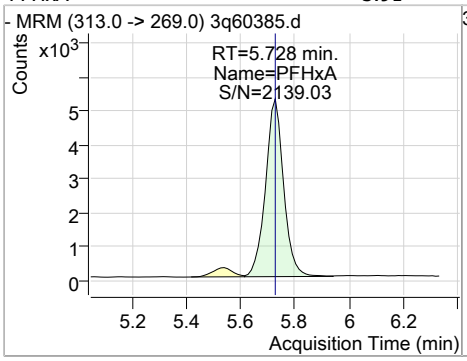
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.48	4.62	-0.01	2960	299.0 -> 99.0	43.9	12.7	72.7

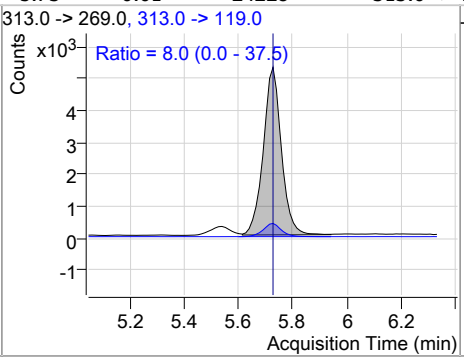


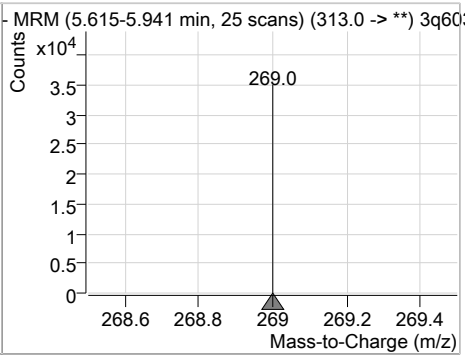




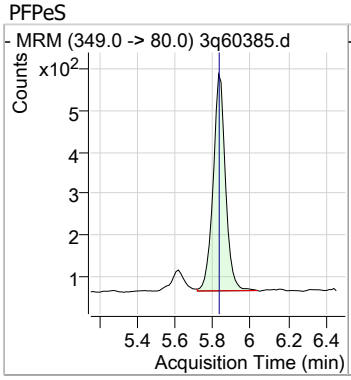
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.91	5.73	-0.01	24228	313.0 -> 119.0	8.0	0.0	37.5

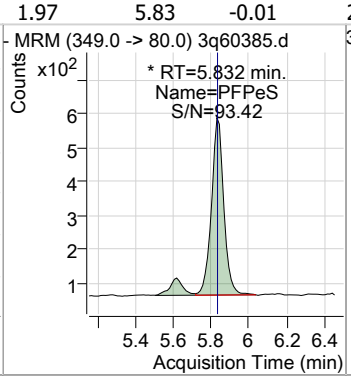


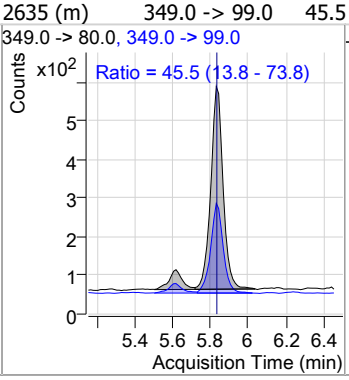


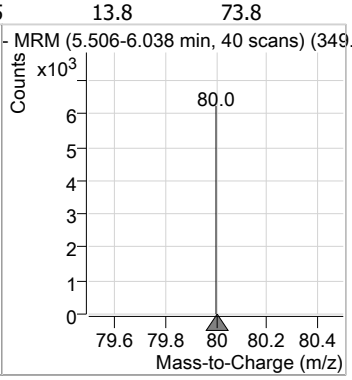


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.97	5.83	-0.01	2635 (m)	349.0 -> 99.0	45.5	13.8	73.8

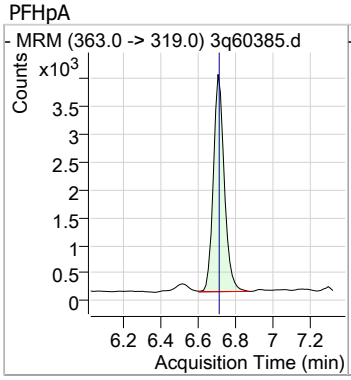


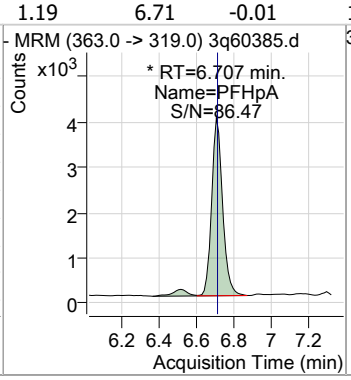


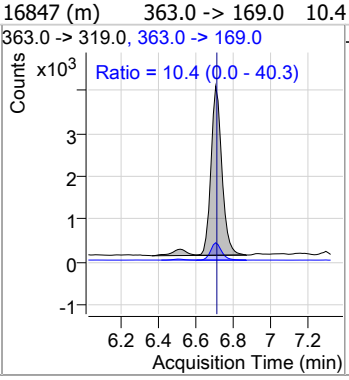


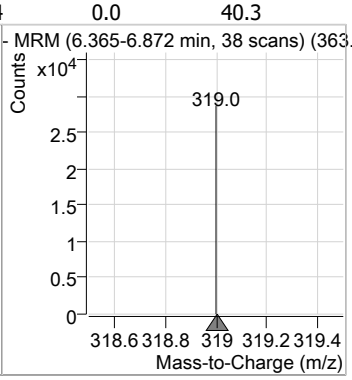


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.19	6.71	-0.01	16847 (m)	363.0 -> 169.0	10.4	0.0	40.3



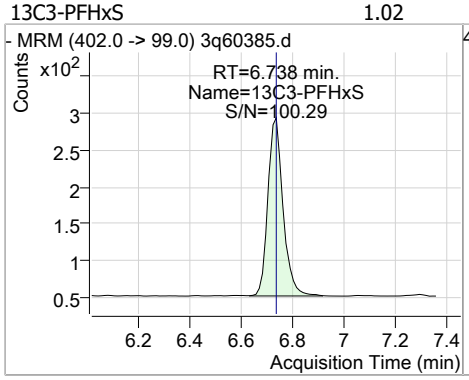


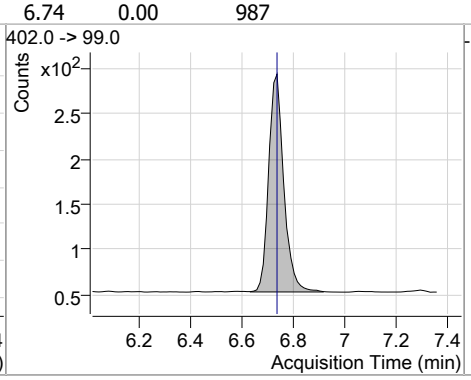


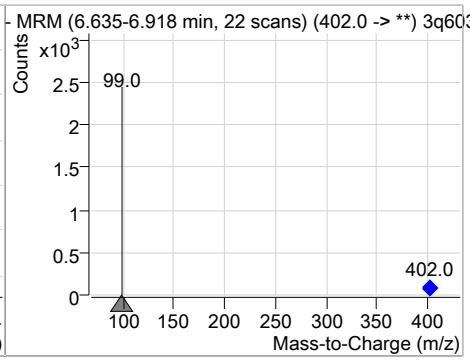


Perfluorinated Compounds by LC/MS/MS

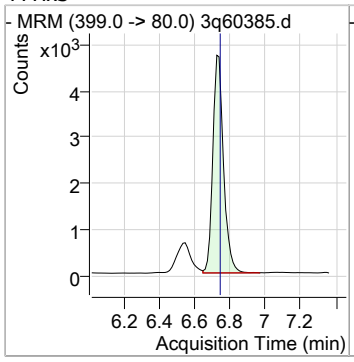
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.02	6.74	0.00	987				

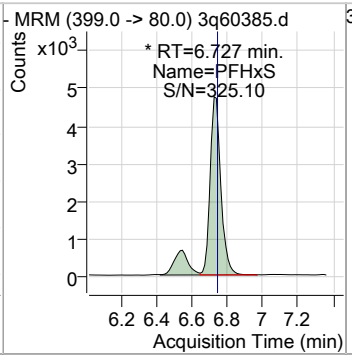


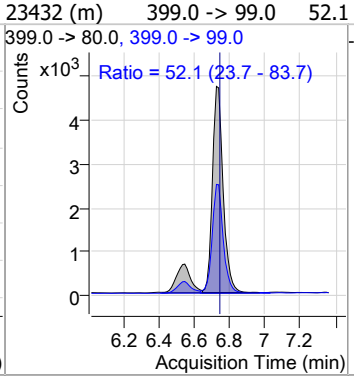


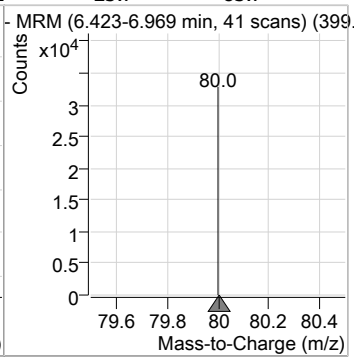


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.37	6.73	-0.01	23432 (m)	399.0 -> 99.0	52.1	23.7	83.7

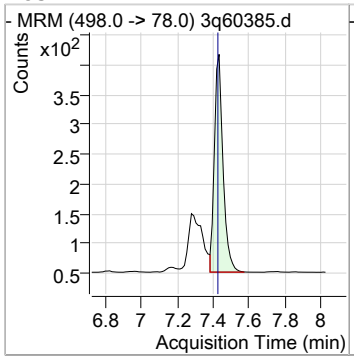


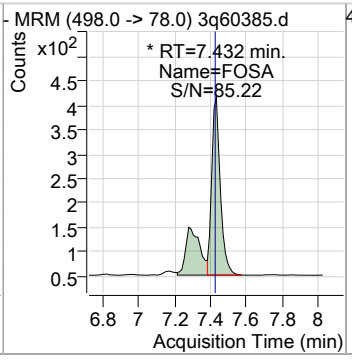


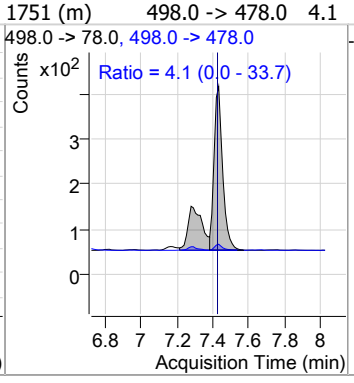


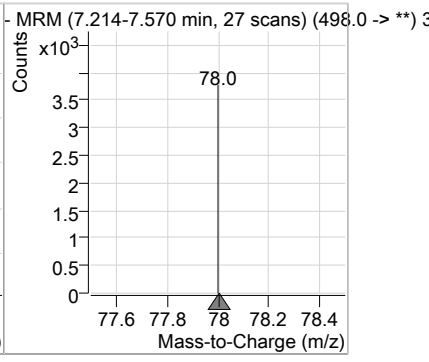


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.62	7.43	0.00	1751 (m)	498.0 -> 478.0	4.1	0.0	33.7

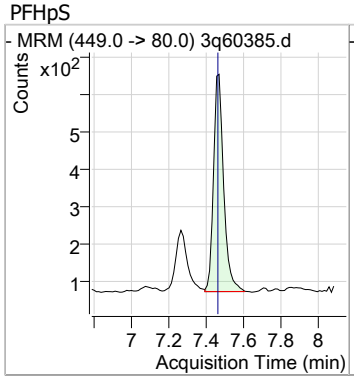


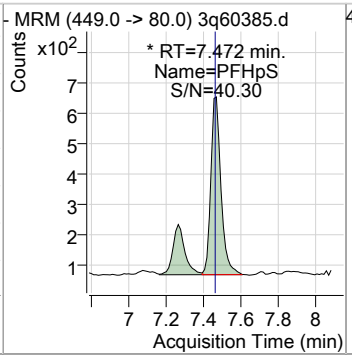


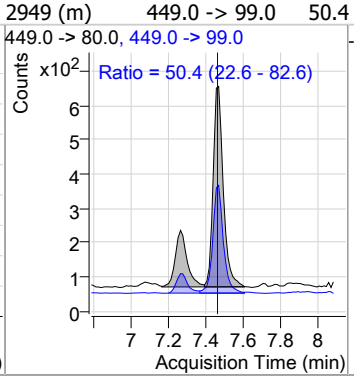


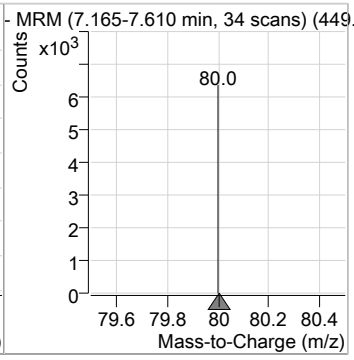


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.55	7.47	0.00	2949 (m)	449.0 -> 99.0	50.4	22.6	82.6



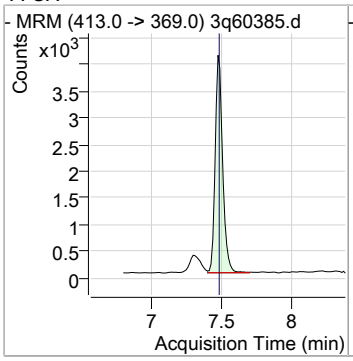


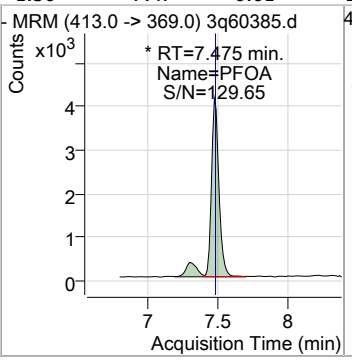


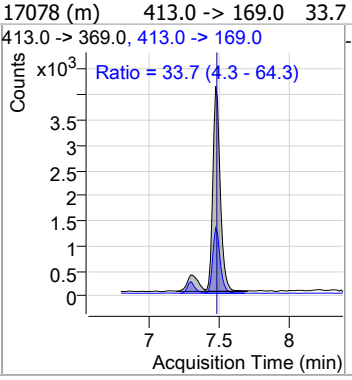


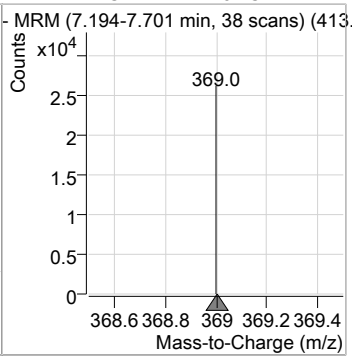
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.50	7.47	-0.01	17078 (m)	413.0 -> 169.0	33.7	4.3	64.3

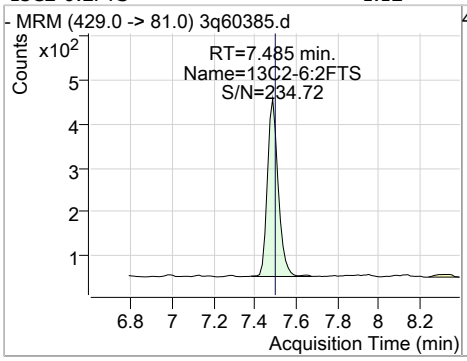


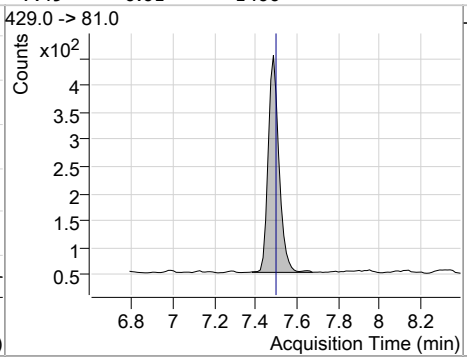


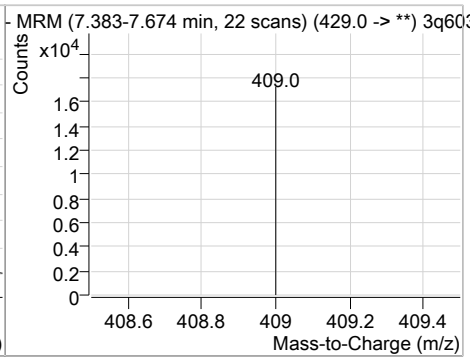




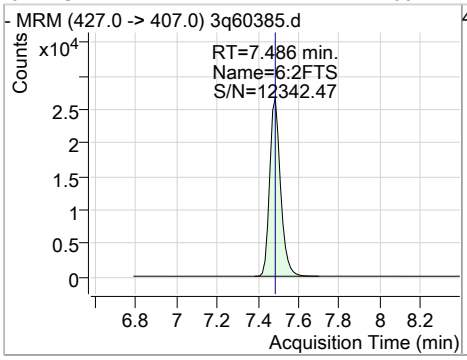
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	1.12	7.49	-0.01	1460				

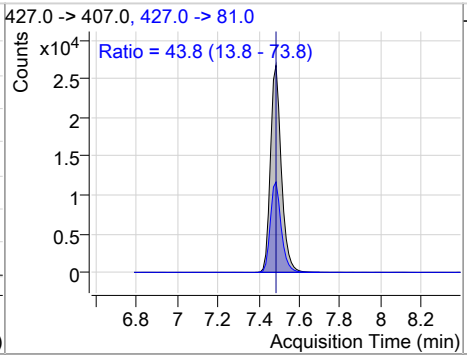


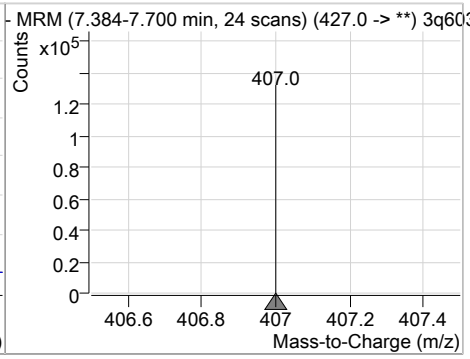




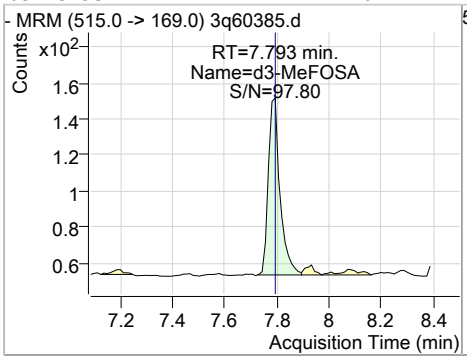
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	14.08	7.49	-0.01	98760	427.0 -> 81.0	43.8	13.8	73.8

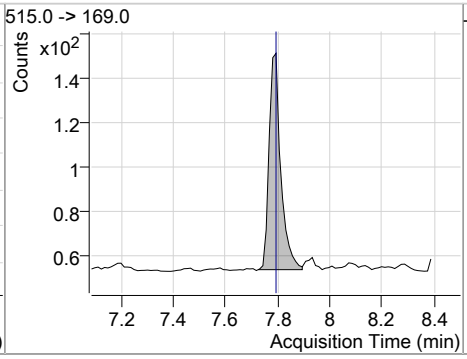


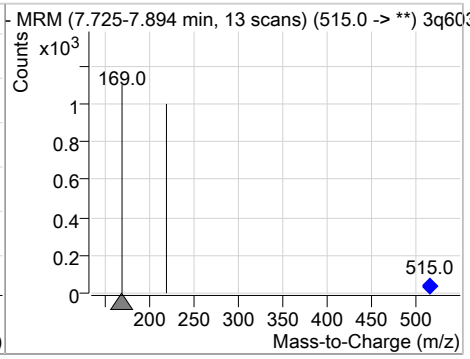




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.24	7.79	0.00	306				

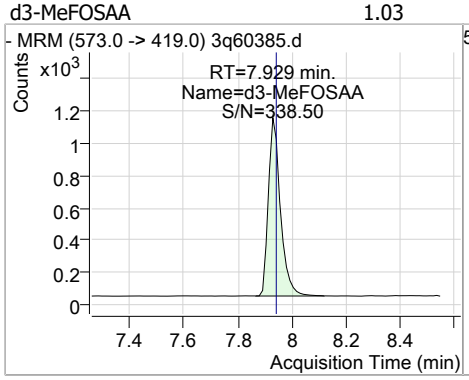


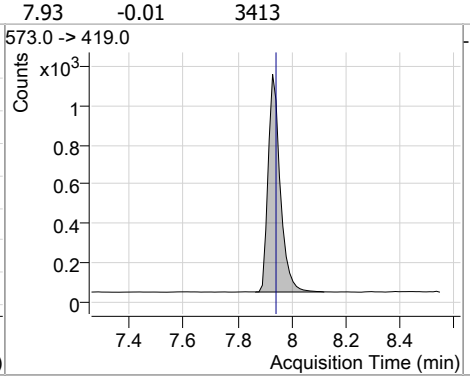


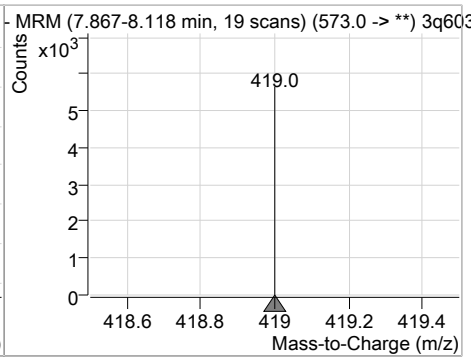


Perfluorinated Compounds by LC/MS/MS

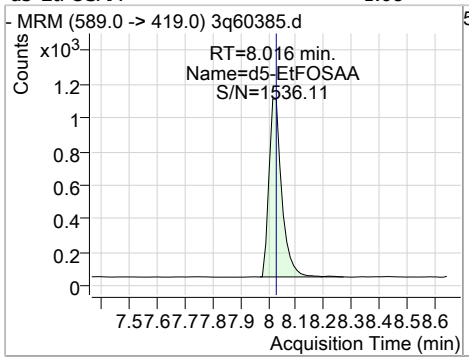
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.03	7.93	-0.01	3413				

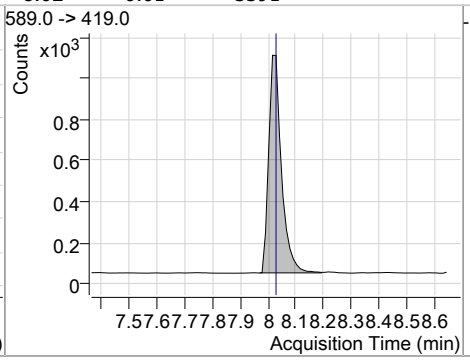


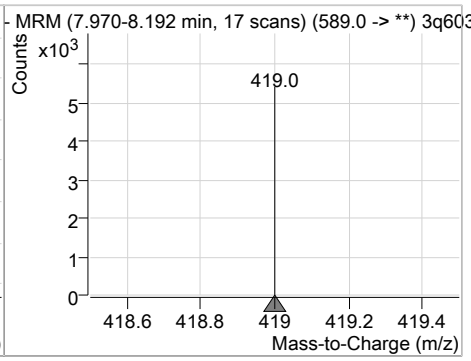




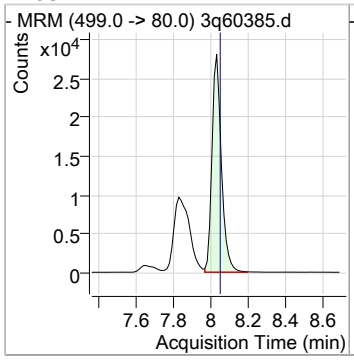
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.08	8.02	-0.01	3391				

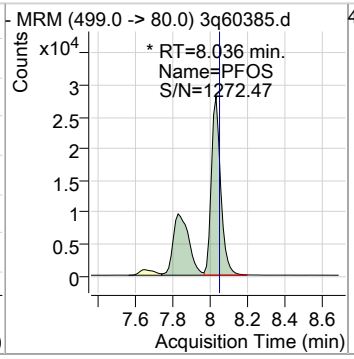


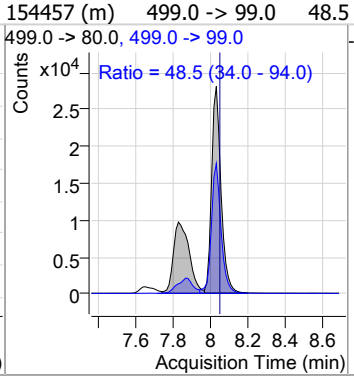


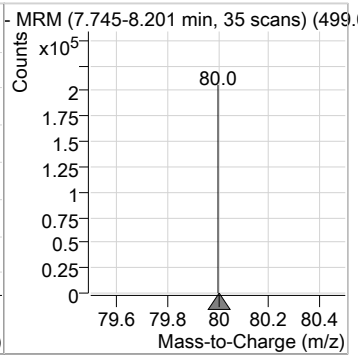


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	66.78	8.04	-0.01	154457 (m)	499.0 -> 99.0	48.5	34.0	94.0

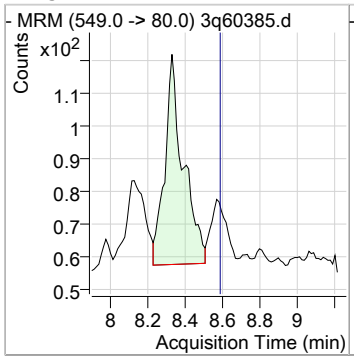


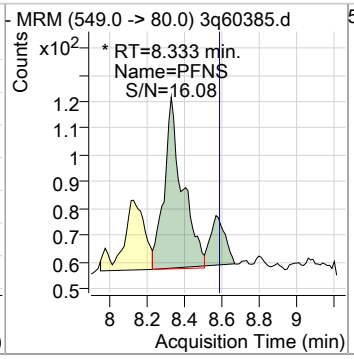


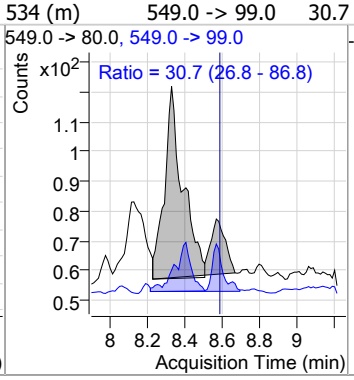


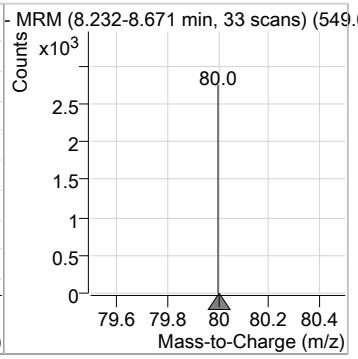


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.30	8.33	-0.25	534 (m)	549.0 -> 99.0	30.7	26.8	86.8



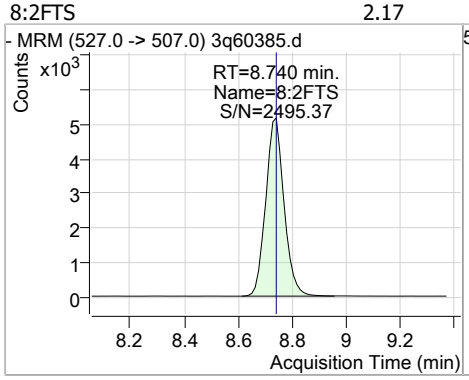


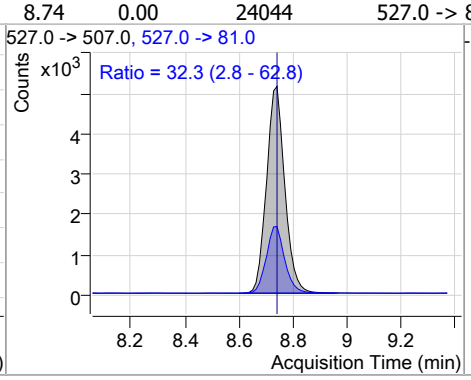


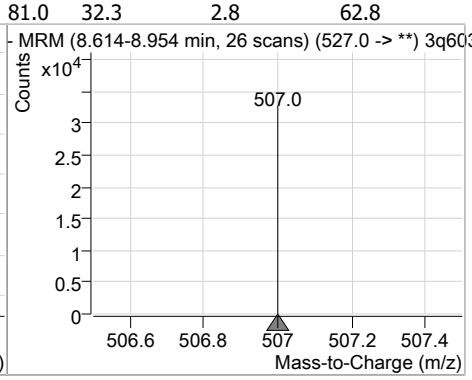


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.17	8.74	0.00	24044	527.0 -> 81.0	32.3	2.8	62.8







Manual Integration Approval Summary

Sample Number: FA95502-6
Lab FileID: 3Q60385.D
Injection Time: 05/28/22 02:27
Method: EPA 537M BY ID
Analyst approved: 06/01/22 14:26 Martha Valls
Supervisor approved: 06/01/22 14:50 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.83	Split peak
Perfluoroheptanoic acid	375-85-9		6.71	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.73	Split peak
PFOSA	754-91-6		7.43	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.47	Split peak
Perfluorooctanoic acid	335-67-1		7.47	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak
Perfluorononanesulfonic acid	68259-12-1		8.33	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:46

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q610.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 2:30:31 AM
Sample Name : fa95502-7
Vial : P2-B1
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91243,S6Q11,120,,,1.0,1,water

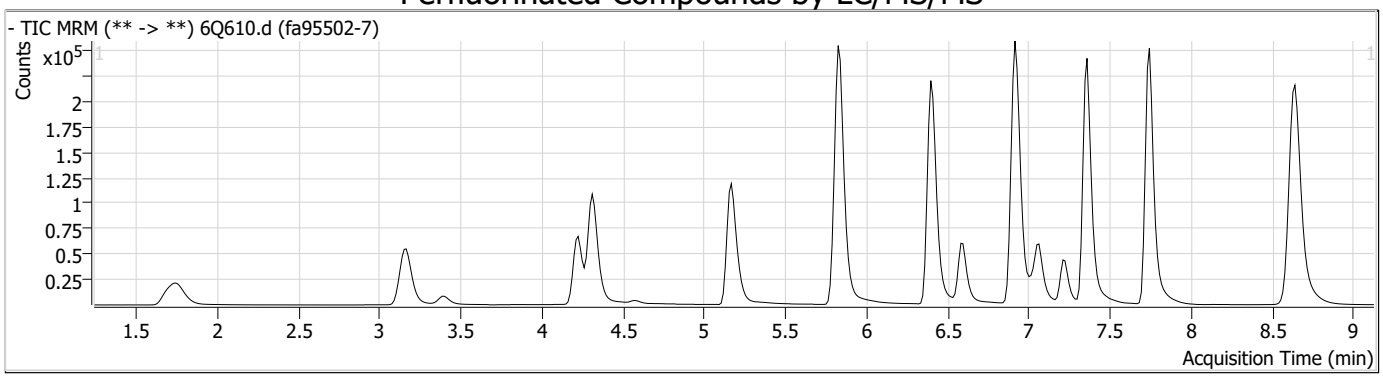
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	179638	20.00 µg/L	0.000
M5-PFPeA	3.168	268.0 -> 223.0	298566	20.00 µg/L	0.000
M5-PFHxA	4.314	318.0 -> 273.0	456114	20.00 µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	491884	20.00 µg/L	0.000
M8-PFOA	5.844	421.0 -> 376.0	778826	20.00 µg/L	0.000
M9-PFNA	6.404	472.0 -> 427.0	873017	20.00 µg/L	-0.001
M6-PFDA	6.920	519.0 -> 474.0	801451	20.00 µg/L	0.012
M7-PFUnDA	7.362	570.0 -> 525.0	911377	20.00 µg/L	0.012
M2-PFDoDA	7.746	615.0 -> 570.0	955974	20.00 µg/L	0.013
M2-PFTeDA	8.639	715.0 -> 670.0	1181500	20.00 µg/L	0.012
M8-FOSA	6.588	506.0 -> 78.0	214621	20.00 µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	37959	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	33062	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	44439	20.00 µg/L	-0.002
M2-4:2FTS	4.222	329.0 -> 309.0	293591	20.00 µg/L	0.000
M2-6:2FTS	5.816	429.0 -> 409.0	309954	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	276962	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	181466	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	11555	20.00 µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	51229	20.00 µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	155175	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.222	329.0 -> 309.0	293591	19.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C2-6:2FTS	5.816	429.0 -> 409.0	309954	18.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
13C2-8:2FTS	6.931	529.0 -> 509.0	276962	22.52 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C2-PFDoDA	7.746	615.0 -> 570.0	955974	20.60 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C2-PFTeDA	8.639	715.0 -> 670.0	1181500	22.02 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C3-PFBS	3.385	302.0 -> 99.0	37959	21.52 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C3-PFHxS	5.202	402.0 -> 99.0	33062	20.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFBA	1.737	217.0 -> 172.0	179638	22.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%	
13C4-PFHpA	5.172	367.0 -> 322.0	491884	21.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C5-PFHxA	4.314	318.0 -> 273.0	456114	21.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C5-PFPeA	3.168	268.0 -> 223.0	298566	21.48 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%	
13C6-PFDA	6.920	519.0 -> 474.0	801451	21.85 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

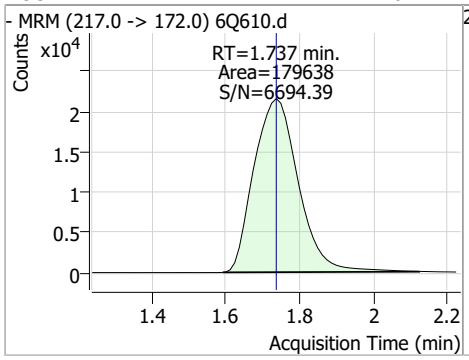
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C7-PFUnDA	7.362	570.0 -> 525.0	911377	21.05 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C8-FOSA	6.588	506.0 -> 78.0	214621	20.39 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-PFOA	5.844	421.0 -> 376.0	778826	20.90 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C8-PFOS	6.386	507.0 -> 99.0	44439	20.62 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C9-PFNA	6.404	472.0 -> 427.0	873017	20.18 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSAA	7.064	573.0 -> 419.0	181466	19.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	11567	19.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
d3-MeFOSA	7.033	515.0 -> 169.0	51229	19.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d5-EtFOSAA	7.211	589.0 -> 419.0	155182	18.86 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	6.590	498.0 -> 78.0	607	0.06 µg/L		87
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	6.388	499.0 -> 80.0	226	0.05 µg/L	m	75
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		

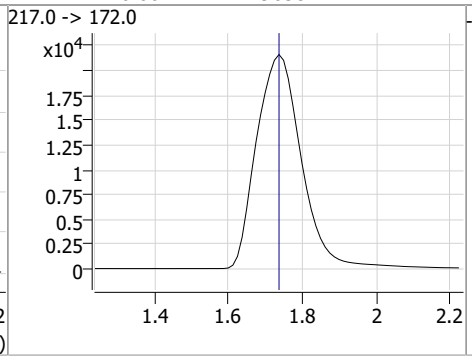
 # = Qualifier out of range, m = manually integrated, + = Area summed

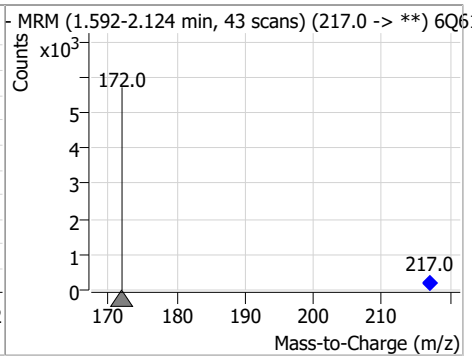
Perfluorinated Compounds by LC/MS/MS



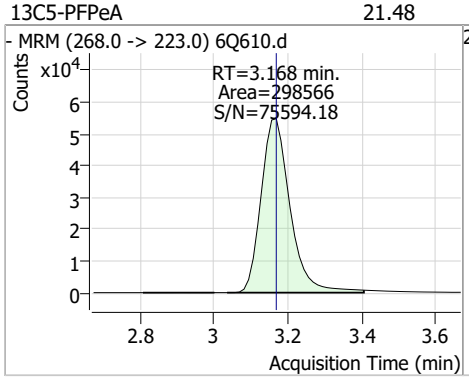
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.02	1.74	0.00	179638				

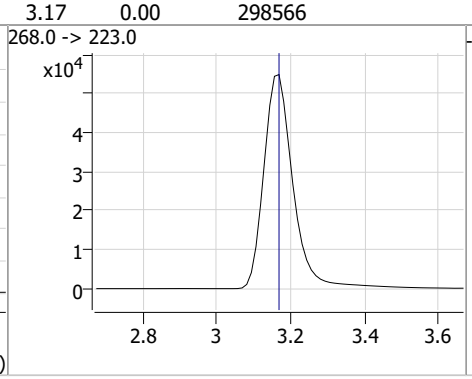


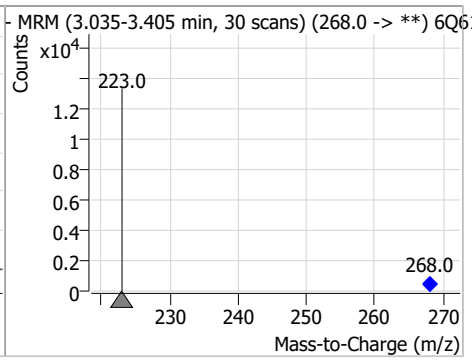




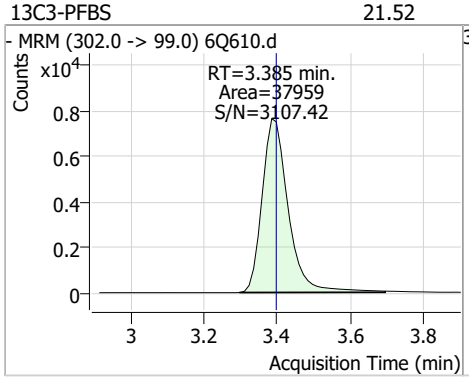
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.48	3.17	0.00	298566				

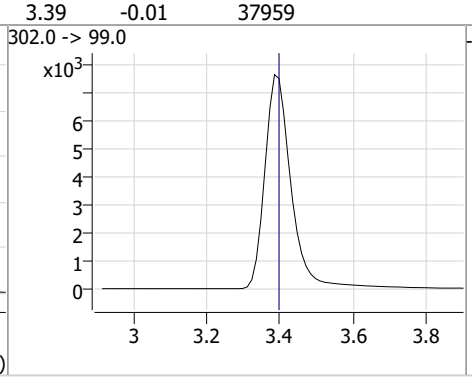


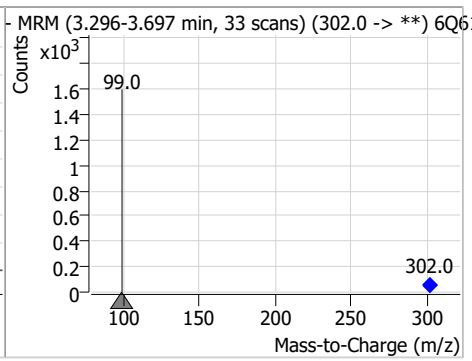




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.52	3.39	-0.01	37959				

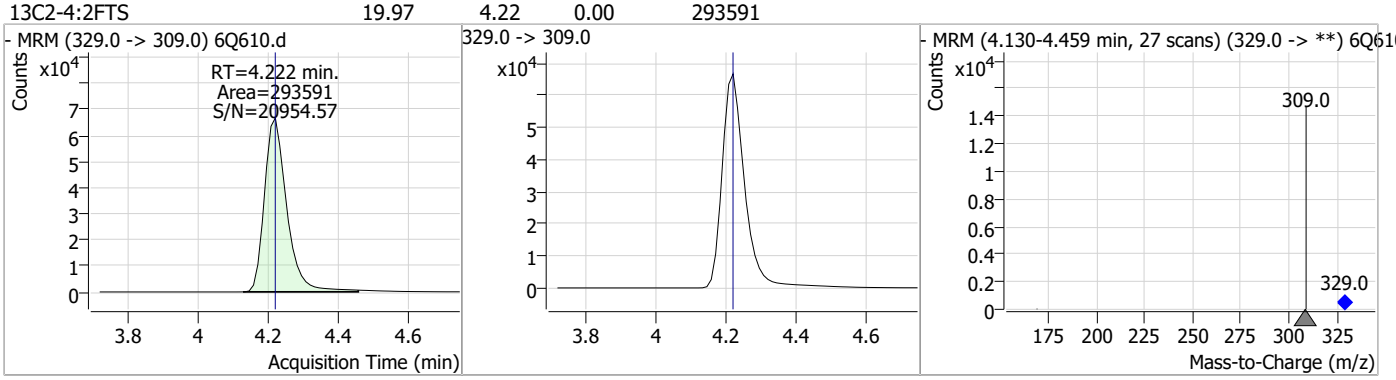




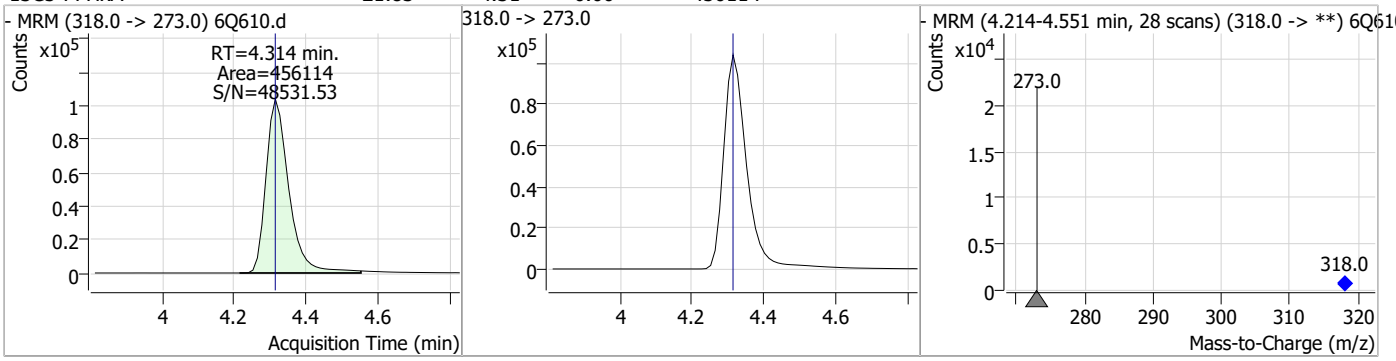


Perfluorinated Compounds by LC/MS/MS

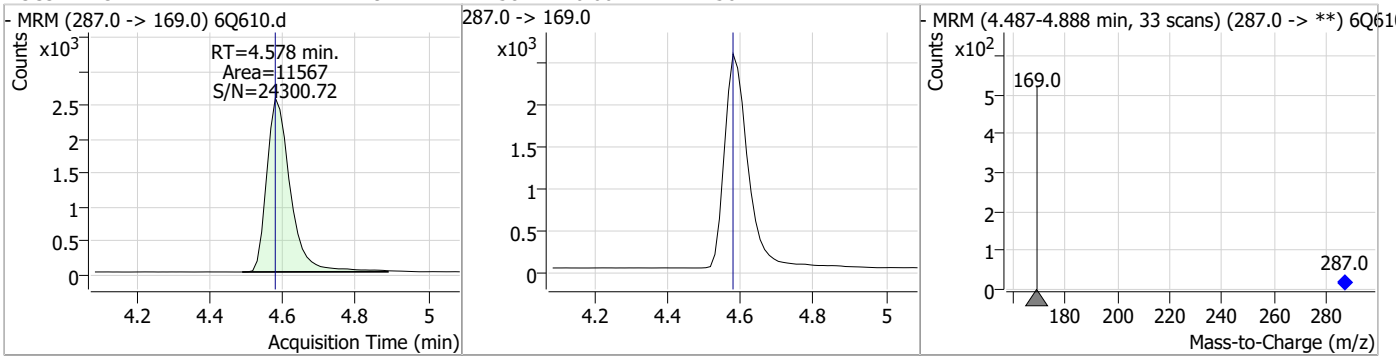
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.97	4.22	0.00	293591				



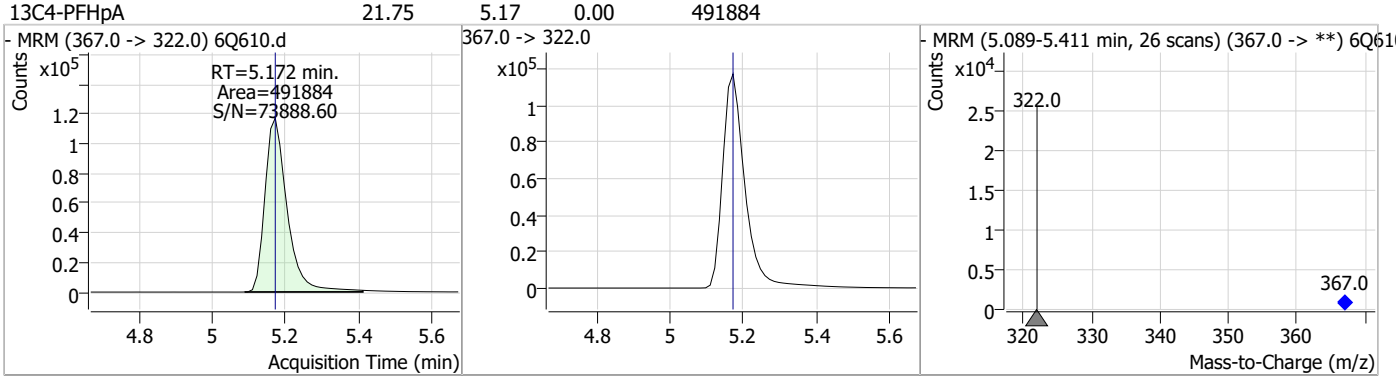
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.83	4.31	0.00	456114				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.47	4.58	0.00	11567				

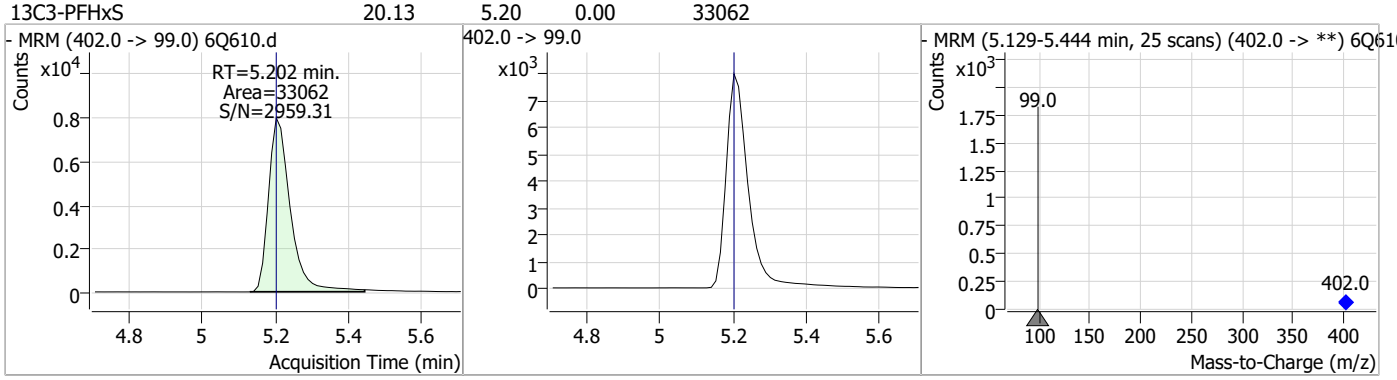


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.75	5.17	0.00	491884				

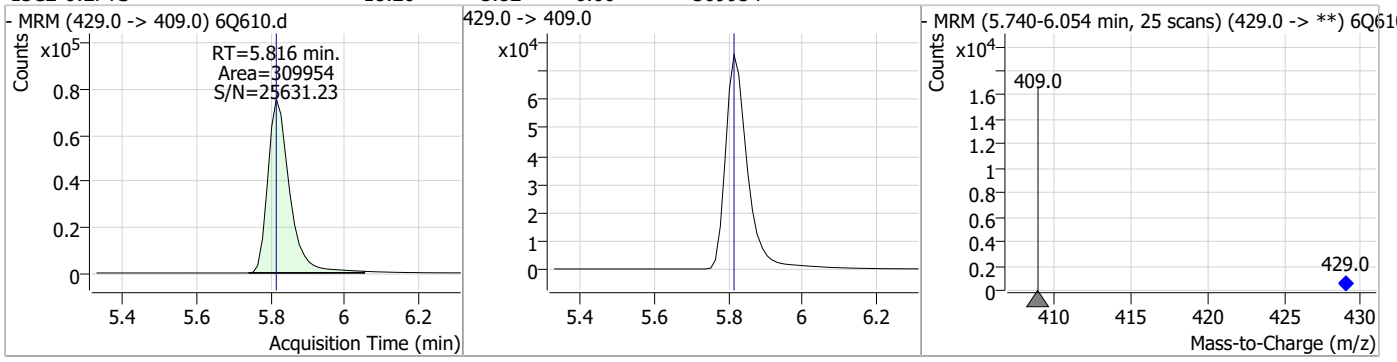


Perfluorinated Compounds by LC/MS/MS

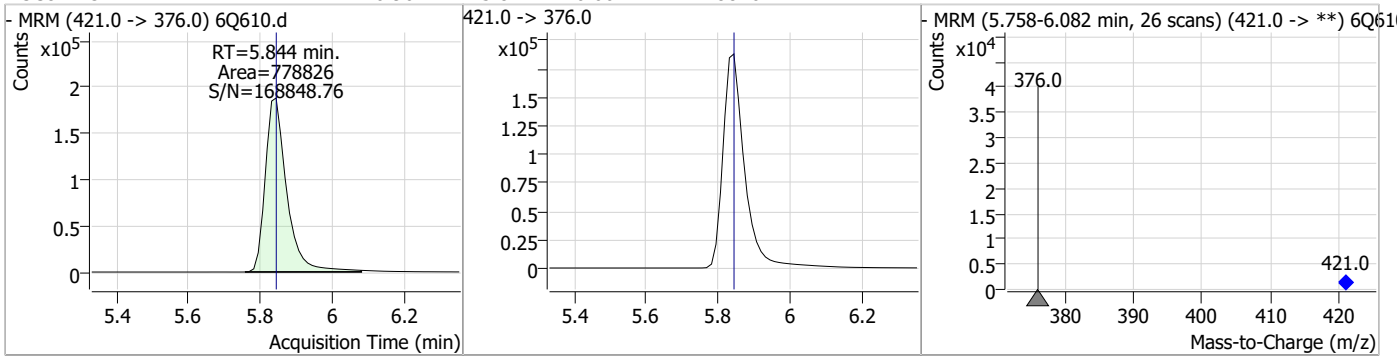
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.13	5.20	0.00	33062				



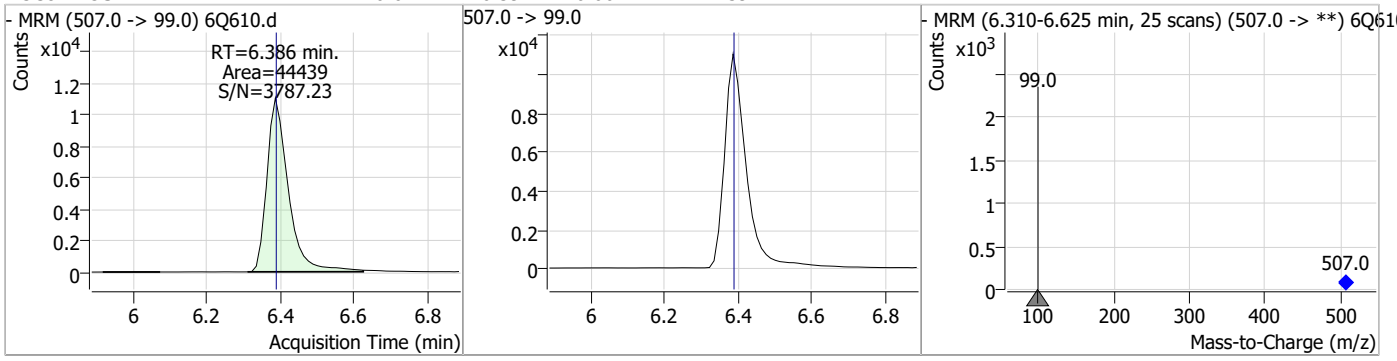
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.20	5.82	0.00	309954				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.90	5.84	0.00	778826				

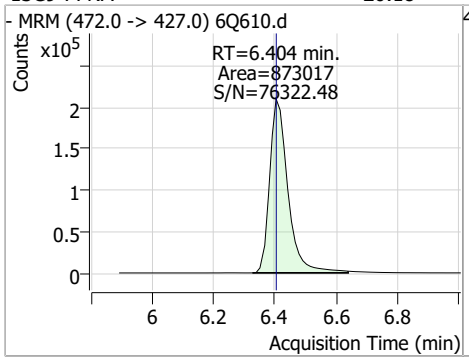


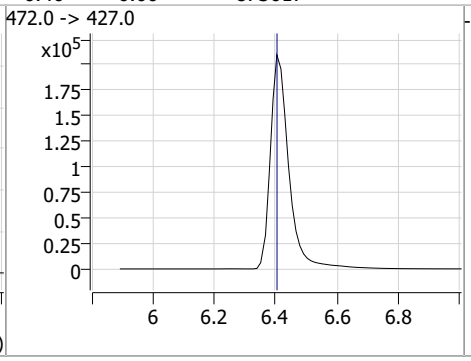
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.62	6.39	0.00	44439				

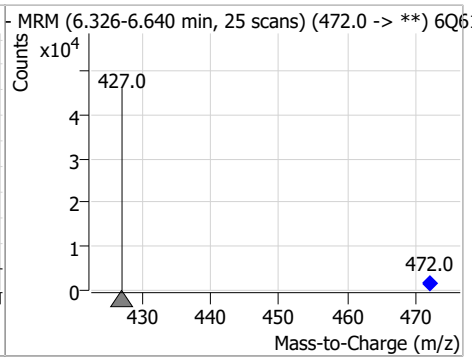


Perfluorinated Compounds by LC/MS/MS

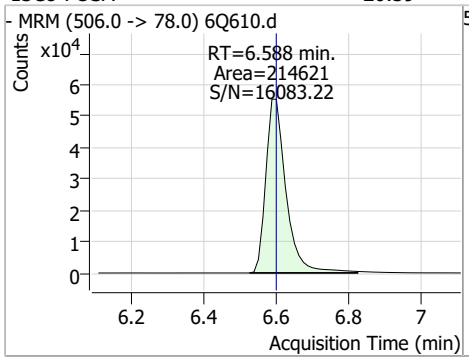
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.18	6.40	0.00	873017				

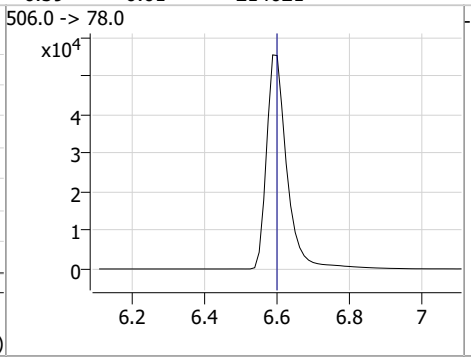


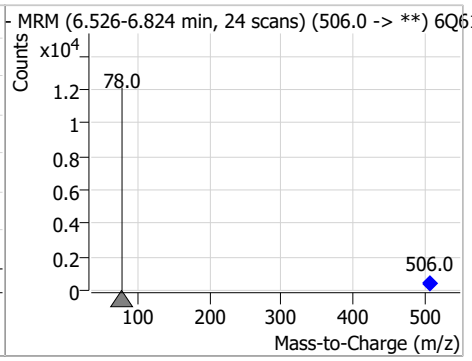




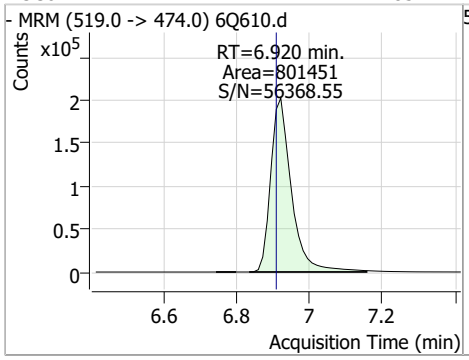
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.39	6.59	-0.01	214621				

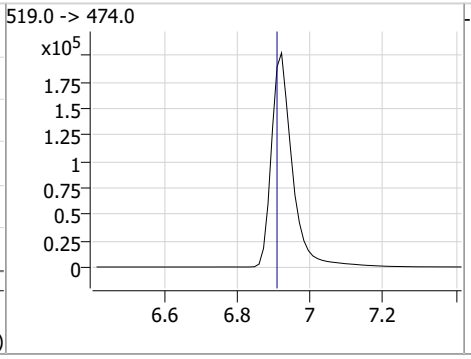


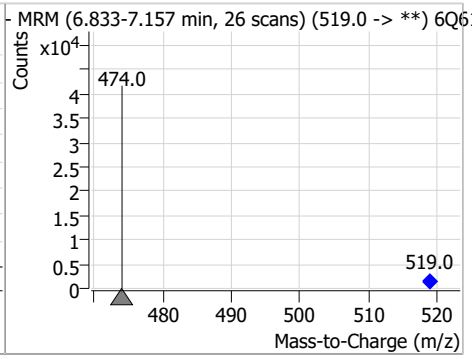




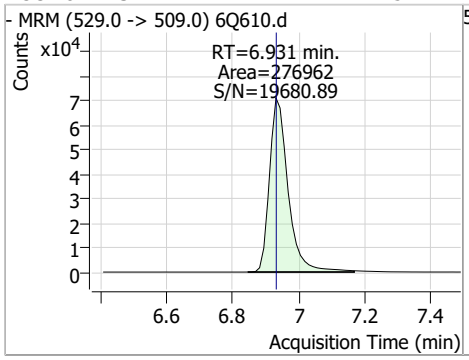
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.85	6.92	0.01	801451				

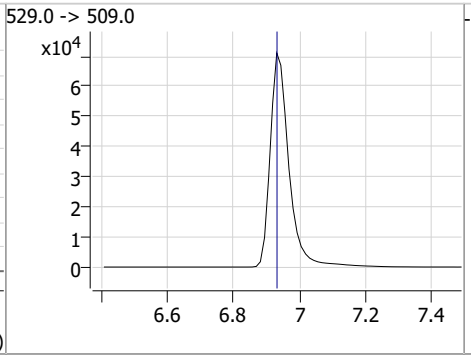


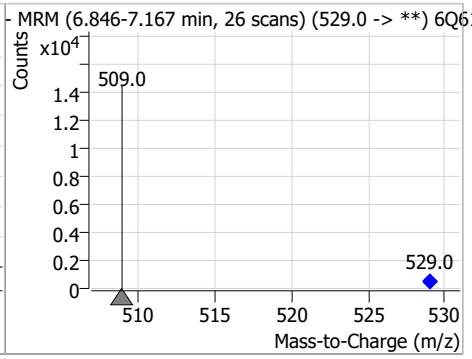




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.52	6.93	0.00	276962				

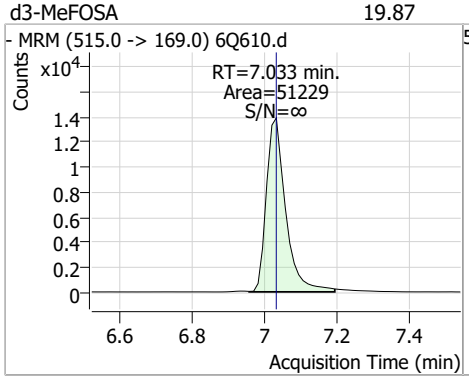


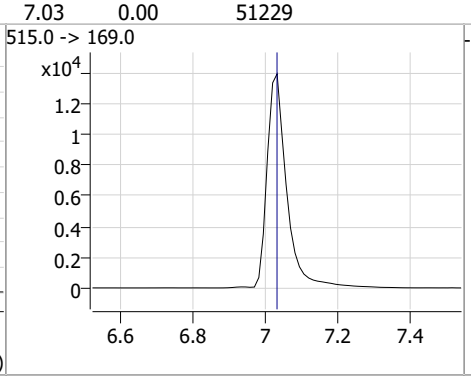


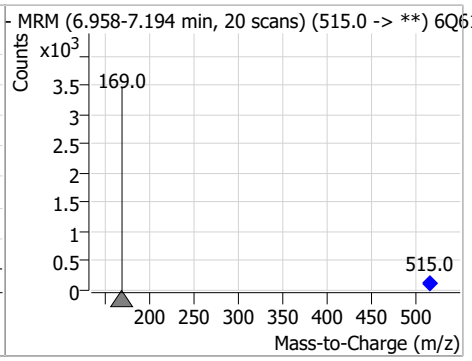


Perfluorinated Compounds by LC/MS/MS

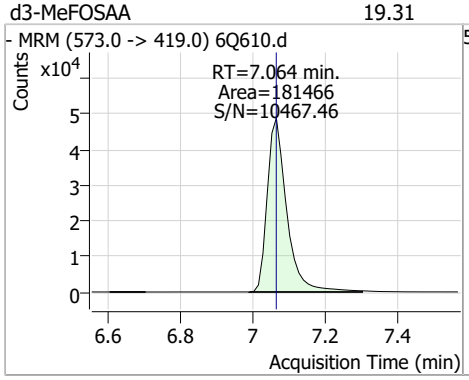
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.87	7.03	0.00	51229				

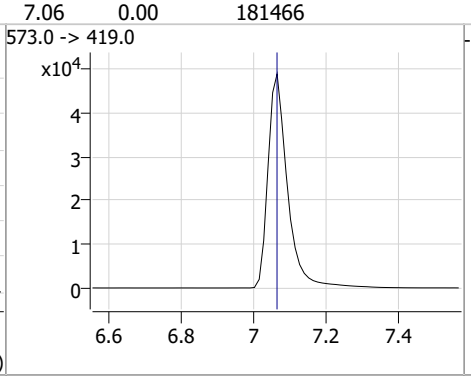


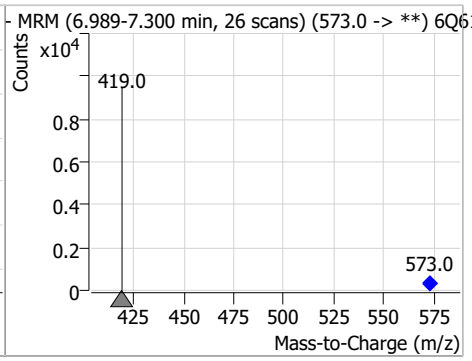




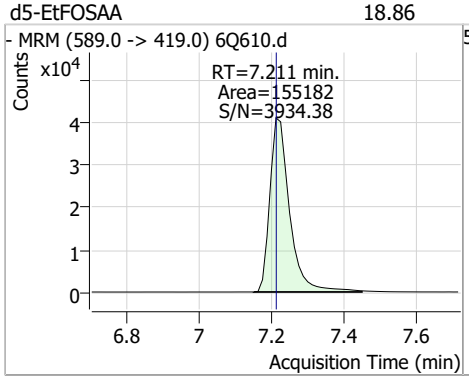
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.31	7.06	0.00	181466				

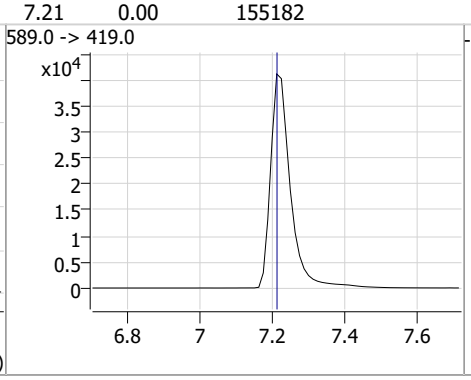


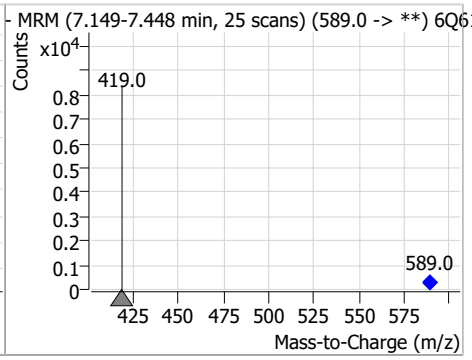




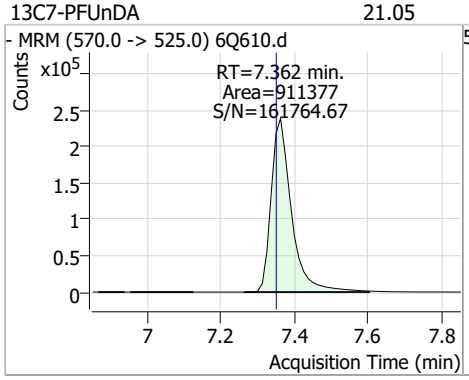
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.86	7.21	0.00	155182				

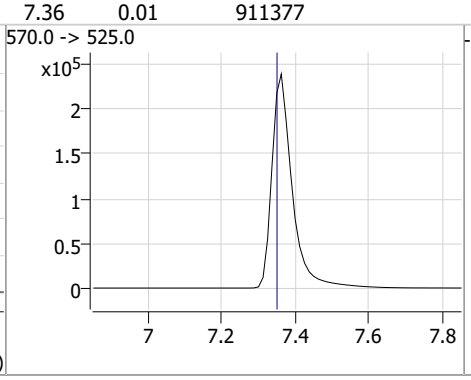


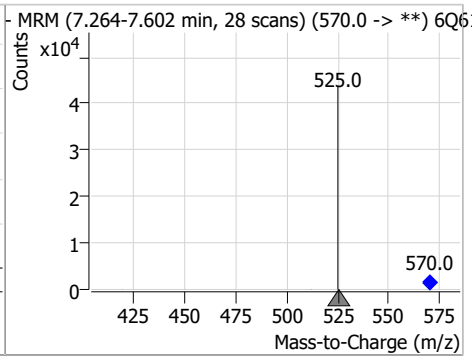




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.05	7.36	0.01	911377				

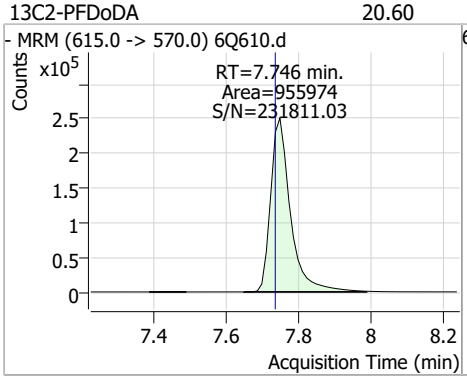


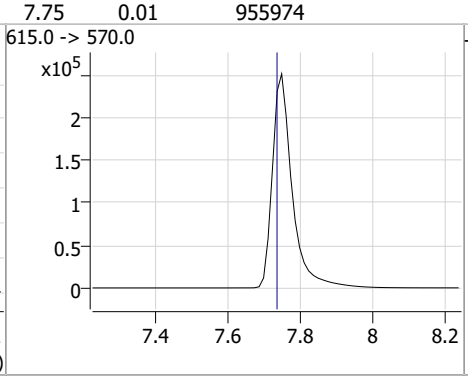


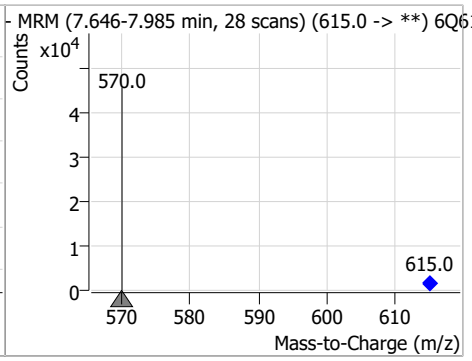


Perfluorinated Compounds by LC/MS/MS

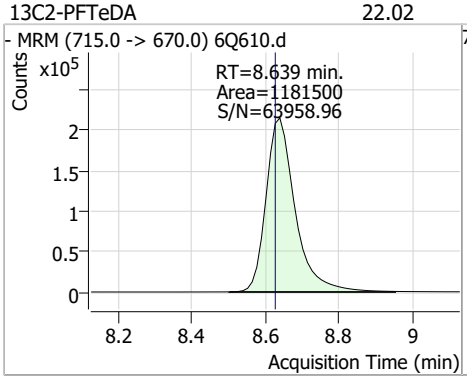
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.60	7.75	0.01	955974				

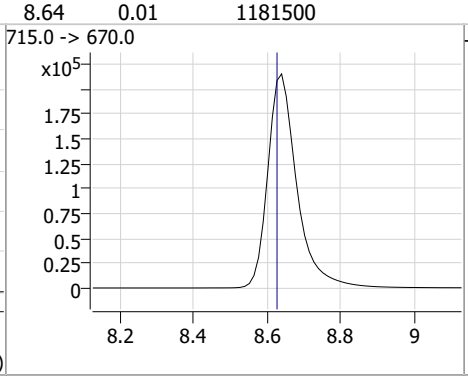


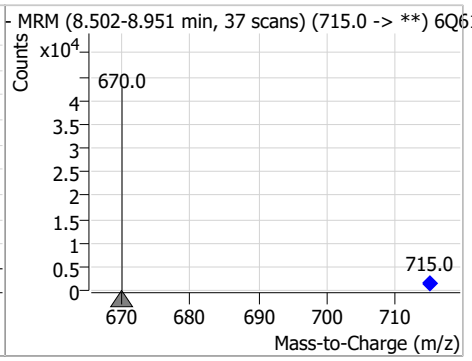




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.02	8.64	0.01	1181500				







Manual Integration Approval Summary

Sample Number: FA95502-7
Lab FileID: 6Q610.D
Injection Time: 05/27/22 02:30
Method: EPA 537M BY ID
Analyst approved: 05/27/22 11:25 Natasha Gumtie
Supervisor approved: 05/27/22 12:46 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.39	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:46

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q611.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 2:45:33 AM
Sample Name : fa95502-8
Vial : P2-B2
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91243,S6Q11,120,,,1.0,1,water

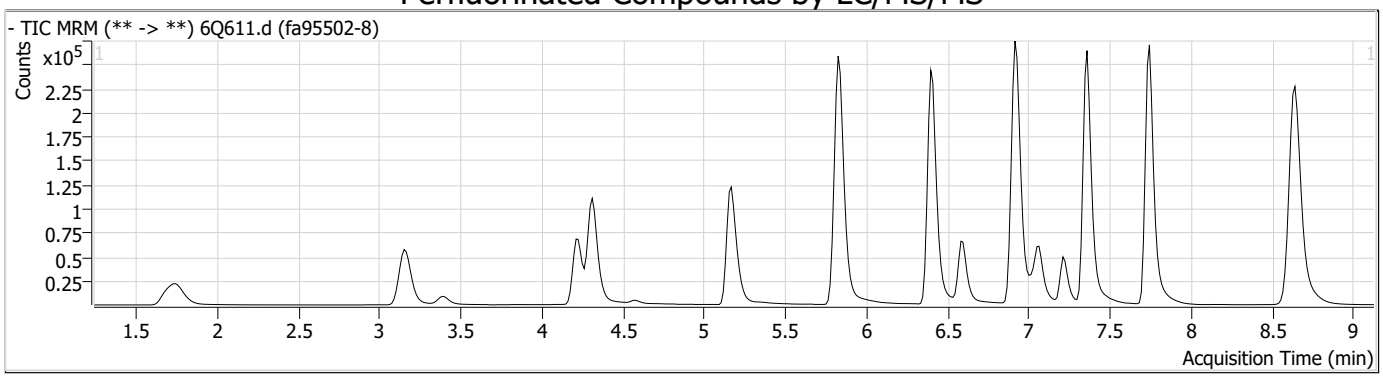
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	187797	20.00 µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	315502	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	467472	20.00 µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	513170	20.00 µg/L	0.000
M8-PFOA	5.844	421.0 -> 376.0	796235	20.00 µg/L	0.000
M9-PFNA	6.404	472.0 -> 427.0	951573	20.00 µg/L	-0.001
M6-PFDA	6.920	519.0 -> 474.0	853872	20.00 µg/L	0.012
M7-PFUnDA	7.362	570.0 -> 525.0	998599	20.00 µg/L	0.012
M2-PFDoDA	7.746	615.0 -> 570.0	1030710	20.00 µg/L	0.013
M2-PFTeDA	8.639	715.0 -> 670.0	1243324	20.00 µg/L	0.012
M8-FOSA	6.588	506.0 -> 78.0	234291	20.00 µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	39810	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	35836	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	47809	20.00 µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	308801	20.00 µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	328003	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	296744	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	188877	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12809	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	52073	20.00 µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	167997	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.210	329.0 -> 309.0	308801	21.00 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C2-6:2FTS	5.816	429.0 -> 409.0	328003	19.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%	
13C2-8:2FTS	6.931	529.0 -> 509.0	296744	24.12 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%	
13C2-PFDoDA	7.746	615.0 -> 570.0	1030710	22.22 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C2-PFTeDA	8.639	715.0 -> 670.0	1243324	23.17 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.8%	
13C3-PFBS	3.385	302.0 -> 99.0	39810	22.57 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%	
13C3-PFHxS	5.202	402.0 -> 99.0	35836	21.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C4-PFBA	1.737	217.0 -> 172.0	187797	23.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.1%	
13C4-PFHpA	5.172	367.0 -> 322.0	513170	22.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%	
13C5-PFHxA	4.314	318.0 -> 273.0	467472	22.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%	
13C5-PFPeA	3.155	268.0 -> 223.0	315502	22.69 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%	
13C6-PFDA	6.920	519.0 -> 474.0	853872	23.28 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

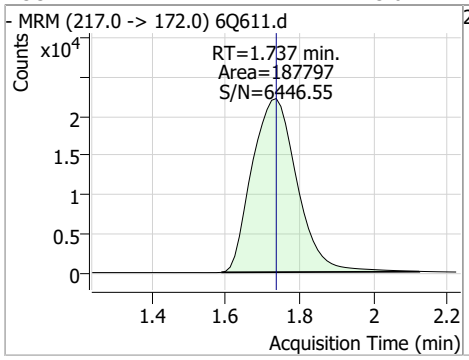
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.4%			
13C7-PFUnDA	7.362	570.0 -> 525.0	998599	23.07	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%			
13C8-FOSA	6.588	506.0 -> 78.0	234291	22.26	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%			
13C8-PFOA	5.844	421.0 -> 376.0	796235	21.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%			
13C8-PFOS	6.386	507.0 -> 99.0	47809	22.18	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%			
13C9-PFNA	6.404	472.0 -> 427.0	951573	21.99	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%			
d3-MeFOSAA	7.064	573.0 -> 419.0	188877	20.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C3-HFPO-DA	4.578	287.0 -> 169.0	12807	21.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%			
d3-MeFOSA	7.020	515.0 -> 169.0	52073	20.20	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
d5-EtFOSAA	7.211	589.0 -> 419.0	168098	20.43	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	6.590	498.0 -> 78.0	599	0.05	µg/L		91
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.315	313.0 -> 269.0	0		µg/L	m	1
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.388	499.0 -> 80.0	372	0.08	µg/L	m	98
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

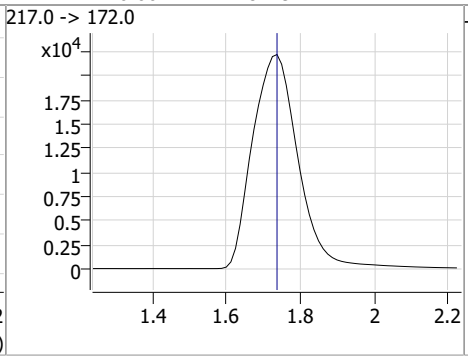
 # = Qualifier out of range, m = manually integrated, + = Area summed

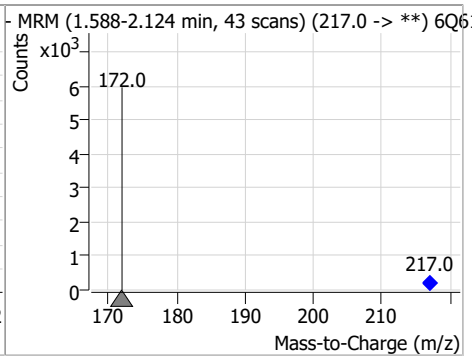
Perfluorinated Compounds by LC/MS/MS



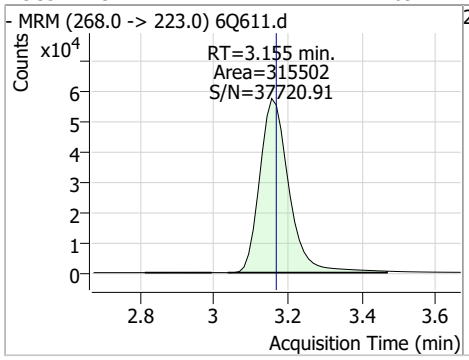
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	23.02	1.74	0.00	187797				

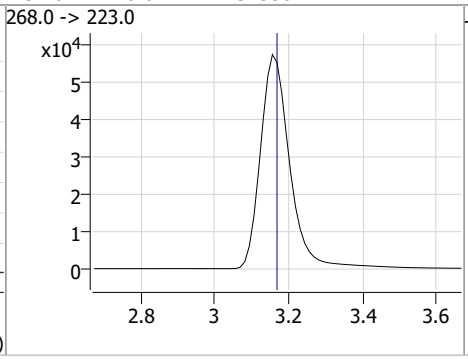


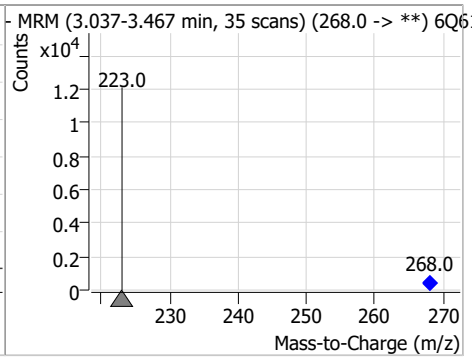




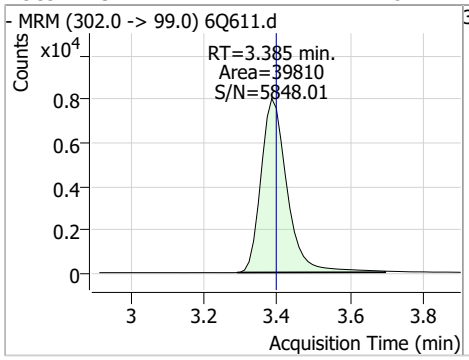
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.69	3.16	-0.01	315502				

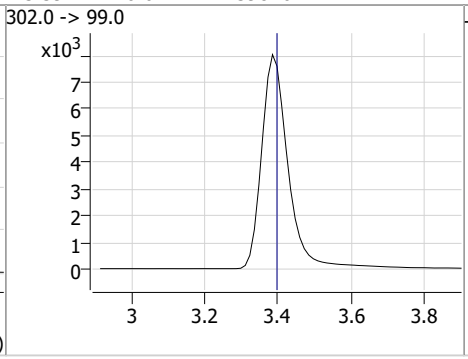


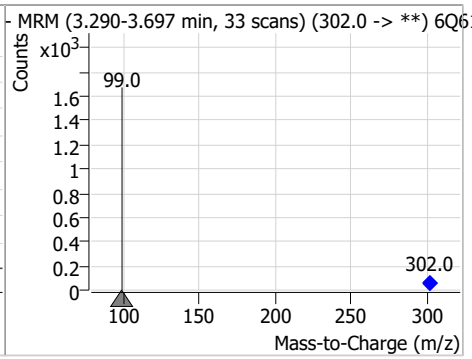




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.57	3.39	-0.01	39810				

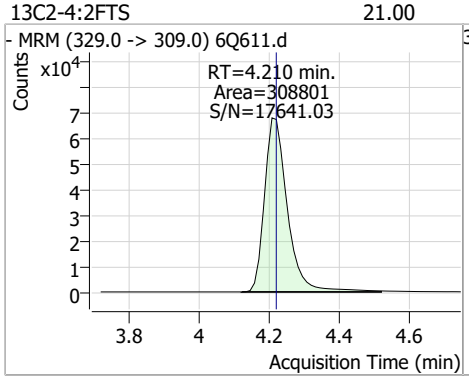


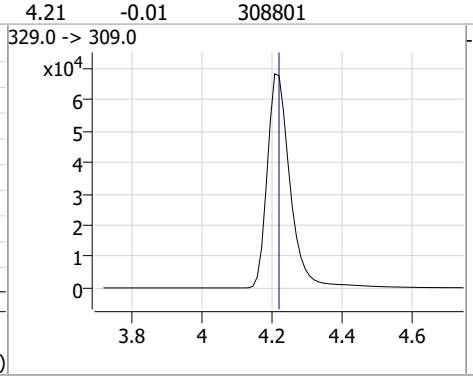


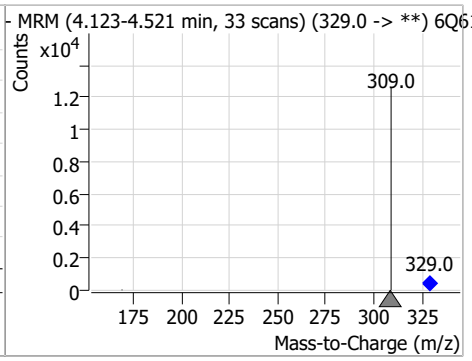


Perfluorinated Compounds by LC/MS/MS

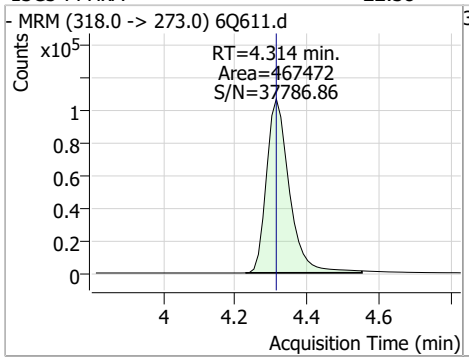
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.00	4.21	-0.01	308801				

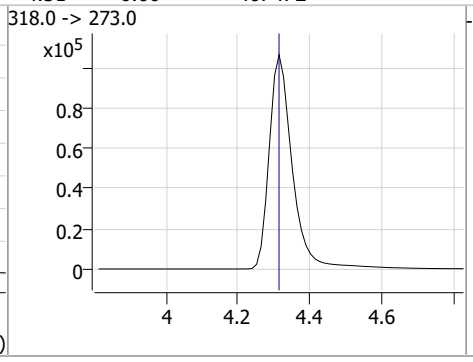


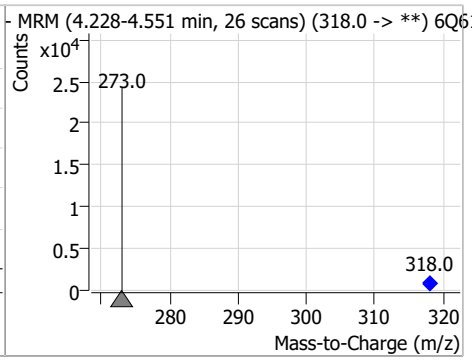




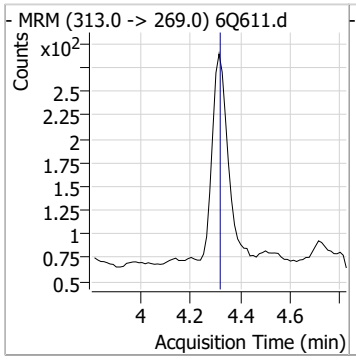
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.38	4.31	0.00	467472				

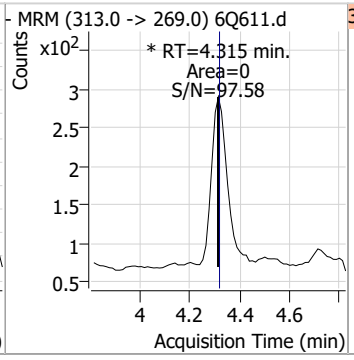


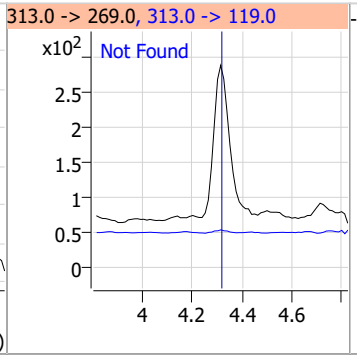


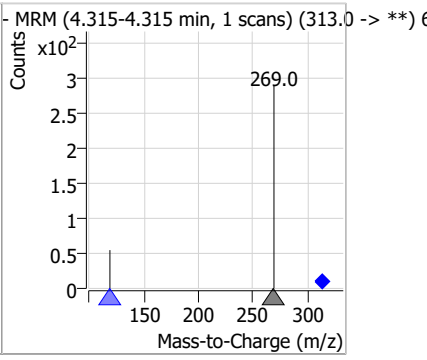


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		0.0	32.8

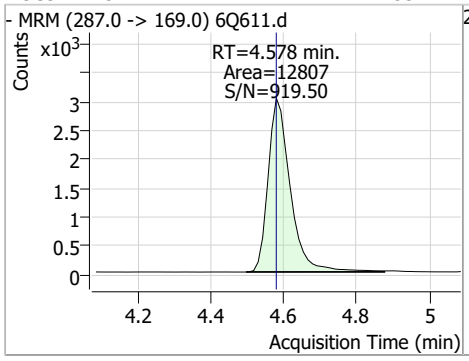


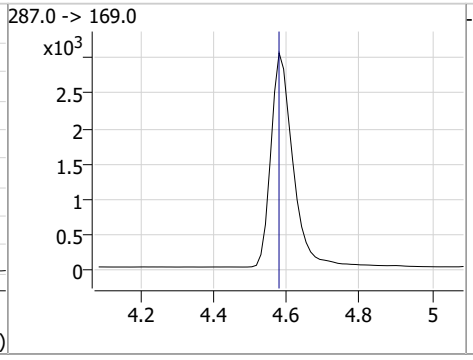


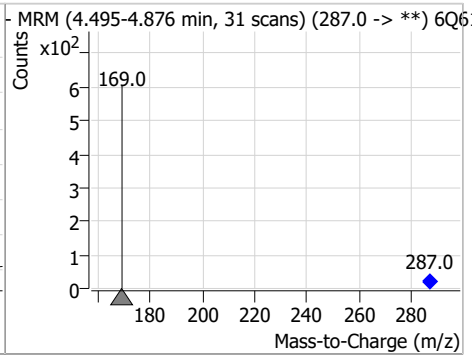




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.55	4.58	0.00	12807				

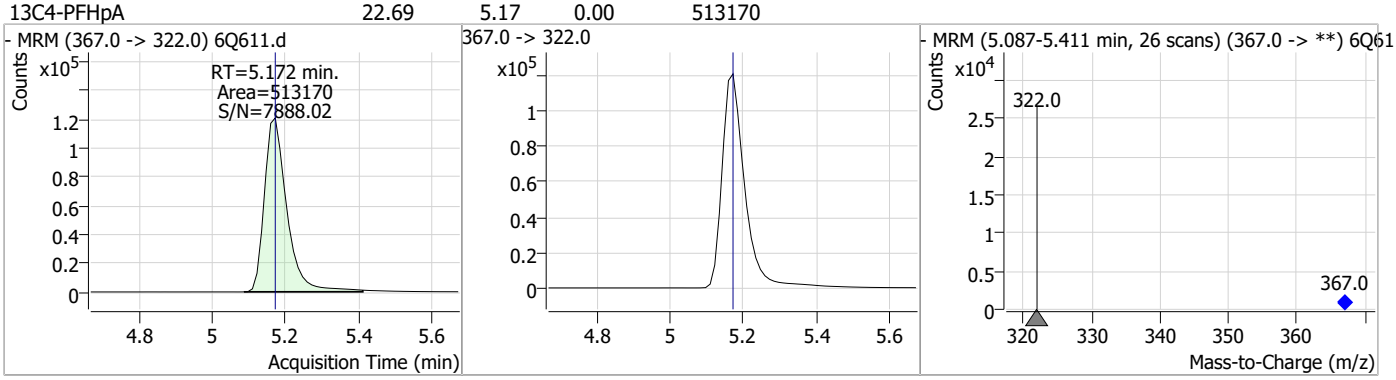




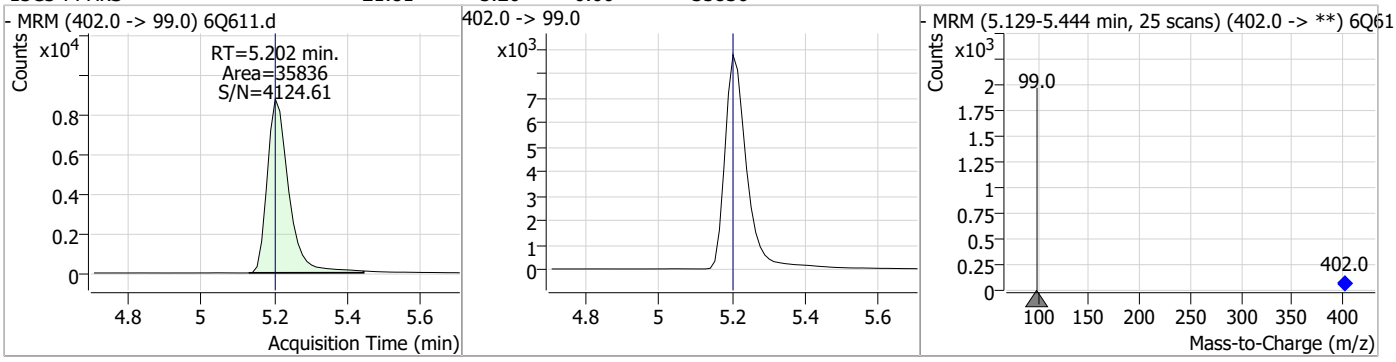


Perfluorinated Compounds by LC/MS/MS

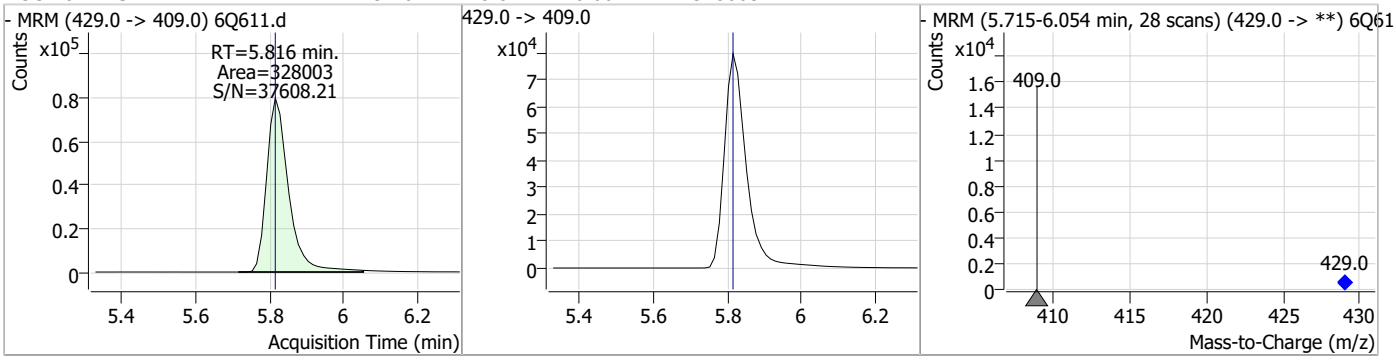
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.69	5.17	0.00	513170				



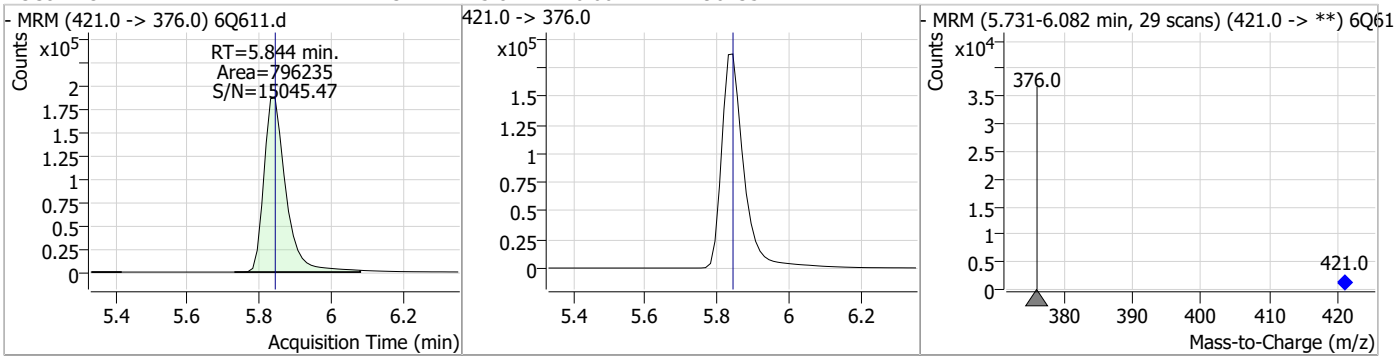
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.81	5.20	0.00	35836				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.26	5.82	0.00	328003				

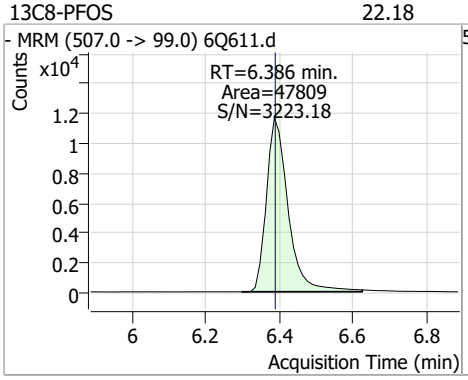


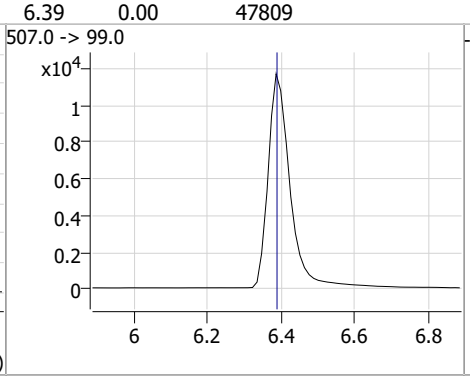
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.37	5.84	0.00	796235				

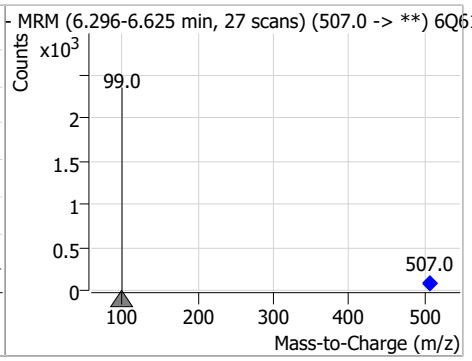


Perfluorinated Compounds by LC/MS/MS

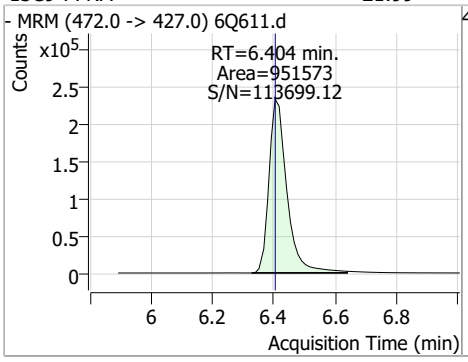
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.18	6.39	0.00	47809				

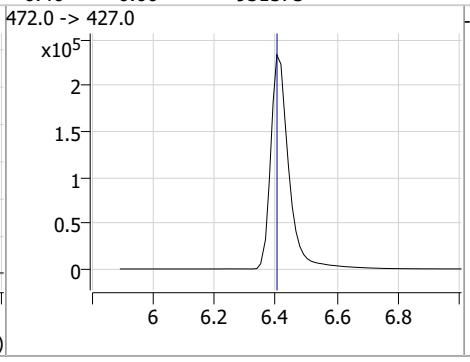


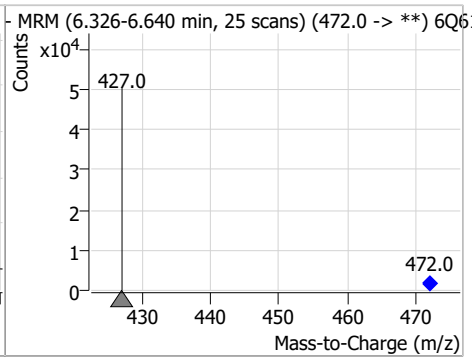




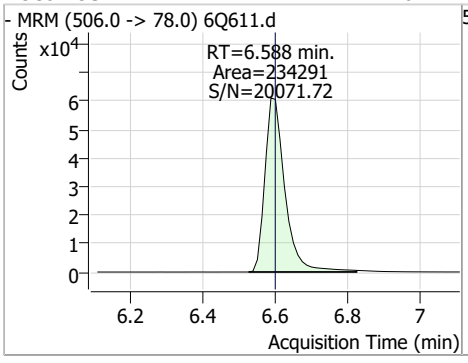
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.99	6.40	0.00	951573				

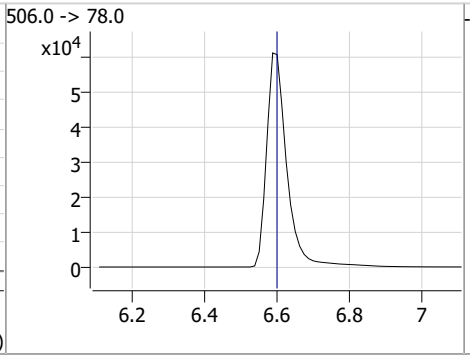


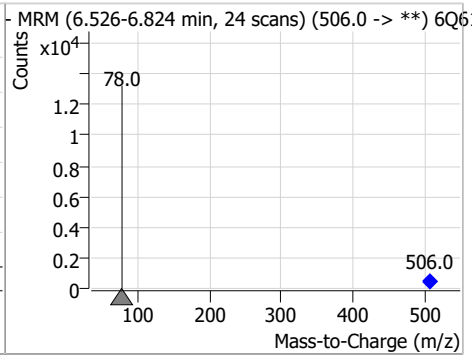




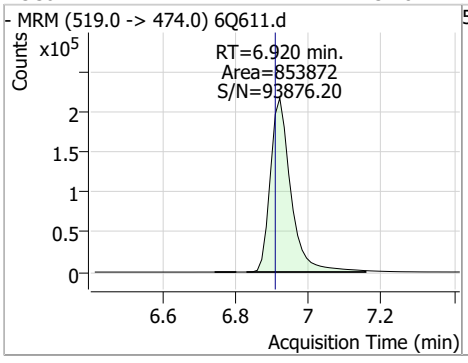
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.26	6.59	-0.01	234291				

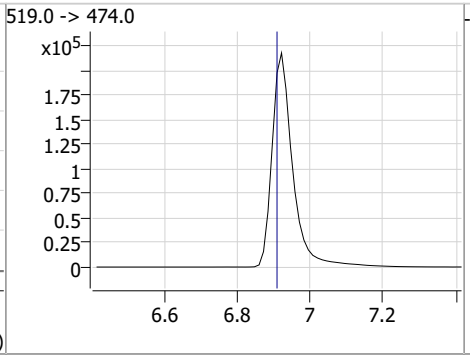


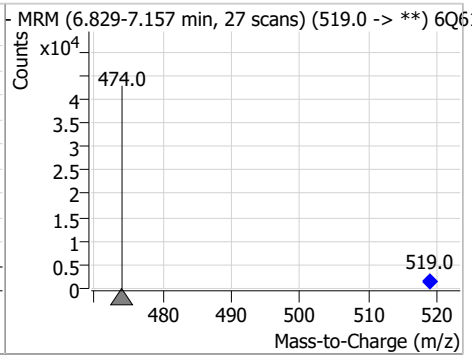




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.28	6.92	0.01	853872				

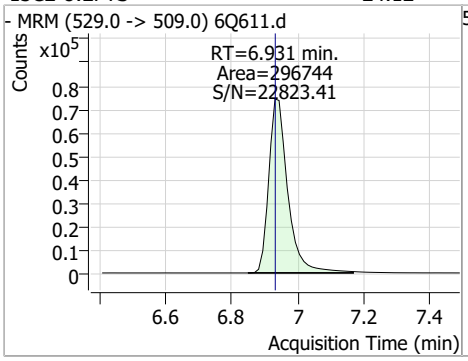


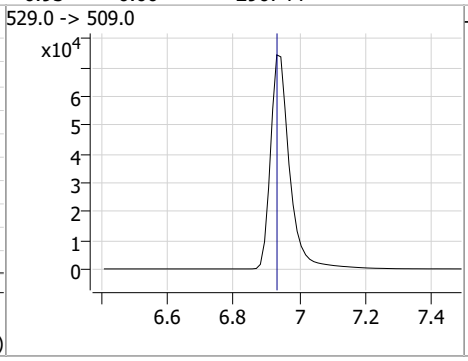


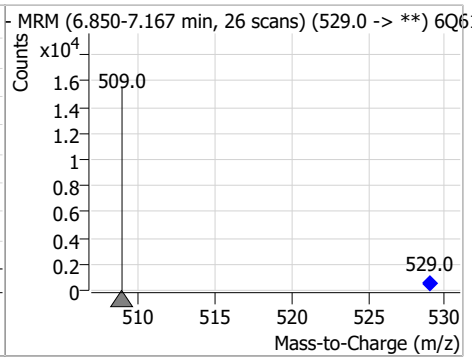


Perfluorinated Compounds by LC/MS/MS

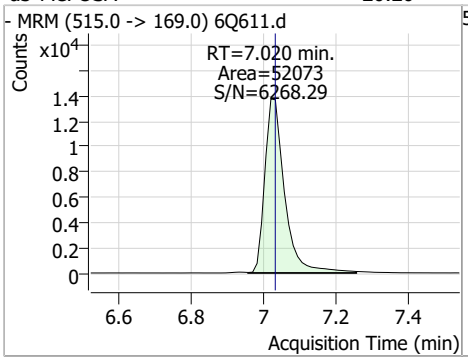
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.12	6.93	0.00	296744				

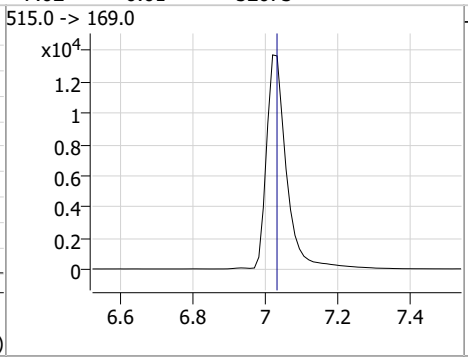


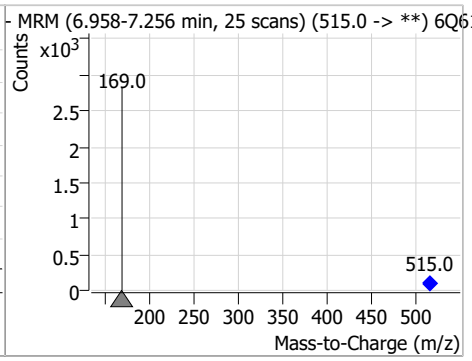




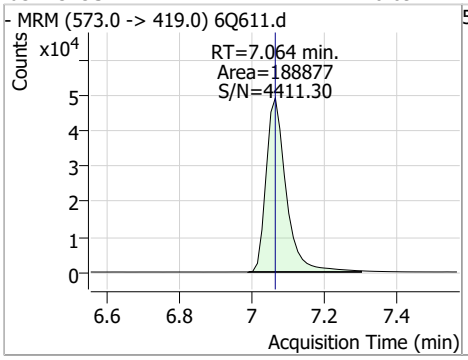
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.20	7.02	-0.01	52073				

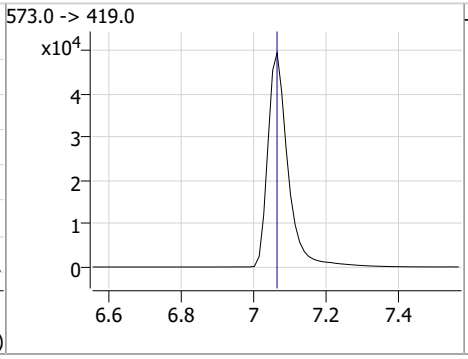


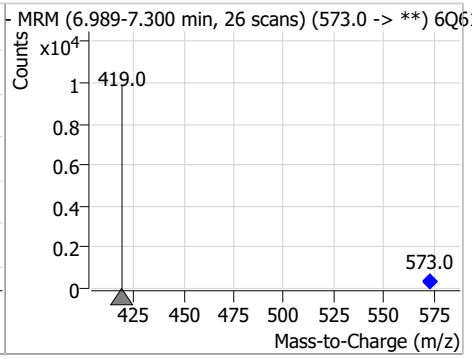




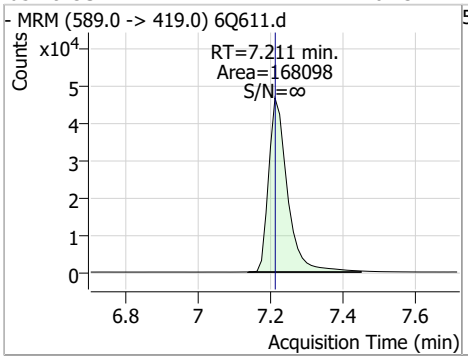
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.09	7.06	0.00	188877				

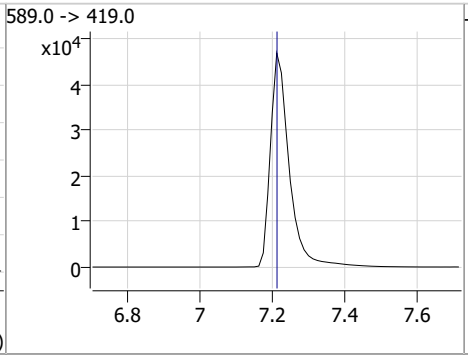


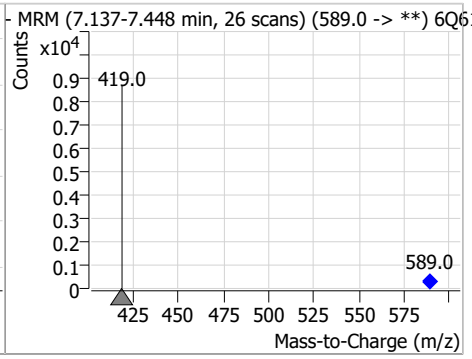




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.43	7.21	0.00	168098				

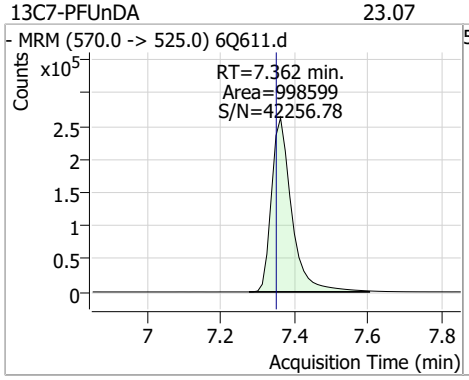


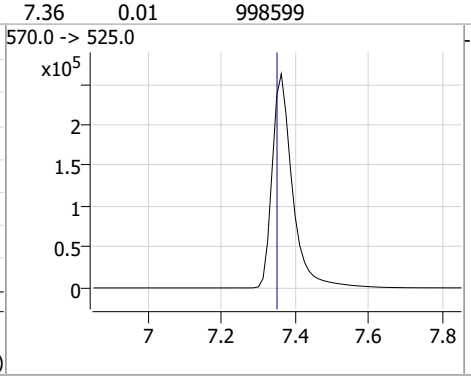


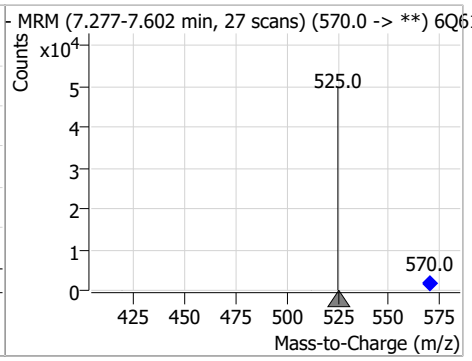


Perfluorinated Compounds by LC/MS/MS

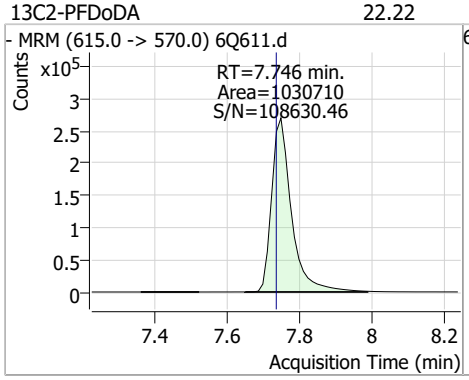
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.07	7.36	0.01	998599				

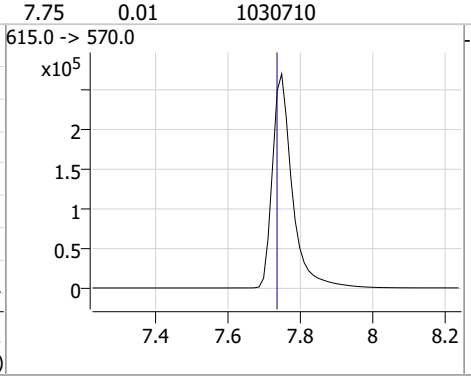


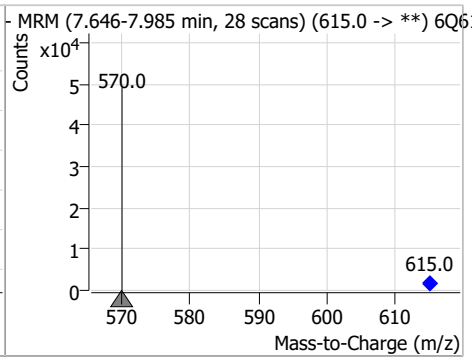




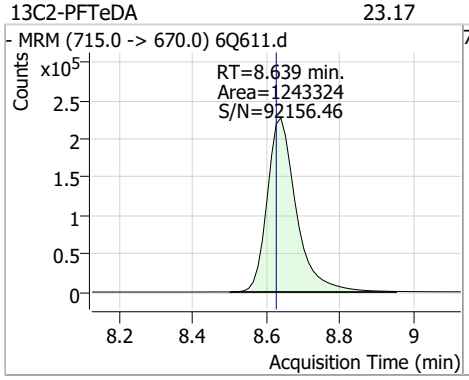
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.22	7.75	0.01	1030710				

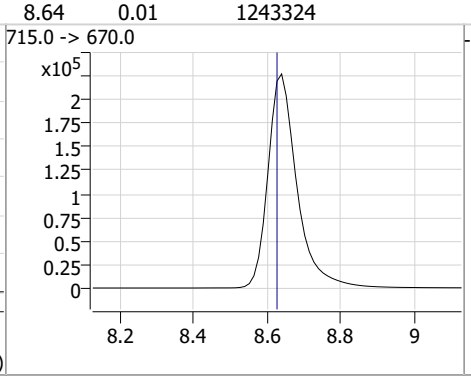


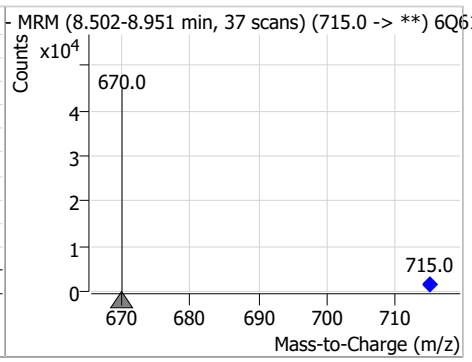




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	23.17	8.64	0.01	1243324				







Manual Integration Approval Summary

Sample Number: FA95502-8
Lab FileID: 6Q611.D
Injection Time: 05/27/22 02:45

Method: EPA 537M BY ID
Analyst approved: 05/27/22 11:25 Natasha Gumtie
Supervisor approved: 05/27/22 12:46 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.39	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q585.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 8:14:09 PM
Sample Name : op91243-mb
Vial : P1-E7
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91243,S6Q11,250,,,1.0,1,water

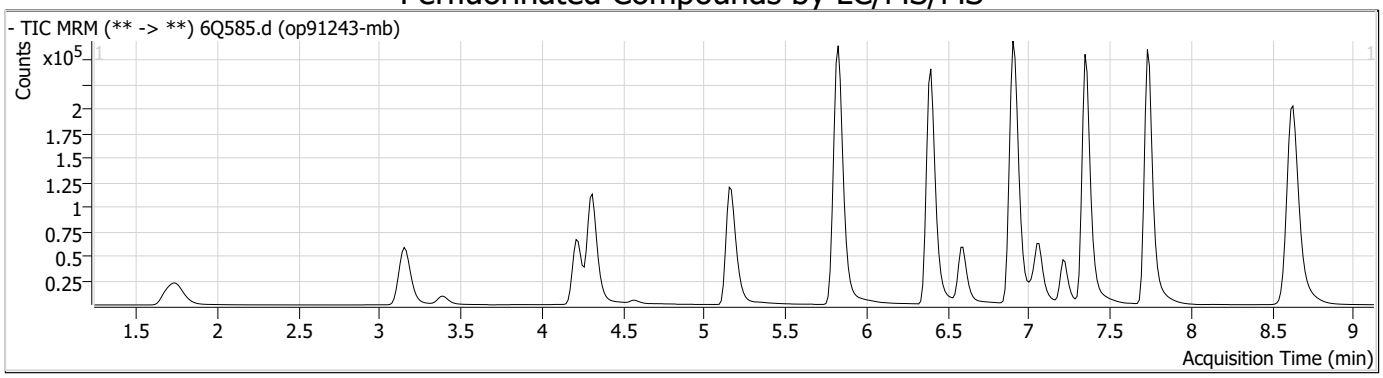
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	185979	20.00 µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	314311	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	477773	20.00 µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	509099	20.00 µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	813040	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	948685	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	887702	20.00 µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	964450	20.00 µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	985539	20.00 µg/L	0.000
M2-PFTeDA	8.626	715.0 -> 670.0	1119944	20.00 µg/L	0.000
M8-FOSA	6.601	506.0 -> 78.0	212785	20.00 µg/L	0.000
M3-PFBS	3.385	302.0 -> 99.0	39323	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	35697	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	48780	20.00 µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	296637	20.00 µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	334300	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	250471	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	196885	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12637	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	42914	20.00 µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	158058	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.210	329.0 -> 309.0	296637	20.17 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C2-6:2FTS	5.816	429.0 -> 409.0	334300	19.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C2-8:2FTS	6.931	529.0 -> 509.0	250471	20.36 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C2-PFDoDA	7.733	615.0 -> 570.0	985539	21.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1119944	20.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%	
13C3-PFBS	3.385	302.0 -> 99.0	39323	22.29 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%	
13C3-PFHxS	5.202	402.0 -> 99.0	35697	21.73 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C4-PFBA	1.737	217.0 -> 172.0	185979	22.80 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.0%	
13C4-PFHpA	5.160	367.0 -> 322.0	509099	22.51 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C5-PFHxA	4.314	318.0 -> 273.0	477773	22.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%	
13C5-PFPeA	3.155	268.0 -> 223.0	314311	22.61 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C6-PFDA	6.908	519.0 -> 474.0	887702	24.21 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

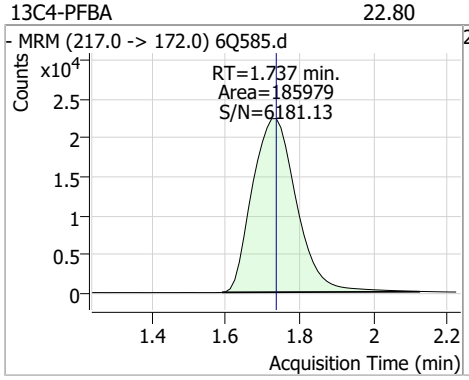
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.0%			
13C7-PFUnDA	7.350	570.0 -> 525.0	964450	22.28	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%			
13C8-FOSA	6.601	506.0 -> 78.0	212785	20.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C8-PFOA	5.832	421.0 -> 376.0	813040	21.82	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%			
13C8-PFOS	6.386	507.0 -> 99.0	48780	22.63	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%			
13C9-PFNA	6.404	472.0 -> 427.0	948685	21.93	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%			
d3-MeFOSAA	7.064	573.0 -> 419.0	196885	20.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%			
13C3-HFPO-DA	4.578	287.0 -> 169.0	12654	21.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%			
d3-MeFOSA	7.020	515.0 -> 169.0	42914	16.64	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%			
d5-EtFOSAA	7.211	589.0 -> 419.0	158171	19.22	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.718	213.0 -> 169.0	219	0.05	µg/L	m	100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.315	313.0 -> 269.0	1285	0.05	µg/L		97
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	8.616	713.0 -> 669.0	1765	0.03	µg/L		99
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

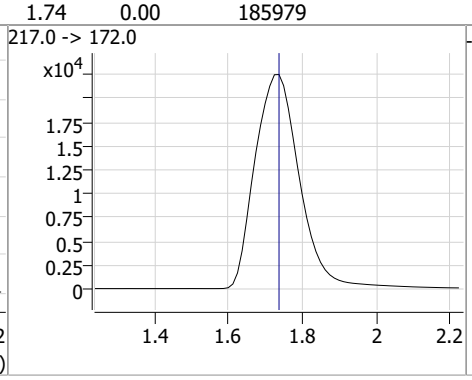
 # = Qualifier out of range, m = manually integrated, + = Area summed

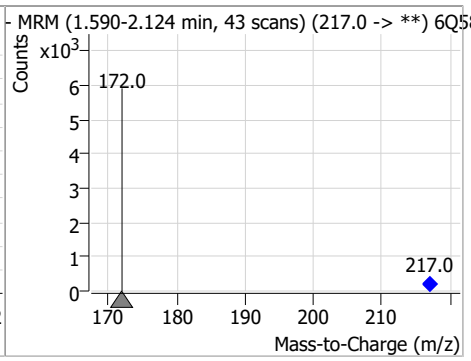
Perfluorinated Compounds by LC/MS/MS



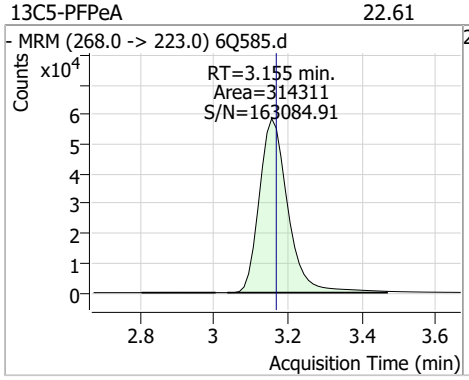
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.80	1.74	0.00	185979				

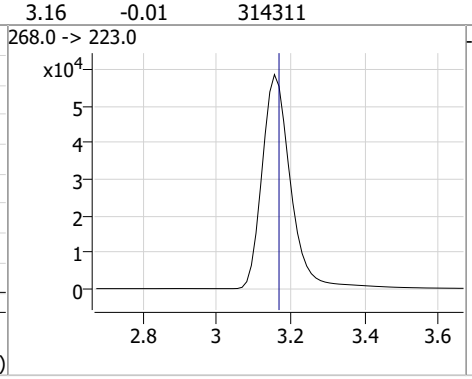


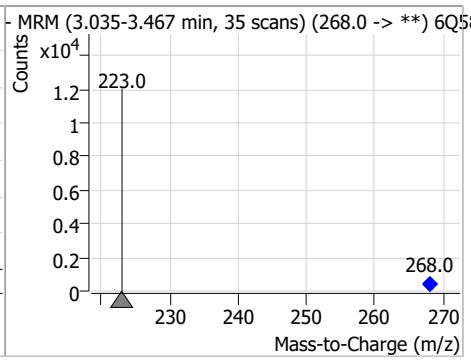




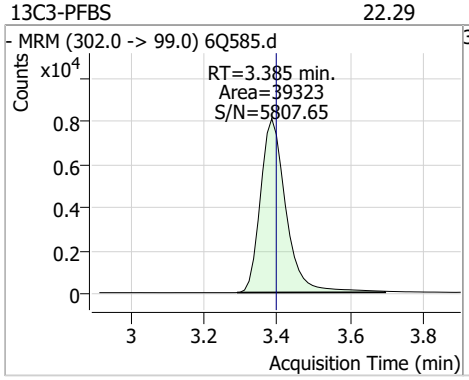
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.61	3.16	-0.01	314311				

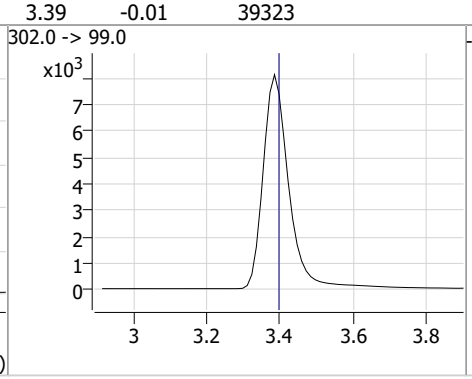


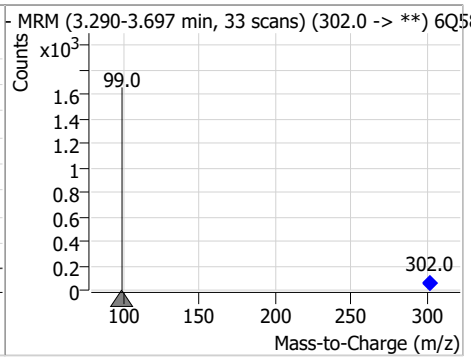




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.29	3.39	-0.01	39323				

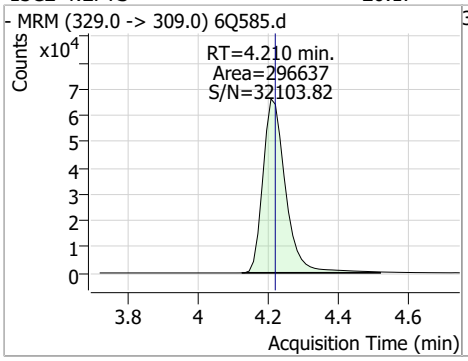


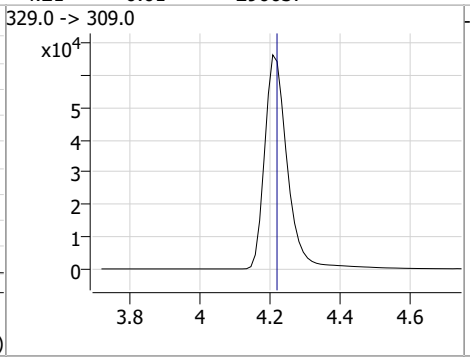


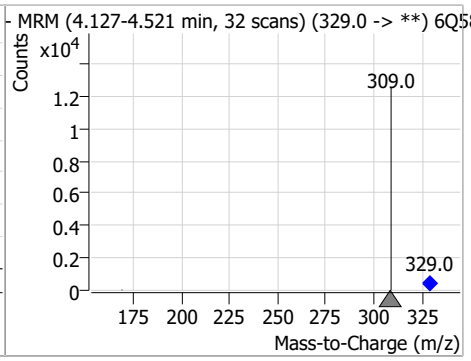


Perfluorinated Compounds by LC/MS/MS

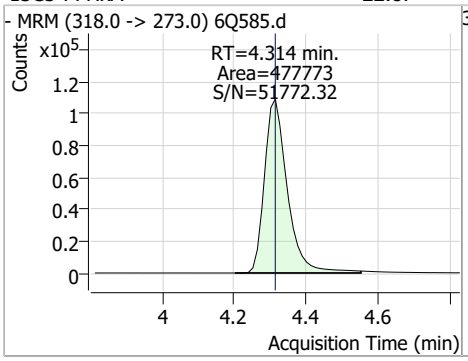
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.17	4.21	-0.01	296637				

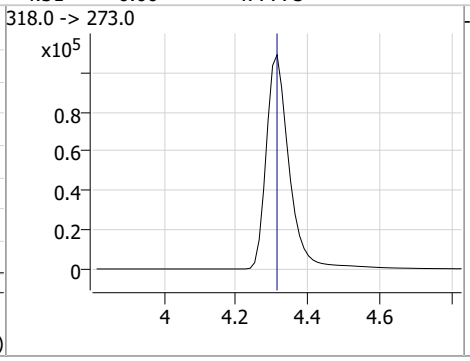


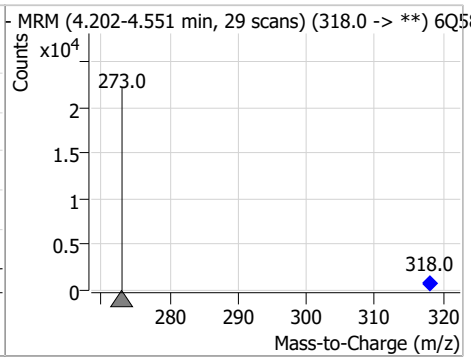




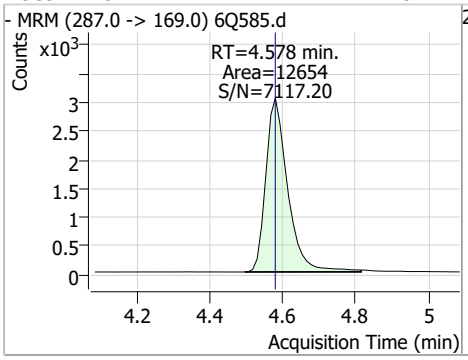
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.87	4.31	0.00	477773				

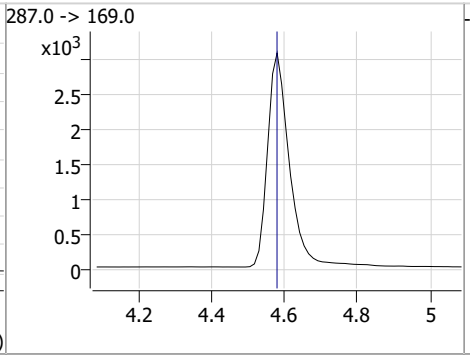


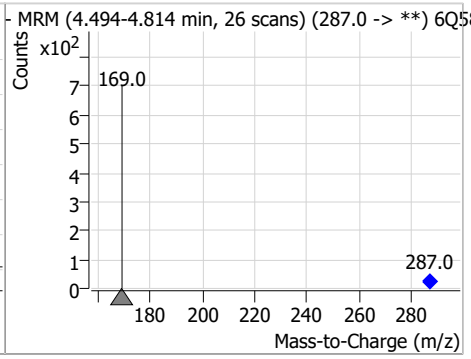




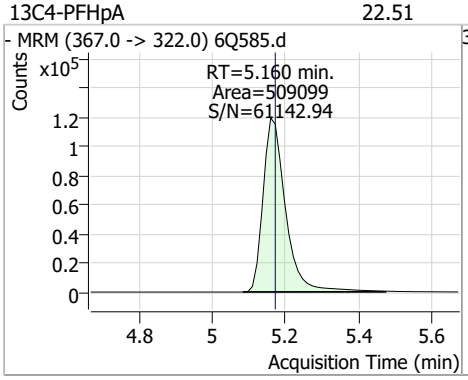
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.29	4.58	0.00	12654				

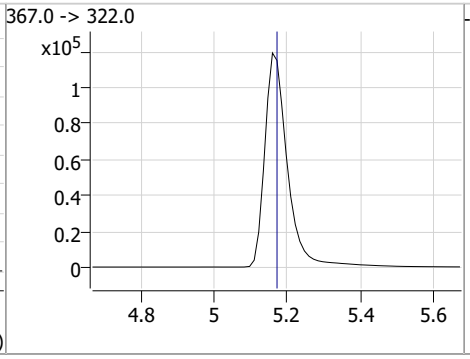


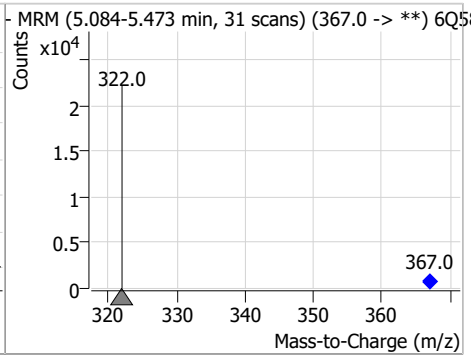




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.51	5.16	-0.01	509099				

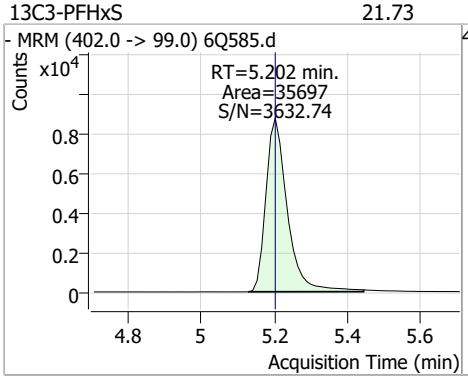


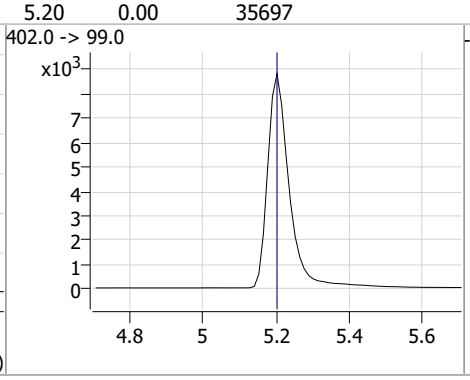


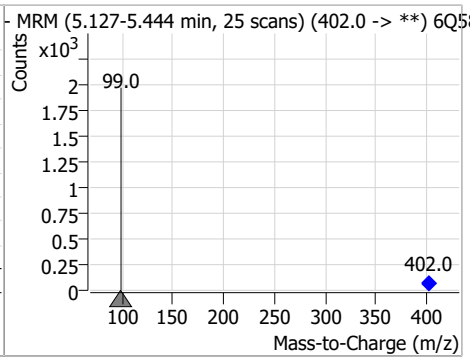


Perfluorinated Compounds by LC/MS/MS

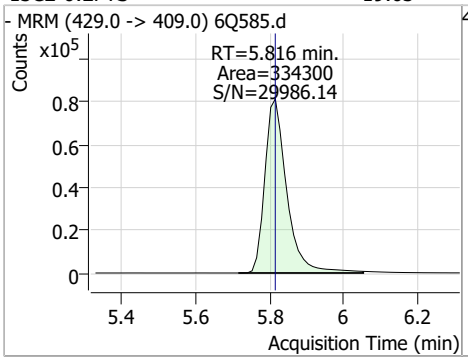
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.73	5.20	0.00	35697				

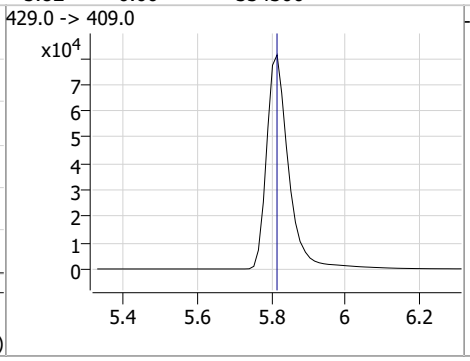


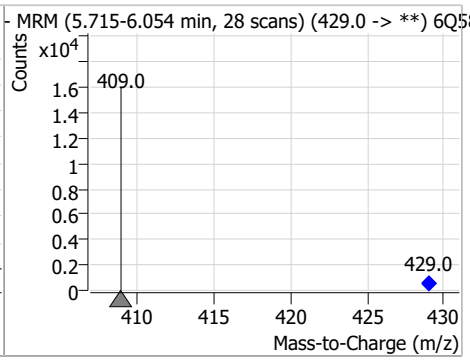




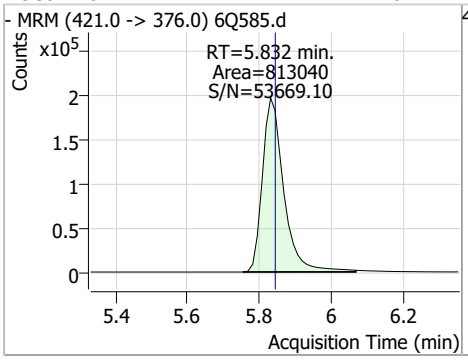
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.63	5.82	0.00	334300				

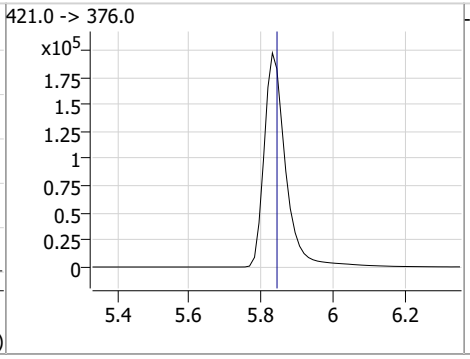


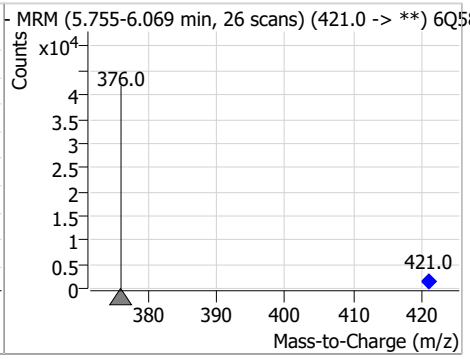




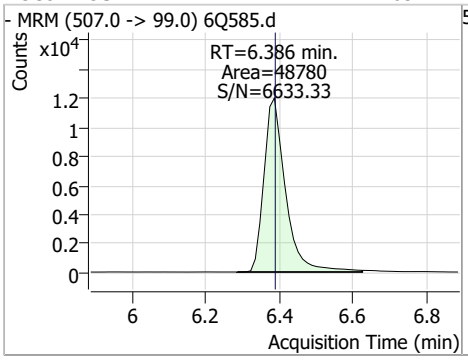
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.82	5.83	-0.01	813040				

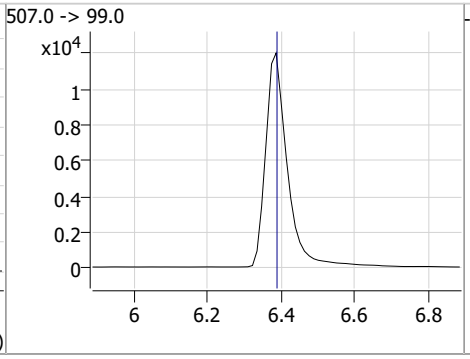


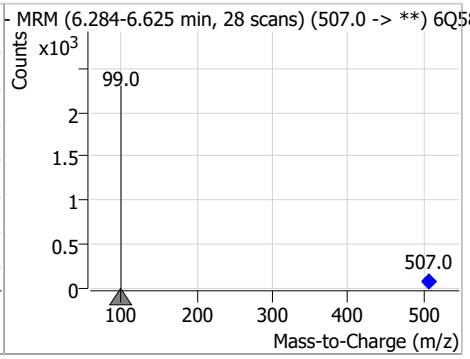




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.63	6.39	0.00	48780				

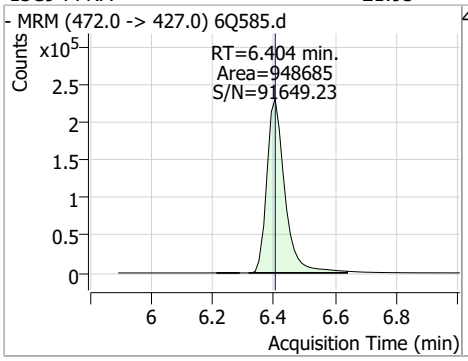


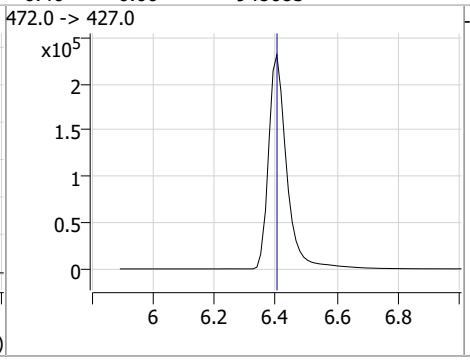


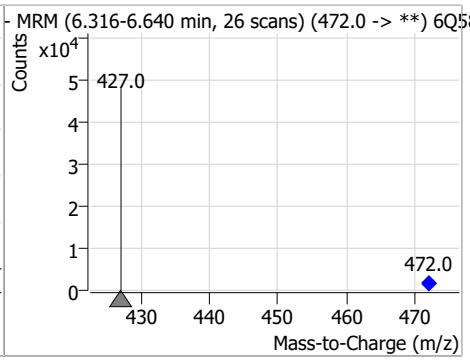


Perfluorinated Compounds by LC/MS/MS

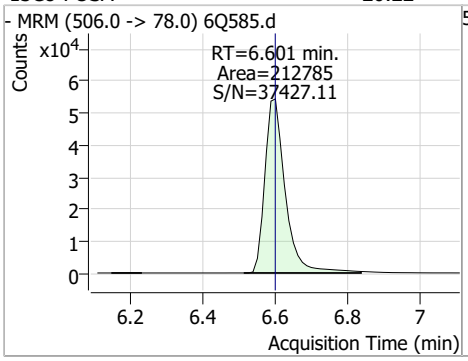
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.93	6.40	0.00	948685				

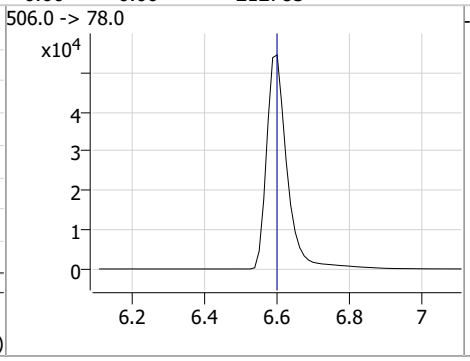


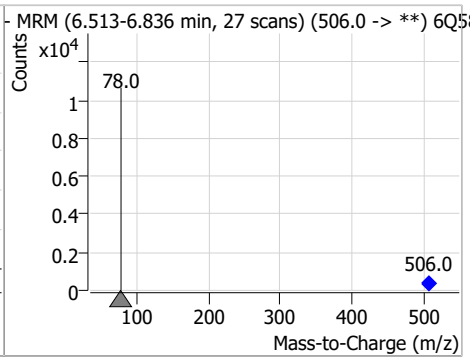




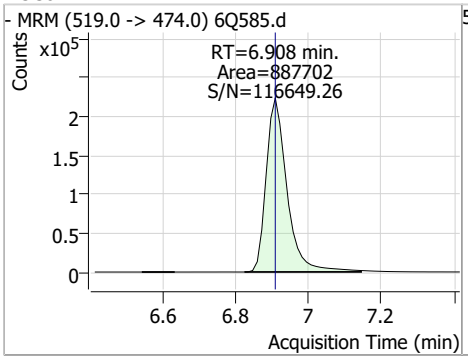
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.22	6.60	0.00	212785				

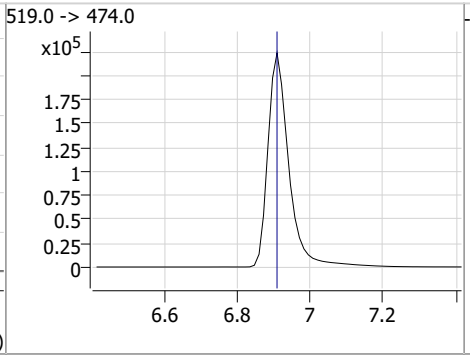


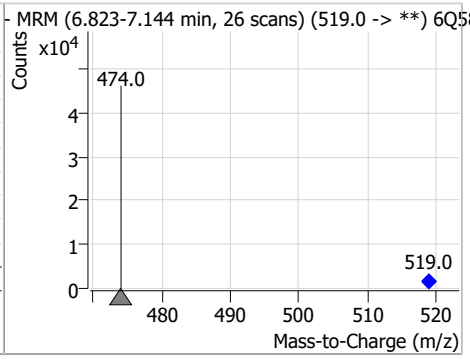




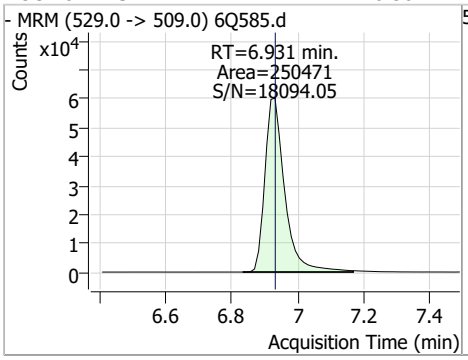
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.21	6.91	0.00	887702				

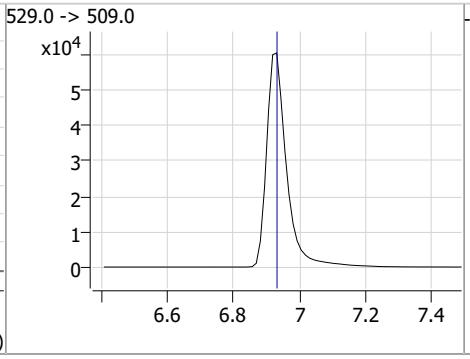


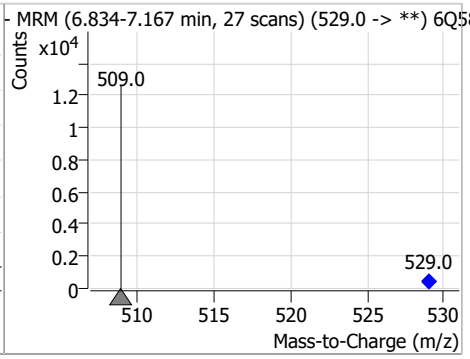




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.36	6.93	0.00	250471				

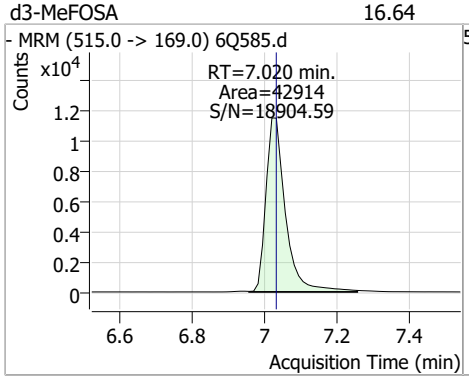


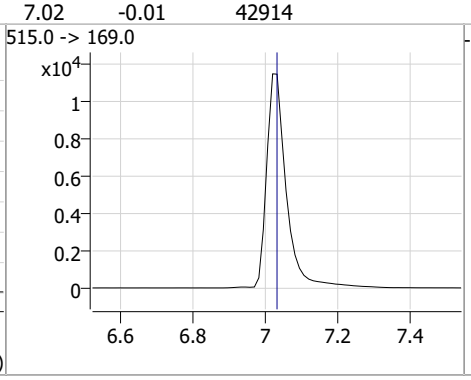


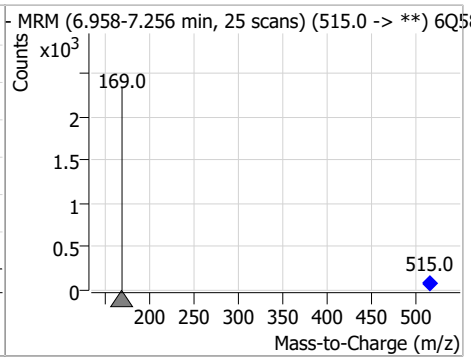


Perfluorinated Compounds by LC/MS/MS

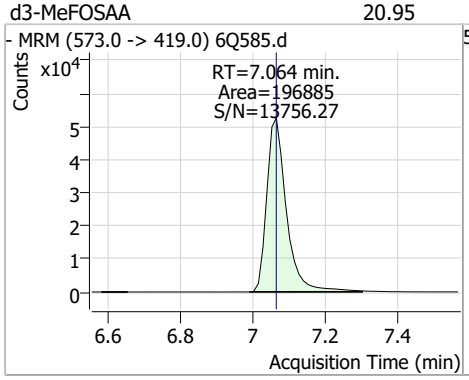
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	16.64	7.02	-0.01	42914				

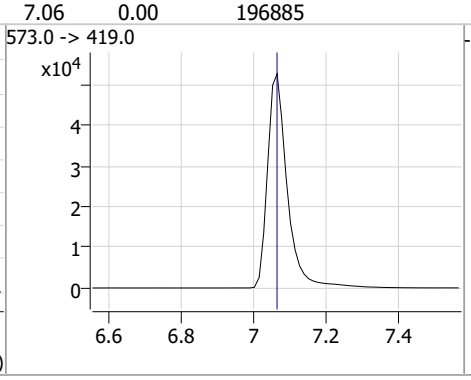


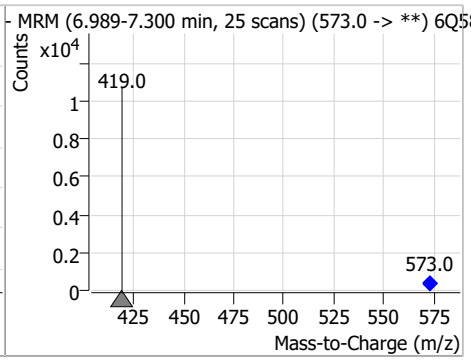




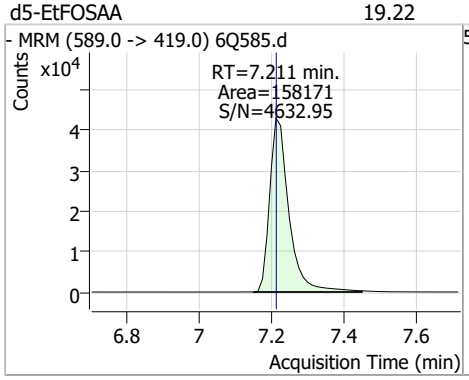
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.95	7.06	0.00	196885				

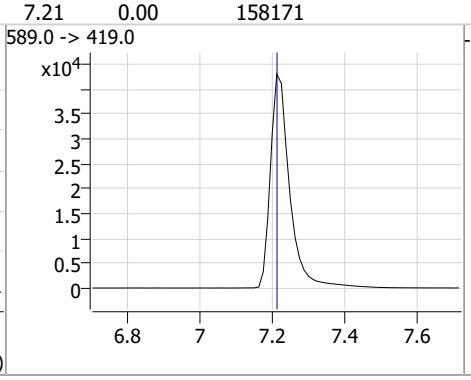


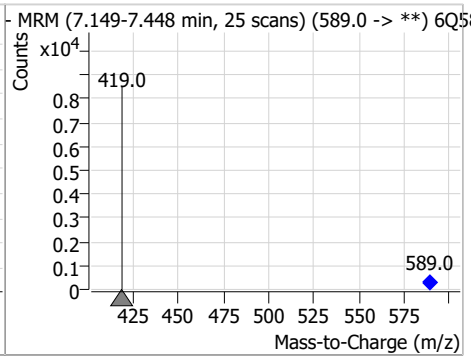




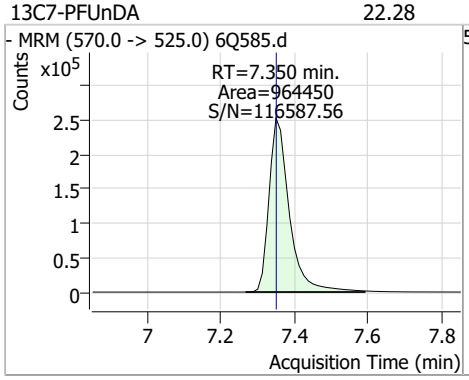
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.22	7.21	0.00	158171				

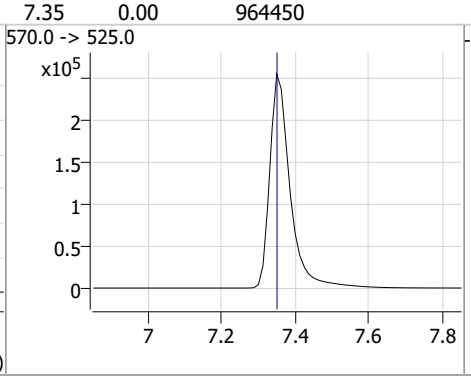


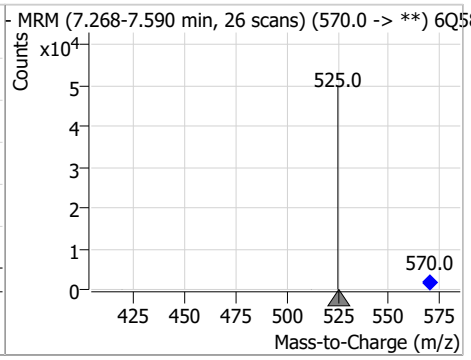




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.28	7.35	0.00	964450				

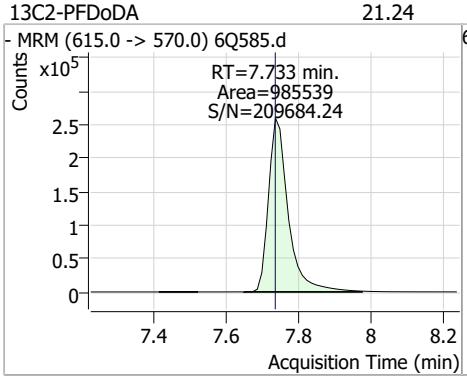


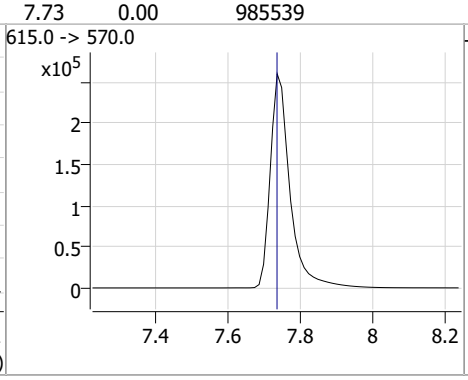


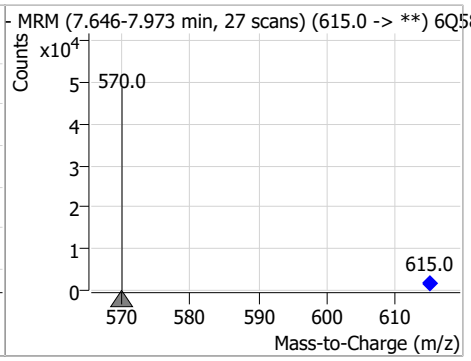


Perfluorinated Compounds by LC/MS/MS

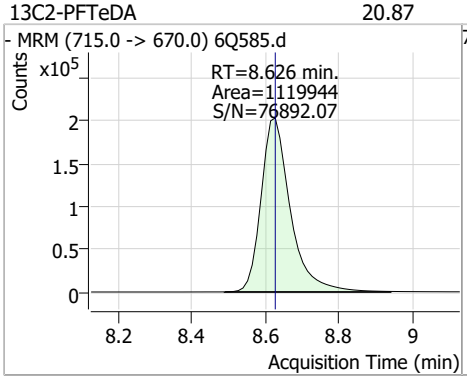
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.24	7.73	0.00	985539				

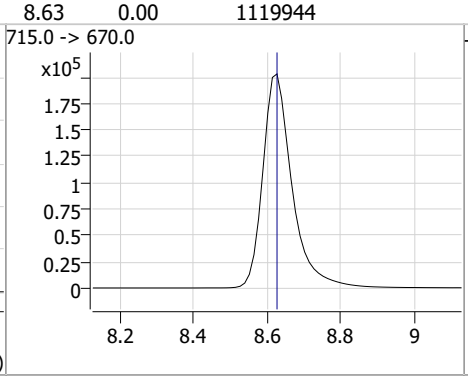


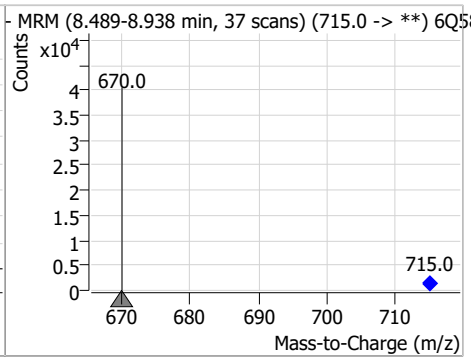




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.87	8.63	0.00	1119944				







Manual Integration Approval Summary

Sample Number:	OP91243-MB	**Method:**	EPA 537M BY ID
Lab FileID:	6Q585.D	**Analyst approved:**	05/27/22 11:17 Natasha Gumtie
Injection Time:	05/26/22 20:14	**Supervisor approved:**	05/27/22 12:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanoic acid	375-22-4		1.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:44

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q552.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 11:57:18 AM
Sample Name : iblk
Vial : P1-A1
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

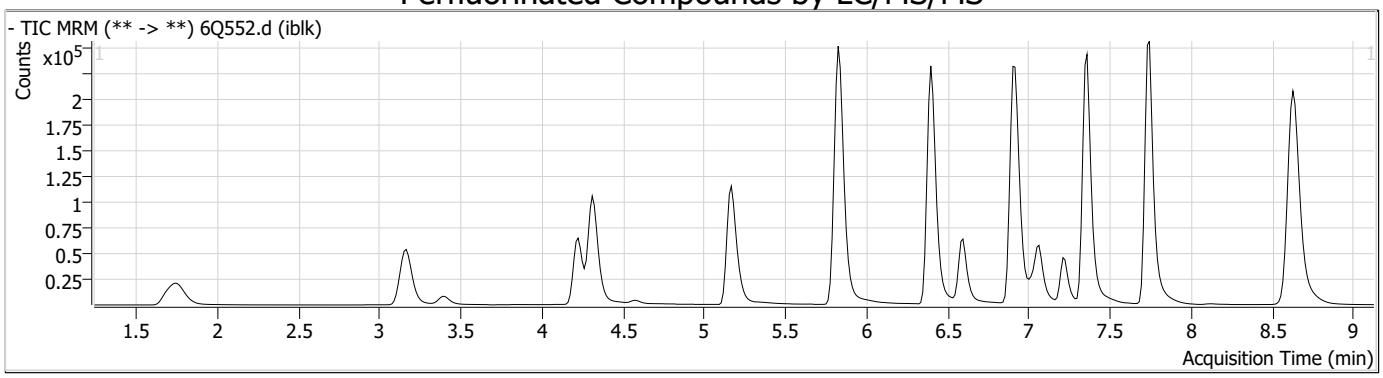
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	176786	20.00 µg/L	0.000
M5-PFPeA	3.168	268.0 -> 223.0	296156	20.00 µg/L	0.000
M5-PFHxA	4.314	318.0 -> 273.0	448490	20.00 µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	475214	20.00 µg/L	0.000
M8-PFOA	5.832	421.0 -> 376.0	772510	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	897811	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	774767	20.00 µg/L	0.000
M7-PFUnDA	7.362	570.0 -> 525.0	934769	20.00 µg/L	0.012
M2-PFDoDA	7.746	615.0 -> 570.0	973873	20.00 µg/L	0.013
M2-PFTeDA	8.626	715.0 -> 670.0	1136270	20.00 µg/L	0.000
M8-FOSA	6.601	506.0 -> 78.0	224896	20.00 µg/L	0.000
M3-PFBS	3.398	302.0 -> 99.0	37521	20.00 µg/L	0.000
M3-PFHxS	5.202	402.0 -> 99.0	34011	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	46884	20.00 µg/L	-0.002
M2-4:2FTS	4.222	329.0 -> 309.0	282993	20.00 µg/L	0.000
M2-6:2FTS	5.816	429.0 -> 409.0	316174	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	233270	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	172694	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12209	20.00 µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	55952	20.00 µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	155313	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.222	329.0 -> 309.0	282993	19.25 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C2-6:2FTS	5.816	429.0 -> 409.0	316174	18.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%	
13C2-8:2FTS	6.931	529.0 -> 509.0	233270	18.96 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C2-PFDoDA	7.746	615.0 -> 570.0	973873	20.99 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1136270	21.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C3-PFBS	3.398	302.0 -> 99.0	37521	21.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C3-PFHxS	5.202	402.0 -> 99.0	34011	20.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C4-PFBA	1.737	217.0 -> 172.0	176786	21.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C4-PFHpA	5.172	367.0 -> 322.0	475214	21.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C5-PFHxA	4.314	318.0 -> 273.0	448490	21.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C5-PFPeA	3.168	268.0 -> 223.0	296156	21.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C6-PFDA	6.908	519.0 -> 474.0	774767	21.13 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

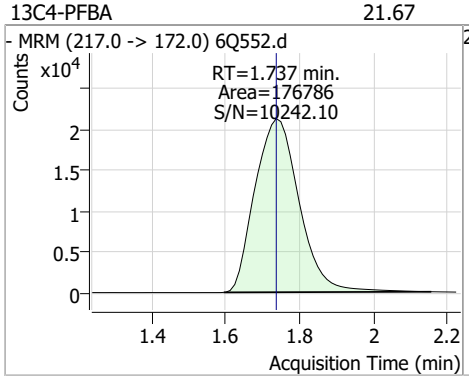
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
13C7-PFUnDA	7.362	570.0 -> 525.0	934769	21.60	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%			
13C8-FOSA	6.601	506.0 -> 78.0	224896	21.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%			
13C8-PFOA	5.832	421.0 -> 376.0	772510	20.73	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C8-PFOS	6.386	507.0 -> 99.0	46884	21.75	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%			
13C9-PFNA	6.404	472.0 -> 427.0	897811	20.75	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
d3-MeFOSAA	7.064	573.0 -> 419.0	172694	18.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%			
13C3-HFPO-DA	4.578	287.0 -> 169.0	12179	20.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
d3-MeFOSA	7.033	515.0 -> 169.0	55952	21.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%			
d5-EtFOSAA	7.211	589.0 -> 419.0	155234	18.87	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.225	584.0 -> 419.0	897	0.12	µg/L	m	87
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.065	570.0 -> 419.0	871	0.11	µg/L	m	87
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	6.909	513.0 -> 469.0	1877	0.04	µg/L		99
PFDoDA	7.747	613.0 -> 569.0	2807	0.06	µg/L		92
PFDS	7.323	599.0 -> 80.0	0		µg/L	m	1
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	8.630	713.0 -> 669.0	5580	0.09	µg/L		100
PFTrDA	8.115	663.0 -> 619.0	3355	0.07	µg/L		99
PFUnDA	7.364	563.0 -> 519.0	1718	0.04	µg/L		96
11Cl-PF3OUdS	7.506	631.0 -> 451.0	725	0.04	µg/L		81
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			

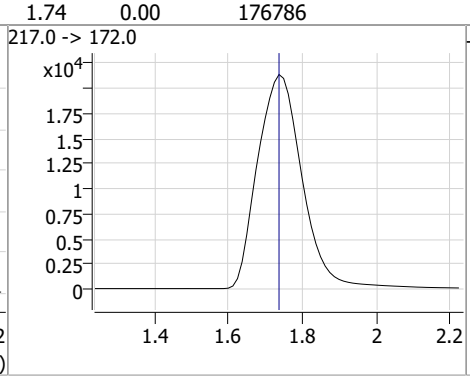
 # = Qualifier out of range, m = manually integrated, + = Area summed

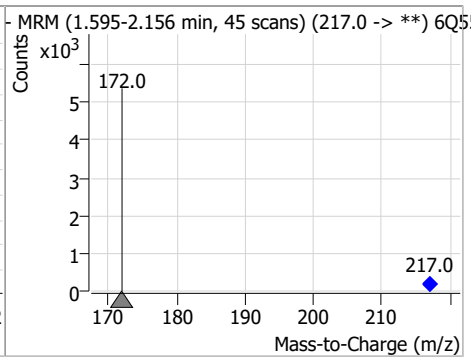
Perfluorinated Compounds by LC/MS/MS



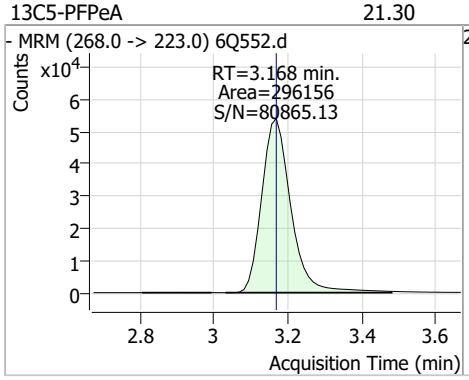
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.67	1.74	0.00	176786				

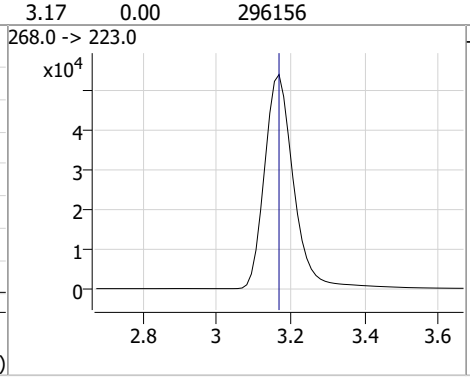


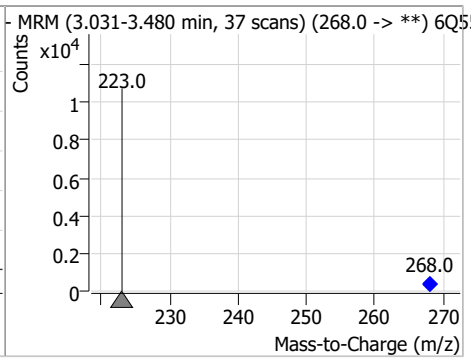




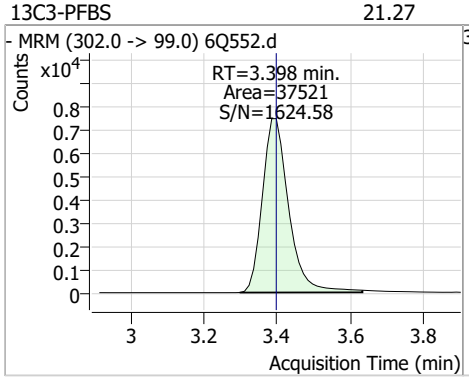
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.30	3.17	0.00	296156				

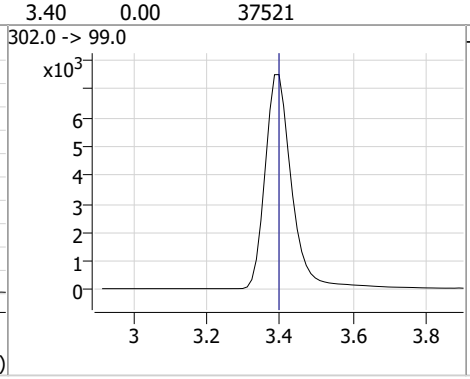


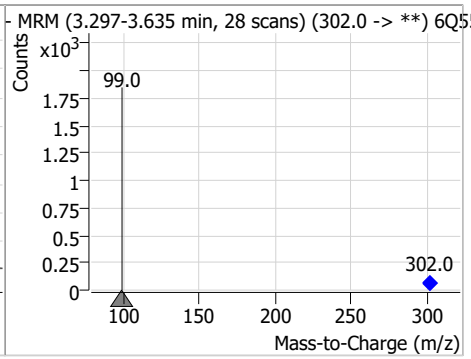




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.27	3.40	0.00	37521				

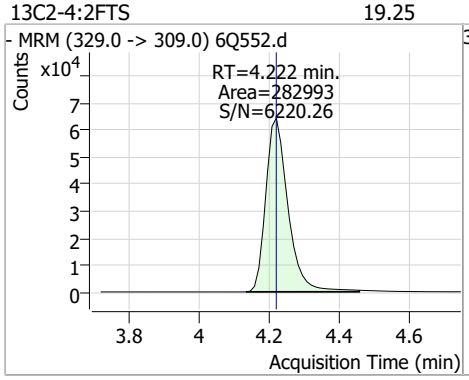


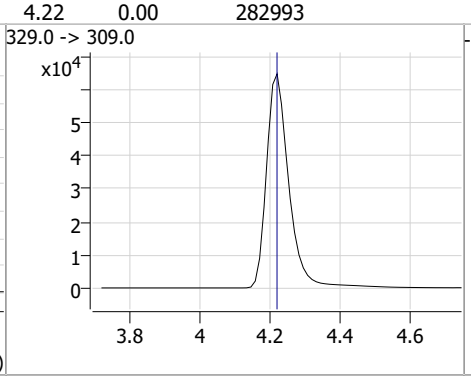


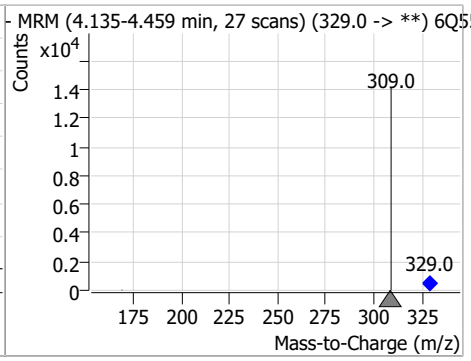


Perfluorinated Compounds by LC/MS/MS

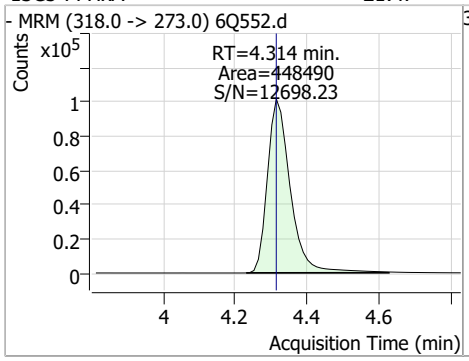
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.25	4.22	0.00	282993				

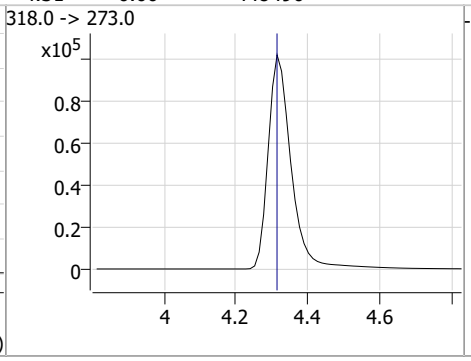


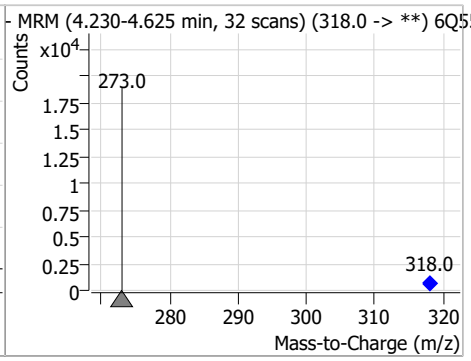




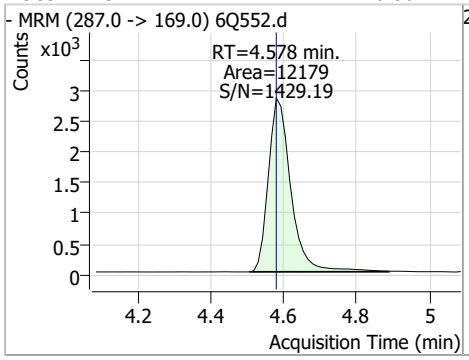
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.47	4.31	0.00	448490				

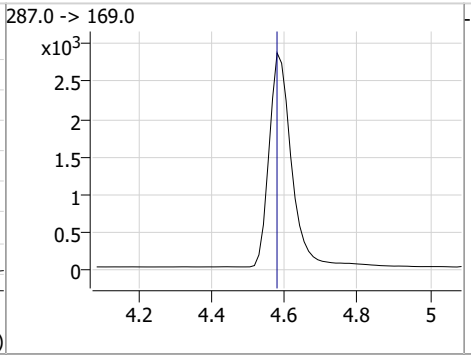


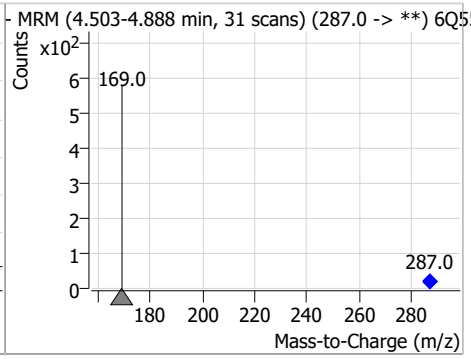




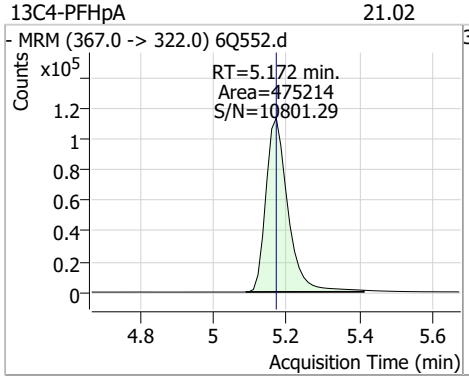
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.50	4.58	0.00	12179				

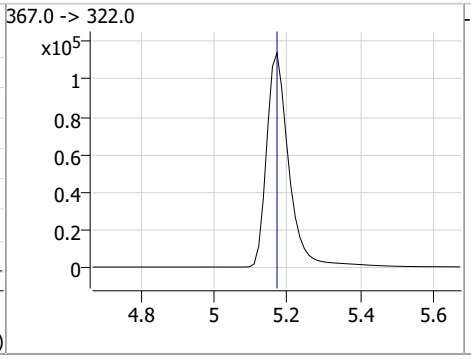


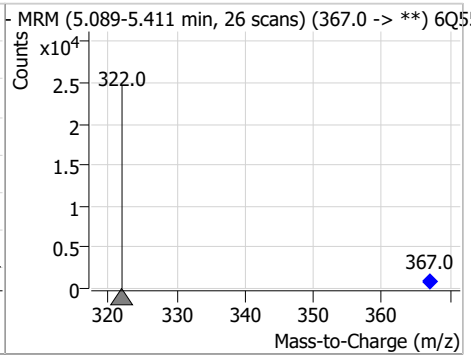




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.02	5.17	0.00	475214				

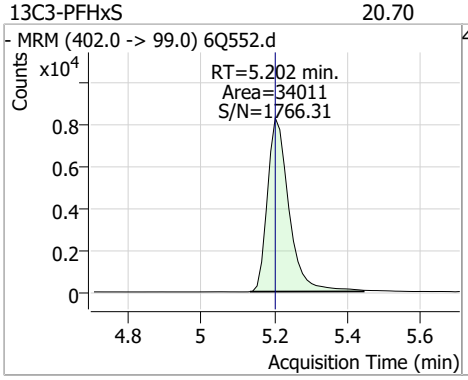


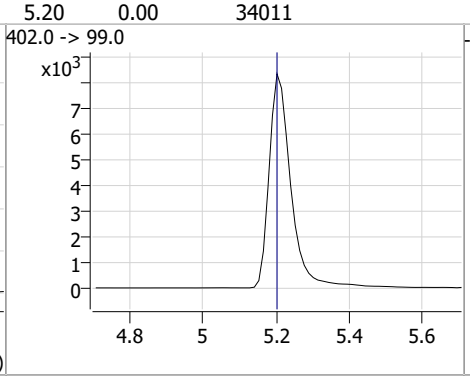


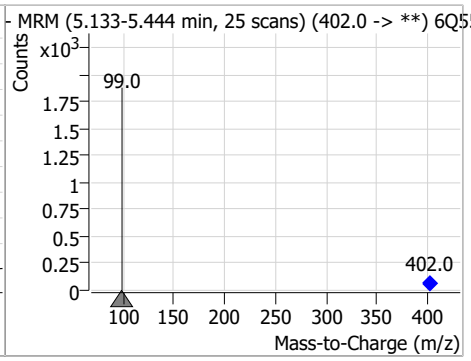


Perfluorinated Compounds by LC/MS/MS

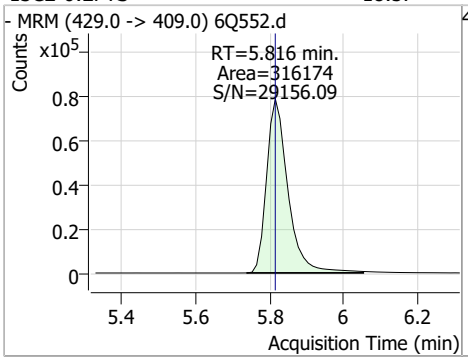
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.70	5.20	0.00	34011				

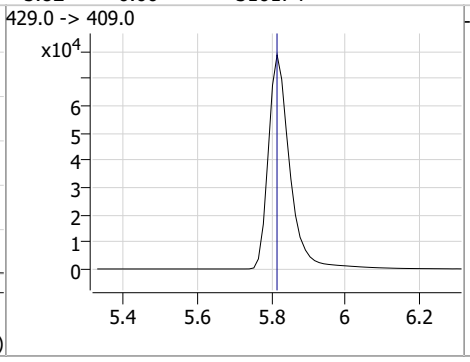


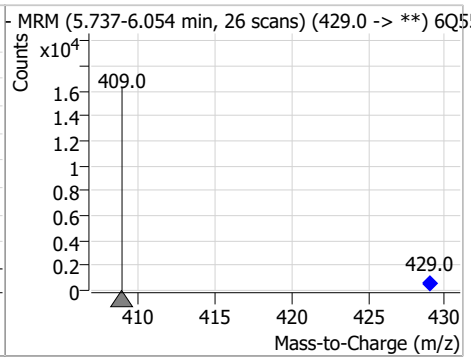




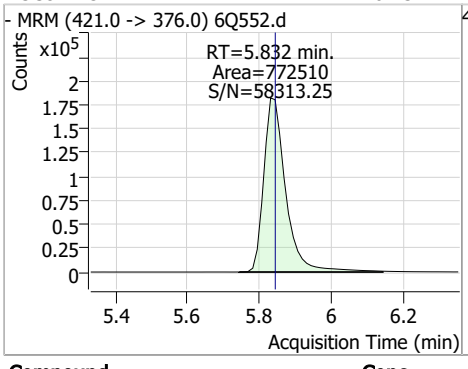
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.57	5.82	0.00	316174				

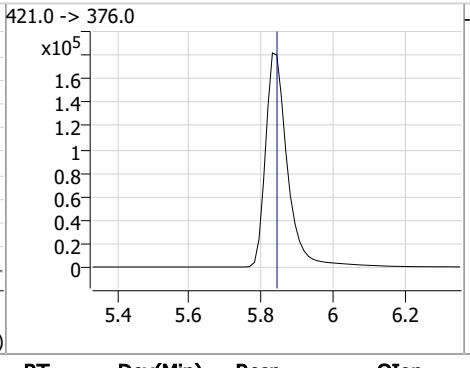


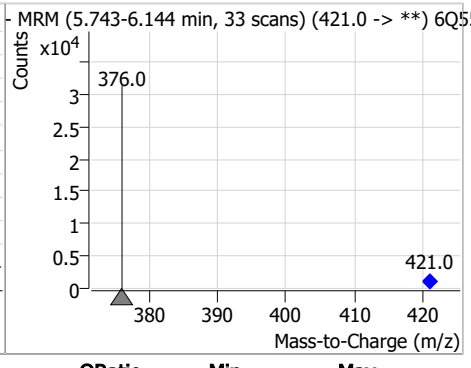




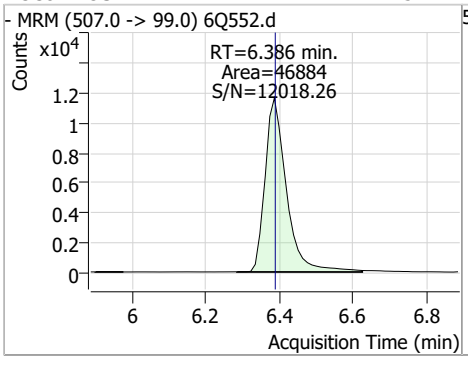
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.73	5.83	-0.01	772510				

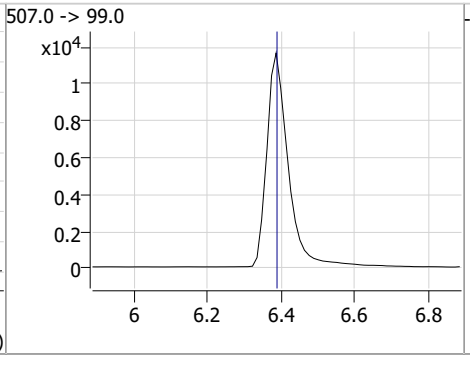


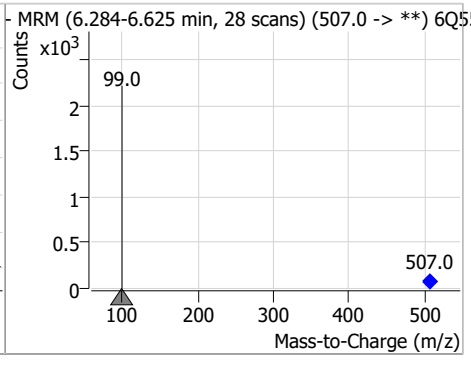




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.75	6.39	0.00	46884				

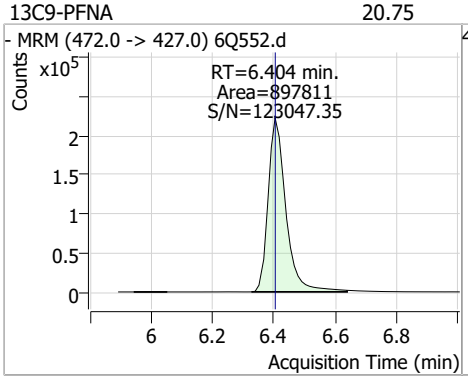


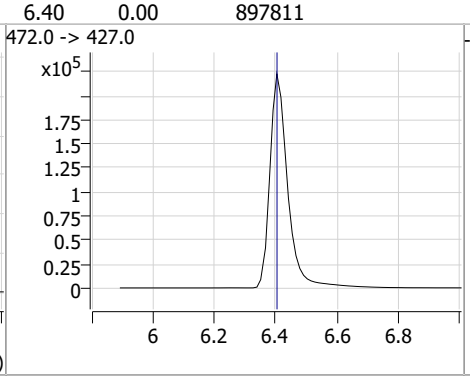


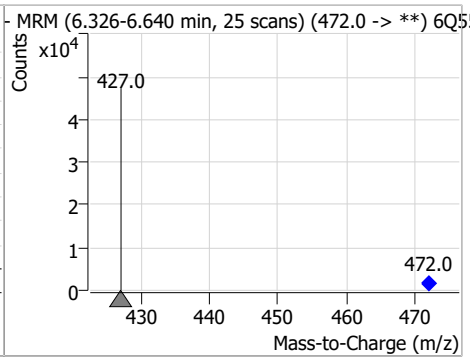


Perfluorinated Compounds by LC/MS/MS

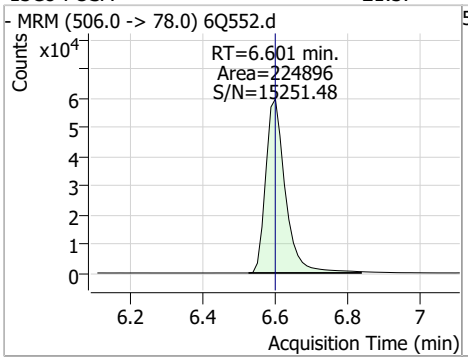
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.75	6.40	0.00	897811				

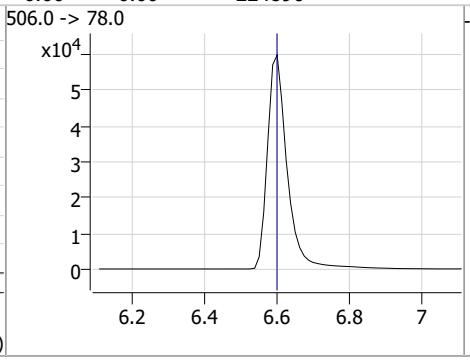


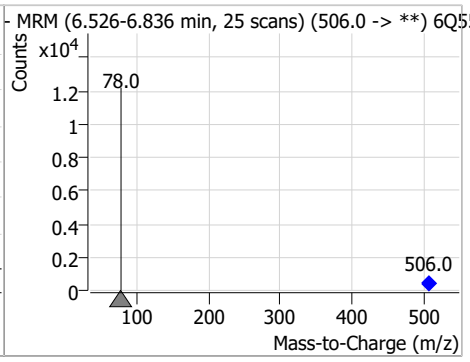




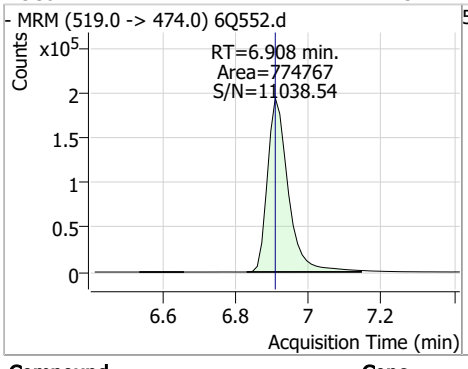
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.37	6.60	0.00	224896				

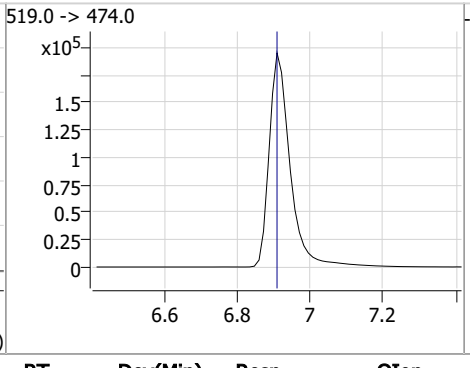


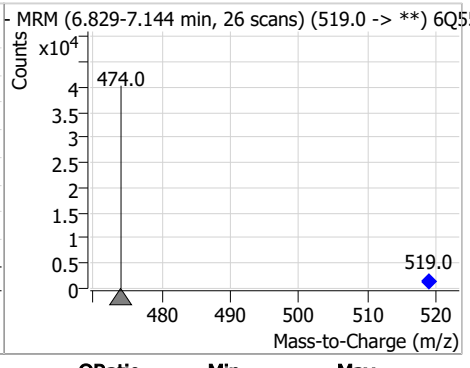




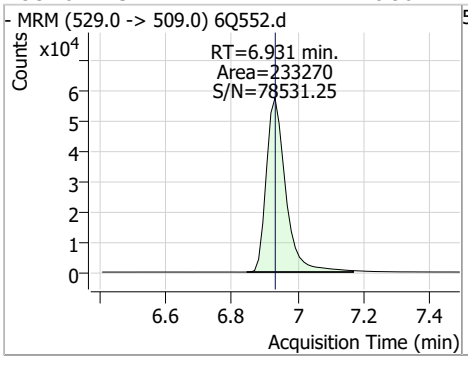
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.13	6.91	0.00	774767				

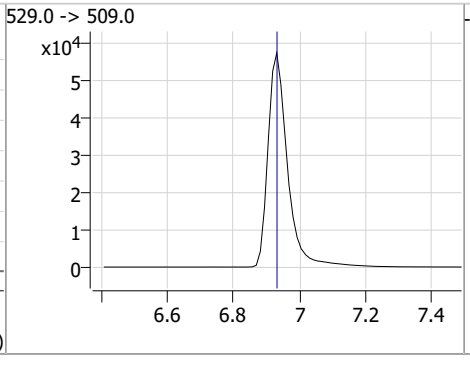


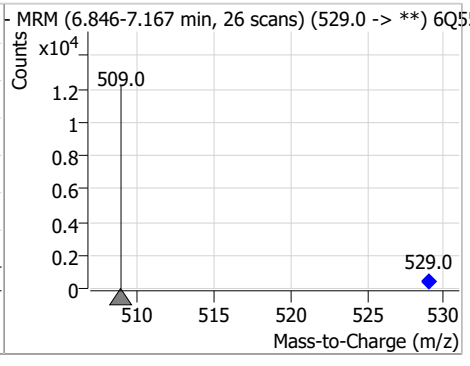




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.96	6.93	0.00	233270				

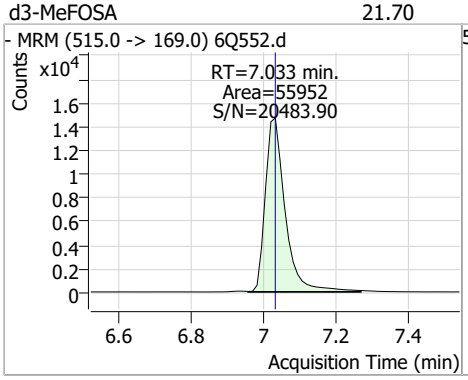


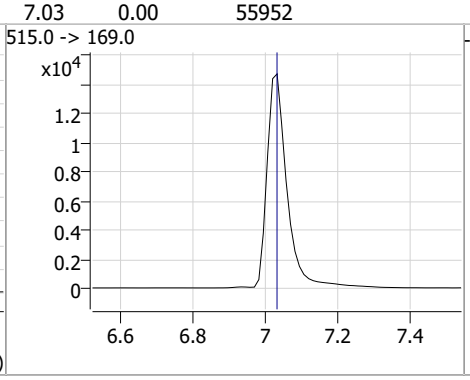


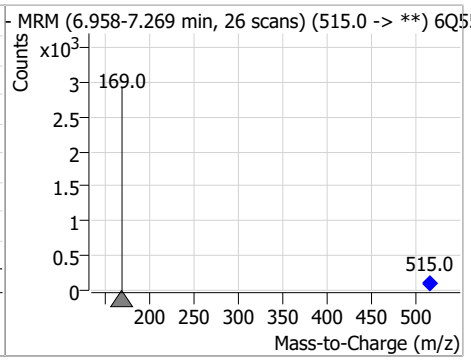


Perfluorinated Compounds by LC/MS/MS

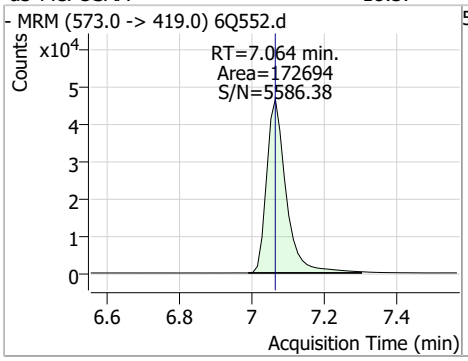
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.70	7.03	0.00	55952				

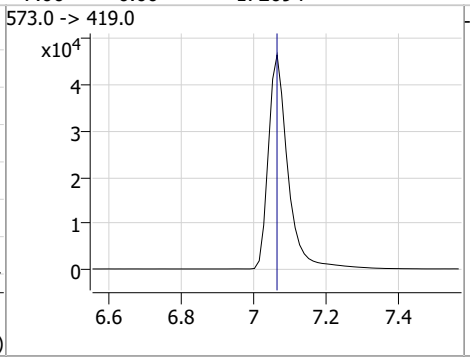


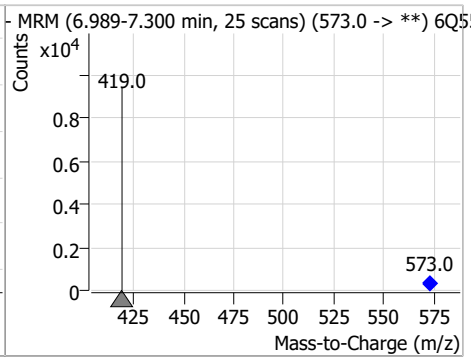




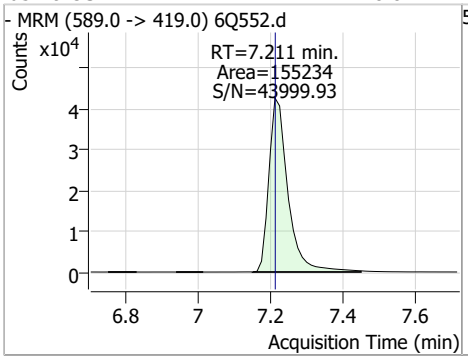
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.37	7.06	0.00	172694				

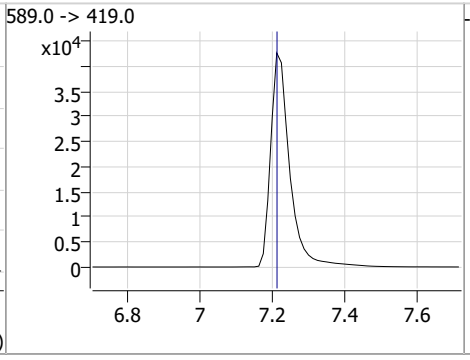


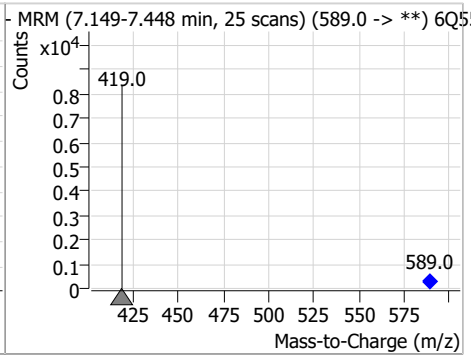




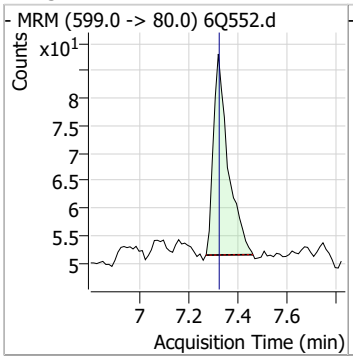
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.87	7.21	0.00	155234				

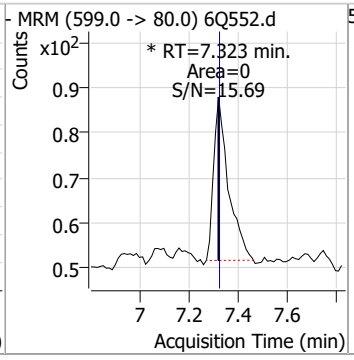


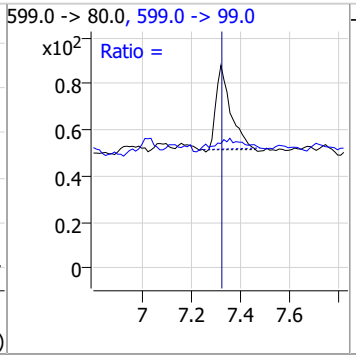


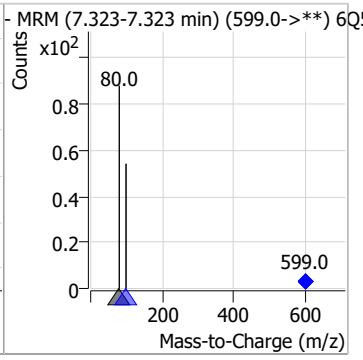


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS		0		0	599.0 -> 99.0		16.6	76.6



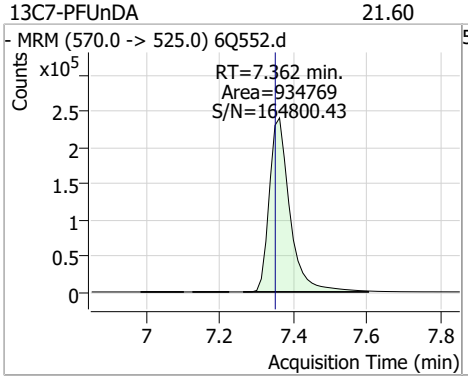


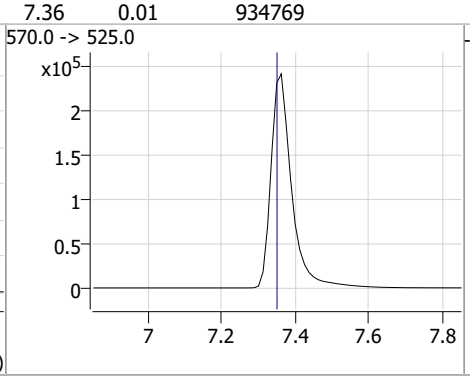


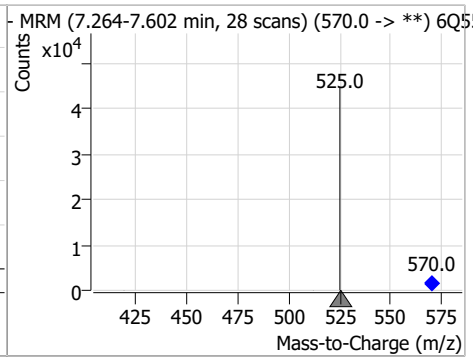


Perfluorinated Compounds by LC/MS/MS

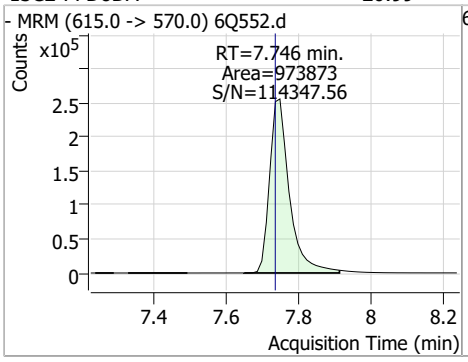
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.60	7.36	0.01	934769				

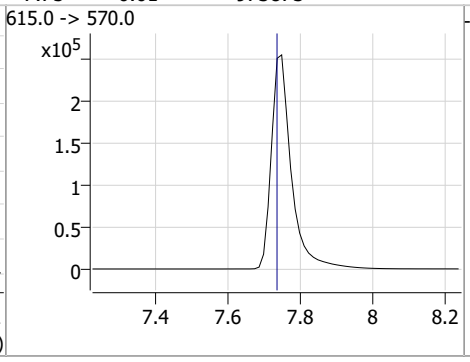


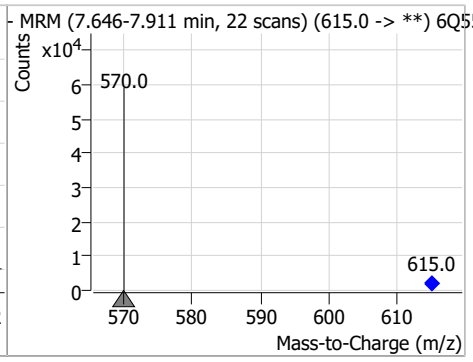




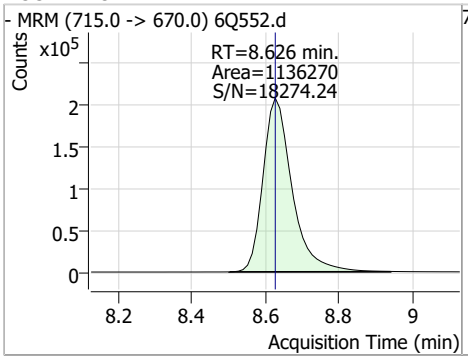
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.99	7.75	0.01	973873				

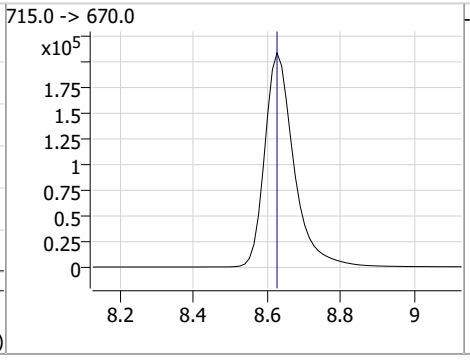


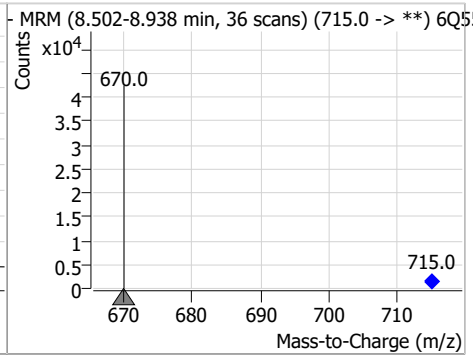




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.17	8.63	0.00	1136270				







Manual Integration Approval Summary

Sample Number: S6Q11-IBLK
Lab FileID: 6Q552.D
Injection Time: 05/26/22 11:57
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60372.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 10:26:16 PM
Sample Name : op91274-lb
Vial : P3-B2
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

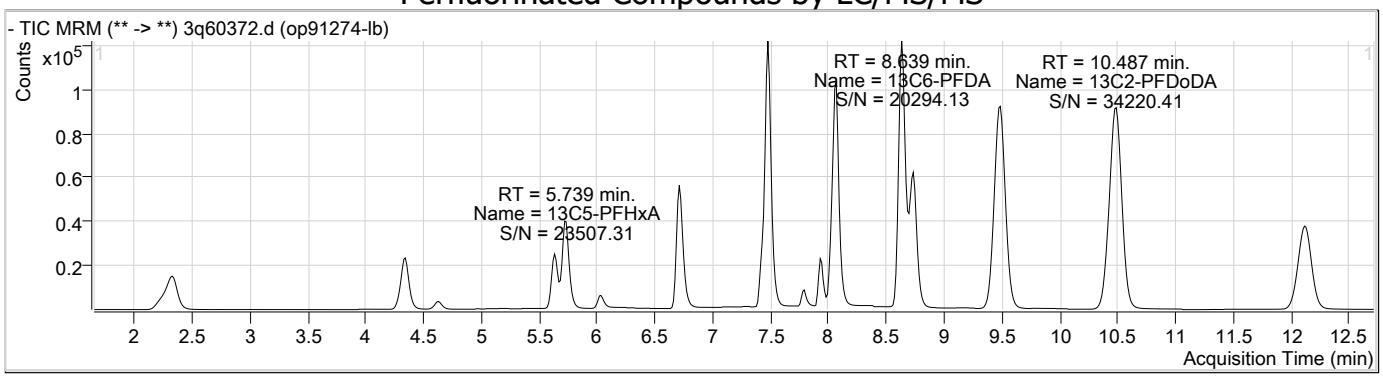
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	121921	20.00	µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	116916	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	159770	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	207377	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	260598	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	329349	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	501686	20.00	µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	625562	20.00	µg/L	-0.013
M2-PFDoDA	10.487	615.0 -> 570.0	686640	20.00	µg/L	-0.025
M2-PFTeDA	12.114	715.0 -> 670.0	312013	20.00	µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	74620	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16120	20.00	µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	19806	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	31460	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11572	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	27217	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	46194	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	65612	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	21822	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	12046	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	61053	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	11572	20.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-6:2FTS	7.485	429.0 -> 81.0	27217	20.79	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-8:2FTS	8.739	529.0 -> 81.0	46194	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-PFDoDA	10.487	615.0 -> 570.0	686640	18.73	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C2-PFTeDA	12.114	715.0 -> 670.0	312013	17.43	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C3-PFBS	4.629	302.0 -> 99.0	16120	20.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C3-PFHxS	6.738	402.0 -> 99.0	19806	20.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C4-PFBA	2.327	217.0 -> 172.0	121921	20.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	6.718	367.0 -> 322.0	207377	20.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFHxA	5.739	318.0 -> 273.0	159770	20.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFPeA	4.349	268.0 -> 223.0	116916	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C6-PFDA	8.639	519.0 -> 474.0	501686	20.10	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

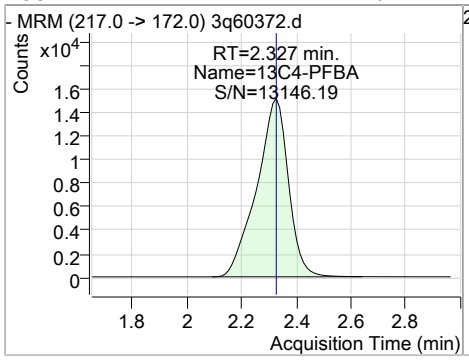
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C7-PFUnDA	9.492	570.0 -> 525.0	625562	20.29 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C8-FOSA	7.430	506.0 -> 78.0	74620	19.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C8-PFOA	7.487	421.0 -> 376.0	260598	20.62 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C8-PFOS	8.036	507.0 -> 99.0	31460	20.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C9-PFNA	8.075	472.0 -> 427.0	329349	20.36 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
d3-MeFOSAA	7.929	573.0 -> 419.0	65612	19.79 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C3-HFPO-DA	6.044	287.0 -> 169.0	21799	19.48 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
d3-MeFOSA	7.793	515.0 -> 169.0	12046	9.64 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.2%	
d5-EtFOSAA	8.029	589.0 -> 419.0	61088	19.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
Target Compounds					**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	329.0 -> 169.0	-	N.D.	
MeFOSA	-	512.0 -> 169.0	-	N.D.	

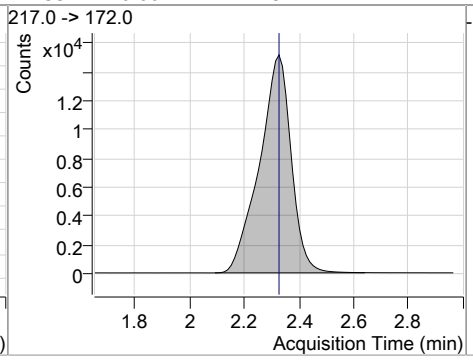
 # = Qualifier out of range, m = manually integrated, + = Area summed

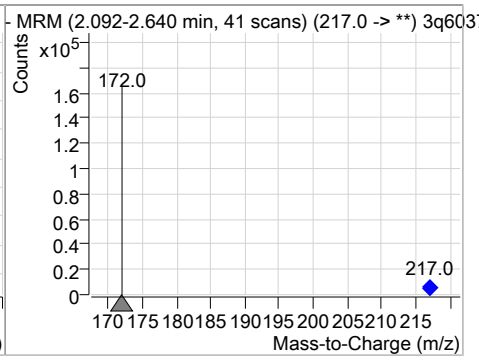
Perfluorinated Compounds by LC/MS/MS



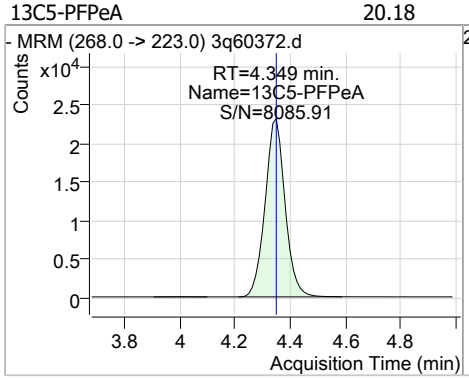
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.17	2.33	0.00	121921				

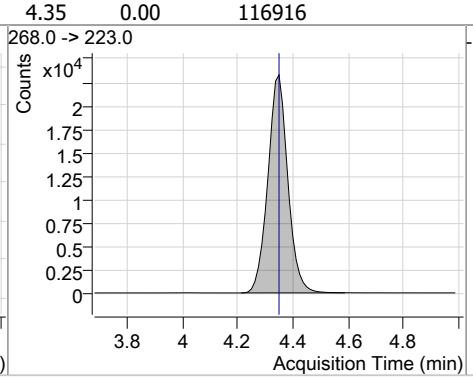


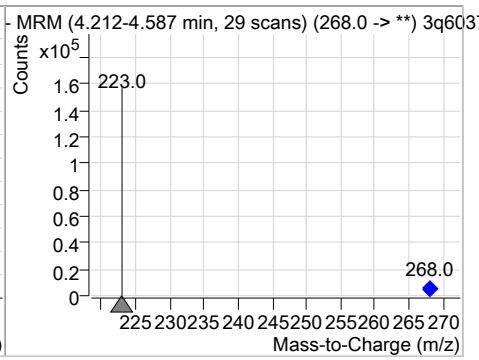




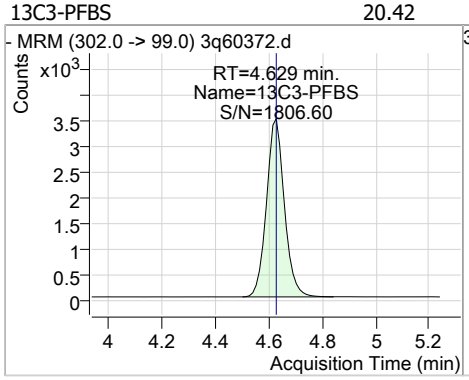
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.18	4.35	0.00	116916				

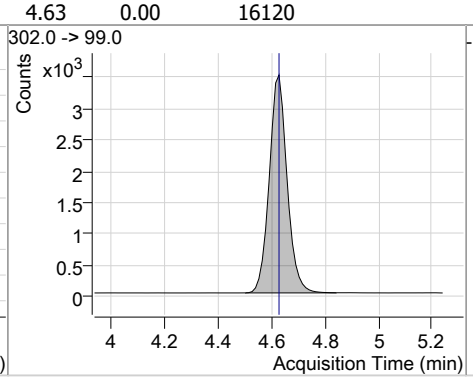


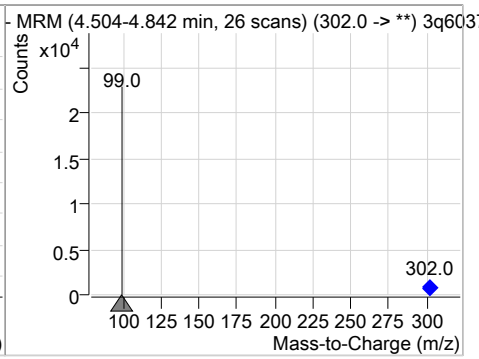




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.42	4.63	0.00	16120				

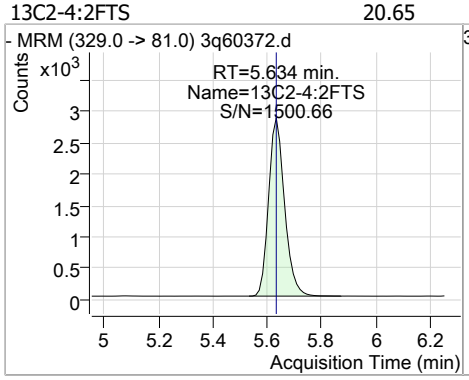


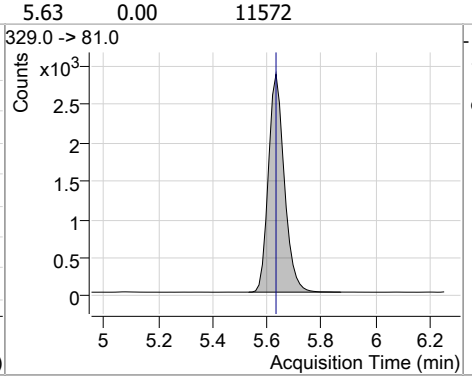


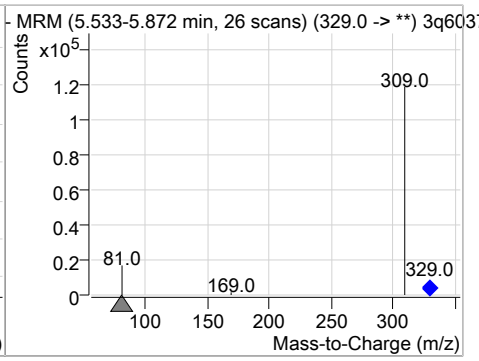


Perfluorinated Compounds by LC/MS/MS

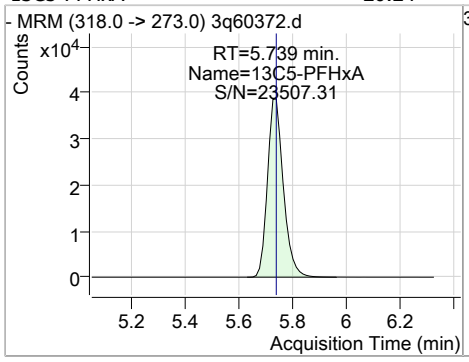
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.65	5.63	0.00	11572				

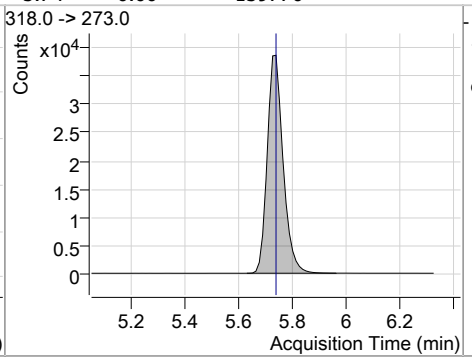


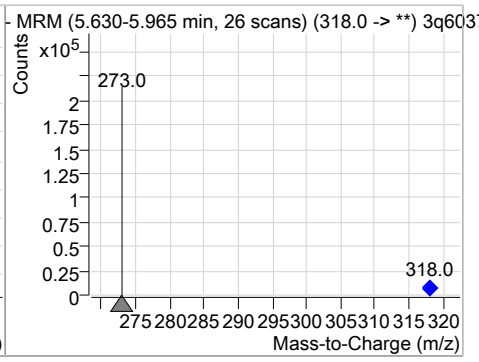




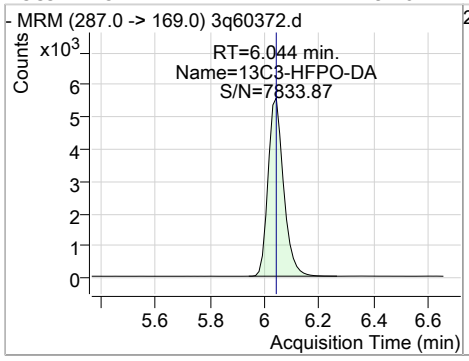
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.24	5.74	0.00	159770				

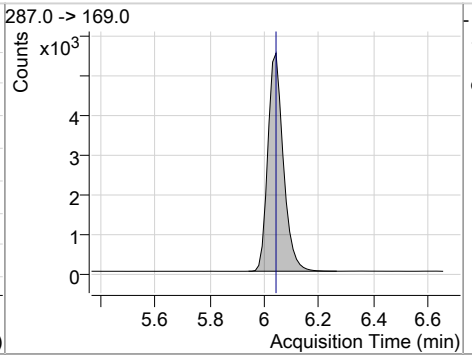


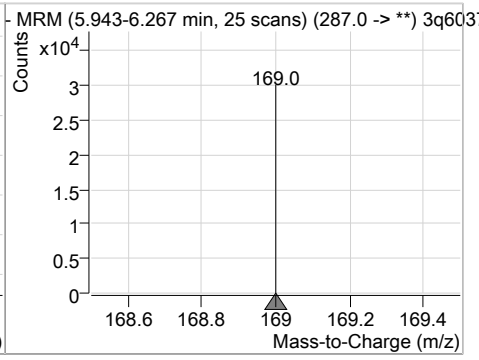




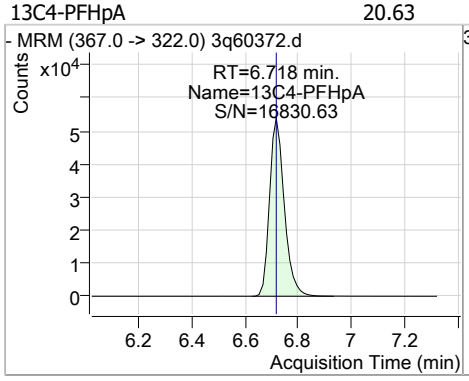
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.48	6.04	0.00	21799				

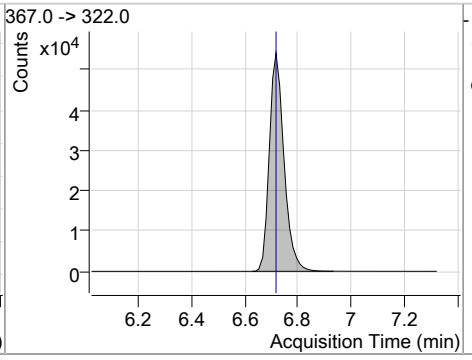


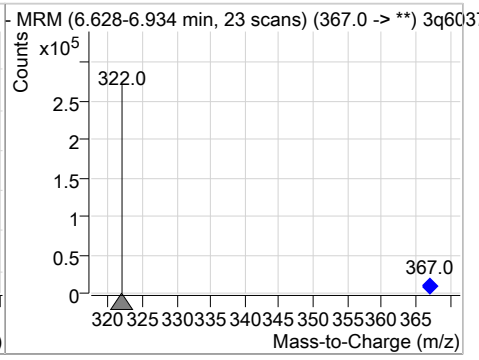




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.63	6.72	0.00	207377				

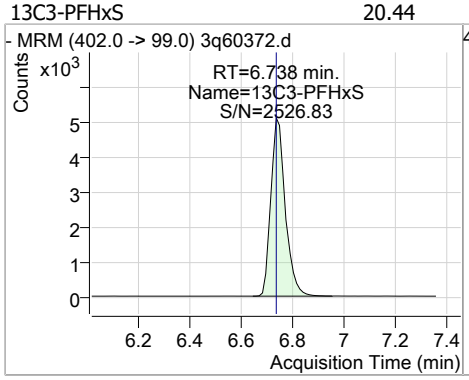


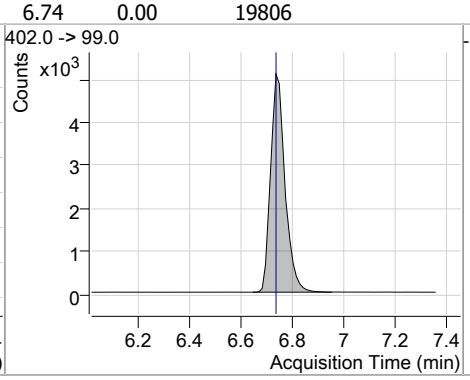


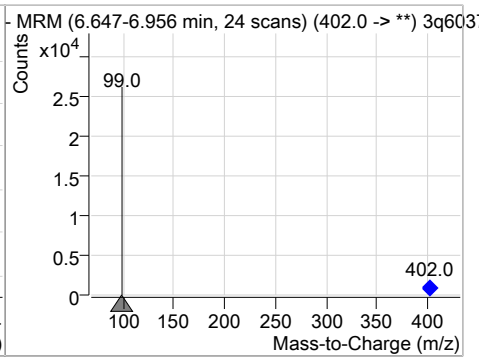


Perfluorinated Compounds by LC/MS/MS

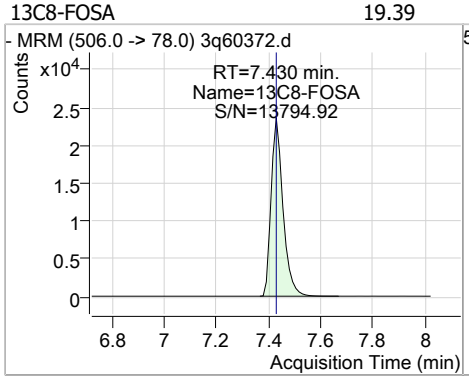
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.44	6.74	0.00	19806				

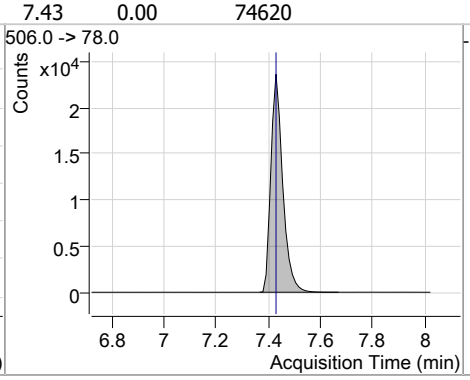


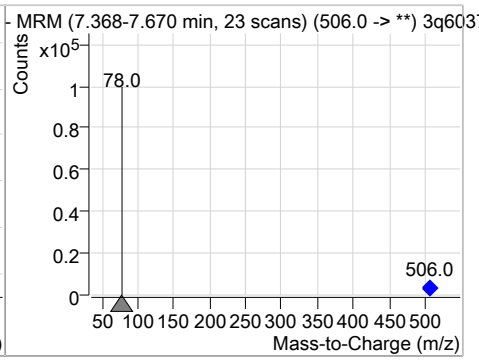




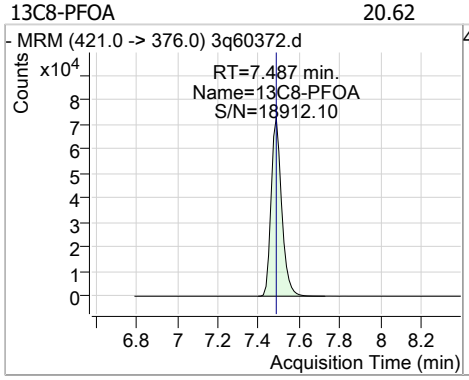
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.39	7.43	0.00	74620				

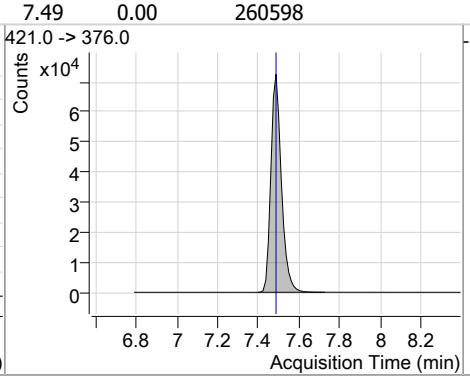


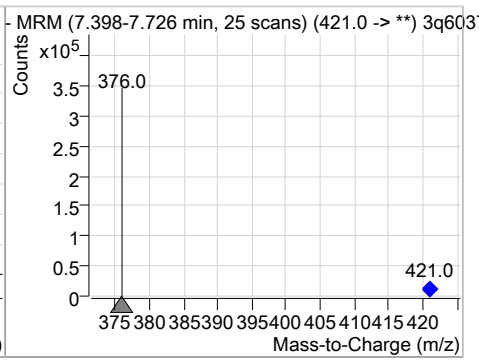




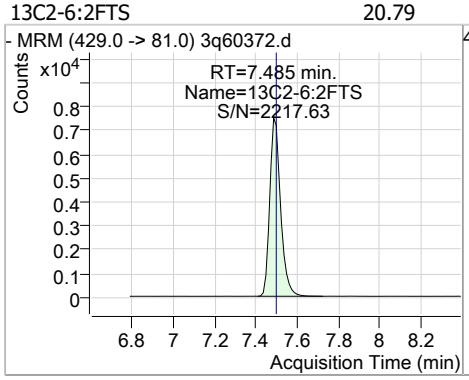
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.62	7.49	0.00	260598				

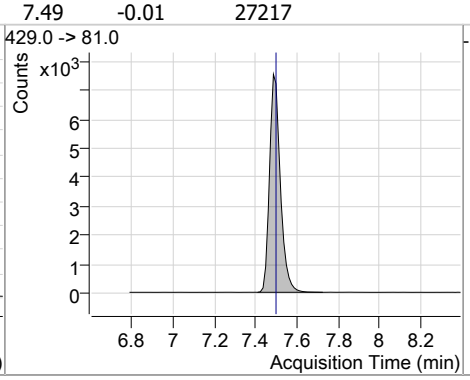


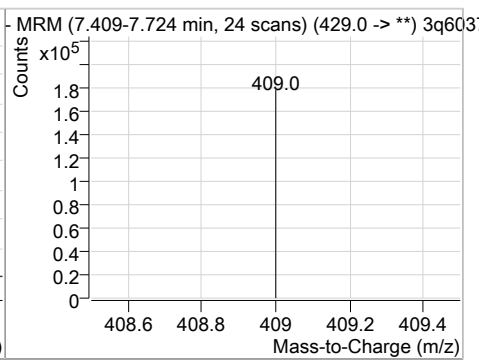




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.79	7.49	-0.01	27217				

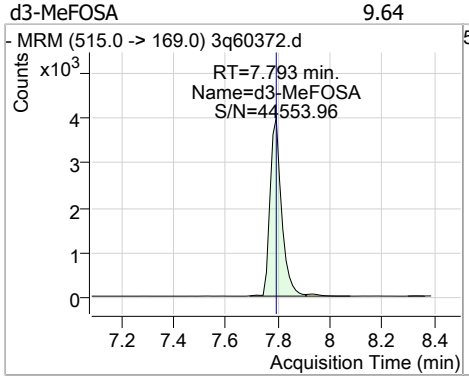


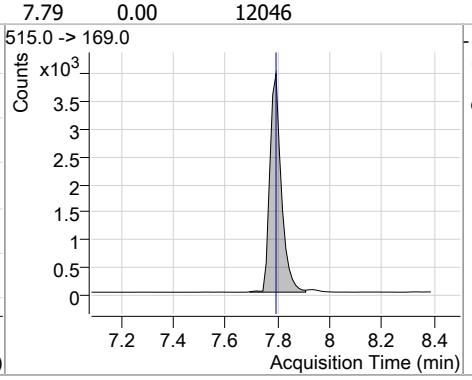


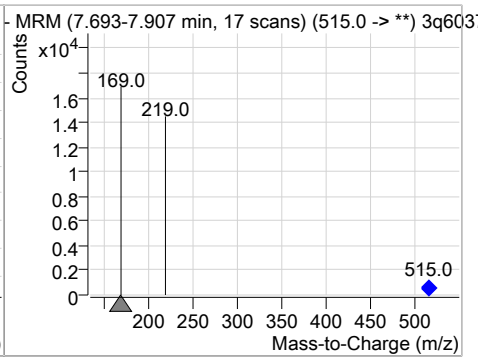


Perfluorinated Compounds by LC/MS/MS

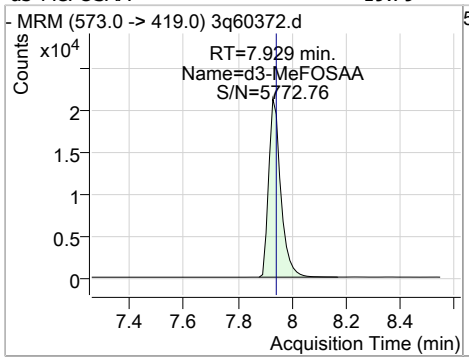
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	9.64	7.79	0.00	12046				

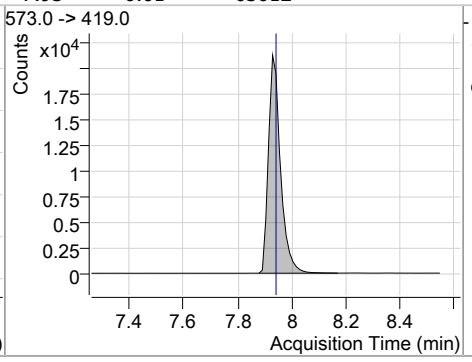


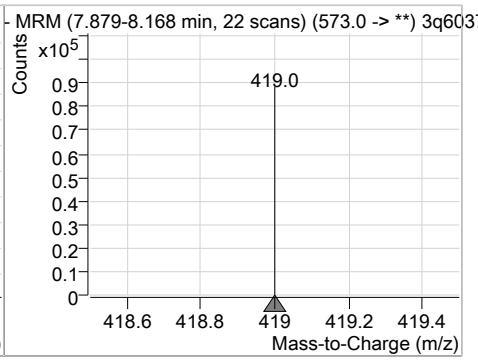




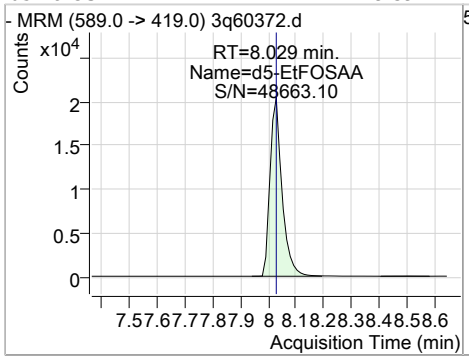
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.79	7.93	-0.01	65612				

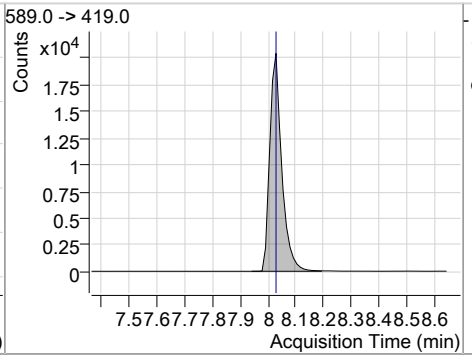


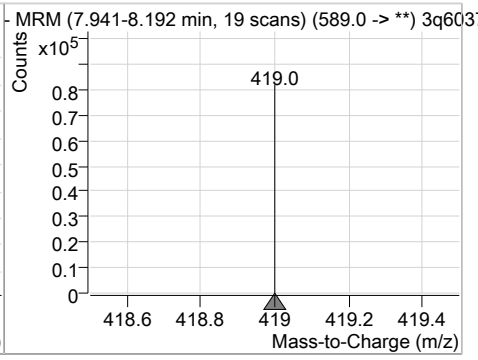




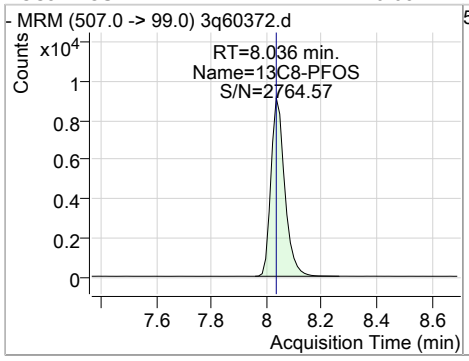
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.39	8.03	0.00	61088				

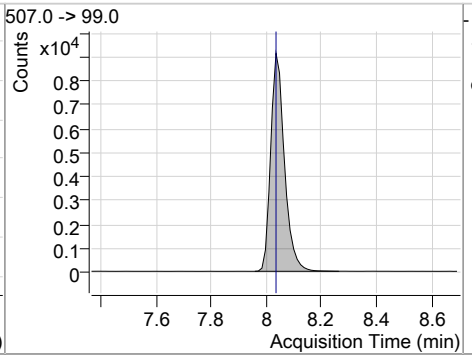


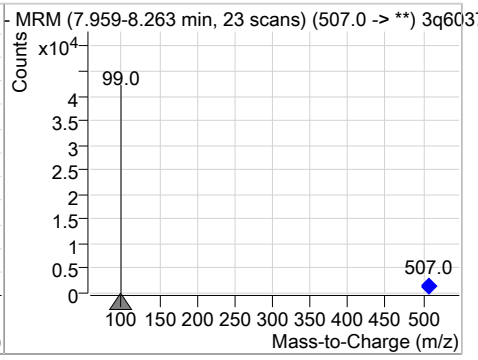




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.08	8.04	0.00	31460				

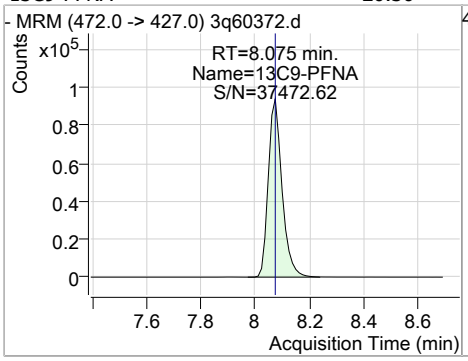


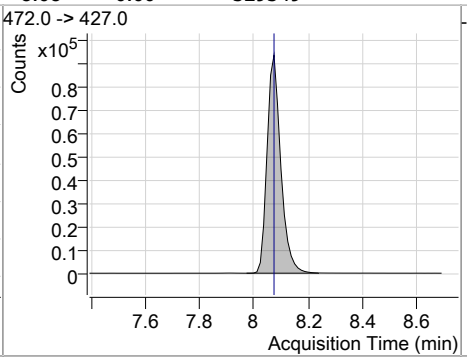


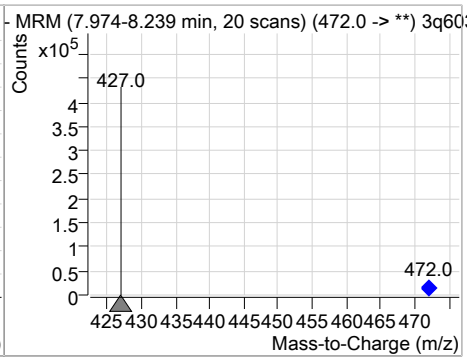


Perfluorinated Compounds by LC/MS/MS

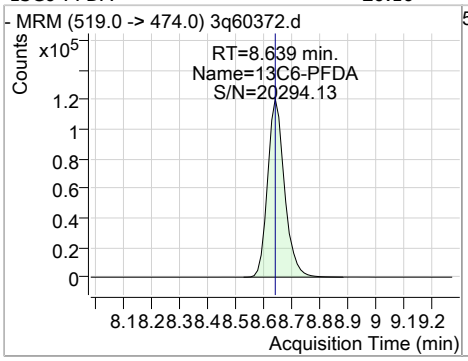
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.36	8.08	0.00	329349				

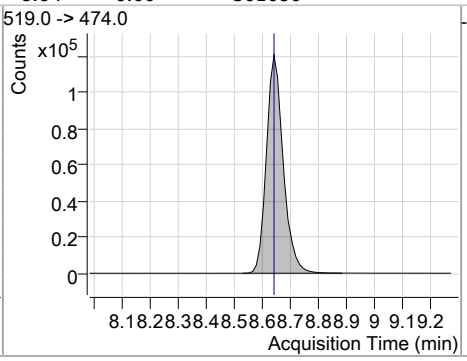


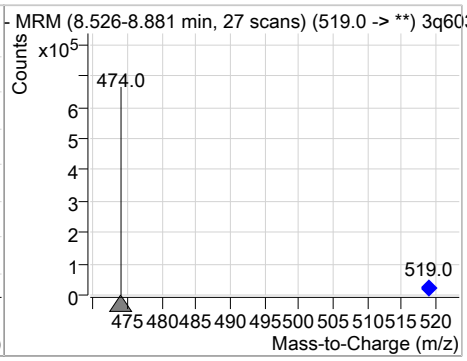




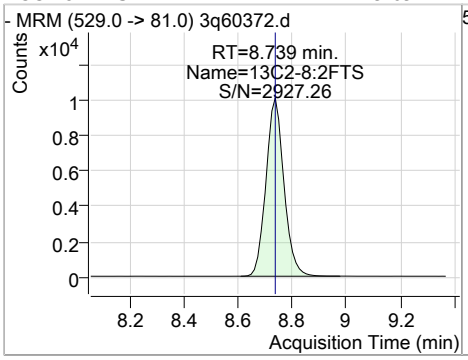
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.10	8.64	0.00	501686				

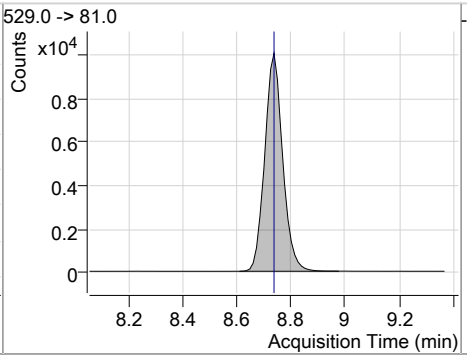


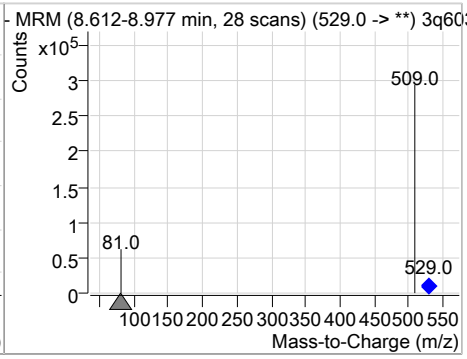




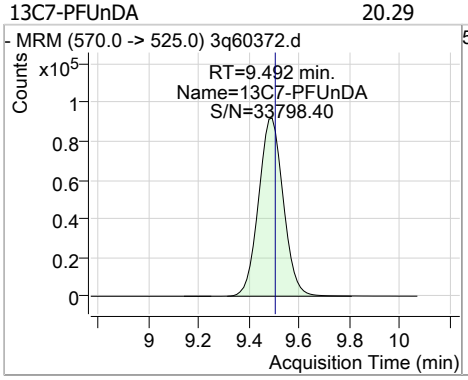
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.69	8.74	0.00	46194				

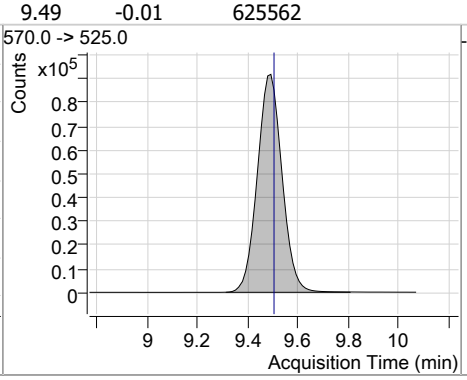


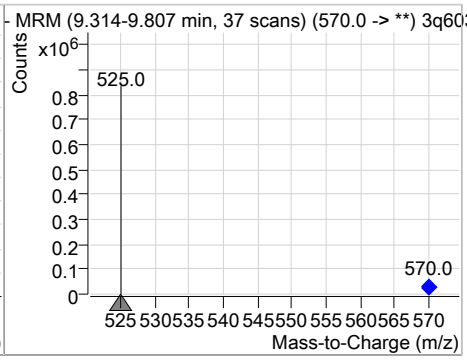




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.29	9.49	-0.01	625562				

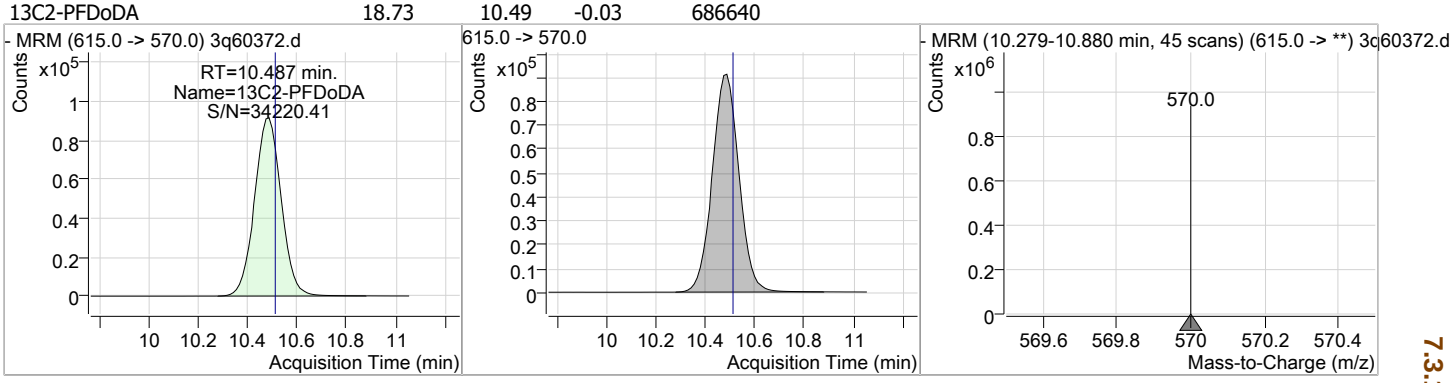




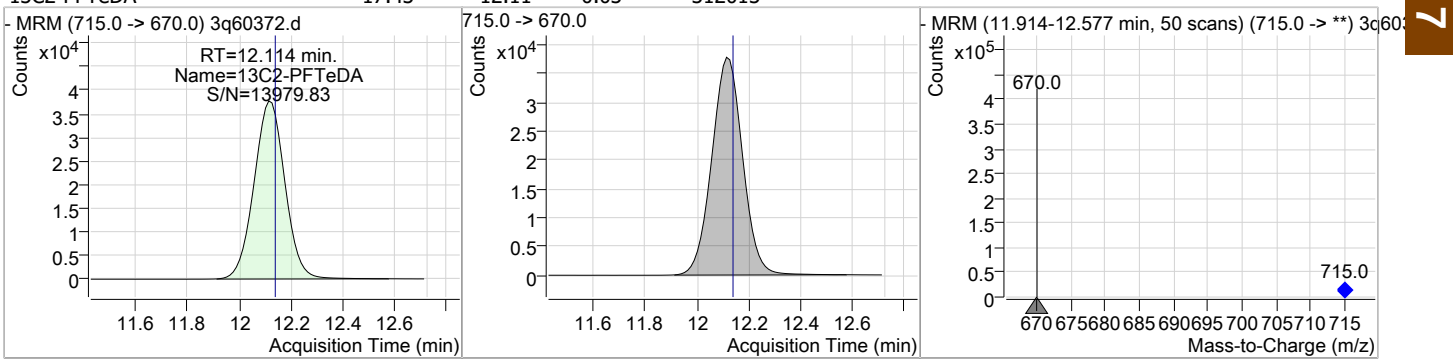


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.73	10.49	-0.03	686640				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.43	12.11	-0.03	312013				



7.3.1

7

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q584.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 7:59:05 PM
Sample Name : op91243-bs
Vial : P1-E6
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91243,S6Q11,250,,,1.0,1,water

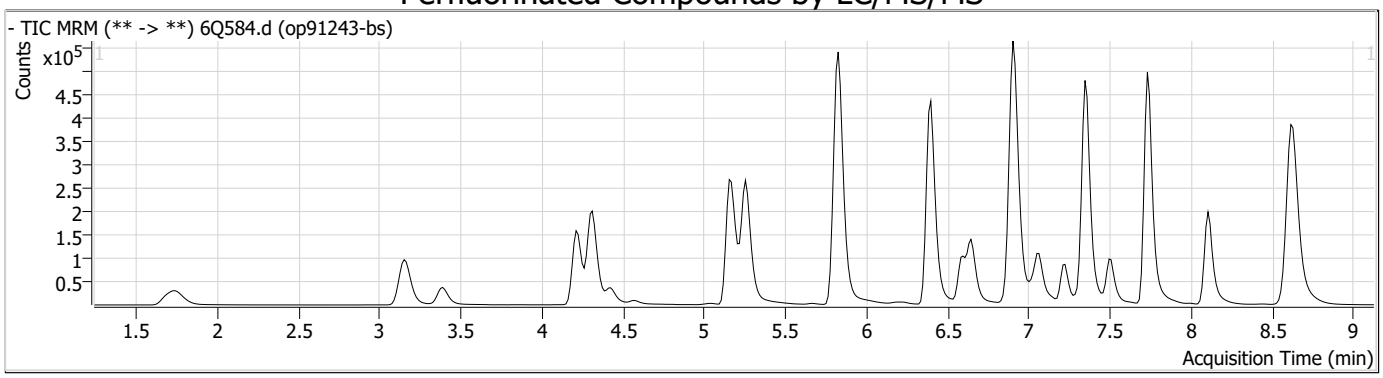
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	183546	20.00 µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	305429	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	451775	20.00 µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	493870	20.00 µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	777633	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	938023	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	799914	20.00 µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	985418	20.00 µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	1005943	20.00 µg/L	0.000
M2-PFTeDA	8.626	715.0 -> 670.0	1089524	20.00 µg/L	0.000
M8-FOSA	6.601	506.0 -> 78.0	198645	20.00 µg/L	0.000
M3-PFBS	3.385	302.0 -> 99.0	38263	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	35045	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	48808	20.00 µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	311170	20.00 µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	337658	20.00 µg/L	0.000
M2-8:2FTS	6.919	529.0 -> 509.0	264819	20.00 µg/L	-0.013
M3-MeFOSAA	7.064	573.0 -> 419.0	179205	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	13503	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	39870	20.00 µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	144899	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.210	329.0 -> 309.0	311170	21.16 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C2-6:2FTS	5.816	429.0 -> 409.0	337658	19.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C2-8:2FTS	6.919	529.0 -> 509.0	264819	21.53 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%	
13C2-PFDoDA	7.733	615.0 -> 570.0	1005943	21.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1089524	20.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFBS	3.385	302.0 -> 99.0	38263	21.69 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%	
13C3-PFHxS	5.202	402.0 -> 99.0	35045	21.33 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C4-PFBA	1.737	217.0 -> 172.0	183546	22.50 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%	
13C4-PFHpA	5.160	367.0 -> 322.0	493870	21.84 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C5-PFHxA	4.314	318.0 -> 273.0	451775	21.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C5-PFPeA	3.155	268.0 -> 223.0	305429	21.97 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C6-PFDA	6.908	519.0 -> 474.0	799914	21.81 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

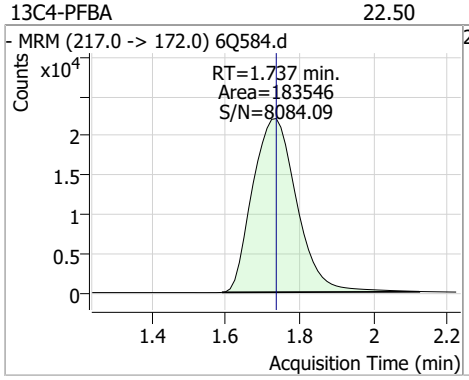
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C7-PFUnDA	7.350	570.0 -> 525.0	985418	22.77 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.8%		
13C8-FOSA	6.601	506.0 -> 78.0	198645	18.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C8-PFOA	5.832	421.0 -> 376.0	777633	20.87 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C8-PFOS	6.386	507.0 -> 99.0	48808	22.64 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C9-PFNA	6.404	472.0 -> 427.0	938023	21.68 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
d3-MeFOSAA	7.064	573.0 -> 419.0	179205	19.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	13220	22.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
d3-MeFOSA	7.020	515.0 -> 169.0	39870	15.46 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%		
d5-EtFOSAA	7.211	589.0 -> 419.0	145211	17.65 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%		
Target Compounds						**QValue**
4:2FTS	4.212	327.0 -> 307.0	295868	17.49 µg/L		99
6:2FTS	5.817	427.0 -> 407.0	289310	16.90 µg/L		96
8:2FTS	6.920	527.0 -> 507.0	213901	16.29 µg/L		99
EtFOSAA	7.225	584.0 -> 419.0	124608	17.90 µg/L	m	97
FOSA	6.590	498.0 -> 78.0	163789	16.81 µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	129191	16.17 µg/L	m	90
PFBA	1.730	213.0 -> 169.0	70261	16.89 µg/L		100
PFBS	3.390	299.0 -> 80.0	97907	16.46 µg/L		98
PFDA	6.909	513.0 -> 469.0	840274	16.51 µg/L		99
PFDoDA	7.734	613.0 -> 569.0	758430	16.37 µg/L		98
PFDS	7.311	599.0 -> 80.0	58353	15.96 µg/L		100
PFHpA	5.161	363.0 -> 319.0	538747	16.44 µg/L		100
PFHpS	5.839	449.0 -> 80.0	69284	15.54 µg/L		97
PFHxA	4.315	313.0 -> 269.0	391391	15.99 µg/L		100
PFHxS	5.205	399.0 -> 80.0	76065	16.31 µg/L	m	96
PFNA	6.405	463.0 -> 419.0	623814	15.62 µg/L		100
PFNS	6.869	549.0 -> 80.0	79472	16.53 µg/L		100
PFOA	5.833	413.0 -> 369.0	664419	16.89 µg/L		100
PFOS	6.376	499.0 -> 80.0	73512	16.01 µg/L	m	84
PFPeA	3.158	263.0 -> 219.0	218247	16.35 µg/L		100
PFPeS	4.420	349.0 -> 80.0	81871	16.46 µg/L		100
PFTeDA	8.616	713.0 -> 669.0	972778	16.25 µg/L		99
PFTrDA	8.103	663.0 -> 619.0	742442	14.76 µg/L		99
PFUnDA	7.351	563.0 -> 519.0	711937	15.46 µg/L		98
11Cl-PF3OUdS	7.494	631.0 -> 451.0	257244	15.36 µg/L		97
9Cl-PF3ONS	6.645	531.0 -> 351.0	366375	15.43 µg/L		99
ADONA	5.256	377.0 -> 251.0	826171	16.26 µg/L		100
HFPO-DA	4.580	285.0 -> 169.0	10561	16.68 µg/L		96
MeFOSA	7.035	512.0 -> 169.0	31892	15.44 µg/L		98

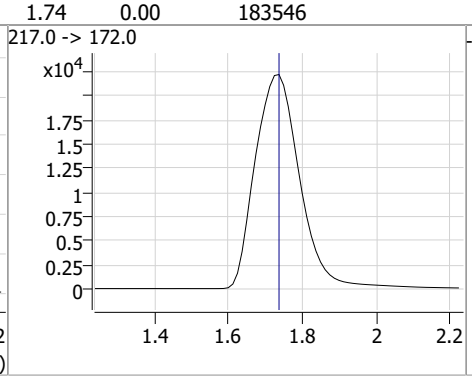
 # = Qualifier out of range, m = manually integrated, + = Area summed

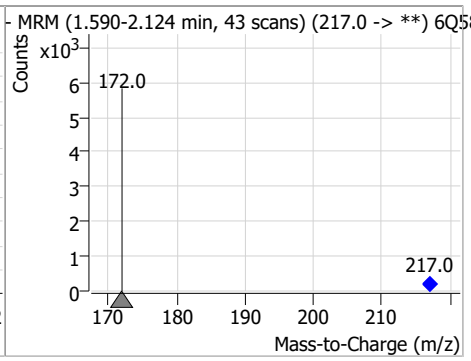
Perfluorinated Compounds by LC/MS/MS



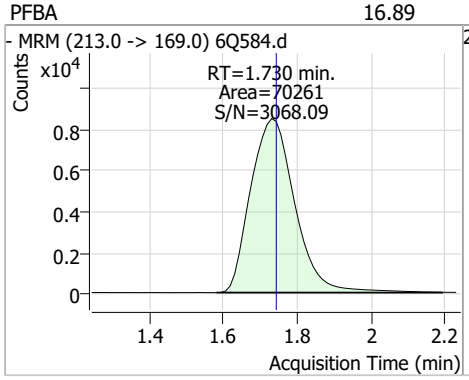
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.50	1.74	0.00	183546				

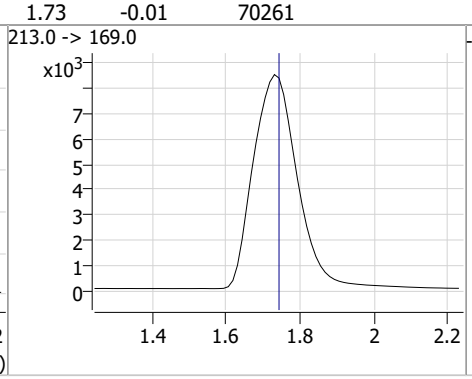


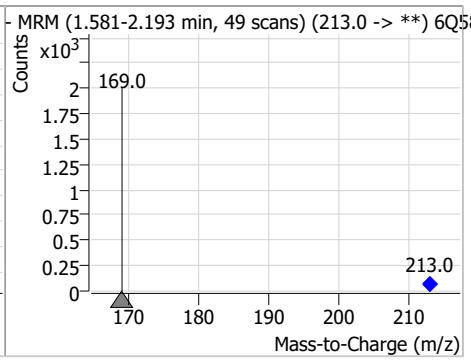




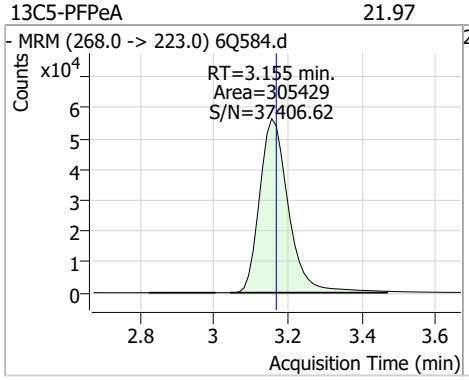
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	16.89	1.73	-0.01	70261				

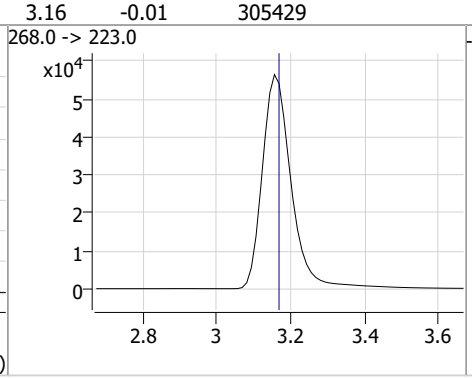


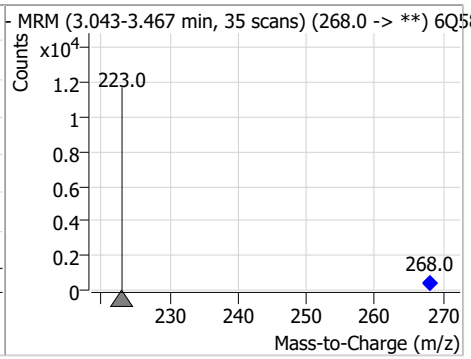




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.97	3.16	-0.01	305429				

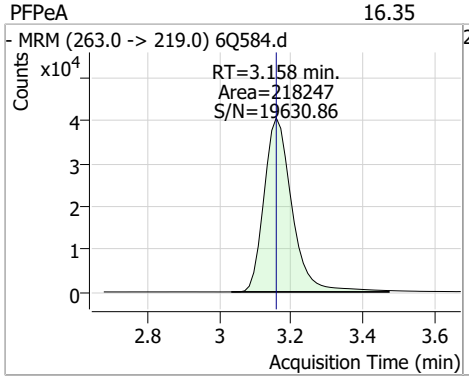


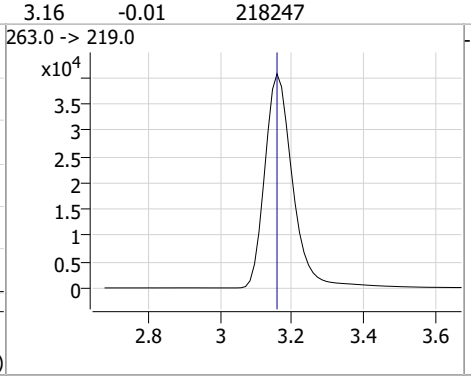


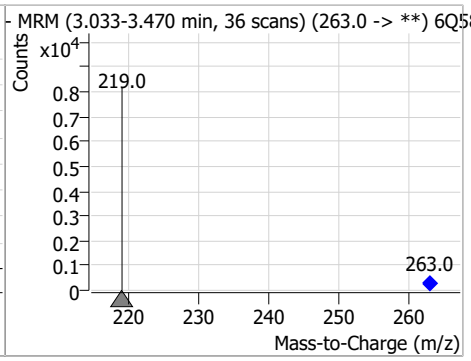


Perfluorinated Compounds by LC/MS/MS

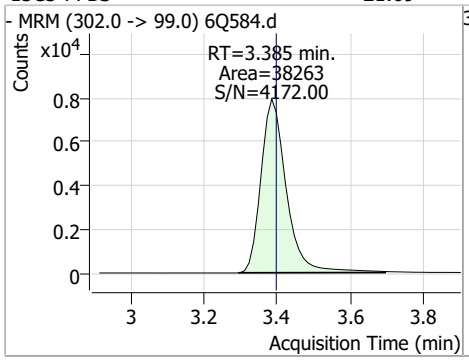
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.35	3.16	-0.01	218247				

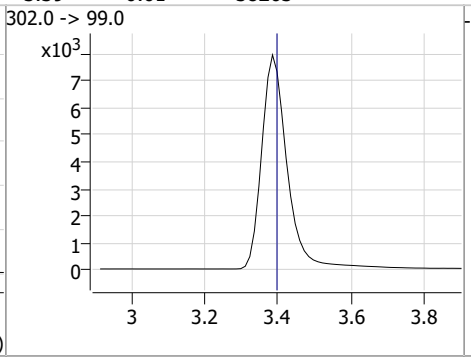


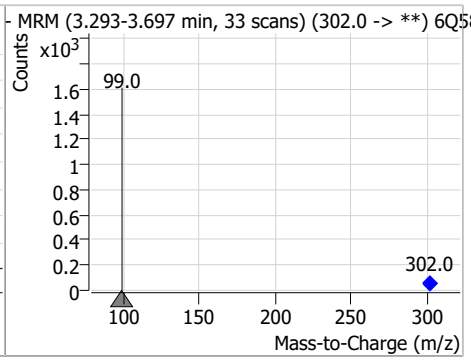




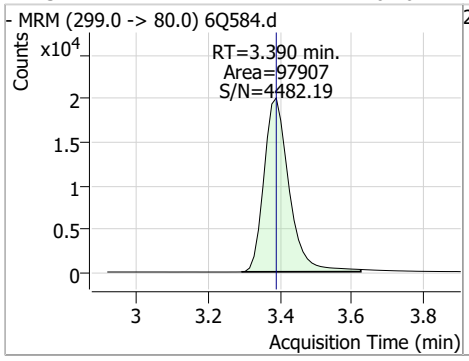
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.69	3.39	-0.01	38263				

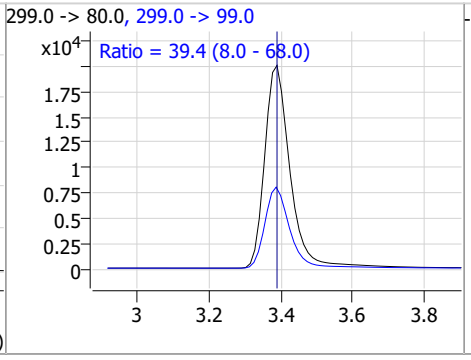


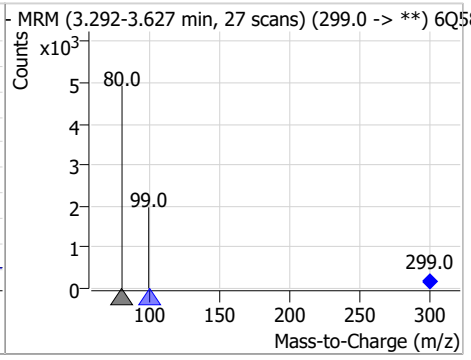




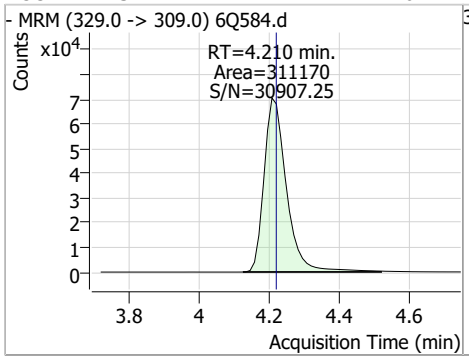
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.46	3.39	-0.01	97907	299.0 -> 99.0	39.4	8.0	68.0

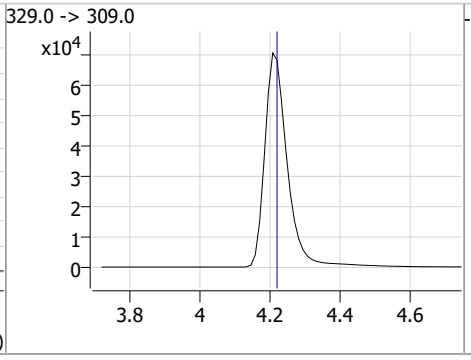


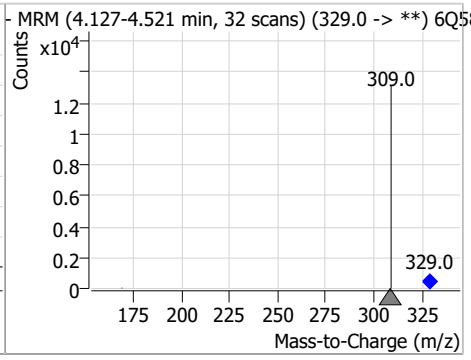




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.16	4.21	-0.01	311170				

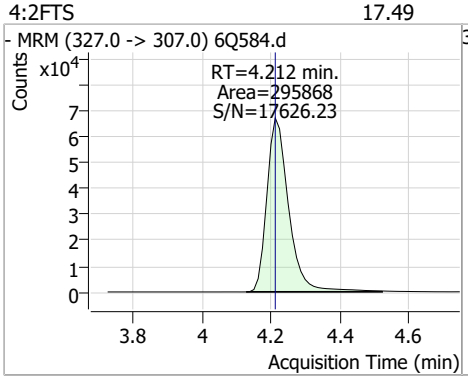


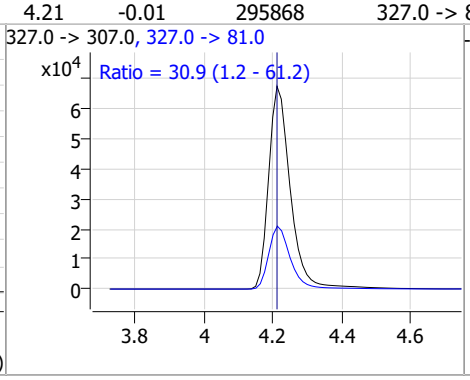


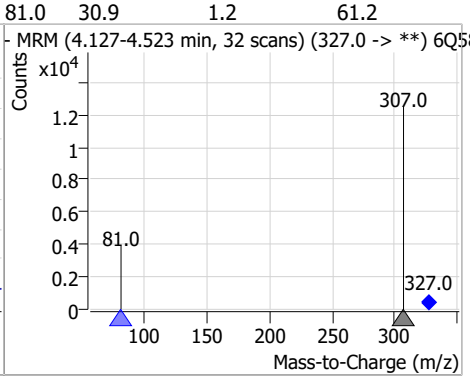


Perfluorinated Compounds by LC/MS/MS

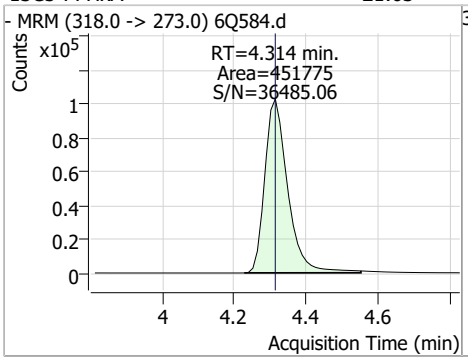
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.49	4.21	-0.01	295868	327.0 -> 81.0	30.9	1.2	61.2

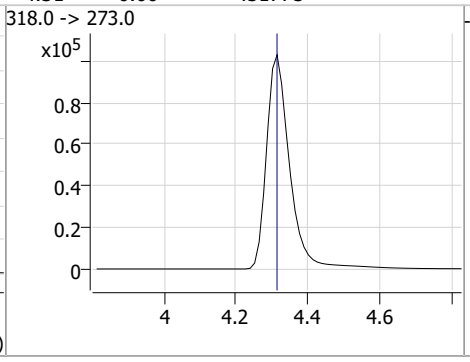


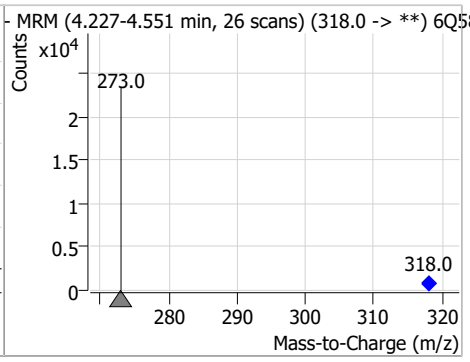




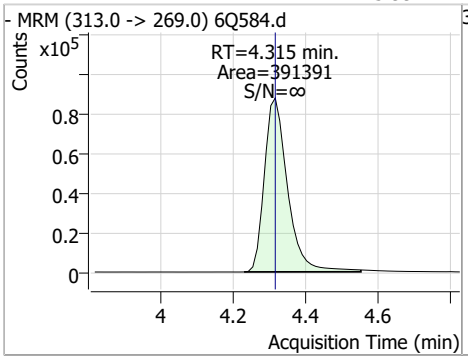
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.63	4.31	0.00	451775				

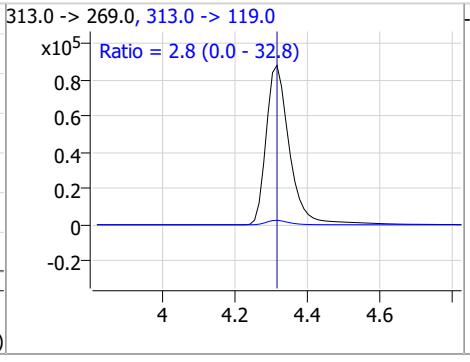


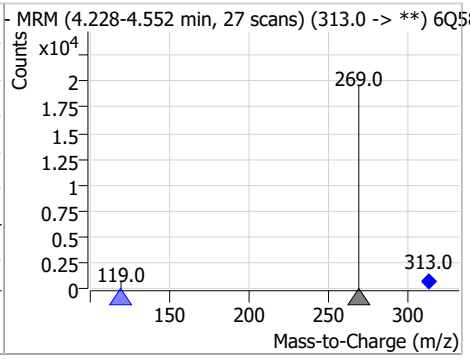




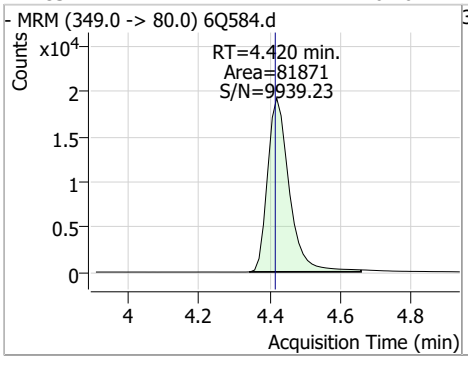
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.99	4.31	0.00	391391	313.0 -> 119.0	2.8	0.0	32.8

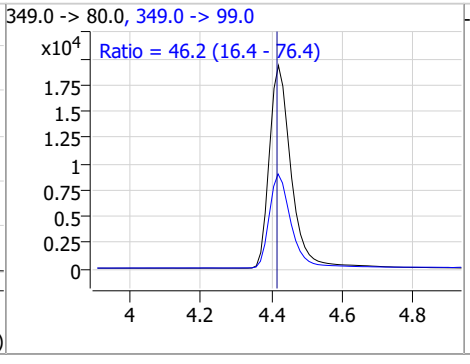


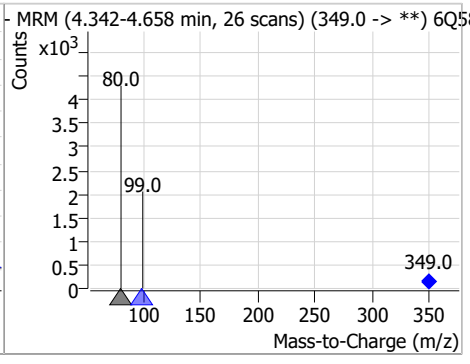




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.46	4.42	-0.01	81871	349.0 -> 99.0	46.2	16.4	76.4

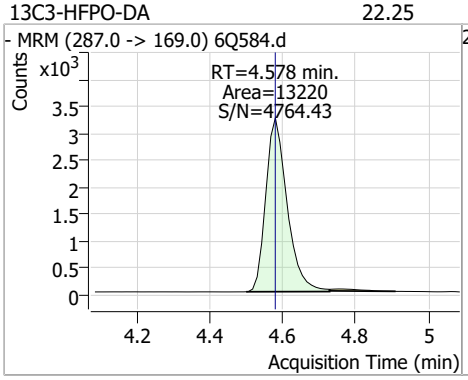


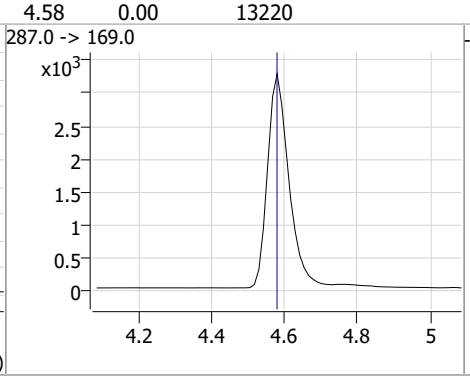


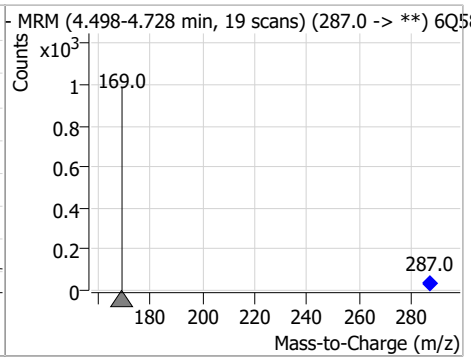


Perfluorinated Compounds by LC/MS/MS

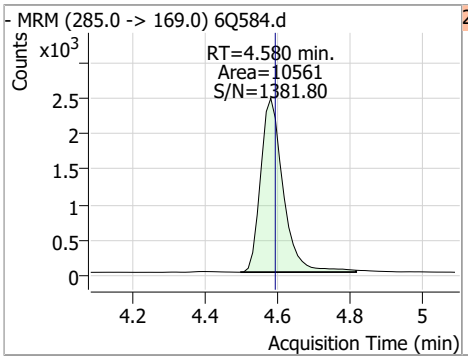
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.25	4.58	0.00	13220				

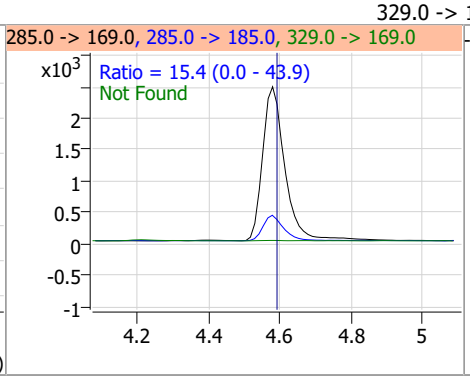


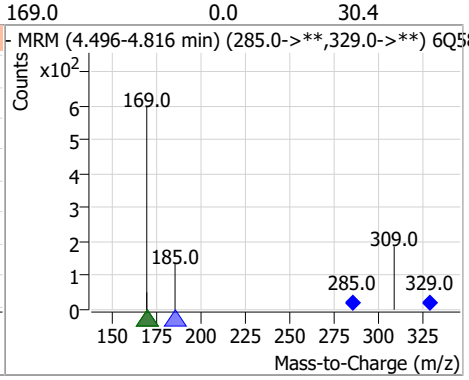




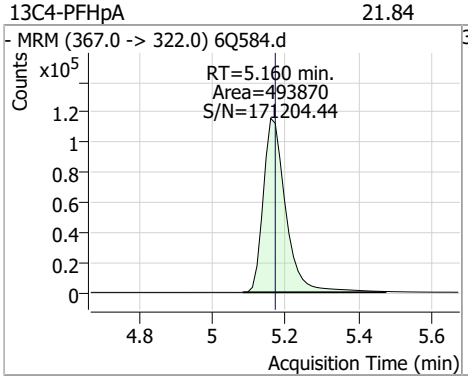
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	16.68	4.58	-0.01	10561	285.0 -> 185.0	15.4	0.0	43.9
					329.0 -> 169.0		0.0	30.4

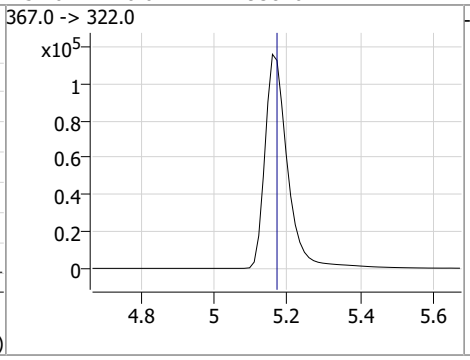


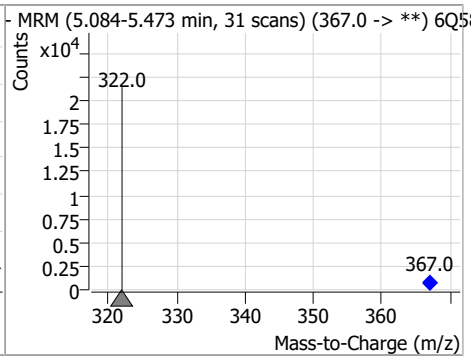




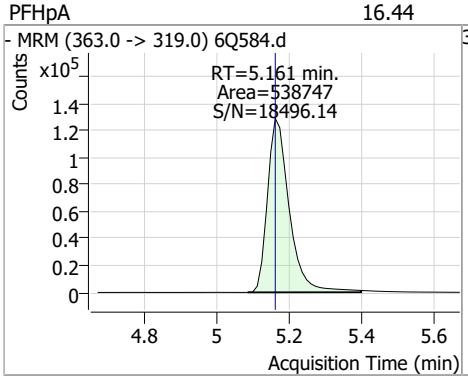
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.84	5.16	-0.01	493870				

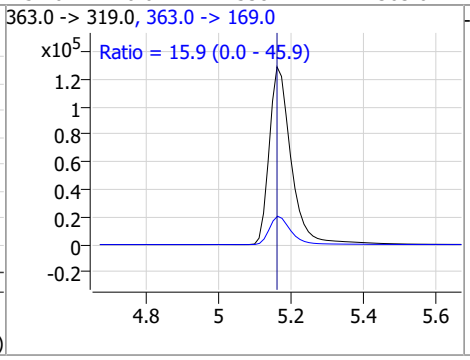


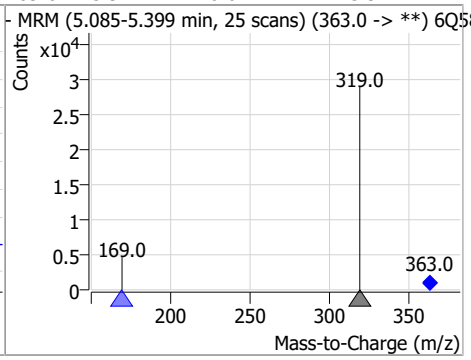




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.44	5.16	-0.01	538747	363.0 -> 169.0	15.9	0.0	45.9

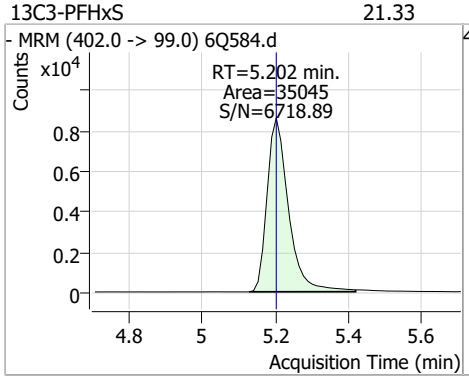


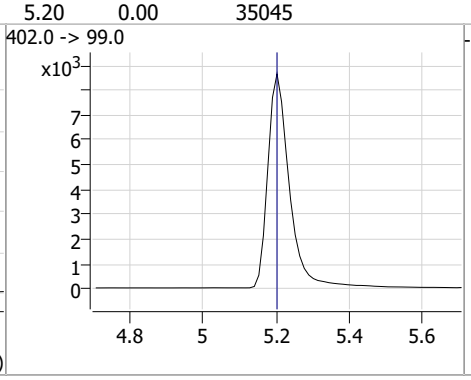


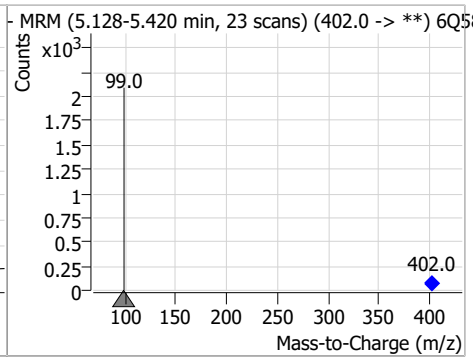


Perfluorinated Compounds by LC/MS/MS

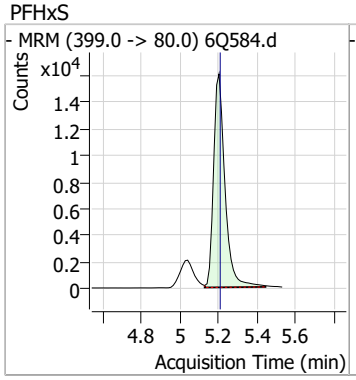
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.33	5.20	0.00	35045				

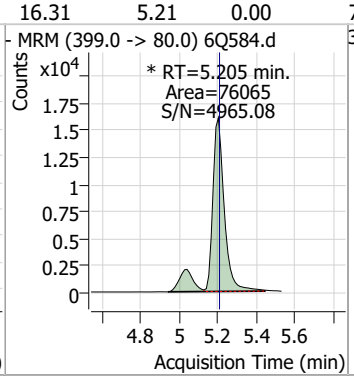


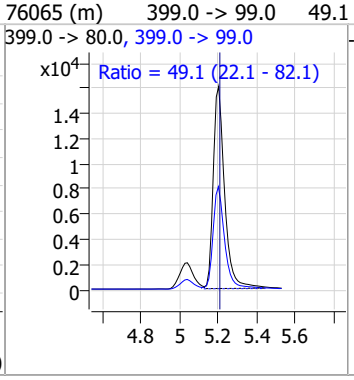


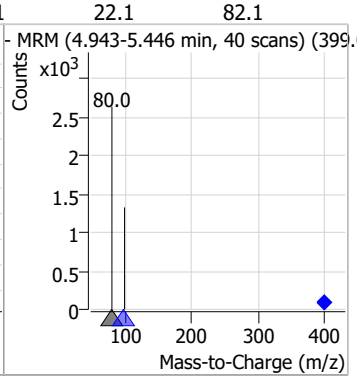


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.31	5.21	0.00	76065 (m)	399.0 -> 99.0	49.1	22.1	82.1

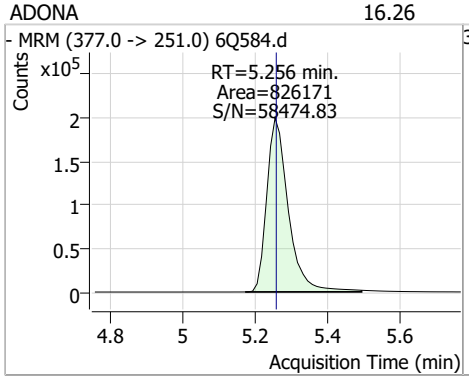


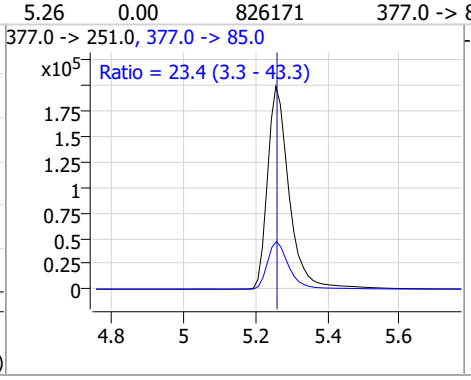


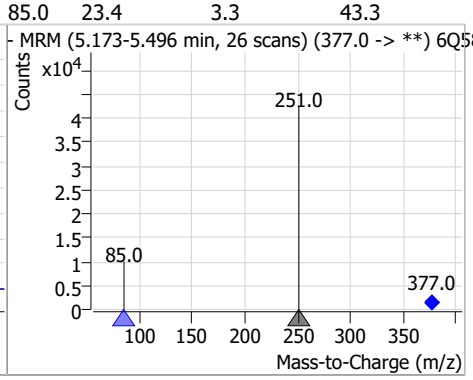




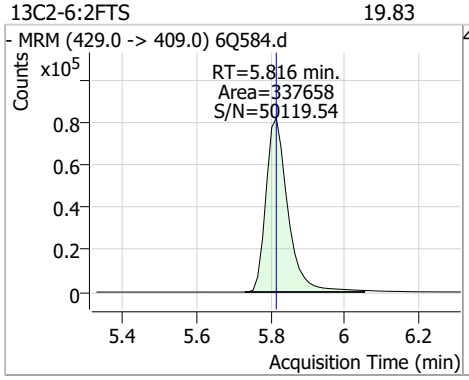
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.26	5.26	0.00	826171	377.0 -> 85.0	23.4	3.3	43.3

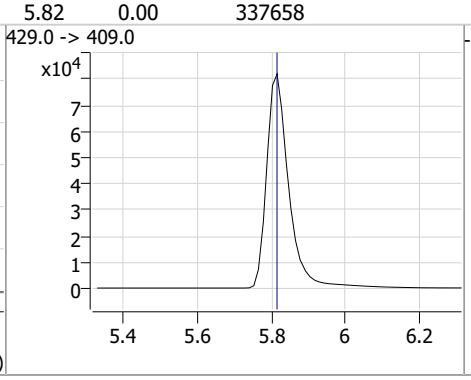


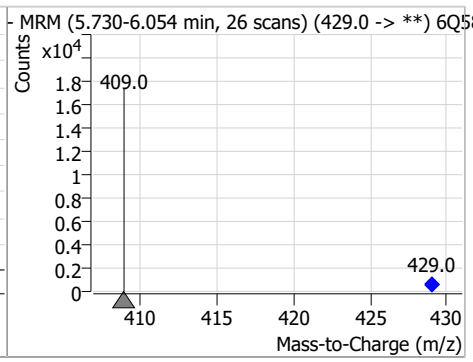




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.83	5.82	0.00	337658				

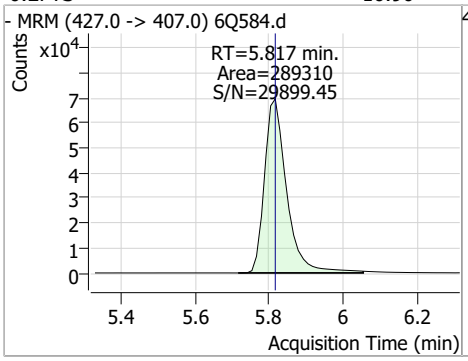


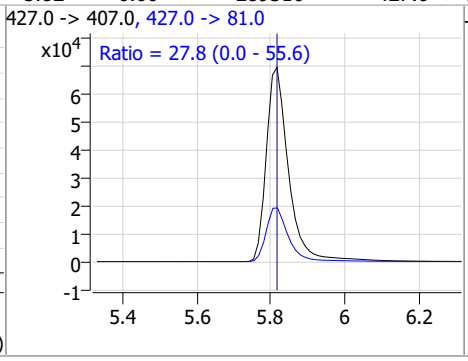


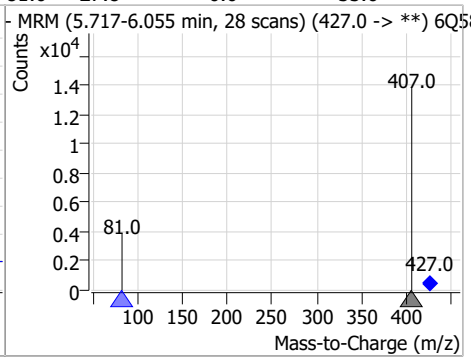


Perfluorinated Compounds by LC/MS/MS

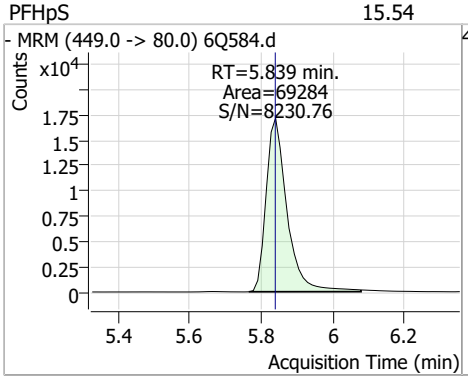
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	16.90	5.82	0.00	289310	427.0 -> 81.0	27.8	0.0	55.6

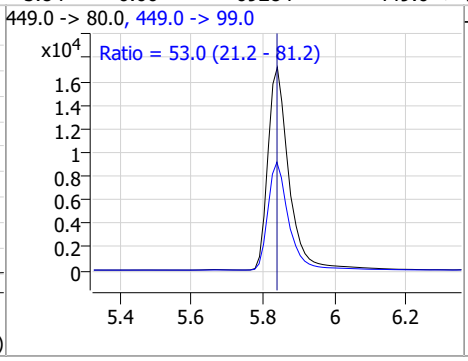


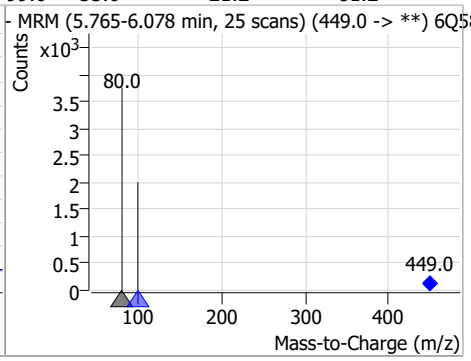




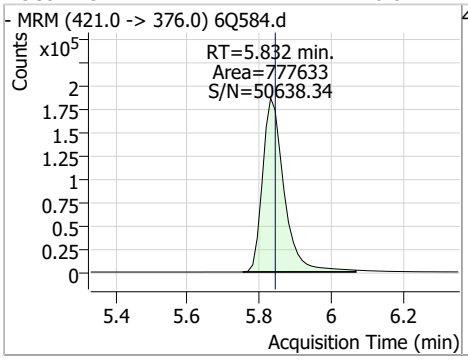
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	15.54	5.84	0.00	69284	449.0 -> 99.0	53.0	21.2	81.2

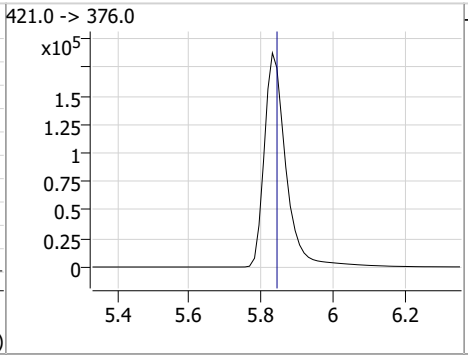


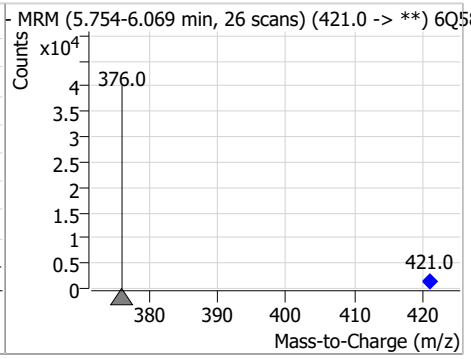




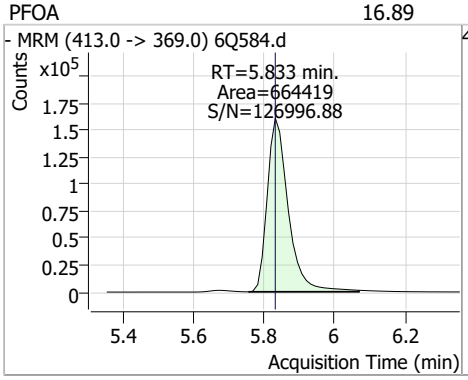
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.87	5.83	-0.01	777633				

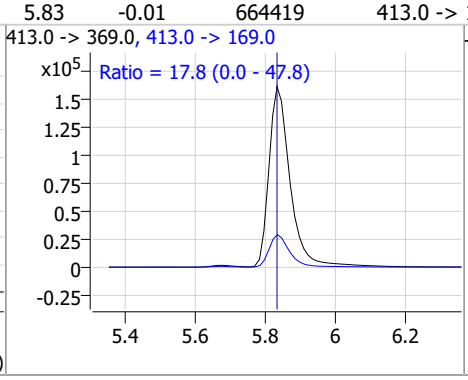


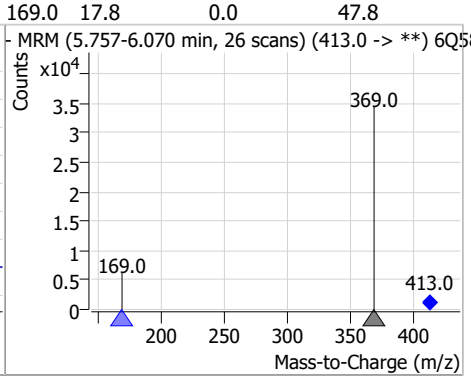




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.89	5.83	-0.01	664419	413.0 -> 169.0	17.8	0.0	47.8

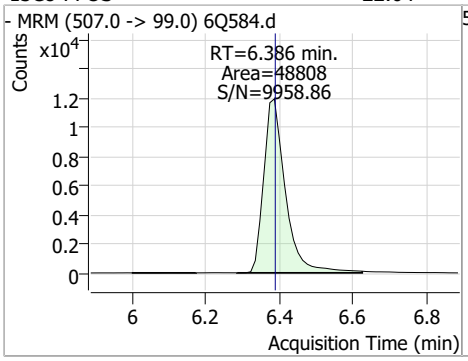


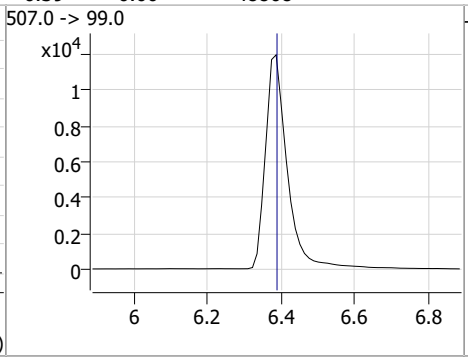


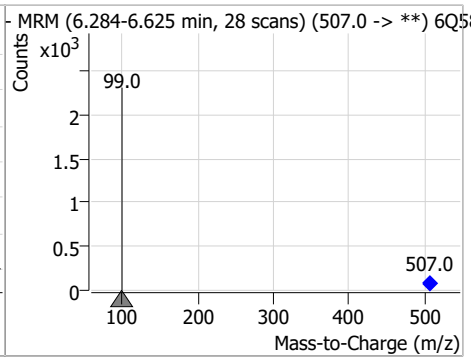


Perfluorinated Compounds by LC/MS/MS

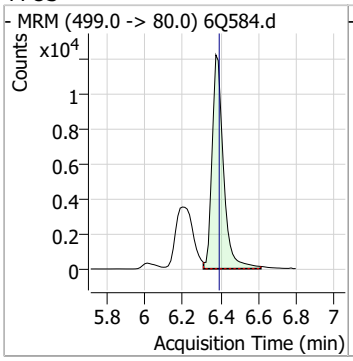
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.64	6.39	0.00	48808				

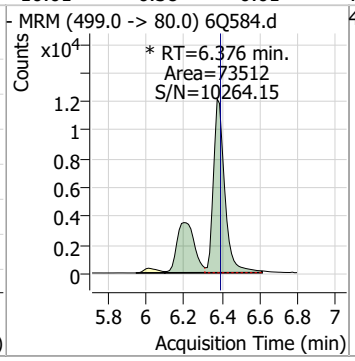


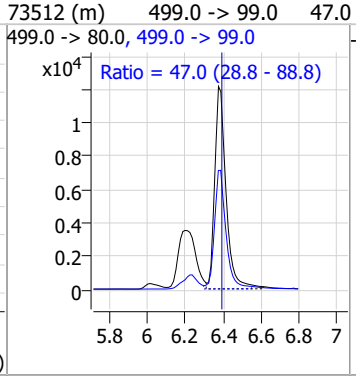


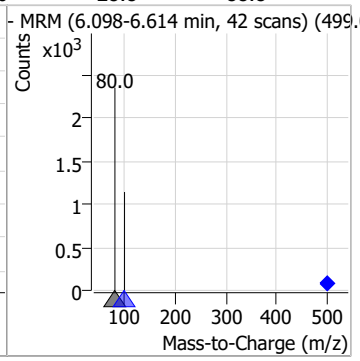


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.01	6.38	-0.01	73512 (m)	499.0 -> 99.0	47.0	28.8	88.8

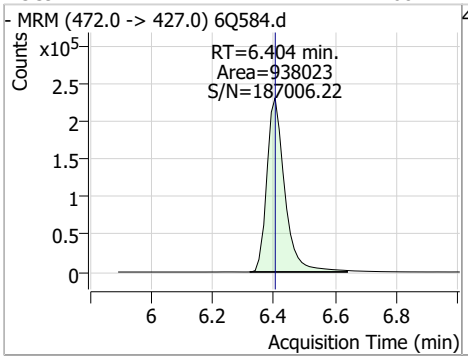


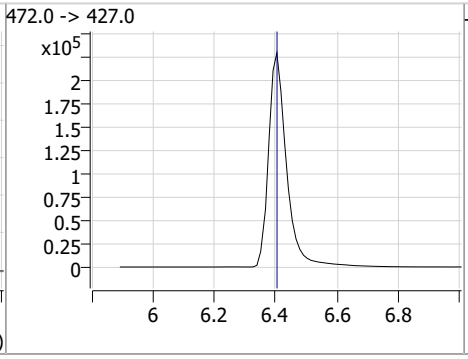


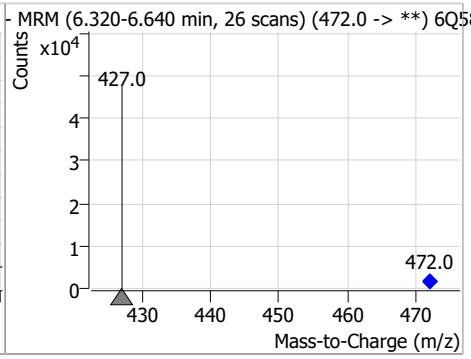




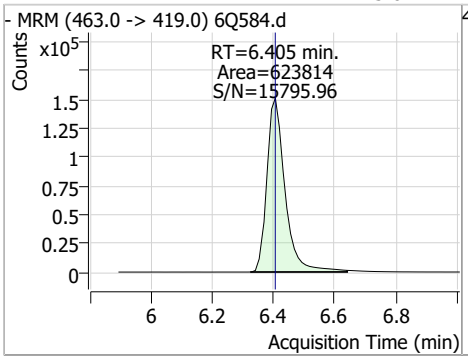
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.68	6.40	0.00	938023				

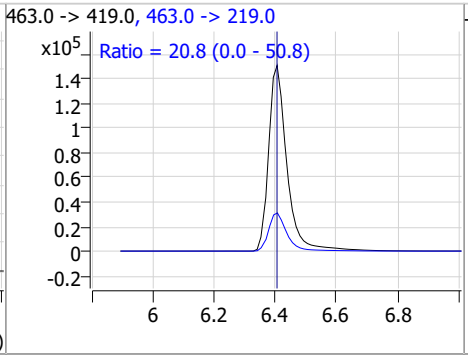


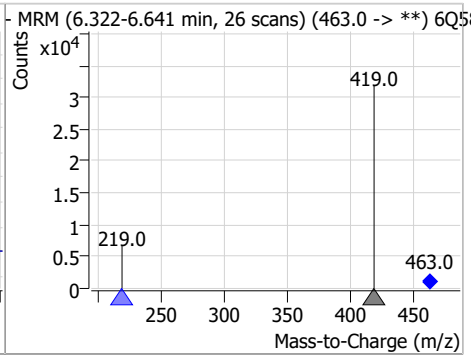




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	15.62	6.40	0.00	623814	463.0 -> 219.0	20.8	0.0	50.8

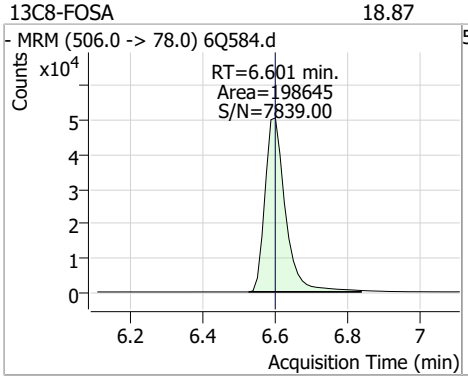


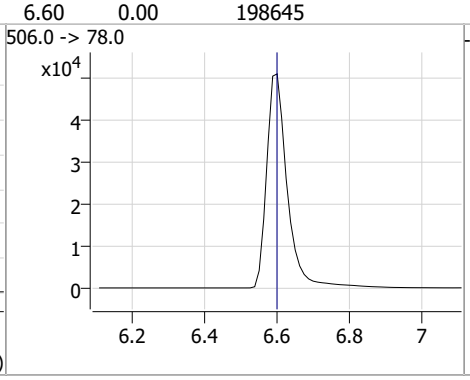


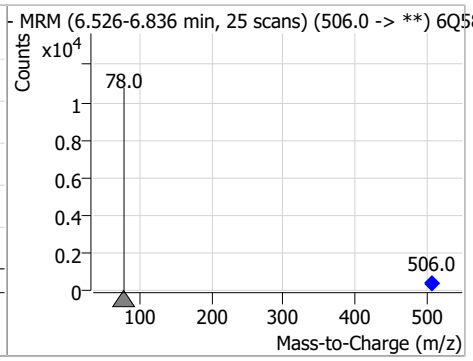


Perfluorinated Compounds by LC/MS/MS

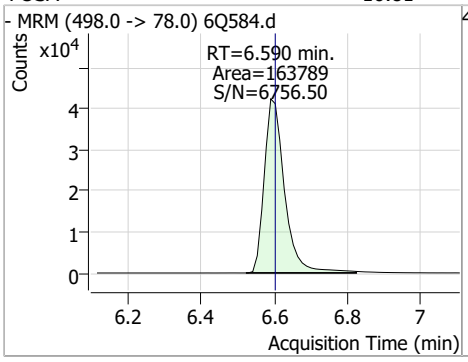
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.87	6.60	0.00	198645				

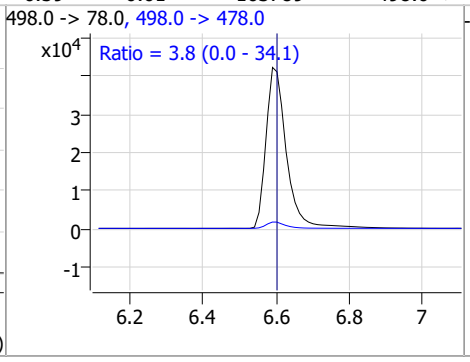


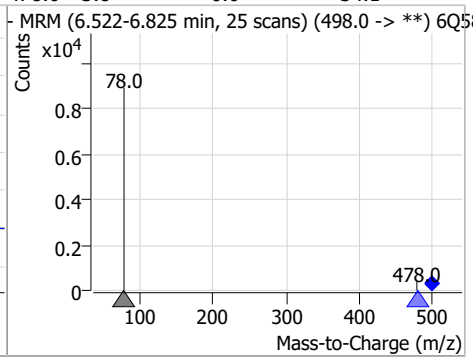




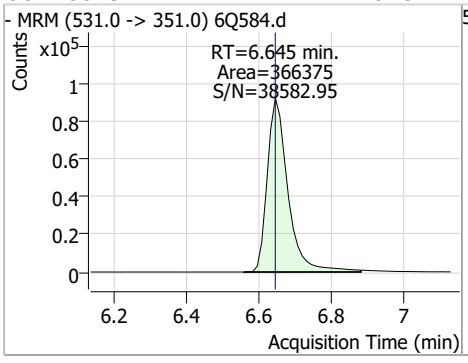
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	16.81	6.59	-0.01	163789	498.0 -> 478.0	3.8	0.0	34.1

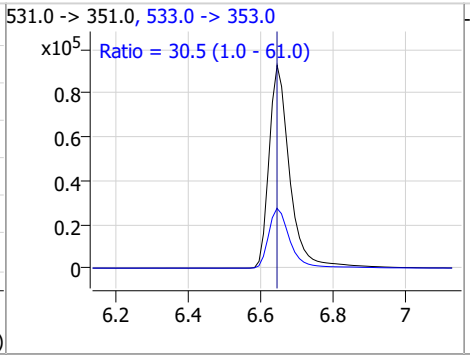


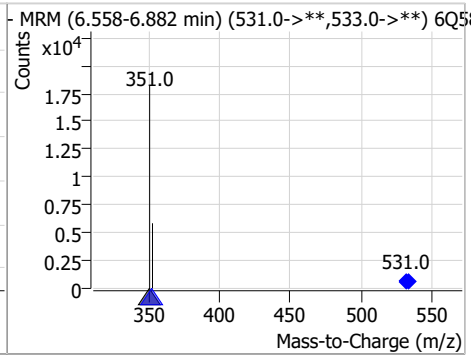




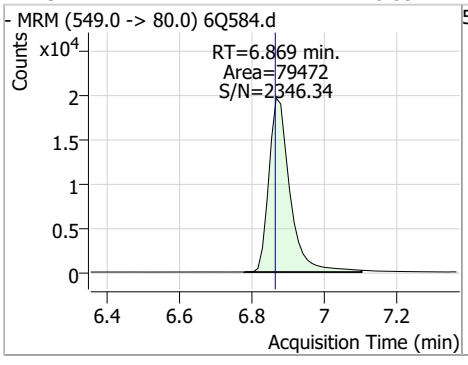
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.43	6.65	0.00	366375	533.0 -> 353.0	30.5	1.0	61.0

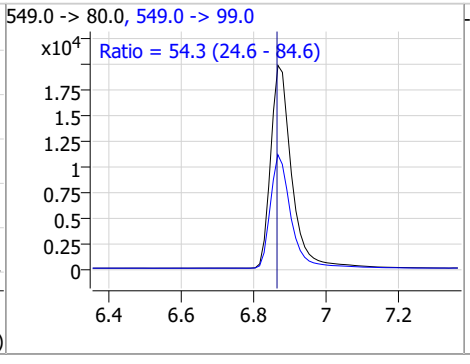


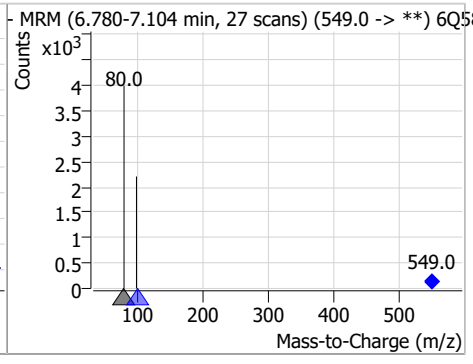




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.53	6.87	0.00	79472	549.0 -> 99.0	54.3	24.6	84.6

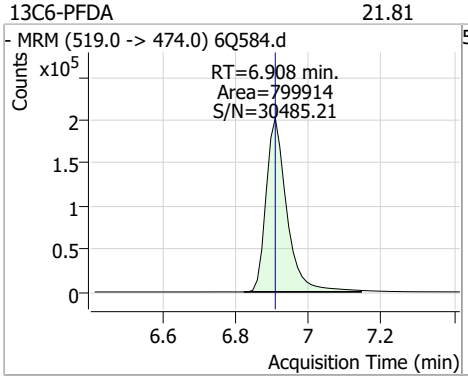


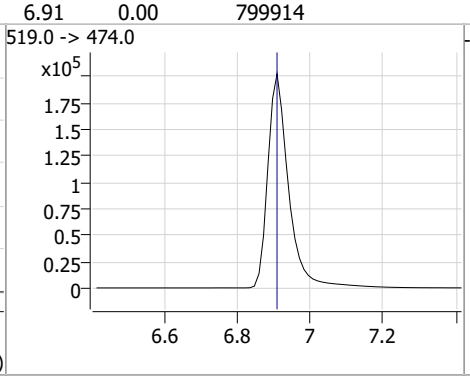


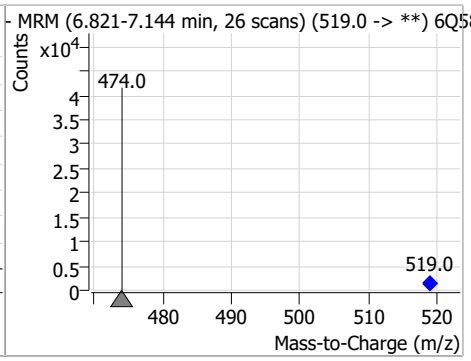


Perfluorinated Compounds by LC/MS/MS

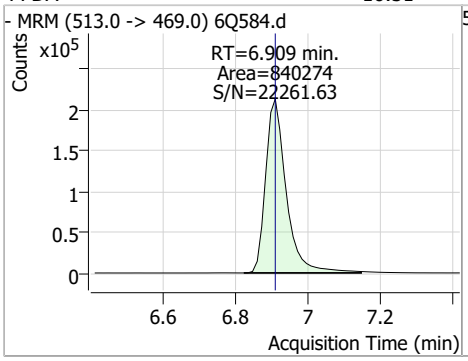
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.81	6.91	0.00	799914				

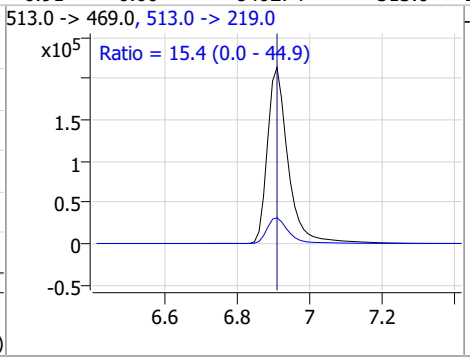


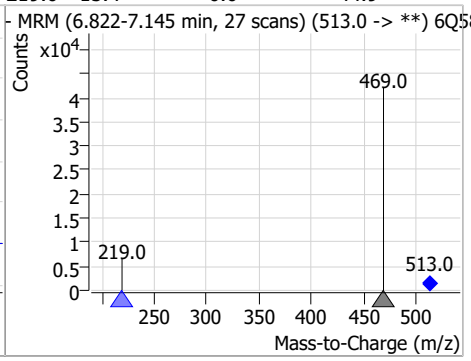




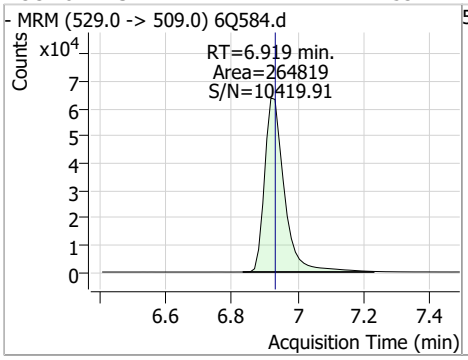
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.51	6.91	0.00	840274	513.0 -> 219.0	15.4	0.0	44.9

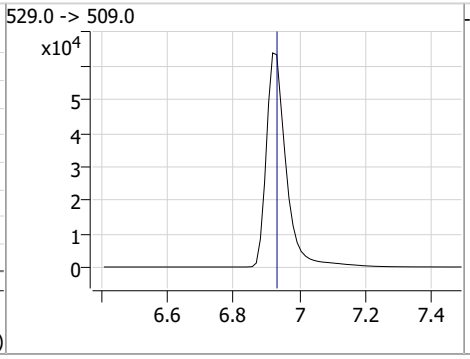


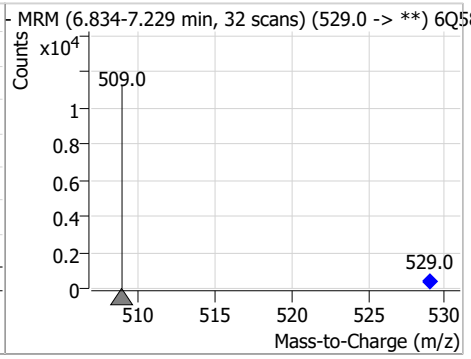




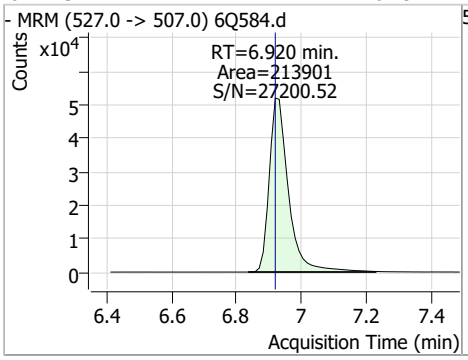
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.53	6.92	-0.01	264819				

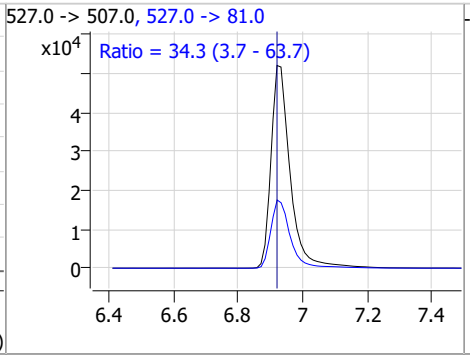


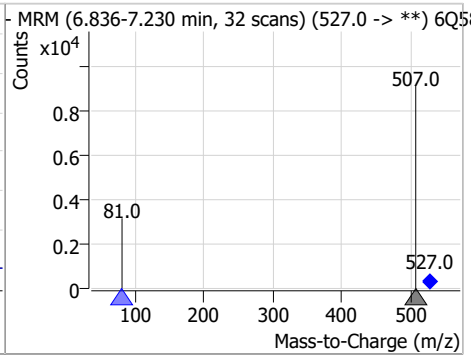




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	16.29	6.92	-0.01	213901	527.0 -> 81.0	34.3	3.7	63.7

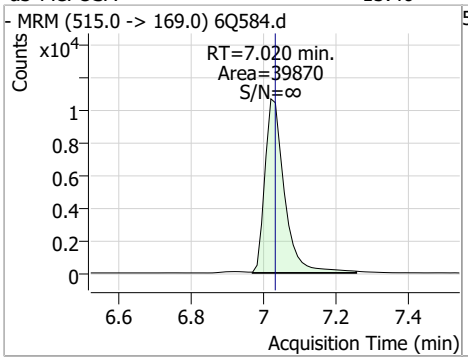


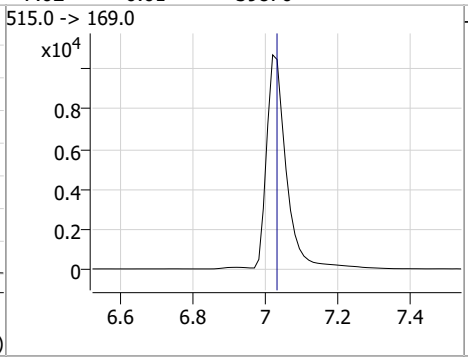


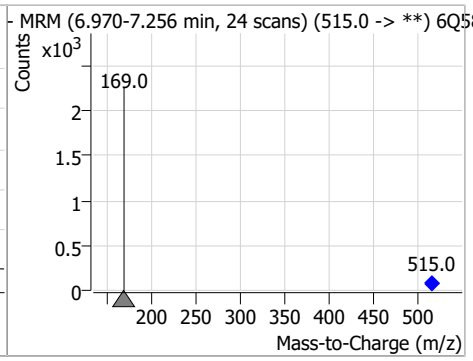


Perfluorinated Compounds by LC/MS/MS

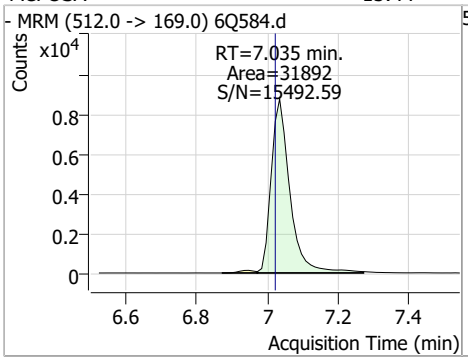
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	15.46	7.02	-0.01	39870				

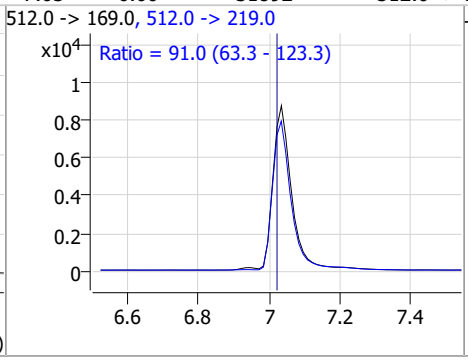


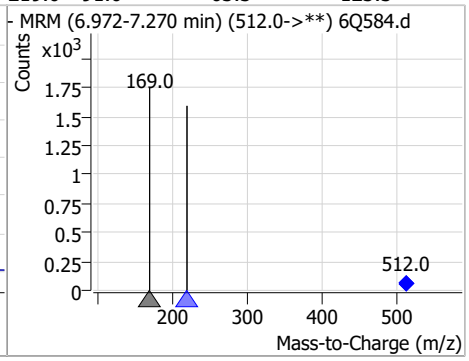




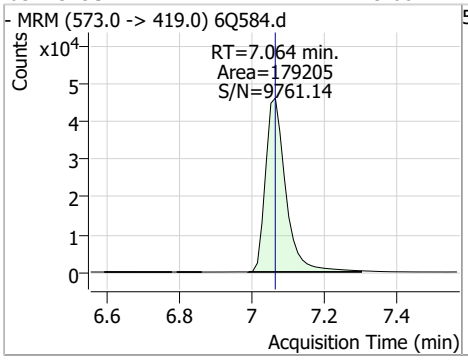
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	15.44	7.03	0.00	31892	512.0 -> 219.0	91.0	63.3	123.3

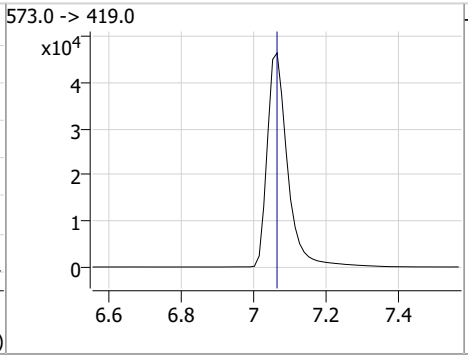


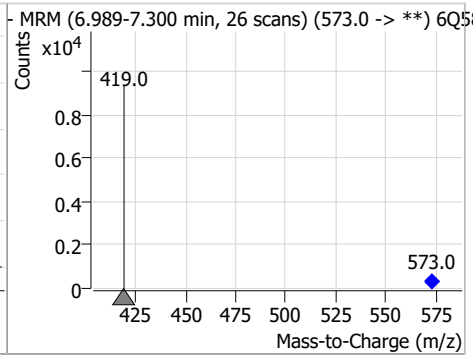




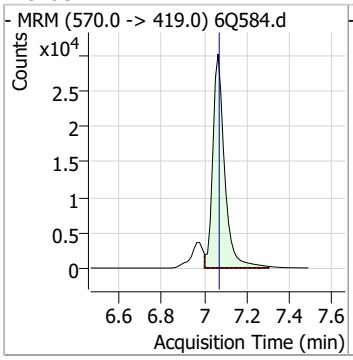
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.06	7.06	0.00	179205				

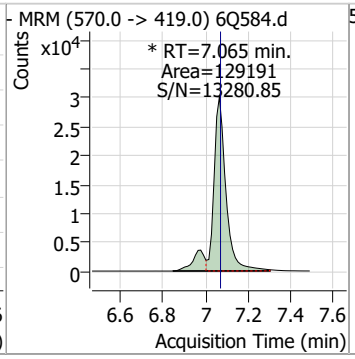


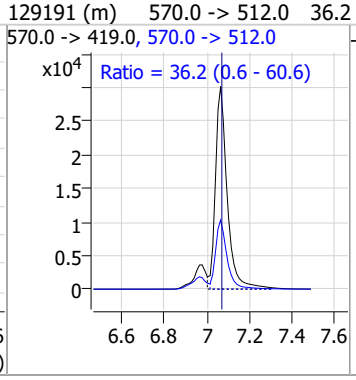


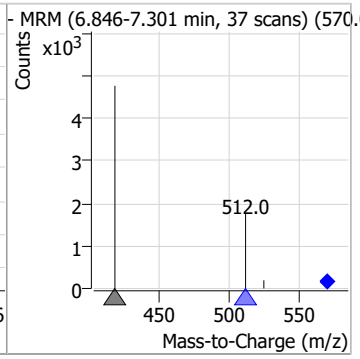


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.17	7.07	0.00	129191 (m)	570.0 -> 512.0	36.2	0.6	60.6



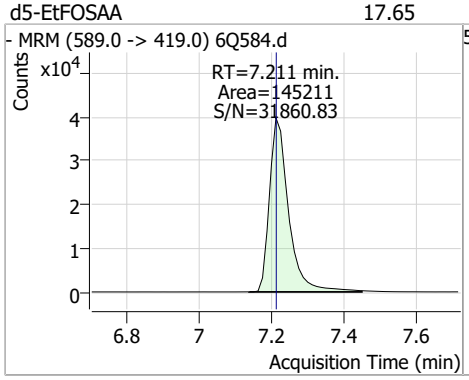


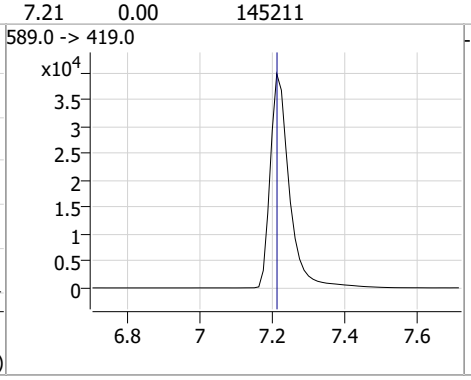


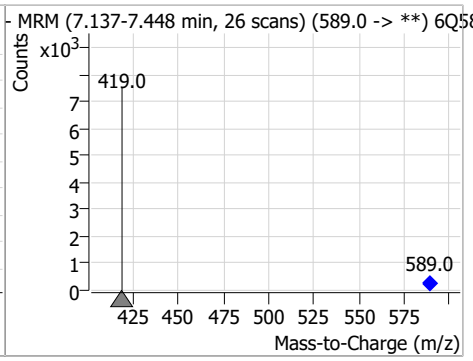


Perfluorinated Compounds by LC/MS/MS

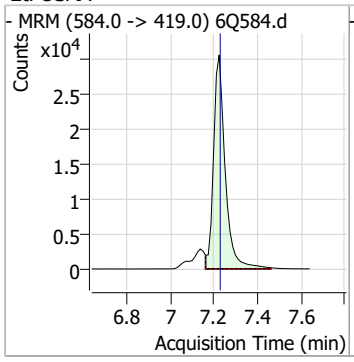
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.65	7.21	0.00	145211				

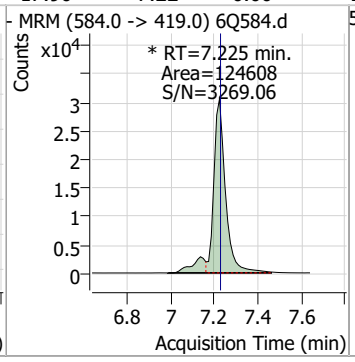


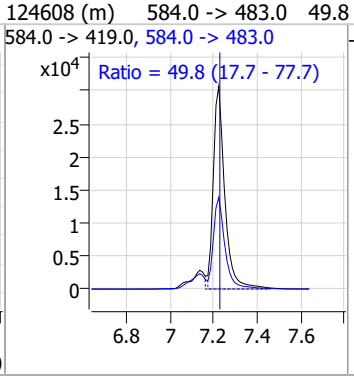


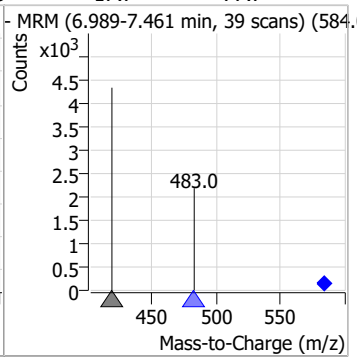


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.90	7.22	0.00	124608 (m)	584.0 -> 483.0	49.8	17.7	77.7

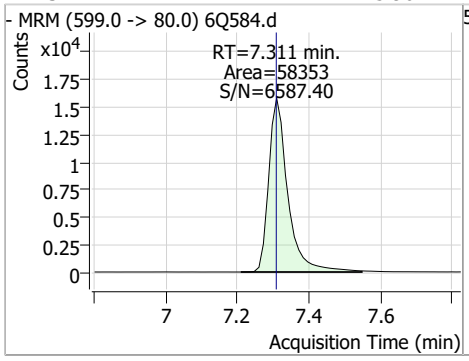


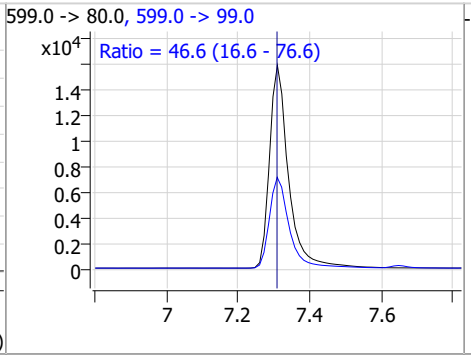


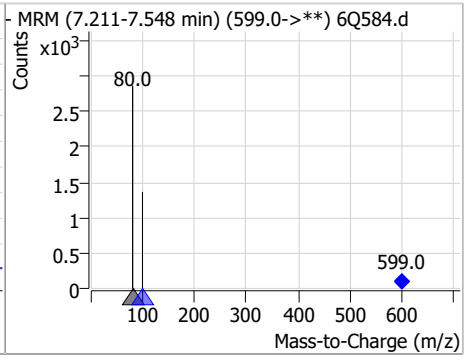




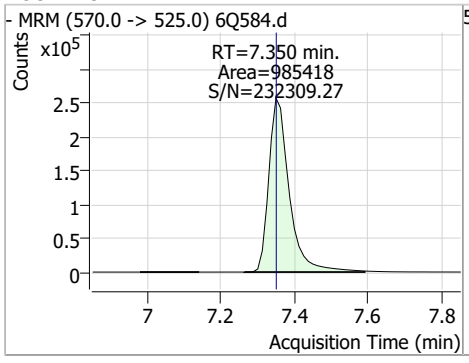
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.96	7.31	0.00	58353	599.0 -> 99.0	46.6	16.6	76.6

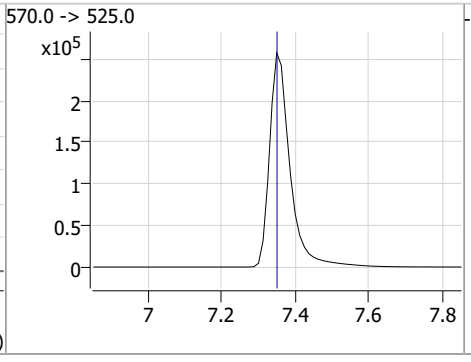


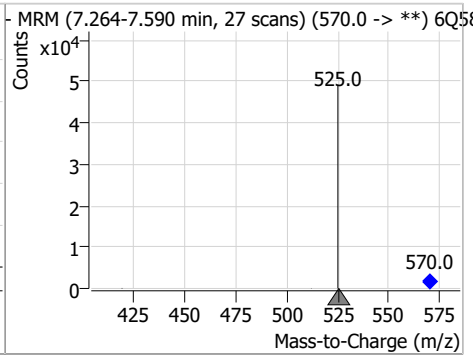




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.77	7.35	0.00	985418				

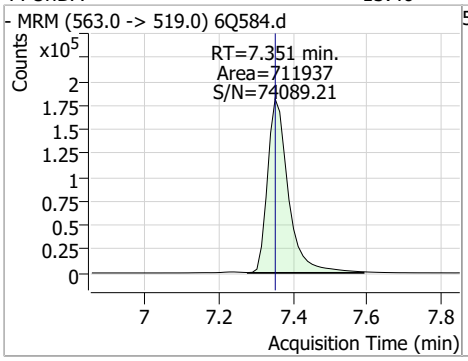


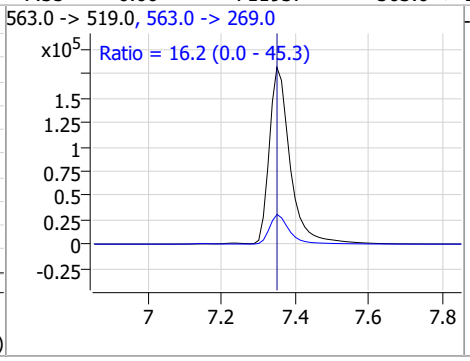


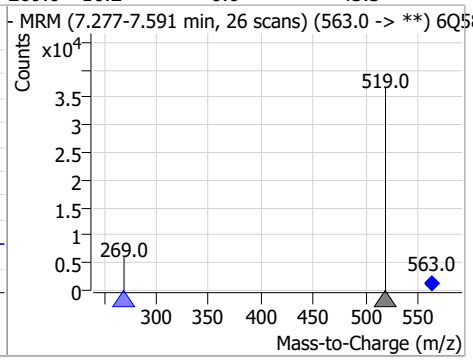


Perfluorinated Compounds by LC/MS/MS

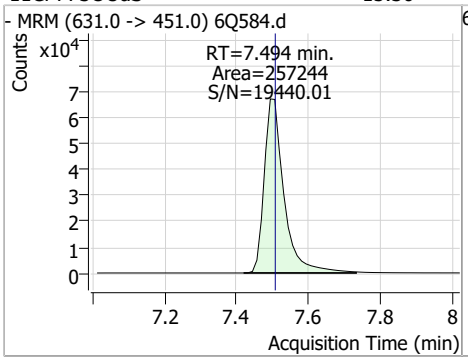
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	15.46	7.35	0.00	711937	563.0 -> 269.0	16.2	0.0	45.3

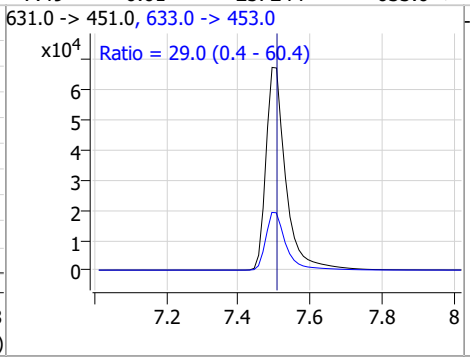


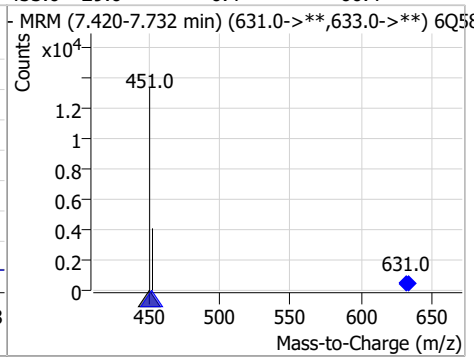




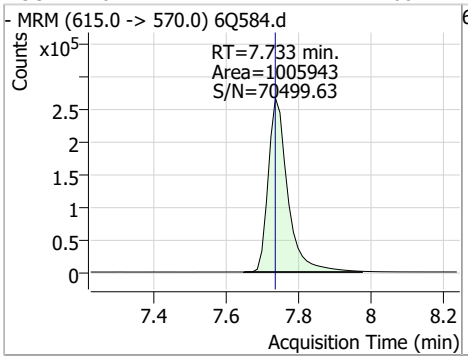
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.36	7.49	-0.01	257244	633.0 -> 453.0	29.0	0.4	60.4

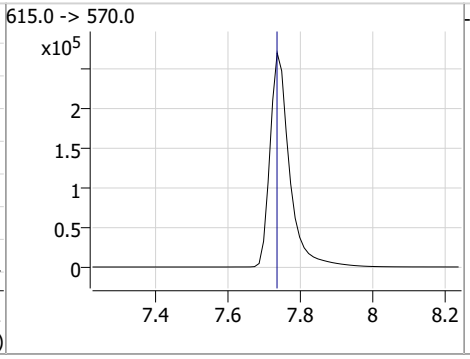


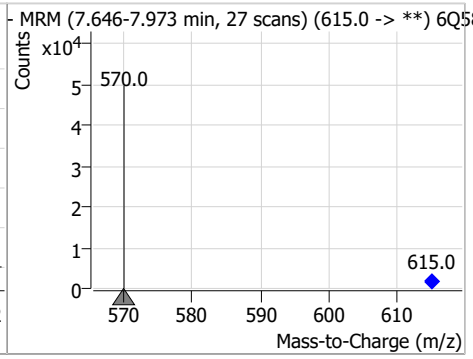




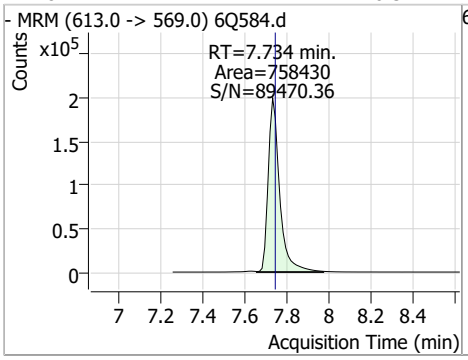
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.68	7.73	0.00	1005943				

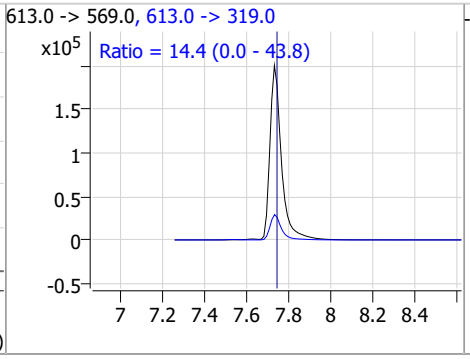


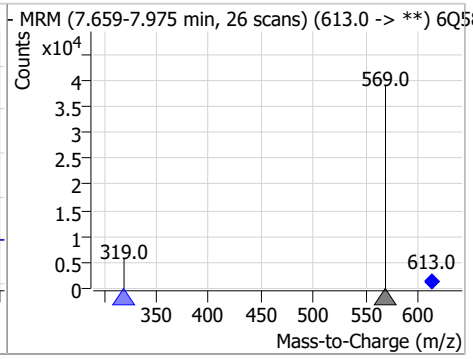




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	16.37	7.73	-0.01	758430	613.0 -> 319.0	14.4	0.0	43.8

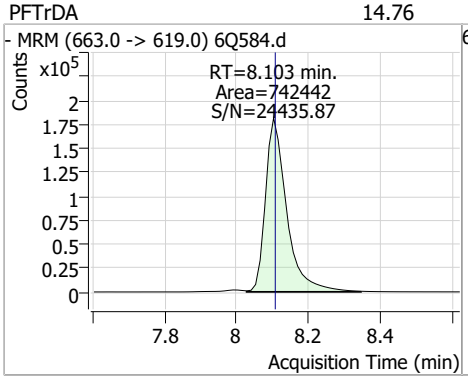


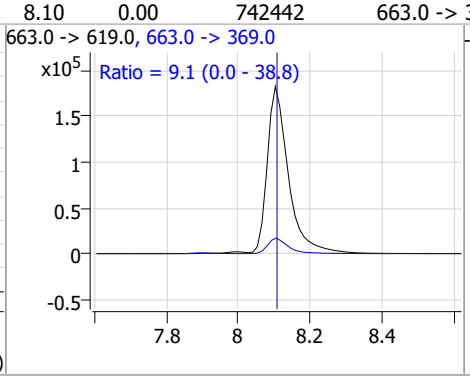


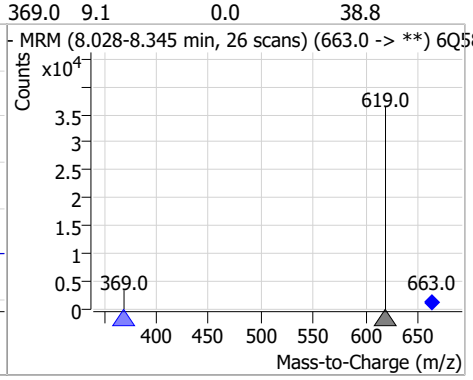


Perfluorinated Compounds by LC/MS/MS

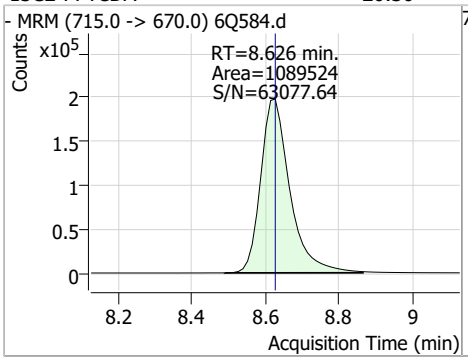
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	14.76	8.10	0.00	742442	663.0 -> 369.0	9.1	0.0	38.8

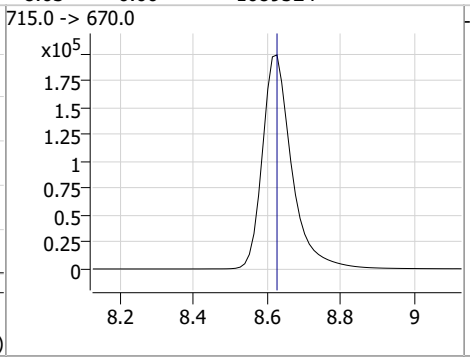


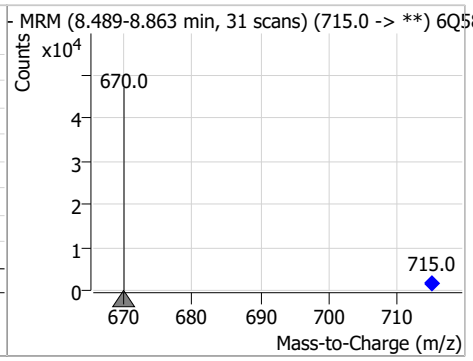




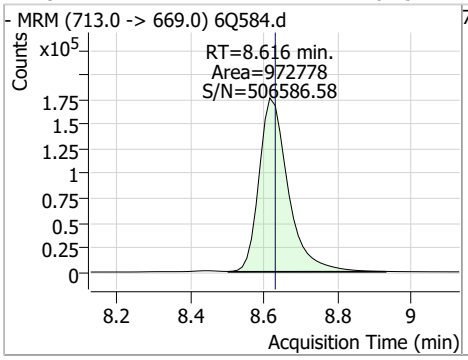
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.30	8.63	0.00	1089524				

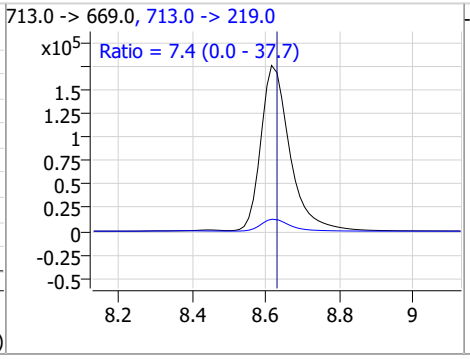


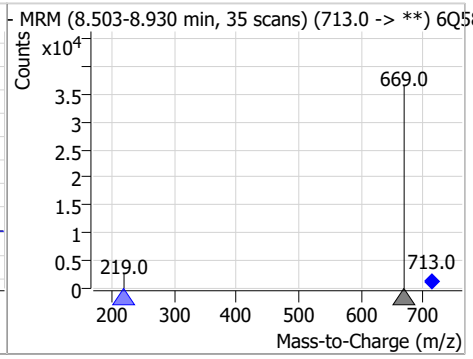




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.25	8.62	-0.01	972778	713.0 -> 219.0	7.4	0.0	37.7







Manual Integration Approval Summary

Sample Number: OP91243-BS
Lab FileID: 6Q584.D
Injection Time: 05/26/22 19:59
Method: EPA 537M BY ID
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.38	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60371.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 10:07:44 PM
Sample Name : op91274-lbs
Vial : P3-B1
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,1,water

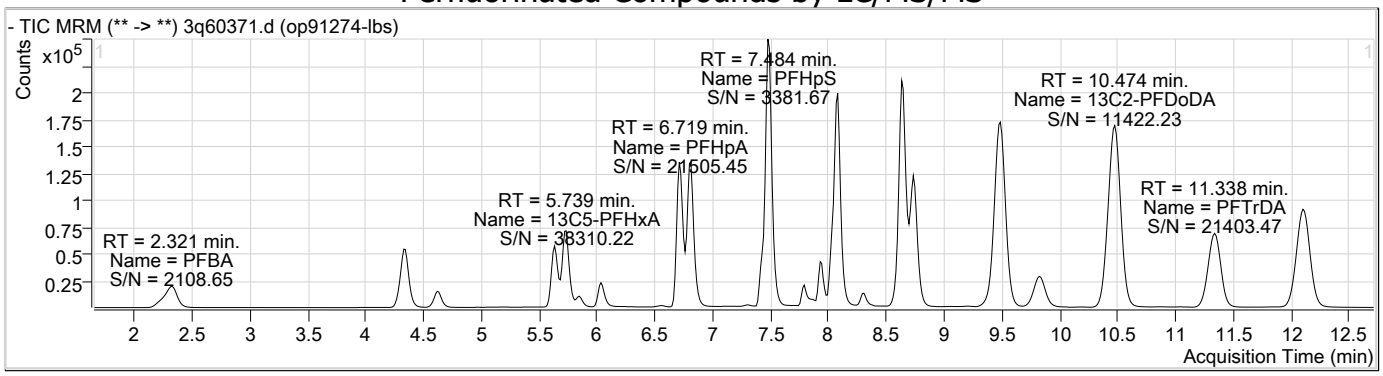
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	118324	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	113564	20.00	µg/L	-0.013
M5-PFHxA	5.739	318.0 -> 273.0	152805	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	191276	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	241158	20.00	µg/L	0.000
M9-PFNA	8.088	472.0 -> 427.0	303989	20.00	µg/L	0.013
M6-PFDA	8.639	519.0 -> 474.0	447256	20.00	µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	570476	20.00	µg/L	-0.012
M2-PFDoDA	10.474	615.0 -> 570.0	663660	20.00	µg/L	-0.038
M2-PFTeDA	12.101	715.0 -> 670.0	314260	20.00	µg/L	-0.038
M8-FOSA	7.430	506.0 -> 78.0	69707	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15385	20.00	µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	16031	20.00	µg/L	0.000
M8-PFOS	8.048	507.0 -> 99.0	28371	20.00	µg/L	0.013
M2-4:2FTS	5.634	329.0 -> 81.0	11063	20.00	µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	25156	20.00	µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	43713	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	62524	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	20645	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	16048	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	59722	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	11063	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C2-6:2FTS	7.498	429.0 -> 81.0	25156	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-8:2FTS	8.739	529.0 -> 81.0	43713	18.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C2-PFDoDA	10.474	615.0 -> 570.0	663660	18.11	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C2-PFTeDA	12.101	715.0 -> 670.0	314260	17.56	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C3-PFBS	4.629	302.0 -> 99.0	15385	19.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C3-PFHxS	6.738	402.0 -> 99.0	16031	16.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C4-PFBA	2.327	217.0 -> 172.0	118324	19.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C4-PFHpA	6.718	367.0 -> 322.0	191276	19.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C5-PFHxA	5.739	318.0 -> 273.0	152805	19.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C5-PFPeA	4.337	268.0 -> 223.0	113564	19.60	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C6-PFDA	8.639	519.0 -> 474.0	447256	17.92	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

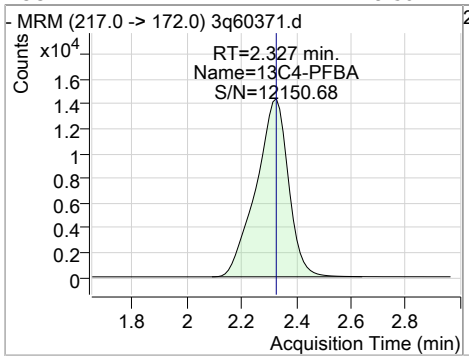
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
13C7-PFUnDA	9.492	570.0 -> 525.0	570476	18.50	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%			
13C8-FOSA	7.430	506.0 -> 78.0	69707	18.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C8-PFOA	7.487	421.0 -> 376.0	241158	19.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
13C8-PFOS	8.048	507.0 -> 99.0	28371	18.11	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
13C9-PFNA	8.088	472.0 -> 427.0	303989	18.79	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
d3-MeFOSAA	7.929	573.0 -> 419.0	62524	18.86	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	20650	18.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
d3-MeFOSA	7.793	515.0 -> 169.0	16048	12.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.2%			
d5-EtFOSAA	8.029	589.0 -> 419.0	59622	18.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	93740	19.42	µg/L		100
6:2FTS	7.499	427.0 -> 407.0	119302	19.74	µg/L		99
8:2FTS	8.740	527.0 -> 507.0	201417	19.30	µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	46426	19.99	µg/L	m	92
FOSA	7.432	498.0 -> 78.0	64121	20.00	µg/L		99
MeFOSAA	7.942	570.0 -> 419.0	50056	20.14	µg/L	m	92
PFBA	2.321	213.0 -> 169.0	44874	19.45	µg/L		100
PFBS	4.619	299.0 -> 80.0	38734	19.90	µg/L		100
PFDA	8.640	513.0 -> 469.0	369608	19.79	µg/L		100
PFDoDA	10.478	613.0 -> 569.0	556098	19.70	µg/L		100
PFDS	9.376	599.0 -> 80.0	21200	19.32	µg/L		100
PFHpA	6.719	363.0 -> 319.0	276376	19.70	µg/L		100
PFHpS	7.484	449.0 -> 80.0	38569	21.09	µg/L		99
PFHxA	5.740	313.0 -> 269.0	126983	19.88	µg/L		99
PFHxS	6.739	399.0 -> 80.0	33078	19.77	µg/L	m	97
PFNA	8.088	463.0 -> 419.0	285553	19.80	µg/L		99
PFNS	8.584	549.0 -> 80.0	34665	20.34	µg/L		99
PFOA	7.487	413.0 -> 369.0	220520	19.64	µg/L		100
PFOS	8.049	499.0 -> 80.0	44715	20.14	µg/L	m	82
PFPeA	4.339	263.0 -> 219.0	168369	20.11	µg/L		100
PFPeS	5.845	349.0 -> 80.0	24992	19.22	µg/L		99
PFTeDA	12.105	713.0 -> 669.0	407669	19.88	µg/L		100
PFTrDA	11.338	663.0 -> 619.0	512106	20.53	µg/L		100
PFUnDA	9.494	563.0 -> 519.0	514823	19.22	µg/L		100
11Cl-PF3OUdS	9.824	631.0 -> 451.0	152764	19.72	µg/L		99
9Cl-PF3ONS	8.309	531.0 -> 351.0	31539	20.36	µg/L		98
ADONA	6.819	377.0 -> 251.0	402676	22.66	µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	56937	19.45	µg/L		99
MeFOSA	7.794	512.0 -> 169.0	15249	19.17	µg/L		100

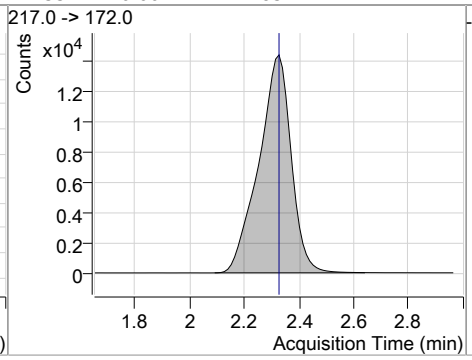
 # = Qualifier out of range, m = manually integrated, + = Area summed

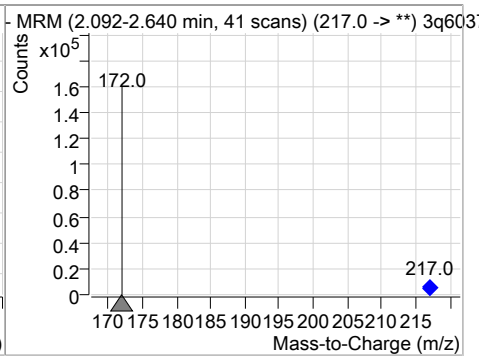
Perfluorinated Compounds by LC/MS/MS



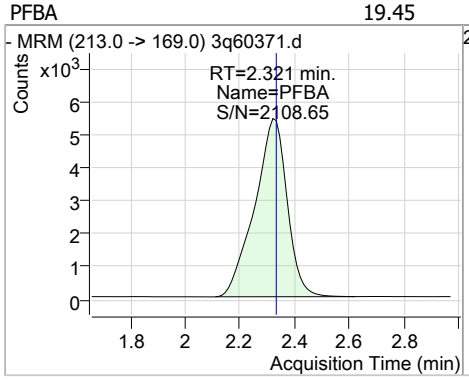
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.58	2.33	0.00	118324				

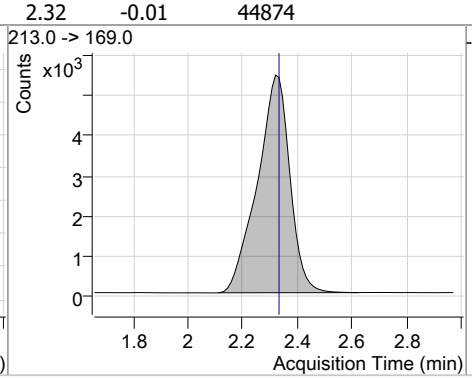


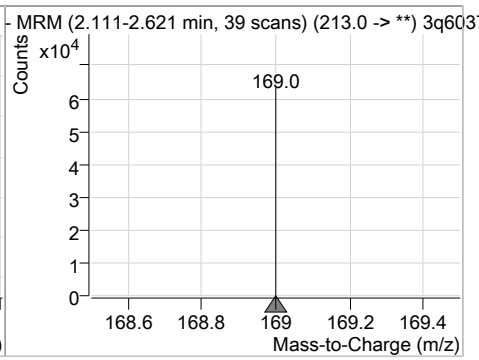




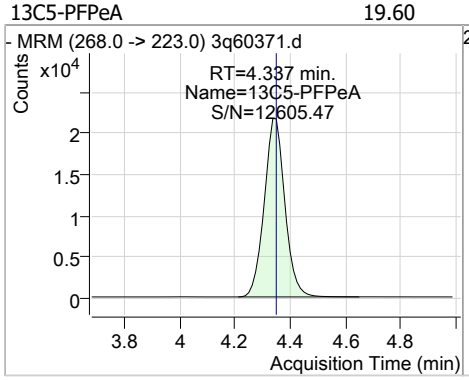
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.45	2.32	-0.01	44874				

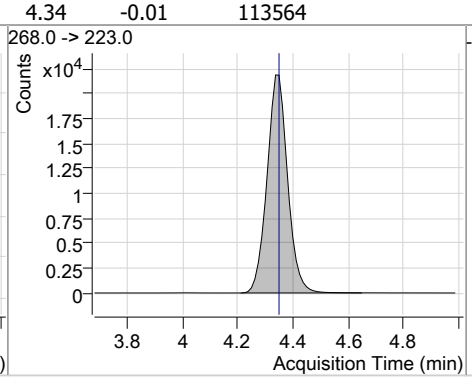


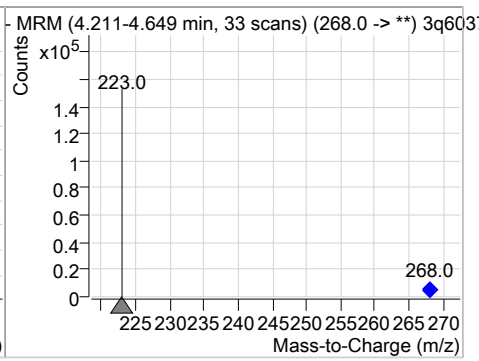




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.60	4.34	-0.01	113564				

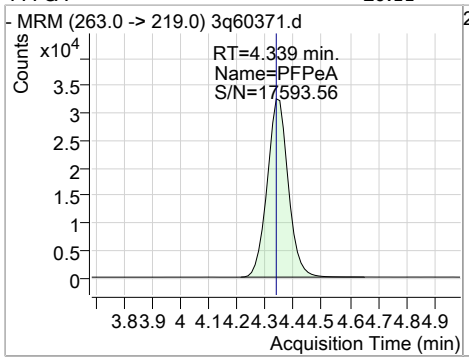


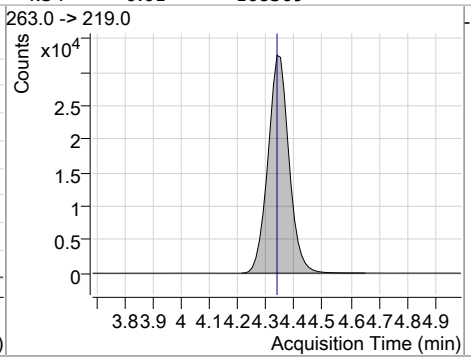


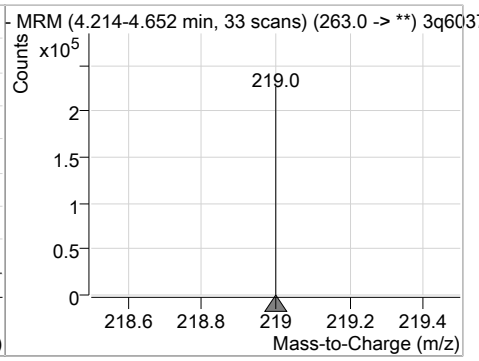


Perfluorinated Compounds by LC/MS/MS

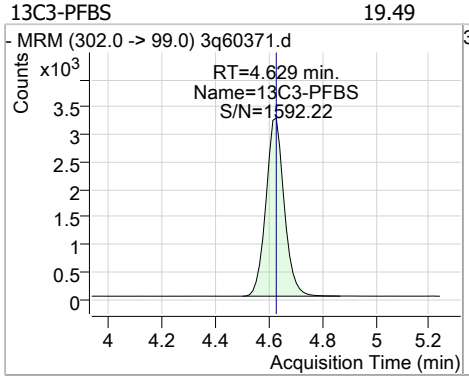
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.11	4.34	-0.01	168369				

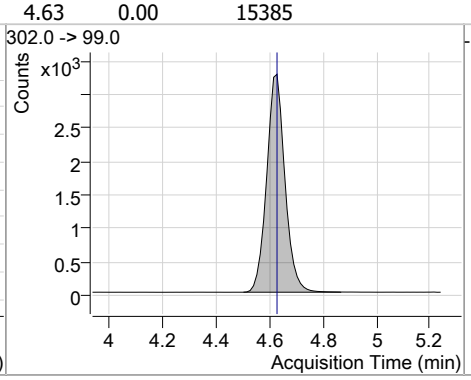


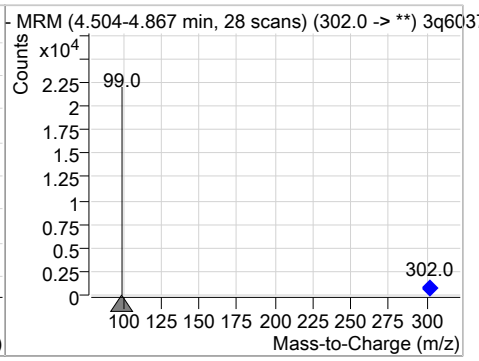




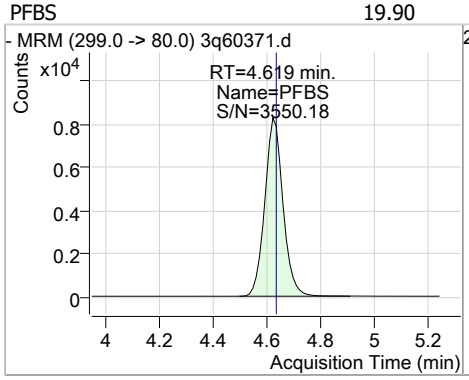
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.49	4.63	0.00	15385				

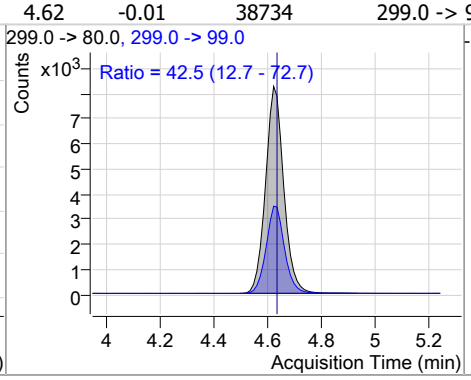


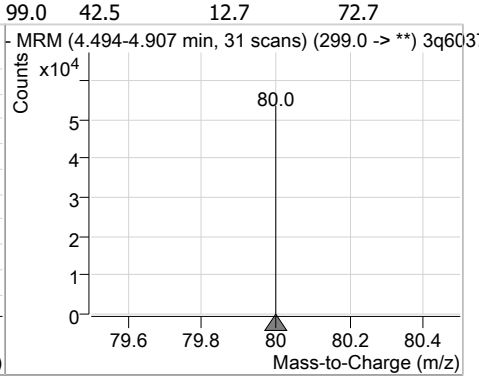




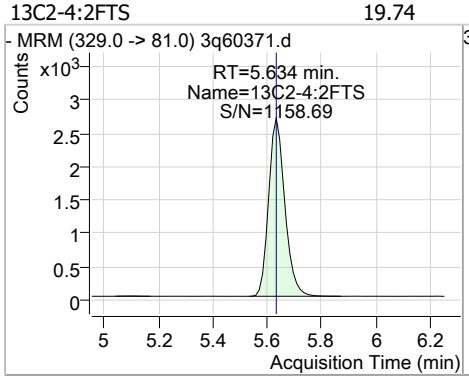
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.90	4.62	-0.01	38734	299.0 -> 99.0	42.5	12.7	72.7

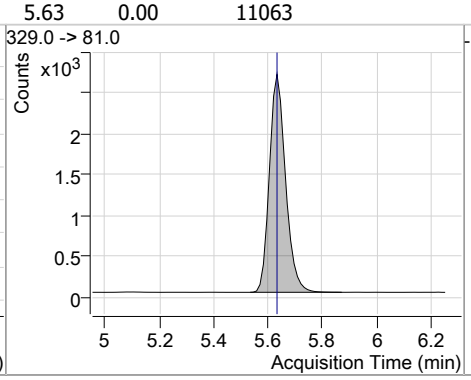


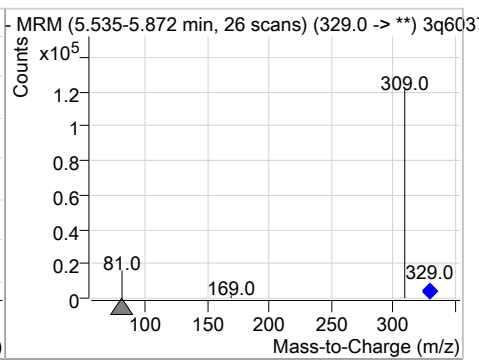




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.74	5.63	0.00	11063				

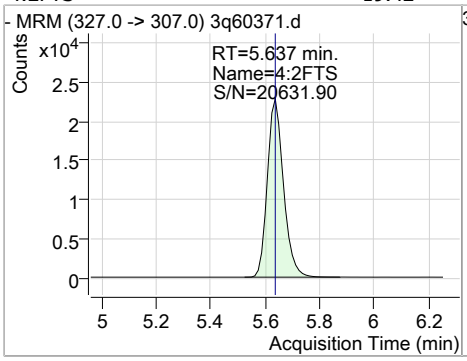


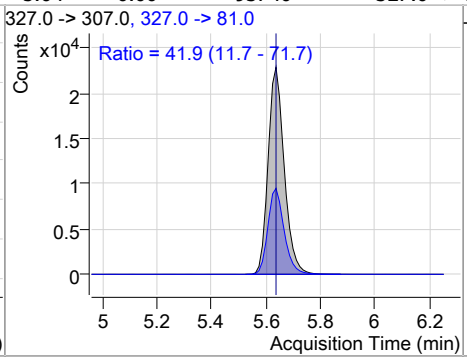


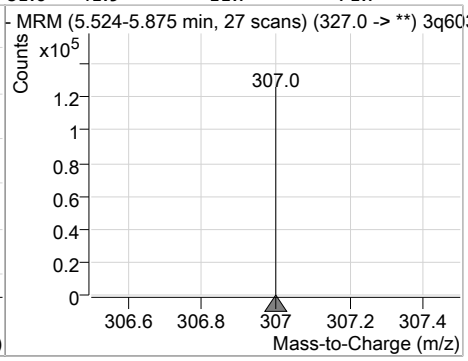


Perfluorinated Compounds by LC/MS/MS

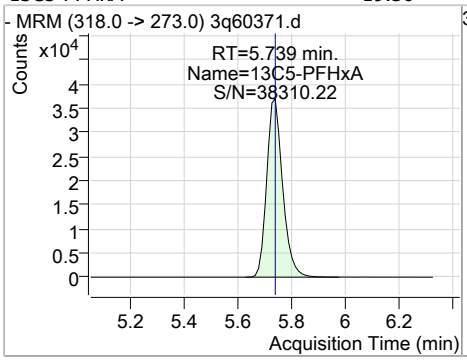
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.42	5.64	0.00	93740	327.0 -> 81.0	41.9	11.7	71.7

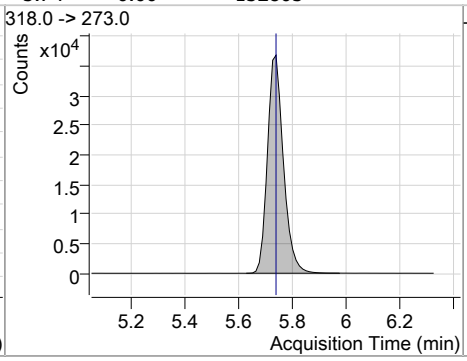


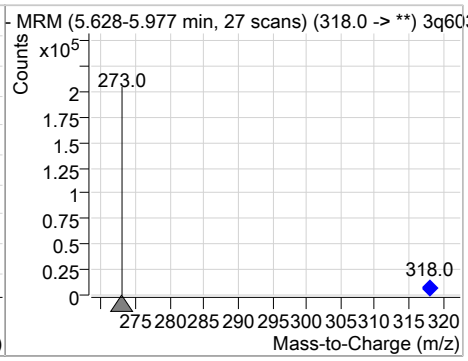




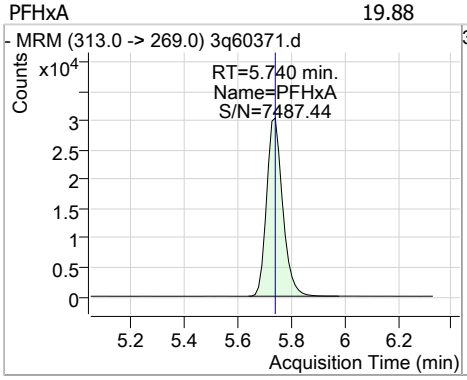
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.36	5.74	0.00	152805				

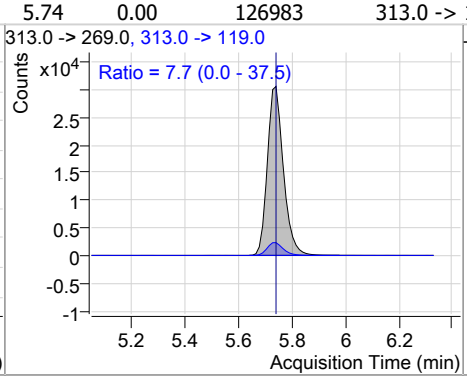


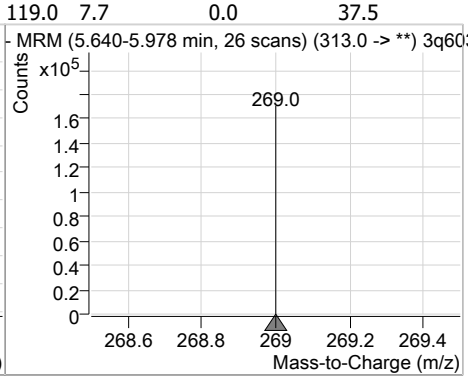




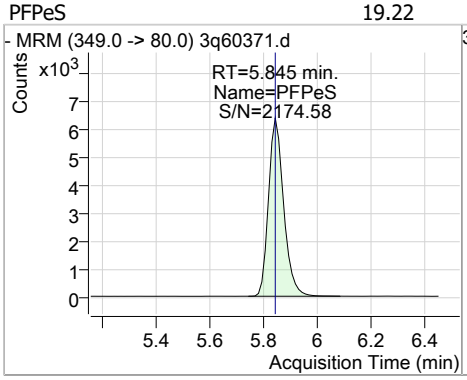
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.88	5.74	0.00	126983	313.0 -> 119.0	7.7	0.0	37.5

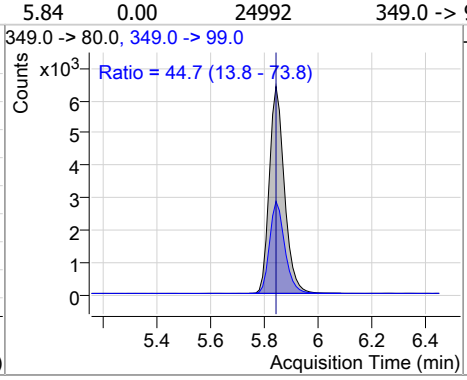


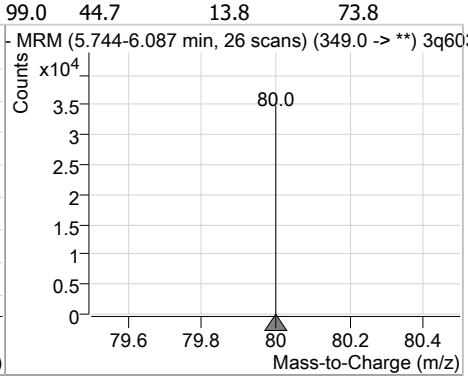




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.22	5.84	0.00	24992	349.0 -> 99.0	44.7	13.8	73.8

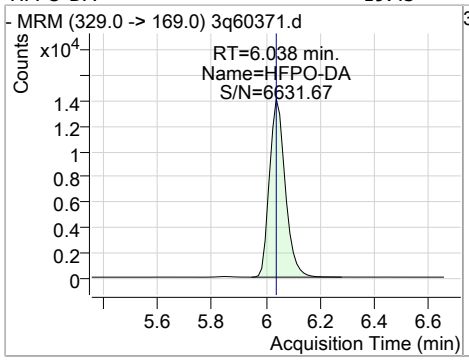


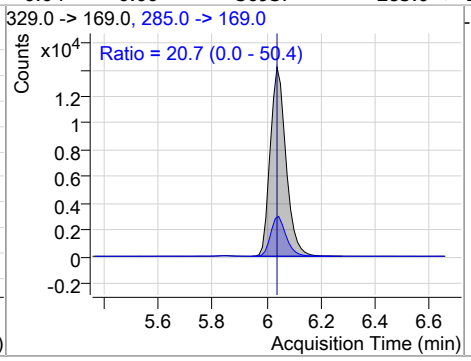


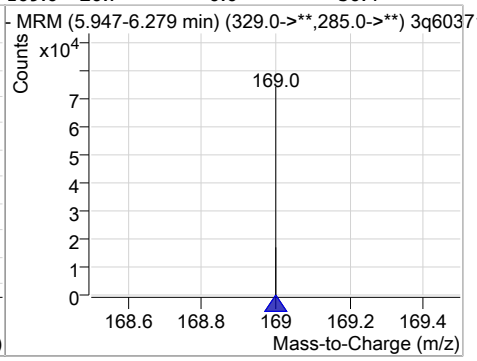


Perfluorinated Compounds by LC/MS/MS

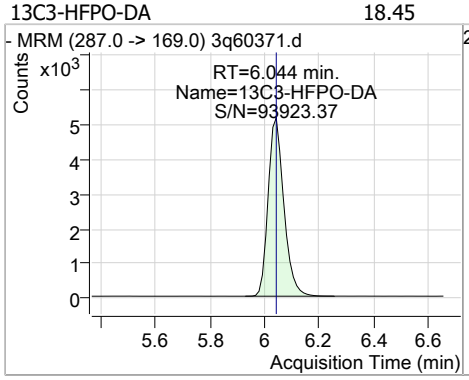
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.45	6.04	0.00	56937	285.0 -> 169.0	20.7	0.0	50.4

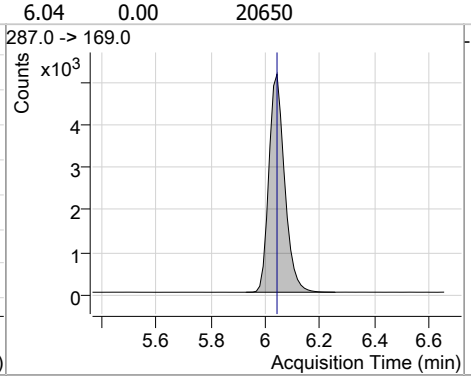


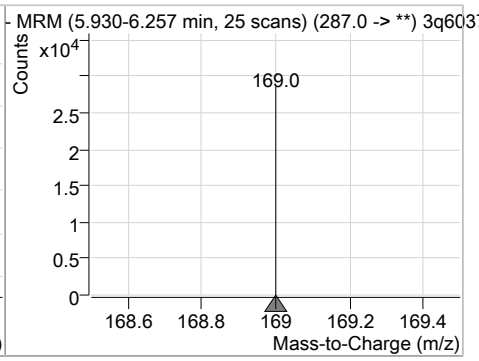




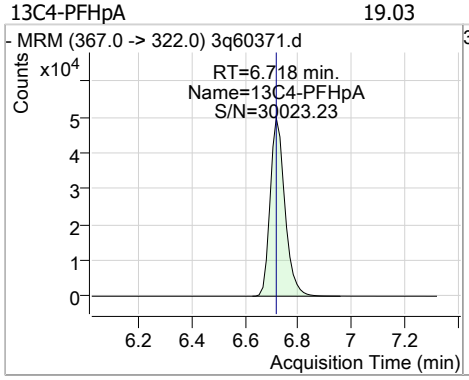
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.45	6.04	0.00	20650				

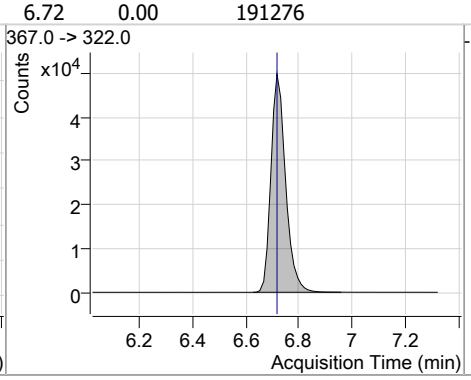


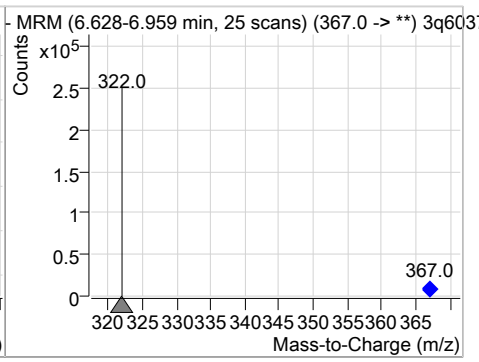




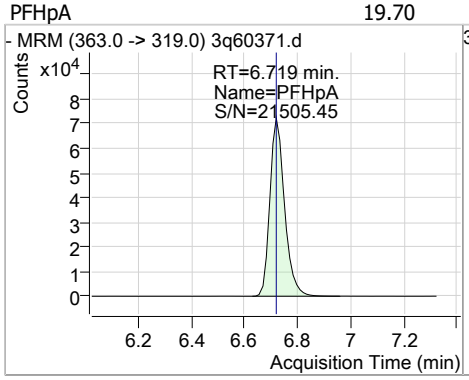
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.03	6.72	0.00	191276				

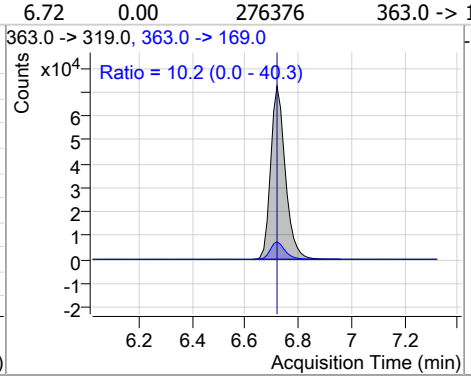


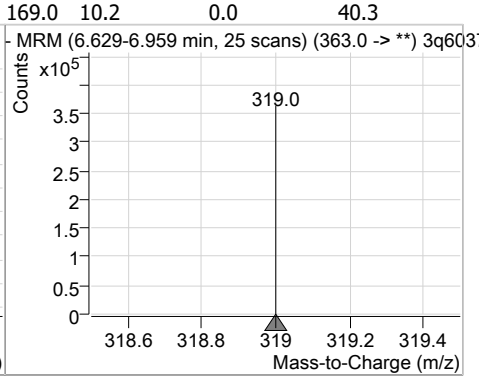




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.70	6.72	0.00	276376	363.0 -> 169.0	10.2	0.0	40.3

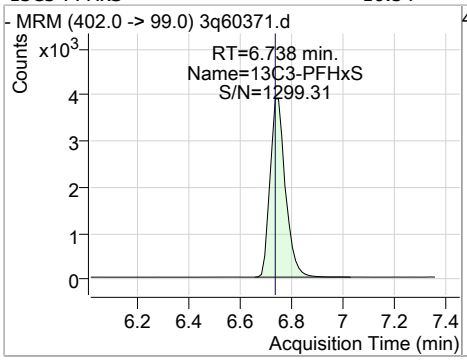


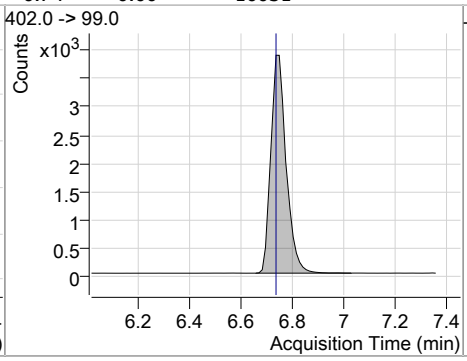


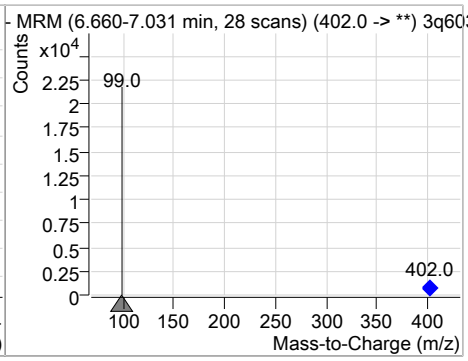


Perfluorinated Compounds by LC/MS/MS

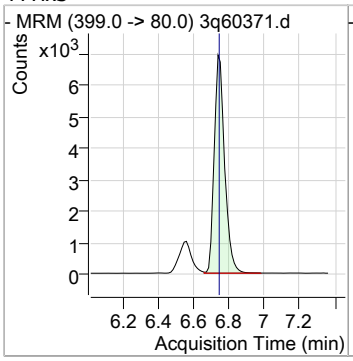
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.54	6.74	0.00	16031				

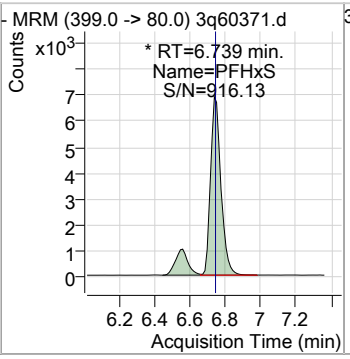


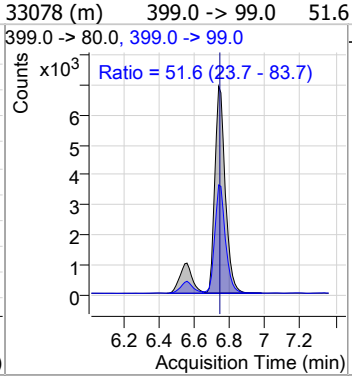


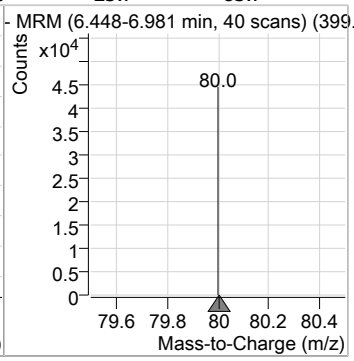


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.77	6.74	0.00	33078 (m)	399.0 -> 99.0	51.6	23.7	83.7

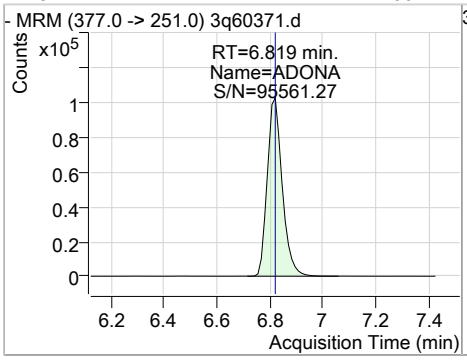


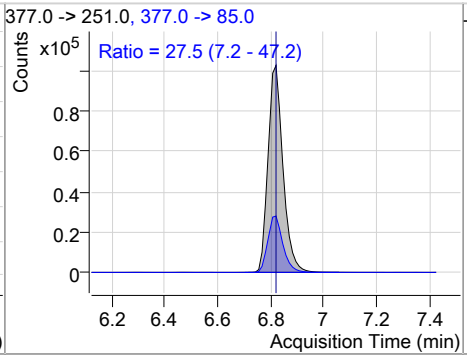


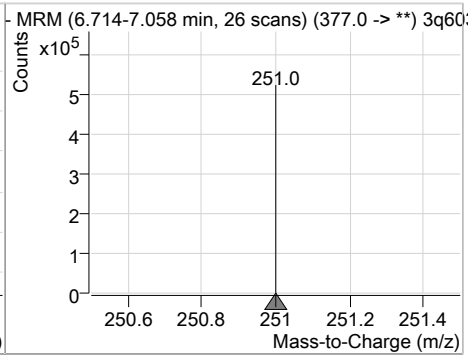




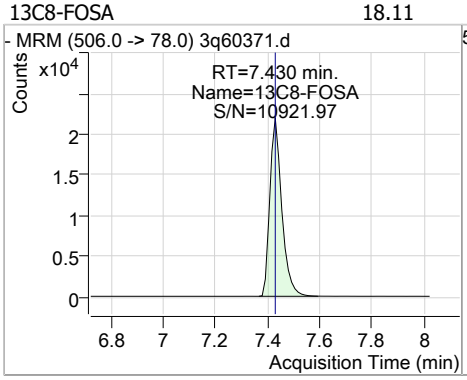
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	22.66	6.82	0.00	402676	377.0 -> 85.0	27.5	7.2	47.2

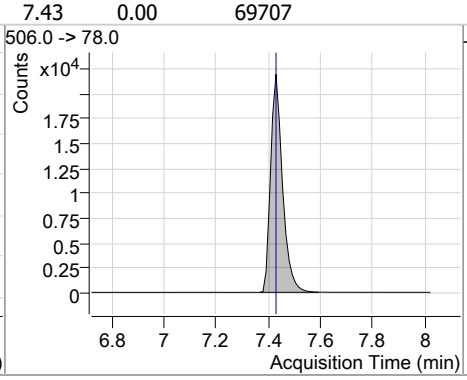


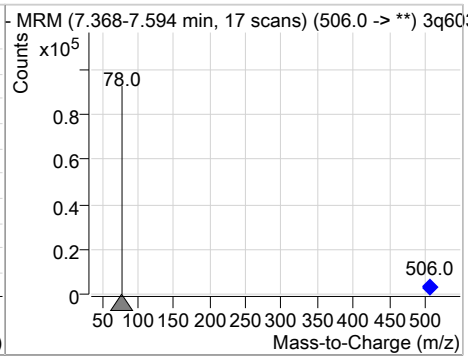




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.11	7.43	0.00	69707				

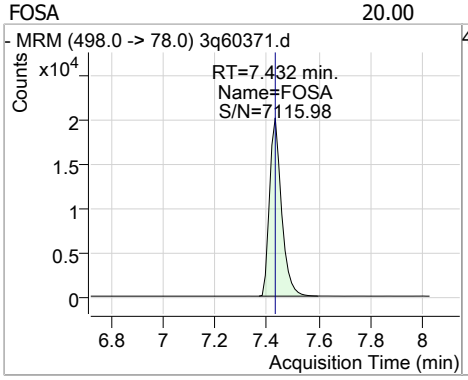


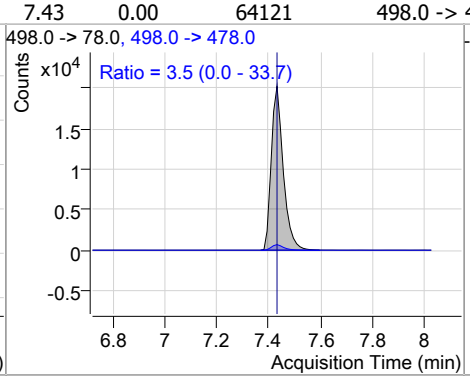


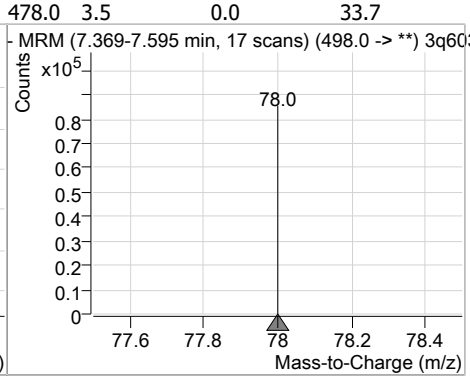


Perfluorinated Compounds by LC/MS/MS

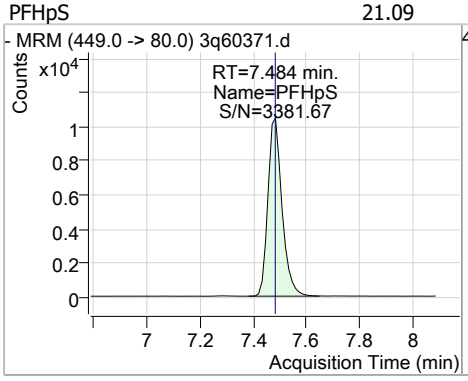
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.00	7.43	0.00	64121	498.0 -> 478.0	3.5	0.0	33.7

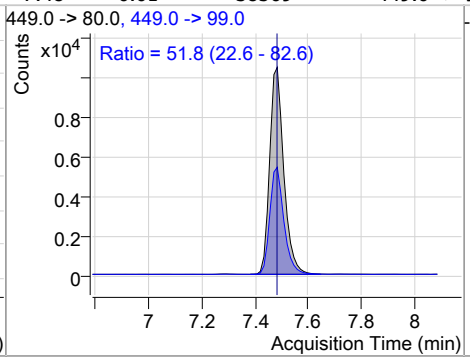


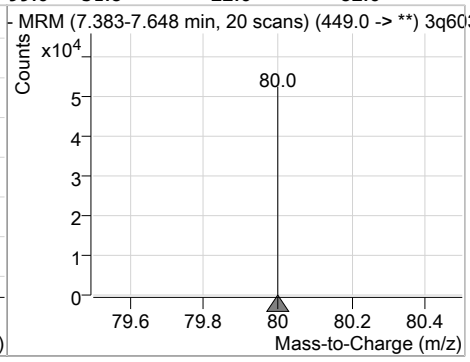




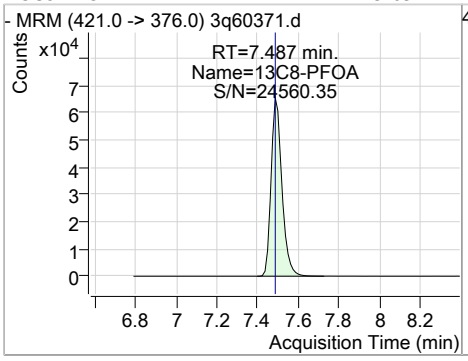
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.09	7.48	0.01	38569	449.0 -> 99.0	51.8	22.6	82.6

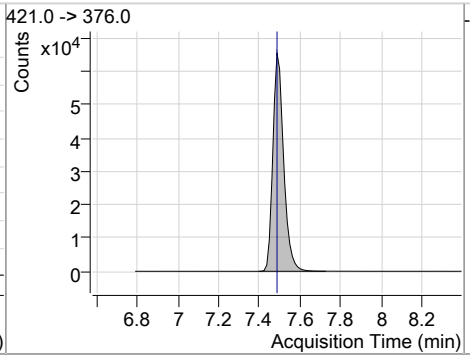


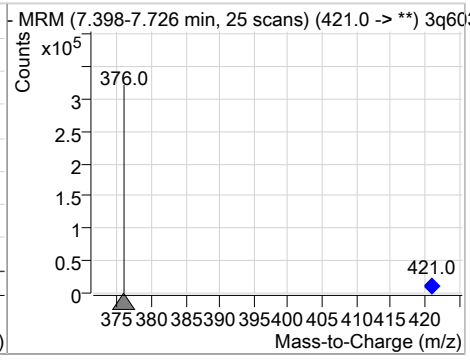




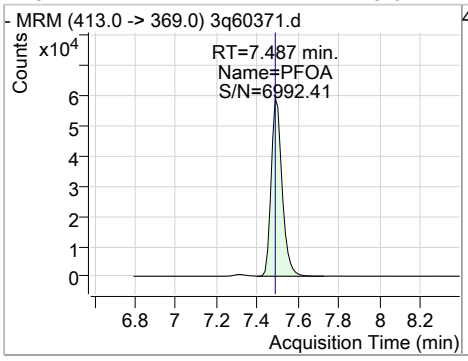
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.09	7.49	0.00	241158				

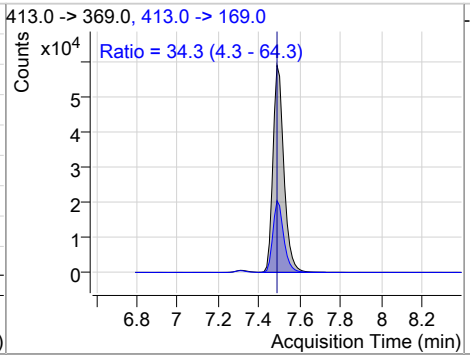


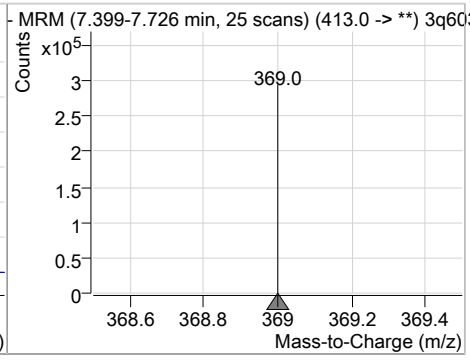




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.64	7.49	0.00	220520	413.0 -> 169.0	34.3	4.3	64.3

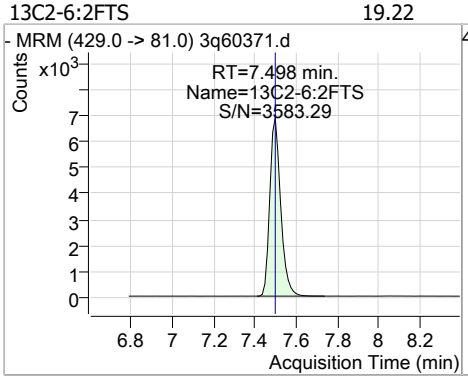


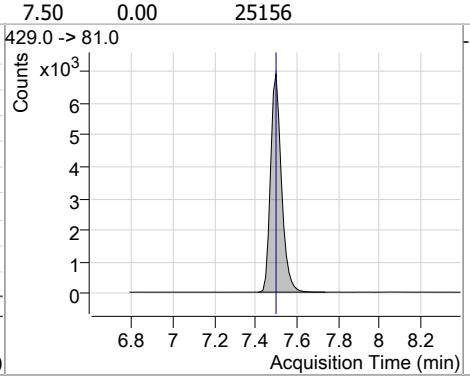


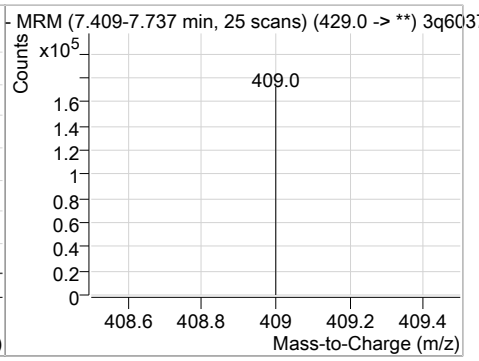


Perfluorinated Compounds by LC/MS/MS

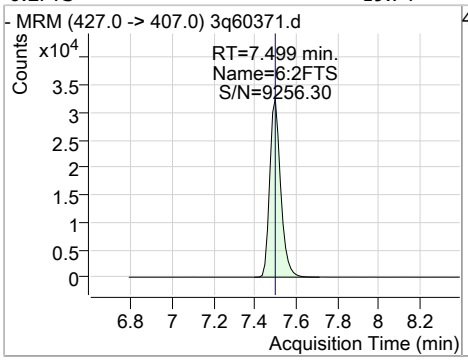
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.22	7.50	0.00	25156				

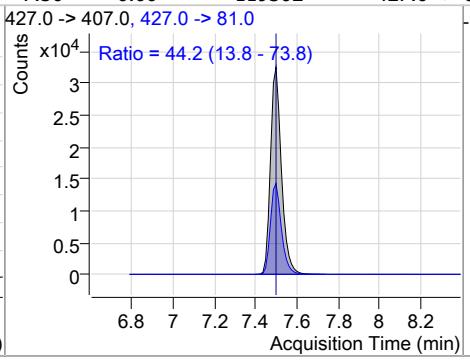


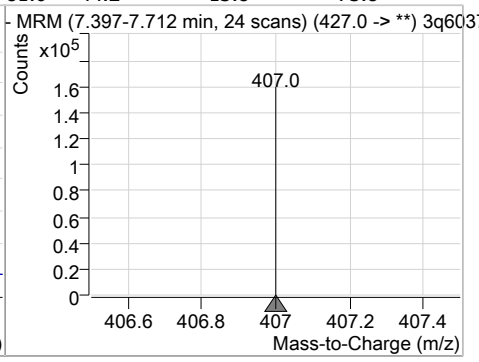




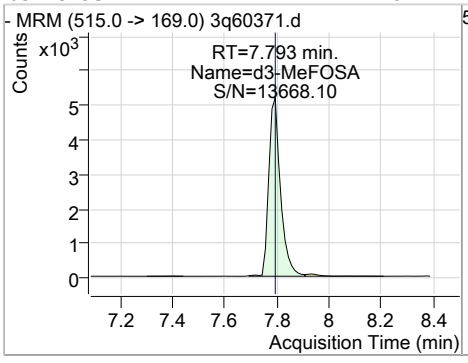
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.74	7.50	0.00	119302	427.0 -> 81.0	44.2	13.8	73.8

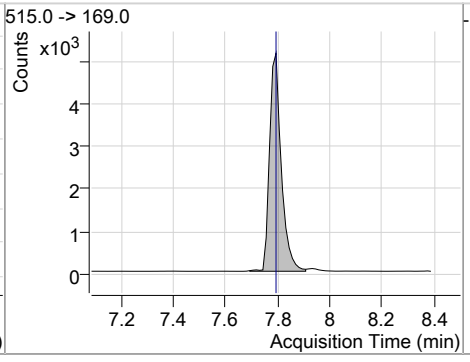


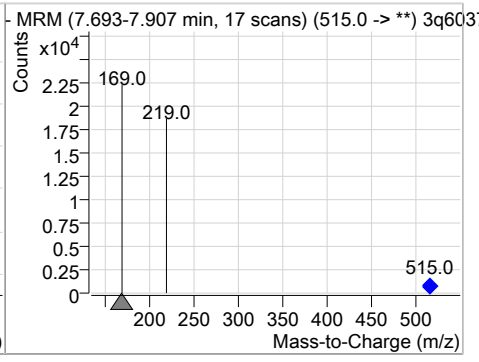




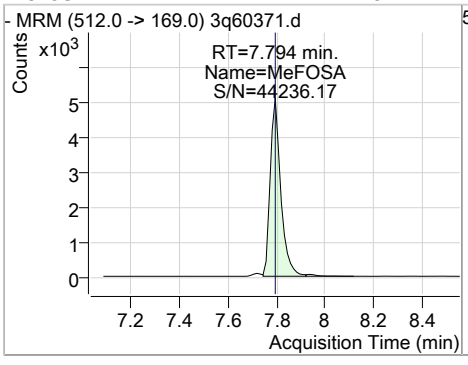
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.84	7.79	0.00	16048				

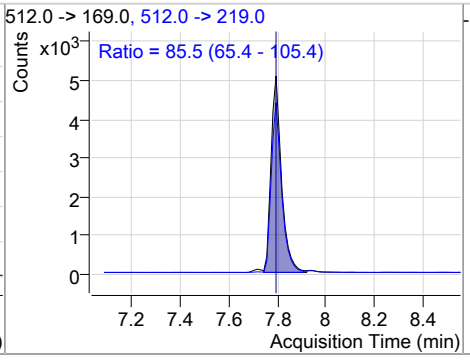


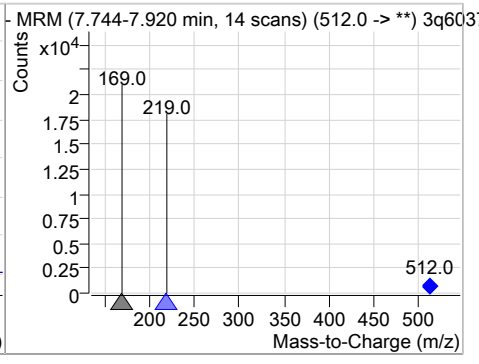




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.17	7.79	0.00	15249	512.0 -> 219.0	85.5	65.4	105.4

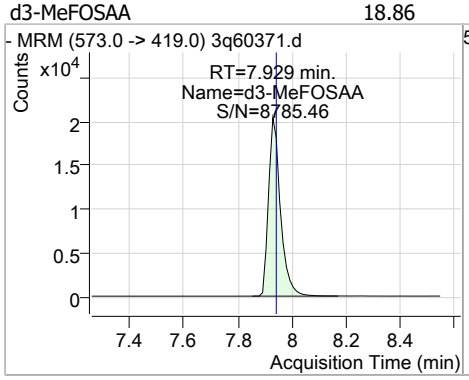


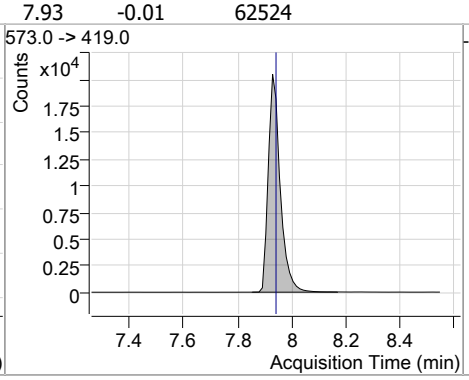


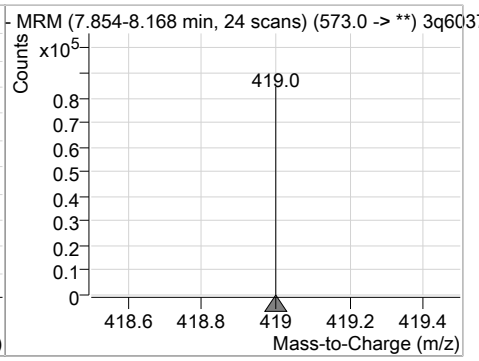


Perfluorinated Compounds by LC/MS/MS

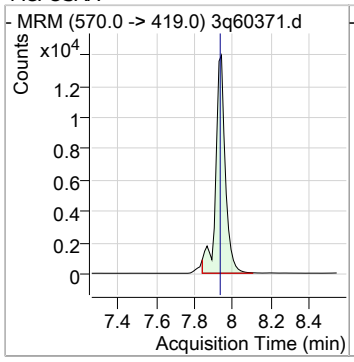
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.86	7.93	-0.01	62524				

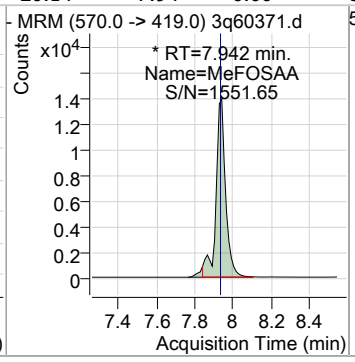


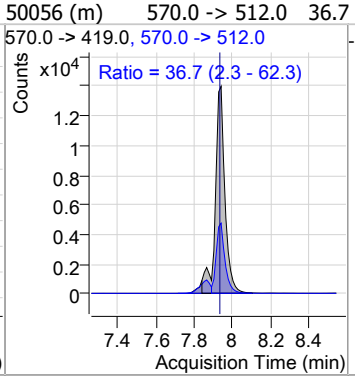


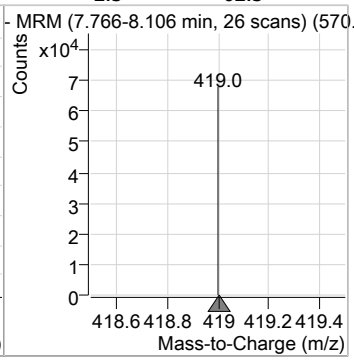


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.14	7.94	0.00	50056 (m)	570.0 -> 512.0	36.7	2.3	62.3

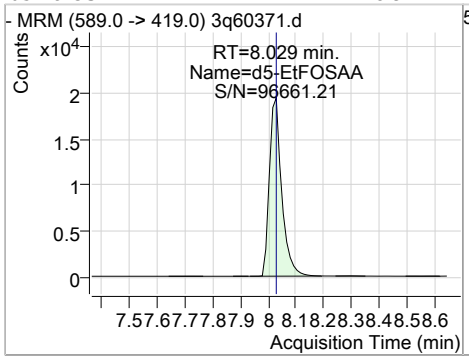


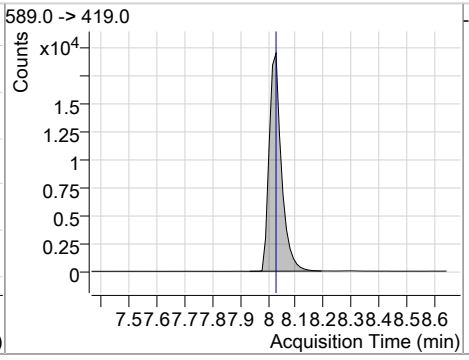


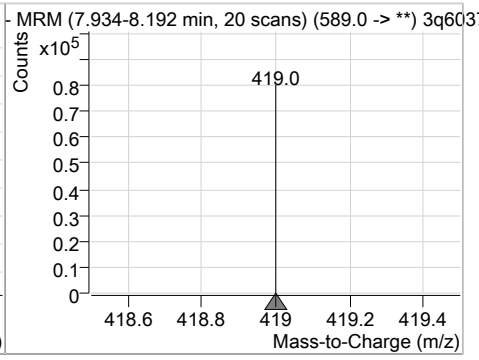




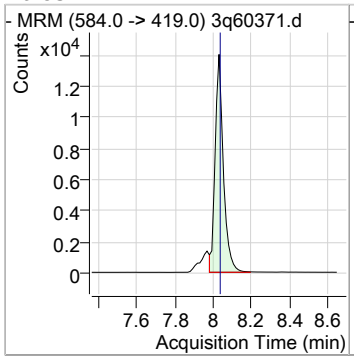
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.92	8.03	0.00	59622				

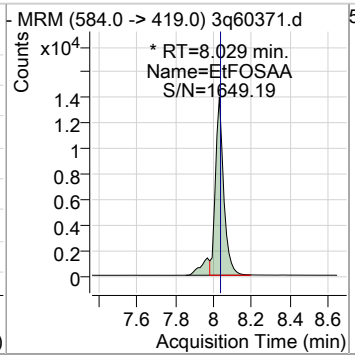


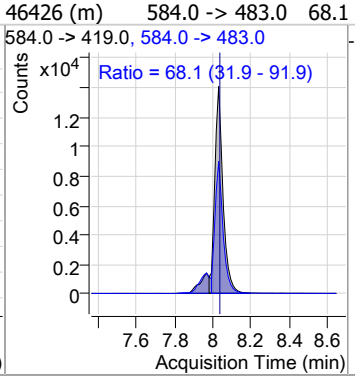


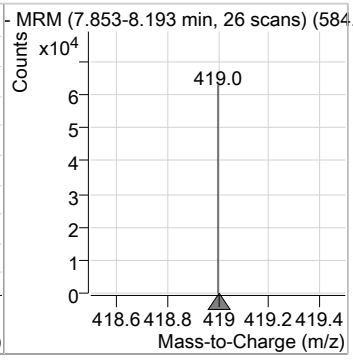


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.99	8.03	0.00	46426 (m)	584.0 -> 483.0	68.1	31.9	91.9



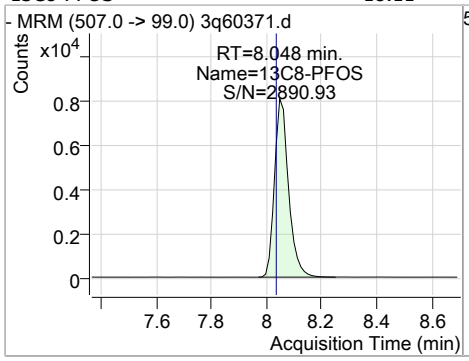


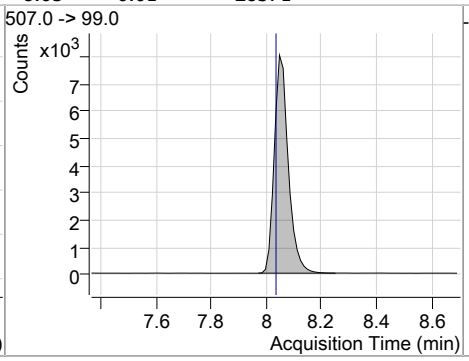


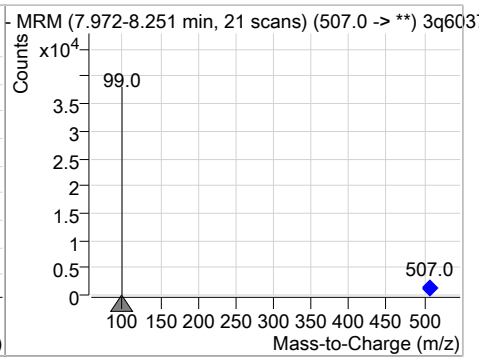


Perfluorinated Compounds by LC/MS/MS

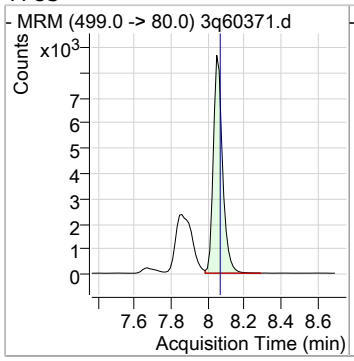
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.11	8.05	0.01	28371				

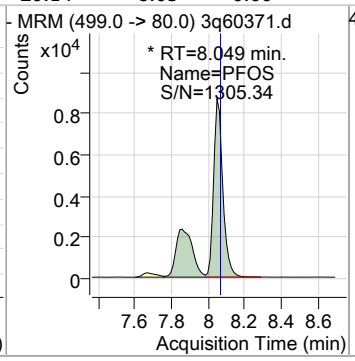


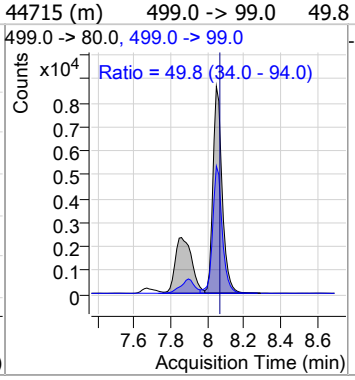


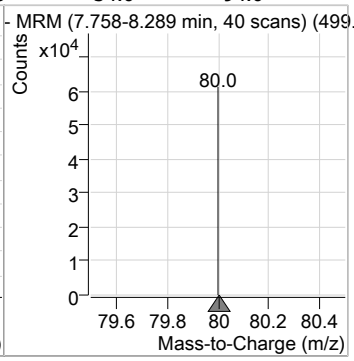


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.14	8.05	0.00	44715 (m)	499.0 -> 99.0	49.8	34.0	94.0

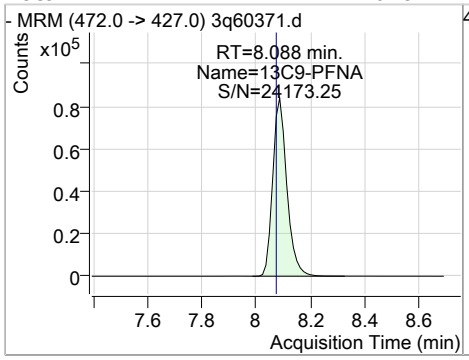


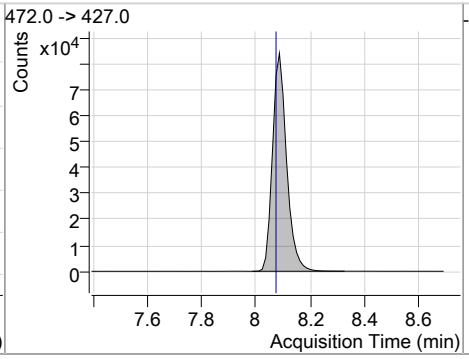


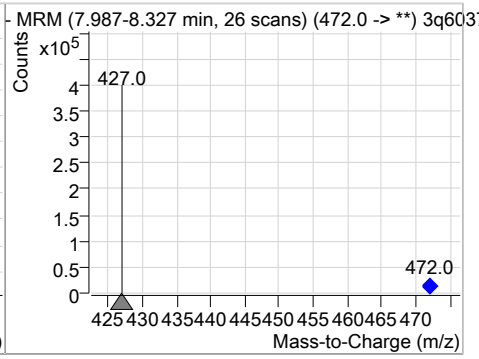




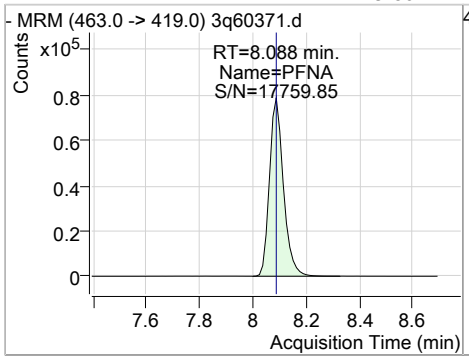
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.79	8.09	0.01	303989				

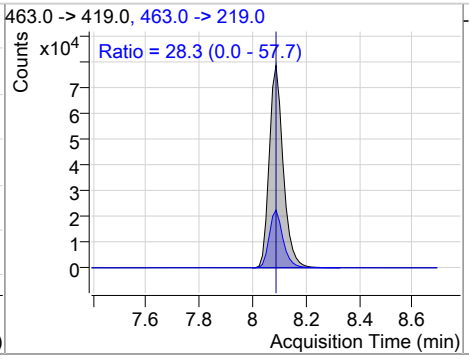


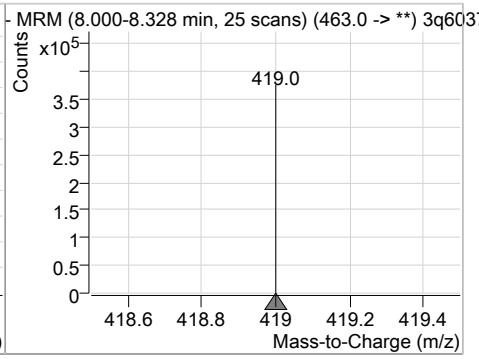




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.80	8.09	0.01	285553	463.0 -> 219.0	28.3	0.0	57.7

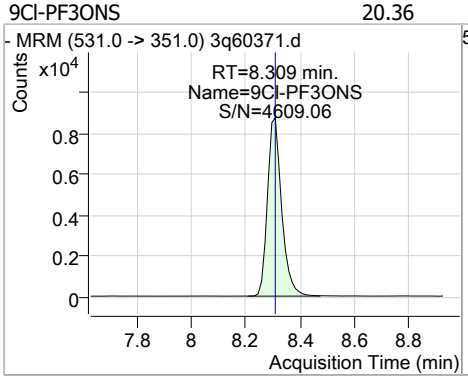


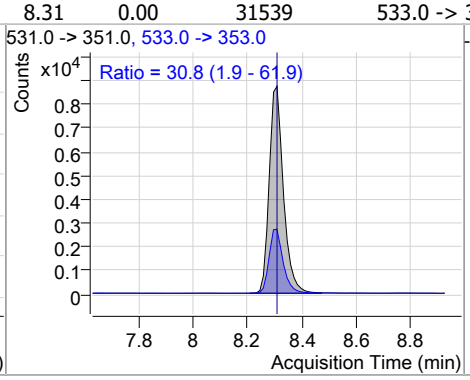


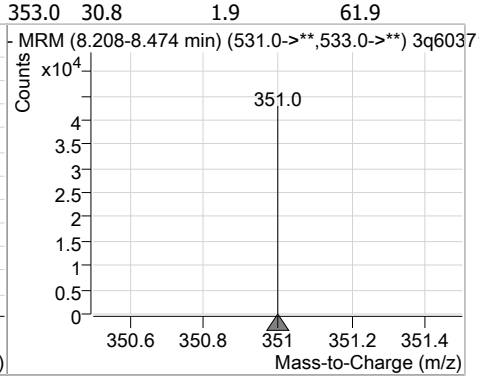


Perfluorinated Compounds by LC/MS/MS

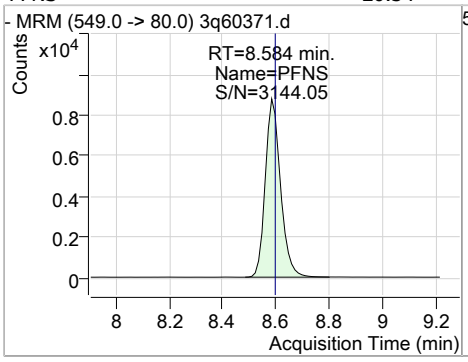
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.36	8.31	0.00	31539	533.0 -> 353.0	30.8	1.9	61.9

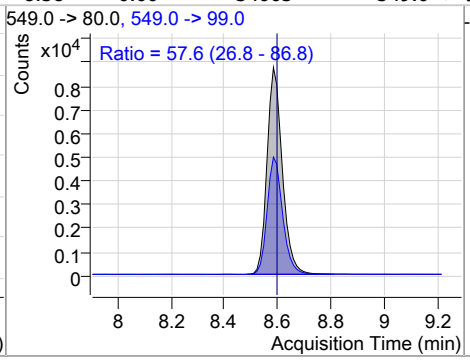


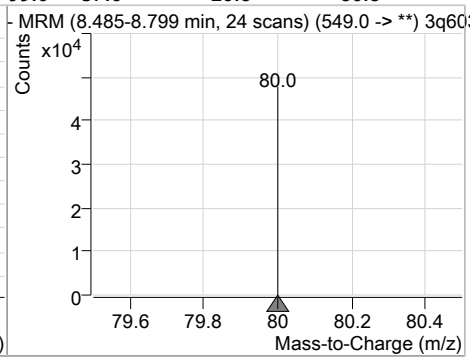




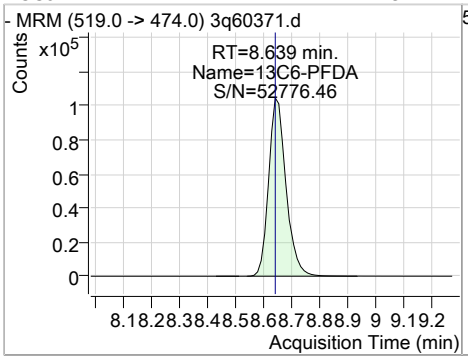
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.34	8.58	0.00	34665	549.0 -> 99.0	57.6	26.8	86.8

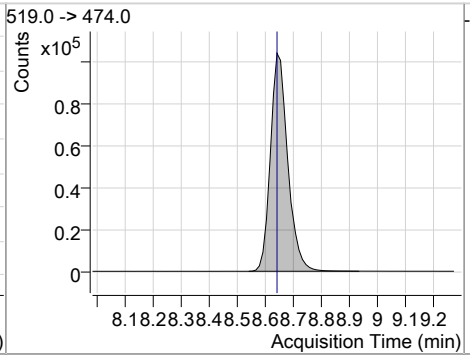


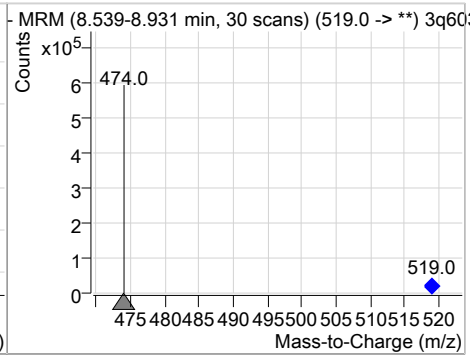




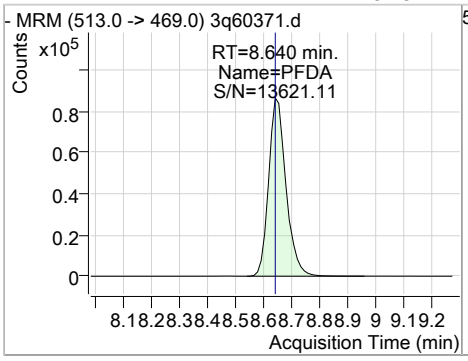
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.92	8.64	0.00	447256				

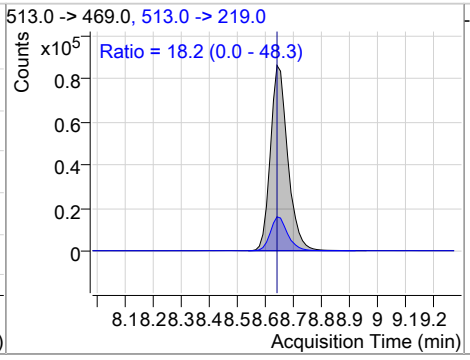


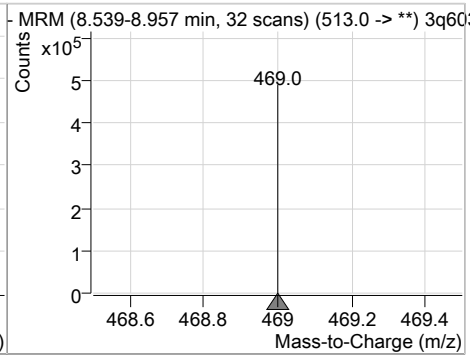




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.79	8.64	0.00	369608	513.0 -> 219.0	18.2	0.0	48.3

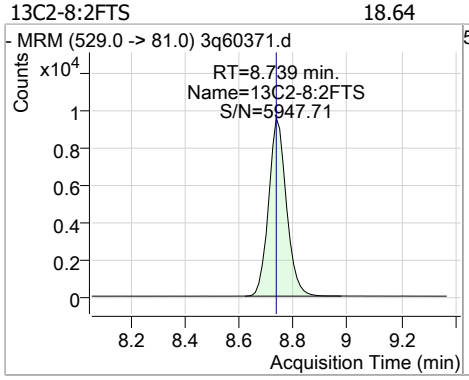


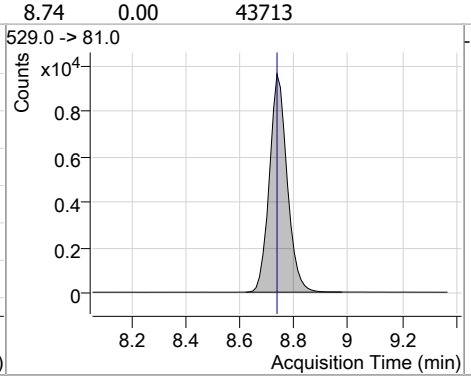


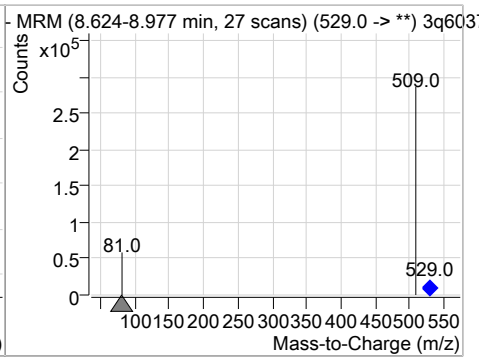


Perfluorinated Compounds by LC/MS/MS

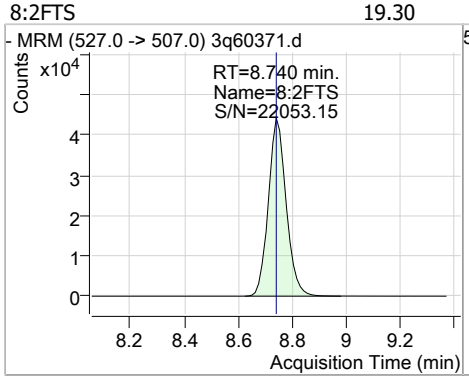
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.64	8.74	0.00	43713				

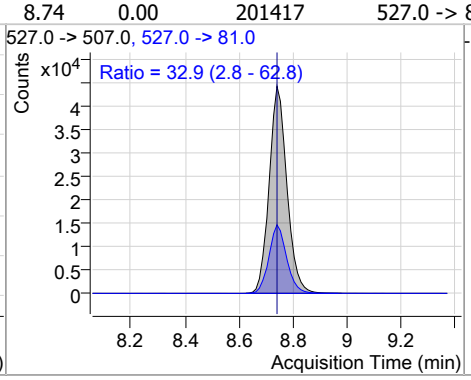


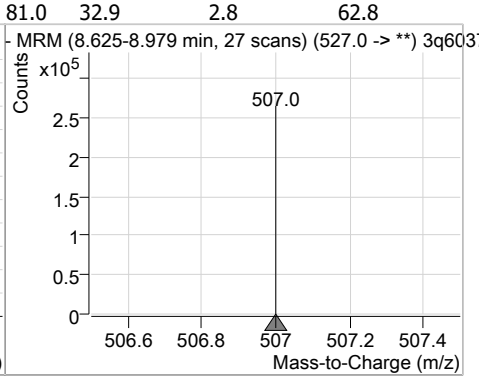




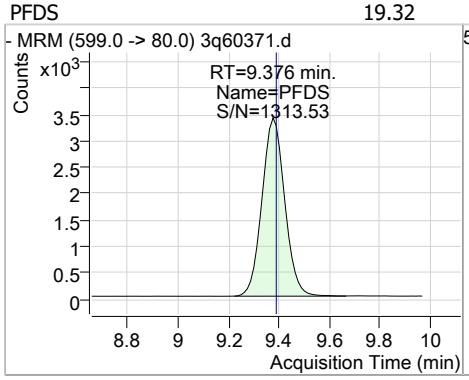
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.30	8.74	0.00	201417	527.0 -> 81.0	32.9	2.8	62.8

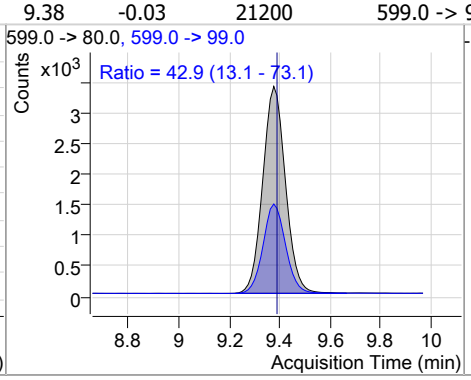


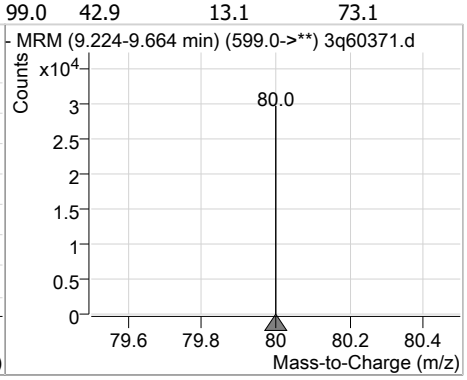




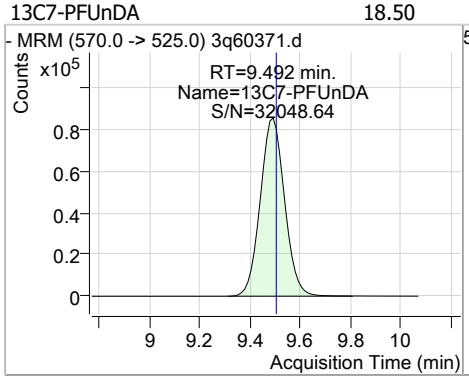
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.32	9.38	-0.03	21200	599.0 -> 99.0	42.9	13.1	73.1

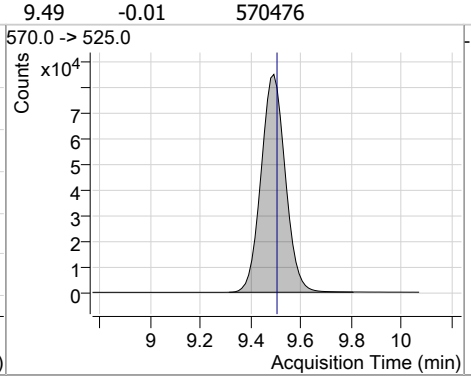


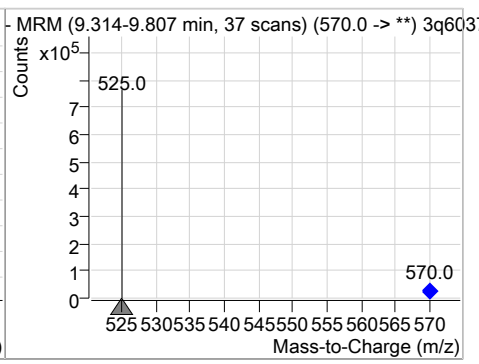




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.50	9.49	-0.01	570476				

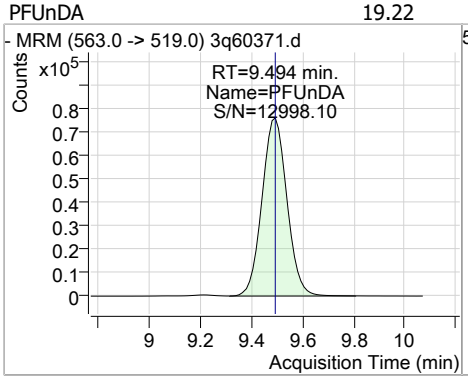


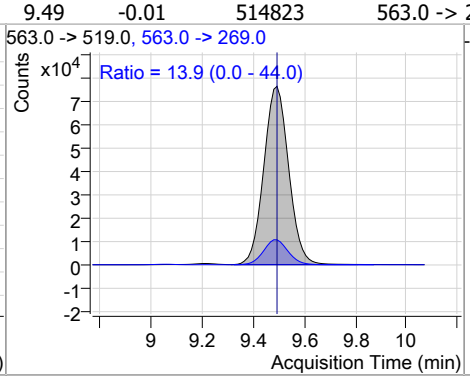


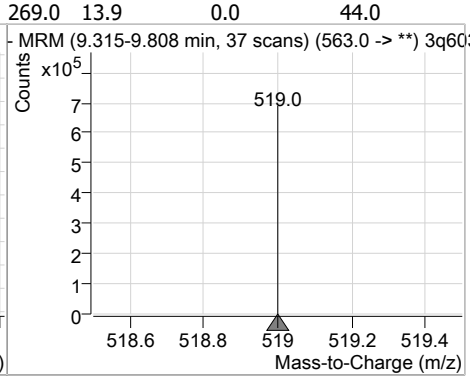


Perfluorinated Compounds by LC/MS/MS

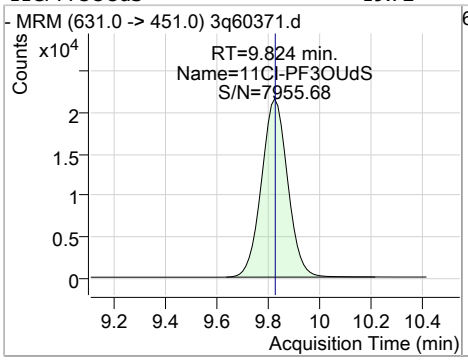
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.22	9.49	-0.01	514823	563.0 -> 269.0	13.9	0.0	44.0

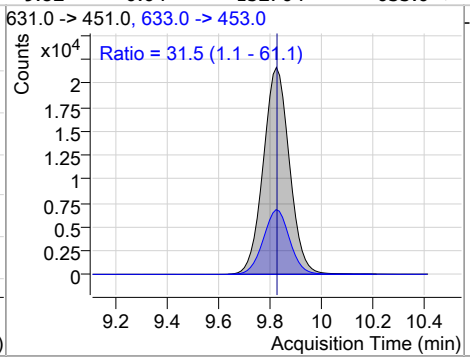


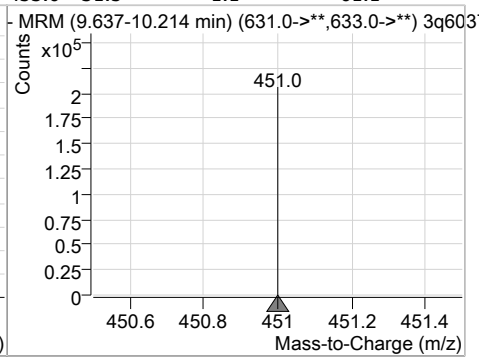




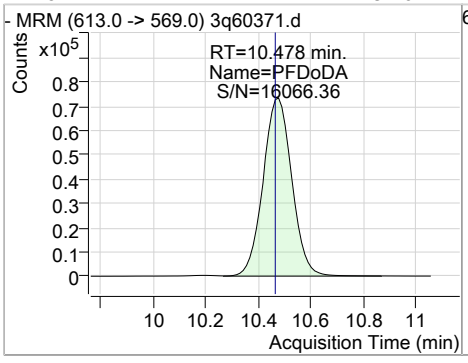
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.72	9.82	-0.04	152764	633.0 -> 453.0	31.5	1.1	61.1

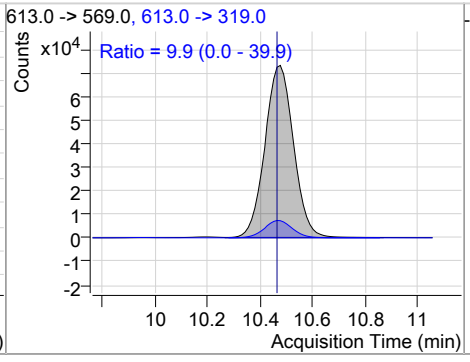


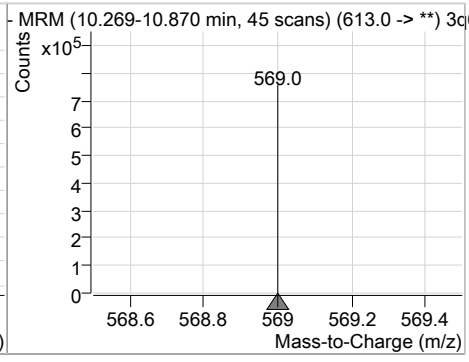




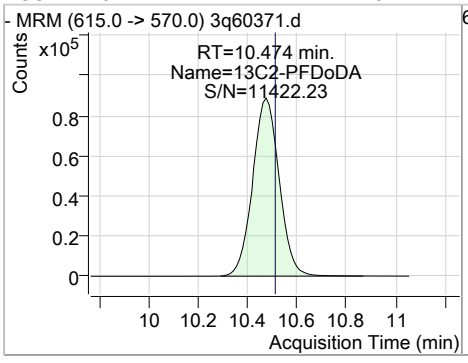
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.70	10.48	-0.03	556098	613.0 -> 319.0	9.9	0.0	39.9

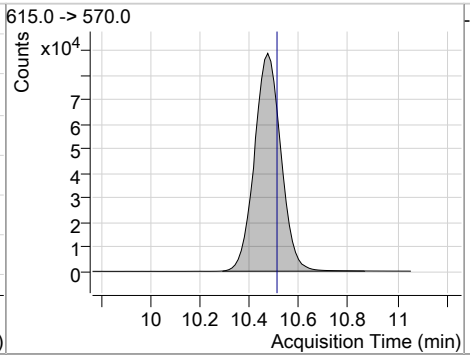


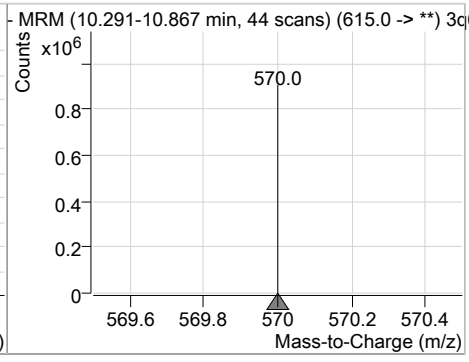




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.11	10.47	-0.04	663660				

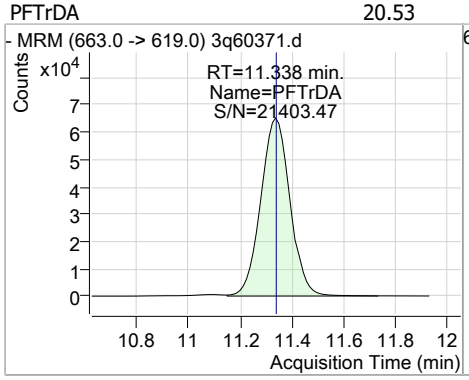


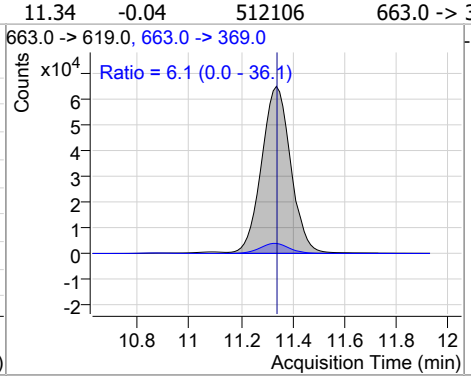


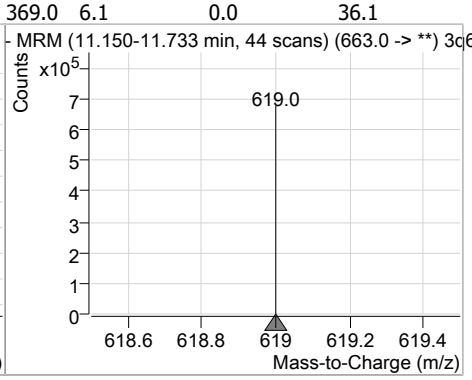


Perfluorinated Compounds by LC/MS/MS

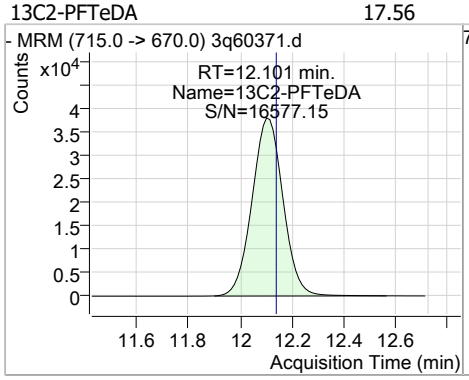
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.53	11.34	-0.04	512106	663.0 -> 369.0	6.1	0.0	36.1

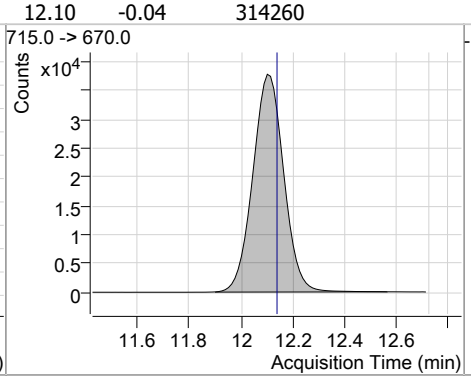


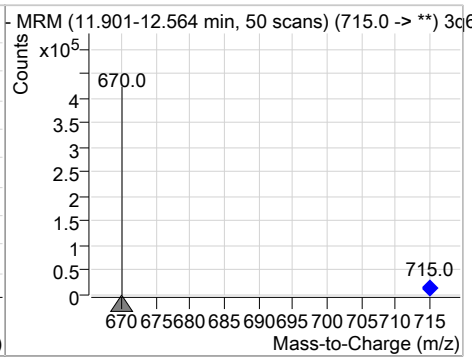




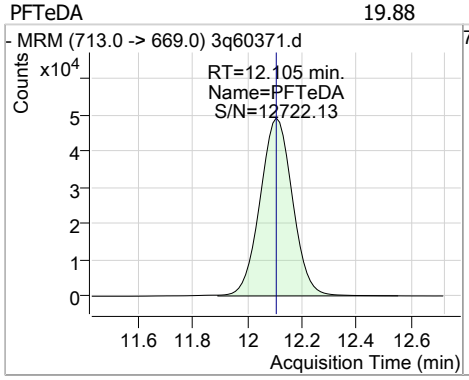
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.56	12.10	-0.04	314260				

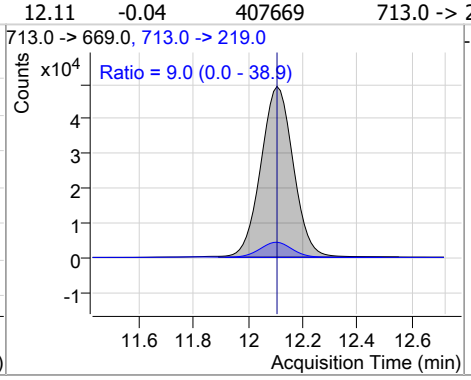


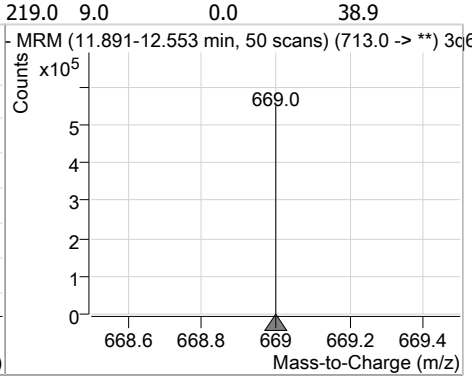




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.88	12.11	-0.04	407669	713.0 -> 219.0	9.0	0.0	38.9







Manual Integration Approval Summary

Sample Number: OP91274-LBS
Lab FileID: 3Q60371.D
Injection Time: 05/27/22 22:07
Method: EPA 537M BY ID
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q595.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 10:44:38 PM
Sample Name : op91243-ms
Vial : P1-F6
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91243,S6Q11,270,,,1.0,1,water

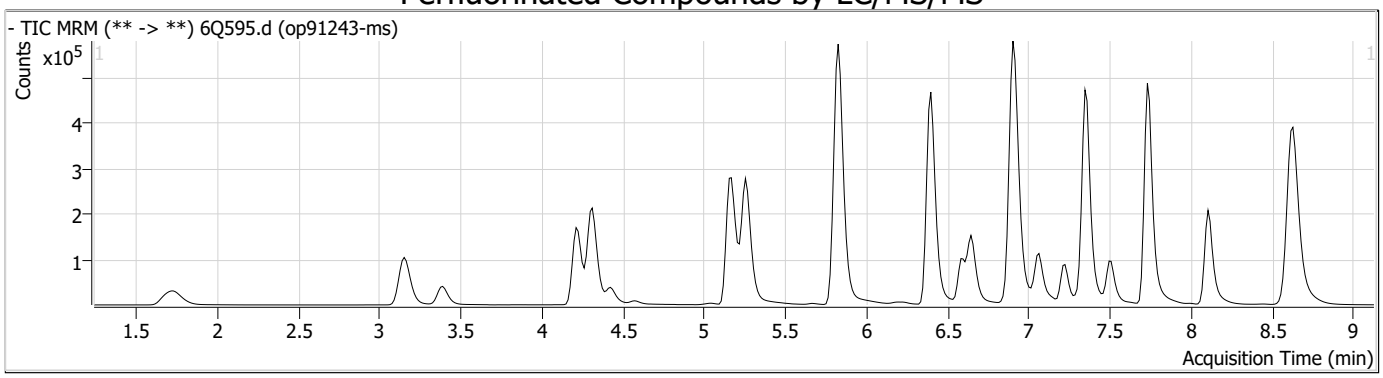
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.724	217.0 -> 172.0	184512	20.00 µg/L	-0.013
M5-PFPeA	3.155	268.0 -> 223.0	314665	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	462254	20.00 µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	509080	20.00 µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	799334	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	989533	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	826543	20.00 µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	948157	20.00 µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	973716	20.00 µg/L	0.000
M2-PFTeDA	8.626	715.0 -> 670.0	1106871	20.00 µg/L	0.000
M8-FOSA	6.601	506.0 -> 78.0	202337	20.00 µg/L	0.000
M3-PFBS	3.385	302.0 -> 99.0	40662	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	36812	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	50385	20.00 µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	328267	20.00 µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	349520	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	272506	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	191494	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	13267	20.00 µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	10825	20.00 µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	160014	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.210	329.0 -> 309.0	328267	22.32 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%	
13C2-6:2FTS	5.816	429.0 -> 409.0	349520	20.53 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C2-8:2FTS	6.931	529.0 -> 509.0	272506	22.15 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%	
13C2-PFDoDA	7.733	615.0 -> 570.0	973716	20.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1106871	20.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-PFBS	3.385	302.0 -> 99.0	40662	23.05 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.3%	
13C3-PFHxS	5.202	402.0 -> 99.0	36812	22.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C4-PFBA	1.724	217.0 -> 172.0	184512	22.62 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.1%	
13C4-PFHpA	5.160	367.0 -> 322.0	509080	22.51 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C5-PFHxA	4.314	318.0 -> 273.0	462254	22.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%	
13C5-PFPeA	3.155	268.0 -> 223.0	314665	22.63 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%	
13C6-PFDA	6.908	519.0 -> 474.0	826543	22.54 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

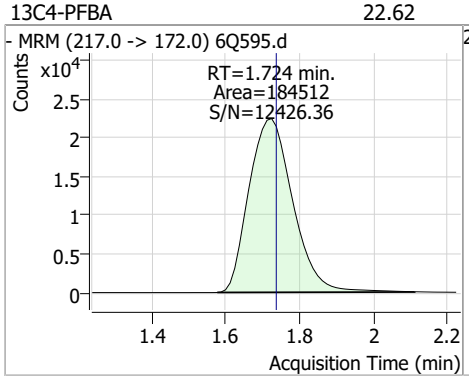
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
13C7-PFUnDA	7.350	570.0 -> 525.0	948157	21.90 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C8-FOSA	6.601	506.0 -> 78.0	202337	19.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C8-PFOA	5.832	421.0 -> 376.0	799334	21.45 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C8-PFOS	6.386	507.0 -> 99.0	50385	23.38 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C9-PFNA	6.404	472.0 -> 427.0	989533	22.87 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%		
d3-MeFOSAA	7.064	573.0 -> 419.0	191494	20.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	13285	22.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%		
d3-MeFOSA	7.033	515.0 -> 169.0	10825	4.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.0%		
d5-EtFOSAA	7.211	589.0 -> 419.0	159739	19.42 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
Target Compounds						**QValue**
4:2FTS	4.212	327.0 -> 307.0	312440	17.51 µg/L		99
6:2FTS	5.817	427.0 -> 407.0	312037	17.61 µg/L		98
8:2FTS	6.932	527.0 -> 507.0	227523	16.84 µg/L		99
EtFOSAA	7.225	584.0 -> 419.0	119753	15.58 µg/L	m	91
FOSA	6.590	498.0 -> 78.0	154803	15.60 µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	142118	16.65 µg/L	m	92
PFBA	1.718	213.0 -> 169.0	71928	17.20 µg/L		100
PFBS	3.390	299.0 -> 80.0	105965	16.76 µg/L		99
PFDA	6.909	513.0 -> 469.0	869856	16.54 µg/L		99
PFDoDA	7.734	613.0 -> 569.0	758845	16.92 µg/L		98
PFDS	7.311	599.0 -> 80.0	57050	16.22 µg/L		91
PFHpA	5.161	363.0 -> 319.0	565086	16.73 µg/L		100
PFHpS	5.839	449.0 -> 80.0	73982	16.07 µg/L		99
PFHxA	4.315	313.0 -> 269.0	419533	16.75 µg/L		100
PFHxS	5.205	399.0 -> 80.0	82362	16.82 µg/L	m	94
PFNA	6.405	463.0 -> 419.0	659559	15.66 µg/L		99
PFNS	6.869	549.0 -> 80.0	84263	16.97 µg/L		94
PFOA	5.833	413.0 -> 369.0	688243	17.02 µg/L		99
PFOS	6.388	499.0 -> 80.0	77015	16.25 µg/L	m	88
PFPeA	3.158	263.0 -> 219.0	229224	16.67 µg/L		100
PFPeS	4.420	349.0 -> 80.0	87232	16.50 µg/L		99
PFTeDA	8.630	713.0 -> 669.0	988798	16.25 µg/L		99
PFTrDA	8.103	663.0 -> 619.0	775100	15.92 µg/L		100
PFUnDA	7.351	563.0 -> 519.0	719715	16.24 µg/L		98
11Cl-PF3OUdS	7.506	631.0 -> 451.0	244687	15.10 µg/L		94
9Cl-PF3ONS	6.645	531.0 -> 351.0	396438	16.16 µg/L		99
ADONA	5.256	377.0 -> 251.0	858766	16.09 µg/L		100
HFPO-DA	4.580	285.0 -> 169.0	11153	17.93 µg/L		100
MeFOSA	7.035	512.0 -> 169.0	9450	16.84 µg/L		99

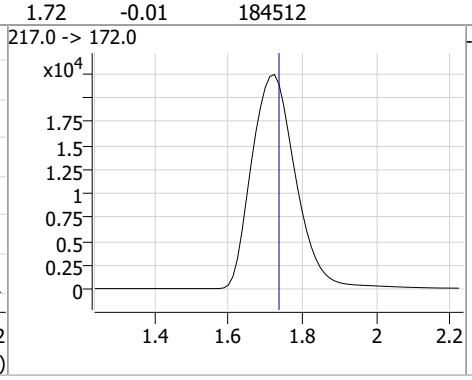
 # = Qualifier out of range, m = manually integrated, + = Area summed

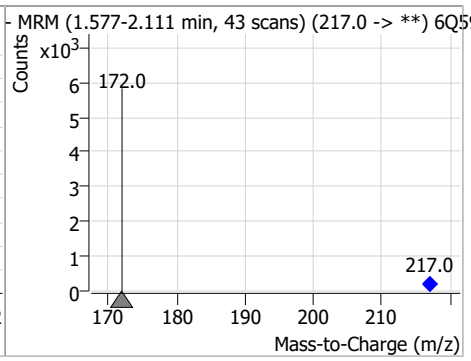
Perfluorinated Compounds by LC/MS/MS



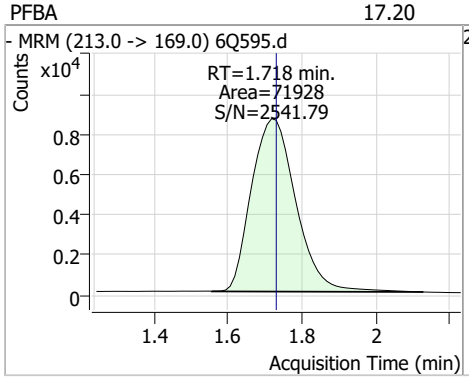
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.62	1.72	-0.01	184512				

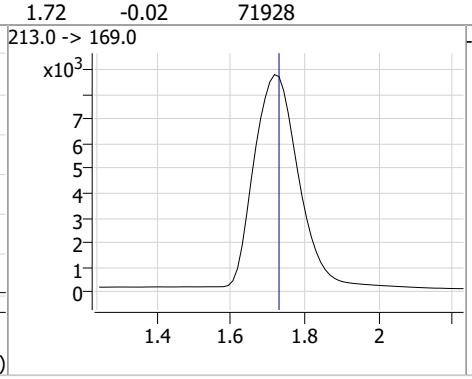


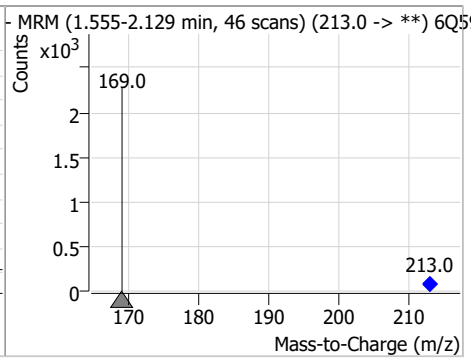




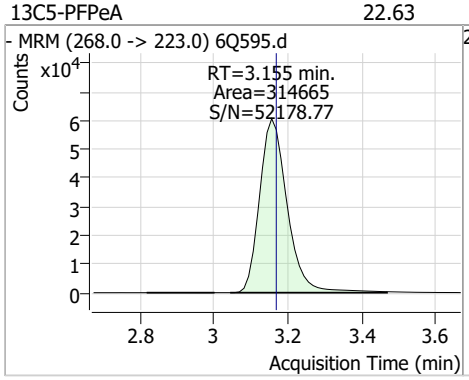
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.20	1.72	-0.02	71928				

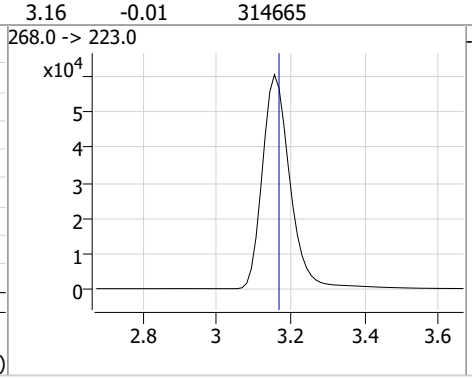


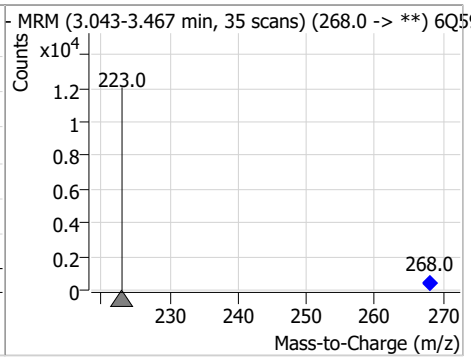




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.63	3.16	-0.01	314665				

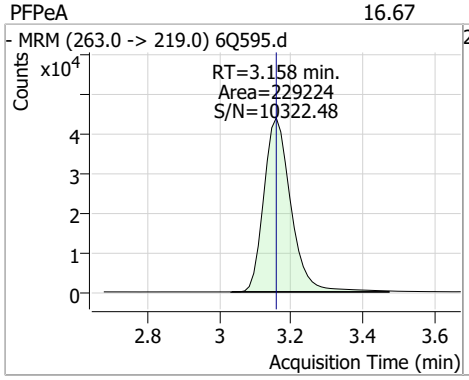


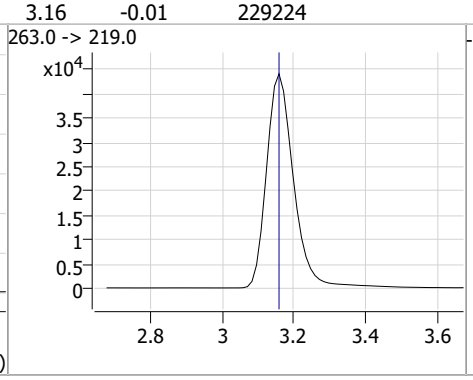


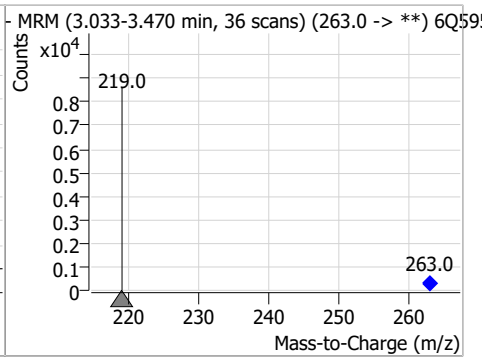


Perfluorinated Compounds by LC/MS/MS

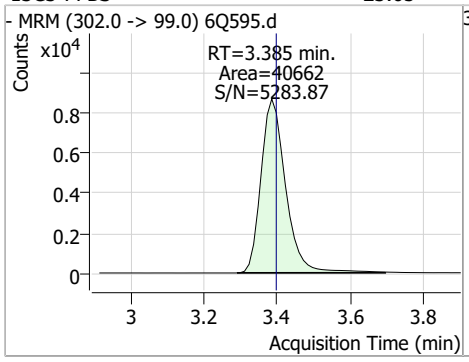
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.67	3.16	-0.01	229224				

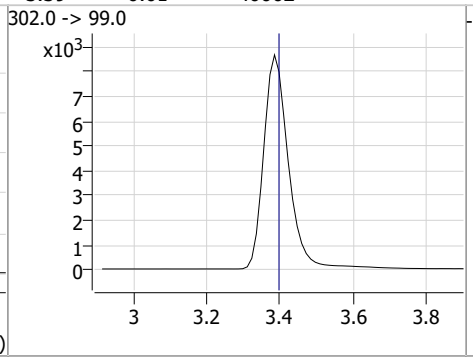


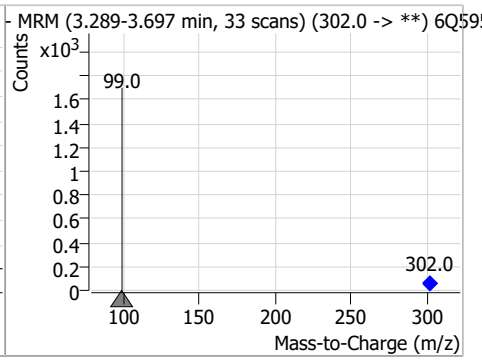




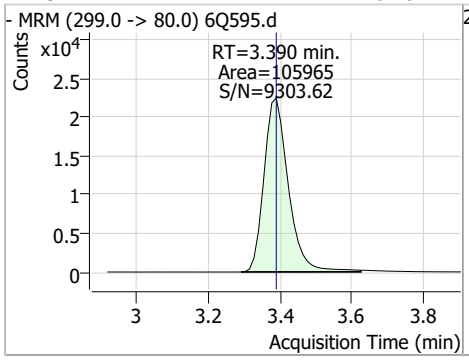
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.05	3.39	-0.01	40662				

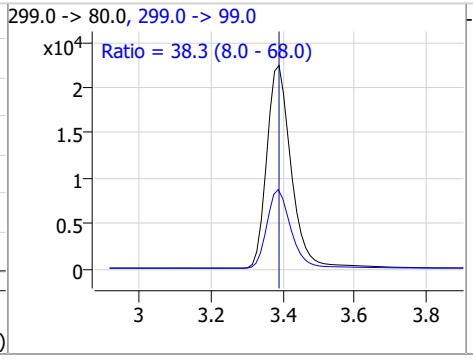


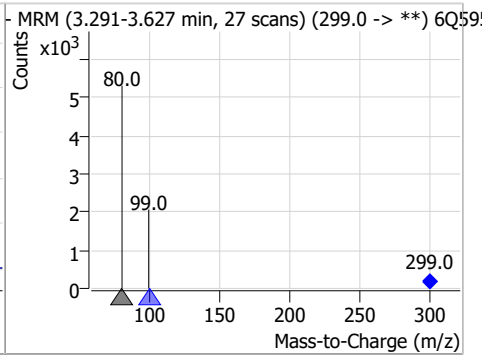




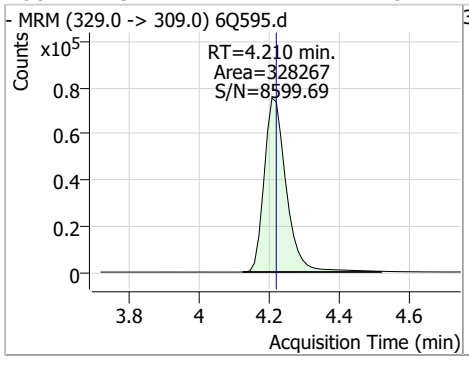
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.76	3.39	-0.01	105965	299.0 -> 99.0	38.3	8.0	68.0

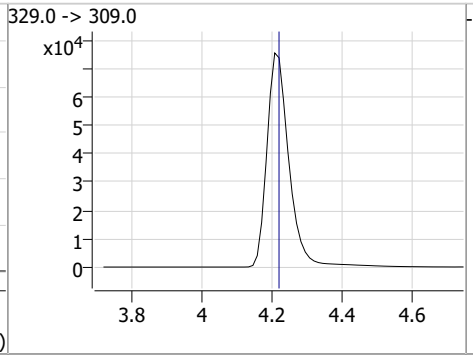


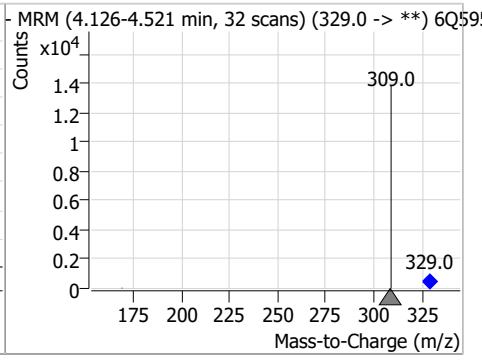




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.32	4.21	-0.01	328267				

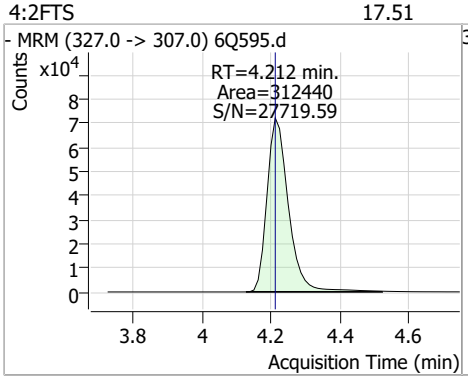


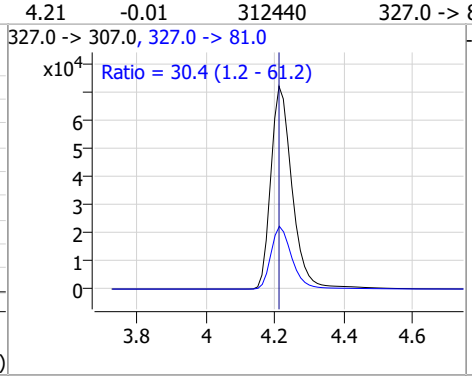


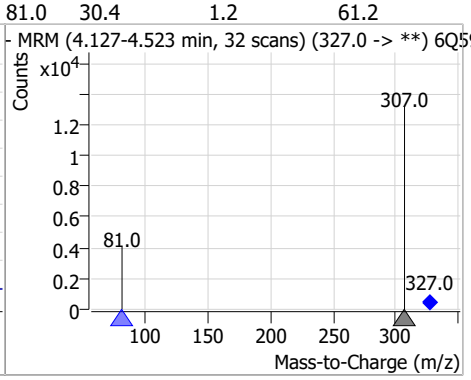


Perfluorinated Compounds by LC/MS/MS

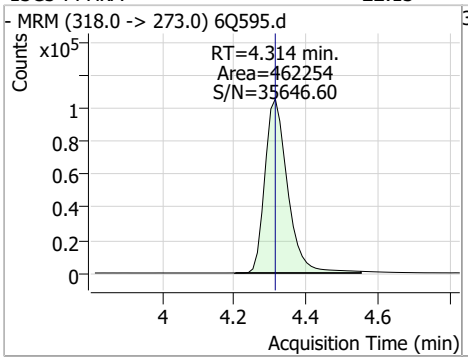
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.51	4.21	-0.01	312440	327.0 -> 81.0	30.4	1.2	61.2

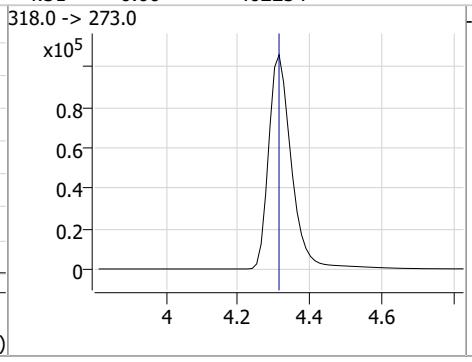


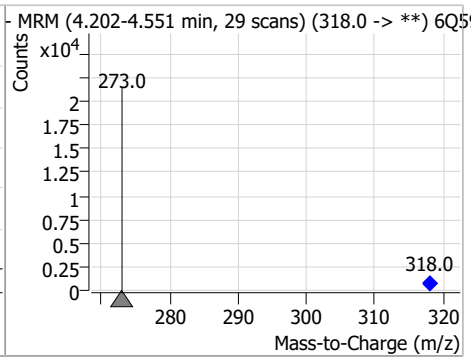




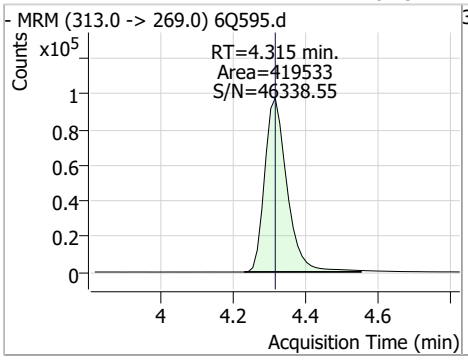
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.13	4.31	0.00	462254				

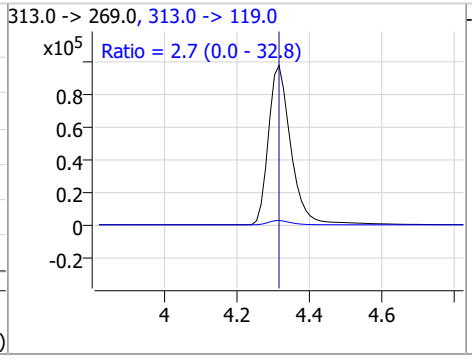


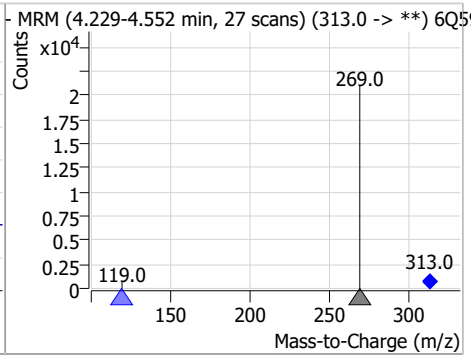




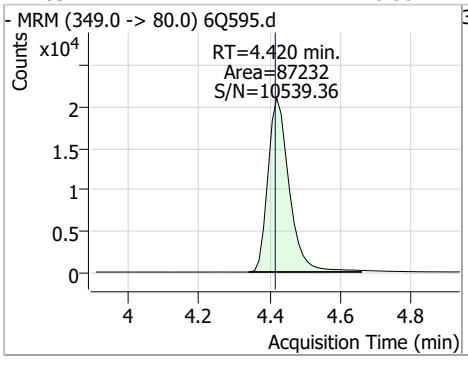
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.75	4.31	0.00	419533	313.0 -> 119.0	2.7	0.0	32.8

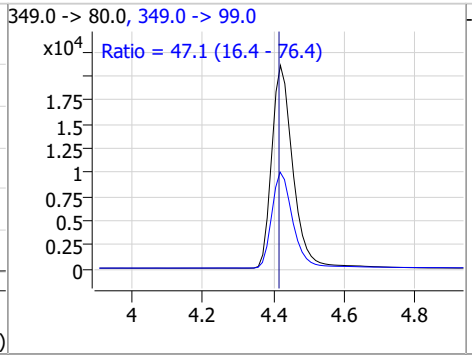


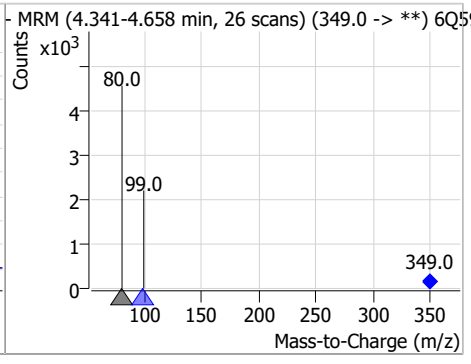




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.50	4.42	-0.01	87232	349.0 -> 99.0	47.1	16.4	76.4

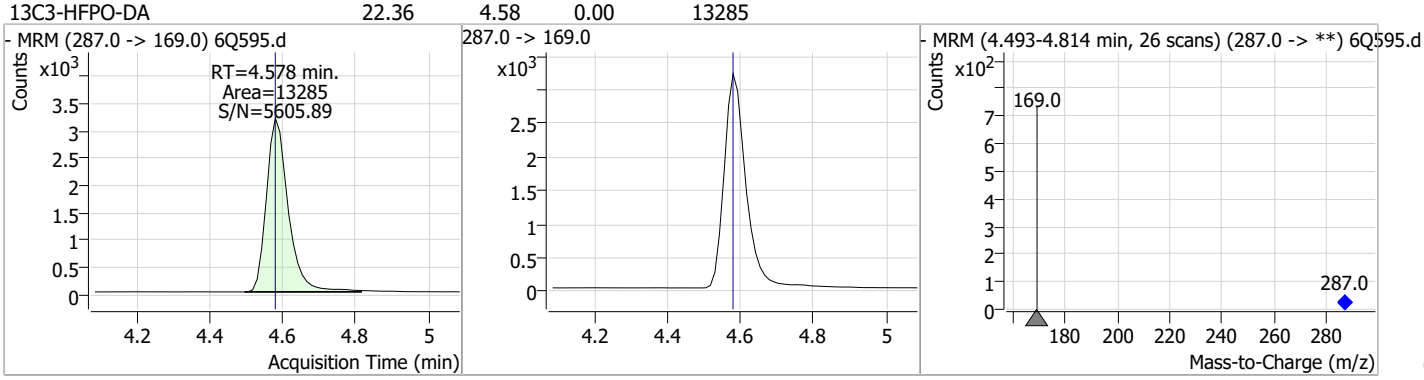




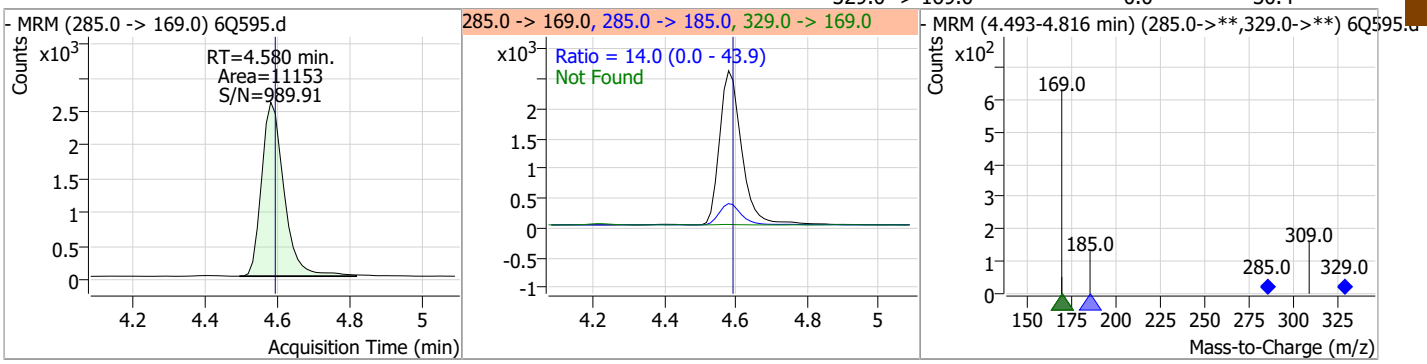


Perfluorinated Compounds by LC/MS/MS

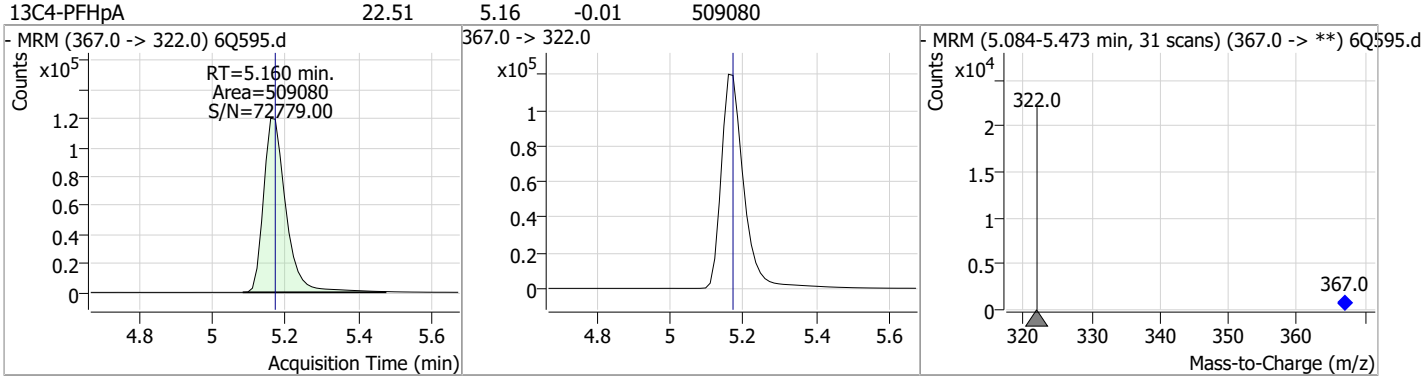
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.36	4.58	0.00	13285				



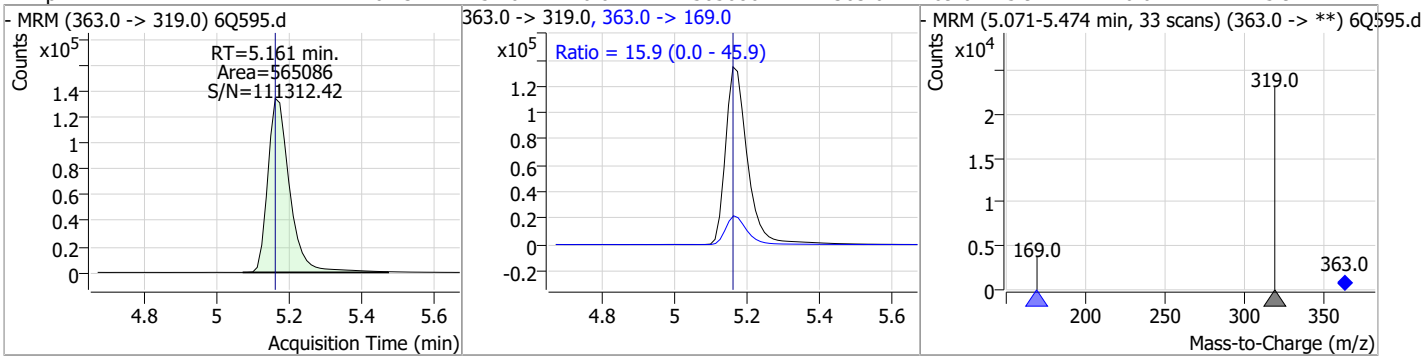
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.93	4.58	-0.01	11153	285.0 -> 185.0	14.0	0.0	43.9
					329.0 -> 169.0		0.0	30.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.51	5.16	-0.01	509080				

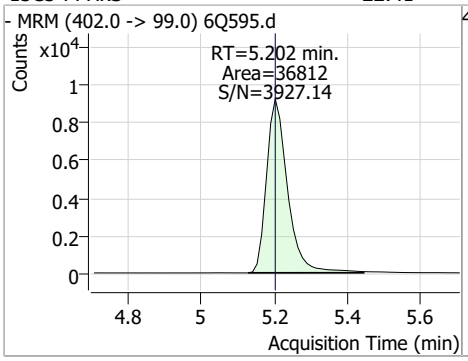


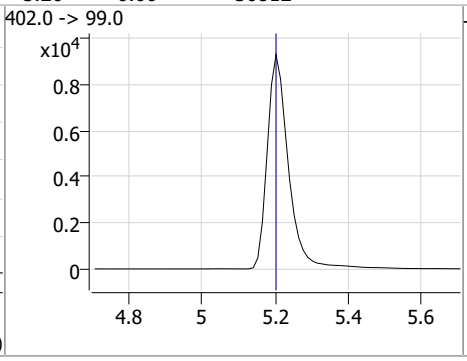
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.73	5.16	-0.01	565086	363.0 -> 169.0	15.9	0.0	45.9

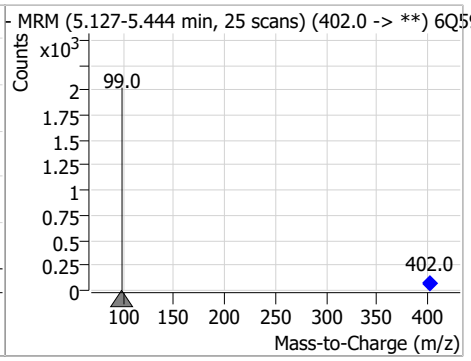


Perfluorinated Compounds by LC/MS/MS

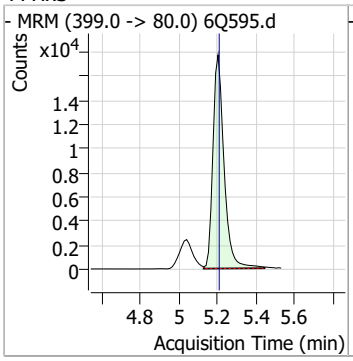
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.41	5.20	0.00	36812				

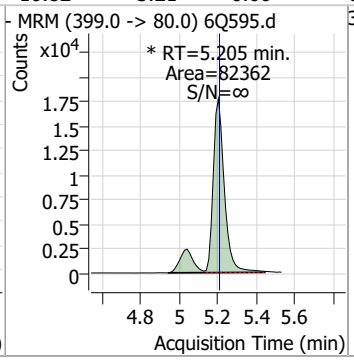


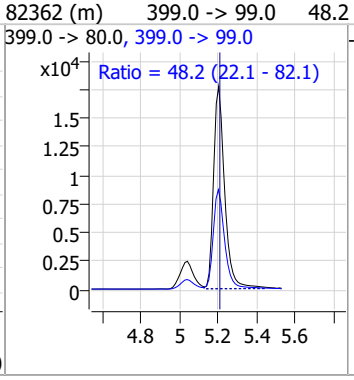


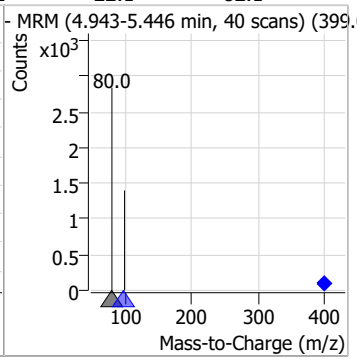


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.82	5.21	0.00	82362 (m)	399.0 -> 99.0	48.2	22.1	82.1

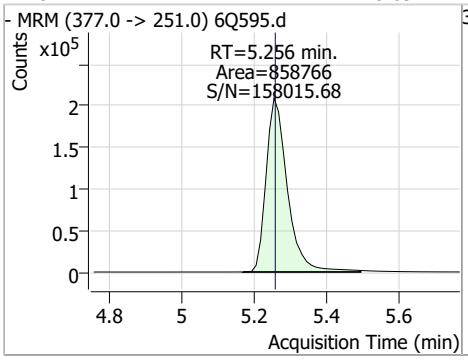


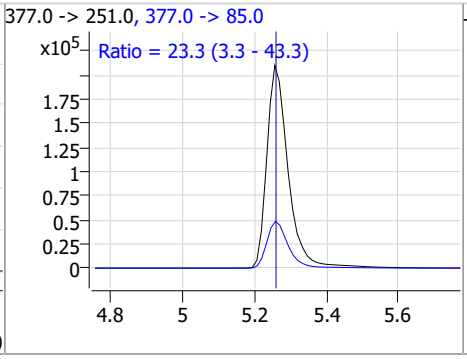


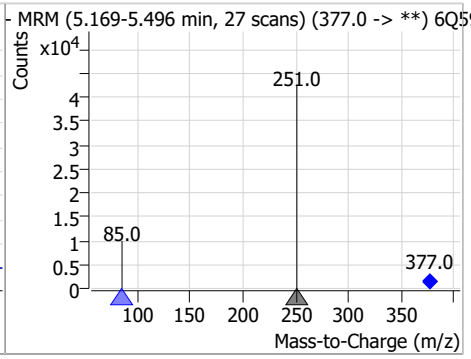




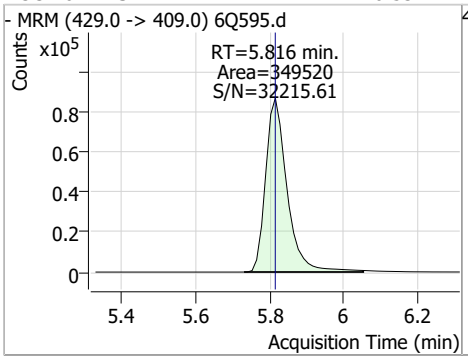
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.09	5.26	0.00	858766	377.0 -> 85.0	23.3	3.3	43.3

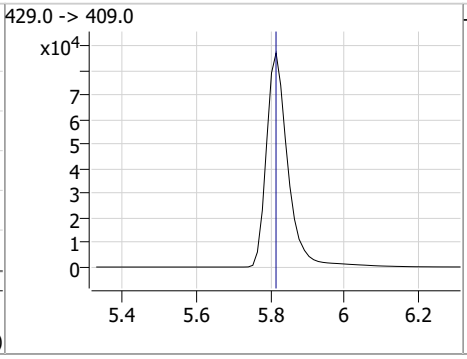


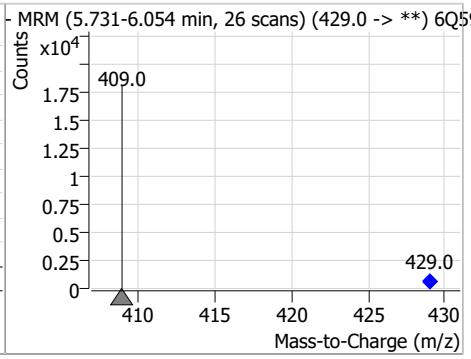




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.53	5.82	0.00	349520				

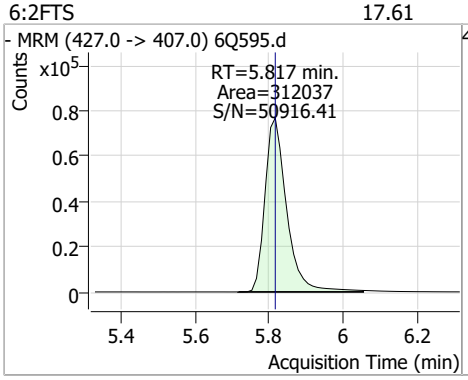


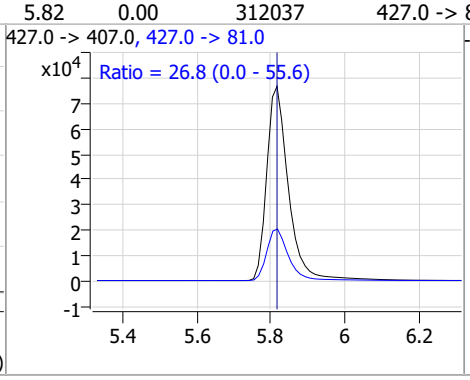


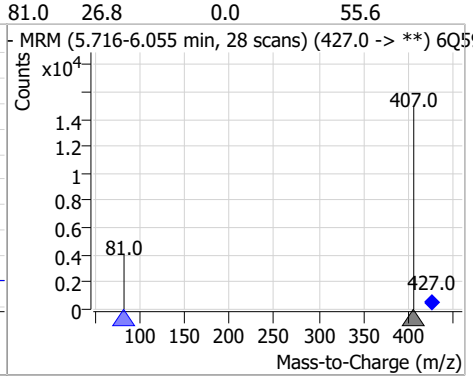


Perfluorinated Compounds by LC/MS/MS

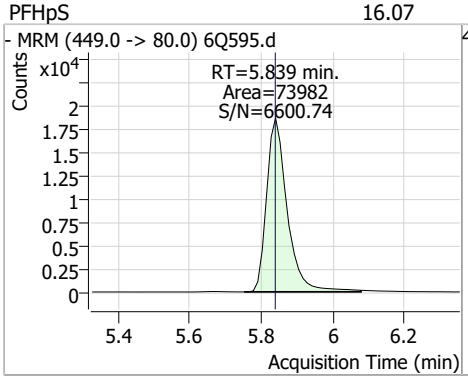
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.61	5.82	0.00	312037	427.0 -> 81.0	26.8	0.0	55.6

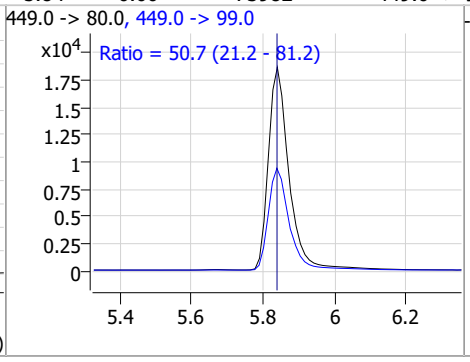


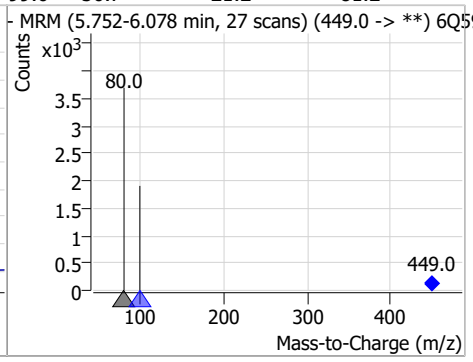




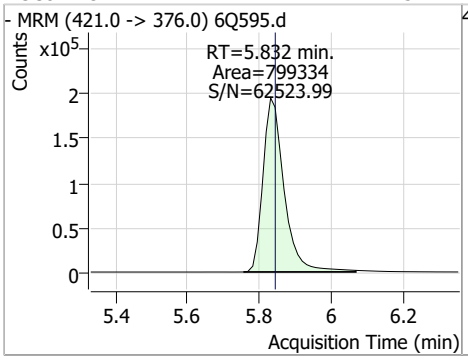
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	16.07	5.84	0.00	73982	449.0 -> 99.0	50.7	21.2	81.2

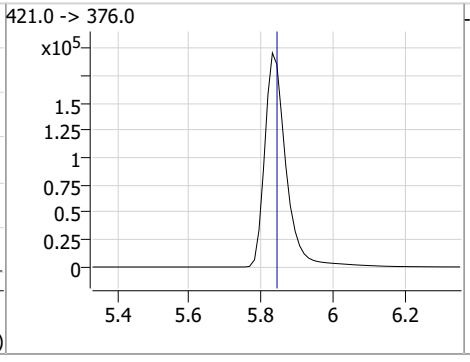


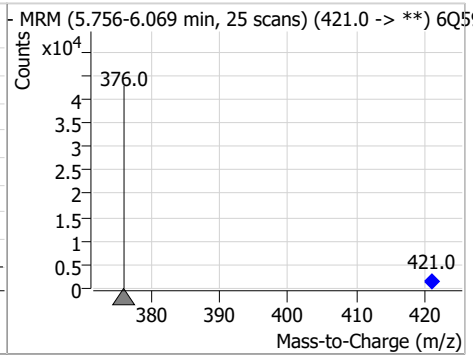




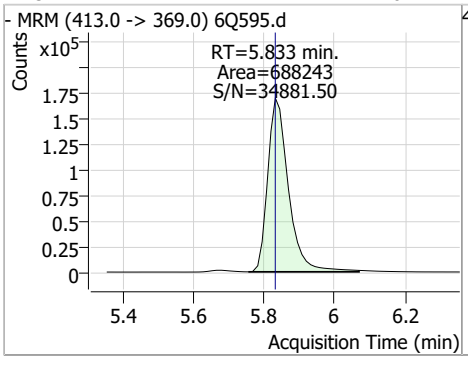
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.45	5.83	-0.01	799334				

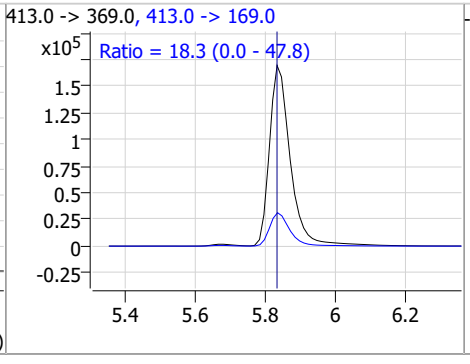


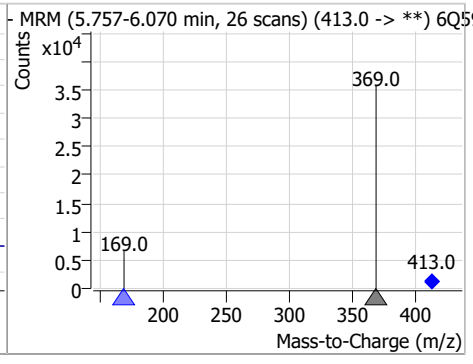




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.02	5.83	-0.01	688243	413.0 -> 169.0	18.3	0.0	47.8

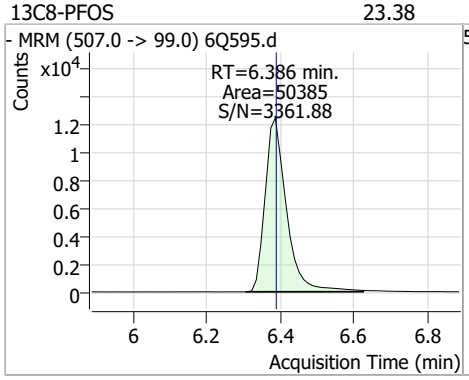


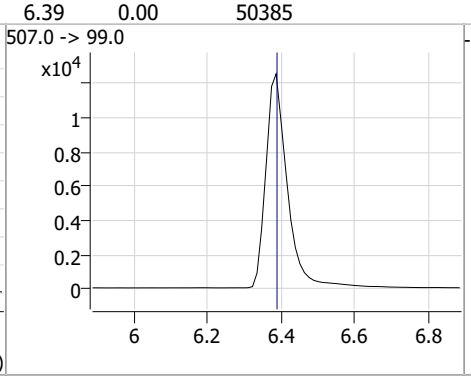


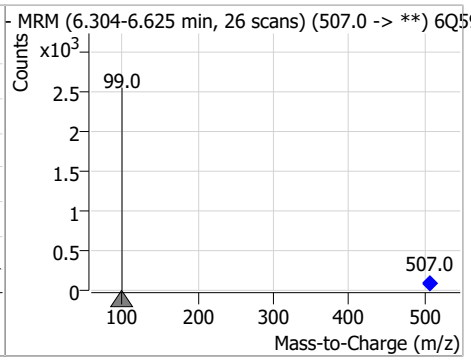


Perfluorinated Compounds by LC/MS/MS

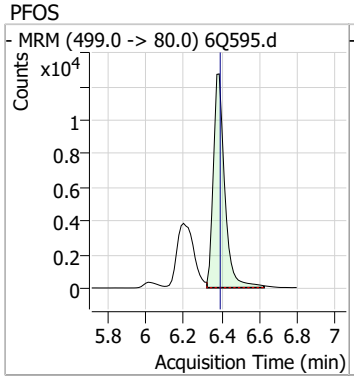
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.38	6.39	0.00	50385				

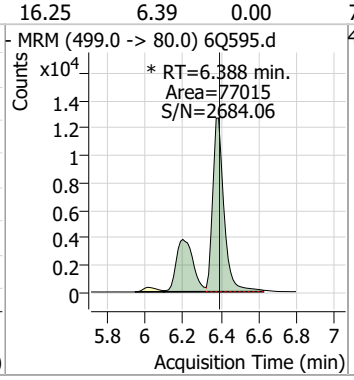


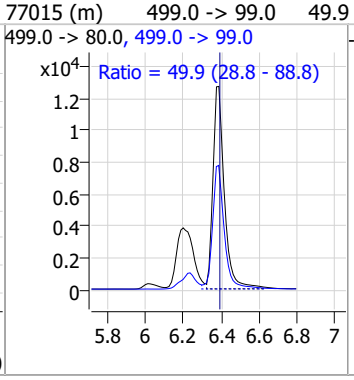


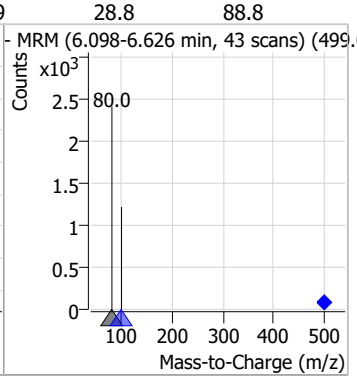


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.25	6.39	0.00	77015 (m)	499.0 -> 99.0	49.9	28.8	88.8

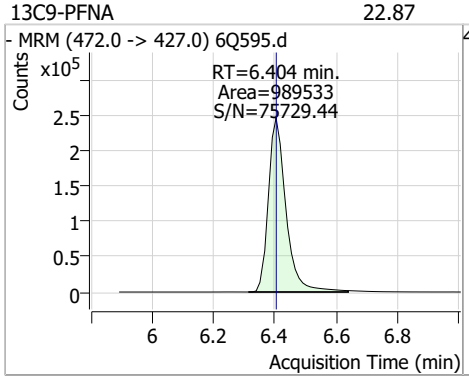


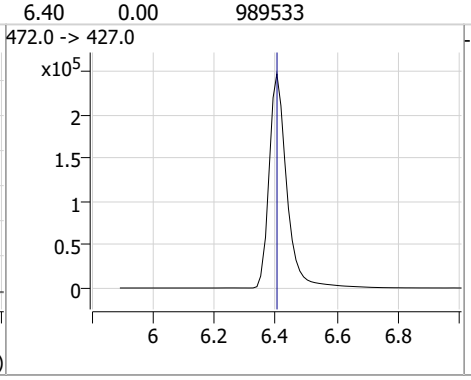


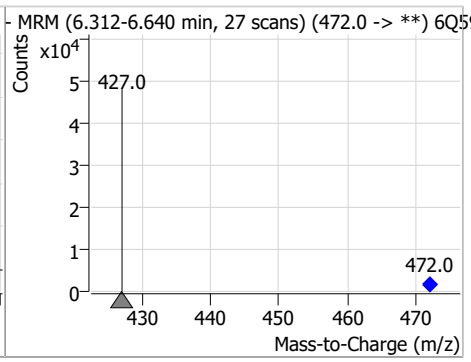




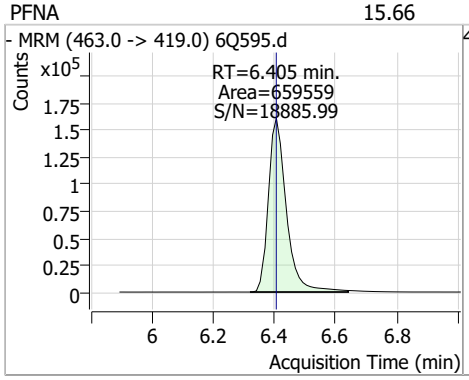
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.87	6.40	0.00	989533				

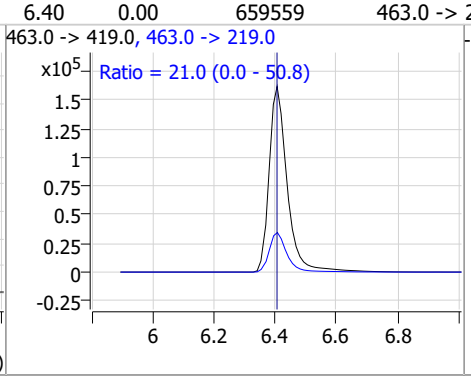


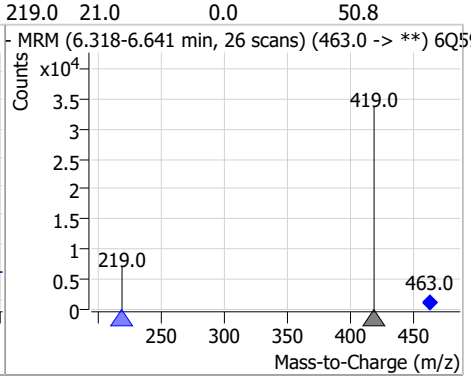




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	15.66	6.40	0.00	659559	463.0 -> 219.0	21.0	0.0	50.8

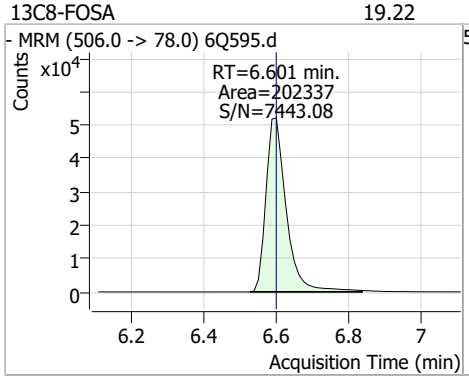


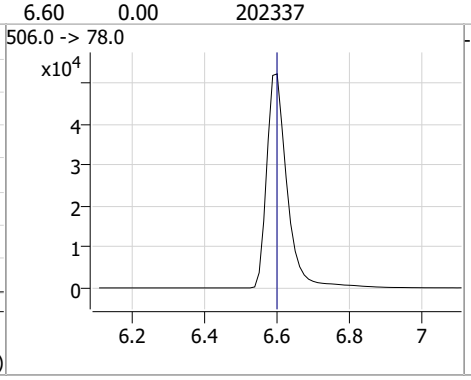


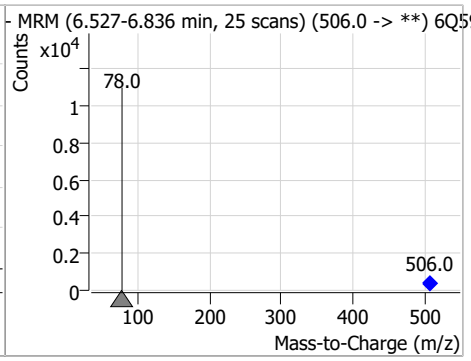


Perfluorinated Compounds by LC/MS/MS

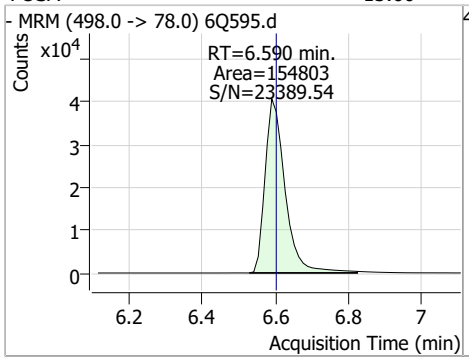
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.22	6.60	0.00	202337				

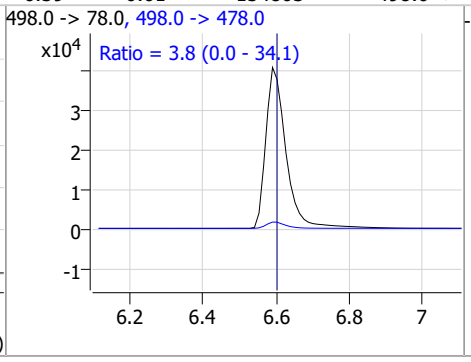


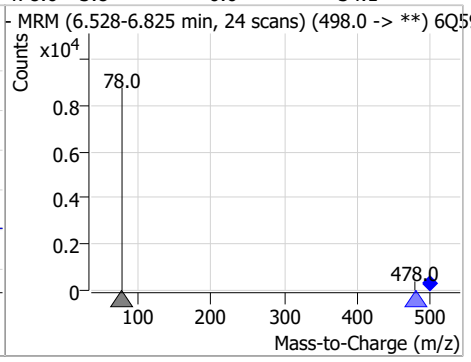




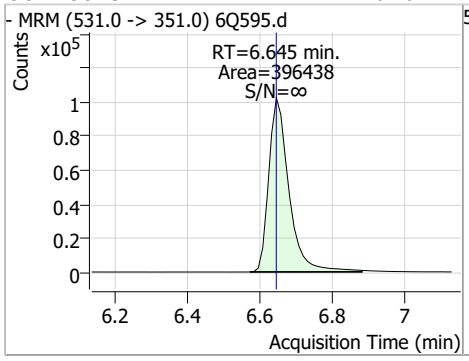
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	15.60	6.59	-0.01	154803	498.0 -> 478.0	3.8	0.0	34.1

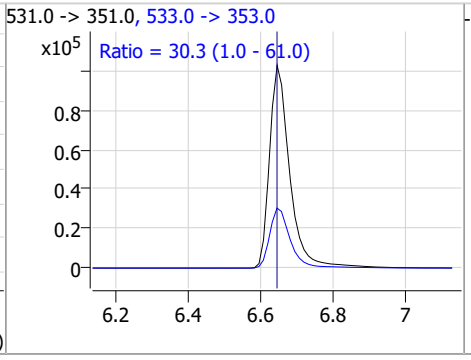


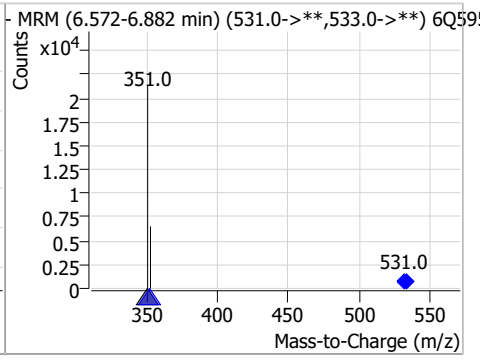




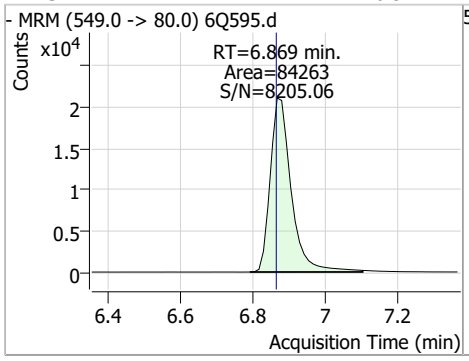
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	16.16	6.65	0.00	396438	533.0 -> 353.0	30.3	1.0	61.0

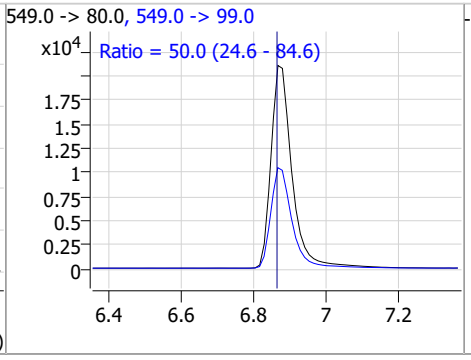


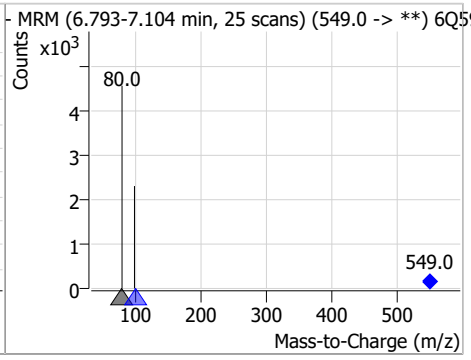




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.97	6.87	0.00	84263	549.0 -> 99.0	50.0	24.6	84.6

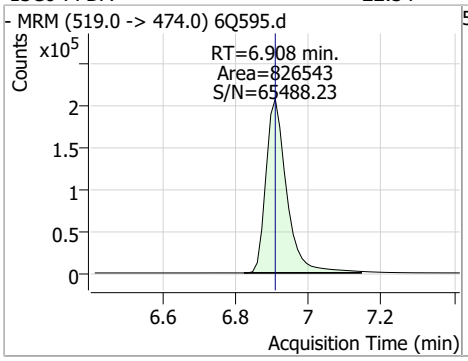


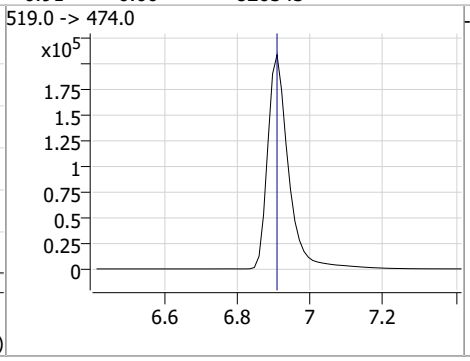


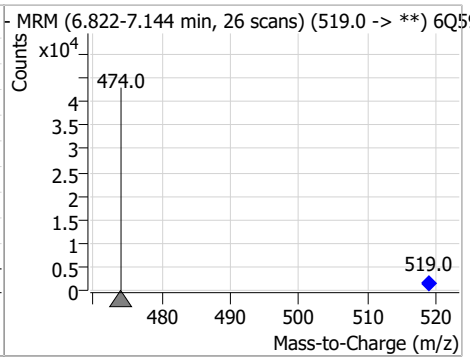


Perfluorinated Compounds by LC/MS/MS

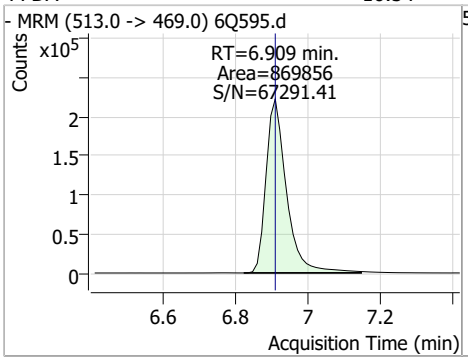
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.54	6.91	0.00	826543				

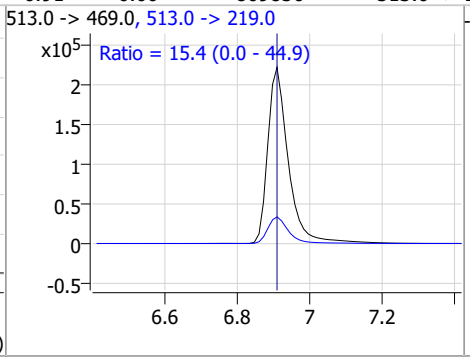


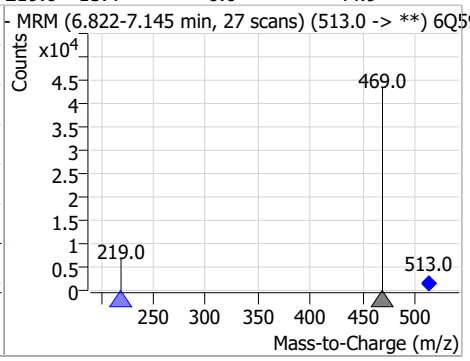




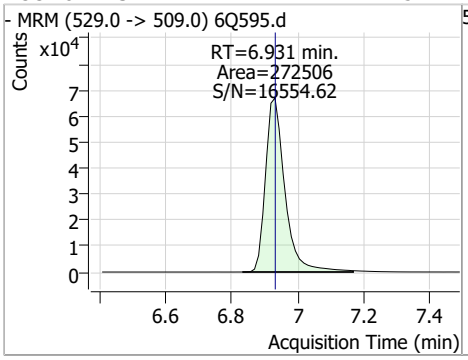
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.54	6.91	0.00	869856	513.0 -> 219.0	15.4	0.0	44.9

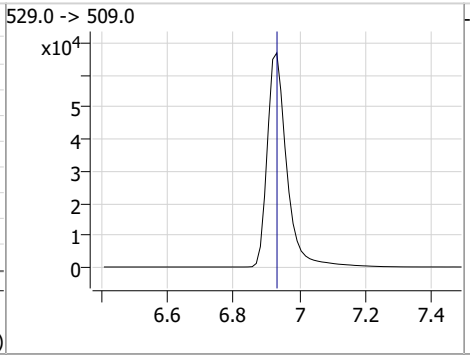


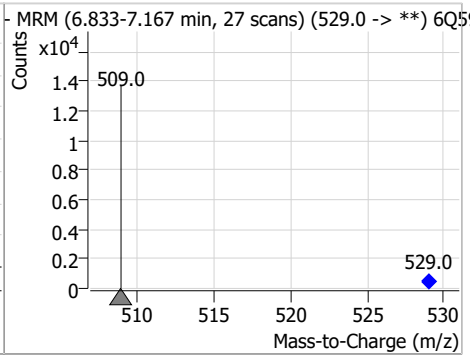




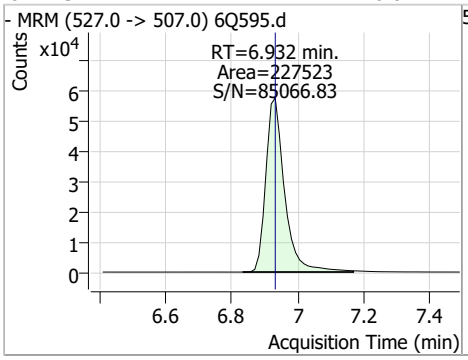
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.15	6.93	0.00	272506				

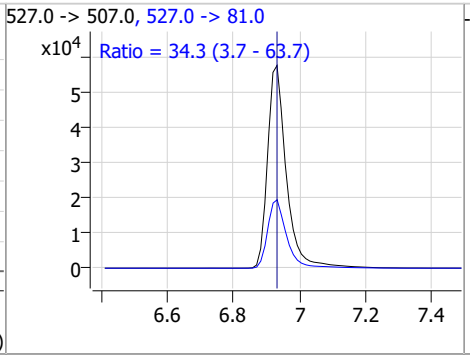


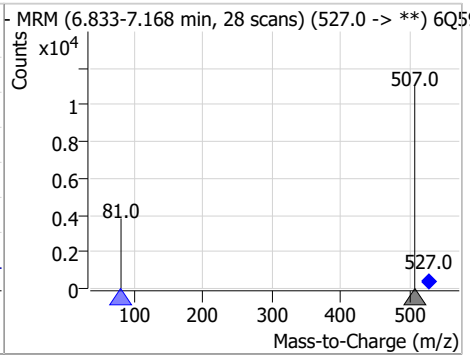




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	16.84	6.93	0.00	227523	527.0 -> 81.0	34.3	3.7	63.7

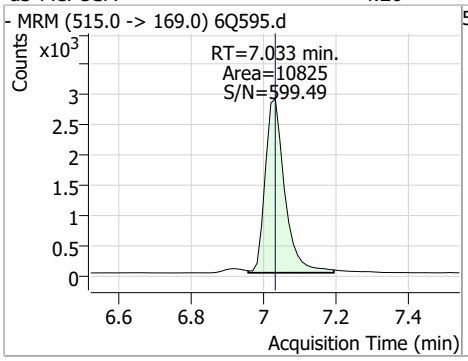


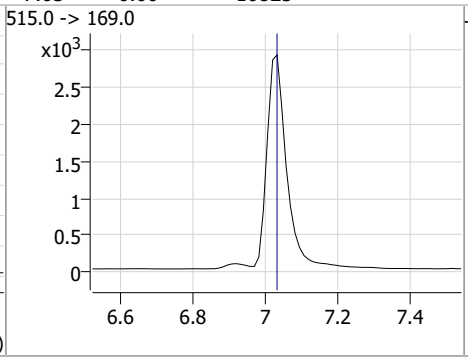


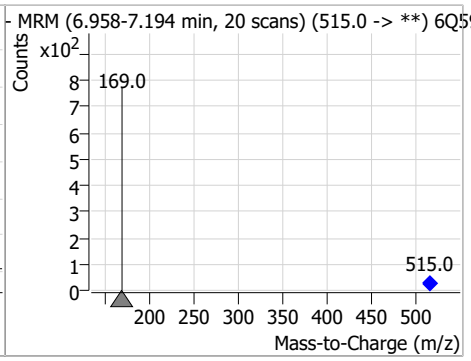


Perfluorinated Compounds by LC/MS/MS

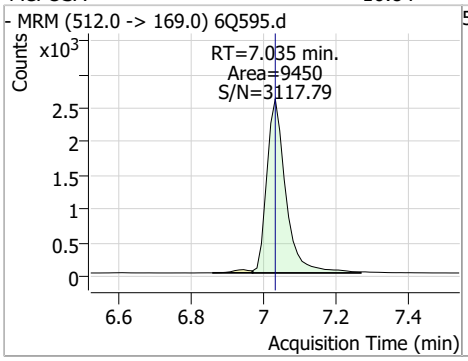
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	4.20	7.03	0.00	10825				

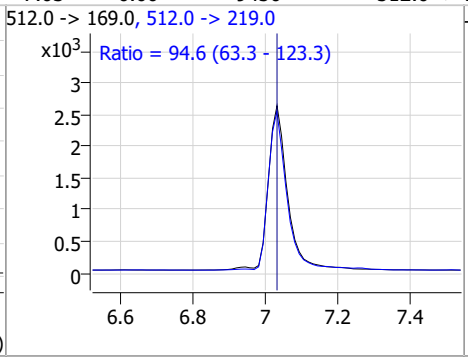


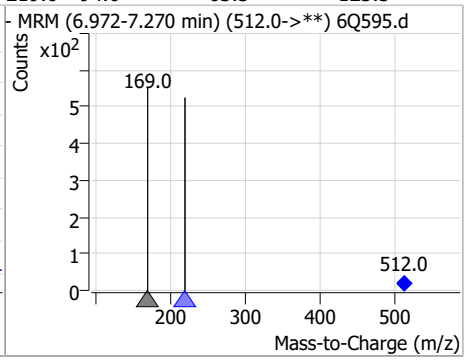




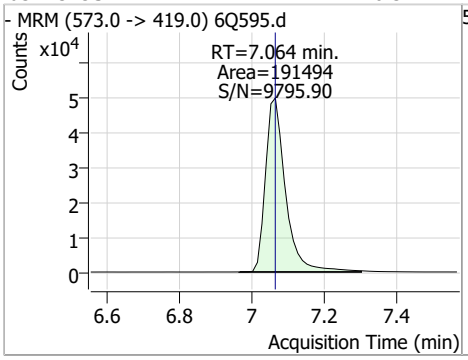
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	16.84	7.03	0.00	9450	512.0 -> 219.0	94.6	63.3	123.3

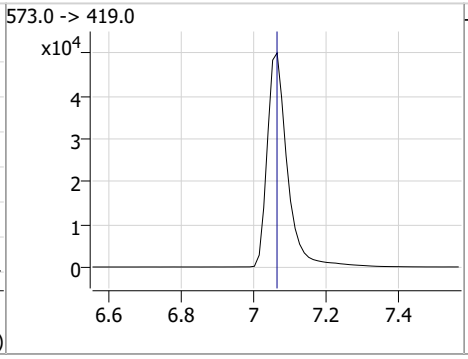


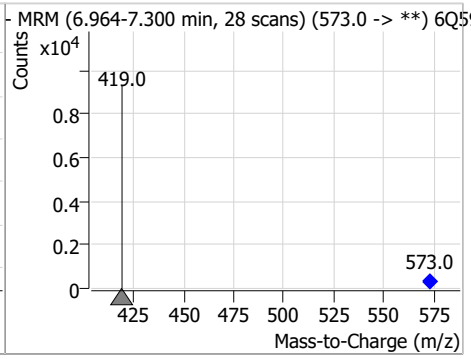




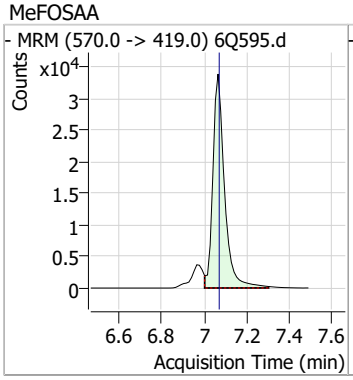
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.37	7.06	0.00	191494				

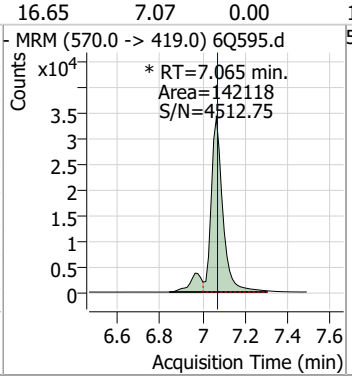


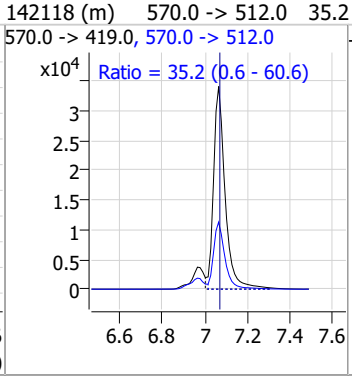


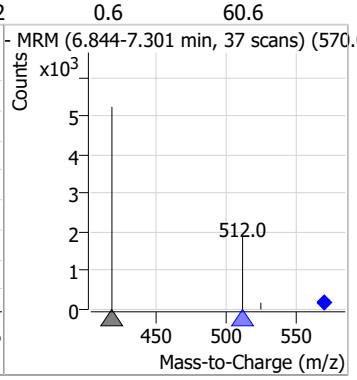


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.65	7.07	0.00	142118 (m)	570.0 -> 512.0	35.2	0.6	60.6



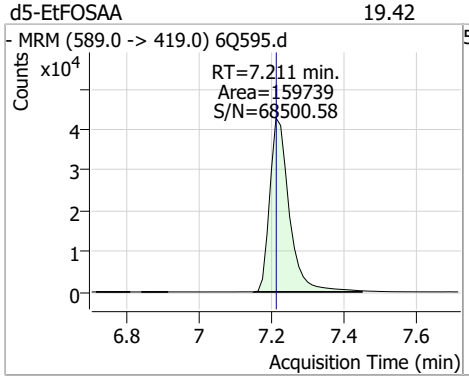


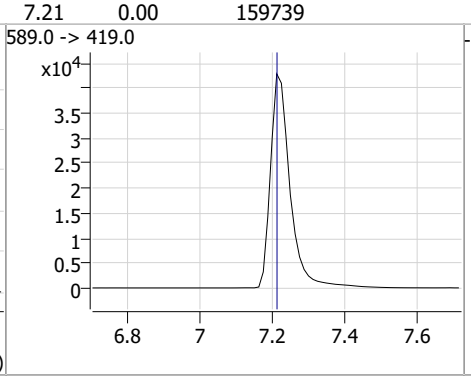


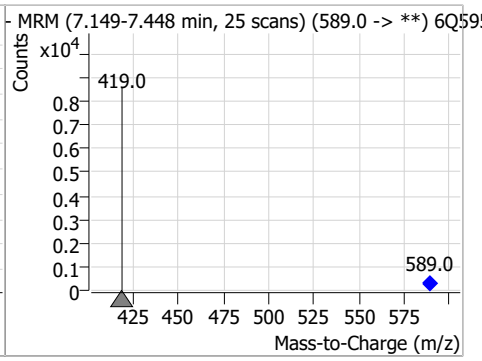


Perfluorinated Compounds by LC/MS/MS

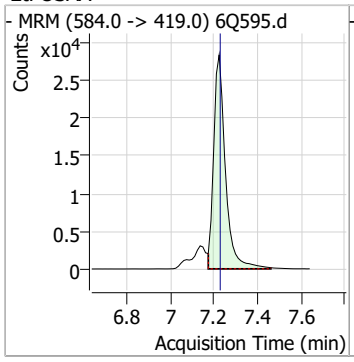
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.42	7.21	0.00	159739				

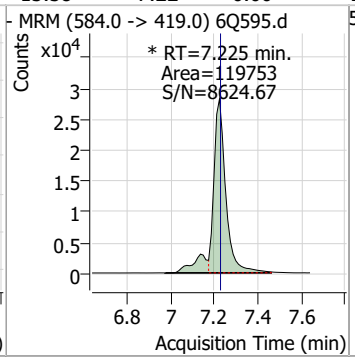


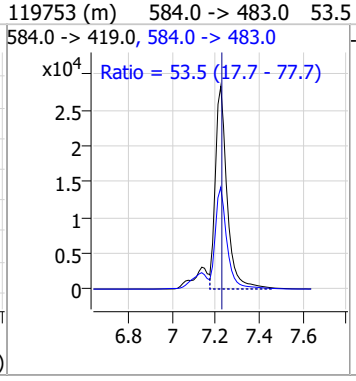


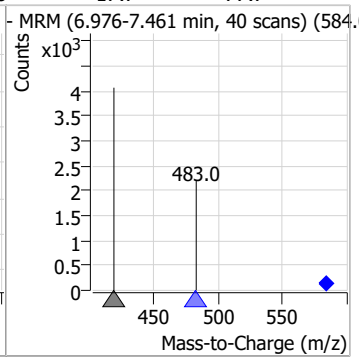


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.58	7.22	0.00	119753 (m)	584.0 -> 483.0	53.5	17.7	77.7

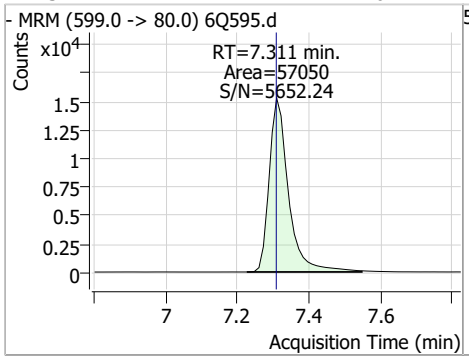


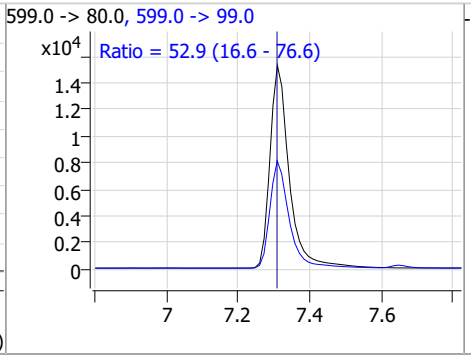


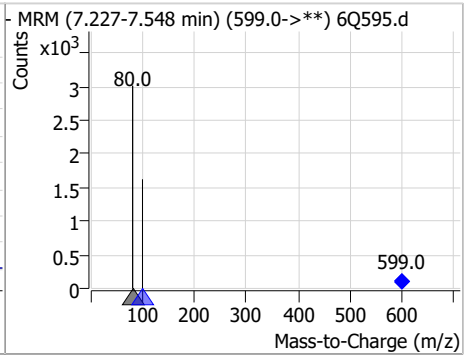




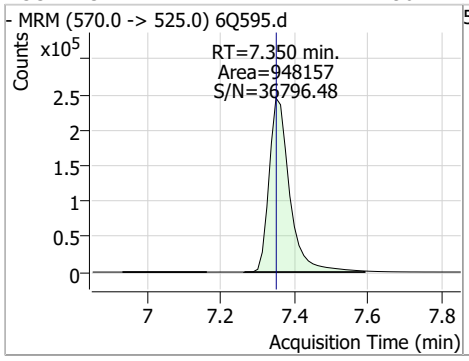
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.22	7.31	0.00	57050	599.0 -> 99.0	52.9	16.6	76.6

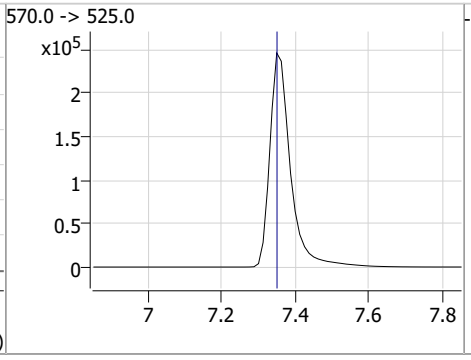


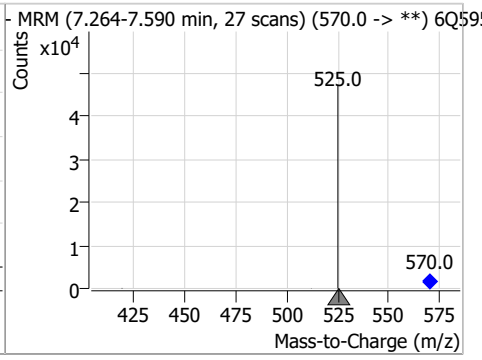




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.90	7.35	0.00	948157				

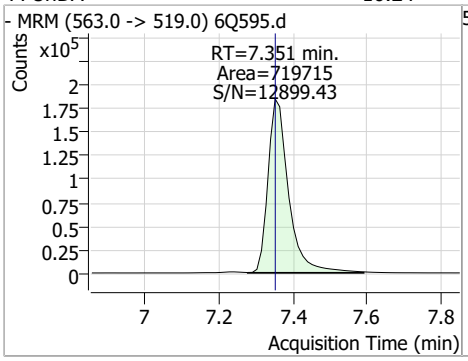


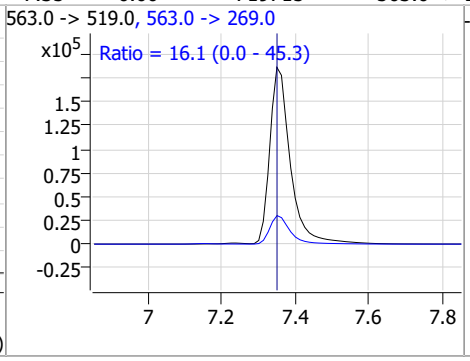


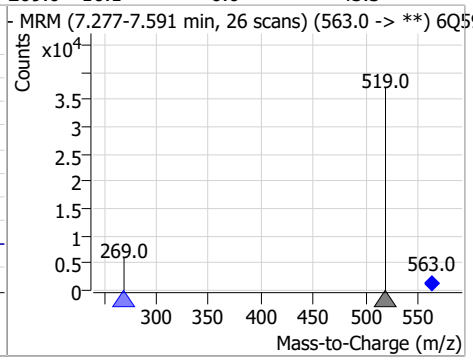


Perfluorinated Compounds by LC/MS/MS

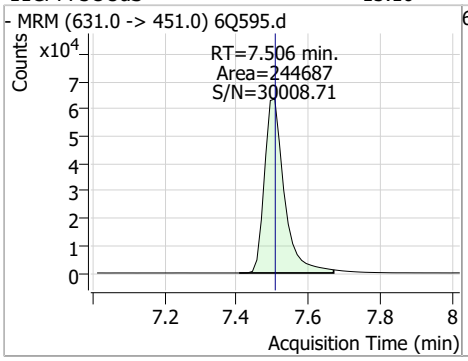
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	16.24	7.35	0.00	719715	563.0 -> 269.0	16.1	0.0	45.3

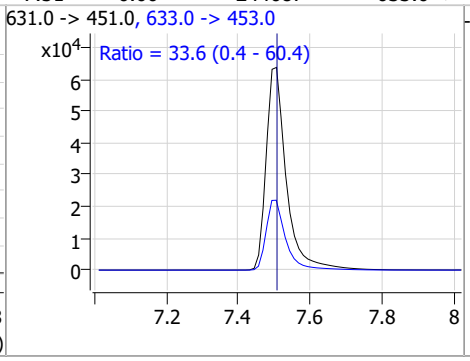


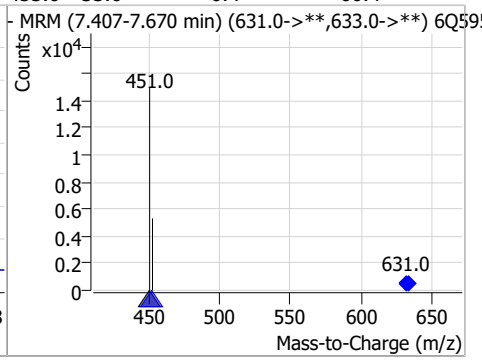




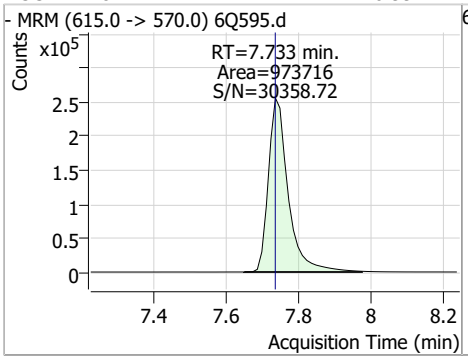
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.10	7.51	0.00	244687	633.0 -> 453.0	33.6	0.4	60.4

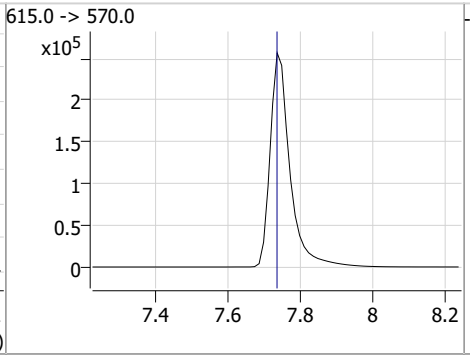


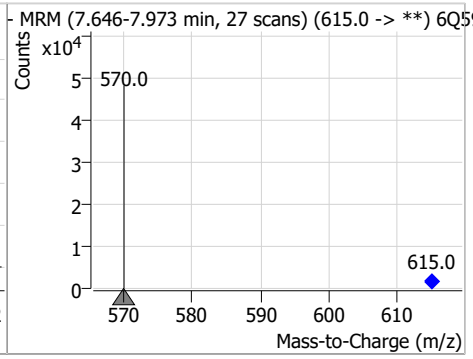




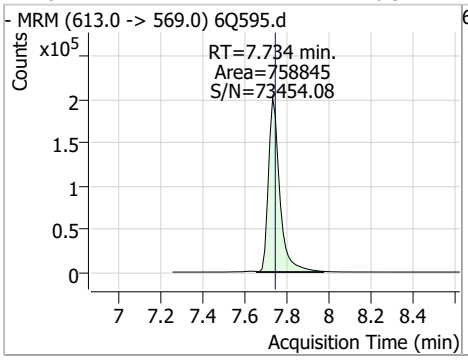
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.99	7.73	0.00	973716				

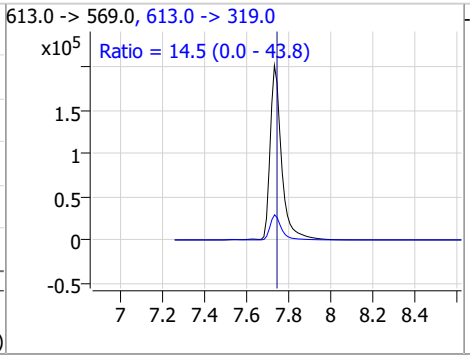


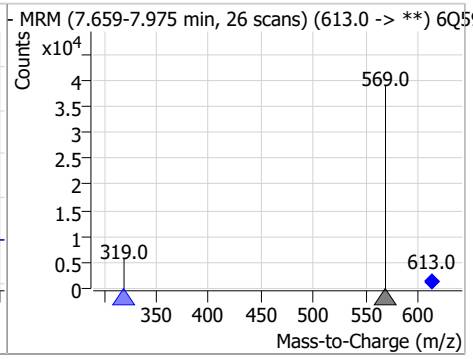




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	16.92	7.73	-0.01	758845	613.0 -> 319.0	14.5	0.0	43.8

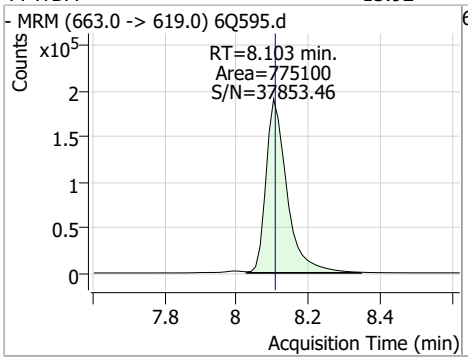


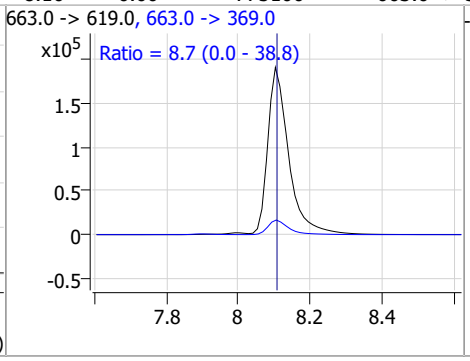


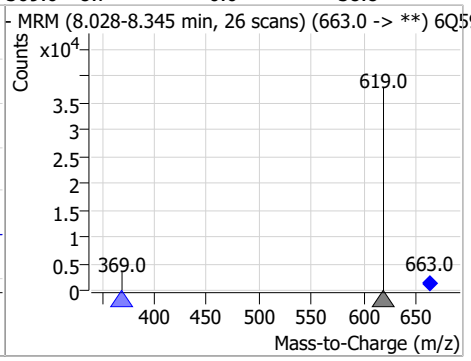


Perfluorinated Compounds by LC/MS/MS

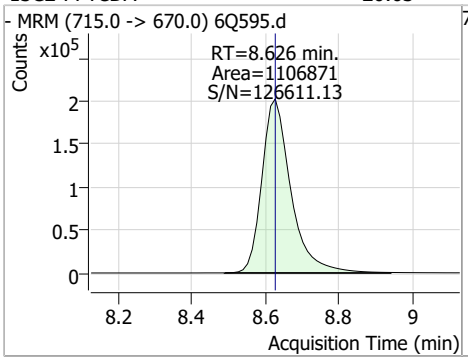
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	15.92	8.10	0.00	775100	663.0 -> 369.0	8.7	0.0	38.8

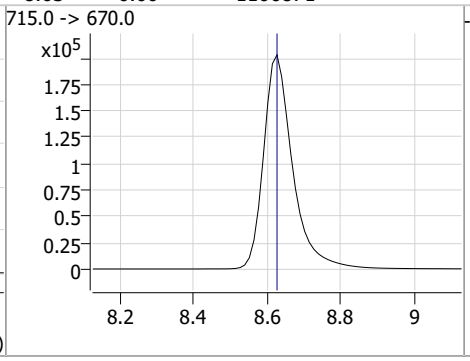


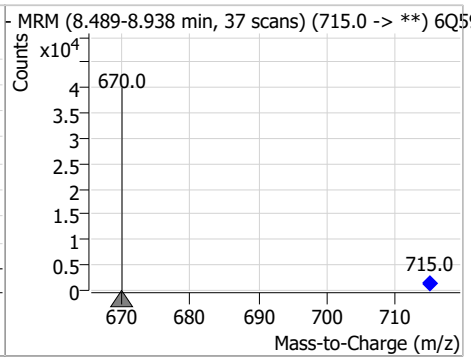




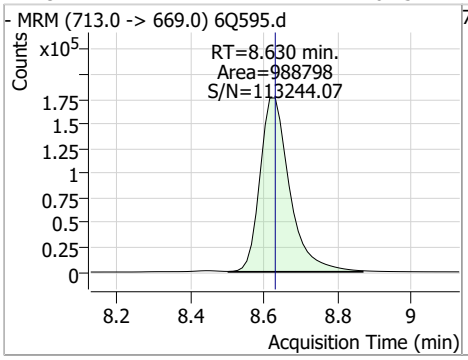
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.63	8.63	0.00	1106871				

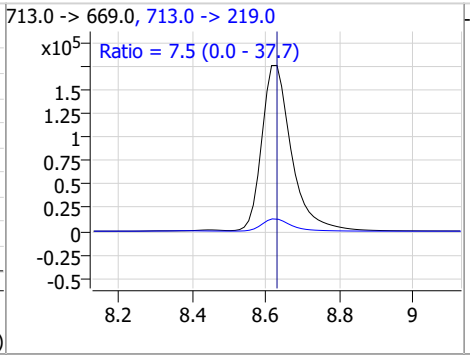


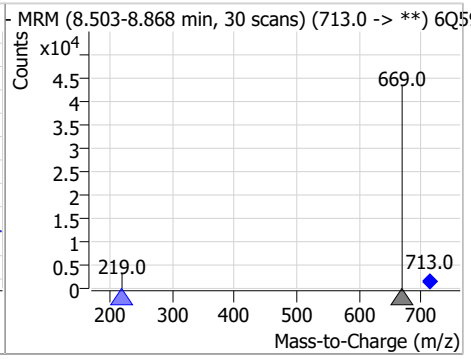




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.25	8.63	0.00	988798	713.0 -> 219.0	7.5	0.0	37.7







Manual Integration Approval Summary

Sample Number: OP91243-MS
Lab FileID: 6Q595.D
Injection Time: 05/26/22 22:44
Method: EPA 537M BY ID
Analyst approved: 05/27/22 11:25 Natasha Gumtie
Supervisor approved: 05/27/22 12:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.39	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60375.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:21:55 PM
Sample Name : op91274-ms
Vial : P3-B5
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,5,water

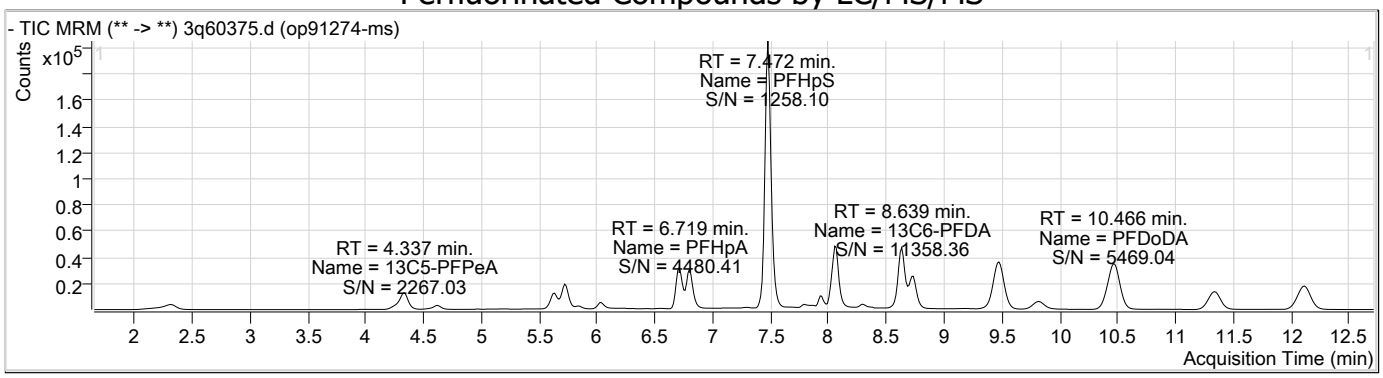
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.315	217.0 -> 172.0	26651	20.00	µg/L	-0.013
M5-PFPeA	4.337	268.0 -> 223.0	25237	20.00	µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	33888	20.00	µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	45001	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	55142	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	66683	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	96293	20.00	µg/L	0.000
M7-PFUnDA	9.480	570.0 -> 525.0	117204	20.00	µg/L	-0.025
M2-PFDoDA	10.474	615.0 -> 570.0	135254	20.00	µg/L	-0.038
M2-PFTeDA	12.114	715.0 -> 670.0	62276	20.00	µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	13313	20.00	µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	3548	20.00	µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	4276	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	5881	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	2516	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	6169	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	9265	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	13505	20.00	µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	4639	20.00	µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	1874	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	12593	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	2516	4.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.4%		
13C2-6:2FTS	7.485	429.0 -> 81.0	6169	4.71	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 23.6%		
13C2-8:2FTS	8.739	529.0 -> 81.0	9265	3.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.7%		
13C2-PFDoDA	10.474	615.0 -> 570.0	135254	3.69	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.4%		
13C2-PFTeDA	12.114	715.0 -> 670.0	62276	3.48	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.4%		
13C3-PFBS	4.617	302.0 -> 99.0	3548	4.49	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.5%		
13C3-PFHxS	6.738	402.0 -> 99.0	4276	4.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.1%		
13C4-PFBA	2.315	217.0 -> 172.0	26651	4.41	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.0%		
13C4-PFHpA	6.718	367.0 -> 322.0	45001	4.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.4%		
13C5-PFHxA	5.727	318.0 -> 273.0	33888	4.29	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.5%		
13C5-PFPeA	4.337	268.0 -> 223.0	25237	4.36	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.8%		
13C6-PFDA	8.639	519.0 -> 474.0	96293	3.86	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

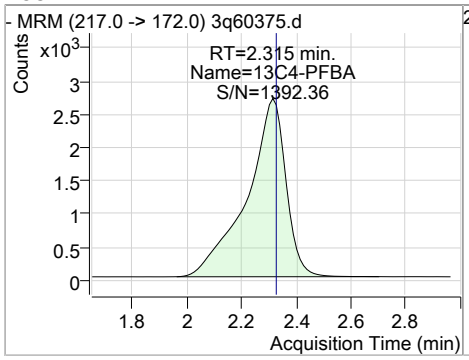
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.3%			
13C7-PFUnDA	9.480	570.0 -> 525.0	117204	3.80	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.0%			
13C8-FOSA	7.430	506.0 -> 78.0	13313	3.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.3%			
13C8-PFOA	7.487	421.0 -> 376.0	55142	4.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 21.8%			
13C8-PFOS	8.036	507.0 -> 99.0	5881	3.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.8%			
13C9-PFNA	8.075	472.0 -> 427.0	66683	4.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.6%			
d3-MeFOSAA	7.929	573.0 -> 419.0	13505	4.07	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.4%			
13C3-HFPO-DA	6.031	287.0 -> 169.0	4640	4.15	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.7%			
d3-MeFOSA	7.793	515.0 -> 169.0	1874	1.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.5%			
d5-EtFOSAA	8.029	589.0 -> 419.0	12576	3.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.0%			
Target Compounds							**QValue**
4:2FTS	5.624	327.0 -> 307.0	22248	4.05	µg/L		98
6:2FTS	7.486	427.0 -> 407.0	380303	51.32	µg/L		99
8:2FTS	8.740	527.0 -> 507.0	42559	3.85	µg/L		99
EtFOSAA	8.029	584.0 -> 419.0	9905	4.04	µg/L	m	92
FOSA	7.432	498.0 -> 78.0	12425	4.06	µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	10737	4.00	µg/L	m	96
PFBA	2.321	213.0 -> 169.0	12029	4.63	µg/L		100
PFBS	4.619	299.0 -> 80.0	8885	3.96	µg/L		99
PFDA	8.640	513.0 -> 469.0	80542	4.01	µg/L		99
PFDoDA	10.466	613.0 -> 569.0	113657	3.95	µg/L		100
PFDS	9.362	599.0 -> 80.0	4380	3.89	µg/L		99
PFHpA	6.719	363.0 -> 319.0	66353	4.02	µg/L		100
PFHpS	7.472	449.0 -> 80.0	8665	4.57	µg/L		98
PFHxA	5.728	313.0 -> 269.0	44086	6.22	µg/L		99
PFHxS	6.739	399.0 -> 80.0	10686	4.79	µg/L	m	97
PFNA	8.075	463.0 -> 419.0	62623	3.96	µg/L		99
PFNS	8.571	549.0 -> 80.0	7010	3.97	µg/L		100
PFOA	7.487	413.0 -> 369.0	51132	3.98	µg/L	m	99
PFOS	8.036	499.0 -> 80.0	16890	7.34	µg/L	m	82
PFPeA	4.339	263.0 -> 219.0	50079	5.38	µg/L		100
PFPeS	5.845	349.0 -> 80.0	6162	4.11	µg/L	m	97
PFTeDA	12.118	713.0 -> 669.0	79139	3.89	µg/L		99
PFTrDA	11.338	663.0 -> 619.0	100738	4.08	µg/L		100
PFUnDA	9.481	563.0 -> 519.0	107981	3.92	µg/L		100
11Cl-PF3OUdS	9.812	631.0 -> 451.0	30931	3.92	µg/L		98
9Cl-PF3ONS	8.296	531.0 -> 351.0	6365	3.82	µg/L		99
ADONA	6.807	377.0 -> 251.0	88212	3.72	µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	12204	3.71	µg/L		98
MeFOSA	7.794	512.0 -> 169.0	1884	4.06	µg/L		96

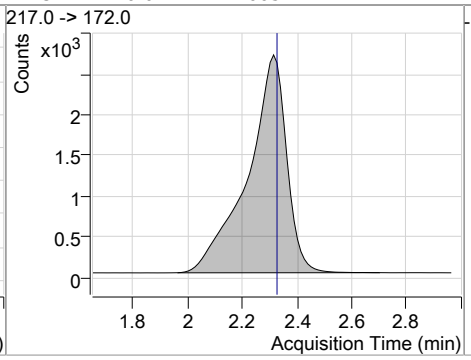
 # = Qualifier out of range, m = manually integrated, + = Area summed

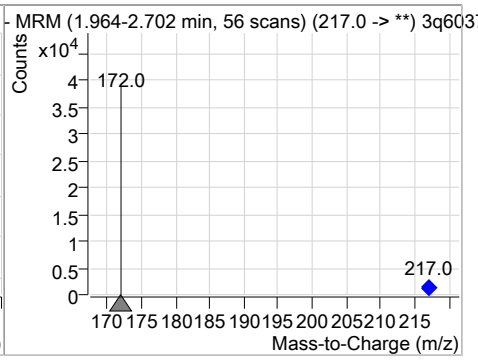
Perfluorinated Compounds by LC/MS/MS



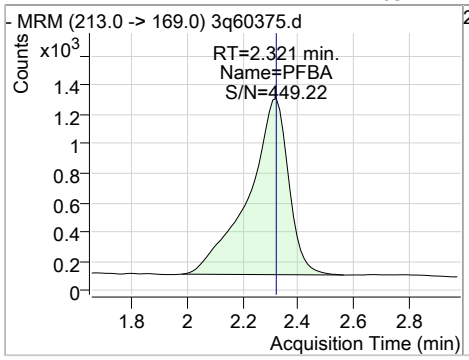
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	4.41	2.31	-0.01	26651				

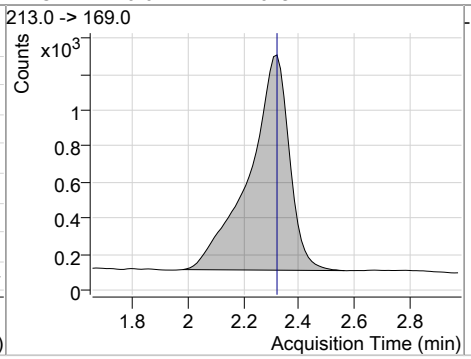


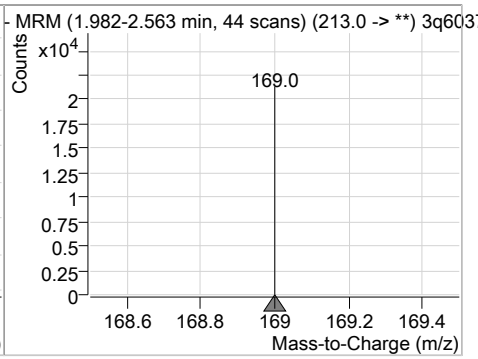




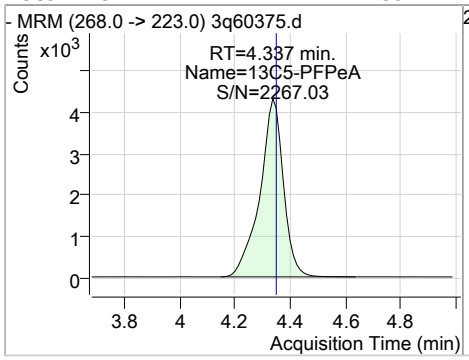
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.63	2.32	-0.01	12029				

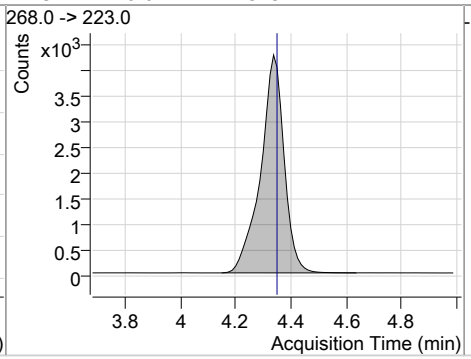


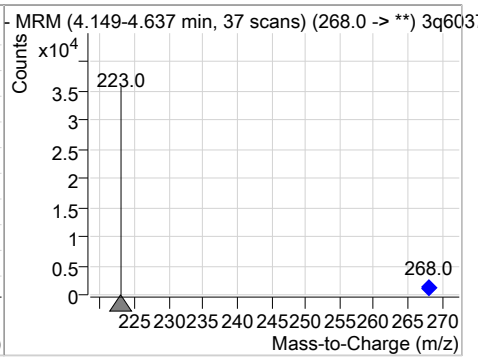




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	4.36	4.34	-0.01	25237				

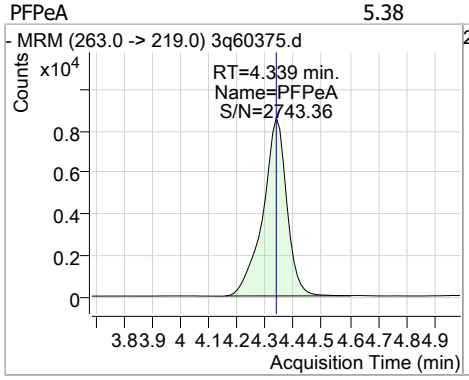


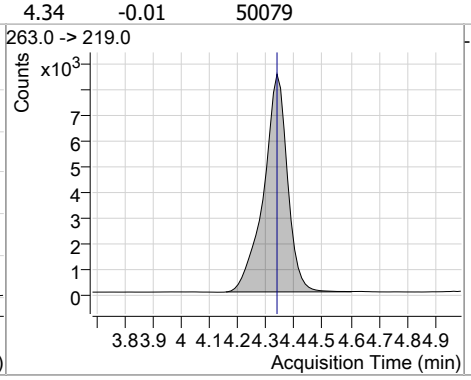


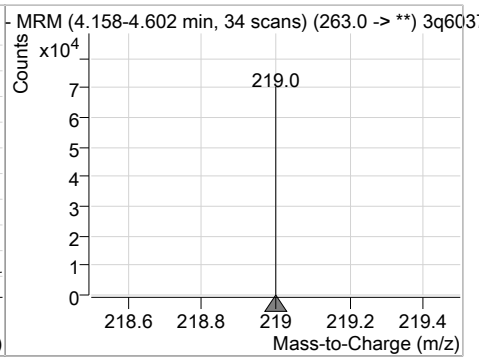


Perfluorinated Compounds by LC/MS/MS

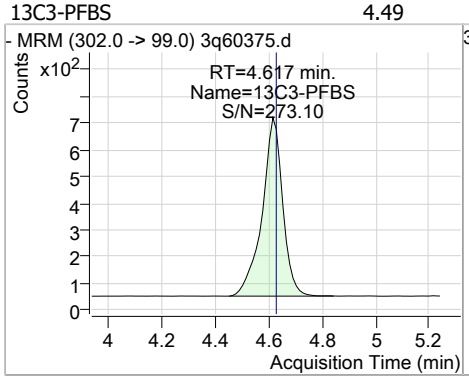
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.38	4.34	-0.01	50079				

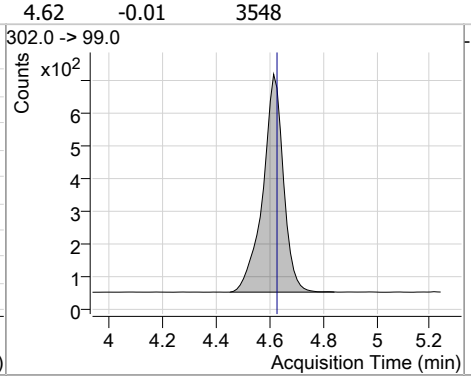


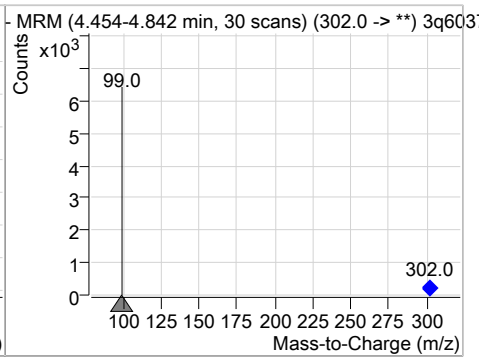




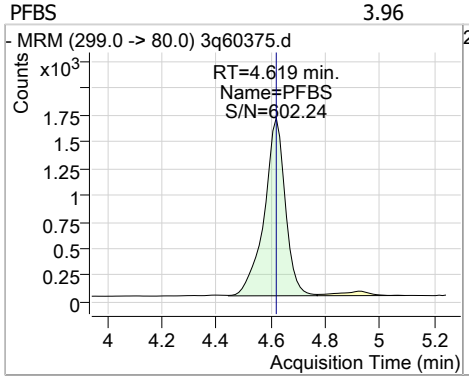
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	4.49	4.62	-0.01	3548				

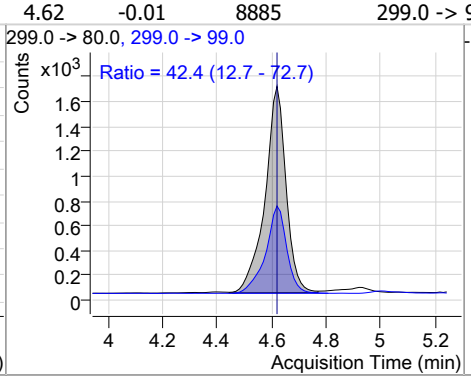


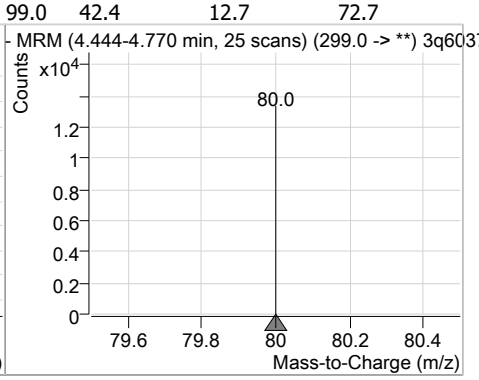




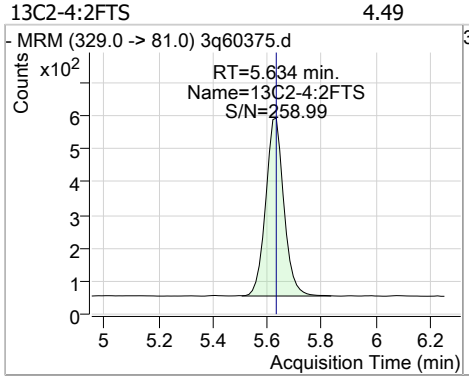
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	3.96	4.62	-0.01	8885	299.0 -> 99.0	42.4	12.7	72.7

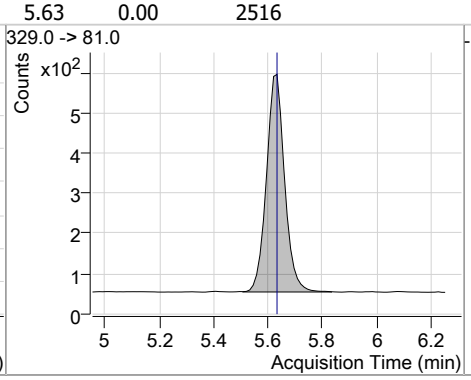


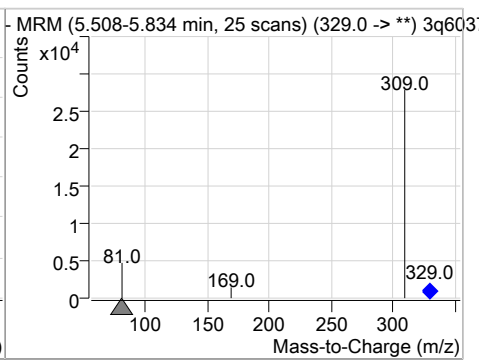




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	4.49	5.63	0.00	2516				

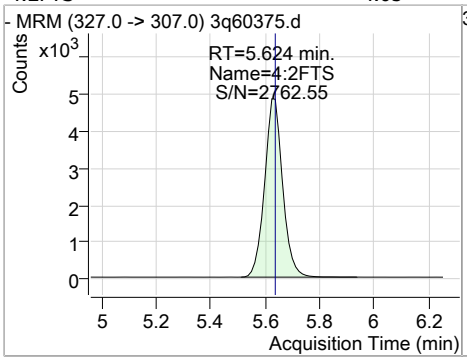


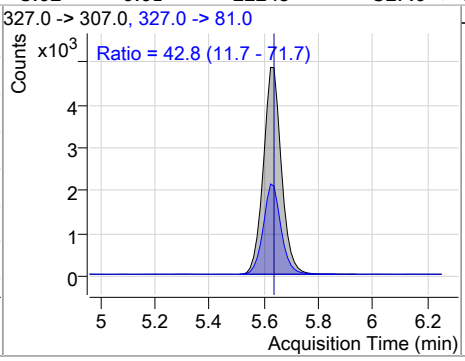


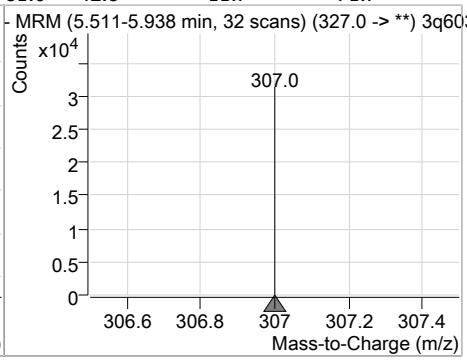


Perfluorinated Compounds by LC/MS/MS

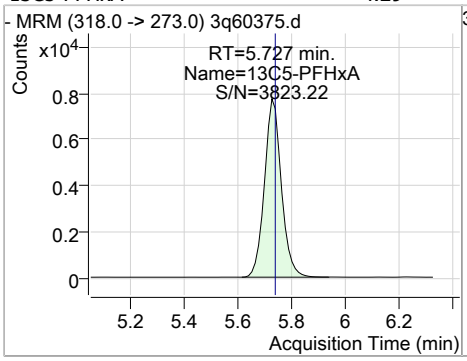
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	4.05	5.62	-0.01	22248	327.0 -> 81.0	42.8	11.7	71.7

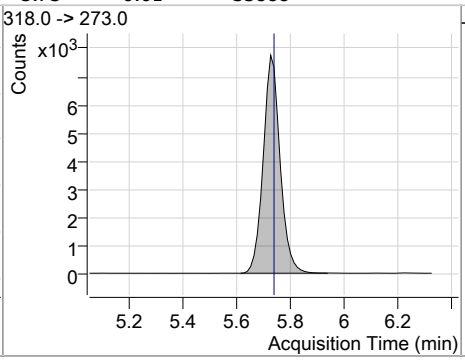


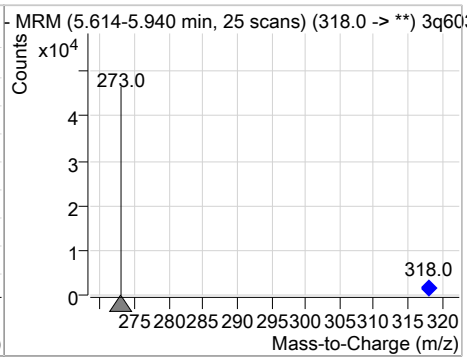




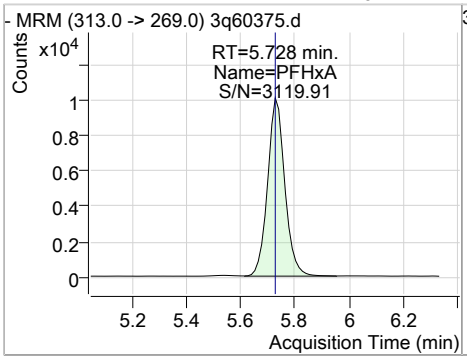
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	4.29	5.73	-0.01	33888				

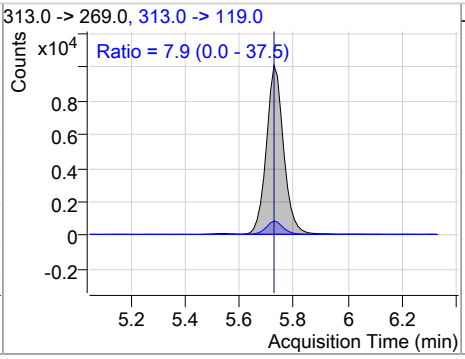


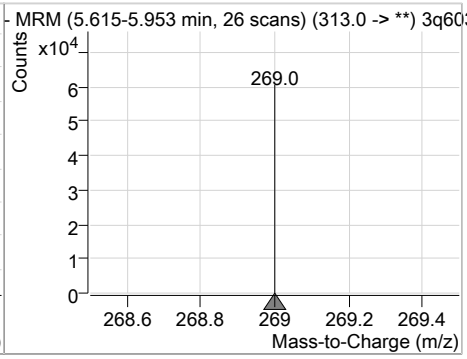




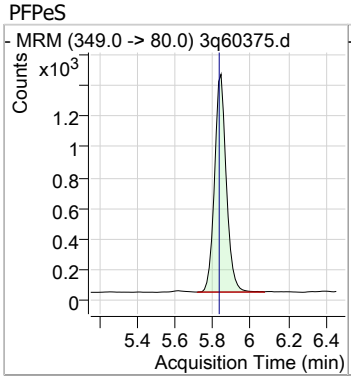
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.22	5.73	-0.01	44086	313.0 -> 119.0	7.9	0.0	37.5

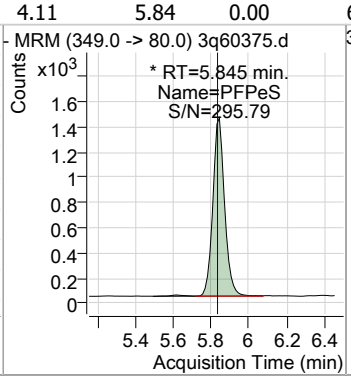


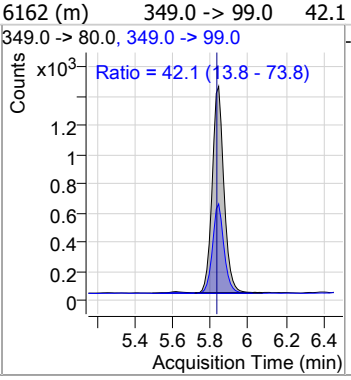


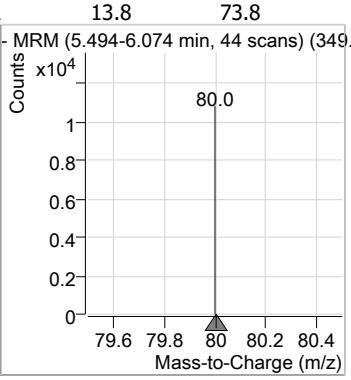


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.11	5.84	0.00	6162 (m)	349.0 -> 99.0	42.1	13.8	73.8



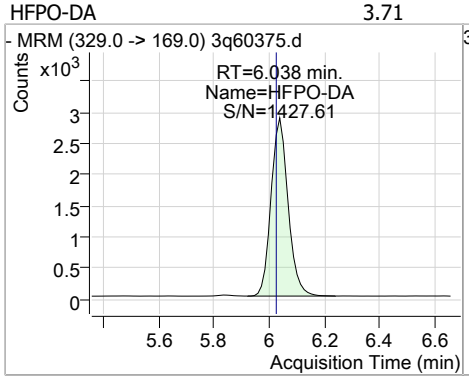


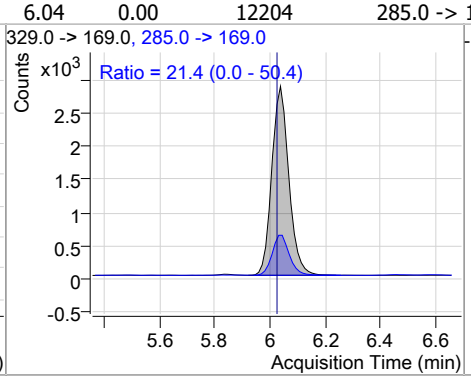


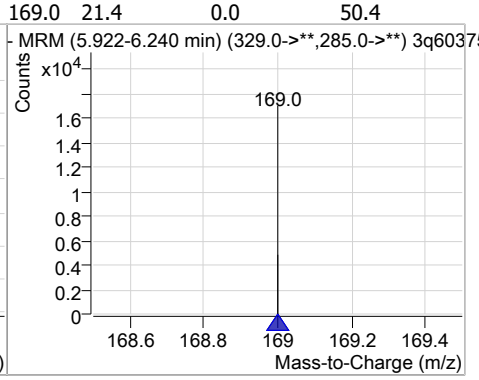


Perfluorinated Compounds by LC/MS/MS

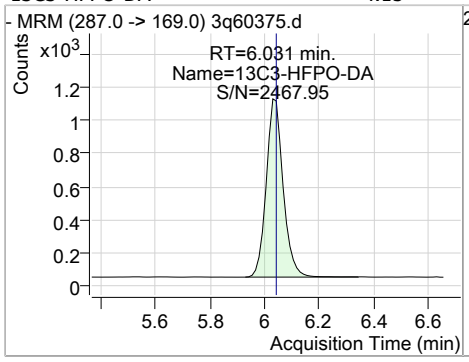
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	3.71	6.04	0.00	12204	285.0 -> 169.0	21.4	0.0	50.4

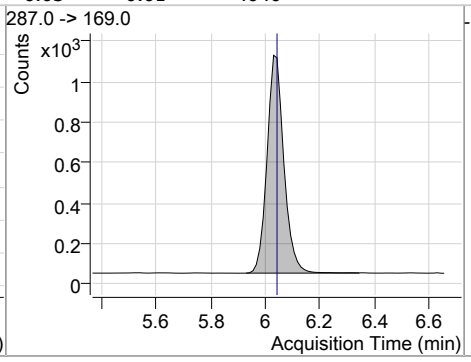


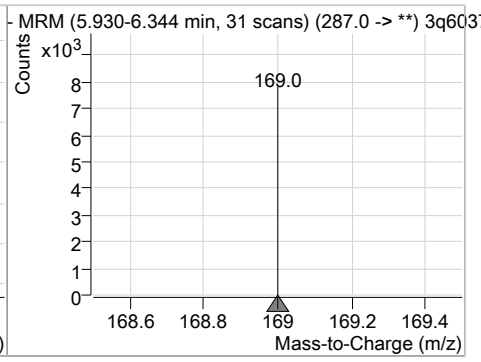




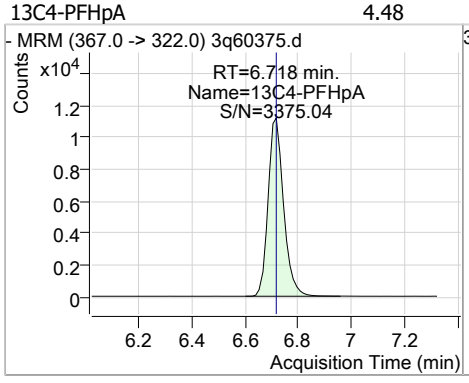
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	4.15	6.03	-0.01	4640				

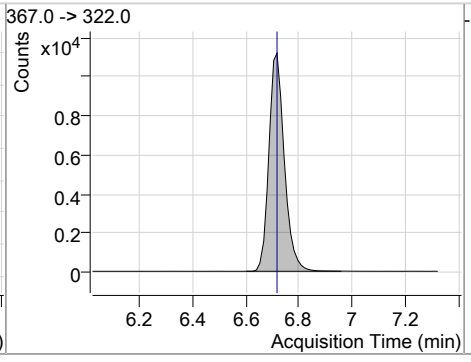


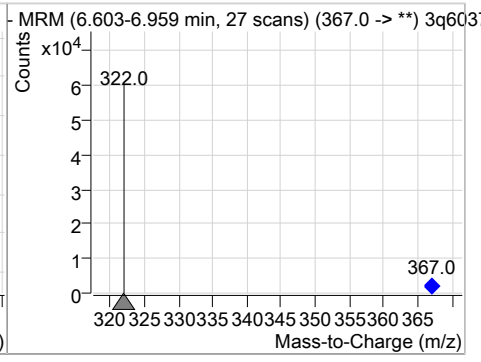




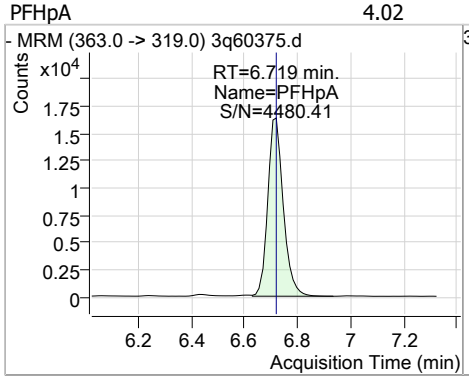
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	4.48	6.72	0.00	45001				

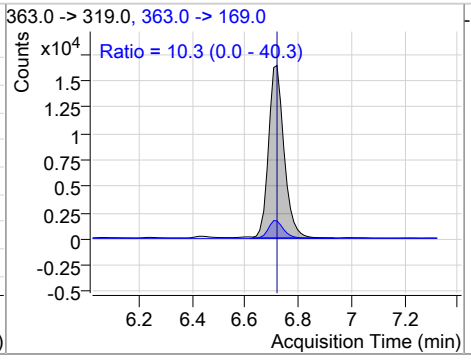


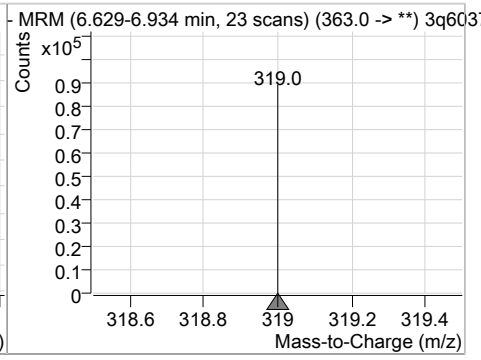




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.02	6.72	0.00	66353	363.0 -> 169.0	10.3	0.0	40.3

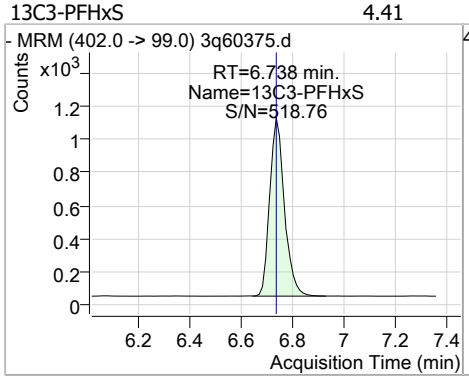


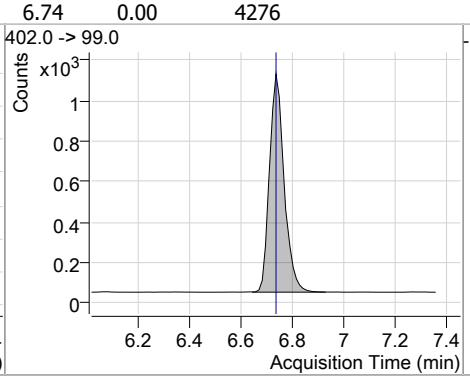


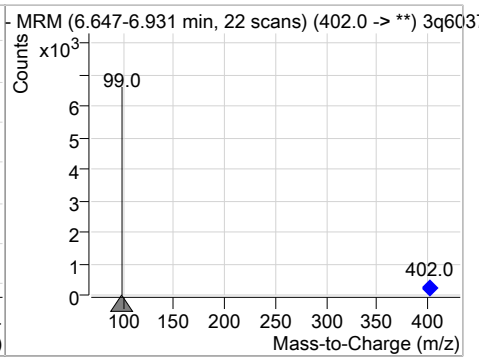


Perfluorinated Compounds by LC/MS/MS

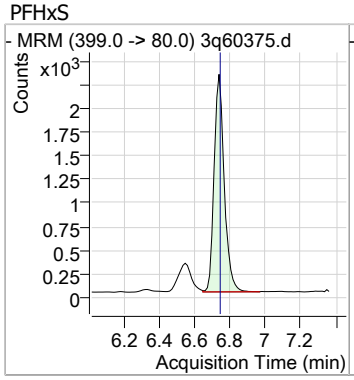
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	4.41	6.74	0.00	4276				

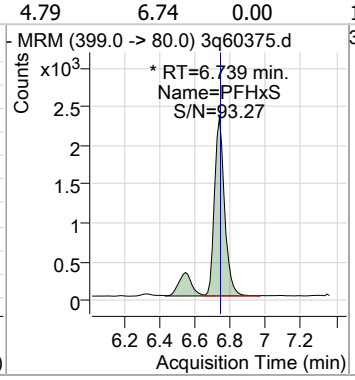


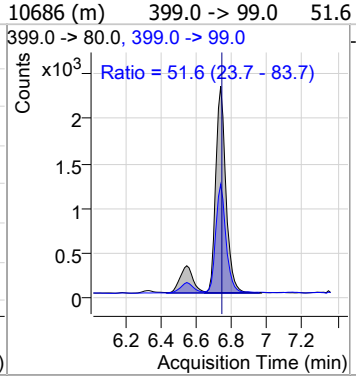


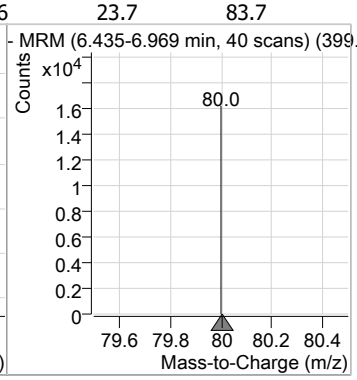


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.79	6.74	0.00	10686 (m)	399.0 -> 99.0	51.6	23.7	83.7

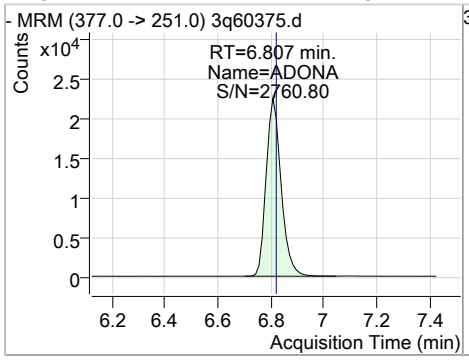


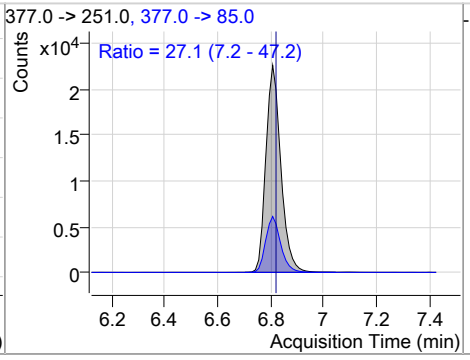


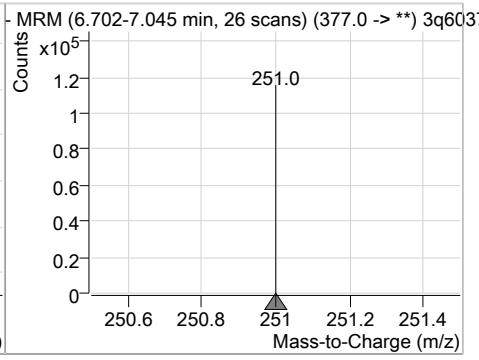




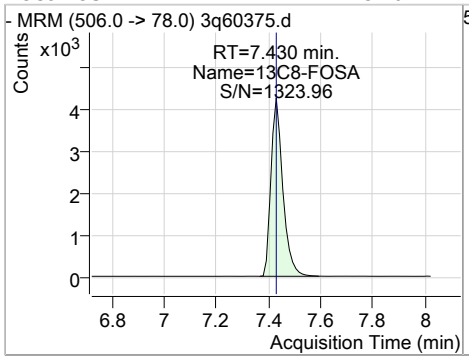
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	3.72	6.81	-0.01	88212	377.0 -> 85.0	27.1	7.2	47.2

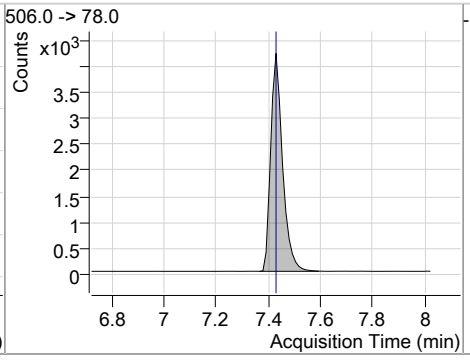


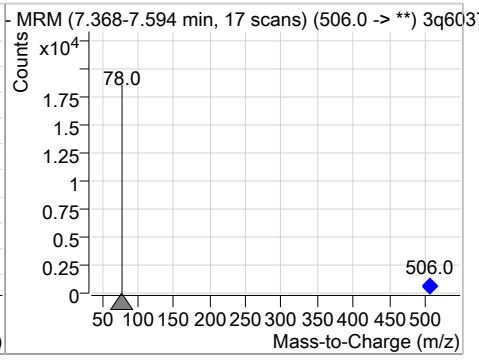




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	3.46	7.43	0.00	13313				

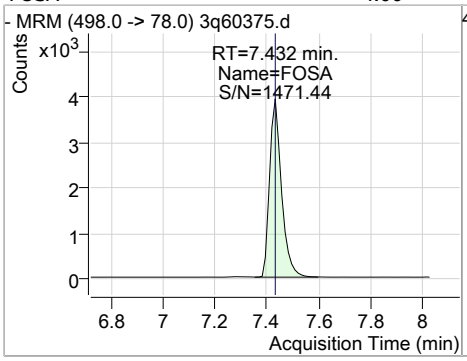


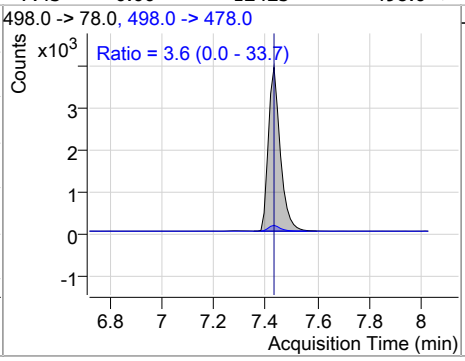


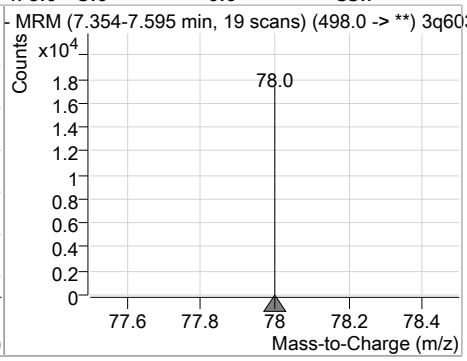


Perfluorinated Compounds by LC/MS/MS

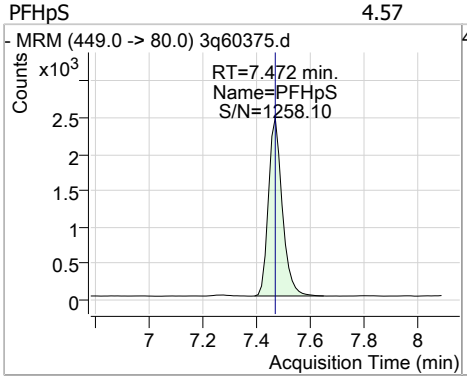
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.06	7.43	0.00	12425	498.0 -> 478.0	3.6	0.0	33.7

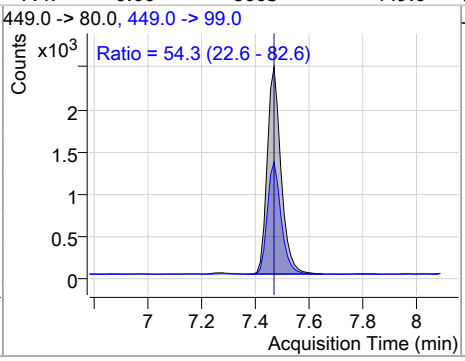


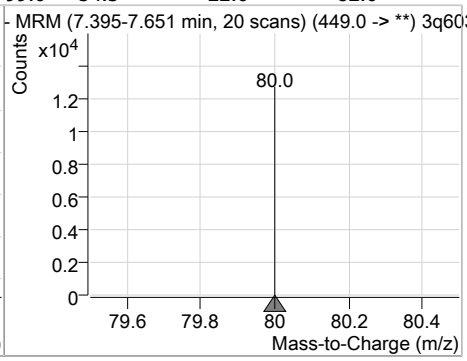




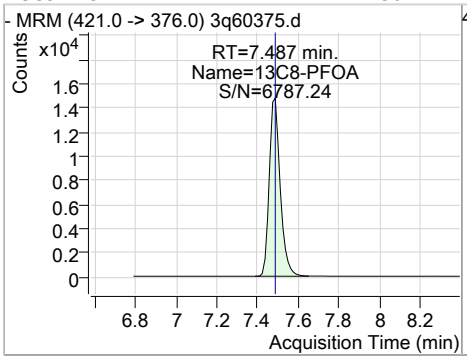
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.57	7.47	0.00	8665	449.0 -> 99.0	54.3	22.6	82.6

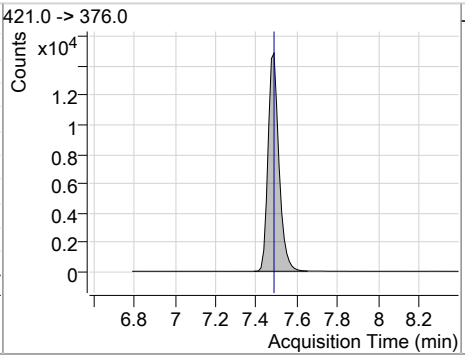


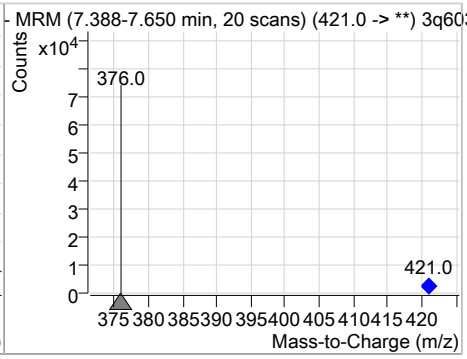




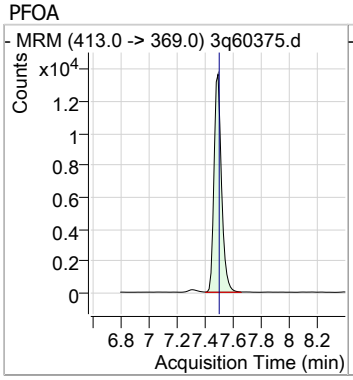
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	4.36	7.49	0.00	55142				

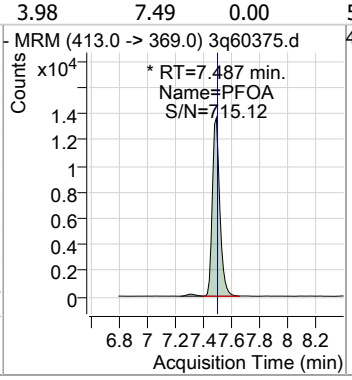


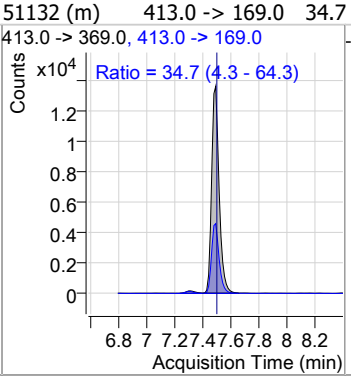


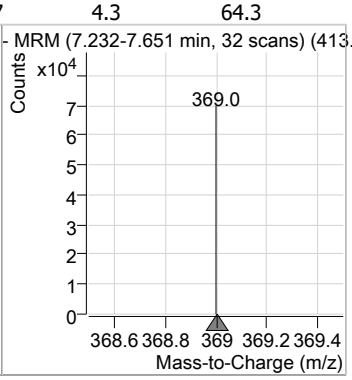


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.98	7.49	0.00	51132 (m)	413.0 -> 169.0	34.7	4.3	64.3



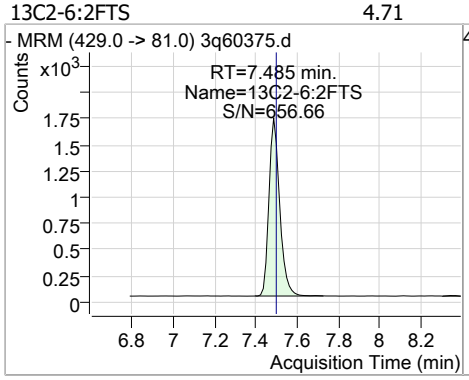


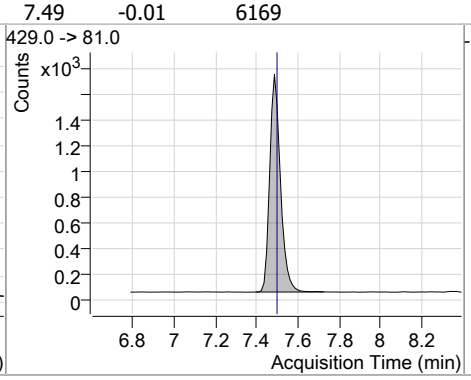


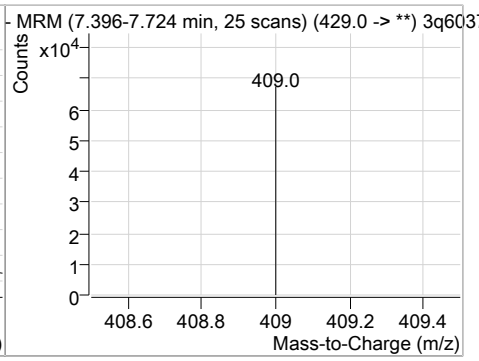


Perfluorinated Compounds by LC/MS/MS

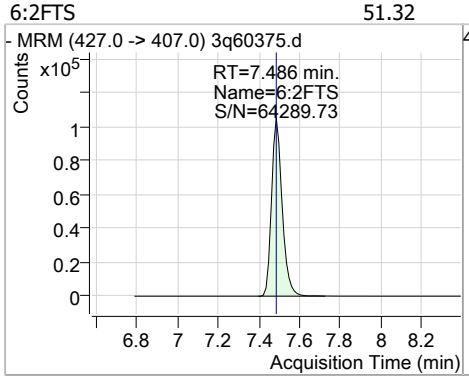
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	4.71	7.49	-0.01	6169				

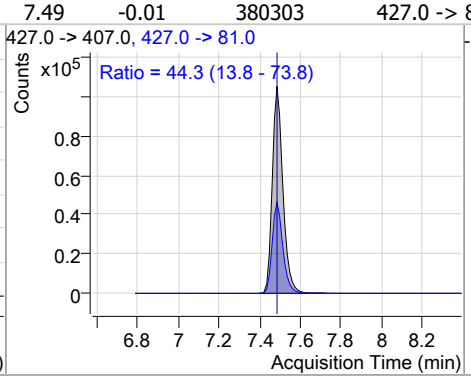


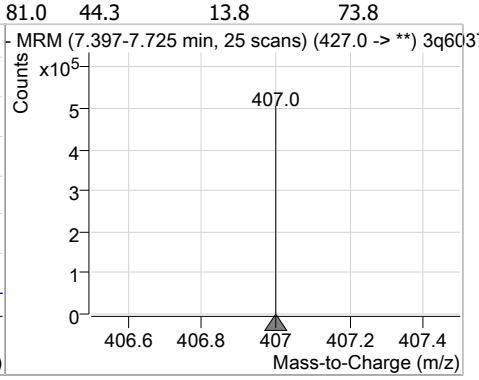




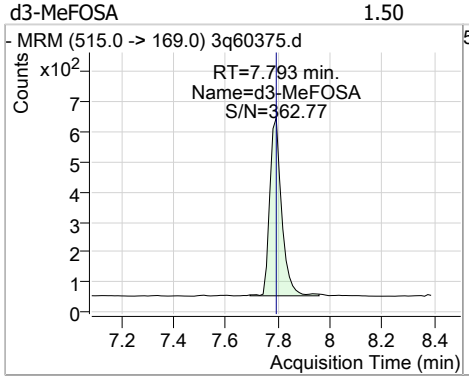
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	51.32	7.49	-0.01	380303	427.0 -> 81.0	44.3	13.8	73.8

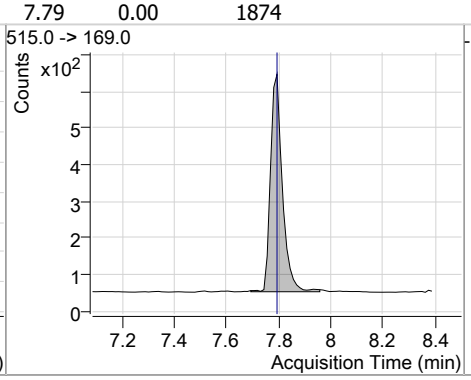


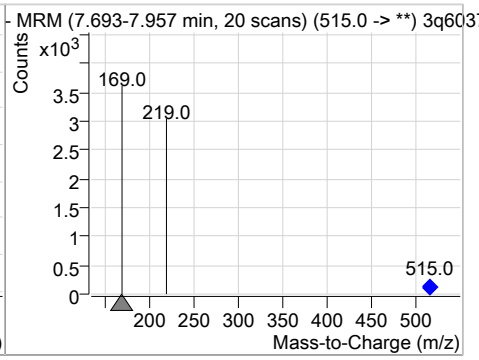




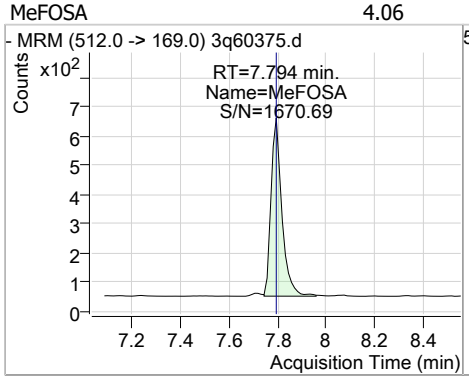
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.50	7.79	0.00	1874				

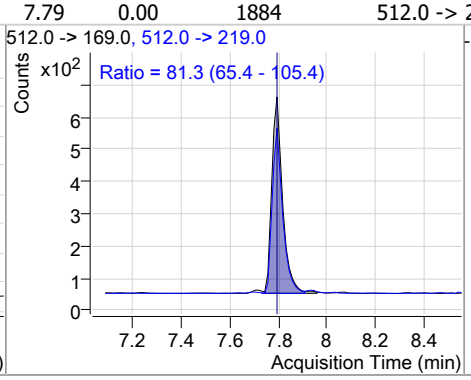


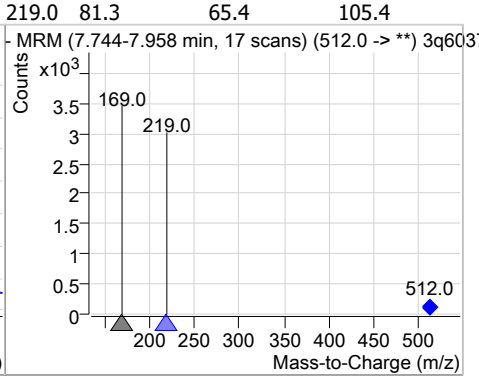




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	4.06	7.79	0.00	1884	512.0 -> 219.0	81.3	65.4	105.4

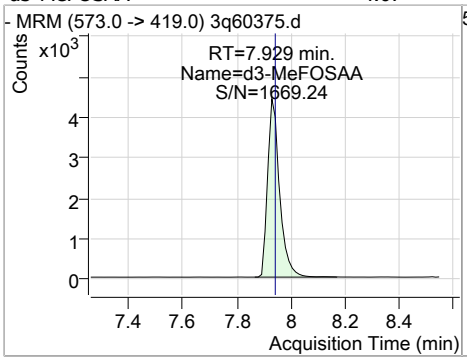


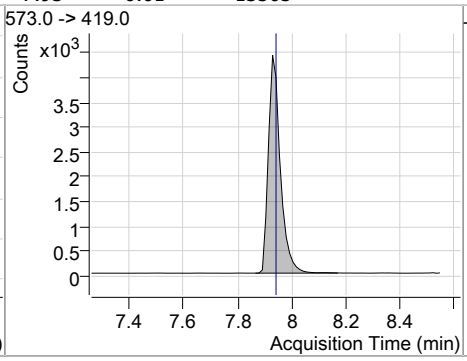


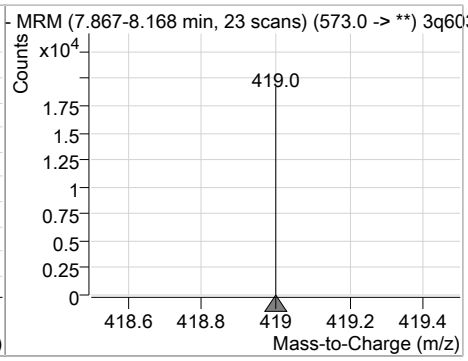


Perfluorinated Compounds by LC/MS/MS

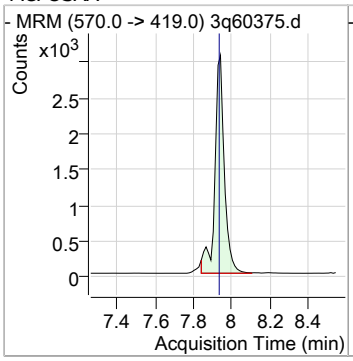
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	4.07	7.93	-0.01	13505				

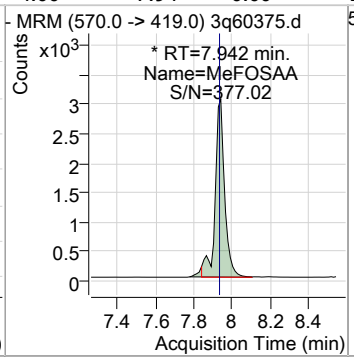


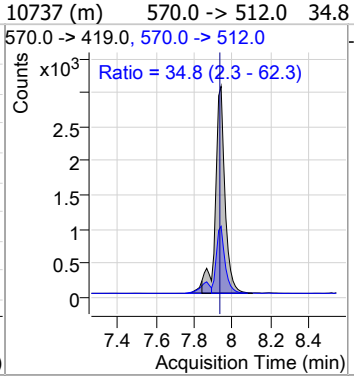


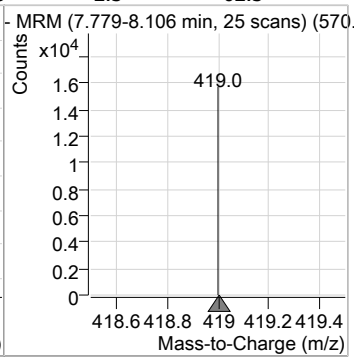


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.00	7.94	0.00	10737 (m)	570.0 -> 512.0	34.8	2.3	62.3

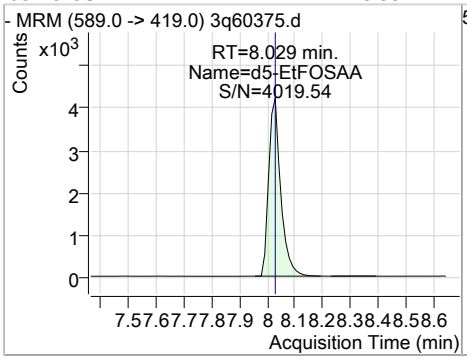


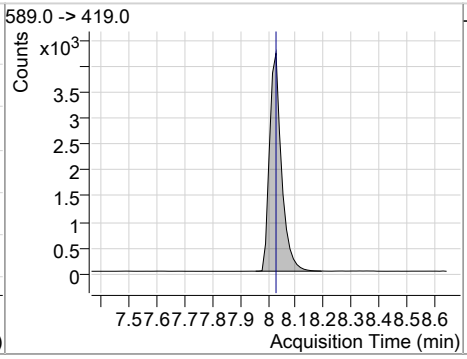


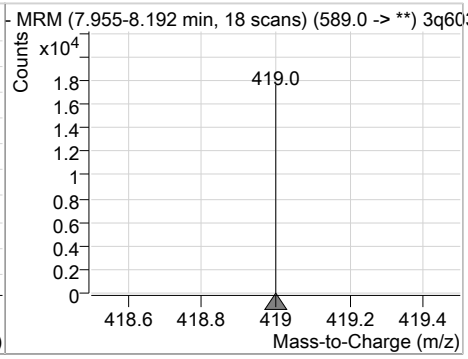




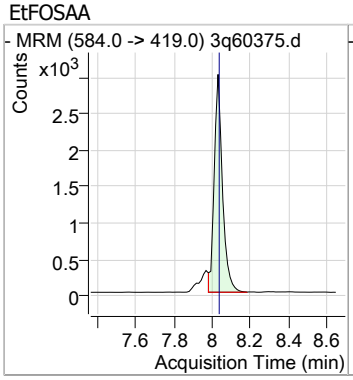
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.99	8.03	0.00	12576				

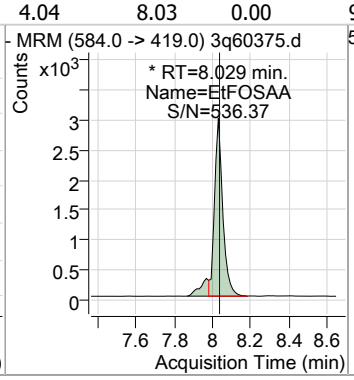


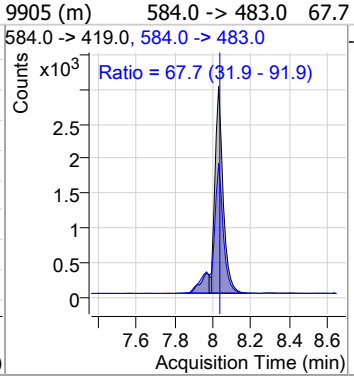


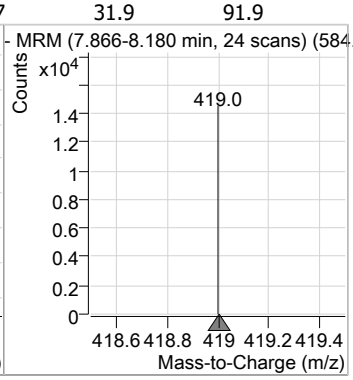


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.04	8.03	0.00	9905 (m)	584.0 -> 483.0	67.7	31.9	91.9



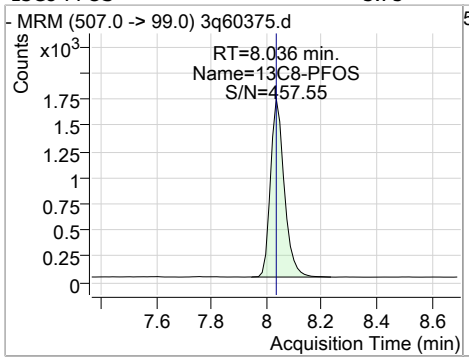


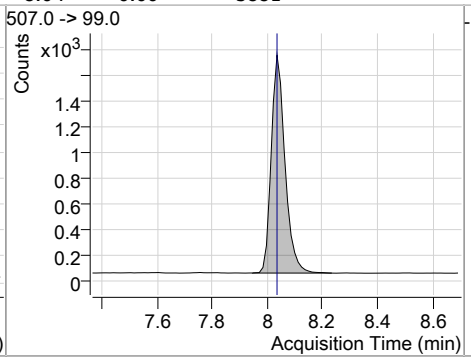


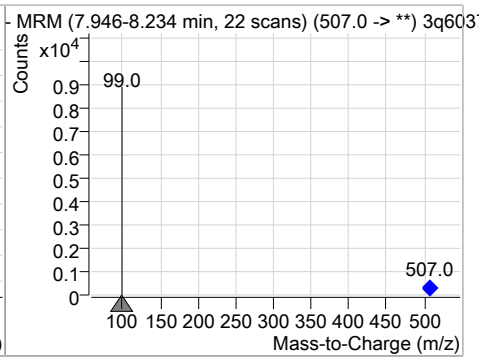


Perfluorinated Compounds by LC/MS/MS

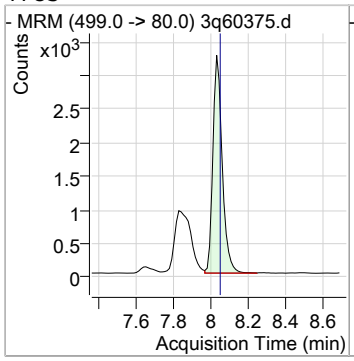
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.75	8.04	0.00	5881				

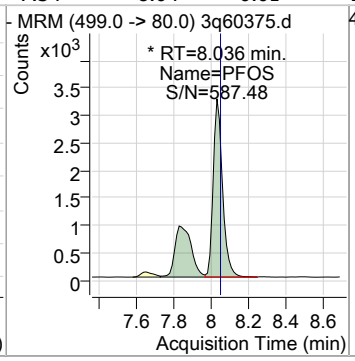


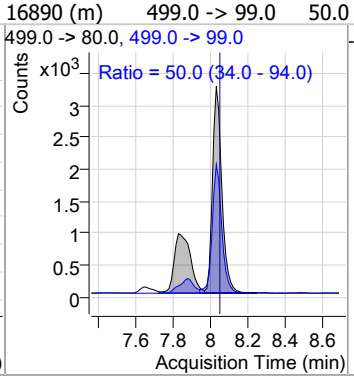


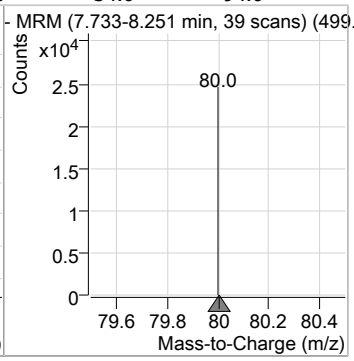


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	7.34	8.04	-0.01	16890 (m)	499.0 -> 99.0	50.0	34.0	94.0

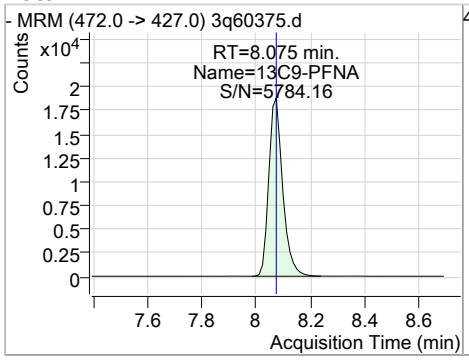


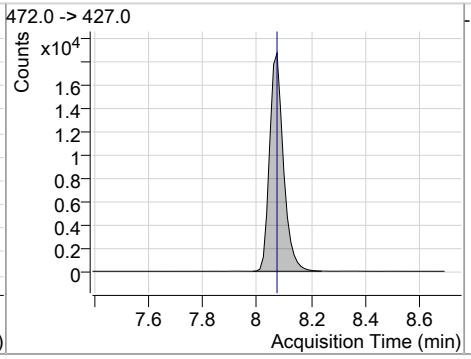


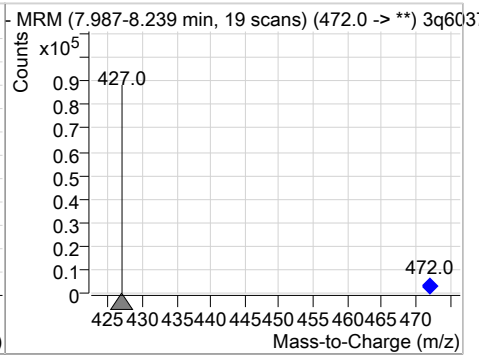




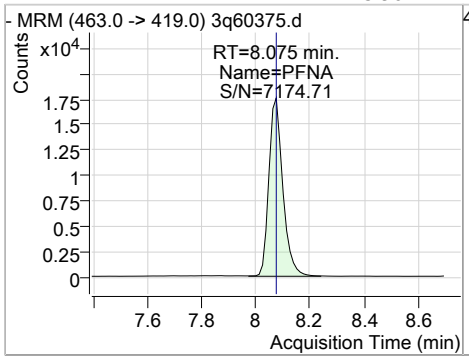
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	4.12	8.08	0.00	66683				

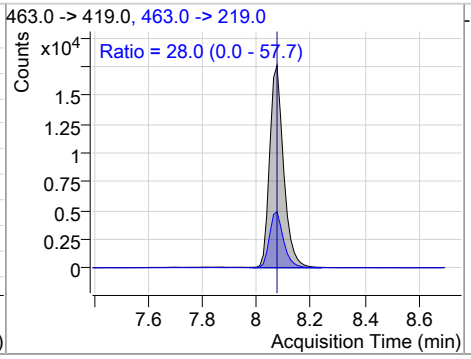


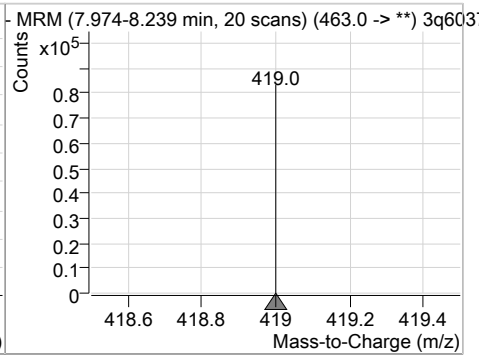




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.96	8.08	0.00	62623	463.0 -> 219.0	28.0	0.0	57.7

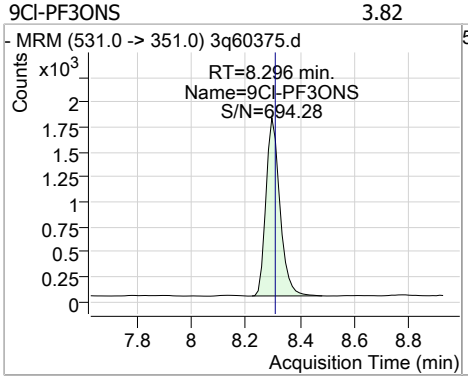


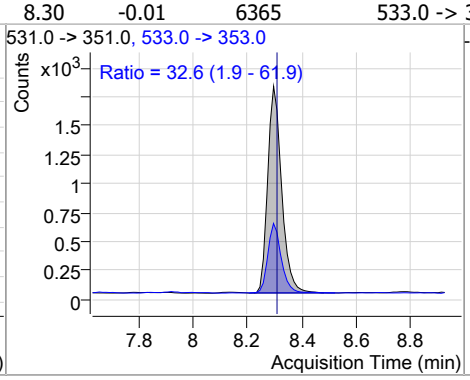


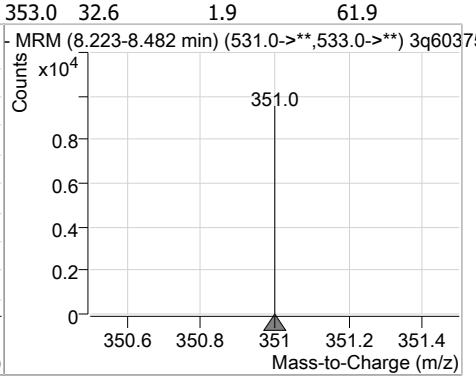


Perfluorinated Compounds by LC/MS/MS

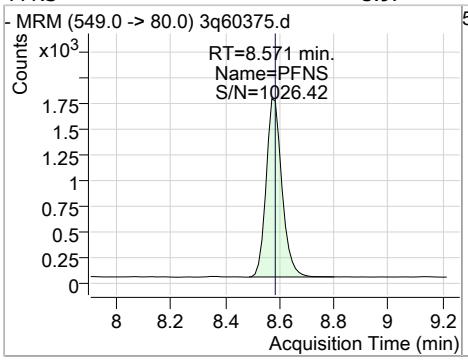
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	3.82	8.30	-0.01	6365	533.0 -> 353.0	32.6	1.9	61.9

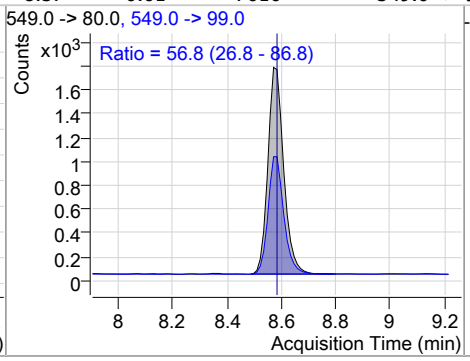


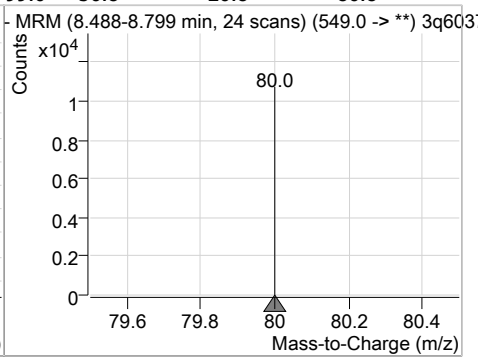




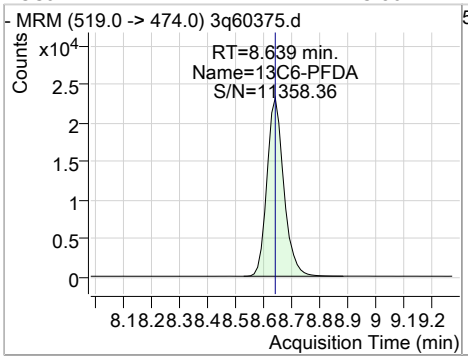
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	3.97	8.57	-0.01	7010	549.0 -> 99.0	56.8	26.8	86.8

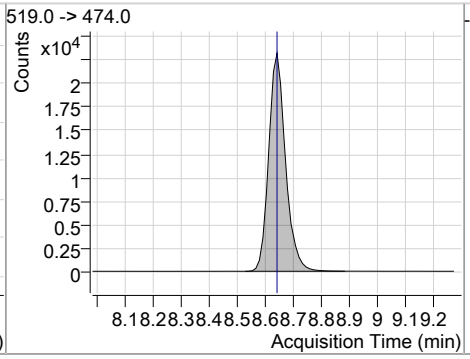


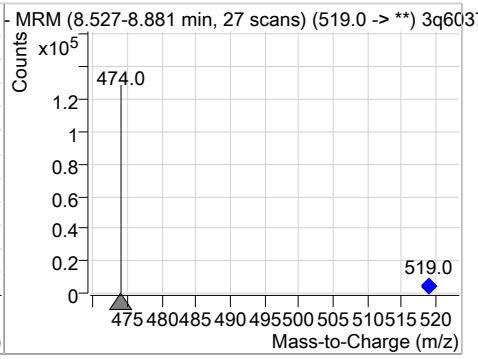




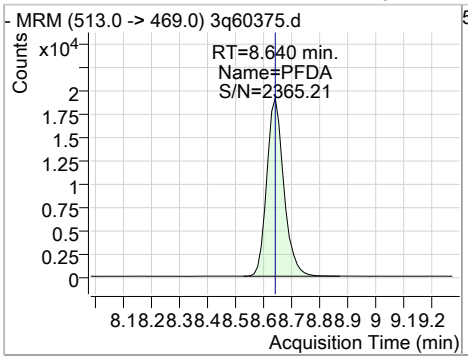
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.86	8.64	0.00	96293				

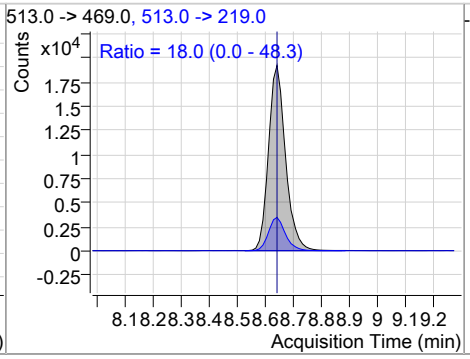


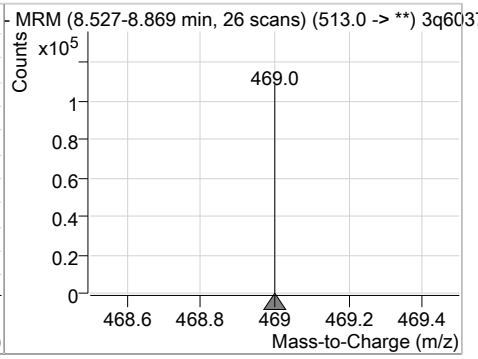




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.01	8.64	0.00	80542	513.0 -> 219.0	18.0	0.0	48.3

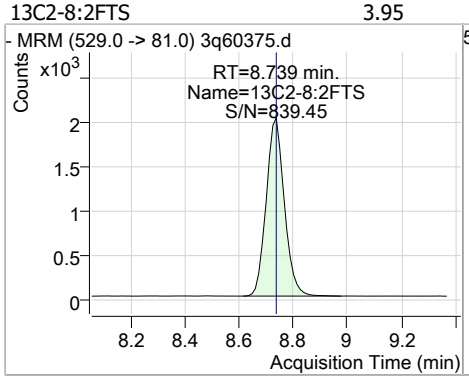


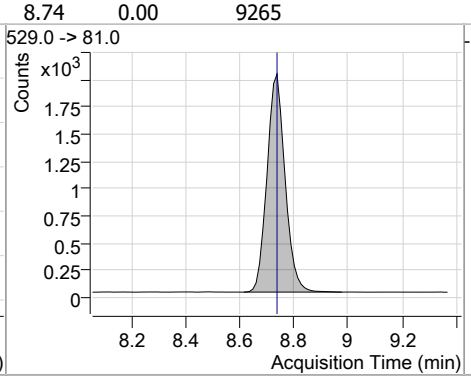


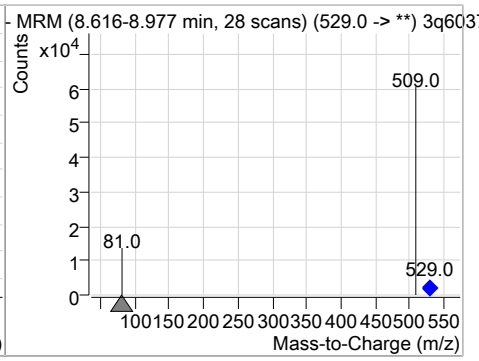


Perfluorinated Compounds by LC/MS/MS

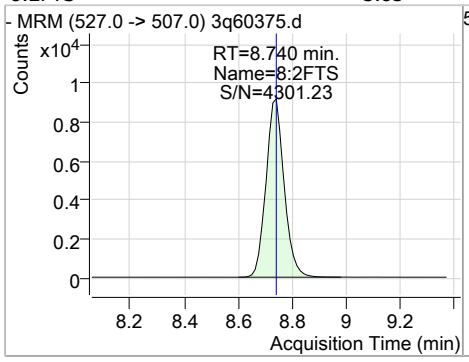
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.95	8.74	0.00	9265				

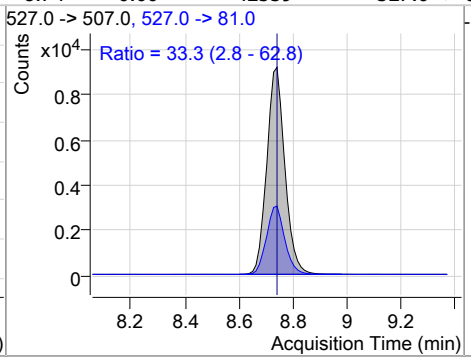


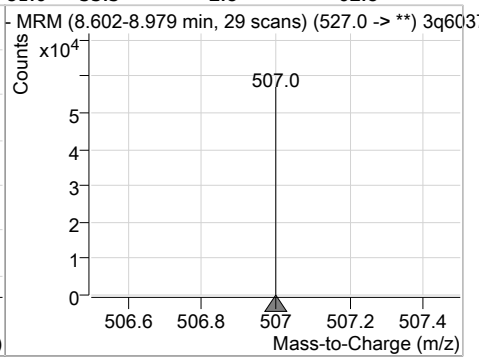




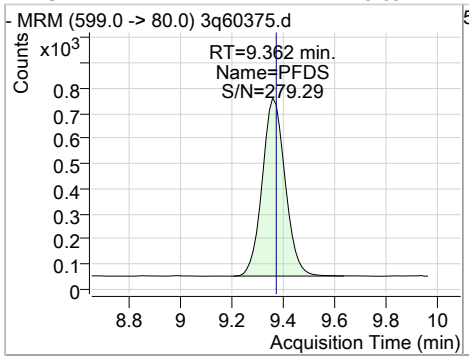
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	3.85	8.74	0.00	42559	527.0 -> 81.0	33.3	2.8	62.8

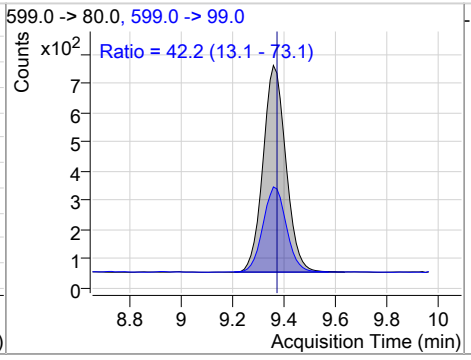


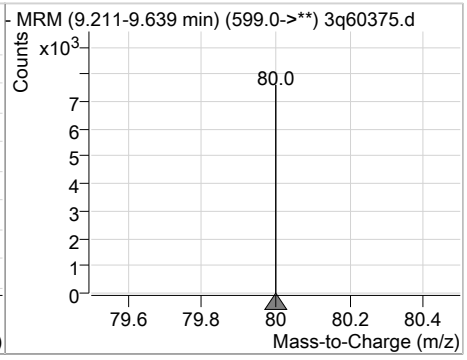




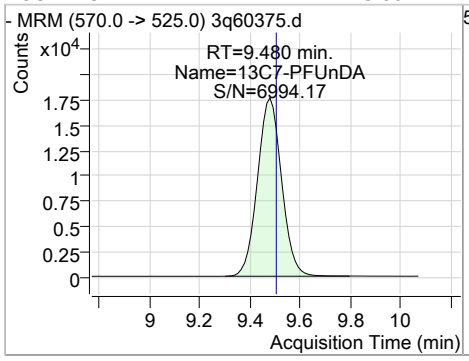
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	3.89	9.36	-0.04	4380	599.0 -> 99.0	42.2	13.1	73.1

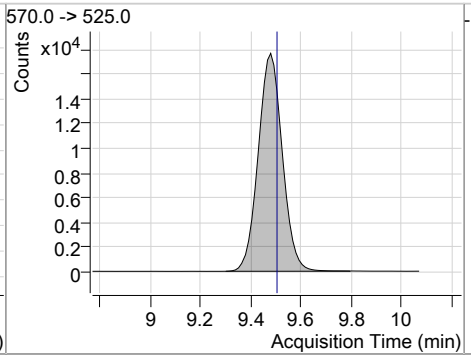


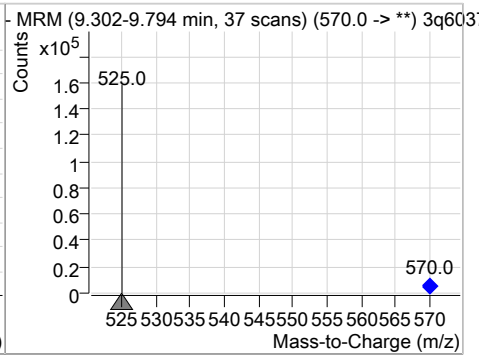




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	3.80	9.48	-0.03	117204				

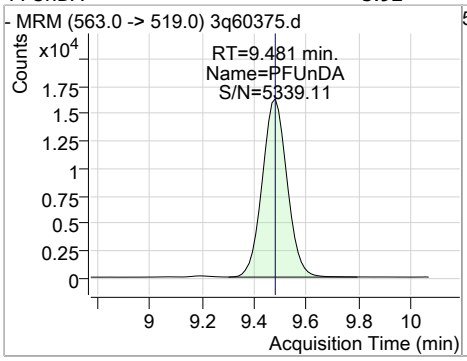


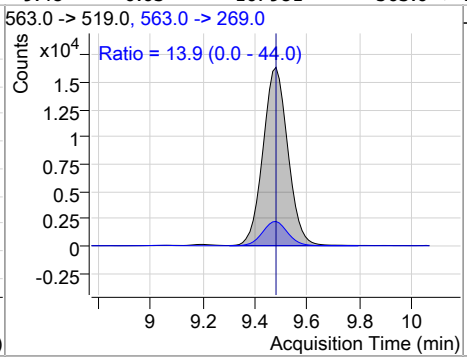


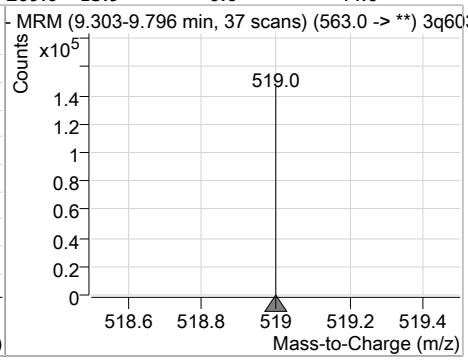


Perfluorinated Compounds by LC/MS/MS

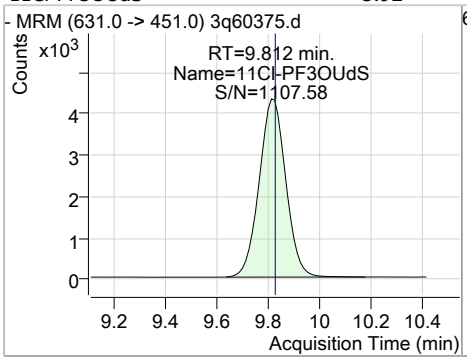
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	3.92	9.48	-0.03	107981	563.0 -> 269.0	13.9	0.0	44.0

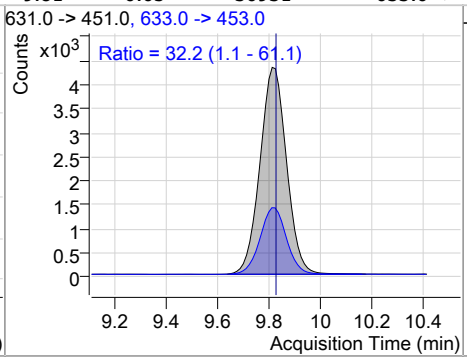


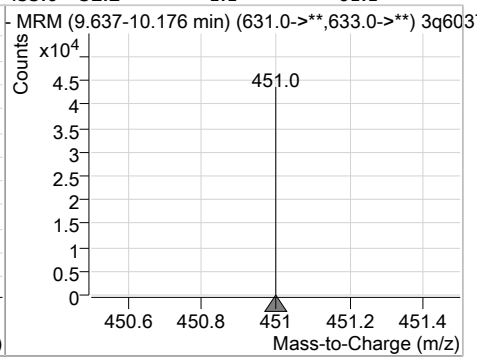




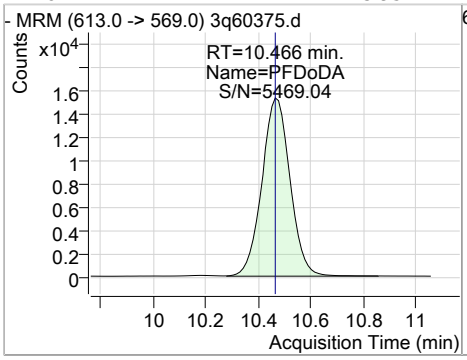
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	3.92	9.81	-0.05	30931	633.0 -> 453.0	32.2	1.1	61.1

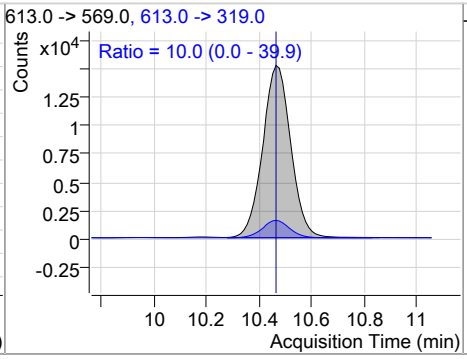


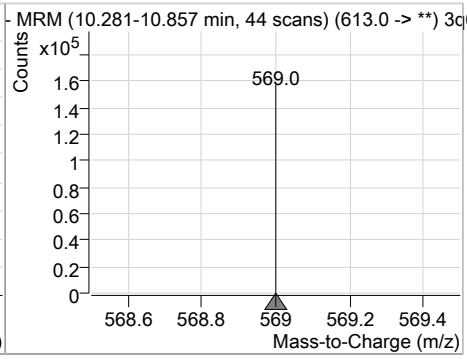




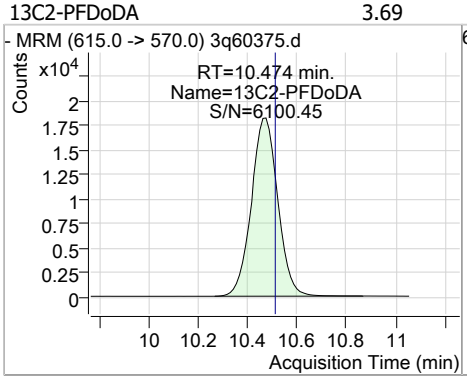
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	3.95	10.47	-0.04	113657	613.0 -> 319.0	10.0	0.0	39.9

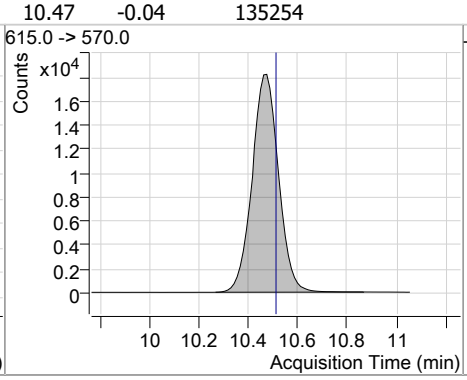


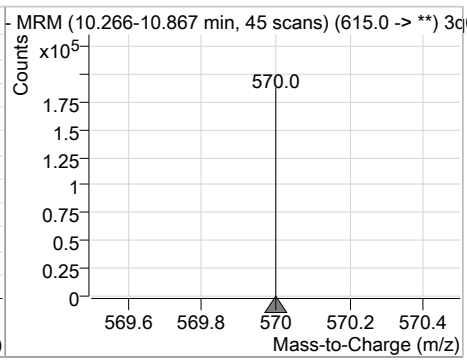




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	3.69	10.47	-0.04	135254				

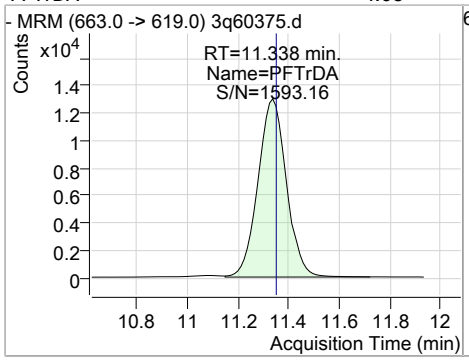


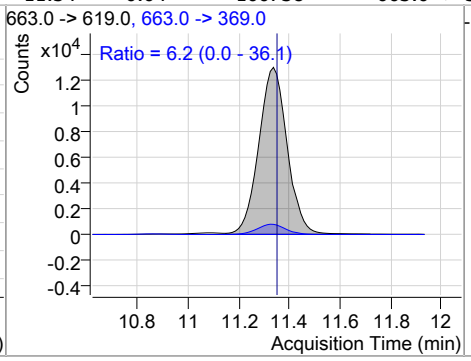


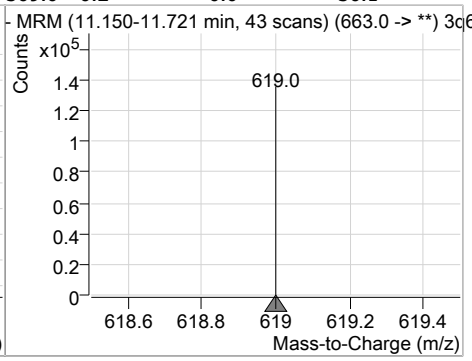


Perfluorinated Compounds by LC/MS/MS

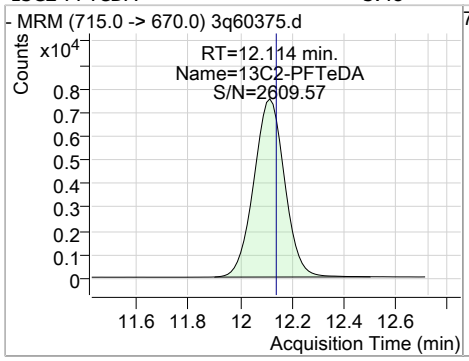
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.08	11.34	-0.04	100738	663.0 -> 369.0	6.2	0.0	36.1

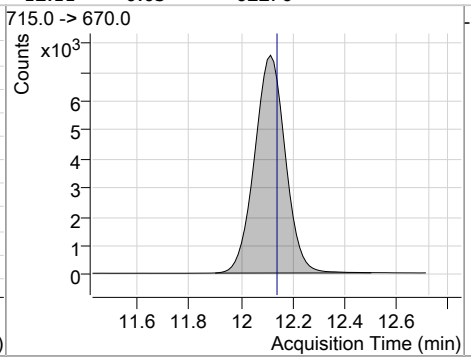


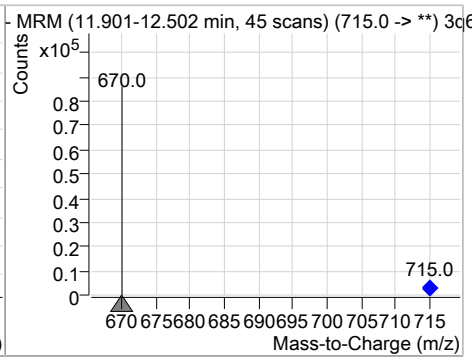




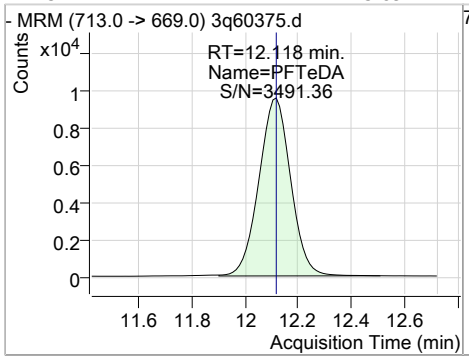
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	3.48	12.11	-0.03	62276				

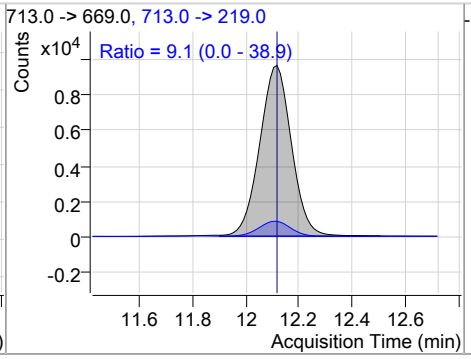


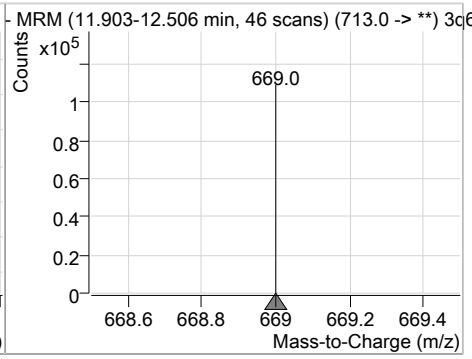




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	3.89	12.12	-0.03	79139	713.0 -> 219.0	9.1	0.0	38.9







Manual Integration Approval Summary

Sample Number: OP91274-MS
Lab FileID: 3Q60375.D
Injection Time: 05/27/22 23:21
Method: EPA 537M BY ID
Analyst approved: 05/29/22 10:38 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.84	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanoic acid	335-67-1		7.49	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q599.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	5/26/2022 11:44:52 PM
Sample Name	:	op91243-dup
Vial	:	P2-A1
DA Method File	:	ID_051922_S6Q6.quantmethod.xml
Batch Name	:	s6q11.batch.bin
Sample Information	:	OP91243,S6Q11,220,,,1.0,1,water

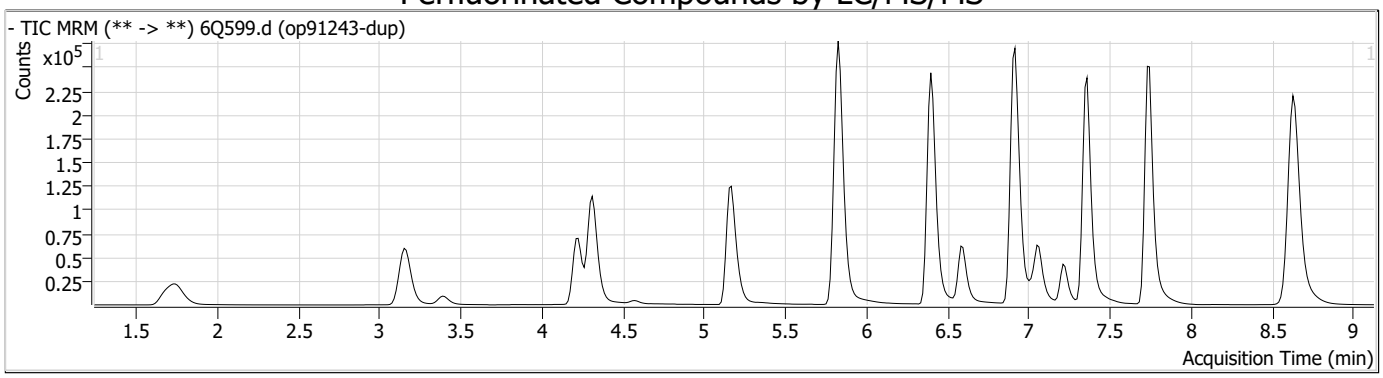
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	191234	20.00 µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	320754	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	479841	20.00 µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	518649	20.00 µg/L	0.000
M8-PFOA	5.832	421.0 -> 376.0	828835	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	942911	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	879236	20.00 µg/L	0.000
M7-PFUnDA	7.362	570.0 -> 525.0	914429	20.00 µg/L	0.012
M2-PFDoDA	7.733	615.0 -> 570.0	965699	20.00 µg/L	0.000
M2-PFTeDA	8.626	715.0 -> 670.0	1182994	20.00 µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	215795	20.00 µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	41072	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	36079	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	48997	20.00 µg/L	-0.002
M2-4:2FTS	4.222	329.0 -> 309.0	310629	20.00 µg/L	0.000
M2-6:2FTS	5.816	429.0 -> 409.0	343902	20.00 µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	247217	20.00 µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	190032	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12453	20.00 µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	47124	20.00 µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	146760	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.222	329.0 -> 309.0	310629	21.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C2-6:2FTS	5.816	429.0 -> 409.0	343902	20.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C2-8:2FTS	6.931	529.0 -> 509.0	247217	20.10 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C2-PFDoDA	7.733	615.0 -> 570.0	965699	20.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1182994	22.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C3-PFBS	3.385	302.0 -> 99.0	41072	23.29 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.4%	
13C3-PFHxS	5.202	402.0 -> 99.0	36079	21.96 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C4-PFBA	1.737	217.0 -> 172.0	191234	23.44 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.2%	
13C4-PFHpA	5.172	367.0 -> 322.0	518649	22.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C5-PFHxA	4.314	318.0 -> 273.0	479841	22.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%	
13C5-PFPeA	3.155	268.0 -> 223.0	320754	23.07 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%	
13C6-PFDA	6.908	519.0 -> 474.0	879236	23.98 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

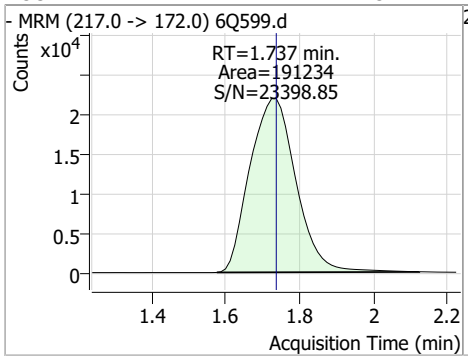
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.9%	
13C7-PFUnDA	7.362	570.0 -> 525.0	914429	21.13 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C8-FOSA	6.588	506.0 -> 78.0	215795	20.50 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C8-PFOA	5.832	421.0 -> 376.0	828835	22.24 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%	
13C8-PFOS	6.386	507.0 -> 99.0	48997	22.73 µg/L	-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%	
13C9-PFNA	6.404	472.0 -> 427.0	942911	21.79 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
d3-MeFOSAA	7.064	573.0 -> 419.0	190032	20.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C3-HFPO-DA	4.578	287.0 -> 169.0	12471	20.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%	
d3-MeFOSA	7.033	515.0 -> 169.0	47124	18.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
d5-EtFOSAA	7.211	589.0 -> 419.0	146790	17.84 µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	6.590	498.0 -> 78.0	1733	0.16 µg/L	97
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	6.388	499.0 -> 80.0	219	0.05 µg/L	97
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	8.630	713.0 -> 669.0	1535	0.02 µg/L	97
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	285.0 -> 169.0	-	N.D.	
MeFOSA	-	512.0 -> 169.0	-	N.D.	

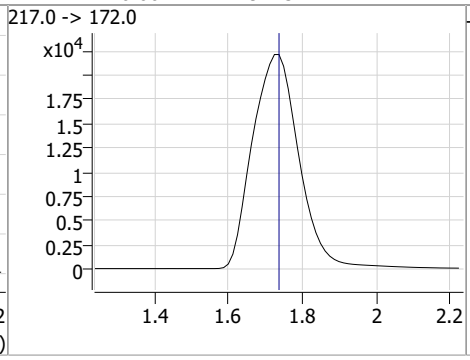
 # = Qualifier out of range, m = manually integrated, + = Area summed

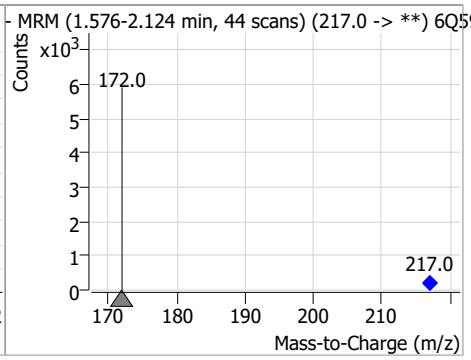
Perfluorinated Compounds by LC/MS/MS



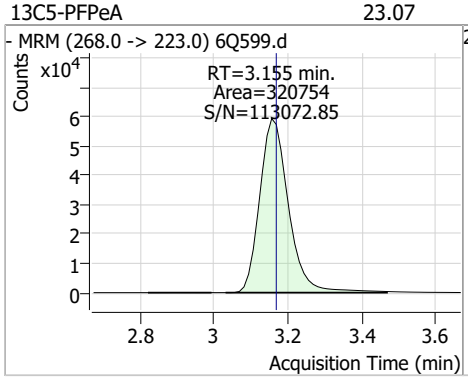
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	23.44	1.74	0.00	191234				

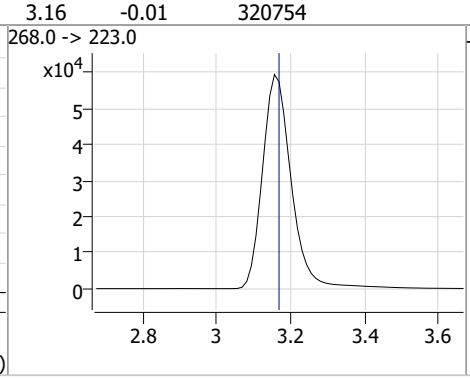


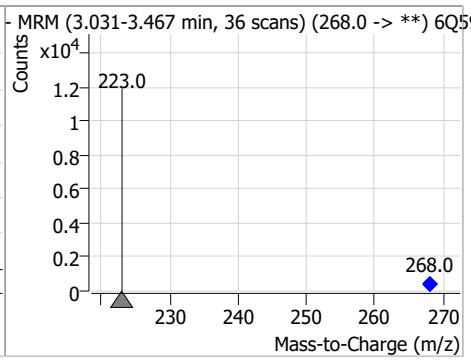




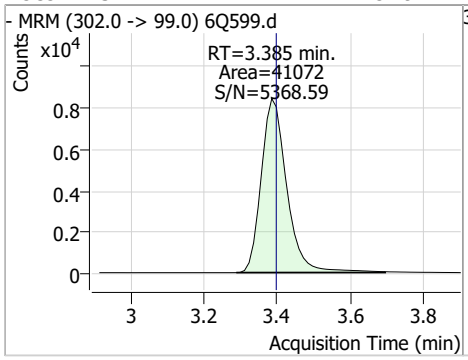
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.07	3.16	-0.01	320754				

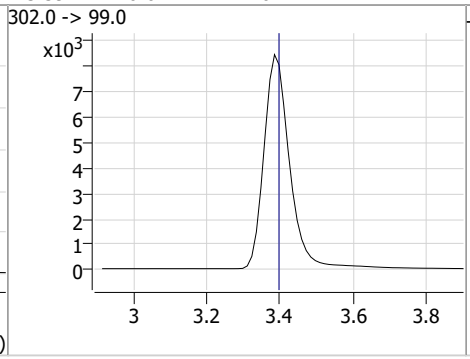


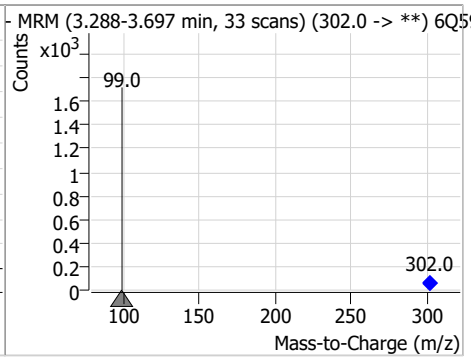




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.29	3.39	-0.01	41072				

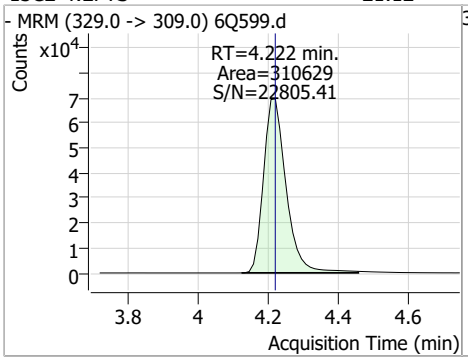


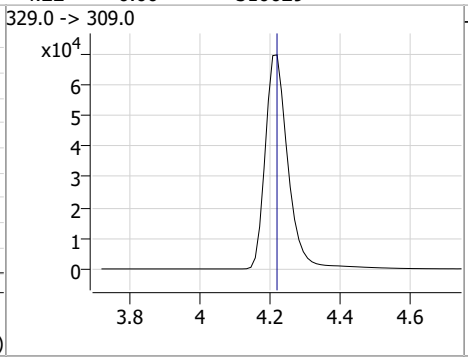


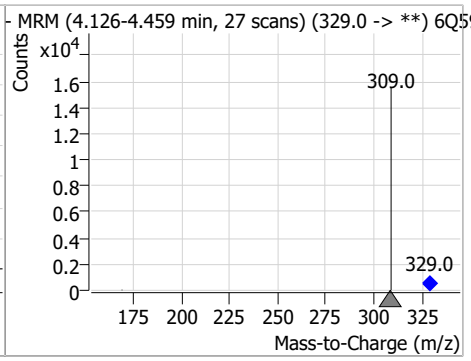


Perfluorinated Compounds by LC/MS/MS

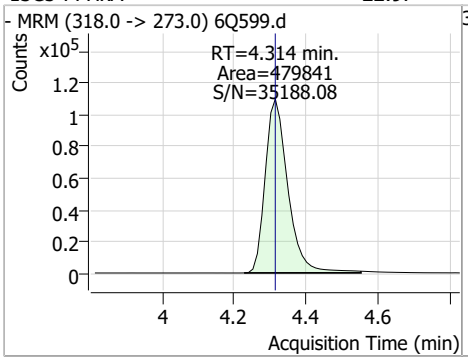
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.12	4.22	0.00	310629				

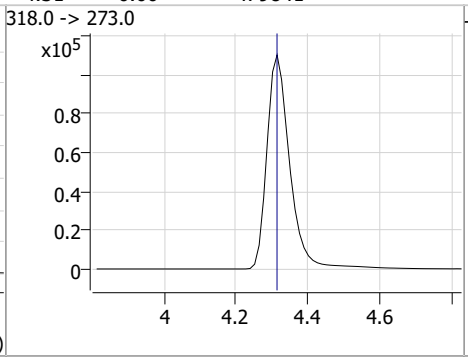


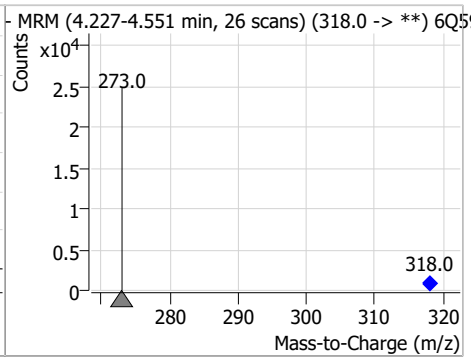




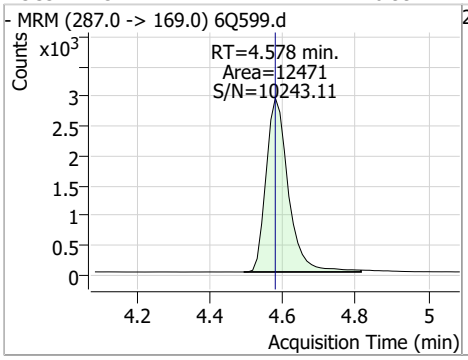
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.97	4.31	0.00	479841				

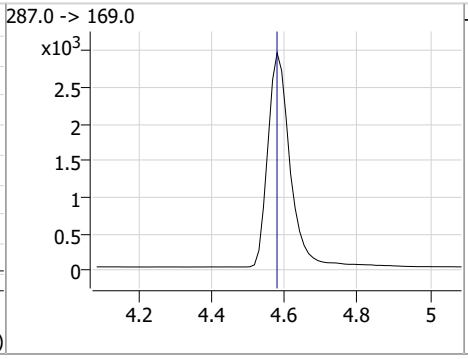


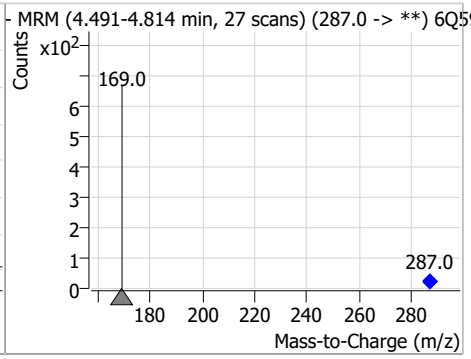




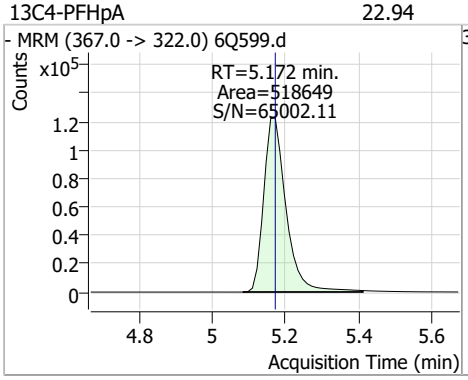
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.99	4.58	0.00	12471				

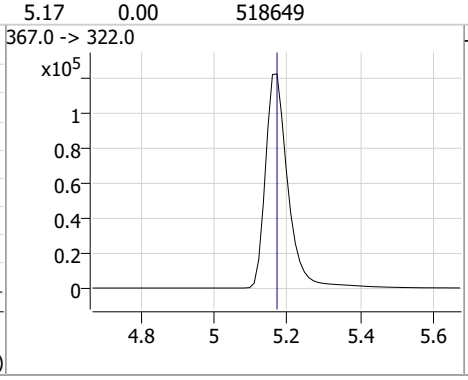


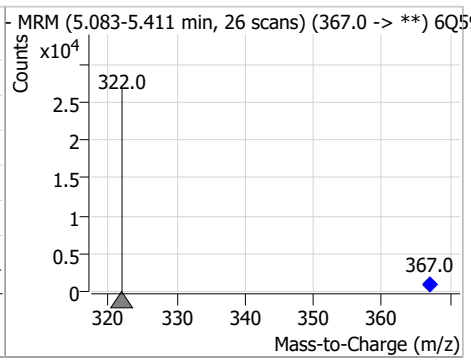




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.94	5.17	0.00	518649				

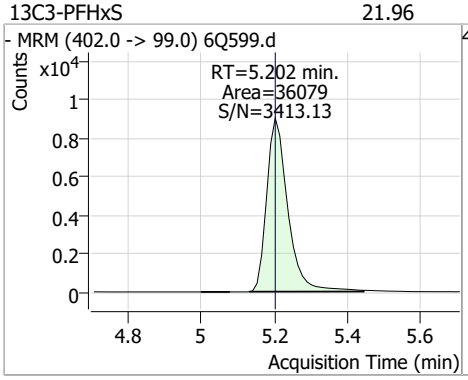


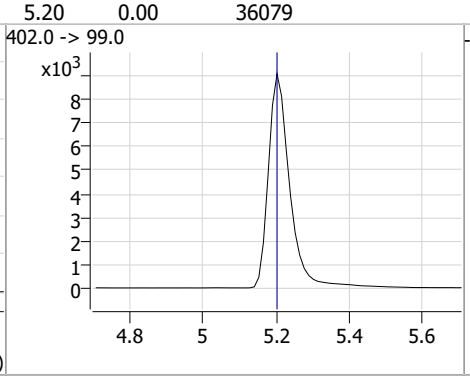


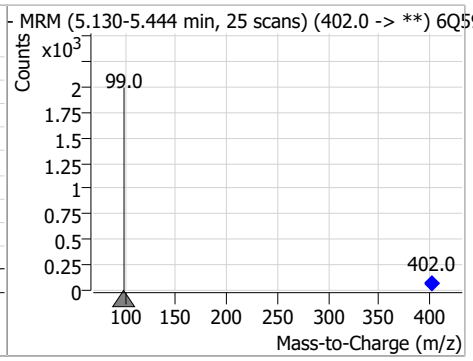


Perfluorinated Compounds by LC/MS/MS

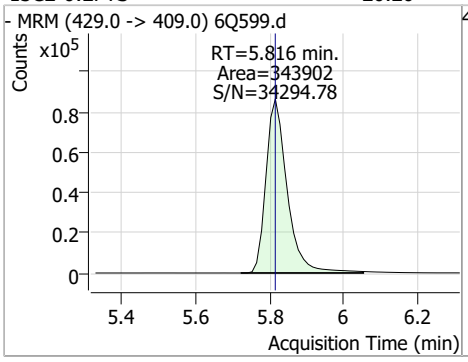
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.96	5.20	0.00	36079				

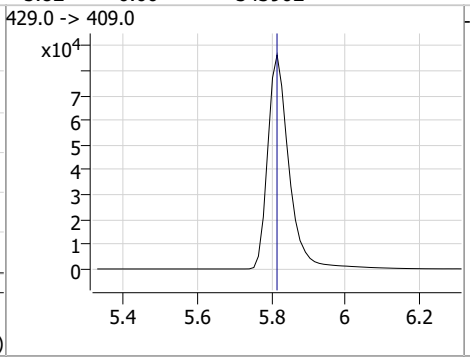


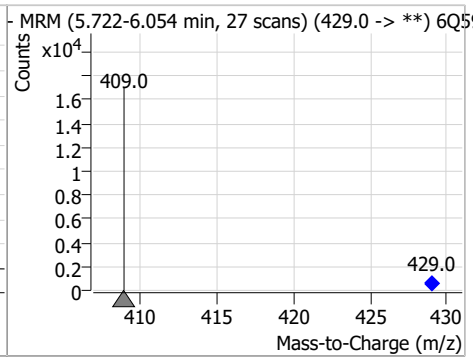




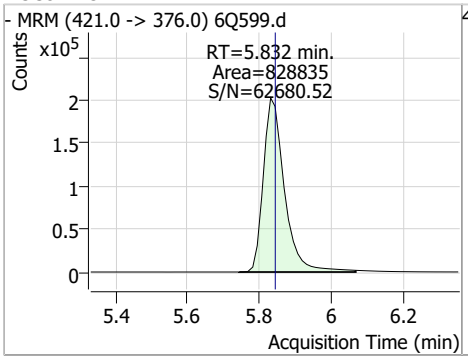
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.20	5.82	0.00	343902				

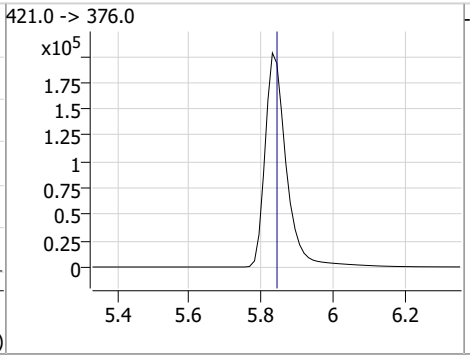


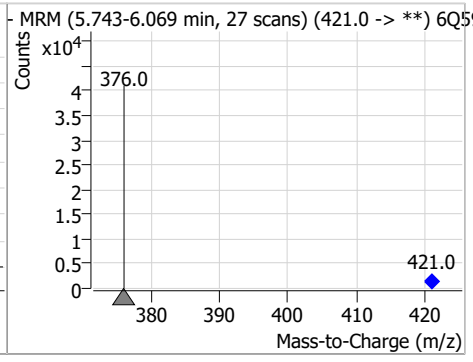




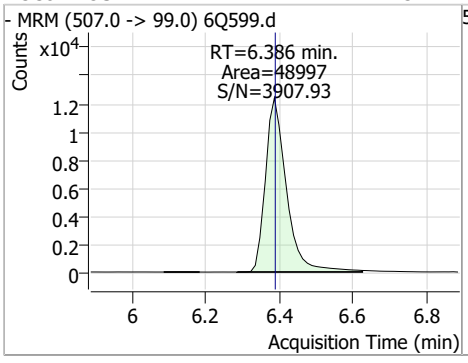
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.24	5.83	-0.01	828835				

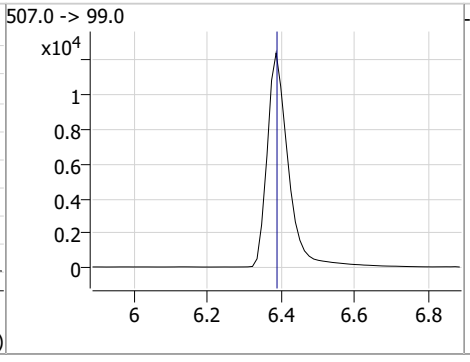


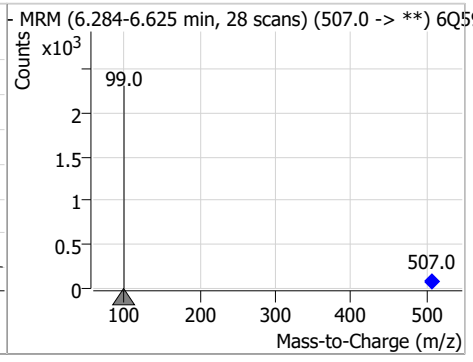




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.73	6.39	0.00	48997				

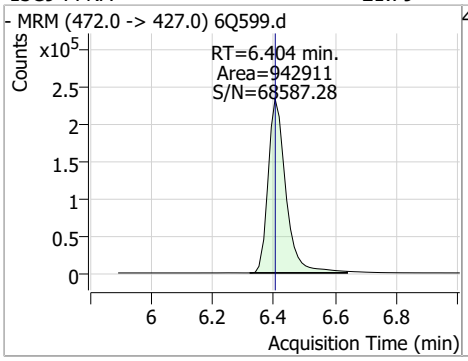


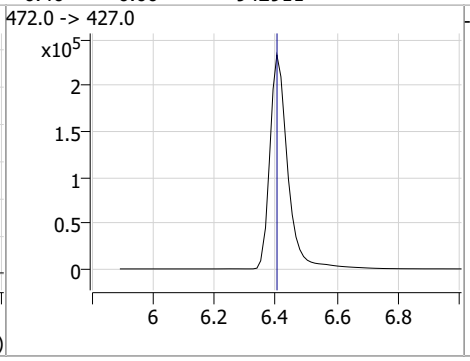


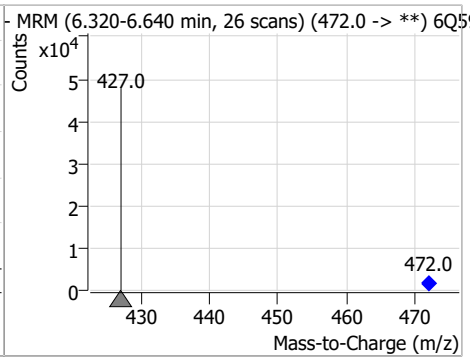


Perfluorinated Compounds by LC/MS/MS

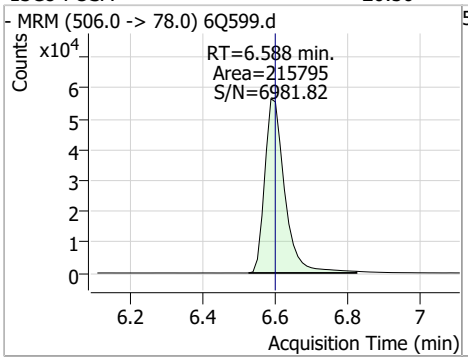
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.79	6.40	0.00	942911				

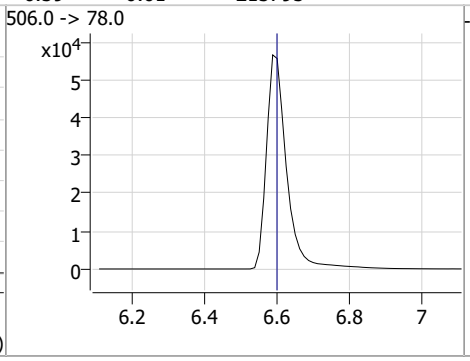


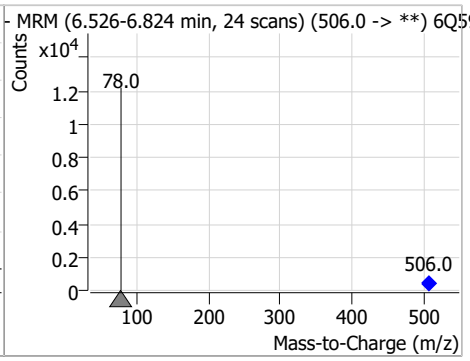




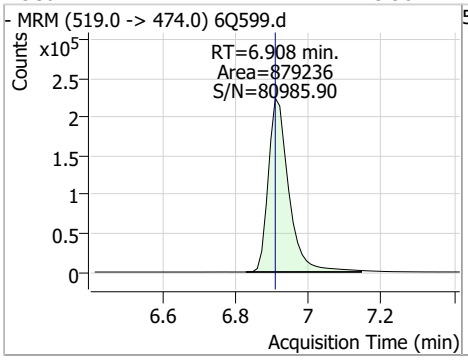
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.50	6.59	-0.01	215795				

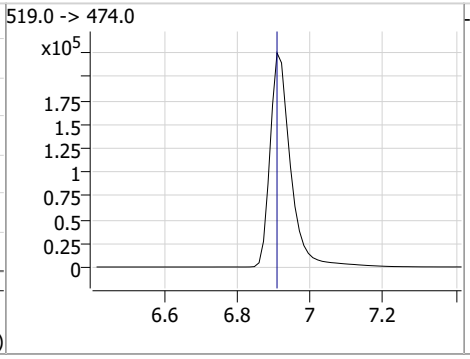


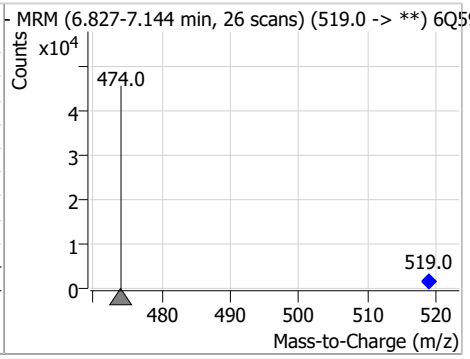




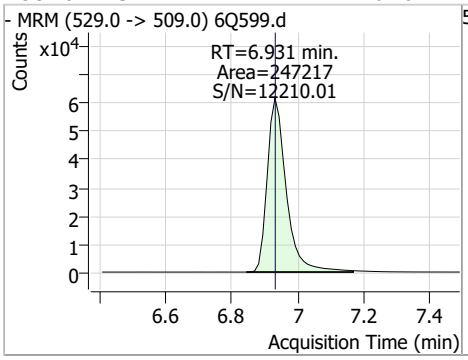
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.98	6.91	0.00	879236				

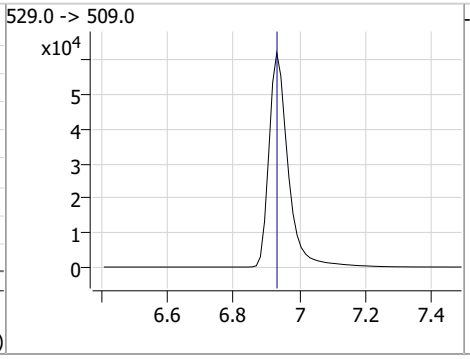


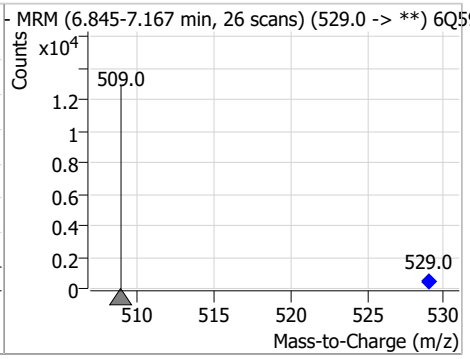




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.10	6.93	0.00	247217				

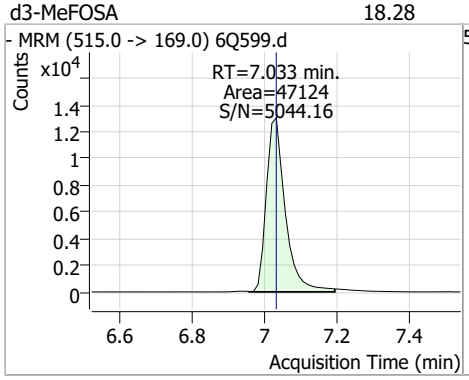


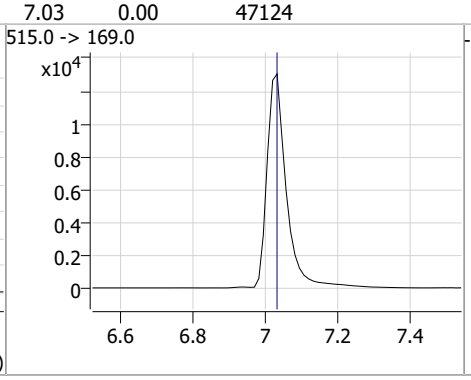


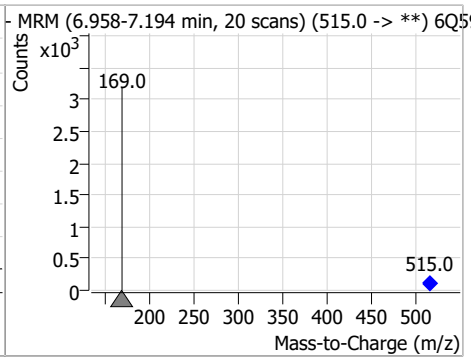


Perfluorinated Compounds by LC/MS/MS

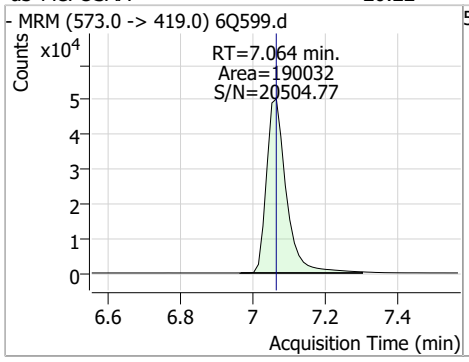
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.28	7.03	0.00	47124				

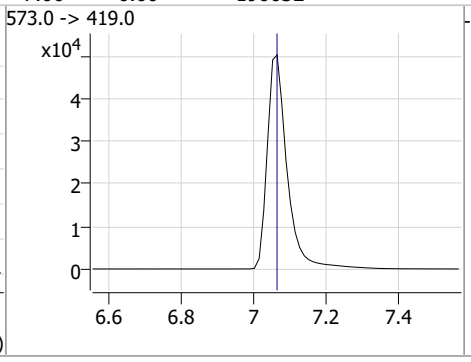


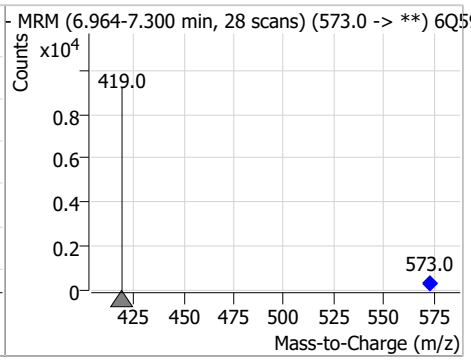




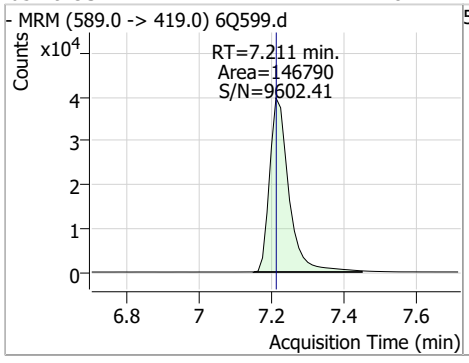
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.22	7.06	0.00	190032				

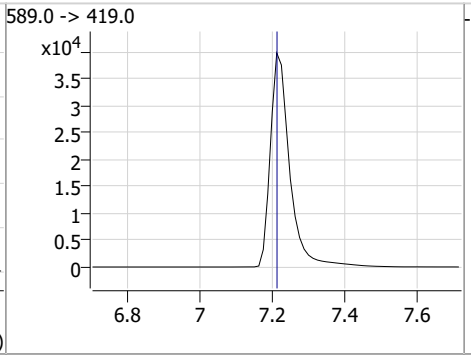


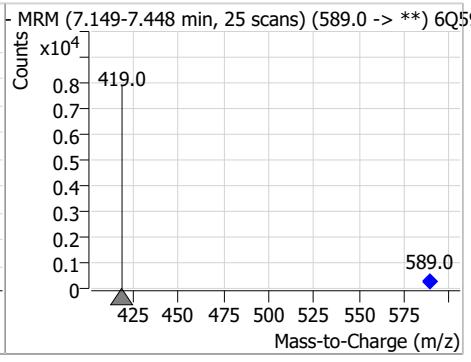




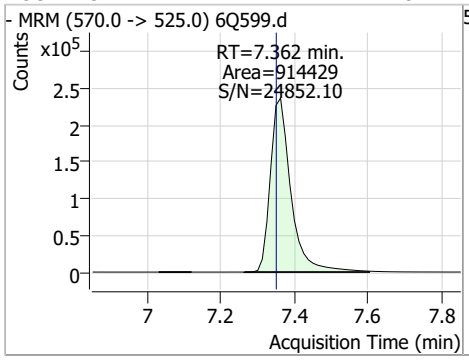
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.84	7.21	0.00	146790				

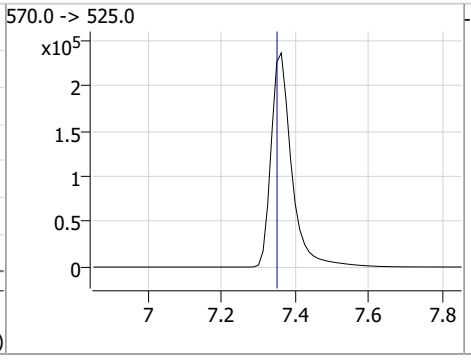


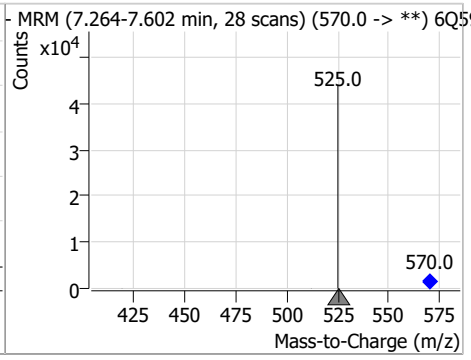




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.13	7.36	0.01	914429				

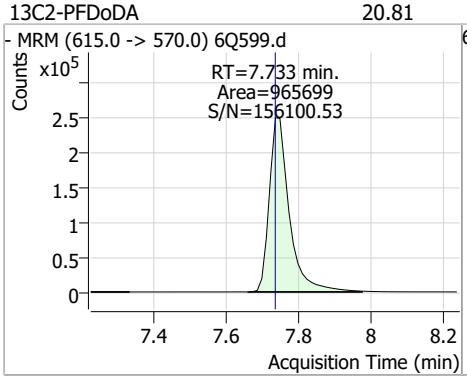


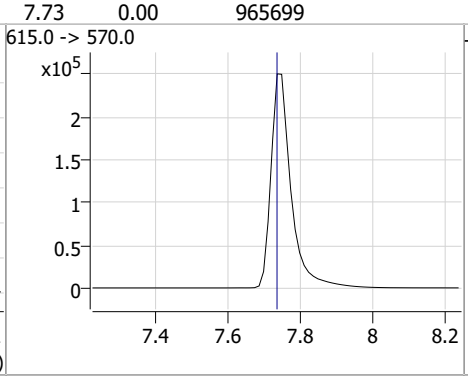


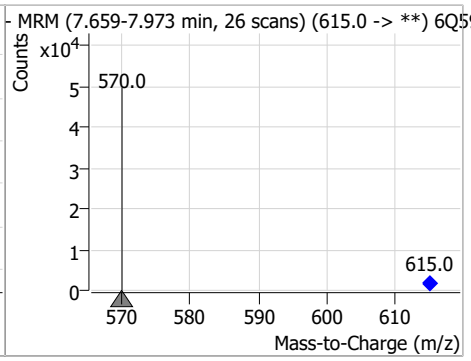


Perfluorinated Compounds by LC/MS/MS

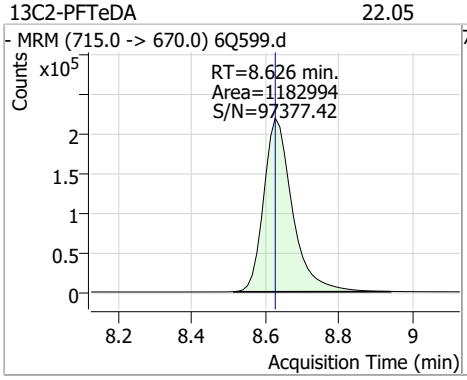
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.81	7.73	0.00	965699				

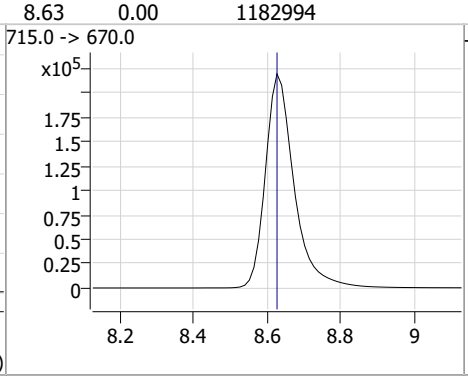


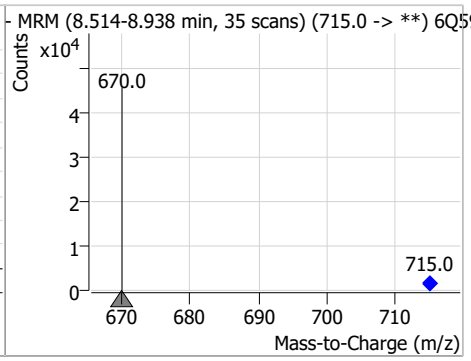




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.05	8.63	0.00	1182994				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/31/22 21:13

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60378.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 12:17:34 AM
Sample Name : op91274-dup
Vial : P3-B8
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91274,S3Q824,250,,,1,10,water

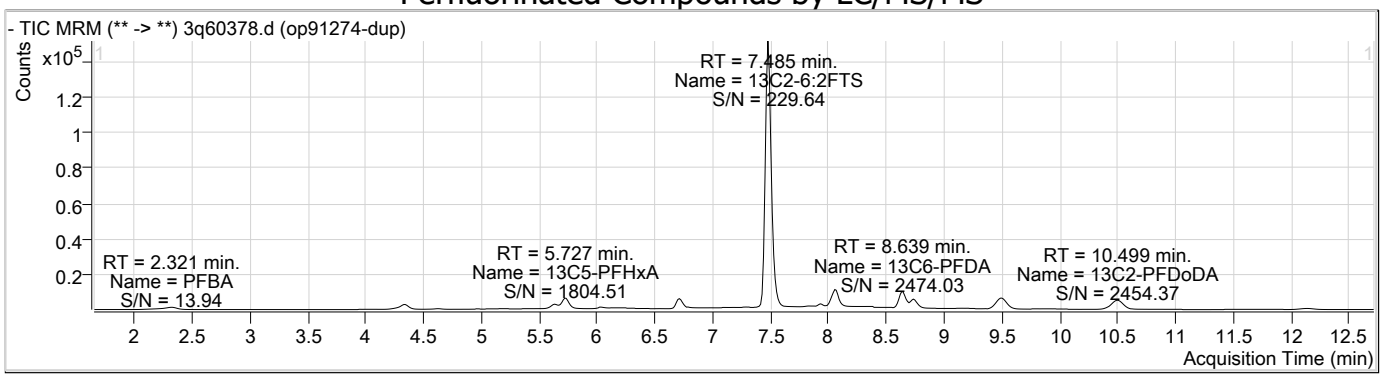
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	11892	20.00	µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	11029	20.00	µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	15026	20.00	µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	19499	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	23324	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	27417	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	39322	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	41970	20.00	µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	38556	20.00	µg/L	-0.013
M2-PFTeDA	12.139	715.0 -> 670.0	5010	20.00	µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	2059	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	1590	20.00	µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	1857	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	2514	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	1110	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	2911	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	3728	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	4556	20.00	µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	2148	20.00	µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	93	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	3920	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	1110	1.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.9%		
13C2-6:2FTS	7.485	429.0 -> 81.0	2911	2.22	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%		
13C2-8:2FTS	8.739	529.0 -> 81.0	3728	1.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.9%		
13C2-PFDoDA	10.499	615.0 -> 570.0	38556	1.05	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.3%		
13C2-PFTeDA	12.139	715.0 -> 670.0	5010	0.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.4%		
13C3-PFBS	4.629	302.0 -> 99.0	1590	2.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%		
13C3-PFHxS	6.738	402.0 -> 99.0	1857	1.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.6%		
13C4-PFBA	2.327	217.0 -> 172.0	11892	1.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.8%		
13C4-PFHpA	6.718	367.0 -> 322.0	19499	1.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.7%		
13C5-PFHxA	5.727	318.0 -> 273.0	15026	1.90	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%		
13C5-PFPeA	4.337	268.0 -> 223.0	11029	1.90	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%		
13C6-PFDA	8.639	519.0 -> 474.0	39322	1.58	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

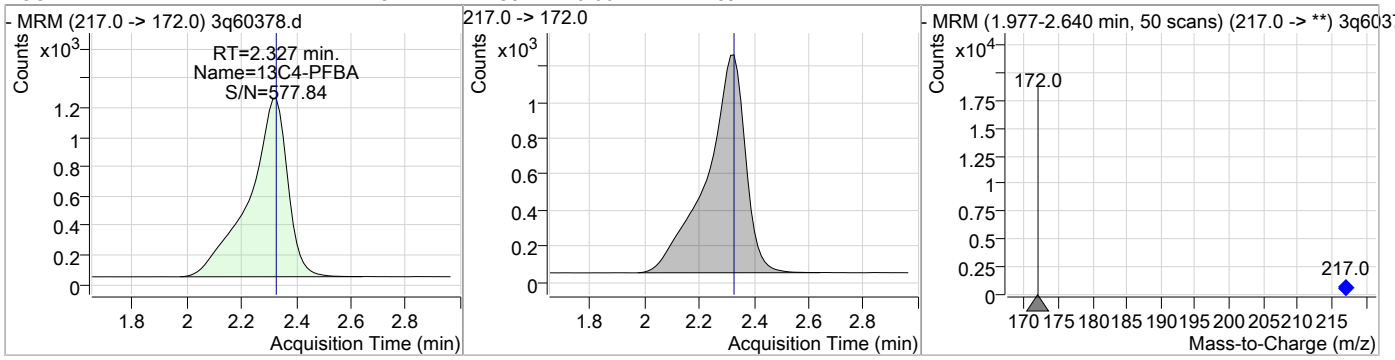
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.9%		
13C7-PFUnDA	9.505	570.0 -> 525.0	41970	1.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.8%		
13C8-FOSA	7.430	506.0 -> 78.0	2059	0.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.7%		
13C8-PFOA	7.487	421.0 -> 376.0	23324	1.85 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.2%		
13C8-PFOS	8.036	507.0 -> 99.0	2514	1.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C9-PFNA	8.075	472.0 -> 427.0	27417	1.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.5%		
d3-MeFOSAA	7.929	573.0 -> 419.0	4556	1.37 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.9%		
13C3-HFPO-DA	6.031	287.0 -> 169.0	2146	1.92 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.6%		
d3-MeFOSA	7.793	515.0 -> 169.0	93	0.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.4%		
d5-EtFOSAA	8.029	589.0 -> 419.0	3896	1.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.2%		
Target Compounds						**QValue**
4:2FTS	5.637	327.0 -> 307.0	1135	0.23 µg/L		97
6:2FTS	7.486	427.0 -> 407.0	339547	48.56 µg/L		100
8:2FTS	8.740	527.0 -> 507.0	1207	0.14 µg/L		99
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	2.321	213.0 -> 169.0	592	0.26 µg/L		100
PFBS	4.619	299.0 -> 80.0	196	0.10 µg/L	m	98
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	6.719	363.0 -> 319.0	2297	0.16 µg/L		99
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.728	313.0 -> 269.0	10623	1.69 µg/L		99
PFHxS	6.739	399.0 -> 80.0	1011	0.52 µg/L	m	94
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	8.036	499.0 -> 80.0	6985	3.55 µg/L	m	83
PFPeA	4.339	263.0 -> 219.0	5225	0.64 µg/L		100
PFPeS	5.845	349.0 -> 80.0	135	0.10 µg/L		99
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		

 # = Qualifier out of range, m = manually integrated, + = Area summed

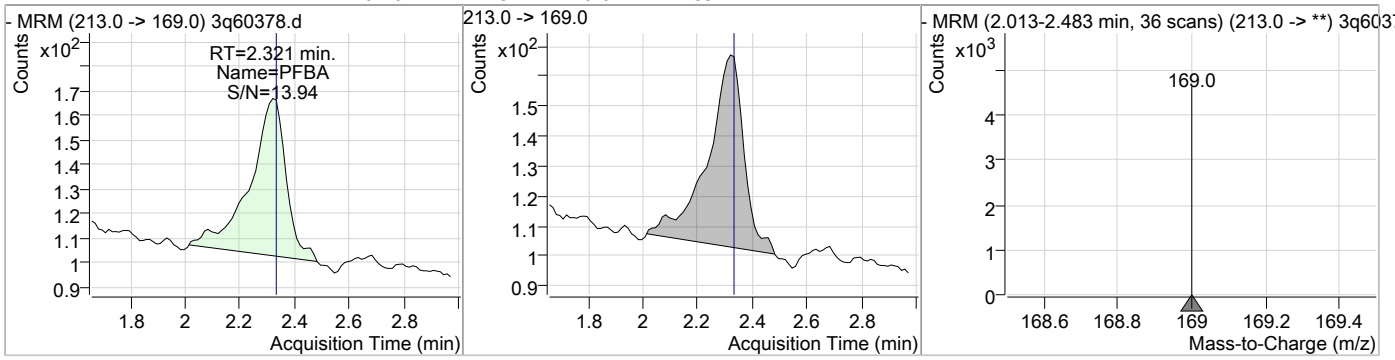
Perfluorinated Compounds by LC/MS/MS



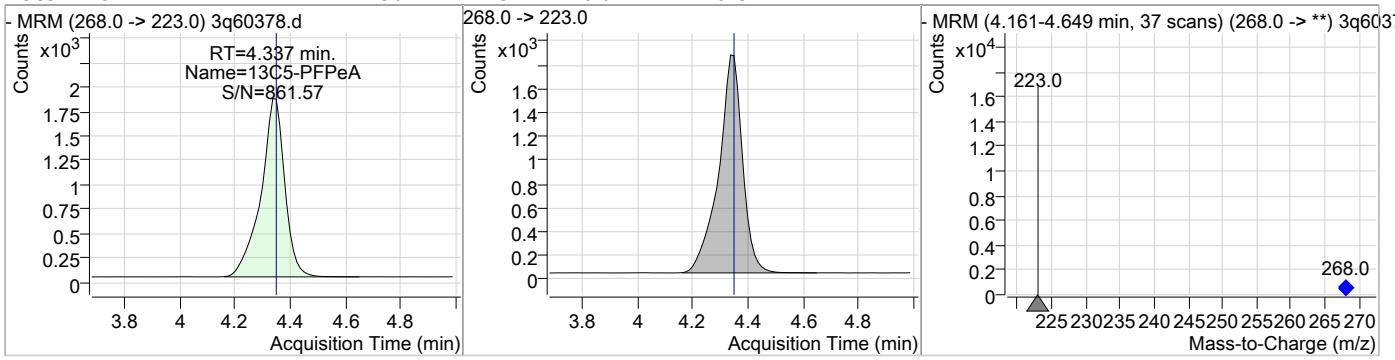
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.97	2.33	0.00	11892				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.26	2.32	-0.01	592				

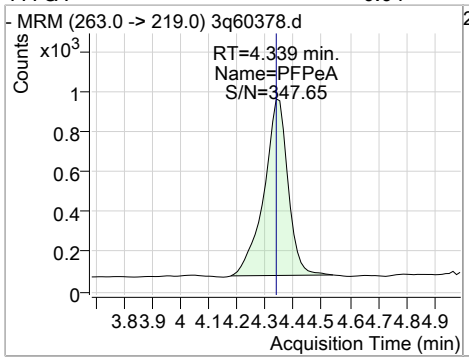


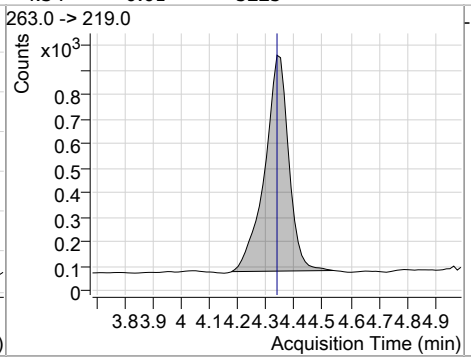
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.90	4.34	-0.01	11029				

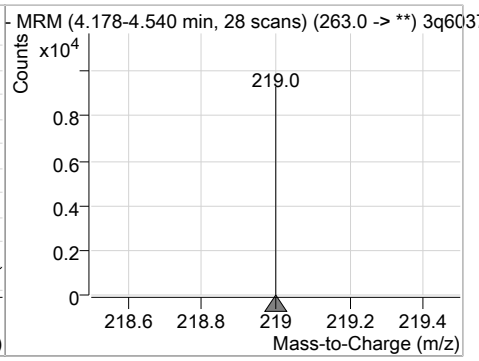


Perfluorinated Compounds by LC/MS/MS

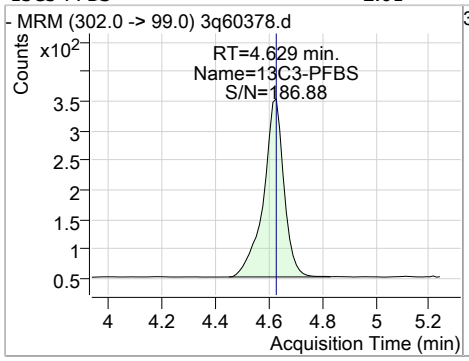
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.64	4.34	-0.01	5225				

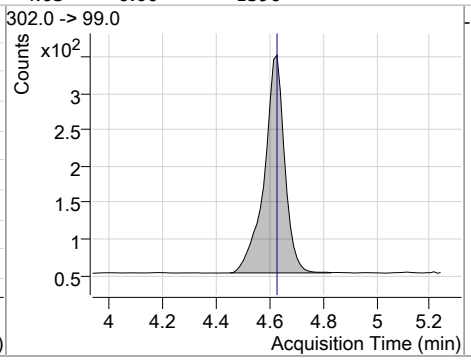


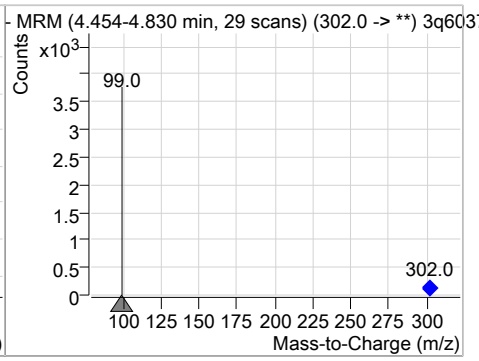




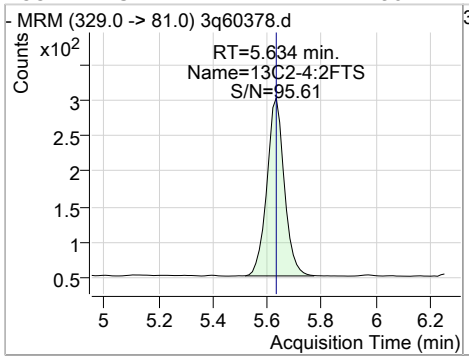
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.01	4.63	0.00	1590				

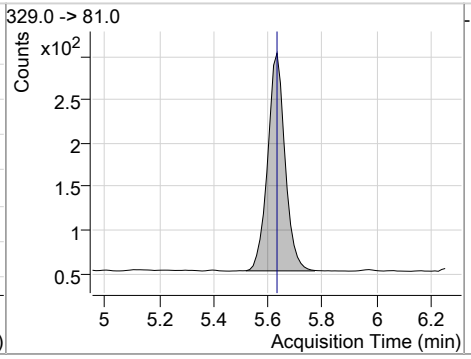


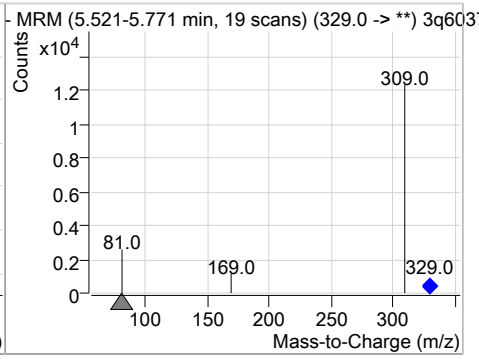




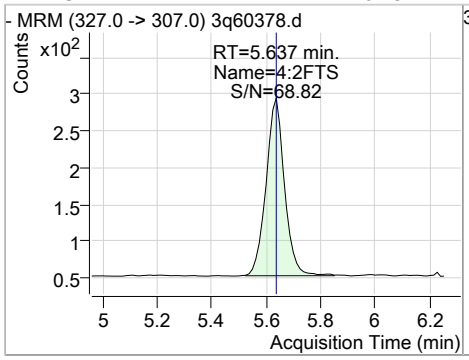
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.98	5.63	0.00	1110				

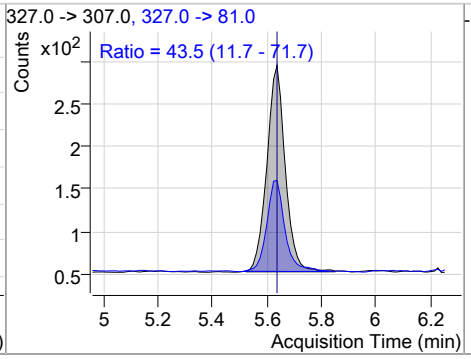


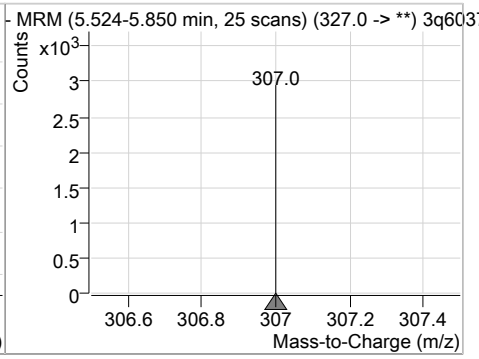




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.23	5.64	0.00	1135	327.0 -> 81.0	43.5	11.7	71.7

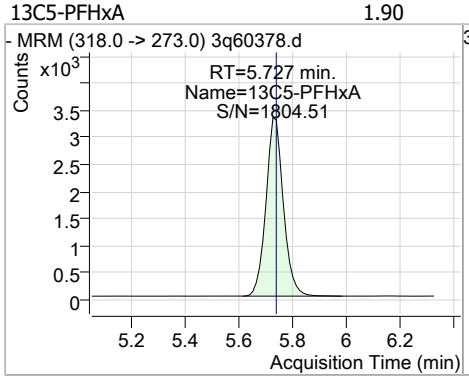


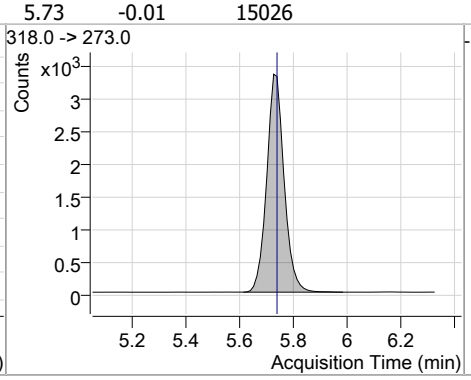


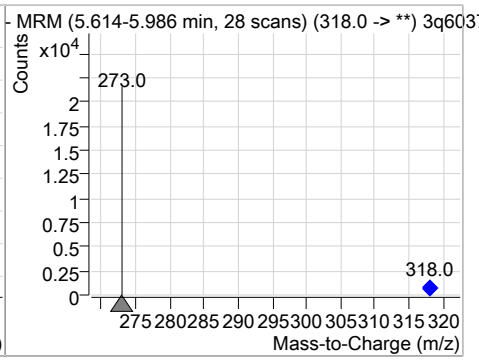


Perfluorinated Compounds by LC/MS/MS

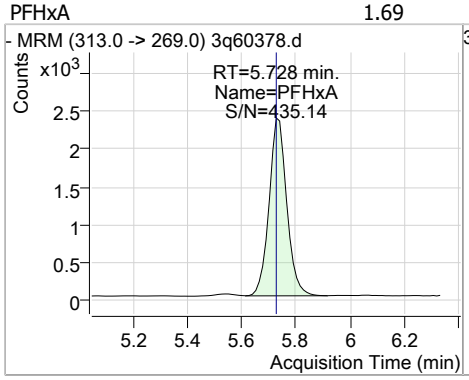
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.90	5.73	-0.01	15026				

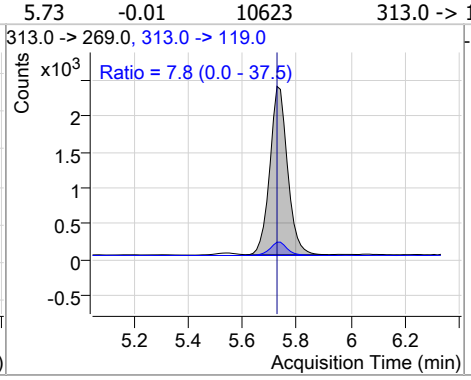


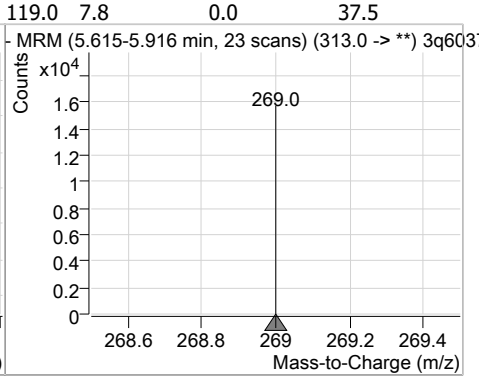




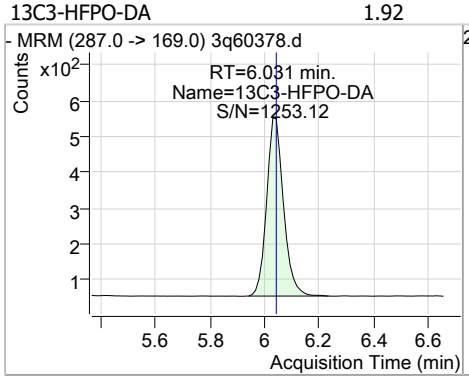
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.69	5.73	-0.01	10623	313.0 -> 119.0	7.8	0.0	37.5

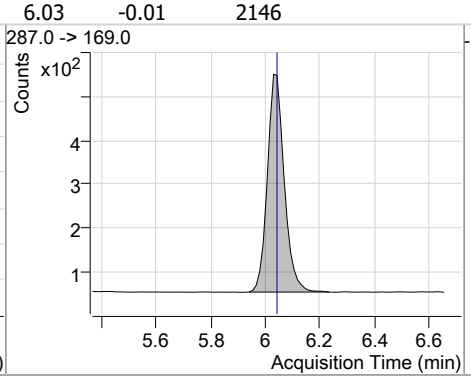


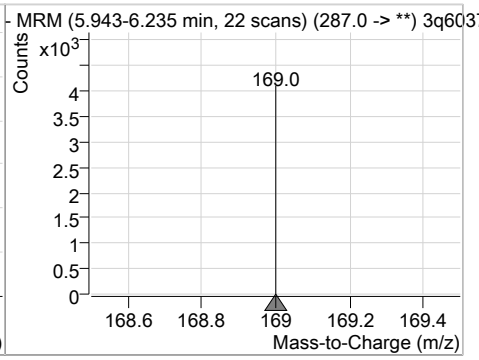




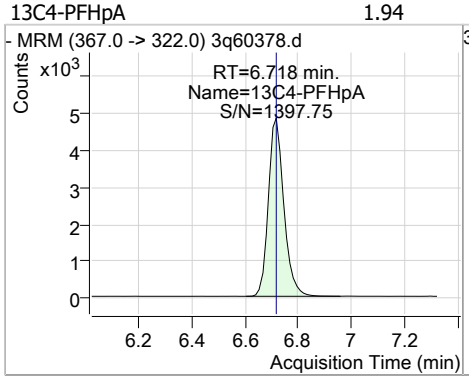
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.92	6.03	-0.01	2146				

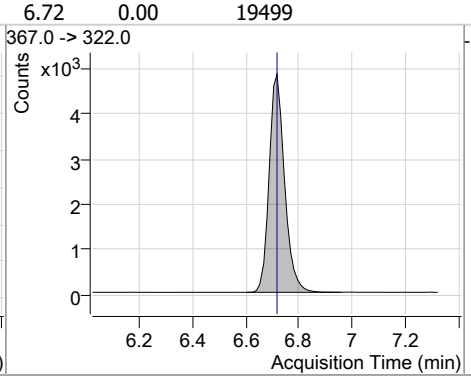


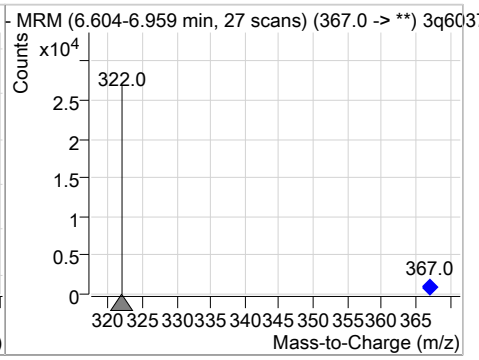




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.94	6.72	0.00	19499				

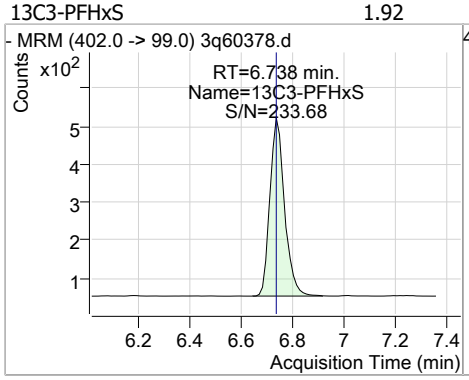


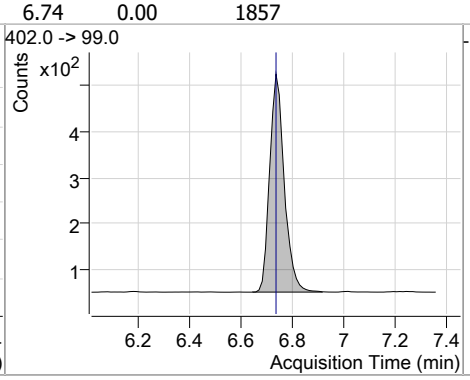


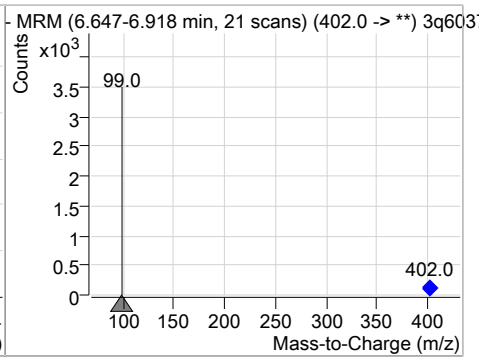


Perfluorinated Compounds by LC/MS/MS

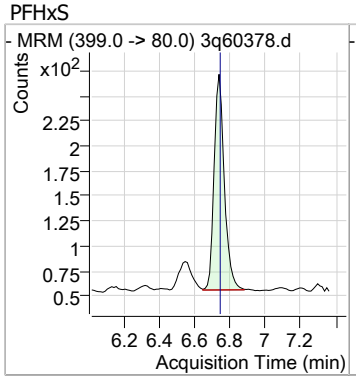
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.92	6.74	0.00	1857				

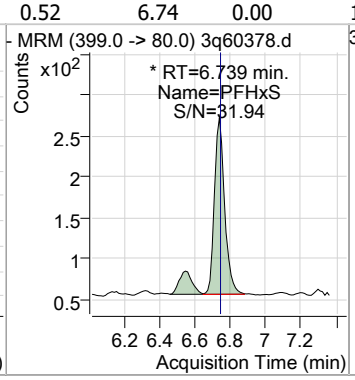


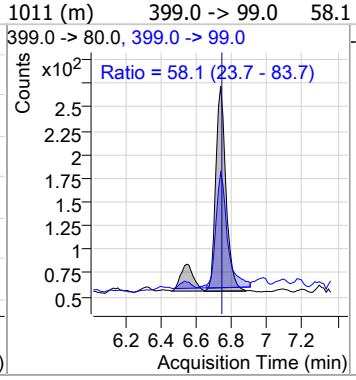


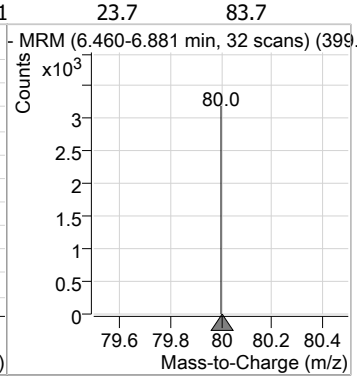


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.52	6.74	0.00	1011 (m)	399.0 -> 99.0	58.1	23.7	83.7

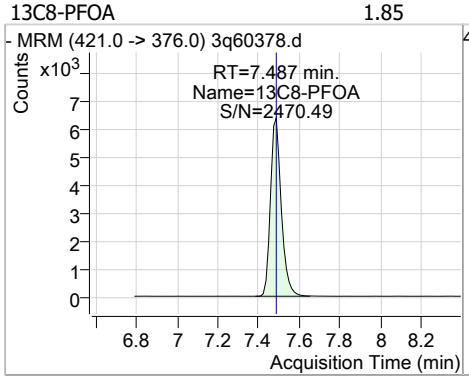


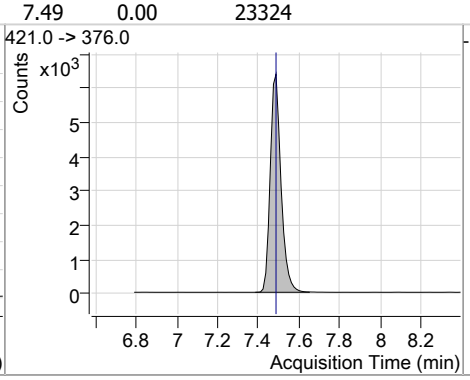


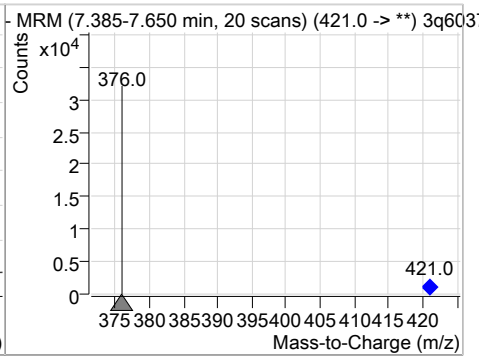




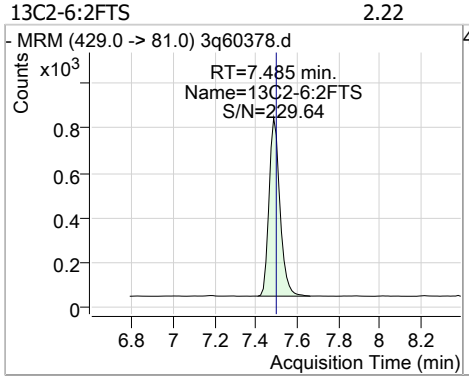
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.85	7.49	0.00	23324				

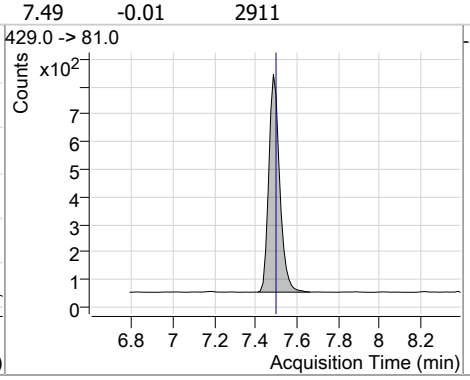


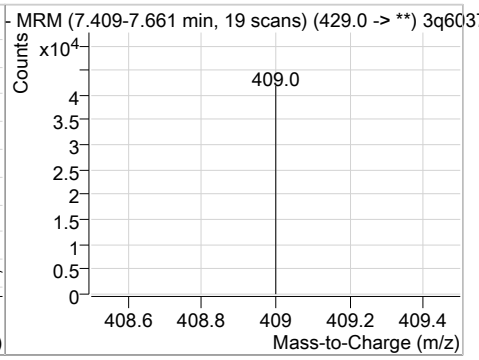




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.22	7.49	-0.01	2911				

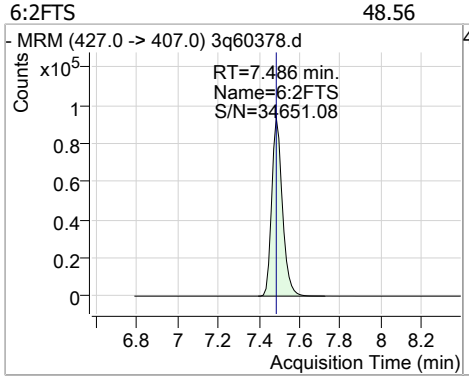


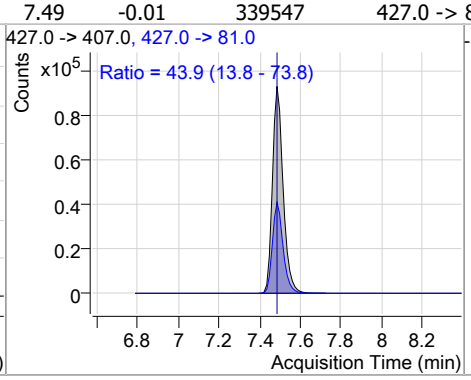


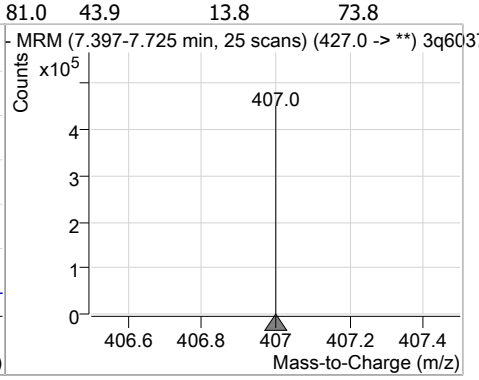


Perfluorinated Compounds by LC/MS/MS

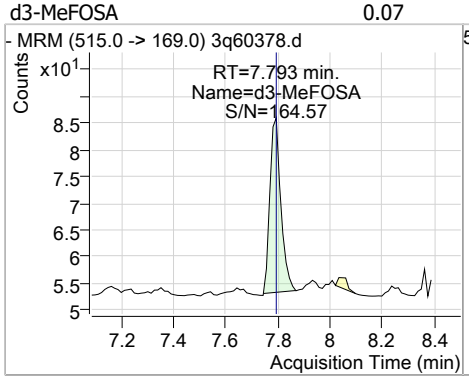
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.56	7.49	-0.01	339547	427.0 -> 81.0	43.9	13.8	73.8

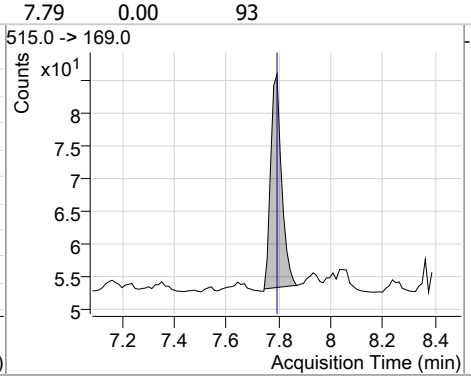


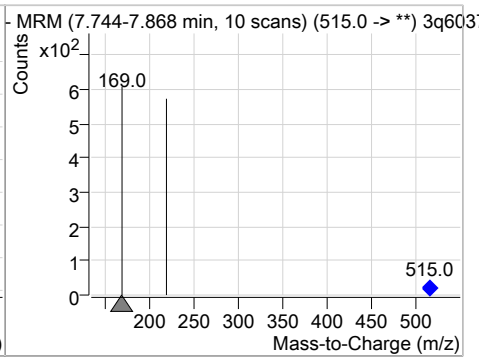




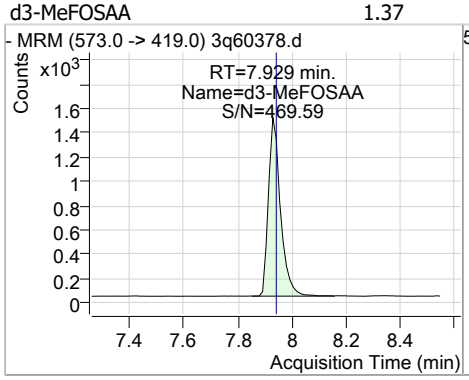
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.07	7.79	0.00	93				

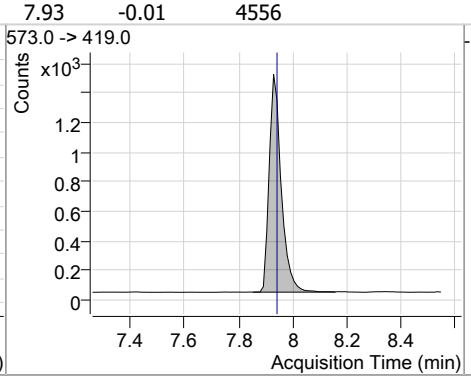


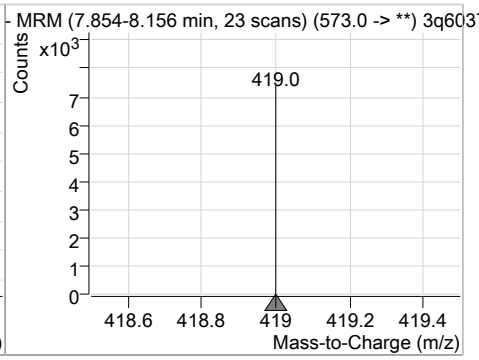




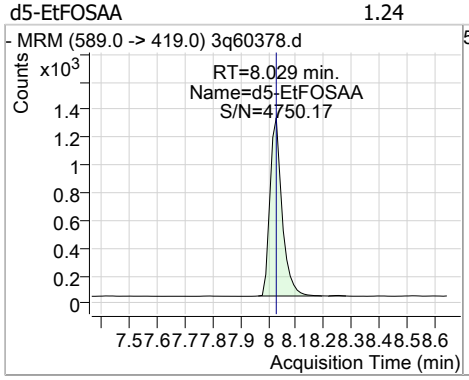
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.37	7.93	-0.01	4556				

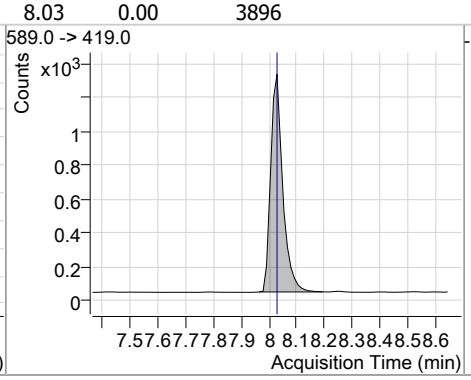


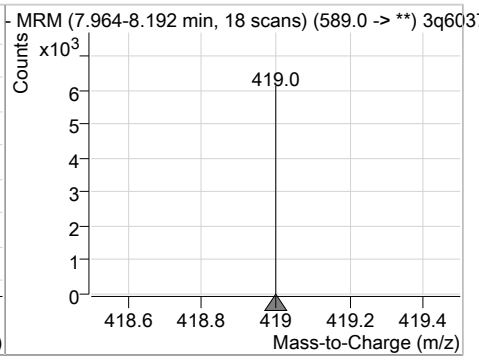




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.24	8.03	0.00	3896				

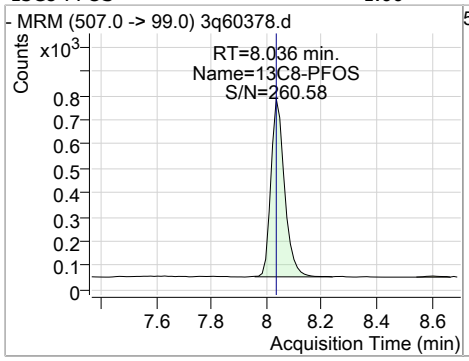


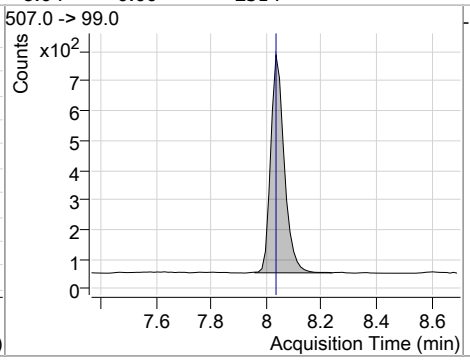


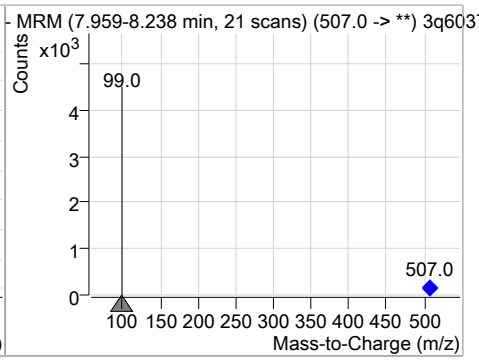


Perfluorinated Compounds by LC/MS/MS

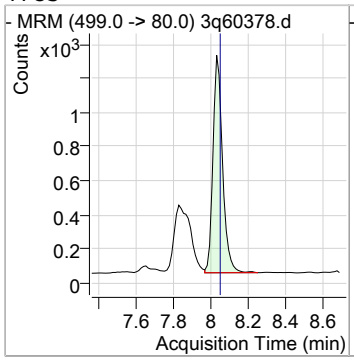
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.60	8.04	0.00	2514				

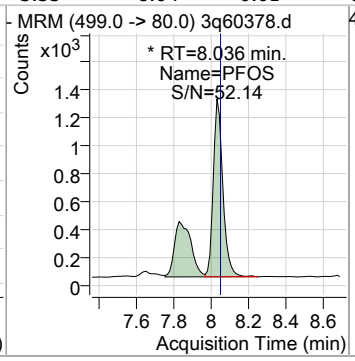


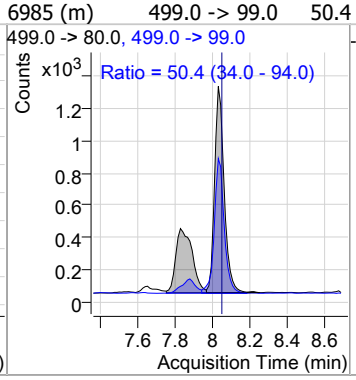


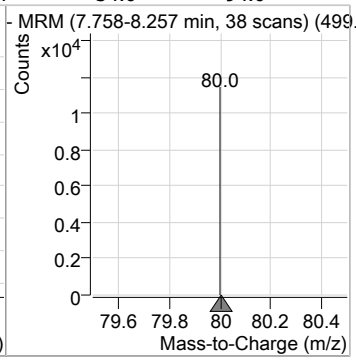


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.55	8.04	-0.01	6985 (m)	499.0 -> 99.0	50.4	34.0	94.0

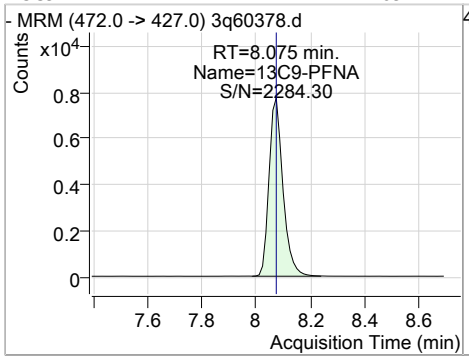


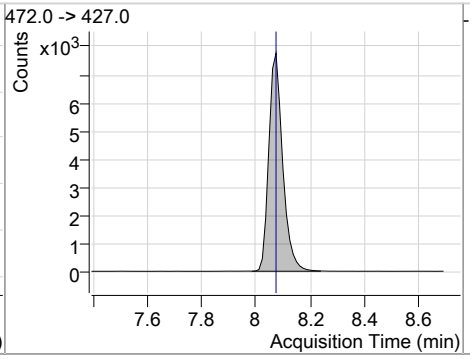


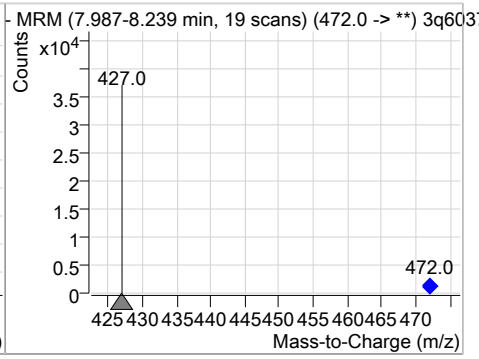




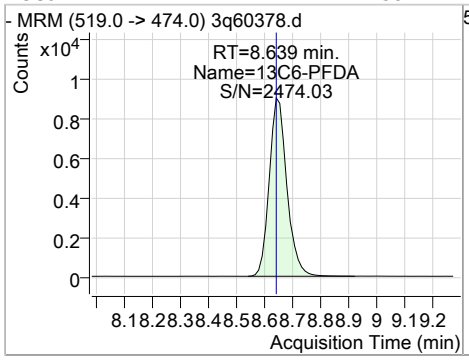
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.69	8.08	0.00	27417				

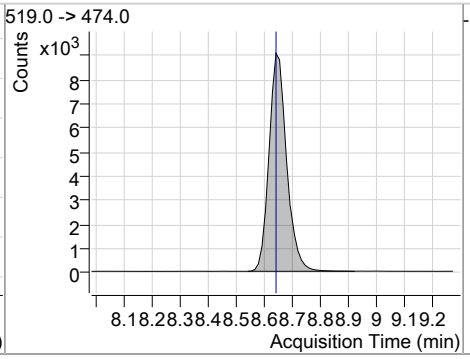


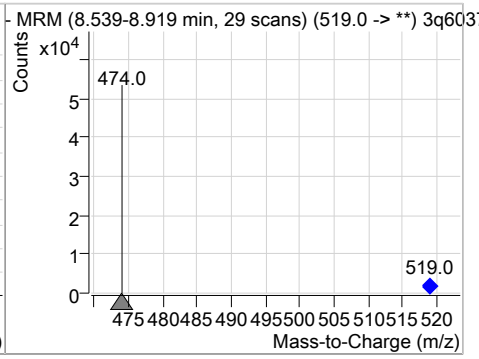




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.58	8.64	0.00	39322				

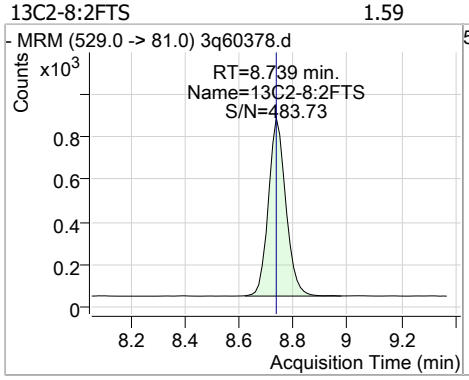


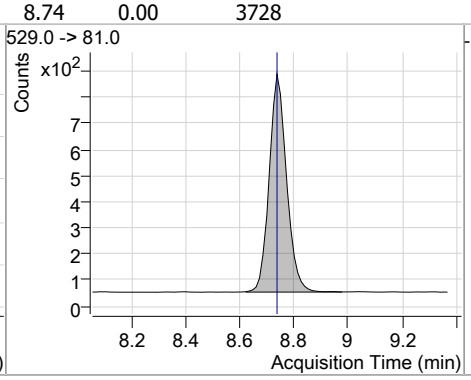


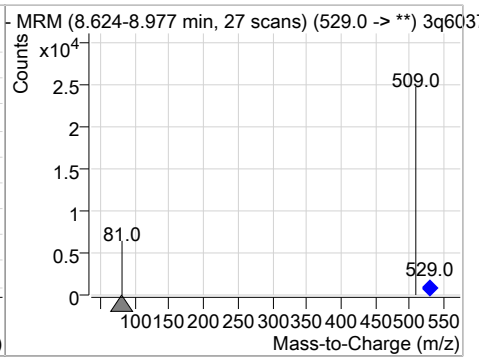


Perfluorinated Compounds by LC/MS/MS

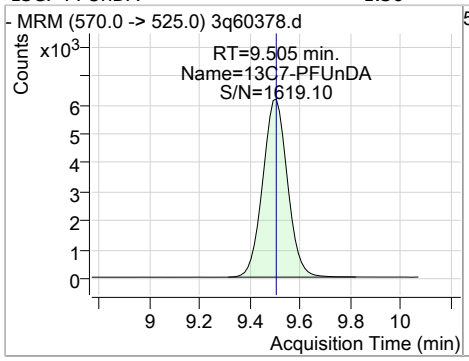
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.59	8.74	0.00	3728				

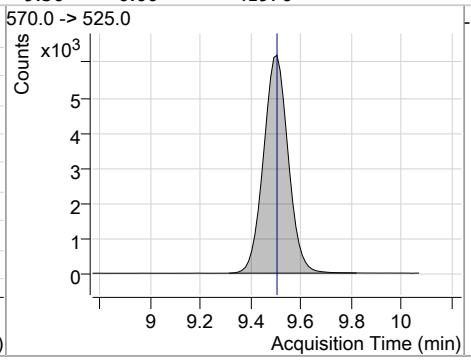


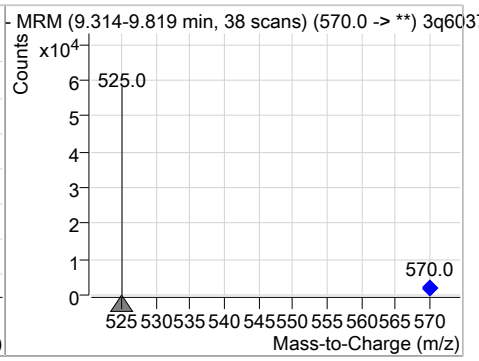




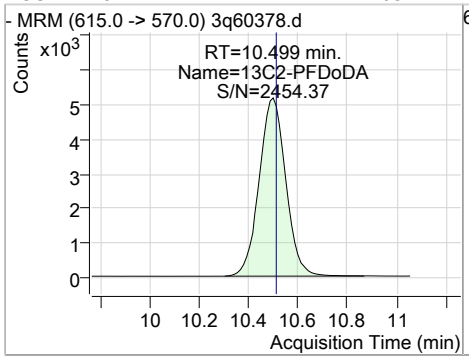
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.36	9.50	0.00	41970				

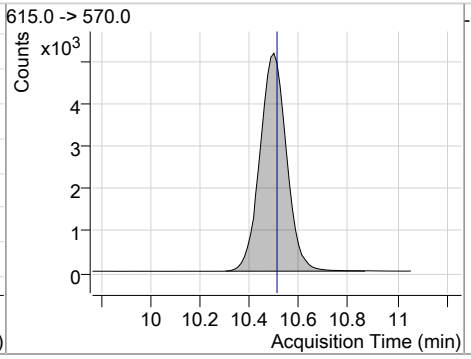


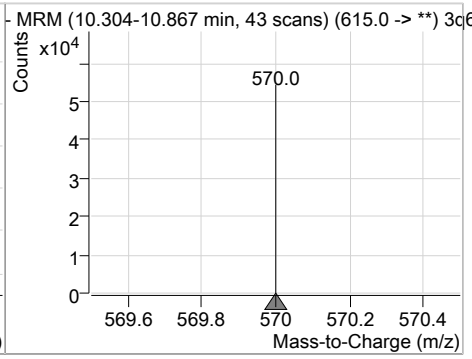




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.05	10.50	-0.01	38556				







Manual Integration Approval Summary

Sample Number: OP91274-DUP
Lab FileID: 3Q60378.D
Injection Time: 05/28/22 00:17
Method: EPA 537M BY ID
Analyst approved: 05/31/22 14:46 Martha Valls
Supervisor approved: 05/31/22 21:13 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.62	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

QQQ Check Tune Report

Agilent Technologies

Instrument Name	Instrument 1
MS Model	G6470A
MS Instrument Serial	SG1752G107
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	23 May 2022 14:27:18
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.55E+0[R]; 2.51E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	3500
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

QQQ Check Tune Report

Agilent Technologies

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.01	0.02	Pass	0.70	0.71	0.01	Pass	86616
302.00	302.01	0.01	Pass	0.70	0.70	0.00	Pass	72919
601.98	602.00	0.02	Pass	0.70	0.71	0.01	Pass	210366
1033.99	1034.07	0.08	Pass	0.70	0.69	-0.01	Pass	297872
1633.95	1633.99	0.04	Pass	0.70	0.67	-0.03	Pass	709860
2233.91	2233.96	0.05	Pass	0.70	0.68	-0.02	Pass	596286

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	0.70	0.63	-0.07	Pass	25152
112.99	113.00	0.01	Pass	0.70	0.71	0.01	Pass	99070
302.00	302.00	0.00	Pass	0.70	0.69	-0.01	Pass	64506
601.98	602.00	0.02	Pass	0.70	0.68	-0.02	Pass	186352
1033.99	1034.05	0.06	Pass	0.70	0.66	-0.04	Pass	224252
1633.95	1634.01	0.06	Pass	0.70	0.64	-0.06	Pass	450466
2233.91	2233.98	0.07	Pass	0.70	0.69	-0.01	Pass	349072

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.87	-0.12	Pass	1.20	1.31	0.11	Pass	108532
302.00	301.89	-0.11	Pass	1.20	1.40	0.20	Pass	92776
601.98	601.79	-0.19	Pass	1.20	1.43	0.23	Pass	330840
1033.99	1033.76	-0.23	Pass	1.20	1.42	0.22	Pass	544734
1633.95	1633.54	-0.41	Pass	1.20	1.31	0.11	Pass	1306686
2233.91	2233.34	-0.57	Adjust	1.20	1.23	0.03	Pass	946395

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.08	0.08	Pass	1.20	1.09	-0.11	Pass	30408
112.99	112.97	-0.02	Pass	1.20	1.17	-0.03	Pass	116577
302.00	301.96	-0.04	Pass	1.20	1.27	0.07	Pass	86794
601.98	601.89	-0.09	Pass	1.20	1.33	0.13	Pass	275824
1033.99	1033.79	-0.20	Pass	1.20	1.36	0.16	Pass	369699
1633.95	1633.61	-0.34	Pass	1.20	1.30	0.10	Pass	853817
2233.91	2233.34	-0.57	Adjust	1.20	1.15	-0.05	Pass	561837

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.75	-0.24	Pass	2.50	2.79	0.29	Pass	136066
302.00	301.81	-0.19	Pass	2.50	2.89	0.39	Pass	120377
601.98	601.75	-0.23	Pass	2.50	2.81	0.31	Pass	447099
1033.99	1033.71	-0.28	Pass	2.50	2.67	0.17	Pass	937200
1633.95	1633.54	-0.41	Pass	2.50	2.49	-0.01	Pass	3060283
2233.91	2233.27	-0.64	Pass	2.50	2.41	-0.09	Pass	3356864

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.08	0.08	Pass	2.50	2.32	-0.18	Pass	35683
112.99	113.00	0.01	Pass	2.50	2.44	-0.06	Pass	141578
302.00	301.96	-0.04	Pass	2.50	2.49	-0.01	Pass	110805
601.98	601.87	-0.11	Pass	2.50	2.53	0.03	Pass	408185
1033.99	1033.78	-0.21	Pass	2.50	2.57	0.07	Pass	637691
1633.95	1633.62	-0.33	Pass	2.50	2.39	-0.11	Pass	2076547
2233.91	2233.35	-0.56	Pass	2.50	2.35	-0.15	Pass	1788358

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60346.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 2:19:32 PM
Sample Name : ic824-0.5
Vial : P1-A2
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

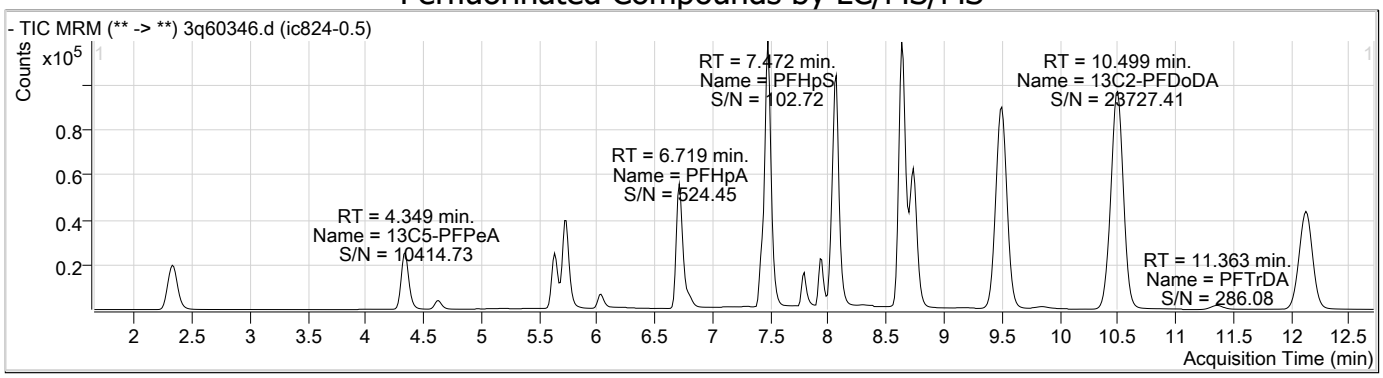
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	117226	20.00	µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	111928	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	152566	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	197867	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	249587	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	320318	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	486631	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	601129	20.00	µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	712571	20.00	µg/L	-0.013
M2-PFTeDA	12.126	715.0 -> 670.0	346043	20.00	µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	77285	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15312	20.00	µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	19094	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	30683	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	10892	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	26003	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	45457	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	64150	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	21749	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	24465	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	61521	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	10892	19.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-6:2FTS	7.485	429.0 -> 81.0	26003	19.87	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C2-8:2FTS	8.739	529.0 -> 81.0	45457	19.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C2-PFDoDA	10.499	615.0 -> 570.0	712571	19.44	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-PFTeDA	12.126	715.0 -> 670.0	346043	19.34	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFBS	4.629	302.0 -> 99.0	15312	19.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C3-PFHxS	6.738	402.0 -> 99.0	19094	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C4-PFBA	2.327	217.0 -> 172.0	117226	19.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C4-PFHpA	6.718	367.0 -> 322.0	197867	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C5-PFHxA	5.739	318.0 -> 273.0	152566	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C5-PFPeA	4.349	268.0 -> 223.0	111928	19.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C6-PFDA	8.639	519.0 -> 474.0	486631	19.49	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

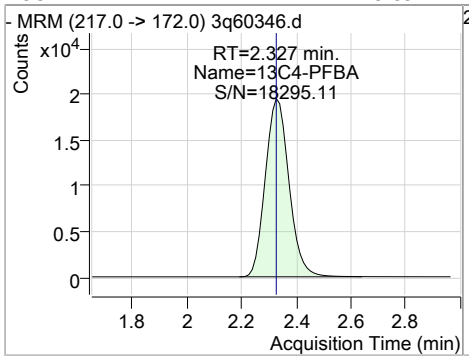
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%			
13C7-PFUnDA	9.505	570.0 -> 525.0	601129	19.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%			
13C8-FOSA	7.430	506.0 -> 78.0	77285	20.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-PFOA	7.487	421.0 -> 376.0	249587	19.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
13C8-PFOS	8.036	507.0 -> 99.0	30683	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C9-PFNA	8.075	472.0 -> 427.0	320318	19.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
d3-MeFOSAA	7.929	573.0 -> 419.0	64150	19.35	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	21736	19.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
d3-MeFOSA	7.793	515.0 -> 169.0	24465	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d5-EtFOSAA	8.029	589.0 -> 419.0	61545	19.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	2375	0.50	µg/L		97
6:2FTS	7.486	427.0 -> 407.0	3113	0.50	µg/L		92
8:2FTS	8.740	527.0 -> 507.0	5298	0.49	µg/L		94
EtFOSAA	8.029	584.0 -> 419.0	1214	0.51	µg/L	m	100
FOSA	7.432	498.0 -> 78.0	1843	0.52	µg/L		98
MeFOSAA	7.942	570.0 -> 419.0	1312	0.51	µg/L	m	93
PFBA	2.333	213.0 -> 169.0	1200	0.53	µg/L		100
PFBS	4.619	299.0 -> 80.0	983	0.51	µg/L		98
PFDA	8.640	513.0 -> 469.0	10190	0.50	µg/L		99
PFDoDA	10.491	613.0 -> 569.0	14989	0.49	µg/L		99
PFDS	9.388	599.0 -> 80.0	585	0.51	µg/L		100
PFHpA	6.719	363.0 -> 319.0	7359	0.51	µg/L		100
PFHpS	7.472	449.0 -> 80.0	1095	0.55	µg/L		97
PFHxA	5.740	313.0 -> 269.0	3215	0.50	µg/L		99
PFHxS	6.739	399.0 -> 80.0	1026	0.51	µg/L	m	88
PFNA	8.075	463.0 -> 419.0	7479	0.49	µg/L		95
PFNS	8.584	549.0 -> 80.0	986	0.53	µg/L		97
PFOA	7.487	413.0 -> 369.0	5799	0.50	µg/L		97
PFOS	8.036	499.0 -> 80.0	1247	0.52	µg/L	m	85
PFPeA	4.352	263.0 -> 219.0	4204	0.51	µg/L		100
PFPeS	5.845	349.0 -> 80.0	614	0.47	µg/L		85
PFTeDA	12.130	713.0 -> 669.0	11736	0.52	µg/L		99
PFTrDA	11.363	663.0 -> 619.0	13714	0.50	µg/L		99
PFUnDA	9.506	563.0 -> 519.0	13914	0.49	µg/L		100
11Cl-PF3OUdS	9.849	631.0 -> 451.0	4026	0.48	µg/L		100
9Cl-PF3ONS	8.296	531.0 -> 351.0	795	0.47	µg/L		93
ADONA	6.807	377.0 -> 251.0	10151	0.48	µg/L		99
HFPO-DA	6.038	329.0 -> 169.0	1529	0.50	µg/L		99
MeFOSA	7.794	512.0 -> 169.0	616	0.51	µg/L		90

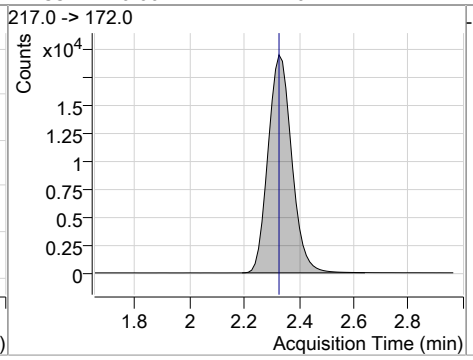
 # = Qualifier out of range, m = manually integrated, + = Area summed

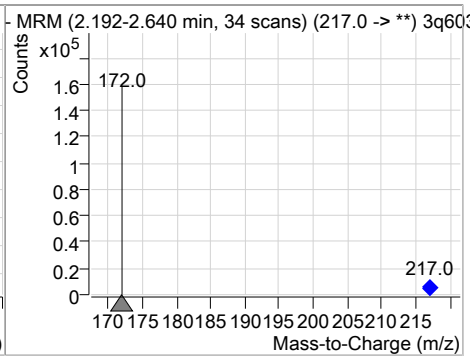
Perfluorinated Compounds by LC/MS/MS



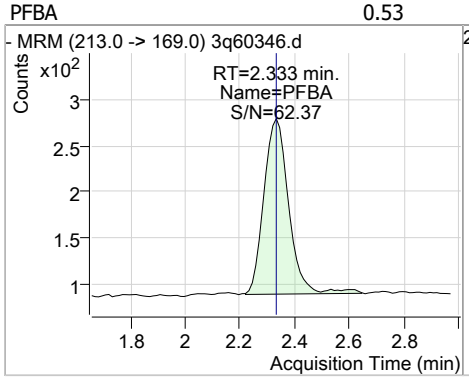
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.39	2.33	0.00	117226				

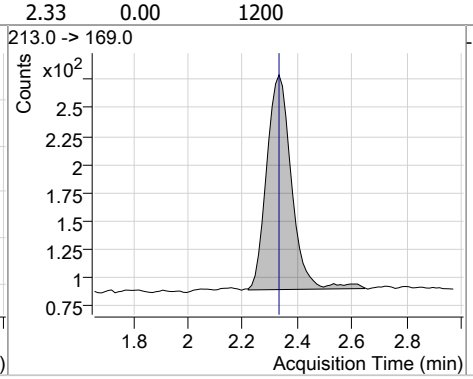


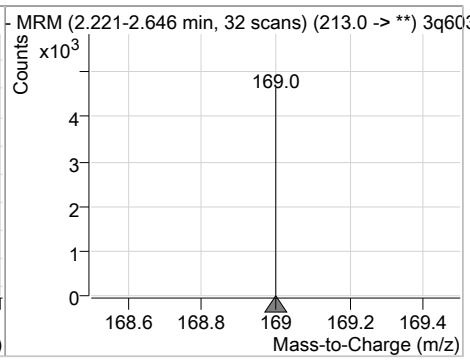




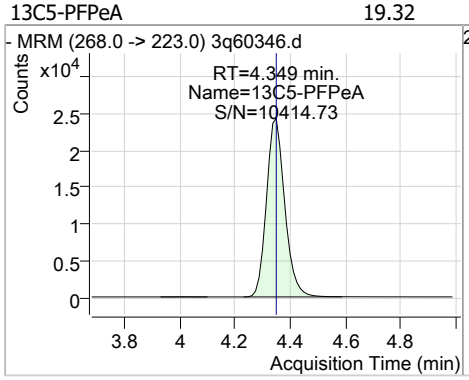
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.53	2.33	0.00	1200				

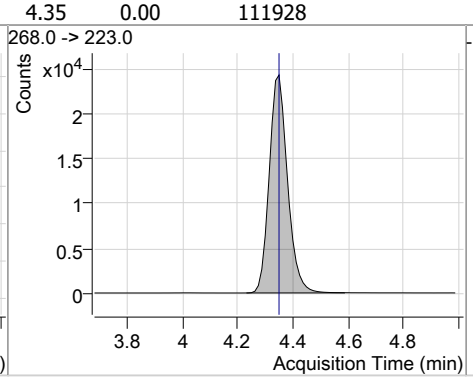


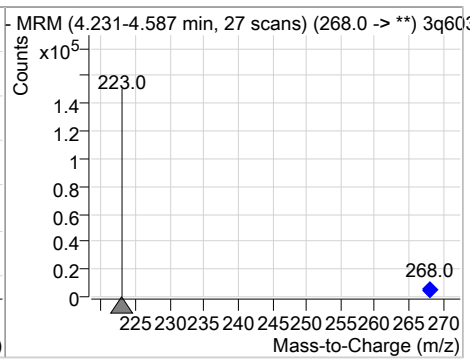




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.32	4.35	0.00	111928				

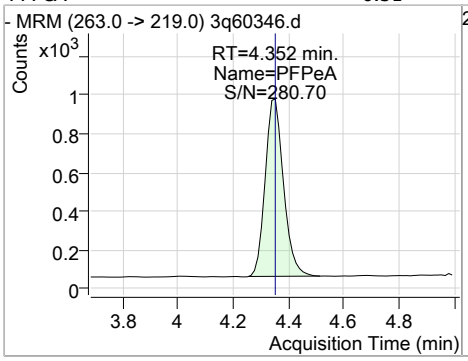


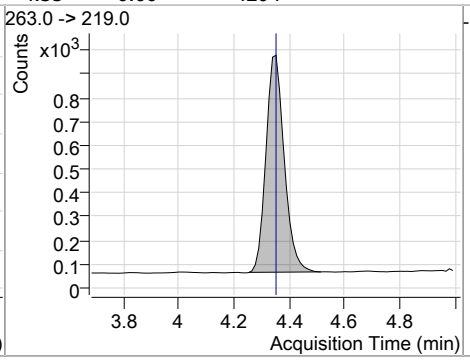


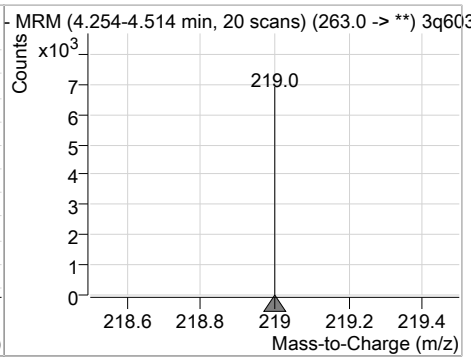


Perfluorinated Compounds by LC/MS/MS

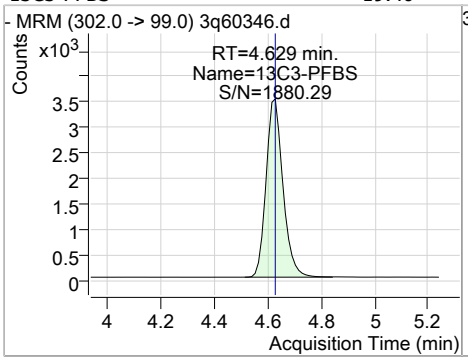
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.51	4.35	0.00	4204				

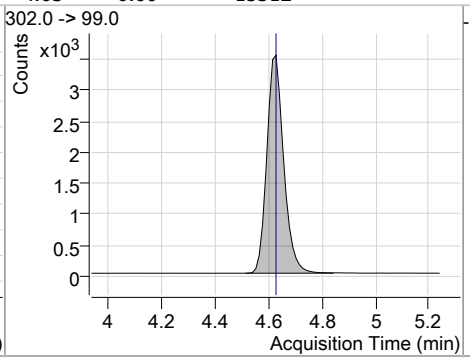


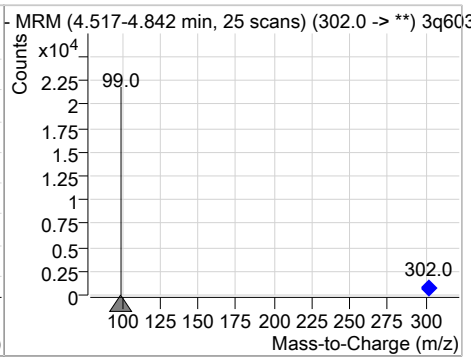




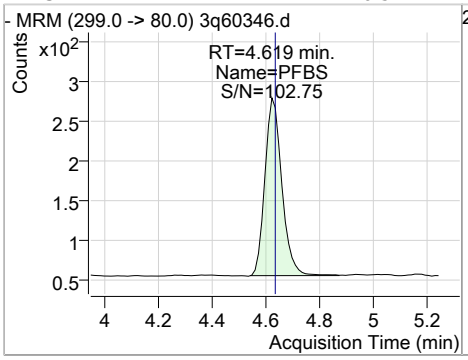
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.40	4.63	0.00	15312				

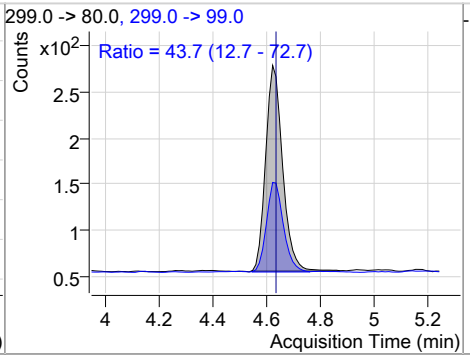


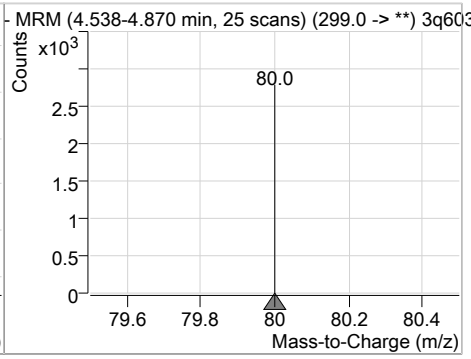




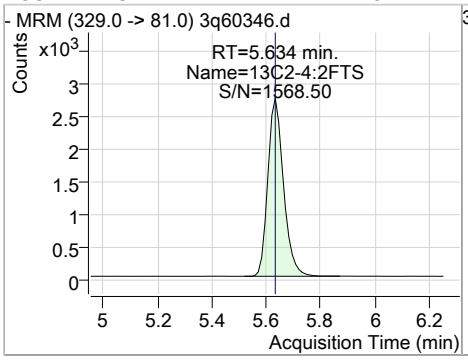
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.51	4.62	-0.01	983	299.0 -> 99.0	43.7	12.7	72.7

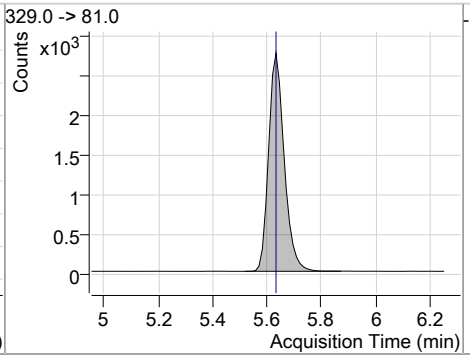


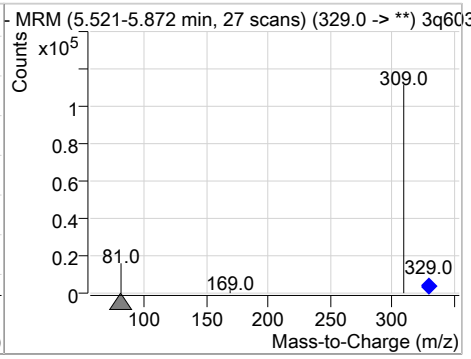




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.44	5.63	0.00	10892				

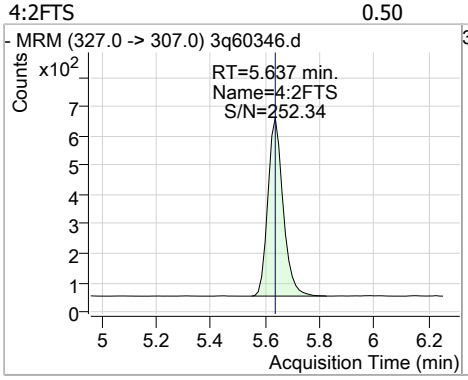


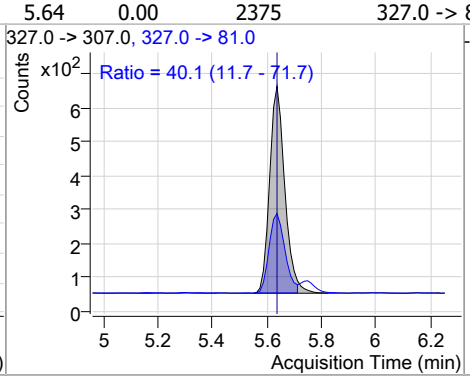


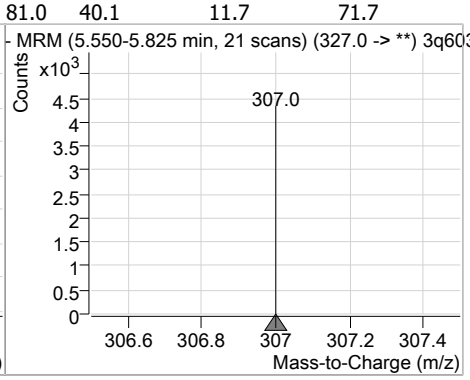


Perfluorinated Compounds by LC/MS/MS

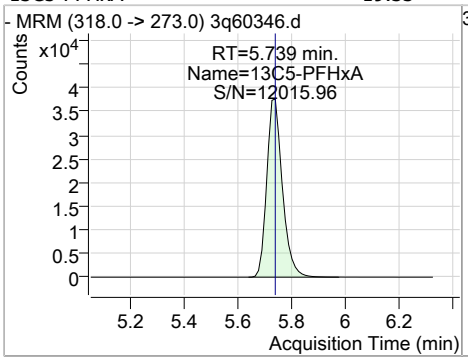
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.50	5.64	0.00	2375	327.0 -> 81.0	40.1	11.7	71.7

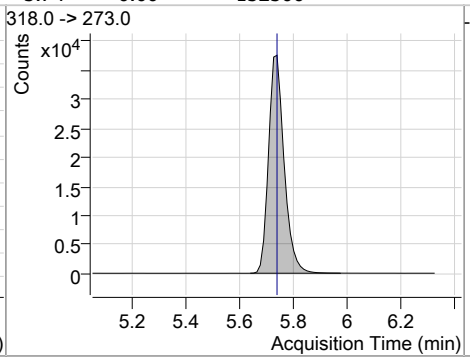


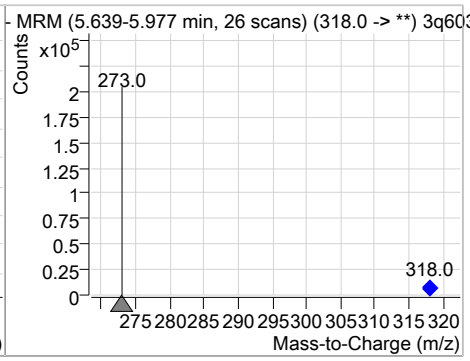




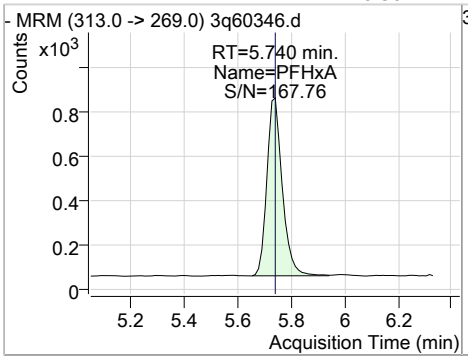
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.33	5.74	0.00	152566				

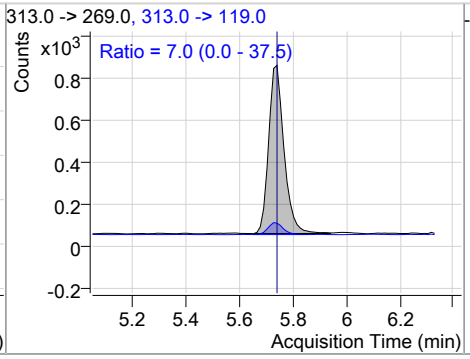


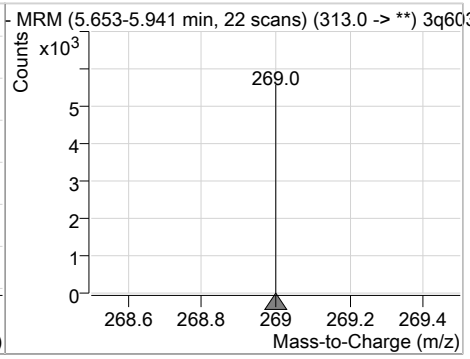




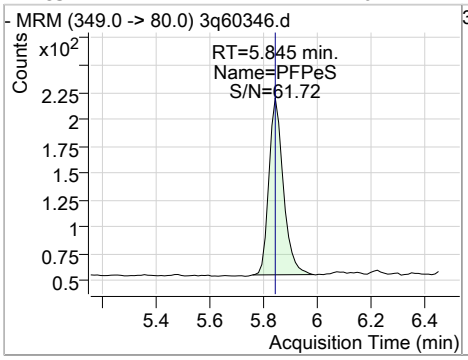
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.50	5.74	0.00	3215	313.0 -> 119.0	7.0	0.0	37.5

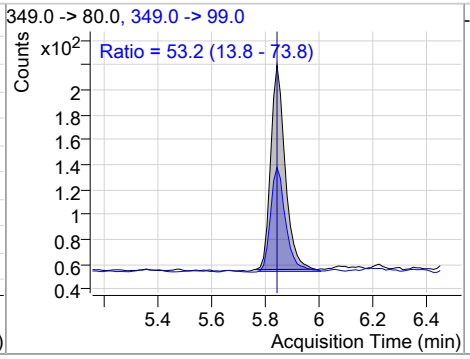


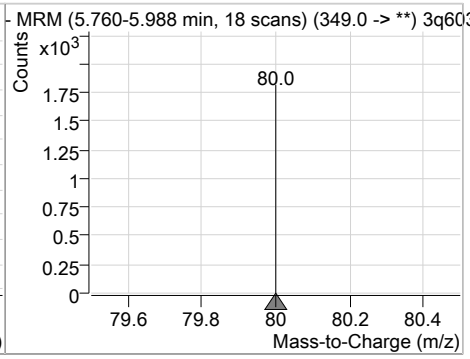




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.47	5.84	0.00	614	349.0 -> 99.0	53.2	13.8	73.8

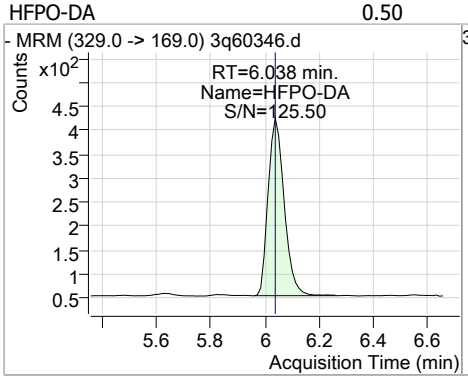


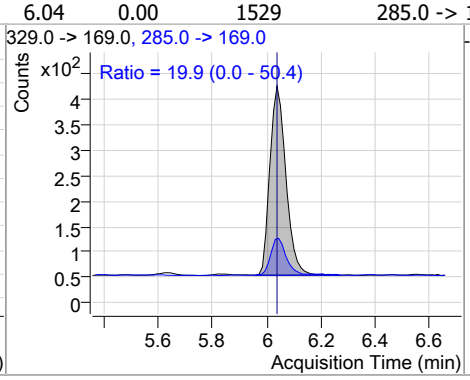


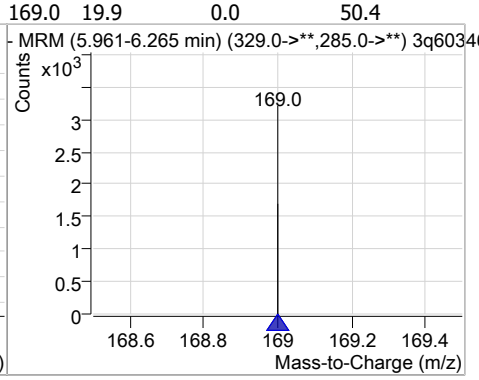


Perfluorinated Compounds by LC/MS/MS

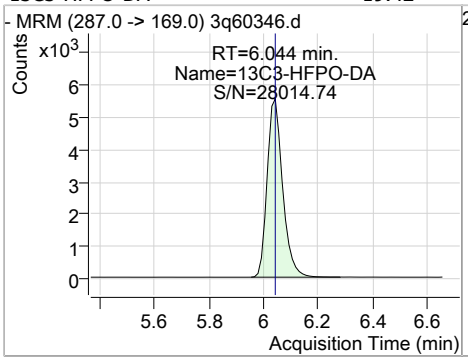
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.50	6.04	0.00	1529	285.0 -> 169.0	19.9	0.0	50.4

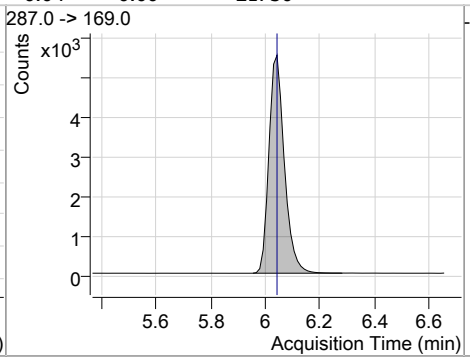


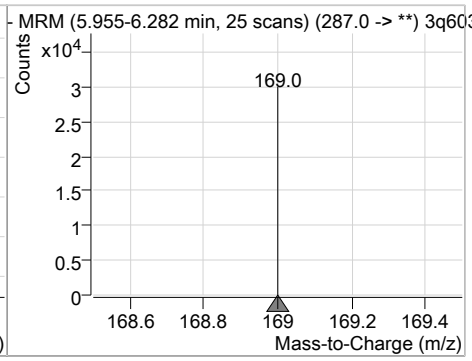




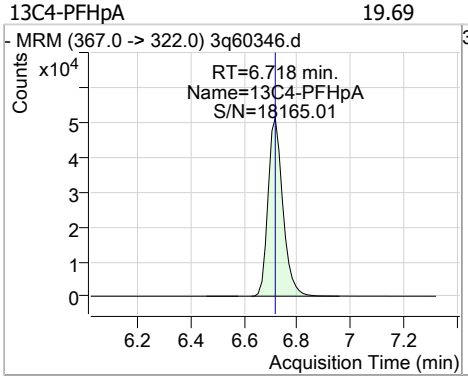
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.42	6.04	0.00	21736				

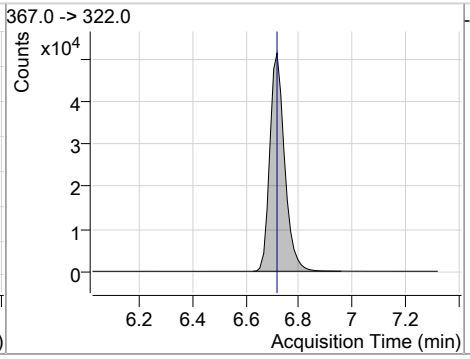


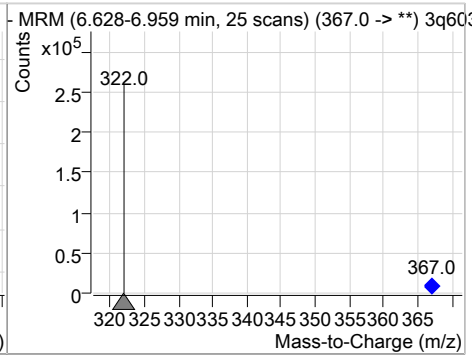




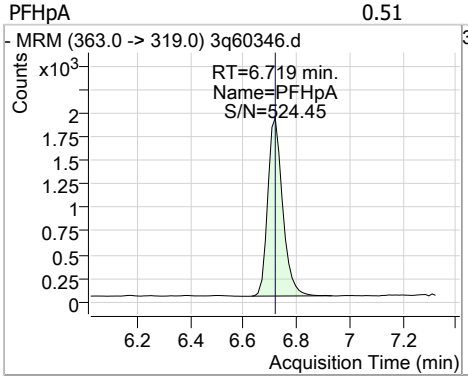
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.69	6.72	0.00	197867				

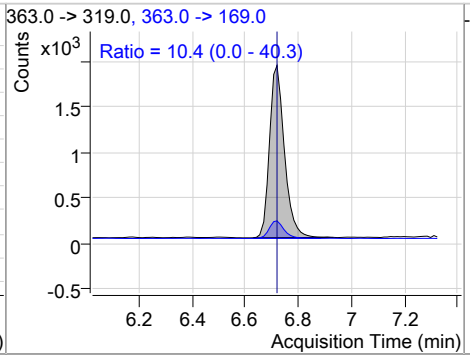


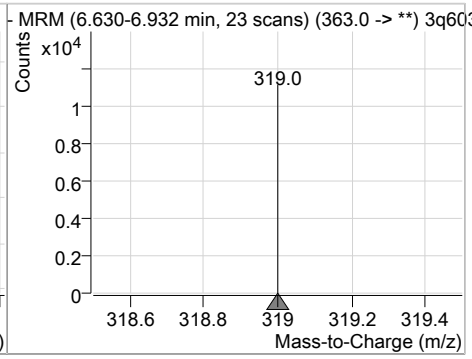




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.51	6.72	0.00	7359	363.0 -> 169.0	10.4	0.0	40.3

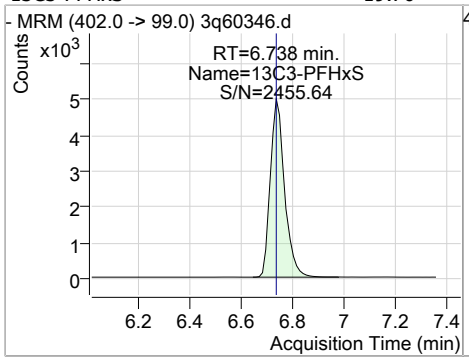


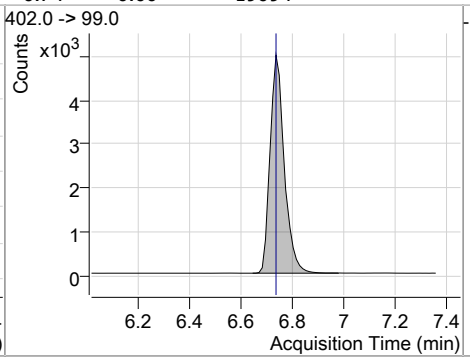


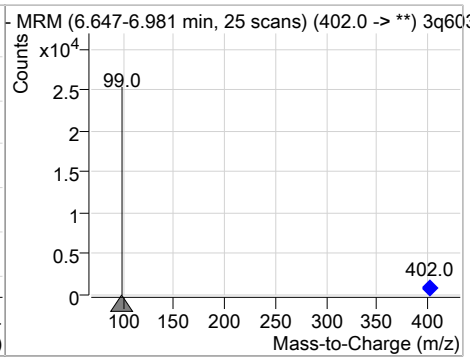


Perfluorinated Compounds by LC/MS/MS

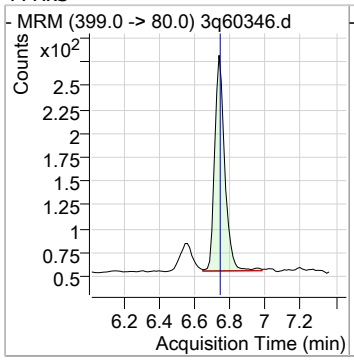
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.70	6.74	0.00	19094				

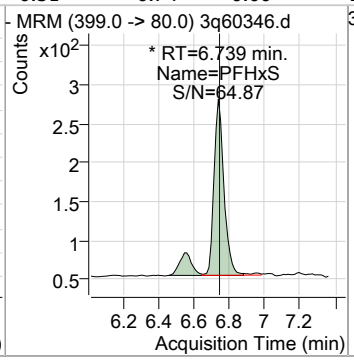


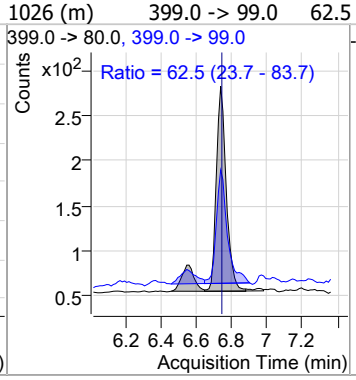


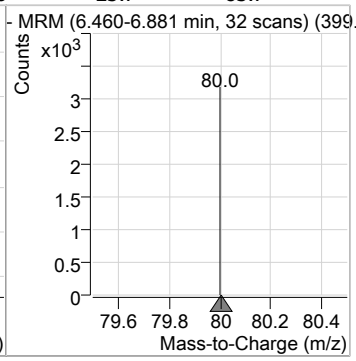


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.51	6.74	0.00	1026 (m)	399.0 -> 99.0	62.5	23.7	83.7

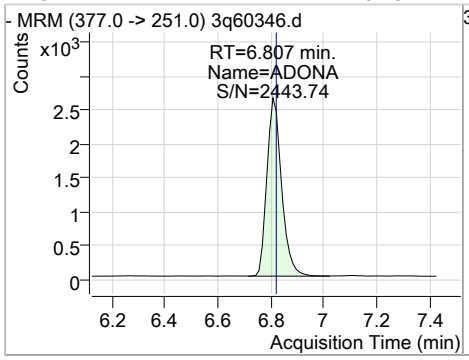


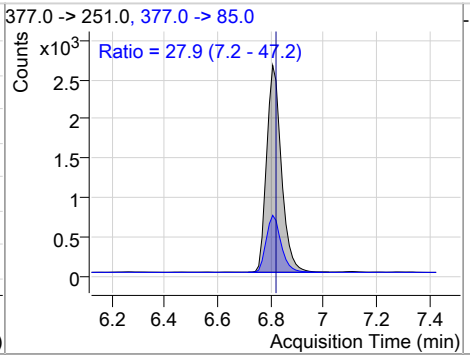


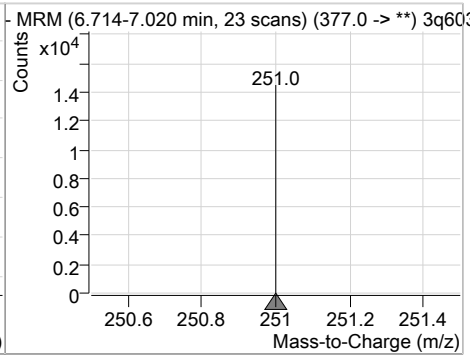




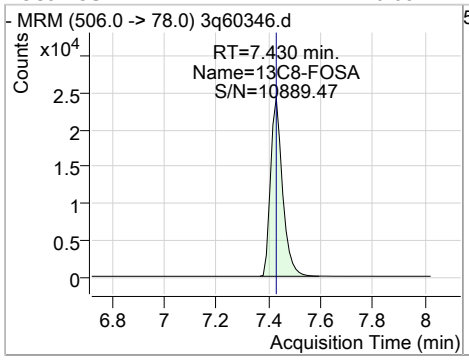
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.48	6.81	-0.01	10151	377.0 -> 85.0	27.9	7.2	47.2

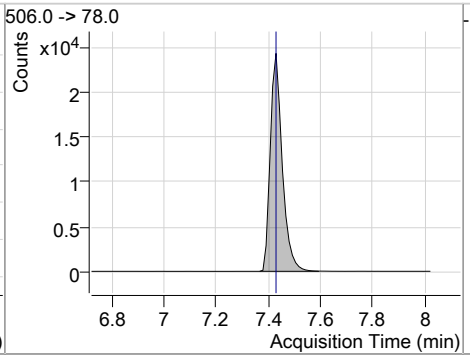


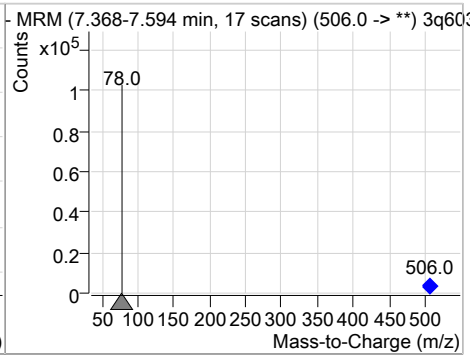




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.08	7.43	0.00	77285				

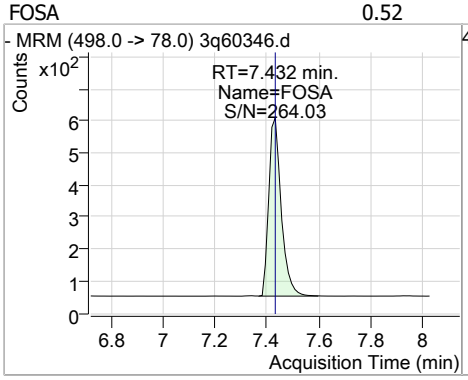


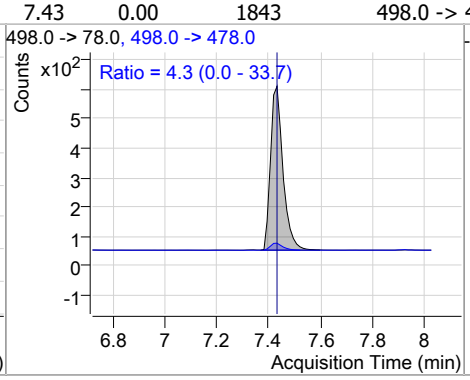


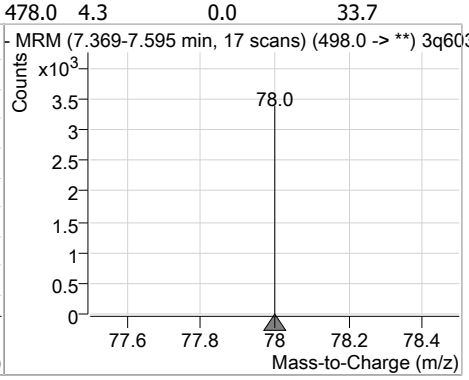


Perfluorinated Compounds by LC/MS/MS

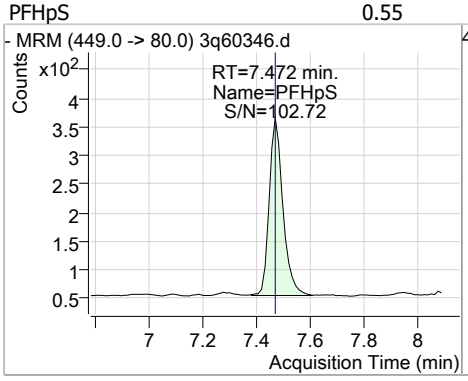
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.52	7.43	0.00	1843	498.0 -> 478.0	4.3	0.0	33.7

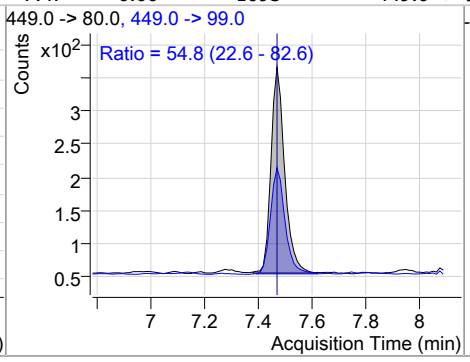


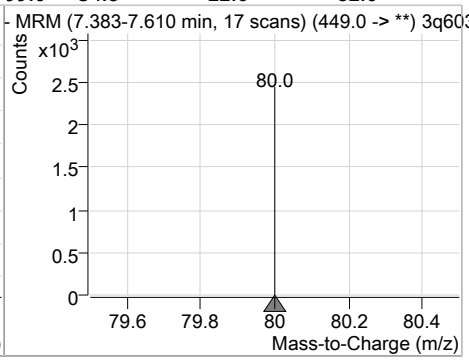




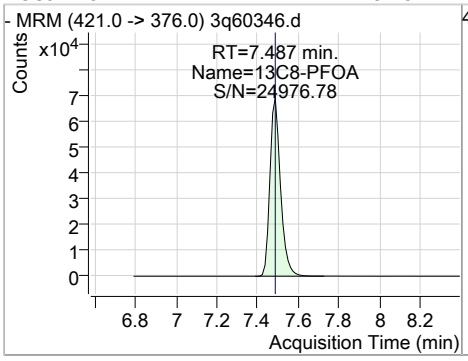
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.55	7.47	0.00	1095	449.0 -> 99.0	54.8	22.6	82.6

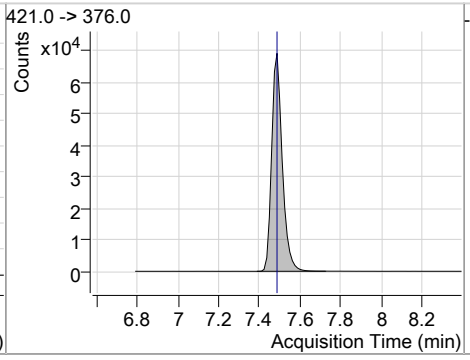


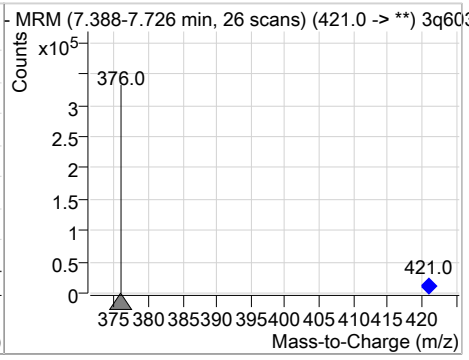




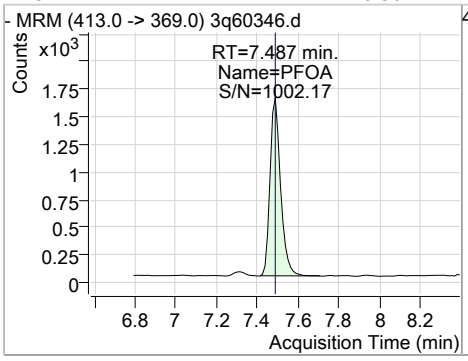
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.75	7.49	0.00	249587				

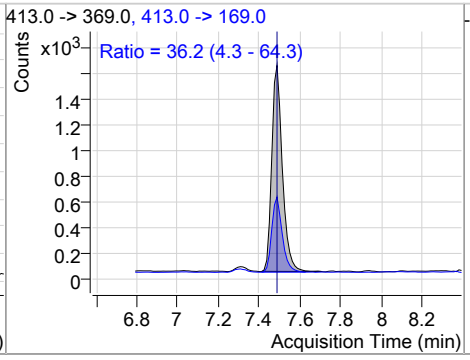


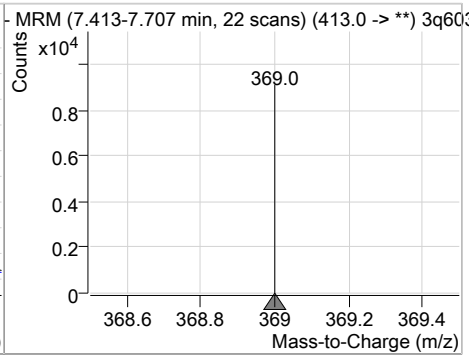




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.50	7.49	0.00	5799	413.0 -> 169.0	36.2	4.3	64.3

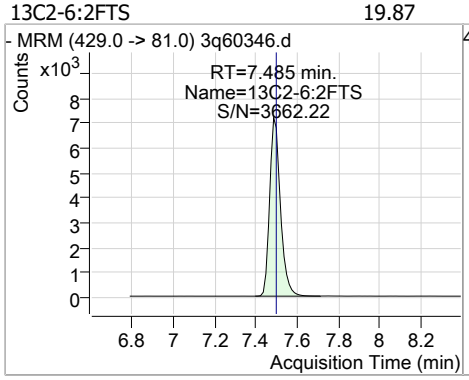


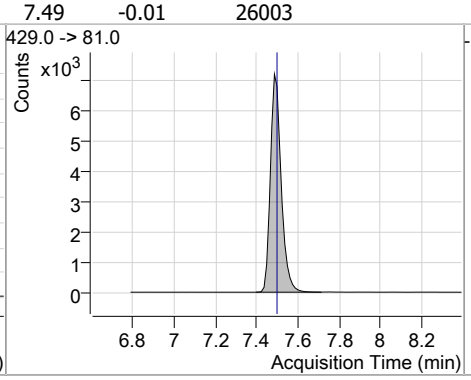


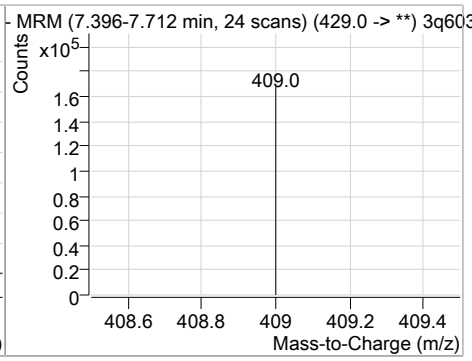


Perfluorinated Compounds by LC/MS/MS

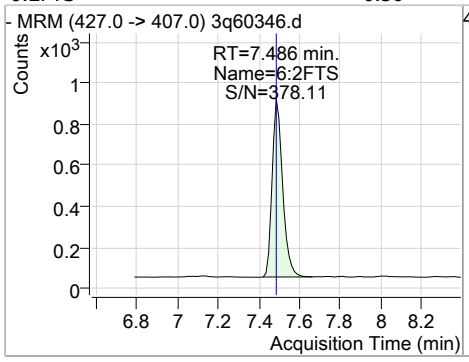
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.87	7.49	-0.01	26003				

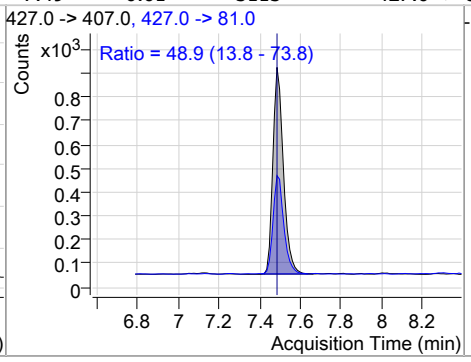


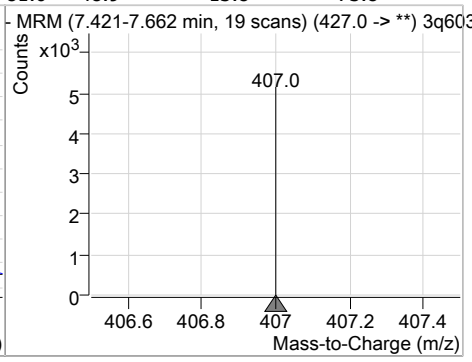




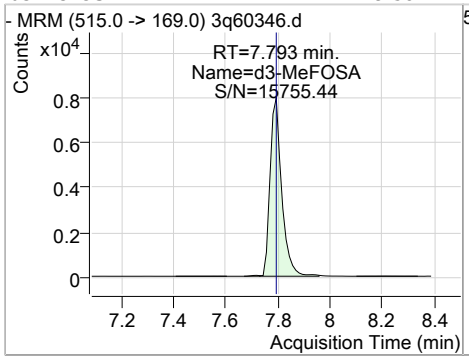
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.50	7.49	-0.01	3113	427.0 -> 81.0	48.9	13.8	73.8

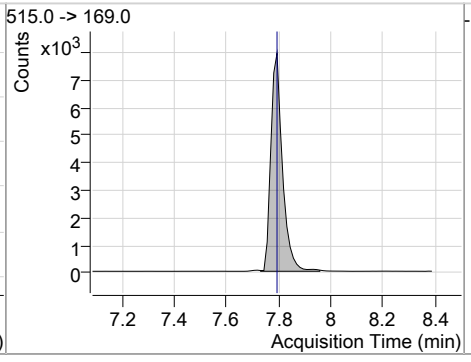


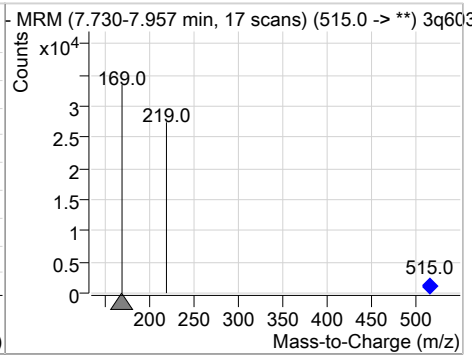




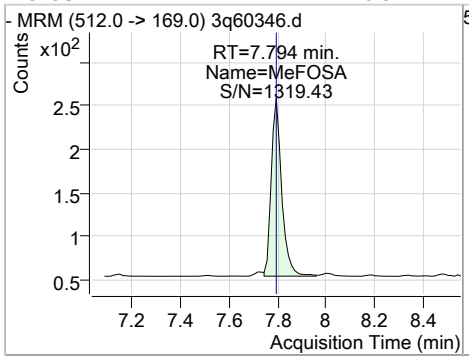
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.58	7.79	0.00	24465				

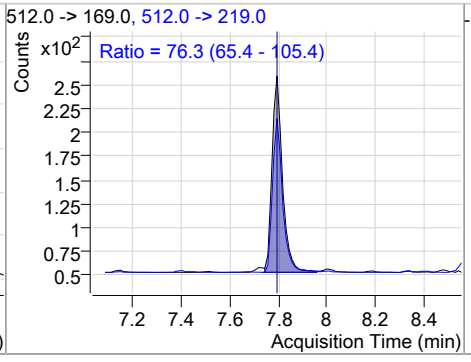


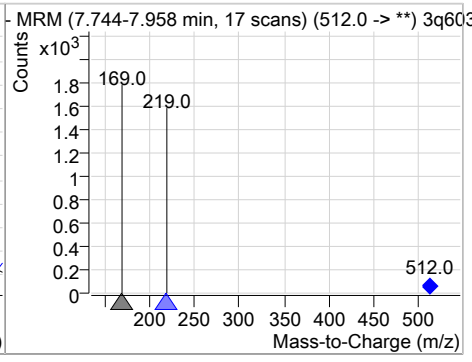




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.51	7.79	0.00	616	512.0 -> 219.0	76.3	65.4	105.4

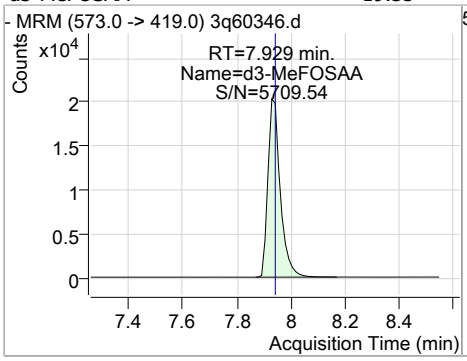


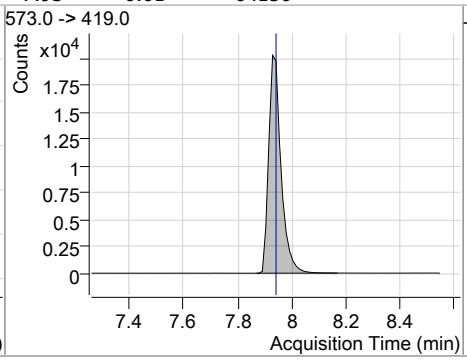


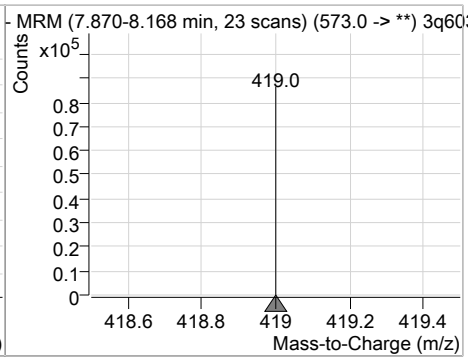


Perfluorinated Compounds by LC/MS/MS

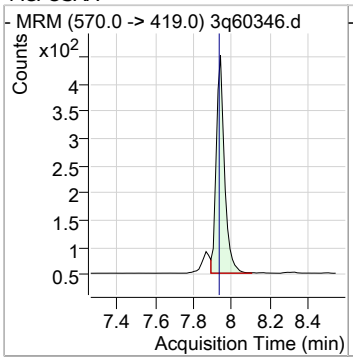
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.35	7.93	-0.01	64150				

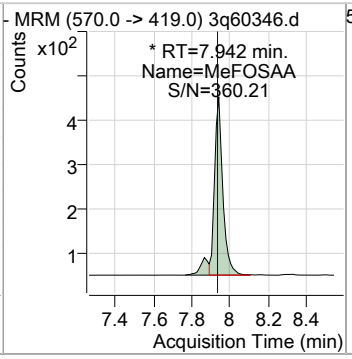


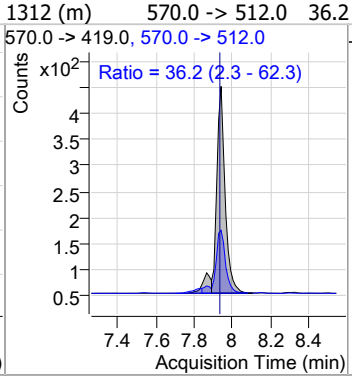


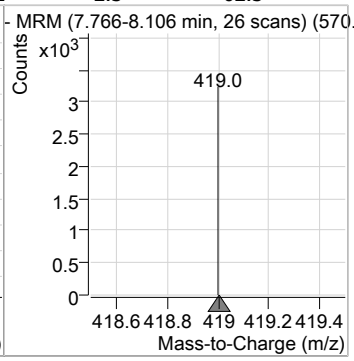


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.51	7.94	0.00	1312 (m)	570.0 -> 512.0	36.2	2.3	62.3

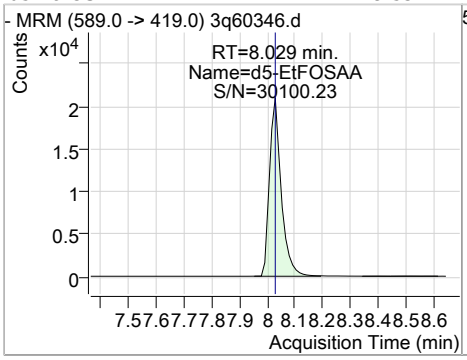


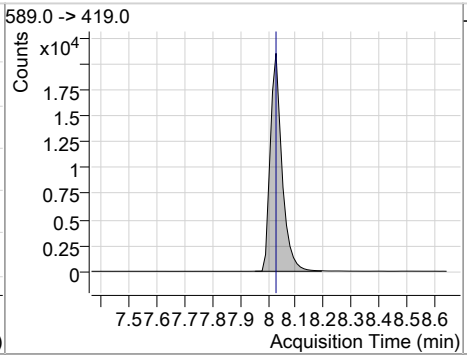


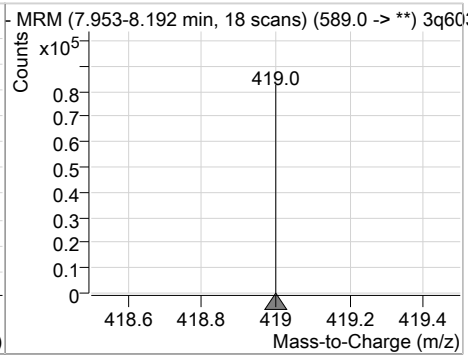




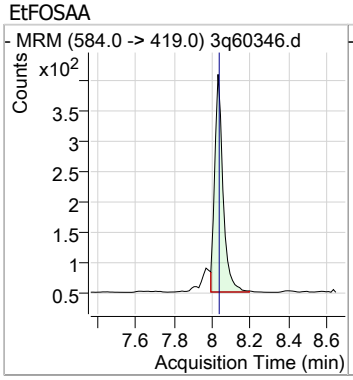
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.53	8.03	0.00	61545				

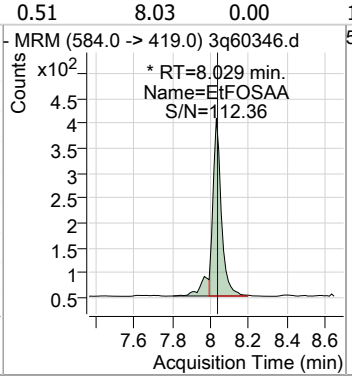


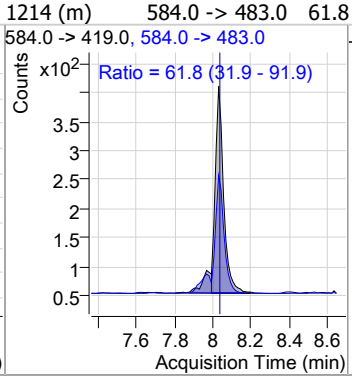


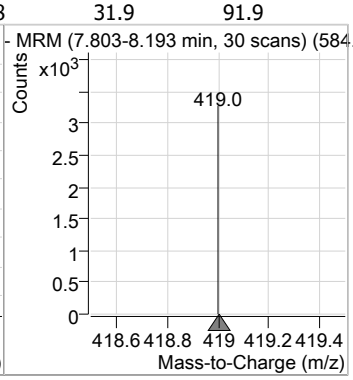


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.51	8.03	0.00	1214 (m)	584.0 -> 483.0	61.8	31.9	91.9



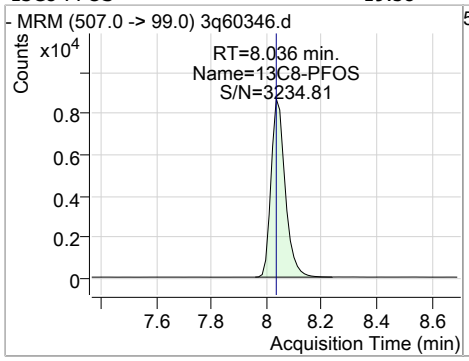


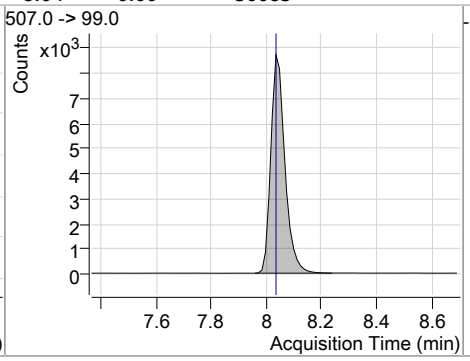


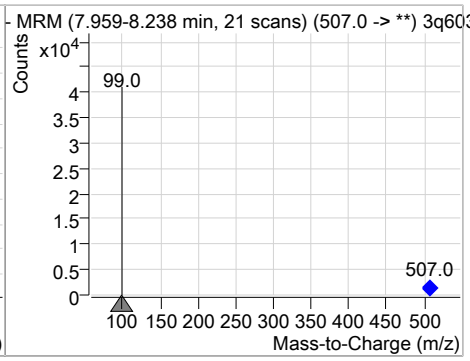


Perfluorinated Compounds by LC/MS/MS

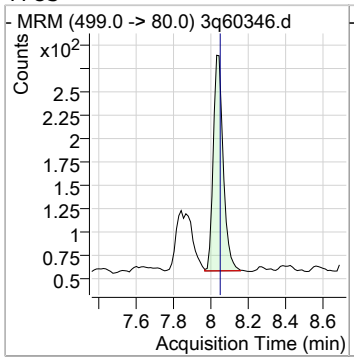
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.58	8.04	0.00	30683				

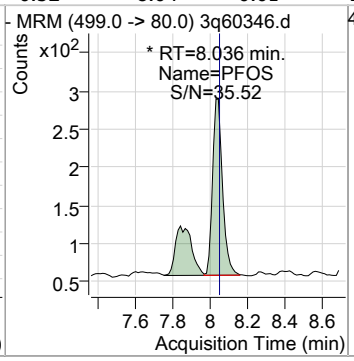


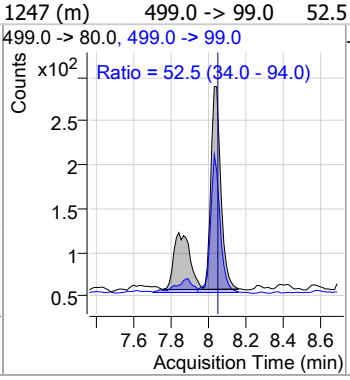


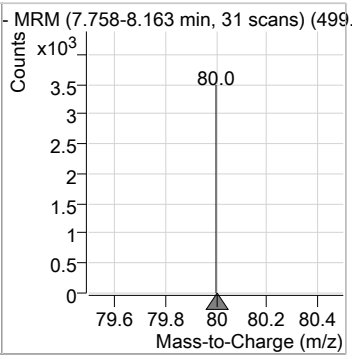


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.52	8.04	-0.01	1247 (m)	499.0 -> 99.0	52.5	34.0	94.0

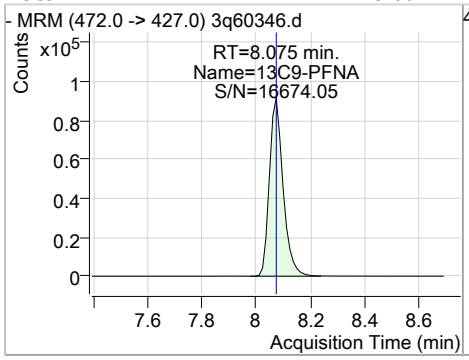


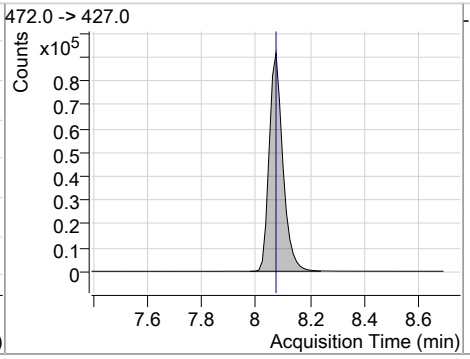


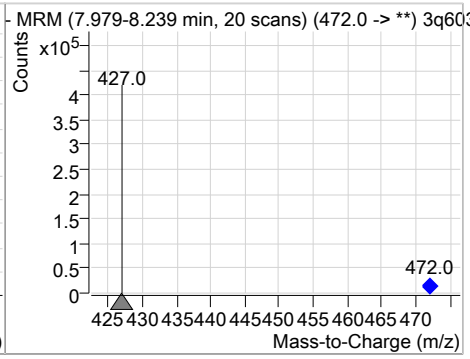




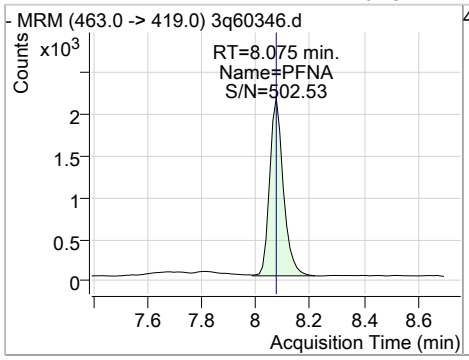
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.80	8.08	0.00	320318				

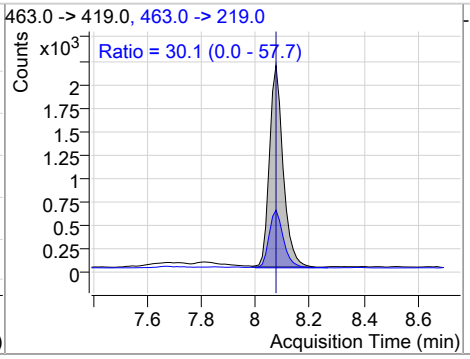


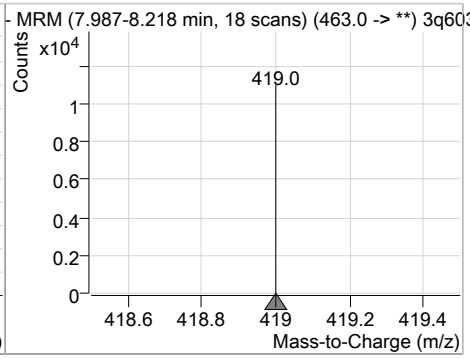




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	8.08	0.00	7479	463.0 -> 219.0	30.1	0.0	57.7

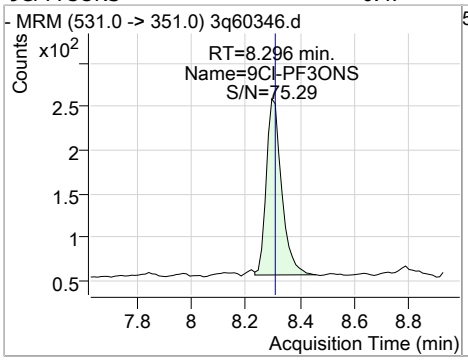


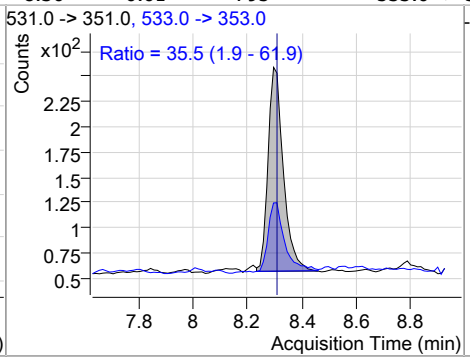


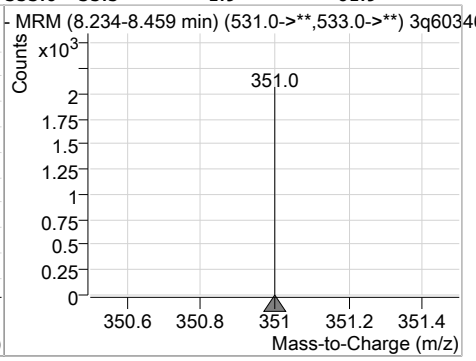


Perfluorinated Compounds by LC/MS/MS

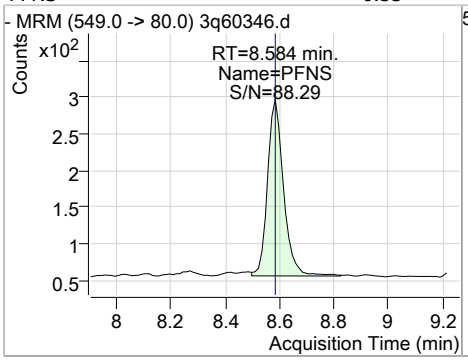
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.47	8.30	-0.01	795	533.0 -> 353.0	35.5	1.9	61.9

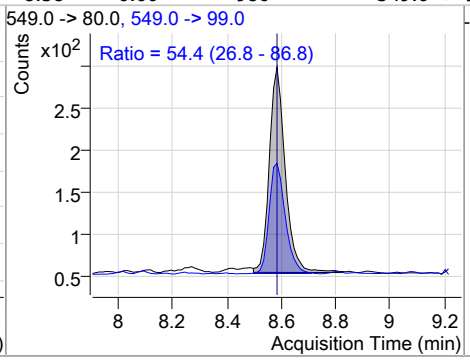


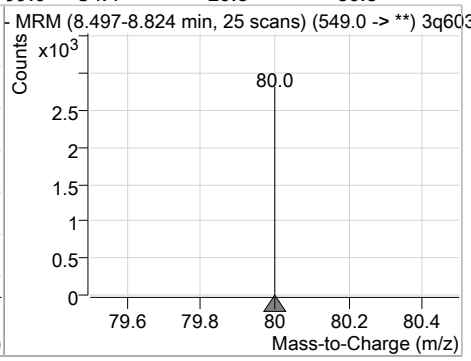




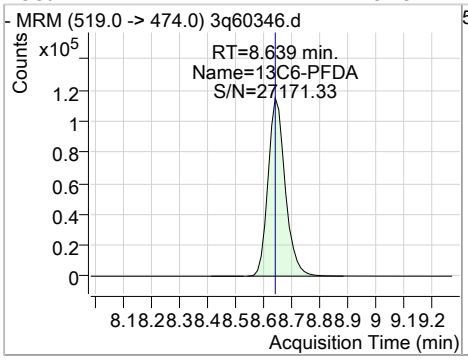
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.53	8.58	0.00	986	549.0 -> 99.0	54.4	26.8	86.8

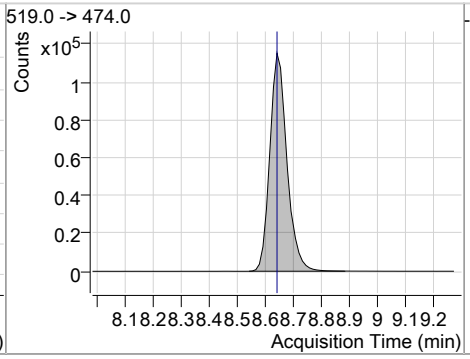


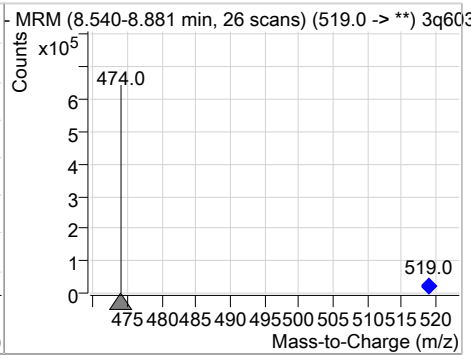




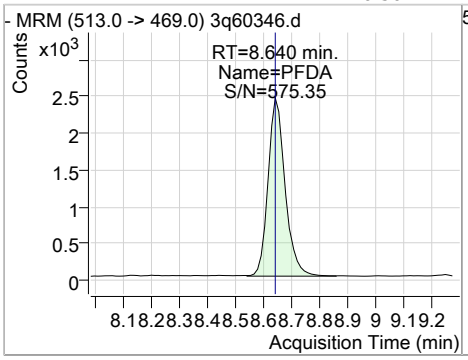
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.49	8.64	0.00	486631				

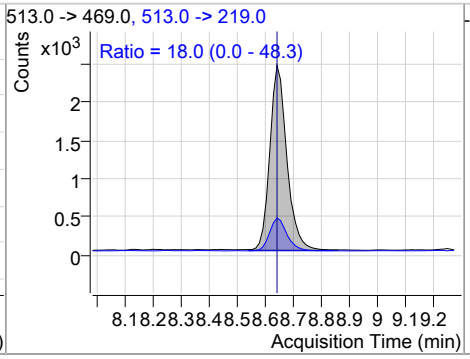


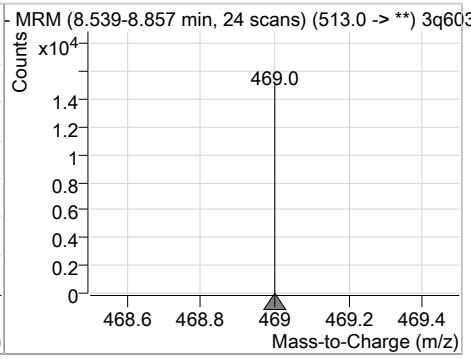




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.50	8.64	0.00	10190	513.0 -> 219.0	18.0	0.0	48.3

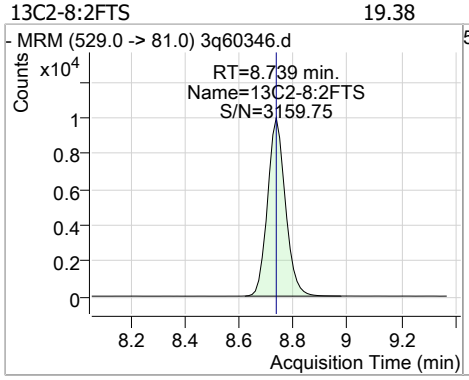


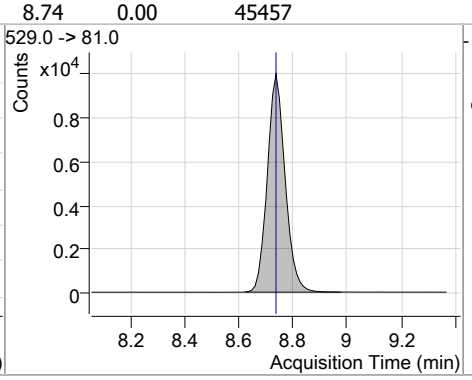


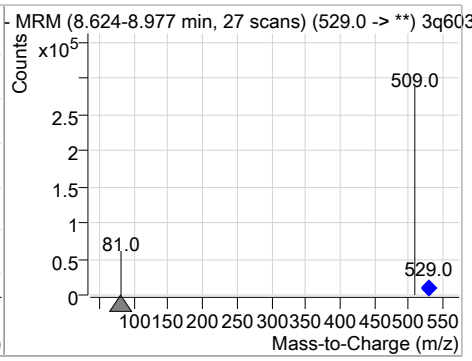


Perfluorinated Compounds by LC/MS/MS

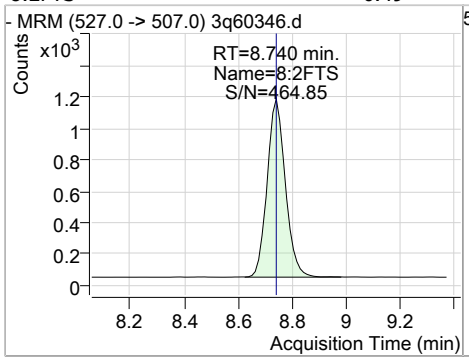
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.38	8.74	0.00	45457				

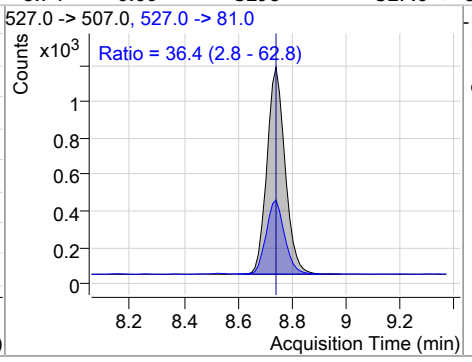


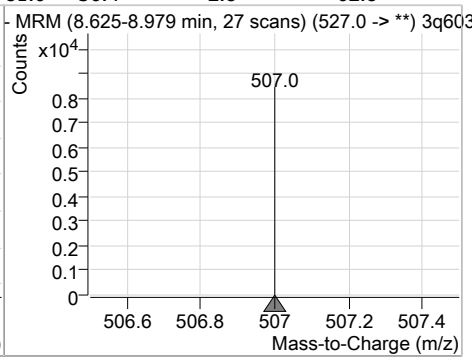




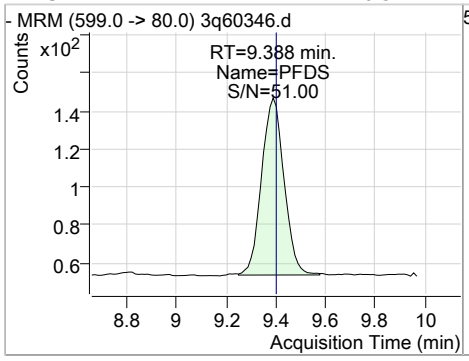
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.49	8.74	0.00	5298	527.0 -> 81.0	36.4	2.8	62.8

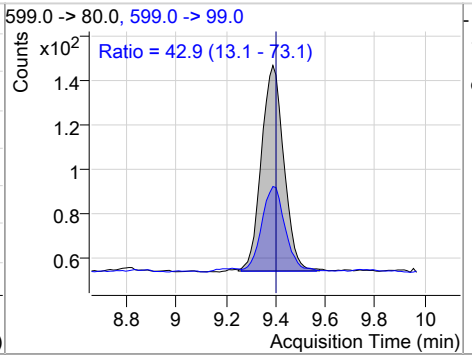


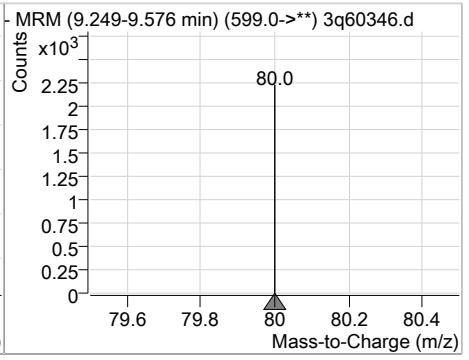




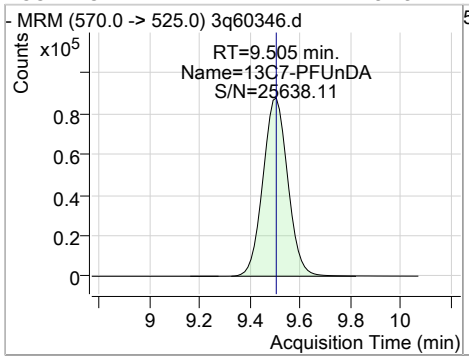
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.51	9.39	-0.01	585	599.0 -> 99.0	42.9	13.1	73.1

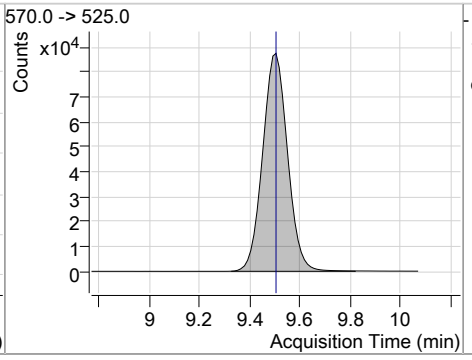


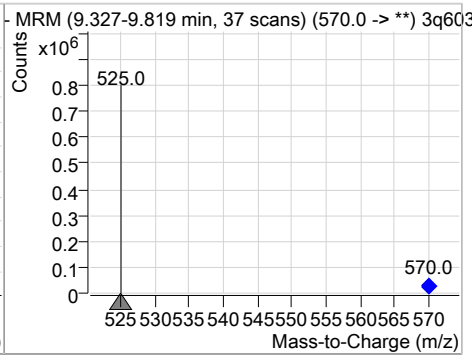




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.49	9.50	0.00	601129				

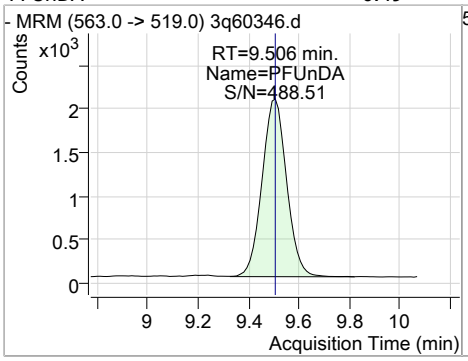


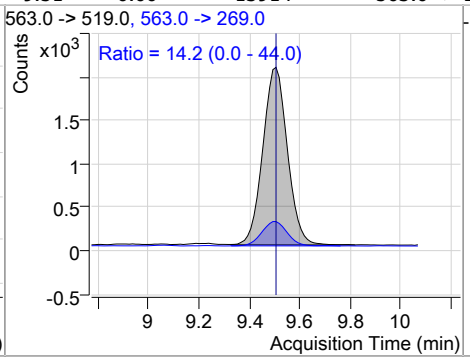


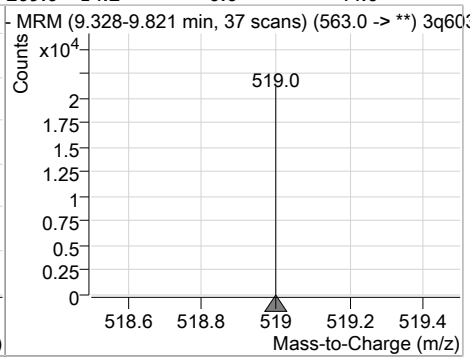


Perfluorinated Compounds by LC/MS/MS

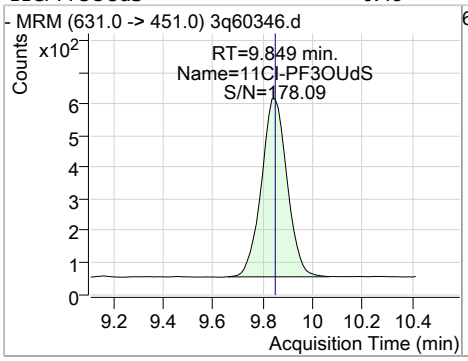
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.49	9.51	0.00	13914	563.0 -> 269.0	14.2	0.0	44.0

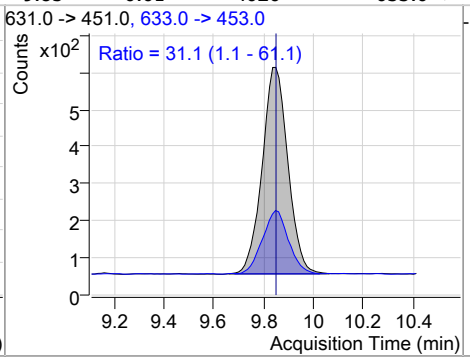


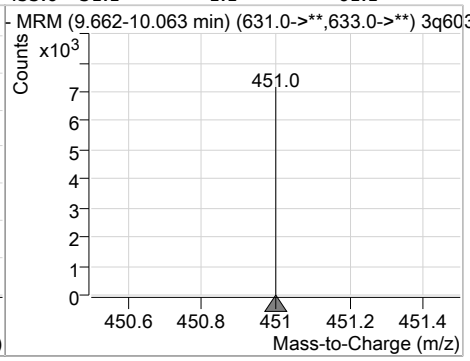




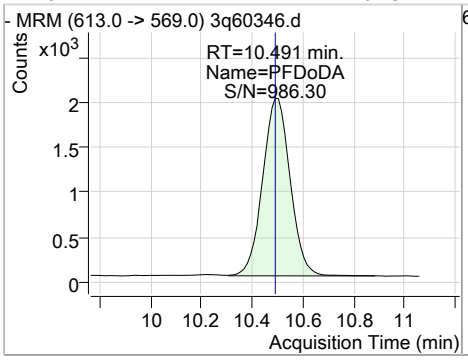
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.48	9.85	-0.01	4026	633.0 -> 453.0	31.1	1.1	61.1

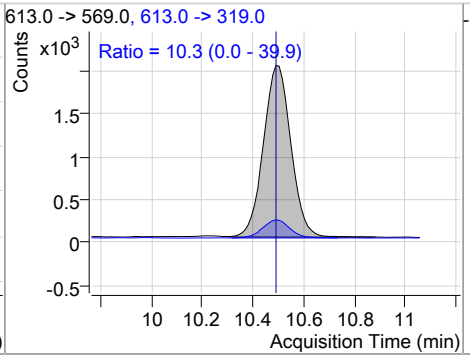


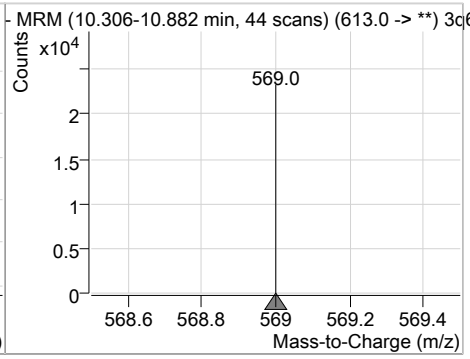




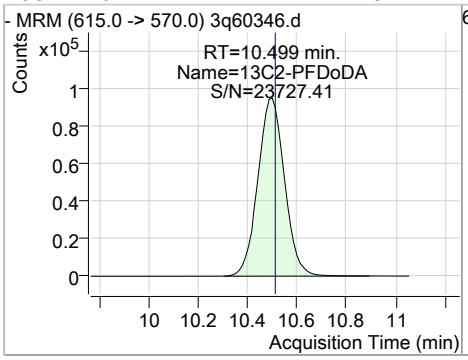
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.49	10.49	-0.01	14989	613.0 -> 319.0	10.3	0.0	39.9

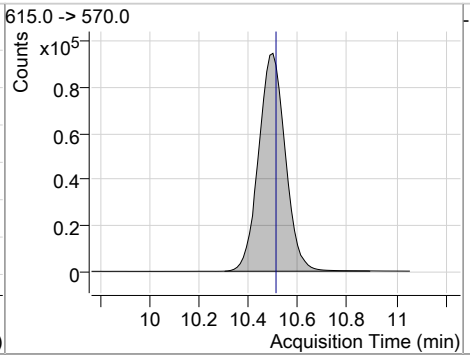


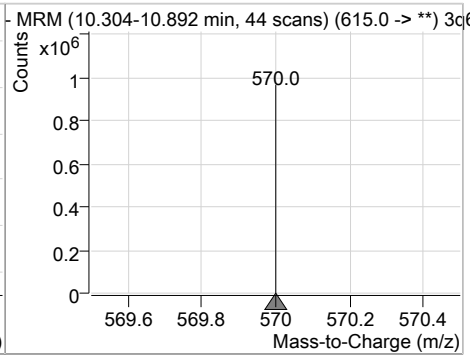




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.44	10.50	-0.01	712571				

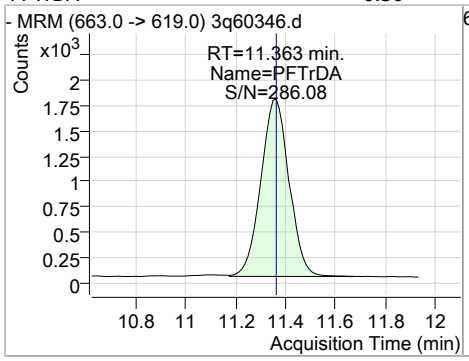


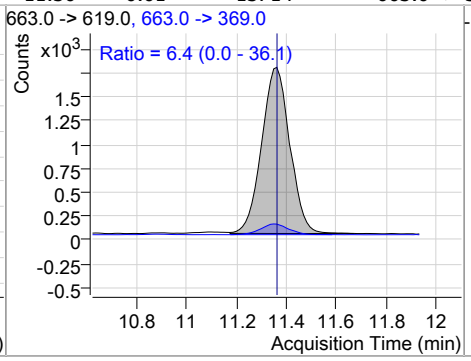


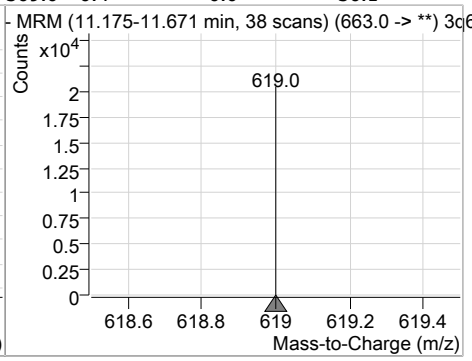


Perfluorinated Compounds by LC/MS/MS

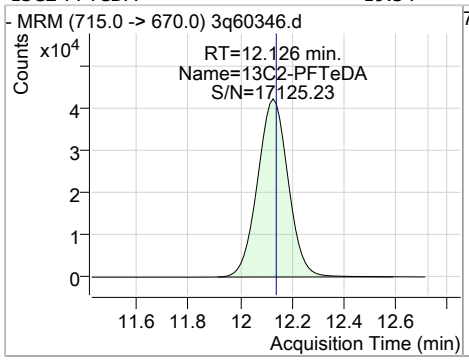
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.50	11.36	-0.01	13714	663.0 -> 369.0	6.4	0.0	36.1

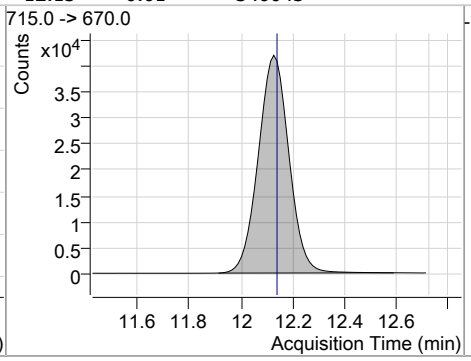


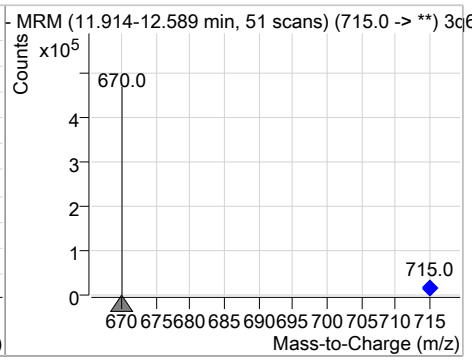




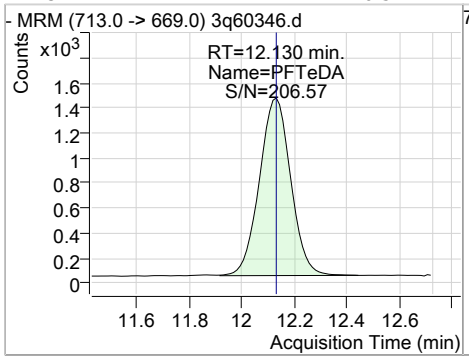
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.34	12.13	-0.01	346043				

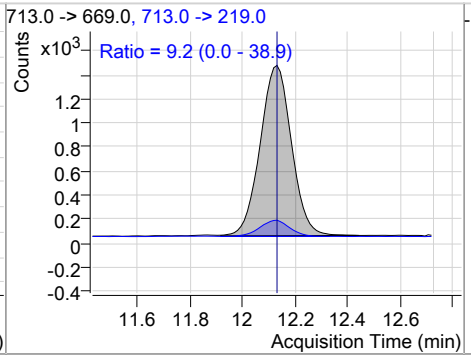


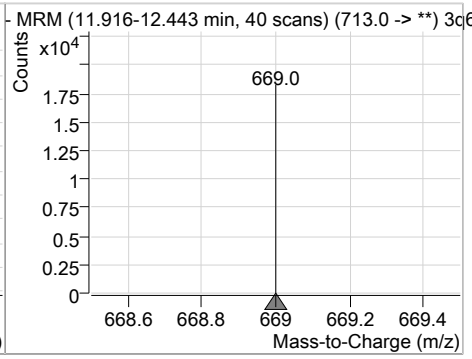




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.52	12.13	-0.01	11736	713.0 -> 219.0	9.2	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60346.D
Injection Time: 05/27/22 14:19

Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60347.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 2:38:06 PM
Sample Name : ic824-1
Vial : P1-A3
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

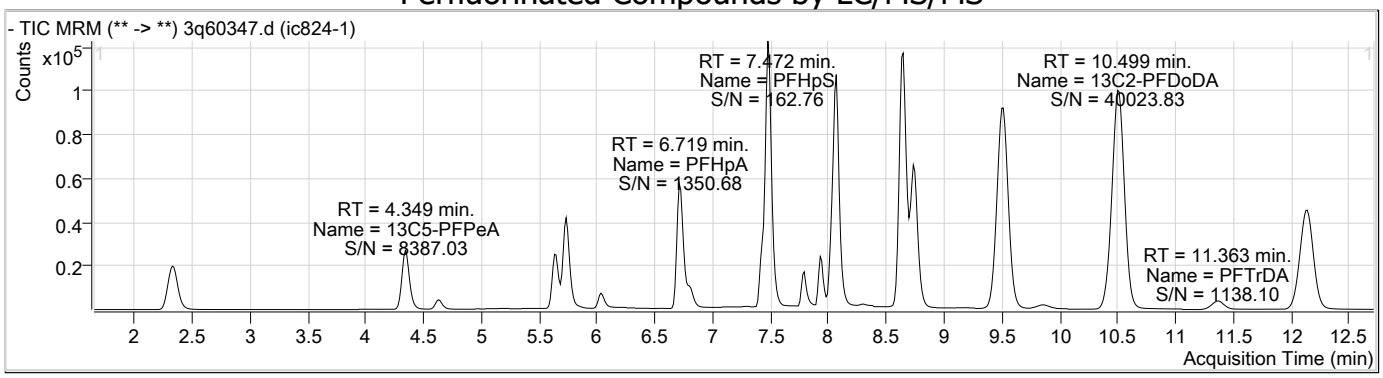
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	117916	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	113224	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	153529	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	196670	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	251486	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	318958	20.00 µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	486169	20.00 µg/L	0.013
M7-PFUnDA	9.517	570.0 -> 525.0	602047	20.00 µg/L	0.013
M2-PFDoDA	10.499	615.0 -> 570.0	719197	20.00 µg/L	-0.013
M2-PFTeDA	12.139	715.0 -> 670.0	349401	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	78057	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15508	20.00 µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	19068	20.00 µg/L	0.013
M8-PFOS	8.036	507.0 -> 99.0	30262	20.00 µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	10861	20.00 µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	26045	20.00 µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	46232	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	65412	20.00 µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	21715	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	25550	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	63296	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	10861	19.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C2-6:2FTS	7.498	429.0 -> 81.0	26045	19.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C2-8:2FTS	8.739	529.0 -> 81.0	46232	19.71 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C2-PFDoDA	10.499	615.0 -> 570.0	719197	19.62 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%	
13C2-PFTeDA	12.139	715.0 -> 670.0	349401	19.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%	
13C3-PFBS	4.629	302.0 -> 99.0	15508	19.65 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-PFHxS	6.751	402.0 -> 99.0	19068	19.68 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C4-PFBA	2.327	217.0 -> 172.0	117916	19.51 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%	
13C4-PFHpA	6.718	367.0 -> 322.0	196670	19.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	5.739	318.0 -> 273.0	153529	19.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C5-PFPeA	4.349	268.0 -> 223.0	113224	19.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C6-PFDA	8.652	519.0 -> 474.0	486169	19.48 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

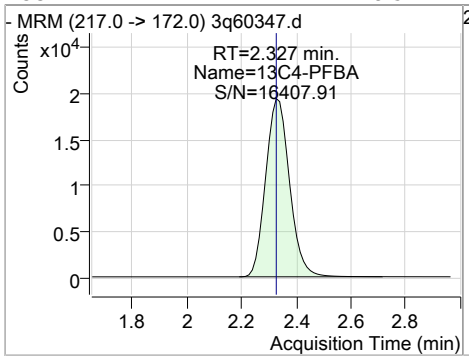
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
13C7-PFUnDA	9.517	570.0 -> 525.0	602047	19.52	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C8-FOSA	7.430	506.0 -> 78.0	78057	20.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C8-PFOA	7.487	421.0 -> 376.0	251486	19.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C8-PFOS	8.036	507.0 -> 99.0	30262	19.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
13C9-PFNA	8.075	472.0 -> 427.0	318958	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d3-MeFOSAA	7.929	573.0 -> 419.0	65412	19.73	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	21717	19.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
d3-MeFOSA	7.793	515.0 -> 169.0	25550	20.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
d5-EtFOSAA	8.029	589.0 -> 419.0	63300	20.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	4841	1.02	µg/L		91
6:2FTS	7.499	427.0 -> 407.0	6404	1.02	µg/L		96
8:2FTS	8.740	527.0 -> 507.0	11572	1.05	µg/L		99
EtFOSAA	8.029	584.0 -> 419.0	2583	1.05	µg/L	m	92
FOSA	7.432	498.0 -> 78.0	3755	1.05	µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	2688	1.03	µg/L	m	94
PFBA	2.333	213.0 -> 169.0	2482	1.08	µg/L		100
PFBS	4.632	299.0 -> 80.0	2080	1.06	µg/L		98
PFDA	8.652	513.0 -> 469.0	21466	1.06	µg/L		100
PFDoDA	10.503	613.0 -> 569.0	31605	1.03	µg/L		99
PFDS	9.401	599.0 -> 80.0	1203	1.04	µg/L		99
PFHpA	6.719	363.0 -> 319.0	15153	1.05	µg/L		99
PFHpS	7.472	449.0 -> 80.0	2204	1.13	µg/L		95
PFHxA	5.740	313.0 -> 269.0	6793	1.06	µg/L		100
PFHxS	6.739	399.0 -> 80.0	2054	1.03	µg/L	m	99
PFNA	8.075	463.0 -> 419.0	15930	1.05	µg/L		97
PFNS	8.584	549.0 -> 80.0	1966	1.08	µg/L		98
PFOA	7.487	413.0 -> 369.0	12326	1.05	µg/L		98
PFOS	8.036	499.0 -> 80.0	2746	1.16	µg/L	m	81
PFPeA	4.352	263.0 -> 219.0	8901	1.07	µg/L		100
PFPeS	5.845	349.0 -> 80.0	1400	1.07	µg/L		97
PFTeDA	12.130	713.0 -> 669.0	24171	1.06	µg/L		99
PFTrDA	11.363	663.0 -> 619.0	28949	1.04	µg/L		99
PFUnDA	9.519	563.0 -> 519.0	29336	1.04	µg/L		99
11Cl-PF3OUdS	9.862	631.0 -> 451.0	8636	1.03	µg/L		97
9Cl-PF3ONS	8.296	531.0 -> 351.0	1774	1.05	µg/L		98
ADONA	6.819	377.0 -> 251.0	21701	1.03	µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	3275	1.06	µg/L		99
MeFOSA	7.794	512.0 -> 169.0	1352	1.07	µg/L		97

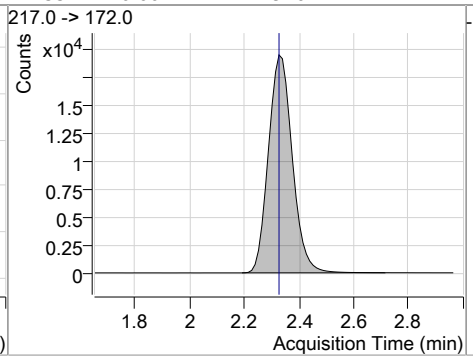
 # = Qualifier out of range, m = manually integrated, + = Area summed

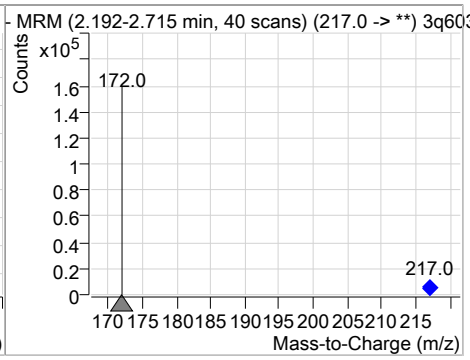
Perfluorinated Compounds by LC/MS/MS



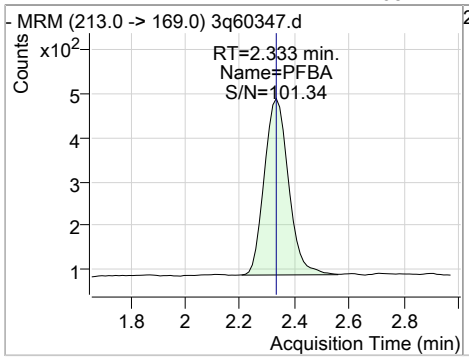
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.51	2.33	0.00	117916				

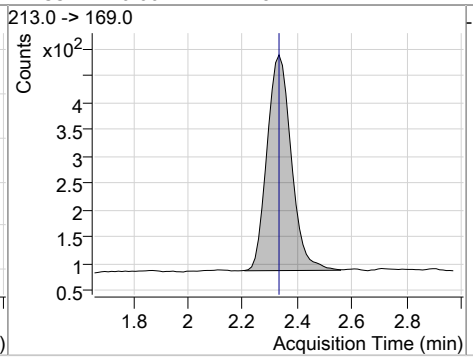


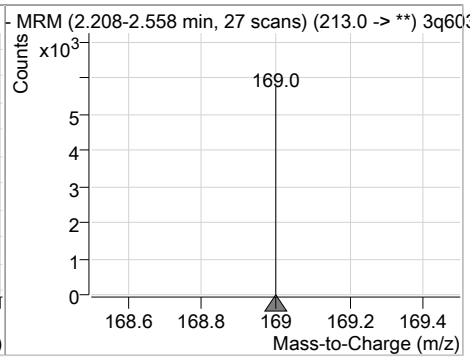




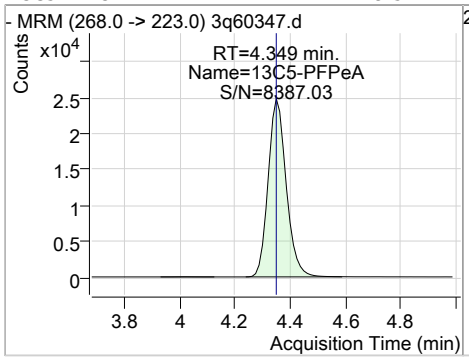
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.08	2.33	0.00	2482				

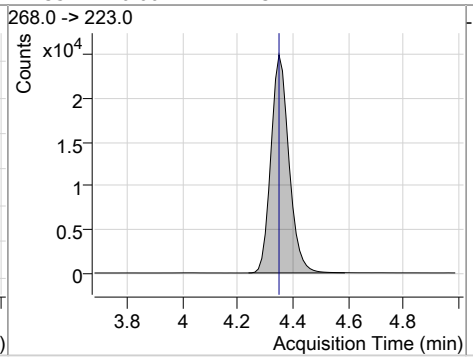


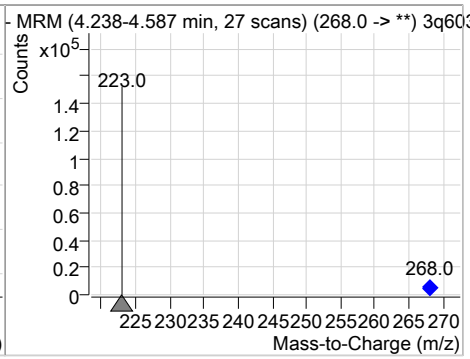




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.54	4.35	0.00	113224				

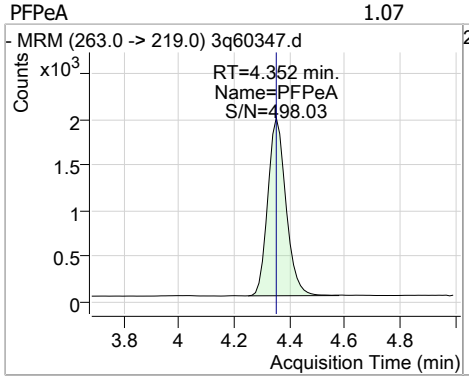


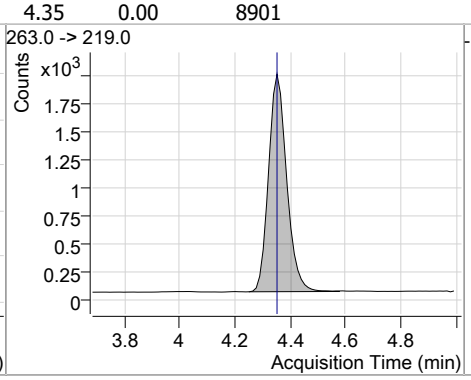


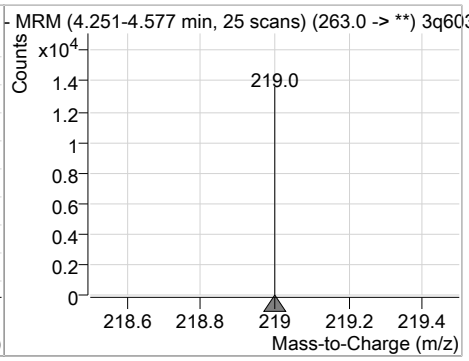


Perfluorinated Compounds by LC/MS/MS

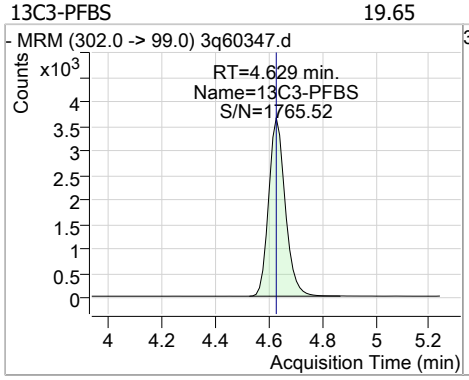
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.07	4.35	0.00	8901				

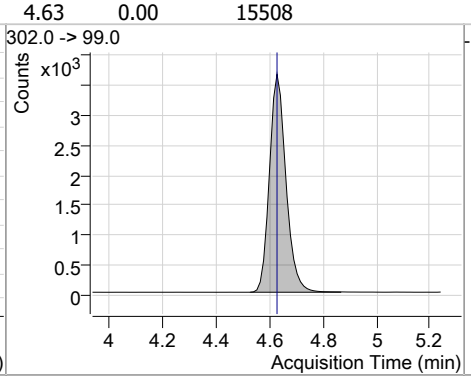


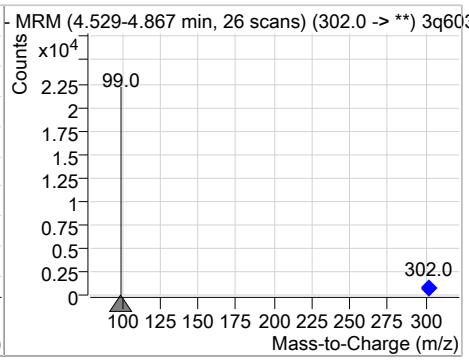




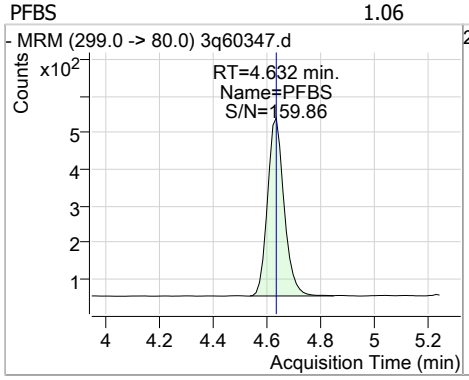
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.65	4.63	0.00	15508				

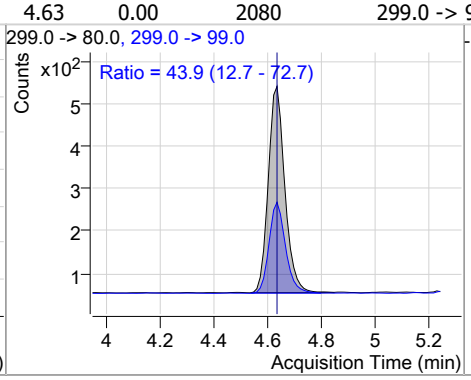


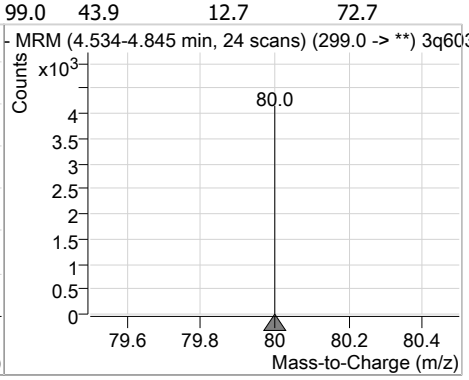




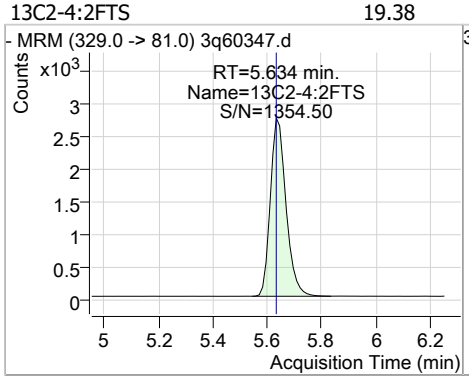
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.06	4.63	0.00	2080	299.0 -> 99.0	43.9	12.7	72.7

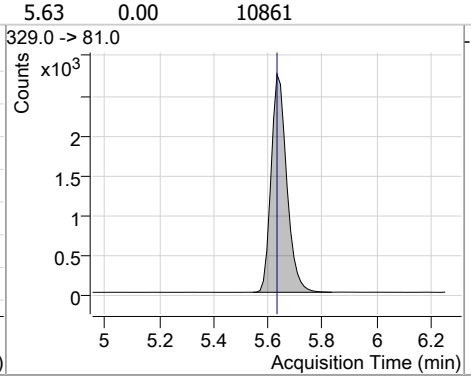


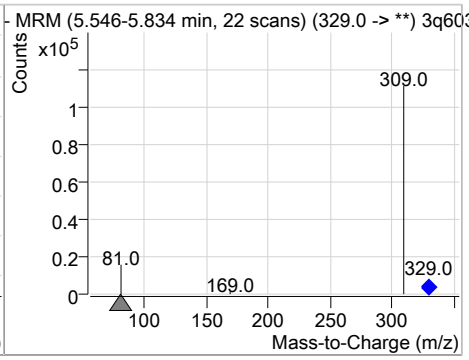




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.38	5.63	0.00	10861				

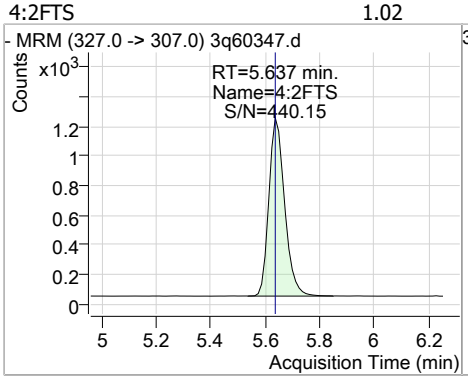


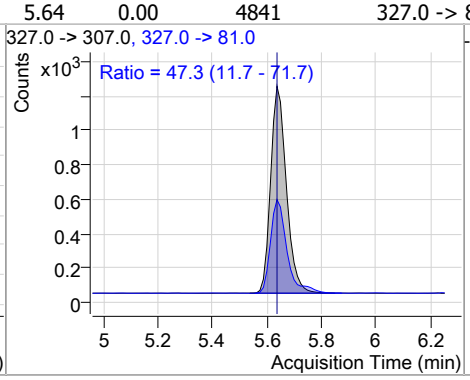


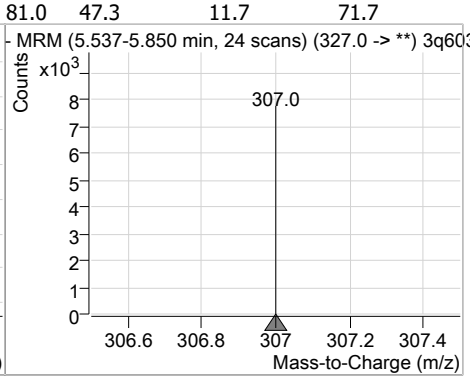


Perfluorinated Compounds by LC/MS/MS

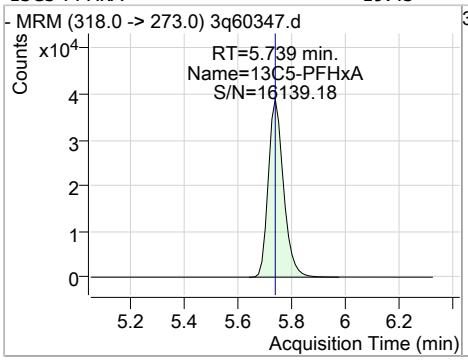
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.02	5.64	0.00	4841	327.0 -> 81.0	47.3	11.7	71.7

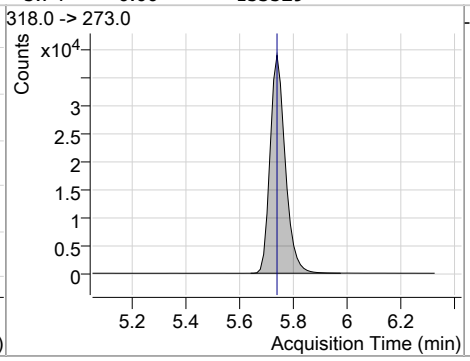


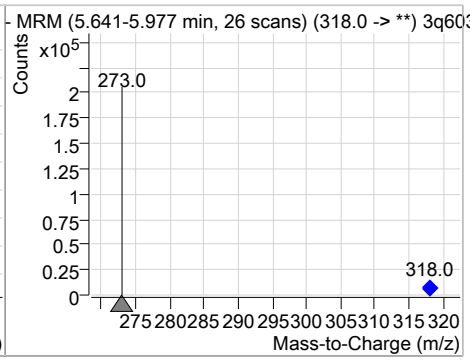




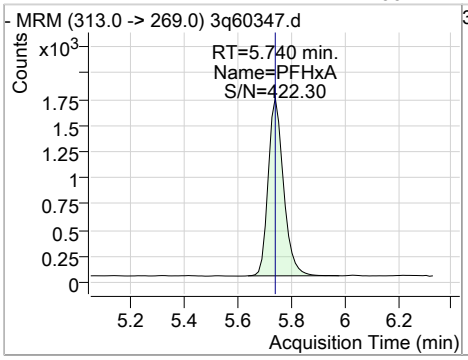
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.45	5.74	0.00	153529				

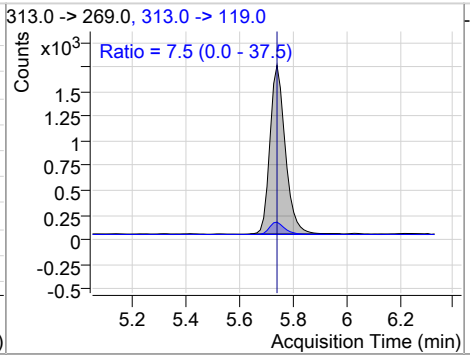


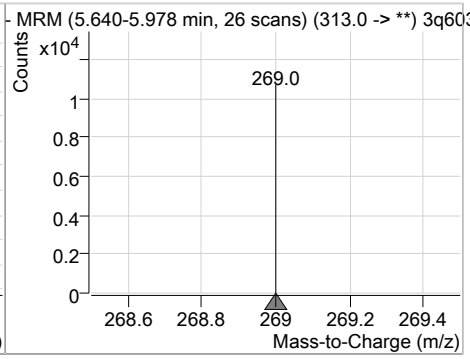




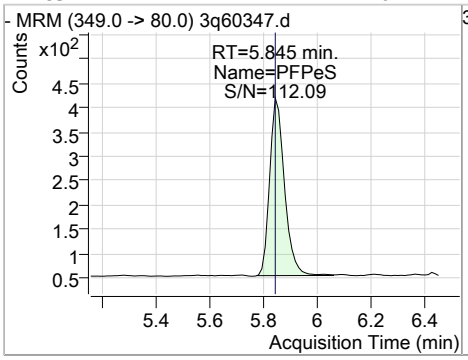
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.06	5.74	0.00	6793	313.0 -> 119.0	7.5	0.0	37.5

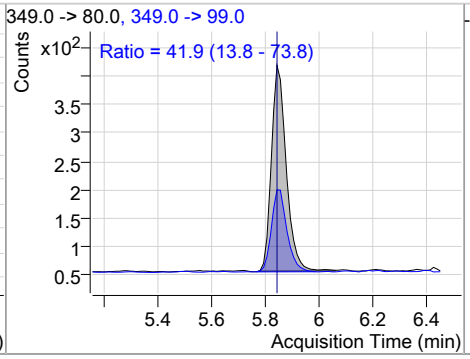


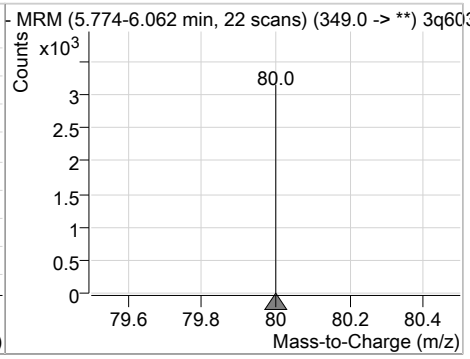




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.07	5.84	0.00	1400	349.0 -> 99.0	41.9	13.8	73.8

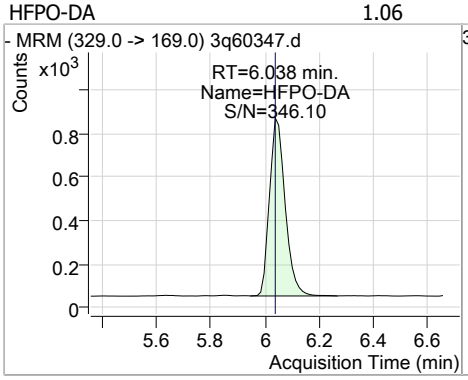


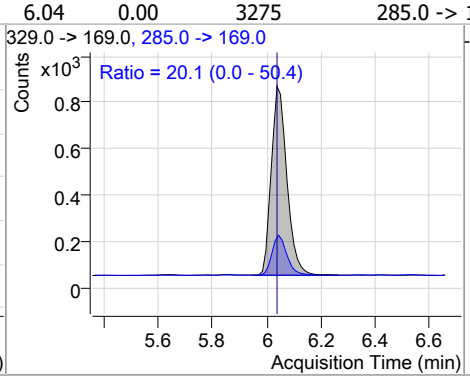


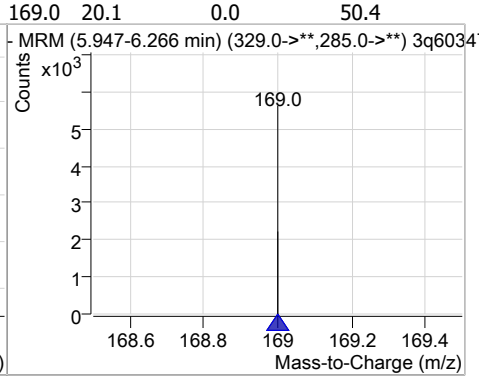


Perfluorinated Compounds by LC/MS/MS

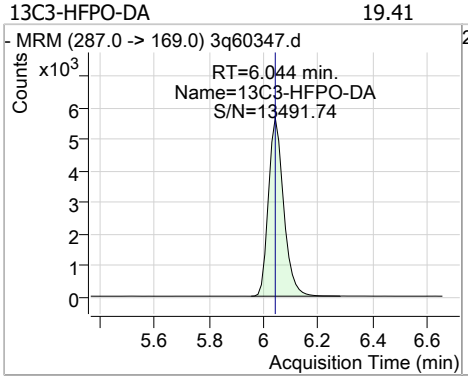
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.06	6.04	0.00	3275	285.0 -> 169.0	20.1	0.0	50.4

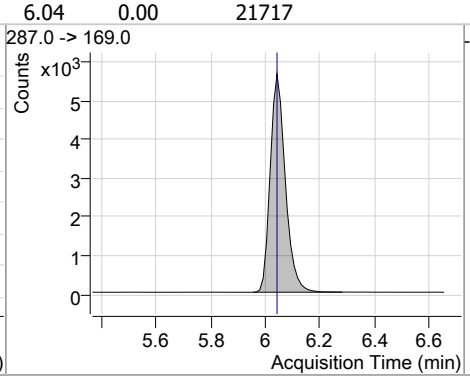


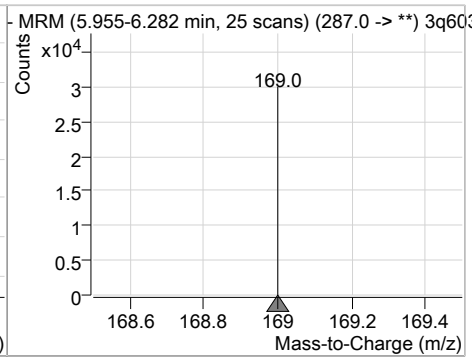




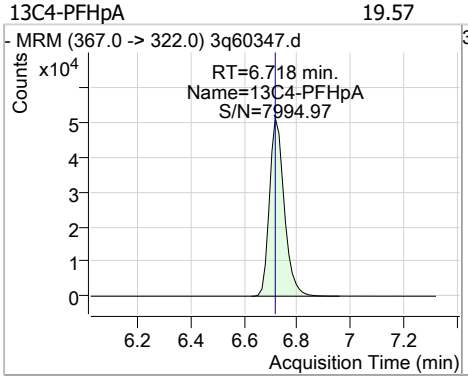
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.41	6.04	0.00	21717				

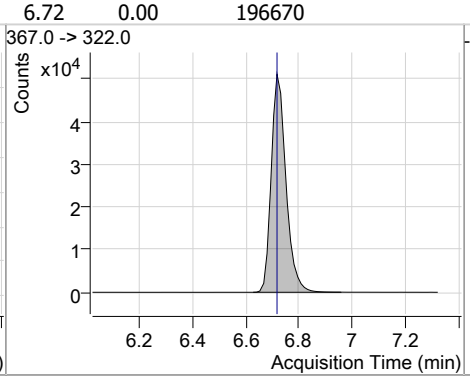


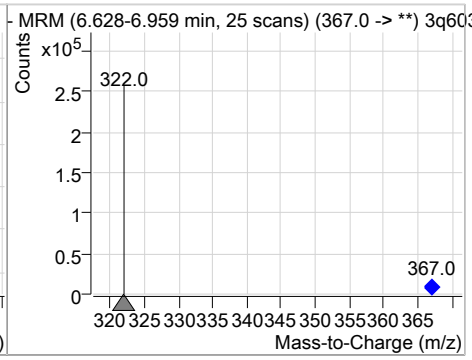




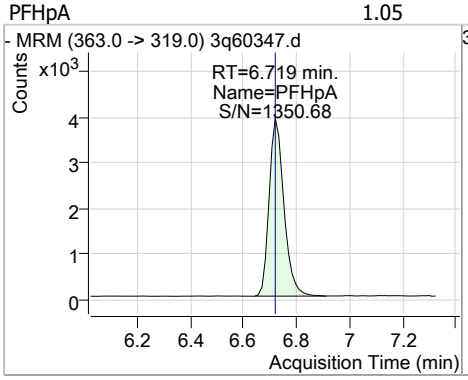
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.57	6.72	0.00	196670				

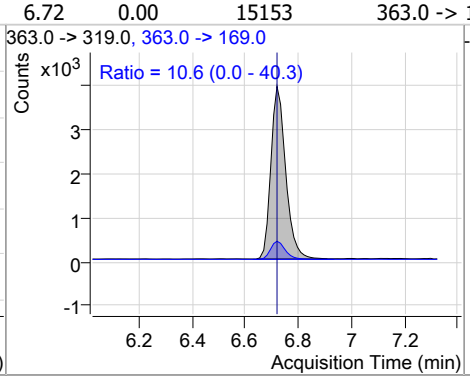


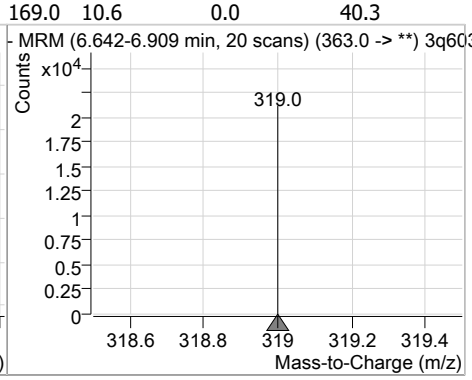




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.05	6.72	0.00	15153	363.0 -> 169.0	10.6	0.0	40.3

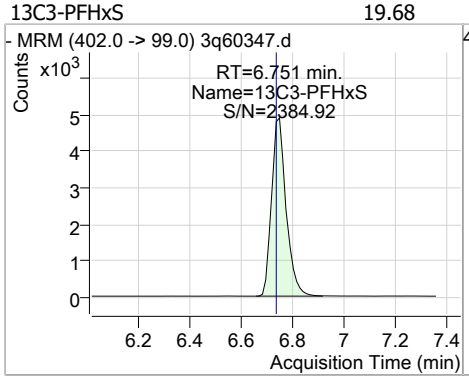


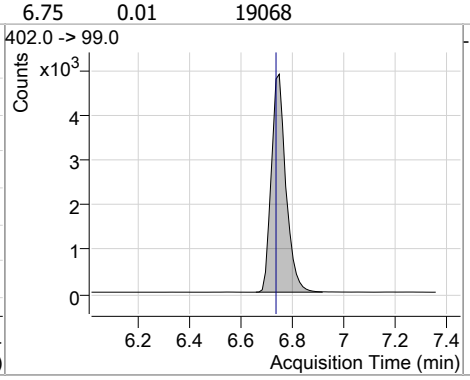


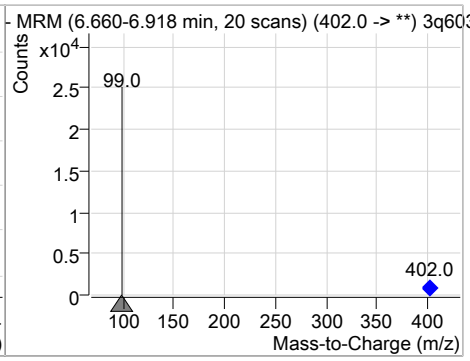


Perfluorinated Compounds by LC/MS/MS

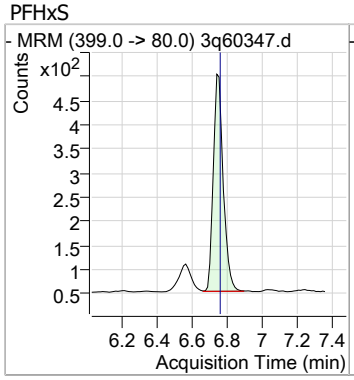
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.68	6.75	0.01	19068				

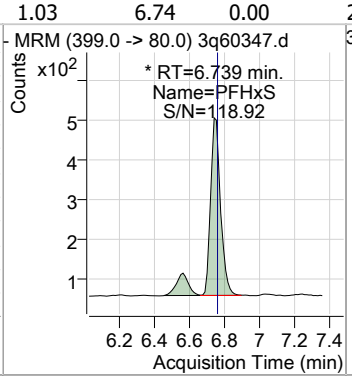


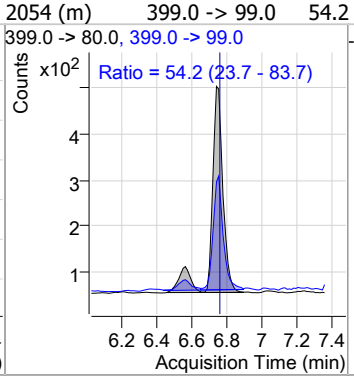


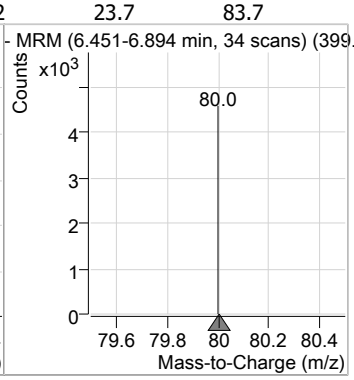


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.03	6.74	0.00	2054 (m)	399.0 -> 99.0	54.2	23.7	83.7

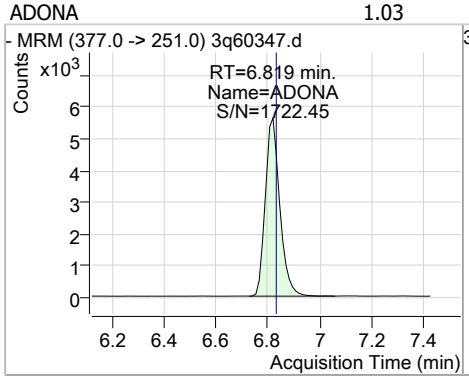


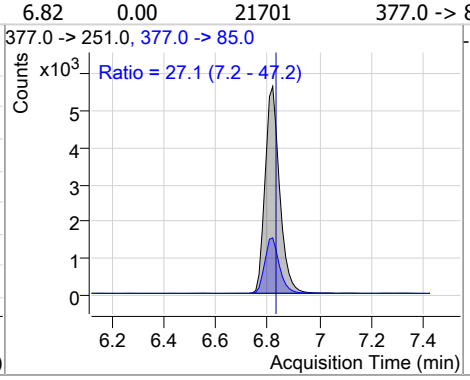


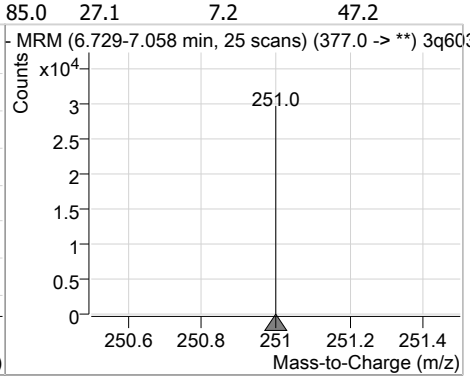




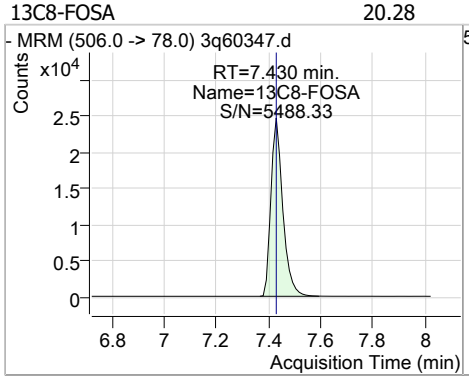
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.03	6.82	0.00	21701	377.0 -> 85.0	27.1	7.2	47.2

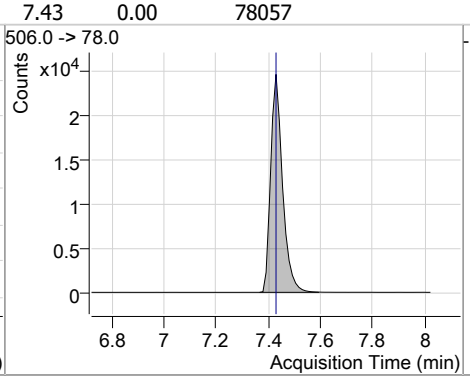


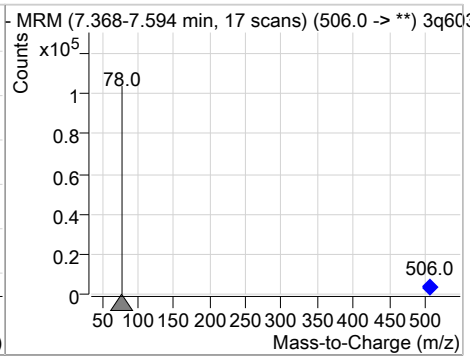




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.28	7.43	0.00	78057				

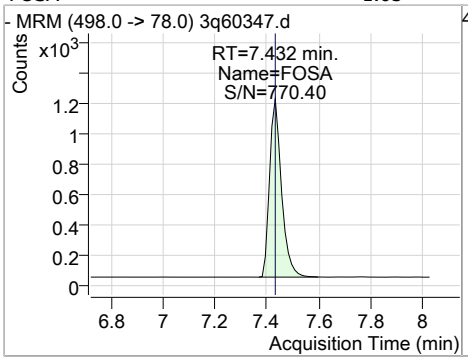


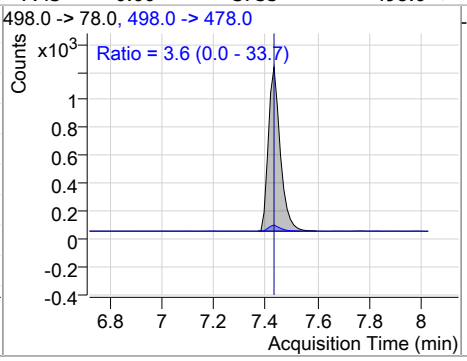


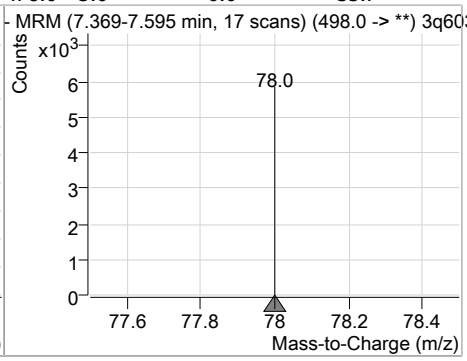


Perfluorinated Compounds by LC/MS/MS

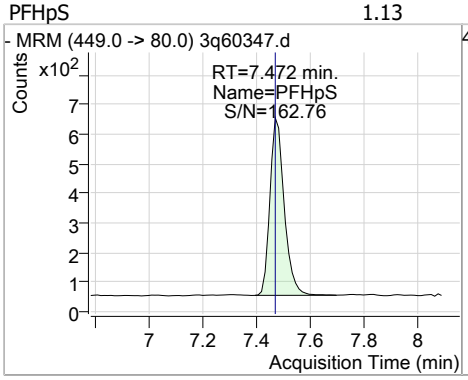
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.05	7.43	0.00	3755	498.0 -> 478.0	3.6	0.0	33.7

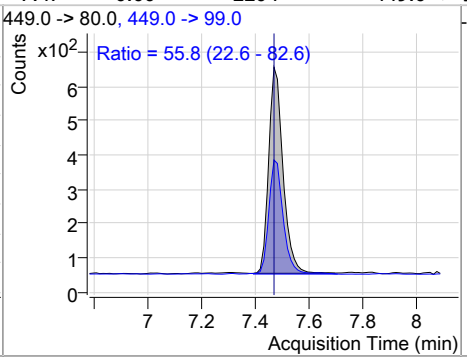


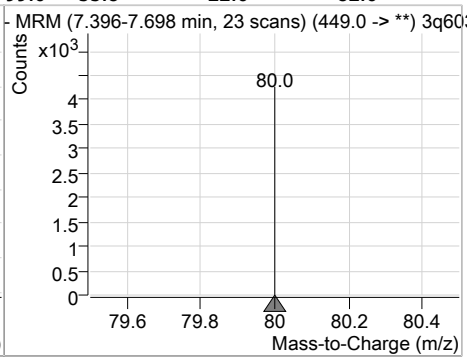




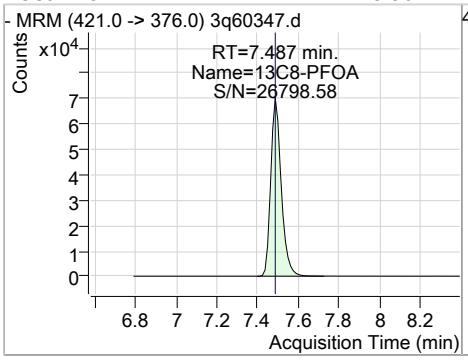
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.13	7.47	0.00	2204	449.0 -> 99.0	55.8	22.6	82.6

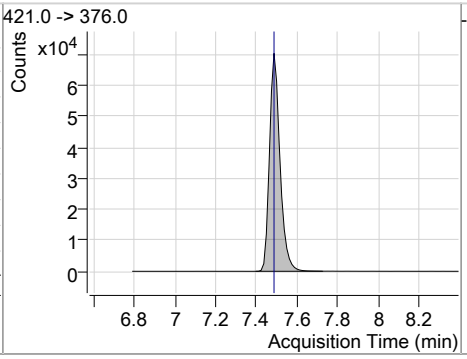


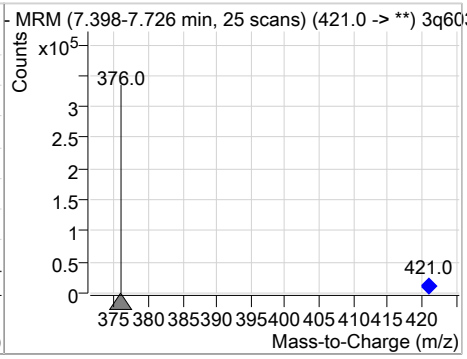




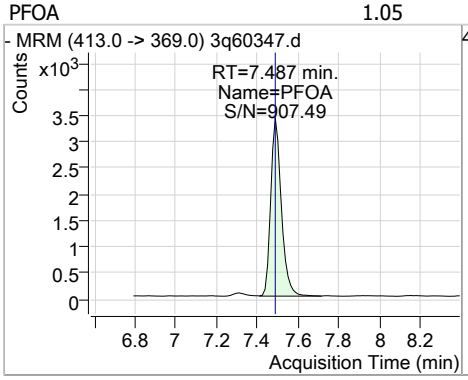
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.90	7.49	0.00	251486				

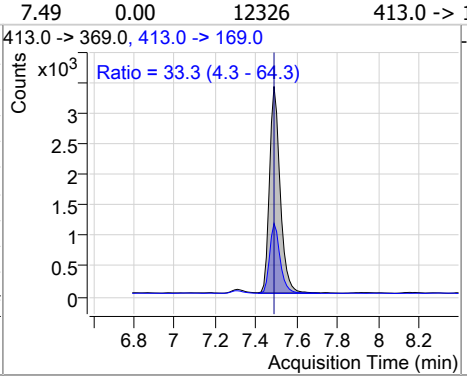


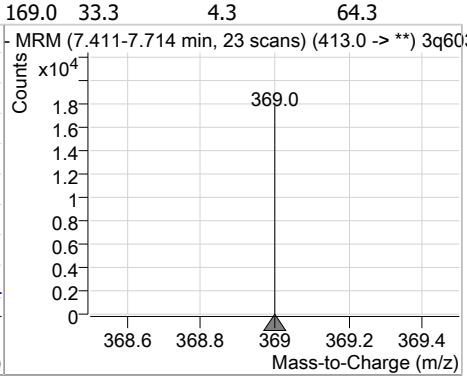




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.05	7.49	0.00	12326	413.0 -> 169.0	33.3	4.3	64.3

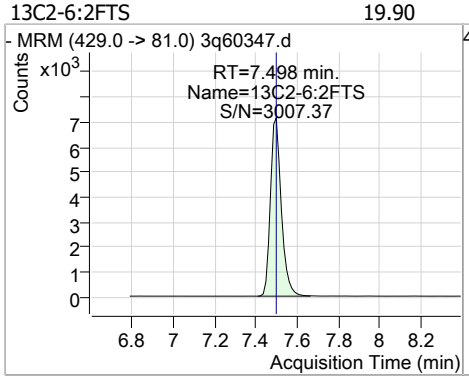


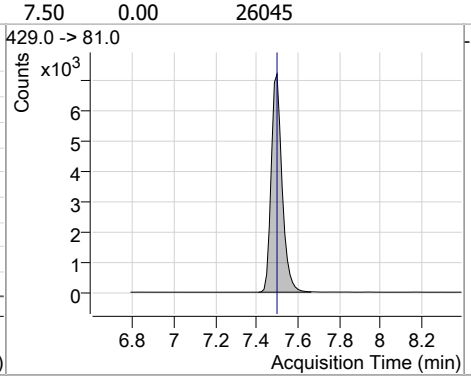


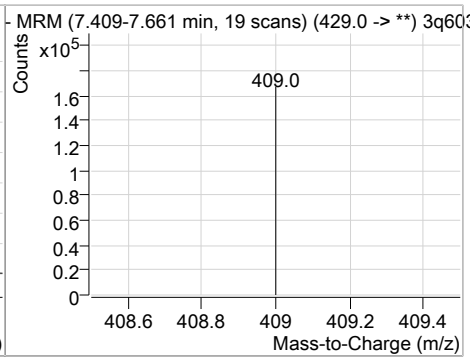


Perfluorinated Compounds by LC/MS/MS

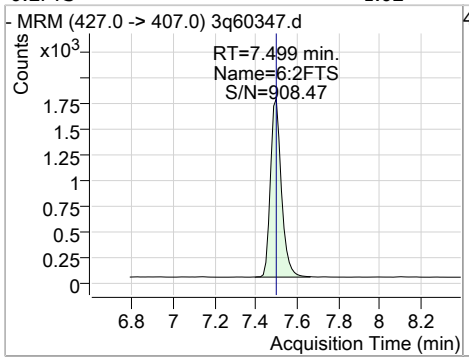
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.90	7.50	0.00	26045				

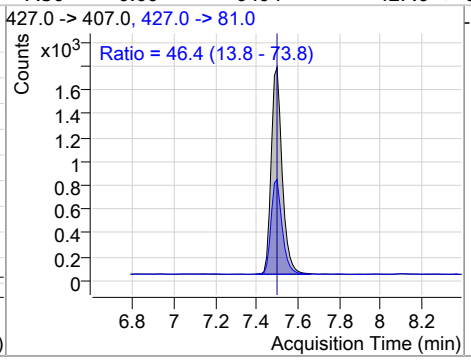


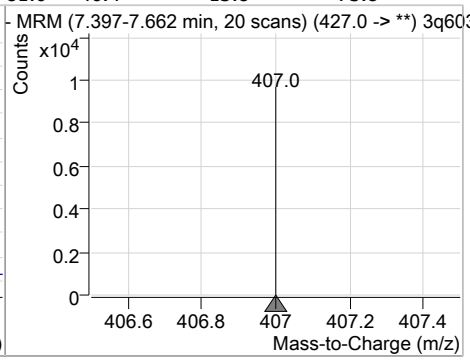




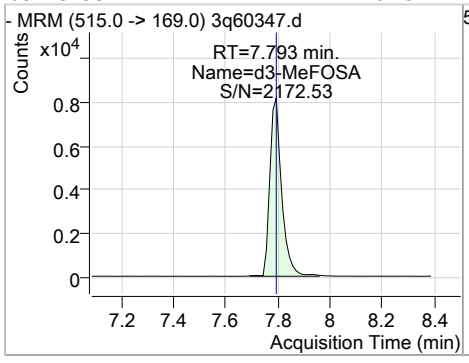
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.02	7.50	0.00	6404	427.0 -> 81.0	46.4	13.8	73.8

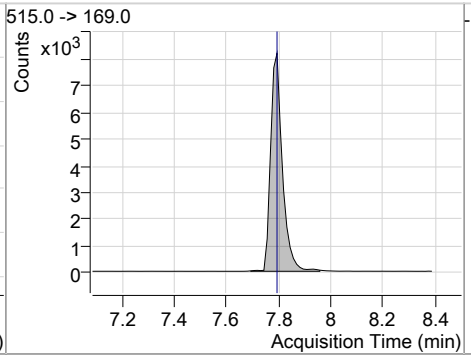


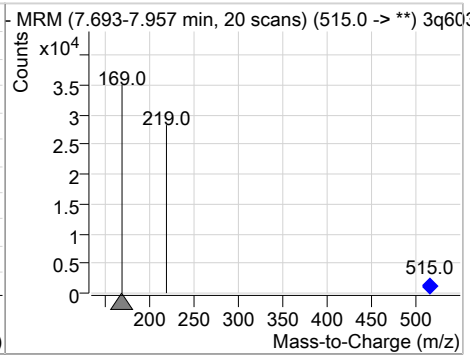




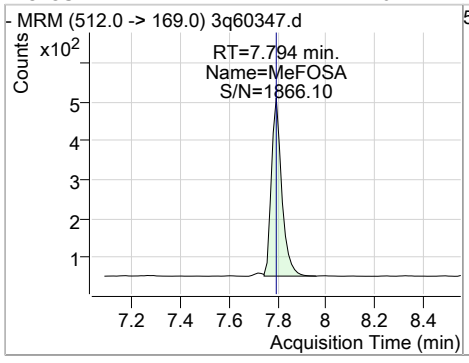
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.45	7.79	0.00	25550				

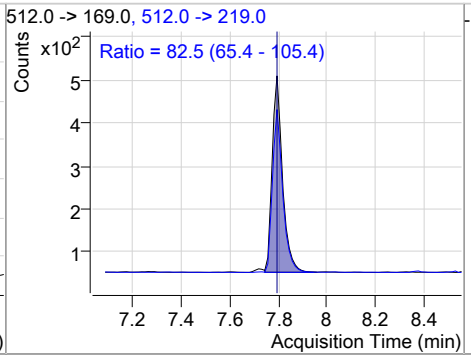


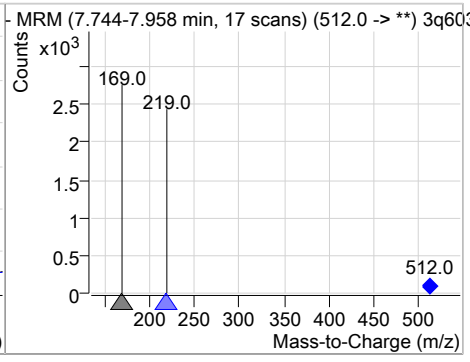




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.07	7.79	0.00	1352	512.0 -> 219.0	82.5	65.4	105.4

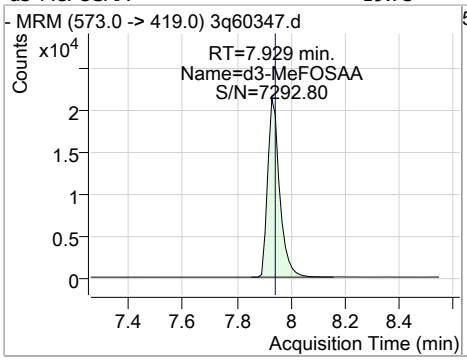


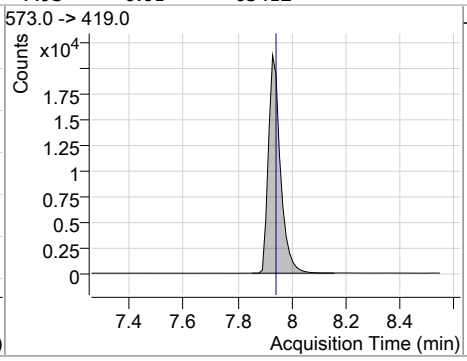


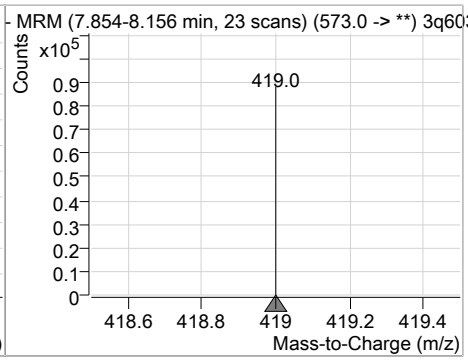


Perfluorinated Compounds by LC/MS/MS

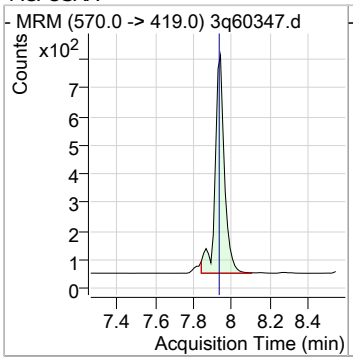
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.73	7.93	-0.01	65412				

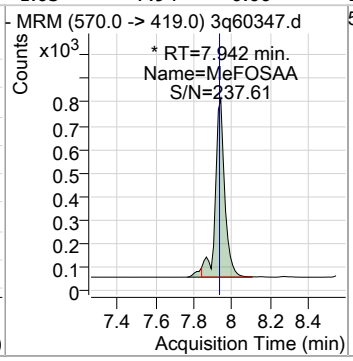


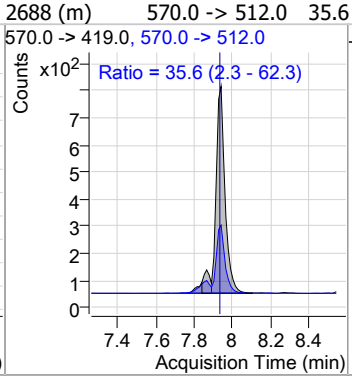


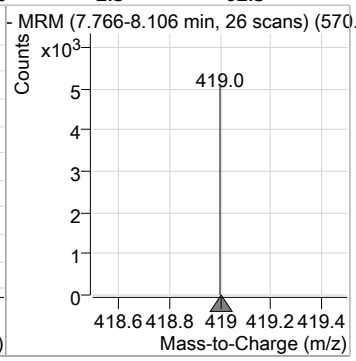


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.03	7.94	0.00	2688 (m)	570.0 -> 512.0	35.6	2.3	62.3

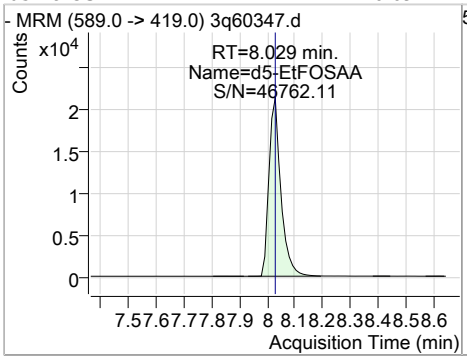


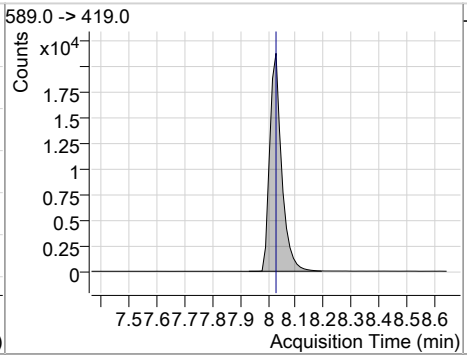


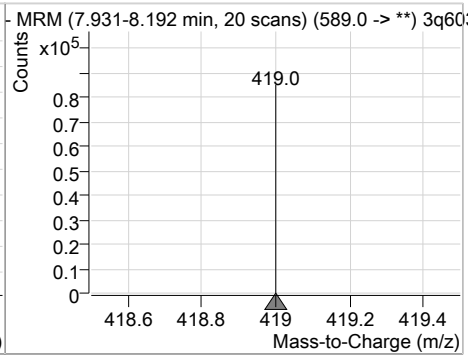




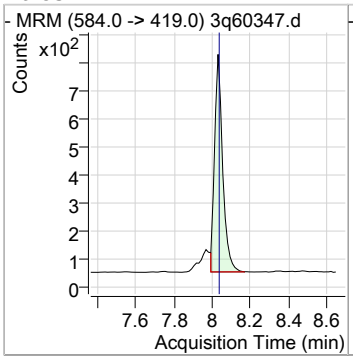
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.09	8.03	0.00	63300				

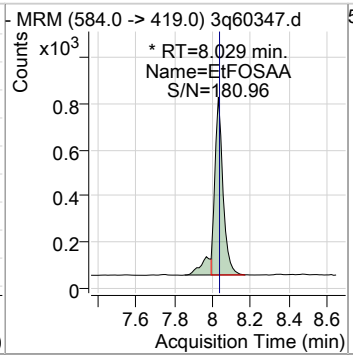


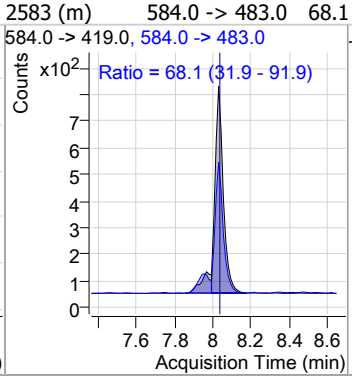


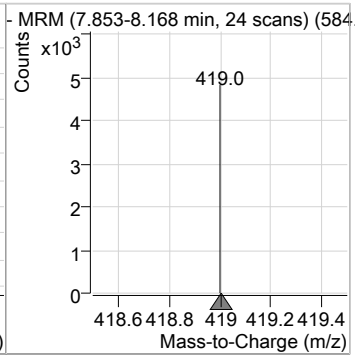


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.05	8.03	0.00	2583 (m)	584.0 -> 483.0	68.1	31.9	91.9



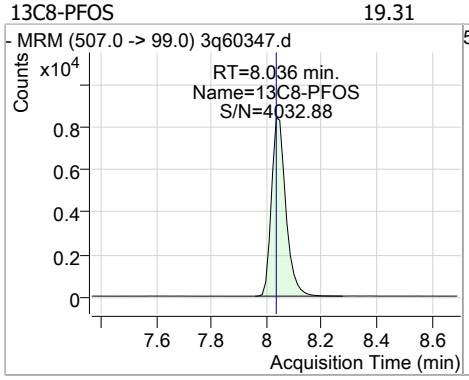


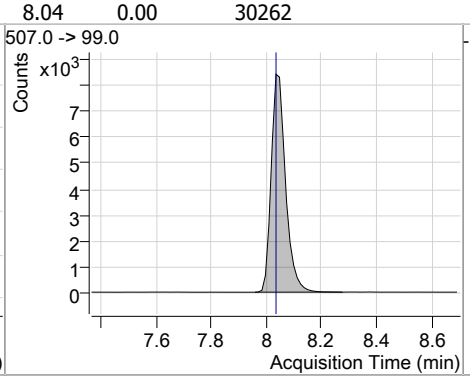


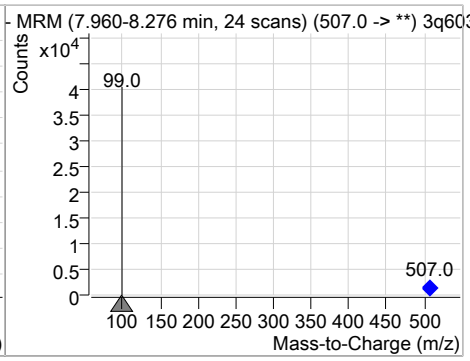


Perfluorinated Compounds by LC/MS/MS

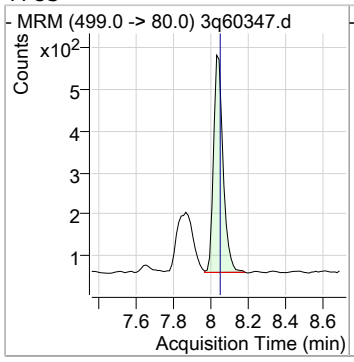
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.31	8.04	0.00	30262				

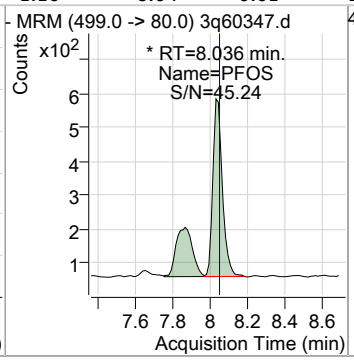


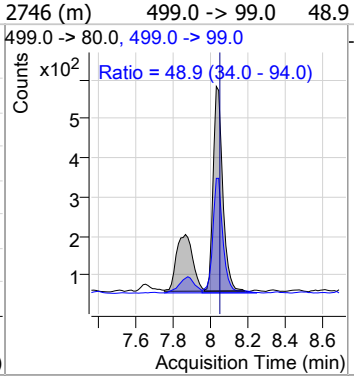


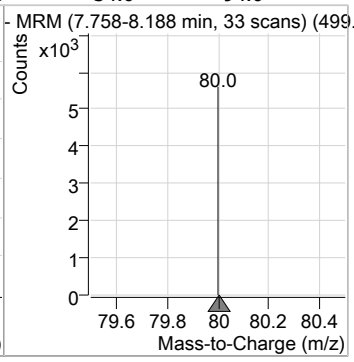


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.16	8.04	-0.01	2746 (m)	499.0 -> 99.0	48.9	34.0	94.0

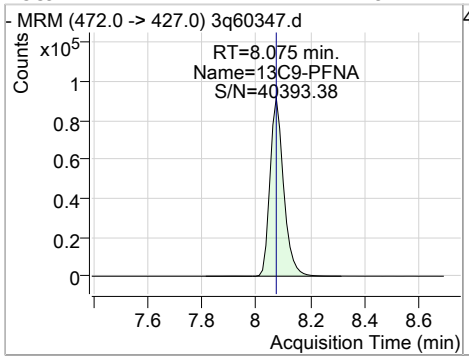


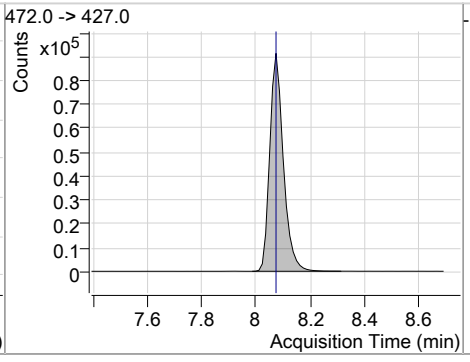


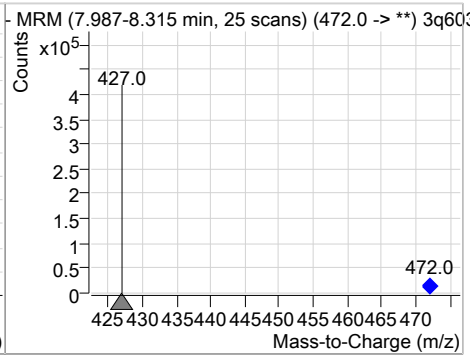




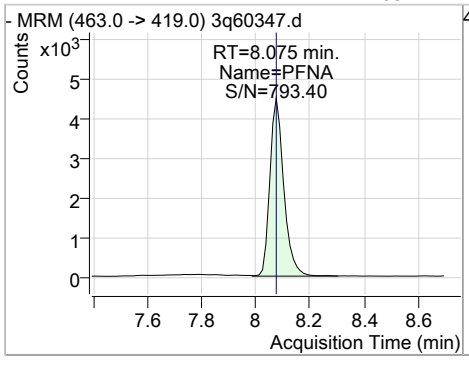
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.72	8.08	0.00	318958				

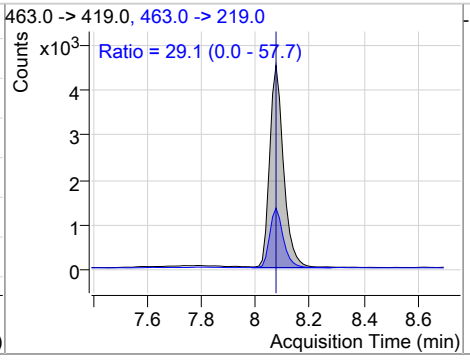


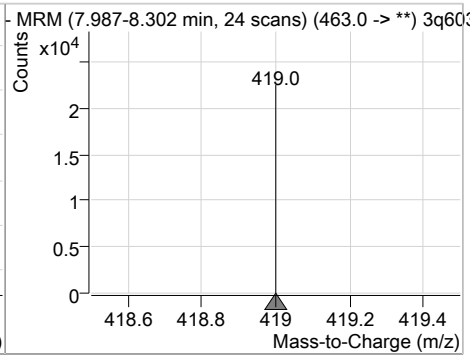




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.05	8.08	0.00	15930	463.0 -> 219.0	29.1	0.0	57.7

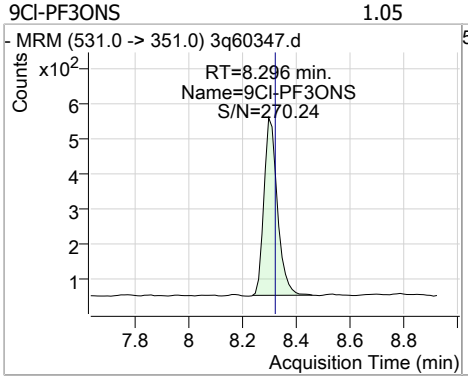


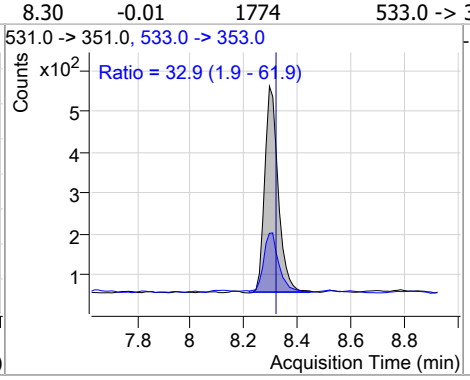


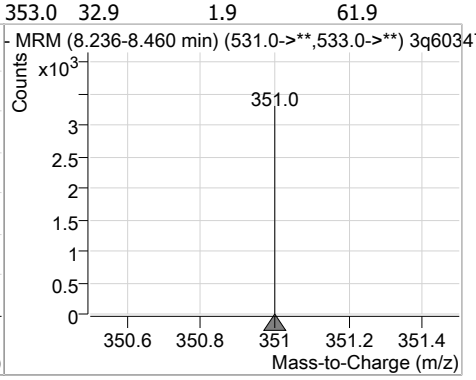


Perfluorinated Compounds by LC/MS/MS

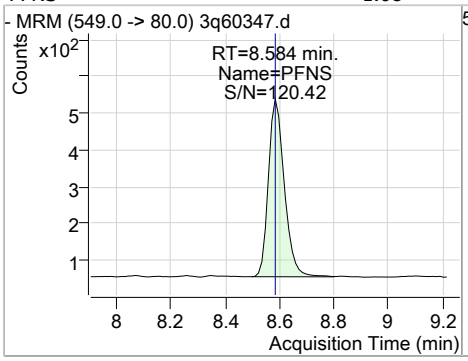
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.05	8.30	-0.01	1774	533.0 -> 353.0	32.9	1.9	61.9

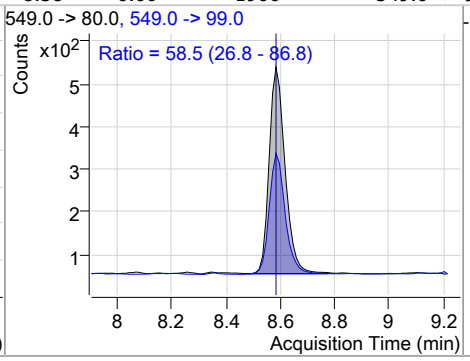


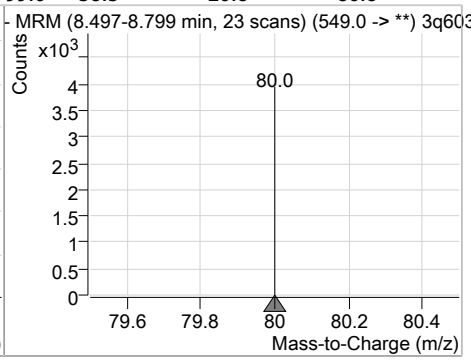




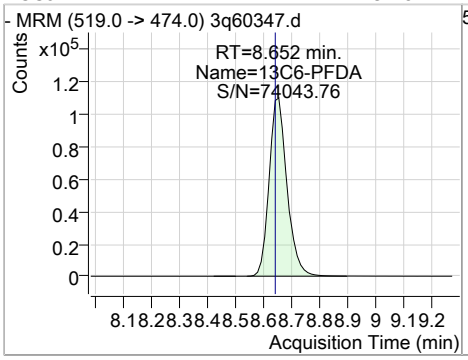
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.08	8.58	0.00	1966	549.0 -> 99.0	58.5	26.8	86.8

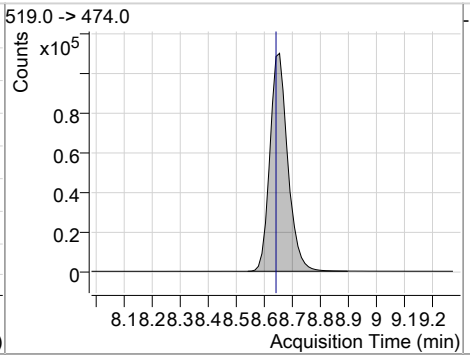


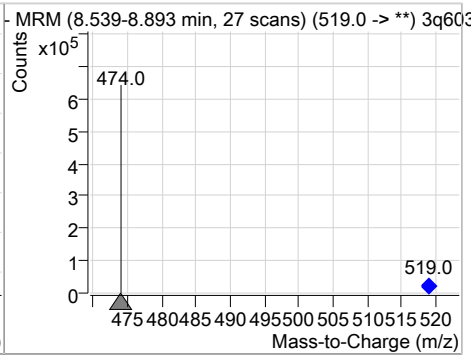




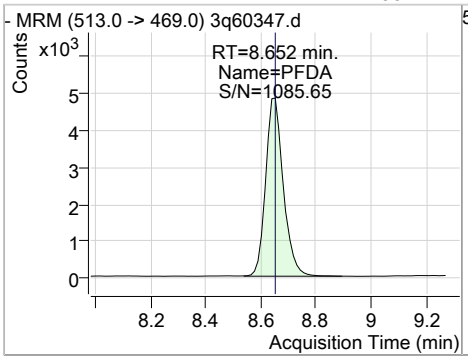
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.48	8.65	0.01	486169				

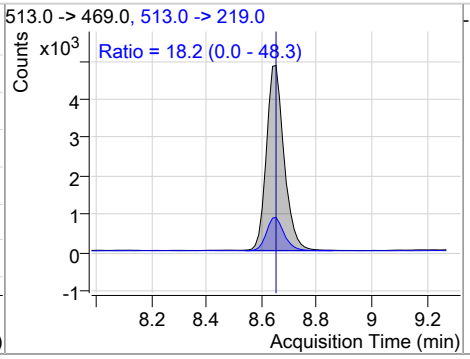


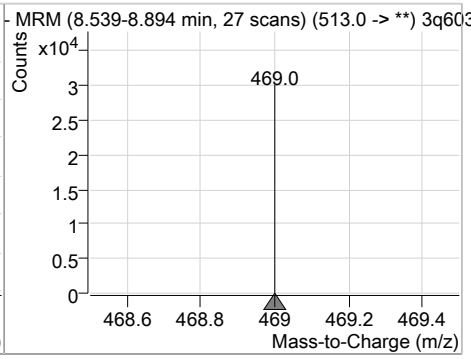




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.06	8.65	0.01	21466	513.0 -> 219.0	18.2	0.0	48.3

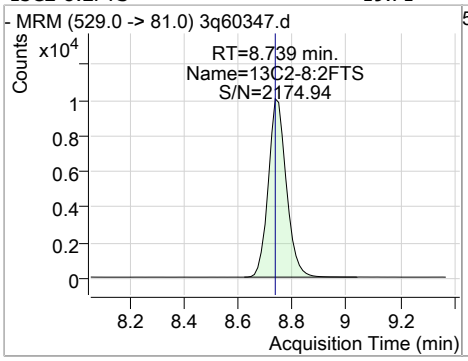


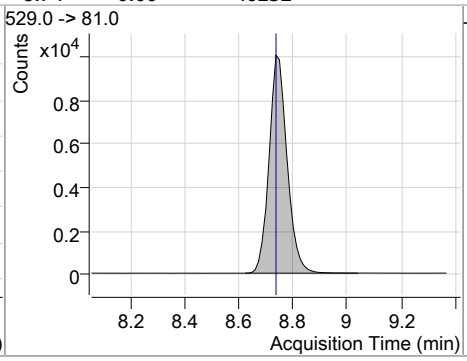


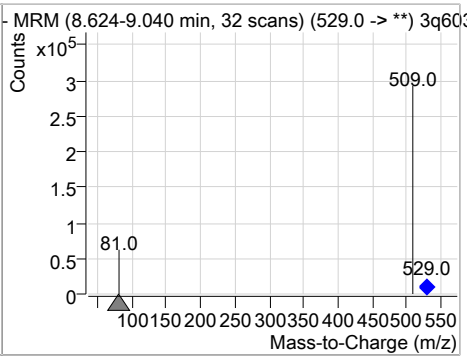


Perfluorinated Compounds by LC/MS/MS

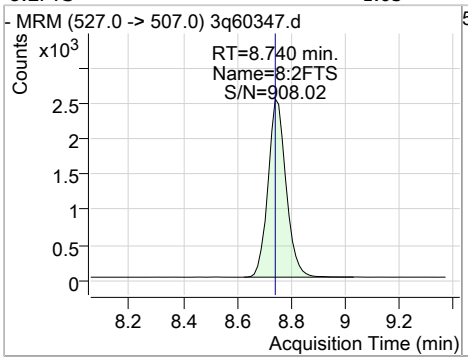
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.71	8.74	0.00	46232				

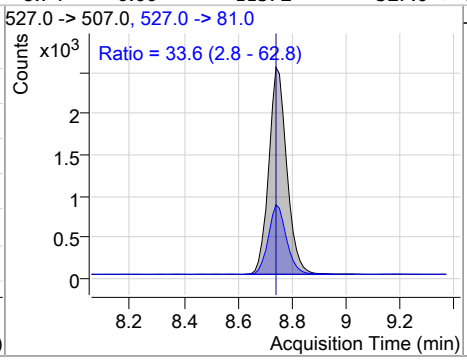


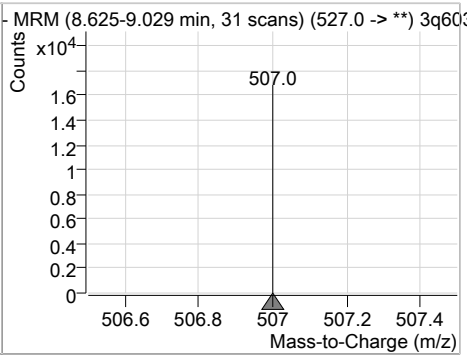




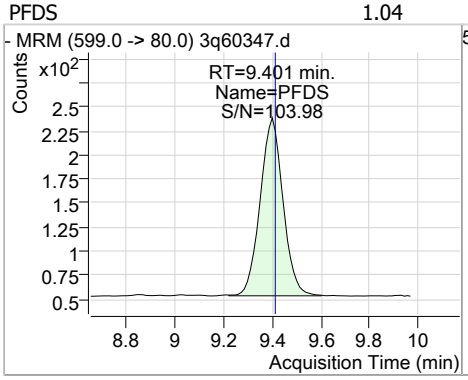
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.05	8.74	0.00	11572	527.0 -> 81.0	33.6	2.8	62.8

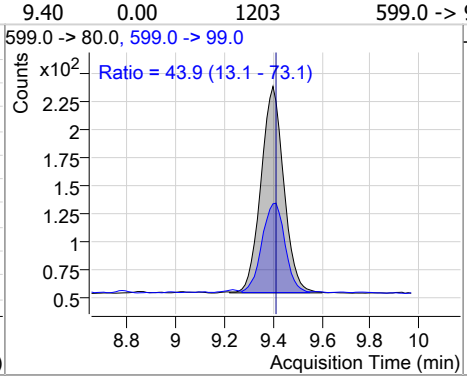


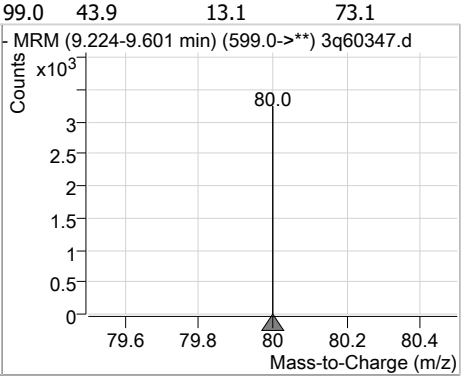




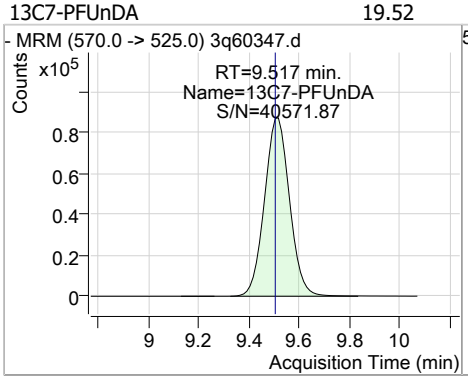
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.04	9.40	0.00	1203	599.0 -> 99.0	43.9	13.1	73.1

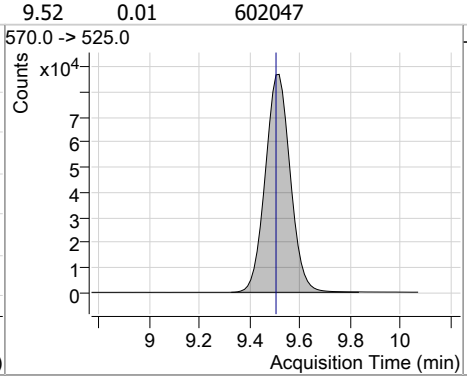


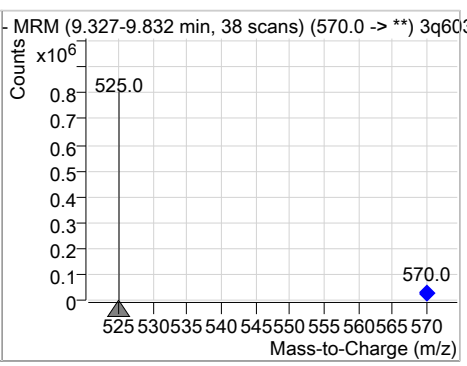




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.52	9.52	0.01	602047				

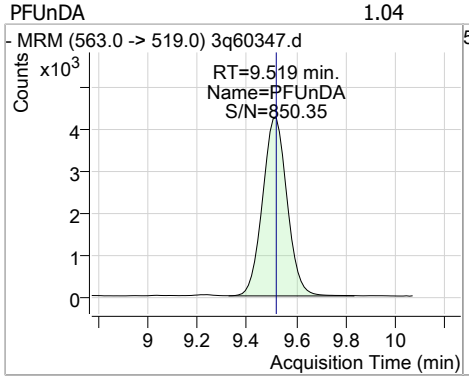


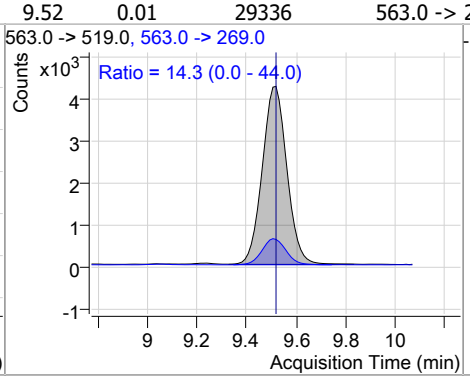


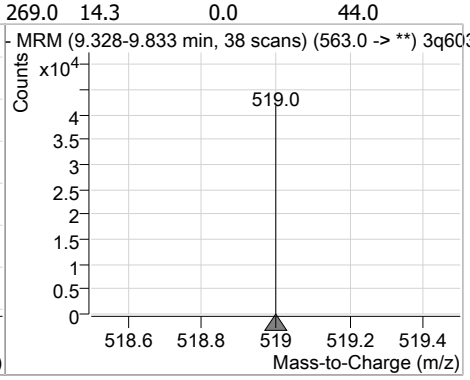


Perfluorinated Compounds by LC/MS/MS

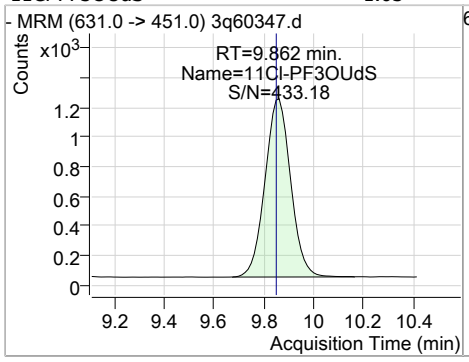
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.04	9.52	0.01	29336	563.0 -> 269.0	14.3	0.0	44.0

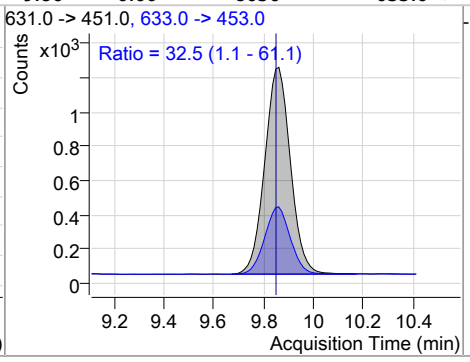


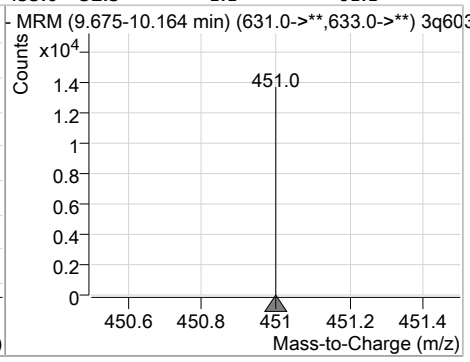




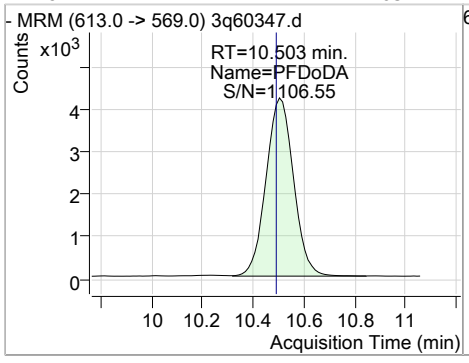
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.03	9.86	0.00	8636	633.0 -> 453.0	32.5	1.1	61.1

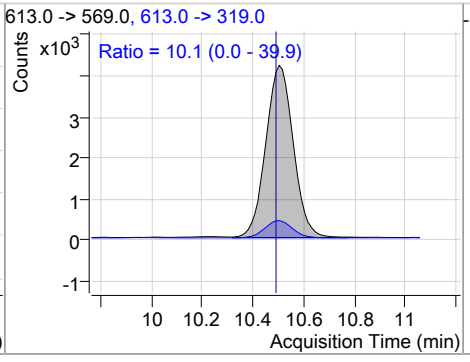


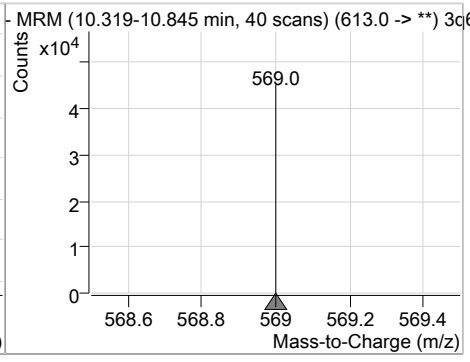




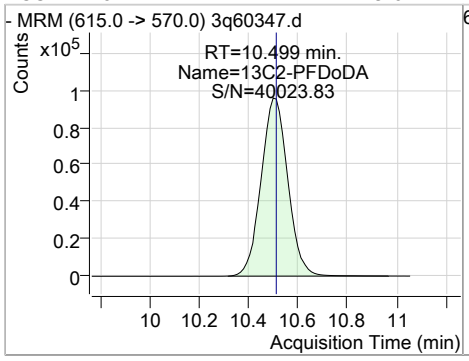
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.03	10.50	0.00	31605	613.0 -> 319.0	10.1	0.0	39.9

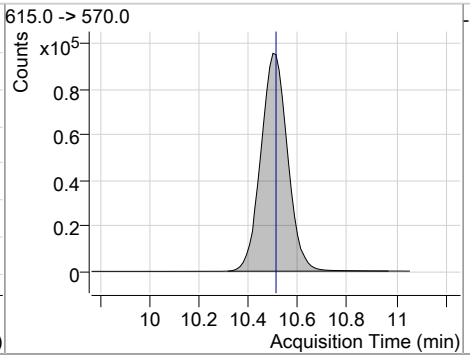


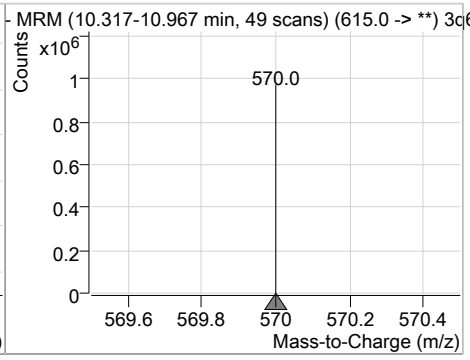




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.62	10.50	-0.01	719197				

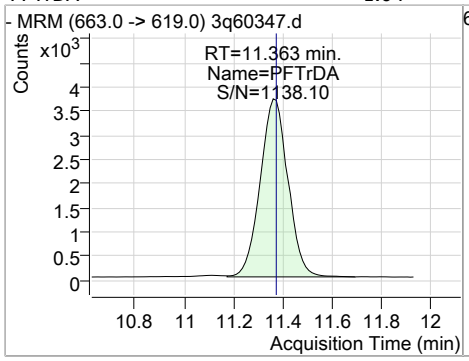


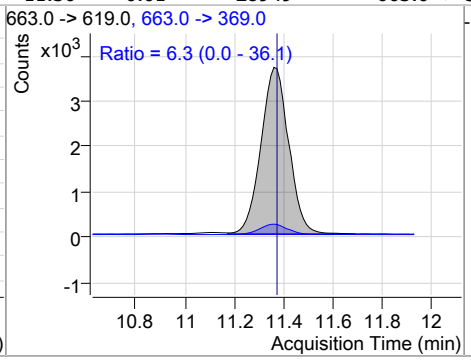


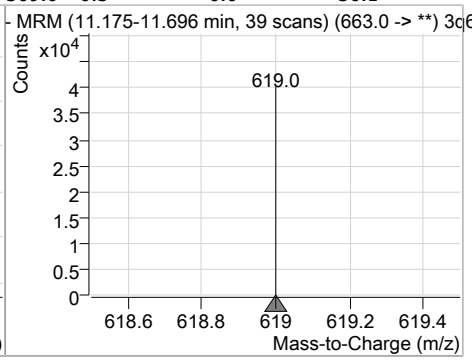


Perfluorinated Compounds by LC/MS/MS

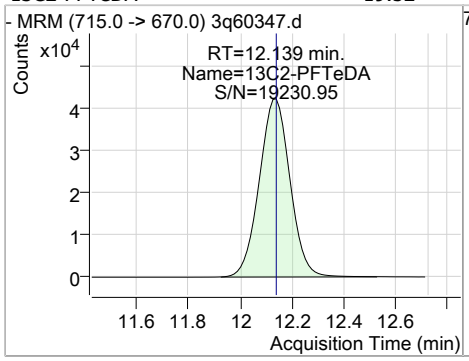
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.04	11.36	-0.01	28949	663.0 -> 369.0	6.3	0.0	36.1

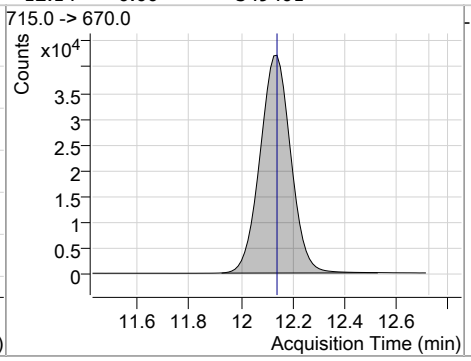


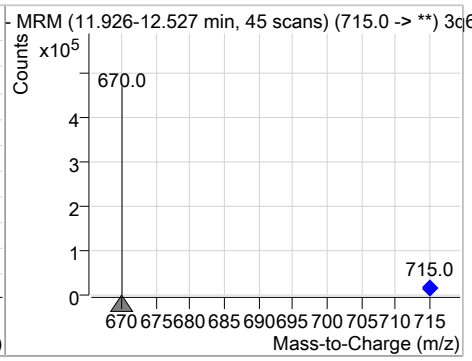




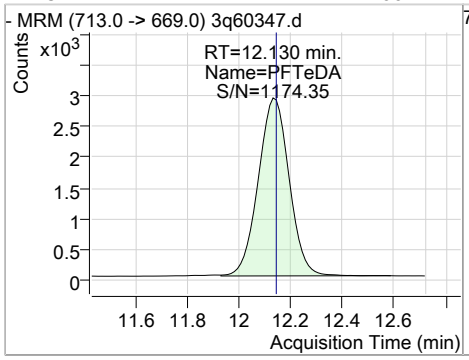
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.52	12.14	0.00	349401				

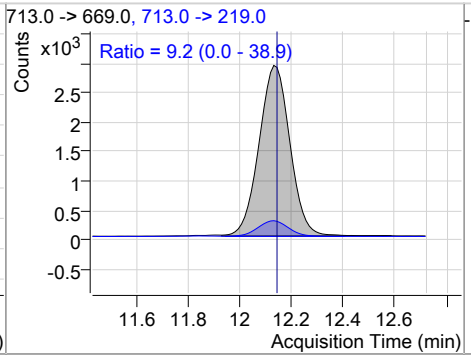


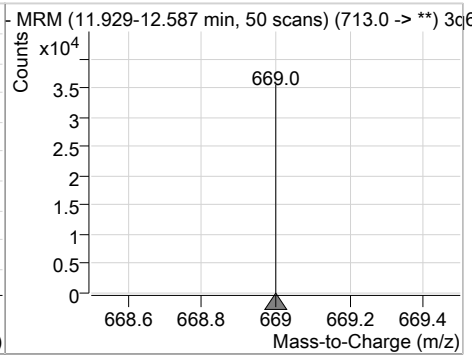




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.06	12.13	-0.01	24171	713.0 -> 219.0	9.2	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60347.D
Injection Time: 05/27/22 14:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q60348.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	5/27/2022 2:56:40 PM
Sample Name	:	ic824-2
Vial	:	P1-A4
DA Method File	:	ID_052722_S3Q824.quantmethod.xml
Batch Name	:	s3q824.batch.bin
Sample Information	:	op91139,S3Q824,250,,,1,1,water

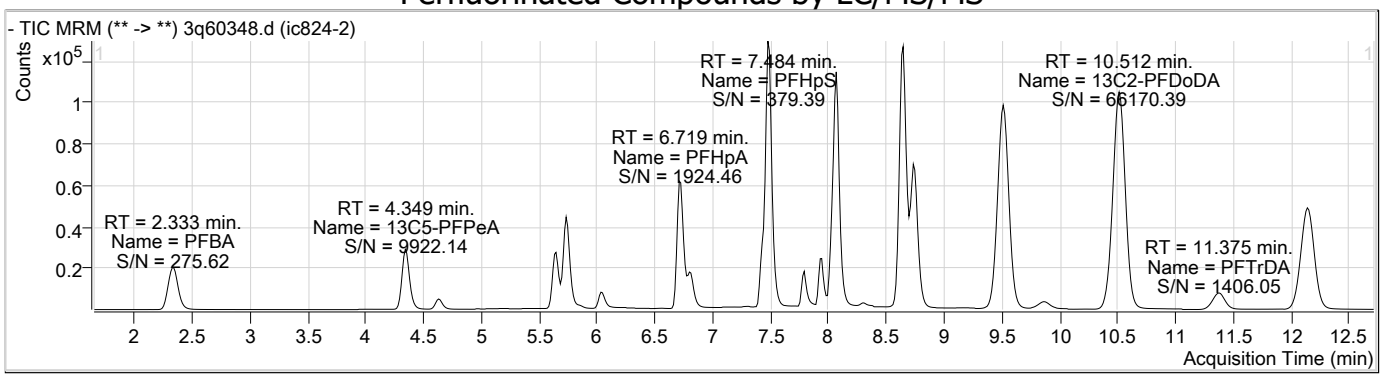
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.340	217.0 -> 172.0	118252	20.00	µg/L	0.013
M5-PFPeA	4.349	268.0 -> 223.0	113720	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	155969	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	198613	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	250459	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	320058	20.00	µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	493274	20.00	µg/L	0.013
M7-PFUnDA	9.517	570.0 -> 525.0	604680	20.00	µg/L	0.013
M2-PFDoDA	10.512	615.0 -> 570.0	718018	20.00	µg/L	0.000
M2-PFTeDA	12.139	715.0 -> 670.0	350378	20.00	µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	78971	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15344	20.00	µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	18954	20.00	µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	31688	20.00	µg/L	0.013
M2-4:2FTS	5.646	329.0 -> 81.0	10783	20.00	µg/L	0.013
M2-6:2FTS	7.498	429.0 -> 81.0	26560	20.00	µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	46779	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	65530	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	22089	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	25332	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	61021	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.646	329.0 -> 81.0	10783	19.24	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-6:2FTS	7.498	429.0 -> 81.0	26560	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-8:2FTS	8.739	529.0 -> 81.0	46779	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C2-PFDoDA	10.512	615.0 -> 570.0	718018	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-PFTeDA	12.139	715.0 -> 670.0	350378	19.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFBS	4.629	302.0 -> 99.0	15344	19.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C3-PFHxS	6.751	402.0 -> 99.0	18954	19.56	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFBA	2.340	217.0 -> 172.0	118252	19.56	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFHpA	6.718	367.0 -> 322.0	198613	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFHxA	5.739	318.0 -> 273.0	155969	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFPeA	4.349	268.0 -> 223.0	113720	19.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C6-PFDA	8.652	519.0 -> 474.0	493274	19.76	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

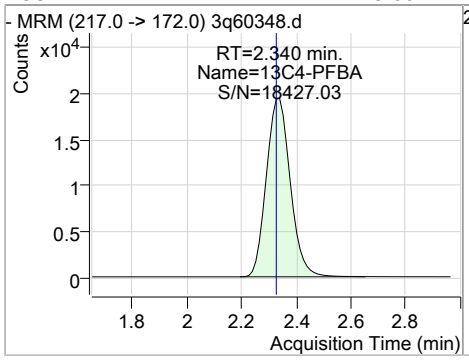
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C7-PFUnDA	9.517	570.0 -> 525.0	604680	19.61 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C8-FOSA	7.430	506.0 -> 78.0	78971	20.52 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C8-PFOA	7.487	421.0 -> 376.0	250459	19.82 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C8-PFOS	8.048	507.0 -> 99.0	31688	20.22 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C9-PFNA	8.075	472.0 -> 427.0	320058	19.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
d3-MeFOSAA	7.929	573.0 -> 419.0	65530	19.76 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C3-HFPO-DA	6.044	287.0 -> 169.0	22091	19.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
d3-MeFOSA	7.793	515.0 -> 169.0	25332	20.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
d5-EtFOSAA	8.029	589.0 -> 419.0	61082	19.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
Target Compounds						QValue
4:2FTS	5.637	327.0 -> 307.0	9861	2.10 µg/L		97
6:2FTS	7.499	427.0 -> 407.0	13054	2.05 µg/L		97
8:2FTS	8.740	527.0 -> 507.0	23385	2.09 µg/L		97
EtFOSAA	8.029	584.0 -> 419.0	5283	2.23 µg/L	m	95
FOSA	7.432	498.0 -> 78.0	7624	2.10 µg/L		99
MeFOSAA	7.942	570.0 -> 419.0	5661	2.17 µg/L	m	86
PFBA	2.333	213.0 -> 169.0	5071	2.20 µg/L		100
PFBS	4.632	299.0 -> 80.0	4230	2.18 µg/L		100
PFDA	8.652	513.0 -> 469.0	43973	2.13 µg/L		100
PFDoDA	10.516	613.0 -> 569.0	64852	2.12 µg/L		100
PFDS	9.401	599.0 -> 80.0	2541	2.18 µg/L		98
PFHpA	6.719	363.0 -> 319.0	30748	2.11 µg/L		99
PFHpS	7.484	449.0 -> 80.0	4513	2.21 µg/L		99
PFHxA	5.740	313.0 -> 269.0	13905	2.13 µg/L		99
PFHxS	6.752	399.0 -> 80.0	4305	2.18 µg/L	m	98
PFNA	8.075	463.0 -> 419.0	32448	2.14 µg/L		99
PFNS	8.584	549.0 -> 80.0	4017	2.11 µg/L		98
PFOA	7.487	413.0 -> 369.0	24930	2.14 µg/L		100
PFOS	8.049	499.0 -> 80.0	5391	2.17 µg/L	m	82
PFPeA	4.352	263.0 -> 219.0	17926	2.14 µg/L		100
PFPeS	5.857	349.0 -> 80.0	2807	2.16 µg/L		97
PFTeDA	12.143	713.0 -> 669.0	49085	2.15 µg/L		99
PFTrDA	11.375	663.0 -> 619.0	59487	2.14 µg/L		99
PFUnDA	9.519	563.0 -> 519.0	59770	2.11 µg/L		100
11Cl-PF3OUdS	9.862	631.0 -> 451.0	17343	2.07 µg/L		98
9Cl-PF3ONS	8.309	531.0 -> 351.0	3818	2.23 µg/L		94
ADONA	6.819	377.0 -> 251.0	44084	2.10 µg/L		100
HFPO-DA	6.051	329.0 -> 169.0	6602	2.11 µg/L		100
MeFOSA	7.794	512.0 -> 169.0	2650	2.11 µg/L		91

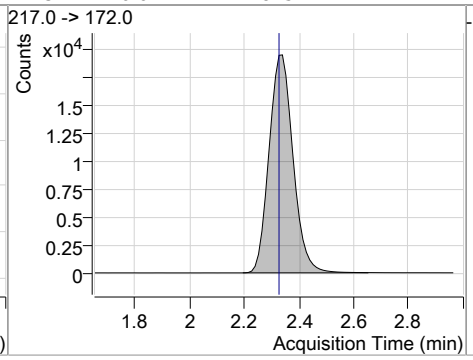
 # = Qualifier out of range, m = manually integrated, + = Area summed

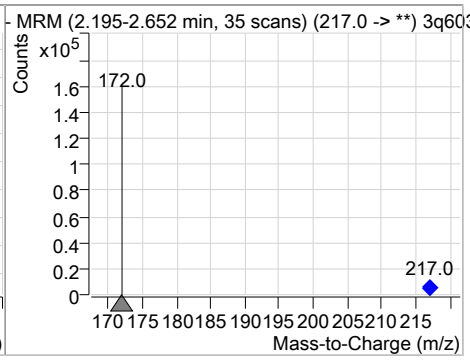
Perfluorinated Compounds by LC/MS/MS



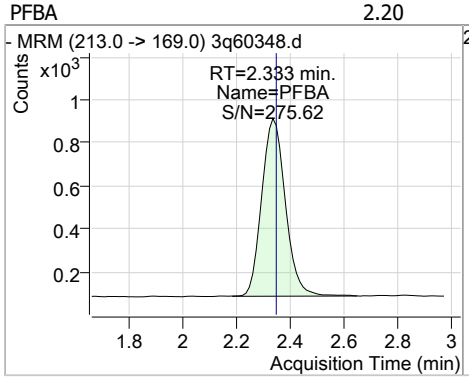
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.56	2.34	0.01	118252				

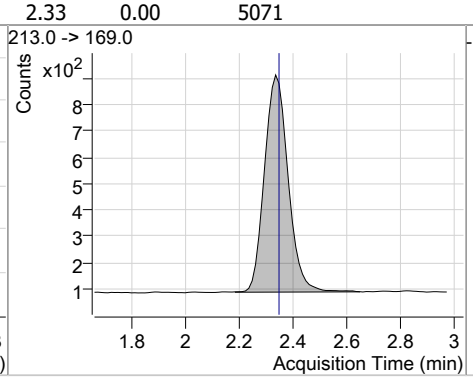


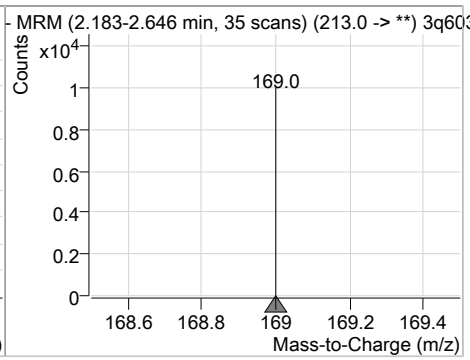




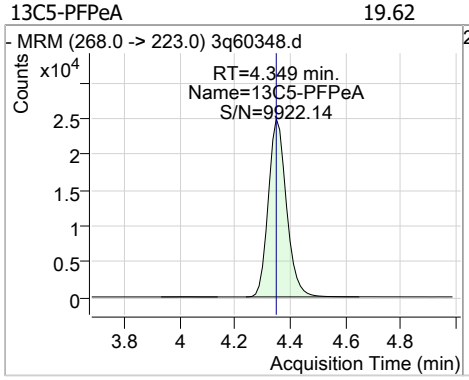
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.20	2.33	0.00	5071				

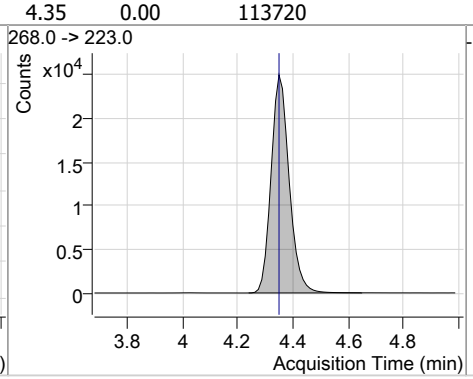


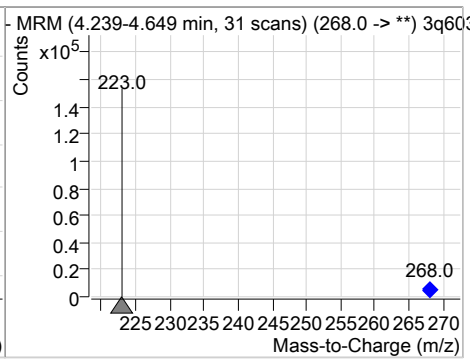




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.62	4.35	0.00	113720				

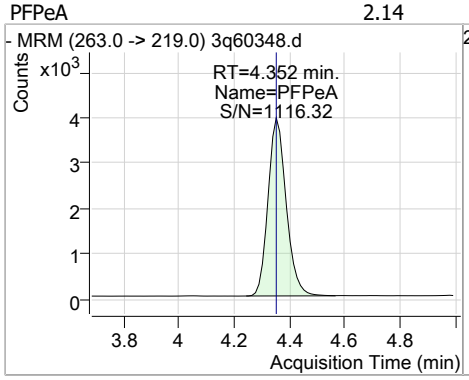


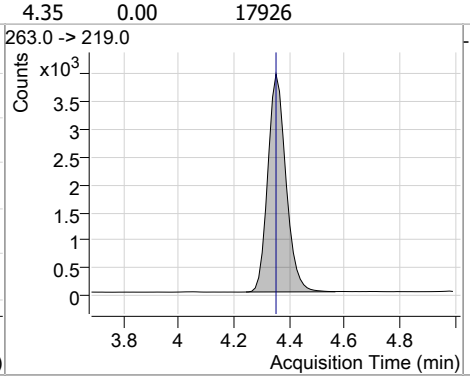


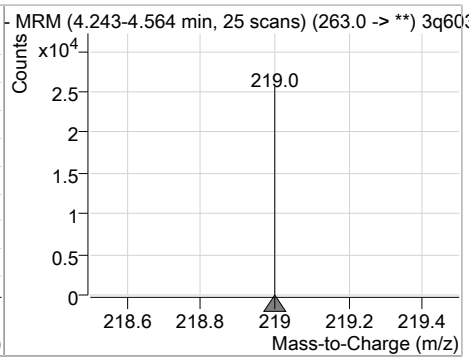


Perfluorinated Compounds by LC/MS/MS

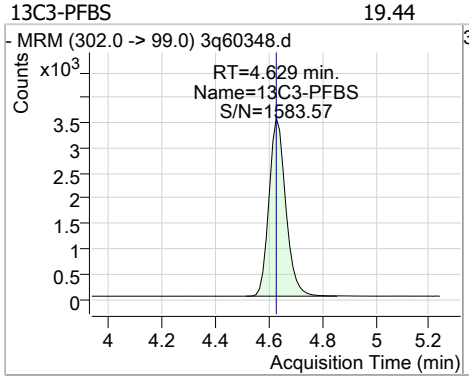
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.14	4.35	0.00	17926				

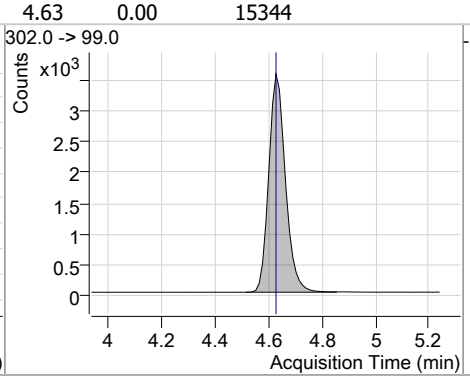


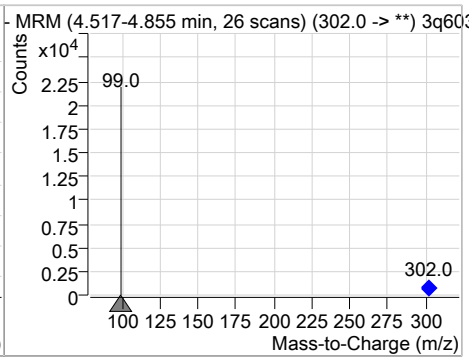




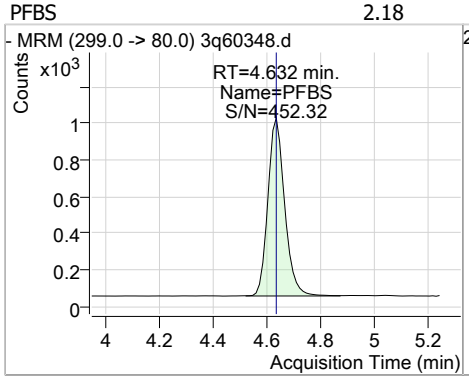
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.44	4.63	0.00	15344				

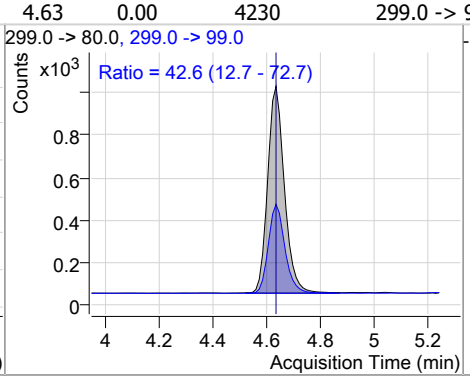


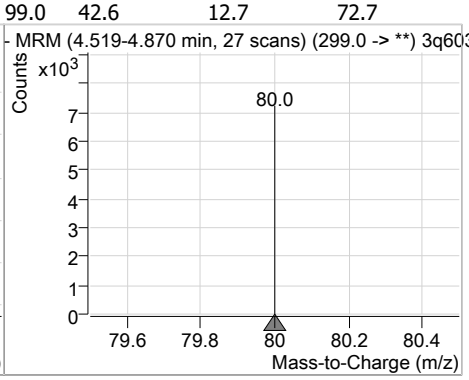




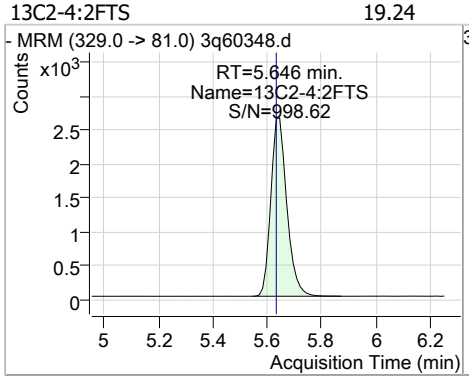
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.18	4.63	0.00	4230	299.0 -> 99.0	42.6	12.7	72.7

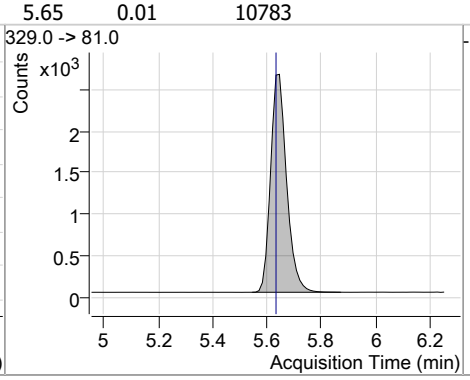


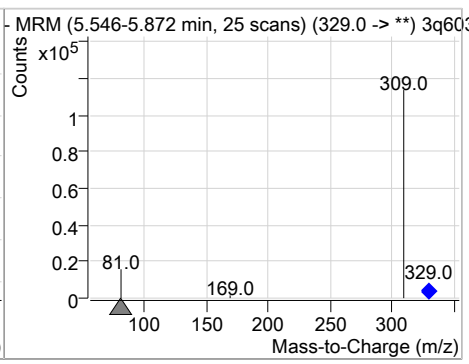




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.24	5.65	0.01	10783				

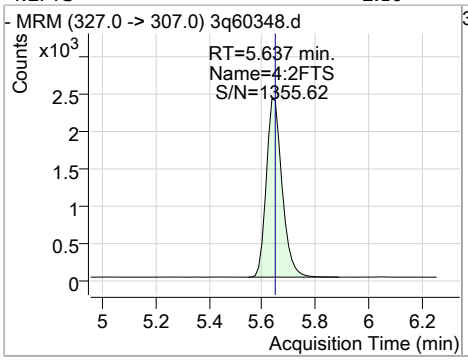


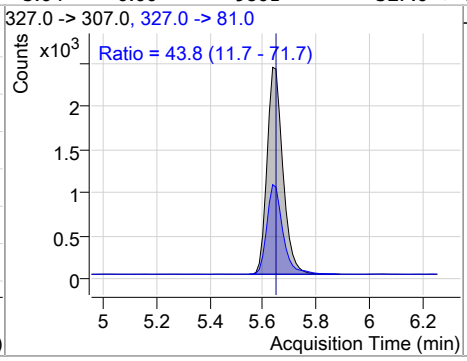


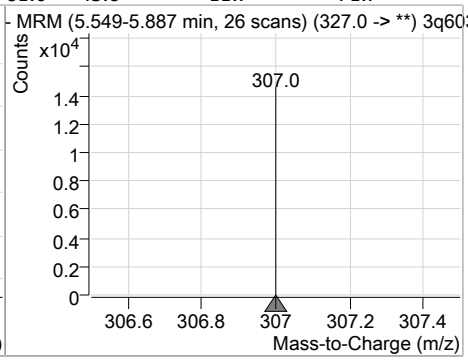


Perfluorinated Compounds by LC/MS/MS

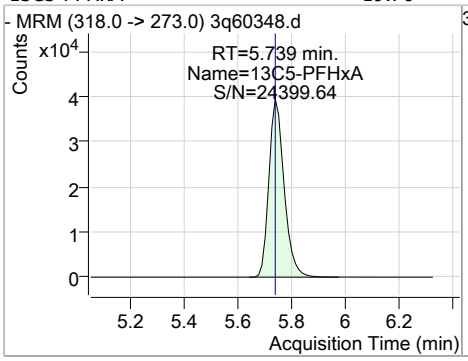
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.10	5.64	0.00	9861	327.0 -> 81.0	43.8	11.7	71.7

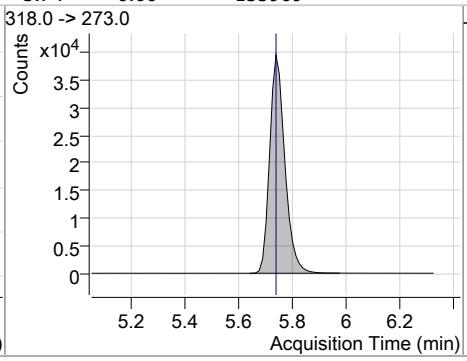


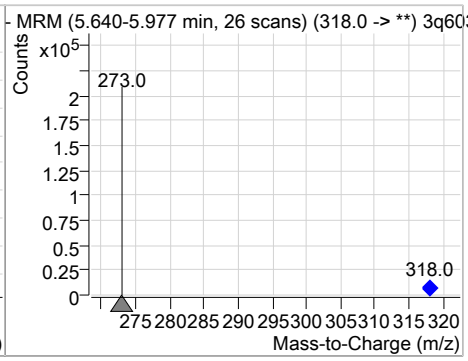




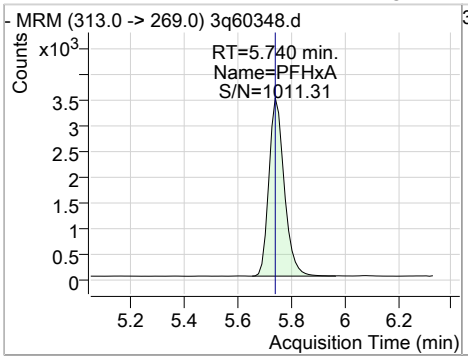
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.76	5.74	0.00	155969				

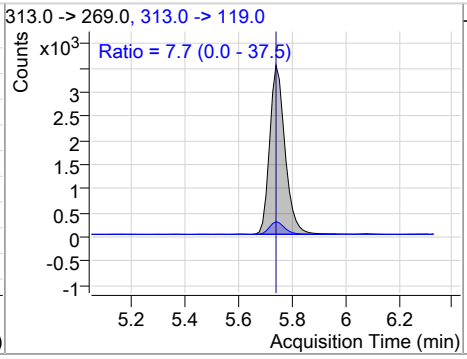


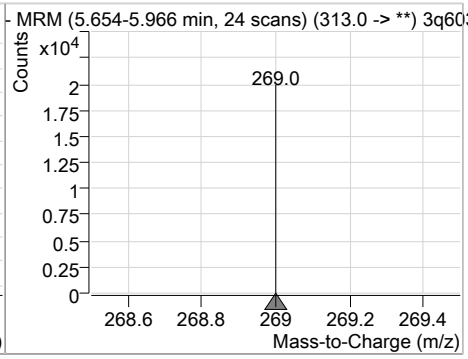




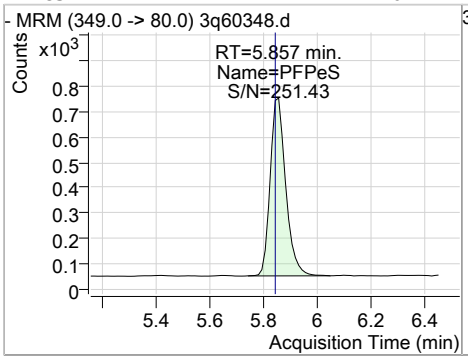
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.13	5.74	0.00	13905	313.0 -> 119.0	7.7	0.0	37.5

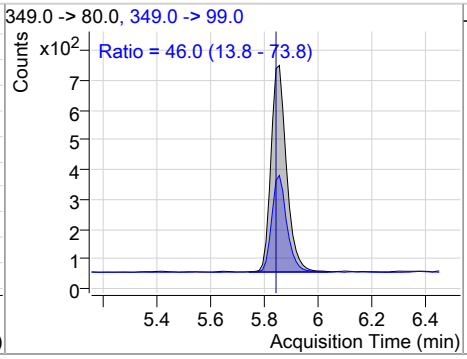


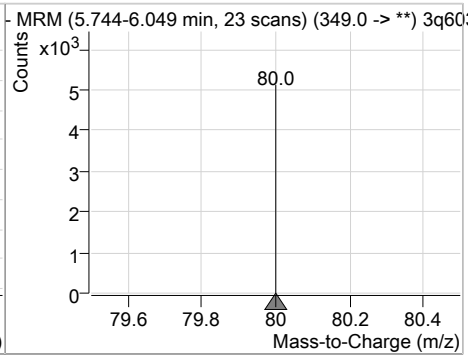




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.16	5.86	0.01	2807	349.0 -> 99.0	46.0	13.8	73.8

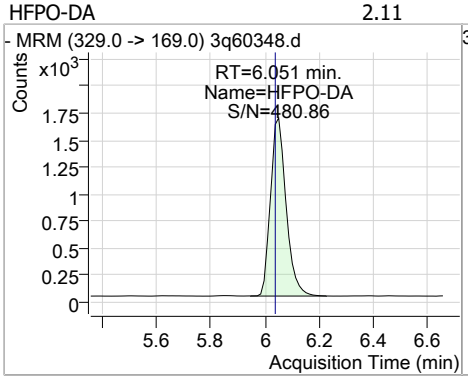


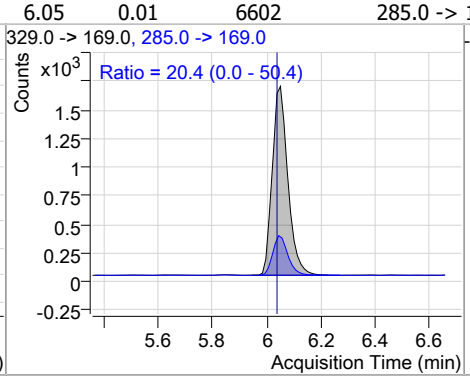


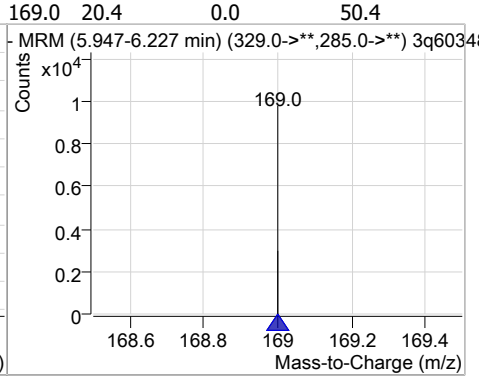


Perfluorinated Compounds by LC/MS/MS

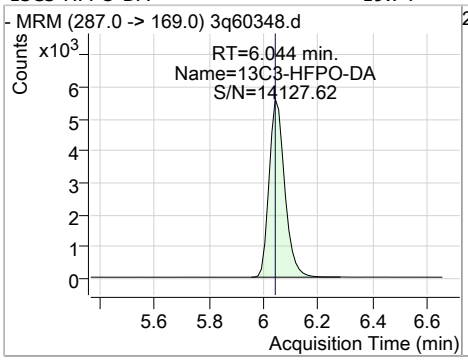
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.11	6.05	0.01	6602	285.0 -> 169.0	20.4	0.0	50.4

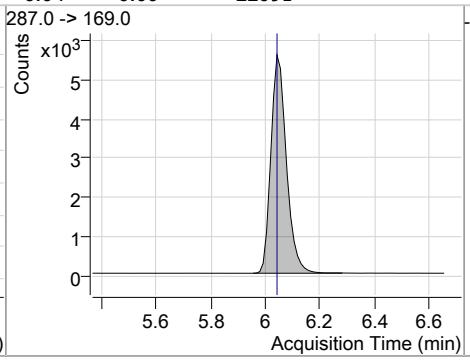


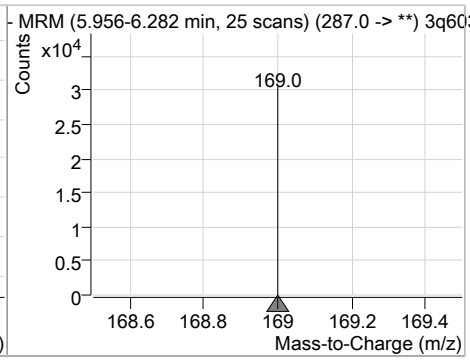




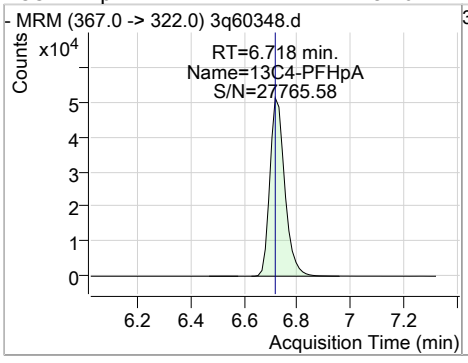
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.74	6.04	0.00	22091				

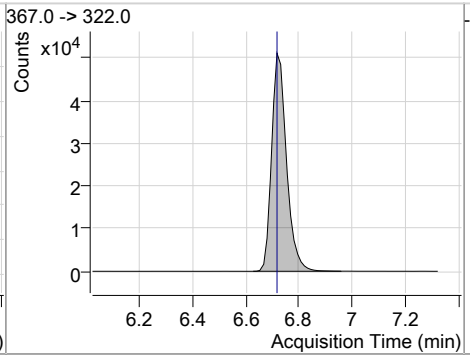


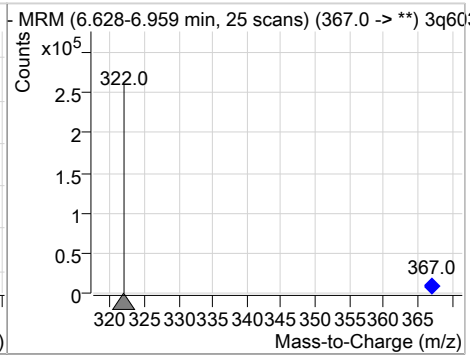




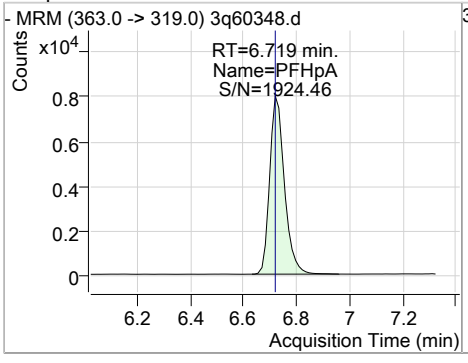
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.76	6.72	0.00	198613				

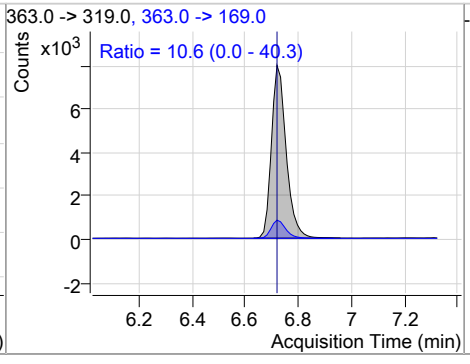


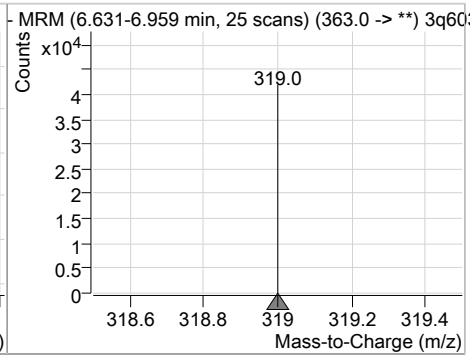




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.11	6.72	0.00	30748	363.0 -> 169.0	10.6	0.0	40.3

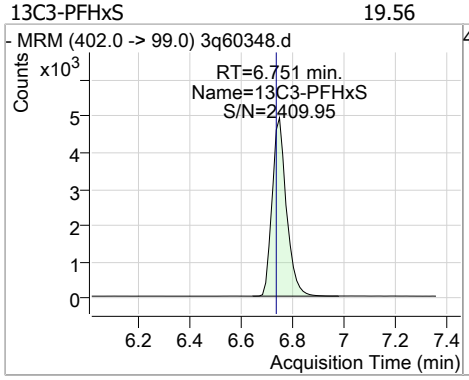


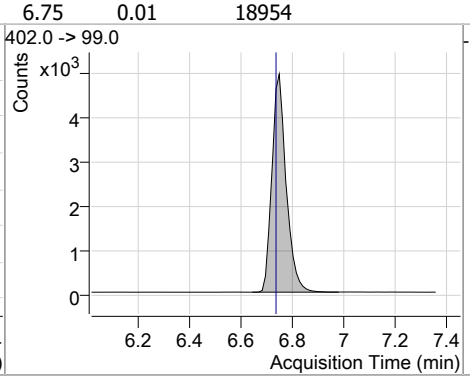


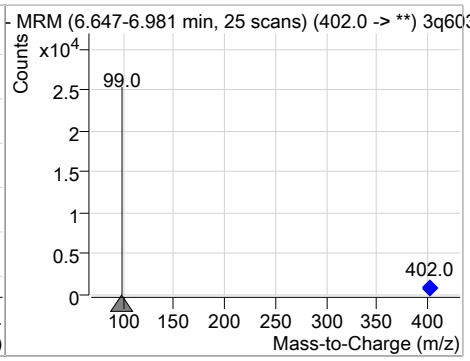


Perfluorinated Compounds by LC/MS/MS

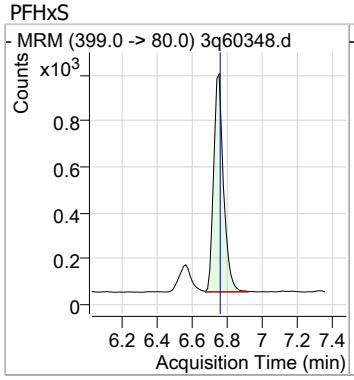
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.56	6.75	0.01	18954				

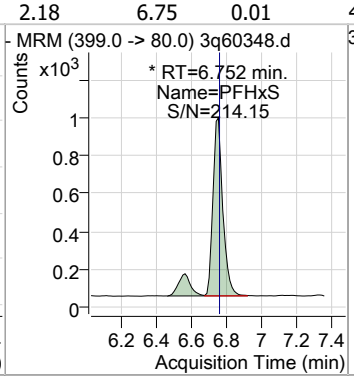


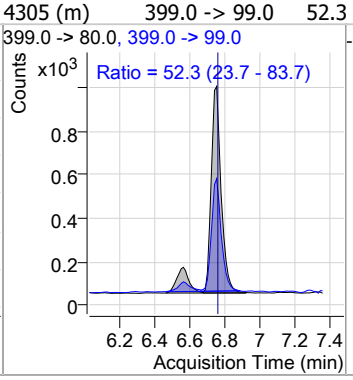


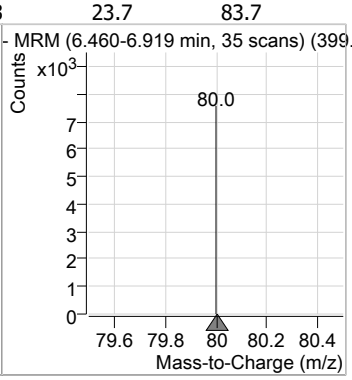


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.18	6.75	0.01	4305 (m)	399.0 -> 99.0	52.3	23.7	83.7

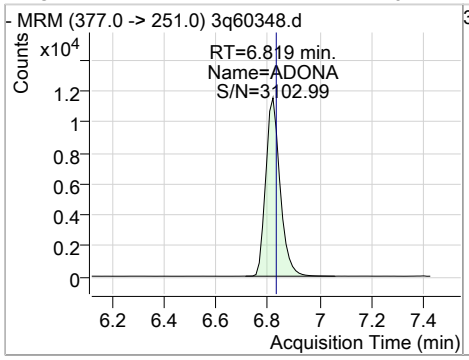


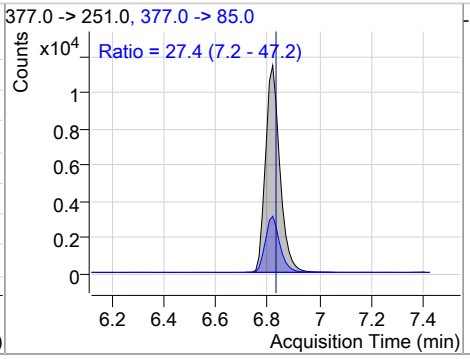


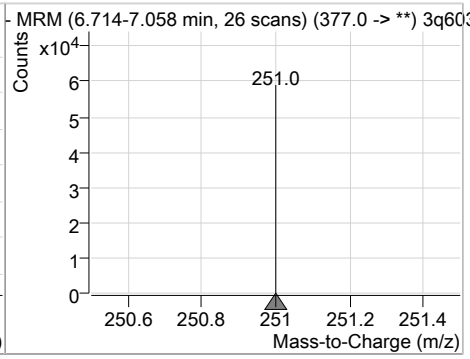




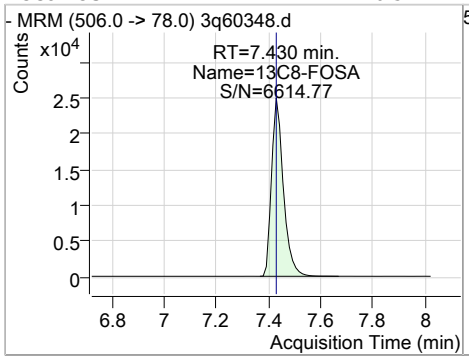
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	2.10	6.82	0.00	44084	377.0 -> 85.0	27.4	7.2	47.2

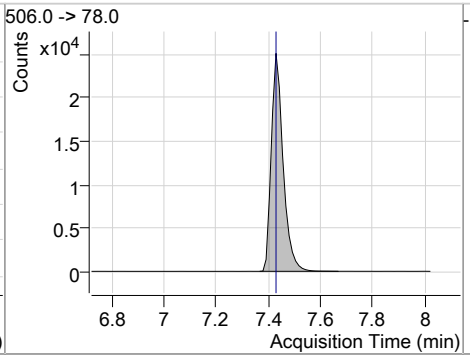


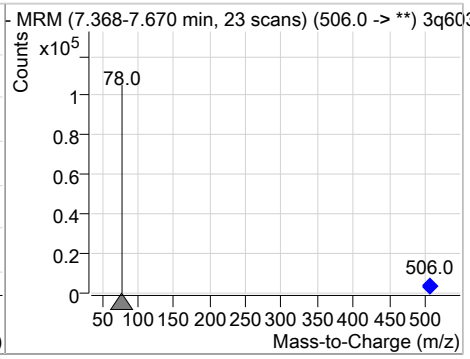




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.52	7.43	0.00	78971				

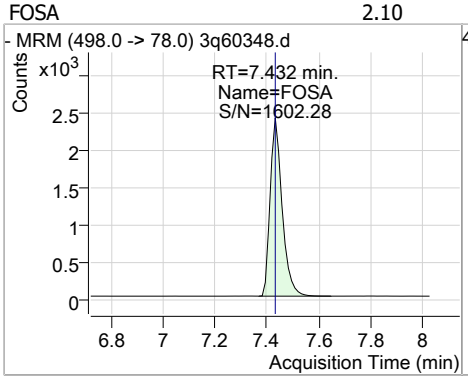


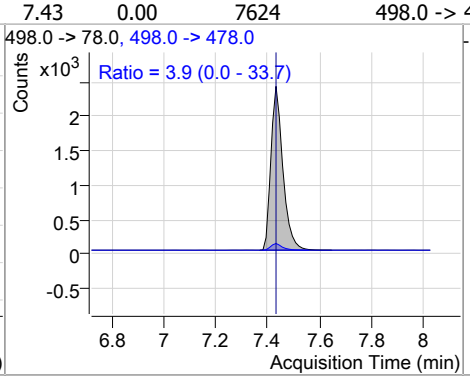


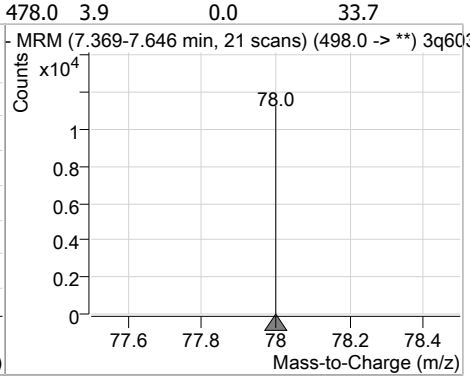


Perfluorinated Compounds by LC/MS/MS

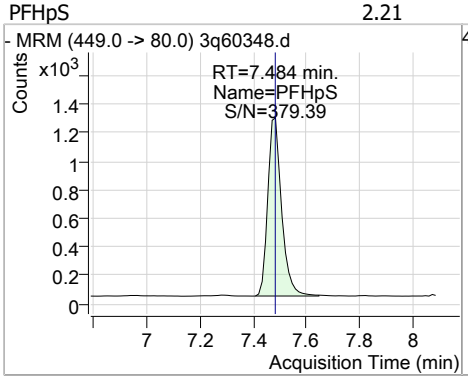
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.10	7.43	0.00	7624	498.0 -> 478.0	3.9	0.0	33.7

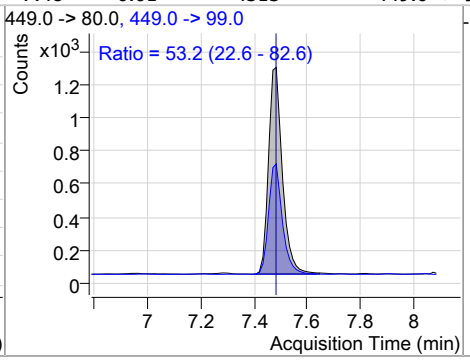


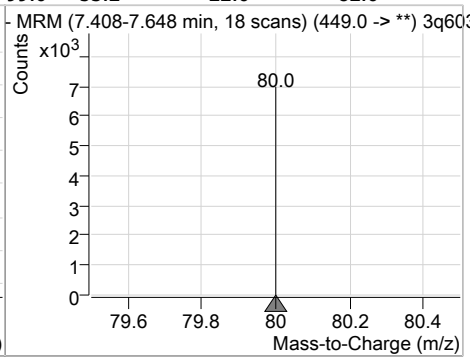




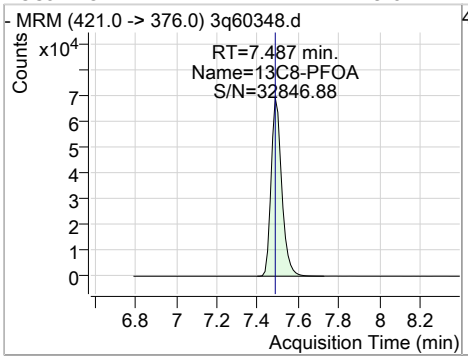
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.21	7.48	0.01	4513	449.0 -> 99.0	53.2	22.6	82.6

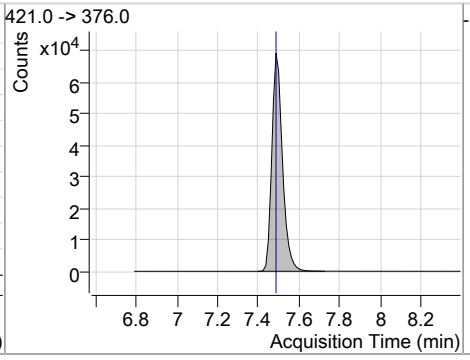


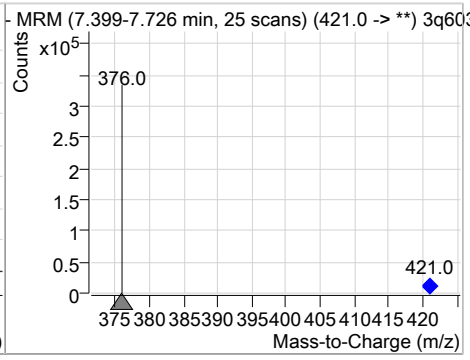




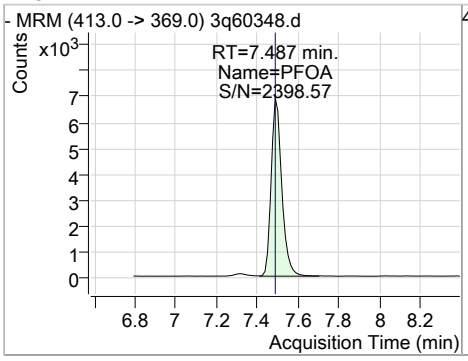
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.82	7.49	0.00	250459				

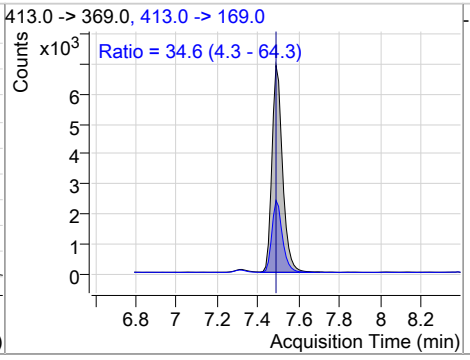


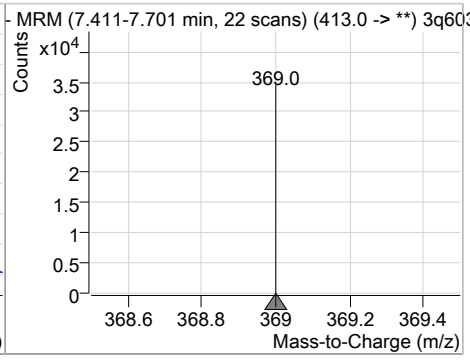




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.14	7.49	0.00	24930	413.0 -> 169.0	34.6	4.3	64.3

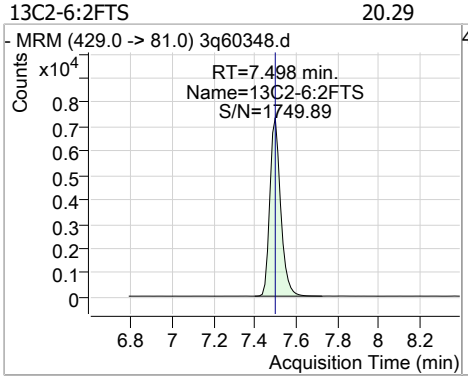


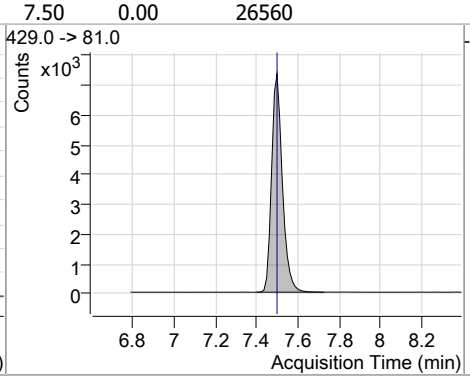


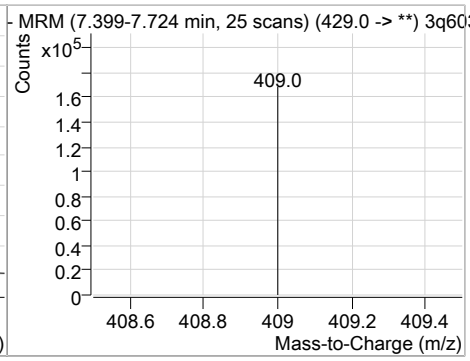


Perfluorinated Compounds by LC/MS/MS

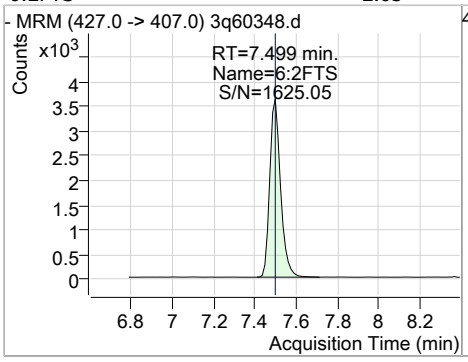
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.29	7.50	0.00	26560				

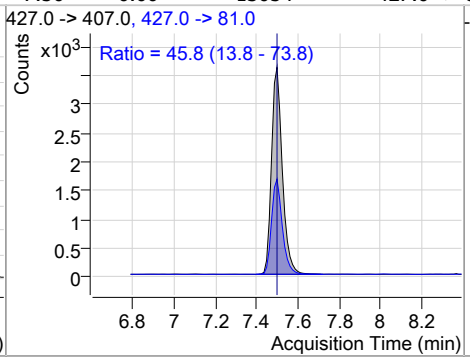


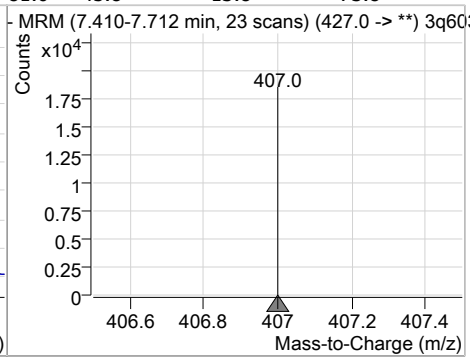




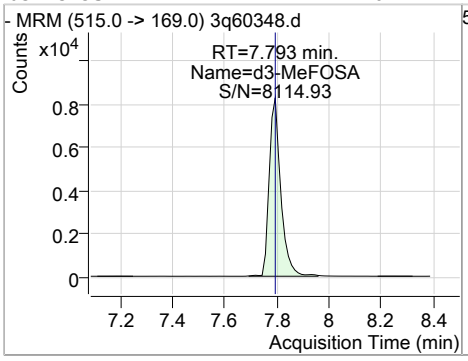
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.05	7.50	0.00	13054	427.0 -> 81.0	45.8	13.8	73.8

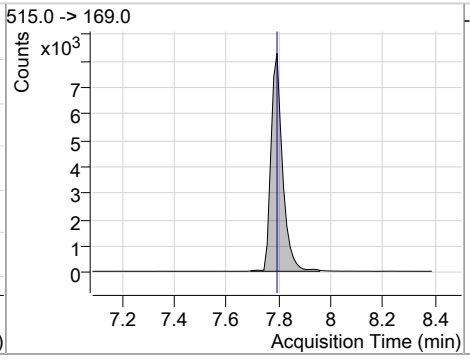


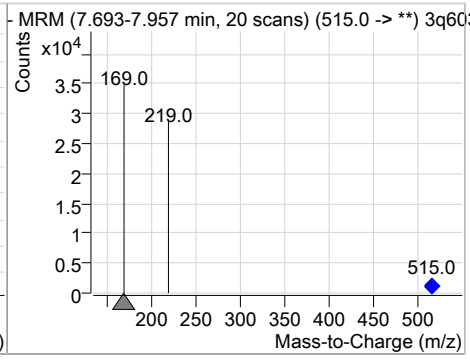




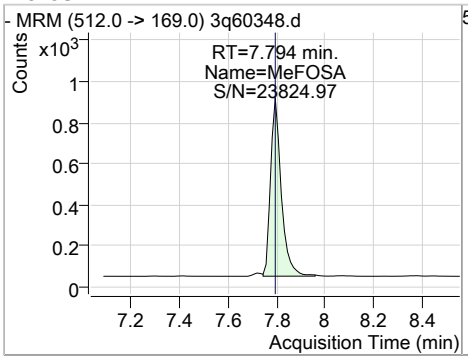
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.27	7.79	0.00	25332				

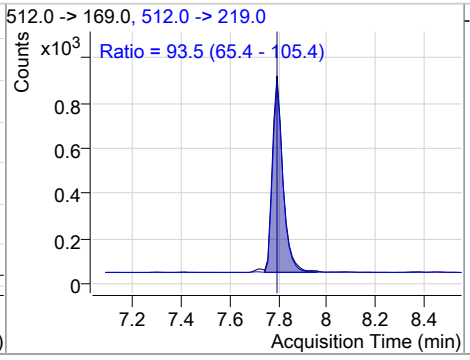


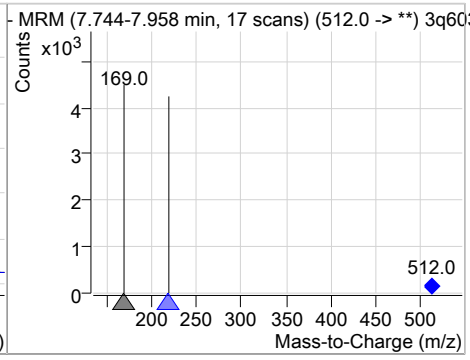




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.11	7.79	0.00	2650	512.0 -> 219.0	93.5	65.4	105.4

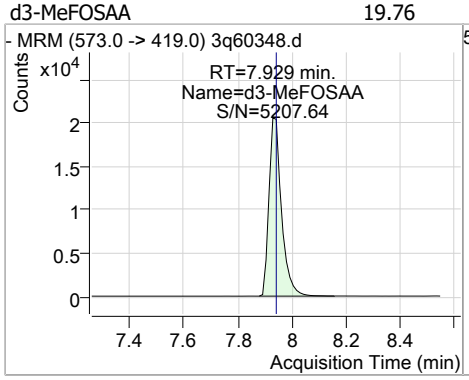


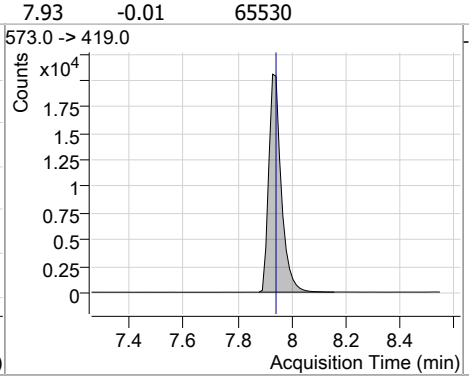


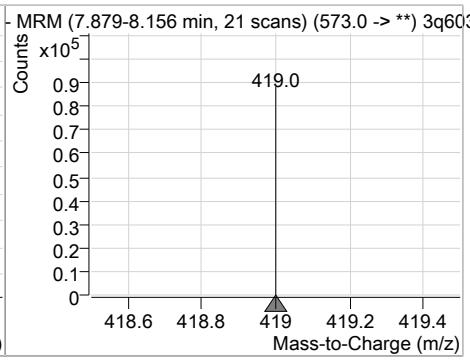


Perfluorinated Compounds by LC/MS/MS

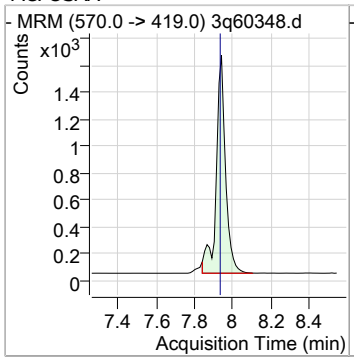
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.76	7.93	-0.01	65530				

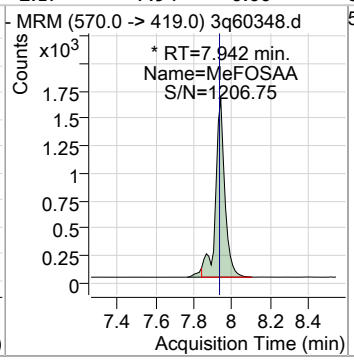


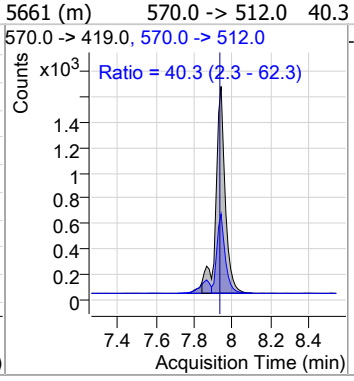


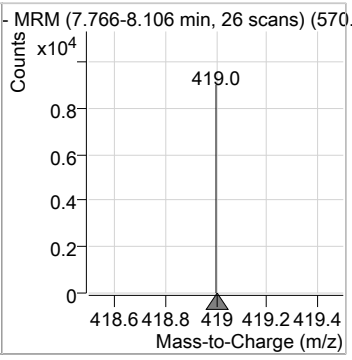


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.17	7.94	0.00	5661 (m)	570.0 -> 512.0	40.3	2.3	62.3

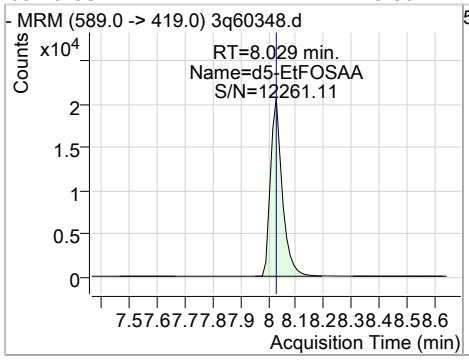


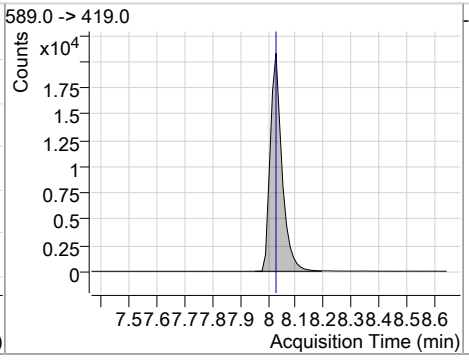


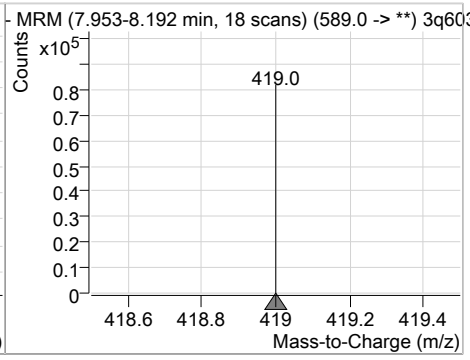




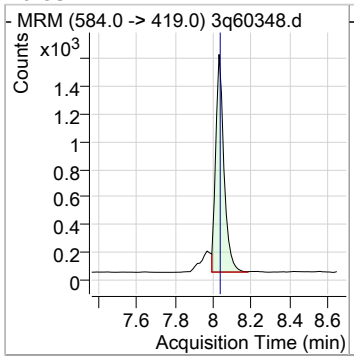
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.38	8.03	0.00	61082				

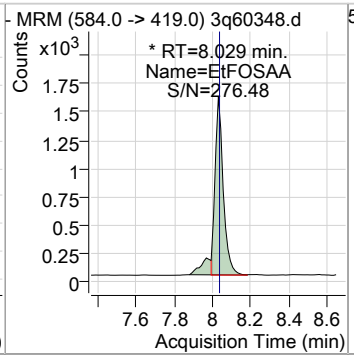


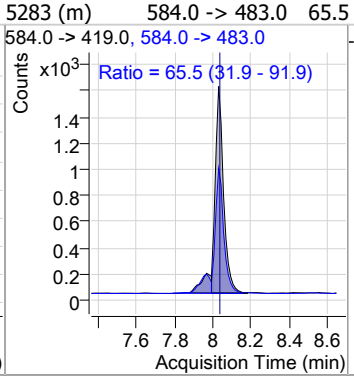


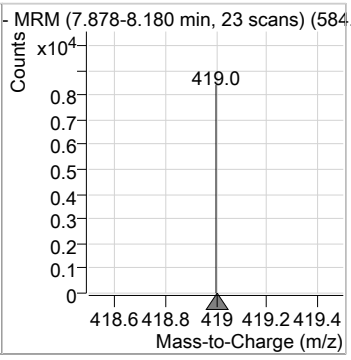


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	2.23	8.03	0.00	5283 (m)	584.0 -> 483.0	65.5	31.9	91.9



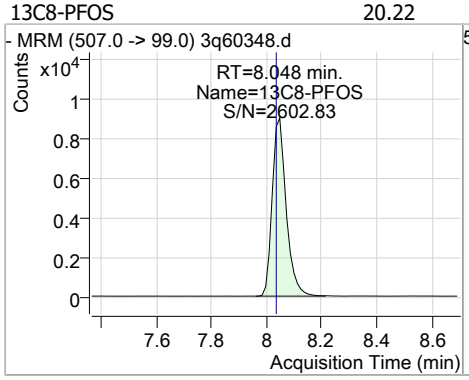


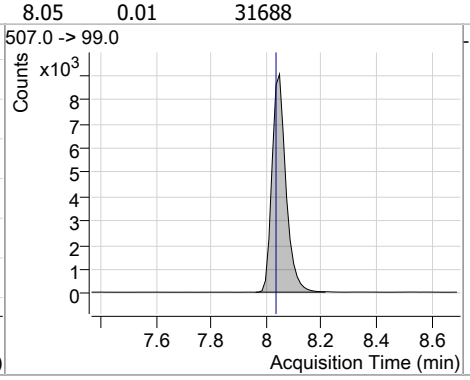


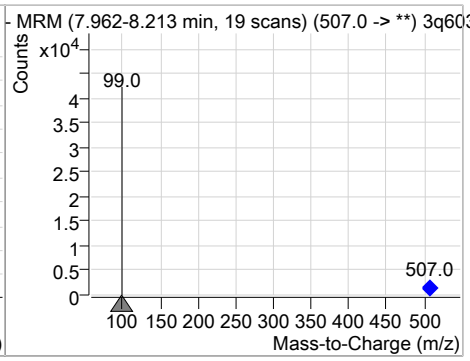


Perfluorinated Compounds by LC/MS/MS

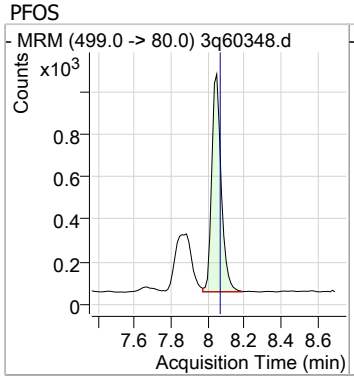
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.22	8.05	0.01	31688				

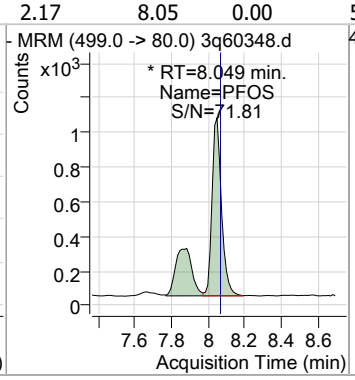


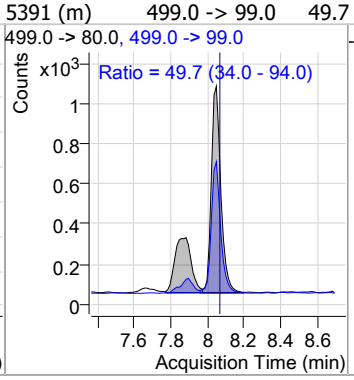


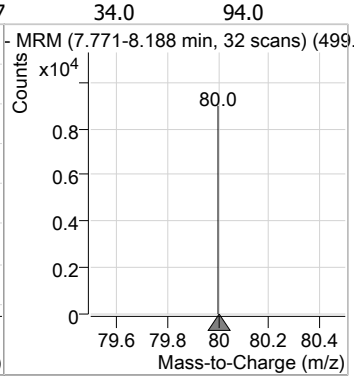


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.17	8.05	0.00	5391 (m)	499.0 -> 99.0	49.7	34.0	94.0

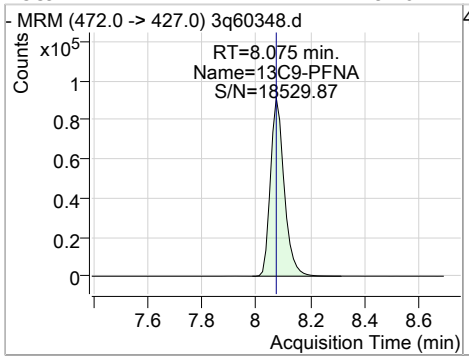


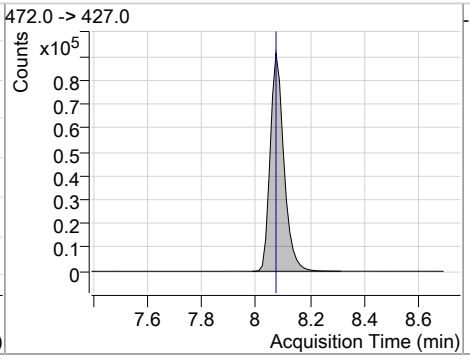


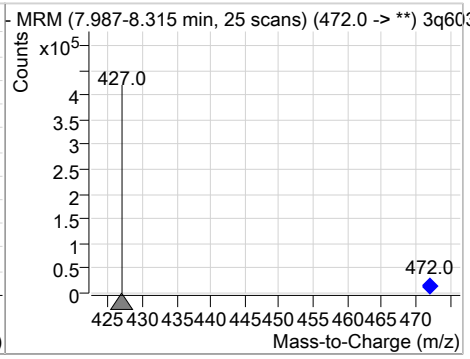




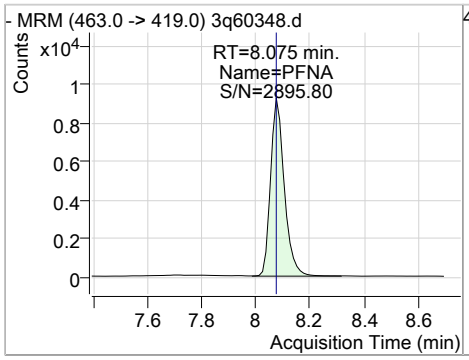
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.78	8.08	0.00	320058				

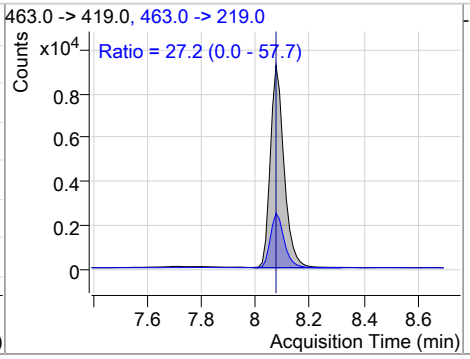


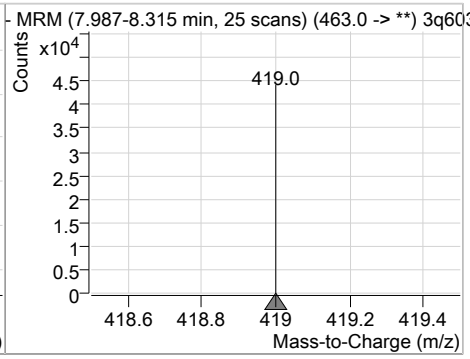




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.14	8.08	0.00	32448	463.0 -> 219.0	27.2	0.0	57.7

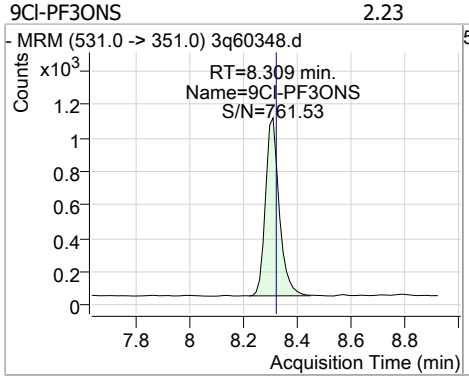


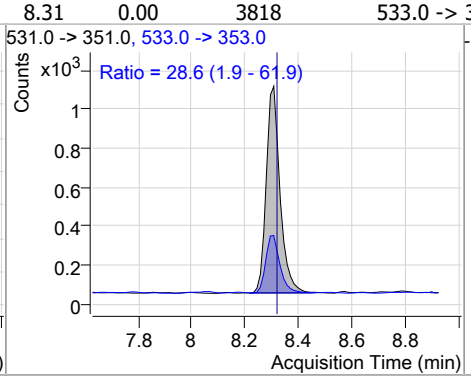


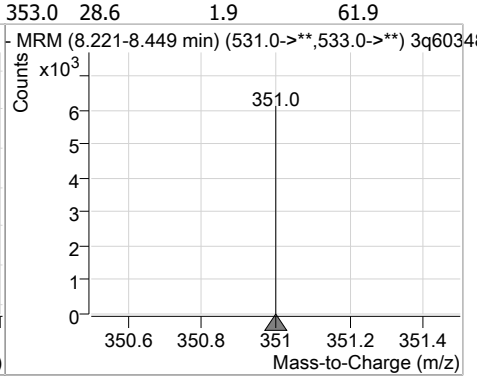


Perfluorinated Compounds by LC/MS/MS

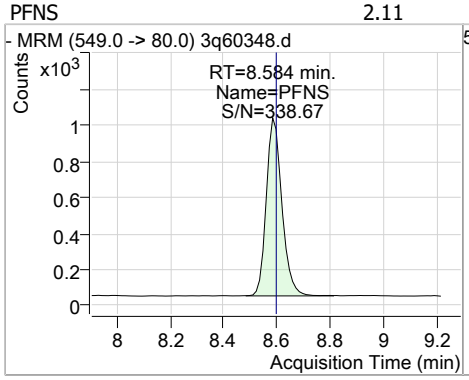
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	2.23	8.31	0.00	3818	533.0 -> 353.0	28.6	1.9	61.9

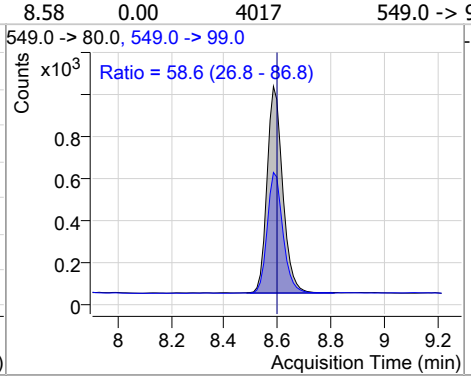


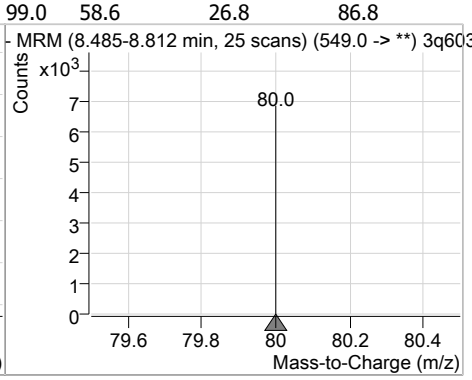




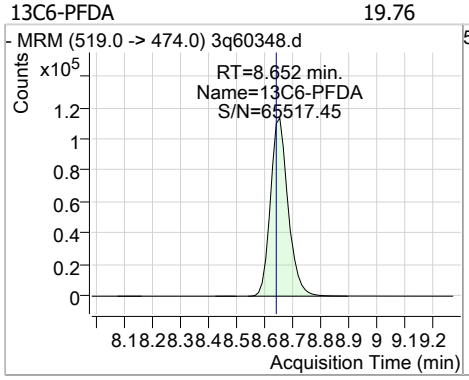
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.11	8.58	0.00	4017	549.0 -> 99.0	58.6	26.8	86.8

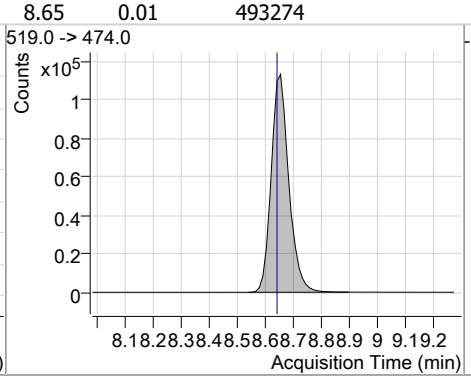


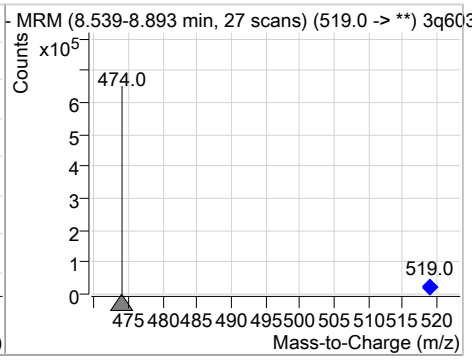




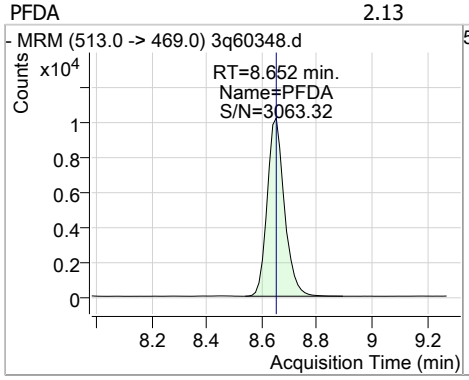
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.76	8.65	0.01	493274				

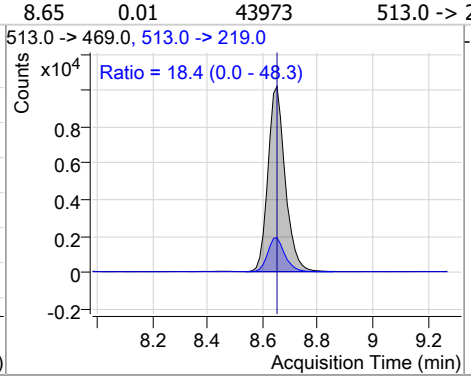


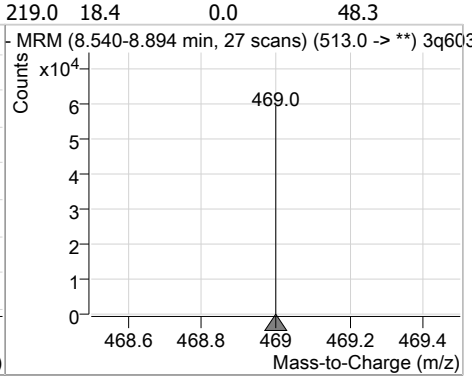




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	2.13	8.65	0.01	43973	513.0 -> 219.0	18.4	0.0	48.3

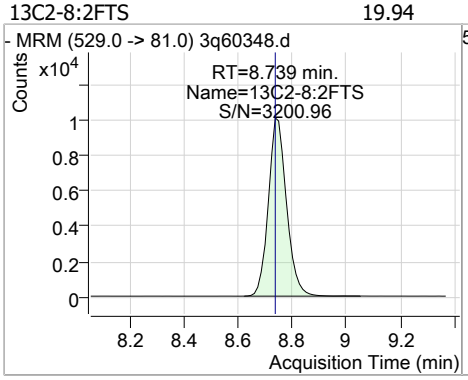


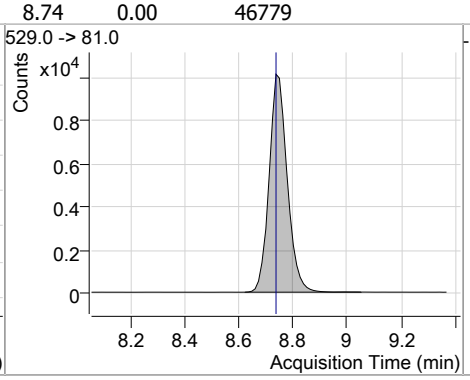


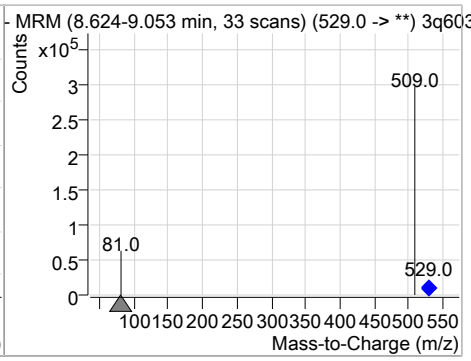


Perfluorinated Compounds by LC/MS/MS

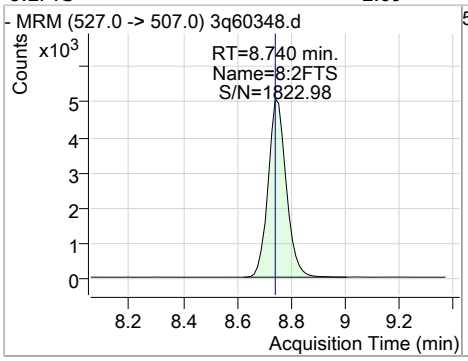
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.94	8.74	0.00	46779				

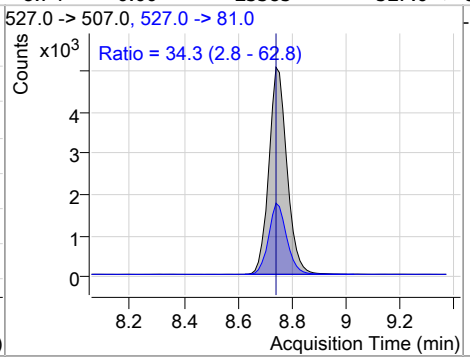


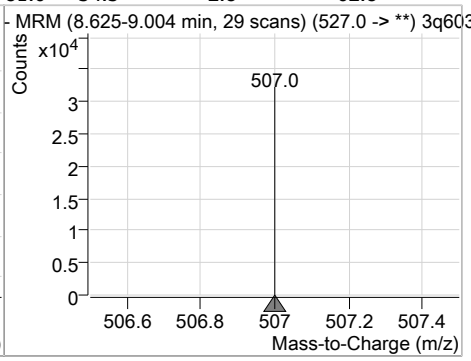




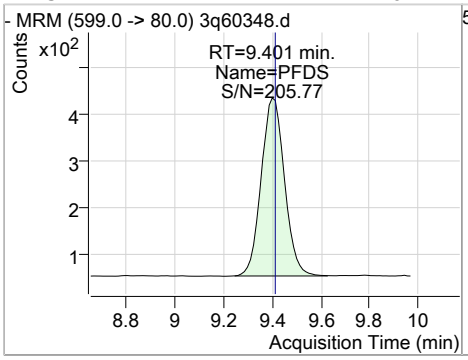
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.09	8.74	0.00	23385	527.0 -> 81.0	34.3	2.8	62.8

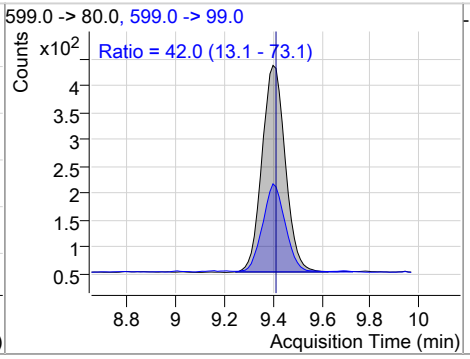


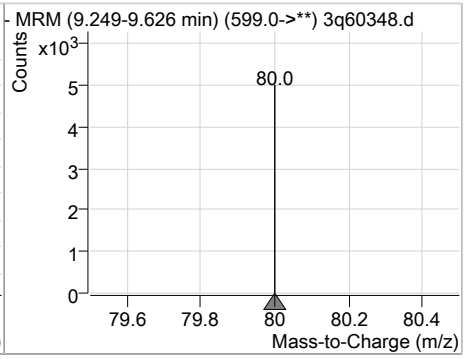




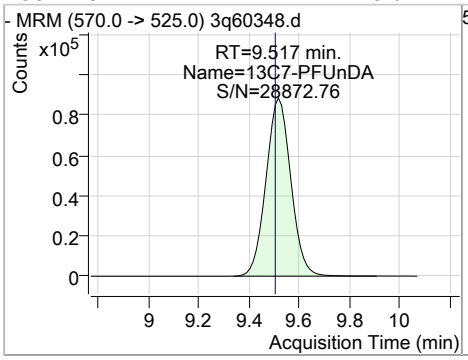
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	2.18	9.40	0.00	2541	599.0 -> 99.0	42.0	13.1	73.1

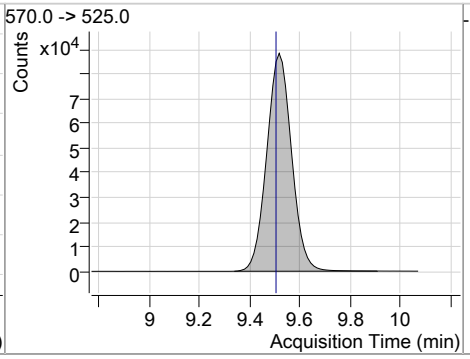


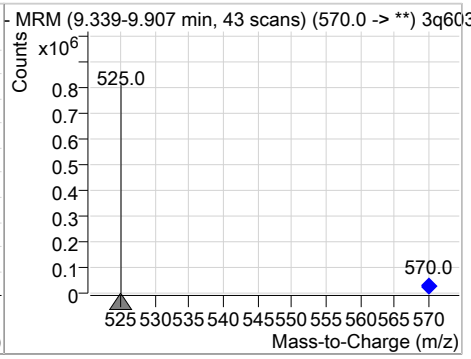




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.61	9.52	0.01	604680				

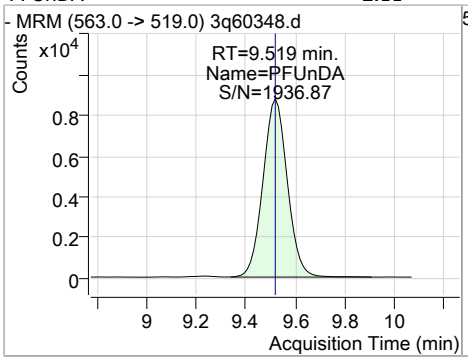


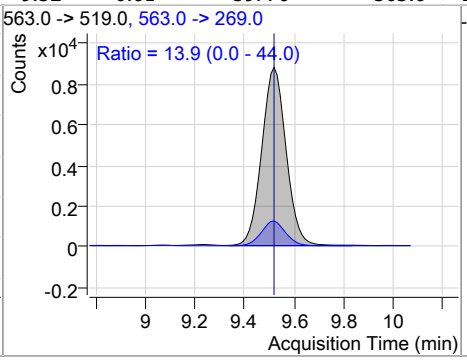


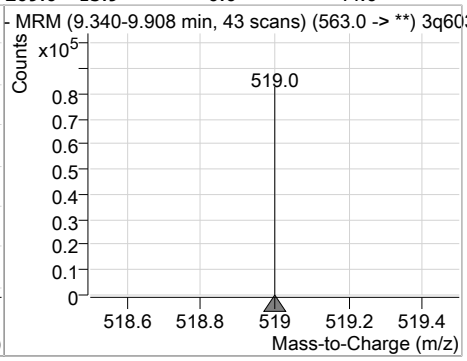


Perfluorinated Compounds by LC/MS/MS

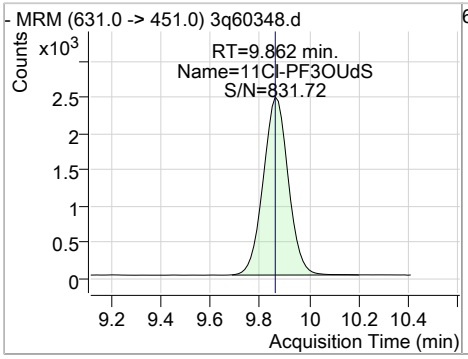
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	2.11	9.52	0.01	59770	563.0 -> 269.0	13.9	0.0	44.0

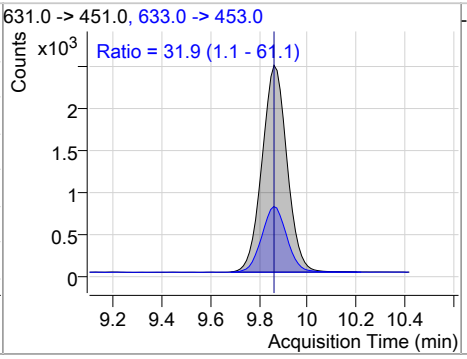


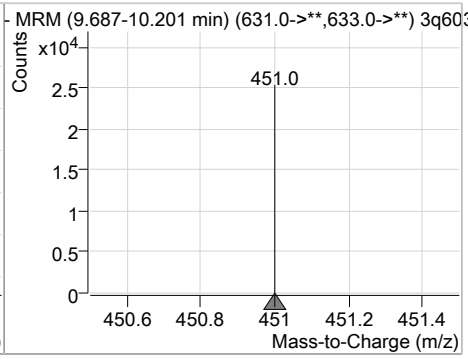




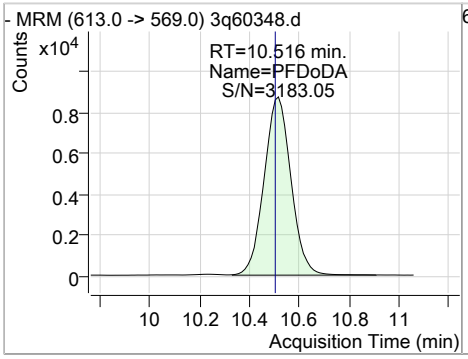
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.07	9.86	0.00	17343	633.0 -> 453.0	31.9	1.1	61.1

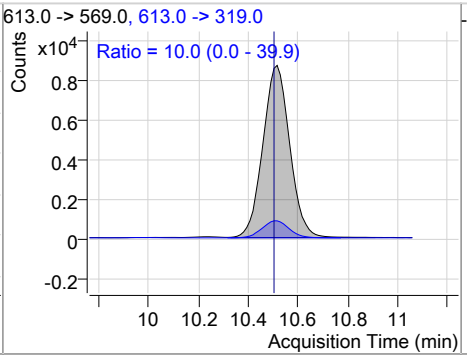


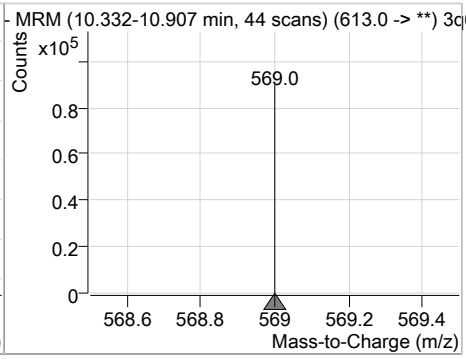




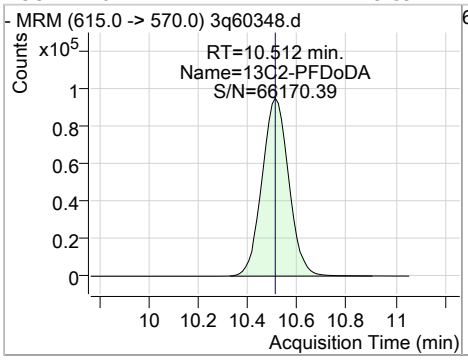
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.12	10.52	0.01	64852	613.0 -> 319.0	10.0	0.0	39.9

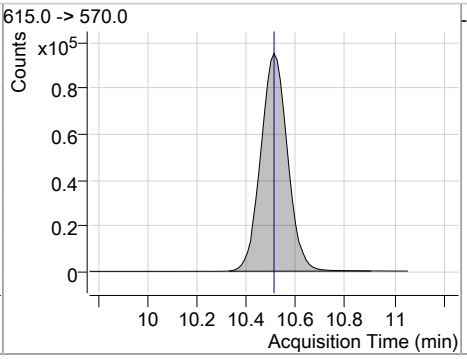


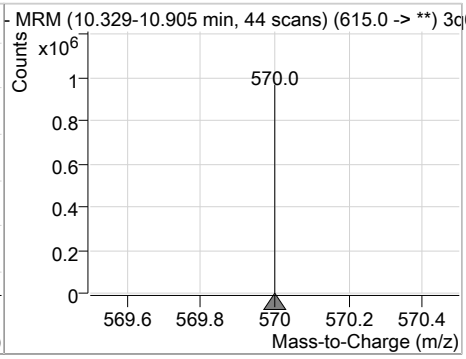




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.59	10.51	0.00	718018				

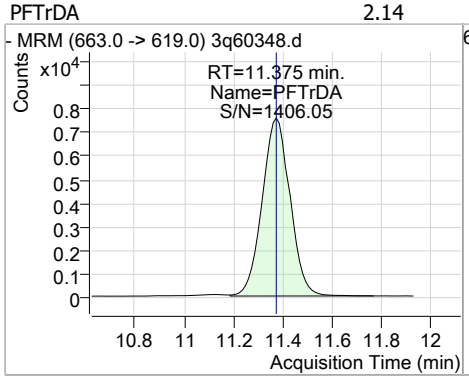


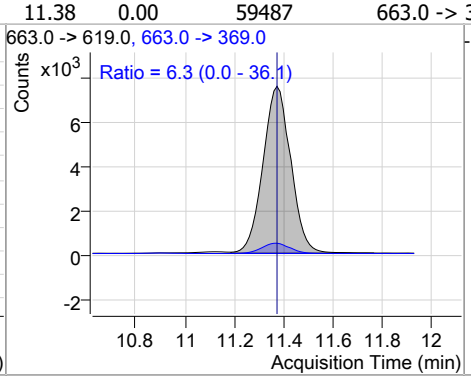


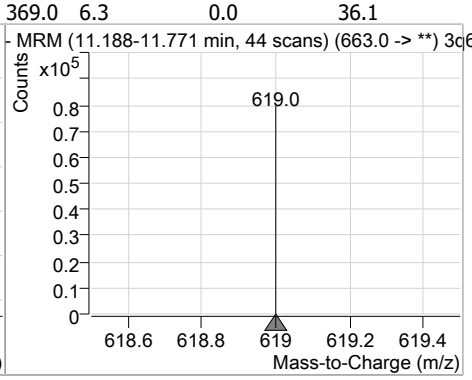


Perfluorinated Compounds by LC/MS/MS

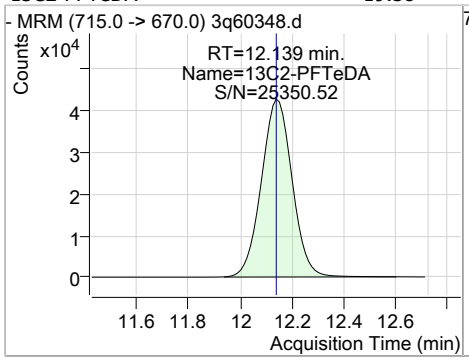
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.14	11.38	0.00	59487	663.0 -> 369.0	6.3	0.0	36.1

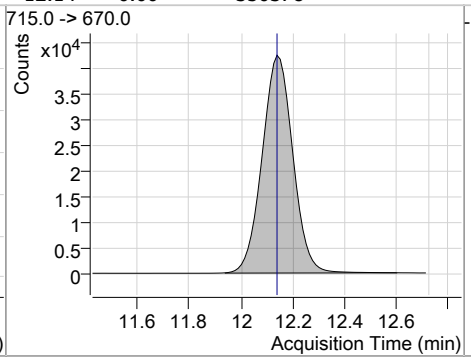


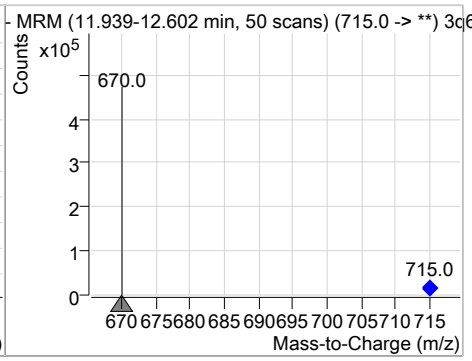




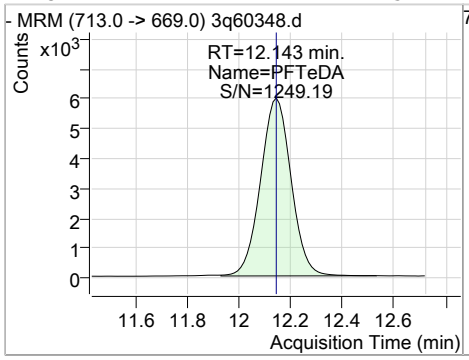
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.58	12.14	0.00	350378				

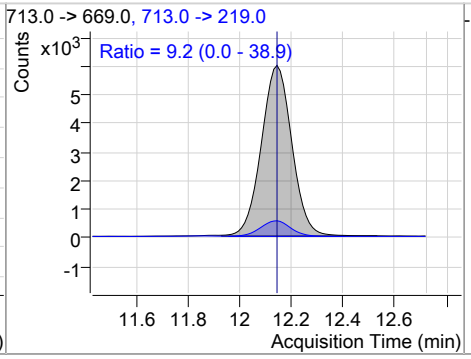


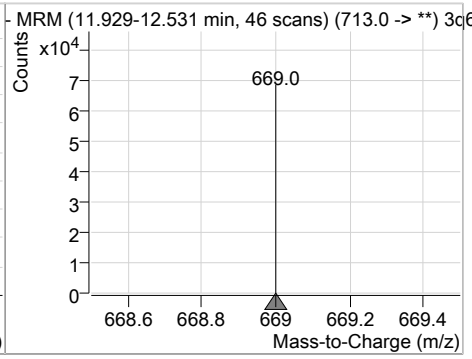




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.15	12.14	0.00	49085	713.0 -> 219.0	9.2	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60348.D
Injection Time: 05/27/22 14:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.75	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60349.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 3:15:12 PM
Sample Name : ic824-5
Vial : P1-A5
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

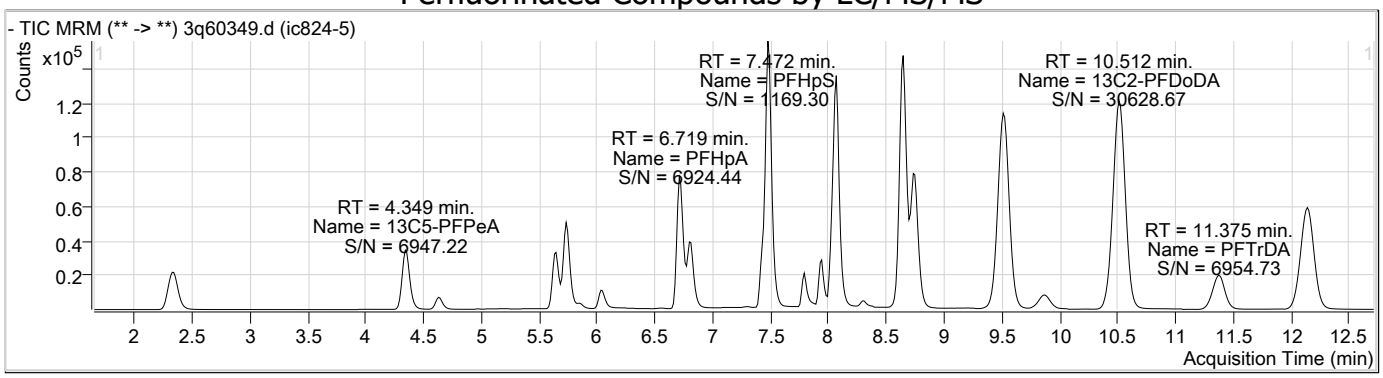
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	119962	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	115271	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	157803	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	200001	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	253716	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	324517	20.00 µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	505330	20.00 µg/L	0.013
M7-PFUnDA	9.517	570.0 -> 525.0	613685	20.00 µg/L	0.013
M2-PFDoDA	10.512	615.0 -> 570.0	731233	20.00 µg/L	0.000
M2-PFTeDA	12.139	715.0 -> 670.0	355860	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	79590	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15680	20.00 µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	19557	20.00 µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	31415	20.00 µg/L	0.013
M2-4:2FTS	5.634	329.0 -> 81.0	11197	20.00 µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	26520	20.00 µg/L	0.000
M2-8:2FTS	8.751	529.0 -> 81.0	47439	20.00 µg/L	0.013
M3-MeFOSAA	7.942	573.0 -> 419.0	65944	20.00 µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	22212	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	25583	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	63796	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	11197	19.98 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C2-6:2FTS	7.498	429.0 -> 81.0	26520	20.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C2-8:2FTS	8.751	529.0 -> 81.0	47439	20.22 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C2-PFDoDA	10.512	615.0 -> 570.0	731233	19.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C2-PFTeDA	12.139	715.0 -> 670.0	355860	19.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C3-PFBS	4.629	302.0 -> 99.0	15680	19.86 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C3-PFHxS	6.751	402.0 -> 99.0	19557	20.18 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C4-PFBA	2.327	217.0 -> 172.0	119962	19.85 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%	
13C4-PFHpA	6.718	367.0 -> 322.0	200001	19.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFHxA	5.739	318.0 -> 273.0	157803	19.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFPeA	4.349	268.0 -> 223.0	115271	19.89 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C6-PFDA	8.652	519.0 -> 474.0	505330	20.24 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

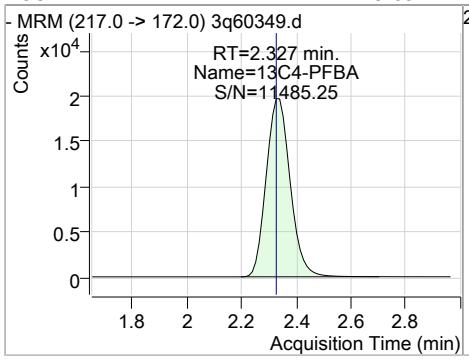
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C7-PFUnDA	9.517	570.0 -> 525.0	613685	19.90 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C8-FOSA	7.430	506.0 -> 78.0	79590	20.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C8-PFOA	7.487	421.0 -> 376.0	253716	20.08 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-PFOS	8.048	507.0 -> 99.0	31415	20.05 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C9-PFNA	8.075	472.0 -> 427.0	324517	20.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
d3-MeFOSAA	7.942	573.0 -> 419.0	65944	19.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-HFPO-DA	6.044	287.0 -> 169.0	22201	19.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSA	7.793	515.0 -> 169.0	25583	20.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
d5-EtFOSAA	8.029	589.0 -> 419.0	63664	20.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
Target Compounds						QValue
4:2FTS	5.637	327.0 -> 307.0	24651	5.05 µg/L		99
6:2FTS	7.499	427.0 -> 407.0	32494	5.10 µg/L		99
8:2FTS	8.753	527.0 -> 507.0	55855	4.93 µg/L		98
EtFOSAA	8.029	584.0 -> 419.0	13043	5.26 µg/L	m	94
FOSA	7.432	498.0 -> 78.0	18695	5.11 µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	13747	5.25 µg/L	m	92
PFBA	2.333	213.0 -> 169.0	12136	5.19 µg/L		100
PFBS	4.632	299.0 -> 80.0	10161	5.12 µg/L		99
PFDA	8.652	513.0 -> 469.0	108166	5.12 µg/L		100
PFDoDA	10.516	613.0 -> 569.0	159252	5.12 µg/L		100
PFDS	9.401	599.0 -> 80.0	6214	5.27 µg/L		100
PFHpA	6.719	363.0 -> 319.0	75580	5.15 µg/L		100
PFHpS	7.472	449.0 -> 80.0	10835	5.35 µg/L		100
PFHxA	5.740	313.0 -> 269.0	33726	5.11 µg/L		99
PFHxS	6.739	399.0 -> 80.0	10171	4.98 µg/L	m	100
PFNA	8.075	463.0 -> 419.0	80616	5.24 µg/L		99
PFNS	8.584	549.0 -> 80.0	9707	5.14 µg/L		97
PFOA	7.487	413.0 -> 369.0	60643	5.13 µg/L		100
PFOS	8.049	499.0 -> 80.0	13159	5.35 µg/L	m	80
PFPeA	4.352	263.0 -> 219.0	43566	5.13 µg/L		100
PFPeS	5.857	349.0 -> 80.0	6766	5.11 µg/L		96
PFTeDA	12.143	713.0 -> 669.0	120038	5.17 µg/L		99
PFTrDA	11.375	663.0 -> 619.0	146705	5.19 µg/L		100
PFUnDA	9.519	563.0 -> 519.0	147571	5.12 µg/L		99
11Cl-PF3OUdS	9.862	631.0 -> 451.0	42853	5.02 µg/L		99
9Cl-PF3ONS	8.309	531.0 -> 351.0	8837	5.05 µg/L		98
ADONA	6.819	377.0 -> 251.0	108426	5.00 µg/L		99
HFPO-DA	6.051	329.0 -> 169.0	16155	5.13 µg/L		99
MeFOSA	7.794	512.0 -> 169.0	6685	5.27 µg/L		98

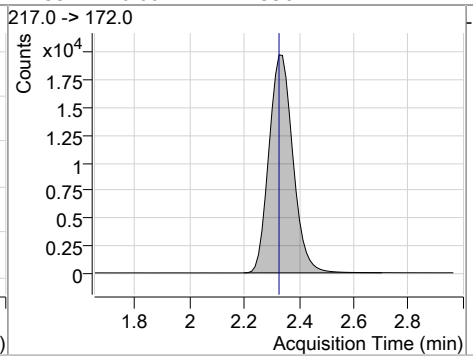
 # = Qualifier out of range, m = manually integrated, + = Area summed

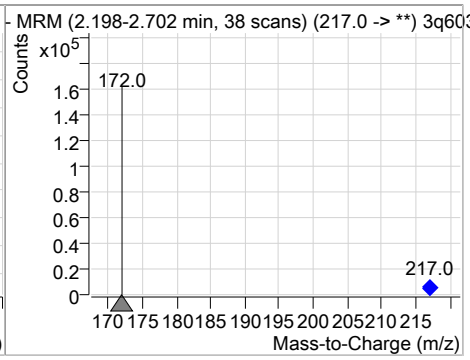
Perfluorinated Compounds by LC/MS/MS



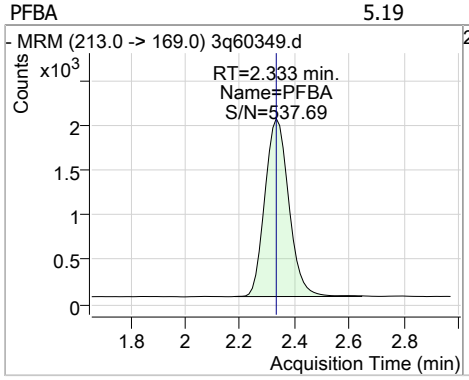
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.85	2.33	0.00	119962				

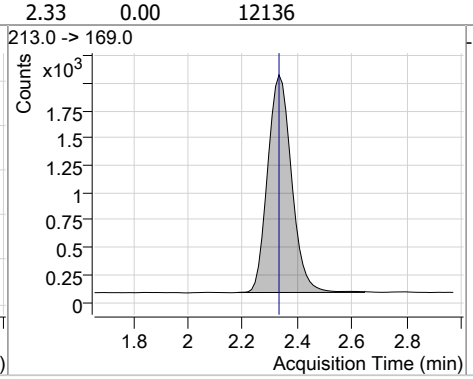


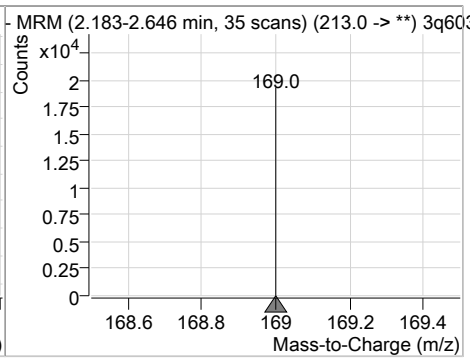




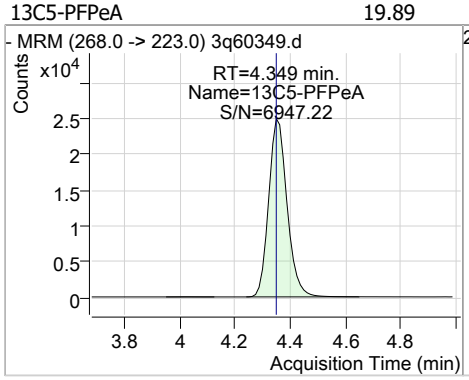
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.19	2.33	0.00	12136				

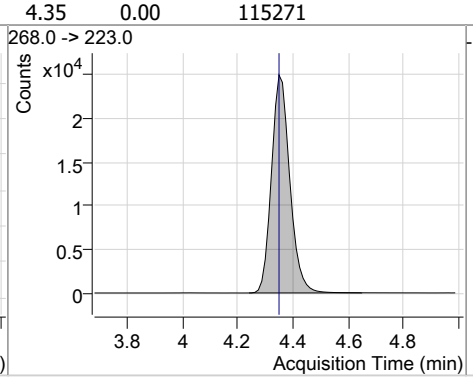


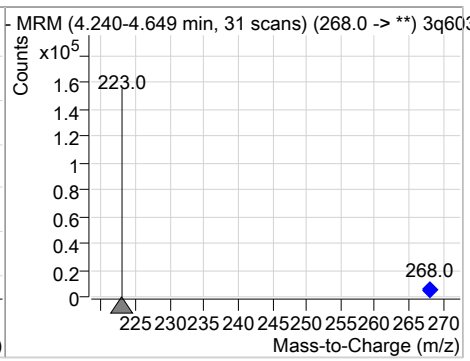




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.89	4.35	0.00	115271				

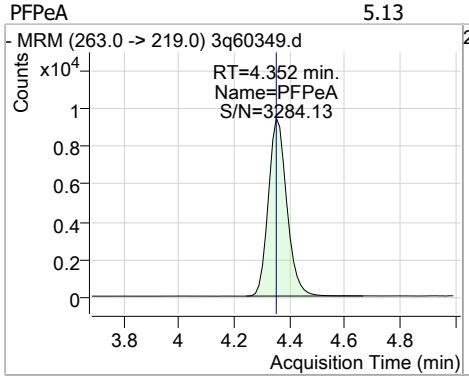


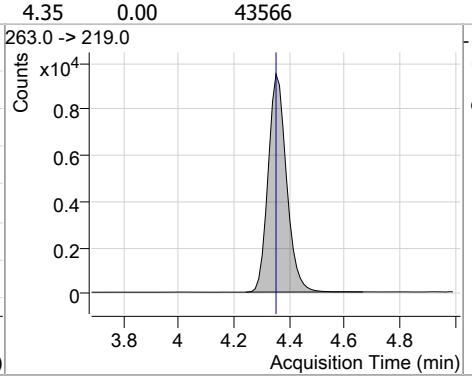


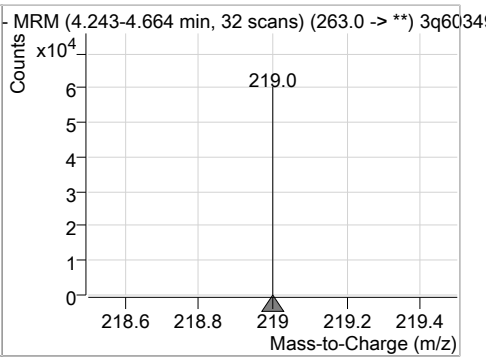


Perfluorinated Compounds by LC/MS/MS

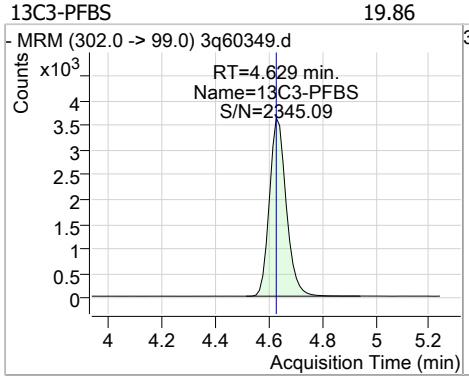
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.13	4.35	0.00	43566				

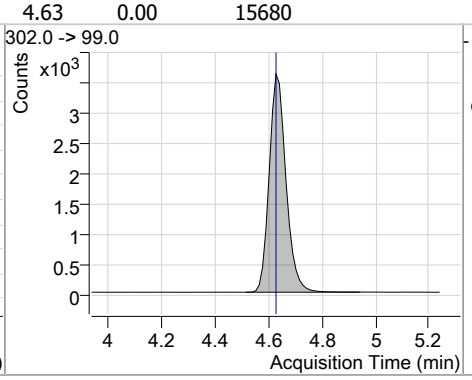


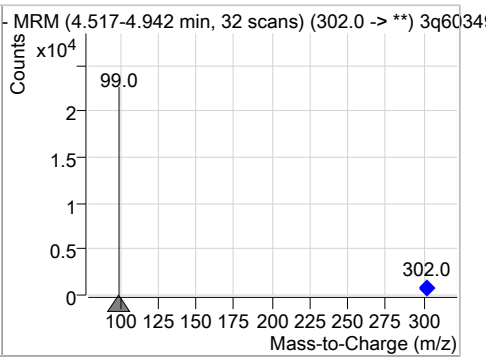




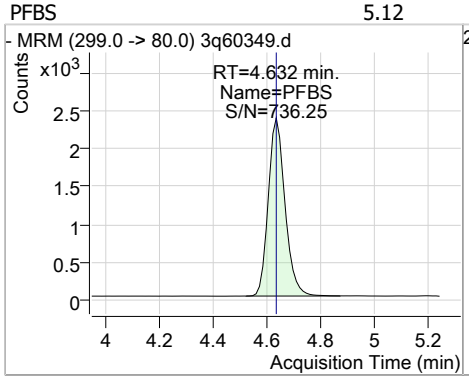
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.86	4.63	0.00	15680				

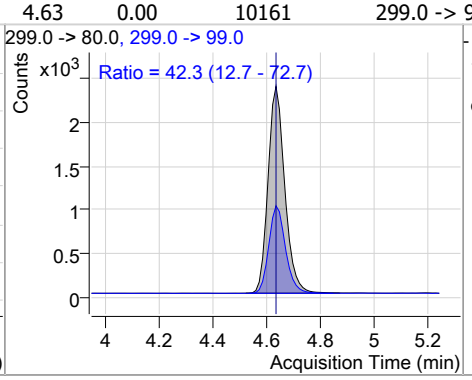


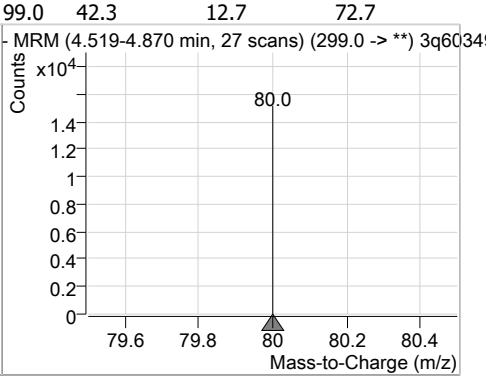




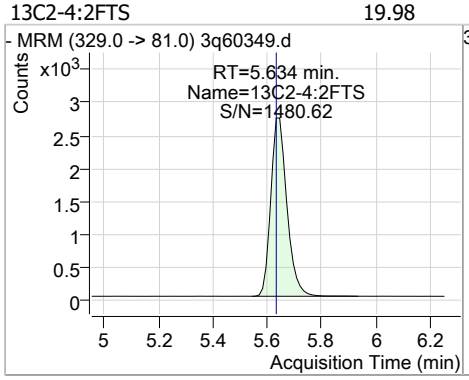
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.12	4.63	0.00	10161	299.0 -> 99.0	42.3	12.7	72.7

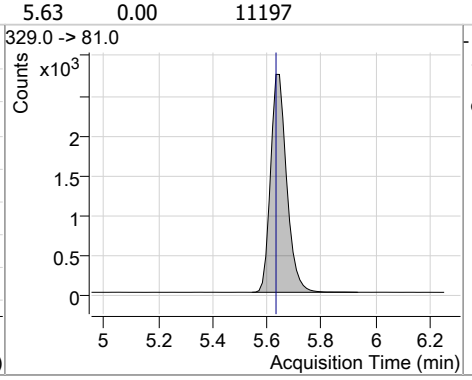


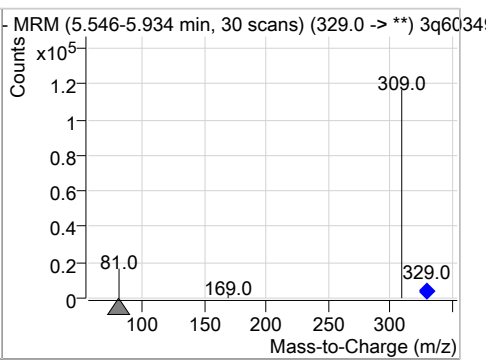




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.98	5.63	0.00	11197				

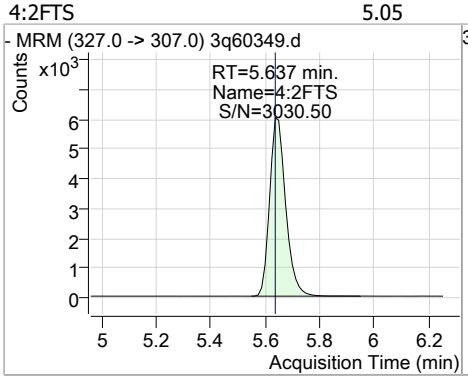


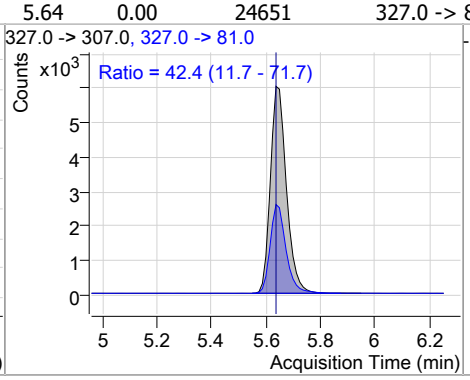


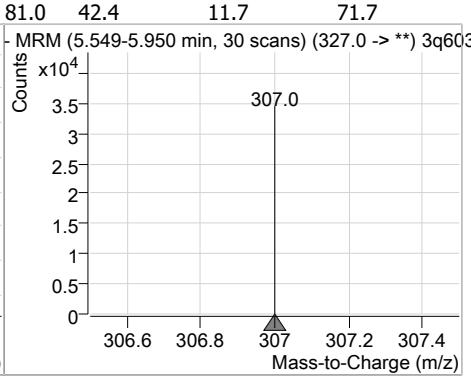


Perfluorinated Compounds by LC/MS/MS

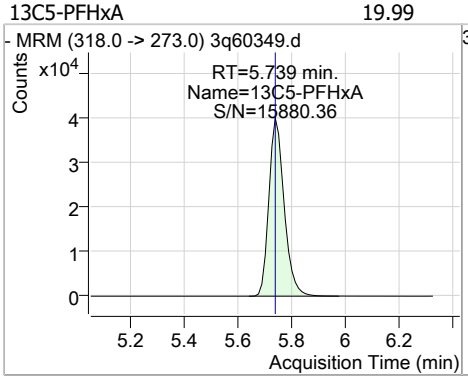
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.05	5.64	0.00	24651	327.0 -> 81.0	42.4	11.7	71.7

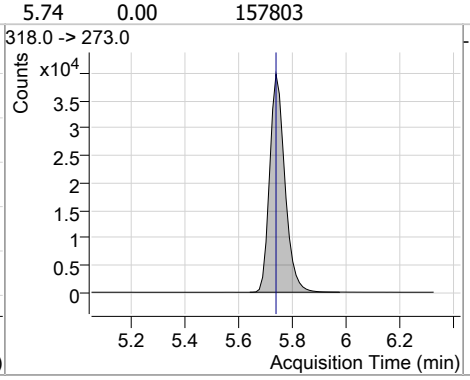


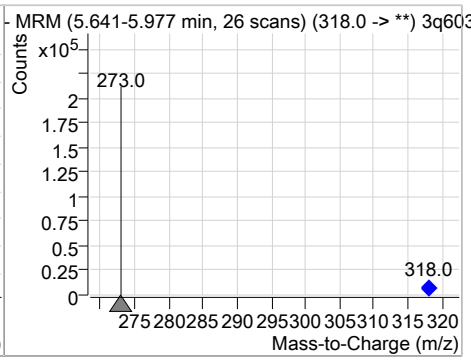




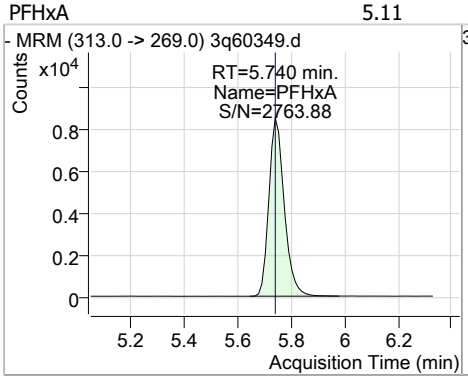
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.99	5.74	0.00	157803				

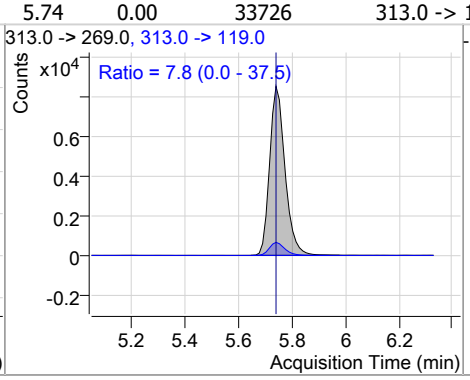


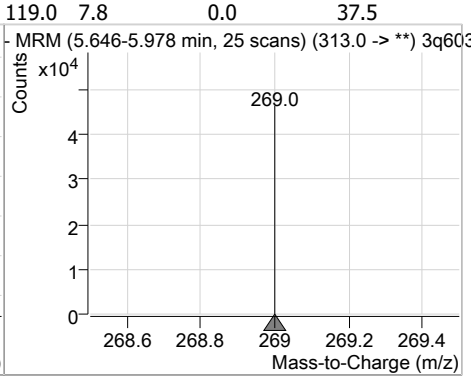




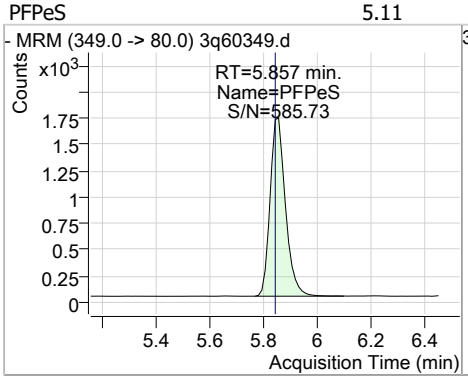
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.11	5.74	0.00	33726	313.0 -> 119.0	7.8	0.0	37.5

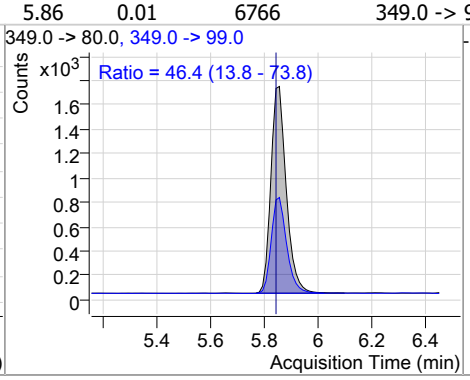


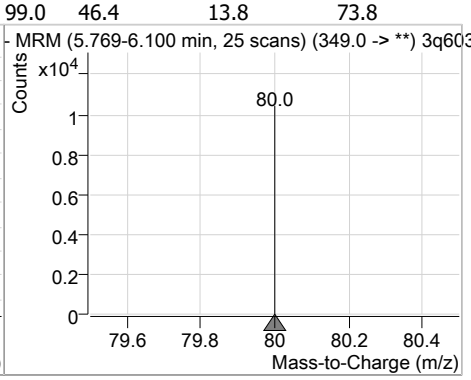




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.11	5.86	0.01	6766	349.0 -> 99.0	46.4	13.8	73.8

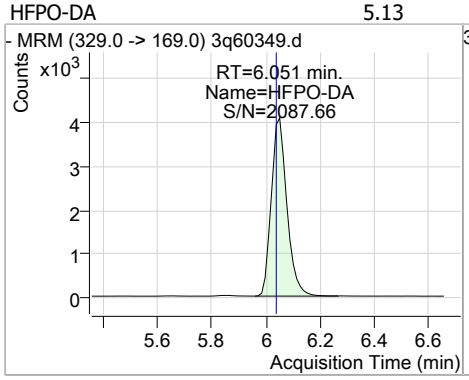


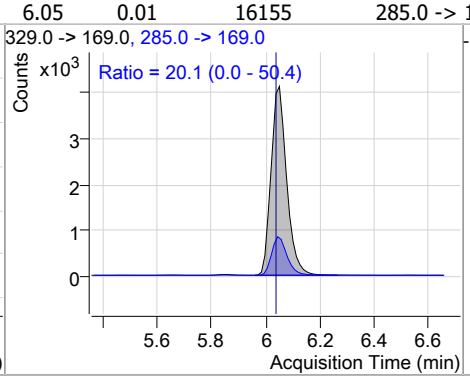


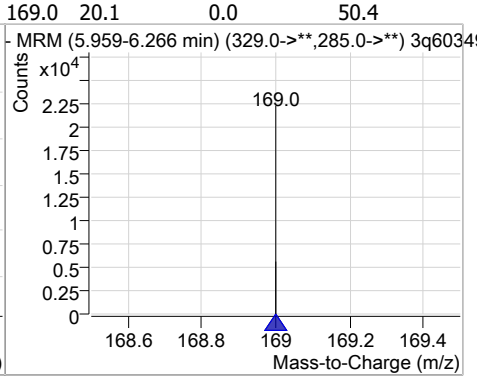


Perfluorinated Compounds by LC/MS/MS

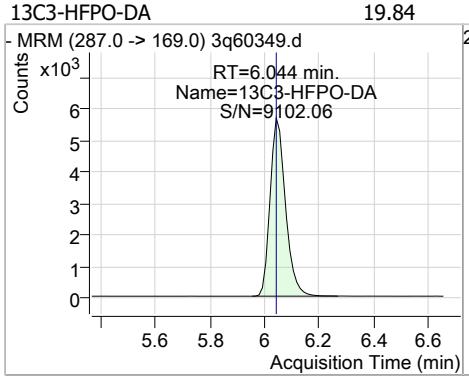
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.13	6.05	0.01	16155	285.0 -> 169.0	20.1	0.0	50.4

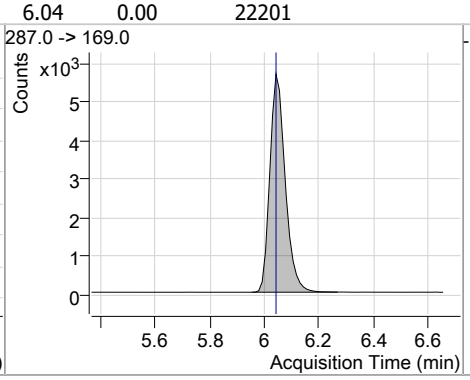


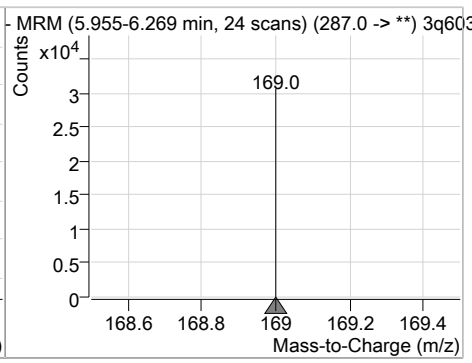




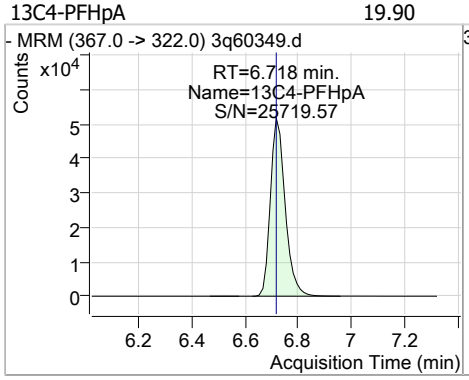
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.84	6.04	0.00	22201				

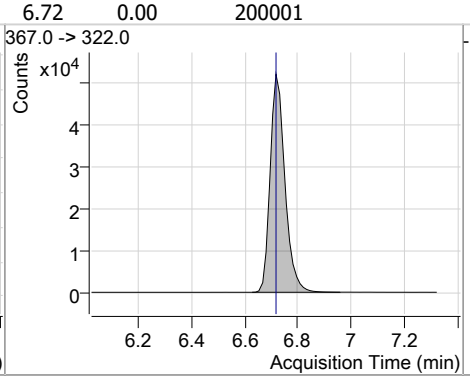


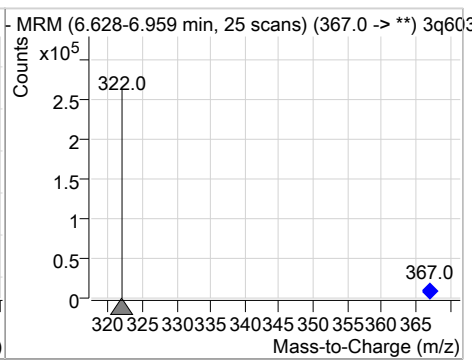




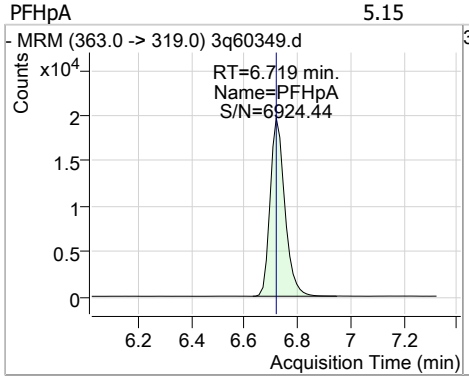
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.90	6.72	0.00	200001				

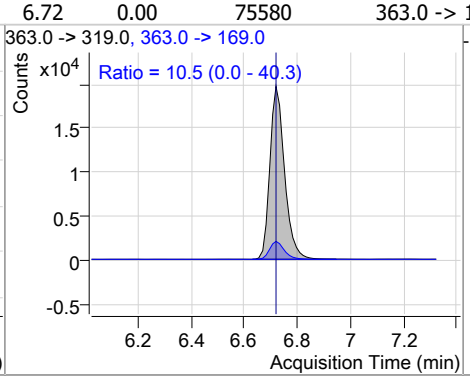


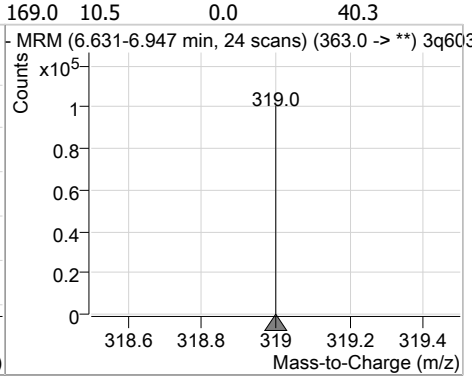




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.15	6.72	0.00	75580	363.0 -> 169.0	10.5	0.0	40.3

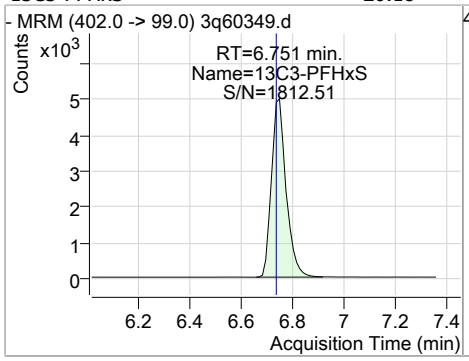


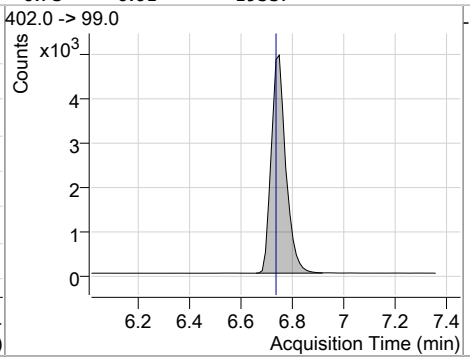


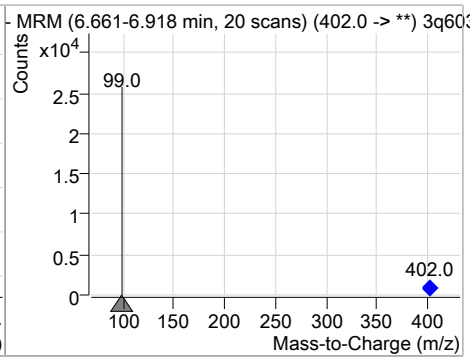


Perfluorinated Compounds by LC/MS/MS

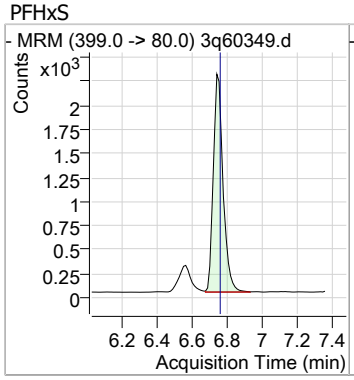
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.18	6.75	0.01	19557				

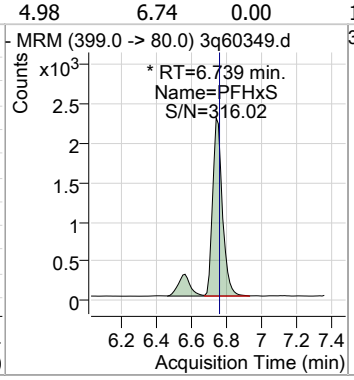


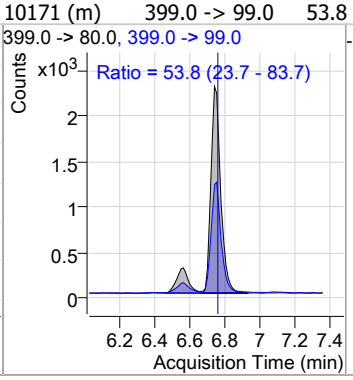


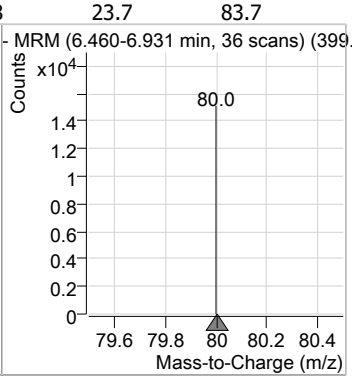


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.98	6.74	0.00	10171 (m)	399.0 -> 99.0	53.8	23.7	83.7

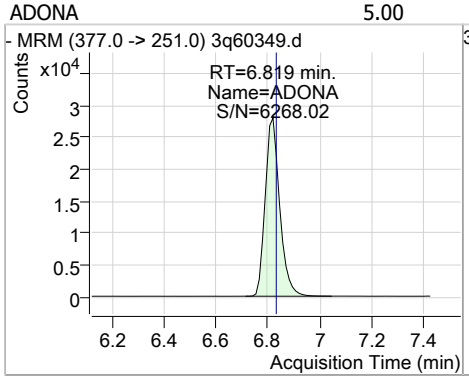


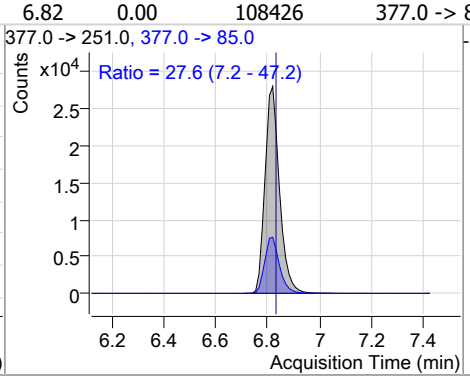


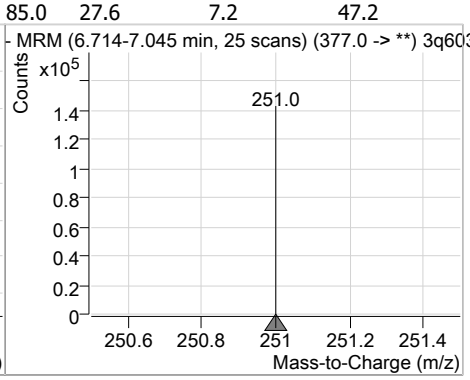




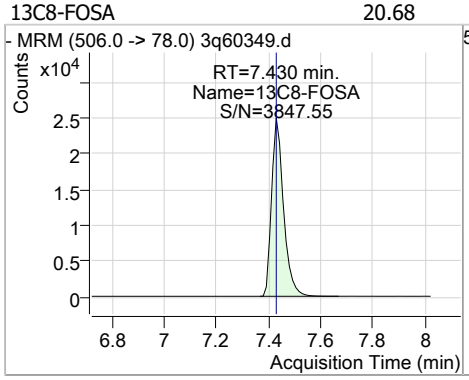
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.00	6.82	0.00	108426	377.0 -> 85.0	27.6	7.2	47.2

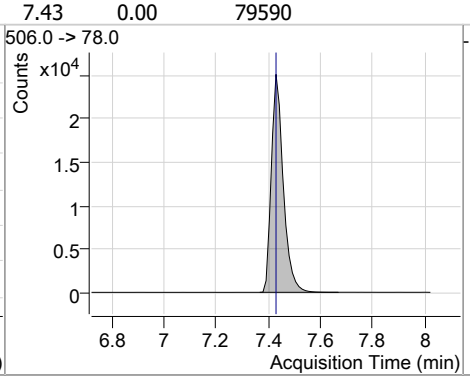


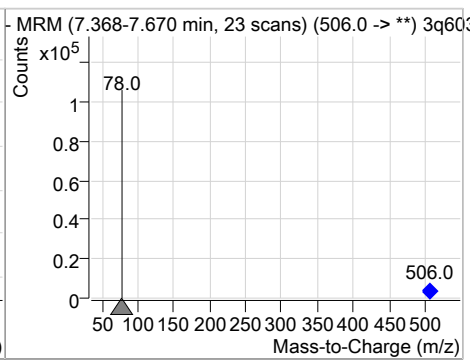




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.68	7.43	0.00	79590				

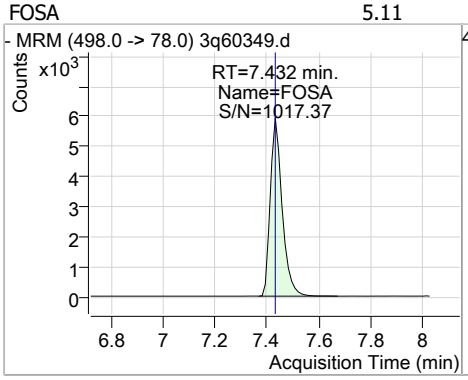


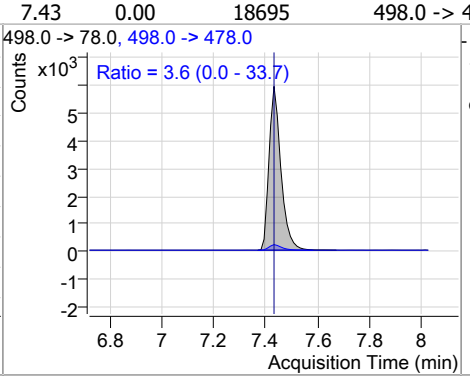


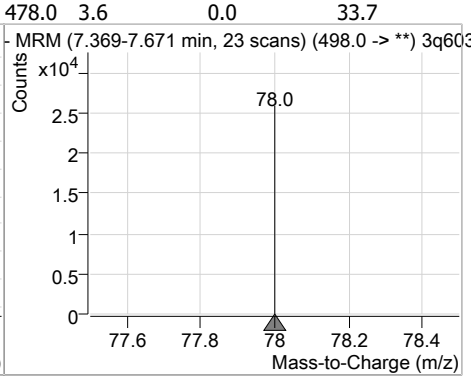


Perfluorinated Compounds by LC/MS/MS

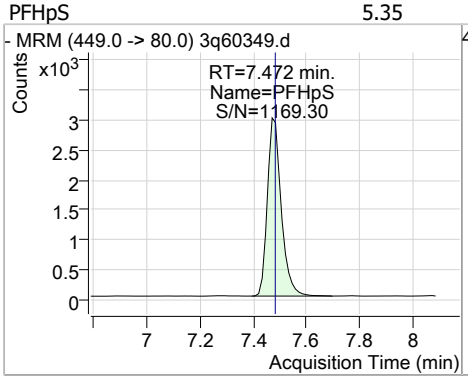
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.11	7.43	0.00	18695	498.0 -> 478.0	3.6	0.0	33.7

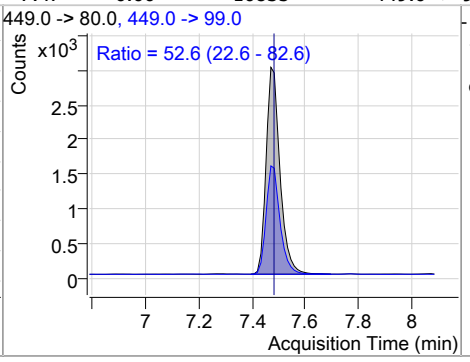


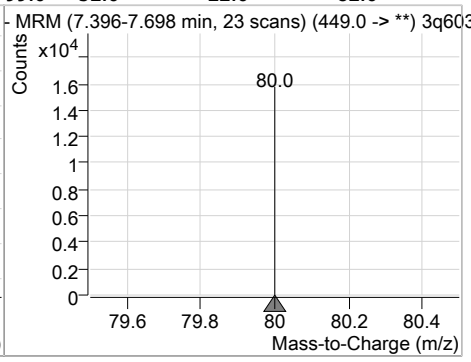




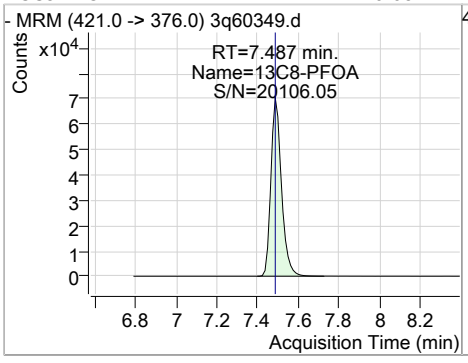
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.35	7.47	0.00	10835	449.0 -> 99.0	52.6	22.6	82.6

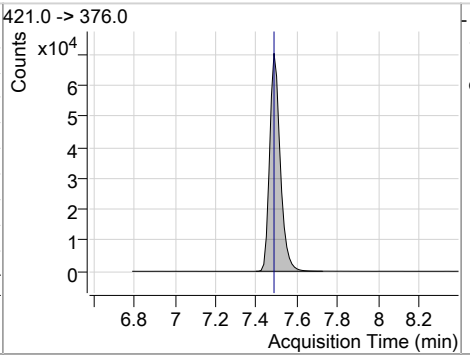


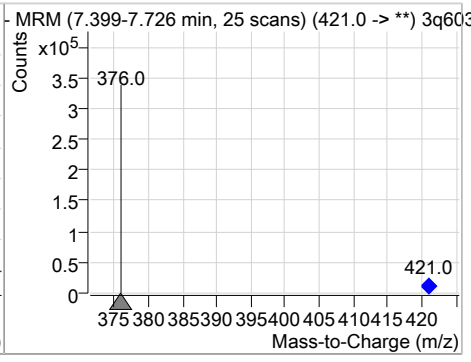




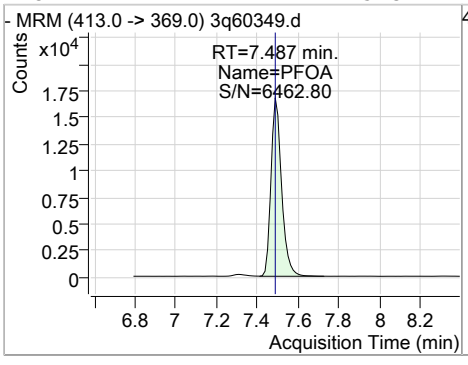
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.08	7.49	0.00	253716				

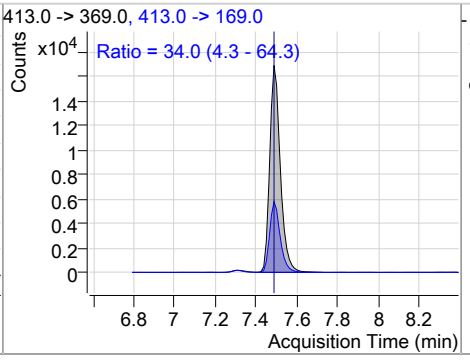


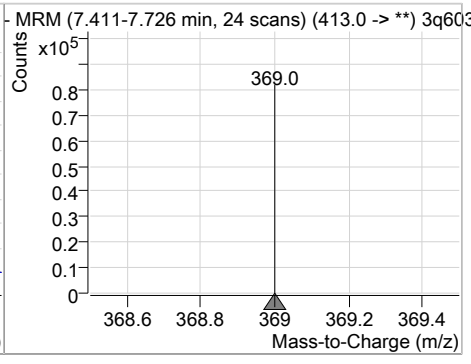




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.13	7.49	0.00	60643	413.0 -> 169.0	34.0	4.3	64.3

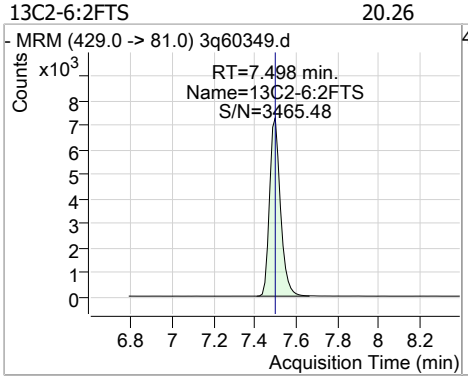


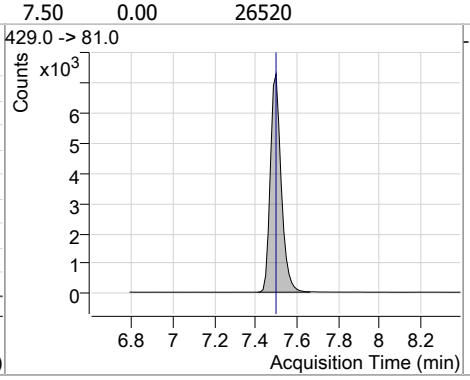


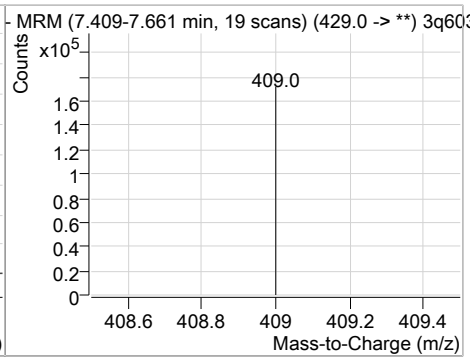


Perfluorinated Compounds by LC/MS/MS

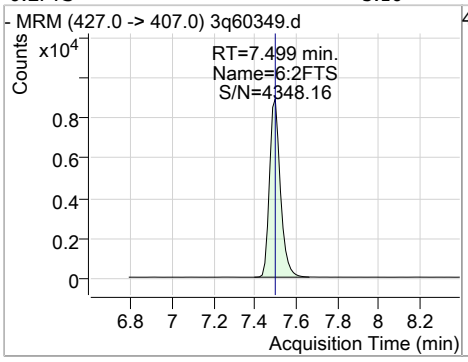
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.26	7.50	0.00	26520				

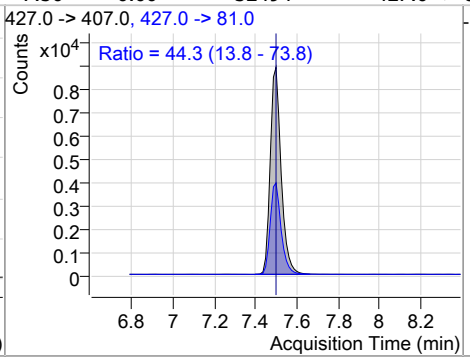


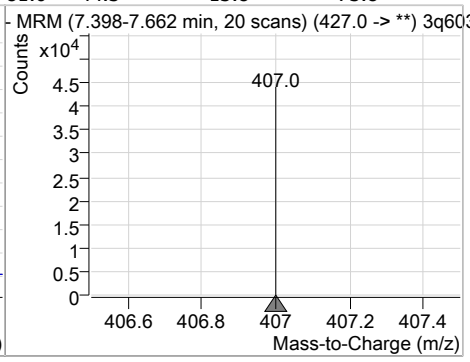




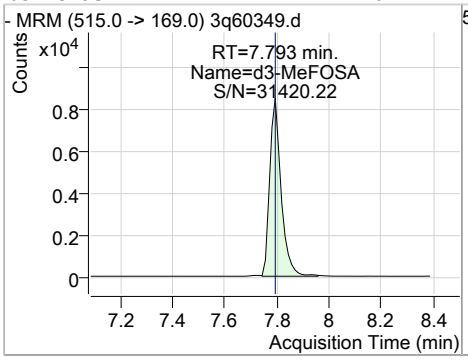
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.10	7.50	0.00	32494	427.0 -> 81.0	44.3	13.8	73.8

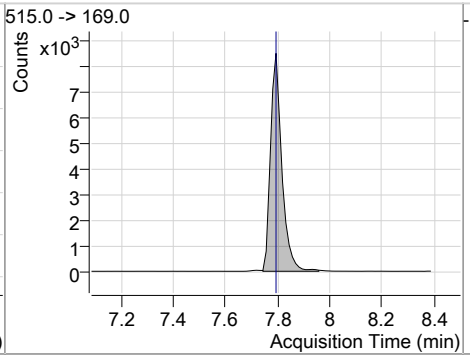


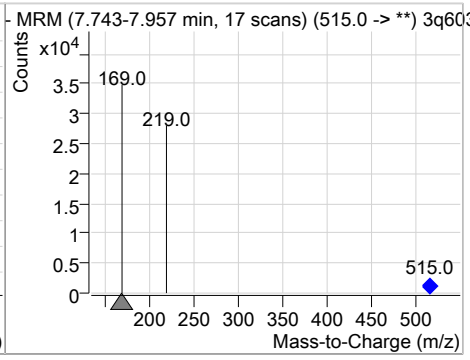




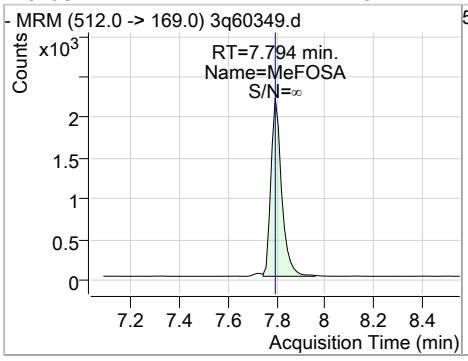
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.47	7.79	0.00	25583				

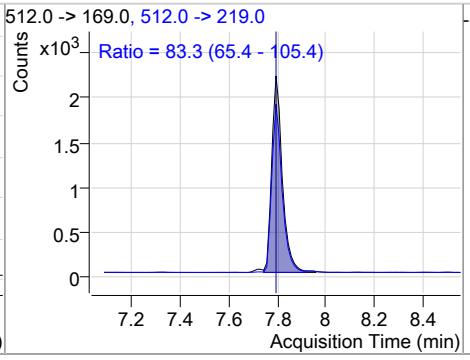


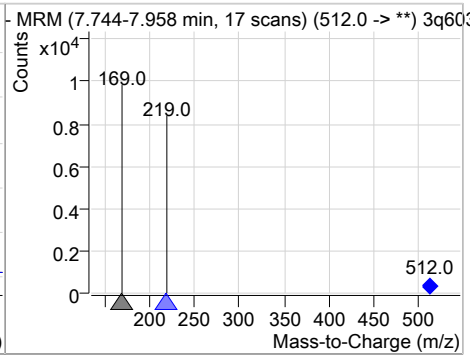




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.27	7.79	0.00	6685	512.0 -> 219.0	83.3	65.4	105.4

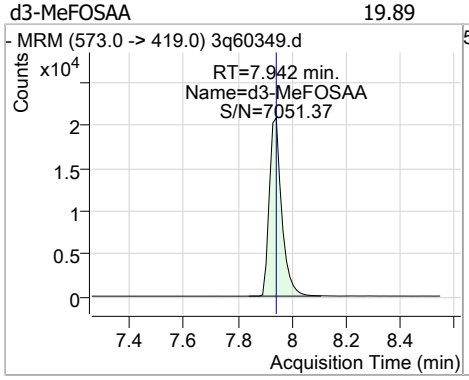


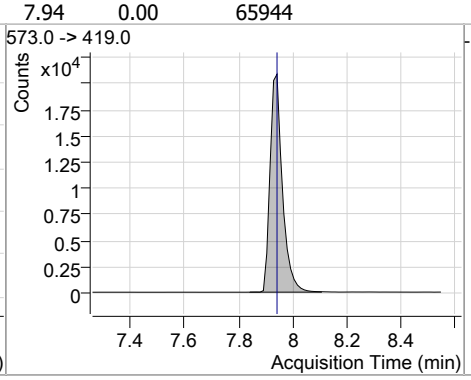


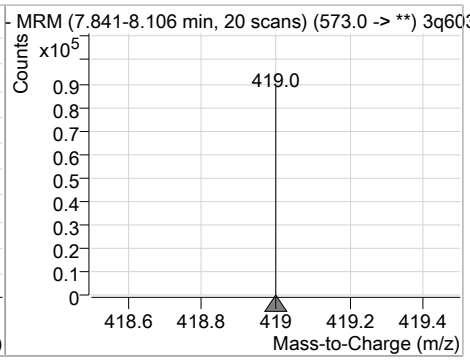


Perfluorinated Compounds by LC/MS/MS

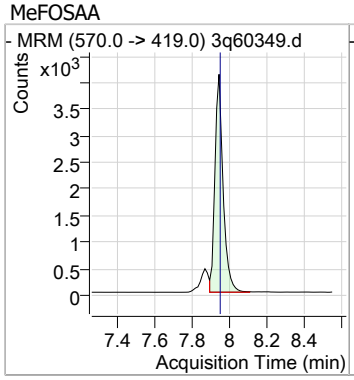
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.89	7.94	0.00	65944				

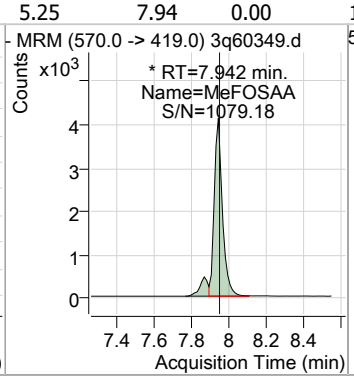


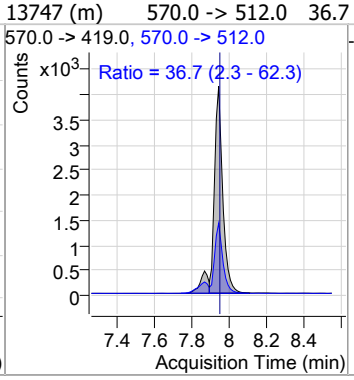


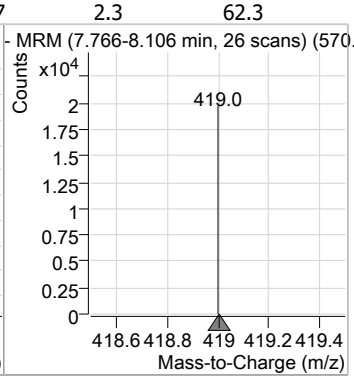


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.25	7.94	0.00	13747 (m)	570.0 -> 512.0	36.7	2.3	62.3

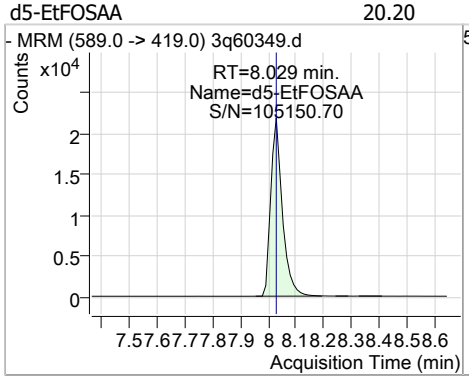


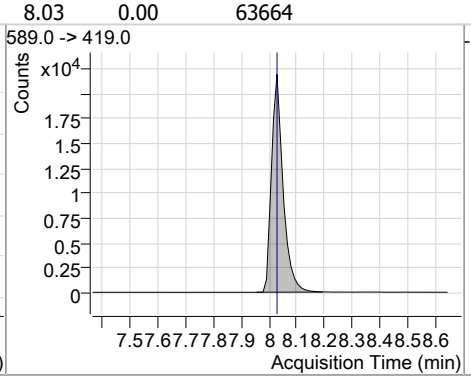


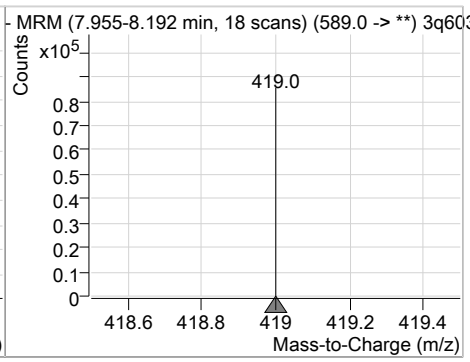




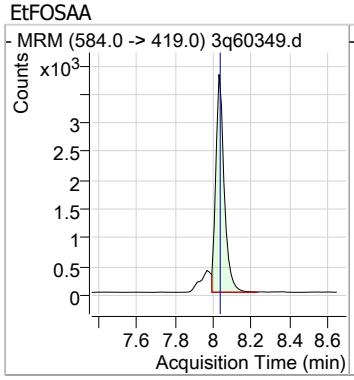
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.20	8.03	0.00	63664				

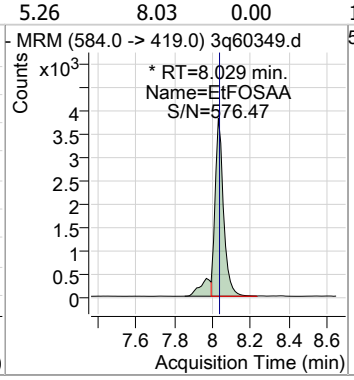


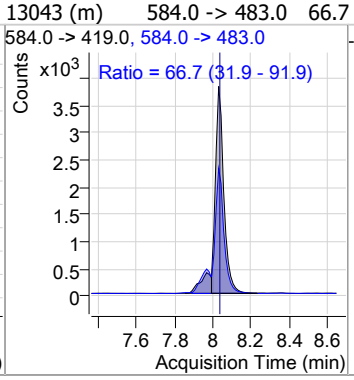


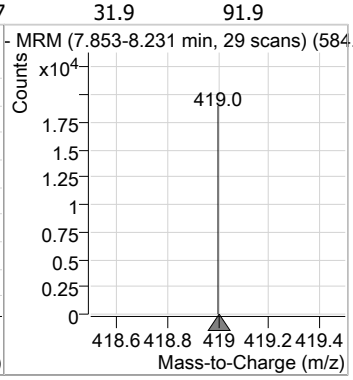


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.26	8.03	0.00	13043 (m)	584.0 -> 483.0	66.7	31.9	91.9



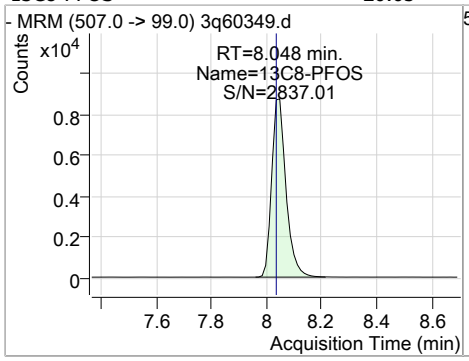


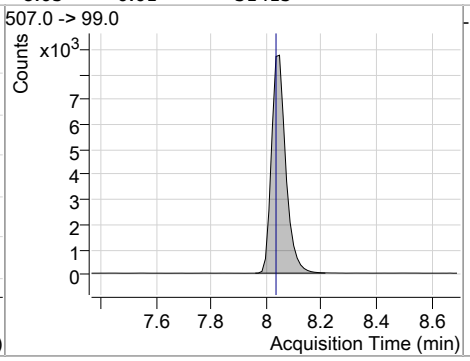


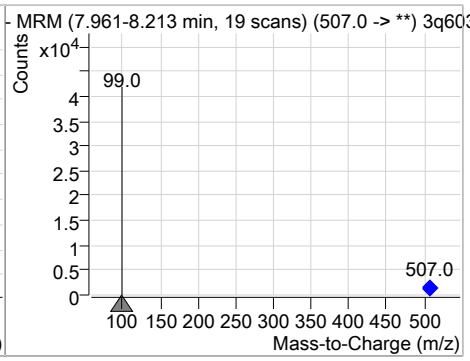


Perfluorinated Compounds by LC/MS/MS

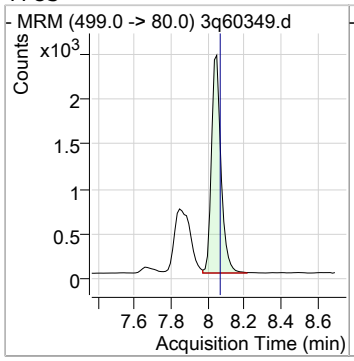
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.05	8.05	0.01	31415				

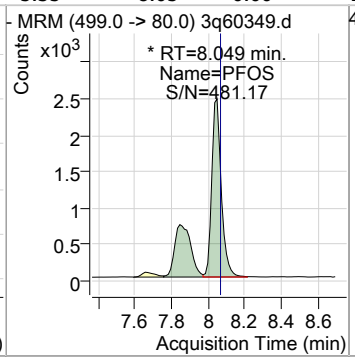


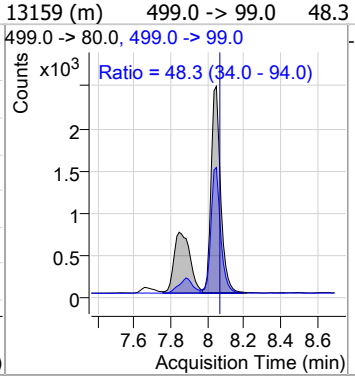


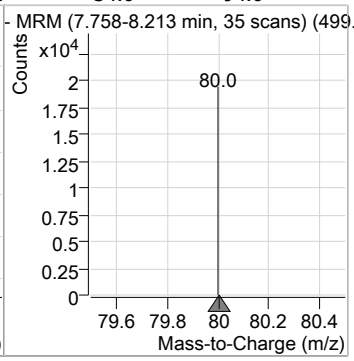


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5.35	8.05	0.00	13159 (m)	499.0 -> 99.0	48.3	34.0	94.0

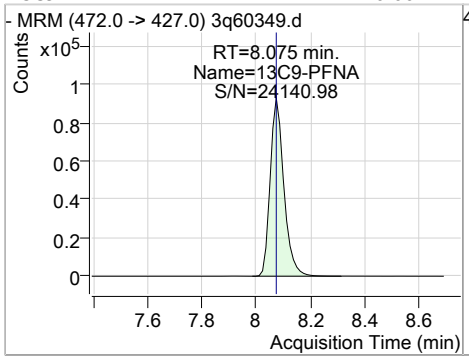


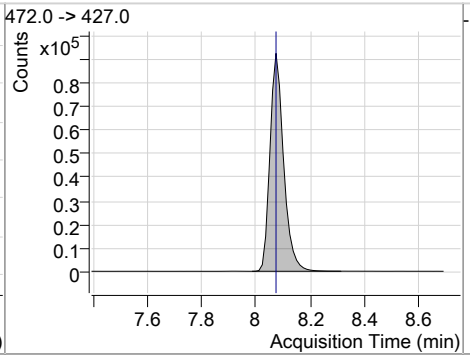


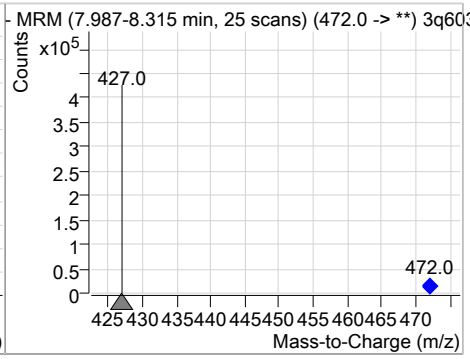




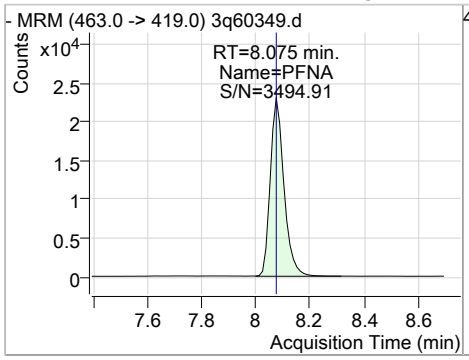
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.06	8.08	0.00	324517				

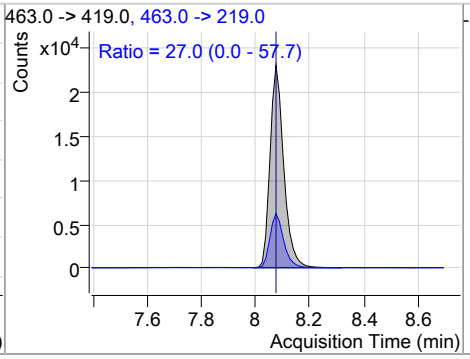


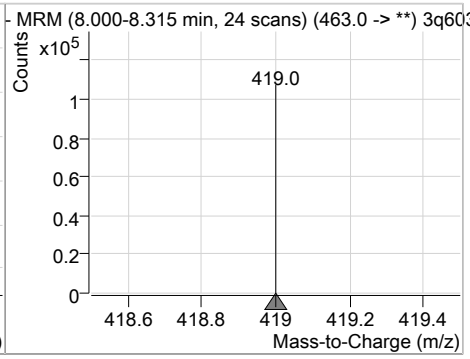




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.24	8.08	0.00	80616	463.0 -> 219.0	27.0	0.0	57.7

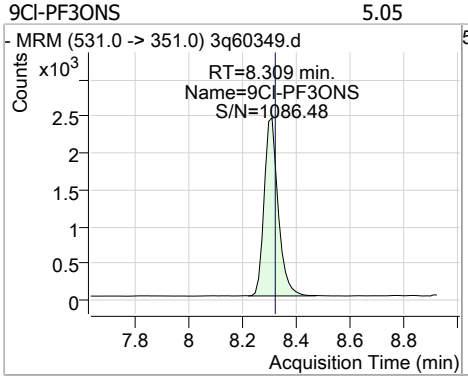


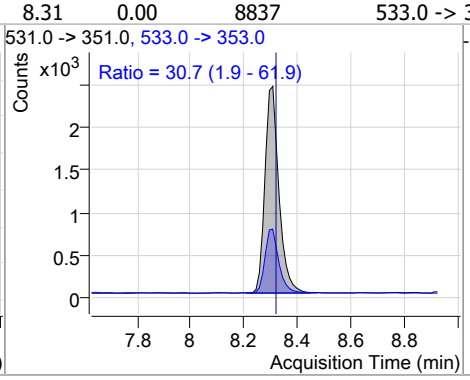


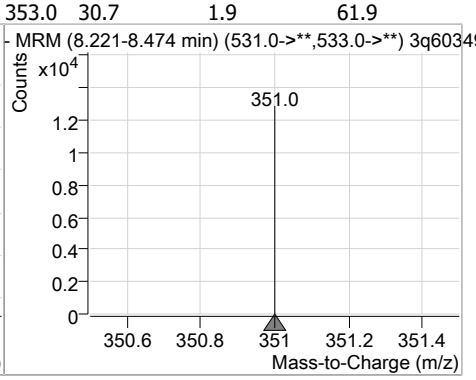


Perfluorinated Compounds by LC/MS/MS

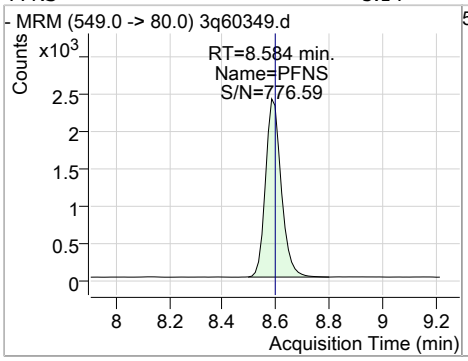
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.05	8.31	0.00	8837	533.0 -> 353.0	30.7	1.9	61.9

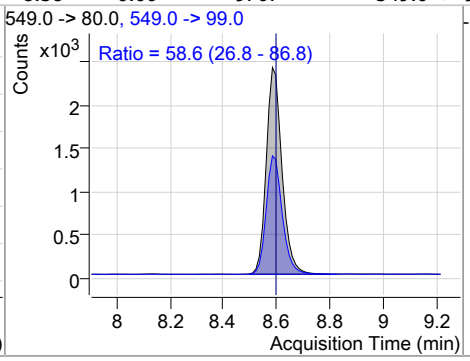


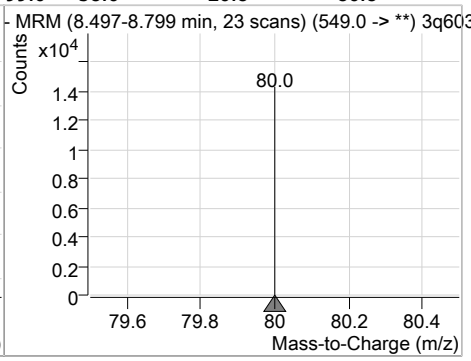




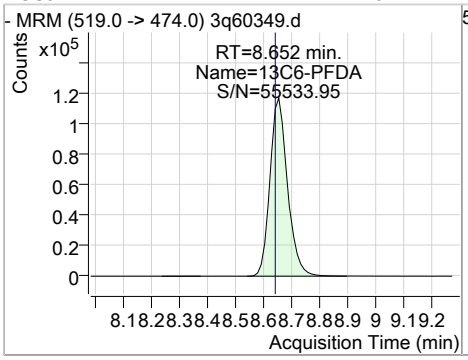
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.14	8.58	0.00	9707	549.0 -> 99.0	58.6	26.8	86.8

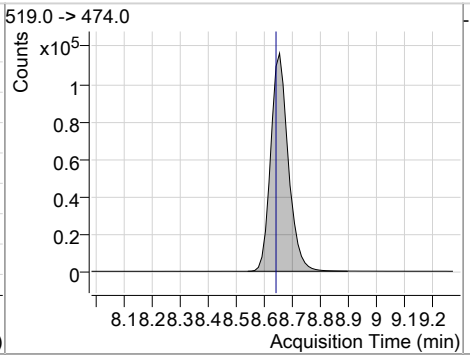


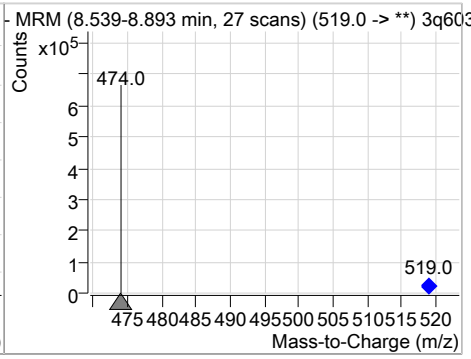




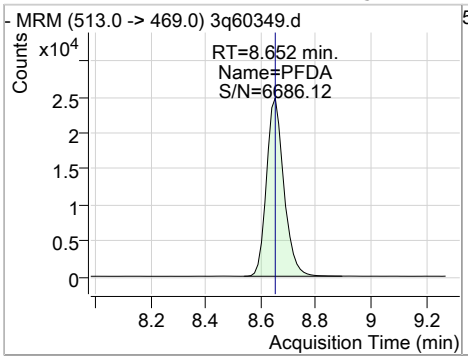
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.24	8.65	0.01	505330				

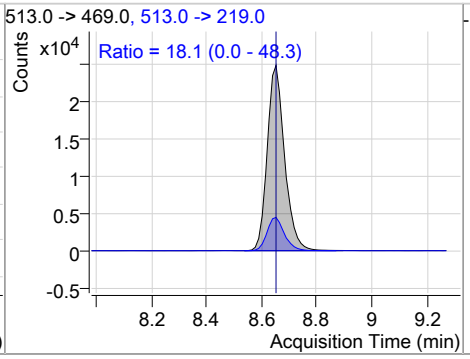


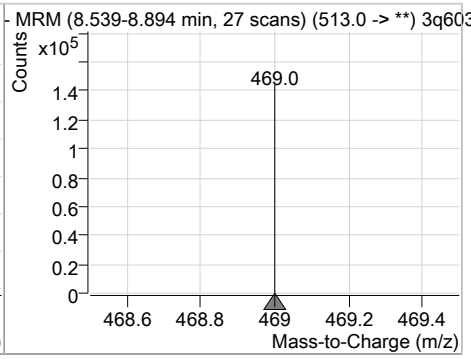




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	5.12	8.65	0.01	108166	513.0 -> 219.0	18.1	0.0	48.3

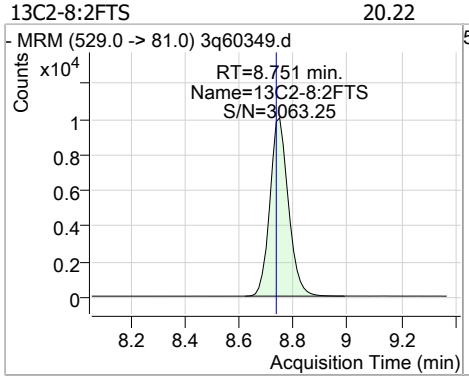


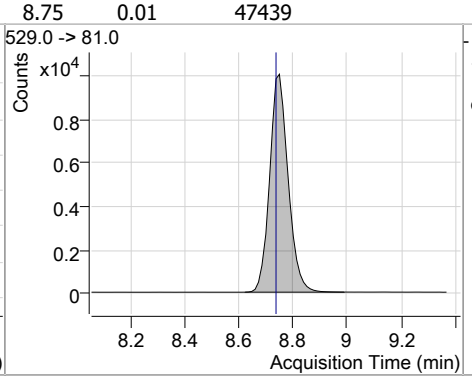


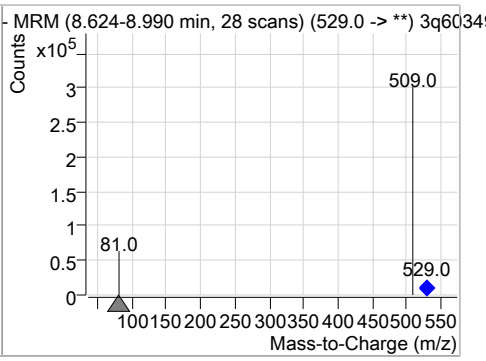


Perfluorinated Compounds by LC/MS/MS

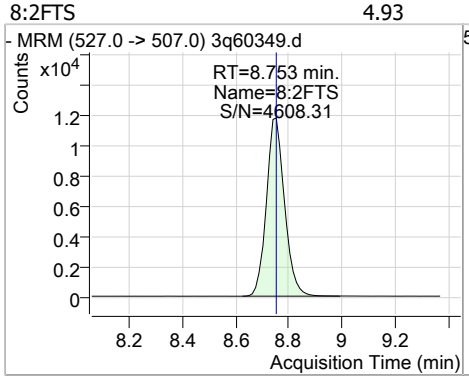
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.22	8.75	0.01	47439				

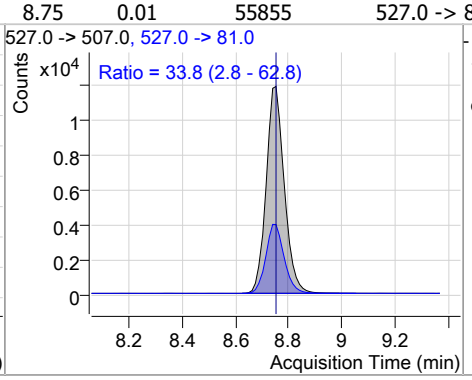


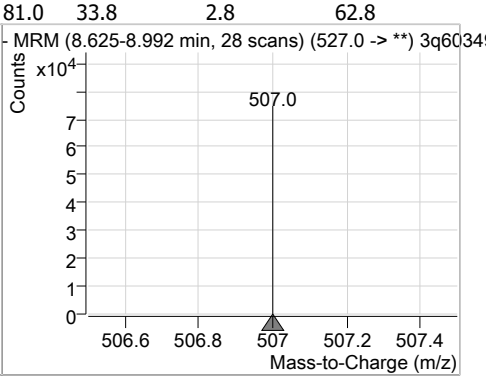




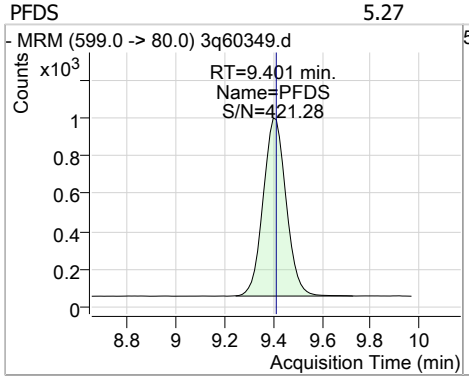
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	4.93	8.75	0.01	55855	527.0 -> 81.0	33.8	2.8	62.8

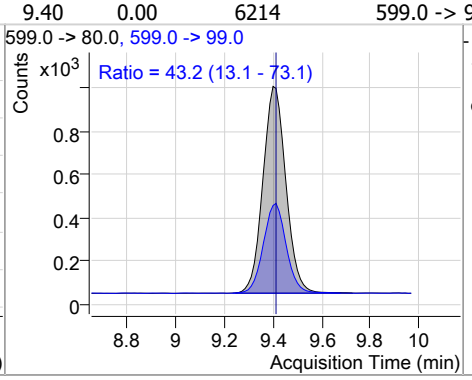


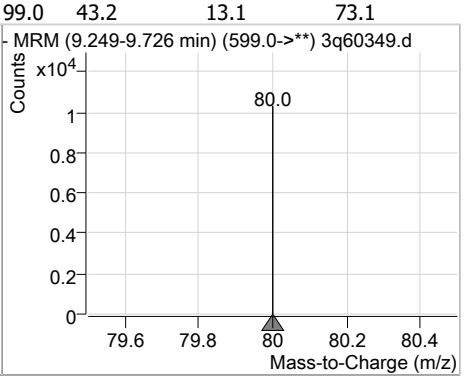




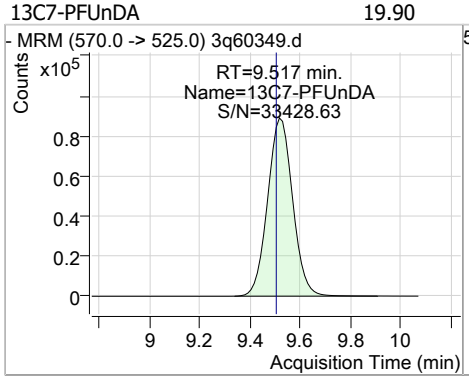
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.27	9.40	0.00	6214	599.0 -> 99.0	43.2	13.1	73.1

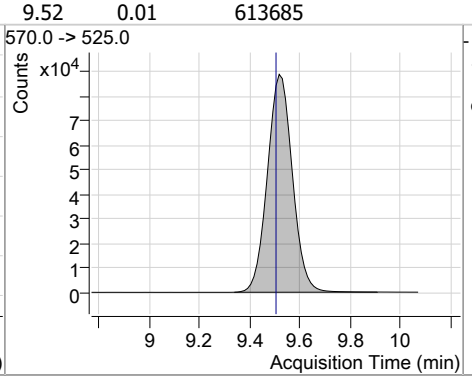


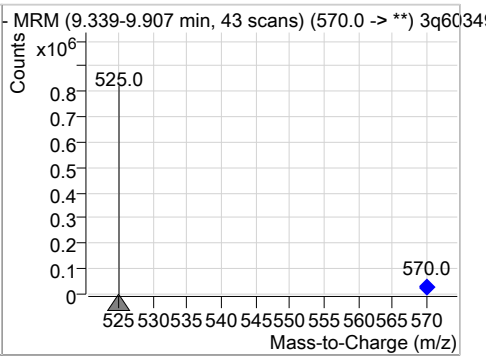




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.90	9.52	0.01	613685				

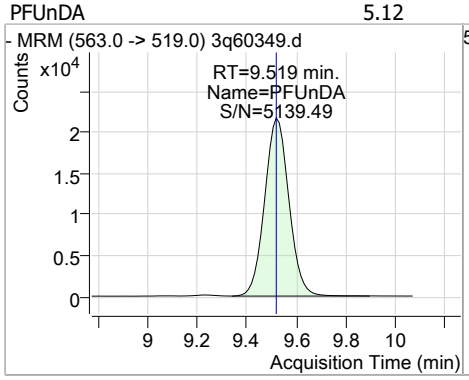


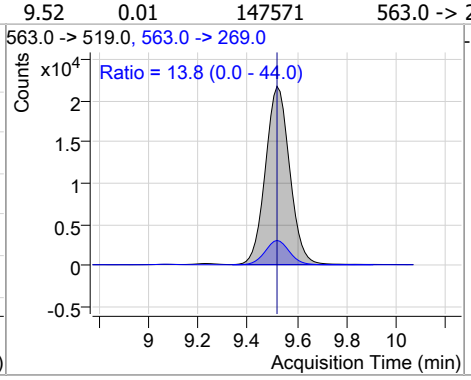


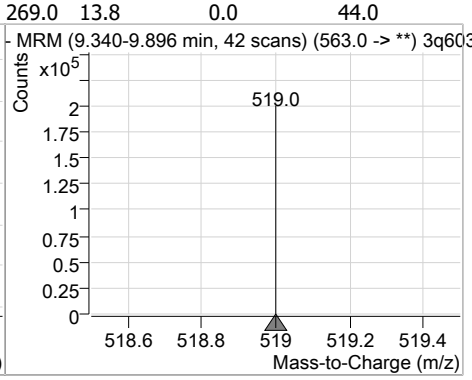


Perfluorinated Compounds by LC/MS/MS

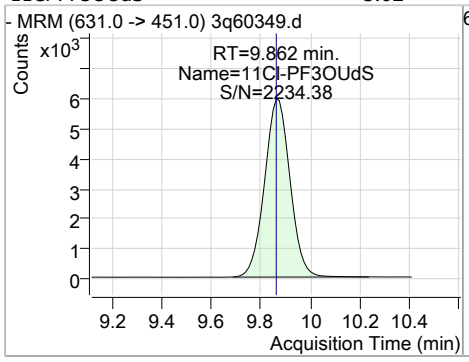
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.12	9.52	0.01	147571	563.0 -> 269.0	13.8	0.0	44.0

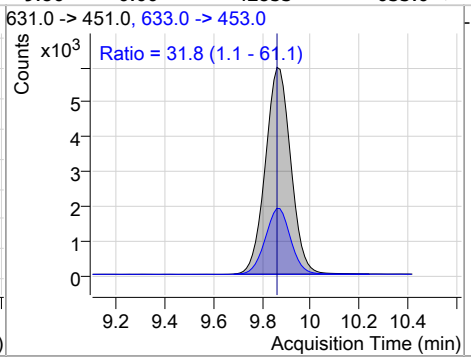


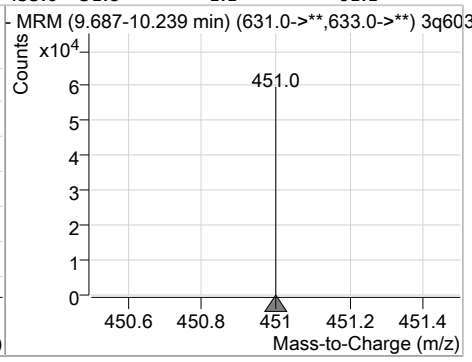




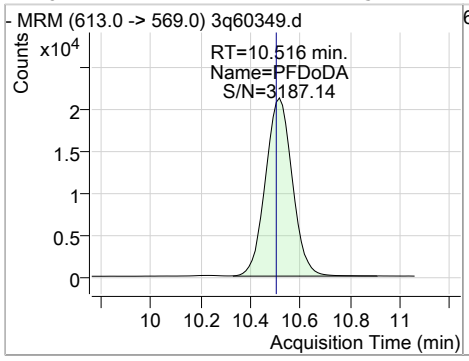
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	5.02	9.86	0.00	42853	633.0 -> 453.0	31.8	1.1	61.1

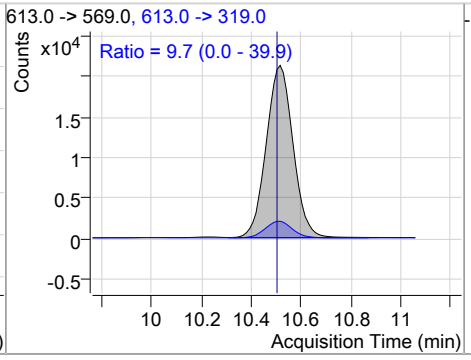


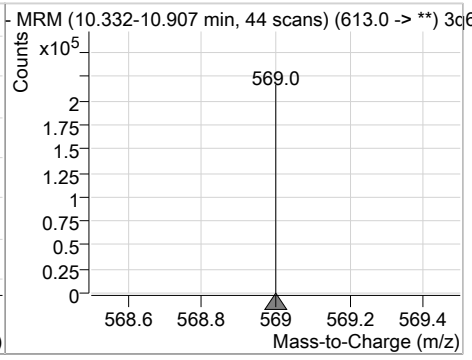




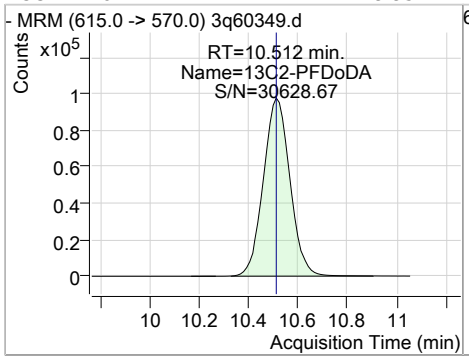
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.12	10.52	0.01	159252	613.0 -> 319.0	9.7	0.0	39.9

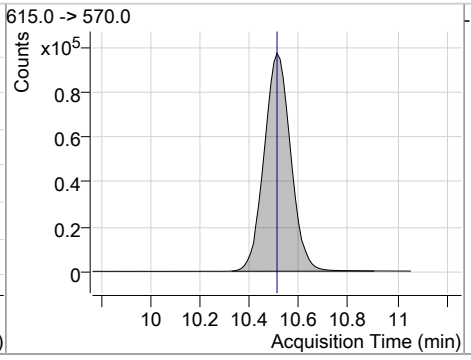


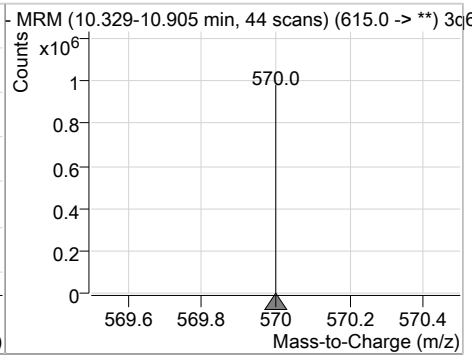




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.95	10.51	0.00	731233				

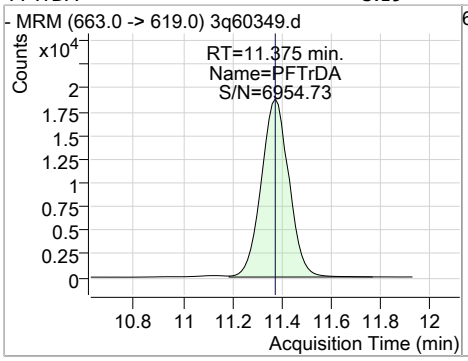


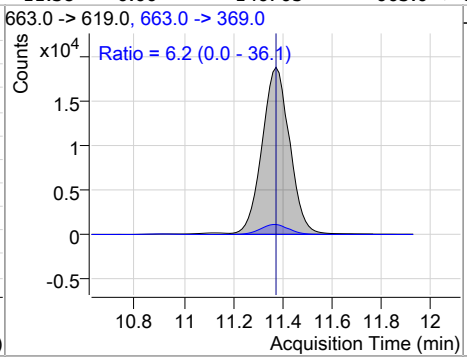


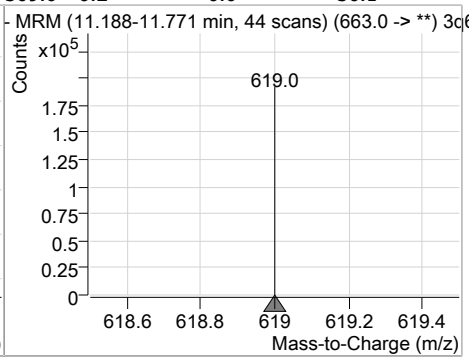


Perfluorinated Compounds by LC/MS/MS

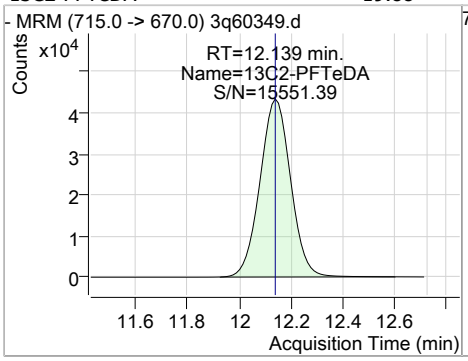
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.19	11.38	0.00	146705	663.0 -> 369.0	6.2	0.0	36.1

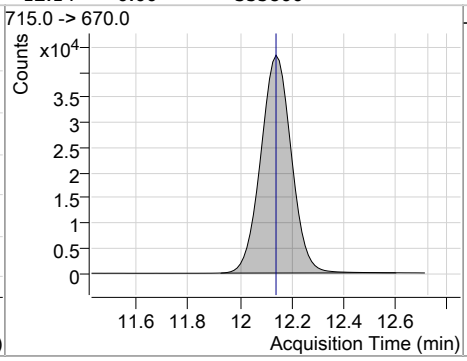


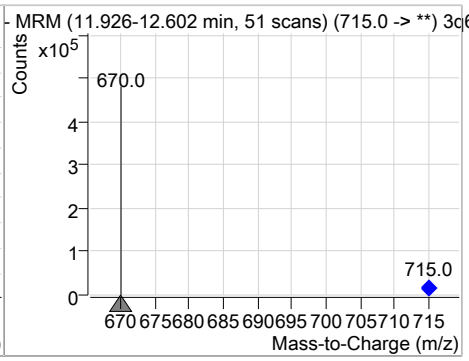




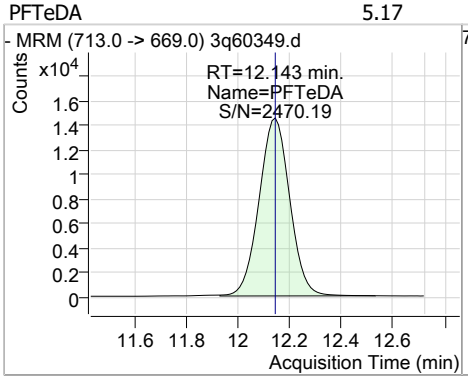
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.88	12.14	0.00	355860				

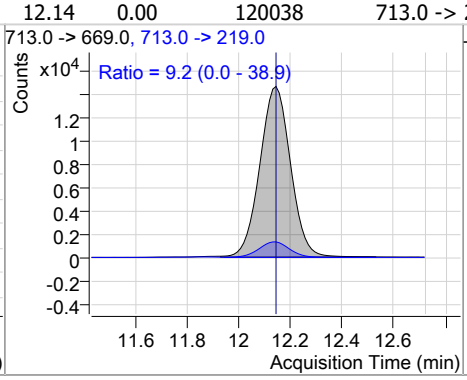


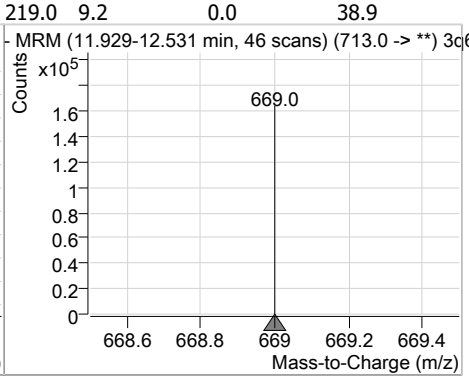




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.17	12.14	0.00	120038	713.0 -> 219.0	9.2	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60349.D
Injection Time: 05/27/22 15:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60350.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 3:33:45 PM
Sample Name : ic824-10
Vial : P1-A6
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

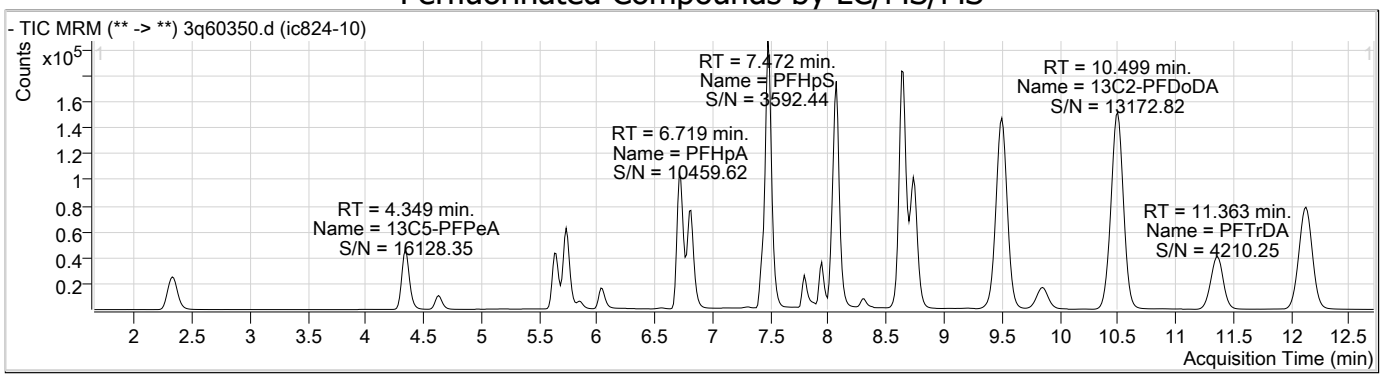
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	127762	20.00	µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	121997	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	166843	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	213369	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	273860	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	342658	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	524922	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	654856	20.00	µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	773619	20.00	µg/L	-0.013
M2-PFTeDA	12.126	715.0 -> 670.0	378956	20.00	µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	83081	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16558	20.00	µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	20605	20.00	µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	32966	20.00	µg/L	0.013
M2-4:2FTS	5.634	329.0 -> 81.0	12015	20.00	µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	28004	20.00	µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	49045	20.00	µg/L	0.000
M3-MeFOSAA	7.942	573.0 -> 419.0	68908	20.00	µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	24030	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	26836	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	67241	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	12015	21.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C2-6:2FTS	7.498	429.0 -> 81.0	28004	21.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-8:2FTS	8.739	529.0 -> 81.0	49045	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C2-PFDoDA	10.499	615.0 -> 570.0	773619	21.11	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C2-PFTeDA	12.126	715.0 -> 670.0	378956	21.17	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C3-PFBS	4.629	302.0 -> 99.0	16558	20.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C3-PFHxS	6.751	402.0 -> 99.0	20605	21.26	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C4-PFBA	2.327	217.0 -> 172.0	127762	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C4-PFHpA	6.718	367.0 -> 322.0	213369	21.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C5-PFHxA	5.739	318.0 -> 273.0	166843	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C5-PFPeA	4.349	268.0 -> 223.0	121997	21.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C6-PFDA	8.639	519.0 -> 474.0	524922	21.03	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

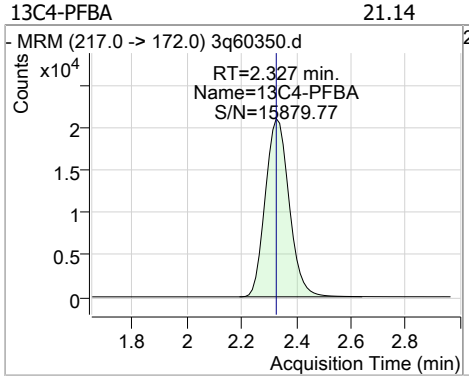
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C7-PFUnDA	9.505	570.0 -> 525.0	654856	21.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C8-FOSA	7.430	506.0 -> 78.0	83081	21.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C8-PFOA	7.487	421.0 -> 376.0	273860	21.67 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C8-PFOS	8.048	507.0 -> 99.0	32966	21.04 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C9-PFNA	8.075	472.0 -> 427.0	342658	21.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
d3-MeFOSAA	7.942	573.0 -> 419.0	68908	20.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C3-HFPO-DA	6.044	287.0 -> 169.0	24014	21.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
d3-MeFOSA	7.793	515.0 -> 169.0	26836	21.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
d5-EtFOSAA	8.029	589.0 -> 419.0	67289	21.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
Target Compounds						QValue
4:2FTS	5.637	327.0 -> 307.0	50253	9.59 µg/L		100
6:2FTS	7.499	427.0 -> 407.0	65443	9.73 µg/L		100
8:2FTS	8.740	527.0 -> 507.0	113822	9.72 µg/L		99
EtFOSAA	8.029	584.0 -> 419.0	26319	10.06 µg/L	m	94
FOSA	7.432	498.0 -> 78.0	37582	9.84 µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	27413	10.01 µg/L	m	91
PFBA	2.333	213.0 -> 169.0	24475	9.83 µg/L		100
PFBS	4.632	299.0 -> 80.0	20663	9.87 µg/L		100
PFDA	8.640	513.0 -> 469.0	217863	9.94 µg/L		100
PFDoDA	10.503	613.0 -> 569.0	326680	9.93 µg/L		99
PFDS	9.388	599.0 -> 80.0	12393	9.84 µg/L		100
PFHpA	6.719	363.0 -> 319.0	155132	9.91 µg/L		100
PFHpS	7.472	449.0 -> 80.0	21813	10.27 µg/L		99
PFHxA	5.740	313.0 -> 269.0	68613	9.84 µg/L		100
PFHxS	6.752	399.0 -> 80.0	20971	9.75 µg/L	m	97
PFNA	8.075	463.0 -> 419.0	160993	9.90 µg/L		100
PFNS	8.584	549.0 -> 80.0	19382	9.79 µg/L		100
PFOA	7.487	413.0 -> 369.0	123653	9.70 µg/L		100
PFOS	8.049	499.0 -> 80.0	25581	9.91 µg/L	m	83
PFPeA	4.352	263.0 -> 219.0	89415	9.94 µg/L		100
PFPeS	5.845	349.0 -> 80.0	13763	9.83 µg/L		97
PFTeDA	12.130	713.0 -> 669.0	246113	9.95 µg/L		100
PFTrDA	11.363	663.0 -> 619.0	300346	9.99 µg/L		100
PFUnDA	9.506	563.0 -> 519.0	302655	9.84 µg/L		99
11Cl-PF3OUdS	9.849	631.0 -> 451.0	88452	9.80 µg/L		99
9Cl-PF3ONS	8.309	531.0 -> 351.0	17830	9.81 µg/L		99
ADONA	6.819	377.0 -> 251.0	219186	9.60 µg/L		99
HFPO-DA	6.051	329.0 -> 169.0	32228	9.46 µg/L		99
MeFOSA	7.794	512.0 -> 169.0	13341	10.03 µg/L		99

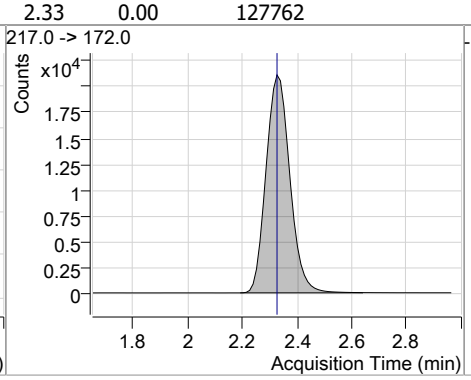
 # = Qualifier out of range, m = manually integrated, + = Area summed

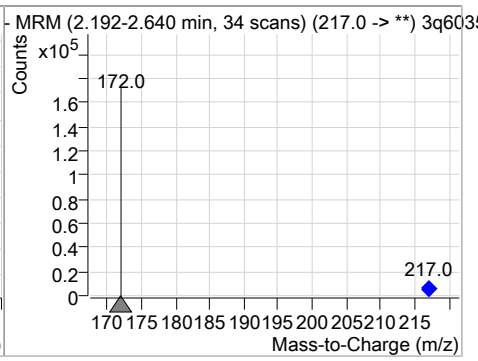
Perfluorinated Compounds by LC/MS/MS



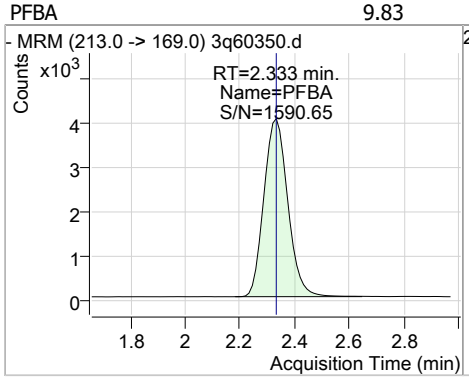
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.14	2.33	0.00	127762				

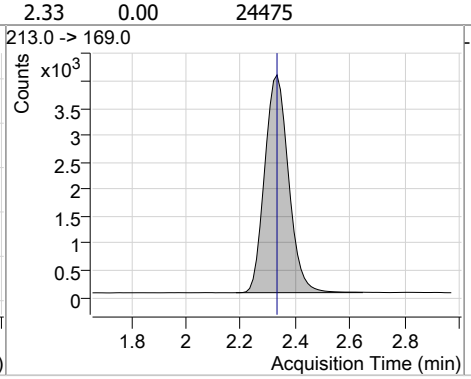


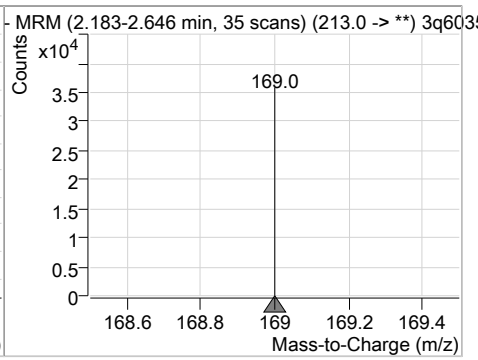




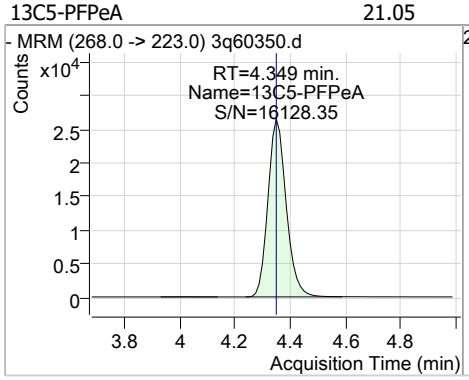
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.83	2.33	0.00	24475				

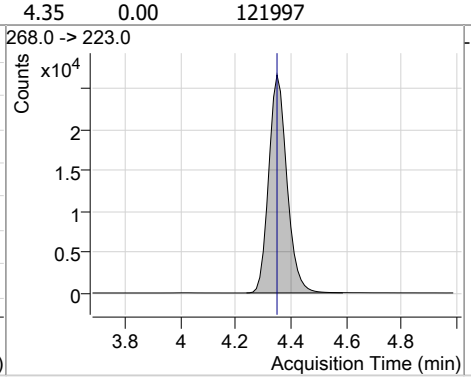


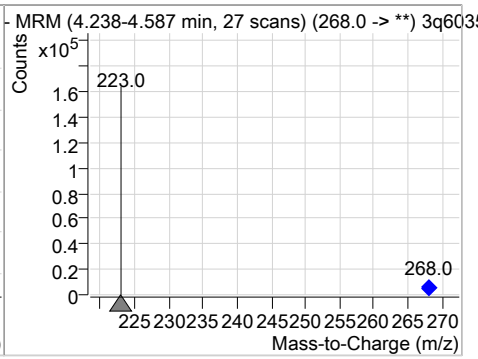




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.05	4.35	0.00	121997				

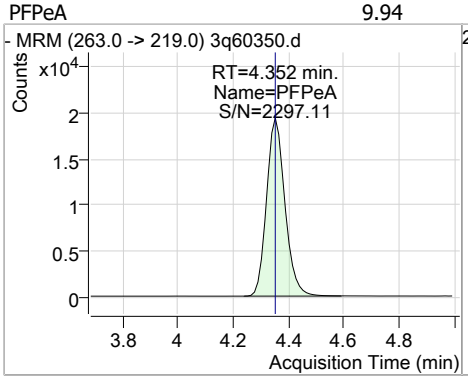


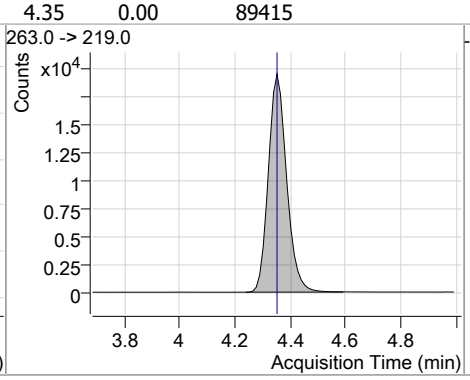


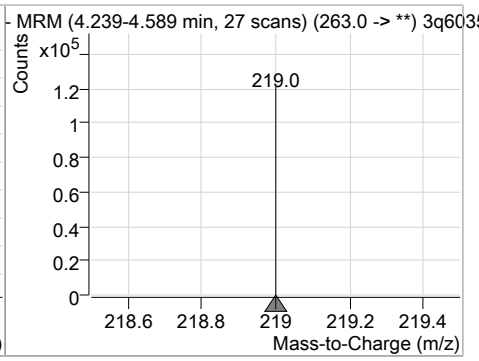


Perfluorinated Compounds by LC/MS/MS

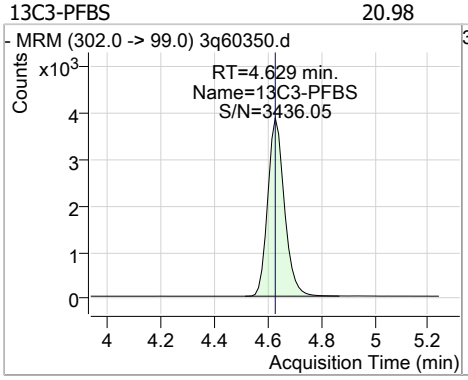
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.94	4.35	0.00	89415				

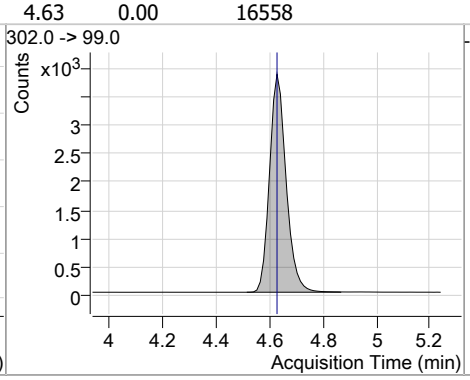


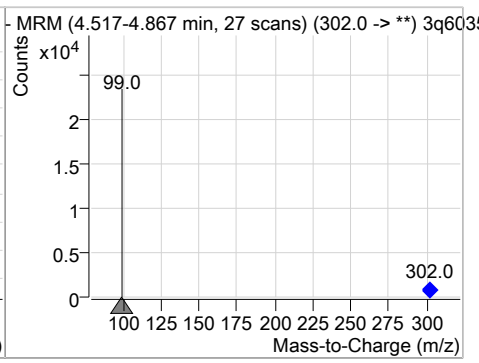




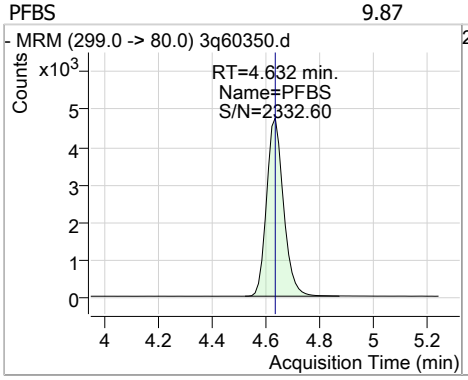
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.98	4.63	0.00	16558				

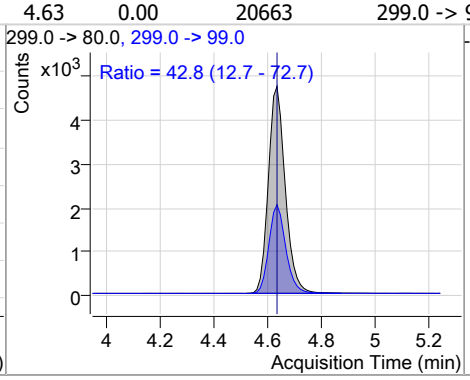


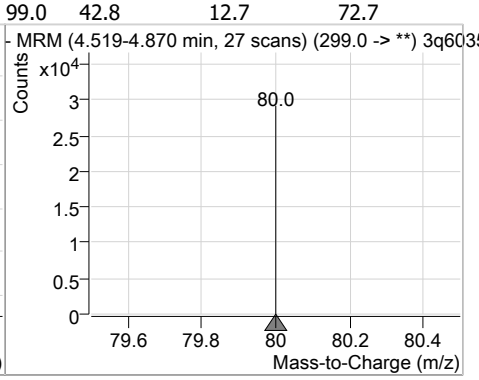




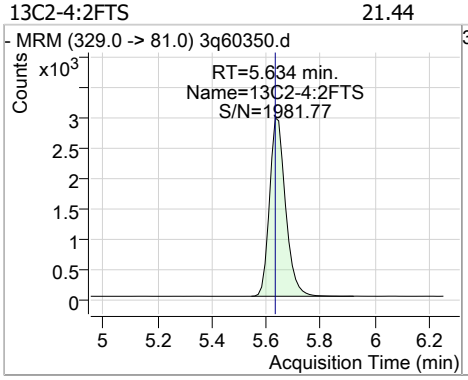
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.87	4.63	0.00	20663	299.0 -> 99.0	42.8	12.7	72.7

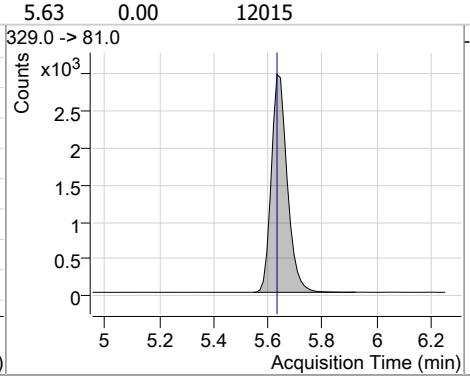


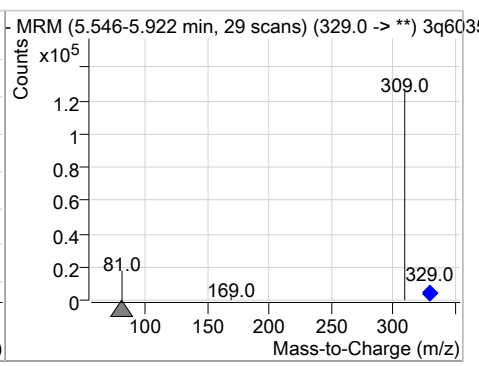




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.44	5.63	0.00	12015				

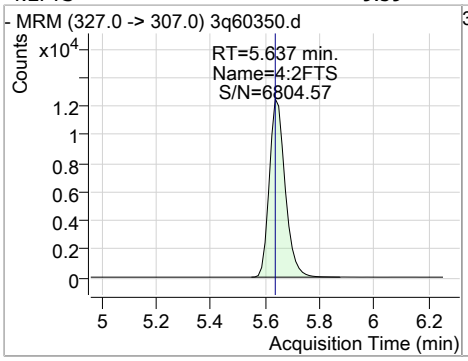


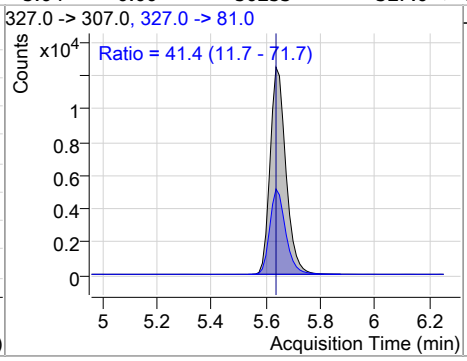


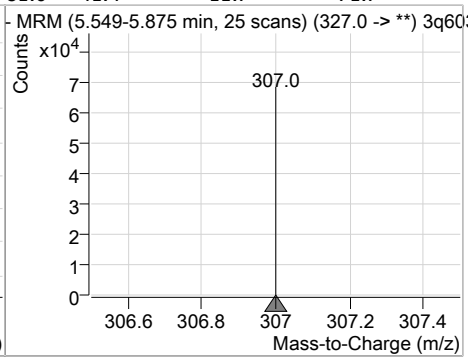


Perfluorinated Compounds by LC/MS/MS

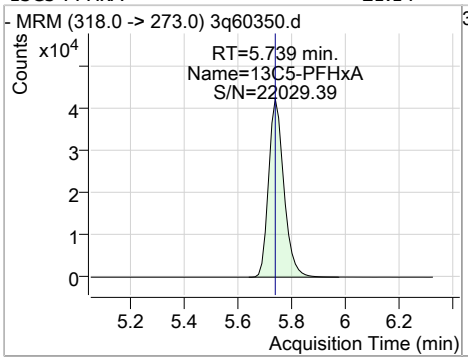
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.59	5.64	0.00	50253	327.0 -> 81.0	41.4	11.7	71.7

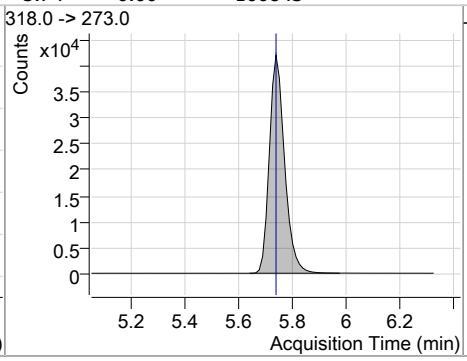


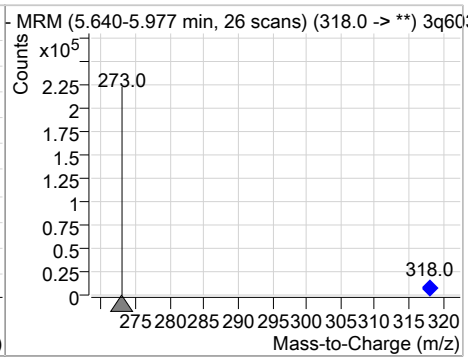




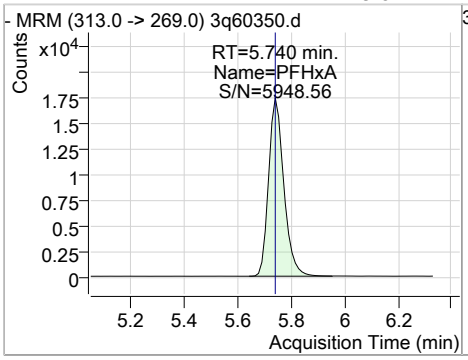
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.14	5.74	0.00	166843				

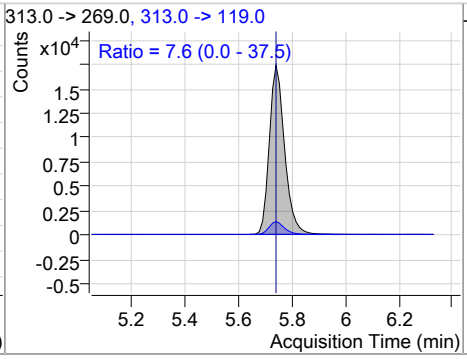


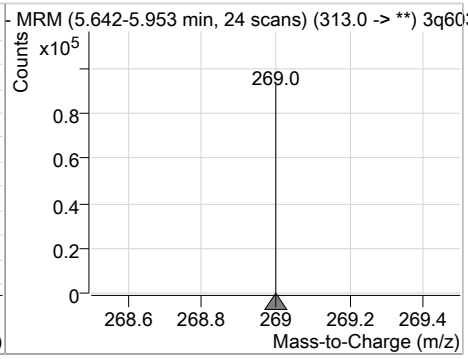




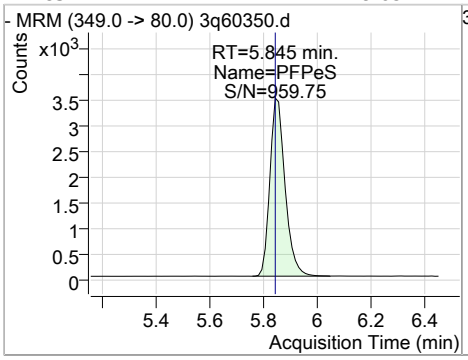
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.84	5.74	0.00	68613	313.0 -> 119.0	7.6	0.0	37.5

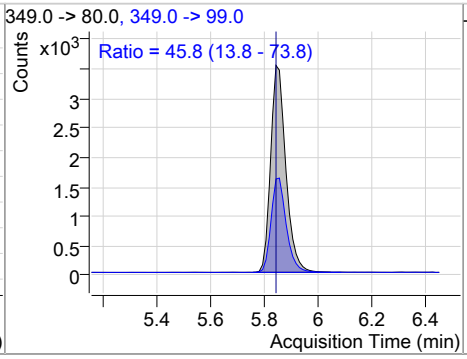


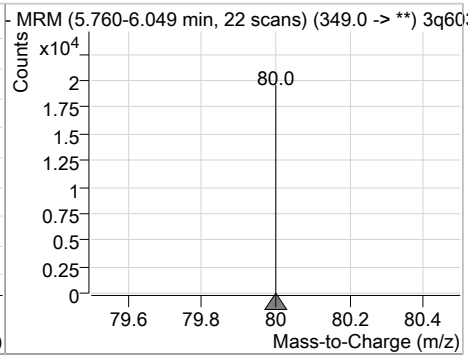




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.83	5.84	0.00	13763	349.0 -> 99.0	45.8	13.8	73.8

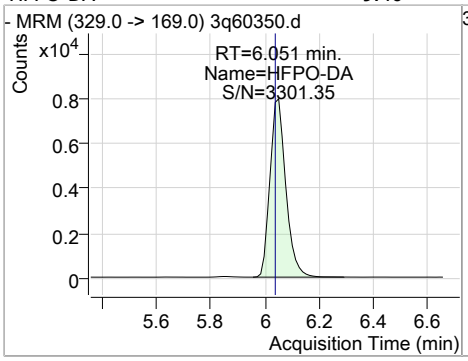


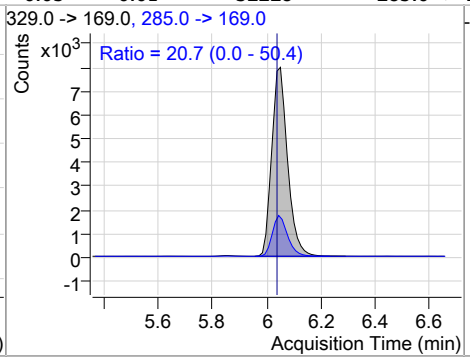


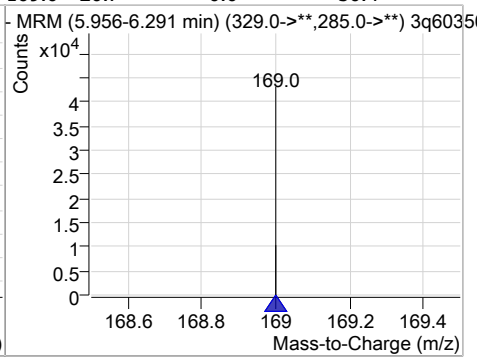


Perfluorinated Compounds by LC/MS/MS

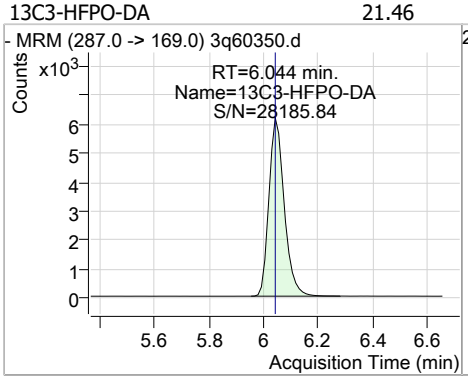
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.46	6.05	0.01	32228	285.0 -> 169.0	20.7	0.0	50.4

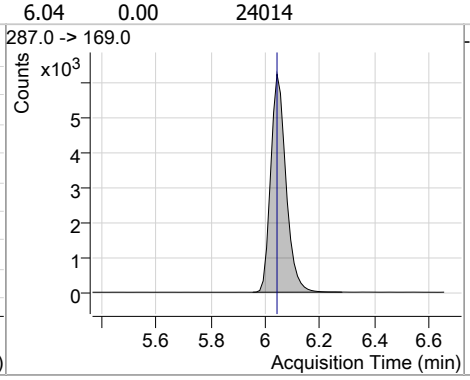


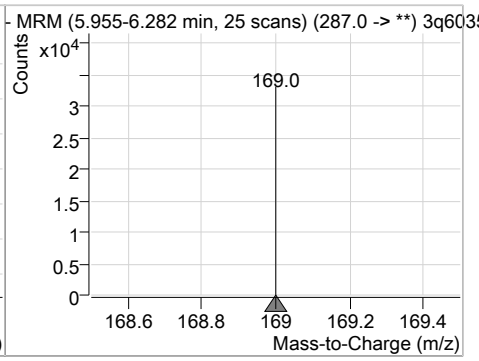




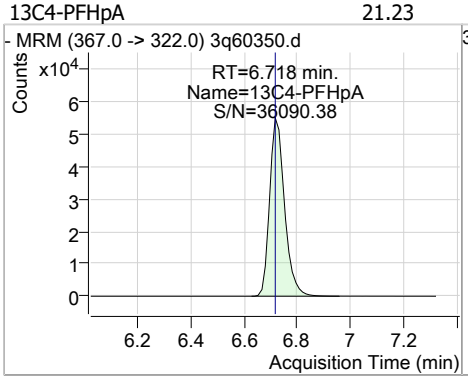
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.46	6.04	0.00	24014				

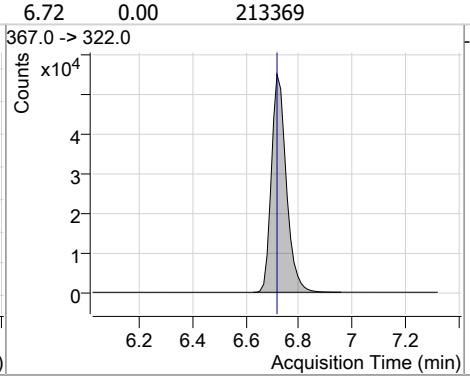


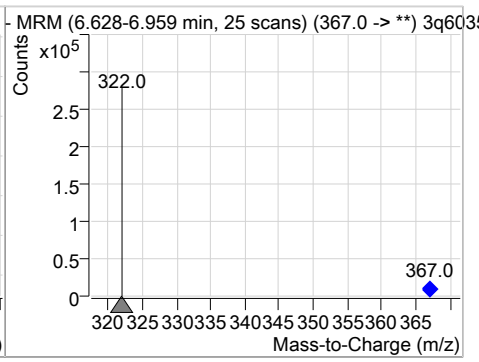




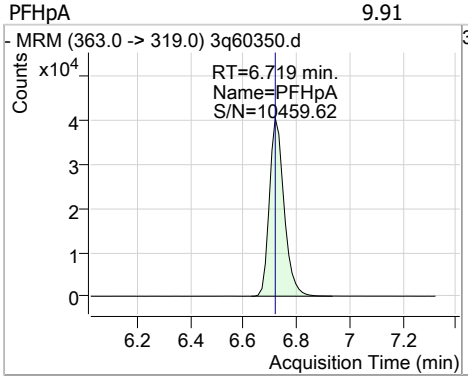
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.23	6.72	0.00	213369				

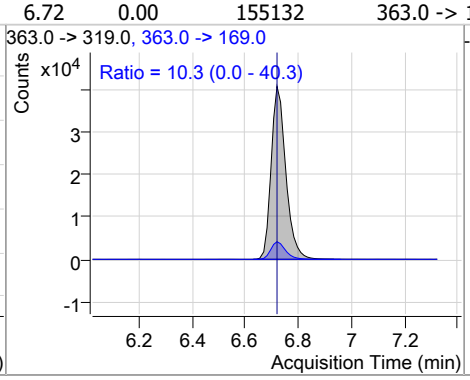


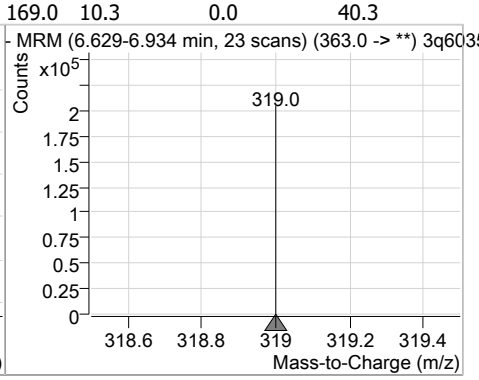




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.91	6.72	0.00	155132	363.0 -> 169.0	10.3	0.0	40.3

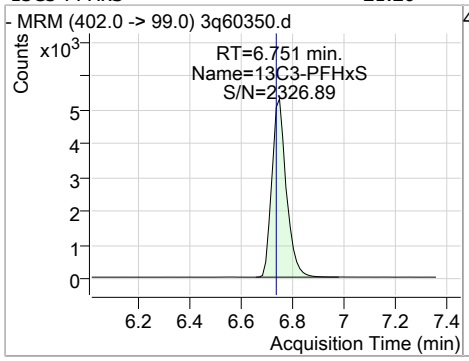


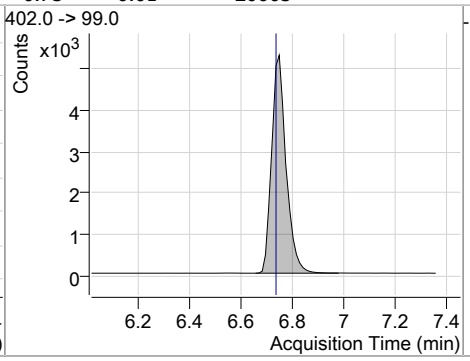


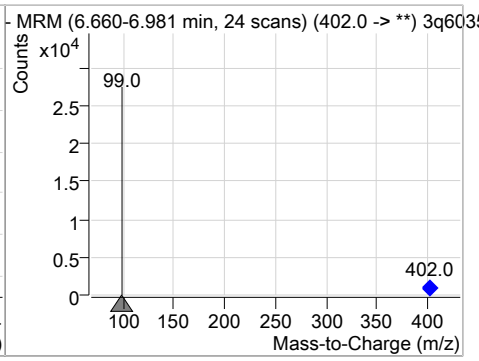


Perfluorinated Compounds by LC/MS/MS

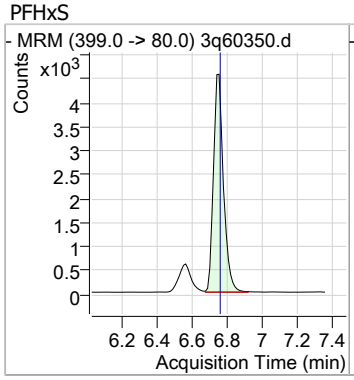
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.26	6.75	0.01	20605				

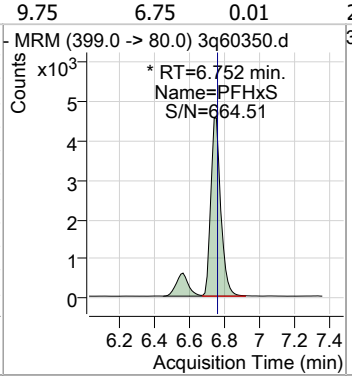


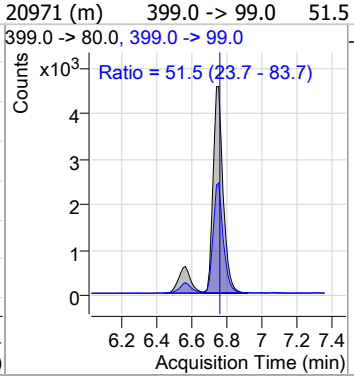


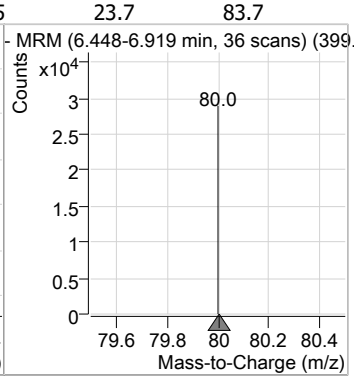


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.75	6.75	0.01	20971 (m)	399.0 -> 99.0	51.5	23.7	83.7

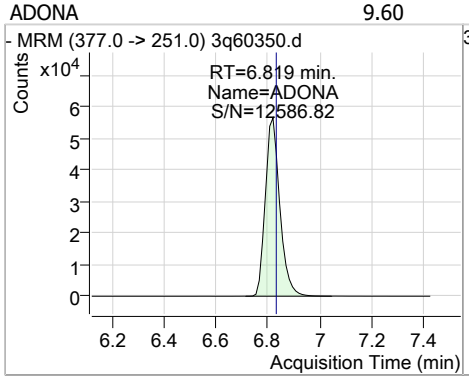


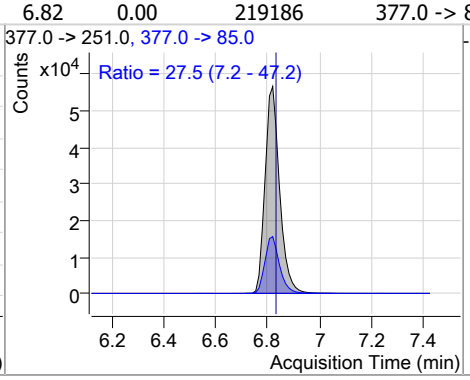


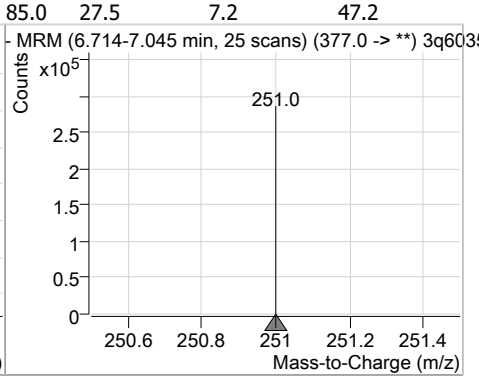




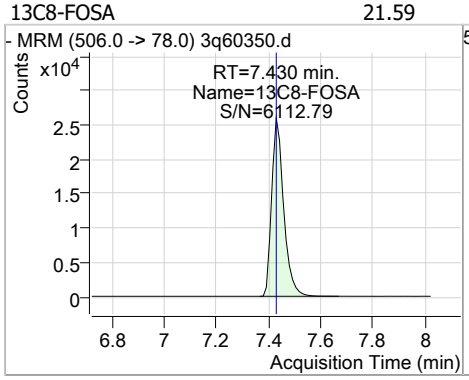
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.60	6.82	0.00	219186	377.0 -> 85.0	27.5	7.2	47.2

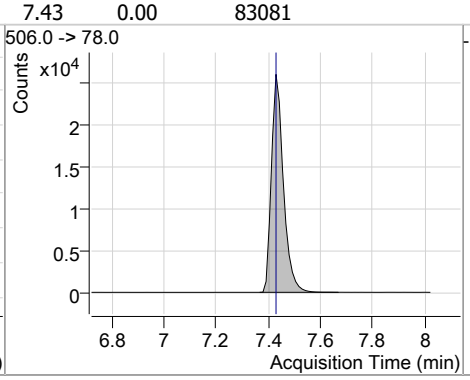


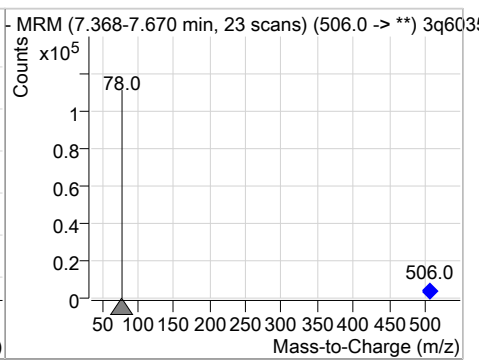




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.59	7.43	0.00	83081				

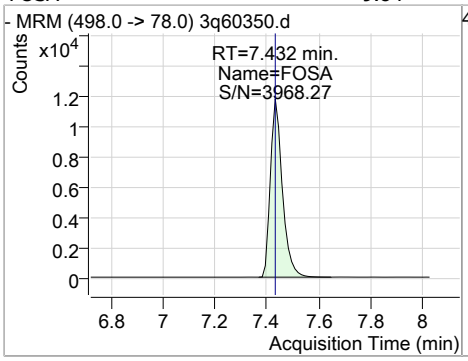


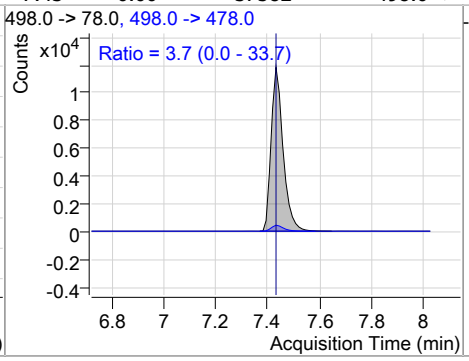


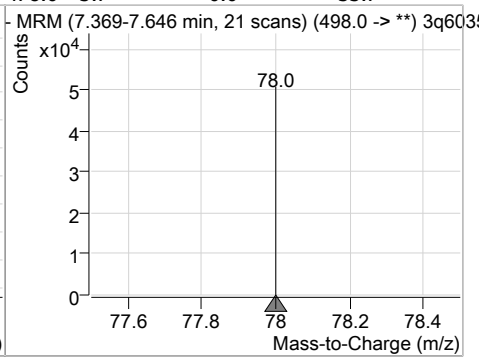


Perfluorinated Compounds by LC/MS/MS

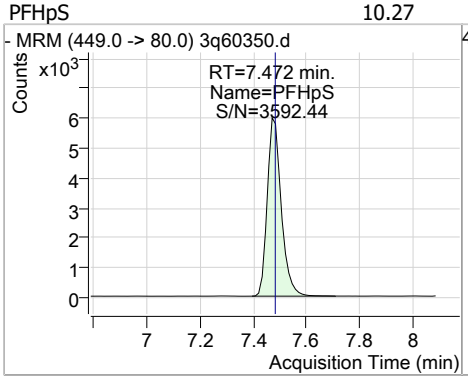
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.84	7.43	0.00	37582	498.0 -> 478.0	3.7	0.0	33.7

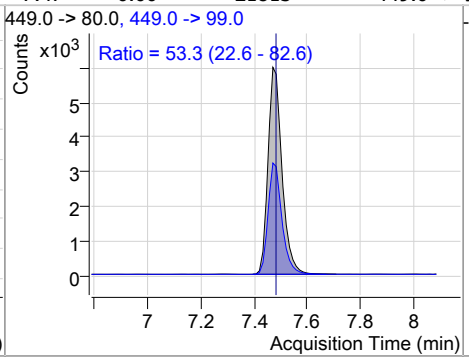


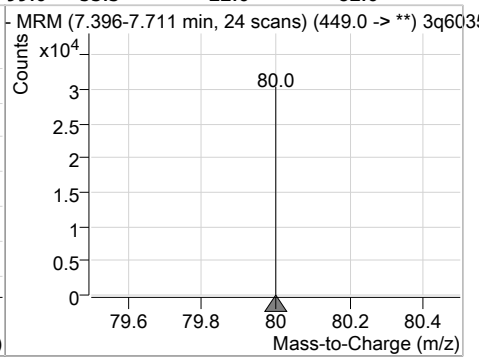




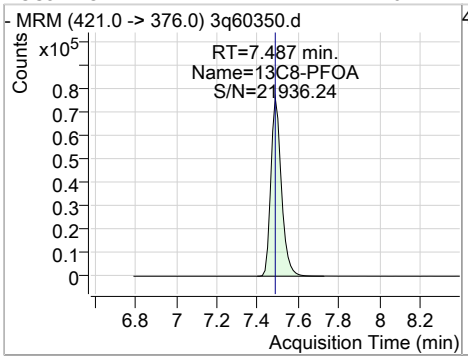
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.27	7.47	0.00	21813	449.0 -> 99.0	53.3	22.6	82.6

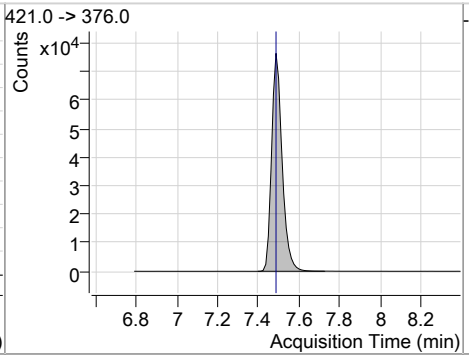


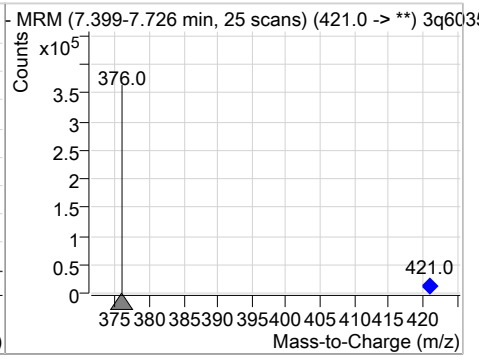




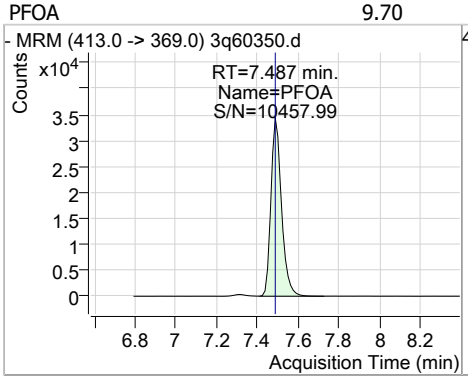
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.67	7.49	0.00	273860				

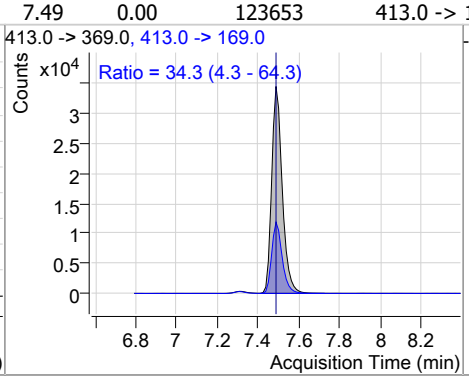


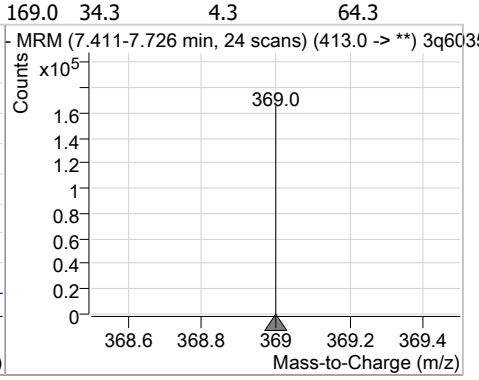




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.70	7.49	0.00	123653	413.0 -> 169.0	34.3	4.3	64.3

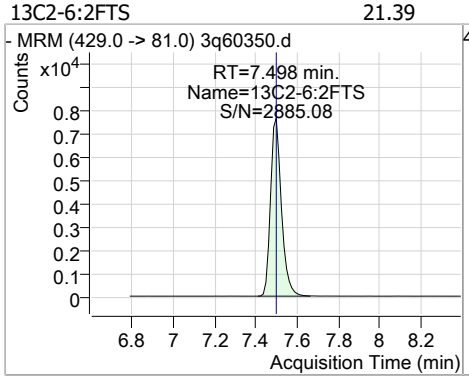


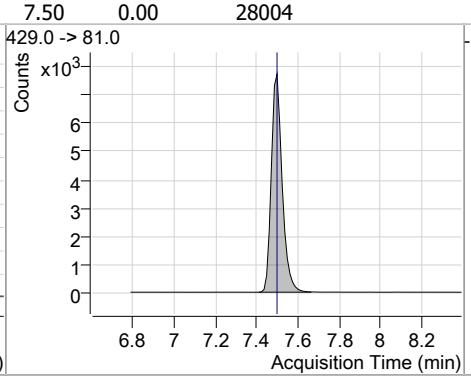


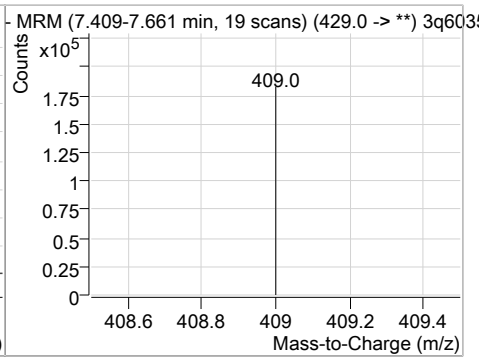


Perfluorinated Compounds by LC/MS/MS

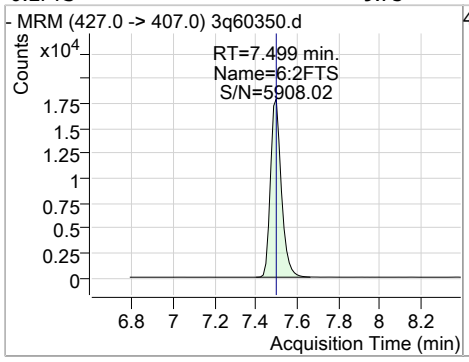
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.39	7.50	0.00	28004				

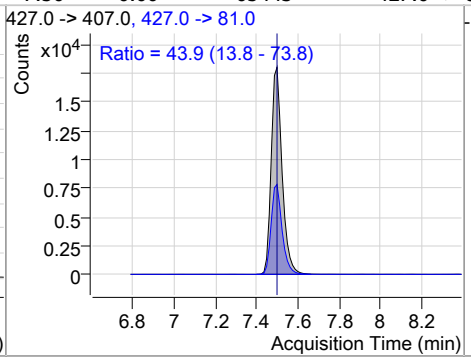


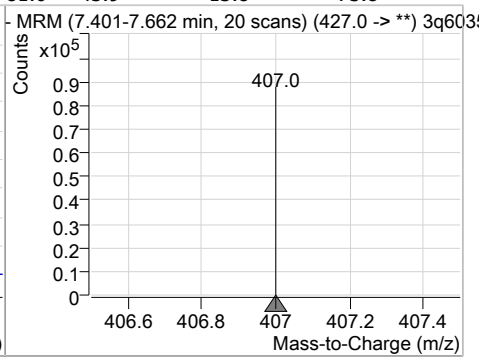




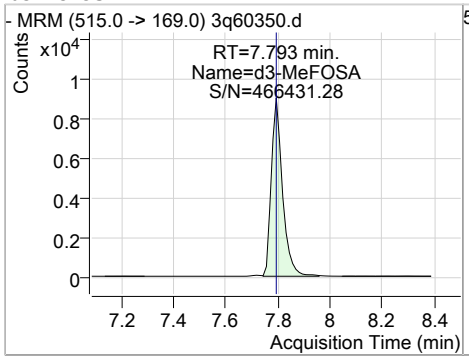
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.73	7.50	0.00	65443	427.0 -> 81.0	43.9	13.8	73.8

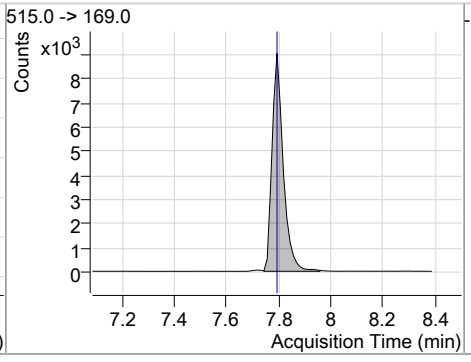


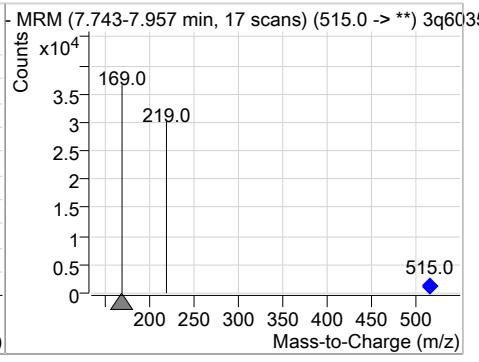




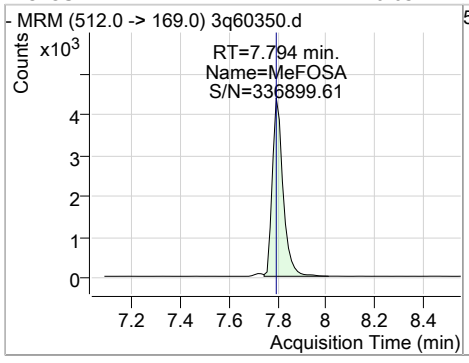
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.47	7.79	0.00	26836				

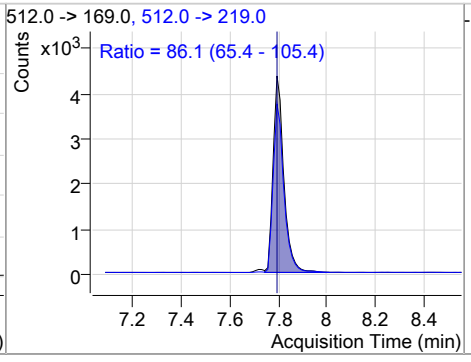


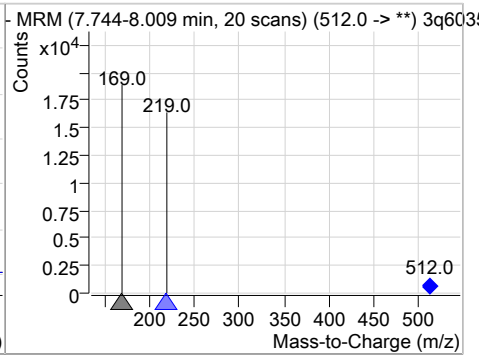




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.03	7.79	0.00	13341	512.0 -> 219.0	86.1	65.4	105.4

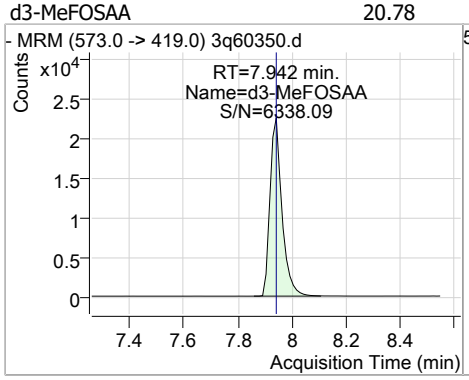


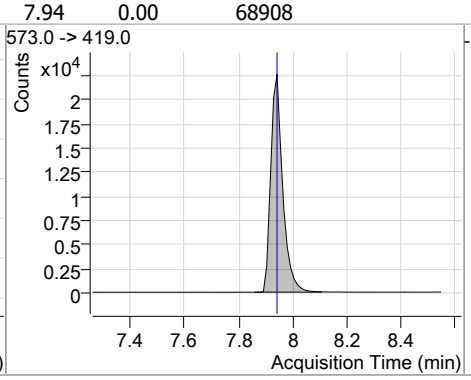


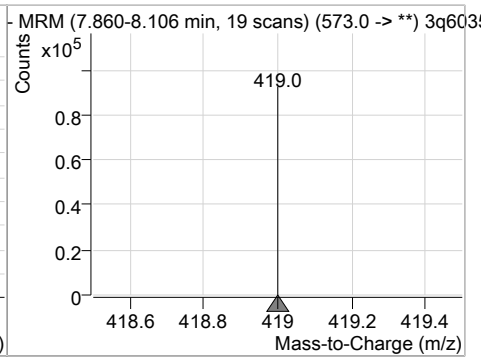


Perfluorinated Compounds by LC/MS/MS

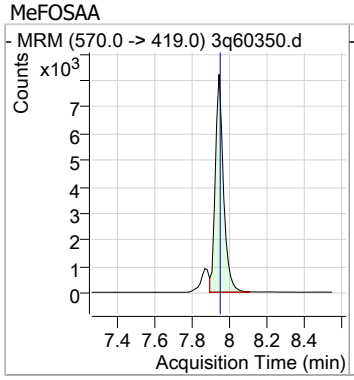
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.78	7.94	0.00	68908				

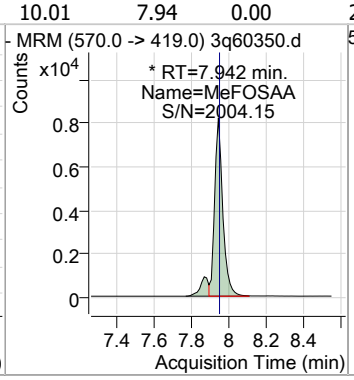


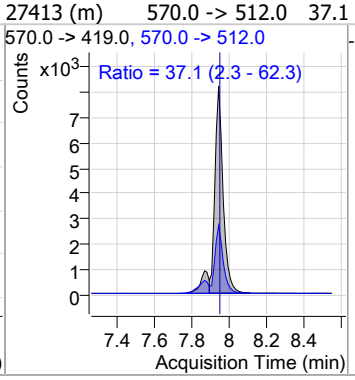


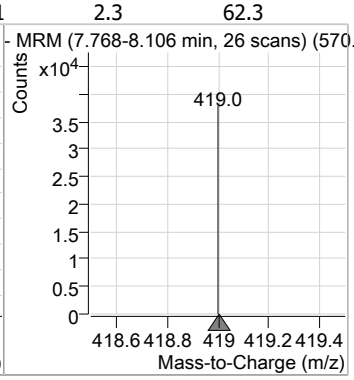


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.01	7.94	0.00	27413 (m)	570.0 -> 512.0	37.1	2.3	62.3

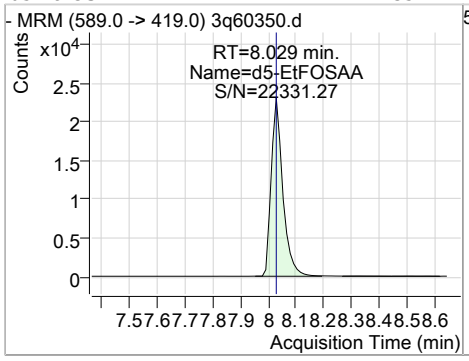


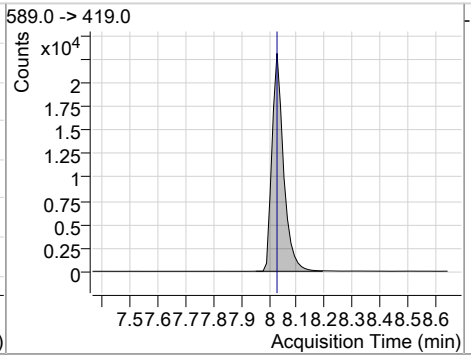


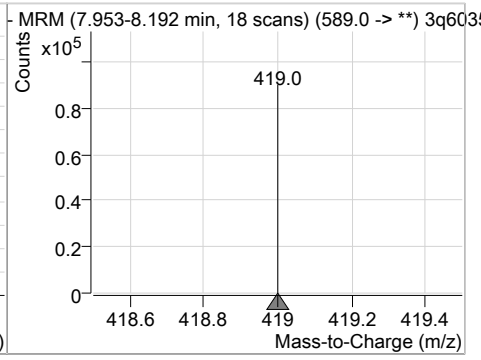




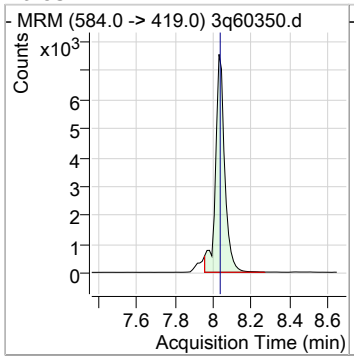
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.35	8.03	0.00	67289				

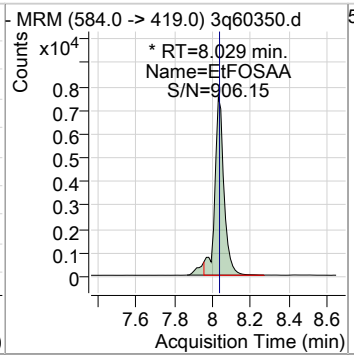


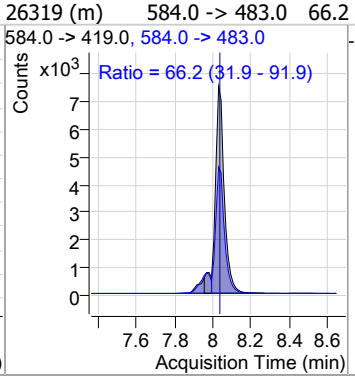


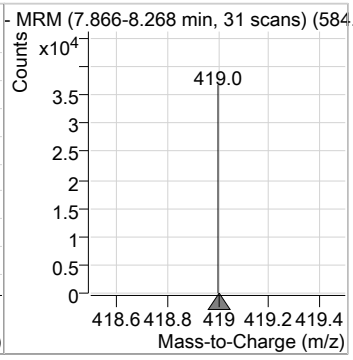


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.06	8.03	0.00	26319 (m)	584.0 -> 483.0	66.2	31.9	91.9



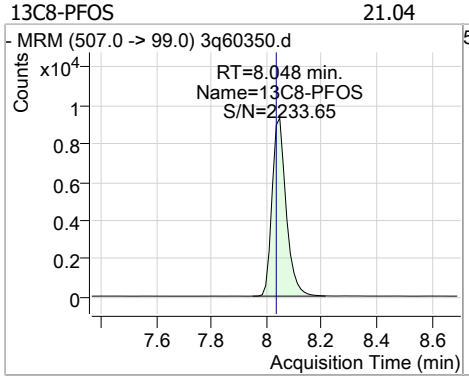


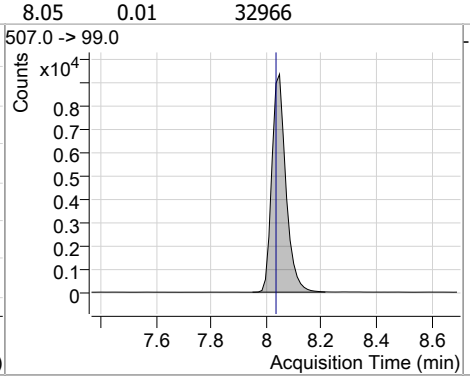


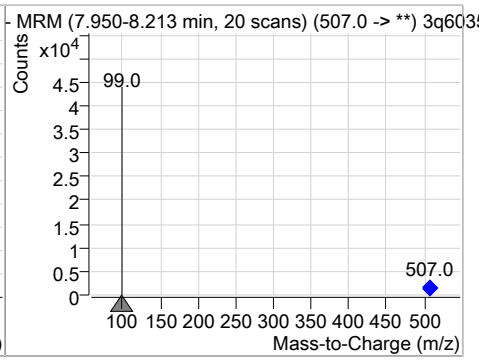


Perfluorinated Compounds by LC/MS/MS

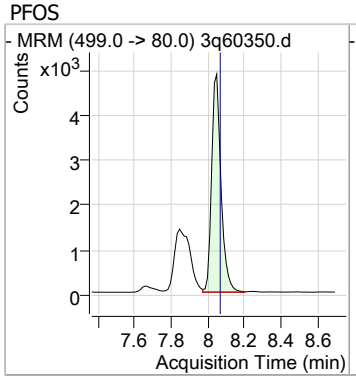
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.04	8.05	0.01	32966				

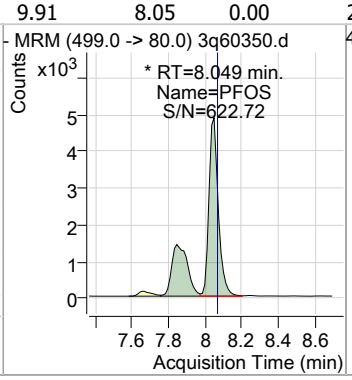


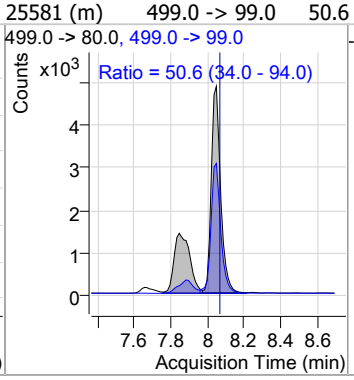


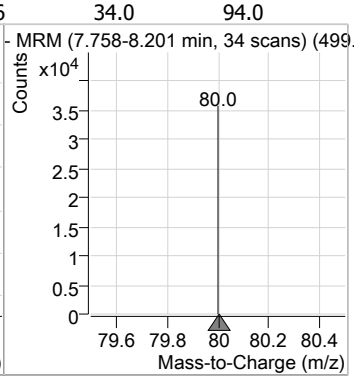


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.91	8.05	0.00	25581 (m)	499.0 -> 99.0	50.6	34.0	94.0

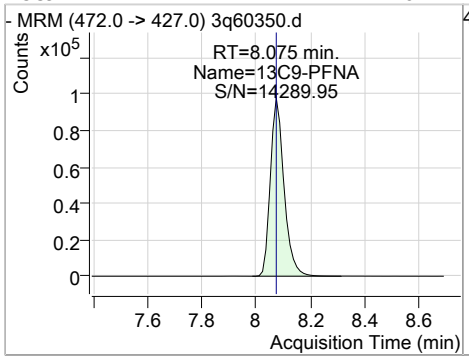


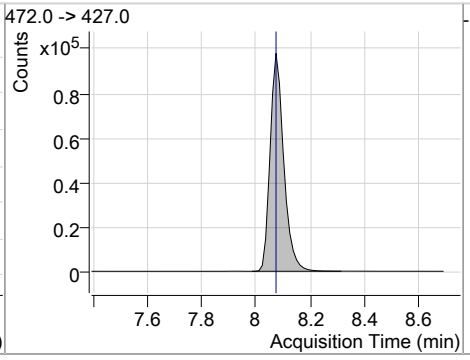


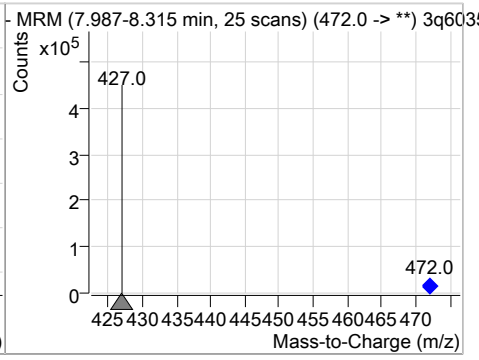




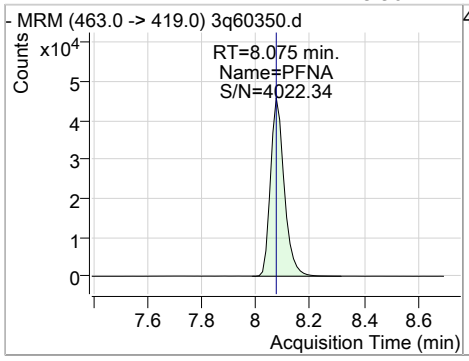
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.18	8.08	0.00	342658				

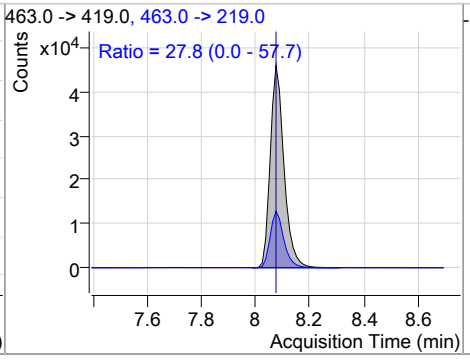


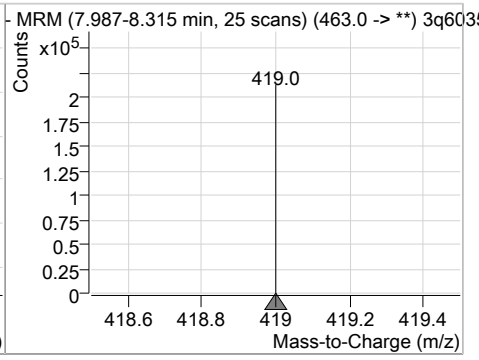




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.90	8.08	0.00	160993	463.0 -> 219.0	27.8	0.0	57.7

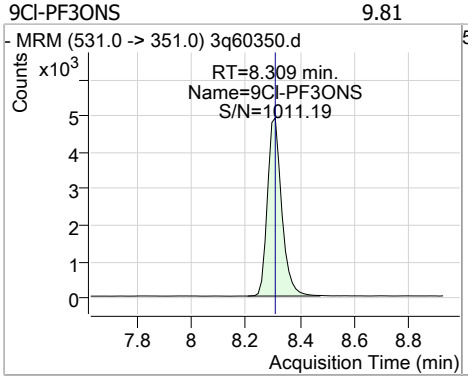


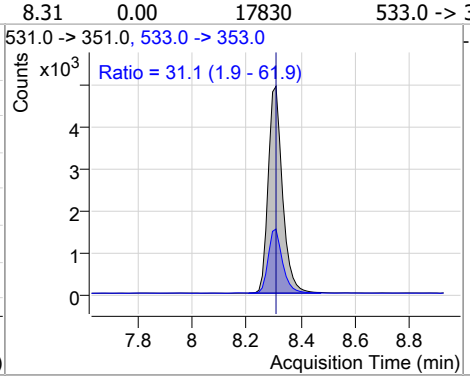


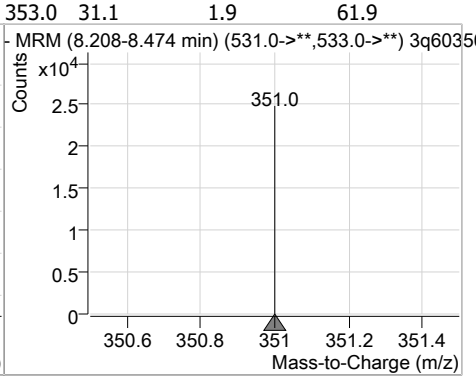


Perfluorinated Compounds by LC/MS/MS

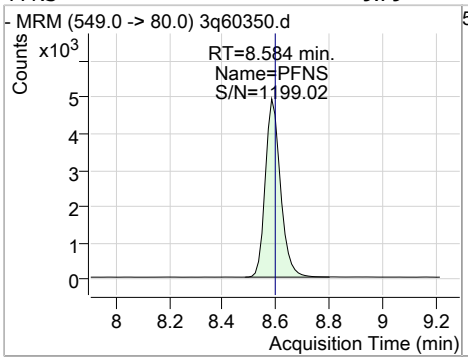
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.81	8.31	0.00	17830	533.0 -> 353.0	31.1	1.9	61.9

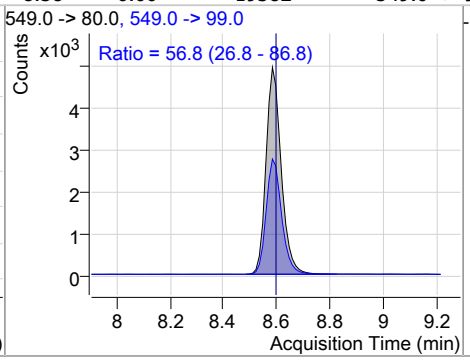


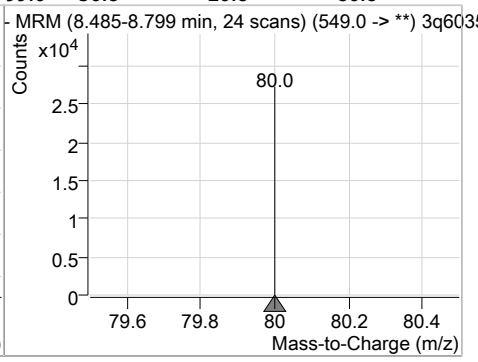




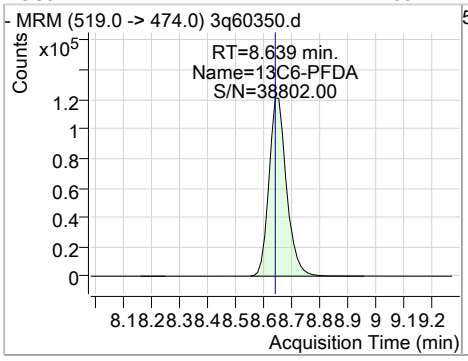
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.79	8.58	0.00	19382	549.0 -> 99.0	56.8	26.8	86.8

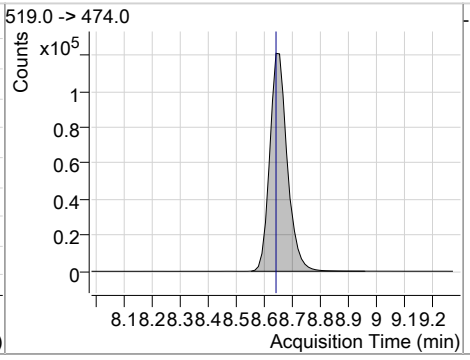


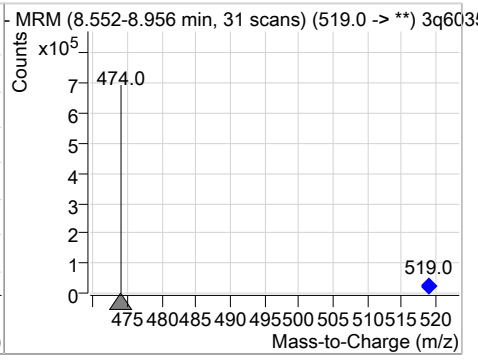




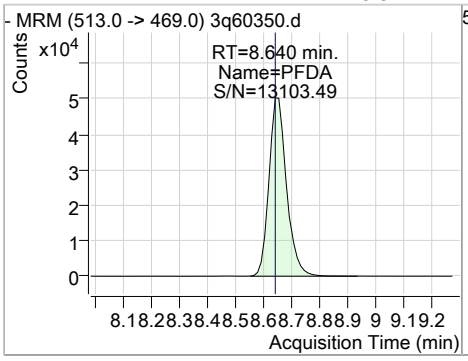
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.03	8.64	0.00	524922				

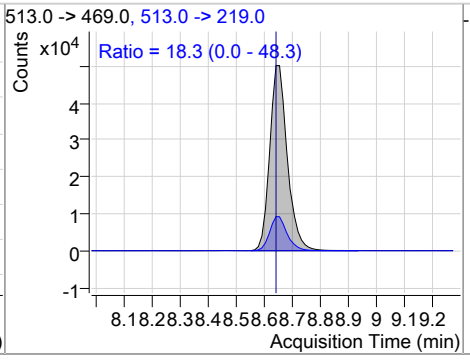


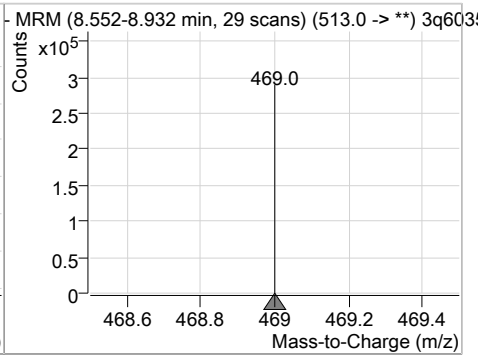




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.94	8.64	0.00	217863	513.0 -> 219.0	18.3	0.0	48.3

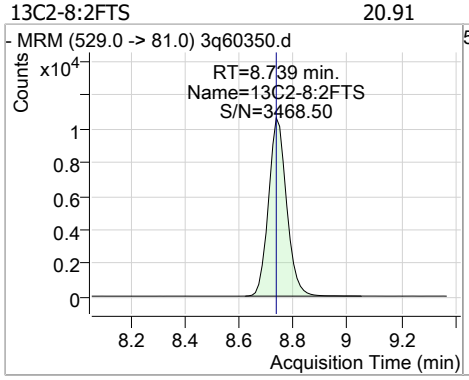


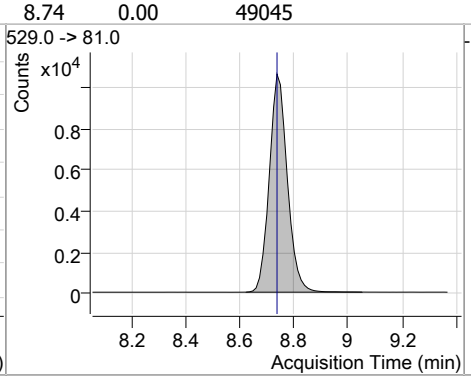


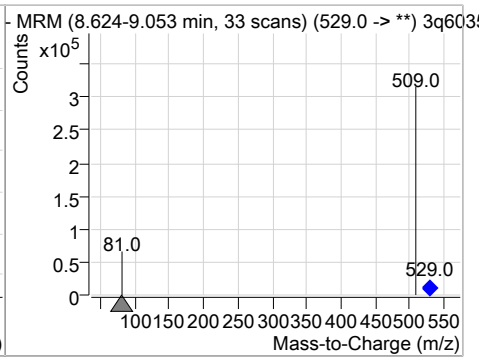


Perfluorinated Compounds by LC/MS/MS

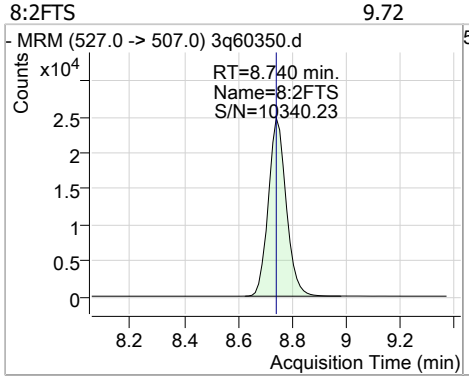
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.91	8.74	0.00	49045				

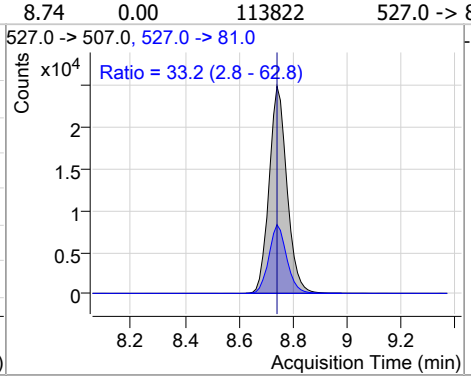


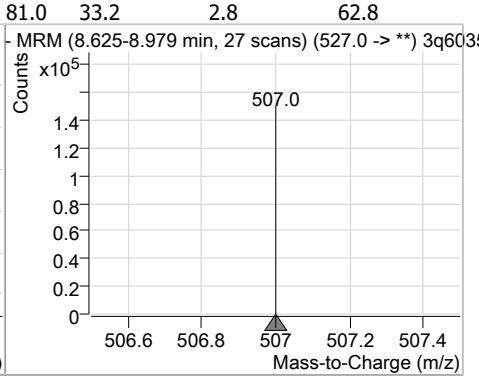




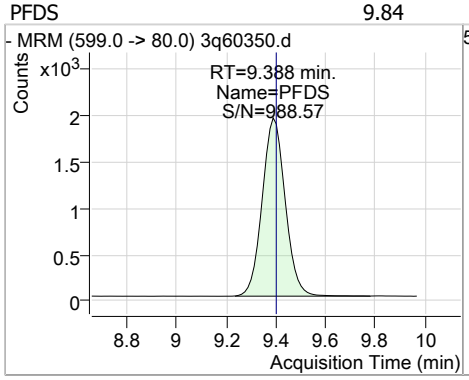
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	9.72	8.74	0.00	113822	527.0 -> 81.0	33.2	2.8	62.8

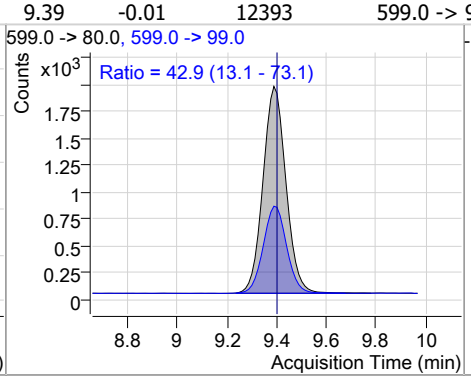


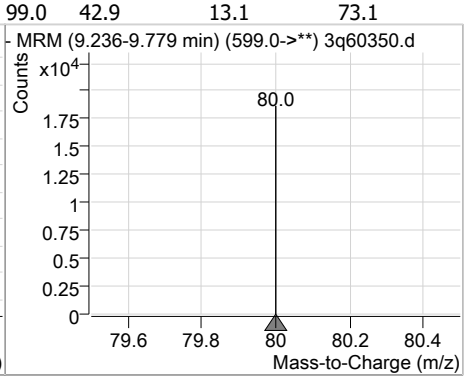




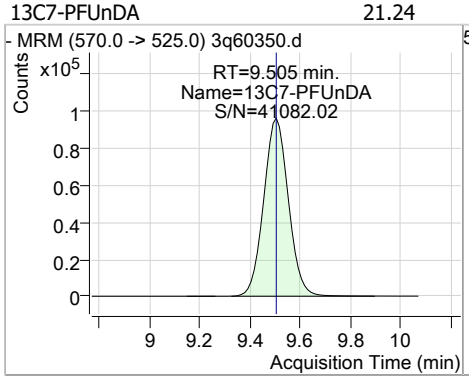
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.84	9.39	-0.01	12393	599.0 -> 99.0	42.9	13.1	73.1

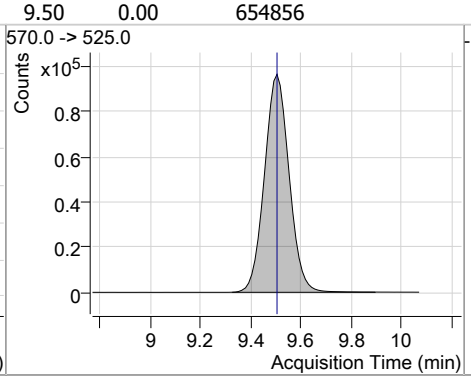


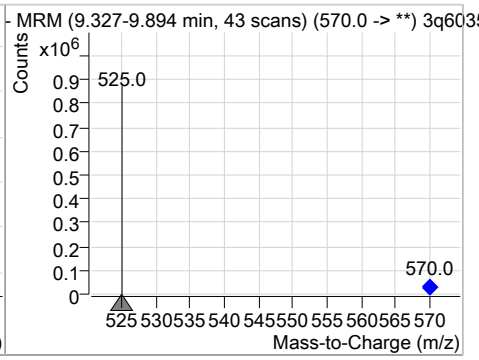




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.24	9.50	0.00	654856				

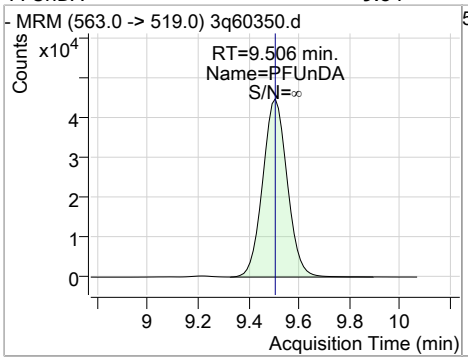


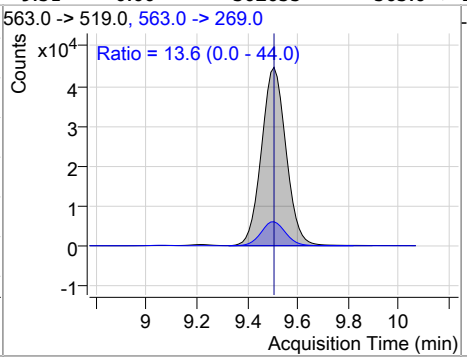


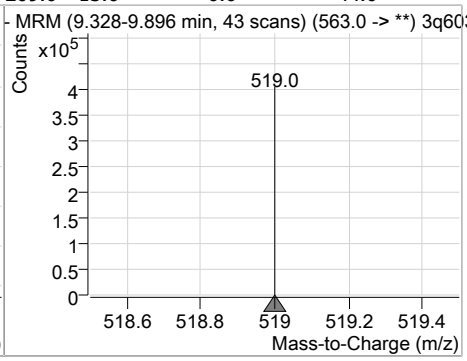


Perfluorinated Compounds by LC/MS/MS

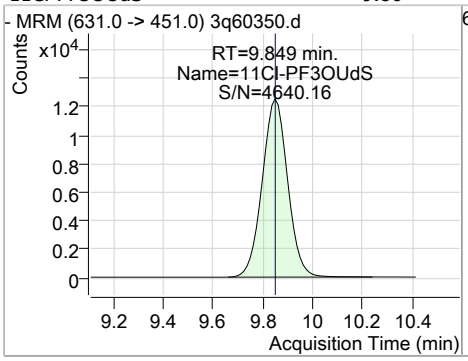
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.84	9.51	0.00	302655	563.0 -> 269.0	13.6	0.0	44.0

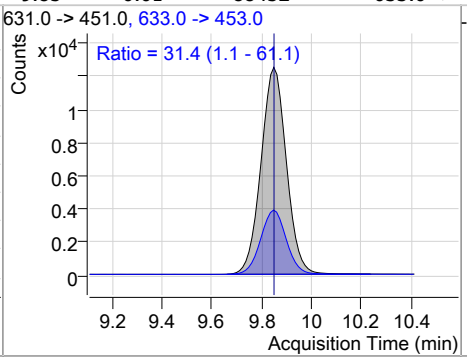


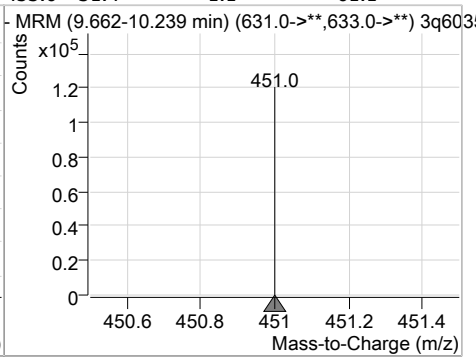




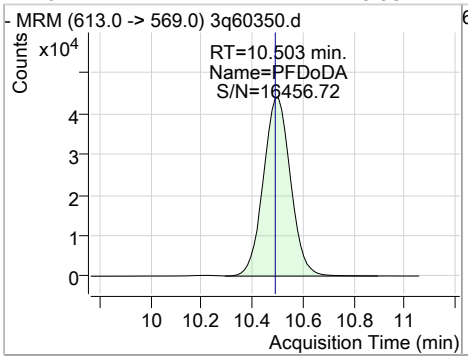
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.80	9.85	-0.01	88452	633.0 -> 453.0	31.4	1.1	61.1

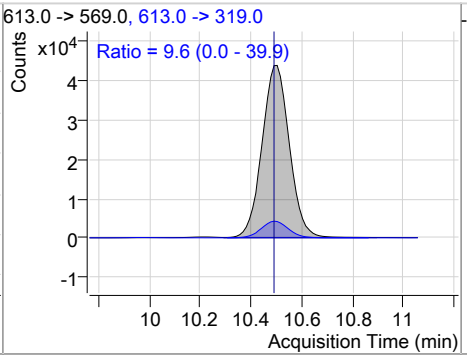


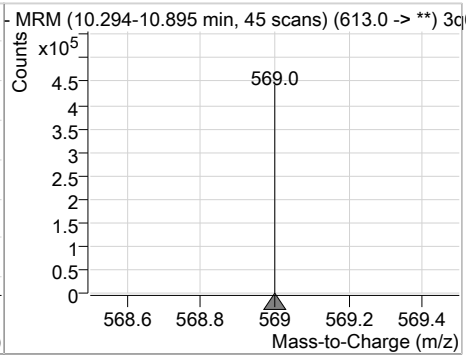




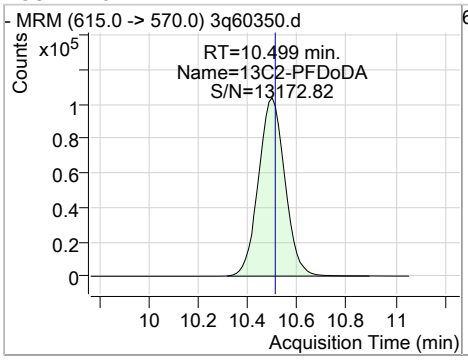
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.93	10.50	0.00	326680	613.0 -> 319.0	9.6	0.0	39.9

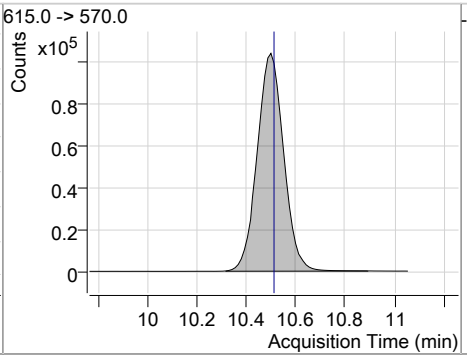


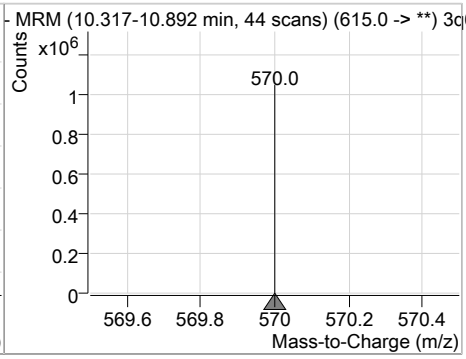




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.11	10.50	-0.01	773619				

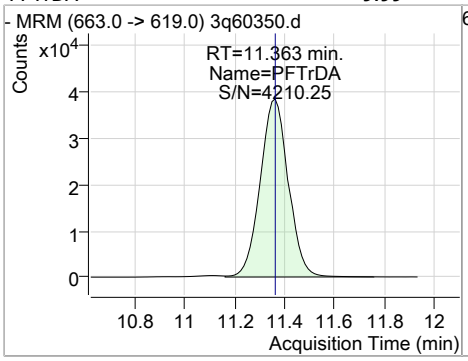


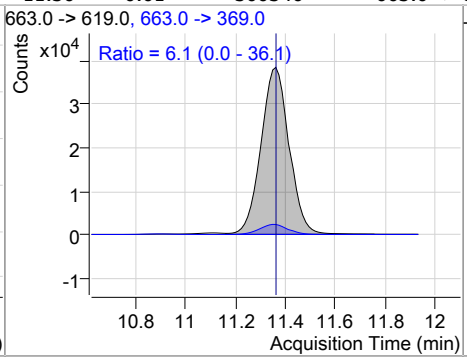


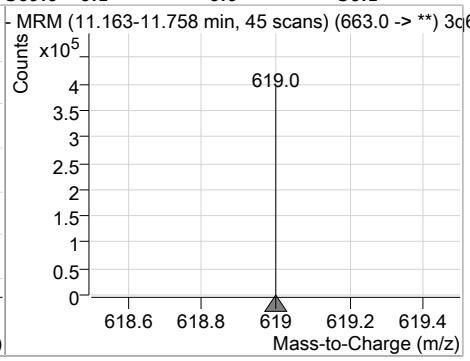


Perfluorinated Compounds by LC/MS/MS

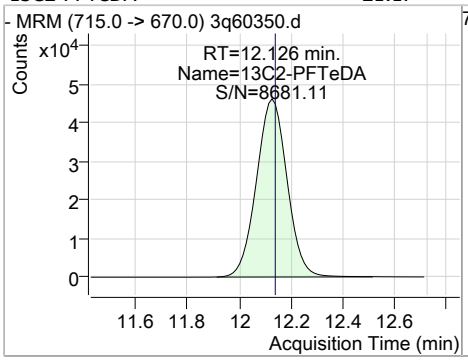
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.99	11.36	-0.01	300346	663.0 -> 369.0	6.1	0.0	36.1

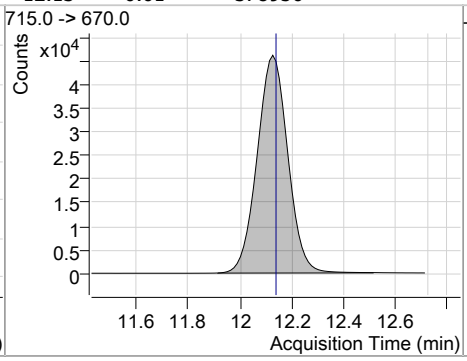


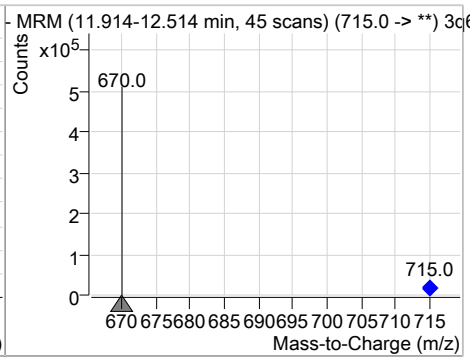




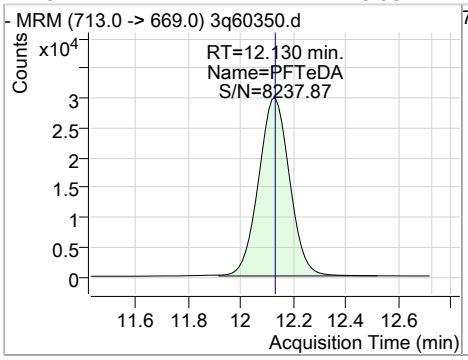
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.17	12.13	-0.01	378956				

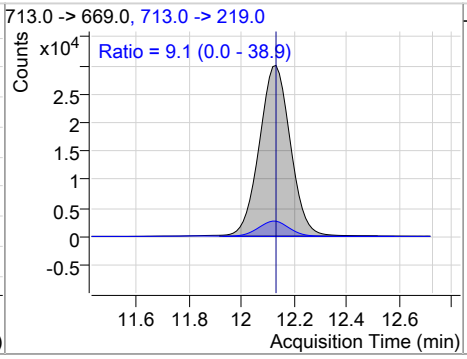


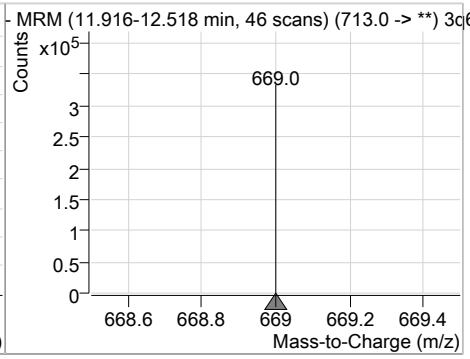




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.95	12.13	-0.01	246113	713.0 -> 219.0	9.1	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60350.D
Injection Time: 05/27/22 15:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.75	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

3Q60351.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q60351.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	5/27/2022 3:53:16 PM
Sample Name	:	icc824-20
Vial	:	P1-A7
DA Method File	:	ID_052722_S3Q824.quantmethod.xml
Batch Name	:	s3q824.batch.bin
Sample Information	:	op91139,S3Q824,250,,,1,1,water

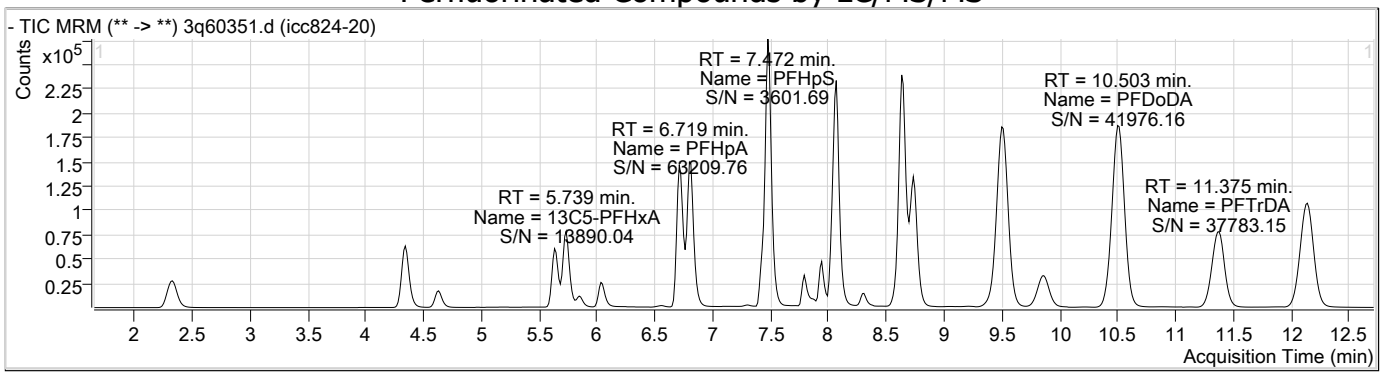
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	119553	20.00	µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	114730	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	156765	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	199482	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	251145	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	320750	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	497220	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	615100	20.00	µg/L	0.000
M2-PFDoDA	10.512	615.0 -> 570.0	725003	20.00	µg/L	0.000
M2-PFTeDA	12.139	715.0 -> 670.0	354975	20.00	µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	76932	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15648	20.00	µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	19074	20.00	µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	30796	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11204	20.00	µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	26144	20.00	µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	46697	20.00	µg/L	0.000
M3-MeFOSAA	7.942	573.0 -> 419.0	65376	20.00	µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	22567	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	25099	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	63461	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	11204	19.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-6:2FTS	7.498	429.0 -> 81.0	26144	19.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C2-8:2FTS	8.739	529.0 -> 81.0	46697	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-PFDoDA	10.512	615.0 -> 570.0	725003	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-PFTeDA	12.139	715.0 -> 670.0	354975	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFBS	4.629	302.0 -> 99.0	15648	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFHxS	6.738	402.0 -> 99.0	19074	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFBA	2.327	217.0 -> 172.0	119553	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	6.718	367.0 -> 322.0	199482	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFHxA	5.739	318.0 -> 273.0	156765	19.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFPeA	4.349	268.0 -> 223.0	114730	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	8.639	519.0 -> 474.0	497220	19.92	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

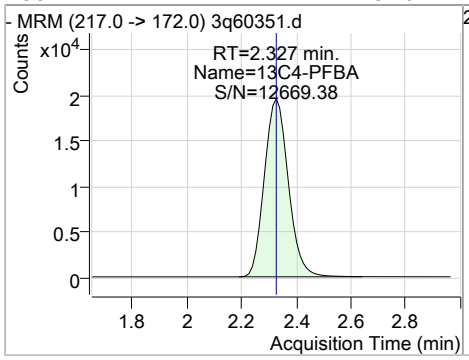
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C7-PFUnDA	9.505	570.0 -> 525.0	615100	19.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C8-FOSA	7.430	506.0 -> 78.0	76932	19.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C8-PFOA	7.487	421.0 -> 376.0	251145	19.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C8-PFOS	8.036	507.0 -> 99.0	30796	19.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C9-PFNA	8.075	472.0 -> 427.0	320750	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
d3-MeFOSAA	7.942	573.0 -> 419.0	65376	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	22559	20.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
d3-MeFOSA	7.793	515.0 -> 169.0	25099	20.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
d5-EtFOSAA	8.029	589.0 -> 419.0	63434	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
Target Compounds							QValue
4:2FTS	5.637	327.0 -> 307.0	98297	20.11	µg/L		100
6:2FTS	7.499	427.0 -> 407.0	129340	20.59	µg/L		100
8:2FTS	8.740	527.0 -> 507.0	229120	20.55	µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	51862	21.01	µg/L	m	95
FOSA	7.432	498.0 -> 78.0	74268	20.99	µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	55940	21.53	µg/L	m	94
PFBA	2.333	213.0 -> 169.0	48605	20.85	µg/L		100
PFBS	4.632	299.0 -> 80.0	41053	20.74	µg/L		100
PFDA	8.640	513.0 -> 469.0	434641	20.93	µg/L		100
PFDoDA	10.503	613.0 -> 569.0	631053	20.47	µg/L		100
PFDS	9.401	599.0 -> 80.0	24622	20.81	µg/L		100
PFHpA	6.719	363.0 -> 319.0	302816	20.70	µg/L		100
PFHpS	7.472	449.0 -> 80.0	42936	21.63	µg/L		100
PFHxA	5.740	313.0 -> 269.0	136003	20.76	µg/L		100
PFHxS	6.739	399.0 -> 80.0	41228	20.71	µg/L	m	97
PFNA	8.075	463.0 -> 419.0	321201	21.11	µg/L		100
PFNS	8.584	549.0 -> 80.0	39350	21.27	µg/L		100
PFOA	7.487	413.0 -> 369.0	240817	20.60	µg/L		100
PFOS	8.049	499.0 -> 80.0	50460	20.94	µg/L	m	82
PFPeA	4.352	263.0 -> 219.0	176034	20.81	µg/L		100
PFPeS	5.845	349.0 -> 80.0	27638	20.90	µg/L		100
PFTeDA	12.143	713.0 -> 669.0	487197	21.03	µg/L		100
PFTrDA	11.375	663.0 -> 619.0	588235	20.88	µg/L		100
PFUnDA	9.506	563.0 -> 519.0	585533	20.28	µg/L		100
11Cl-PF3OUdS	9.862	631.0 -> 451.0	175679	20.76	µg/L		100
9Cl-PF3ONS	8.309	531.0 -> 351.0	34939	20.29	µg/L		100
ADONA	6.819	377.0 -> 251.0	440828	20.85	µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	63996	20.00	µg/L		100
MeFOSA	7.794	512.0 -> 169.0	25966	20.87	µg/L		100

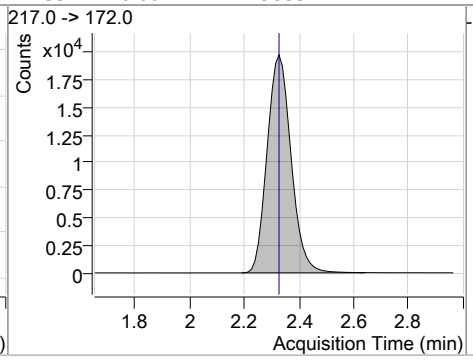
 # = Qualifier out of range, m = manually integrated, + = Area summed

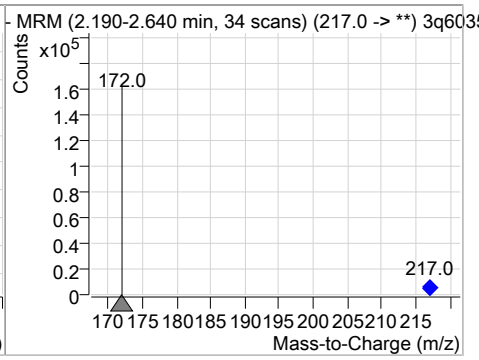
Perfluorinated Compounds by LC/MS/MS



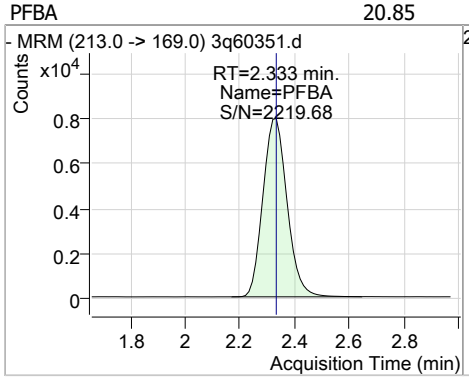
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.78	2.33	0.00	119553				

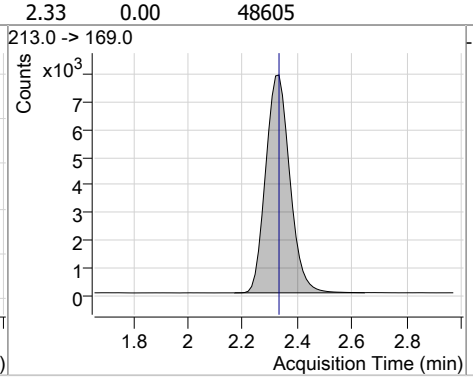


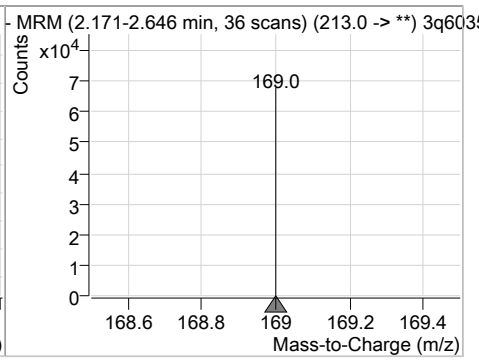




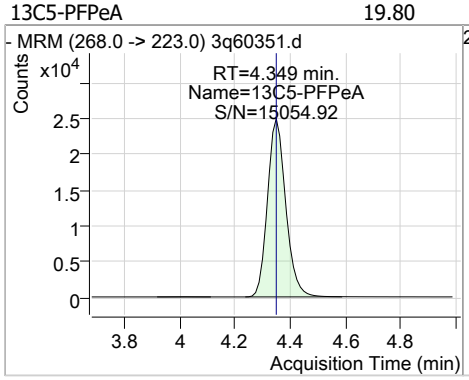
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.85	2.33	0.00	48605				

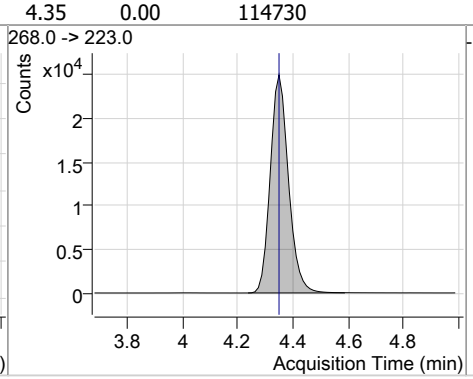


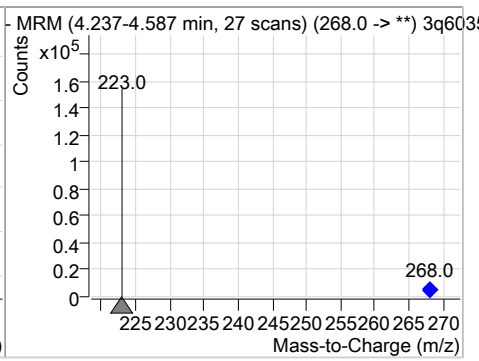




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.80	4.35	0.00	114730				

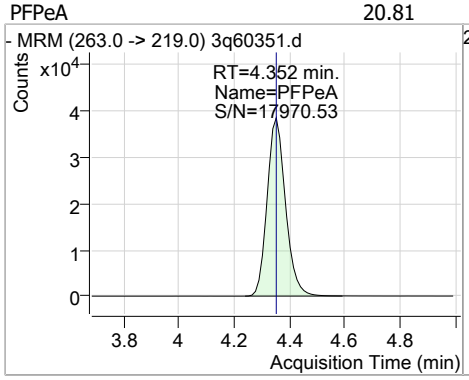


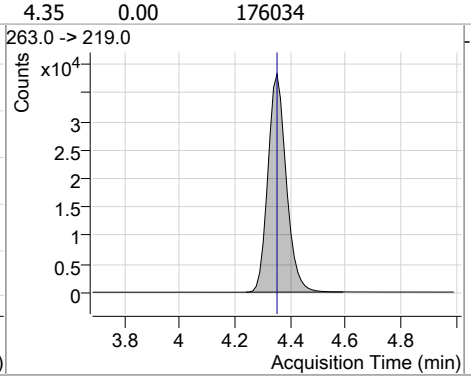


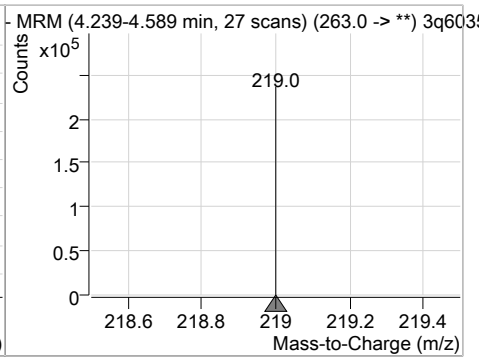


Perfluorinated Compounds by LC/MS/MS

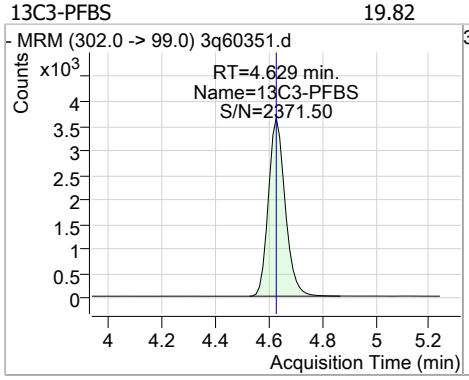
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.81	4.35	0.00	176034				

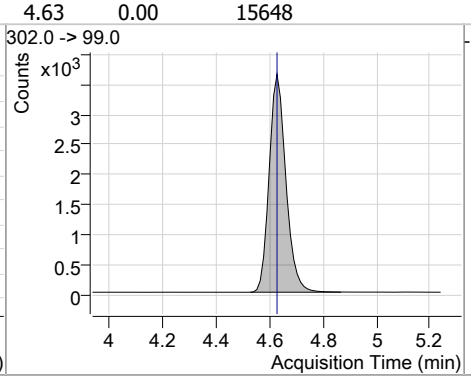


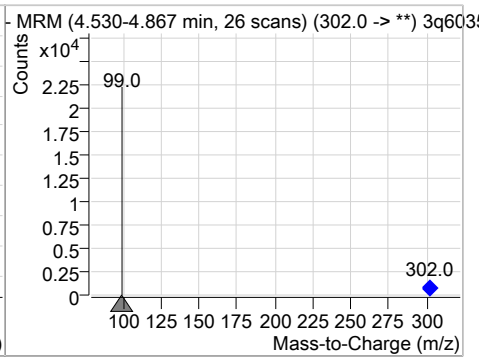




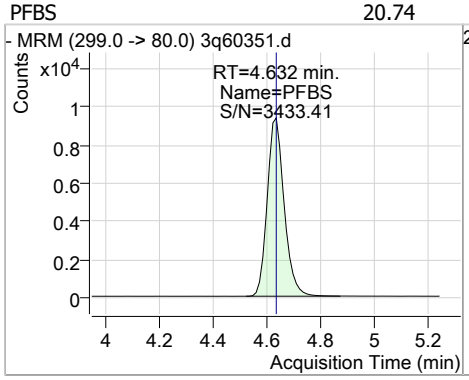
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.82	4.63	0.00	15648				

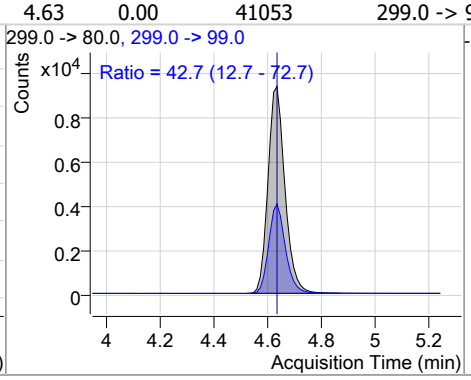


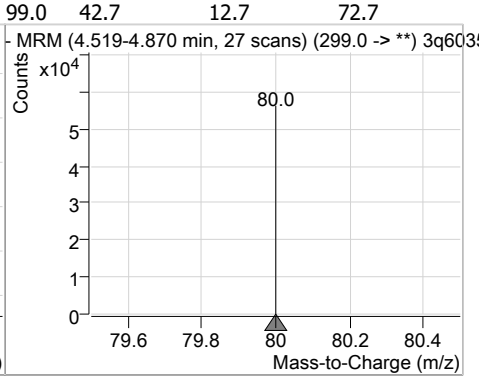




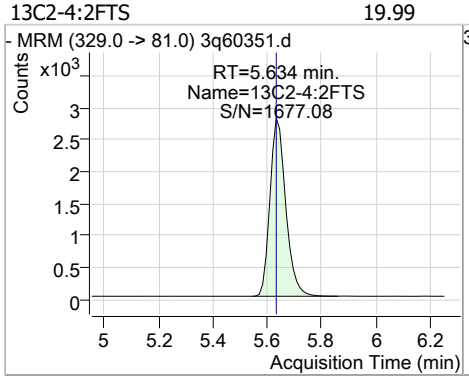
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.74	4.63	0.00	41053	299.0 -> 99.0	42.7	12.7	72.7

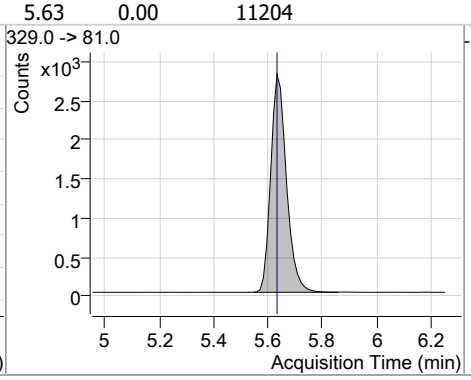


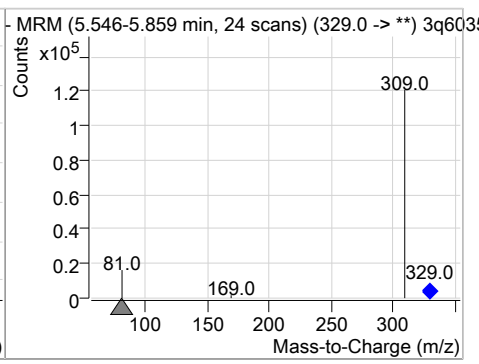




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.99	5.63	0.00	11204				

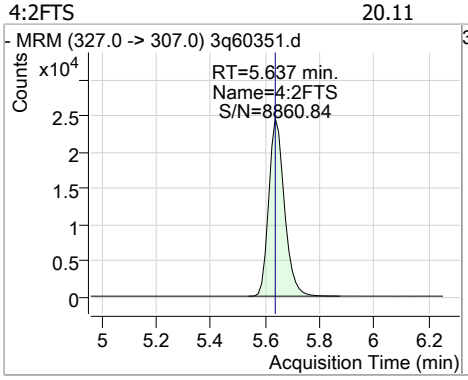


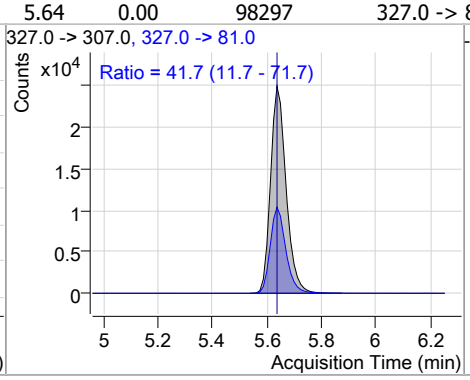


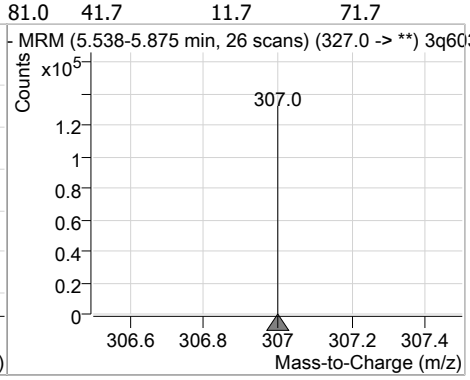


Perfluorinated Compounds by LC/MS/MS

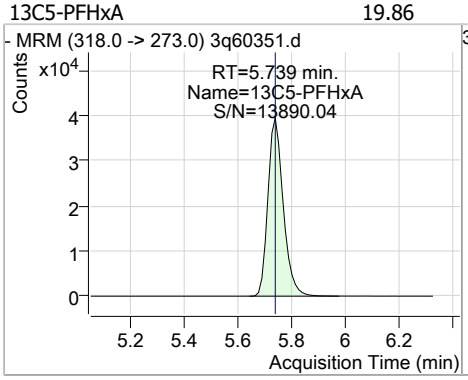
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.11	5.64	0.00	98297	327.0 -> 81.0	41.7	11.7	71.7

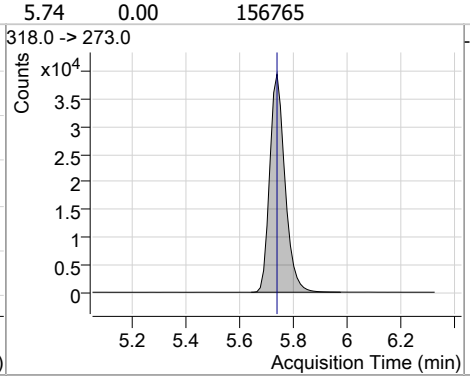


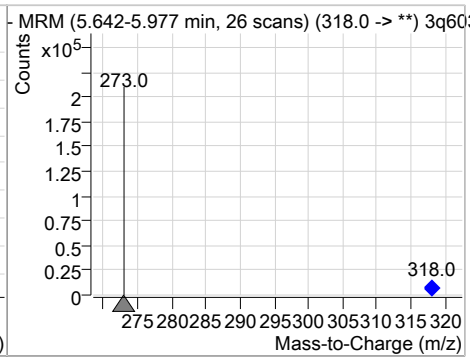




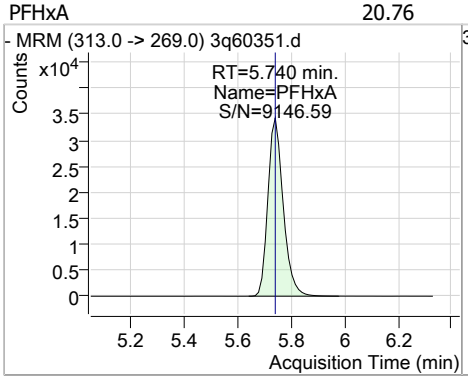
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.86	5.74	0.00	156765				

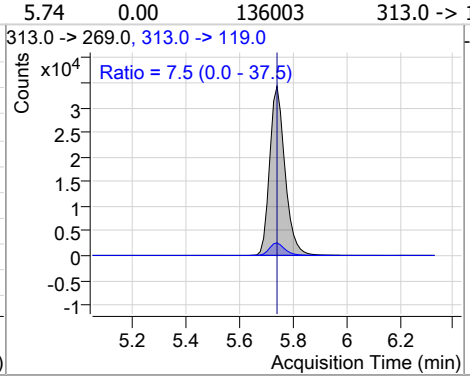


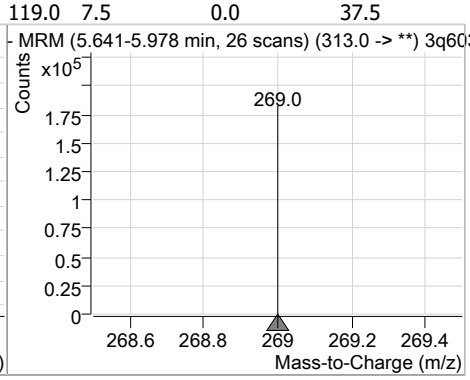




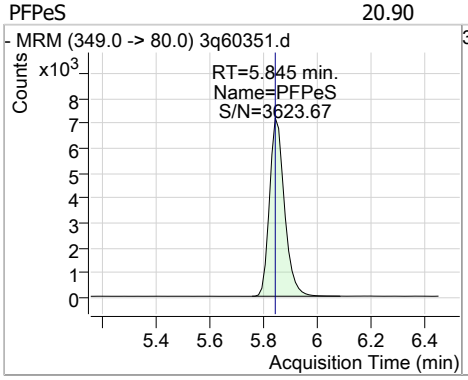
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.76	5.74	0.00	136003	313.0 -> 119.0	7.5	0.0	37.5

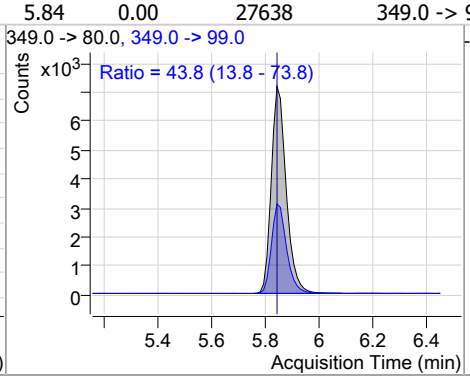


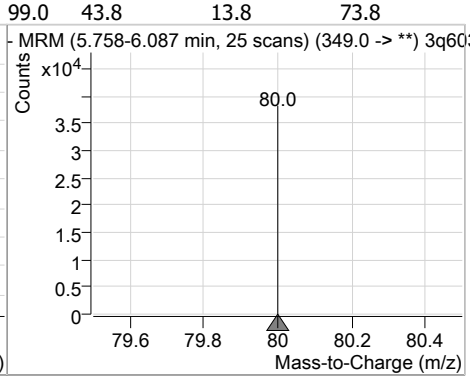




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.90	5.84	0.00	27638	349.0 -> 99.0	43.8	13.8	73.8

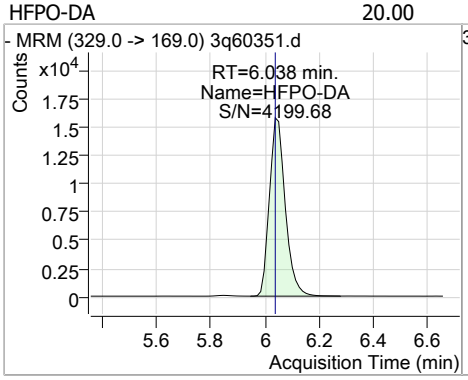


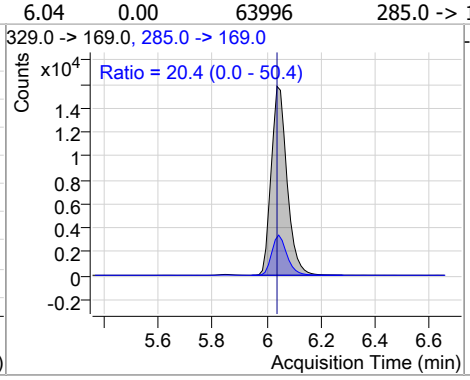


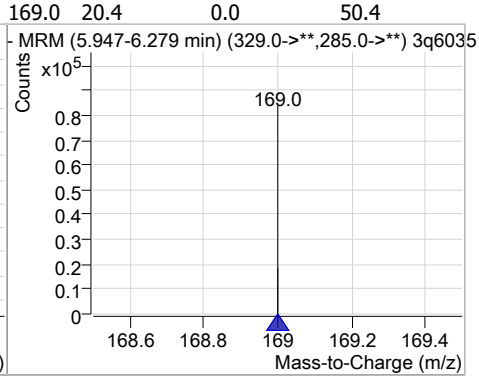


Perfluorinated Compounds by LC/MS/MS

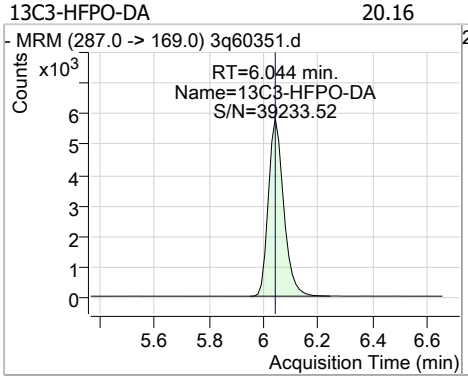
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.00	6.04	0.00	63996	285.0 -> 169.0	20.4	0.0	50.4

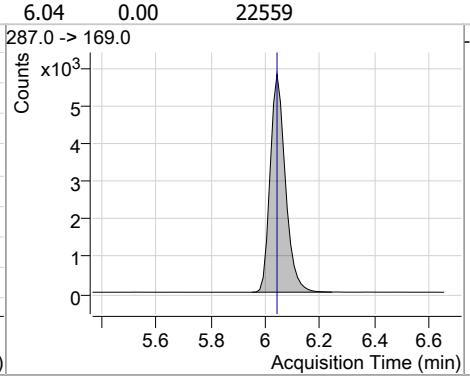


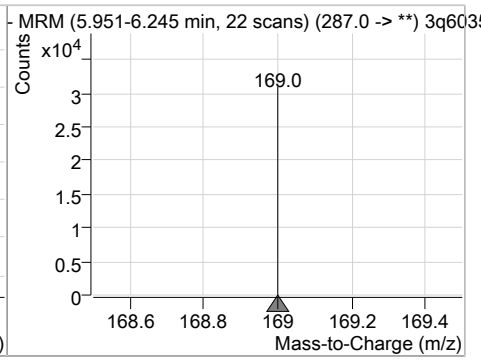




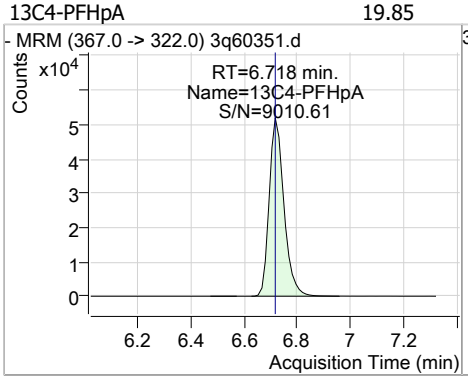
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.16	6.04	0.00	22559				

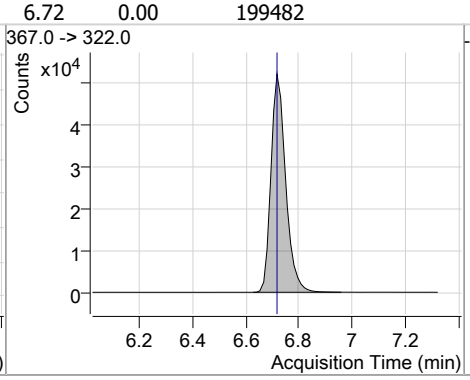


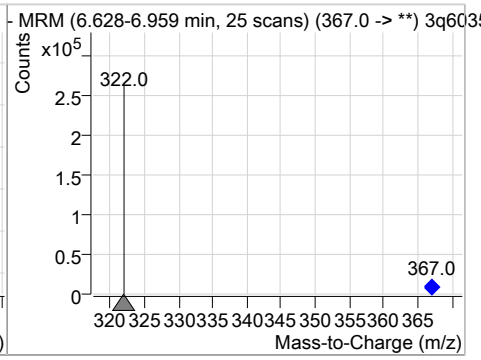




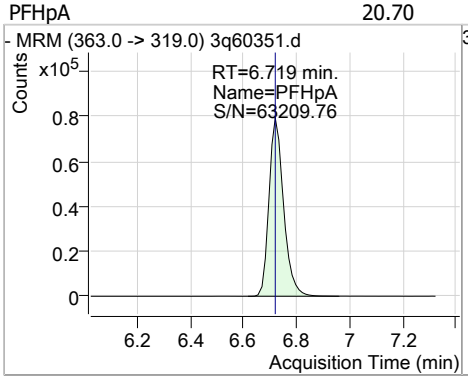
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.85	6.72	0.00	199482				

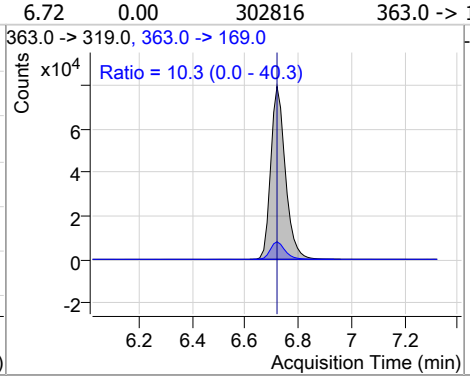


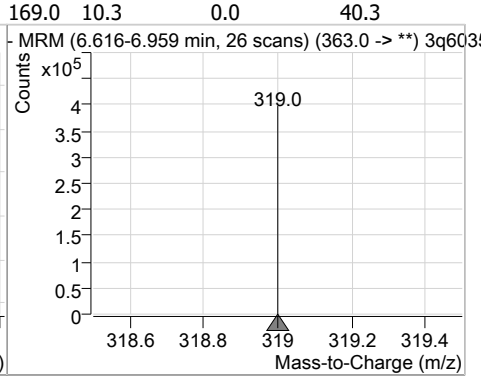




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.70	6.72	0.00	302816	363.0 -> 169.0	10.3	0.0	40.3

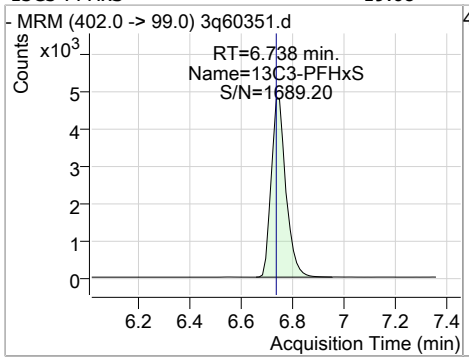


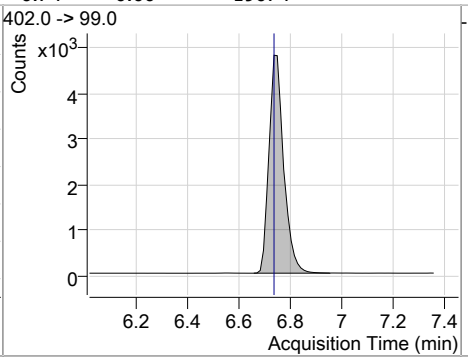


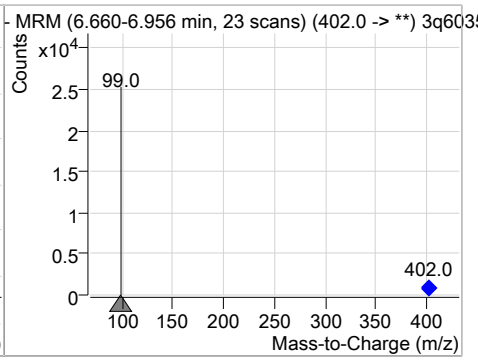


Perfluorinated Compounds by LC/MS/MS

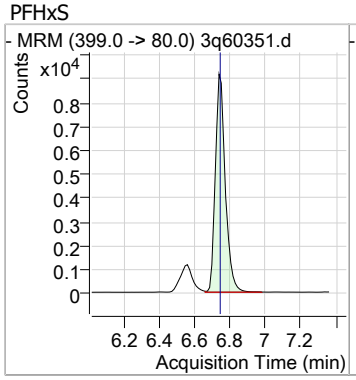
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.68	6.74	0.00	19074				

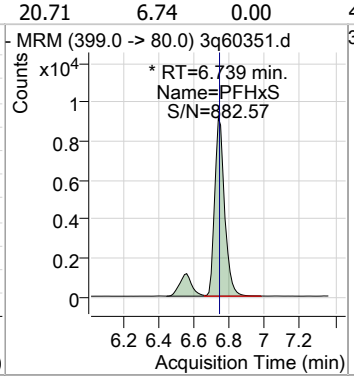


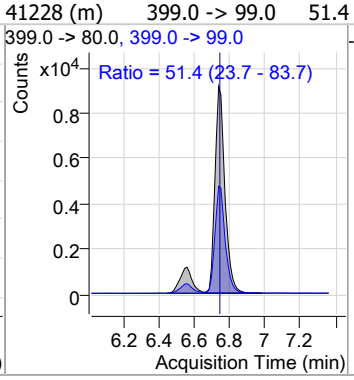


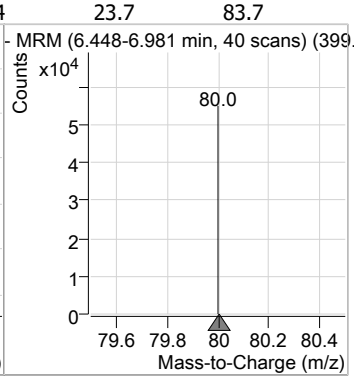


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.71	6.74	0.00	41228 (m)	399.0 -> 99.0	51.4	23.7	83.7

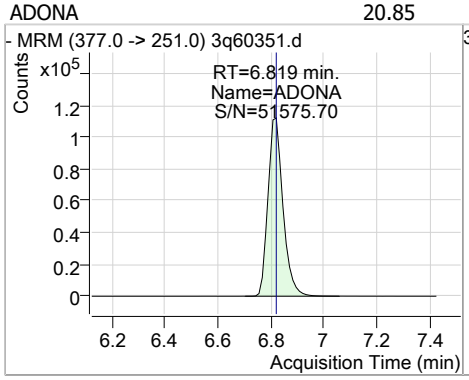


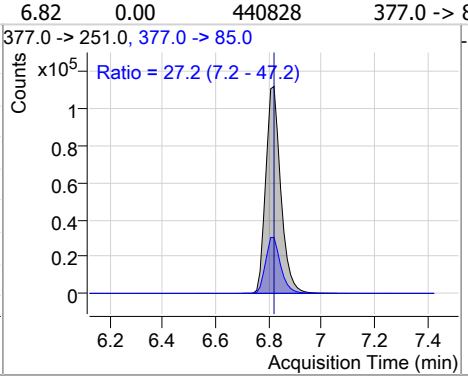


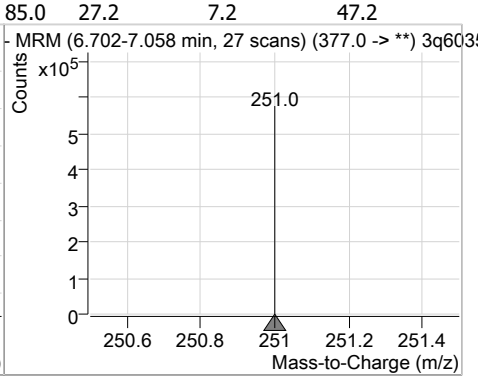




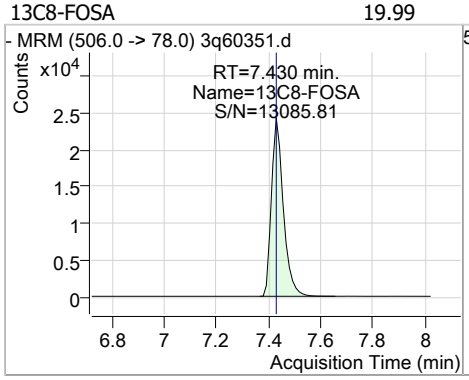
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.85	6.82	0.00	440828	377.0 -> 85.0	27.2	7.2	47.2

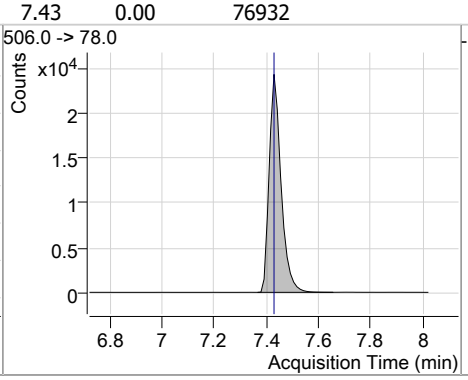


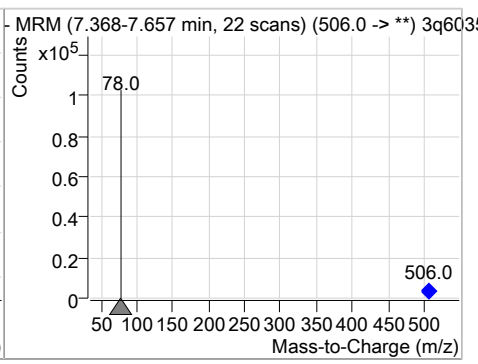




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.99	7.43	0.00	76932				

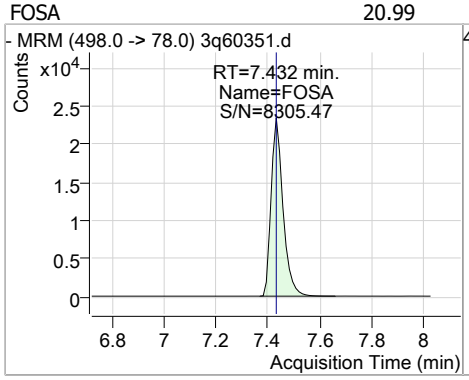


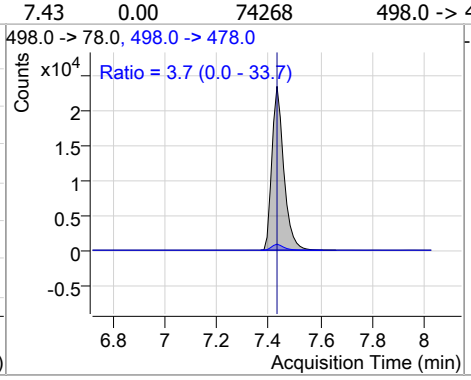


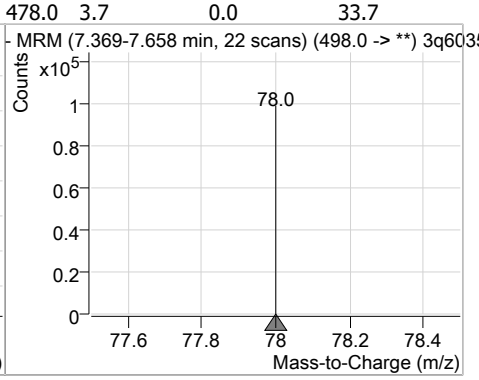


Perfluorinated Compounds by LC/MS/MS

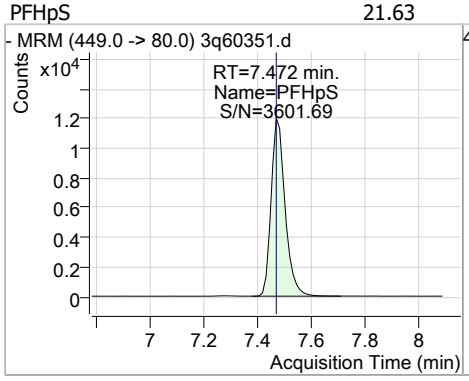
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.99	7.43	0.00	74268	498.0 -> 478.0	3.7	0.0	33.7

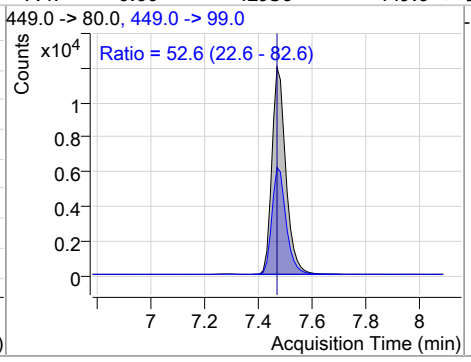


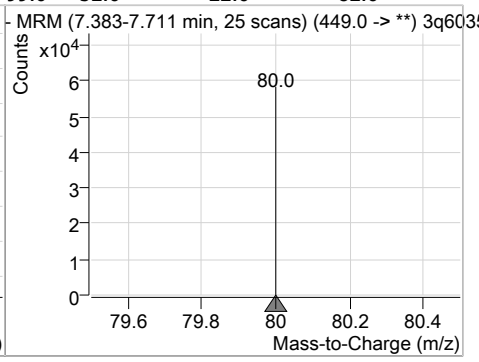




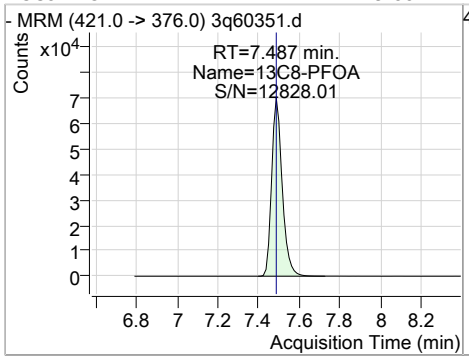
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.63	7.47	0.00	42936	449.0 -> 99.0	52.6	22.6	82.6

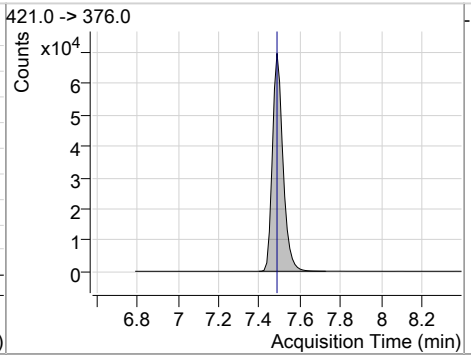


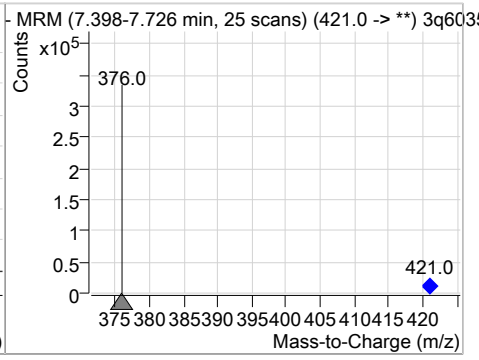




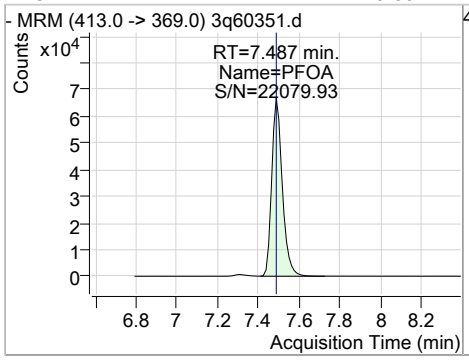
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.88	7.49	0.00	251145				

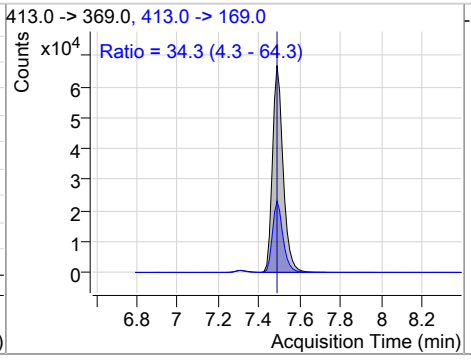


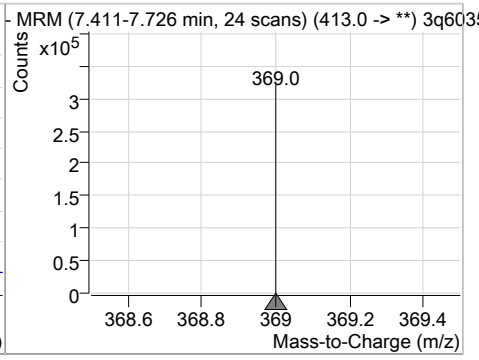




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.60	7.49	0.00	240817	413.0 -> 169.0	34.3	4.3	64.3

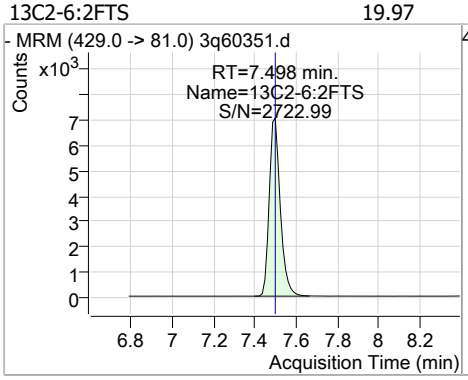


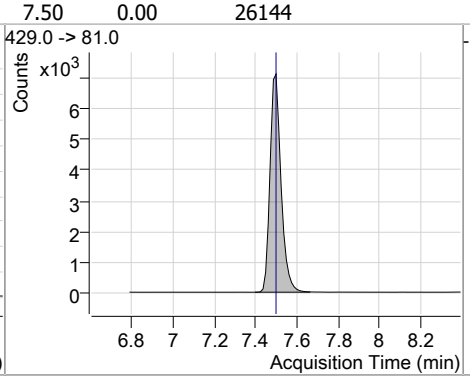


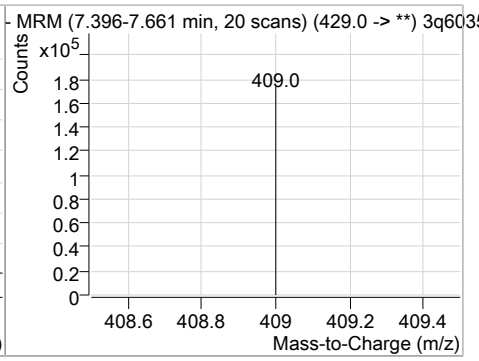


Perfluorinated Compounds by LC/MS/MS

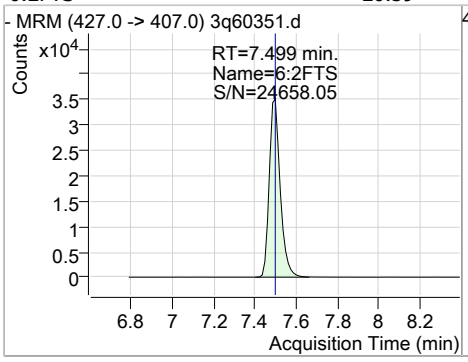
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.97	7.50	0.00	26144				

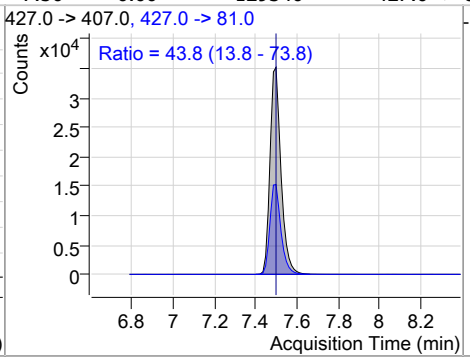


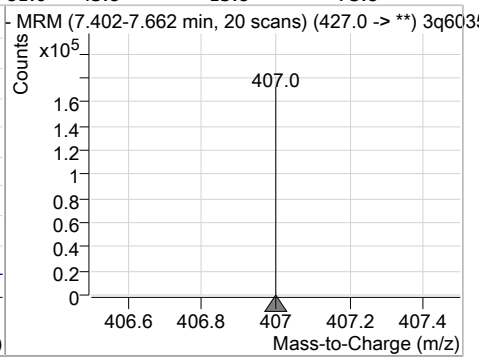




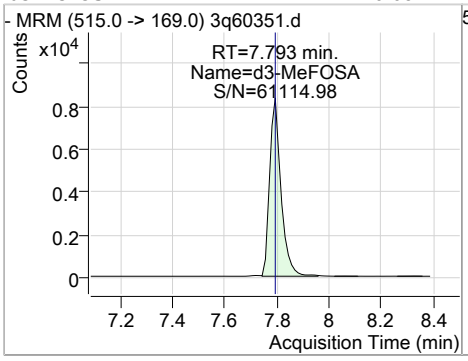
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.59	7.50	0.00	129340	427.0 -> 81.0	43.8	13.8	73.8

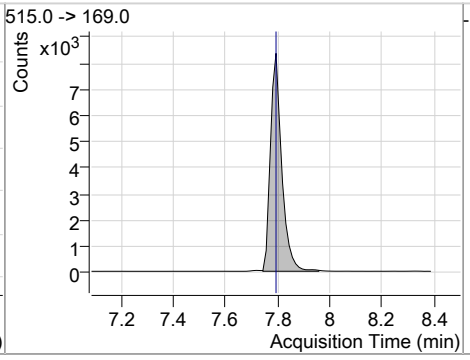


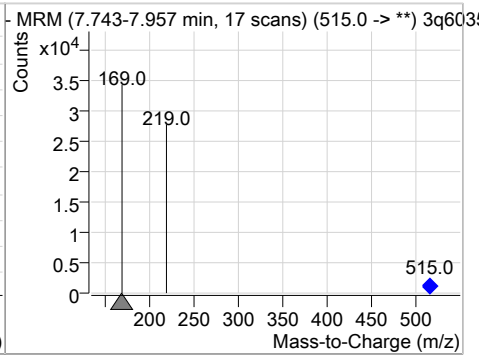




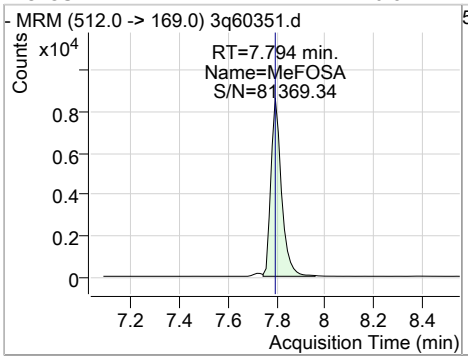
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.08	7.79	0.00	25099				

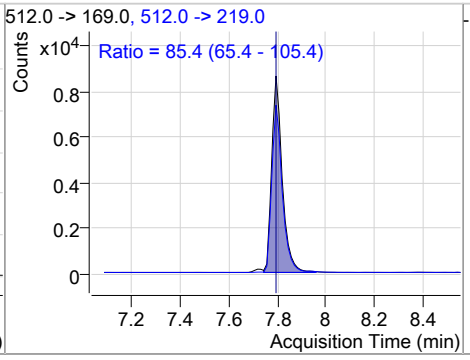


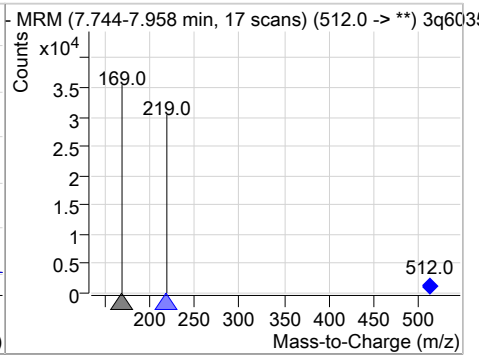




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.87	7.79	0.00	25966	512.0 -> 219.0	85.4	65.4	105.4

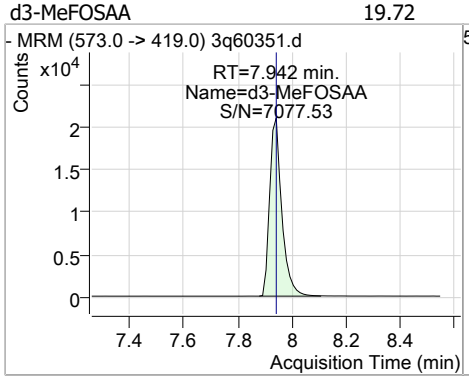


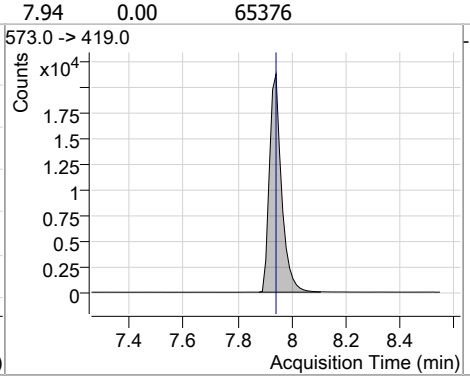


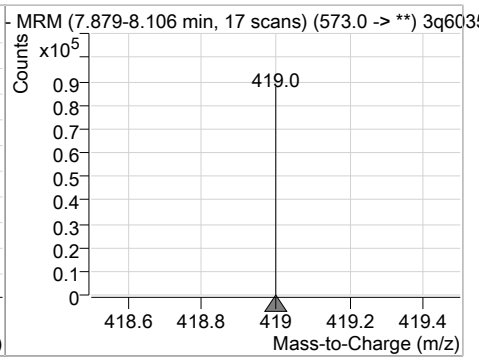


Perfluorinated Compounds by LC/MS/MS

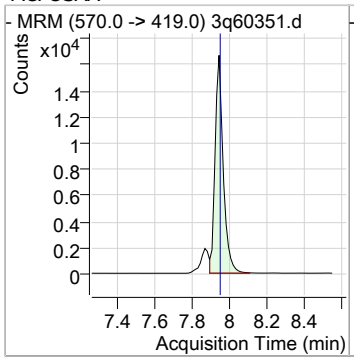
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.72	7.94	0.00	65376				

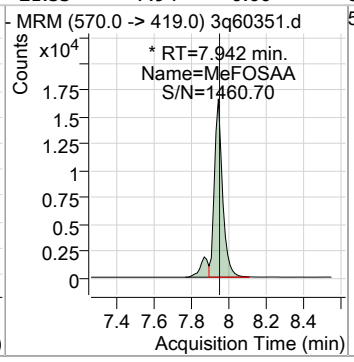


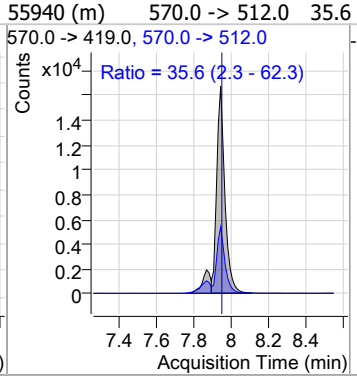


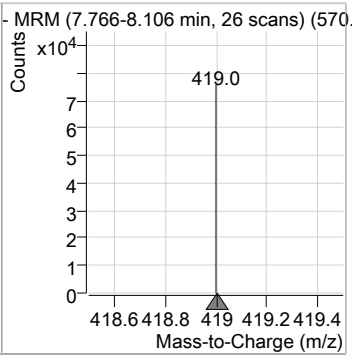


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.53	7.94	0.00	55940 (m)	570.0 -> 512.0	35.6	2.3	62.3

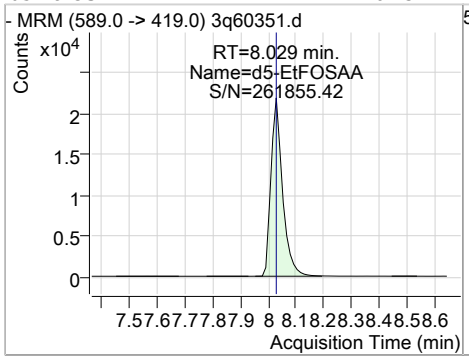


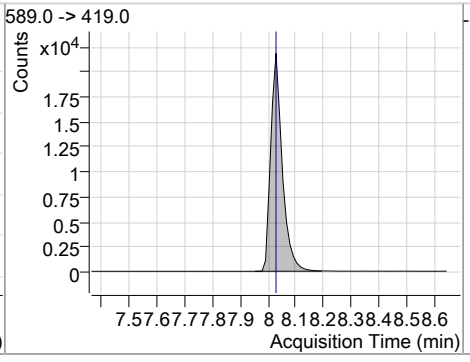


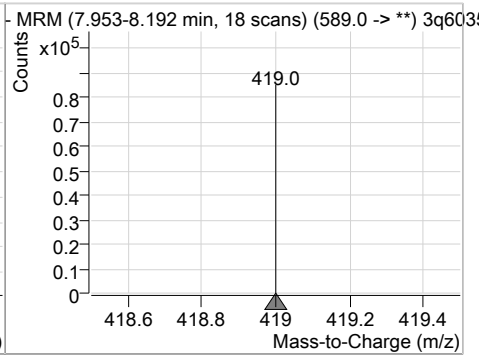




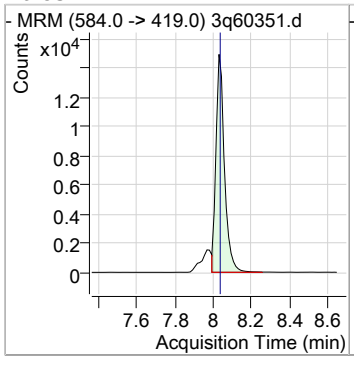
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.13	8.03	0.00	63434				

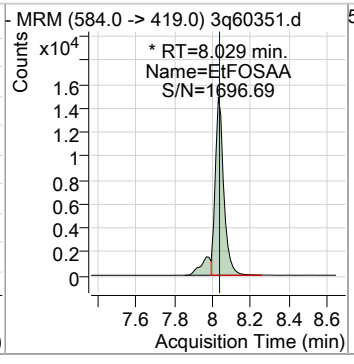


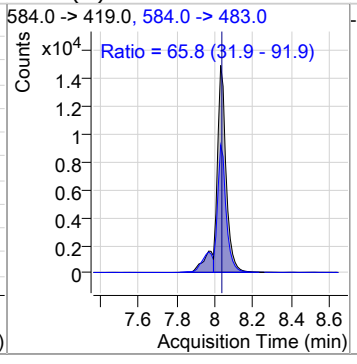


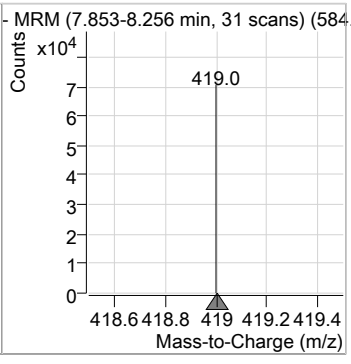


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.01	8.03	0.00	51862 (m)	584.0 -> 483.0	65.8	31.9	91.9



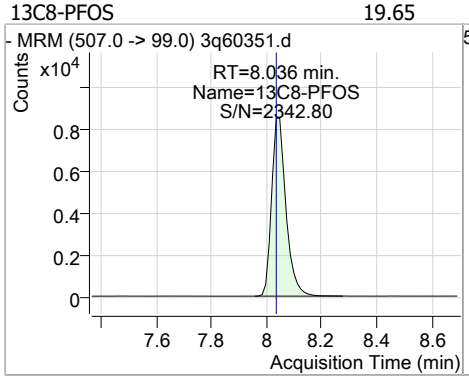


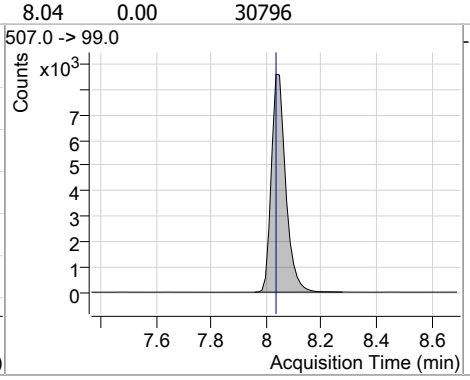


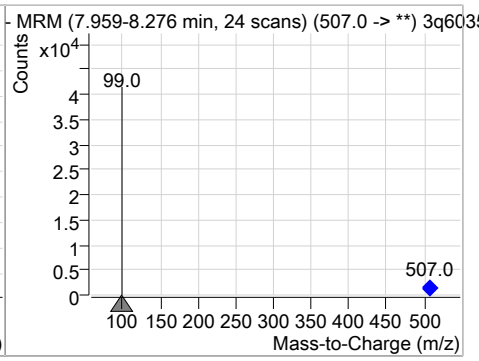


Perfluorinated Compounds by LC/MS/MS

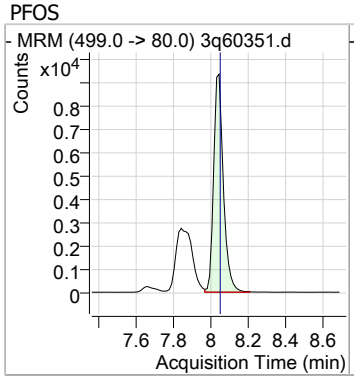
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.65	8.04	0.00	30796				

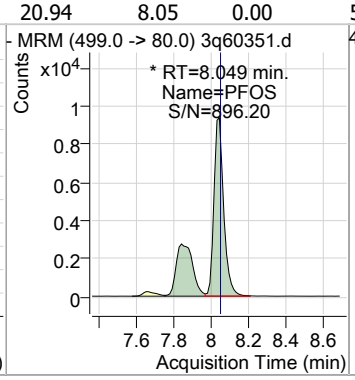


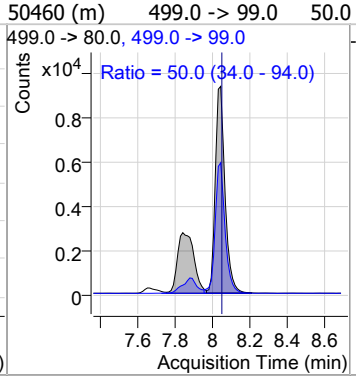


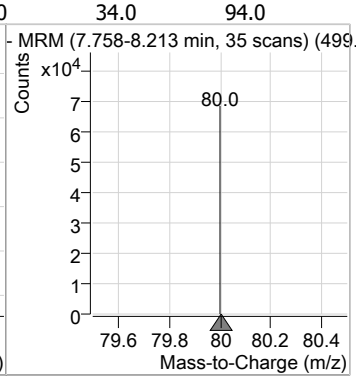


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.94	8.05	0.00	50460 (m)	499.0 -> 99.0	50.0	34.0	94.0

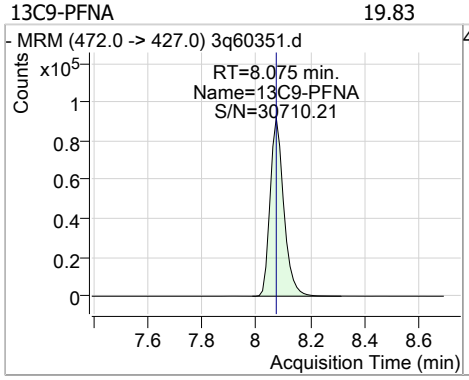


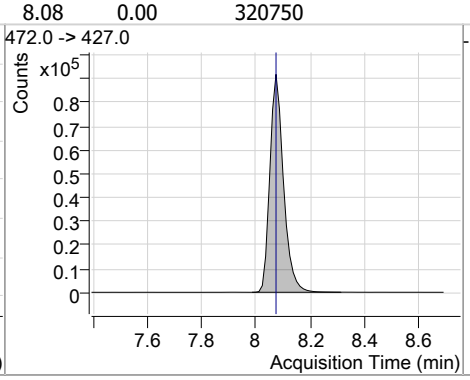


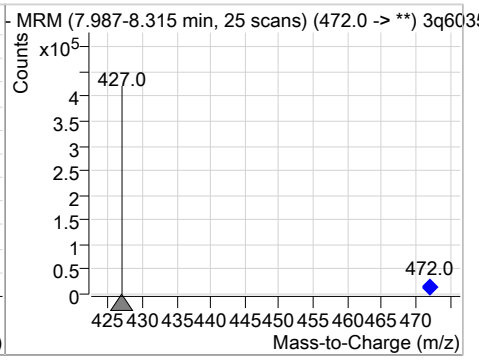




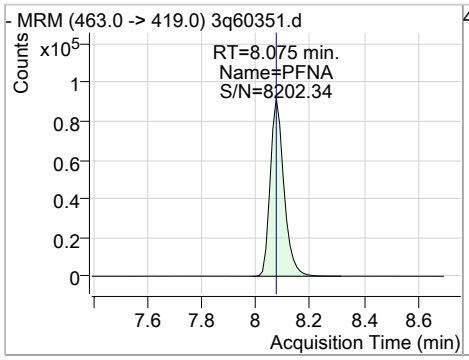
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.83	8.08	0.00	320750				

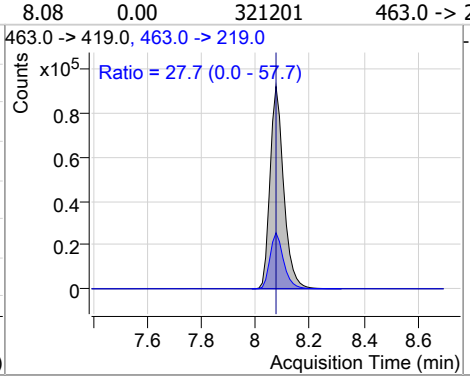


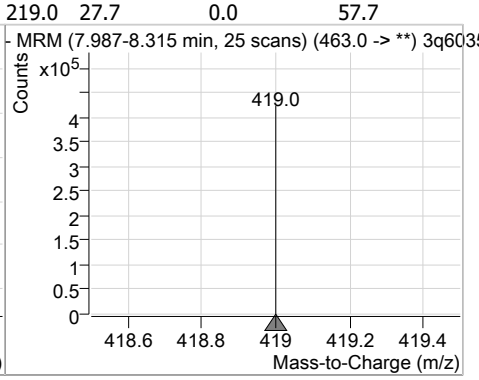




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.11	8.08	0.00	321201	463.0 -> 219.0	27.7	0.0	57.7

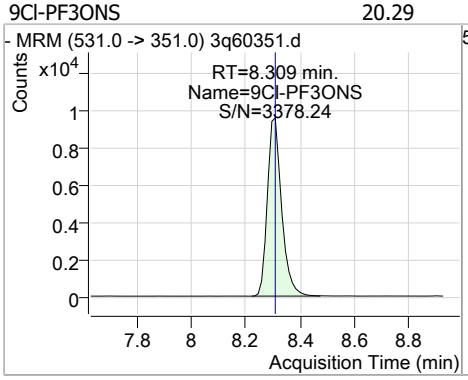


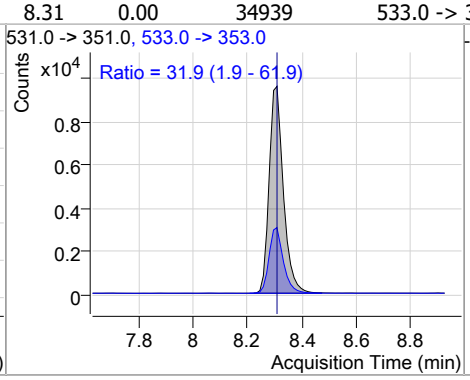


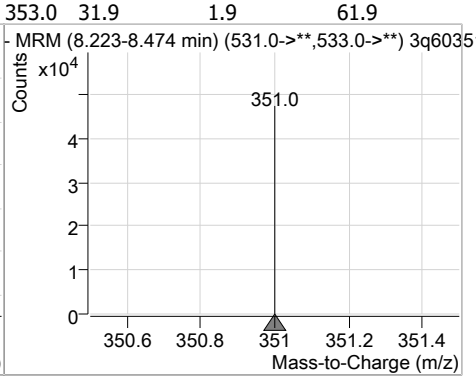


Perfluorinated Compounds by LC/MS/MS

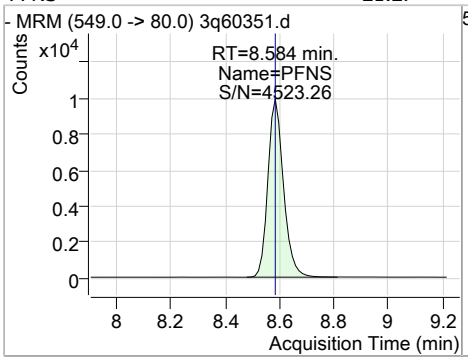
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.29	8.31	0.00	34939	533.0 -> 353.0	31.9	1.9	61.9

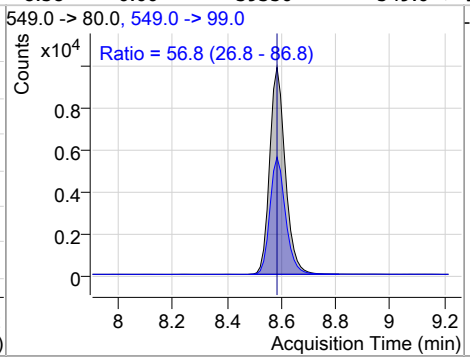


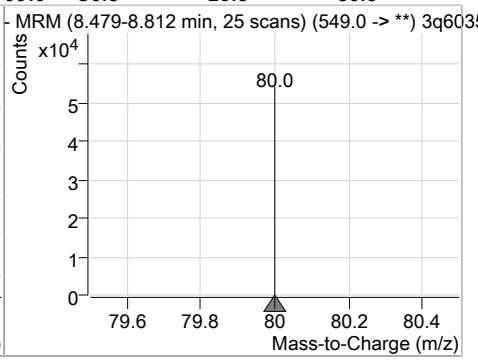




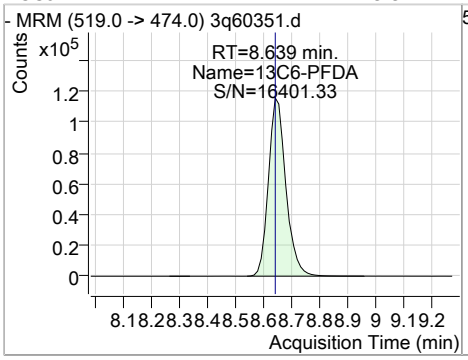
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.27	8.58	0.00	39350	549.0 -> 99.0	56.8	26.8	86.8

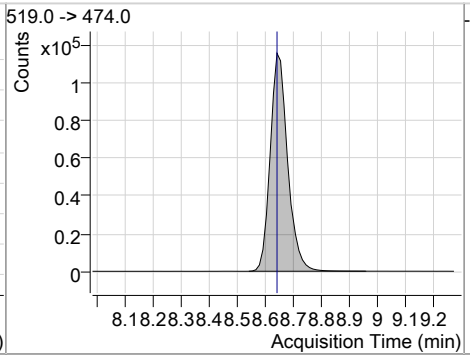


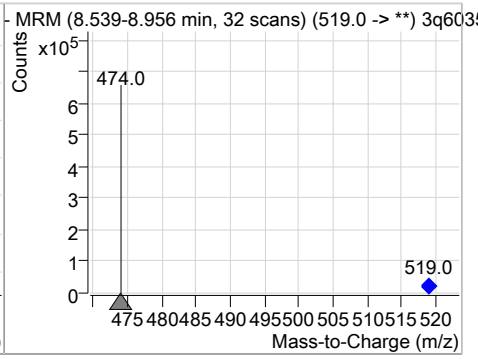




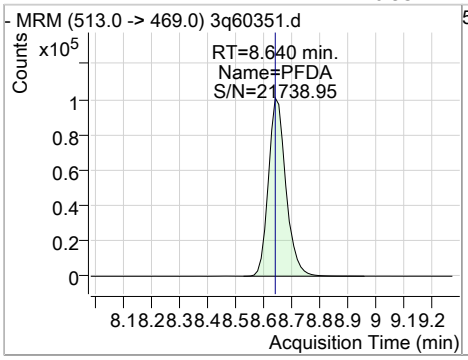
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.92	8.64	0.00	497220				

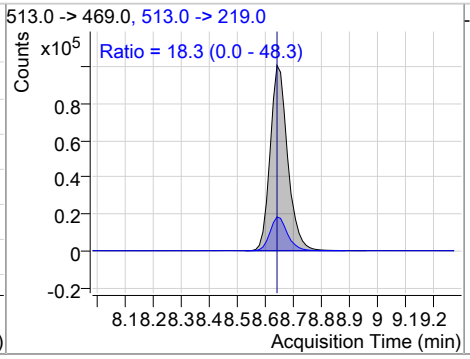


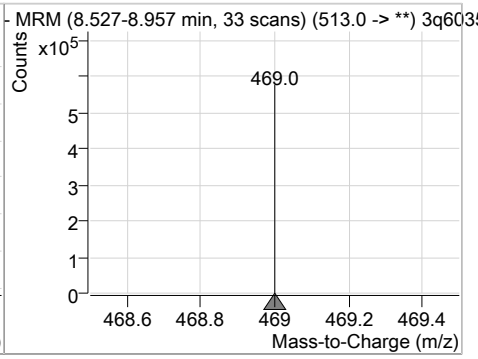




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.93	8.64	0.00	434641	513.0 -> 219.0	18.3	0.0	48.3

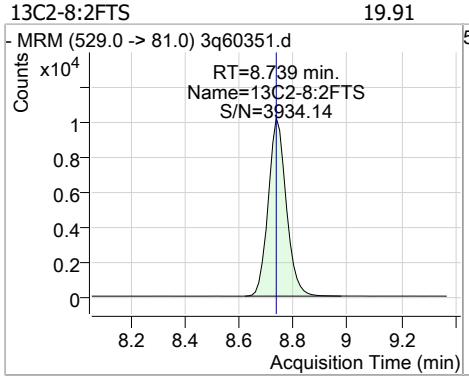


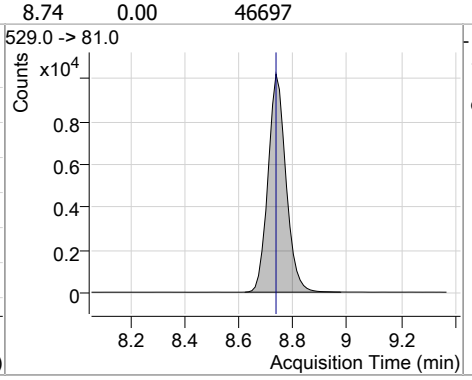


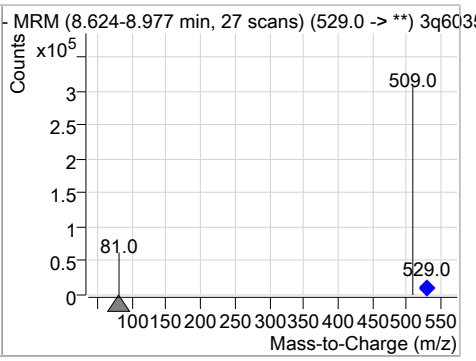


Perfluorinated Compounds by LC/MS/MS

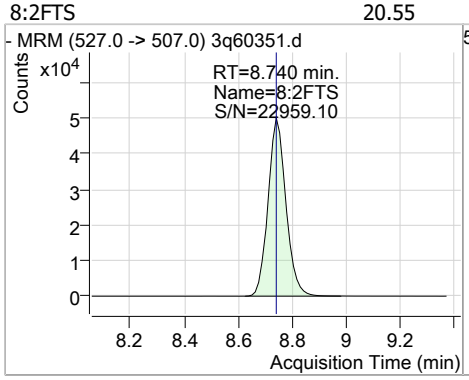
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.91	8.74	0.00	46697				

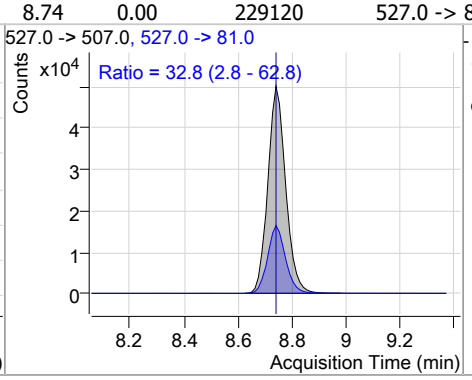


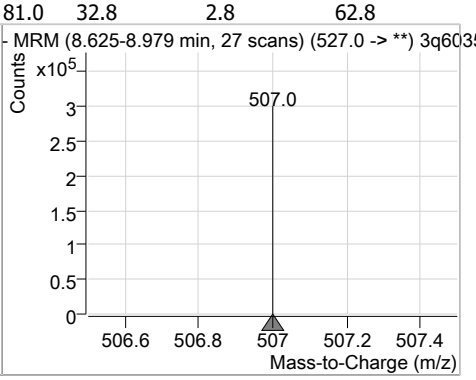




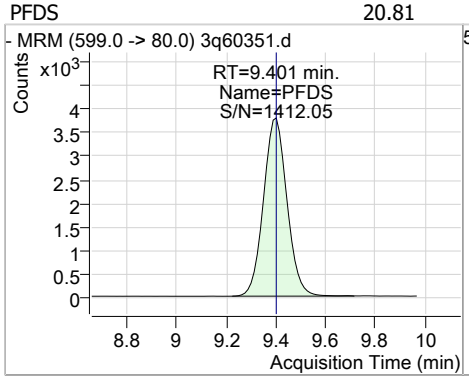
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.55	8.74	0.00	229120	527.0 -> 81.0	32.8	2.8	62.8

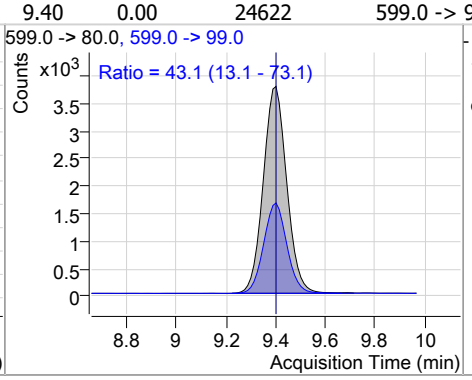


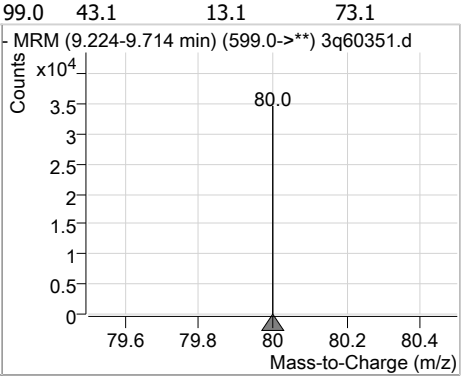




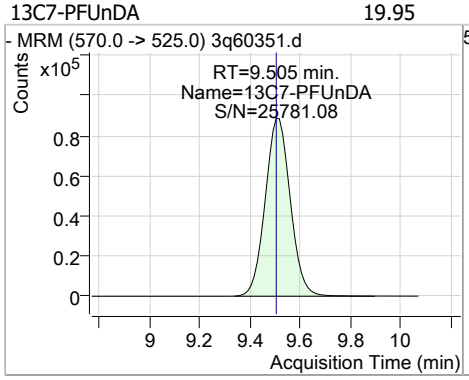
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.81	9.40	0.00	24622	599.0 -> 99.0	43.1	13.1	73.1

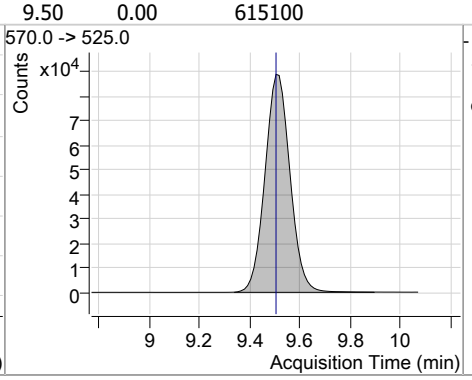


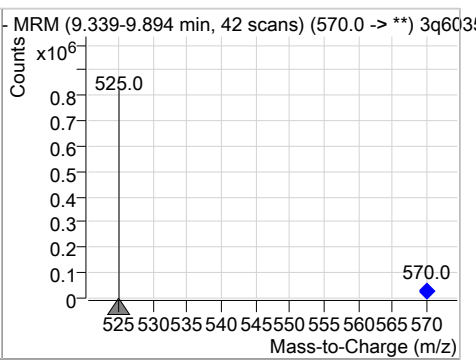




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.95	9.50	0.00	615100				

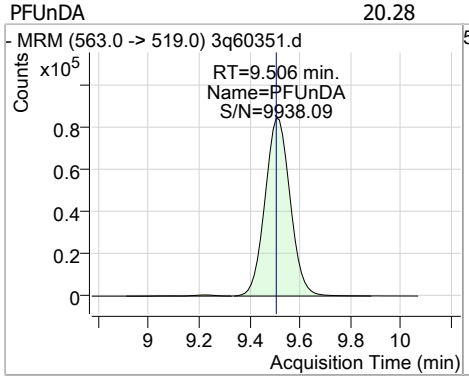


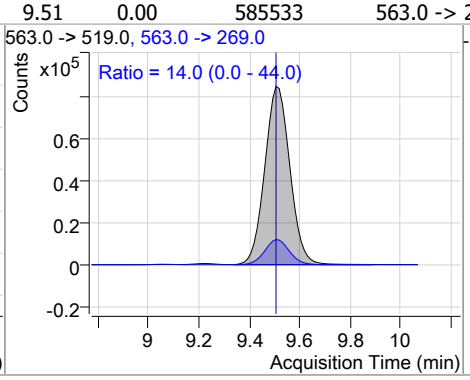


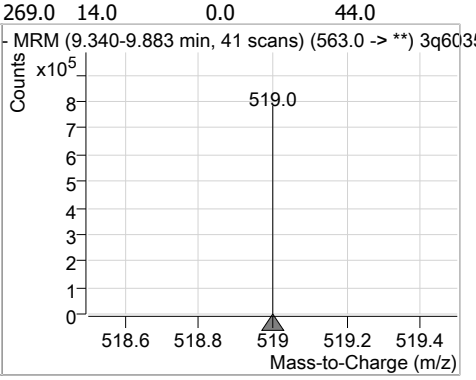


Perfluorinated Compounds by LC/MS/MS

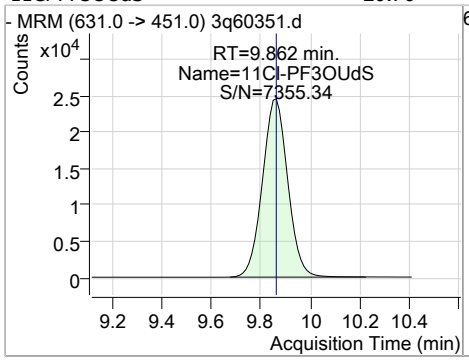
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.28	9.51	0.00	585533	563.0 -> 269.0	14.0	0.0	44.0

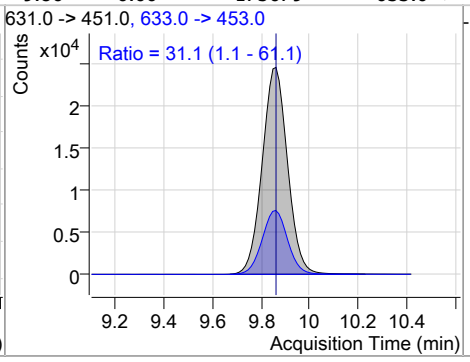


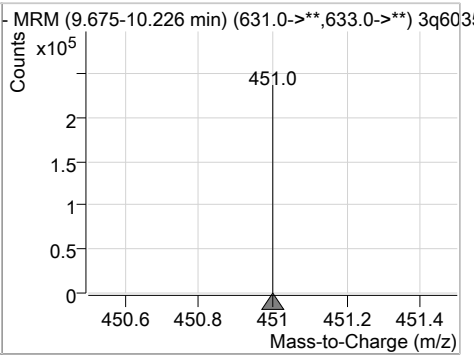




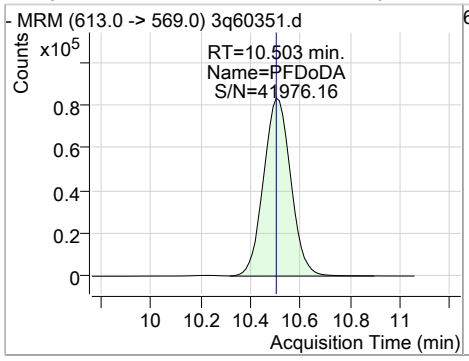
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.76	9.86	0.00	175679	633.0 -> 453.0	31.1	1.1	61.1

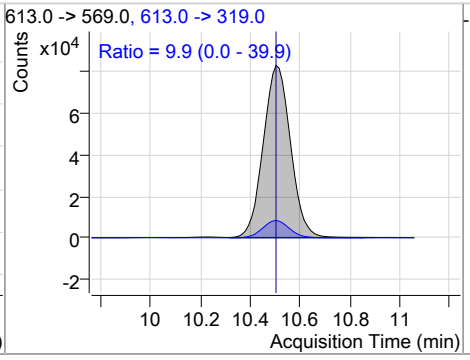


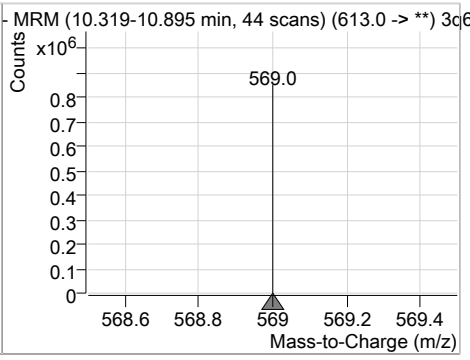




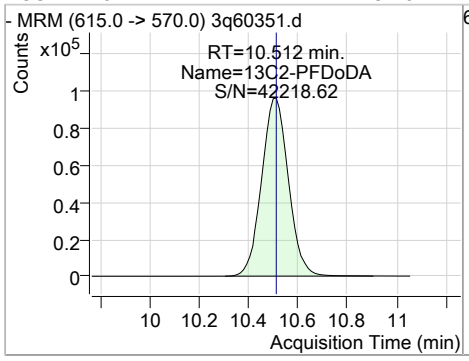
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.47	10.50	0.00	631053	613.0 -> 319.0	9.9	0.0	39.9

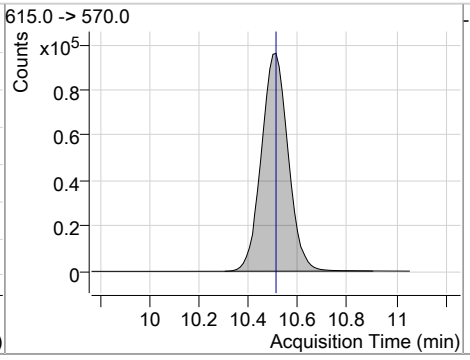


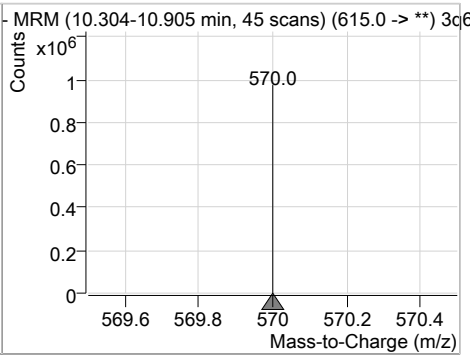




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.78	10.51	0.00	725003				

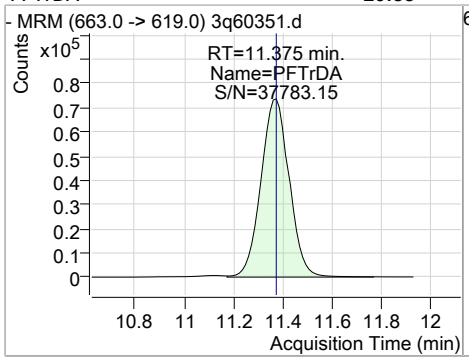


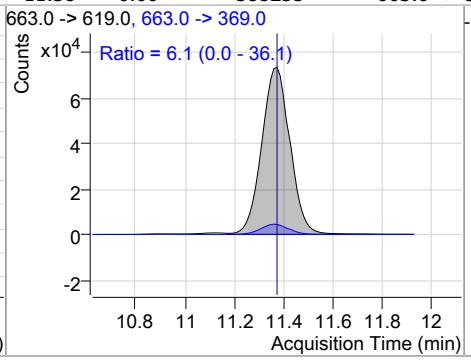


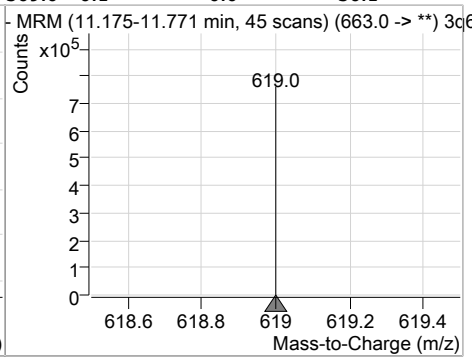


Perfluorinated Compounds by LC/MS/MS

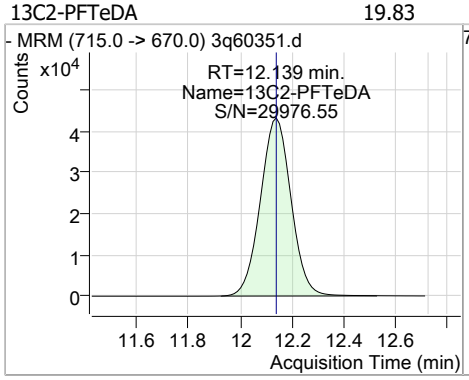
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.88	11.38	0.00	588235	663.0 -> 369.0	6.1	0.0	36.1

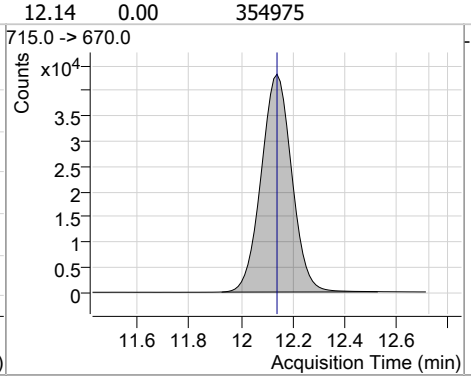


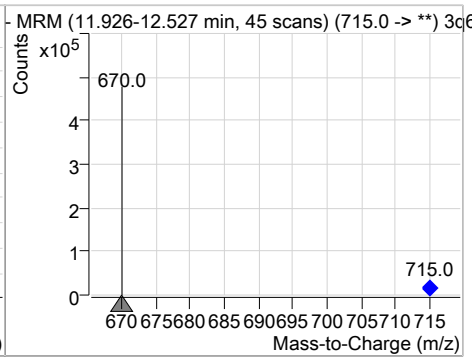




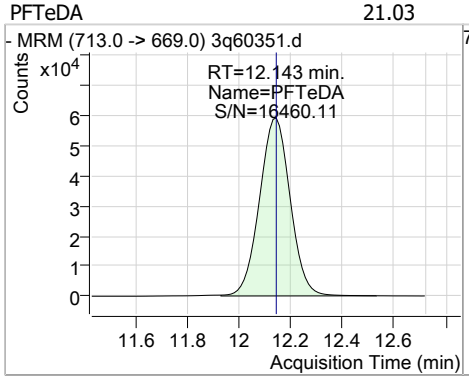
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.83	12.14	0.00	354975				

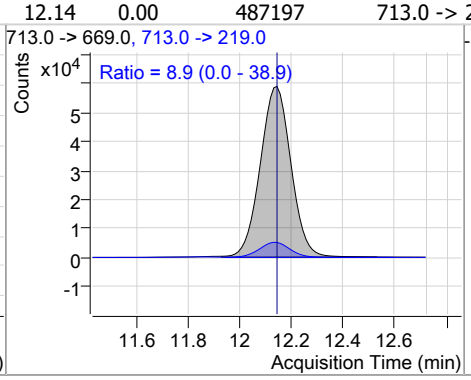


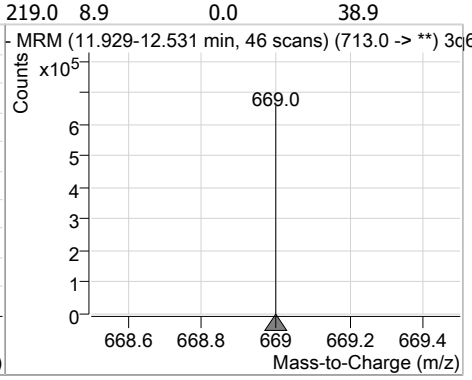




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.03	12.14	0.00	487197	713.0 -> 219.0	8.9	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-ICC824
Lab FileID: 3Q60351.D
Injection Time: 05/27/22 15:53
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60352.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 4:15:10 PM
Sample Name : ic824-50
Vial : P1-A8
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

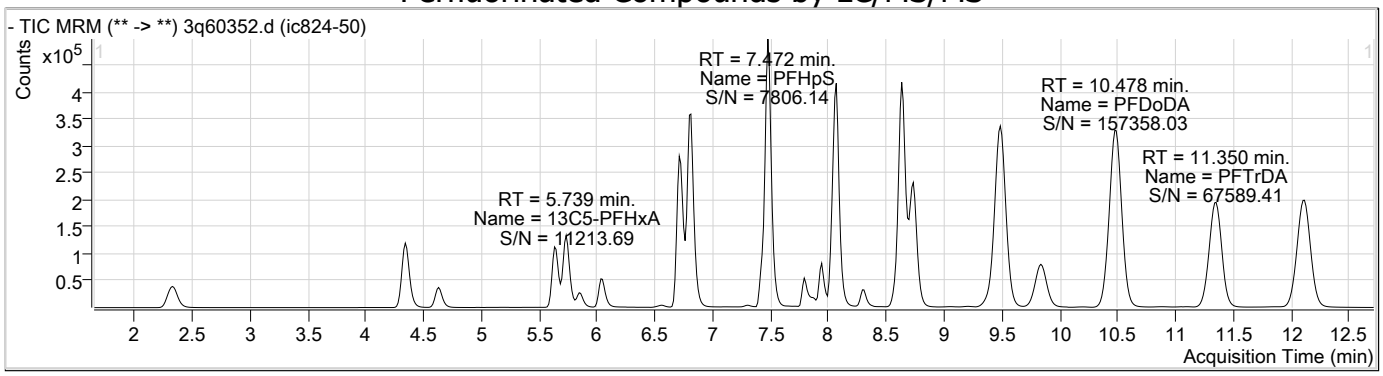
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	122216	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	117524	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	159217	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	202175	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	252061	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	324371	20.00 µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	501401	20.00 µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	619103	20.00 µg/L	-0.012
M2-PFDoDA	10.487	615.0 -> 570.0	740935	20.00 µg/L	-0.025
M2-PFTeDA	12.114	715.0 -> 670.0	362316	20.00 µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	74666	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16160	20.00 µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	19325	20.00 µg/L	0.013
M8-PFOS	8.036	507.0 -> 99.0	31543	20.00 µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11356	20.00 µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	25636	20.00 µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	46746	20.00 µg/L	0.000
M3-MeFOSAA	7.942	573.0 -> 419.0	68322	20.00 µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	22455	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	24169	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	63171	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	11356	20.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C2-6:2FTS	7.498	429.0 -> 81.0	25636	19.59 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C2-8:2FTS	8.739	529.0 -> 81.0	46746	19.93 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C2-PFDoDA	10.487	615.0 -> 570.0	740935	20.21 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C2-PFTeDA	12.114	715.0 -> 670.0	362316	20.25 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-PFBS	4.629	302.0 -> 99.0	16160	20.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C3-PFHxS	6.751	402.0 -> 99.0	19325	19.94 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C4-PFBA	2.327	217.0 -> 172.0	122216	20.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	6.718	367.0 -> 322.0	202175	20.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFHxA	5.739	318.0 -> 273.0	159217	20.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C5-PFPeA	4.349	268.0 -> 223.0	117524	20.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C6-PFDA	8.639	519.0 -> 474.0	501401	20.09 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

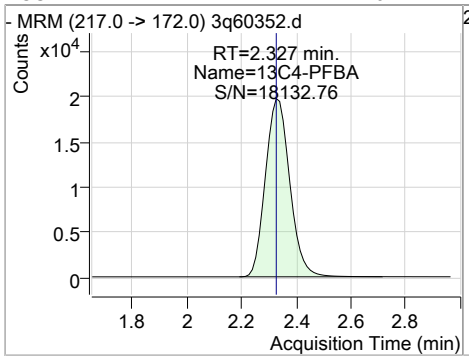
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C7-PFUnDA	9.492	570.0 -> 525.0	619103	20.08 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C8-FOSA	7.430	506.0 -> 78.0	74666	19.40 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C8-PFOA	7.487	421.0 -> 376.0	252061	19.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C8-PFOS	8.036	507.0 -> 99.0	31543	20.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C9-PFNA	8.075	472.0 -> 427.0	324371	20.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
d3-MeFOSAA	7.942	573.0 -> 419.0	68322	20.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-HFPO-DA	6.044	287.0 -> 169.0	22447	20.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
d3-MeFOSA	7.793	515.0 -> 169.0	24169	19.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
d5-EtFOSAA	8.029	589.0 -> 419.0	63161	20.04 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
Target Compounds						**QValue**
4:2FTS	5.637	327.0 -> 307.0	241941	48.84 µg/L		100
6:2FTS	7.499	427.0 -> 407.0	298950	48.54 µg/L		98
8:2FTS	8.740	527.0 -> 507.0	546488	48.96 µg/L		99
EtFOSAA	8.029	584.0 -> 419.0	123110	50.11 µg/L	m	93
FOSA	7.432	498.0 -> 78.0	167799	48.87 µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	134110	49.39 µg/L	m	92
PFBA	2.333	213.0 -> 169.0	119561	50.18 µg/L		100
PFBS	4.632	299.0 -> 80.0	102028	49.91 µg/L		99
PFDA	8.640	513.0 -> 469.0	1047204	50.00 µg/L		100
PFDoDA	10.478	613.0 -> 569.0	1576108	50.01 µg/L		99
PFDS	9.376	599.0 -> 80.0	58940	49.50 µg/L		99
PFHpA	6.719	363.0 -> 319.0	741966	50.04 µg/L		100
PFHpS	7.472	449.0 -> 80.0	104712	51.51 µg/L		100
PFHxA	5.740	313.0 -> 269.0	333464	50.11 µg/L		100
PFHxS	6.739	399.0 -> 80.0	101913	50.52 µg/L	m	96
PFNA	8.075	463.0 -> 419.0	771800	50.16 µg/L		100
PFNS	8.584	549.0 -> 80.0	95089	50.19 µg/L		99
PFOA	7.487	413.0 -> 369.0	585345	49.88 µg/L		99
PFOS	8.036	499.0 -> 80.0	123764	50.13 µg/L	m	83
PFPeA	4.352	263.0 -> 219.0	435336	50.25 µg/L		100
PFPeS	5.845	349.0 -> 80.0	68093	49.86 µg/L		98
PFTeDA	12.105	713.0 -> 669.0	1181561	49.97 µg/L		100
PFTrDA	11.350	663.0 -> 619.0	1441762	50.14 µg/L		100
PFUnDA	9.494	563.0 -> 519.0	1453832	50.02 µg/L		99
11Cl-PF3OUdS	9.837	631.0 -> 451.0	428846	49.59 µg/L		100
9Cl-PF3ONS	8.296	531.0 -> 351.0	86752	49.95 µg/L		98
ADONA	6.819	377.0 -> 251.0	1076840	50.27 µg/L		100
HFPO-DA	6.051	329.0 -> 169.0	158840	49.90 µg/L		100
MeFOSA	7.794	512.0 -> 169.0	60114	50.17 µg/L		98

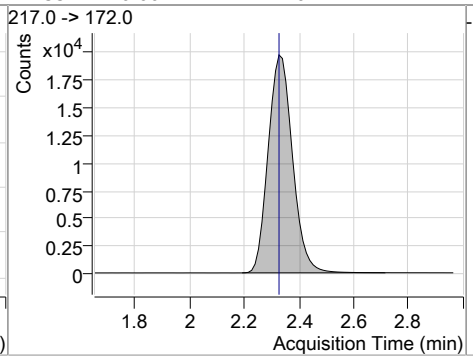
 # = Qualifier out of range, m = manually integrated, + = Area summed

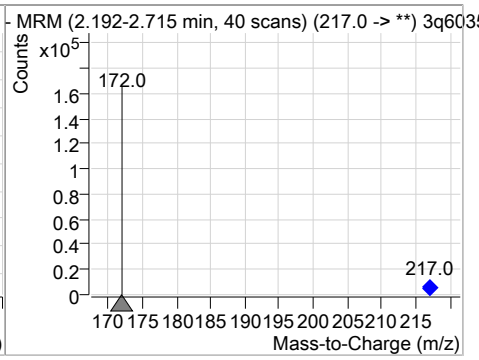
Perfluorinated Compounds by LC/MS/MS



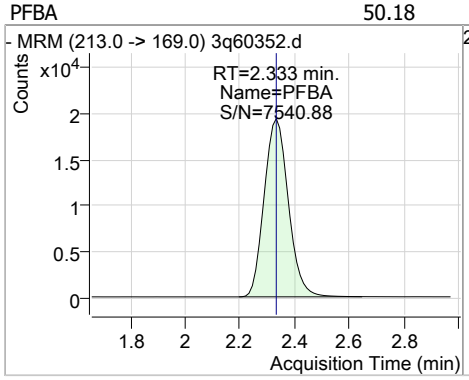
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.22	2.33	0.00	122216				

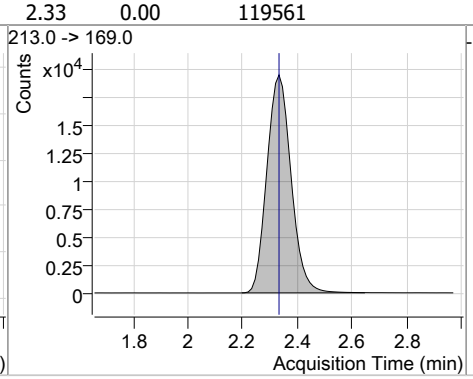


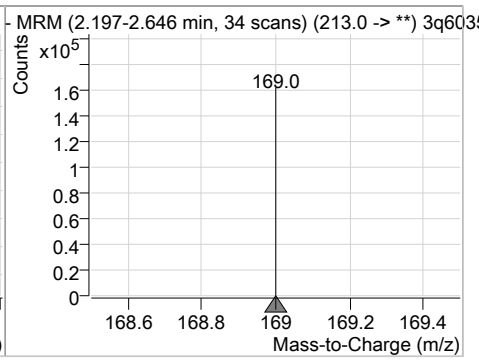




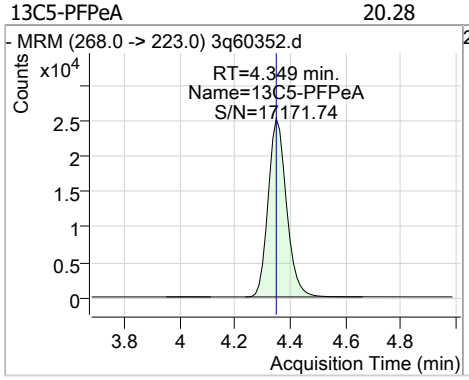
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.18	2.33	0.00	119561				

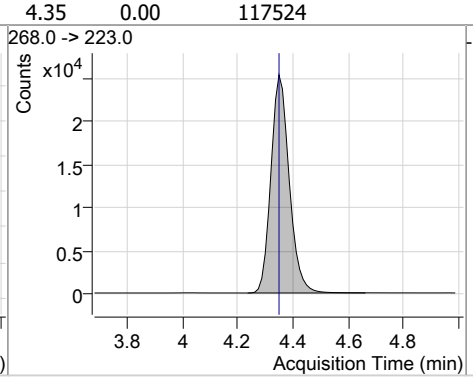


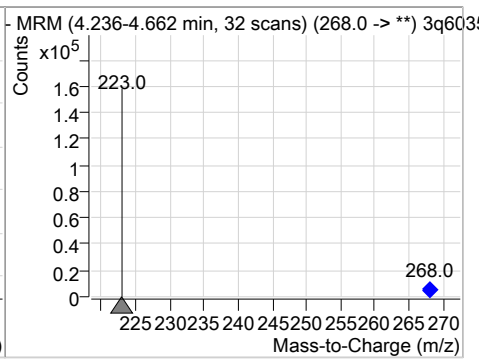




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.28	4.35	0.00	117524				

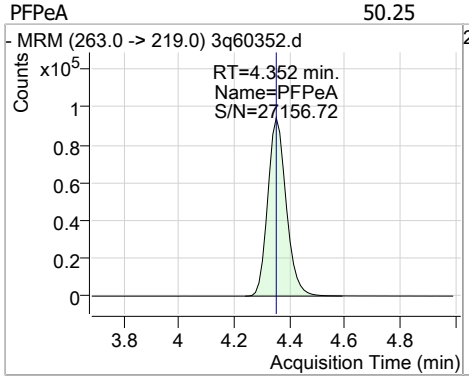


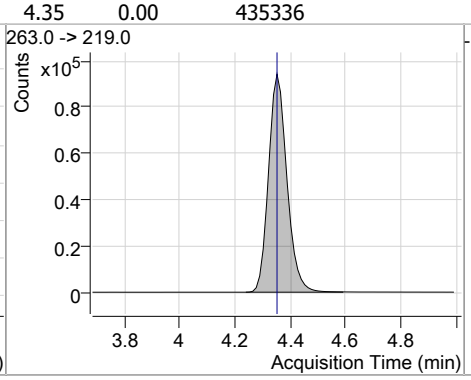


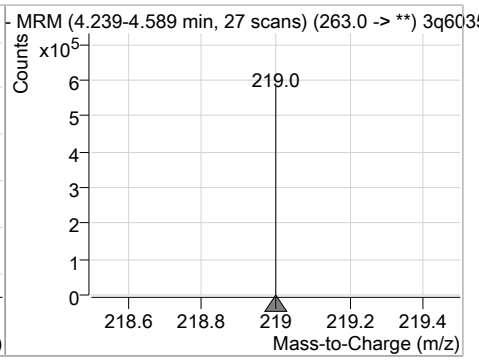


Perfluorinated Compounds by LC/MS/MS

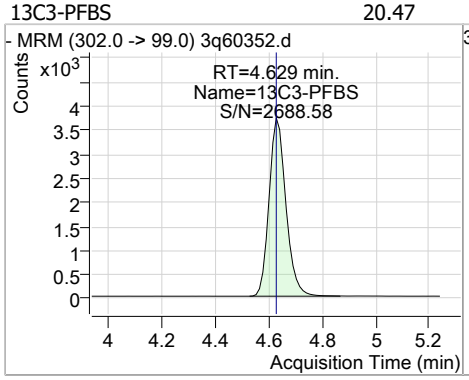
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.25	4.35	0.00	435336				

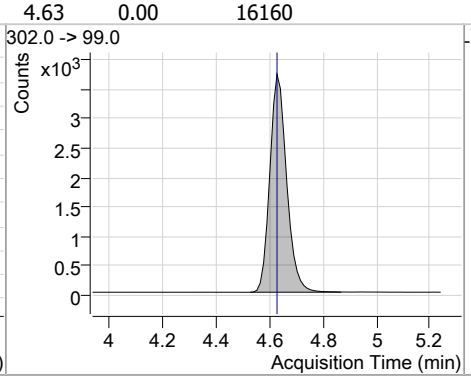


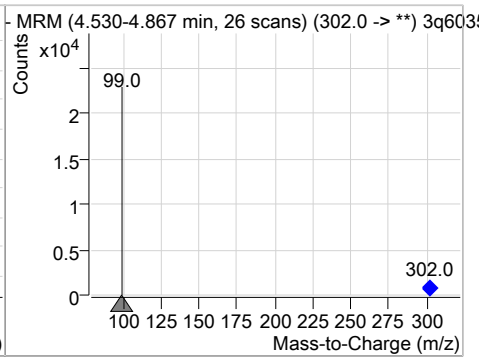




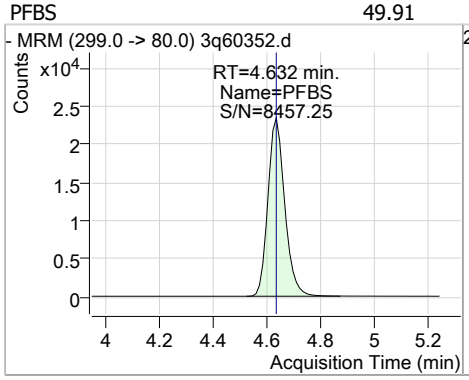
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.47	4.63	0.00	16160				

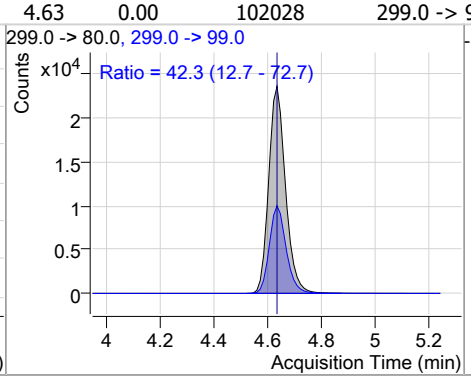


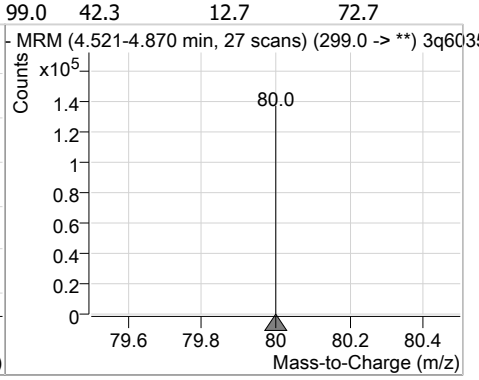




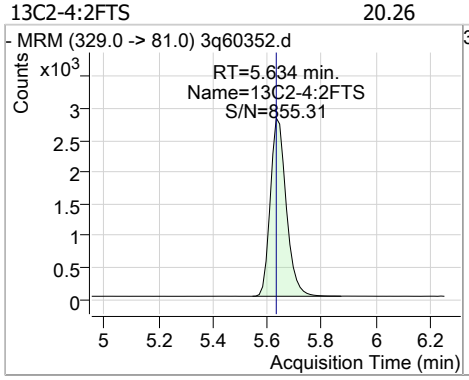
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.91	4.63	0.00	102028	299.0 -> 99.0	42.3	12.7	72.7

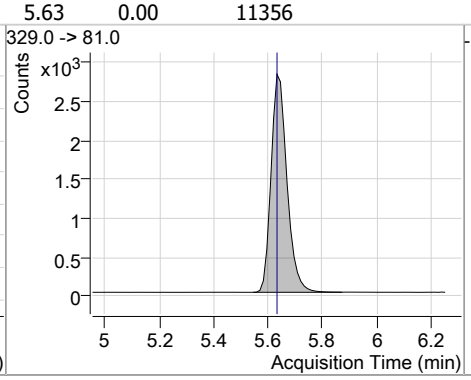


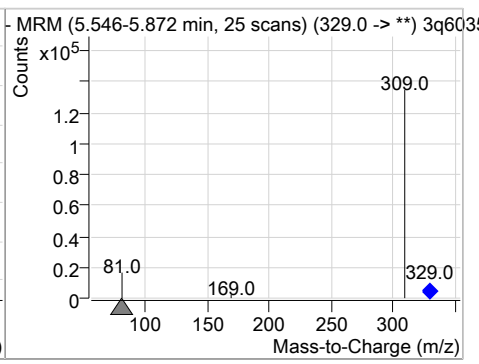




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.26	5.63	0.00	11356				

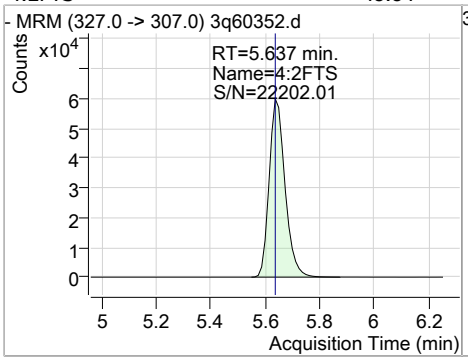


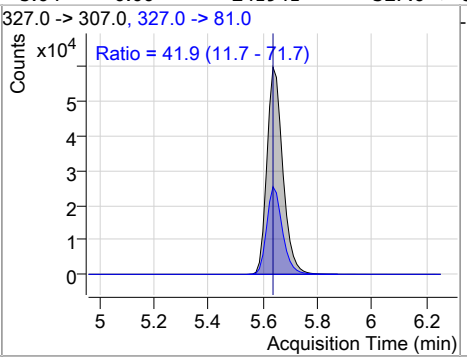


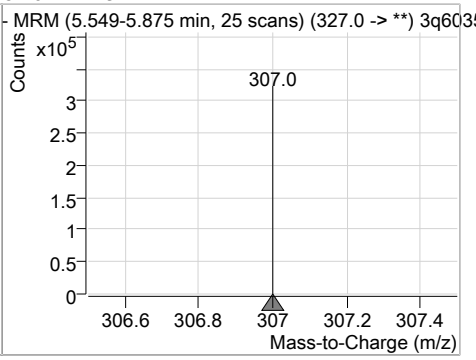


Perfluorinated Compounds by LC/MS/MS

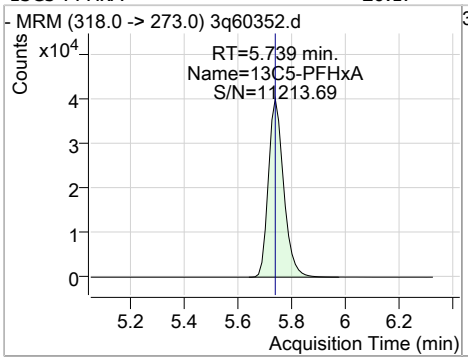
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.84	5.64	0.00	241941	327.0 -> 81.0	41.9	11.7	71.7

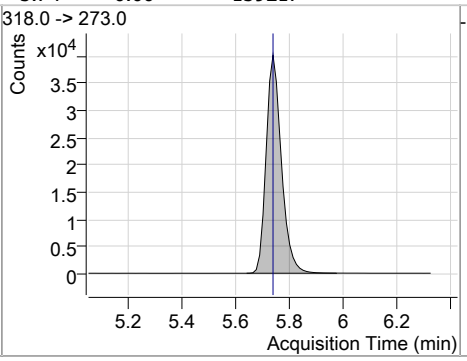


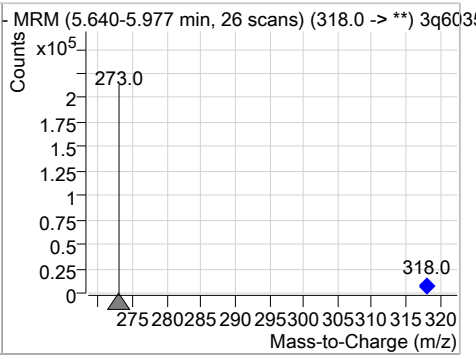




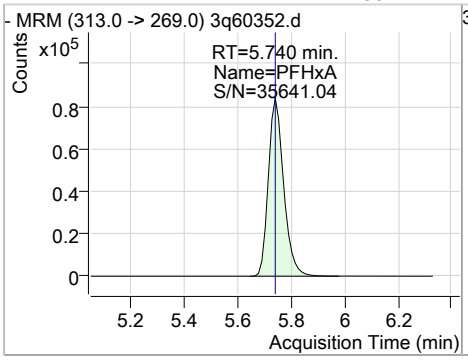
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.17	5.74	0.00	159217				

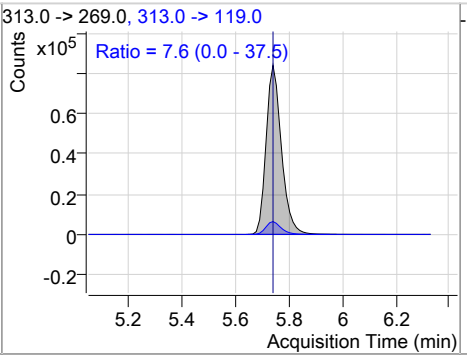


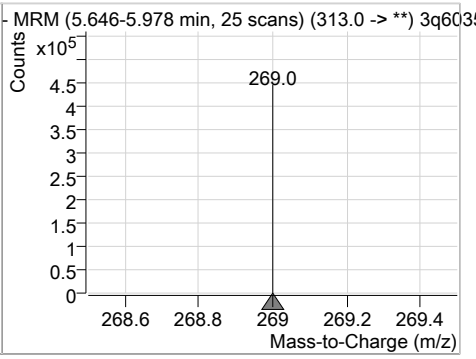




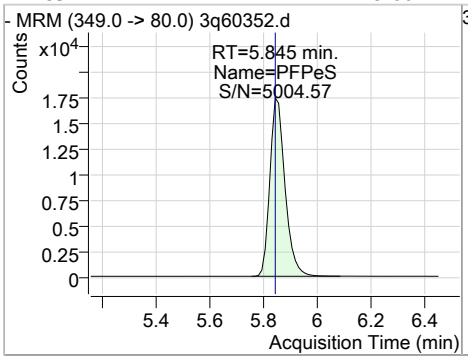
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.11	5.74	0.00	333464	313.0 -> 119.0	7.6	0.0	37.5

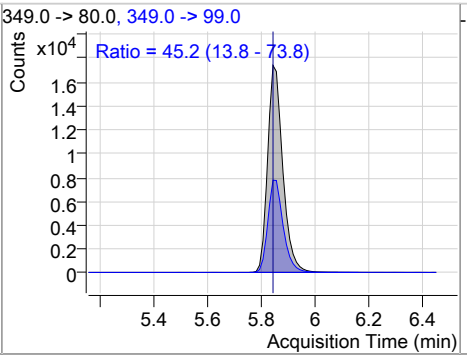


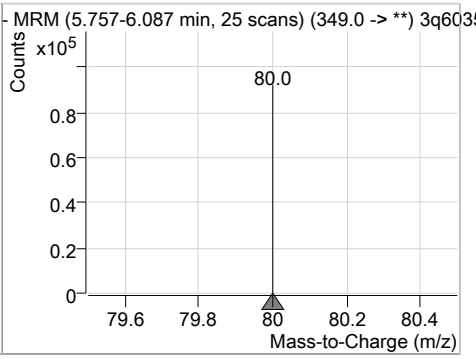




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.86	5.84	0.00	68093	349.0 -> 99.0	45.2	13.8	73.8

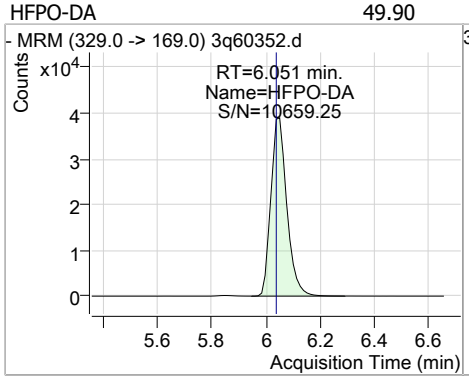


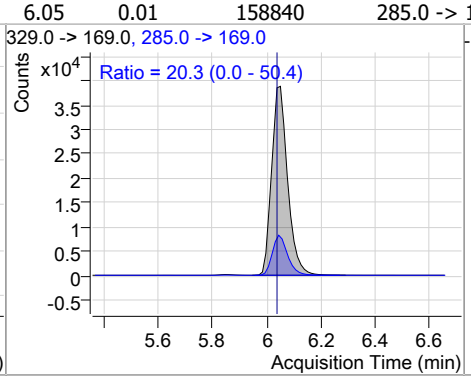


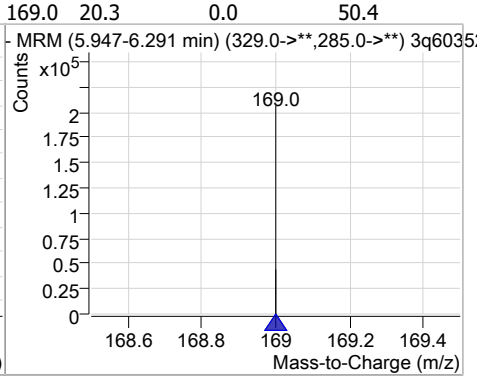


Perfluorinated Compounds by LC/MS/MS

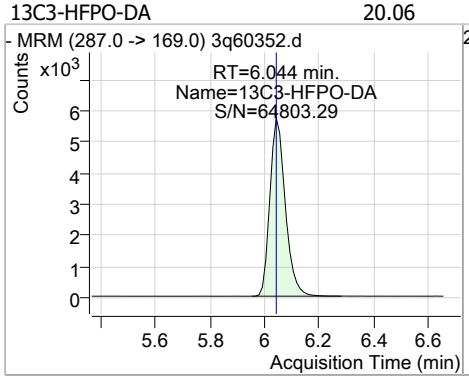
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	49.90	6.05	0.01	158840	285.0 -> 169.0	20.3	0.0	50.4

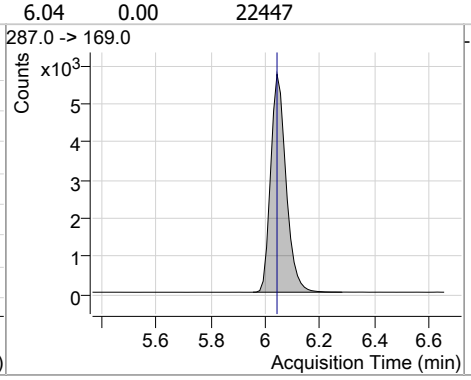


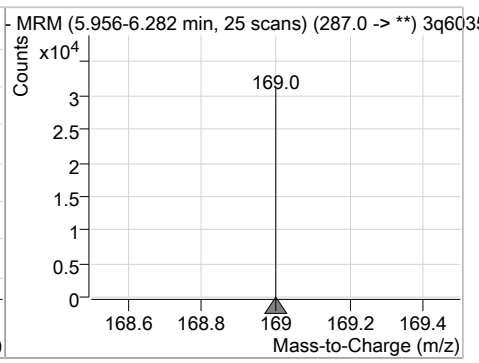




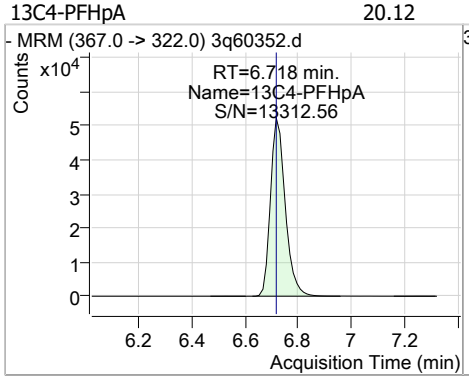
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.06	6.04	0.00	22447				

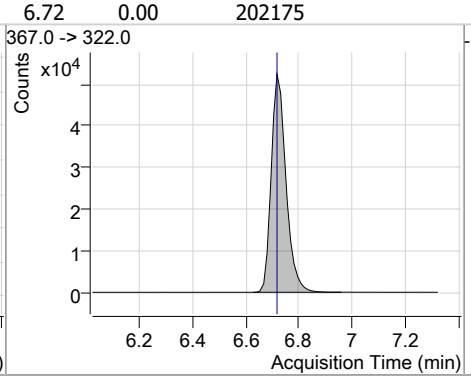


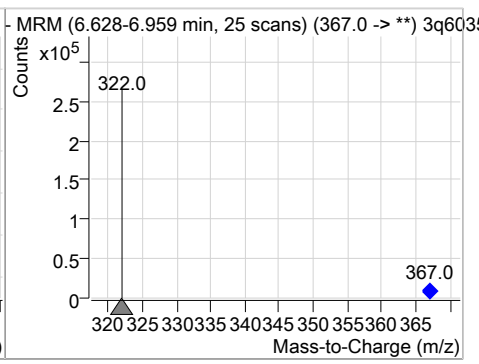




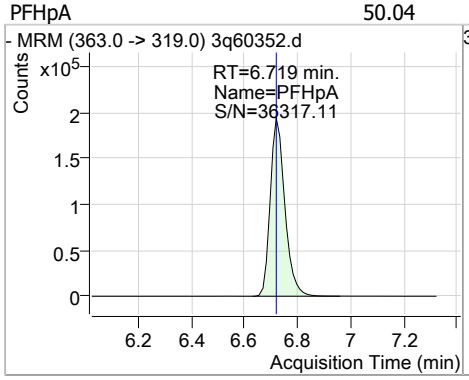
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.12	6.72	0.00	202175				

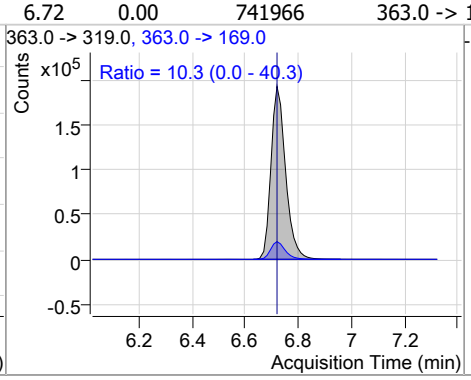


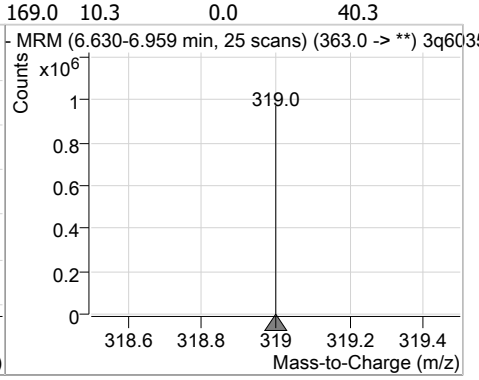




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.04	6.72	0.00	741966	363.0 -> 169.0	10.3	0.0	40.3

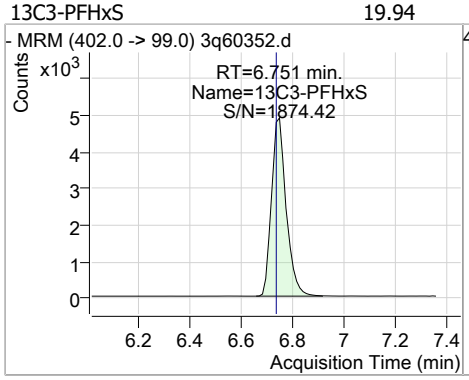


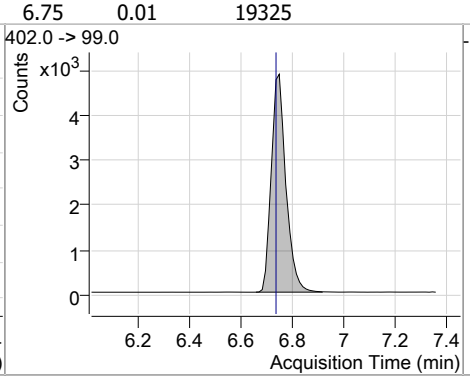


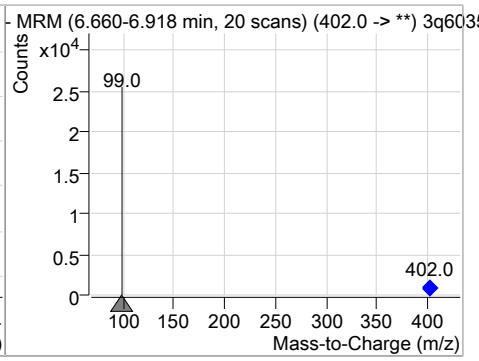


Perfluorinated Compounds by LC/MS/MS

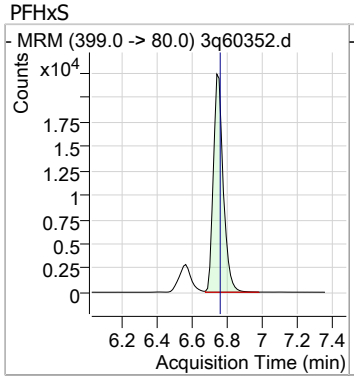
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.94	6.75	0.01	19325				

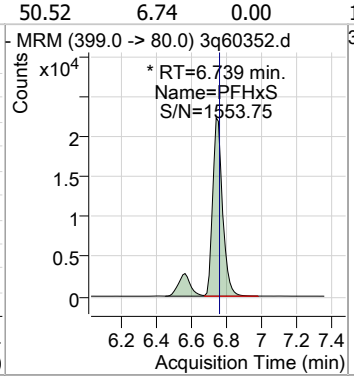


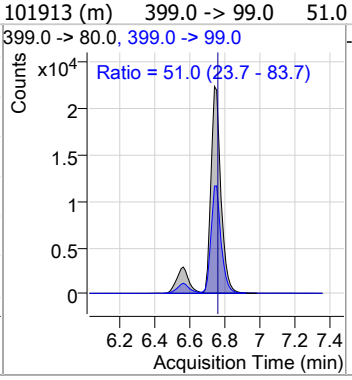


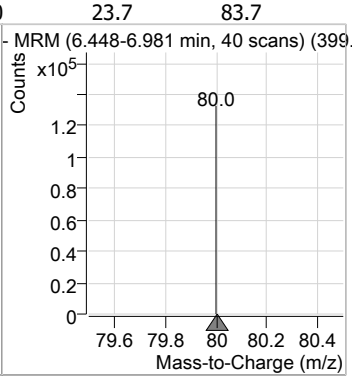


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	50.52	6.74	0.00	101913 (m)	399.0 -> 99.0	51.0	23.7	83.7

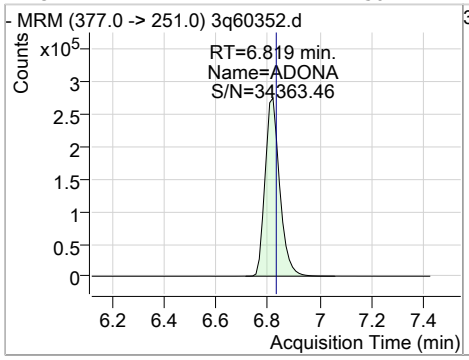


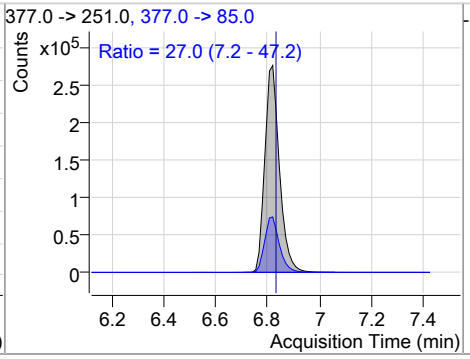


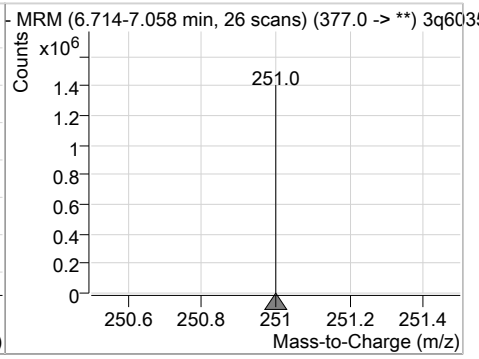




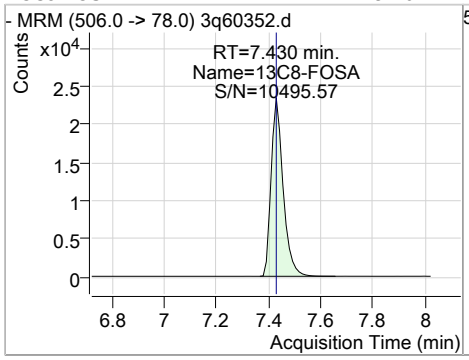
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	50.27	6.82	0.00	1076840	377.0 -> 85.0	27.0	7.2	47.2

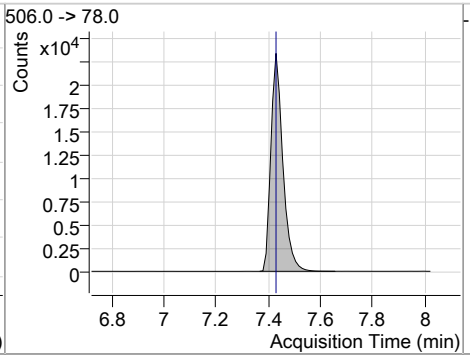


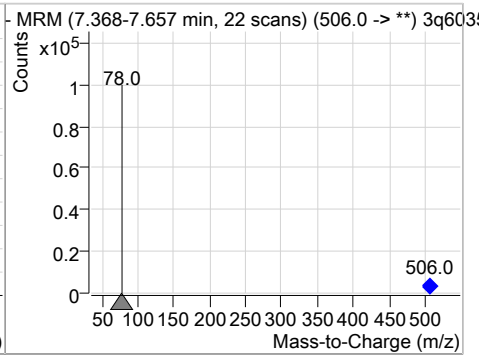




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.40	7.43	0.00	74666				

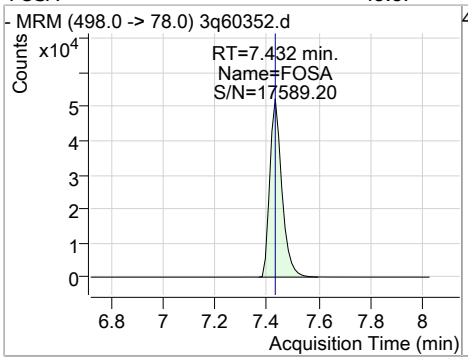


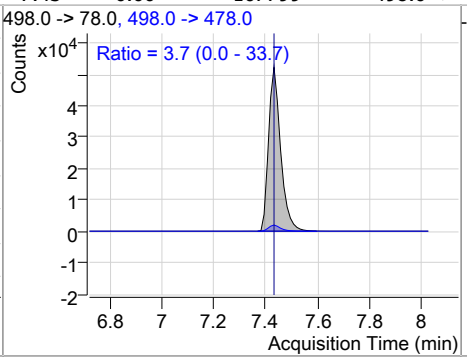


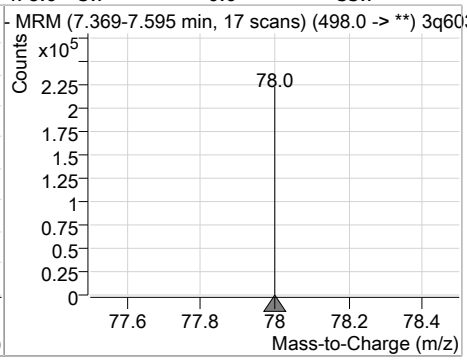


Perfluorinated Compounds by LC/MS/MS

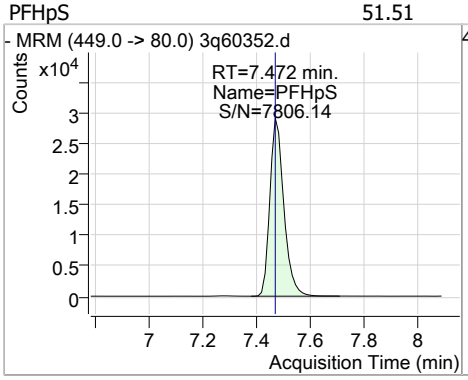
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.87	7.43	0.00	167799	498.0 -> 478.0	3.7	0.0	33.7

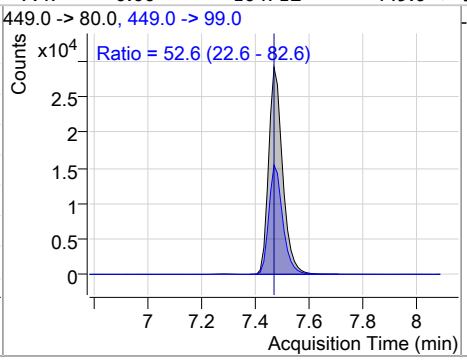


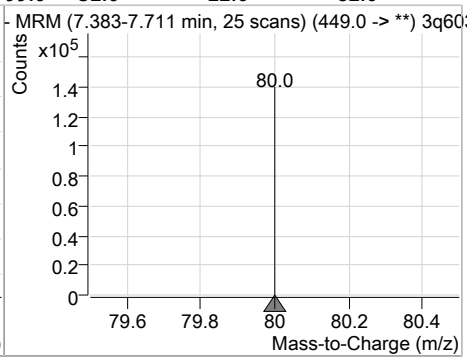




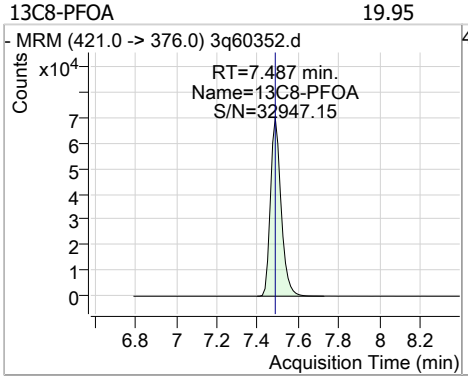
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.51	7.47	0.00	104712	449.0 -> 99.0	52.6	22.6	82.6

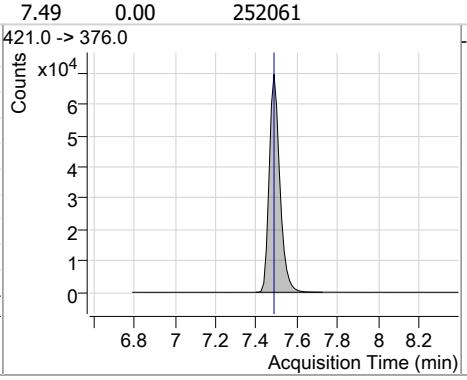


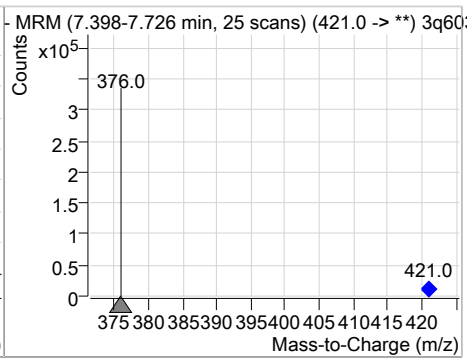




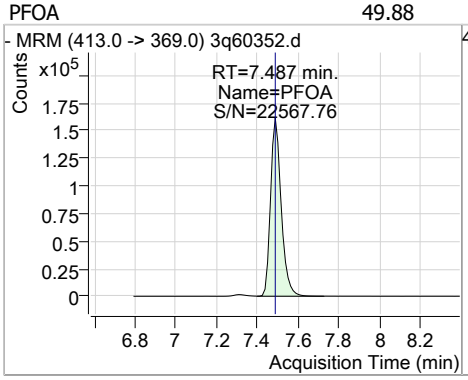
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.95	7.49	0.00	252061				

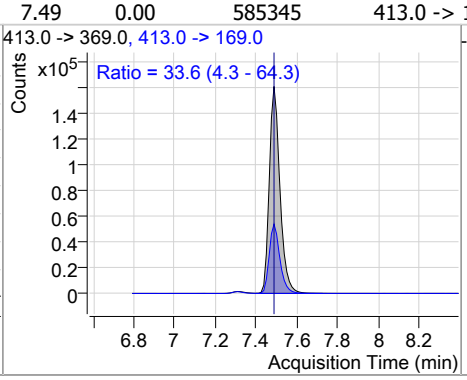


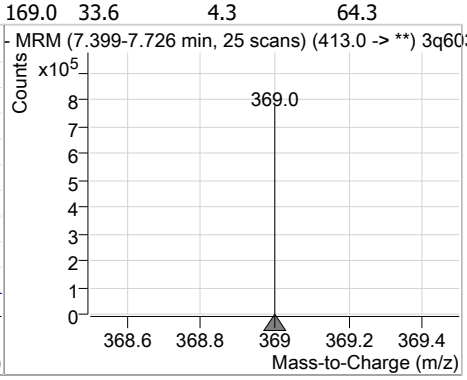




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.88	7.49	0.00	585345	413.0 -> 169.0	33.6	4.3	64.3

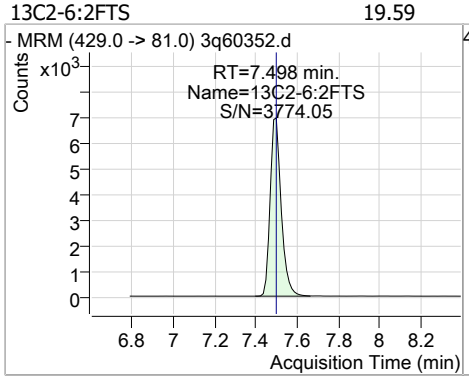


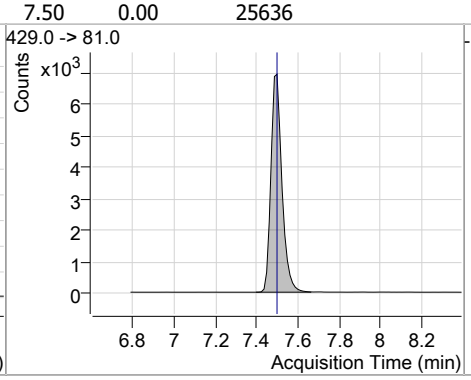


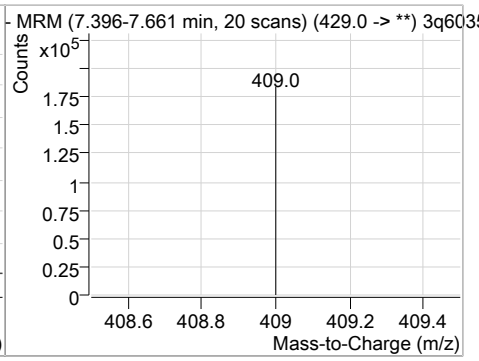


Perfluorinated Compounds by LC/MS/MS

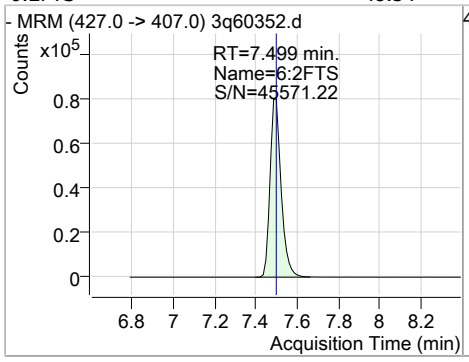
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.59	7.50	0.00	25636				

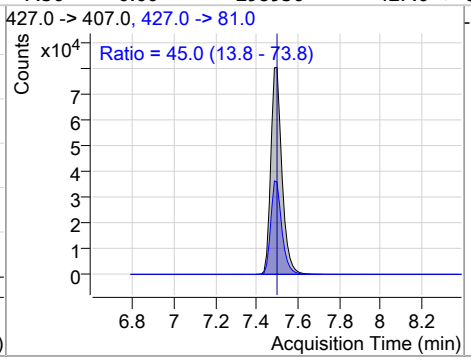


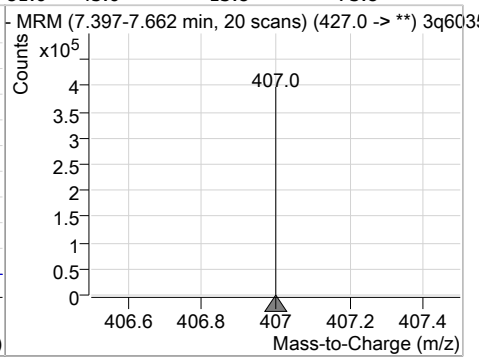




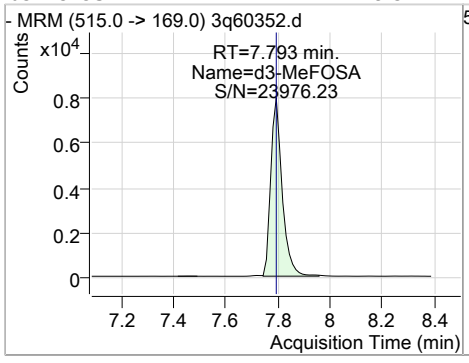
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.54	7.50	0.00	298950	427.0 -> 81.0	45.0	13.8	73.8

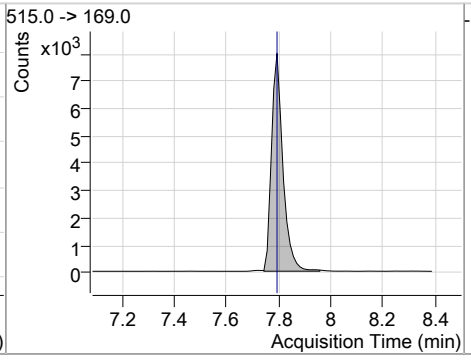


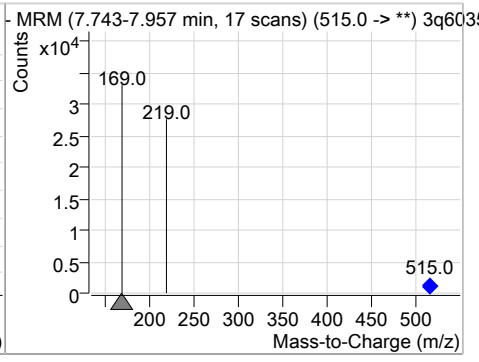




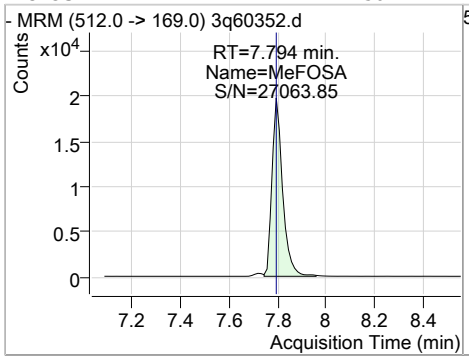
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.34	7.79	0.00	24169				

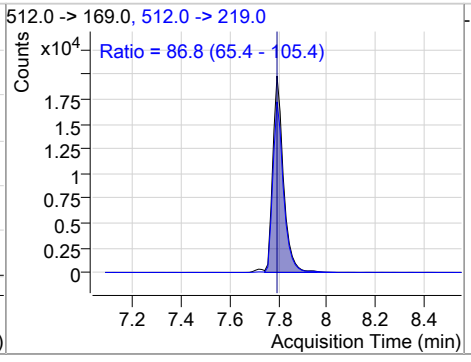


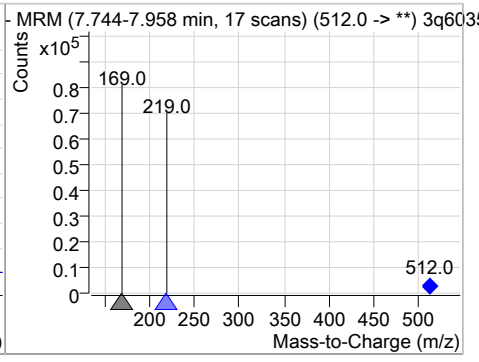




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	50.17	7.79	0.00	60114	512.0 -> 219.0	86.8	65.4	105.4

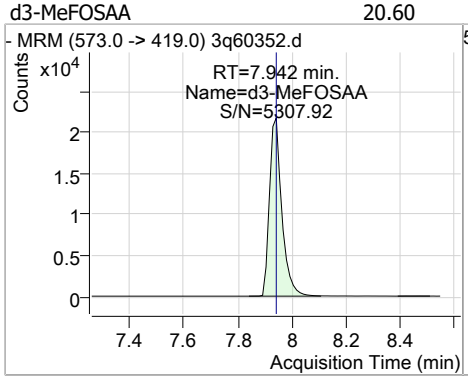


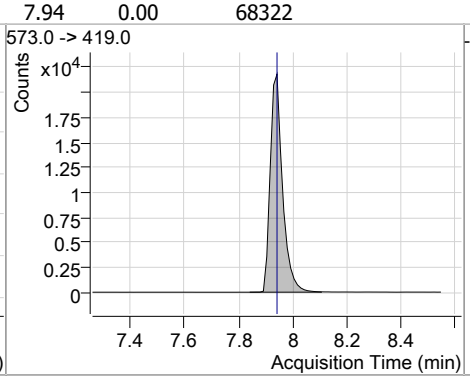


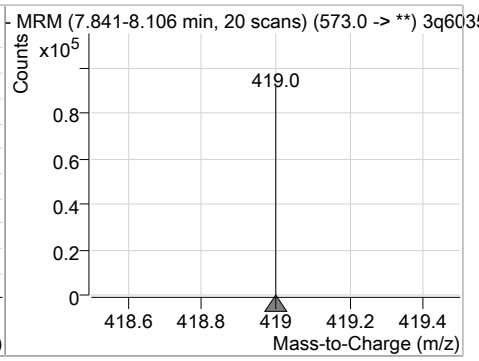


Perfluorinated Compounds by LC/MS/MS

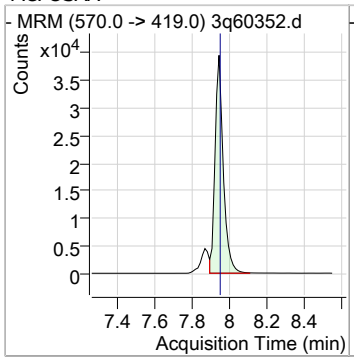
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.60	7.94	0.00	68322				

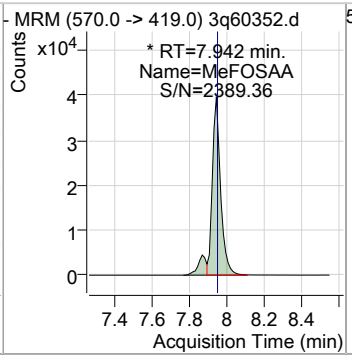


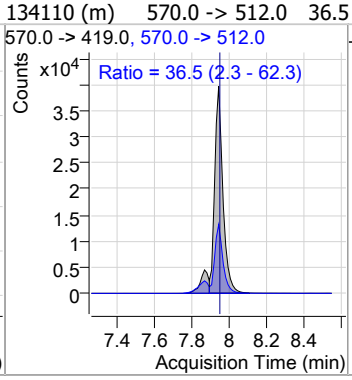


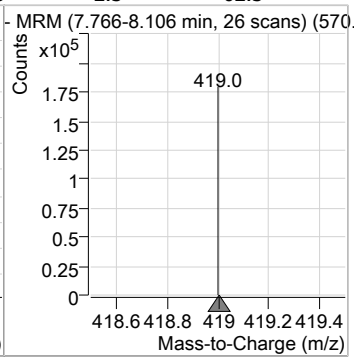


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	49.39	7.94	0.00	134110 (m)	570.0 -> 512.0	36.5	2.3	62.3

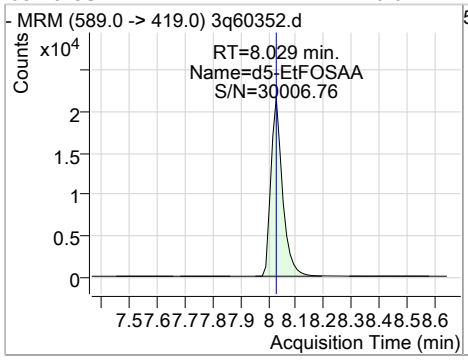


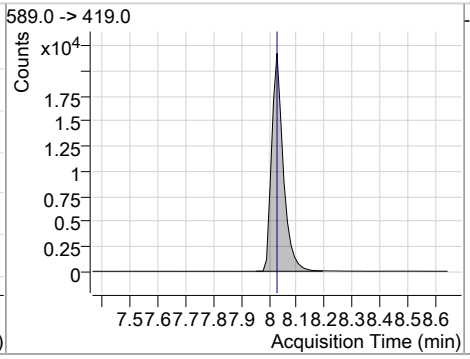


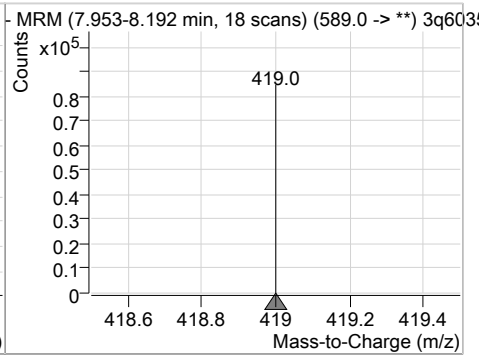




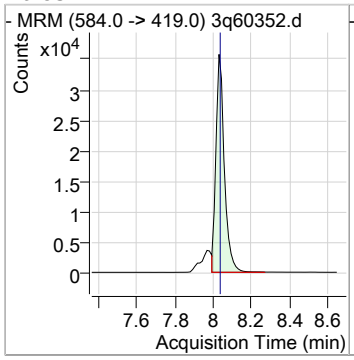
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.04	8.03	0.00	63161				

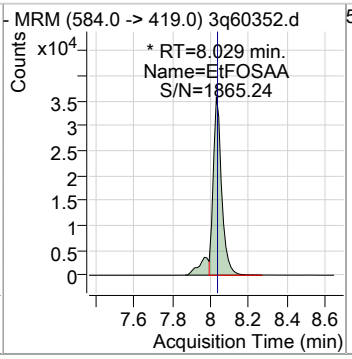


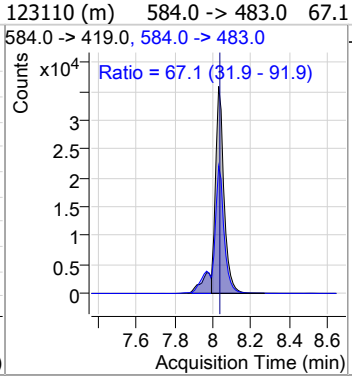


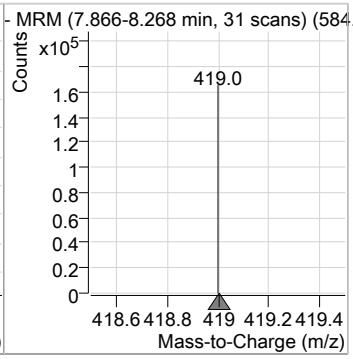


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	50.11	8.03	0.00	123110 (m)	584.0 -> 483.0	67.1	31.9	91.9



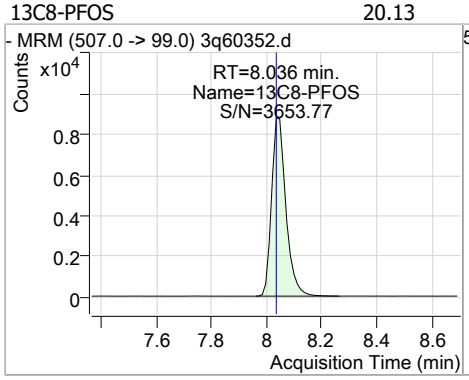


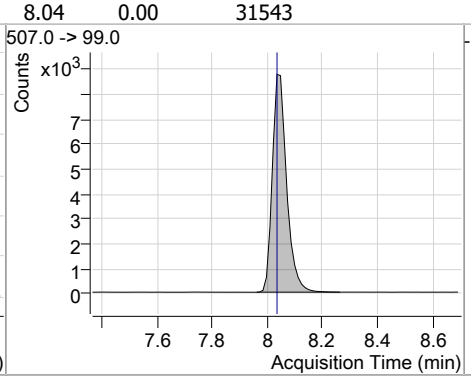


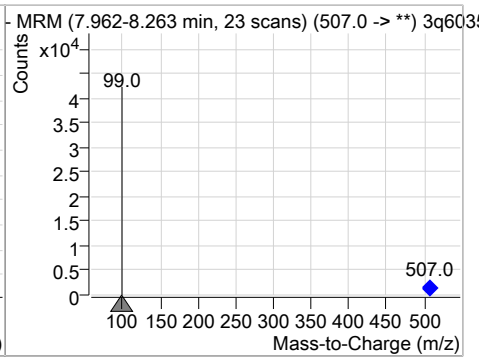


Perfluorinated Compounds by LC/MS/MS

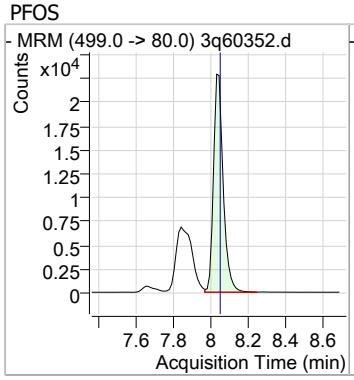
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.13	8.04	0.00	31543				

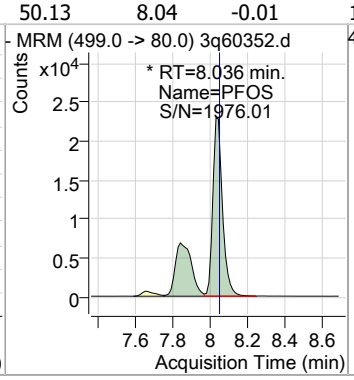


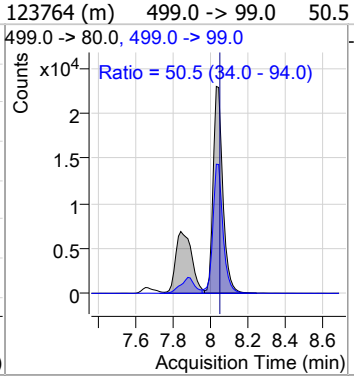


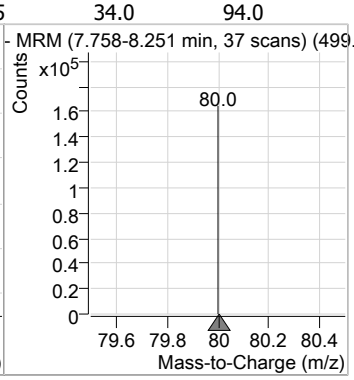


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	50.13	8.04	-0.01	123764 (m)	499.0 -> 99.0	50.5	34.0	94.0

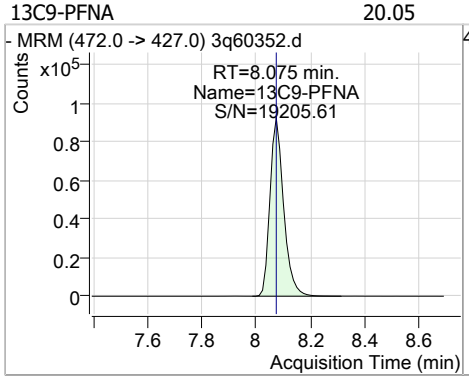


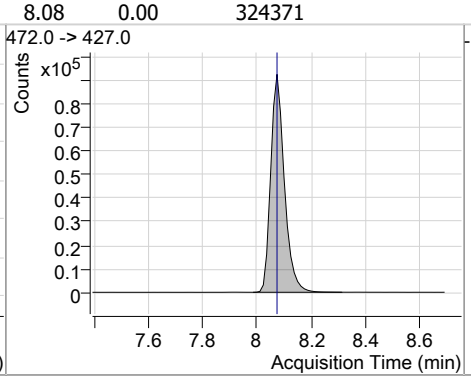


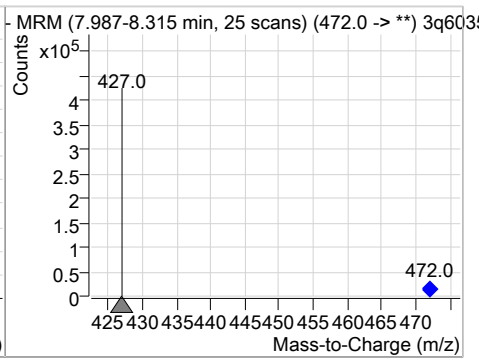




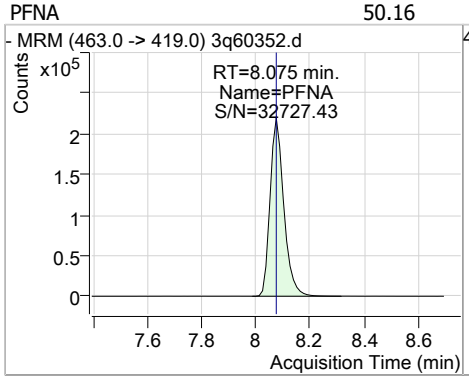
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.05	8.08	0.00	324371				

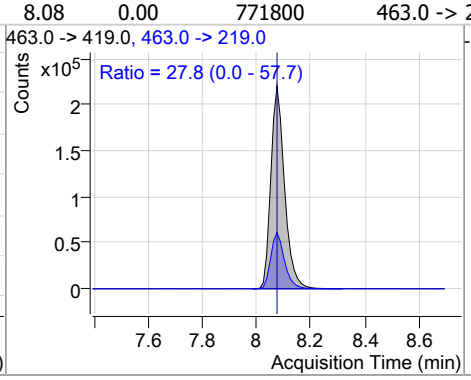


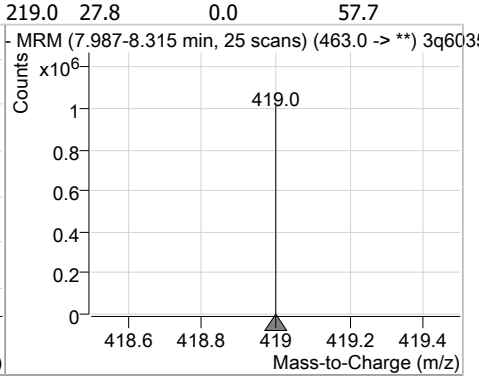




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	50.16	8.08	0.00	771800	463.0 -> 219.0	27.8	0.0	57.7

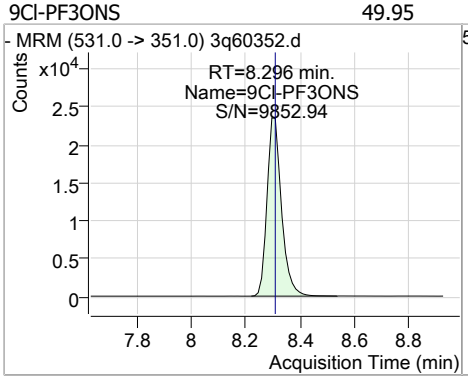


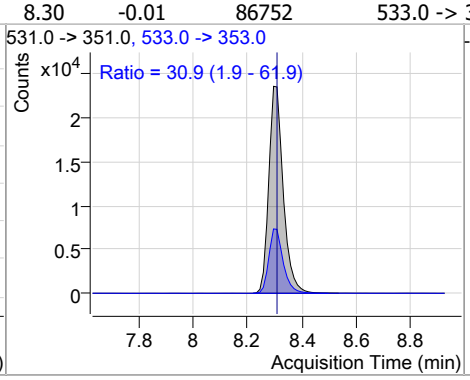


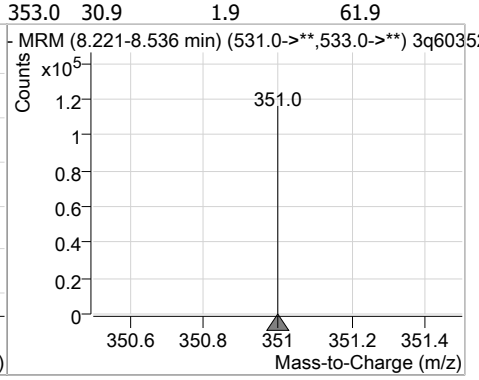


Perfluorinated Compounds by LC/MS/MS

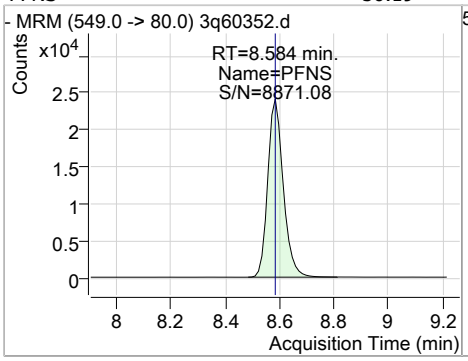
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	49.95	8.30	-0.01	86752	533.0 -> 353.0	30.9	1.9	61.9

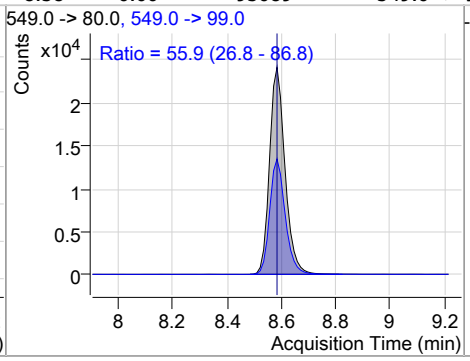


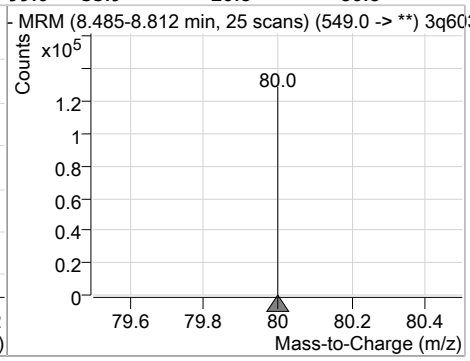




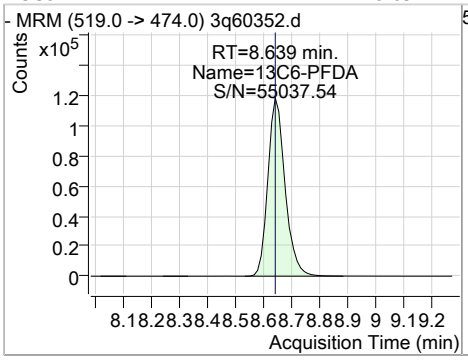
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.19	8.58	0.00	95089	549.0 -> 99.0	55.9	26.8	86.8

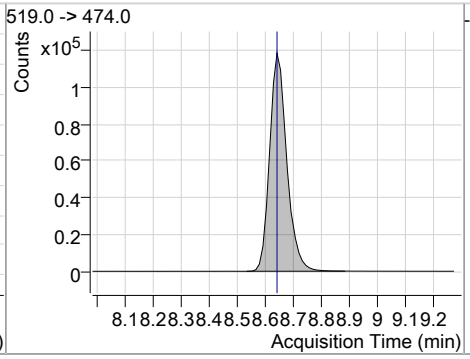


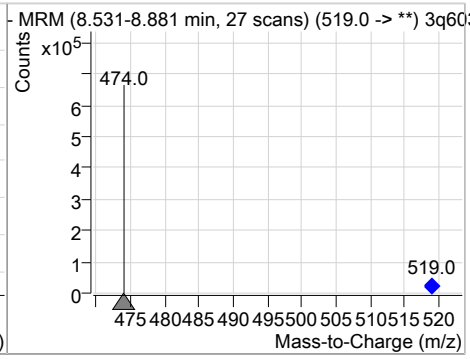




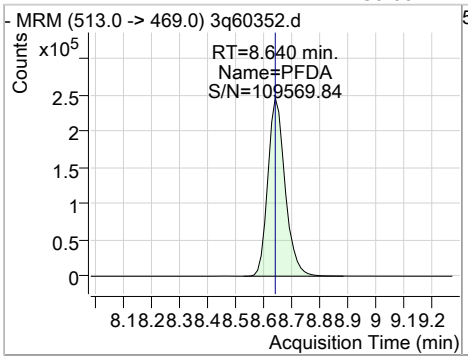
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.09	8.64	0.00	501401				

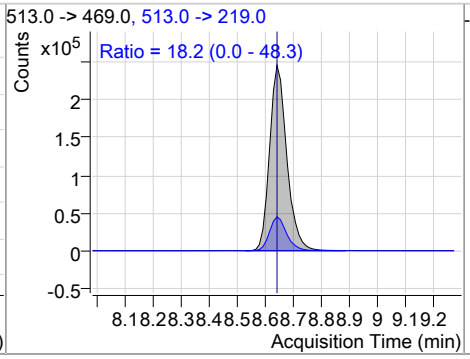


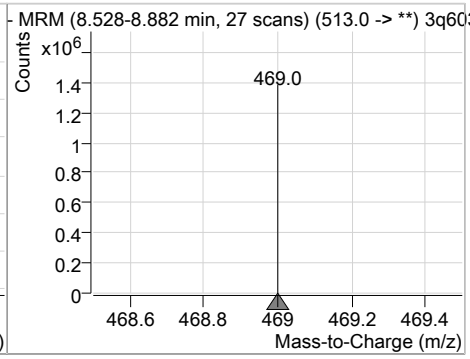




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.00	8.64	0.00	1047204	513.0 -> 219.0	18.2	0.0	48.3

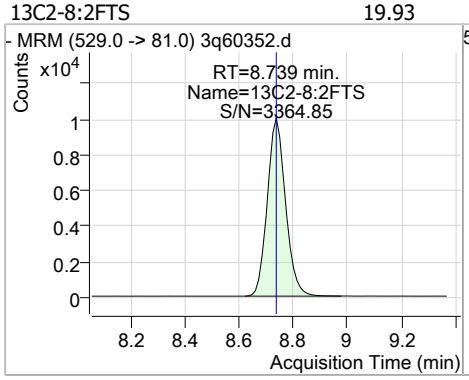


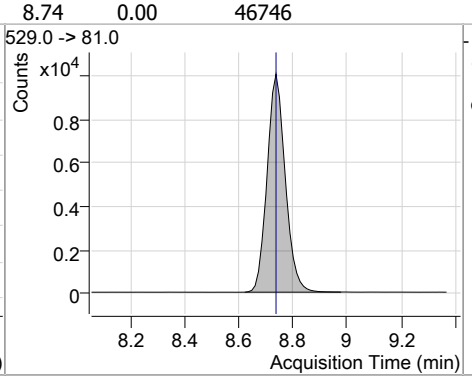


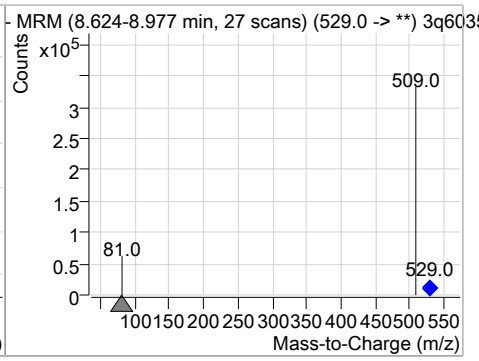


Perfluorinated Compounds by LC/MS/MS

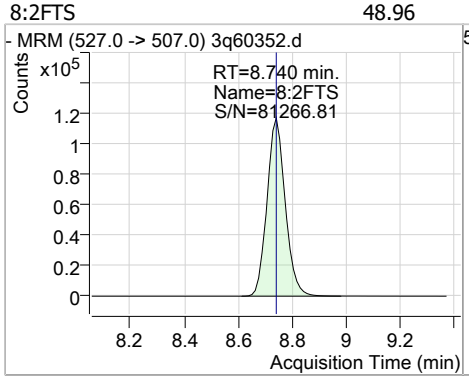
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.93	8.74	0.00	46746				

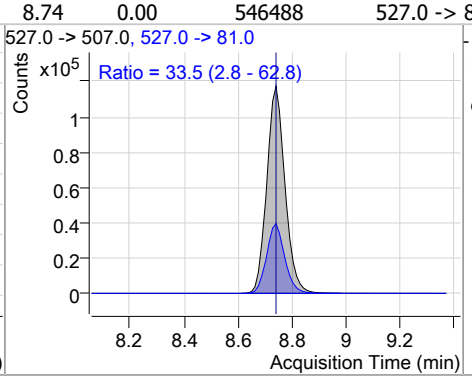


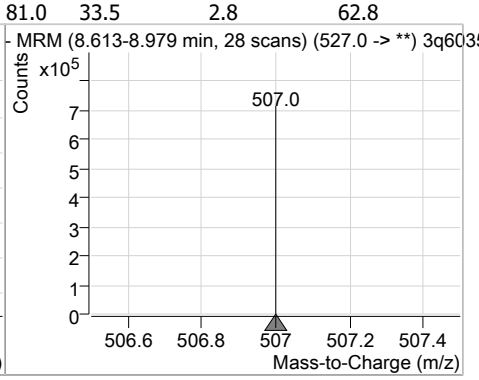




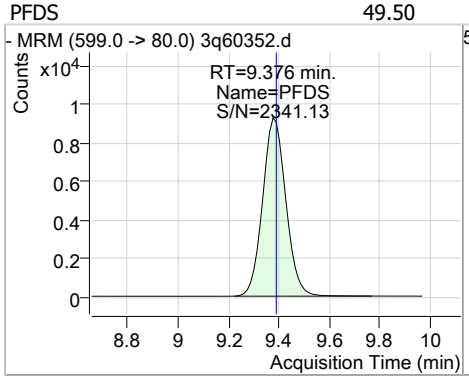
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	48.96	8.74	0.00	546488	527.0 -> 81.0	33.5	2.8	62.8

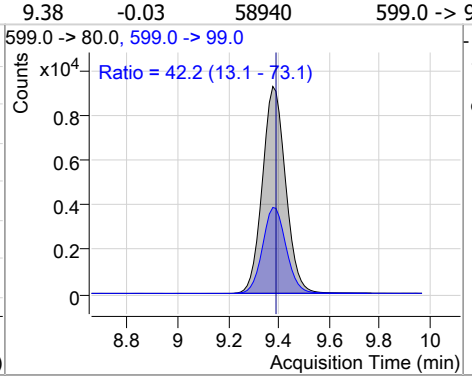


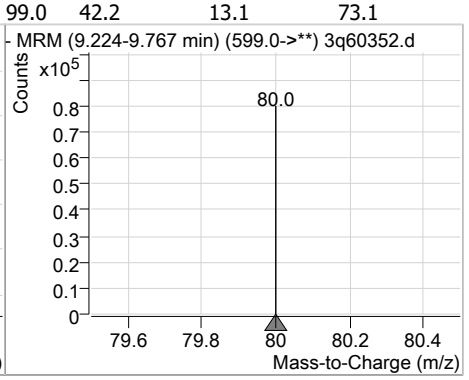




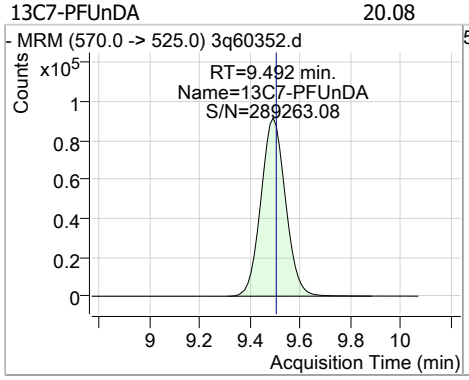
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	49.50	9.38	-0.03	58940	599.0 -> 99.0	42.2	13.1	73.1

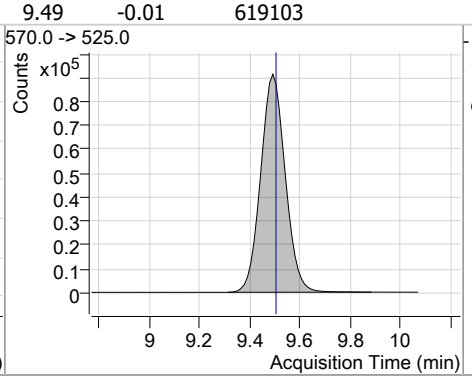


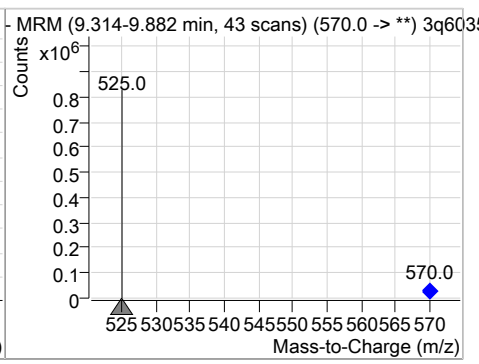




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.08	9.49	-0.01	619103				

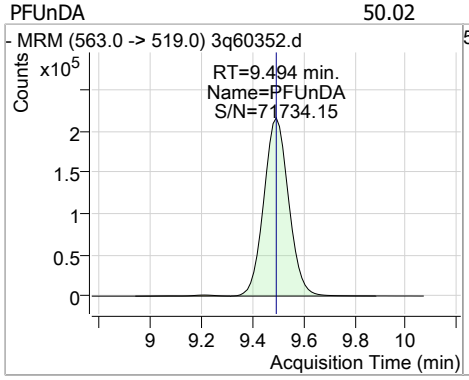


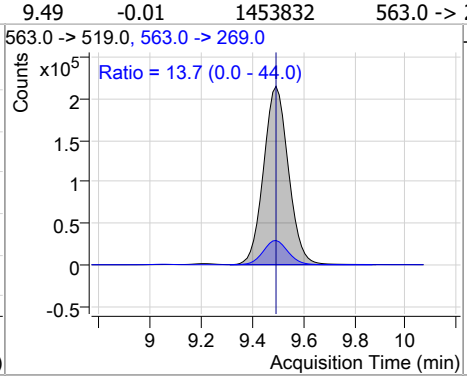


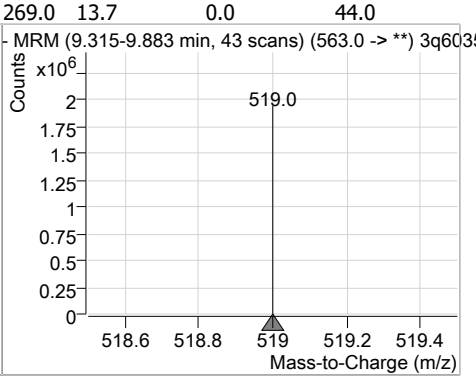


Perfluorinated Compounds by LC/MS/MS

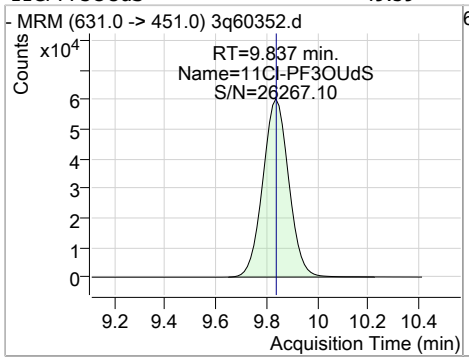
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	50.02	9.49	-0.01	1453832	563.0 -> 269.0	13.7	0.0	44.0

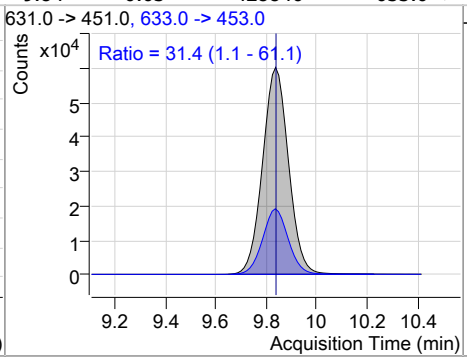


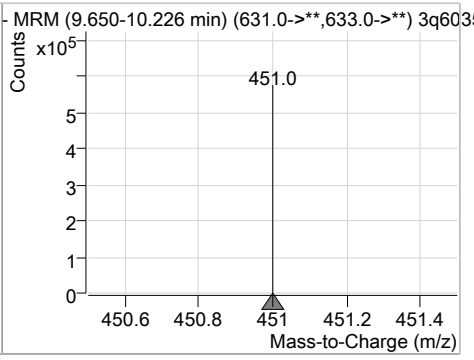




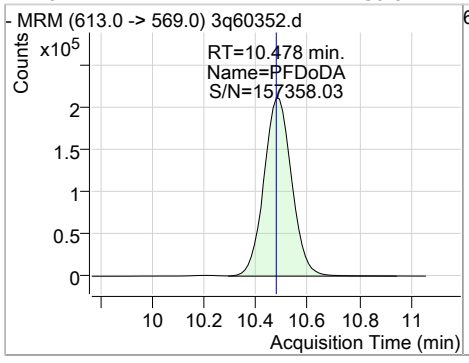
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.59	9.84	-0.03	428846	633.0 -> 453.0	31.4	1.1	61.1

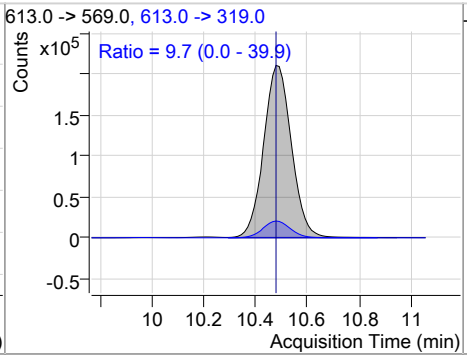


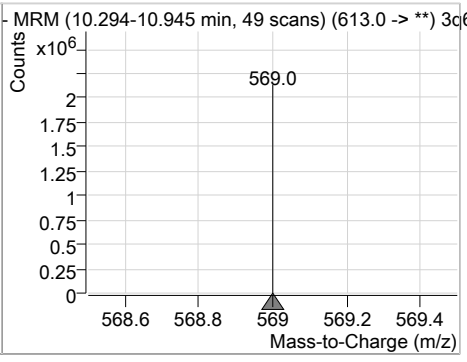




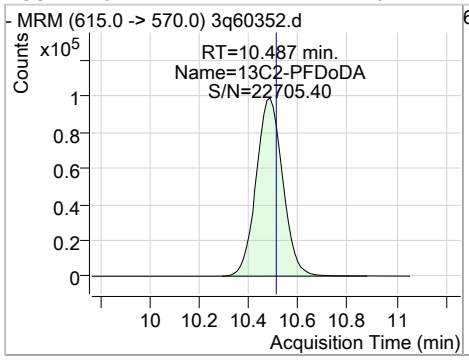
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.01	10.48	-0.03	1576108	613.0 -> 319.0	9.7	0.0	39.9

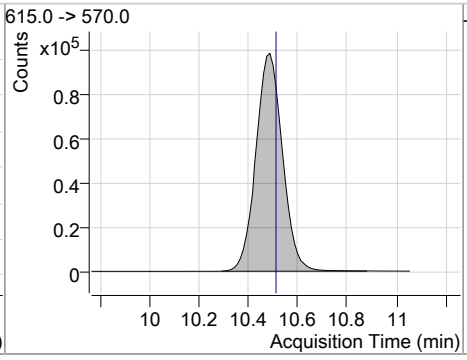


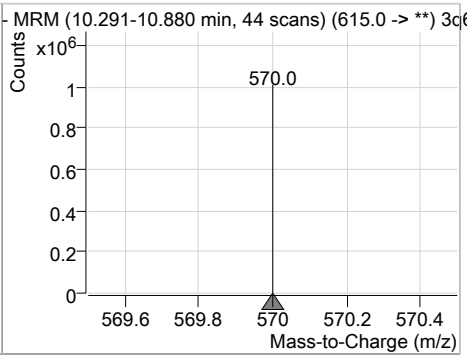




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.21	10.49	-0.03	740935				

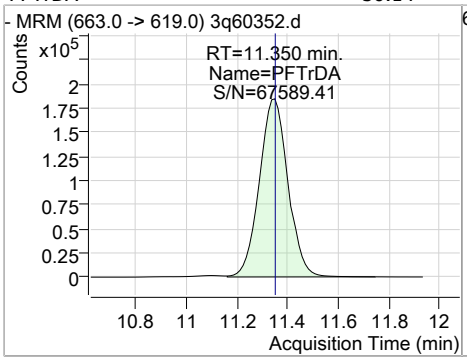


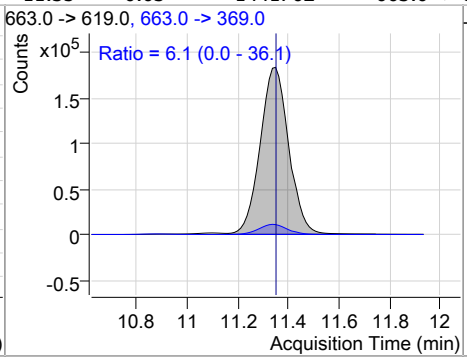


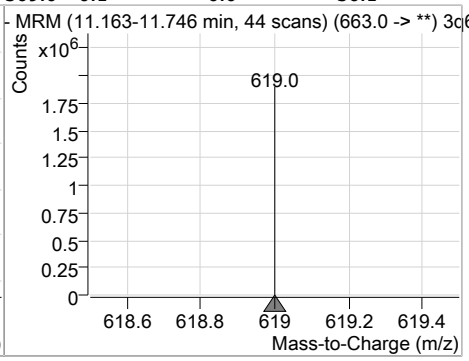


Perfluorinated Compounds by LC/MS/MS

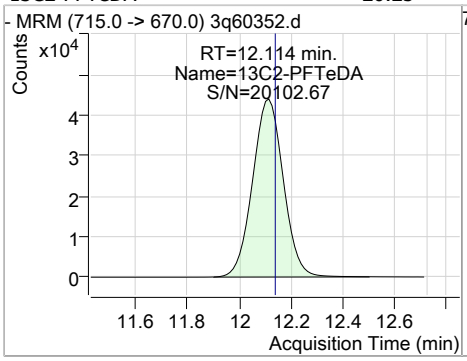
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.14	11.35	-0.03	1441762	663.0 -> 369.0	6.1	0.0	36.1

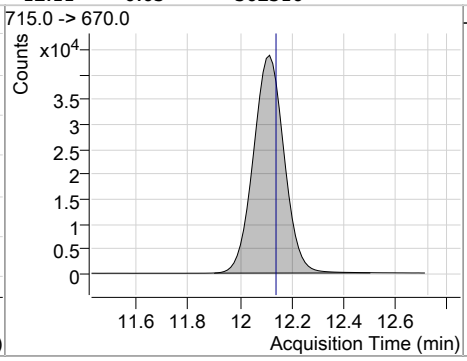


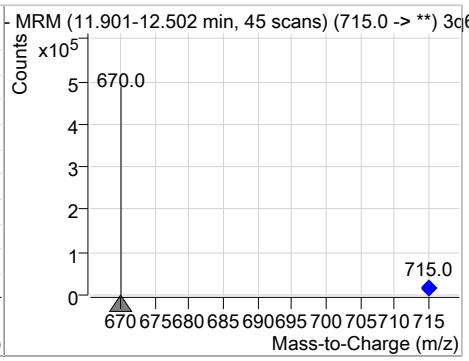




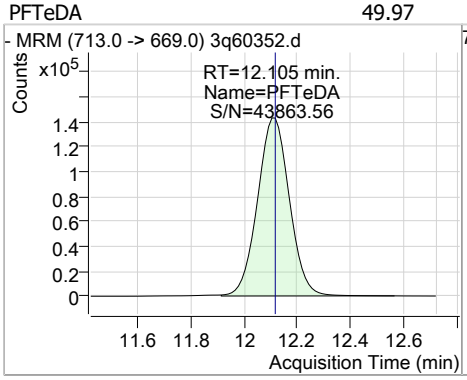
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.25	12.11	-0.03	362316				

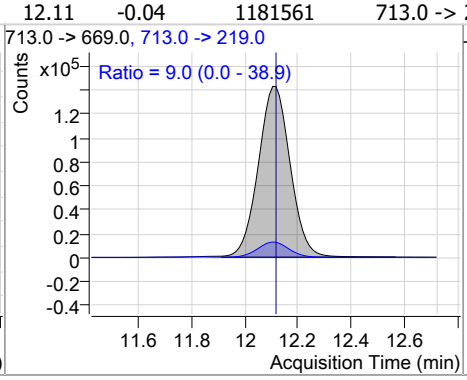


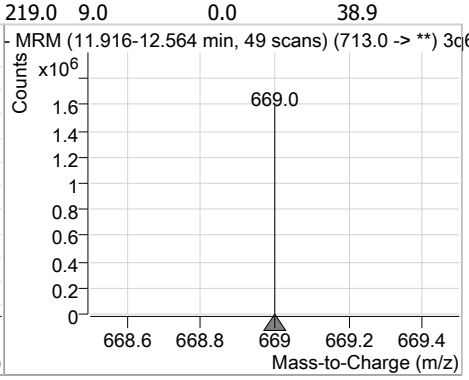




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.97	12.11	-0.04	1181561	713.0 -> 219.0	9.0	0.0	38.9







7.7.8

7

Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60352.D
Injection Time: 05/27/22 16:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:52

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60353.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 4:33:43 PM
Sample Name : ic824-100
Vial : P1-A9
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

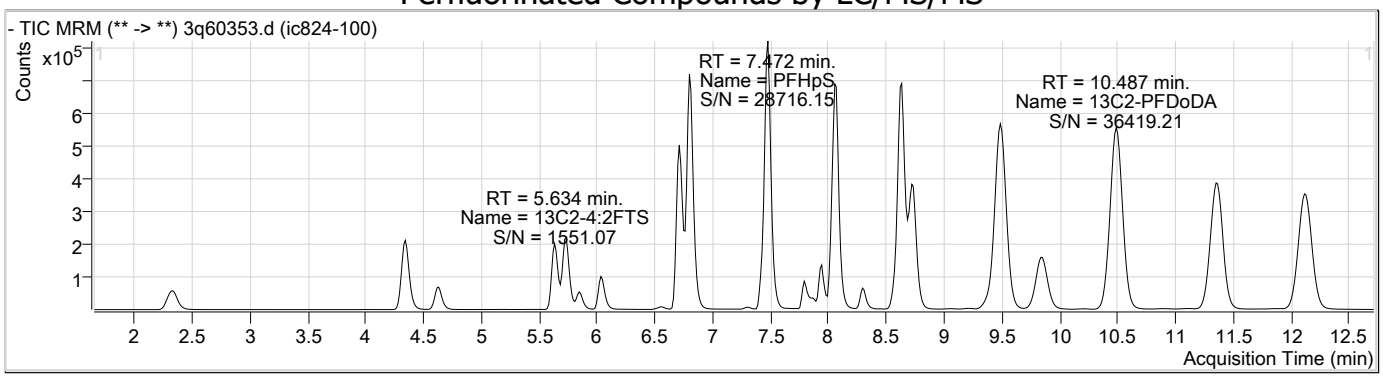
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	124185	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	118776	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	160163	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	199826	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	239354	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	316895	20.00 µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	499241	20.00 µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	623145	20.00 µg/L	-0.013
M2-PFDoDA	10.487	615.0 -> 570.0	744260	20.00 µg/L	-0.025
M2-PFTeDA	12.126	715.0 -> 670.0	365502	20.00 µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	67171	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16087	20.00 µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	19367	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	31360	20.00 µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11353	20.00 µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	24516	20.00 µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	46901	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	66897	20.00 µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	22285	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	22915	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	60668	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	11353	20.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C2-6:2FTS	7.485	429.0 -> 81.0	24516	18.73 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%	
13C2-8:2FTS	8.739	529.0 -> 81.0	46901	20.00 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C2-PFDoDA	10.487	615.0 -> 570.0	744260	20.30 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C2-PFTeDA	12.126	715.0 -> 670.0	365502	20.42 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C3-PFBS	4.629	302.0 -> 99.0	16087	20.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C3-PFHxS	6.738	402.0 -> 99.0	19367	19.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C4-PFBA	2.327	217.0 -> 172.0	124185	20.55 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFHpA	6.718	367.0 -> 322.0	199826	19.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C5-PFHxA	5.739	318.0 -> 273.0	160163	20.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C5-PFPeA	4.349	268.0 -> 223.0	118776	20.50 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C6-PFDA	8.639	519.0 -> 474.0	499241	20.00 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

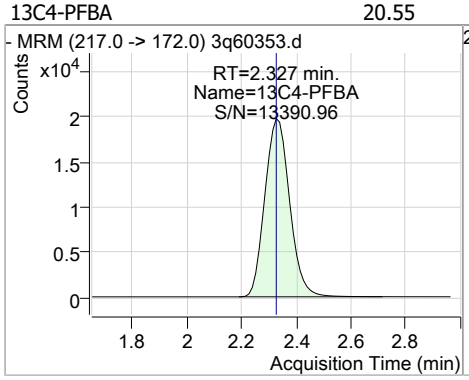
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C7-PFUnDA	9.492	570.0 -> 525.0	623145	20.21	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
13C8-FOSA	7.430	506.0 -> 78.0	67171	17.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
13C8-PFOA	7.487	421.0 -> 376.0	239354	18.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C8-PFOS	8.036	507.0 -> 99.0	31360	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C9-PFNA	8.075	472.0 -> 427.0	316895	19.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSAA	7.929	573.0 -> 419.0	66897	20.17	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	22290	19.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
d3-MeFOSA	7.793	515.0 -> 169.0	22915	18.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
d5-EtFOSAA	8.029	589.0 -> 419.0	60692	19.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	485639	98.05	µg/L		99
6:2FTS	7.486	427.0 -> 407.0	567639	96.38	µg/L		99
8:2FTS	8.740	527.0 -> 507.0	1079048	96.36	µg/L		99
EtFOSAA	8.029	584.0 -> 419.0	235281	99.72	µg/L	m	94
FOSA	7.432	498.0 -> 78.0	310031	100.37	µg/L		99
MeFOSAA	7.942	570.0 -> 419.0	265829	99.98	µg/L	m	93
PFBA	2.333	213.0 -> 169.0	241462	99.74	µg/L		100
PFBS	4.632	299.0 -> 80.0	203284	99.90	µg/L		100
PFDA	8.640	513.0 -> 469.0	2081291	99.81	µg/L		99
PFDoDA	10.491	613.0 -> 569.0	3162181	99.90	µg/L		100
PFDS	9.376	599.0 -> 80.0	119946	100.08	µg/L		98
PFHpA	6.719	363.0 -> 319.0	1463272	99.84	µg/L		100
PFHpS	7.472	449.0 -> 80.0	199841	98.87	µg/L		99
PFHxA	5.740	313.0 -> 269.0	668112	99.80	µg/L		100
PFHxS	6.739	399.0 -> 80.0	201384	99.62	µg/L	m	96
PFNA	8.075	463.0 -> 419.0	1498643	99.69	µg/L		100
PFNS	8.572	549.0 -> 80.0	187743	99.66	µg/L		99
PFOA	7.487	413.0 -> 369.0	1113852	99.96	µg/L		100
PFOS	8.036	499.0 -> 80.0	244786	99.73	µg/L	m	82
PFPeA	4.352	263.0 -> 219.0	873062	99.71	µg/L		100
PFPeS	5.845	349.0 -> 80.0	135824	99.90	µg/L		98
PFTeDA	12.118	713.0 -> 669.0	2380444	99.80	µg/L		100
PFTrDA	11.350	663.0 -> 619.0	2893176	99.74	µg/L		100
PFUnDA	9.494	563.0 -> 519.0	2923948	99.94	µg/L		99
11Cl-PF3OUdS	9.837	631.0 -> 451.0	869178	100.07	µg/L		99
9Cl-PF3ONS	8.296	531.0 -> 351.0	172878	99.98	µg/L		99
ADONA	6.807	377.0 -> 251.0	2141314	99.74	µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	316238	100.10	µg/L		100
MeFOSA	7.794	512.0 -> 169.0	113274	99.72	µg/L		99

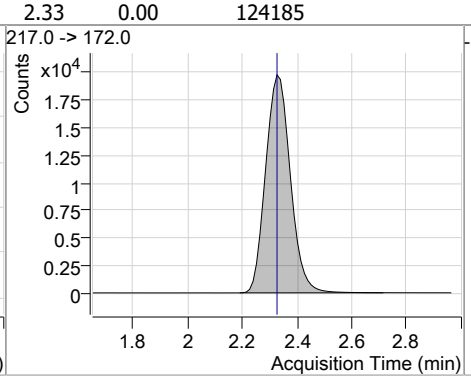
 # = Qualifier out of range, m = manually integrated, + = Area summed

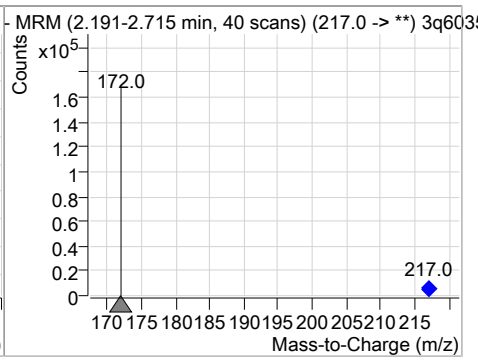
Perfluorinated Compounds by LC/MS/MS



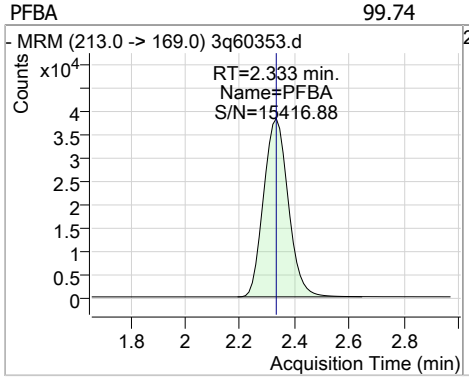
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.55	2.33	0.00	124185				

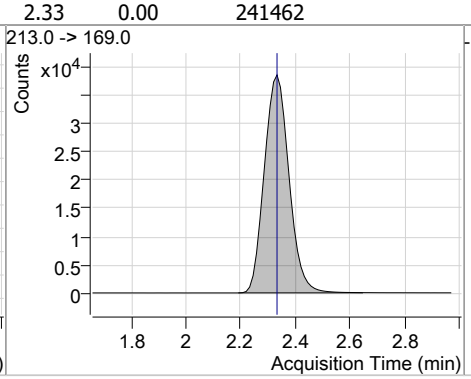


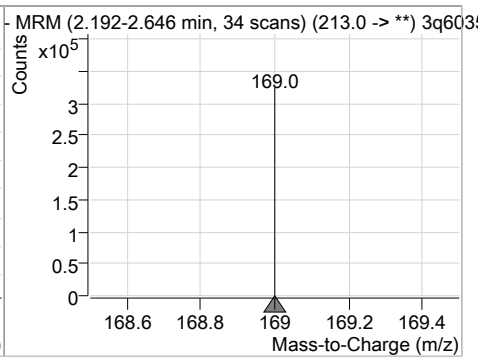




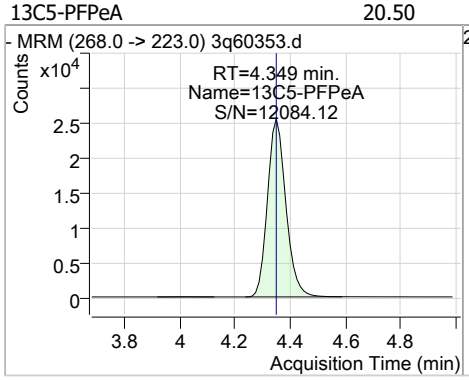
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	99.74	2.33	0.00	241462				

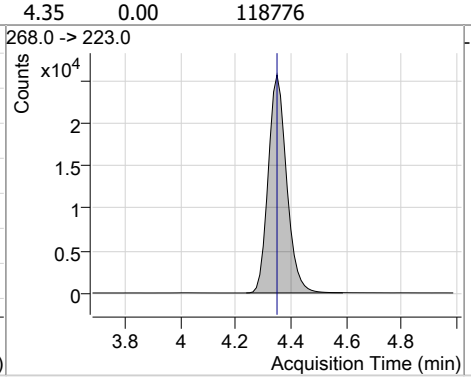


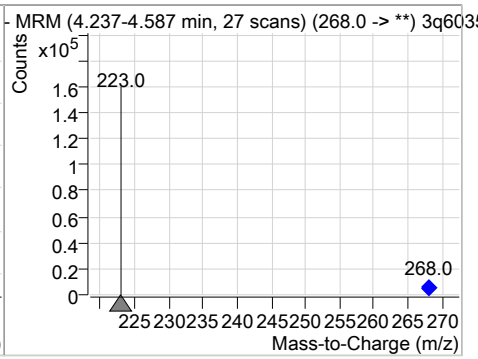




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.50	4.35	0.00	118776				

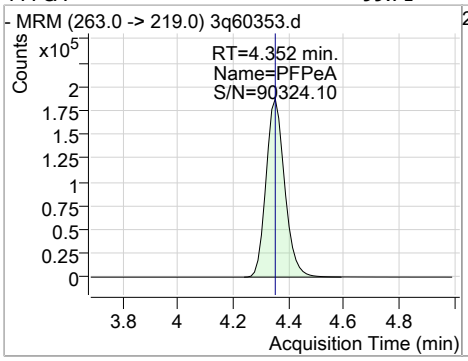


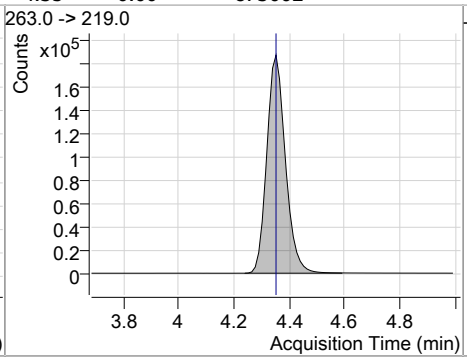


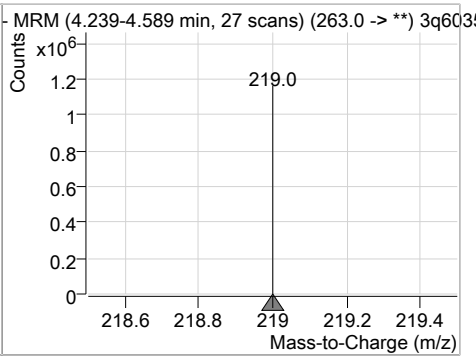


Perfluorinated Compounds by LC/MS/MS

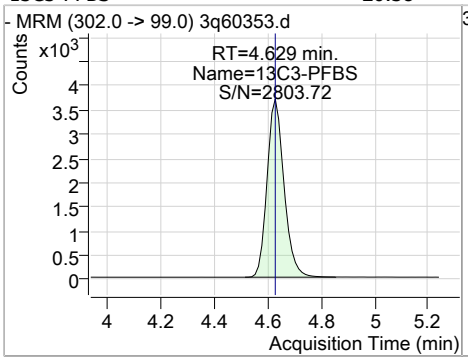
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	99.71	4.35	0.00	873062				

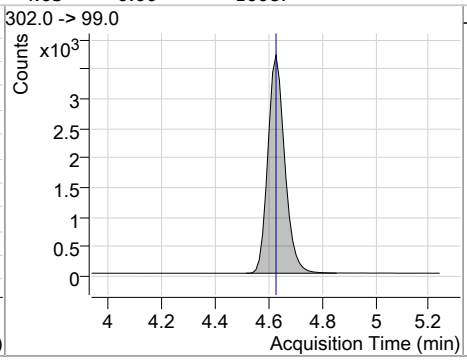


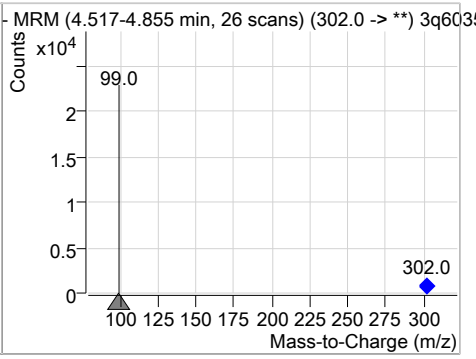




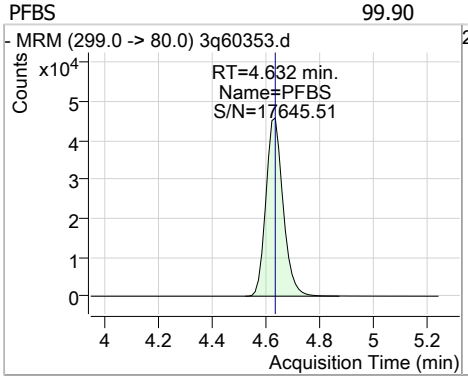
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.38	4.63	0.00	16087				

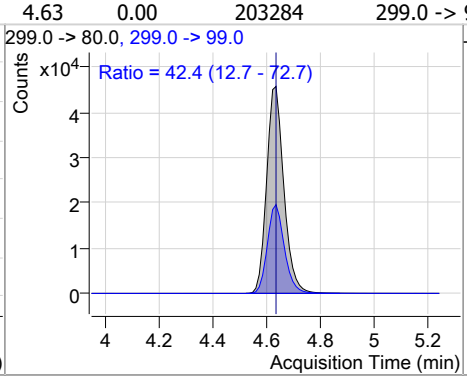


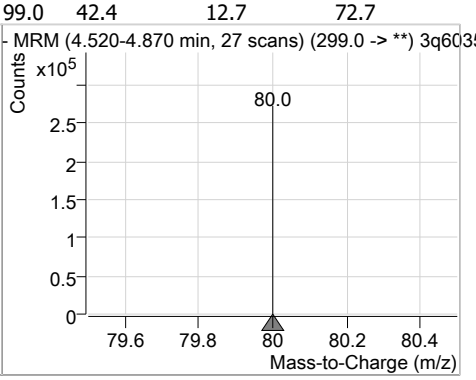




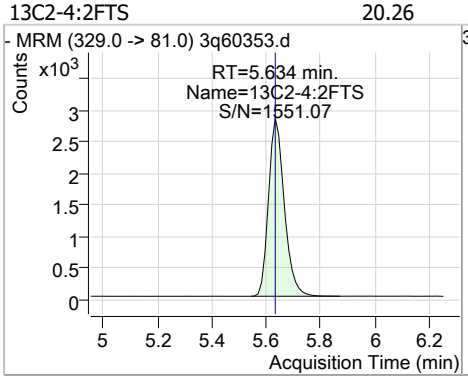
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	99.90	4.63	0.00	203284	299.0 -> 99.0	42.4	12.7	72.7

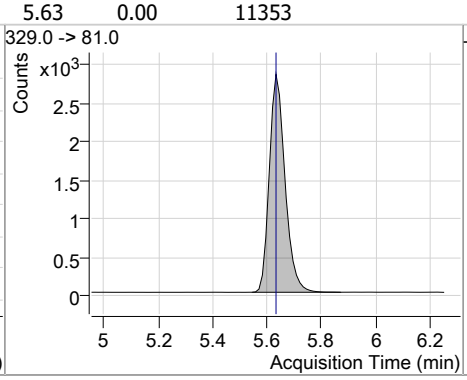


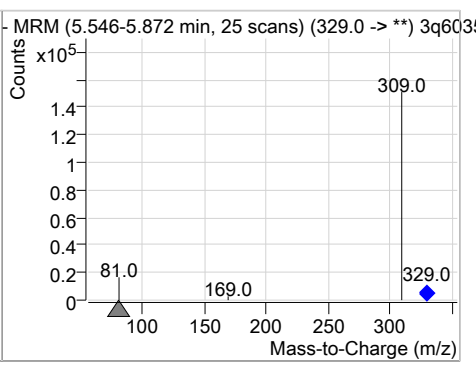




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.26	5.63	0.00	11353				

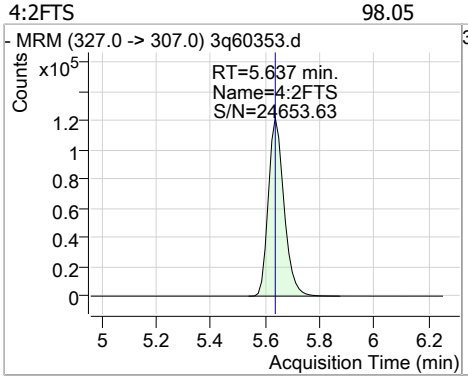


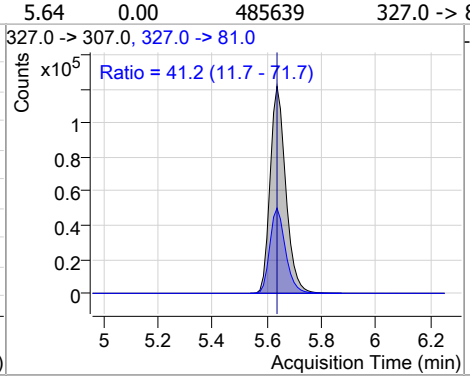


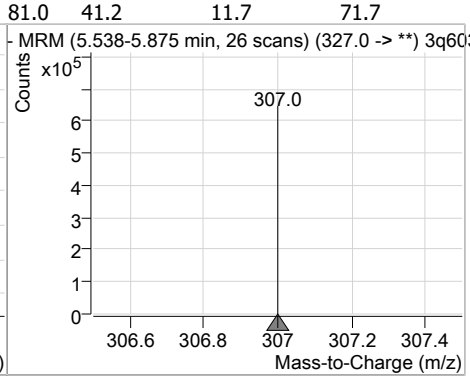


Perfluorinated Compounds by LC/MS/MS

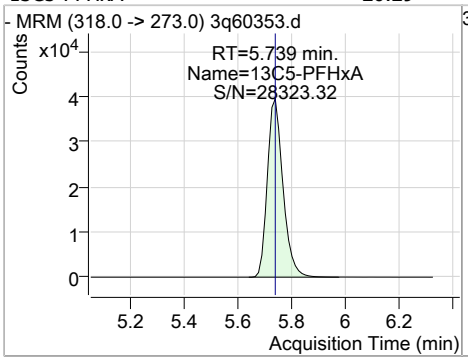
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	98.05	5.64	0.00	485639	327.0 -> 81.0	41.2	11.7	71.7

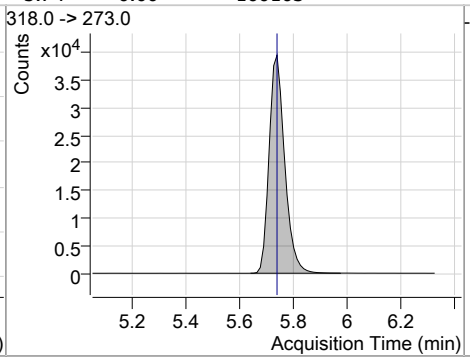


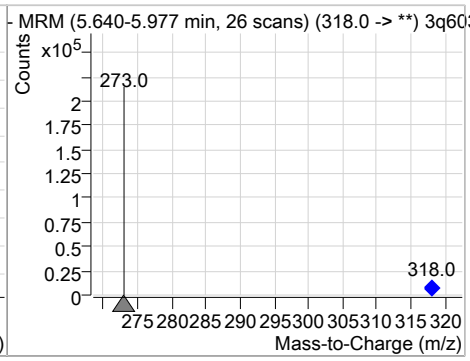




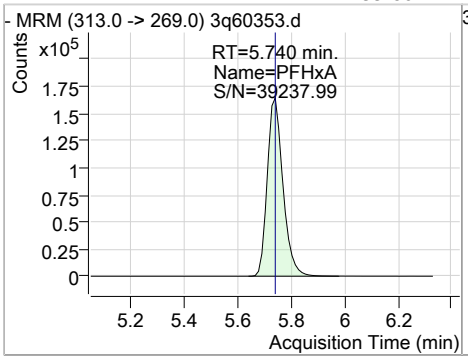
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.29	5.74	0.00	160163				

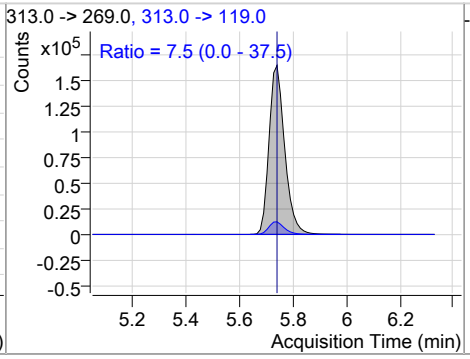


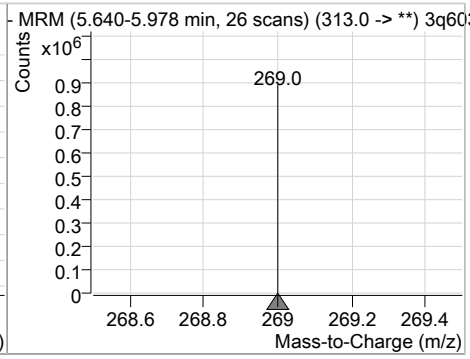




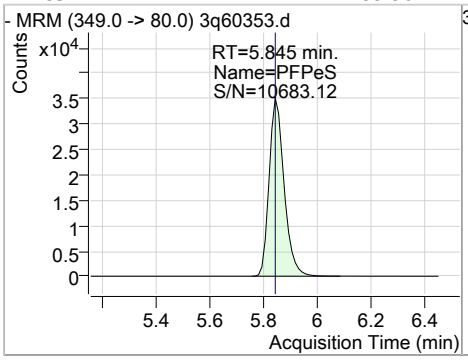
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.80	5.74	0.00	668112	313.0 -> 119.0	7.5	0.0	37.5

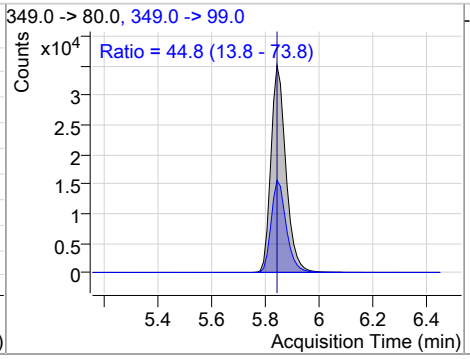


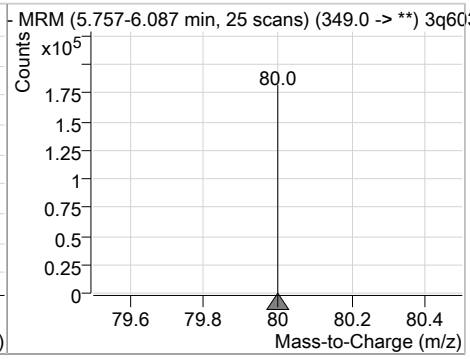




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.90	5.84	0.00	135824	349.0 -> 99.0	44.8	13.8	73.8

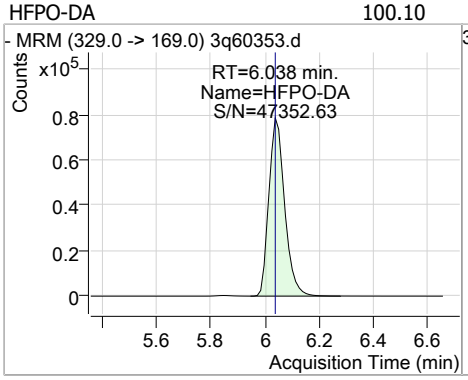


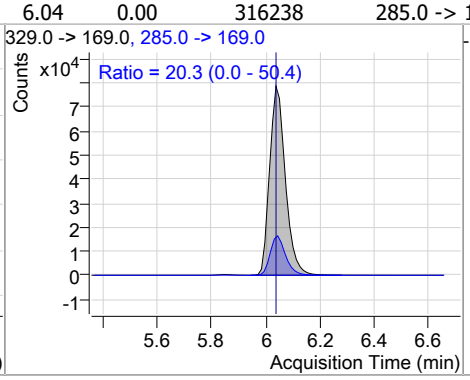


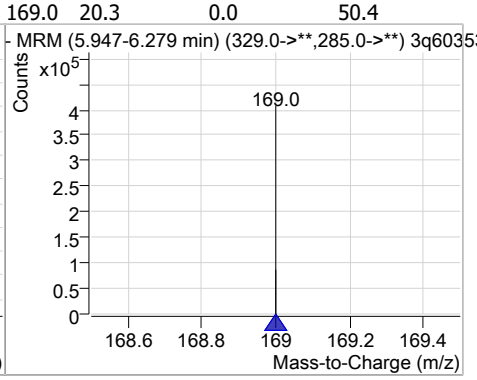


Perfluorinated Compounds by LC/MS/MS

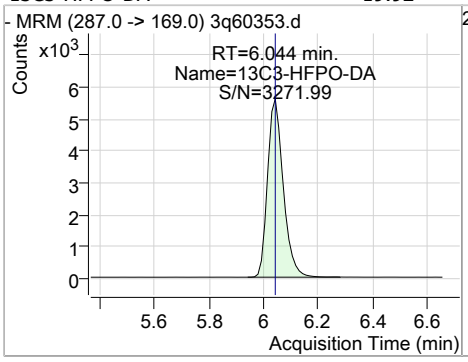
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	100.10	6.04	0.00	316238	285.0 -> 169.0	20.3	0.0	50.4

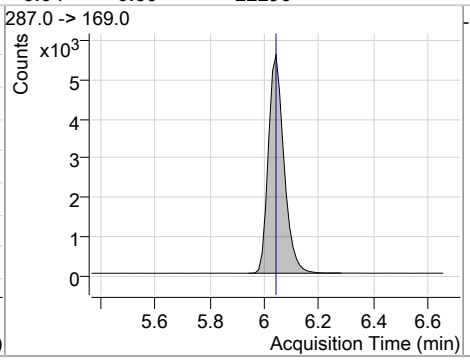


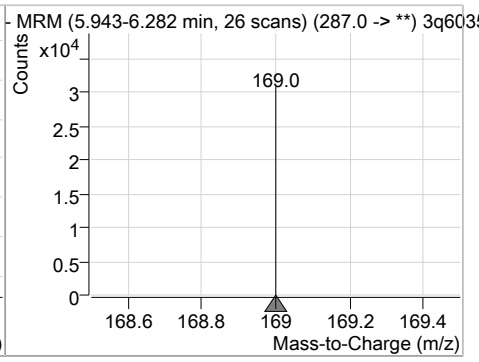




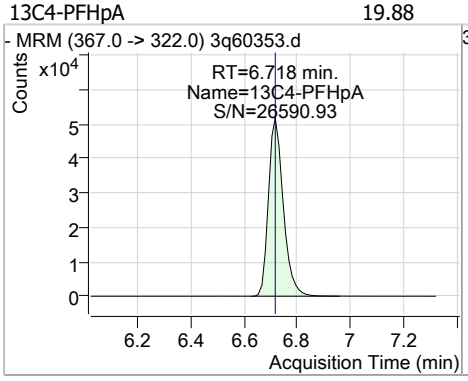
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.92	6.04	0.00	22290				

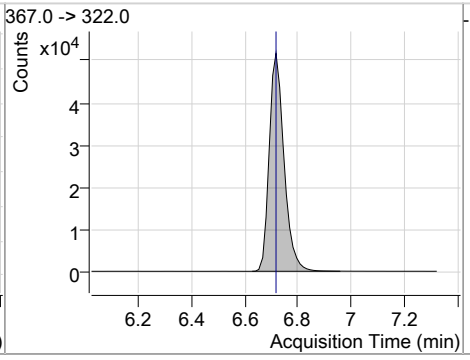


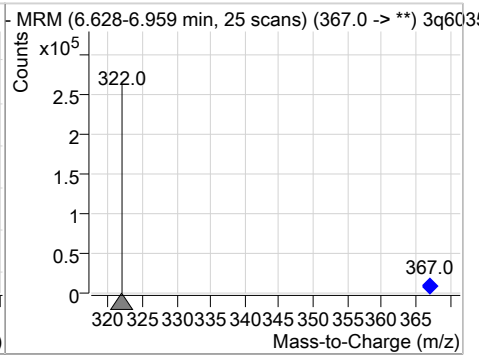




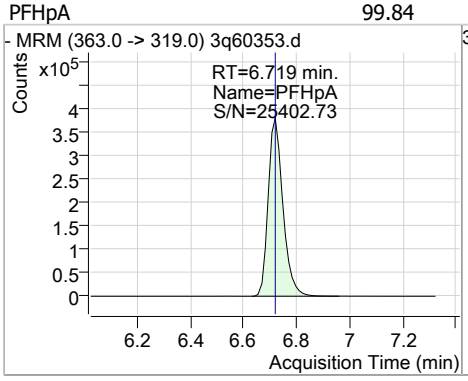
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.88	6.72	0.00	199826				

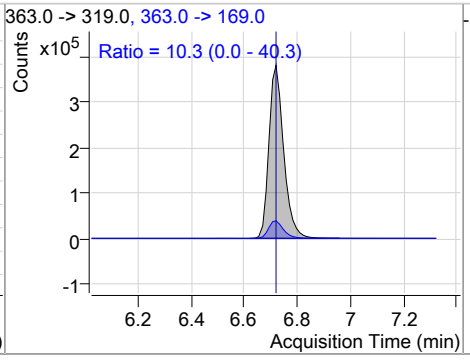


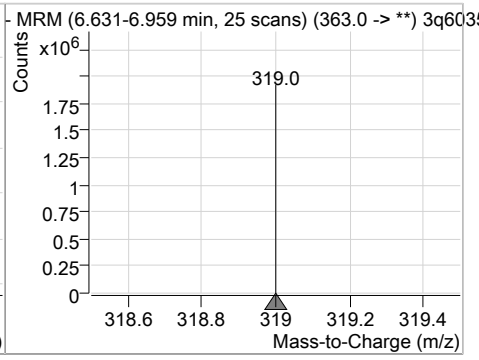




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.84	6.72	0.00	1463272	363.0 -> 169.0	10.3	0.0	40.3

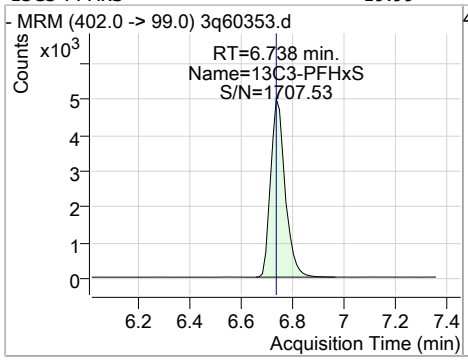


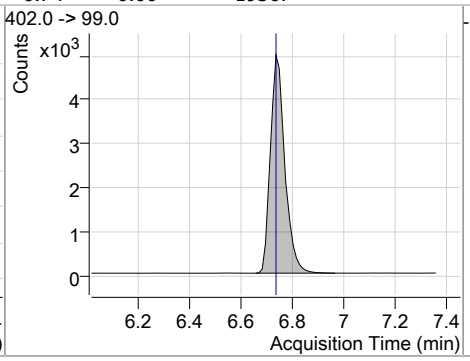


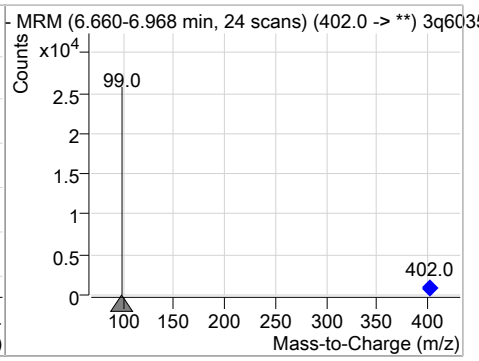


Perfluorinated Compounds by LC/MS/MS

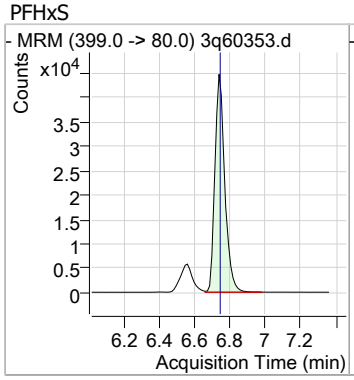
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.99	6.74	0.00	19367				

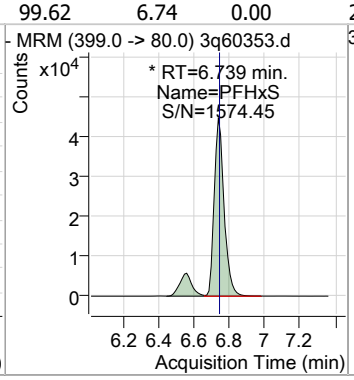


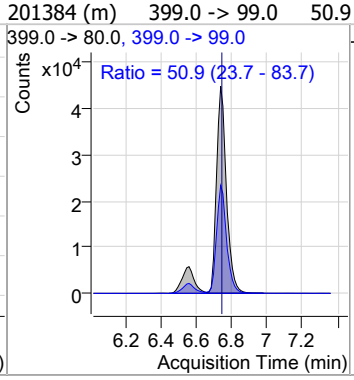


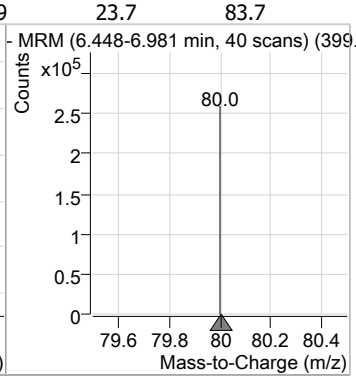


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	99.62	6.74	0.00	201384 (m)	399.0 -> 99.0	50.9	23.7	83.7

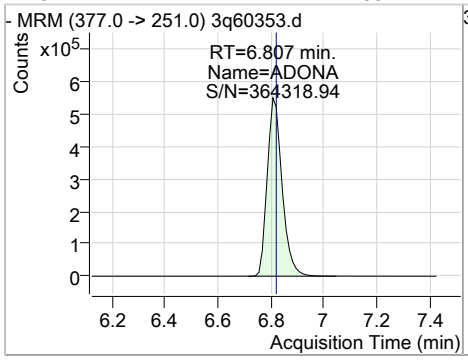


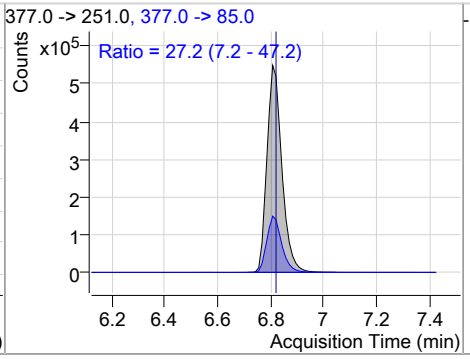


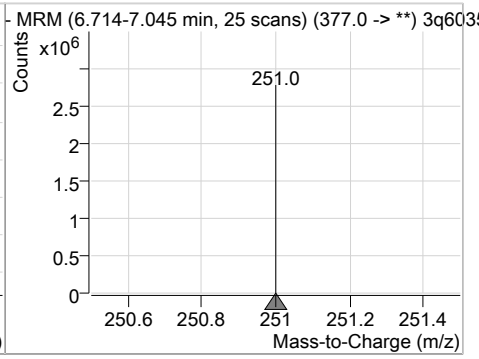




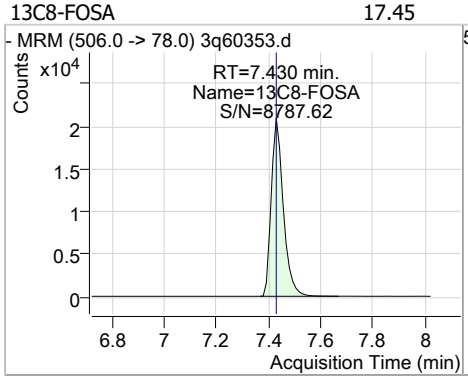
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	99.74	6.81	-0.01	2141314	377.0 -> 85.0	27.2	7.2	47.2

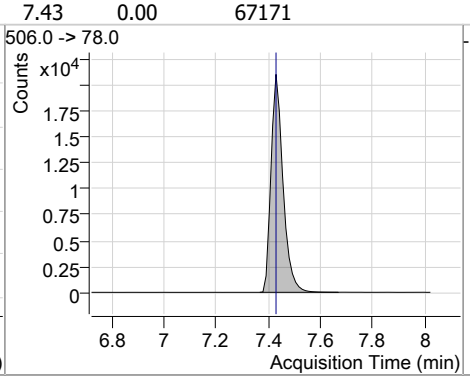


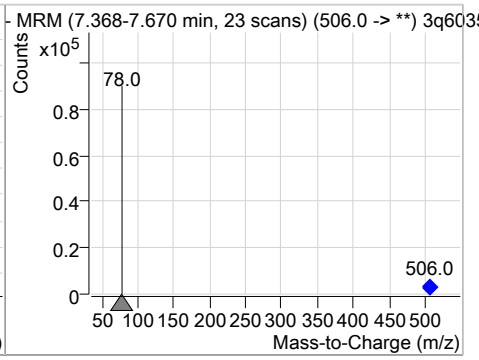




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.45	7.43	0.00	67171				

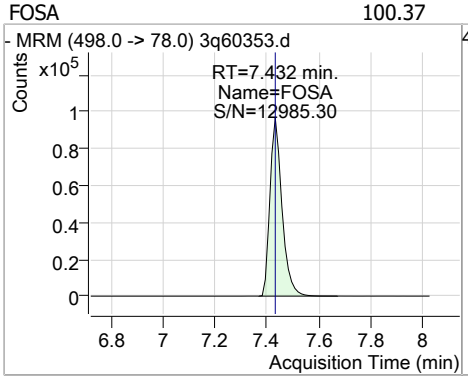


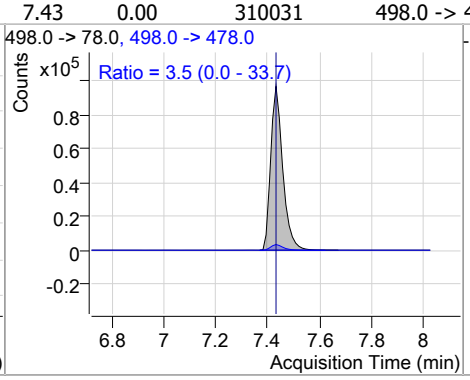


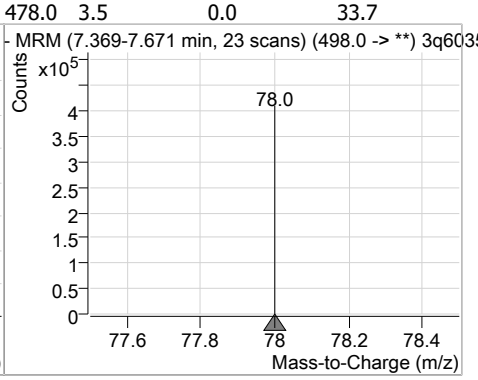


Perfluorinated Compounds by LC/MS/MS

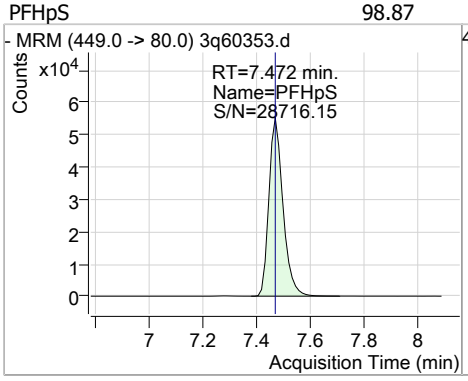
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.37	7.43	0.00	310031	498.0 -> 478.0	3.5	0.0	33.7

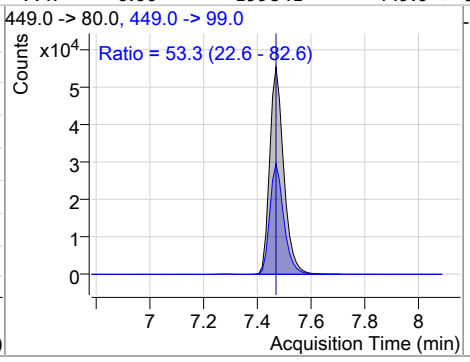


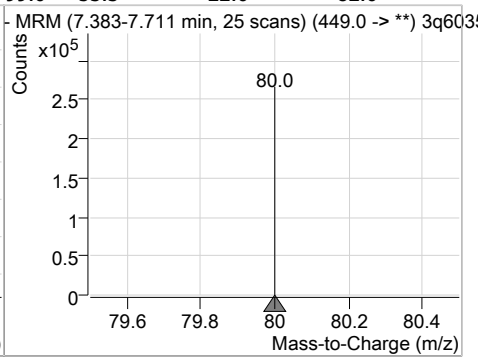




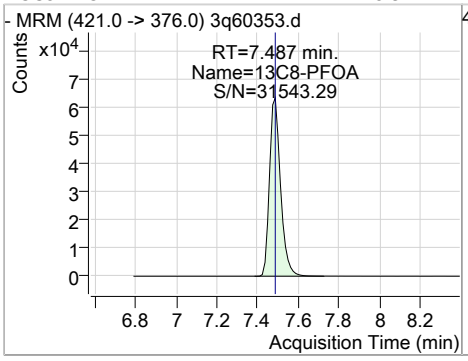
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	98.87	7.47	0.00	199841	449.0 -> 99.0	53.3	22.6	82.6

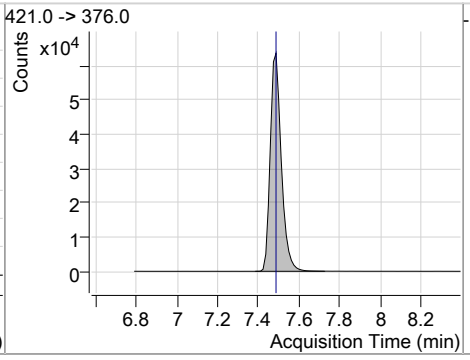


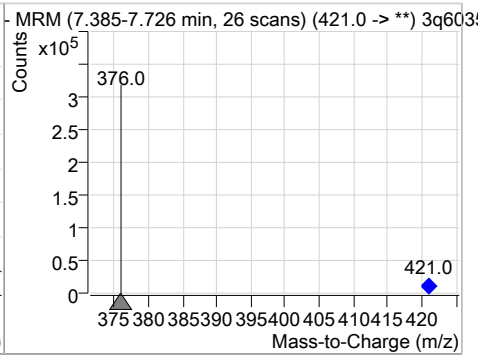




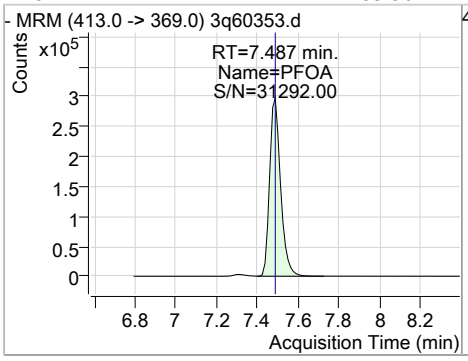
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.94	7.49	0.00	239354				

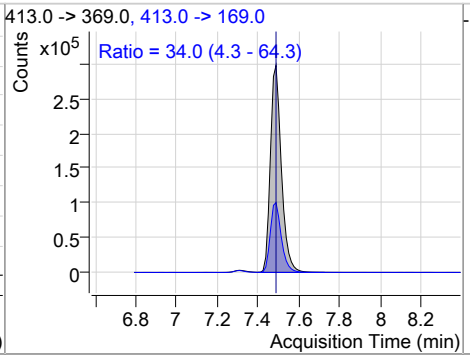


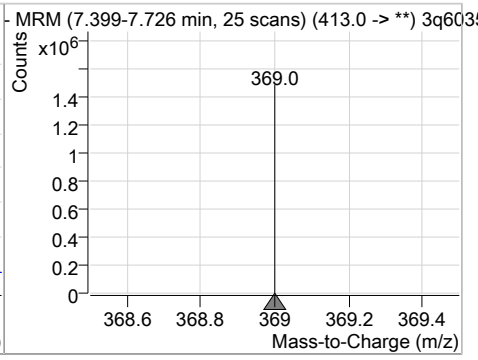




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	99.96	7.49	0.00	1113852	413.0 -> 169.0	34.0	4.3	64.3

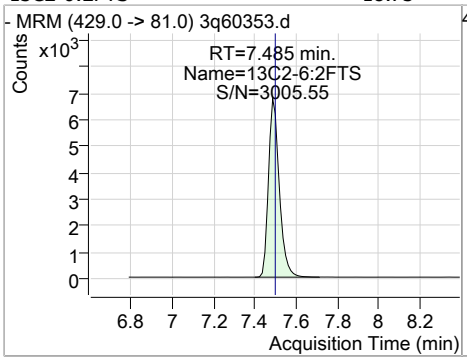


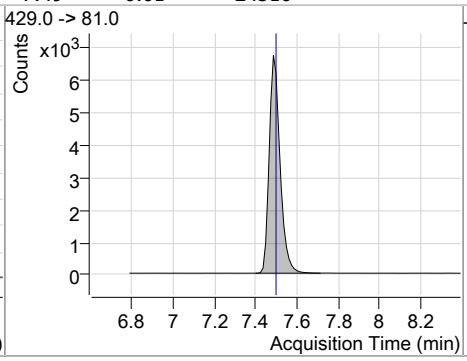


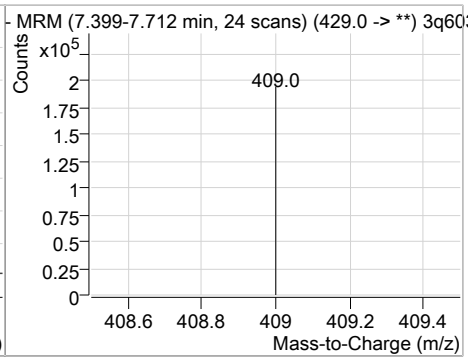


Perfluorinated Compounds by LC/MS/MS

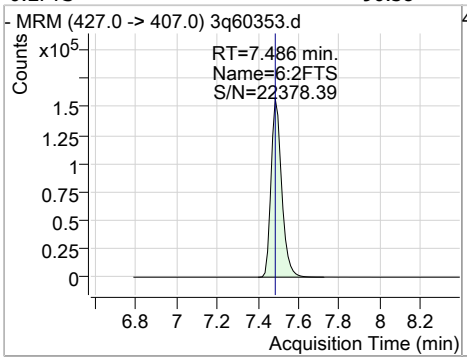
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.73	7.49	-0.01	24516				

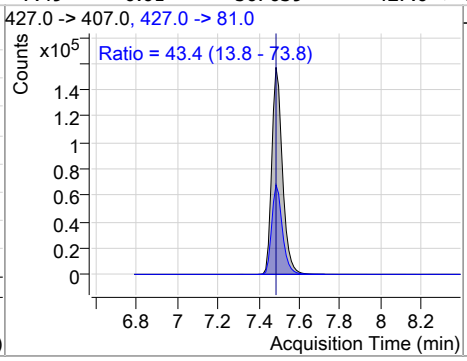


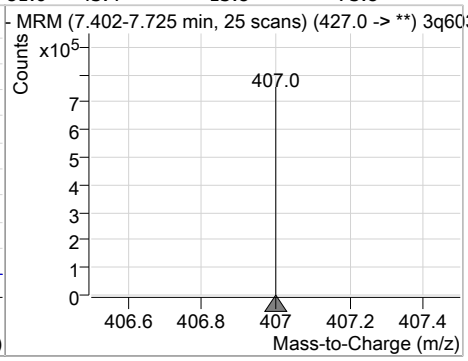




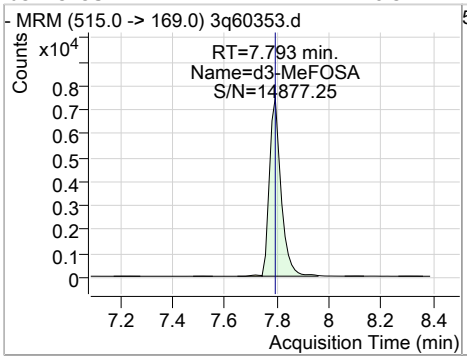
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	96.38	7.49	-0.01	567639	427.0 -> 81.0	43.4	13.8	73.8

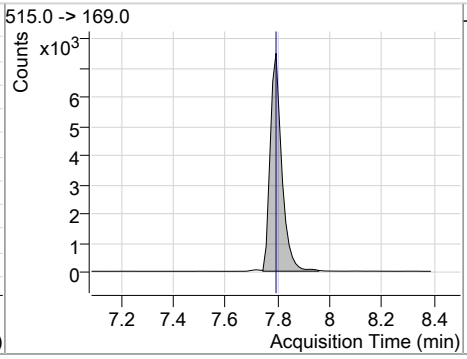


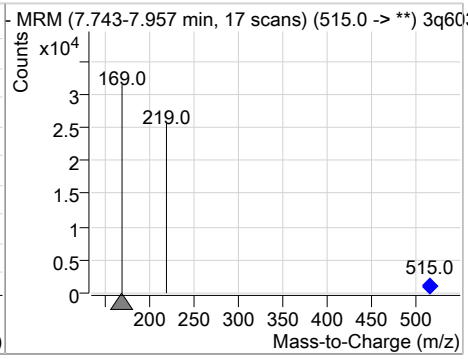




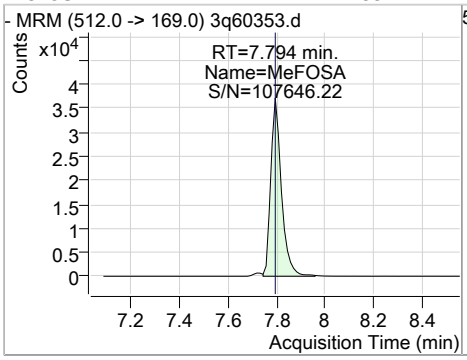
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.34	7.79	0.00	22915				

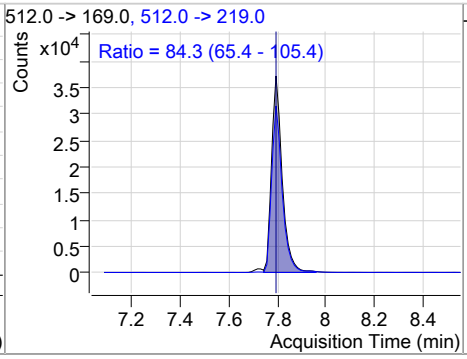


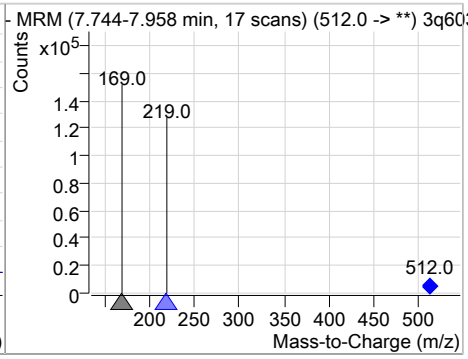




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	99.72	7.79	0.00	113274	512.0 -> 219.0	84.3	65.4	105.4

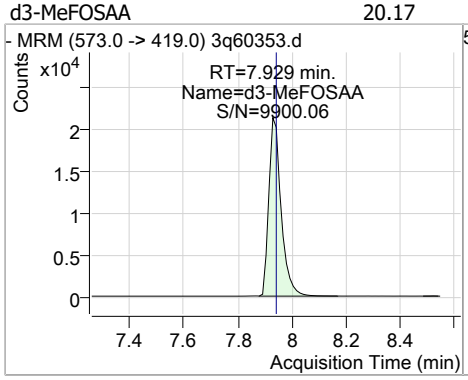


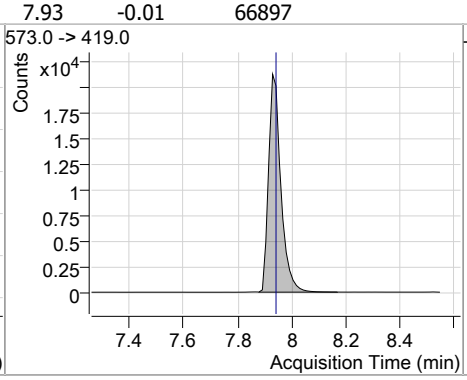


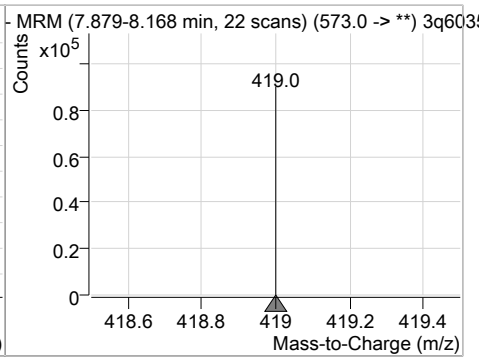


Perfluorinated Compounds by LC/MS/MS

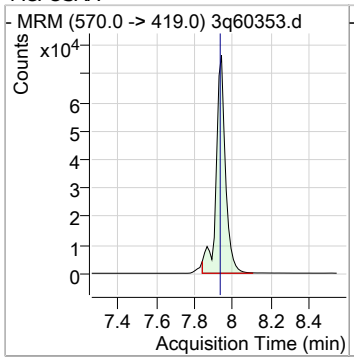
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.17	7.93	-0.01	66897				

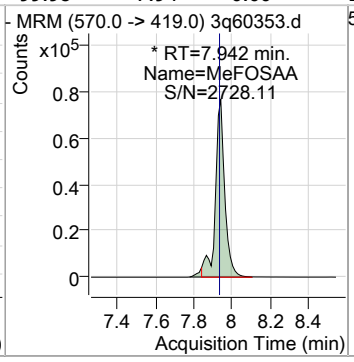


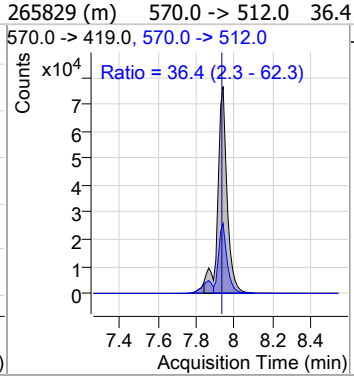


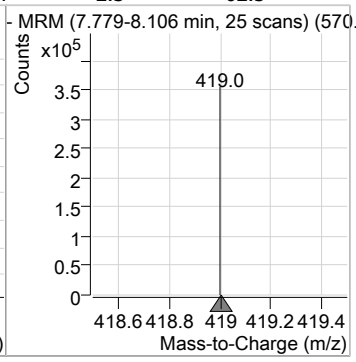


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.98	7.94	0.00	265829 (m)	570.0 -> 512.0	36.4	2.3	62.3

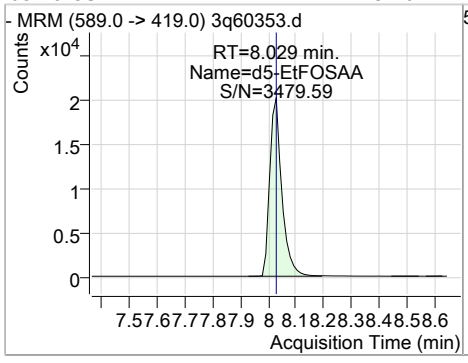


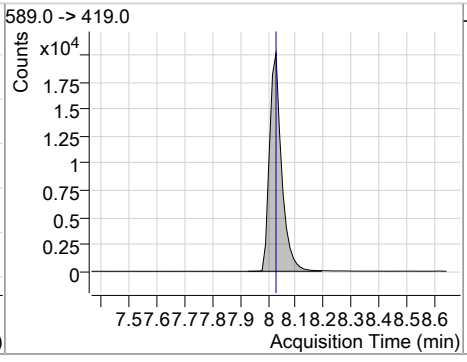


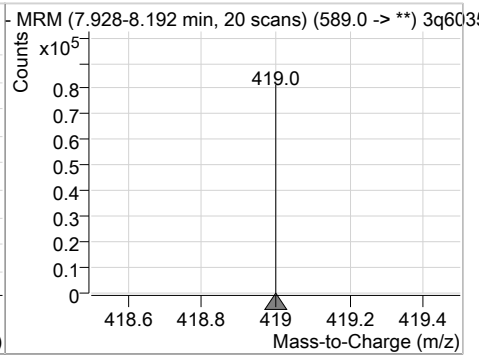




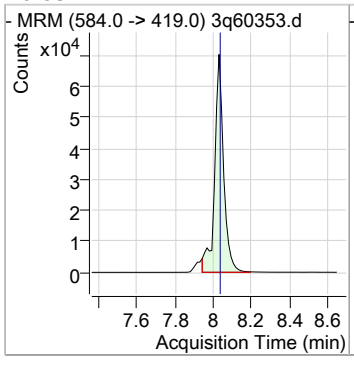
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.26	8.03	0.00	60692				

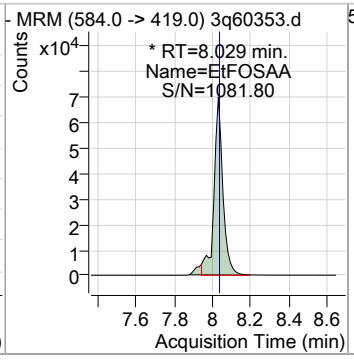


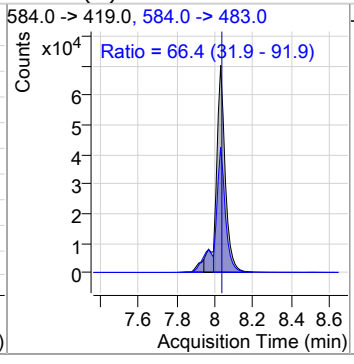


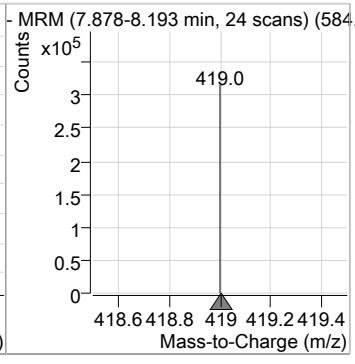


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.72	8.03	0.00	235281 (m)	584.0 -> 483.0	66.4	31.9	91.9



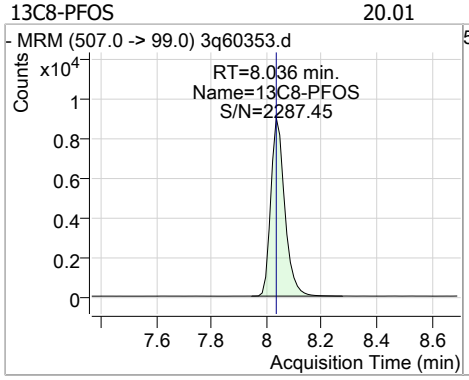


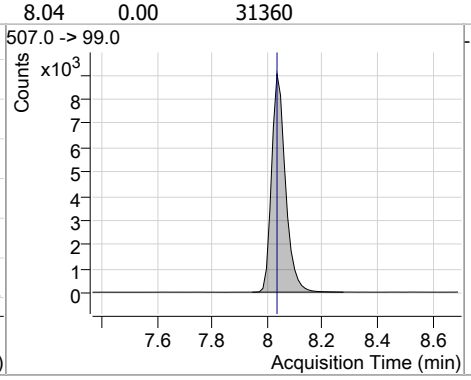


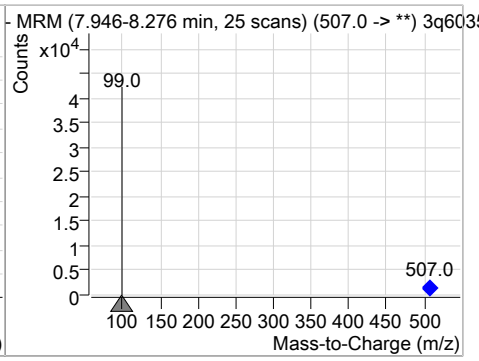


Perfluorinated Compounds by LC/MS/MS

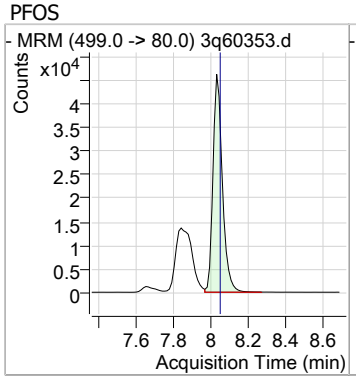
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.01	8.04	0.00	31360				

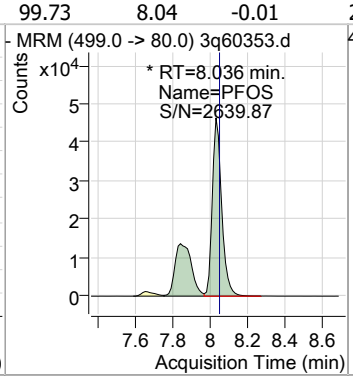


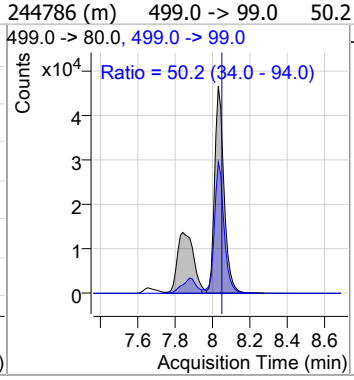


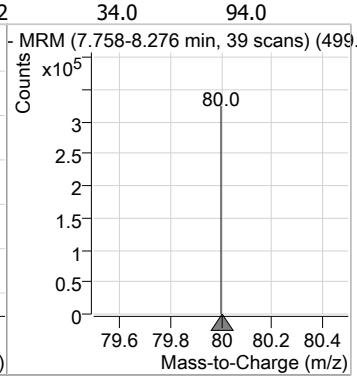


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	99.73	8.04	-0.01	244786 (m)	499.0 -> 99.0	50.2	34.0	94.0

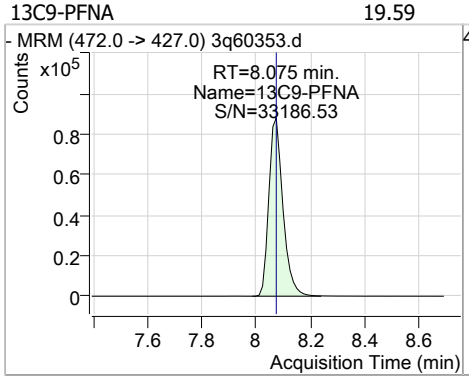


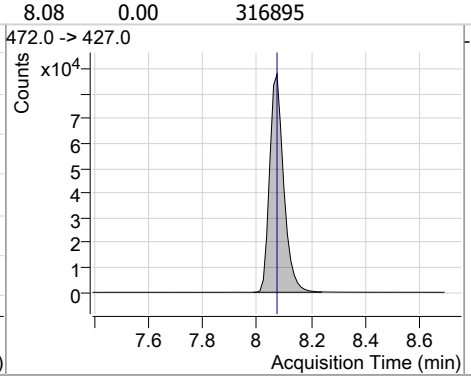


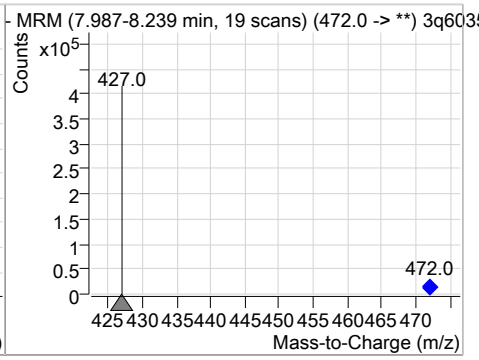




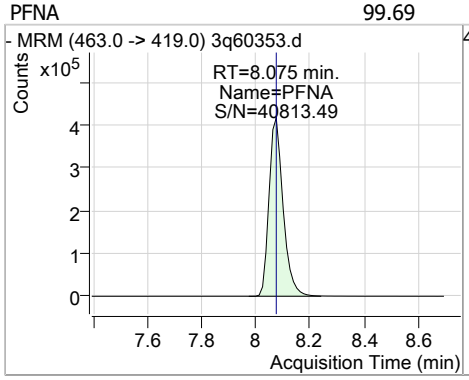
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.59	8.08	0.00	316895				

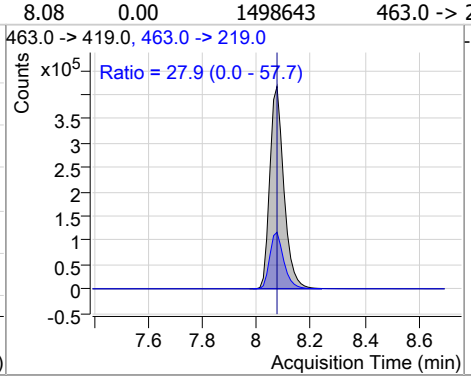


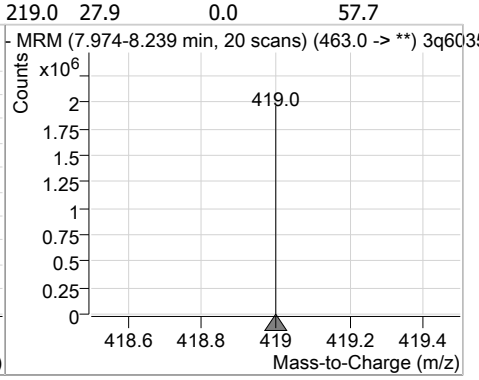




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	99.69	8.08	0.00	1498643	463.0 -> 219.0	27.9	0.0	57.7

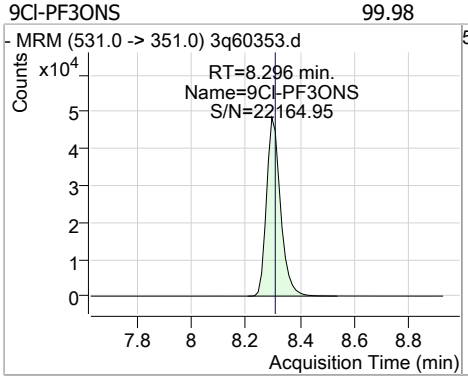


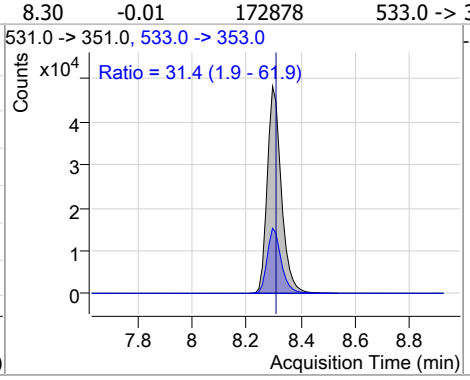


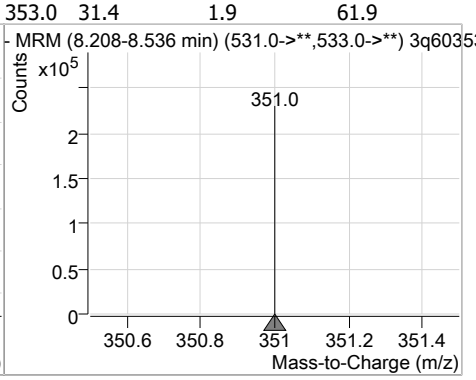


Perfluorinated Compounds by LC/MS/MS

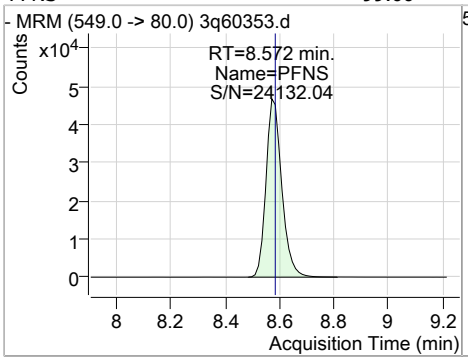
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	99.98	8.30	-0.01	172878	533.0 -> 353.0	31.4	1.9	61.9

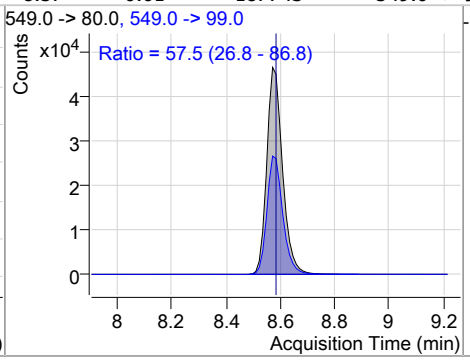


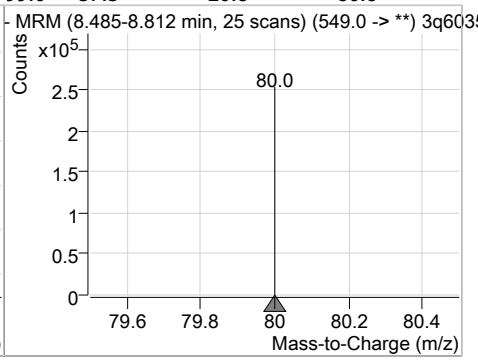




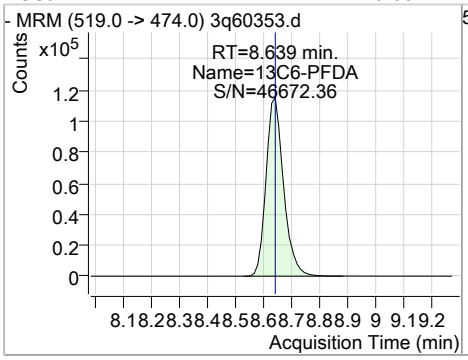
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.66	8.57	-0.01	187743	549.0 -> 99.0	57.5	26.8	86.8

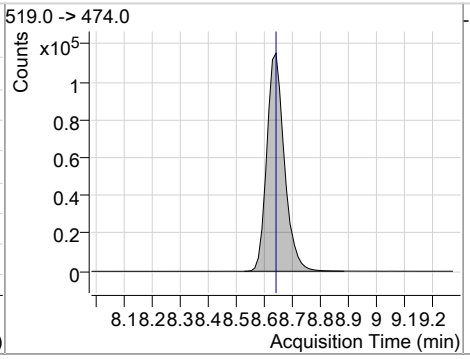


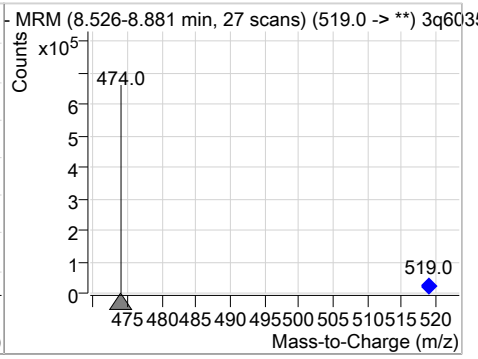




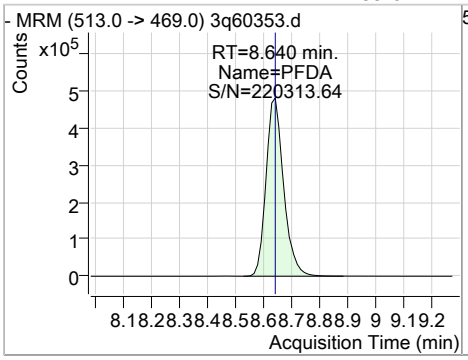
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.00	8.64	0.00	499241				

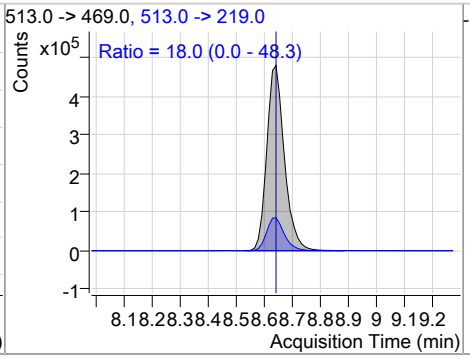


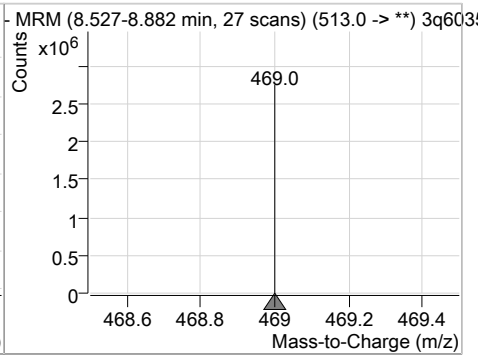




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	99.81	8.64	0.00	2081291	513.0 -> 219.0	18.0	0.0	48.3

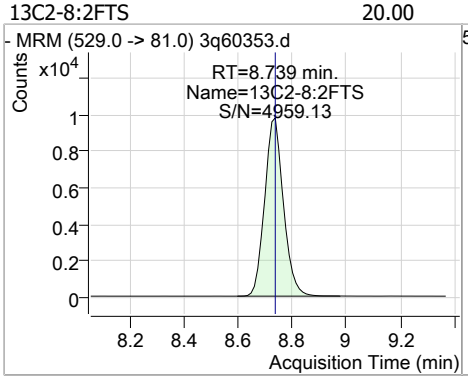


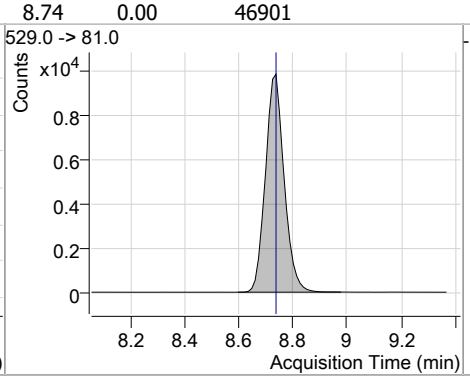


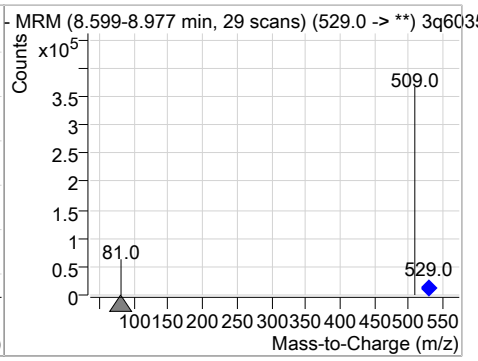


Perfluorinated Compounds by LC/MS/MS

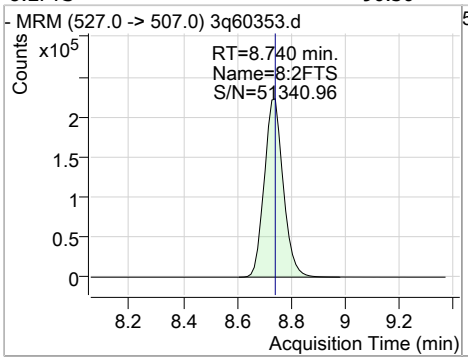
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.00	8.74	0.00	46901				

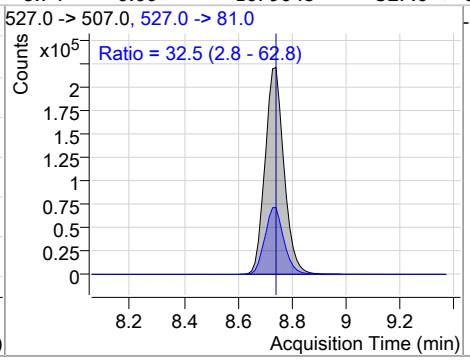


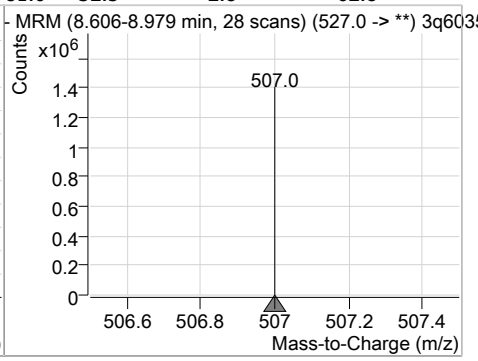




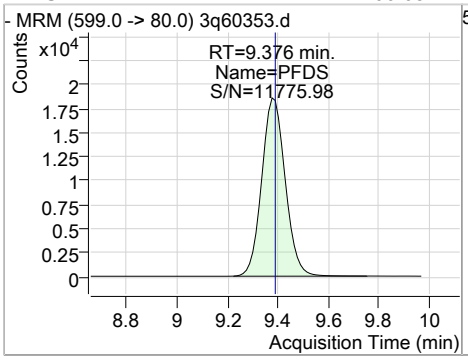
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	96.36	8.74	0.00	1079048	527.0 -> 81.0	32.5	2.8	62.8

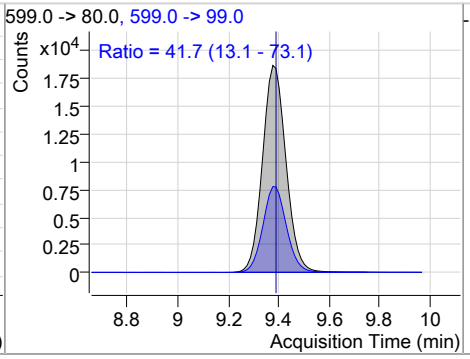


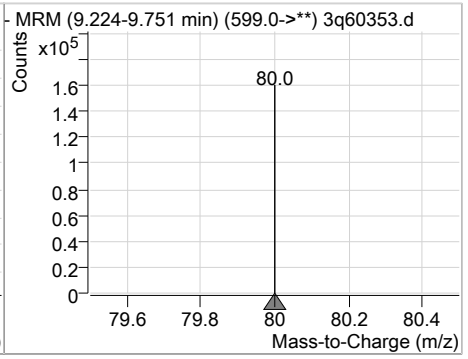




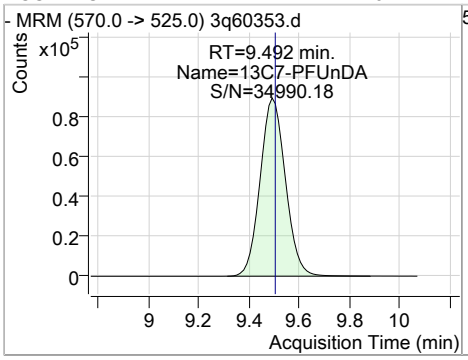
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.08	9.38	-0.03	119946	599.0 -> 99.0	41.7	13.1	73.1

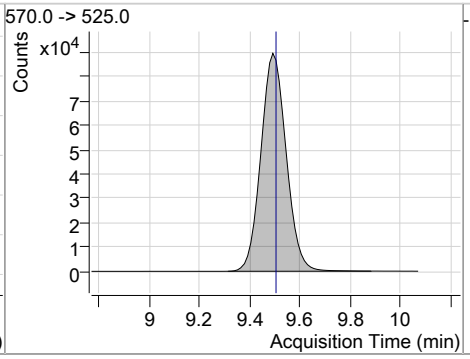


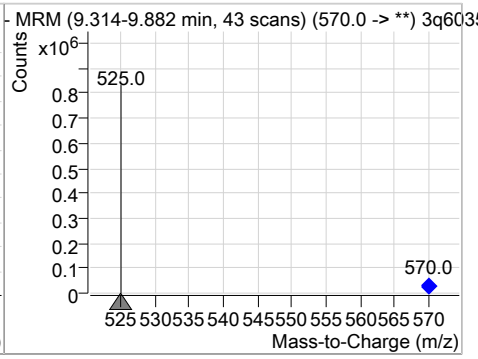




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.21	9.49	-0.01	623145				

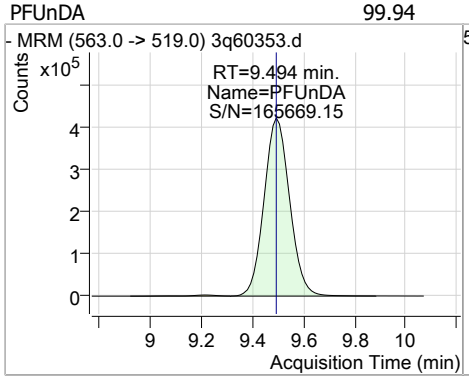


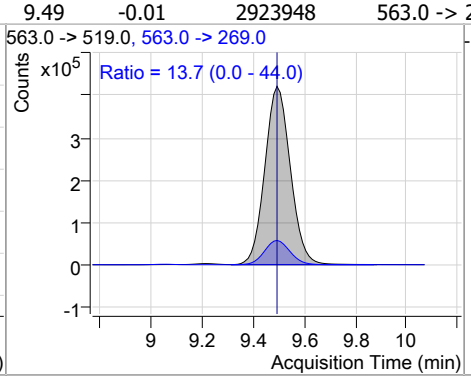


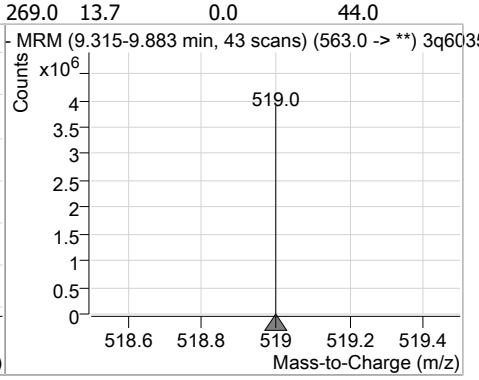


Perfluorinated Compounds by LC/MS/MS

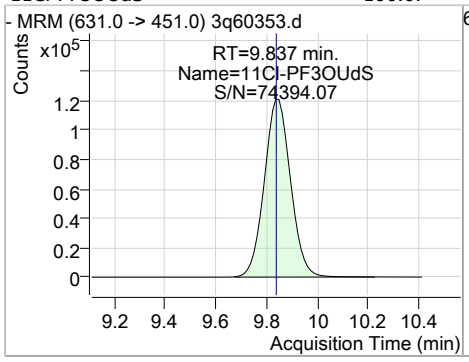
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.94	9.49	-0.01	2923948	563.0 -> 269.0	13.7	0.0	44.0

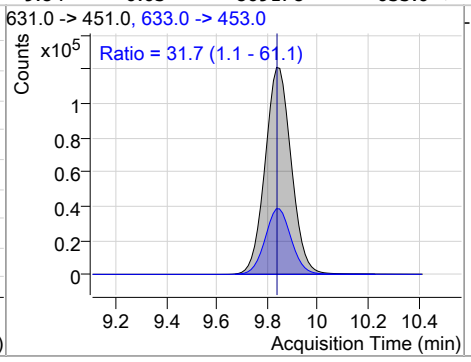


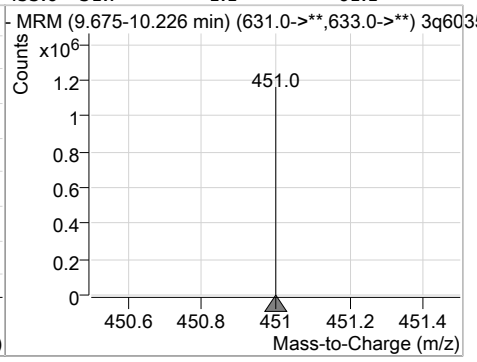




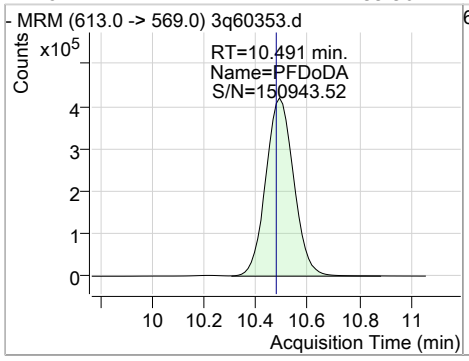
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.07	9.84	-0.03	869178	633.0 -> 453.0	31.7	1.1	61.1

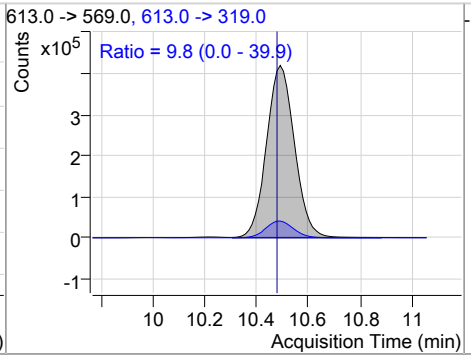


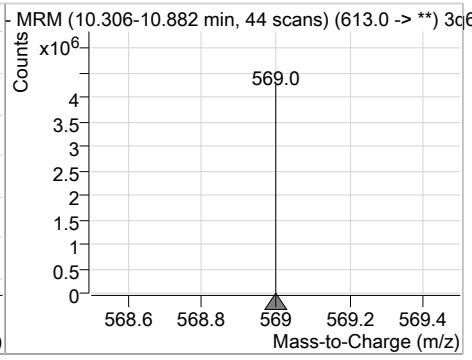




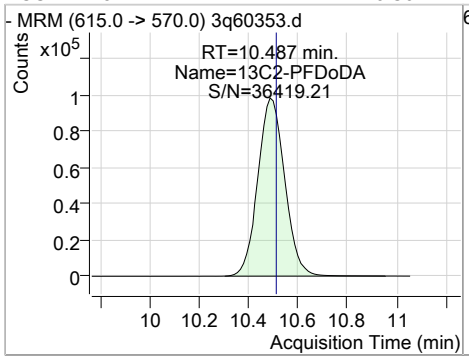
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.90	10.49	-0.01	3162181	613.0 -> 319.0	9.8	0.0	39.9

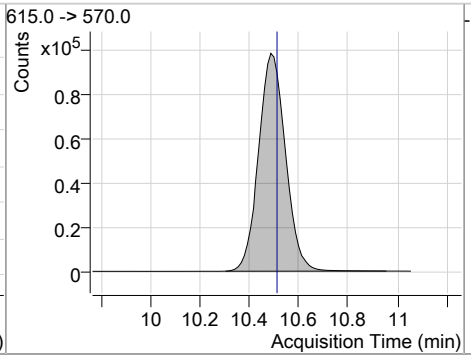


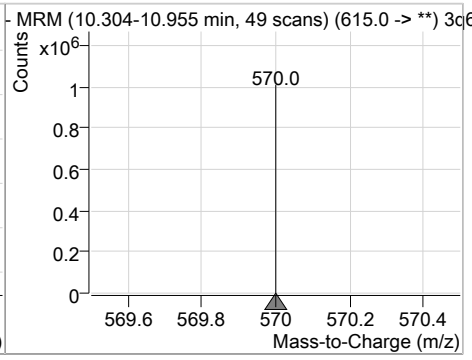




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.30	10.49	-0.03	744260				

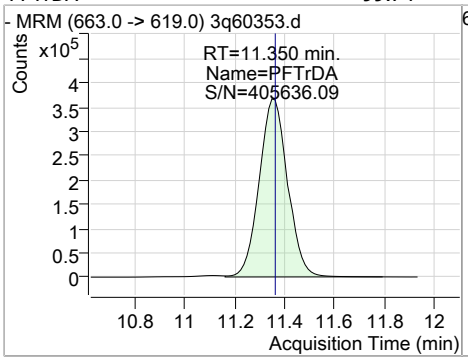


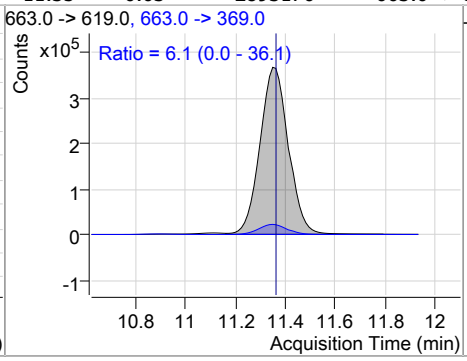


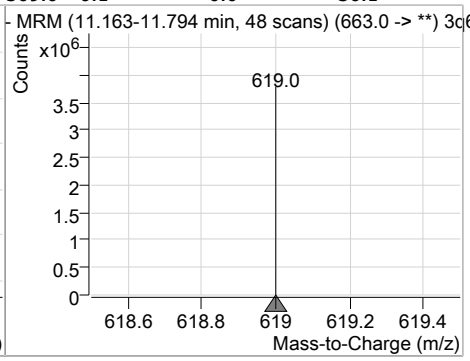


Perfluorinated Compounds by LC/MS/MS

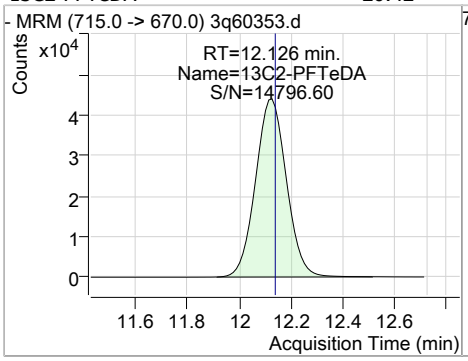
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	99.74	11.35	-0.03	2893176	663.0 -> 369.0	6.1	0.0	36.1

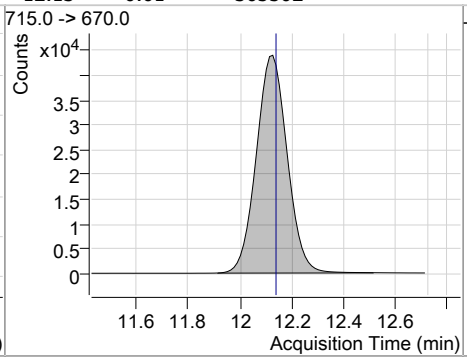


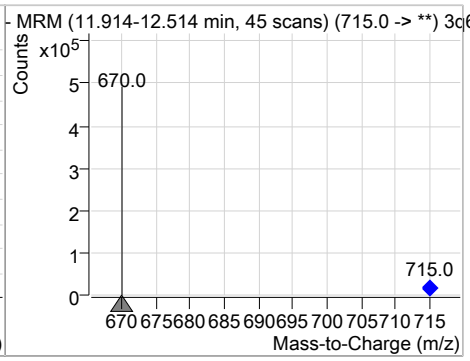




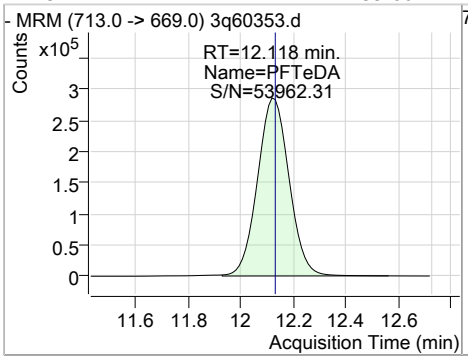
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.42	12.13	-0.01	365502				

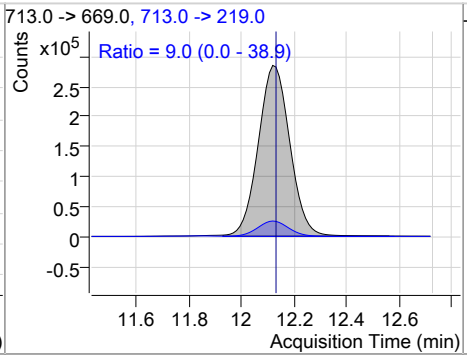


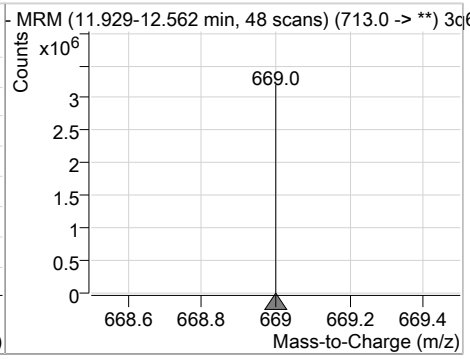




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.80	12.12	-0.03	2380444	713.0 -> 219.0	9.0	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-IC824
Lab FileID: 3Q60353.D
Injection Time: 05/27/22 16:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:52 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:56

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60355.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 5:10:47 PM
Sample Name : icv824-20
Vial : P1-B1
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

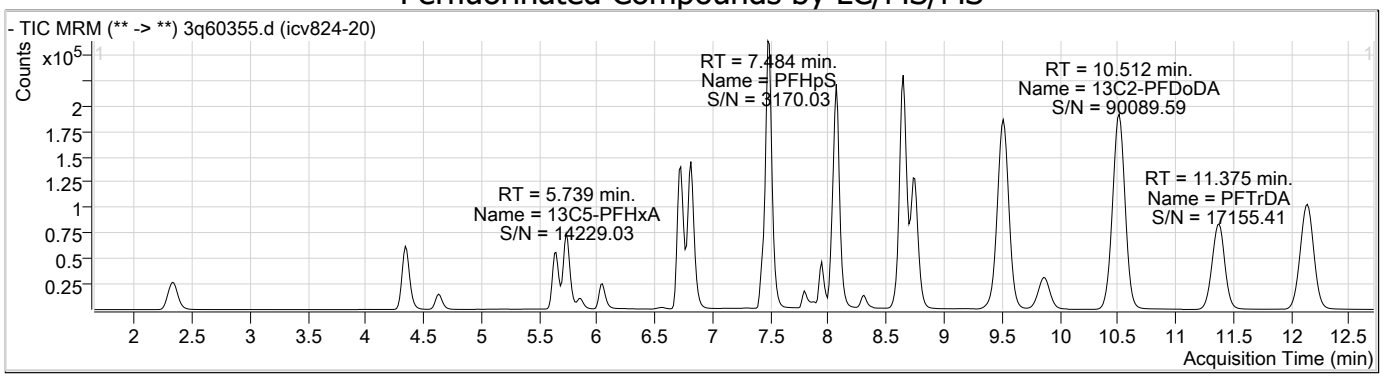
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	113871	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	109731	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	150170	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	190639	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	239241	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	305112	20.00 µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	474974	20.00 µg/L	0.013
M7-PFUnDA	9.517	570.0 -> 525.0	582592	20.00 µg/L	0.013
M2-PFDoDA	10.512	615.0 -> 570.0	693793	20.00 µg/L	0.000
M2-PFTeDA	12.139	715.0 -> 670.0	339396	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	72956	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	14868	20.00 µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	18448	20.00 µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	29425	20.00 µg/L	0.013
M2-4:2FTS	5.646	329.0 -> 81.0	10704	20.00 µg/L	0.013
M2-6:2FTS	7.498	429.0 -> 81.0	25032	20.00 µg/L	0.000
M2-8:2FTS	8.751	529.0 -> 81.0	44681	20.00 µg/L	0.013
M3-MeFOSAA	7.942	573.0 -> 419.0	62881	20.00 µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	20505	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	24593	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	59239	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.646	329.0 -> 81.0	10704	19.10 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C2-6:2FTS	7.498	429.0 -> 81.0	25032	19.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C2-8:2FTS	8.751	529.0 -> 81.0	44681	19.05 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C2-PFDoDA	10.512	615.0 -> 570.0	693793	18.93 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C2-PFTeDA	12.139	715.0 -> 670.0	339396	18.96 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C3-PFBS	4.629	302.0 -> 99.0	14868	18.84 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C3-PFHxS	6.751	402.0 -> 99.0	18448	19.04 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C4-PFBA	2.327	217.0 -> 172.0	113871	18.84 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%	
13C4-PFHpA	6.718	367.0 -> 322.0	190639	18.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%	
13C5-PFHxA	5.739	318.0 -> 273.0	150170	19.03 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%	
13C5-PFPeA	4.349	268.0 -> 223.0	109731	18.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C6-PFDA	8.652	519.0 -> 474.0	474974	19.03 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

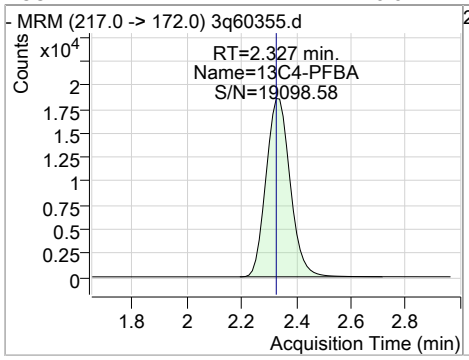
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C7-PFUnDA	9.517	570.0 -> 525.0	582592	18.89	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-FOSA	7.430	506.0 -> 78.0	72956	18.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C8-PFOA	7.487	421.0 -> 376.0	239241	18.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C8-PFOS	8.048	507.0 -> 99.0	29425	18.78	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
13C9-PFNA	8.075	472.0 -> 427.0	305112	18.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
d3-MeFOSAA	7.942	573.0 -> 419.0	62881	18.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	20509	18.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%			
d3-MeFOSA	7.793	515.0 -> 169.0	24593	19.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
d5-EtFOSAA	8.029	589.0 -> 419.0	59217	18.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
Target Compounds							**QValue**
4:2FTS	5.637	327.0 -> 307.0	92523	19.81	µg/L		99
6:2FTS	7.499	427.0 -> 407.0	118831	19.76	µg/L		100
8:2FTS	8.753	527.0 -> 507.0	223142	20.92	µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	51432	22.32	µg/L	m	93
FOSA	7.432	498.0 -> 78.0	74645	22.25	µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	55500	22.21	µg/L	m	95
PFBA	2.333	213.0 -> 169.0	48904	22.03	µg/L		100
PFBS	4.632	299.0 -> 80.0	34846	18.53	µg/L		100
PFDA	8.652	513.0 -> 469.0	427376	21.54	µg/L		100
PFDoDA	10.516	613.0 -> 569.0	683758	23.17	µg/L		100
PFDS	9.401	599.0 -> 80.0	23742	21.19	µg/L		98
PFHpA	6.719	363.0 -> 319.0	299122	21.39	µg/L		100
PFHpS	7.484	449.0 -> 80.0	41294	21.77	µg/L		99
PFHxA	5.740	313.0 -> 269.0	128631	20.49	µg/L		100
PFHxS	6.752	399.0 -> 80.0	36315	18.86	µg/L	m	98
PFNA	8.075	463.0 -> 419.0	300345	20.75	µg/L		100
PFNS	8.584	549.0 -> 80.0	37540	21.24	µg/L		99
PFOA	7.487	413.0 -> 369.0	251292	22.56	µg/L		100
PFOS	8.049	499.0 -> 80.0	50899	22.10	µg/L	m	85
PFPeA	4.352	263.0 -> 219.0	174605	21.58	µg/L		100
PFPeS	5.857	349.0 -> 80.0	26083	20.76	µg/L		98
PFTeDA	12.143	713.0 -> 669.0	471006	21.27	µg/L		100
PFTrDA	11.375	663.0 -> 619.0	628369	23.33	µg/L		100
PFUnDA	9.519	563.0 -> 519.0	609804	22.29	µg/L		100
11Cl-PF3OUdS	9.862	631.0 -> 451.0	167663	20.71	µg/L		100
9Cl-PF3ONS	8.309	531.0 -> 351.0	33019	20.07	µg/L		97
ADONA	6.819	377.0 -> 251.0	415359	20.31	µg/L		99
HFPO-DA	6.051	329.0 -> 169.0	64479	22.18	µg/L		100
MeFOSA	7.794	512.0 -> 169.0	0	0.00	µg/L	m	1

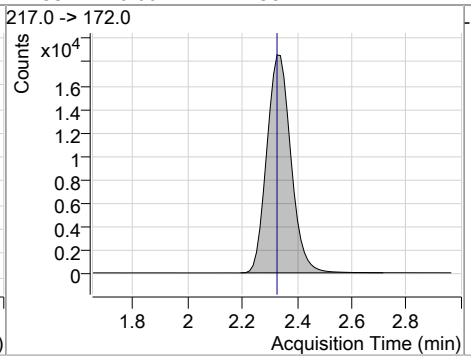
 # = Qualifier out of range, m = manually integrated, + = Area summed

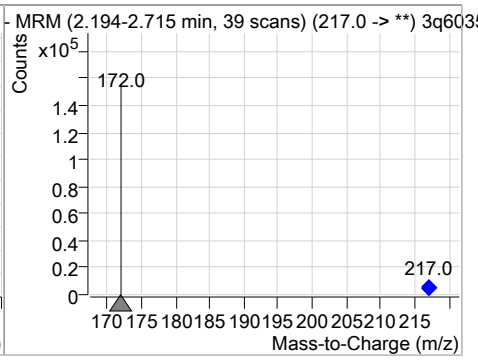
Perfluorinated Compounds by LC/MS/MS



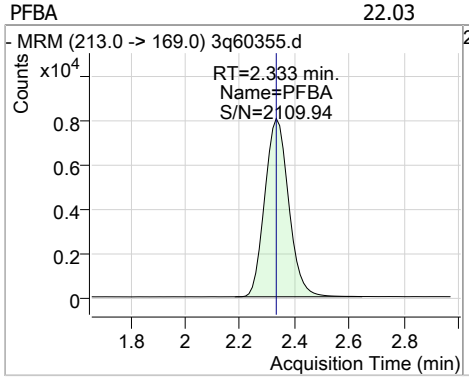
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.84	2.33	0.00	113871				

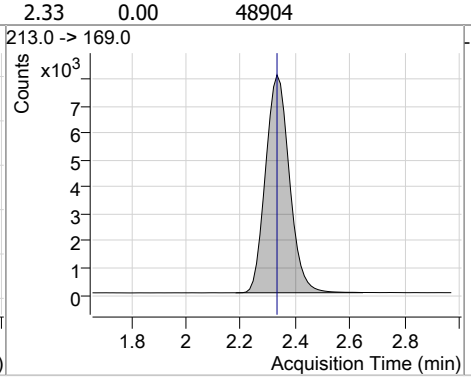


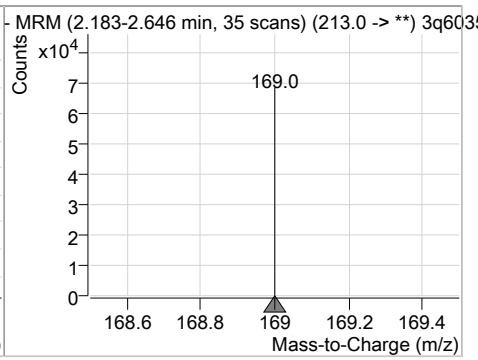




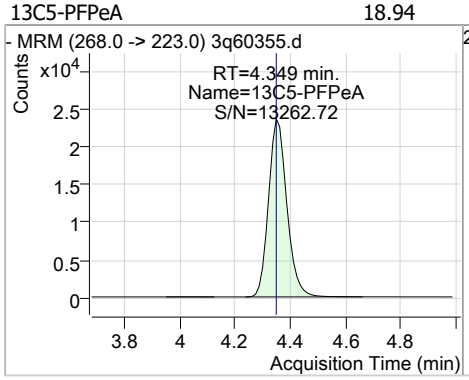
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	22.03	2.33	0.00	48904				

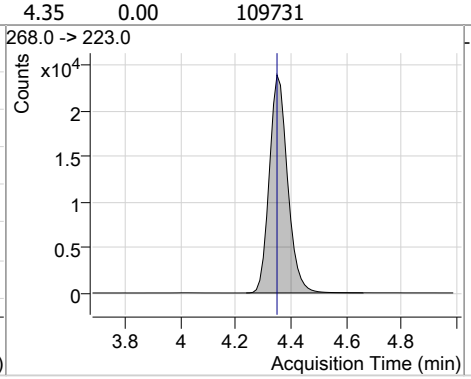


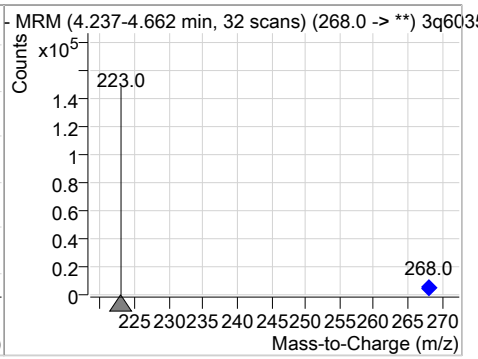




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.94	4.35	0.00	109731				

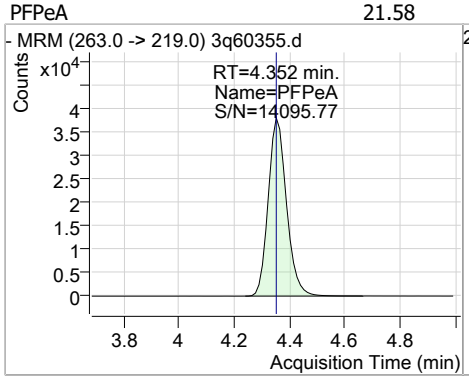


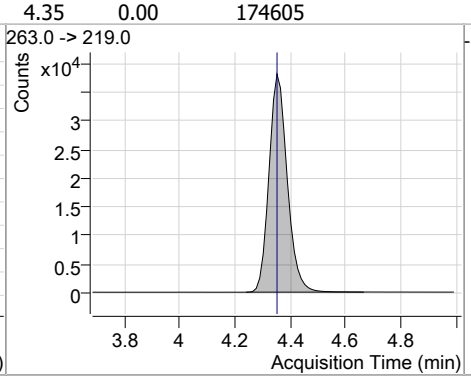


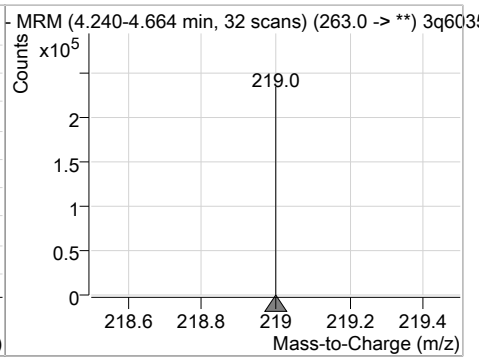


Perfluorinated Compounds by LC/MS/MS

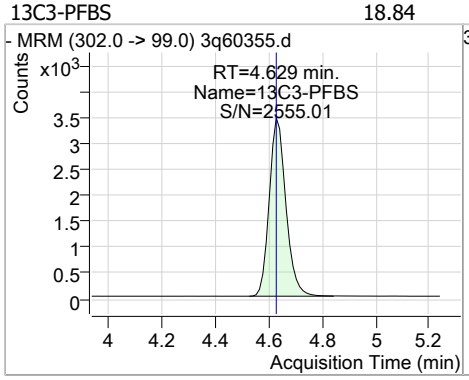
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.58	4.35	0.00	174605				

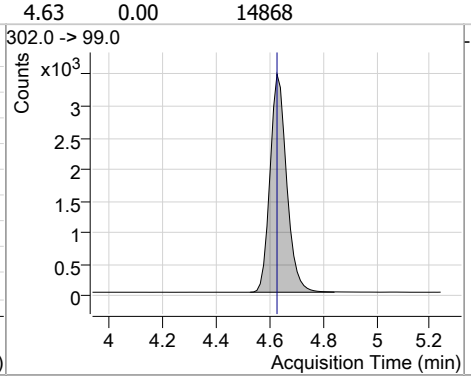


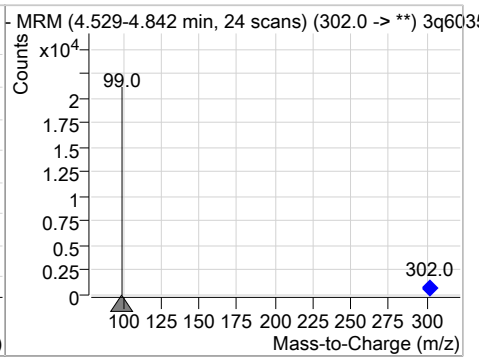




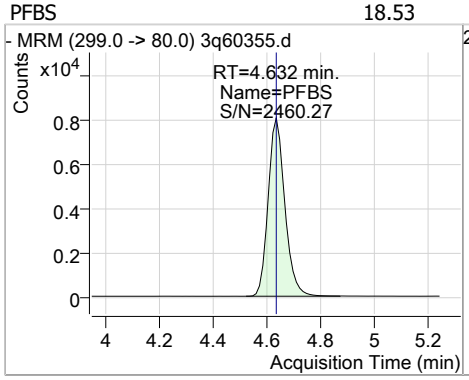
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.84	4.63	0.00	14868				

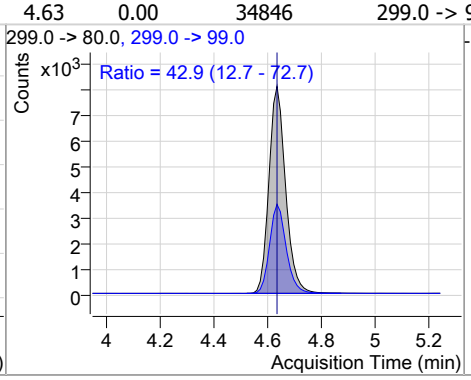


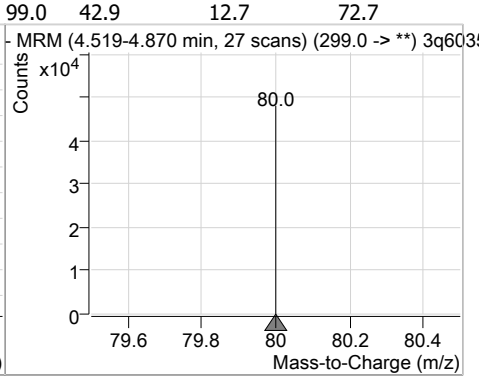




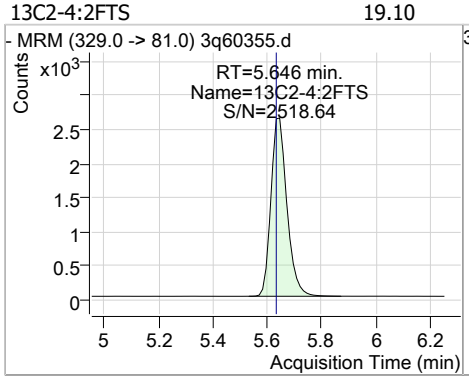
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.53	4.63	0.00	34846	299.0 -> 99.0	42.9	12.7	72.7

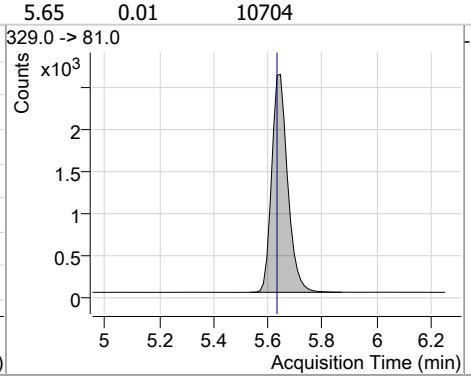


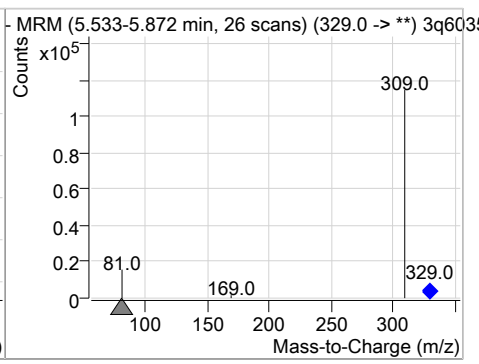




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.10	5.65	0.01	10704				

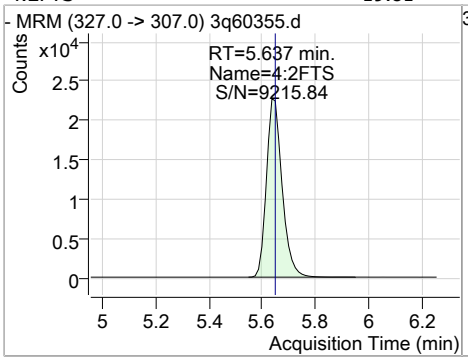


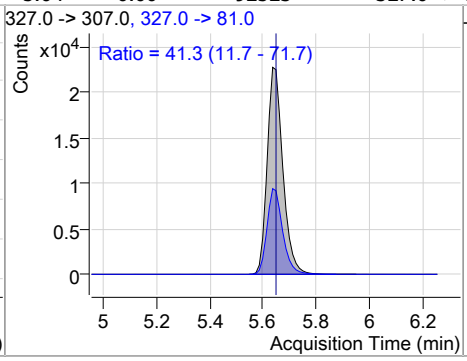


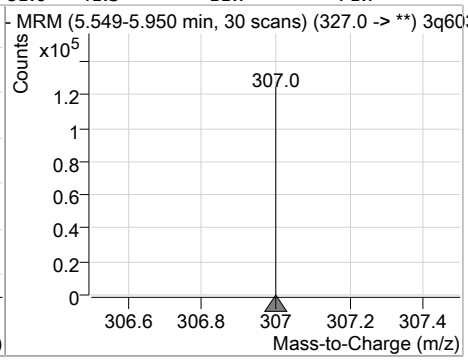


Perfluorinated Compounds by LC/MS/MS

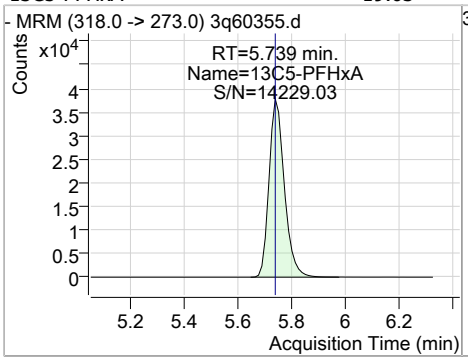
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.81	5.64	0.00	92523	327.0 -> 81.0	41.3	11.7	71.7

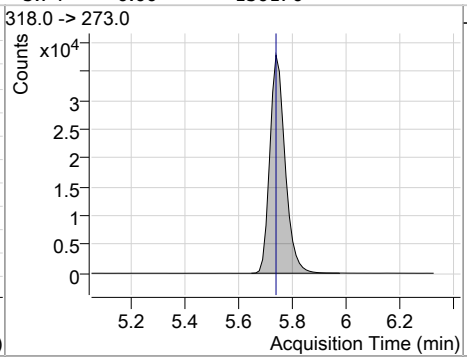


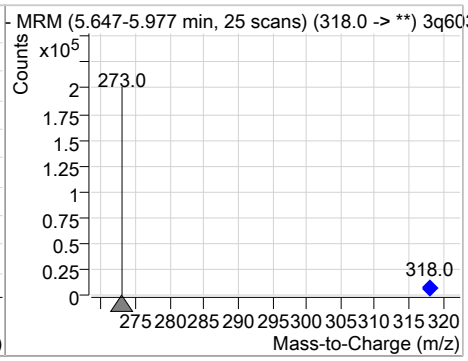




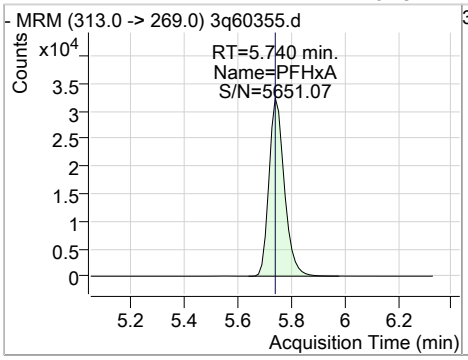
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.03	5.74	0.00	150170				

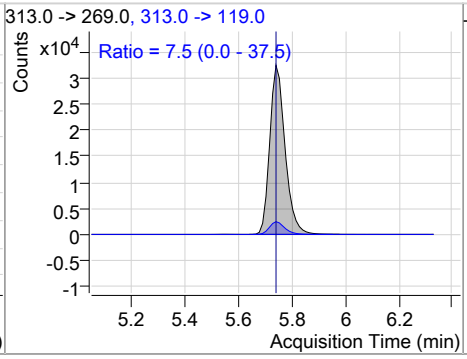


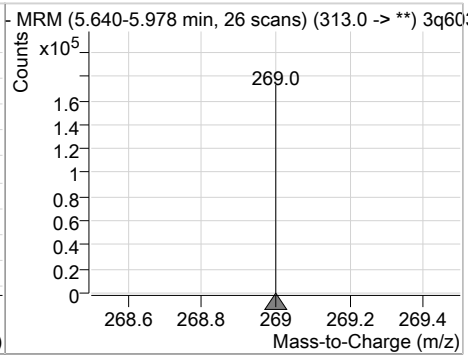




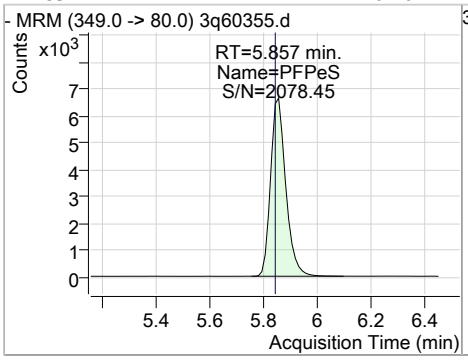
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.49	5.74	0.00	128631	313.0 -> 119.0	7.5	0.0	37.5

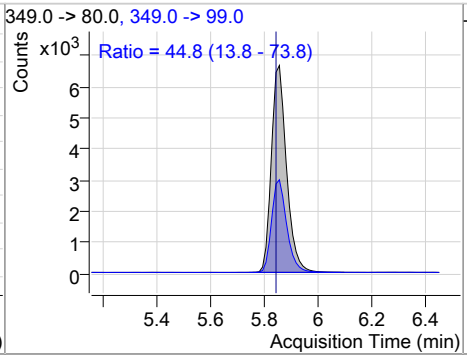


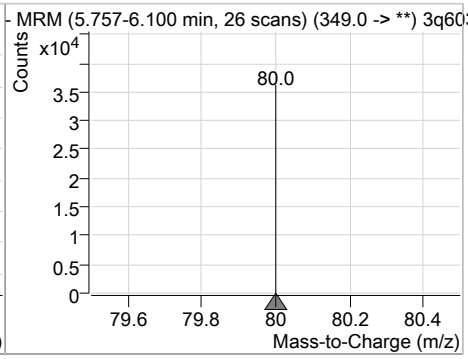




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.76	5.86	0.01	26083	349.0 -> 99.0	44.8	13.8	73.8

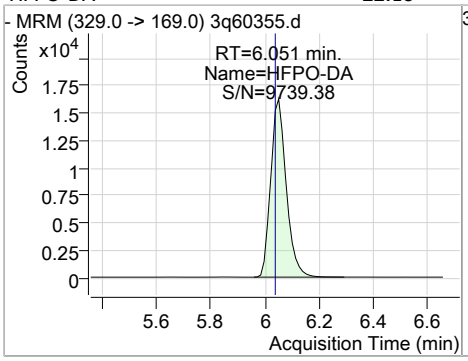


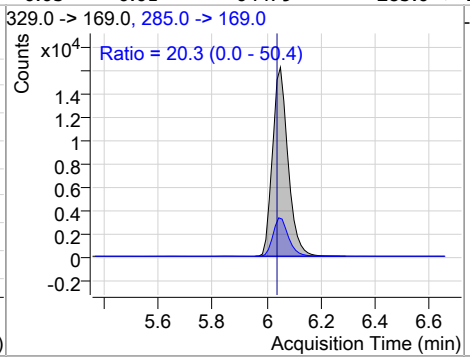


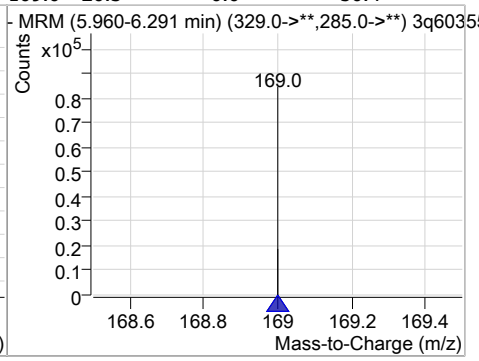


Perfluorinated Compounds by LC/MS/MS

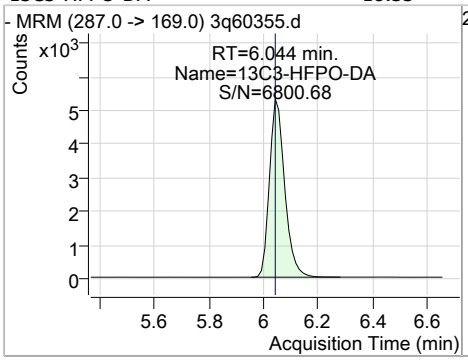
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.18	6.05	0.01	64479	285.0 -> 169.0	20.3	0.0	50.4

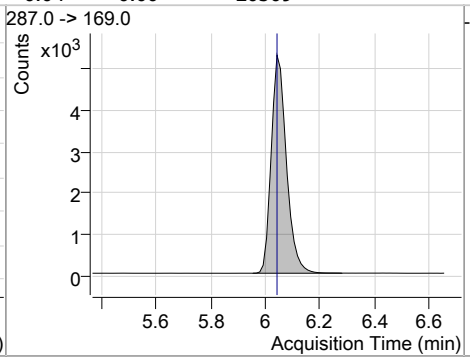


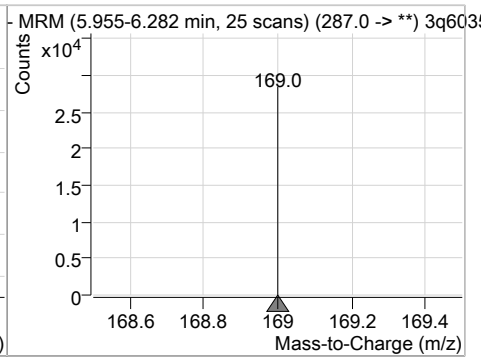




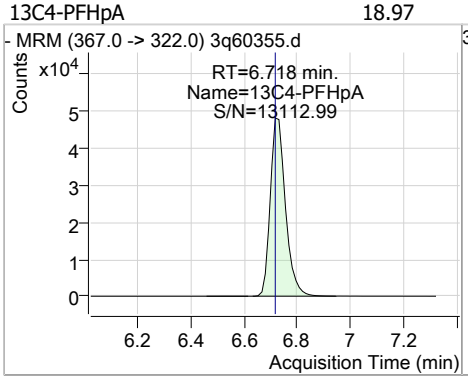
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.33	6.04	0.00	20509				

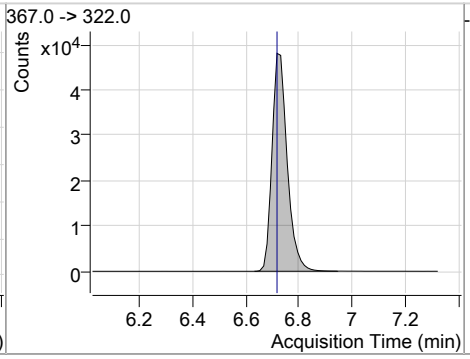


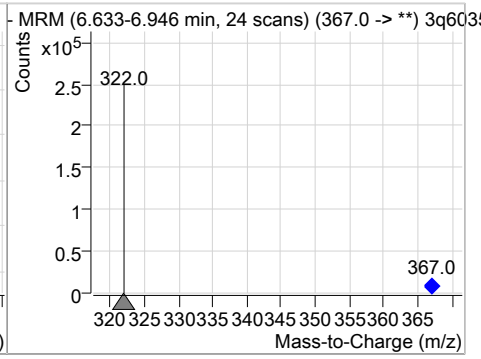




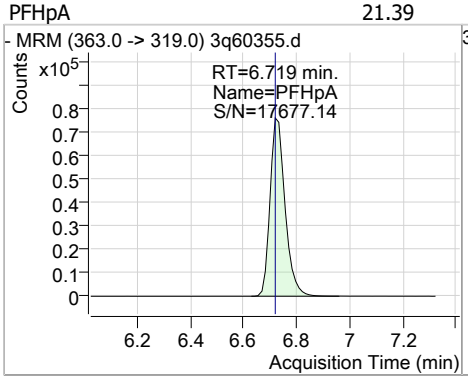
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.97	6.72	0.00	190639				

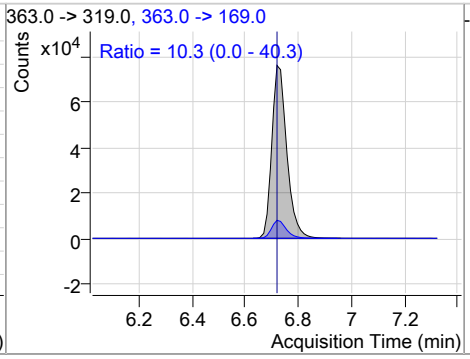


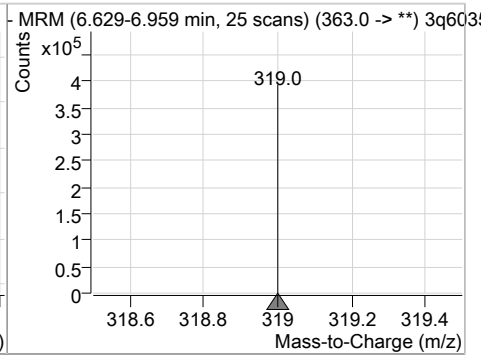




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.39	6.72	0.00	299122	363.0 -> 169.0	10.3	0.0	40.3

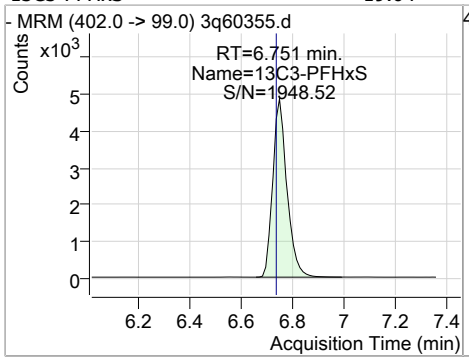


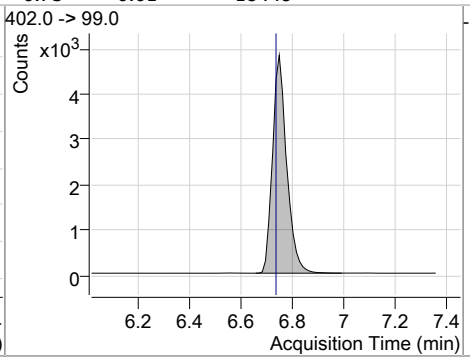


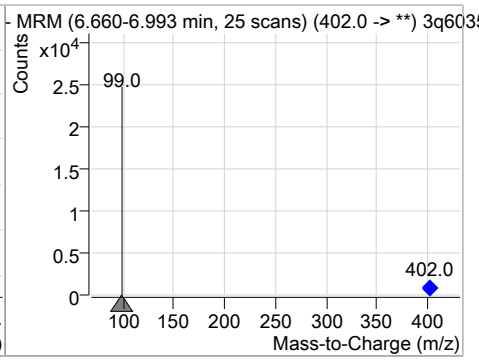


Perfluorinated Compounds by LC/MS/MS

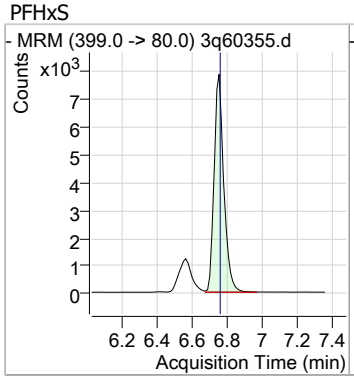
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.04	6.75	0.01	18448				

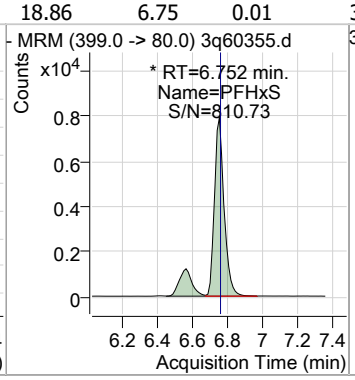


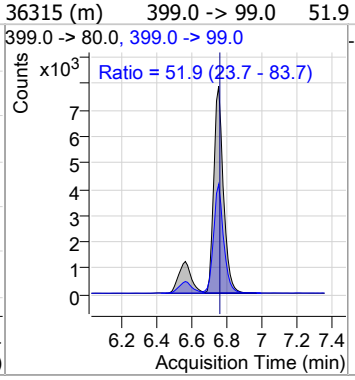


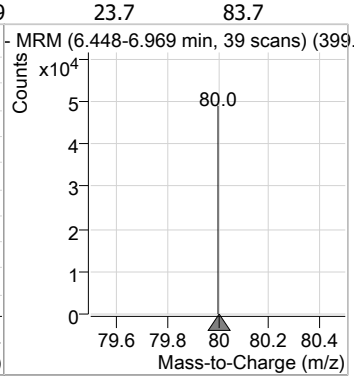


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.86	6.75	0.01	36315 (m)	399.0 -> 99.0	51.9	23.7	83.7

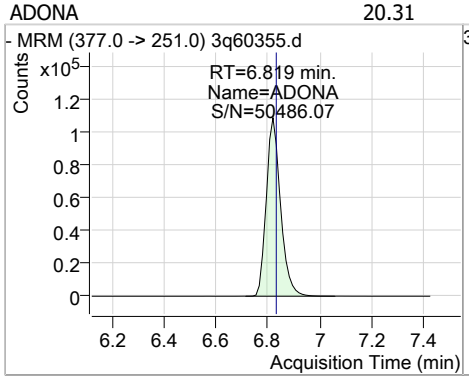


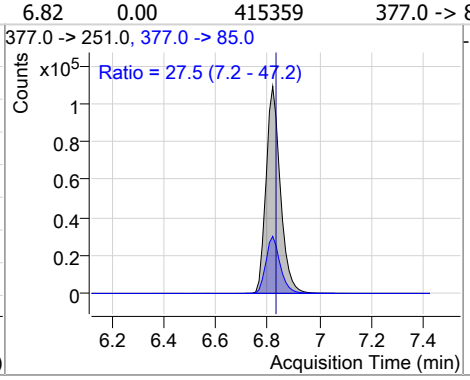


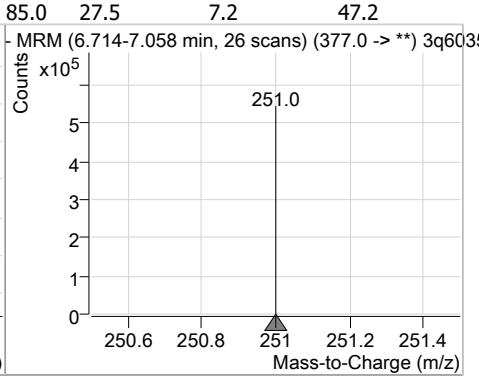




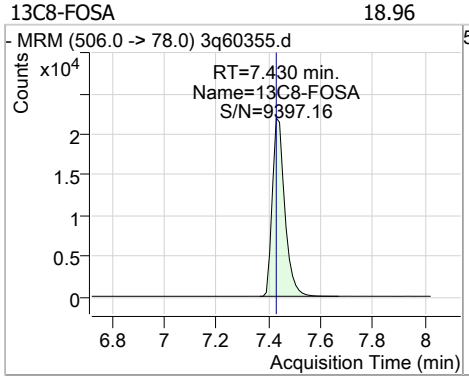
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.31	6.82	0.00	415359	377.0 -> 85.0	27.5	7.2	47.2

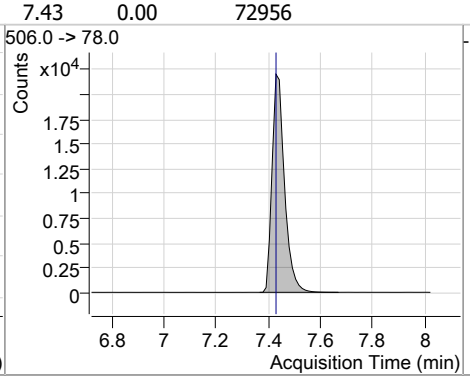


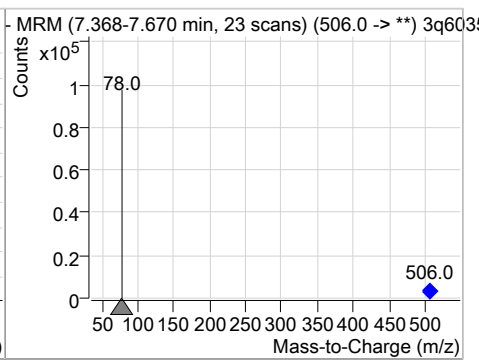




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.96	7.43	0.00	72956				

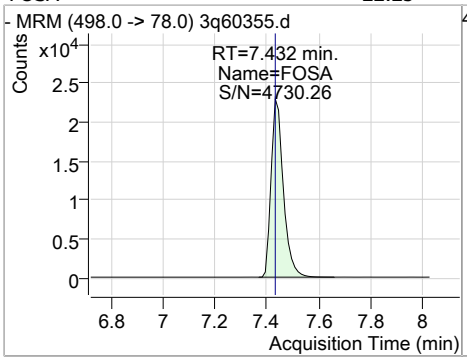


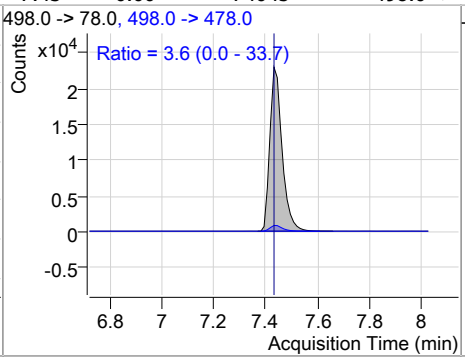


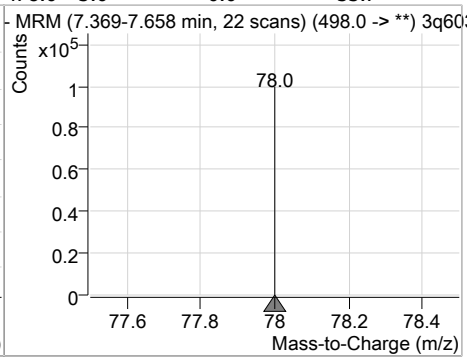


Perfluorinated Compounds by LC/MS/MS

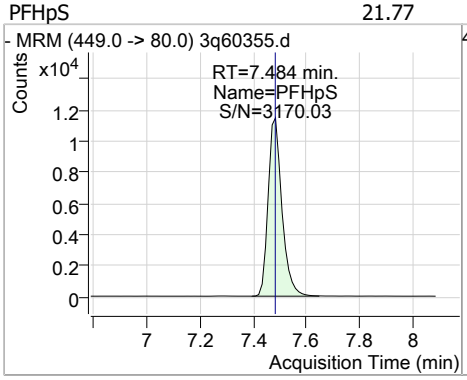
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	22.25	7.43	0.00	74645	498.0 -> 478.0	3.6	0.0	33.7

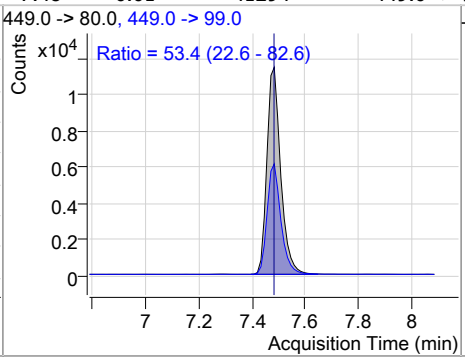


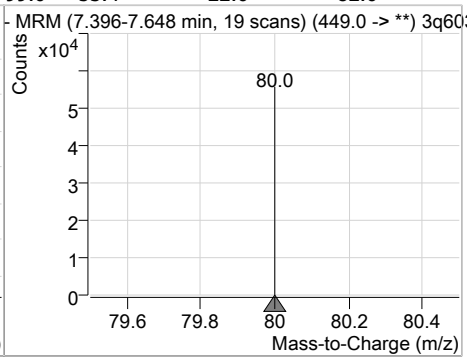




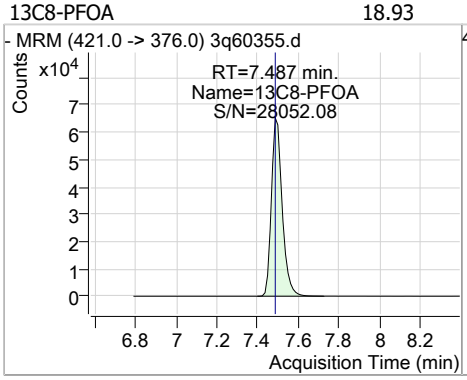
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.77	7.48	0.01	41294	449.0 -> 99.0	53.4	22.6	82.6

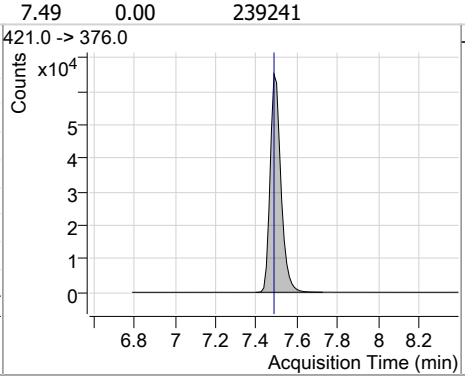


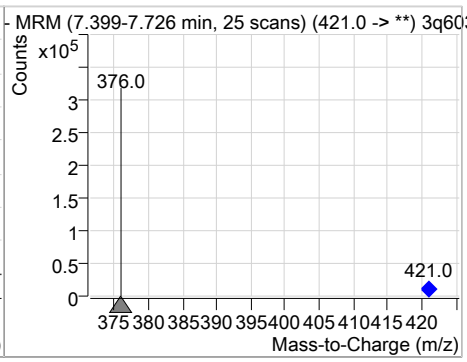




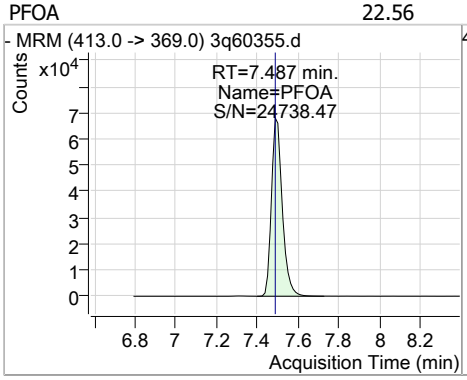
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.93	7.49	0.00	239241				

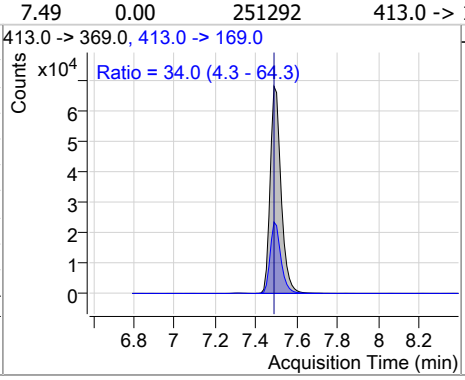


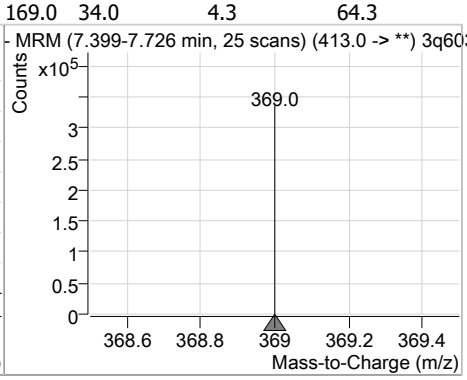




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.56	7.49	0.00	251292	413.0 -> 169.0	34.0	4.3	64.3

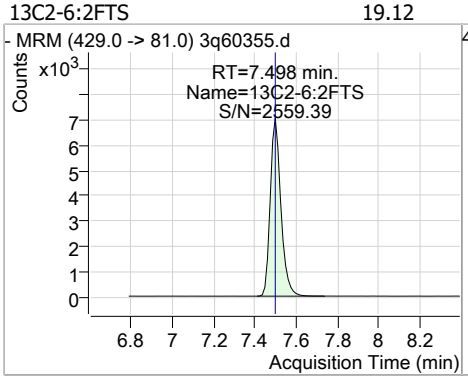


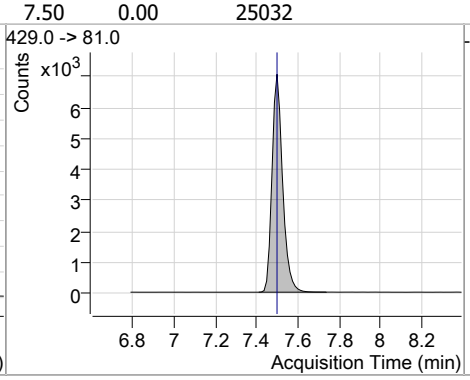


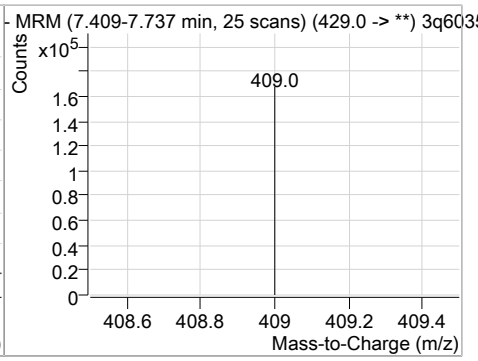


Perfluorinated Compounds by LC/MS/MS

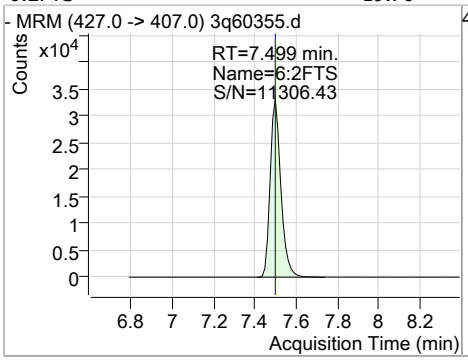
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.12	7.50	0.00	25032				

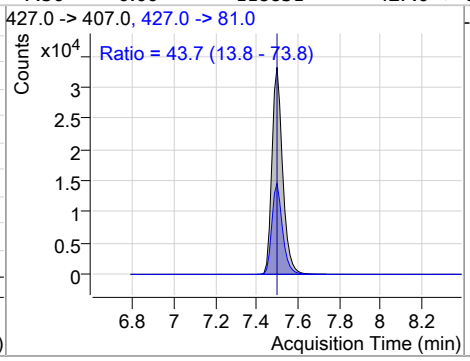


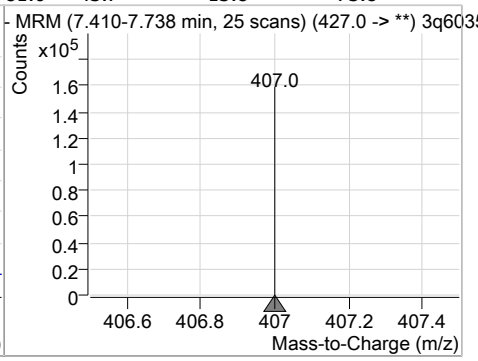




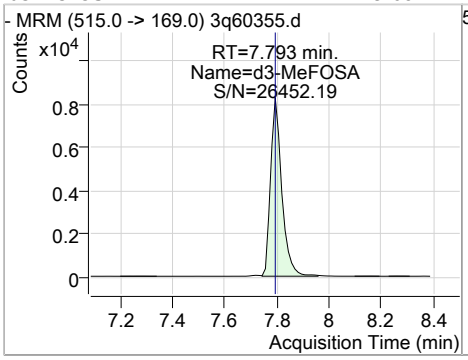
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.76	7.50	0.00	118831	427.0 -> 81.0	43.7	13.8	73.8

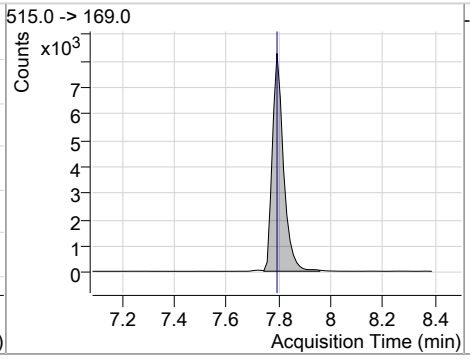


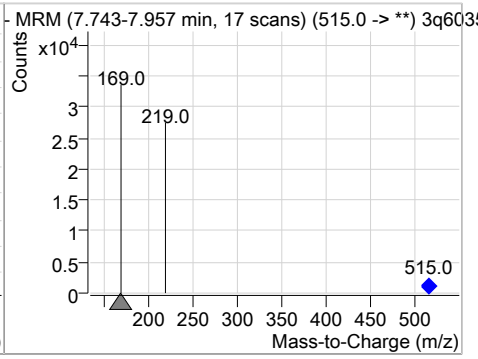




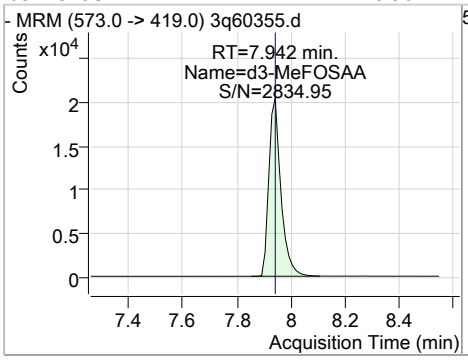
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.68	7.79	0.00	24593				

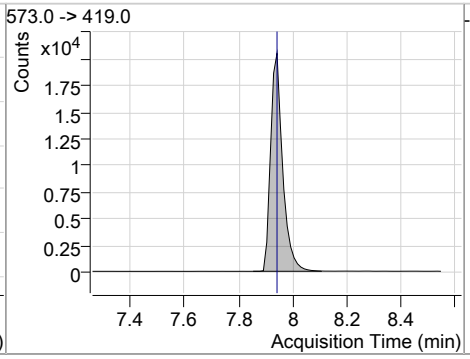


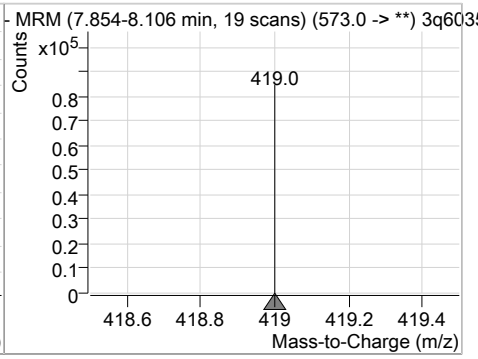




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.96	7.94	0.00	62881				

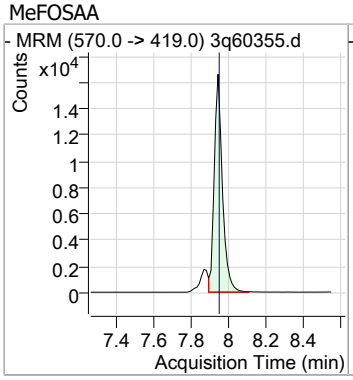


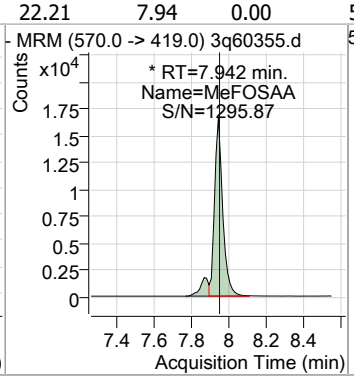


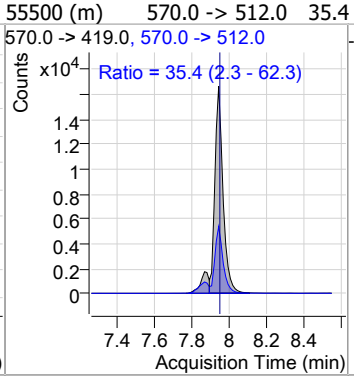


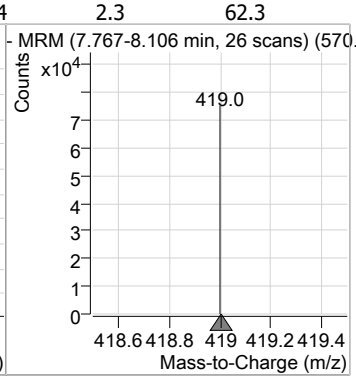
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.21	7.94	0.00	55500 (m)	570.0 -> 512.0	35.4	2.3	62.3

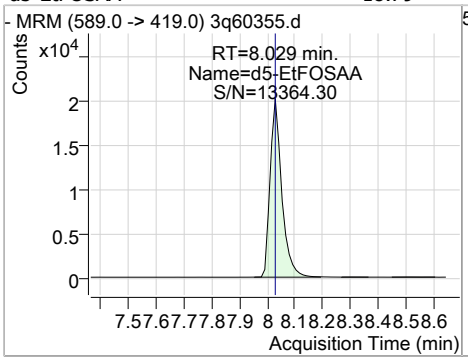


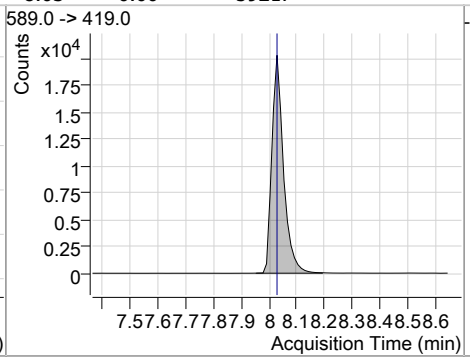


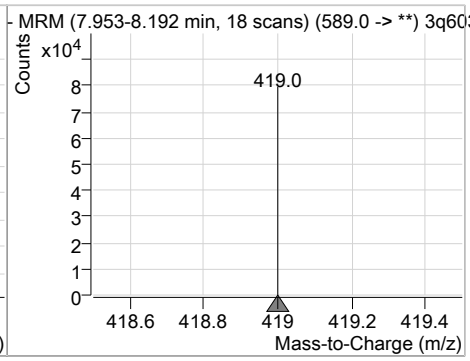




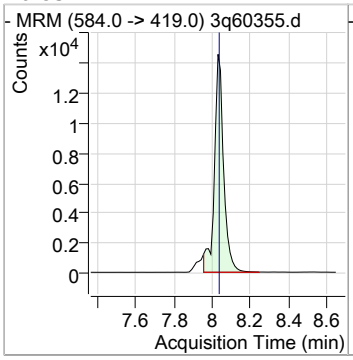
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.79	8.03	0.00	59217				

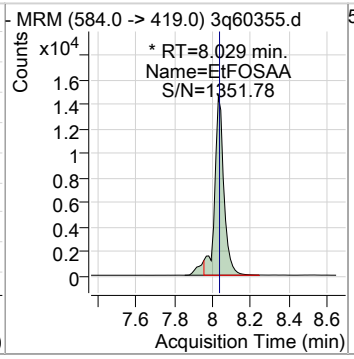


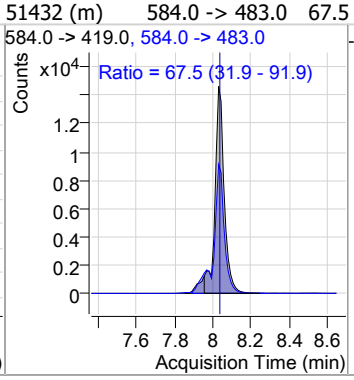


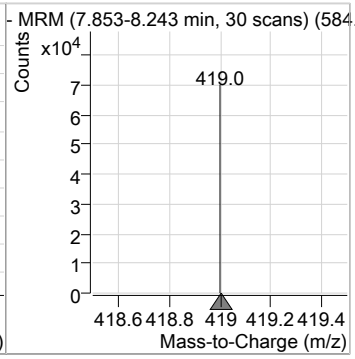


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.32	8.03	0.00	51432 (m)	584.0 -> 483.0	67.5	31.9	91.9

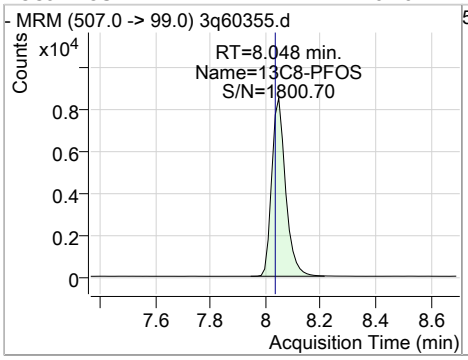


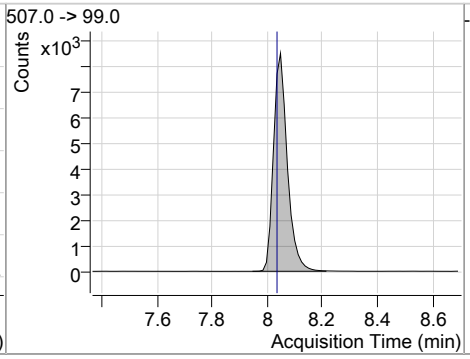


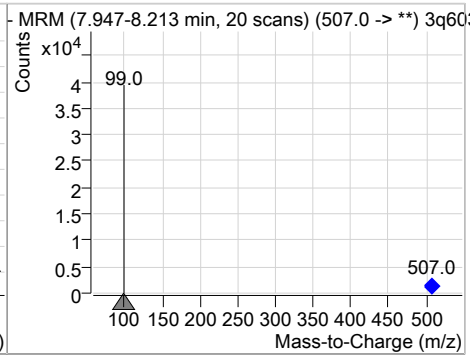




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.78	8.05	0.01	29425				

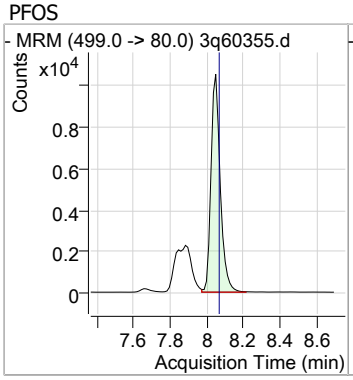


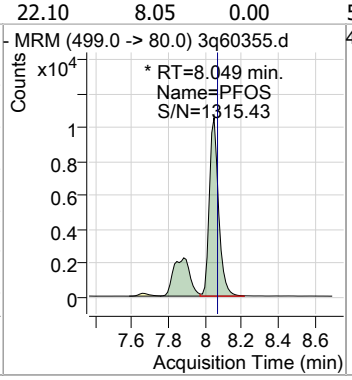


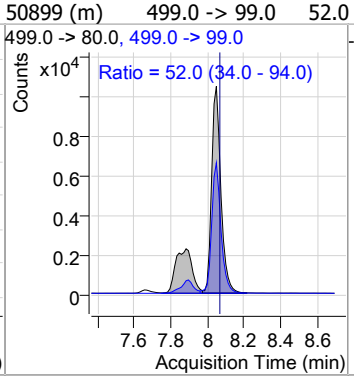


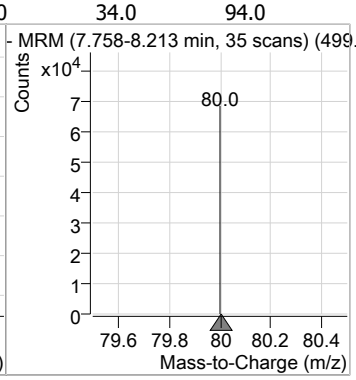
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.10	8.05	0.00	50899 (m)	499.0 -> 99.0	52.0	34.0	94.0

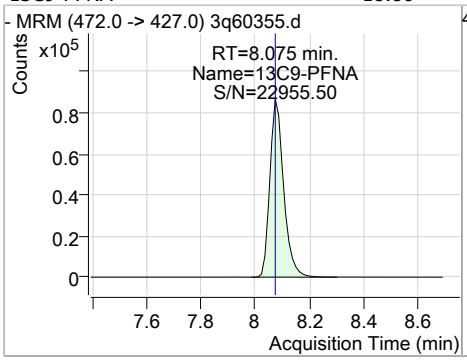


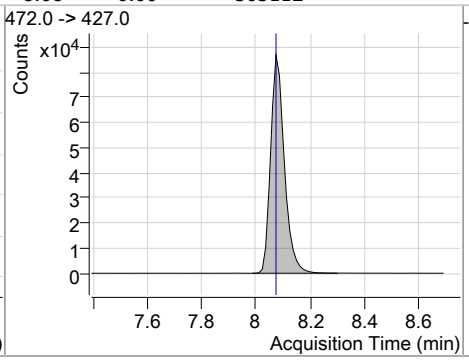


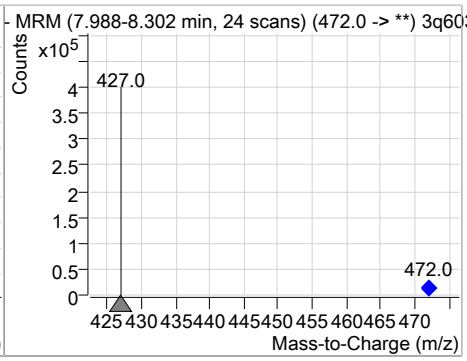




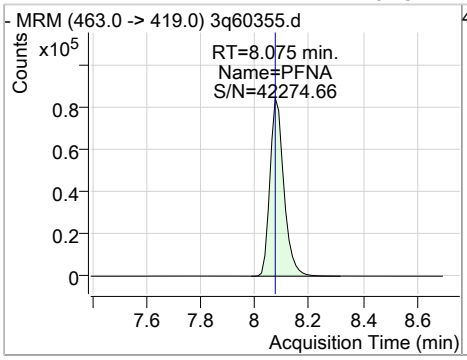
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.86	8.08	0.00	305112				

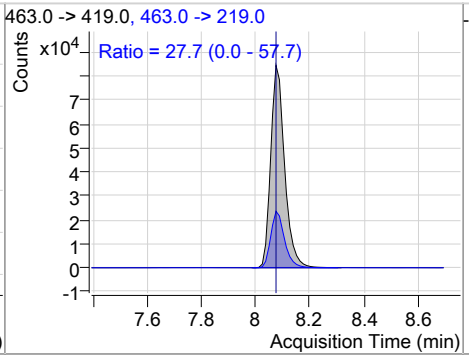


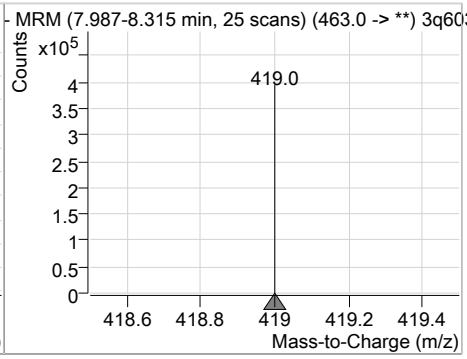




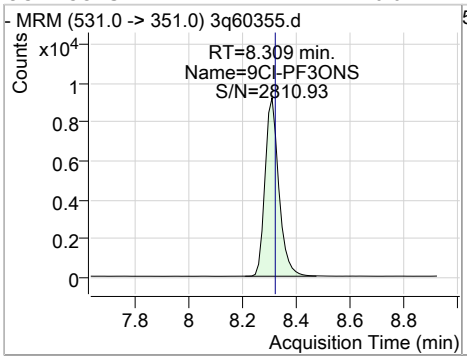
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.75	8.08	0.00	300345	463.0 -> 219.0	27.7	0.0	57.7

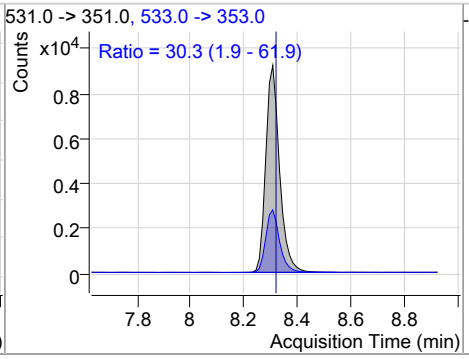


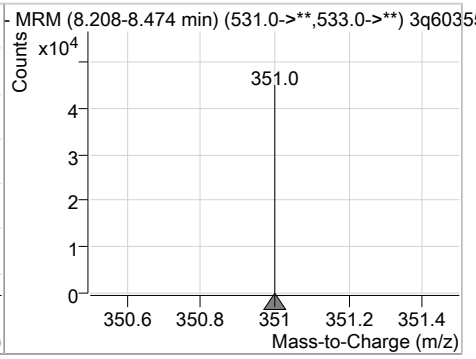




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.07	8.31	0.00	33019	533.0 -> 353.0	30.3	1.9	61.9

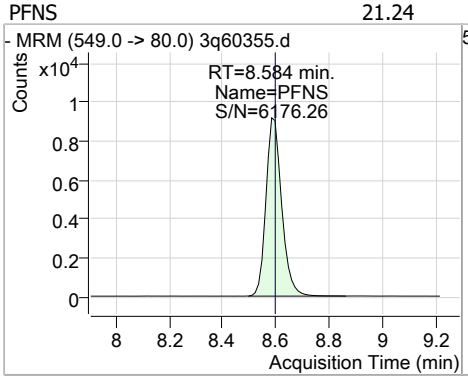


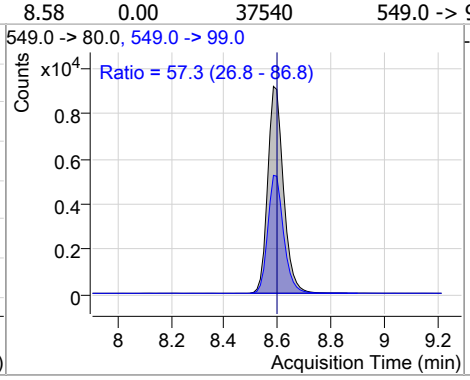


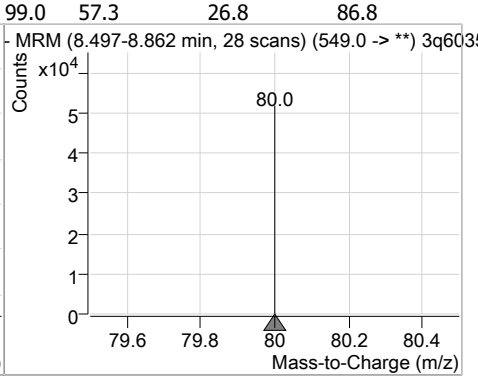


Perfluorinated Compounds by LC/MS/MS

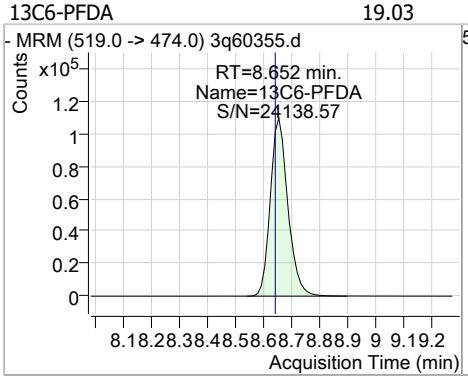
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.24	8.58	0.00	37540	549.0 -> 99.0	57.3	26.8	86.8

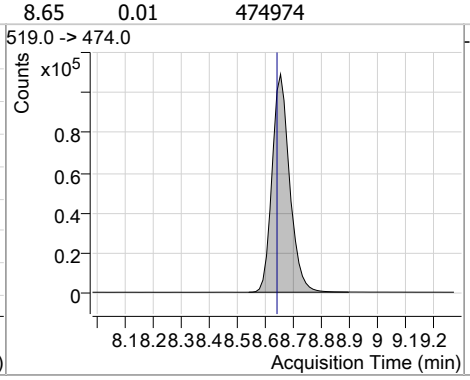


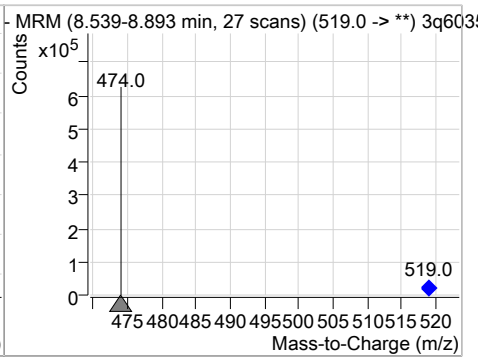




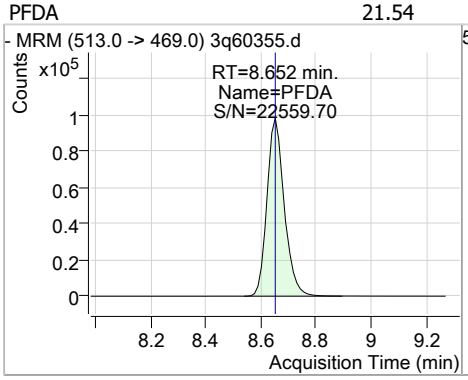
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.03	8.65	0.01	474974				

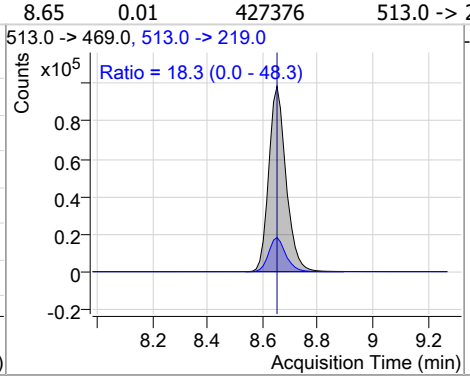


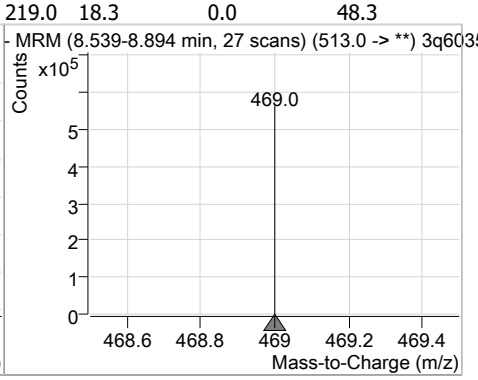




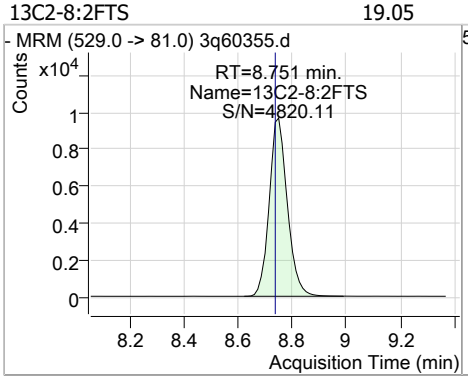
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.54	8.65	0.01	427376	513.0 -> 219.0	18.3	0.0	48.3

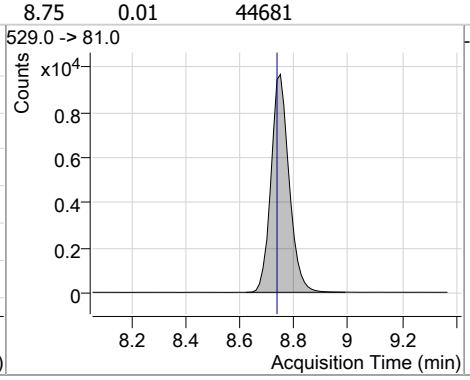


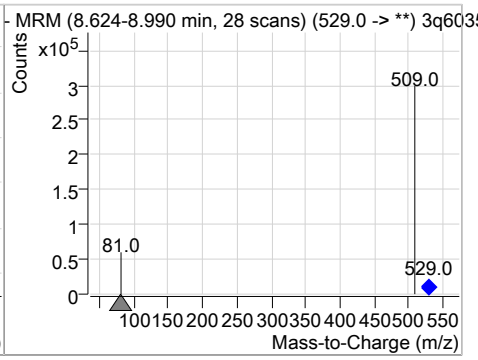




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.05	8.75	0.01	44681				

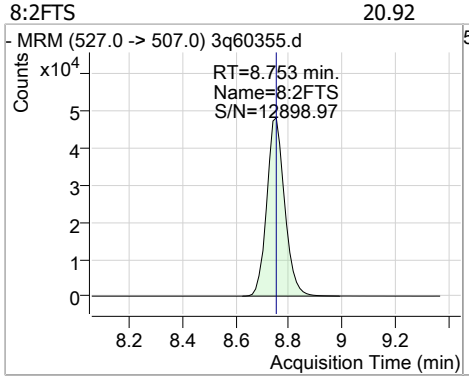


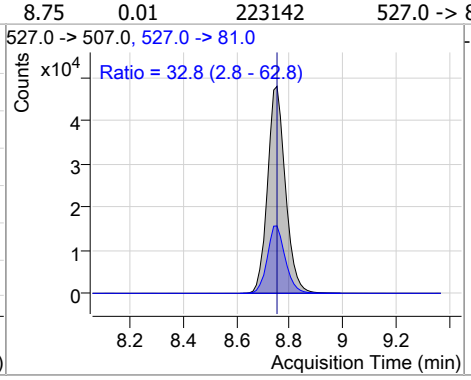


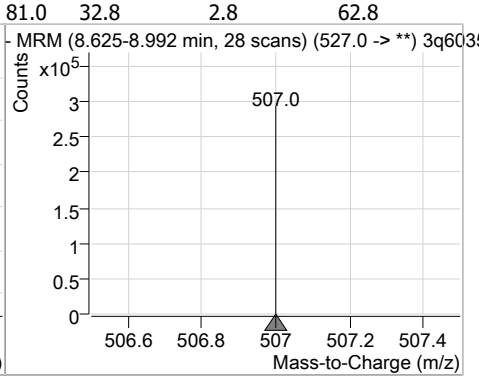


Perfluorinated Compounds by LC/MS/MS

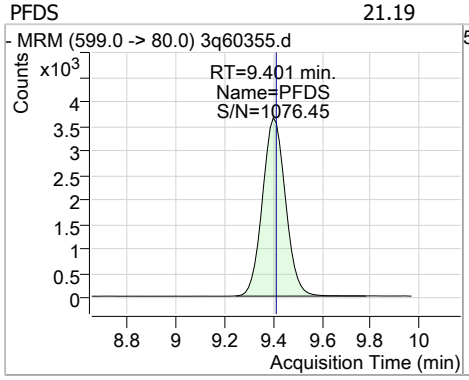
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.92	8.75	0.01	223142	527.0 -> 81.0	32.8	2.8	62.8

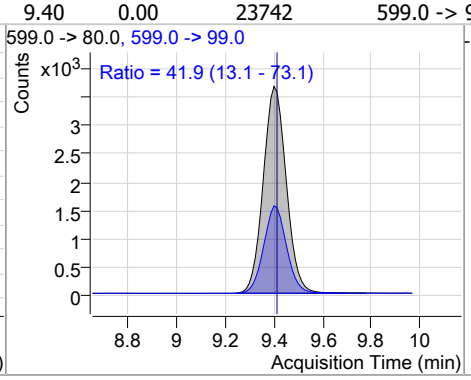


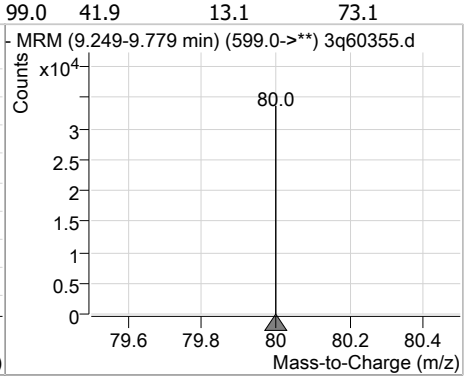




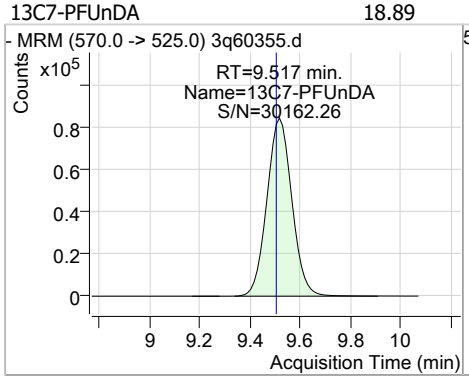
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.19	9.40	0.00	23742	599.0 -> 99.0	41.9	13.1	73.1

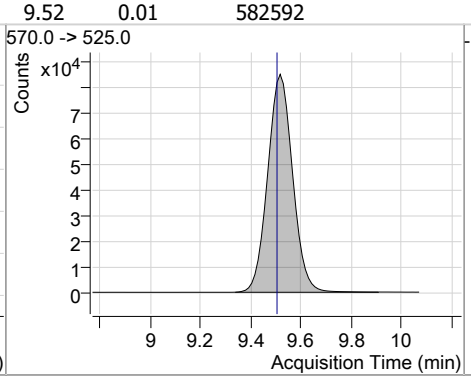


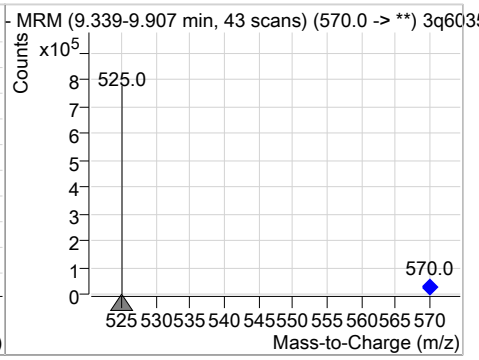




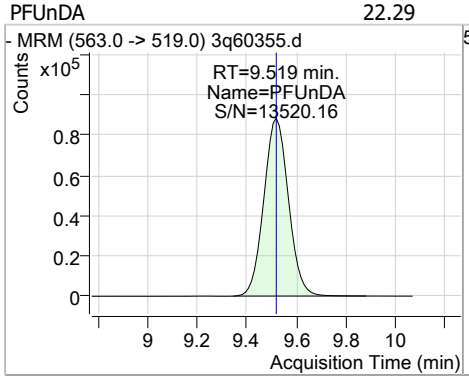
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.89	9.52	0.01	582592				

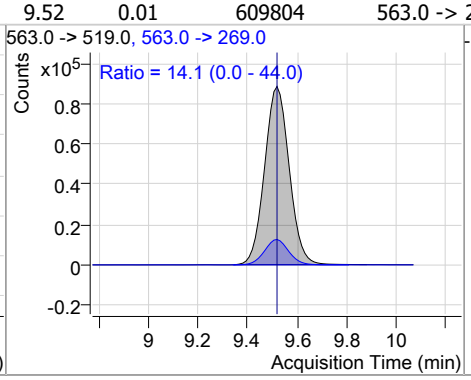


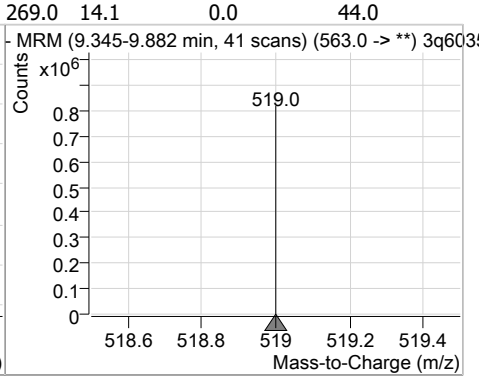




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.29	9.52	0.01	609804	563.0 -> 269.0	14.1	0.0	44.0

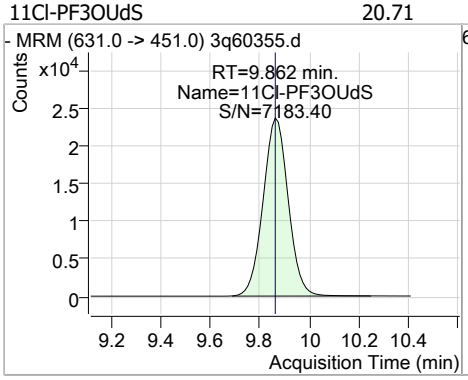


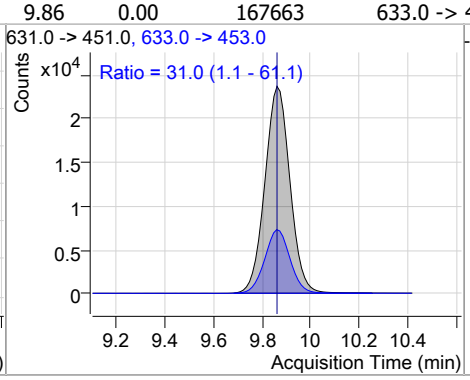


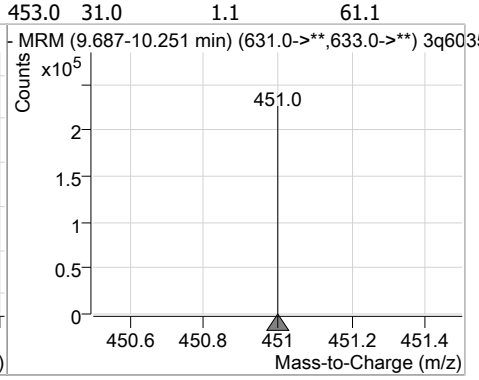


Perfluorinated Compounds by LC/MS/MS

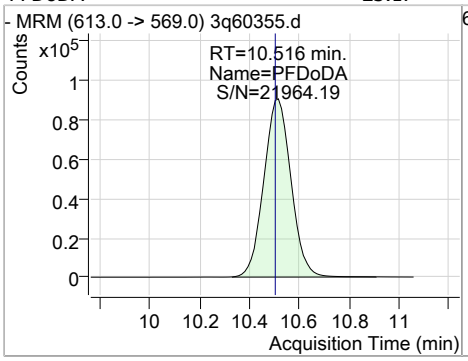
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.71	9.86	0.00	167663	633.0 -> 453.0	31.0	1.1	61.1

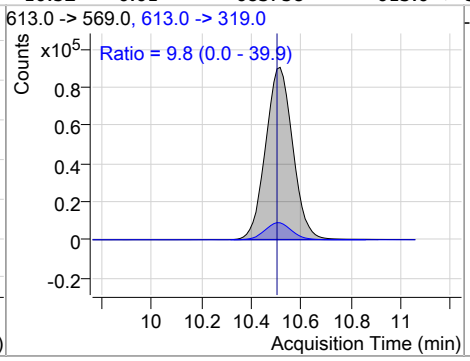


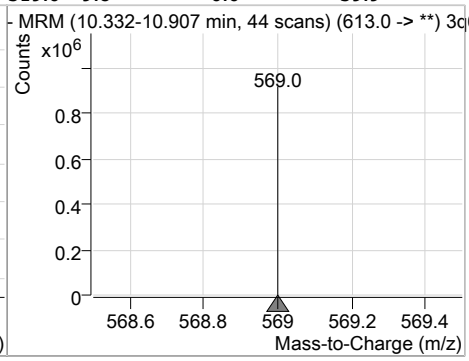




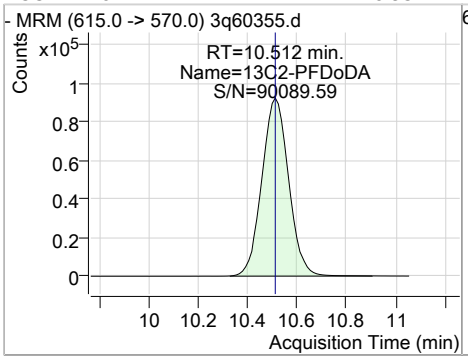
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	23.17	10.52	0.01	683758	613.0 -> 319.0	9.8	0.0	39.9

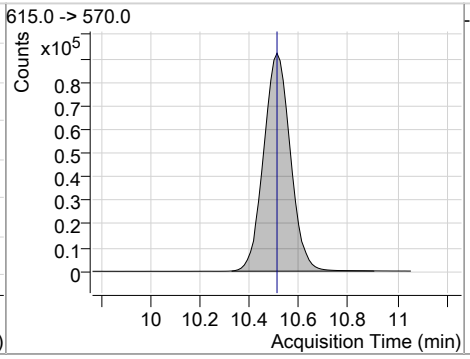


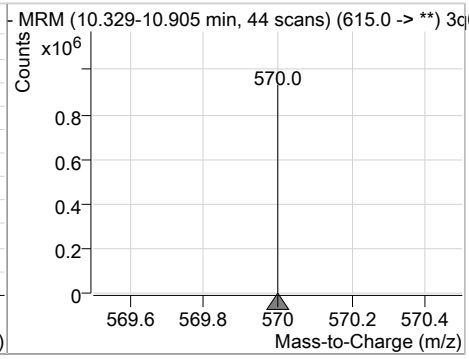




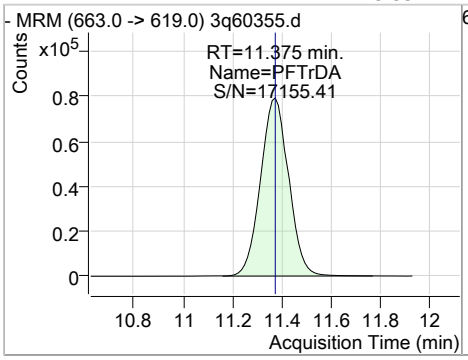
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.93	10.51	0.00	693793				

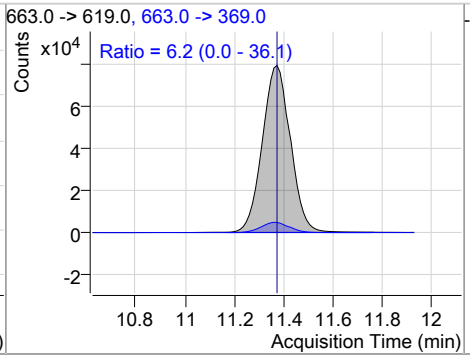


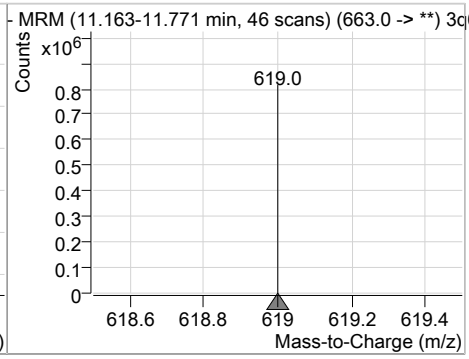




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.33	11.38	0.00	628369	663.0 -> 369.0	6.2	0.0	36.1

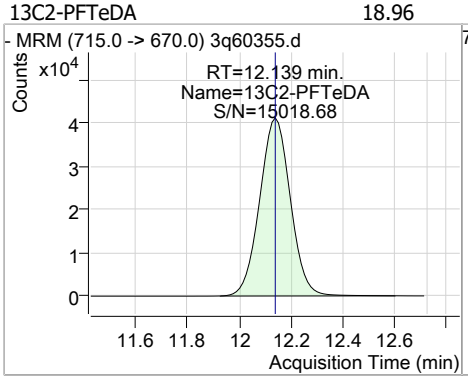


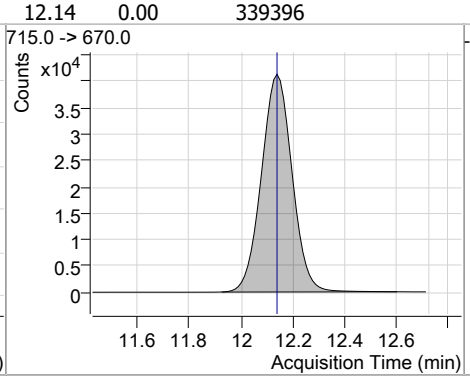


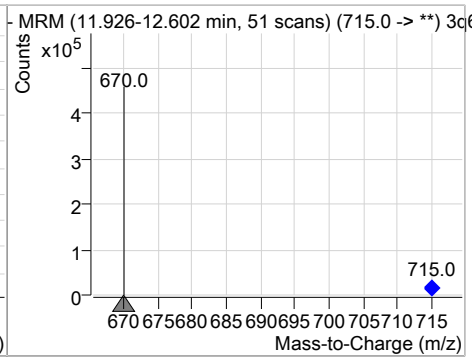


Perfluorinated Compounds by LC/MS/MS

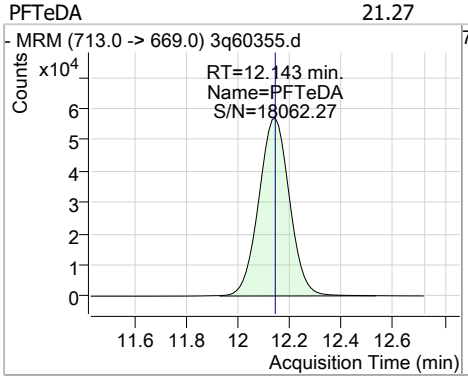
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.96	12.14	0.00	339396				

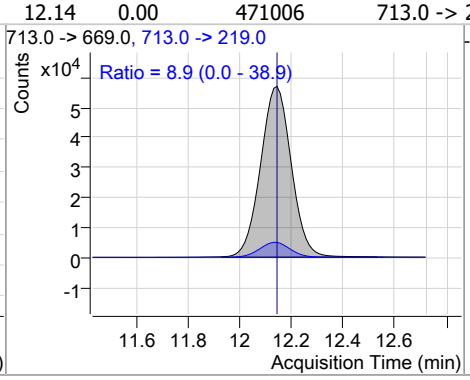


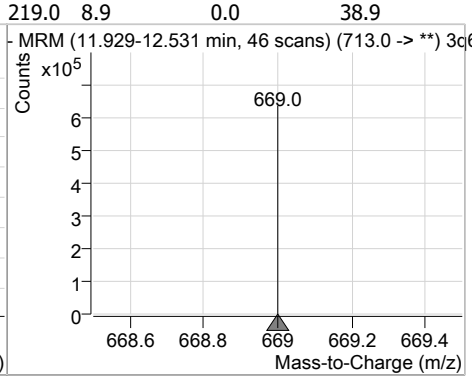




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	21.27	12.14	0.00	471006	713.0 -> 219.0	8.9	0.0	38.9







7.7.10

7

Manual Integration Approval Summary

Sample Number: S3Q824-ICV824
Lab FileID: 3Q60355.D
Injection Time: 05/27/22 17:10
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:52 Martha Valls
Supervisor approved: 05/29/22 16:56 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.75	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 16:58

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60358.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 6:06:32 PM
Sample Name : cc824-1.0LL
Vial : P1-A3
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

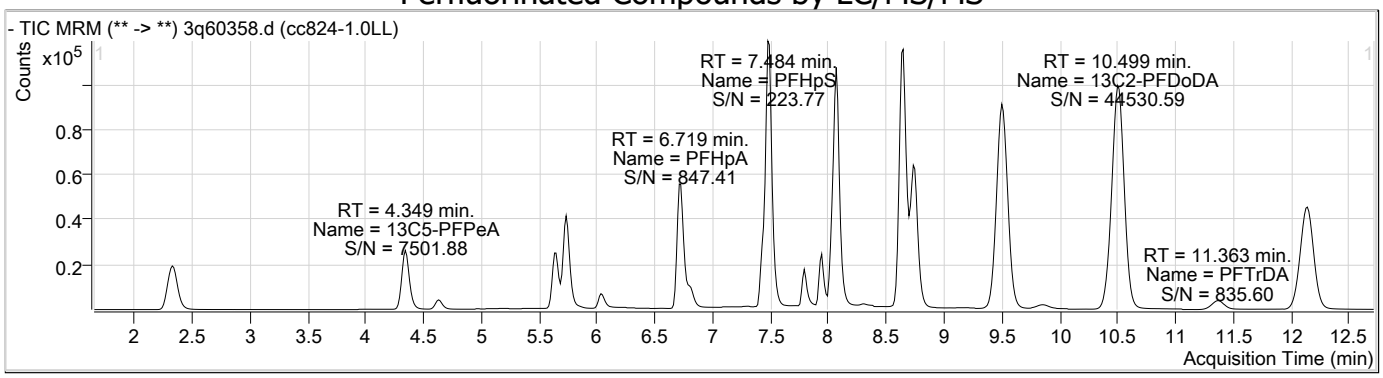
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	115045	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	110715	20.00 µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	152407	20.00 µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	194788	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	247596	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	314929	20.00 µg/L	0.000
M6-PFDA	8.652	519.0 -> 474.0	473684	20.00 µg/L	0.013
M7-PFUnDA	9.505	570.0 -> 525.0	586480	20.00 µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	709725	20.00 µg/L	-0.013
M2-PFTeDA	12.139	715.0 -> 670.0	346671	20.00 µg/L	0.000
M8-FOSA	7.430	506.0 -> 78.0	77496	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	15100	20.00 µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	18698	20.00 µg/L	0.013
M8-PFOS	8.048	507.0 -> 99.0	29617	20.00 µg/L	0.013
M2-4:2FTS	5.634	329.0 -> 81.0	10818	20.00 µg/L	0.000
M2-6:2FTS	7.498	429.0 -> 81.0	25786	20.00 µg/L	0.000
M2-8:2FTS	8.739	529.0 -> 81.0	45569	20.00 µg/L	0.000
M3-MeFOSAA	7.942	573.0 -> 419.0	65231	20.00 µg/L	0.000
M3-HFPO-DA	6.044	287.0 -> 169.0	20527	20.00 µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	25306	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	64842	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	10818	19.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C2-6:2FTS	7.498	429.0 -> 81.0	25786	19.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C2-8:2FTS	8.739	529.0 -> 81.0	45569	19.43 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C2-PFDoDA	10.499	615.0 -> 570.0	709725	19.36 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%	
13C2-PFTeDA	12.139	715.0 -> 670.0	346671	19.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C3-PFBS	4.629	302.0 -> 99.0	15100	19.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C3-PFHxS	6.751	402.0 -> 99.0	18698	19.30 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C4-PFBA	2.327	217.0 -> 172.0	115045	19.03 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C4-PFHpA	6.718	367.0 -> 322.0	194788	19.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C5-PFHxA	5.739	318.0 -> 273.0	152407	19.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C5-PFPeA	4.349	268.0 -> 223.0	110715	19.11 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C6-PFDA	8.652	519.0 -> 474.0	473684	18.97 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

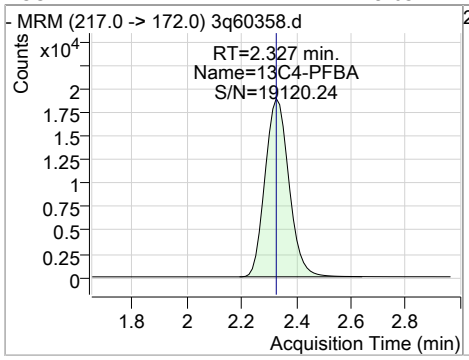
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
13C7-PFUnDA	9.505	570.0 -> 525.0	586480	19.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C8-FOSA	7.430	506.0 -> 78.0	77496	20.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
13C8-PFOA	7.487	421.0 -> 376.0	247596	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-PFOS	8.048	507.0 -> 99.0	29617	18.90	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C9-PFNA	8.075	472.0 -> 427.0	314929	19.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
d3-MeFOSAA	7.942	573.0 -> 419.0	65231	19.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
13C3-HFPO-DA	6.044	287.0 -> 169.0	20523	18.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
d3-MeFOSA	7.793	515.0 -> 169.0	25306	20.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
d5-EtFOSAA	8.029	589.0 -> 419.0	64801	20.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
Target Compounds							QValue
4:2FTS	5.637	327.0 -> 307.0	4897	1.04	µg/L		95
6:2FTS	7.499	427.0 -> 407.0	6456	1.04	µg/L		99
8:2FTS	8.740	527.0 -> 507.0	11017	1.01	µg/L		97
EtFOSAA	8.029	584.0 -> 419.0	2828	1.12	µg/L	m	98
FOSA	7.432	498.0 -> 78.0	3936	1.10	µg/L		96
MeFOSAA	7.942	570.0 -> 419.0	2796	1.08	µg/L	m	91
PFBA	2.333	213.0 -> 169.0	2400	1.07	µg/L		100
PFBS	4.632	299.0 -> 80.0	2020	1.06	µg/L		98
PFDA	8.652	513.0 -> 469.0	20283	1.03	µg/L		97
PFDoDA	10.503	613.0 -> 569.0	31582	1.05	µg/L		99
PFDS	9.388	599.0 -> 80.0	1200	1.06	µg/L		99
PFHpA	6.719	363.0 -> 319.0	15072	1.05	µg/L		99
PFHpS	7.484	449.0 -> 80.0	2134	1.12	µg/L		97
PFHxA	5.740	313.0 -> 269.0	6561	1.03	µg/L		99
PFHxS	6.752	399.0 -> 80.0	2174	1.11	µg/L	m	95
PFNA	8.075	463.0 -> 419.0	16181	1.08	µg/L		97
PFNS	8.584	549.0 -> 80.0	1939	1.09	µg/L		98
PFOA	7.487	413.0 -> 369.0	12001	1.04	µg/L		100
PFOS	8.049	499.0 -> 80.0	2470	1.07	µg/L	m	87
PFPeA	4.352	263.0 -> 219.0	8779	1.08	µg/L		100
PFPeS	5.845	349.0 -> 80.0	1373	1.08	µg/L		98
PFTeDA	12.130	713.0 -> 669.0	24792	1.10	µg/L		99
PFTrDA	11.363	663.0 -> 619.0	29457	1.07	µg/L		100
PFUnDA	9.506	563.0 -> 519.0	28678	1.04	µg/L		99
11Cl-PF3OUdS	9.849	631.0 -> 451.0	8534	1.03	µg/L		98
9Cl-PF3ONS	8.309	531.0 -> 351.0	1806	1.10	µg/L		98
ADONA	6.819	377.0 -> 251.0	20937	1.01	µg/L		98
HFPO-DA	6.038	329.0 -> 169.0	3006	1.03	µg/L		99
MeFOSA	7.794	512.0 -> 169.0	1391	1.11	µg/L		97

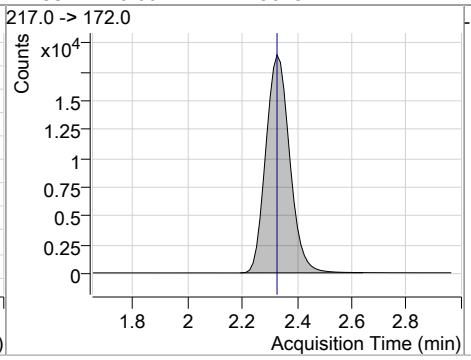
 # = Qualifier out of range, m = manually integrated, + = Area summed

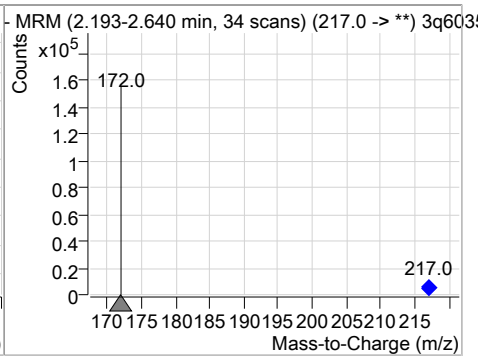
Perfluorinated Compounds by LC/MS/MS



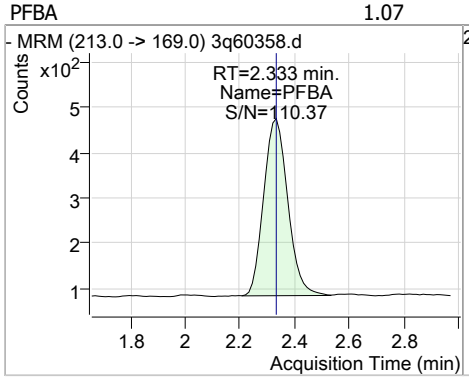
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.03	2.33	0.00	115045				

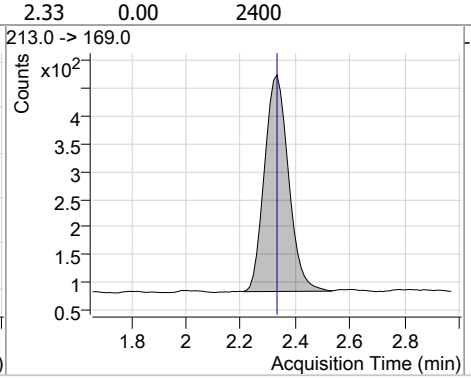


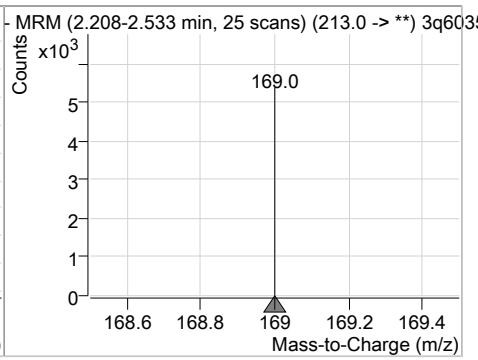




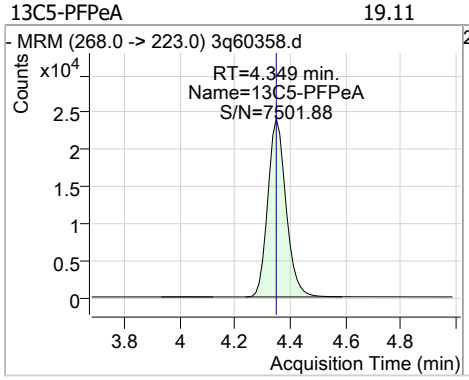
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.07	2.33	0.00	2400				

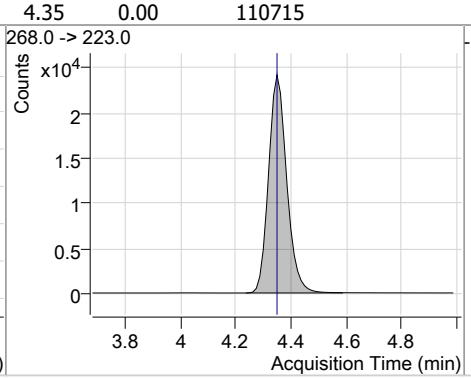


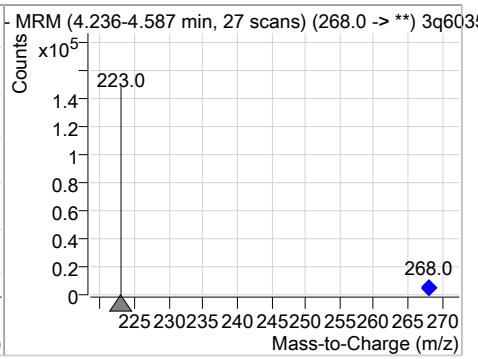




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.11	4.35	0.00	110715				

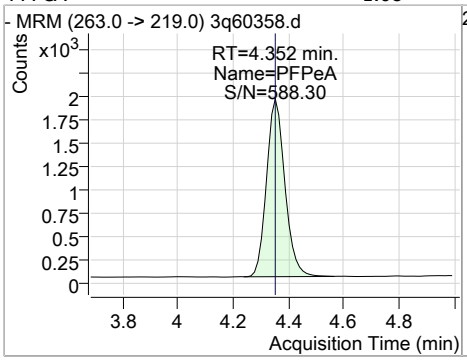


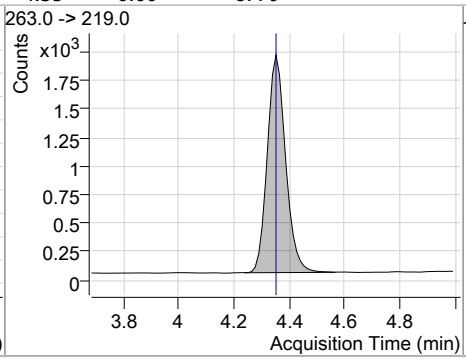


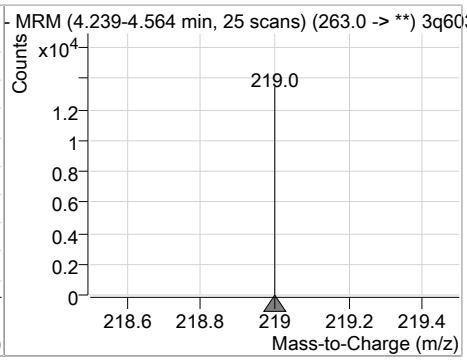


Perfluorinated Compounds by LC/MS/MS

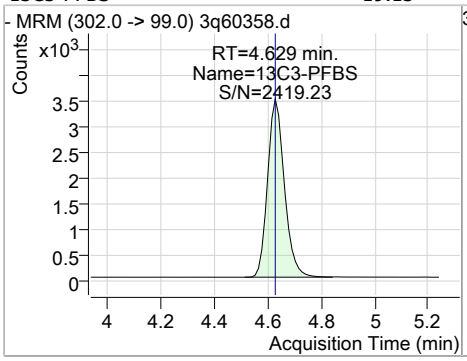
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.08	4.35	0.00	8779				

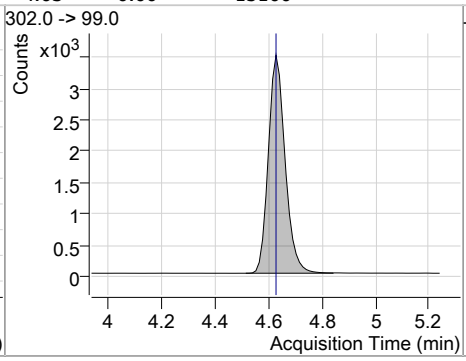


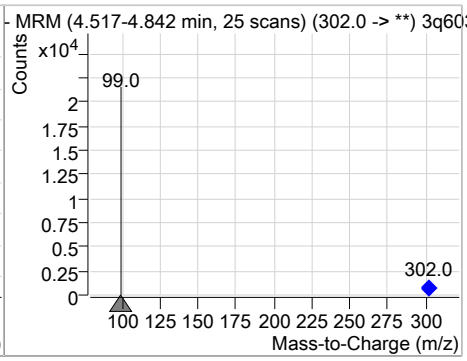




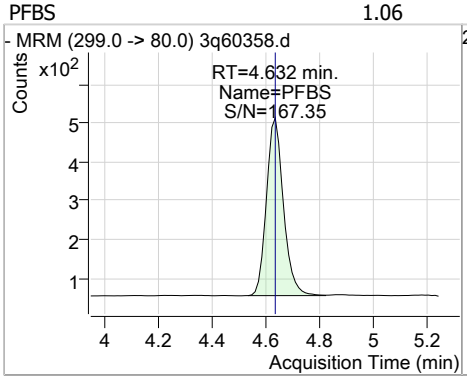
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.13	4.63	0.00	15100				

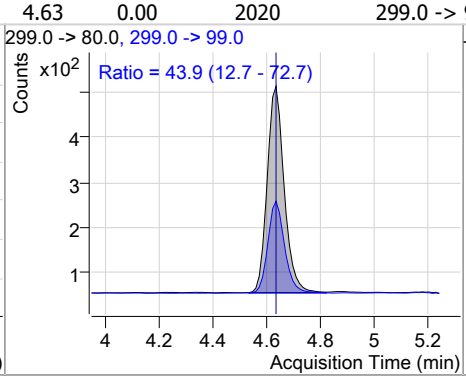


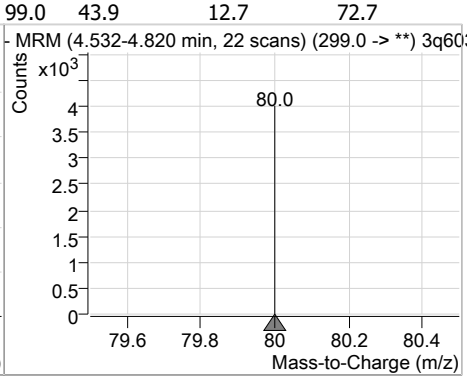




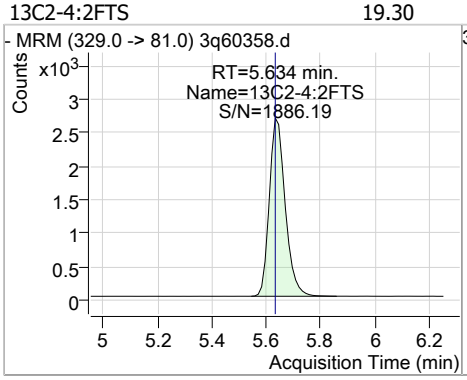
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.06	4.63	0.00	2020	299.0 -> 99.0	43.9	12.7	72.7

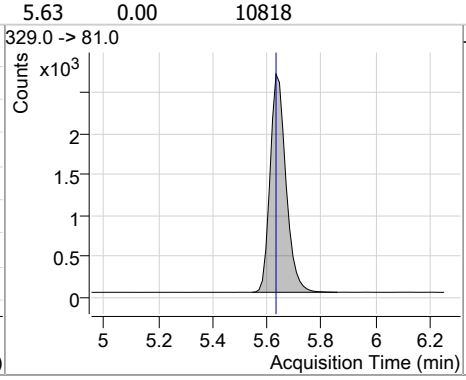


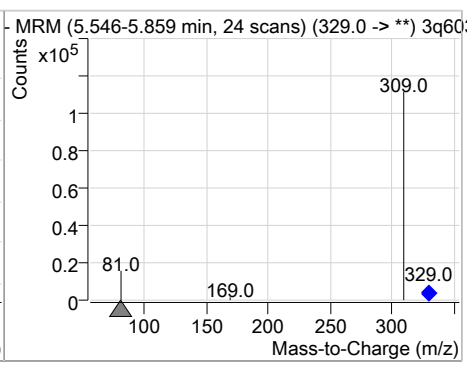




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.30	5.63	0.00	10818				

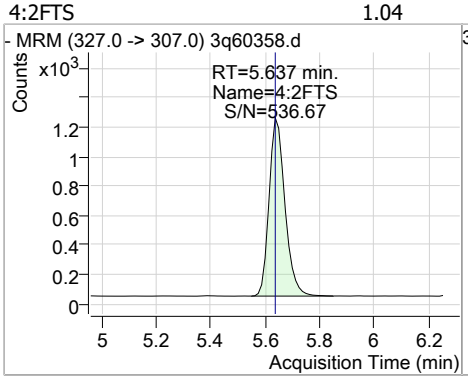


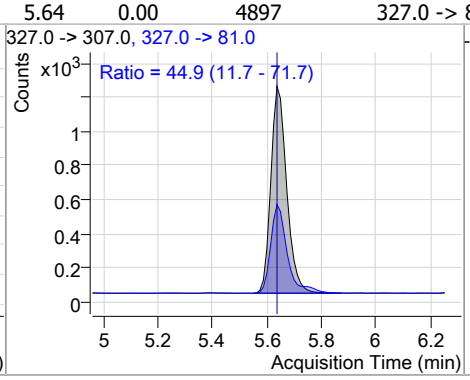


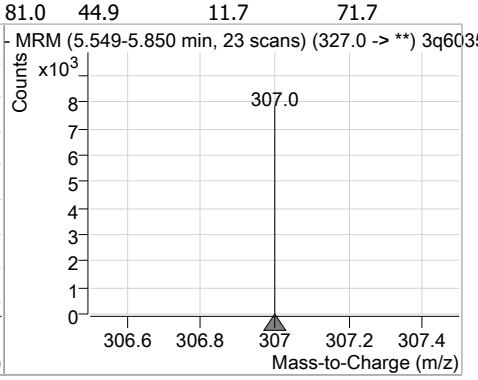


Perfluorinated Compounds by LC/MS/MS

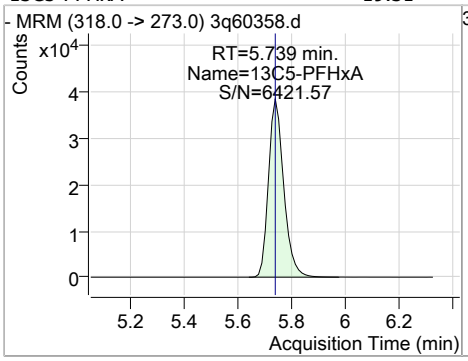
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.04	5.64	0.00	4897	327.0 -> 81.0	44.9	11.7	71.7

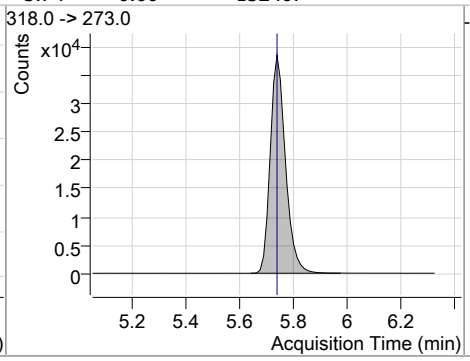


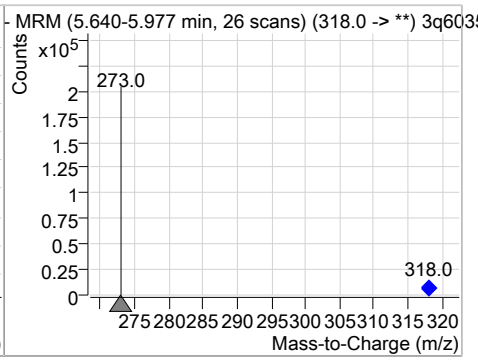




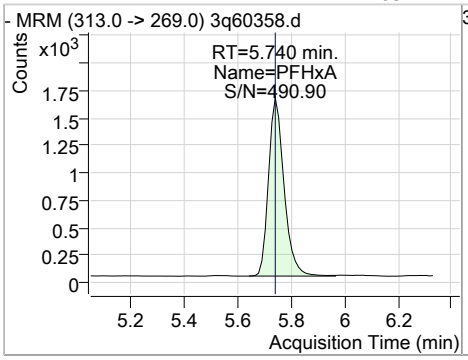
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.31	5.74	0.00	152407				

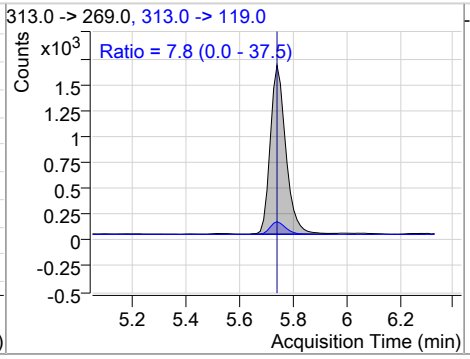


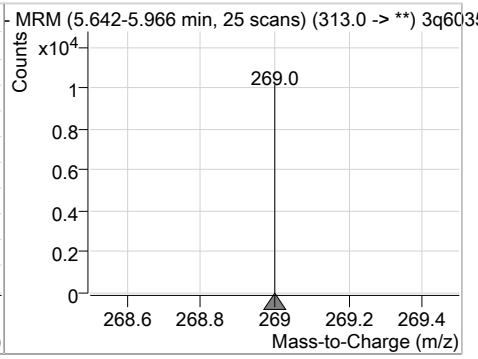




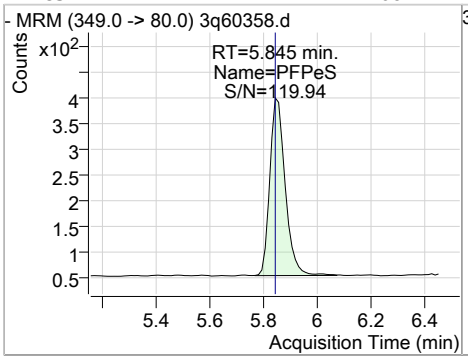
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.03	5.74	0.00	6561	313.0 -> 119.0	7.8	0.0	37.5

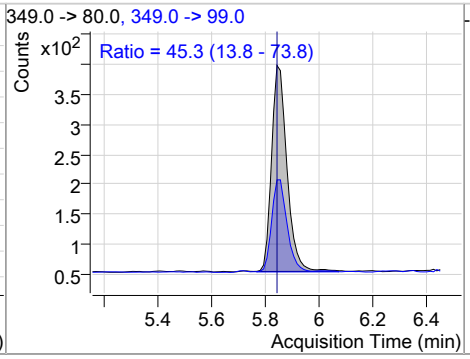


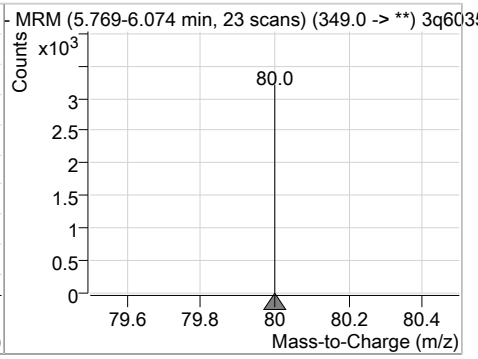




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.08	5.84	0.00	1373	349.0 -> 99.0	45.3	13.8	73.8

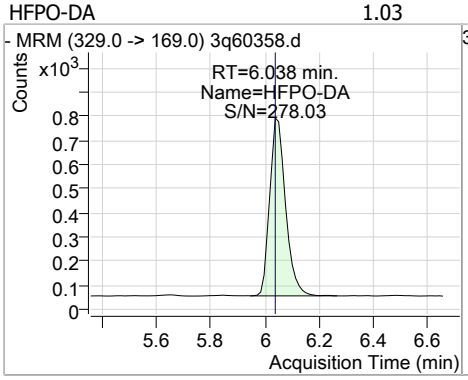


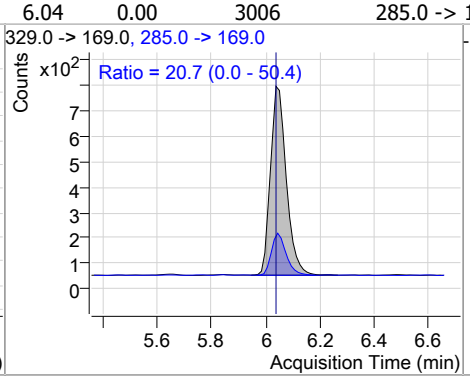


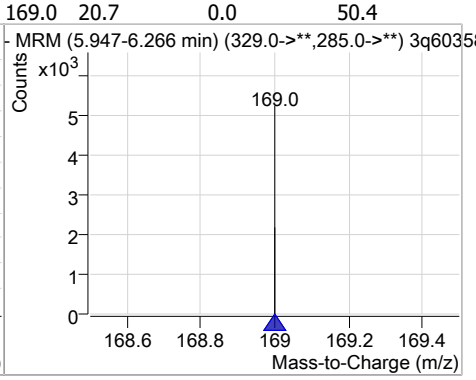


Perfluorinated Compounds by LC/MS/MS

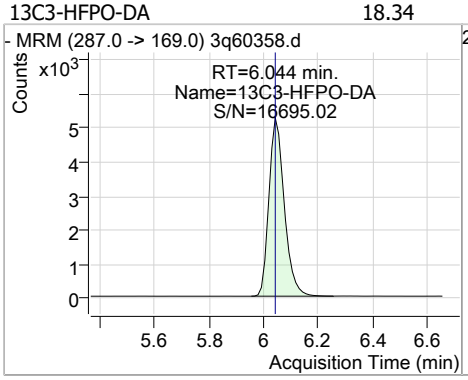
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.03	6.04	0.00	3006	285.0 -> 169.0	20.7	0.0	50.4

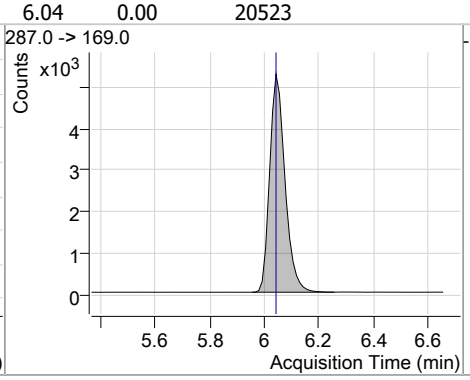


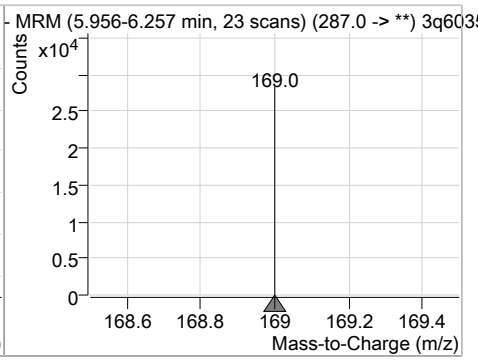




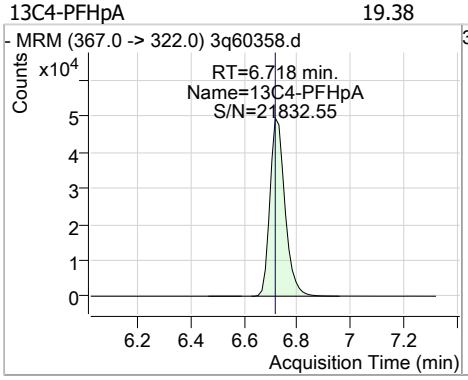
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.34	6.04	0.00	20523				

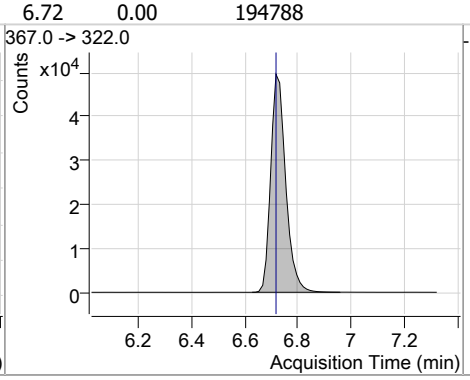


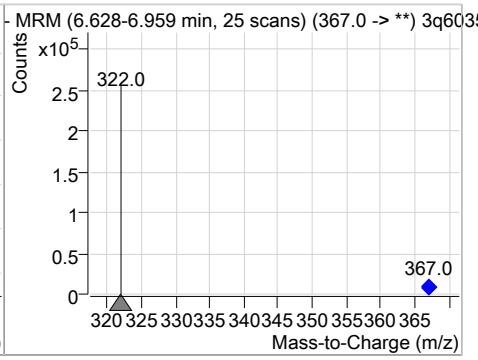




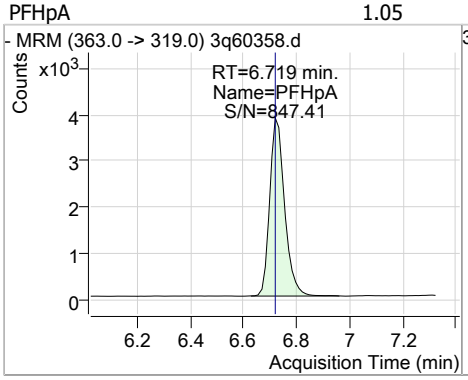
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.38	6.72	0.00	194788				

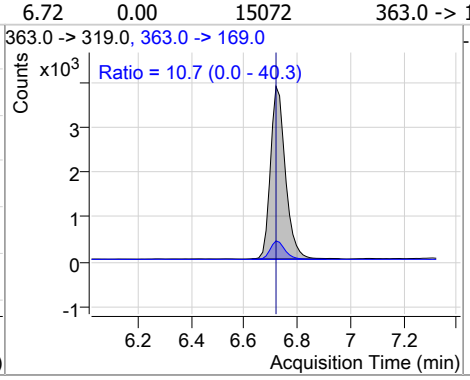


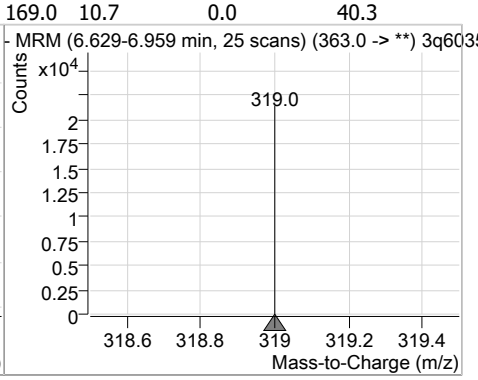




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.05	6.72	0.00	15072	363.0 -> 169.0	10.7	0.0	40.3

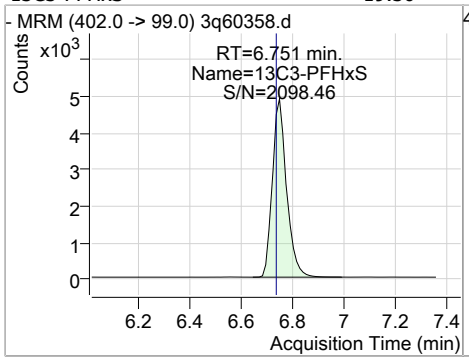


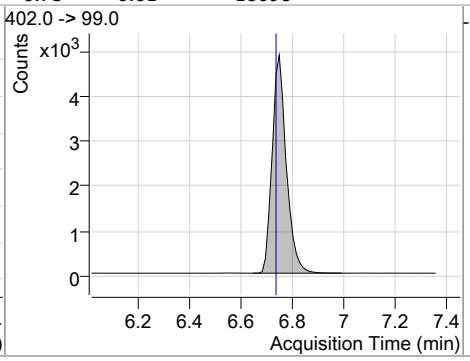


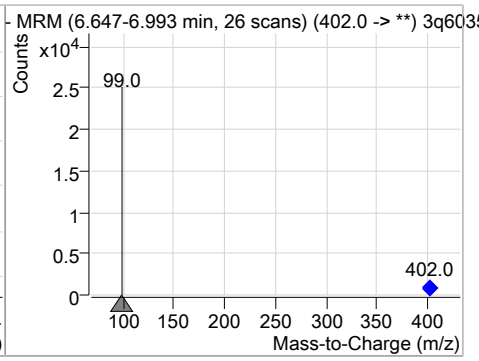


Perfluorinated Compounds by LC/MS/MS

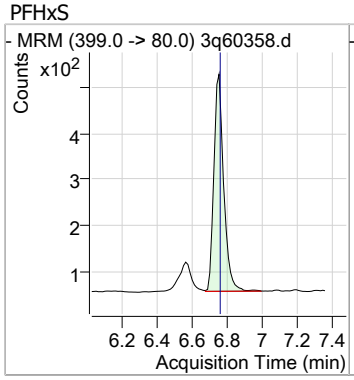
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.30	6.75	0.01	18698				

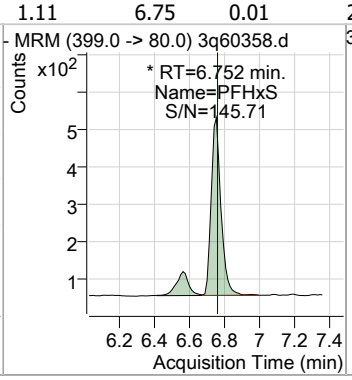


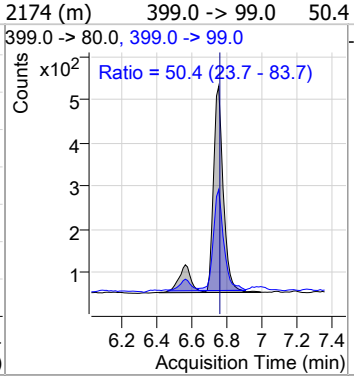


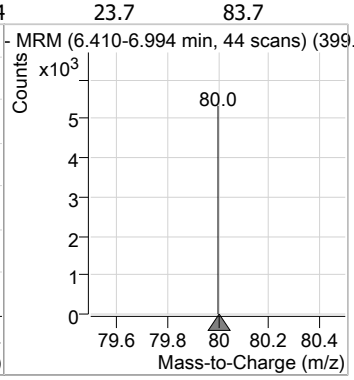


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.11	6.75	0.01	2174 (m)	399.0 -> 99.0	50.4	23.7	83.7

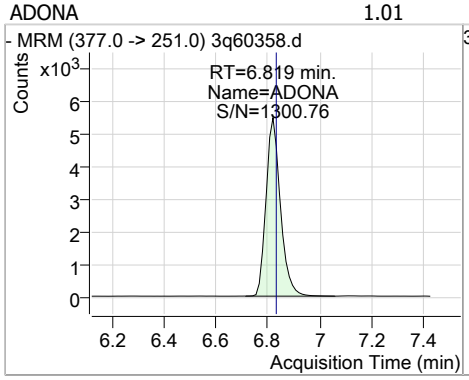


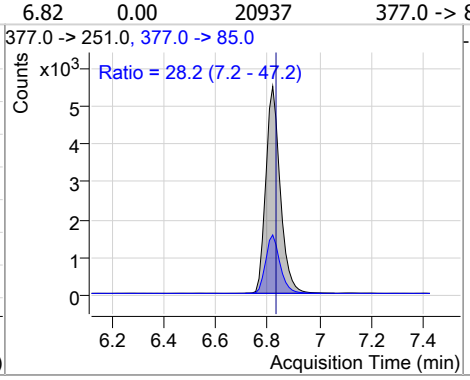


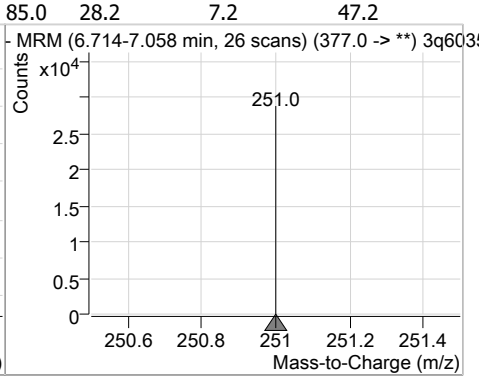




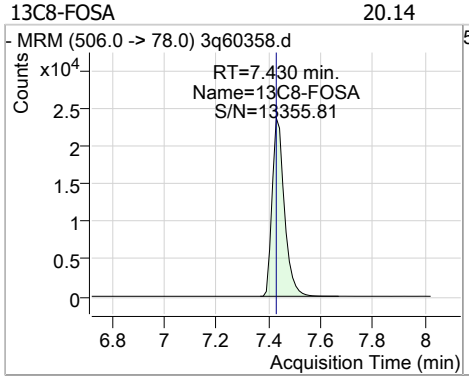
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.01	6.82	0.00	20937	377.0 -> 85.0	28.2	7.2	47.2

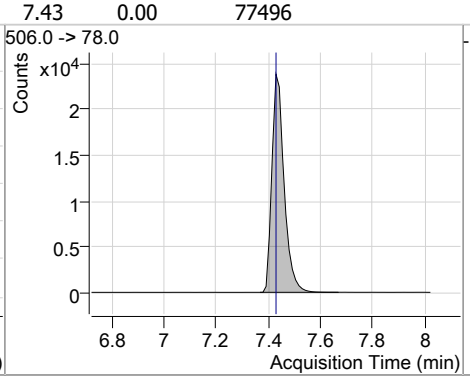


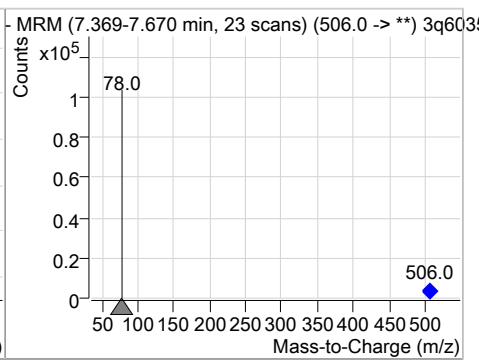




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.14	7.43	0.00	77496				

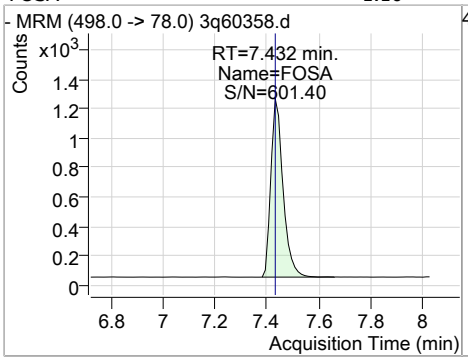


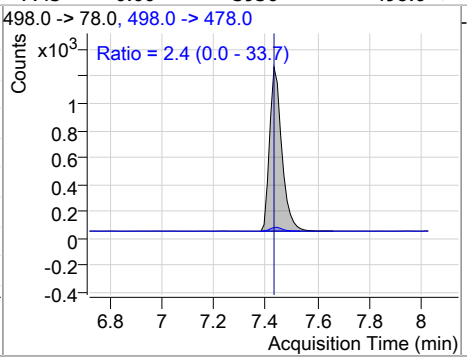


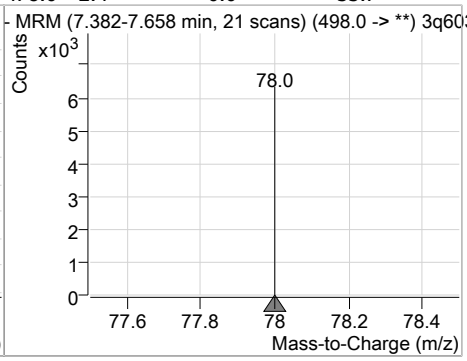


Perfluorinated Compounds by LC/MS/MS

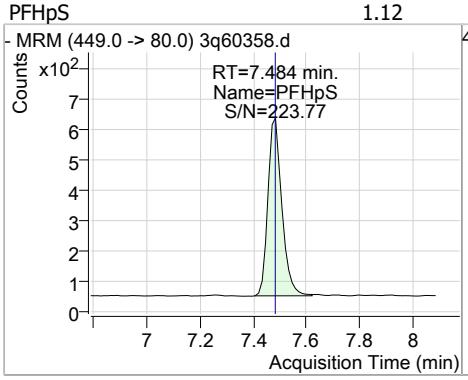
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.10	7.43	0.00	3936	498.0 -> 478.0	2.4	0.0	33.7

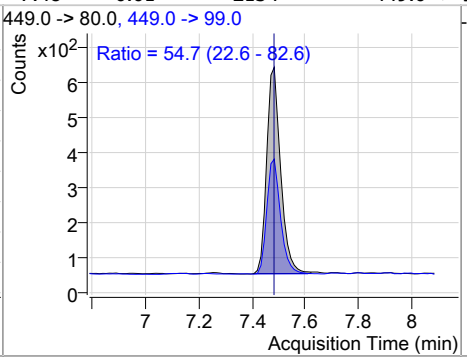


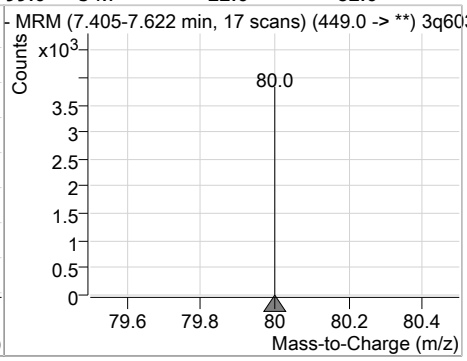




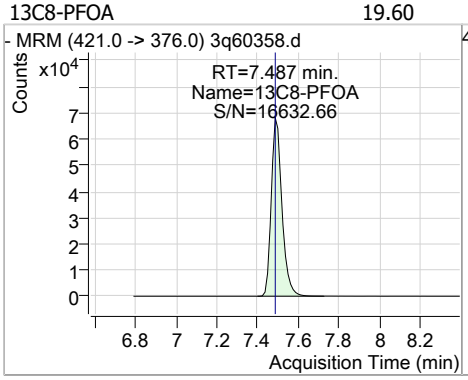
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.12	7.48	0.01	2134	449.0 -> 99.0	54.7	22.6	82.6

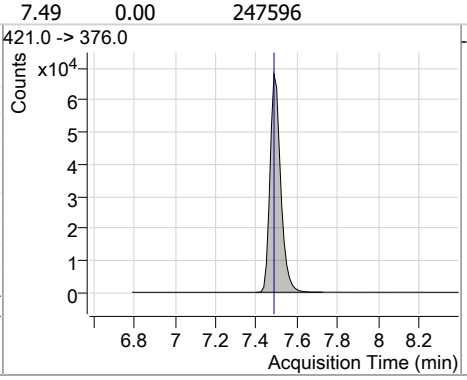


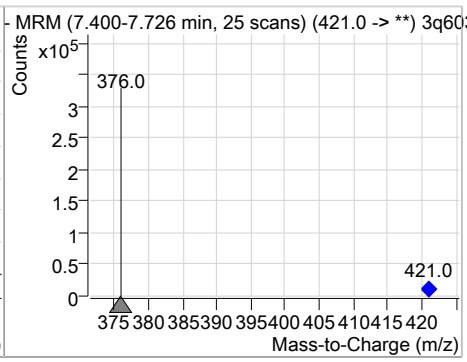




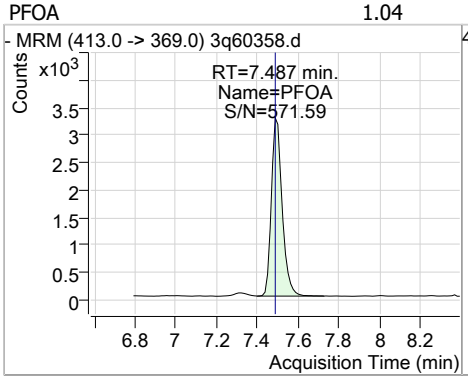
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.60	7.49	0.00	247596				

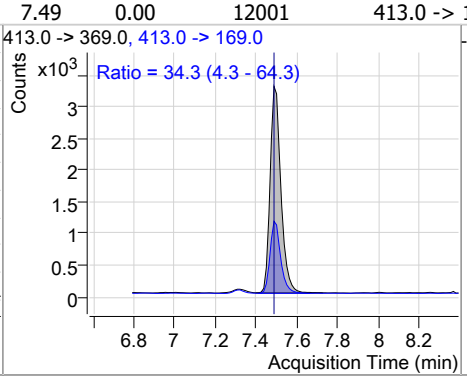


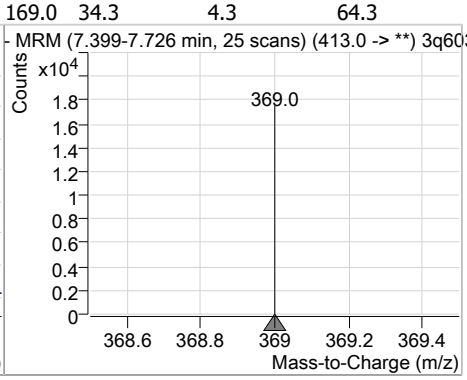




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.04	7.49	0.00	12001	413.0 -> 169.0	34.3	4.3	64.3

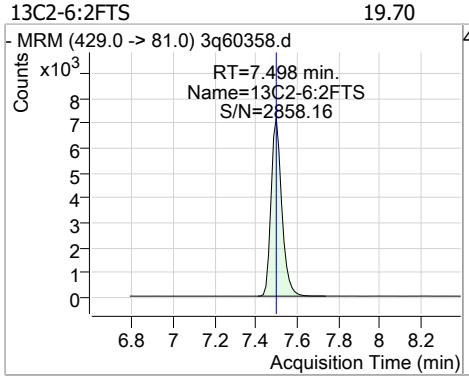


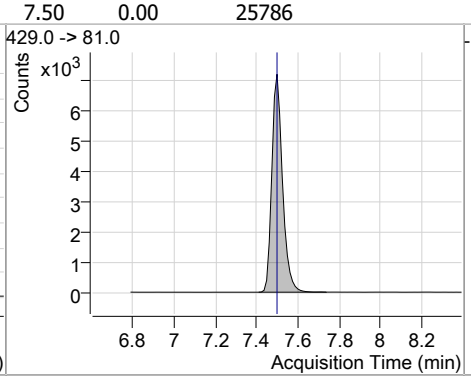


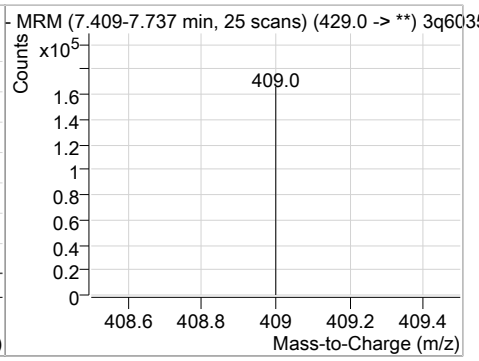


Perfluorinated Compounds by LC/MS/MS

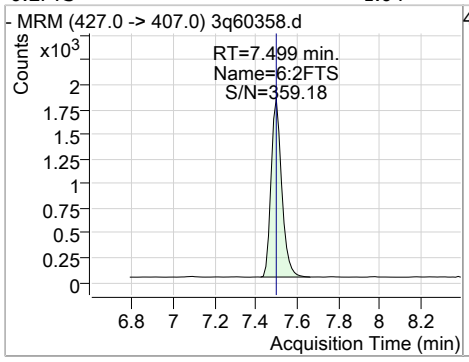
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.70	7.50	0.00	25786				

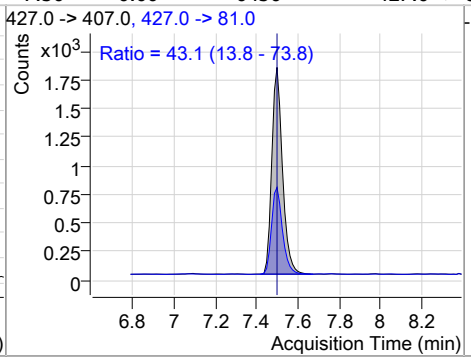


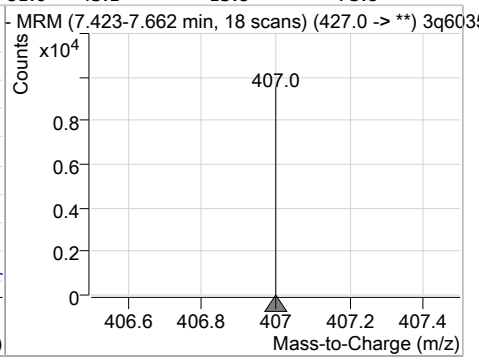




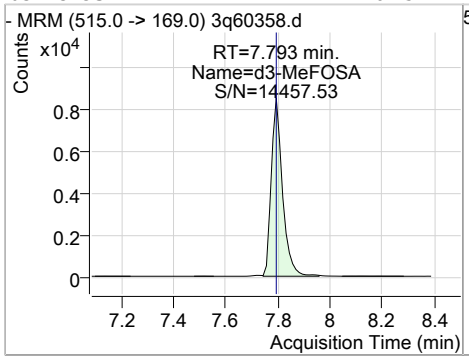
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.04	7.50	0.00	6456	427.0 -> 81.0	43.1	13.8	73.8

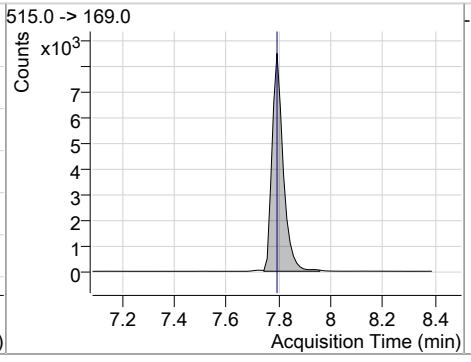


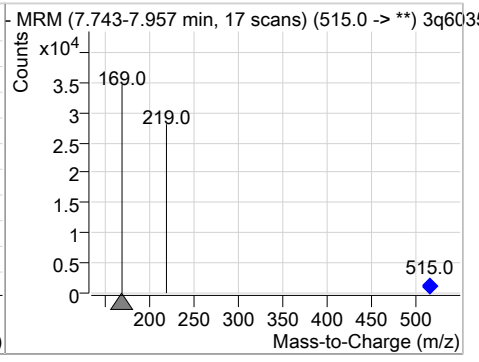




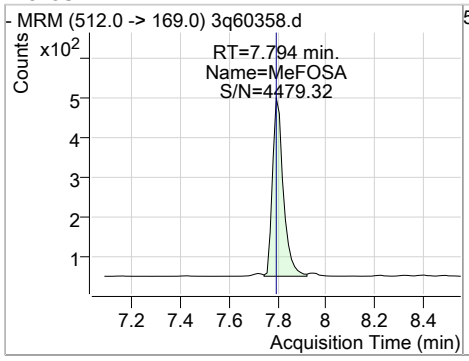
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.25	7.79	0.00	25306				

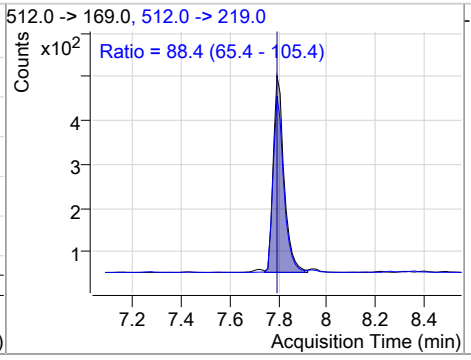


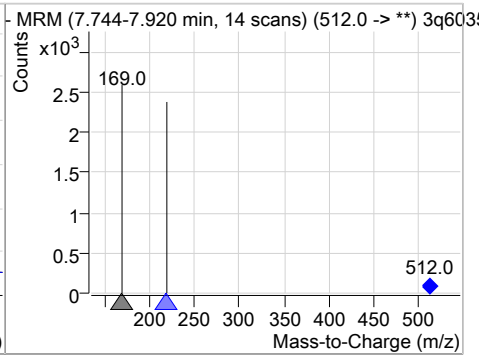




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.11	7.79	0.00	1391	512.0 -> 219.0	88.4	65.4	105.4

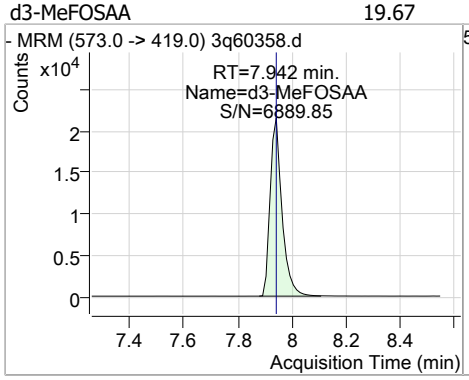


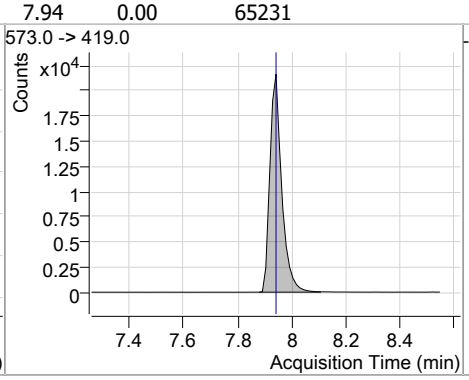


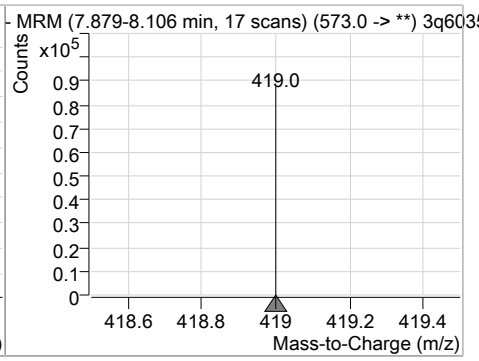


Perfluorinated Compounds by LC/MS/MS

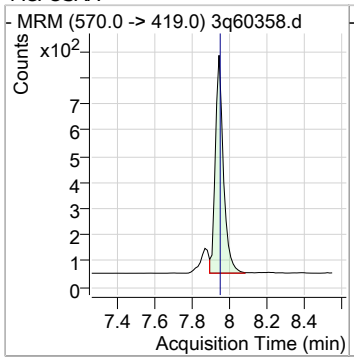
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.67	7.94	0.00	65231				

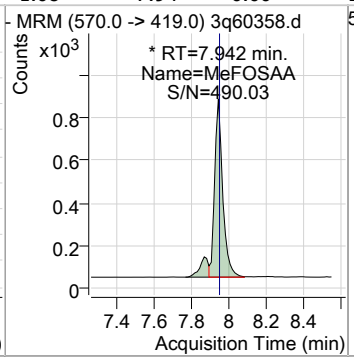


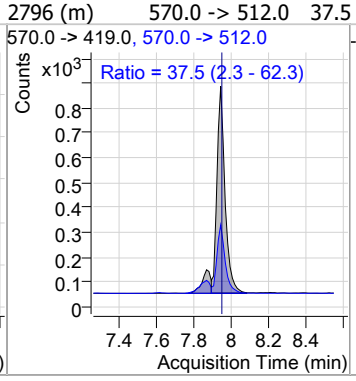


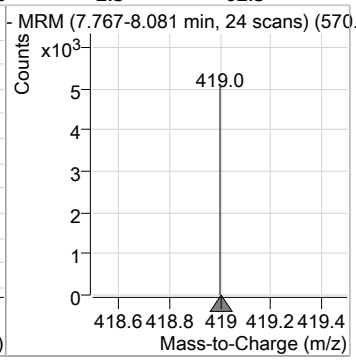


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.08	7.94	0.00	2796 (m)	570.0 -> 512.0	37.5	2.3	62.3

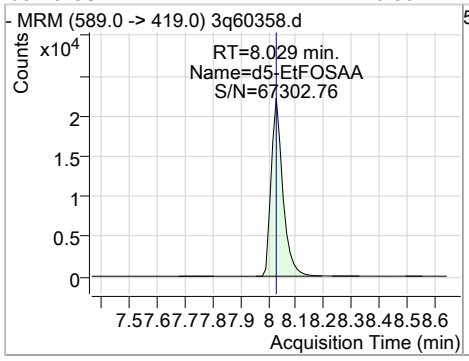


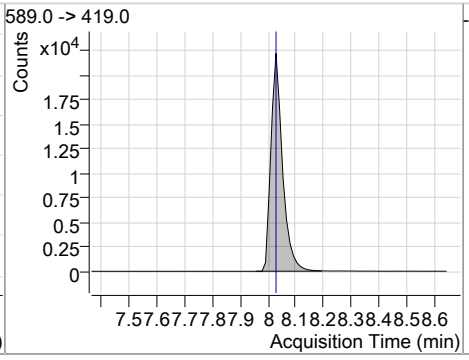


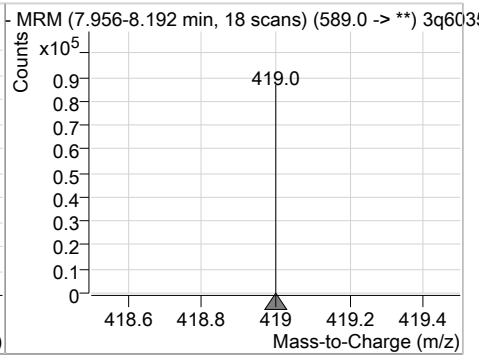




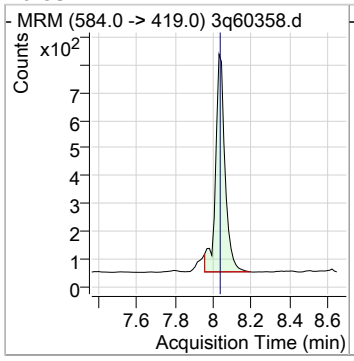
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.56	8.03	0.00	64801				

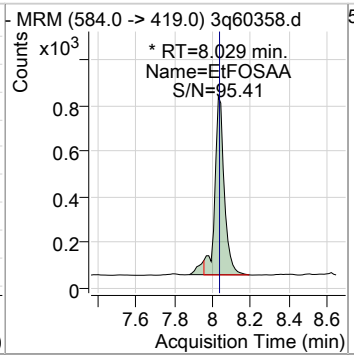


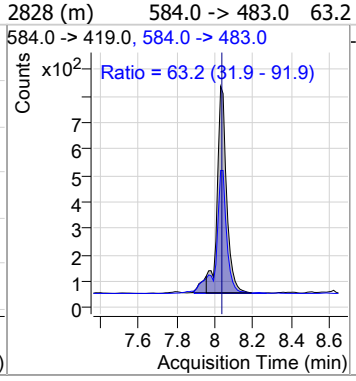


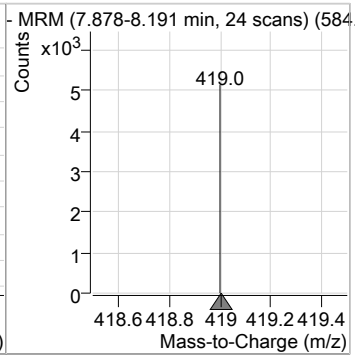


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.12	8.03	0.00	2828 (m)	584.0 -> 483.0	63.2	31.9	91.9



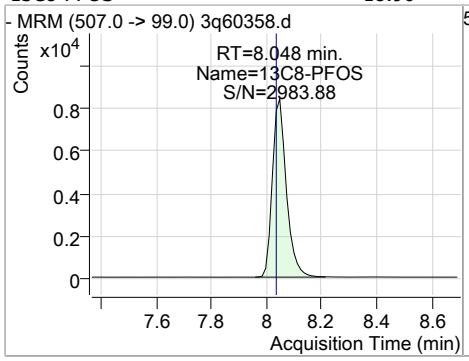


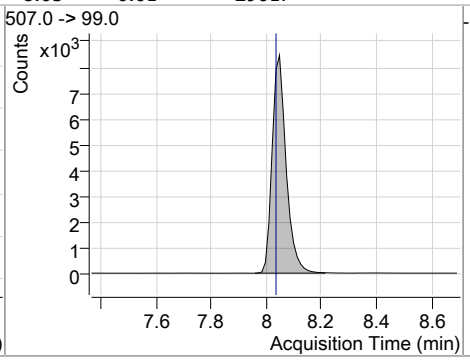


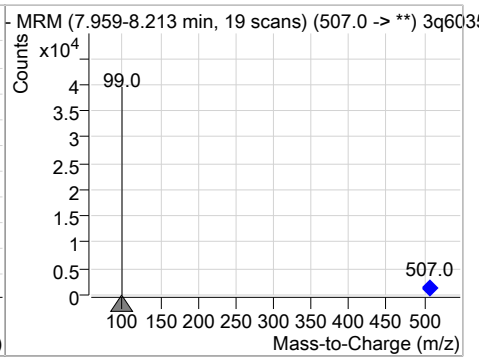


Perfluorinated Compounds by LC/MS/MS

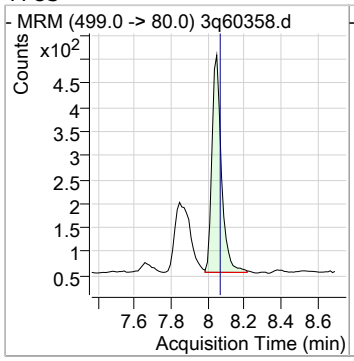
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.90	8.05	0.01	29617				

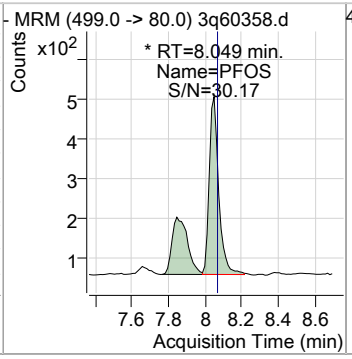


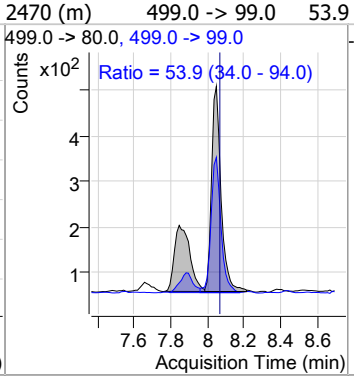


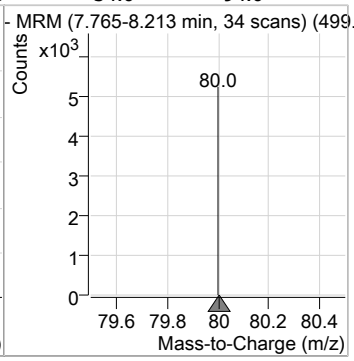


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.07	8.05	0.00	2470 (m)	499.0 -> 99.0	53.9	34.0	94.0

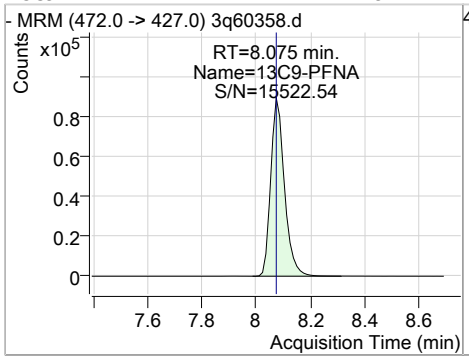


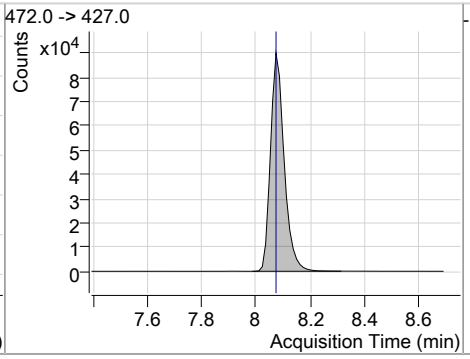


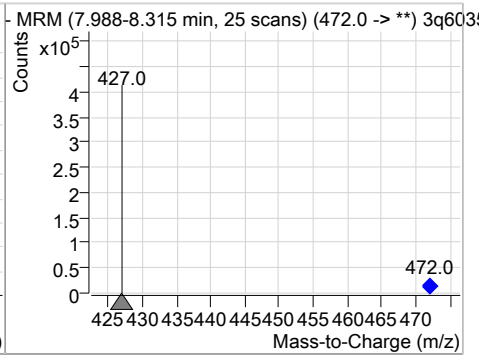




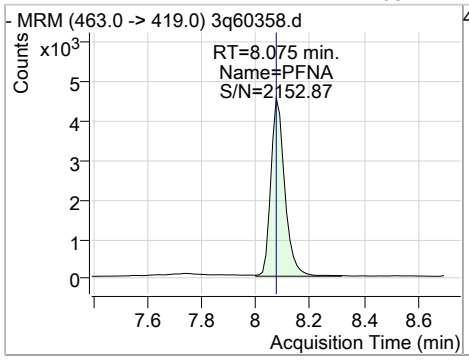
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.47	8.08	0.00	314929				

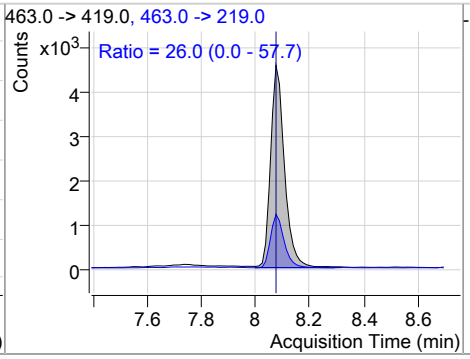


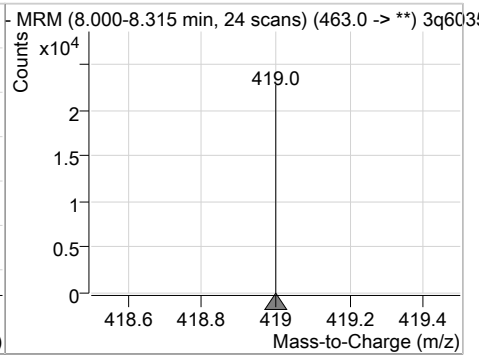




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.08	8.08	0.00	16181	463.0 -> 219.0	26.0	0.0	57.7

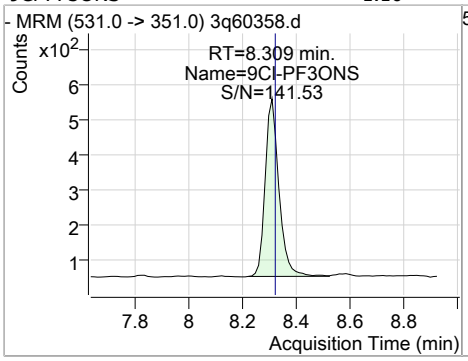


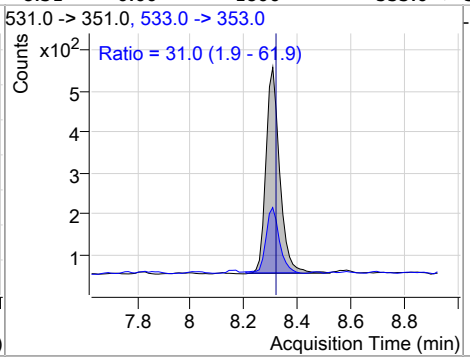


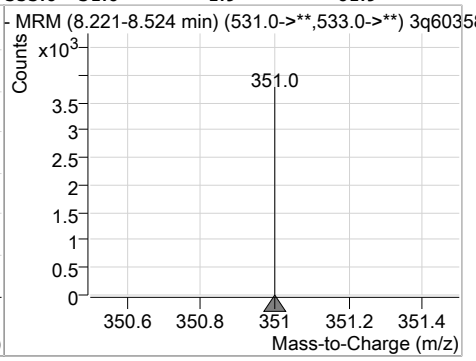


Perfluorinated Compounds by LC/MS/MS

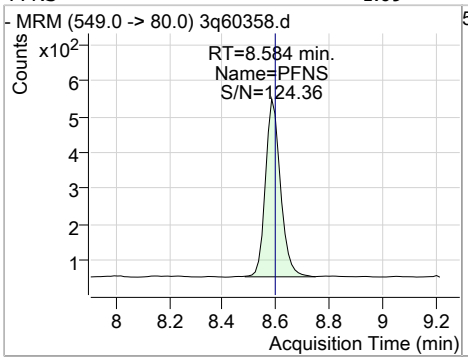
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.10	8.31	0.00	1806	533.0 -> 353.0	31.0	1.9	61.9

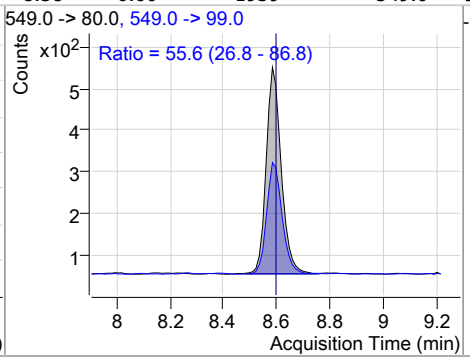


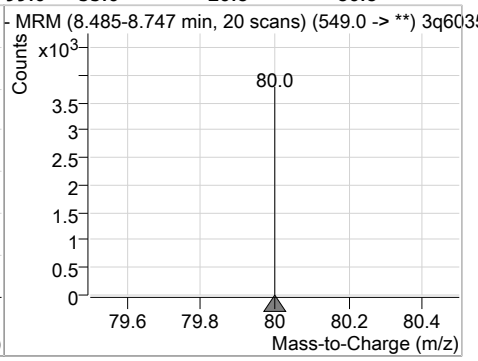




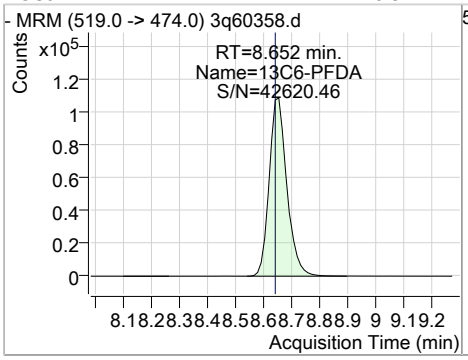
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.09	8.58	0.00	1939	549.0 -> 99.0	55.6	26.8	86.8

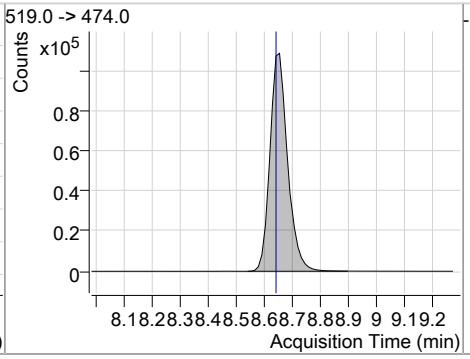


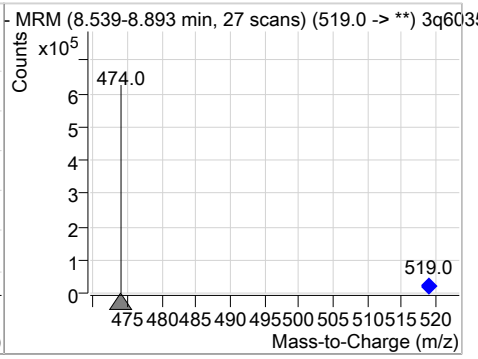




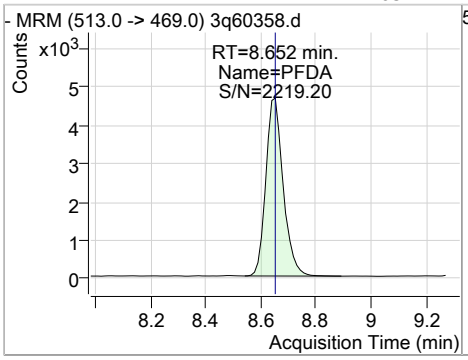
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.97	8.65	0.01	473684				

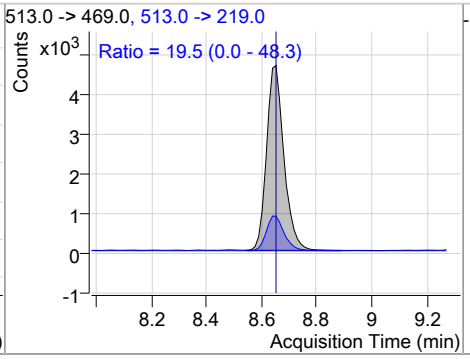


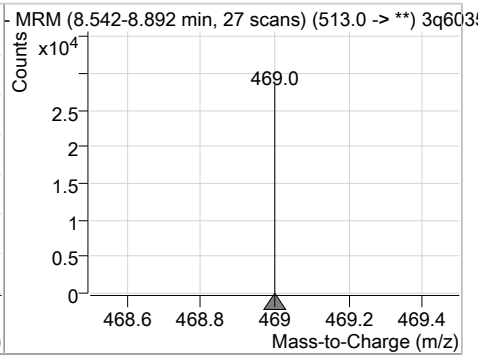




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.03	8.65	0.01	20283	513.0 -> 219.0	19.5	0.0	48.3

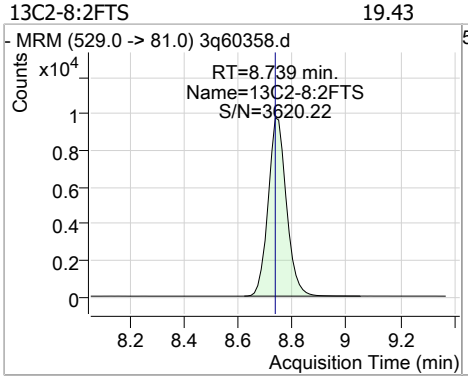


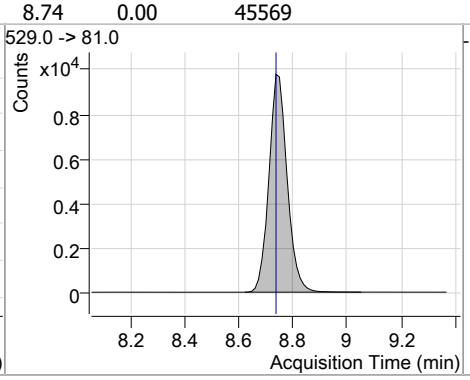


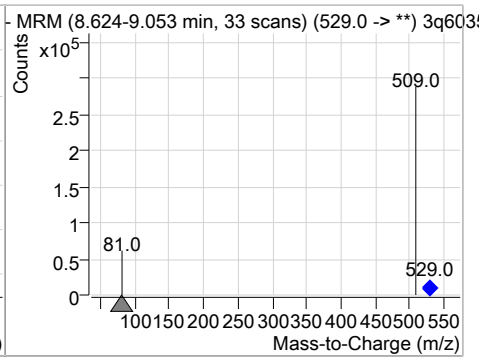


Perfluorinated Compounds by LC/MS/MS

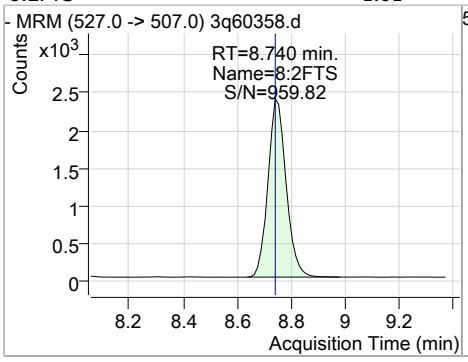
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.43	8.74	0.00	45569				

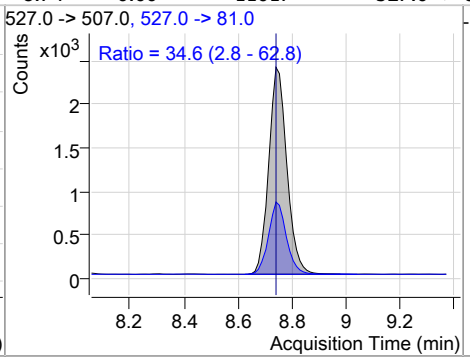


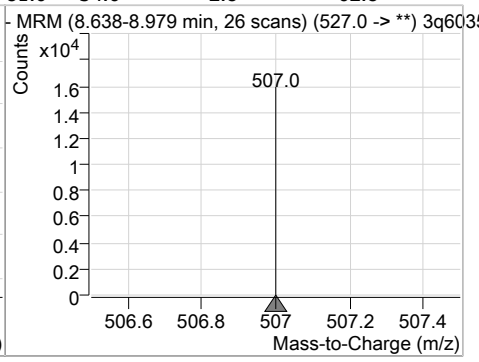




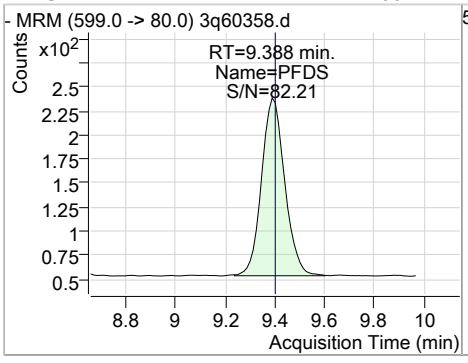
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.01	8.74	0.00	11017	527.0 -> 81.0	34.6	2.8	62.8

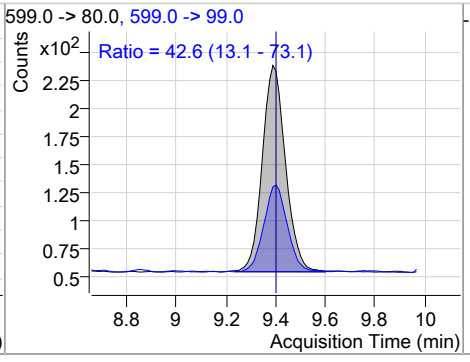


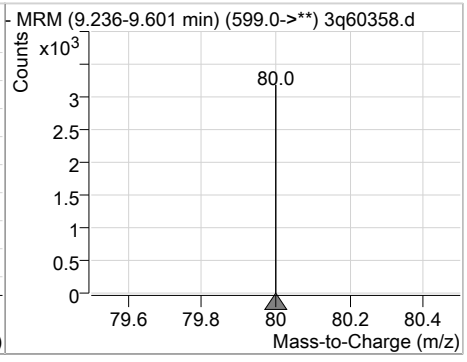




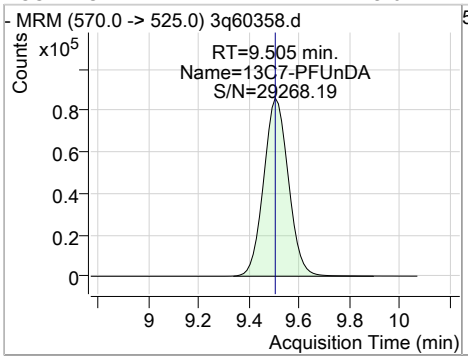
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.06	9.39	-0.01	1200	599.0 -> 99.0	42.6	13.1	73.1

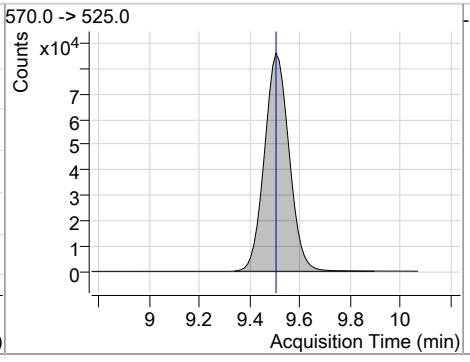


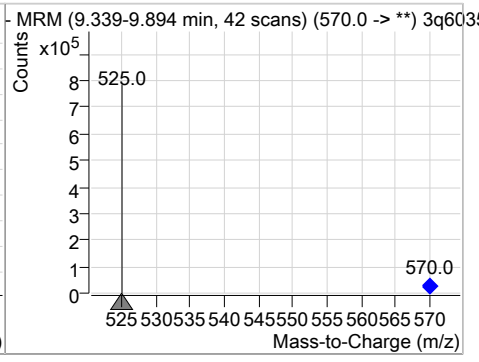




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.02	9.50	0.00	586480				

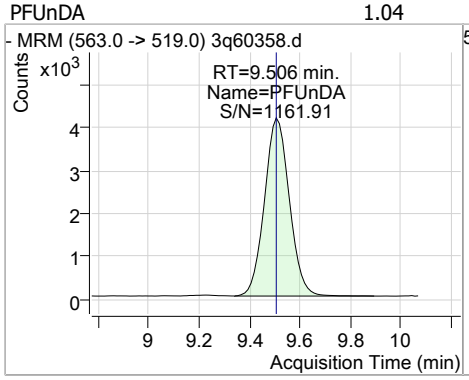


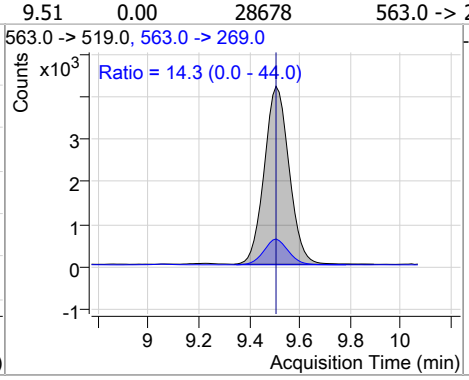


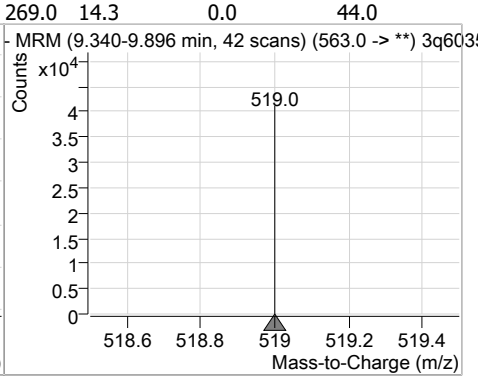


Perfluorinated Compounds by LC/MS/MS

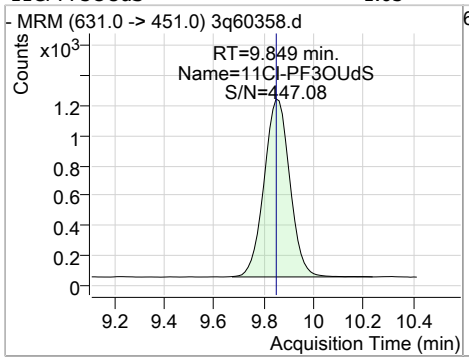
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.04	9.51	0.00	28678	563.0 -> 269.0	14.3	0.0	44.0

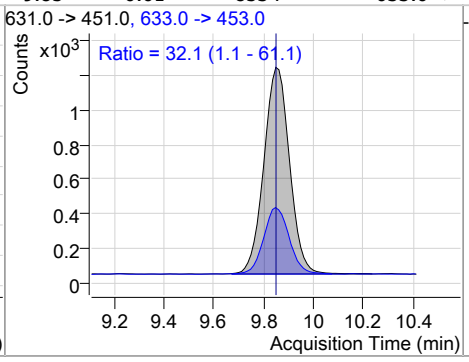


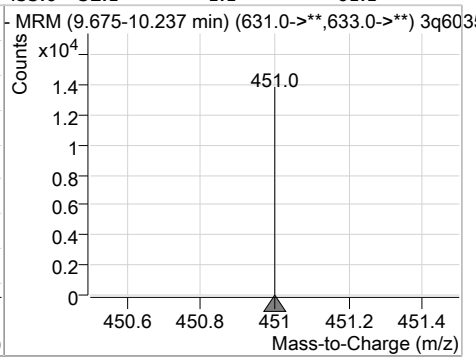




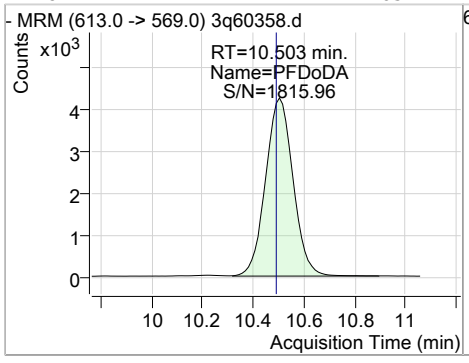
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.03	9.85	-0.01	8534	633.0 -> 453.0	32.1	1.1	61.1

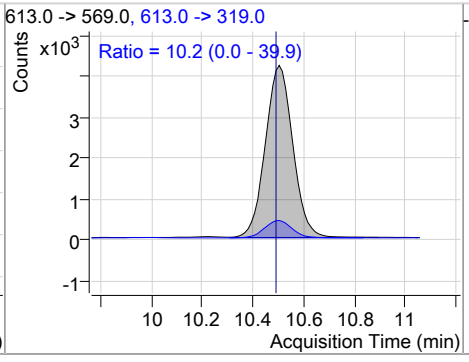


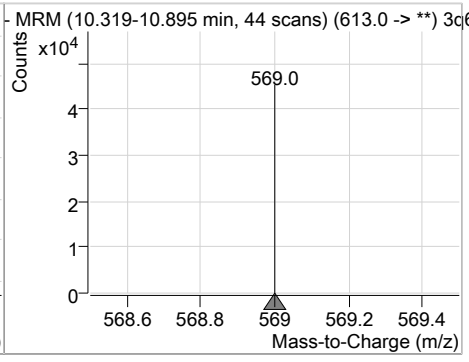




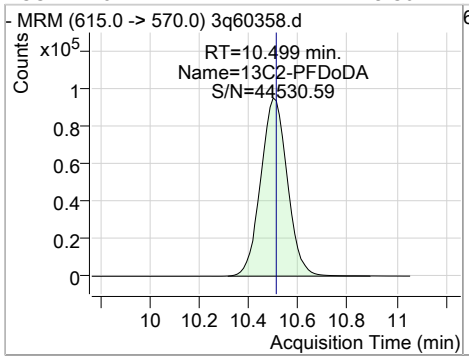
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.05	10.50	0.00	31582	613.0 -> 319.0	10.2	0.0	39.9

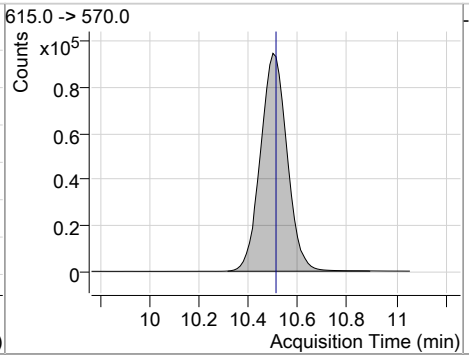


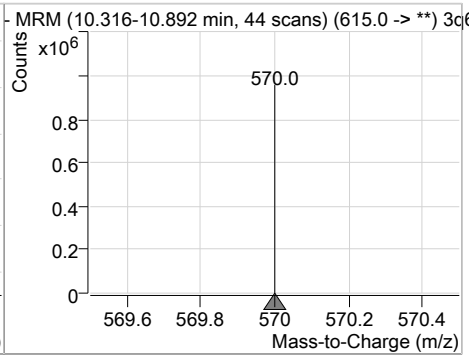




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.36	10.50	-0.01	709725				

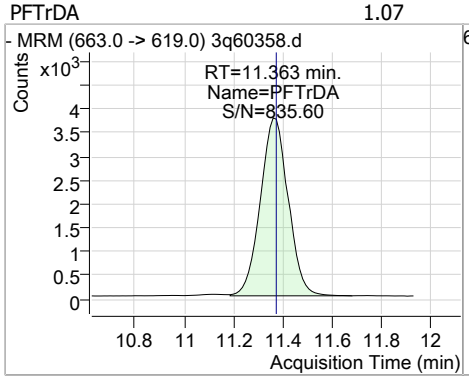


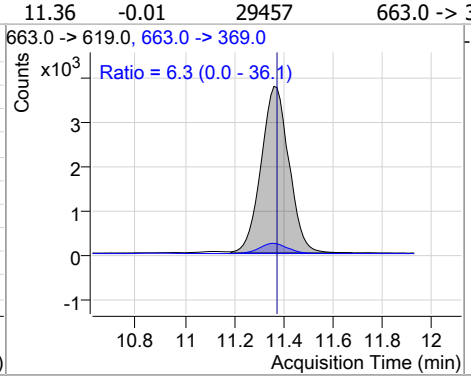


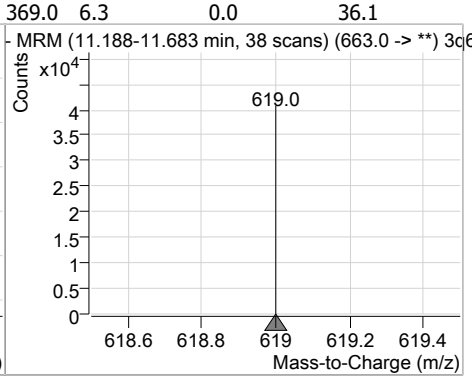


Perfluorinated Compounds by LC/MS/MS

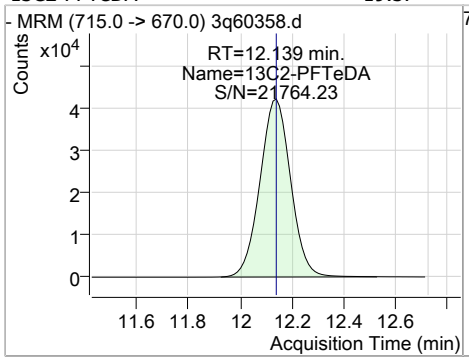
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.07	11.36	-0.01	29457	663.0 -> 369.0	6.3	0.0	36.1

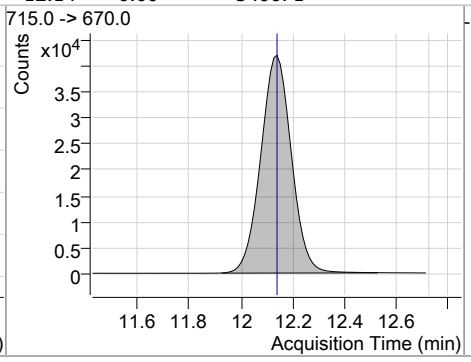


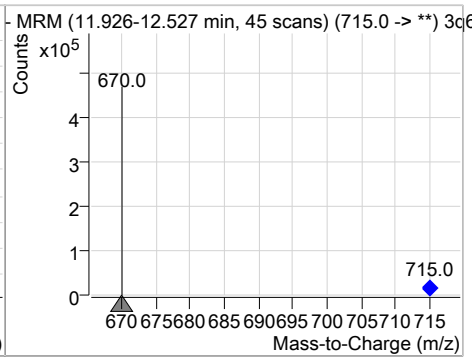




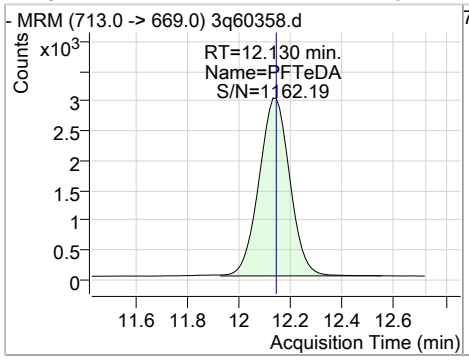
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.37	12.14	0.00	346671				

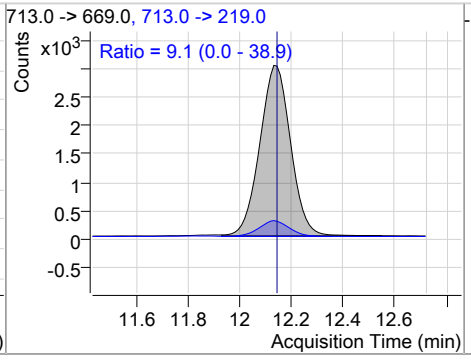


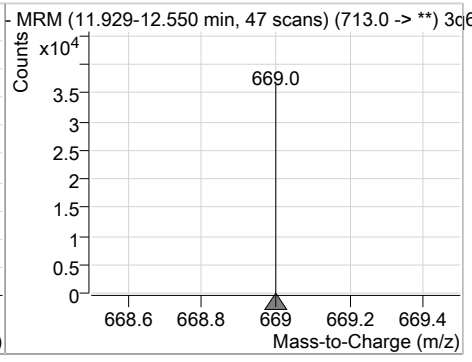




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.10	12.13	-0.01	24792	713.0 -> 219.0	9.1	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-CC824
Lab FileID: 3Q60358.D
Injection Time: 05/27/22 18:06
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 16:58 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.75	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.05	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60369.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 9:30:40 PM
Sample Name : cc824-20
Vial : P1-A7
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

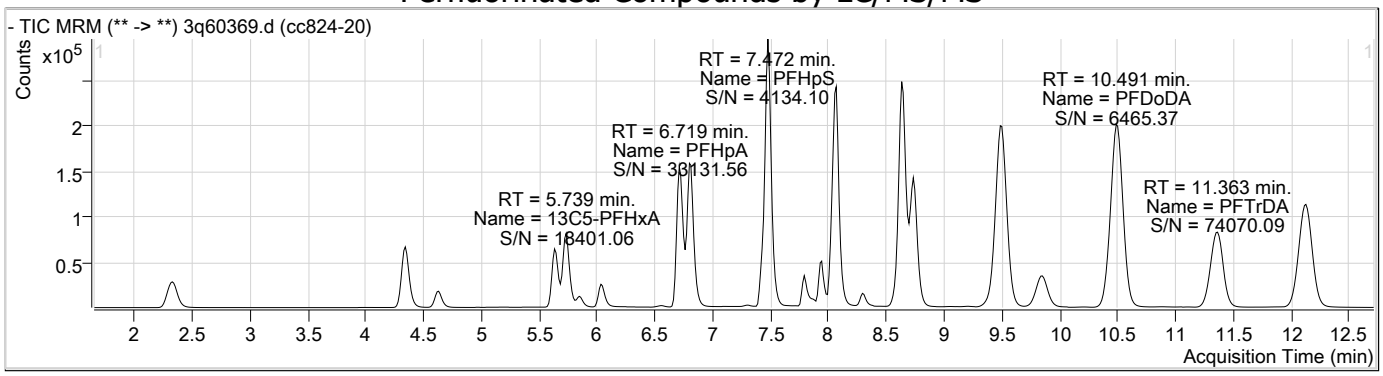
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	125317	20.00	µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	119878	20.00	µg/L	0.000
M5-PFHxA	5.739	318.0 -> 273.0	164480	20.00	µg/L	0.000
M4-PFHpA	6.718	367.0 -> 322.0	211982	20.00	µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	267450	20.00	µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	339551	20.00	µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	523836	20.00	µg/L	0.000
M7-PFUnDA	9.505	570.0 -> 525.0	653022	20.00	µg/L	0.000
M2-PFDoDA	10.499	615.0 -> 570.0	774835	20.00	µg/L	-0.013
M2-PFTeDA	12.126	715.0 -> 670.0	378986	20.00	µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	81747	20.00	µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16578	20.00	µg/L	0.000
M3-PFHxS	6.751	402.0 -> 99.0	20492	20.00	µg/L	0.013
M8-PFOS	8.036	507.0 -> 99.0	32795	20.00	µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	12015	20.00	µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	27456	20.00	µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	49361	20.00	µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	74137	20.00	µg/L	-0.013
M3-HFPO-DA	6.044	287.0 -> 169.0	22573	20.00	µg/L	0.000
M3-MeFOSA	7.793	515.0 -> 169.0	26298	20.00	µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	68327	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.634	329.0 -> 81.0	12015	21.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C2-6:2FTS	7.485	429.0 -> 81.0	27456	20.98	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C2-8:2FTS	8.739	529.0 -> 81.0	49361	21.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C2-PFDoDA	10.499	615.0 -> 570.0	774835	21.14	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C2-PFTeDA	12.126	715.0 -> 670.0	378986	21.18	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C3-PFBS	4.629	302.0 -> 99.0	16578	21.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C3-PFHxS	6.751	402.0 -> 99.0	20492	21.15	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C4-PFBA	2.327	217.0 -> 172.0	125317	20.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C4-PFHpA	6.718	367.0 -> 322.0	211982	21.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C5-PFHxA	5.739	318.0 -> 273.0	164480	20.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C5-PFPeA	4.349	268.0 -> 223.0	119878	20.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C6-PFDA	8.639	519.0 -> 474.0	523836	20.98	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

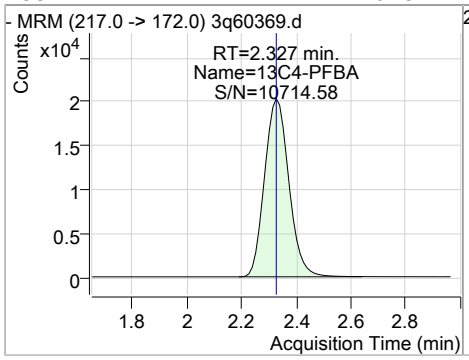
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C7-PFUnDA	9.505	570.0 -> 525.0	653022	21.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C8-FOSA	7.430	506.0 -> 78.0	81747	21.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C8-PFOA	7.487	421.0 -> 376.0	267450	21.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	8.036	507.0 -> 99.0	32795	20.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C9-PFNA	8.075	472.0 -> 427.0	339551	20.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
d3-MeFOSAA	7.929	573.0 -> 419.0	74137	22.36 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%		
13C3-HFPO-DA	6.044	287.0 -> 169.0	22574	20.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSA	7.793	515.0 -> 169.0	26298	21.04 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
d5-EtFOSAA	8.029	589.0 -> 419.0	68327	21.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
Target Compounds						**QValue**
4:2FTS	5.637	327.0 -> 307.0	105572	20.14 µg/L		100
6:2FTS	7.486	427.0 -> 407.0	137817	20.89 µg/L		99
8:2FTS	8.740	527.0 -> 507.0	240781	20.43 µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	56570	21.29 µg/L	m	93
FOSA	7.432	498.0 -> 78.0	79575	21.17 µg/L		100
MeFOSAA	7.942	570.0 -> 419.0	61604	20.91 µg/L	m	92
PFBA	2.333	213.0 -> 169.0	49956	20.45 µg/L		100
PFBS	4.632	299.0 -> 80.0	43620	20.80 µg/L		99
PFDA	8.640	513.0 -> 469.0	457432	20.91 µg/L		100
PFDoDA	10.491	613.0 -> 569.0	675788	20.51 µg/L		100
PFDS	9.388	599.0 -> 80.0	25517	20.32 µg/L		99
PFHpA	6.719	363.0 -> 319.0	323963	20.84 µg/L		99
PFHpS	7.472	449.0 -> 80.0	45998	21.76 µg/L		100
PFHxA	5.740	313.0 -> 269.0	142226	20.69 µg/L		99
PFHxS	6.739	399.0 -> 80.0	43879	20.51 µg/L	m	96
PFNA	8.075	463.0 -> 419.0	336642	20.90 µg/L		100
PFNS	8.584	549.0 -> 80.0	41785	21.21 µg/L		100
PFOA	7.487	413.0 -> 369.0	254907	20.47 µg/L		100
PFOS	8.036	499.0 -> 80.0	53794	20.96 µg/L	m	80
PFPeA	4.352	263.0 -> 219.0	189088	21.40 µg/L		100
PFPeS	5.845	349.0 -> 80.0	29054	20.74 µg/L		99
PFTeDA	12.130	713.0 -> 669.0	518147	20.95 µg/L		100
PFTrDA	11.363	663.0 -> 619.0	624392	20.76 µg/L		100
PFUnDA	9.494	563.0 -> 519.0	624615	20.37 µg/L		100
11Cl-PF3OUdS	9.849	631.0 -> 451.0	185989	20.57 µg/L		99
9Cl-PF3ONS	8.296	531.0 -> 351.0	37284	20.55 µg/L		98
ADONA	6.819	377.0 -> 251.0	468526	20.62 µg/L		100
HFPO-DA	6.038	329.0 -> 169.0	63333	19.79 µg/L		99
MeFOSA	7.794	512.0 -> 169.0	27298	20.94 µg/L		100

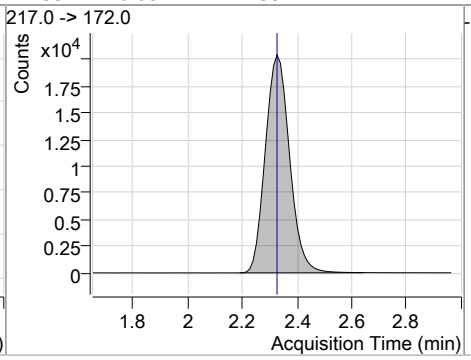
 # = Qualifier out of range, m = manually integrated, + = Area summed

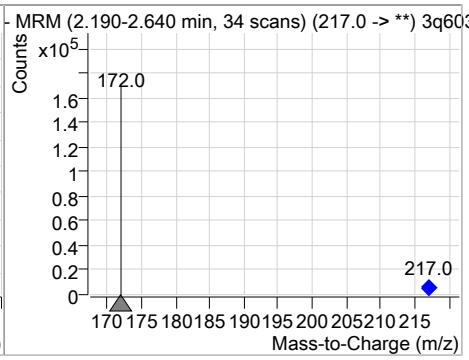
Perfluorinated Compounds by LC/MS/MS



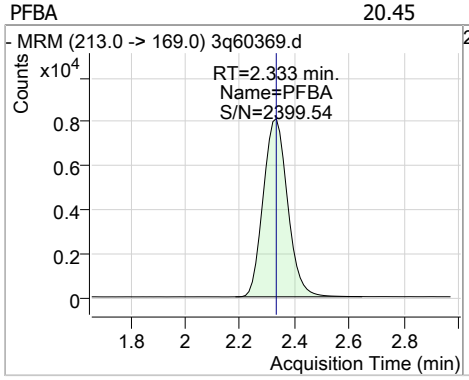
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.73	2.33	0.00	125317				

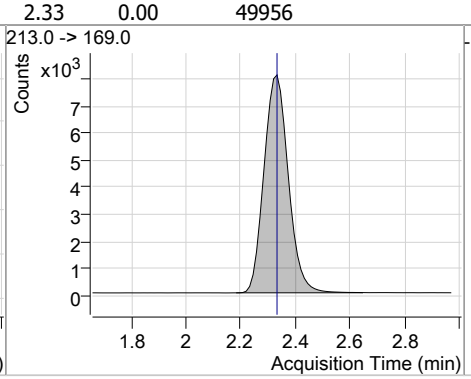


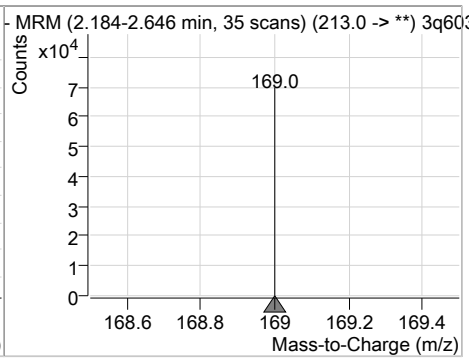




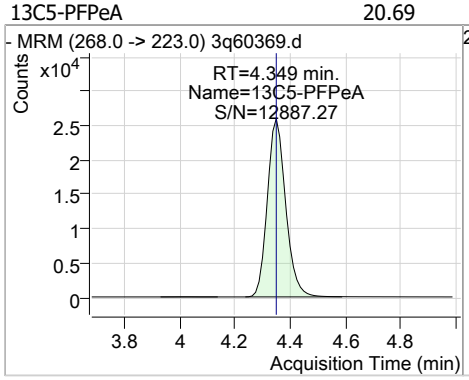
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.45	2.33	0.00	49956				

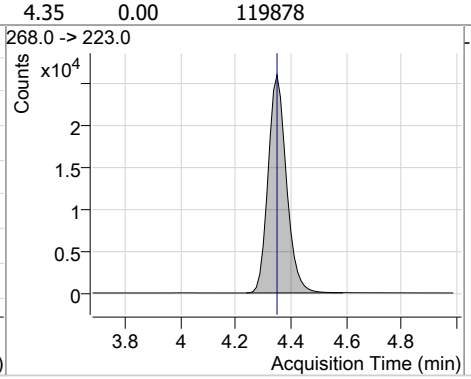


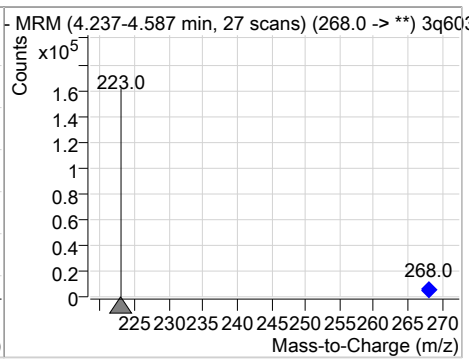




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.69	4.35	0.00	119878				

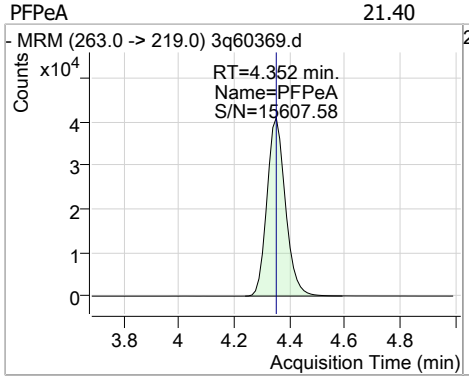


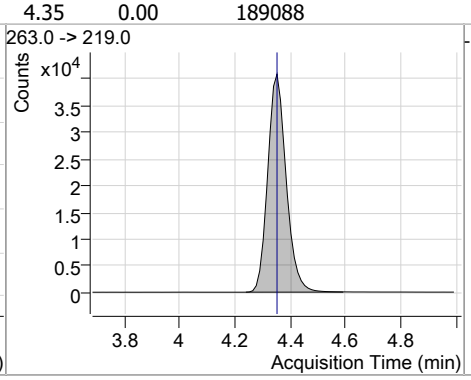


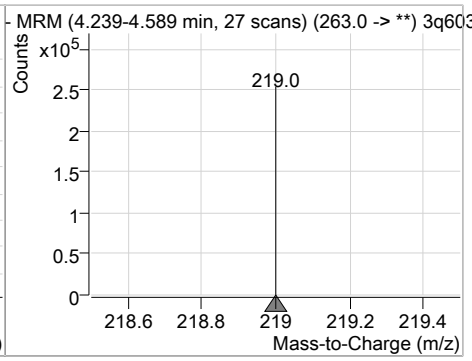


Perfluorinated Compounds by LC/MS/MS

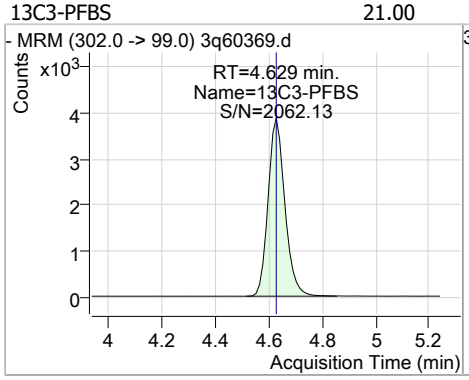
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.40	4.35	0.00	189088				

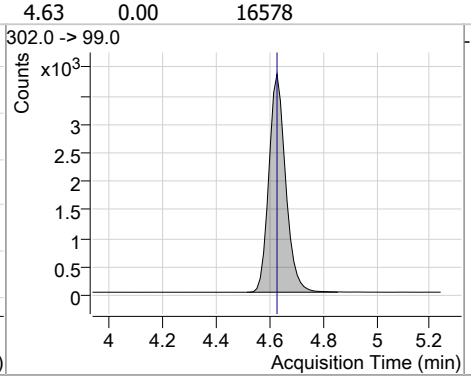


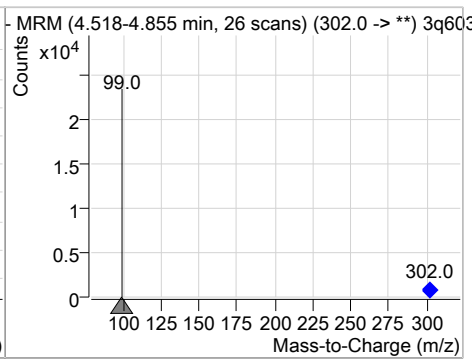




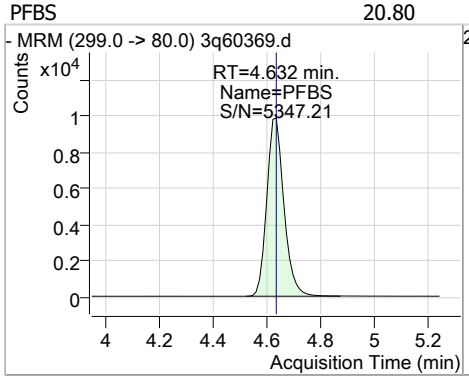
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.00	4.63	0.00	16578				

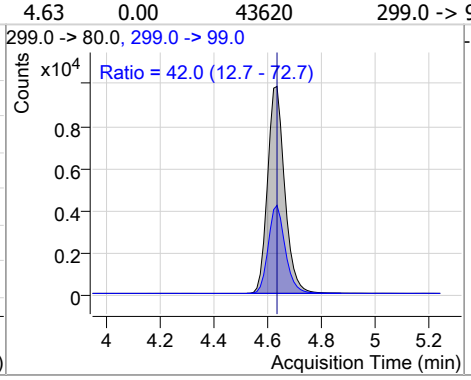


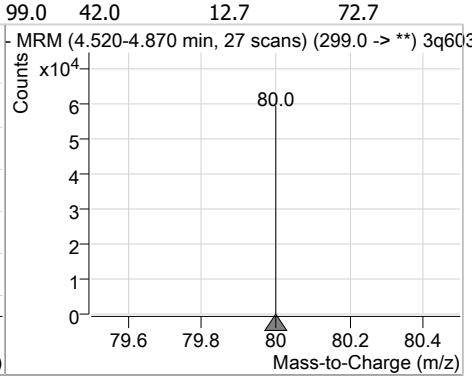




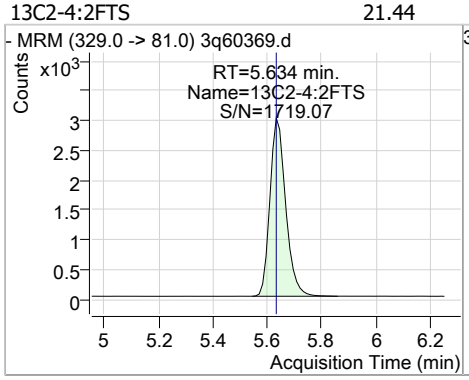
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.80	4.63	0.00	43620	299.0 -> 99.0	42.0	12.7	72.7

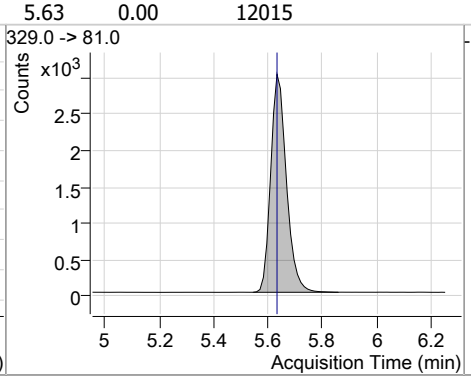


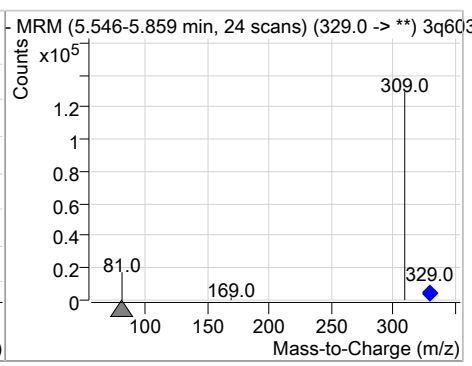




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.44	5.63	0.00	12015				

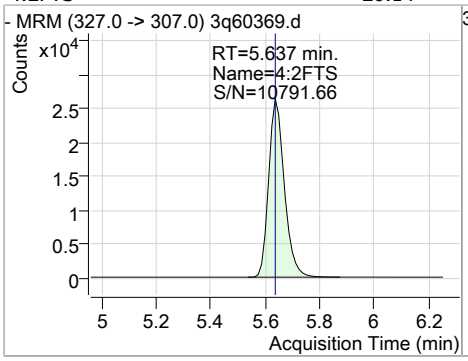


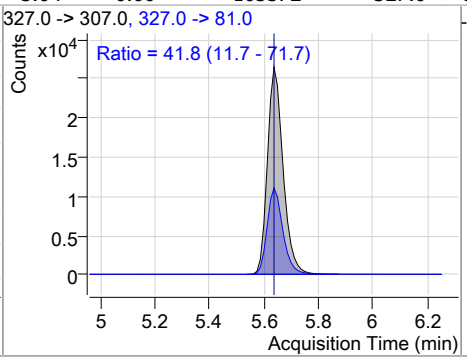


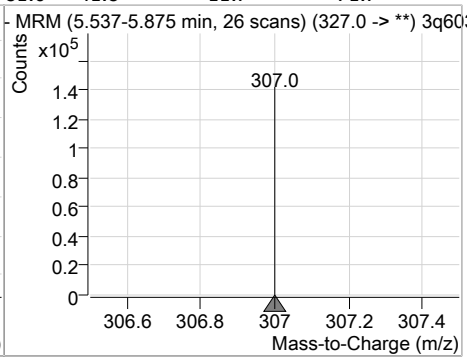


Perfluorinated Compounds by LC/MS/MS

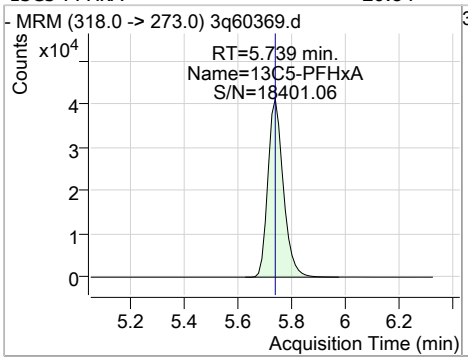
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.14	5.64	0.00	105572	327.0 -> 81.0	41.8	11.7	71.7

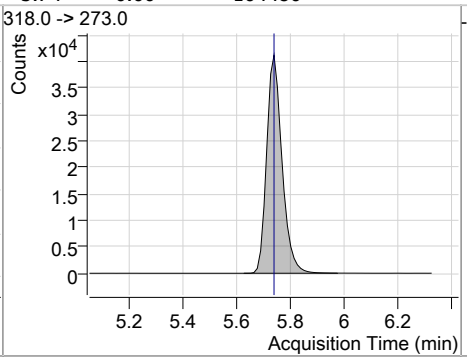


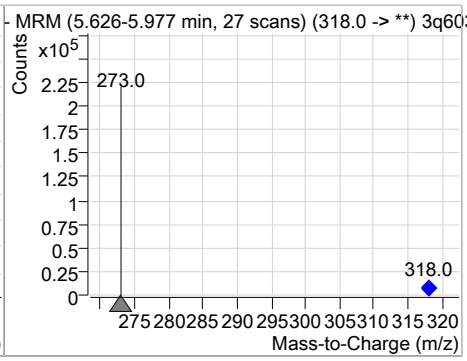




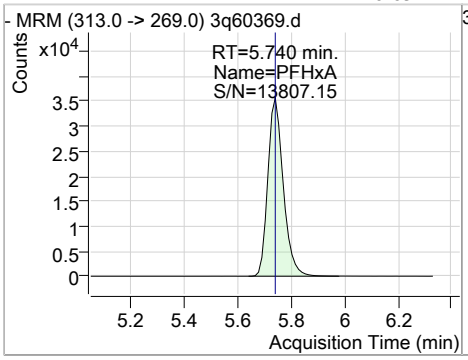
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.84	5.74	0.00	164480				

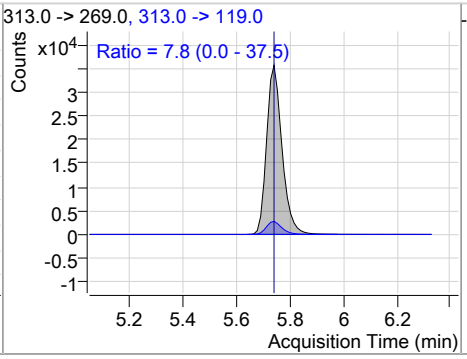


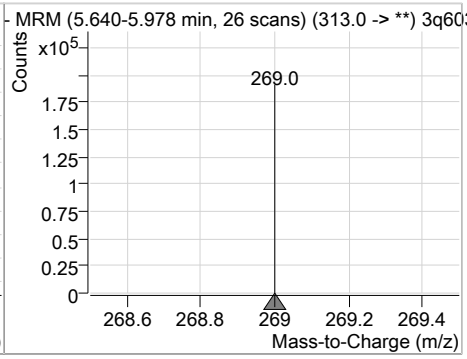




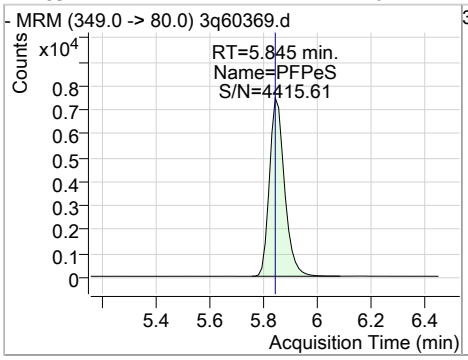
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.69	5.74	0.00	142226	313.0 -> 119.0	7.8	0.0	37.5

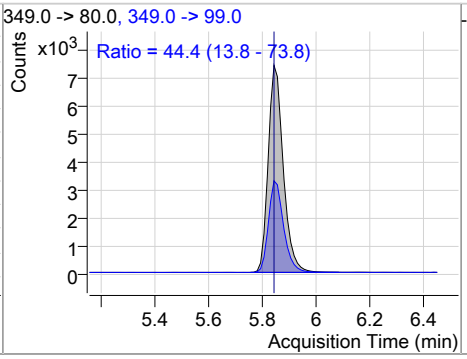


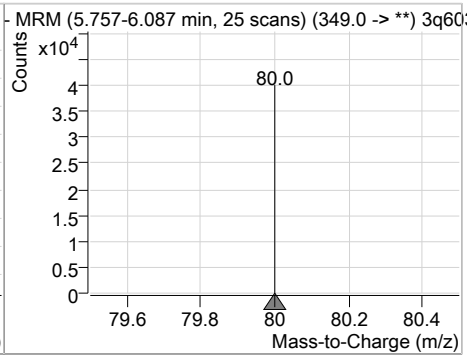




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.74	5.84	0.00	29054	349.0 -> 99.0	44.4	13.8	73.8

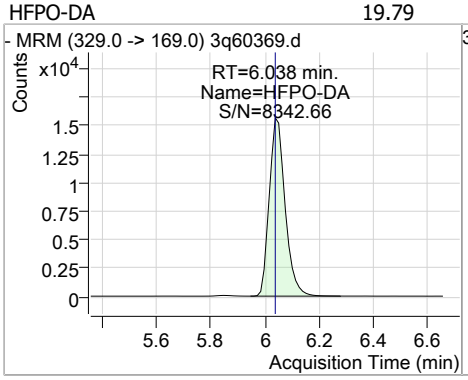


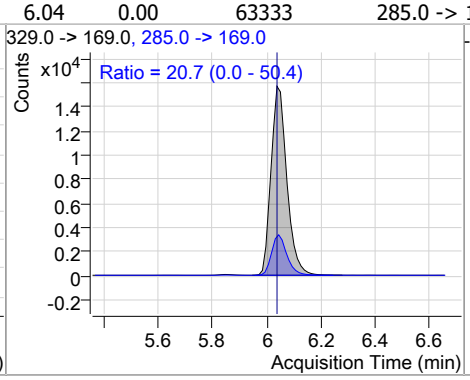


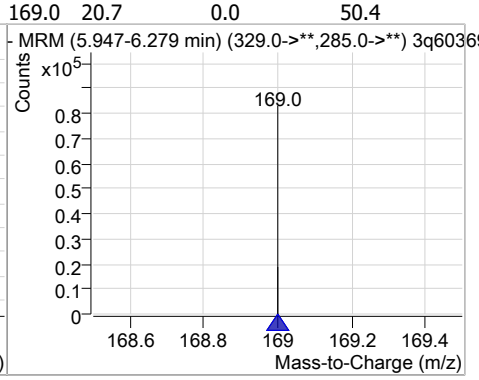


Perfluorinated Compounds by LC/MS/MS

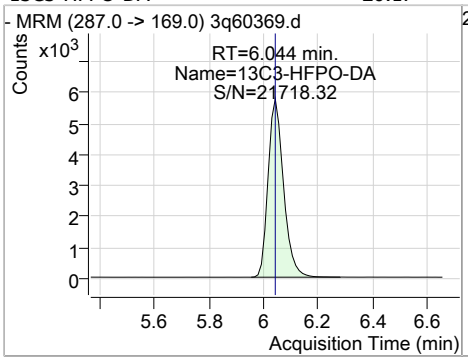
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.79	6.04	0.00	63333	285.0 -> 169.0	20.7	0.0	50.4

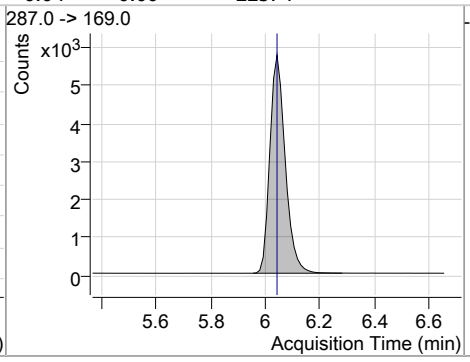


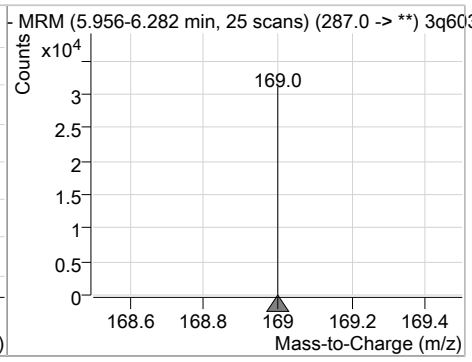




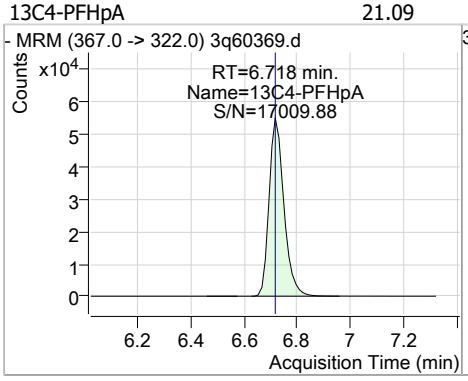
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.17	6.04	0.00	22574				

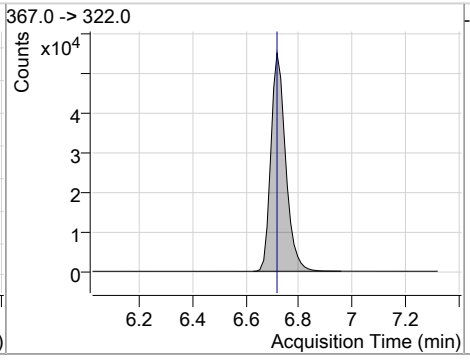


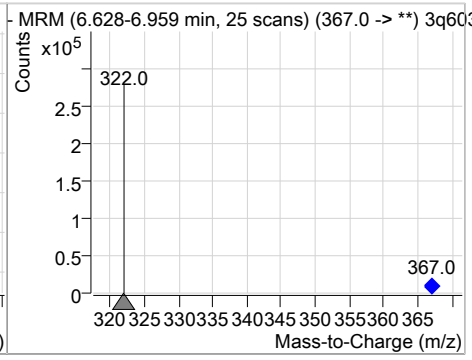




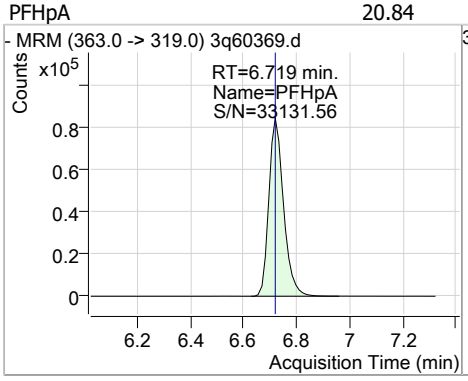
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.09	6.72	0.00	211982				

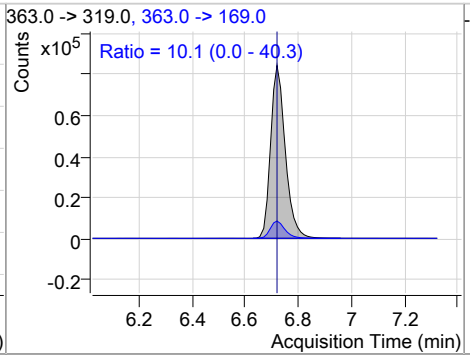


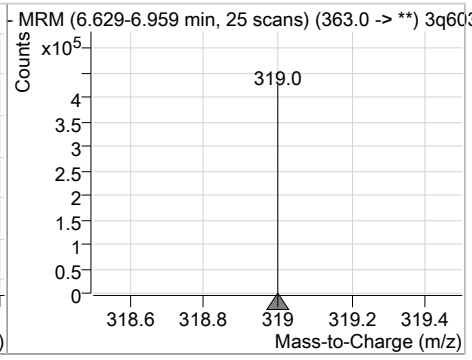




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.84	6.72	0.00	323963	363.0 -> 169.0	10.1	0.0	40.3

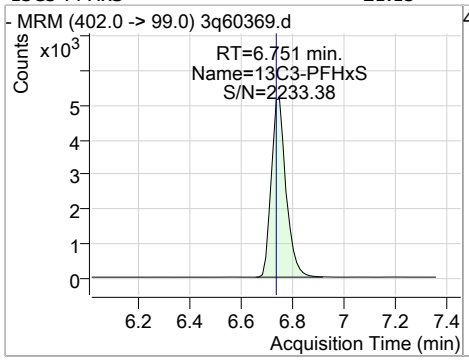


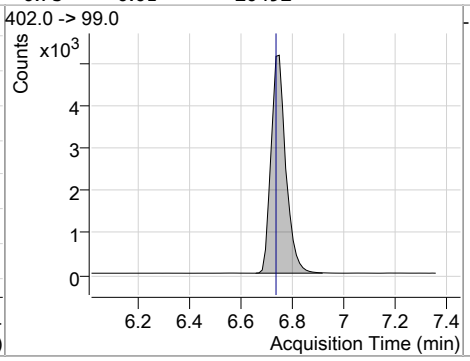


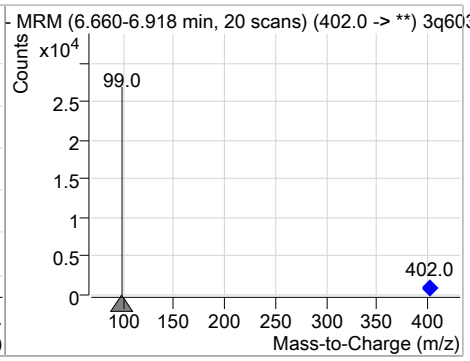


Perfluorinated Compounds by LC/MS/MS

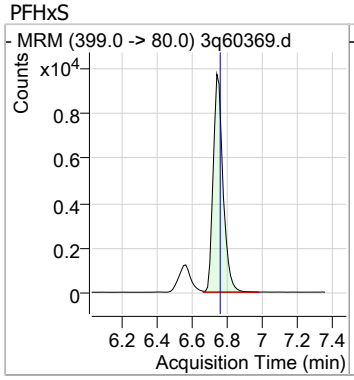
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.15	6.75	0.01	20492				

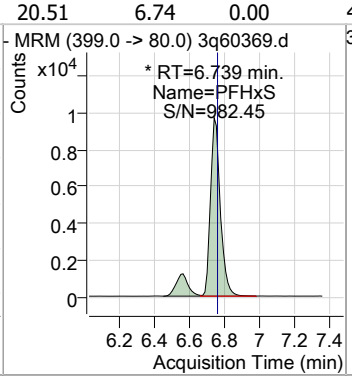


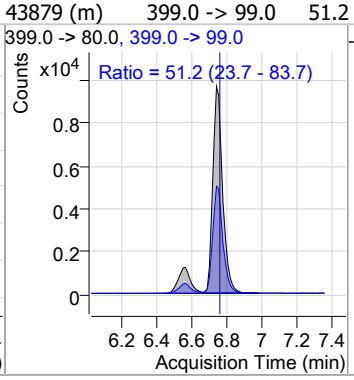


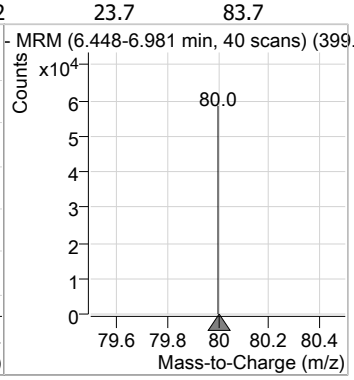


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.51	6.74	0.00	43879 (m)	399.0 -> 99.0	51.2	23.7	83.7

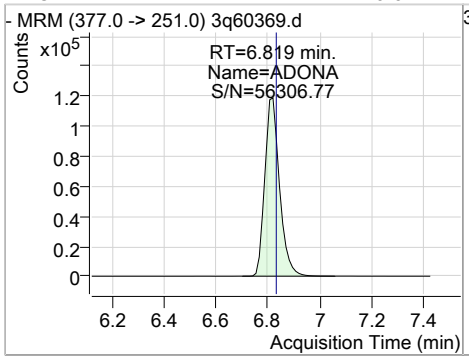


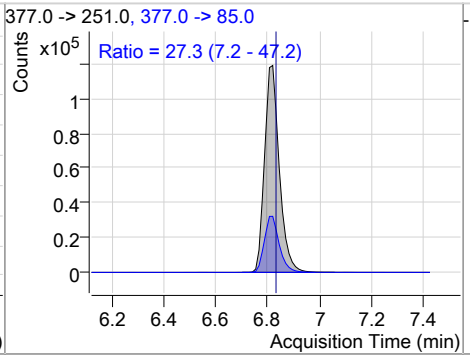


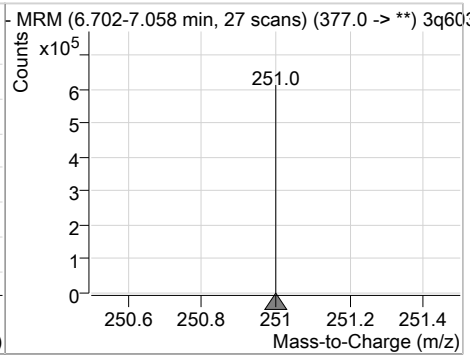




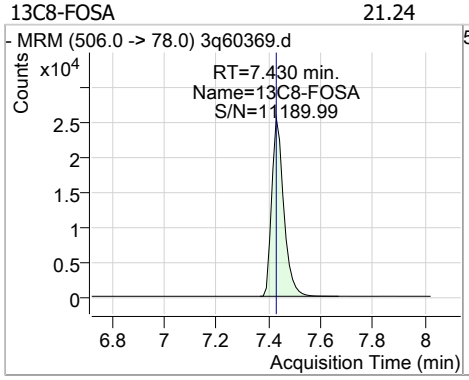
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.62	6.82	0.00	468526	377.0 -> 85.0	27.3	7.2	47.2

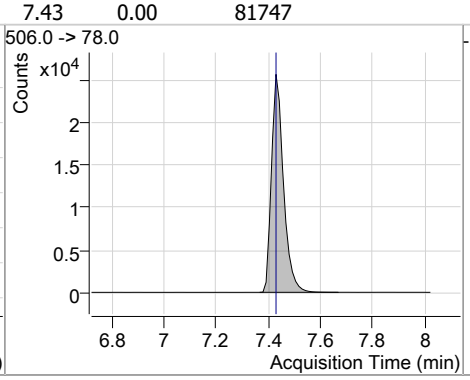


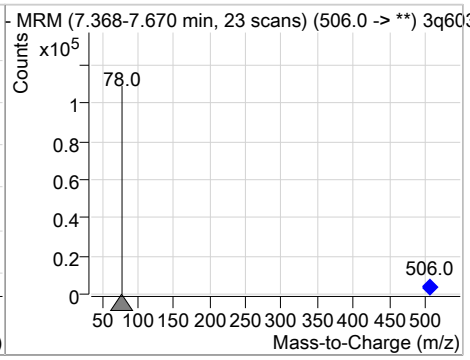




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.24	7.43	0.00	81747				

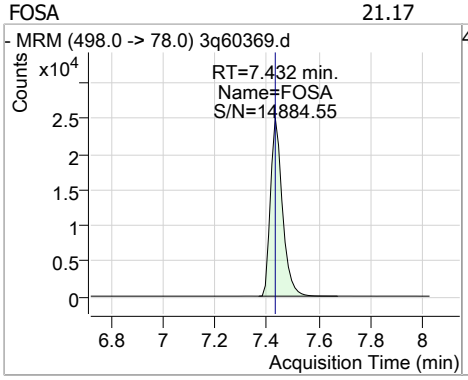


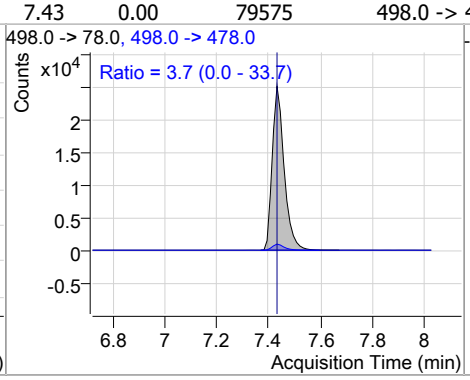


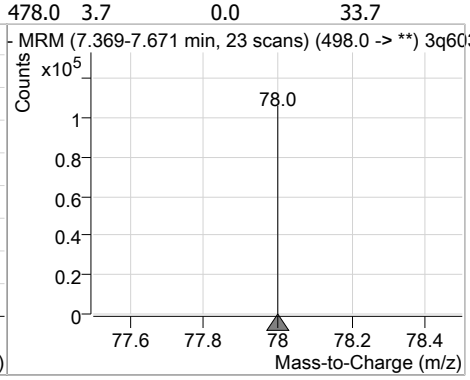


Perfluorinated Compounds by LC/MS/MS

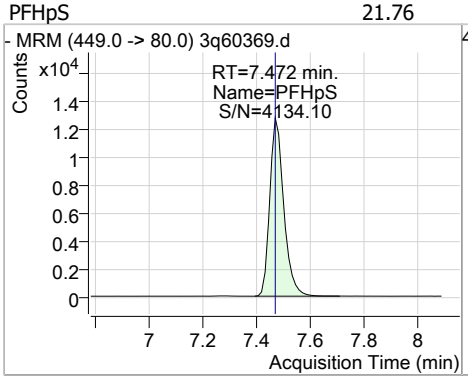
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.17	7.43	0.00	79575	498.0 -> 478.0	3.7	0.0	33.7

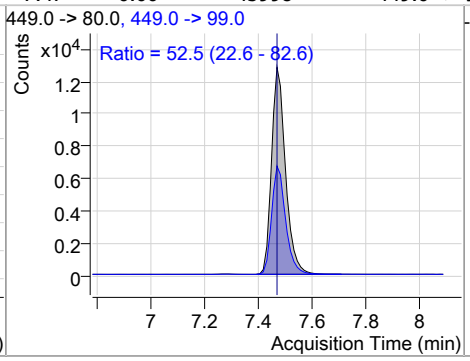


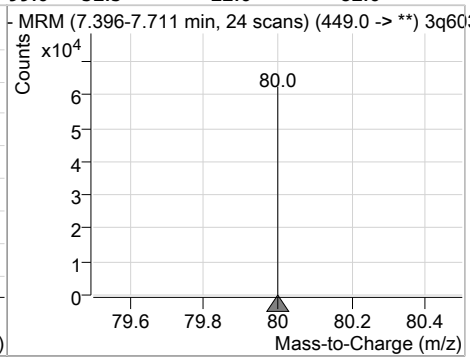




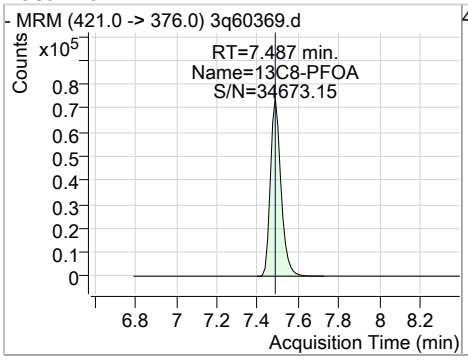
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.76	7.47	0.00	45998	449.0 -> 99.0	52.5	22.6	82.6

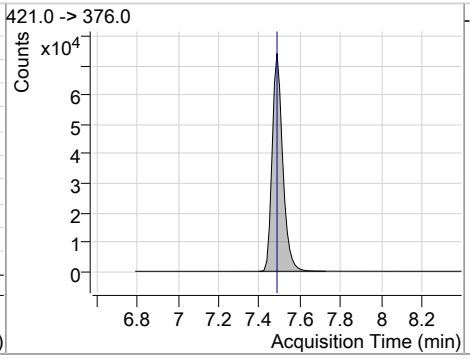


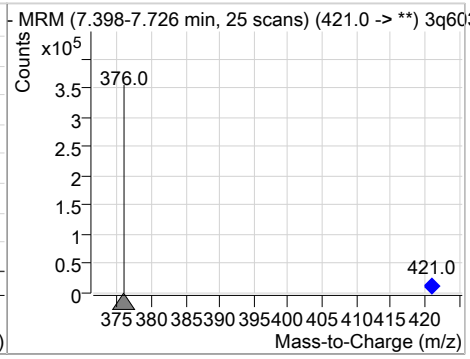




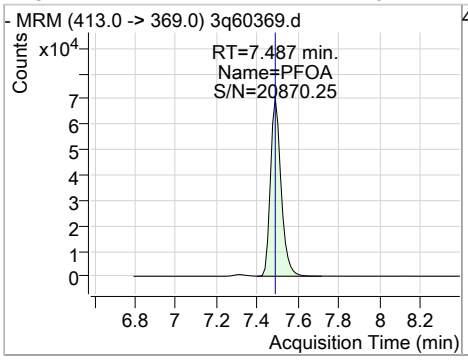
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.17	7.49	0.00	267450				

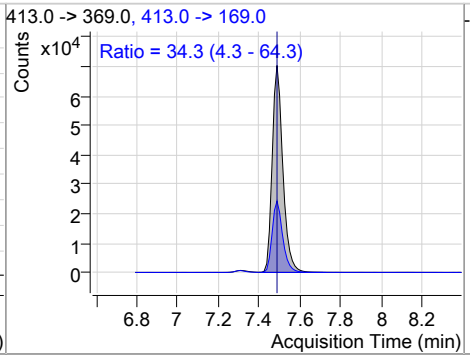


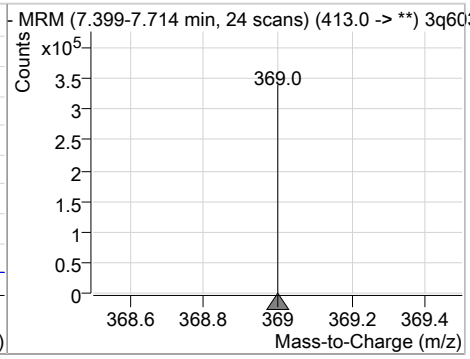




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.47	7.49	0.00	254907	413.0 -> 169.0	34.3	4.3	64.3

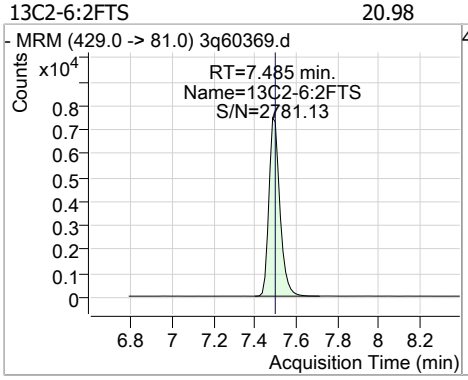


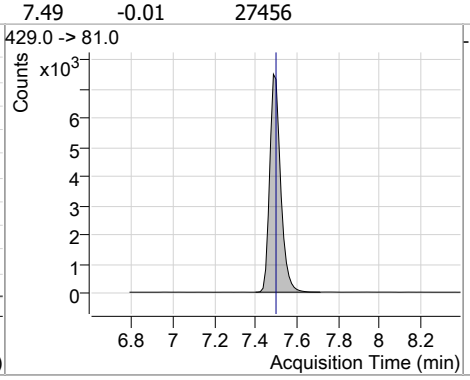


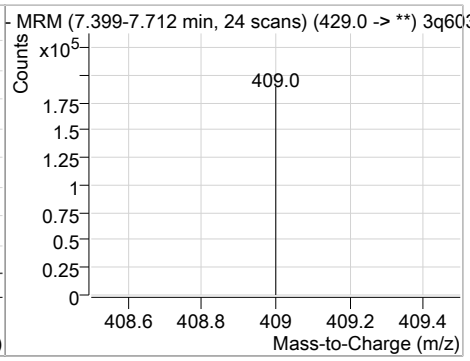


Perfluorinated Compounds by LC/MS/MS

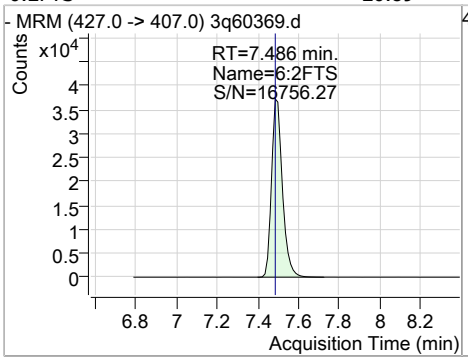
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.98	7.49	-0.01	27456				

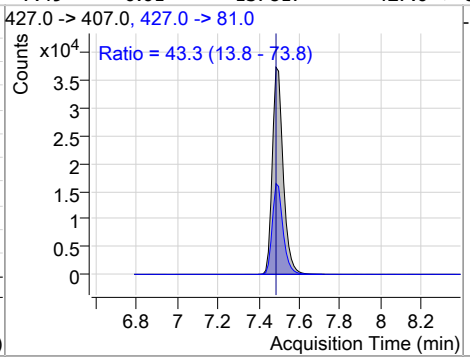


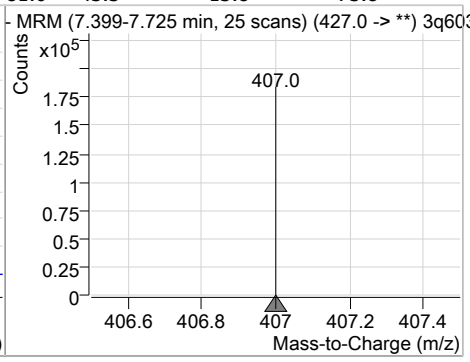




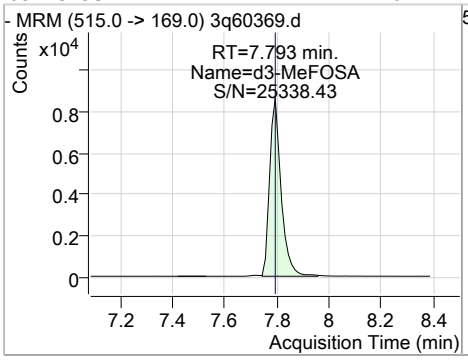
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.89	7.49	-0.01	137817	427.0 -> 81.0	43.3	13.8	73.8

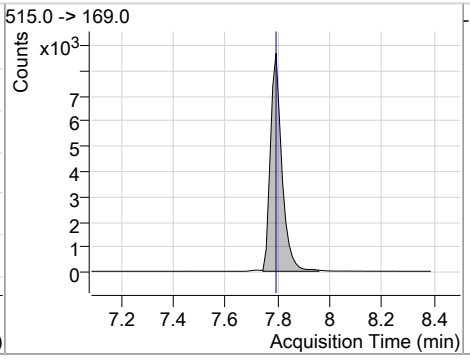


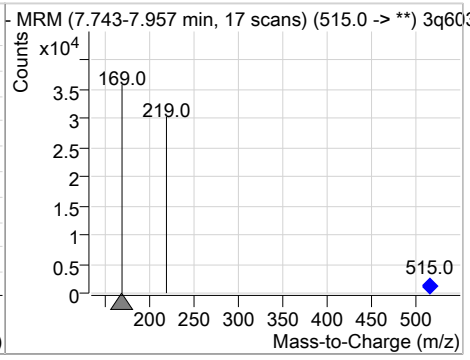




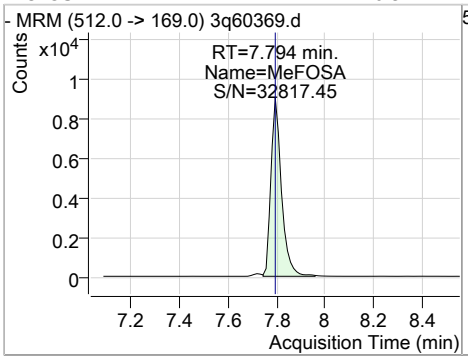
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.04	7.79	0.00	26298				

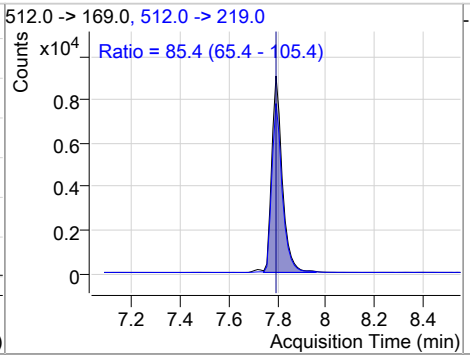


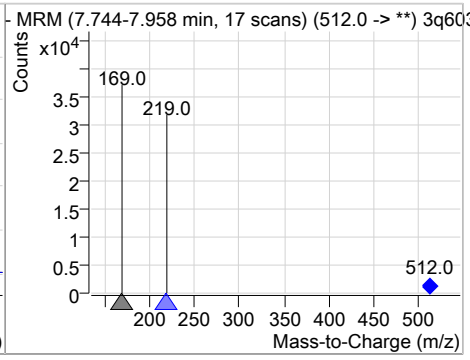




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.94	7.79	0.00	27298	512.0 -> 219.0	85.4	65.4	105.4

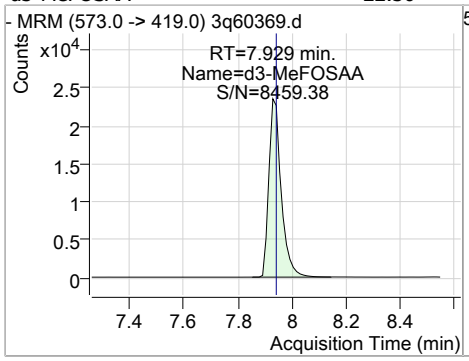


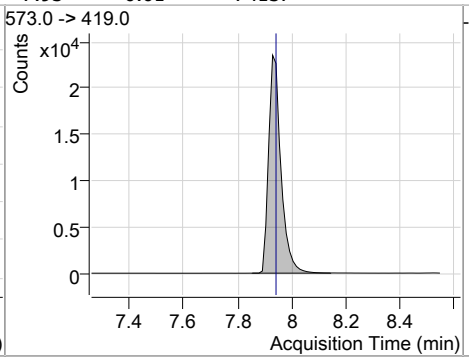


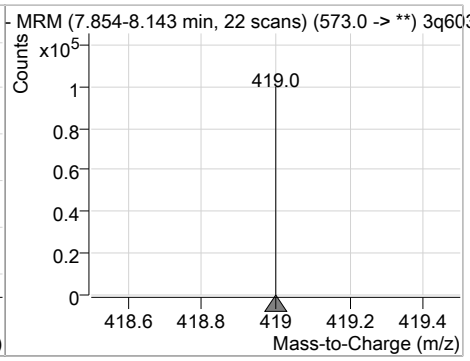


Perfluorinated Compounds by LC/MS/MS

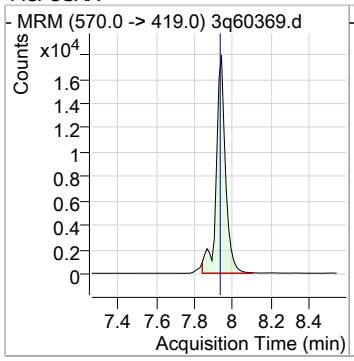
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.36	7.93	-0.01	74137				

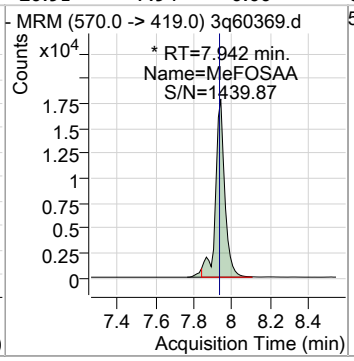


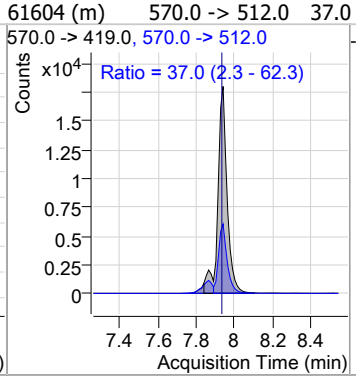


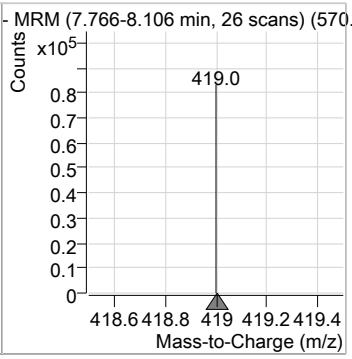


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.91	7.94	0.00	61604 (m)	570.0 -> 512.0	37.0	2.3	62.3

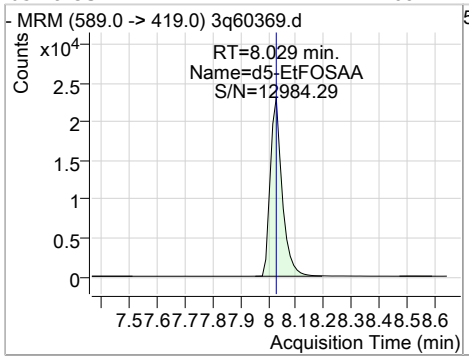


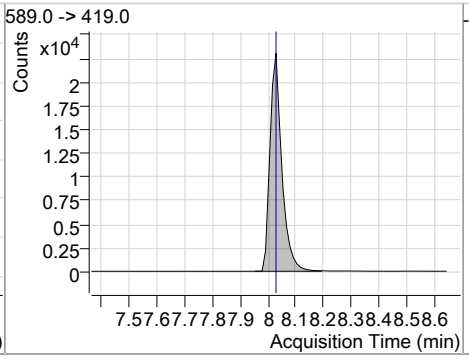


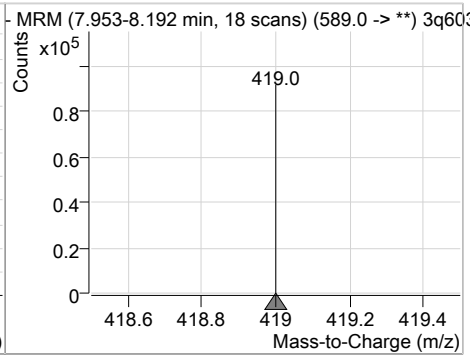




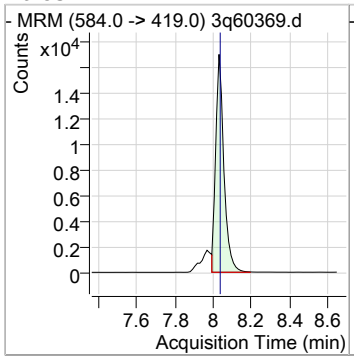
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.68	8.03	0.00	68327				

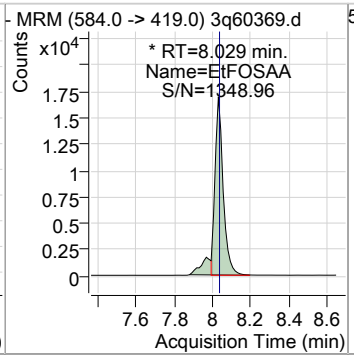


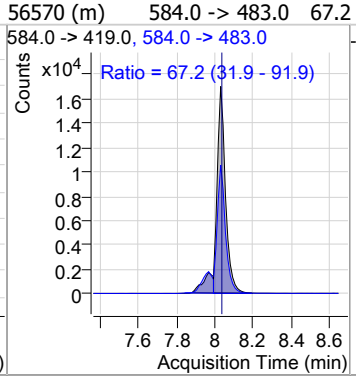


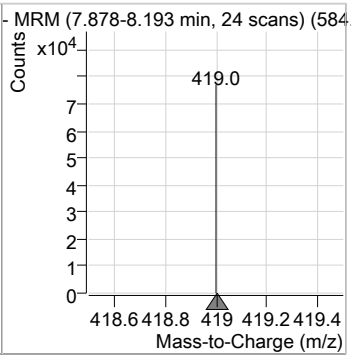


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.29	8.03	0.00	56570 (m)	584.0 -> 483.0	67.2	31.9	91.9



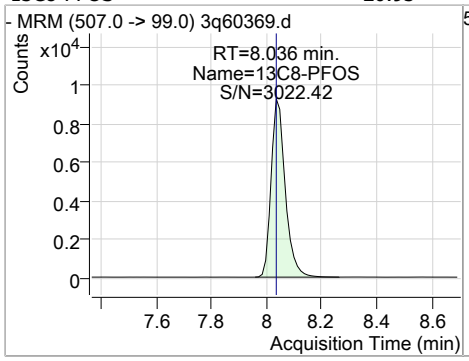


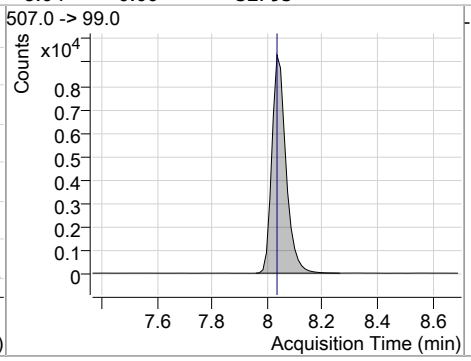


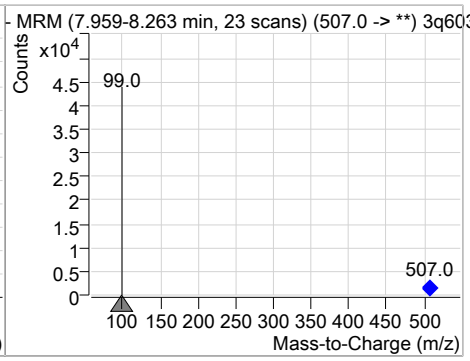


Perfluorinated Compounds by LC/MS/MS

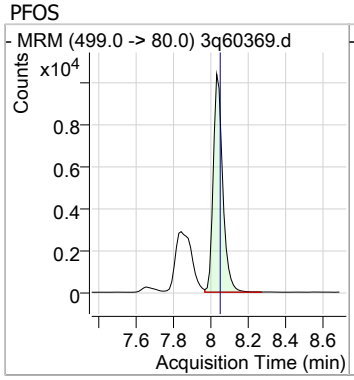
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.93	8.04	0.00	32795				

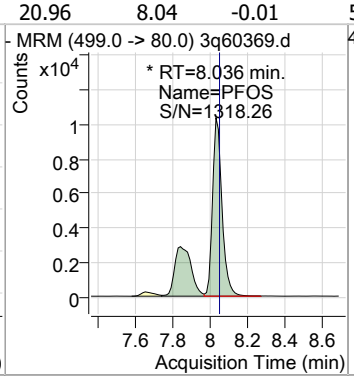


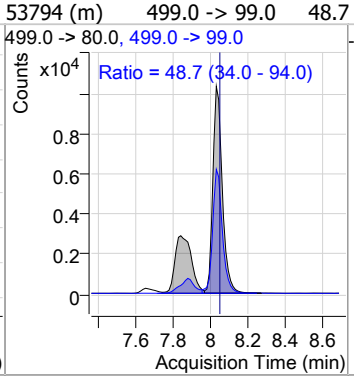


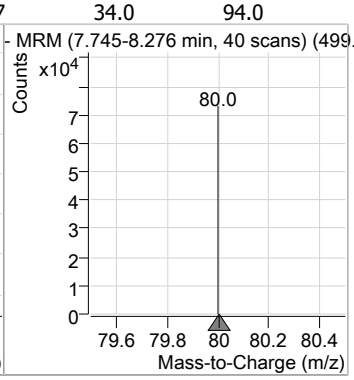


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.96	8.04	-0.01	53794 (m)	499.0 -> 99.0	48.7	34.0	94.0

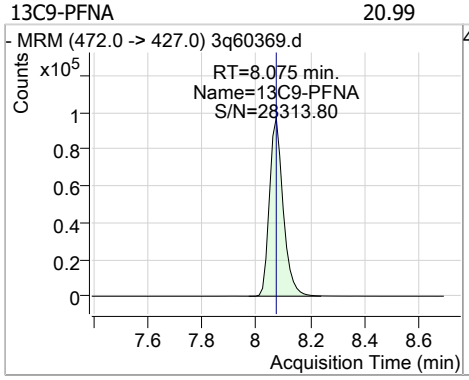


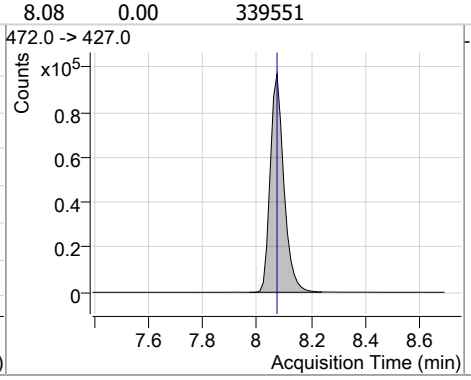


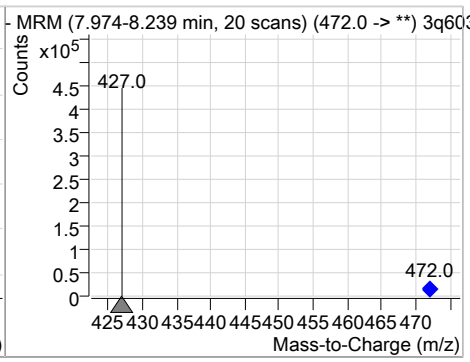




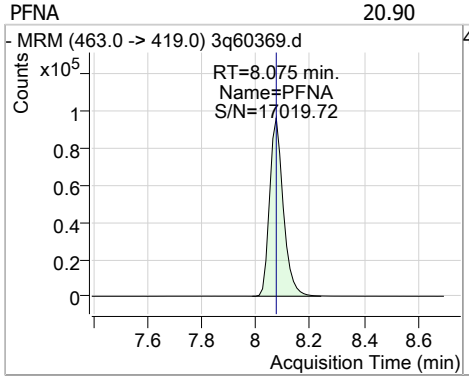
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.99	8.08	0.00	339551				

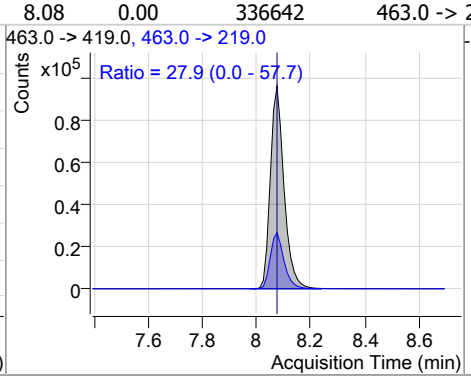


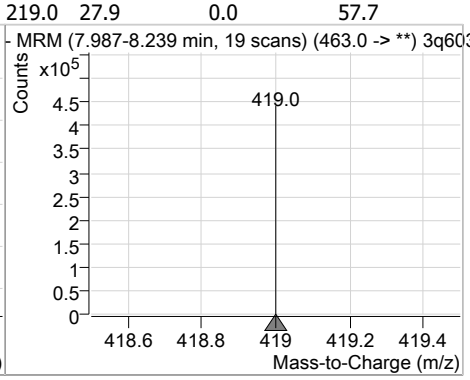




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.90	8.08	0.00	336642	463.0 -> 219.0	27.9	0.0	57.7

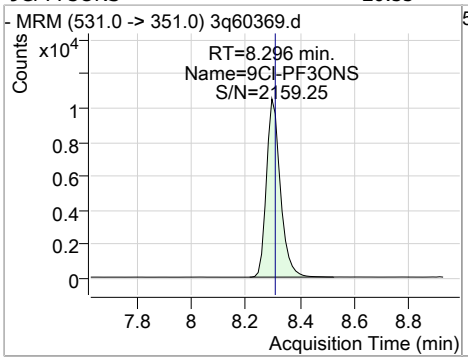


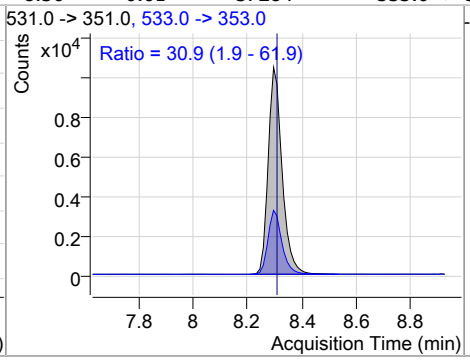


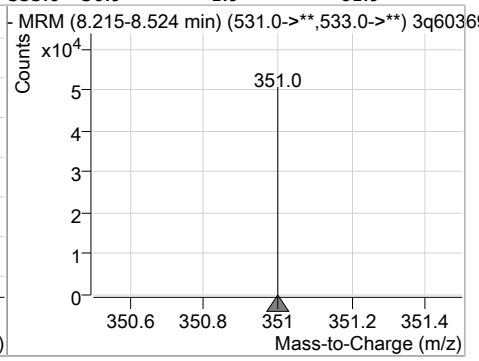


Perfluorinated Compounds by LC/MS/MS

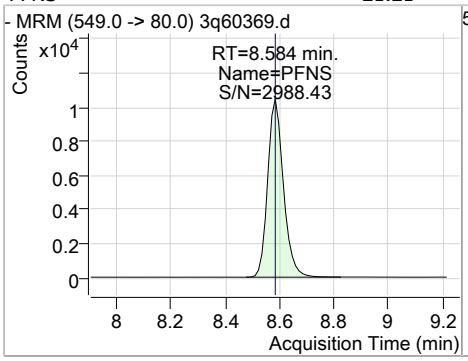
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.55	8.30	-0.01	37284	533.0 -> 353.0	30.9	1.9	61.9

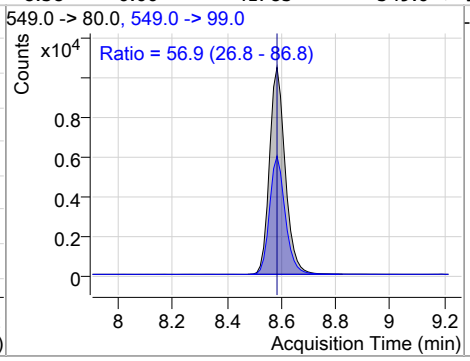


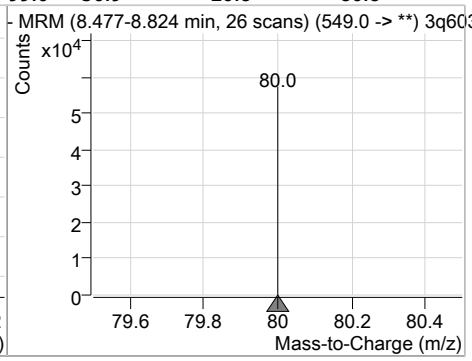




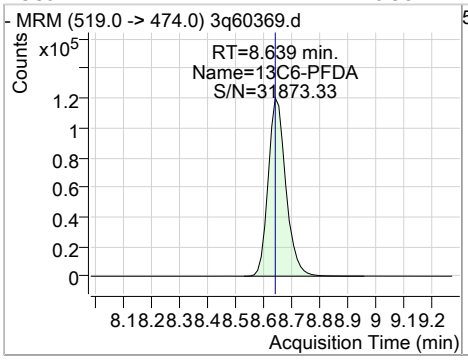
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.21	8.58	0.00	41785	549.0 -> 99.0	56.9	26.8	86.8

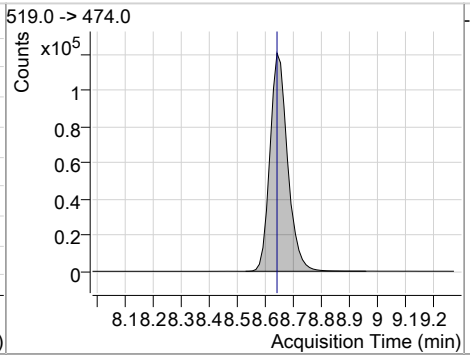


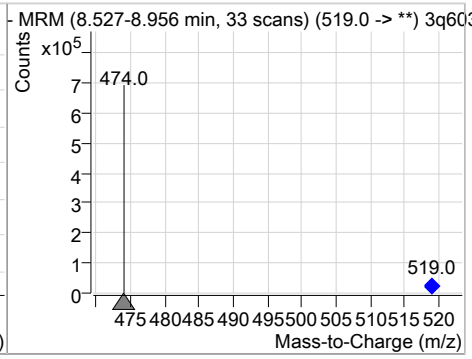




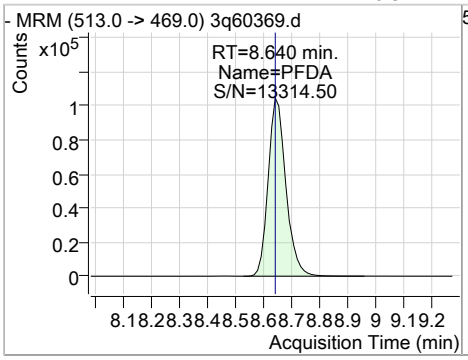
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.98	8.64	0.00	523836				

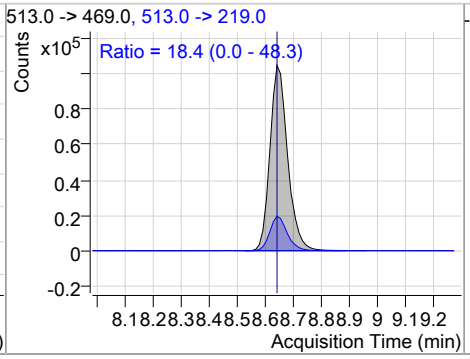


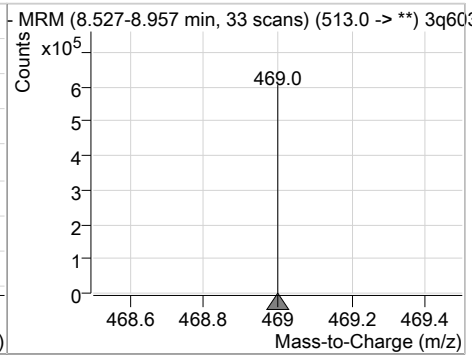




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.91	8.64	0.00	457432	513.0 -> 219.0	18.4	0.0	48.3

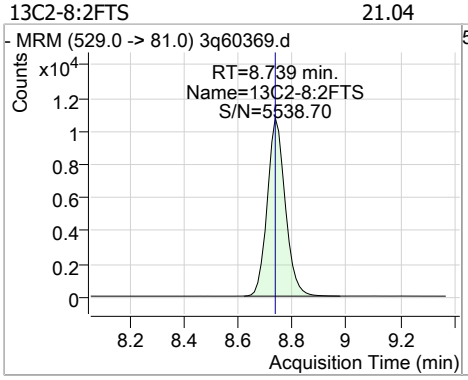


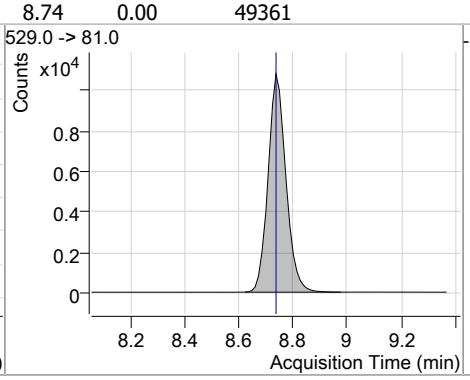


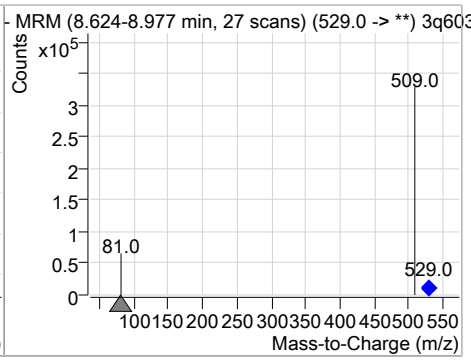


Perfluorinated Compounds by LC/MS/MS

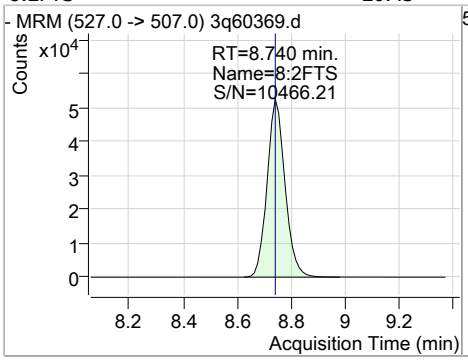
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.04	8.74	0.00	49361				

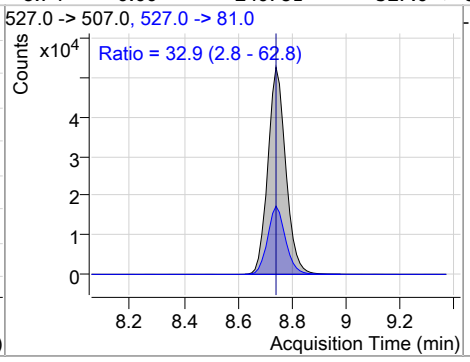


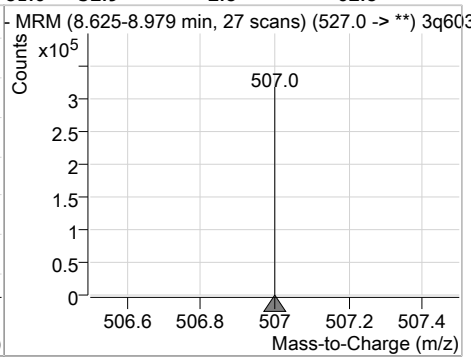




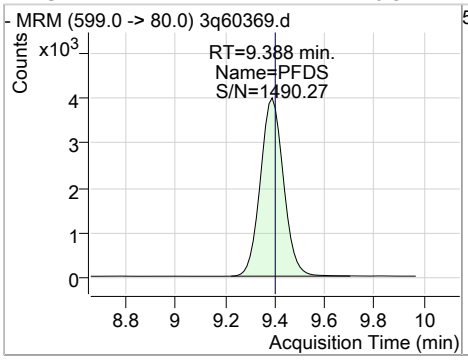
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.43	8.74	0.00	240781	527.0 -> 81.0	32.9	2.8	62.8

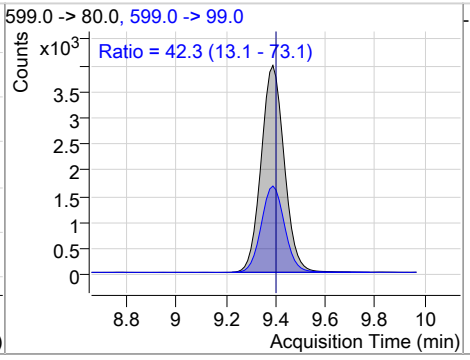


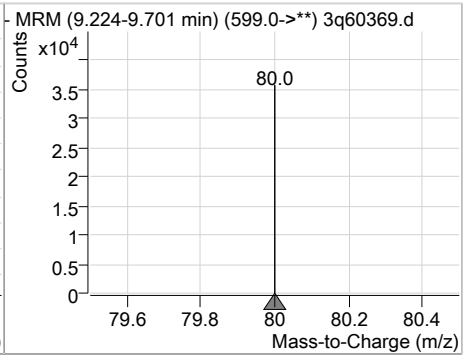




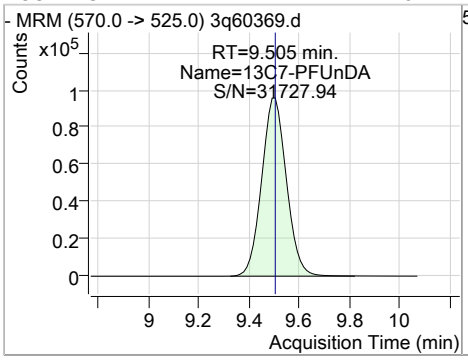
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.32	9.39	-0.01	25517	599.0 -> 99.0	42.3	13.1	73.1

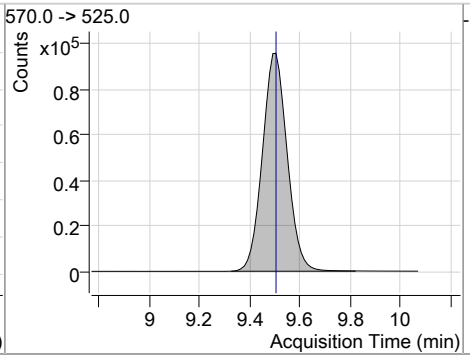


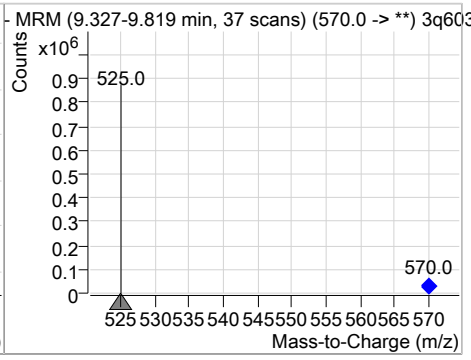




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.18	9.50	0.00	653022				

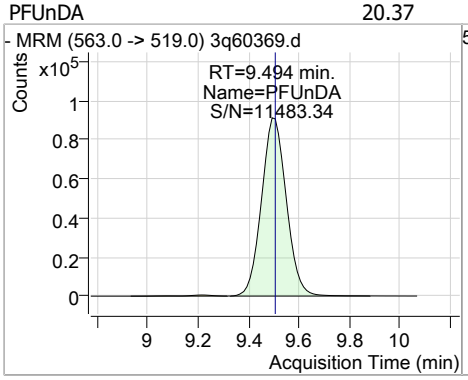


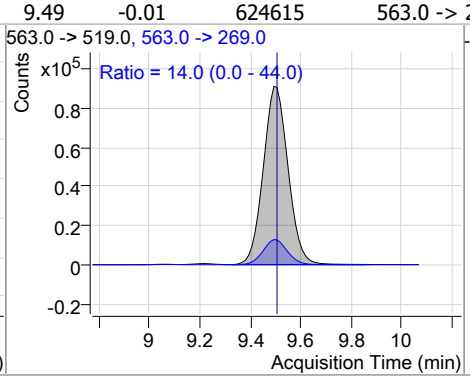


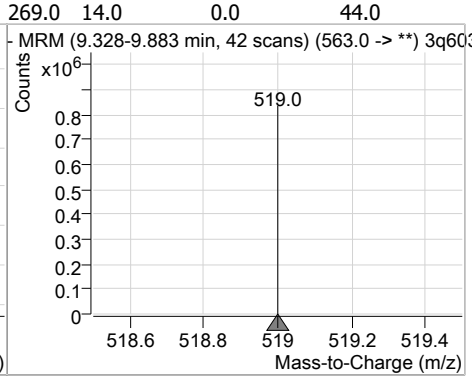


Perfluorinated Compounds by LC/MS/MS

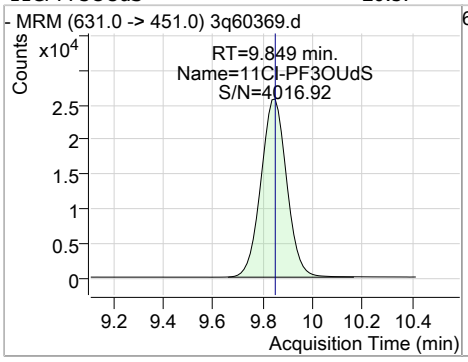
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.37	9.49	-0.01	624615	563.0 -> 269.0	14.0	0.0	44.0

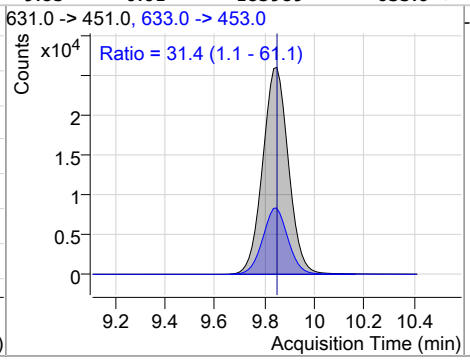


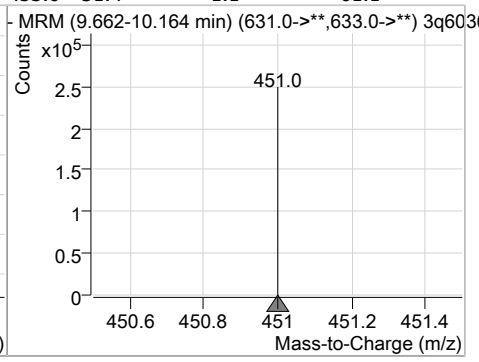




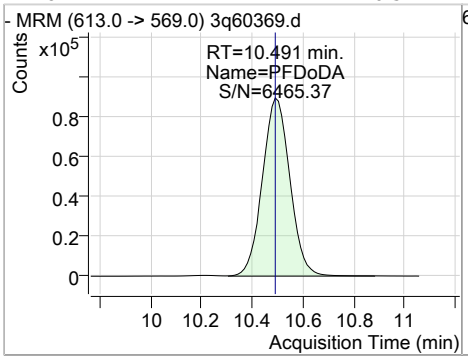
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.57	9.85	-0.01	185989	633.0 -> 453.0	31.4	1.1	61.1

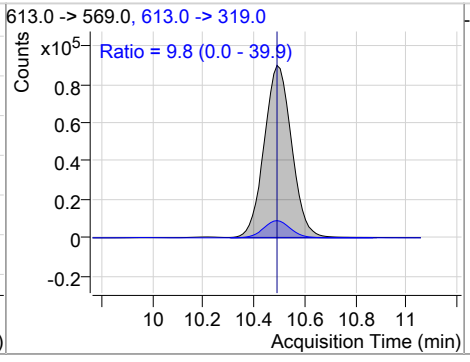


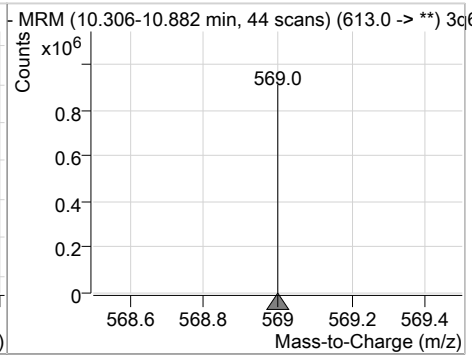




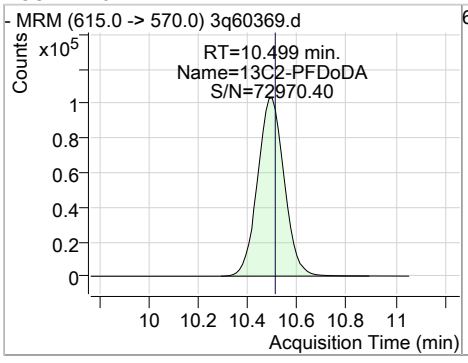
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.51	10.49	-0.01	675788	613.0 -> 319.0	9.8	0.0	39.9

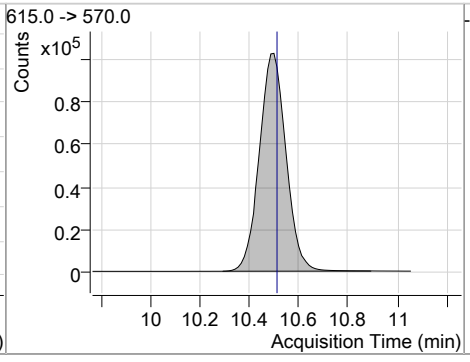


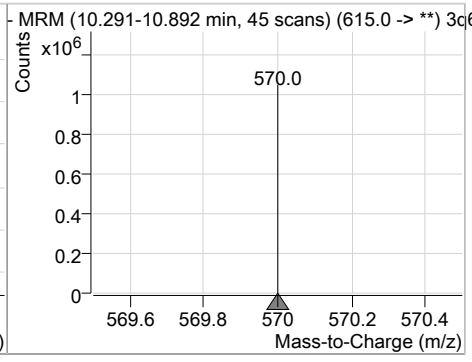




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.14	10.50	-0.01	774835				

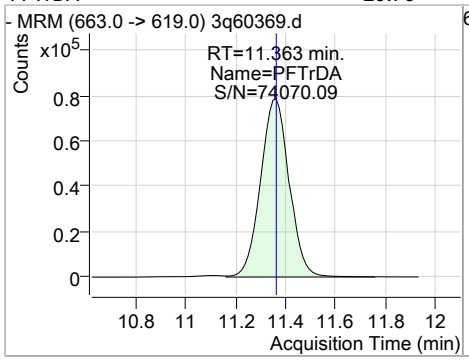


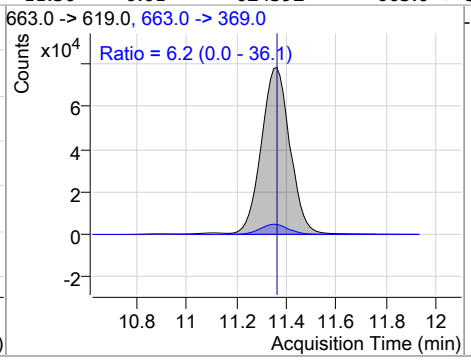


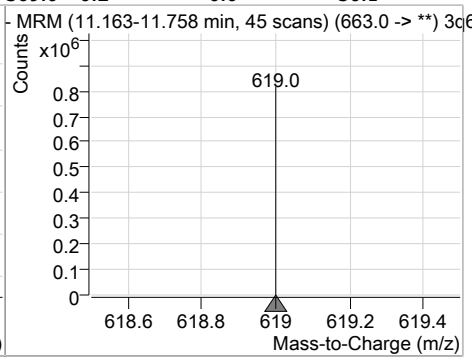


Perfluorinated Compounds by LC/MS/MS

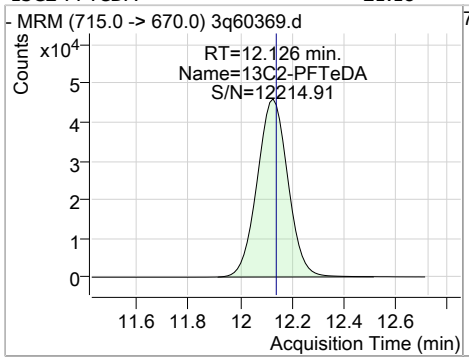
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.76	11.36	-0.01	624392	663.0 -> 369.0	6.2	0.0	36.1

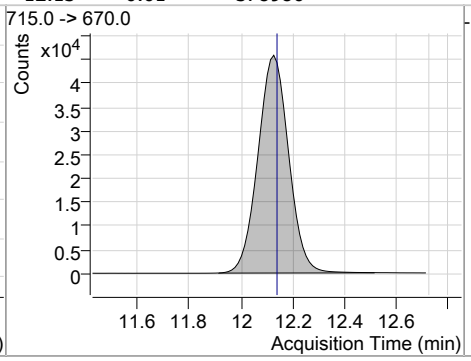


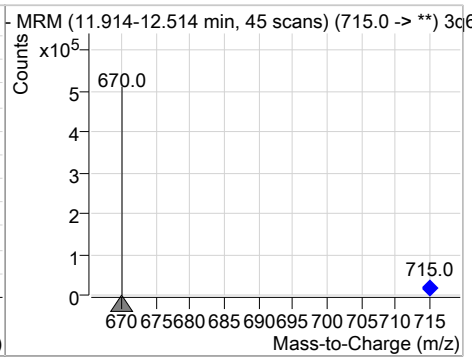




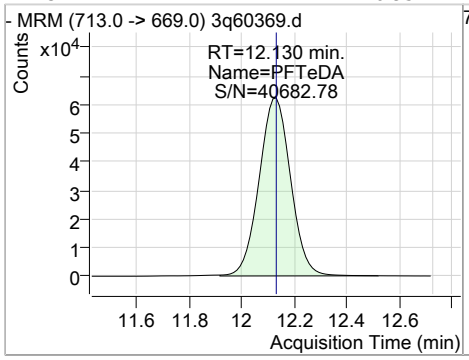
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.18	12.13	-0.01	378986				

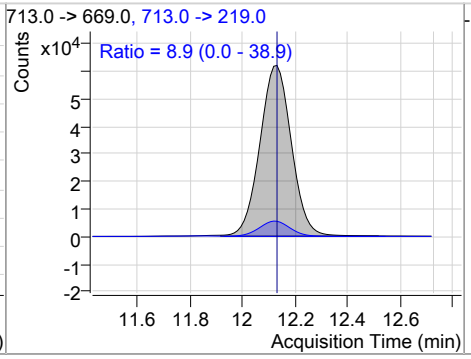


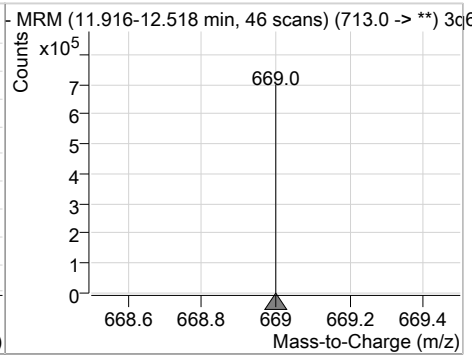




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.95	12.13	-0.01	518147	713.0 -> 219.0	8.9	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-CC824
Lab FileID: 3Q60369.D
Injection Time: 05/27/22 21:30
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60381.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 1:13:11 AM
Sample Name : cc824-20
Vial : P1-A7
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

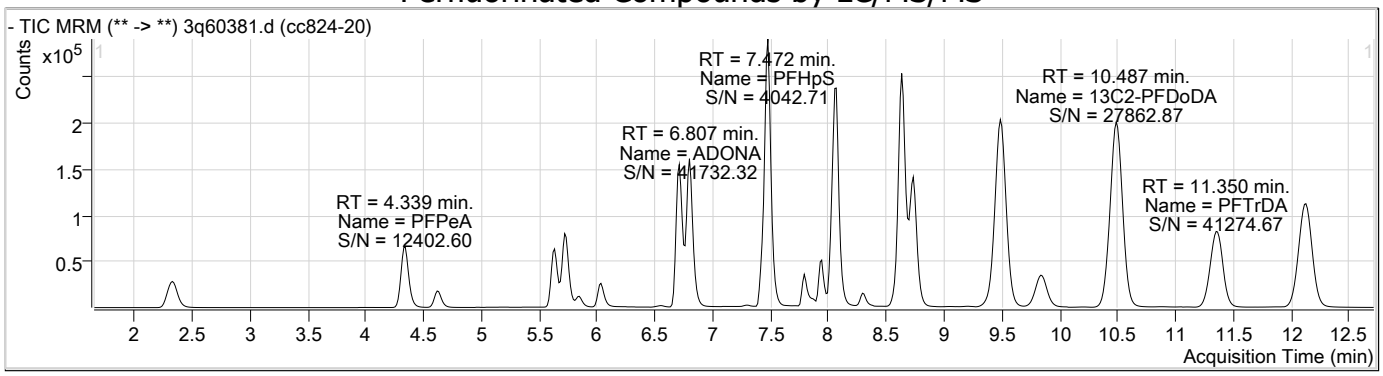
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	126104	20.00 µg/L	0.000
M5-PFPeA	4.349	268.0 -> 223.0	119949	20.00 µg/L	0.000
M5-PFHxA	5.727	318.0 -> 273.0	162384	20.00 µg/L	-0.013
M4-PFHpA	6.718	367.0 -> 322.0	211727	20.00 µg/L	0.000
M8-PFOA	7.487	421.0 -> 376.0	261680	20.00 µg/L	0.000
M9-PFNA	8.075	472.0 -> 427.0	332957	20.00 µg/L	0.000
M6-PFDA	8.639	519.0 -> 474.0	526146	20.00 µg/L	0.000
M7-PFUnDA	9.492	570.0 -> 525.0	659081	20.00 µg/L	-0.012
M2-PFDoDA	10.487	615.0 -> 570.0	772050	20.00 µg/L	-0.025
M2-PFTeDA	12.126	715.0 -> 670.0	377385	20.00 µg/L	-0.013
M8-FOSA	7.430	506.0 -> 78.0	83352	20.00 µg/L	0.000
M3-PFBS	4.629	302.0 -> 99.0	16607	20.00 µg/L	0.000
M3-PFHxS	6.738	402.0 -> 99.0	20395	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	32847	20.00 µg/L	0.000
M2-4:2FTS	5.634	329.0 -> 81.0	11609	20.00 µg/L	0.000
M2-6:2FTS	7.485	429.0 -> 81.0	27216	20.00 µg/L	-0.013
M2-8:2FTS	8.739	529.0 -> 81.0	48635	20.00 µg/L	0.000
M3-MeFOSAA	7.929	573.0 -> 419.0	74842	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	22634	20.00 µg/L	-0.013
M3-MeFOSA	7.793	515.0 -> 169.0	26626	20.00 µg/L	0.000
M5-EtFOSAA	8.029	589.0 -> 419.0	70354	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.634	329.0 -> 81.0	11609	20.72 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C2-6:2FTS	7.485	429.0 -> 81.0	27216	20.79 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C2-8:2FTS	8.739	529.0 -> 81.0	48635	20.73 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C2-PFDoDA	10.487	615.0 -> 570.0	772050	21.06 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C2-PFTeDA	12.126	715.0 -> 670.0	377385	21.09 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C3-PFBS	4.629	302.0 -> 99.0	16607	21.04 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C3-PFHxS	6.738	402.0 -> 99.0	20395	21.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C4-PFBA	2.327	217.0 -> 172.0	126104	20.86 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFHpA	6.718	367.0 -> 322.0	211727	21.07 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C5-PFHxA	5.727	318.0 -> 273.0	162384	20.57 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C5-PFPeA	4.349	268.0 -> 223.0	119949	20.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	8.639	519.0 -> 474.0	526146	21.08 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

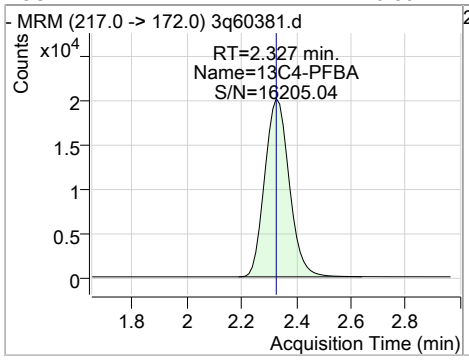
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C7-PFUnDA	9.492	570.0 -> 525.0	659081	21.37 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C8-FOSA	7.430	506.0 -> 78.0	83352	21.66 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C8-PFOA	7.487	421.0 -> 376.0	261680	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C8-PFOS	8.036	507.0 -> 99.0	32847	20.96 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C9-PFNA	8.075	472.0 -> 427.0	332957	20.58 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
d3-MeFOSAA	7.929	573.0 -> 419.0	74842	22.57 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
13C3-HFPO-DA	6.031	287.0 -> 169.0	22635	20.23 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
d3-MeFOSA	7.793	515.0 -> 169.0	26626	21.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
d5-EtFOSAA	8.029	589.0 -> 419.0	70333	22.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
Target Compounds						**QValue**
4:2FTS	5.637	327.0 -> 307.0	105319	20.80 µg/L		100
6:2FTS	7.486	427.0 -> 407.0	136228	20.84 µg/L		100
8:2FTS	8.740	527.0 -> 507.0	239710	20.64 µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	57269	20.93 µg/L	m	91
FOSA	7.432	498.0 -> 78.0	78955	20.60 µg/L		99
MeFOSAA	7.942	570.0 -> 419.0	62741	21.09 µg/L	m	94
PFBA	2.333	213.0 -> 169.0	50286	20.46 µg/L		100
PFBS	4.619	299.0 -> 80.0	43513	20.71 µg/L		100
PFDA	8.640	513.0 -> 469.0	454981	20.70 µg/L		100
PFDoDA	10.491	613.0 -> 569.0	671893	20.46 µg/L		100
PFDS	9.376	599.0 -> 80.0	25455	20.08 µg/L		99
PFHpA	6.719	363.0 -> 319.0	323644	20.84 µg/L		100
PFHpS	7.472	449.0 -> 80.0	45520	21.50 µg/L		99
PFHxA	5.728	313.0 -> 269.0	140300	20.67 µg/L		99
PFHxS	6.739	399.0 -> 80.0	44066	20.70 µg/L	m	96
PFNA	8.075	463.0 -> 419.0	337432	21.36 µg/L		100
PFNS	8.584	549.0 -> 80.0	41513	21.04 µg/L		97
PFOA	7.487	413.0 -> 369.0	251920	20.68 µg/L		99
PFOS	8.036	499.0 -> 80.0	53832	20.94 µg/L	m	82
PFPeA	4.339	263.0 -> 219.0	188767	21.35 µg/L		100
PFPeS	5.845	349.0 -> 80.0	29131	20.75 µg/L		98
PFTeDA	12.130	713.0 -> 669.0	511811	20.78 µg/L		100
PFTrDA	11.350	663.0 -> 619.0	620100	20.70 µg/L		100
PFUnDA	9.494	563.0 -> 519.0	626443	20.24 µg/L		100
11Cl-PF3OUdS	9.837	631.0 -> 451.0	186371	20.68 µg/L		100
9Cl-PF3ONS	8.296	531.0 -> 351.0	37954	20.83 µg/L		96
ADONA	6.807	377.0 -> 251.0	462685	20.46 µg/L		99
HFPO-DA	6.038	329.0 -> 169.0	65484	20.41 µg/L		99
MeFOSA	7.794	512.0 -> 169.0	28258	21.41 µg/L		99

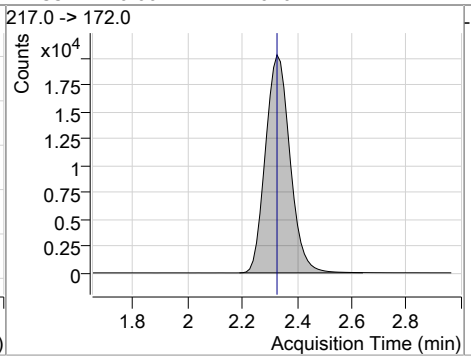
 # = Qualifier out of range, m = manually integrated, + = Area summed

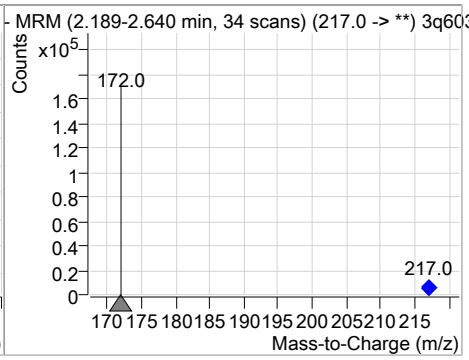
Perfluorinated Compounds by LC/MS/MS



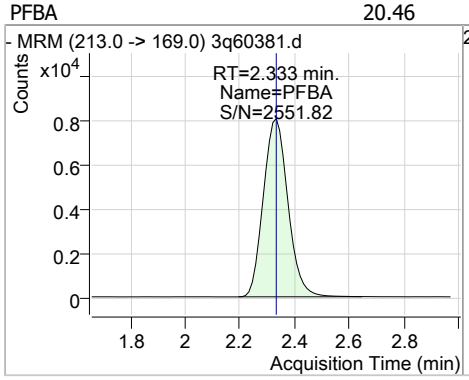
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.86	2.33	0.00	126104				

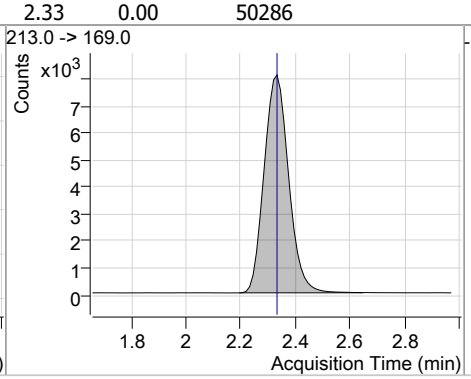


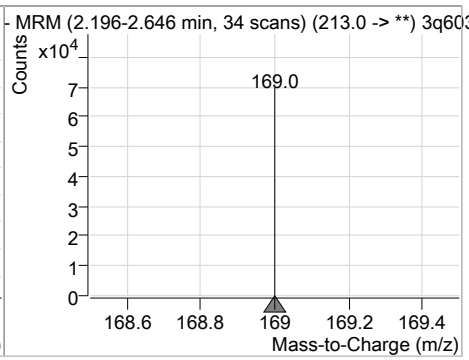




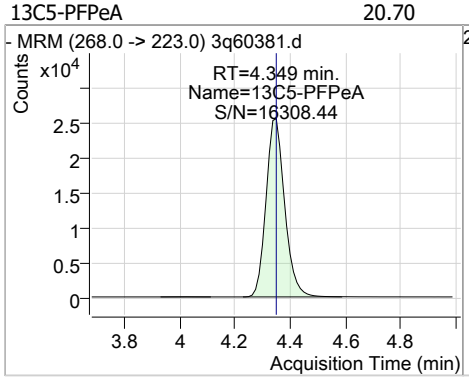
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.46	2.33	0.00	50286				

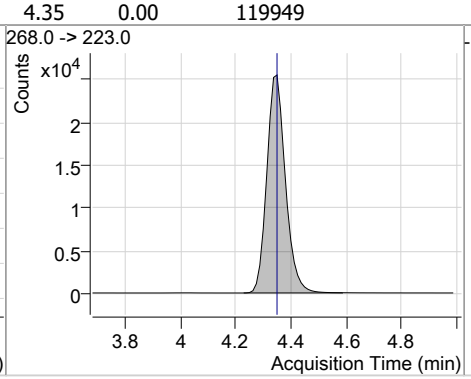


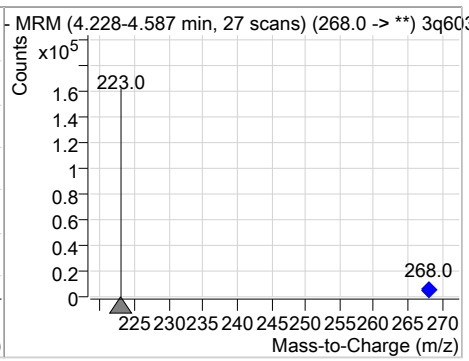




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.70	4.35	0.00	119949				

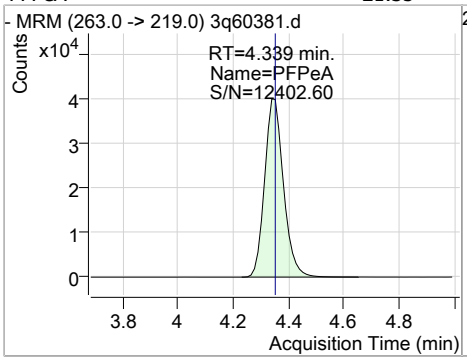


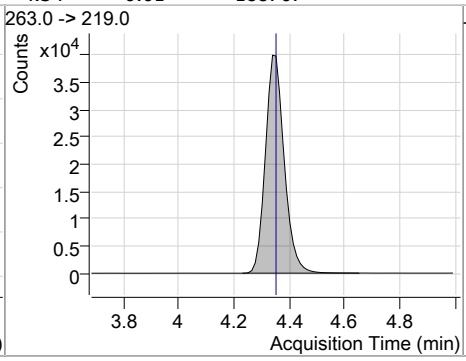


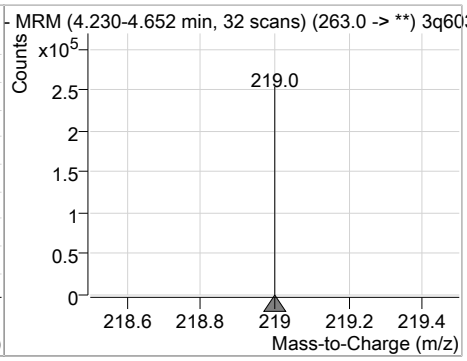


Perfluorinated Compounds by LC/MS/MS

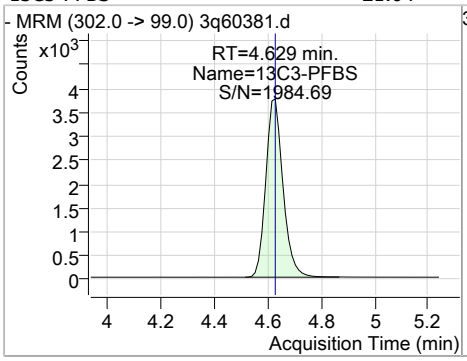
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.35	4.34	-0.01	188767				

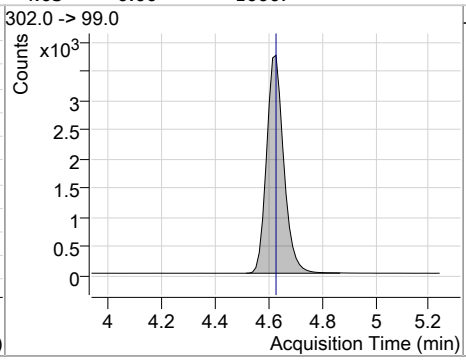


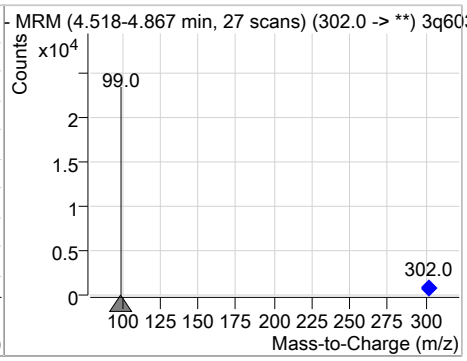




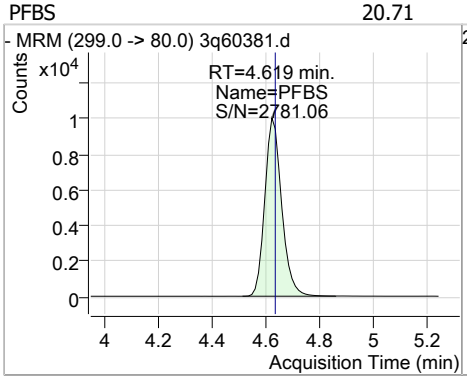
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.04	4.63	0.00	16607				

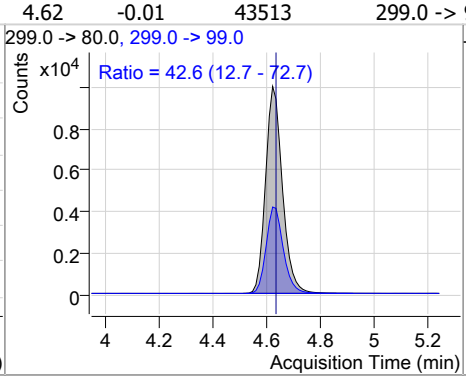


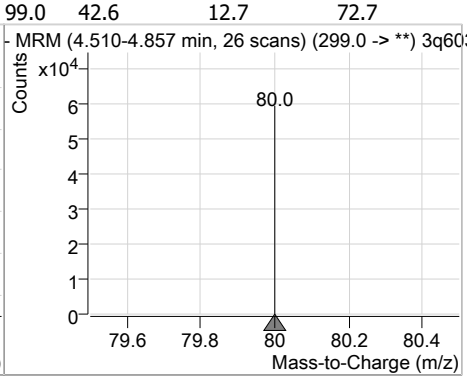




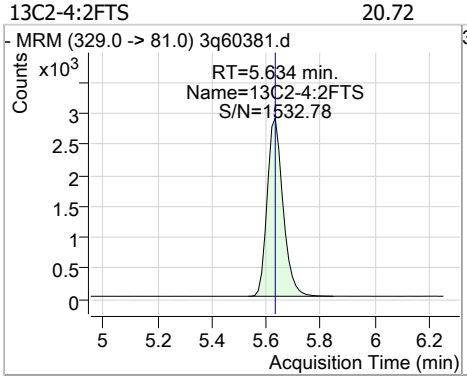
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.71	4.62	-0.01	43513	299.0 -> 99.0	42.6	12.7	72.7

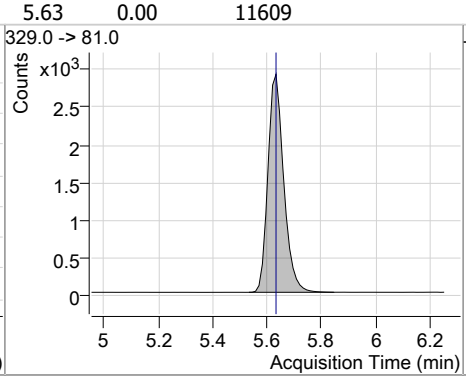


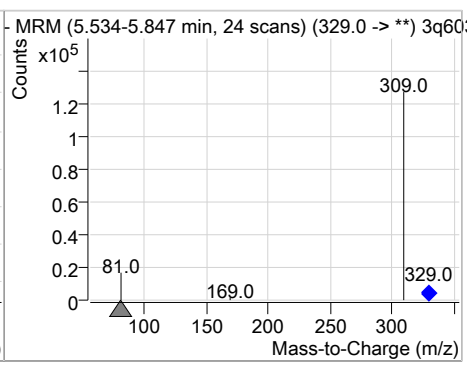




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.72	5.63	0.00	11609				

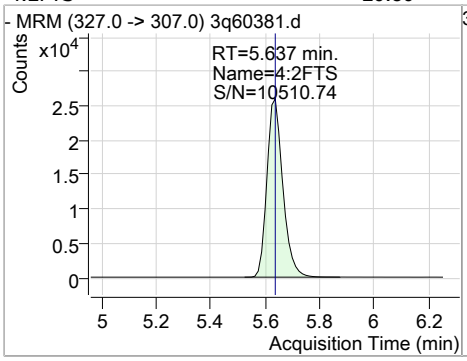


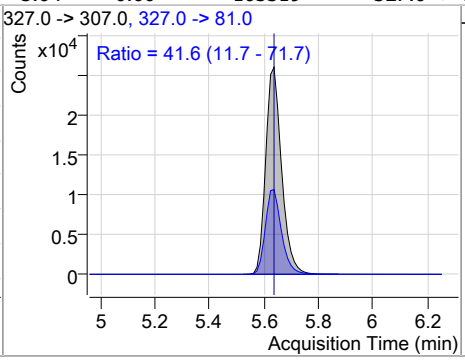


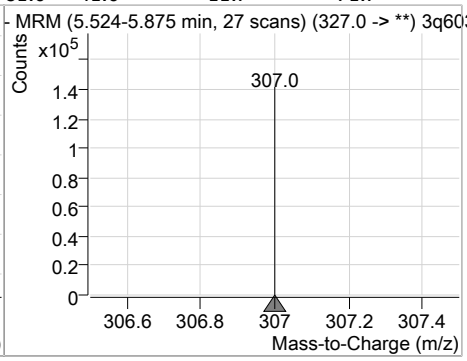


Perfluorinated Compounds by LC/MS/MS

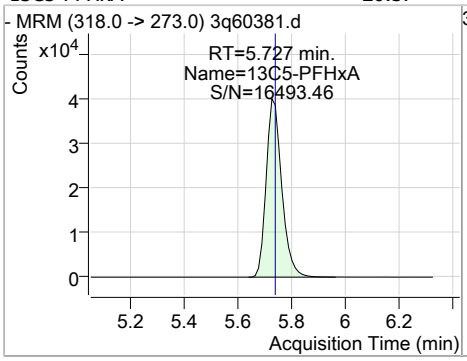
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.80	5.64	0.00	105319	327.0 -> 81.0	41.6	11.7	71.7

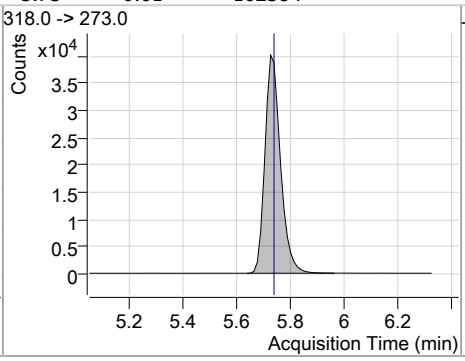


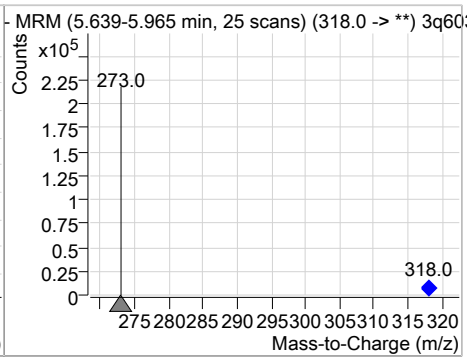




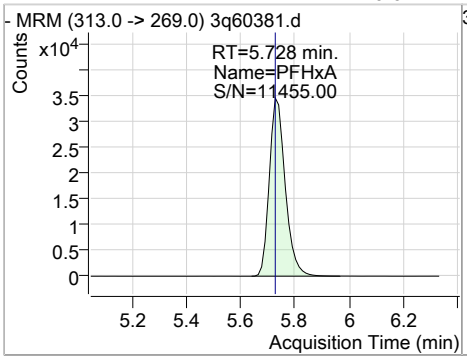
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.57	5.73	-0.01	162384				

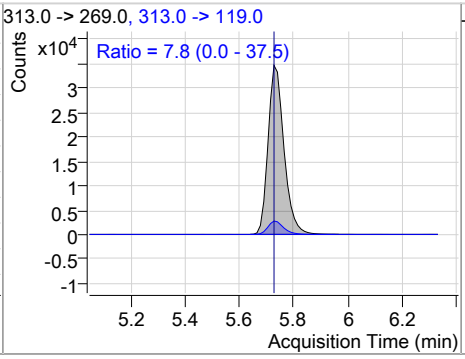


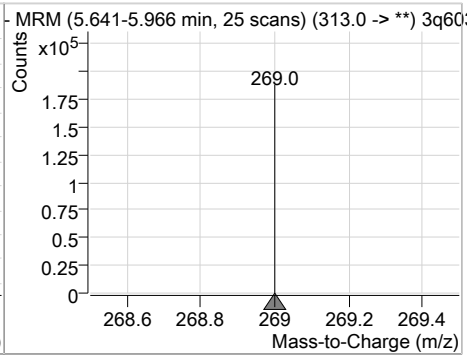




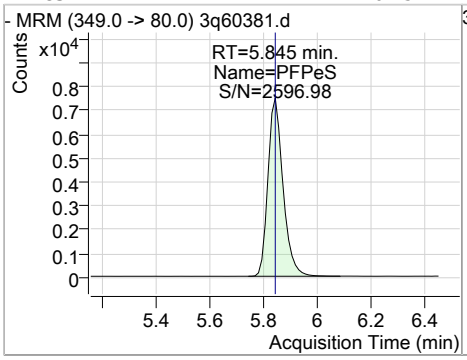
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.67	5.73	-0.01	140300	313.0 -> 119.0	7.8	0.0	37.5

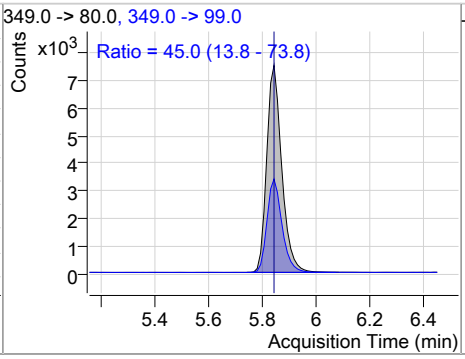


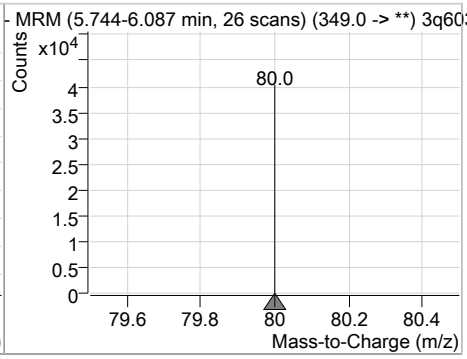




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.75	5.84	0.00	29131	349.0 -> 99.0	45.0	13.8	73.8

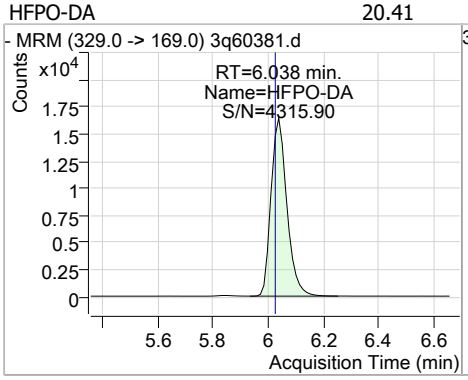


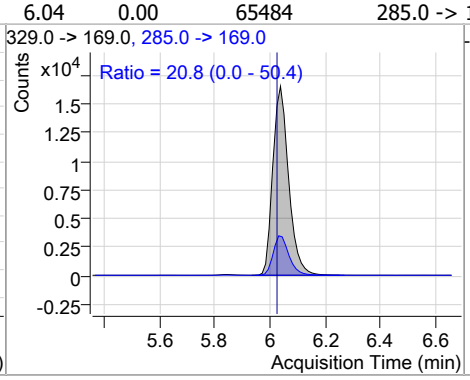


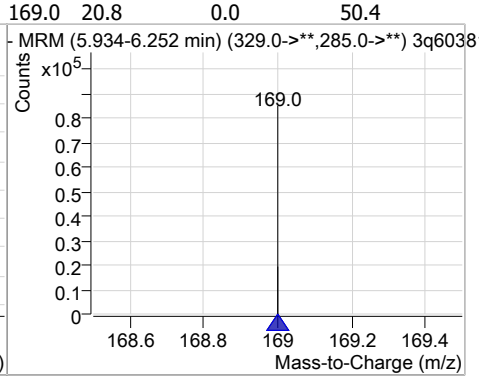


Perfluorinated Compounds by LC/MS/MS

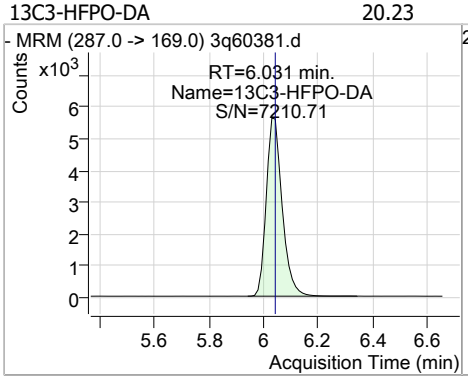
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.41	6.04	0.00	65484	285.0 -> 169.0	20.8	0.0	50.4

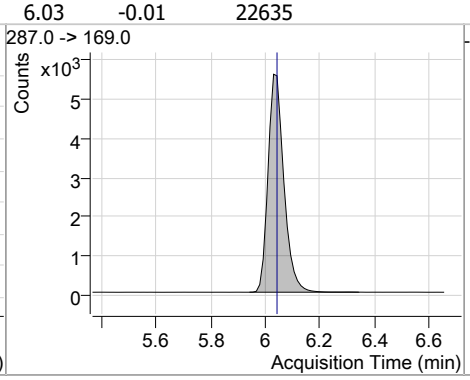


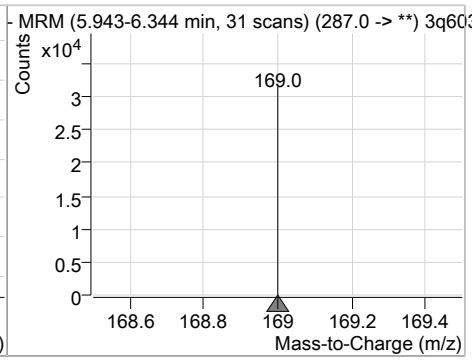




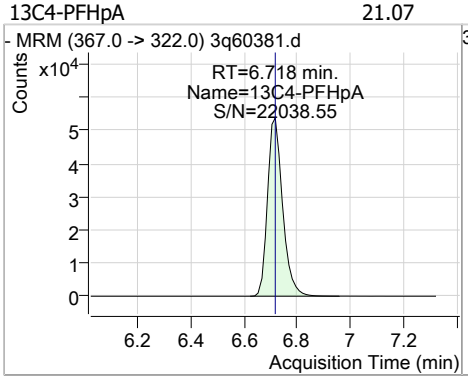
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.23	6.03	-0.01	22635				

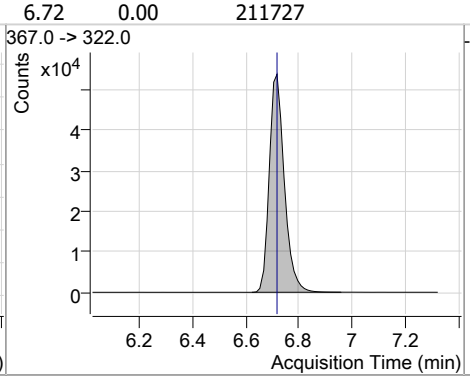


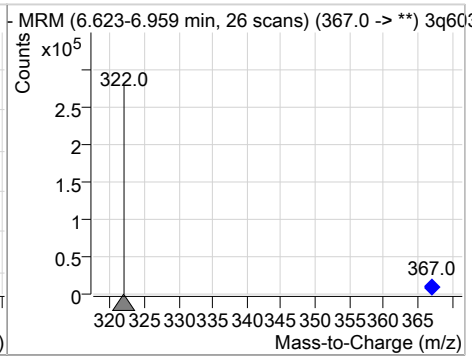




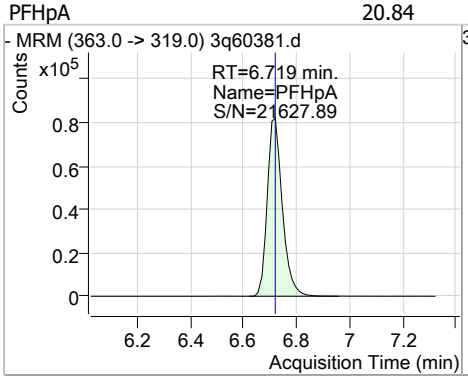
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.07	6.72	0.00	211727				

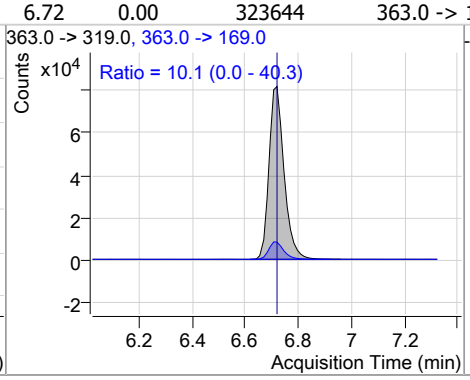


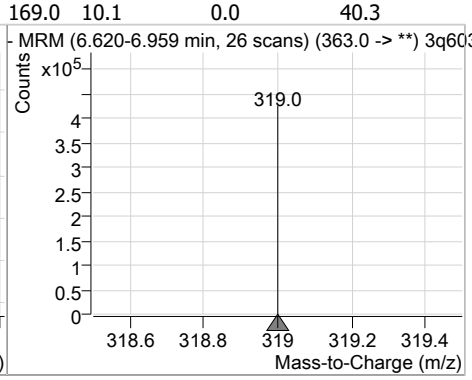




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.84	6.72	0.00	323644	363.0 -> 169.0	10.1	0.0	40.3

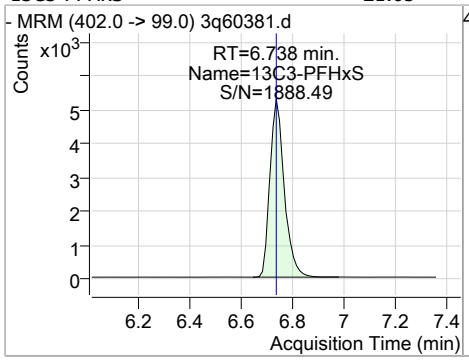


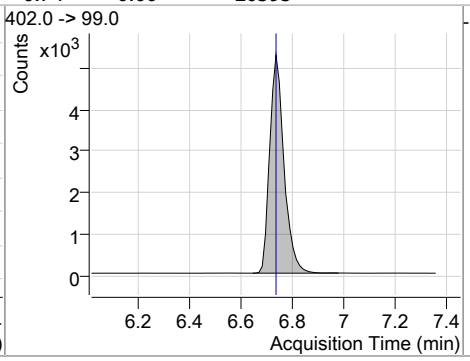


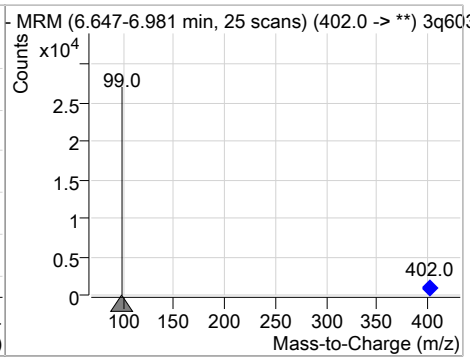


Perfluorinated Compounds by LC/MS/MS

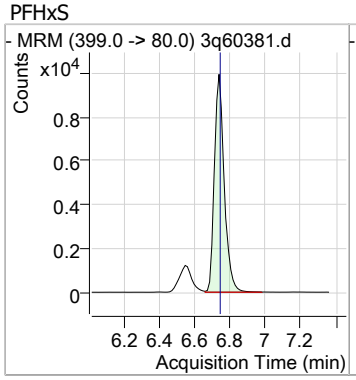
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.05	6.74	0.00	20395				

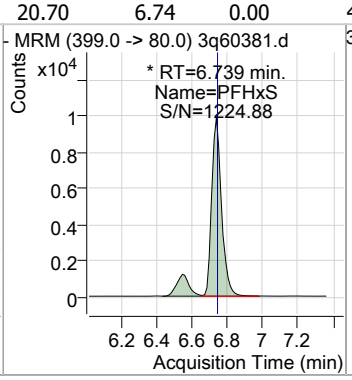


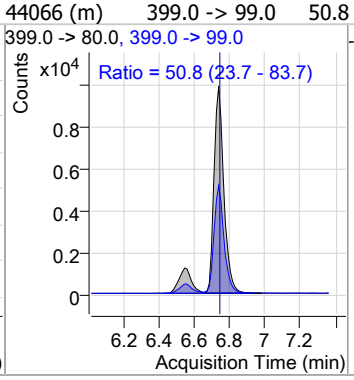


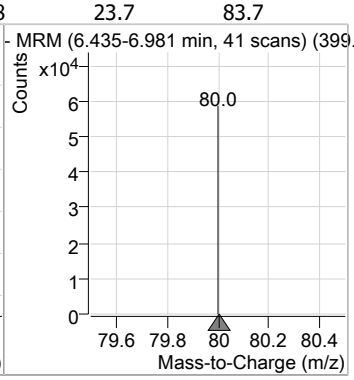


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.70	6.74	0.00	44066 (m)	399.0 -> 99.0	50.8	23.7	83.7

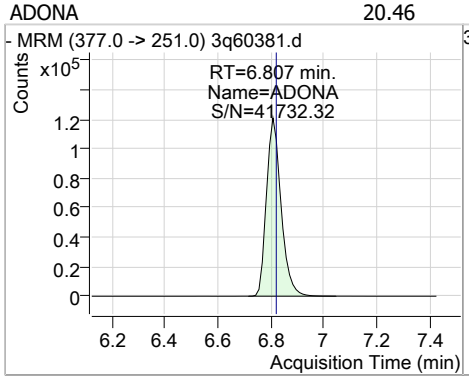


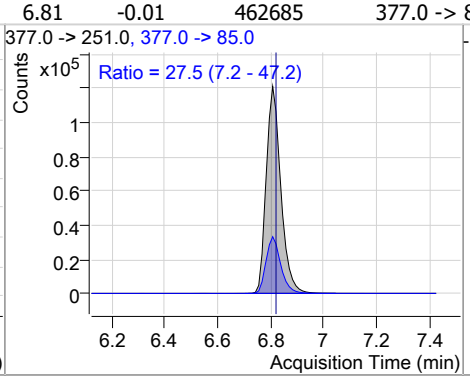


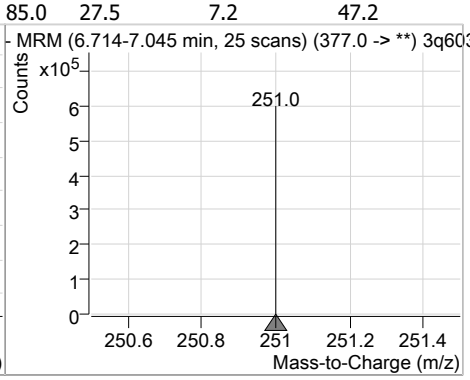




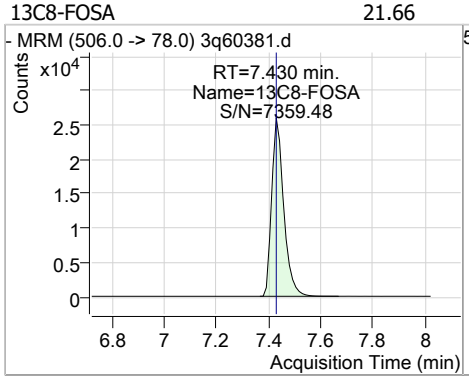
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.46	6.81	-0.01	462685	377.0 -> 85.0	27.5	7.2	47.2

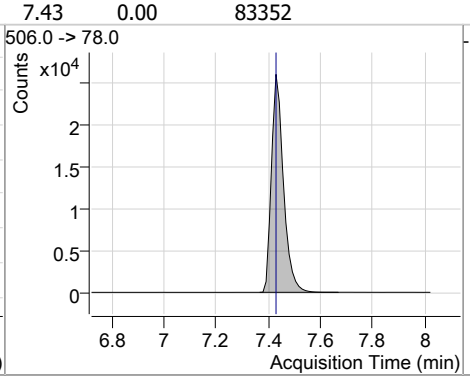


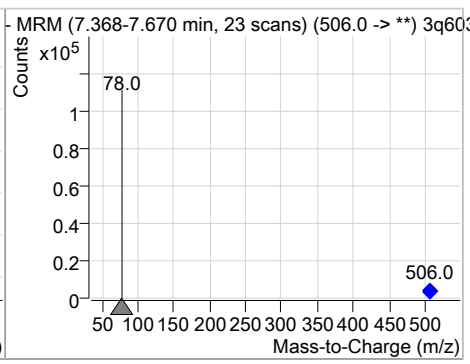




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.66	7.43	0.00	83352				

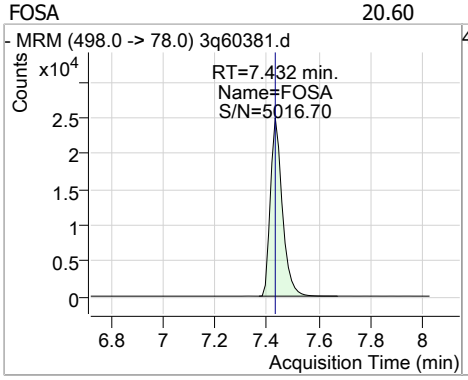


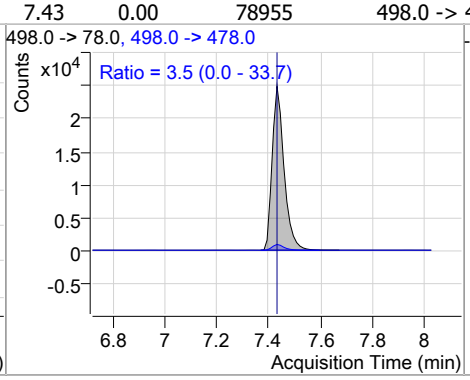


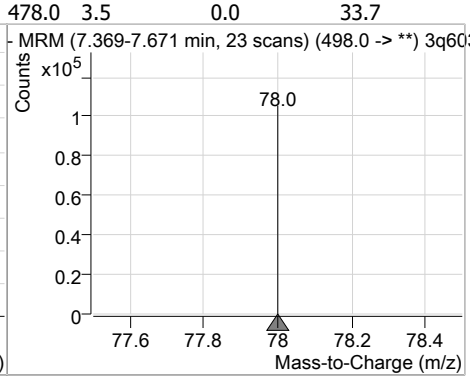


Perfluorinated Compounds by LC/MS/MS

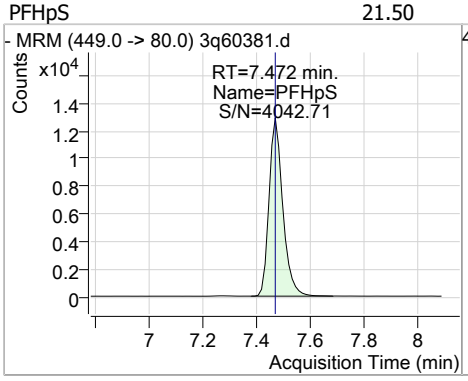
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.60	7.43	0.00	78955	498.0 -> 478.0	3.5	0.0	33.7

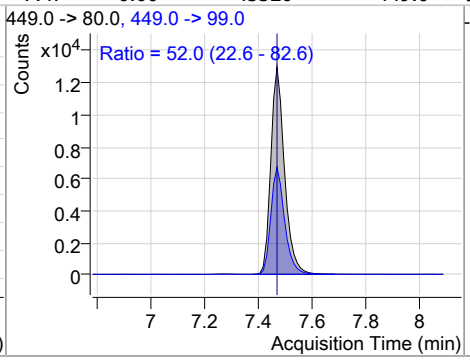


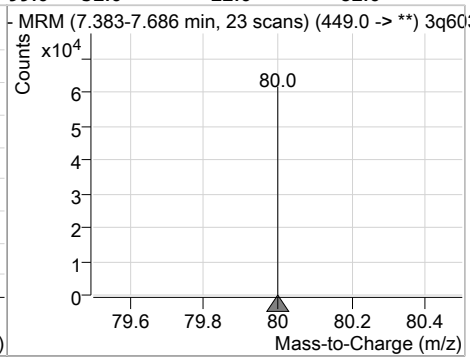




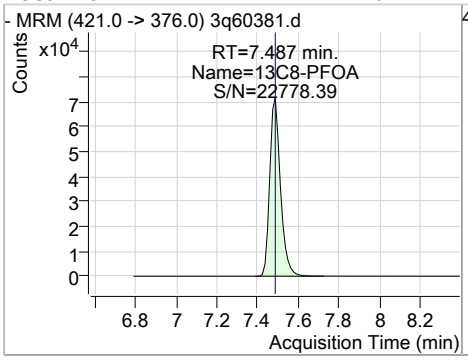
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.50	7.47	0.00	45520	449.0 -> 99.0	52.0	22.6	82.6

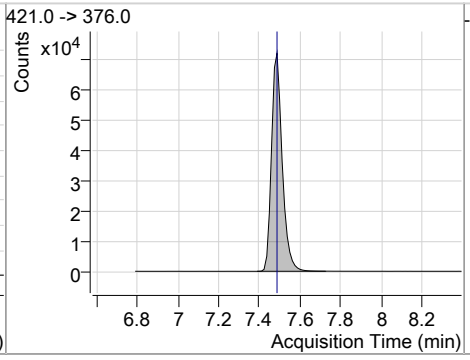


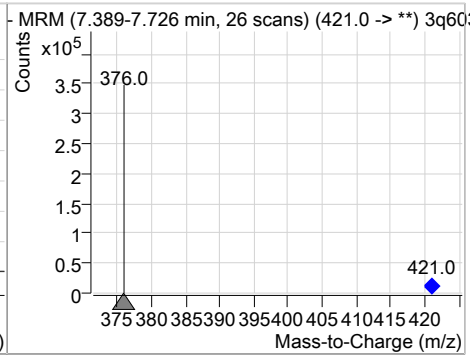




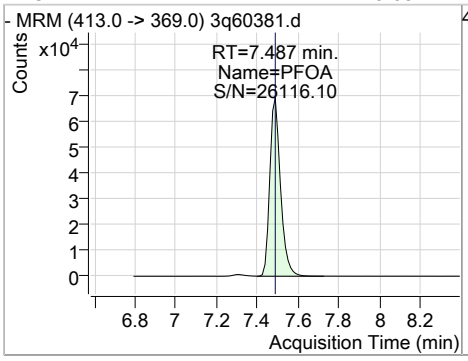
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.71	7.49	0.00	261680				

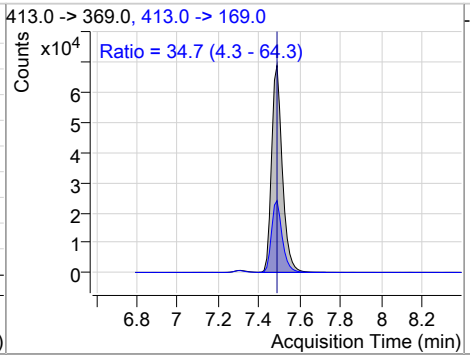


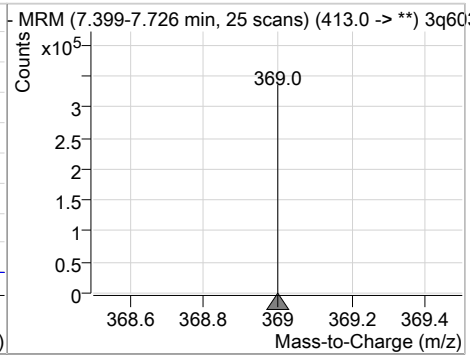




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.68	7.49	0.00	251920	413.0 -> 169.0	34.7	4.3	64.3

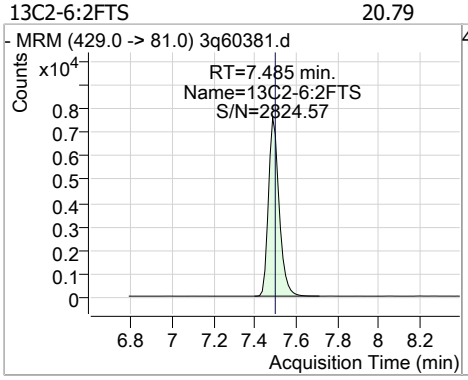


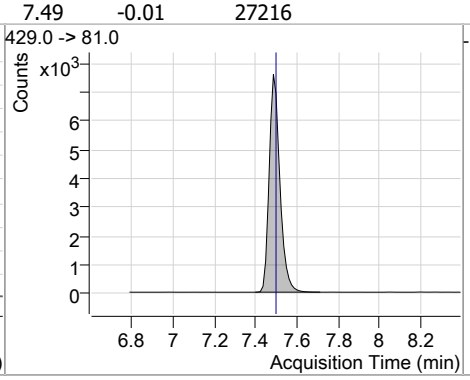


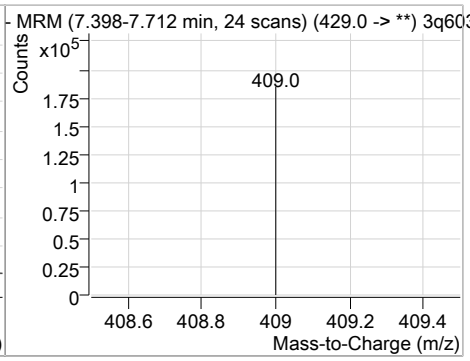


Perfluorinated Compounds by LC/MS/MS

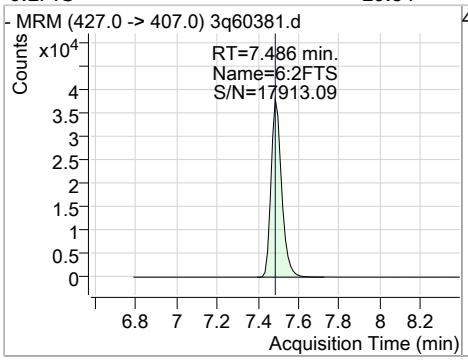
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.79	7.49	-0.01	27216				

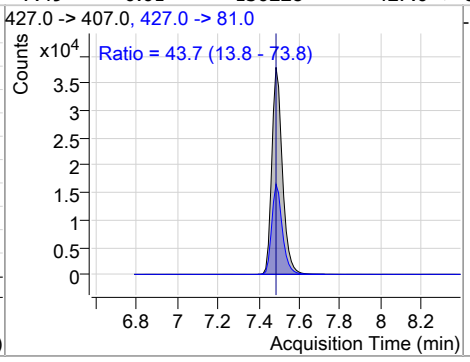


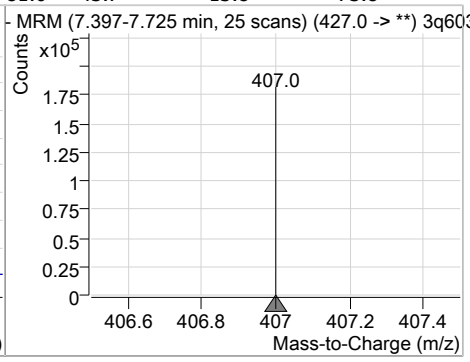




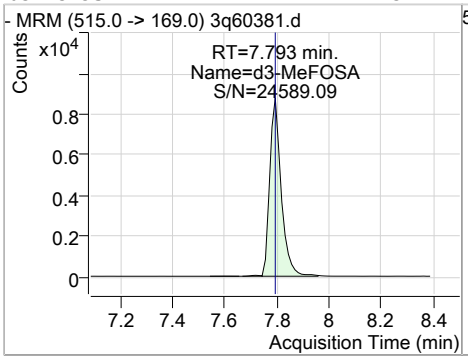
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.84	7.49	-0.01	136228	427.0 -> 81.0	43.7	13.8	73.8

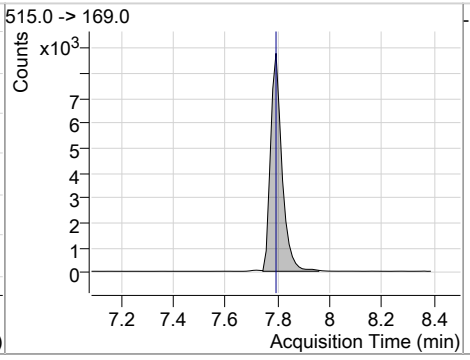


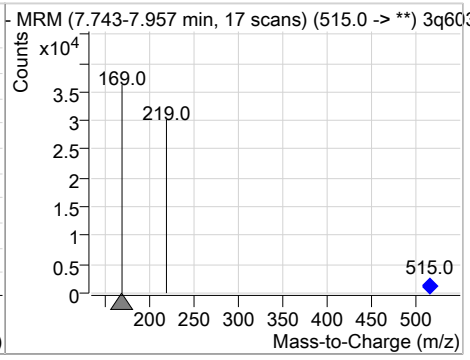




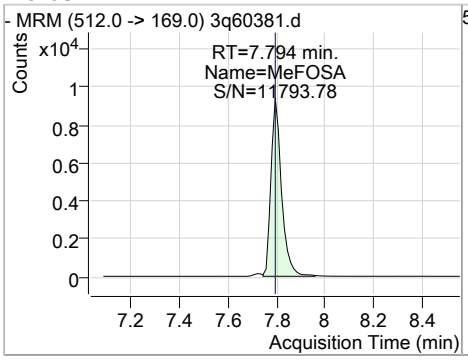
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.31	7.79	0.00	26626				

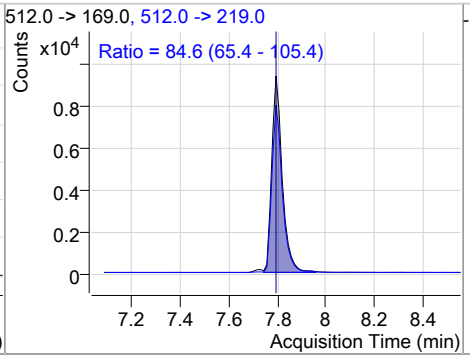


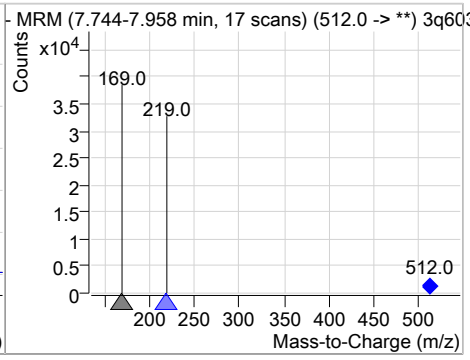




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.41	7.79	0.00	28258	512.0 -> 219.0	84.6	65.4	105.4

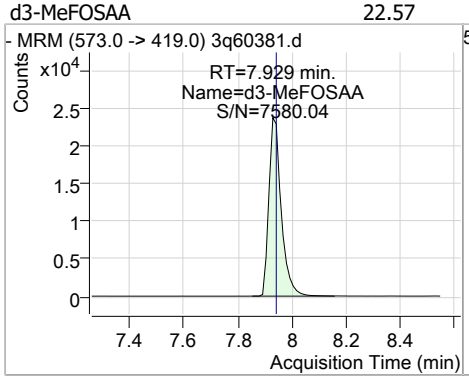


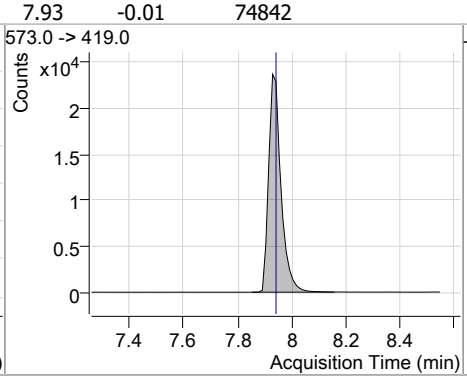


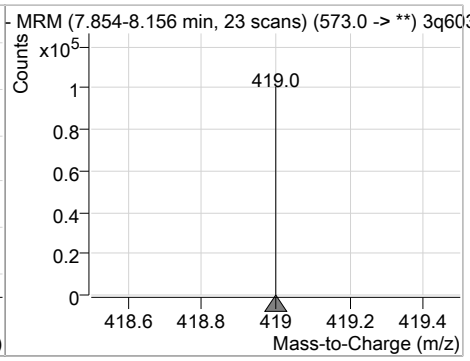


Perfluorinated Compounds by LC/MS/MS

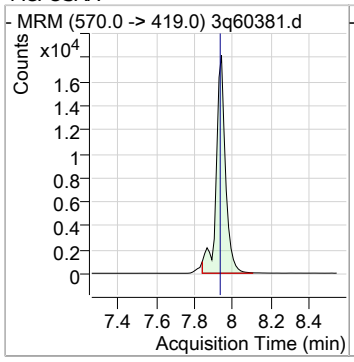
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.57	7.93	-0.01	74842				

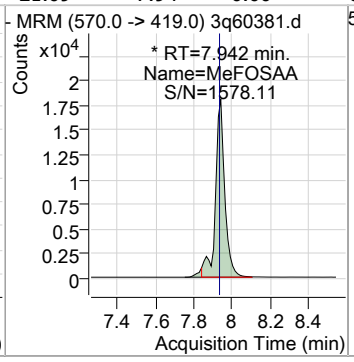


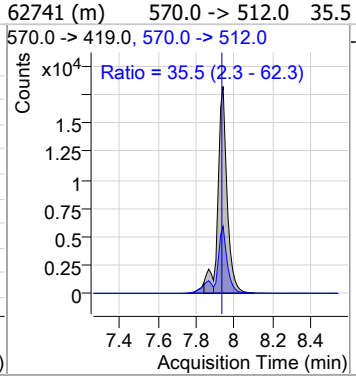


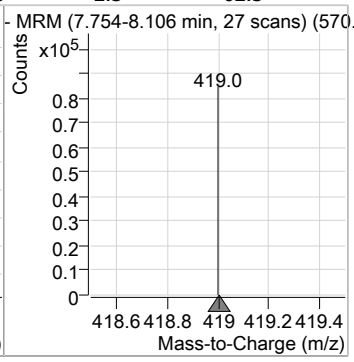


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.09	7.94	0.00	62741 (m)	570.0 -> 512.0	35.5	2.3	62.3

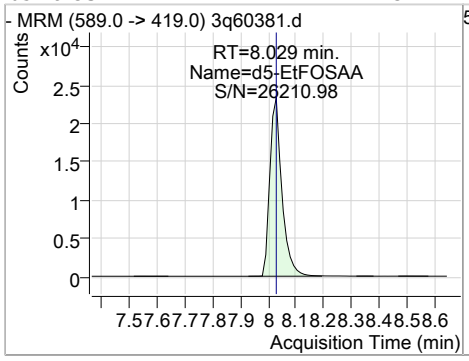


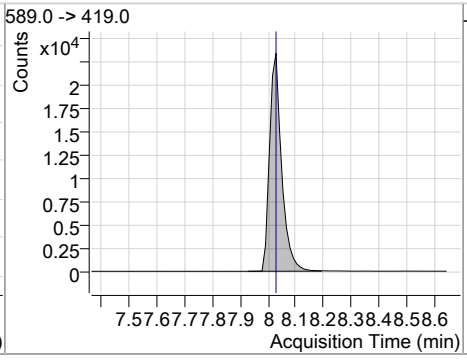


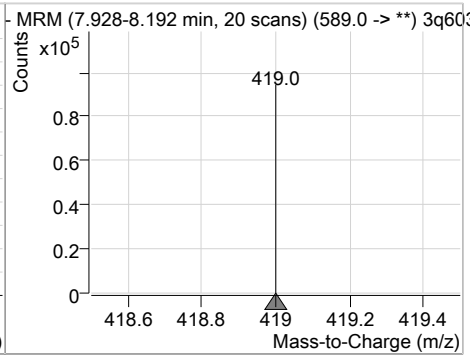




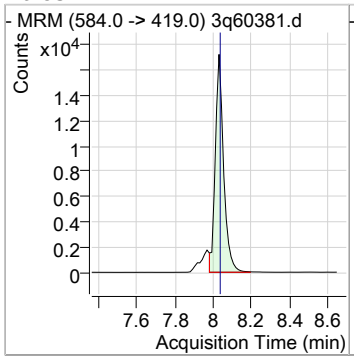
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.32	8.03	0.00	70333				

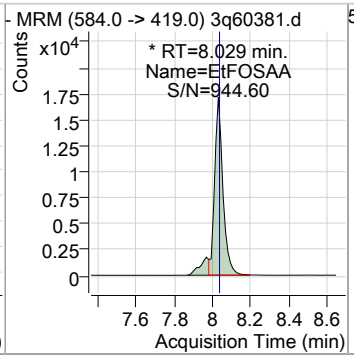


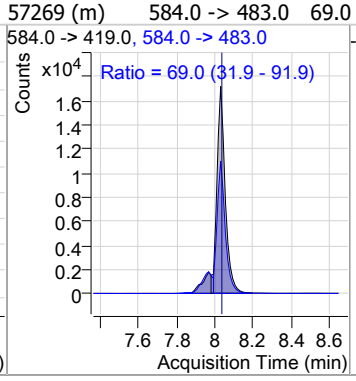


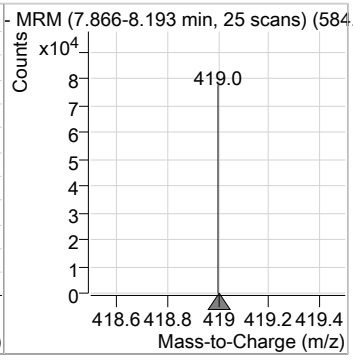


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.93	8.03	0.00	57269 (m)	584.0 -> 483.0	69.0	31.9	91.9



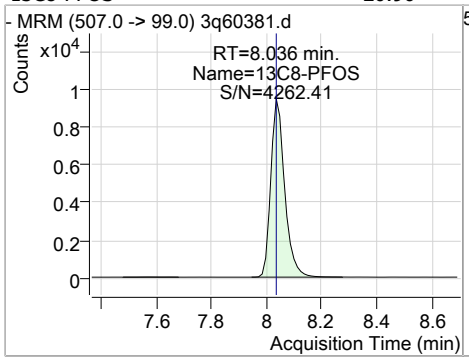


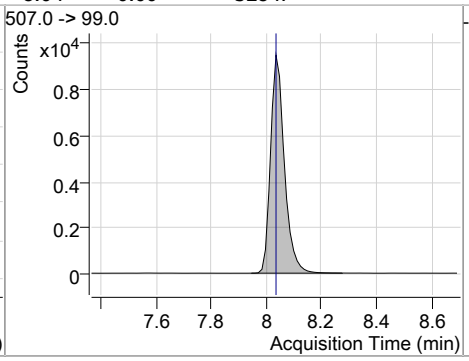


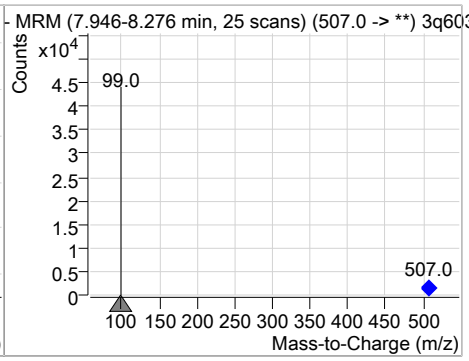


Perfluorinated Compounds by LC/MS/MS

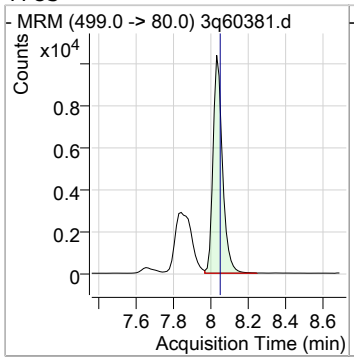
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.96	8.04	0.00	32847				

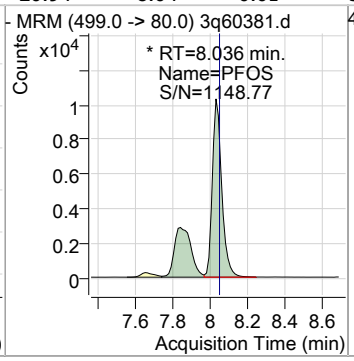


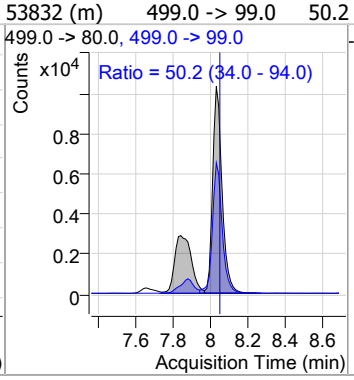


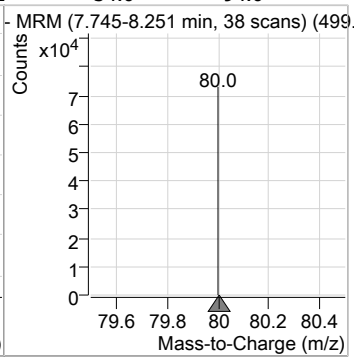


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.94	8.04	-0.01	53832 (m)	499.0 -> 99.0	50.2	34.0	94.0

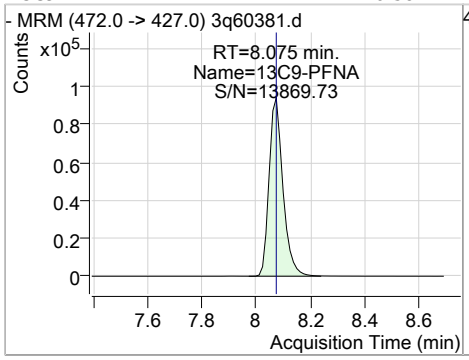


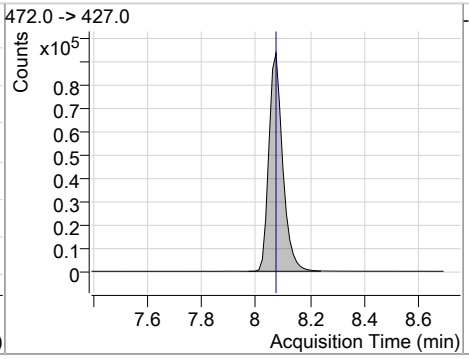


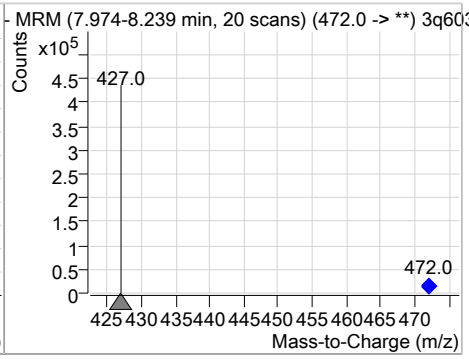




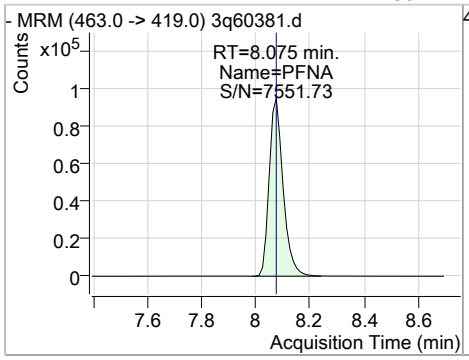
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.58	8.08	0.00	332957				

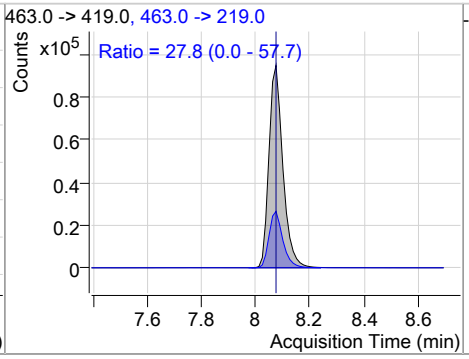


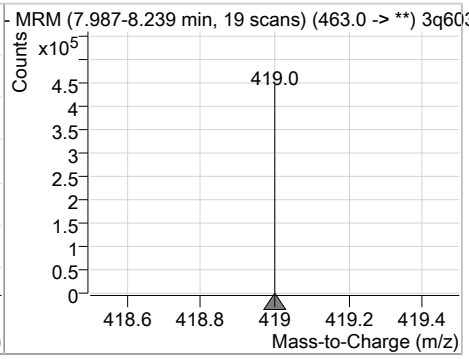




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.36	8.08	0.00	337432	463.0 -> 219.0	27.8	0.0	57.7

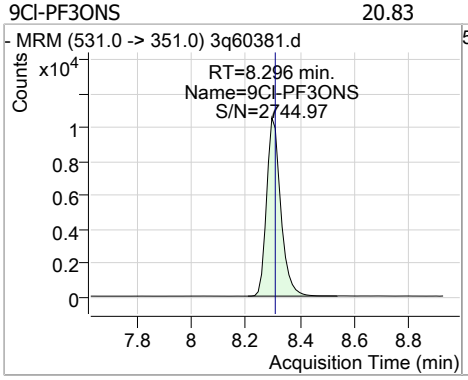


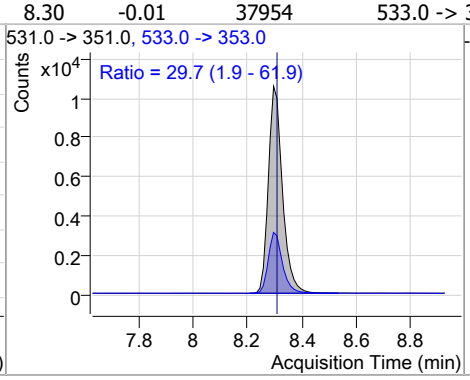


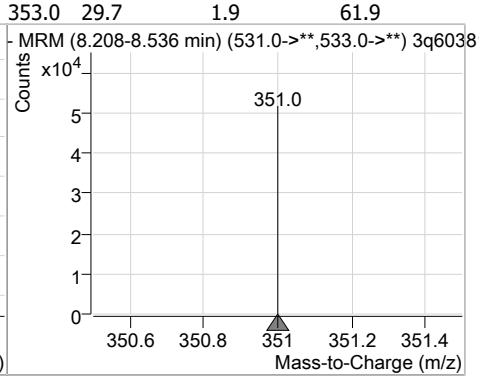


Perfluorinated Compounds by LC/MS/MS

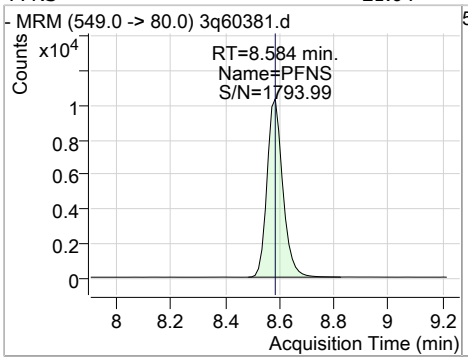
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.83	8.30	-0.01	37954	533.0 -> 353.0	29.7	1.9	61.9

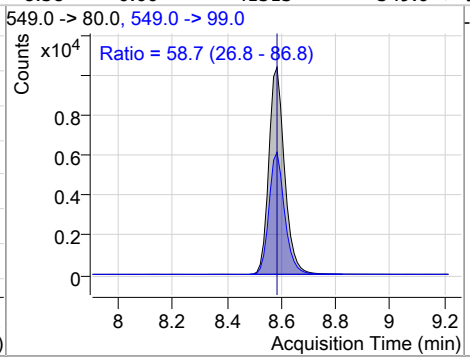


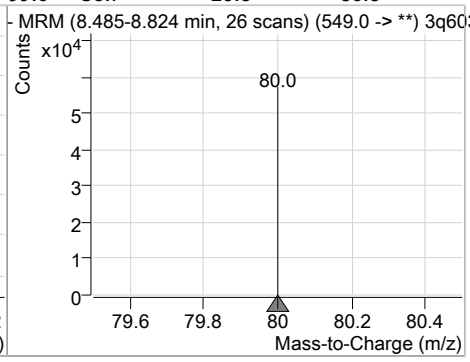




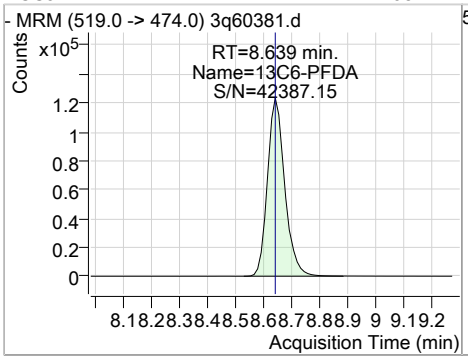
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.04	8.58	0.00	41513	549.0 -> 99.0	58.7	26.8	86.8

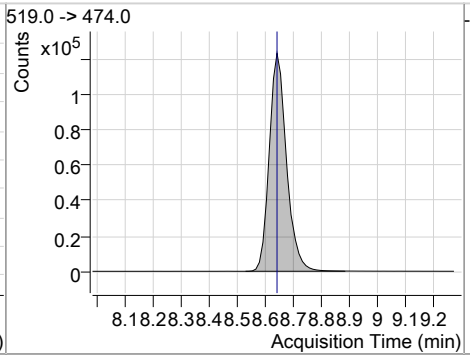


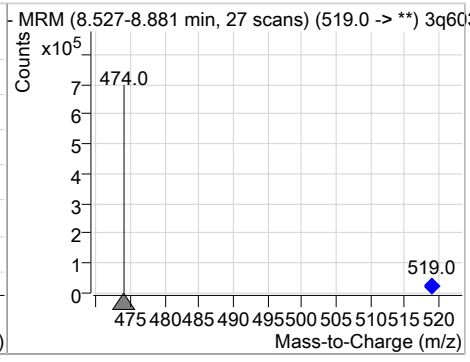




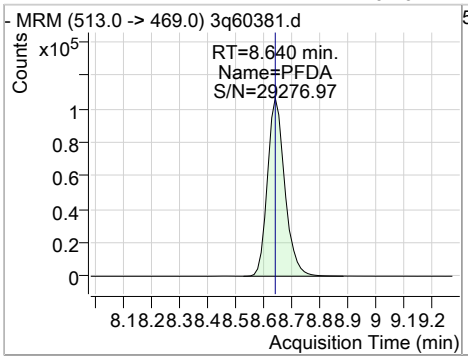
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.08	8.64	0.00	526146				

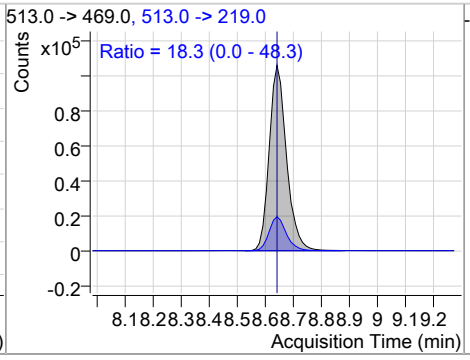


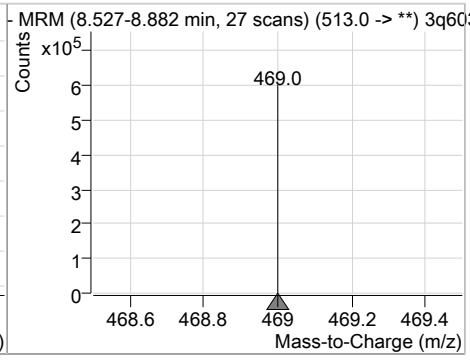




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.70	8.64	0.00	454981	513.0 -> 219.0	18.3	0.0	48.3

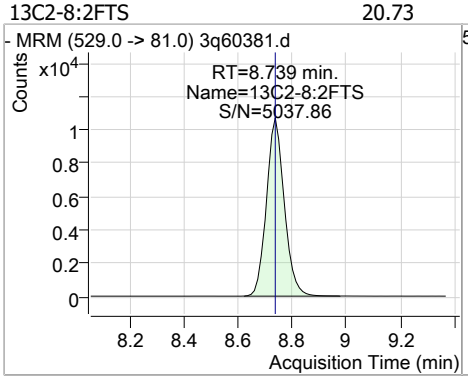


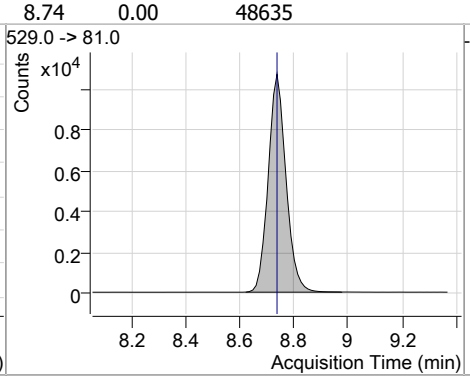


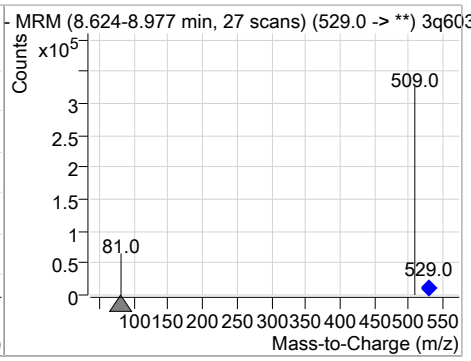


Perfluorinated Compounds by LC/MS/MS

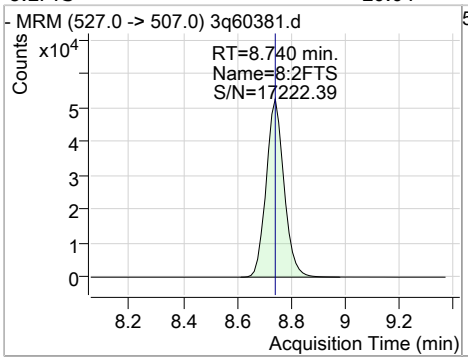
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.73	8.74	0.00	48635				

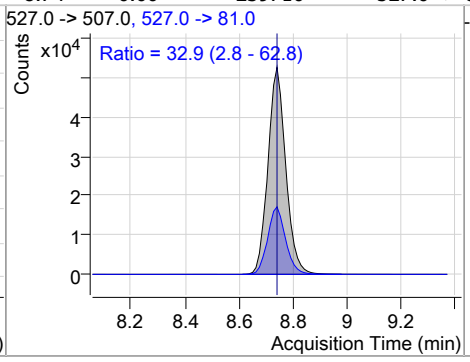


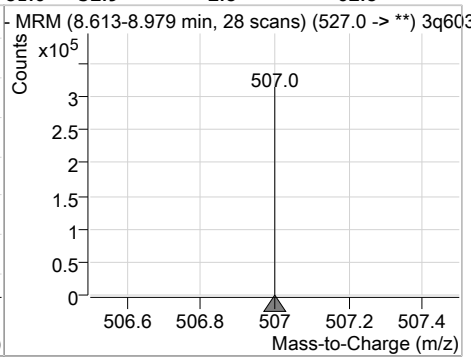




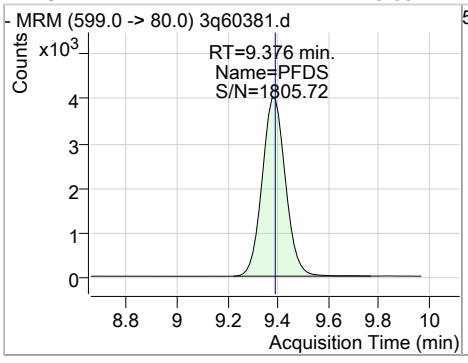
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.64	8.74	0.00	239710	527.0 -> 81.0	32.9	2.8	62.8

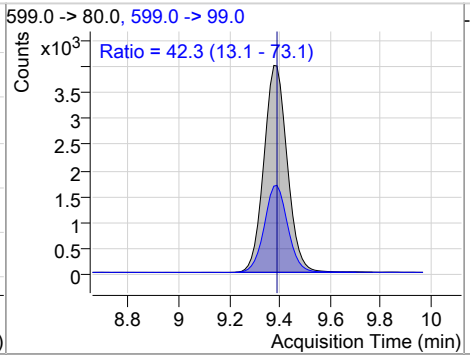


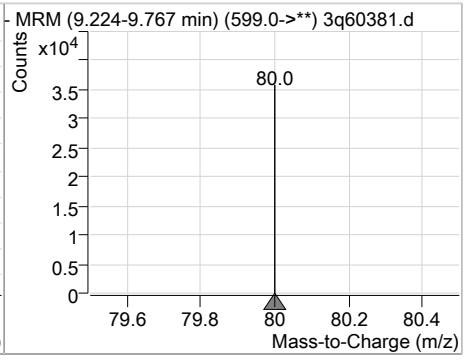




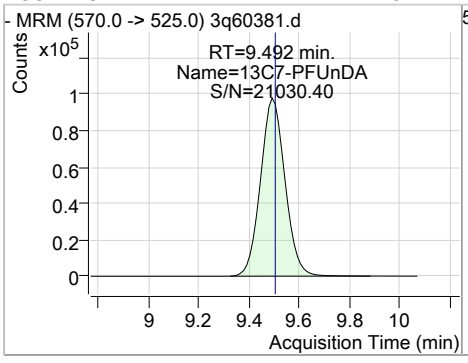
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.08	9.38	-0.03	25455	599.0 -> 99.0	42.3	13.1	73.1

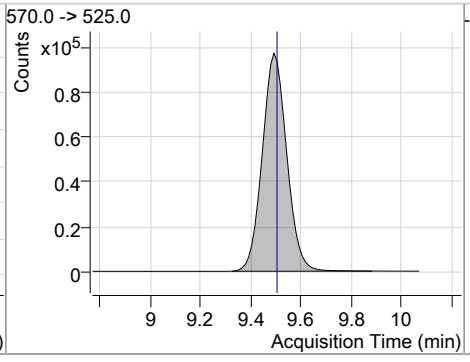


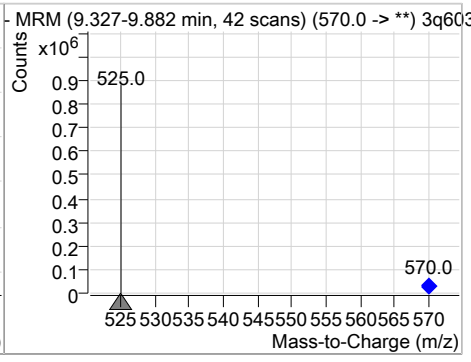




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.37	9.49	-0.01	659081				

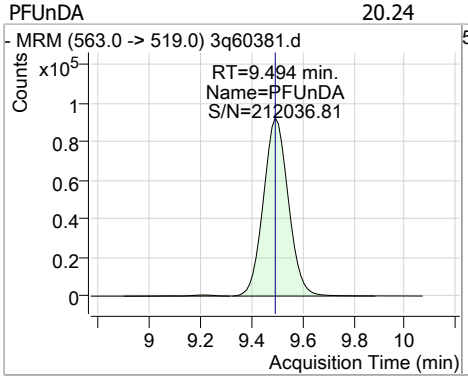


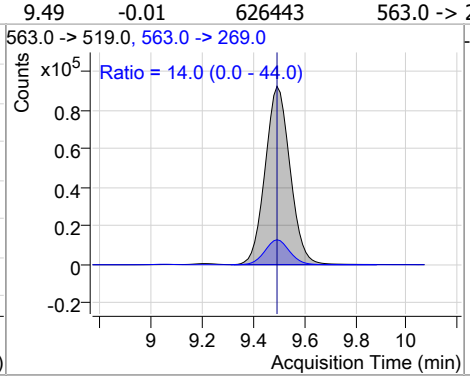


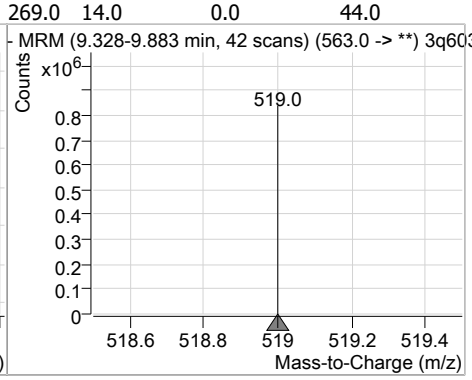


Perfluorinated Compounds by LC/MS/MS

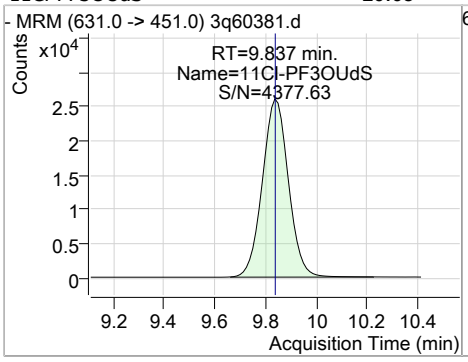
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.24	9.49	-0.01	626443	563.0 -> 269.0	14.0	0.0	44.0

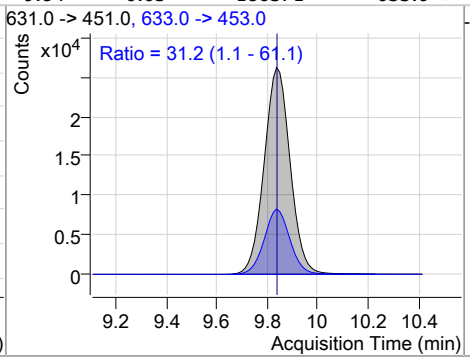


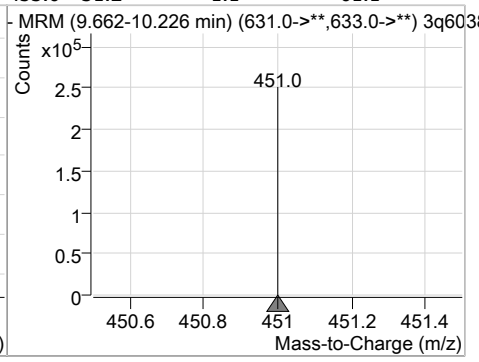




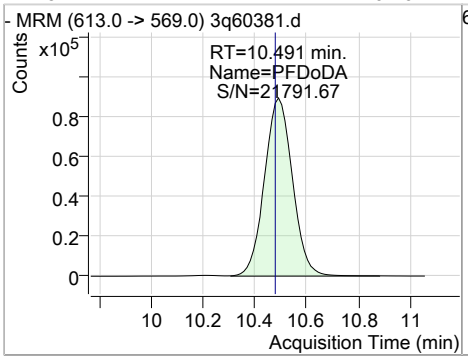
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.68	9.84	-0.03	186371	633.0 -> 453.0	31.2	1.1	61.1

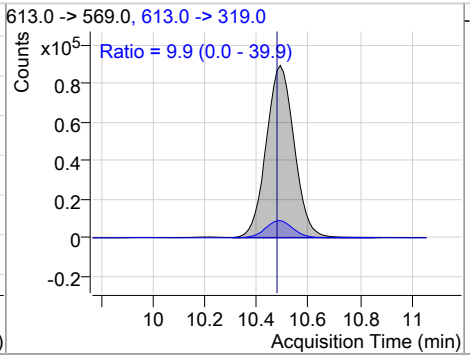


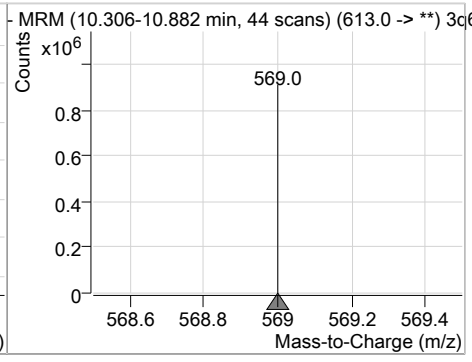




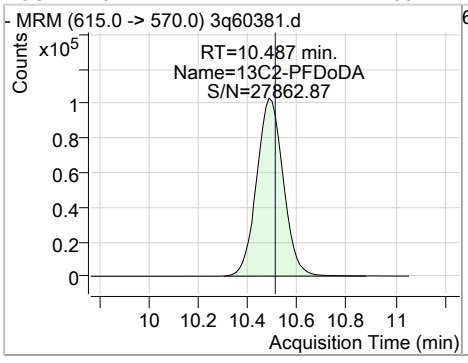
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.46	10.49	-0.01	671893	613.0 -> 319.0	9.9	0.0	39.9

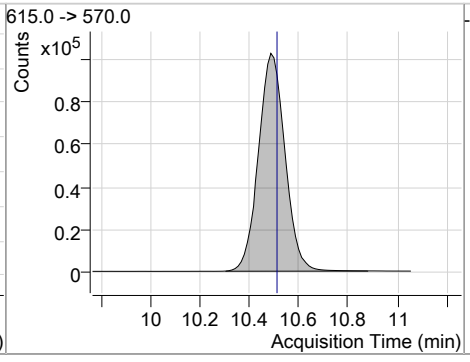


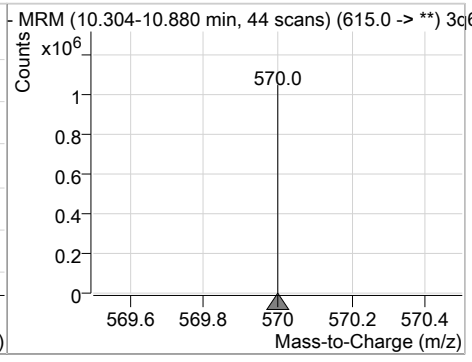




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.06	10.49	-0.03	772050				

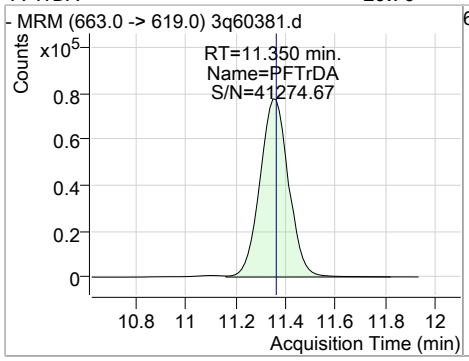


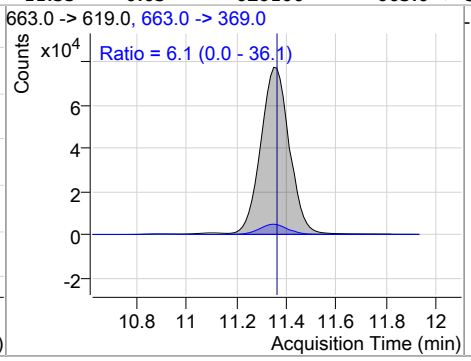


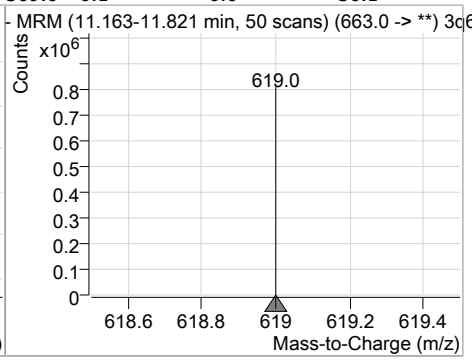


Perfluorinated Compounds by LC/MS/MS

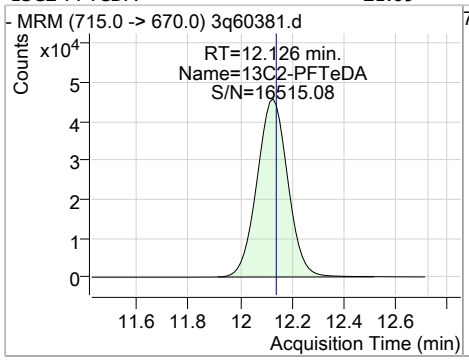
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.70	11.35	-0.03	620100	663.0 -> 369.0	6.1	0.0	36.1

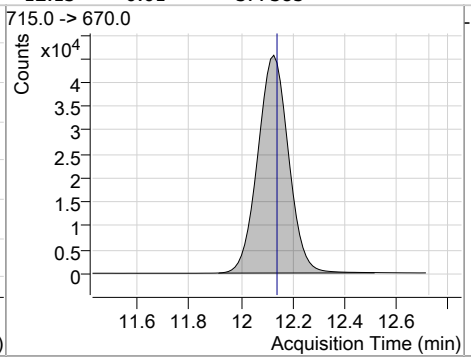


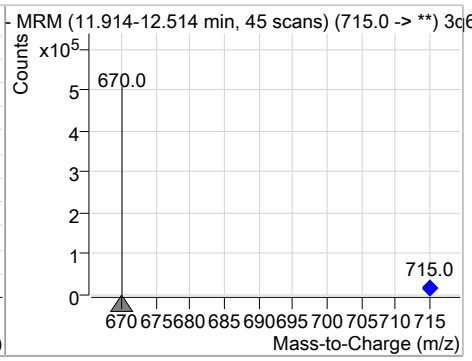




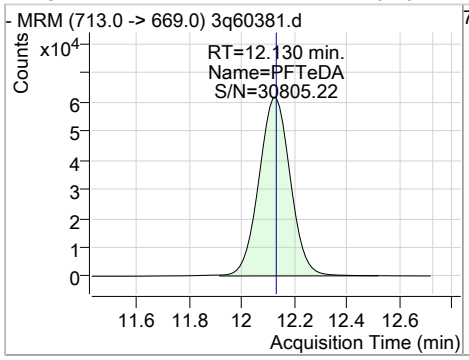
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.09	12.13	-0.01	377385				

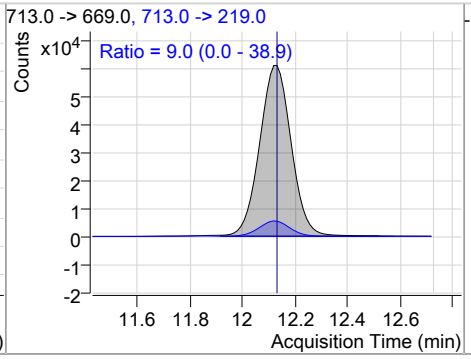


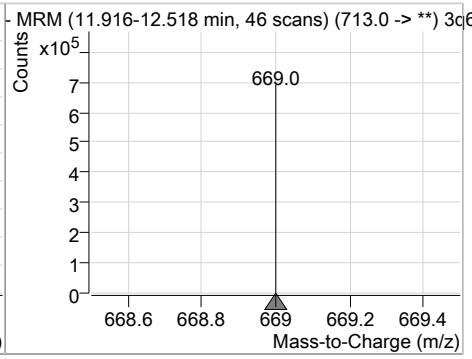




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.78	12.13	-0.01	511811	713.0 -> 219.0	9.0	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-CC824
Lab FileID: 3Q60381.D
Injection Time: 05/28/22 01:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 17:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.74	Split peak
MeFOSAA	2355-31-9		7.94	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:11

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60393.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 4:56:04 AM
Sample Name : cc824-20
Vial : P1-A7
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

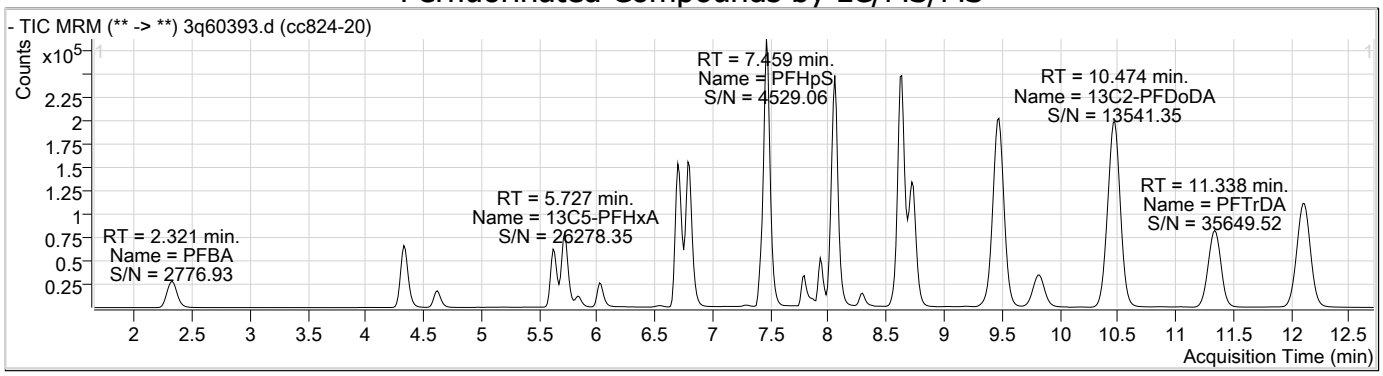
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	125010	20.00 µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	117849	20.00 µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	160585	20.00 µg/L	-0.013
M4-PFHpA	6.705	367.0 -> 322.0	210156	20.00 µg/L	-0.013
M8-PFOA	7.474	421.0 -> 376.0	257494	20.00 µg/L	-0.013
M9-PFNA	8.062	472.0 -> 427.0	330665	20.00 µg/L	-0.013
M6-PFDA	8.639	519.0 -> 474.0	518308	20.00 µg/L	0.000
M7-PFUnDA	9.480	570.0 -> 525.0	652526	20.00 µg/L	-0.025
M2-PFDoDA	10.474	615.0 -> 570.0	767943	20.00 µg/L	-0.038
M2-PFTeDA	12.114	715.0 -> 670.0	373965	20.00 µg/L	-0.025
M8-FOSA	7.430	506.0 -> 78.0	82237	20.00 µg/L	0.000
M3-PFBS	4.617	302.0 -> 99.0	16361	20.00 µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	20048	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	32470	20.00 µg/L	0.000
M2-4:2FTS	5.621	329.0 -> 81.0	11488	20.00 µg/L	-0.013
M2-6:2FTS	7.485	429.0 -> 81.0	26610	20.00 µg/L	-0.013
M2-8:2FTS	8.726	529.0 -> 81.0	46462	20.00 µg/L	-0.013
M3-MeFOSAA	7.929	573.0 -> 419.0	75169	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	22746	20.00 µg/L	-0.013
M3-MeFOSA	7.781	515.0 -> 169.0	27072	20.00 µg/L	-0.013
M5-EtFOSAA	8.016	589.0 -> 419.0	70542	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	11488	20.50 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C2-6:2FTS	7.485	429.0 -> 81.0	26610	20.33 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C2-8:2FTS	8.726	529.0 -> 81.0	46462	19.81 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C2-PFDoDA	10.474	615.0 -> 570.0	767943	20.95 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C2-PFTeDA	12.114	715.0 -> 670.0	373965	20.90 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C3-PFBS	4.617	302.0 -> 99.0	16361	20.73 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C3-PFHxS	6.738	402.0 -> 99.0	20048	20.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	2.327	217.0 -> 172.0	125010	20.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFHpA	6.705	367.0 -> 322.0	210156	20.91 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C5-PFHxA	5.727	318.0 -> 273.0	160585	20.35 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C5-PFPeA	4.337	268.0 -> 223.0	117849	20.34 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	8.639	519.0 -> 474.0	518308	20.76 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

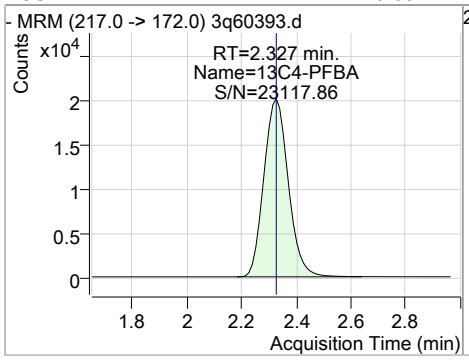
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C7-PFUnDA	9.480	570.0 -> 525.0	652526	21.16 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-FOSA	7.430	506.0 -> 78.0	82237	21.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C8-PFOA	7.474	421.0 -> 376.0	257494	20.38 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-PFOS	8.036	507.0 -> 99.0	32470	20.72 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C9-PFNA	8.062	472.0 -> 427.0	330665	20.44 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
d3-MeFOSAA	7.929	573.0 -> 419.0	75169	22.67 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.3%		
13C3-HFPO-DA	6.031	287.0 -> 169.0	22749	20.33 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d3-MeFOSA	7.781	515.0 -> 169.0	27072	21.66 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
d5-EtFOSAA	8.016	589.0 -> 419.0	70557	22.39 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
Target Compounds						QValue
4:2FTS	5.624	327.0 -> 307.0	103002	20.55 µg/L		100
6:2FTS	7.486	427.0 -> 407.0	133951	20.95 µg/L		99
8:2FTS	8.728	527.0 -> 507.0	231523	20.87 µg/L		100
EtFOSAA	8.029	584.0 -> 419.0	58227	21.22 µg/L	m	94
FOSA	7.419	498.0 -> 78.0	80143	21.19 µg/L		100
MeFOSAA	7.930	570.0 -> 419.0	63261	21.18 µg/L	m	95
PFBA	2.321	213.0 -> 169.0	49613	20.36 µg/L		100
PFBS	4.619	299.0 -> 80.0	43354	20.95 µg/L		99
PFDA	8.640	513.0 -> 469.0	448973	20.74 µg/L		100
PFDoDA	10.466	613.0 -> 569.0	667906	20.45 µg/L		100
PFDS	9.362	599.0 -> 80.0	25025	19.94 µg/L		98
PFHpA	6.707	363.0 -> 319.0	322606	20.93 µg/L		99
PFHpS	7.459	449.0 -> 80.0	45452	21.72 µg/L		99
PFHxA	5.728	313.0 -> 269.0	136621	20.35 µg/L		99
PFHxS	6.727	399.0 -> 80.0	43121	20.61 µg/L	m	96
PFNA	8.063	463.0 -> 419.0	336455	21.45 µg/L		99
PFNS	8.571	549.0 -> 80.0	40852	20.95 µg/L		99
PFOA	7.475	413.0 -> 369.0	248978	20.77 µg/L		99
PFOS	8.036	499.0 -> 80.0	52943	20.83 µg/L	m	82
PFPeA	4.339	263.0 -> 219.0	188104	21.65 µg/L		100
PFPeS	5.832	349.0 -> 80.0	28986	20.96 µg/L		98
PFTeDA	12.105	713.0 -> 669.0	507893	20.81 µg/L		100
PFTrDA	11.338	663.0 -> 619.0	615108	20.73 µg/L		100
PFUnDA	9.481	563.0 -> 519.0	616000	20.11 µg/L		100
11Cl-PF3OUdS	9.824	631.0 -> 451.0	185929	20.75 µg/L		100
9Cl-PF3ONS	8.296	531.0 -> 351.0	37237	20.74 µg/L		96
ADONA	6.794	377.0 -> 251.0	455476	20.49 µg/L		99
HFPO-DA	6.026	329.0 -> 169.0	66350	20.58 µg/L		100
MeFOSA	7.794	512.0 -> 169.0	27675	20.62 µg/L		100

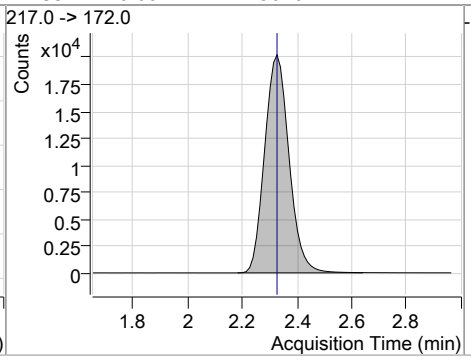
 # = Qualifier out of range, m = manually integrated, + = Area summed

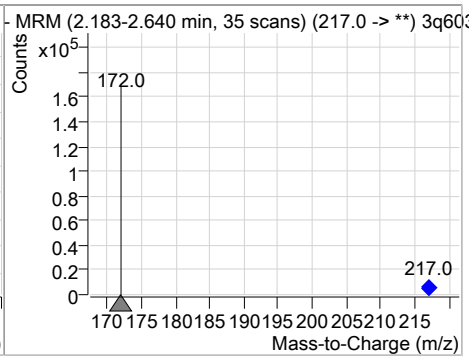
Perfluorinated Compounds by LC/MS/MS



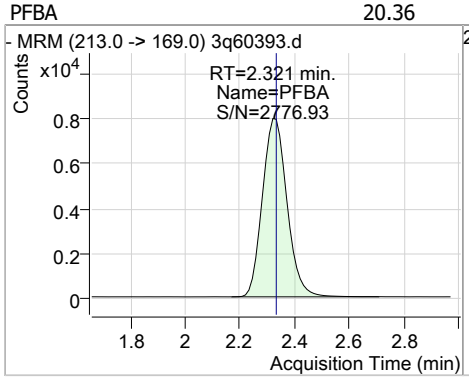
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.68	2.33	0.00	125010				

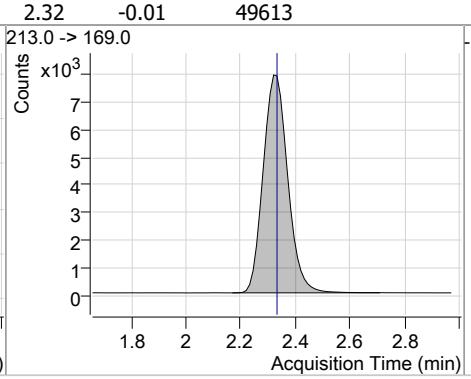


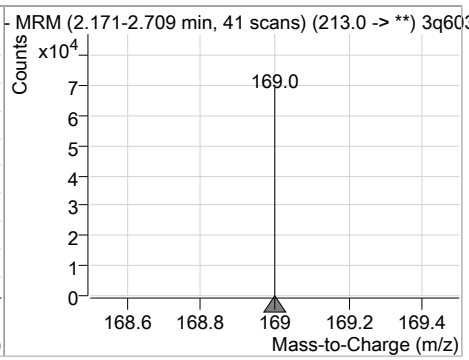




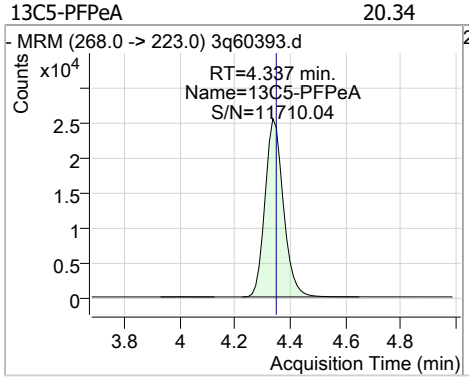
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.36	2.32	-0.01	49613				

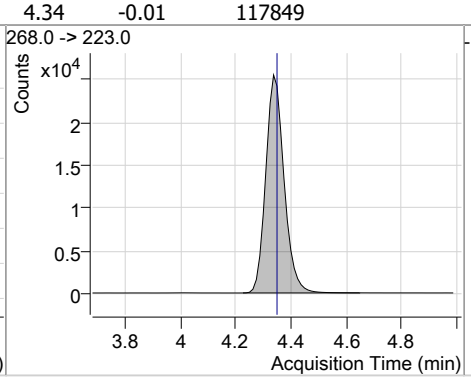


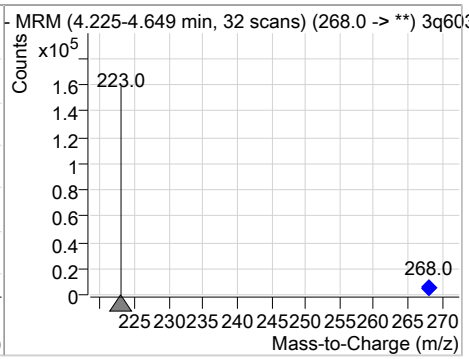




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.34	4.34	-0.01	117849				

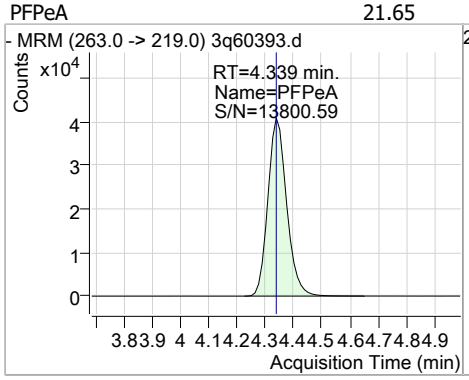


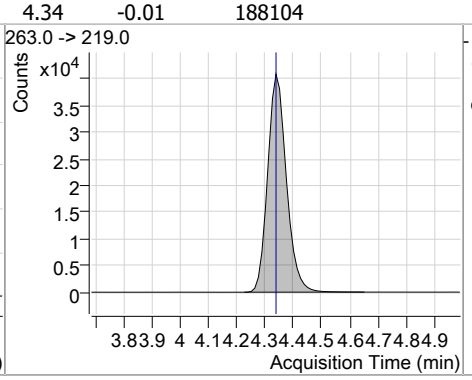


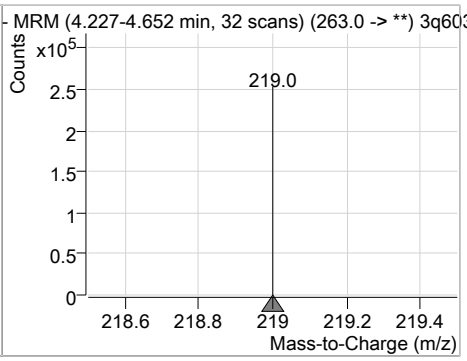


Perfluorinated Compounds by LC/MS/MS

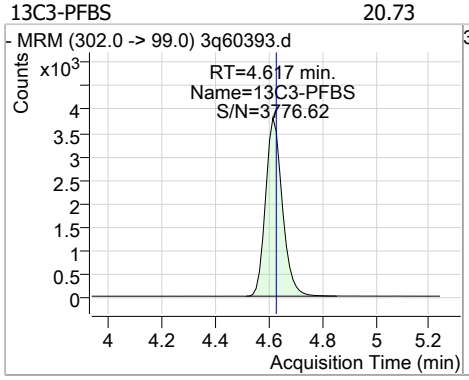
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.65	4.34	-0.01	188104				

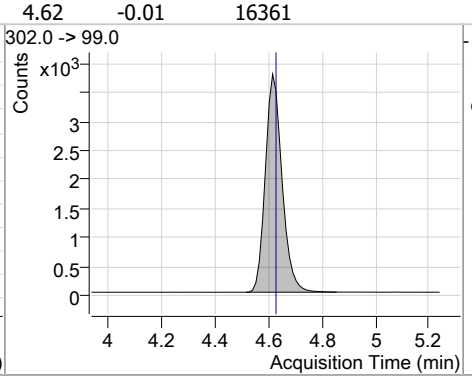


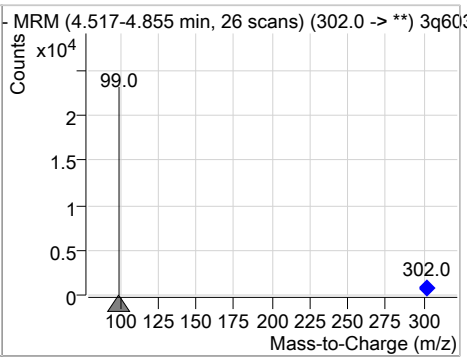




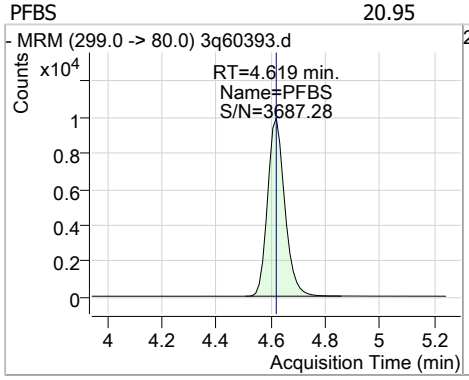
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.73	4.62	-0.01	16361				

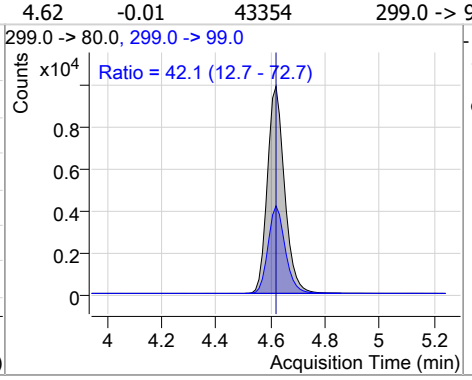


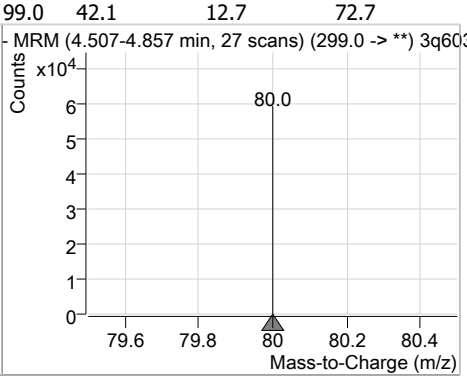




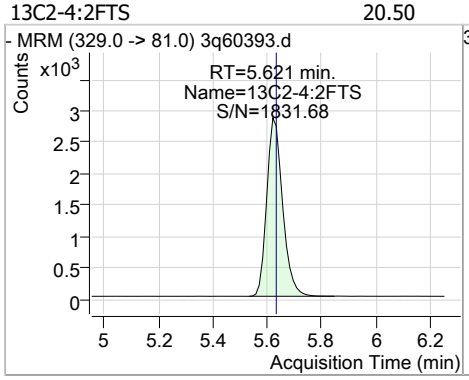
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.95	4.62	-0.01	43354	299.0 -> 99.0	42.1	12.7	72.7

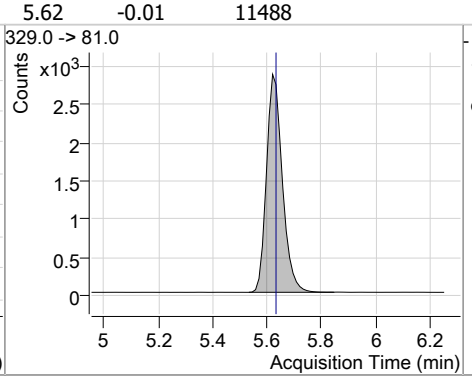


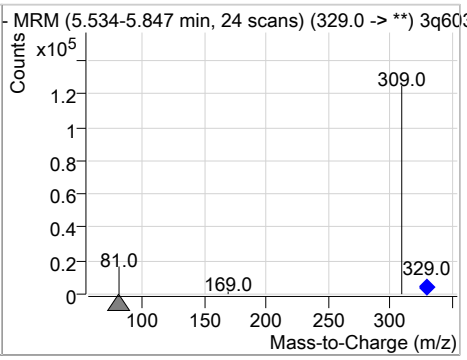




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.50	5.62	-0.01	11488				

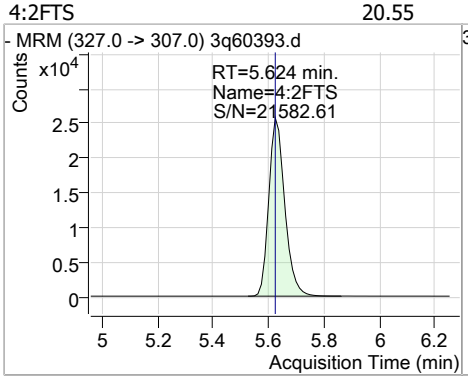


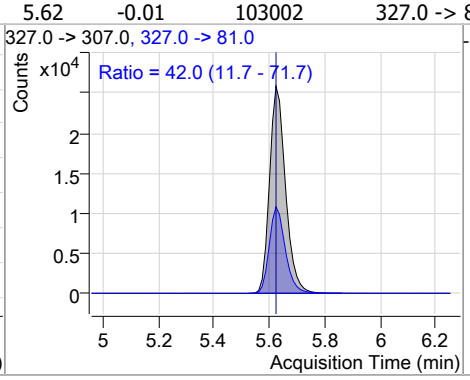


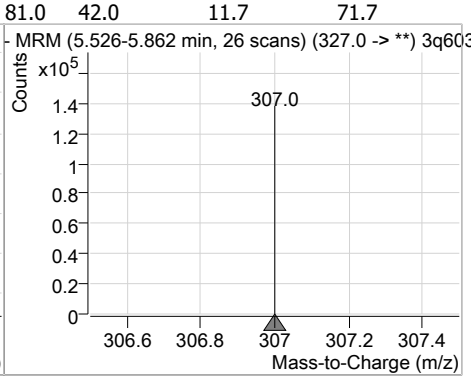


Perfluorinated Compounds by LC/MS/MS

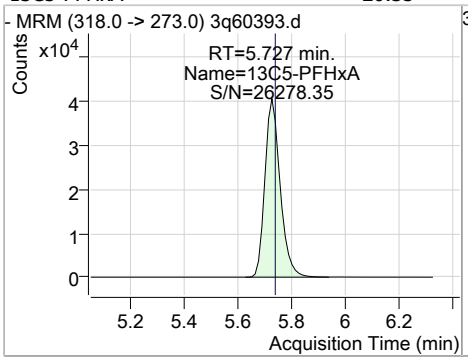
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.55	5.62	-0.01	103002	327.0 -> 81.0	42.0	11.7	71.7

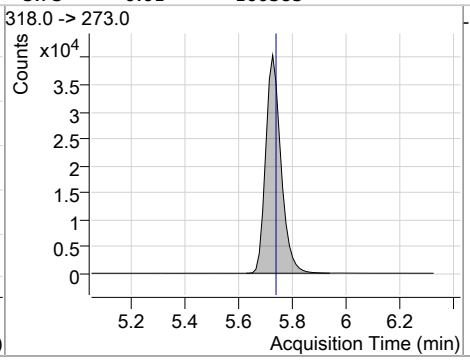


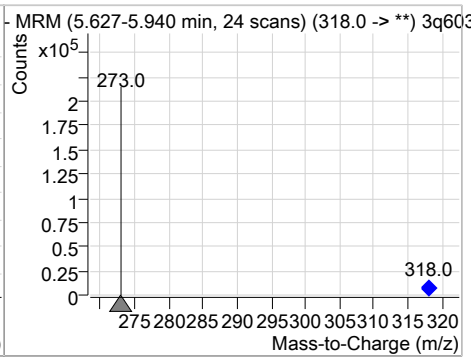




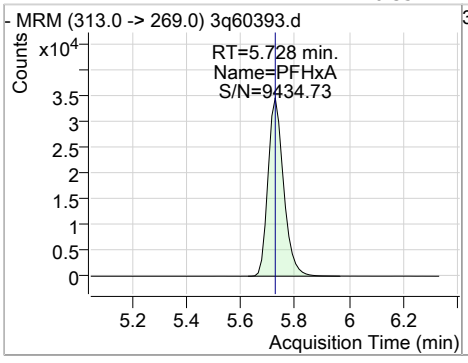
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.35	5.73	-0.01	160585				

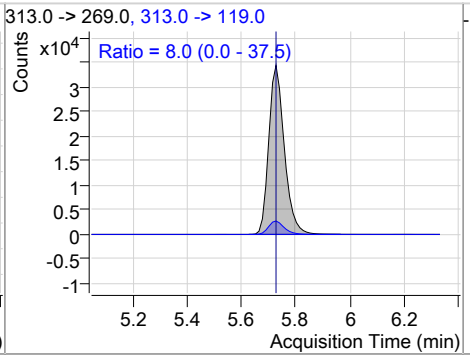


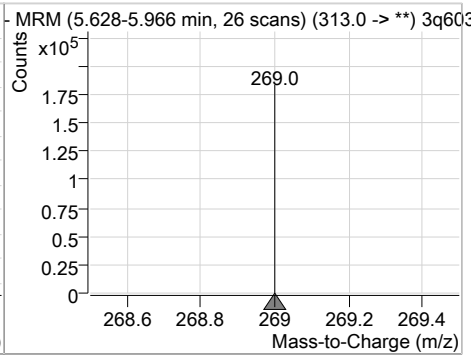




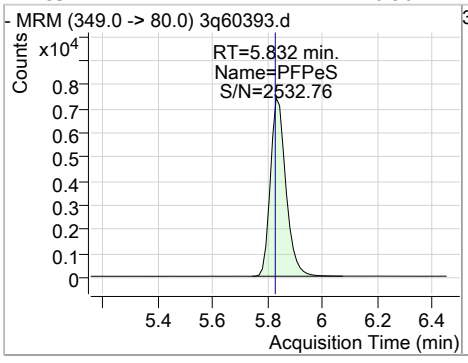
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.35	5.73	-0.01	136621	313.0 -> 119.0	8.0	0.0	37.5

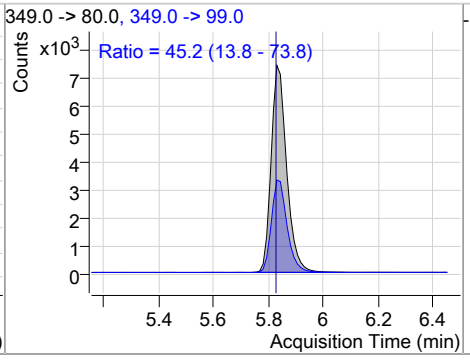


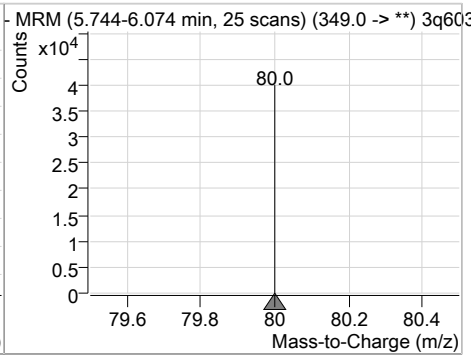




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.96	5.83	-0.01	28986	349.0 -> 99.0	45.2	13.8	73.8

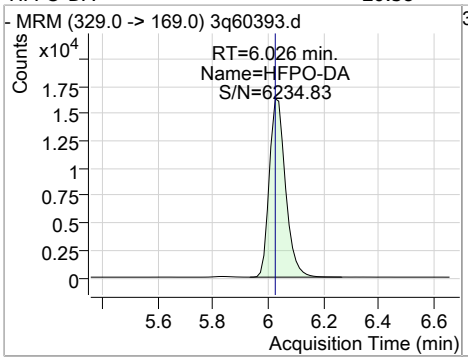


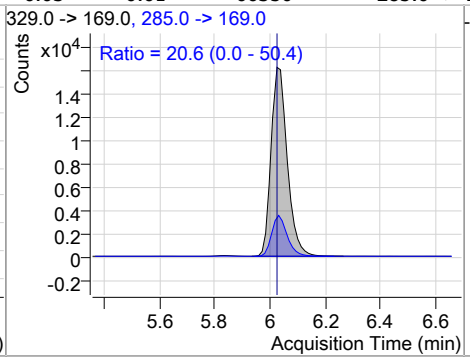


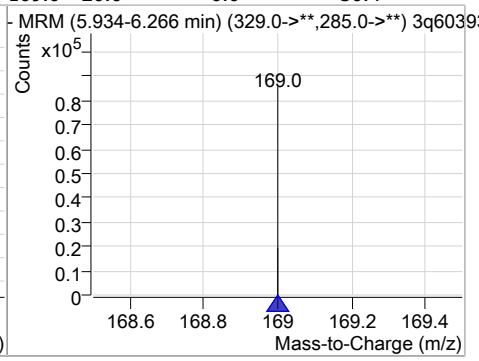


Perfluorinated Compounds by LC/MS/MS

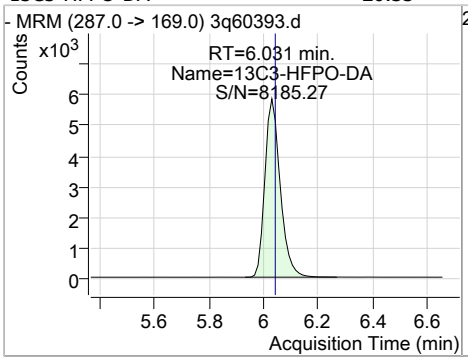
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.58	6.03	-0.01	66350	285.0 -> 169.0	20.6	0.0	50.4

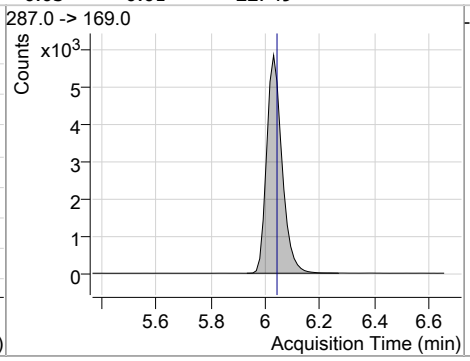


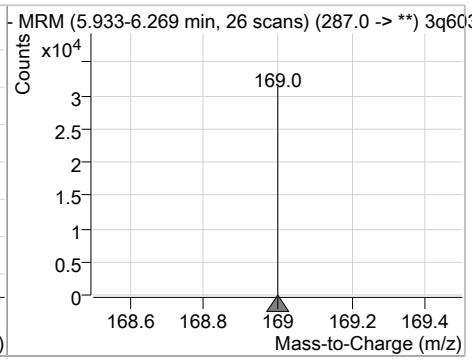




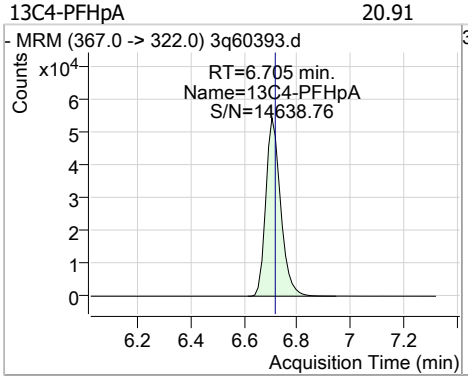
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.33	6.03	-0.01	22749				

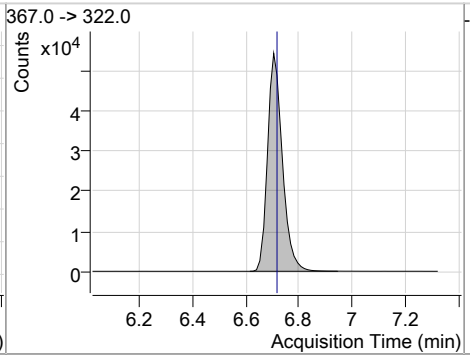


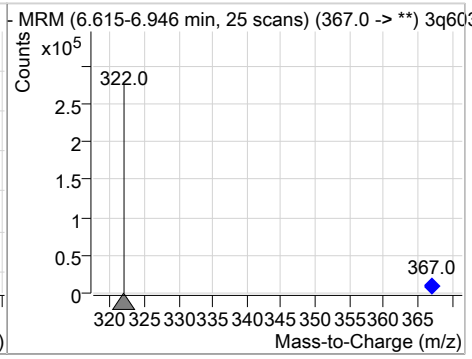




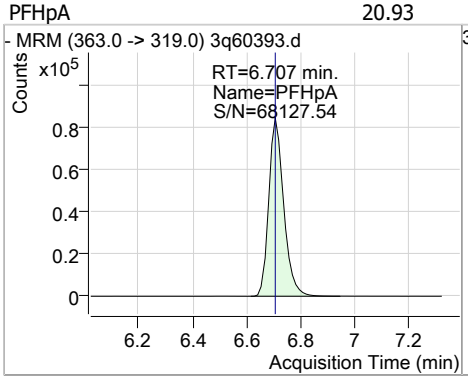
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.91	6.71	-0.01	210156				

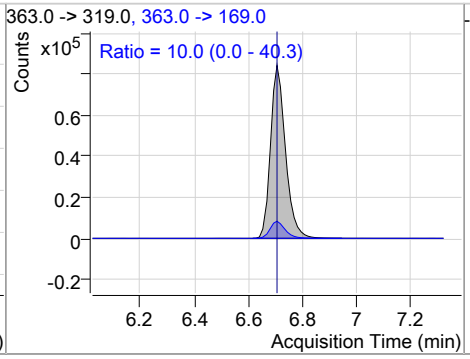


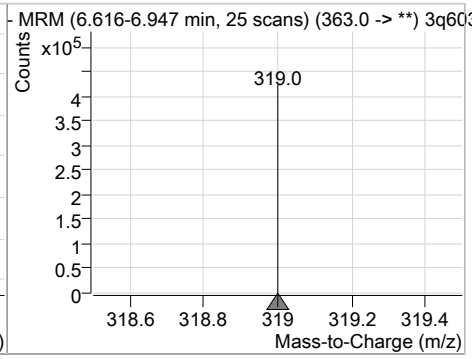




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.93	6.71	-0.01	322606	363.0 -> 169.0	10.0	0.0	40.3

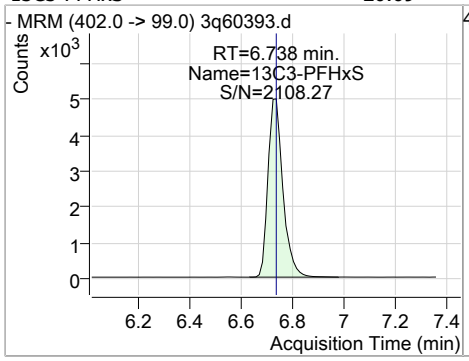


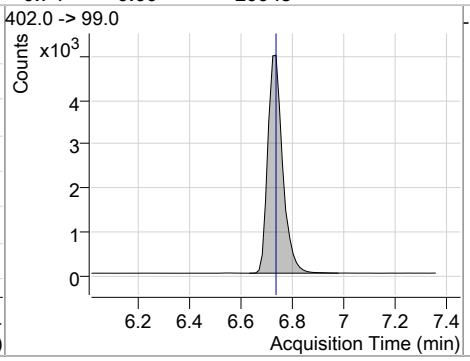


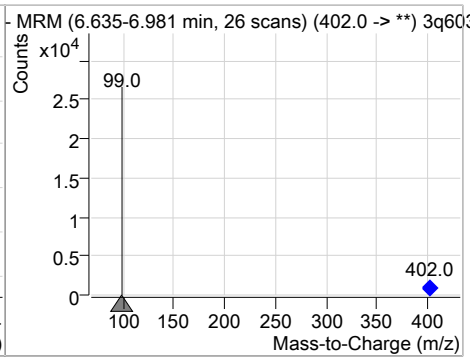


Perfluorinated Compounds by LC/MS/MS

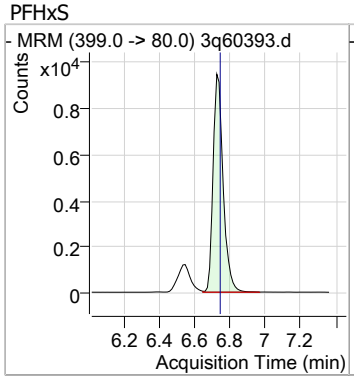
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.69	6.74	0.00	20048				

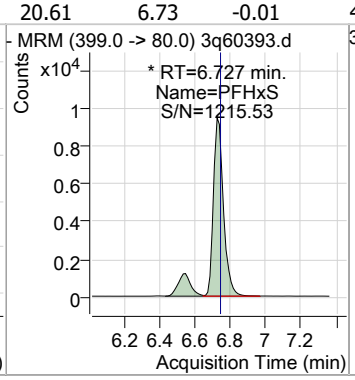


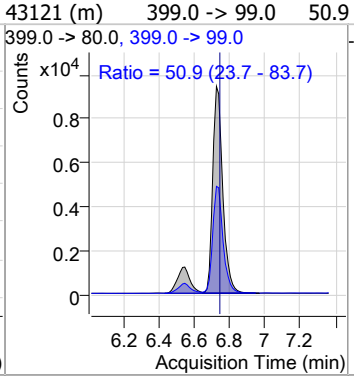


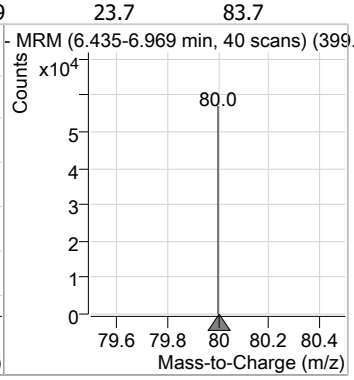


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.61	6.73	-0.01	43121 (m)	399.0 -> 99.0	50.9	23.7	83.7

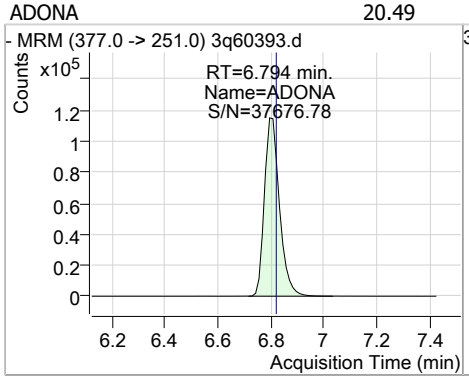


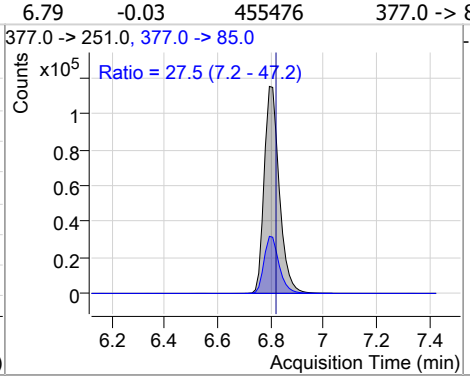


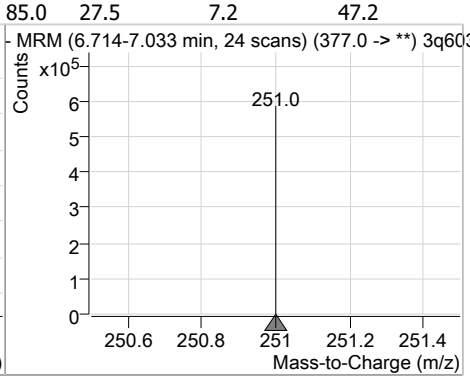




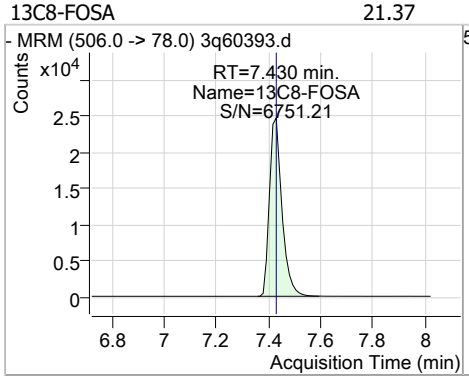
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.49	6.79	-0.03	455476	377.0 -> 85.0	27.5	7.2	47.2

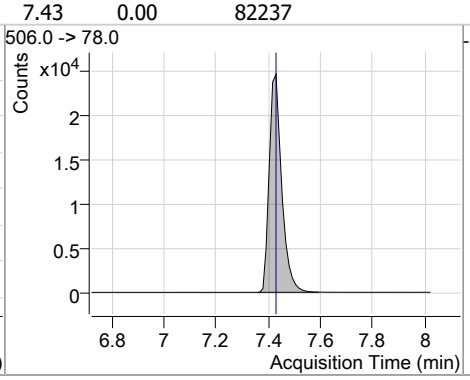


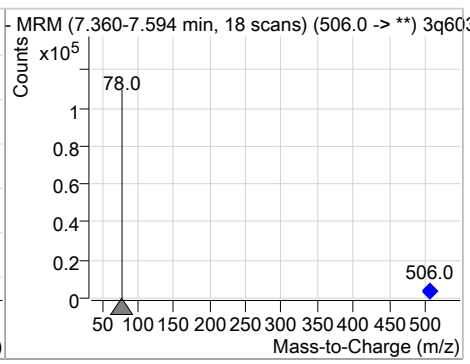




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.37	7.43	0.00	82237				

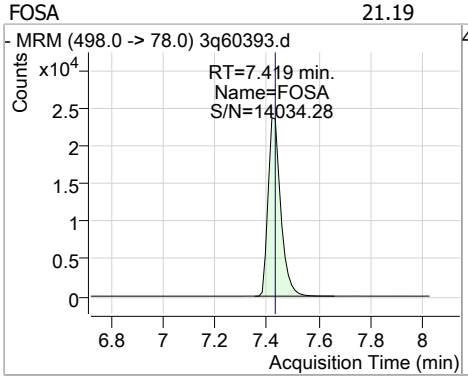


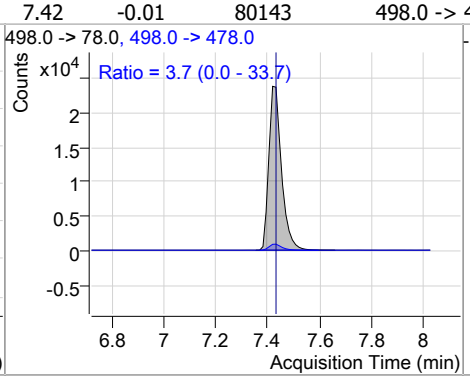


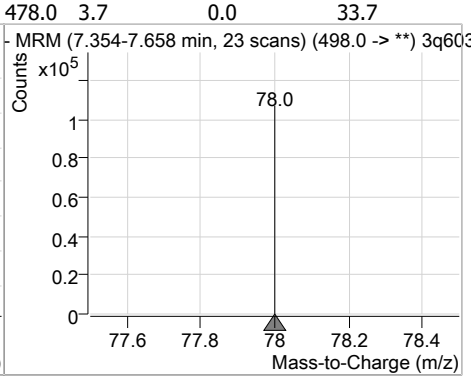


Perfluorinated Compounds by LC/MS/MS

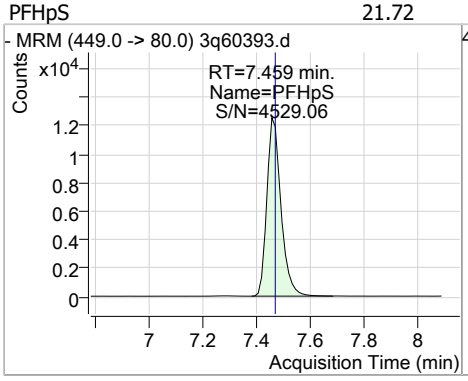
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.19	7.42	-0.01	80143	498.0 -> 478.0	3.7	0.0	33.7

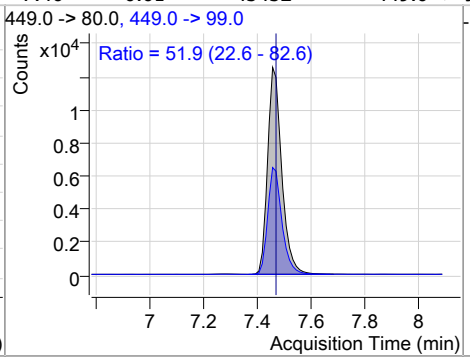


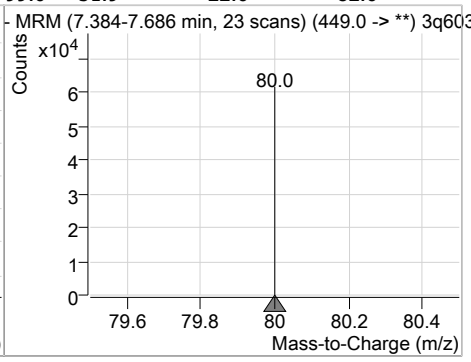




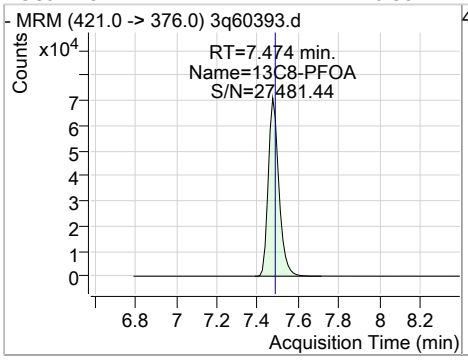
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.72	7.46	-0.01	45452	449.0 -> 99.0	51.9	22.6	82.6

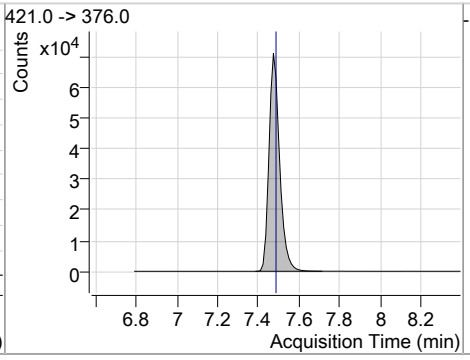


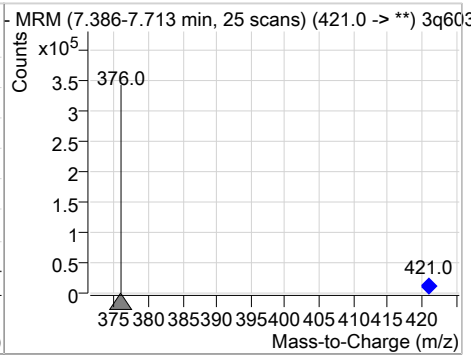




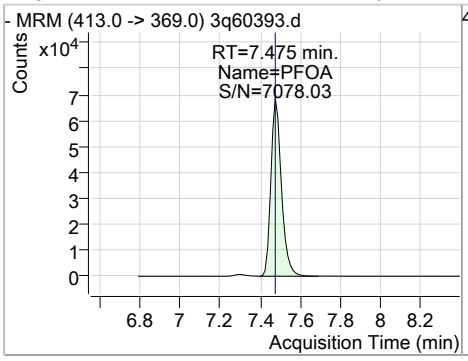
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.38	7.47	-0.01	257494				

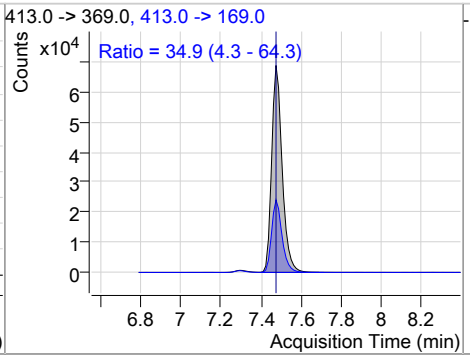


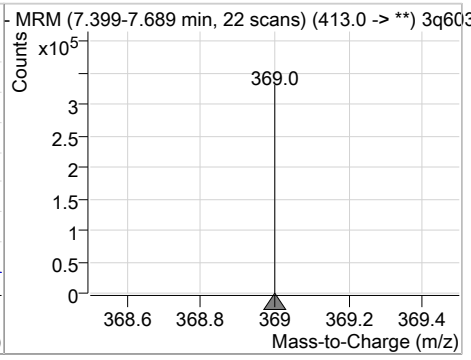




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.77	7.47	-0.01	248978	413.0 -> 169.0	34.9	4.3	64.3

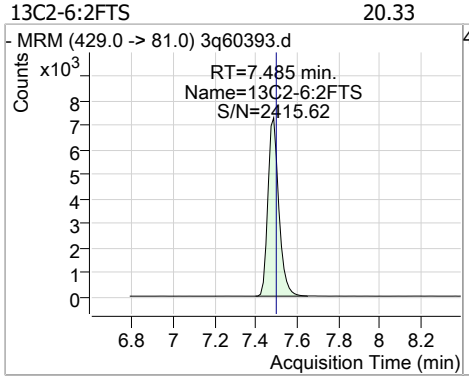


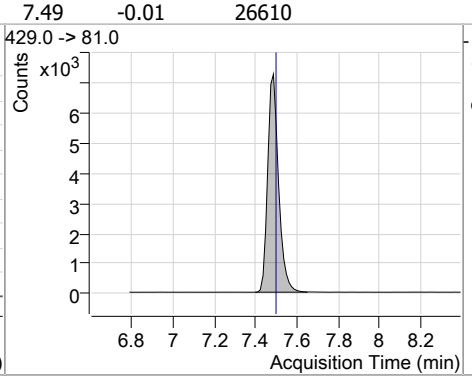


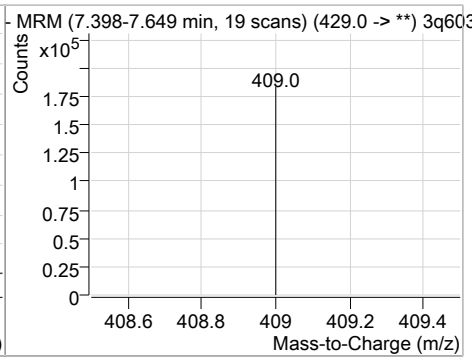


Perfluorinated Compounds by LC/MS/MS

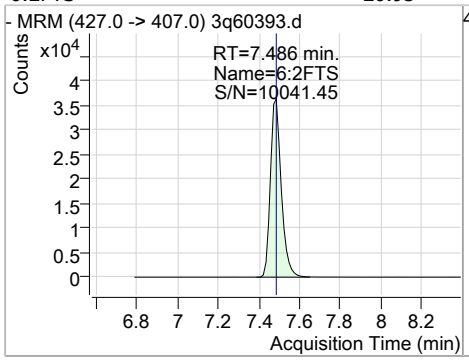
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.33	7.49	-0.01	26610				

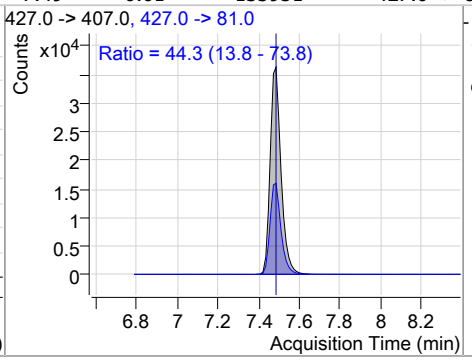


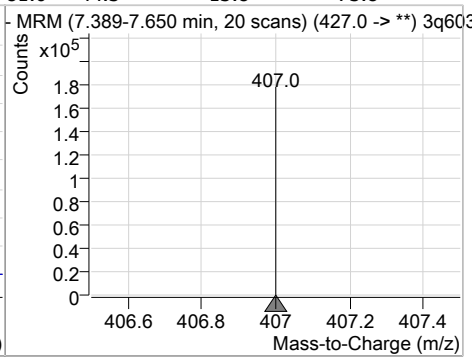




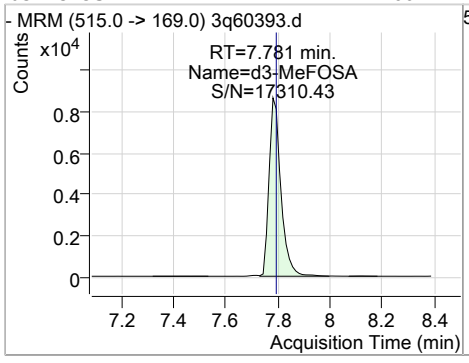
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.95	7.49	-0.01	133951	427.0 -> 81.0	44.3	13.8	73.8

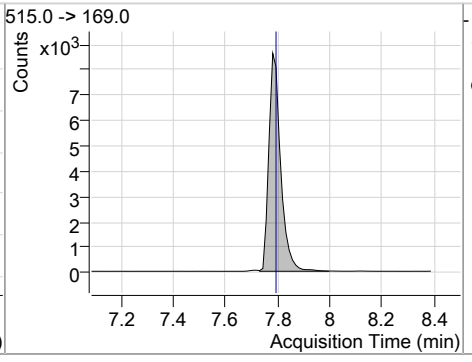


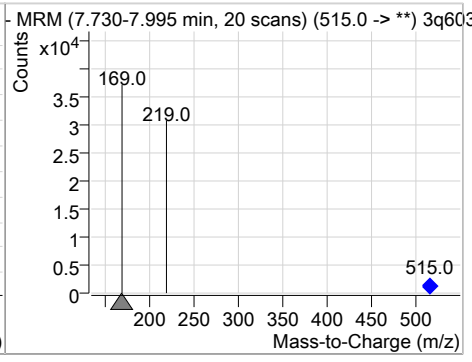




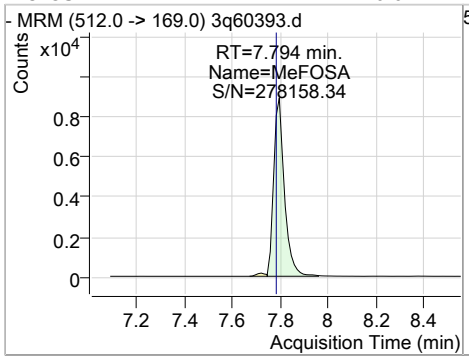
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.66	7.78	-0.01	27072				

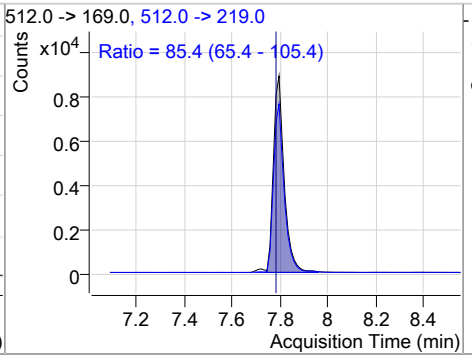


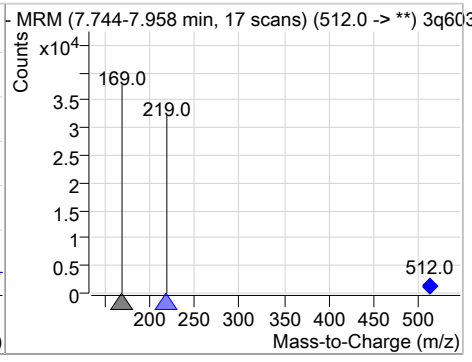




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.62	7.79	0.00	27675	512.0 -> 219.0	85.4	65.4	105.4

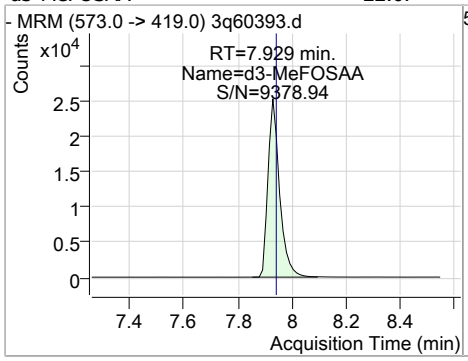


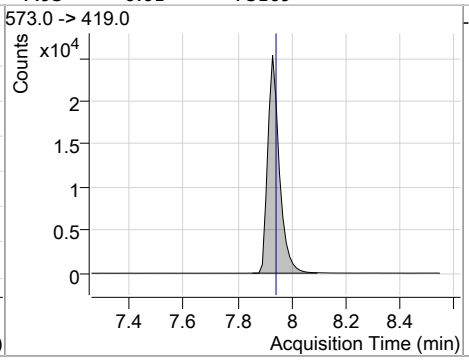


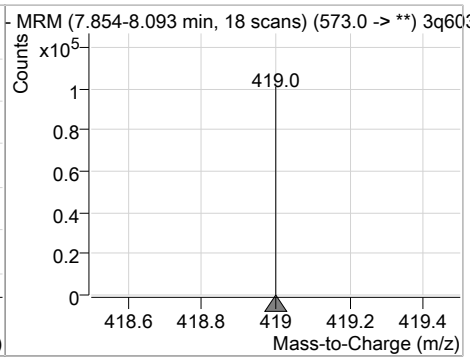


Perfluorinated Compounds by LC/MS/MS

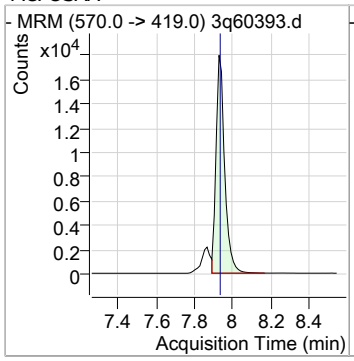
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.67	7.93	-0.01	75169				

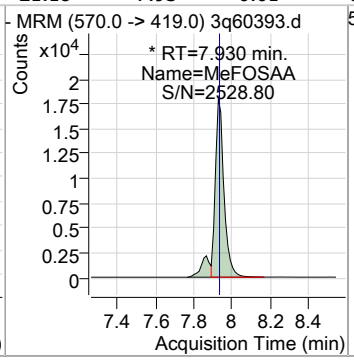


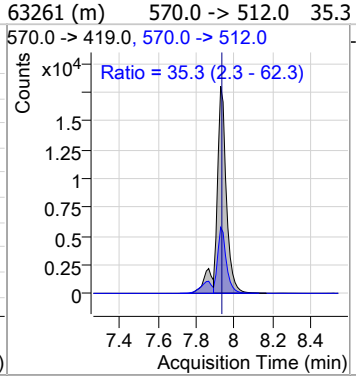


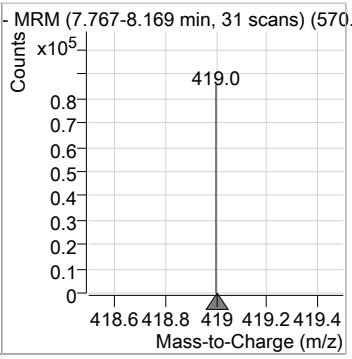


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.18	7.93	-0.01	63261 (m)	570.0 -> 512.0	35.3	2.3	62.3

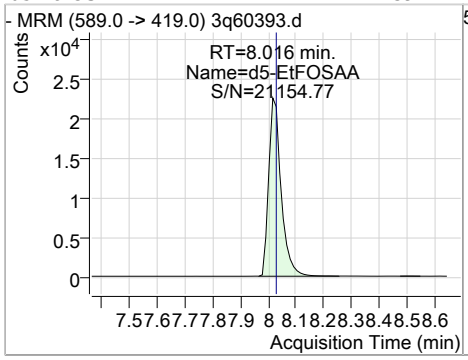


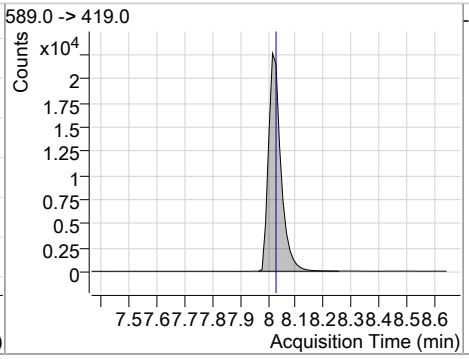


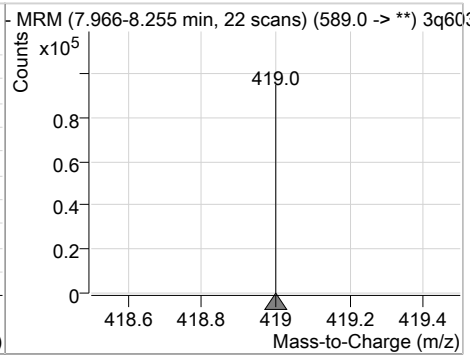




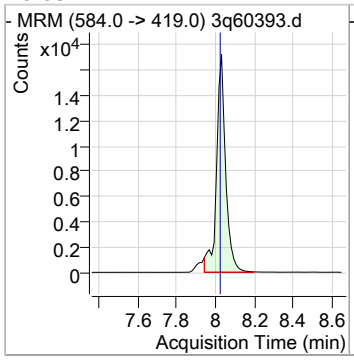
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.39	8.02	-0.01	70557				

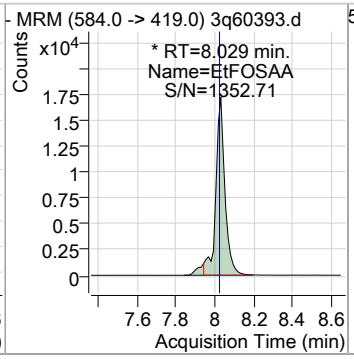


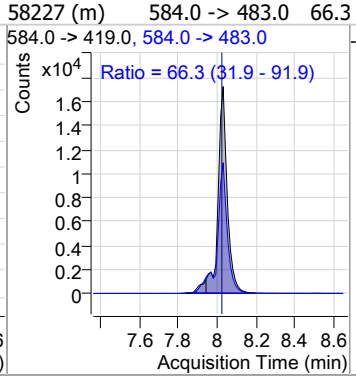


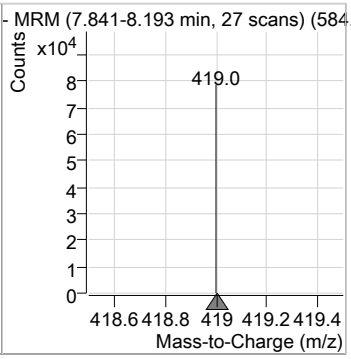


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.22	8.03	0.00	58227 (m)	584.0 -> 483.0	66.3	31.9	91.9



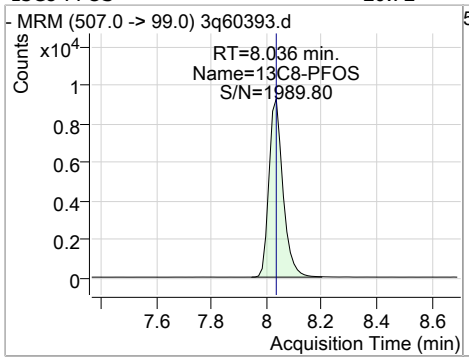


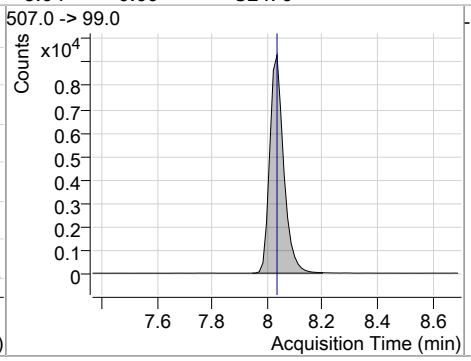


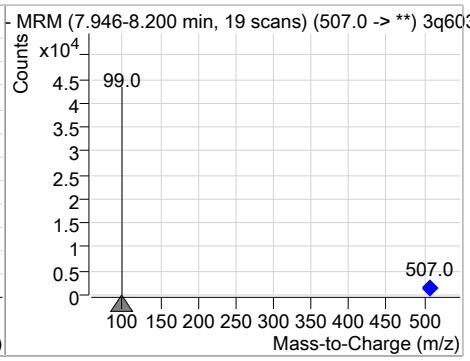


Perfluorinated Compounds by LC/MS/MS

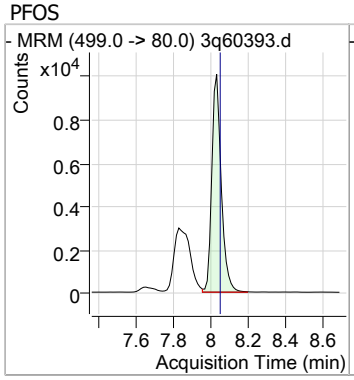
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.72	8.04	0.00	32470				

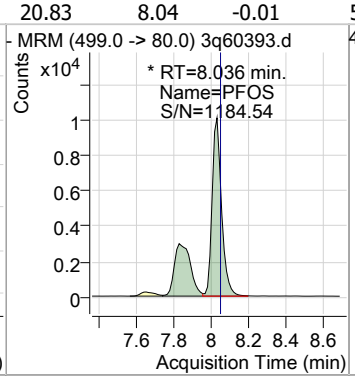


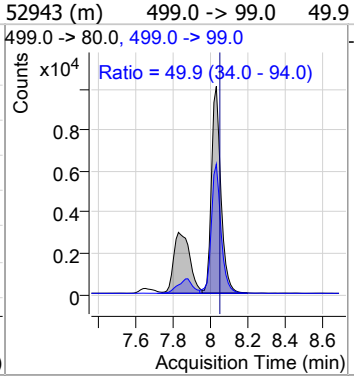


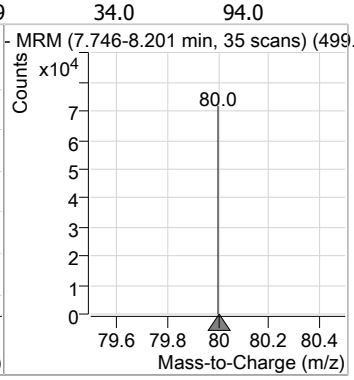


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.83	8.04	-0.01	52943 (m)	499.0 -> 99.0	49.9	34.0	94.0

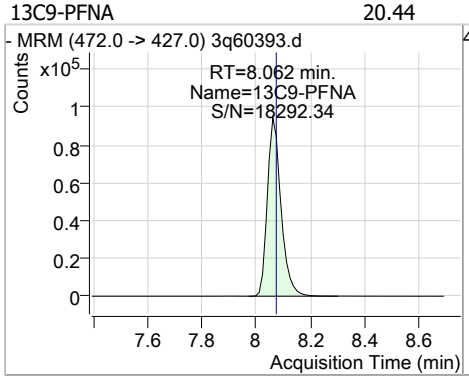


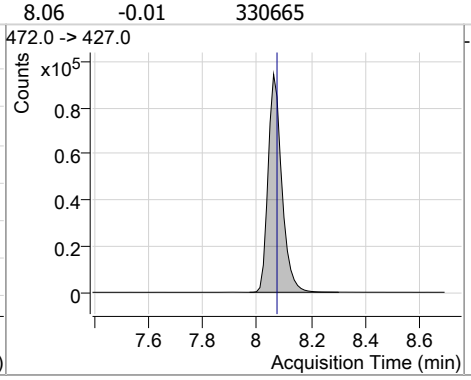


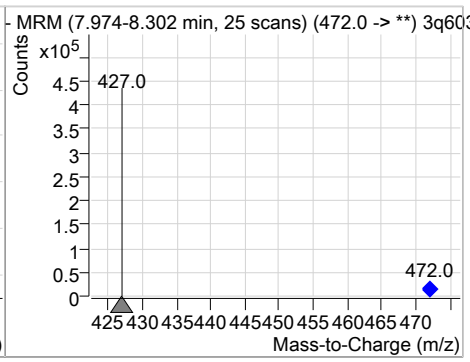




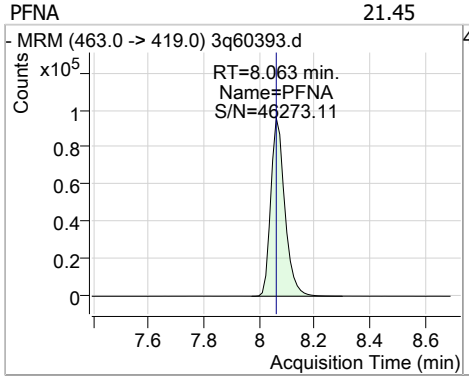
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.44	8.06	-0.01	330665				

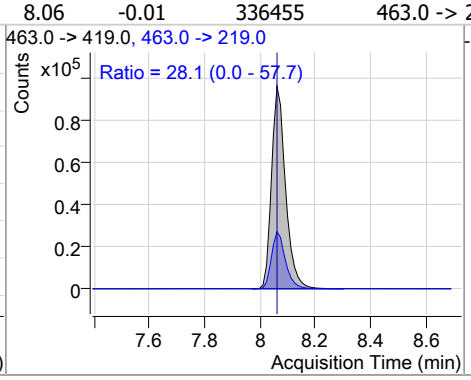


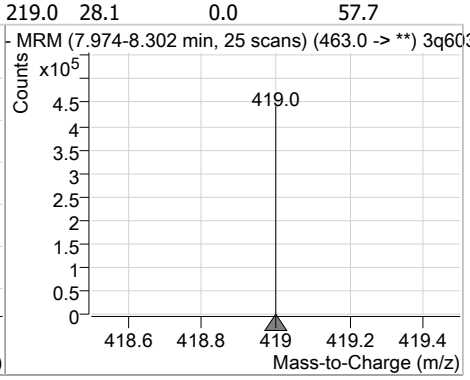




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	21.45	8.06	-0.01	336455	463.0 -> 219.0	28.1	0.0	57.7

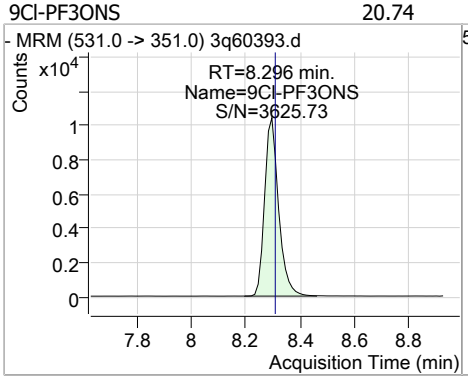


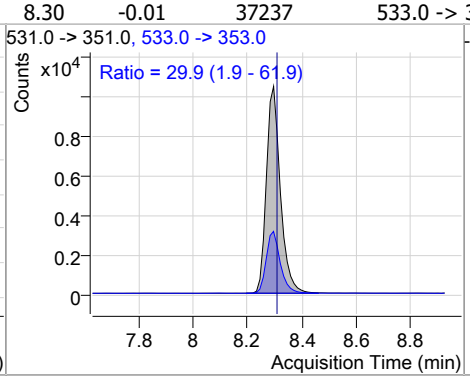


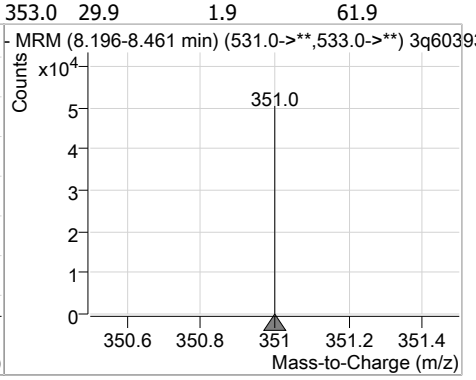


Perfluorinated Compounds by LC/MS/MS

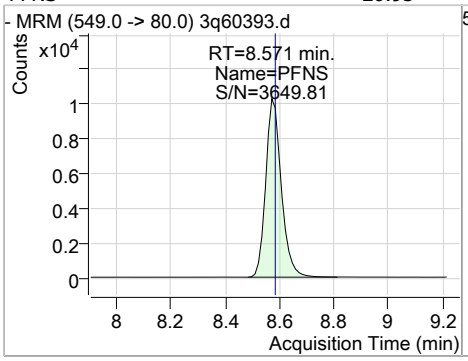
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.74	8.30	-0.01	37237	533.0 -> 353.0	29.9	1.9	61.9

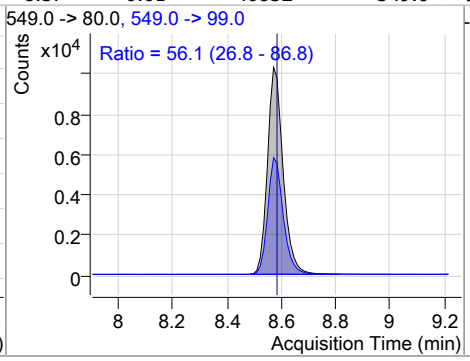


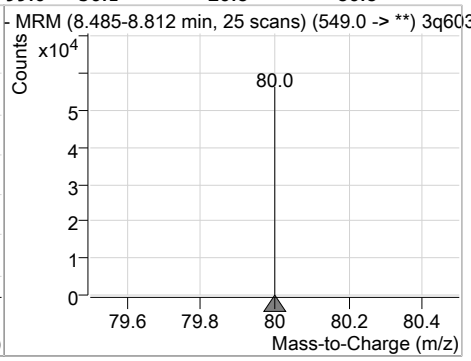




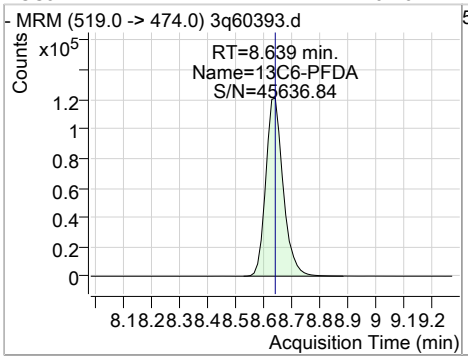
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.95	8.57	-0.01	40852	549.0 -> 99.0	56.1	26.8	86.8

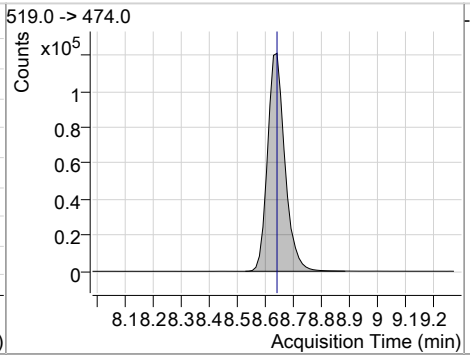


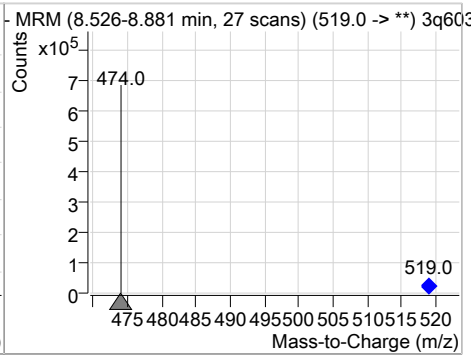




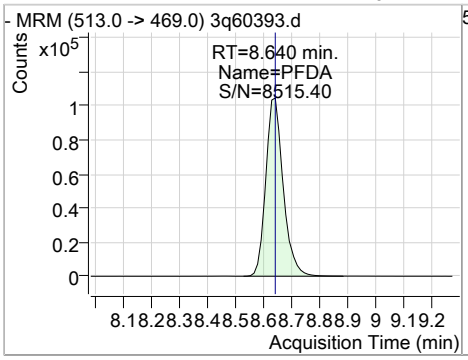
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.76	8.64	0.00	518308				

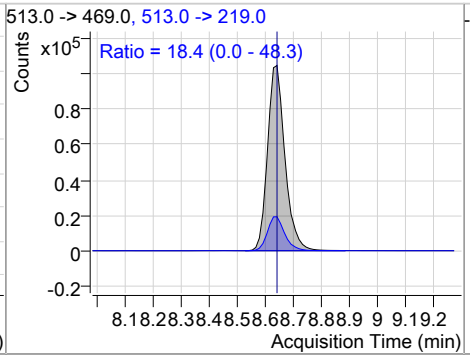


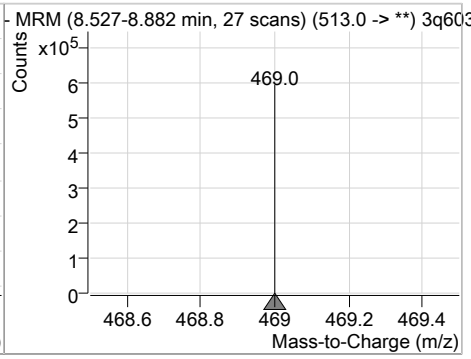




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.74	8.64	0.00	448973	513.0 -> 219.0	18.4	0.0	48.3

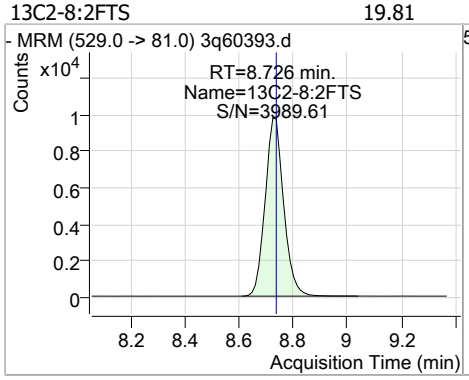


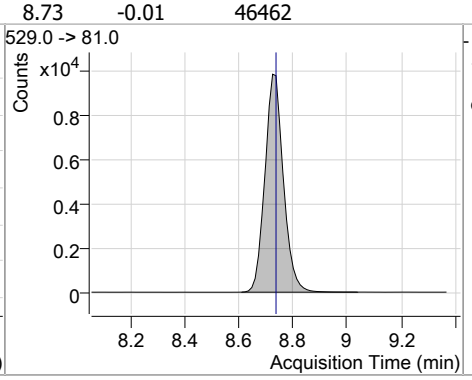


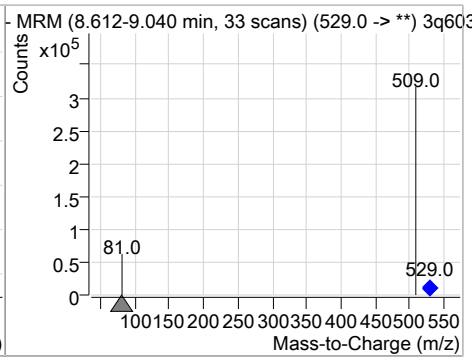


Perfluorinated Compounds by LC/MS/MS

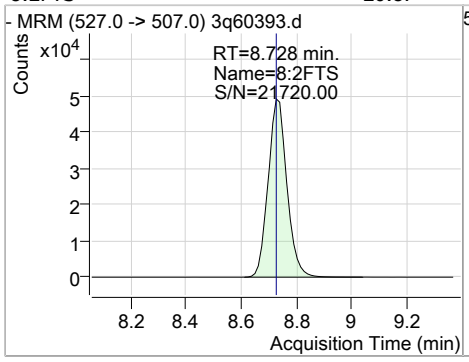
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.81	8.73	-0.01	46462				

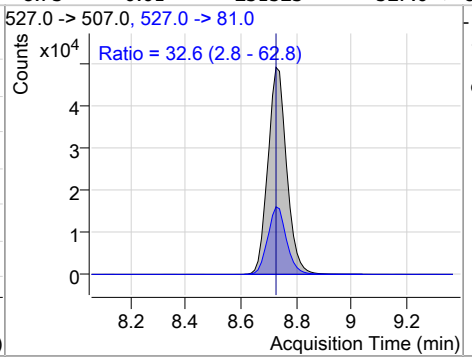


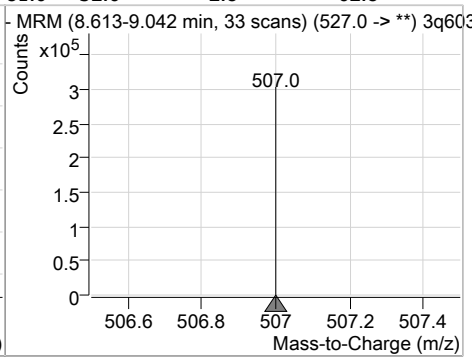




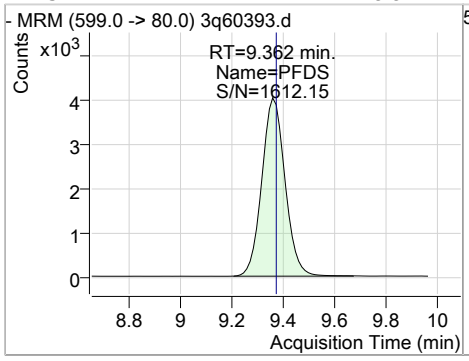
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.87	8.73	-0.01	231523	527.0 -> 81.0	32.6	2.8	62.8

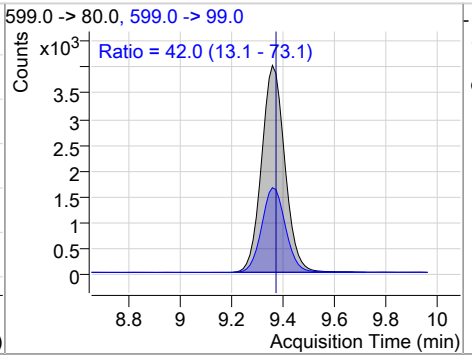


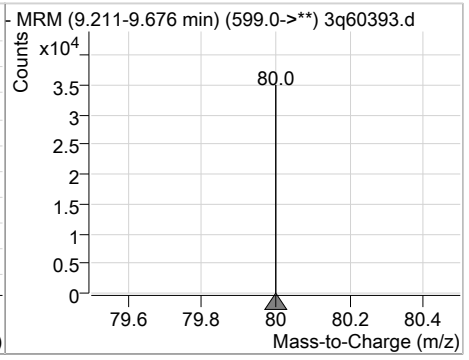




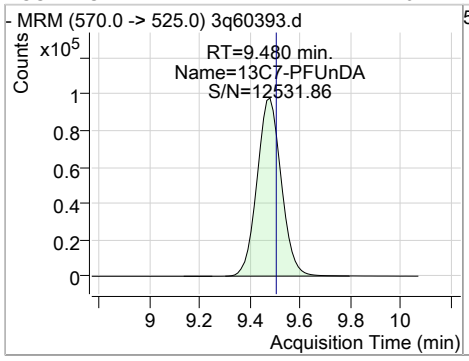
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.94	9.36	-0.04	25025	599.0 -> 99.0	42.0	13.1	73.1

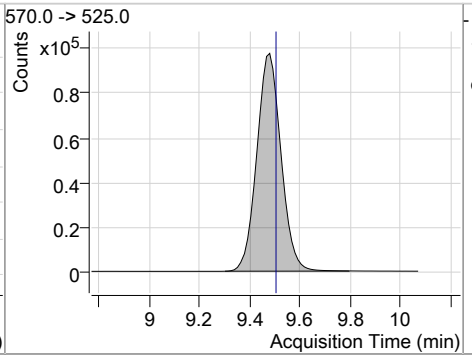


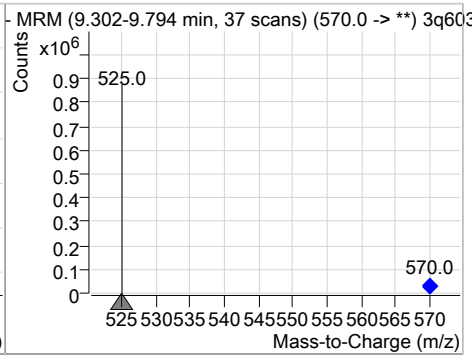




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.16	9.48	-0.03	652526				

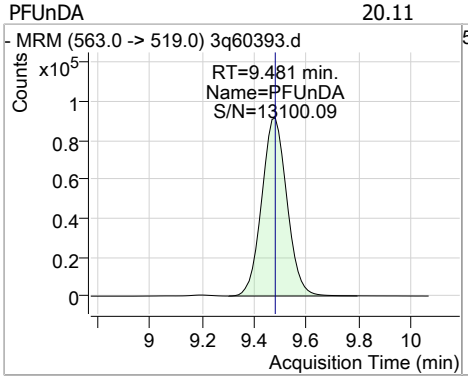


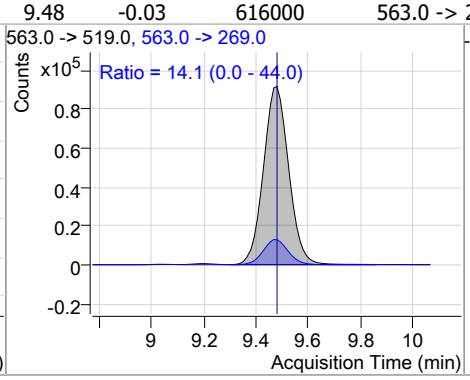


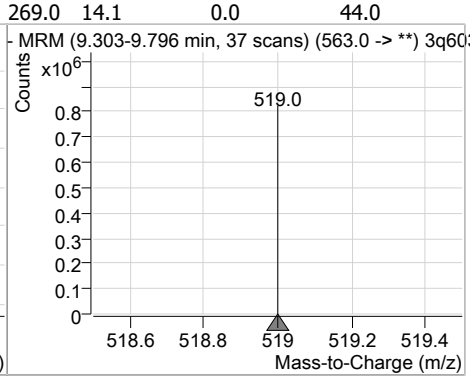


Perfluorinated Compounds by LC/MS/MS

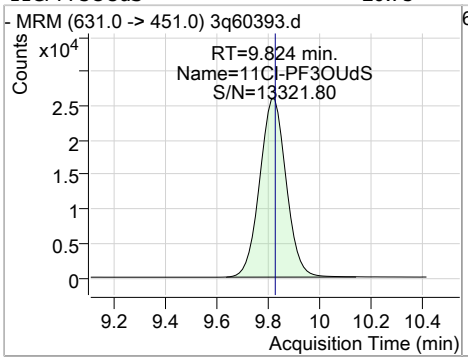
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.11	9.48	-0.03	616000	563.0 -> 269.0	14.1	0.0	44.0

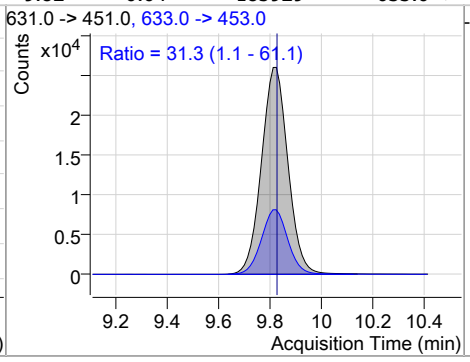


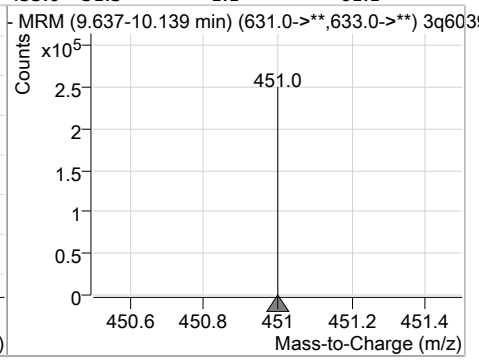




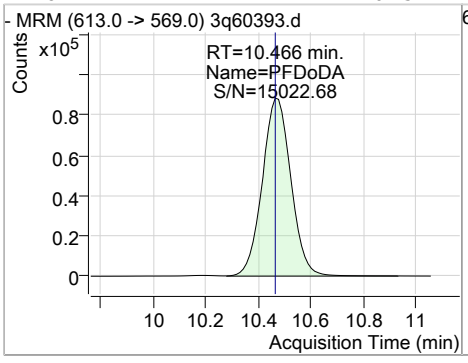
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.75	9.82	-0.04	185929	633.0 -> 453.0	31.3	1.1	61.1

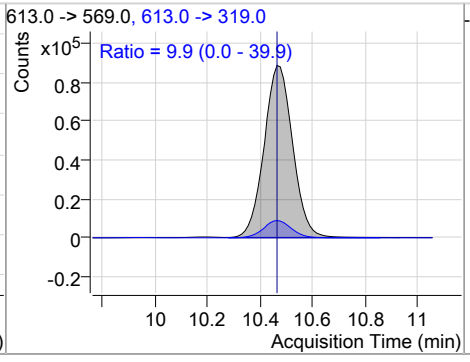


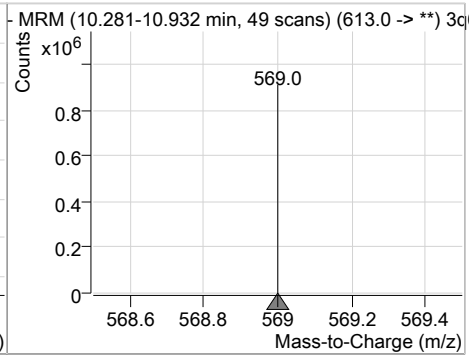




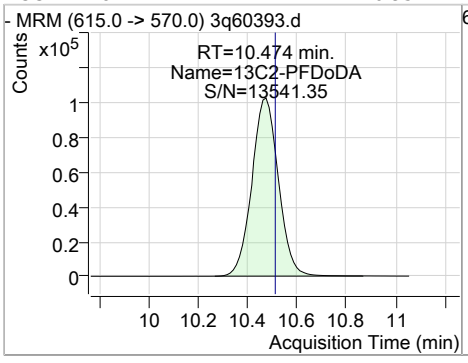
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.45	10.47	-0.04	667906	613.0 -> 319.0	9.9	0.0	39.9

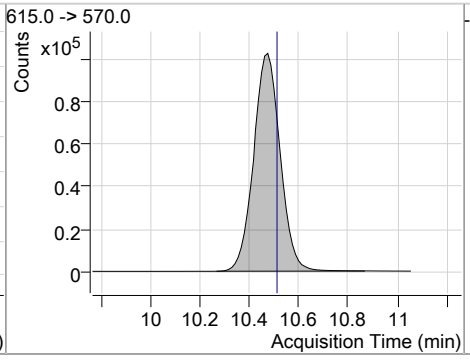


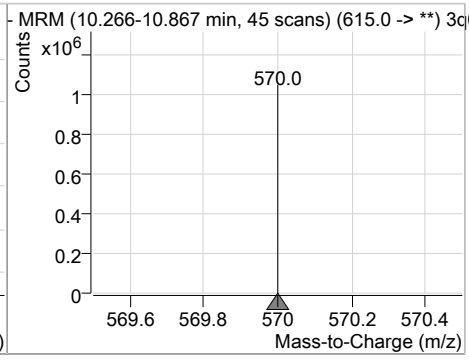




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.95	10.47	-0.04	767943				

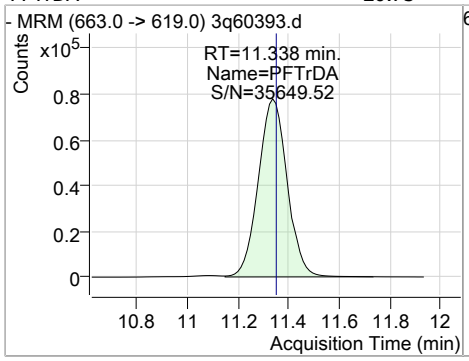


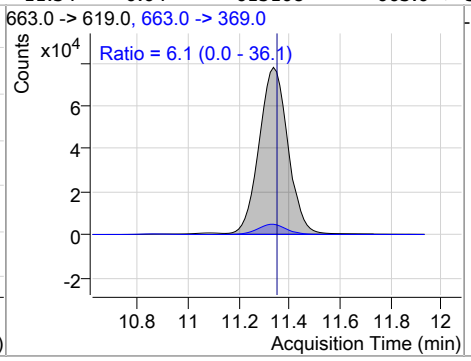


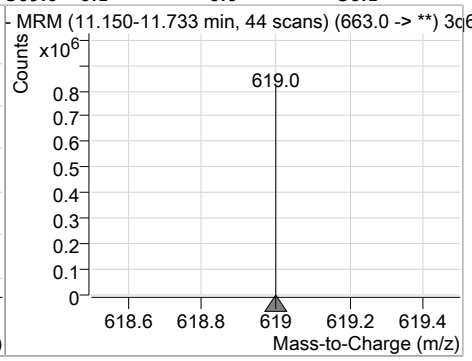


Perfluorinated Compounds by LC/MS/MS

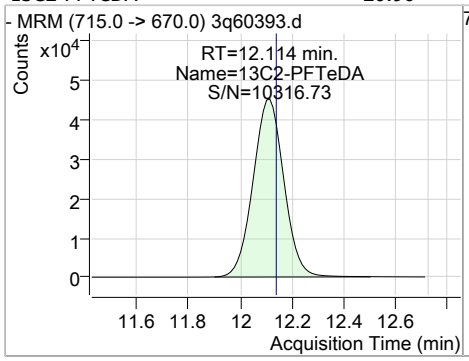
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.73	11.34	-0.04	615108	663.0 -> 369.0	6.1	0.0	36.1

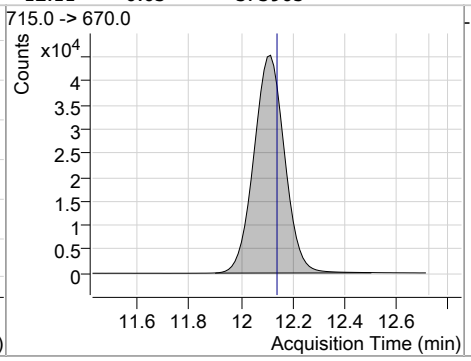


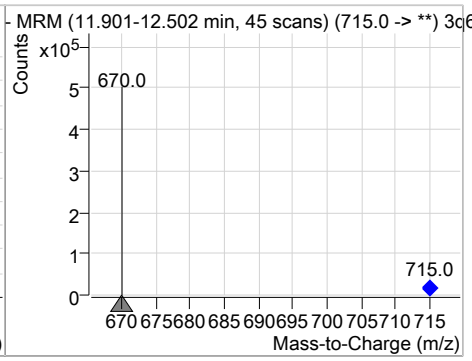




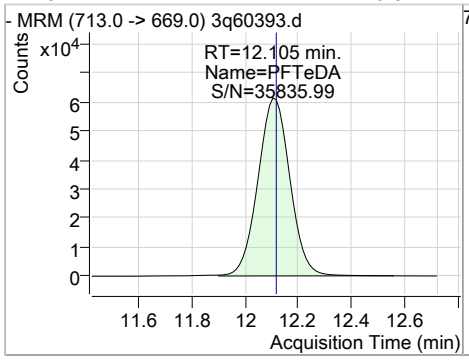
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.90	12.11	-0.03	373965				

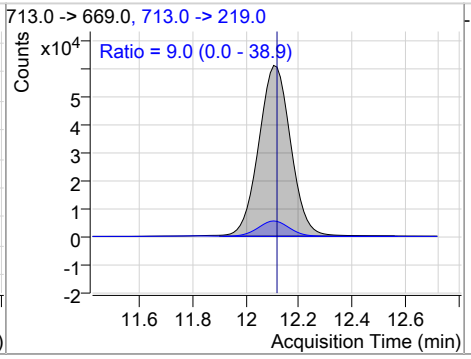


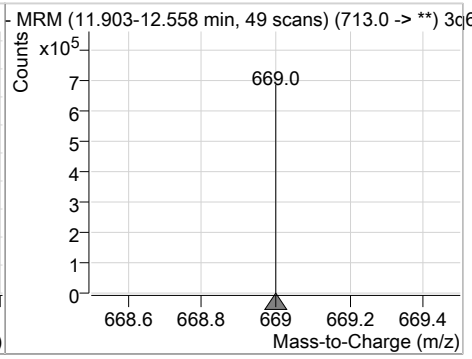




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.81	12.11	-0.04	507893	713.0 -> 219.0	9.0	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-CC824
Lab FileID: 3Q60393.D
Injection Time: 05/28/22 04:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 17:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.73	Split peak
MeFOSAA	2355-31-9		7.93	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 17:11

Perfluorinated Compounds by LC/MS/MS

Data File : 3q60395.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/28/2022 5:33:09 AM
Sample Name : cc824-1.0LL
Vial : P1-A3
DA Method File : ID_052722_S3Q824.quantmethod.xml
Batch Name : s3q824.batch.bin
Sample Information : op91139,S3Q824,250,,,1,1,water

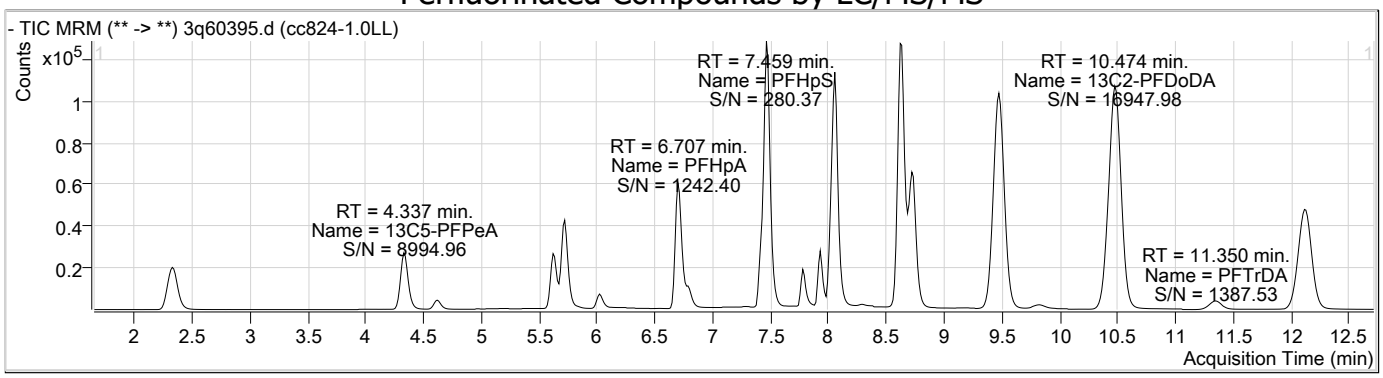
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	122442	20.00 µg/L	0.000
M5-PFPeA	4.337	268.0 -> 223.0	115171	20.00 µg/L	-0.013
M5-PFHxA	5.727	318.0 -> 273.0	158460	20.00 µg/L	-0.013
M4-PFHpA	6.705	367.0 -> 322.0	208158	20.00 µg/L	-0.013
M8-PFOA	7.474	421.0 -> 376.0	259896	20.00 µg/L	-0.013
M9-PFNA	8.062	472.0 -> 427.0	328522	20.00 µg/L	-0.013
M6-PFDA	8.627	519.0 -> 474.0	515505	20.00 µg/L	-0.013
M7-PFUnDA	9.480	570.0 -> 525.0	657194	20.00 µg/L	-0.025
M2-PFDoDA	10.474	615.0 -> 570.0	761794	20.00 µg/L	-0.038
M2-PFTeDA	12.114	715.0 -> 670.0	369265	20.00 µg/L	-0.025
M8-FOSA	7.417	506.0 -> 78.0	85211	20.00 µg/L	-0.013
M3-PFBS	4.617	302.0 -> 99.0	16007	20.00 µg/L	-0.013
M3-PFHxS	6.738	402.0 -> 99.0	19755	20.00 µg/L	0.000
M8-PFOS	8.036	507.0 -> 99.0	32245	20.00 µg/L	0.000
M2-4:2FTS	5.621	329.0 -> 81.0	11313	20.00 µg/L	-0.013
M2-6:2FTS	7.485	429.0 -> 81.0	27230	20.00 µg/L	-0.013
M2-8:2FTS	8.726	529.0 -> 81.0	45943	20.00 µg/L	-0.013
M3-MeFOSAA	7.929	573.0 -> 419.0	74104	20.00 µg/L	-0.013
M3-HFPO-DA	6.031	287.0 -> 169.0	22086	20.00 µg/L	-0.013
M3-MeFOSA	7.781	515.0 -> 169.0	27912	20.00 µg/L	-0.013
M5-EtFOSAA	8.016	589.0 -> 419.0	70718	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.621	329.0 -> 81.0	11313	20.19 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C2-6:2FTS	7.485	429.0 -> 81.0	27230	20.80 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C2-8:2FTS	8.726	529.0 -> 81.0	45943	19.59 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C2-PFDoDA	10.474	615.0 -> 570.0	761794	20.78 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C2-PFTeDA	12.114	715.0 -> 670.0	369265	20.63 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C3-PFBS	4.617	302.0 -> 99.0	16007	20.28 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C3-PFHxS	6.738	402.0 -> 99.0	19755	20.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFBA	2.327	217.0 -> 172.0	122442	20.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFHpA	6.705	367.0 -> 322.0	208158	20.71 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C5-PFHxA	5.727	318.0 -> 273.0	158460	20.08 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFPeA	4.337	268.0 -> 223.0	115171	19.87 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C6-PFDA	8.627	519.0 -> 474.0	515505	20.65 µg/L	-0.013

Perfluorinated Compounds by LC/MS/MS

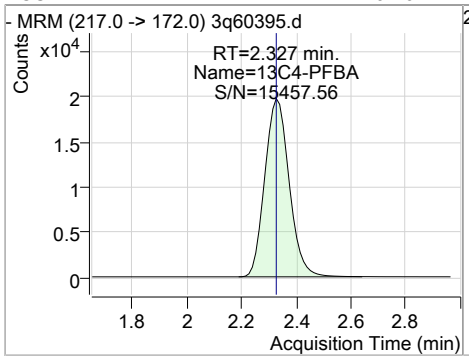
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C7-PFUnDA	9.480	570.0 -> 525.0	657194	21.31 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C8-FOSA	7.417	506.0 -> 78.0	85211	22.14 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C8-PFOA	7.474	421.0 -> 376.0	259896	20.57 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C8-PFOS	8.036	507.0 -> 99.0	32245	20.58 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C9-PFNA	8.062	472.0 -> 427.0	328522	20.31 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	7.929	573.0 -> 419.0	74104	22.35 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%		
13C3-HFPO-DA	6.031	287.0 -> 169.0	22084	19.73 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
d3-MeFOSA	7.781	515.0 -> 169.0	27912	22.33 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%		
d5-EtFOSAA	8.016	589.0 -> 419.0	70712	22.44 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
Target Compounds						**QValue**
4:2FTS	5.624	327.0 -> 307.0	5164	1.05 µg/L		96
6:2FTS	7.486	427.0 -> 407.0	6872	1.05 µg/L		99
8:2FTS	8.728	527.0 -> 507.0	11375	1.04 µg/L		97
EtFOSAA	8.029	584.0 -> 419.0	2955	1.07 µg/L	m	90
FOSA	7.419	498.0 -> 78.0	4158	1.06 µg/L		99
MeFOSAA	7.930	570.0 -> 419.0	3277	1.11 µg/L	m	91
PFBA	2.333	213.0 -> 169.0	2497	1.05 µg/L		100
PFBS	4.619	299.0 -> 80.0	2156	1.06 µg/L		99
PFDA	8.627	513.0 -> 469.0	22528	1.05 µg/L		99
PFDoDA	10.478	613.0 -> 569.0	33577	1.04 µg/L		99
PFDS	9.376	599.0 -> 80.0	1287	1.02 µg/L		99
PFHpA	6.707	363.0 -> 319.0	15971	1.05 µg/L		99
PFHpS	7.459	449.0 -> 80.0	2287	1.10 µg/L		97
PFHxA	5.728	313.0 -> 269.0	6863	1.04 µg/L		98
PFHxS	6.727	399.0 -> 80.0	2189	1.06 µg/L	m	98
PFNA	8.063	463.0 -> 419.0	17103	1.10 µg/L		99
PFNS	8.571	549.0 -> 80.0	1985	1.02 µg/L		96
PFOA	7.475	413.0 -> 369.0	12730	1.05 µg/L		100
PFOS	8.036	499.0 -> 80.0	2694	1.07 µg/L	m	83
PFPeA	4.339	263.0 -> 219.0	9471	1.12 µg/L		100
PFPeS	5.832	349.0 -> 80.0	1436	1.06 µg/L		98
PFTeDA	12.118	713.0 -> 669.0	25499	1.06 µg/L		100
PFTrDA	11.350	663.0 -> 619.0	30478	1.04 µg/L		99
PFUnDA	9.481	563.0 -> 519.0	31020	1.01 µg/L		99
11Cl-PF3OUdS	9.824	631.0 -> 451.0	9240	1.04 µg/L		98
9Cl-PF3ONS	8.296	531.0 -> 351.0	1842	1.03 µg/L		94
ADONA	6.794	377.0 -> 251.0	22469	1.03 µg/L		99
HFPO-DA	6.026	329.0 -> 169.0	3265	1.04 µg/L		98
MeFOSA	7.782	512.0 -> 169.0	1437	1.04 µg/L		96

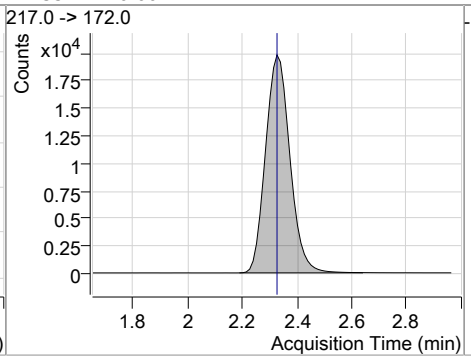
 # = Qualifier out of range, m = manually integrated, + = Area summed

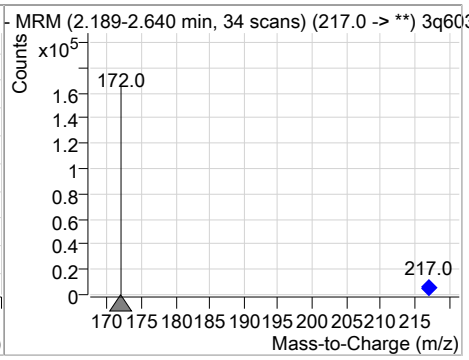
Perfluorinated Compounds by LC/MS/MS



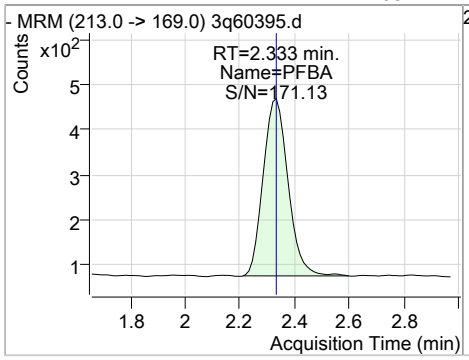
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.26	2.33	0.00	122442				

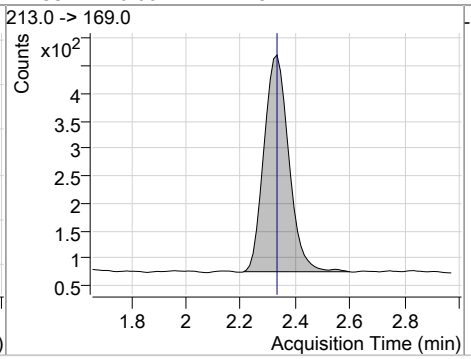


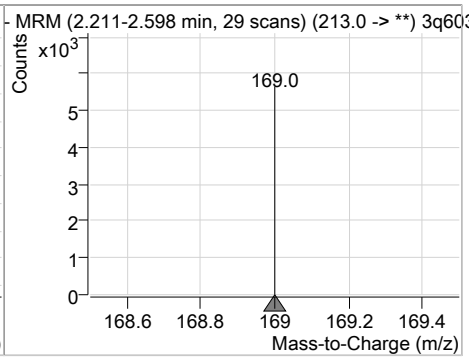




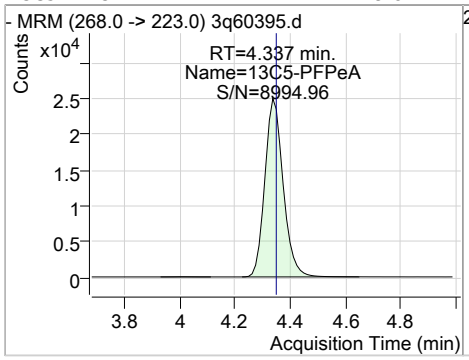
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.05	2.33	0.00	2497				

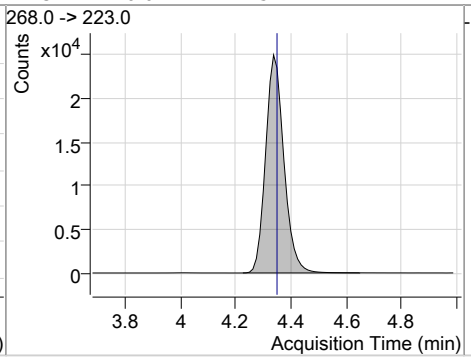


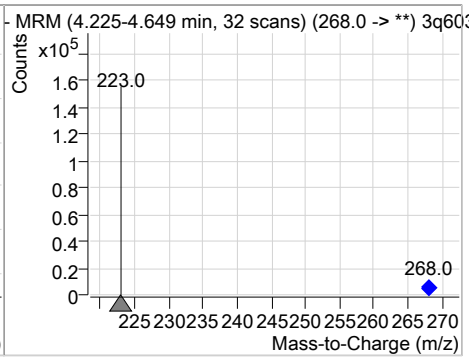




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.87	4.34	-0.01	115171				

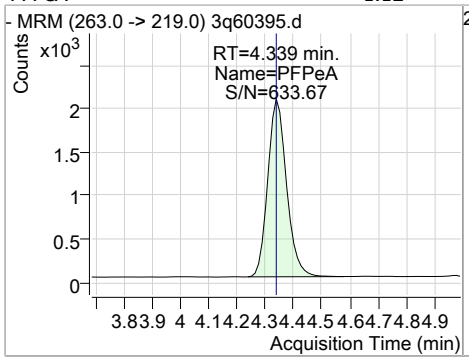


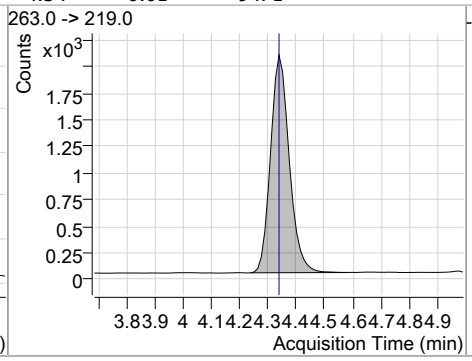


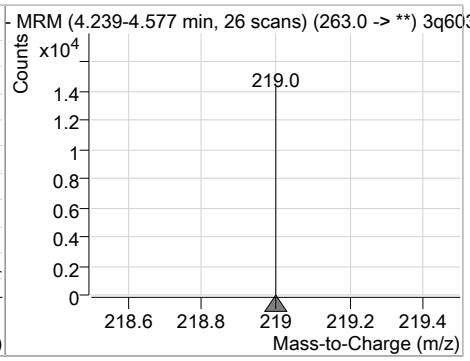


Perfluorinated Compounds by LC/MS/MS

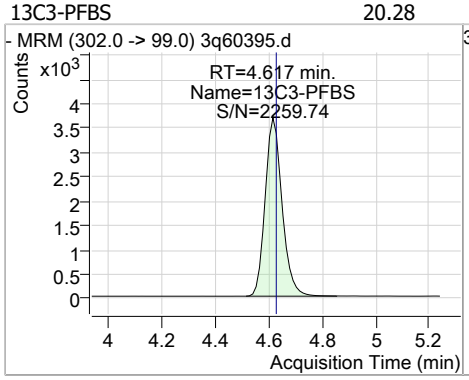
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.12	4.34	-0.01	9471				

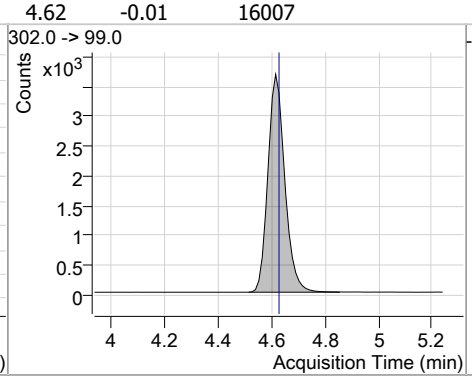


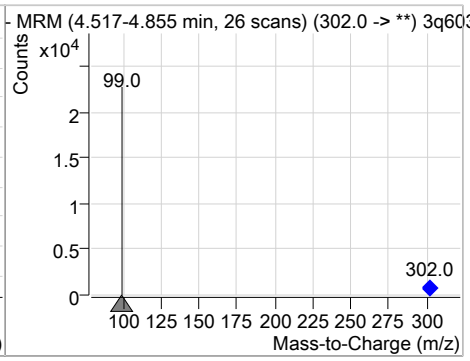




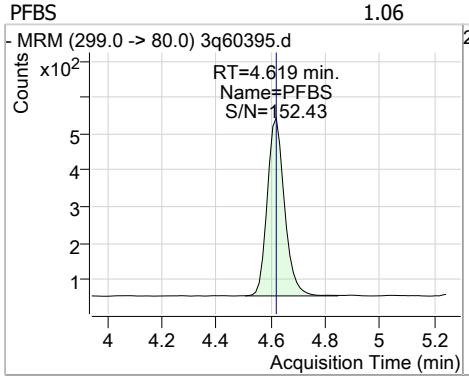
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.28	4.62	-0.01	16007				

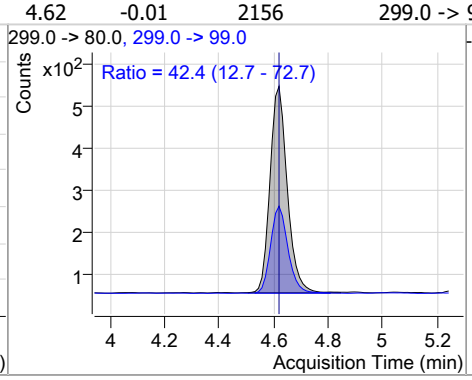


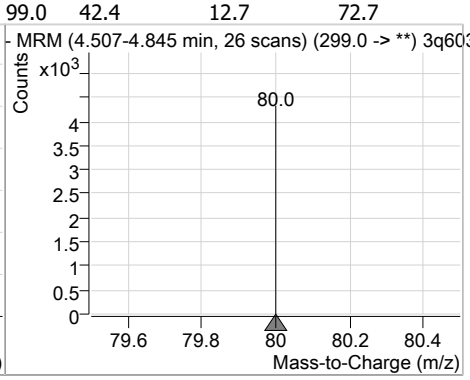




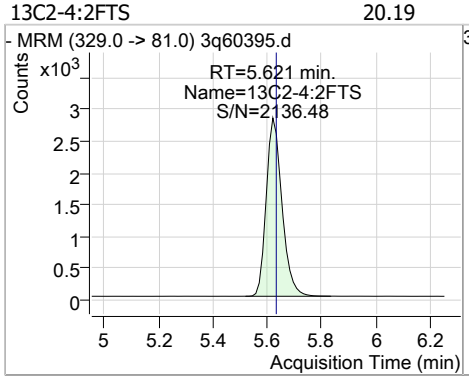
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.06	4.62	-0.01	2156	299.0 -> 99.0	42.4	12.7	72.7

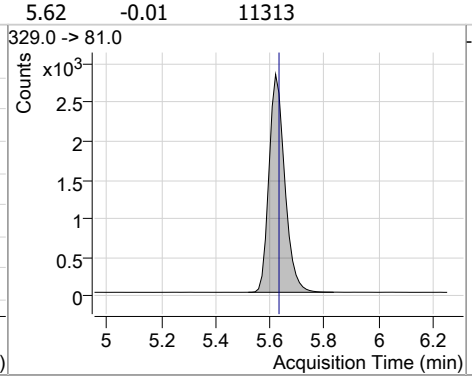


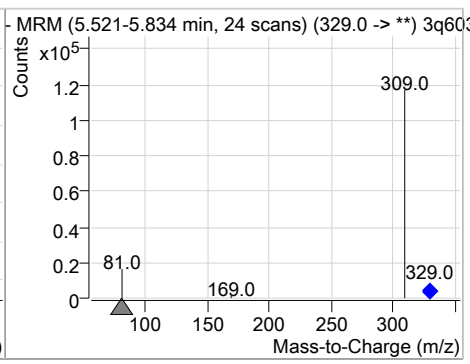




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.19	5.62	-0.01	11313				

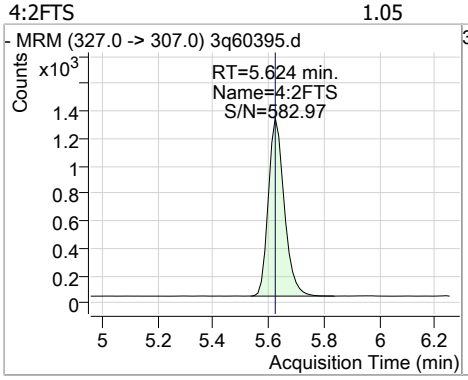


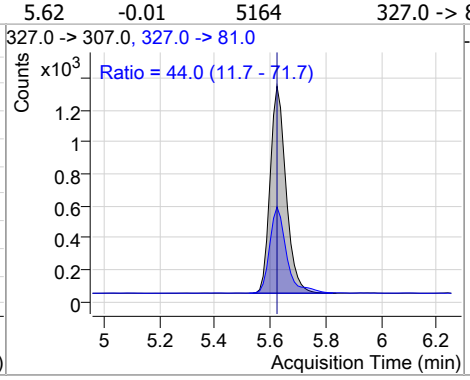


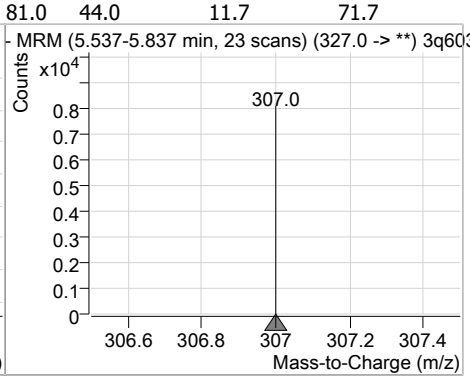


Perfluorinated Compounds by LC/MS/MS

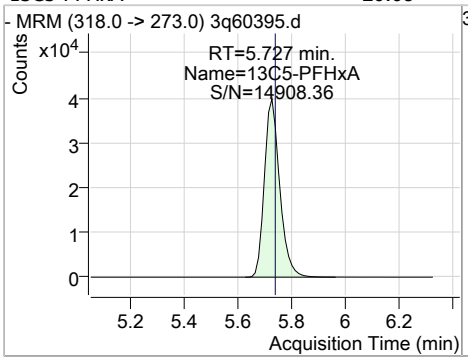
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	5.62	-0.01	5164	327.0 -> 81.0	44.0	11.7	71.7

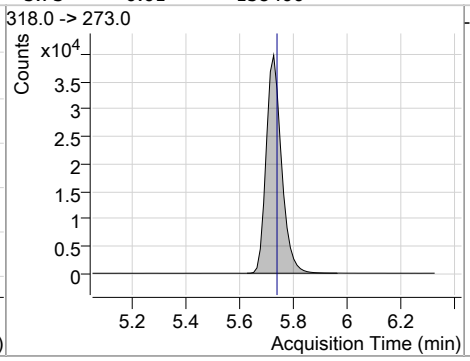


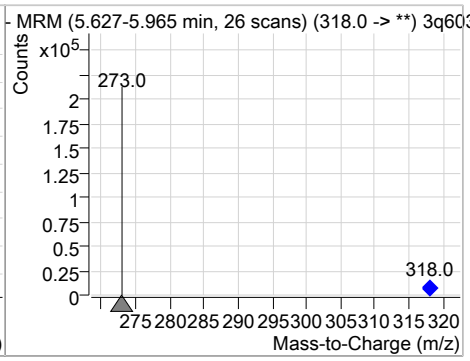




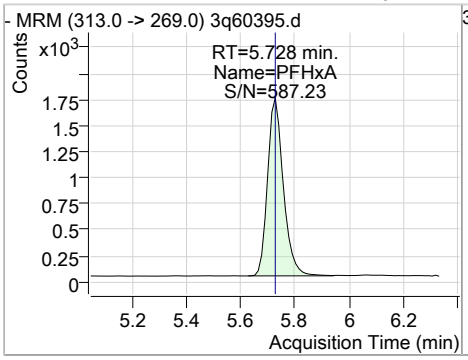
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.08	5.73	-0.01	158460				

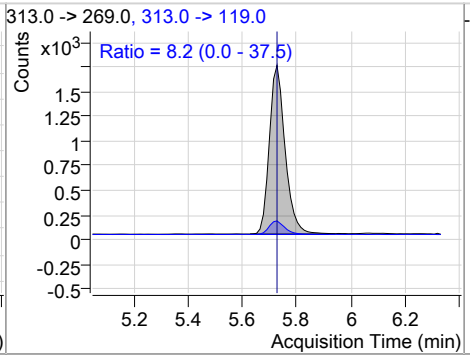


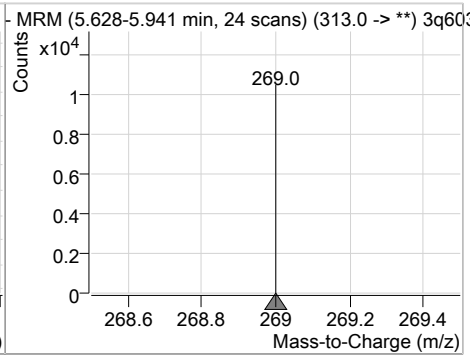




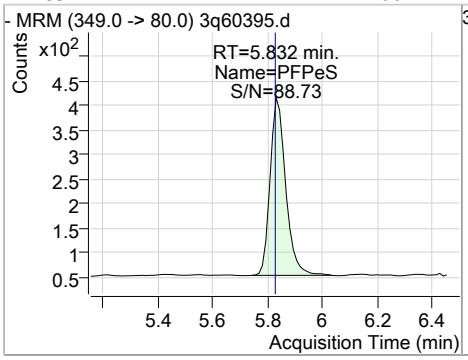
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.04	5.73	-0.01	6863	313.0 -> 119.0	8.2	0.0	37.5

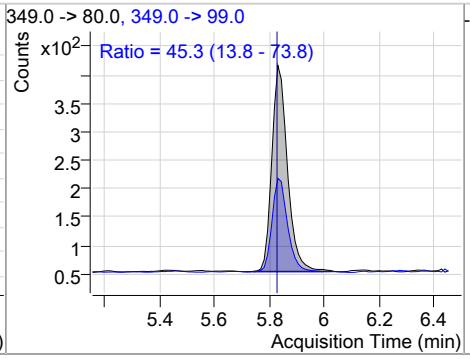


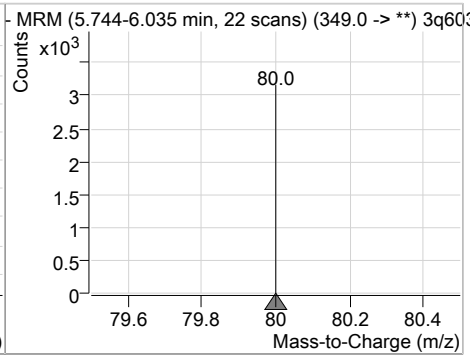




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.06	5.83	-0.01	1436	349.0 -> 99.0	45.3	13.8	73.8

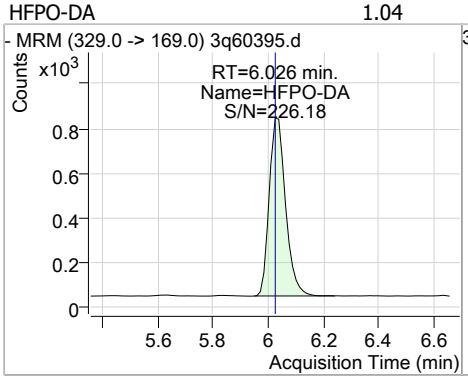


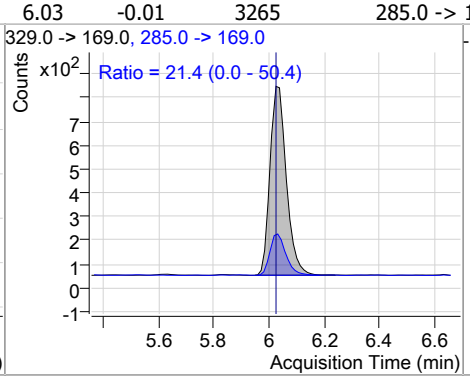


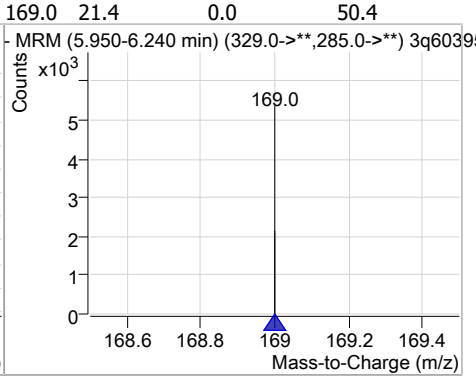


Perfluorinated Compounds by LC/MS/MS

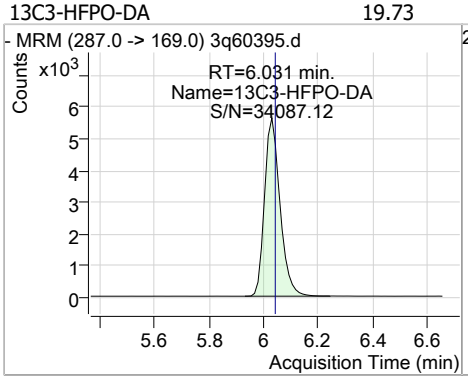
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.04	6.03	-0.01	3265	285.0 -> 169.0	21.4	0.0	50.4

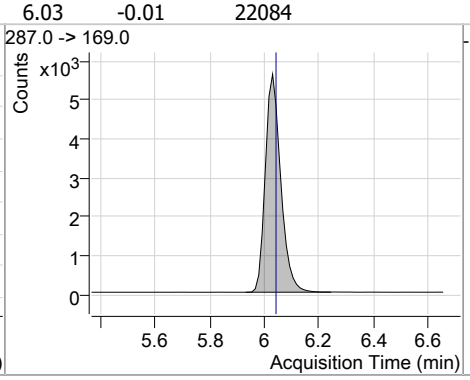


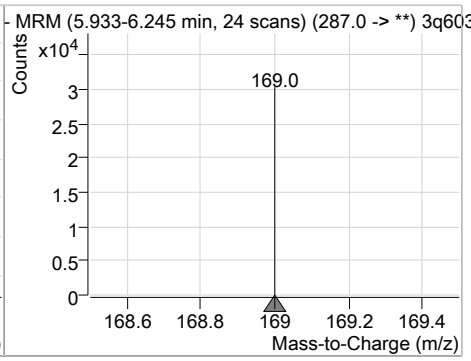




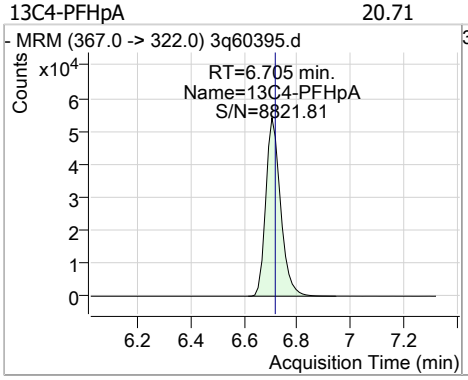
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.73	6.03	-0.01	22084				

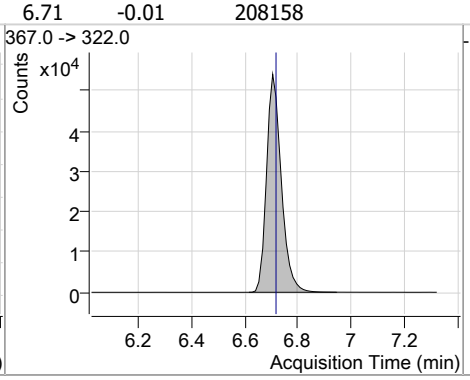


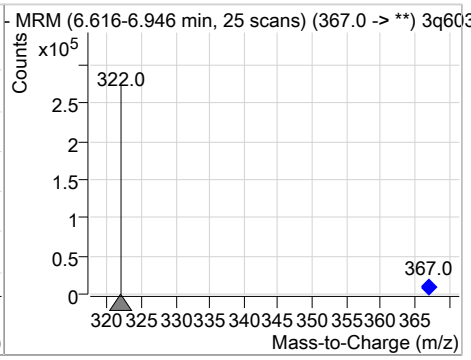




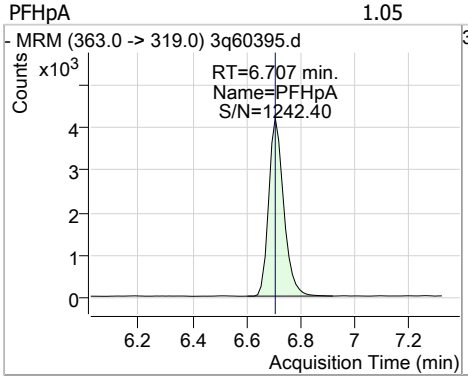
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.71	6.71	-0.01	208158				

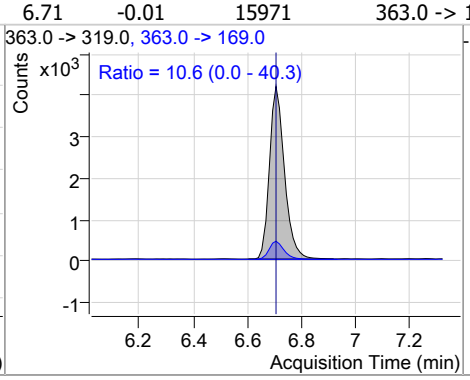


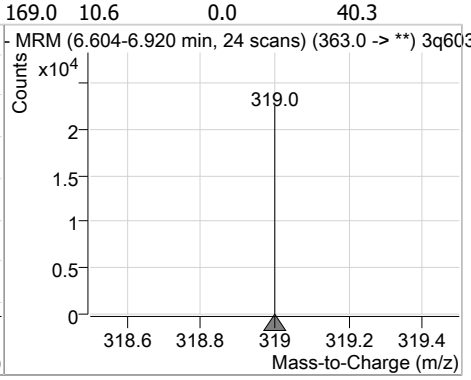




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.05	6.71	-0.01	15971	363.0 -> 169.0	10.6	0.0	40.3

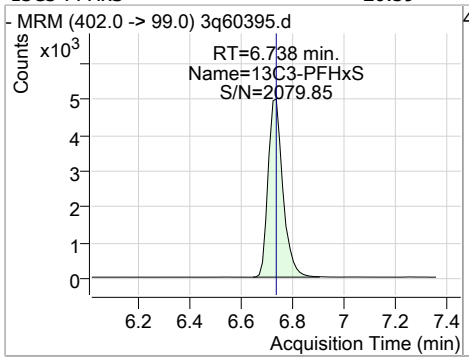


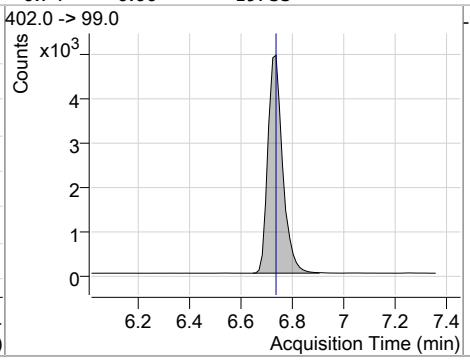


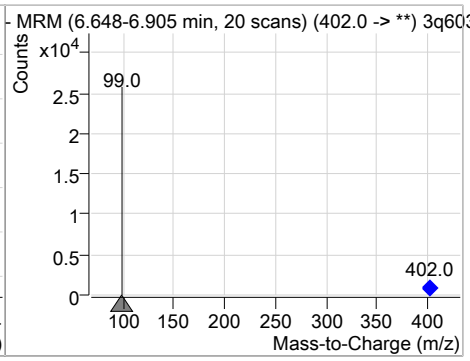


Perfluorinated Compounds by LC/MS/MS

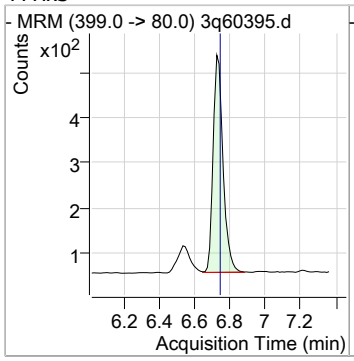
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.39	6.74	0.00	19755				

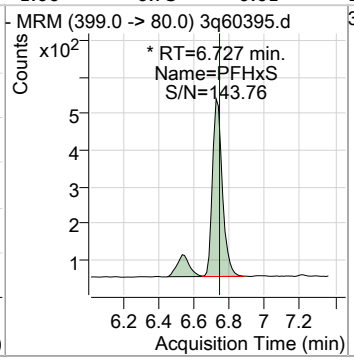


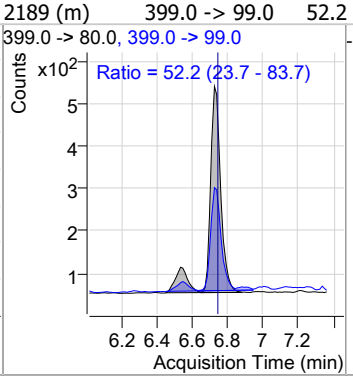


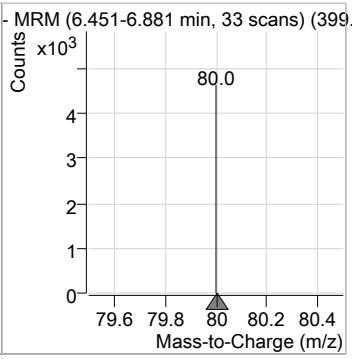


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.06	6.73	-0.01	2189 (m)	399.0 -> 99.0	52.2	23.7	83.7

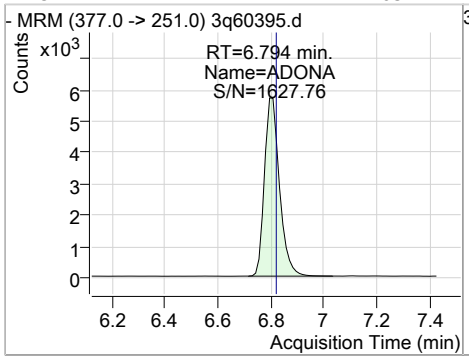


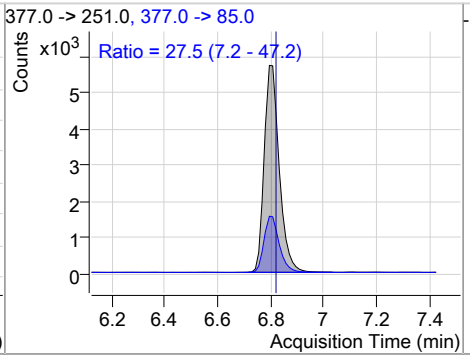


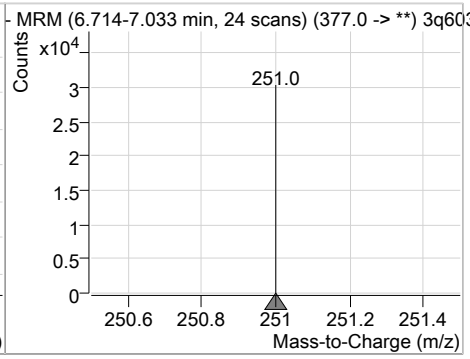




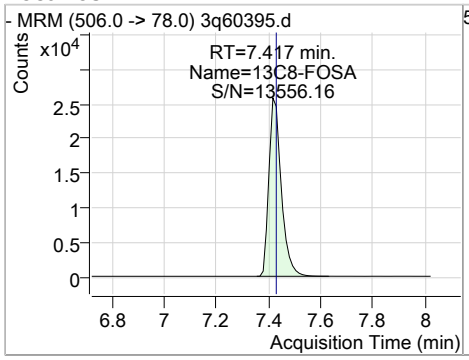
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.03	6.79	-0.03	22469	377.0 -> 85.0	27.5	7.2	47.2

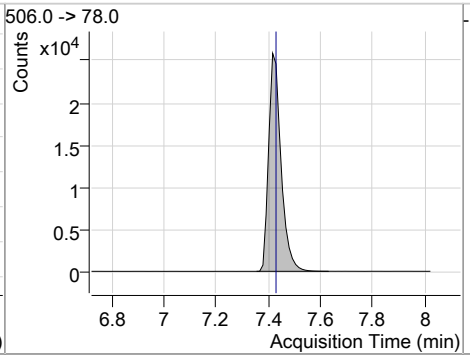


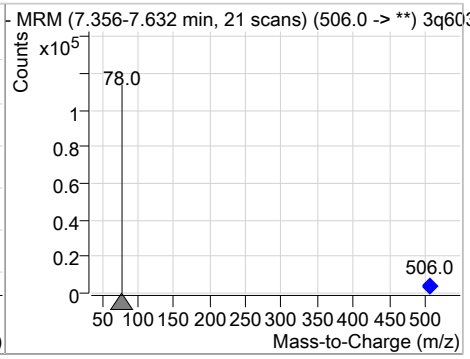




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.14	7.42	-0.01	85211				

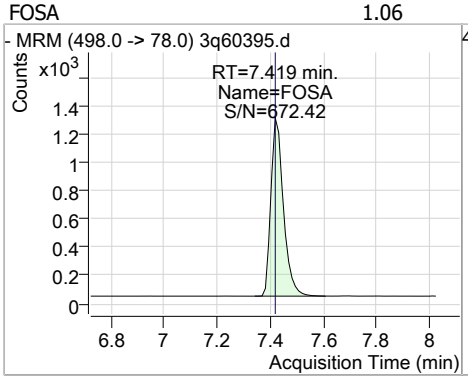


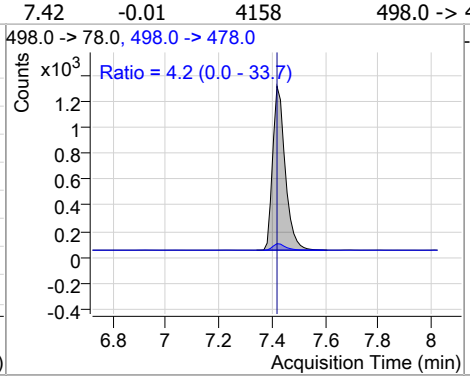


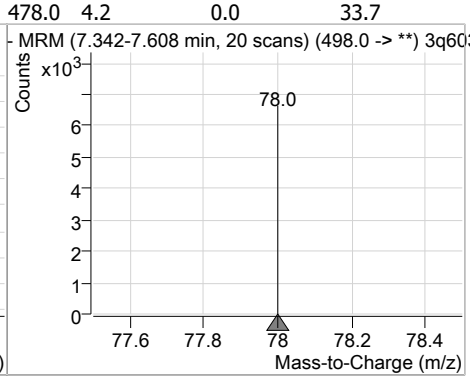


Perfluorinated Compounds by LC/MS/MS

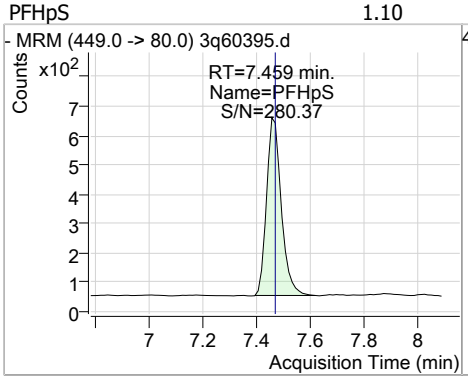
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.06	7.42	-0.01	4158	498.0 -> 478.0	4.2	0.0	33.7

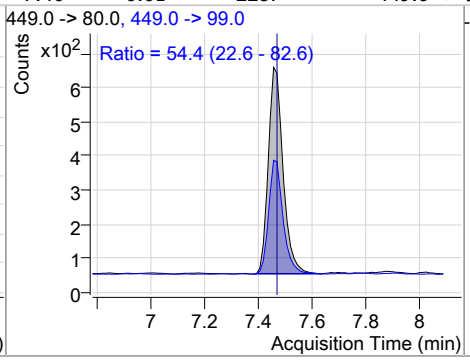


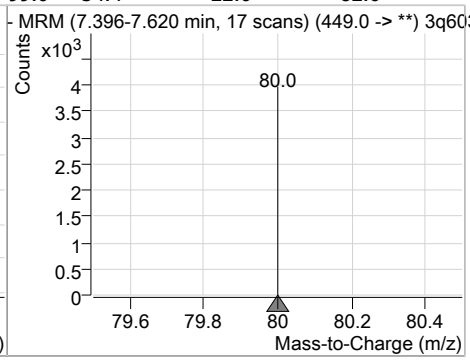




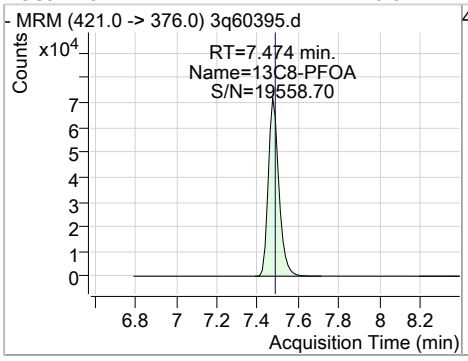
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.10	7.46	-0.01	2287	449.0 -> 99.0	54.4	22.6	82.6

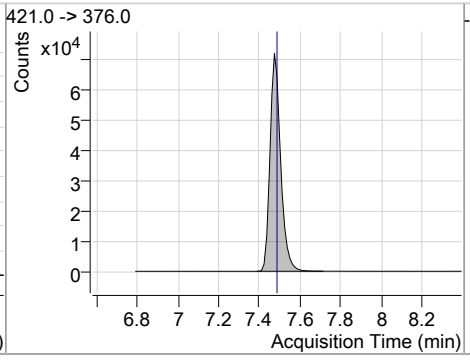


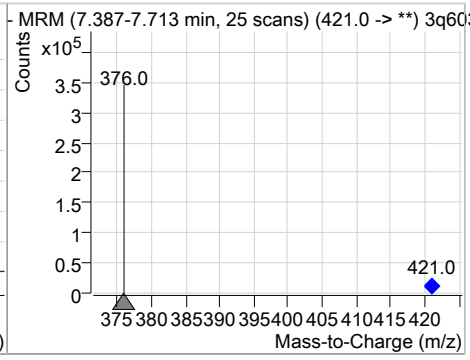




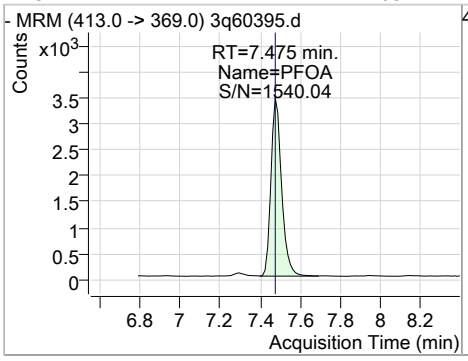
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.57	7.47	-0.01	259896				

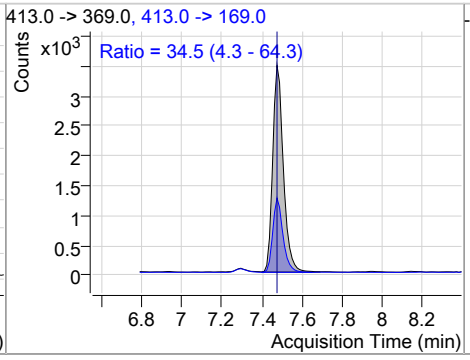


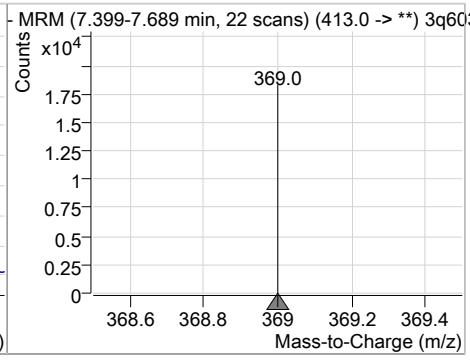




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.05	7.47	-0.01	12730	413.0 -> 169.0	34.5	4.3	64.3

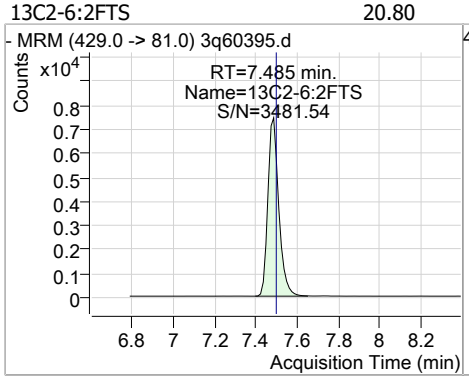


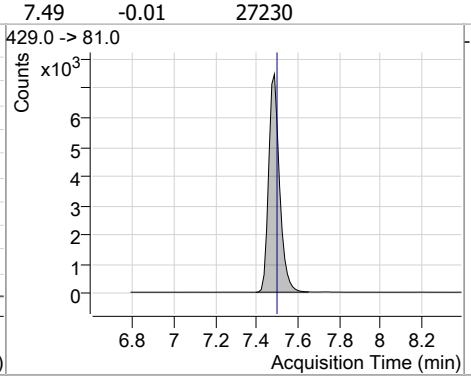


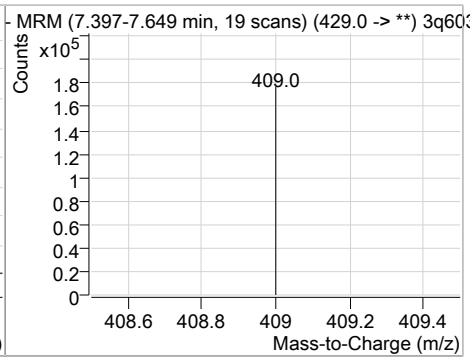


Perfluorinated Compounds by LC/MS/MS

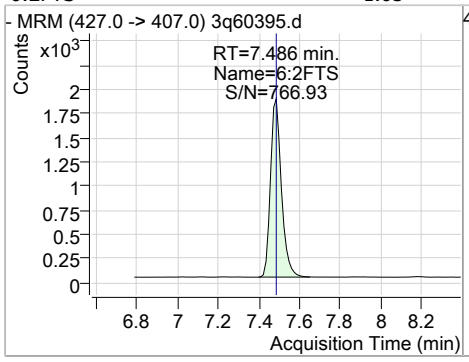
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.80	7.49	-0.01	27230				

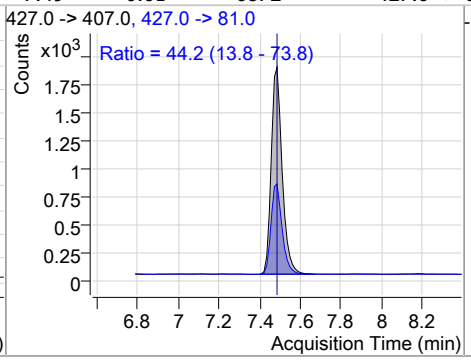


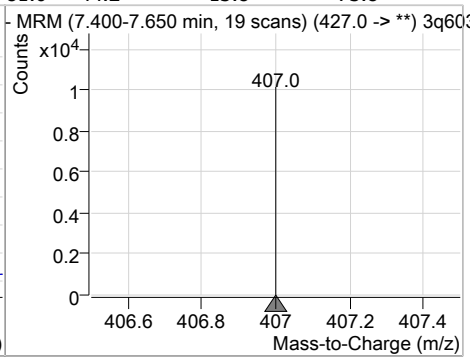




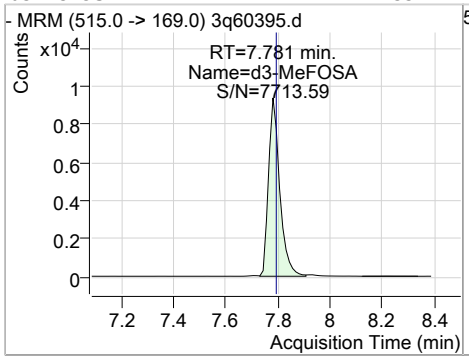
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	7.49	-0.01	6872	427.0 -> 81.0	44.2	13.8	73.8

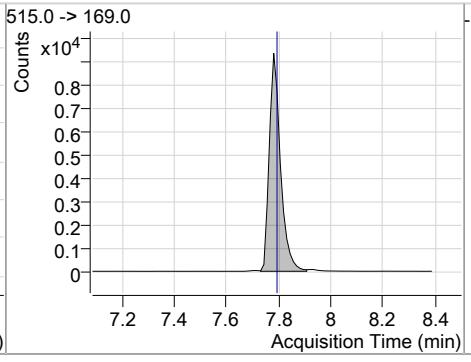


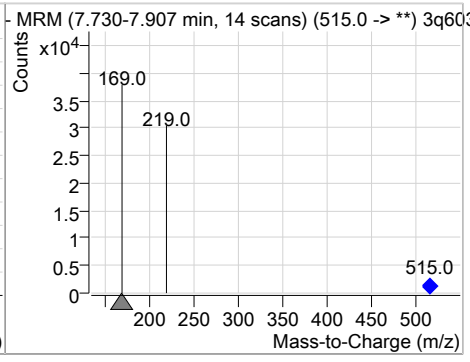




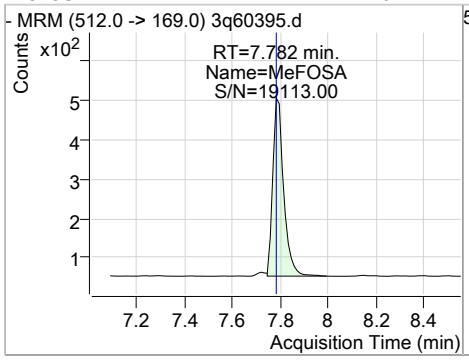
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.33	7.78	-0.01	27912				

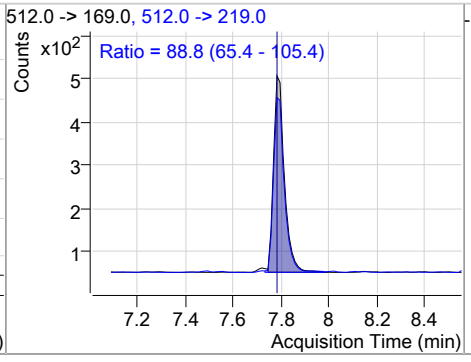


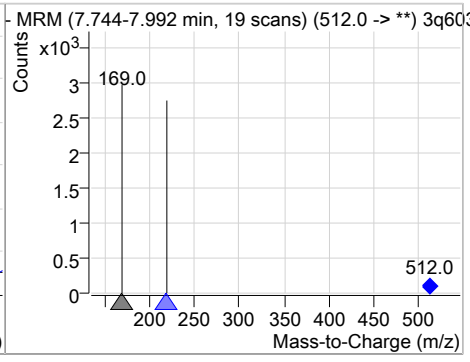




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.04	7.78	-0.01	1437	512.0 -> 219.0	88.8	65.4	105.4

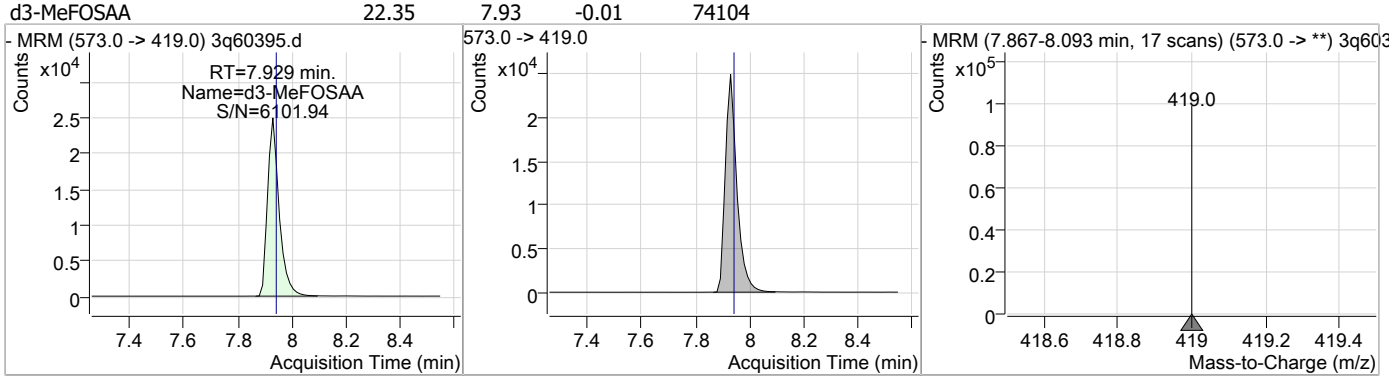




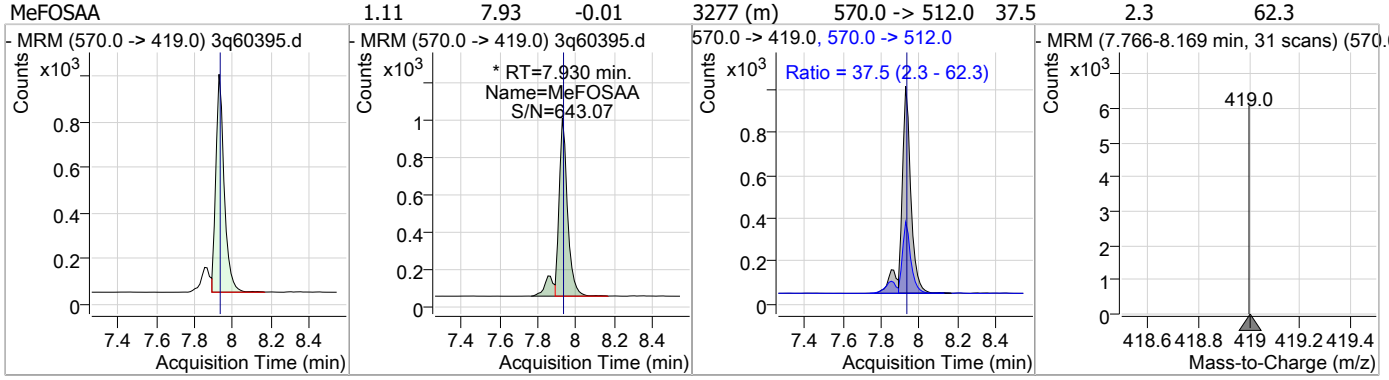


Perfluorinated Compounds by LC/MS/MS

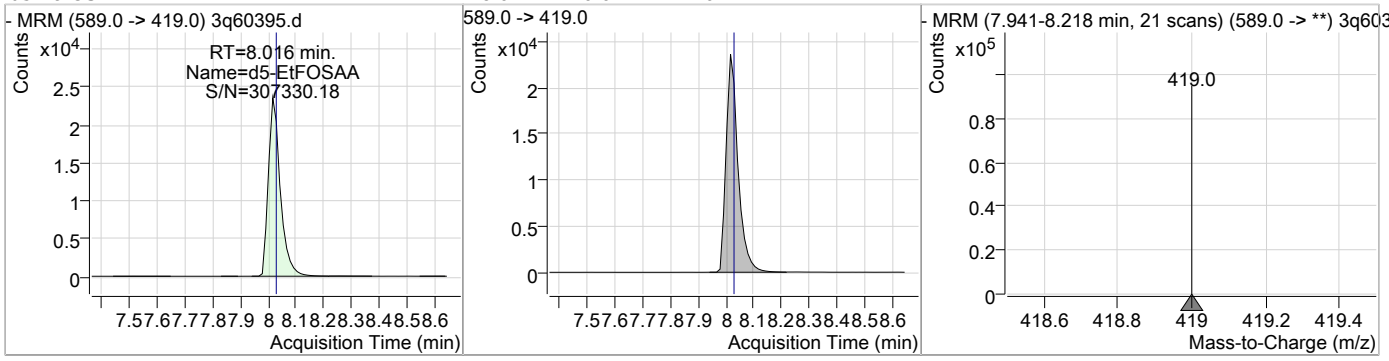
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.35	7.93	-0.01	74104				



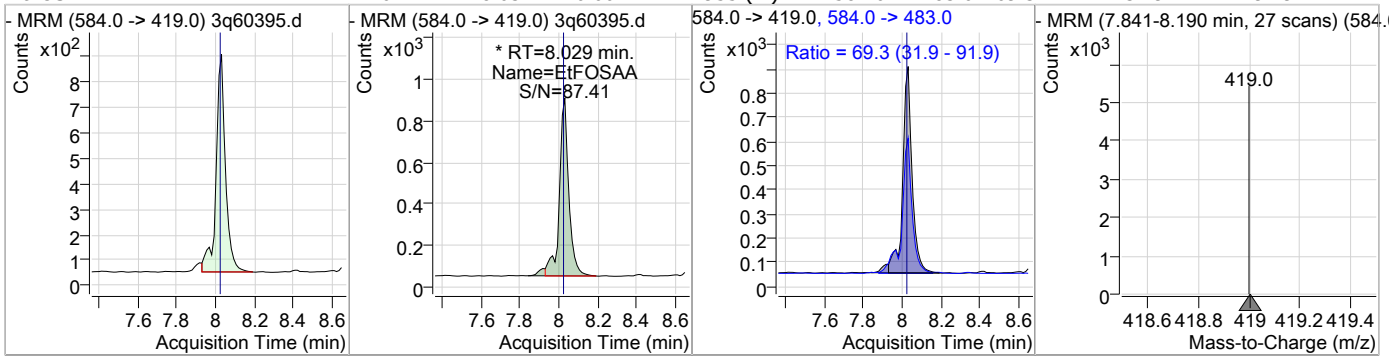
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.11	7.93	-0.01	3277 (m)	570.0 -> 512.0	37.5	2.3	62.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.44	8.02	-0.01	70712				

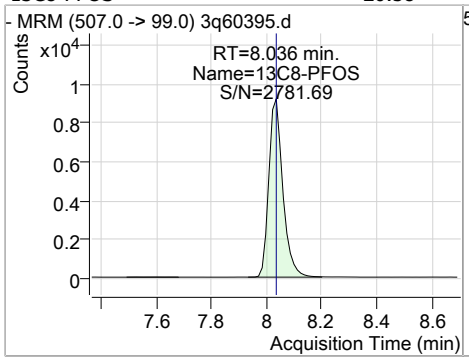


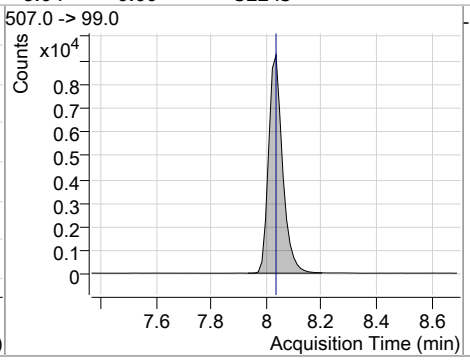
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.07	8.03	0.00	2955 (m)	584.0 -> 483.0	69.3	31.9	91.9

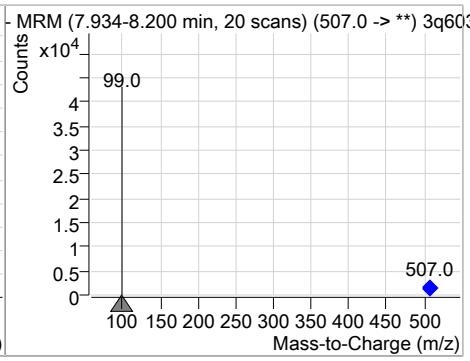


Perfluorinated Compounds by LC/MS/MS

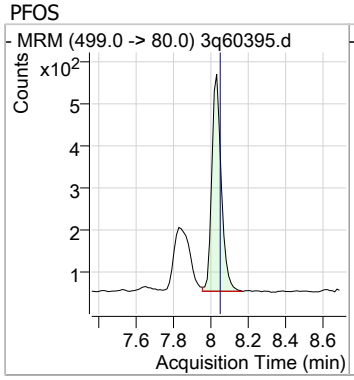
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.58	8.04	0.00	32245				

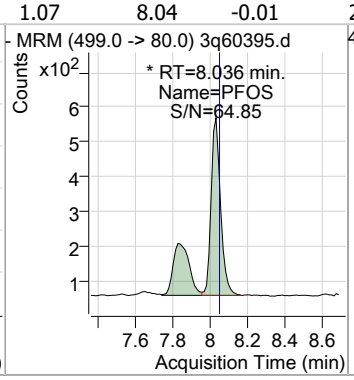


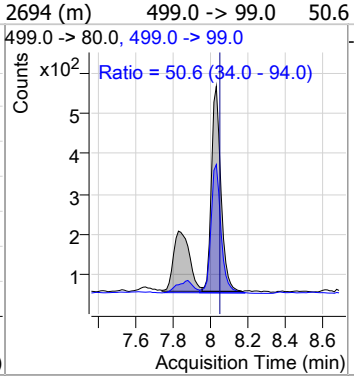


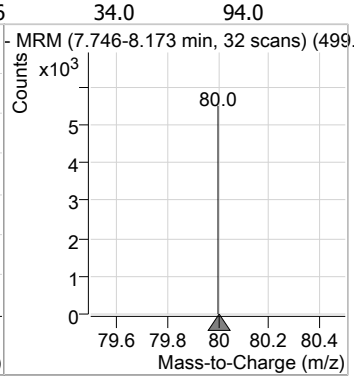


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.07	8.04	-0.01	2694 (m)	499.0 -> 99.0	50.6	34.0	94.0

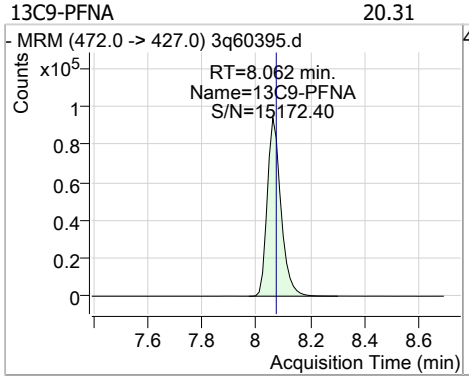


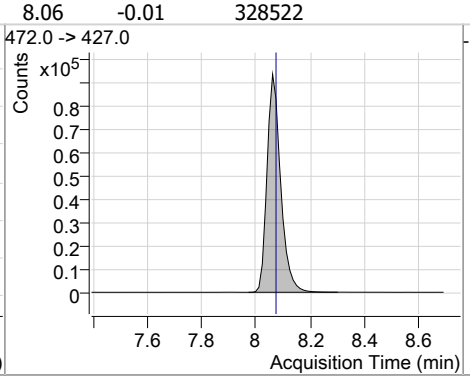


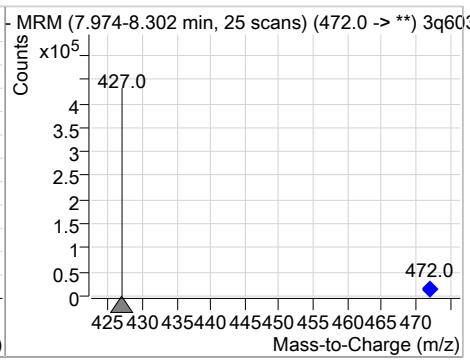




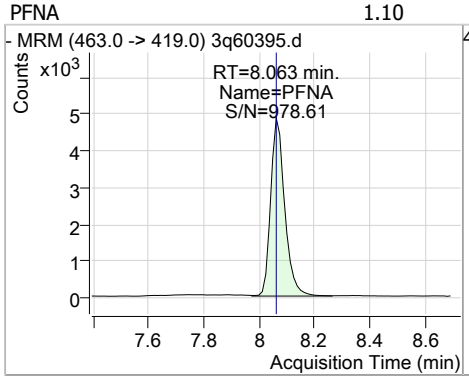
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.31	8.06	-0.01	328522				

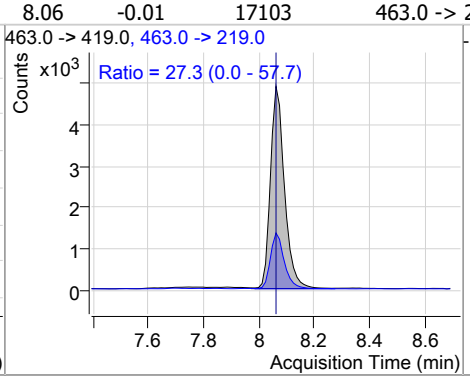


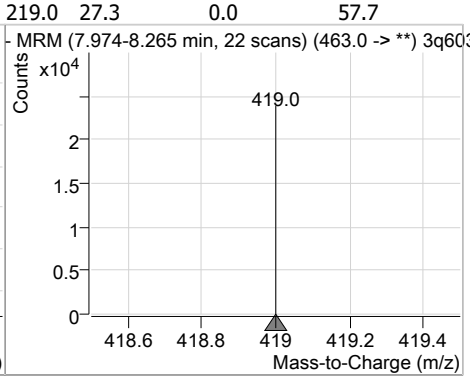




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.10	8.06	-0.01	17103	463.0 -> 219.0	27.3	0.0	57.7

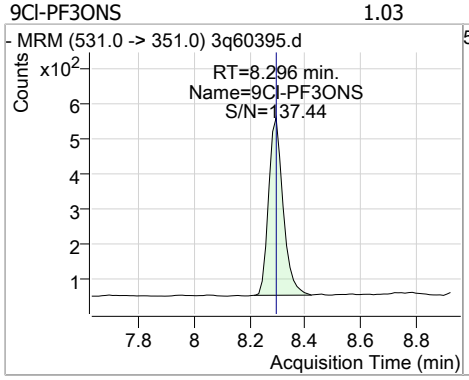


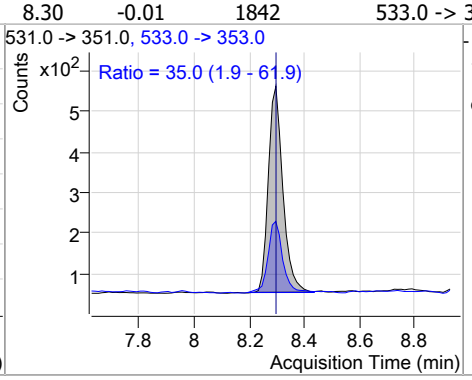


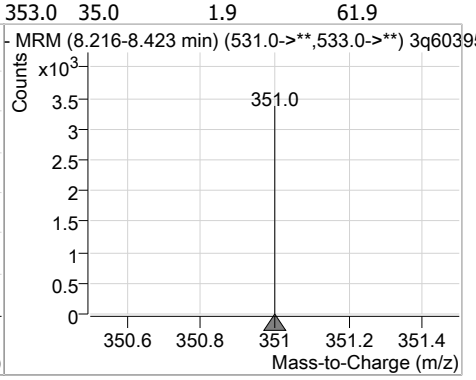


Perfluorinated Compounds by LC/MS/MS

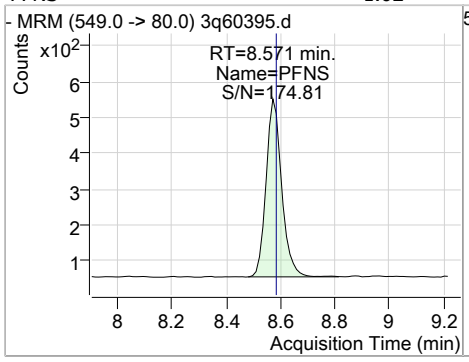
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.03	8.30	-0.01	1842	533.0 -> 353.0	35.0	1.9	61.9

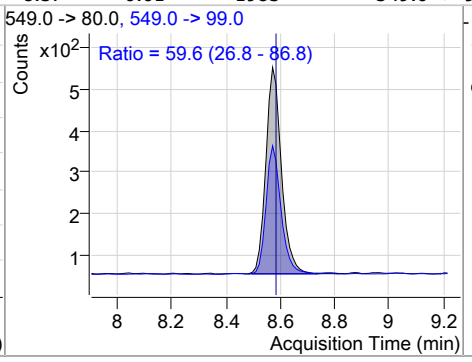


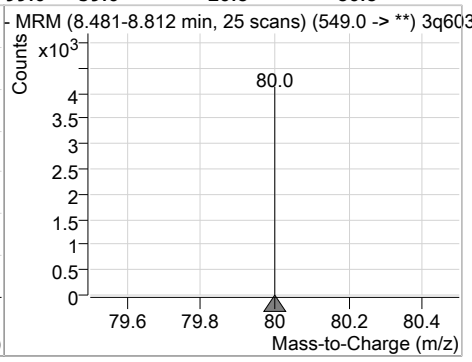




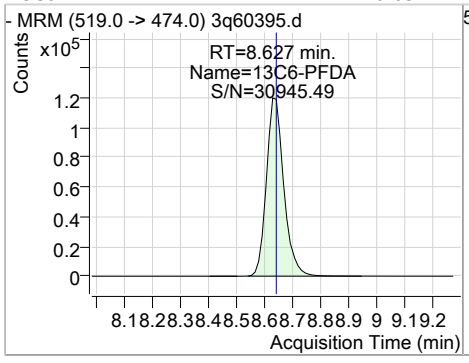
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	8.57	-0.01	1985	549.0 -> 99.0	59.6	26.8	86.8

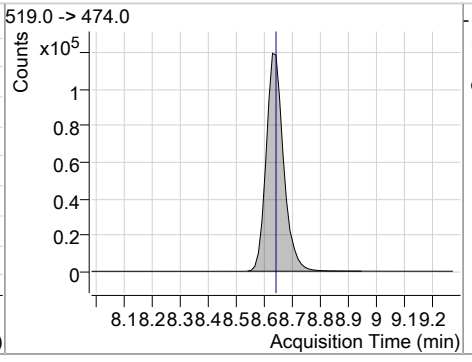


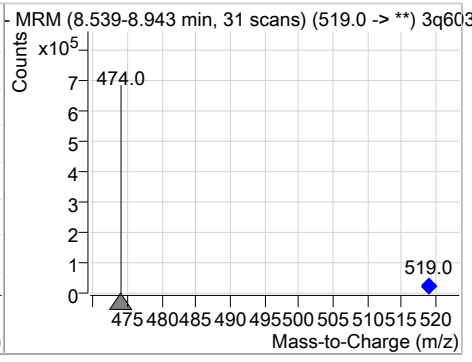




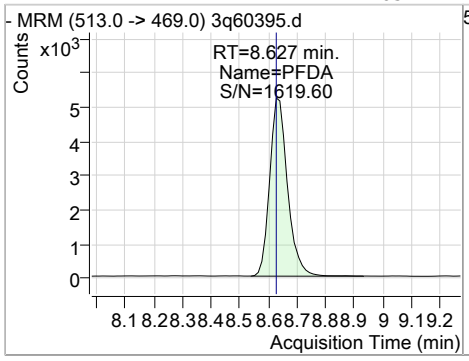
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.65	8.63	-0.01	515505				

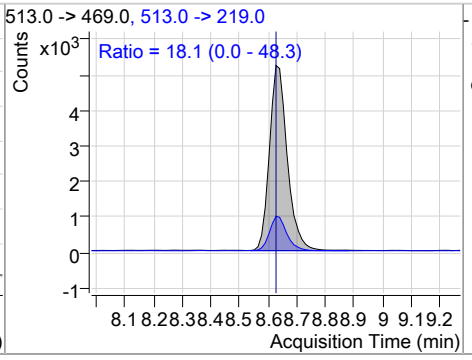


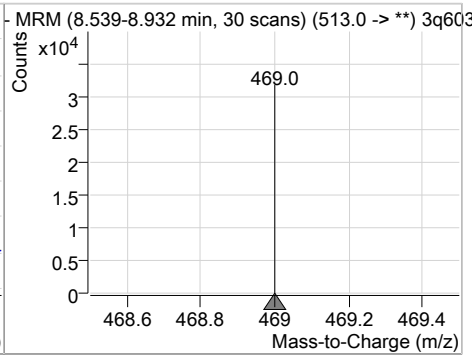




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.05	8.63	-0.01	22528	513.0 -> 219.0	18.1	0.0	48.3

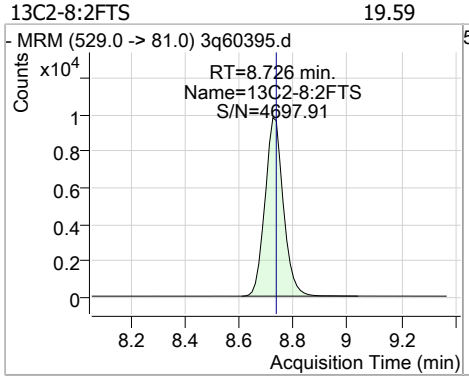


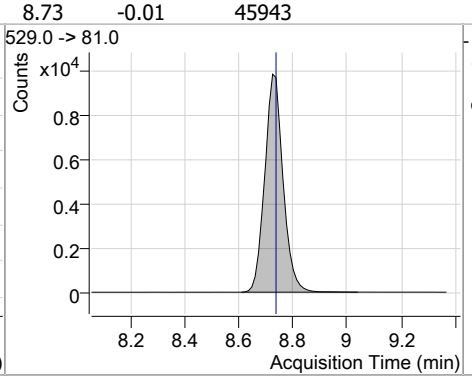


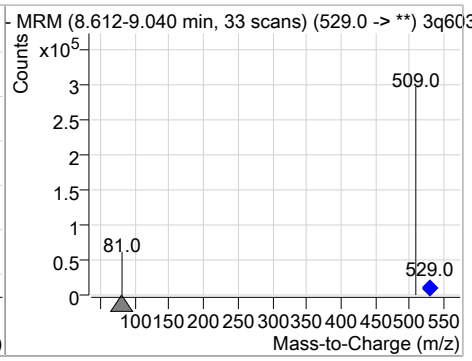


Perfluorinated Compounds by LC/MS/MS

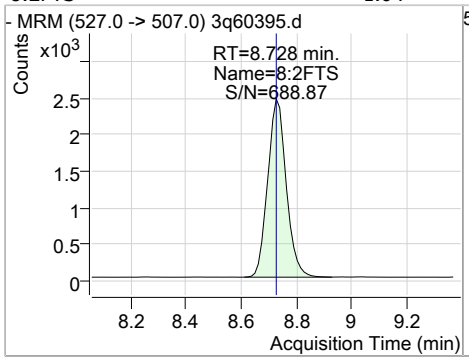
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.59	8.73	-0.01	45943				

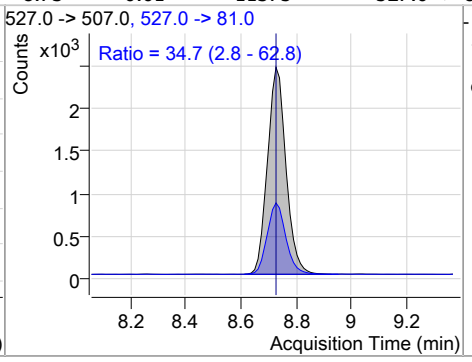


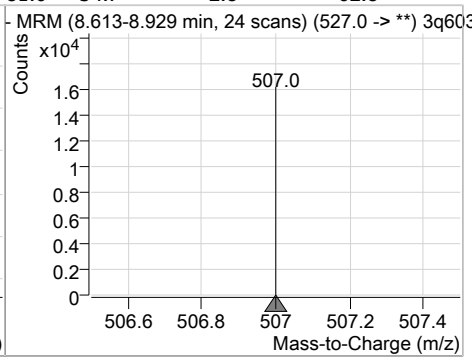




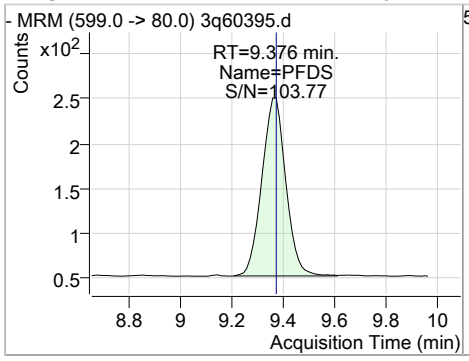
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.73	-0.01	11375	527.0 -> 81.0	34.7	2.8	62.8

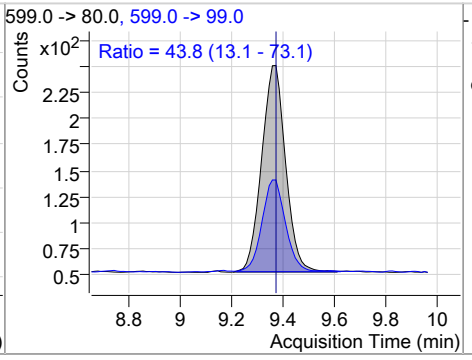


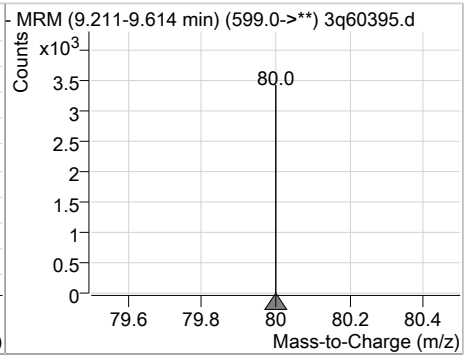




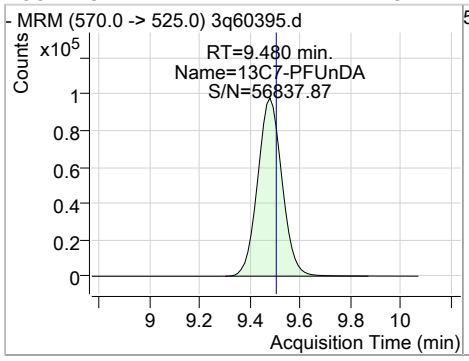
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.02	9.38	-0.03	1287	599.0 -> 99.0	43.8	13.1	73.1

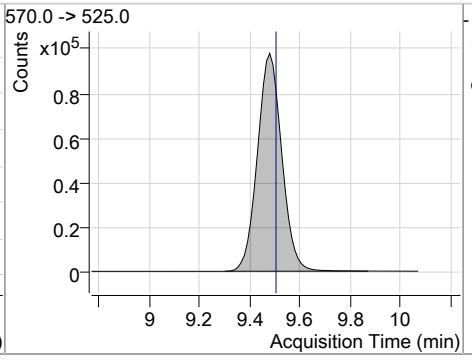


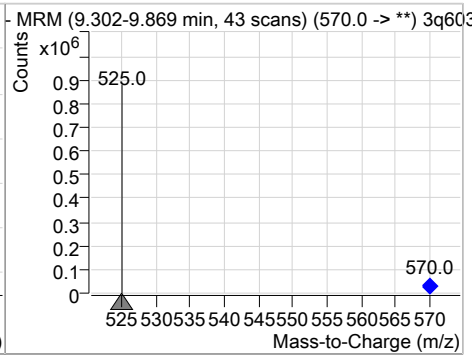




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.31	9.48	-0.03	657194				

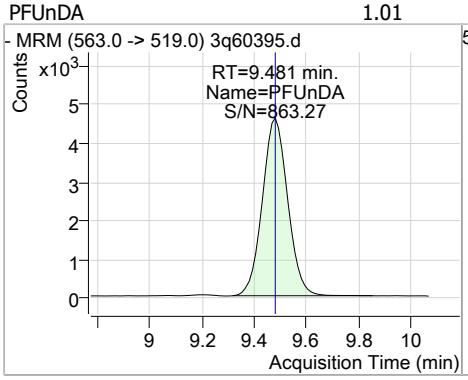


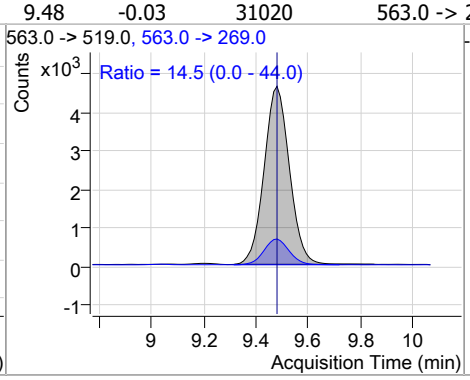


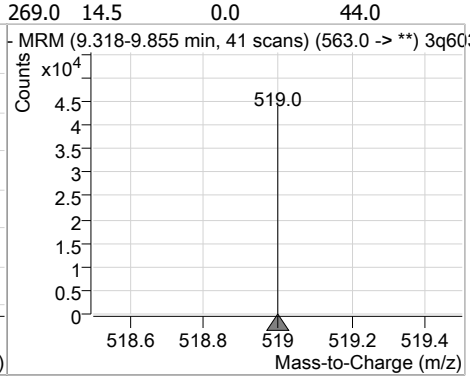


Perfluorinated Compounds by LC/MS/MS

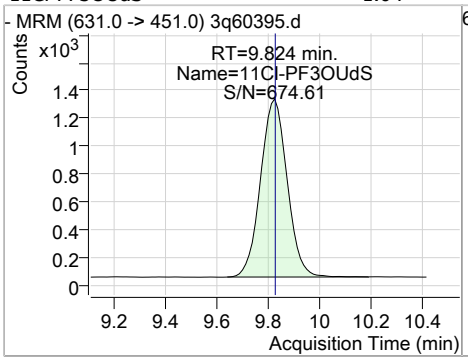
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.01	9.48	-0.03	31020	563.0 -> 269.0	14.5	0.0	44.0

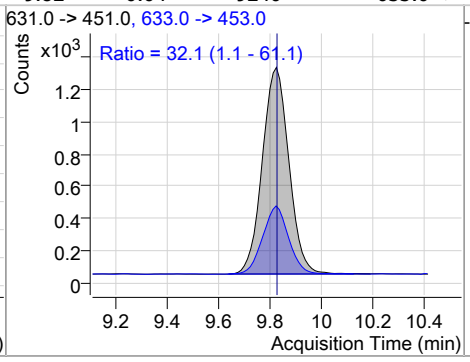


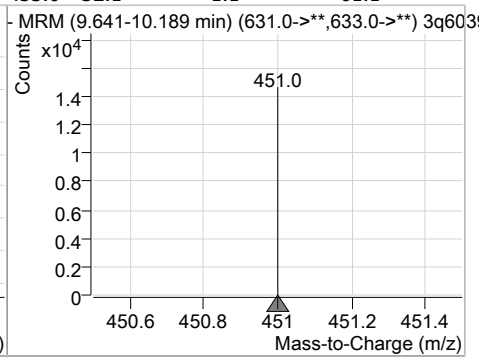




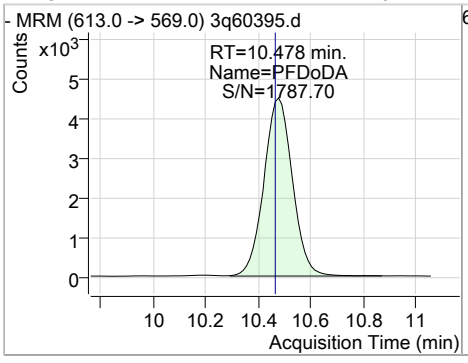
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.04	9.82	-0.04	9240	633.0 -> 453.0	32.1	1.1	61.1

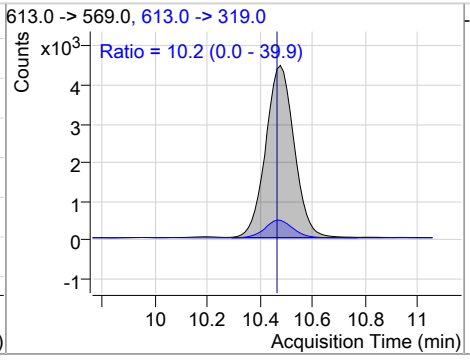


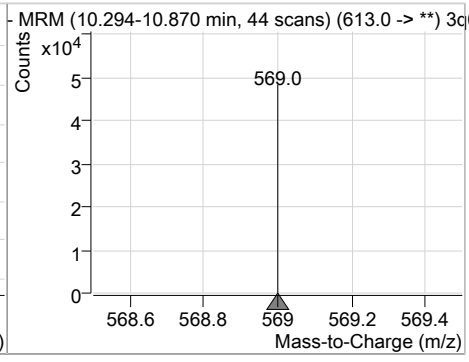




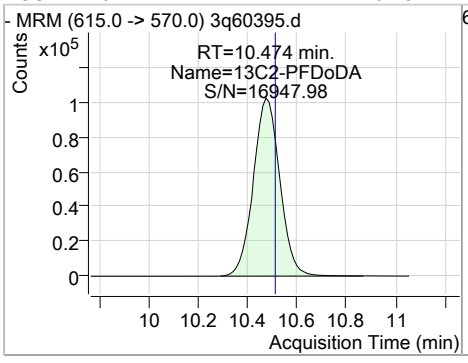
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.04	10.48	-0.03	33577	613.0 -> 319.0	10.2	0.0	39.9

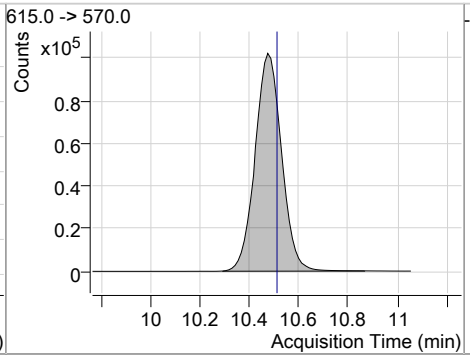


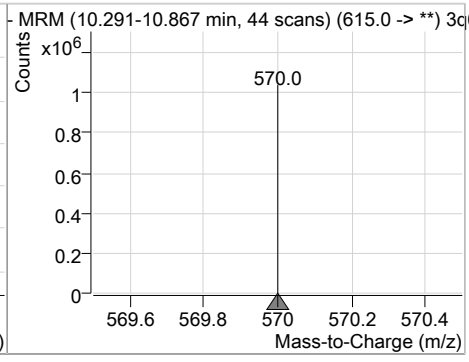




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.78	10.47	-0.04	761794				

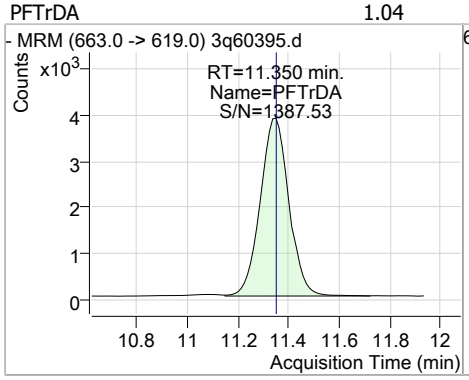


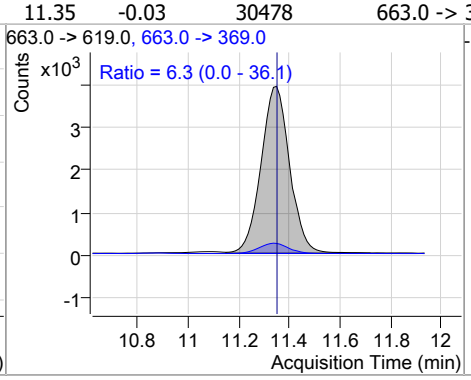


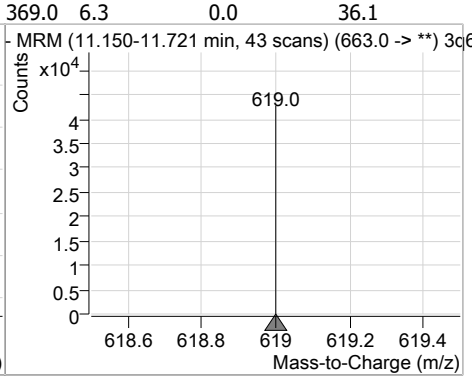


Perfluorinated Compounds by LC/MS/MS

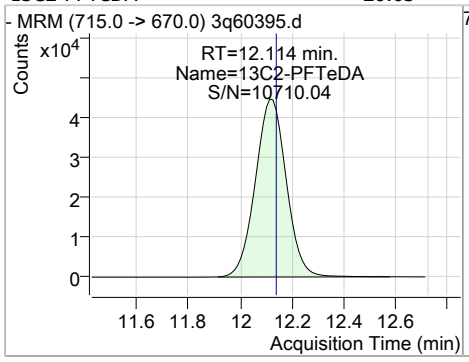
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.04	11.35	-0.03	30478	663.0 -> 369.0	6.3	0.0	36.1

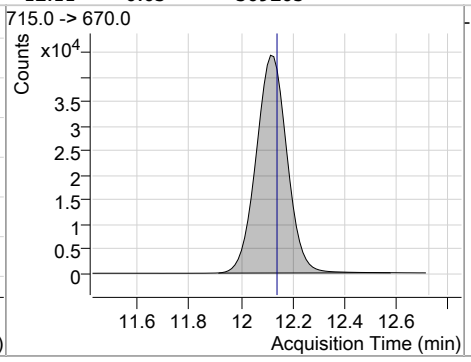


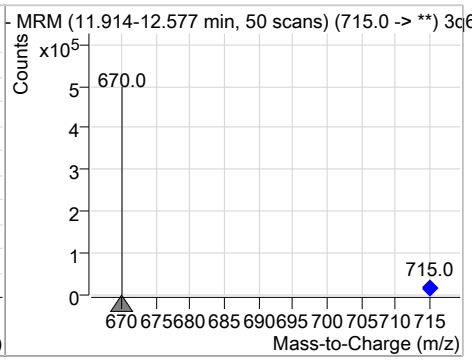




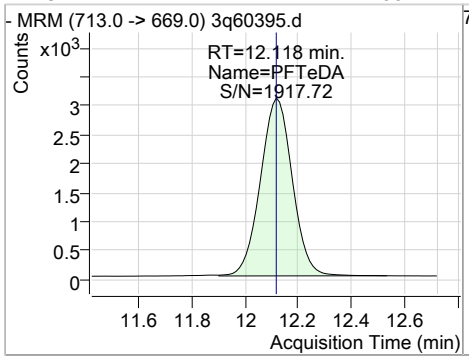
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.63	12.11	-0.03	369265				

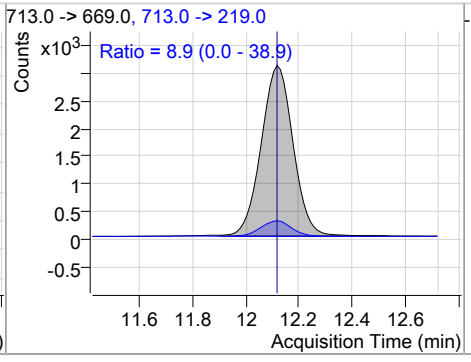


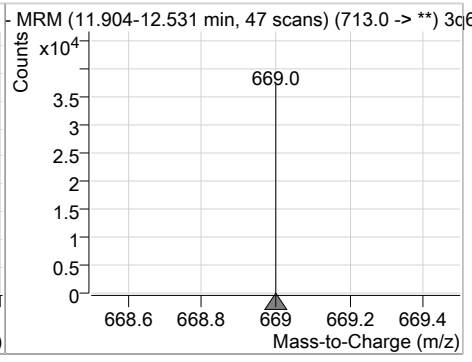




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.06	12.12	-0.03	25499	713.0 -> 219.0	8.9	0.0	38.9







Manual Integration Approval Summary

Sample Number: S3Q824-CC824
Lab FileID: 3Q60395.D
Injection Time: 05/28/22 05:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/29/22 09:40 Martha Valls
Supervisor approved: 05/29/22 17:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.73	Split peak
MeFOSAA	2355-31-9		7.93	Split peak
EtFOSAA	2991-50-6		8.03	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.04	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS4-Q
MS Model	G6470A
MS Instrument Serial	SG2004G105
Software_Firmware Version	10.0.142, FW: A.00.08.100
Tune Date & Time	24 May 2022 16:32:41
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.62E+0 [R] (Torr); 3.46E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	0.70	0.72	0.02	Pass	145903
302.00	302.00	0.00	Pass	0.70	0.72	0.02	Pass	71418
601.98	601.99	0.01	Pass	0.70	0.70	0.00	Pass	327341
1033.99	1033.98	-0.01	Pass	0.70	0.67	-0.03	Pass	478718
1633.95	1633.90	-0.05	Pass	0.70	0.66	-0.04	Pass	734492
2233.91	2233.80	-0.11	Pass	0.70	0.68	-0.02	Pass	456433

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.05	0.05	Pass	0.70	0.65	-0.05	Pass	36372
112.99	113.01	0.02	Pass	0.70	0.67	-0.03	Pass	97017
302.00	302.07	0.07	Pass	0.70	0.66	-0.04	Pass	71033
601.98	602.07	0.09	Pass	0.70	0.64	-0.06	Pass	205084
1033.99	1034.07	0.08	Pass	0.70	0.63	-0.07	Pass	357848
1633.95	1634.00	0.05	Pass	0.70	0.63	-0.07	Pass	540279
2233.91	2233.91	0.00	Pass	0.70	0.66	-0.04	Pass	344118

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.98	-0.01	Pass	1.20	1.23	0.03	Pass	174544
302.00	302.02	0.02	Pass	1.20	1.45	0.25	Pass	108180
601.98	601.98	0.00	Pass	1.20	1.62	0.42	Pass	577890
1033.99	1034.01	0.02	Pass	1.20	1.64	0.44	Pass	956338
1633.95	1633.94	-0.01	Pass	1.20	1.48	0.28	Pass	1911484
2233.91	2233.89	-0.02	Pass	1.20	1.29	0.09	Pass	1198795

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.04	0.04	Pass	1.20	1.13	-0.07	Pass	49408
112.99	113.02	0.03	Pass	1.20	1.19	-0.01	Pass	130683
302.00	302.04	0.04	Pass	1.20	1.17	-0.03	Pass	100016
601.98	602.03	0.05	Pass	1.20	1.27	0.07	Pass	386327
1033.99	1034.06	0.07	Pass	1.20	1.25	0.05	Pass	759278
1633.95	1633.97	0.02	Pass	1.20	1.19	-0.01	Pass	1607132
2233.91	2233.97	0.06	Pass	1.20	1.06	-0.14	Pass	996258

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.98	-0.01	Pass	2.50	2.53	0.03	Pass	197540
302.00	302.02	0.02	Pass	2.50	2.68	0.18	Pass	131430
601.98	602.00	0.02	Pass	2.50	2.92	0.42	Pass	741939
1033.99	1034.01	0.02	Pass	2.50	2.95	0.45	Pass	1455402
1633.95	1633.94	-0.01	Pass	2.50	2.68	0.18	Pass	3914704
2233.91	2233.80	-0.11	Pass	2.50	2.56	0.06	Pass	3085597

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	2.50	2.39	-0.11	Pass	61087
112.99	113.03	0.04	Pass	2.50	2.43	-0.07	Pass	183685
302.00	302.06	0.06	Pass	2.50	2.40	-0.10	Pass	131007
601.98	602.08	0.10	Pass	2.50	2.47	-0.03	Pass	600153
1033.99	1034.11	0.12	Pass	2.50	2.46	-0.04	Pass	1415195
1633.95	1634.02	0.07	Pass	2.50	2.36	-0.14	Pass	3820702
2233.91	2233.88	-0.03	Pass	2.50	2.32	-0.18	Pass	3155736

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29172.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:42:13 AM
Sample Name : ic419-0.5
Vial : P1-A2
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

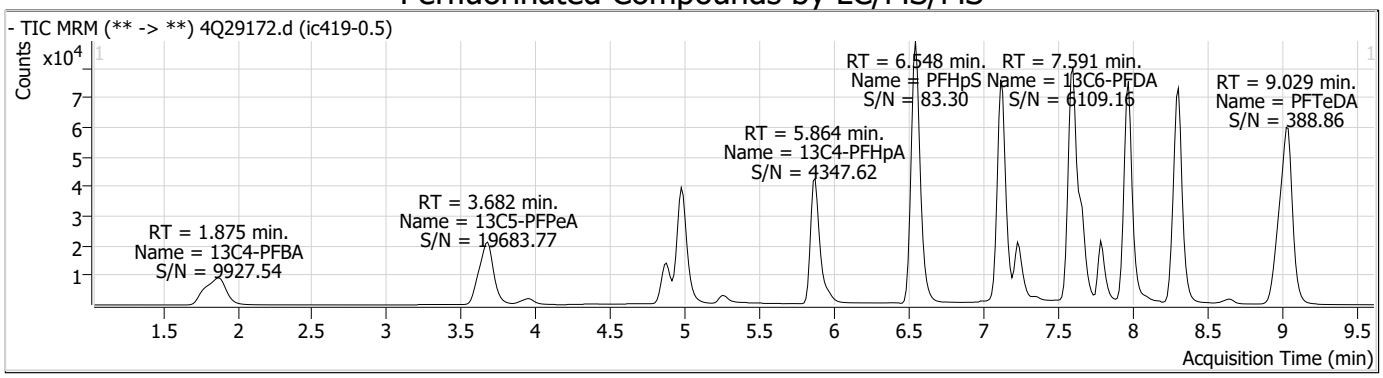
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.875	217.0 -> 172.0	91071	20.00 µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	141091	20.00 µg/L	0.000
M5-PFHxA	4.979	318.0 -> 273.0	173961	20.00 µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	166919	20.00 µg/L	-0.012
M8-PFOA	6.551	421.0 -> 376.0	272916	20.00 µg/L	-0.012
M9-PFNA	7.122	472.0 -> 427.0	285069	20.00 µg/L	-0.012
M6-PFDA	7.591	519.0 -> 474.0	211904	20.00 µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	278584	20.00 µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	296849	20.00 µg/L	0.000
M2-PFTeDA	9.027	715.0 -> 670.0	367210	20.00 µg/L	0.000
M8-FOSA	7.234	506.0 -> 78.0	66837	20.00 µg/L	-0.012
M3-PFBS	3.949	302.0 -> 99.0	10609	20.00 µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	10693	20.00 µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	17735	20.00 µg/L	0.000
M2-4:2FTS	4.875	329.0 -> 309.0	60908	20.00 µg/L	0.000
M2-6:2FTS	6.523	429.0 -> 409.0	98145	20.00 µg/L	-0.012
M2-8:2FTS	7.615	529.0 -> 509.0	85962	20.00 µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	72328	20.00 µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10322	20.00 µg/L	-0.012
M3-MeFOSA	7.616	515.0 -> 169.0	16215	20.00 µg/L	-0.012
M5-EtFOSAA	7.785	589.0 -> 419.0	62952	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.875	329.0 -> 309.0	60908	17.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%	
13C2-6:2FTS	6.523	429.0 -> 409.0	98145	18.64 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C2-8:2FTS	7.615	529.0 -> 509.0	85962	19.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C2-PFDoDA	8.307	615.0 -> 570.0	296849	19.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C2-PFTeDA	9.027	715.0 -> 670.0	367210	19.06 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C3-PFBS	3.949	302.0 -> 99.0	10609	19.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C3-PFHxS	5.898	402.0 -> 99.0	10693	19.59 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%	
13C4-PFBA	1.875	217.0 -> 172.0	91071	19.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%	
13C4-PFHpA	5.864	367.0 -> 322.0	166919	19.55 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%	
13C5-PFHxA	4.979	318.0 -> 273.0	173961	19.32 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%	
13C5-PFPeA	3.682	268.0 -> 223.0	141091	19.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%	
13C6-PFDA	7.591	519.0 -> 474.0	211904	20.20 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

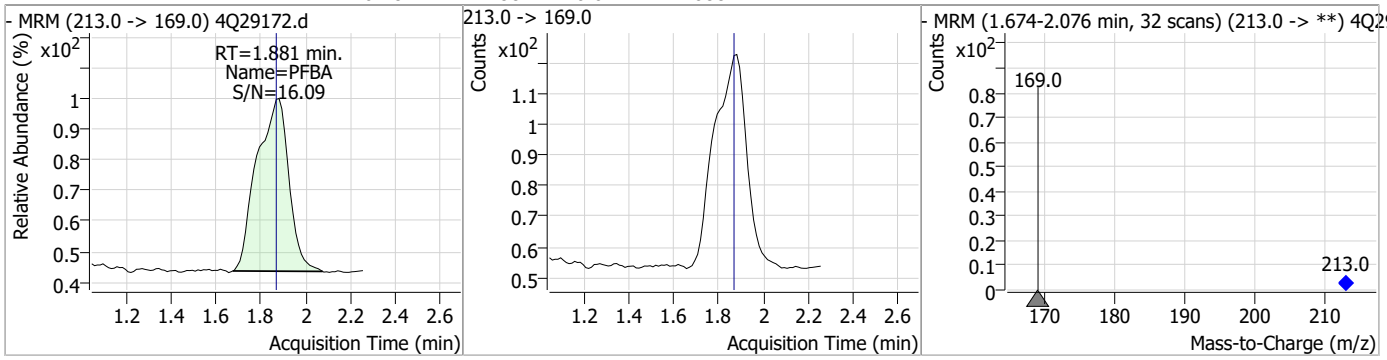
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C7-PFUnDA	7.973	570.0 -> 525.0	278584	19.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C8-FOSA	7.234	506.0 -> 78.0	66837	20.39 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C8-PFOA	6.551	421.0 -> 376.0	272916	20.11 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C8-PFOS	7.094	507.0 -> 99.0	17735	19.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C9-PFNA	7.122	472.0 -> 427.0	285069	20.03 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d3-MeFOSAA	7.661	573.0 -> 419.0	72328	19.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10324	19.44 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
d3-MeFOSA	7.616	515.0 -> 169.0	16215	20.80 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d5-EtFOSAA	7.785	589.0 -> 419.0	62755	19.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
Target Compounds						**QValue**
4:2FTS	4.877	327.0 -> 307.0	1780	0.51 µg/L		89
6:2FTS	6.524	427.0 -> 407.0	2761	0.55 µg/L		100
8:2FTS	7.615	527.0 -> 507.0	2366	0.53 µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	1473	0.51 µg/L	m	88
FOSA	7.236	498.0 -> 78.0	1508	0.48 µg/L		97
MeFOSAA	7.662	570.0 -> 419.0	1625	0.49 µg/L	m	86
PFBA	1.881	213.0 -> 169.0	688	0.48 µg/L		100
PFBS	3.941	299.0 -> 80.0	865	0.51 µg/L		99
PFDA	7.592	513.0 -> 469.0	6502	0.48 µg/L		99
PFDoDA	8.308	613.0 -> 569.0	6682	0.48 µg/L		98
PFDS	7.921	599.0 -> 80.0	591	0.46 µg/L		93
PFHpA	5.866	363.0 -> 319.0	5655	0.49 µg/L		99
PFHpS	6.548	449.0 -> 80.0	711	0.53 µg/L		96
PFHxA	4.980	313.0 -> 269.0	4350	0.49 µg/L		99
PFHxS	5.900	399.0 -> 80.0	774	0.56 µg/L	m	88
PFNA	7.123	463.0 -> 419.0	6027	0.49 µg/L		99
PFNS	7.552	549.0 -> 80.0	652	0.48 µg/L		89
PFOA	6.552	413.0 -> 369.0	7374	0.49 µg/L		99
PFOS	7.096	499.0 -> 80.0	831	0.50 µg/L	m	87
PFPeA	3.684	263.0 -> 219.0	3209	0.51 µg/L		100
PFPeS	5.085	349.0 -> 80.0	546	0.50 µg/L		95
PFTeDA	9.029	713.0 -> 669.0	8683	0.49 µg/L		99
PFTrDA	8.644	663.0 -> 619.0	7486	0.46 µg/L		99
PFUnDA	7.975	563.0 -> 519.0	6351	0.48 µg/L		98
11Cl-PF3OUdS	8.081	631.0 -> 451.0	2879	0.46 µg/L		97
9Cl-PF3ONS	7.353	531.0 -> 351.0	3379	0.44 µg/L		91
ADONA	5.965	377.0 -> 251.0	6589	0.47 µg/L		98
HFPO-DA	5.264	329.0 -> 169.0	812	0.50 µg/L		99
MeFOSA	7.630	512.0 -> 169.0	453	0.50 µg/L		91

 # = Qualifier out of range, m = manually integrated, + = Area summed

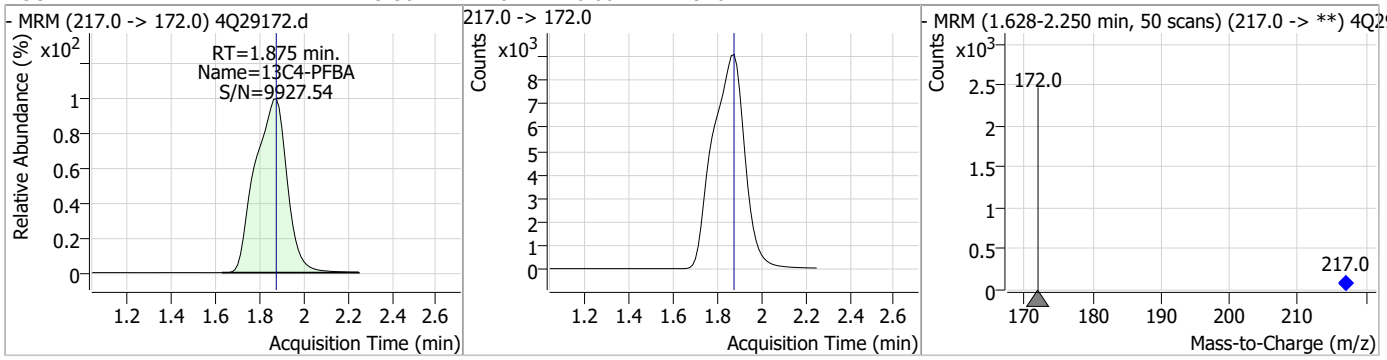
Perfluorinated Compounds by LC/MS/MS



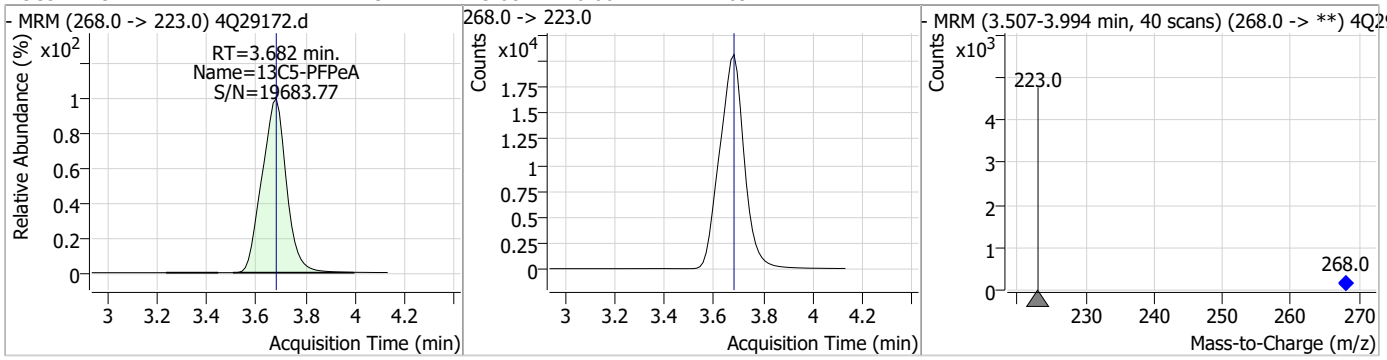
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.48	1.88	0.01	688				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.38	1.87	0.00	91071				

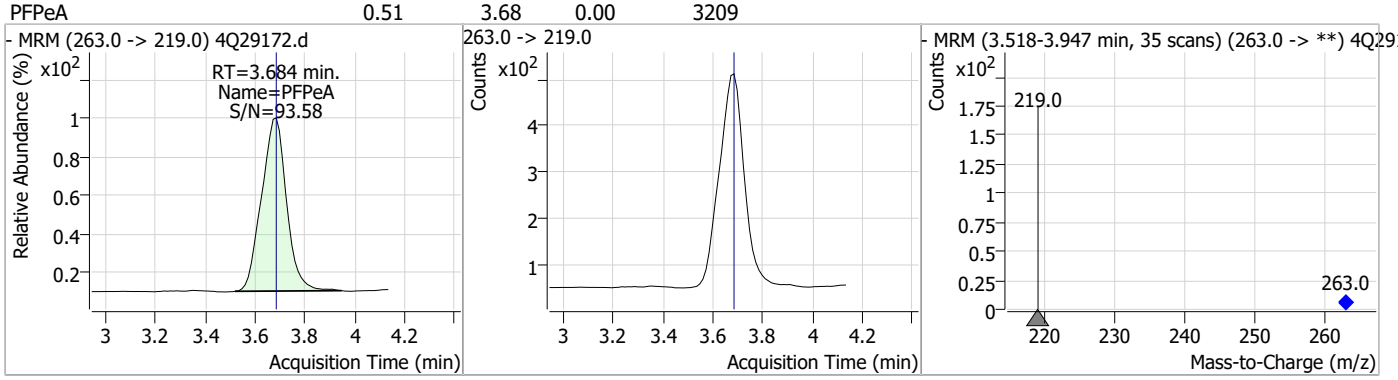


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.24	3.68	0.00	141091				

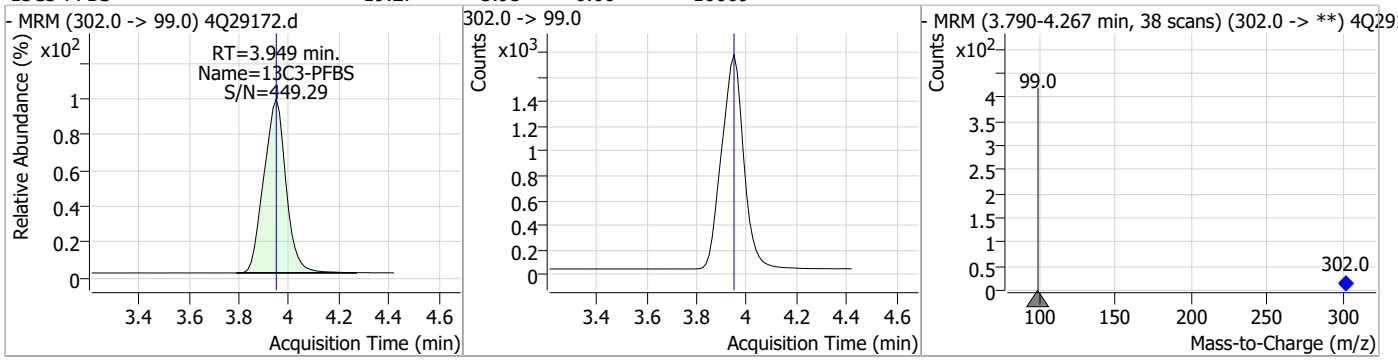


Perfluorinated Compounds by LC/MS/MS

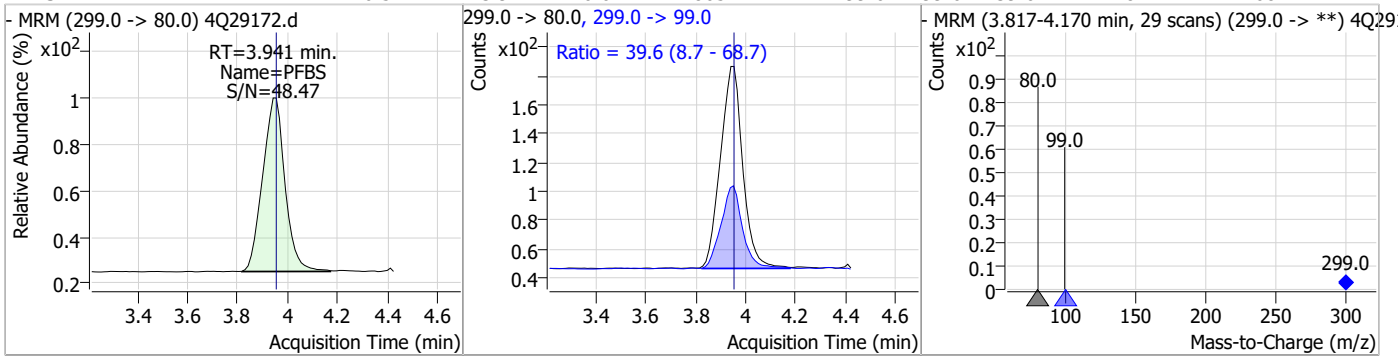
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.51	3.68	0.00	3209				



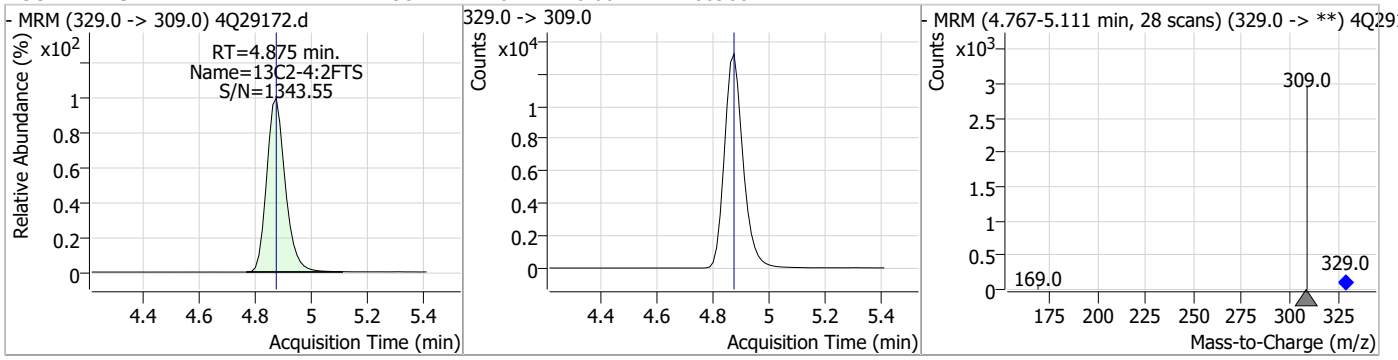
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.27	3.95	0.00	10609				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.51	3.94	-0.01	865	299.0 -> 99.0	39.6	8.7	68.7

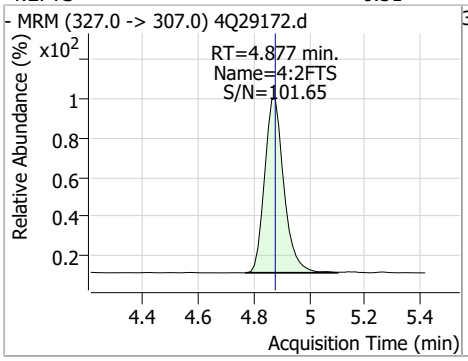


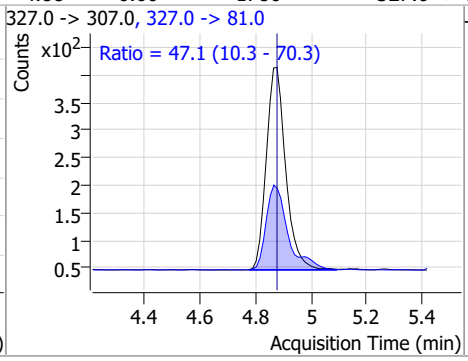
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.95	4.87	0.00	60908				

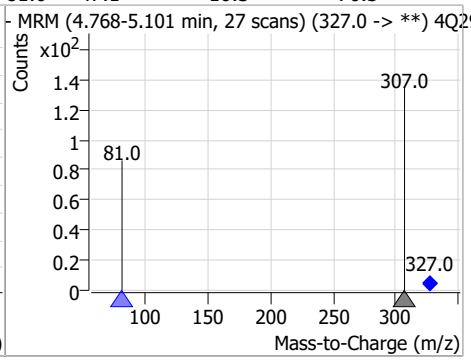


Perfluorinated Compounds by LC/MS/MS

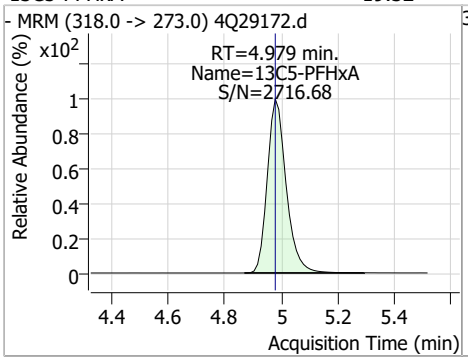
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.51	4.88	0.00	1780	327.0 -> 81.0	47.1	10.3	70.3

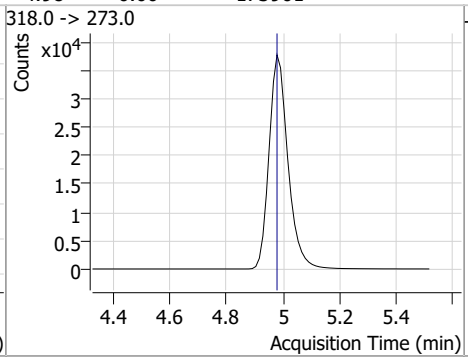


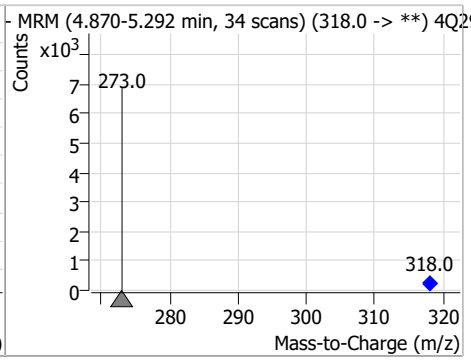




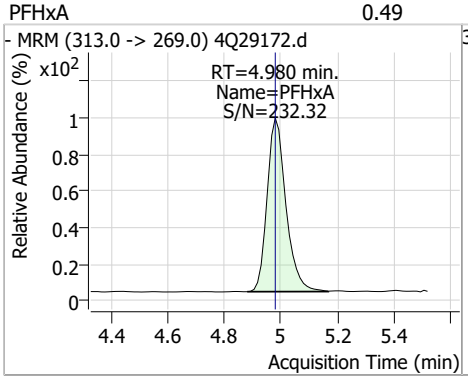
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.32	4.98	0.00	173961				

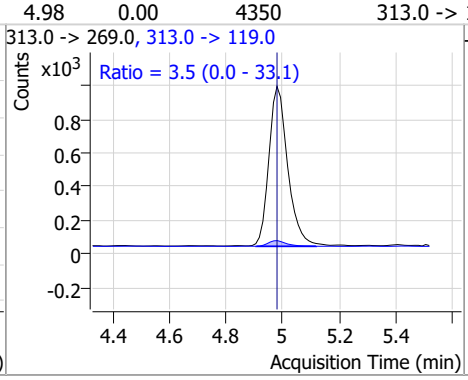


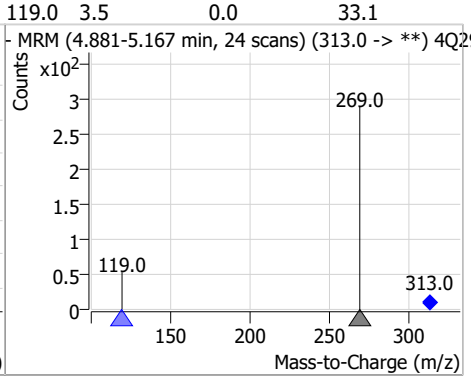




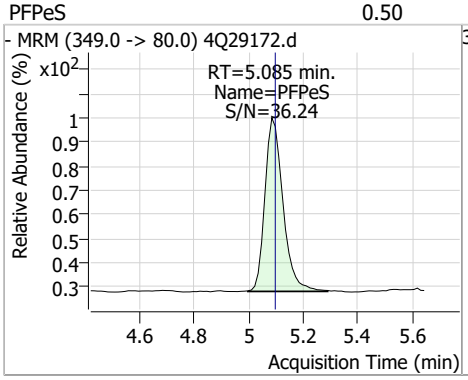
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.49	4.98	0.00	4350	313.0 -> 119.0	3.5	0.0	33.1

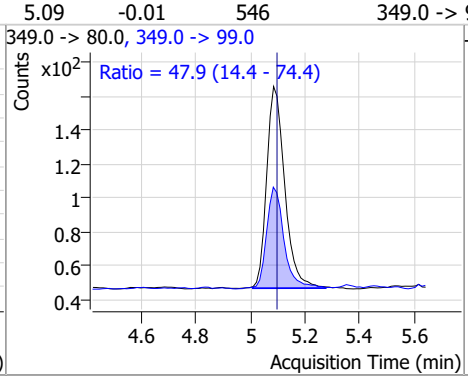


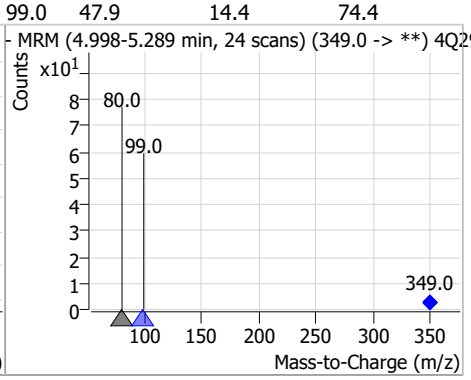




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.50	5.09	-0.01	546	349.0 -> 99.0	47.9	14.4	74.4

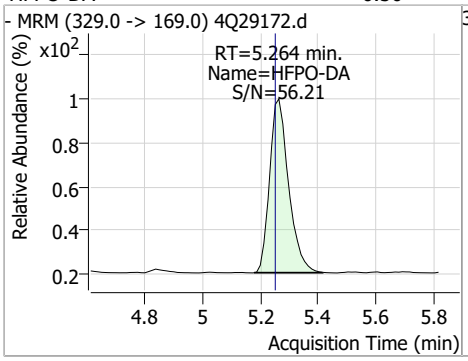


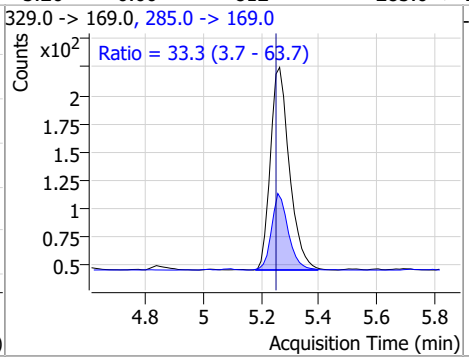


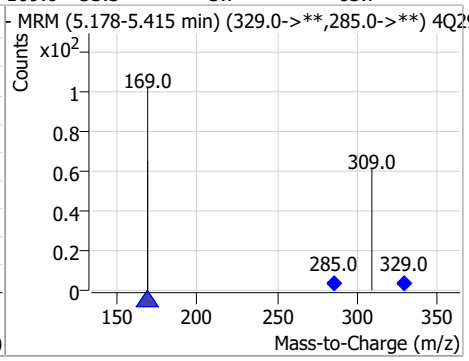


Perfluorinated Compounds by LC/MS/MS

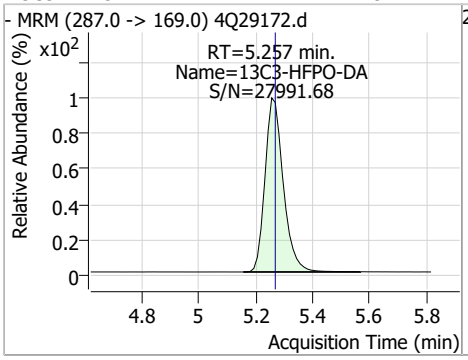
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.50	5.26	0.00	812	285.0 -> 169.0	33.3	3.7	63.7

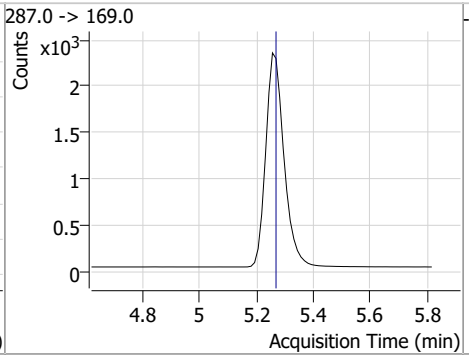


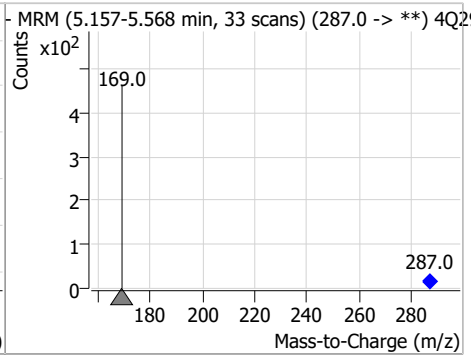




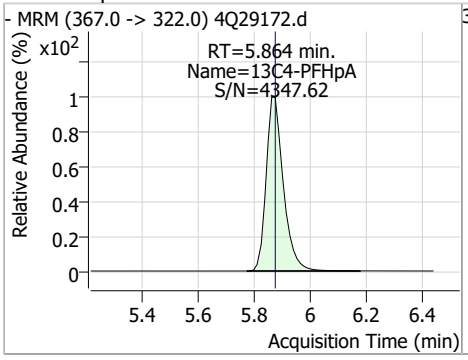
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.44	5.26	-0.01	10324				

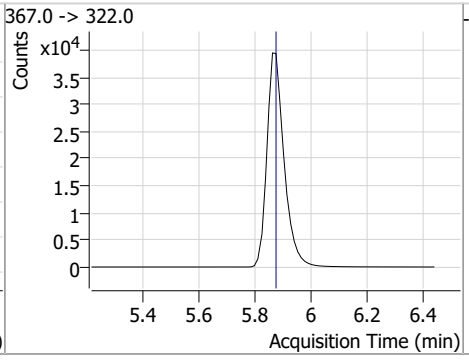


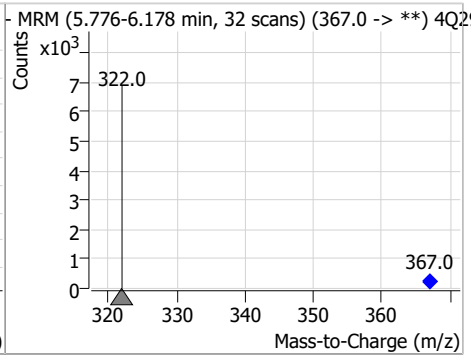




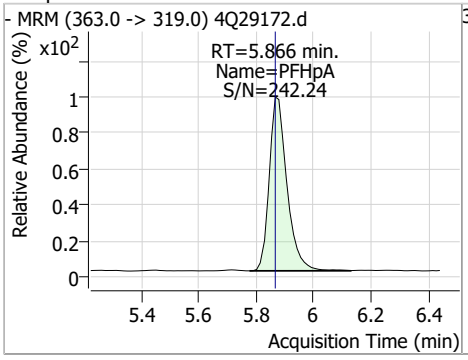
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.55	5.86	-0.01	166919				

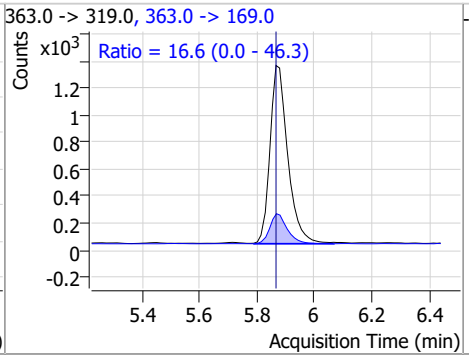


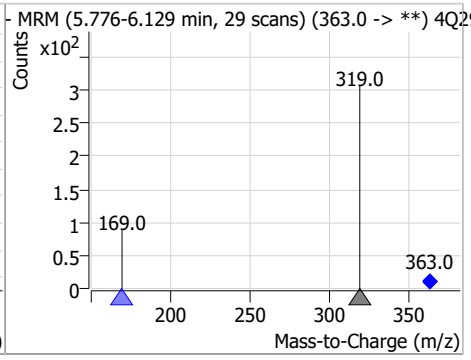




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.49	5.87	-0.01	5655	363.0 -> 169.0	16.6	0.0	46.3

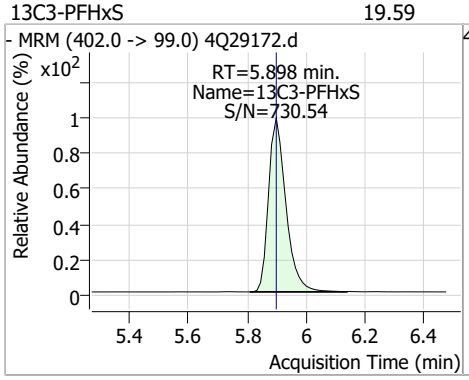


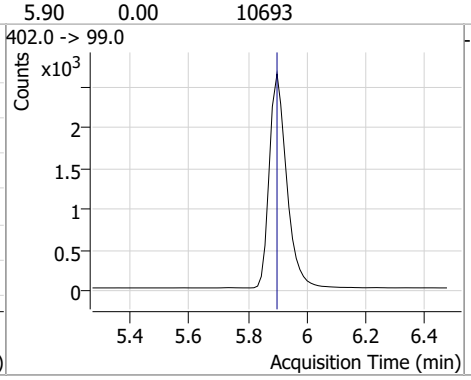


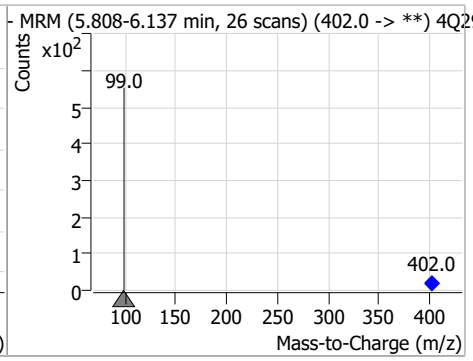


Perfluorinated Compounds by LC/MS/MS

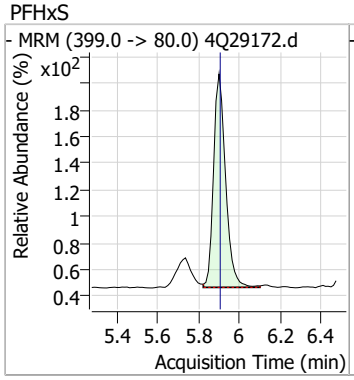
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.59	5.90	0.00	10693				

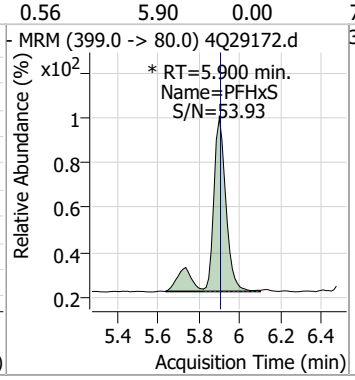


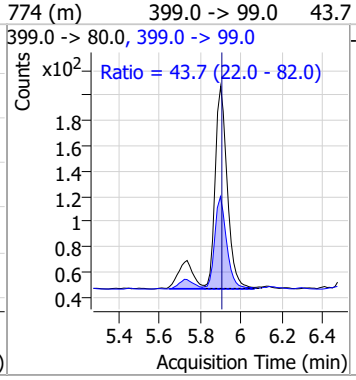


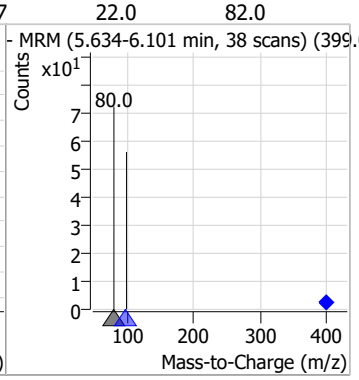


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.56	5.90	0.00	774 (m)	399.0 -> 99.0	43.7	22.0	82.0

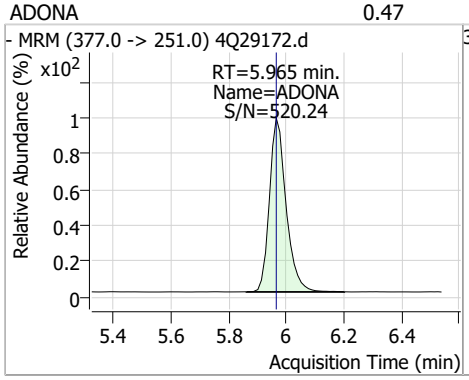


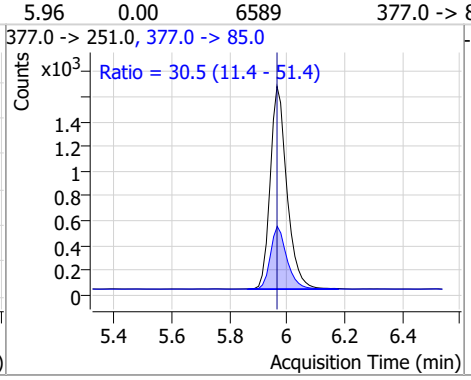


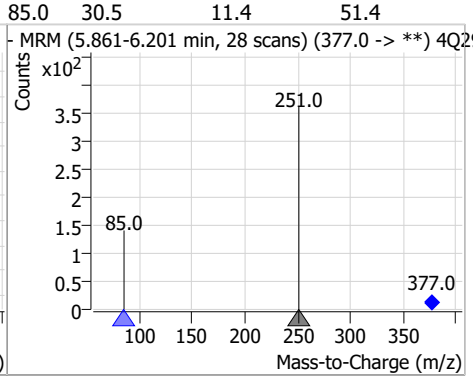




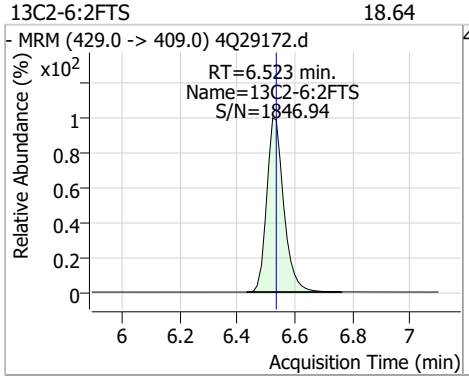
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.47	5.96	0.00	6589	377.0 -> 85.0	30.5	11.4	51.4

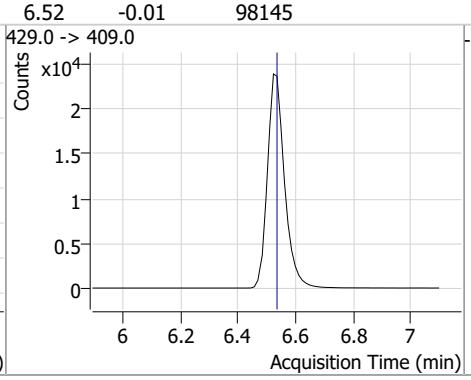


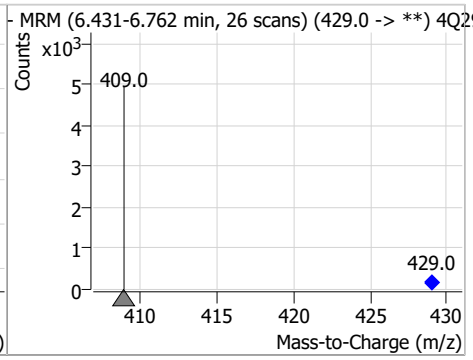




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.64	6.52	-0.01	98145				

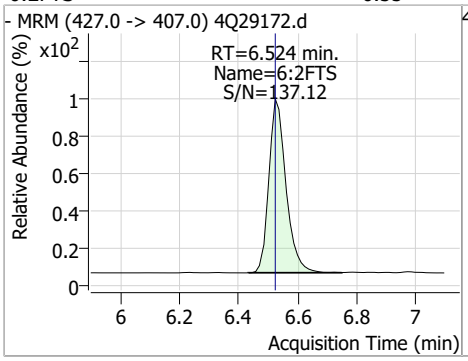


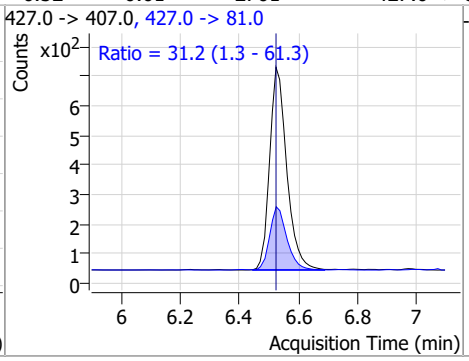


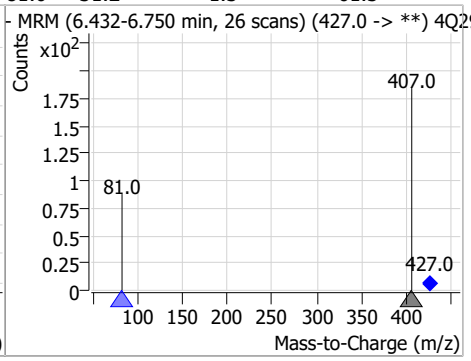


Perfluorinated Compounds by LC/MS/MS

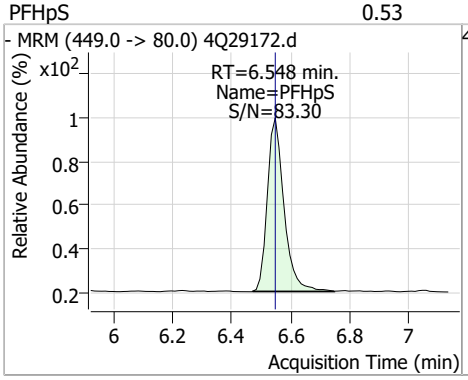
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.55	6.52	-0.01	2761	427.0 -> 81.0	31.2	1.3	61.3

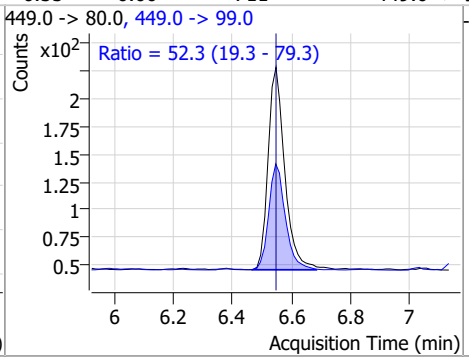


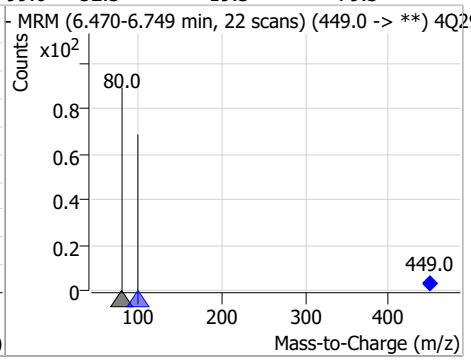




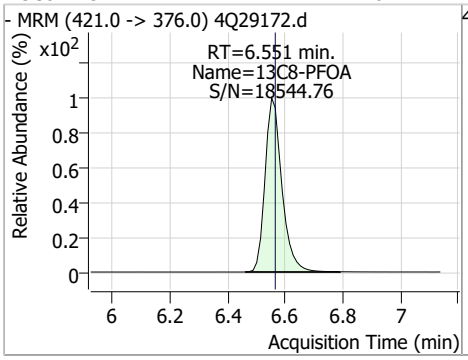
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.53	6.55	0.00	711	449.0 -> 99.0	52.3	19.3	79.3

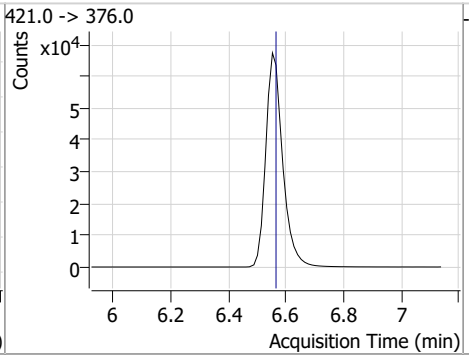


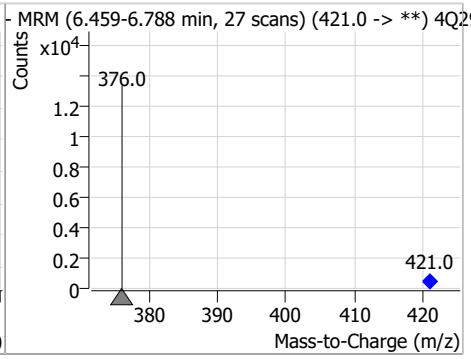




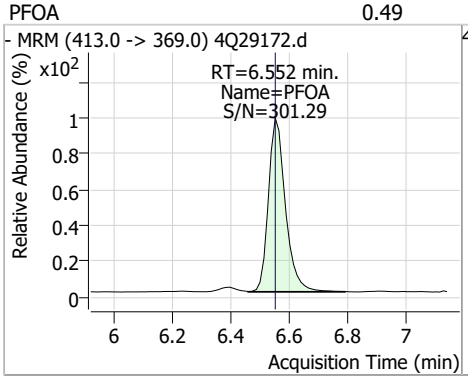
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.11	6.55	-0.01	272916				

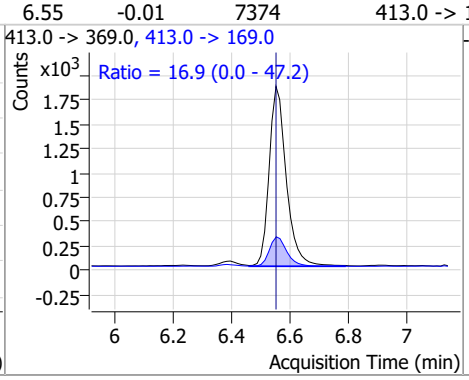


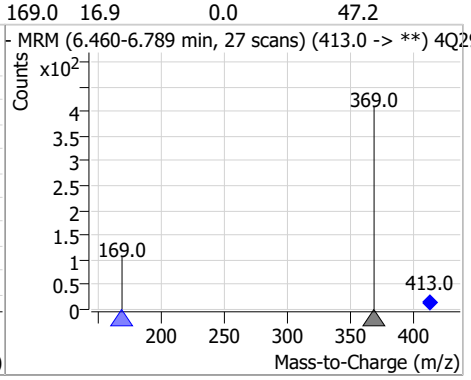




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.49	6.55	-0.01	7374	413.0 -> 169.0	16.9	0.0	47.2

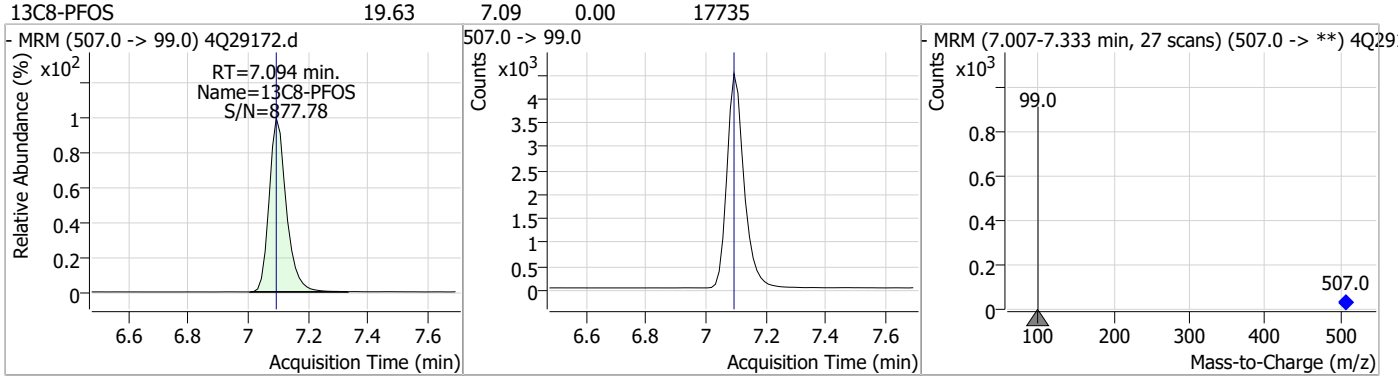




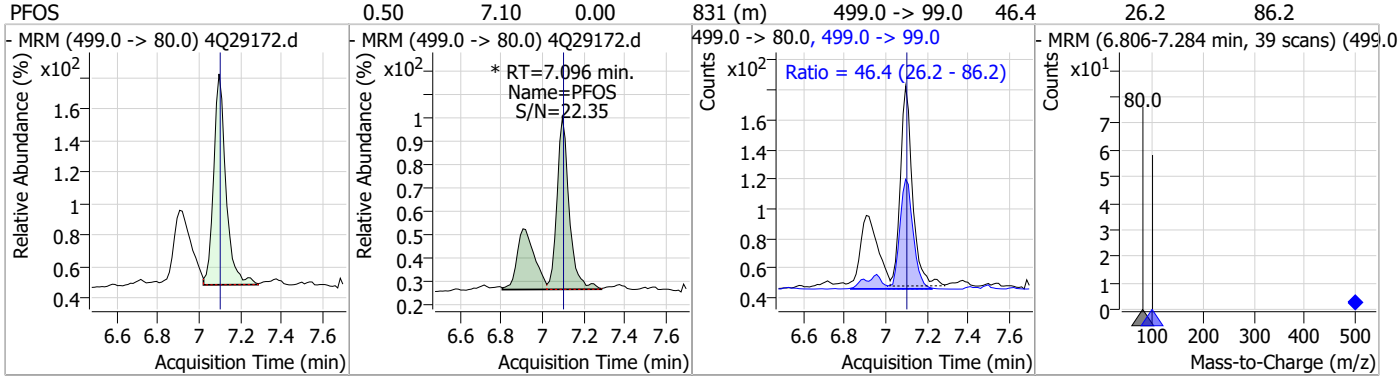


Perfluorinated Compounds by LC/MS/MS

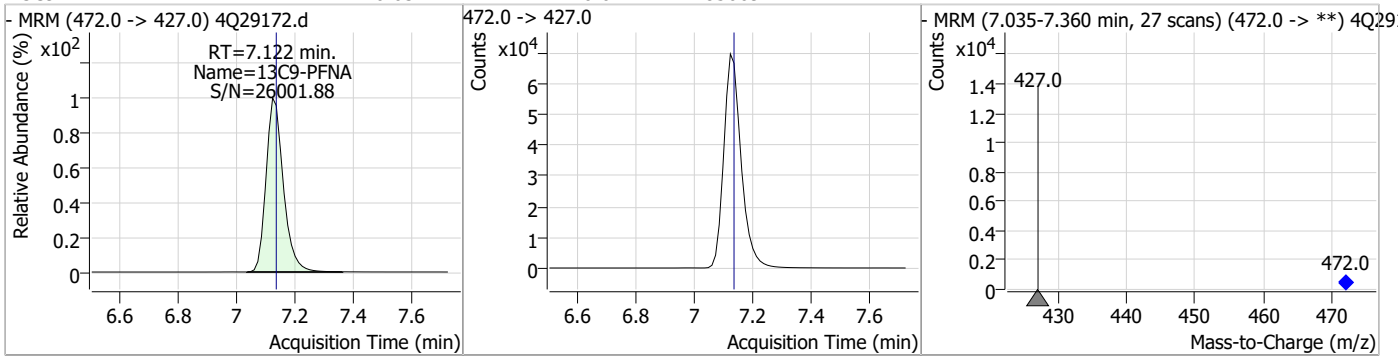
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.63	7.09	0.00	17735				



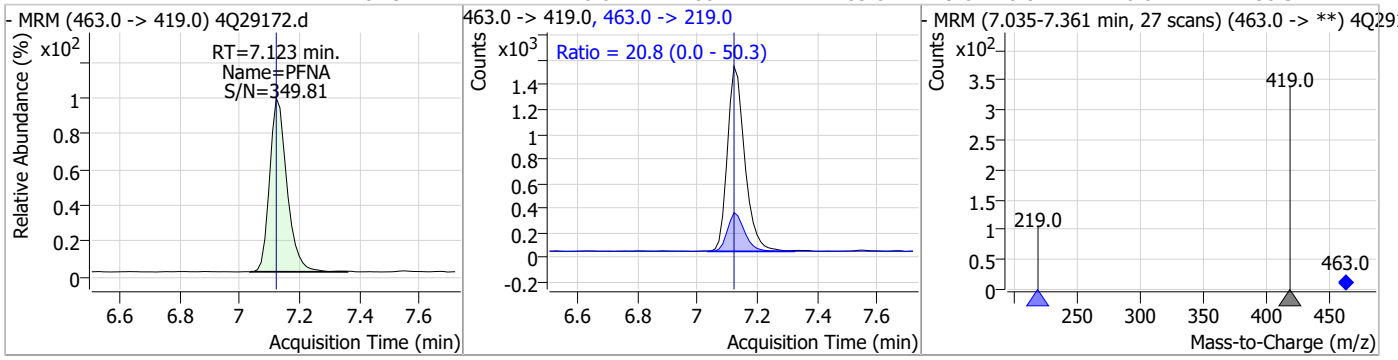
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.50	7.10	0.00	831 (m)	499.0 -> 99.0	46.4	26.2	86.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.03	7.12	-0.01	285069				

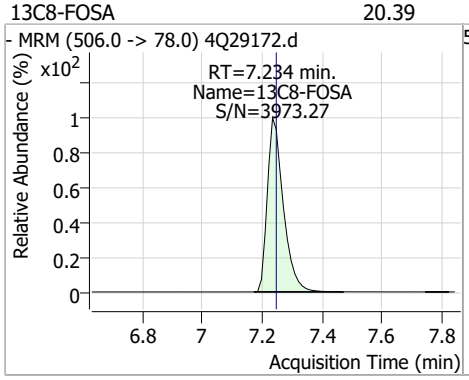


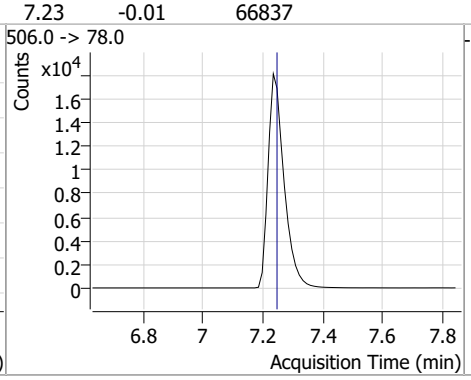
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.49	7.12	-0.01	6027	463.0 -> 219.0	20.8	0.0	50.3

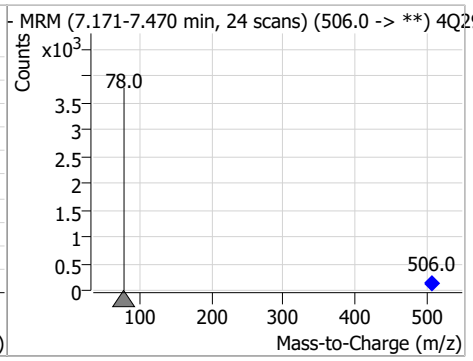


Perfluorinated Compounds by LC/MS/MS

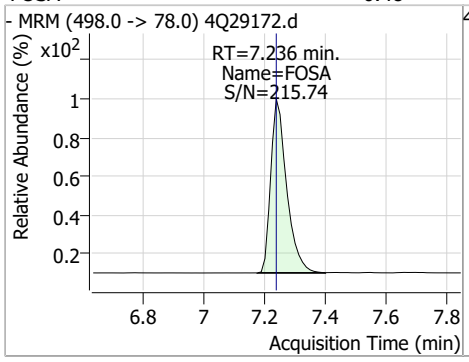
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.39	7.23	-0.01	66837				

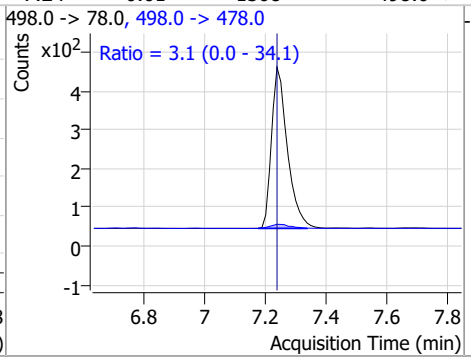


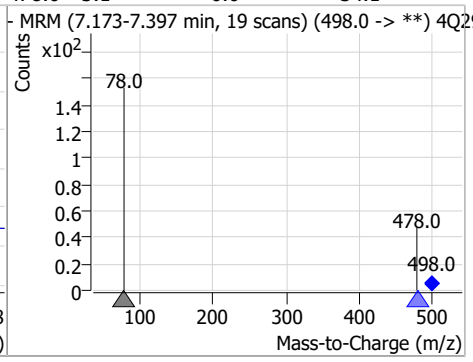




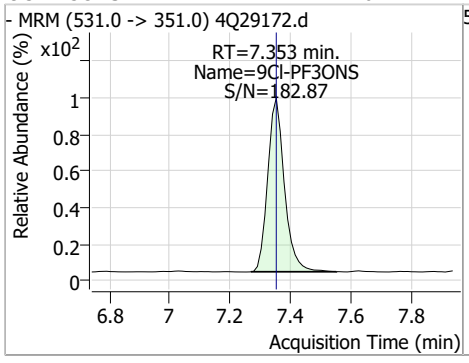
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.48	7.24	-0.01	1508	498.0 -> 478.0	3.1	0.0	34.1

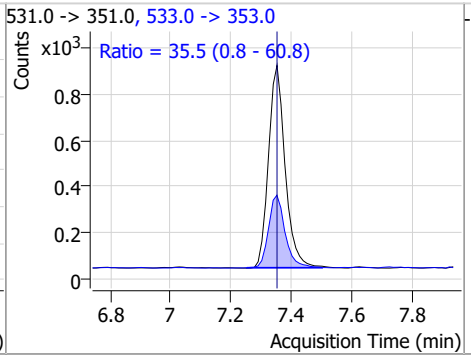


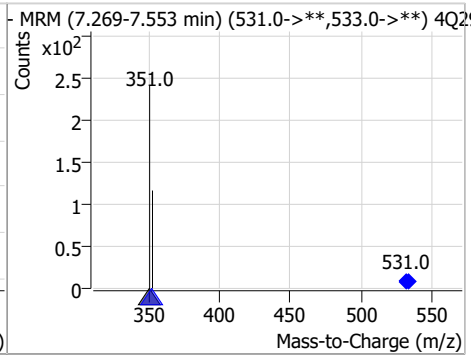




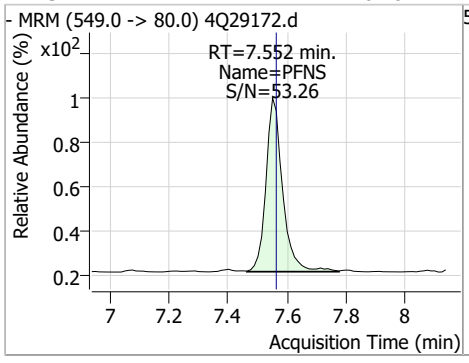
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.44	7.35	0.00	3379	533.0 -> 353.0	35.5	0.8	60.8

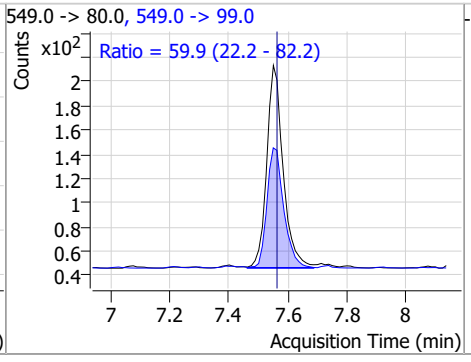


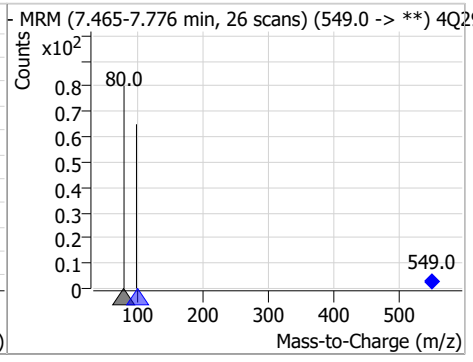




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.48	7.55	-0.01	652	549.0 -> 99.0	59.9	22.2	82.2

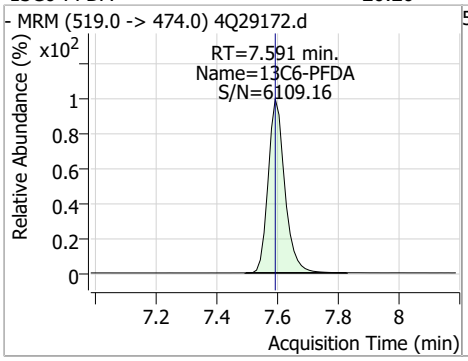


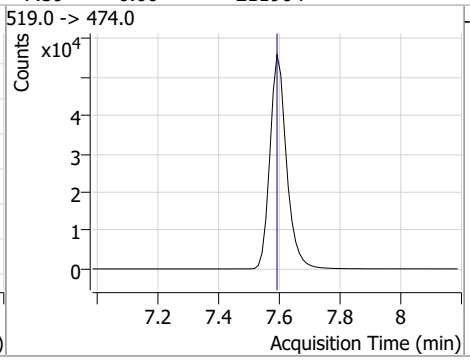


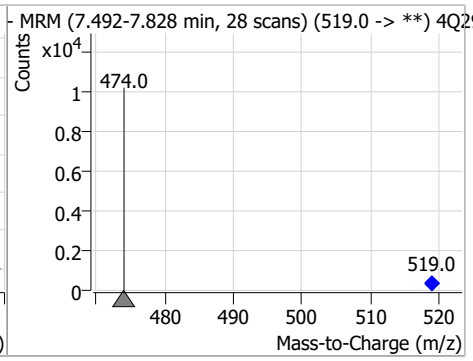


Perfluorinated Compounds by LC/MS/MS

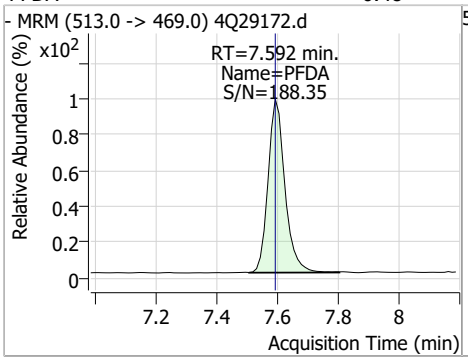
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.20	7.59	0.00	211904				

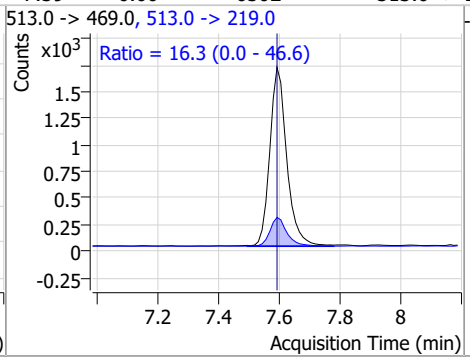


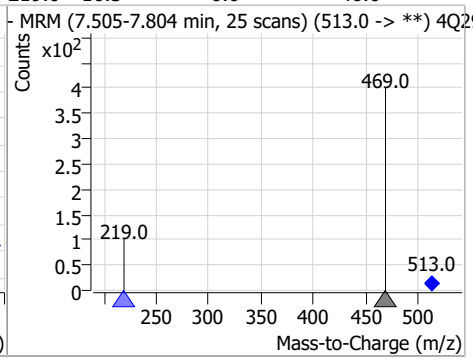




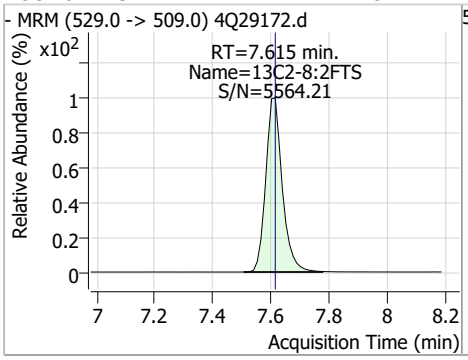
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.48	7.59	0.00	6502	513.0 -> 219.0	16.3	0.0	46.6

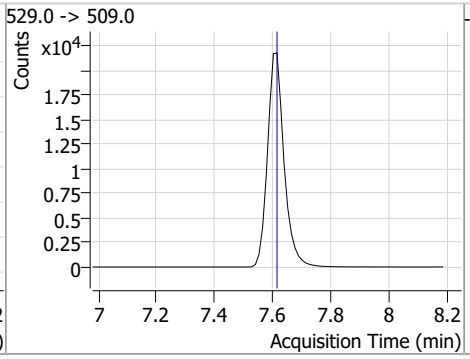


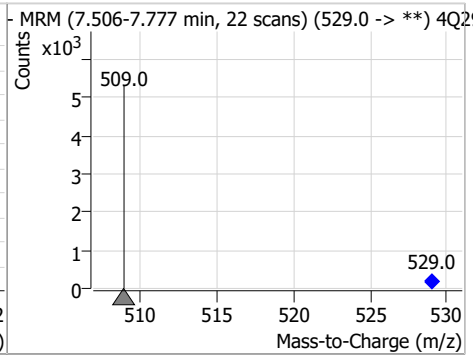




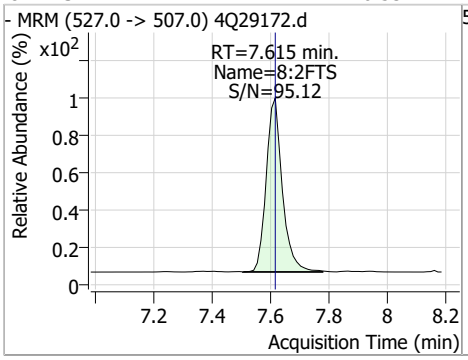
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.27	7.61	0.00	85962				

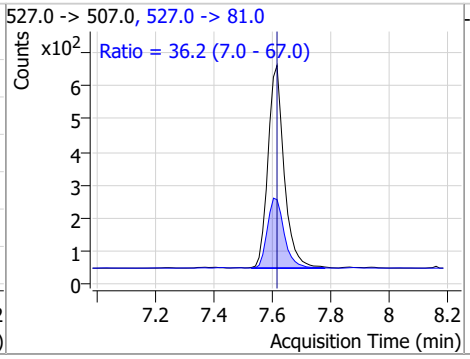


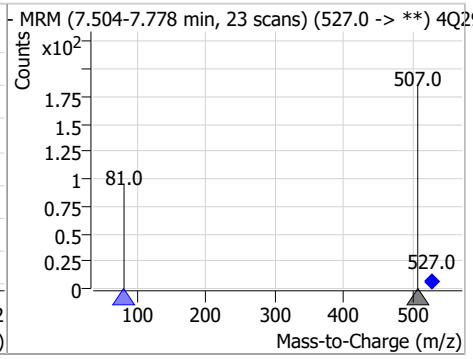




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.53	7.62	0.00	2366	527.0 -> 81.0	36.2	7.0	67.0

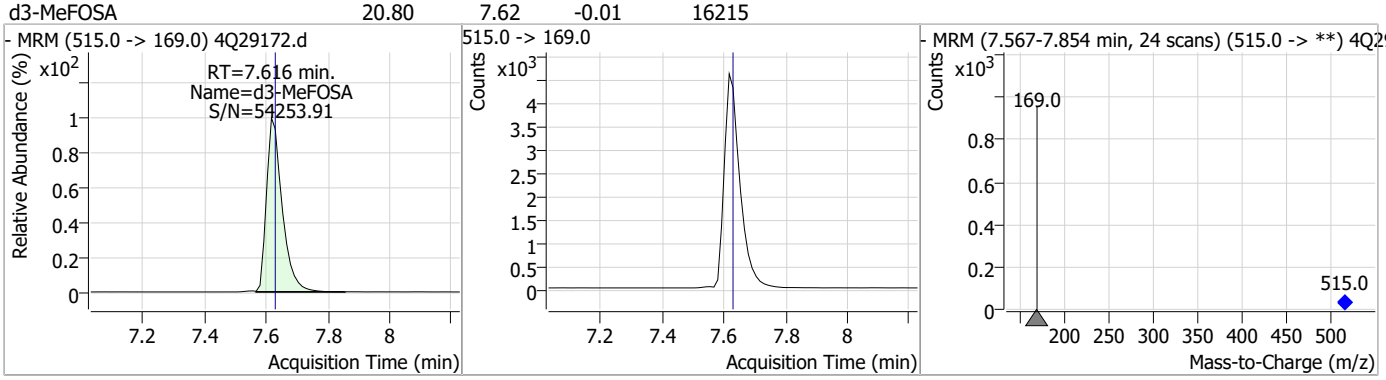




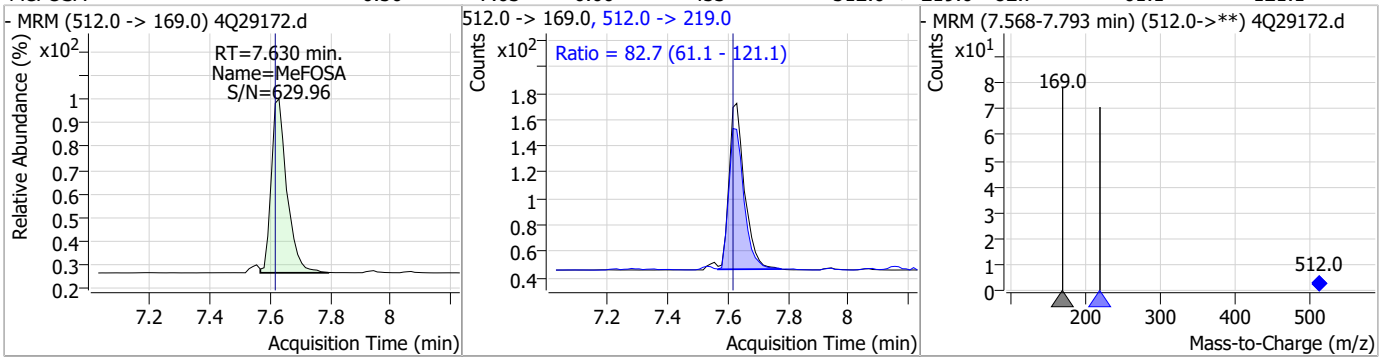


Perfluorinated Compounds by LC/MS/MS

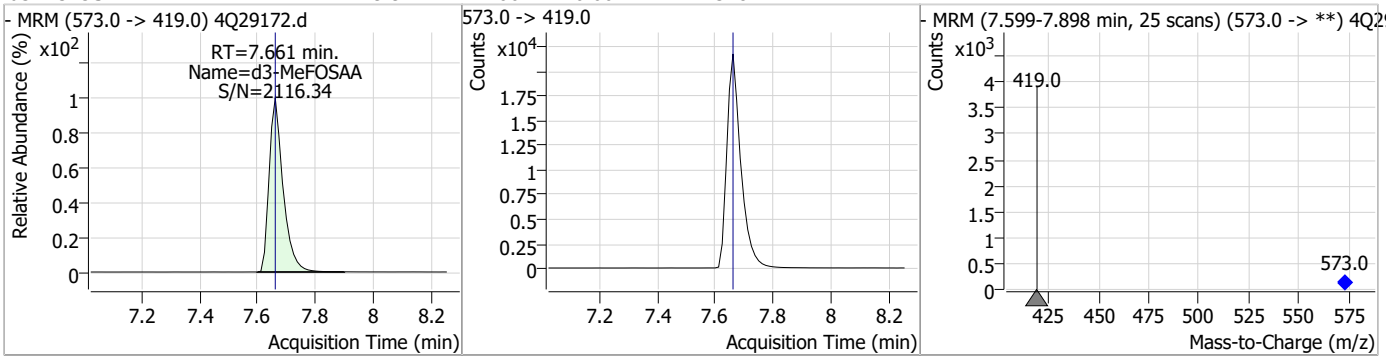
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.80	7.62	-0.01	16215				



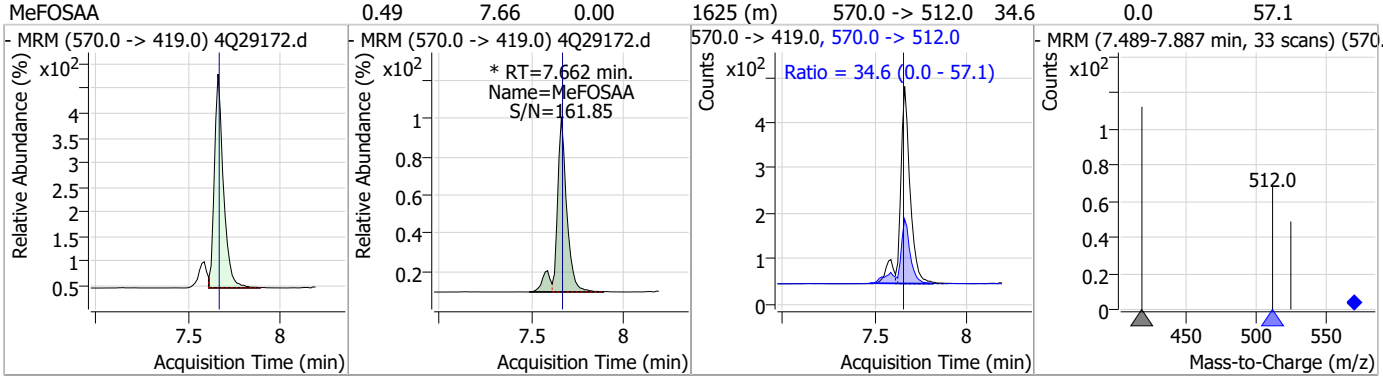
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.50	7.63	0.00	453	512.0 -> 219.0	82.7	61.1	121.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.92	7.66	0.00	72328				

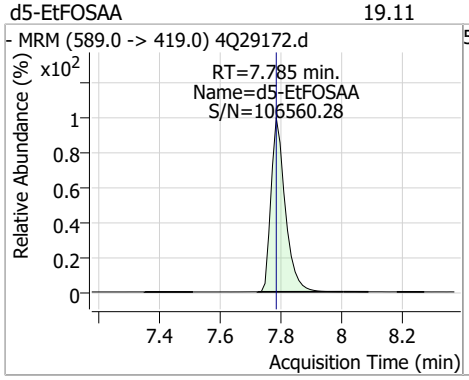


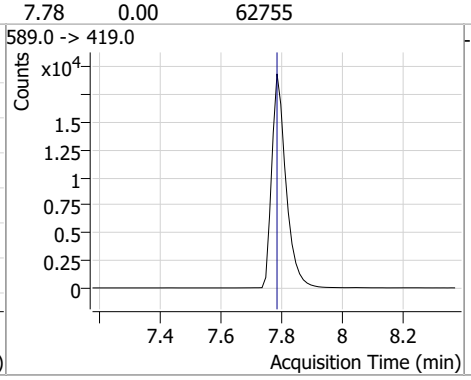
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.49	7.66	0.00	1625 (m)	570.0 -> 512.0	34.6	0.0	57.1

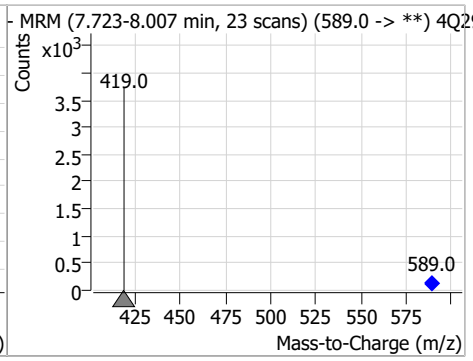


Perfluorinated Compounds by LC/MS/MS

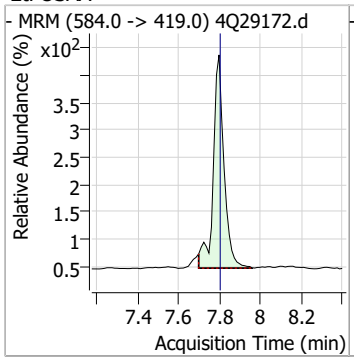
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.11	7.78	0.00	62755				

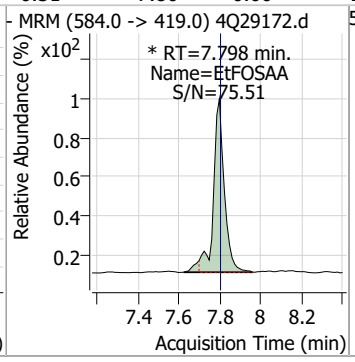


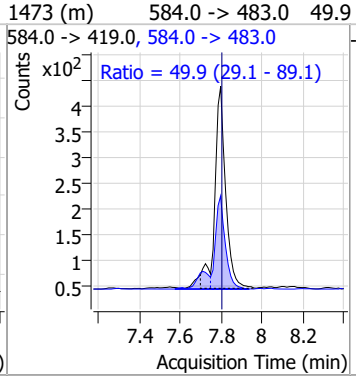


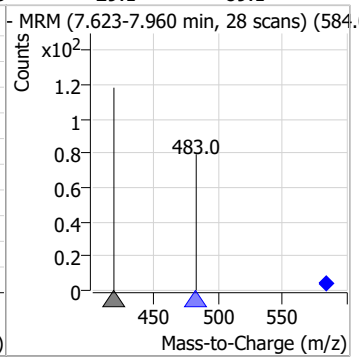


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.51	7.80	0.00	1473 (m)	584.0 -> 483.0	49.9	29.1	89.1

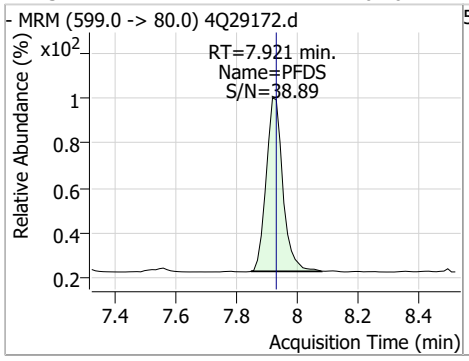


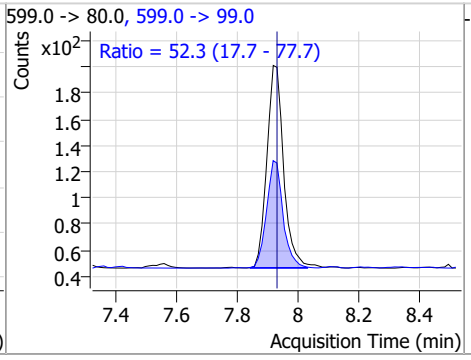


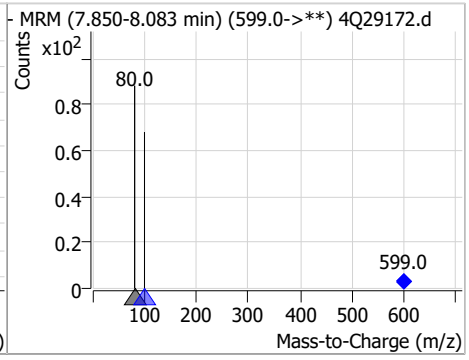




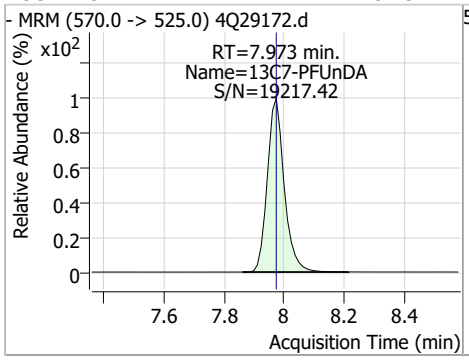
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.46	7.92	-0.01	591	599.0 -> 99.0	52.3	17.7	77.7

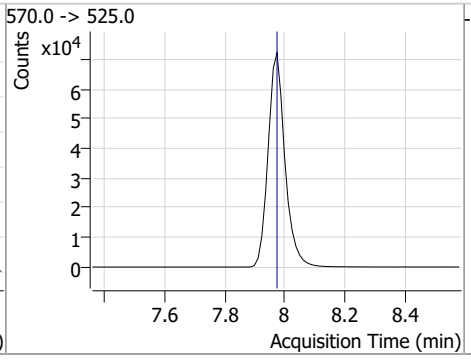


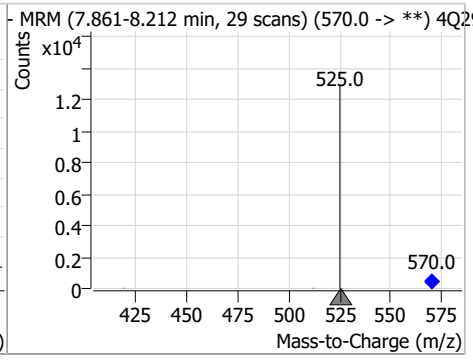




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.73	7.97	0.00	278584				

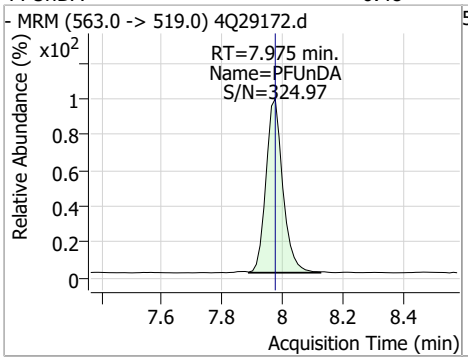


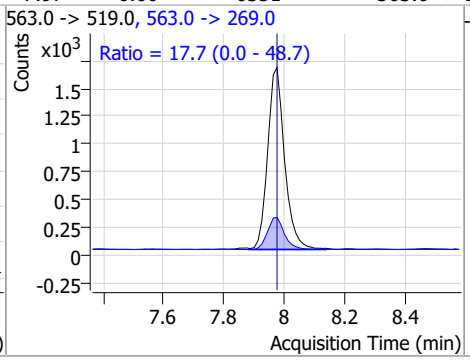


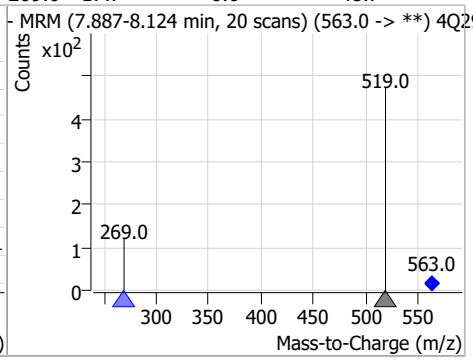


Perfluorinated Compounds by LC/MS/MS

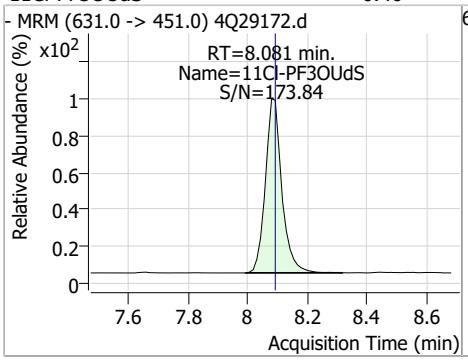
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.48	7.97	0.00	6351	563.0 -> 269.0	17.7	0.0	48.7

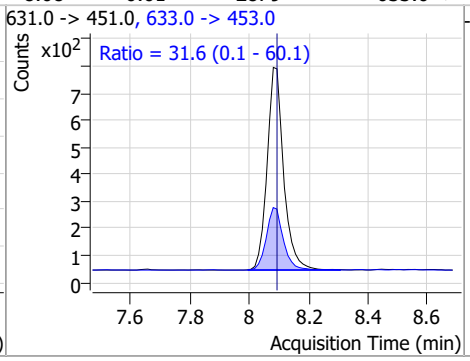


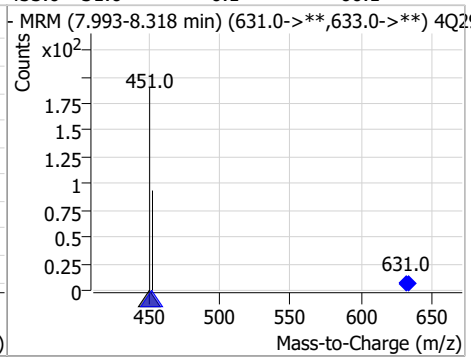




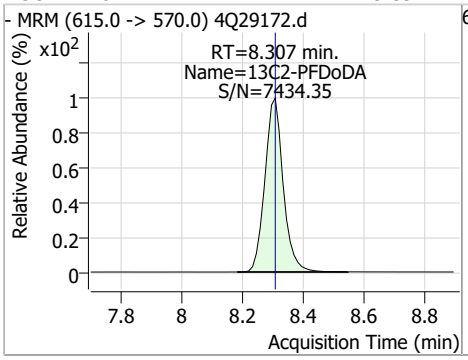
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.46	8.08	-0.01	2879	633.0 -> 453.0	31.6	0.1	60.1

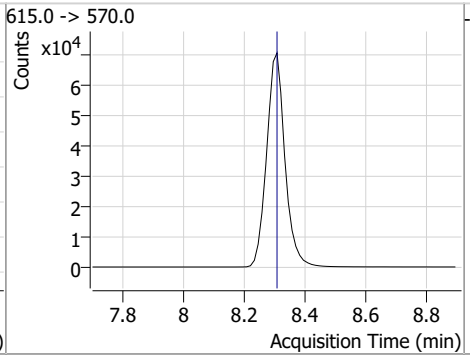


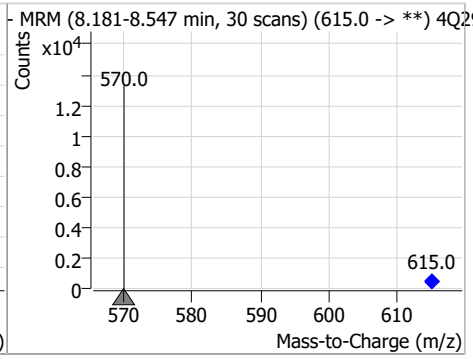




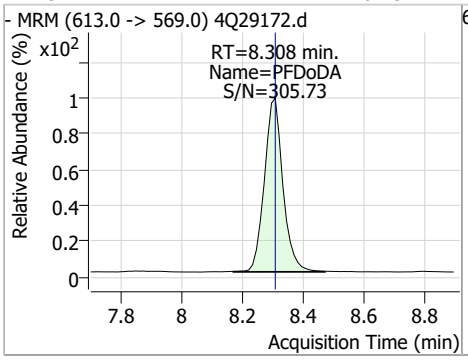
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.39	8.31	0.00	296849				

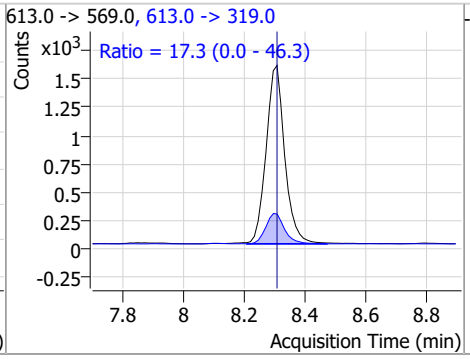


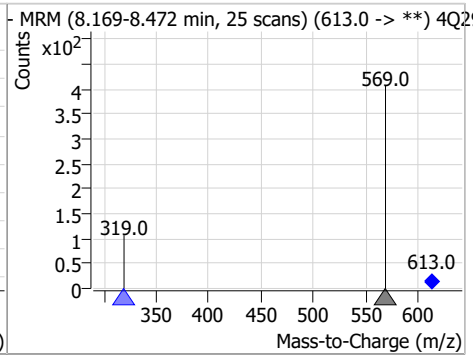




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.48	8.31	0.00	6682	613.0 -> 319.0	17.3	0.0	46.3

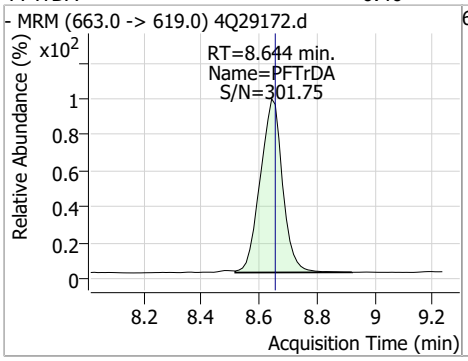


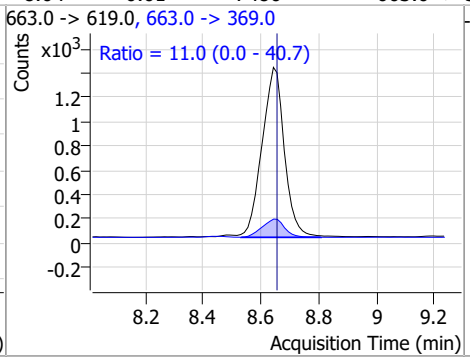


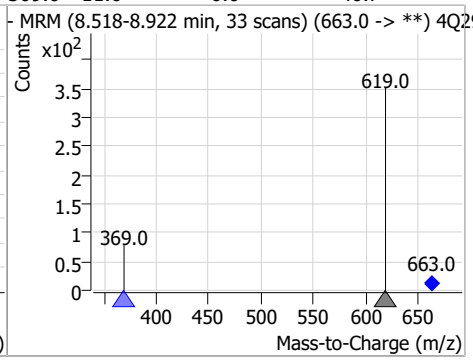


Perfluorinated Compounds by LC/MS/MS

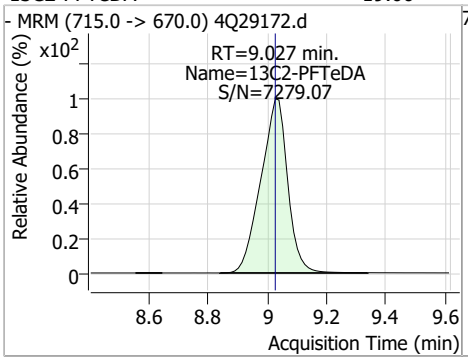
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.46	8.64	-0.01	7486	663.0 -> 369.0	11.0	0.0	40.7

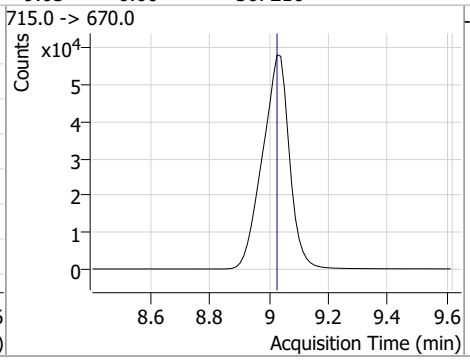


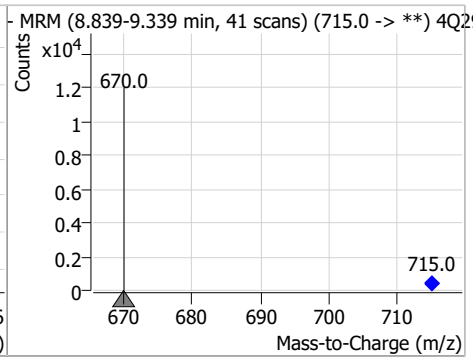




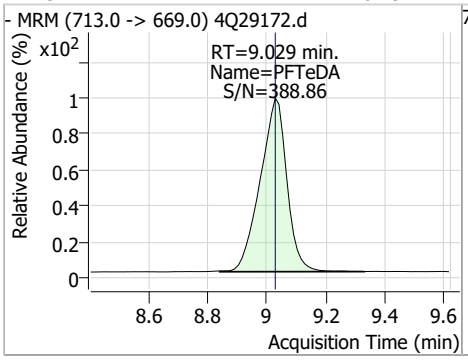
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.06	9.03	0.00	367210				

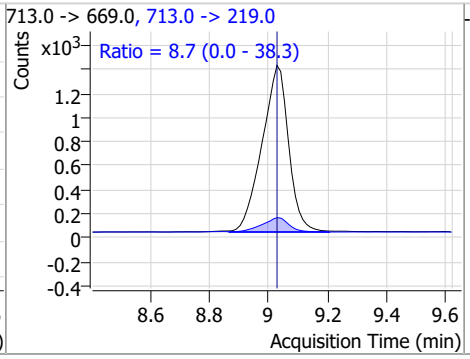


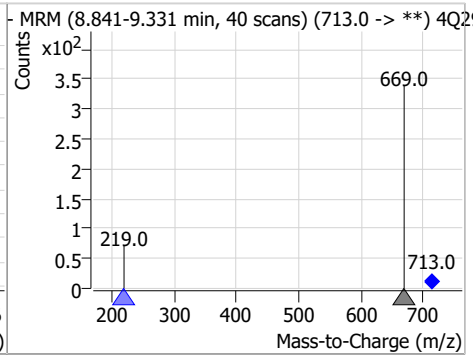




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.49	9.03	0.00	8683	713.0 -> 219.0	8.7	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29172.D
Injection Time: 05/27/22 11:42
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29173.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 11:58:46 AM
Sample Name : ic419-1
Vial : P1-A3
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.875	217.0 -> 172.0	95777	20.00	µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	148613	20.00	µg/L	0.000
M5-PFHxA	4.979	318.0 -> 273.0	183860	20.00	µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	176481	20.00	µg/L	-0.012
M8-PFOA	6.551	421.0 -> 376.0	283838	20.00	µg/L	-0.012
M9-PFNA	7.122	472.0 -> 427.0	294916	20.00	µg/L	-0.012
M6-PFDA	7.591	519.0 -> 474.0	219269	20.00	µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	292619	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	313698	20.00	µg/L	0.000
M2-PFTeDA	9.027	715.0 -> 670.0	390644	20.00	µg/L	0.000
M8-FOSA	7.234	506.0 -> 78.0	70702	20.00	µg/L	-0.012
M3-PFBS	3.949	302.0 -> 99.0	11137	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	11123	20.00	µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	18704	20.00	µg/L	0.000
M2-4:2FTS	4.875	329.0 -> 309.0	63984	20.00	µg/L	0.000
M2-6:2FTS	6.523	429.0 -> 409.0	104007	20.00	µg/L	-0.012
M2-8:2FTS	7.602	529.0 -> 509.0	90159	20.00	µg/L	-0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	76689	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10983	20.00	µg/L	-0.012
M3-MeFOSA	7.616	515.0 -> 169.0	16816	20.00	µg/L	-0.012
M5-EtFOSAA	7.785	589.0 -> 419.0	67620	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	63984	18.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	6.523	429.0 -> 409.0	104007	19.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C2-8:2FTS	7.602	529.0 -> 509.0	90159	20.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-PFDoDA	8.307	615.0 -> 570.0	313698	20.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFTeDA	9.027	715.0 -> 670.0	390644	20.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C3-PFBS	3.949	302.0 -> 99.0	11137	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C3-PFHxS	5.898	402.0 -> 99.0	11123	20.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFBA	1.875	217.0 -> 172.0	95777	20.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFHpA	5.864	367.0 -> 322.0	176481	20.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C5-PFHxA	4.979	318.0 -> 273.0	183860	20.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C5-PFPeA	3.682	268.0 -> 223.0	148613	20.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C6-PFDA	7.591	519.0 -> 474.0	219269	20.90	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

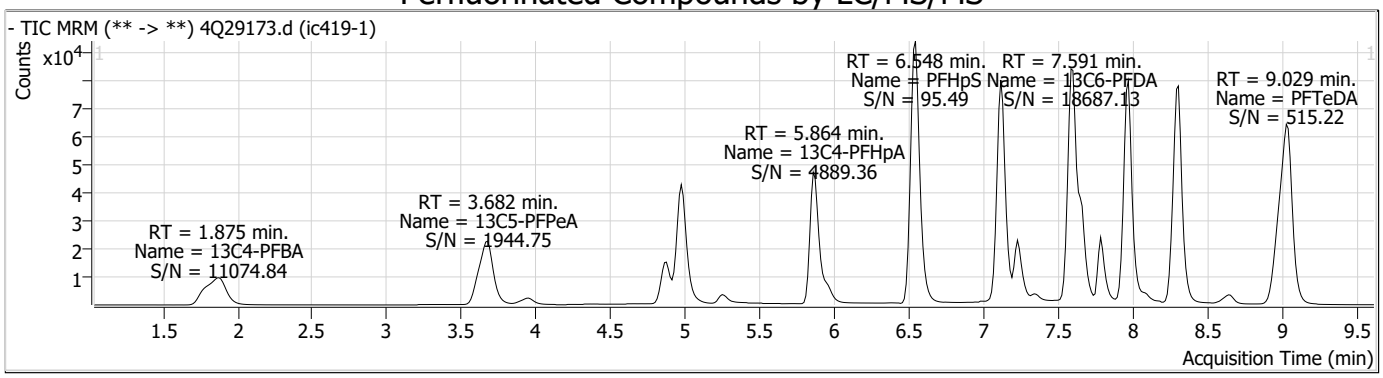
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C7-PFUnDA	7.973	570.0 -> 525.0	292619	20.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C8-FOSA	7.234	506.0 -> 78.0	70702	21.57 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C8-PFOA	6.551	421.0 -> 376.0	283838	20.91 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-PFOS	7.094	507.0 -> 99.0	18704	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C9-PFNA	7.122	472.0 -> 427.0	294916	20.72 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
d3-MeFOSAA	7.661	573.0 -> 419.0	76689	21.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10977	20.67 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
d3-MeFOSA	7.616	515.0 -> 169.0	16816	21.57 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
d5-EtFOSAA	7.785	589.0 -> 419.0	67643	20.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	3732	1.01 µg/L		91
6:2FTS	6.524	427.0 -> 407.0	5267	0.99 µg/L		96
8:2FTS	7.603	527.0 -> 507.0	5013	1.07 µg/L		94
EtFOSAA	7.786	584.0 -> 419.0	3163	1.02 µg/L	m	85
FOSA	7.236	498.0 -> 78.0	3300	1.00 µg/L		99
MeFOSAA	7.662	570.0 -> 419.0	3323	0.94 µg/L	m	92
PFBA	1.869	213.0 -> 169.0	1472	0.97 µg/L		100
PFBS	3.941	299.0 -> 80.0	1766	1.00 µg/L		99
PFDA	7.592	513.0 -> 469.0	13162	0.94 µg/L		96
PFDoDA	8.308	613.0 -> 569.0	13741	0.94 µg/L		98
PFDS	7.921	599.0 -> 80.0	1187	0.89 µg/L		89
PFHpA	5.866	363.0 -> 319.0	11569	0.94 µg/L		99
PFHpS	6.548	449.0 -> 80.0	1539	1.09 µg/L		98
PFHxA	4.980	313.0 -> 269.0	8675	0.93 µg/L		99
PFHxS	5.900	399.0 -> 80.0	1429	0.99 µg/L	m	98
PFNA	7.123	463.0 -> 419.0	11928	0.94 µg/L		98
PFNS	7.552	549.0 -> 80.0	1303	0.92 µg/L		99
PFOA	6.552	413.0 -> 369.0	15072	0.96 µg/L		99
PFOS	7.096	499.0 -> 80.0	1747	1.00 µg/L	m	93
PFPeA	3.684	263.0 -> 219.0	6430	0.98 µg/L		100
PFPeS	5.085	349.0 -> 80.0	1202	1.04 µg/L		96
PFTeDA	9.029	713.0 -> 669.0	18117	0.97 µg/L		98
PFTrDA	8.644	663.0 -> 619.0	15480	0.91 µg/L		100
PFUnDA	7.975	563.0 -> 519.0	13355	0.96 µg/L		98
11Cl-PF3OUdS	8.081	631.0 -> 451.0	6162	0.93 µg/L		95
9Cl-PF3ONS	7.353	531.0 -> 351.0	6572	0.83 µg/L		95
ADONA	5.965	377.0 -> 251.0	13682	0.93 µg/L		98
HFPO-DA	5.252	329.0 -> 169.0	1697	0.99 µg/L		97
MeFOSA	7.630	512.0 -> 169.0	951	1.02 µg/L		94

 # = Qualifier out of range, m = manually integrated, + = Area summed

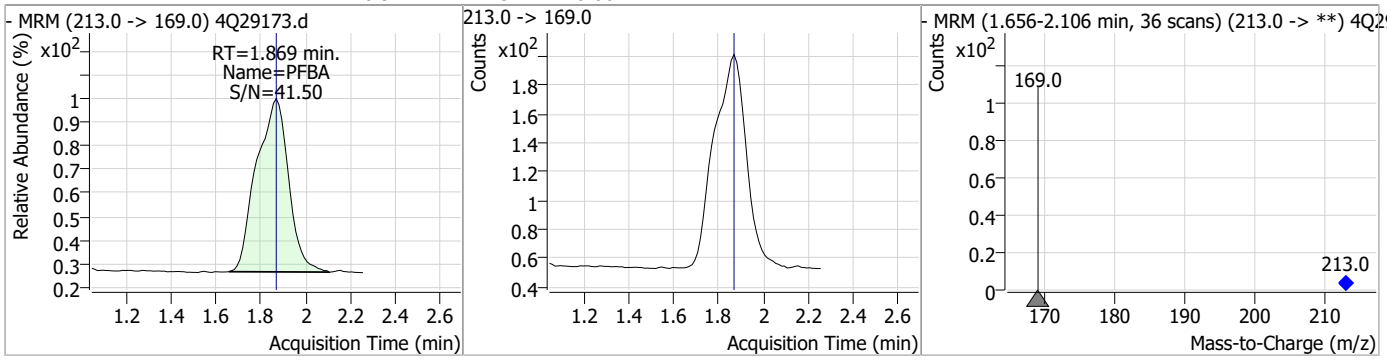
7.7.18

7

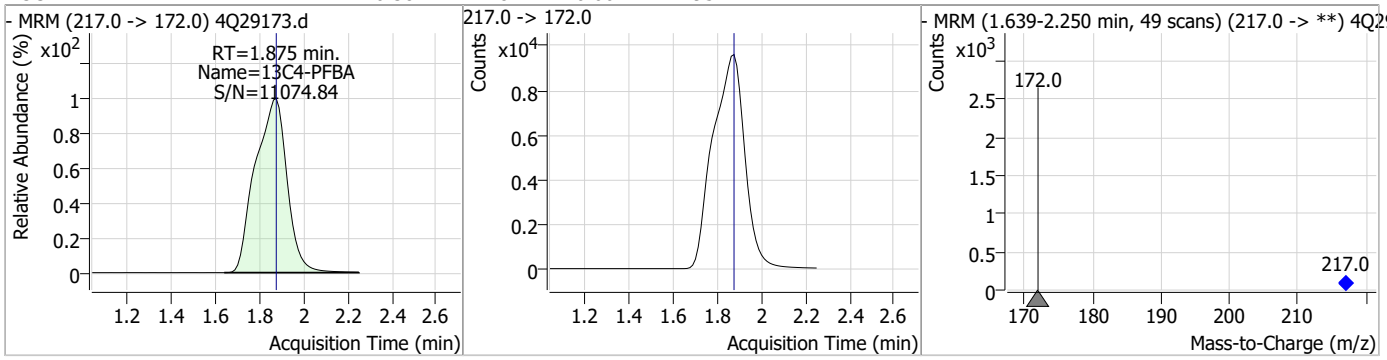
Perfluorinated Compounds by LC/MS/MS



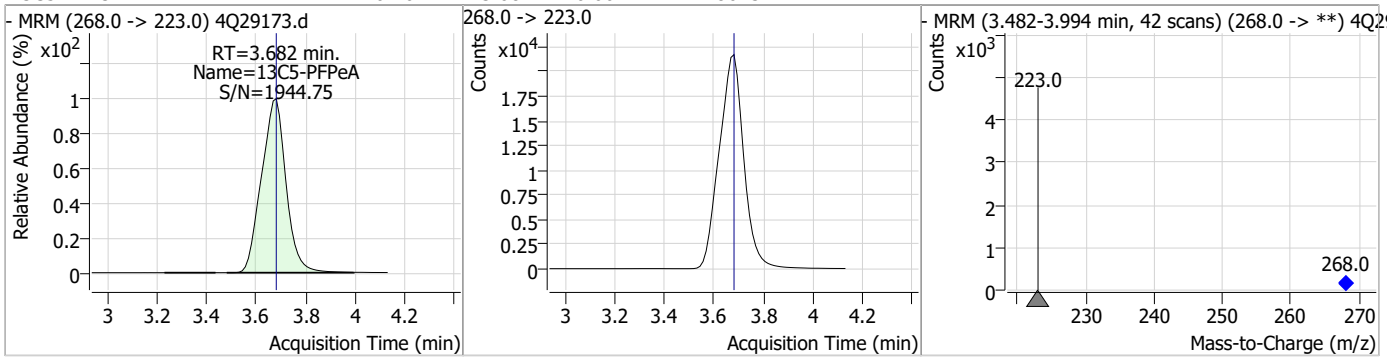
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.97	1.87	0.00	1472				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.38	1.87	0.00	95777				

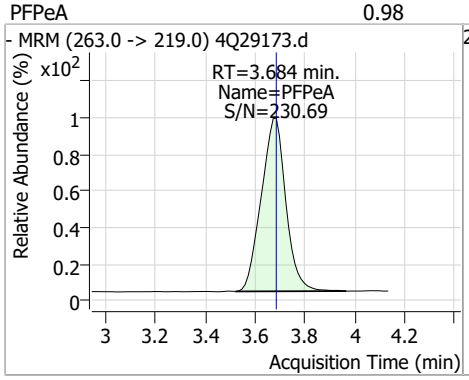


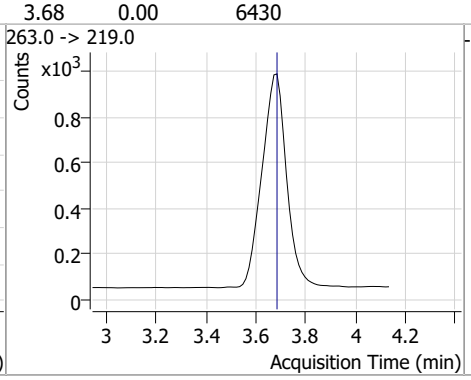
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.26	3.68	0.00	148613				

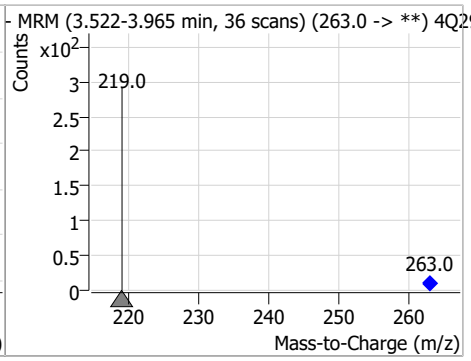


Perfluorinated Compounds by LC/MS/MS

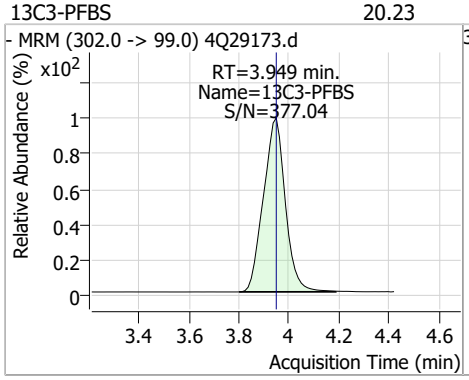
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.98	3.68	0.00	6430				

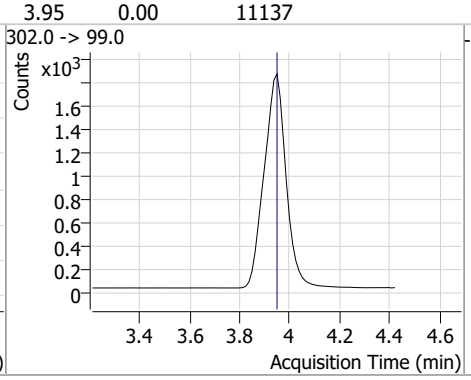


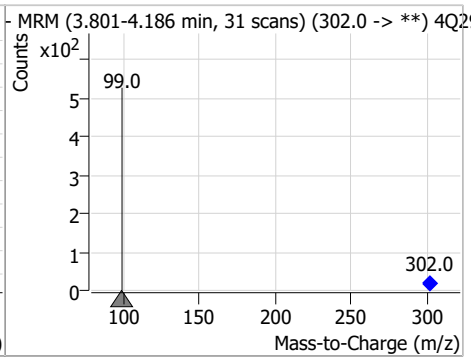




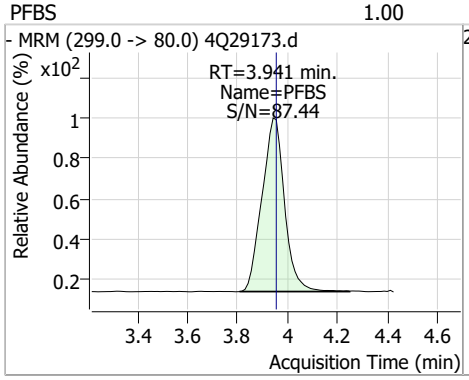
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.23	3.95	0.00	11137				

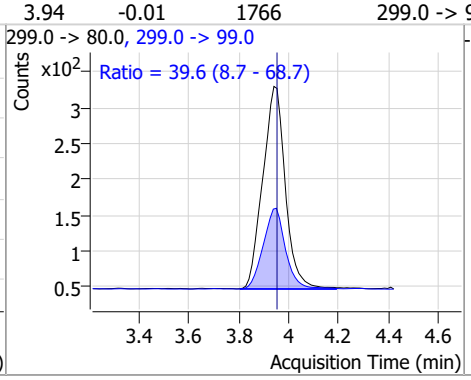


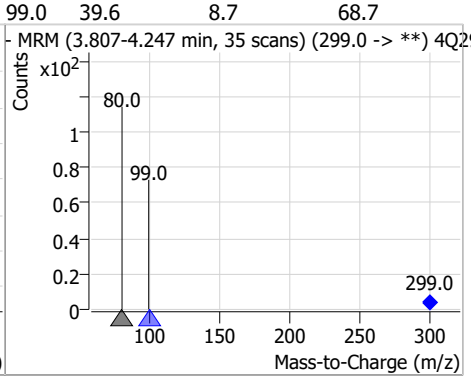




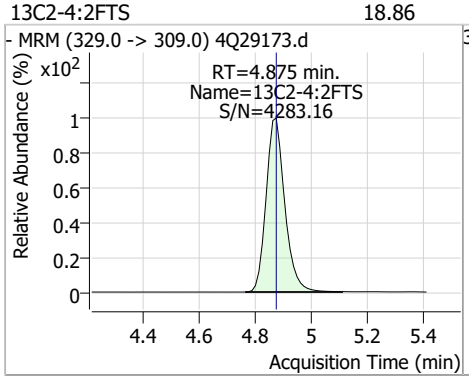
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.00	3.94	-0.01	1766	299.0 -> 99.0	39.6	8.7	68.7

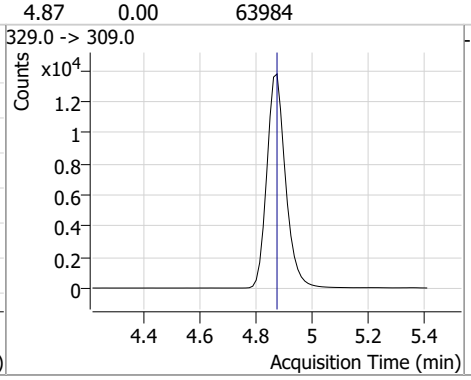


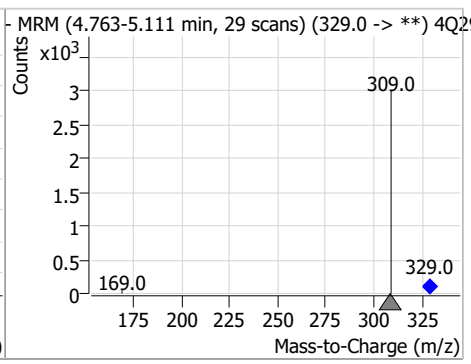




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.86	4.87	0.00	63984				

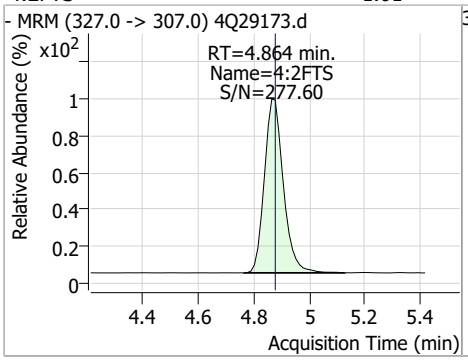


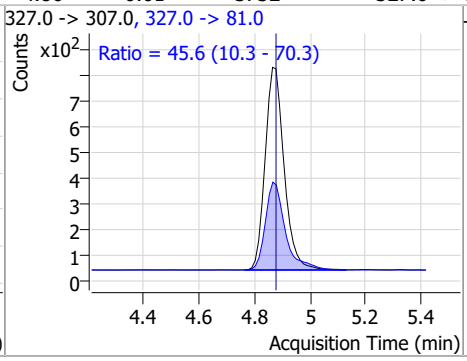


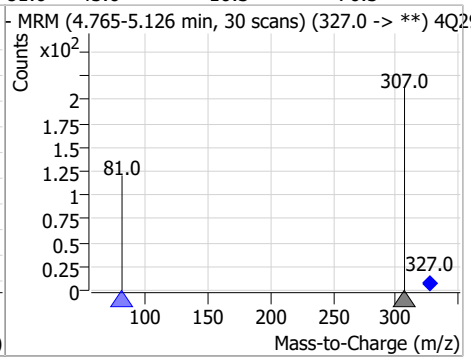


Perfluorinated Compounds by LC/MS/MS

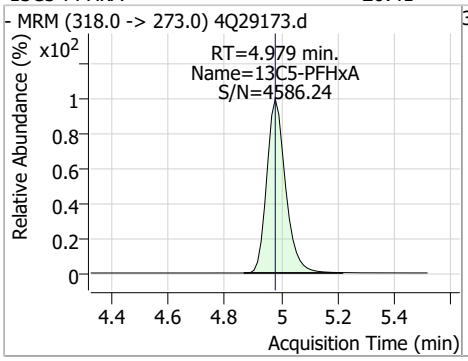
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	4.86	-0.01	3732	327.0 -> 81.0	45.6	10.3	70.3

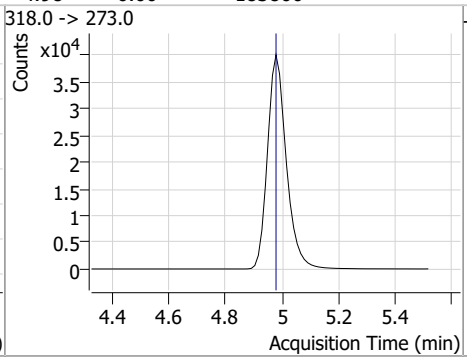


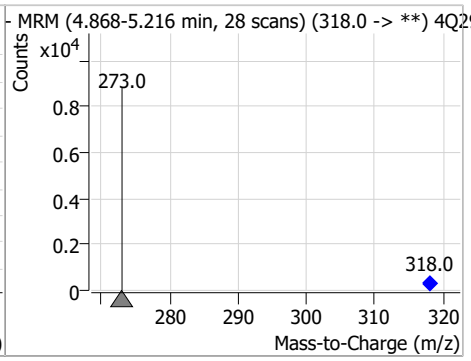




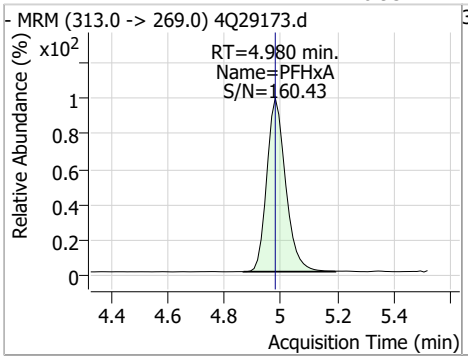
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.41	4.98	0.00	183860				

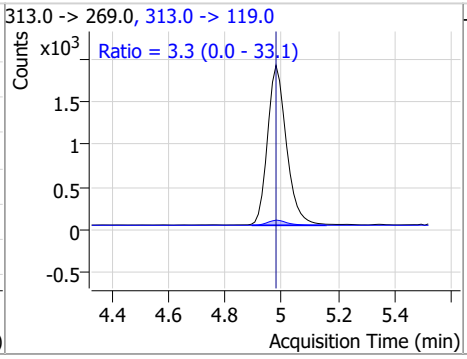


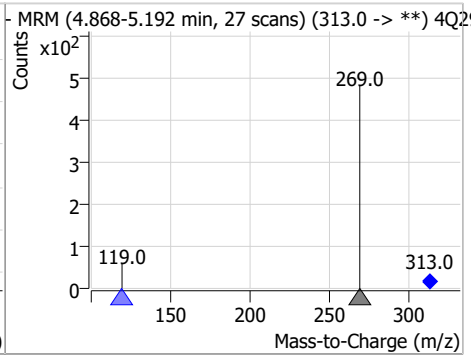




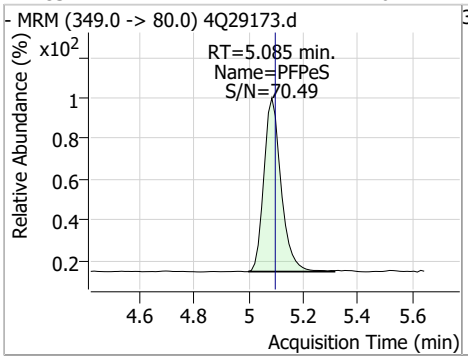
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.93	4.98	0.00	8675	313.0 -> 119.0	3.3	0.0	33.1

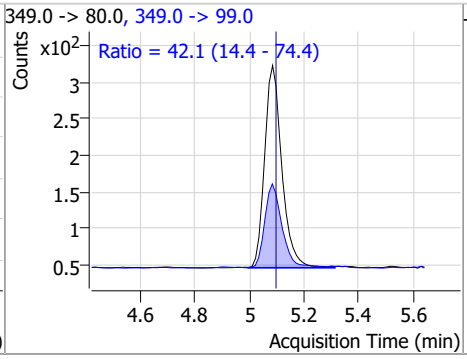


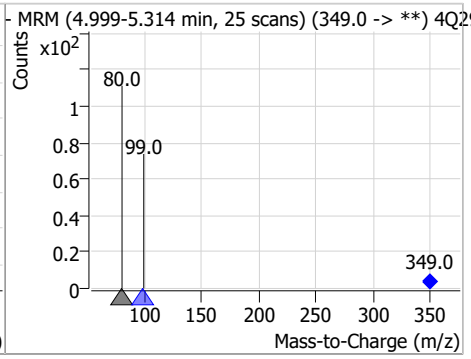




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.04	5.09	-0.01	1202	349.0 -> 99.0	42.1	14.4	74.4

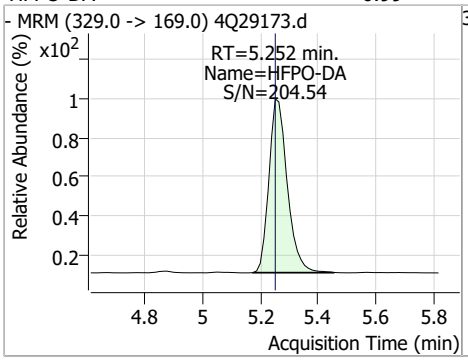


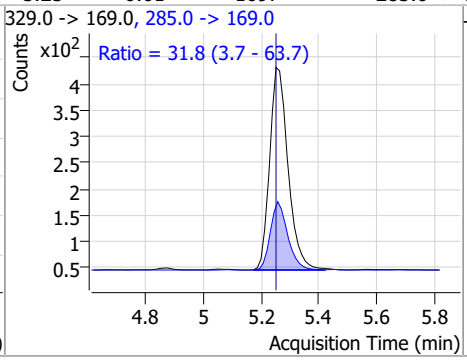


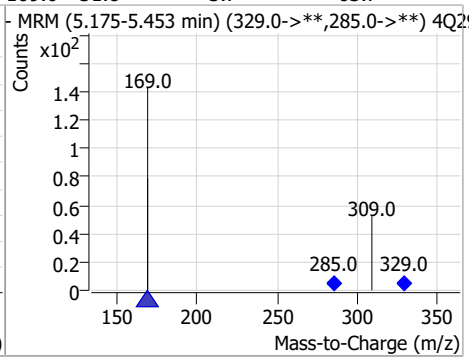


Perfluorinated Compounds by LC/MS/MS

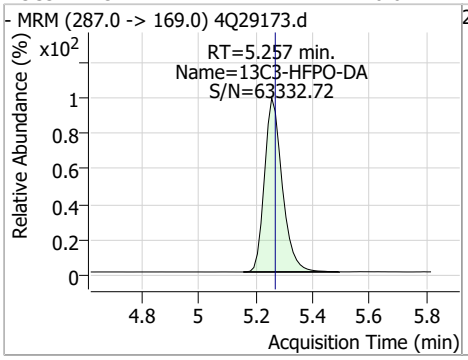
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.99	5.25	-0.01	1697	285.0 -> 169.0	31.8	3.7	63.7

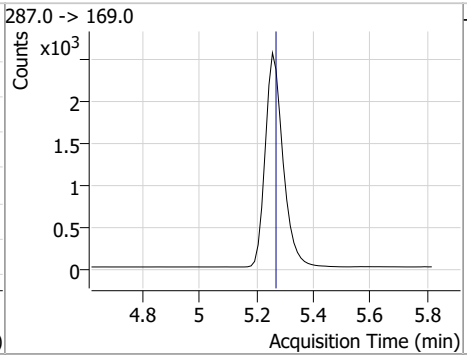


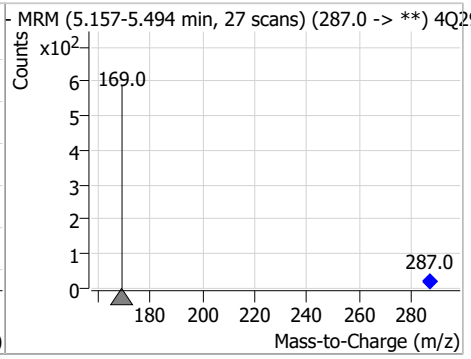




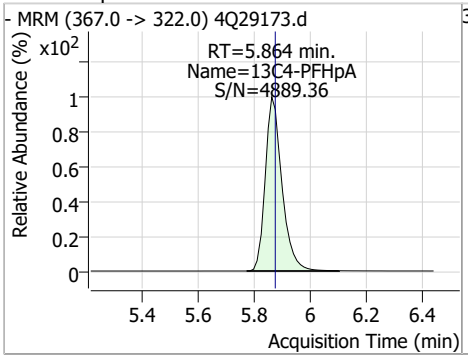
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.67	5.26	-0.01	10977				

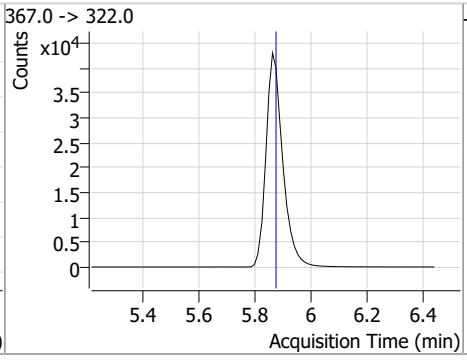


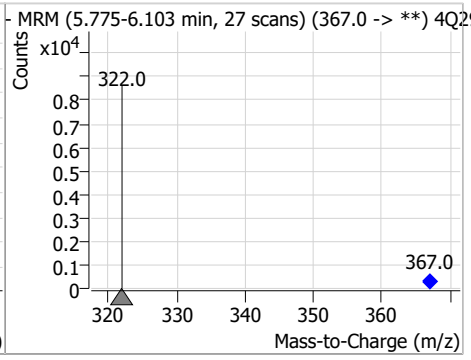




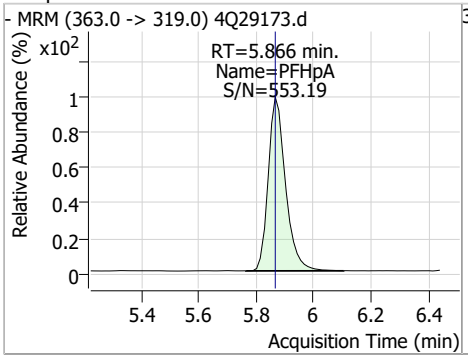
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	5.86	-0.01	176481				

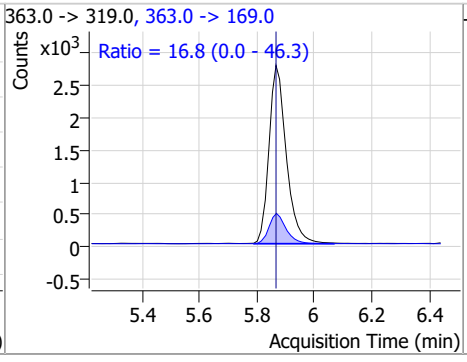


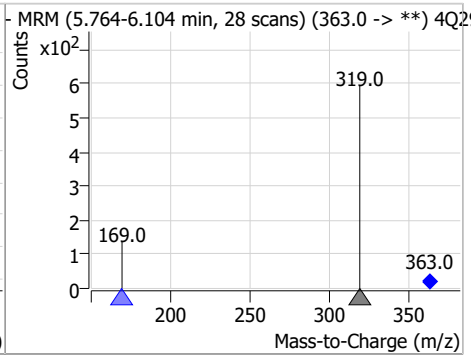




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	5.87	-0.01	11569	363.0 -> 169.0	16.8	0.0	46.3

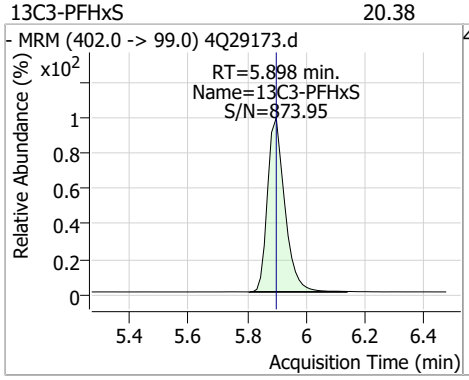


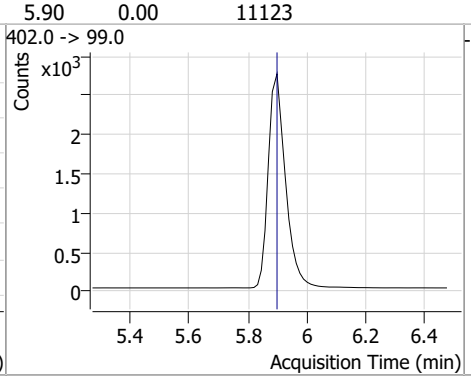


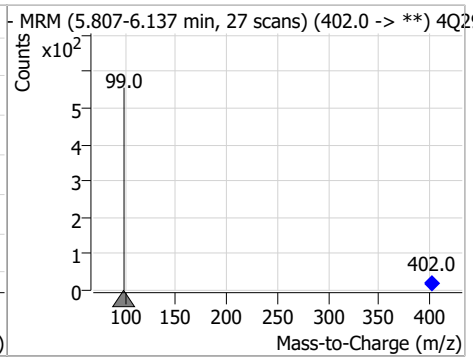


Perfluorinated Compounds by LC/MS/MS

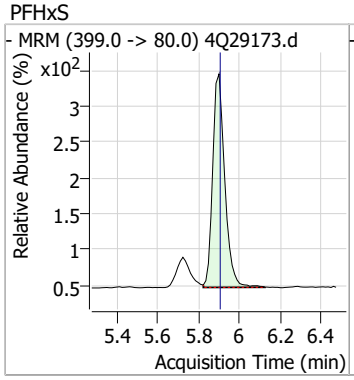
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.38	5.90	0.00	11123				

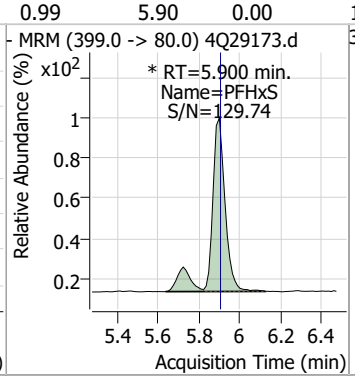


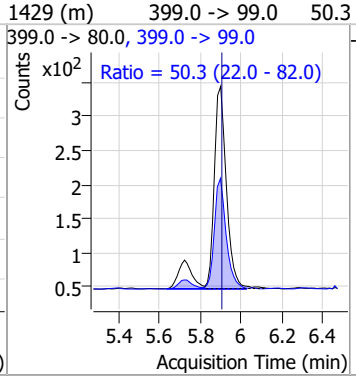


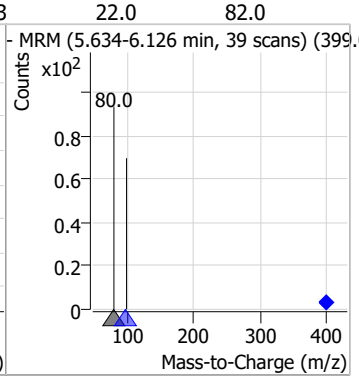


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.99	5.90	0.00	1429 (m)	399.0 -> 99.0	50.3	22.0	82.0

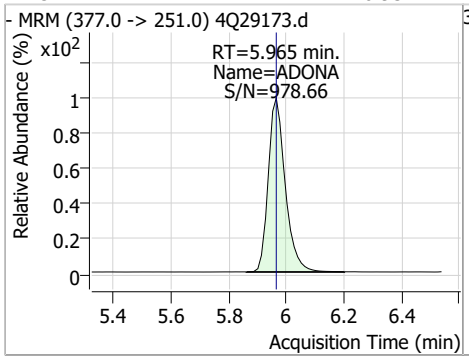


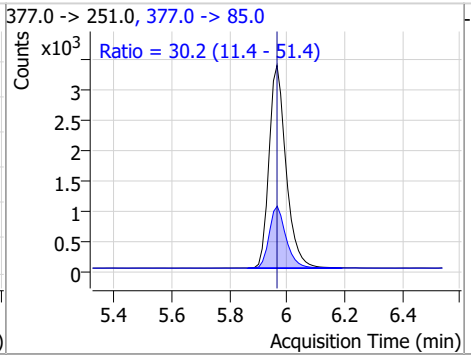


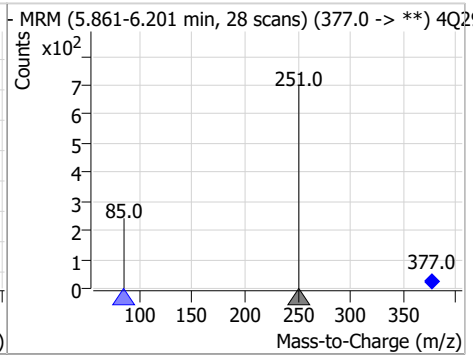




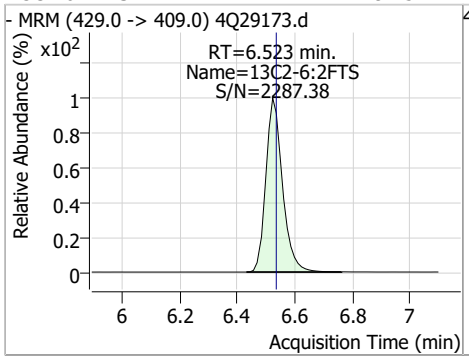
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.93	5.96	0.00	13682	377.0 -> 85.0	30.2	11.4	51.4

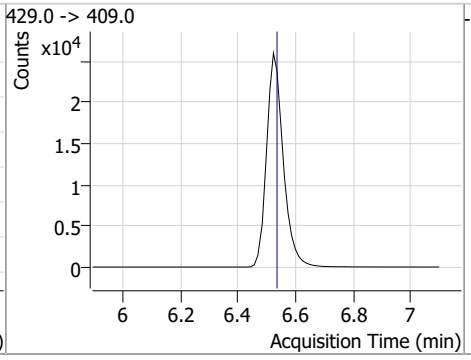


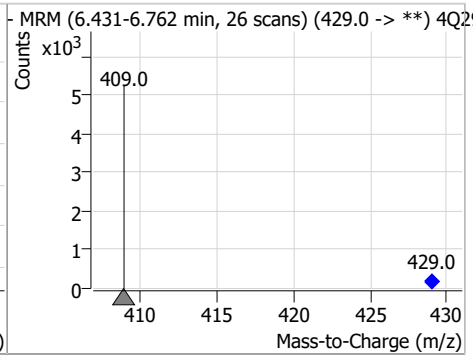




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.75	6.52	-0.01	104007				

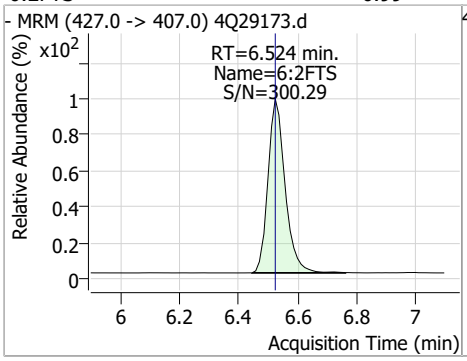


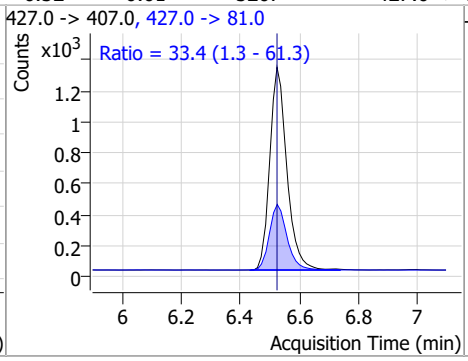


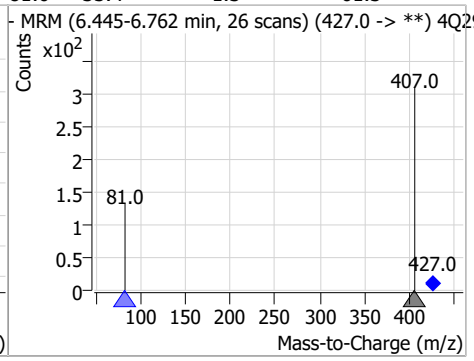


Perfluorinated Compounds by LC/MS/MS

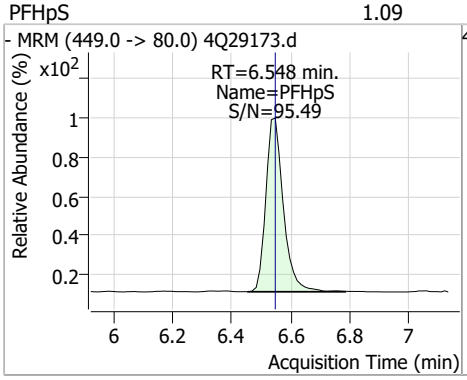
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.99	6.52	-0.01	5267	427.0 -> 81.0	33.4	1.3	61.3

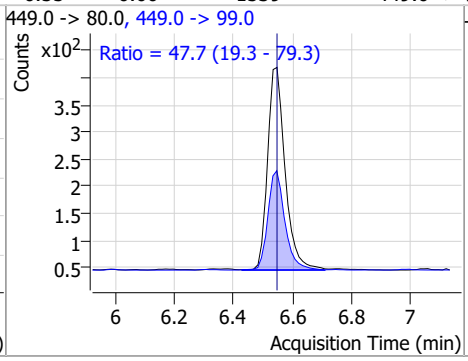


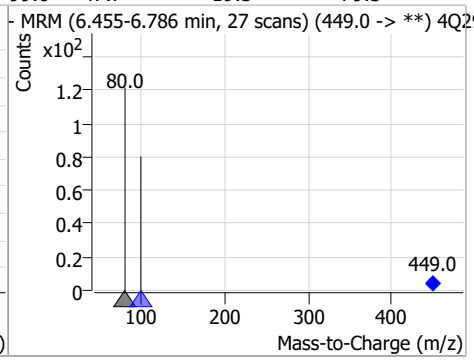




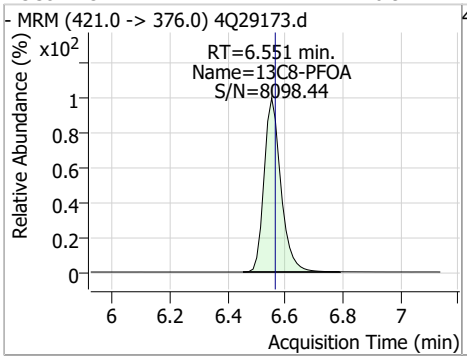
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.09	6.55	0.00	1539	449.0 -> 99.0	47.7	19.3	79.3

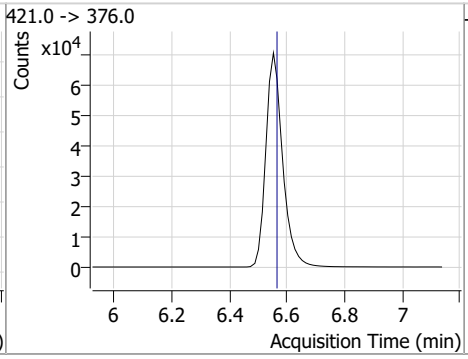


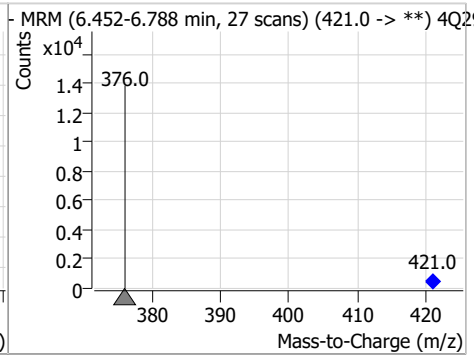




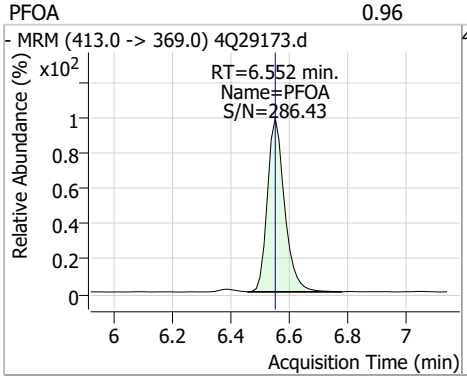
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.91	6.55	-0.01	283838				

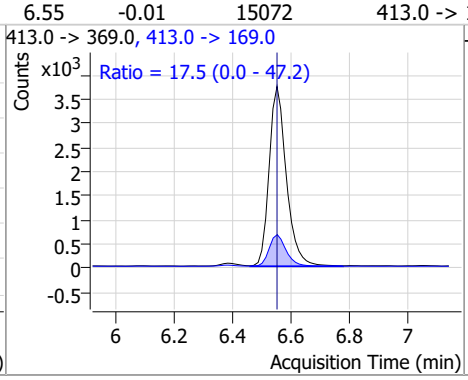


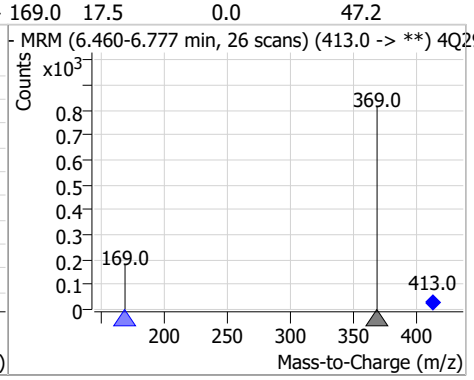




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.96	6.55	-0.01	15072	413.0 -> 169.0	17.5	0.0	47.2

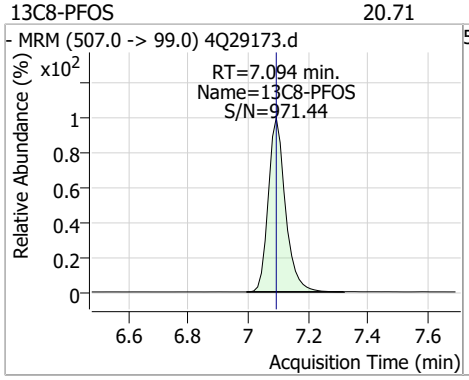


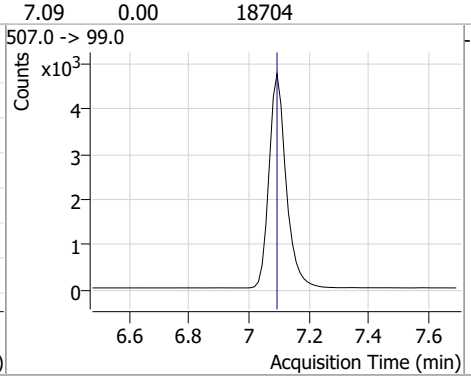


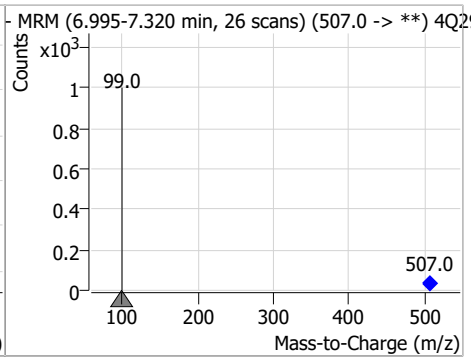


Perfluorinated Compounds by LC/MS/MS

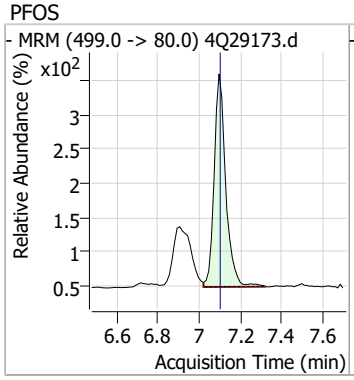
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.71	7.09	0.00	18704				

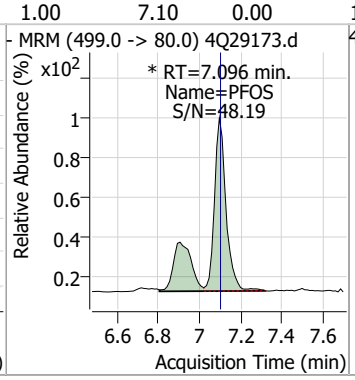


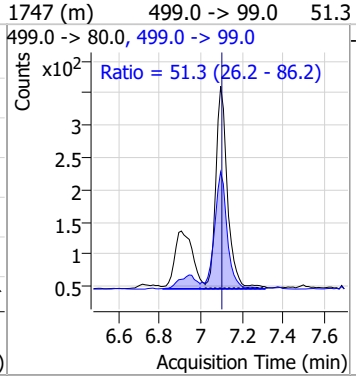


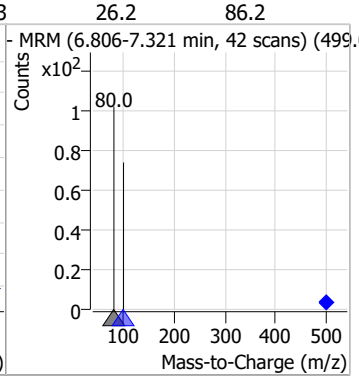


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	7.10	0.00	1747 (m)	499.0 -> 99.0	51.3	26.2	86.2

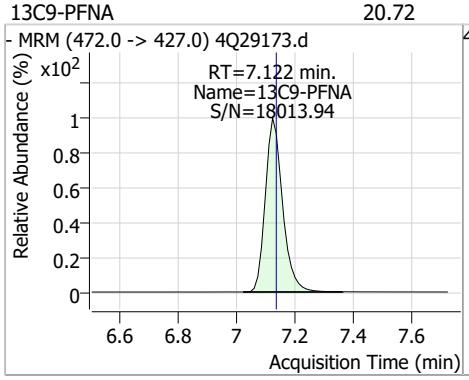


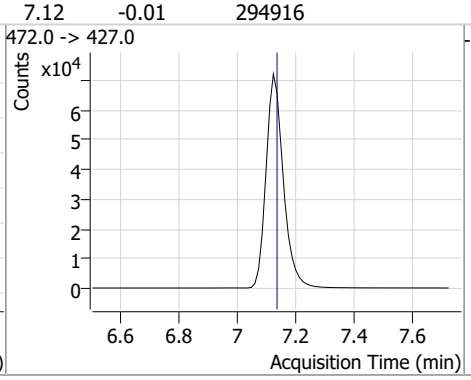


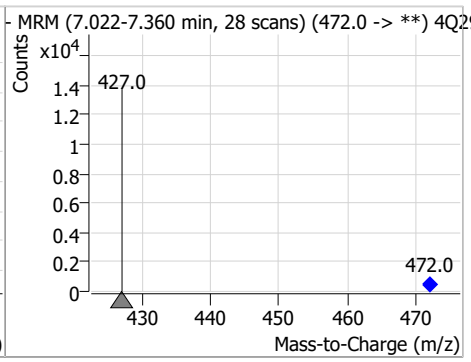




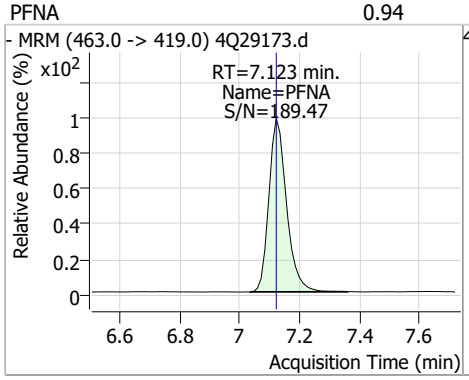
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.72	7.12	-0.01	294916				

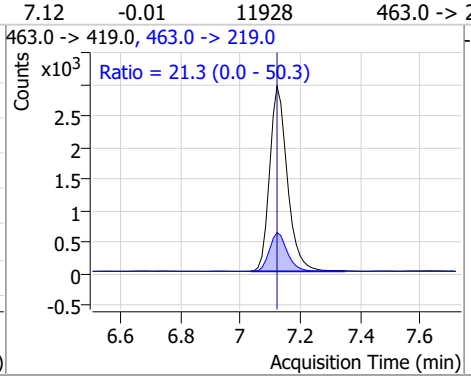


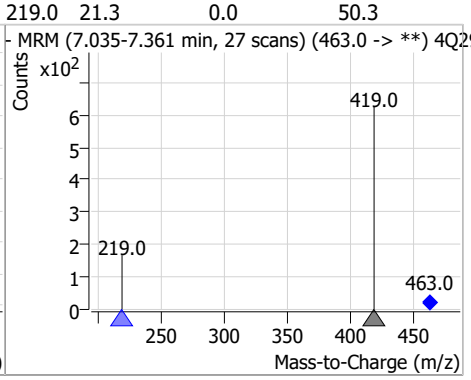




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.94	7.12	-0.01	11928	463.0 -> 219.0	21.3	0.0	50.3

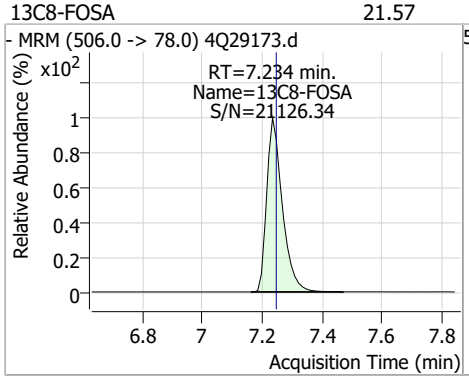


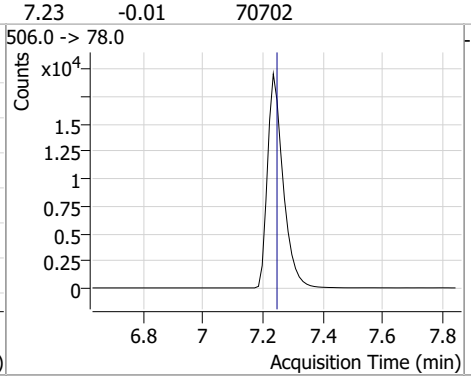


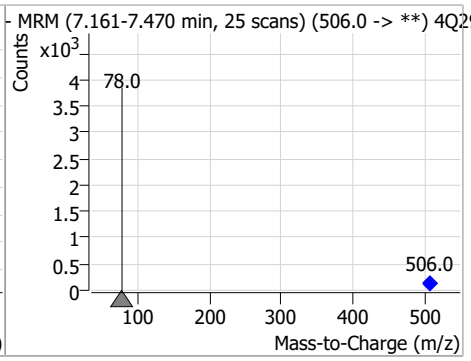


Perfluorinated Compounds by LC/MS/MS

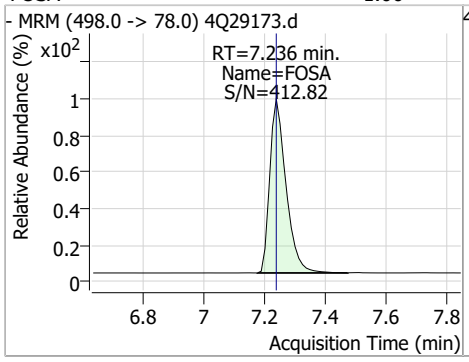
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.57	7.23	-0.01	70702				

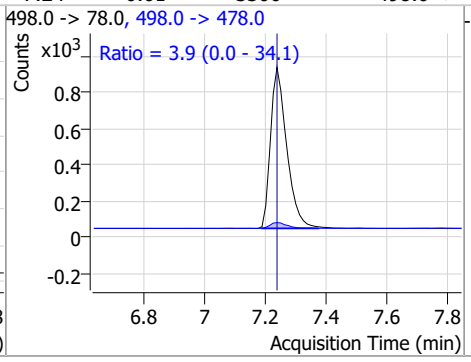


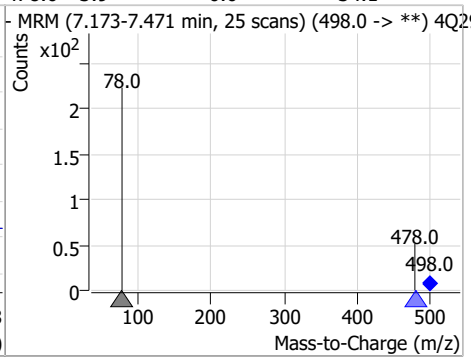




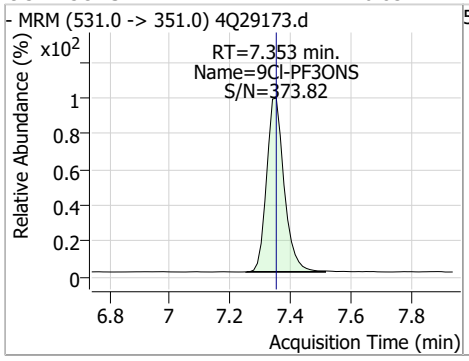
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.00	7.24	-0.01	3300	498.0 -> 478.0	3.9	0.0	34.1

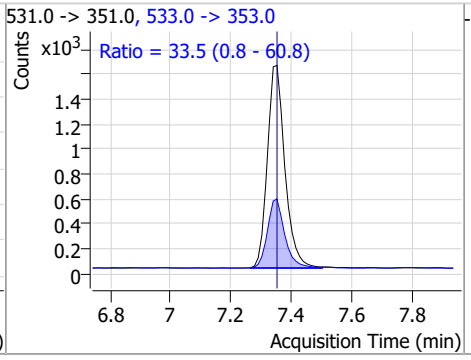


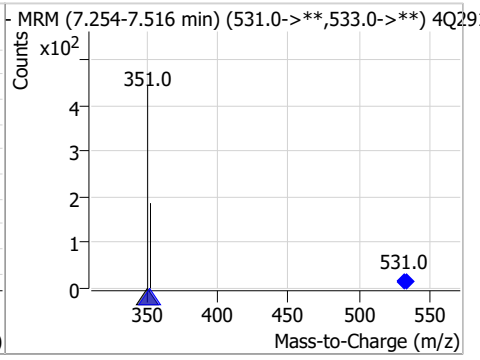




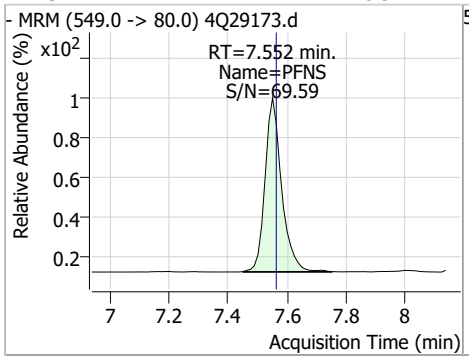
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.83	7.35	0.00	6572	533.0 -> 353.0	33.5	0.8	60.8

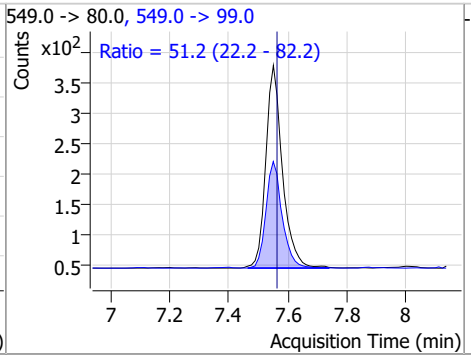


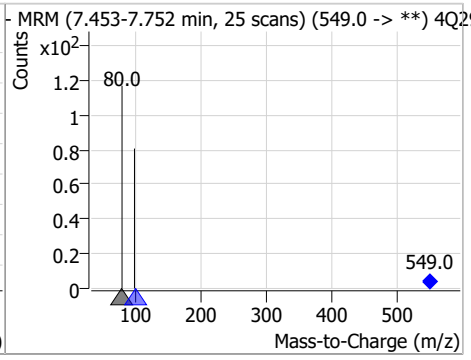




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.92	7.55	-0.01	1303	549.0 -> 99.0	51.2	22.2	82.2

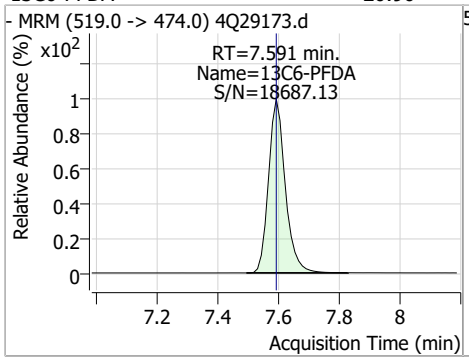


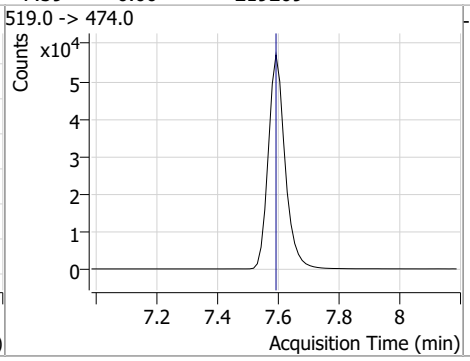


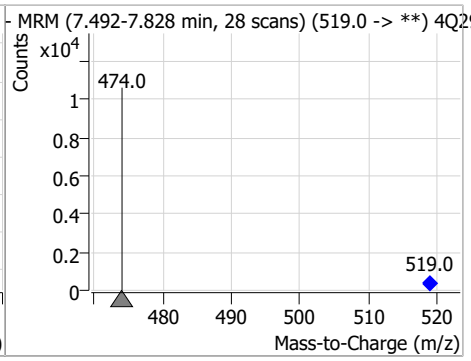


Perfluorinated Compounds by LC/MS/MS

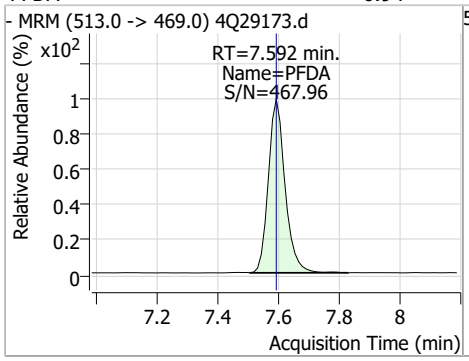
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.90	7.59	0.00	219269				

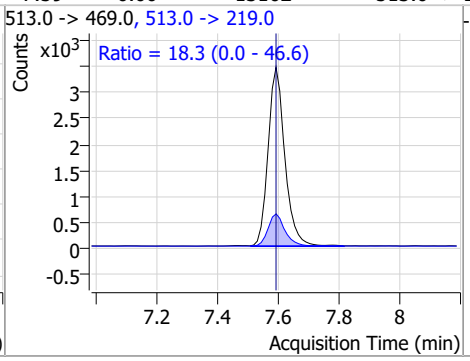


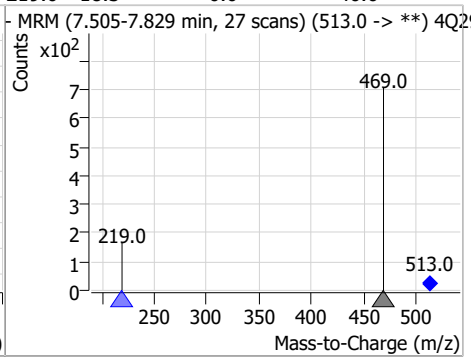




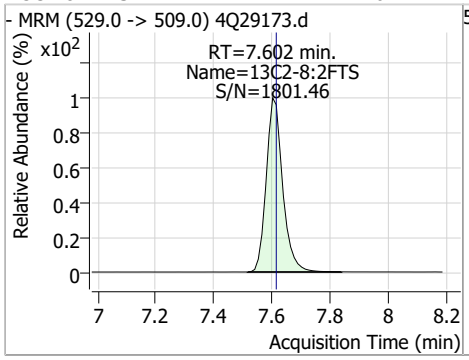
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.94	7.59	0.00	13162	513.0 -> 219.0	18.3	0.0	46.6

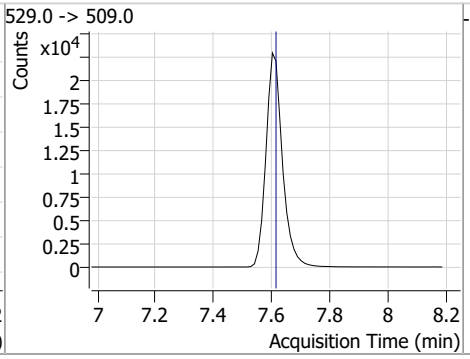


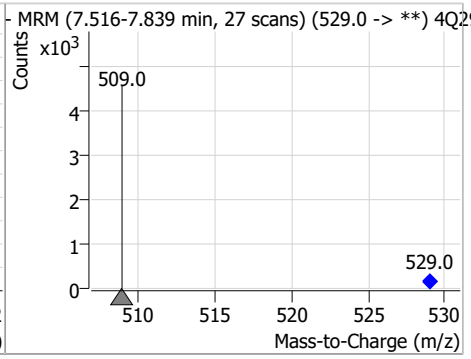




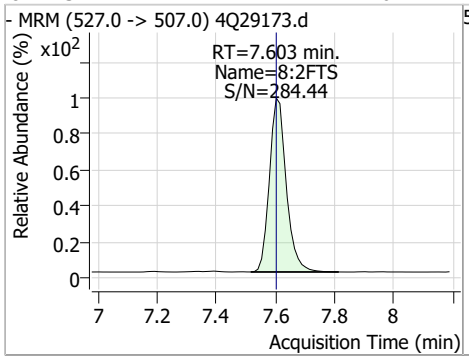
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.21	7.60	-0.01	90159				

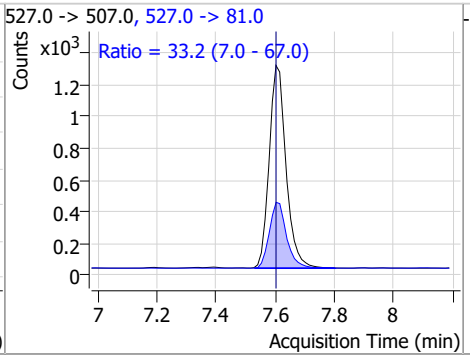


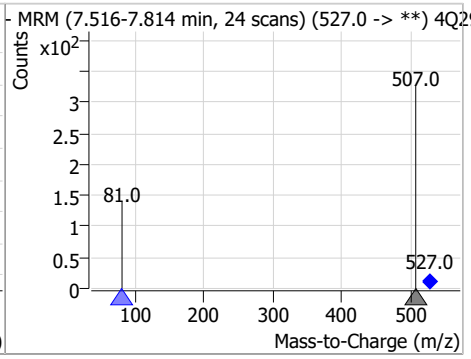




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.07	7.60	-0.01	5013	527.0 -> 81.0	33.2	7.0	67.0

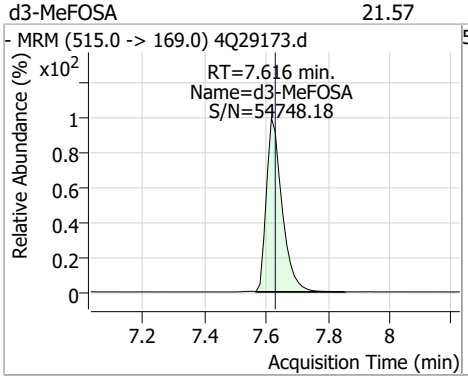


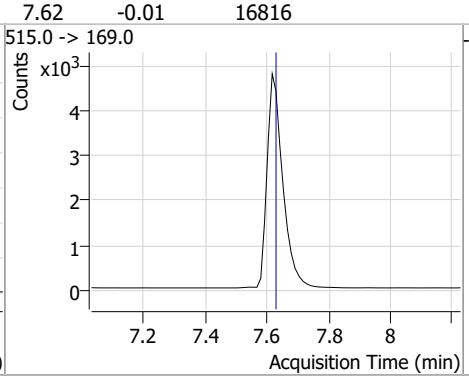


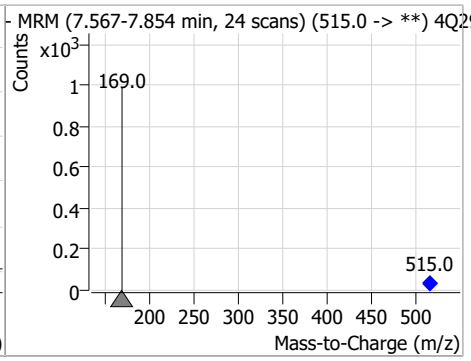


Perfluorinated Compounds by LC/MS/MS

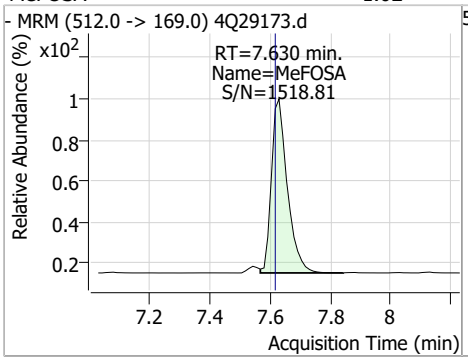
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.57	7.62	-0.01	16816				

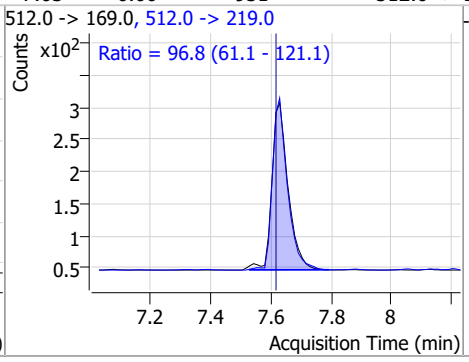


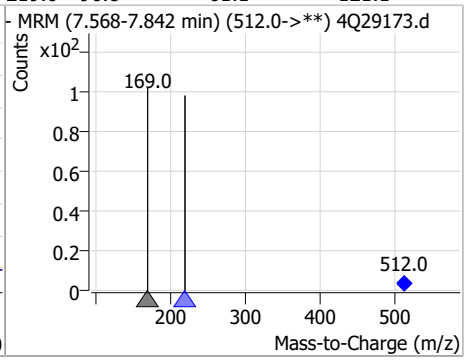




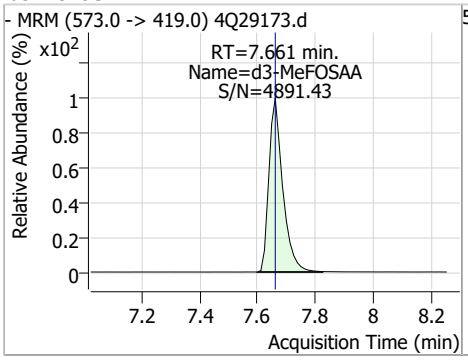
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.02	7.63	0.00	951	512.0 -> 219.0	96.8	61.1	121.1

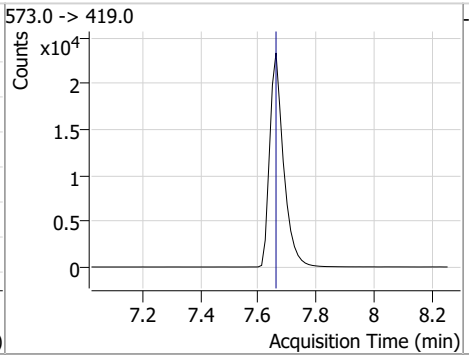


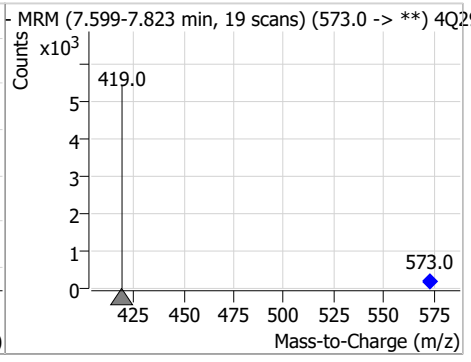




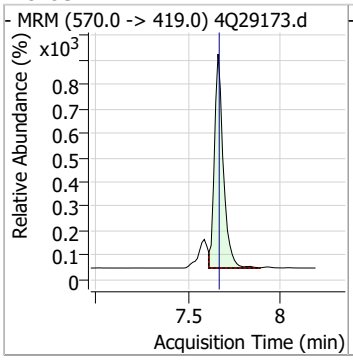
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.12	7.66	0.00	76689				

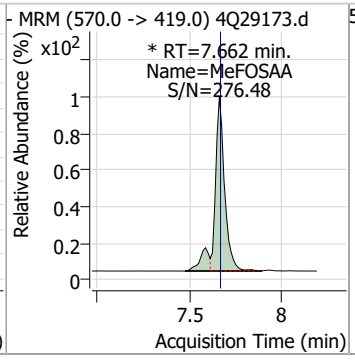


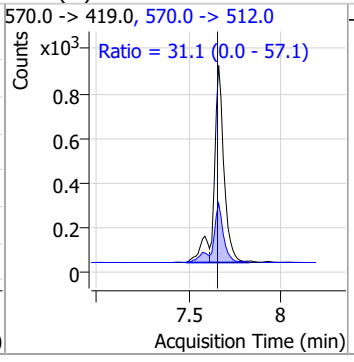


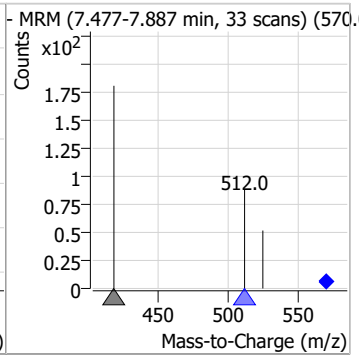


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.94	7.66	0.00	3323 (m)	570.0 -> 512.0	31.1	0.0	57.1



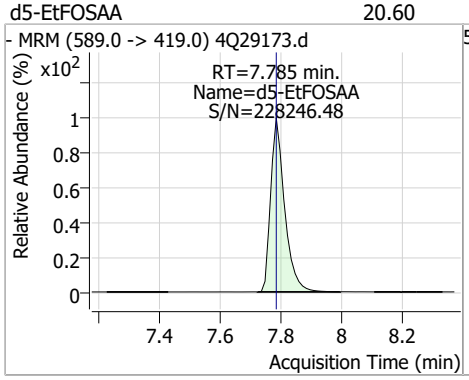


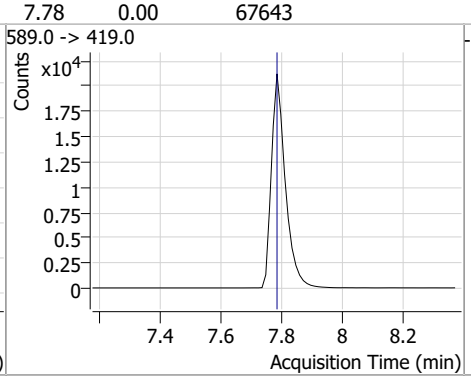


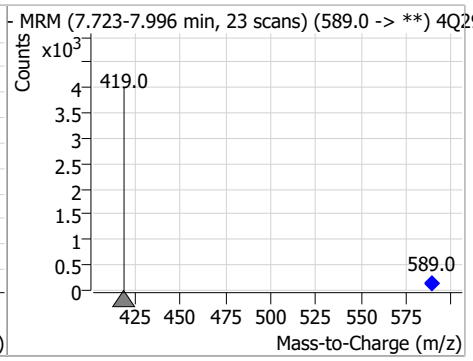


Perfluorinated Compounds by LC/MS/MS

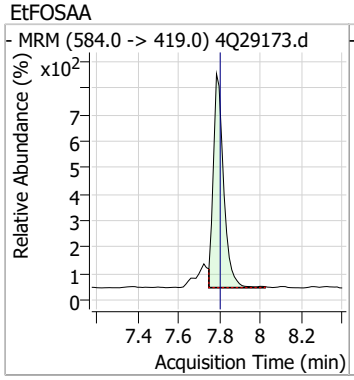
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.60	7.78	0.00	67643				

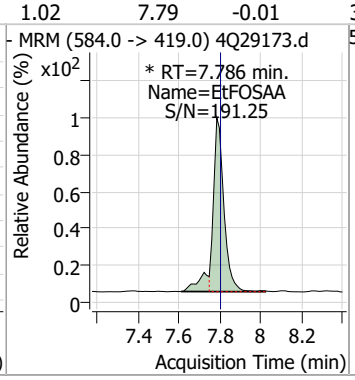


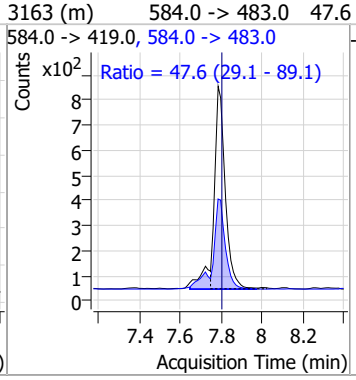


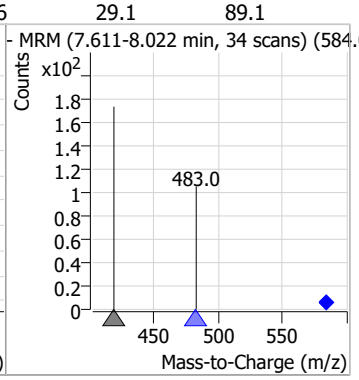


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.02	7.79	-0.01	3163 (m)	584.0 -> 483.0	47.6	29.1	89.1

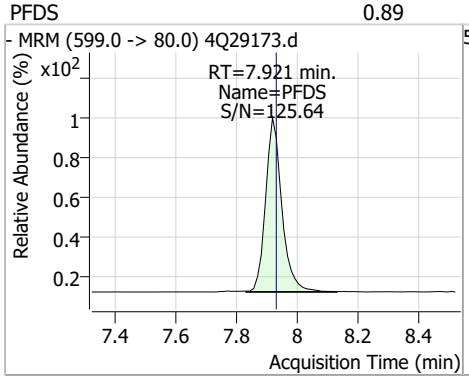


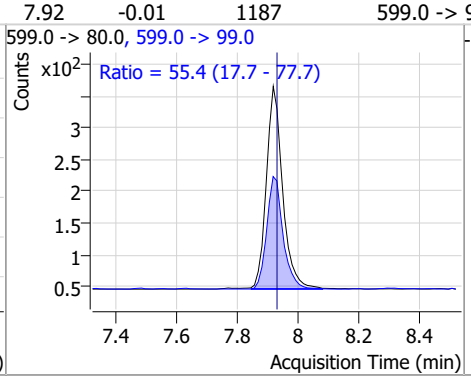


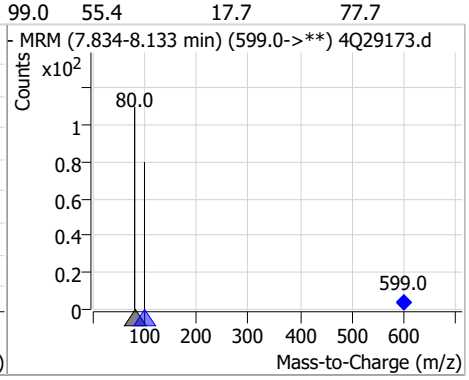




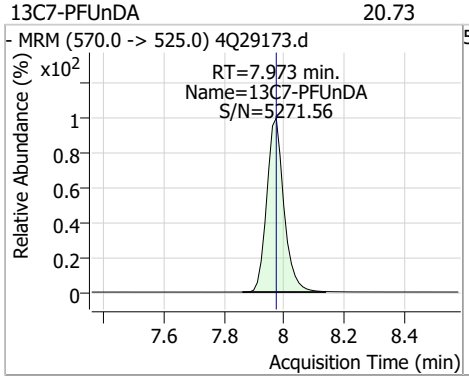
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.89	7.92	-0.01	1187	599.0 -> 99.0	55.4	17.7	77.7

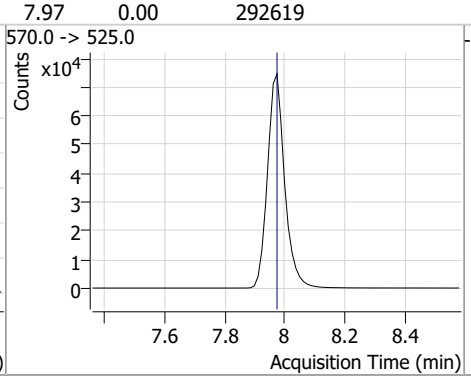


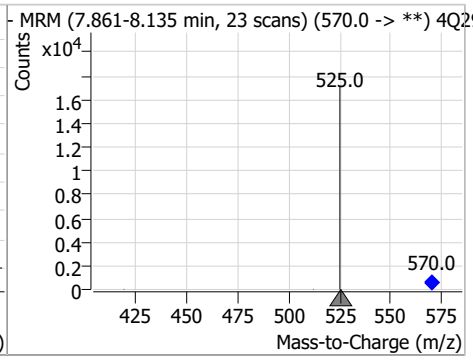




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.73	7.97	0.00	292619				

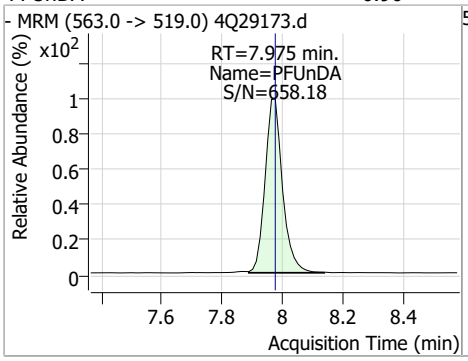


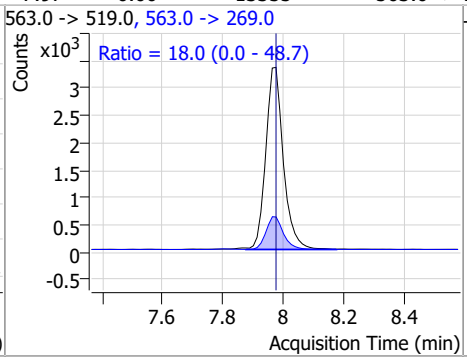


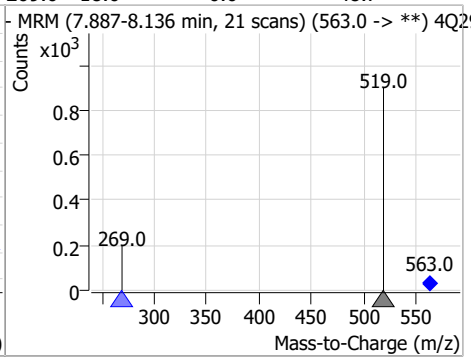


Perfluorinated Compounds by LC/MS/MS

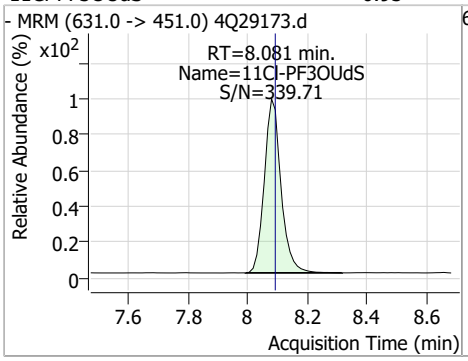
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.96	7.97	0.00	13355	563.0 -> 269.0	18.0	0.0	48.7

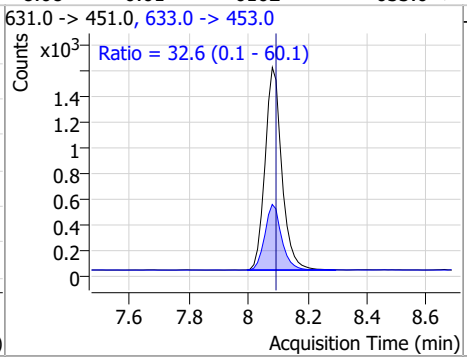


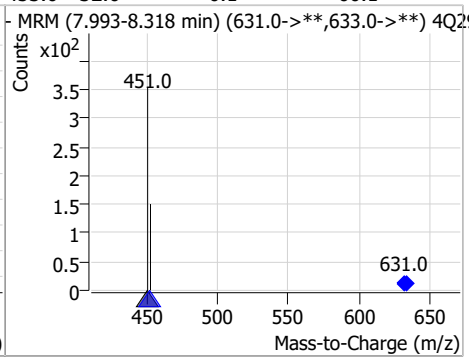




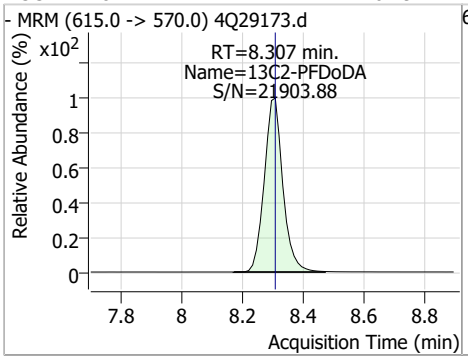
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.93	8.08	-0.01	6162	633.0 -> 453.0	32.6	0.1	60.1

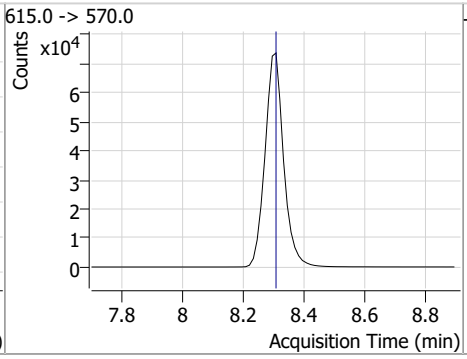


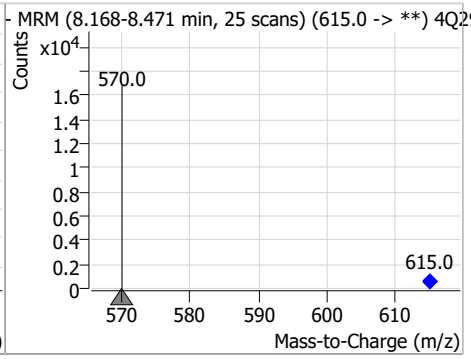




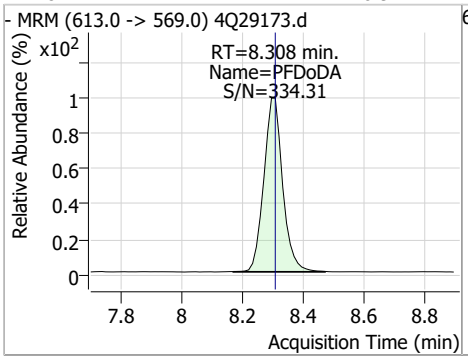
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.49	8.31	0.00	313698				

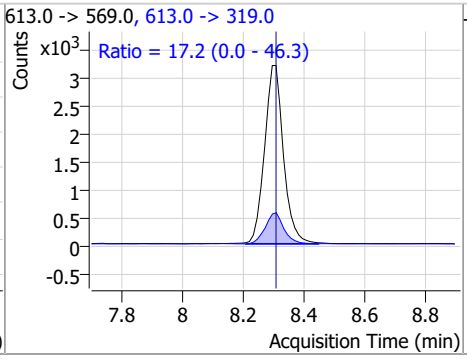


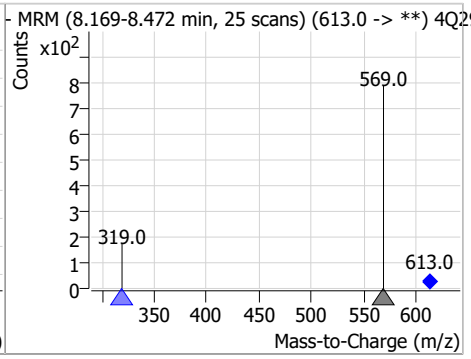




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.94	8.31	0.00	13741	613.0 -> 319.0	17.2	0.0	46.3

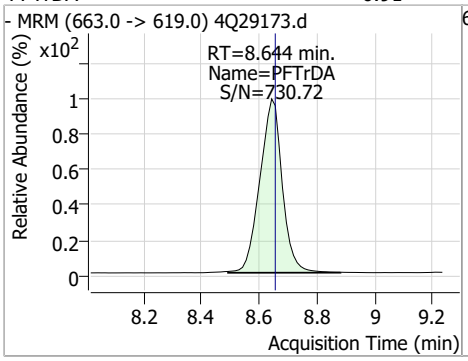


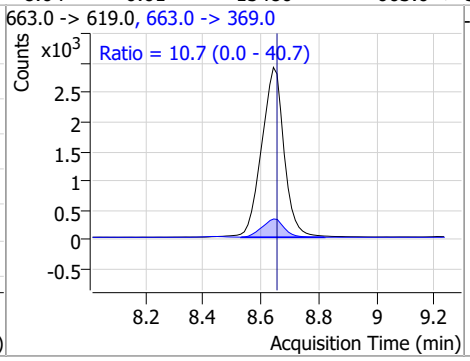


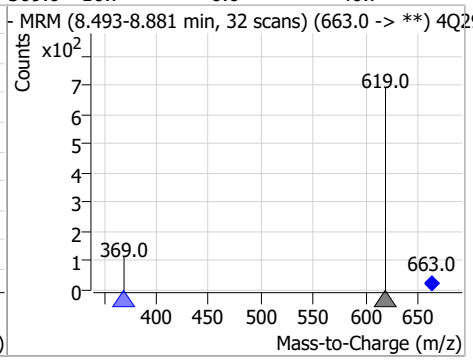


Perfluorinated Compounds by LC/MS/MS

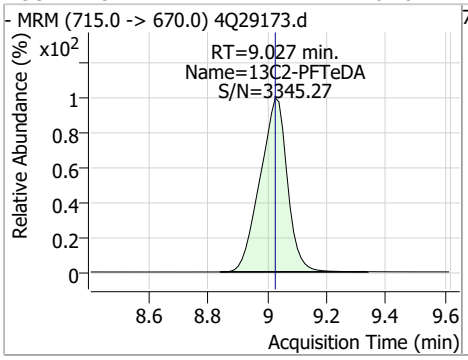
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.91	8.64	-0.01	15480	663.0 -> 369.0	10.7	0.0	40.7

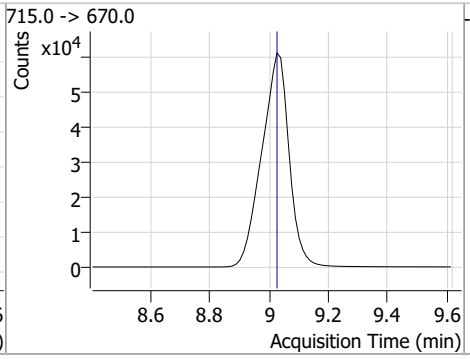


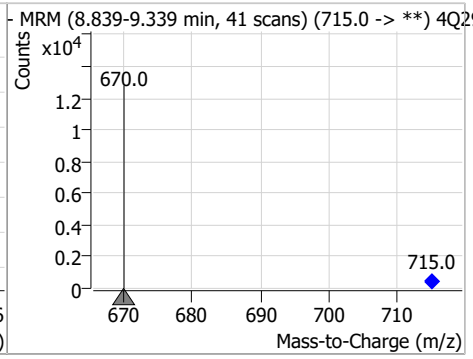




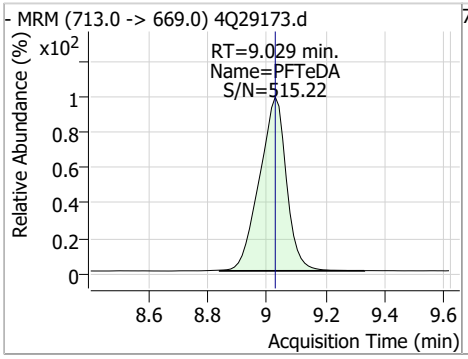
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.28	9.03	0.00	390644				

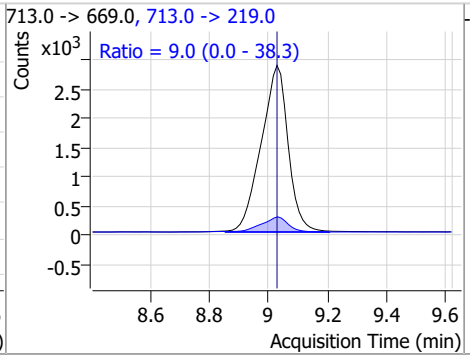


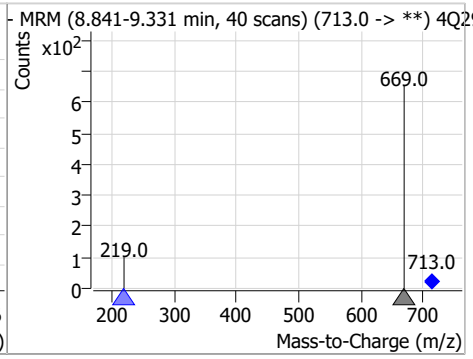




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.97	9.03	0.00	18117	713.0 -> 219.0	9.0	0.0	38.3







7.7.18

7

Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29173.D
Injection Time: 05/27/22 11:58
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.79	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29174.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 12:15:27 PM
Sample Name : ic419-2
Vial : P1-A4
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

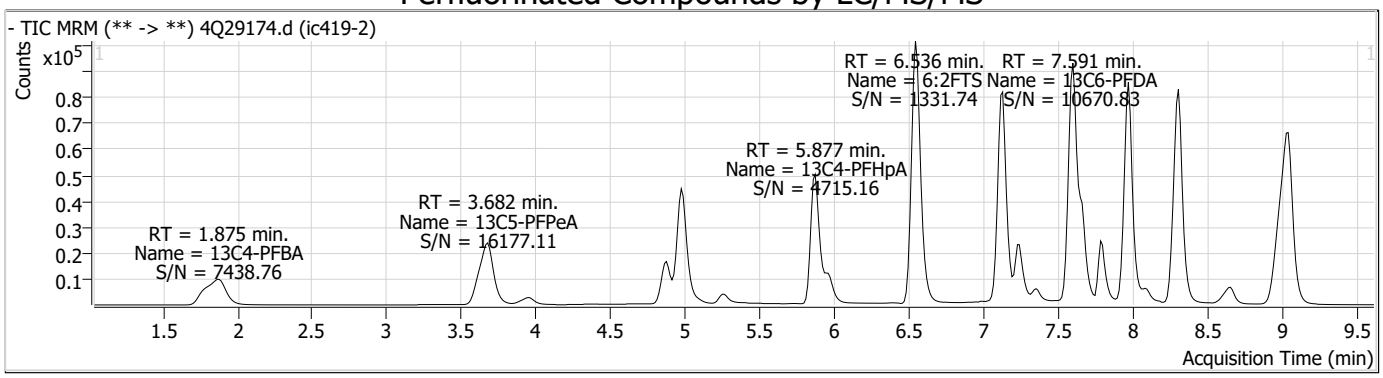
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.875	217.0 -> 172.0	96548	20.00 µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	149385	20.00 µg/L	0.000
M5-PFHxA	4.979	318.0 -> 273.0	184292	20.00 µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	175991	20.00 µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	284468	20.00 µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	296337	20.00 µg/L	0.000
M6-PFDA	7.591	519.0 -> 474.0	224396	20.00 µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	297255	20.00 µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	316430	20.00 µg/L	0.000
M2-PFTeDA	9.039	715.0 -> 670.0	392230	20.00 µg/L	0.012
M8-FOSA	7.246	506.0 -> 78.0	71186	20.00 µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	11257	20.00 µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	11249	20.00 µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	18517	20.00 µg/L	0.013
M2-4:2FTS	4.875	329.0 -> 309.0	64498	20.00 µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	105376	20.00 µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	89995	20.00 µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	76796	20.00 µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	11242	20.00 µg/L	-0.012
M3-MeFOSA	7.629	515.0 -> 169.0	17013	20.00 µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	67963	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.875	329.0 -> 309.0	64498	19.01 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C2-6:2FTS	6.535	429.0 -> 409.0	105376	20.01 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C2-8:2FTS	7.615	529.0 -> 509.0	89995	20.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C2-PFDoDA	8.307	615.0 -> 570.0	316430	20.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C2-PFTeDA	9.039	715.0 -> 670.0	392230	20.36 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C3-PFBS	3.949	302.0 -> 99.0	11257	20.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C3-PFHxS	5.898	402.0 -> 99.0	11249	20.61 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%	
13C4-PFBA	1.875	217.0 -> 172.0	96548	20.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFHpA	5.877	367.0 -> 322.0	175991	20.62 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C5-PFHxA	4.979	318.0 -> 273.0	184292	20.46 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFPeA	3.682	268.0 -> 223.0	149385	20.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	7.591	519.0 -> 474.0	224396	21.39 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

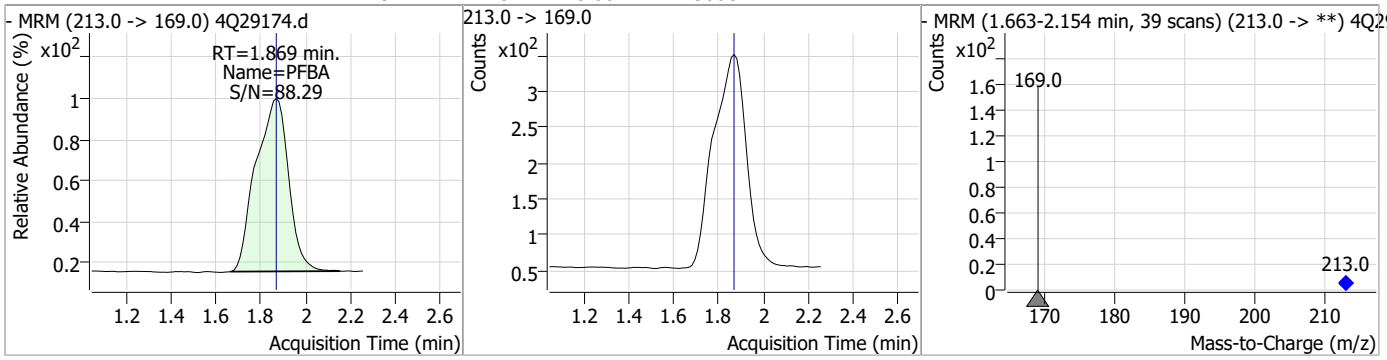
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C7-PFUnDA	7.973	570.0 -> 525.0	297255	21.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C8-FOSA	7.246	506.0 -> 78.0	71186	21.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C8-PFOA	6.564	421.0 -> 376.0	284468	20.96 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C8-PFOS	7.108	507.0 -> 99.0	18517	20.50 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C9-PFNA	7.135	472.0 -> 427.0	296337	20.82 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
d3-MeFOSAA	7.661	573.0 -> 419.0	76796	21.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	11215	21.11 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
d3-MeFOSA	7.629	515.0 -> 169.0	17013	21.82 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
d5-EtFOSAA	7.785	589.0 -> 419.0	67959	20.70 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
Target Compounds						**QValue**
4:2FTS	4.877	327.0 -> 307.0	7891	2.13 µg/L		98
6:2FTS	6.536	427.0 -> 407.0	11053	2.04 µg/L		98
8:2FTS	7.615	527.0 -> 507.0	9567	2.04 µg/L		98
EtFOSAA	7.798	584.0 -> 419.0	6070	1.95 µg/L	m	93
FOSA	7.236	498.0 -> 78.0	6325	1.91 µg/L		98
MeFOSAA	7.662	570.0 -> 419.0	7060	2.00 µg/L	m	97
PFBA	1.869	213.0 -> 169.0	3006	1.97 µg/L		100
PFBS	3.954	299.0 -> 80.0	3667	2.06 µg/L		99
PFDA	7.592	513.0 -> 469.0	27196	1.89 µg/L		99
PFDoDA	8.308	613.0 -> 569.0	28028	1.90 µg/L		99
PFDS	7.933	599.0 -> 80.0	2450	1.80 µg/L		95
PFHpA	5.878	363.0 -> 319.0	23563	1.92 µg/L		99
PFHpS	6.548	449.0 -> 80.0	2860	2.05 µg/L		96
PFHxA	4.980	313.0 -> 269.0	18116	1.93 µg/L		99
PFHxS	5.900	399.0 -> 80.0	3004	2.05 µg/L	m	92
PFNA	7.135	463.0 -> 419.0	24324	1.90 µg/L		99
PFNS	7.564	549.0 -> 80.0	2689	1.91 µg/L		99
PFOA	6.552	413.0 -> 369.0	30257	1.92 µg/L		100
PFOS	7.096	499.0 -> 80.0	3435	1.99 µg/L	m	83
PFPeA	3.684	263.0 -> 219.0	13106	1.98 µg/L		100
PFPeS	5.085	349.0 -> 80.0	2391	2.05 µg/L		100
PFTeDA	9.029	713.0 -> 669.0	36927	1.96 µg/L		99
PFTrDA	8.656	663.0 -> 619.0	31490	1.83 µg/L		100
PFUnDA	7.975	563.0 -> 519.0	27102	1.91 µg/L		99
11Cl-PF3OUdS	8.081	631.0 -> 451.0	12590	1.89 µg/L		100
9Cl-PF3ONS	7.353	531.0 -> 351.0	13497	1.66 µg/L		100
ADONA	5.965	377.0 -> 251.0	28054	1.89 µg/L		98
HFPO-DA	5.264	329.0 -> 169.0	3427	1.95 µg/L		100
MeFOSA	7.630	512.0 -> 169.0	1974	2.09 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

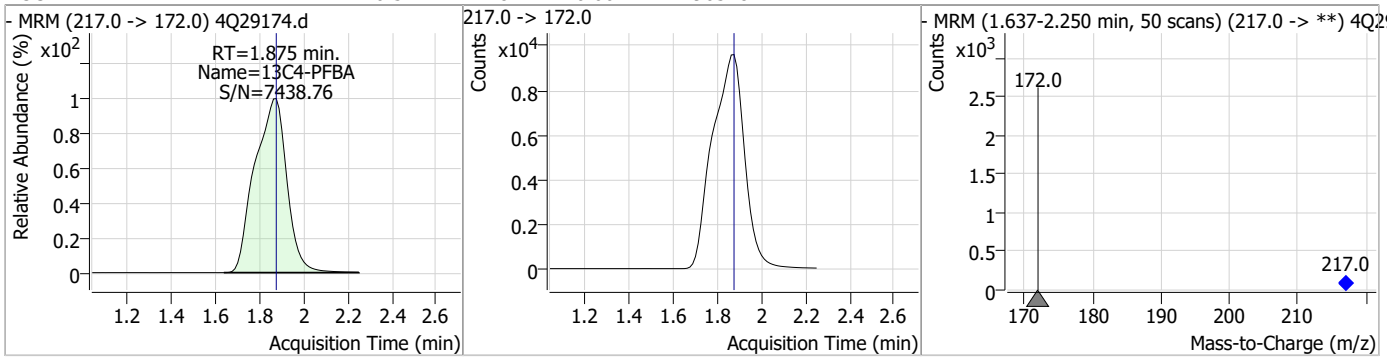
Perfluorinated Compounds by LC/MS/MS



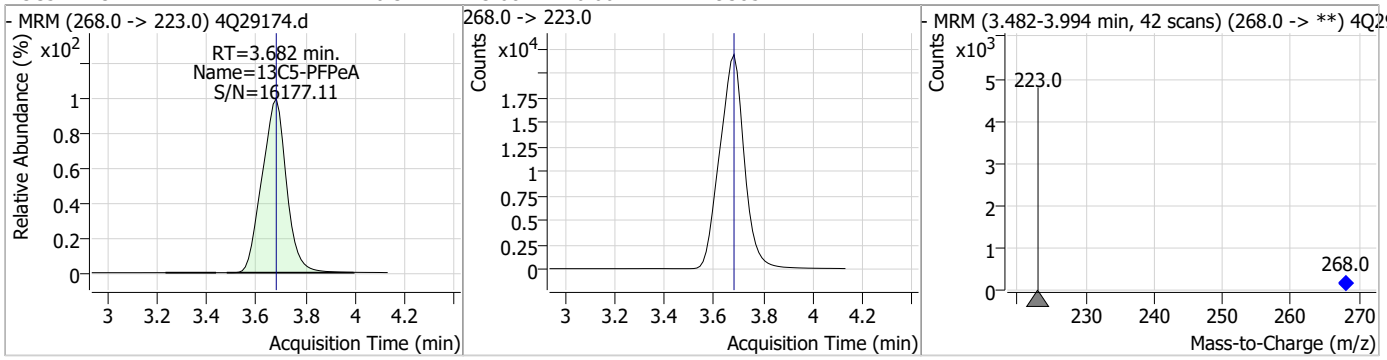
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.97	1.87	0.00	3006				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.54	1.87	0.00	96548				

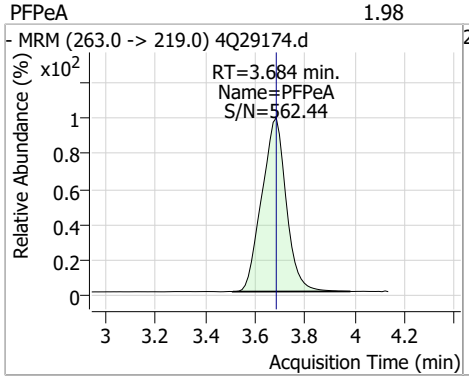


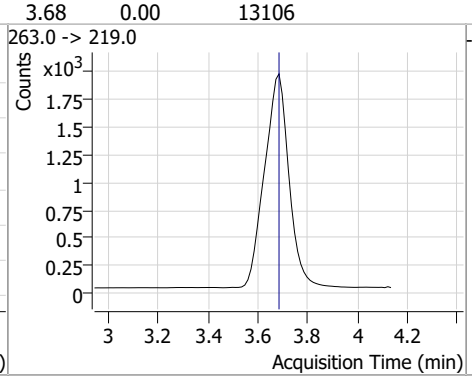
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.37	3.68	0.00	149385				

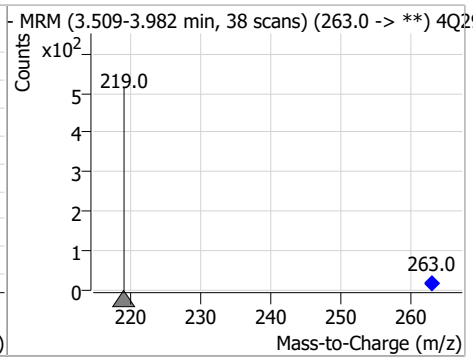


Perfluorinated Compounds by LC/MS/MS

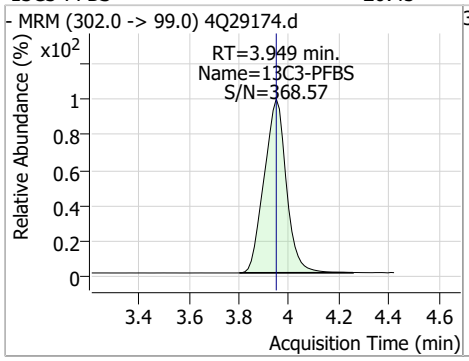
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.98	3.68	0.00	13106				

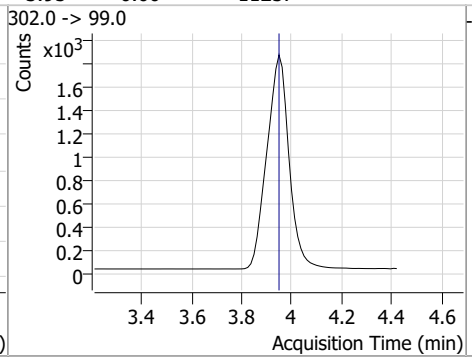


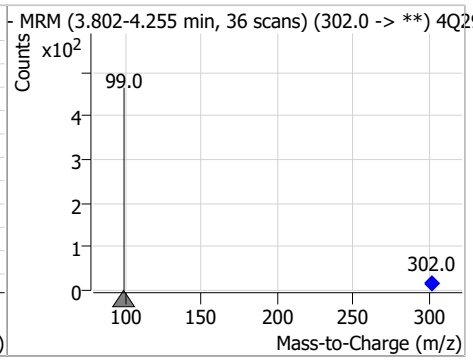




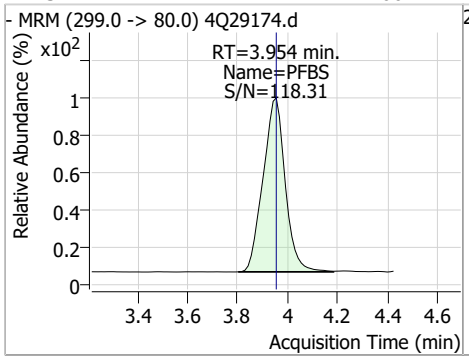
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.45	3.95	0.00	11257				

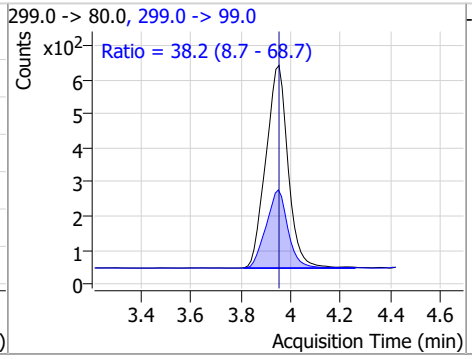


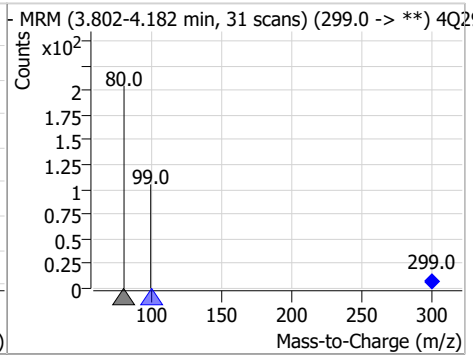




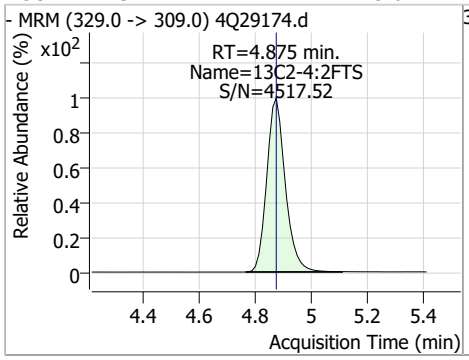
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.06	3.95	0.00	3667	299.0 -> 99.0	38.2	8.7	68.7

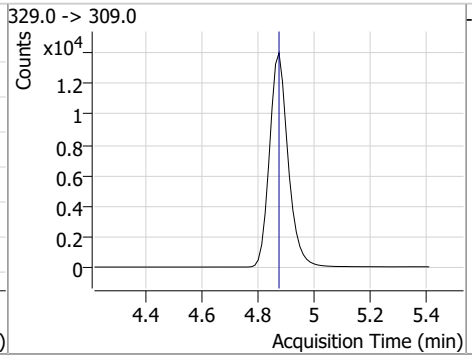


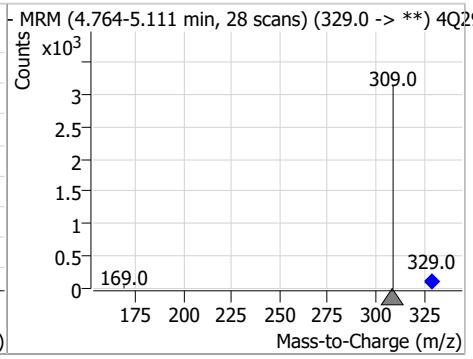




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.01	4.87	0.00	64498				

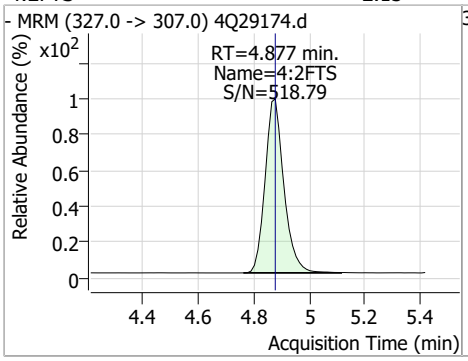


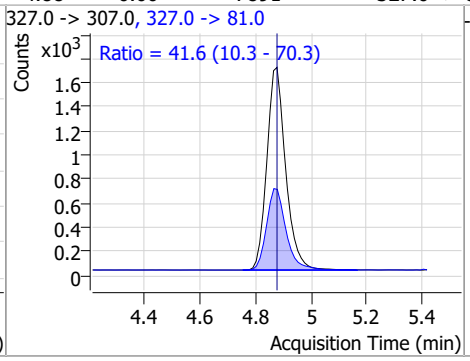


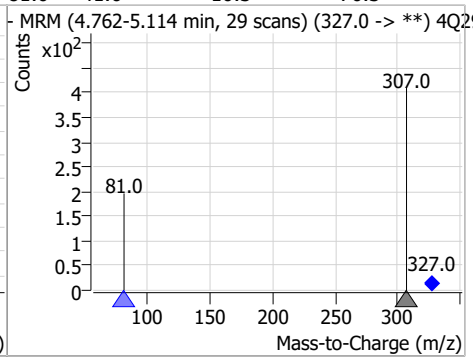


Perfluorinated Compounds by LC/MS/MS

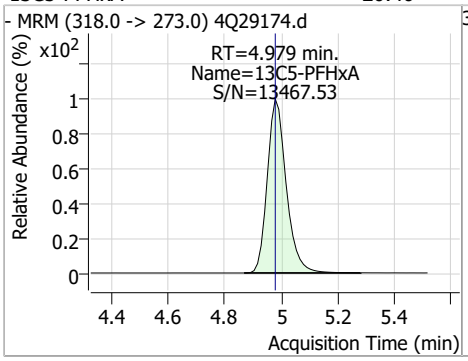
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.13	4.88	0.00	7891	327.0 -> 81.0	41.6	10.3	70.3

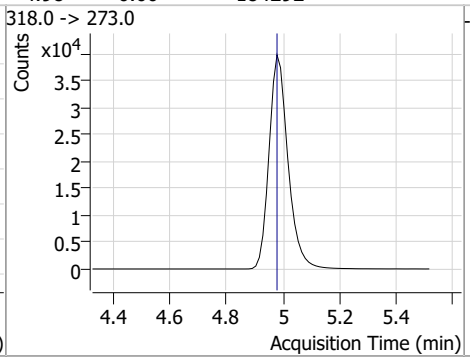


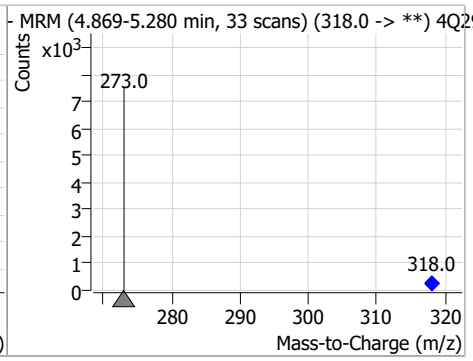




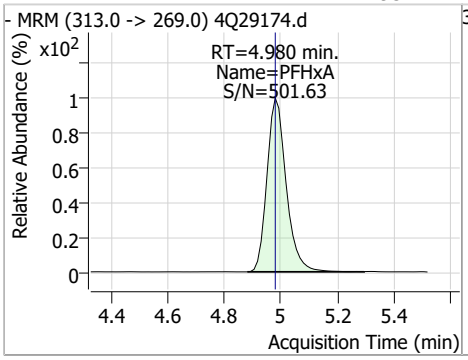
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.46	4.98	0.00	184292				

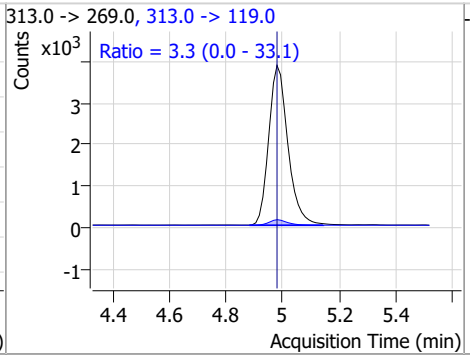


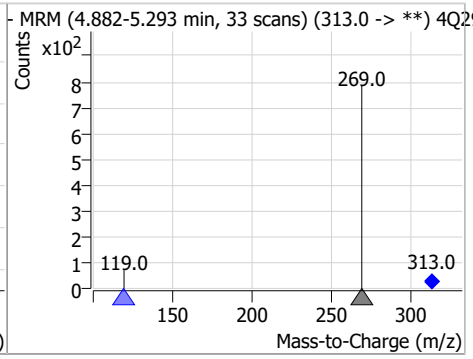




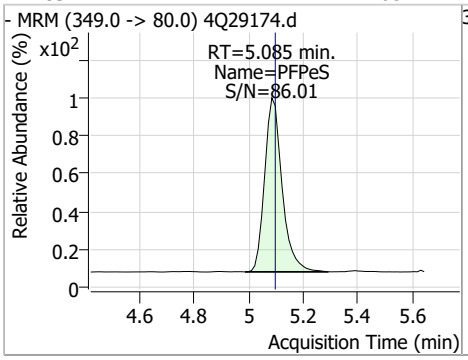
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.93	4.98	0.00	18116	313.0 -> 119.0	3.3	0.0	33.1

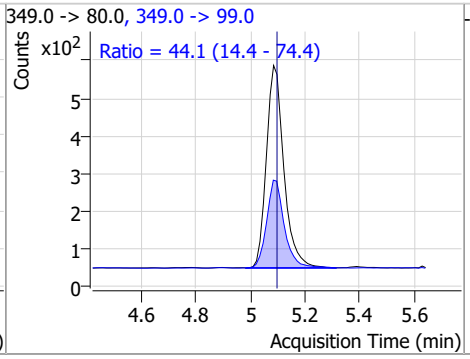


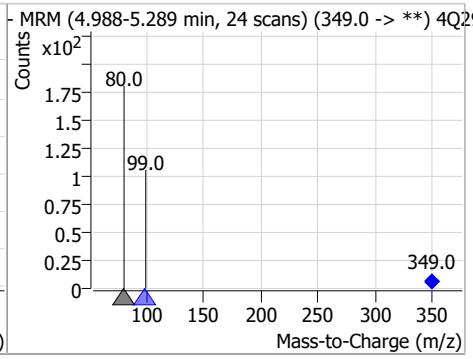




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.05	5.09	-0.01	2391	349.0 -> 99.0	44.1	14.4	74.4

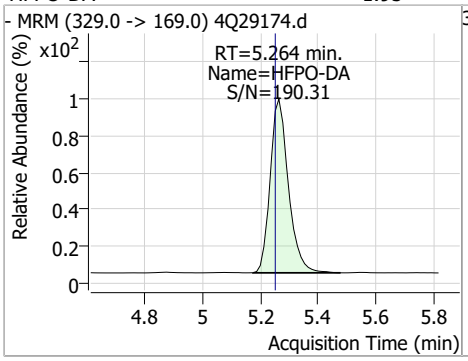


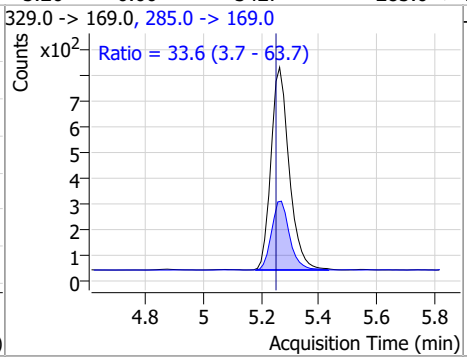


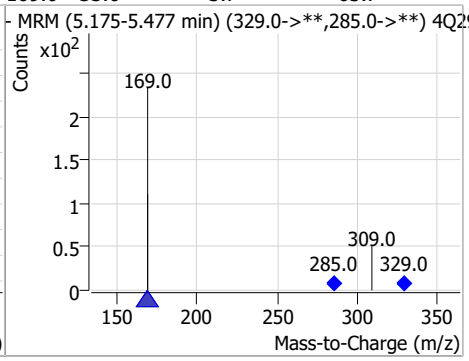


Perfluorinated Compounds by LC/MS/MS

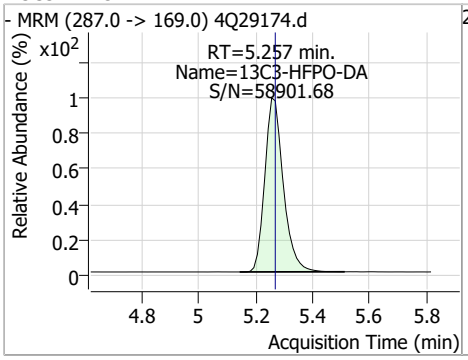
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.95	5.26	0.00	3427	285.0 -> 169.0	33.6	3.7	63.7

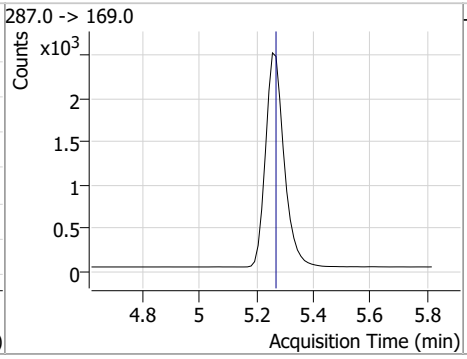


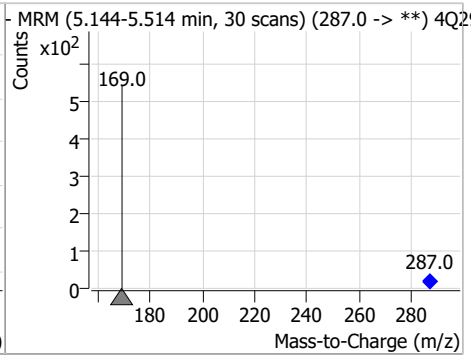




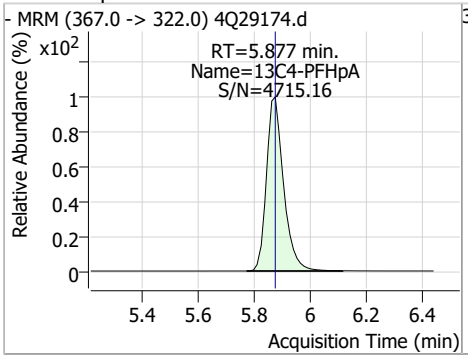
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.11	5.26	-0.01	11215				

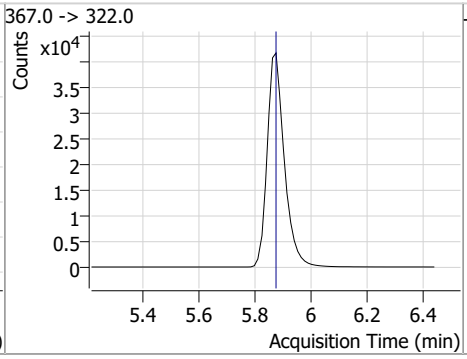


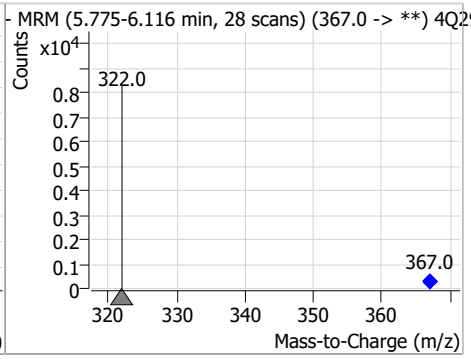




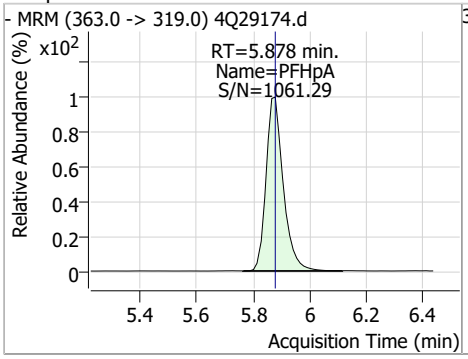
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.62	5.88	0.00	175991				

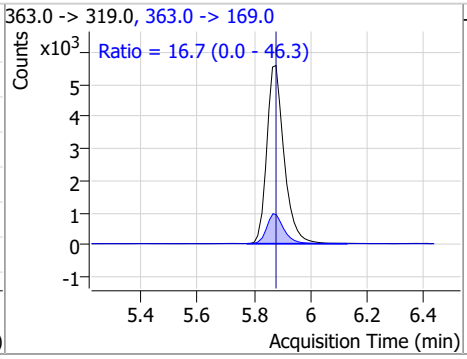


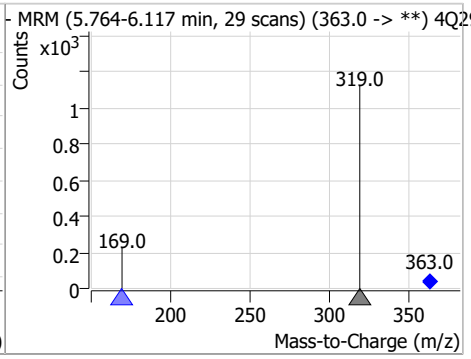




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.92	5.88	0.00	23563	363.0 -> 169.0	16.7	0.0	46.3

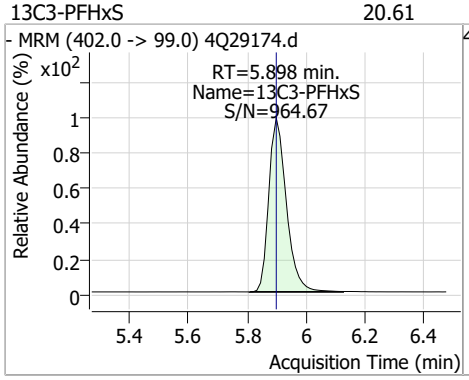


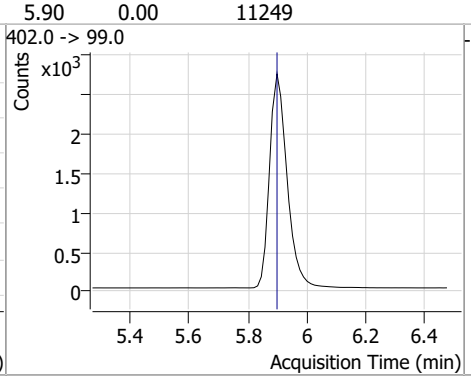


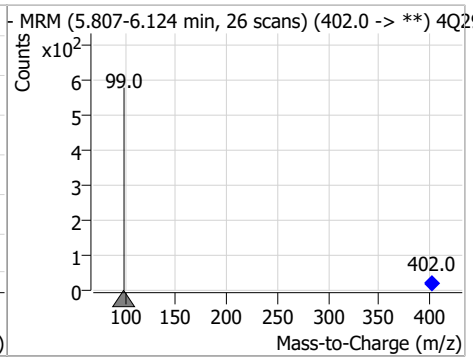


Perfluorinated Compounds by LC/MS/MS

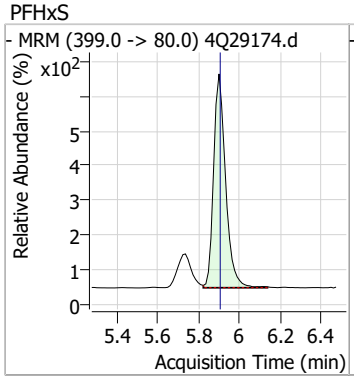
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.61	5.90	0.00	11249				

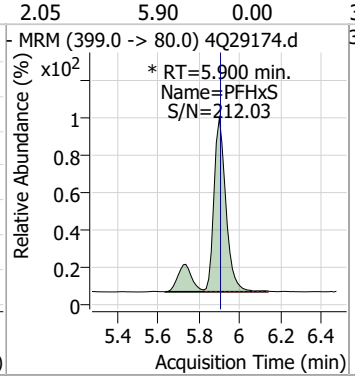


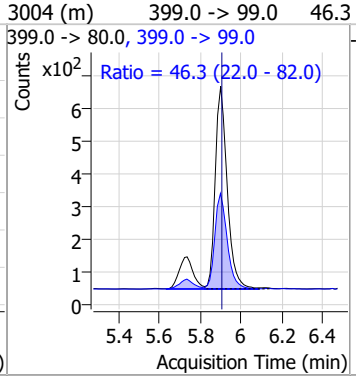


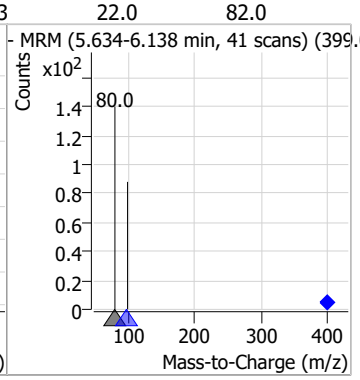


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.05	5.90	0.00	3004 (m)	399.0 -> 99.0	46.3	22.0	82.0

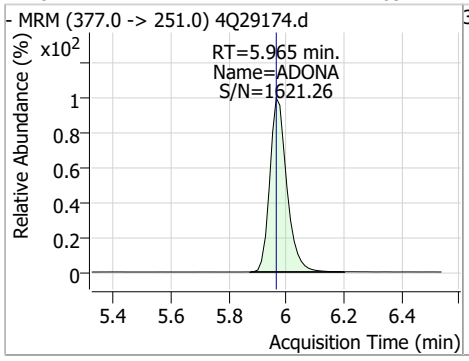


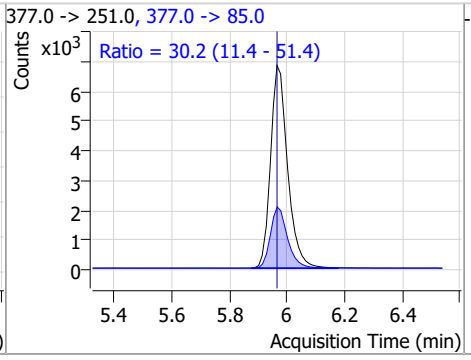


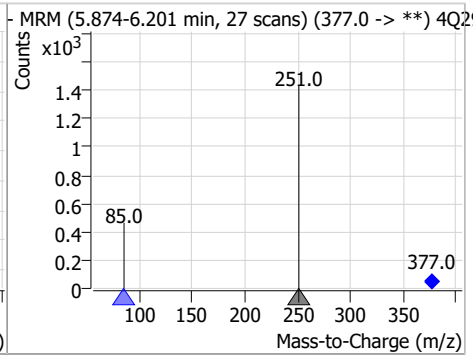




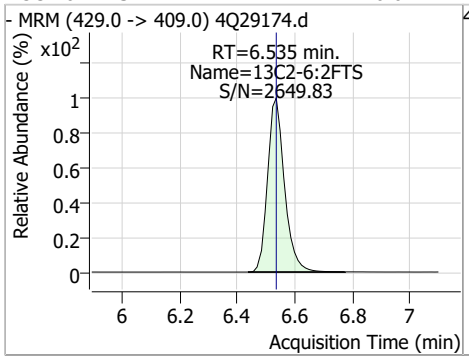
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.89	5.96	0.00	28054	377.0 -> 85.0	30.2	11.4	51.4

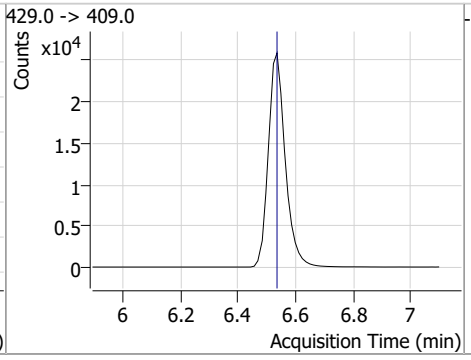


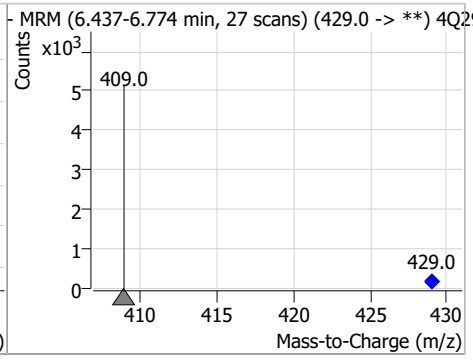




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.01	6.54	0.00	105376				

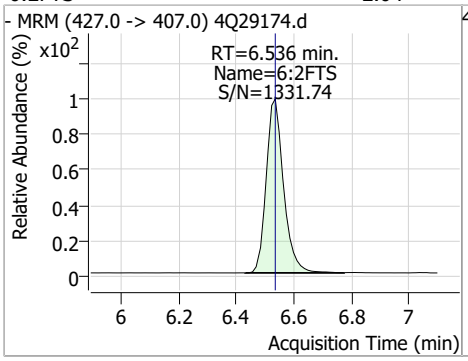


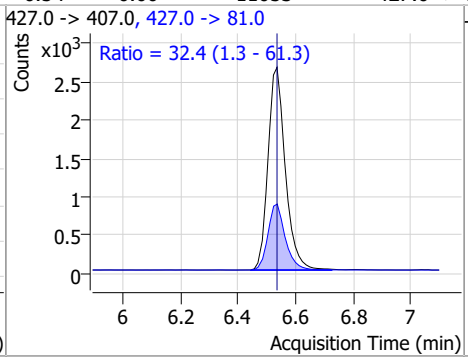


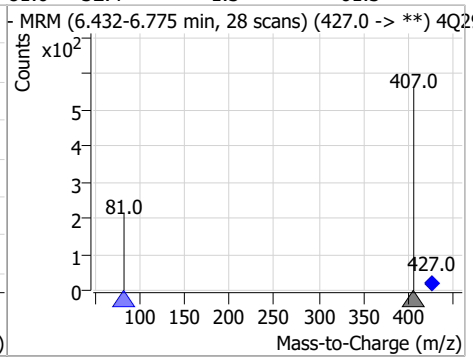


Perfluorinated Compounds by LC/MS/MS

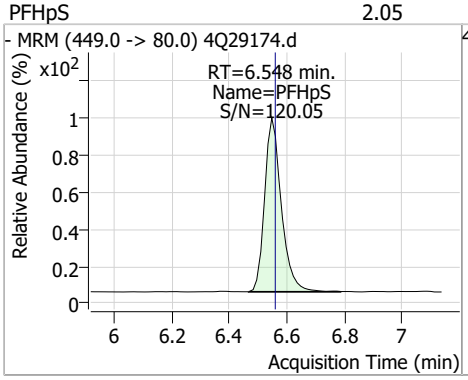
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.04	6.54	0.00	11053	427.0 -> 81.0	32.4	1.3	61.3

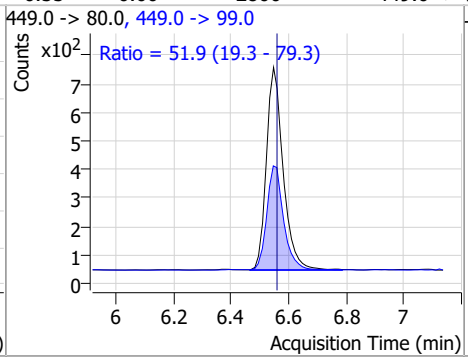


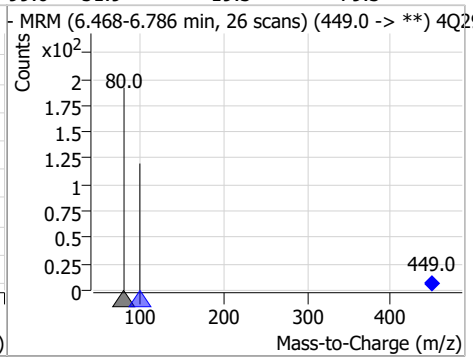




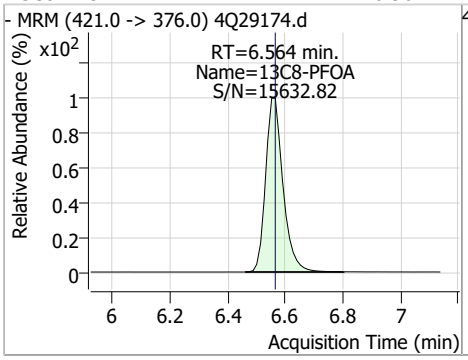
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.05	6.55	0.00	2860	449.0 -> 99.0	51.9	19.3	79.3

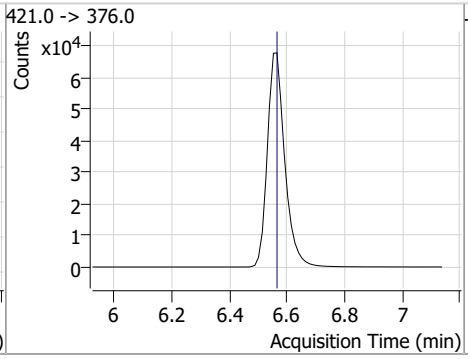


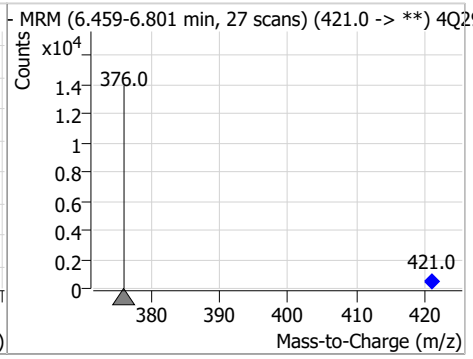




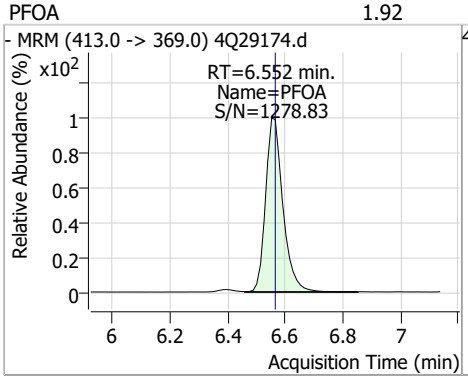
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.96	6.56	0.00	284468				

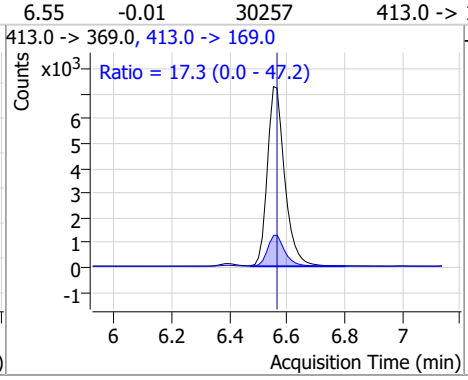


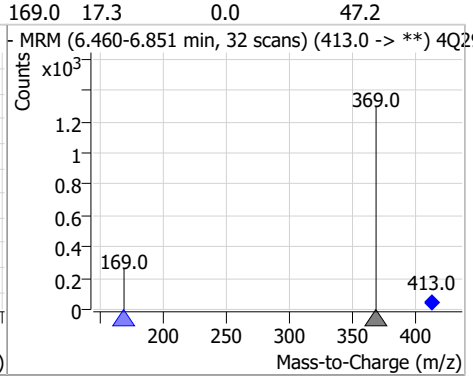




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.92	6.55	-0.01	30257	413.0 -> 169.0	17.3	0.0	47.2

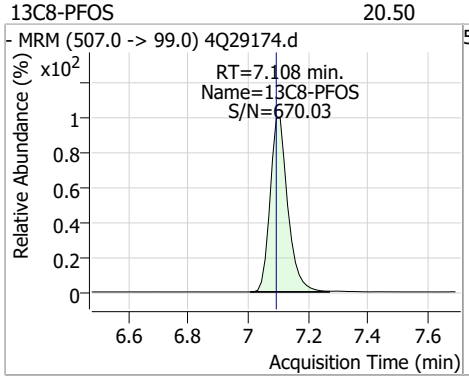


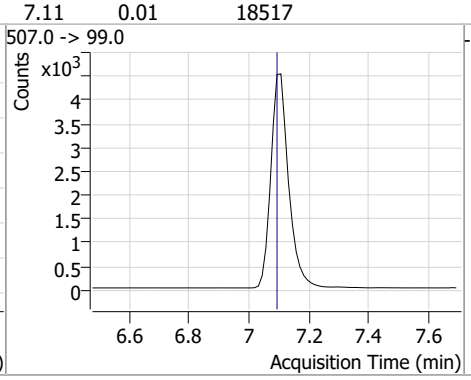


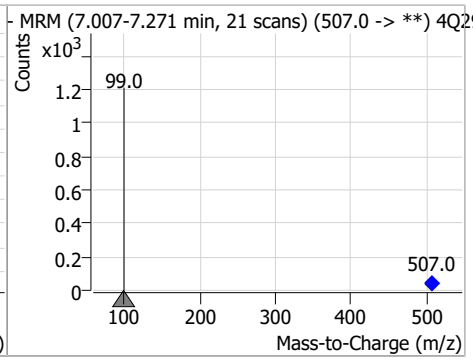


Perfluorinated Compounds by LC/MS/MS

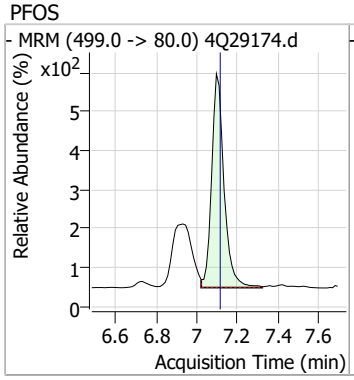
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.50	7.11	0.01	18517				

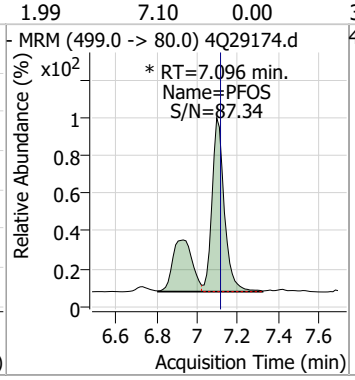


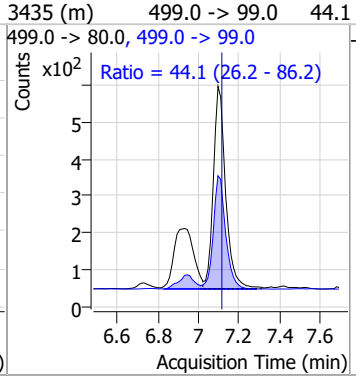


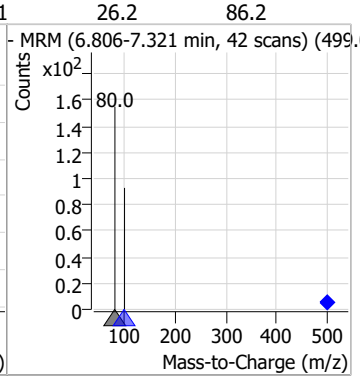


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.99	7.10	0.00	3435 (m)	499.0 -> 99.0	44.1	26.2	86.2

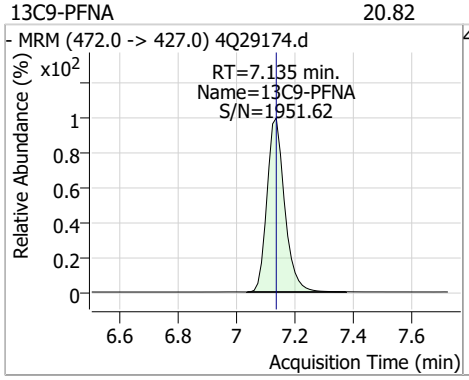


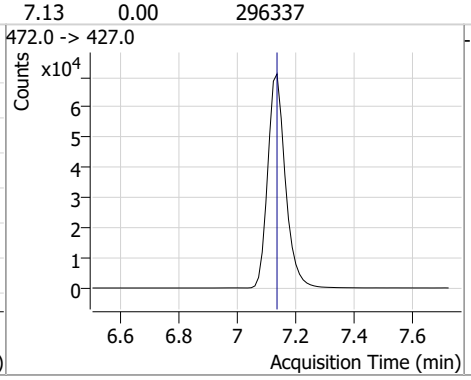


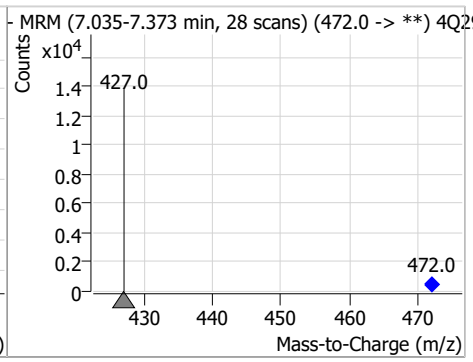




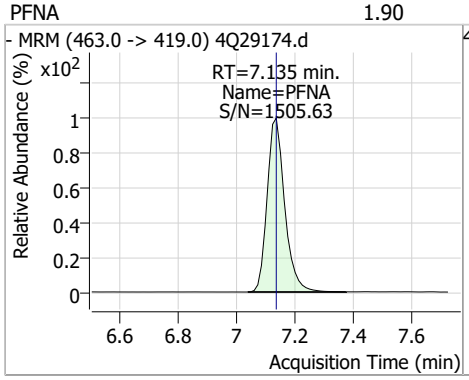
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.82	7.13	0.00	296337				

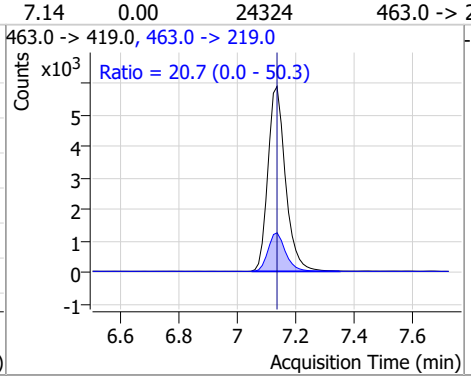


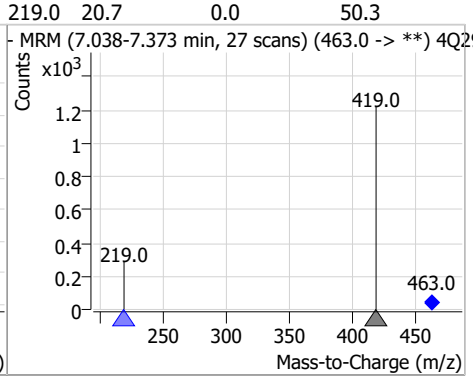




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.90	7.14	0.00	24324	463.0 -> 219.0	20.7	0.0	50.3

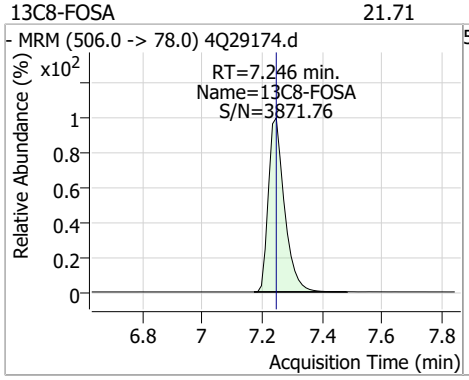


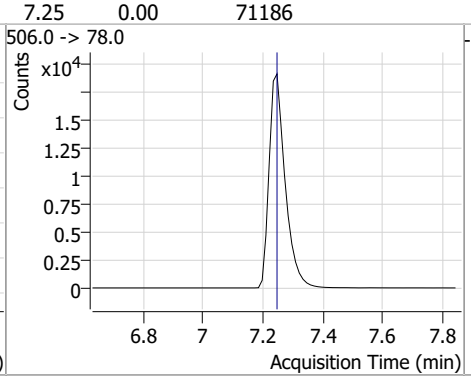


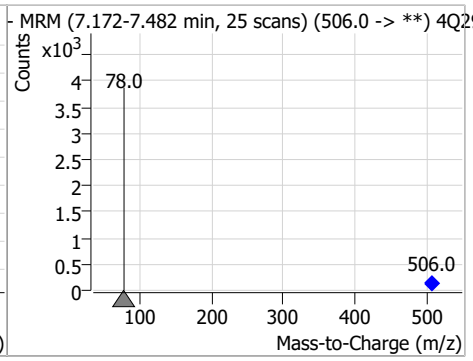


Perfluorinated Compounds by LC/MS/MS

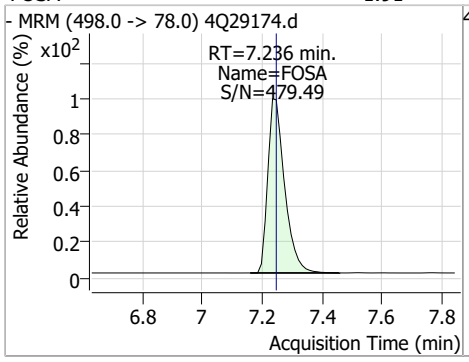
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.71	7.25	0.00	71186				

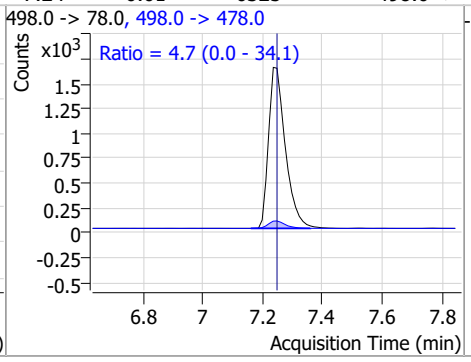


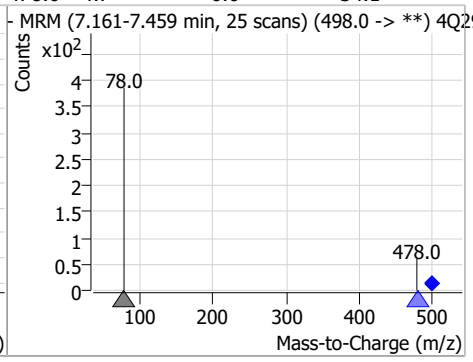




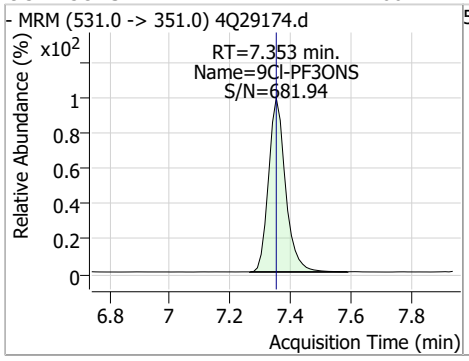
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.91	7.24	-0.01	6325	498.0 -> 478.0	4.7	0.0	34.1

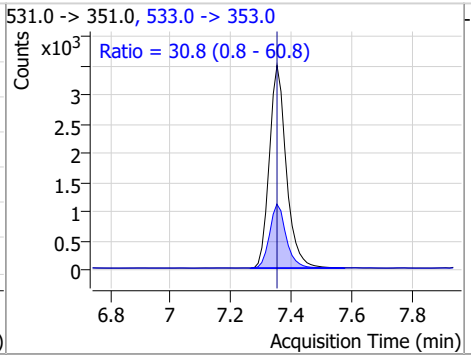


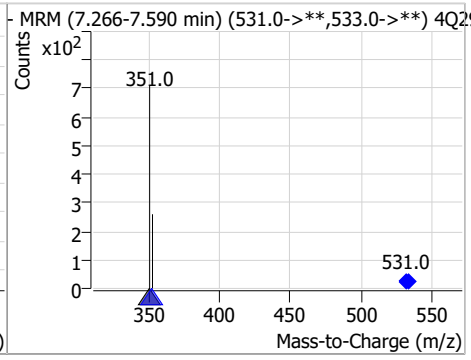




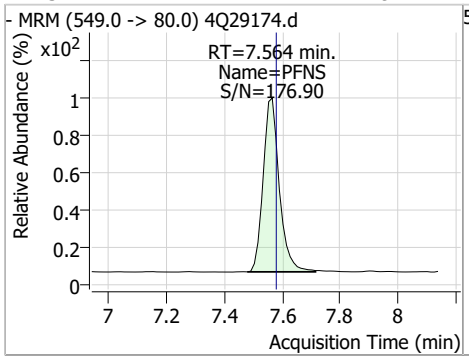
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.66	7.35	0.00	13497	533.0 -> 353.0	30.8	0.8	60.8

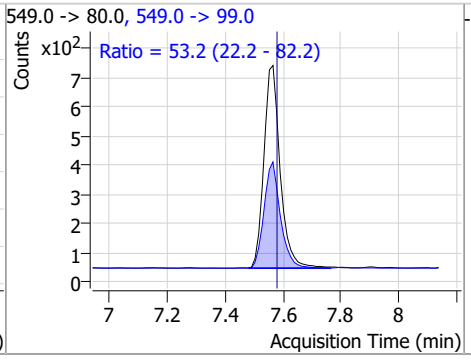


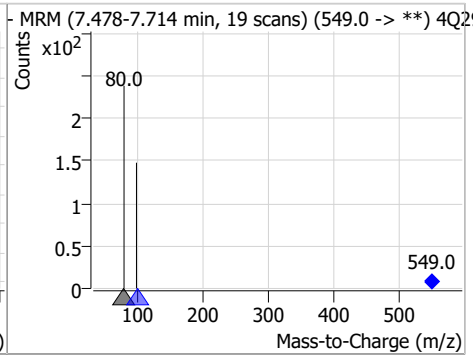




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.91	7.56	0.00	2689	549.0 -> 99.0	53.2	22.2	82.2

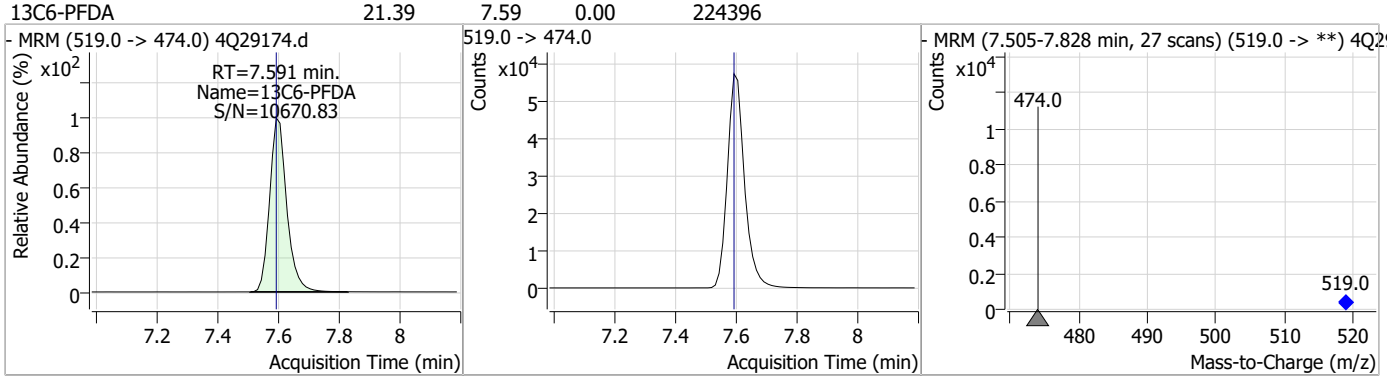




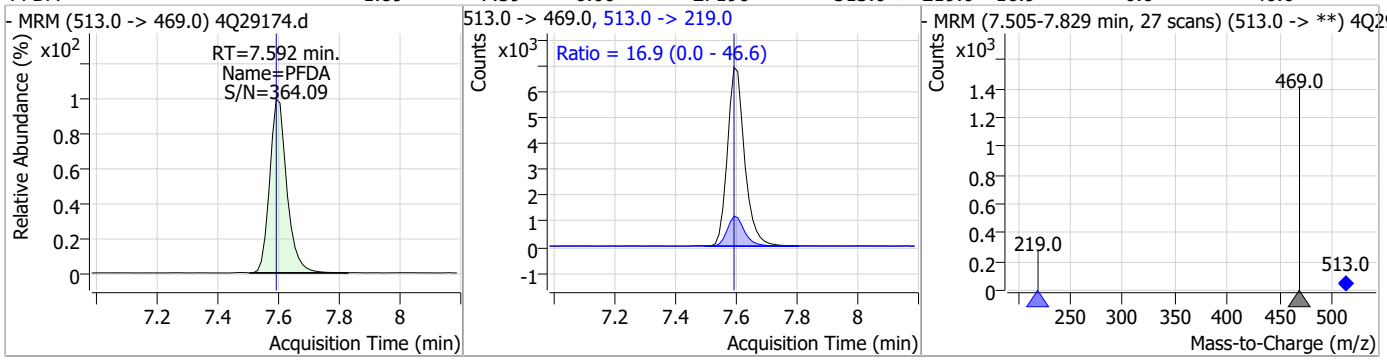


Perfluorinated Compounds by LC/MS/MS

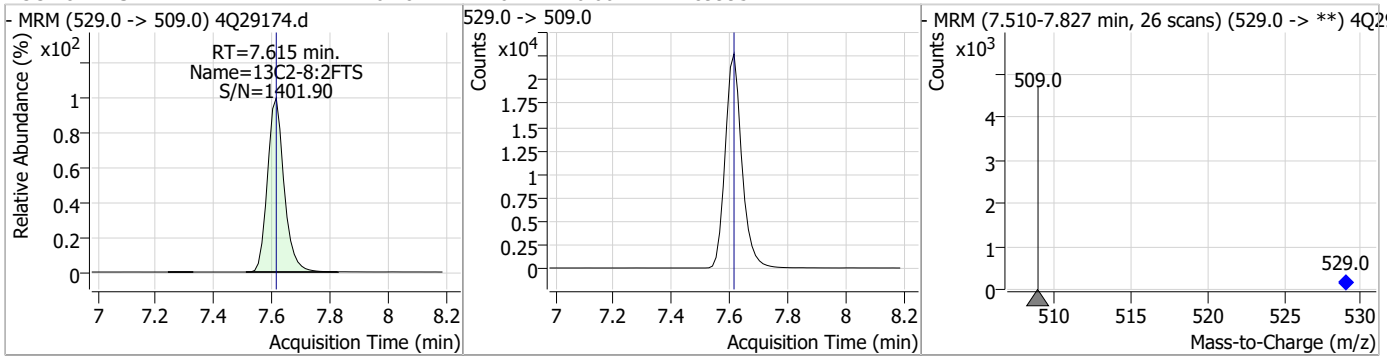
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.39	7.59	0.00	224396				



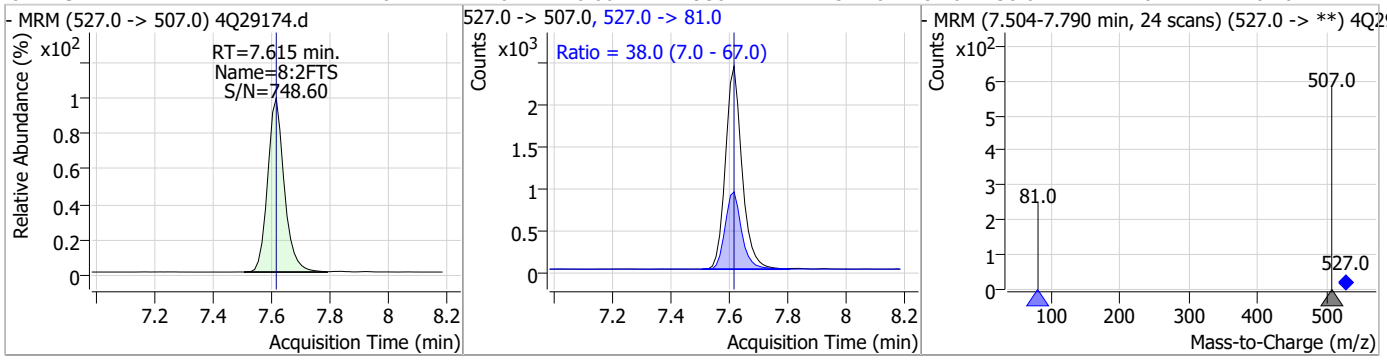
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.89	7.59	0.00	27196	513.0 -> 219.0	16.9	0.0	46.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.18	7.61	0.00	89995				

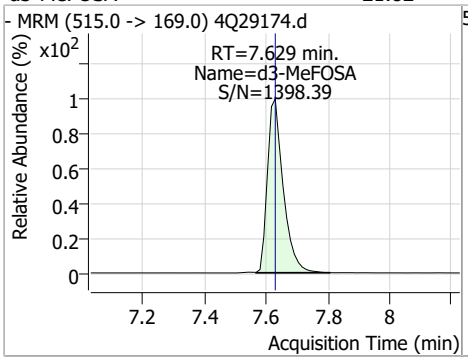


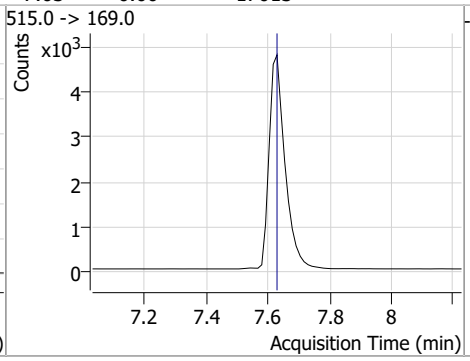
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.04	7.62	0.00	9567	527.0 -> 81.0	38.0	7.0	67.0

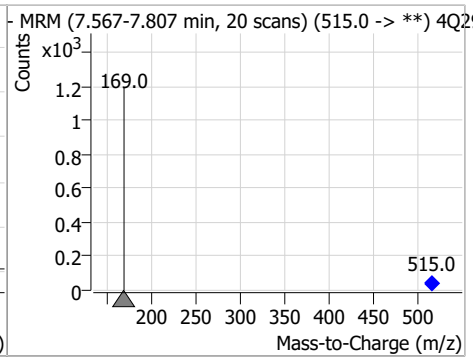


Perfluorinated Compounds by LC/MS/MS

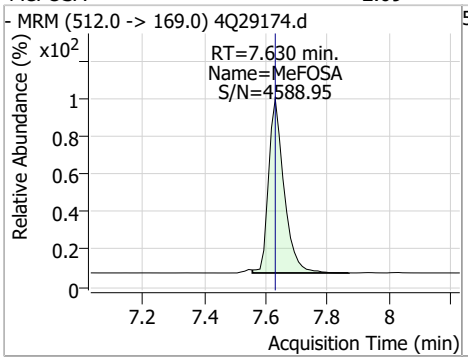
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.82	7.63	0.00	17013				

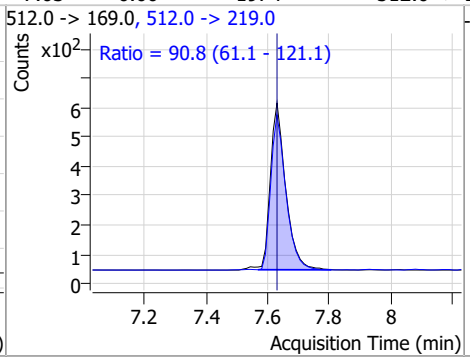


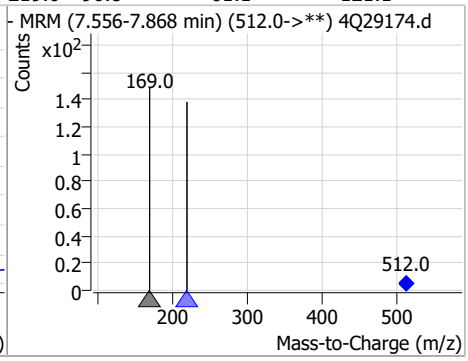




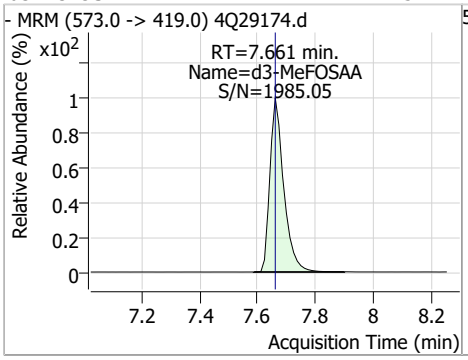
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.09	7.63	0.00	1974	512.0 -> 219.0	90.8	61.1	121.1

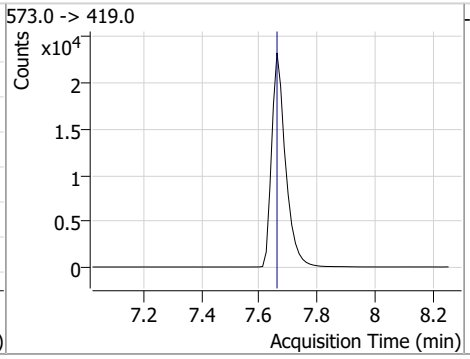


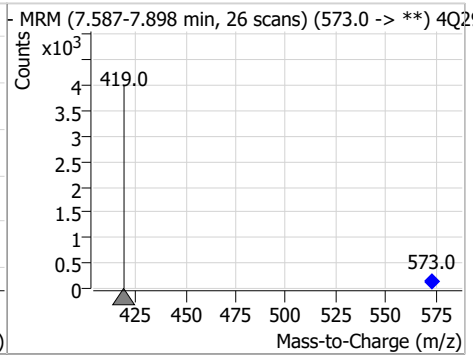




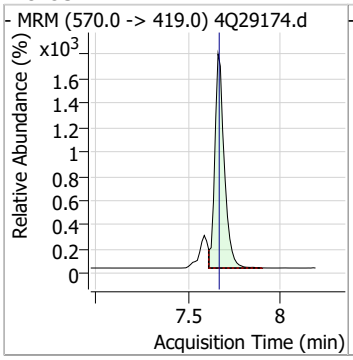
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.15	7.66	0.00	76796				

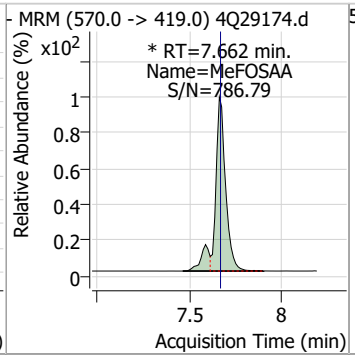


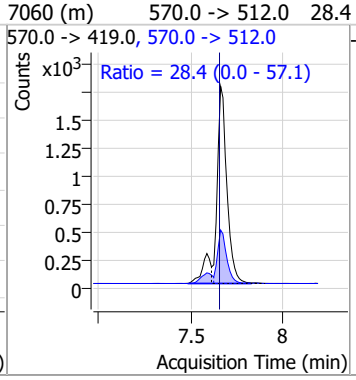


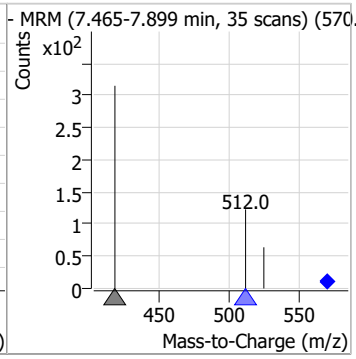


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.00	7.66	0.00	7060 (m)	570.0 -> 512.0	28.4	0.0	57.1



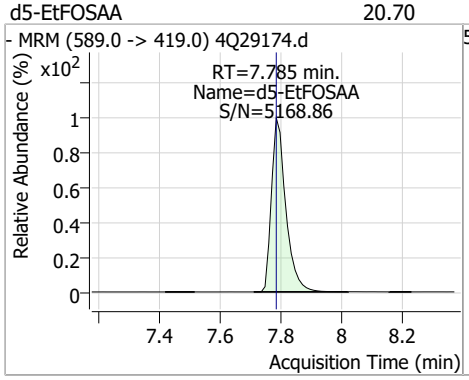


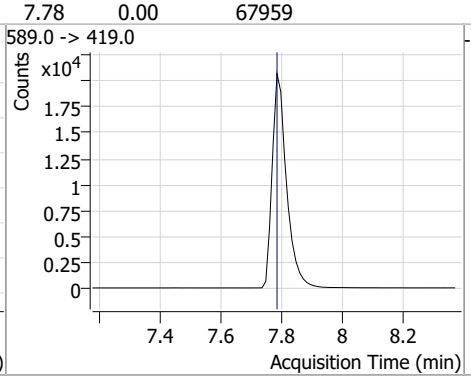


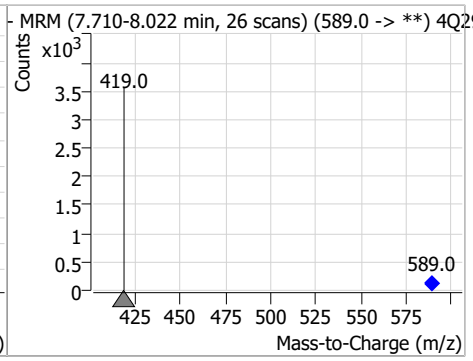


Perfluorinated Compounds by LC/MS/MS

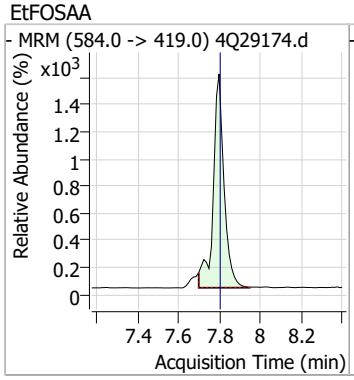
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.70	7.78	0.00	67959				

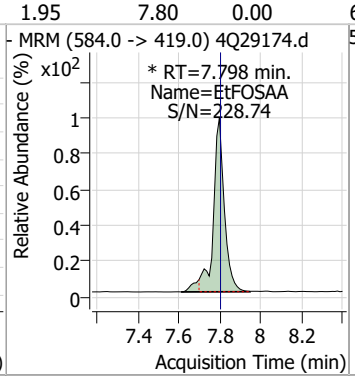


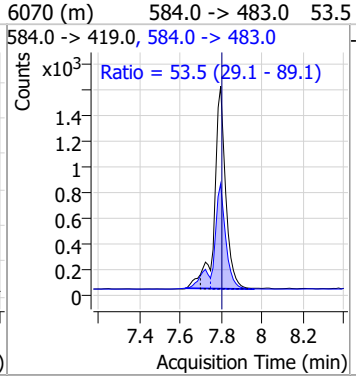


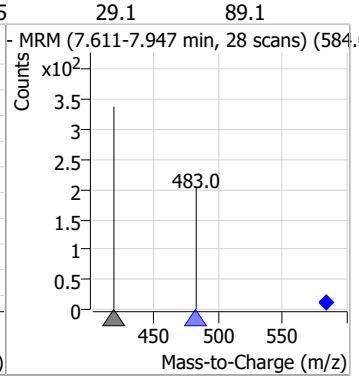


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.95	7.80	0.00	6070 (m)	584.0 -> 483.0	53.5	29.1	89.1

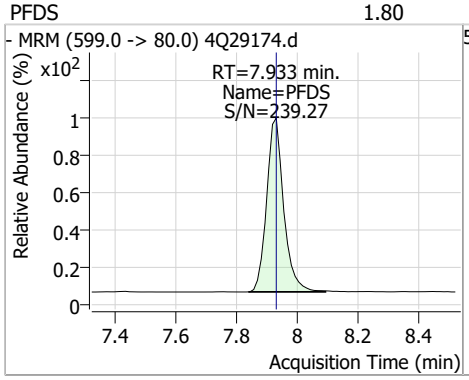


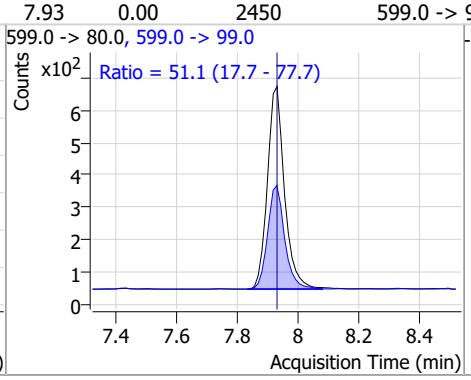


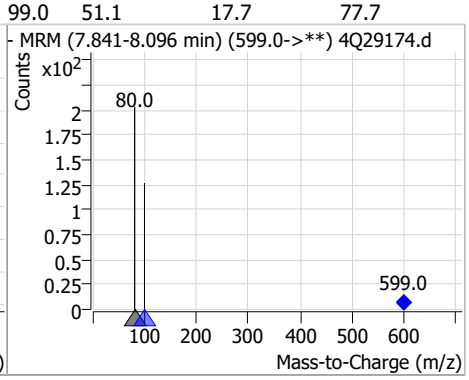




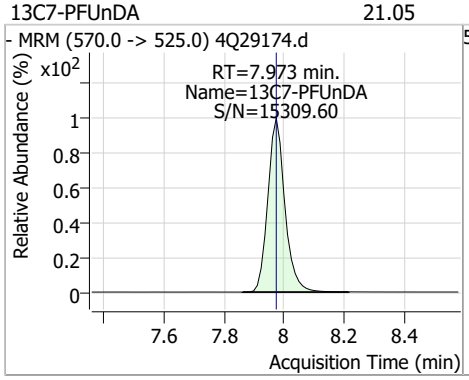
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.80	7.93	0.00	2450	599.0 -> 99.0	51.1	17.7	77.7

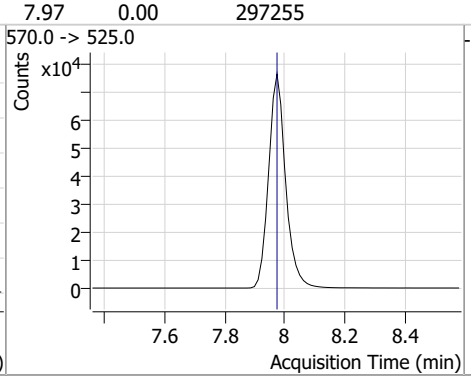


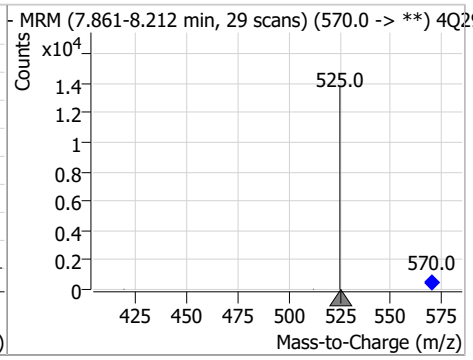




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.05	7.97	0.00	297255				

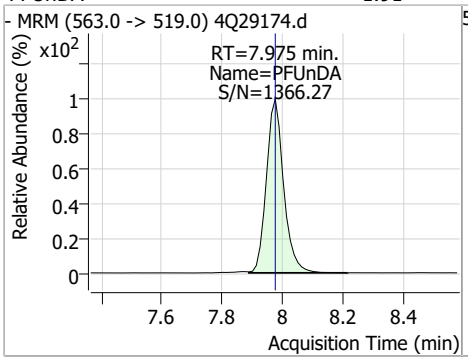


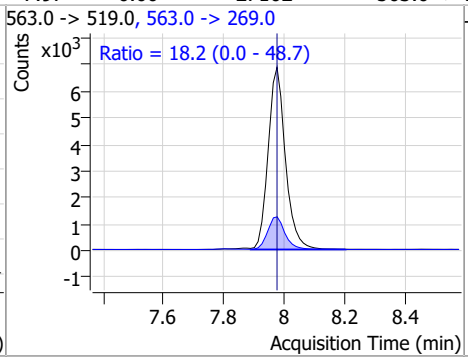


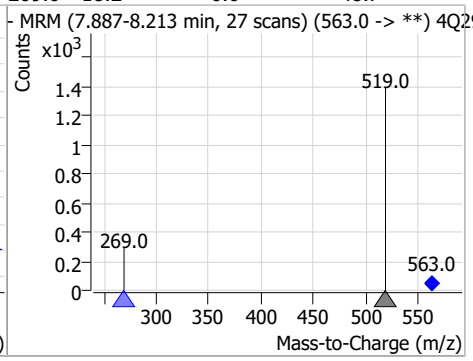


Perfluorinated Compounds by LC/MS/MS

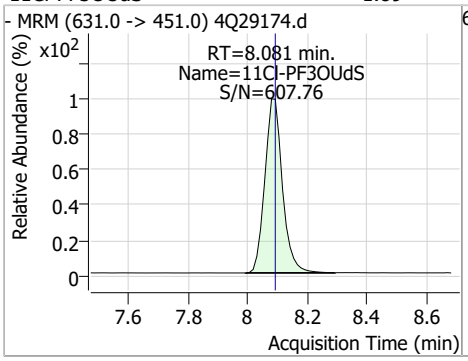
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.91	7.97	0.00	27102	563.0 -> 269.0	18.2	0.0	48.7

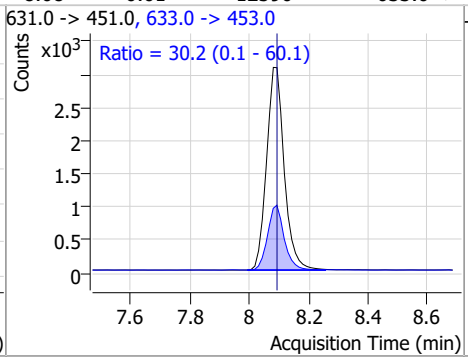


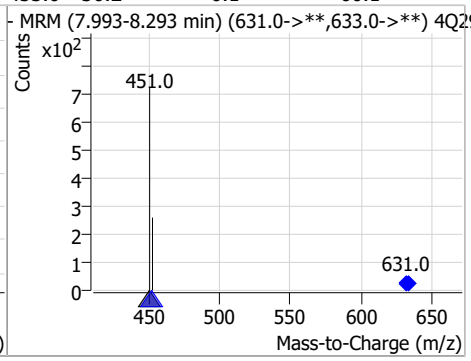




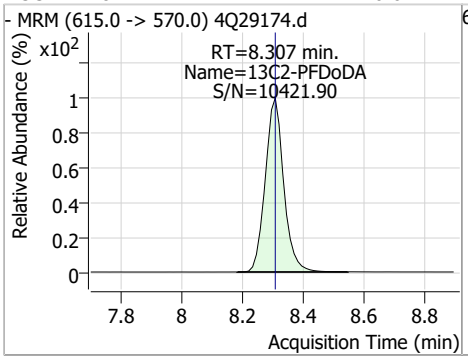
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.89	8.08	-0.01	12590	633.0 -> 453.0	30.2	0.1	60.1

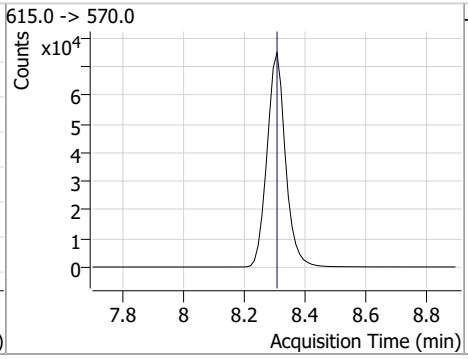


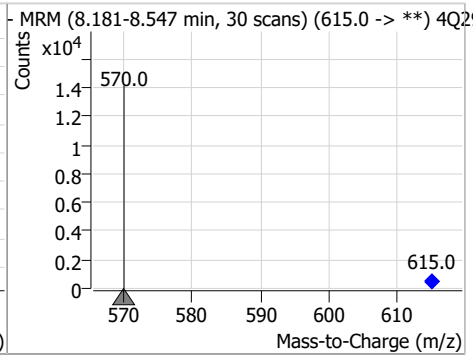




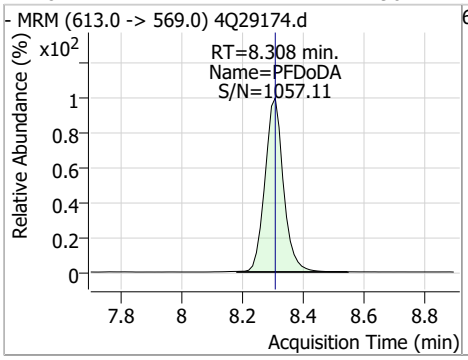
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.67	8.31	0.00	316430				

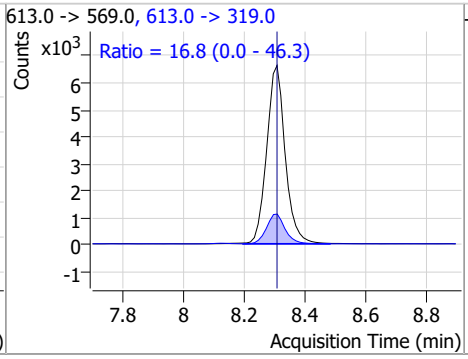


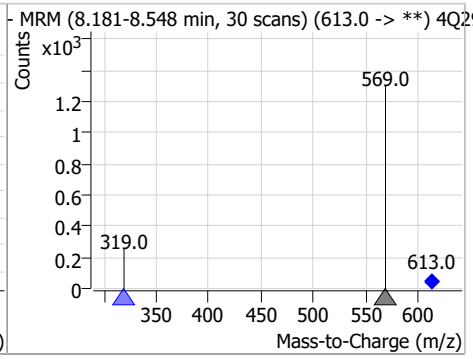




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.90	8.31	0.00	28028	613.0 -> 319.0	16.8	0.0	46.3

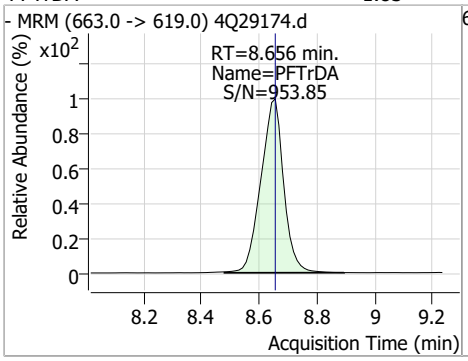


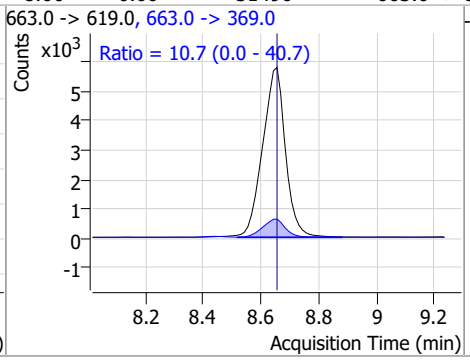


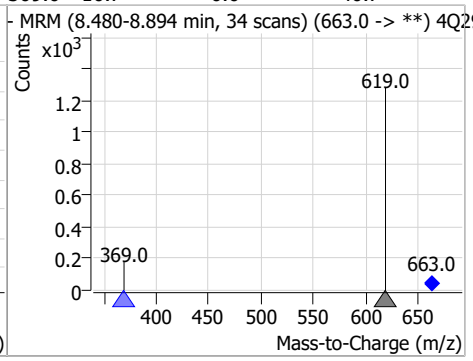


Perfluorinated Compounds by LC/MS/MS

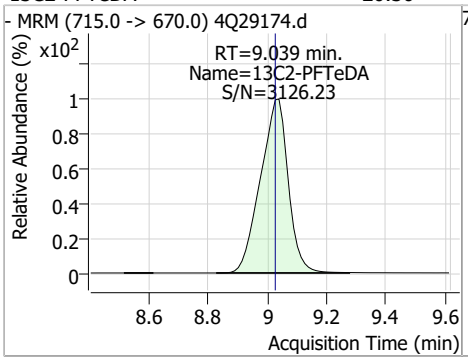
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.83	8.66	0.00	31490	663.0 -> 369.0	10.7	0.0	40.7

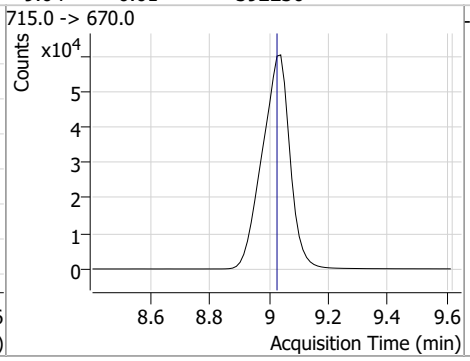


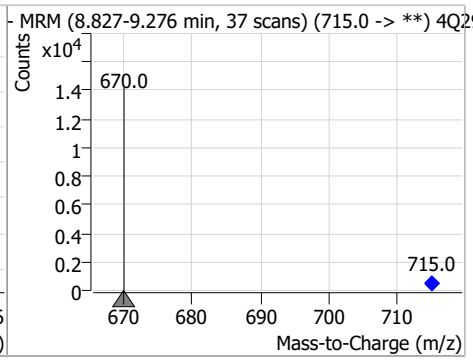




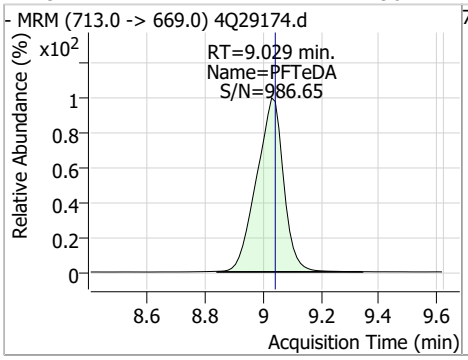
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.36	9.04	0.01	392230				

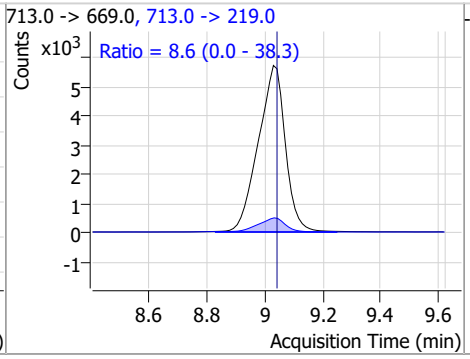


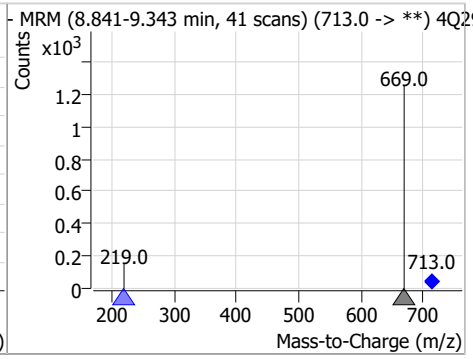




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.96	9.03	0.00	36927	713.0 -> 219.0	8.6	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29174.D
Injection Time: 05/27/22 12:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29175.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 12:31:59 PM
Sample Name : ic419-5
Vial : P1-A5
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

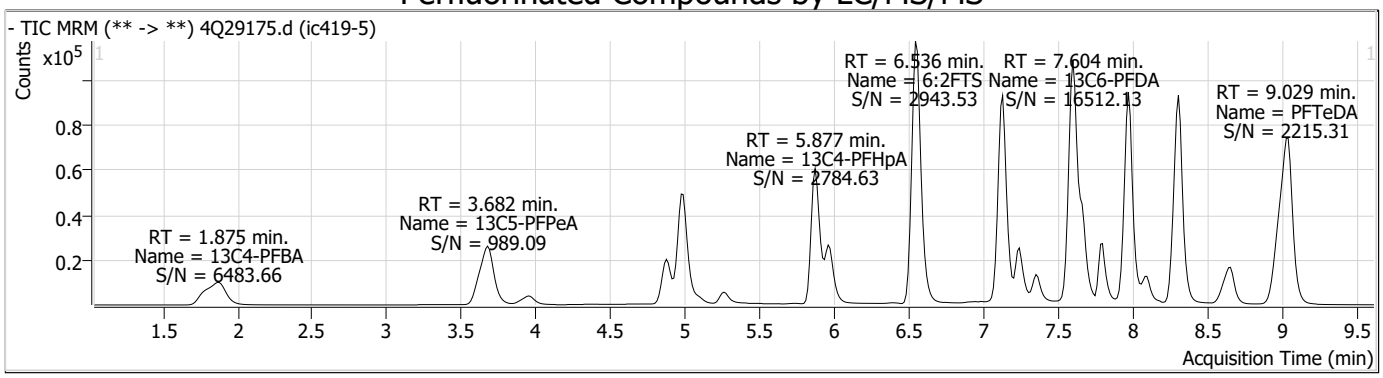
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.875	217.0 -> 172.0	93566	20.00	µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	145759	20.00	µg/L	0.000
M5-PFHxA	4.991	318.0 -> 273.0	179850	20.00	µg/L	0.012
M4-PFHpA	5.877	367.0 -> 322.0	171309	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	278404	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	289562	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	216703	20.00	µg/L	0.012
M7-PFUnDA	7.973	570.0 -> 525.0	285417	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	307636	20.00	µg/L	0.000
M2-PFTeDA	9.039	715.0 -> 670.0	382885	20.00	µg/L	0.012
M8-FOSA	7.246	506.0 -> 78.0	67168	20.00	µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	10962	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	10999	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	18173	20.00	µg/L	0.013
M2-4:2FTS	4.875	329.0 -> 309.0	64078	20.00	µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	103093	20.00	µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	87275	20.00	µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	73913	20.00	µg/L	0.000
M3-HFPO-DA	5.269	287.0 -> 169.0	10610	20.00	µg/L	0.000
M3-MeFOSA	7.629	515.0 -> 169.0	16431	20.00	µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	66419	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	64078	18.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	6.535	429.0 -> 409.0	103093	19.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-8:2FTS	7.615	529.0 -> 509.0	87275	19.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFDoDA	8.307	615.0 -> 570.0	307636	20.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFTeDA	9.039	715.0 -> 670.0	382885	19.87	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFBS	3.949	302.0 -> 99.0	10962	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-PFHxS	5.898	402.0 -> 99.0	10999	20.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFBA	1.875	217.0 -> 172.0	93566	19.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C4-PFHpA	5.877	367.0 -> 322.0	171309	20.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFHxA	4.991	318.0 -> 273.0	179850	19.97	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFPeA	3.682	268.0 -> 223.0	145759	19.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C6-PFDA	7.604	519.0 -> 474.0	216703	20.66	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

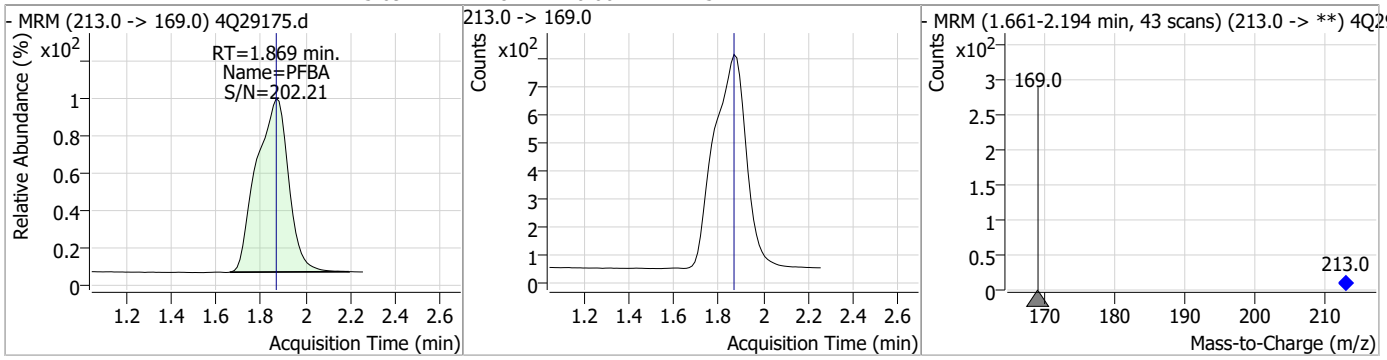
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C7-PFUnDA	7.973	570.0 -> 525.0	285417	20.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-FOSA	7.246	506.0 -> 78.0	67168	20.49 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C8-PFOA	6.564	421.0 -> 376.0	278404	20.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C8-PFOS	7.108	507.0 -> 99.0	18173	20.12 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C9-PFNA	7.135	472.0 -> 427.0	289562	20.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
d3-MeFOSAA	7.661	573.0 -> 419.0	73913	20.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C3-HFPO-DA	5.269	287.0 -> 169.0	10600	19.96 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
d3-MeFOSA	7.629	515.0 -> 169.0	16431	21.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
d5-EtFOSAA	7.785	589.0 -> 419.0	66348	20.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
Target Compounds						**QValue**
4:2FTS	4.877	327.0 -> 307.0	19788	5.37 µg/L		97
6:2FTS	6.536	427.0 -> 407.0	27962	5.29 µg/L		99
8:2FTS	7.615	527.0 -> 507.0	23865	5.25 µg/L		96
EtFOSAA	7.798	584.0 -> 419.0	15482	5.09 µg/L	m	91
FOSA	7.248	498.0 -> 78.0	16142	5.16 µg/L		99
MeFOSAA	7.674	570.0 -> 419.0	17561	5.18 µg/L	m	94
PFBA	1.869	213.0 -> 169.0	7547	5.09 µg/L		100
PFBS	3.954	299.0 -> 80.0	8978	5.17 µg/L		99
PFDA	7.604	513.0 -> 469.0	68850	4.97 µg/L		98
PFDoDA	8.308	613.0 -> 569.0	72433	5.06 µg/L		100
PFDS	7.933	599.0 -> 80.0	6445	4.93 µg/L		100
PFHpA	5.878	363.0 -> 319.0	60291	5.05 µg/L		99
PFHpS	6.548	449.0 -> 80.0	7537	5.51 µg/L		99
PFHxA	4.992	313.0 -> 269.0	46280	5.05 µg/L		100
PFHxS	5.900	399.0 -> 80.0	7410	5.18 µg/L	m	96
PFNA	7.135	463.0 -> 419.0	62835	5.03 µg/L		99
PFNS	7.564	549.0 -> 80.0	7111	5.14 µg/L		100
PFOA	6.565	413.0 -> 369.0	76961	5.00 µg/L		100
PFOS	7.109	499.0 -> 80.0	8907	5.27 µg/L	m	84
PFPeA	3.684	263.0 -> 219.0	32767	5.08 µg/L		100
PFPeS	5.098	349.0 -> 80.0	5875	5.17 µg/L		99
PFTeDA	9.029	713.0 -> 669.0	93963	5.11 µg/L		99
PFTrDA	8.656	663.0 -> 619.0	81068	4.84 µg/L		100
PFUnDA	7.975	563.0 -> 519.0	67538	4.95 µg/L		99
11Cl-PF3OUdS	8.093	631.0 -> 451.0	31736	4.91 µg/L		99
9Cl-PF3ONS	7.353	531.0 -> 351.0	34647	4.41 µg/L		98
ADONA	5.965	377.0 -> 251.0	71716	4.95 µg/L		97
HFPO-DA	5.264	329.0 -> 169.0	8574	5.17 µg/L		97
MeFOSA	7.630	512.0 -> 169.0	4678	5.14 µg/L		93

 # = Qualifier out of range, m = manually integrated, + = Area summed

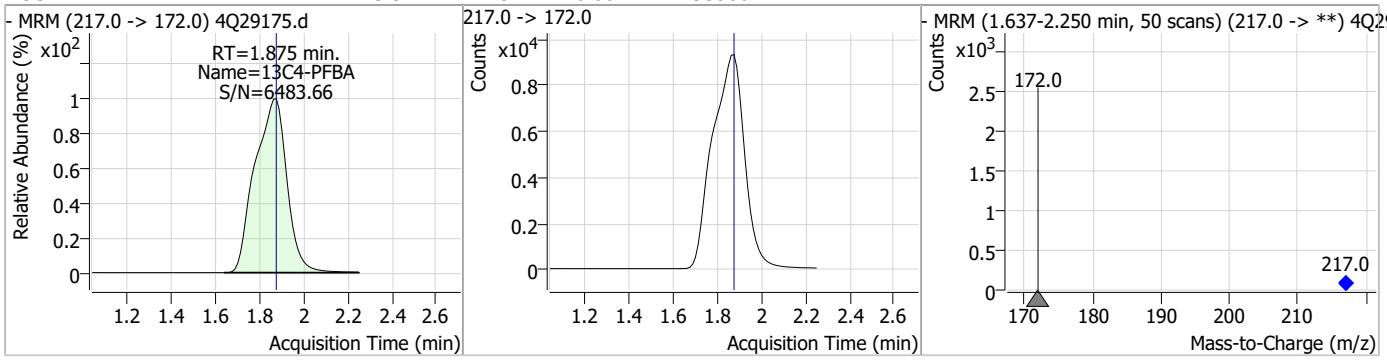
Perfluorinated Compounds by LC/MS/MS



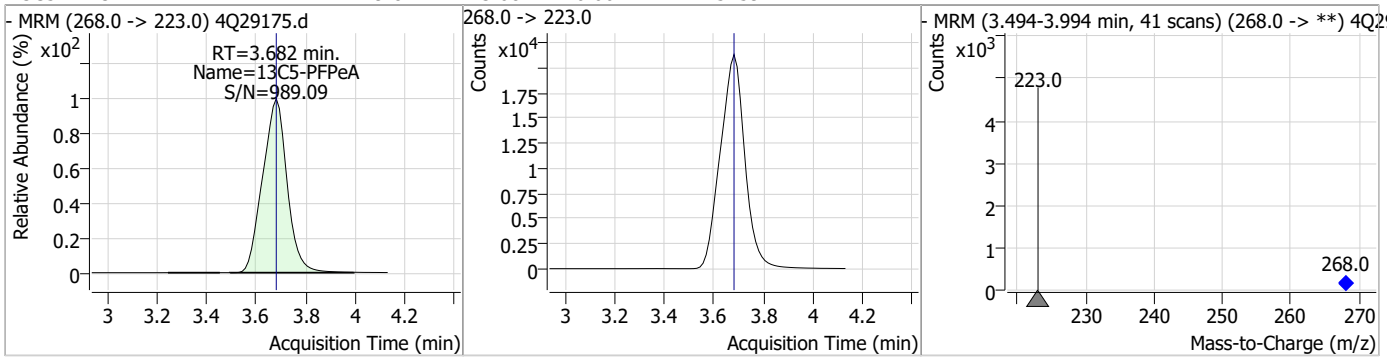
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.09	1.87	0.00	7547				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.91	1.87	0.00	93566				

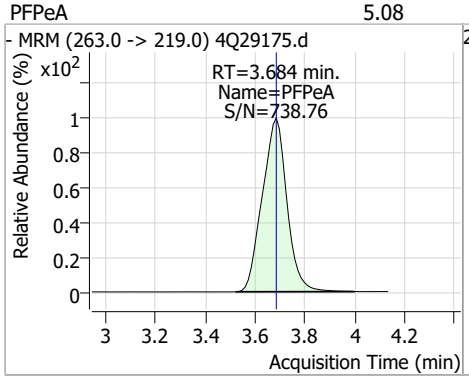


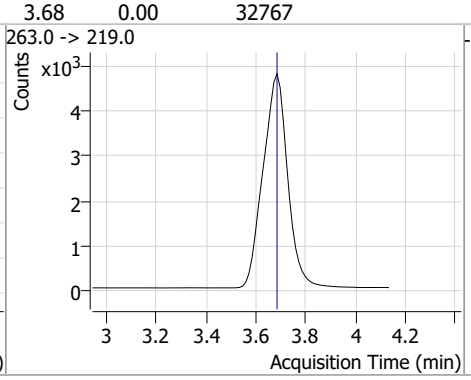
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.87	3.68	0.00	145759				

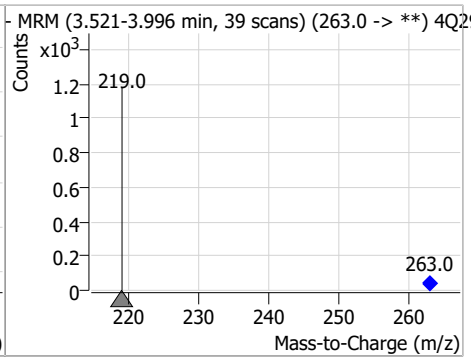


Perfluorinated Compounds by LC/MS/MS

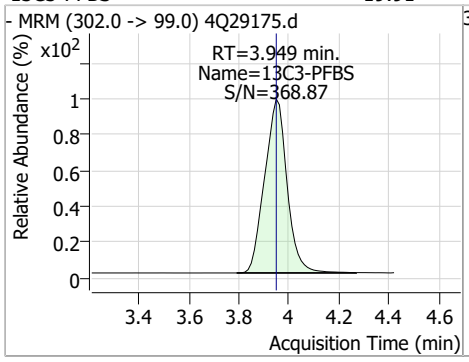
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.08	3.68	0.00	32767				

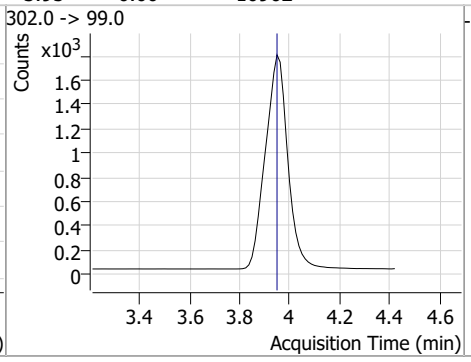


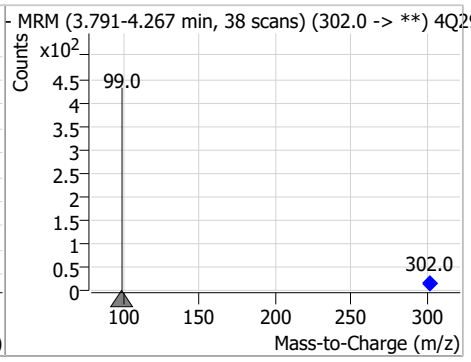




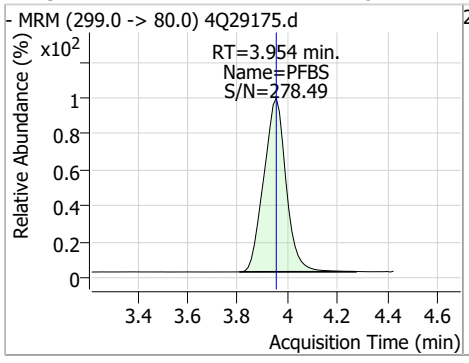
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.91	3.95	0.00	10962				

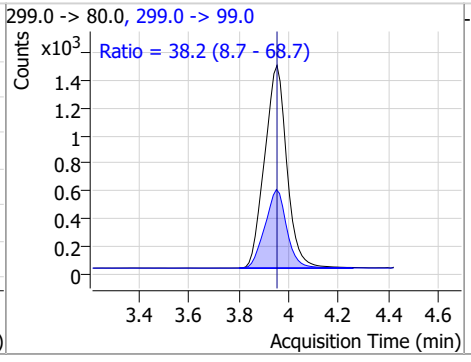


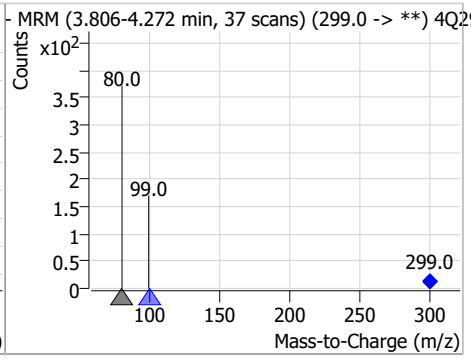




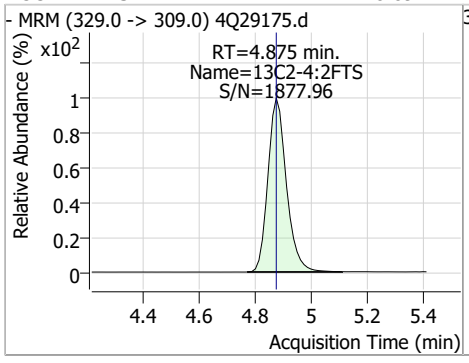
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.17	3.95	0.00	8978	299.0 -> 99.0	38.2	8.7	68.7

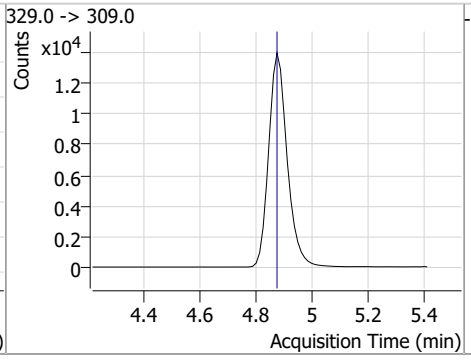


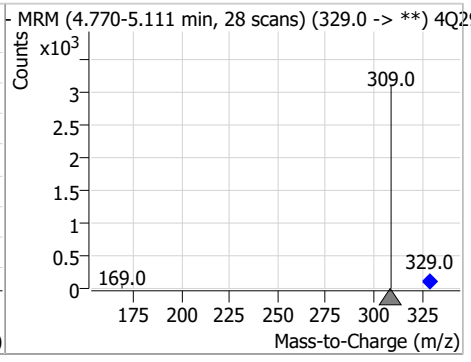




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.89	4.87	0.00	64078				

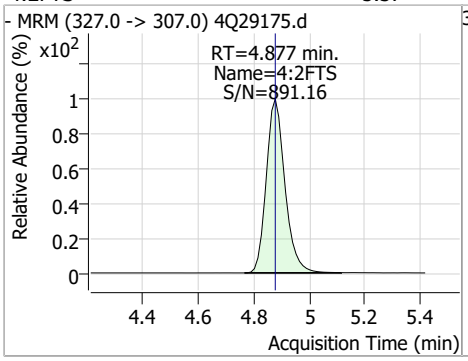


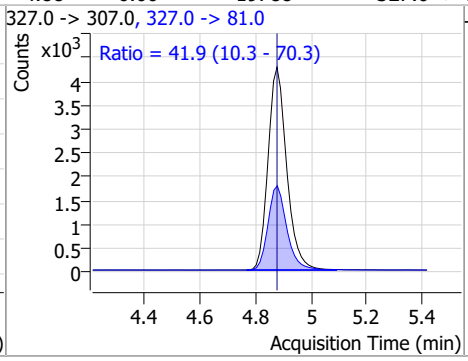


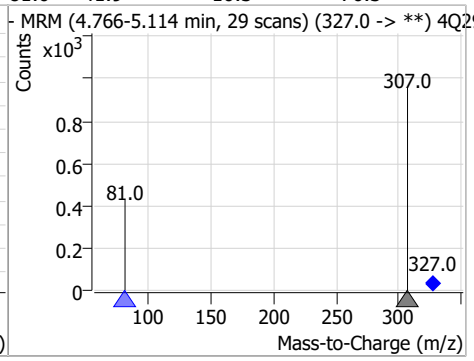


Perfluorinated Compounds by LC/MS/MS

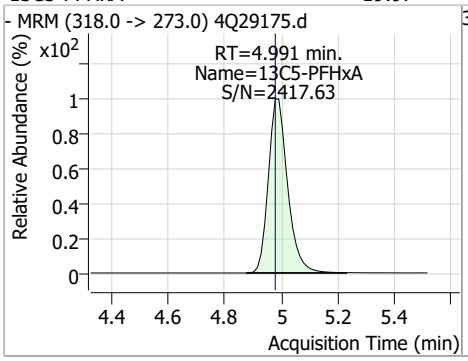
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.37	4.88	0.00	19788	327.0 -> 81.0	41.9	10.3	70.3

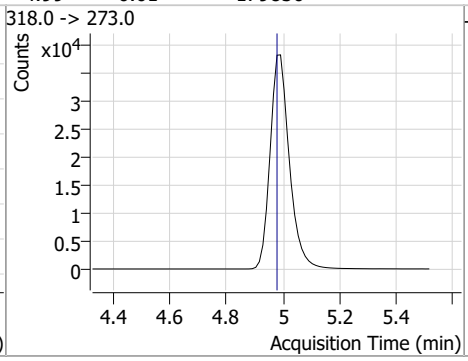


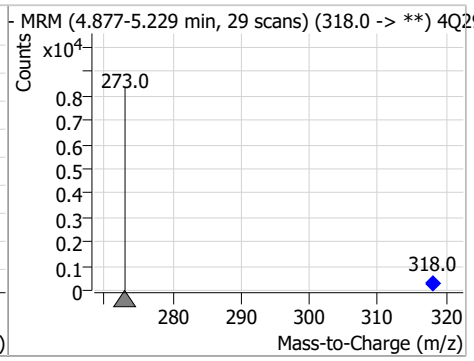




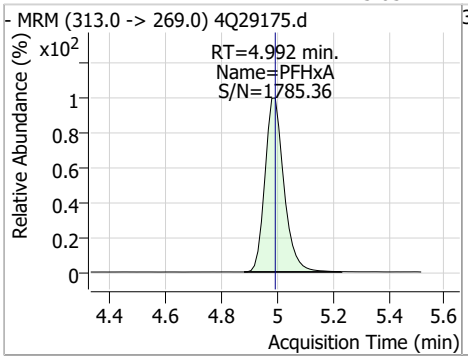
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.97	4.99	0.01	179850				

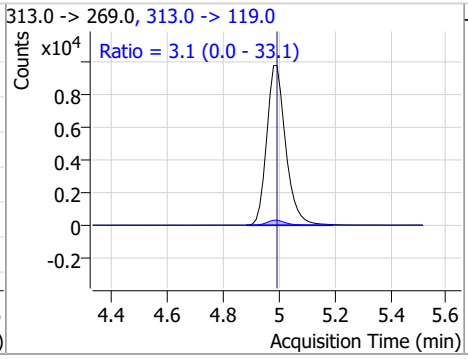


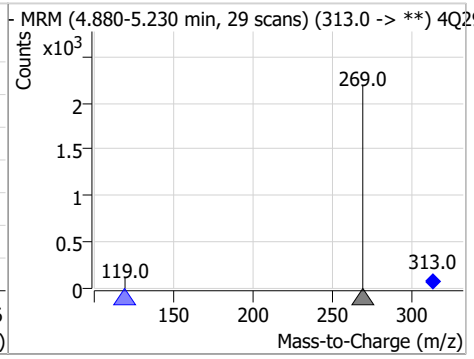




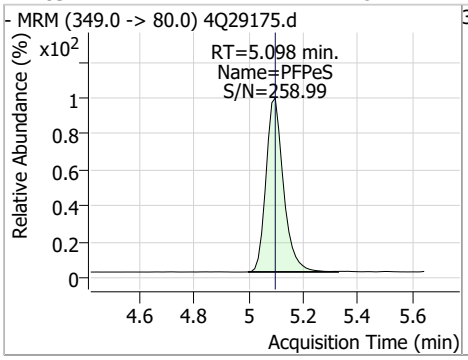
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.05	4.99	0.01	46280	313.0 -> 119.0	3.1	0.0	33.1

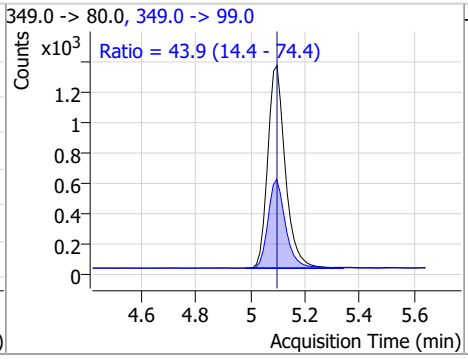


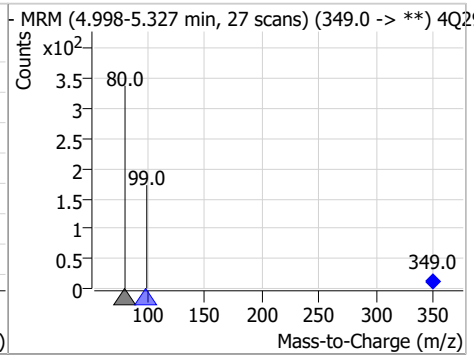




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.17	5.10	0.00	5875	349.0 -> 99.0	43.9	14.4	74.4

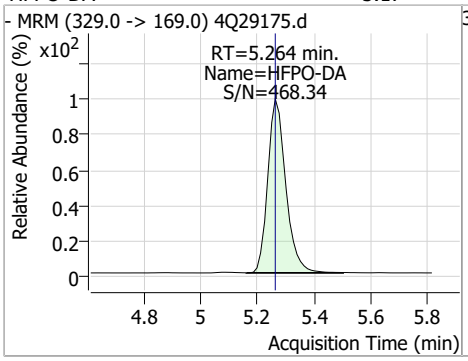


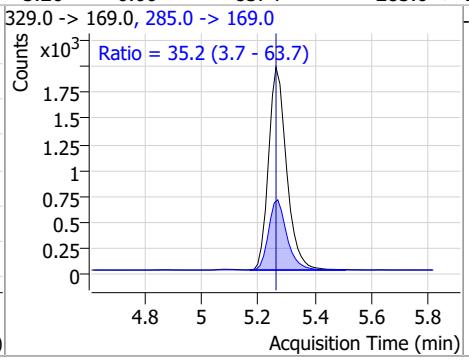


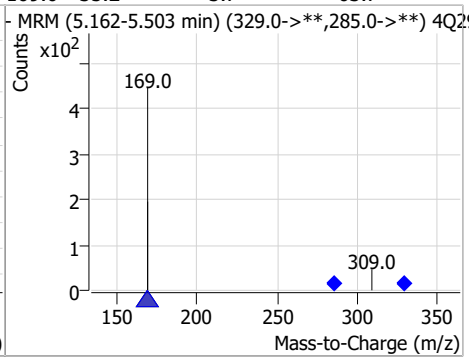


Perfluorinated Compounds by LC/MS/MS

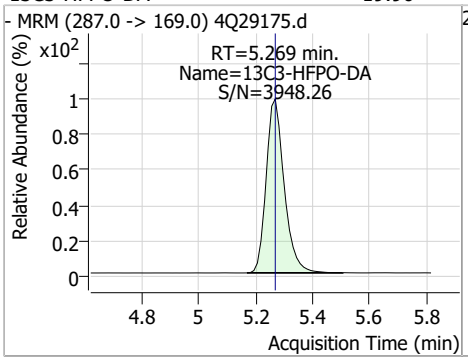
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.17	5.26	0.00	8574	285.0 -> 169.0	35.2	3.7	63.7

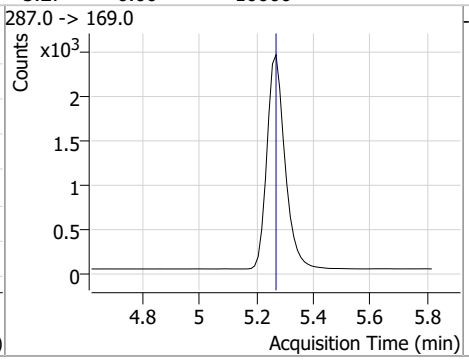


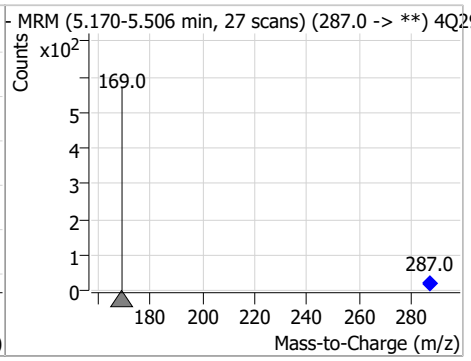




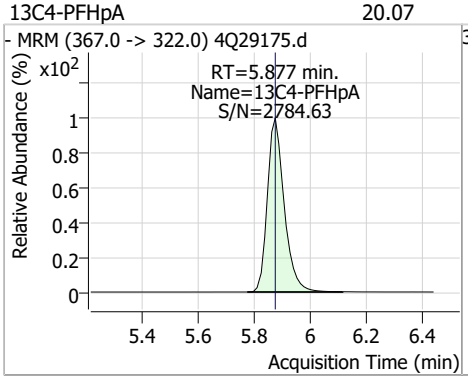
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.96	5.27	0.00	10600				

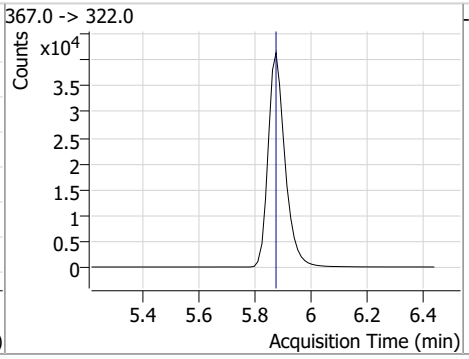


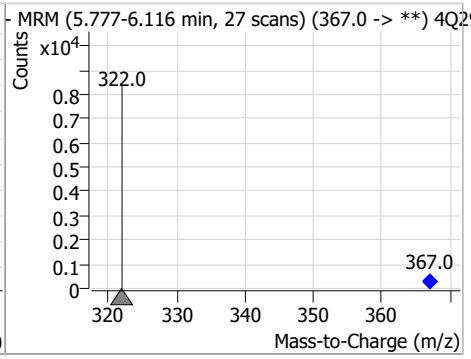




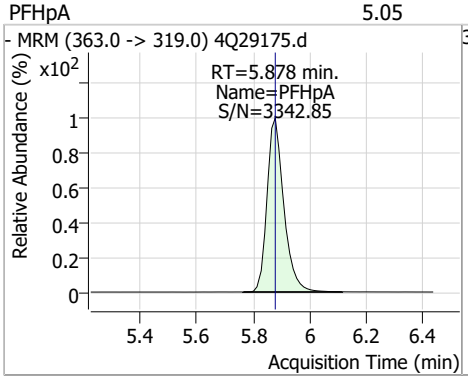
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.07	5.88	0.00	171309				

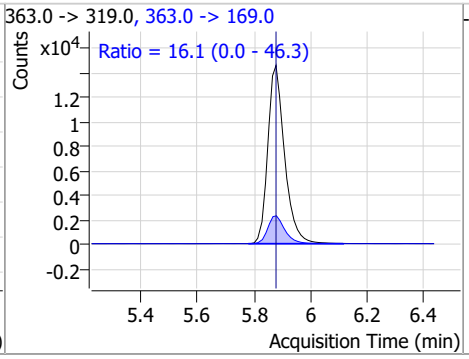


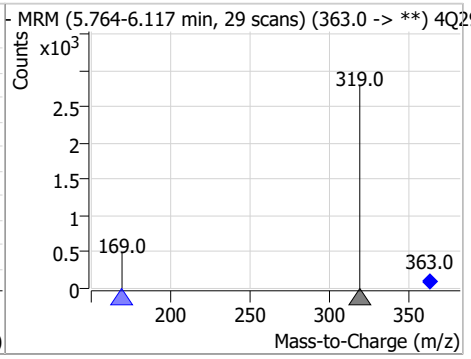




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.05	5.88	0.00	60291	363.0 -> 169.0	16.1	0.0	46.3

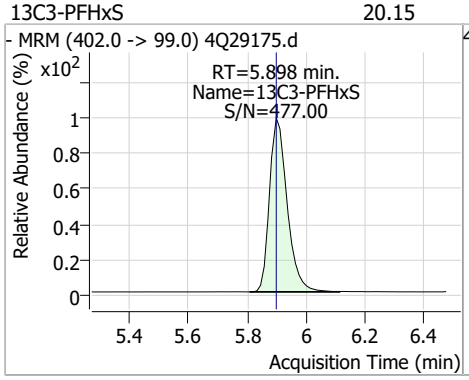


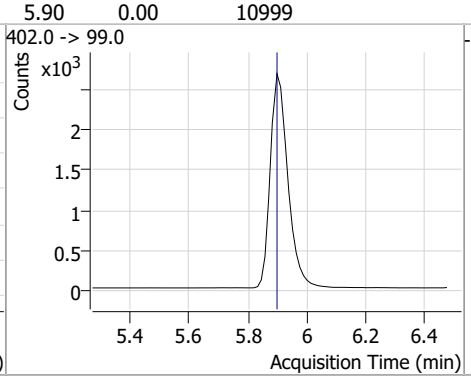


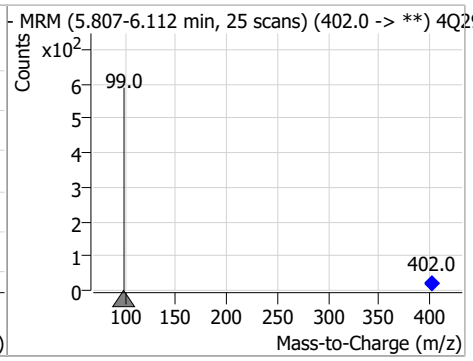


Perfluorinated Compounds by LC/MS/MS

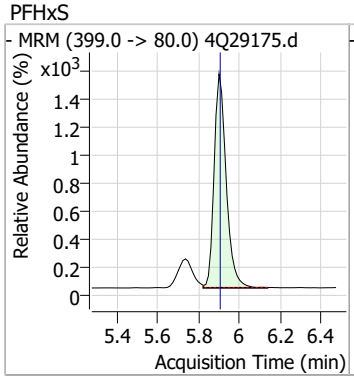
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.15	5.90	0.00	10999				

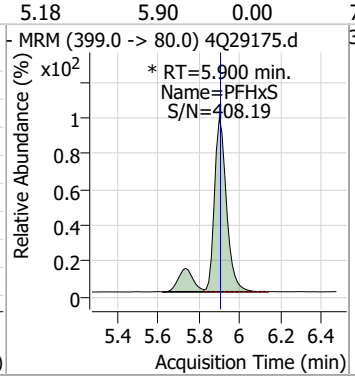


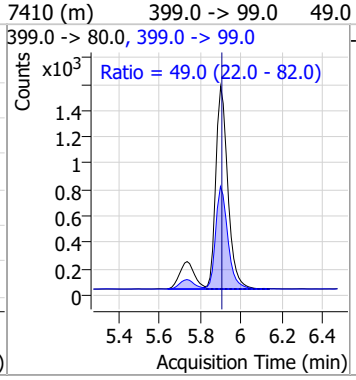


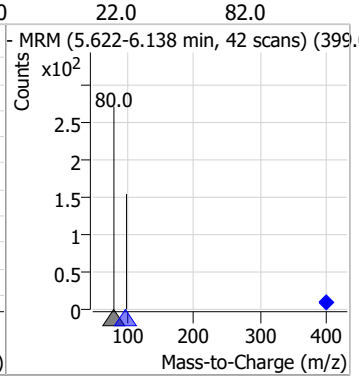


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.18	5.90	0.00	7410 (m)	399.0 -> 99.0	49.0	22.0	82.0

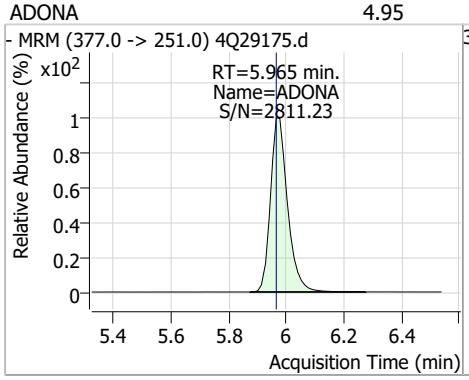


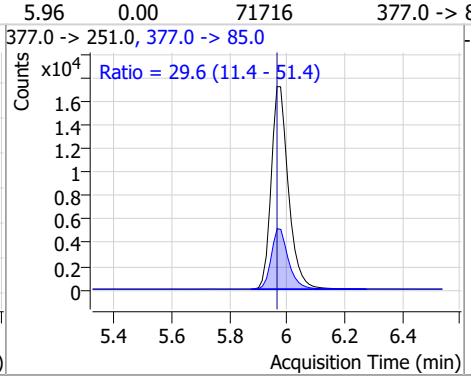


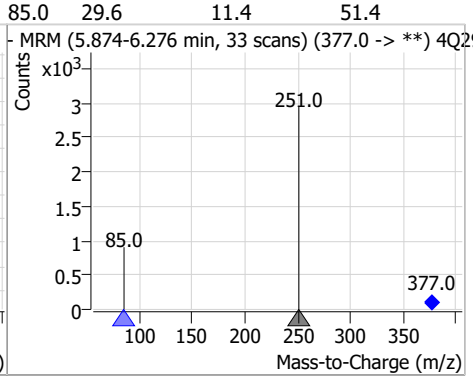




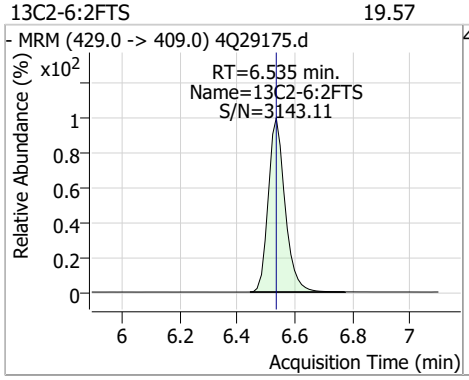
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.95	5.96	0.00	71716	377.0 -> 85.0	29.6	11.4	51.4

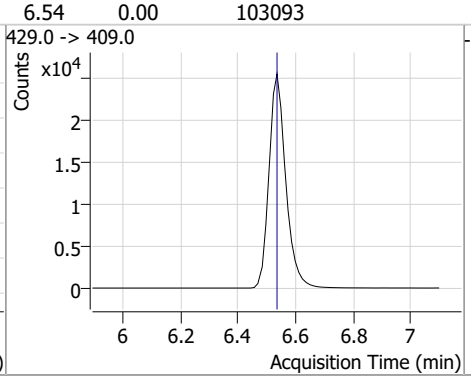


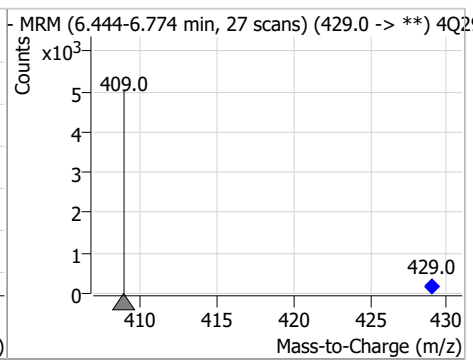




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.57	6.54	0.00	103093				

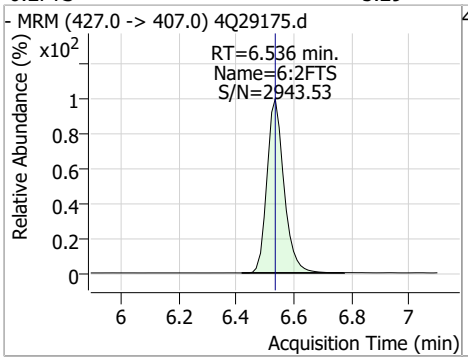


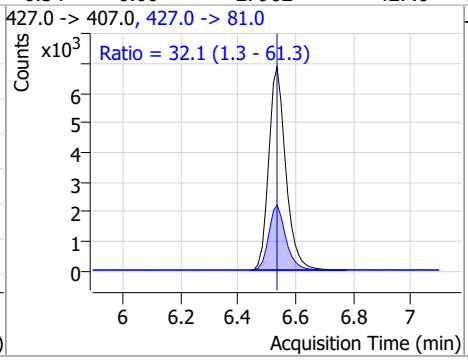


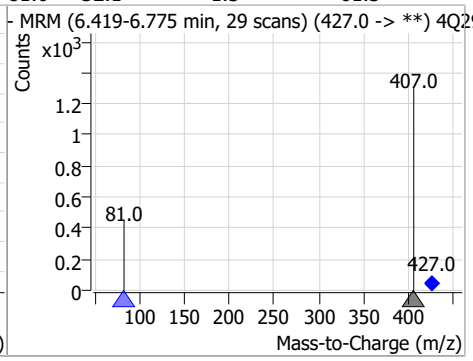


Perfluorinated Compounds by LC/MS/MS

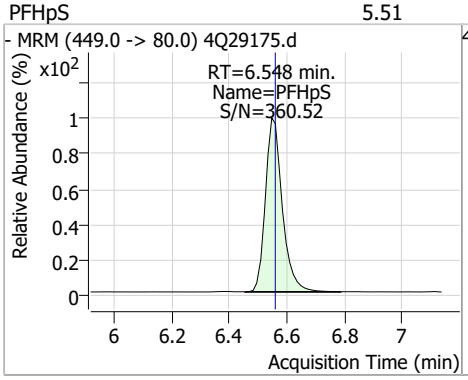
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.29	6.54	0.00	27962	427.0 -> 81.0	32.1	1.3	61.3

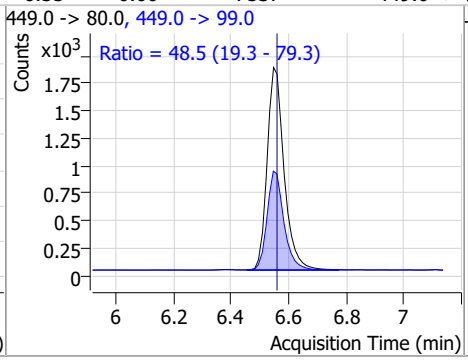


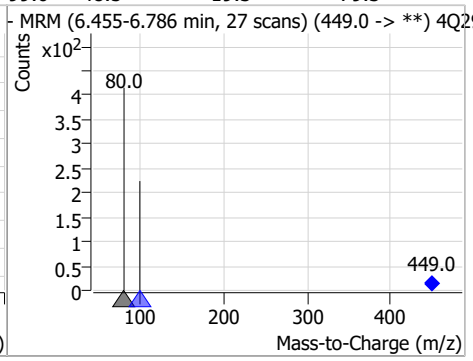




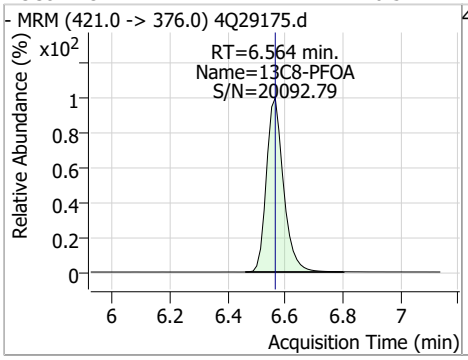
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.51	6.55	0.00	7537	449.0 -> 99.0	48.5	19.3	79.3

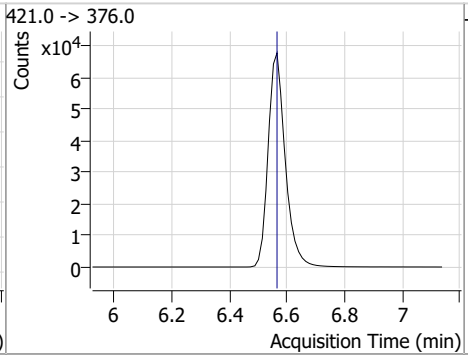


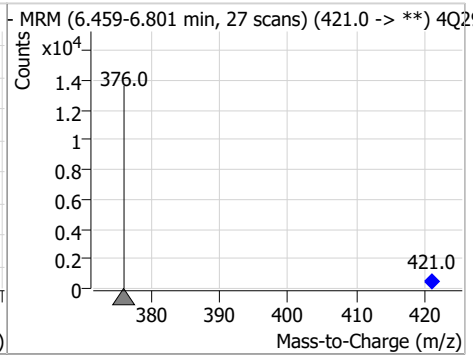




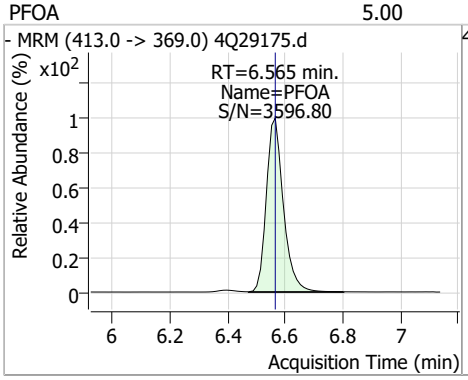
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.51	6.56	0.00	278404				

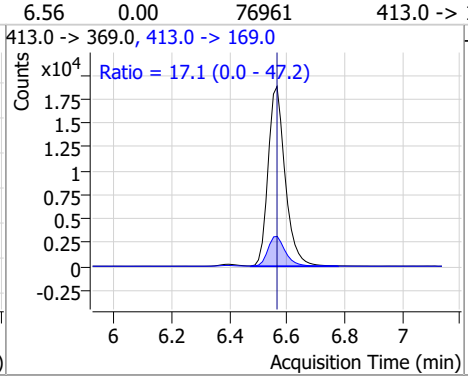


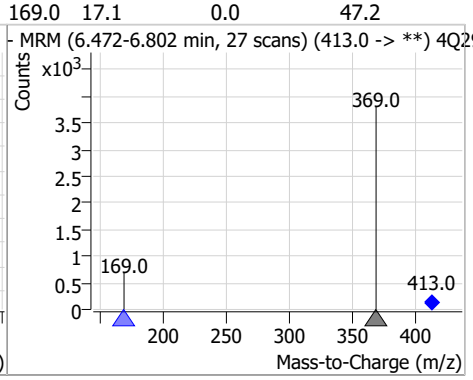




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.00	6.56	0.00	76961	413.0 -> 169.0	17.1	0.0	47.2

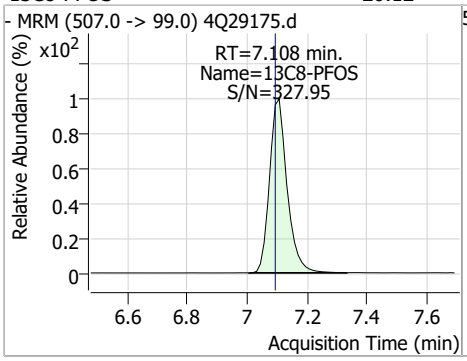


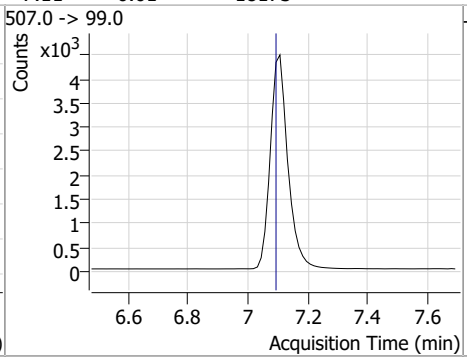


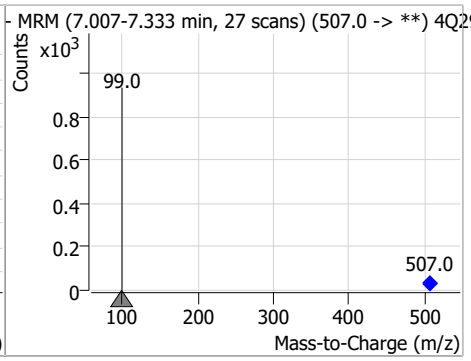


Perfluorinated Compounds by LC/MS/MS

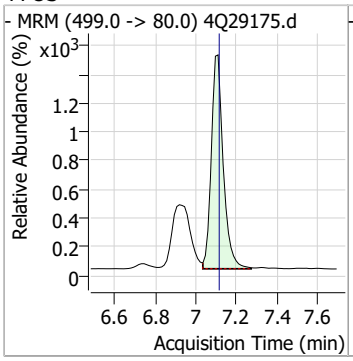
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.12	7.11	0.01	18173				

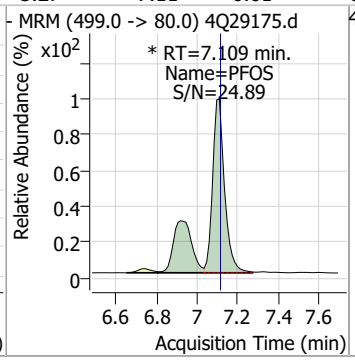


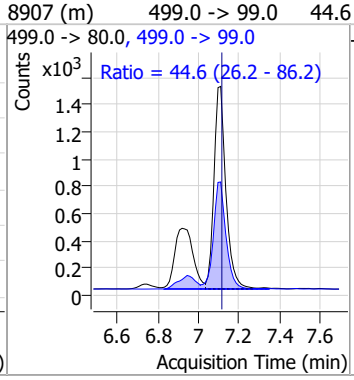


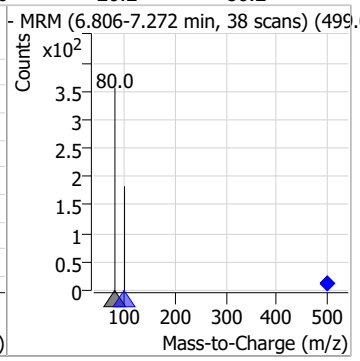


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5.27	7.11	0.01	8907 (m)	499.0 -> 99.0	44.6	26.2	86.2

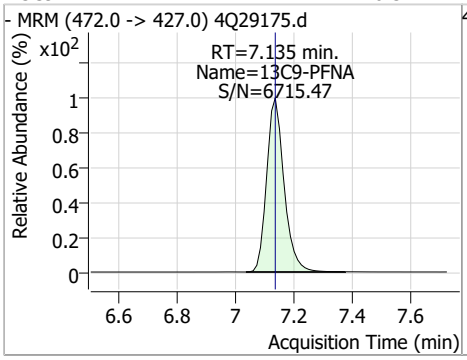


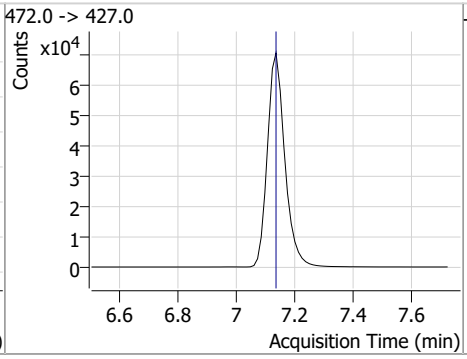


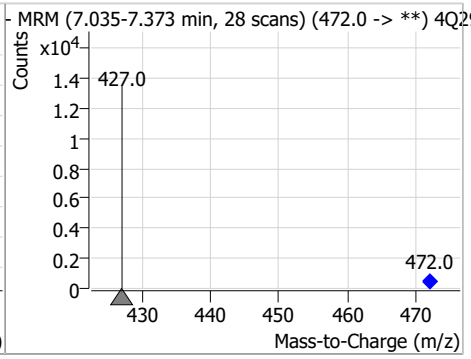




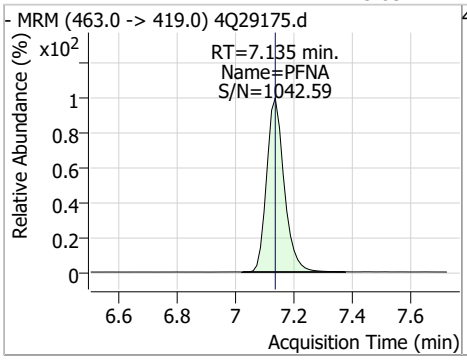
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.34	7.13	0.00	289562				

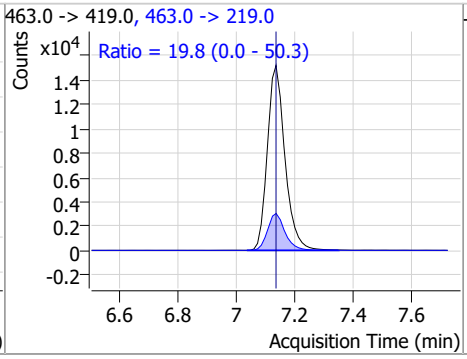


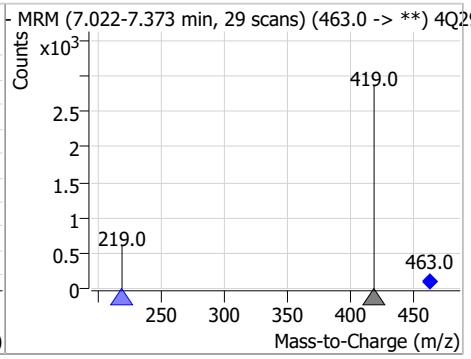




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.03	7.14	0.00	62835	463.0 -> 219.0	19.8	0.0	50.3

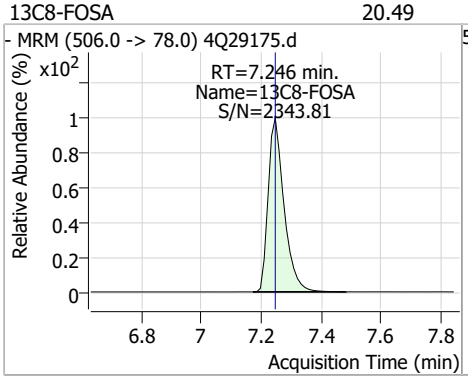


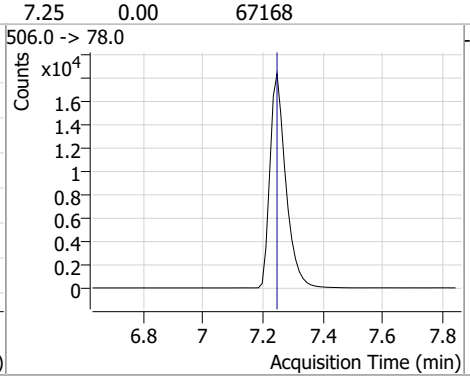


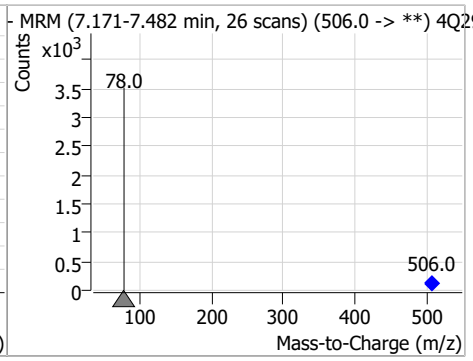


Perfluorinated Compounds by LC/MS/MS

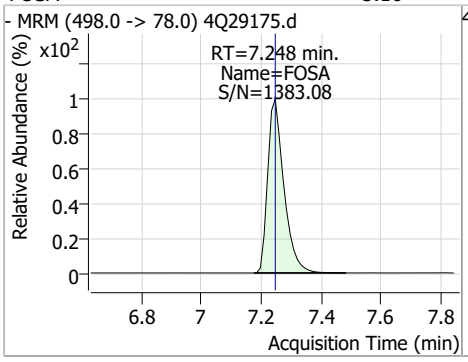
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.49	7.25	0.00	67168				

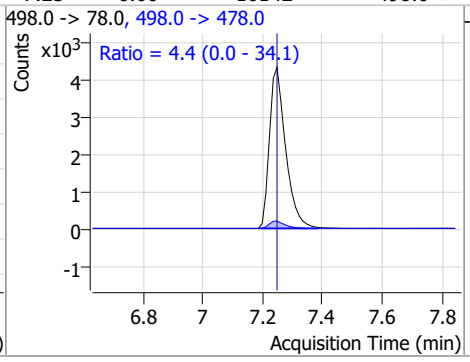


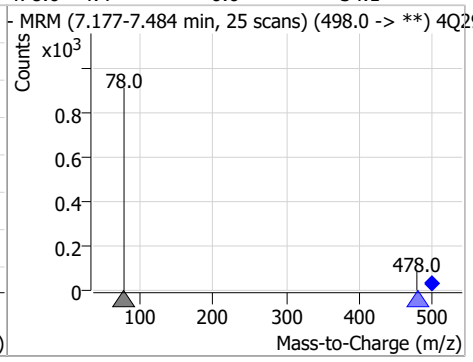




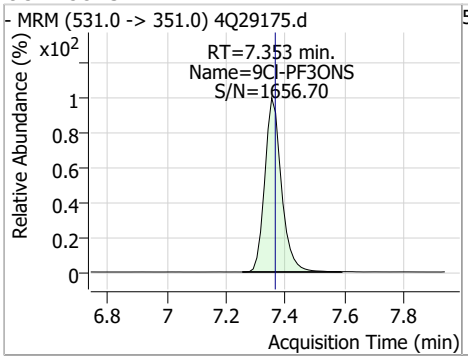
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.16	7.25	0.00	16142	498.0 -> 478.0	4.4	0.0	34.1

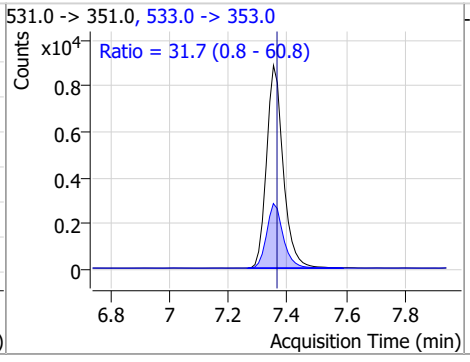


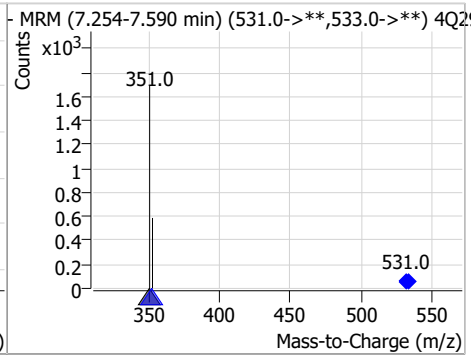




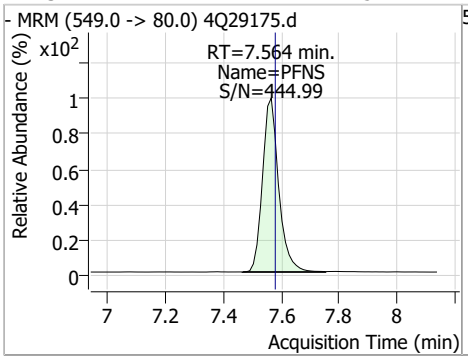
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.41	7.35	0.00	34647	533.0 -> 353.0	31.7	0.8	60.8

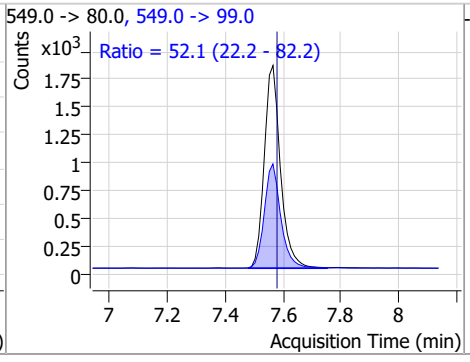


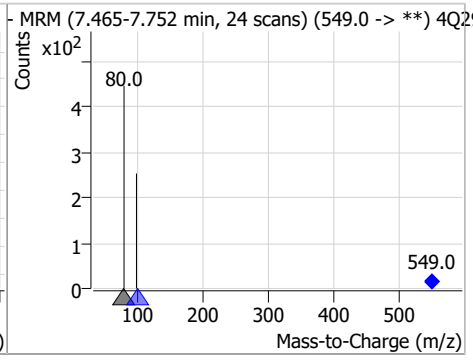




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.14	7.56	0.00	7111	549.0 -> 99.0	52.1	22.2	82.2

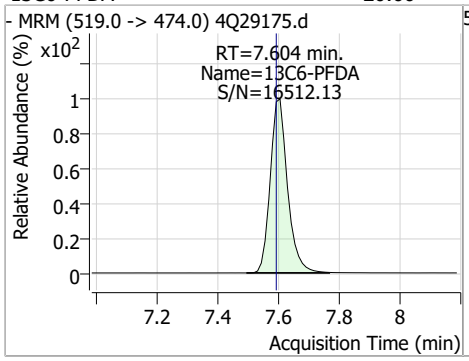


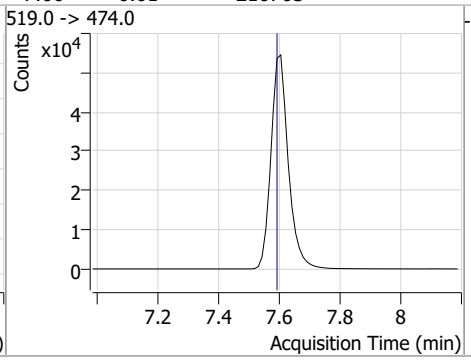


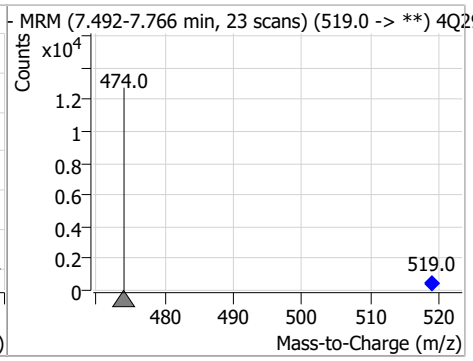


Perfluorinated Compounds by LC/MS/MS

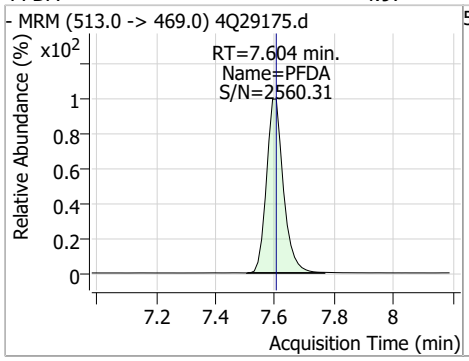
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.66	7.60	0.01	216703				

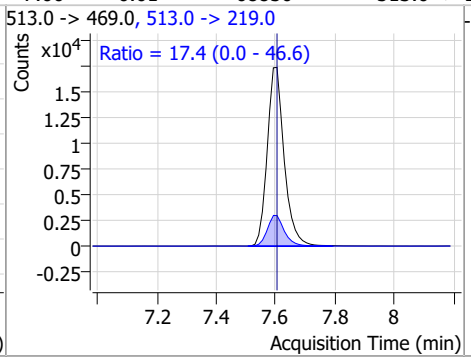


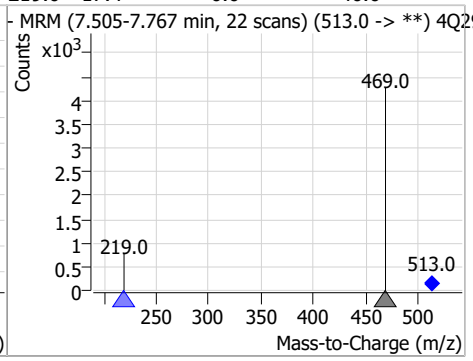




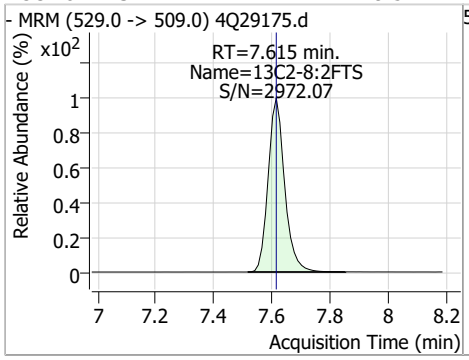
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.97	7.60	0.01	68850	513.0 -> 219.0	17.4	0.0	46.6

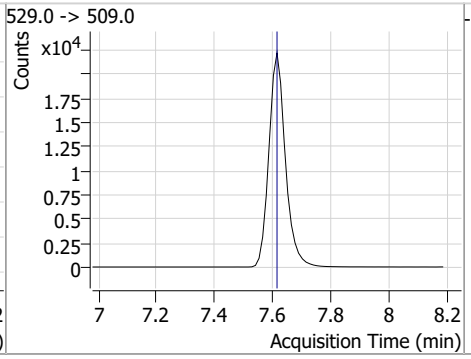


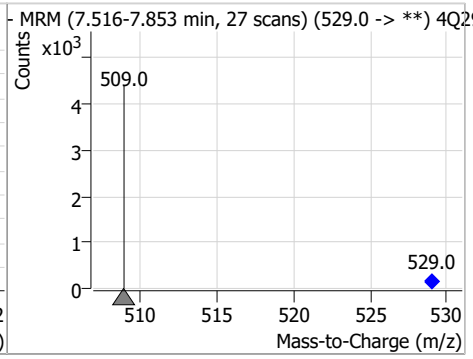




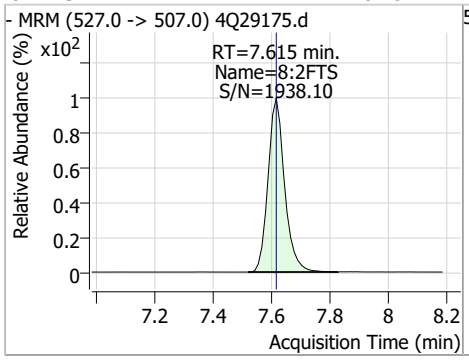
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.57	7.61	0.00	87275				

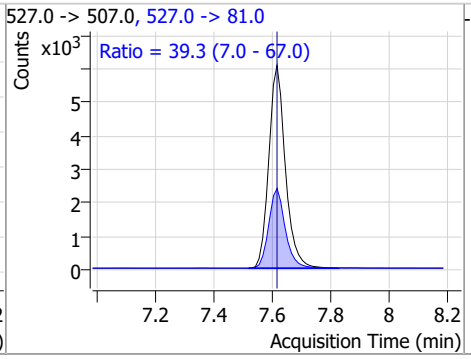


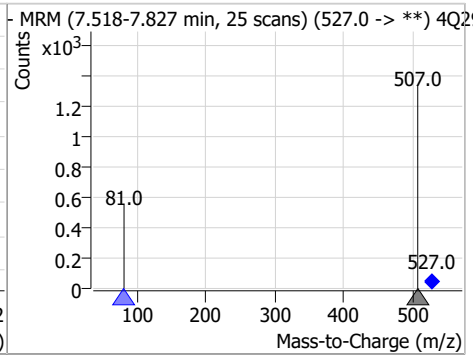




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.25	7.62	0.00	23865	527.0 -> 81.0	39.3	7.0	67.0

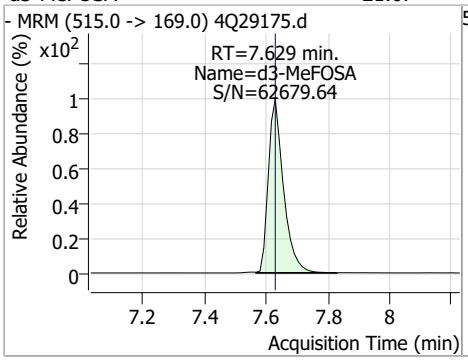


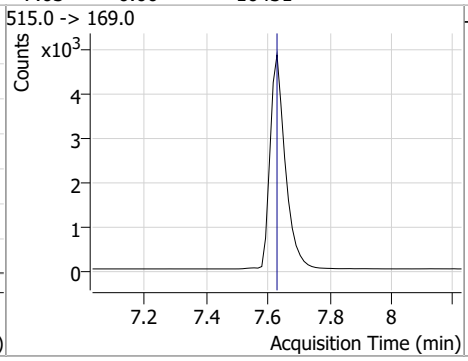


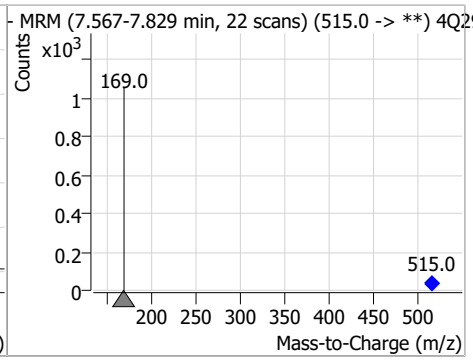


Perfluorinated Compounds by LC/MS/MS

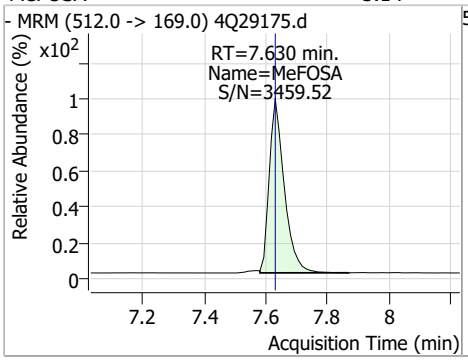
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.07	7.63	0.00	16431				

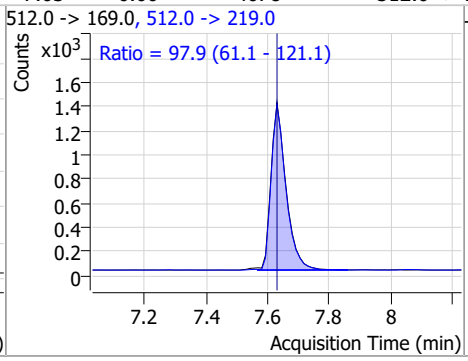


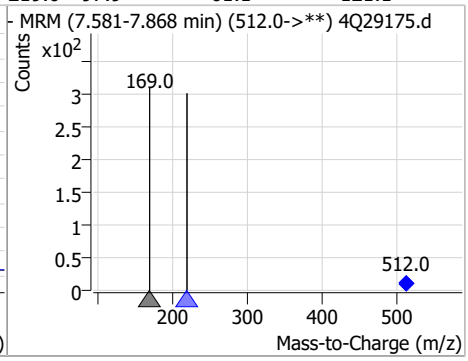




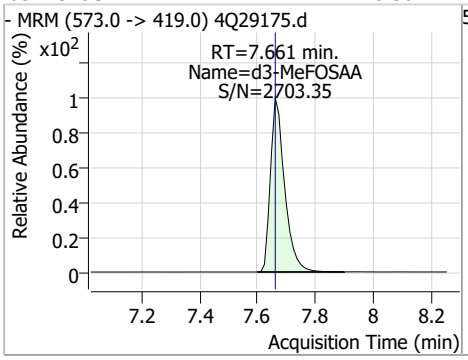
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.14	7.63	0.00	4678	512.0 -> 219.0	97.9	61.1	121.1

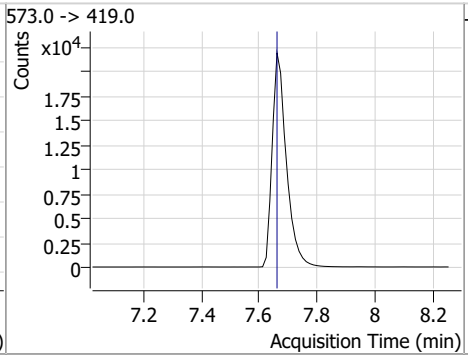


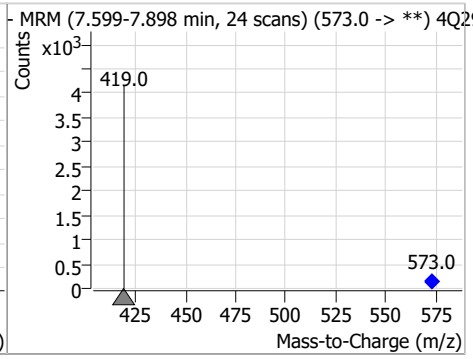




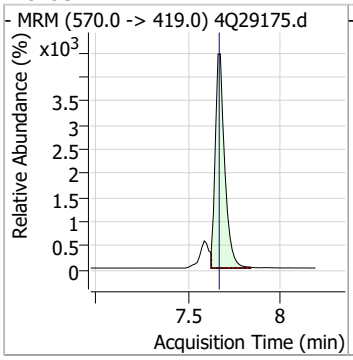
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.36	7.66	0.00	73913				

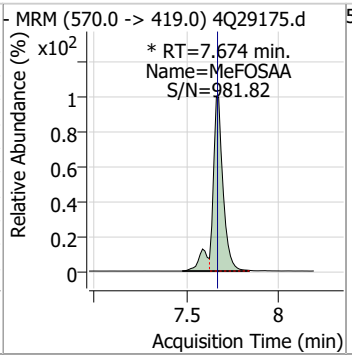


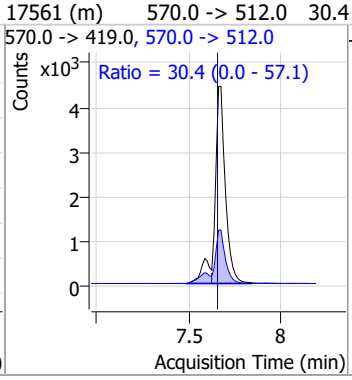


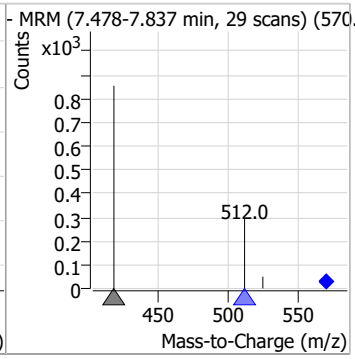


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.18	7.67	0.01	17561 (m)	570.0 -> 512.0	30.4	0.0	57.1



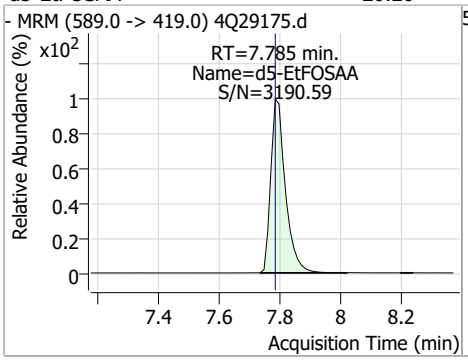


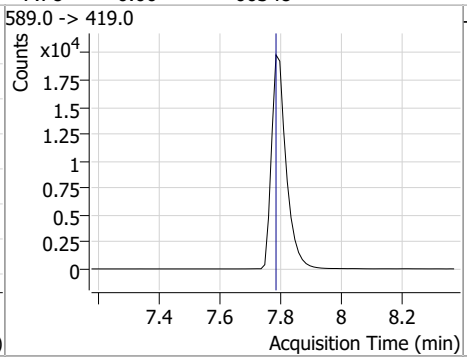


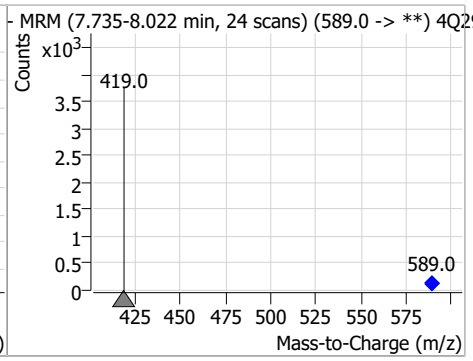


Perfluorinated Compounds by LC/MS/MS

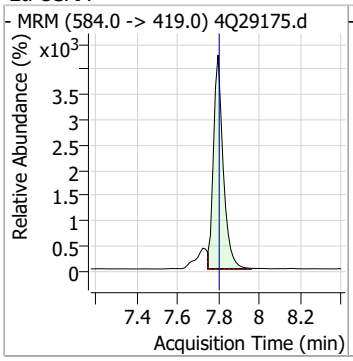
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.20	7.78	0.00	66348				

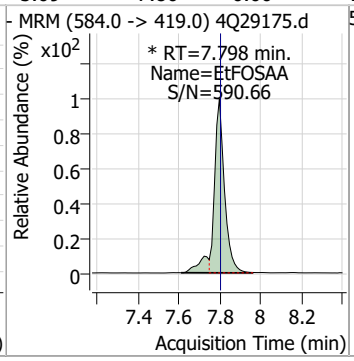


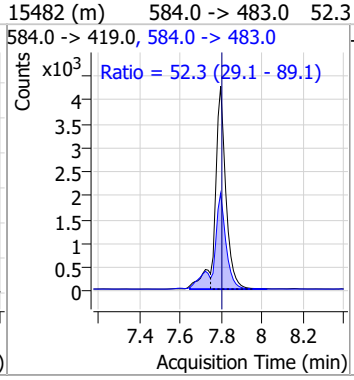


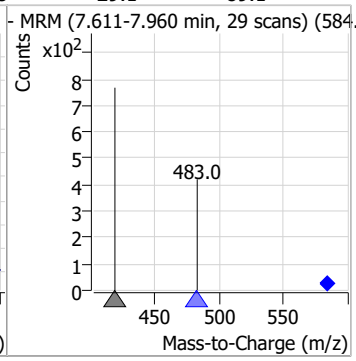


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.09	7.80	0.00	15482 (m)	584.0 -> 483.0	52.3	29.1	89.1

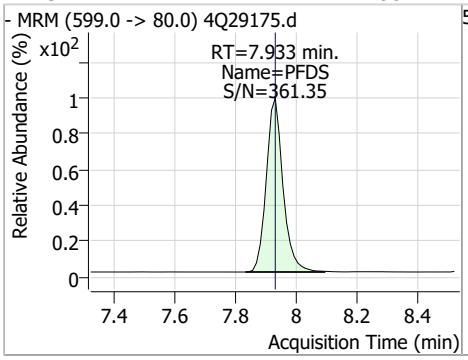


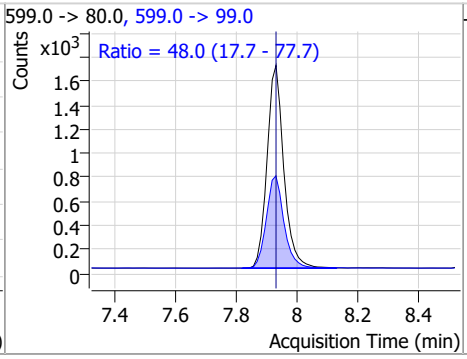


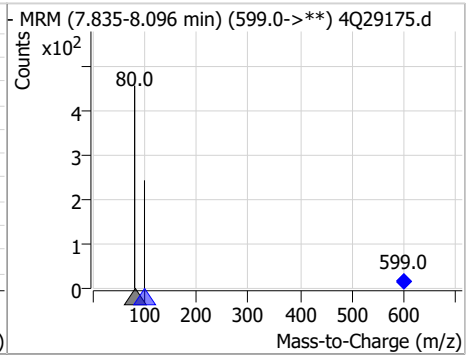




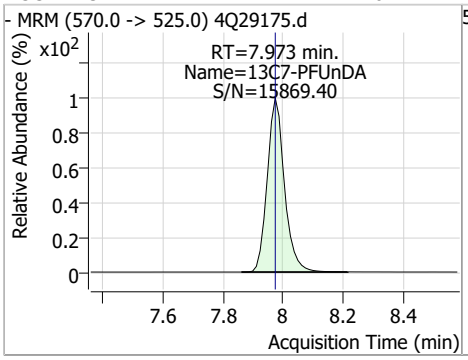
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.93	7.93	0.00	6445	599.0 -> 99.0	48.0	17.7	77.7

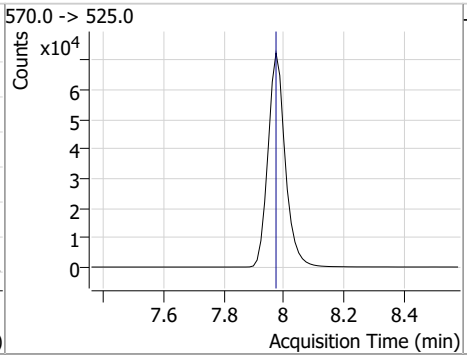


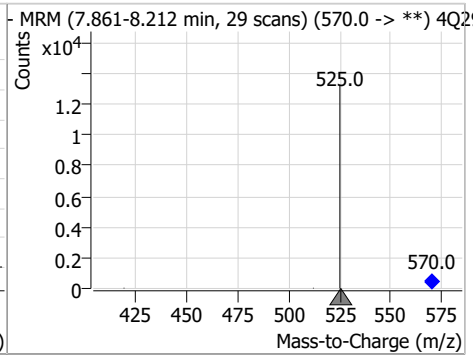




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.22	7.97	0.00	285417				

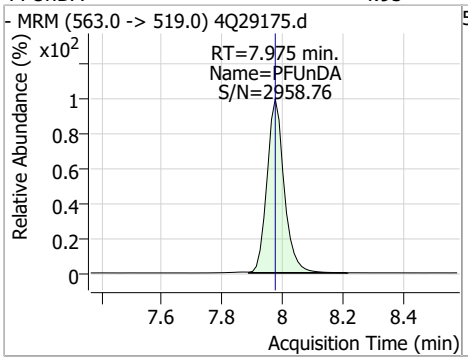


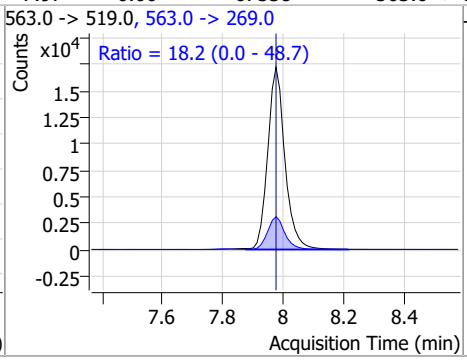


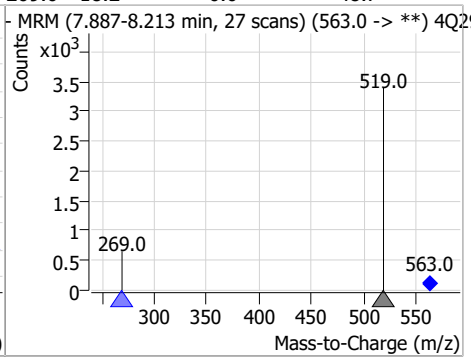


Perfluorinated Compounds by LC/MS/MS

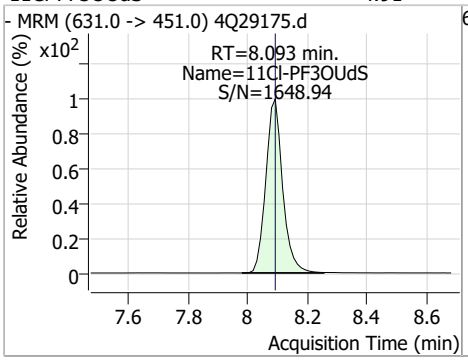
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.95	7.97	0.00	67538	563.0 -> 269.0	18.2	0.0	48.7

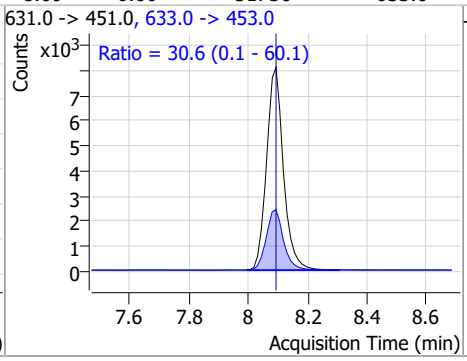


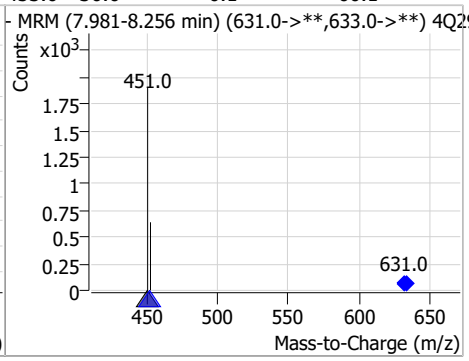




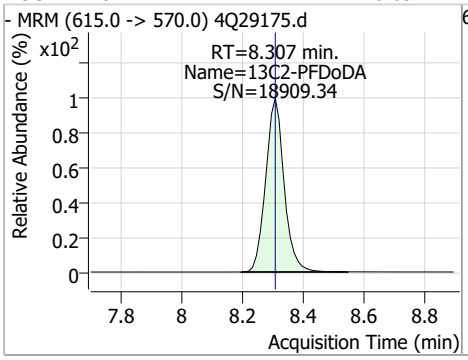
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.91	8.09	0.00	31736	633.0 -> 453.0	30.6	0.1	60.1

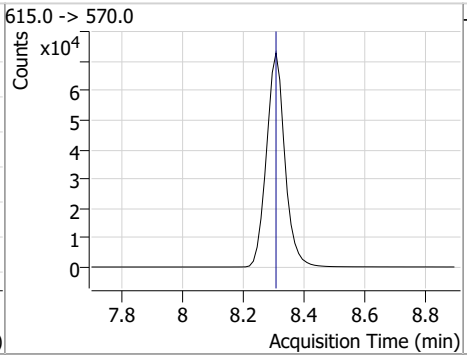


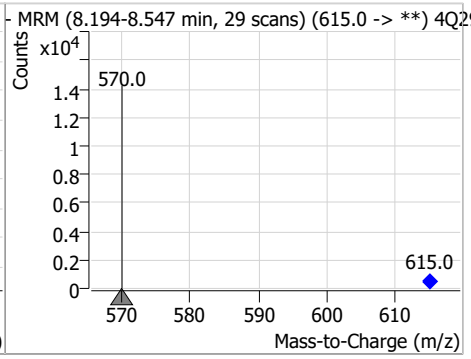




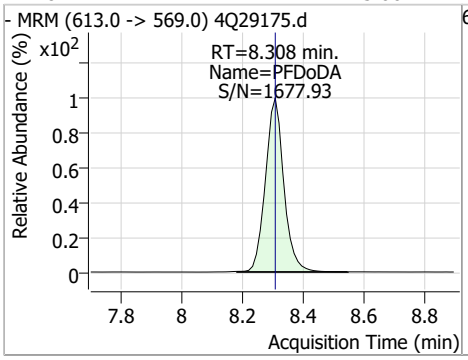
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.09	8.31	0.00	307636				

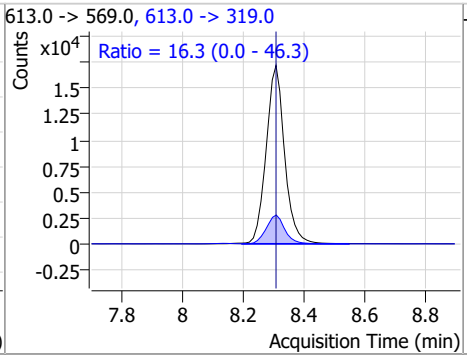


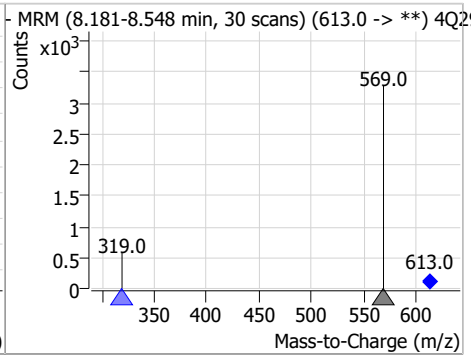




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.06	8.31	0.00	72433	613.0 -> 319.0	16.3	0.0	46.3

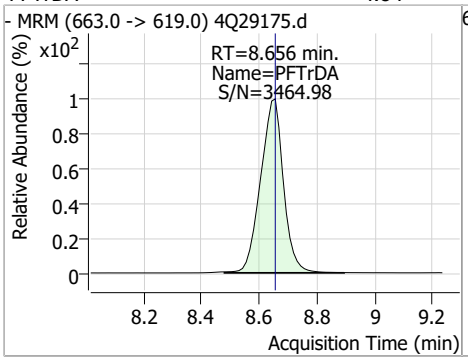


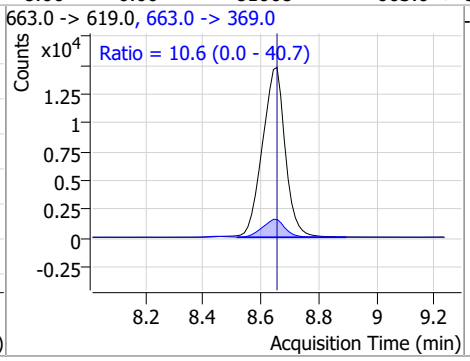


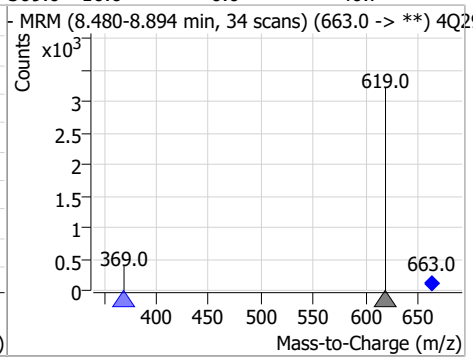


Perfluorinated Compounds by LC/MS/MS

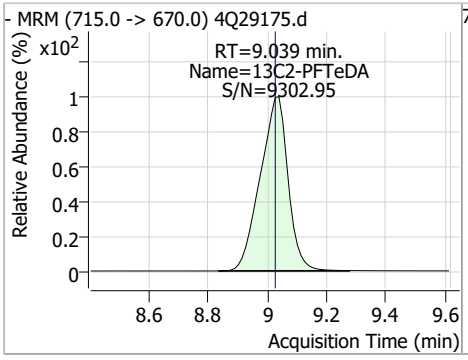
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.84	8.66	0.00	81068	663.0 -> 369.0	10.6	0.0	40.7

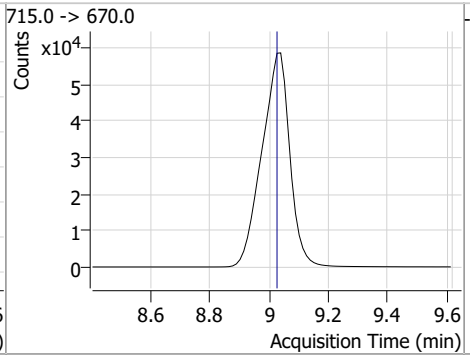


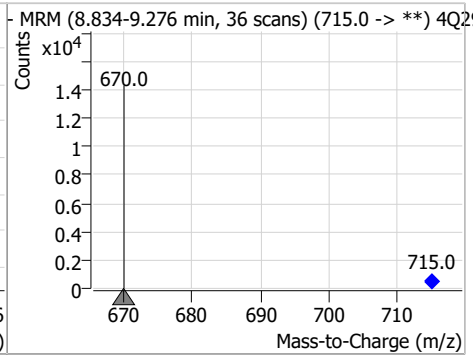




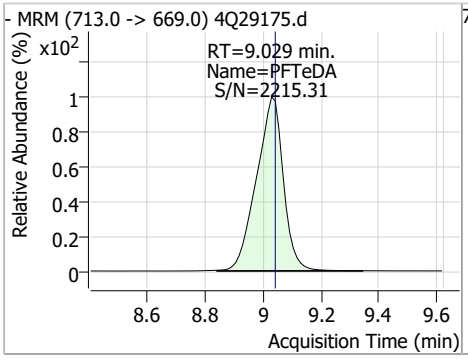
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.87	9.04	0.01	382885				

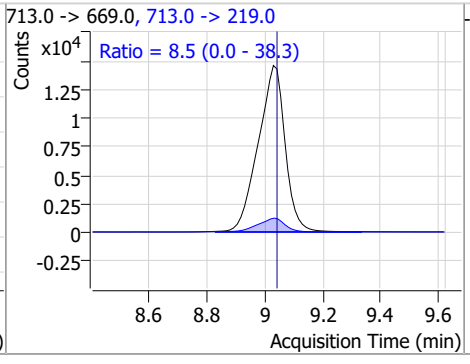


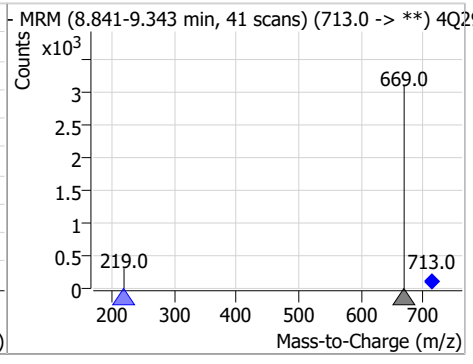




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.11	9.03	0.00	93963	713.0 -> 219.0	8.5	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29175.D
Injection Time: 05/27/22 12:31
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.67	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29176.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 12:48:29 PM
Sample Name : ic419-10
Vial : P1-A6
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

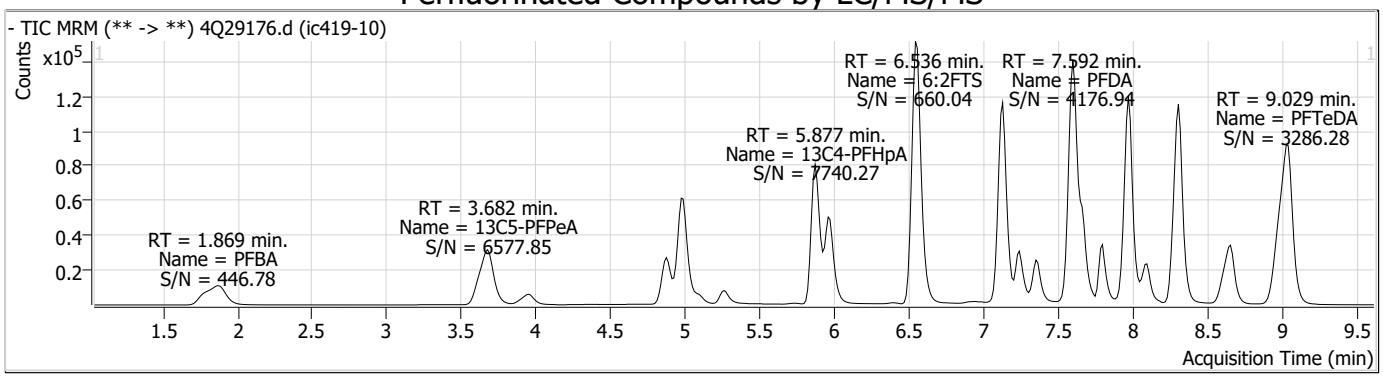
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.875	217.0 -> 172.0	96787	20.00	µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	150018	20.00	µg/L	0.000
M5-PFHxA	4.979	318.0 -> 273.0	185907	20.00	µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	176013	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	285053	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	298637	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	218963	20.00	µg/L	0.012
M7-PFUnDA	7.973	570.0 -> 525.0	296526	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	317911	20.00	µg/L	0.000
M2-PFTeDA	9.039	715.0 -> 670.0	397496	20.00	µg/L	0.012
M8-FOSA	7.246	506.0 -> 78.0	68910	20.00	µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	11252	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	11254	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	18925	20.00	µg/L	0.013
M2-4:2FTS	4.875	329.0 -> 309.0	67291	20.00	µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	106822	20.00	µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	91239	20.00	µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	76307	20.00	µg/L	0.000
M3-HFPO-DA	5.269	287.0 -> 169.0	10617	20.00	µg/L	0.000
M3-MeFOSA	7.629	515.0 -> 169.0	16733	20.00	µg/L	0.000
M5-EtFOSAA	7.797	589.0 -> 419.0	67180	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	67291	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C2-6:2FTS	6.535	429.0 -> 409.0	106822	20.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C2-8:2FTS	7.615	529.0 -> 509.0	91239	20.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-PFDoDA	8.307	615.0 -> 570.0	317911	20.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C2-PFTeDA	9.039	715.0 -> 670.0	397496	20.63	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-PFBS	3.949	302.0 -> 99.0	11252	20.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFHxS	5.898	402.0 -> 99.0	11254	20.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C4-PFBA	1.875	217.0 -> 172.0	96787	20.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFHpA	5.877	367.0 -> 322.0	176013	20.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFHxA	4.979	318.0 -> 273.0	185907	20.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFPeA	3.682	268.0 -> 223.0	150018	20.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C6-PFDA	7.604	519.0 -> 474.0	218963	20.87	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

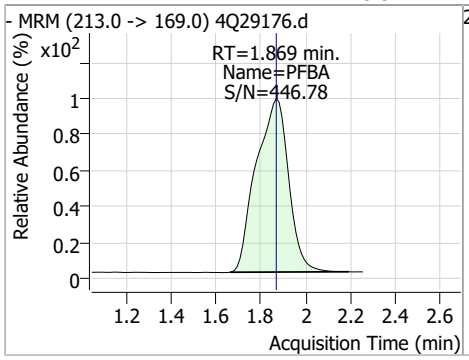
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C7-PFUnDA	7.973	570.0 -> 525.0	296526	21.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-FOSA	7.246	506.0 -> 78.0	68910	21.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C8-PFOA	6.564	421.0 -> 376.0	285053	21.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-PFOS	7.108	507.0 -> 99.0	18925	20.95 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C9-PFNA	7.135	472.0 -> 427.0	298637	20.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
d3-MeFOSAA	7.661	573.0 -> 419.0	76307	21.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-HFPO-DA	5.269	287.0 -> 169.0	10611	19.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d3-MeFOSA	7.629	515.0 -> 169.0	16733	21.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
d5-EtFOSAA	7.797	589.0 -> 419.0	67191	20.46 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
Target Compounds						**QValue**
4:2FTS	4.877	327.0 -> 307.0	40250	10.40 µg/L		99
6:2FTS	6.536	427.0 -> 407.0	56893	10.38 µg/L		99
8:2FTS	7.615	527.0 -> 507.0	48420	10.19 µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	31584	10.26 µg/L	m	91
FOSA	7.248	498.0 -> 78.0	32081	10.00 µg/L		99
MeFOSAA	7.674	570.0 -> 419.0	34594	9.88 µg/L	m	94
PFBA	1.869	213.0 -> 169.0	15182	9.91 µg/L		100
PFBS	3.954	299.0 -> 80.0	18142	10.18 µg/L		99
PFDA	7.592	513.0 -> 469.0	139798	9.98 µg/L		99
PFDoDA	8.308	613.0 -> 569.0	148635	10.04 µg/L		99
PFDS	7.933	599.0 -> 80.0	12330	9.08 µg/L		97
PFHpA	5.878	363.0 -> 319.0	123743	10.09 µg/L		99
PFHpS	6.548	449.0 -> 80.0	14712	10.32 µg/L		98
PFHxA	4.980	313.0 -> 269.0	94479	9.97 µg/L		100
PFHxS	5.900	399.0 -> 80.0	15055	10.28 µg/L	m	94
PFNA	7.135	463.0 -> 419.0	127956	9.93 µg/L		99
PFNS	7.564	549.0 -> 80.0	14199	9.86 µg/L		96
PFOA	6.565	413.0 -> 369.0	158916	10.08 µg/L		99
PFOS	7.109	499.0 -> 80.0	17350	9.86 µg/L	m	86
PFPeA	3.684	263.0 -> 219.0	66569	10.02 µg/L		100
PFPeS	5.098	349.0 -> 80.0	11800	10.11 µg/L		100
PFTeDA	9.029	713.0 -> 669.0	193206	10.12 µg/L		100
PFTrDA	8.656	663.0 -> 619.0	166683	9.63 µg/L		100
PFUnDA	7.975	563.0 -> 519.0	141357	9.98 µg/L		98
11Cl-PF3OUdS	8.093	631.0 -> 451.0	63841	9.56 µg/L		97
9Cl-PF3ONS	7.353	531.0 -> 351.0	70949	8.93 µg/L		97
ADONA	5.977	377.0 -> 251.0	144423	9.74 µg/L		97
HFPO-DA	5.264	329.0 -> 169.0	17116	10.32 µg/L		99
MeFOSA	7.630	512.0 -> 169.0	9437	10.17 µg/L		99

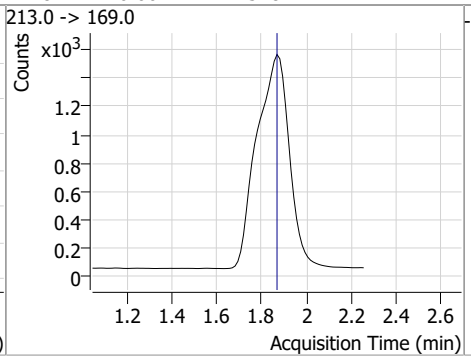
 # = Qualifier out of range, m = manually integrated, + = Area summed

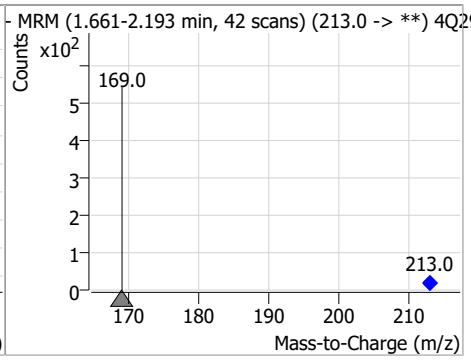
Perfluorinated Compounds by LC/MS/MS



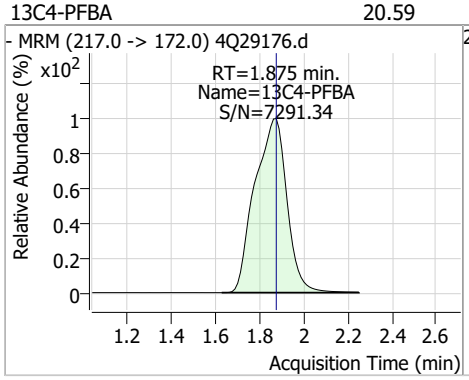
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.91	1.87	0.00	15182				

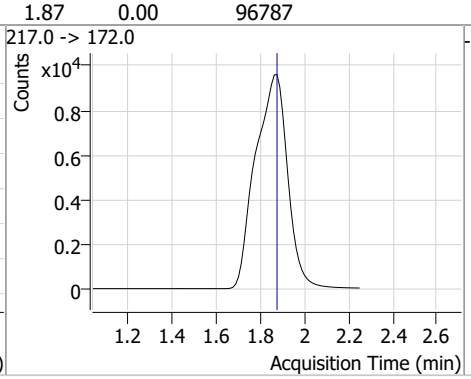


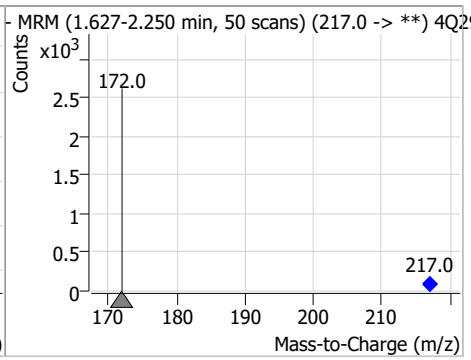




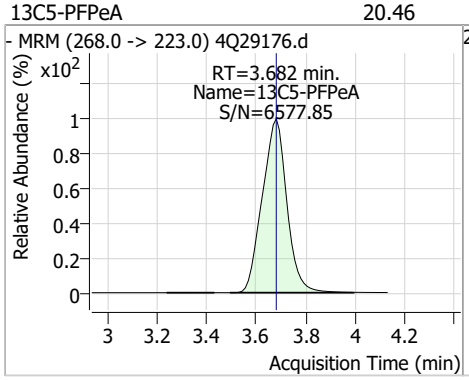
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.59	1.87	0.00	96787				

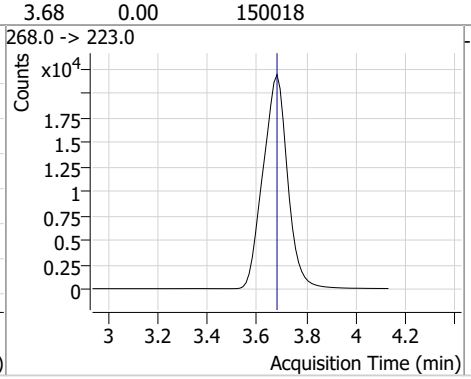


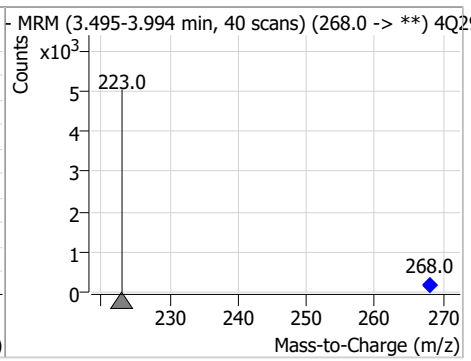




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.46	3.68	0.00	150018				





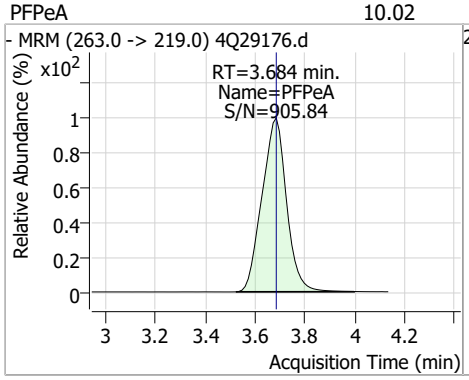


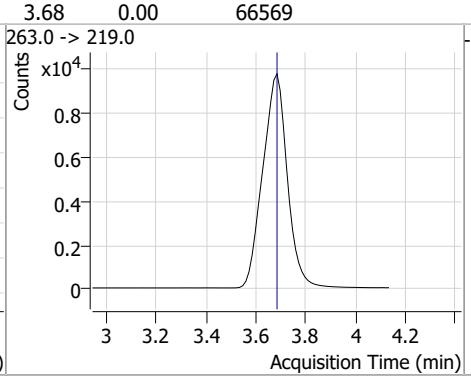
7.7.21

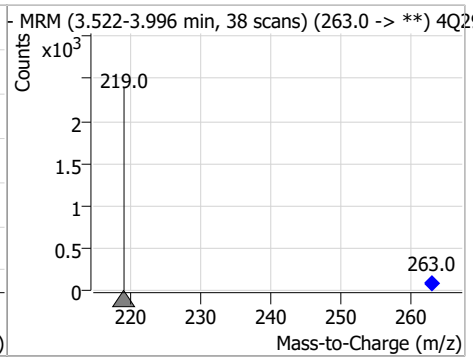
7

Perfluorinated Compounds by LC/MS/MS

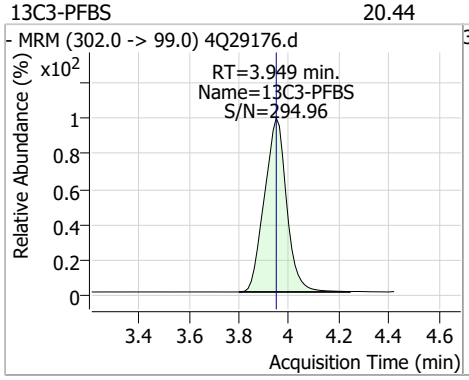
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.02	3.68	0.00	66569				

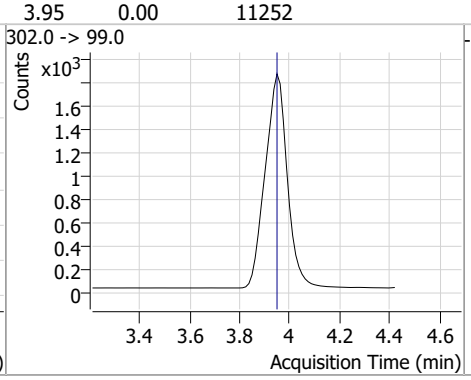


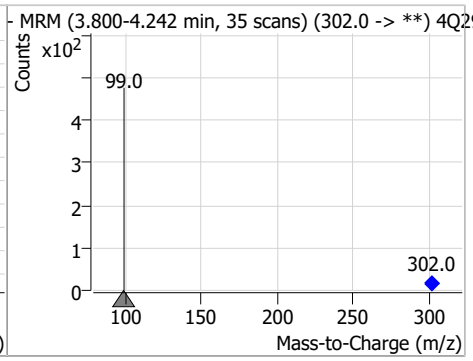




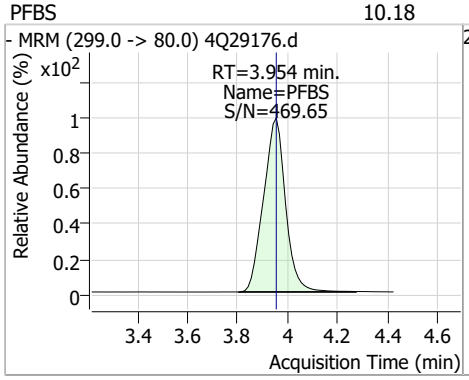
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.44	3.95	0.00	11252				

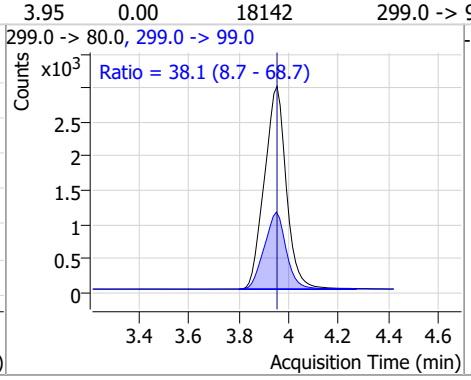


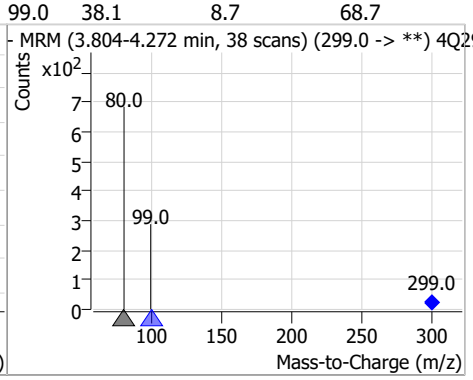




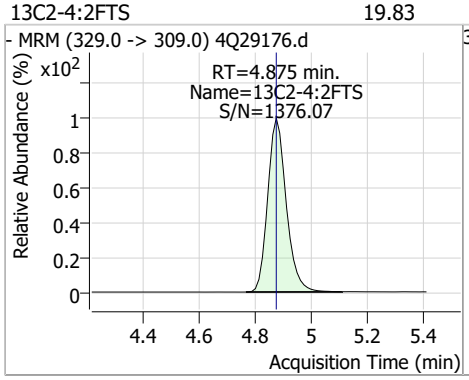
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.18	3.95	0.00	18142	299.0 -> 99.0	38.1	8.7	68.7

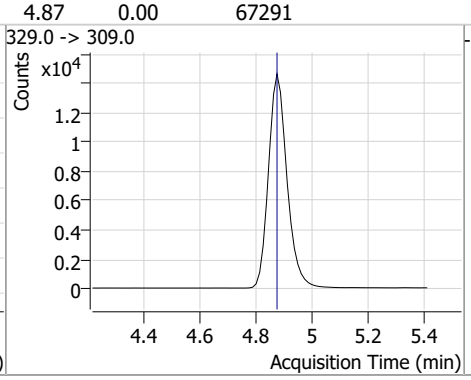


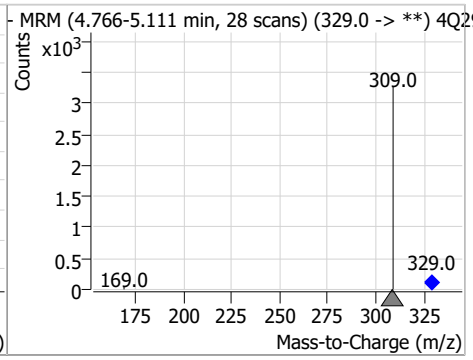




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.83	4.87	0.00	67291				

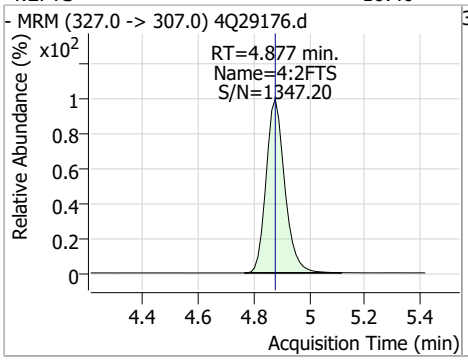


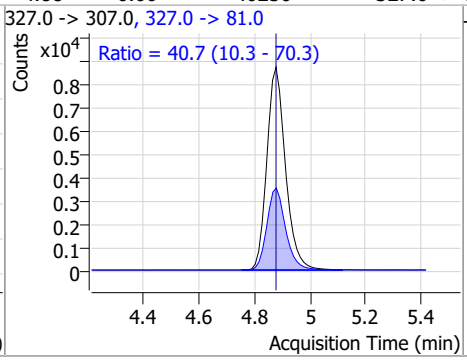


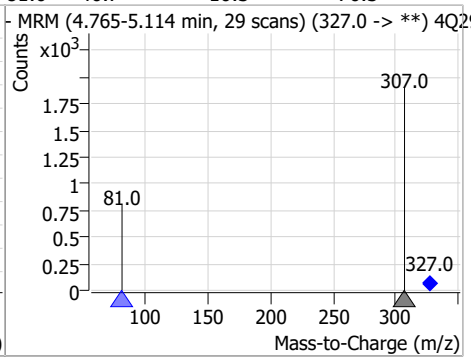


Perfluorinated Compounds by LC/MS/MS

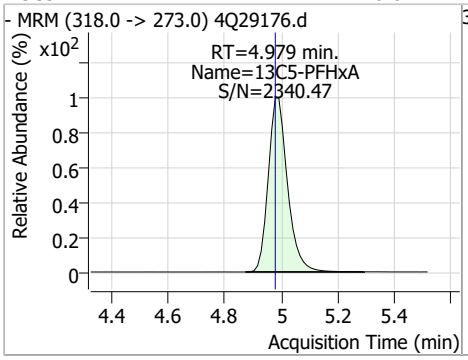
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.40	4.88	0.00	40250	327.0 -> 81.0	40.7	10.3	70.3

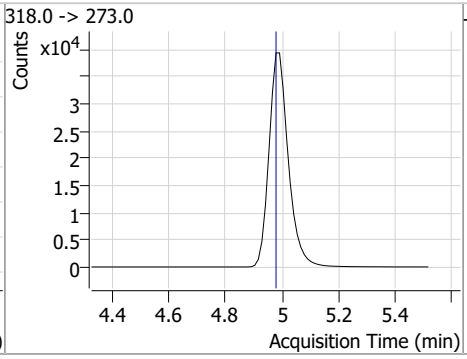


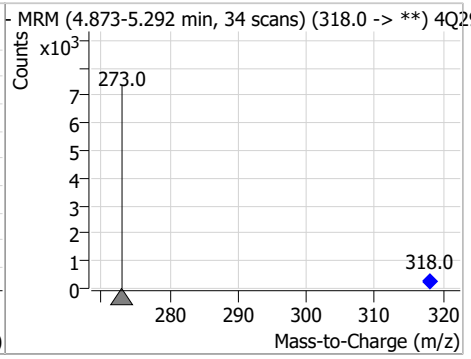




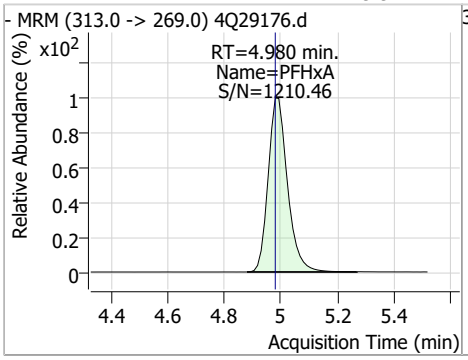
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.64	4.98	0.00	185907				

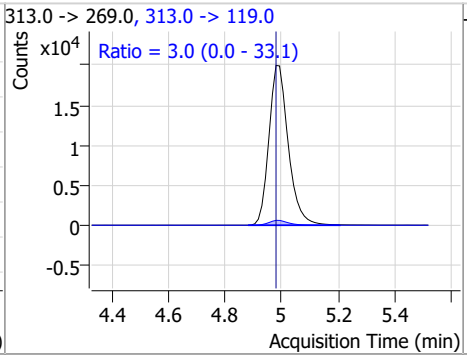


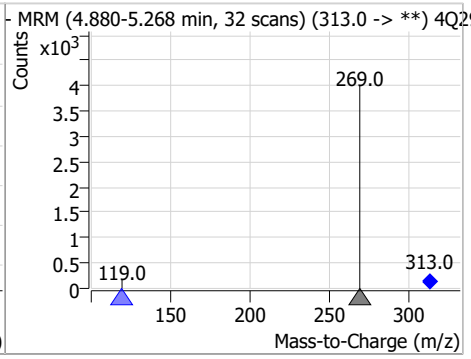




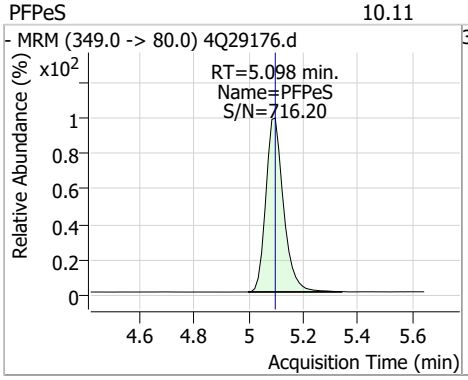
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.97	4.98	0.00	94479	313.0 -> 119.0	3.0	0.0	33.1

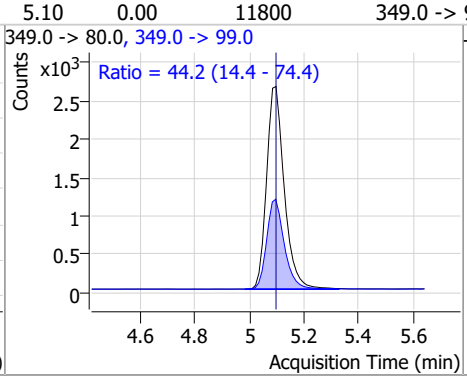


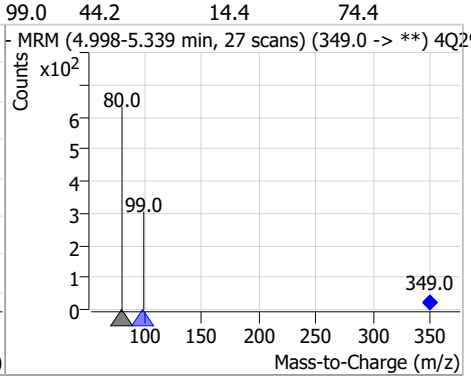




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.11	5.10	0.00	11800	349.0 -> 99.0	44.2	14.4	74.4

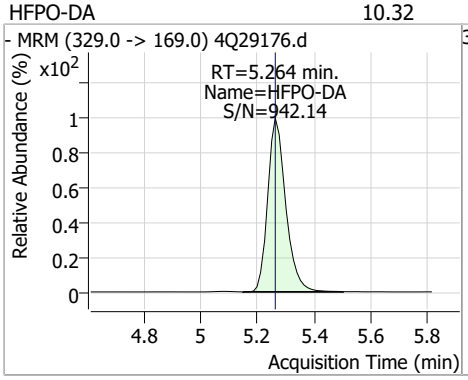


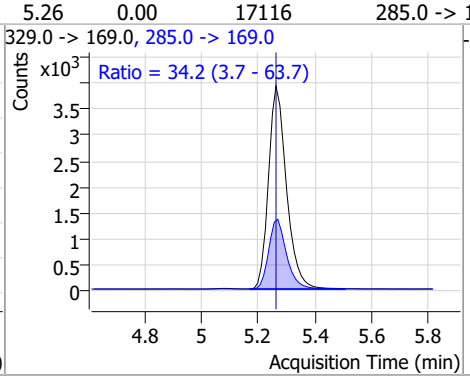


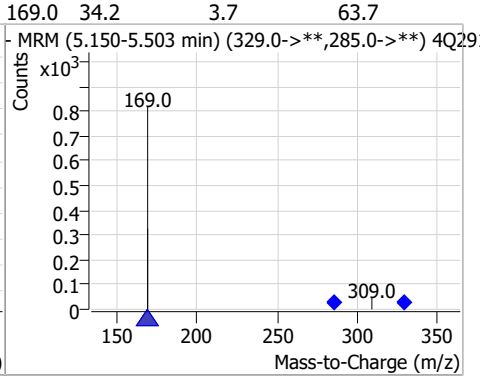


Perfluorinated Compounds by LC/MS/MS

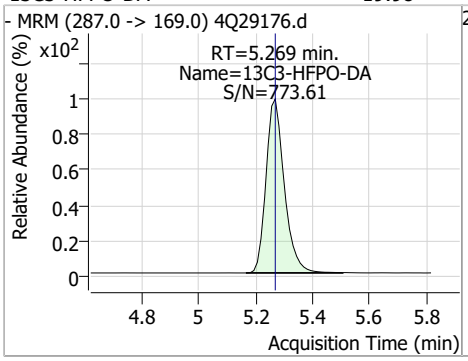
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.32	5.26	0.00	17116	285.0 -> 169.0	34.2	3.7	63.7

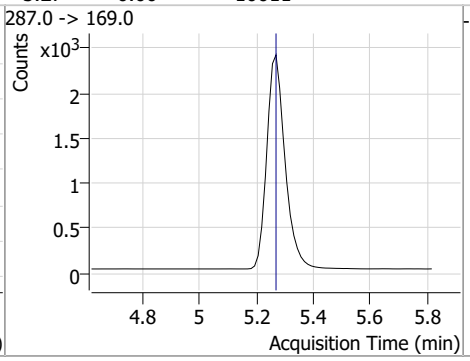


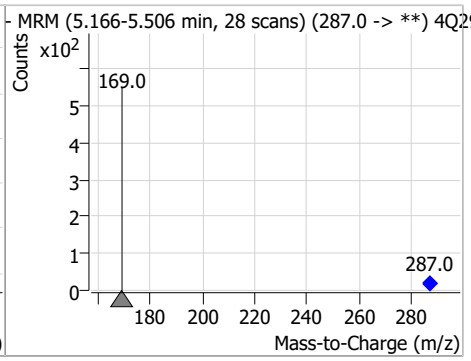




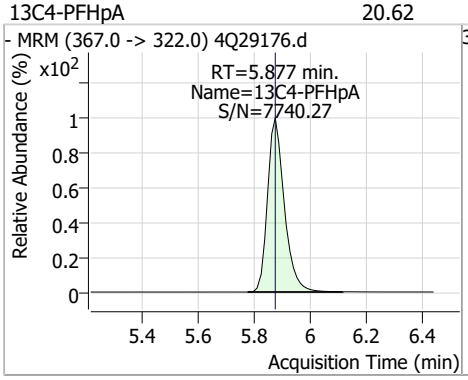
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.98	5.27	0.00	10611				

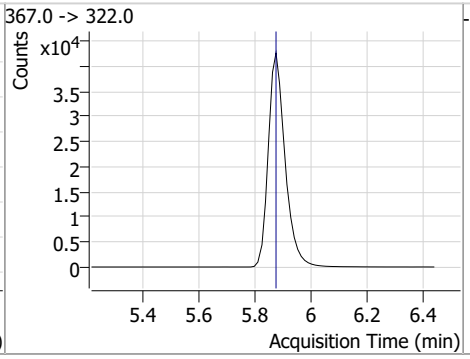


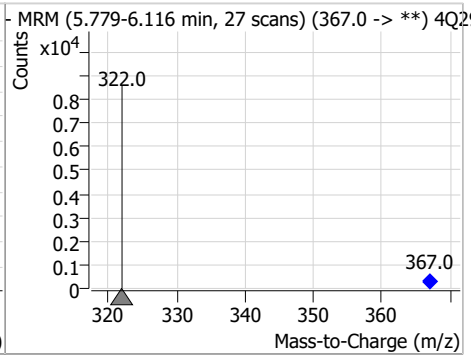




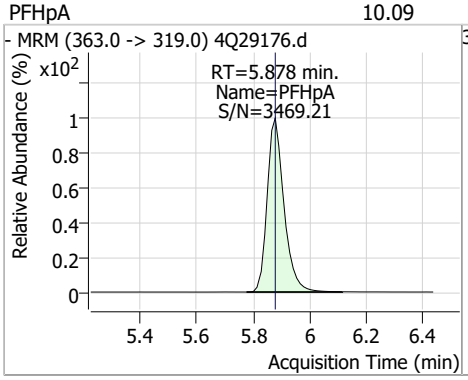
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.62	5.88	0.00	176013				

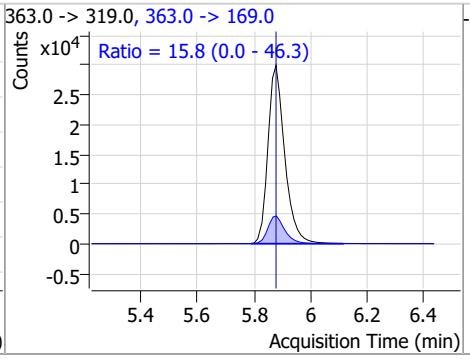


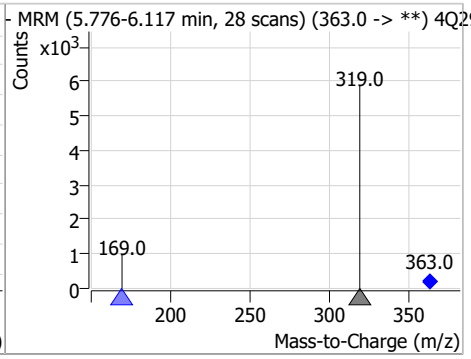




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.09	5.88	0.00	123743	363.0 -> 169.0	15.8	0.0	46.3

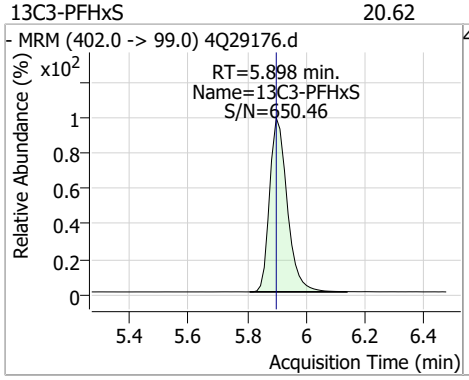


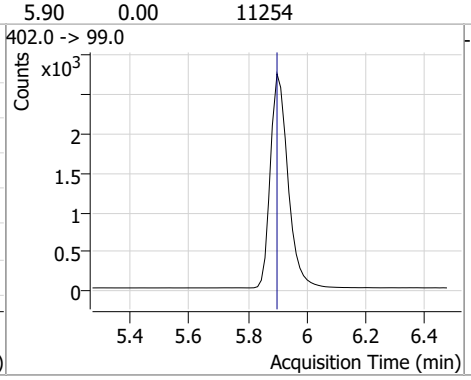


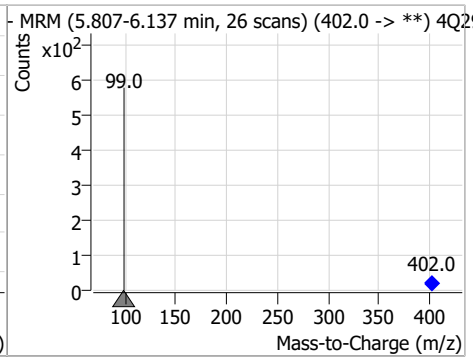


Perfluorinated Compounds by LC/MS/MS

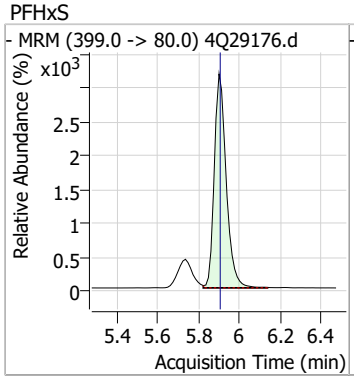
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.62	5.90	0.00	11254				

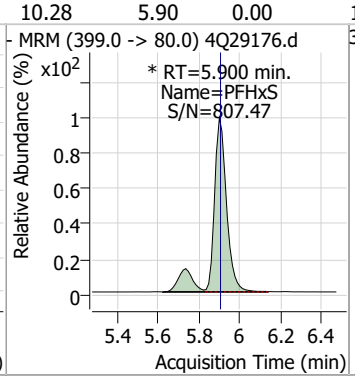


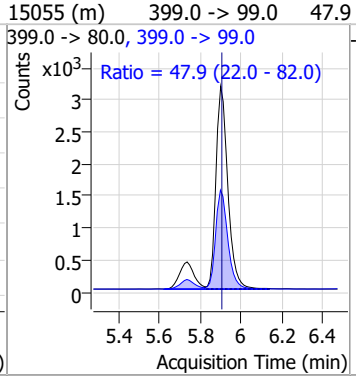


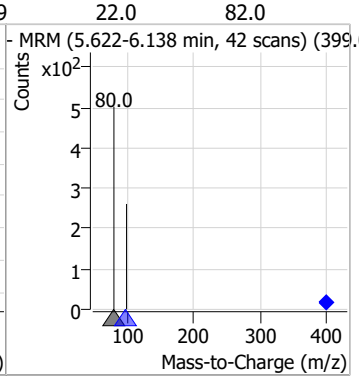


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.28	5.90	0.00	15055 (m)	399.0 -> 99.0	47.9	22.0	82.0

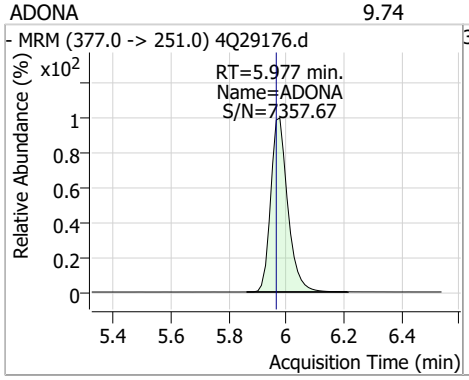


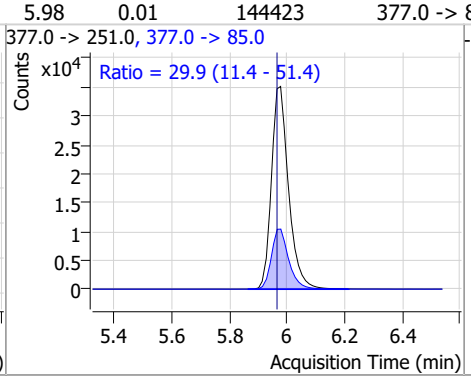


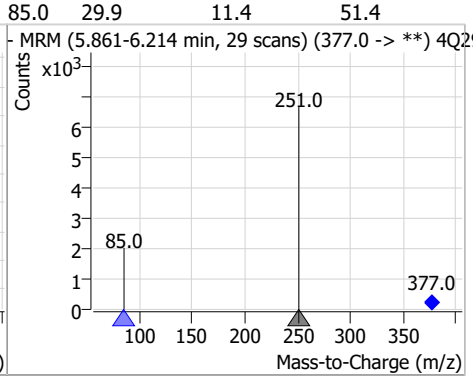




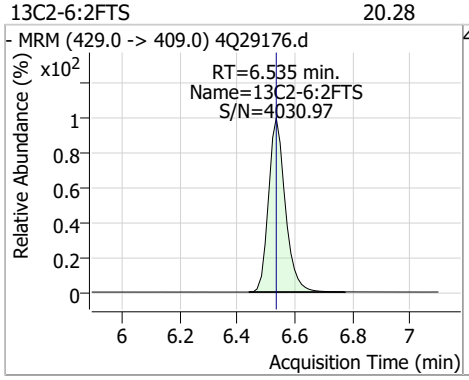
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.74	5.98	0.01	144423	377.0 -> 85.0	29.9	11.4	51.4

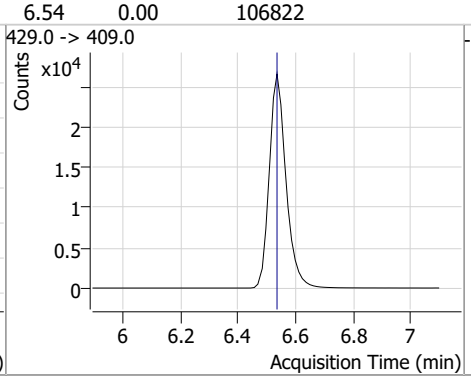


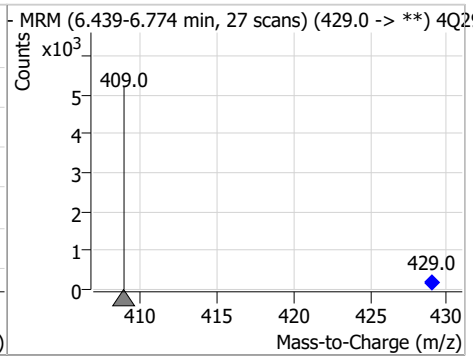




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.28	6.54	0.00	106822				

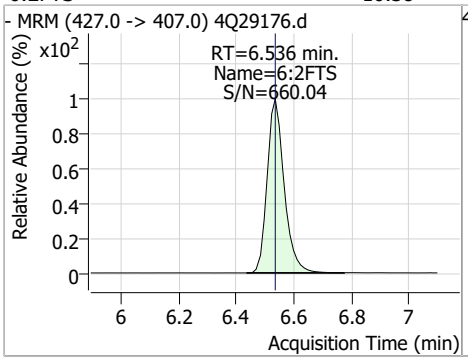


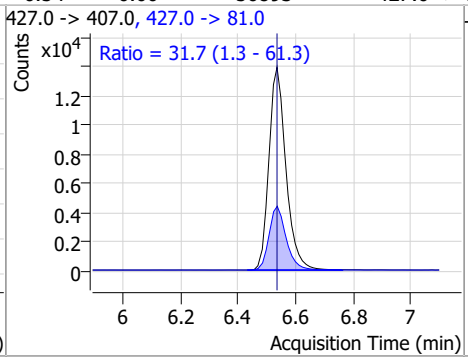


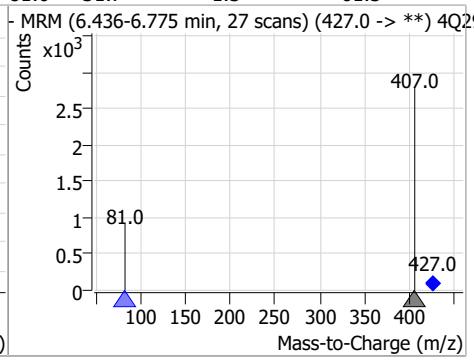


Perfluorinated Compounds by LC/MS/MS

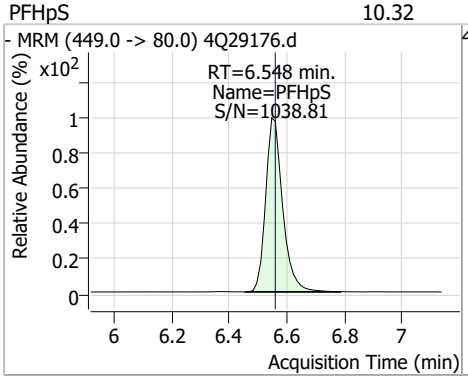
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.38	6.54	0.00	56893	427.0 -> 81.0	31.7	1.3	61.3

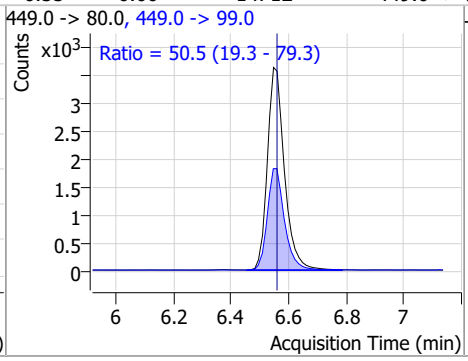


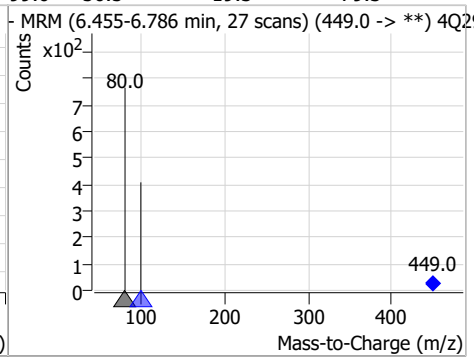




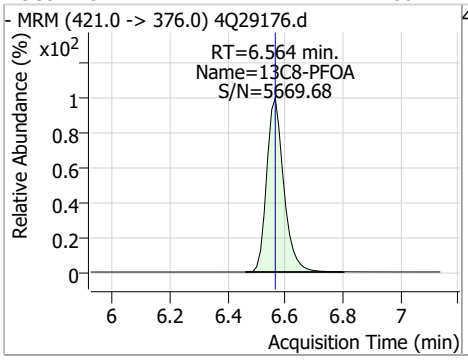
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.32	6.55	0.00	14712	449.0 -> 99.0	50.5	19.3	79.3

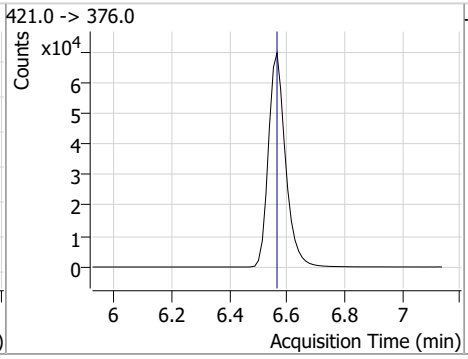


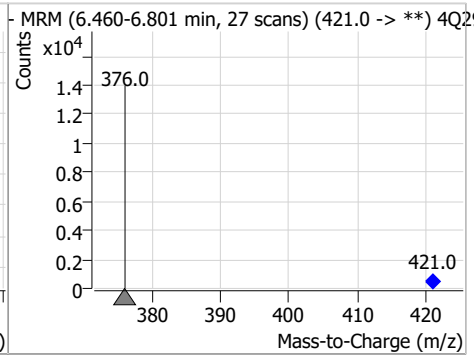




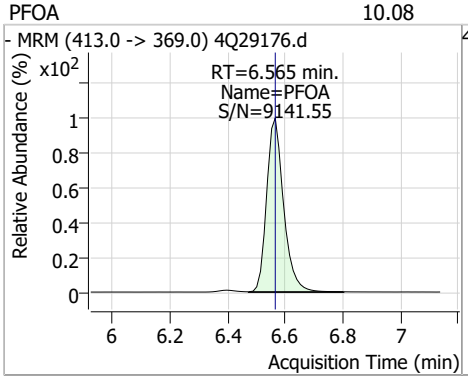
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.00	6.56	0.00	285053				

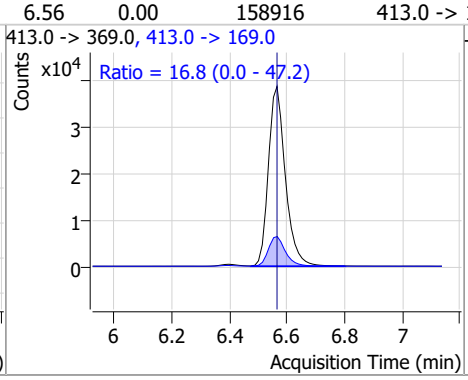


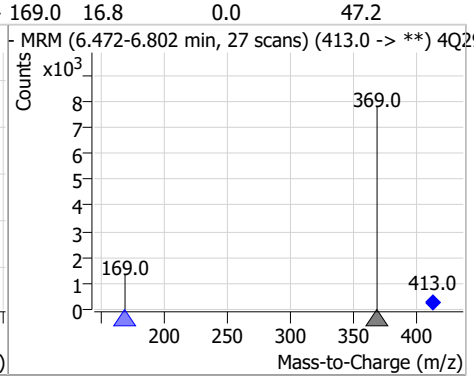




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.08	6.56	0.00	158916	413.0 -> 169.0	16.8	0.0	47.2

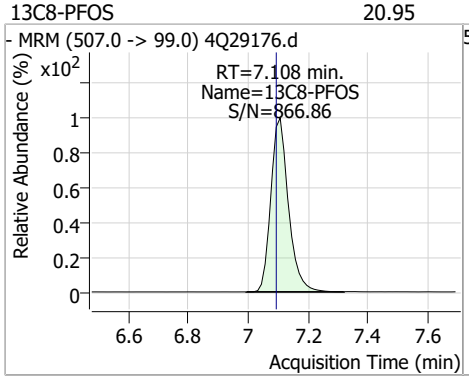


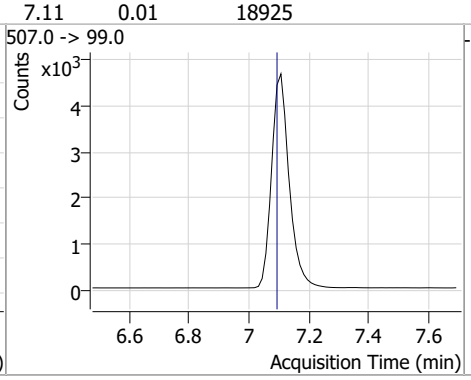


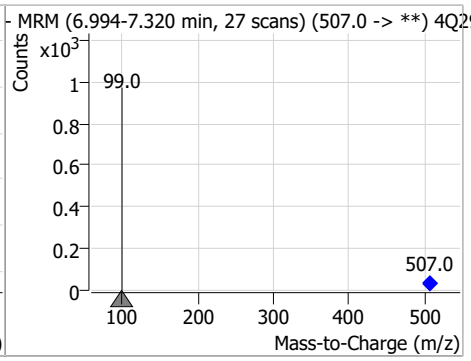


Perfluorinated Compounds by LC/MS/MS

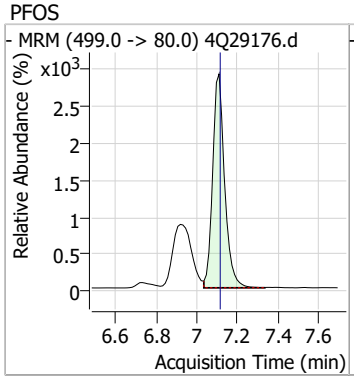
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.95	7.11	0.01	18925				

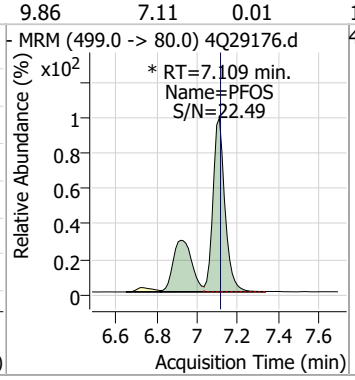


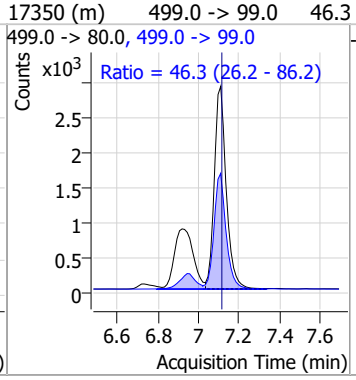


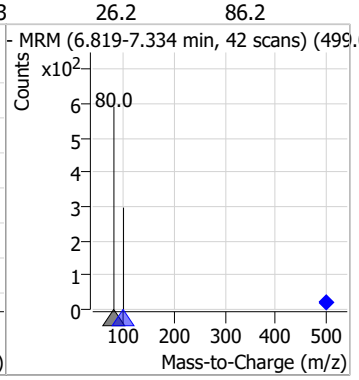


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.86	7.11	0.01	17350 (m)	499.0 -> 99.0	46.3	26.2	86.2

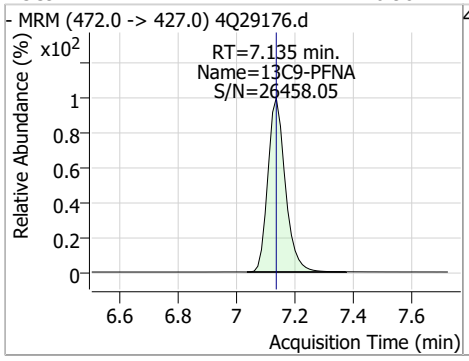


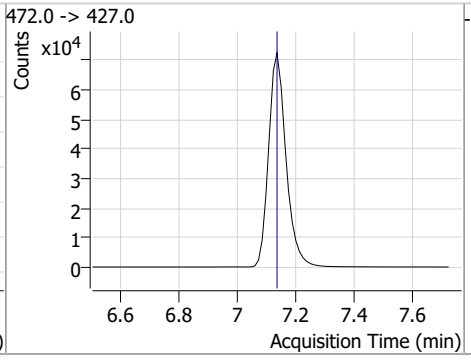


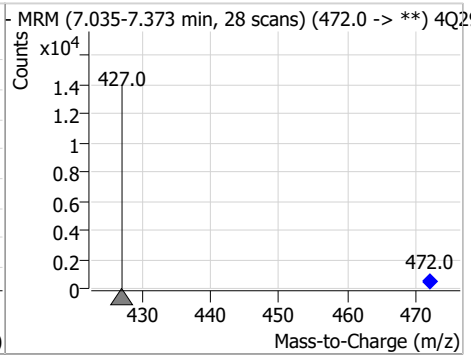




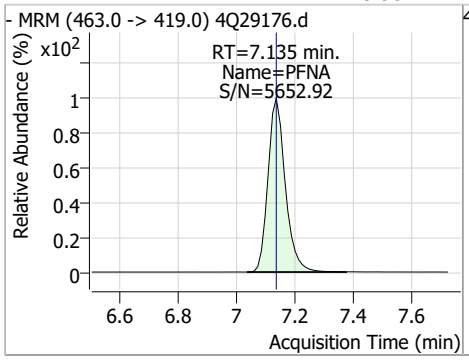
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.98	7.13	0.00	298637				

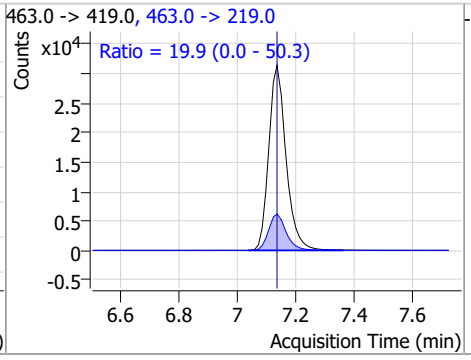


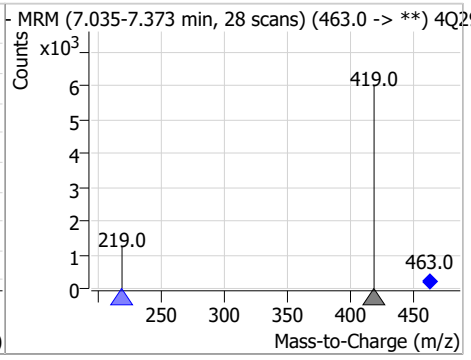




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.93	7.14	0.00	127956	463.0 -> 219.0	19.9	0.0	50.3

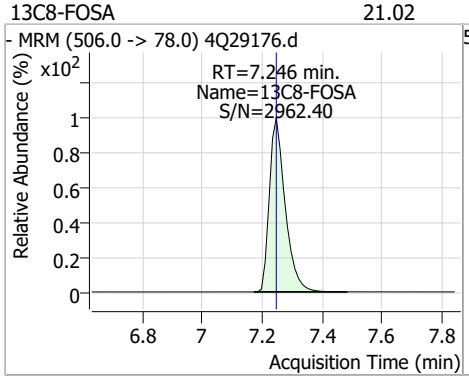


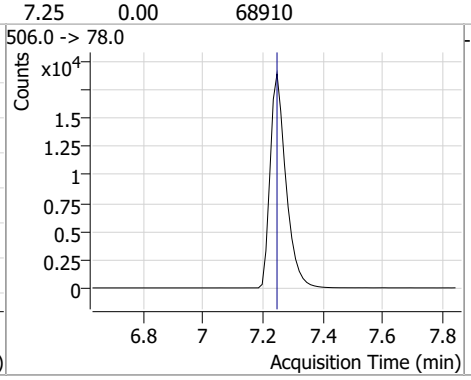


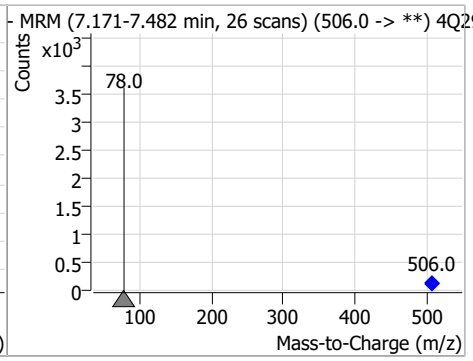


Perfluorinated Compounds by LC/MS/MS

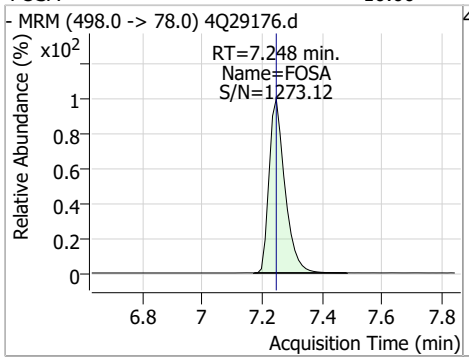
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.02	7.25	0.00	68910				

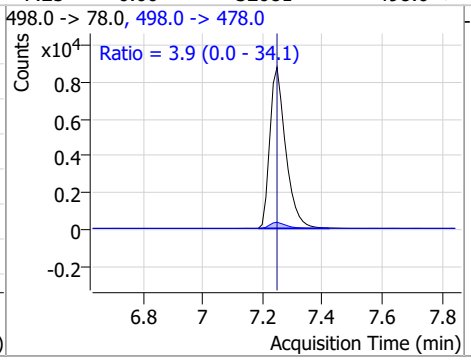


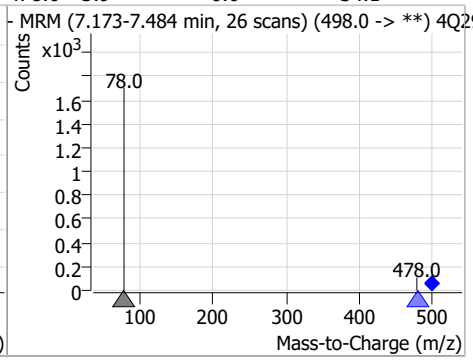




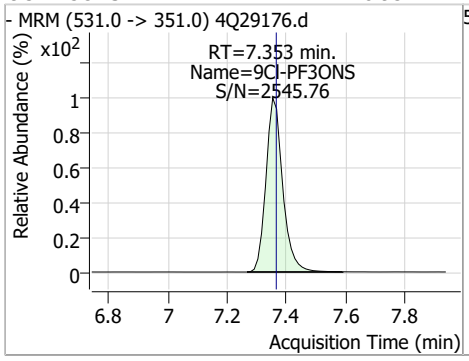
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.00	7.25	0.00	32081	498.0 -> 478.0	3.9	0.0	34.1

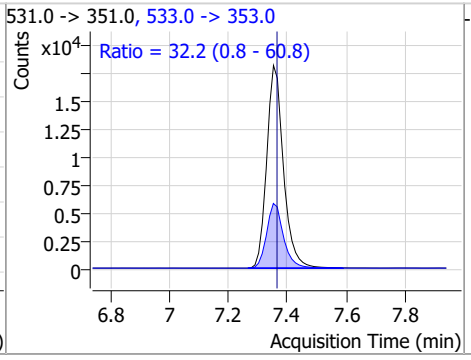


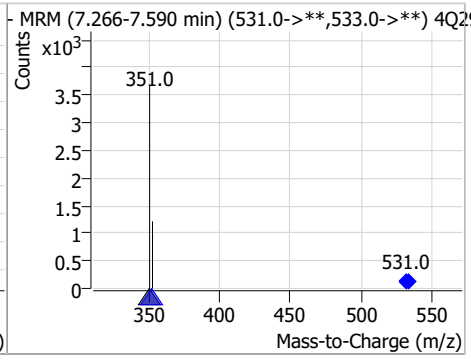




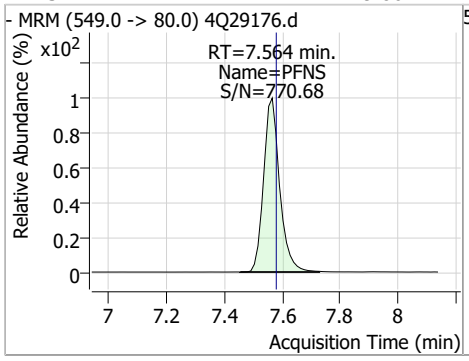
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.93	7.35	0.00	70949	533.0 -> 353.0	32.2	0.8	60.8

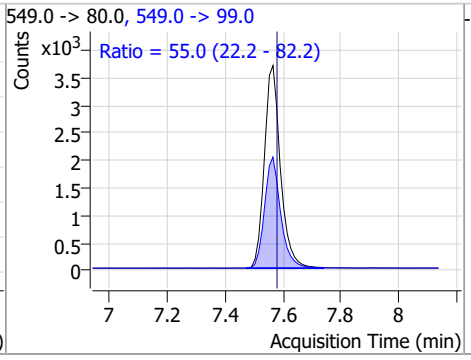


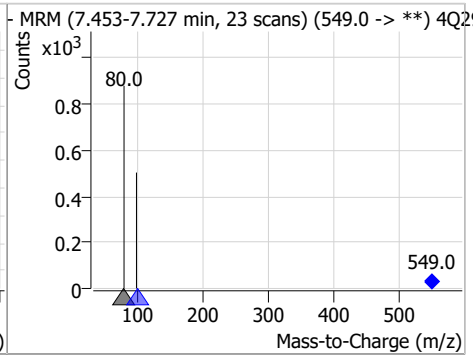




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.86	7.56	0.00	14199	549.0 -> 99.0	55.0	22.2	82.2

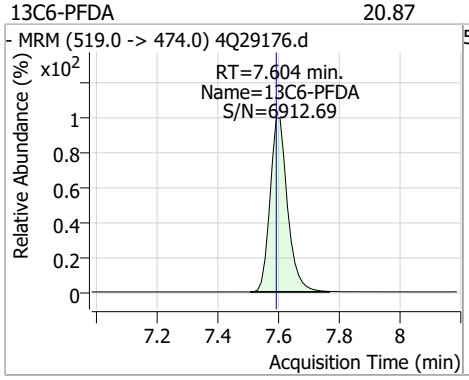


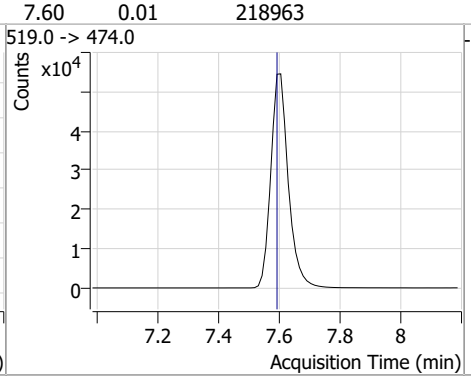


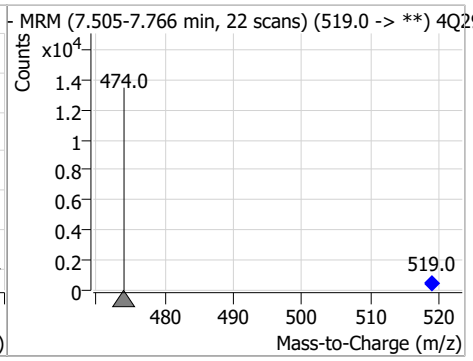


Perfluorinated Compounds by LC/MS/MS

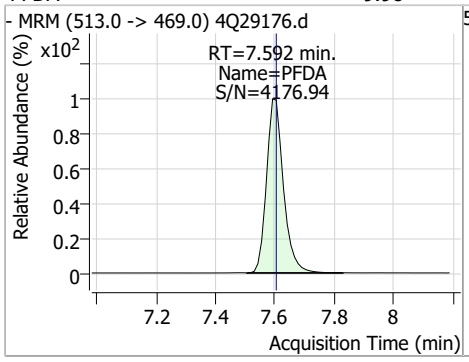
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.87	7.60	0.01	218963				

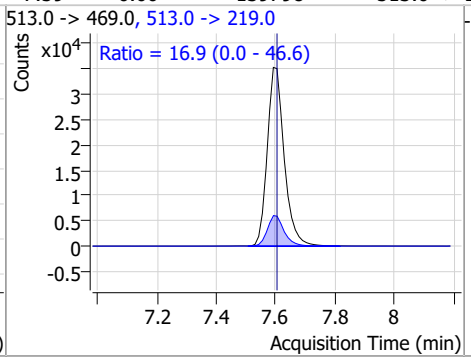


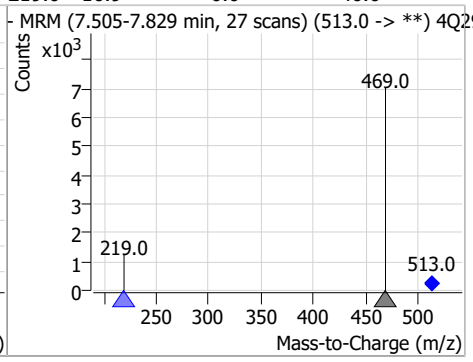




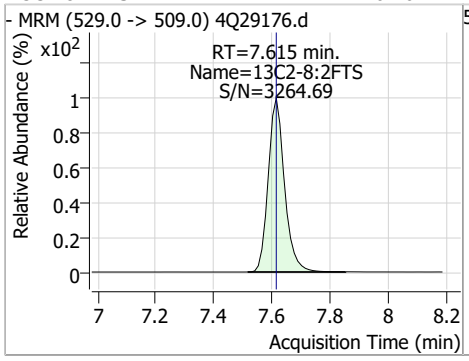
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.98	7.59	0.00	139798	513.0 -> 219.0	16.9	0.0	46.6

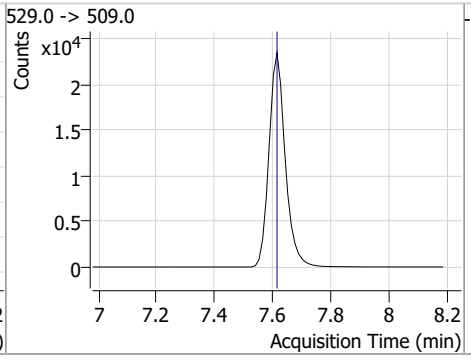


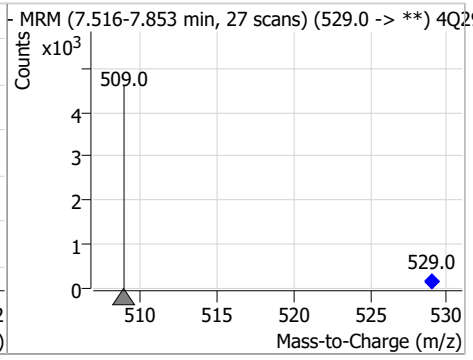




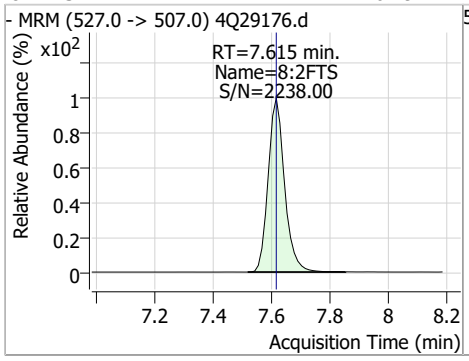
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.46	7.61	0.00	91239				

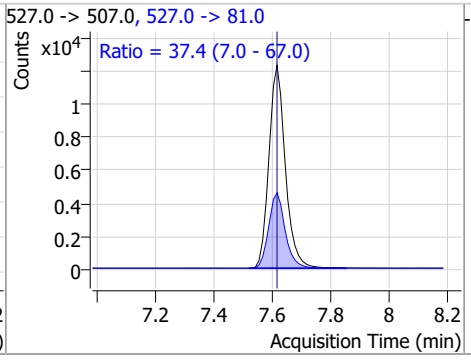


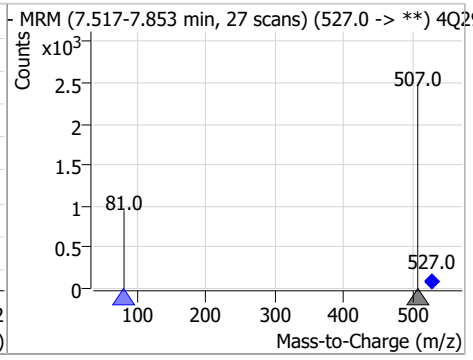




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.19	7.62	0.00	48420	527.0 -> 81.0	37.4	7.0	67.0

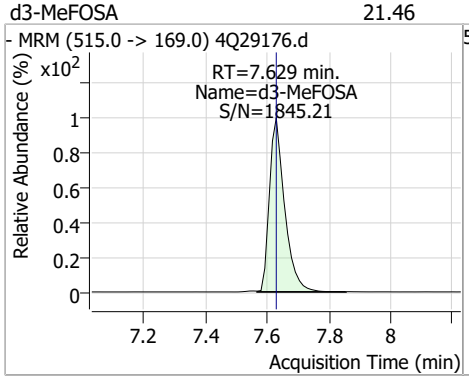


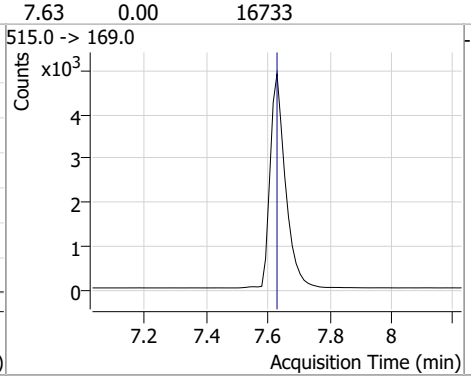


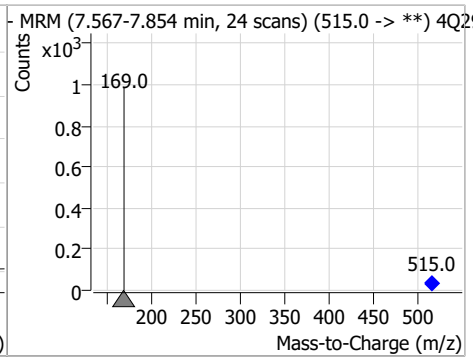


Perfluorinated Compounds by LC/MS/MS

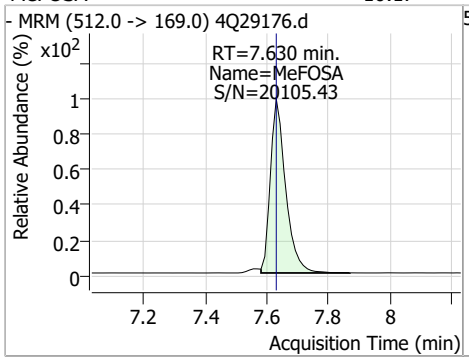
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.46	7.63	0.00	16733				

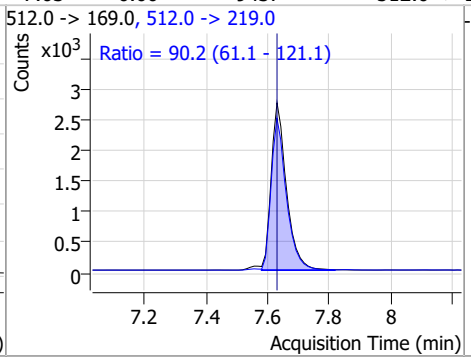


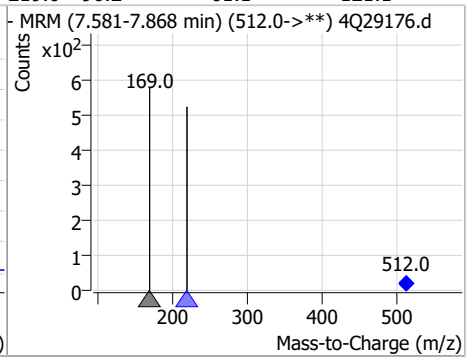




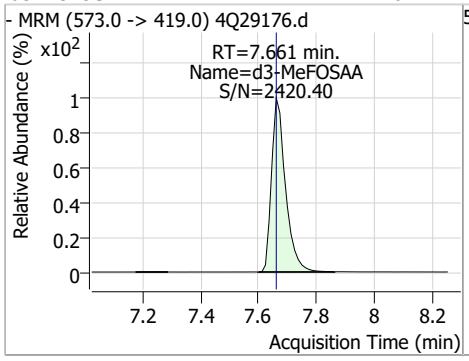
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.17	7.63	0.00	9437	512.0 -> 219.0	90.2	61.1	121.1

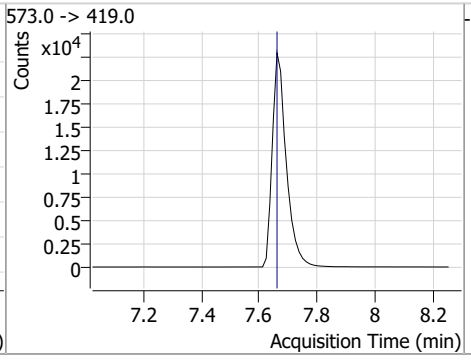


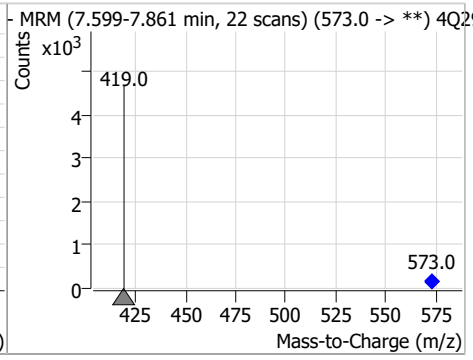




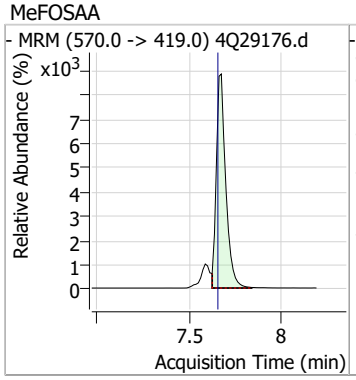
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.02	7.66	0.00	76307				

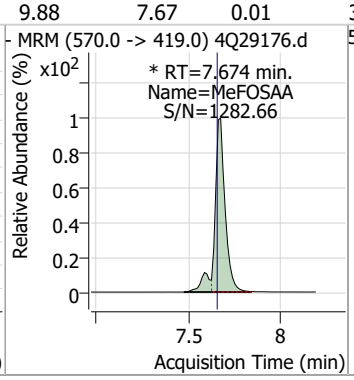


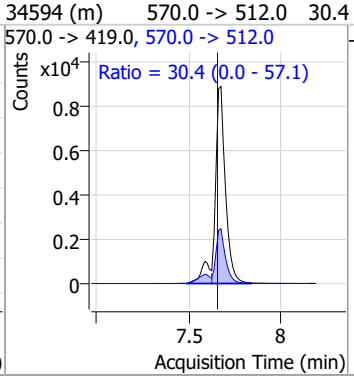


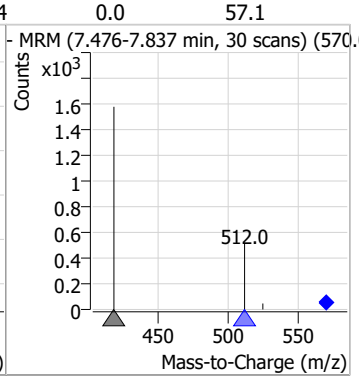


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.88	7.67	0.01	34594 (m)	570.0 -> 512.0	30.4	0.0	57.1



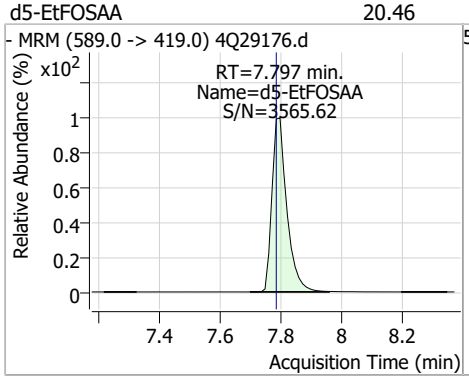


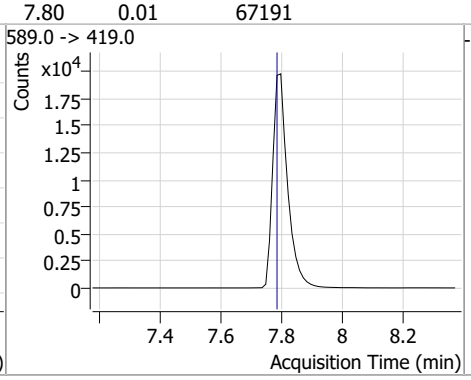


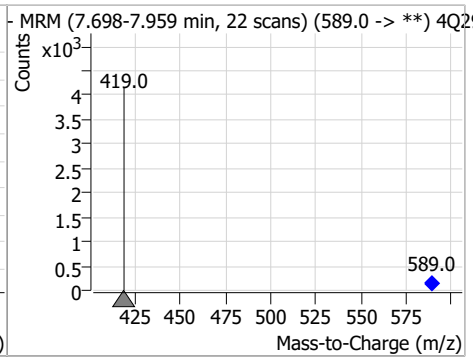


Perfluorinated Compounds by LC/MS/MS

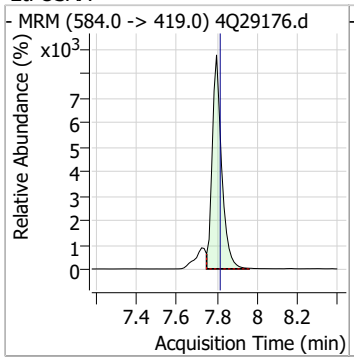
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.46	7.80	0.01	67191				

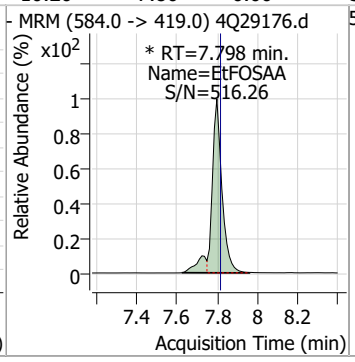


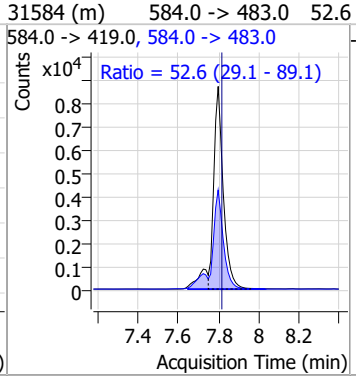


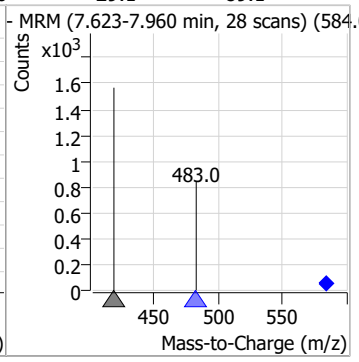


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.26	7.80	0.00	31584 (m)	584.0 -> 483.0	52.6	29.1	89.1

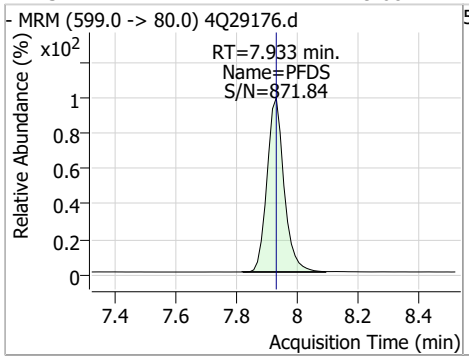


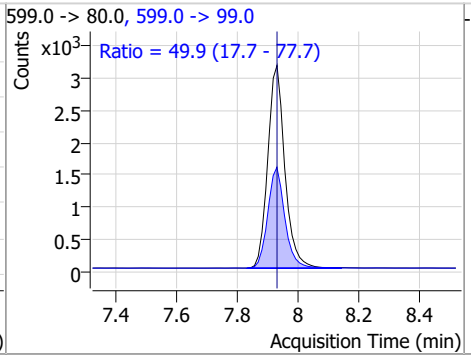


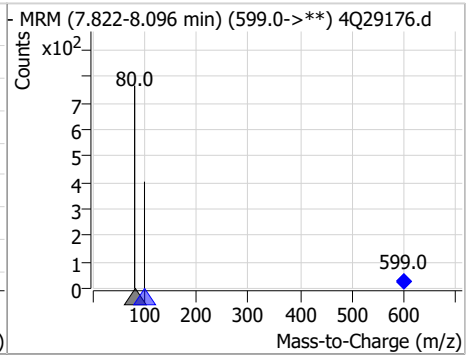




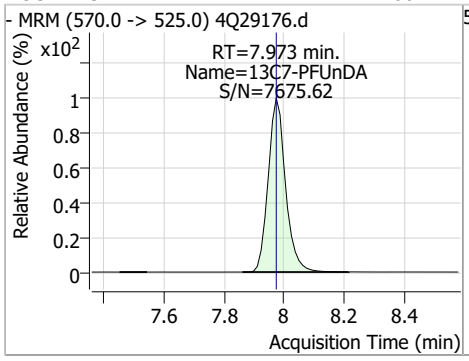
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.08	7.93	0.00	12330	599.0 -> 99.0	49.9	17.7	77.7

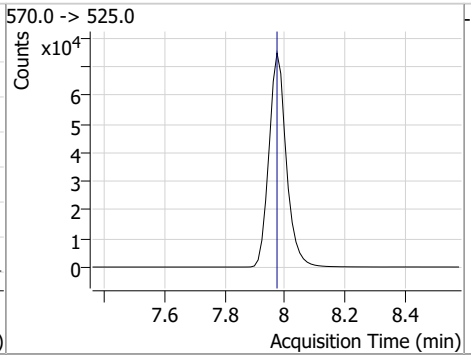


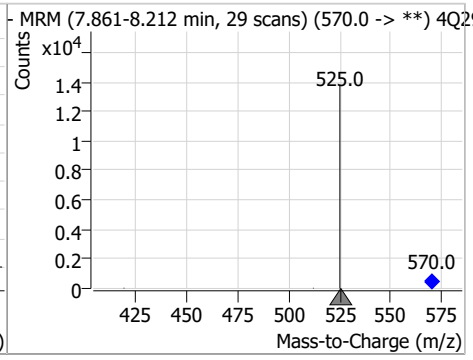




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.00	7.97	0.00	296526				

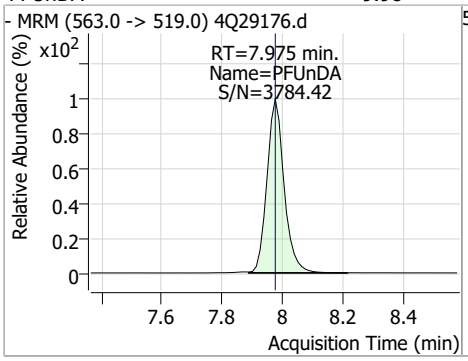


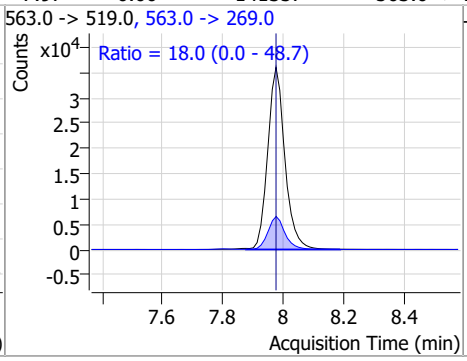


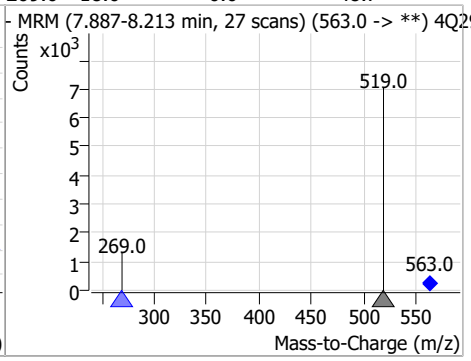


Perfluorinated Compounds by LC/MS/MS

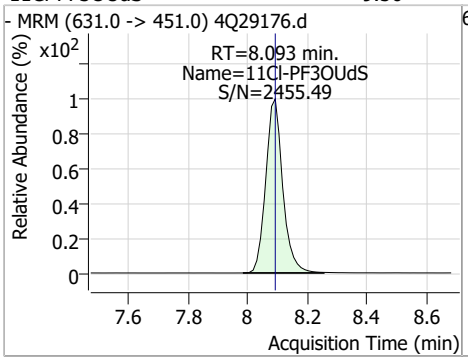
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.98	7.97	0.00	141357	563.0 -> 269.0	18.0	0.0	48.7

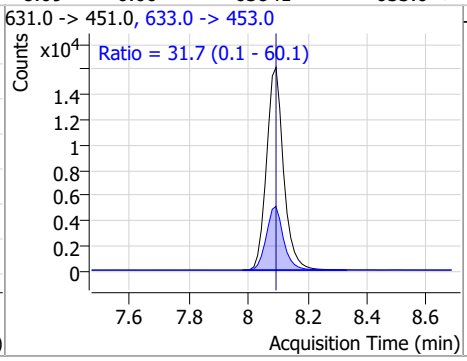


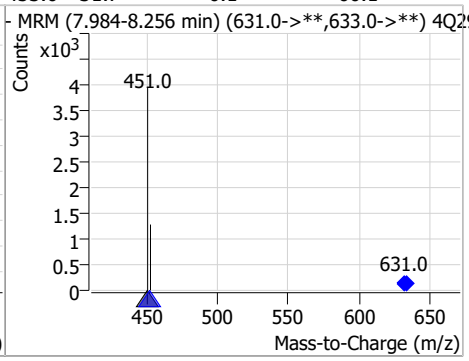




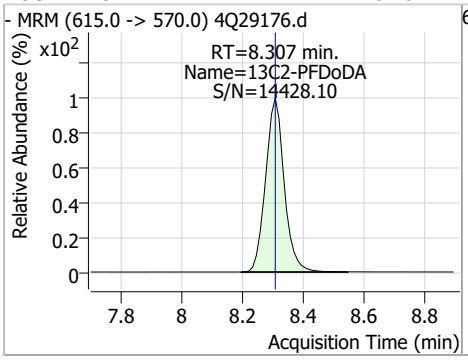
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.56	8.09	0.00	63841	633.0 -> 453.0	31.7	0.1	60.1

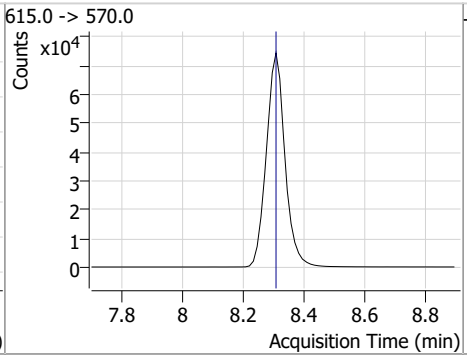


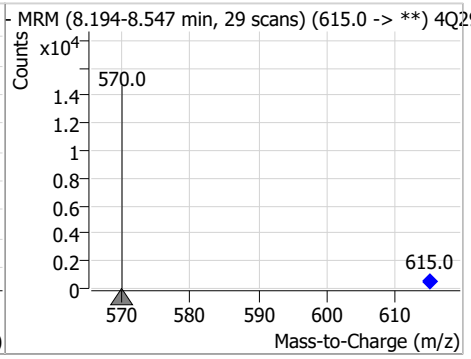




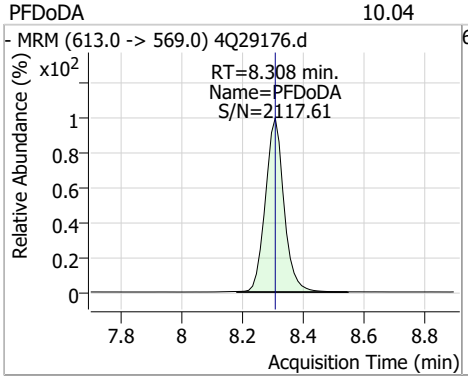
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.76	8.31	0.00	317911				

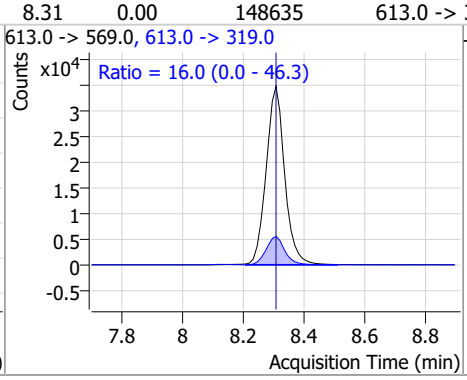


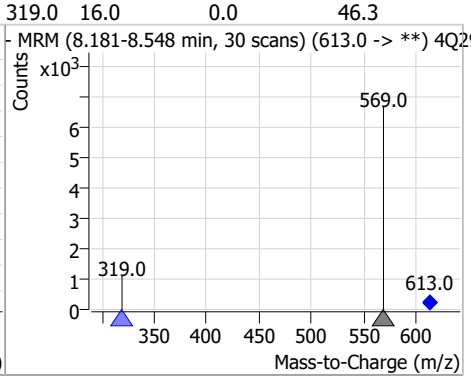




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.04	8.31	0.00	148635	613.0 -> 319.0	16.0	0.0	46.3

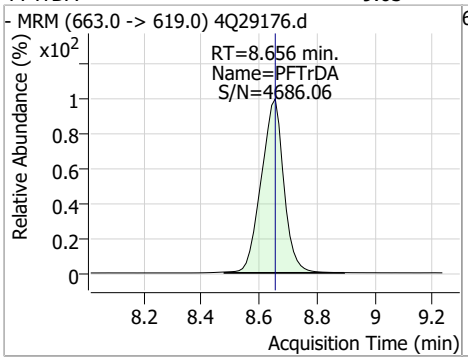


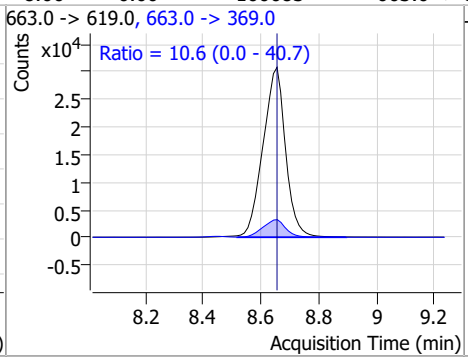


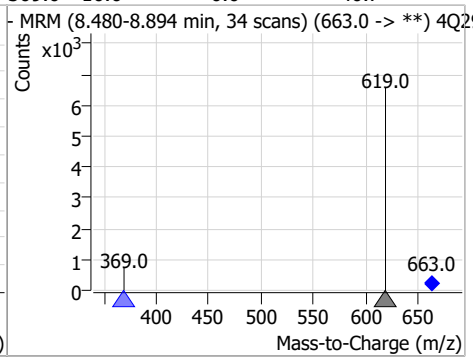


Perfluorinated Compounds by LC/MS/MS

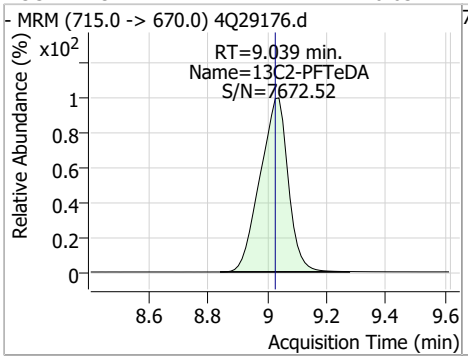
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.63	8.66	0.00	166683	663.0 -> 369.0	10.6	0.0	40.7

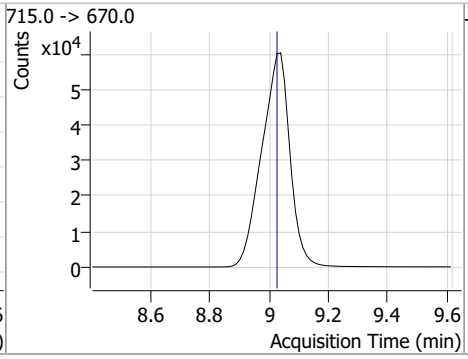


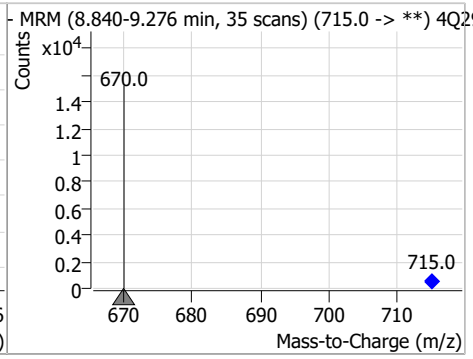




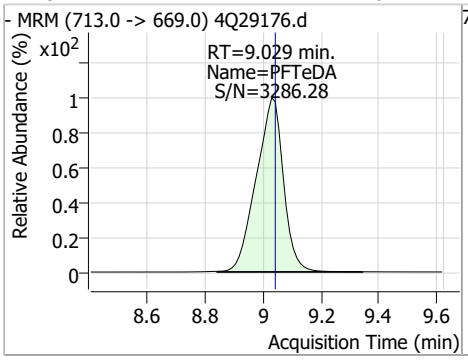
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.63	9.04	0.01	397496				

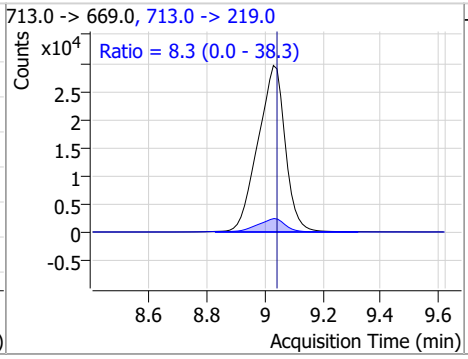


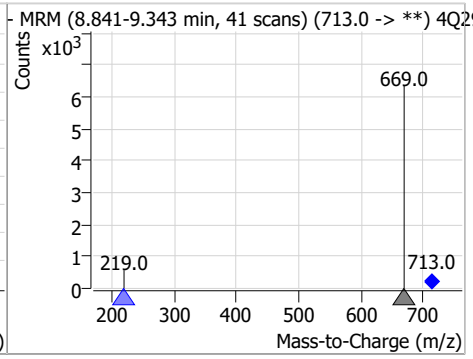




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.12	9.03	0.00	193206	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29176.D
Injection Time: 05/27/22 12:48
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.67	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

4Q29177.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29177.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 1:05:00 PM
Sample Name : icc419-20
Vial : P1-A7
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

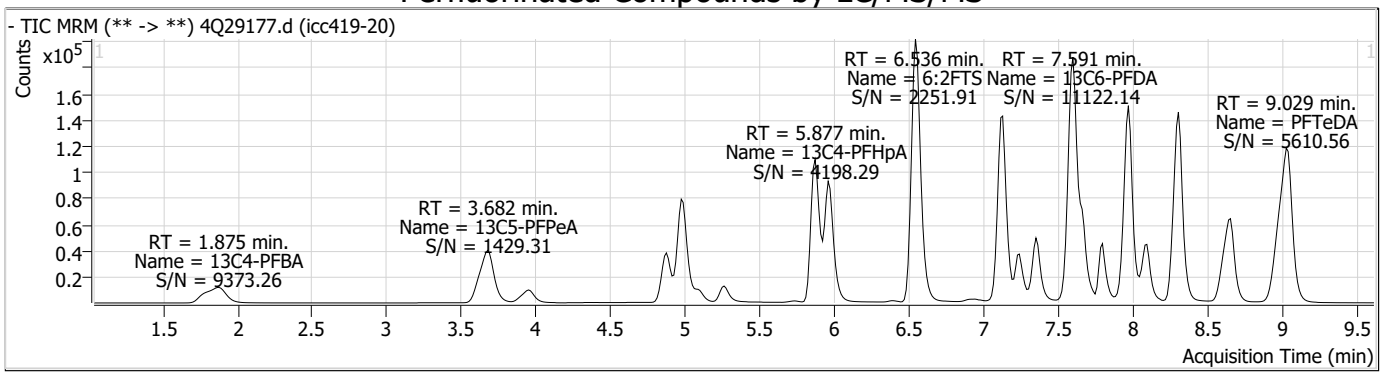
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.875	217.0 -> 172.0	91754	20.00	µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	144104	20.00	µg/L	0.000
M5-PFHxA	4.979	318.0 -> 273.0	175762	20.00	µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	167736	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	265233	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	277447	20.00	µg/L	0.000
M6-PFDA	7.591	519.0 -> 474.0	205016	20.00	µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	276377	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	300891	20.00	µg/L	0.000
M2-PFTeDA	9.027	715.0 -> 670.0	376842	20.00	µg/L	0.000
M8-FOSA	7.246	506.0 -> 78.0	63770	20.00	µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	10890	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	10823	20.00	µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	17345	20.00	µg/L	0.000
M2-4:2FTS	4.875	329.0 -> 309.0	65515	20.00	µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	103053	20.00	µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	86254	20.00	µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	70469	20.00	µg/L	0.000
M3-HFPO-DA	5.269	287.0 -> 169.0	10191	20.00	µg/L	0.000
M3-MeFOSA	7.629	515.0 -> 169.0	15279	20.00	µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	64529	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	65515	19.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-6:2FTS	6.535	429.0 -> 409.0	103053	19.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-8:2FTS	7.615	529.0 -> 509.0	86254	19.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-PFDoDA	8.307	615.0 -> 570.0	300891	19.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-PFTeDA	9.027	715.0 -> 670.0	376842	19.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-PFBS	3.949	302.0 -> 99.0	10890	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C3-PFHxS	5.898	402.0 -> 99.0	10823	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C4-PFBA	1.875	217.0 -> 172.0	91754	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C4-PFHpA	5.877	367.0 -> 322.0	167736	19.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C5-PFHxA	4.979	318.0 -> 273.0	175762	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C5-PFPeA	3.682	268.0 -> 223.0	144104	19.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C6-PFDA	7.591	519.0 -> 474.0	205016	19.54	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

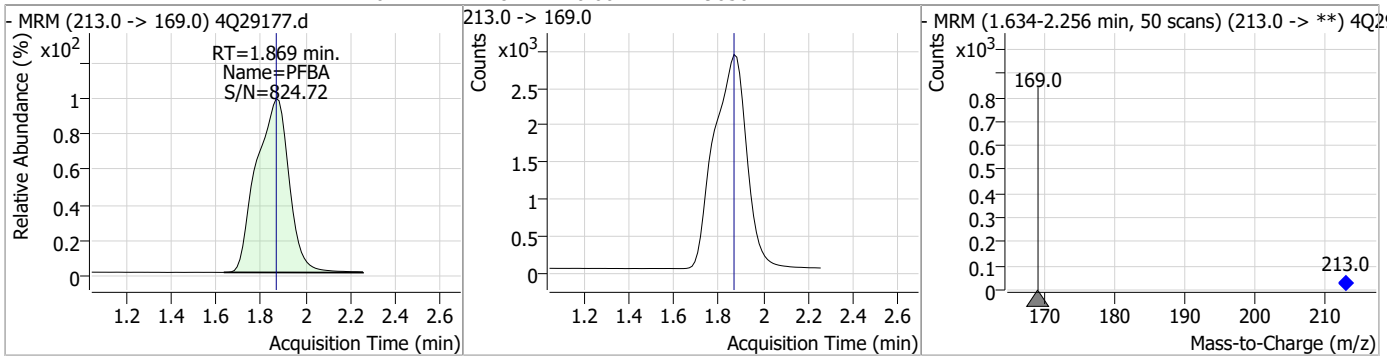
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C7-PFUnDA	7.973	570.0 -> 525.0	276377	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C8-FOSA	7.246	506.0 -> 78.0	63770	19.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C8-PFOA	6.564	421.0 -> 376.0	265233	19.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-PFOS	7.094	507.0 -> 99.0	17345	19.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
13C9-PFNA	7.135	472.0 -> 427.0	277447	19.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%			
d3-MeFOSAA	7.661	573.0 -> 419.0	70469	19.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
13C3-HFPO-DA	5.269	287.0 -> 169.0	10156	19.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%			
d3-MeFOSA	7.629	515.0 -> 169.0	15279	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
d5-EtFOSAA	7.785	589.0 -> 419.0	64498	19.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
Target Compounds							**QValue**
4:2FTS	4.877	327.0 -> 307.0	78509	20.84	µg/L		100
6:2FTS	6.536	427.0 -> 407.0	109902	20.79	µg/L		100
8:2FTS	7.615	527.0 -> 507.0	92843	20.67	µg/L		100
EtFOSAA	7.798	584.0 -> 419.0	60783	20.56	µg/L	m	92
FOSA	7.248	498.0 -> 78.0	61404	20.69	µg/L		100
MeFOSAA	7.662	570.0 -> 419.0	67491	20.86	µg/L	m	95
PFBA	1.869	213.0 -> 169.0	29650	20.41	µg/L		100
PFBS	3.954	299.0 -> 80.0	35263	20.45	µg/L		100
PFDA	7.592	513.0 -> 469.0	266650	20.33	µg/L		100
PFDoDA	8.308	613.0 -> 569.0	282465	20.17	µg/L		100
PFDS	7.933	599.0 -> 80.0	24356	19.25	µg/L		100
PFHpA	5.878	363.0 -> 319.0	233069	19.94	µg/L		100
PFHpS	6.548	449.0 -> 80.0	27985	21.42	µg/L		100
PFHxA	4.980	313.0 -> 269.0	183128	20.43	µg/L		100
PFHxS	5.900	399.0 -> 80.0	28485	20.23	µg/L	m	97
PFNA	7.135	463.0 -> 419.0	243886	20.38	µg/L		100
PFNS	7.564	549.0 -> 80.0	27825	21.09	µg/L		100
PFOA	6.565	413.0 -> 369.0	295546	20.16	µg/L		100
PFOS	7.096	499.0 -> 80.0	33495	20.76	µg/L	m	85
PFPeA	3.684	263.0 -> 219.0	130189	20.40	µg/L		100
PFPeS	5.098	349.0 -> 80.0	22687	20.08	µg/L		100
PFTeDA	9.029	713.0 -> 669.0	371690	20.53	µg/L		100
PFTrDA	8.656	663.0 -> 619.0	320956	19.58	µg/L		100
PFUnDA	7.975	563.0 -> 519.0	262909	19.91	µg/L		100
11Cl-PF3OUdS	8.093	631.0 -> 451.0	129490	20.48	µg/L		100
9Cl-PF3ONS	7.353	531.0 -> 351.0	142448	19.16	µg/L		100
ADONA	5.965	377.0 -> 251.0	271937	19.06	µg/L		100
HFPO-DA	5.264	329.0 -> 169.0	32976	20.72	µg/L		100
MeFOSA	7.630	512.0 -> 169.0	17302	20.43	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

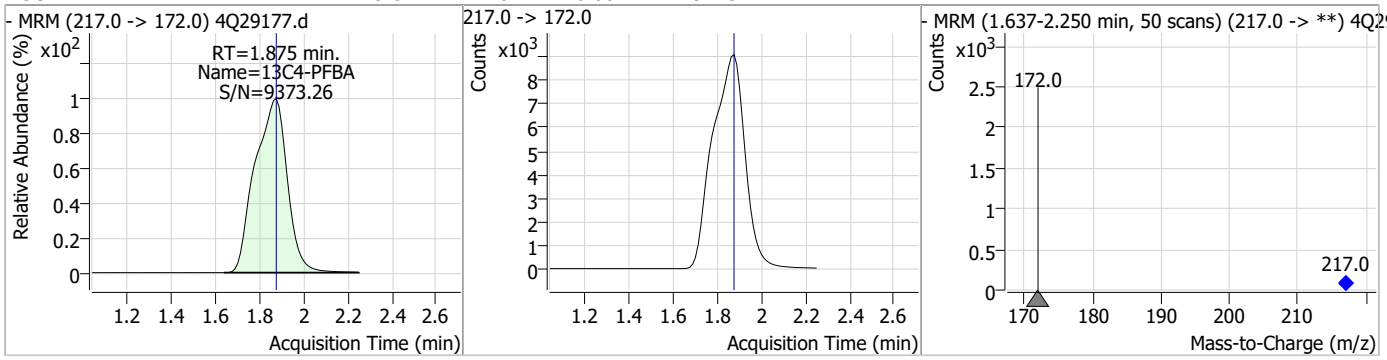
Perfluorinated Compounds by LC/MS/MS



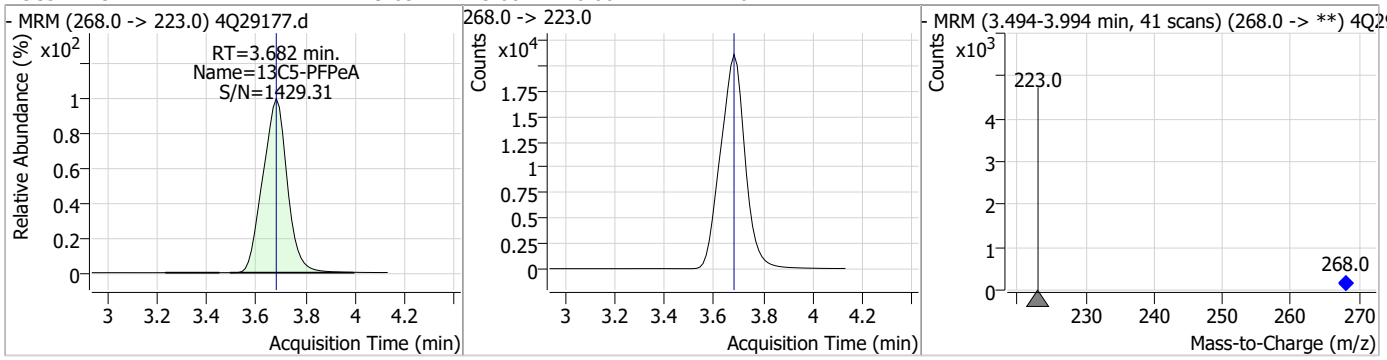
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.41	1.87	0.00	29650				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.52	1.87	0.00	91754				

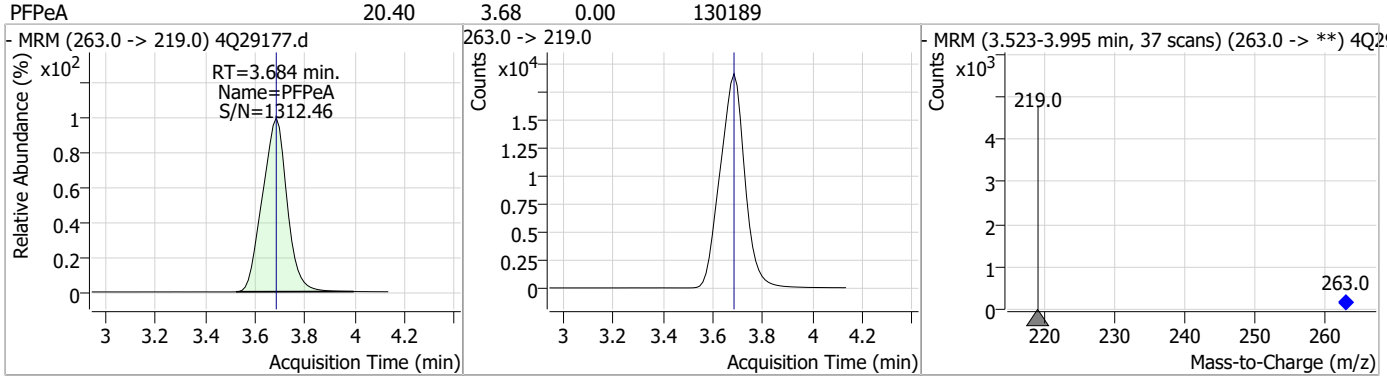


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.65	3.68	0.00	144104				

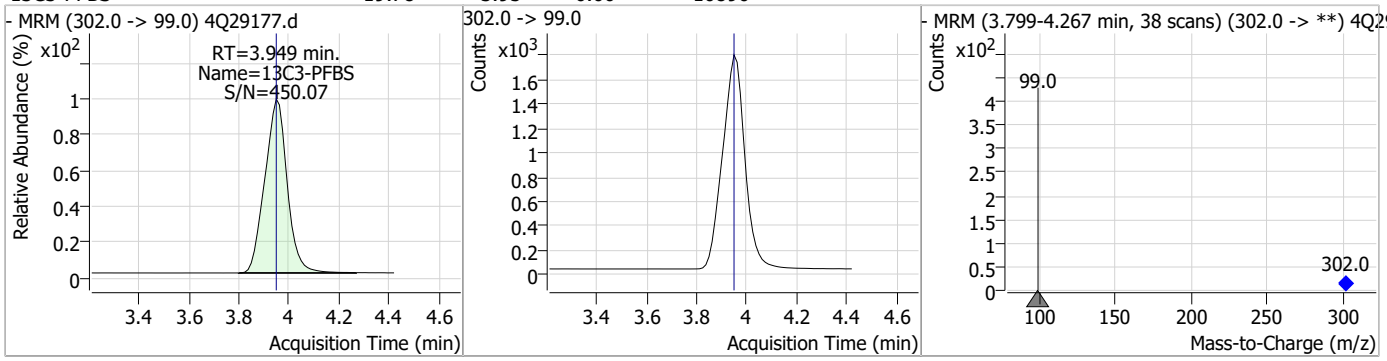


Perfluorinated Compounds by LC/MS/MS

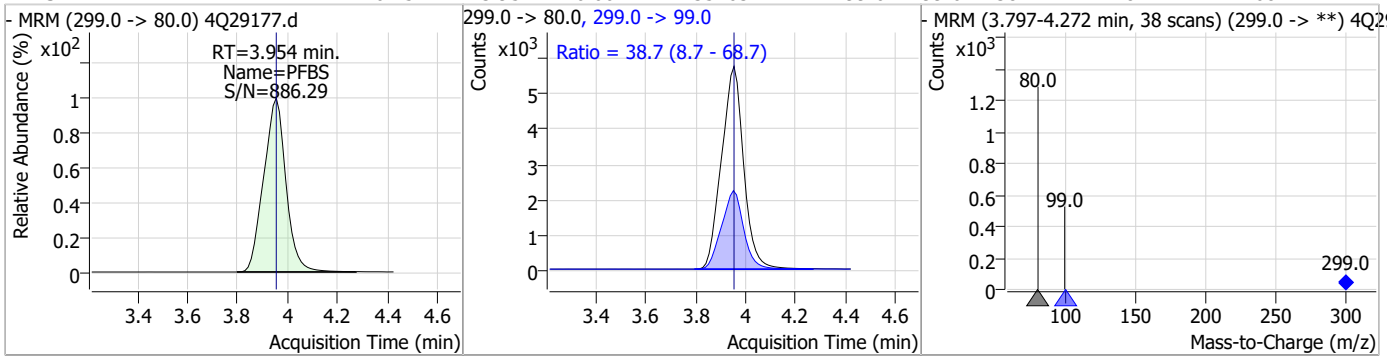
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.40	3.68	0.00	130189				



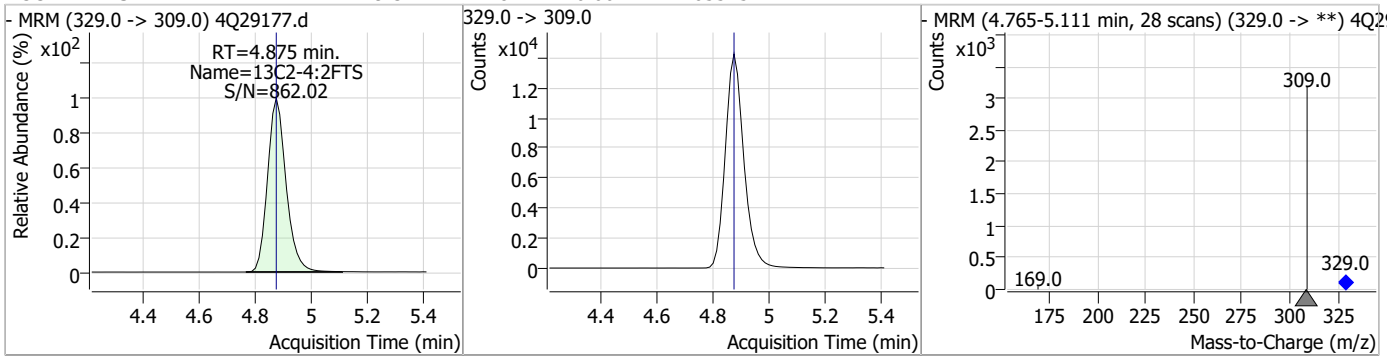
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.78	3.95	0.00	10890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.45	3.95	0.00	35263	299.0 -> 99.0	38.7	8.7	68.7

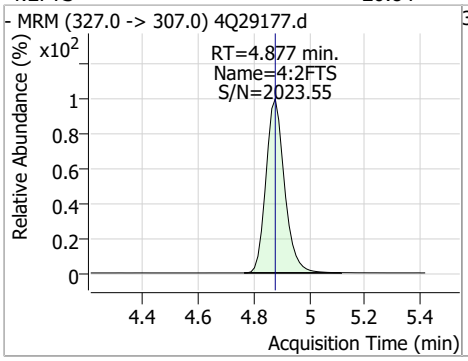


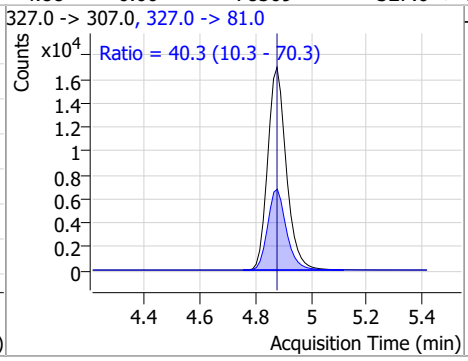
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.31	4.87	0.00	65515				

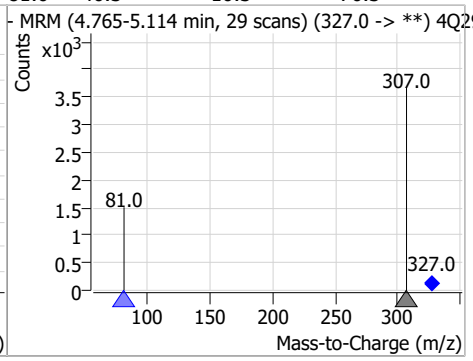


Perfluorinated Compounds by LC/MS/MS

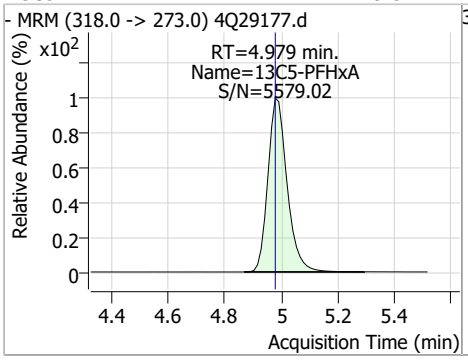
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.84	4.88	0.00	78509	327.0 -> 81.0	40.3	10.3	70.3

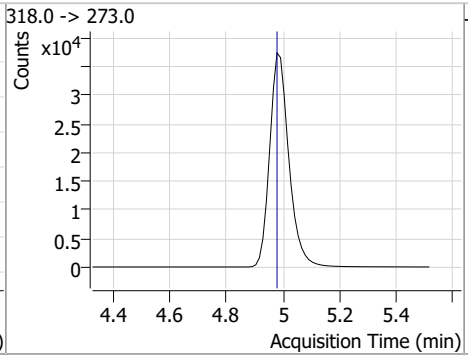


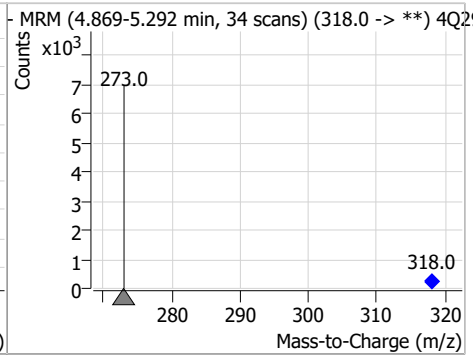




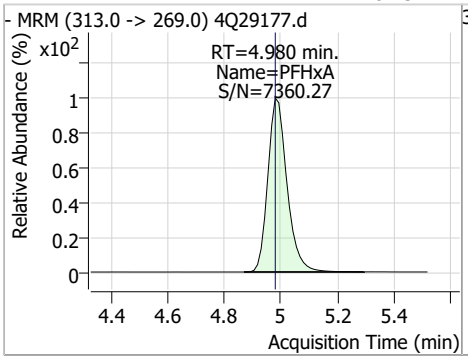
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.52	4.98	0.00	175762				

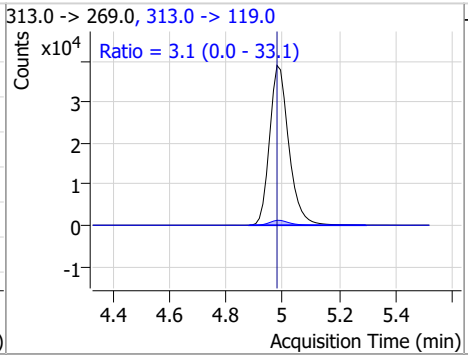


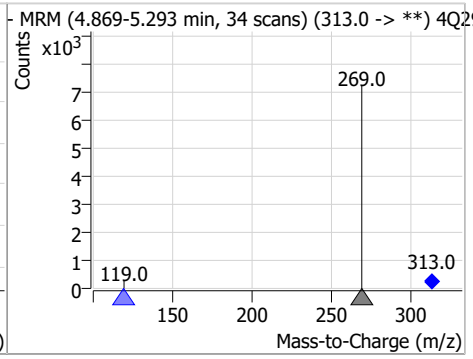




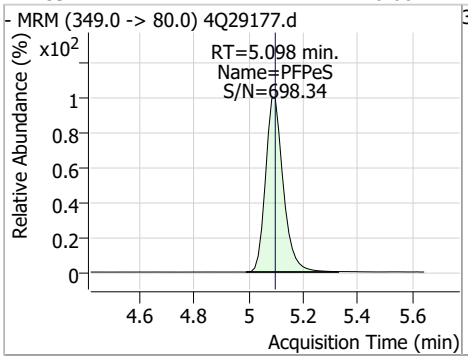
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.43	4.98	0.00	183128	313.0 -> 119.0	3.1	0.0	33.1

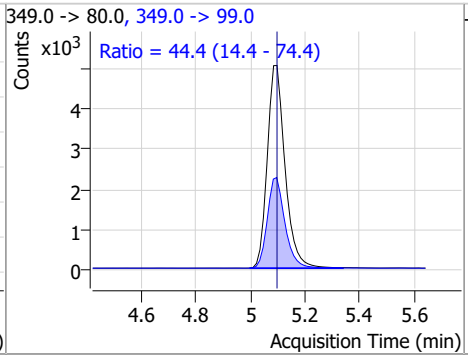


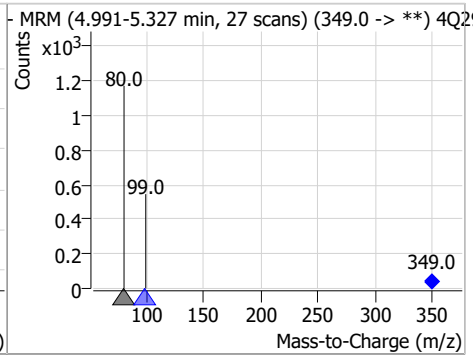




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.08	5.10	0.00	22687	349.0 -> 99.0	44.4	14.4	74.4

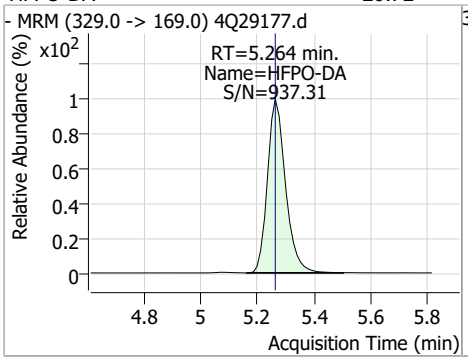


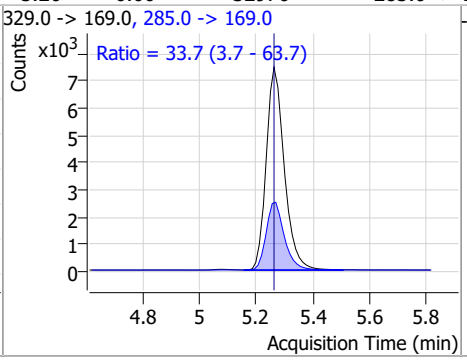


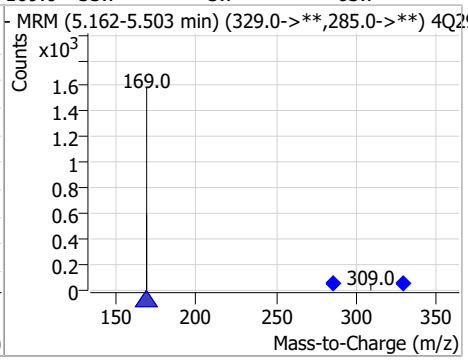


Perfluorinated Compounds by LC/MS/MS

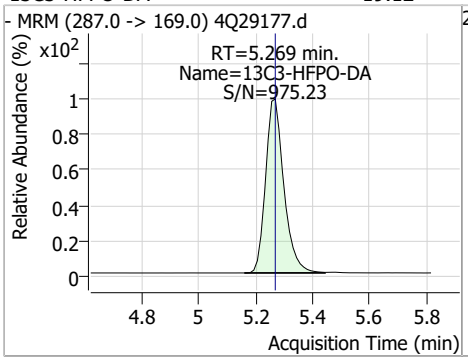
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.72	5.26	0.00	32976	285.0 -> 169.0	33.7	3.7	63.7

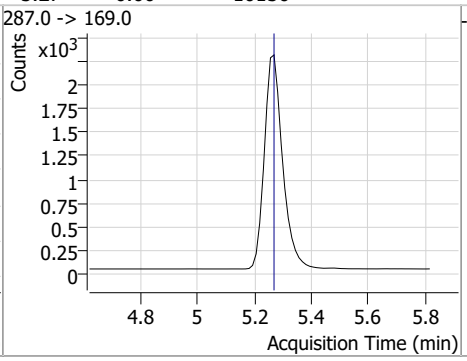


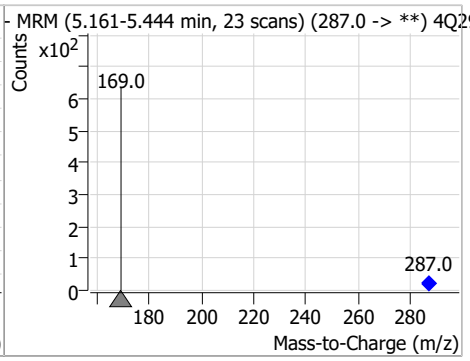




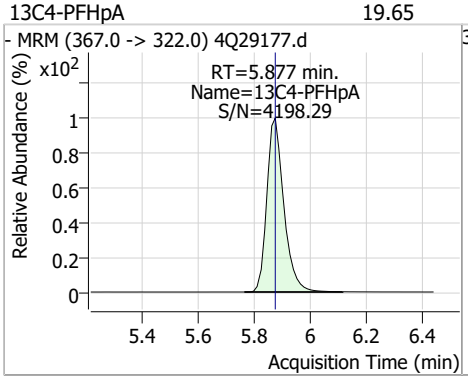
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.12	5.27	0.00	10156				

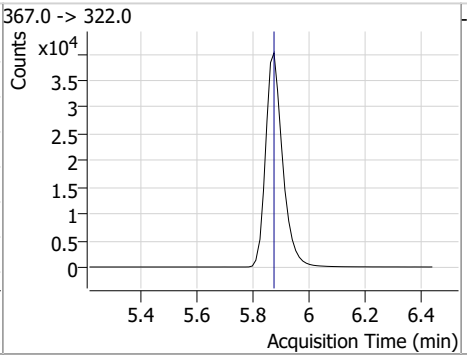


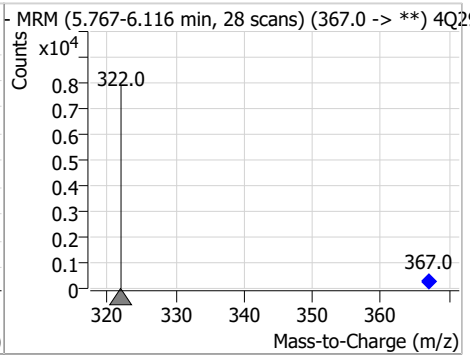




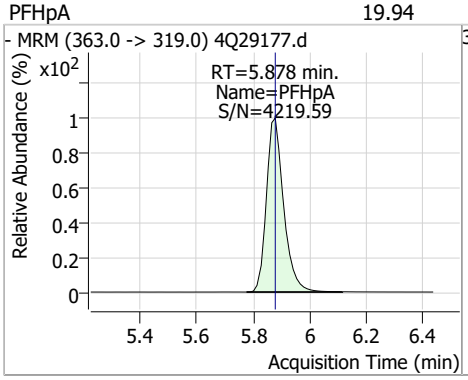
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.65	5.88	0.00	167736				

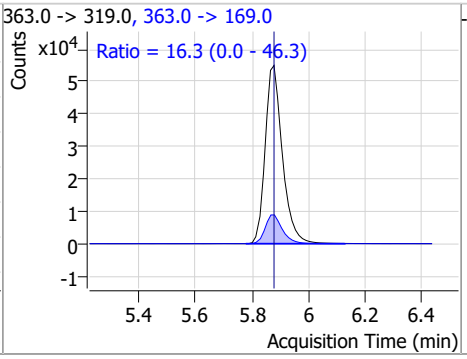


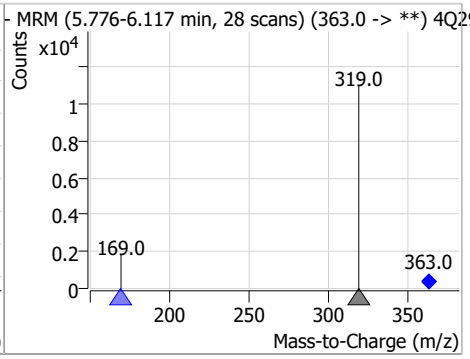




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.94	5.88	0.00	233069	363.0 -> 169.0	16.3	0.0	46.3

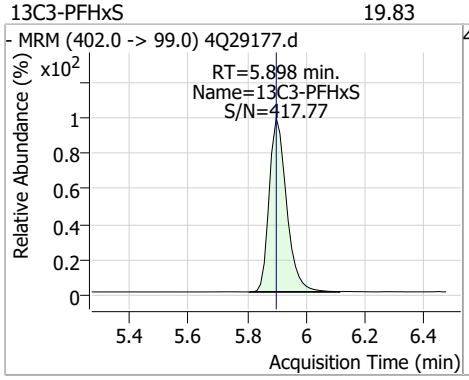


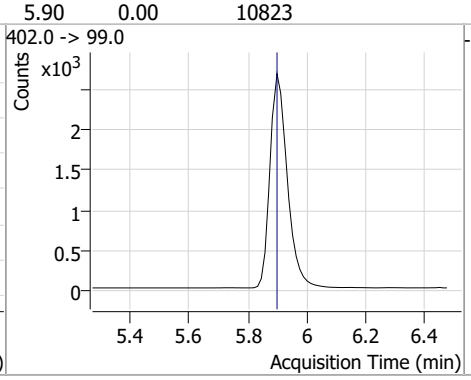


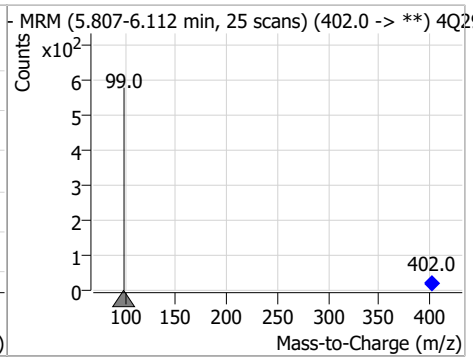


Perfluorinated Compounds by LC/MS/MS

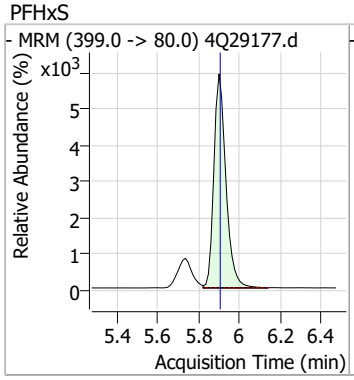
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.83	5.90	0.00	10823				

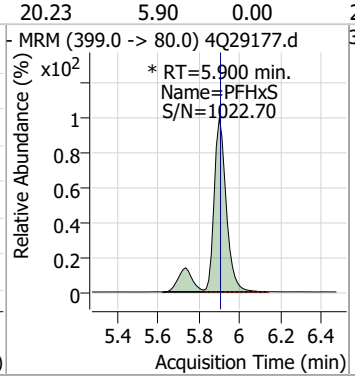


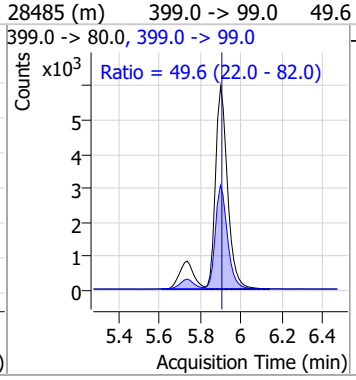


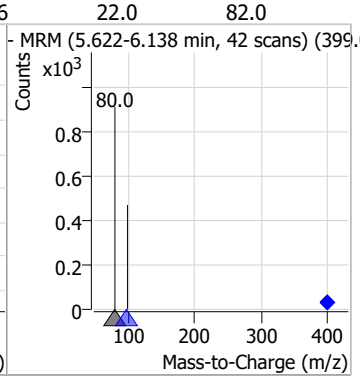


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.23	5.90	0.00	28485 (m)	399.0 -> 99.0	49.6	22.0	82.0

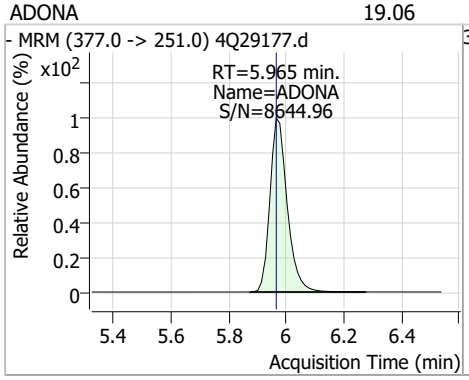


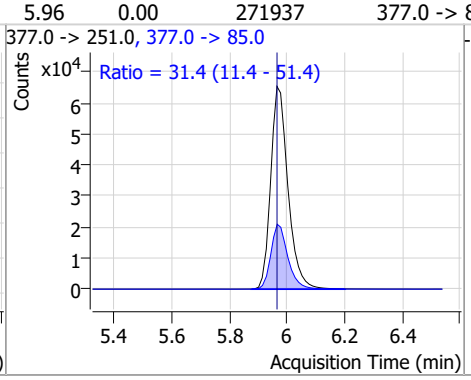


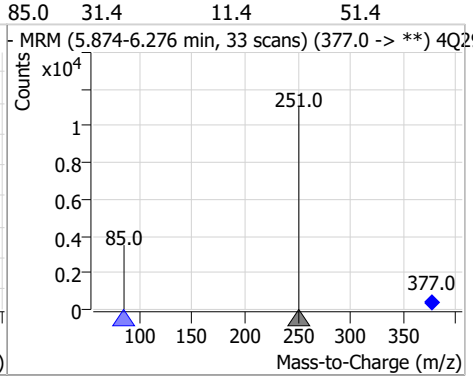




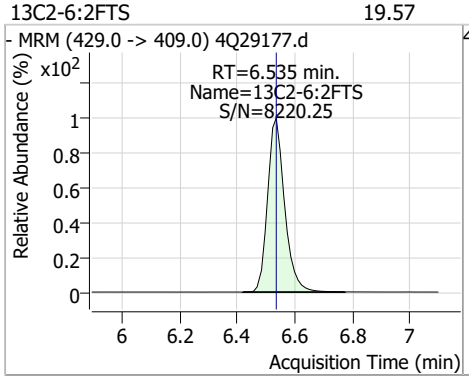
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.06	5.96	0.00	271937	377.0 -> 85.0	31.4	11.4	51.4

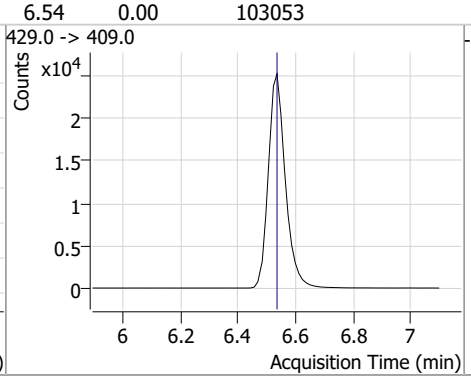


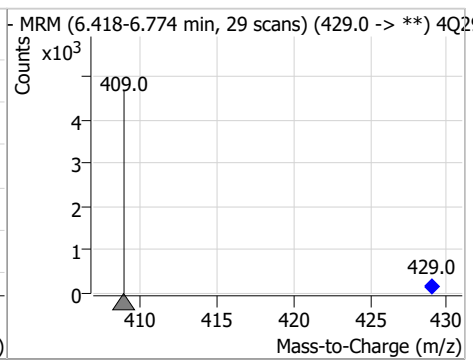




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.57	6.54	0.00	103053				

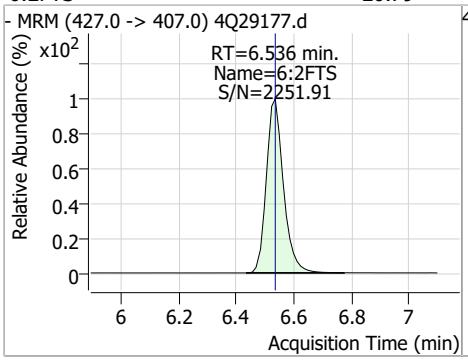


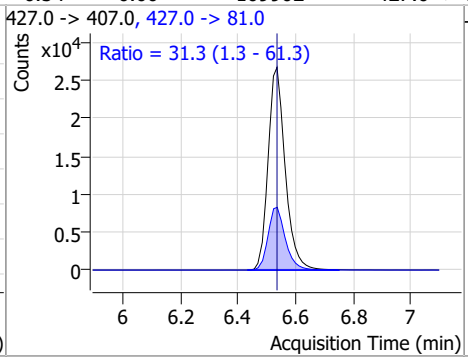


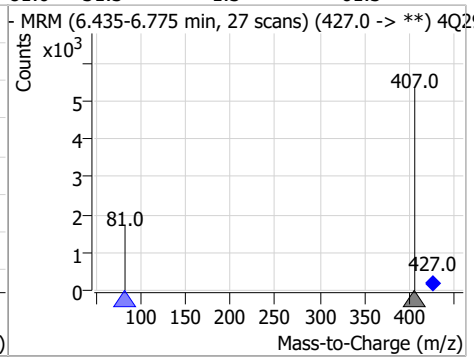


Perfluorinated Compounds by LC/MS/MS

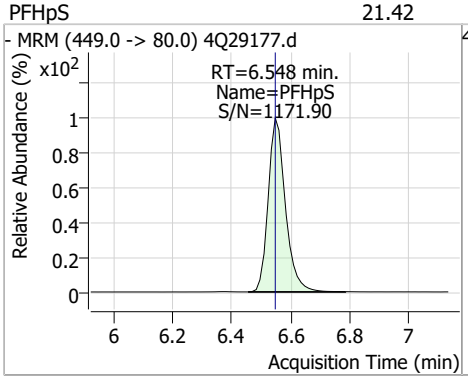
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.79	6.54	0.00	109902	427.0 -> 81.0	31.3	1.3	61.3

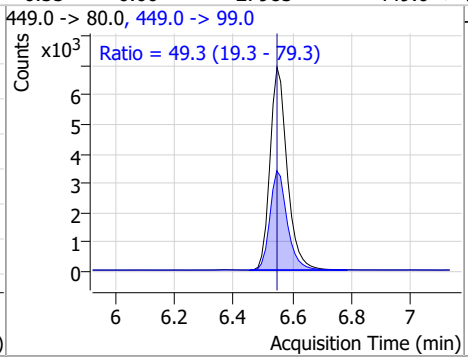


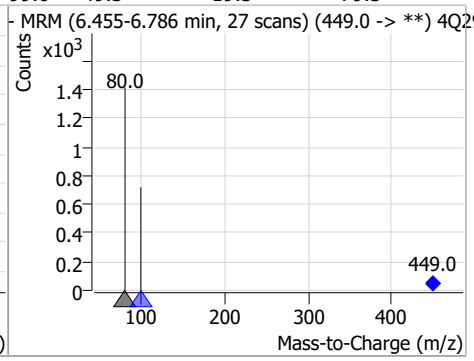




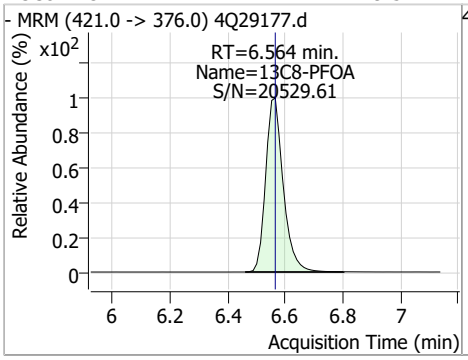
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.42	6.55	0.00	27985	449.0 -> 99.0	49.3	19.3	79.3

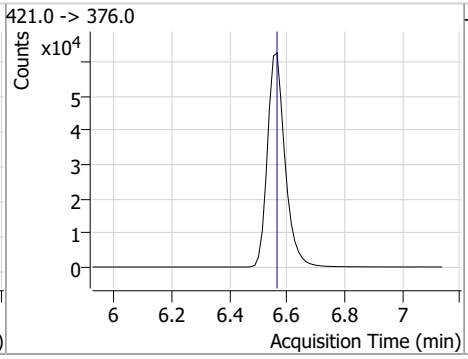


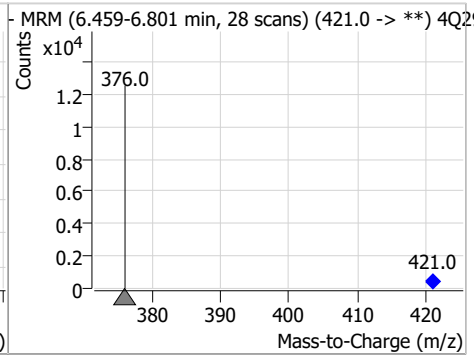




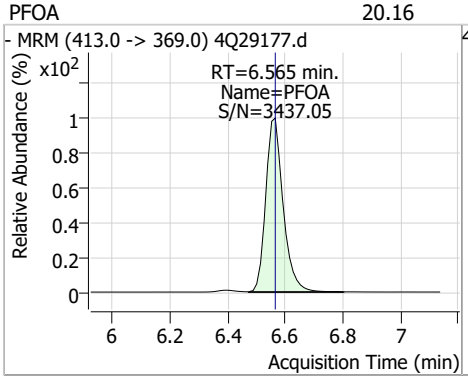
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.54	6.56	0.00	265233				

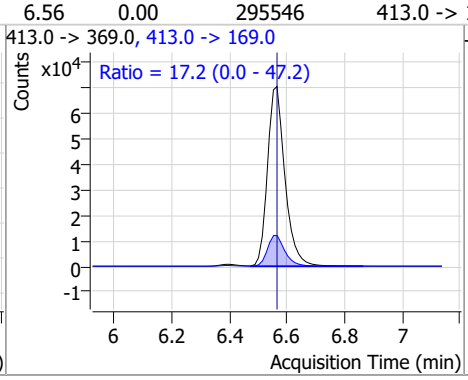


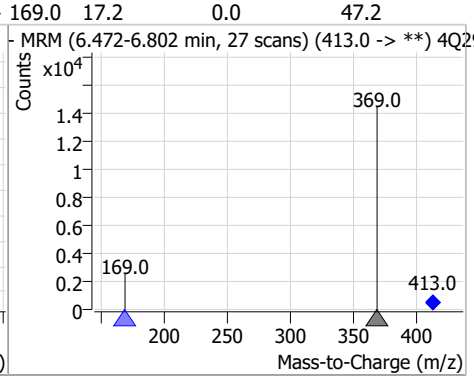




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.16	6.56	0.00	295546	413.0 -> 169.0	17.2	0.0	47.2

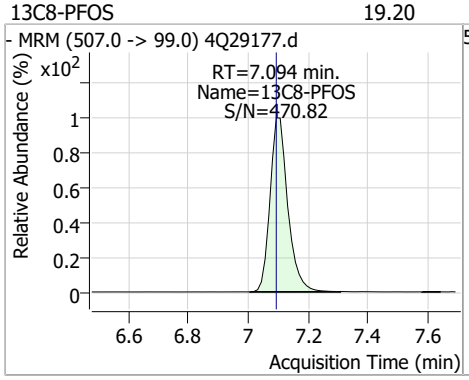


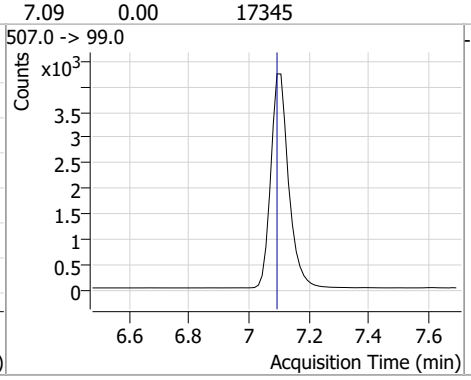


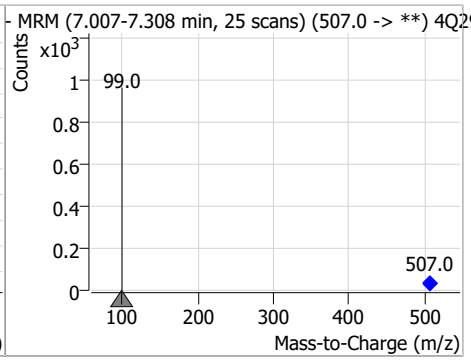


Perfluorinated Compounds by LC/MS/MS

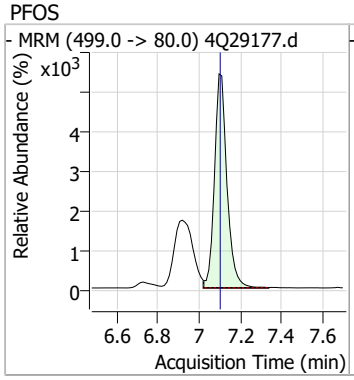
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.20	7.09	0.00	17345				

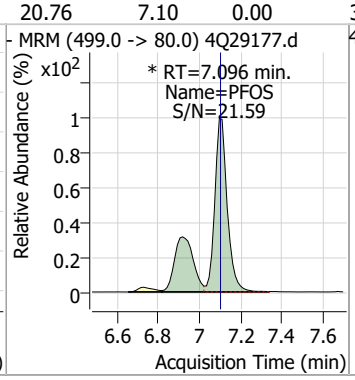


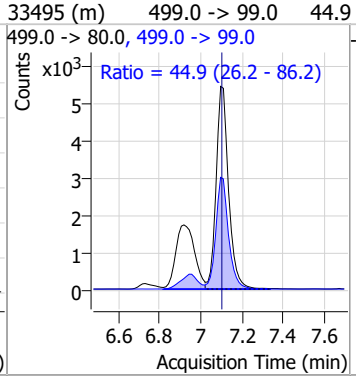


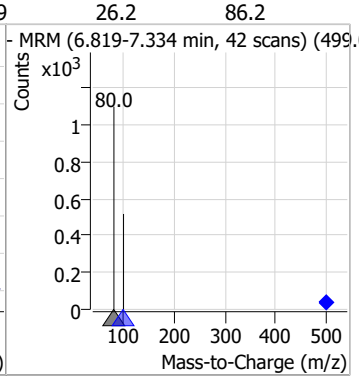


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.76	7.10	0.00	33495 (m)	499.0 -> 99.0	44.9	26.2	86.2

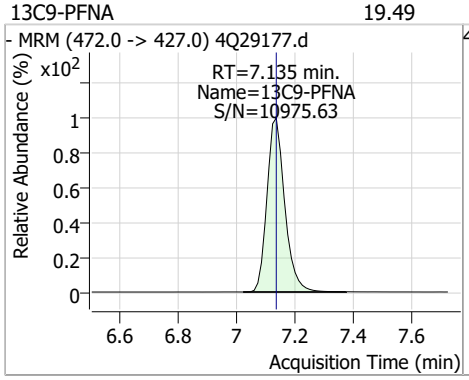


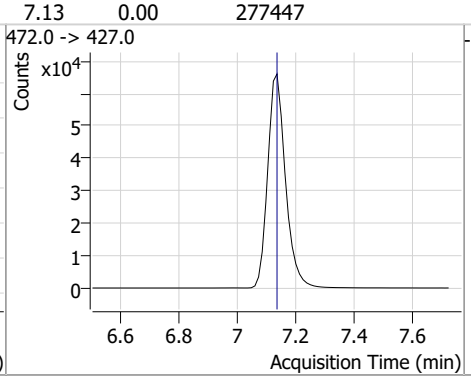


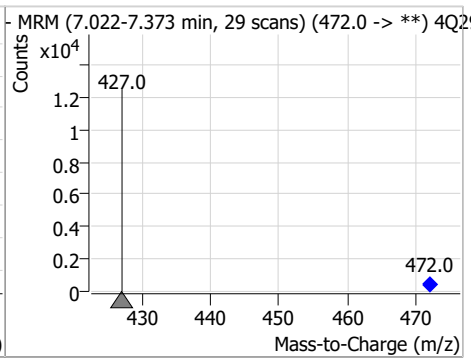




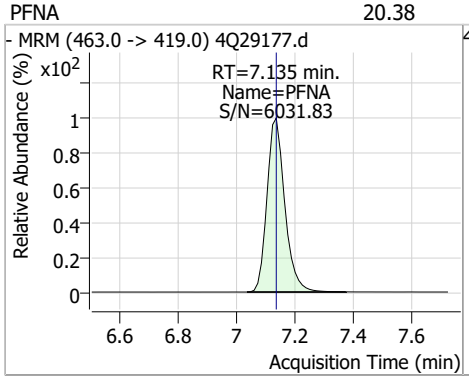
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.49	7.13	0.00	277447				

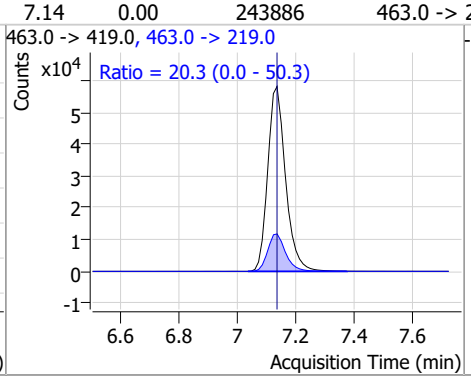


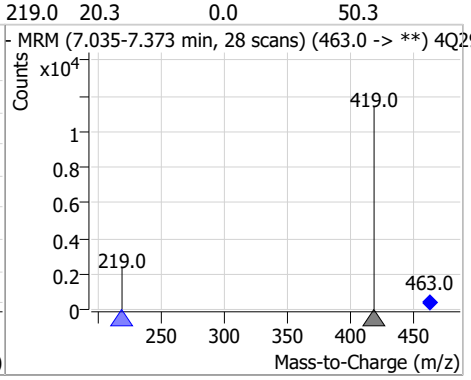




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.38	7.14	0.00	243886	463.0 -> 219.0	20.3	0.0	50.3

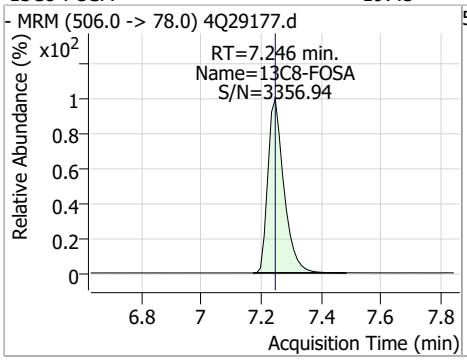


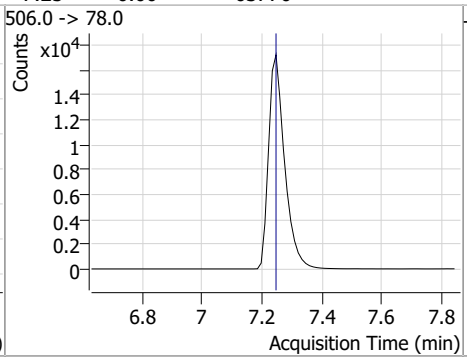


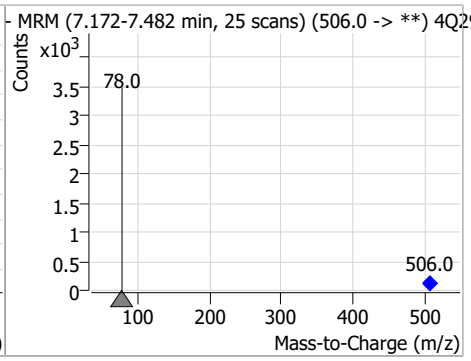


Perfluorinated Compounds by LC/MS/MS

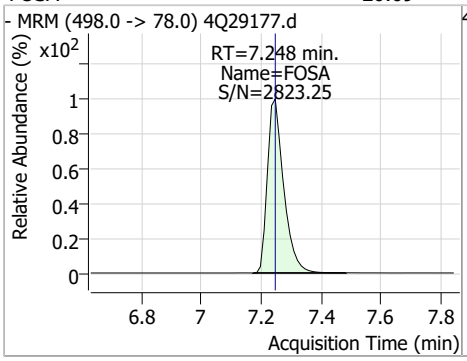
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.45	7.25	0.00	63770				

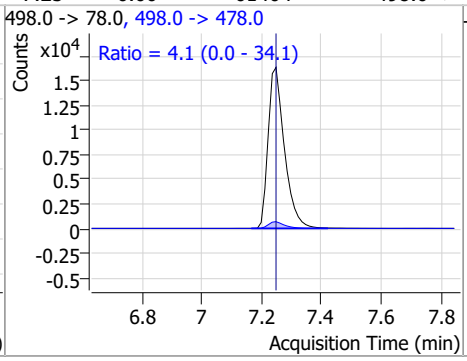


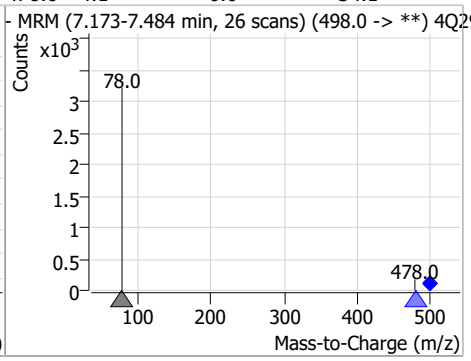




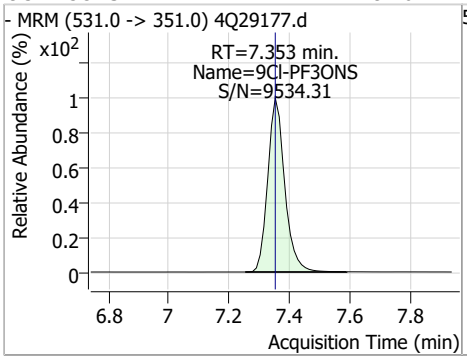
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.69	7.25	0.00	61404	498.0 -> 478.0	4.1	0.0	34.1

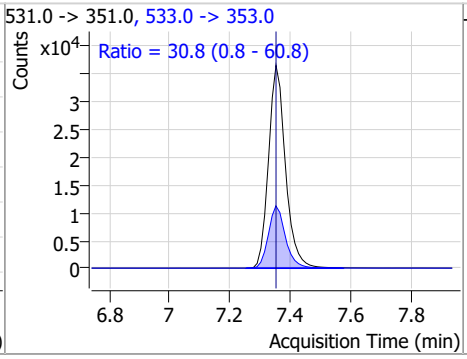


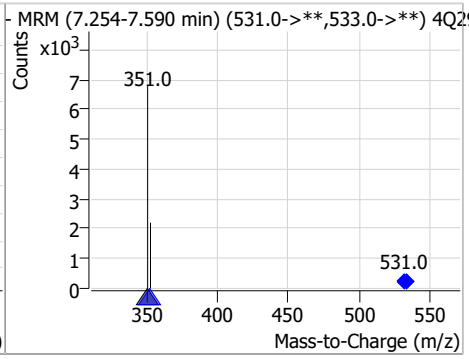




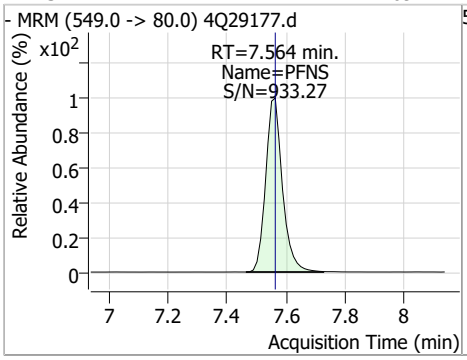
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.16	7.35	0.00	142448	533.0 -> 353.0	30.8	0.8	60.8

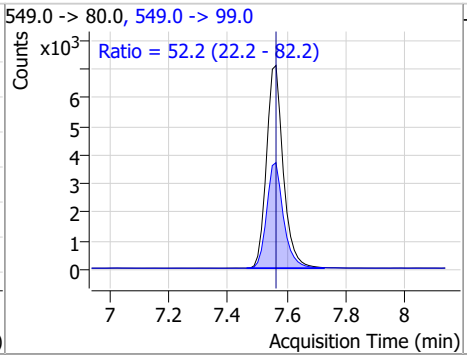


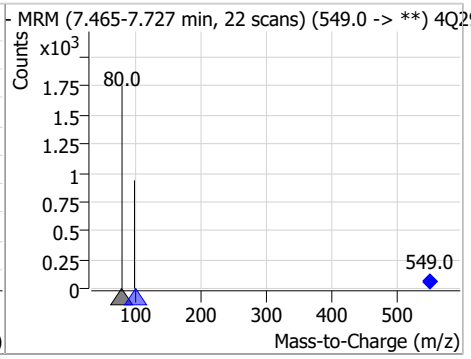




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.09	7.56	0.00	27825	549.0 -> 99.0	52.2	22.2	82.2

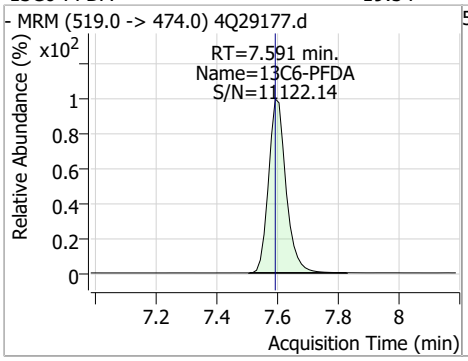


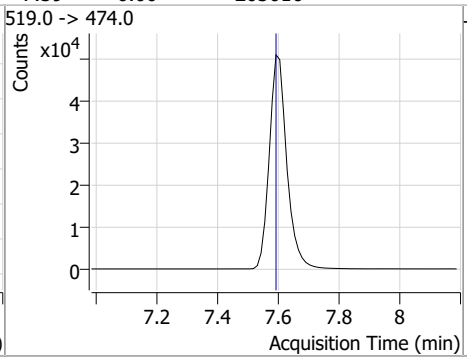


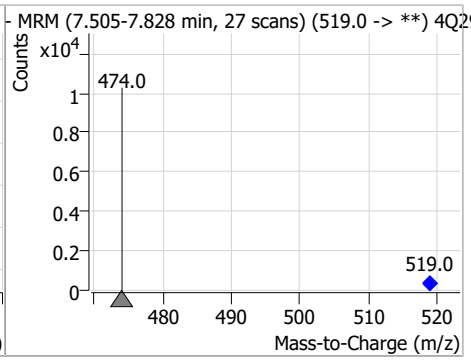


Perfluorinated Compounds by LC/MS/MS

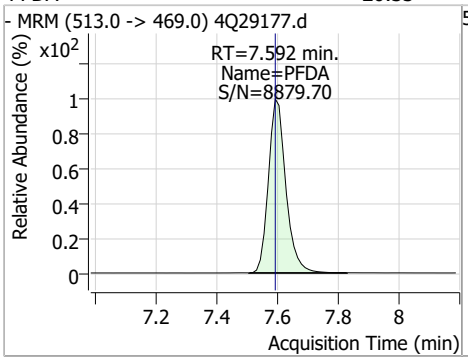
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.54	7.59	0.00	205016				

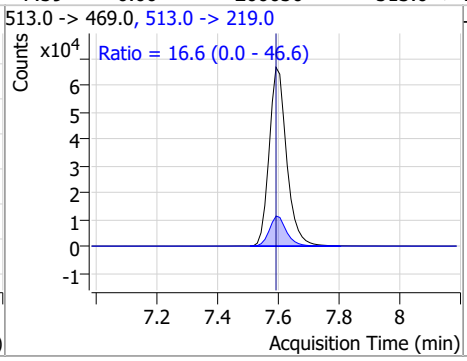


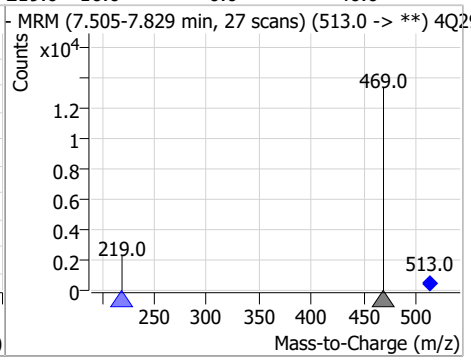




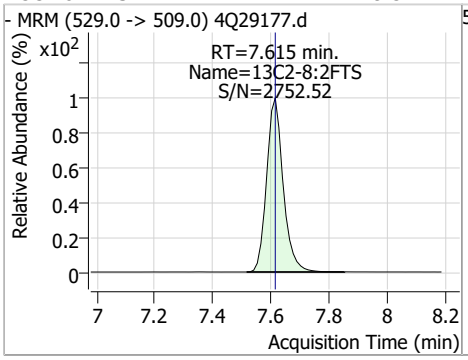
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.33	7.59	0.00	266650	513.0 -> 219.0	16.6	0.0	46.6

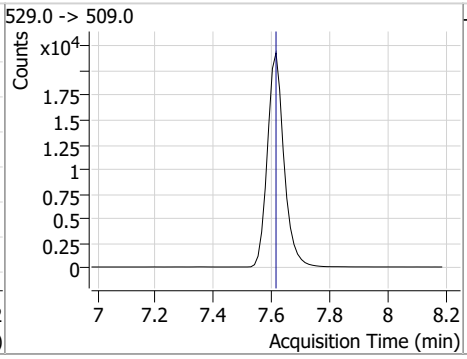


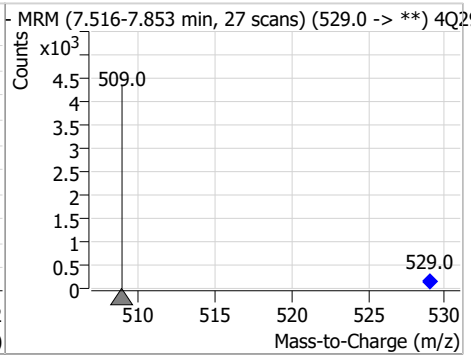




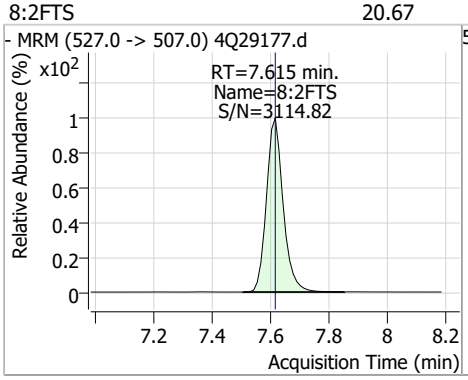
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.34	7.61	0.00	86254				

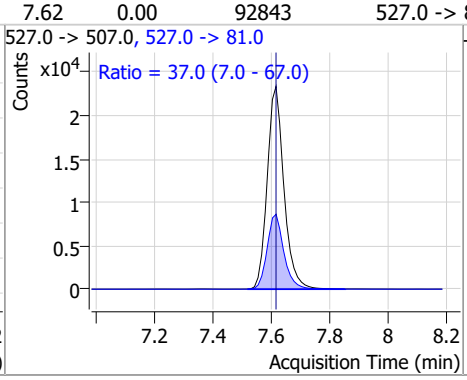


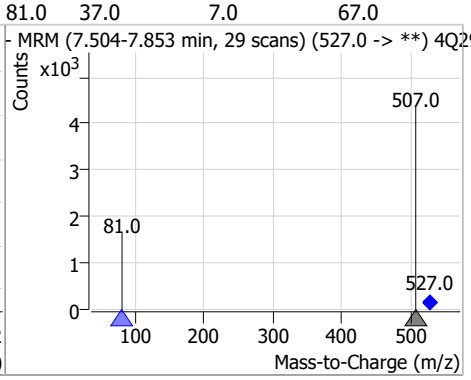




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.67	7.62	0.00	92843	527.0 -> 81.0	37.0	7.0	67.0

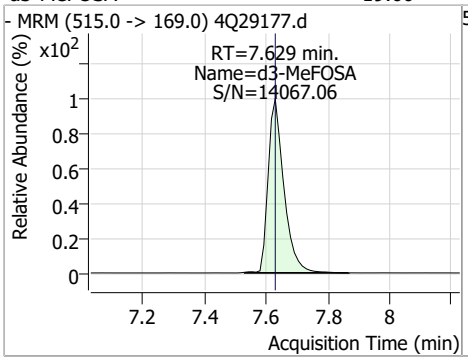


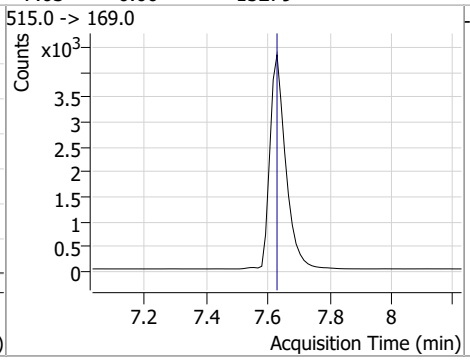


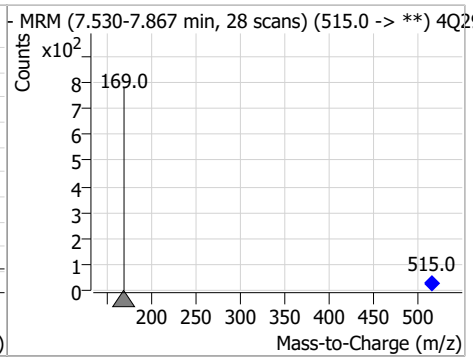


Perfluorinated Compounds by LC/MS/MS

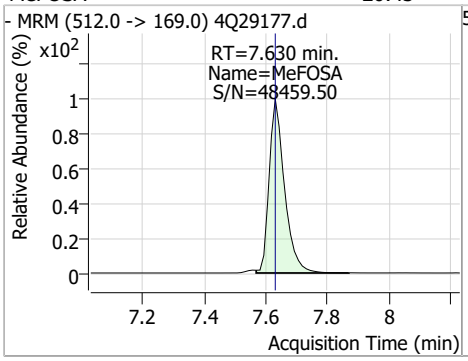
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.60	7.63	0.00	15279				

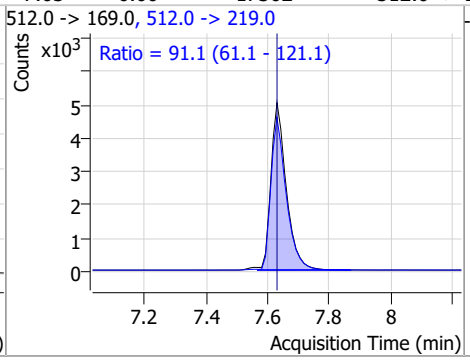


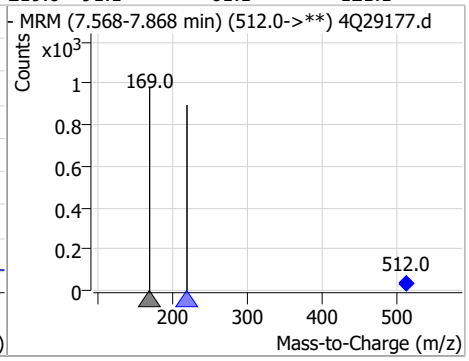




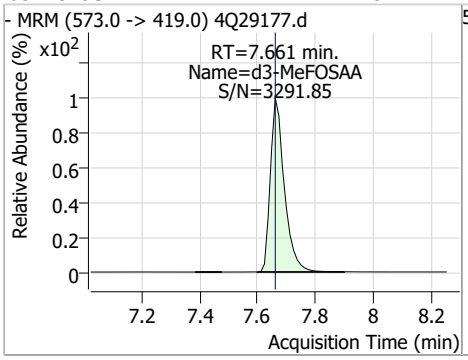
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.43	7.63	0.00	17302	512.0 -> 219.0	91.1	61.1	121.1

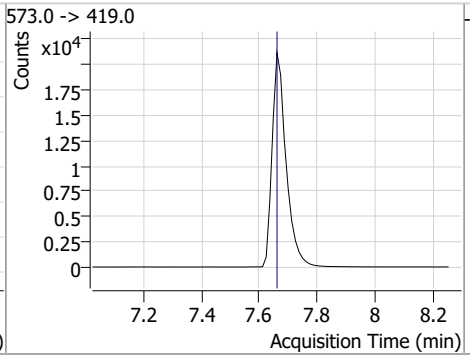


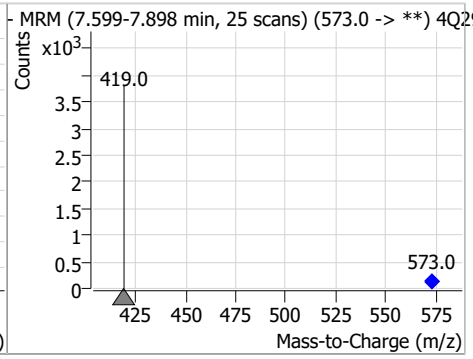




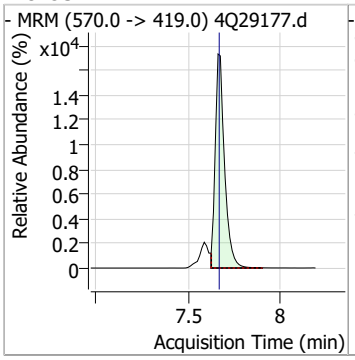
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.41	7.66	0.00	70469				

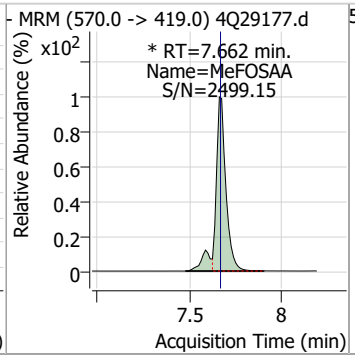


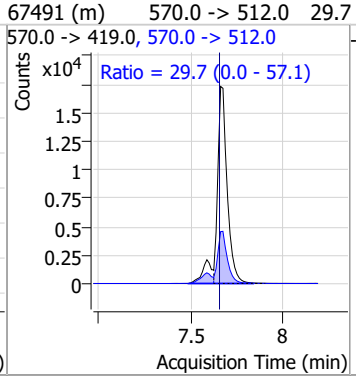


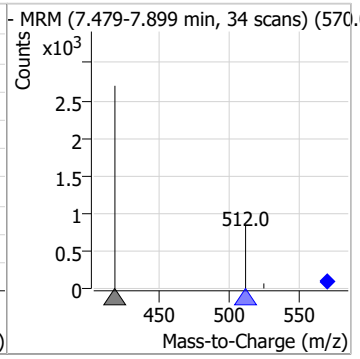


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.86	7.66	0.00	67491 (m)	570.0 -> 512.0	29.7	0.0	57.1



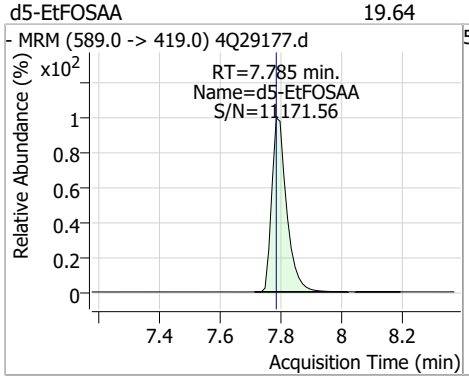


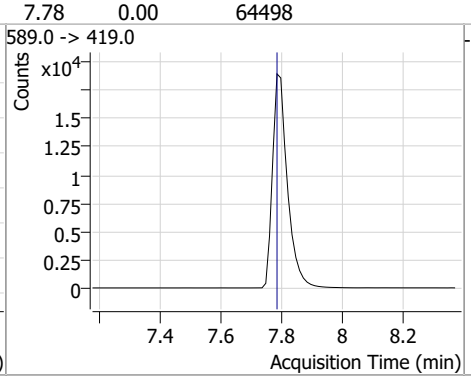


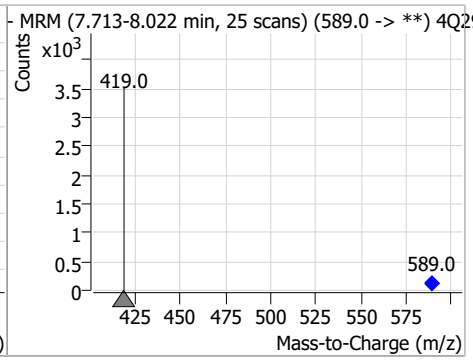


Perfluorinated Compounds by LC/MS/MS

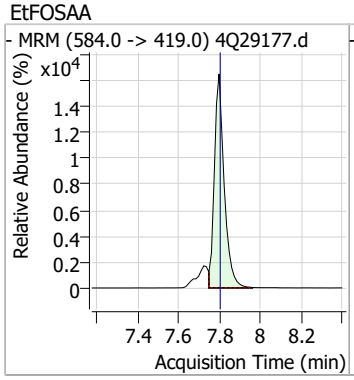
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.64	7.78	0.00	64498				

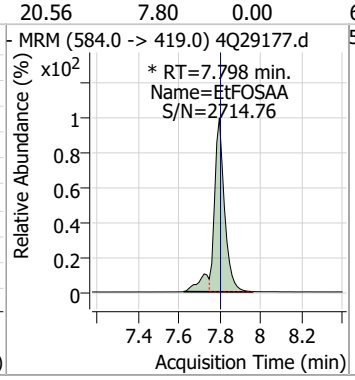


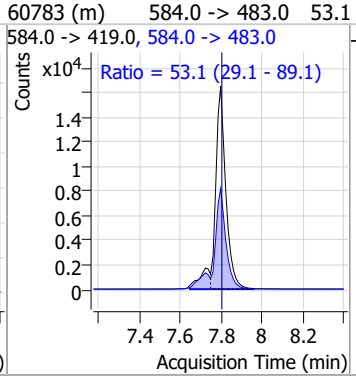


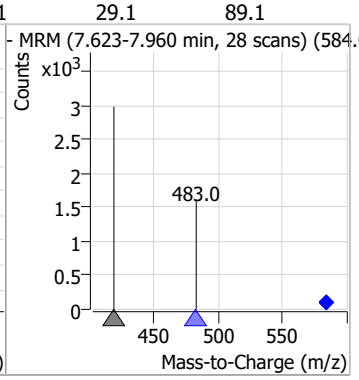


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.56	7.80	0.00	60783 (m)	584.0 -> 483.0	53.1	29.1	89.1

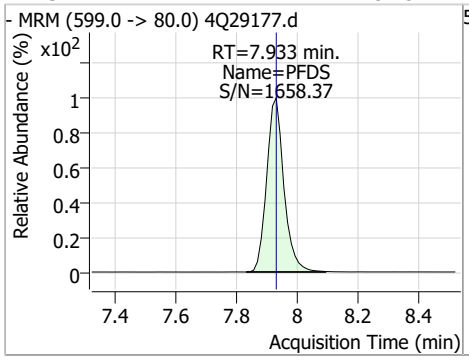


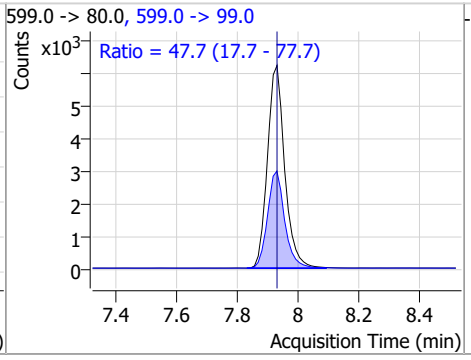


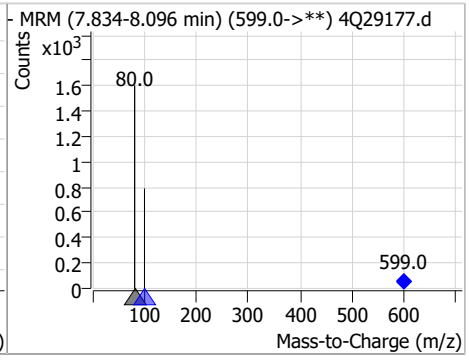




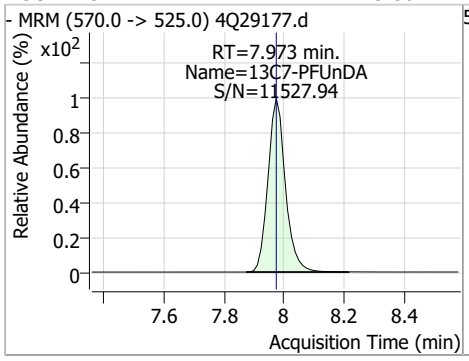
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.25	7.93	0.00	24356	599.0 -> 99.0	47.7	17.7	77.7

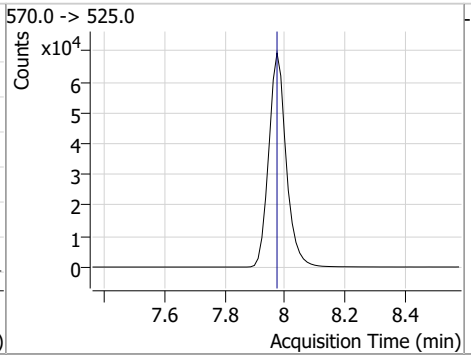


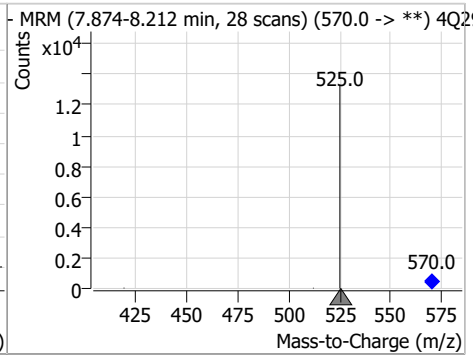




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.58	7.97	0.00	276377				

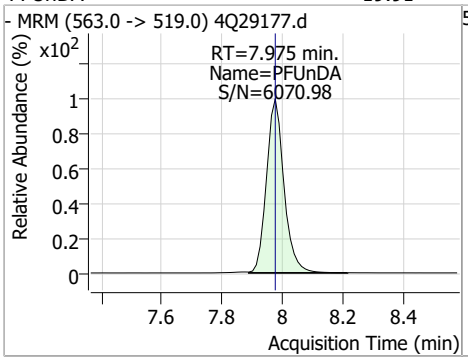


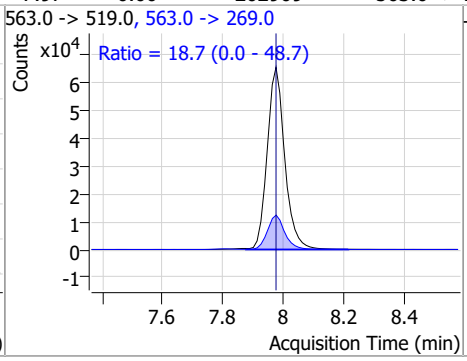


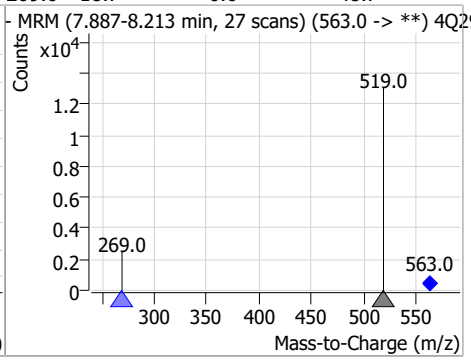


Perfluorinated Compounds by LC/MS/MS

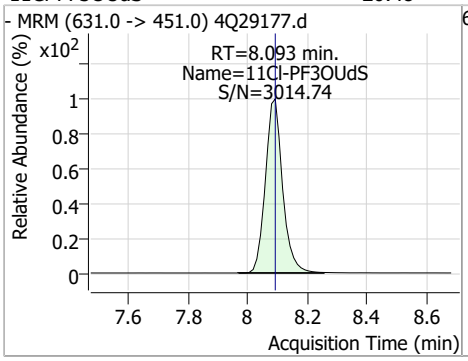
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.91	7.97	0.00	262909	563.0 -> 269.0	18.7	0.0	48.7

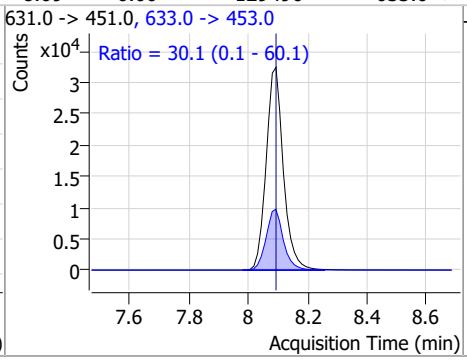


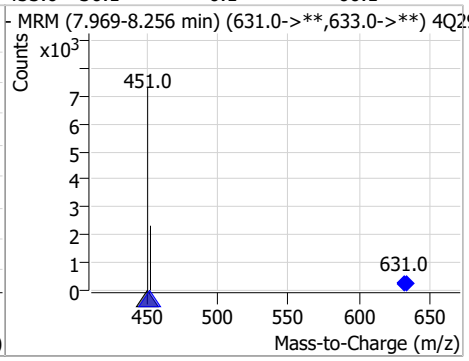




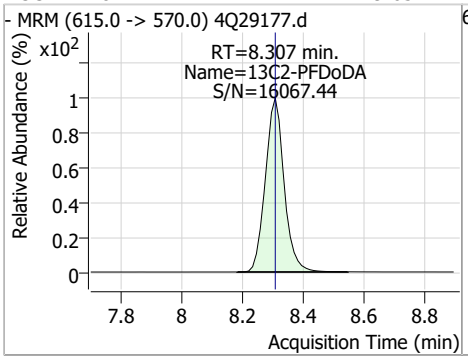
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.48	8.09	0.00	129490	633.0 -> 453.0	30.1	0.1	60.1

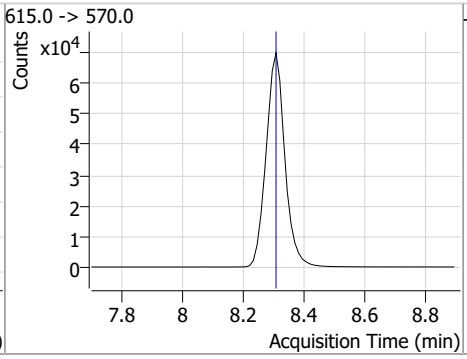


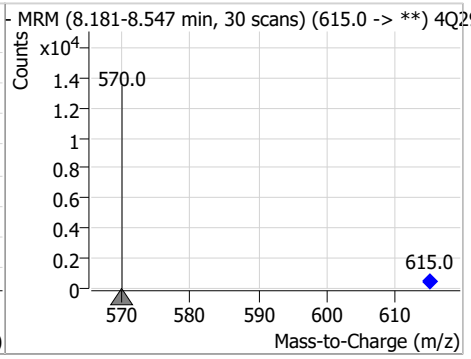




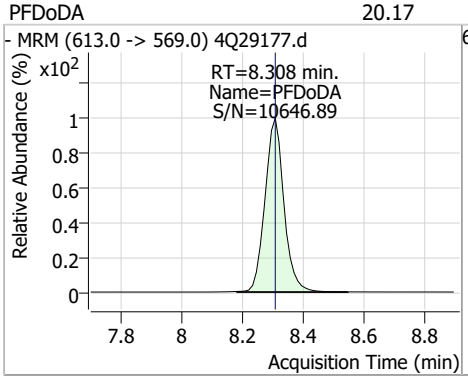
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.65	8.31	0.00	300891				

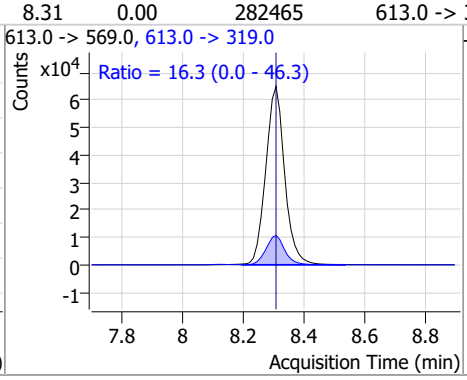


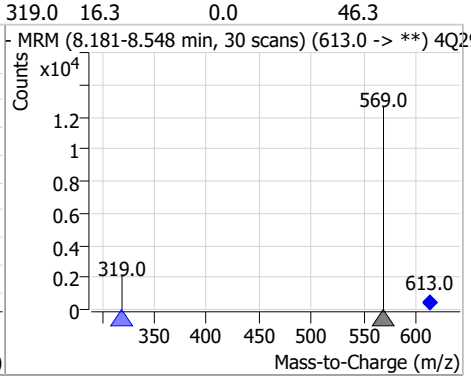




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.17	8.31	0.00	282465	613.0 -> 319.0	16.3	0.0	46.3

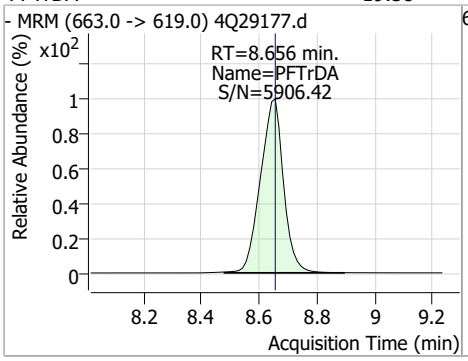


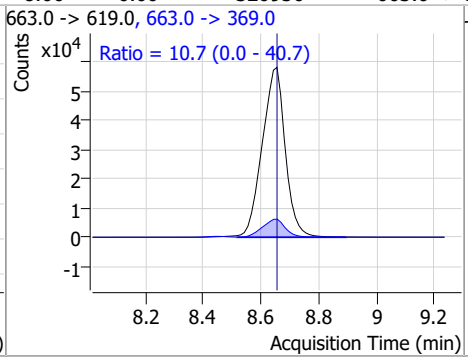


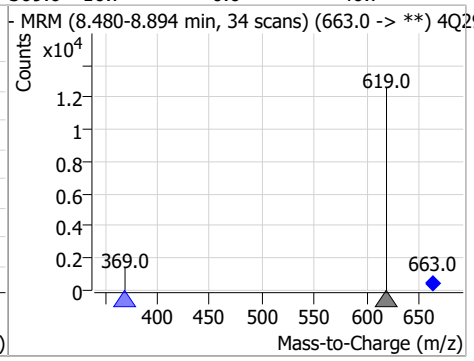


Perfluorinated Compounds by LC/MS/MS

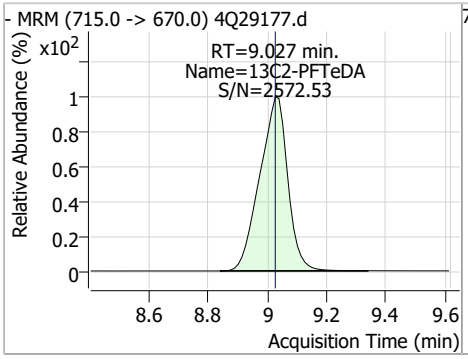
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.58	8.66	0.00	320956	663.0 -> 369.0	10.7	0.0	40.7

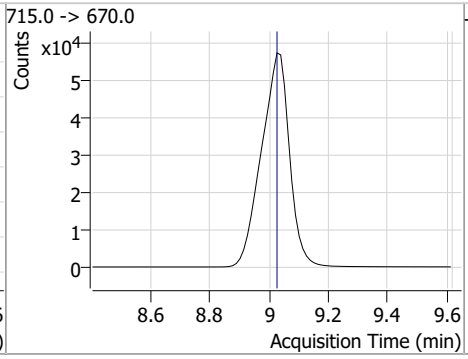


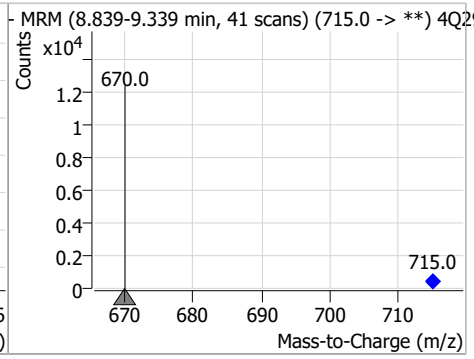




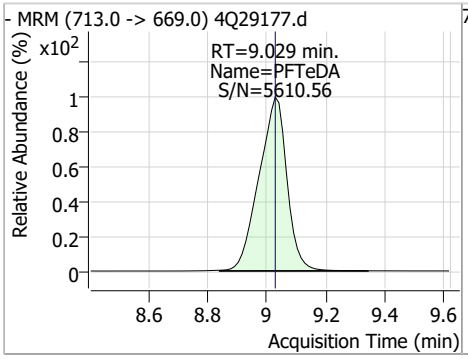
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.56	9.03	0.00	376842				

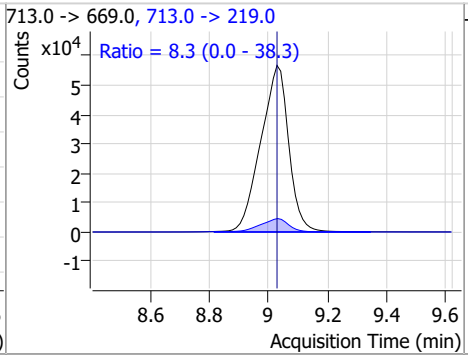


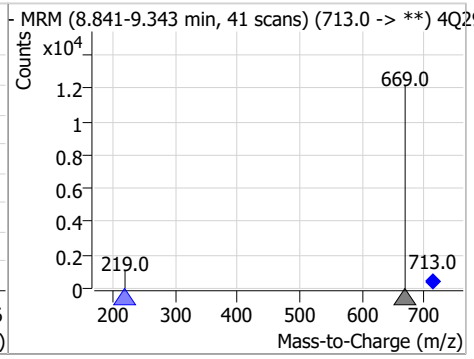




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.53	9.03	0.00	371690	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-ICC419
Lab FileID: 4Q29177.D
Injection Time: 05/27/22 13:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29178.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 1:21:32 PM
Sample Name : ic419-50
Vial : P1-A8
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

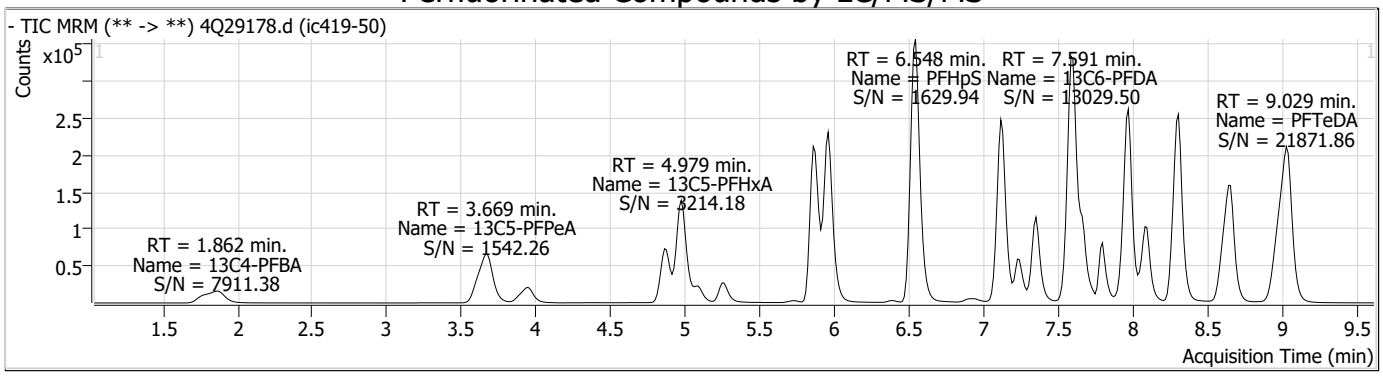
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	92341	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	145194	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	176993	20.00	µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	166720	20.00	µg/L	-0.012
M8-PFOA	6.551	421.0 -> 376.0	254910	20.00	µg/L	-0.012
M9-PFNA	7.122	472.0 -> 427.0	269242	20.00	µg/L	-0.012
M6-PFDA	7.591	519.0 -> 474.0	197901	20.00	µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	270259	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	298793	20.00	µg/L	0.000
M2-PFTeDA	9.027	715.0 -> 670.0	384201	20.00	µg/L	0.000
M8-FOSA	7.246	506.0 -> 78.0	60572	20.00	µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	10780	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	10648	20.00	µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	17760	20.00	µg/L	0.000
M2-4:2FTS	4.875	329.0 -> 309.0	72673	20.00	µg/L	0.000
M2-6:2FTS	6.523	429.0 -> 409.0	106867	20.00	µg/L	-0.012
M2-8:2FTS	7.602	529.0 -> 509.0	88988	20.00	µg/L	-0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	68092	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10409	20.00	µg/L	-0.012
M3-MeFOSA	7.629	515.0 -> 169.0	13751	20.00	µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	64382	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	72673	21.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C2-6:2FTS	6.523	429.0 -> 409.0	106867	20.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-8:2FTS	7.602	529.0 -> 509.0	88988	19.95	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	8.307	615.0 -> 570.0	298793	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-PFTeDA	9.027	715.0 -> 670.0	384201	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFBS	3.949	302.0 -> 99.0	10780	19.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C3-PFHxS	5.898	402.0 -> 99.0	10648	19.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C4-PFBA	1.862	217.0 -> 172.0	92341	19.65	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C4-PFHpA	5.864	367.0 -> 322.0	166720	19.53	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C5-PFHxA	4.979	318.0 -> 273.0	176993	19.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFPeA	3.669	268.0 -> 223.0	145194	19.80	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C6-PFDA	7.591	519.0 -> 474.0	197901	18.87	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

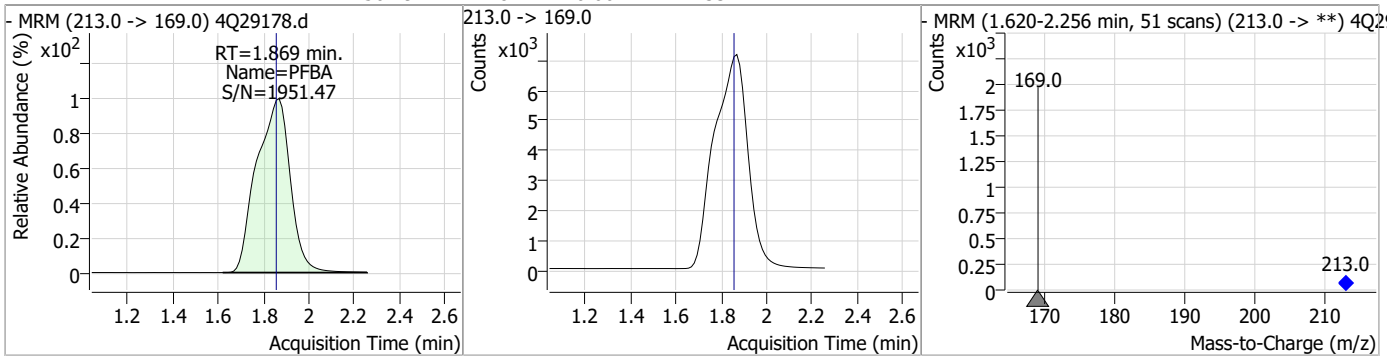
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C7-PFUnDA	7.973	570.0 -> 525.0	270259	19.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
13C8-FOSA	7.246	506.0 -> 78.0	60572	18.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C8-PFOA	6.551	421.0 -> 376.0	254910	18.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
13C8-PFOS	7.094	507.0 -> 99.0	17760	19.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C9-PFNA	7.122	472.0 -> 427.0	269242	18.92	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
d3-MeFOSAA	7.661	573.0 -> 419.0	68092	18.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C3-HFPO-DA	5.257	287.0 -> 169.0	10405	19.59	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSA	7.629	515.0 -> 169.0	13751	17.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%			
d5-EtFOSAA	7.785	589.0 -> 419.0	64391	19.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
Target Compounds							**QValue**
4:2FTS	4.864	327.0 -> 307.0	196184	46.94	µg/L		100
6:2FTS	6.524	427.0 -> 407.0	255221	46.55	µg/L		99
8:2FTS	7.603	527.0 -> 507.0	214299	46.23	µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	146987	49.83	µg/L	m	93
FOSA	7.248	498.0 -> 78.0	143338	50.84	µg/L		98
MeFOSAA	7.662	570.0 -> 419.0	158260	50.63	µg/L	m	95
PFBA	1.869	213.0 -> 169.0	73372	50.19	µg/L		100
PFBS	3.941	299.0 -> 80.0	87395	51.20	µg/L		98
PFDA	7.592	513.0 -> 469.0	632952	50.00	µg/L		100
PFDoDA	8.308	613.0 -> 569.0	697460	50.14	µg/L		99
PFDS	7.921	599.0 -> 80.0	60236	48.68	µg/L		98
PFHpA	5.866	363.0 -> 319.0	588276	50.63	µg/L		99
PFHpS	6.548	449.0 -> 80.0	66932	50.04	µg/L		100
PFHxA	4.980	313.0 -> 269.0	451237	50.00	µg/L		100
PFHxS	5.900	399.0 -> 80.0	69759	50.36	µg/L	m	96
PFNA	7.123	463.0 -> 419.0	586251	50.47	µg/L		100
PFNS	7.552	549.0 -> 80.0	67165	49.72	µg/L		100
PFOA	6.552	413.0 -> 369.0	711769	50.51	µg/L		99
PFOS	7.096	499.0 -> 80.0	81700	49.46	µg/L	m	84
PFPeA	3.672	263.0 -> 219.0	324564	50.49	µg/L		100
PFPeS	5.085	349.0 -> 80.0	56393	50.41	µg/L		99
PFTeDA	9.029	713.0 -> 669.0	931469	50.46	µg/L		100
PFTrDA	8.656	663.0 -> 619.0	799250	49.11	µg/L		100
PFUnDA	7.975	563.0 -> 519.0	634934	49.17	µg/L		100
11Cl-PF3OUdS	8.081	631.0 -> 451.0	307521	48.98	µg/L		97
9Cl-PF3ONS	7.353	531.0 -> 351.0	339041	47.24	µg/L		97
ADONA	5.965	377.0 -> 251.0	691922	49.30	µg/L		98
HFPO-DA	5.264	329.0 -> 169.0	82626	50.83	µg/L		99
MeFOSA	7.630	512.0 -> 169.0	39694	52.08	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

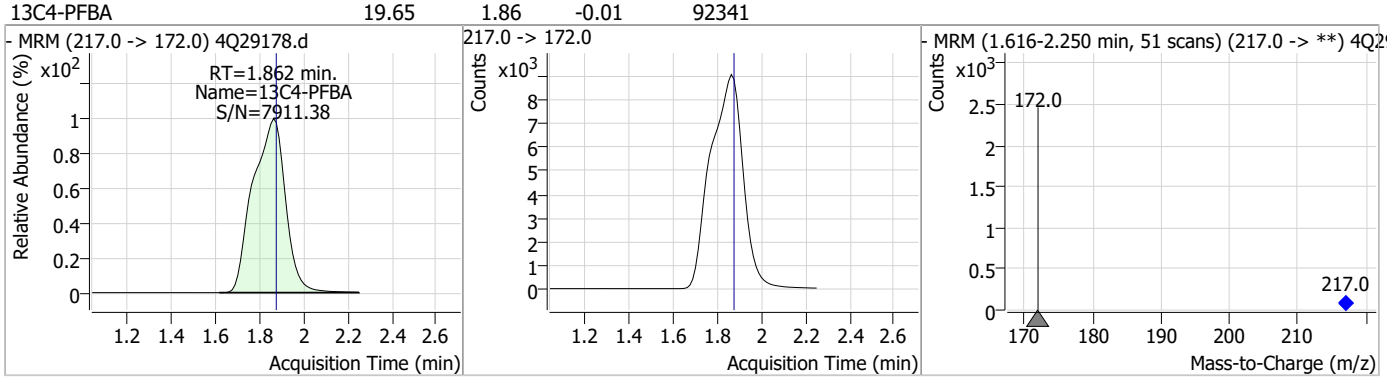
Perfluorinated Compounds by LC/MS/MS



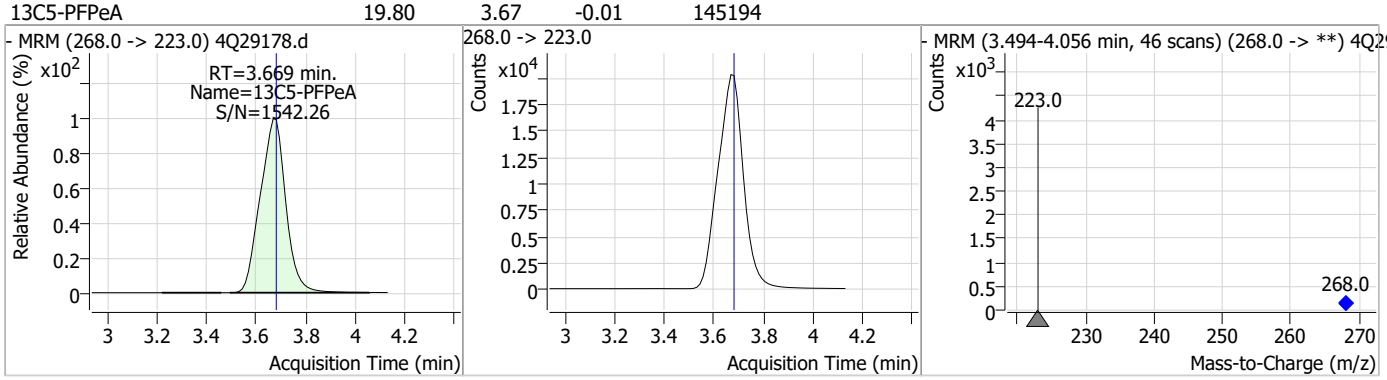
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	50.19	1.87	0.00	73372				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.65	1.86	-0.01	92341				

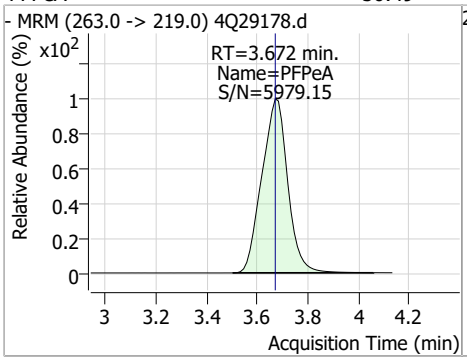


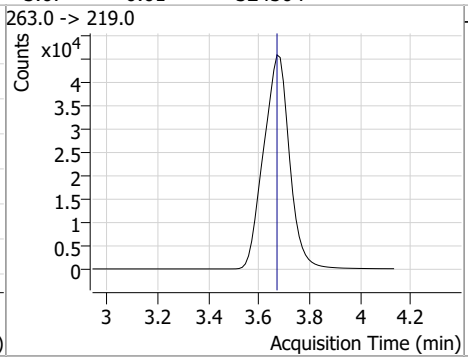
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.80	3.67	-0.01	145194				

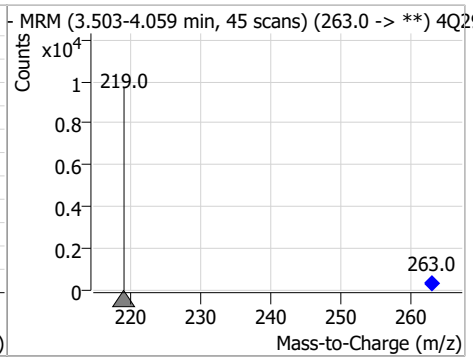


Perfluorinated Compounds by LC/MS/MS

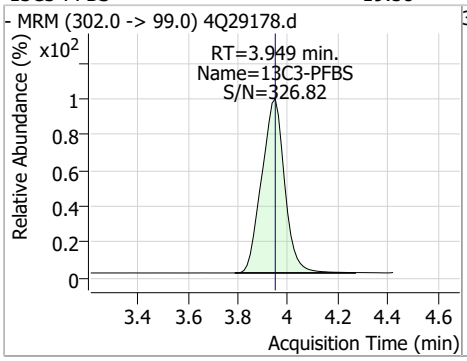
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.49	3.67	-0.01	324564				

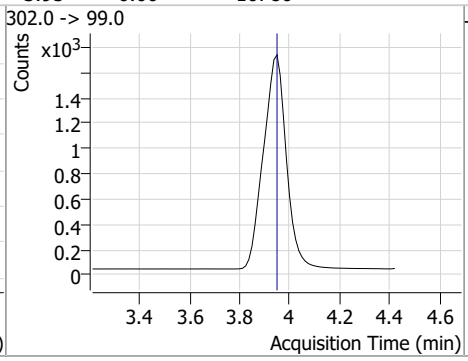


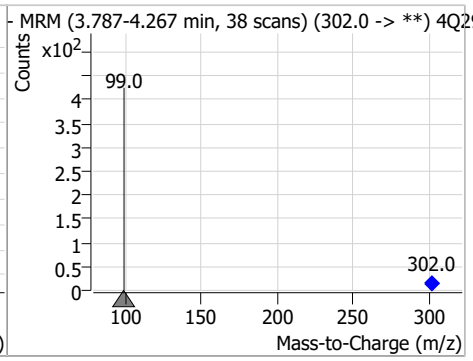




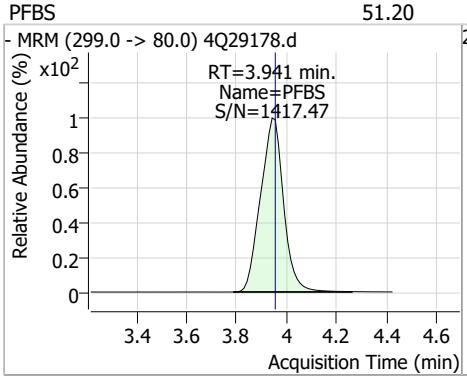
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.58	3.95	0.00	10780				

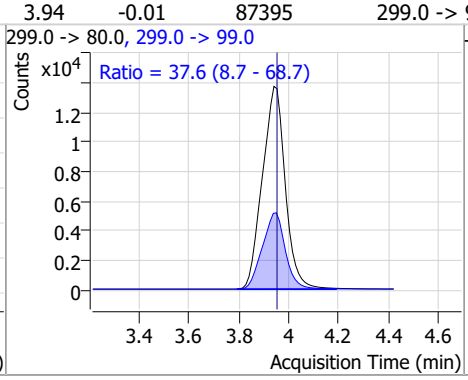


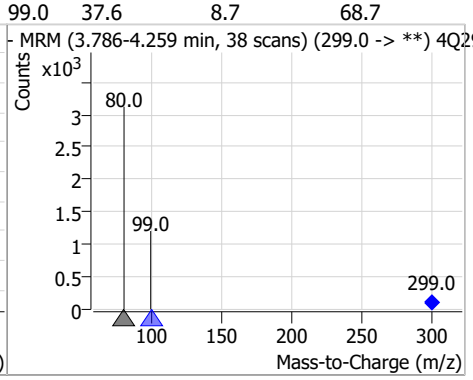




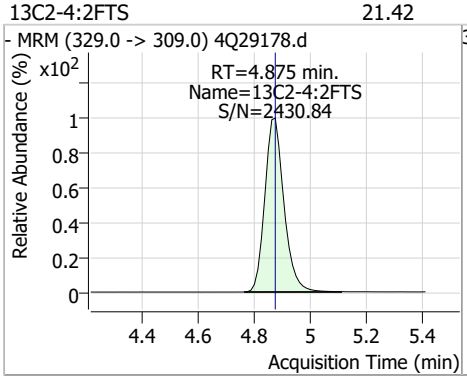
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	51.20	3.94	-0.01	87395	299.0 -> 99.0	37.6	8.7	68.7

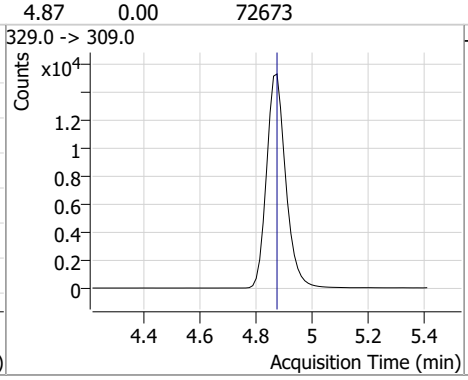


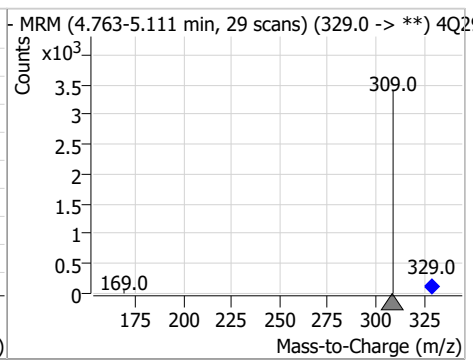




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.42	4.87	0.00	72673				

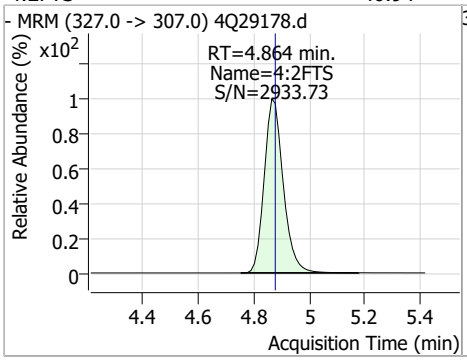


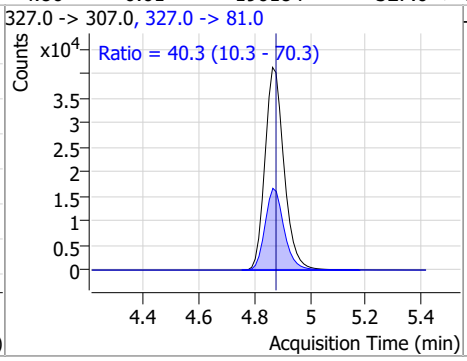


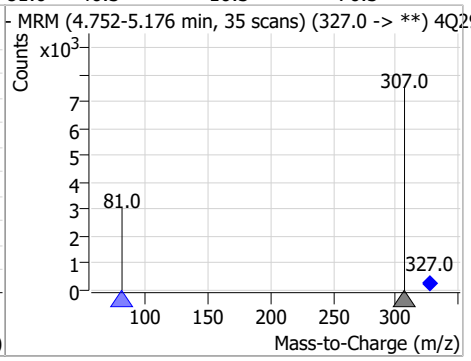


Perfluorinated Compounds by LC/MS/MS

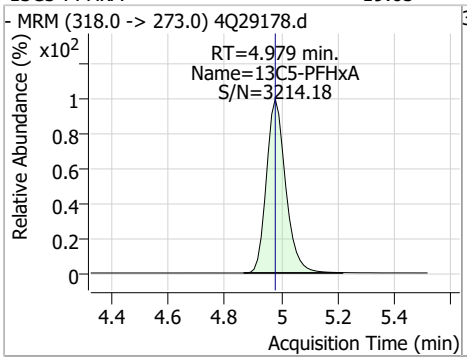
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	46.94	4.86	-0.01	196184	327.0 -> 81.0	40.3	10.3	70.3

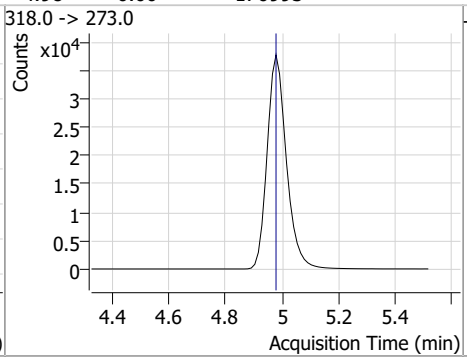


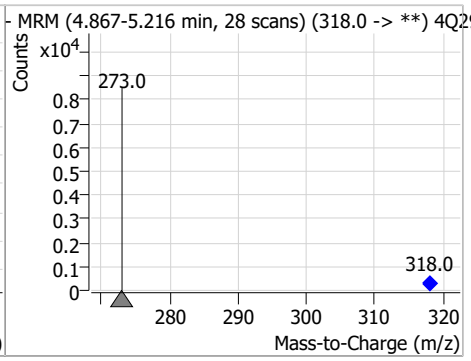




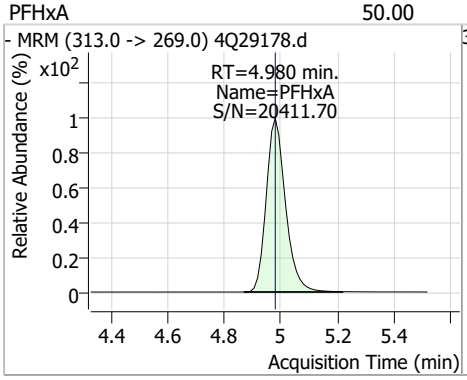
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.65	4.98	0.00	176993				

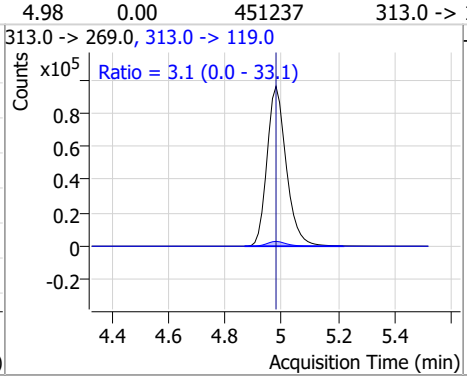


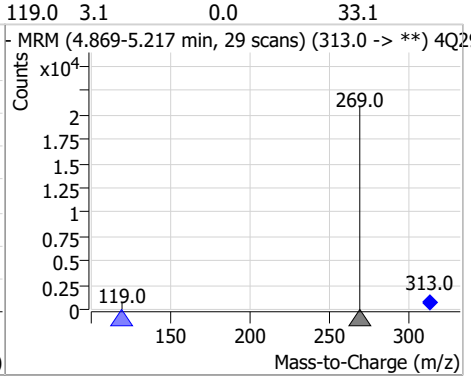




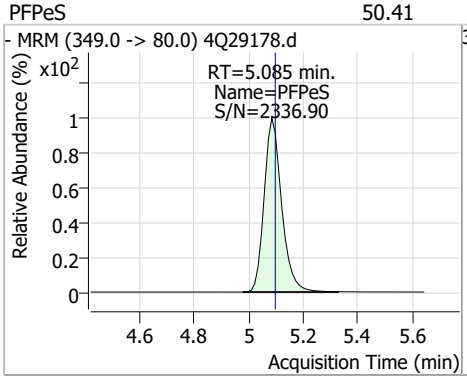
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.00	4.98	0.00	451237	313.0 -> 119.0	3.1	0.0	33.1

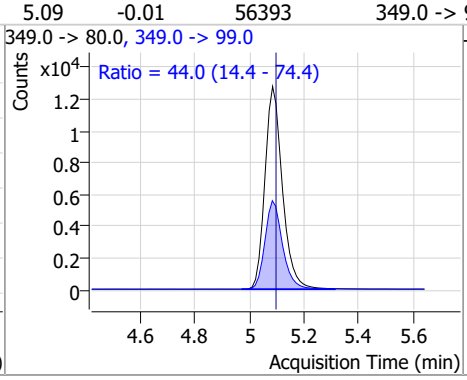


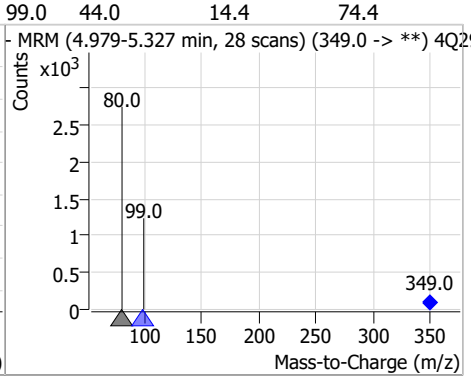




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	50.41	5.09	-0.01	56393	349.0 -> 99.0	44.0	14.4	74.4

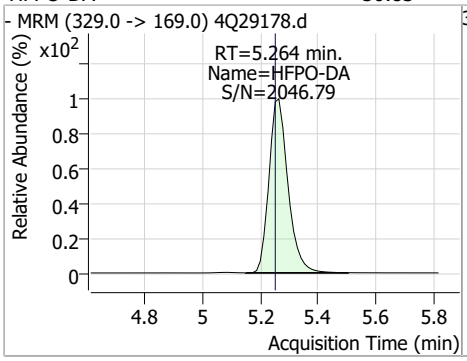


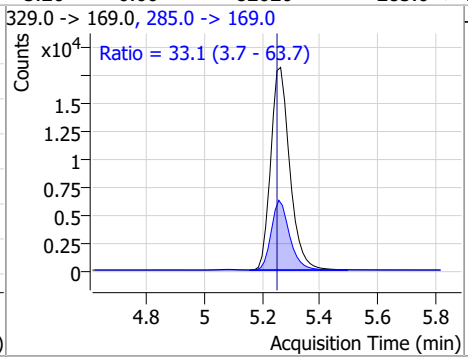


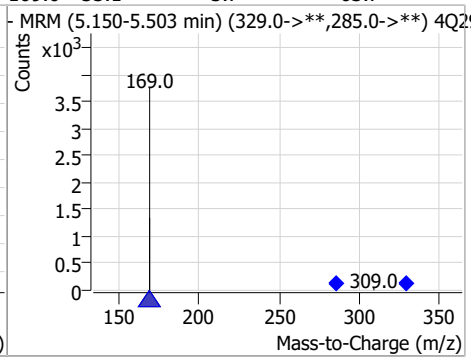


Perfluorinated Compounds by LC/MS/MS

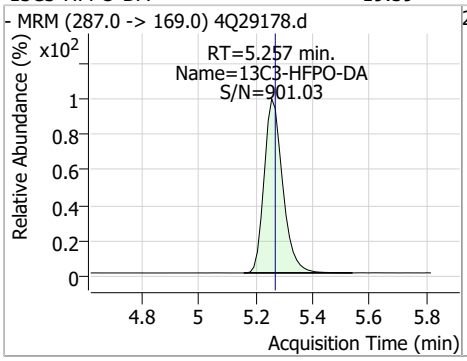
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.83	5.26	0.00	82626	285.0 -> 169.0	33.1	3.7	63.7

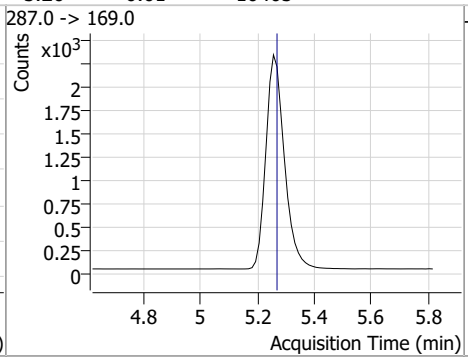


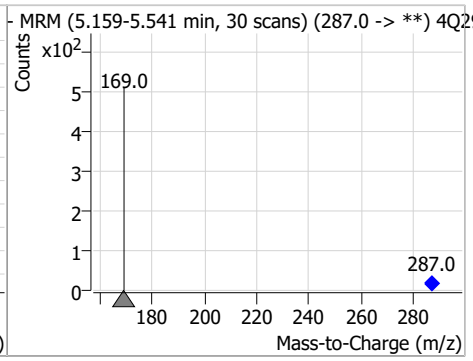




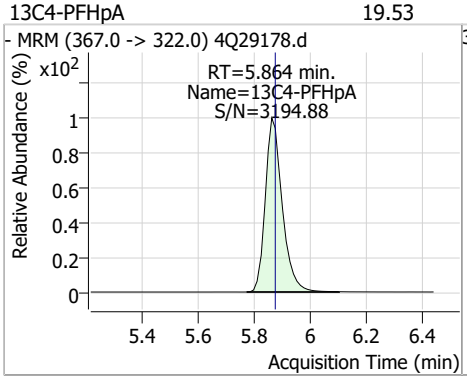
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.59	5.26	-0.01	10405				

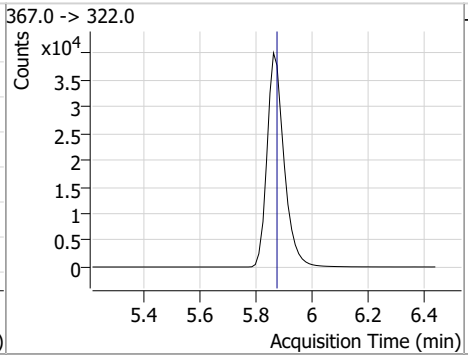


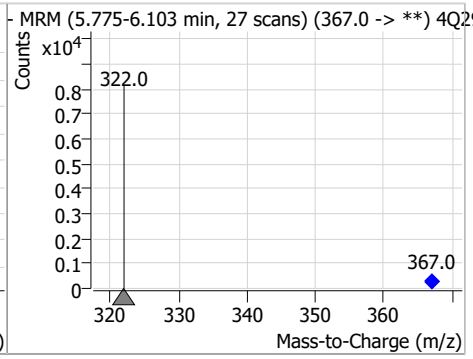




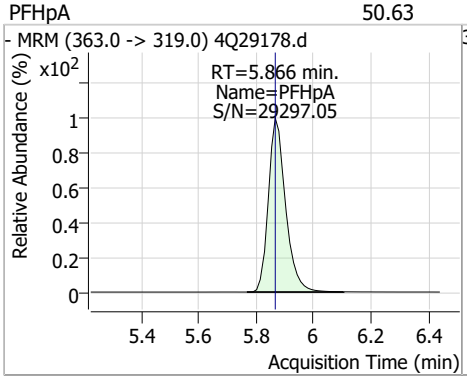
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.53	5.86	-0.01	166720				

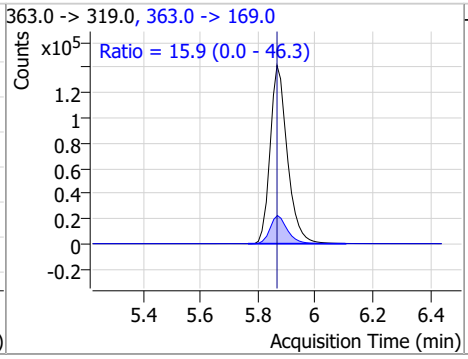


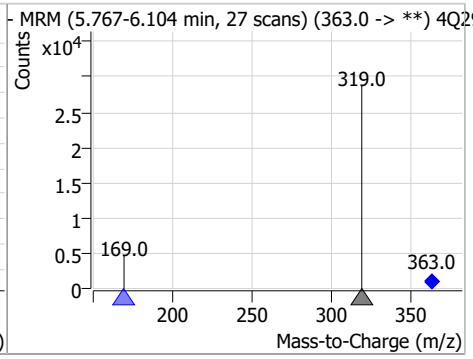




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.63	5.87	-0.01	588276	363.0 -> 169.0	15.9	0.0	46.3

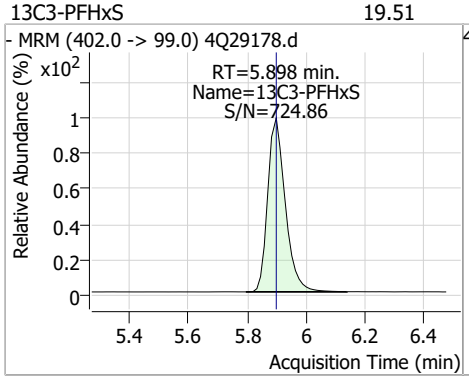


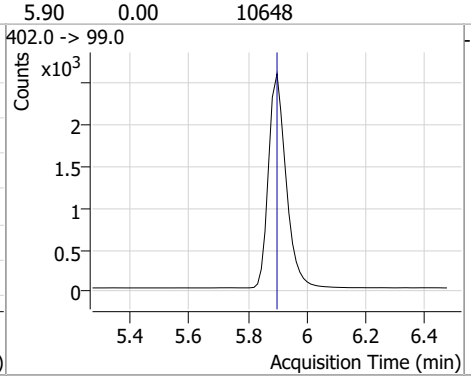


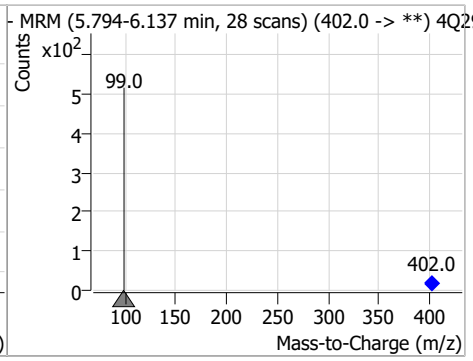


Perfluorinated Compounds by LC/MS/MS

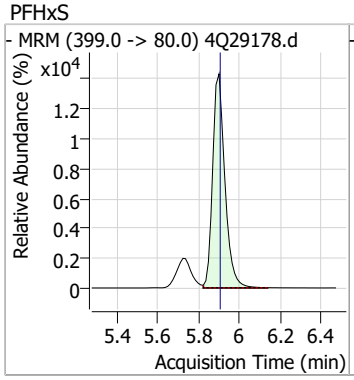
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.51	5.90	0.00	10648				

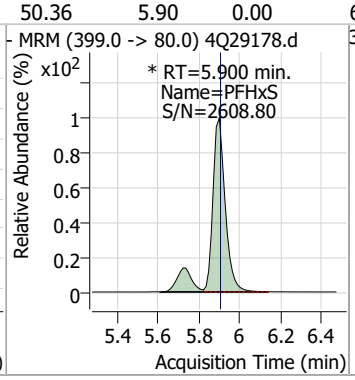


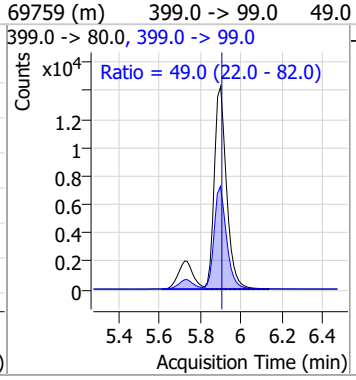


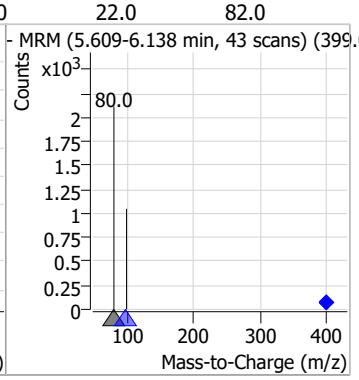


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	50.36	5.90	0.00	69759 (m)	399.0 -> 99.0	49.0	22.0	82.0

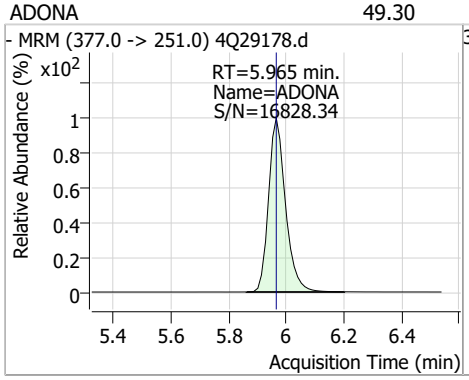


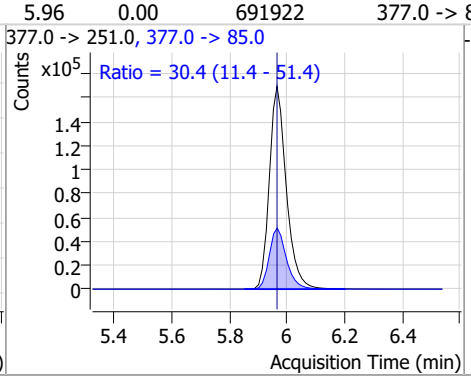


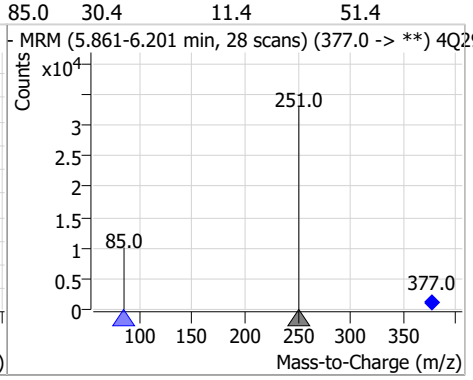




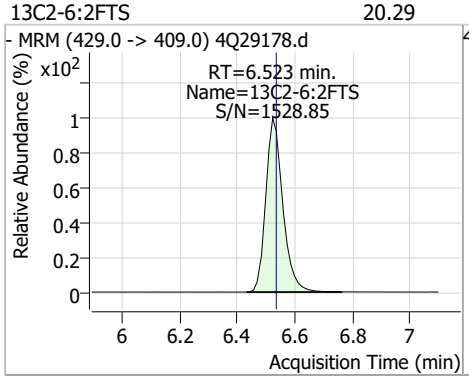
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.30	5.96	0.00	691922	377.0 -> 85.0	30.4	11.4	51.4

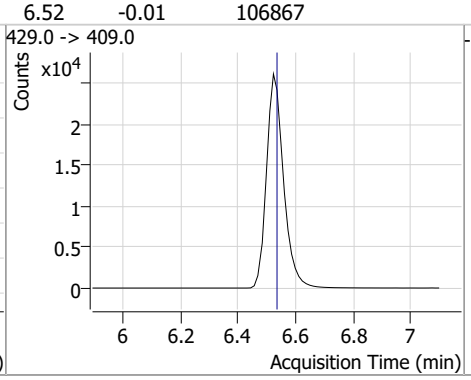


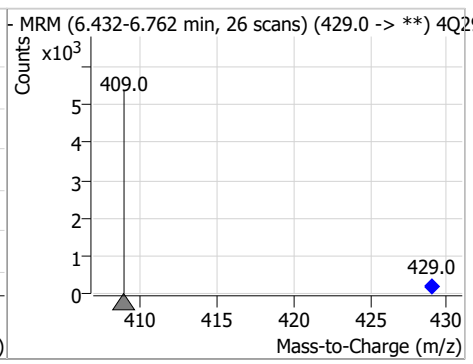




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.29	6.52	-0.01	106867				

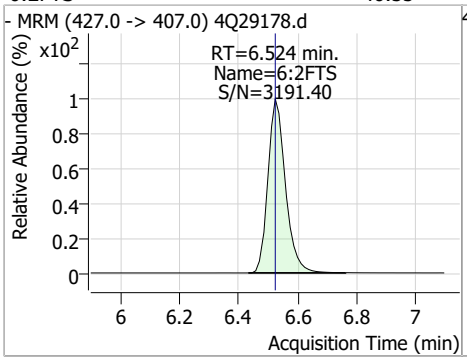


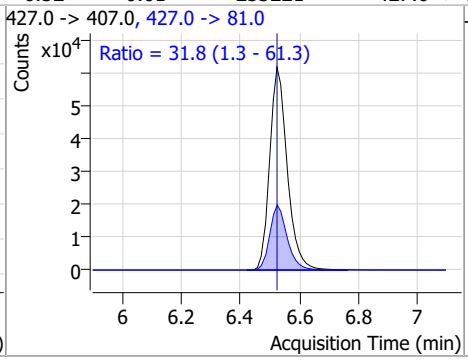


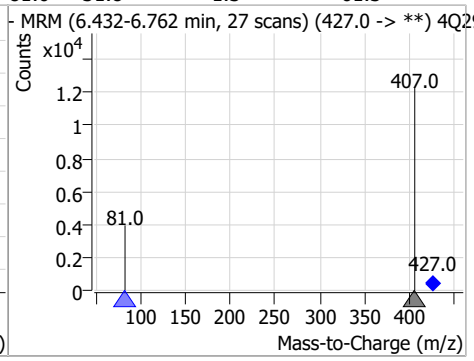


Perfluorinated Compounds by LC/MS/MS

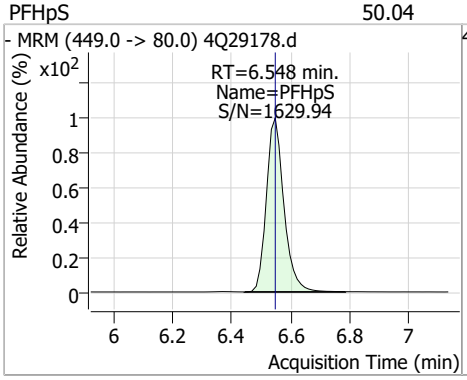
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	46.55	6.52	-0.01	255221	427.0 -> 81.0	31.8	1.3	61.3

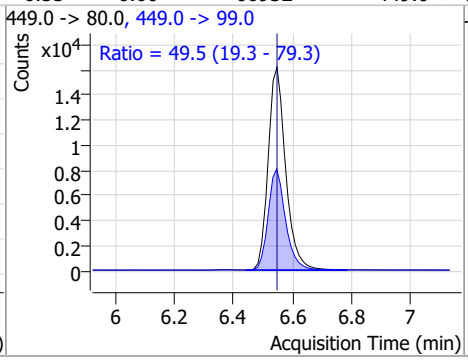


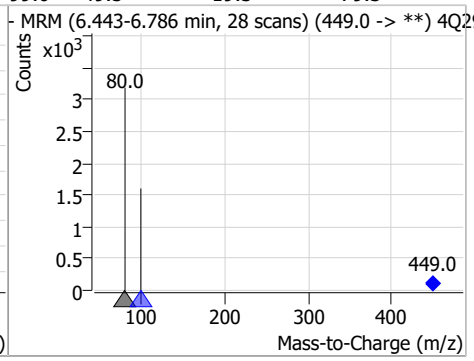




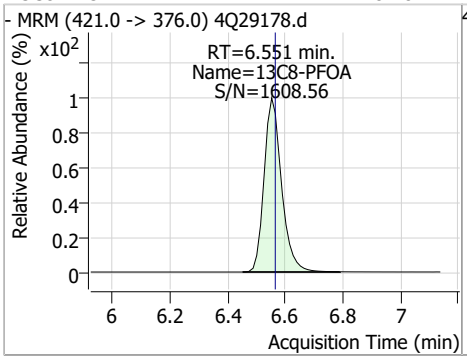
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	50.04	6.55	0.00	66932	449.0 -> 99.0	49.5	19.3	79.3

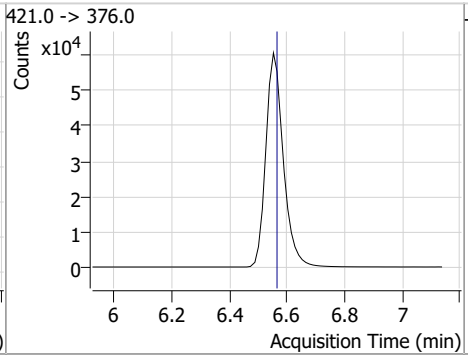


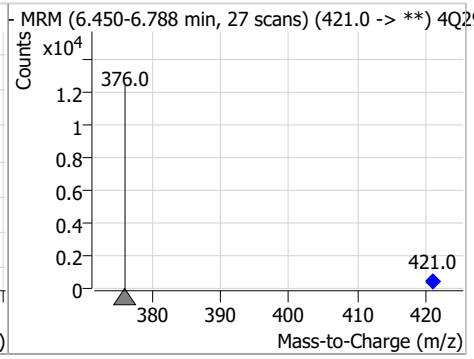




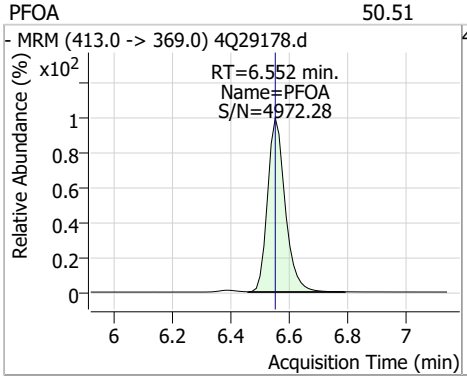
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.78	6.55	-0.01	254910				

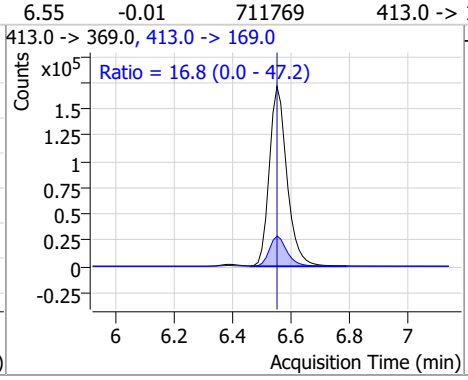


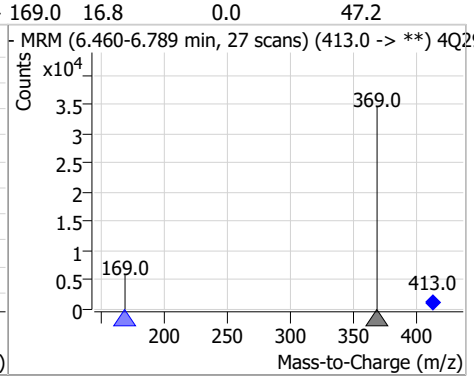




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.51	6.55	-0.01	711769	413.0 -> 169.0	16.8	0.0	47.2

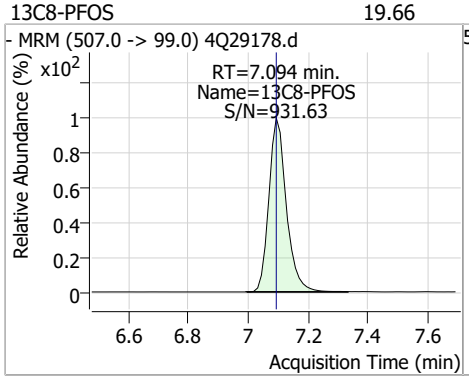


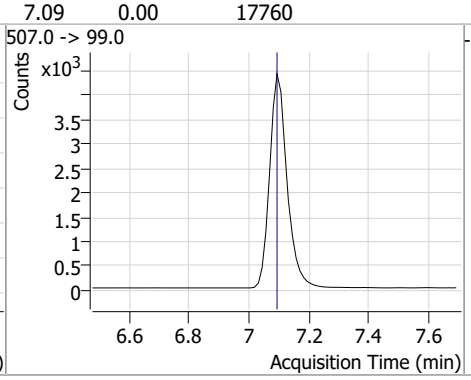


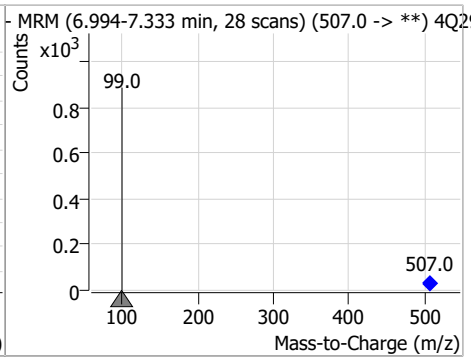


Perfluorinated Compounds by LC/MS/MS

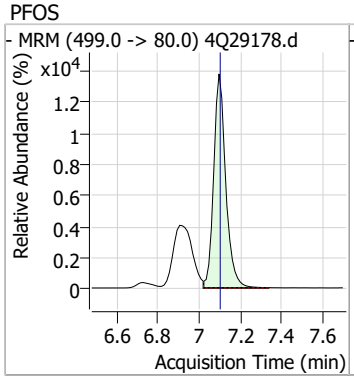
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.66	7.09	0.00	17760				

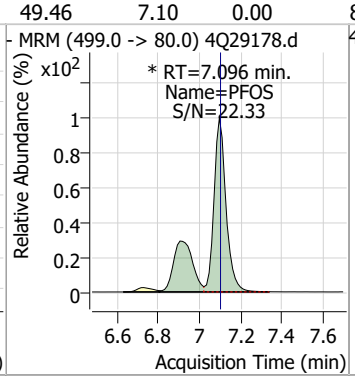


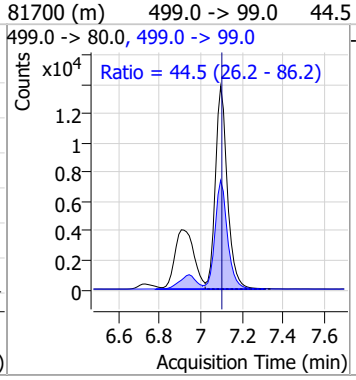


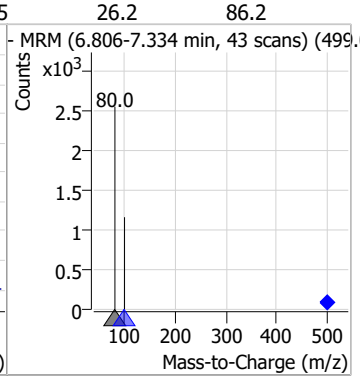


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	49.46	7.10	0.00	81700 (m)	499.0 -> 99.0	44.5	26.2	86.2

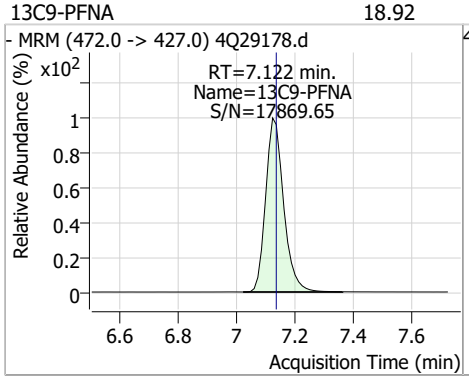


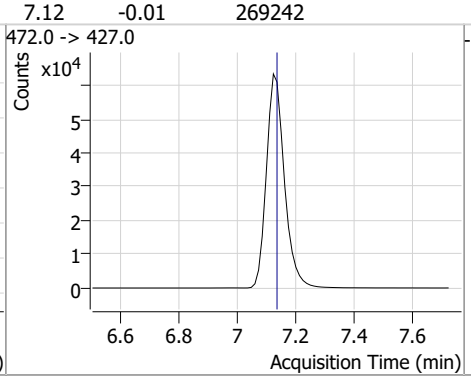


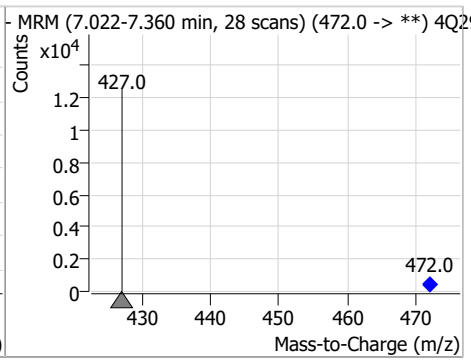




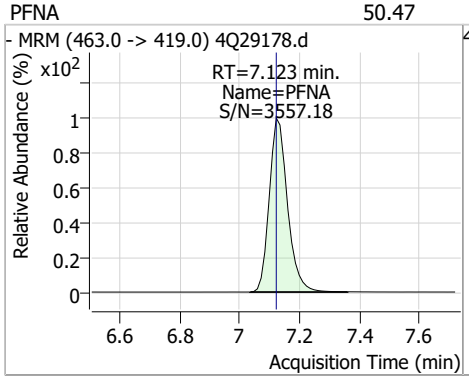
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.92	7.12	-0.01	269242				

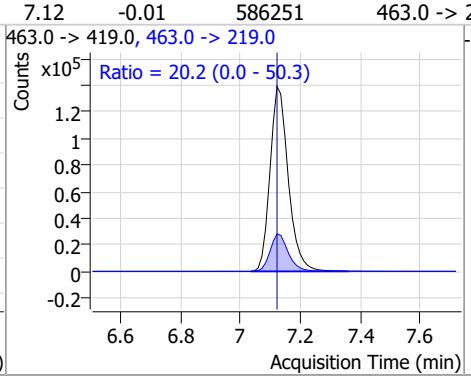


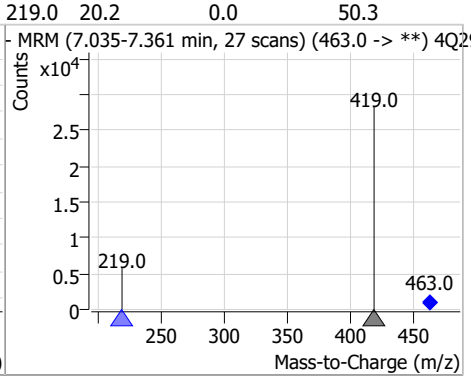




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	50.47	7.12	-0.01	586251	463.0 -> 219.0	20.2	0.0	50.3

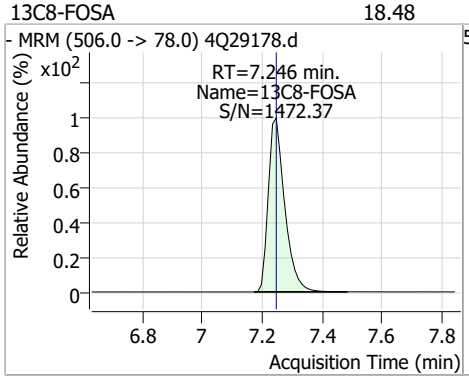


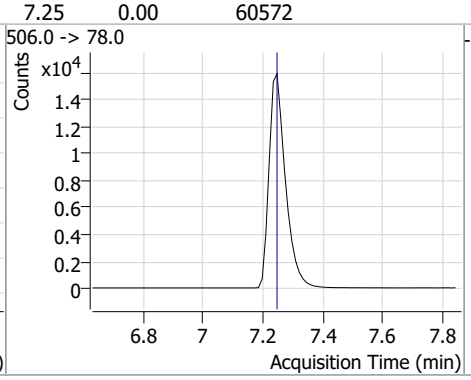


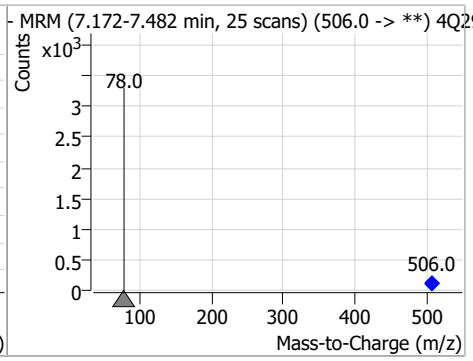


Perfluorinated Compounds by LC/MS/MS

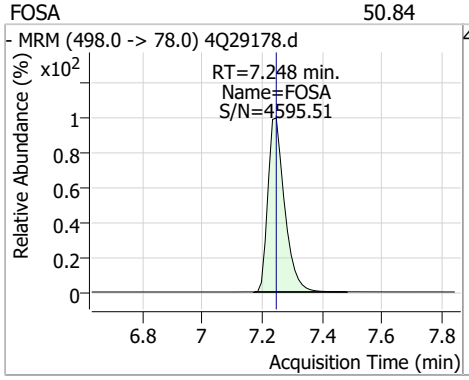
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.48	7.25	0.00	60572				

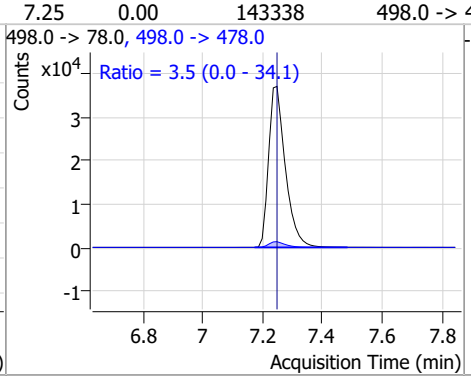


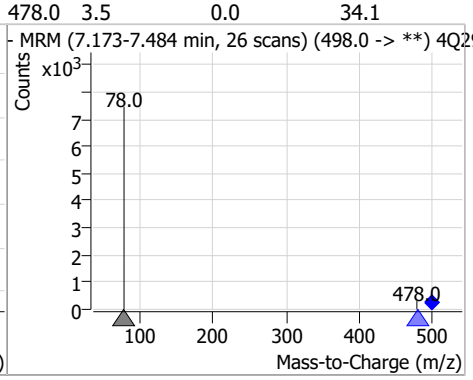




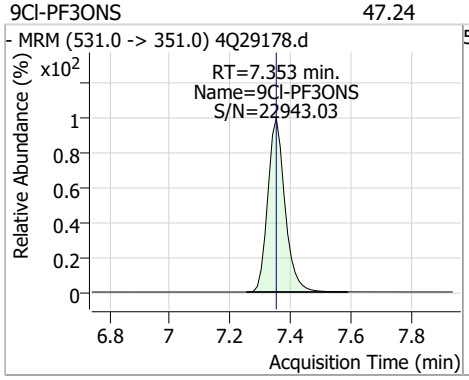
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	50.84	7.25	0.00	143338	498.0 -> 478.0	3.5	0.0	34.1

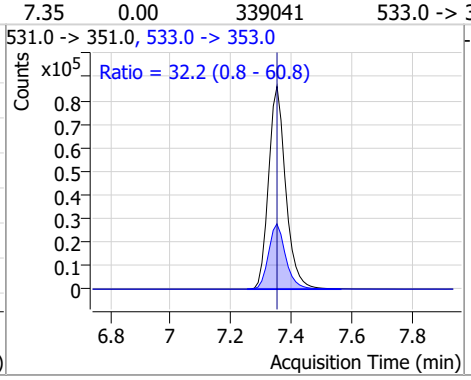


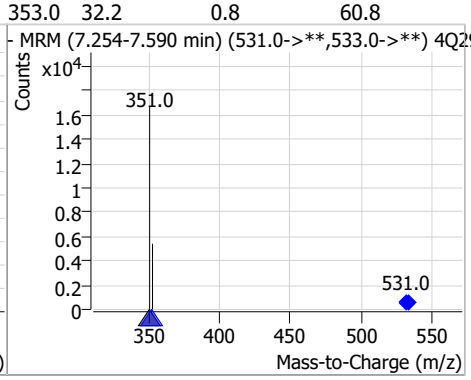




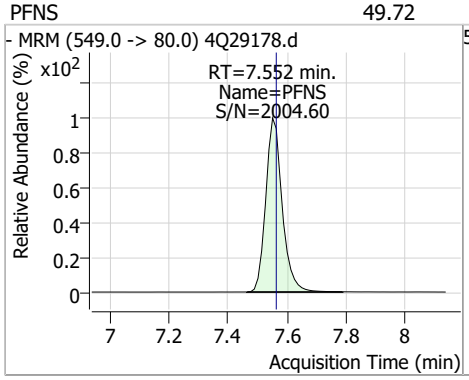
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	47.24	7.35	0.00	339041	533.0 -> 353.0	32.2	0.8	60.8

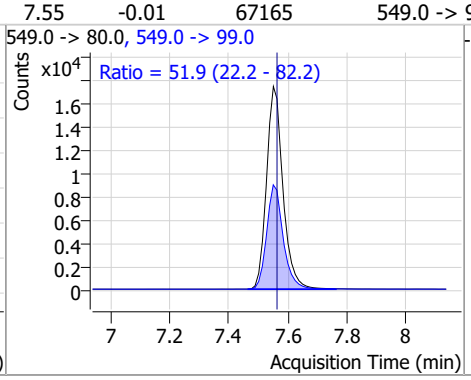


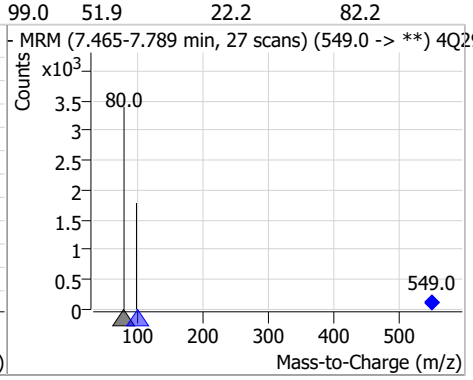




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.72	7.55	-0.01	67165	549.0 -> 99.0	51.9	22.2	82.2

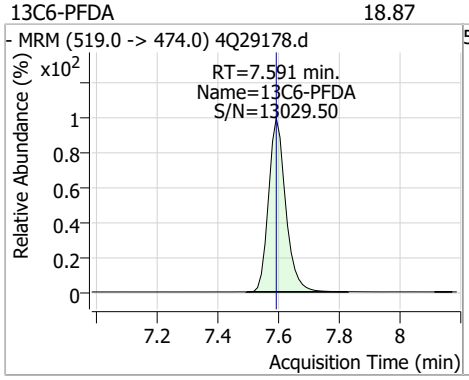


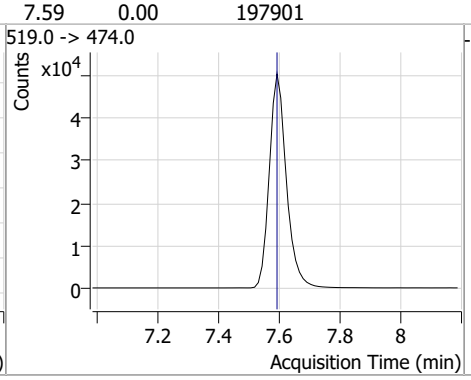


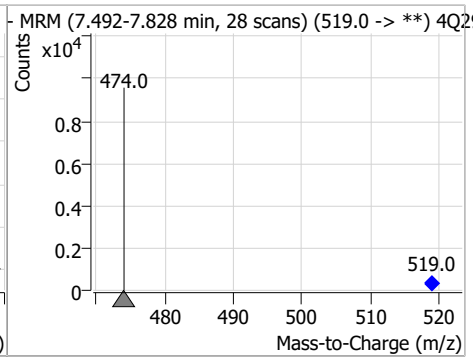


Perfluorinated Compounds by LC/MS/MS

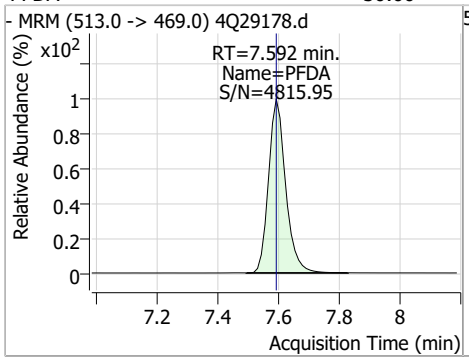
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.87	7.59	0.00	197901				

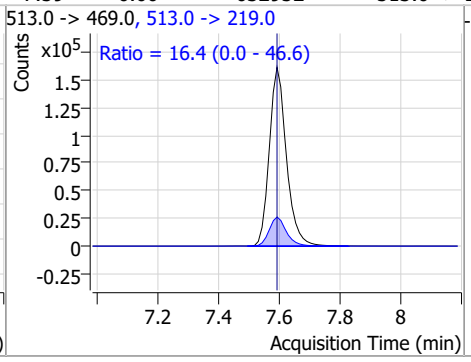


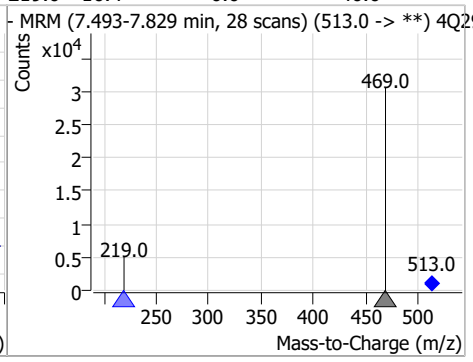




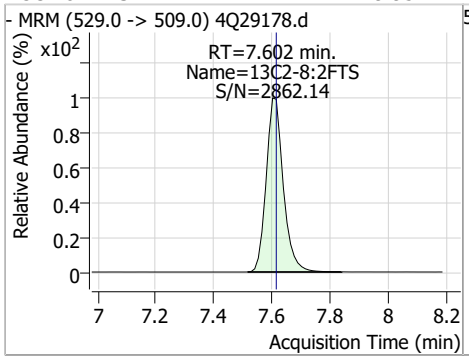
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	50.00	7.59	0.00	632952	513.0 -> 219.0	16.4	0.0	46.6

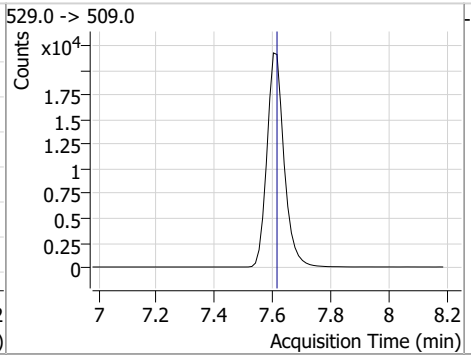


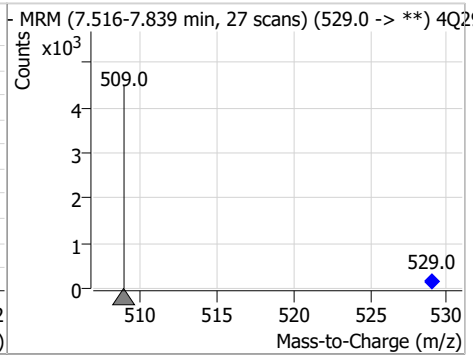




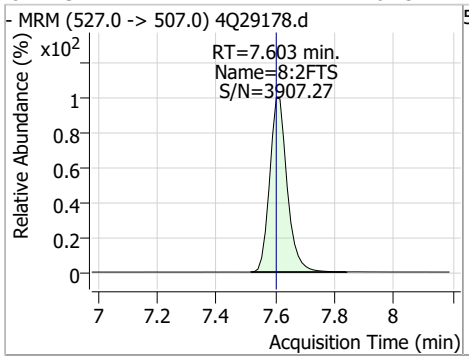
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.95	7.60	-0.01	88988				

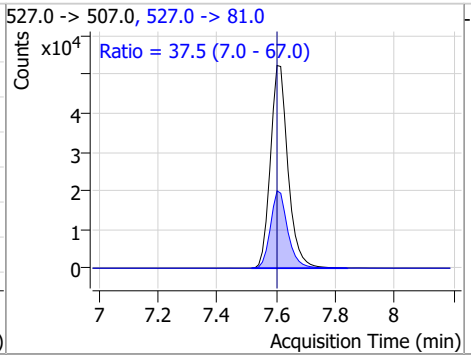


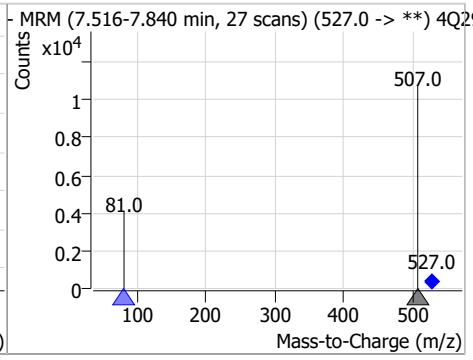




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	46.23	7.60	-0.01	214299	527.0 -> 81.0	37.5	7.0	67.0

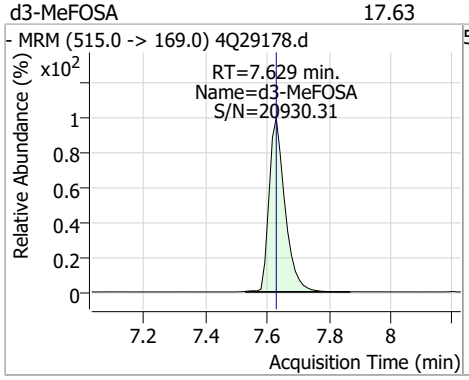


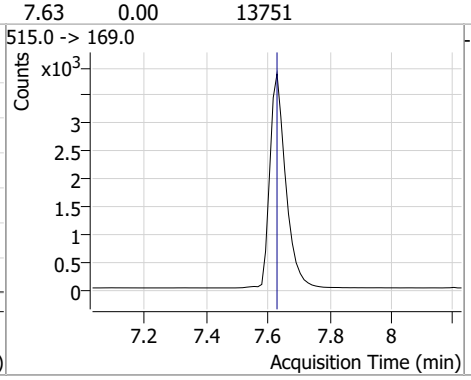


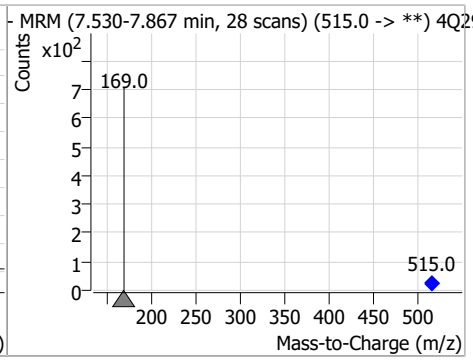


Perfluorinated Compounds by LC/MS/MS

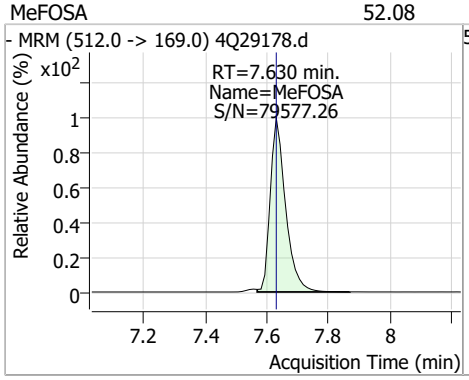
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.63	7.63	0.00	13751				

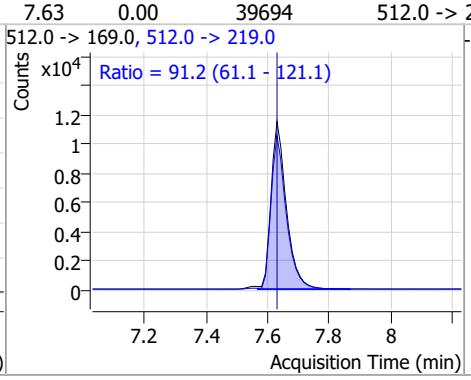


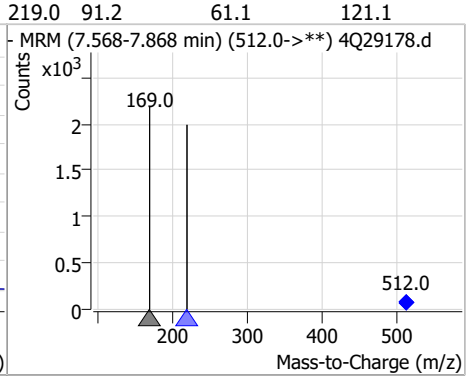




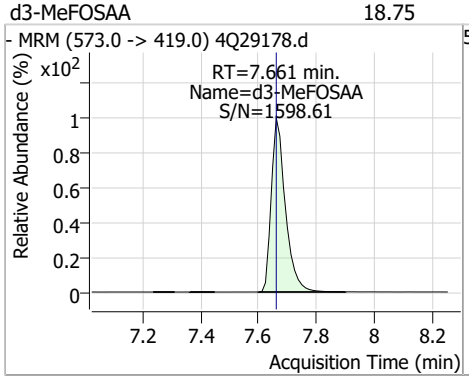
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	52.08	7.63	0.00	39694	512.0 -> 219.0	91.2	61.1	121.1

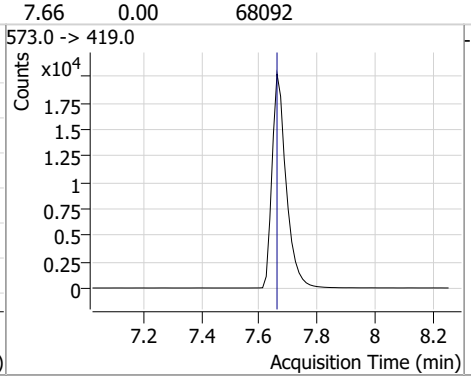


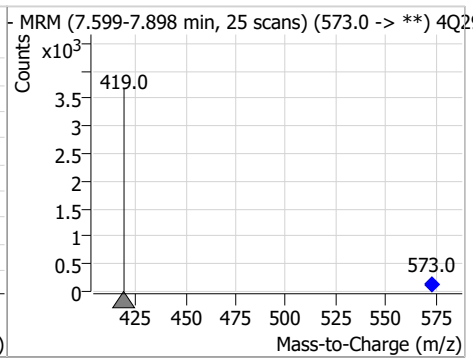




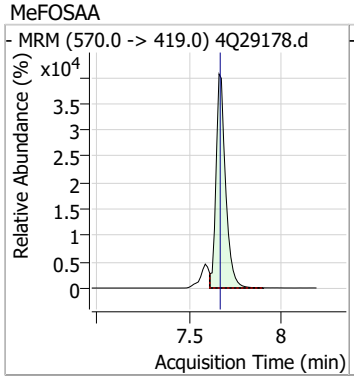
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.75	7.66	0.00	68092				

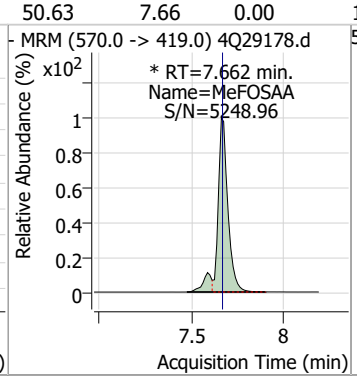


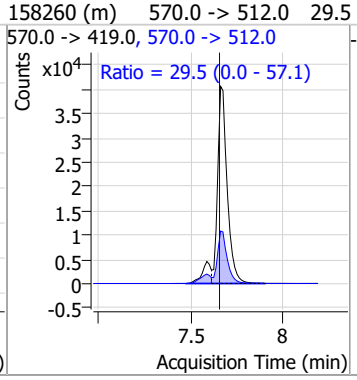


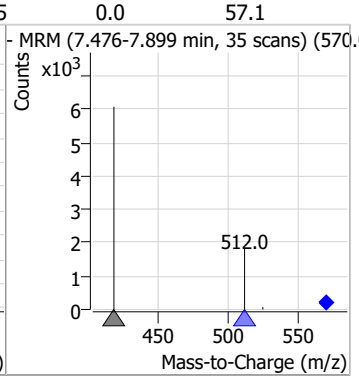


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.63	7.66	0.00	158260 (m)	570.0 -> 512.0	29.5	0.0	57.1



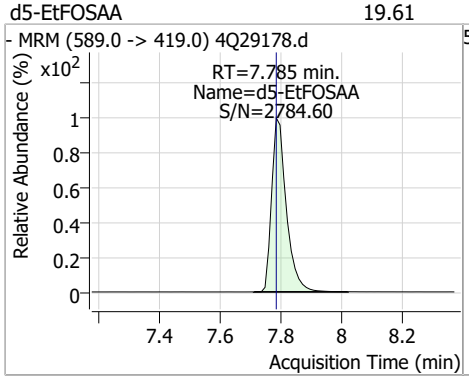


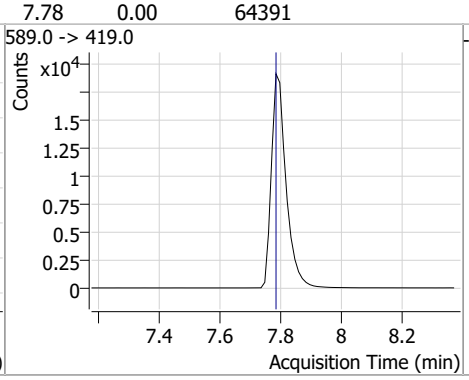


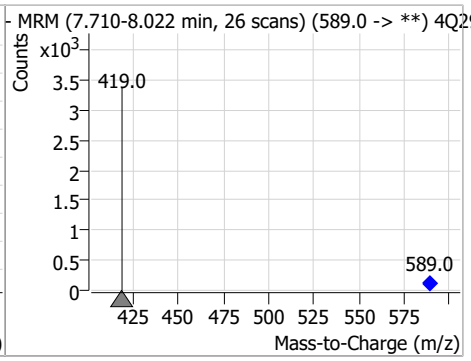


Perfluorinated Compounds by LC/MS/MS

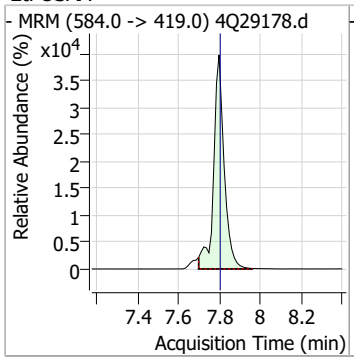
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.61	7.78	0.00	64391				

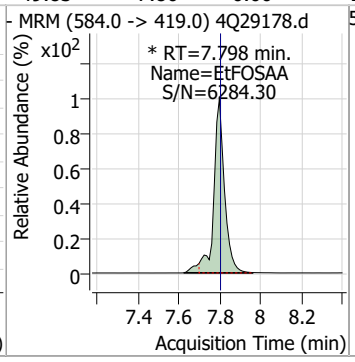


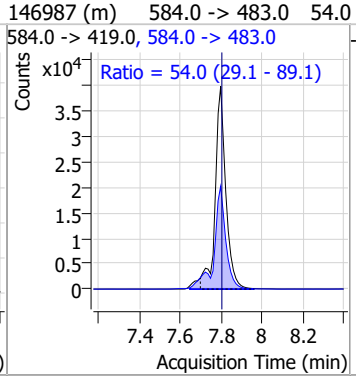


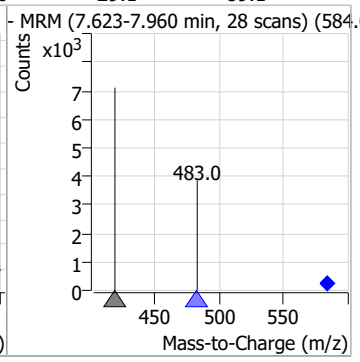


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.83	7.80	0.00	146987 (m)	584.0 -> 483.0	54.0	29.1	89.1

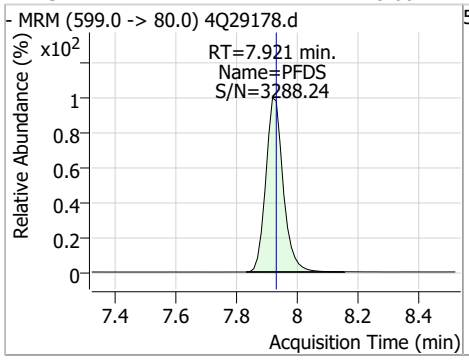


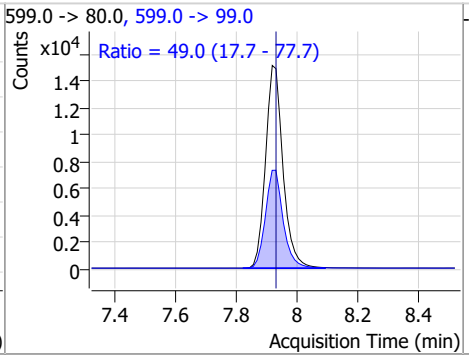


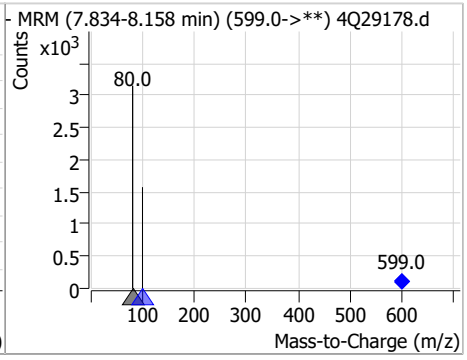




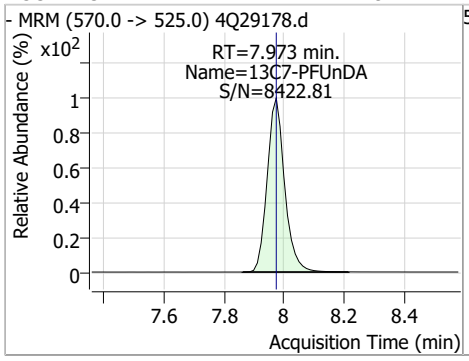
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.68	7.92	-0.01	60236	599.0 -> 99.0	49.0	17.7	77.7

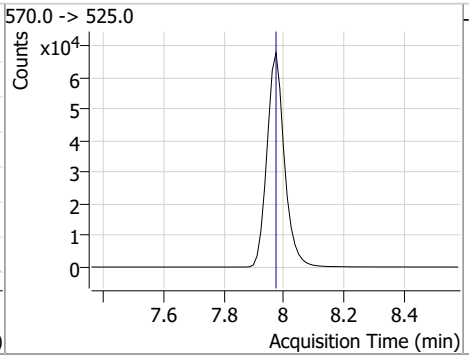


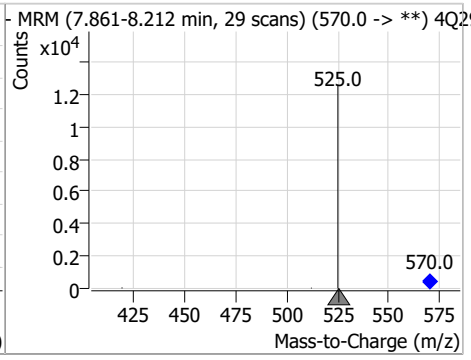




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.14	7.97	0.00	270259				

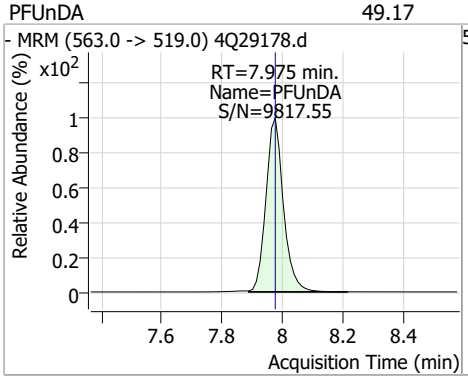


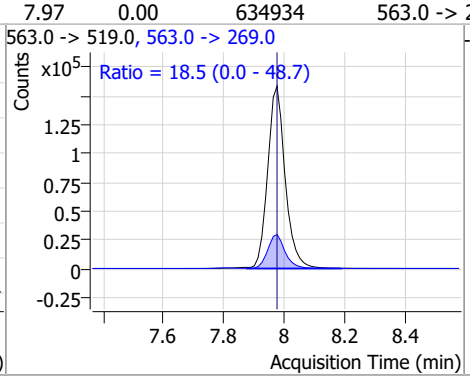


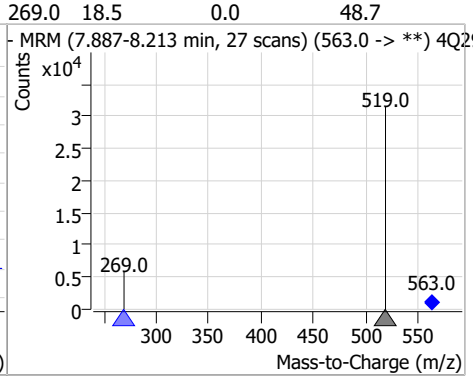


Perfluorinated Compounds by LC/MS/MS

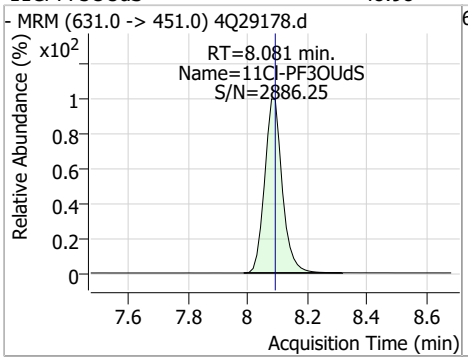
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.17	7.97	0.00	634934	563.0 -> 269.0	18.5	0.0	48.7

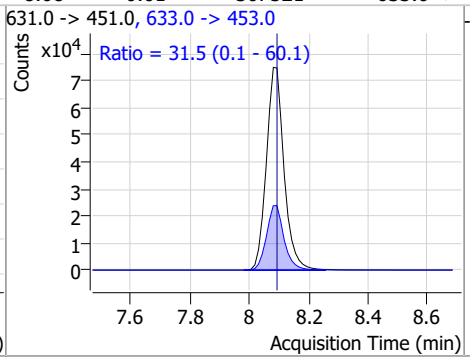


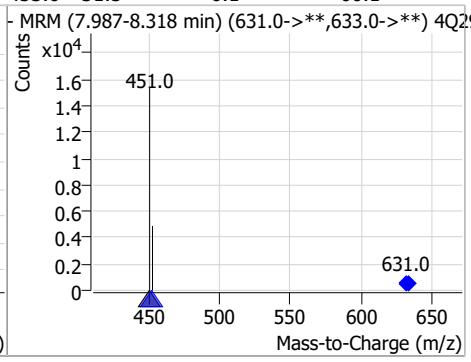




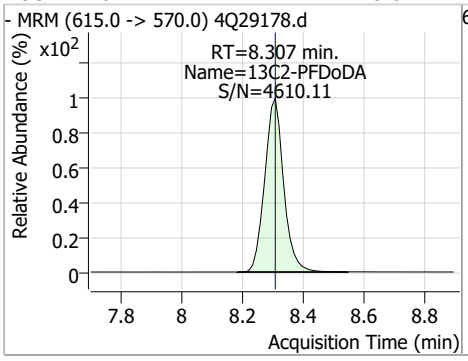
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	48.98	8.08	-0.01	307521	633.0 -> 453.0	31.5	0.1	60.1

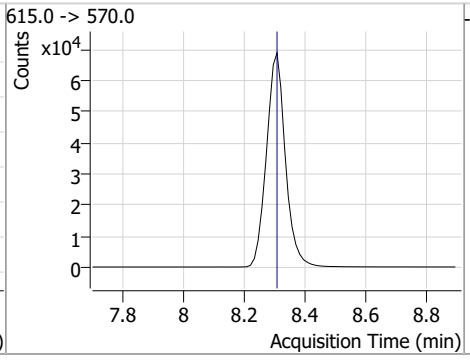


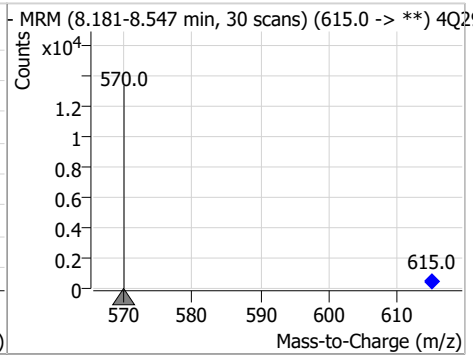




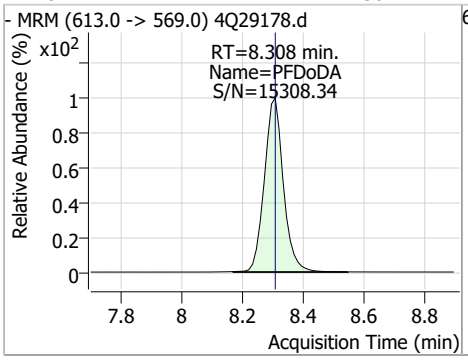
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.52	8.31	0.00	298793				

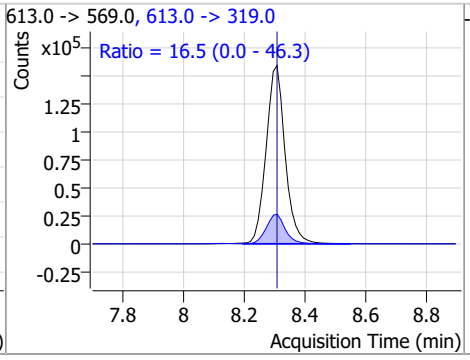


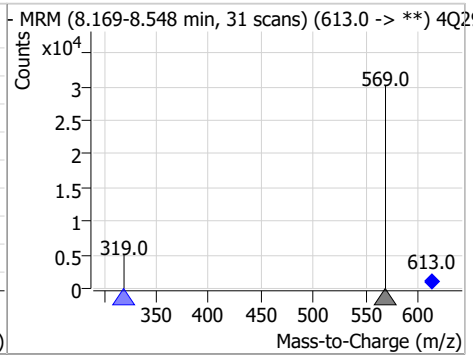




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.14	8.31	0.00	697460	613.0 -> 319.0	16.5	0.0	46.3

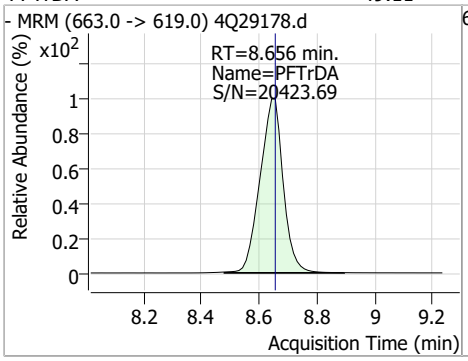


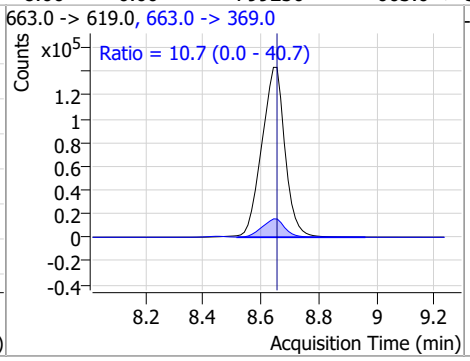


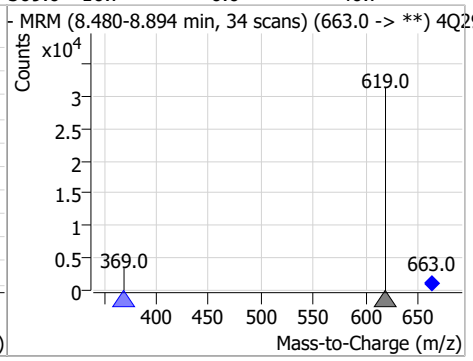


Perfluorinated Compounds by LC/MS/MS

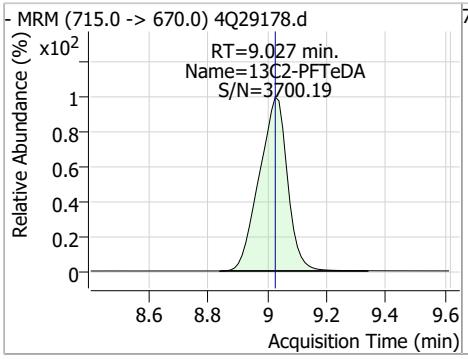
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.11	8.66	0.00	799250	663.0 -> 369.0	10.7	0.0	40.7

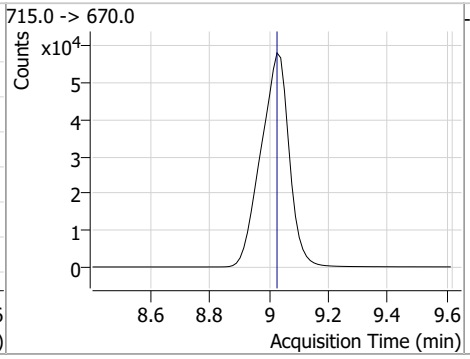


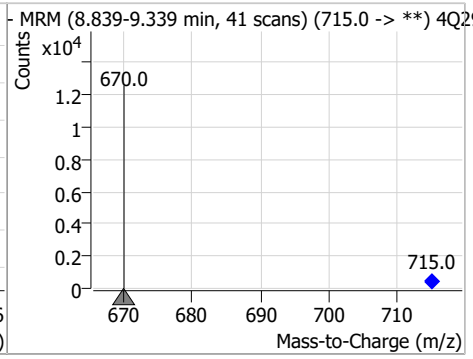




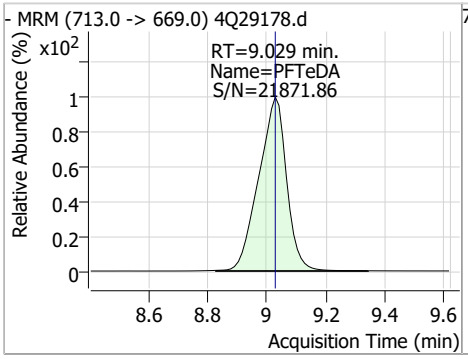
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.94	9.03	0.00	384201				

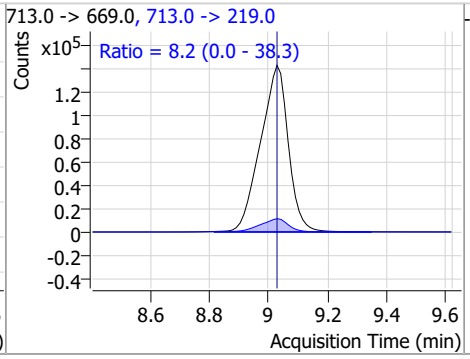


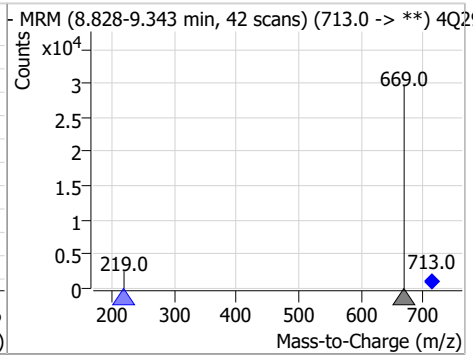




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.46	9.03	0.00	931469	713.0 -> 219.0	8.2	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29178.D
Injection Time: 05/27/22 13:21
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29179.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 1:38:02 PM
Sample Name : ic419-100
Vial : P1-A9
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

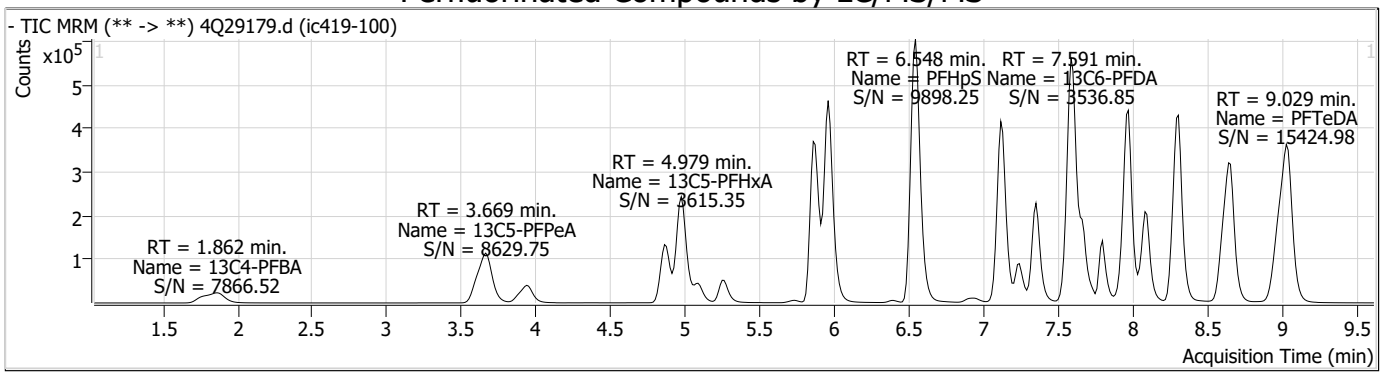
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	94225	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	149245	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	180414	20.00	µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	164717	20.00	µg/L	-0.012
M8-PFOA	6.551	421.0 -> 376.0	246800	20.00	µg/L	-0.012
M9-PFNA	7.122	472.0 -> 427.0	266119	20.00	µg/L	-0.012
M6-PFDA	7.591	519.0 -> 474.0	184163	20.00	µg/L	0.000
M7-PFUnDA	7.973	570.0 -> 525.0	261895	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	297433	20.00	µg/L	0.000
M2-PFTeDA	9.027	715.0 -> 670.0	391047	20.00	µg/L	0.000
M8-FOSA	7.246	506.0 -> 78.0	55383	20.00	µg/L	0.000
M3-PFBS	3.936	302.0 -> 99.0	11189	20.00	µg/L	-0.013
M3-PFHxS	5.898	402.0 -> 99.0	10549	20.00	µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	17360	20.00	µg/L	0.000
M2-4:2FTS	4.862	329.0 -> 309.0	83917	20.00	µg/L	-0.012
M2-6:2FTS	6.523	429.0 -> 409.0	115300	20.00	µg/L	-0.012
M2-8:2FTS	7.602	529.0 -> 509.0	93761	20.00	µg/L	-0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	66337	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10703	20.00	µg/L	-0.012
M3-MeFOSA	7.629	515.0 -> 169.0	12520	20.00	µg/L	0.000
M5-EtFOSAA	7.785	589.0 -> 419.0	64590	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	83917	24.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.7%		
13C2-6:2FTS	6.523	429.0 -> 409.0	115300	21.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C2-8:2FTS	7.602	529.0 -> 509.0	93761	21.02	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-PFDoDA	8.307	615.0 -> 570.0	297433	19.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-PFTeDA	9.027	715.0 -> 670.0	391047	20.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C3-PFBS	3.936	302.0 -> 99.0	11189	20.33	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C3-PFHxS	5.898	402.0 -> 99.0	10549	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C4-PFBA	1.862	217.0 -> 172.0	94225	20.05	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C4-PFHpA	5.864	367.0 -> 322.0	164717	19.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C5-PFHxA	4.979	318.0 -> 273.0	180414	20.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFPeA	3.669	268.0 -> 223.0	149245	20.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C6-PFDA	7.591	519.0 -> 474.0	184163	17.56	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

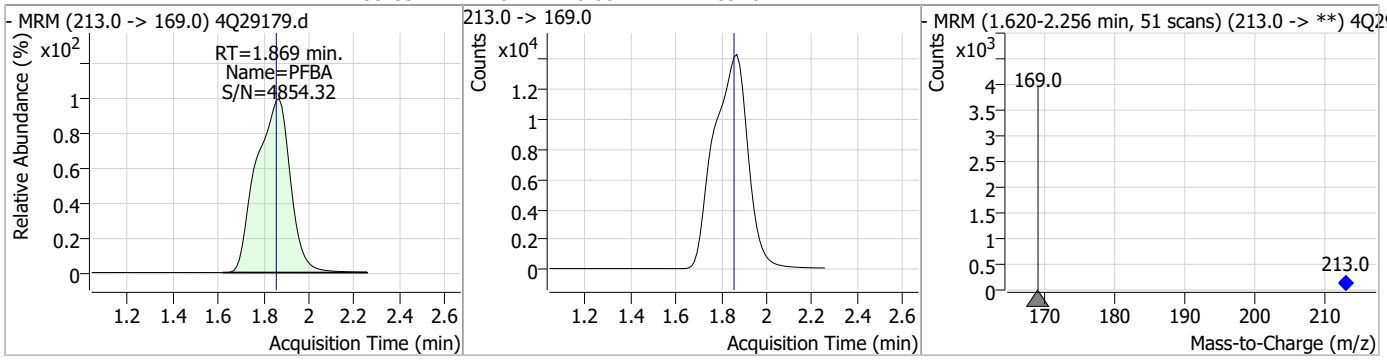
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C7-PFUnDA	7.973	570.0 -> 525.0	261895	18.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C8-FOSA	7.246	506.0 -> 78.0	55383	16.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.5%		
13C8-PFOA	6.551	421.0 -> 376.0	246800	18.18 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C8-PFOS	7.094	507.0 -> 99.0	17360	19.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C9-PFNA	7.122	472.0 -> 427.0	266119	18.70 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
d3-MeFOSAA	7.661	573.0 -> 419.0	66337	18.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10698	20.14 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d3-MeFOSA	7.629	515.0 -> 169.0	12520	16.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
d5-EtFOSAA	7.785	589.0 -> 419.0	64625	19.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	391333	81.09 µg/L		99
6:2FTS	6.524	427.0 -> 407.0	489324	82.73 µg/L		99
8:2FTS	7.603	527.0 -> 507.0	404402	82.81 µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	295762	99.94 µg/L	m	92
FOSA	7.248	498.0 -> 78.0	256358	99.44 µg/L		99
MeFOSAA	7.662	570.0 -> 419.0	303040	99.52 µg/L	m	94
PFBA	1.869	213.0 -> 169.0	148926	99.83 µg/L		100
PFBS	3.941	299.0 -> 80.0	175883	99.28 µg/L		99
PFDA	7.592	513.0 -> 469.0	1177277	99.94 µg/L		100
PFDoDA	8.308	613.0 -> 569.0	1383100	99.89 µg/L		100
PFDS	7.921	599.0 -> 80.0	121012	100.91 µg/L		99
PFHpA	5.866	363.0 -> 319.0	1144499	99.69 µg/L		99
PFHpS	6.548	449.0 -> 80.0	130270	99.64 µg/L		100
PFHxA	4.980	313.0 -> 269.0	919224	99.92 µg/L		100
PFHxS	5.900	399.0 -> 80.0	136861	99.73 µg/L	m	95
PFNA	7.123	463.0 -> 419.0	1144620	99.70 µg/L		99
PFNS	7.552	549.0 -> 80.0	131945	99.93 µg/L		98
PFOA	6.552	413.0 -> 369.0	1360396	99.71 µg/L		99
PFOS	7.096	499.0 -> 80.0	161634	100.12 µg/L	m	86
PFPeA	3.672	263.0 -> 219.0	658608	99.67 µg/L		100
PFPeS	5.085	349.0 -> 80.0	115831	99.76 µg/L		98
PFTeDA	9.029	713.0 -> 669.0	1872061	99.65 µg/L		100
PFTrDA	8.644	663.0 -> 619.0	1629634	100.58 µg/L		100
PFUnDA	7.975	563.0 -> 519.0	1256995	100.44 µg/L		98
11Cl-PF3OUdS	8.081	631.0 -> 451.0	627969	100.47 µg/L		99
9Cl-PF3ONS	7.353	531.0 -> 351.0	679254	101.70 µg/L		99
ADONA	5.965	377.0 -> 251.0	1398365	100.57 µg/L		98
HFPO-DA	5.264	329.0 -> 169.0	166118	99.40 µg/L		99
MeFOSA	7.630	512.0 -> 169.0	68607	98.85 µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

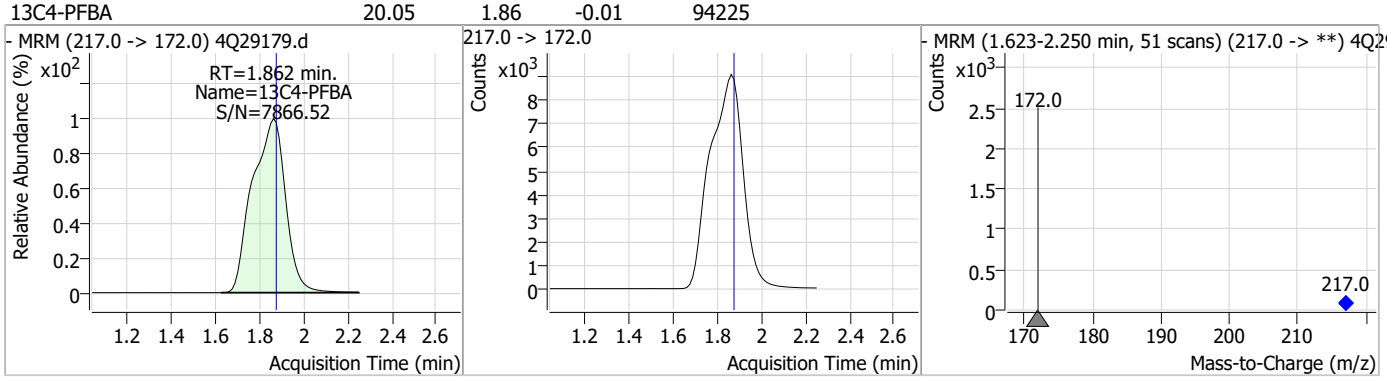
Perfluorinated Compounds by LC/MS/MS



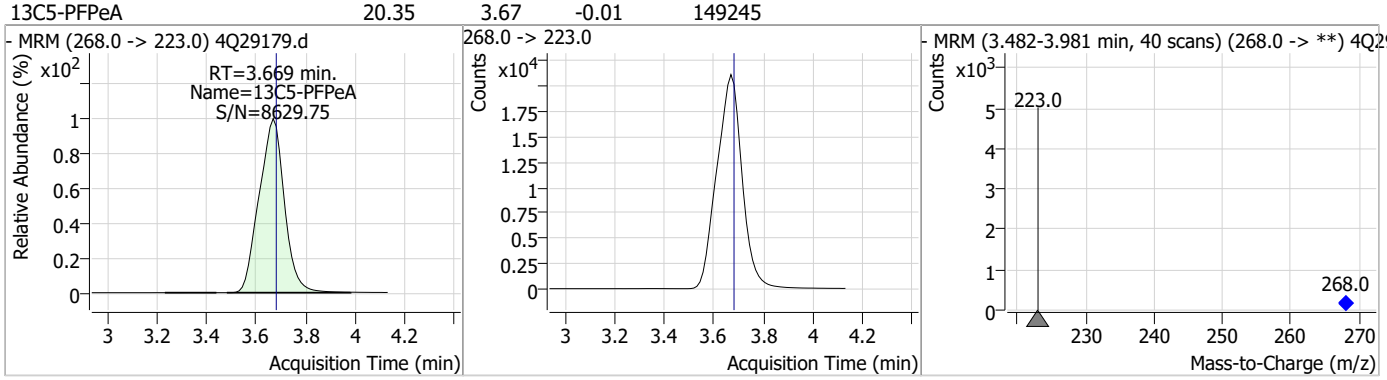
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	99.83	1.87	0.00	148926				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.05	1.86	-0.01	94225				

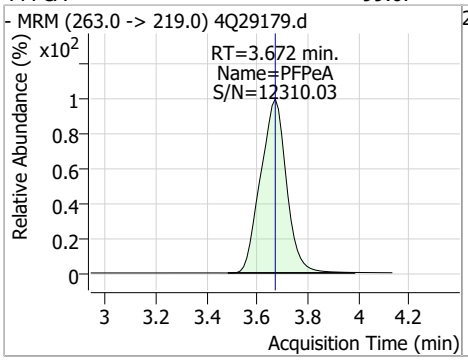


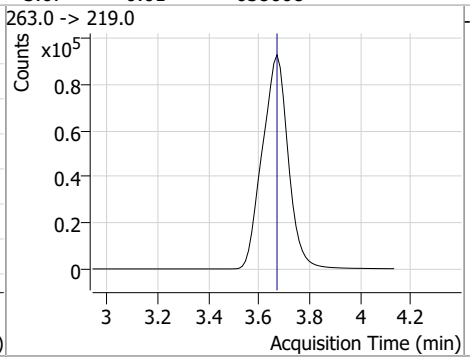
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.35	3.67	-0.01	149245				

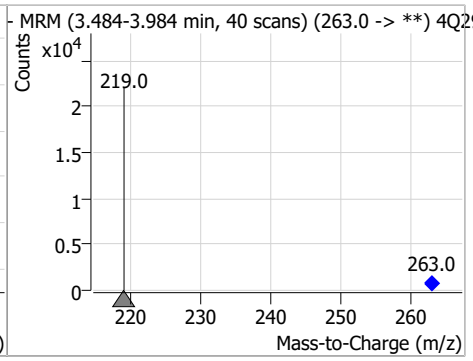


Perfluorinated Compounds by LC/MS/MS

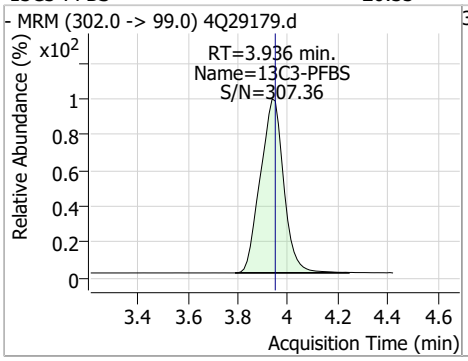
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	99.67	3.67	-0.01	658608				

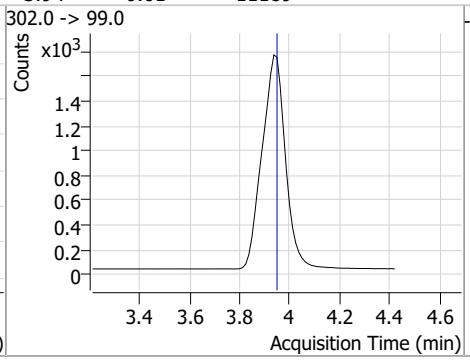


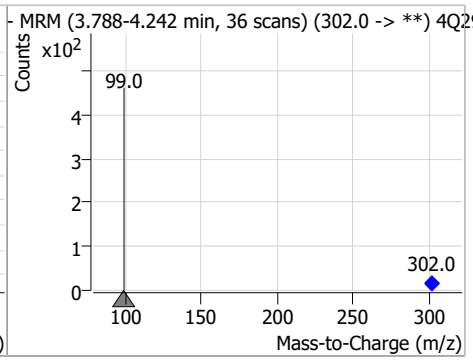




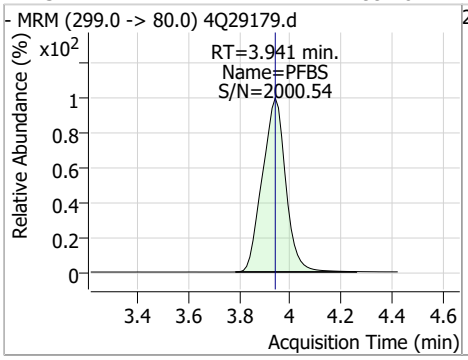
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.33	3.94	-0.01	11189				

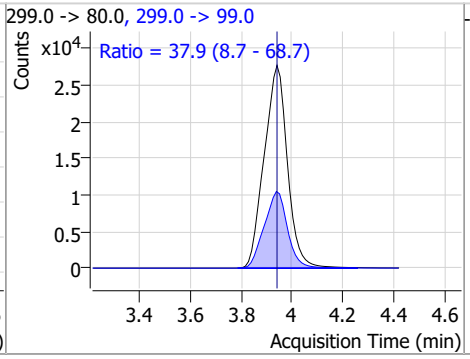


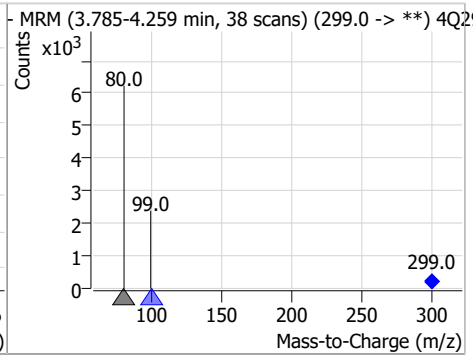




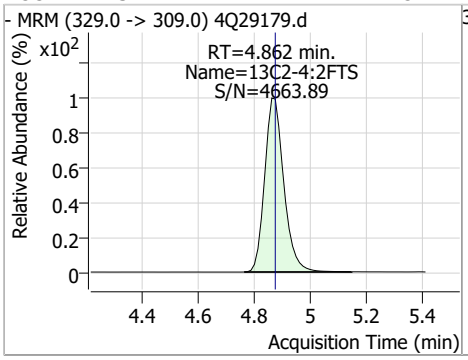
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	99.28	3.94	-0.01	175883	299.0 -> 99.0	37.9	8.7	68.7

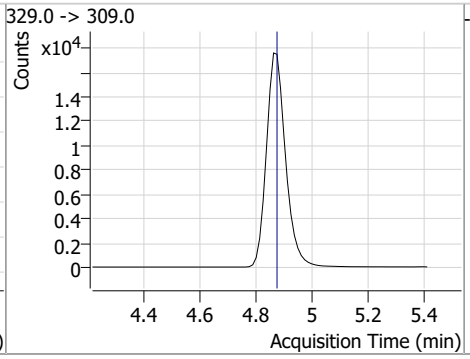


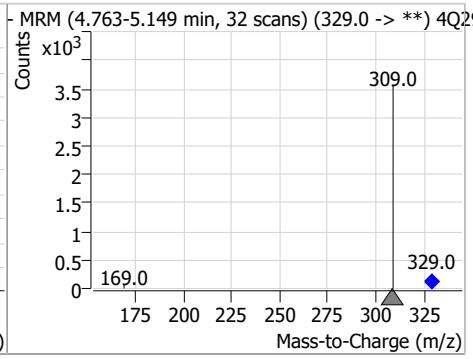




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.73	4.86	-0.01	83917				

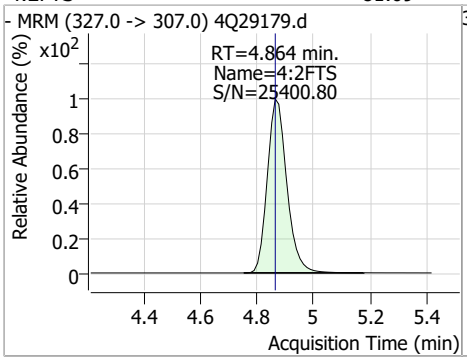


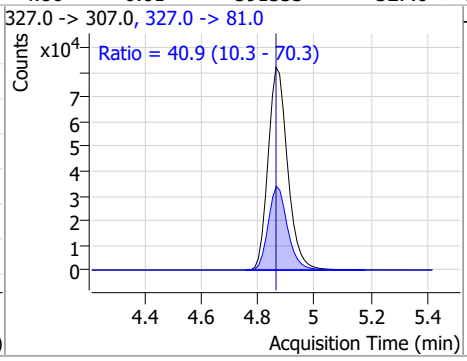


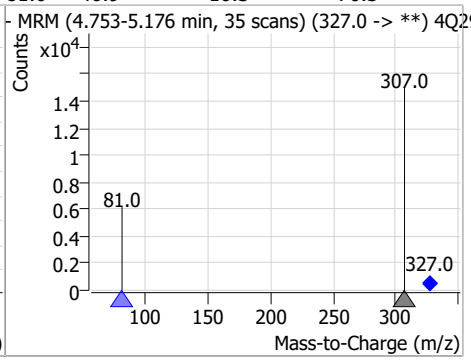


Perfluorinated Compounds by LC/MS/MS

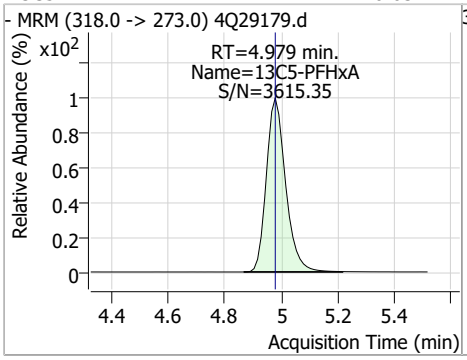
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	81.09	4.86	-0.01	391333	327.0 -> 81.0	40.9	10.3	70.3

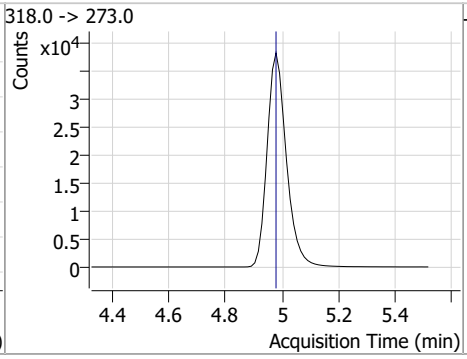


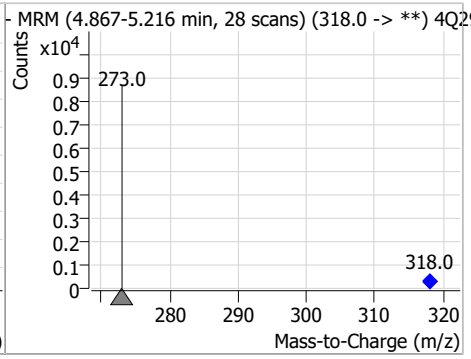




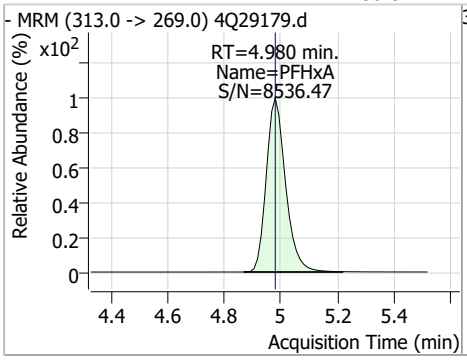
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.03	4.98	0.00	180414				

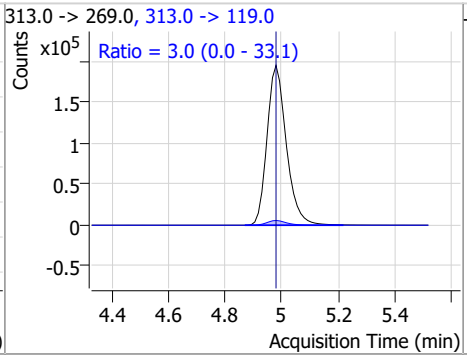


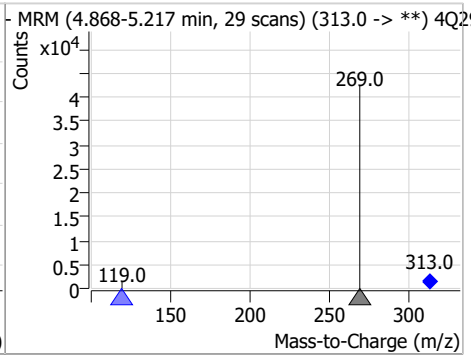




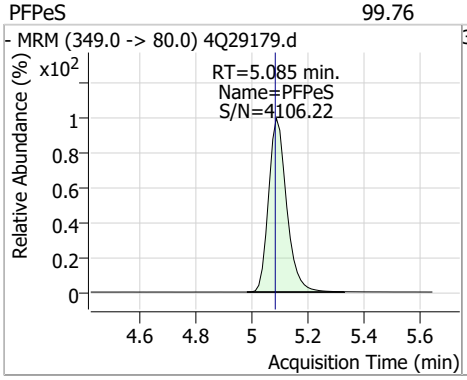
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.92	4.98	0.00	919224	313.0 -> 119.0	3.0	0.0	33.1

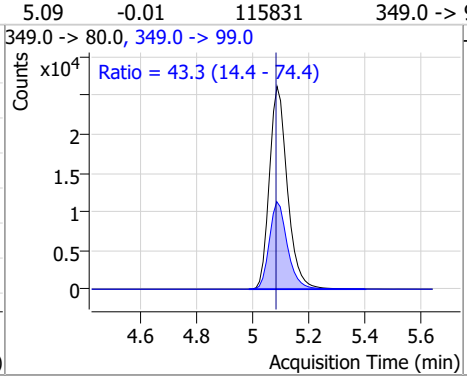


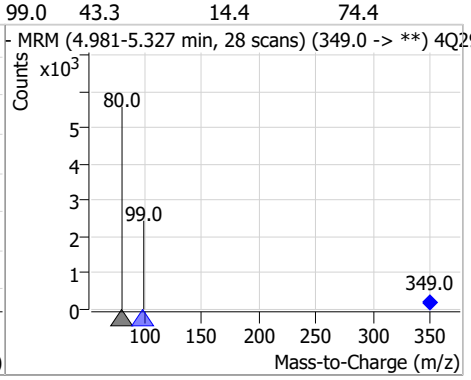




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.76	5.09	-0.01	115831	349.0 -> 99.0	43.3	14.4	74.4

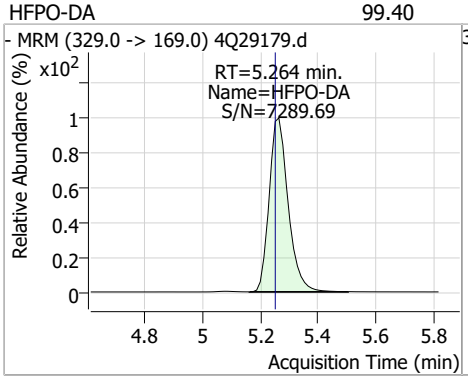


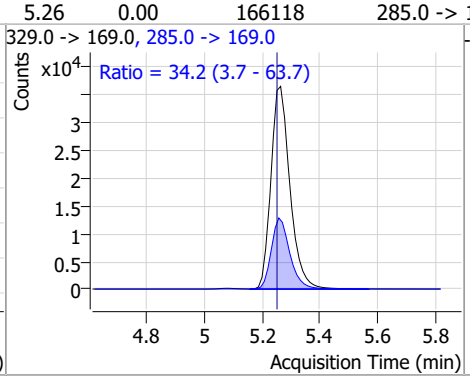


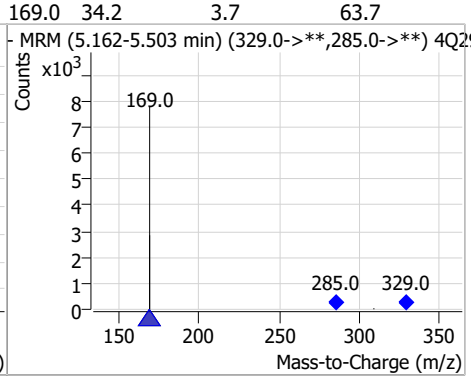


Perfluorinated Compounds by LC/MS/MS

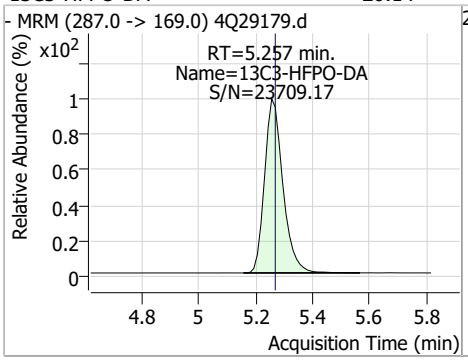
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.40	5.26	0.00	166118	285.0 -> 169.0	34.2	3.7	63.7

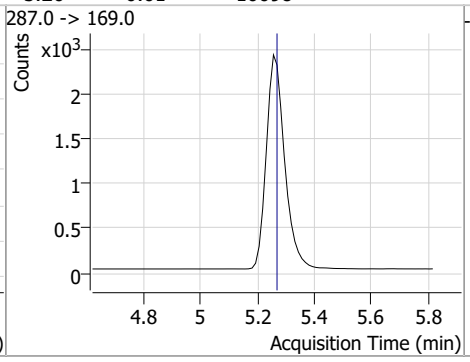


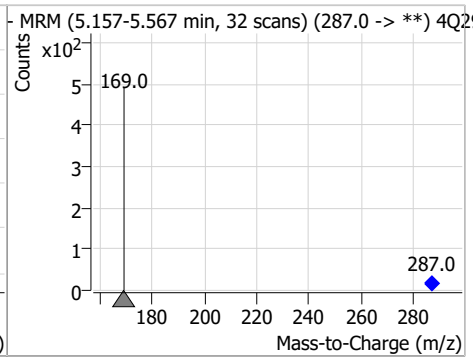




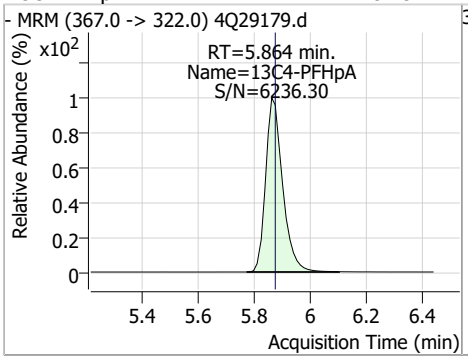
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.14	5.26	-0.01	10698				

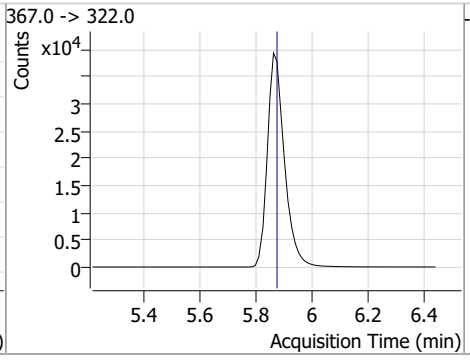


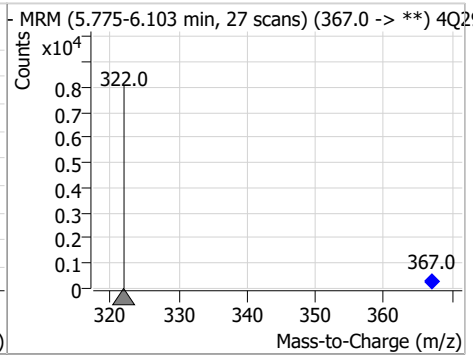




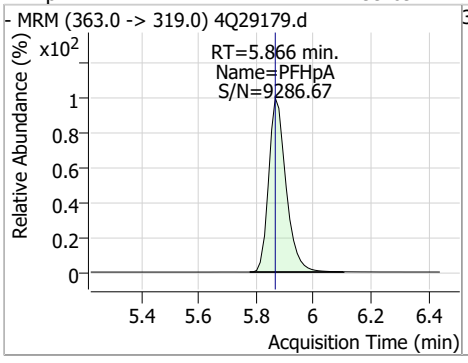
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.29	5.86	-0.01	164717				

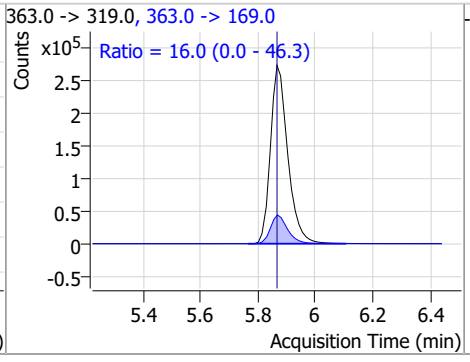


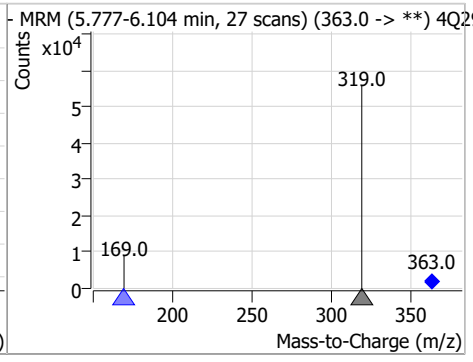




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.69	5.87	-0.01	1144499	363.0 -> 169.0	16.0	0.0	46.3

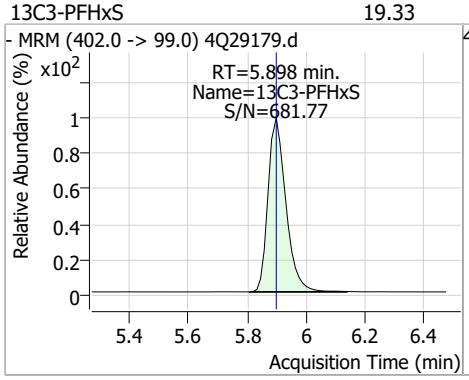


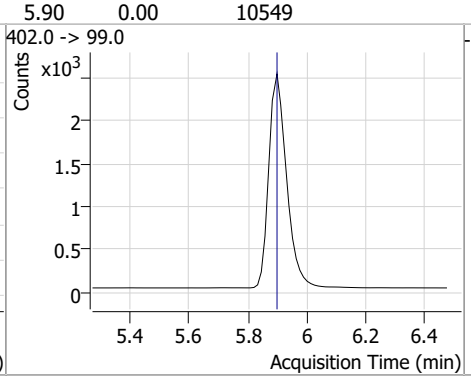


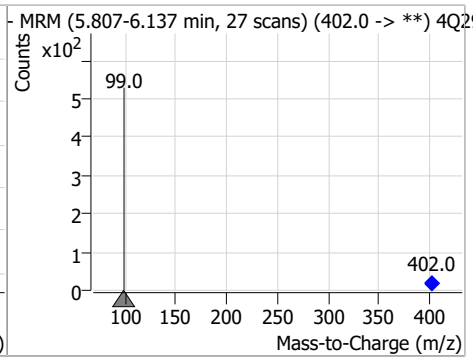


Perfluorinated Compounds by LC/MS/MS

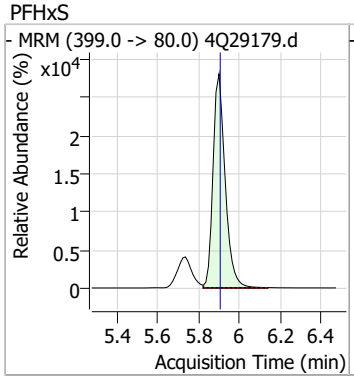
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.33	5.90	0.00	10549				

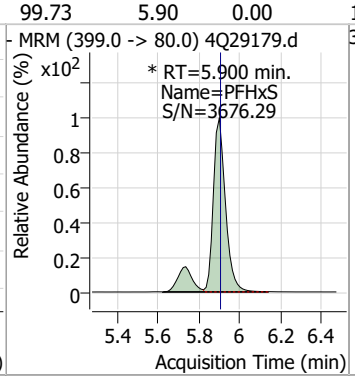


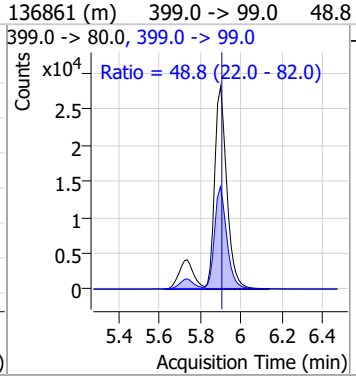


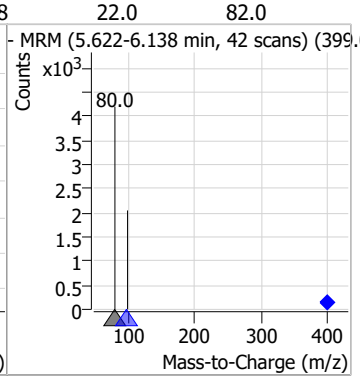


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	99.73	5.90	0.00	136861 (m)	399.0 -> 99.0	48.8	22.0	82.0

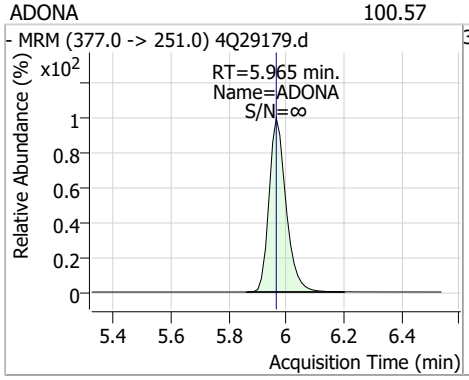


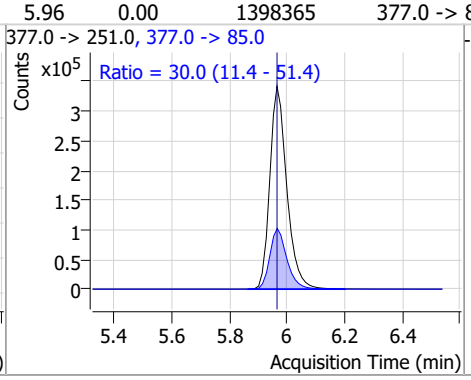


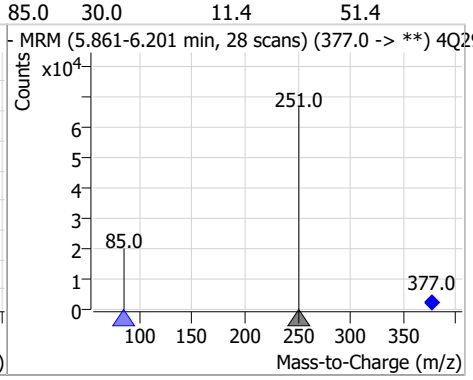




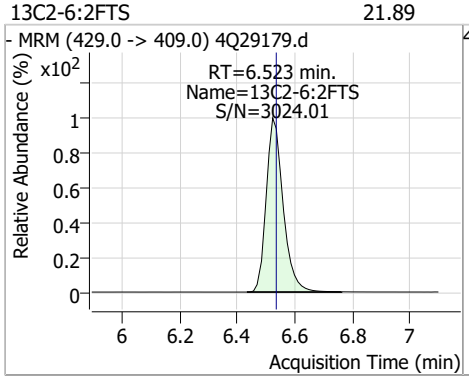
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	100.57	5.96	0.00	1398365	377.0 -> 85.0	30.0	11.4	51.4

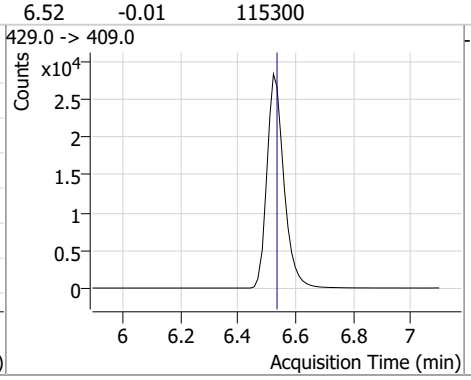


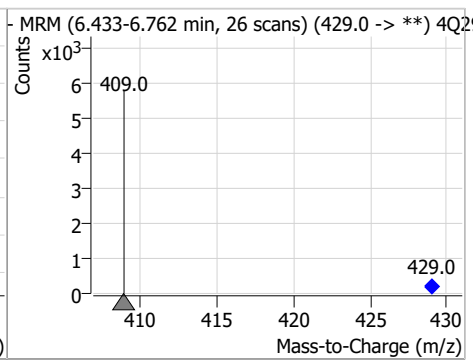




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.89	6.52	-0.01	115300				

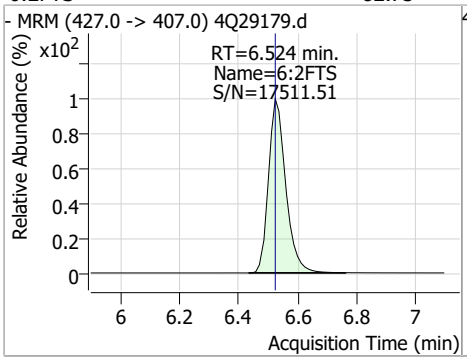


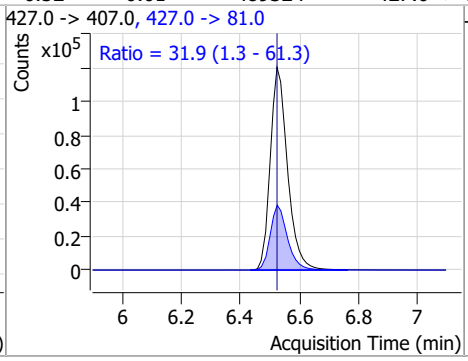


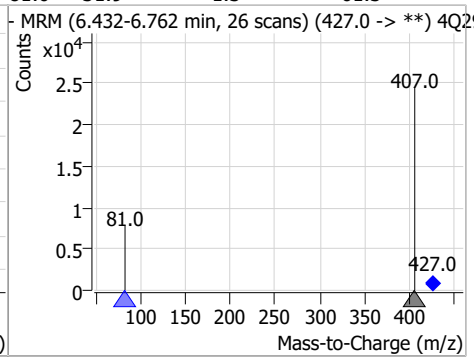


Perfluorinated Compounds by LC/MS/MS

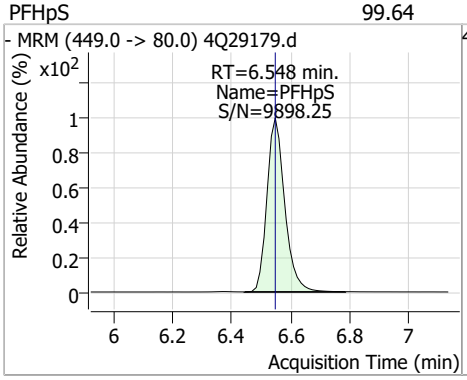
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	82.73	6.52	-0.01	489324	427.0 -> 81.0	31.9	1.3	61.3

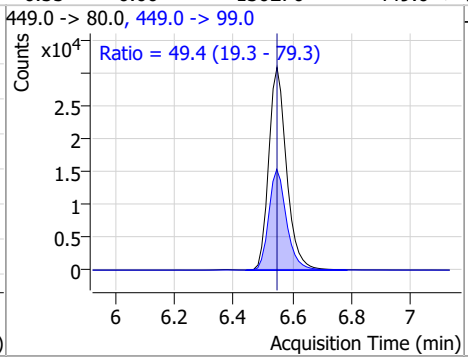


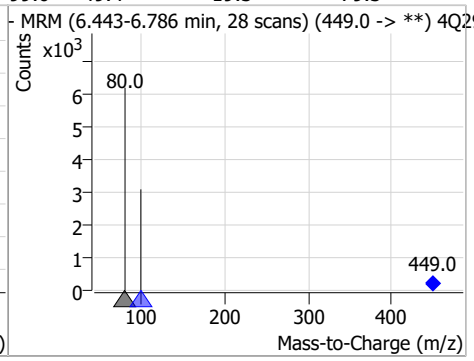




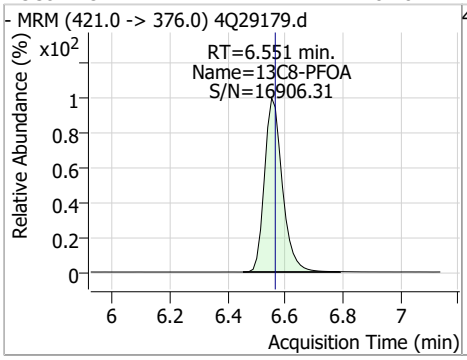
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.64	6.55	0.00	130270	449.0 -> 99.0	49.4	19.3	79.3

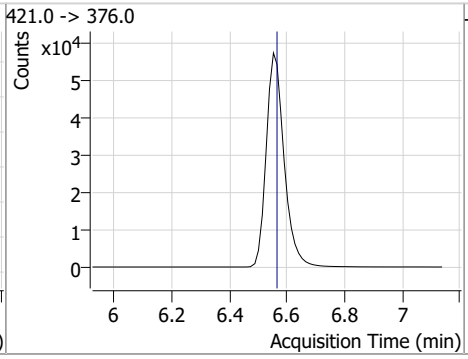


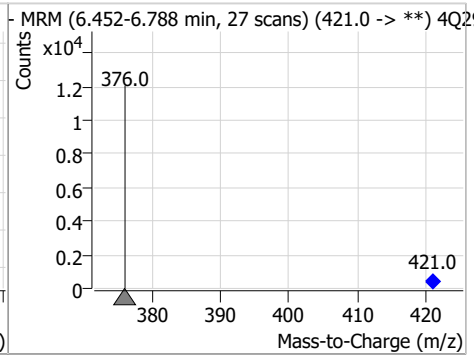




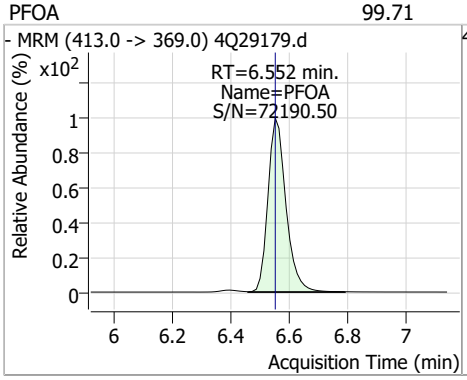
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.18	6.55	-0.01	246800				

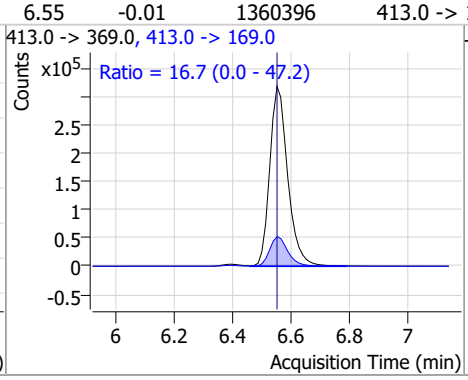


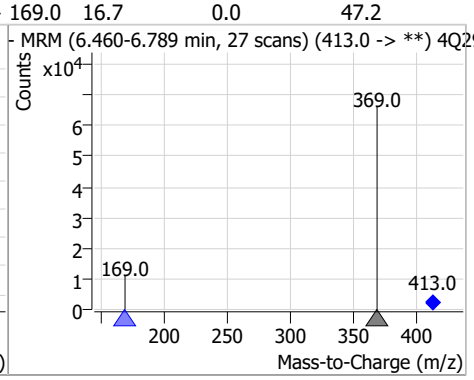




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	99.71	6.55	-0.01	1360396	413.0 -> 169.0	16.7	0.0	47.2

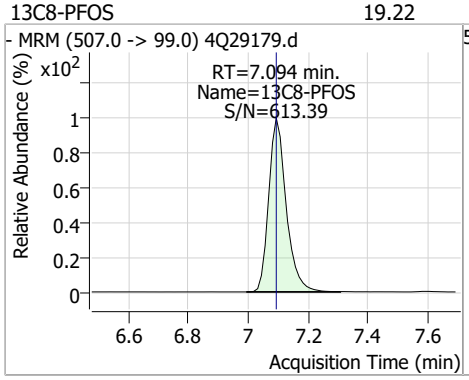


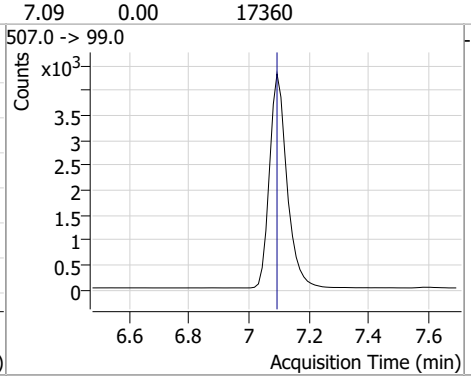


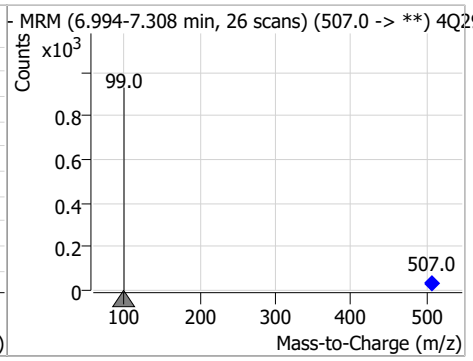


Perfluorinated Compounds by LC/MS/MS

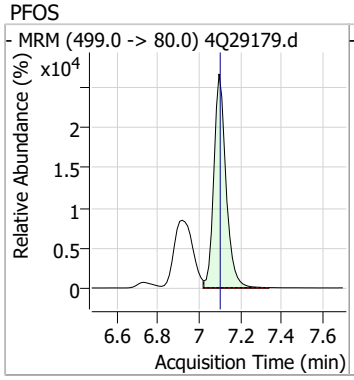
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.22	7.09	0.00	17360				

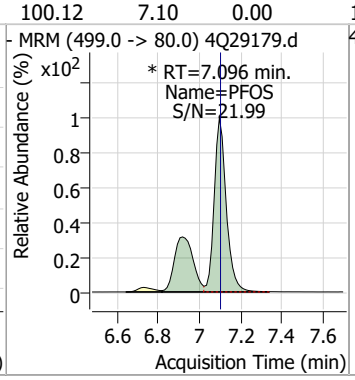


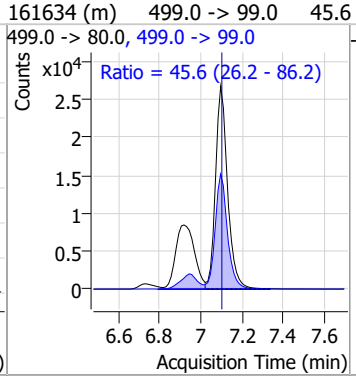


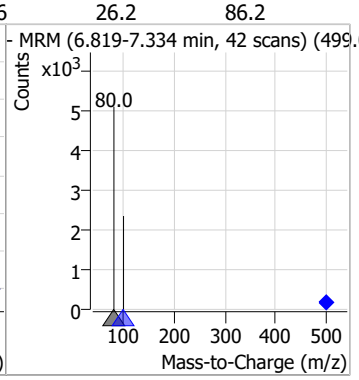


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.12	7.10	0.00	161634 (m)	499.0 -> 99.0	45.6	26.2	86.2

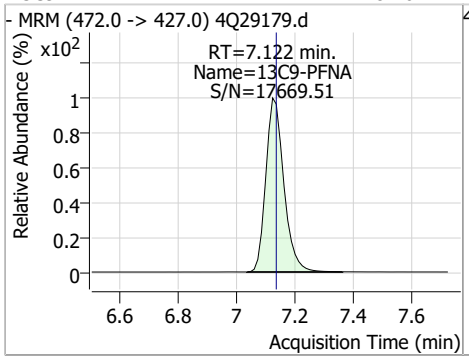


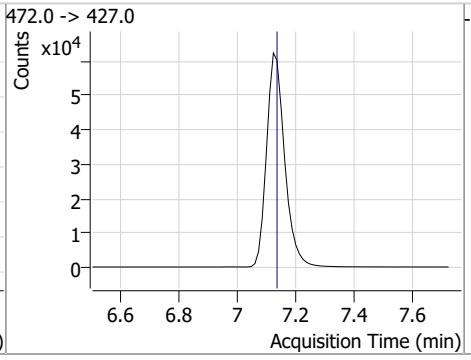


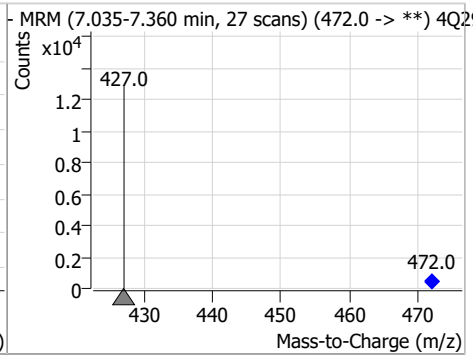




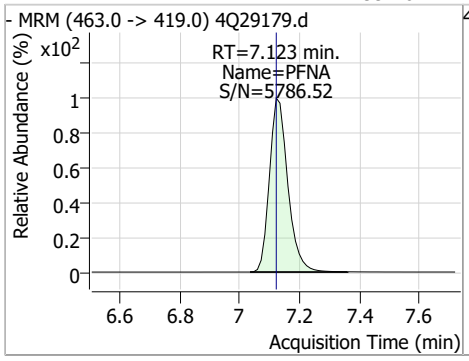
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.70	7.12	-0.01	266119				

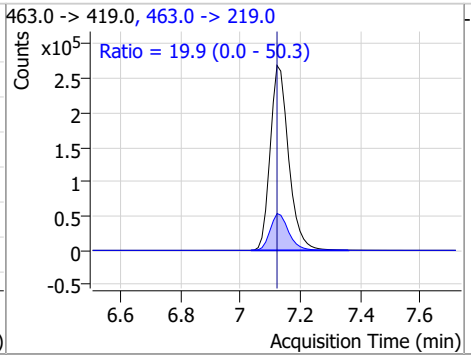


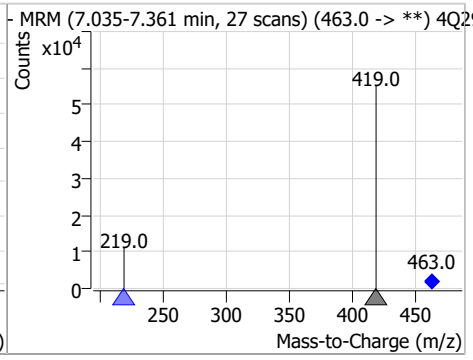




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	99.70	7.12	-0.01	1144620	463.0 -> 219.0	19.9	0.0	50.3

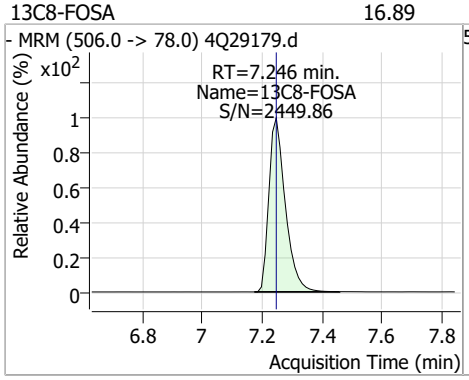


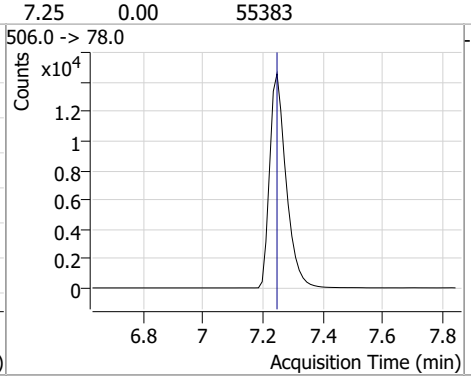


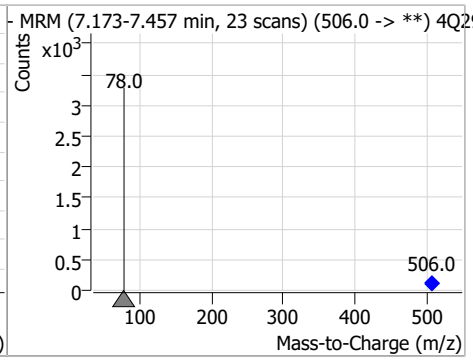


Perfluorinated Compounds by LC/MS/MS

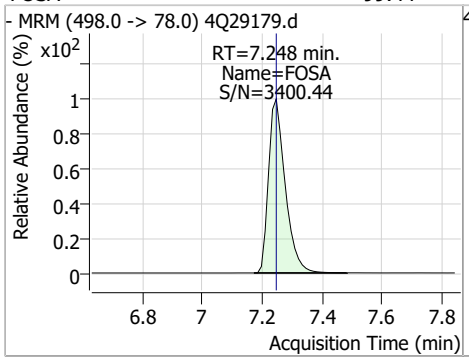
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.89	7.25	0.00	55383				

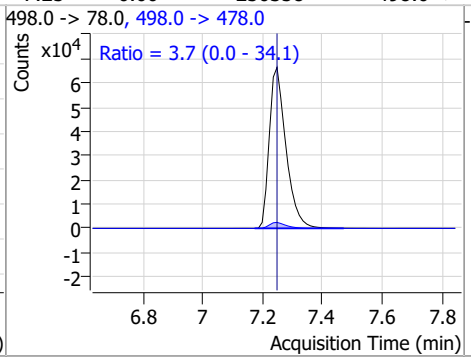


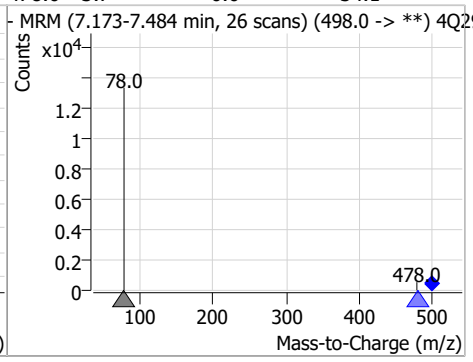




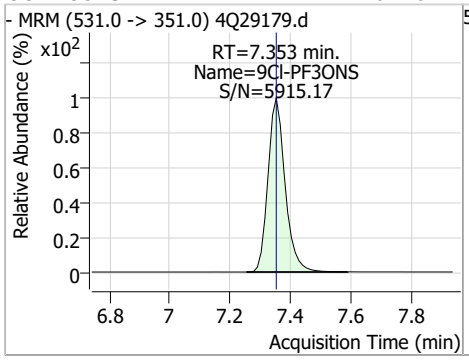
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	99.44	7.25	0.00	256358	498.0 -> 478.0	3.7	0.0	34.1

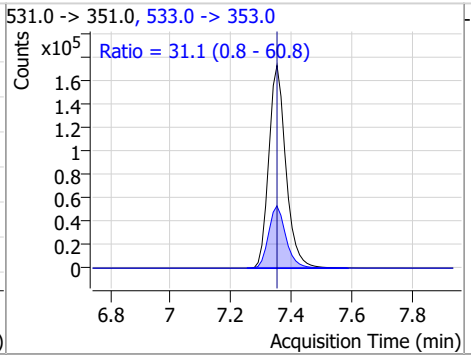


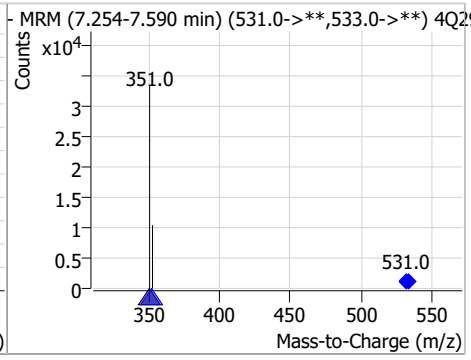




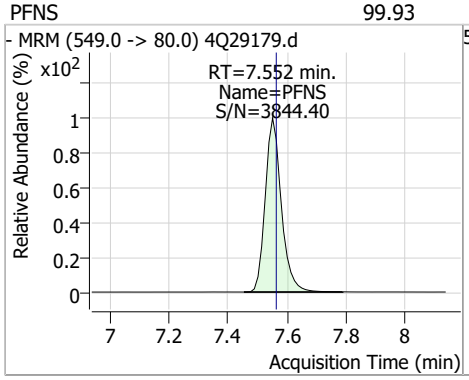
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	101.70	7.35	0.00	679254	533.0 -> 353.0	31.1	0.8	60.8

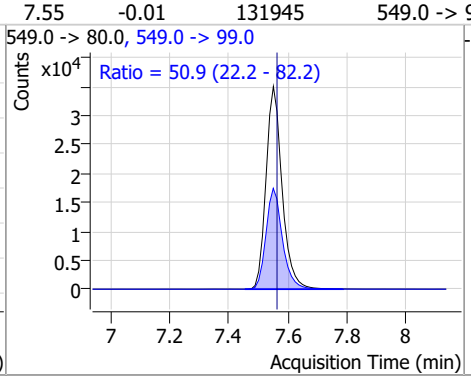


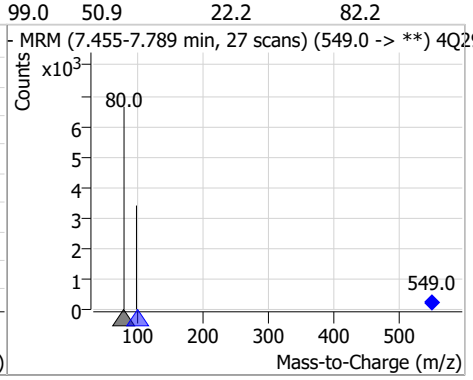




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.93	7.55	-0.01	131945	549.0 -> 99.0	50.9	22.2	82.2

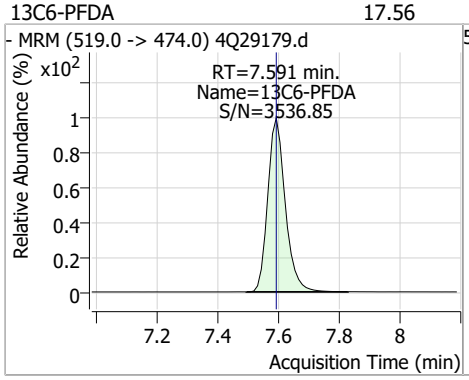


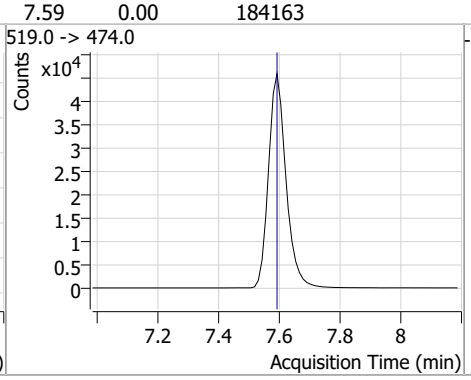


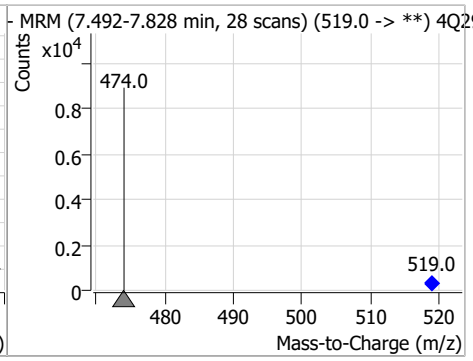


Perfluorinated Compounds by LC/MS/MS

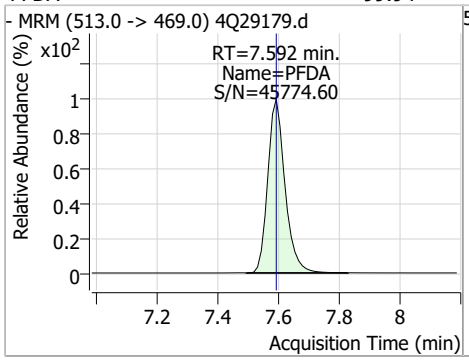
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.56	7.59	0.00	184163				

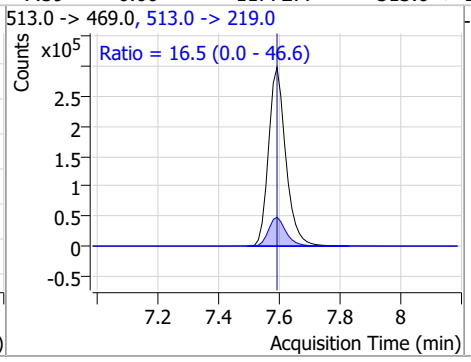


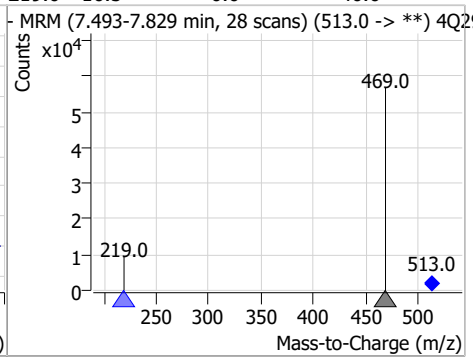




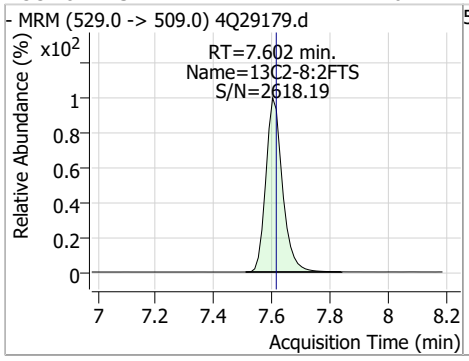
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	99.94	7.59	0.00	1177277	513.0 -> 219.0	16.5	0.0	46.6

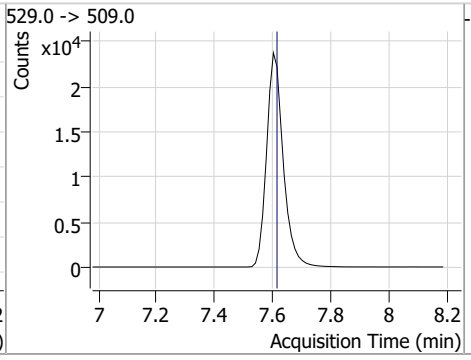


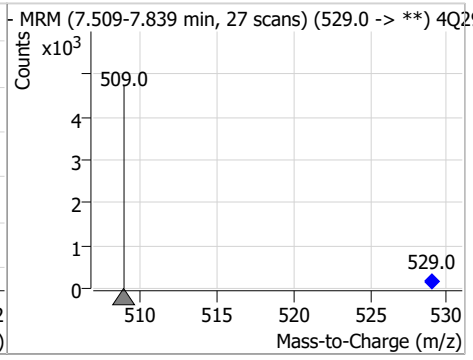




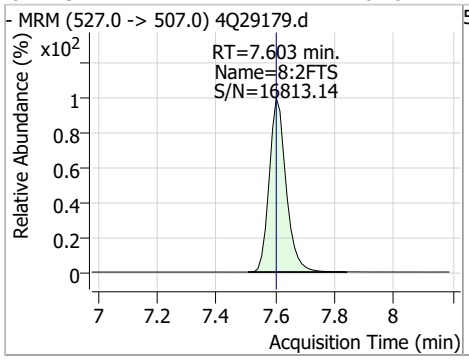
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.02	7.60	-0.01	93761				

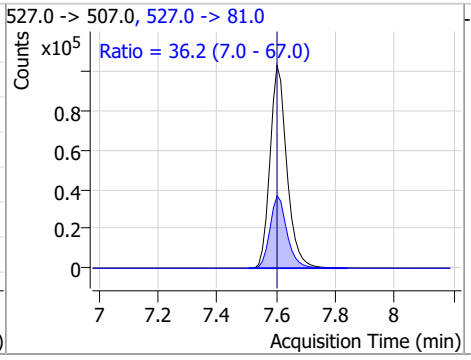


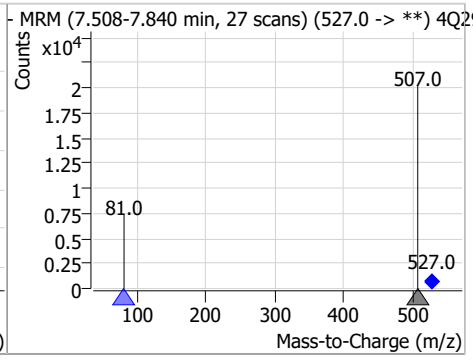




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	82.81	7.60	-0.01	404402	527.0 -> 81.0	36.2	7.0	67.0

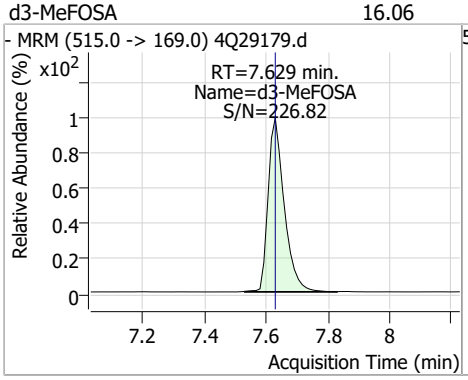


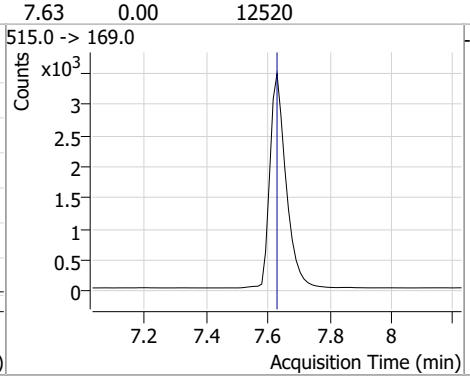


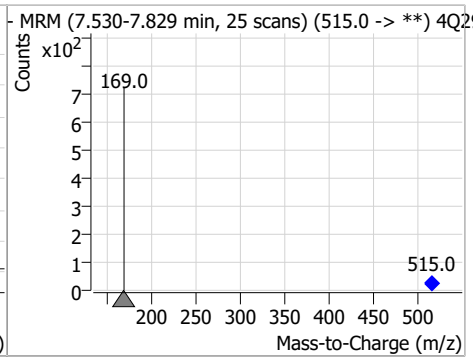


Perfluorinated Compounds by LC/MS/MS

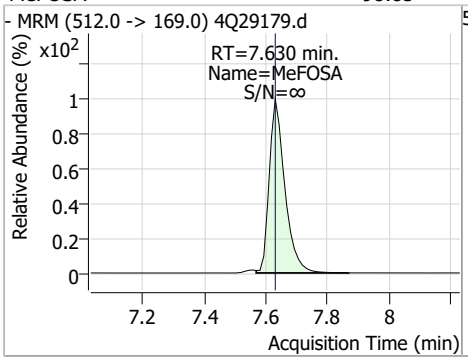
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	16.06	7.63	0.00	12520				

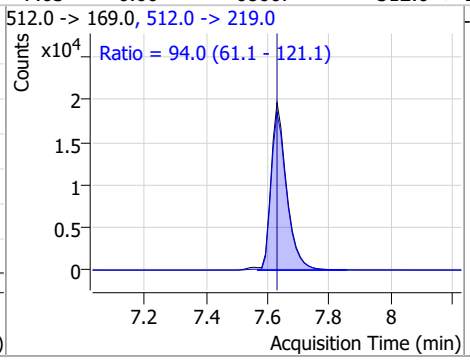


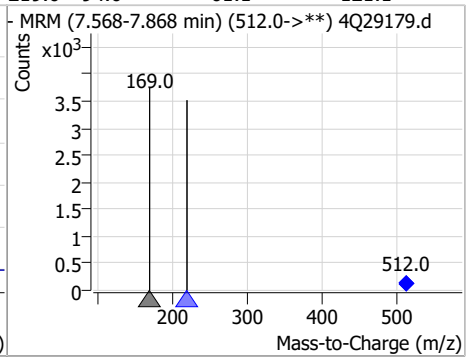




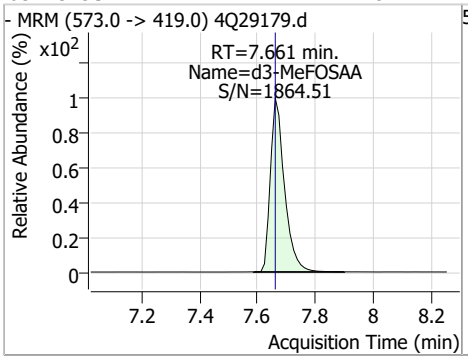
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	98.85	7.63	0.00	68607	512.0 -> 219.0	94.0	61.1	121.1

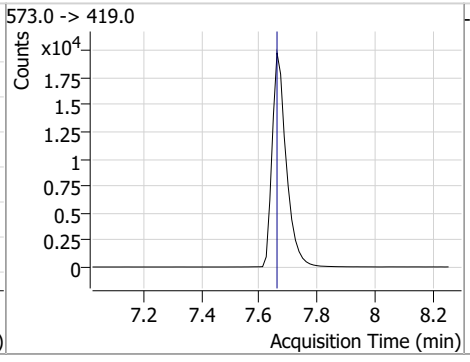


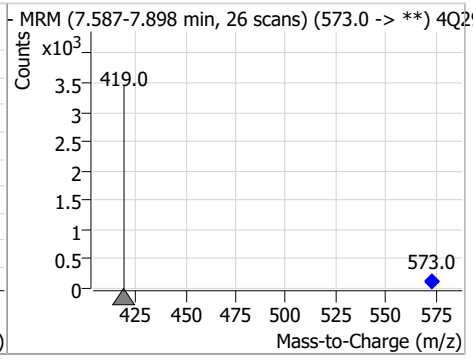




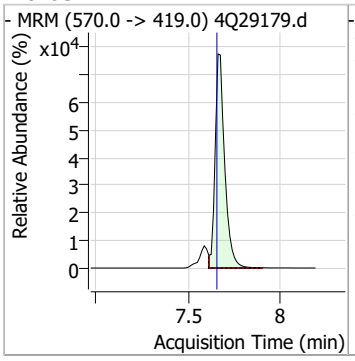
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.27	7.66	0.00	66337				

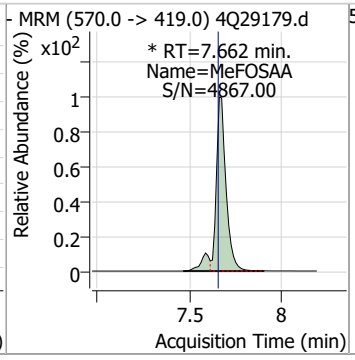


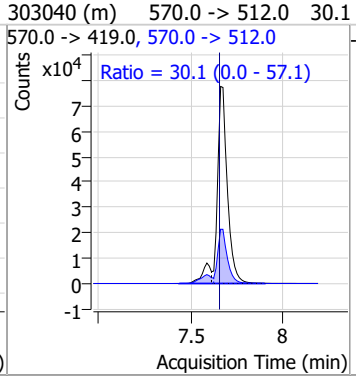


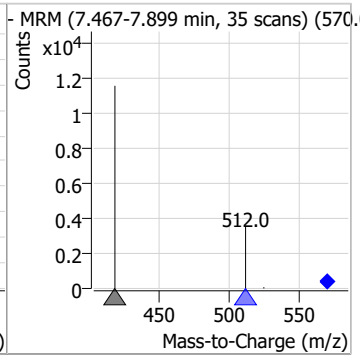


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.52	7.66	0.00	303040 (m)	570.0 -> 512.0	30.1	0.0	57.1



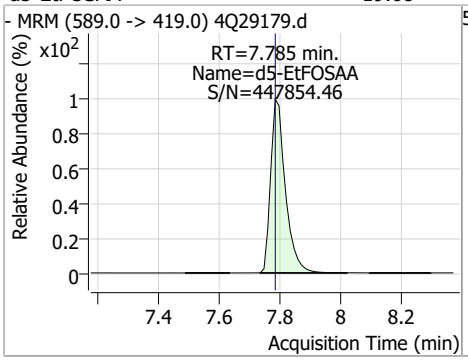


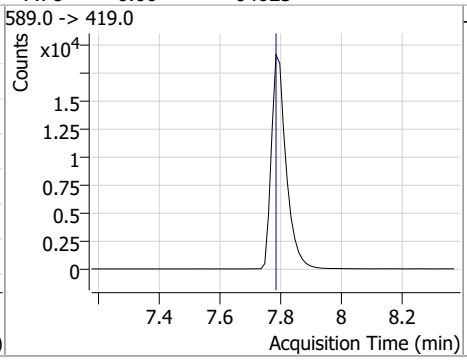


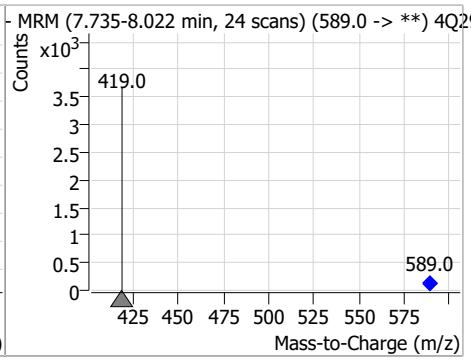


Perfluorinated Compounds by LC/MS/MS

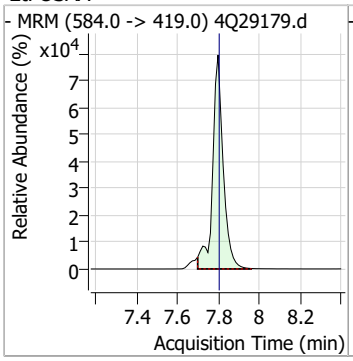
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.68	7.78	0.00	64625				

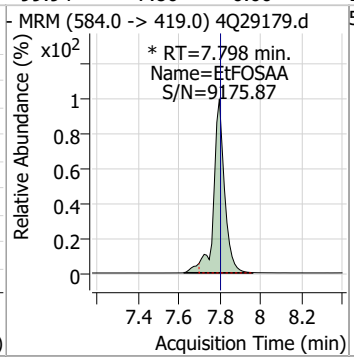


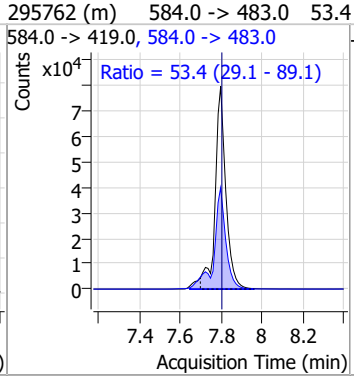


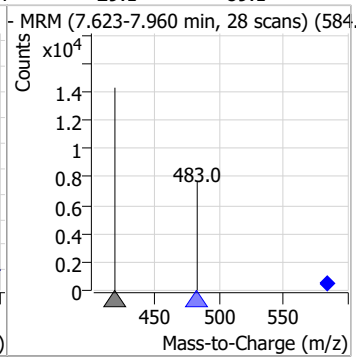


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.94	7.80	0.00	295762 (m)	584.0 -> 483.0	53.4	29.1	89.1

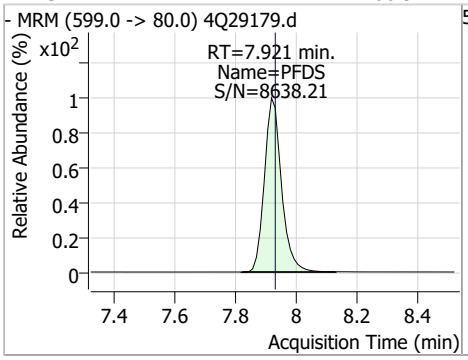


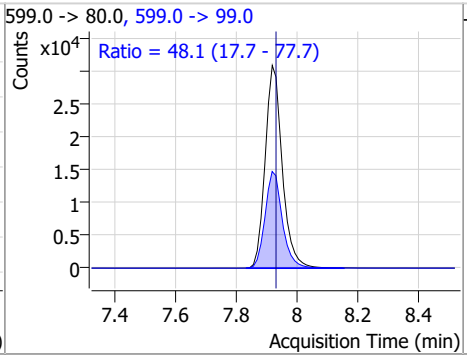


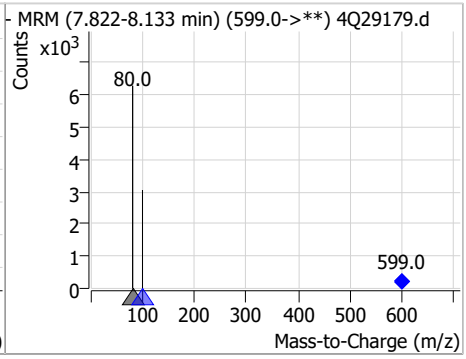




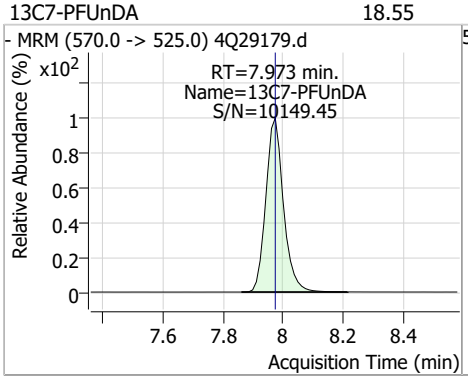
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.91	7.92	-0.01	121012	599.0 -> 99.0	48.1	17.7	77.7

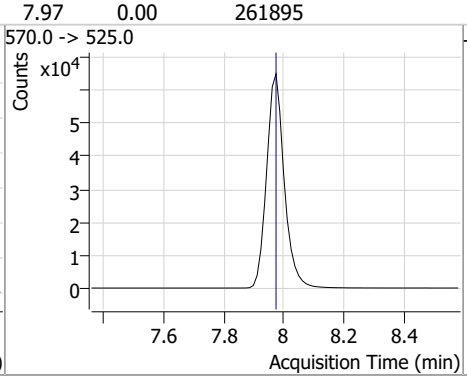


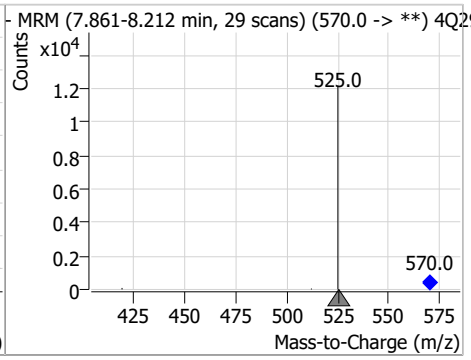




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.55	7.97	0.00	261895				

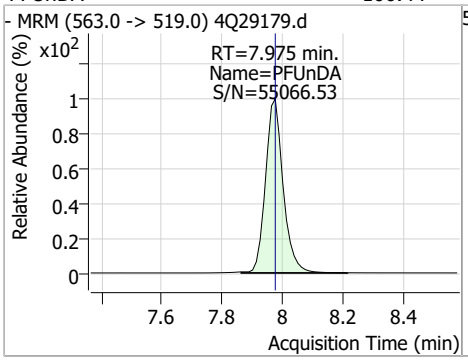


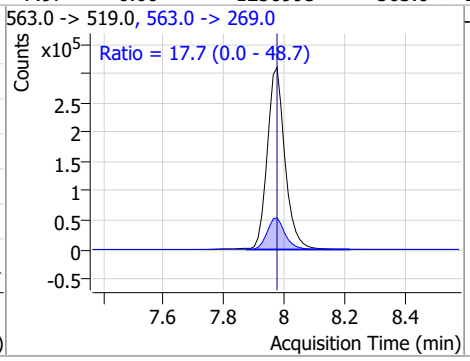


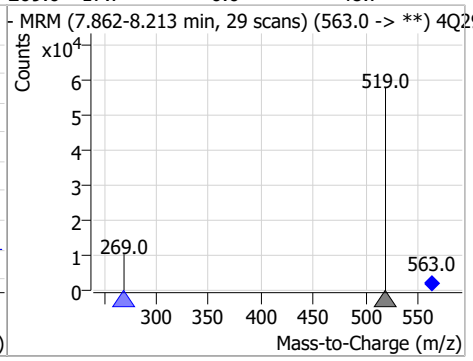


Perfluorinated Compounds by LC/MS/MS

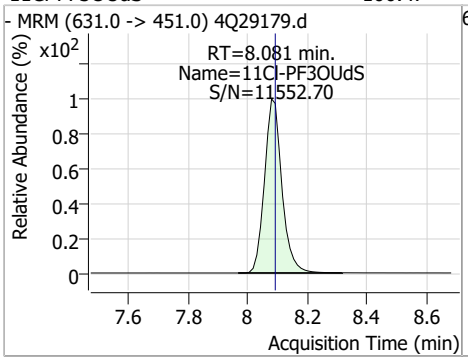
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.44	7.97	0.00	1256995	563.0 -> 269.0	17.7	0.0	48.7

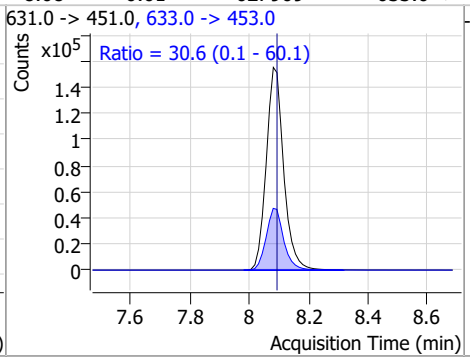


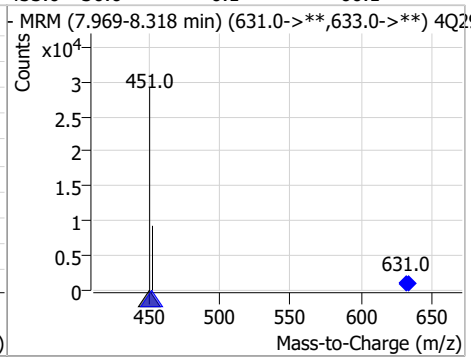




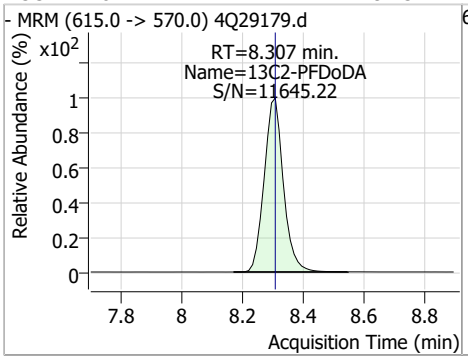
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.47	8.08	-0.01	627969	633.0 -> 453.0	30.6	0.1	60.1

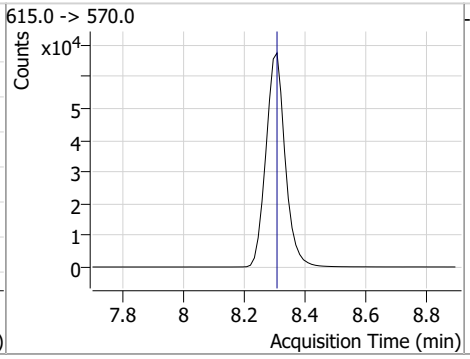


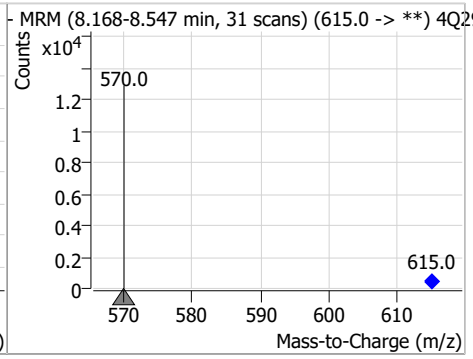




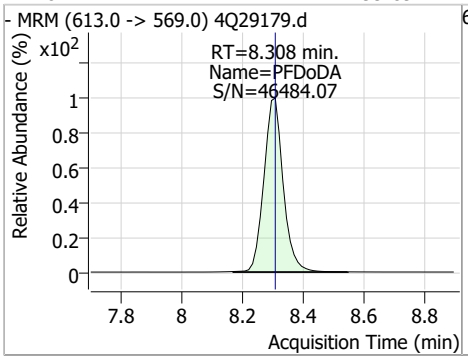
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.43	8.31	0.00	297433				

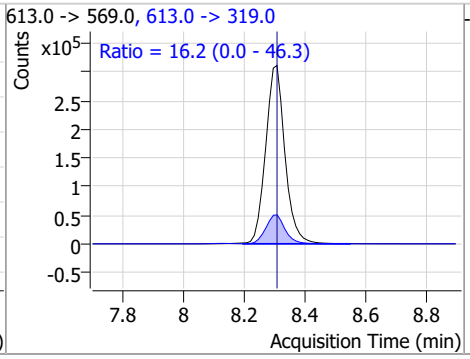


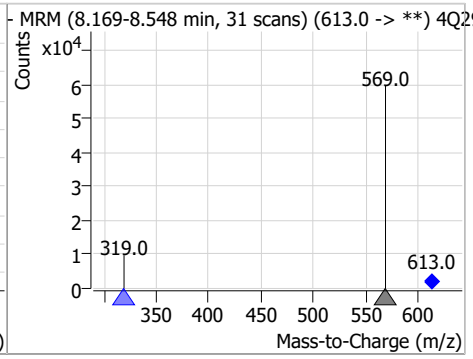




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	99.89	8.31	0.00	1383100	613.0 -> 319.0	16.2	0.0	46.3

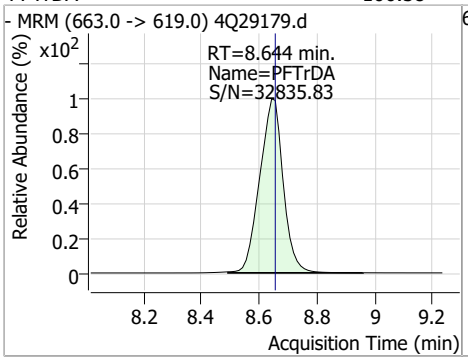


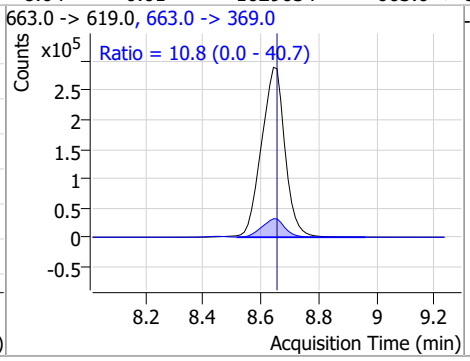


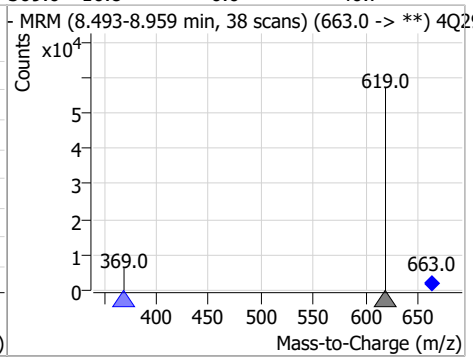


Perfluorinated Compounds by LC/MS/MS

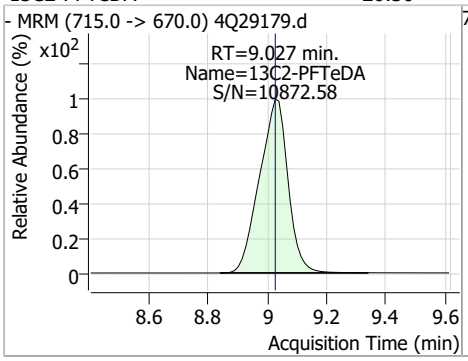
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.58	8.64	-0.01	1629634	663.0 -> 369.0	10.8	0.0	40.7

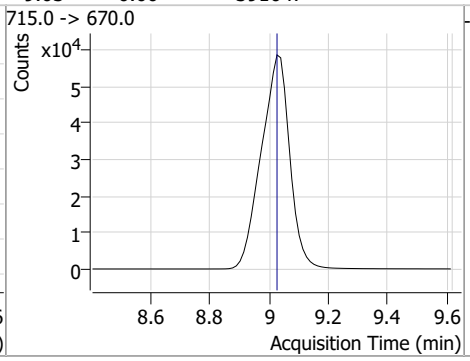


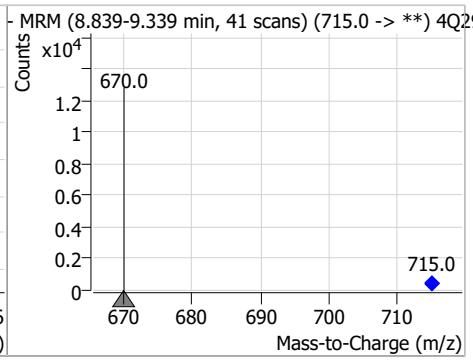




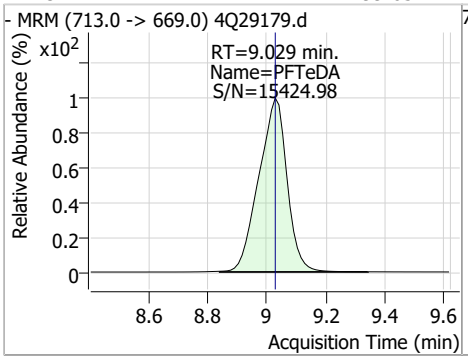
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.30	9.03	0.00	391047				

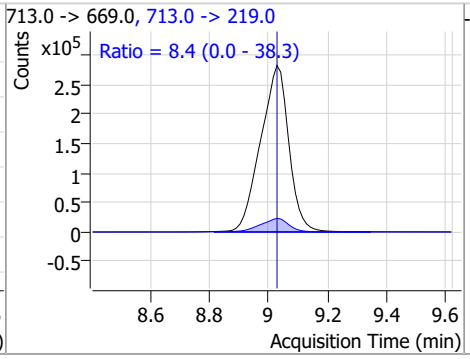


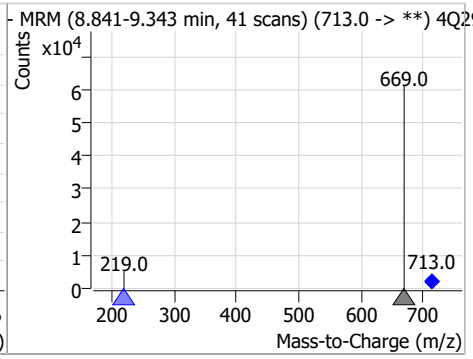




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.65	9.03	0.00	1872061	713.0 -> 219.0	8.4	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-IC419
Lab FileID: 4Q29179.D
Injection Time: 05/27/22 13:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/29/22 21:21

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29181.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 2:11:04 PM
Sample Name : icv419-20
Vial : P1-B1
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q419.batch.bin
Sample Information : op91245,S4Q419,250,,,1.0,1,water

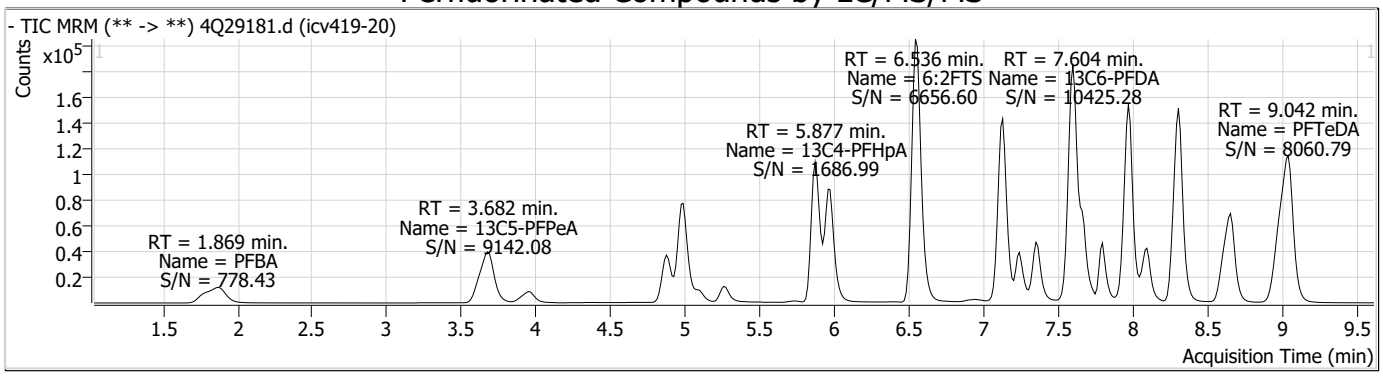
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.875	217.0 -> 172.0	91924	20.00	µg/L	0.000
M5-PFPeA	3.682	268.0 -> 223.0	143689	20.00	µg/L	0.000
M5-PFHxA	4.991	318.0 -> 273.0	176393	20.00	µg/L	0.012
M4-PFHpA	5.877	367.0 -> 322.0	166884	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	268173	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	282594	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	209706	20.00	µg/L	0.012
M7-PFUnDA	7.973	570.0 -> 525.0	276489	20.00	µg/L	0.000
M2-PFDoDA	8.307	615.0 -> 570.0	299920	20.00	µg/L	0.000
M2-PFTeDA	9.039	715.0 -> 670.0	380190	20.00	µg/L	0.012
M8-FOSA	7.246	506.0 -> 78.0	64280	20.00	µg/L	0.000
M3-PFBS	3.949	302.0 -> 99.0	10944	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	10903	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	17732	20.00	µg/L	0.013
M2-4:2FTS	4.875	329.0 -> 309.0	66364	20.00	µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	103166	20.00	µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	86798	20.00	µg/L	0.000
M3-MeFOSAA	7.661	573.0 -> 419.0	74546	20.00	µg/L	0.000
M3-HFPO-DA	5.269	287.0 -> 169.0	10131	20.00	µg/L	0.000
M3-MeFOSA	7.629	515.0 -> 169.0	15979	20.00	µg/L	0.000
M5-EtFOSAA	7.797	589.0 -> 419.0	65114	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.875	329.0 -> 309.0	66364	19.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-6:2FTS	6.535	429.0 -> 409.0	103166	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-8:2FTS	7.615	529.0 -> 509.0	86798	19.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-PFDoDA	8.307	615.0 -> 570.0	299920	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-PFTeDA	9.039	715.0 -> 670.0	380190	19.73	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	3.949	302.0 -> 99.0	10944	19.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	5.898	402.0 -> 99.0	10903	19.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C4-PFBA	1.875	217.0 -> 172.0	91924	19.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFHpA	5.877	367.0 -> 322.0	166884	19.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C5-PFHxA	4.991	318.0 -> 273.0	176393	19.59	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C5-PFPeA	3.682	268.0 -> 223.0	143689	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C6-PFDA	7.604	519.0 -> 474.0	209706	19.99	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

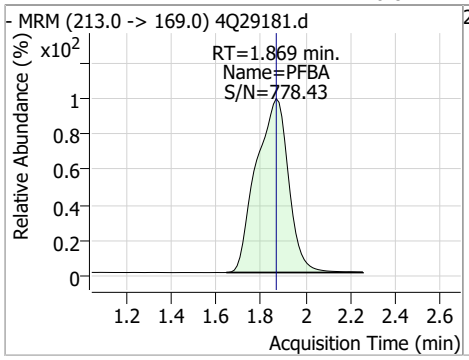
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C7-PFUnDA	7.973	570.0 -> 525.0	276489	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C8-FOSA	7.246	506.0 -> 78.0	64280	19.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-PFOA	6.564	421.0 -> 376.0	268173	19.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
13C8-PFOS	7.108	507.0 -> 99.0	17732	19.63	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
13C9-PFNA	7.135	472.0 -> 427.0	282594	19.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
d3-MeFOSAA	7.661	573.0 -> 419.0	74546	20.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
13C3-HFPO-DA	5.269	287.0 -> 169.0	10135	19.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSA	7.629	515.0 -> 169.0	15979	20.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
d5-EtFOSAA	7.797	589.0 -> 419.0	65129	19.83	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
Target Compounds							**QValue**
4:2FTS	4.877	327.0 -> 307.0	74263	19.46	µg/L		99
6:2FTS	6.536	427.0 -> 407.0	104295	19.71	µg/L		99
8:2FTS	7.615	527.0 -> 507.0	93146	20.60	µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	61646	20.66	µg/L	m	93
FOSA	7.248	498.0 -> 78.0	63612	21.26	µg/L		99
MeFOSAA	7.674	570.0 -> 419.0	68008	19.87	µg/L	m	94
PFBA	1.869	213.0 -> 169.0	30330	20.84	µg/L		100
PFBS	3.954	299.0 -> 80.0	30746	17.74	µg/L		99
PFDA	7.604	513.0 -> 469.0	266172	19.84	µg/L		99
PFDoDA	8.308	613.0 -> 569.0	307328	22.01	µg/L		99
PFDS	7.933	599.0 -> 80.0	23670	18.70	µg/L		99
PFHpA	5.878	363.0 -> 319.0	234192	20.13	µg/L		99
PFHpS	6.548	449.0 -> 80.0	27786	20.81	µg/L		99
PFHxA	4.992	313.0 -> 269.0	176561	19.63	µg/L		100
PFHxS	5.900	399.0 -> 80.0	25385	17.90	µg/L	m	97
PFNA	7.135	463.0 -> 419.0	235031	19.28	µg/L		100
PFNS	7.564	549.0 -> 80.0	25788	19.12	µg/L		97
PFOA	6.565	413.0 -> 369.0	317900	21.44	µg/L		100
PFOS	7.109	499.0 -> 80.0	34338	20.82	µg/L	m	89
PFPeA	3.684	263.0 -> 219.0	130447	20.50	µg/L		100
PFPeS	5.098	349.0 -> 80.0	22086	19.45	µg/L		99
PFTeDA	9.042	713.0 -> 669.0	364674	19.97	µg/L		99
PFTrDA	8.656	663.0 -> 619.0	349138	21.37	µg/L		100
PFUnDA	7.975	563.0 -> 519.0	281398	21.30	µg/L		99
11Cl-PF3OUdS	8.093	631.0 -> 451.0	122596	19.45	µg/L		99
9Cl-PF3ONS	7.353	531.0 -> 351.0	136656	17.97	µg/L		100
ADONA	5.977	377.0 -> 251.0	262800	18.29	µg/L		100
HFPO-DA	5.264	329.0 -> 169.0	33368	21.09	µg/L		99
MeFOSA	7.630	512.0 -> 169.0	0		µg/L	m	1

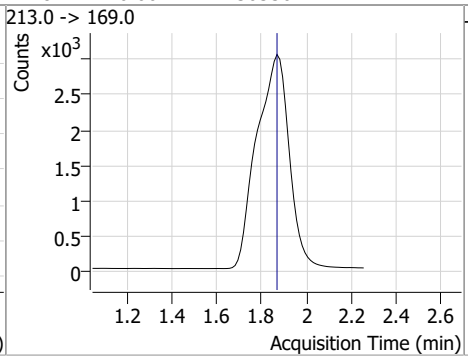
 # = Qualifier out of range, m = manually integrated, + = Area summed

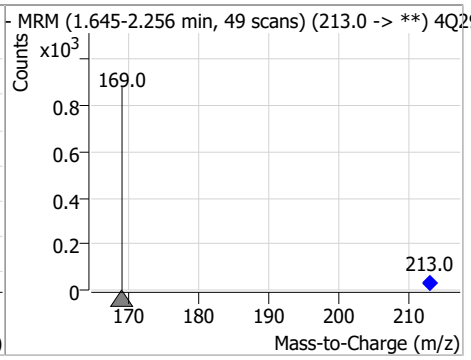
Perfluorinated Compounds by LC/MS/MS



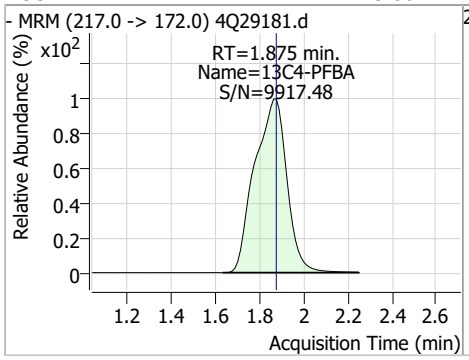
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.84	1.87	0.00	30330				

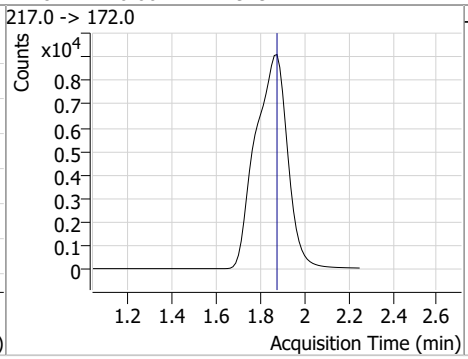


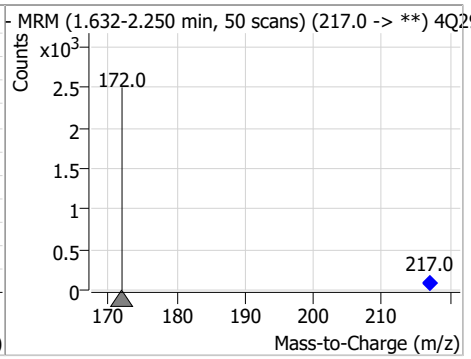




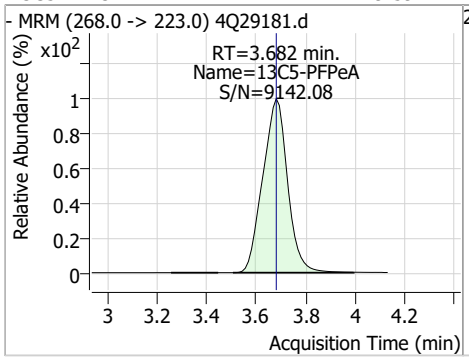
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.56	1.87	0.00	91924				

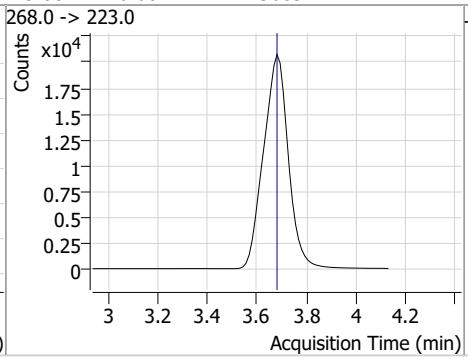


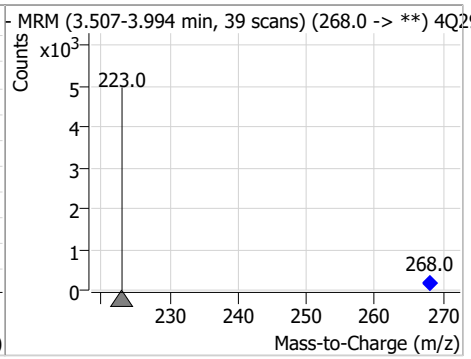




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.59	3.68	0.00	143689				

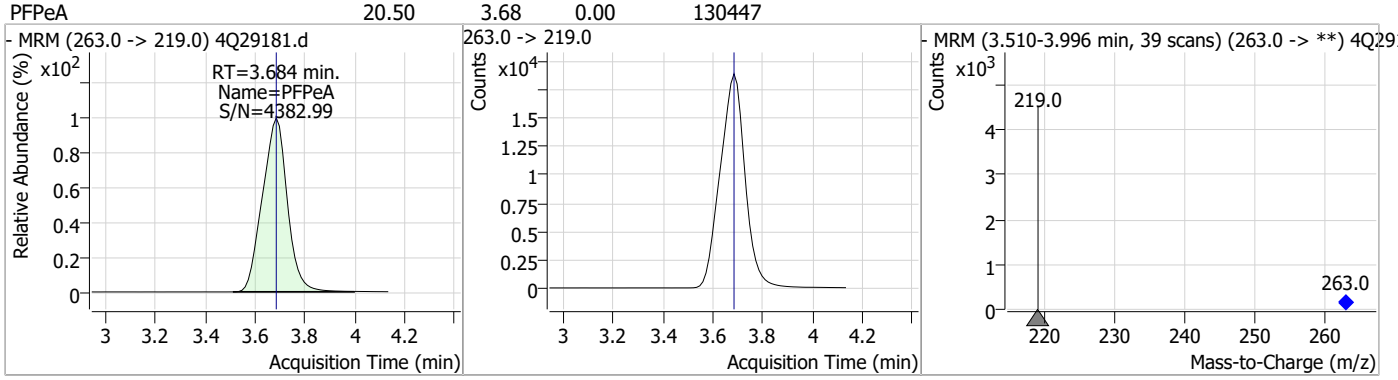




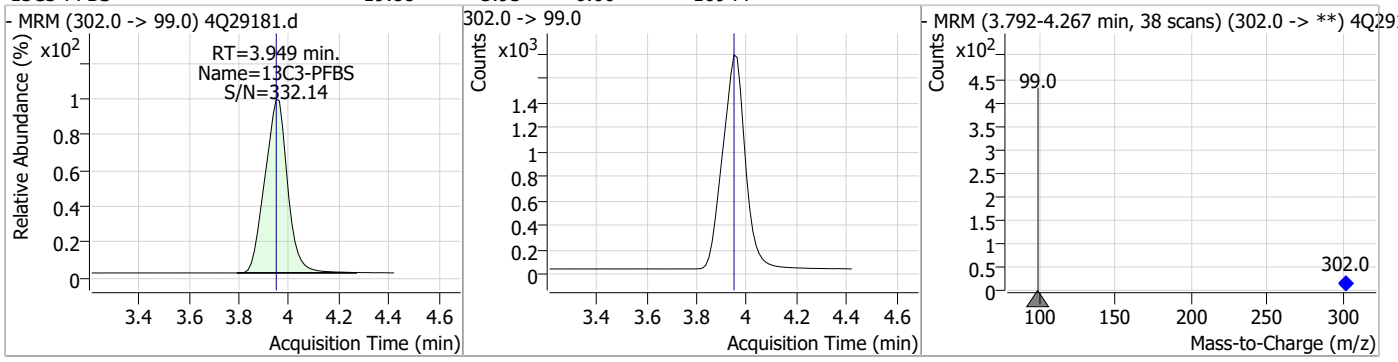


Perfluorinated Compounds by LC/MS/MS

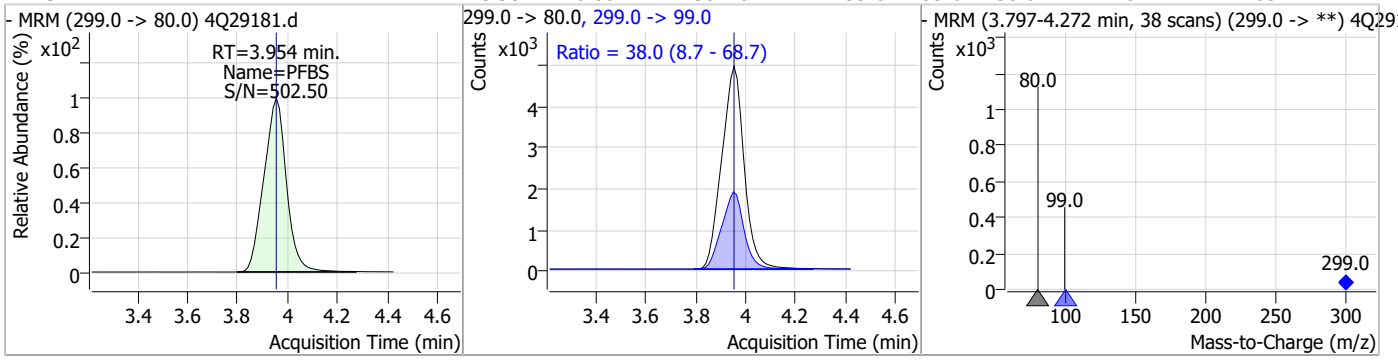
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.50	3.68	0.00	130447				



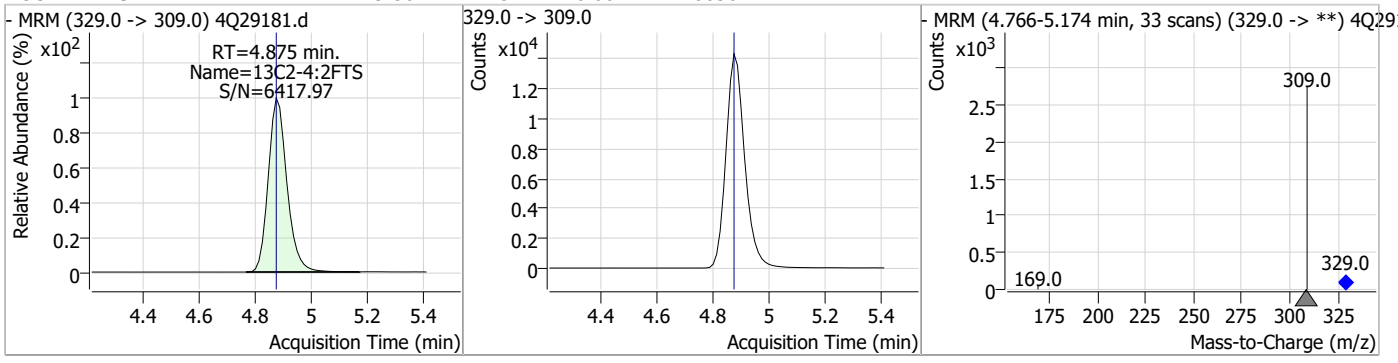
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.88	3.95	0.00	10944				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	17.74	3.95	0.00	30746	299.0 -> 99.0	38.0	8.7	68.7

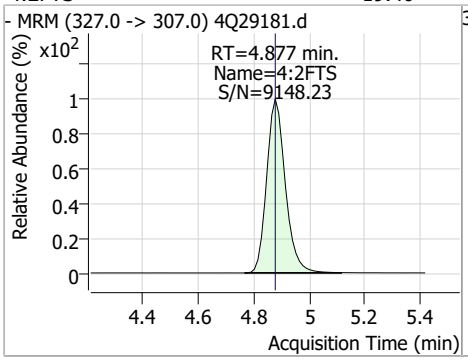


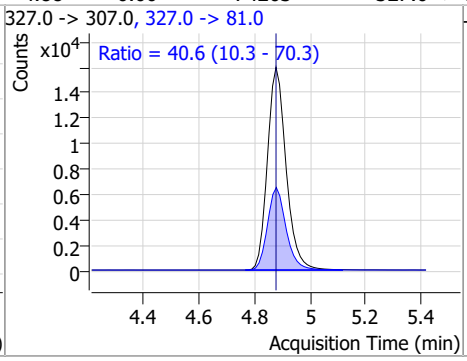
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.56	4.87	0.00	66364				

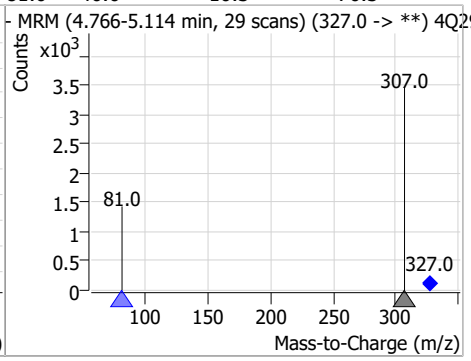


Perfluorinated Compounds by LC/MS/MS

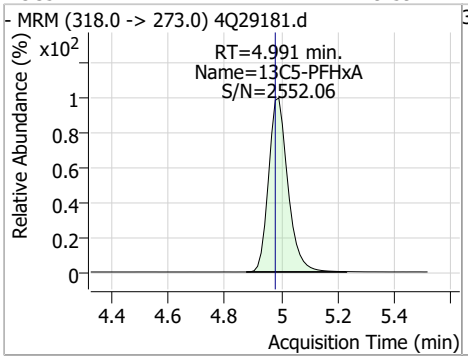
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.46	4.88	0.00	74263	327.0 -> 81.0	40.6	10.3	70.3

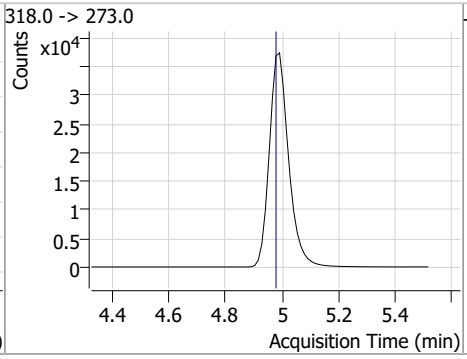


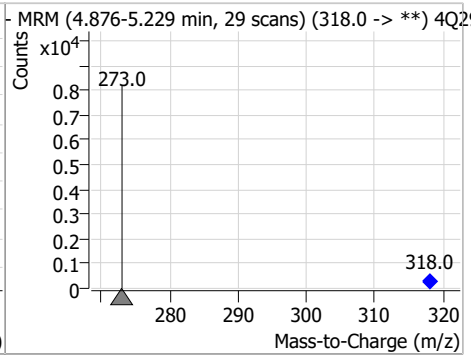




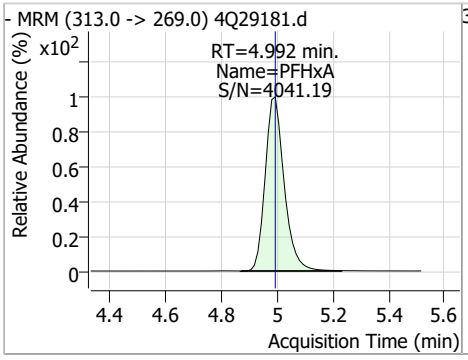
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.59	4.99	0.01	176393				

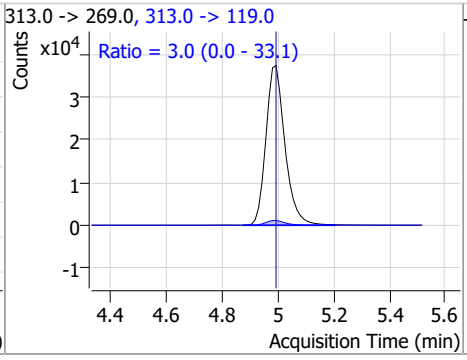


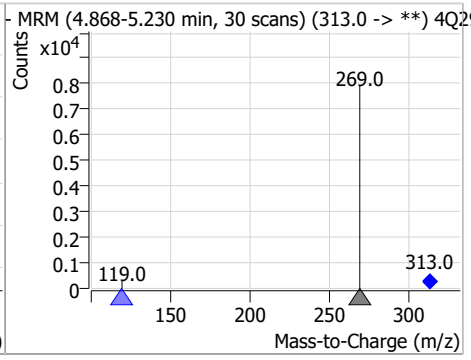




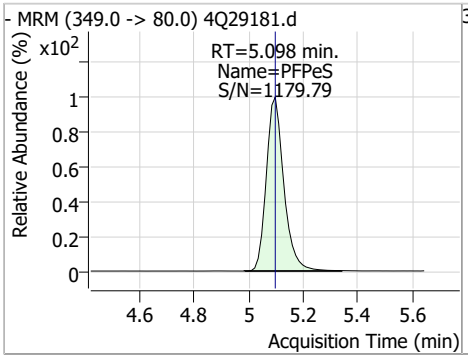
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.63	4.99	0.01	176561	313.0 -> 119.0	3.0	0.0	33.1

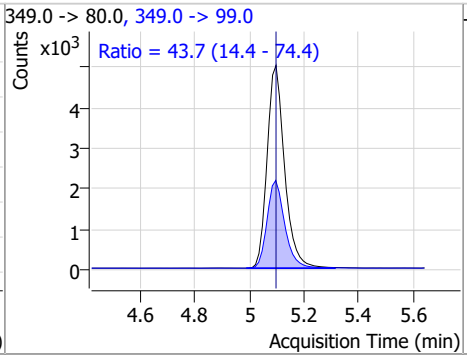


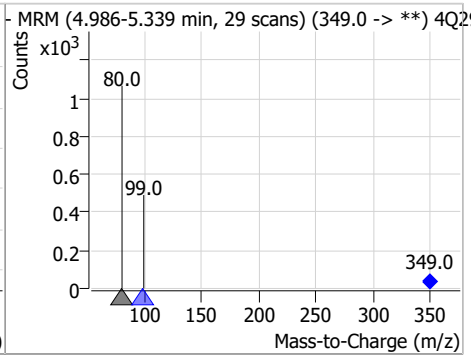




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.45	5.10	0.00	22086	349.0 -> 99.0	43.7	14.4	74.4

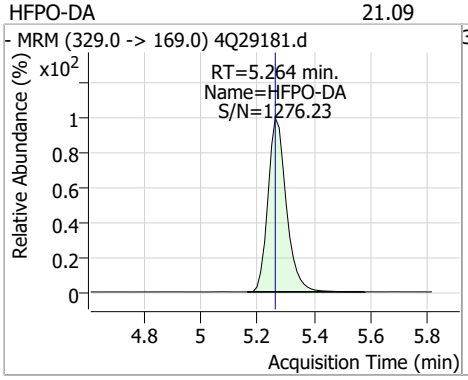


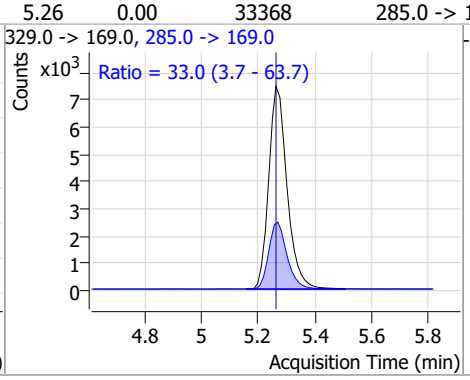


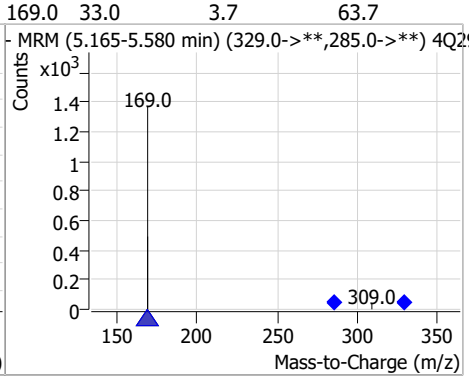


Perfluorinated Compounds by LC/MS/MS

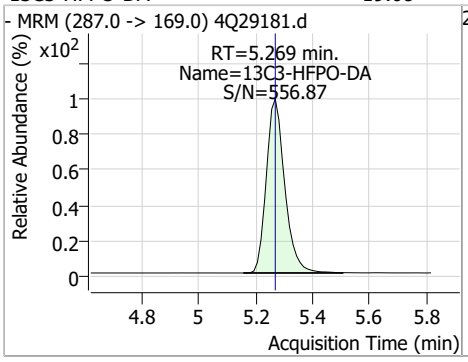
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.09	5.26	0.00	33368	285.0 -> 169.0	33.0	3.7	63.7

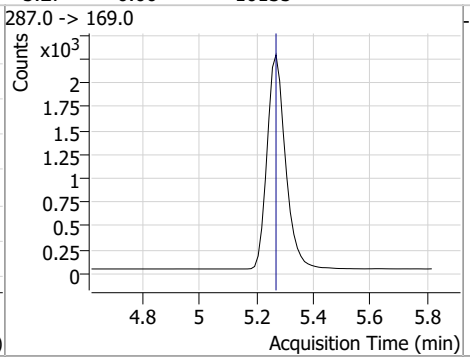


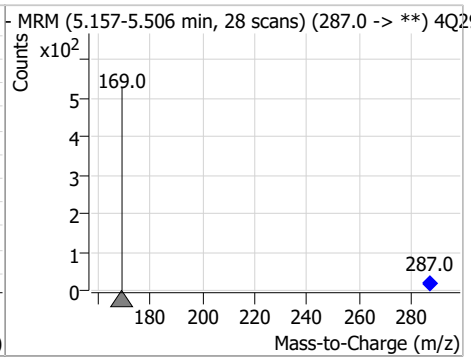




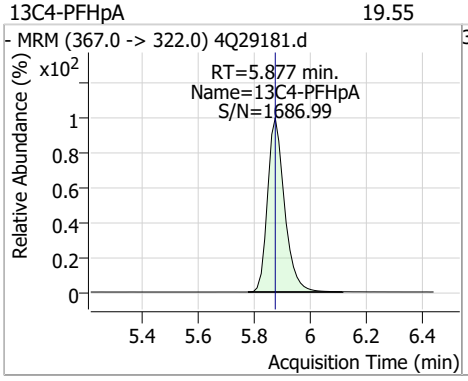
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.08	5.27	0.00	10135				

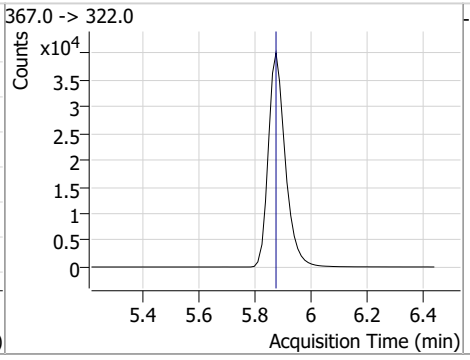


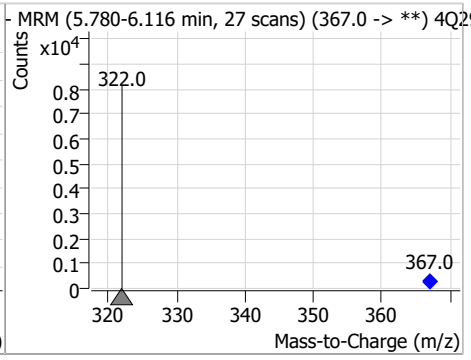




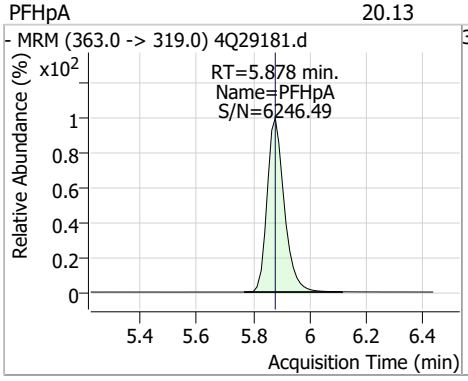
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.55	5.88	0.00	166884				

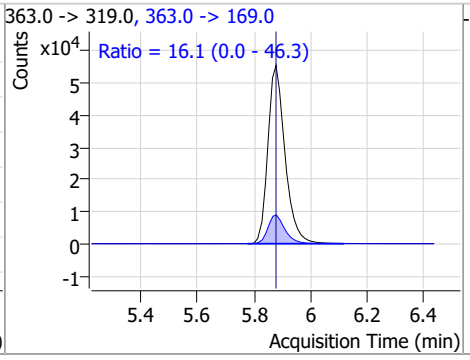


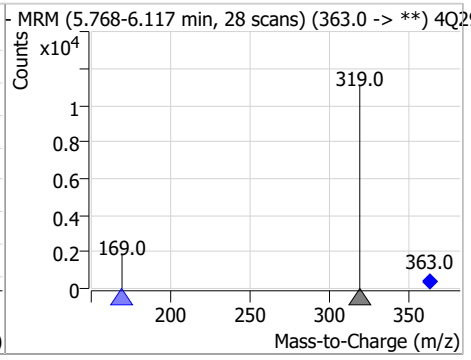




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.13	5.88	0.00	234192	363.0 -> 169.0	16.1	0.0	46.3

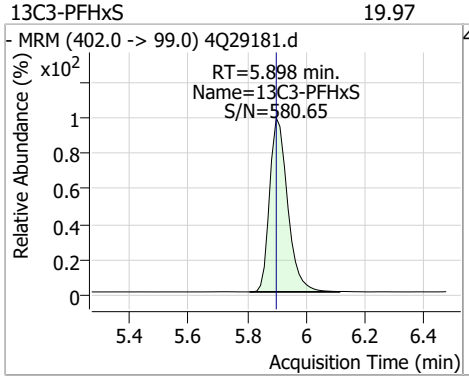


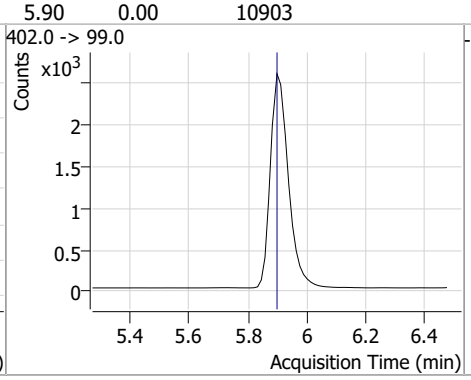


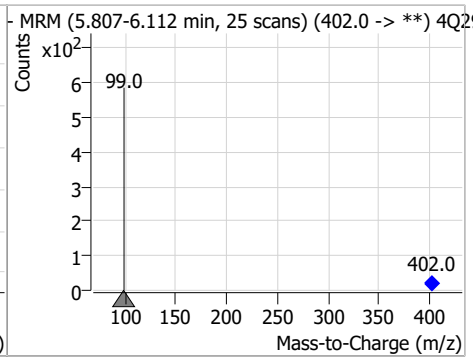


Perfluorinated Compounds by LC/MS/MS

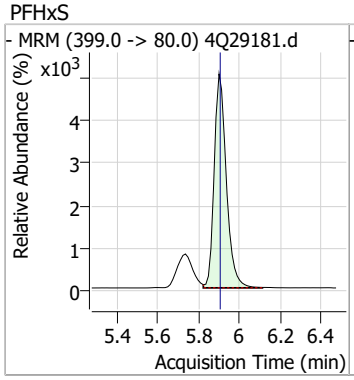
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.97	5.90	0.00	10903				

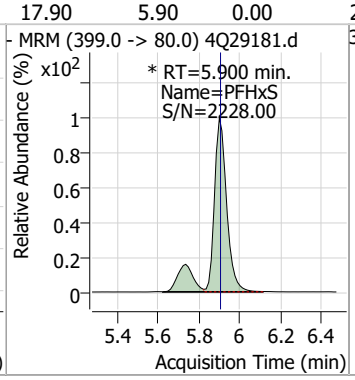


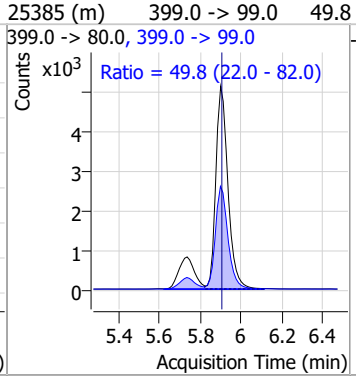


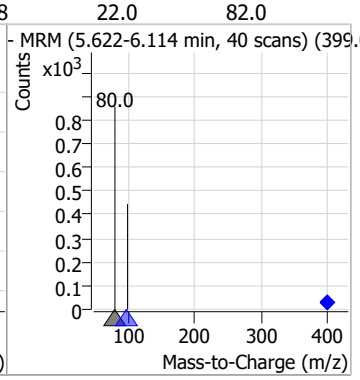


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.90	5.90	0.00	25385 (m)	399.0 -> 99.0	49.8	22.0	82.0

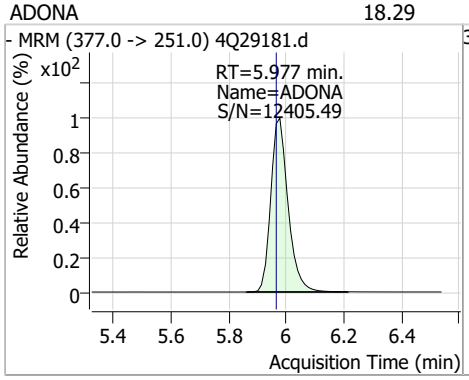


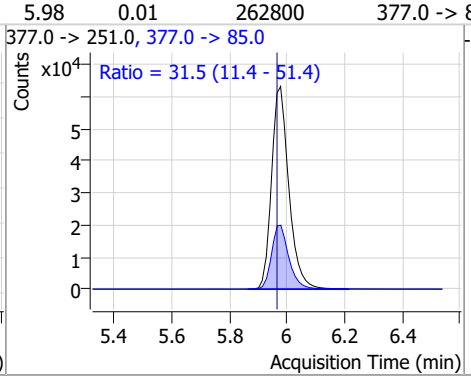


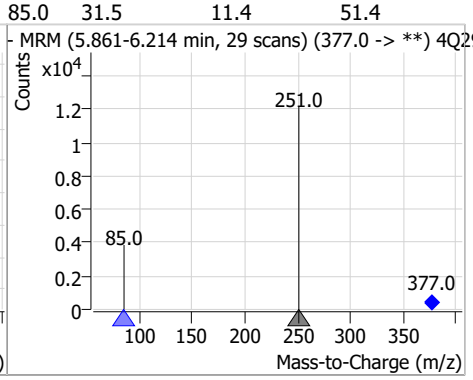




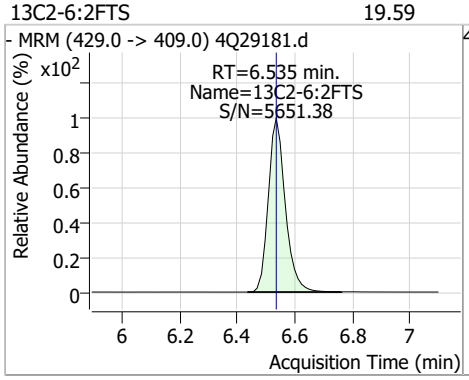
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.29	5.98	0.01	262800	377.0 -> 85.0	31.5	11.4	51.4

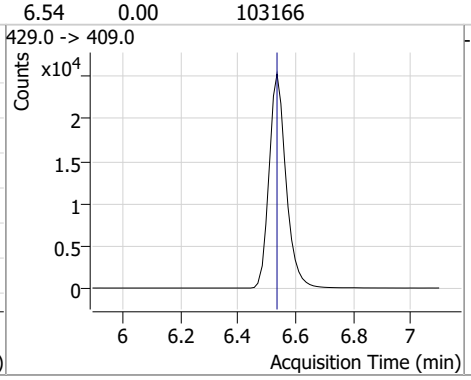


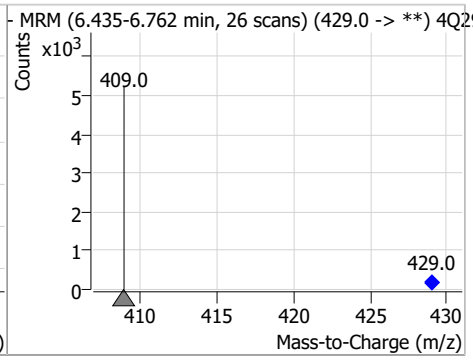




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.59	6.54	0.00	103166				

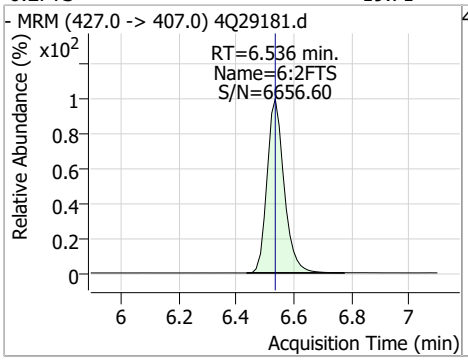


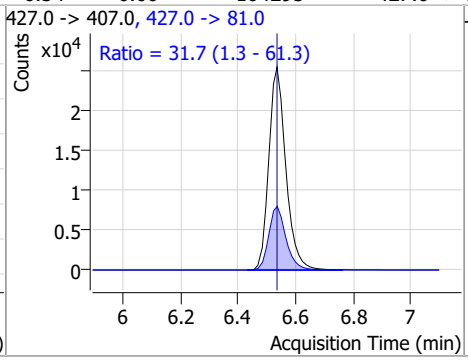


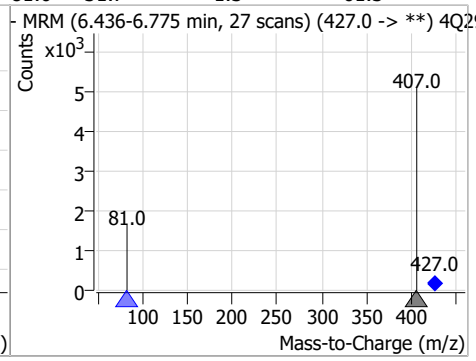


Perfluorinated Compounds by LC/MS/MS

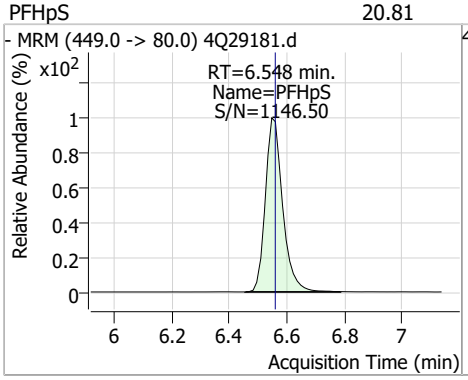
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.71	6.54	0.00	104295	427.0 -> 81.0	31.7	1.3	61.3

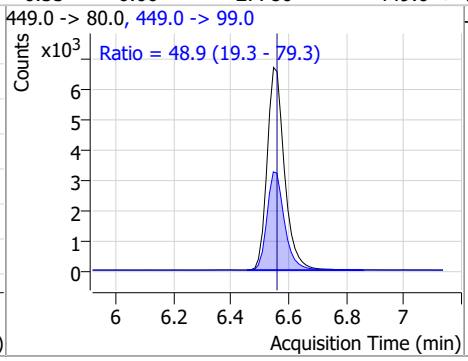


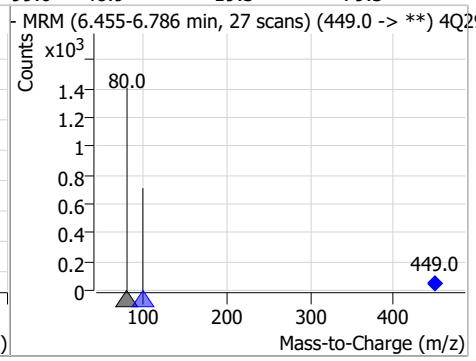




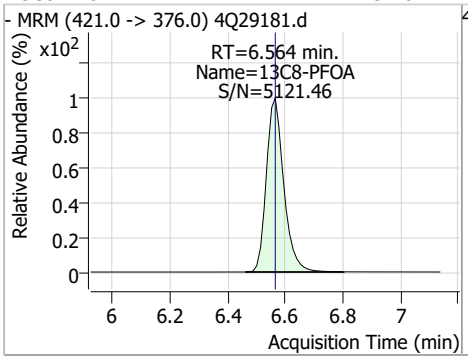
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.81	6.55	0.00	27786	449.0 -> 99.0	48.9	19.3	79.3

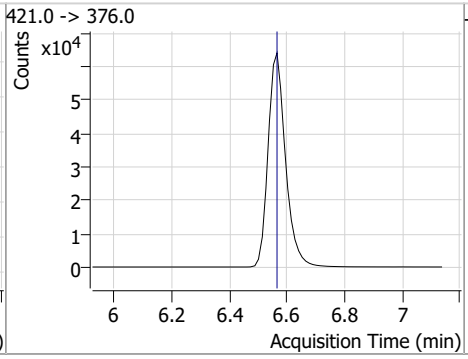


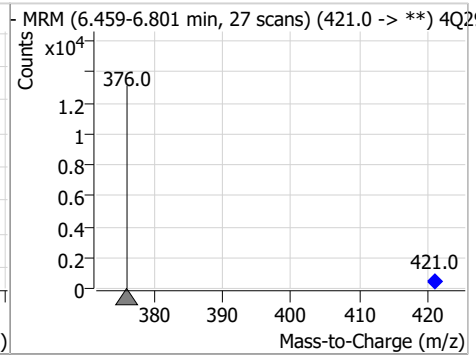




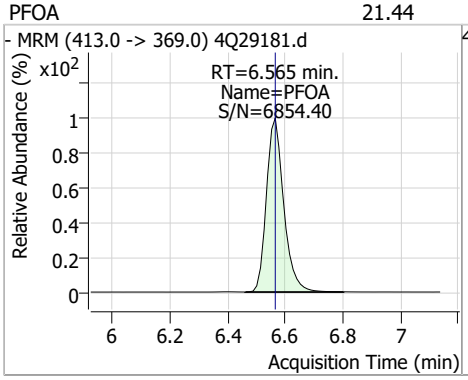
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.76	6.56	0.00	268173				

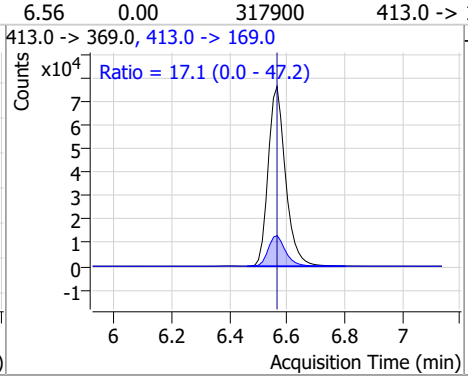


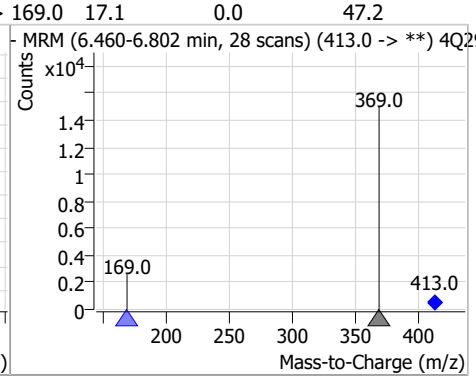




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	21.44	6.56	0.00	317900	413.0 -> 169.0	17.1	0.0	47.2

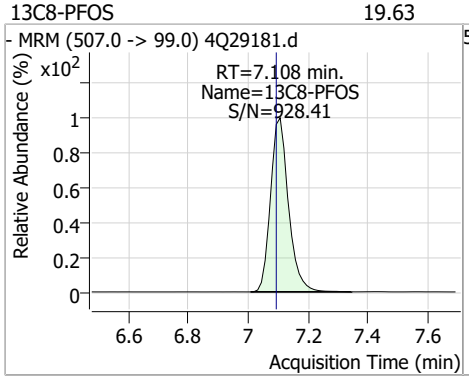


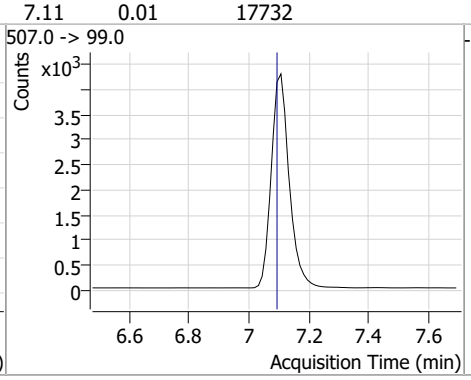


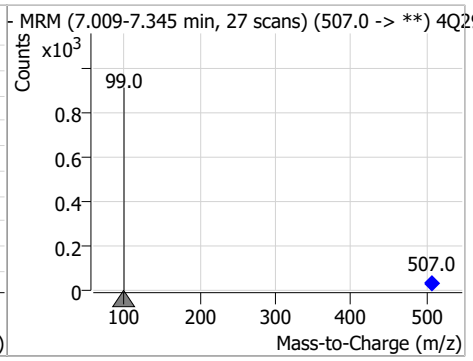


Perfluorinated Compounds by LC/MS/MS

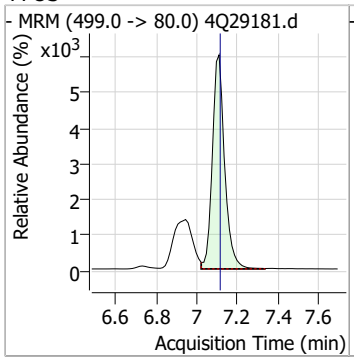
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.63	7.11	0.01	17732				

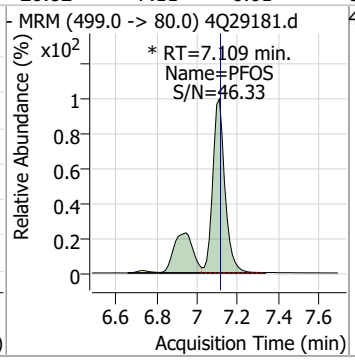


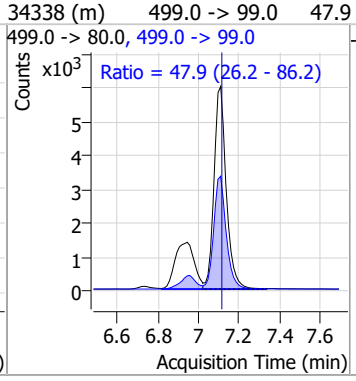


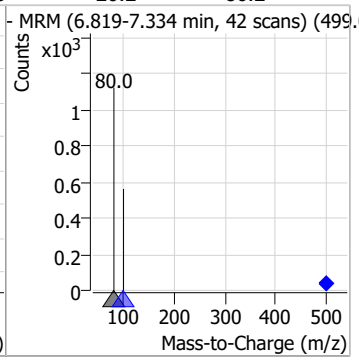


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.82	7.11	0.01	34338 (m)	499.0 -> 99.0	47.9	26.2	86.2

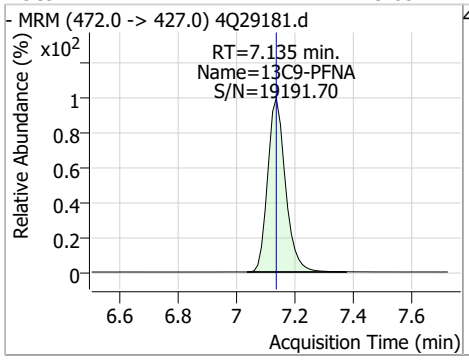


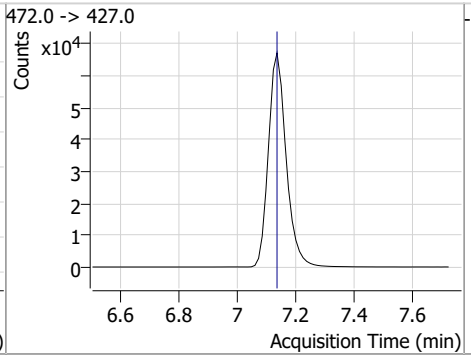


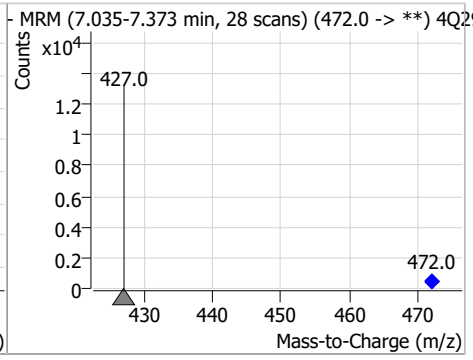




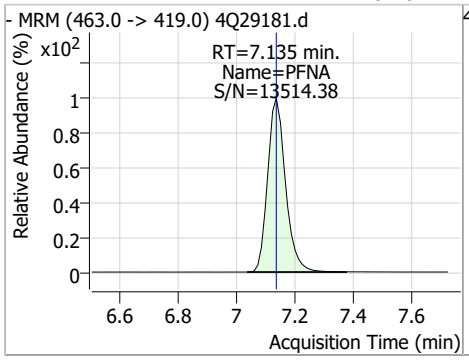
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.85	7.13	0.00	282594				

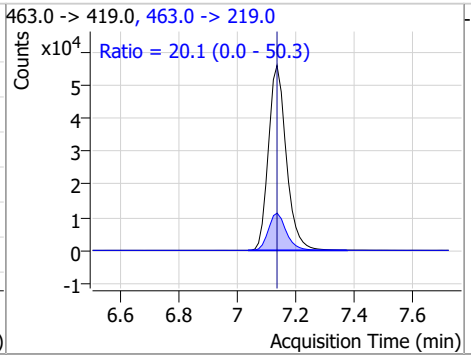


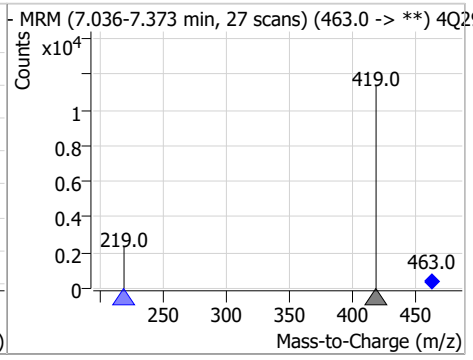




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.28	7.14	0.00	235031	463.0 -> 219.0	20.1	0.0	50.3

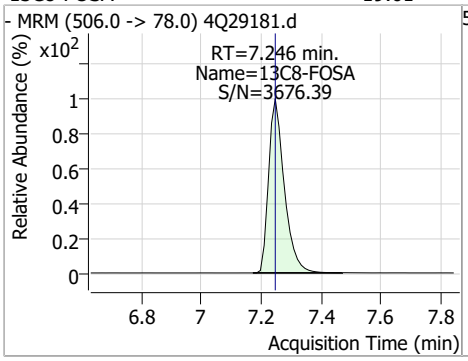


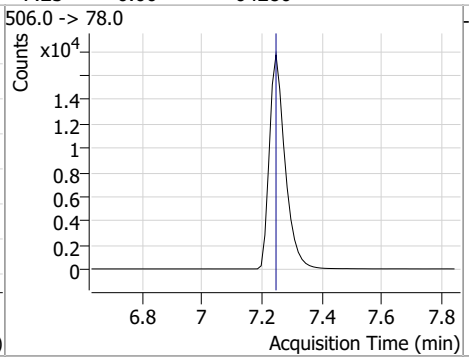


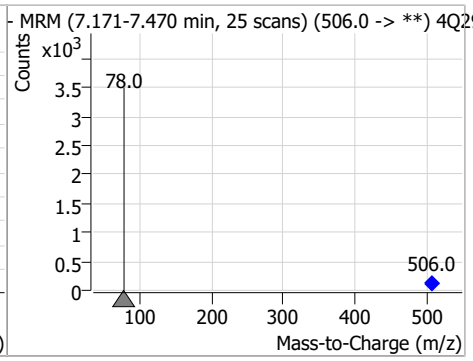


Perfluorinated Compounds by LC/MS/MS

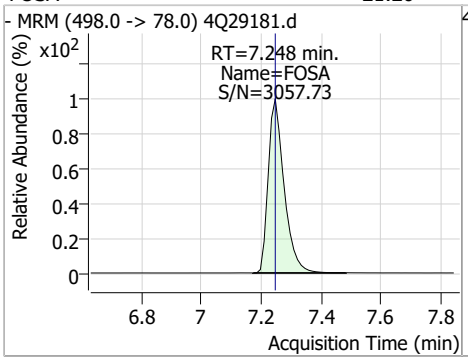
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.61	7.25	0.00	64280				

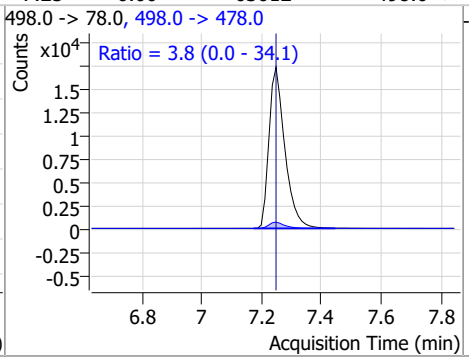


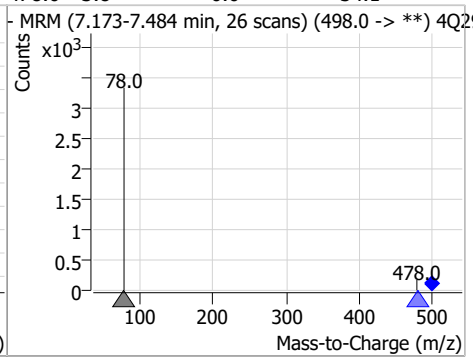




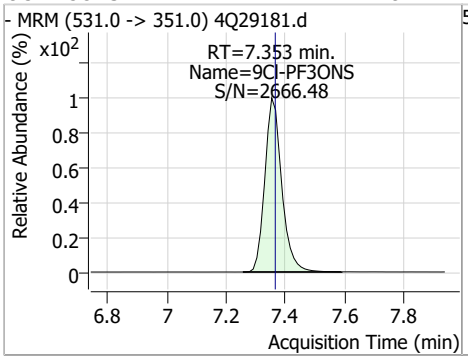
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.26	7.25	0.00	63612	498.0 -> 478.0	3.8	0.0	34.1

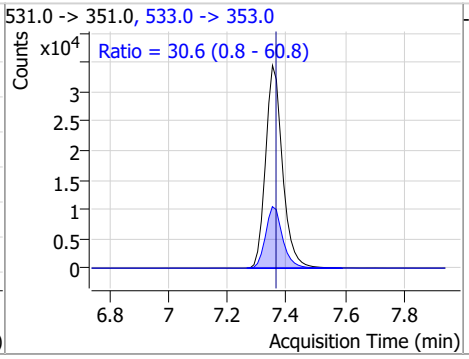


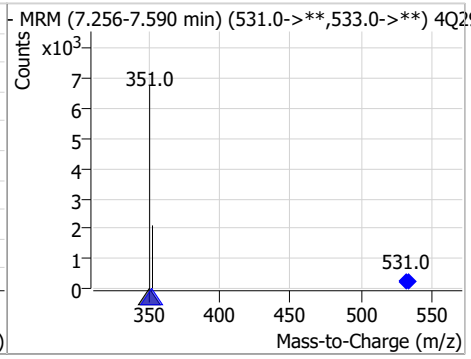




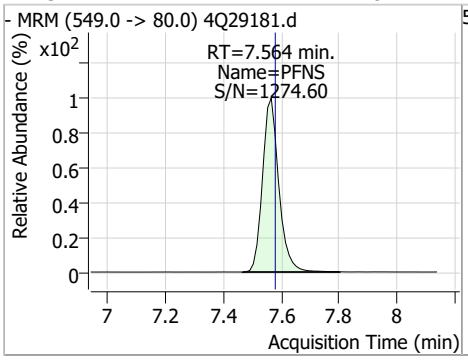
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.97	7.35	0.00	136656	533.0 -> 353.0	30.6	0.8	60.8

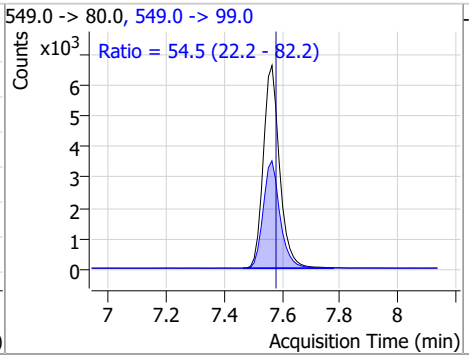


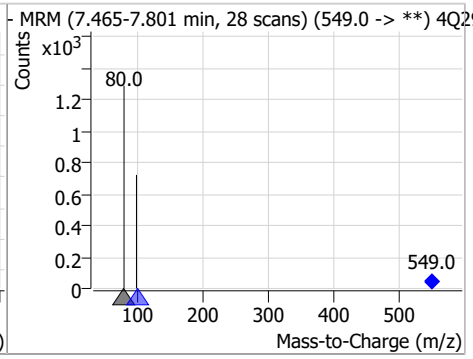




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.12	7.56	0.00	25788	549.0 -> 99.0	54.5	22.2	82.2

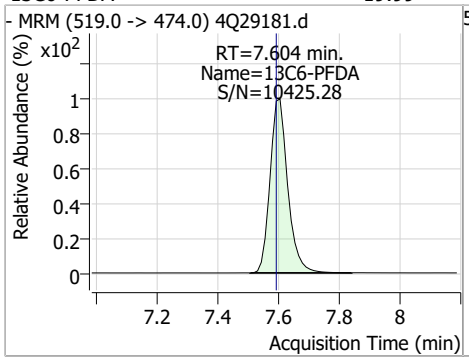


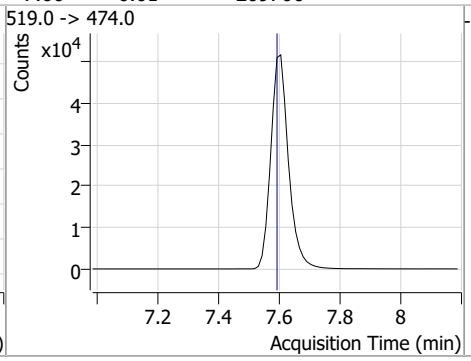


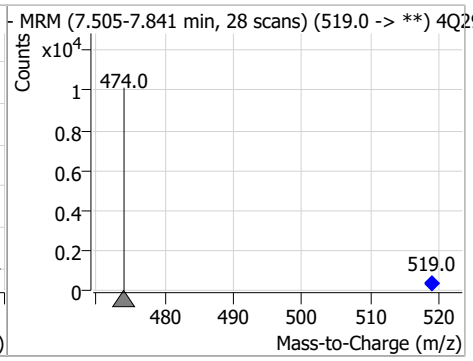


Perfluorinated Compounds by LC/MS/MS

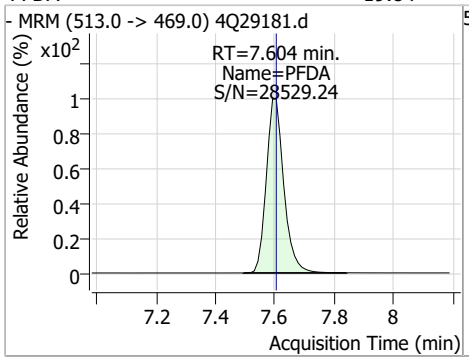
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.99	7.60	0.01	209706				

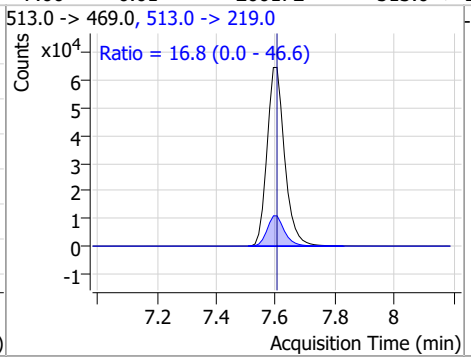


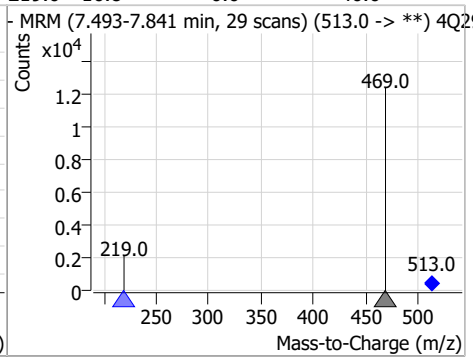




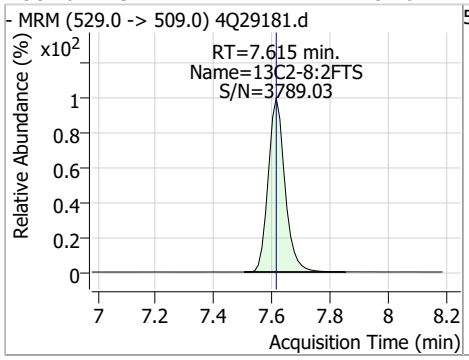
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.84	7.60	0.01	266172	513.0 -> 219.0	16.8	0.0	46.6

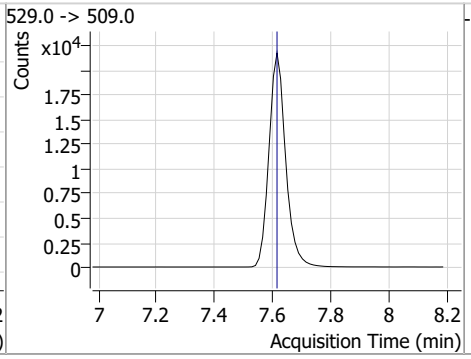


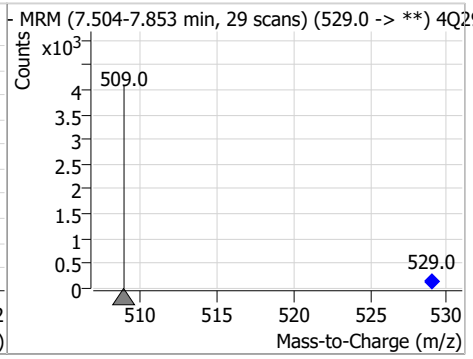




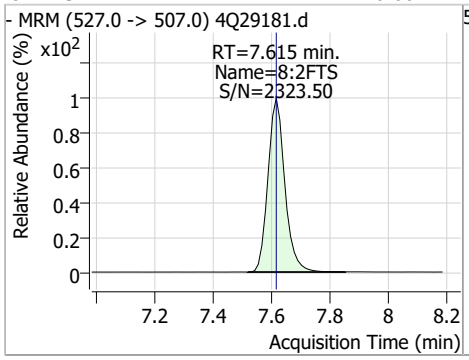
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.46	7.61	0.00	86798				

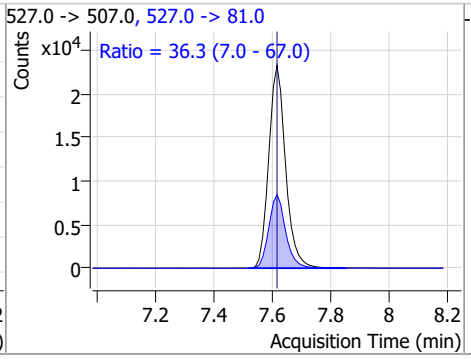


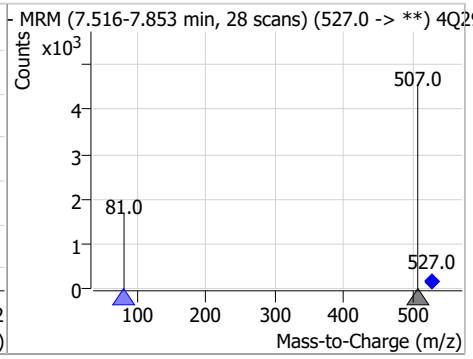




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.60	7.62	0.00	93146	527.0 -> 81.0	36.3	7.0	67.0

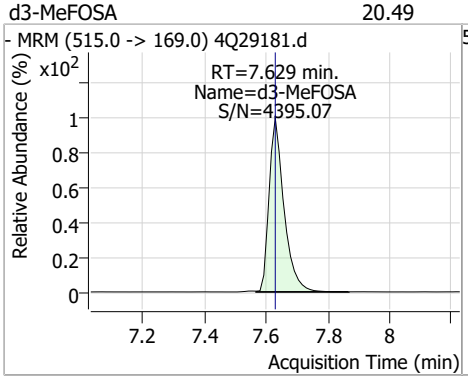


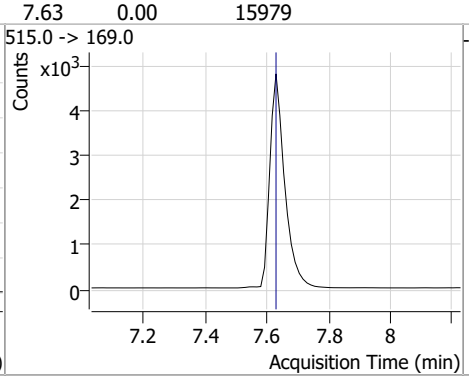


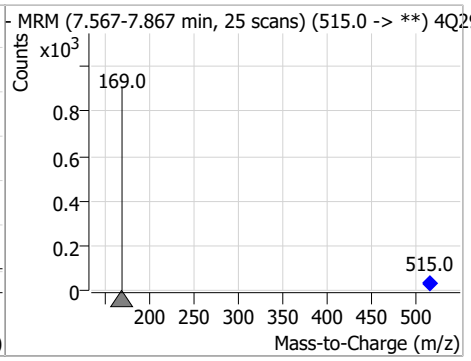


Perfluorinated Compounds by LC/MS/MS

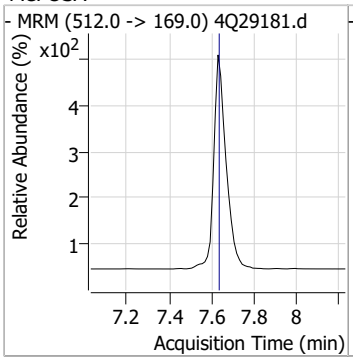
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.49	7.63	0.00	15979				

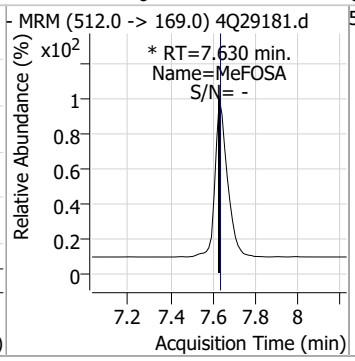


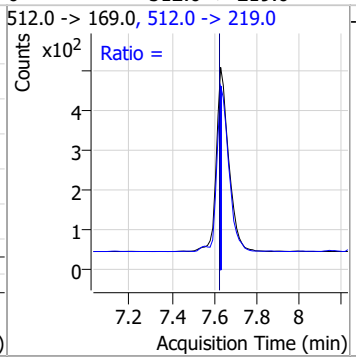


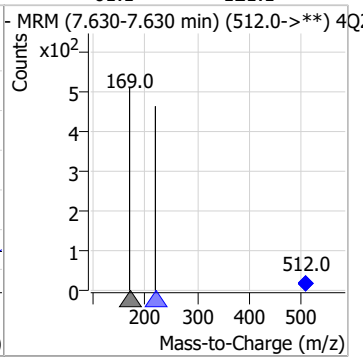


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	512.0 -> 219.0		61.1	121.1

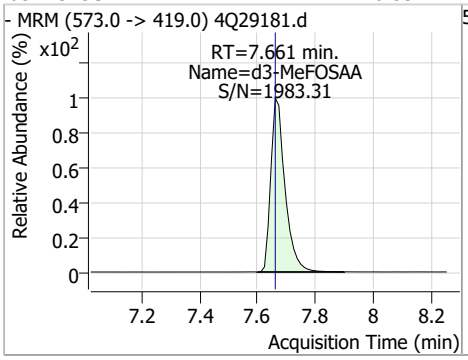


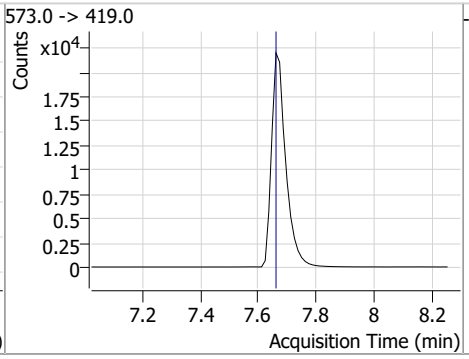


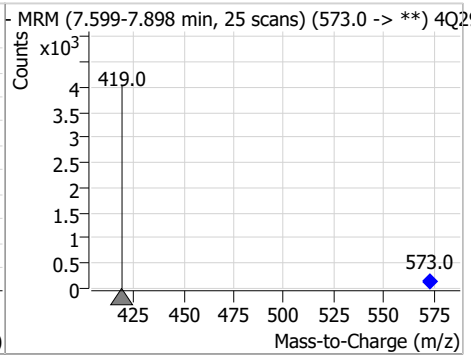




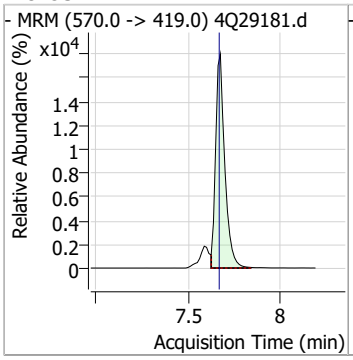
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.53	7.66	0.00	74546				

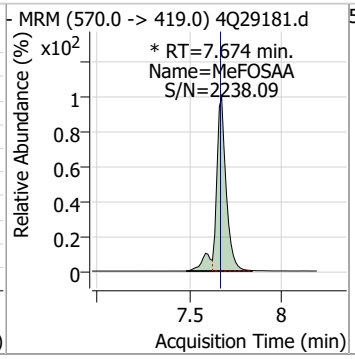


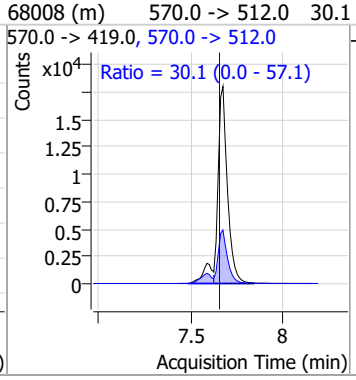


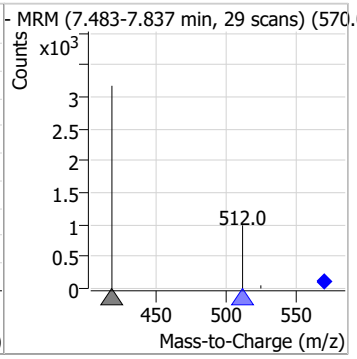


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.87	7.67	0.01	68008 (m)	570.0 -> 512.0	30.1	0.0	57.1



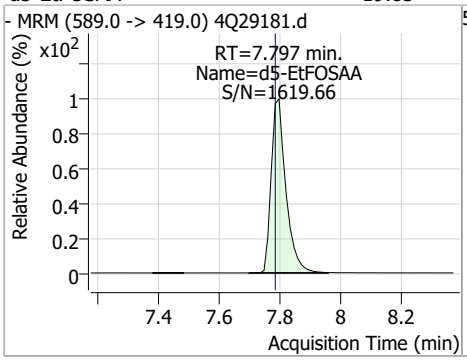


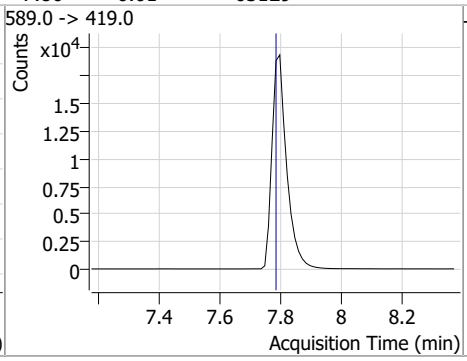


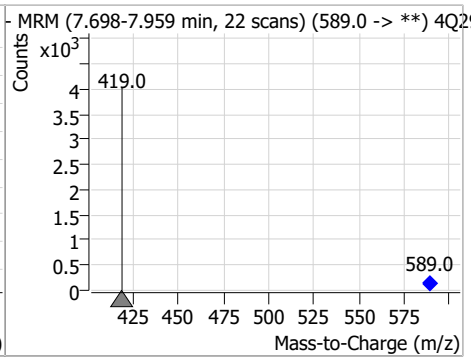


Perfluorinated Compounds by LC/MS/MS

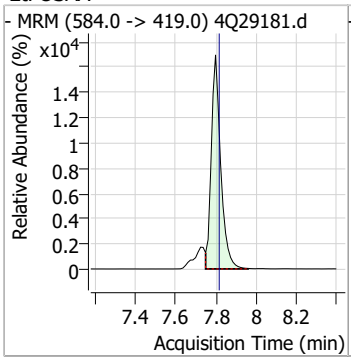
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.83	7.80	0.01	65129				

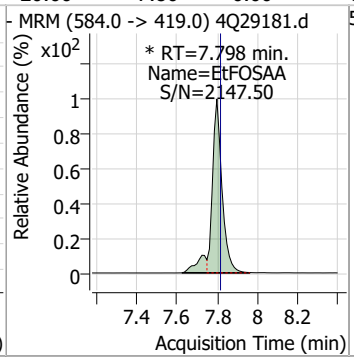


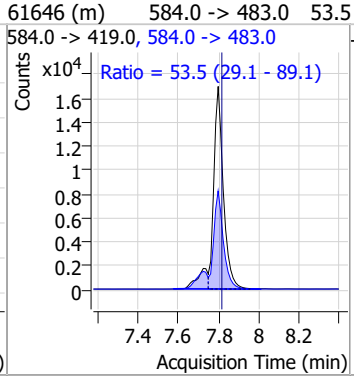


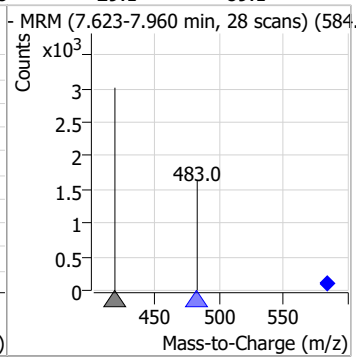


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.66	7.80	0.00	61646 (m)	584.0 -> 483.0	53.5	29.1	89.1

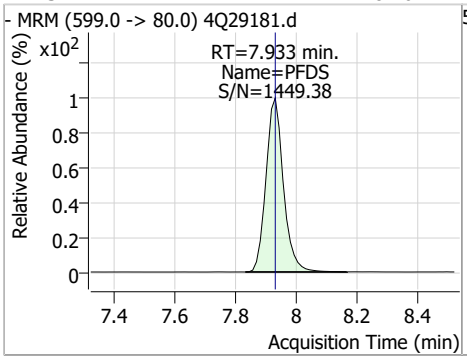


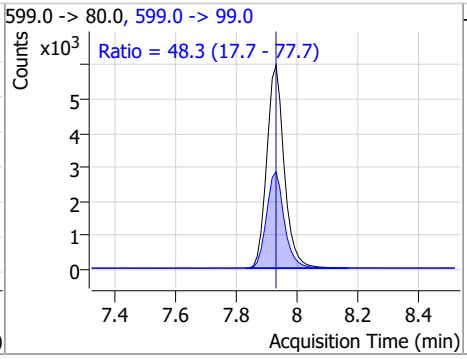


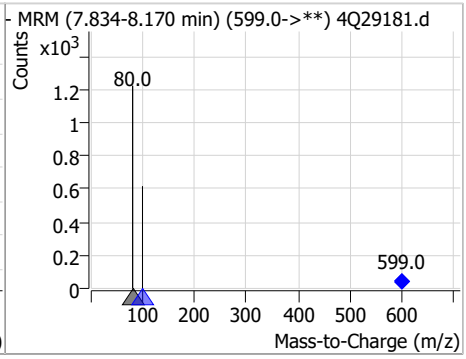




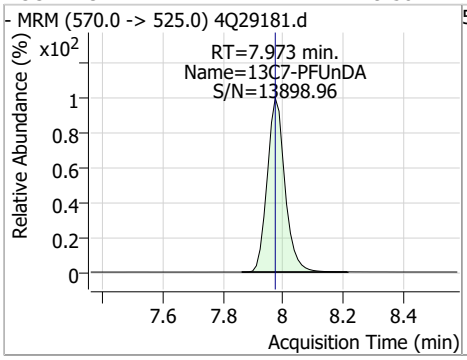
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.70	7.93	0.00	23670	599.0 -> 99.0	48.3	17.7	77.7

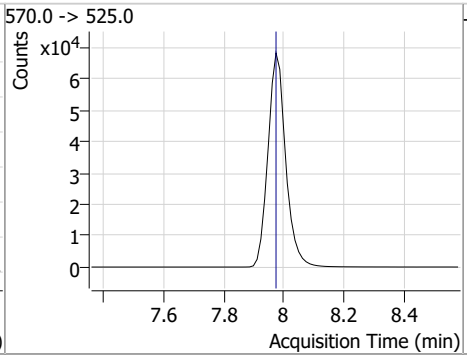


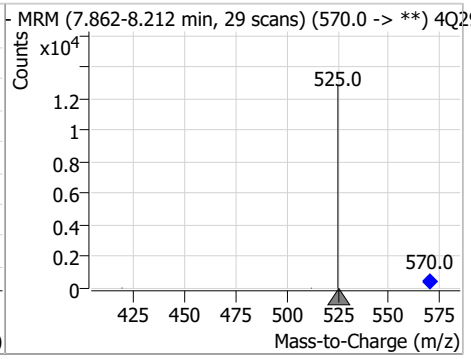




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.58	7.97	0.00	276489				

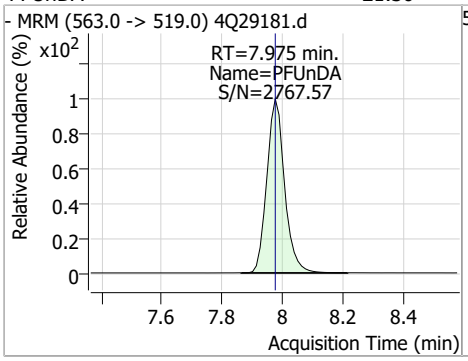


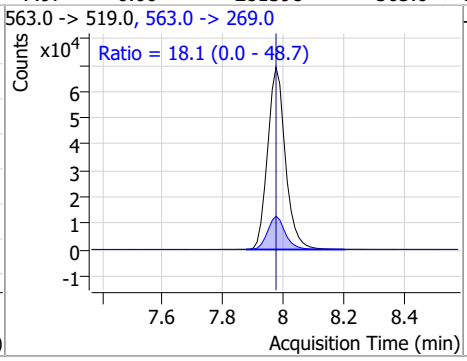


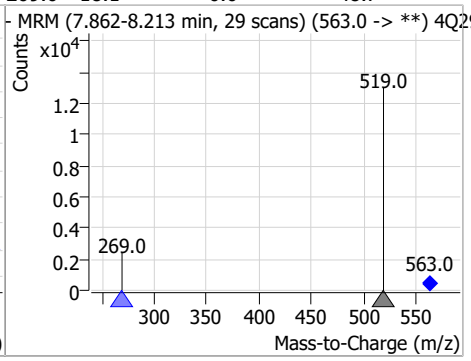


Perfluorinated Compounds by LC/MS/MS

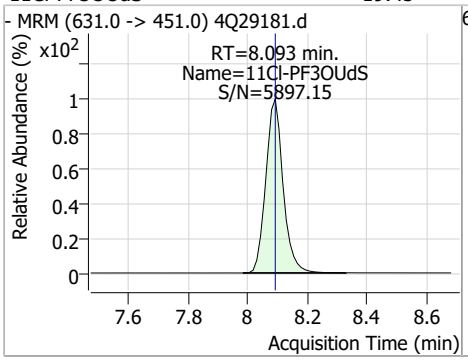
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.30	7.97	0.00	281398	563.0 -> 269.0	18.1	0.0	48.7

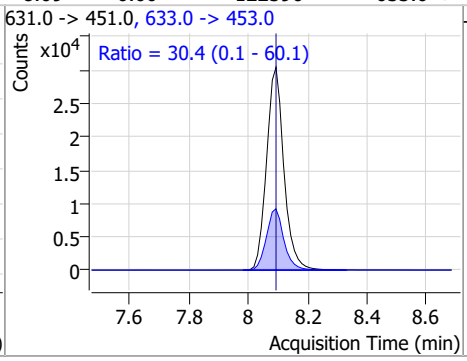


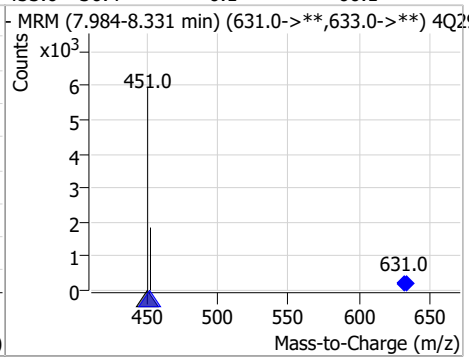




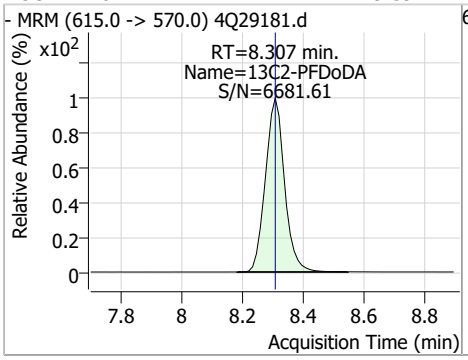
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.45	8.09	0.00	122596	633.0 -> 453.0	30.4	0.1	60.1

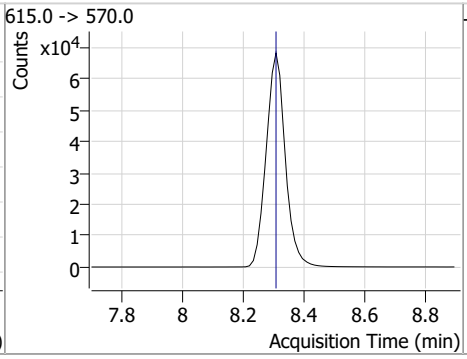


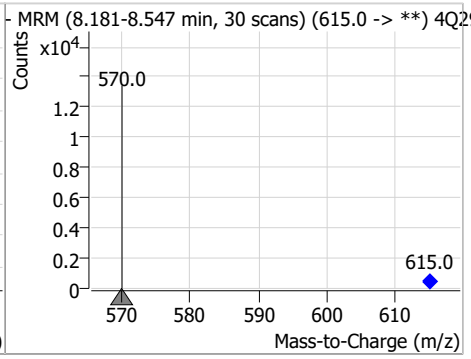




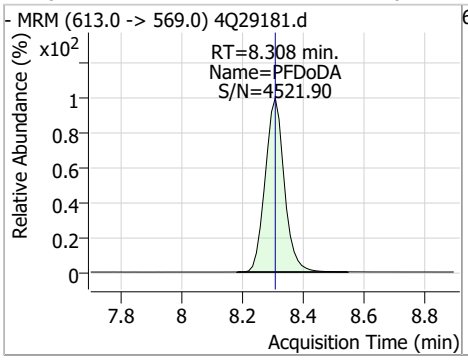
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.59	8.31	0.00	299920				

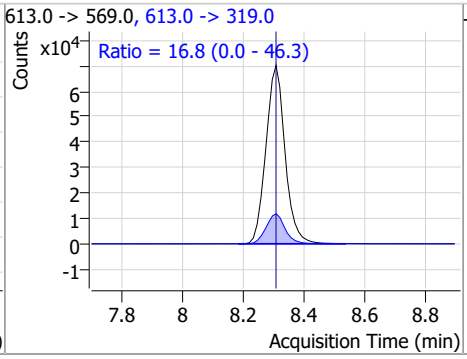


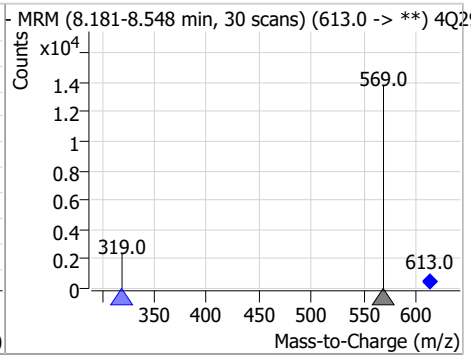




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.01	8.31	0.00	307328	613.0 -> 319.0	16.8	0.0	46.3

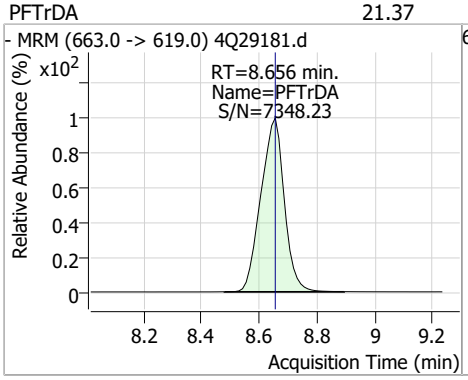


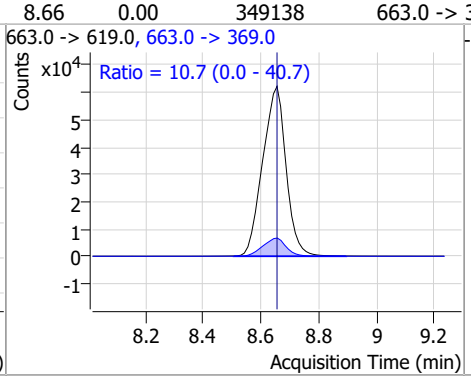


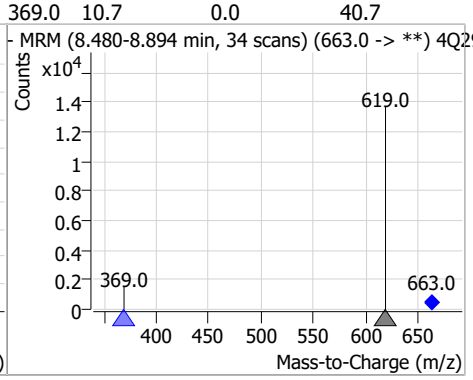


Perfluorinated Compounds by LC/MS/MS

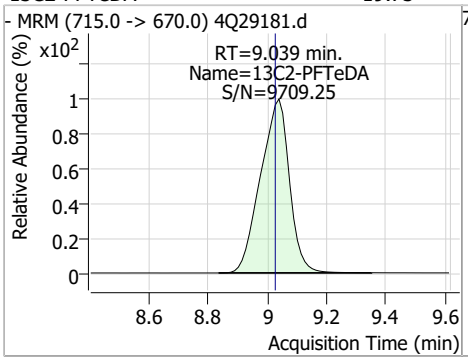
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.37	8.66	0.00	349138	663.0 -> 369.0	10.7	0.0	40.7

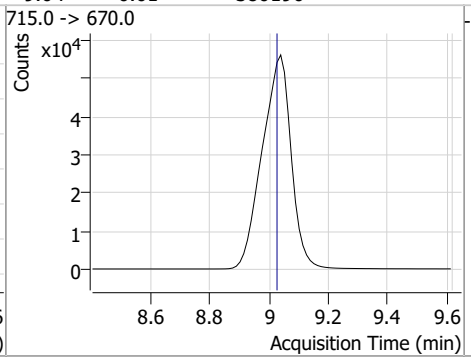


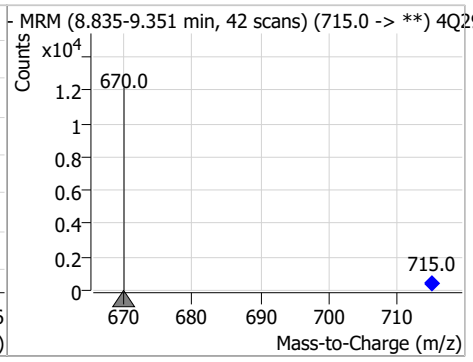




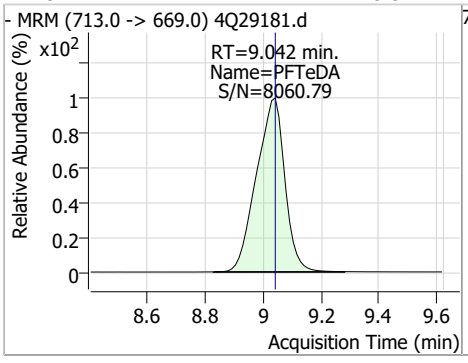
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.73	9.04	0.01	380190				

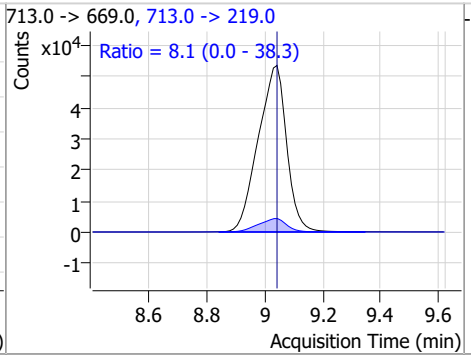


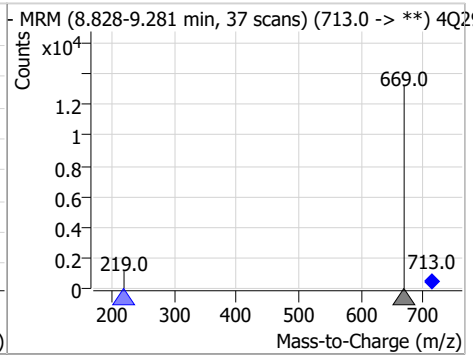




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.97	9.04	0.01	364674	713.0 -> 219.0	8.1	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q419-ICV419
Lab FileID: 4Q29181.D
Injection Time: 05/27/22 14:11
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/28/22 09:23 Martha Valls
Supervisor approved: 05/29/22 21:21 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.67	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/31/22 22:37

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29381.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 11:45:10 AM
Sample Name : cc419-1.0LL
Vial : P1-A3
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91245,S4Q422,250,,,1.0,1,water

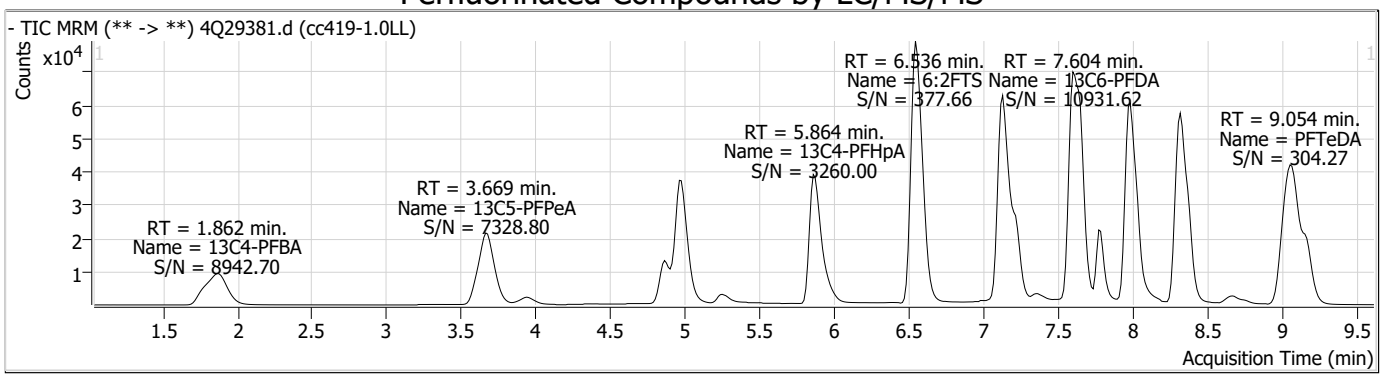
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	98961	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	157518	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	192510	20.00	µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	182741	20.00	µg/L	-0.012
M8-PFOA	6.551	421.0 -> 376.0	301210	20.00	µg/L	-0.012
M9-PFNA	7.135	472.0 -> 427.0	307098	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	230346	20.00	µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	307372	20.00	µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	325480	20.00	µg/L	0.012
M2-PFTeDA	9.052	715.0 -> 670.0	382873	20.00	µg/L	0.025
M8-FOSA	7.221	506.0 -> 78.0	64858	20.00	µg/L	-0.025
M3-PFBS	3.936	302.0 -> 99.0	11737	20.00	µg/L	-0.013
M3-PFHxS	5.898	402.0 -> 99.0	11792	20.00	µg/L	0.000
M8-PFOS	7.094	507.0 -> 99.0	18824	20.00	µg/L	0.000
M2-4:2FTS	4.862	329.0 -> 309.0	65423	20.00	µg/L	-0.012
M2-6:2FTS	6.535	429.0 -> 409.0	104777	20.00	µg/L	0.000
M2-8:2FTS	7.615	529.0 -> 509.0	89069	20.00	µg/L	0.000
M3-MeFOSAA	7.648	573.0 -> 419.0	76782	20.00	µg/L	-0.012
M3-HFPO-DA	5.257	287.0 -> 169.0	11672	20.00	µg/L	-0.012
M3-MeFOSA	7.604	515.0 -> 169.0	14368	20.00	µg/L	-0.025
M5-EtFOSAA	7.772	589.0 -> 419.0	70075	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	65423	19.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-6:2FTS	6.535	429.0 -> 409.0	104777	19.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-8:2FTS	7.615	529.0 -> 509.0	89069	19.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	8.319	615.0 -> 570.0	325480	21.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C2-PFTeDA	9.052	715.0 -> 670.0	382873	19.87	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFBS	3.936	302.0 -> 99.0	11737	21.32	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C3-PFHxS	5.898	402.0 -> 99.0	11792	21.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C4-PFBA	1.862	217.0 -> 172.0	98961	21.05	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C4-PFHpA	5.864	367.0 -> 322.0	182741	21.41	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C5-PFHxA	4.979	318.0 -> 273.0	192510	21.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C5-PFPeA	3.669	268.0 -> 223.0	157518	21.48	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C6-PFDA	7.604	519.0 -> 474.0	230346	21.96	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

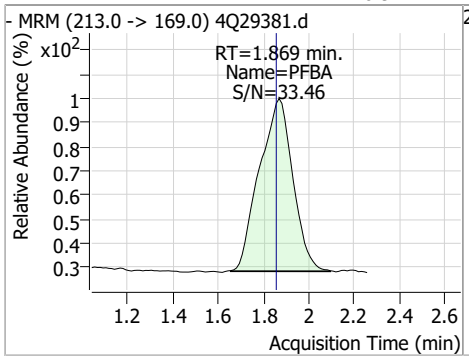
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C7-PFUnDA	7.986	570.0 -> 525.0	307372	21.77 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-FOSA	7.221	506.0 -> 78.0	64858	19.78 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C8-PFOA	6.551	421.0 -> 376.0	301210	22.19 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C8-PFOS	7.094	507.0 -> 99.0	18824	20.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C9-PFNA	7.135	472.0 -> 427.0	307098	21.58 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
d3-MeFOSAA	7.648	573.0 -> 419.0	76782	21.15 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	11657	21.95 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
d3-MeFOSA	7.604	515.0 -> 169.0	14368	18.43 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
d5-EtFOSAA	7.772	589.0 -> 419.0	70099	21.35 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	3965	1.05 µg/L		94
6:2FTS	6.536	427.0 -> 407.0	5506	1.02 µg/L		99
8:2FTS	7.615	527.0 -> 507.0	4892	1.05 µg/L		97
EtFOSAA	7.786	584.0 -> 419.0	3273	1.02 µg/L	m	91
FOSA	7.223	498.0 -> 78.0	3046	1.01 µg/L		98
MeFOSAA	7.649	570.0 -> 419.0	3587	1.02 µg/L	m	87
PFBA	1.869	213.0 -> 169.0	1467	0.94 µg/L		100
PFBS	3.941	299.0 -> 80.0	1849	0.99 µg/L		99
PFDA	7.604	513.0 -> 469.0	13909	0.94 µg/L		98
PFDoDA	8.320	613.0 -> 569.0	14679	0.97 µg/L		97
PFDS	7.933	599.0 -> 80.0	1195	0.85 µg/L		98
PFHpA	5.866	363.0 -> 319.0	12125	0.95 µg/L		100
PFHpS	6.548	449.0 -> 80.0	1454	1.03 µg/L		92
PFHxA	4.980	313.0 -> 269.0	9361	0.95 µg/L		99
PFHxS	5.885	399.0 -> 80.0	1530	1.00 µg/L	m	94
PFNA	7.135	463.0 -> 419.0	12701	0.96 µg/L		98
PFNS	7.564	549.0 -> 80.0	1466	1.02 µg/L		96
PFOA	6.552	413.0 -> 369.0	15822	0.95 µg/L		100
PFOS	7.096	499.0 -> 80.0	1826	1.04 µg/L	m	81
PFPeA	3.672	263.0 -> 219.0	6966	1.00 µg/L		100
PFPeS	5.085	349.0 -> 80.0	1139	0.93 µg/L		98
PFTeDA	9.054	713.0 -> 669.0	18286	0.99 µg/L		99
PFTrDA	8.668	663.0 -> 619.0	16320	0.92 µg/L		99
PFUnDA	7.987	563.0 -> 519.0	13834	0.94 µg/L		97
11Cl-PF3OUdS	8.093	631.0 -> 451.0	6320	0.92 µg/L		95
9Cl-PF3ONS	7.353	531.0 -> 351.0	7023	0.84 µg/L		94
ADONA	5.965	377.0 -> 251.0	14284	0.92 µg/L		99
HFPO-DA	5.252	329.0 -> 169.0	1800	0.99 µg/L		100
MeFOSA	7.605	512.0 -> 169.0	802	1.01 µg/L		97

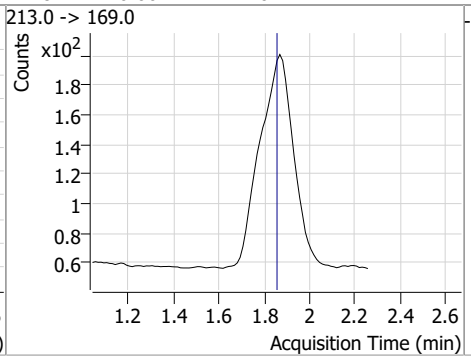
 # = Qualifier out of range, m = manually integrated, + = Area summed

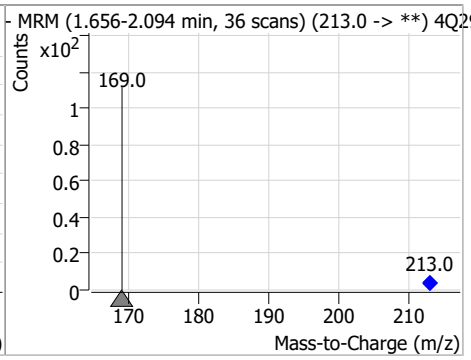
Perfluorinated Compounds by LC/MS/MS



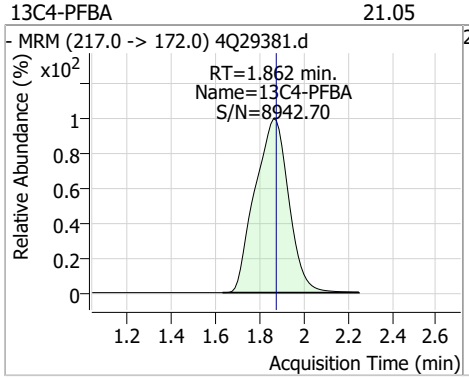
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.94	1.87	0.00	1467				

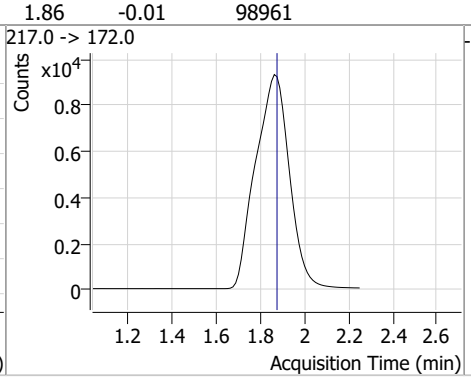


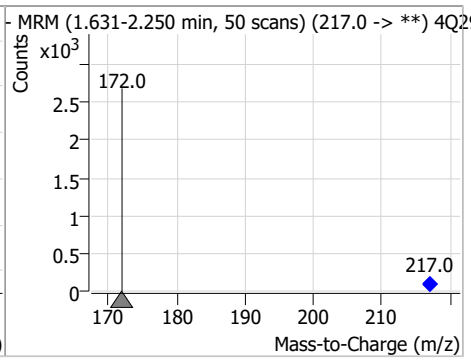




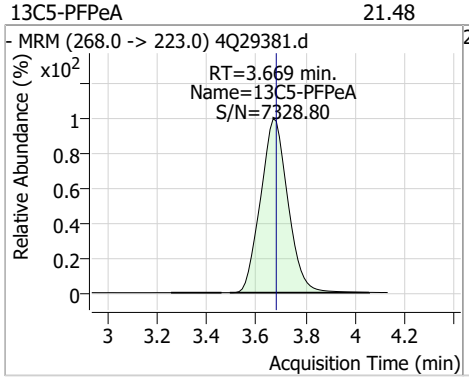
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.05	1.86	-0.01	98961				

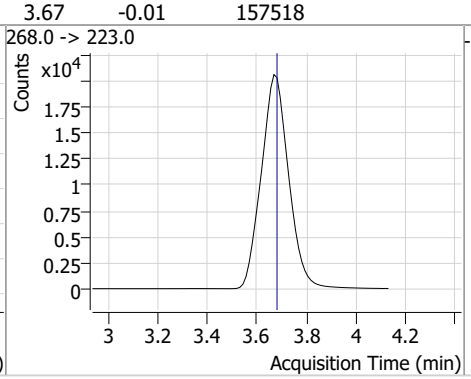


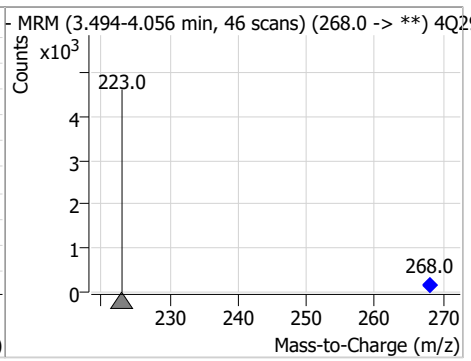




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.48	3.67	-0.01	157518				

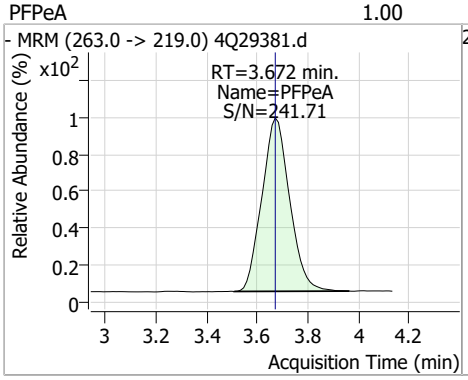


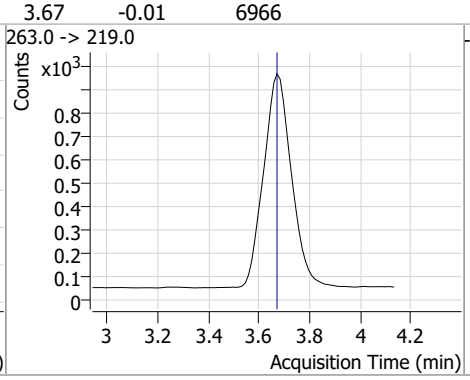


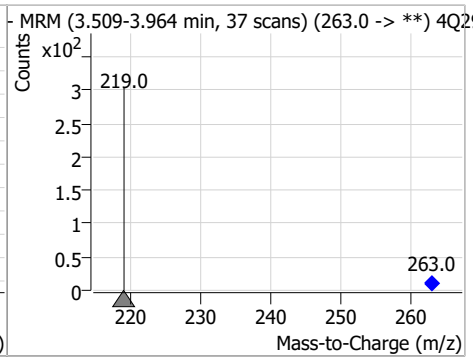


Perfluorinated Compounds by LC/MS/MS

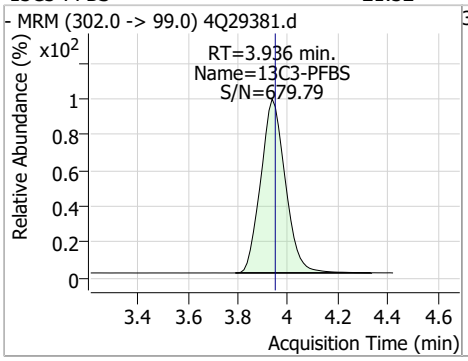
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.00	3.67	-0.01	6966				

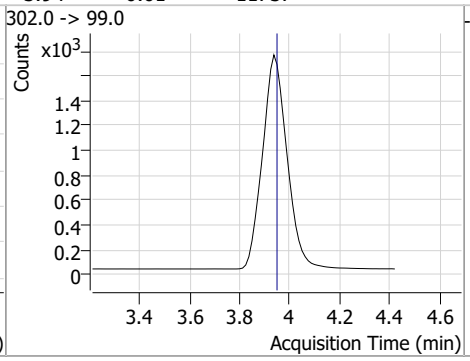


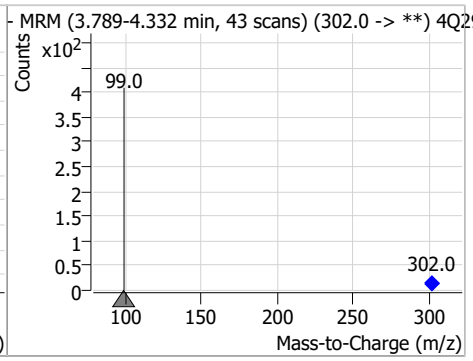




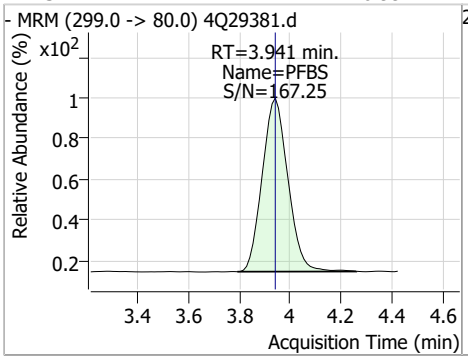
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.32	3.94	-0.01	11737				

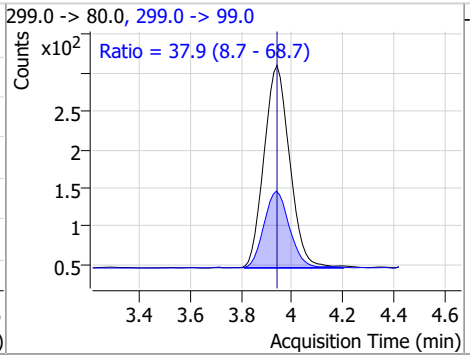


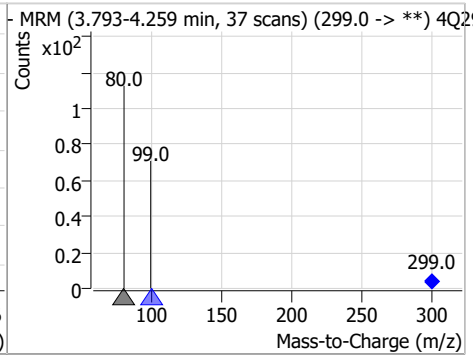




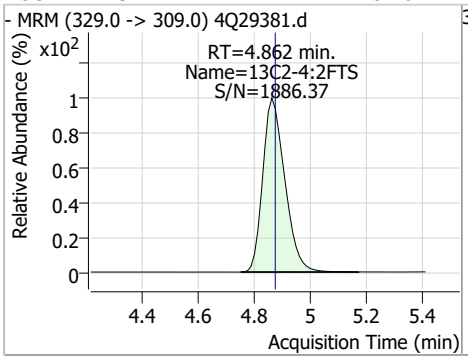
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.99	3.94	-0.01	1849	299.0 -> 99.0	37.9	8.7	68.7

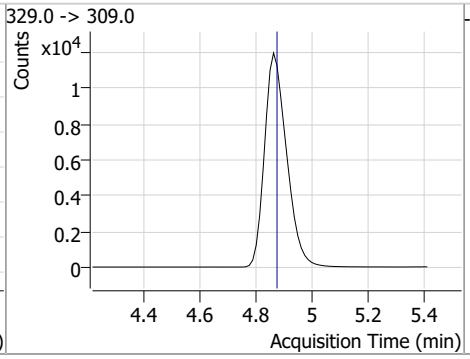


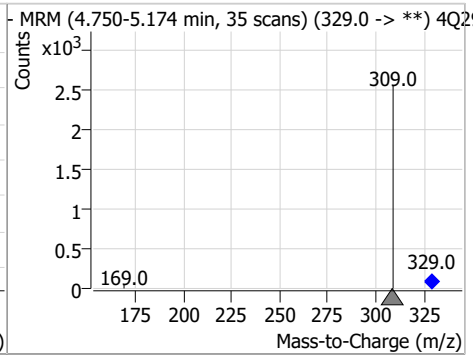




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.28	4.86	-0.01	65423				

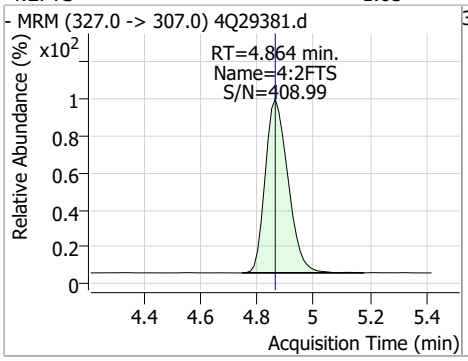


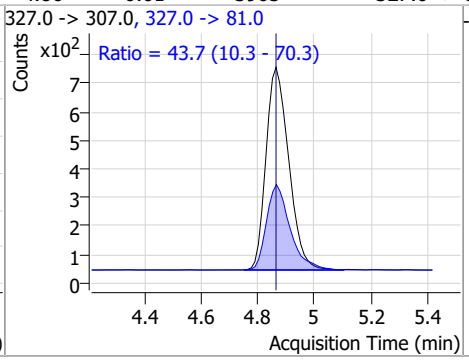


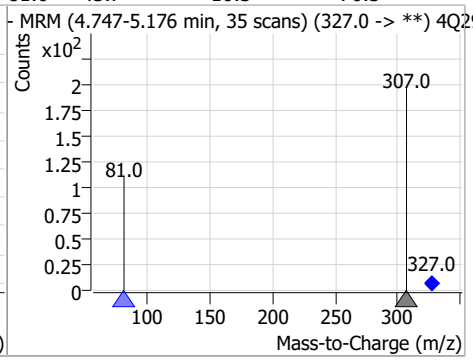


Perfluorinated Compounds by LC/MS/MS

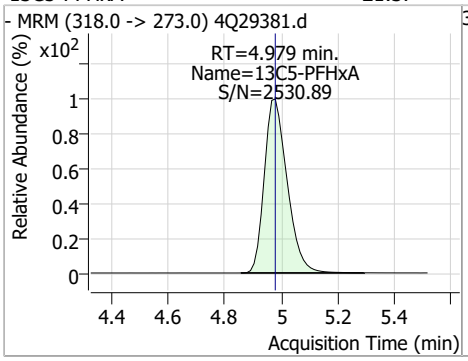
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	4.86	-0.01	3965	327.0 -> 81.0	43.7	10.3	70.3

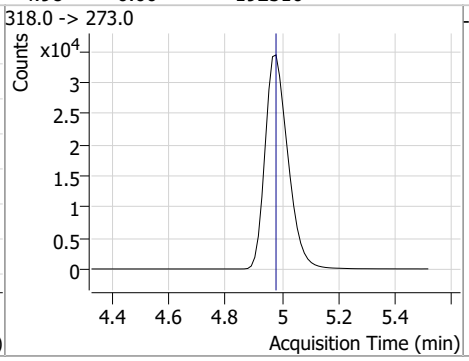


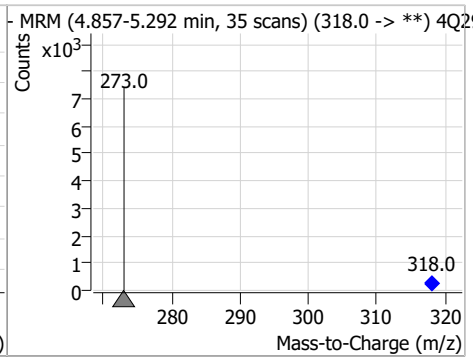




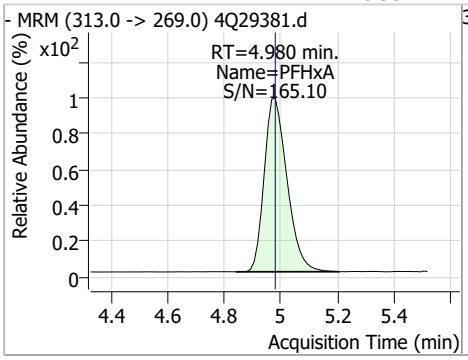
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.37	4.98	0.00	192510				

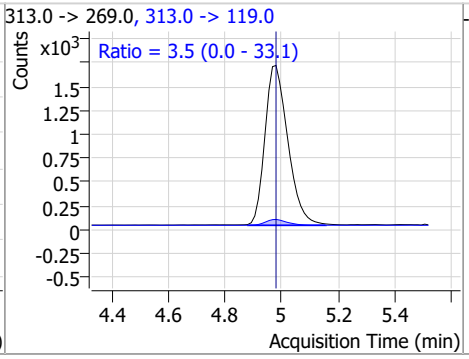


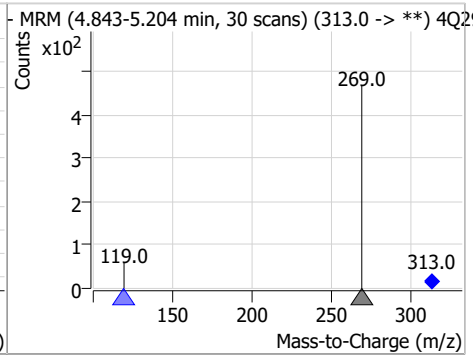




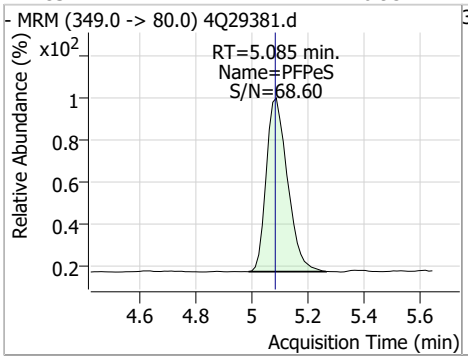
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.95	4.98	0.00	9361	313.0 -> 119.0	3.5	0.0	33.1

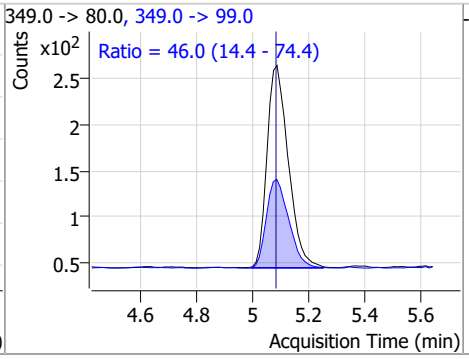


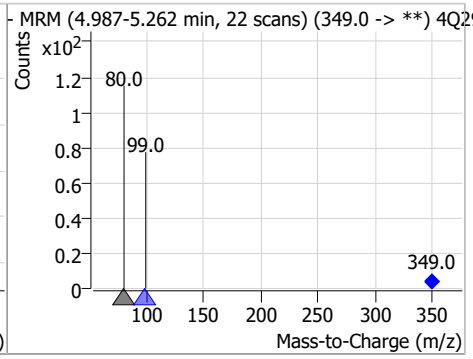




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.93	5.09	-0.01	1139	349.0 -> 99.0	46.0	14.4	74.4

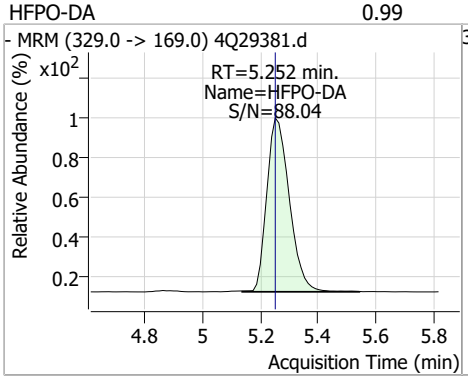


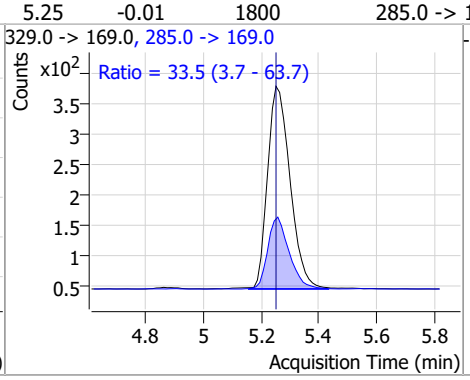


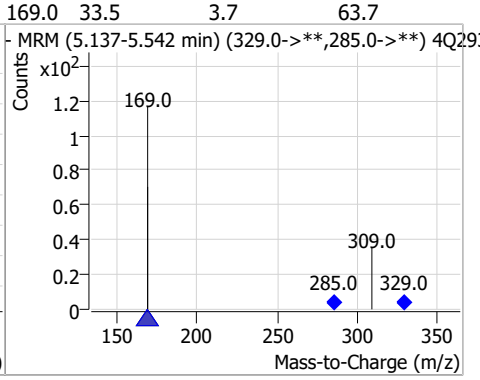


Perfluorinated Compounds by LC/MS/MS

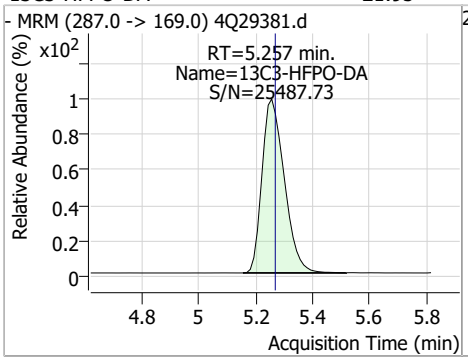
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.99	5.25	-0.01	1800	285.0 -> 169.0	33.5	3.7	63.7

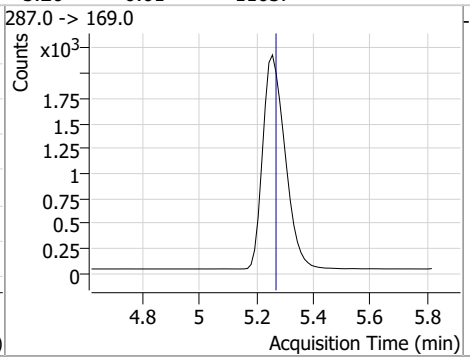


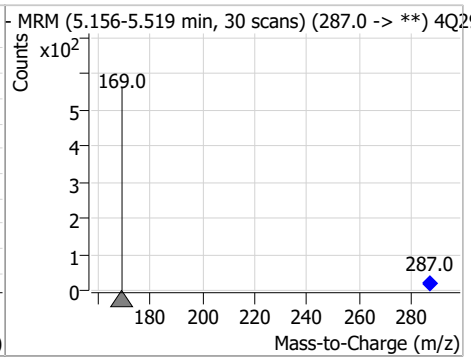




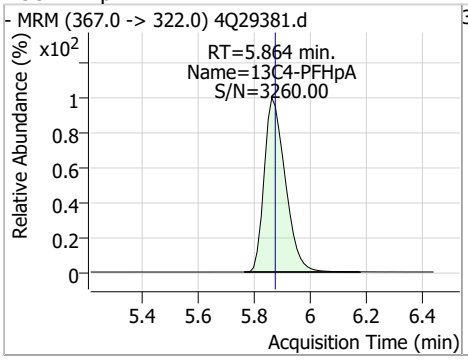
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.95	5.26	-0.01	11657				

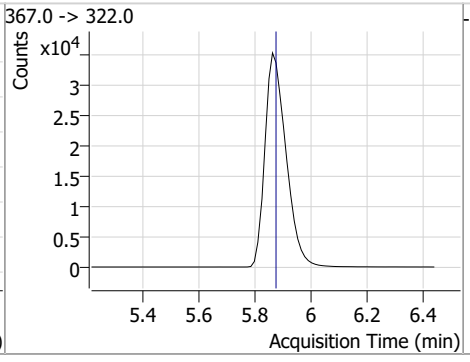


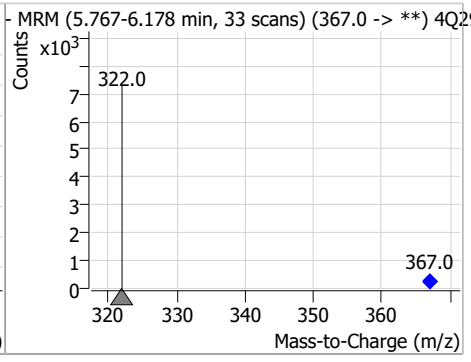




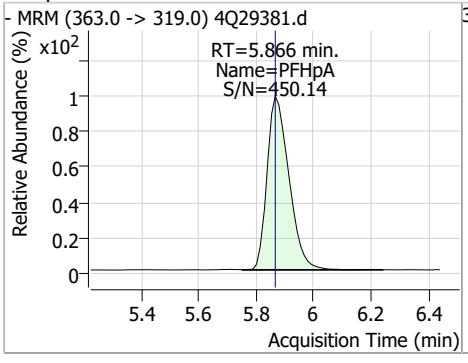
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.41	5.86	-0.01	182741				

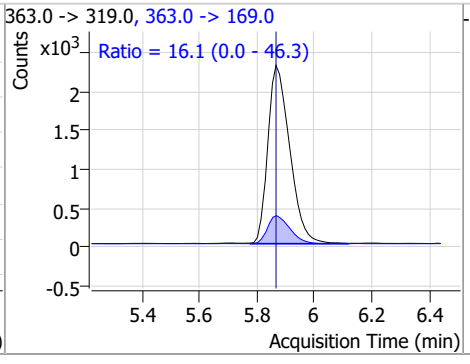


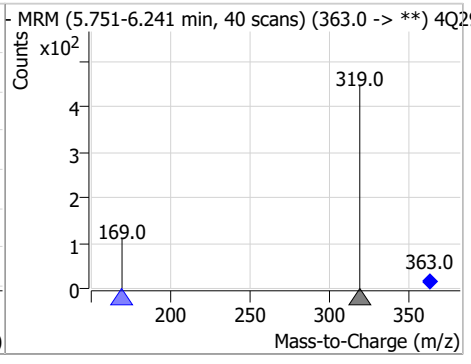




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	5.87	-0.01	12125	363.0 -> 169.0	16.1	0.0	46.3

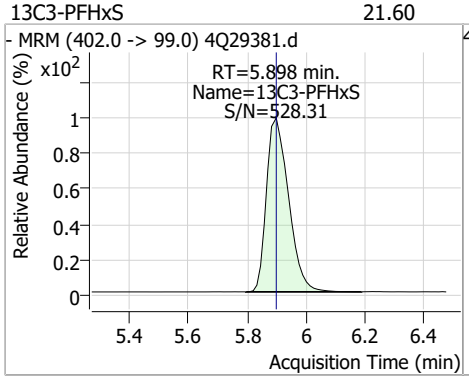


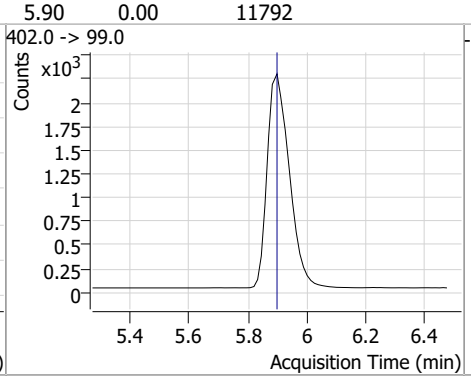


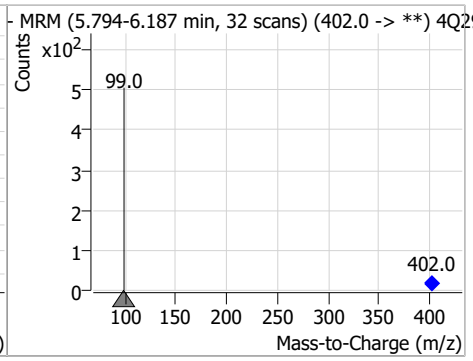


Perfluorinated Compounds by LC/MS/MS

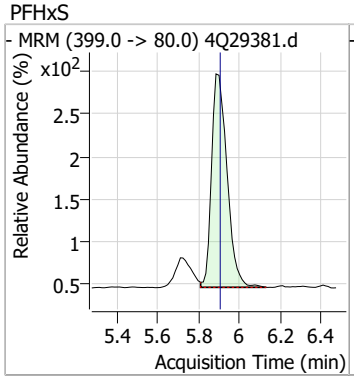
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.60	5.90	0.00	11792				

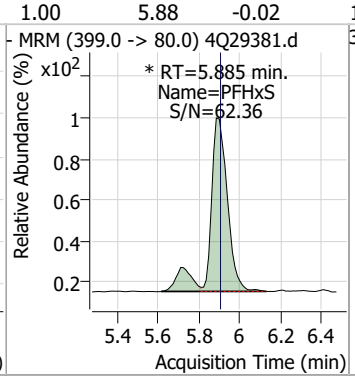


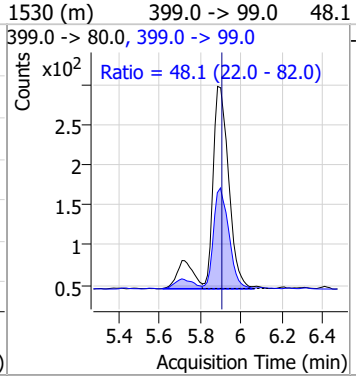


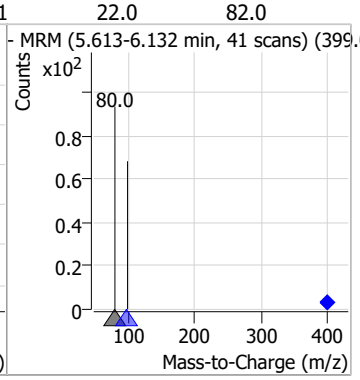


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.00	5.88	-0.02	1530 (m)	399.0 -> 99.0	48.1	22.0	82.0

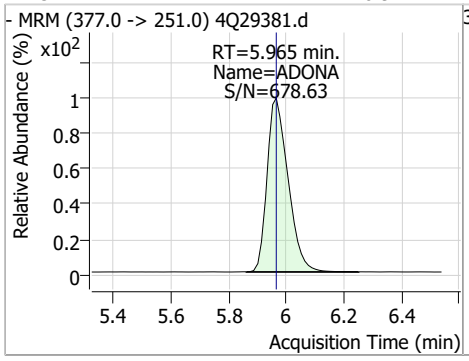


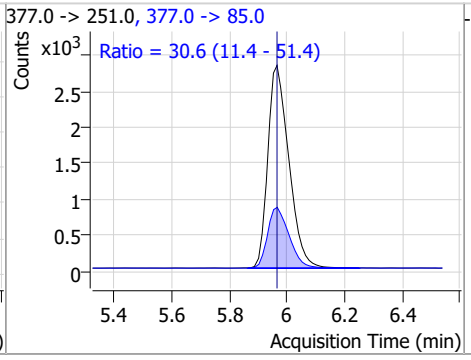


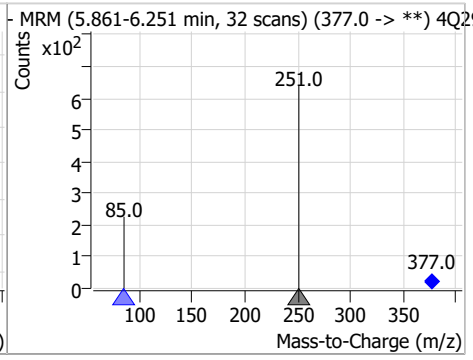




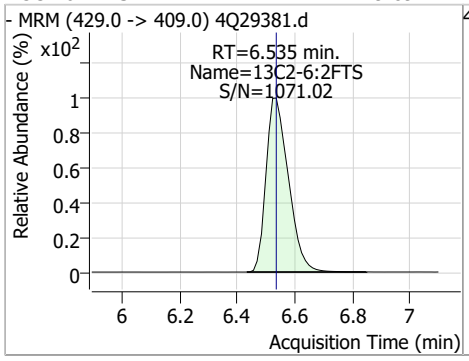
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.92	5.96	0.00	14284	377.0 -> 85.0	30.6	11.4	51.4

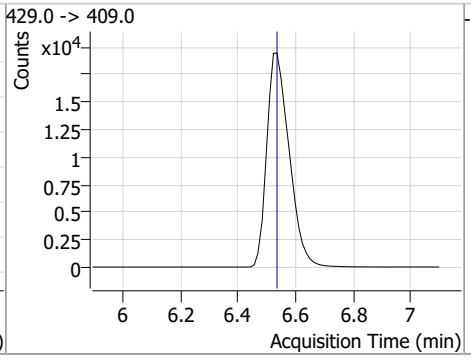


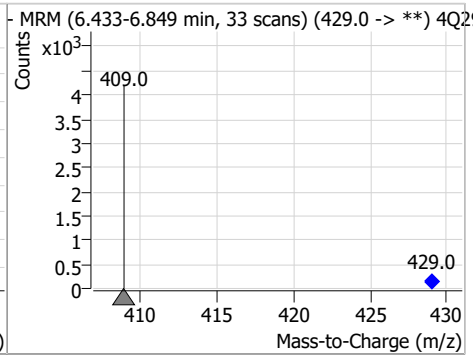




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.89	6.54	0.00	104777				

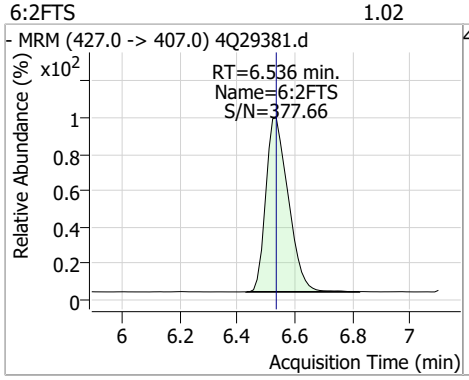


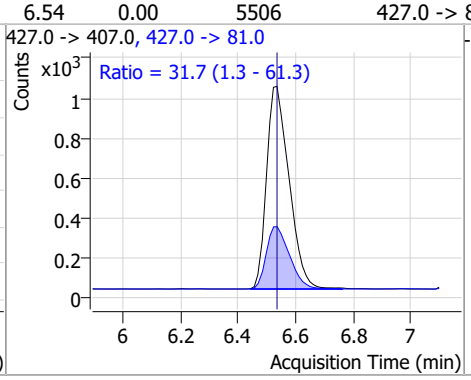


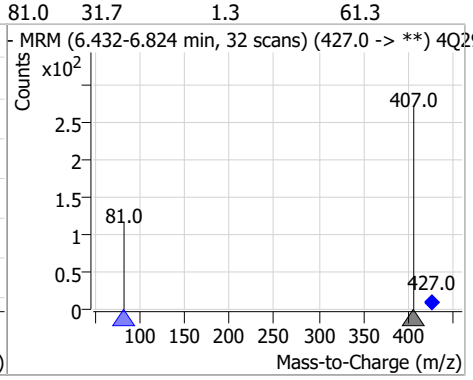


Perfluorinated Compounds by LC/MS/MS

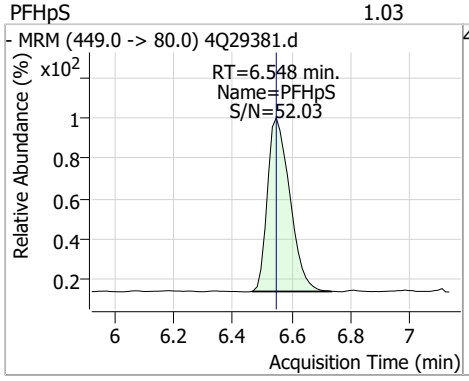
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.02	6.54	0.00	5506	427.0 -> 81.0	31.7	1.3	61.3

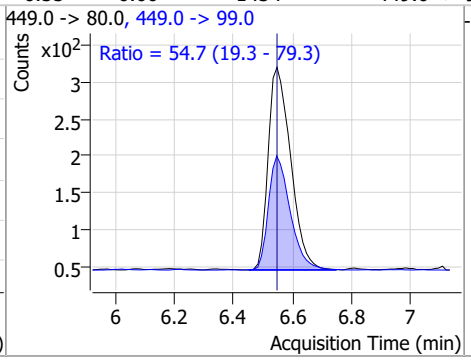


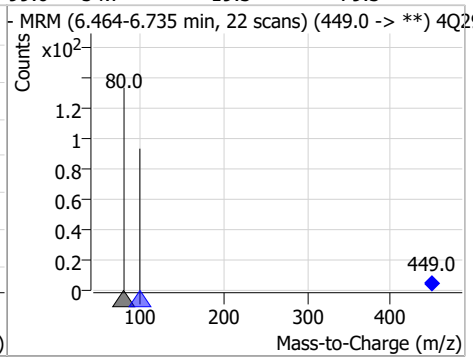




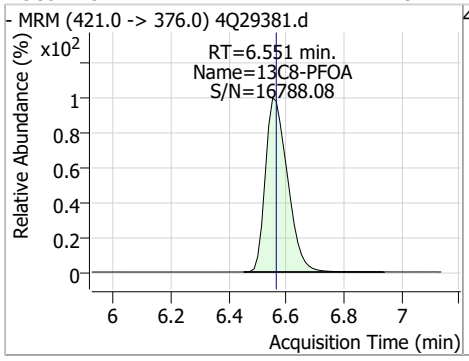
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.03	6.55	0.00	1454	449.0 -> 99.0	54.7	19.3	79.3

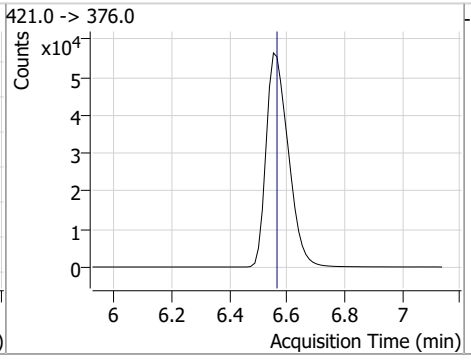


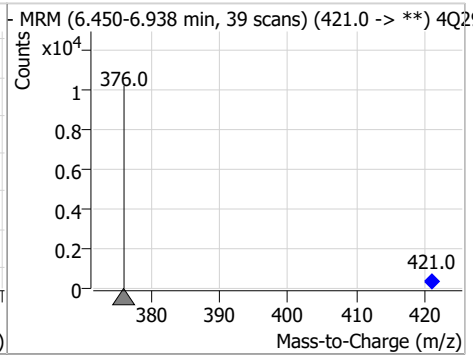




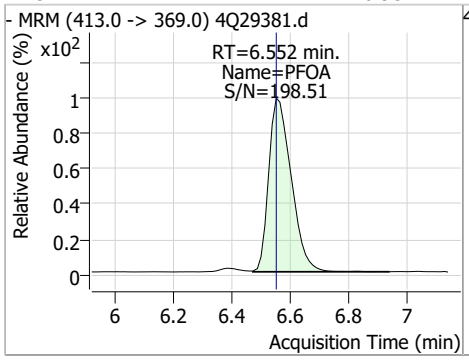
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.19	6.55	-0.01	301210				

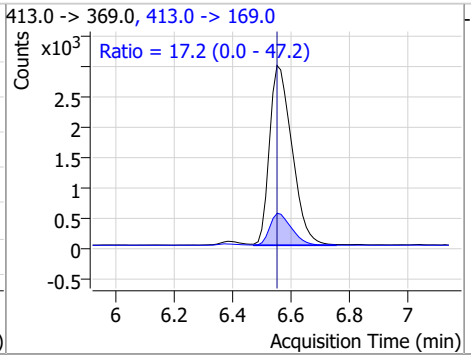


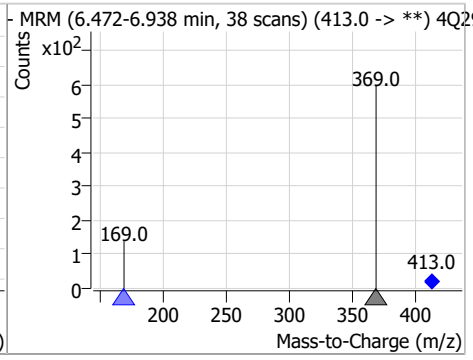




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	6.55	-0.01	15822	413.0 -> 169.0	17.2	0.0	47.2

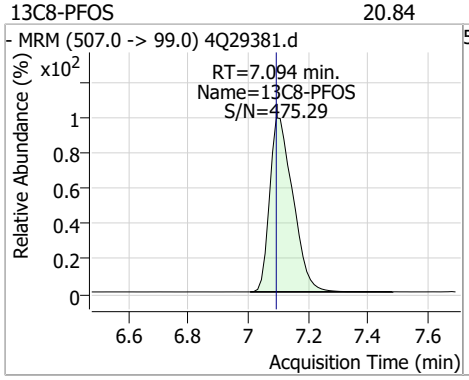


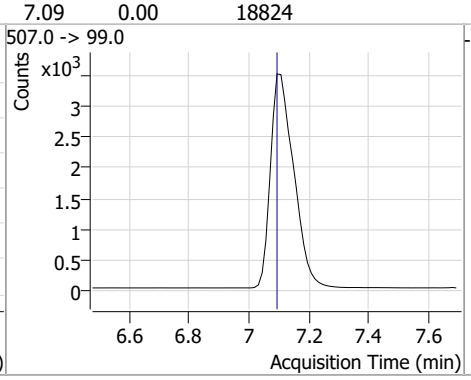


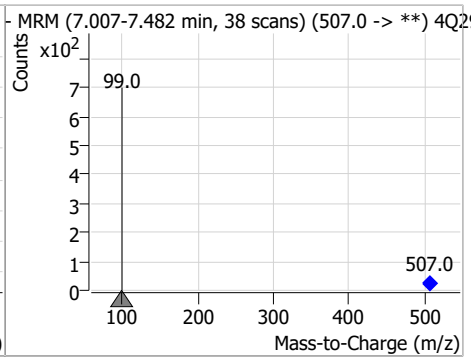


Perfluorinated Compounds by LC/MS/MS

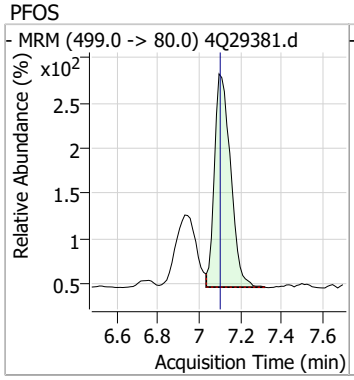
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.84	7.09	0.00	18824				

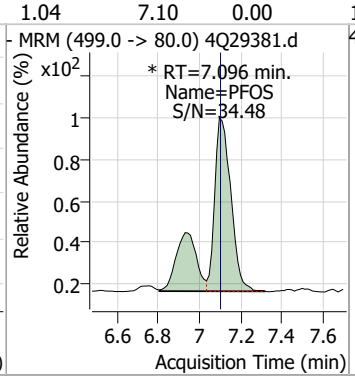


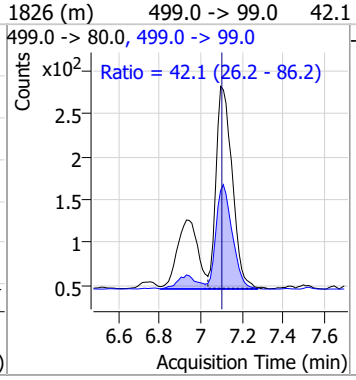


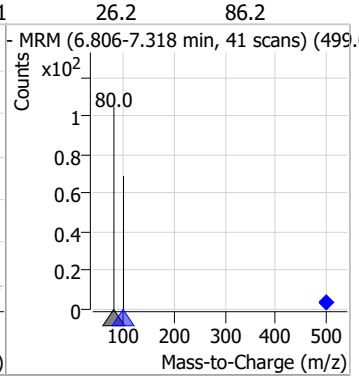


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.04	7.10	0.00	1826 (m)	499.0 -> 99.0	42.1	26.2	86.2

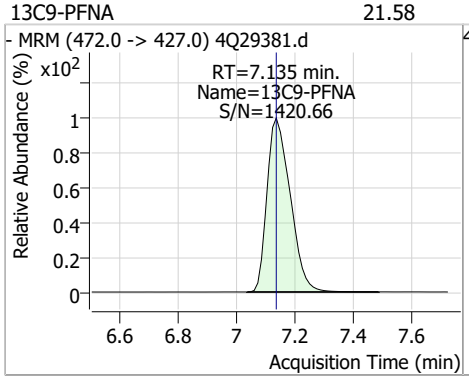


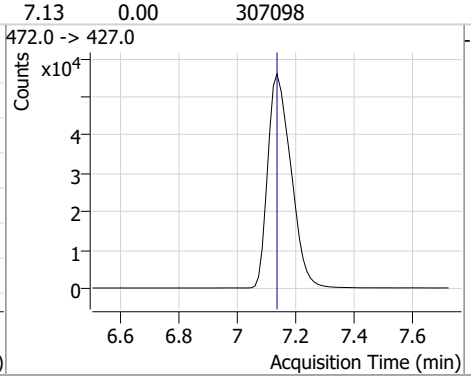


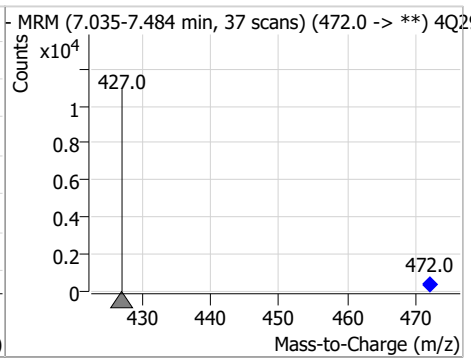




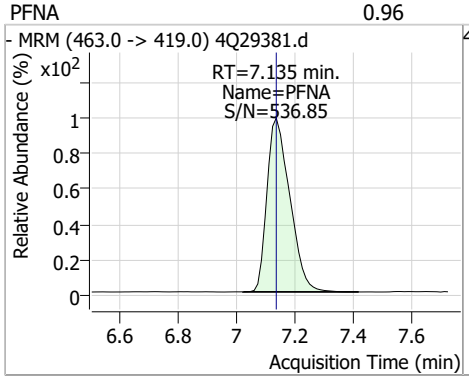
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.58	7.13	0.00	307098				

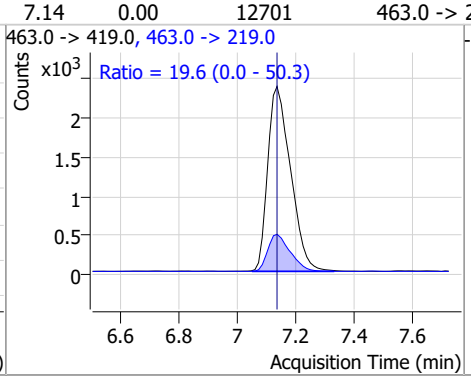


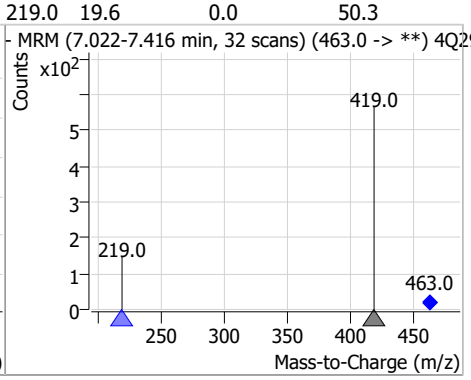




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.96	7.14	0.00	12701	463.0 -> 219.0	19.6	0.0	50.3

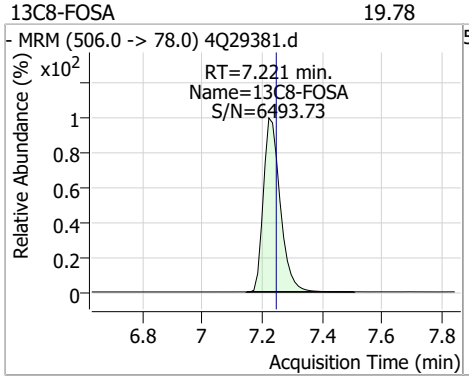


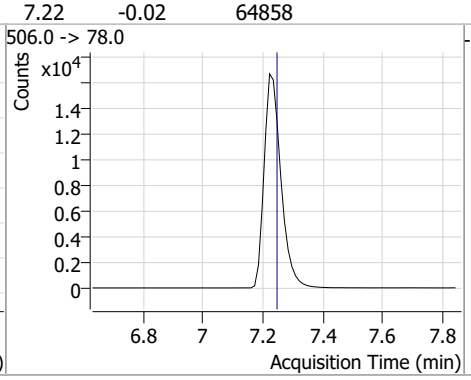


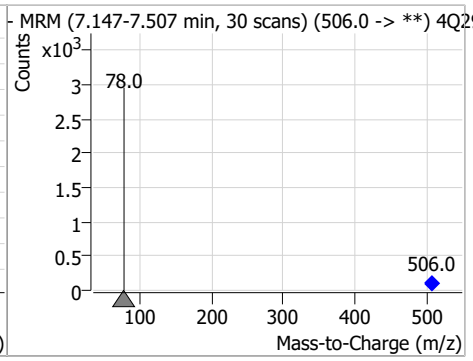


Perfluorinated Compounds by LC/MS/MS

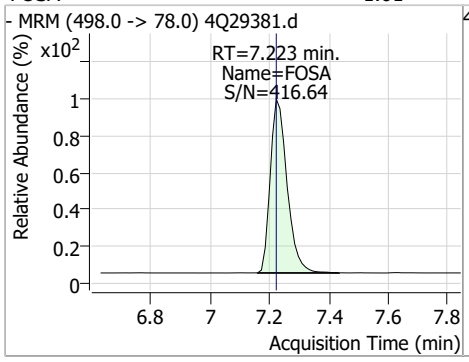
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.78	7.22	-0.02	64858				

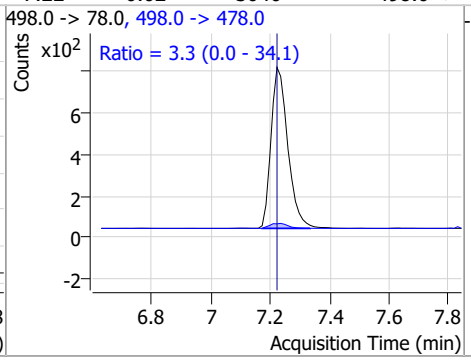


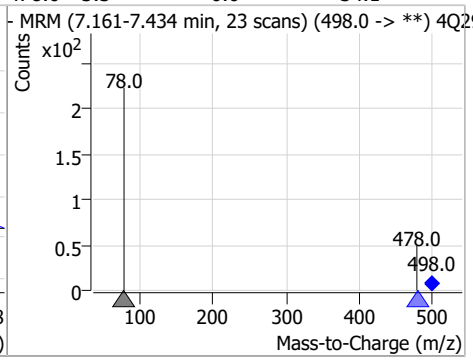




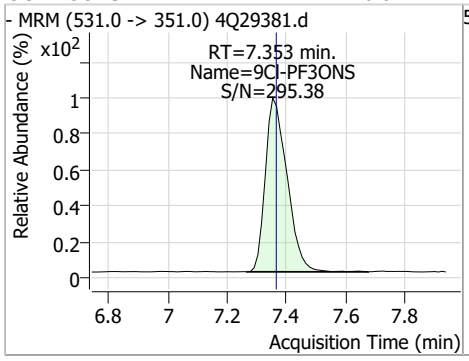
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	7.22	-0.02	3046	498.0 -> 478.0	3.3	0.0	34.1

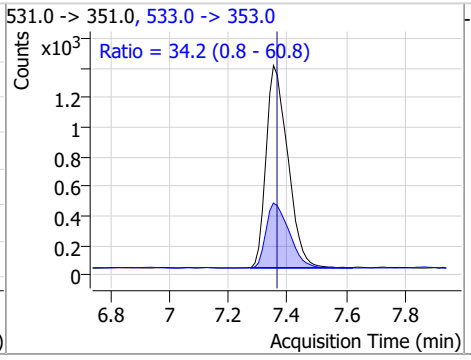


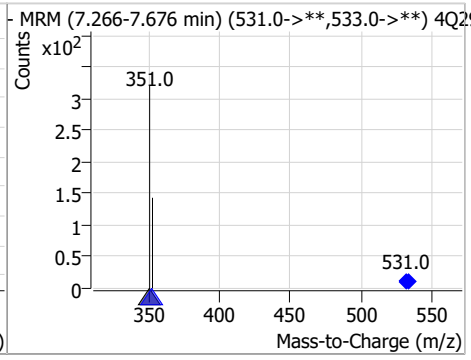




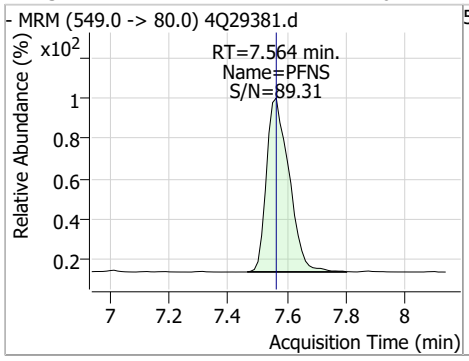
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.84	7.35	0.00	7023	533.0 -> 353.0	34.2	0.8	60.8

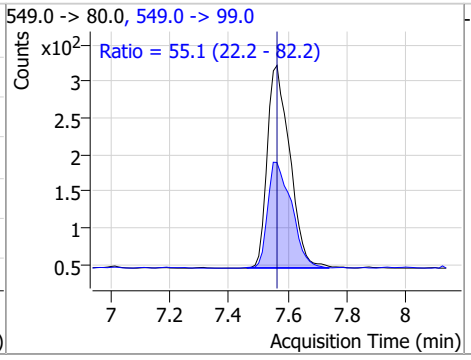


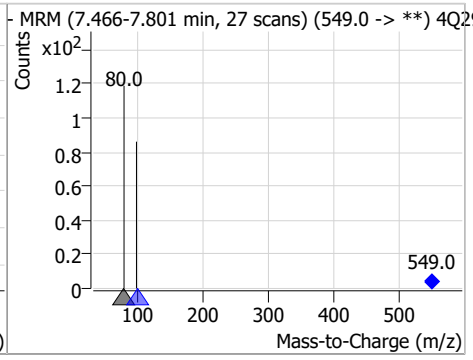




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	7.56	0.00	1466	549.0 -> 99.0	55.1	22.2	82.2

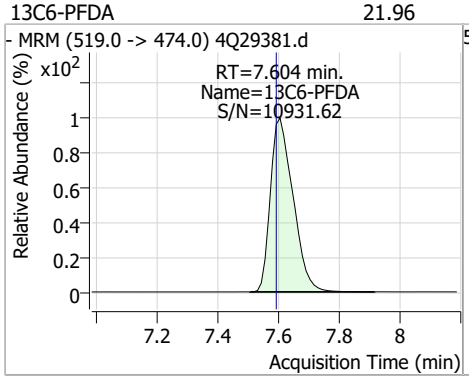


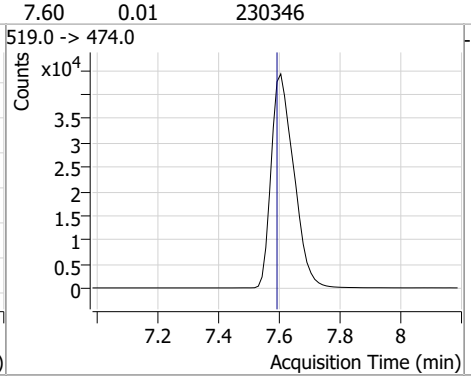


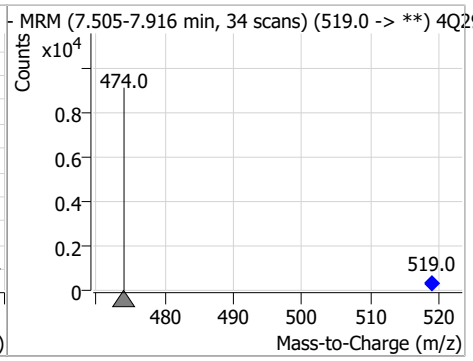


Perfluorinated Compounds by LC/MS/MS

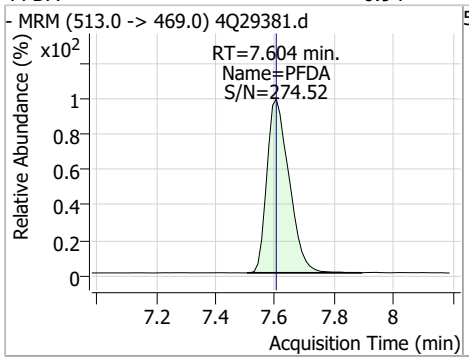
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.96	7.60	0.01	230346				

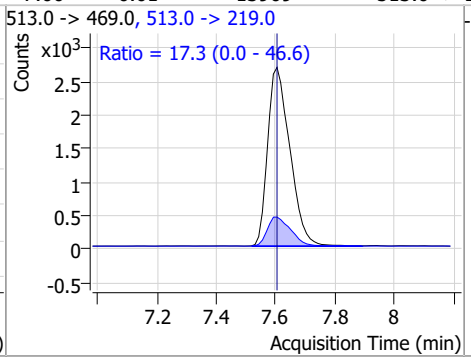


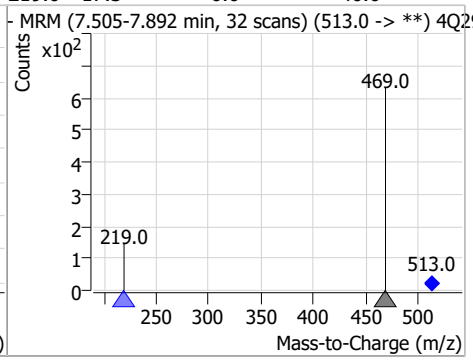




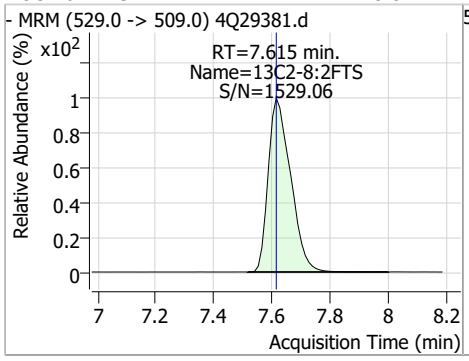
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.94	7.60	0.01	13909	513.0 -> 219.0	17.3	0.0	46.6

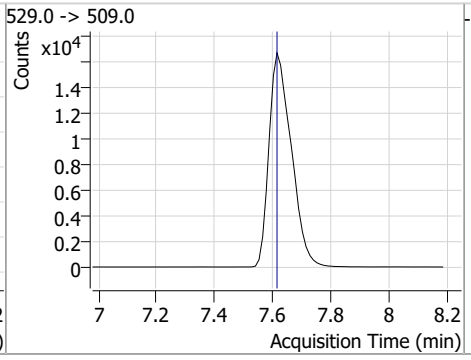


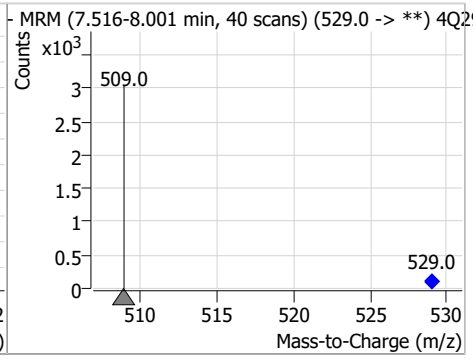




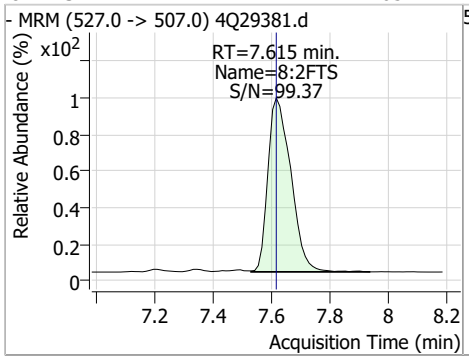
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.97	7.61	0.00	89069				

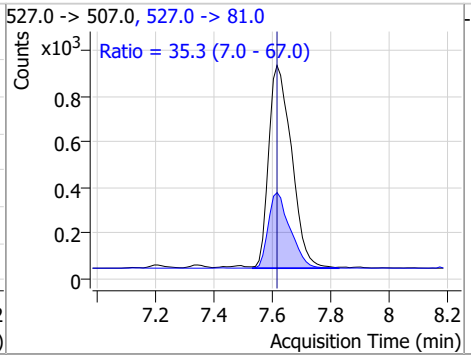


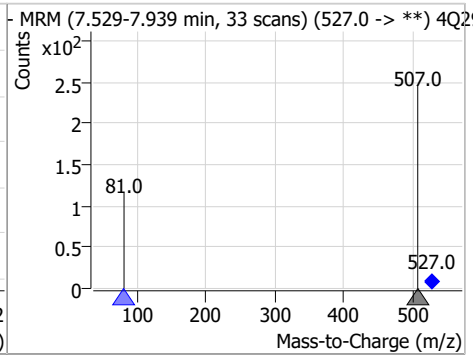




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.05	7.62	0.00	4892	527.0 -> 81.0	35.3	7.0	67.0

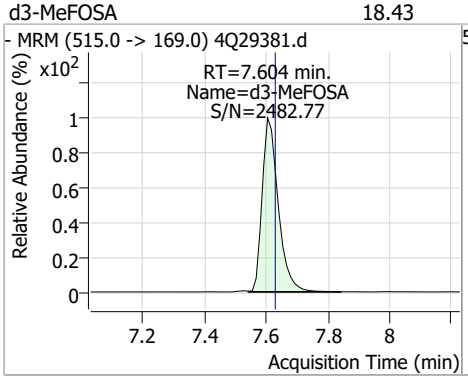


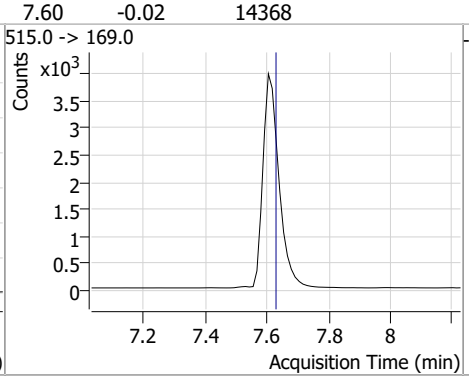


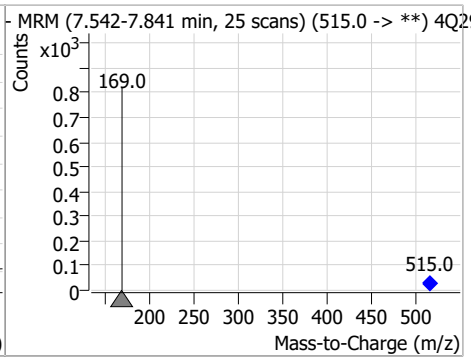


Perfluorinated Compounds by LC/MS/MS

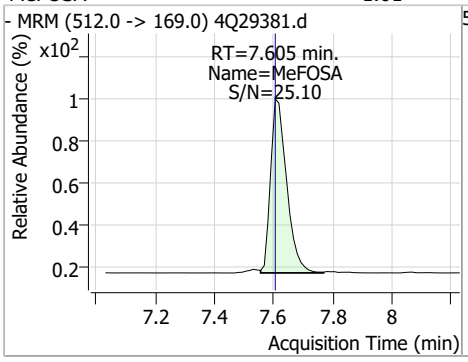
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.43	7.60	-0.02	14368				

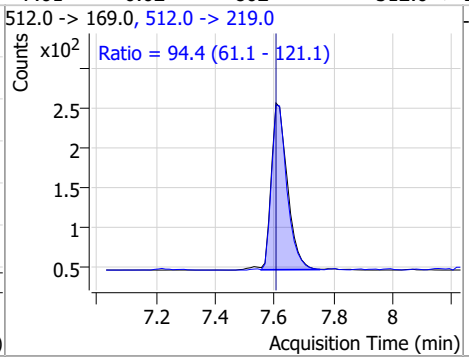


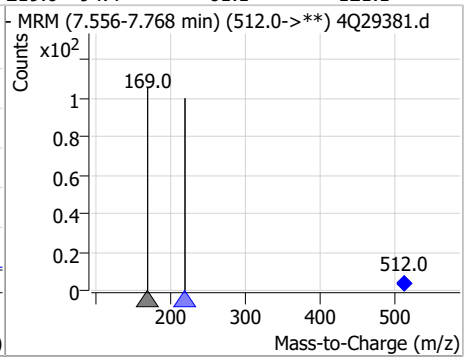




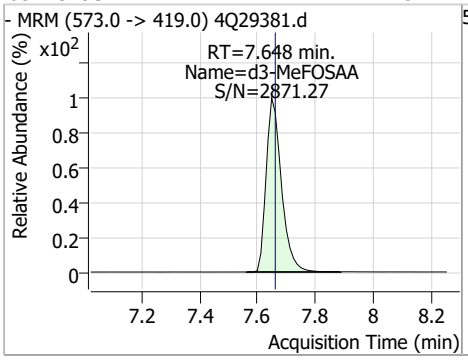
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.01	7.61	-0.02	802	512.0 -> 219.0	94.4	61.1	121.1

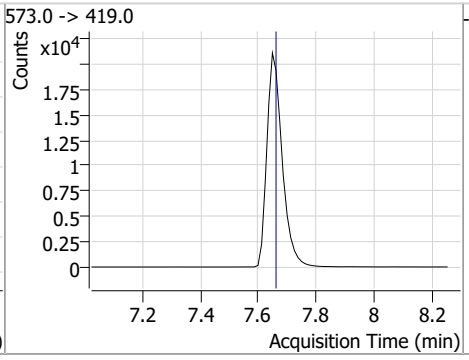


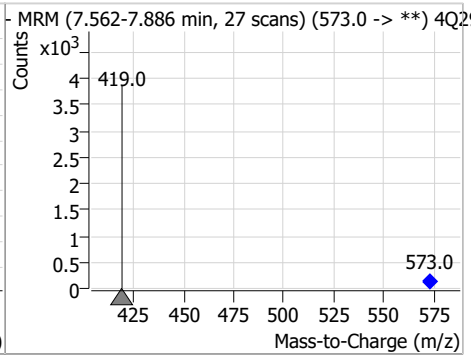




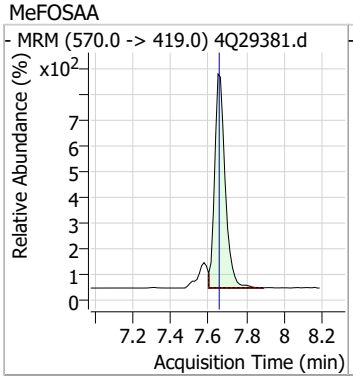
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.15	7.65	-0.01	76782				

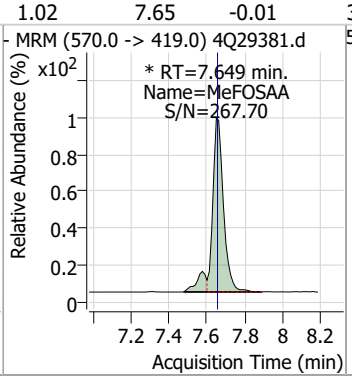


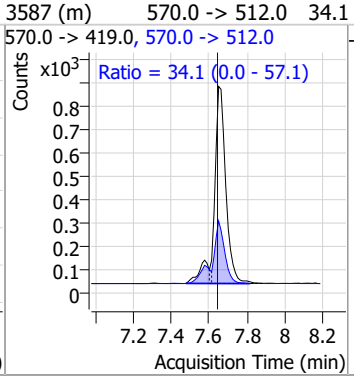


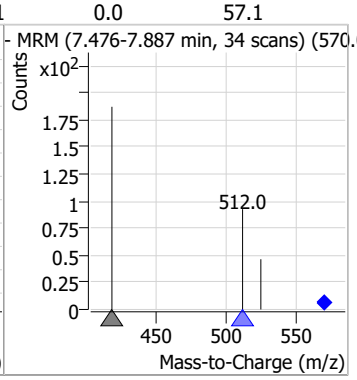


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.02	7.65	-0.01	3587 (m)	570.0 -> 512.0	34.1	0.0	57.1



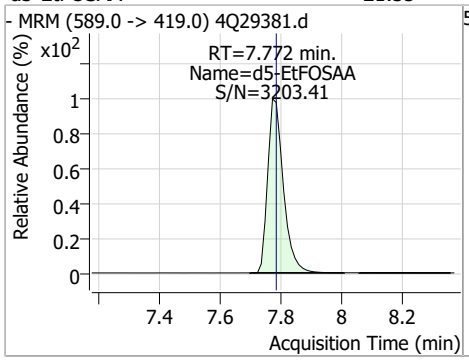


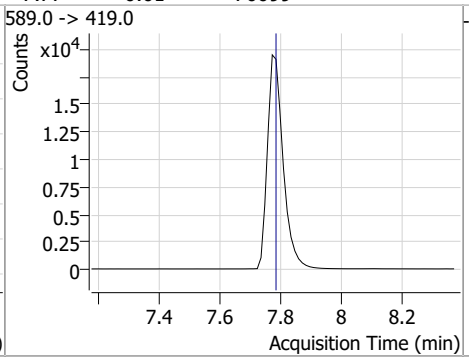


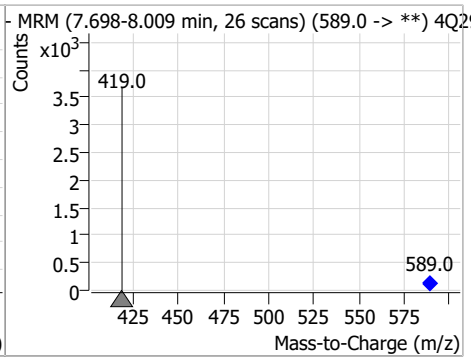


Perfluorinated Compounds by LC/MS/MS

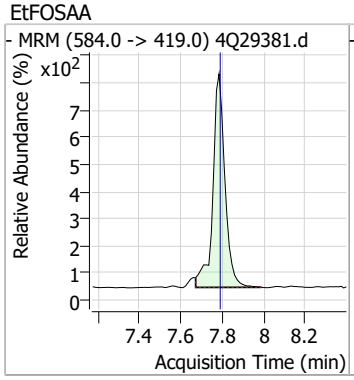
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.35	7.77	-0.01	70099				

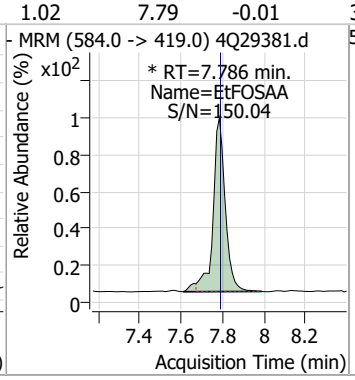


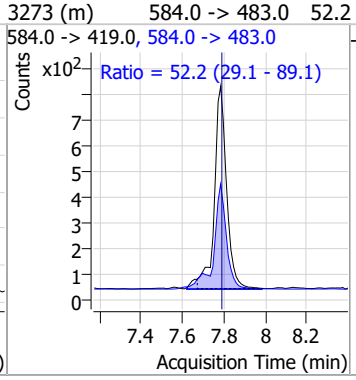


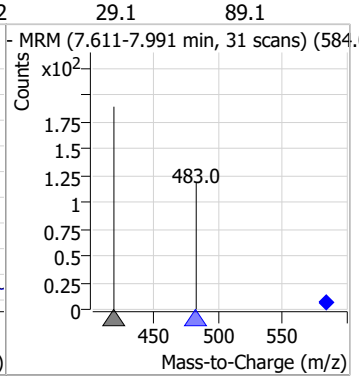


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.02	7.79	-0.01	3273 (m)	584.0 -> 483.0	52.2	29.1	89.1

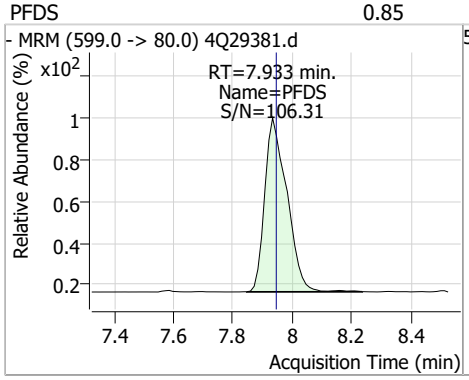


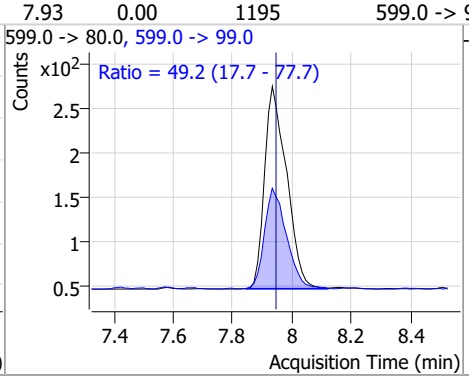


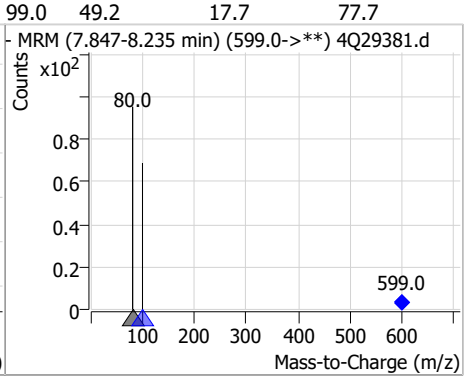




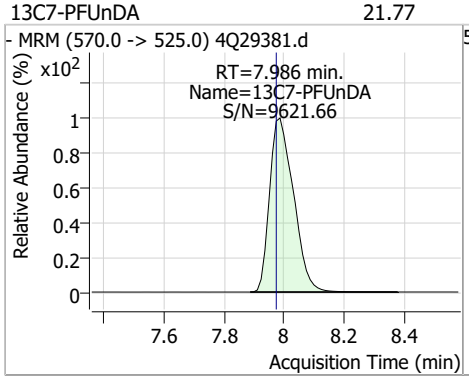
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.85	7.93	0.00	1195	599.0 -> 99.0	49.2	17.7	77.7

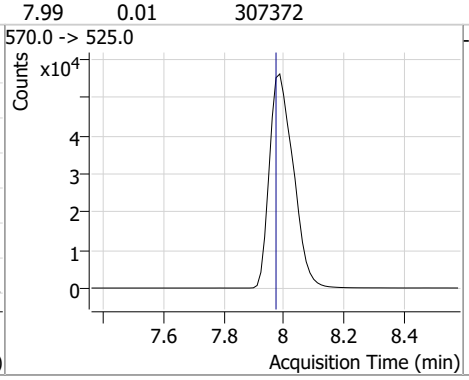


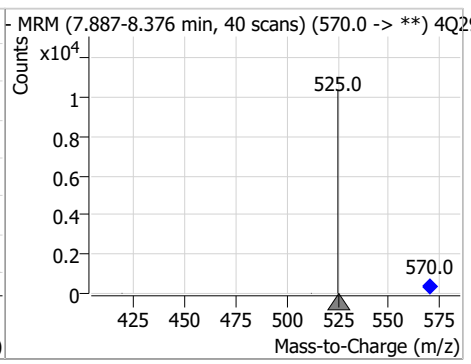




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.77	7.99	0.01	307372				





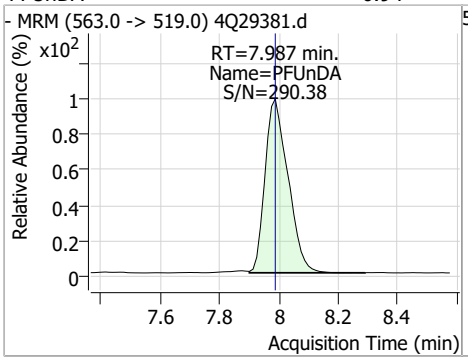


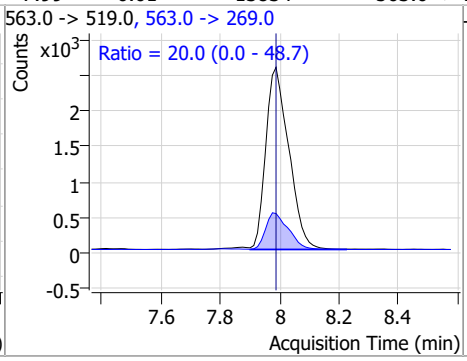
7.7.26

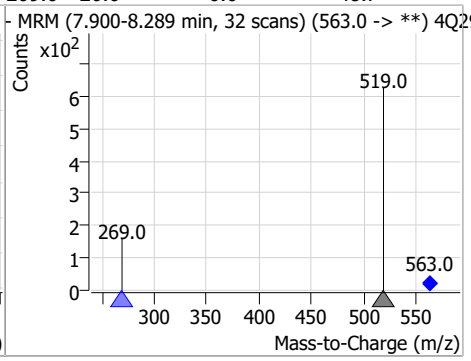
7

Perfluorinated Compounds by LC/MS/MS

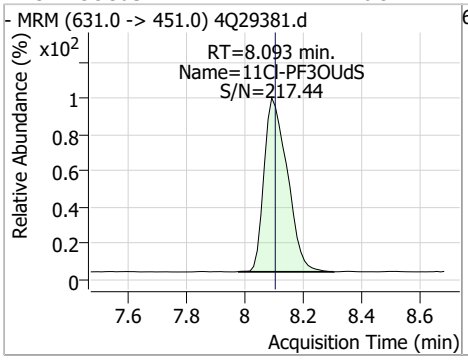
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	7.99	0.01	13834	563.0 -> 269.0	20.0	0.0	48.7

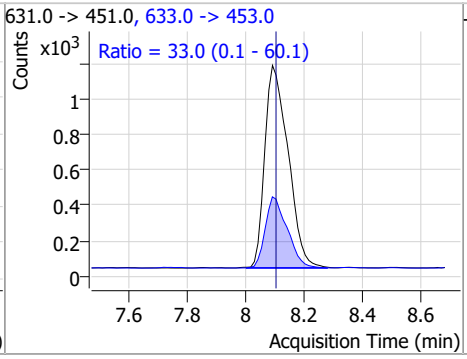


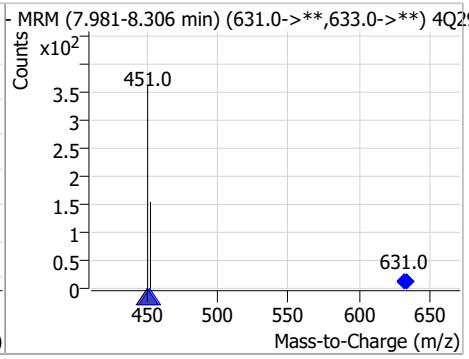




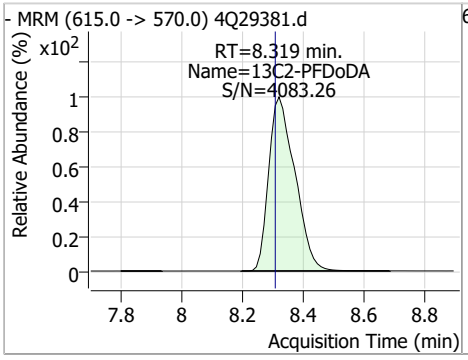
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	8.09	0.00	6320	633.0 -> 453.0	33.0	0.1	60.1

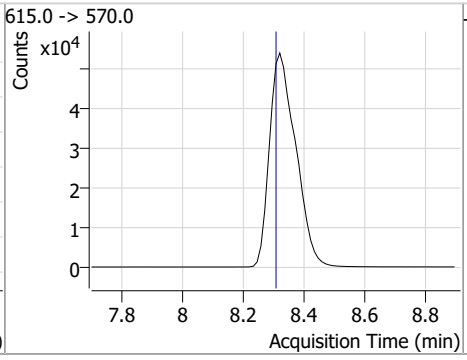


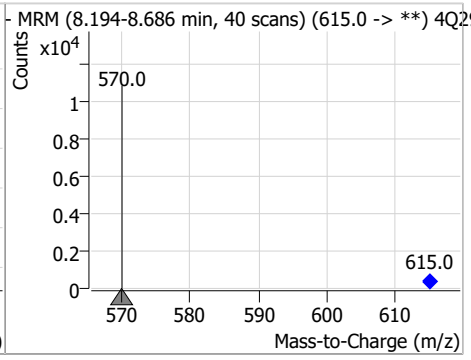




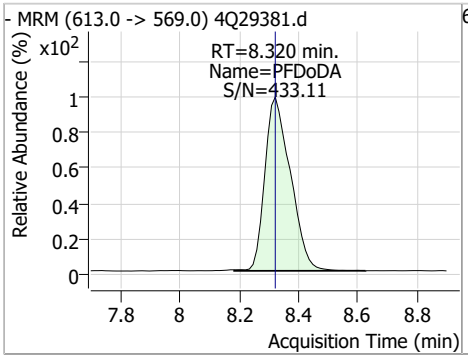
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.26	8.32	0.01	325480				

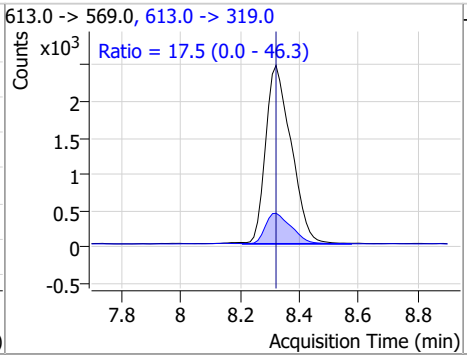


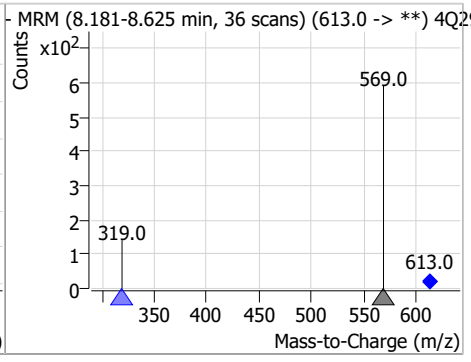




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.97	8.32	0.01	14679	613.0 -> 319.0	17.5	0.0	46.3

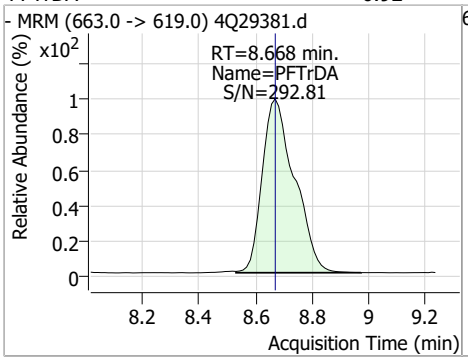


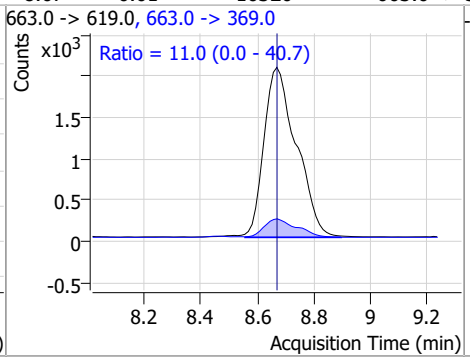


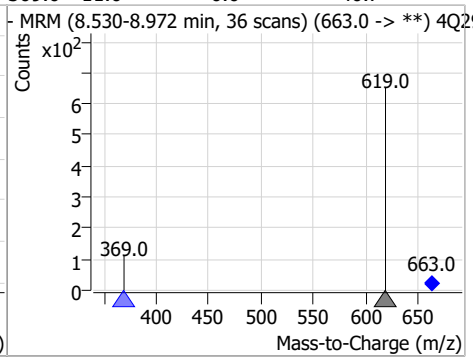


Perfluorinated Compounds by LC/MS/MS

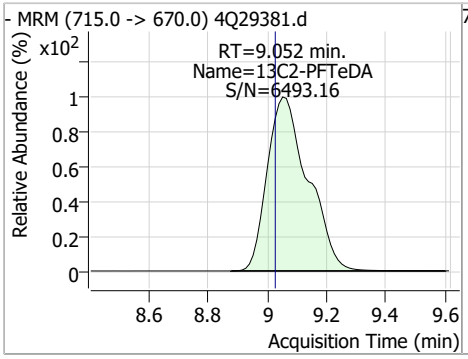
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.92	8.67	0.01	16320	663.0 -> 369.0	11.0	0.0	40.7

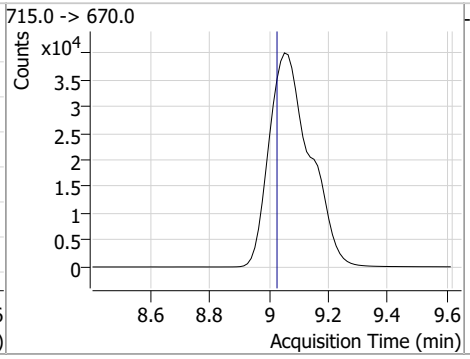


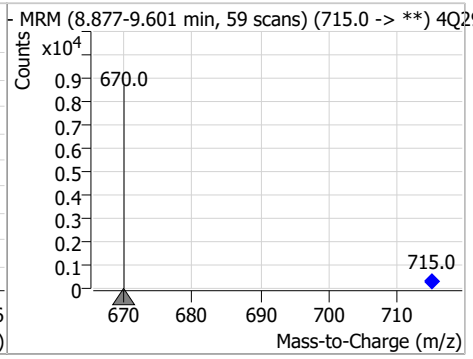




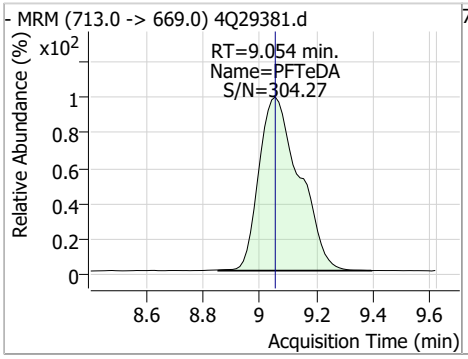
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.87	9.05	0.02	382873				

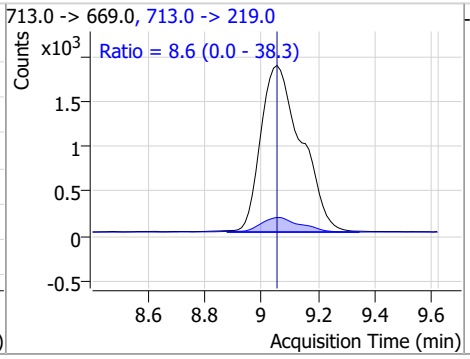


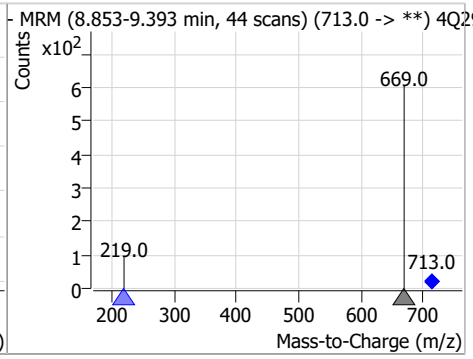




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.99	9.05	0.02	18286	713.0 -> 219.0	8.6	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q422-CC419
Lab FileID: 4Q29381.D
Injection Time: 05/31/22 11:45
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/31/22 21:52 Martha Valls
Supervisor approved: 05/31/22 22:37 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.88	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.10	Split peak
MeFOSAA	2355-31-9		7.65	Split peak
EtFOSAA	2991-50-6		7.79	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/31/22 22:38

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29393.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 2:56:37 PM
Sample Name : cc419-20
Vial : P1-A7
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91245,S4Q422,250,,,1.0,1,water

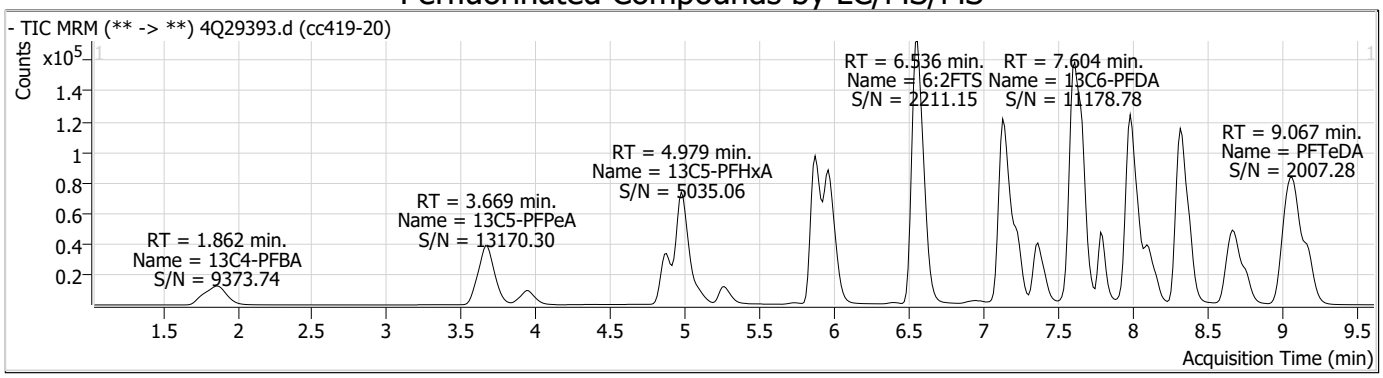
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.862	217.0 -> 172.0	100852	20.00 µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	155855	20.00 µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	191150	20.00 µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	180655	20.00 µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	294490	20.00 µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	304857	20.00 µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	225306	20.00 µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	302214	20.00 µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	324235	20.00 µg/L	0.012
M2-PFTeDA	9.064	715.0 -> 670.0	392534	20.00 µg/L	0.037
M8-FOSA	7.234	506.0 -> 78.0	63960	20.00 µg/L	-0.012
M3-PFBS	3.949	302.0 -> 99.0	11717	20.00 µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	11520	20.00 µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	18862	20.00 µg/L	0.013
M2-4:2FTS	4.875	329.0 -> 309.0	70387	20.00 µg/L	0.000
M2-6:2FTS	6.535	429.0 -> 409.0	108978	20.00 µg/L	0.000
M2-8:2FTS	7.627	529.0 -> 509.0	90660	20.00 µg/L	0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	76960	20.00 µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	11441	20.00 µg/L	-0.012
M3-MeFOSA	7.616	515.0 -> 169.0	13431	20.00 µg/L	-0.012
M5-EtFOSAA	7.785	589.0 -> 419.0	71703	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.875	329.0 -> 309.0	70387	20.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C2-6:2FTS	6.535	429.0 -> 409.0	108978	20.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C2-8:2FTS	7.627	529.0 -> 509.0	90660	20.33 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C2-PFDoDA	8.319	615.0 -> 570.0	324235	21.18 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C2-PFTeDA	9.064	715.0 -> 670.0	392534	20.37 µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C3-PFBS	3.949	302.0 -> 99.0	11717	21.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C3-PFHxS	5.898	402.0 -> 99.0	11520	21.10 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C4-PFBA	1.862	217.0 -> 172.0	100852	21.46 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C4-PFHpA	5.877	367.0 -> 322.0	180655	21.16 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C5-PFHxA	4.979	318.0 -> 273.0	191150	21.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C5-PFPeA	3.669	268.0 -> 223.0	155855	21.25 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C6-PFDA	7.604	519.0 -> 474.0	225306	21.48 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

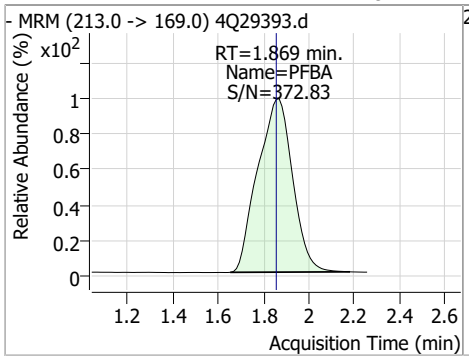
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C7-PFUnDA	7.986	570.0 -> 525.0	302214	21.41 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C8-FOSA	7.234	506.0 -> 78.0	63960	19.51 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C8-PFOA	6.564	421.0 -> 376.0	294490	21.70 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
13C8-PFOS	7.108	507.0 -> 99.0	18862	20.88 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C9-PFNA	7.135	472.0 -> 427.0	304857	21.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
d3-MeFOSAA	7.661	573.0 -> 419.0	76960	21.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	11418	21.50 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
d3-MeFOSA	7.616	515.0 -> 169.0	13431	17.22 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%		
d5-EtFOSAA	7.785	589.0 -> 419.0	71691	21.83 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
Target Compounds						**QValue**
4:2FTS	4.877	327.0 -> 307.0	83094	20.53 µg/L		100
6:2FTS	6.536	427.0 -> 407.0	115434	20.65 µg/L		100
8:2FTS	7.628	527.0 -> 507.0	98113	20.78 µg/L		97
EtFOSAA	7.786	584.0 -> 419.0	66367	20.20 µg/L	m	95
FOSA	7.236	498.0 -> 78.0	61880	20.78 µg/L		100
MeFOSAA	7.662	570.0 -> 419.0	73708	20.86 µg/L	m	95
PFBA	1.869	213.0 -> 169.0	31492	19.72 µg/L		100
PFBS	3.941	299.0 -> 80.0	37453	20.19 µg/L		99
PFDA	7.604	513.0 -> 469.0	276202	19.17 µg/L		99
PFDoDA	8.320	613.0 -> 569.0	306788	20.33 µg/L		100
PFDS	7.946	599.0 -> 80.0	25745	18.60 µg/L		99
PFHpA	5.878	363.0 -> 319.0	256327	20.36 µg/L		99
PFHpS	6.548	449.0 -> 80.0	29964	21.09 µg/L		99
PFHxA	4.980	313.0 -> 269.0	198854	20.40 µg/L		100
PFHxS	5.900	399.0 -> 80.0	30665	20.46 µg/L	m	95
PFNA	7.135	463.0 -> 419.0	263477	20.03 µg/L		99
PFNS	7.564	549.0 -> 80.0	28490	19.86 µg/L		98
PFOA	6.565	413.0 -> 369.0	323611	19.88 µg/L		100
PFOS	7.109	499.0 -> 80.0	35293	20.12 µg/L	m	85
PFPeA	3.672	263.0 -> 219.0	143655	20.82 µg/L		100
PFPeS	5.085	349.0 -> 80.0	24282	19.97 µg/L		100
PFTeDA	9.067	713.0 -> 669.0	389864	20.67 µg/L		100
PFTrDA	8.668	663.0 -> 619.0	346909	19.64 µg/L		99
PFUnDA	7.987	563.0 -> 519.0	288352	19.97 µg/L		100
11Cl-PF3OUdS	8.106	631.0 -> 451.0	136580	20.04 µg/L		98
9Cl-PF3ONS	7.367	531.0 -> 351.0	152063	18.61 µg/L		100
ADONA	5.965	377.0 -> 251.0	295170	19.44 µg/L		99
HFPO-DA	5.264	329.0 -> 169.0	37632	21.06 µg/L		99
MeFOSA	7.618	512.0 -> 169.0	15635	21.00 µg/L		97

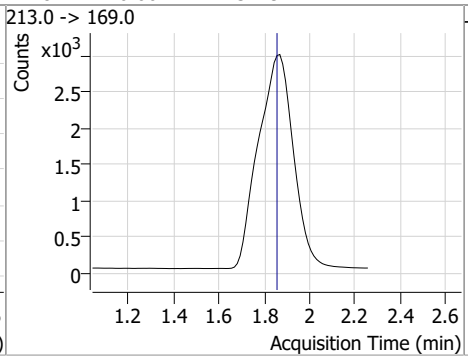
 # = Qualifier out of range, m = manually integrated, + = Area summed

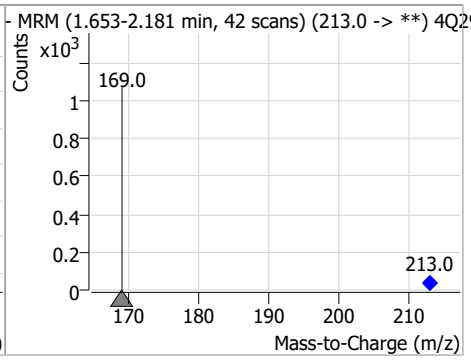
Perfluorinated Compounds by LC/MS/MS



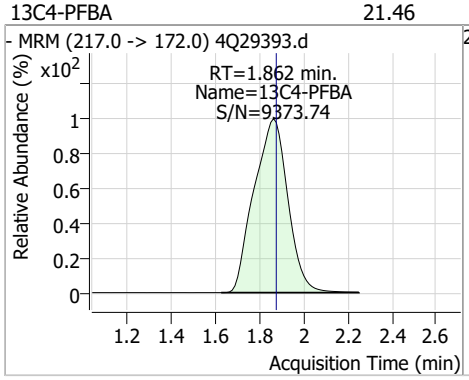
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.72	1.87	0.00	31492				

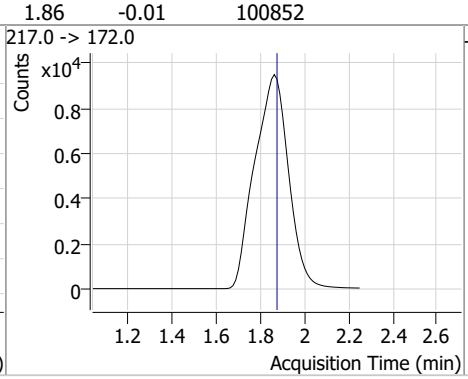


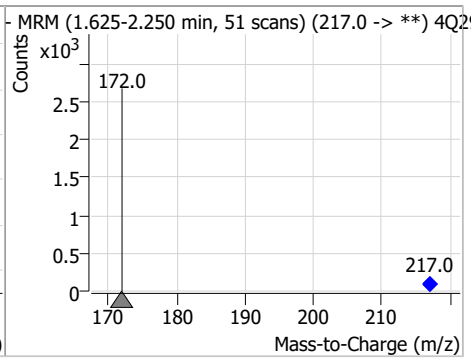




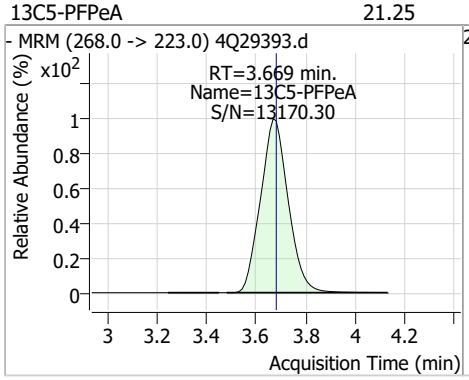
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.46	1.86	-0.01	100852				

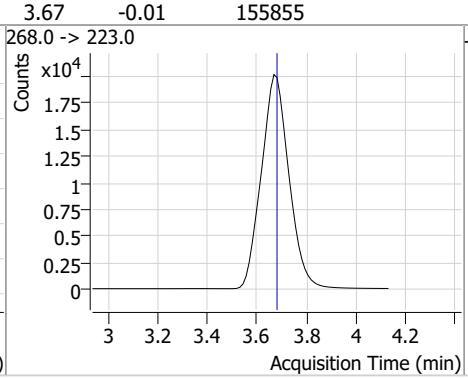


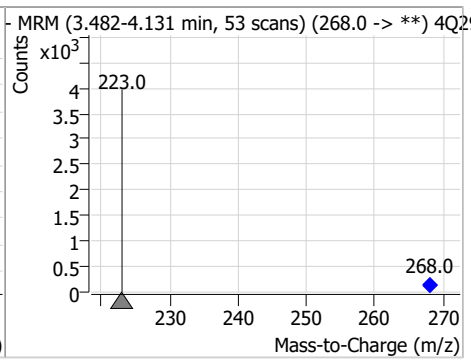




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.25	3.67	-0.01	155855				

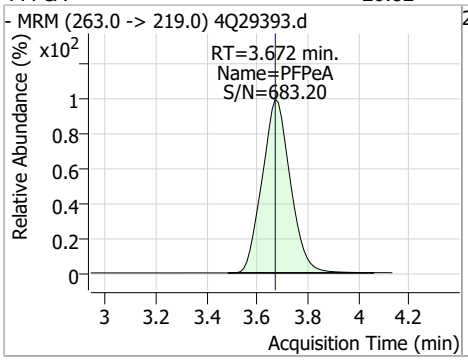


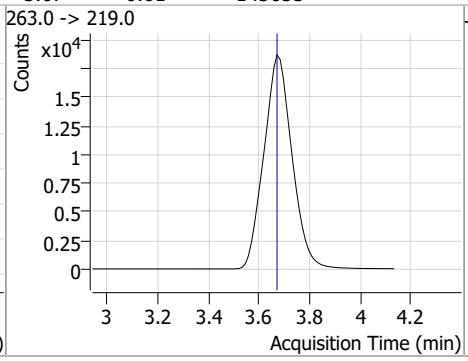


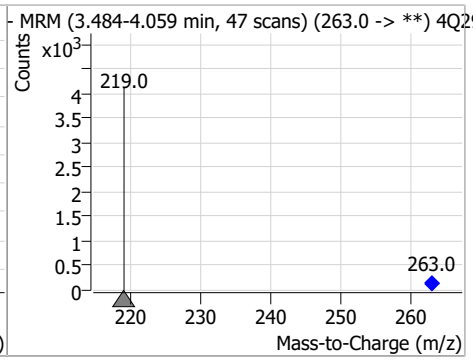


Perfluorinated Compounds by LC/MS/MS

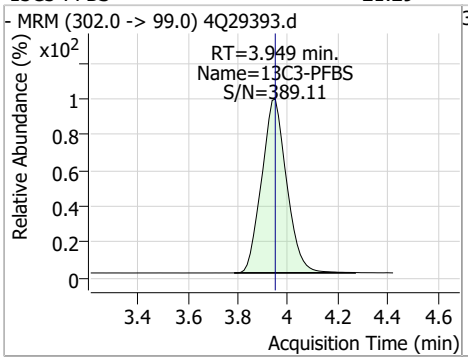
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.82	3.67	-0.01	143655				

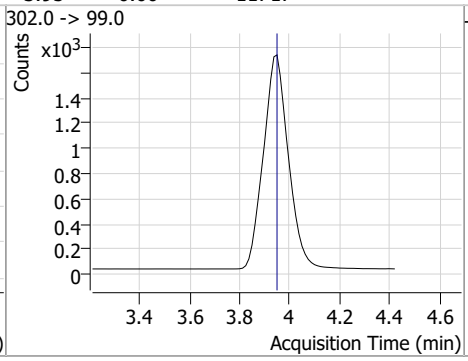


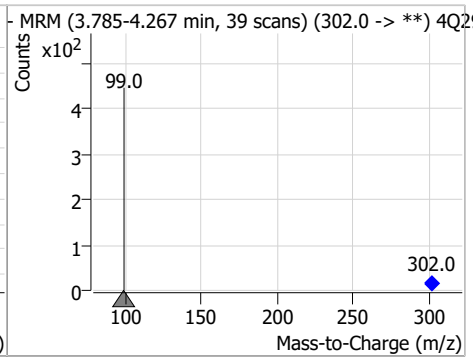




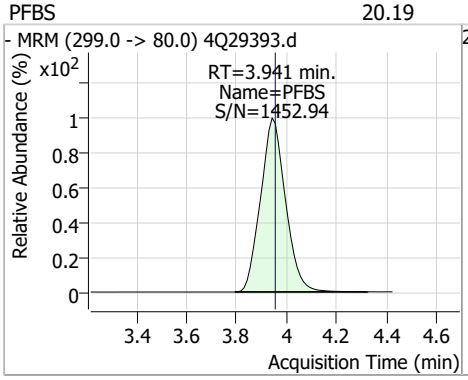
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.29	3.95	0.00	11717				

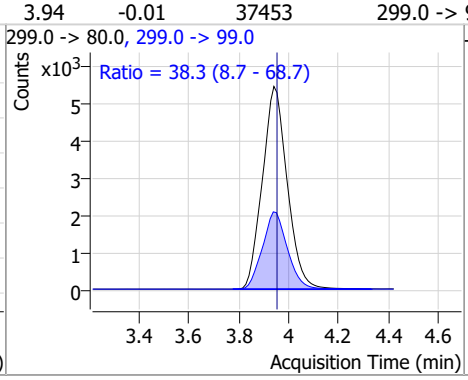


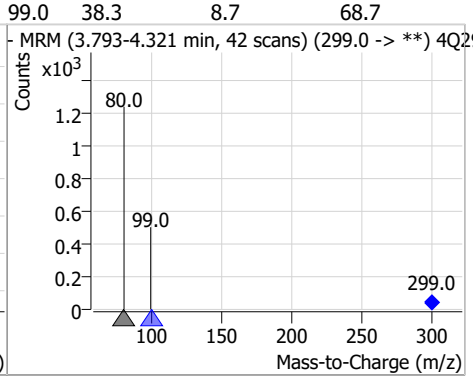




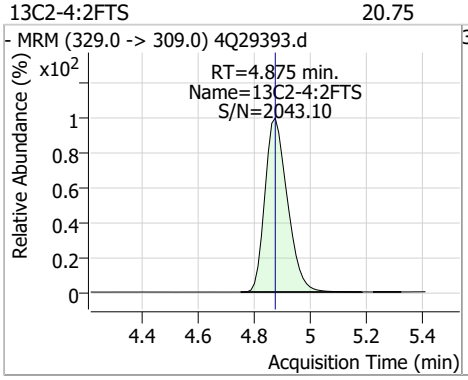
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.19	3.94	-0.01	37453	299.0 -> 99.0	38.3	8.7	68.7

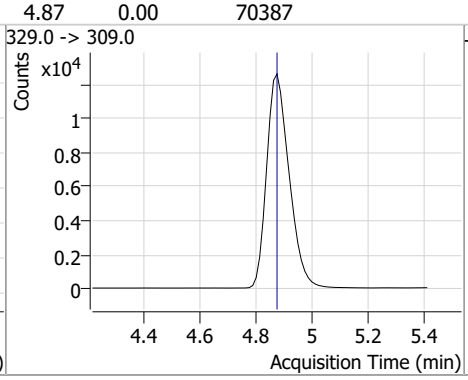


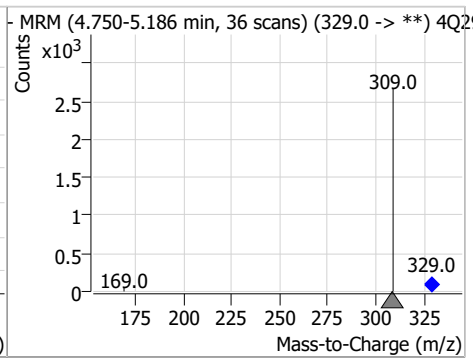




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.75	4.87	0.00	70387				

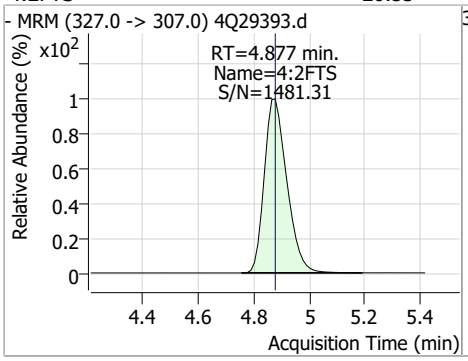


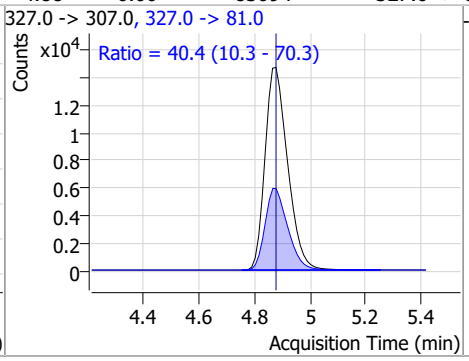


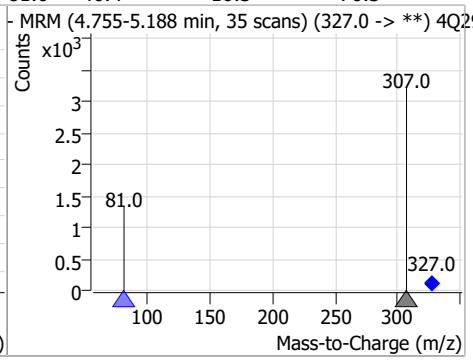


Perfluorinated Compounds by LC/MS/MS

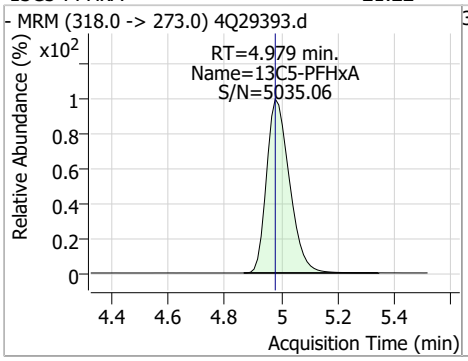
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.53	4.88	0.00	83094	327.0 -> 81.0	40.4	10.3	70.3

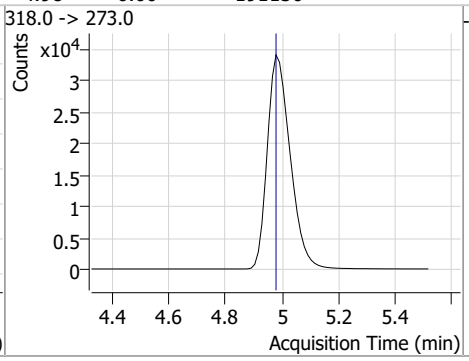


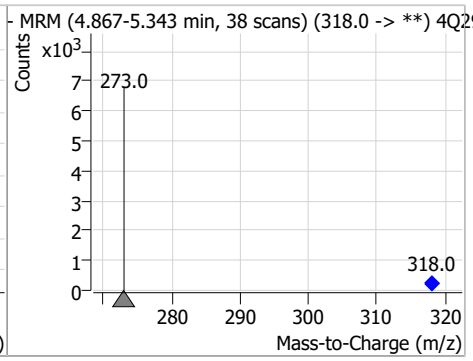




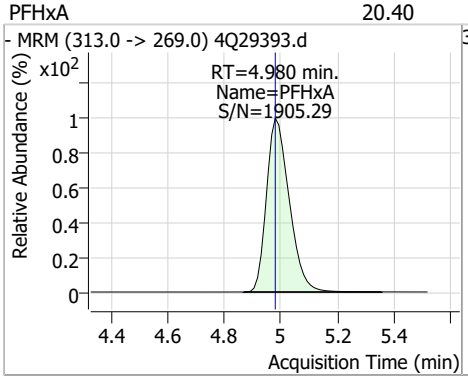
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.22	4.98	0.00	191150				

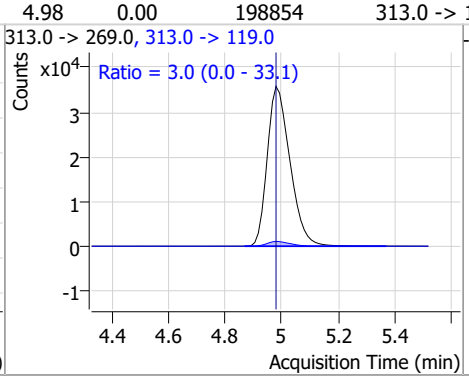


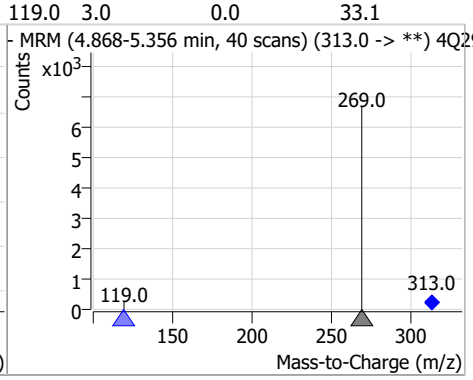




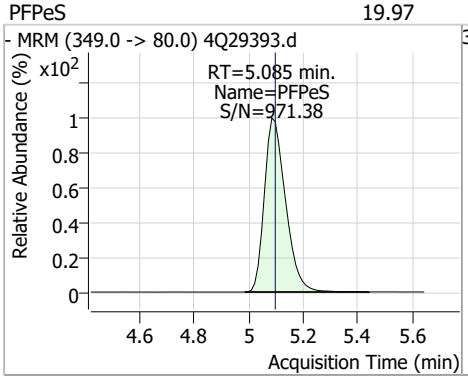
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.40	4.98	0.00	198854	313.0 -> 119.0	3.0	0.0	33.1

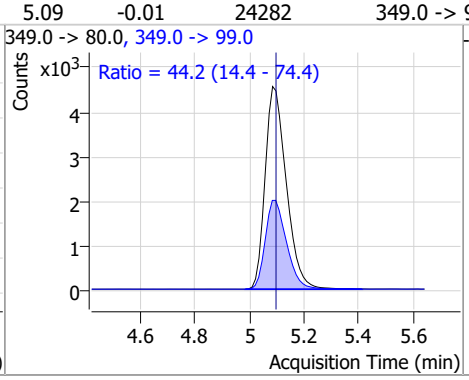


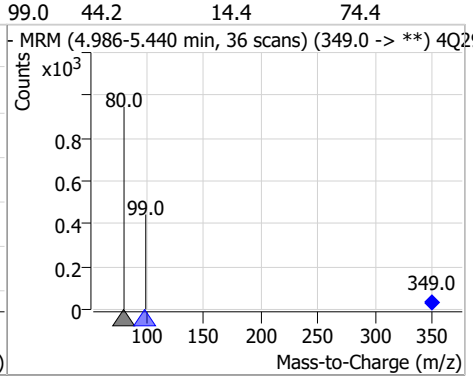




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.97	5.09	-0.01	24282	349.0 -> 99.0	44.2	14.4	74.4

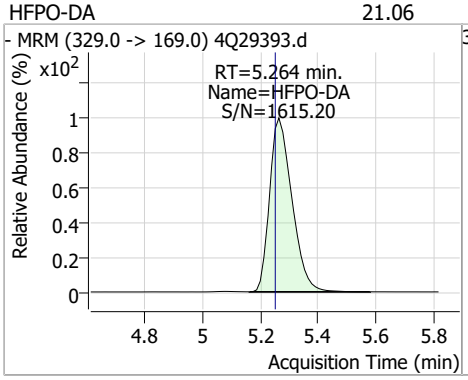


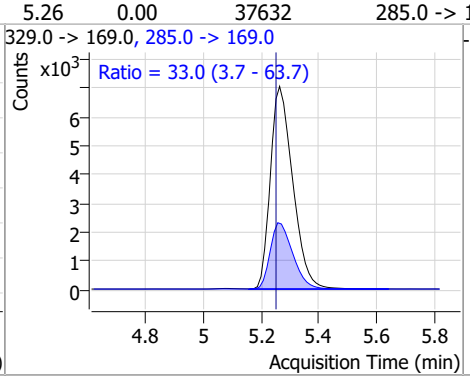


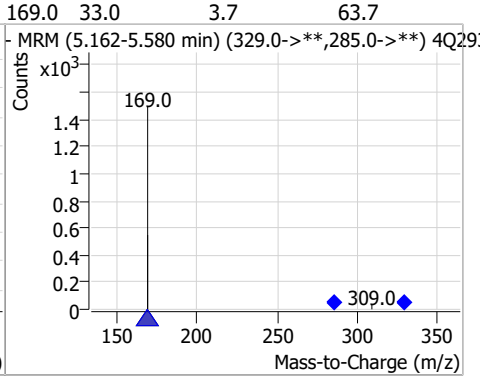


Perfluorinated Compounds by LC/MS/MS

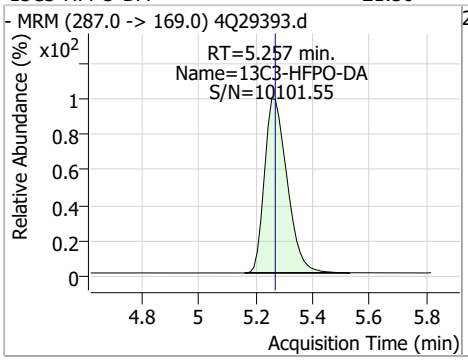
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.06	5.26	0.00	37632	285.0 -> 169.0	33.0	3.7	63.7

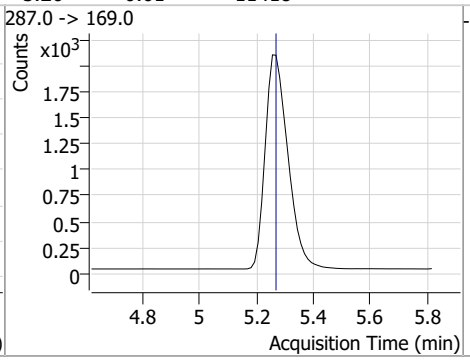


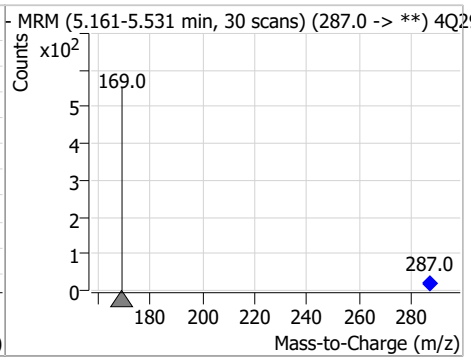




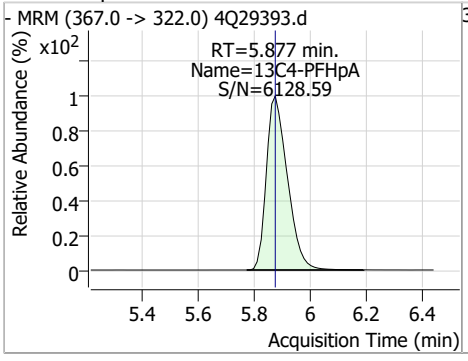
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.50	5.26	-0.01	11418				

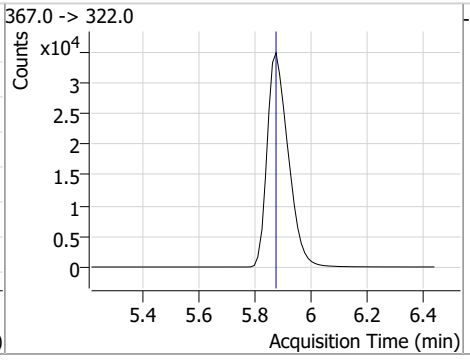


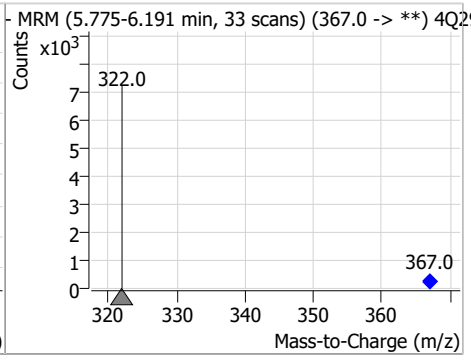




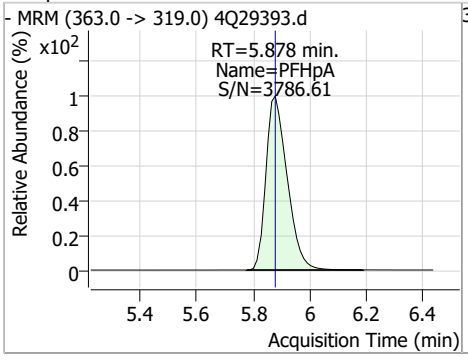
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.16	5.88	0.00	180655				

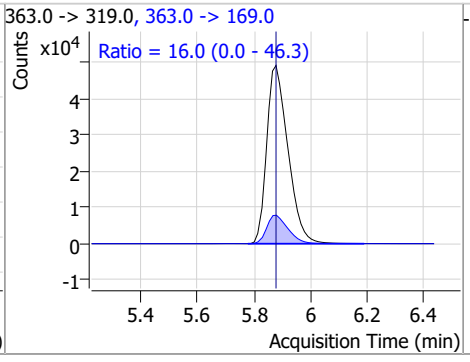


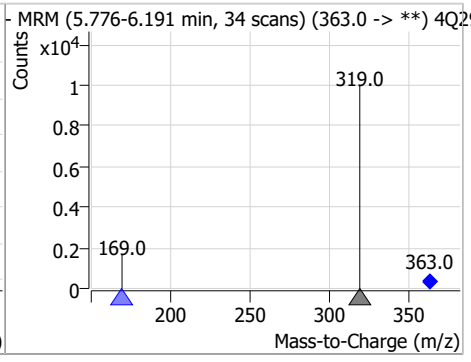




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.36	5.88	0.00	256327	363.0 -> 169.0	16.0	0.0	46.3

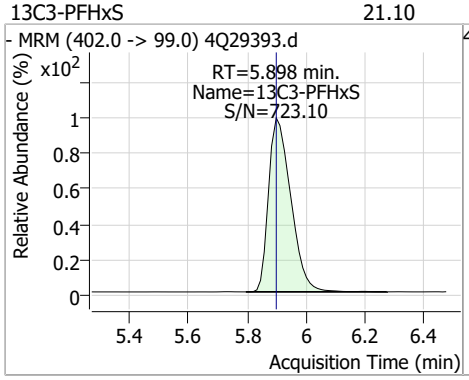


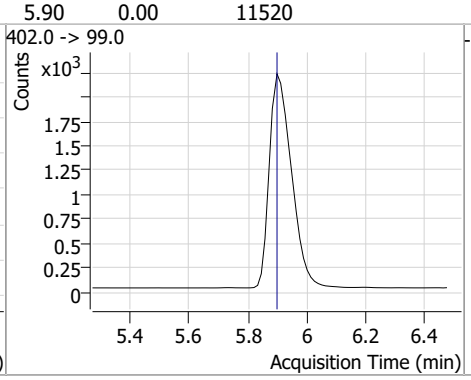


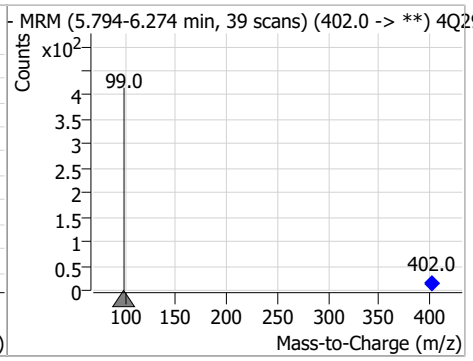


Perfluorinated Compounds by LC/MS/MS

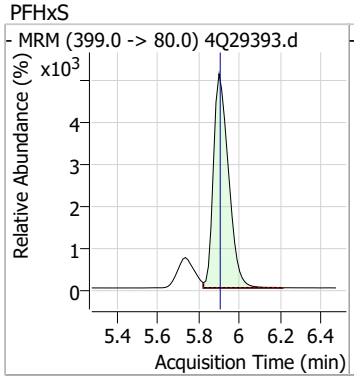
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.10	5.90	0.00	11520				

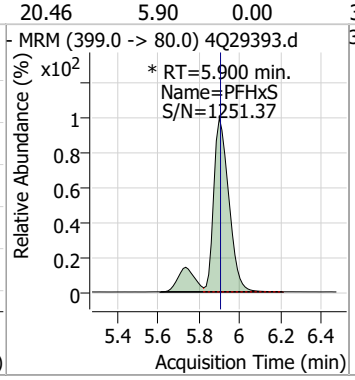


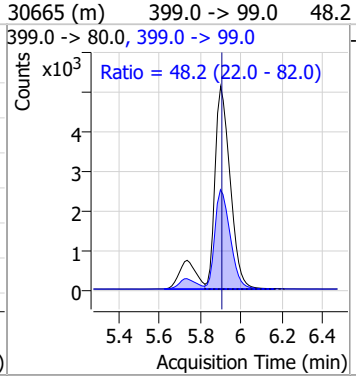


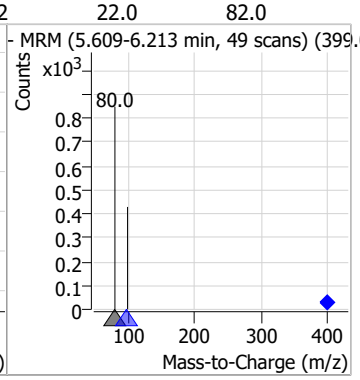


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.46	5.90	0.00	30665 (m)	399.0 -> 99.0	48.2	22.0	82.0

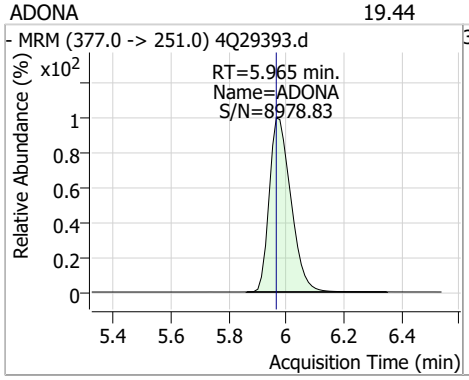


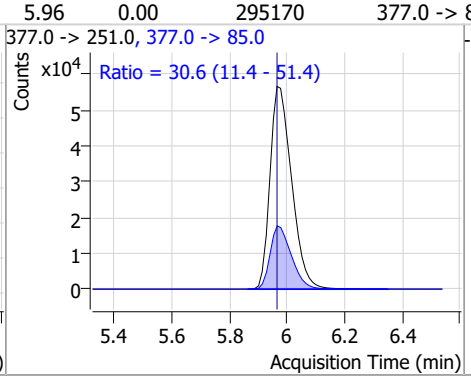


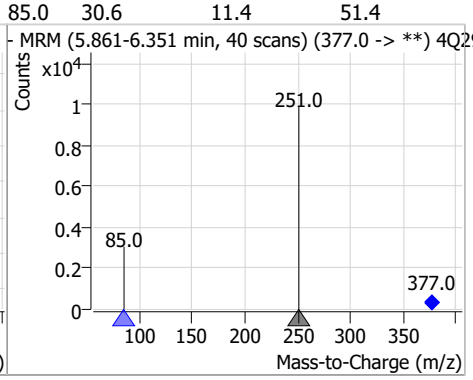




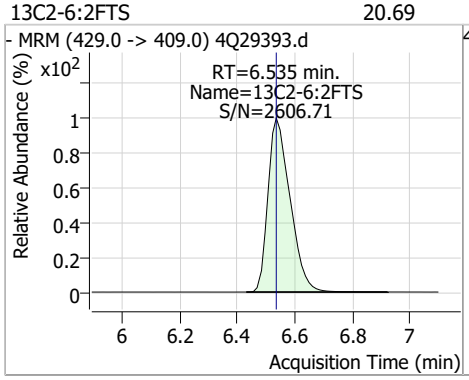
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.44	5.96	0.00	295170	377.0 -> 85.0	30.6	11.4	51.4

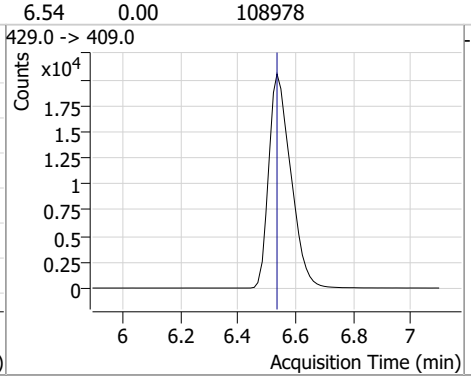


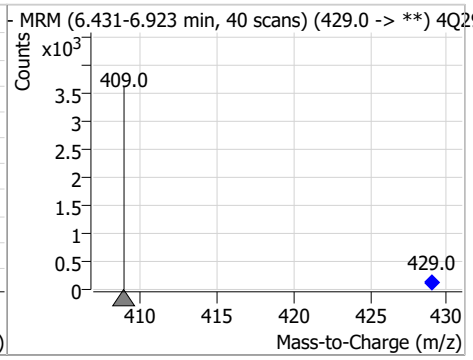




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.69	6.54	0.00	108978				

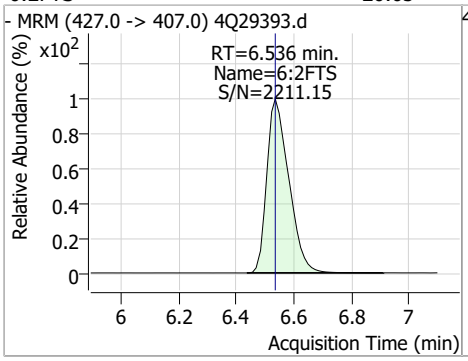


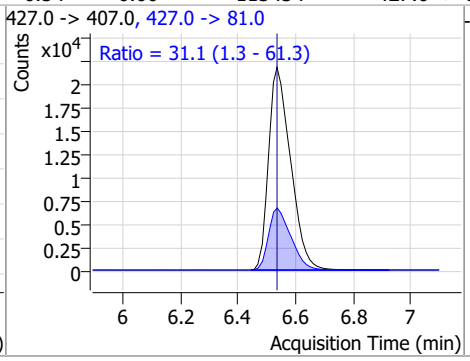


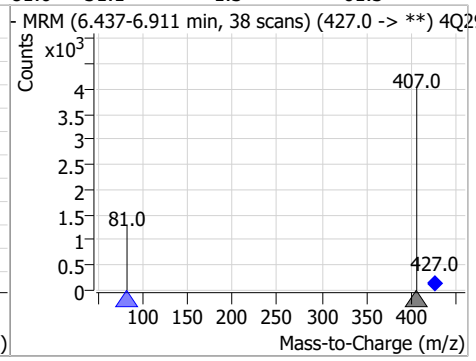


Perfluorinated Compounds by LC/MS/MS

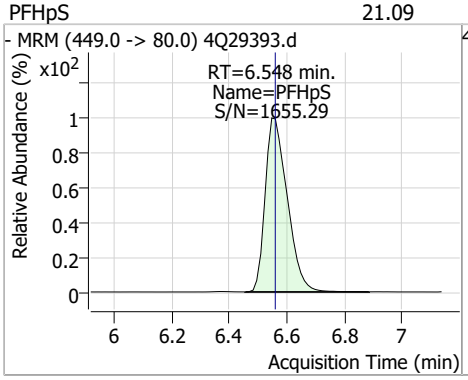
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.65	6.54	0.00	115434	427.0 -> 81.0	31.1	1.3	61.3

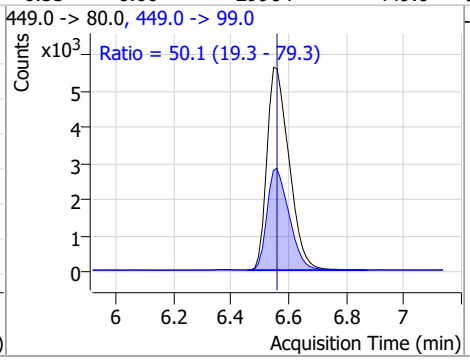


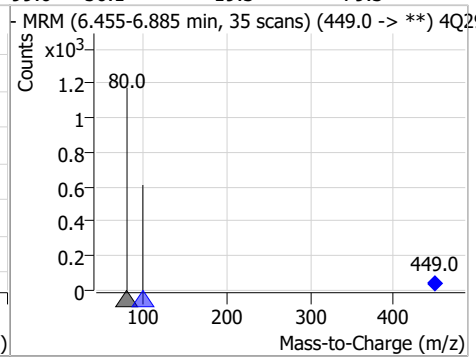




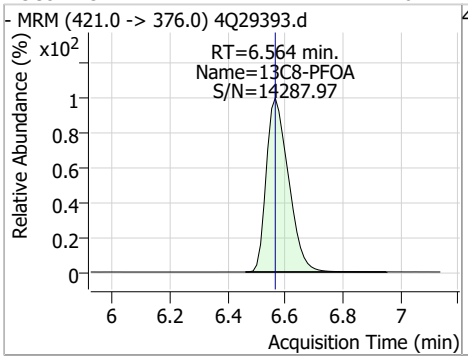
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.09	6.55	0.00	29964	449.0 -> 99.0	50.1	19.3	79.3

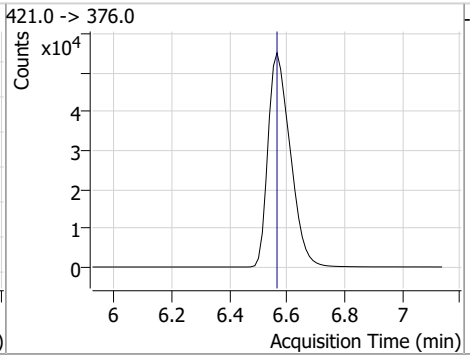


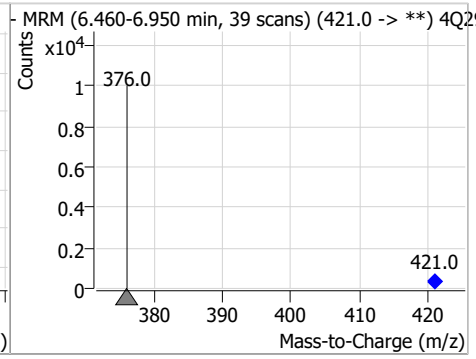




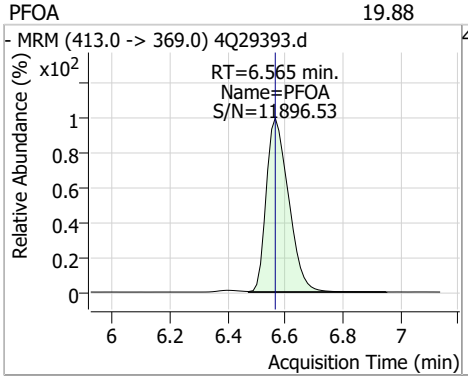
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.70	6.56	0.00	294490				

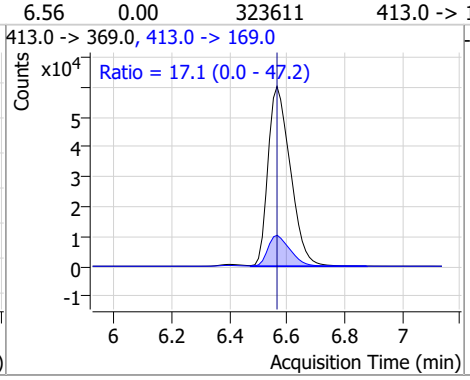


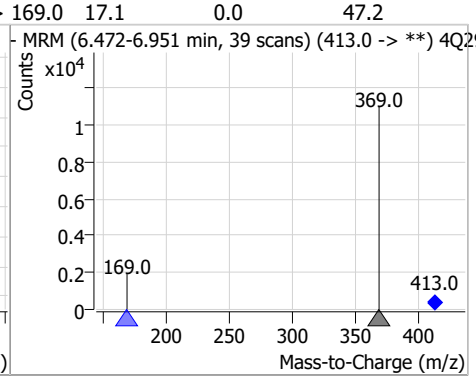




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.88	6.56	0.00	323611	413.0 -> 169.0	17.1	0.0	47.2

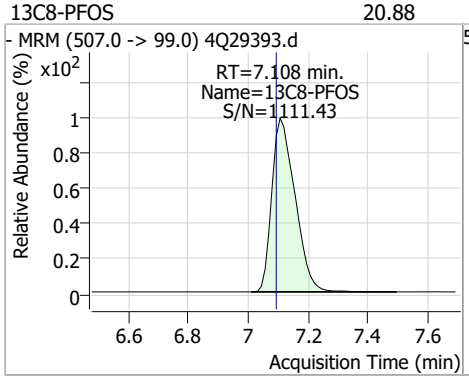


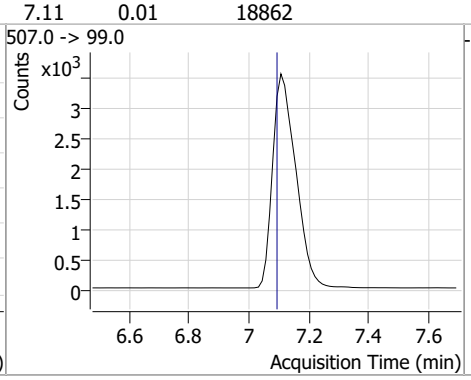


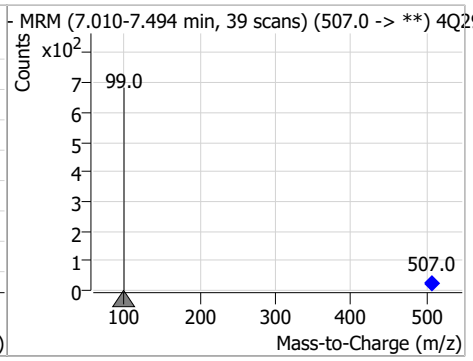


Perfluorinated Compounds by LC/MS/MS

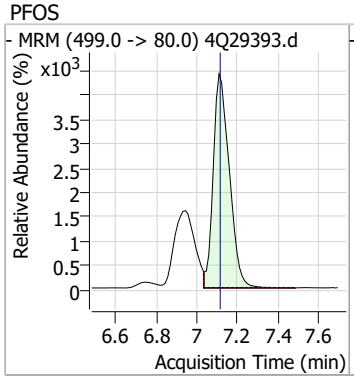
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.88	7.11	0.01	18862				

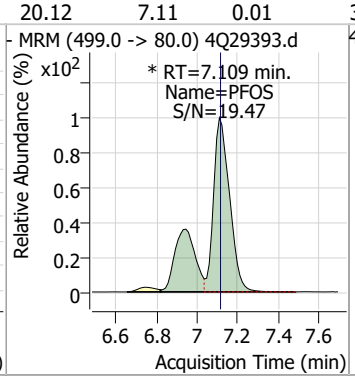


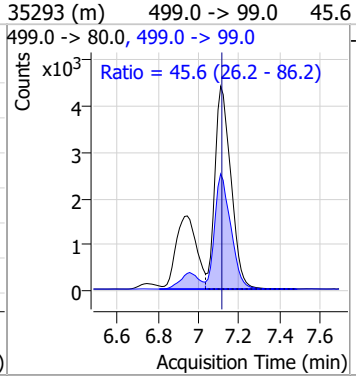


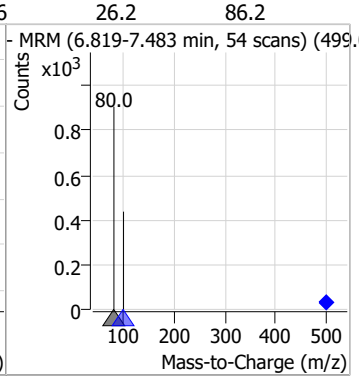


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.12	7.11	0.01	35293 (m)	499.0 -> 99.0	45.6	26.2	86.2

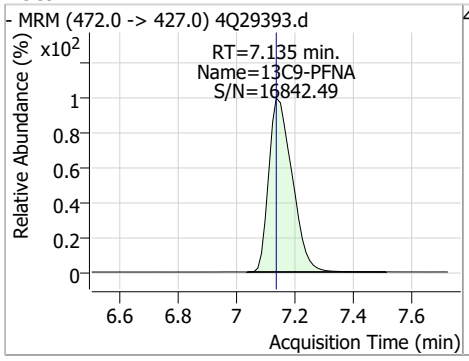


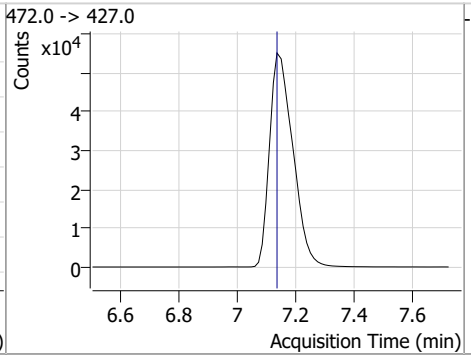


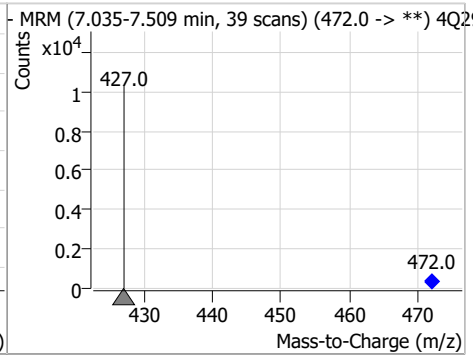




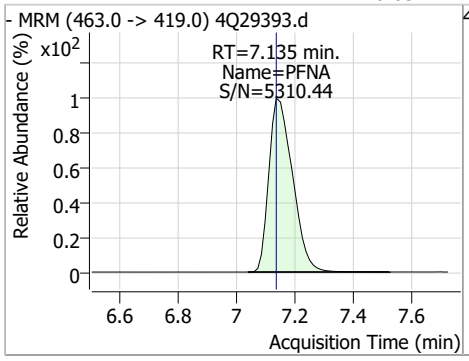
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.42	7.13	0.00	304857				

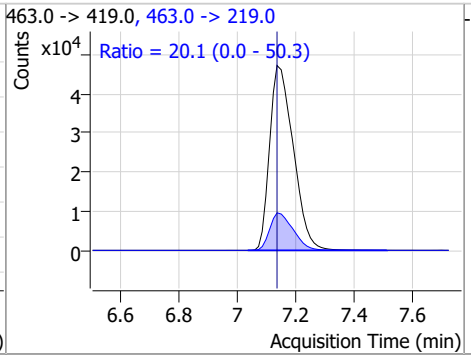


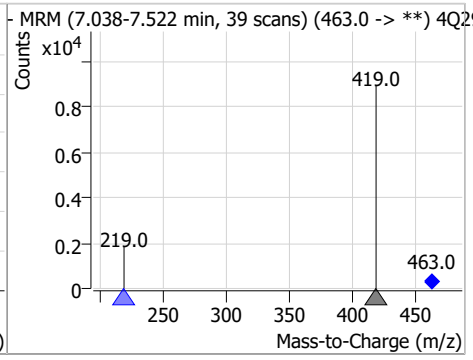




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.03	7.14	0.00	263477	463.0 -> 219.0	20.1	0.0	50.3

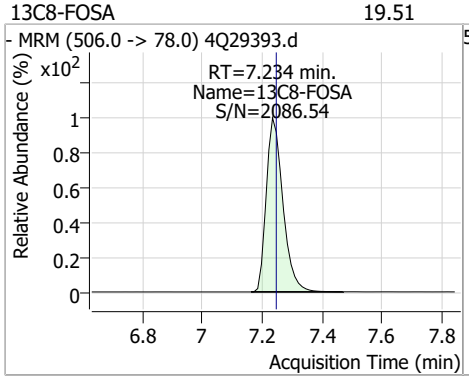


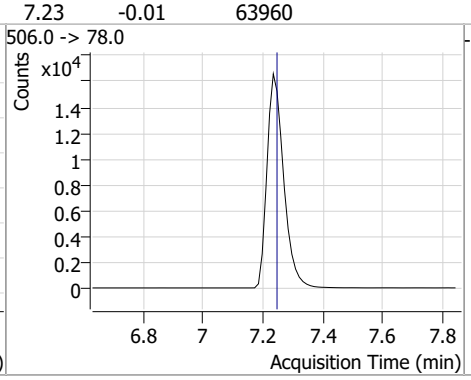


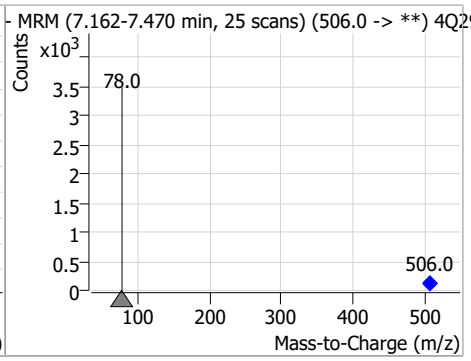


Perfluorinated Compounds by LC/MS/MS

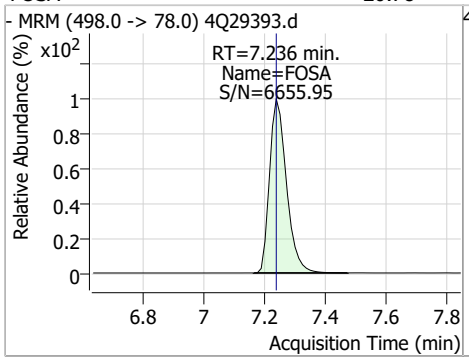
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.51	7.23	-0.01	63960				

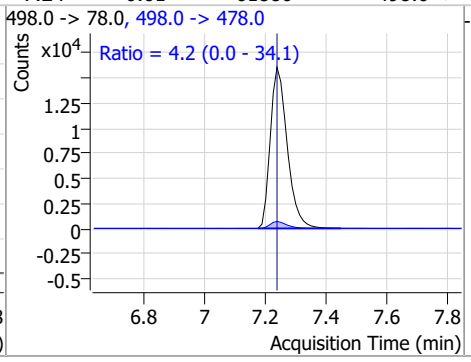


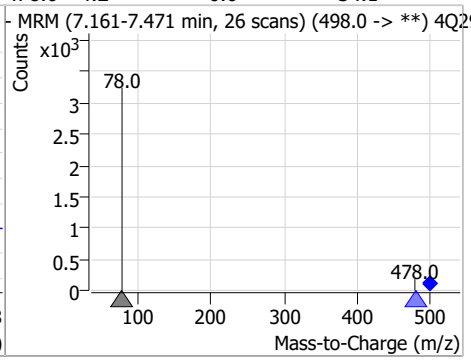




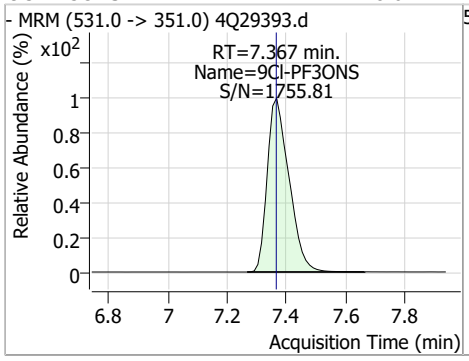
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.78	7.24	-0.01	61880	498.0 -> 478.0	4.2	0.0	34.1

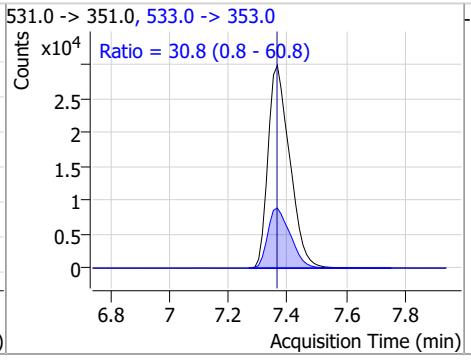


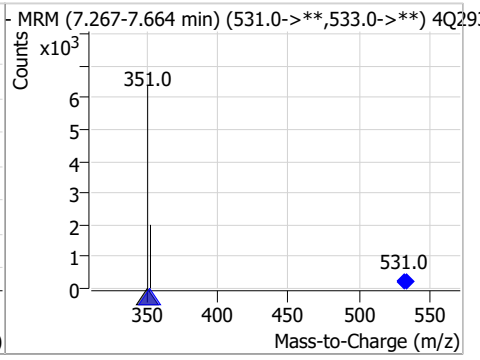




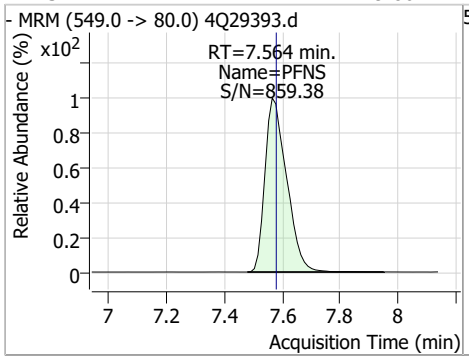
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.61	7.37	0.01	152063	533.0 -> 353.0	30.8	0.8	60.8

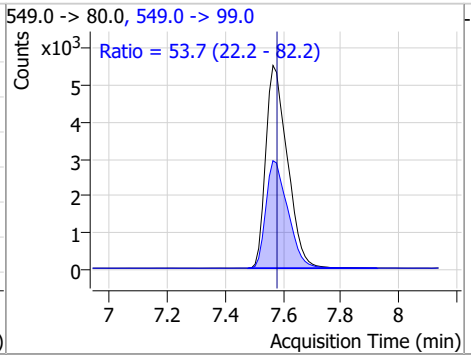


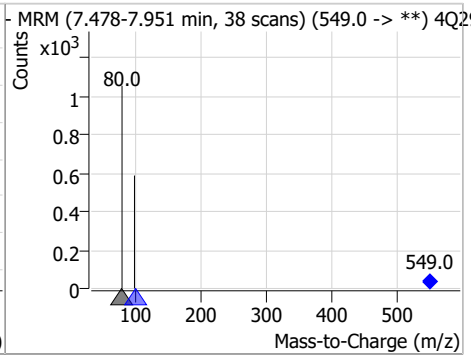




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.86	7.56	0.00	28490	549.0 -> 99.0	53.7	22.2	82.2

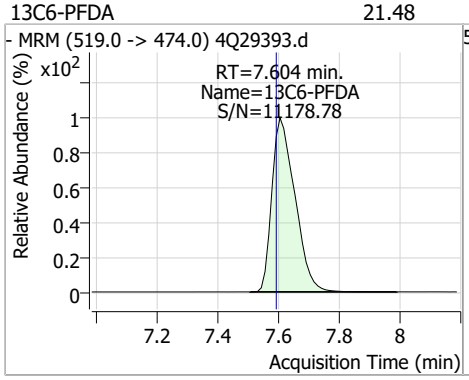


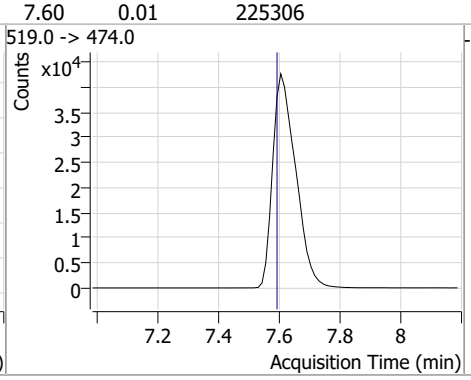


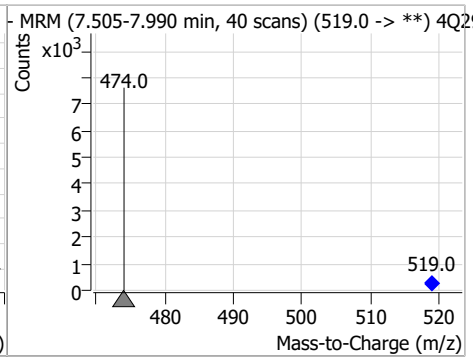


Perfluorinated Compounds by LC/MS/MS

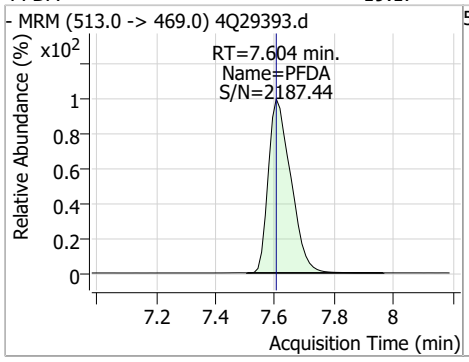
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.48	7.60	0.01	225306				

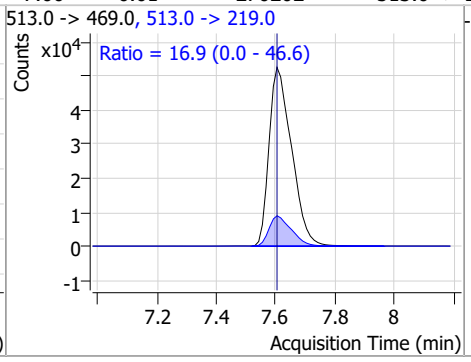


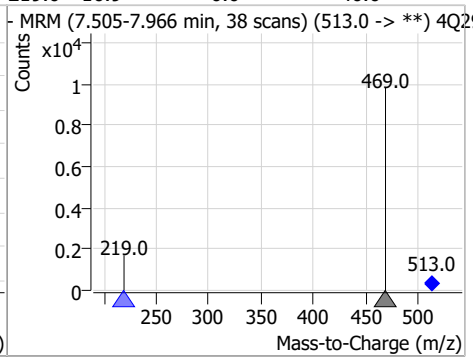




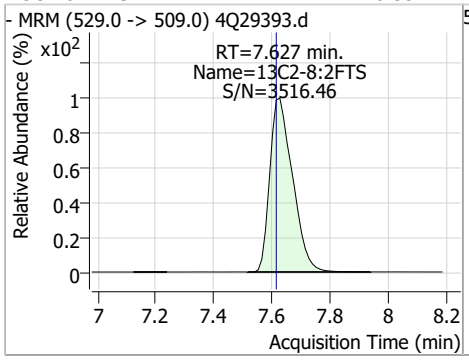
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.17	7.60	0.01	276202	513.0 -> 219.0	16.9	0.0	46.6

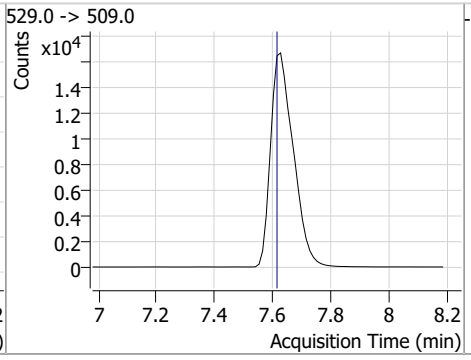


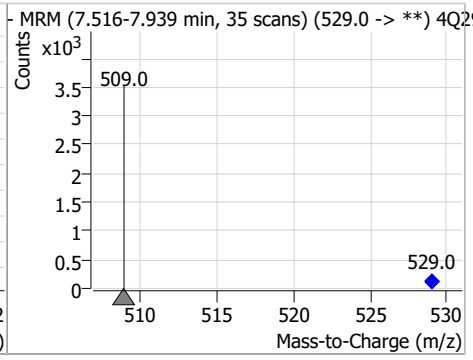




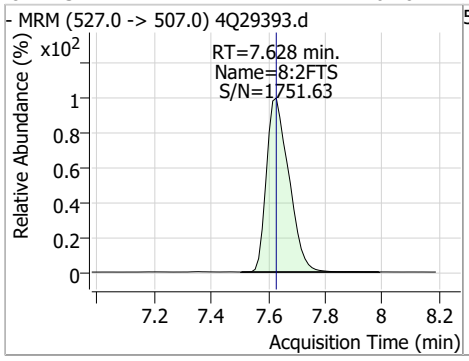
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.33	7.63	0.01	90660				

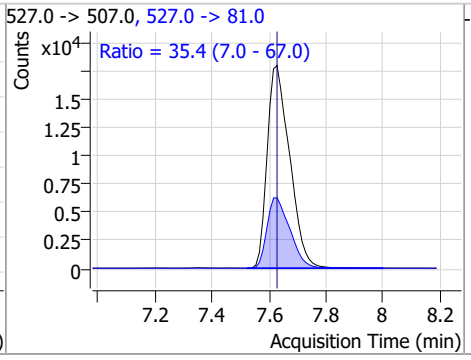


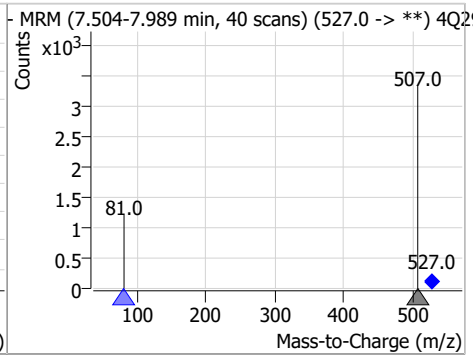




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.78	7.63	0.01	98113	527.0 -> 81.0	35.4	7.0	67.0

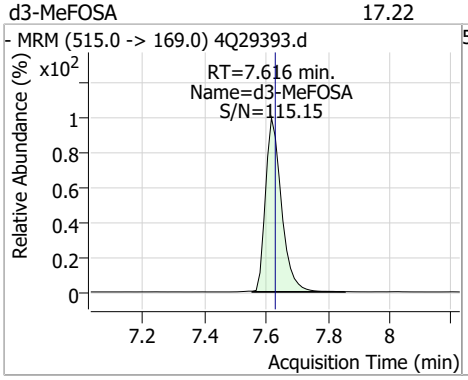


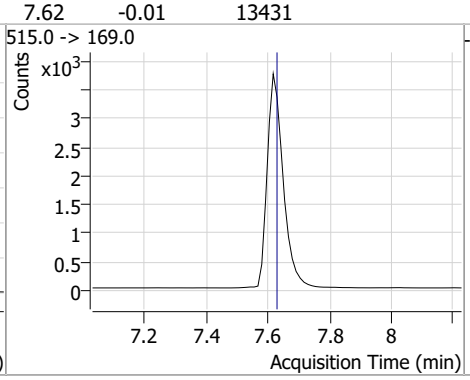


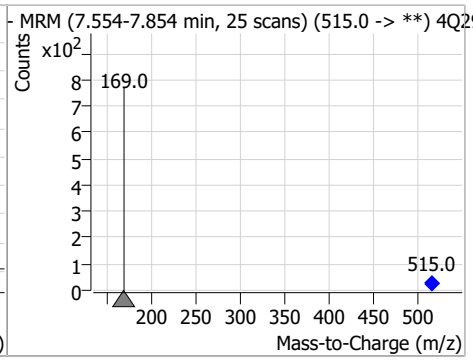


Perfluorinated Compounds by LC/MS/MS

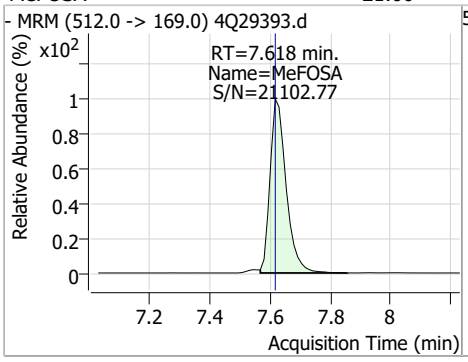
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.22	7.62	-0.01	13431				

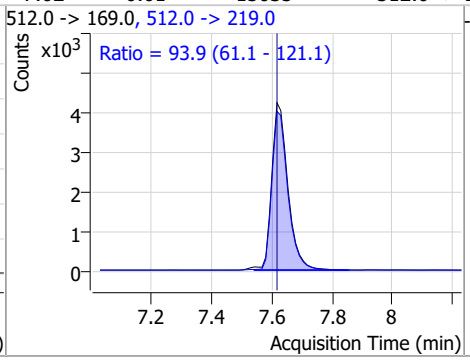


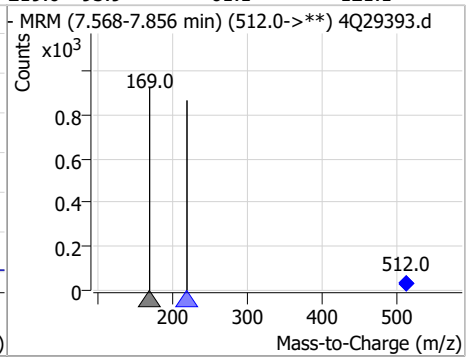




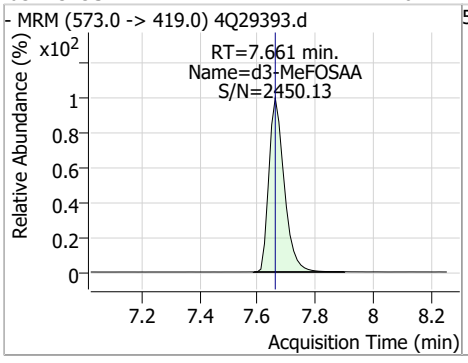
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.00	7.62	-0.01	15635	512.0 -> 219.0	93.9	61.1	121.1

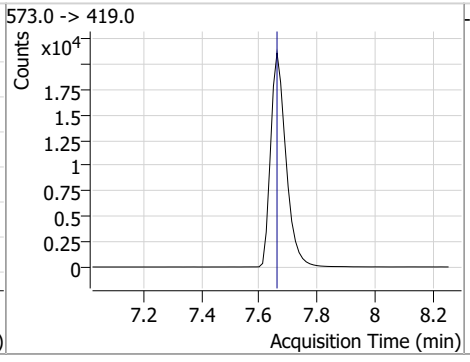


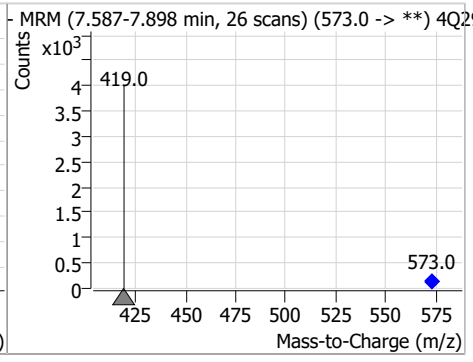




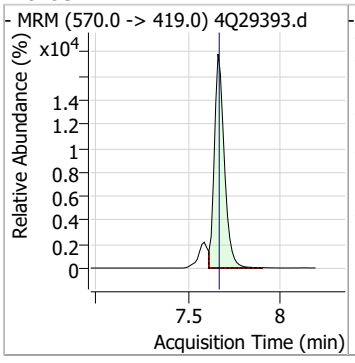
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.20	7.66	0.00	76960				

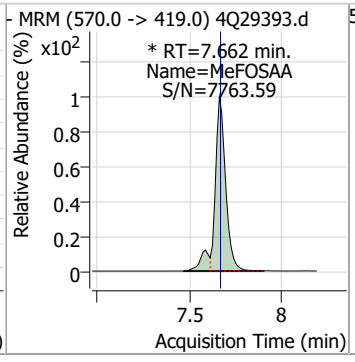


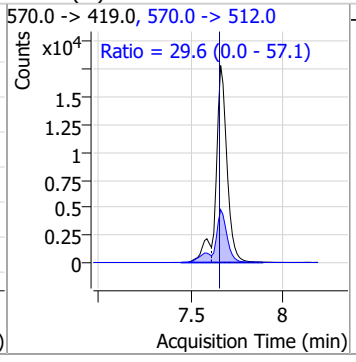


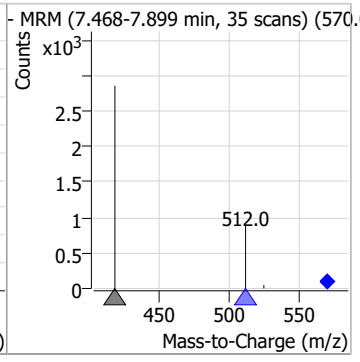


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.86	7.66	0.00	73708 (m)	570.0 -> 512.0	29.6	0.0	57.1



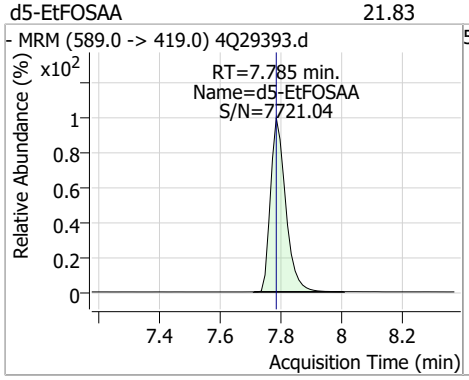


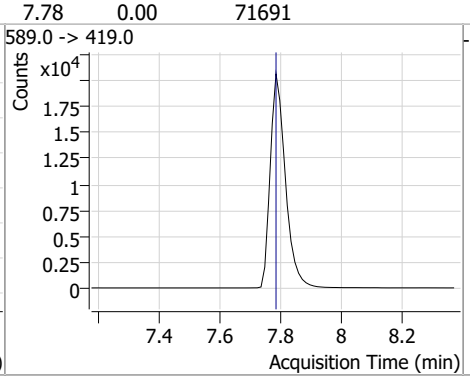


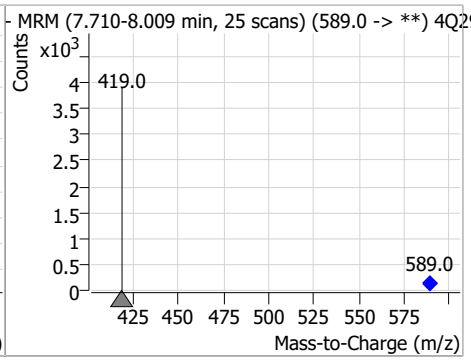


Perfluorinated Compounds by LC/MS/MS

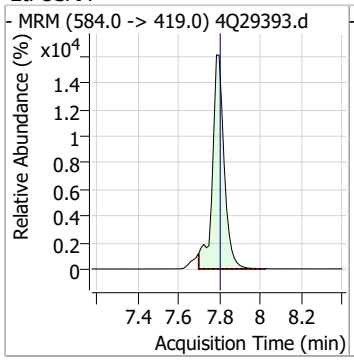
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.83	7.78	0.00	71691				

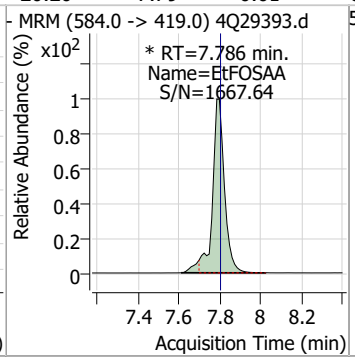


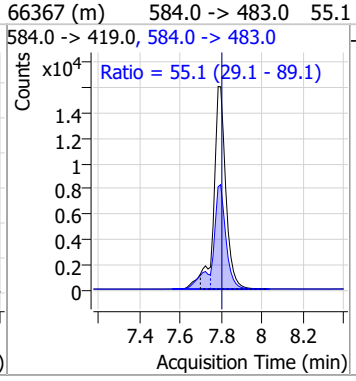


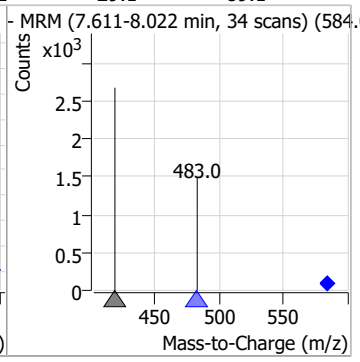


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.20	7.79	-0.01	66367 (m)	584.0 -> 483.0	55.1	29.1	89.1

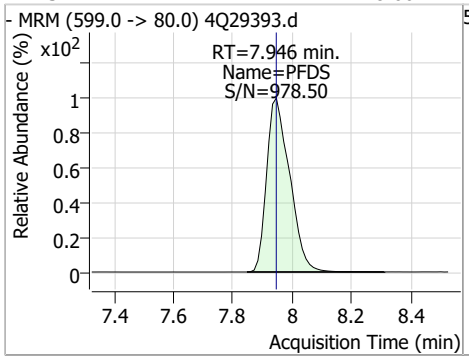


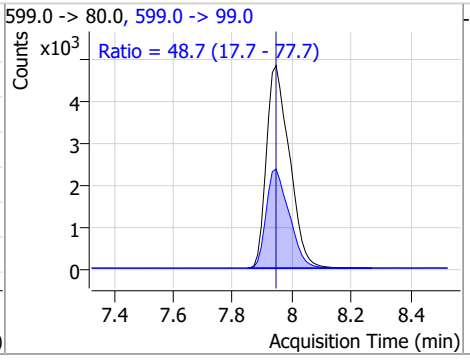


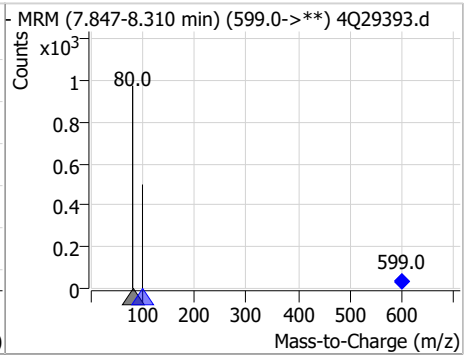




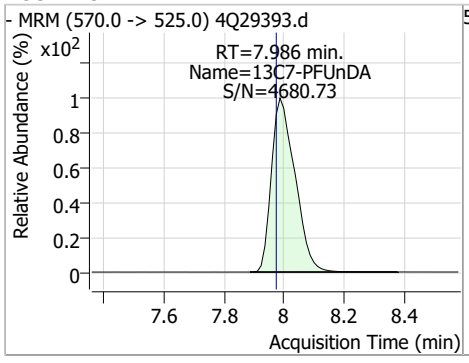
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.60	7.95	0.01	25745	599.0 -> 99.0	48.7	17.7	77.7

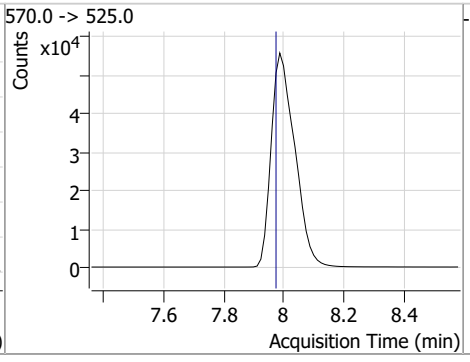


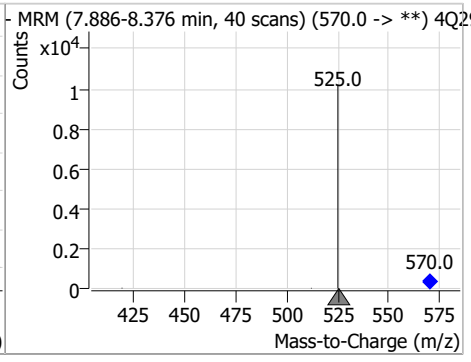




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.41	7.99	0.01	302214				

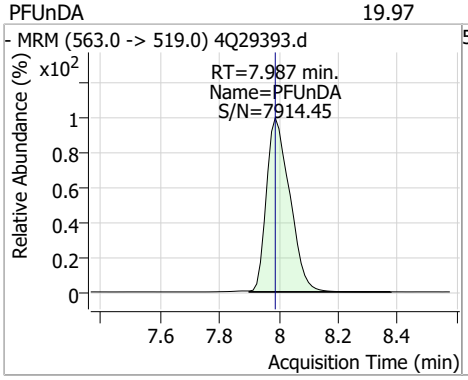


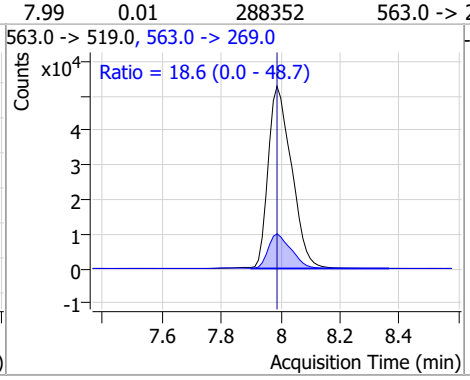


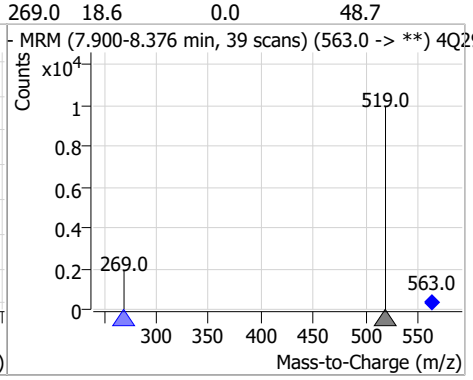


Perfluorinated Compounds by LC/MS/MS

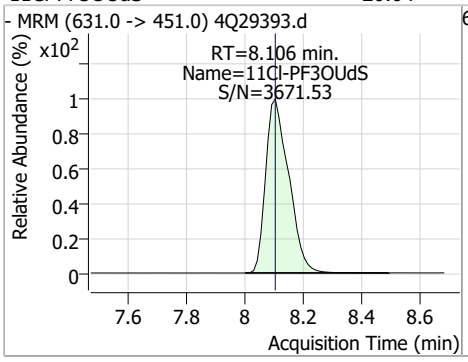
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.97	7.99	0.01	288352	563.0 -> 269.0	18.6	0.0	48.7

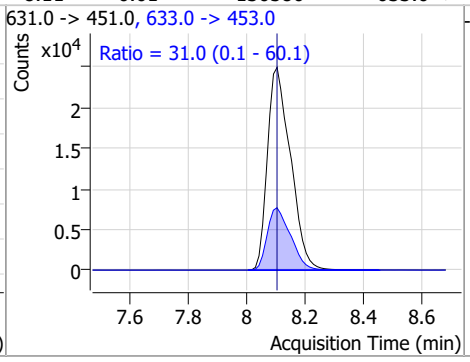


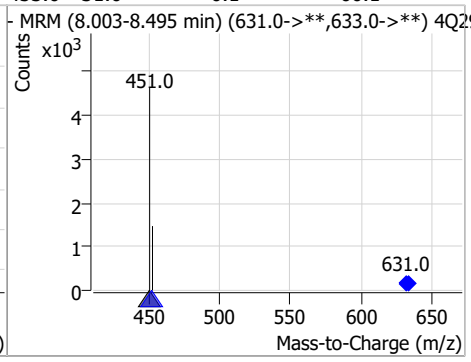




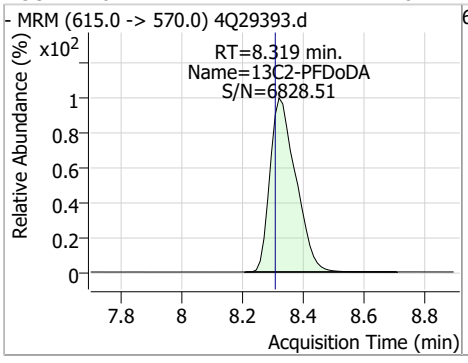
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.04	8.11	0.01	136580	633.0 -> 453.0	31.0	0.1	60.1

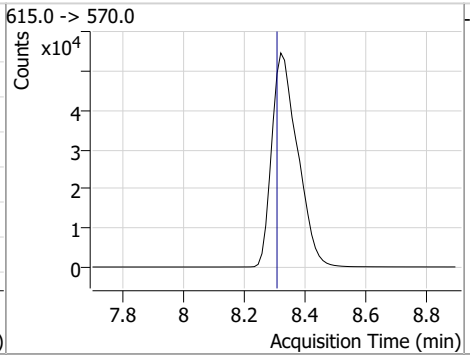


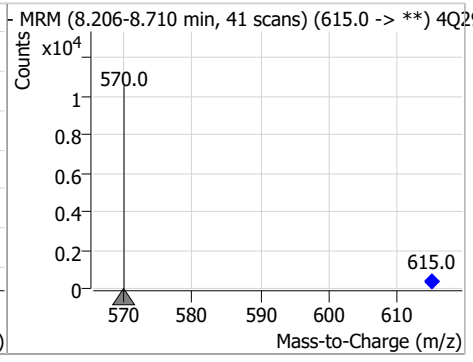




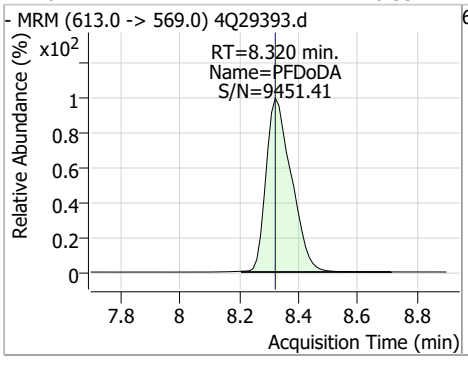
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.18	8.32	0.01	324235				

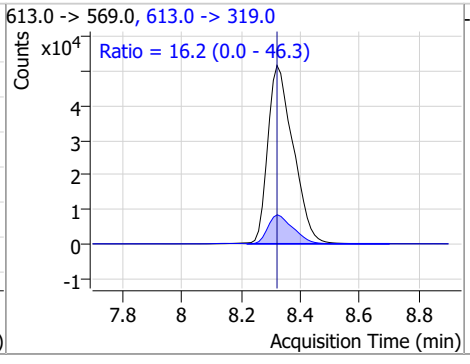


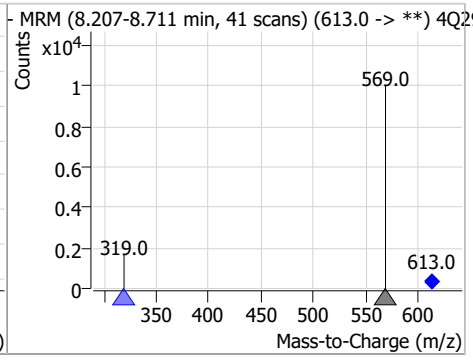




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.33	8.32	0.01	306788	613.0 -> 319.0	16.2	0.0	46.3

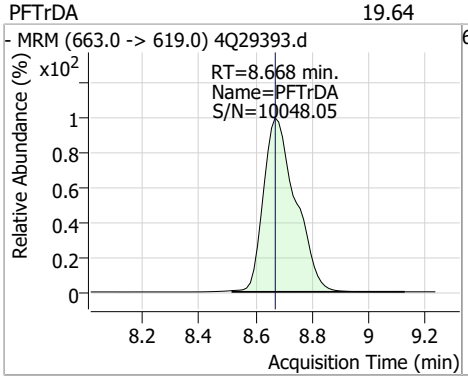


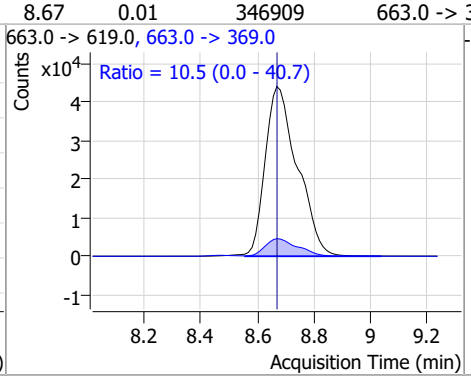


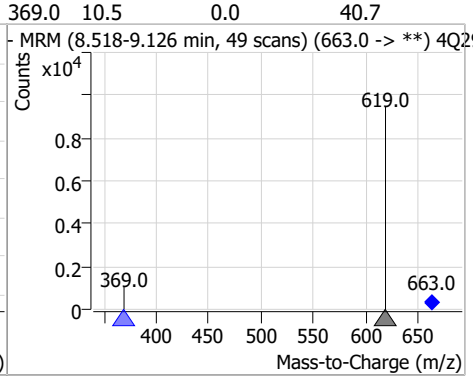


Perfluorinated Compounds by LC/MS/MS

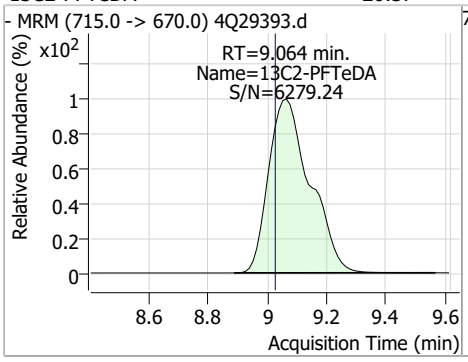
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.64	8.67	0.01	346909	663.0 -> 369.0	10.5	0.0	40.7

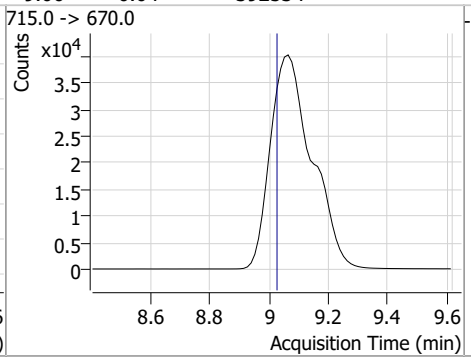


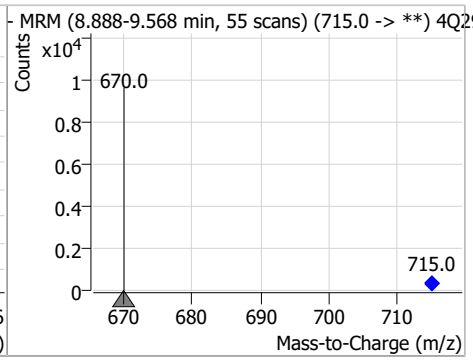




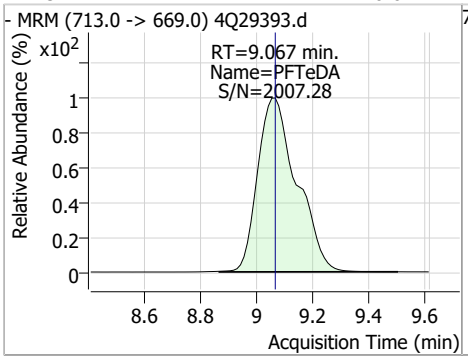
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.37	9.06	0.04	392534				

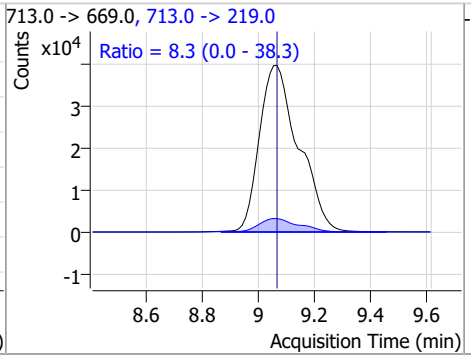


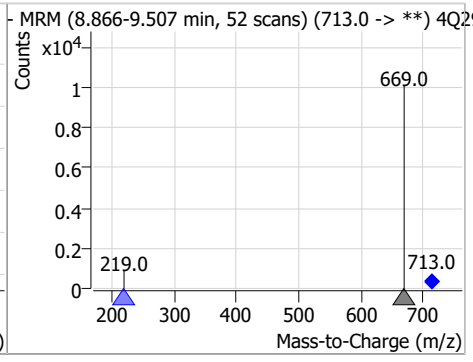




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.67	9.07	0.04	389864	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q422-CC419
Lab FileID: 4Q29393.D
Injection Time: 05/31/22 14:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/31/22 21:52 Martha Valls
Supervisor approved: 05/31/22 22:38 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.79	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 11:50

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29405.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 6:15:00 PM
Sample Name : cc419-20
Vial : P1-A7
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91245,S4Q422,250,,,1.0,1,water

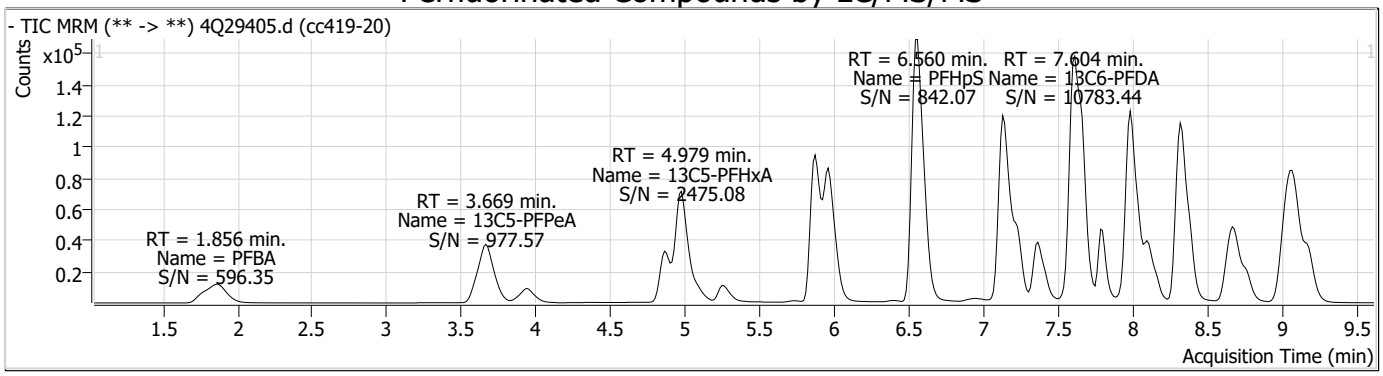
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	98574	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	153096	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	189251	20.00	µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	178946	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	291319	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	302141	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	223961	20.00	µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	300486	20.00	µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	324288	20.00	µg/L	0.012
M2-PFTeDA	9.064	715.0 -> 670.0	398042	20.00	µg/L	0.037
M8-FOSA	7.234	506.0 -> 78.0	66232	20.00	µg/L	-0.012
M3-PFBS	3.936	302.0 -> 99.0	11576	20.00	µg/L	-0.013
M3-PFHxS	5.898	402.0 -> 99.0	11478	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	18686	20.00	µg/L	0.013
M2-4:2FTS	4.862	329.0 -> 309.0	69925	20.00	µg/L	-0.012
M2-6:2FTS	6.535	429.0 -> 409.0	108664	20.00	µg/L	0.000
M2-8:2FTS	7.627	529.0 -> 509.0	90106	20.00	µg/L	0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	77436	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10725	20.00	µg/L	-0.012
M3-MeFOSA	7.616	515.0 -> 169.0	14321	20.00	µg/L	-0.012
M5-EtFOSAA	7.785	589.0 -> 419.0	73105	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	69925	20.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C2-6:2FTS	6.535	429.0 -> 409.0	108664	20.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-8:2FTS	7.627	529.0 -> 509.0	90106	20.20	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C2-PFDoDA	8.319	615.0 -> 570.0	324288	21.18	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C2-PFTeDA	9.064	715.0 -> 670.0	398042	20.66	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C3-PFBS	3.936	302.0 -> 99.0	11576	21.03	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C3-PFHxS	5.898	402.0 -> 99.0	11478	21.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C4-PFBA	1.862	217.0 -> 172.0	98574	20.97	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C4-PFHpA	5.877	367.0 -> 322.0	178946	20.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C5-PFHxA	4.979	318.0 -> 273.0	189251	21.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C5-PFPeA	3.669	268.0 -> 223.0	153096	20.88	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C6-PFDA	7.604	519.0 -> 474.0	223961	21.35	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

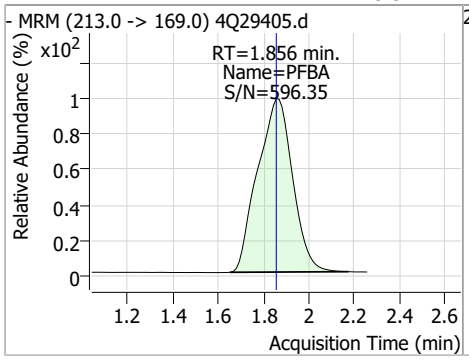
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C7-PFUnDA	7.986	570.0 -> 525.0	300486	21.28 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C8-FOSA	7.234	506.0 -> 78.0	66232	20.20 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-PFOA	6.564	421.0 -> 376.0	291319	21.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C8-PFOS	7.108	507.0 -> 99.0	18686	20.69 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C9-PFNA	7.135	472.0 -> 427.0	302141	21.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
d3-MeFOSAA	7.661	573.0 -> 419.0	77436	21.33 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10721	20.18 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSA	7.616	515.0 -> 169.0	14321	18.37 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
d5-EtFOSAA	7.785	589.0 -> 419.0	73071	22.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	82612	20.54 µg/L		100
6:2FTS	6.536	427.0 -> 407.0	115283	20.68 µg/L		100
8:2FTS	7.628	527.0 -> 507.0	95841	20.42 µg/L		99
EtFOSAA	7.798	584.0 -> 419.0	68904	20.57 µg/L	m	91
FOSA	7.236	498.0 -> 78.0	64497	20.92 µg/L		99
MeFOSAA	7.662	570.0 -> 419.0	74413	20.93 µg/L	m	95
PFBA	1.856	213.0 -> 169.0	31082	19.92 µg/L		100
PFBS	3.941	299.0 -> 80.0	37015	20.19 µg/L		100
PFDA	7.604	513.0 -> 469.0	278834	19.46 µg/L		99
PFDoDA	8.320	613.0 -> 569.0	308344	20.43 µg/L		100
PFDS	7.946	599.0 -> 80.0	26159	19.01 µg/L		99
PFHpA	5.878	363.0 -> 319.0	254899	20.44 µg/L		99
PFHpS	6.560	449.0 -> 80.0	29796	21.17 µg/L		99
PFHxA	4.980	313.0 -> 269.0	193612	20.06 µg/L		100
PFHxS	5.900	399.0 -> 80.0	30079	20.14 µg/L	m	96
PFNA	7.135	463.0 -> 419.0	262445	20.13 µg/L		100
PFNS	7.564	549.0 -> 80.0	28395	19.98 µg/L		100
PFOA	6.565	413.0 -> 369.0	319908	19.86 µg/L		100
PFOS	7.109	499.0 -> 80.0	35413	20.38 µg/L	m	86
PFPeA	3.672	263.0 -> 219.0	139587	20.59 µg/L		100
PFPeS	5.085	349.0 -> 80.0	24433	20.34 µg/L		99
PFTeDA	9.054	713.0 -> 669.0	390101	20.40 µg/L		100
PFTrDA	8.668	663.0 -> 619.0	345843	19.58 µg/L		100
PFUnDA	7.987	563.0 -> 519.0	287526	20.02 µg/L		99
11Cl-PF3OUdS	8.106	631.0 -> 451.0	136466	20.03 µg/L		99
9Cl-PF3ONS	7.367	531.0 -> 351.0	147979	18.22 µg/L		97
ADONA	5.965	377.0 -> 251.0	291861	19.29 µg/L		98
HFPO-DA	5.252	329.0 -> 169.0	35334	21.10 µg/L		99
MeFOSA	7.630	512.0 -> 169.0	16717	21.06 µg/L		97

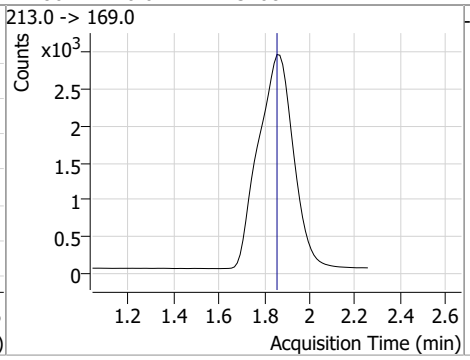
 # = Qualifier out of range, m = manually integrated, + = Area summed

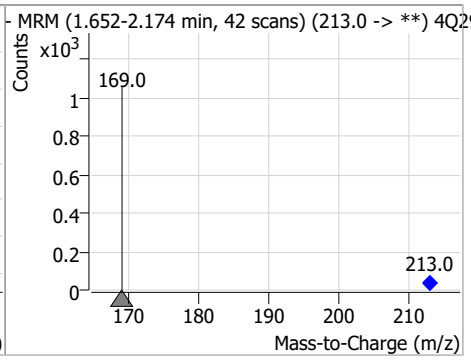
Perfluorinated Compounds by LC/MS/MS



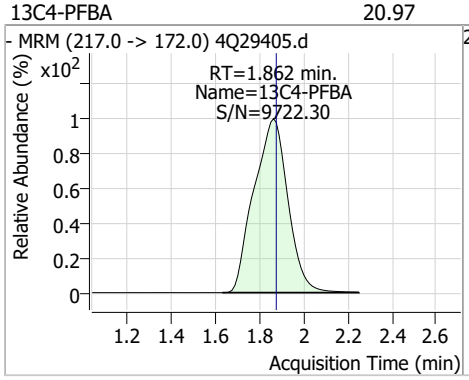
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.92	1.86	-0.01	31082				

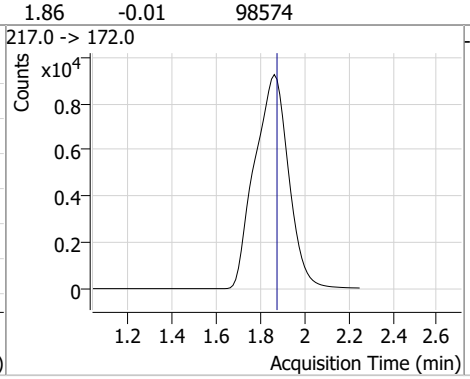


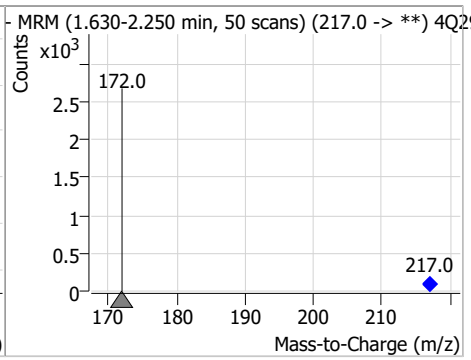




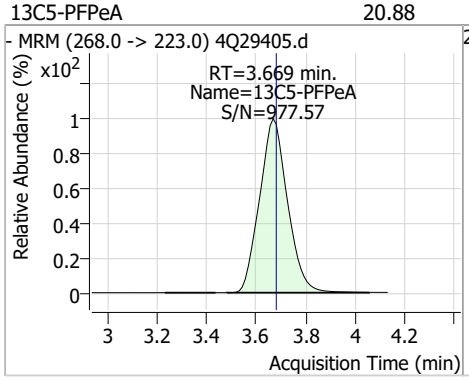
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.97	1.86	-0.01	98574				

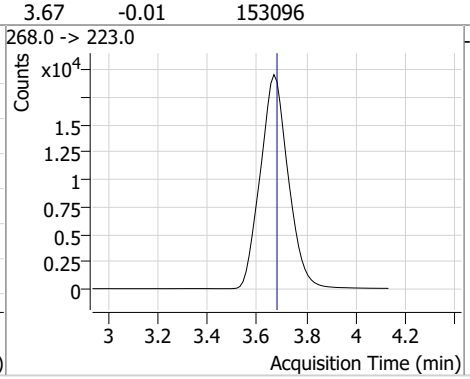


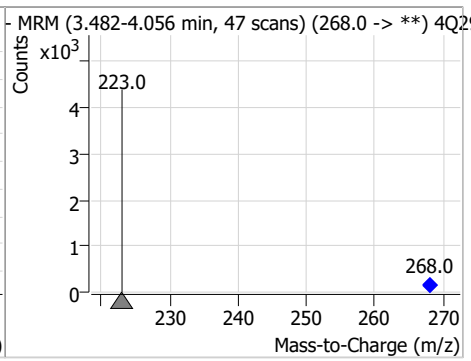




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.88	3.67	-0.01	153096				

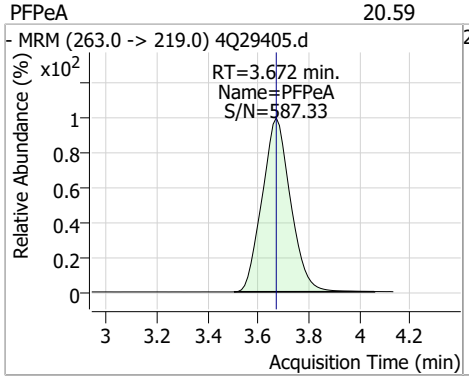


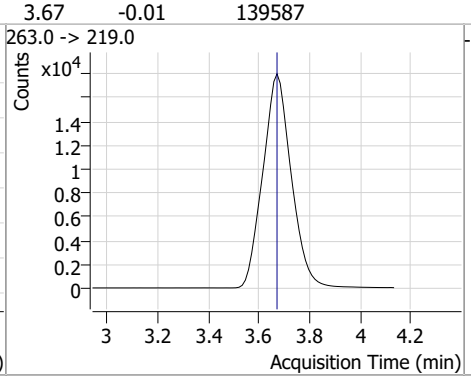


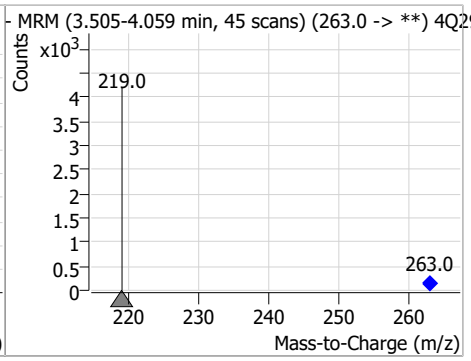


Perfluorinated Compounds by LC/MS/MS

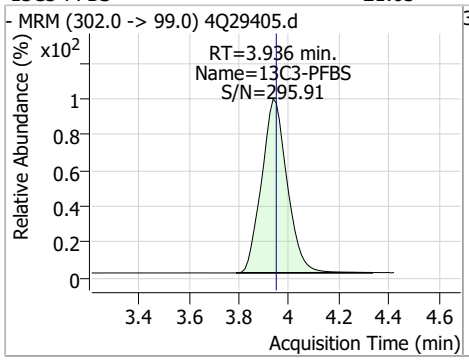
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.59	3.67	-0.01	139587				

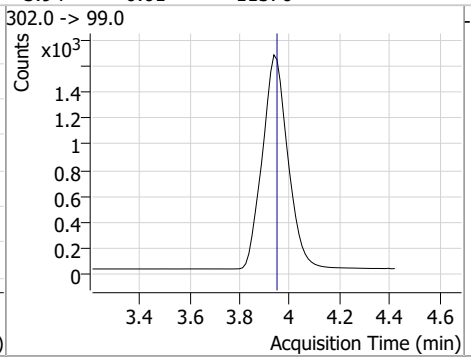


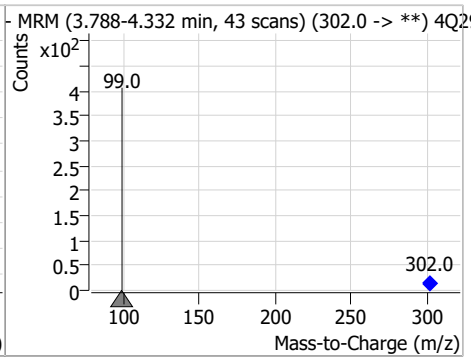




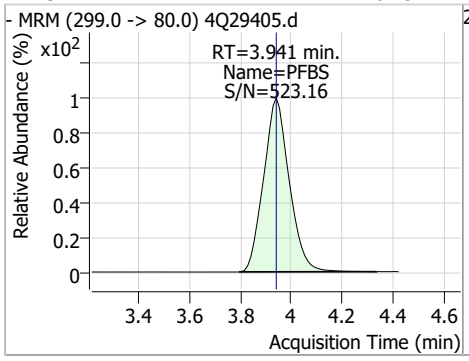
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.03	3.94	-0.01	11576				

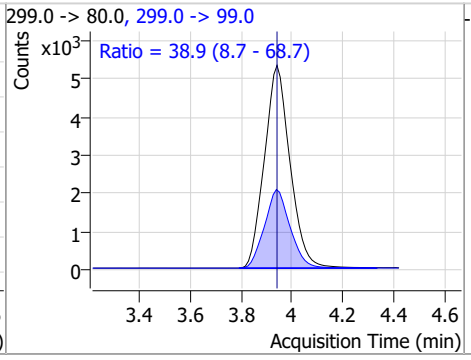


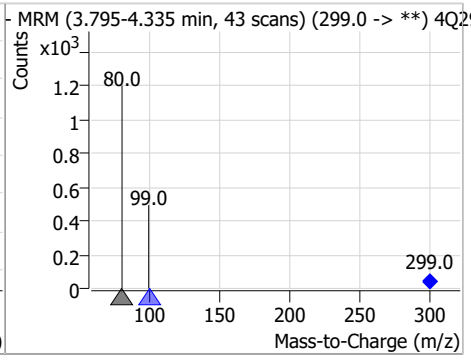




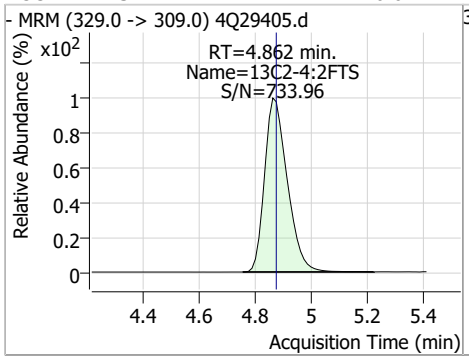
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.19	3.94	-0.01	37015	299.0 -> 99.0	38.9	8.7	68.7

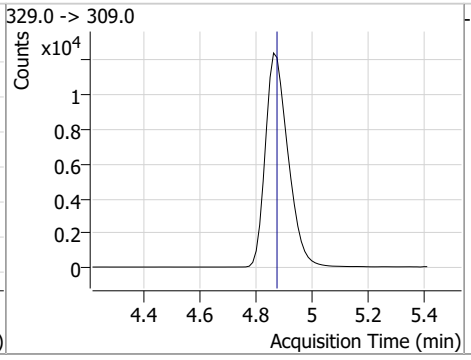


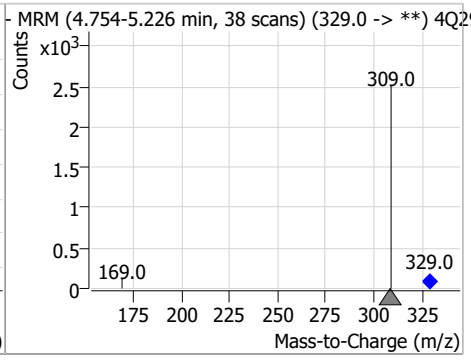




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.61	4.86	-0.01	69925				

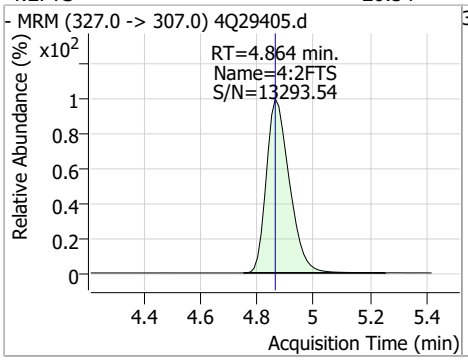


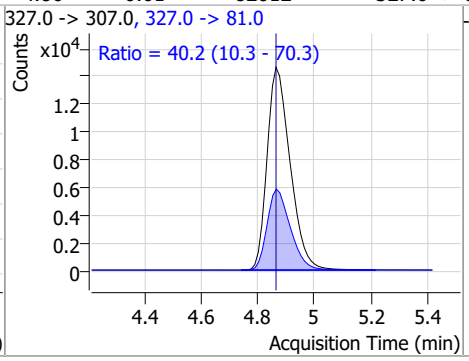


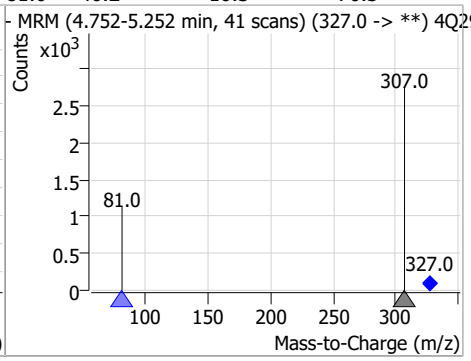


Perfluorinated Compounds by LC/MS/MS

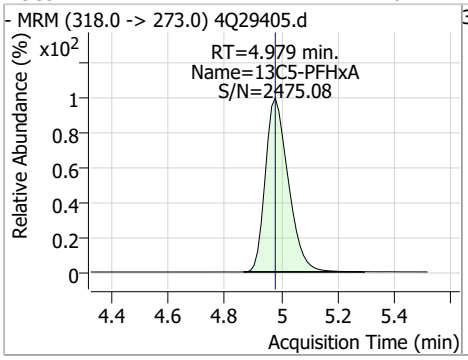
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.54	4.86	-0.01	82612	327.0 -> 81.0	40.2	10.3	70.3

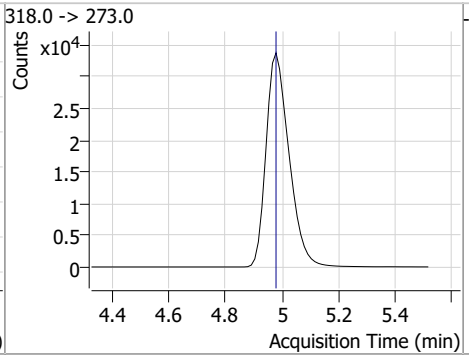


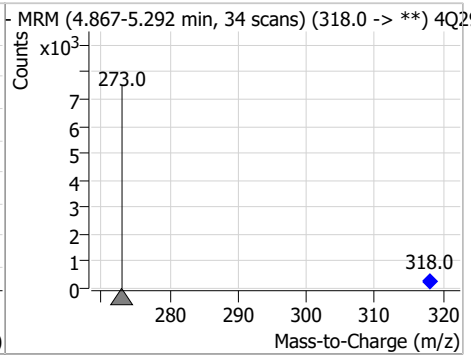




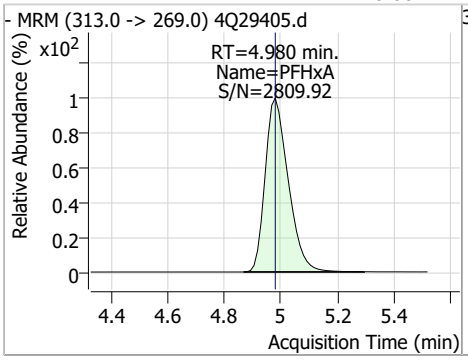
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.01	4.98	0.00	189251				

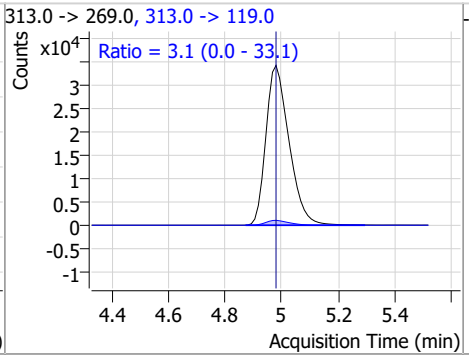


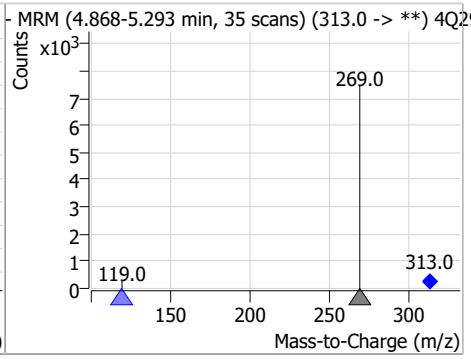




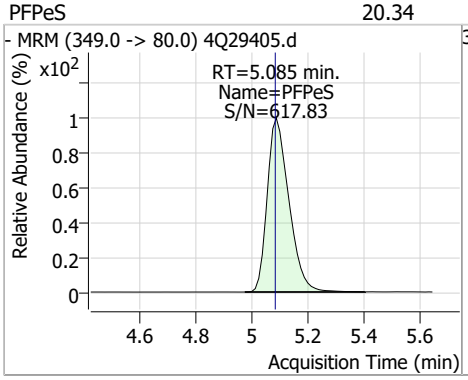
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.06	4.98	0.00	193612	313.0 -> 119.0	3.1	0.0	33.1

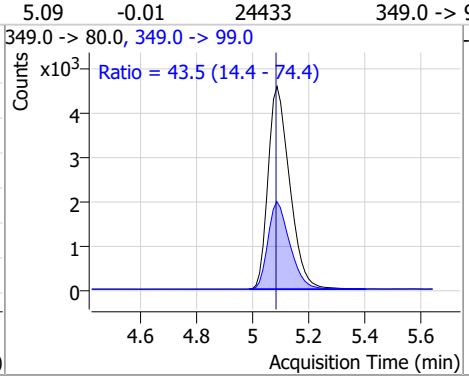


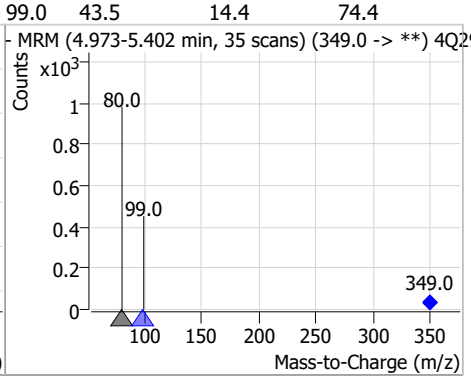




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.34	5.09	-0.01	24433	349.0 -> 99.0	43.5	14.4	74.4

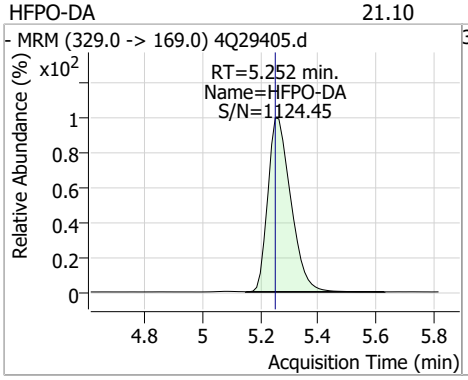


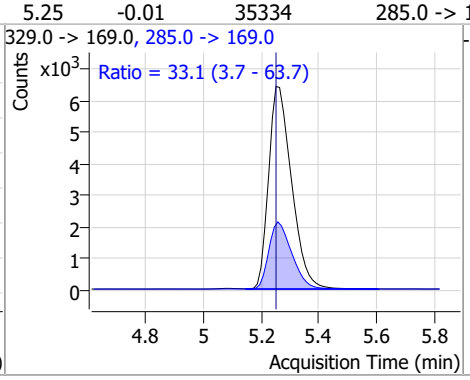


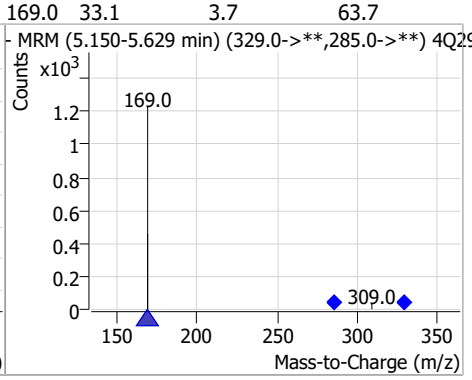


Perfluorinated Compounds by LC/MS/MS

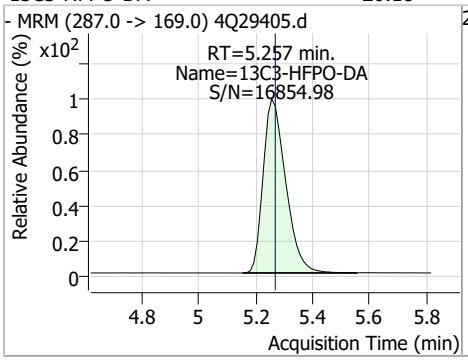
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.10	5.25	-0.01	35334	285.0 -> 169.0	33.1	3.7	63.7

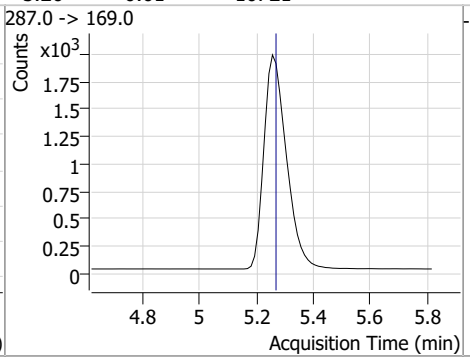


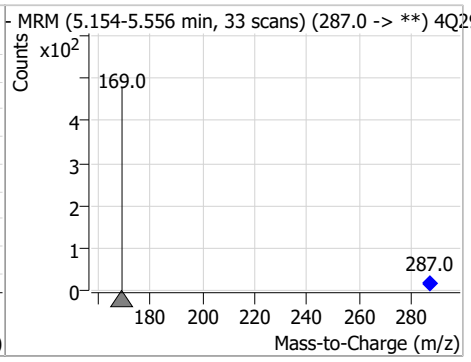




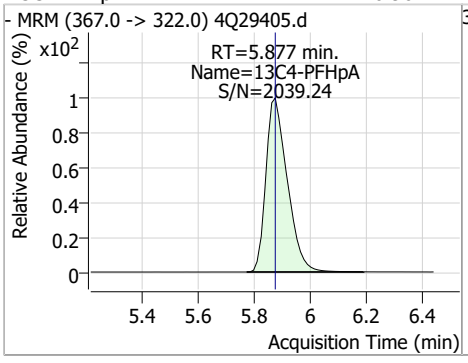
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.18	5.26	-0.01	10721				

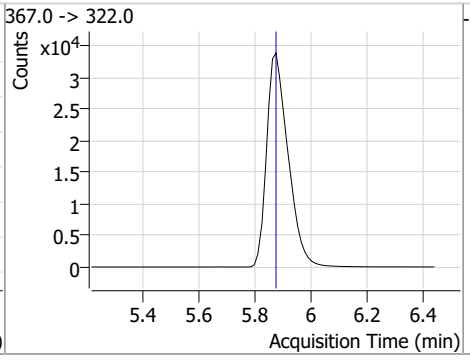


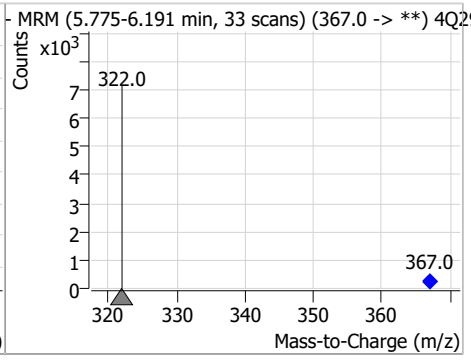




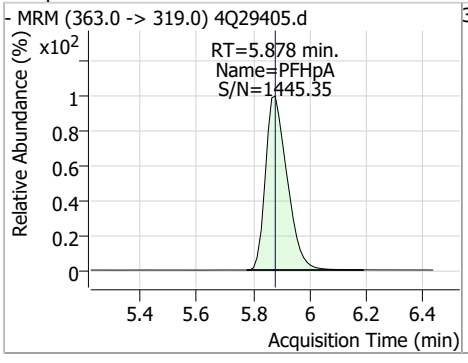
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.96	5.88	0.00	178946				

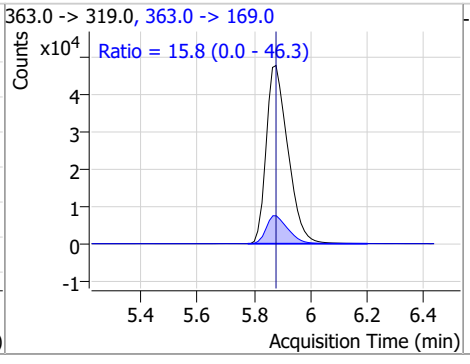


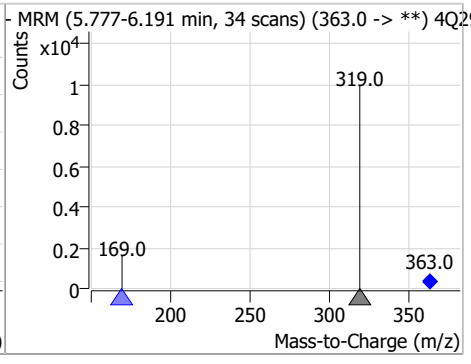




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.44	5.88	0.00	254899	363.0 -> 169.0	15.8	0.0	46.3

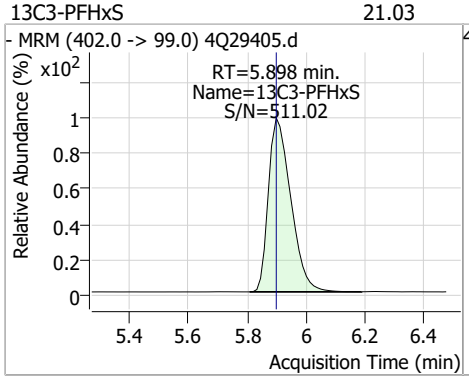


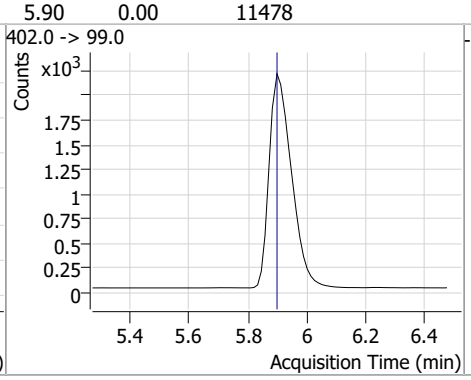


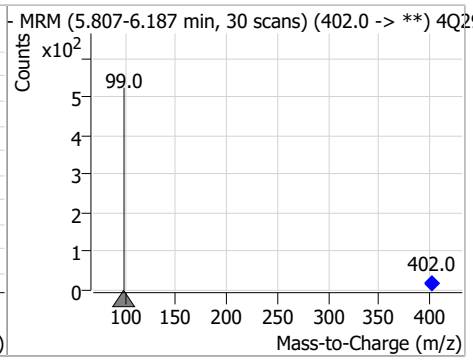


Perfluorinated Compounds by LC/MS/MS

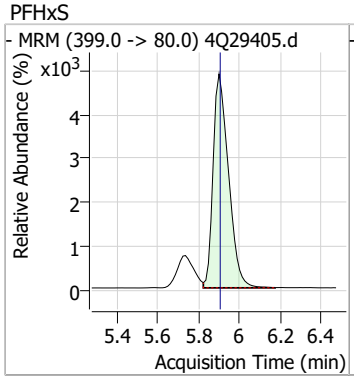
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.03	5.90	0.00	11478				

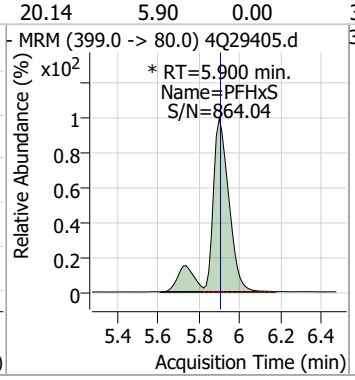


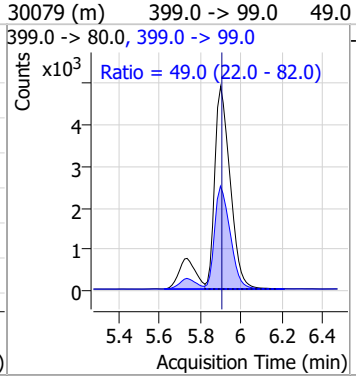


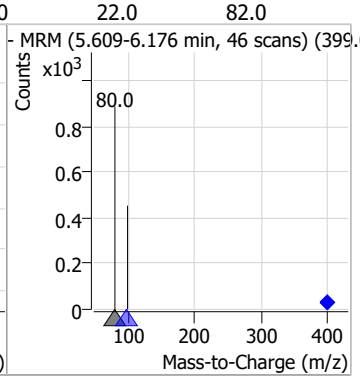


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.14	5.90	0.00	30079 (m)	399.0 -> 99.0	49.0	22.0	82.0

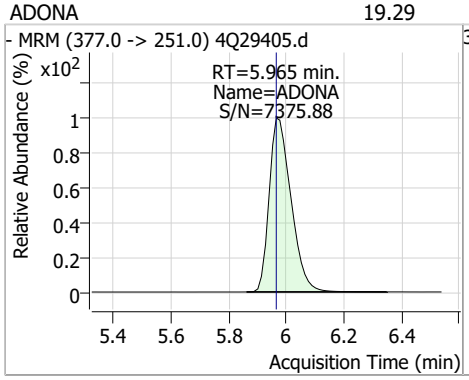


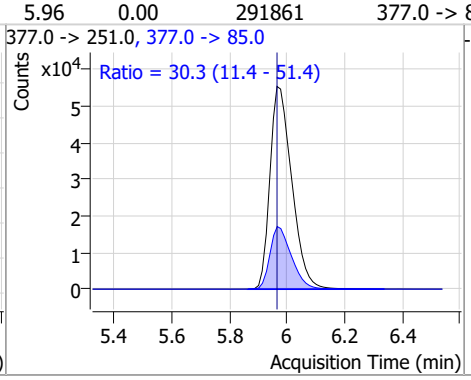


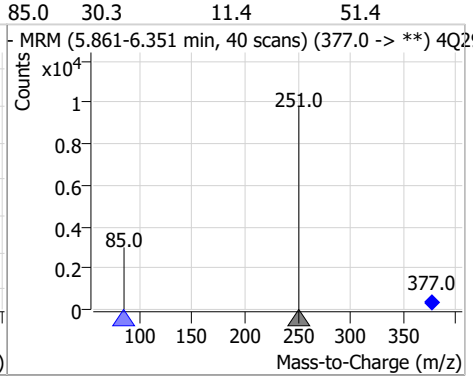




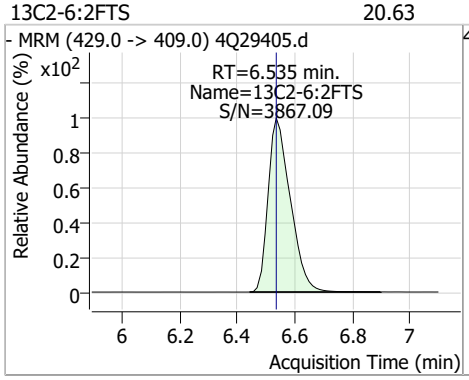
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.29	5.96	0.00	291861	377.0 -> 85.0	30.3	11.4	51.4

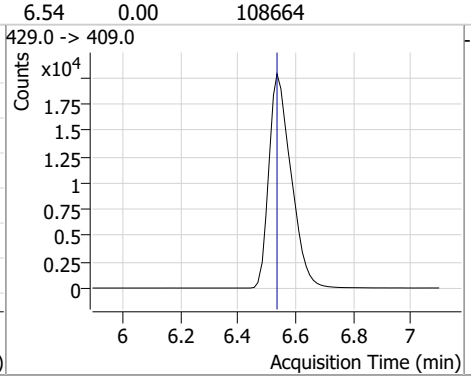


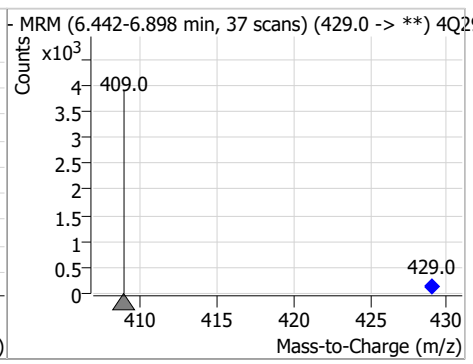




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.63	6.54	0.00	108664				

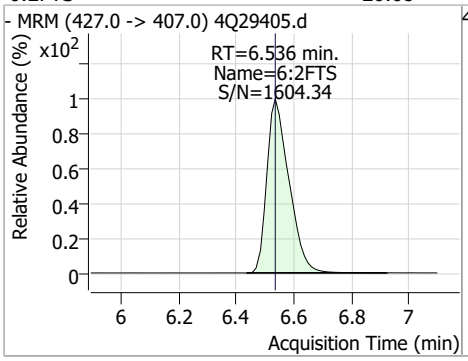


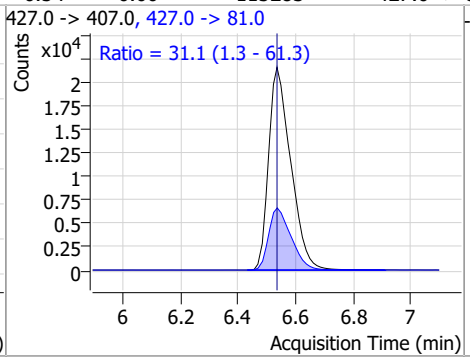


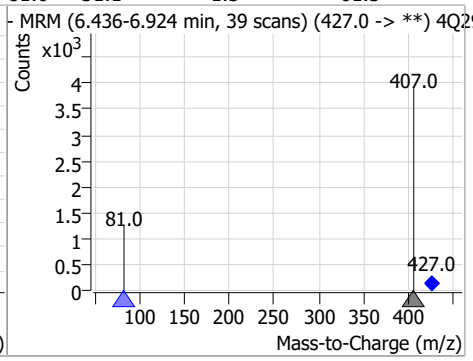


Perfluorinated Compounds by LC/MS/MS

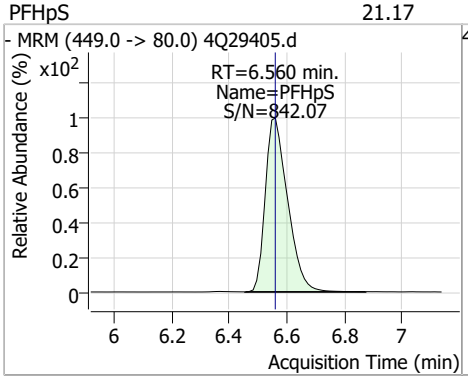
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.68	6.54	0.00	115283	427.0 -> 81.0	31.1	1.3	61.3

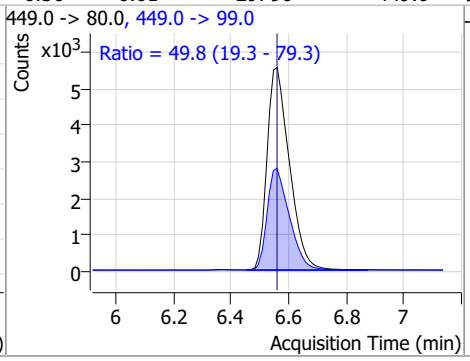


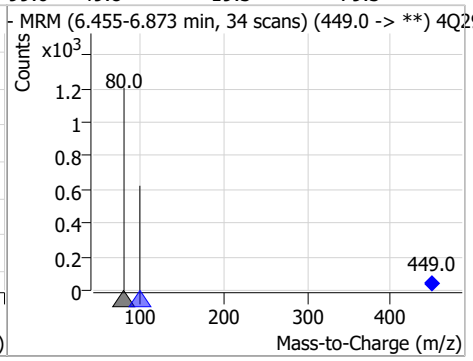




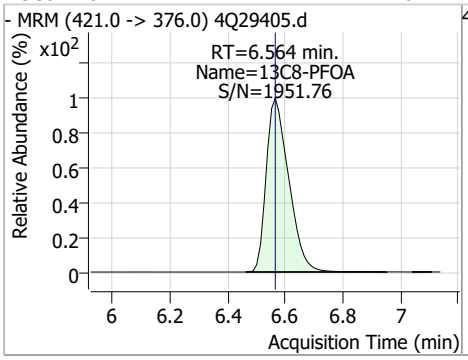
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.17	6.56	0.01	29796	449.0 -> 99.0	49.8	19.3	79.3

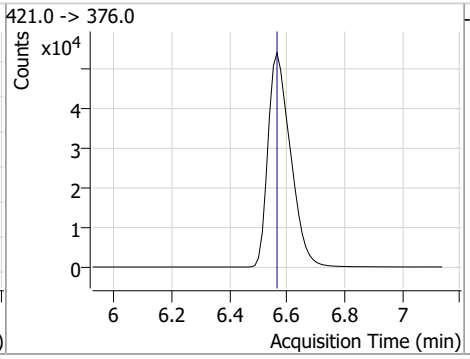


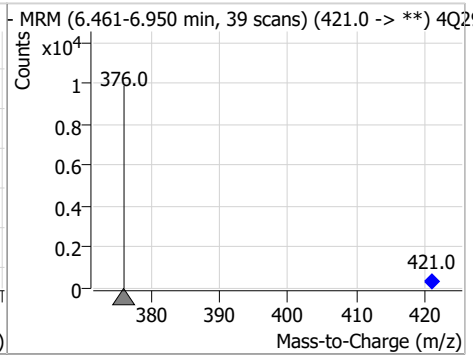




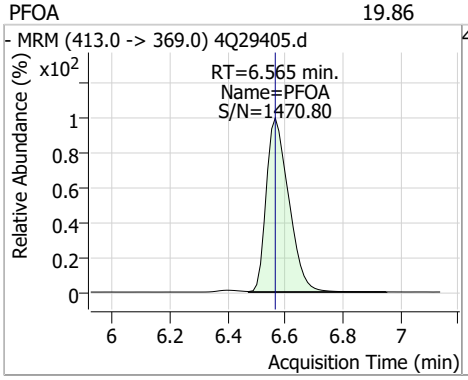
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.46	6.56	0.00	291319				

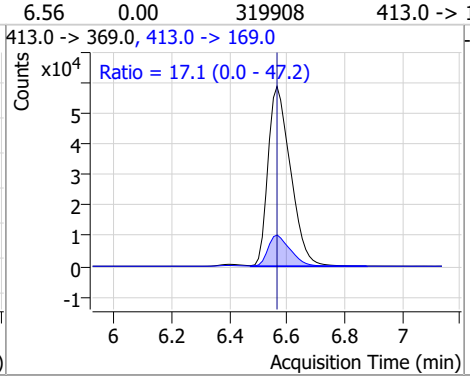


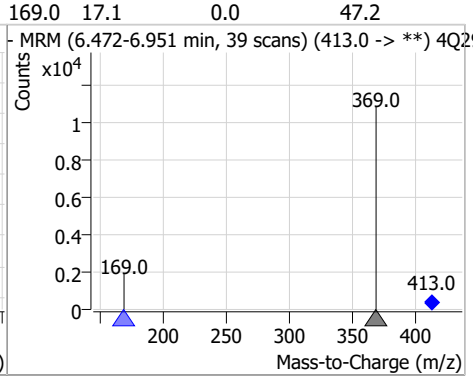




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.86	6.56	0.00	319908	413.0 -> 169.0	17.1	0.0	47.2

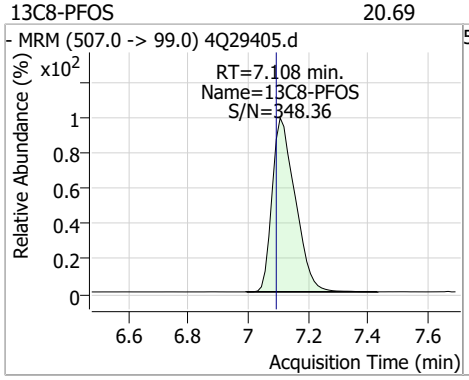


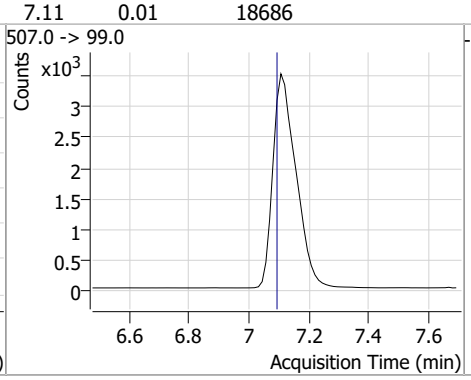


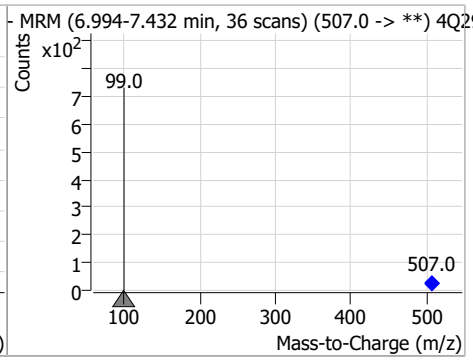


Perfluorinated Compounds by LC/MS/MS

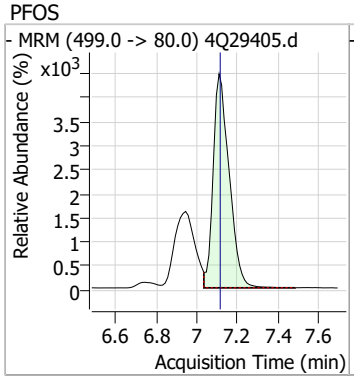
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.69	7.11	0.01	18686				

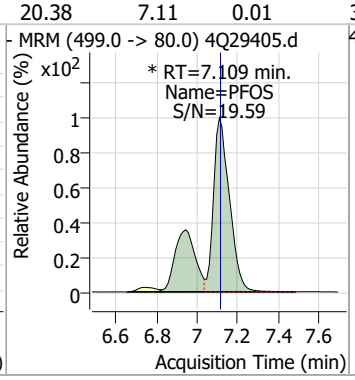


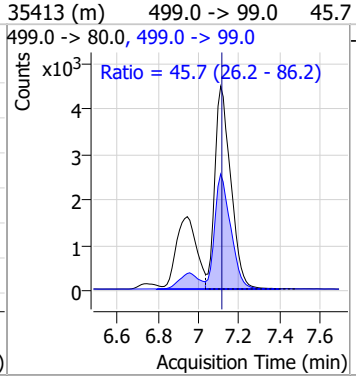


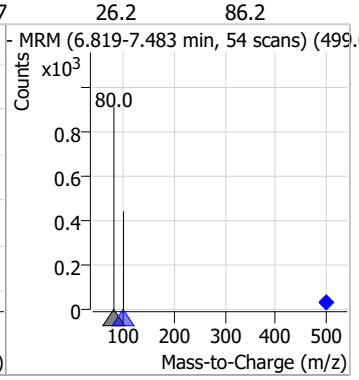


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.38	7.11	0.01	35413 (m)	499.0 -> 99.0	45.7	26.2	86.2

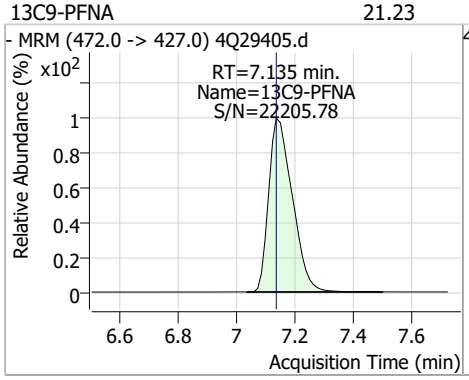


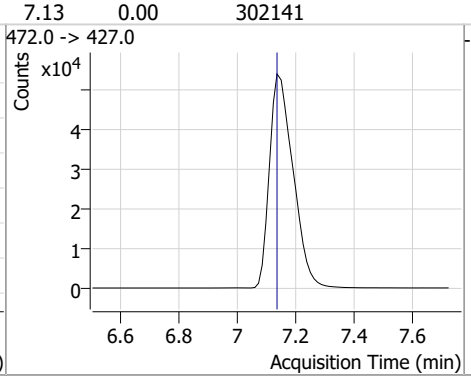


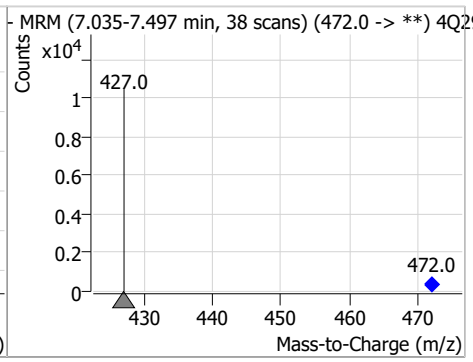




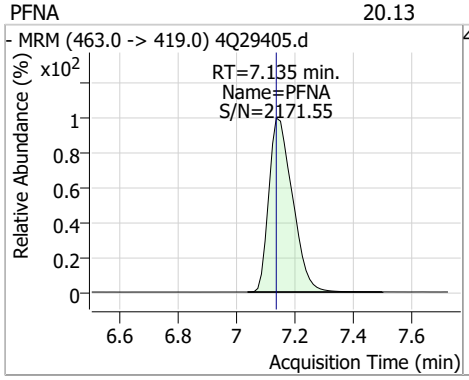
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.23	7.13	0.00	302141				

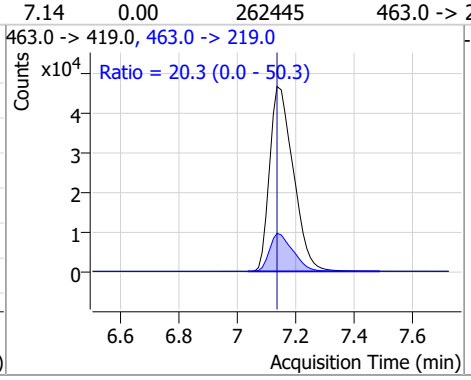


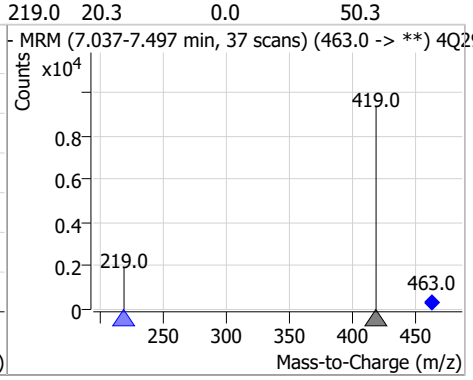




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.13	7.14	0.00	262445	463.0 -> 219.0	20.3	0.0	50.3

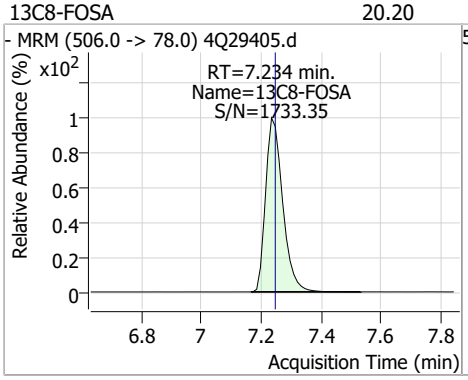


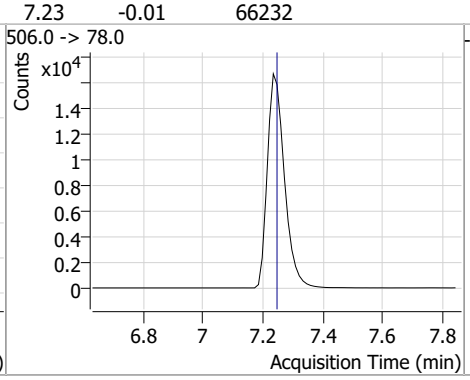


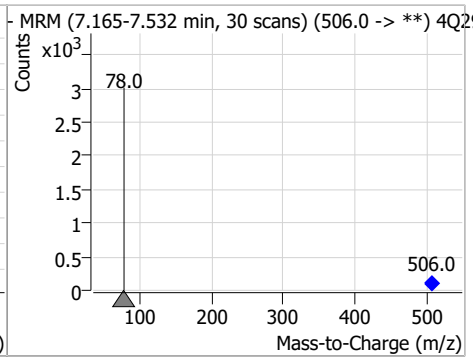


Perfluorinated Compounds by LC/MS/MS

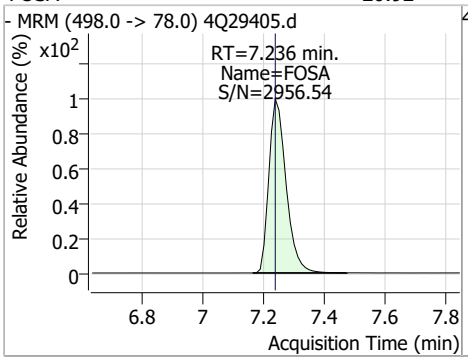
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.20	7.23	-0.01	66232				

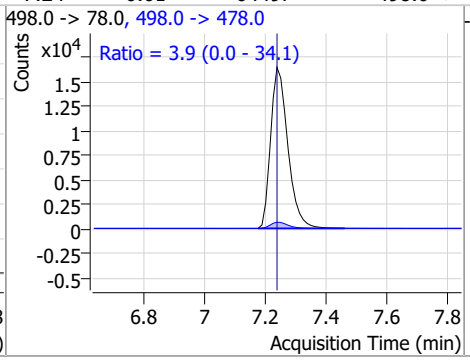


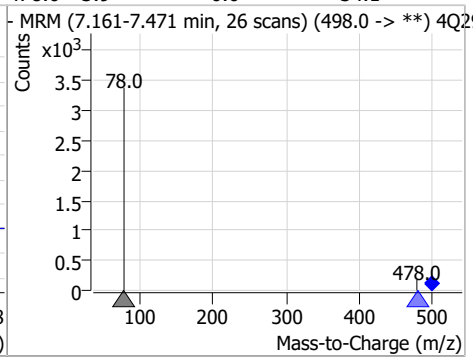




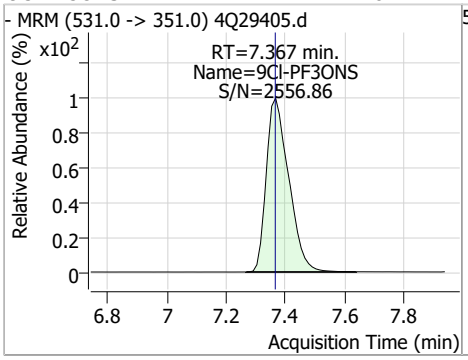
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.92	7.24	-0.01	64497	498.0 -> 478.0	3.9	0.0	34.1

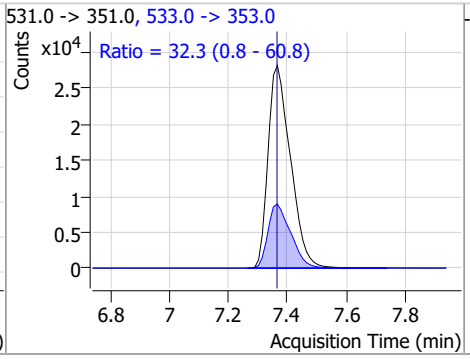


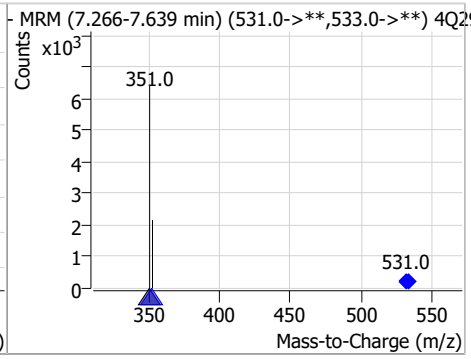




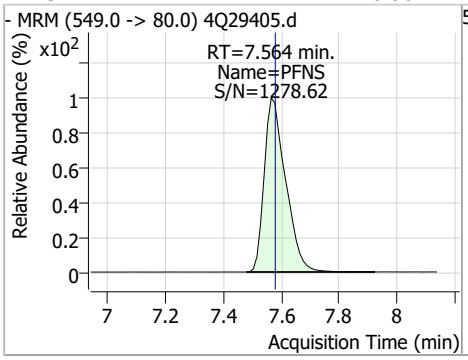
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.22	7.37	0.01	147979	533.0 -> 353.0	32.3	0.8	60.8

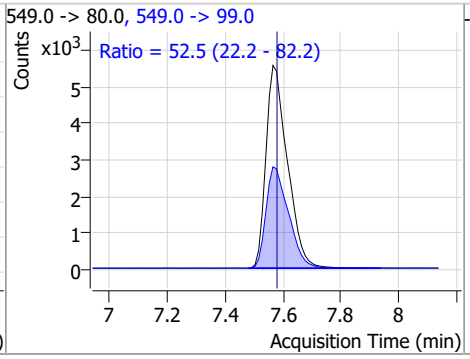


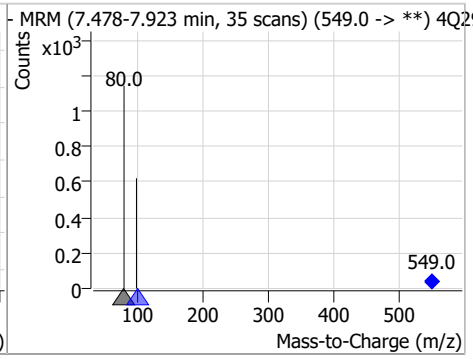




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.98	7.56	0.00	28395	549.0 -> 99.0	52.5	22.2	82.2

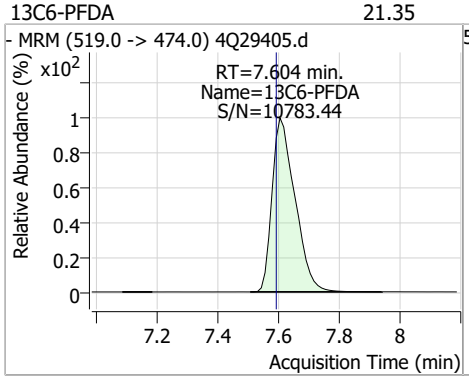


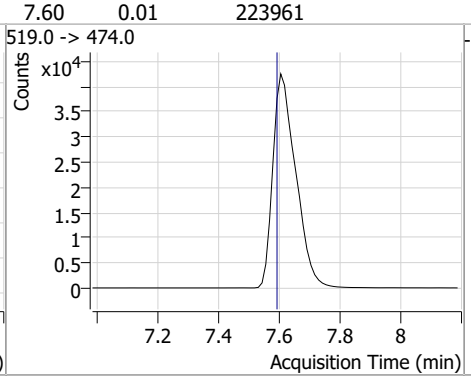


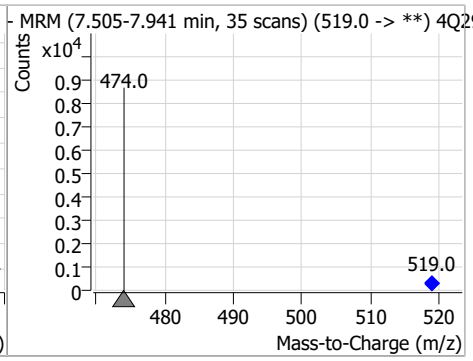


Perfluorinated Compounds by LC/MS/MS

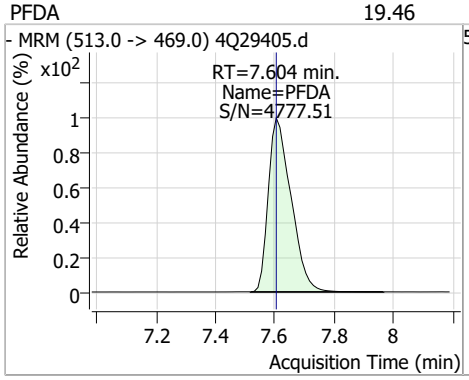
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.35	7.60	0.01	223961				

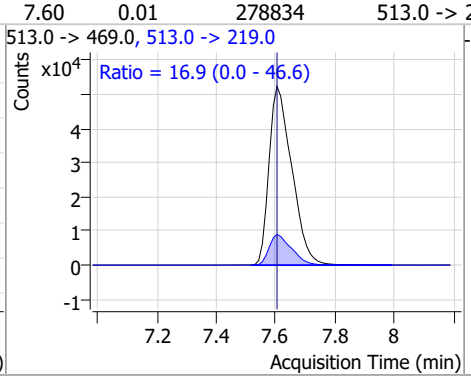


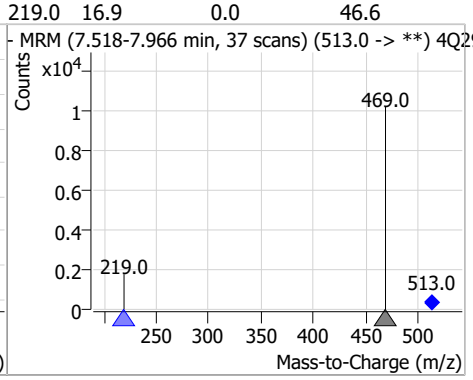




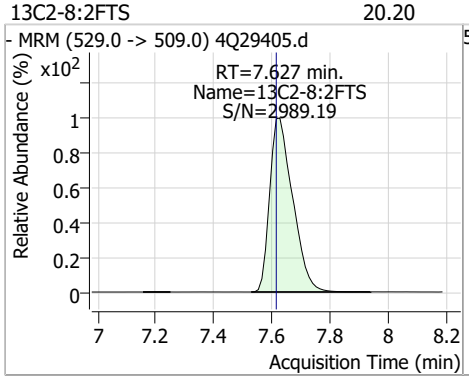
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.46	7.60	0.01	278834	513.0 -> 219.0	16.9	0.0	46.6

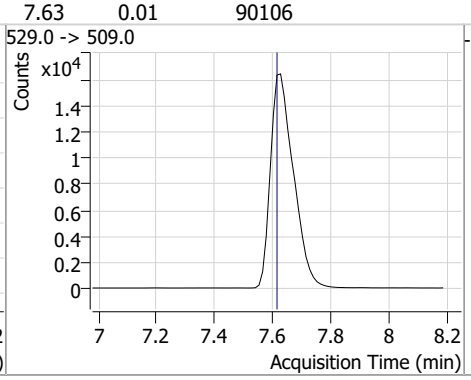


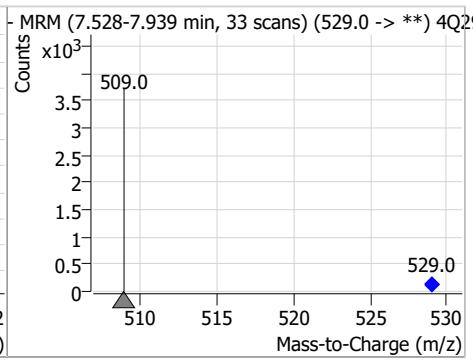




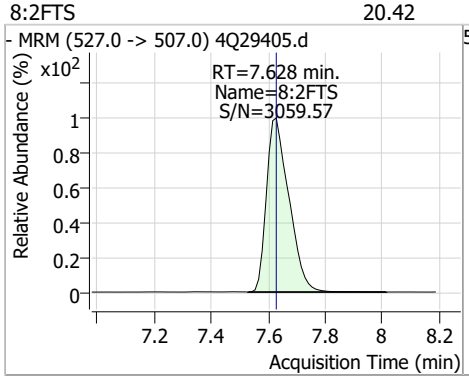
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.20	7.63	0.01	90106				

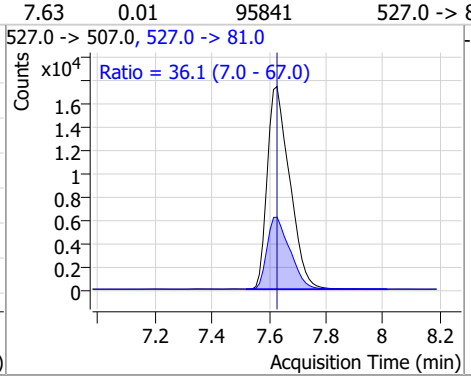


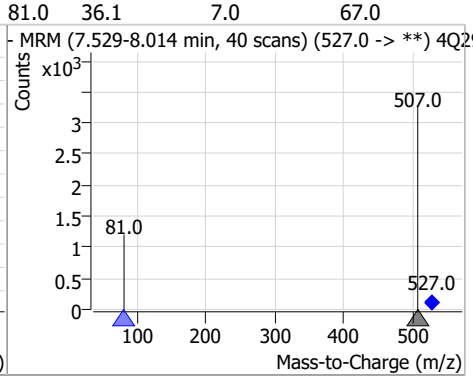




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.42	7.63	0.01	95841	527.0 -> 81.0	36.1	7.0	67.0

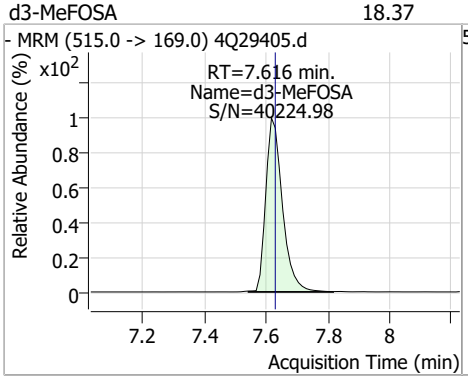


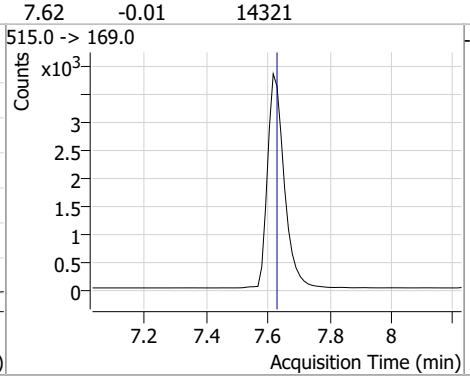


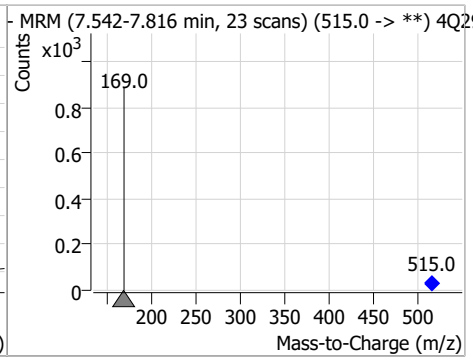


Perfluorinated Compounds by LC/MS/MS

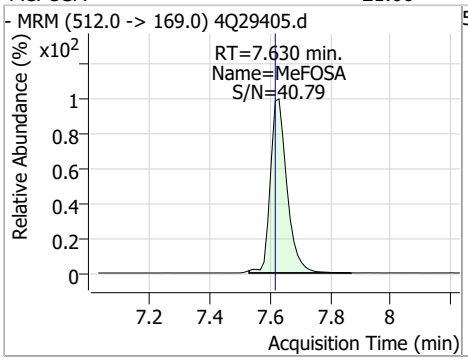
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.37	7.62	-0.01	14321				

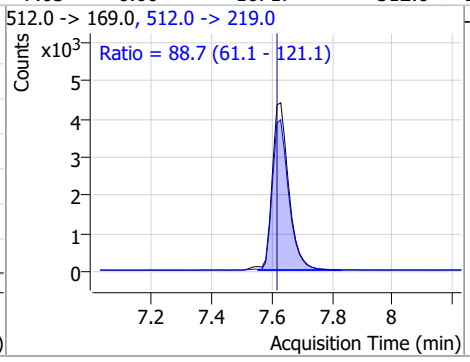


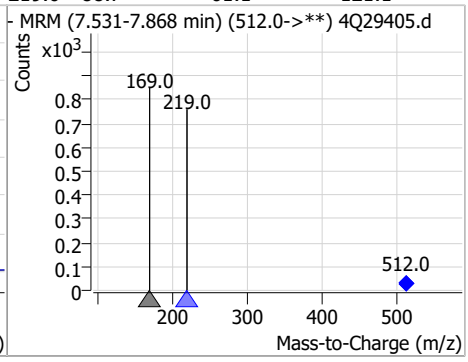




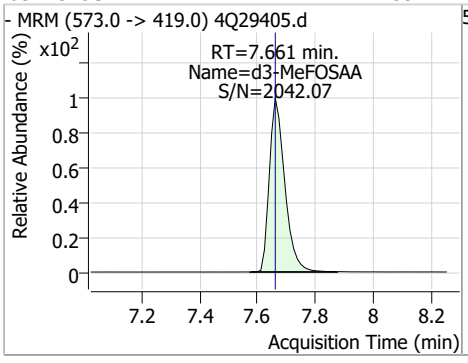
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.06	7.63	0.00	16717	512.0 -> 219.0	88.7	61.1	121.1

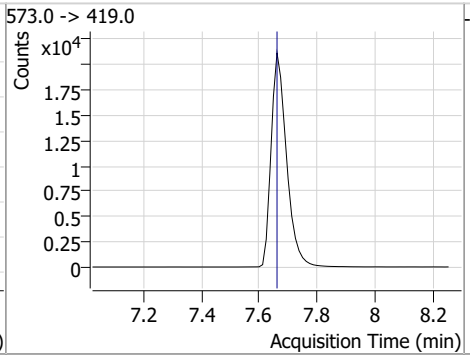


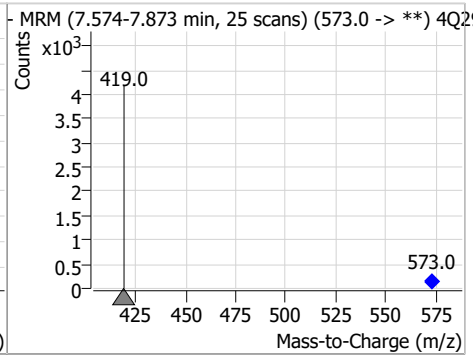




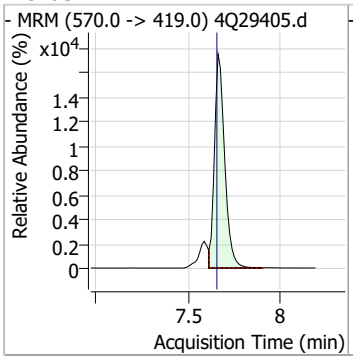
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.33	7.66	0.00	77436				

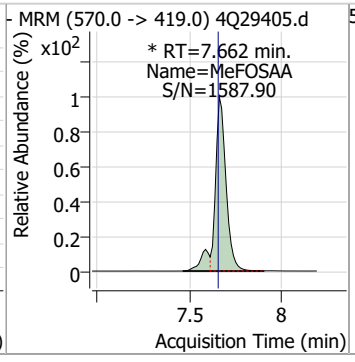


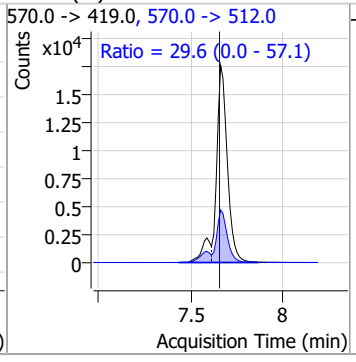


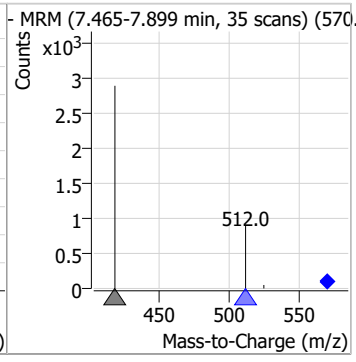


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.93	7.66	0.00	74413 (m)	570.0 -> 512.0	29.6	0.0	57.1



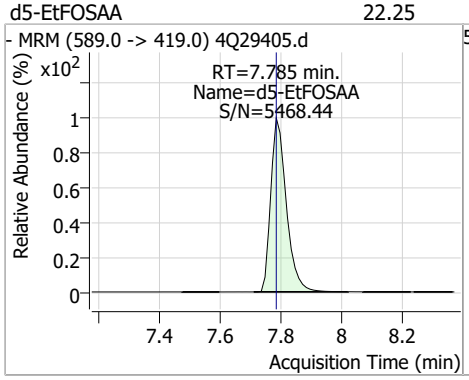


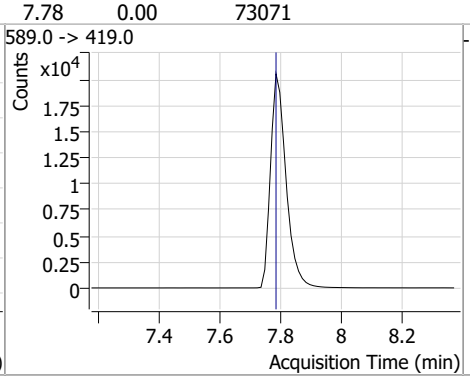


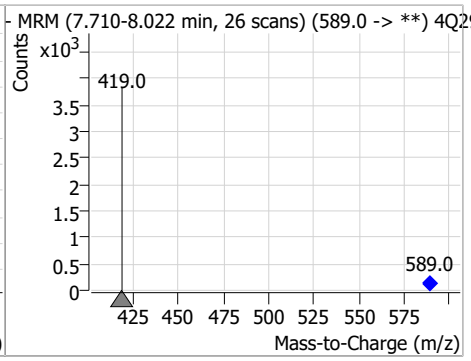


Perfluorinated Compounds by LC/MS/MS

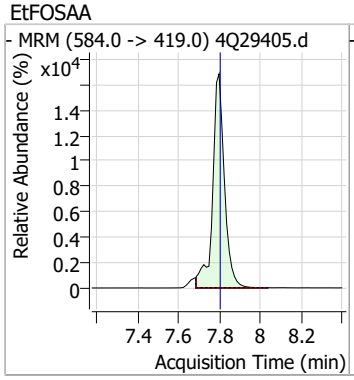
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.25	7.78	0.00	73071				

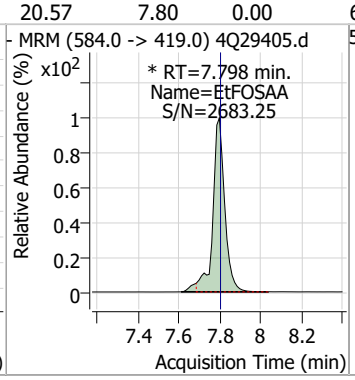


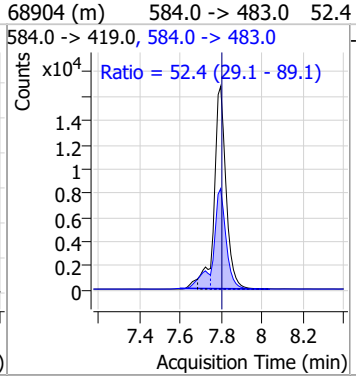


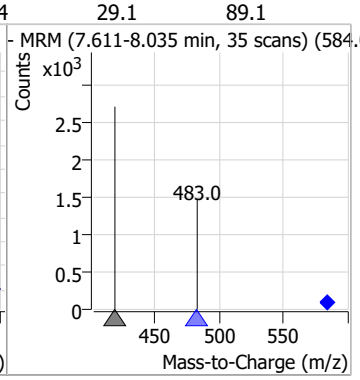


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.57	7.80	0.00	68904 (m)	584.0 -> 483.0	52.4	29.1	89.1

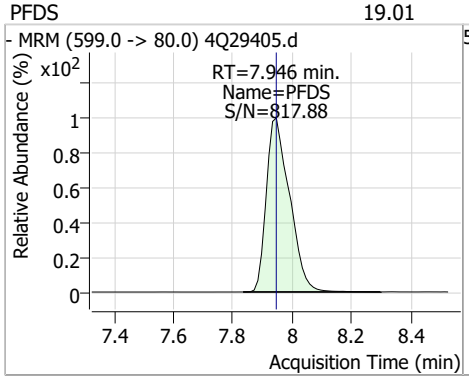


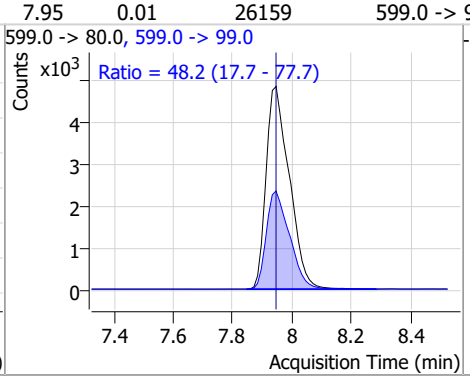


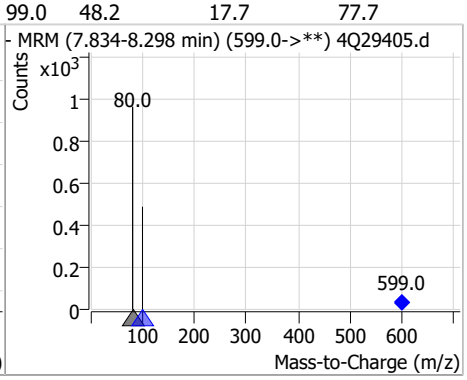




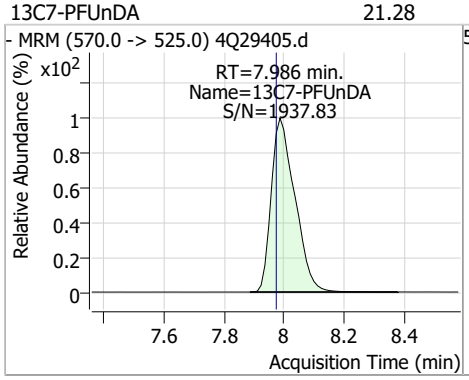
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.01	7.95	0.01	26159	599.0 -> 99.0	48.2	17.7	77.7

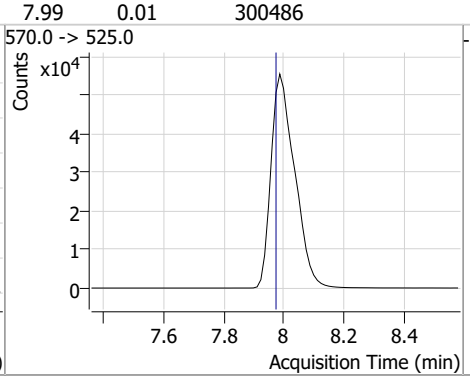


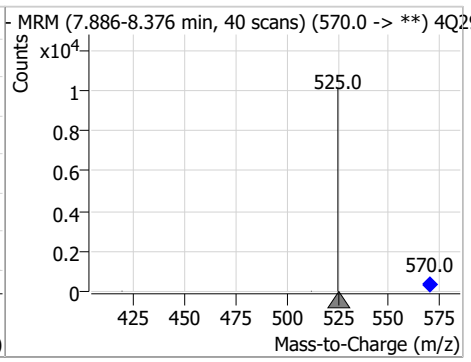




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.28	7.99	0.01	300486				

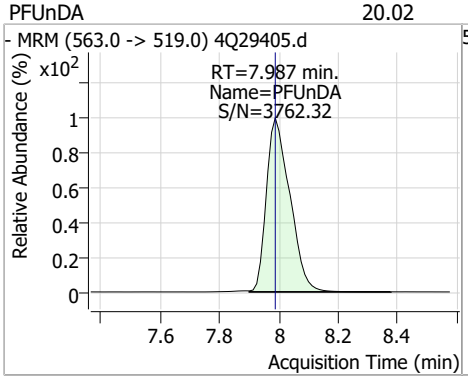


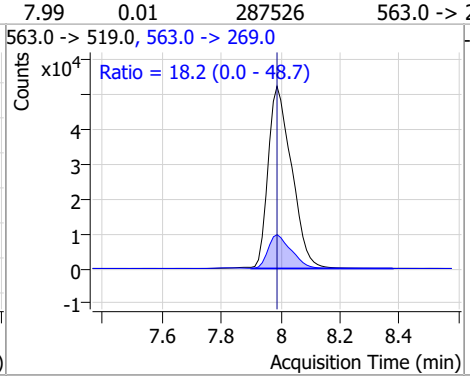


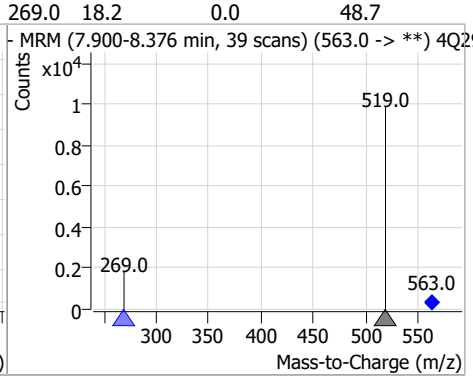


Perfluorinated Compounds by LC/MS/MS

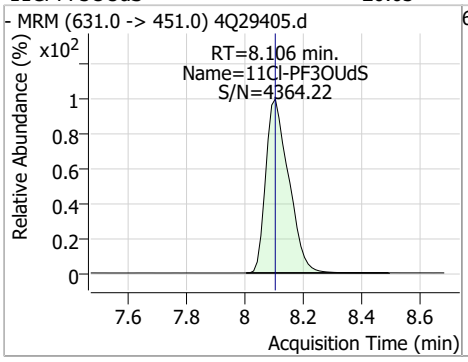
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.02	7.99	0.01	287526	563.0 -> 269.0	18.2	0.0	48.7

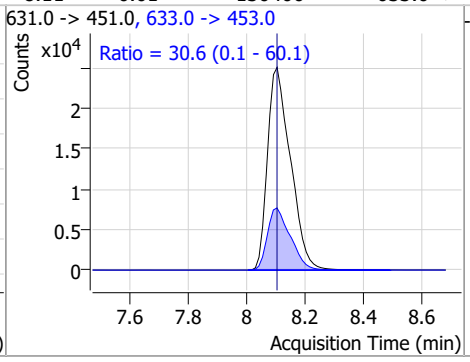


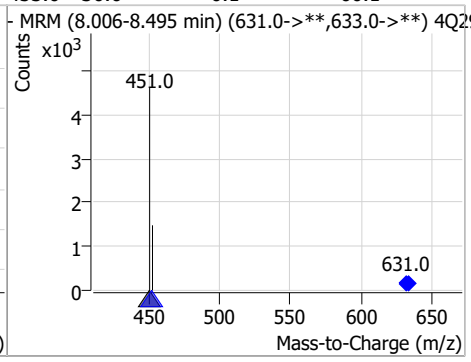




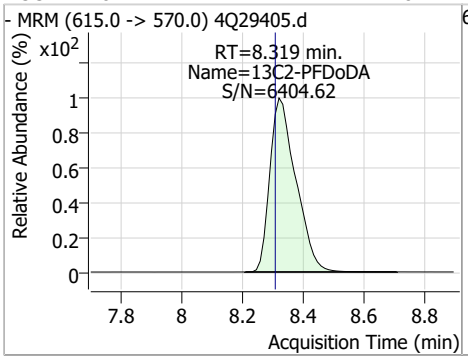
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.03	8.11	0.01	136466	633.0 -> 453.0	30.6	0.1	60.1

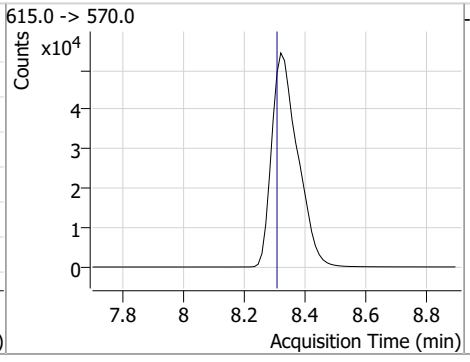


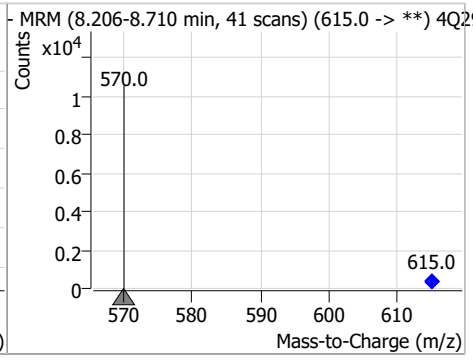




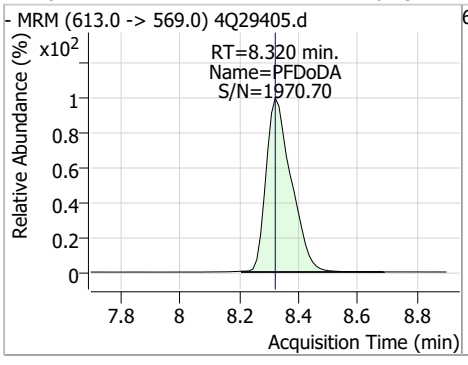
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.18	8.32	0.01	324288				

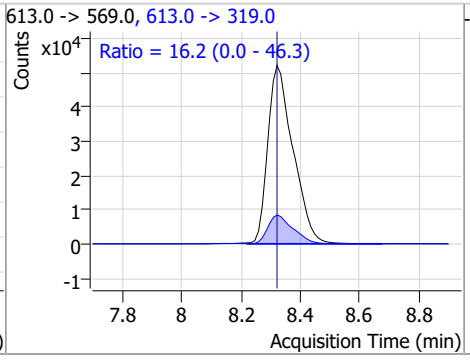


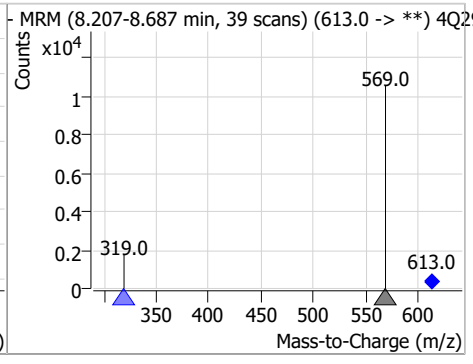




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.43	8.32	0.01	308344	613.0 -> 319.0	16.2	0.0	46.3

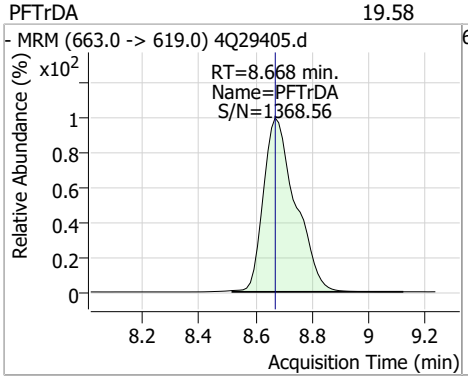


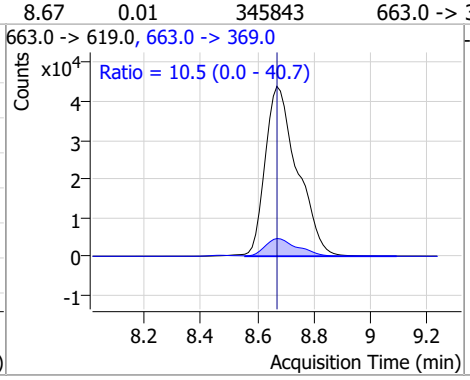


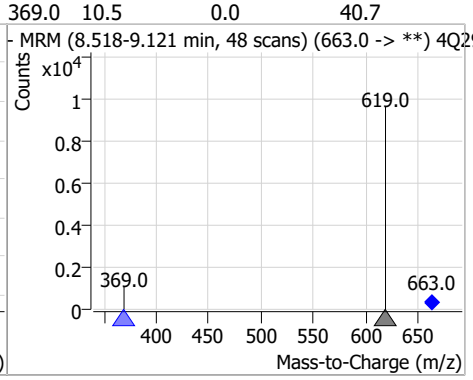


Perfluorinated Compounds by LC/MS/MS

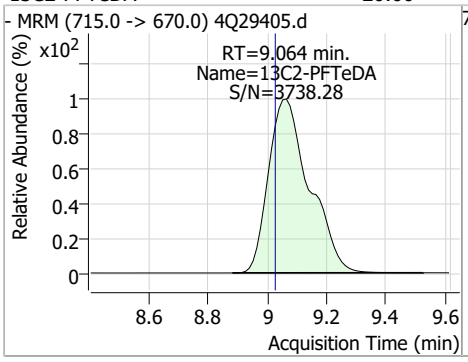
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.58	8.67	0.01	345843	663.0 -> 369.0	10.5	0.0	40.7

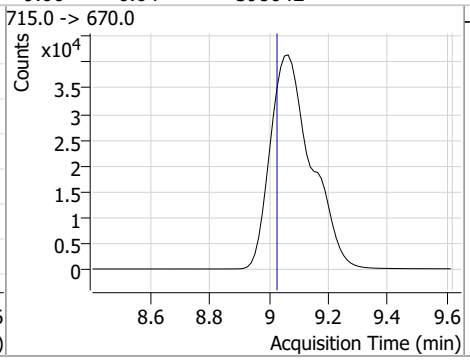


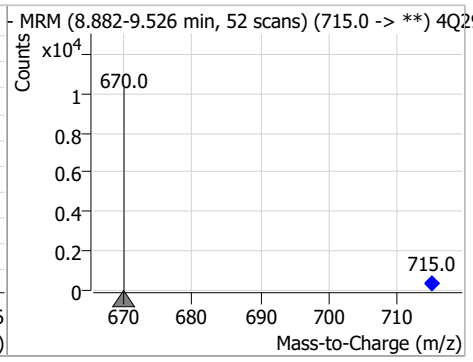




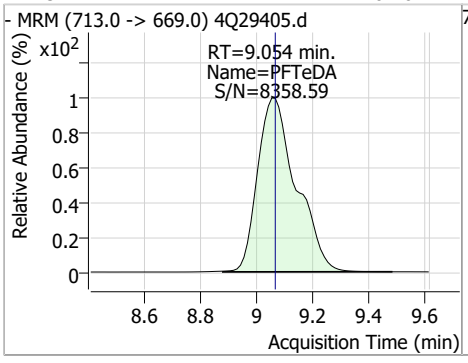
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.66	9.06	0.04	398042				

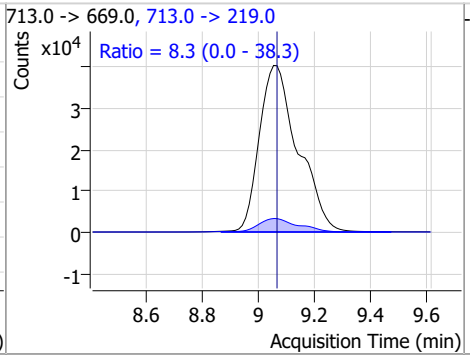


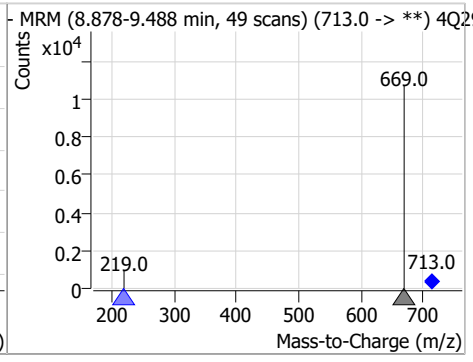




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.40	9.05	0.02	390101	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q422-CC419
Lab FileID: 4Q29405.D
Injection Time: 05/31/22 18:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/31/22 21:52 Martha Valls
Supervisor approved: 06/01/22 11:50 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 11:59

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29417.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 9:35:47 PM
Sample Name : cc419-20
Vial : P1-A7
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91245,S4Q422,250,,,1.0,1,water

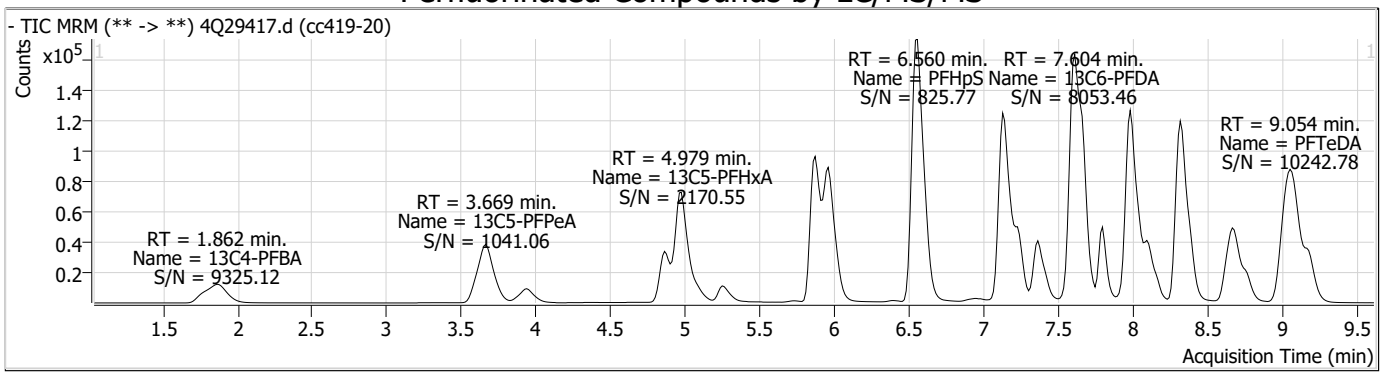
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	99671	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	156353	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	191302	20.00	µg/L	0.000
M4-PFHpA	5.877	367.0 -> 322.0	181759	20.00	µg/L	0.000
M8-PFOA	6.564	421.0 -> 376.0	296935	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	314284	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	229347	20.00	µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	308555	20.00	µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	330163	20.00	µg/L	0.012
M2-PFTeDA	9.052	715.0 -> 670.0	410390	20.00	µg/L	0.025
M8-FOSA	7.246	506.0 -> 78.0	69350	20.00	µg/L	0.000
M3-PFBS	3.936	302.0 -> 99.0	11601	20.00	µg/L	-0.013
M3-PFHxS	5.898	402.0 -> 99.0	11751	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	19837	20.00	µg/L	0.013
M2-4:2FTS	4.862	329.0 -> 309.0	70760	20.00	µg/L	-0.012
M2-6:2FTS	6.535	429.0 -> 409.0	111900	20.00	µg/L	0.000
M2-8:2FTS	7.627	529.0 -> 509.0	92322	20.00	µg/L	0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	80131	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10399	20.00	µg/L	-0.012
M3-MeFOSA	7.629	515.0 -> 169.0	15732	20.00	µg/L	0.000
M5-EtFOSAA	7.797	589.0 -> 419.0	76114	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	70760	20.86	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C2-6:2FTS	6.535	429.0 -> 409.0	111900	21.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C2-8:2FTS	7.627	529.0 -> 509.0	92322	20.70	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFDoDA	8.319	615.0 -> 570.0	330163	21.56	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C2-PFTeDA	9.052	715.0 -> 670.0	410390	21.30	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C3-PFBS	3.936	302.0 -> 99.0	11601	21.07	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C3-PFHxS	5.898	402.0 -> 99.0	11751	21.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C4-PFBA	1.862	217.0 -> 172.0	99671	21.20	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C4-PFHpA	5.877	367.0 -> 322.0	181759	21.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C5-PFHxA	4.979	318.0 -> 273.0	191302	21.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C5-PFPeA	3.669	268.0 -> 223.0	156353	21.32	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C6-PFDA	7.604	519.0 -> 474.0	229347	21.86	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

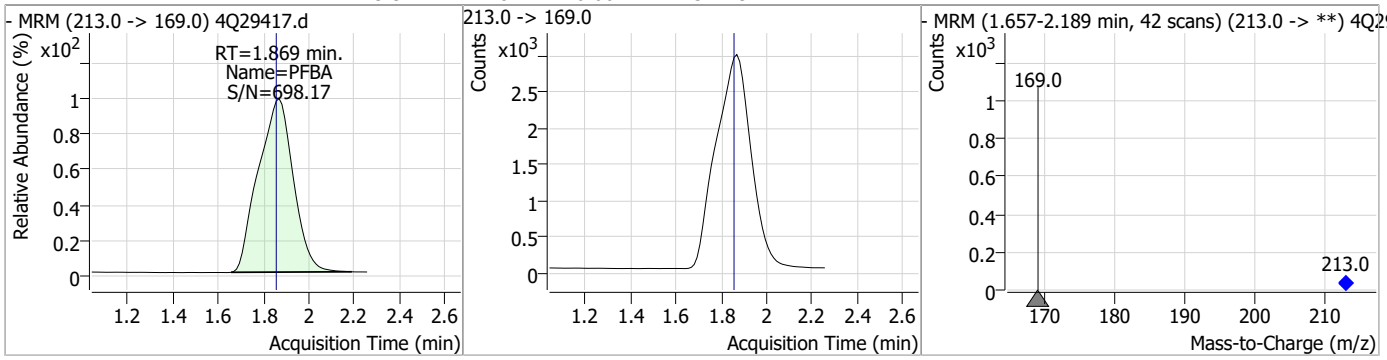
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C7-PFUnDA	7.986	570.0 -> 525.0	308555	21.85 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C8-FOSA	7.246	506.0 -> 78.0	69350	21.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOA	6.564	421.0 -> 376.0	296935	21.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C8-PFOS	7.108	507.0 -> 99.0	19837	21.96 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C9-PFNA	7.135	472.0 -> 427.0	314284	22.08 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
d3-MeFOSAA	7.661	573.0 -> 419.0	80131	22.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10382	19.54 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
d3-MeFOSA	7.629	515.0 -> 169.0	15732	20.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d5-EtFOSAA	7.797	589.0 -> 419.0	76133	23.18 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.9%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	84065	20.66 µg/L		100
6:2FTS	6.536	427.0 -> 407.0	118149	20.58 µg/L		100
8:2FTS	7.628	527.0 -> 507.0	99886	20.77 µg/L		98
EtFOSAA	7.798	584.0 -> 419.0	70527	20.22 µg/L	m	95
FOSA	7.248	498.0 -> 78.0	66334	20.55 µg/L		100
MeFOSAA	7.674	570.0 -> 419.0	77178	20.98 µg/L	m	94
PFBA	1.869	213.0 -> 169.0	31429	19.92 µg/L		100
PFBS	3.941	299.0 -> 80.0	37501	20.42 µg/L		100
PFDA	7.604	513.0 -> 469.0	289314	19.72 µg/L		99
PFDoDA	8.320	613.0 -> 569.0	312180	20.31 µg/L		100
PFDS	7.946	599.0 -> 80.0	26235	18.57 µg/L		99
PFHpA	5.866	363.0 -> 319.0	257701	20.34 µg/L		99
PFHpS	6.560	449.0 -> 80.0	30149	20.18 µg/L		98
PFHxA	4.980	313.0 -> 269.0	198023	20.30 µg/L		100
PFHxS	5.900	399.0 -> 80.0	30578	20.00 µg/L	m	95
PFNA	7.135	463.0 -> 419.0	269615	19.88 µg/L		99
PFNS	7.564	549.0 -> 80.0	28991	19.21 µg/L		100
PFOA	6.565	413.0 -> 369.0	325687	19.84 µg/L		99
PFOS	7.109	499.0 -> 80.0	35629	19.31 µg/L	m	86
PFPeA	3.672	263.0 -> 219.0	142051	20.52 µg/L		100
PFPeS	5.085	349.0 -> 80.0	24582	20.42 µg/L		99
PFTeDA	9.054	713.0 -> 669.0	402249	20.40 µg/L		100
PFTrDA	8.668	663.0 -> 619.0	345695	19.22 µg/L		100
PFUnDA	7.987	563.0 -> 519.0	294195	19.95 µg/L		98
11Cl-PF3OUdS	8.106	631.0 -> 451.0	137515	19.82 µg/L		99
9Cl-PF3ONS	7.367	531.0 -> 351.0	152362	18.32 µg/L		99
ADONA	5.965	377.0 -> 251.0	299590	19.34 µg/L		98
HFPO-DA	5.252	329.0 -> 169.0	34338	21.15 µg/L		99
MeFOSA	7.630	512.0 -> 169.0	17607	20.19 µg/L		98

 # = Qualifier out of range, m = manually integrated, + = Area summed

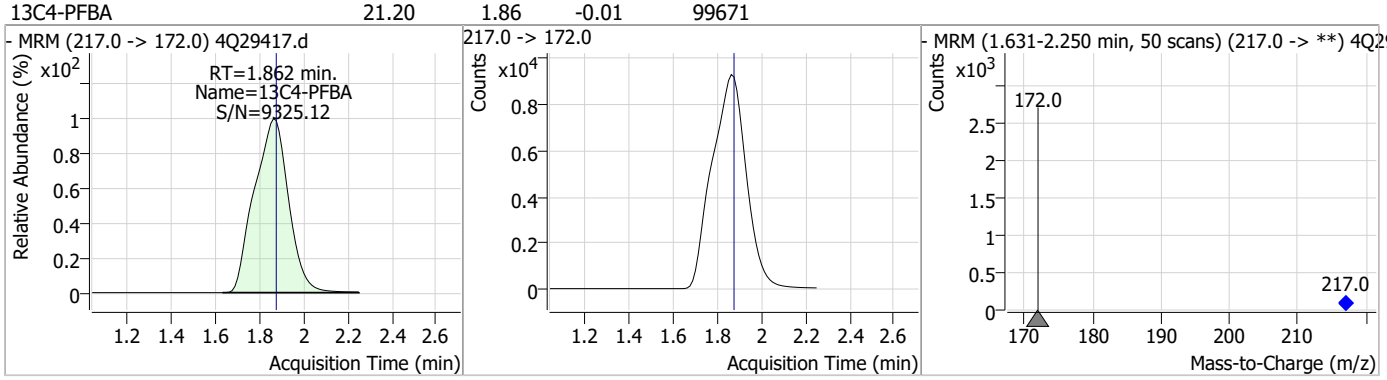
Perfluorinated Compounds by LC/MS/MS



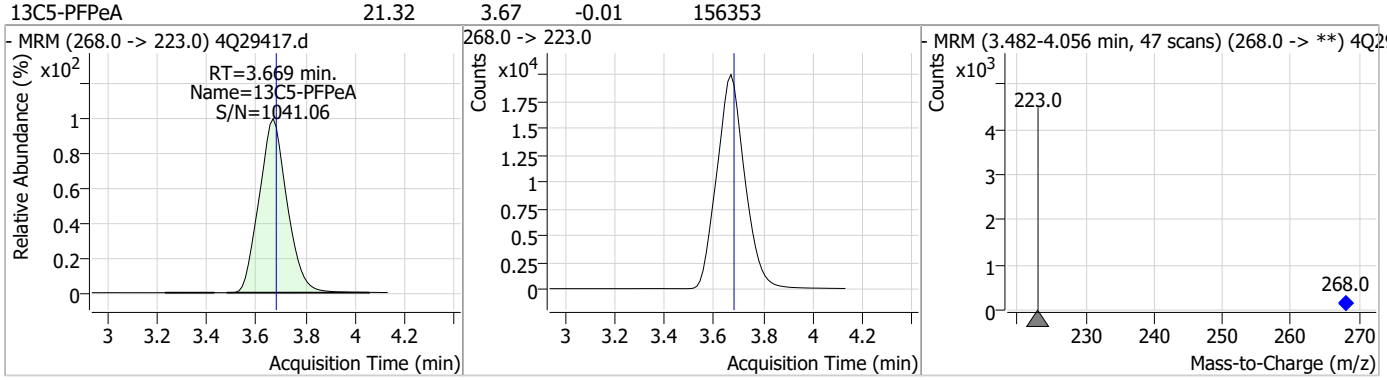
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.92	1.87	0.00	31429				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.20	1.86	-0.01	99671				

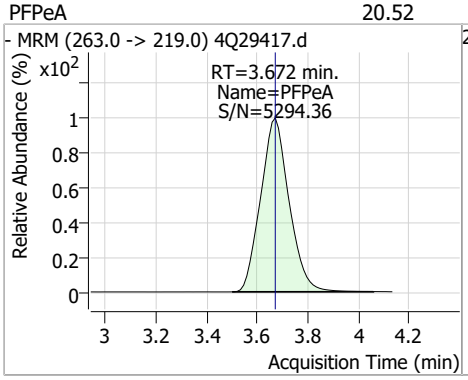


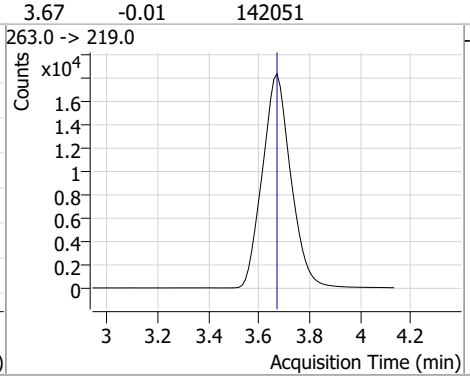
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.32	3.67	-0.01	156353				

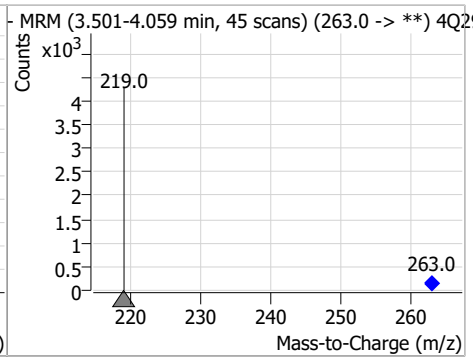


Perfluorinated Compounds by LC/MS/MS

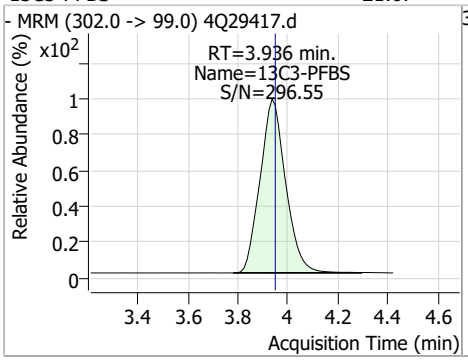
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.52	3.67	-0.01	142051				

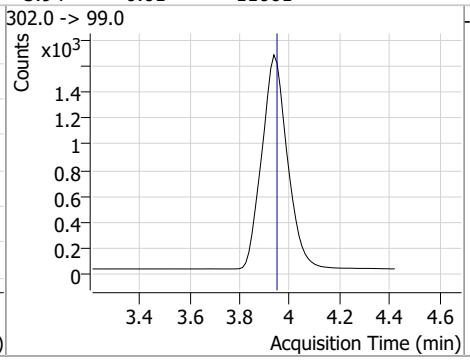


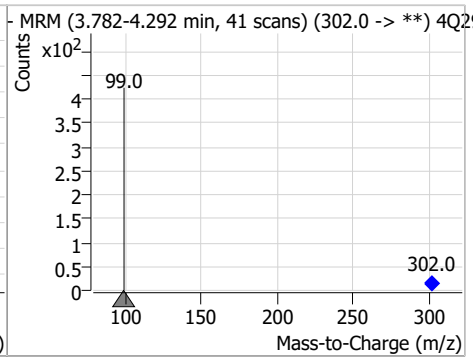




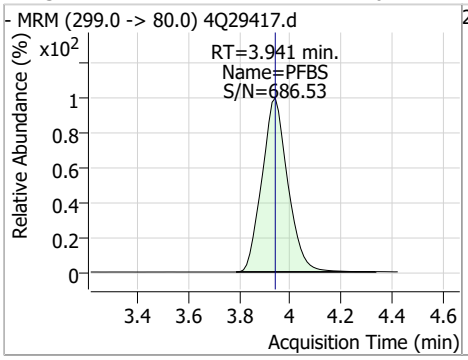
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.07	3.94	-0.01	11601				

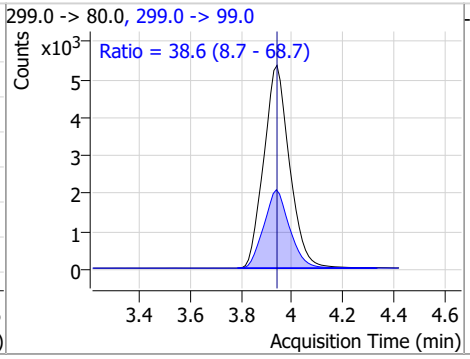


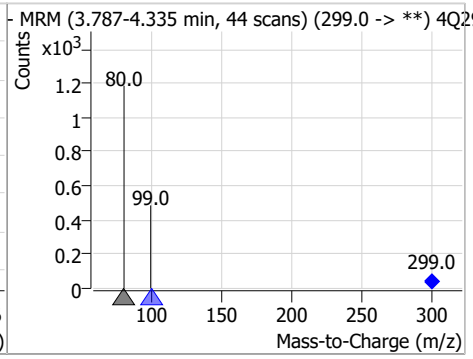




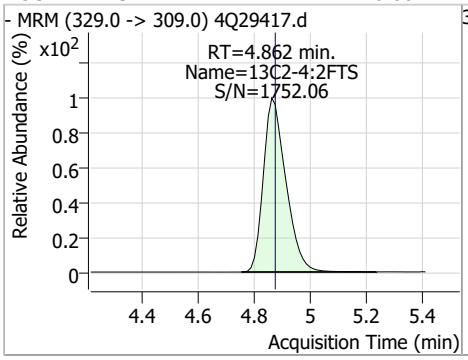
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.42	3.94	-0.01	37501	299.0 -> 99.0	38.6	8.7	68.7

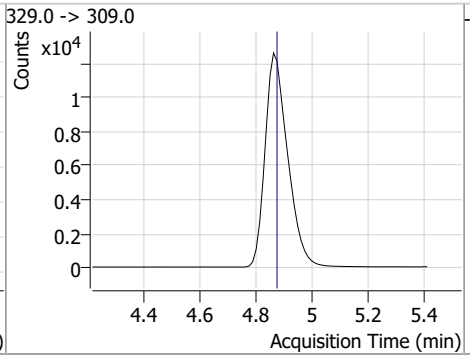


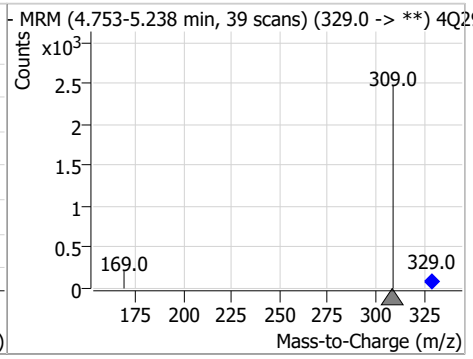




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.86	4.86	-0.01	70760				

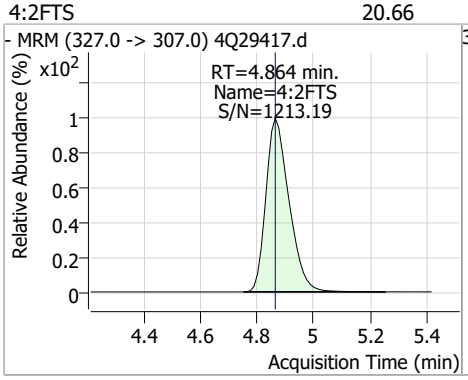


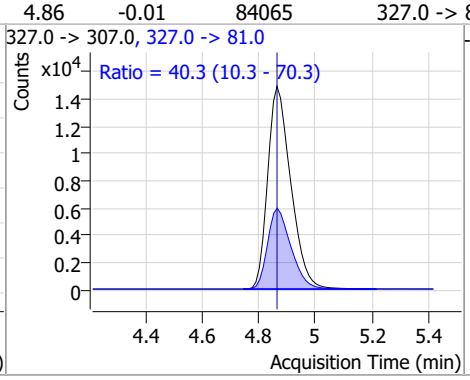


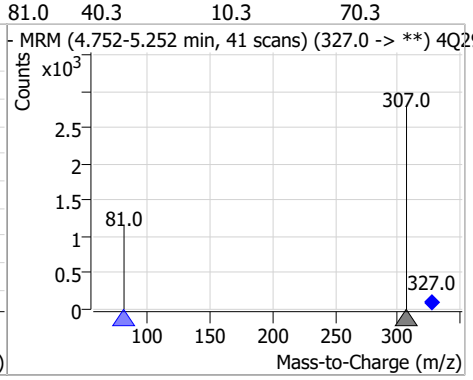


Perfluorinated Compounds by LC/MS/MS

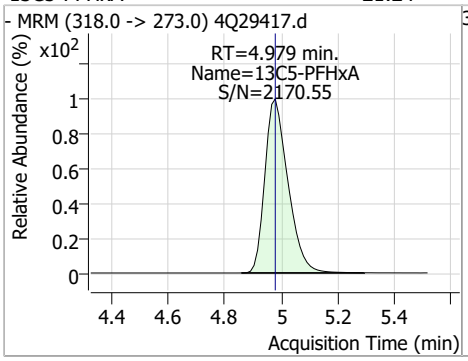
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.66	4.86	-0.01	84065	327.0 -> 81.0	40.3	10.3	70.3

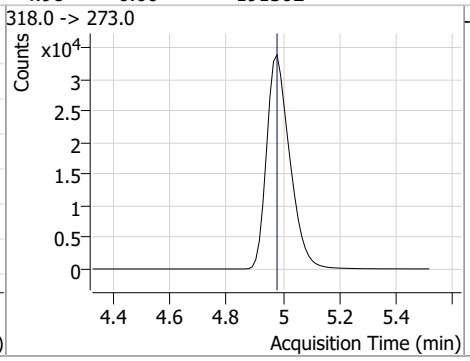


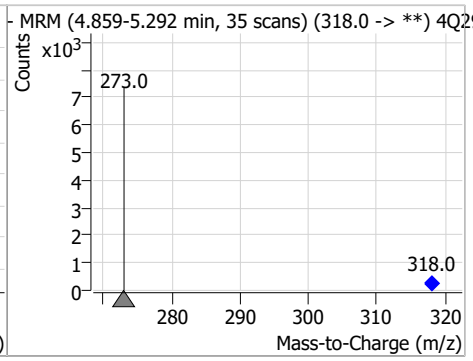




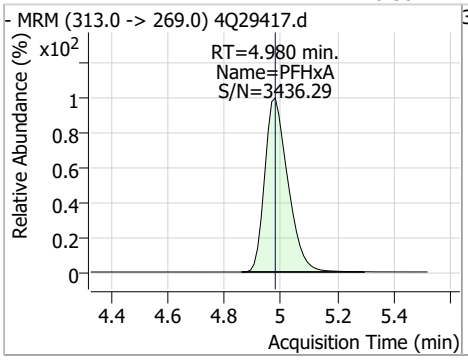
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.24	4.98	0.00	191302				

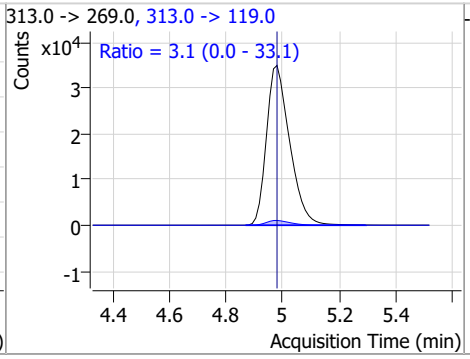


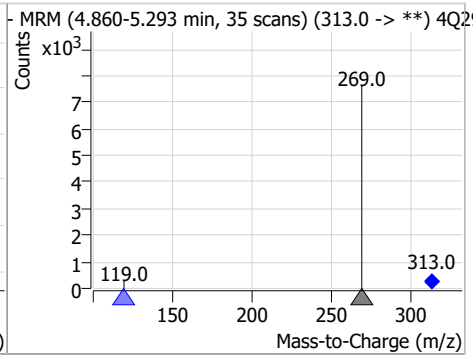




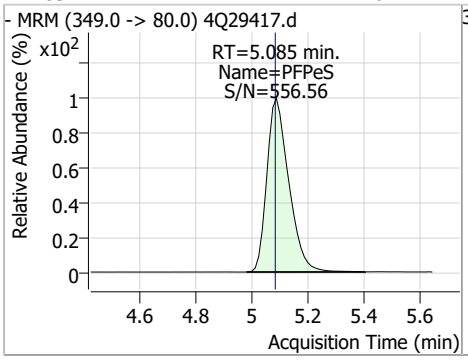
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.30	4.98	0.00	198023	313.0 -> 119.0	3.1	0.0	33.1

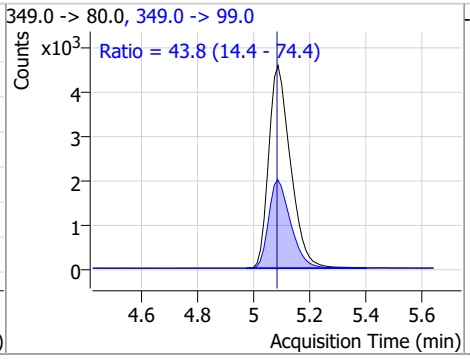


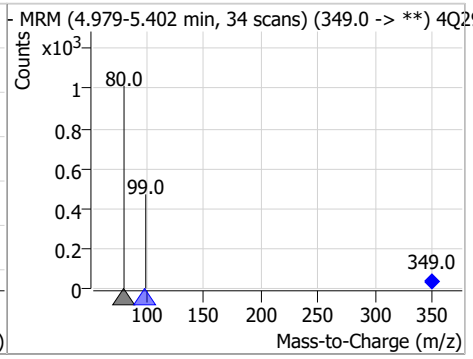




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.42	5.09	-0.01	24582	349.0 -> 99.0	43.8	14.4	74.4

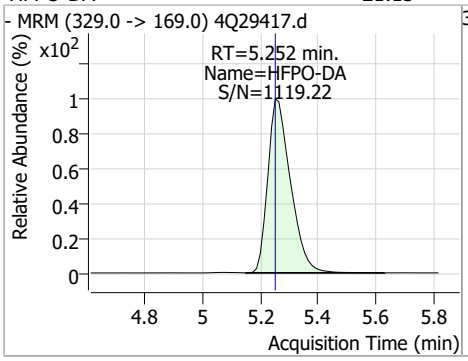


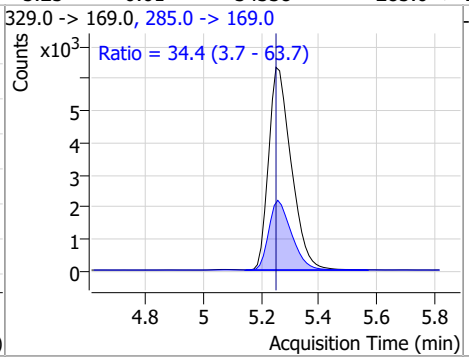


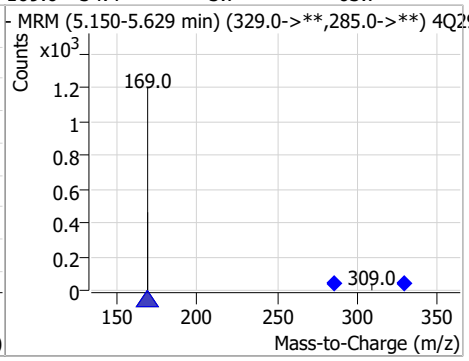


Perfluorinated Compounds by LC/MS/MS

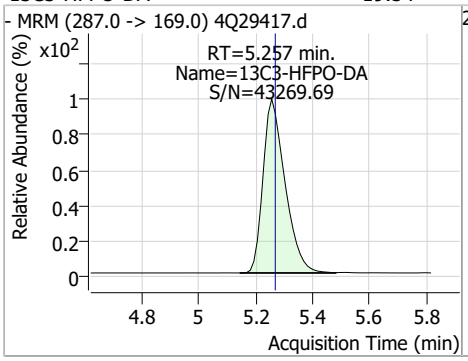
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.15	5.25	-0.01	34338	285.0 -> 169.0	34.4	3.7	63.7

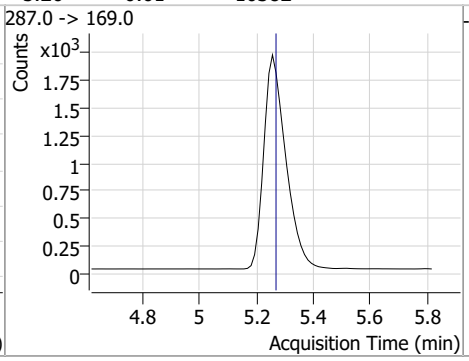


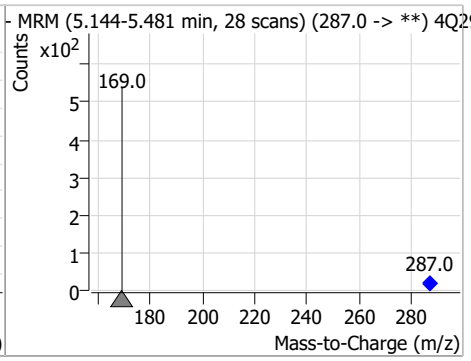




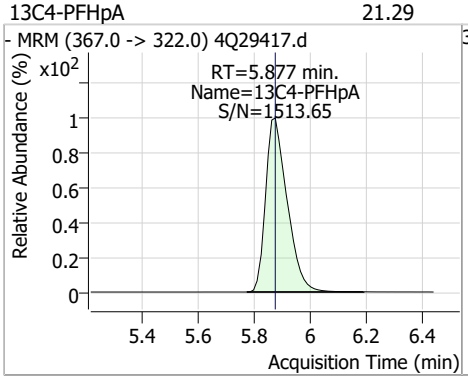
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.54	5.26	-0.01	10382				

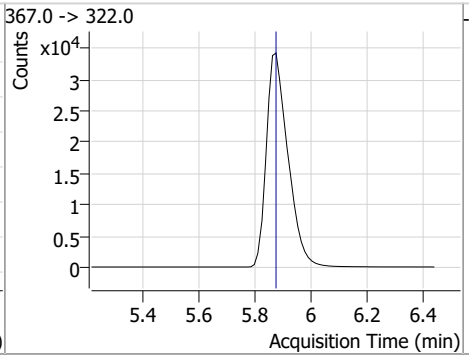


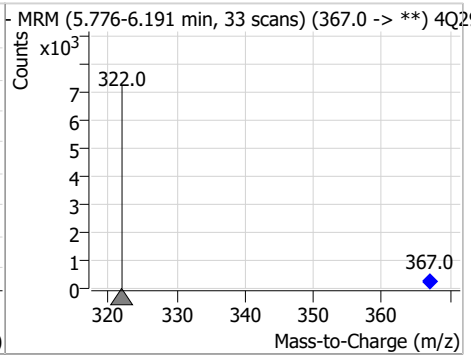




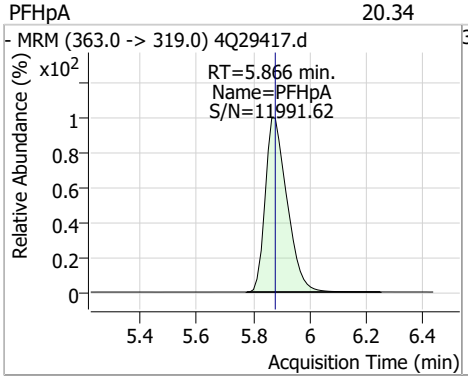
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.29	5.88	0.00	181759				

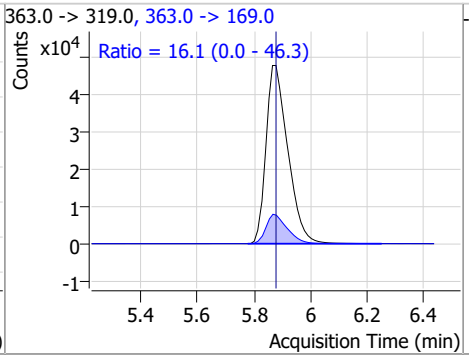


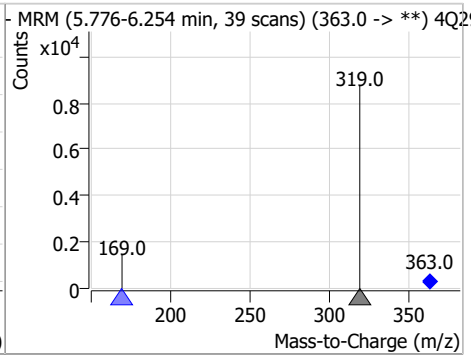




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.34	5.87	-0.01	257701	363.0 -> 169.0	16.1	0.0	46.3

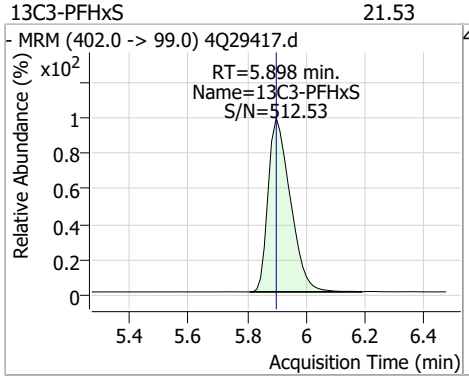


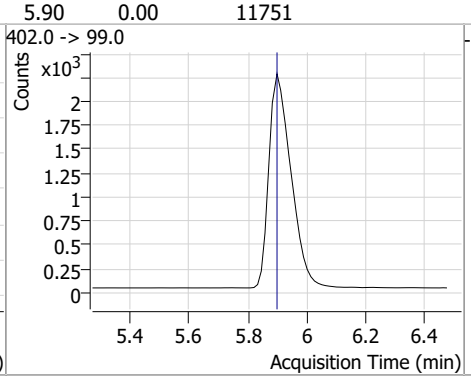


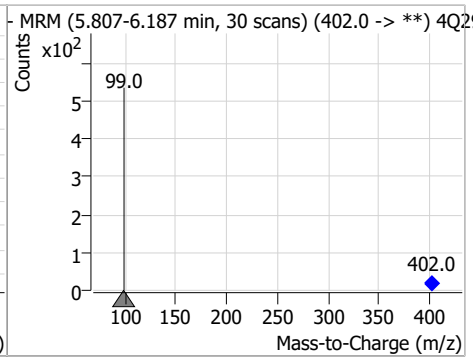


Perfluorinated Compounds by LC/MS/MS

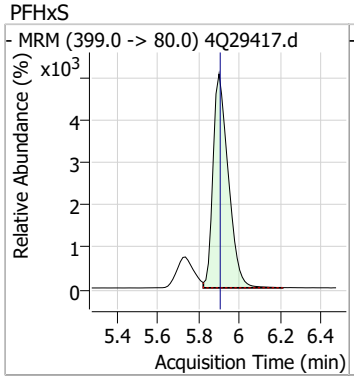
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.53	5.90	0.00	11751				

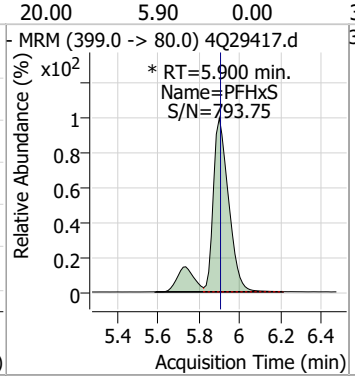


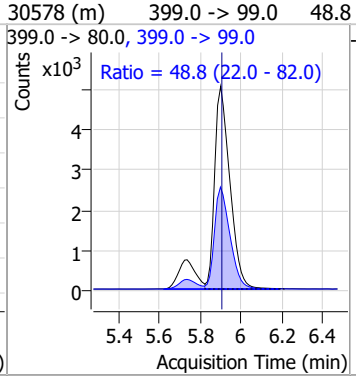


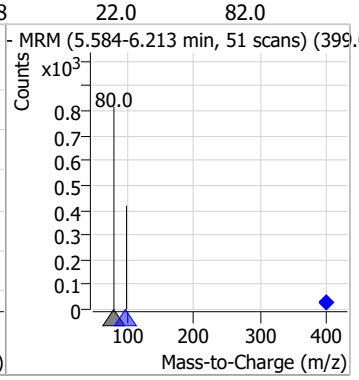


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.00	5.90	0.00	30578 (m)	399.0 -> 99.0	48.8	22.0	82.0

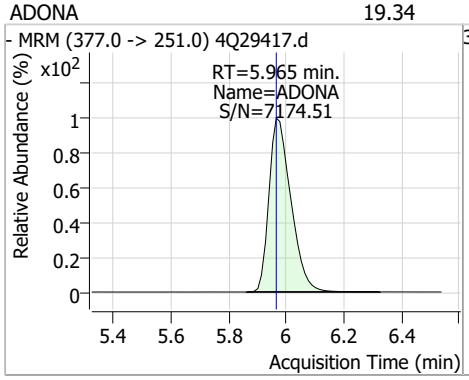


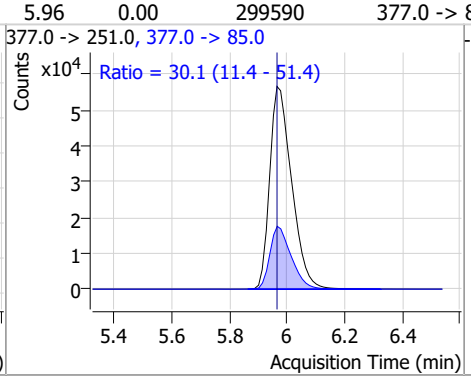


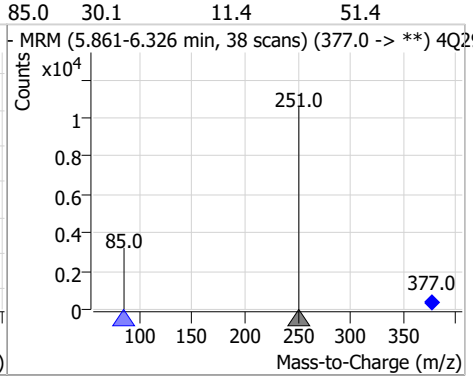




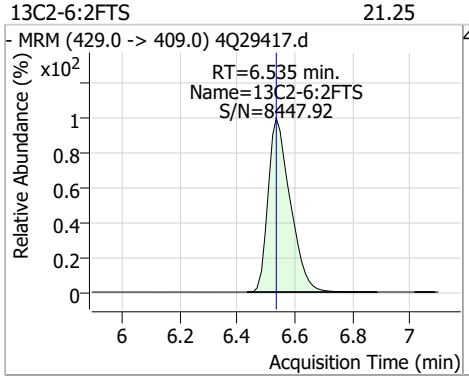
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.34	5.96	0.00	299590	377.0 -> 85.0	30.1	11.4	51.4

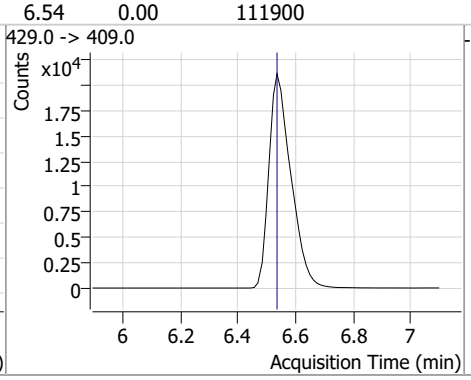


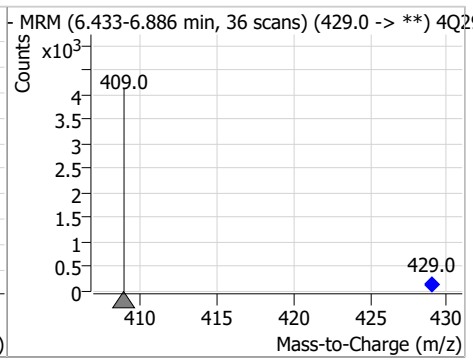




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.25	6.54	0.00	111900				

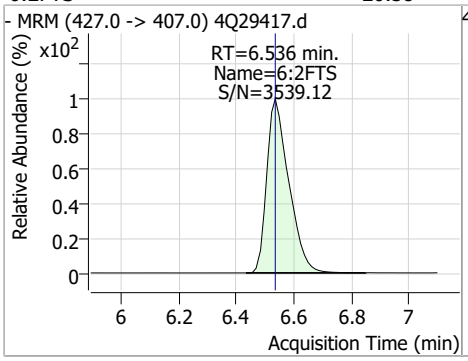


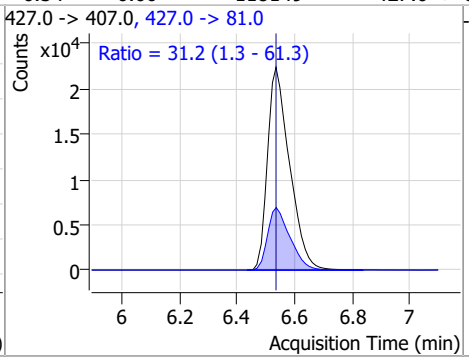


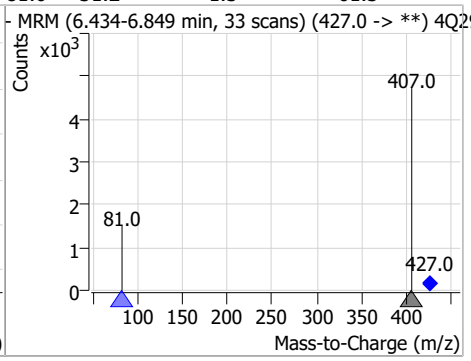


Perfluorinated Compounds by LC/MS/MS

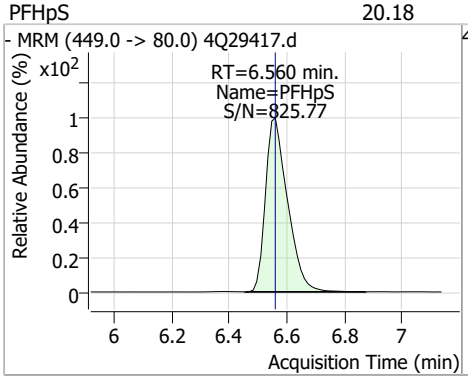
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.58	6.54	0.00	118149	427.0 -> 81.0	31.2	1.3	61.3

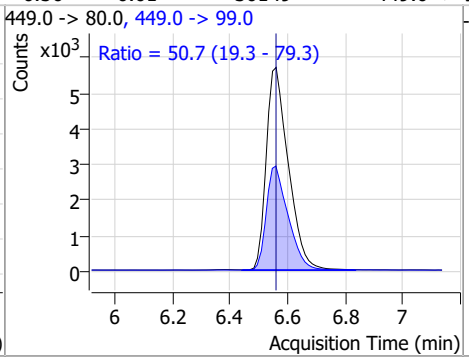


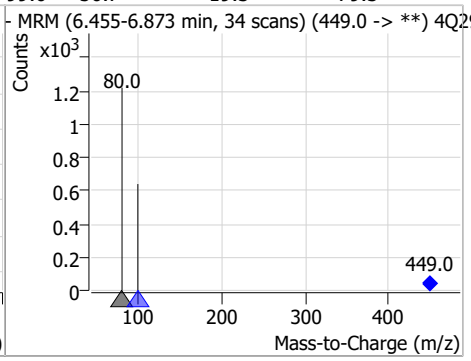




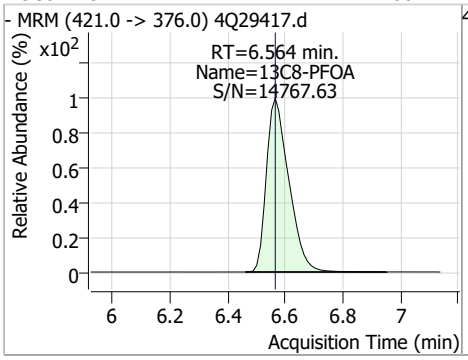
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.18	6.56	0.01	30149	449.0 -> 99.0	50.7	19.3	79.3

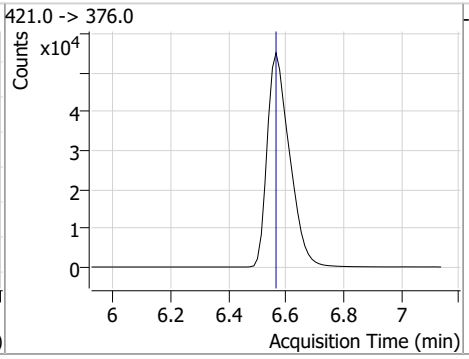


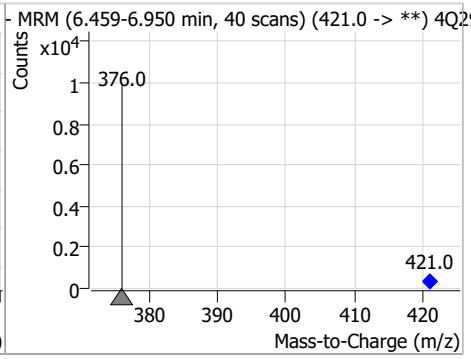




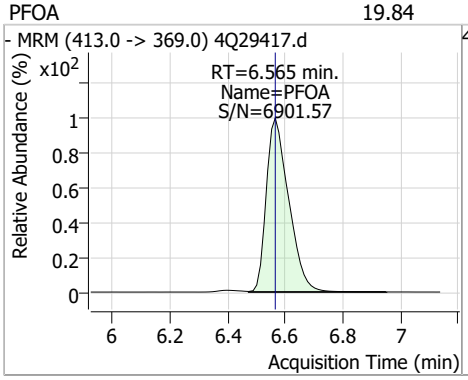
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.88	6.56	0.00	296935				

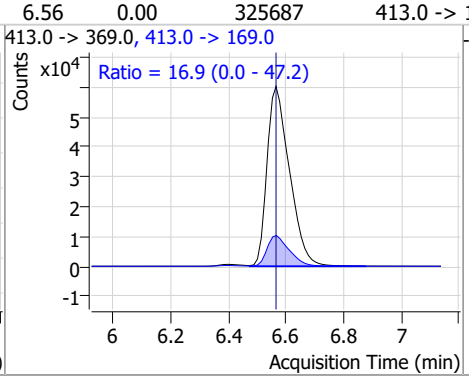


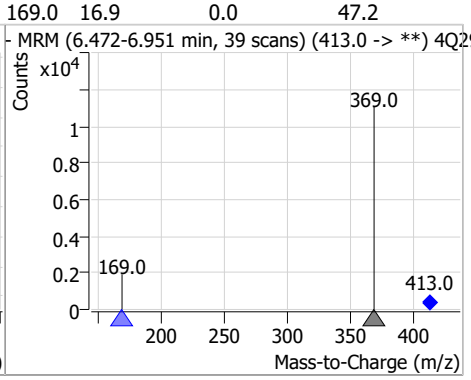




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.84	6.56	0.00	325687	413.0 -> 169.0	16.9	0.0	47.2

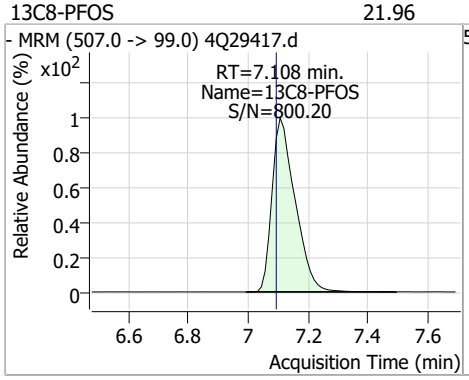


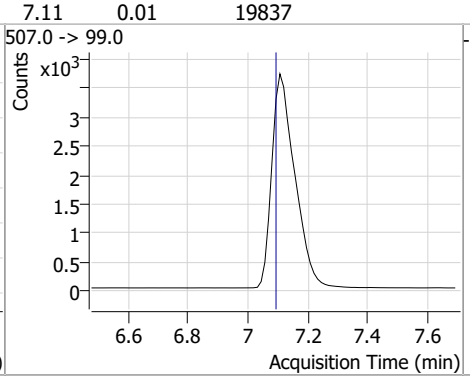


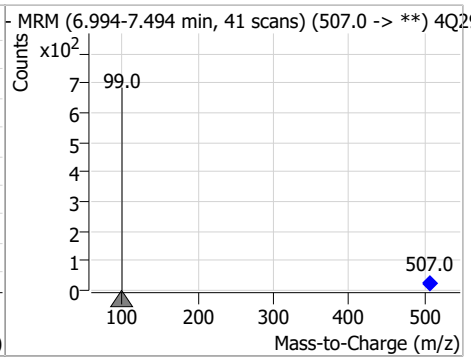


Perfluorinated Compounds by LC/MS/MS

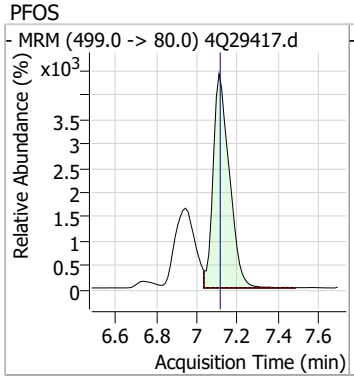
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.96	7.11	0.01	19837				

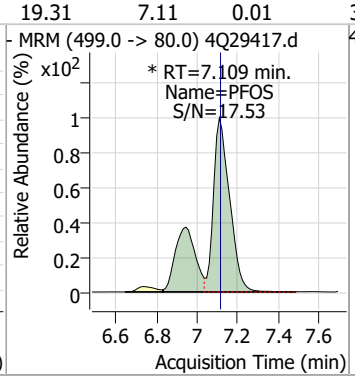


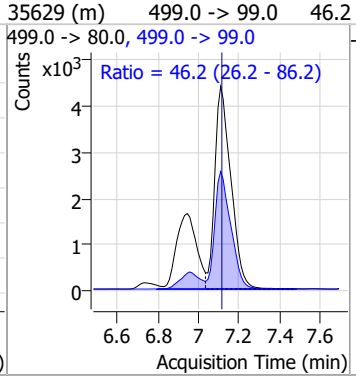


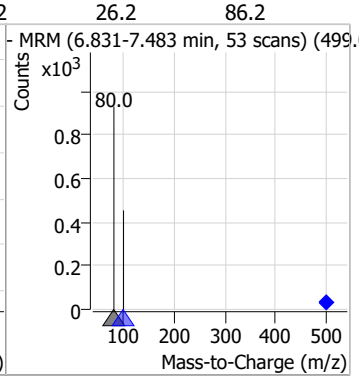


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.31	7.11	0.01	35629 (m)	499.0 -> 99.0	46.2	26.2	86.2

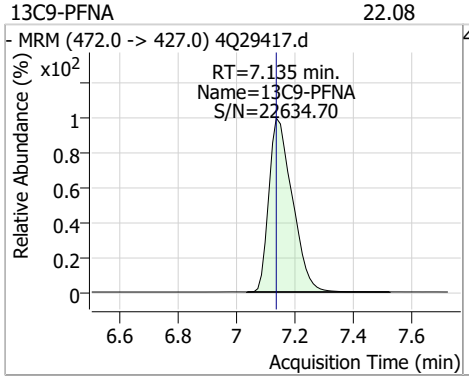


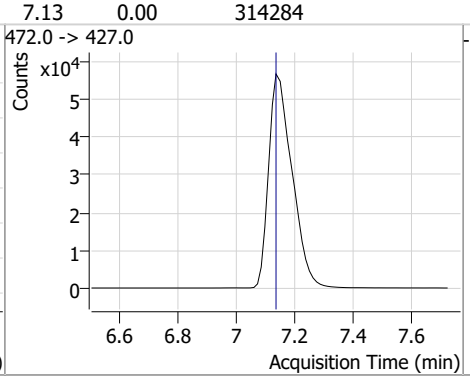


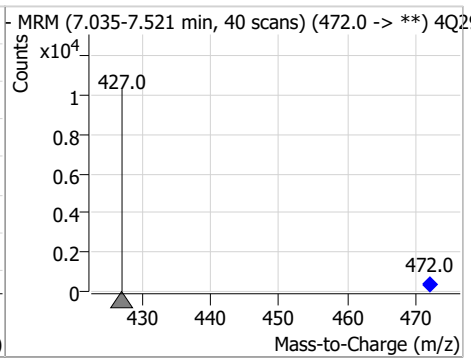




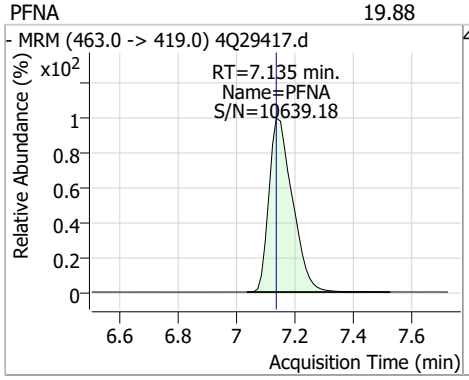
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.08	7.13	0.00	314284				

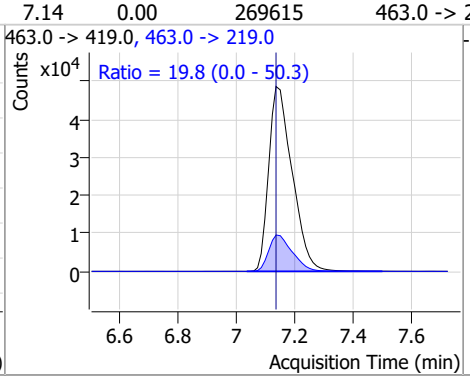


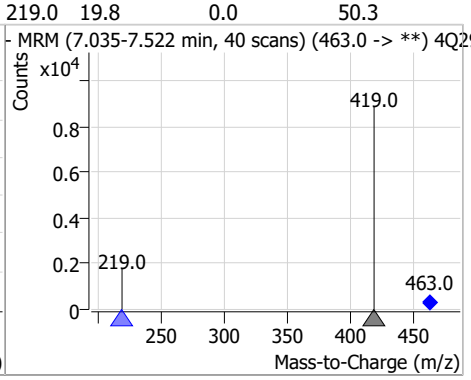




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.88	7.14	0.00	269615	463.0 -> 219.0	19.8	0.0	50.3

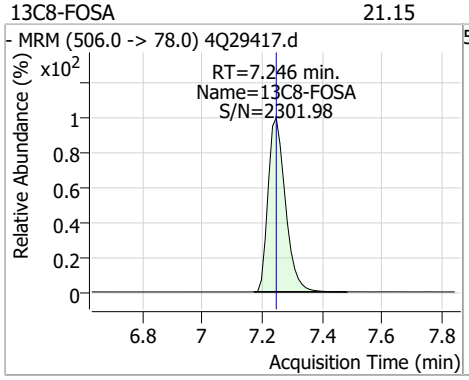


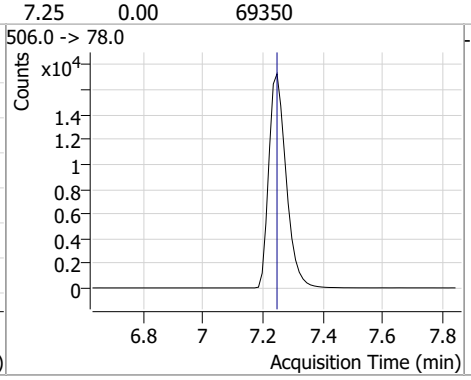


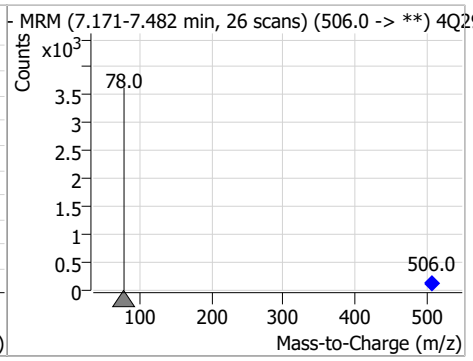


Perfluorinated Compounds by LC/MS/MS

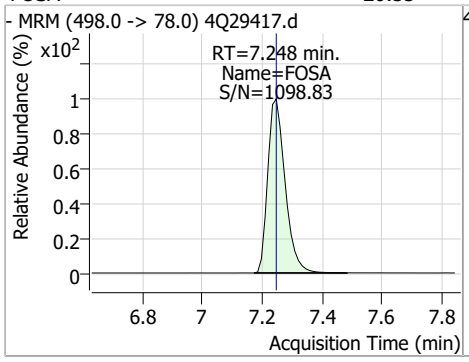
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.15	7.25	0.00	69350				

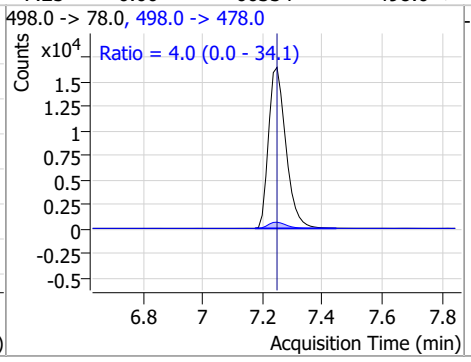


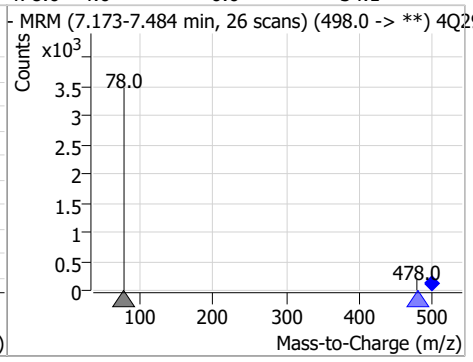




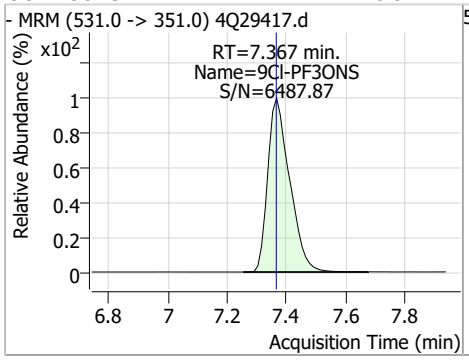
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.55	7.25	0.00	66334	498.0 -> 478.0	4.0	0.0	34.1

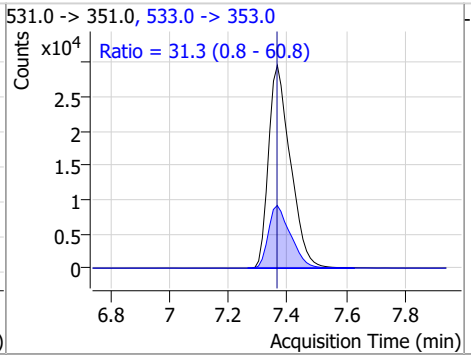


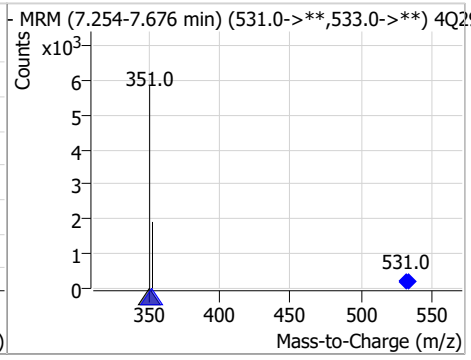




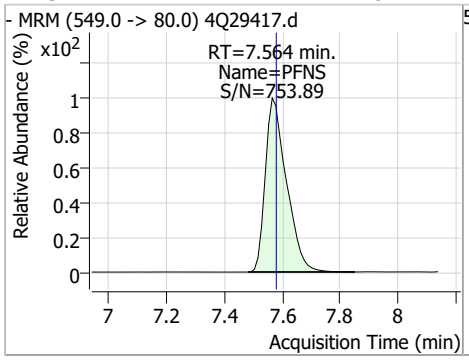
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.32	7.37	0.01	152362	533.0 -> 353.0	31.3	0.8	60.8

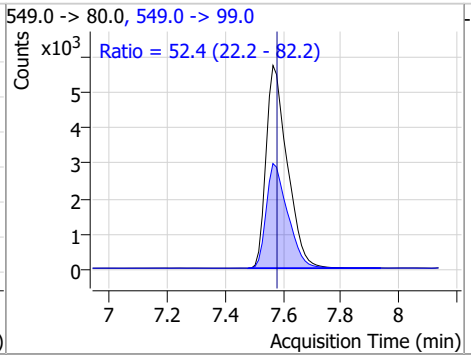


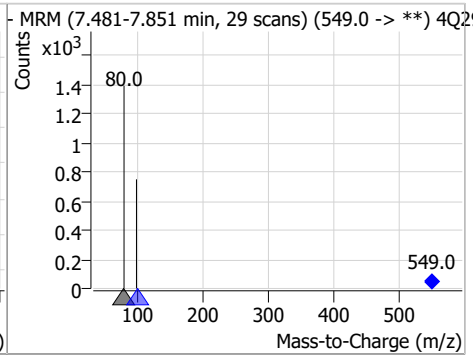




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.21	7.56	0.00	28991	549.0 -> 99.0	52.4	22.2	82.2

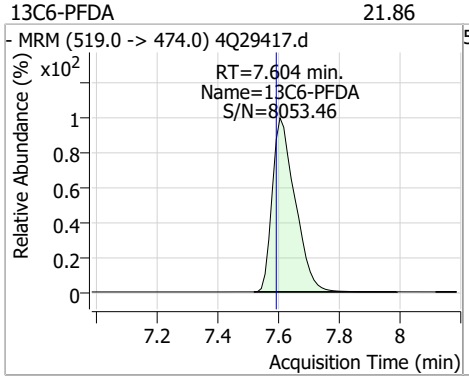


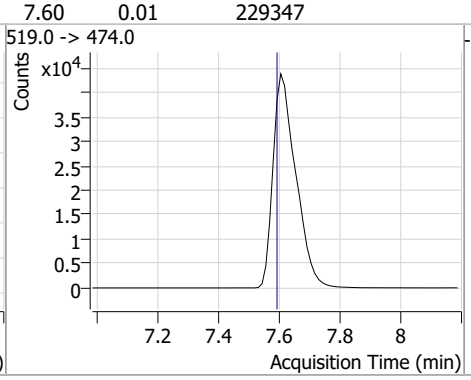


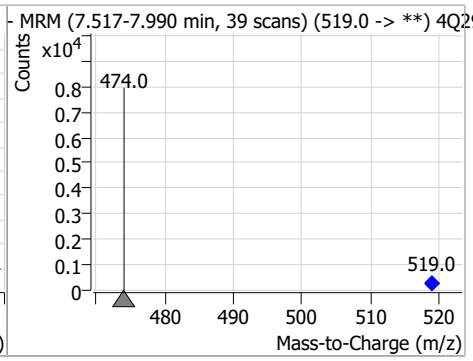


Perfluorinated Compounds by LC/MS/MS

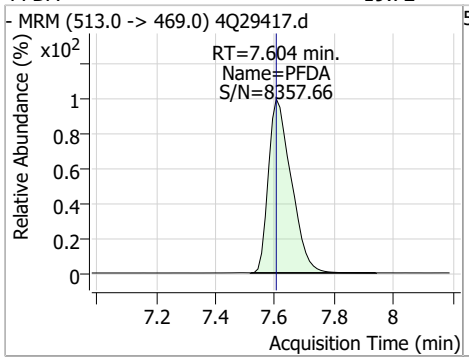
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.86	7.60	0.01	229347				

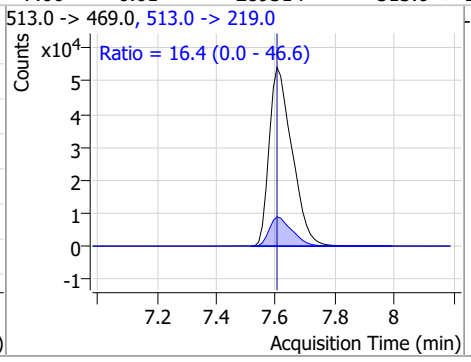


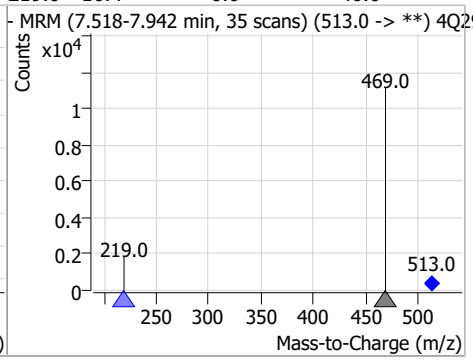




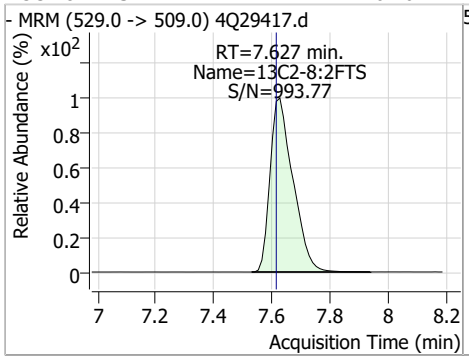
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.72	7.60	0.01	289314	513.0 -> 219.0	16.4	0.0	46.6

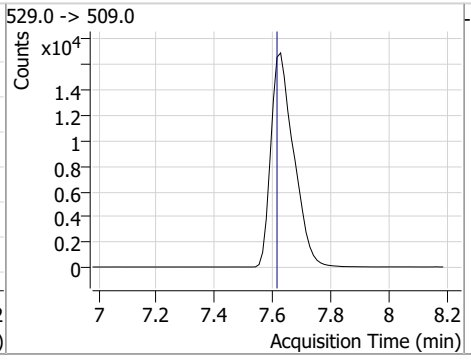


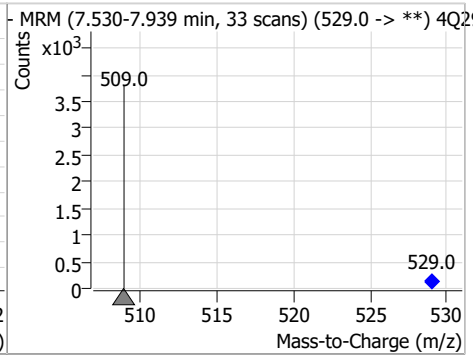




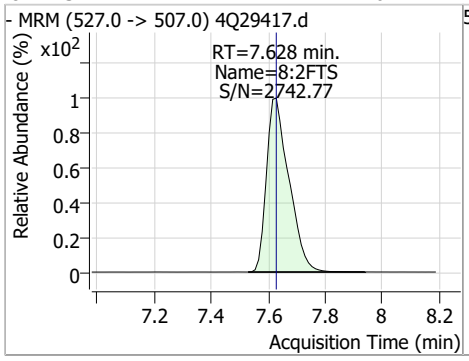
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.70	7.63	0.01	92322				

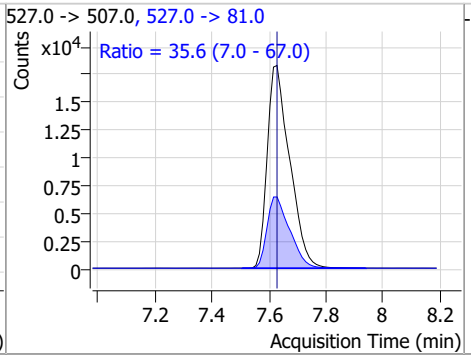


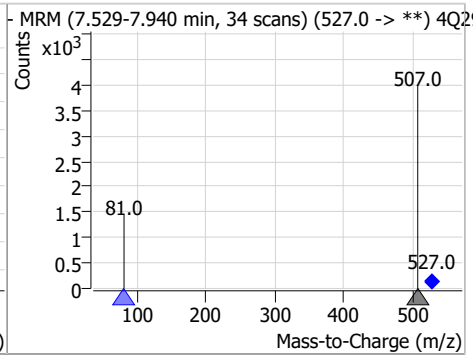




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.77	7.63	0.01	99886	527.0 -> 81.0	35.6	7.0	67.0

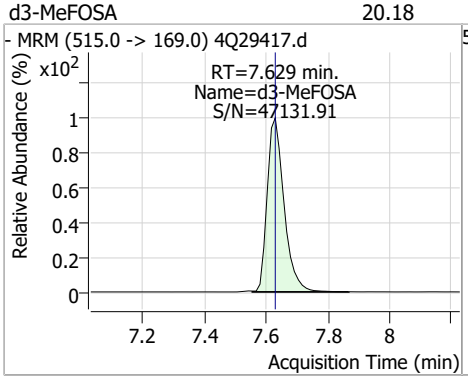


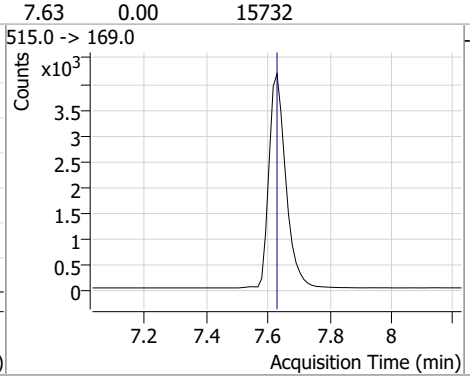


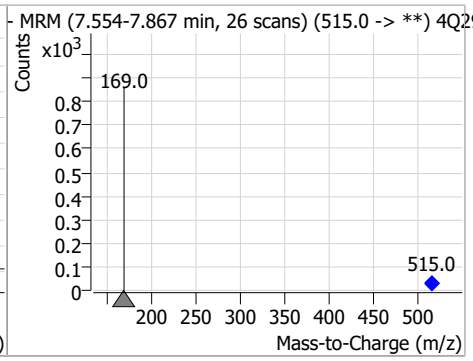


Perfluorinated Compounds by LC/MS/MS

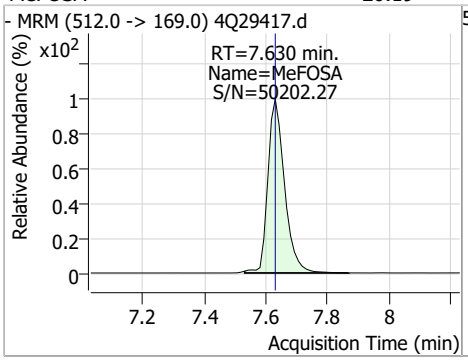
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.18	7.63	0.00	15732				

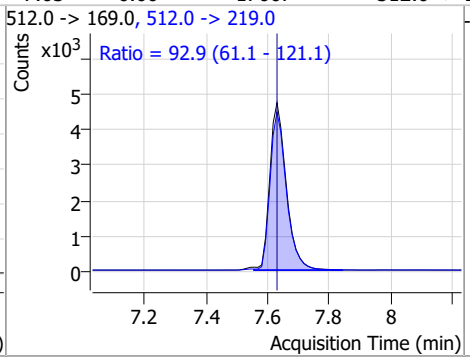


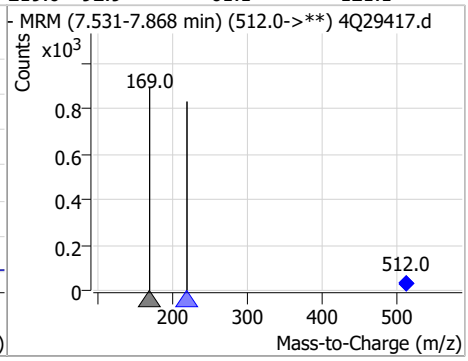




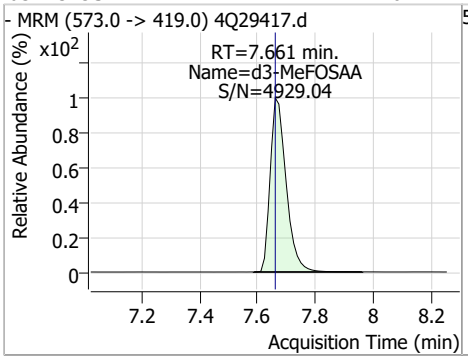
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.19	7.63	0.00	17607	512.0 -> 219.0	92.9	61.1	121.1

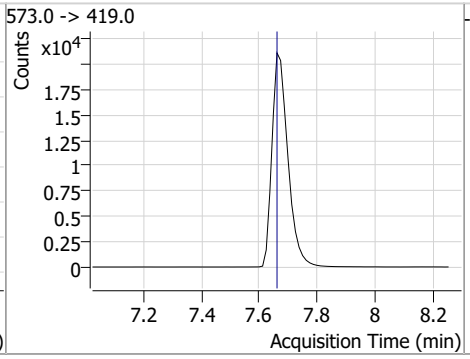


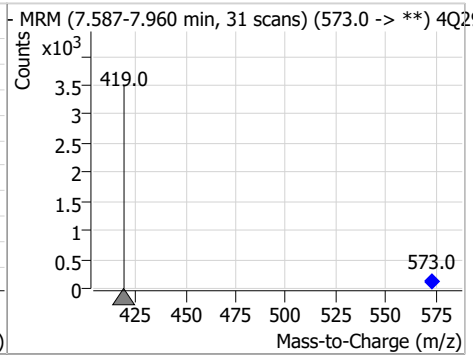




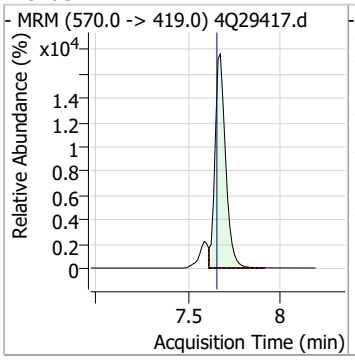
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.07	7.66	0.00	80131				

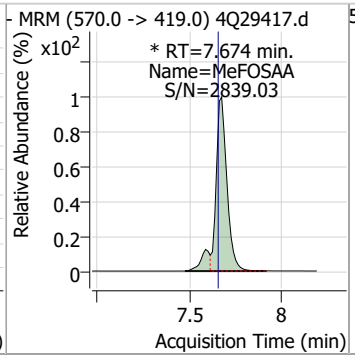


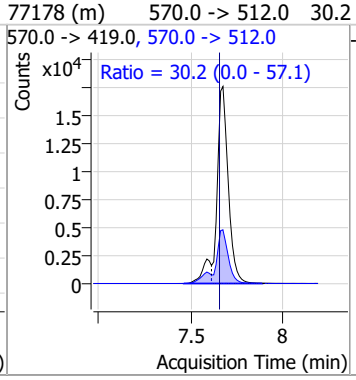


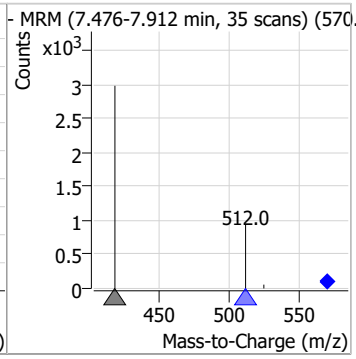


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.98	7.67	0.01	77178 (m)	570.0 -> 512.0	30.2	0.0	57.1



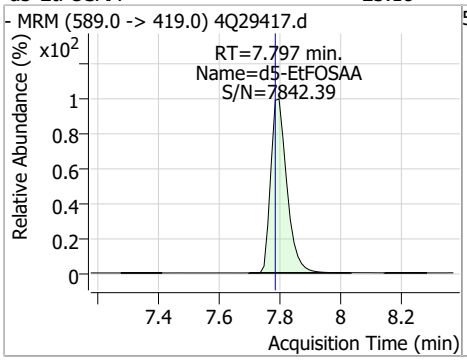


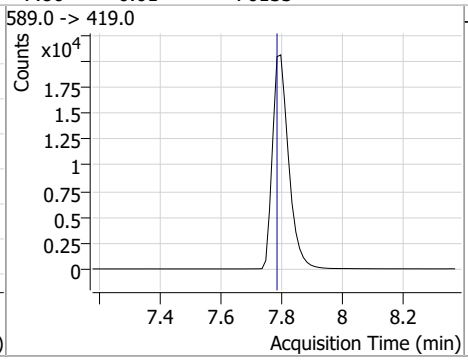


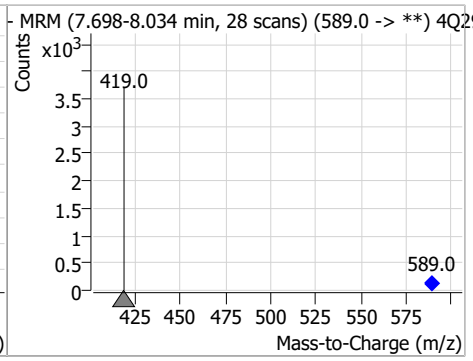


Perfluorinated Compounds by LC/MS/MS

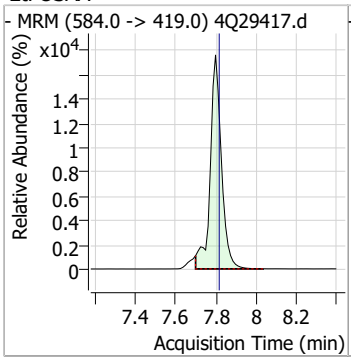
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.18	7.80	0.01	76133				

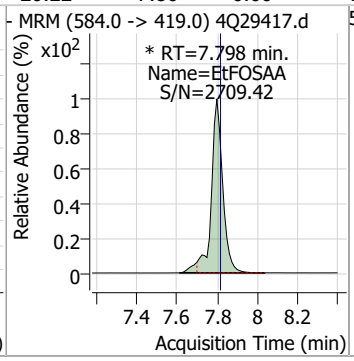


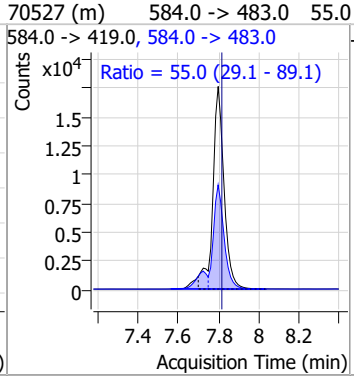


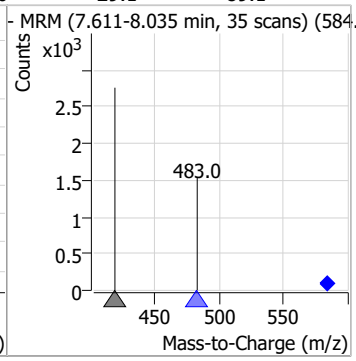


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.22	7.80	0.00	70527 (m)	584.0 -> 483.0	55.0	29.1	89.1

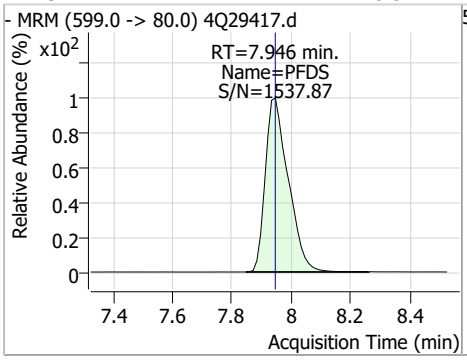


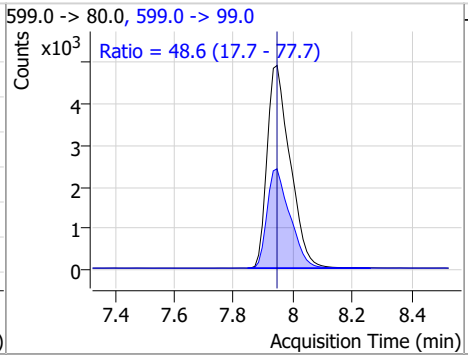


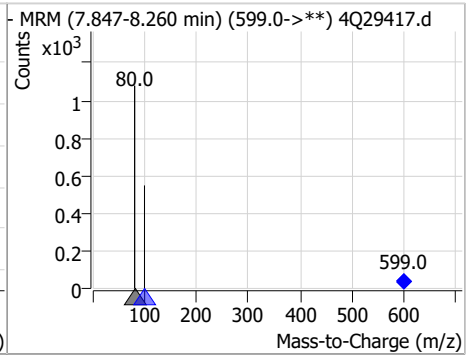




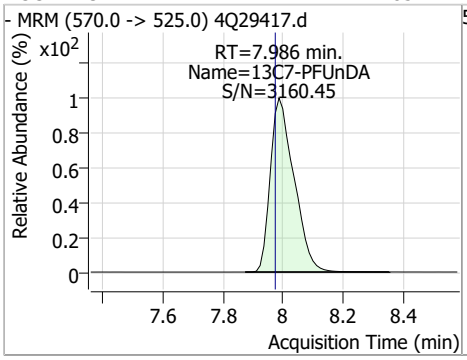
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.57	7.95	0.01	26235	599.0 -> 99.0	48.6	17.7	77.7

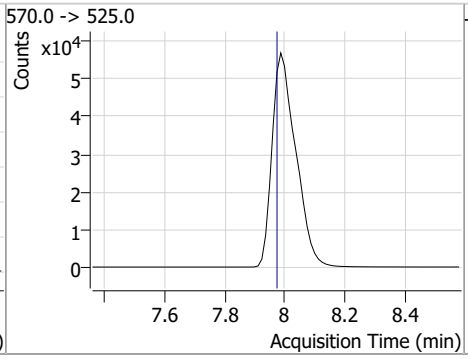


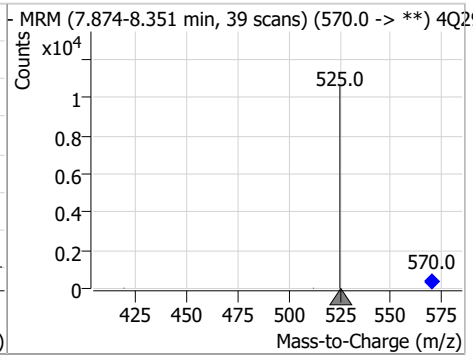




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.85	7.99	0.01	308555				

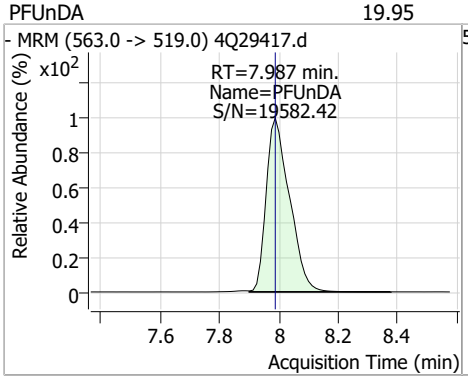


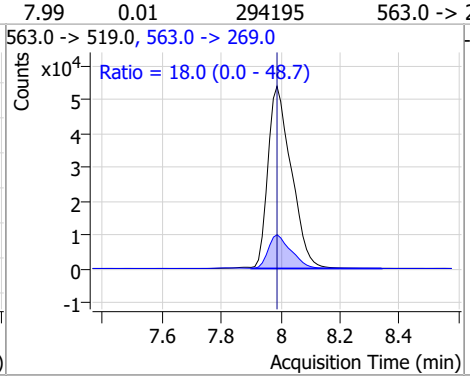


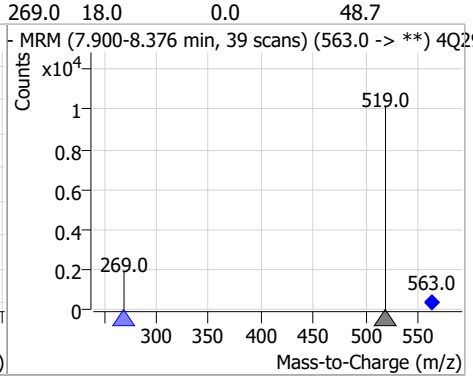


Perfluorinated Compounds by LC/MS/MS

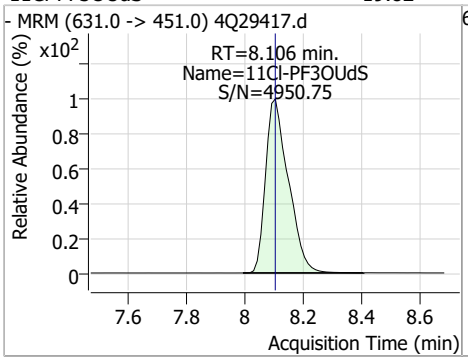
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.95	7.99	0.01	294195	563.0 -> 269.0	18.0	0.0	48.7

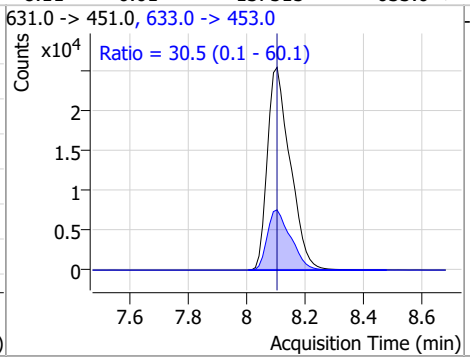


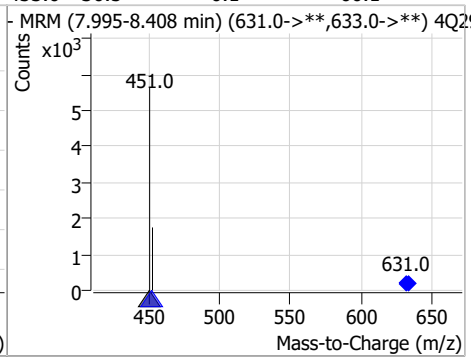




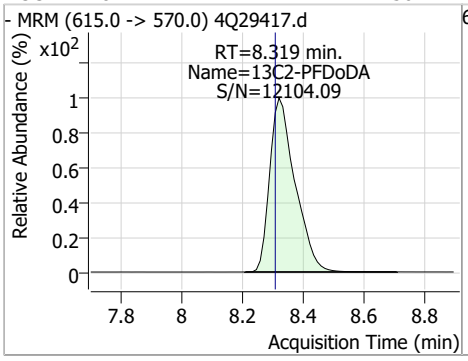
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.82	8.11	0.01	137515	633.0 -> 453.0	30.5	0.1	60.1

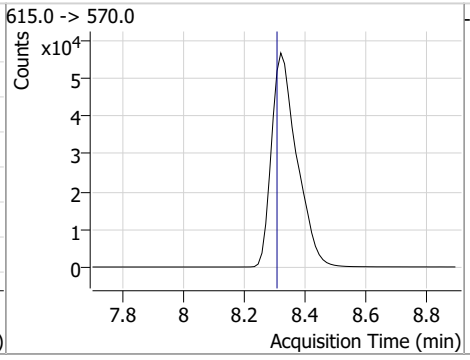


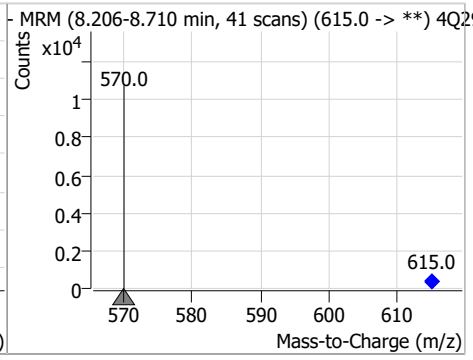




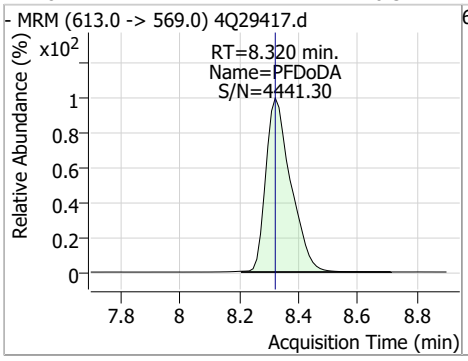
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.56	8.32	0.01	330163				

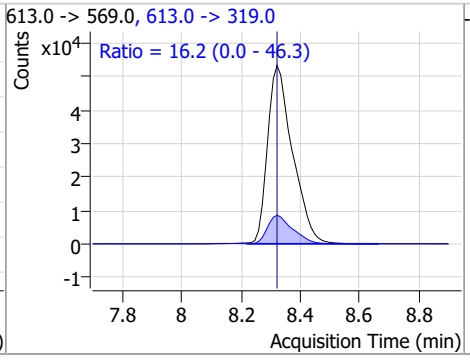


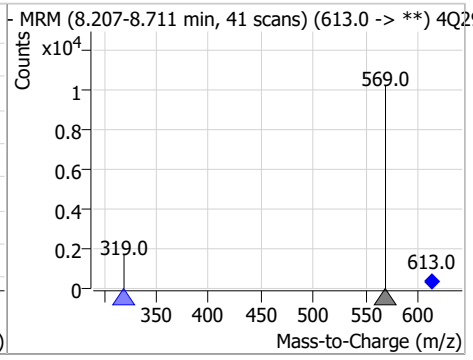




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.31	8.32	0.01	312180	613.0 -> 319.0	16.2	0.0	46.3

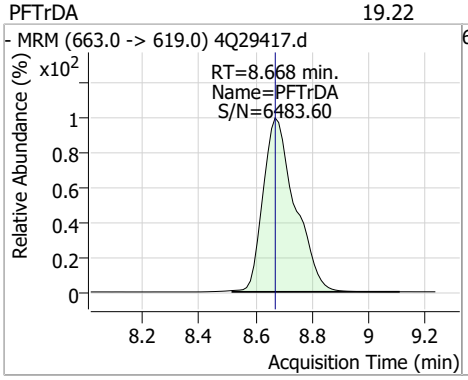


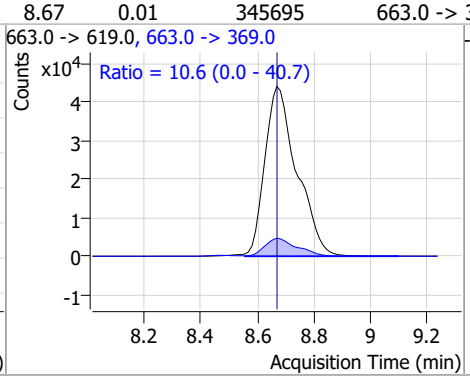


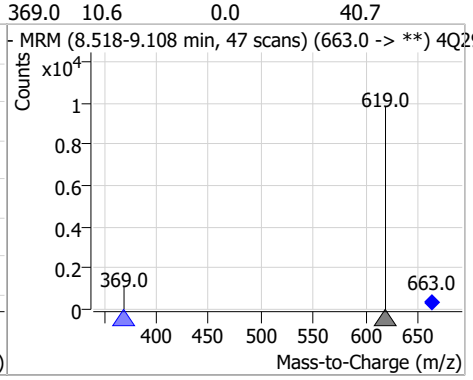


Perfluorinated Compounds by LC/MS/MS

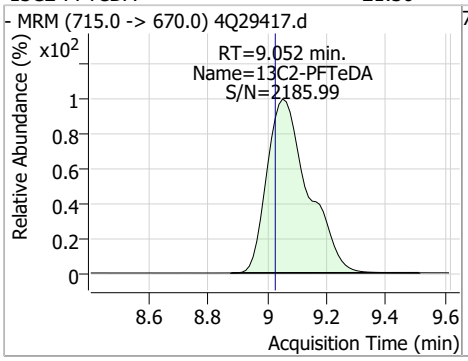
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.22	8.67	0.01	345695	663.0 -> 369.0	10.6	0.0	40.7

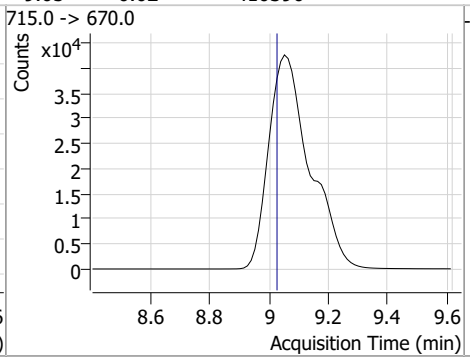


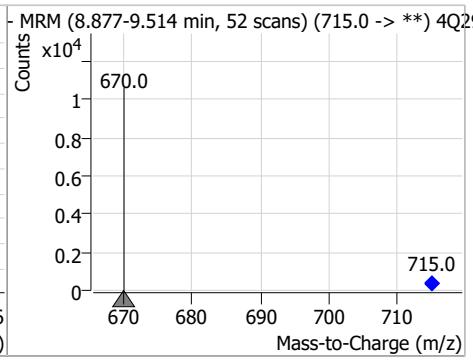




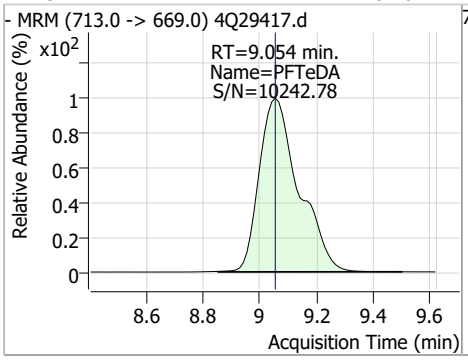
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.30	9.05	0.02	410390				

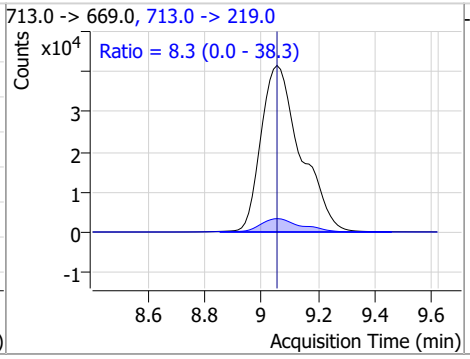


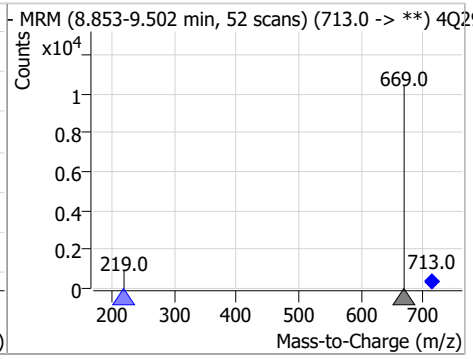




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.40	9.05	0.02	402249	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q422-CC419
Lab FileID: 4Q29417.D
Injection Time: 05/31/22 21:35
Method: EPA 537M QSM5.3 B-15
Analyst approved: 06/01/22 10:30 Martha Valls
Supervisor approved: 06/01/22 11:59 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.67	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 06/01/22 11:59

Perfluorinated Compounds by LC/MS/MS

Data File : 4Q29419.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 5/31/2022 10:08:50 PM
Sample Name : cc419-1.0LL
Vial : P1-A3
DA Method File : ID_052722_S4Q419.quantmethod.xml
Batch Name : s4q422.batch.bin
Sample Information : op91245,S4Q422,250,,,1.0,1,water

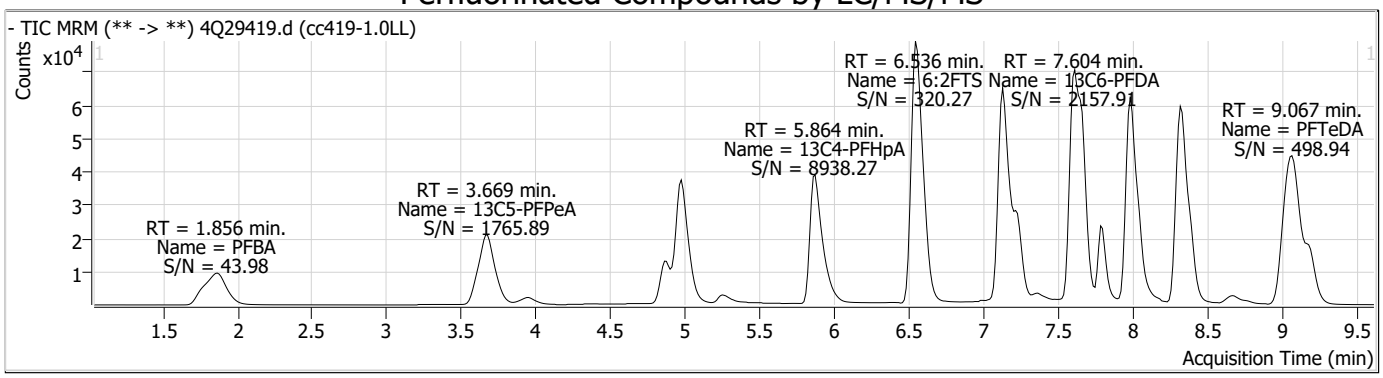
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	101117	20.00	µg/L	-0.013
M5-PFPeA	3.669	268.0 -> 223.0	158067	20.00	µg/L	-0.012
M5-PFHxA	4.979	318.0 -> 273.0	193946	20.00	µg/L	0.000
M4-PFHpA	5.864	367.0 -> 322.0	186471	20.00	µg/L	-0.012
M8-PFOA	6.564	421.0 -> 376.0	306721	20.00	µg/L	0.000
M9-PFNA	7.135	472.0 -> 427.0	319430	20.00	µg/L	0.000
M6-PFDA	7.604	519.0 -> 474.0	236593	20.00	µg/L	0.012
M7-PFUnDA	7.986	570.0 -> 525.0	314372	20.00	µg/L	0.012
M2-PFDoDA	8.319	615.0 -> 570.0	336318	20.00	µg/L	0.012
M2-PFTeDA	9.064	715.0 -> 670.0	408339	20.00	µg/L	0.037
M8-FOSA	7.234	506.0 -> 78.0	72469	20.00	µg/L	-0.012
M3-PFBS	3.949	302.0 -> 99.0	11667	20.00	µg/L	0.000
M3-PFHxS	5.898	402.0 -> 99.0	11906	20.00	µg/L	0.000
M8-PFOS	7.108	507.0 -> 99.0	19926	20.00	µg/L	0.013
M2-4:2FTS	4.862	329.0 -> 309.0	67237	20.00	µg/L	-0.012
M2-6:2FTS	6.535	429.0 -> 409.0	108557	20.00	µg/L	0.000
M2-8:2FTS	7.627	529.0 -> 509.0	92296	20.00	µg/L	0.012
M3-MeFOSAA	7.661	573.0 -> 419.0	85670	20.00	µg/L	0.000
M3-HFPO-DA	5.257	287.0 -> 169.0	10767	20.00	µg/L	-0.012
M3-MeFOSA	7.616	515.0 -> 169.0	17192	20.00	µg/L	-0.012
M5-EtFOSAA	7.785	589.0 -> 419.0	75584	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.862	329.0 -> 309.0	67237	19.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-6:2FTS	6.535	429.0 -> 409.0	108557	20.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-8:2FTS	7.627	529.0 -> 509.0	92296	20.69	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFDoDA	8.319	615.0 -> 570.0	336318	21.97	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C2-PFTeDA	9.064	715.0 -> 670.0	408339	21.19	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-PFBS	3.949	302.0 -> 99.0	11667	21.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C3-PFHxS	5.898	402.0 -> 99.0	11906	21.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C4-PFBA	1.862	217.0 -> 172.0	101117	21.51	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C4-PFHpA	5.864	367.0 -> 322.0	186471	21.84	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C5-PFHxA	4.979	318.0 -> 273.0	193946	21.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
13C5-PFPeA	3.669	268.0 -> 223.0	158067	21.55	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C6-PFDA	7.604	519.0 -> 474.0	236593	22.56	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

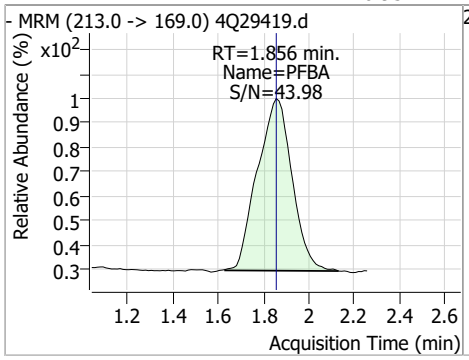
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C7-PFUnDA	7.986	570.0 -> 525.0	314372	22.27 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C8-FOSA	7.234	506.0 -> 78.0	72469	22.11 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C8-PFOA	6.564	421.0 -> 376.0	306721	22.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C8-PFOS	7.108	507.0 -> 99.0	19926	22.06 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C9-PFNA	7.135	472.0 -> 427.0	319430	22.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
d3-MeFOSAA	7.661	573.0 -> 419.0	85670	23.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.0%		
13C3-HFPO-DA	5.257	287.0 -> 169.0	10742	20.22 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
d3-MeFOSA	7.616	515.0 -> 169.0	17192	22.05 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
d5-EtFOSAA	7.785	589.0 -> 419.0	75586	23.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
Target Compounds						**QValue**
4:2FTS	4.864	327.0 -> 307.0	4070	1.05 µg/L		95
6:2FTS	6.536	427.0 -> 407.0	5828	1.05 µg/L		99
8:2FTS	7.615	527.0 -> 507.0	5001	1.04 µg/L		96
EtFOSAA	7.798	584.0 -> 419.0	3300	0.95 µg/L	m	97
FOSA	7.236	498.0 -> 78.0	3339	0.99 µg/L		100
MeFOSAA	7.662	570.0 -> 419.0	3659	0.93 µg/L	m	89
PFBA	1.856	213.0 -> 169.0	1522	0.95 µg/L		100
PFBS	3.941	299.0 -> 80.0	1830	0.99 µg/L		99
PFDA	7.604	513.0 -> 469.0	14120	0.93 µg/L		96
PFDoDA	8.320	613.0 -> 569.0	15023	0.96 µg/L		98
PFDS	7.946	599.0 -> 80.0	1309	0.91 µg/L		97
PFHpA	5.866	363.0 -> 319.0	12260	0.94 µg/L		98
PFHpS	6.548	449.0 -> 80.0	1554	1.04 µg/L		99
PFHxA	4.980	313.0 -> 269.0	9377	0.95 µg/L		99
PFHxS	5.900	399.0 -> 80.0	1503	0.97 µg/L	m	96
PFNA	7.135	463.0 -> 419.0	12376	0.90 µg/L		97
PFNS	7.564	549.0 -> 80.0	1551	1.02 µg/L		92
PFOA	6.565	413.0 -> 369.0	16045	0.95 µg/L		98
PFOS	7.109	499.0 -> 80.0	1758	0.95 µg/L	m	94
PFPeA	3.672	263.0 -> 219.0	6870	0.98 µg/L		100
PFPeS	5.085	349.0 -> 80.0	1201	0.99 µg/L		98
PFTeDA	9.067	713.0 -> 669.0	19171	0.98 µg/L		100
PFTrDA	8.668	663.0 -> 619.0	16722	0.91 µg/L		99
PFUnDA	7.987	563.0 -> 519.0	14147	0.94 µg/L		100
11Cl-PF3OUdS	8.093	631.0 -> 451.0	6495	0.92 µg/L		97
9Cl-PF3ONS	7.367	531.0 -> 351.0	7382	0.86 µg/L		99
ADONA	5.965	377.0 -> 251.0	14273	0.91 µg/L		99
HFPO-DA	5.264	329.0 -> 169.0	1717	1.02 µg/L		95
MeFOSA	7.618	512.0 -> 169.0	1013	1.06 µg/L		98

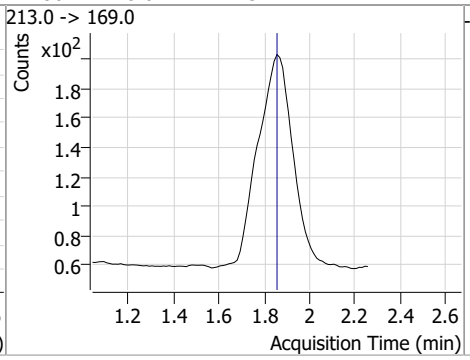
 # = Qualifier out of range, m = manually integrated, + = Area summed

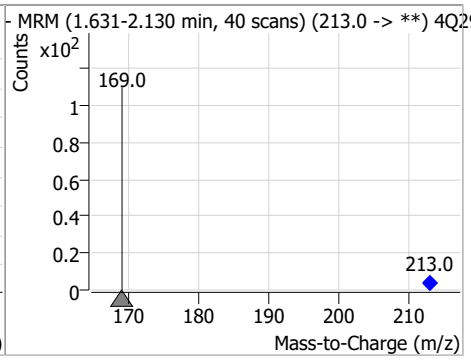
Perfluorinated Compounds by LC/MS/MS



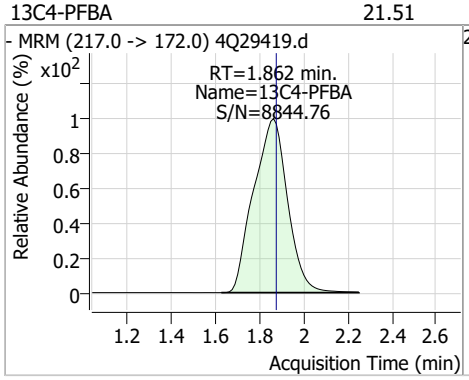
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.95	1.86	-0.01	1522				

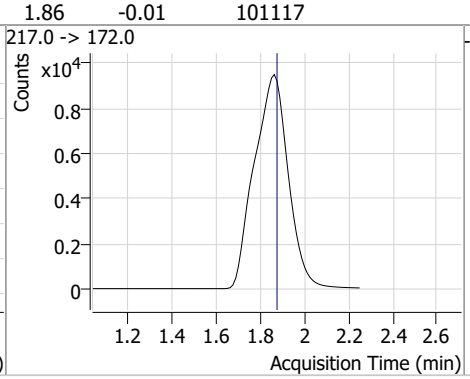


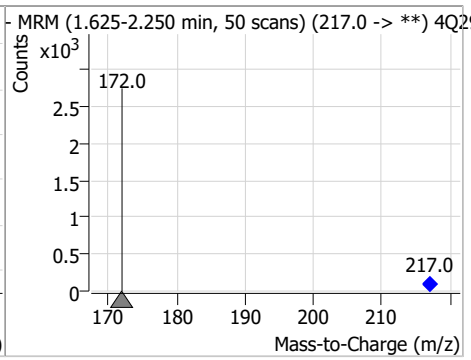




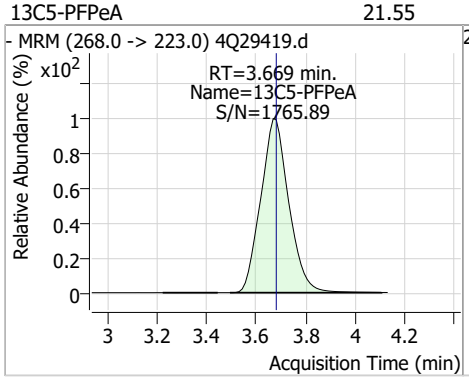
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.51	1.86	-0.01	101117				

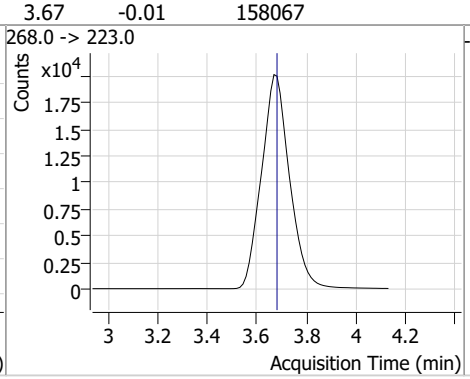


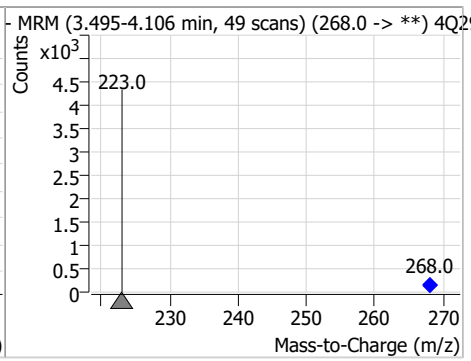




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.55	3.67	-0.01	158067				

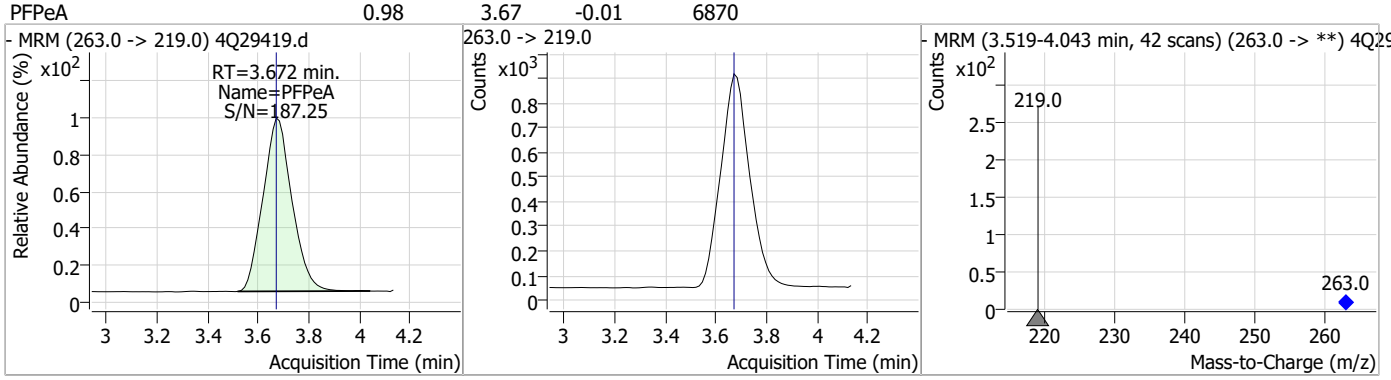




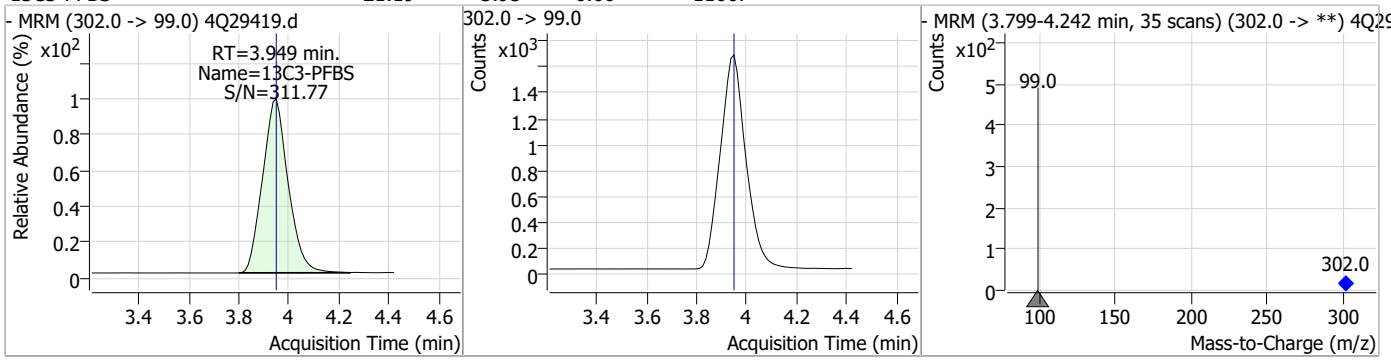


Perfluorinated Compounds by LC/MS/MS

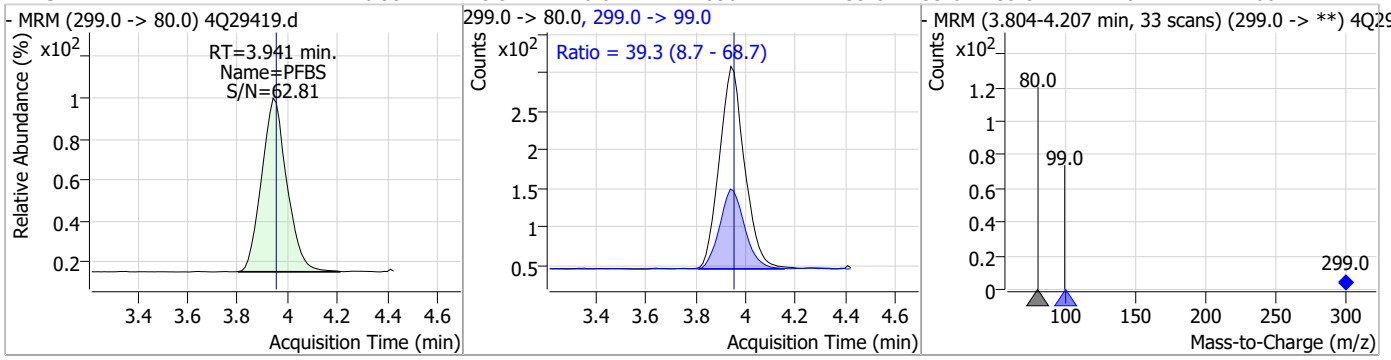
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.98	3.67	-0.01	6870				



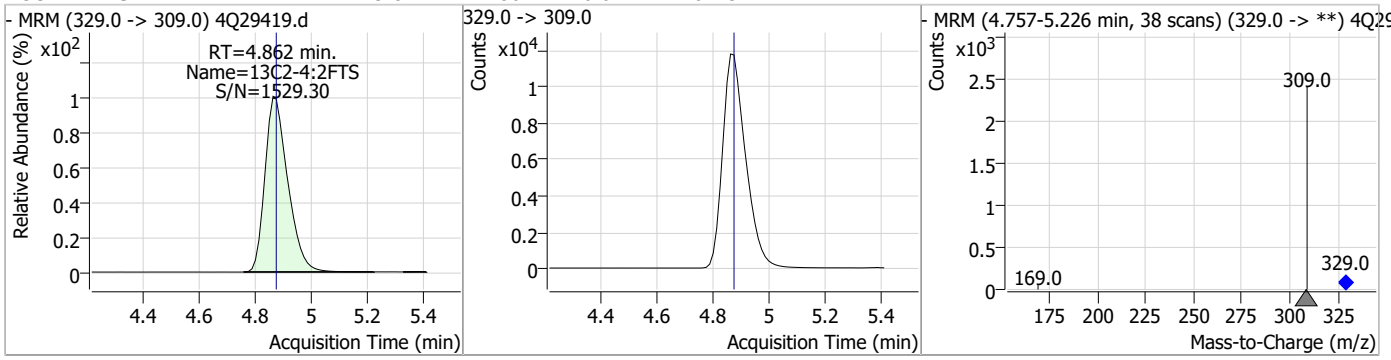
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.19	3.95	0.00	11667				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.99	3.94	-0.01	1830	299.0 -> 99.0	39.3	8.7	68.7

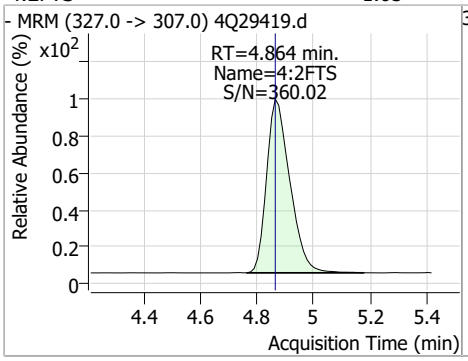


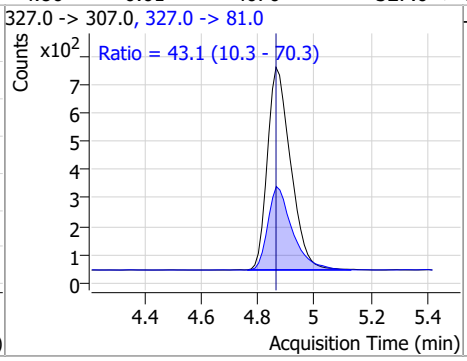
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.82	4.86	-0.01	67237				

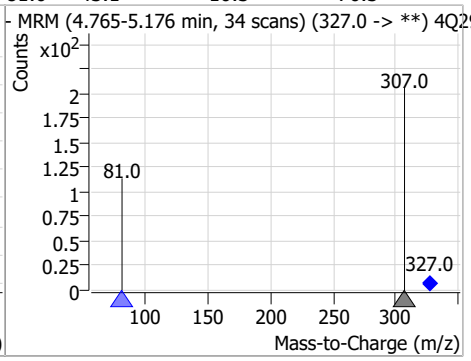


Perfluorinated Compounds by LC/MS/MS

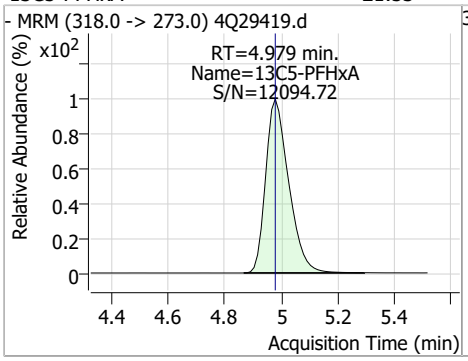
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	4.86	-0.01	4070	327.0 -> 81.0	43.1	10.3	70.3

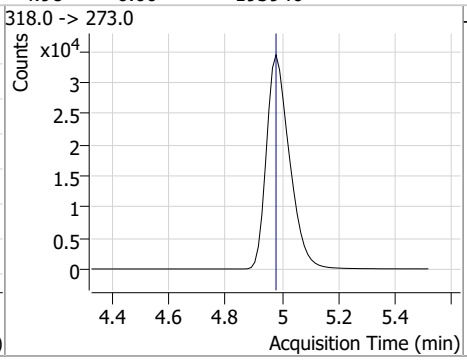


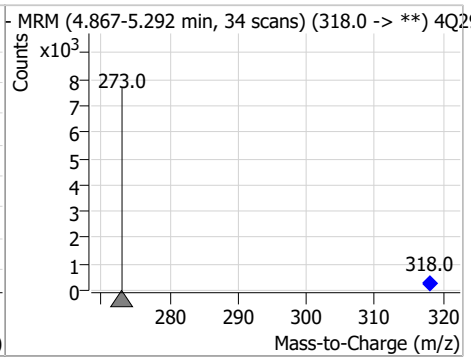




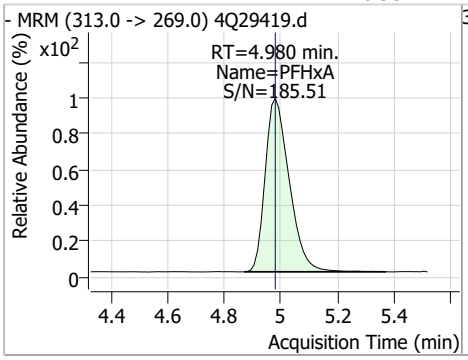
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.53	4.98	0.00	193946				

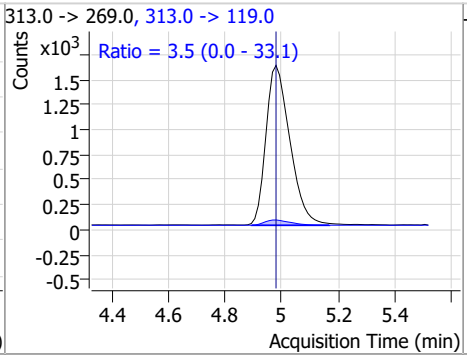


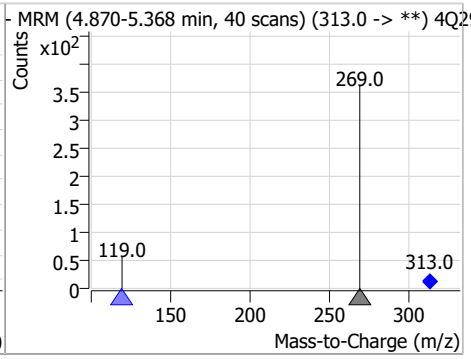




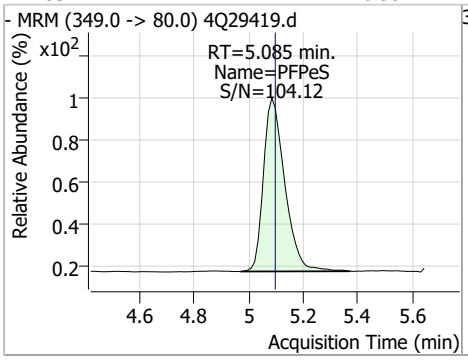
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.95	4.98	0.00	9377	313.0 -> 119.0	3.5	0.0	33.1

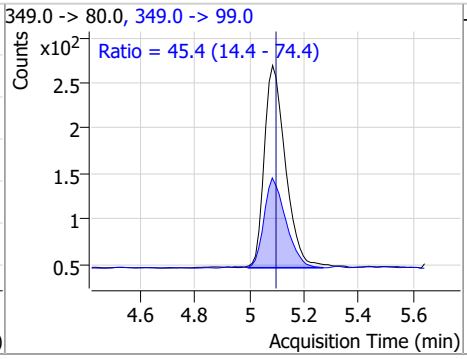


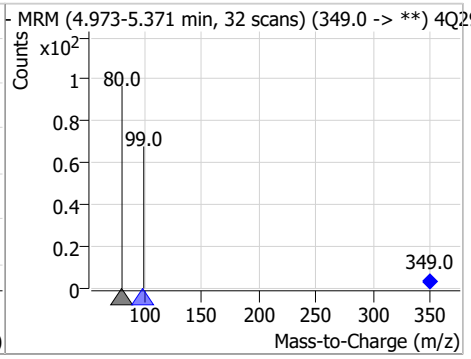




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.99	5.09	-0.01	1201	349.0 -> 99.0	45.4	14.4	74.4

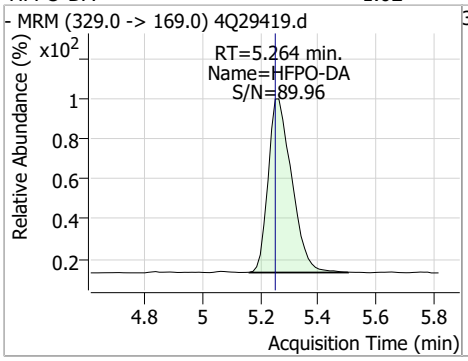


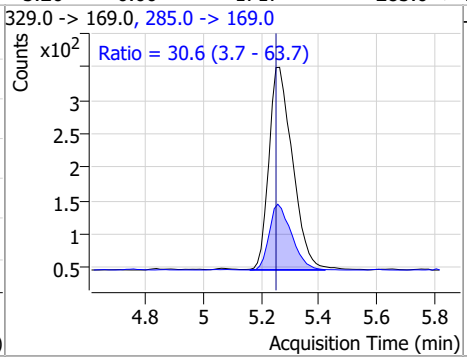


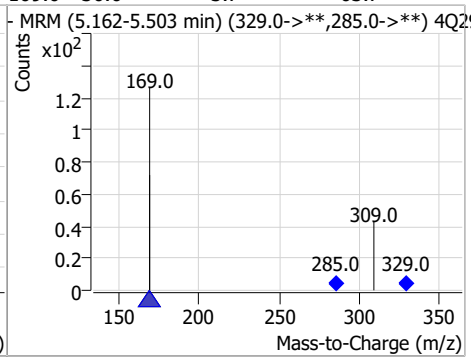


Perfluorinated Compounds by LC/MS/MS

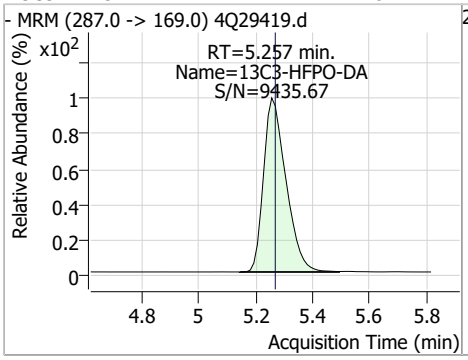
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.02	5.26	0.00	1717	285.0 -> 169.0	30.6	3.7	63.7

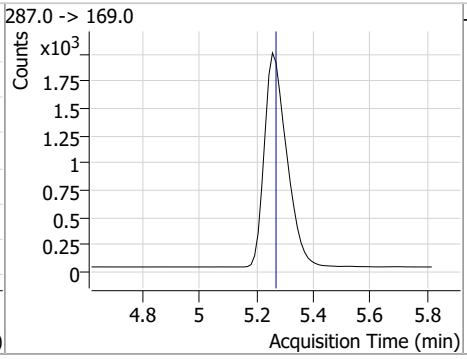


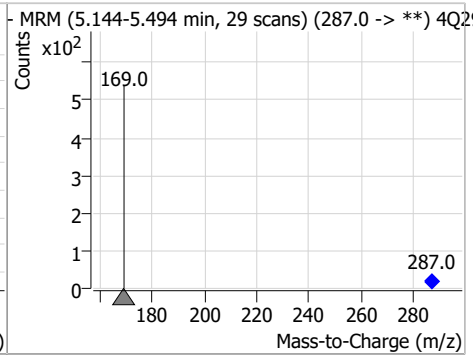




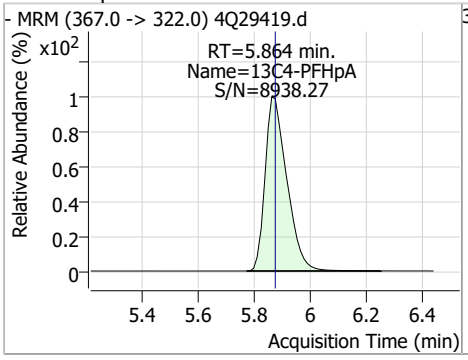
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.22	5.26	-0.01	10742				

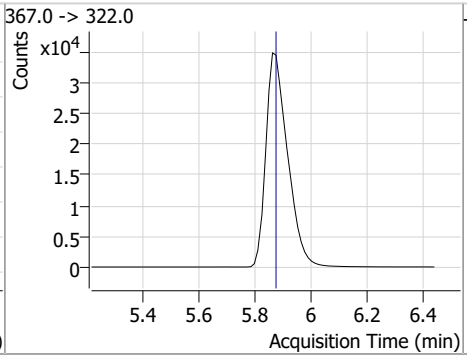


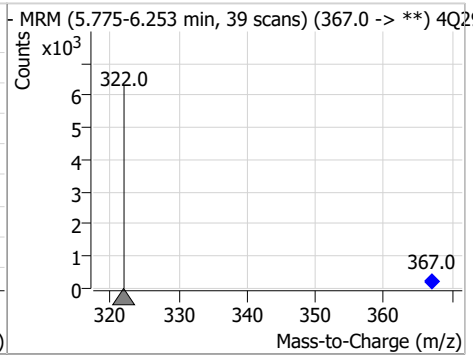




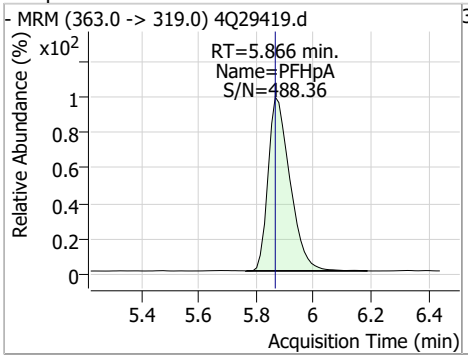
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.84	5.86	-0.01	186471				

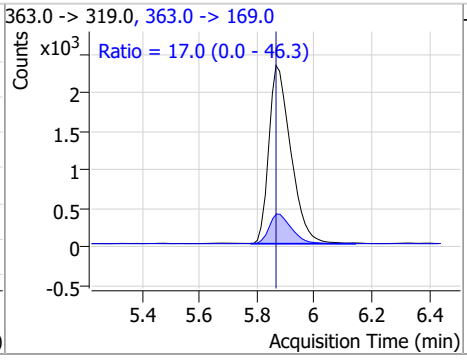


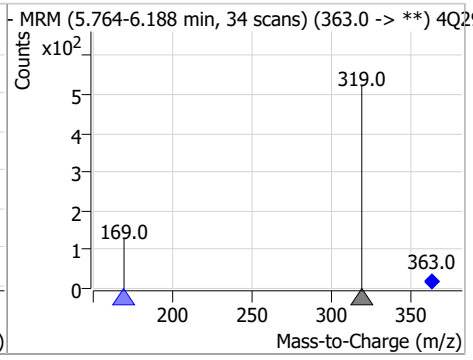




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	5.87	-0.01	12260	363.0 -> 169.0	17.0	0.0	46.3

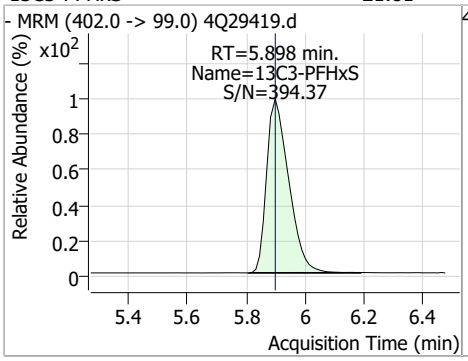


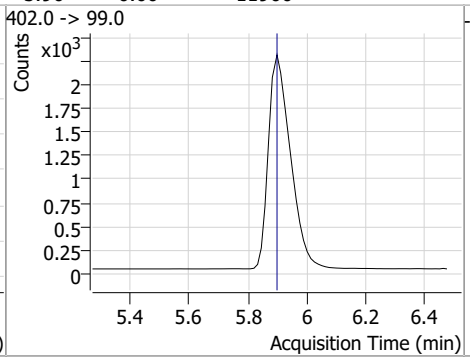


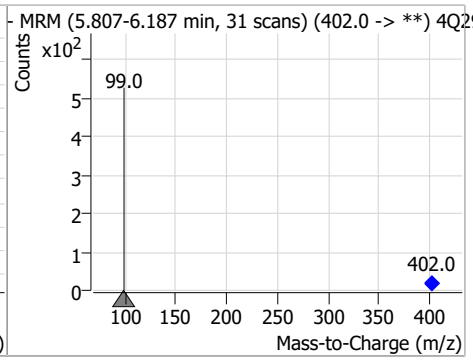


Perfluorinated Compounds by LC/MS/MS

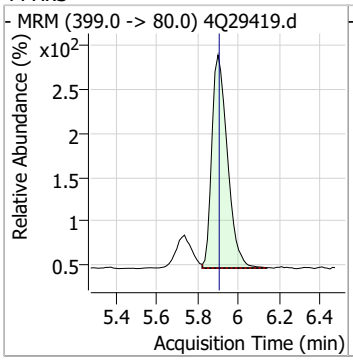
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.81	5.90	0.00	11906				

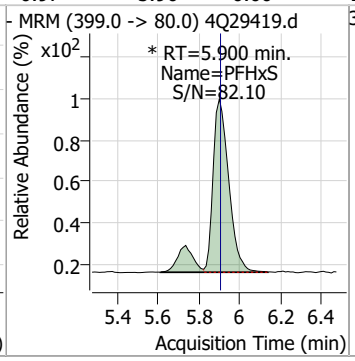


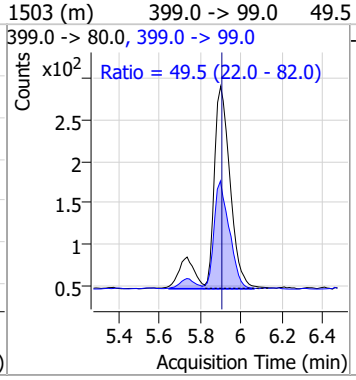


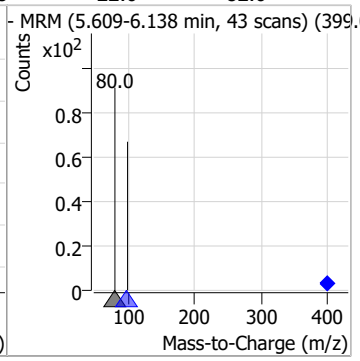


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.97	5.90	0.00	1503 (m)	399.0 -> 99.0	49.5	22.0	82.0

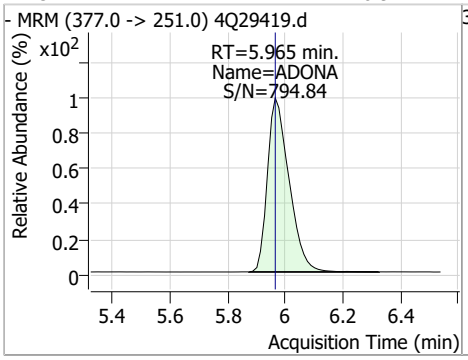


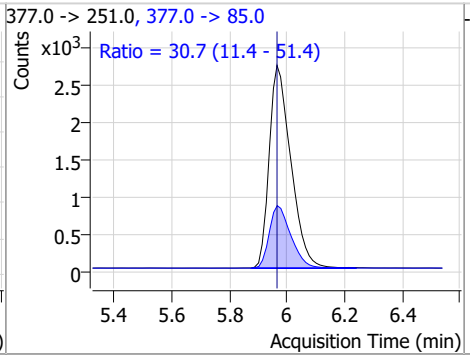


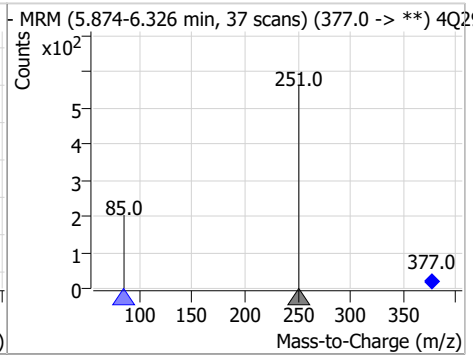




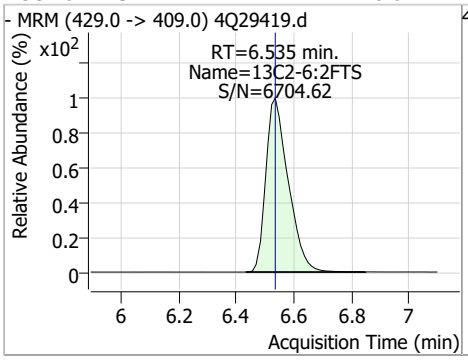
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.91	5.96	0.00	14273	377.0 -> 85.0	30.7	11.4	51.4

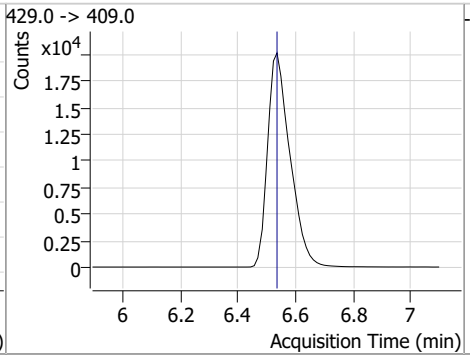


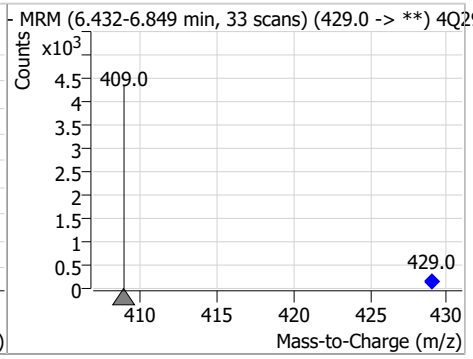




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.61	6.54	0.00	108557				

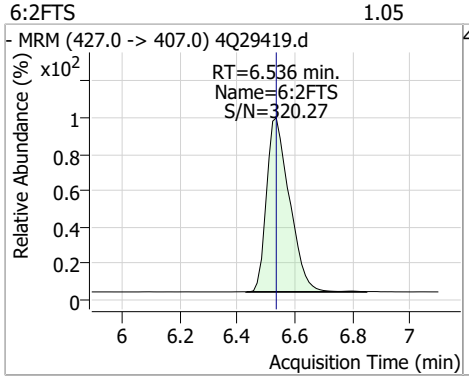


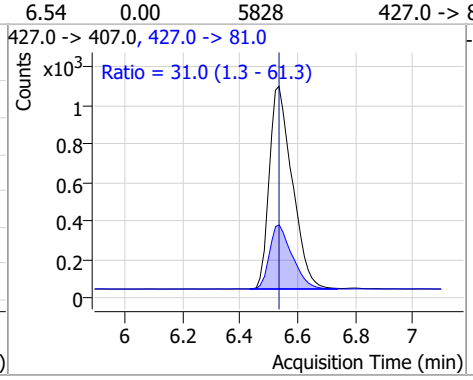


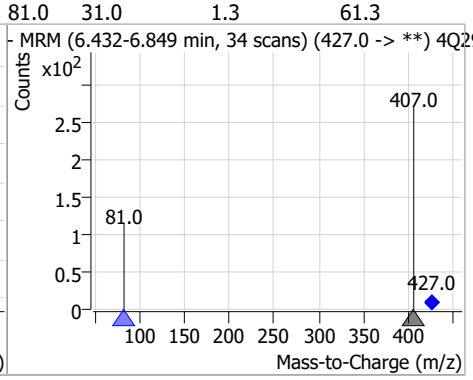


Perfluorinated Compounds by LC/MS/MS

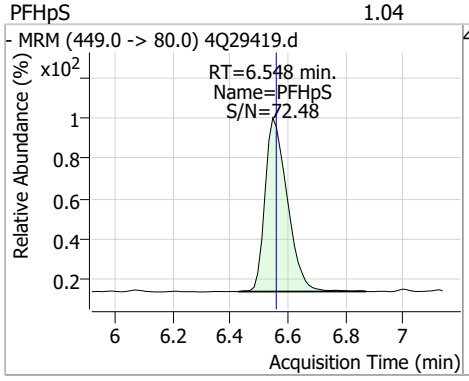
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	6.54	0.00	5828	427.0 -> 81.0	31.0	1.3	61.3

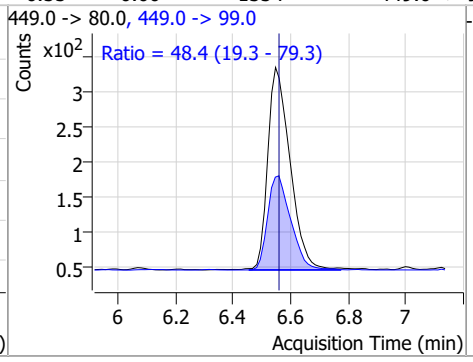


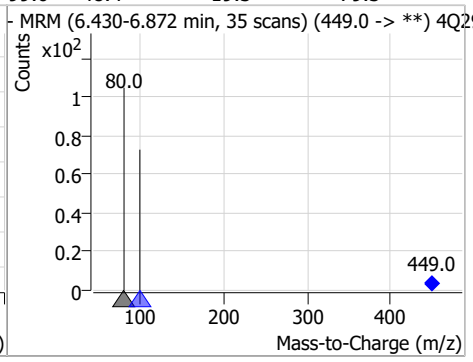




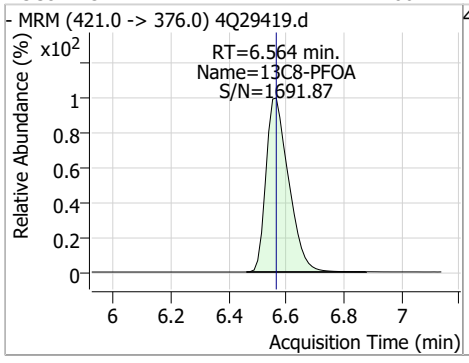
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.04	6.55	0.00	1554	449.0 -> 99.0	48.4	19.3	79.3

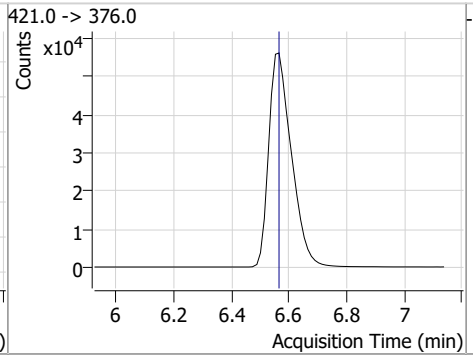


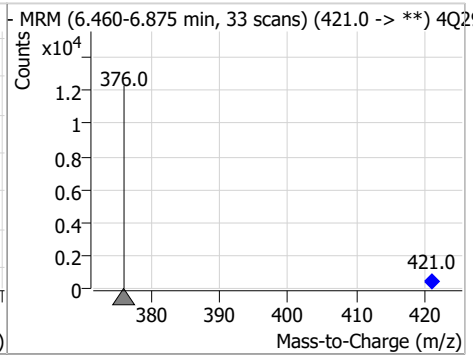




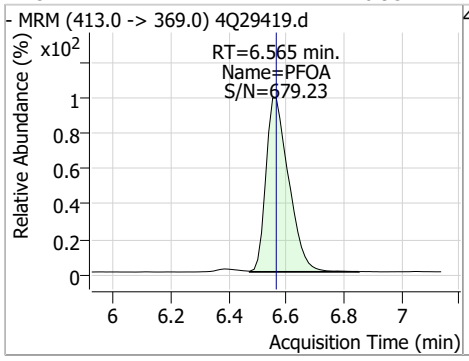
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.60	6.56	0.00	306721				

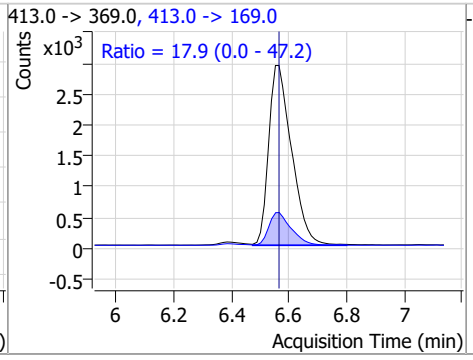


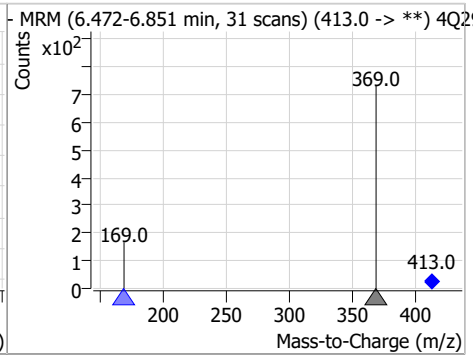




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	6.56	0.00	16045	413.0 -> 169.0	17.9	0.0	47.2

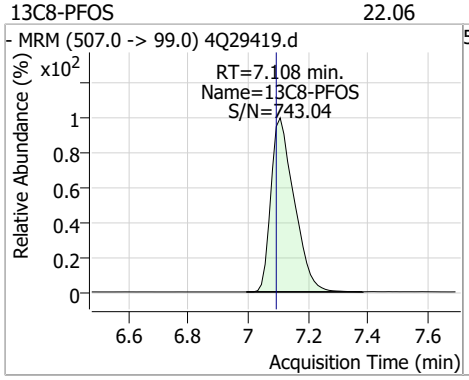


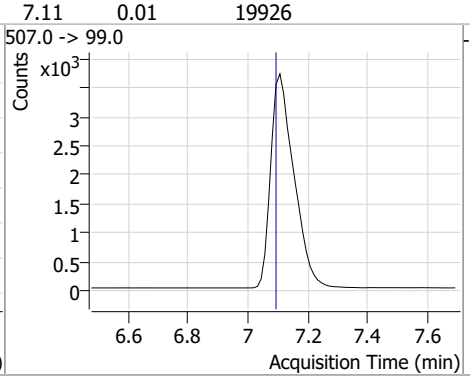


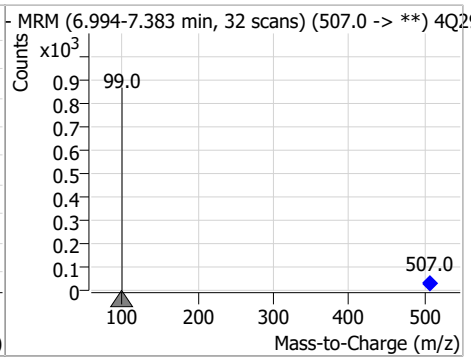


Perfluorinated Compounds by LC/MS/MS

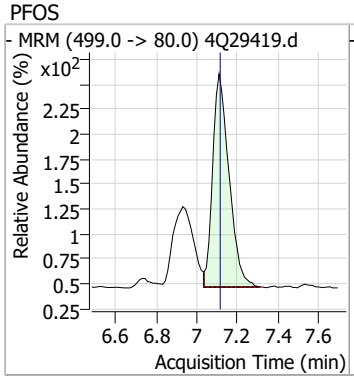
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.06	7.11	0.01	19926				

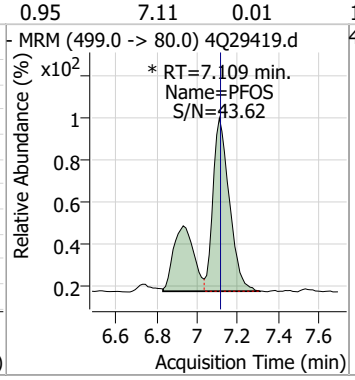


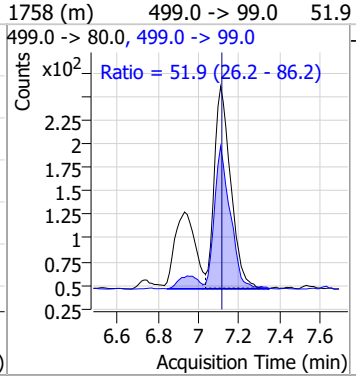


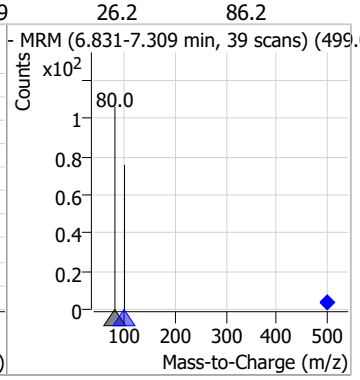


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.95	7.11	0.01	1758 (m)	499.0 -> 99.0	51.9	26.2	86.2

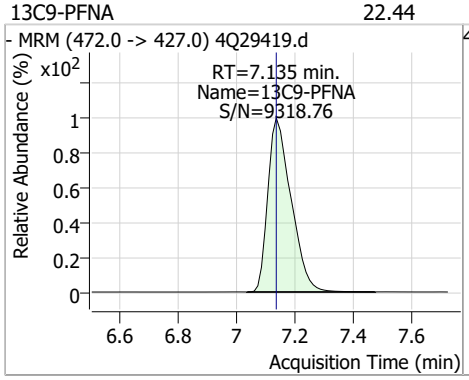


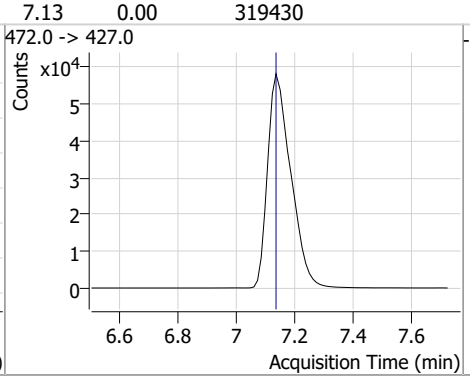


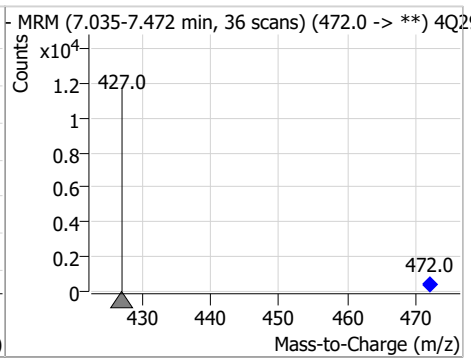




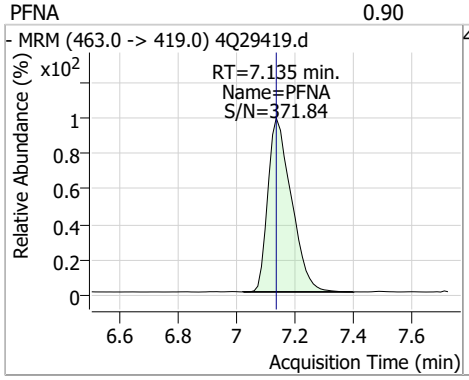
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.44	7.13	0.00	319430				

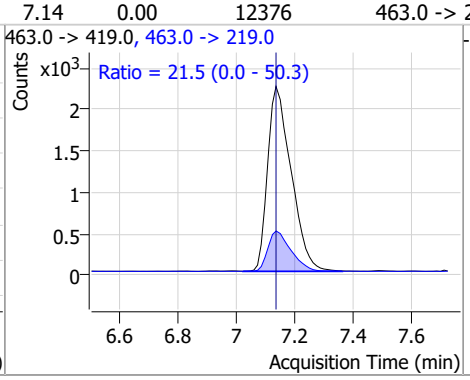


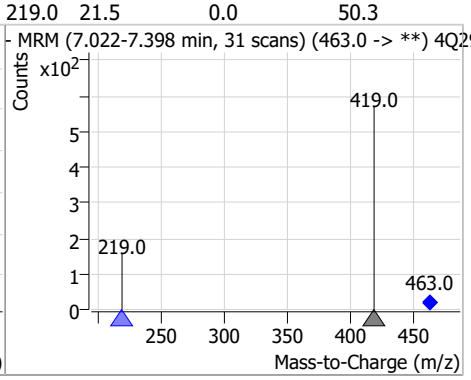




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.90	7.14	0.00	12376	463.0 -> 219.0	21.5	0.0	50.3

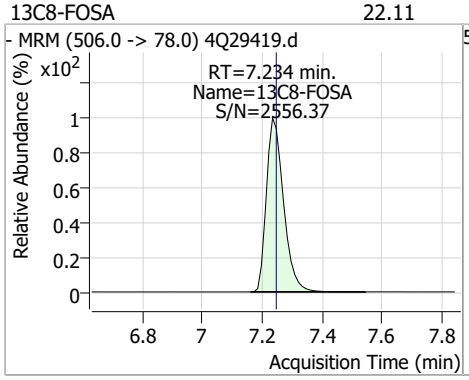


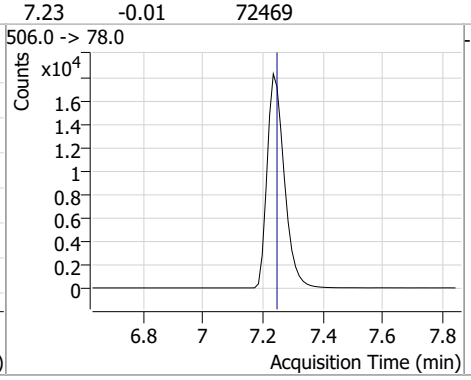


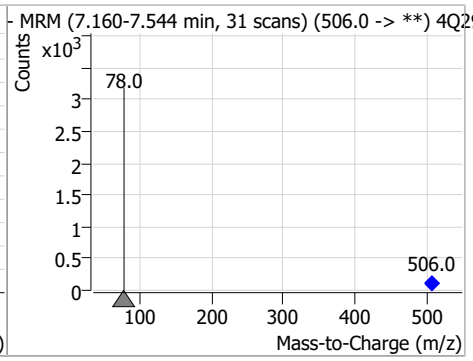


Perfluorinated Compounds by LC/MS/MS

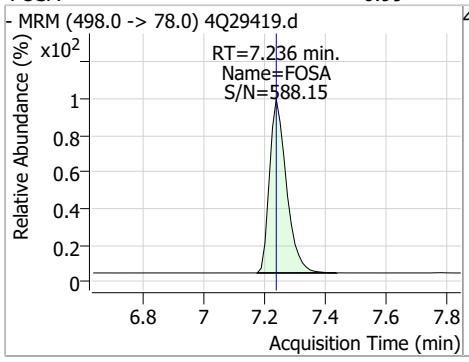
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.11	7.23	-0.01	72469				

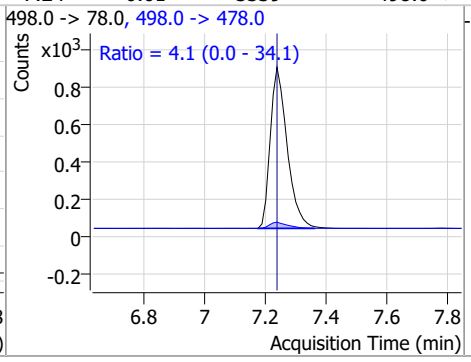


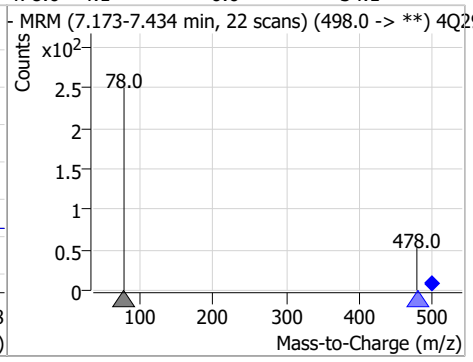




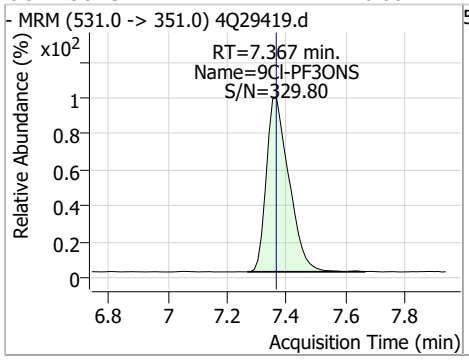
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.99	7.24	-0.01	3339	498.0 -> 478.0	4.1	0.0	34.1

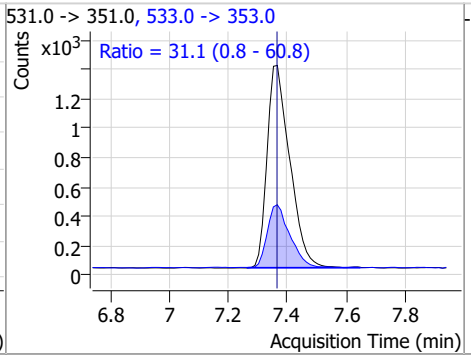


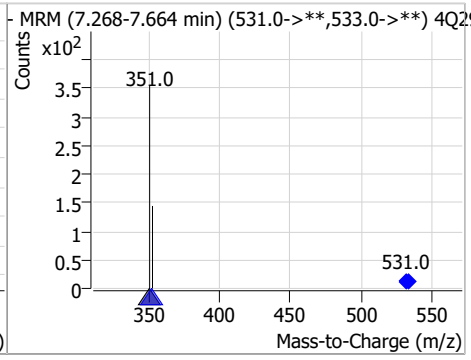




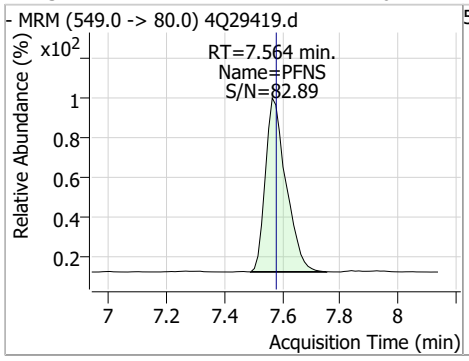
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.86	7.37	0.01	7382	533.0 -> 353.0	31.1	0.8	60.8

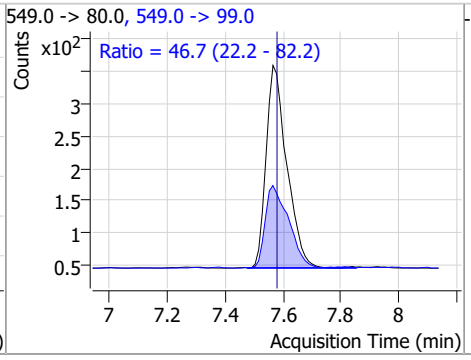


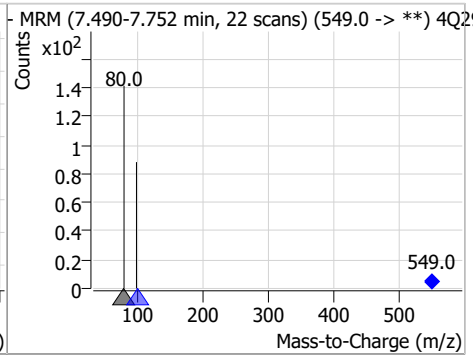




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	7.56	0.00	1551	549.0 -> 99.0	46.7	22.2	82.2

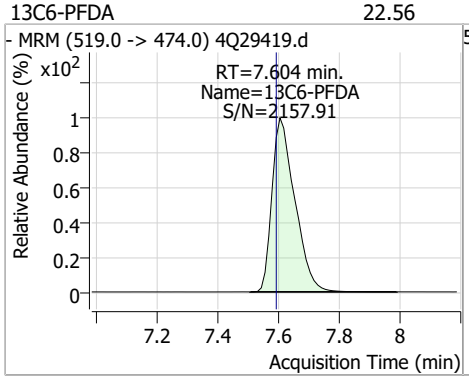


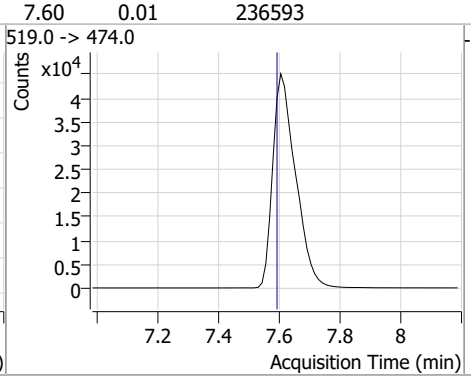


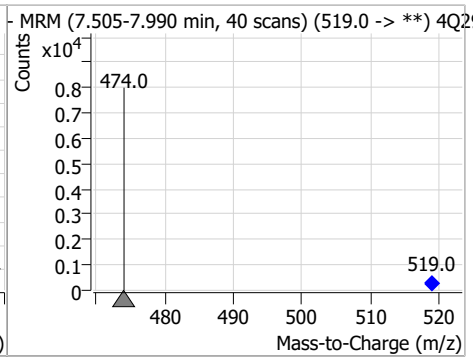


Perfluorinated Compounds by LC/MS/MS

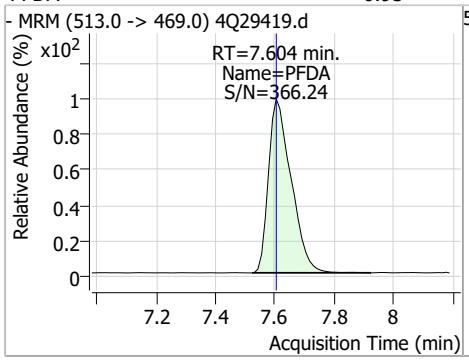
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.56	7.60	0.01	236593				

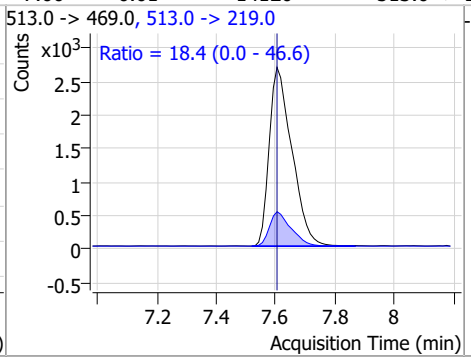


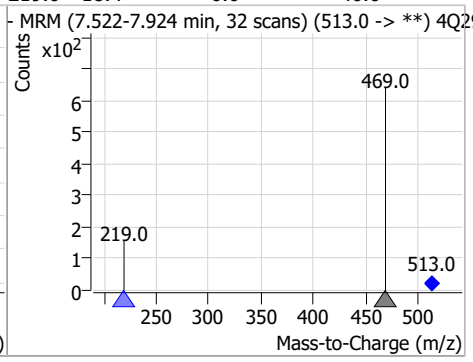




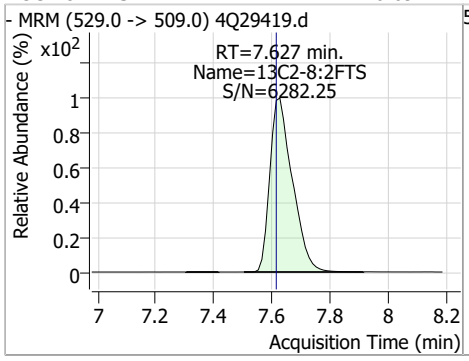
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.93	7.60	0.01	14120	513.0 -> 219.0	18.4	0.0	46.6

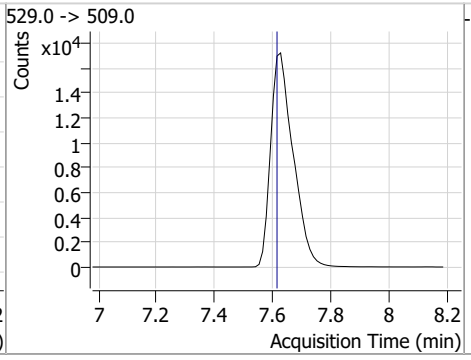


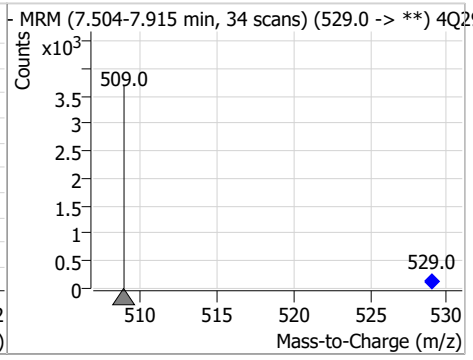




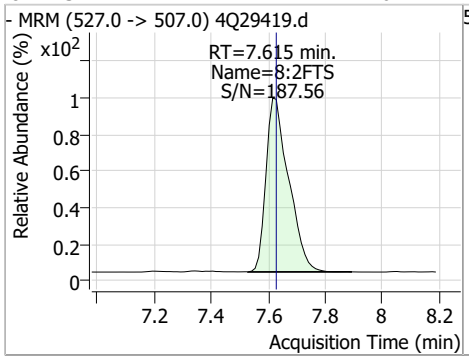
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.69	7.63	0.01	92296				

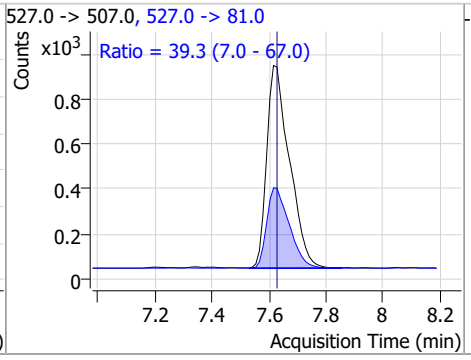


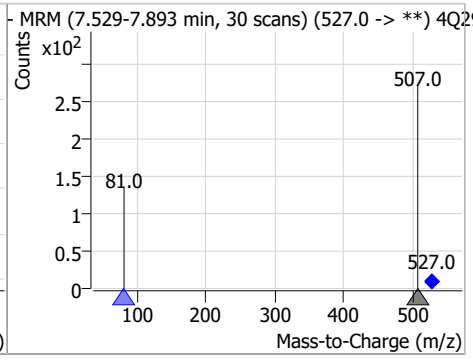




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	7.62	0.00	5001	527.0 -> 81.0	39.3	7.0	67.0

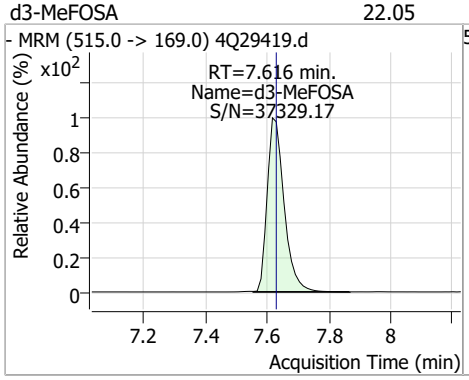


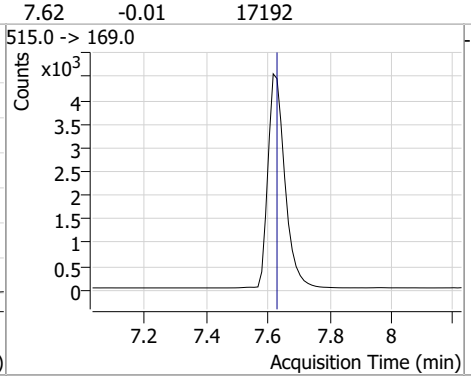


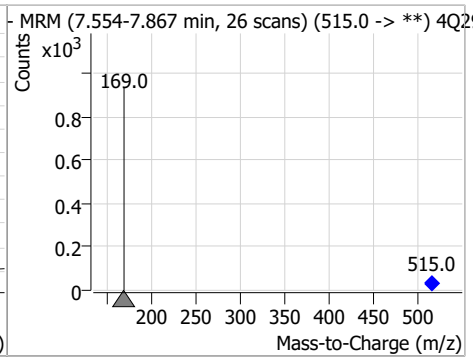


Perfluorinated Compounds by LC/MS/MS

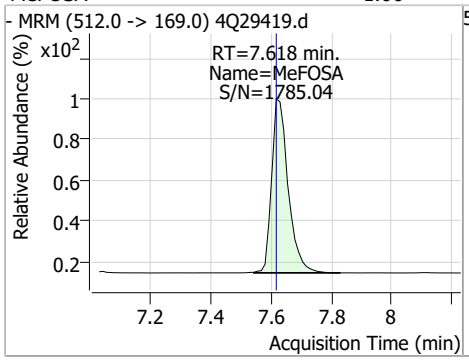
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.05	7.62	-0.01	17192				

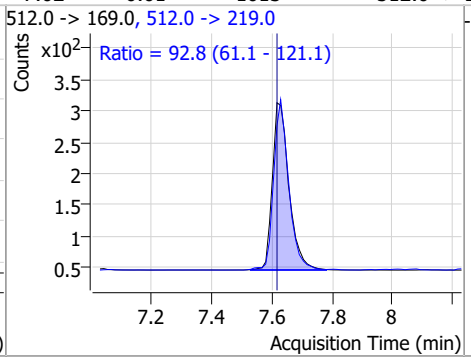


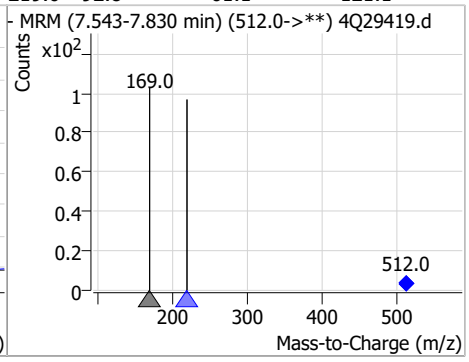




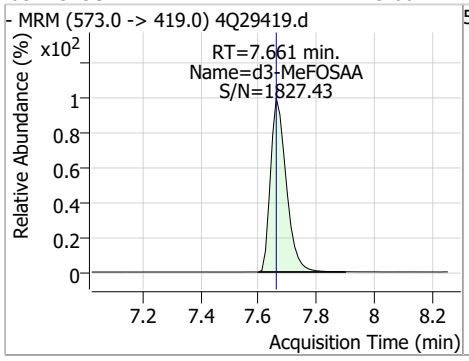
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.06	7.62	-0.01	1013	512.0 -> 219.0	92.8	61.1	121.1

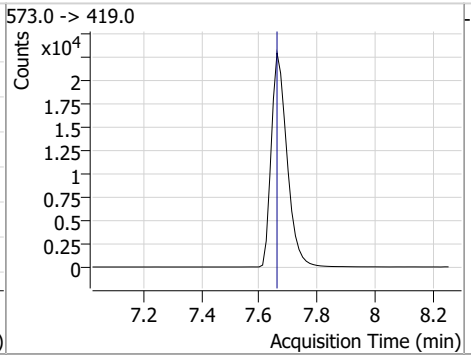


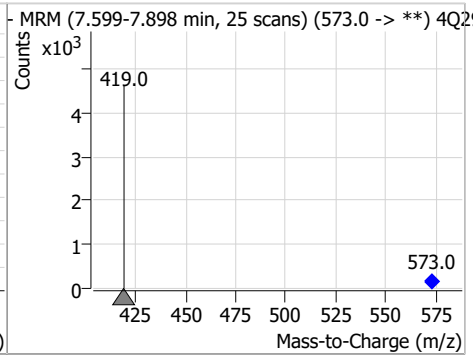




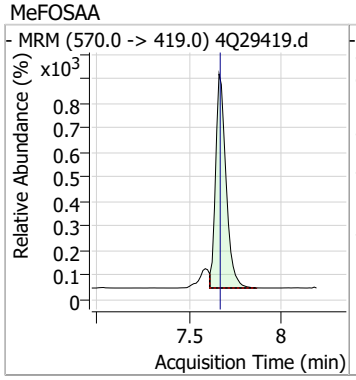
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.60	7.66	0.00	85670				

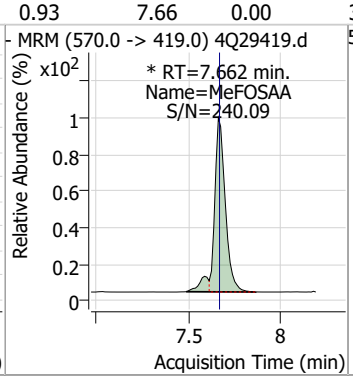


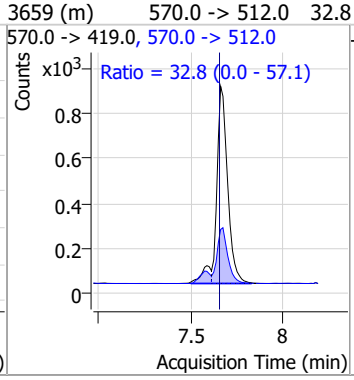


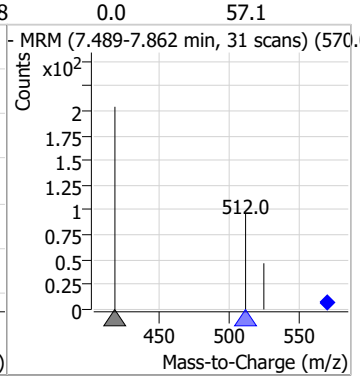


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.93	7.66	0.00	3659 (m)	570.0 -> 512.0	32.8	0.0	57.1



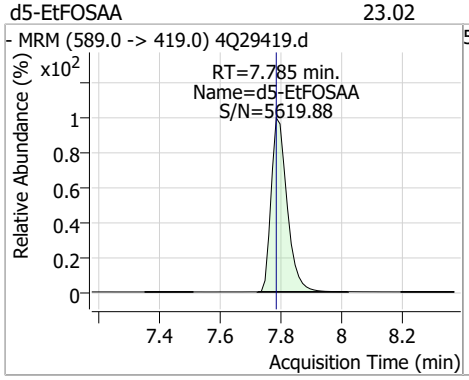


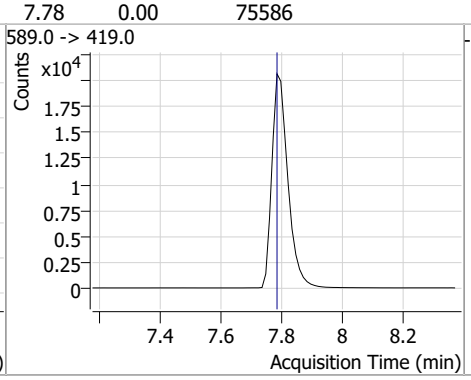


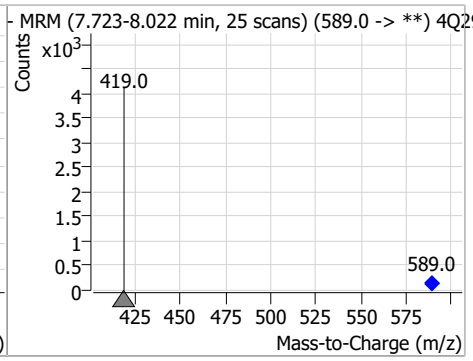


Perfluorinated Compounds by LC/MS/MS

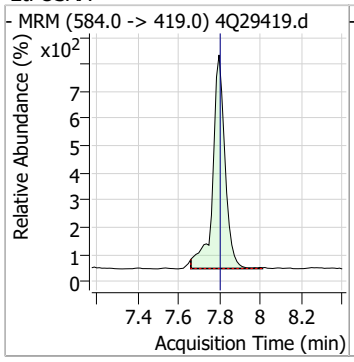
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.02	7.78	0.00	75586				

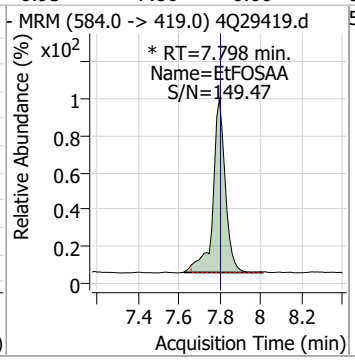


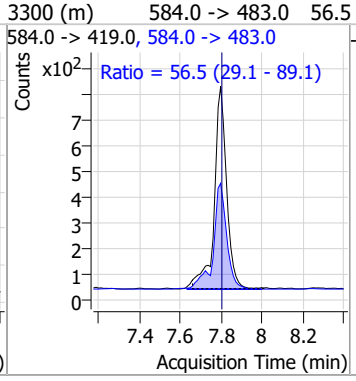


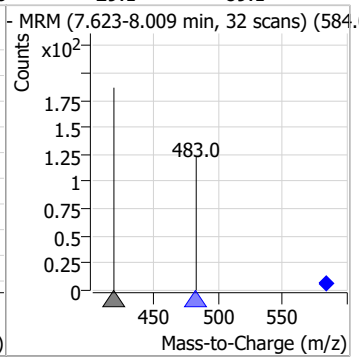


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.95	7.80	0.00	3300 (m)	584.0 -> 483.0	56.5	29.1	89.1

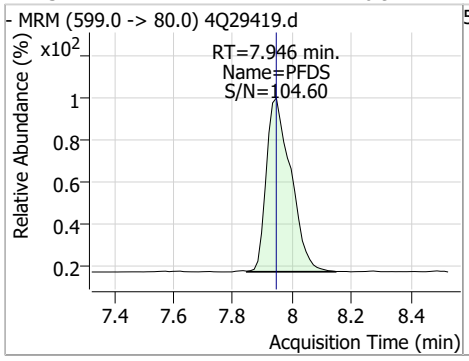


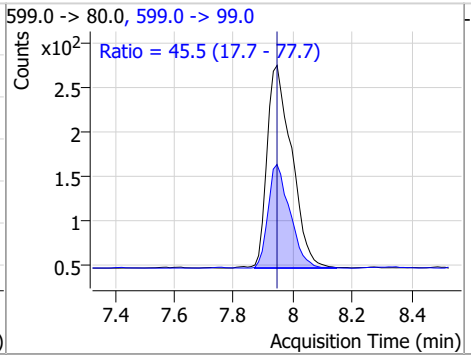


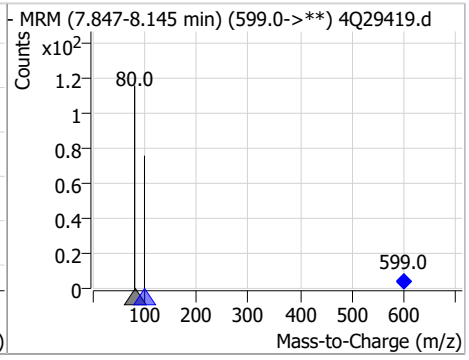




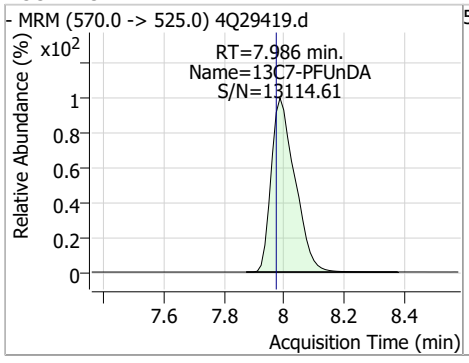
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.91	7.95	0.01	1309	599.0 -> 99.0	45.5	17.7	77.7

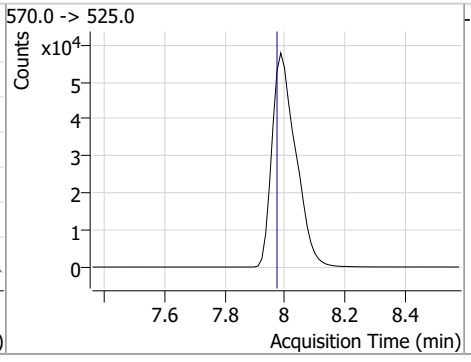


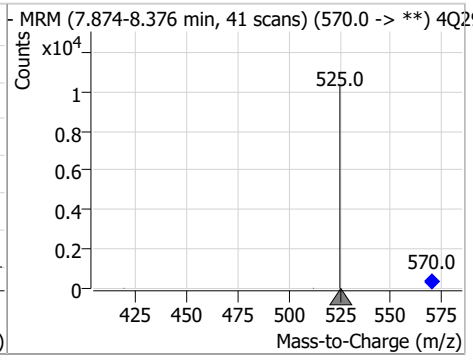




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.27	7.99	0.01	314372				

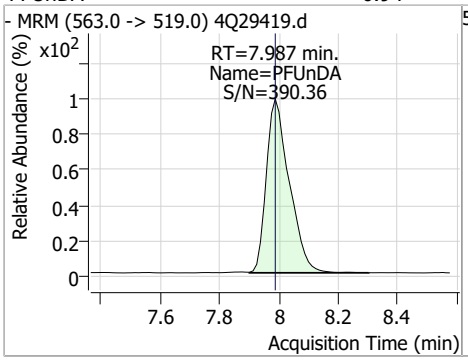


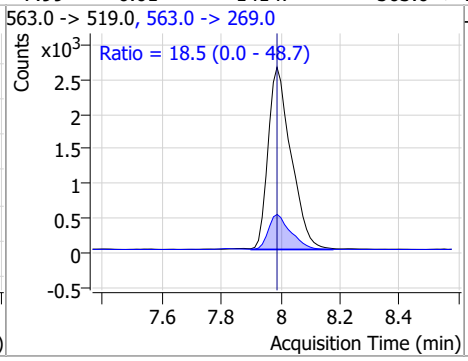


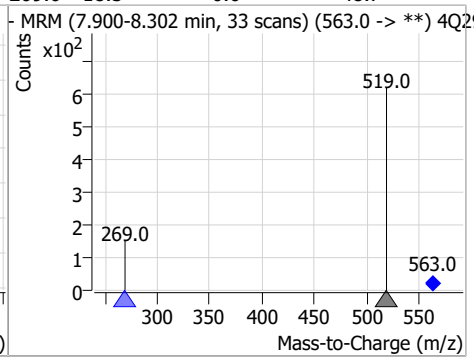


Perfluorinated Compounds by LC/MS/MS

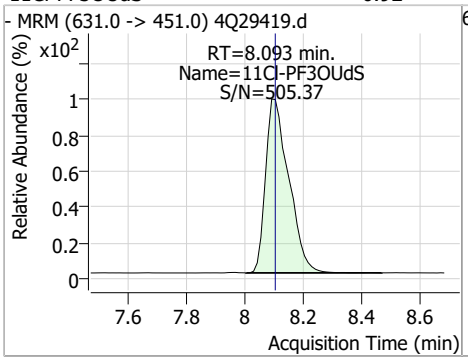
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	7.99	0.01	14147	563.0 -> 269.0	18.5	0.0	48.7

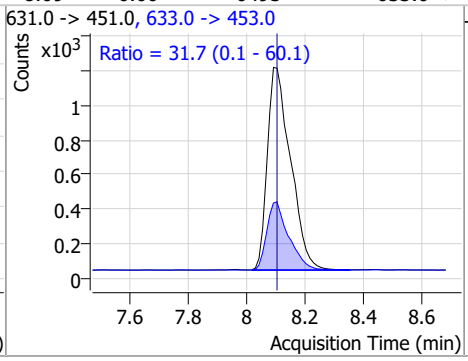


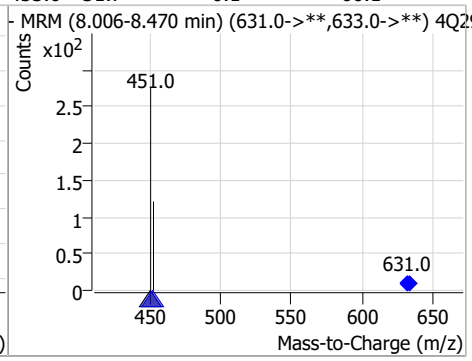




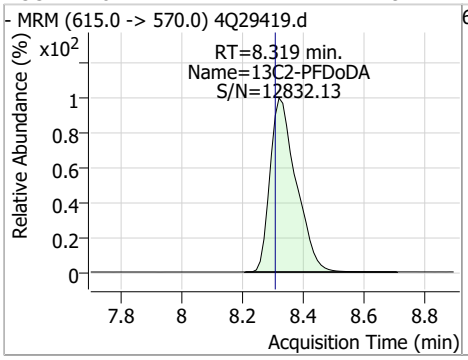
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	8.09	0.00	6495	633.0 -> 453.0	31.7	0.1	60.1

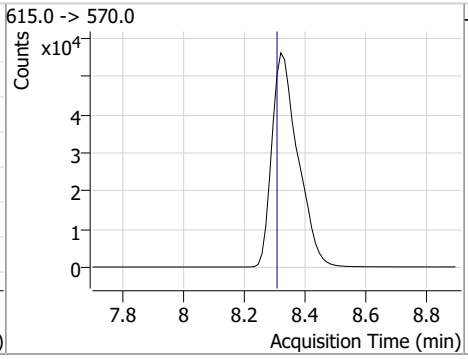


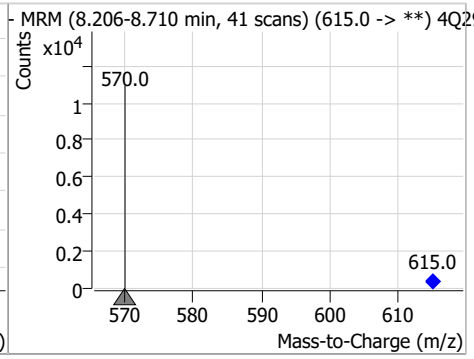




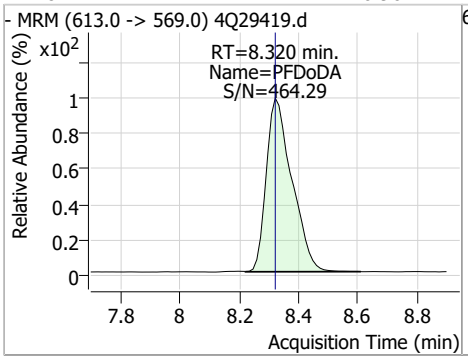
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.97	8.32	0.01	336318				

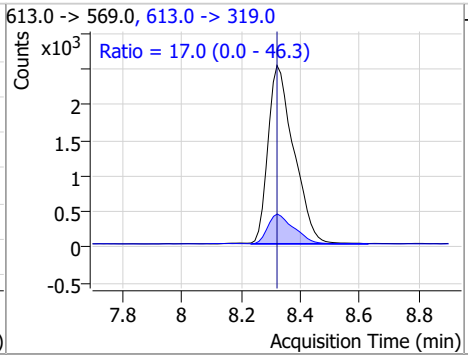


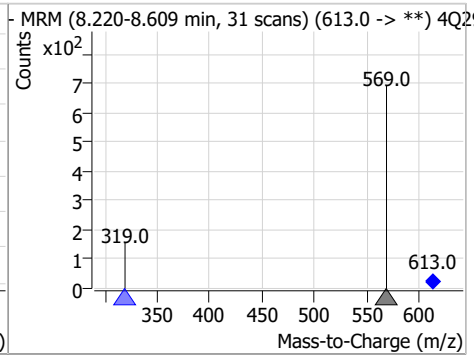




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.96	8.32	0.01	15023	613.0 -> 319.0	17.0	0.0	46.3

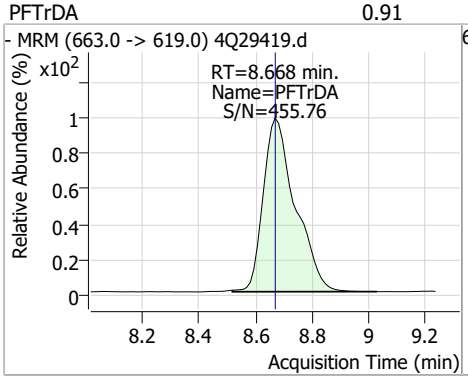


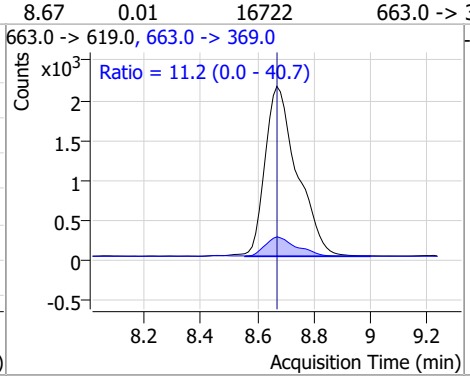


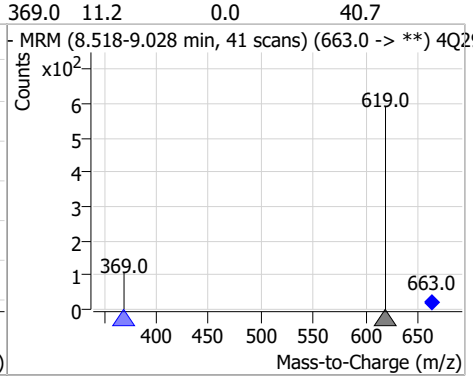


Perfluorinated Compounds by LC/MS/MS

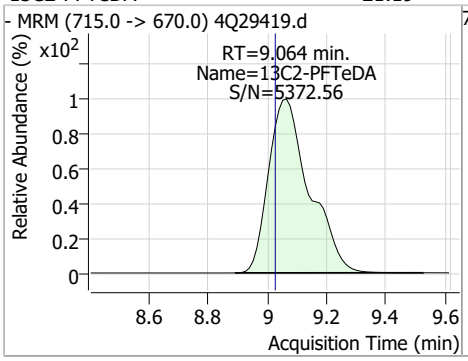
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.91	8.67	0.01	16722	663.0 -> 369.0	11.2	0.0	40.7

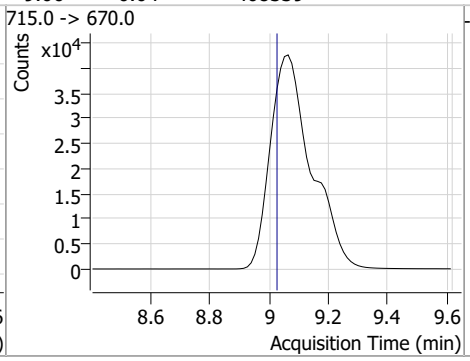


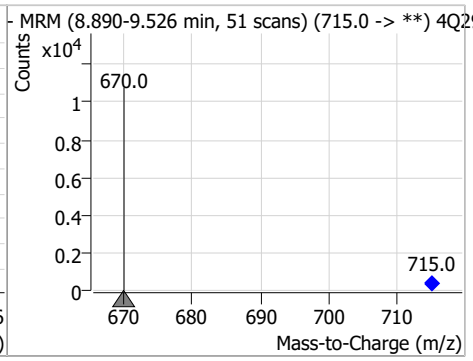




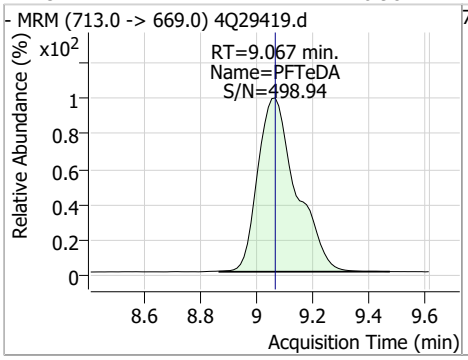
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.19	9.06	0.04	408339				

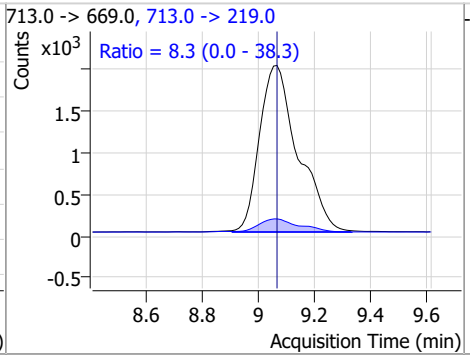


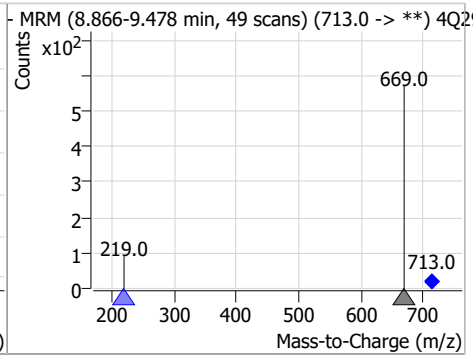




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.98	9.07	0.04	19171	713.0 -> 219.0	8.3	0.0	38.3







Manual Integration Approval Summary

Sample Number: S4Q422-CC419
Lab FileID: 4Q29419.D
Injection Time: 05/31/22 22:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 06/01/22 10:30 Martha Valls
Supervisor approved: 06/01/22 11:59 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.90	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.11	Split peak
MeFOSAA	2355-31-9		7.66	Split peak
EtFOSAA	2991-50-6		7.80	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS Q6
MS Model	G6495B
MS Instrument Serial	SG1752D103
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	19 May 2022 09:27:30
File Path	D:\MassHunter\Tune\QQQ\G6495B\atunes.tune.xml
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.85E+0 [R] (Torr); 2.96E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	220
Gas Flow (l/min)	14
Nebulizer (psi)	20
Capillary (V)	3000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	11

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.96	-0.03	Pass	0.70	0.71	0.01	Pass	649243
302.00	301.97	-0.03	Pass	0.70	0.79	0.09	Pass	1883712
601.98	601.97	-0.01	Pass	0.70	0.84	0.14	Pass	5321784
1033.99	1034.01	0.02	Pass	0.70	0.75	0.05	Pass	1968553
1633.95	1634.04	0.09	Pass	0.70	0.82	0.12	Pass	1633517
2233.91	2234.09	0.18	Pass	0.70	1.11	0.41	Adjust	911523

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.94	-0.06	Pass	0.70	0.78	0.08	Pass	160619
112.99	112.86	-0.13	Pass	0.70	0.82	0.12	Pass	649282
302.00	301.97	-0.03	Pass	0.70	0.80	0.10	Pass	1582911
601.98	601.87	-0.11	Pass	0.70	0.81	0.11	Pass	5235171
1033.99	1033.89	-0.10	Pass	0.70	0.79	0.09	Pass	1470205
1633.95	1633.92	-0.03	Pass	0.70	0.91	0.21	Adjust	1723573
2233.91	2233.90	-0.01	Pass	0.70	0.98	0.28	Adjust	997149

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	1.20	1.36	0.16	Pass	692678
302.00	301.90	-0.10	Pass	1.20	1.58	0.38	Pass	2662902
601.98	601.86	-0.12	Pass	1.20	1.65	0.45	Pass	5935079
1033.99	1033.92	-0.07	Pass	1.20	1.48	0.28	Pass	2884125
1633.95	1633.94	-0.01	Pass	1.20	1.56	0.36	Pass	2587577
2233.91	2234.24	0.33	Pass	1.20	1.57	0.37	Pass	1192074

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.25	0.05	Pass	215523
112.99	112.92	-0.07	Pass	1.20	1.33	0.13	Pass	873707
302.00	301.98	-0.02	Pass	1.20	1.40	0.20	Pass	2128991
601.98	601.81	-0.17	Pass	1.20	1.67	0.47	Pass	6548823
1033.99	1033.79	-0.20	Pass	1.20	1.65	0.45	Pass	2606921
1633.95	1633.84	-0.11	Pass	1.20	1.56	0.36	Pass	3340162
2233.91	2233.81	-0.10	Pass	1.20	1.53	0.33	Pass	2118541

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.96	-0.03	Pass	2.50	2.63	0.13	Pass	689081
302.00	301.94	-0.06	Pass	2.50	2.74	0.24	Pass	2693072
601.98	601.86	-0.12	Pass	2.50	2.89	0.39	Pass	6895809
1033.99	1033.90	-0.09	Pass	2.50	2.55	0.05	Pass	3843183
1633.95	1633.79	-0.16	Pass	2.50	2.45	-0.05	Pass	4144637
2233.91	2233.97	0.06	Pass	2.50	2.05	-0.45	Pass	2701807

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.84	-0.16	Pass	2.50	2.60	0.10	Pass	235095
112.99	112.83	-0.16	Pass	2.50	2.68	0.18	Pass	996473
302.00	302.00	0.00	Pass	2.50	2.55	0.05	Pass	3626833
601.98	601.88	-0.10	Pass	2.50	3.00	0.50	Pass	7538893
1033.99	1034.03	0.04	Pass	2.50	2.69	0.19	Pass	4395664
1633.95	1633.85	-0.10	Pass	2.50	2.92	0.42	Pass	5027676
2233.91	2233.77	-0.14	Pass	2.50	3.31	0.81	Pass	3833419

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q243.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 10:52:50 AM
Sample Name : ic6-0.5
Vial : P1-A2
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

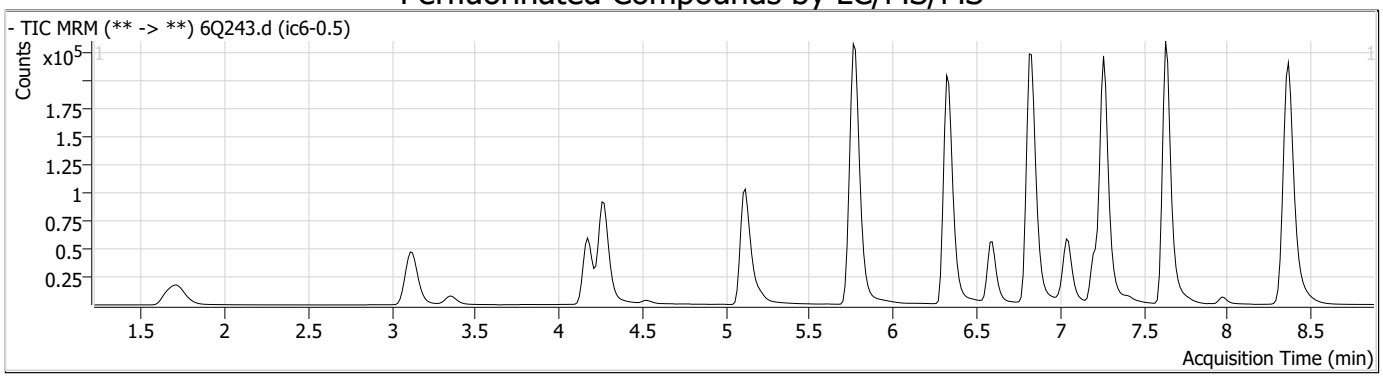
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.712	217.0 -> 172.0	147219	20.00	µg/L	0.013
M5-PFPeA	3.118	268.0 -> 223.0	253890	20.00	µg/L	0.000
M5-PFHxA	4.276	318.0 -> 273.0	383443	20.00	µg/L	0.012
M4-PFHpA	5.123	367.0 -> 322.0	412829	20.00	µg/L	0.012
M8-PFOA	5.782	421.0 -> 376.0	687948	20.00	µg/L	0.012
M9-PFNA	6.329	472.0 -> 427.0	796901	20.00	µg/L	0.000
M6-PFDA	6.821	519.0 -> 474.0	687763	20.00	µg/L	0.012
M7-PFUnDA	7.263	570.0 -> 525.0	785134	20.00	µg/L	0.012
M2-PFDoDA	7.633	615.0 -> 570.0	848981	20.00	µg/L	0.012
M2-PFTeDA	8.364	715.0 -> 670.0	981530	20.00	µg/L	0.037
M8-FOSA	6.600	506.0 -> 78.0	195353	20.00	µg/L	0.012
M3-PFBS	3.348	302.0 -> 99.0	32432	20.00	µg/L	0.000
M3-PFHxS	5.152	402.0 -> 99.0	29963	20.00	µg/L	0.012
M8-PFOS	6.311	507.0 -> 99.0	41517	20.00	µg/L	0.000
M2-4:2FTS	4.172	329.0 -> 309.0	248312	20.00	µg/L	0.012
M2-6:2FTS	5.753	429.0 -> 409.0	296274	20.00	µg/L	0.012
M2-8:2FTS	6.845	529.0 -> 509.0	210797	20.00	µg/L	0.013
M3-MeFOSAA	7.051	573.0 -> 419.0	175269	20.00	µg/L	0.012
M3-HFPO-DA	4.528	287.0 -> 169.0	10962	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	45536	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	149937	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.172	329.0 -> 309.0	248312	16.89	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%		
13C2-6:2FTS	5.753	429.0 -> 409.0	296274	17.40	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%		
13C2-8:2FTS	6.845	529.0 -> 509.0	210797	17.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
13C2-PFDoDA	7.633	615.0 -> 570.0	848981	18.30	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C2-PFTeDA	8.364	715.0 -> 670.0	981530	18.29	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C3-PFBS	3.348	302.0 -> 99.0	32432	18.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C3-PFHxS	5.152	402.0 -> 99.0	29963	18.24	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C4-PFBA	1.712	217.0 -> 172.0	147219	18.05	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C4-PFHpA	5.123	367.0 -> 322.0	412829	18.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C5-PFHxA	4.276	318.0 -> 273.0	383443	18.35	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C5-PFPeA	3.118	268.0 -> 223.0	253890	18.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C6-PFDA	6.821	519.0 -> 474.0	687763	18.75	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

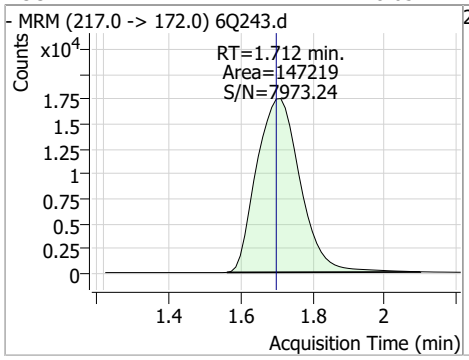
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C7-PFUnDA	7.263	570.0 -> 525.0	785134	18.14	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C8-FOSA	6.600	506.0 -> 78.0	195353	18.56	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%			
13C8-PFOA	5.782	421.0 -> 376.0	687948	18.46	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
13C8-PFOS	6.311	507.0 -> 99.0	41517	19.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
13C9-PFNA	6.329	472.0 -> 427.0	796901	18.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
d3-MeFOSAA	7.051	573.0 -> 419.0	175269	18.65	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C3-HFPO-DA	4.528	287.0 -> 169.0	10960	18.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
d3-MeFOSA	7.020	515.0 -> 169.0	45536	17.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%			
d5-EtFOSAA	7.200	589.0 -> 419.0	150019	18.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%			
Target Compounds							**QValue**
4:2FTS	4.175	327.0 -> 307.0	6870	0.51	µg/L		98
6:2FTS	5.755	427.0 -> 407.0	7717	0.51	µg/L		97
8:2FTS	6.846	527.0 -> 507.0	5415	0.52	µg/L		95
EtFOSAA	7.213	584.0 -> 419.0	3306	0.46	µg/L	m	97
FOSA	6.590	498.0 -> 78.0	4335	0.45	µg/L		98
MeFOSAA	7.052	570.0 -> 419.0	3430	0.44	µg/L	m	95
PFBA	1.705	213.0 -> 169.0	1517	0.45	µg/L		100
PFBS	3.353	299.0 -> 80.0	2370	0.47	µg/L		99
PFDA	6.822	513.0 -> 469.0	18960	0.43	µg/L		96
PFDoDA	7.634	613.0 -> 569.0	19128	0.49	µg/L		98
PFDS	7.224	599.0 -> 80.0	1371	0.47	µg/L		90
PFHpA	5.112	363.0 -> 319.0	13215	0.48	µg/L		100
PFHpS	5.777	449.0 -> 80.0	1696	0.45	µg/L		100
PFHxA	4.265	313.0 -> 269.0	9391	0.45	µg/L		99
PFHxS	5.155	399.0 -> 80.0	1898	0.48	µg/L	m	93
PFNA	6.330	463.0 -> 419.0	15801	0.47	µg/L		100
PFNS	6.794	549.0 -> 80.0	1945	0.48	µg/L		95
PFOA	5.783	413.0 -> 369.0	15727	0.45	µg/L		97
PFOS	6.314	499.0 -> 80.0	1700	0.44	µg/L	m	91
PFPeA	3.121	263.0 -> 219.0	5186	0.47	µg/L		100
PFPeS	4.383	349.0 -> 80.0	1918	0.45	µg/L		97
PFTeDA	8.367	713.0 -> 669.0	26813	0.50	µg/L		96
PFTrDA	7.970	663.0 -> 619.0	21496	0.51	µg/L		99
PFUnDA	7.264	563.0 -> 519.0	16807	0.46	µg/L		95
11Cl-PF3OUdS	7.407	631.0 -> 451.0	6514	0.46	µg/L		99
9Cl-PF3ONS	6.570	531.0 -> 351.0	8844	0.43	µg/L		97
ADONA	5.207	377.0 -> 251.0	19470	0.45	µg/L		98
HFPO-DA	4.542	285.0 -> 169.0	298	0.58	µg/L		77
MeFOSA	7.034	512.0 -> 169.0	1295	0.55	µg/L		94

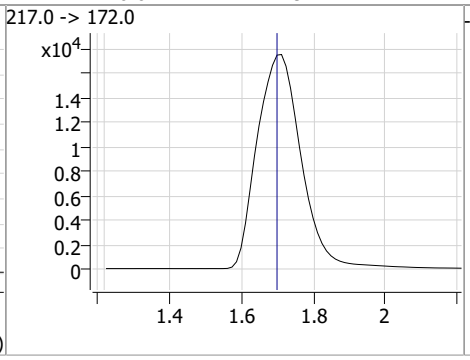
 # = Qualifier out of range, m = manually integrated, + = Area summed

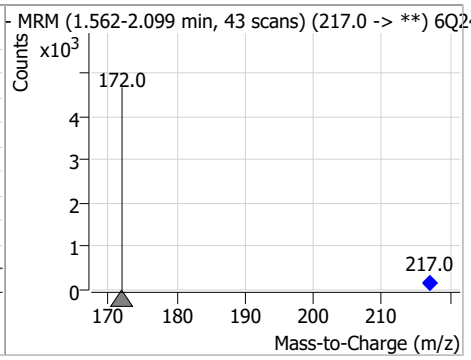
Perfluorinated Compounds by LC/MS/MS



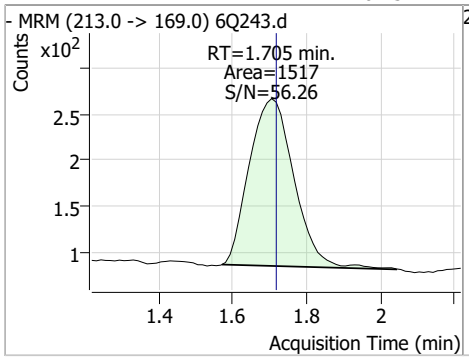
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.05	1.71	0.01	147219				

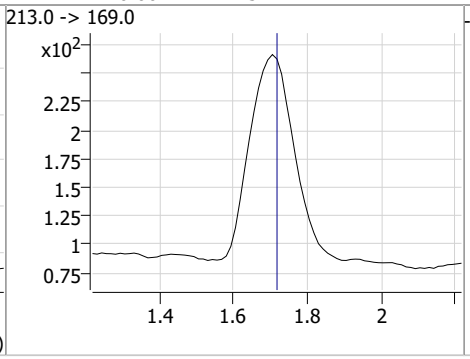


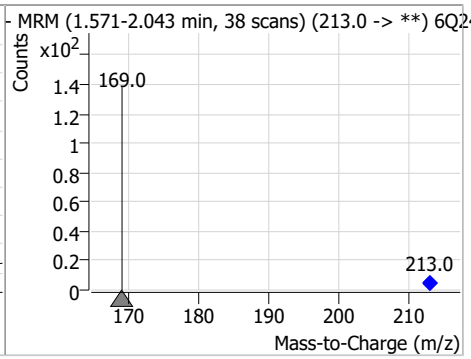




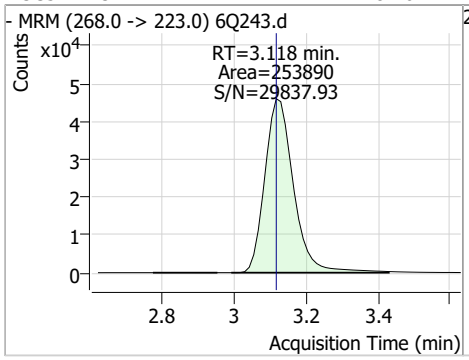
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.45	1.71	0.00	1517				

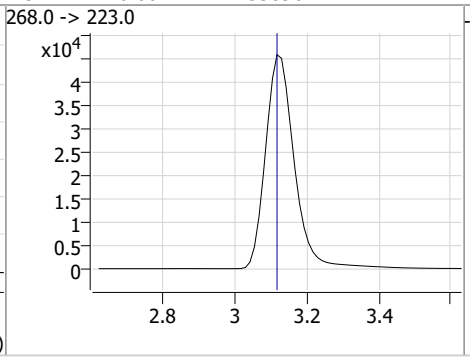


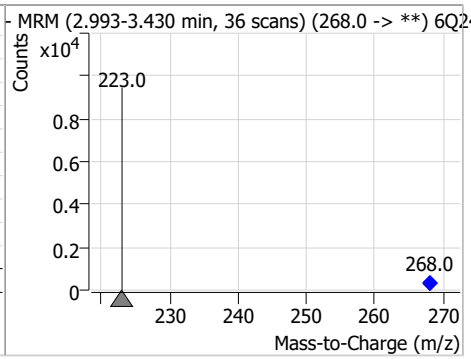




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.26	3.12	0.00	253890				

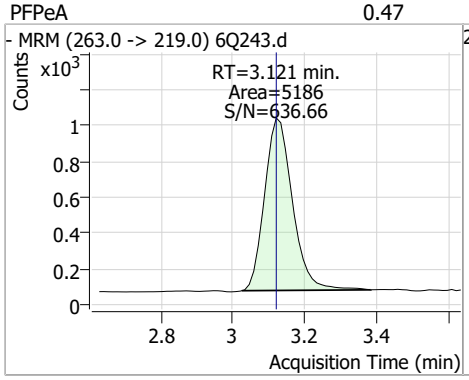


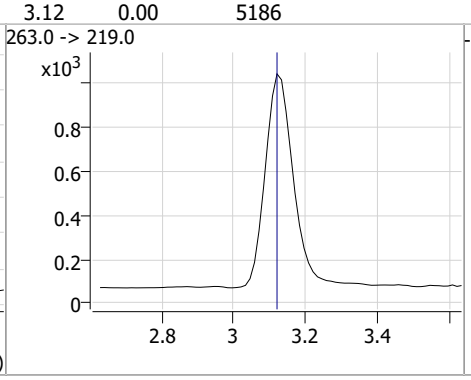


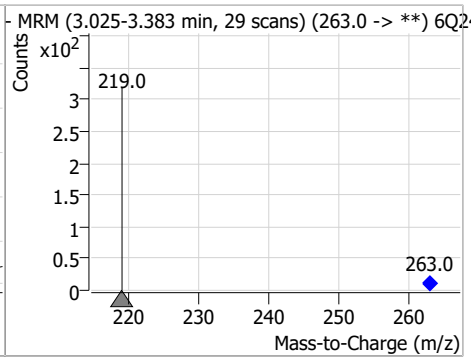


Perfluorinated Compounds by LC/MS/MS

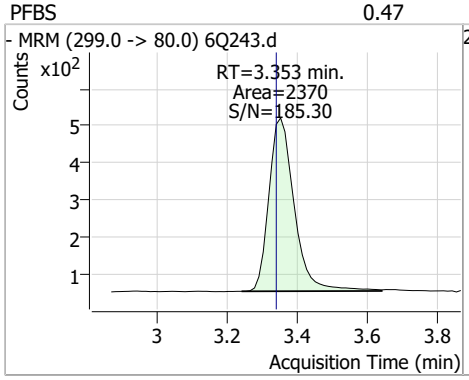
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	3.12	0.00	5186				

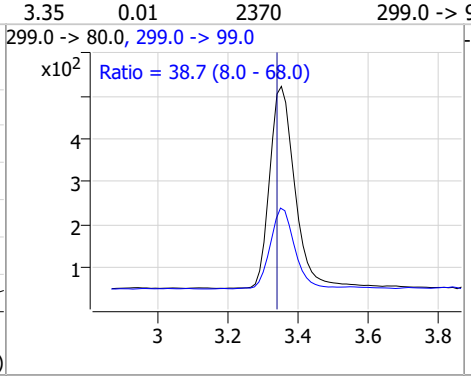


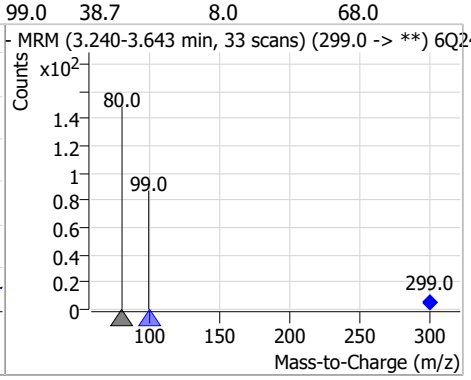




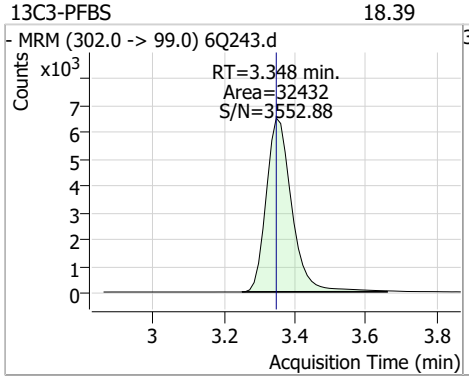
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.47	3.35	0.01	2370	299.0 -> 99.0	38.7	8.0	68.0

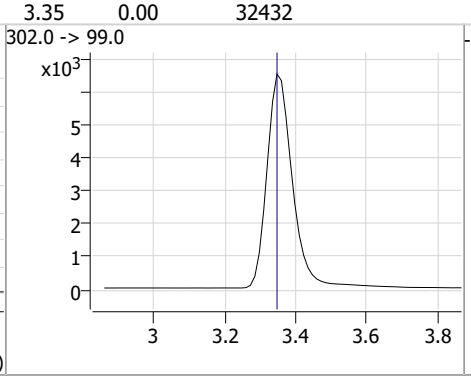


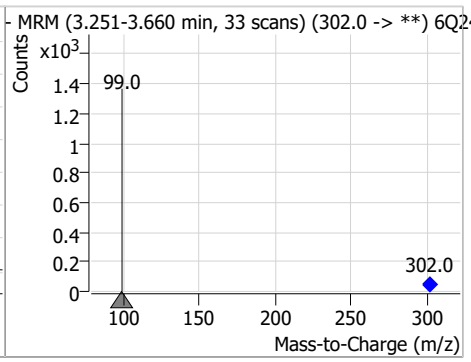




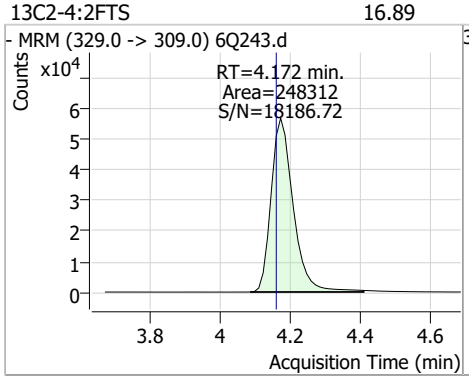
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.39	3.35	0.00	32432				

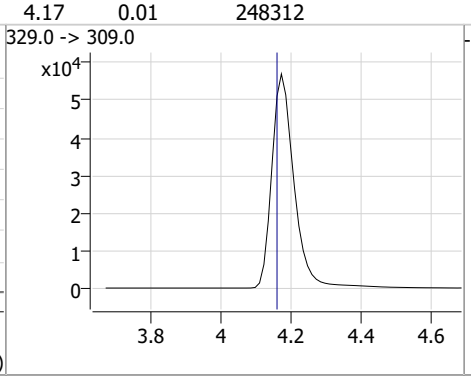


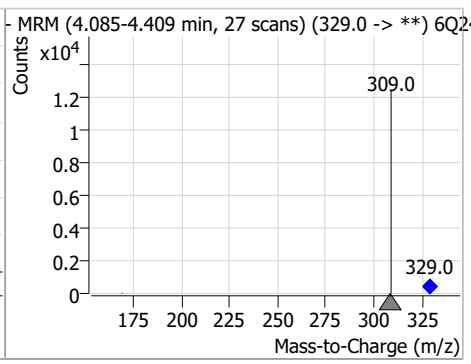




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.89	4.17	0.01	248312				

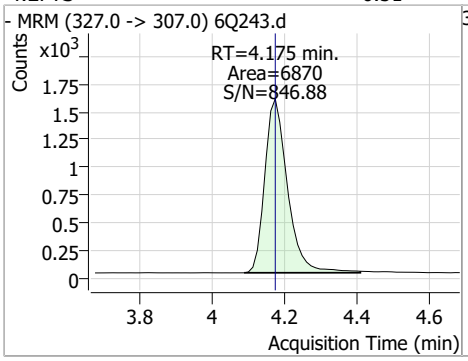


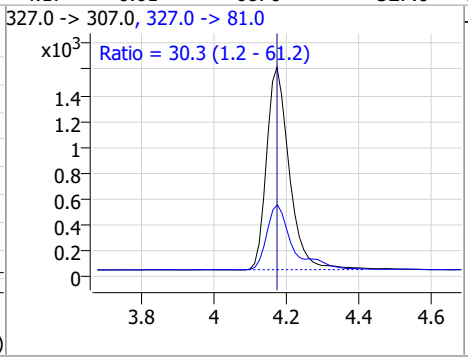


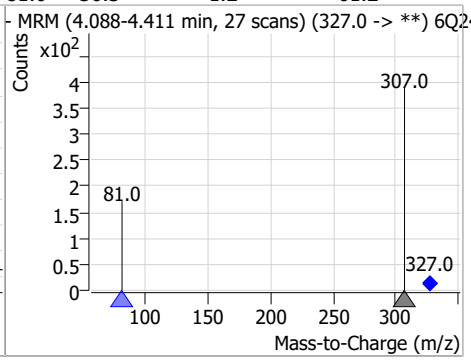


Perfluorinated Compounds by LC/MS/MS

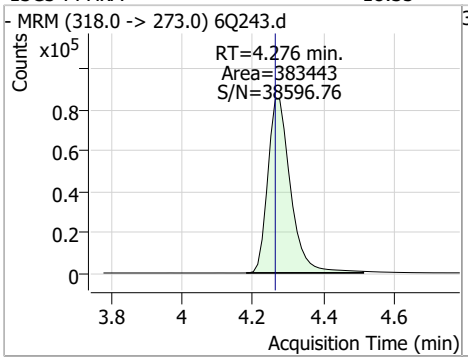
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.51	4.17	0.01	6870	327.0 -> 81.0	30.3	1.2	61.2

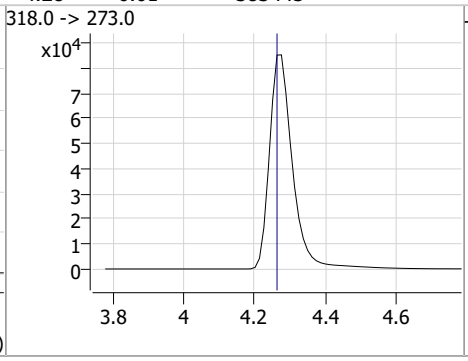


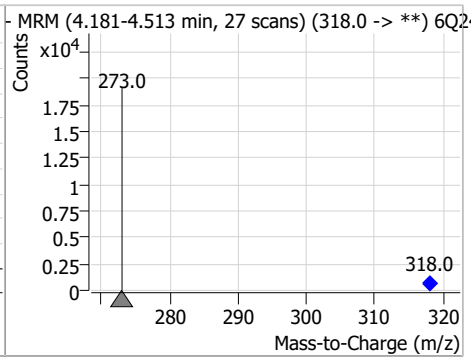




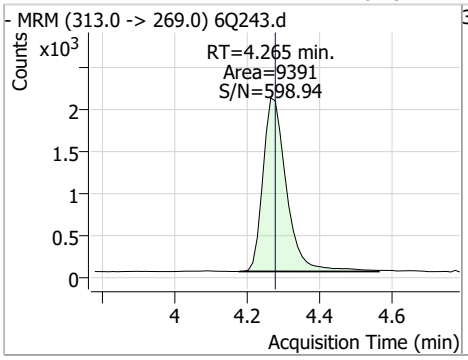
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.35	4.28	0.01	383443				

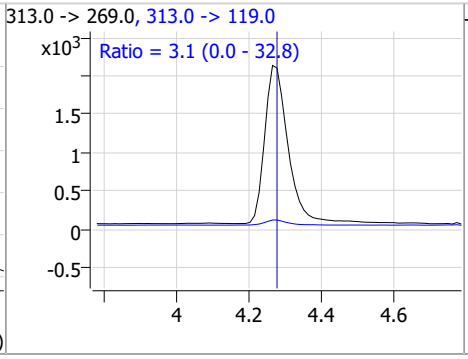


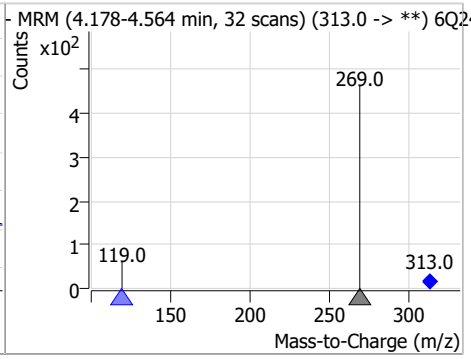




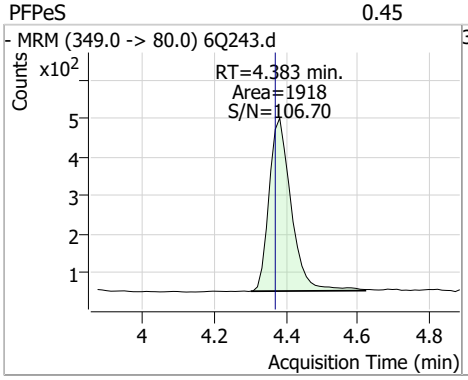
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.45	4.26	0.00	9391	313.0 -> 119.0	3.1	0.0	32.8

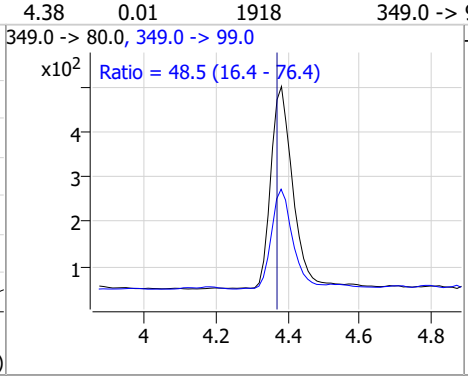


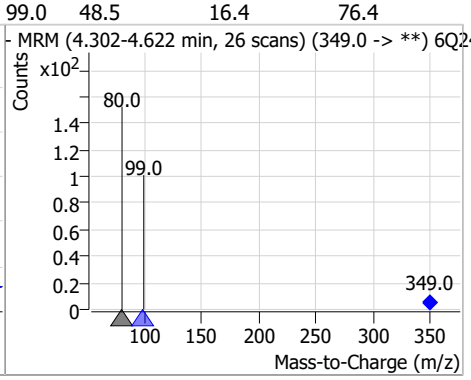




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.45	4.38	0.01	1918	349.0 -> 99.0	48.5	16.4	76.4

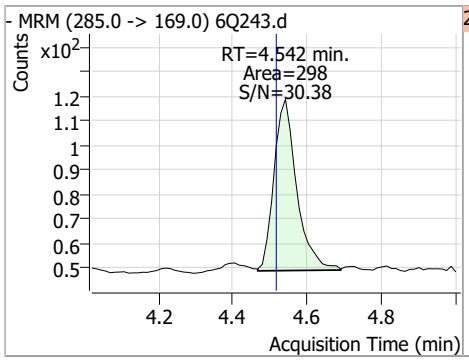


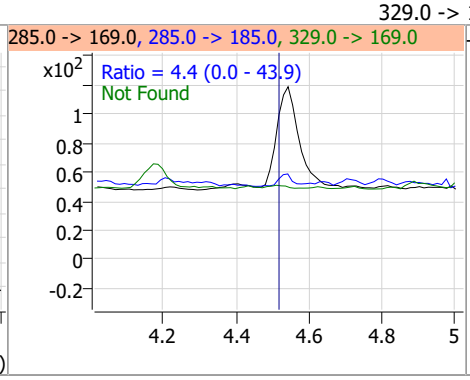


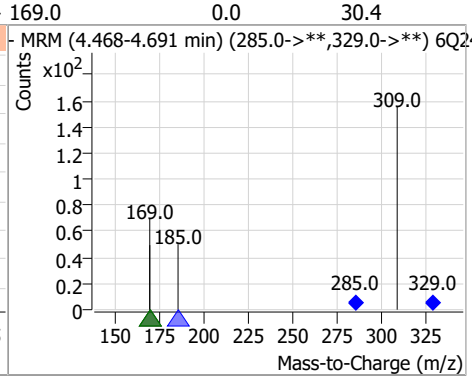


Perfluorinated Compounds by LC/MS/MS

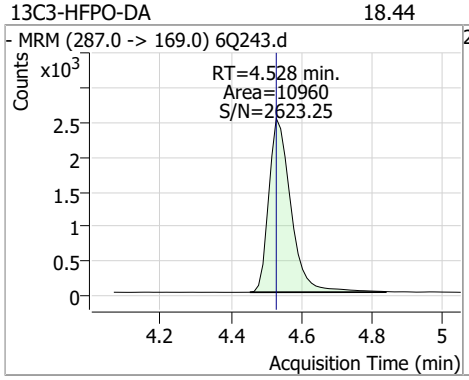
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.58	4.54	0.02	298	285.0 -> 185.0	4.4	0.0	43.9
					329.0 -> 169.0		0.0	30.4

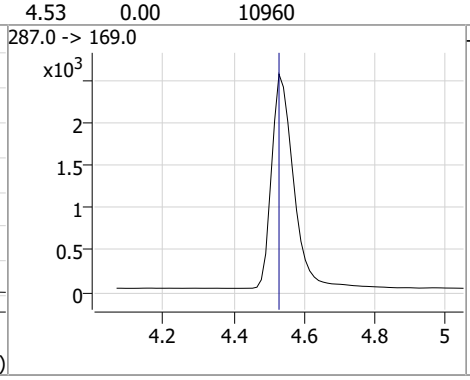


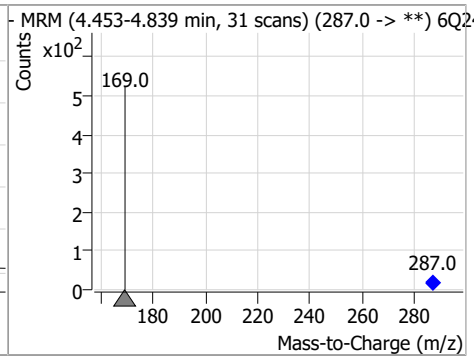




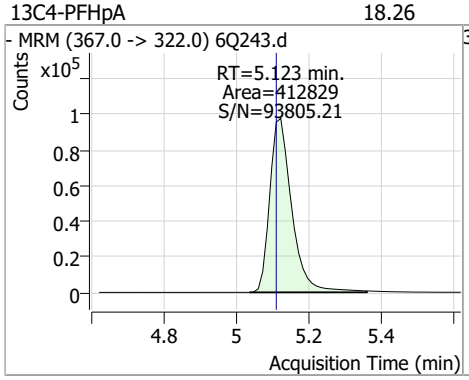
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.44	4.53	0.00	10960				

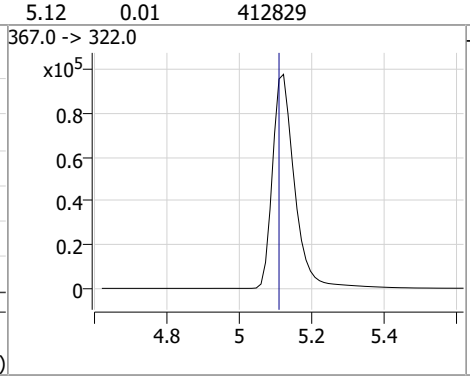


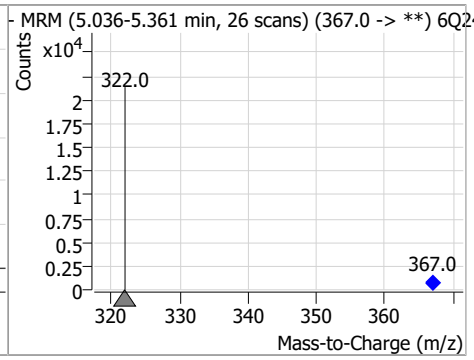




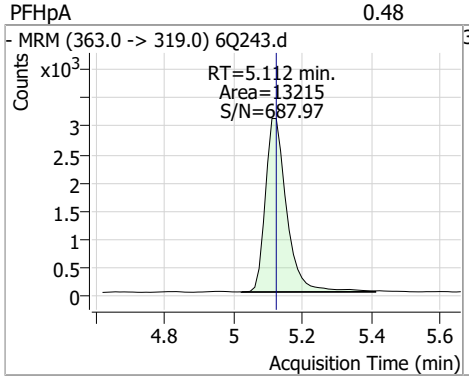
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.26	5.12	0.01	412829				

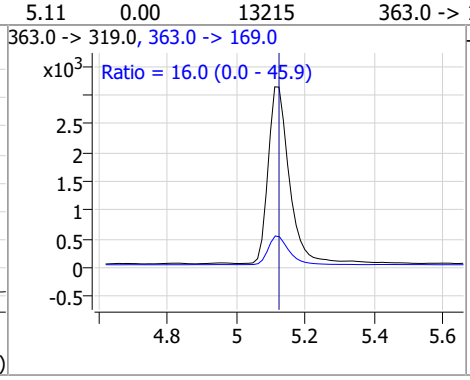


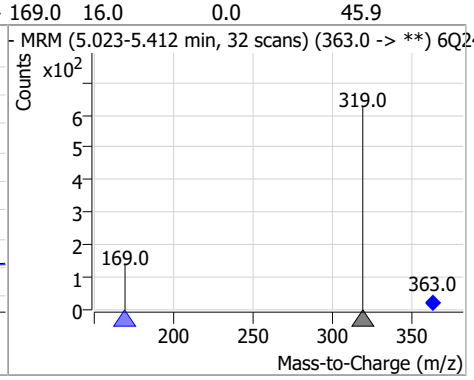




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.48	5.11	0.00	13215	363.0 -> 169.0	16.0	0.0	45.9

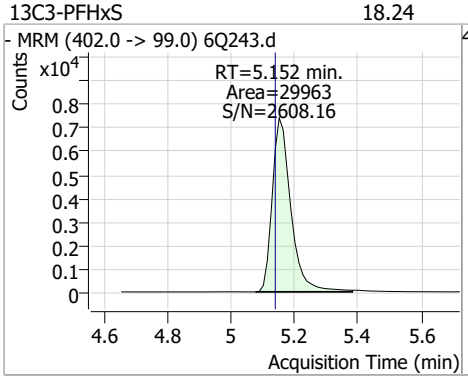


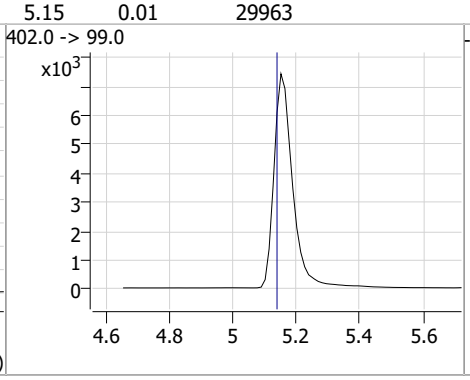


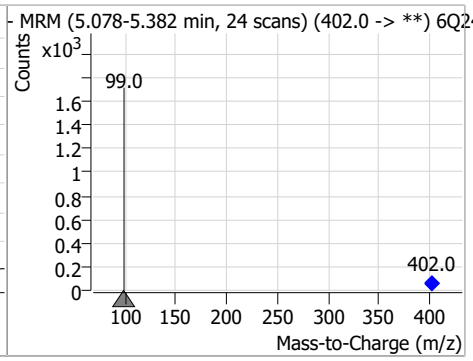


Perfluorinated Compounds by LC/MS/MS

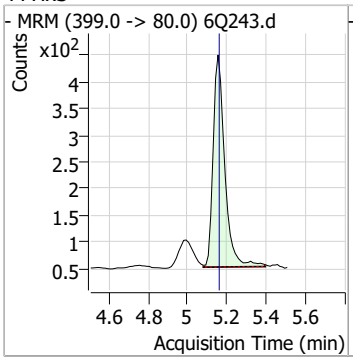
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.24	5.15	0.01	29963				

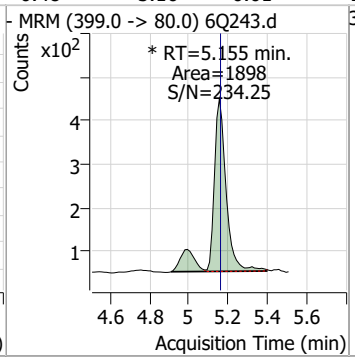


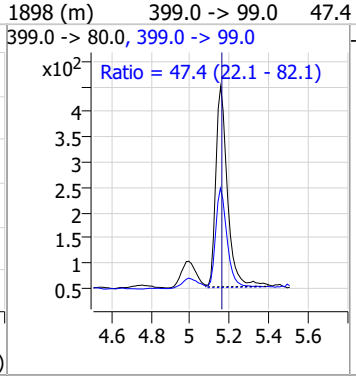


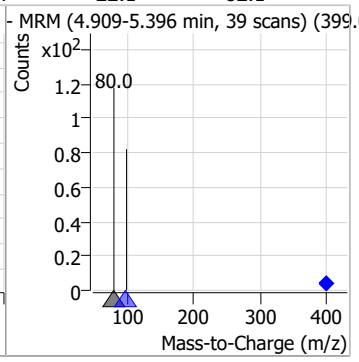


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.48	5.16	0.01	1898 (m)	399.0 -> 99.0	47.4	22.1	82.1

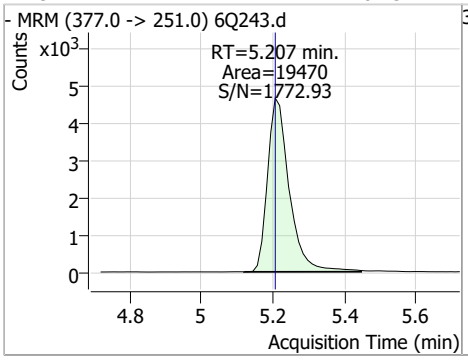


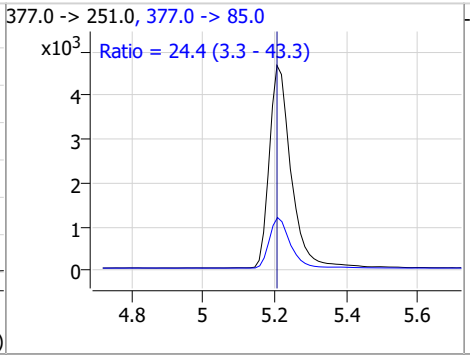


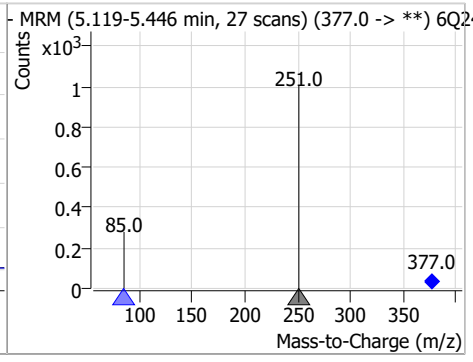




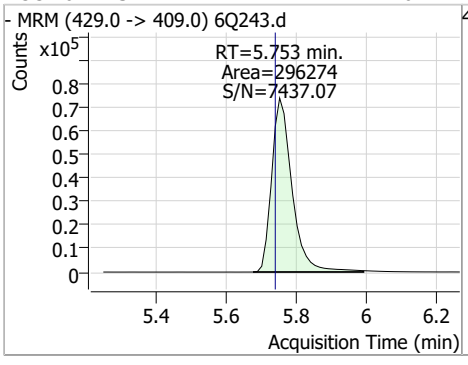
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.45	5.21	0.01	19470	377.0 -> 85.0	24.4	3.3	43.3

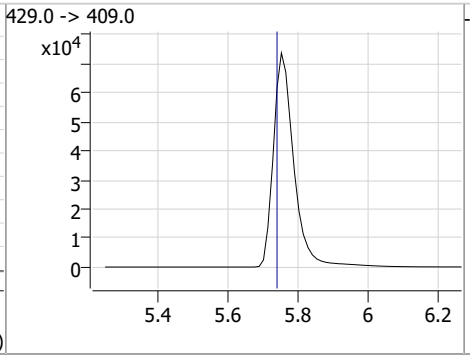


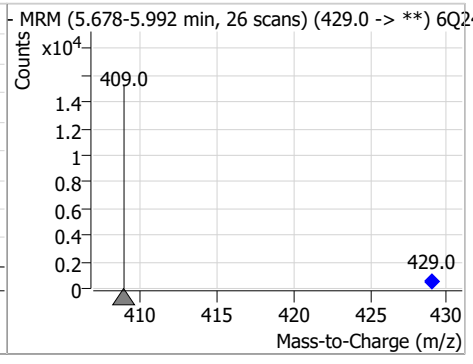




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.40	5.75	0.01	296274				

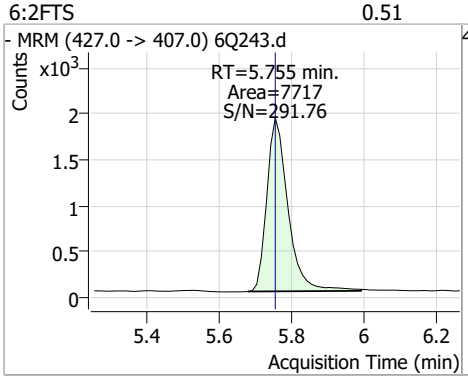


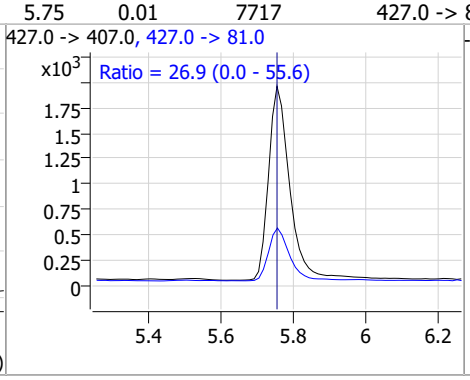


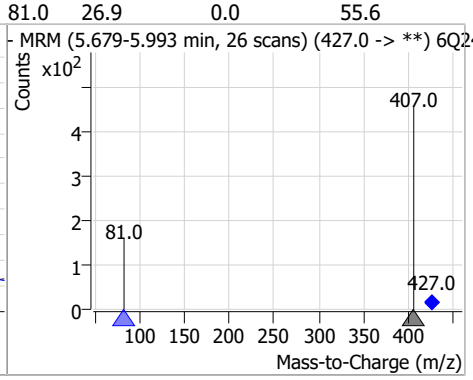


Perfluorinated Compounds by LC/MS/MS

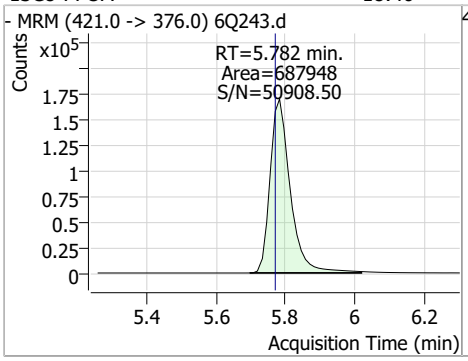
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.51	5.75	0.01	7717	427.0 -> 81.0	26.9	0.0	55.6

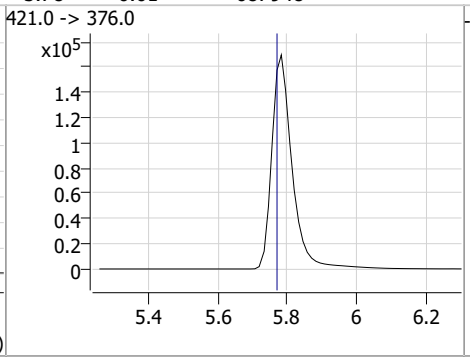


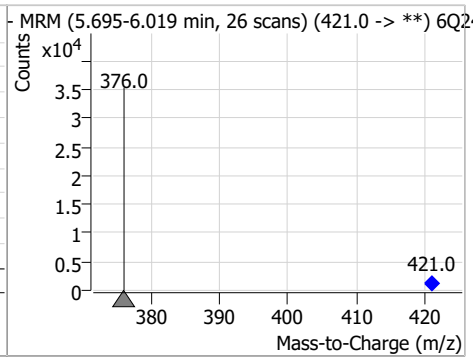




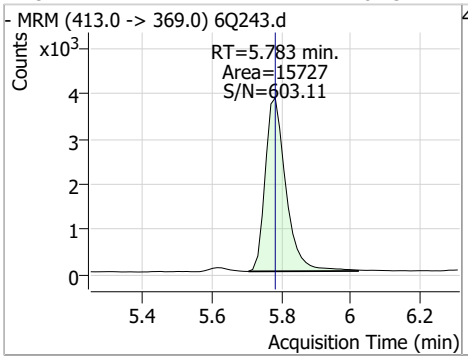
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.46	5.78	0.01	687948				

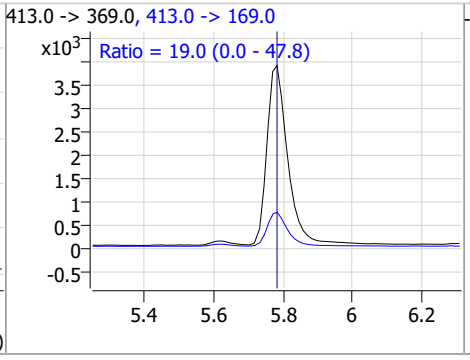


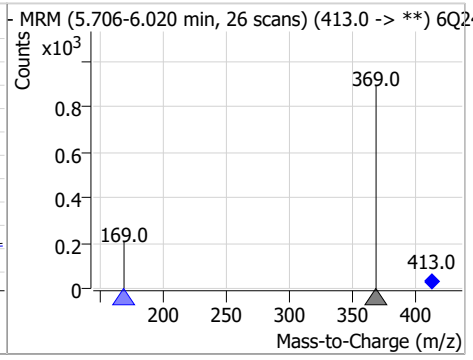




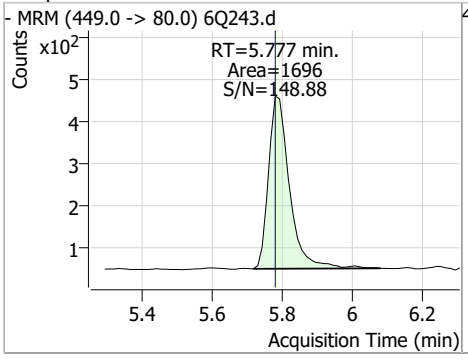
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.45	5.78	0.01	15727	413.0 -> 169.0	19.0	0.0	47.8

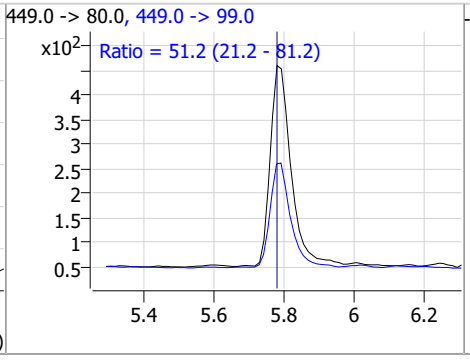


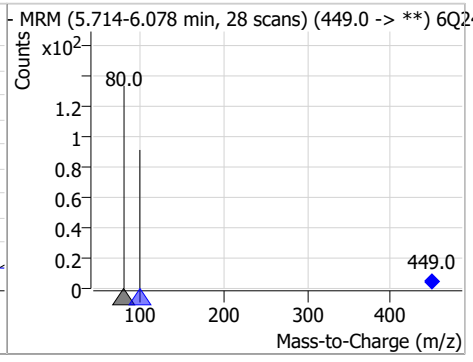




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.45	5.78	0.00	1696	449.0 -> 99.0	51.2	21.2	81.2

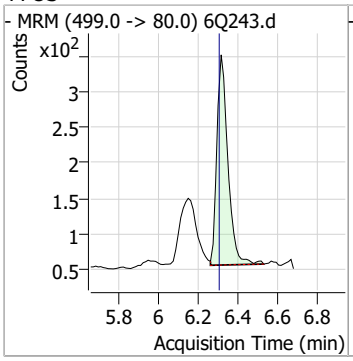


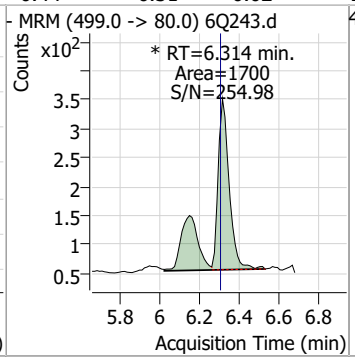


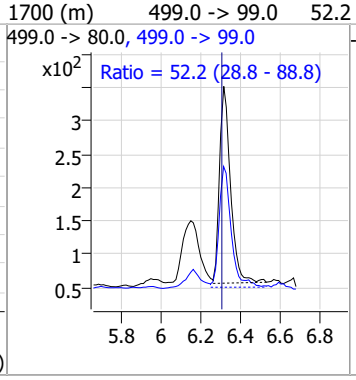


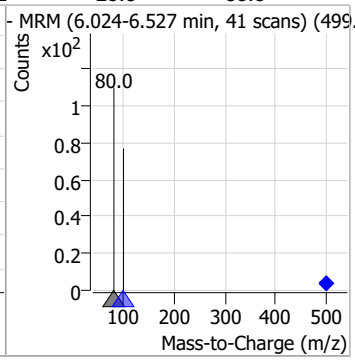
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.44	6.31	0.02	1700 (m)	499.0 -> 99.0	52.2	28.8	88.8

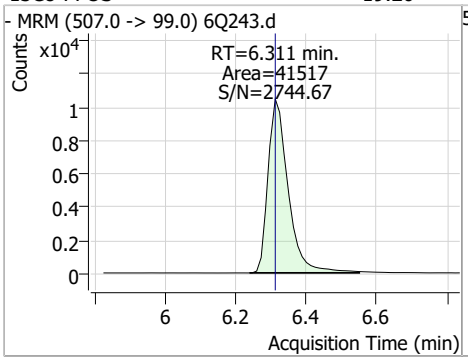


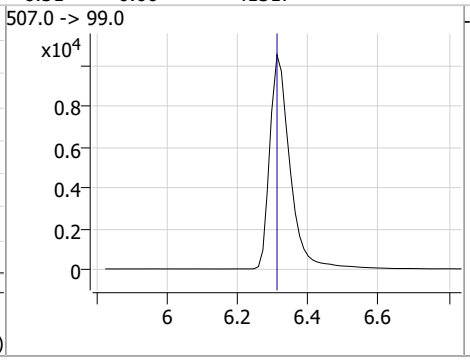


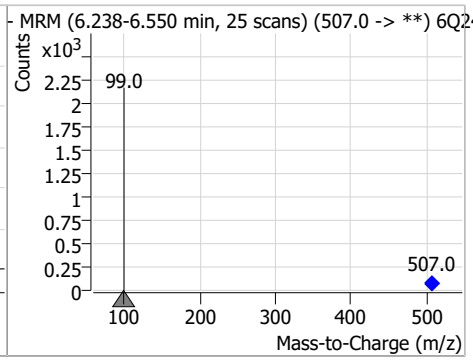




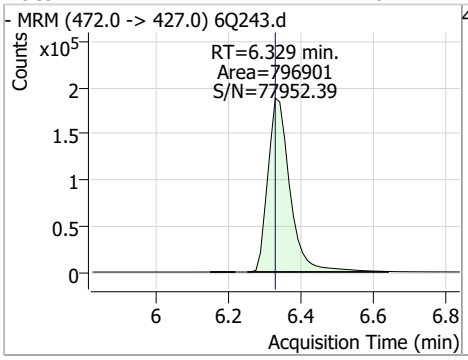
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.26	6.31	0.00	41517				

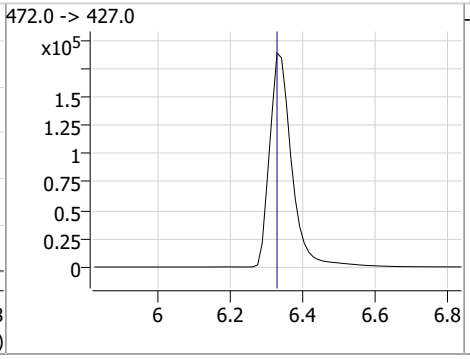


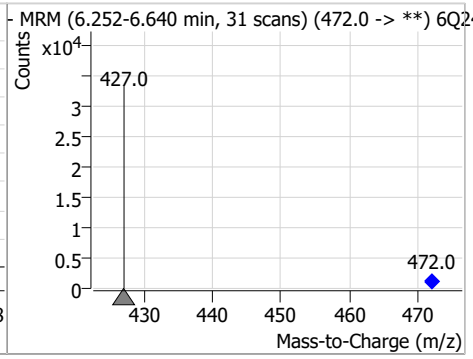




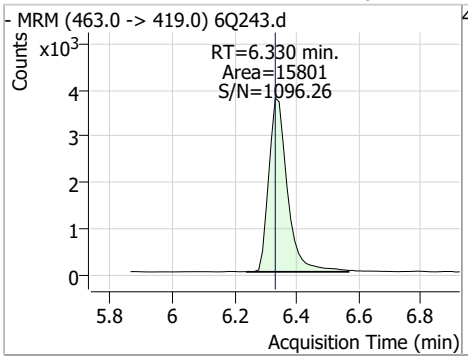
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.42	6.33	0.00	796901				

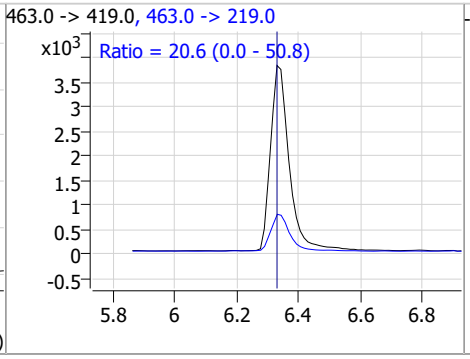


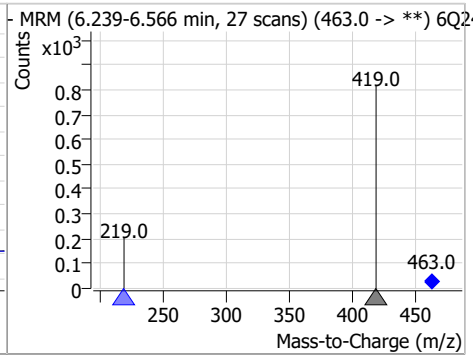




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.47	6.33	0.00	15801	463.0 -> 219.0	20.6	0.0	50.8

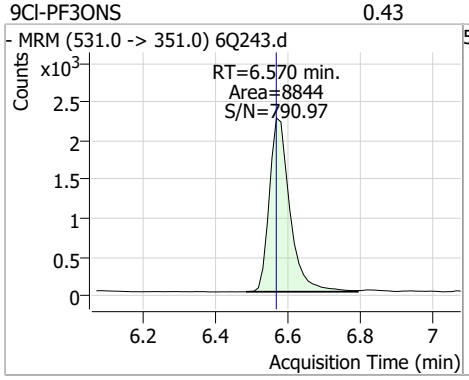


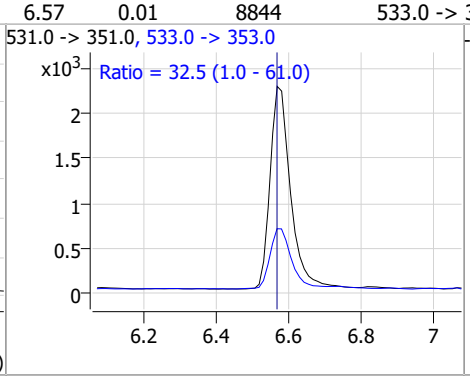


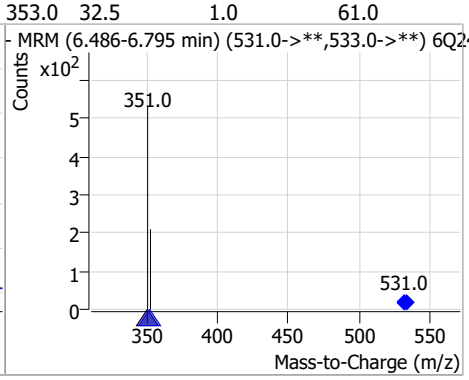


Perfluorinated Compounds by LC/MS/MS

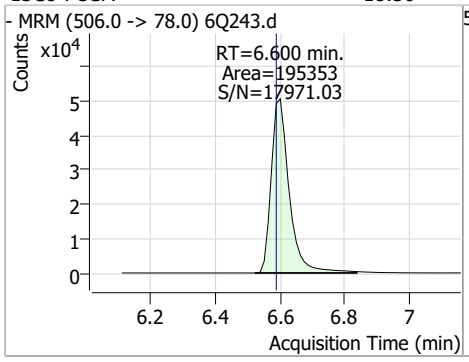
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.43	6.57	0.01	8844	533.0 -> 353.0	32.5	1.0	61.0

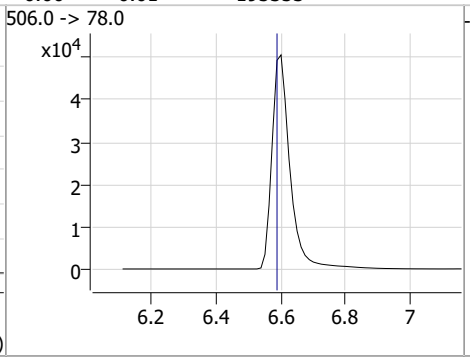


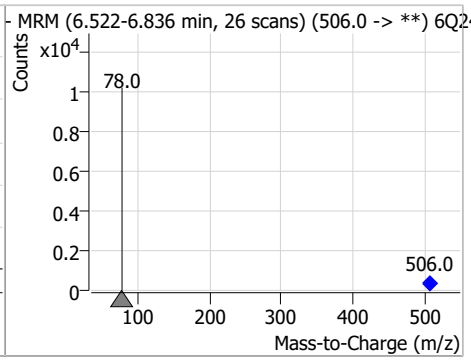




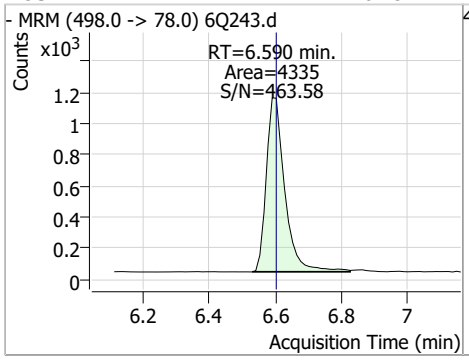
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.56	6.60	0.01	195353				

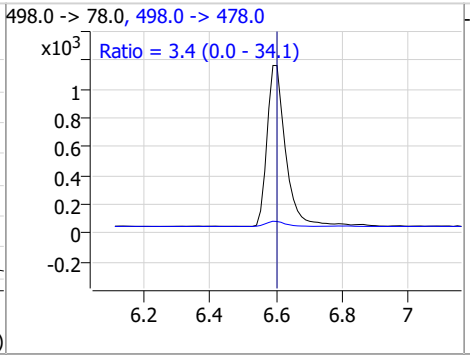


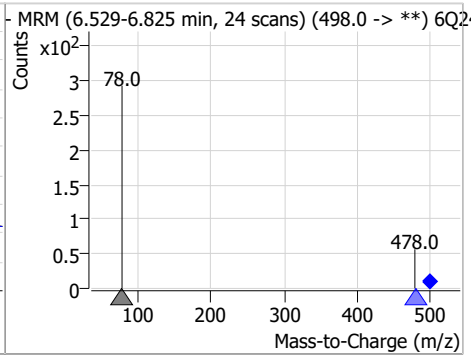




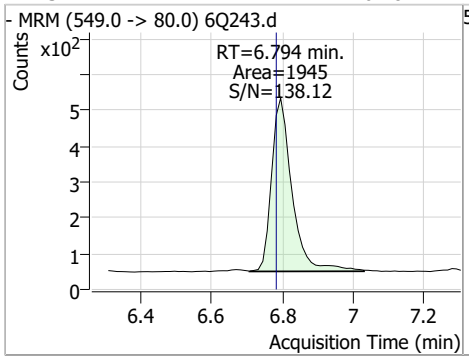
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.45	6.59	0.00	4335	498.0 -> 478.0	3.4	0.0	34.1

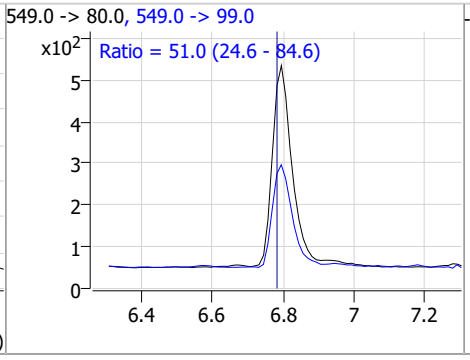


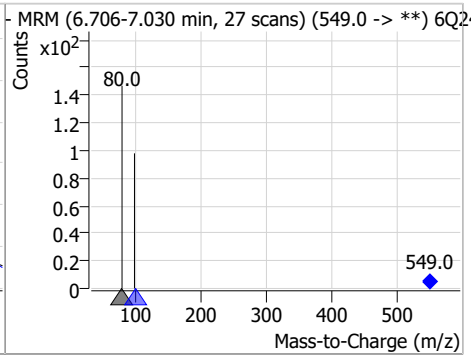




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.48	6.79	0.01	1945	549.0 -> 99.0	51.0	24.6	84.6

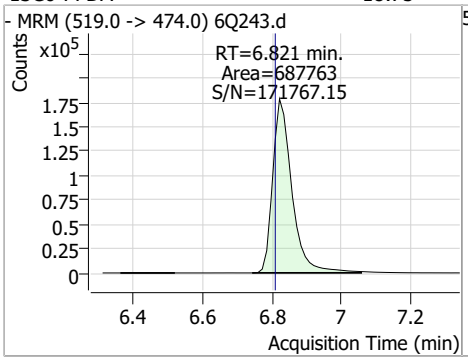


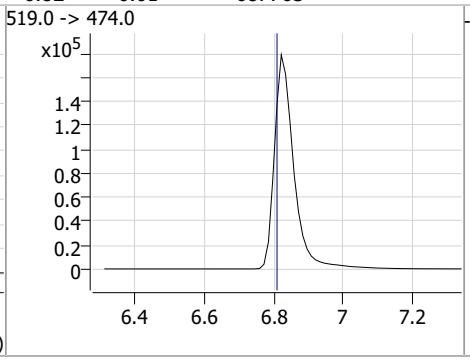


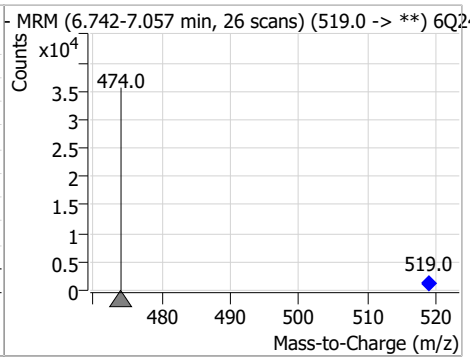


Perfluorinated Compounds by LC/MS/MS

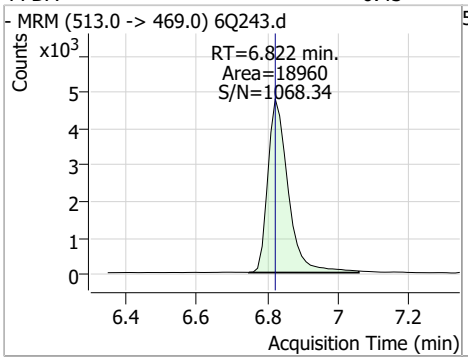
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.75	6.82	0.01	687763				

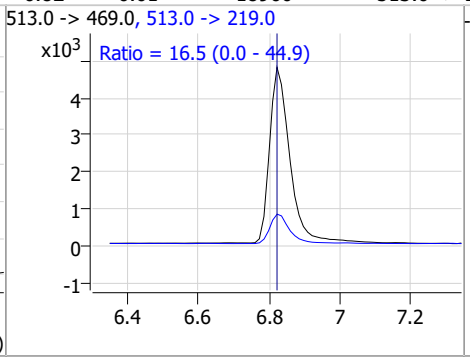


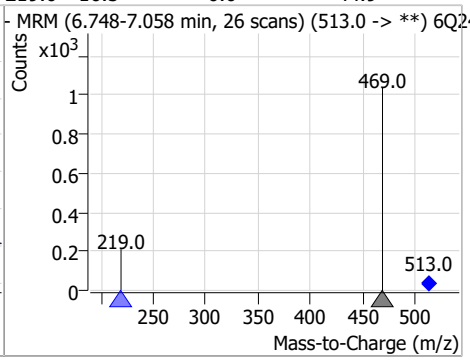




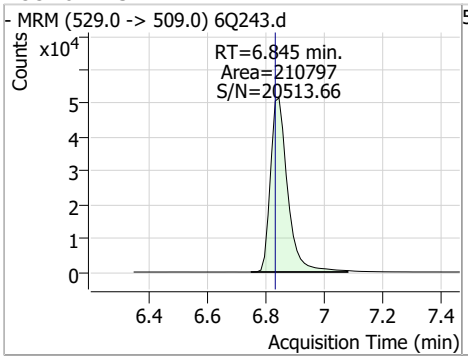
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.43	6.82	0.01	18960	513.0 -> 219.0	16.5	0.0	44.9

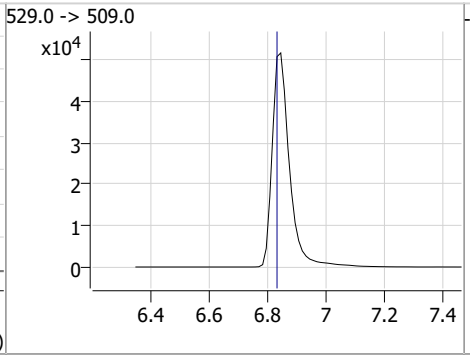


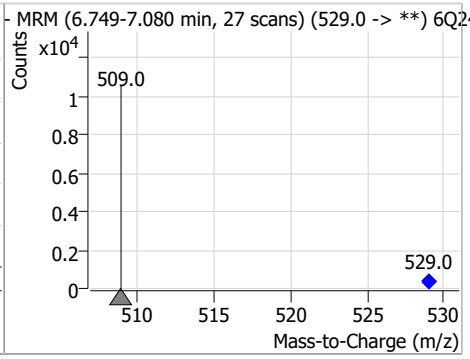




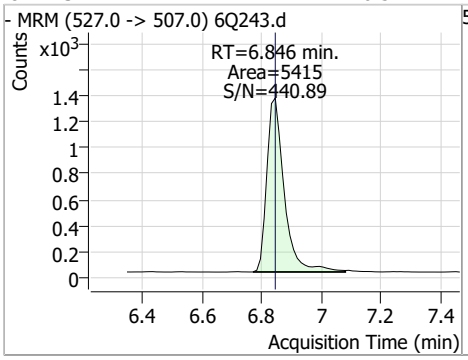
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.14	6.85	0.01	210797				

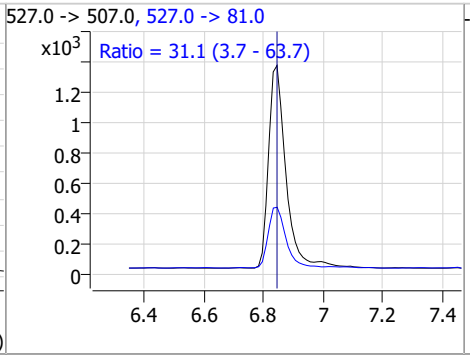


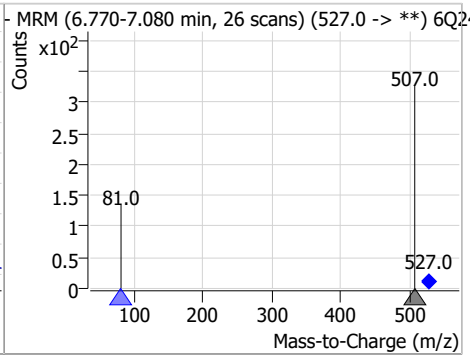




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.52	6.85	0.01	5415	527.0 -> 81.0	31.1	3.7	63.7

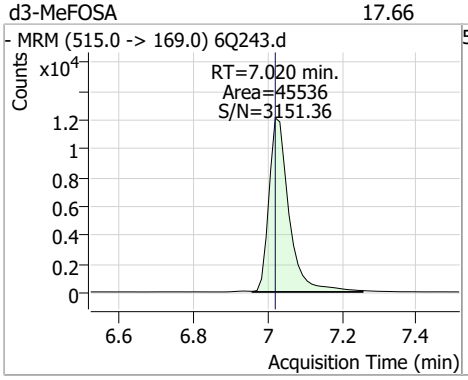


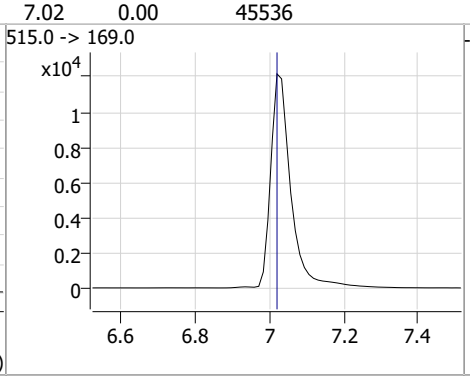


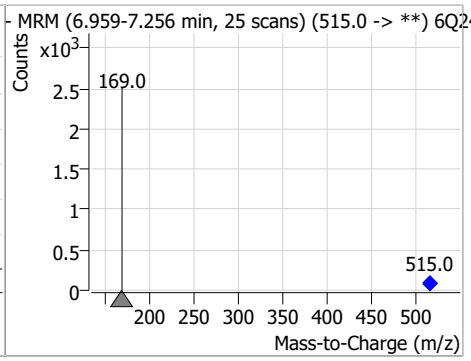


Perfluorinated Compounds by LC/MS/MS

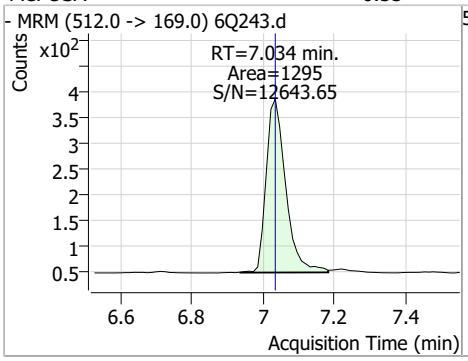
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.66	7.02	0.00	45536				

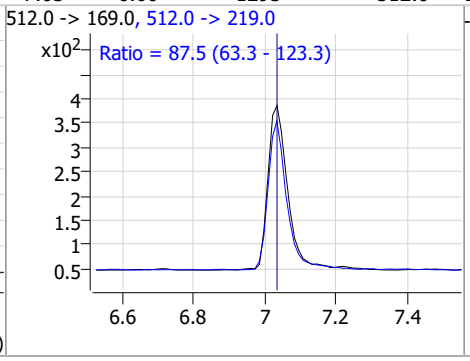


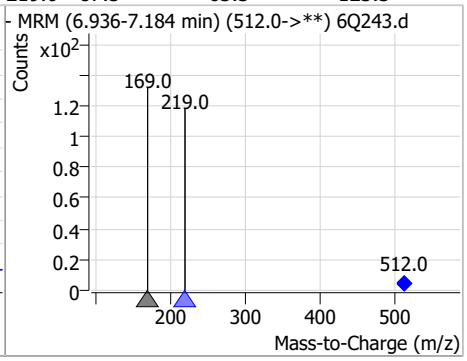




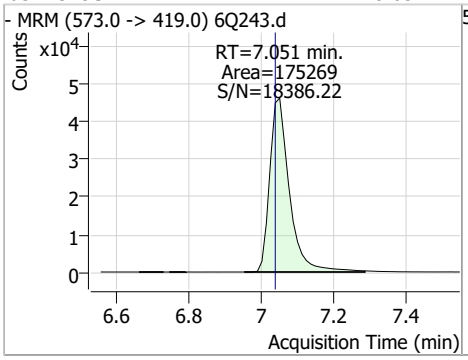
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.55	7.03	0.00	1295	512.0 -> 219.0	87.5	63.3	123.3

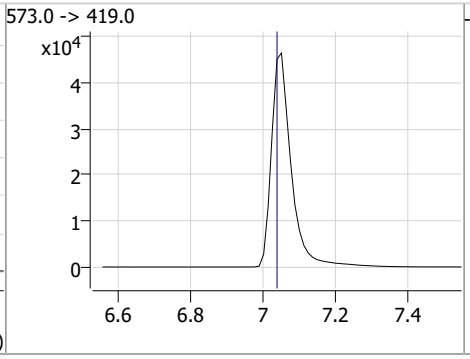


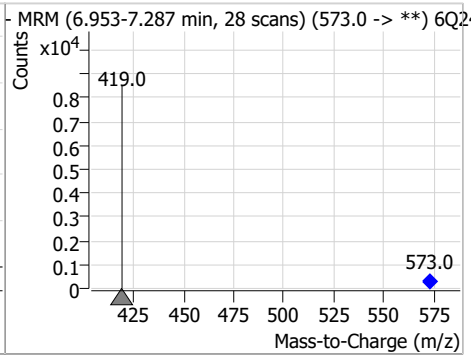




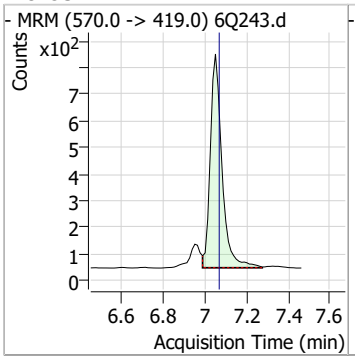
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.65	7.05	0.01	175269				

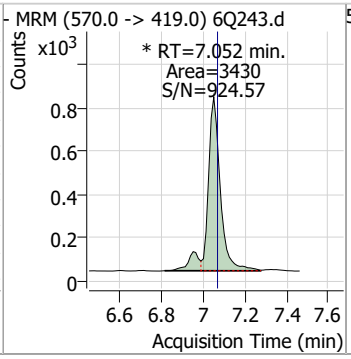


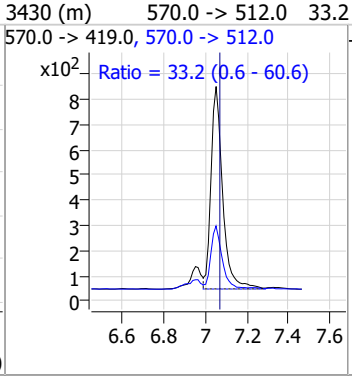


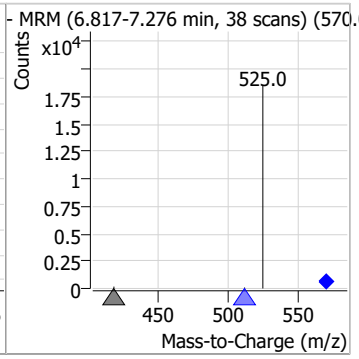


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.44	7.05	0.00	3430 (m)	570.0 -> 512.0	33.2	0.6	60.6



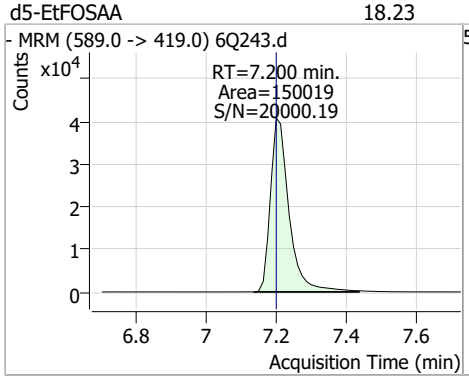


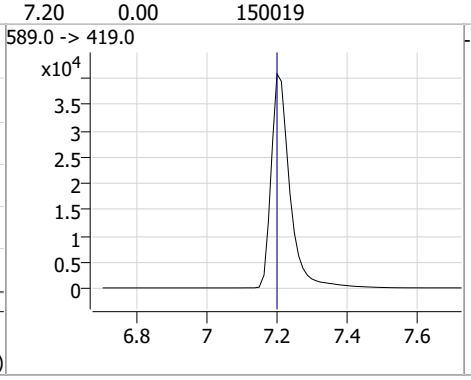


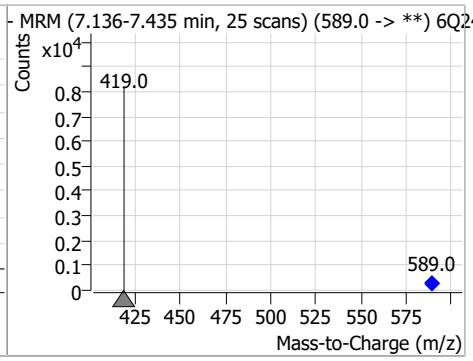


Perfluorinated Compounds by LC/MS/MS

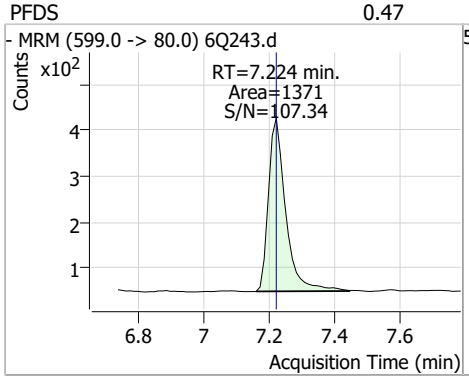
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.23	7.20	0.00	150019				

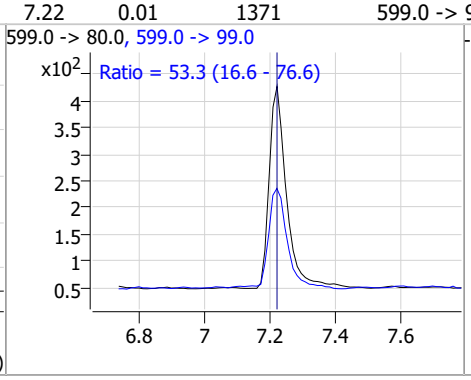


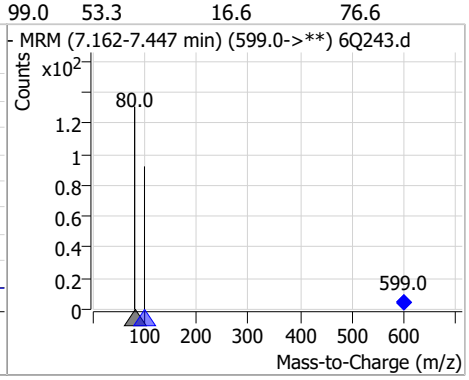




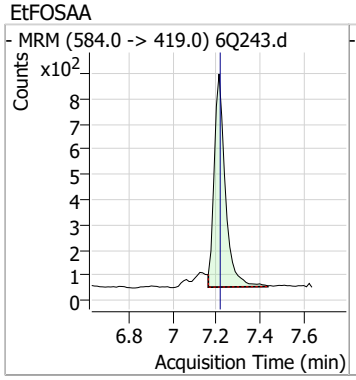
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.47	7.22	0.01	1371	599.0 -> 99.0	53.3	16.6	76.6

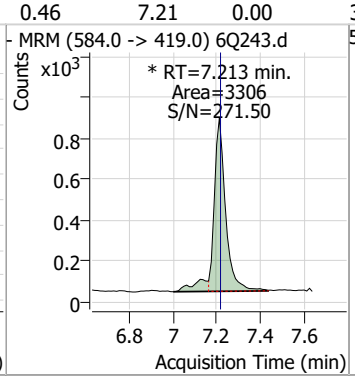


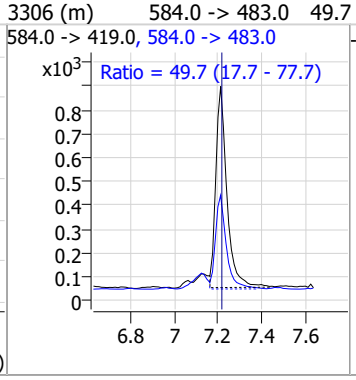


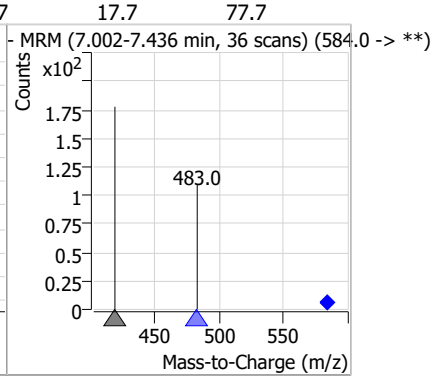


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.46	7.21	0.00	3306 (m)	584.0 -> 483.0	49.7	17.7	77.7

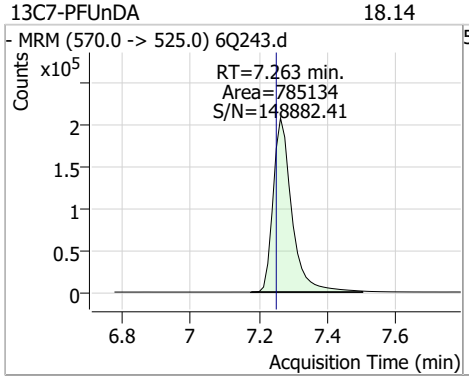


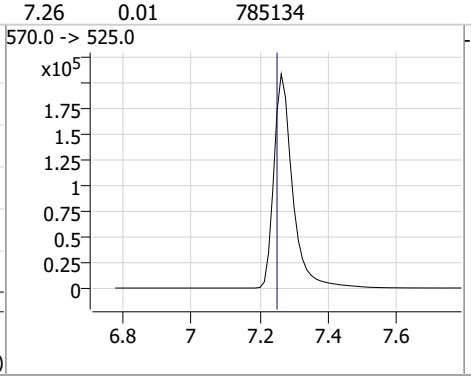


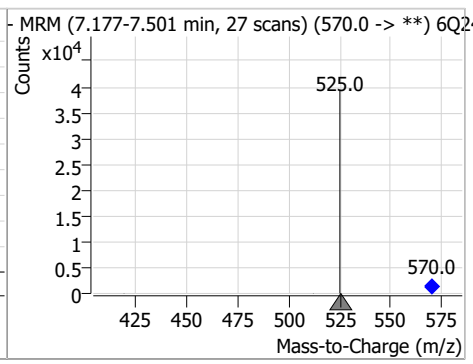




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.14	7.26	0.01	785134				

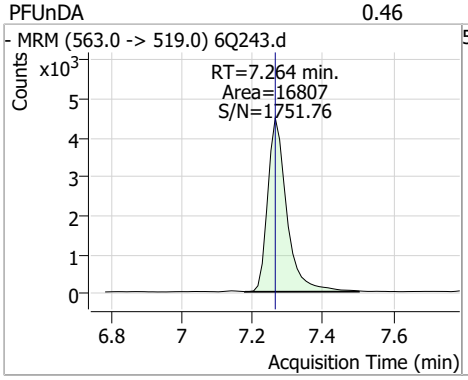


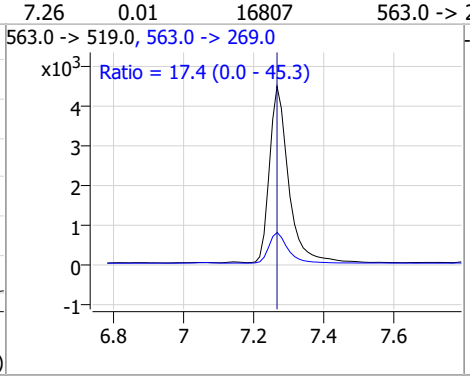


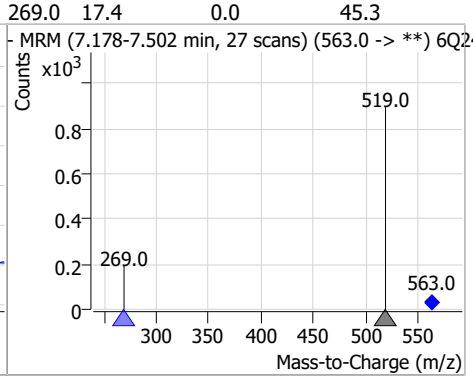


Perfluorinated Compounds by LC/MS/MS

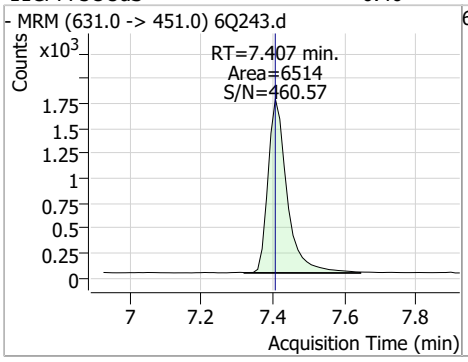
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.46	7.26	0.01	16807	563.0 -> 269.0	17.4	0.0	45.3

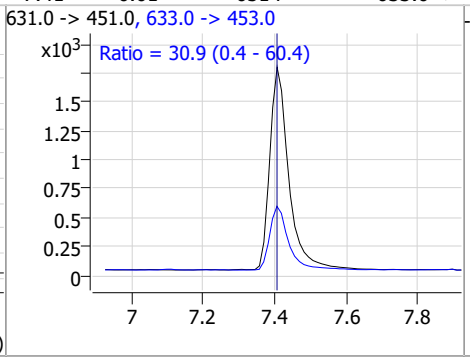


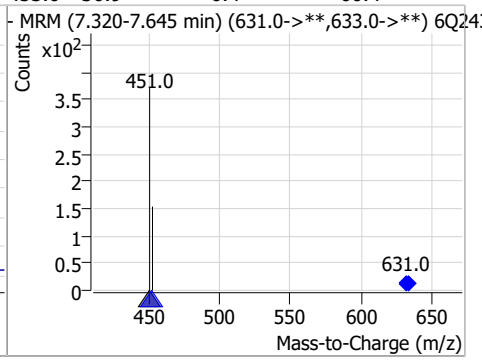




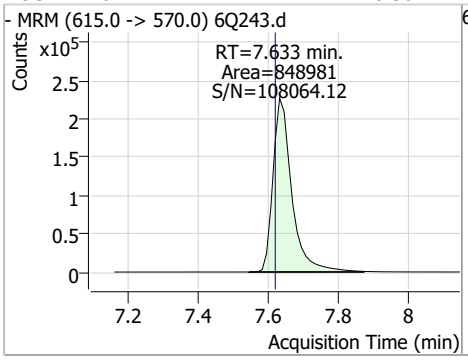
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.46	7.41	0.01	6514	633.0 -> 453.0	30.9	0.4	60.4

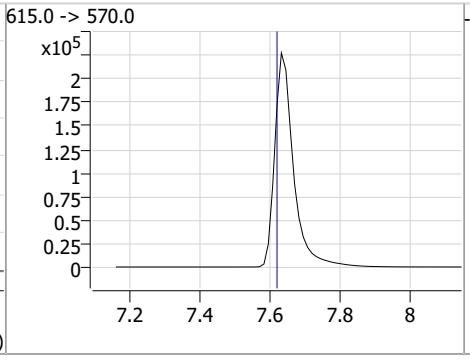


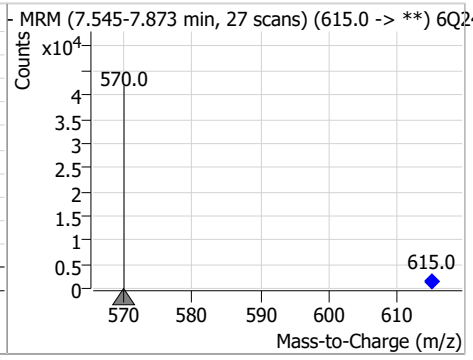




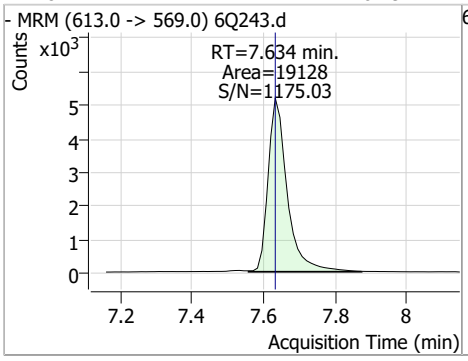
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.30	7.63	0.01	848981				

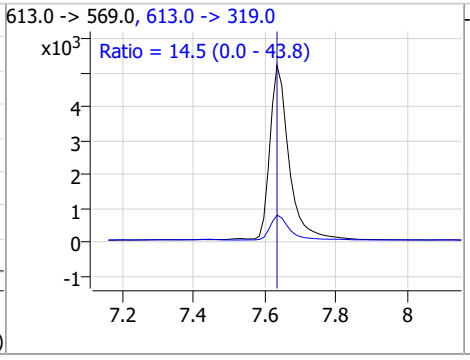


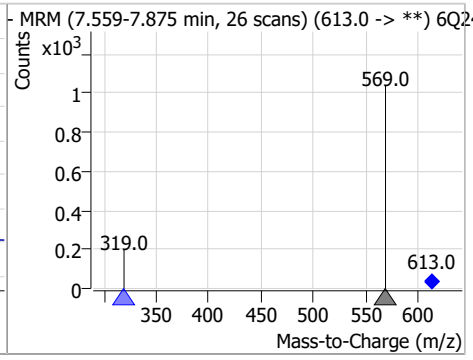




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.49	7.63	0.01	19128	613.0 -> 319.0	14.5	0.0	43.8

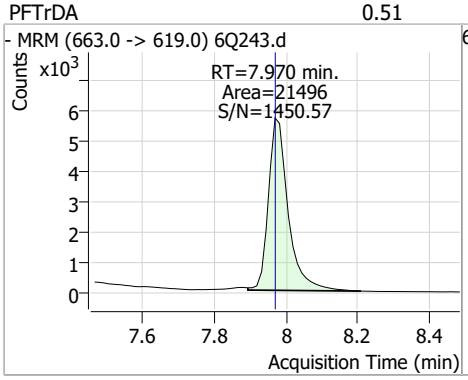


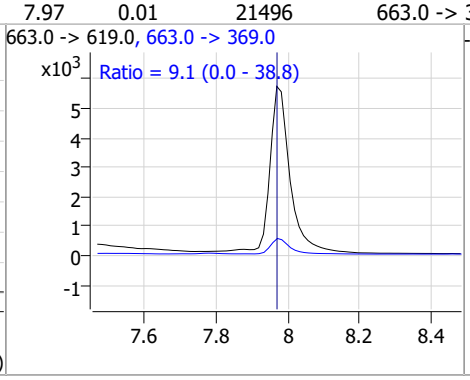


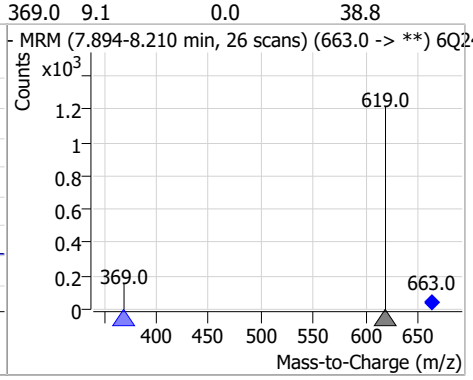


Perfluorinated Compounds by LC/MS/MS

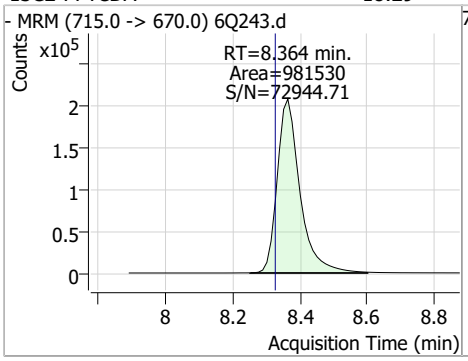
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.51	7.97	0.01	21496	663.0 -> 369.0	9.1	0.0	38.8

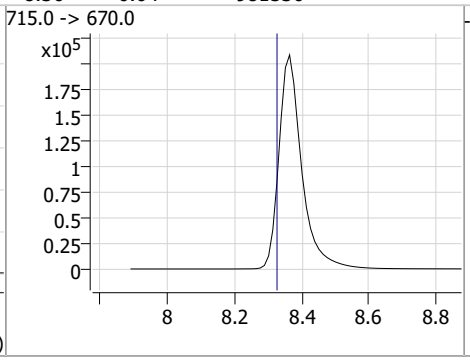


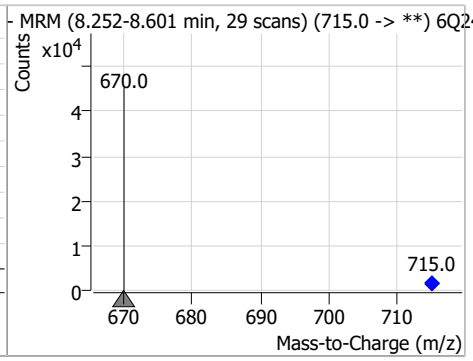




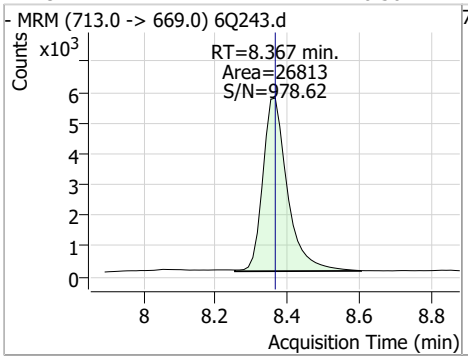
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.29	8.36	0.04	981530				

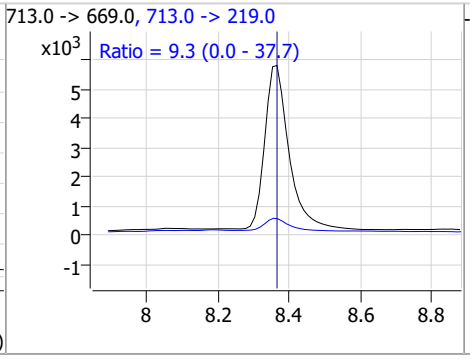


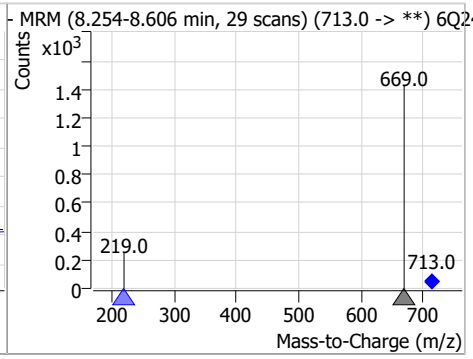




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.50	8.37	0.04	26813	713.0 -> 219.0	9.3	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q243.D
Injection Time: 05/19/22 10:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.16	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.31	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q244.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 11:07:53 AM
Sample Name : ic6-1
Vial : P1-A3
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

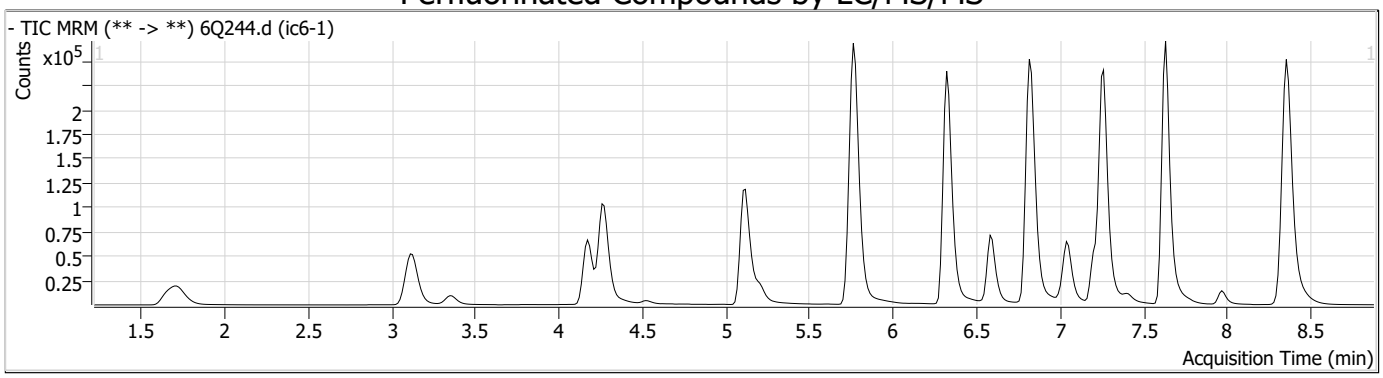
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.699	217.0 -> 172.0	163273	20.00 µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	277735	20.00 µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	421901	20.00 µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	457713	20.00 µg/L	0.000
M8-PFOA	5.782	421.0 -> 376.0	751993	20.00 µg/L	0.012
M9-PFNA	6.329	472.0 -> 427.0	884002	20.00 µg/L	0.000
M6-PFDA	6.821	519.0 -> 474.0	752481	20.00 µg/L	0.012
M7-PFUnDA	7.263	570.0 -> 525.0	853433	20.00 µg/L	0.012
M2-PFDoDA	7.633	615.0 -> 570.0	944063	20.00 µg/L	0.012
M2-PFTeDA	8.352	715.0 -> 670.0	1097016	20.00 µg/L	0.025
M8-FOSA	6.588	506.0 -> 78.0	223383	20.00 µg/L	0.000
M3-PFBS	3.348	302.0 -> 99.0	35738	20.00 µg/L	0.000
M3-PFHxS	5.152	402.0 -> 99.0	33047	20.00 µg/L	0.012
M8-PFOS	6.312	507.0 -> 99.0	43510	20.00 µg/L	0.000
M2-4:2FTS	4.172	329.0 -> 309.0	269399	20.00 µg/L	0.012
M2-6:2FTS	5.753	429.0 -> 409.0	328169	20.00 µg/L	0.012
M2-8:2FTS	6.832	529.0 -> 509.0	225222	20.00 µg/L	0.000
M3-MeFOSAA	7.039	573.0 -> 419.0	186042	20.00 µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	11426	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	51556	20.00 µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	167068	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.172	329.0 -> 309.0	269399	18.32 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C2-6:2FTS	5.753	429.0 -> 409.0	328169	19.27 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C2-8:2FTS	6.832	529.0 -> 509.0	225222	18.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C2-PFDoDA	7.633	615.0 -> 570.0	944063	20.35 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C2-PFTeDA	8.352	715.0 -> 670.0	1097016	20.44 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C3-PFBS	3.348	302.0 -> 99.0	35738	20.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C3-PFHxS	5.152	402.0 -> 99.0	33047	20.12 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFBA	1.699	217.0 -> 172.0	163273	20.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	5.110	367.0 -> 322.0	457713	20.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C5-PFHxA	4.264	318.0 -> 273.0	421901	20.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	3.118	268.0 -> 223.0	277735	19.98 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C6-PFDA	6.821	519.0 -> 474.0	752481	20.52 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

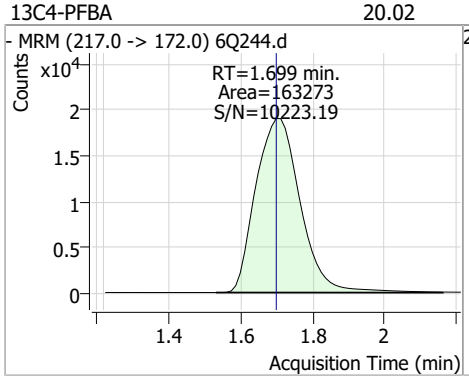
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C7-PFUnDA	7.263	570.0 -> 525.0	853433	19.72 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C8-FOSA	6.588	506.0 -> 78.0	223383	21.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C8-PFOA	5.782	421.0 -> 376.0	751993	20.18 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C8-PFOS	6.312	507.0 -> 99.0	43510	20.19 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C9-PFNA	6.329	472.0 -> 427.0	884002	20.43 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
d3-MeFOSAA	7.039	573.0 -> 419.0	186042	19.79 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	11471	19.30 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
d3-MeFOSA	7.020	515.0 -> 169.0	51556	19.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d5-EtFOSAA	7.200	589.0 -> 419.0	167152	20.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
Target Compounds						**QValue**
4:2FTS	4.175	327.0 -> 307.0	15646	1.07 µg/L		97
6:2FTS	5.755	427.0 -> 407.0	17468	1.05 µg/L		96
8:2FTS	6.833	527.0 -> 507.0	12236	1.10 µg/L		98
EtFOSAA	7.213	584.0 -> 419.0	7839	0.98 µg/L	m	98
FOSA	6.590	498.0 -> 78.0	10194	0.93 µg/L		98
MeFOSAA	7.052	570.0 -> 419.0	8494	1.02 µg/L	m	92
PFBA	1.705	213.0 -> 169.0	3487	0.94 µg/L		100
PFBS	3.353	299.0 -> 80.0	5413	0.97 µg/L		97
PFDA	6.822	513.0 -> 469.0	43297	0.90 µg/L		99
PFDoDA	7.634	613.0 -> 569.0	42359	0.97 µg/L		97
PFDS	7.211	599.0 -> 80.0	3356	1.06 µg/L		96
PFHpA	5.112	363.0 -> 319.0	29790	0.98 µg/L		99
PFHpS	5.777	449.0 -> 80.0	3857	0.97 µg/L		99
PFHxA	4.277	313.0 -> 269.0	21906	0.96 µg/L		100
PFHxS	5.155	399.0 -> 80.0	4134	0.94 µg/L	m	96
PFNA	6.330	463.0 -> 419.0	35259	0.94 µg/L		100
PFNS	6.794	549.0 -> 80.0	4077	0.95 µg/L		98
PFOA	5.771	413.0 -> 369.0	37130	0.98 µg/L		99
PFOS	6.314	499.0 -> 80.0	3970	0.97 µg/L	m	85
PFPeA	3.121	263.0 -> 219.0	12128	1.00 µg/L		100
PFPeS	4.383	349.0 -> 80.0	4541	0.98 µg/L		96
PFTeDA	8.354	713.0 -> 669.0	58712	0.97 µg/L		100
PFTrDA	7.970	663.0 -> 619.0	47692	1.01 µg/L		100
PFUnDA	7.264	563.0 -> 519.0	37061	0.93 µg/L		95
11Cl-PF3OUdS	7.407	631.0 -> 451.0	14430	0.92 µg/L		97
9Cl-PF3ONS	6.570	531.0 -> 351.0	20353	0.91 µg/L		95
ADONA	5.207	377.0 -> 251.0	45765	0.96 µg/L		99
HFPO-DA	4.530	285.0 -> 169.0	644	1.20 µg/L		82
MeFOSA	7.034	512.0 -> 169.0	2451	0.92 µg/L		92

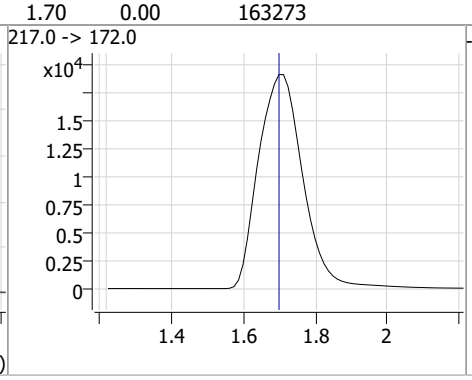
 # = Qualifier out of range, m = manually integrated, + = Area summed

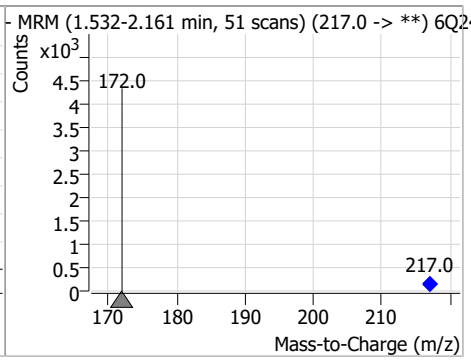
Perfluorinated Compounds by LC/MS/MS



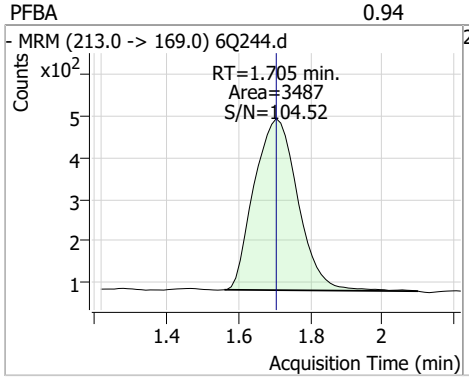
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.02	1.70	0.00	163273				

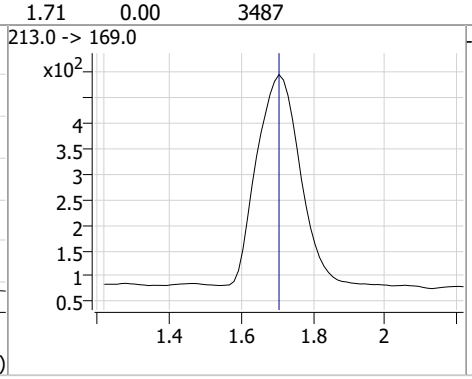


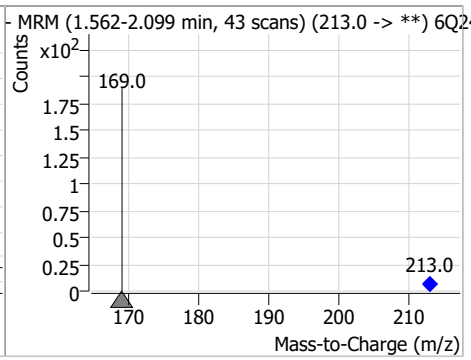




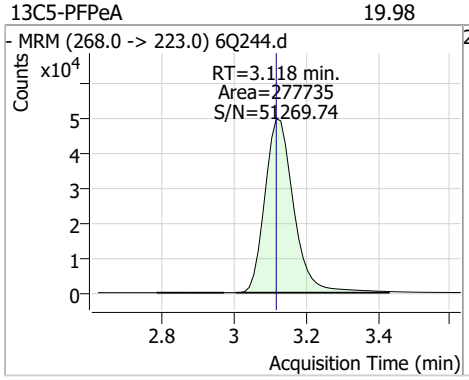
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.94	1.71	0.00	3487				

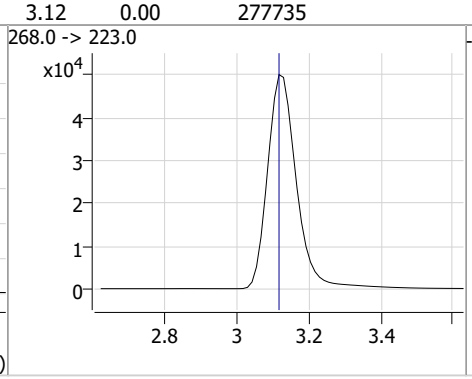


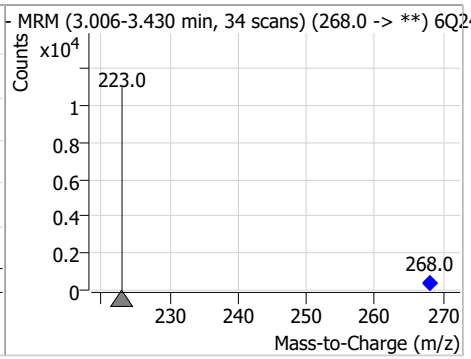




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.98	3.12	0.00	277735				

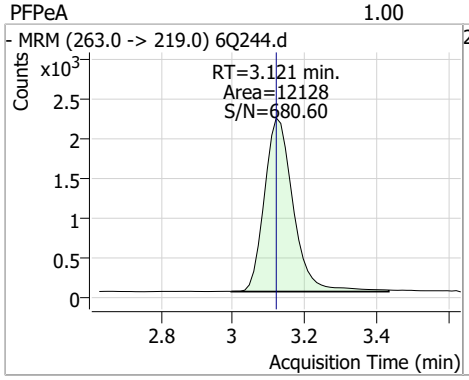


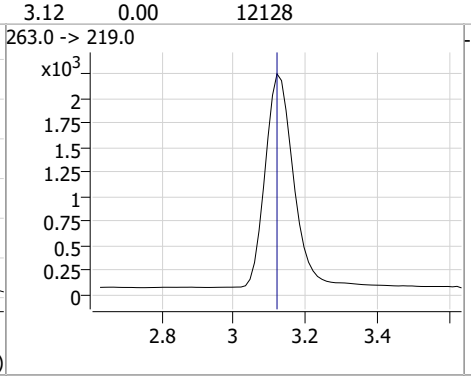


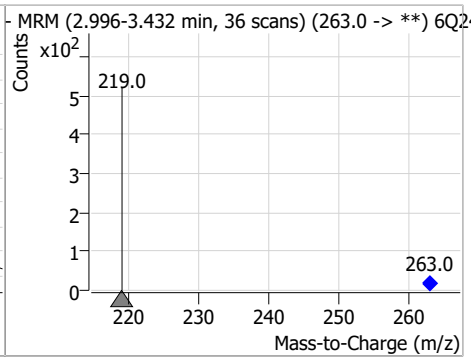


Perfluorinated Compounds by LC/MS/MS

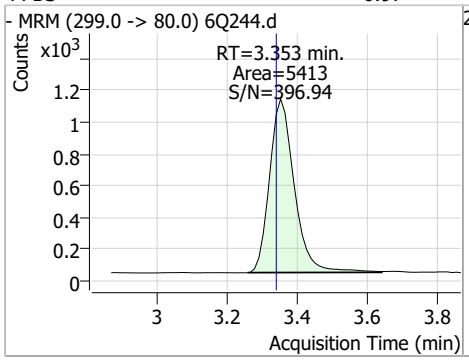
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.00	3.12	0.00	12128				

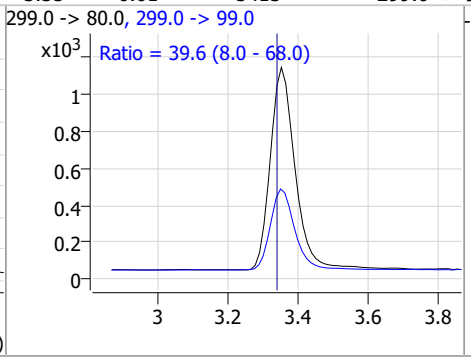


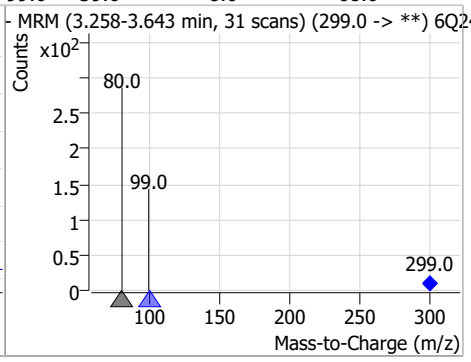




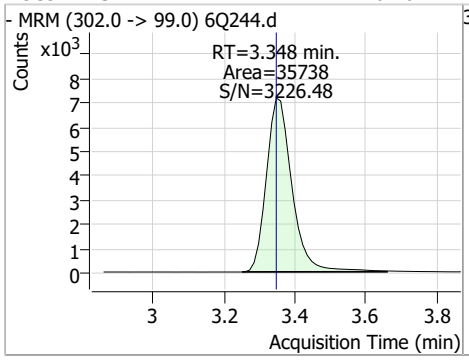
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.97	3.35	0.01	5413	299.0 -> 99.0	39.6	8.0	68.0

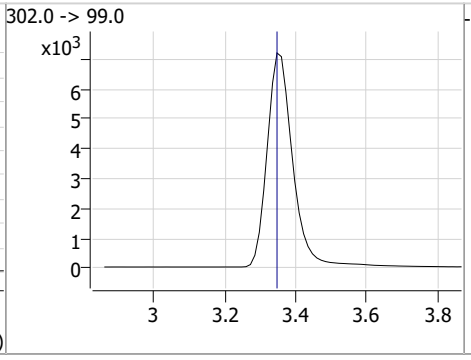


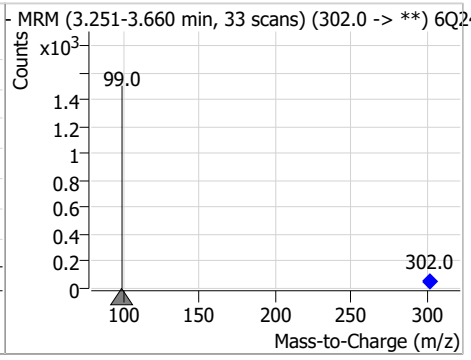




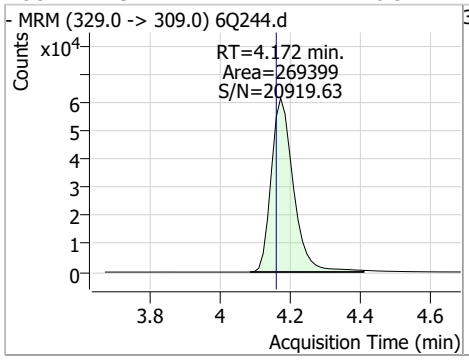
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.26	3.35	0.00	35738				

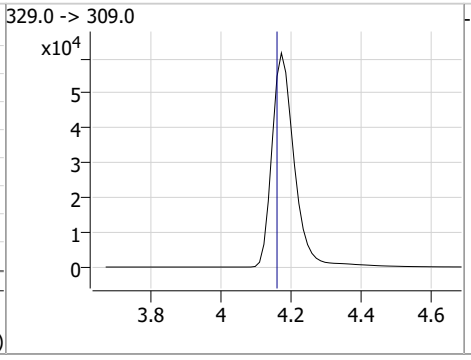


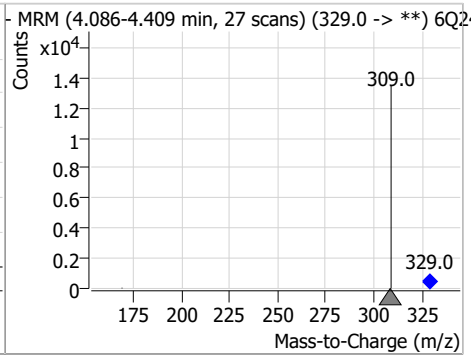




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.32	4.17	0.01	269399				

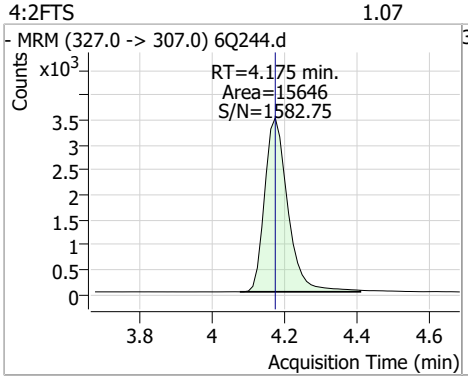


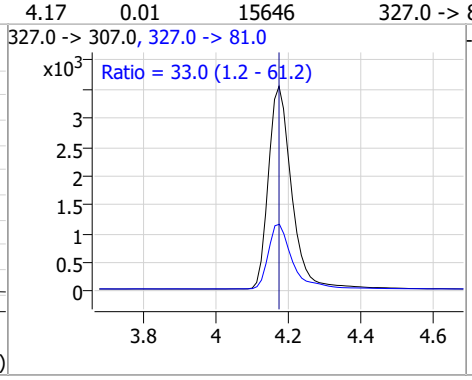


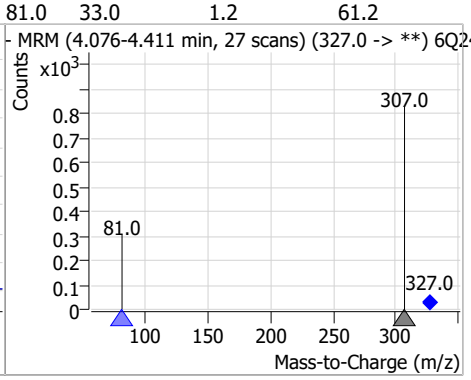


Perfluorinated Compounds by LC/MS/MS

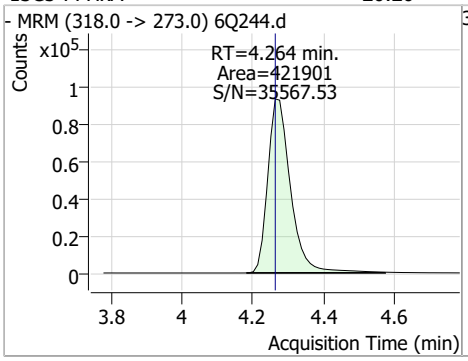
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.07	4.17	0.01	15646	327.0 -> 81.0	33.0	1.2	61.2

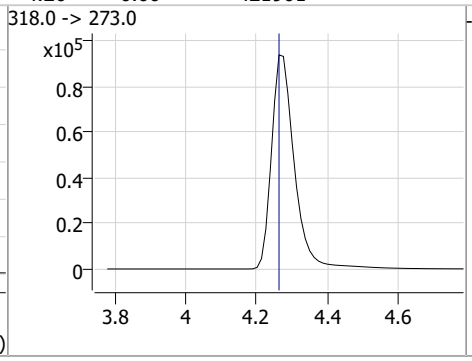


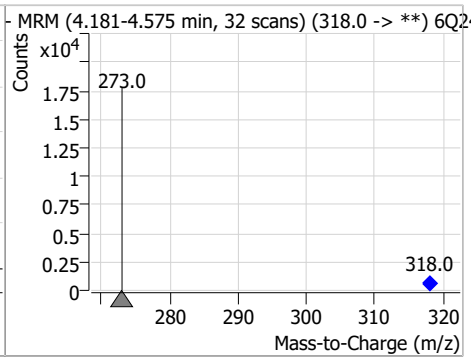




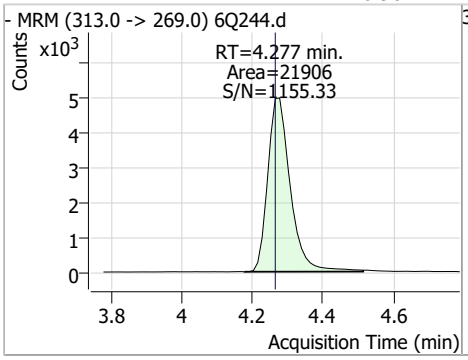
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.20	4.26	0.00	421901				

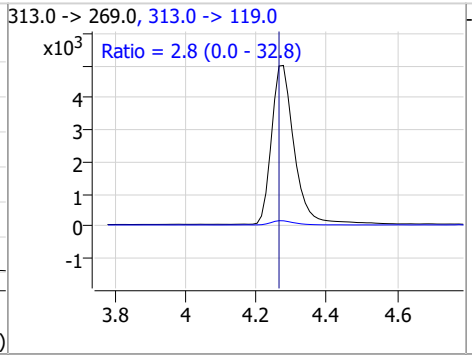


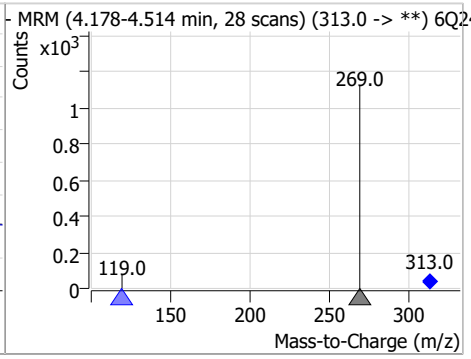




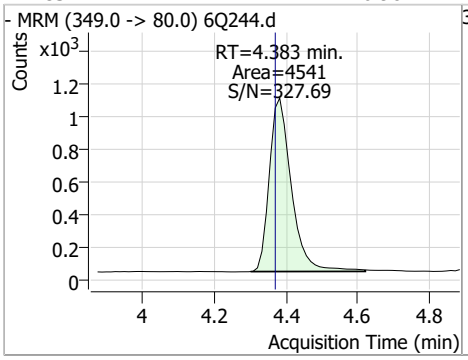
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.96	4.28	0.01	21906	313.0 -> 119.0	2.8	0.0	32.8

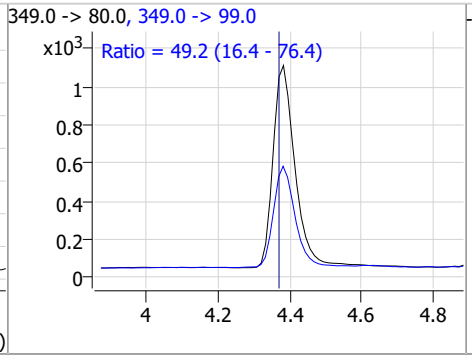


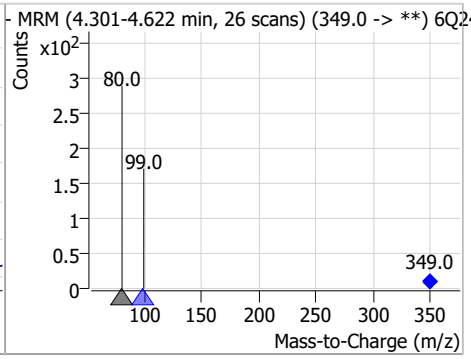




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.98	4.38	0.01	4541	349.0 -> 99.0	49.2	16.4	76.4

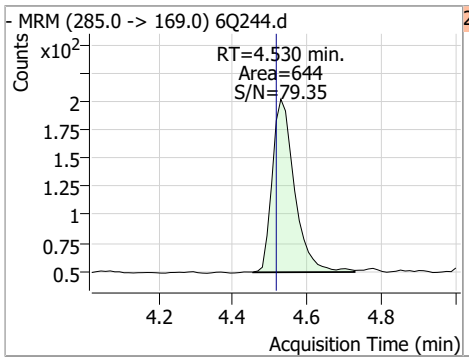


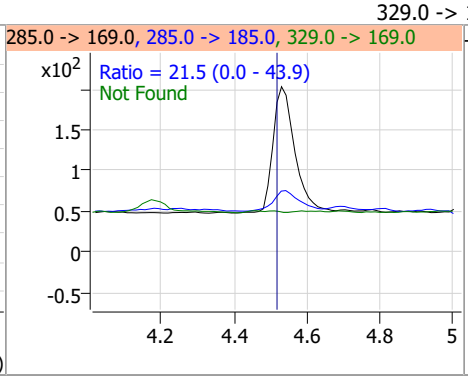


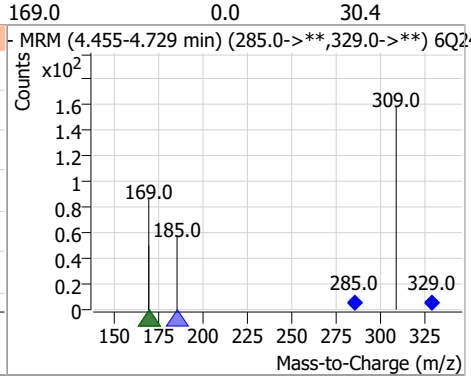


Perfluorinated Compounds by LC/MS/MS

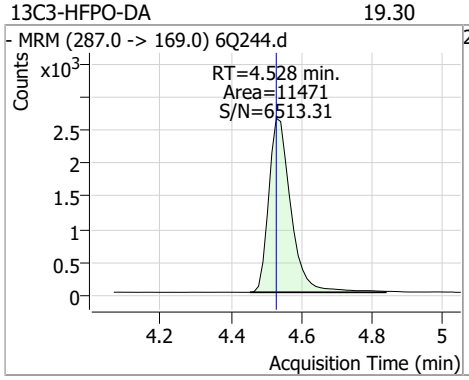
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.20	4.53	0.01	644	285.0 -> 185.0	21.5	0.0	43.9
					329.0 -> 169.0		0.0	30.4

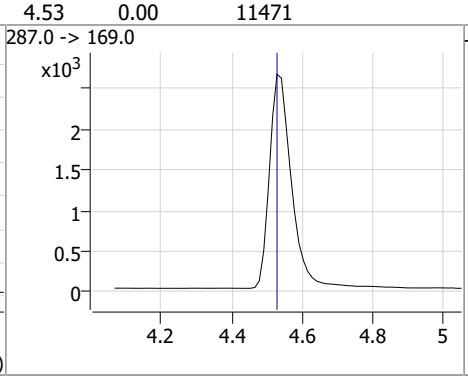


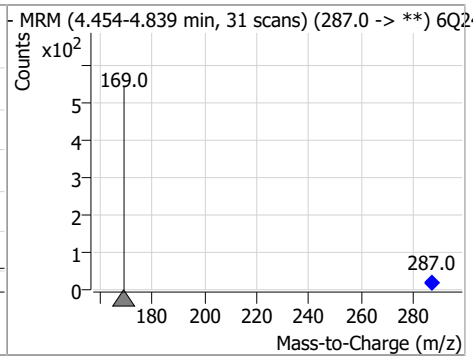




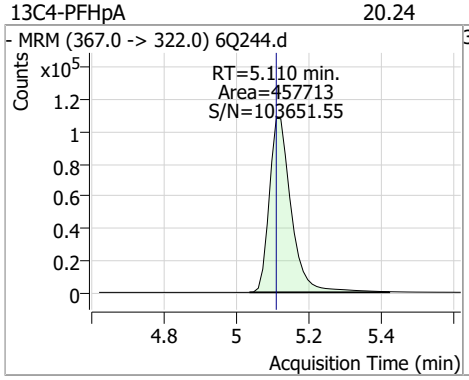
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.30	4.53	0.00	11471				

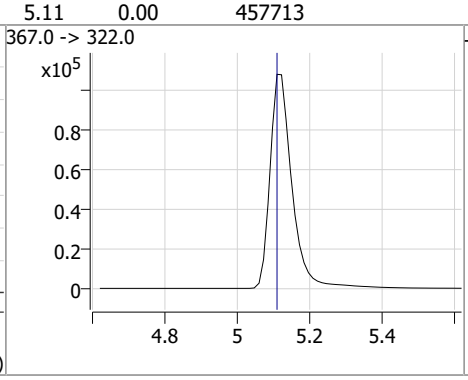


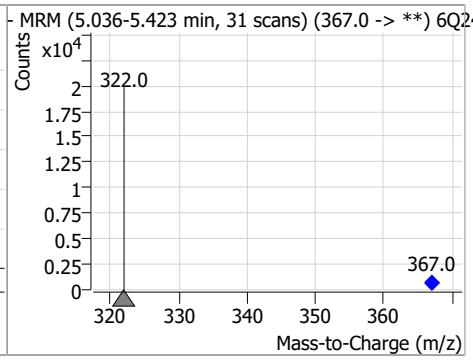




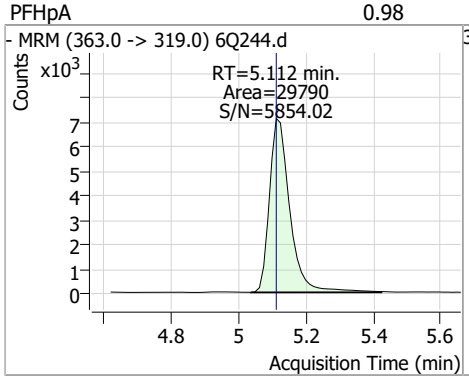
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.24	5.11	0.00	457713				

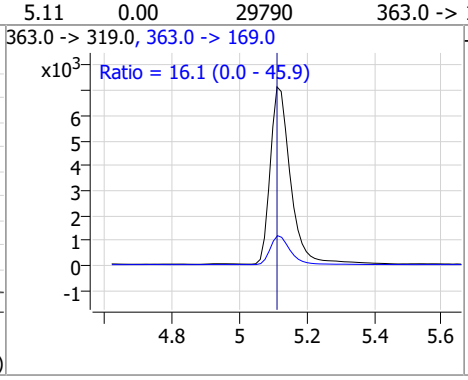


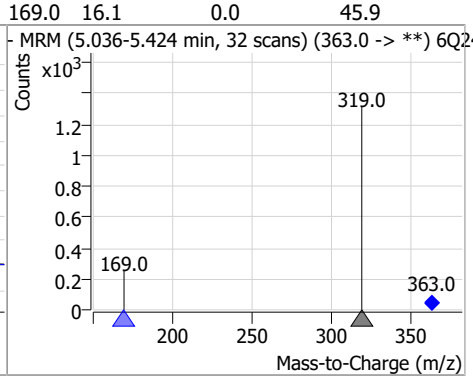




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.98	5.11	0.00	29790	363.0 -> 169.0	16.1	0.0	45.9

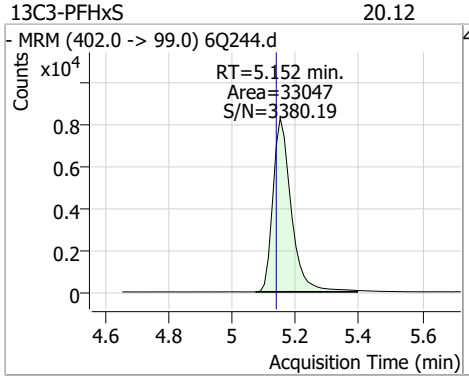


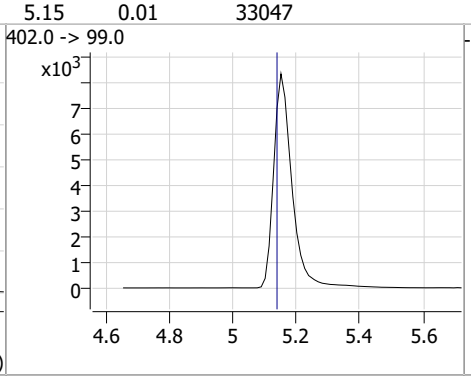


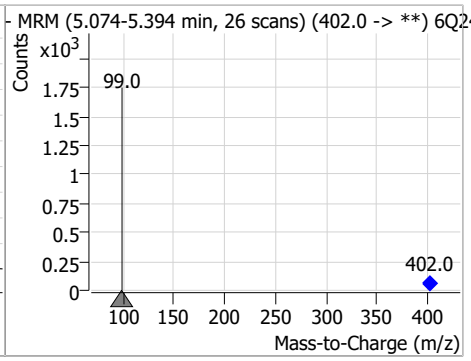


Perfluorinated Compounds by LC/MS/MS

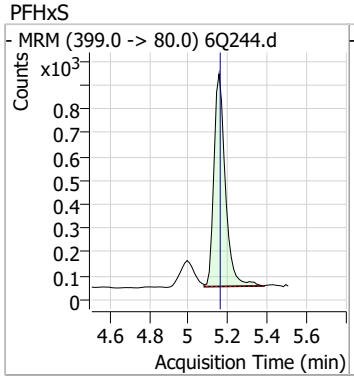
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.12	5.15	0.01	33047				

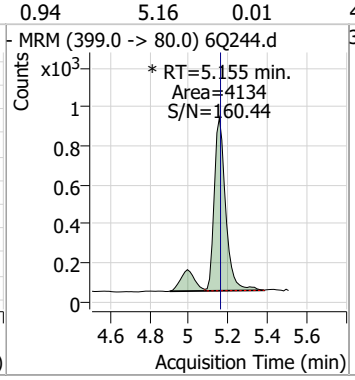


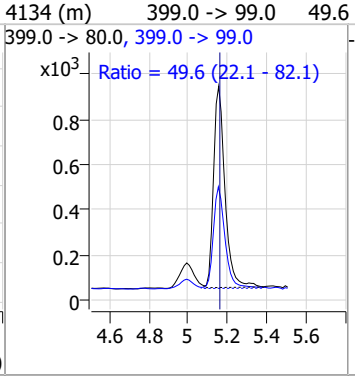


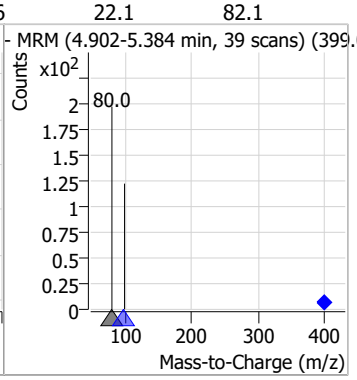


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.94	5.16	0.01	4134 (m)	399.0 -> 99.0	49.6	22.1	82.1

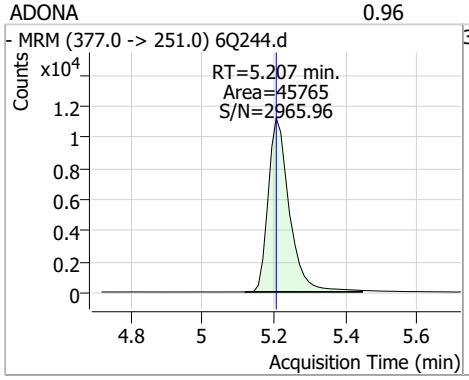


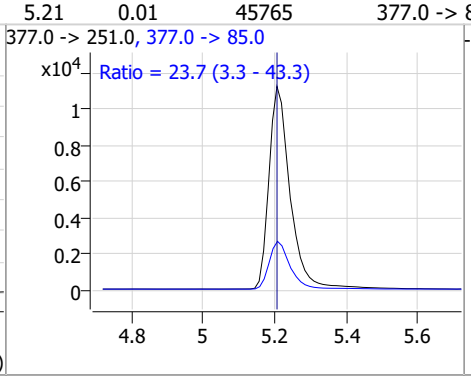


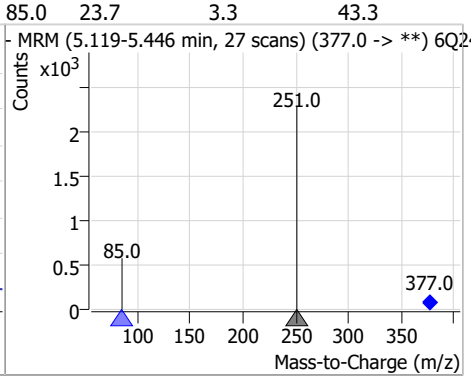




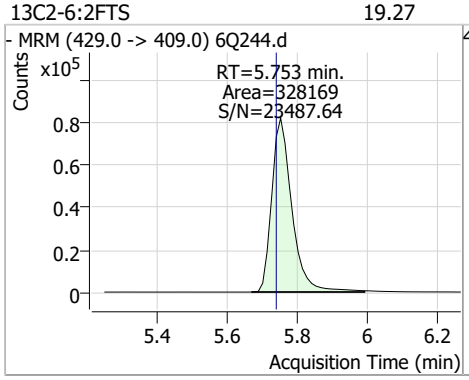
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.96	5.21	0.01	45765	377.0 -> 85.0	23.7	3.3	43.3

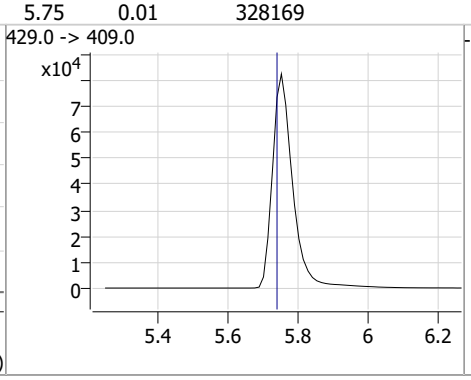


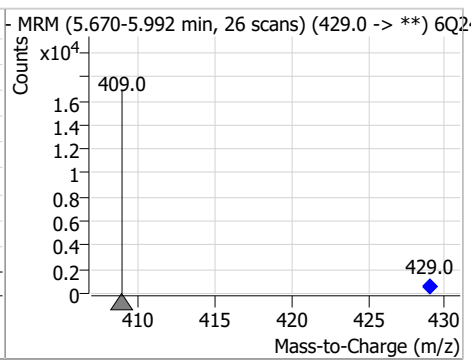




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.27	5.75	0.01	328169				

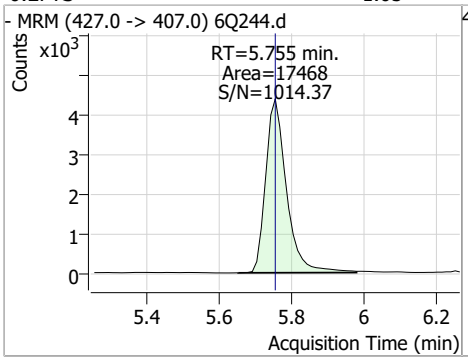


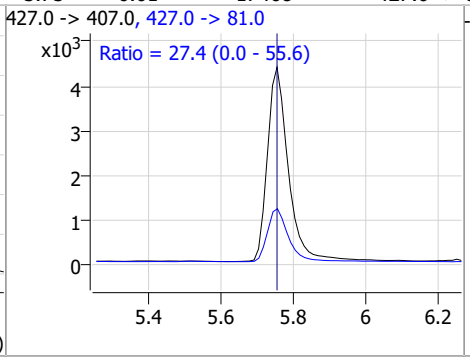


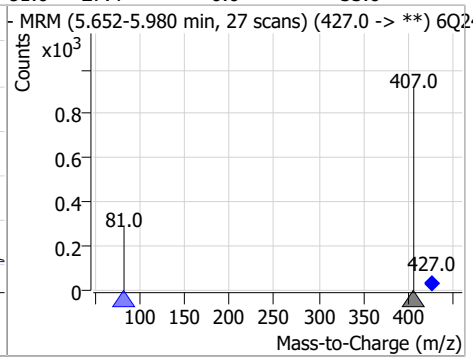


Perfluorinated Compounds by LC/MS/MS

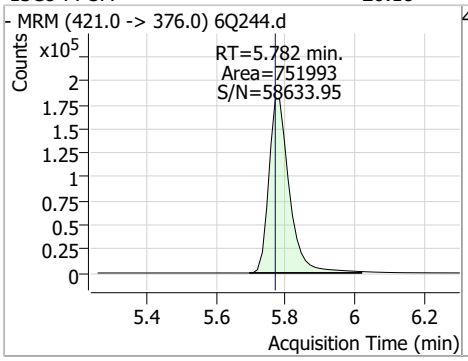
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.75	0.01	17468	427.0 -> 81.0	27.4	0.0	55.6

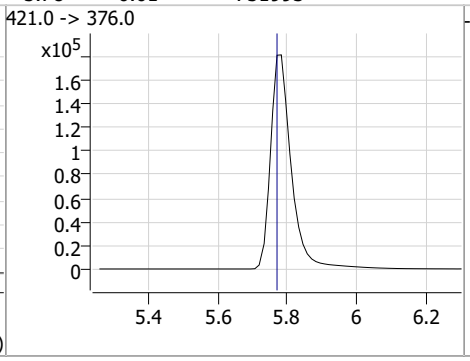


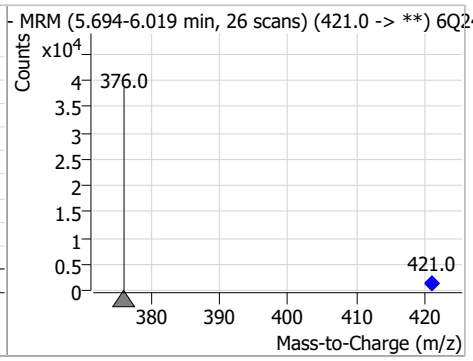




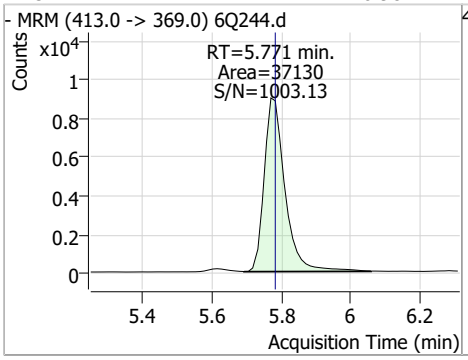
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.18	5.78	0.01	751993				

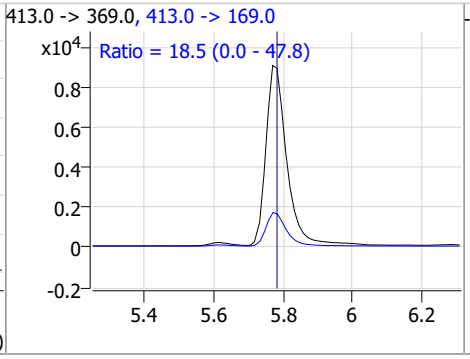


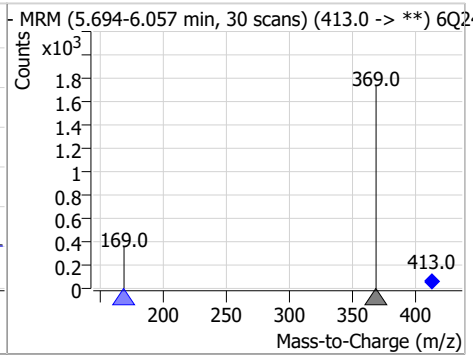




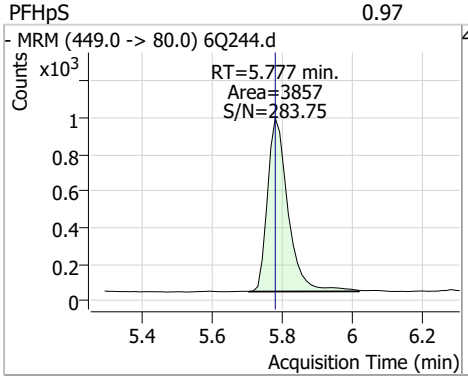
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.98	5.77	0.00	37130	413.0 -> 169.0	18.5	0.0	47.8

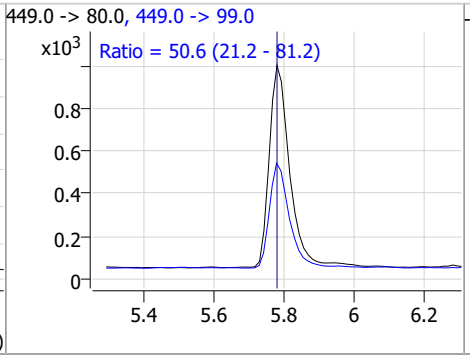


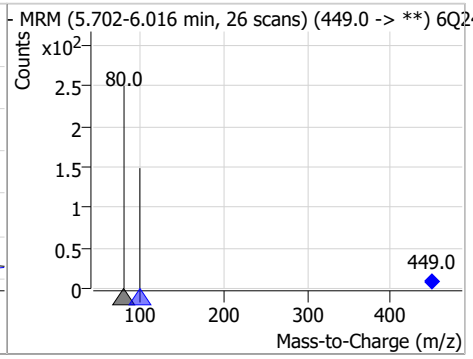




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.97	5.78	0.00	3857	449.0 -> 99.0	50.6	21.2	81.2

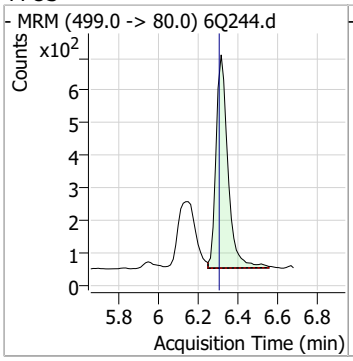


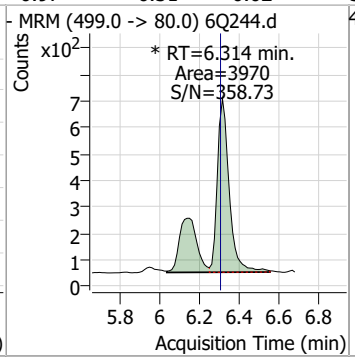


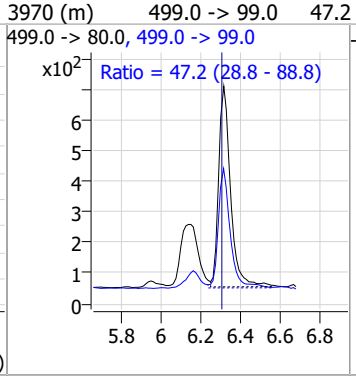


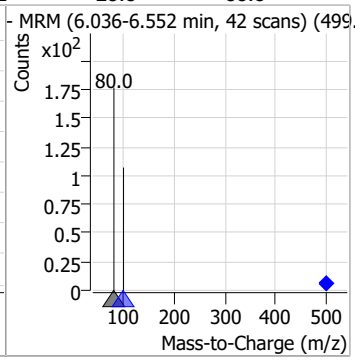
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.97	6.31	0.02	3970 (m)	499.0 -> 99.0	47.2	28.8	88.8

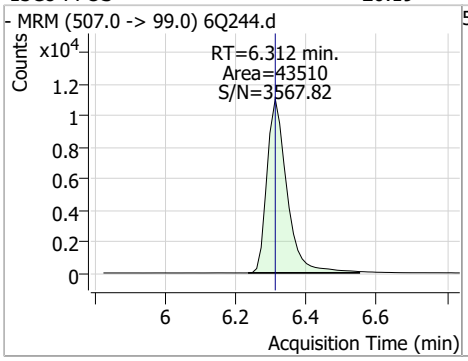


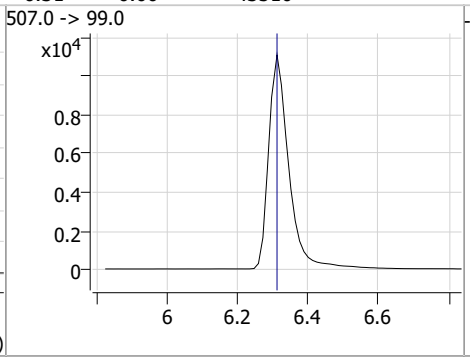


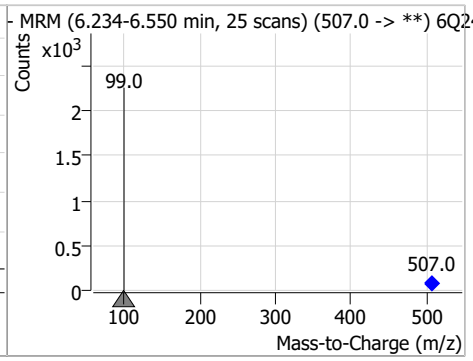




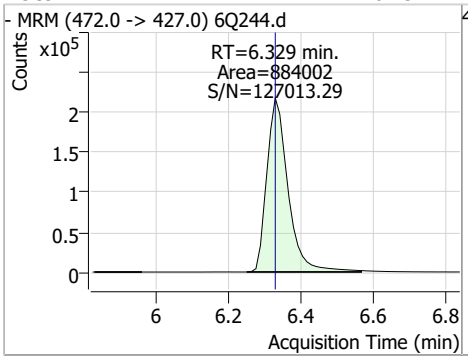
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.19	6.31	0.00	43510				

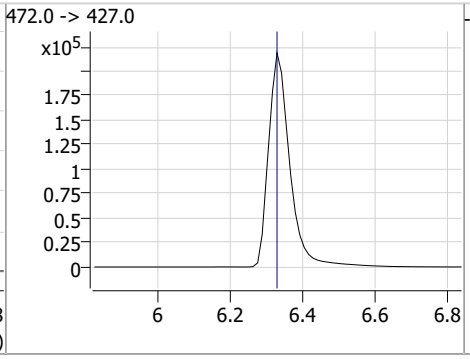


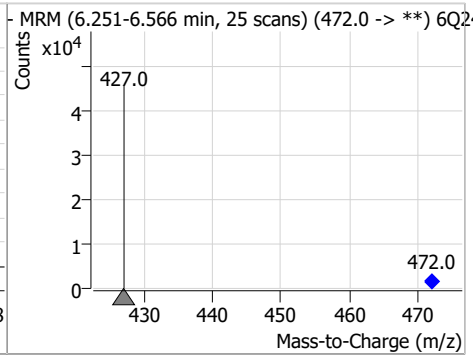




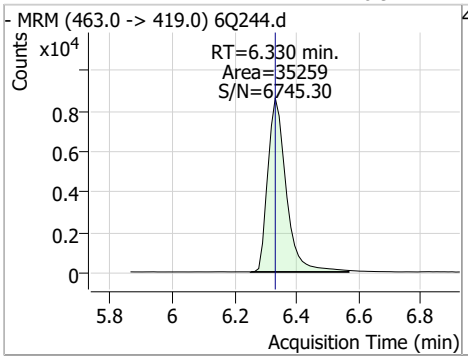
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.43	6.33	0.00	884002				

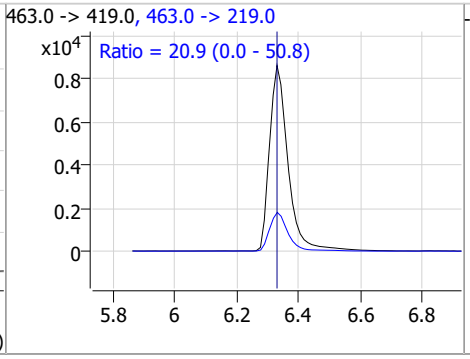


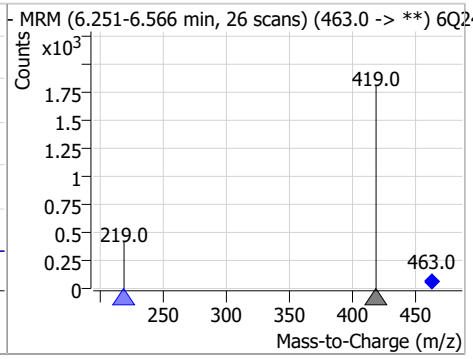




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.94	6.33	0.00	35259	463.0 -> 219.0	20.9	0.0	50.8

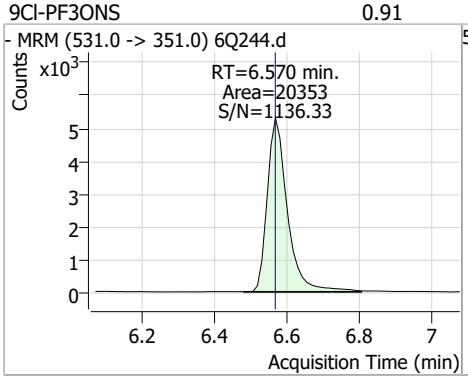


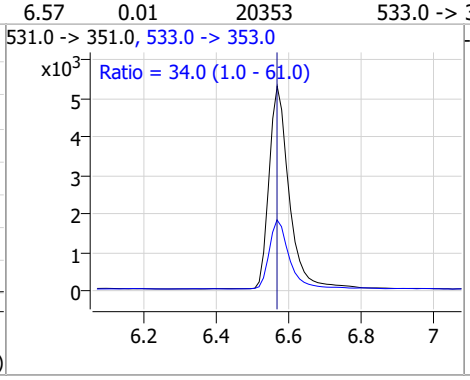


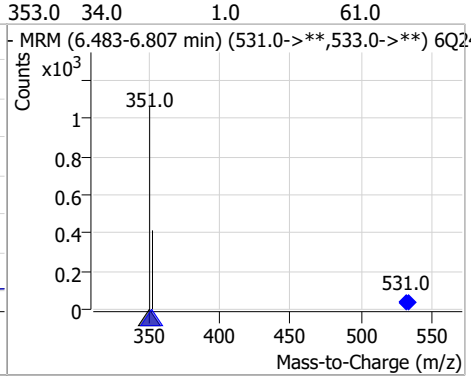


Perfluorinated Compounds by LC/MS/MS

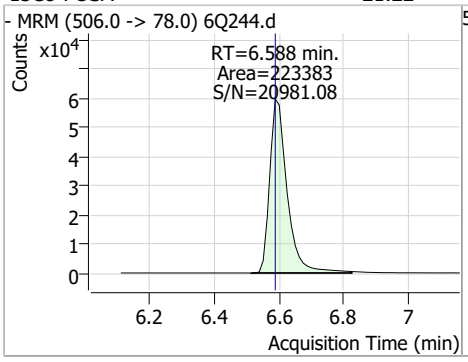
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.91	6.57	0.01	20353	533.0 -> 353.0	34.0	1.0	61.0

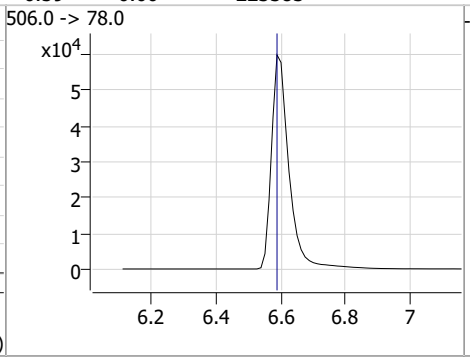


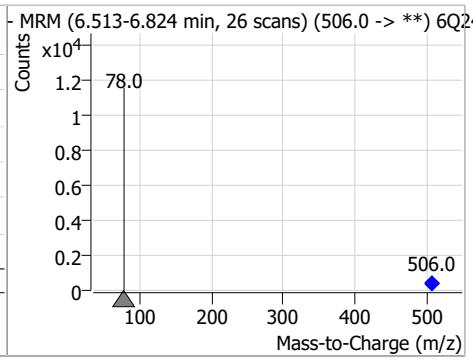




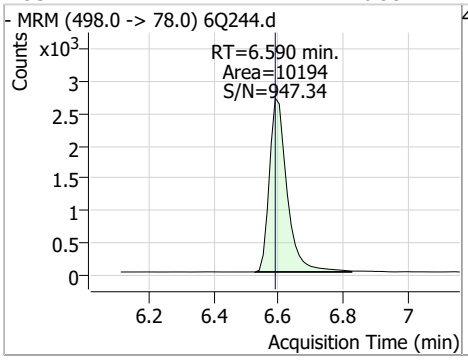
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.22	6.59	0.00	223383				

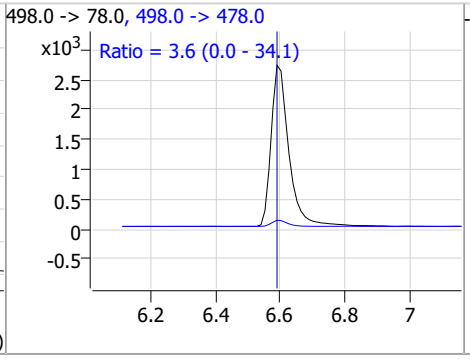


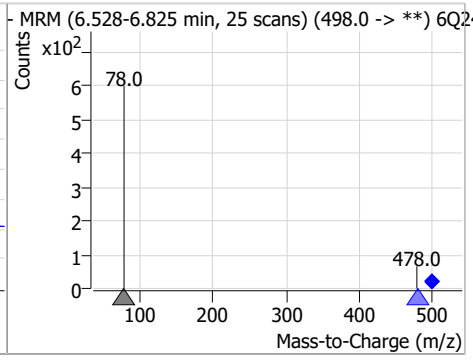




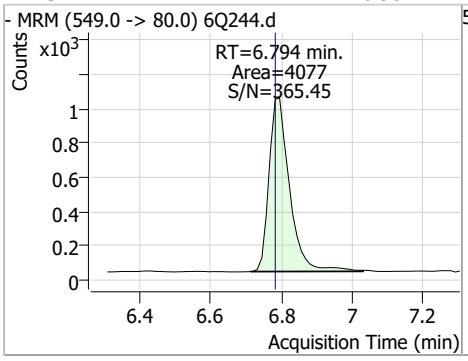
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.93	6.59	0.00	10194	498.0 -> 478.0	3.6	0.0	34.1

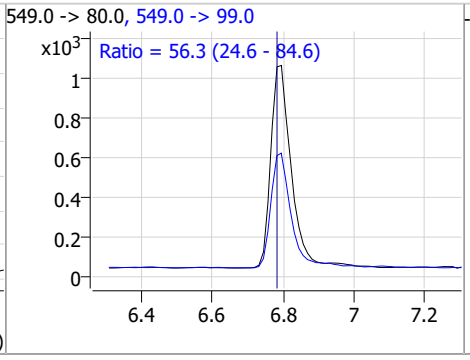


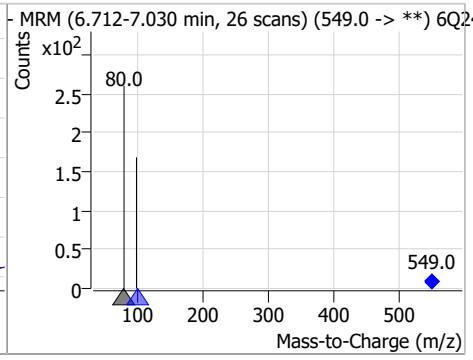




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.95	6.79	0.01	4077	549.0 -> 99.0	56.3	24.6	84.6

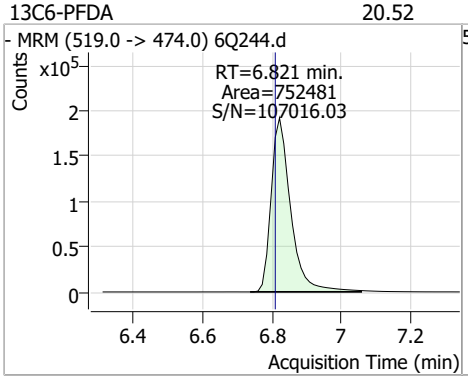


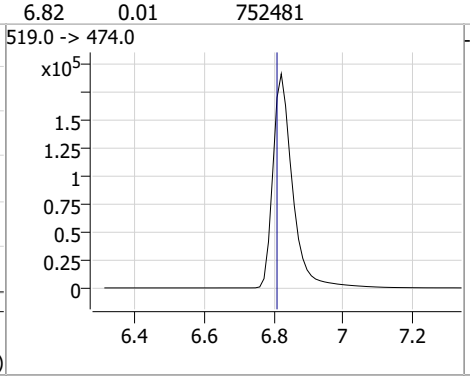


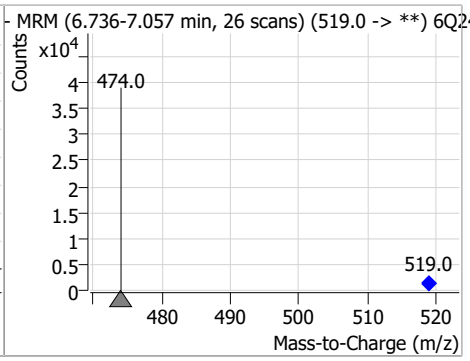


Perfluorinated Compounds by LC/MS/MS

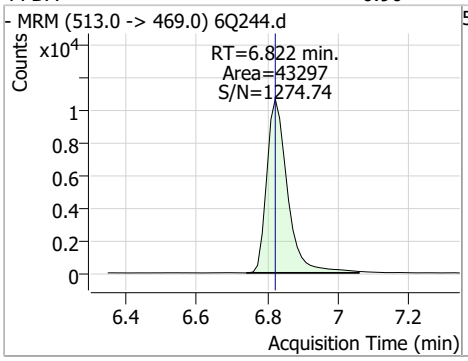
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.52	6.82	0.01	752481				

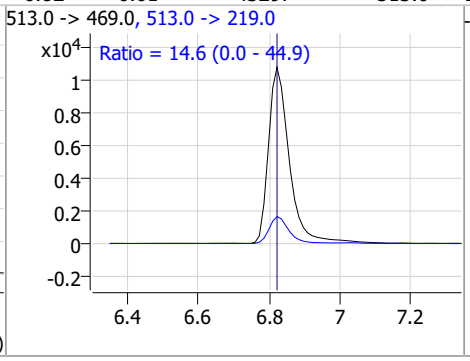


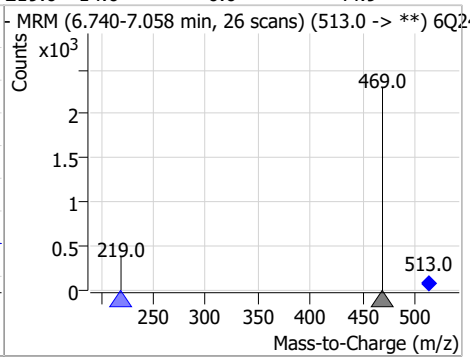




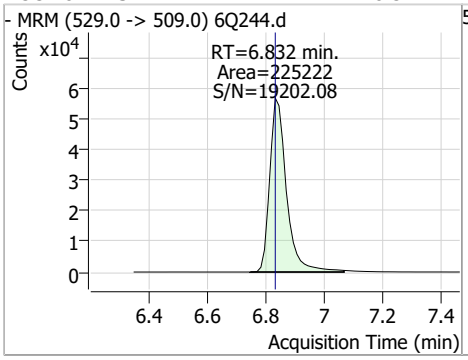
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.90	6.82	0.01	43297	513.0 -> 219.0	14.6	0.0	44.9

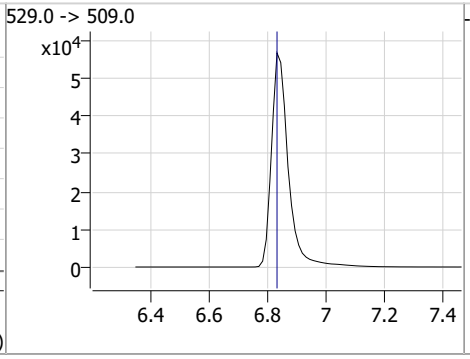


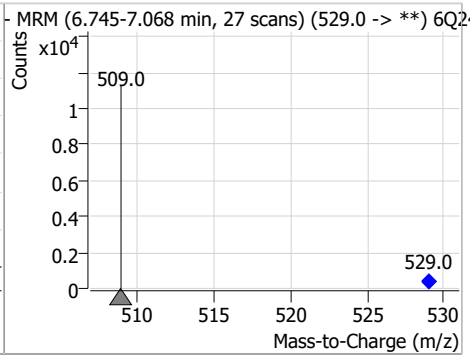




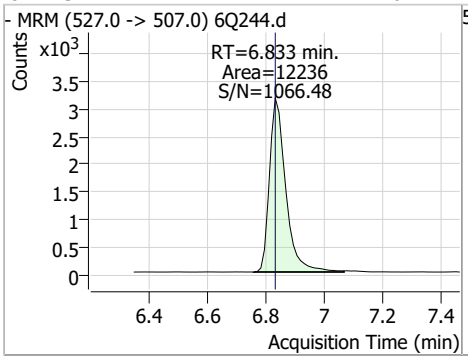
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.31	6.83	0.00	225222				

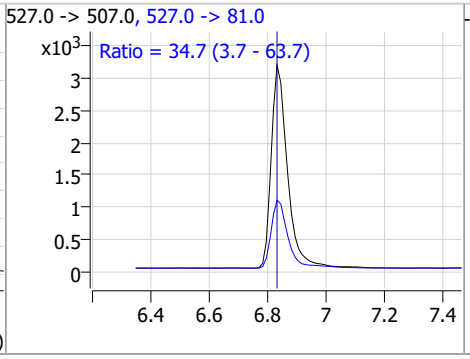


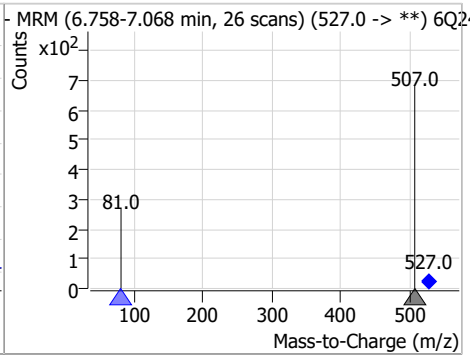




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.10	6.83	0.00	12236	527.0 -> 81.0	34.7	3.7	63.7

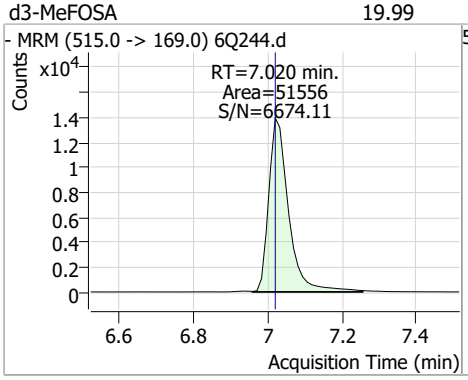


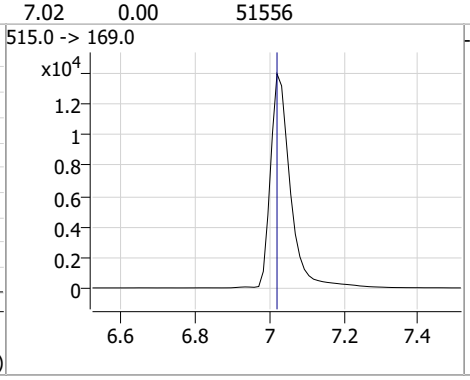


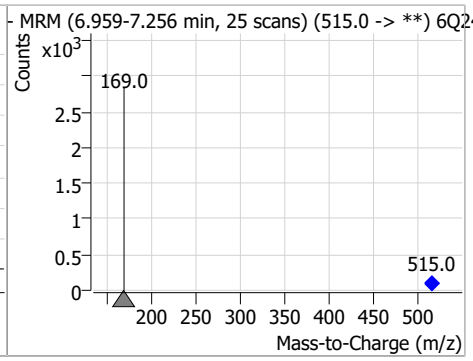


Perfluorinated Compounds by LC/MS/MS

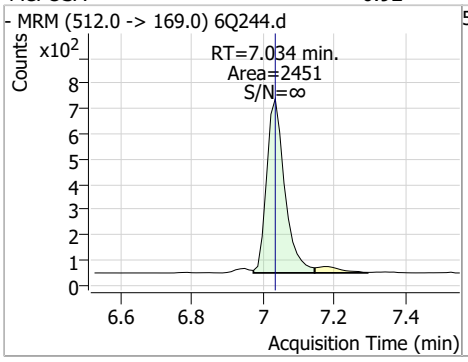
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.99	7.02	0.00	51556				

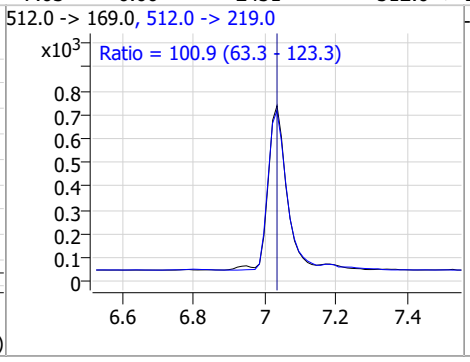


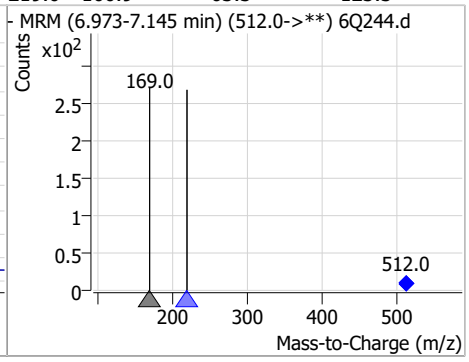




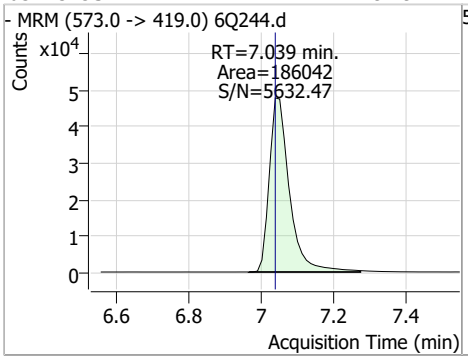
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.92	7.03	0.00	2451	512.0 -> 219.0	100.9	63.3	123.3

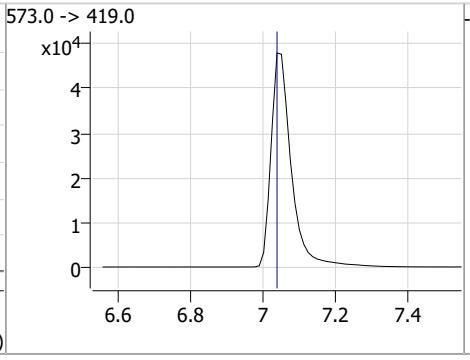


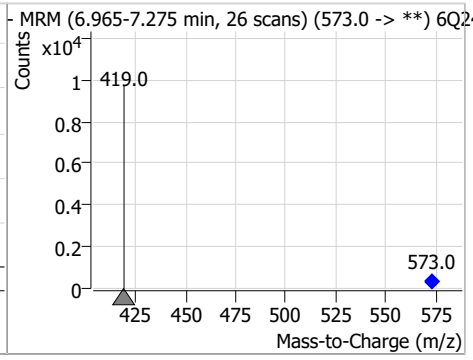




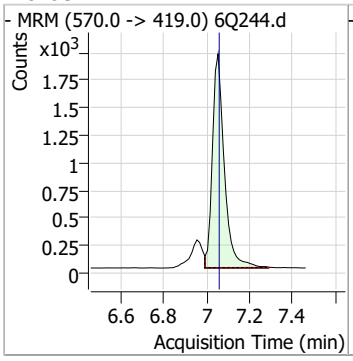
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.79	7.04	0.00	186042				

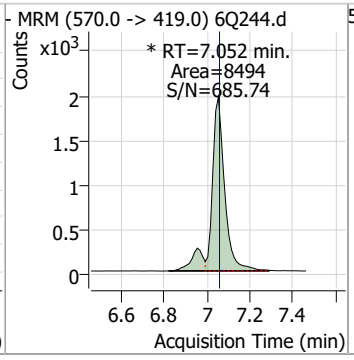


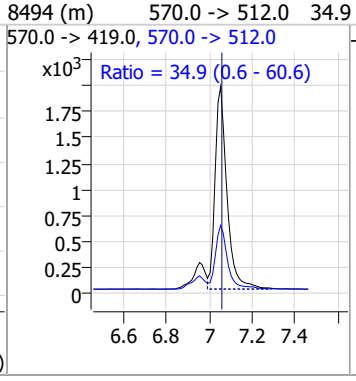


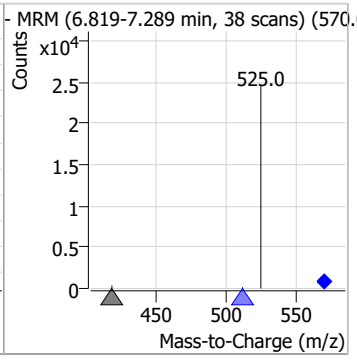


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.02	7.05	0.00	8494 (m)	570.0 -> 512.0	34.9	0.6	60.6



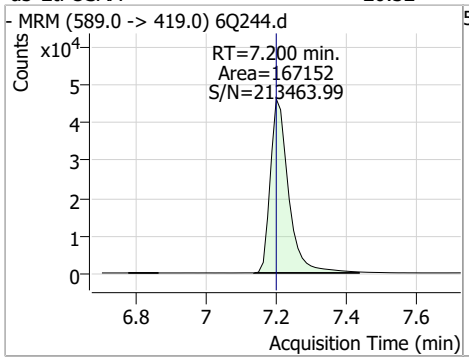


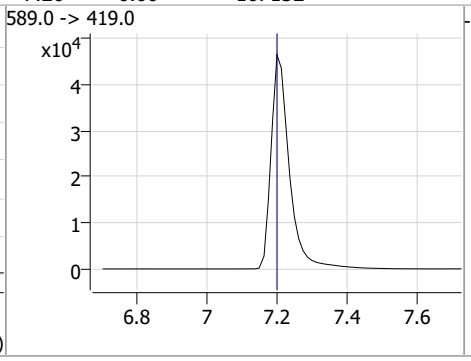


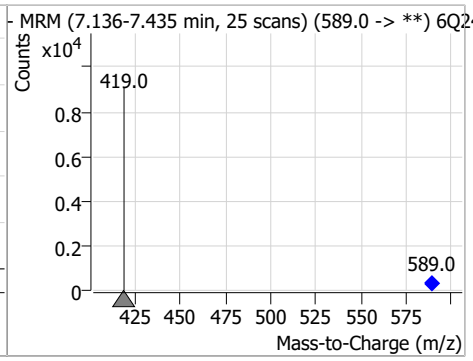


Perfluorinated Compounds by LC/MS/MS

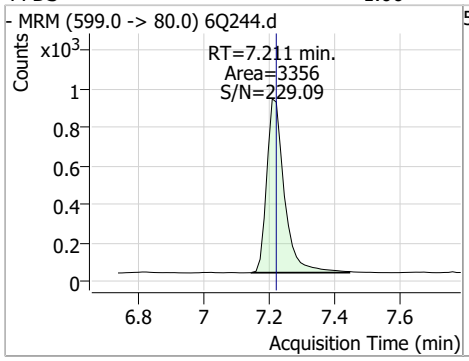
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.32	7.20	0.00	167152				

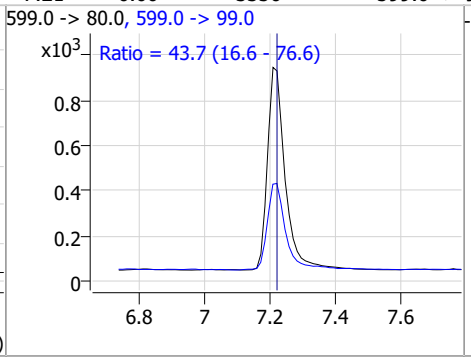


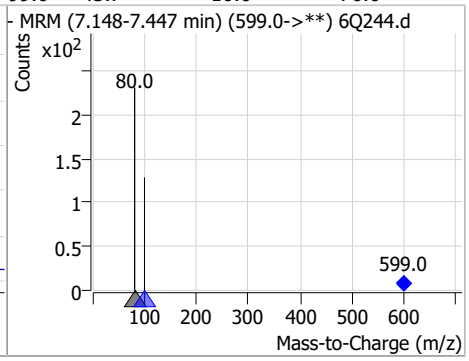




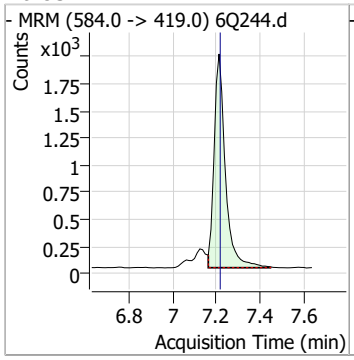
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.06	7.21	0.00	3356	599.0 -> 99.0	43.7	16.6	76.6

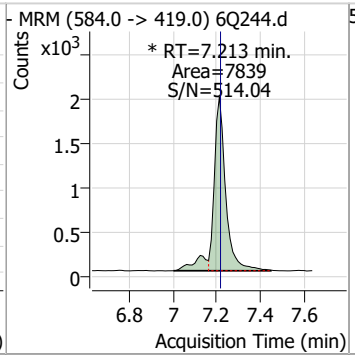


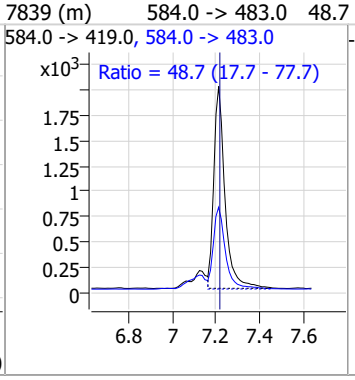


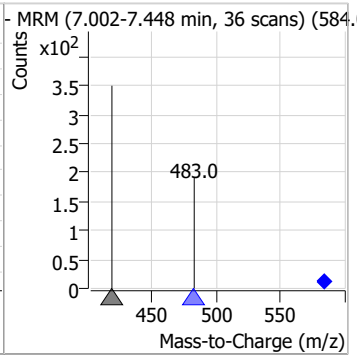


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.98	7.21	0.00	7839 (m)	584.0 -> 483.0	48.7	17.7	77.7

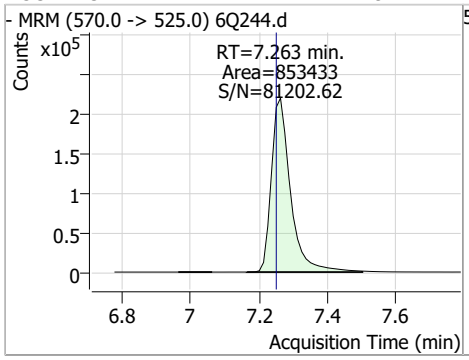


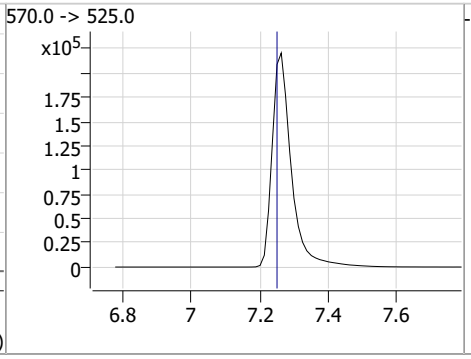


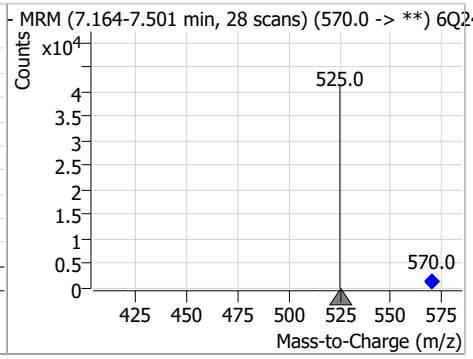




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.72	7.26	0.01	853433				

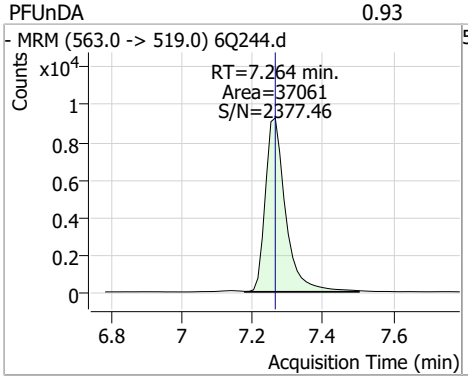


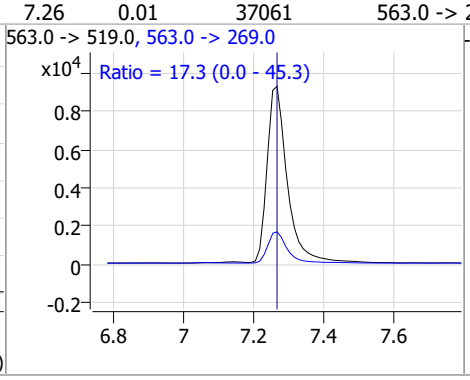


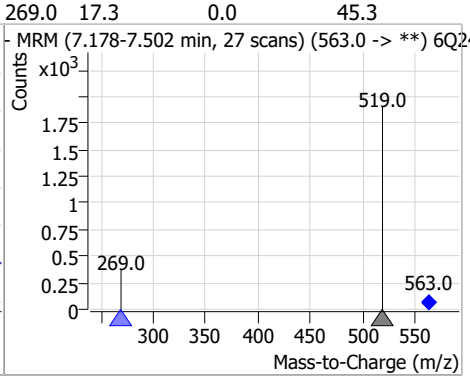


Perfluorinated Compounds by LC/MS/MS

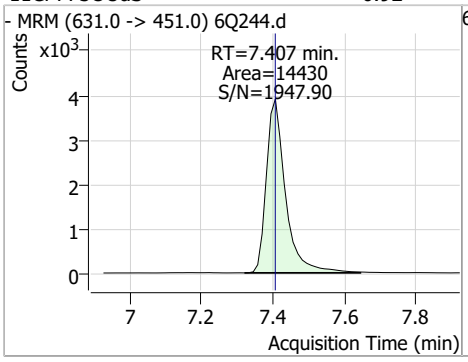
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.93	7.26	0.01	37061	563.0 -> 269.0	17.3	0.0	45.3

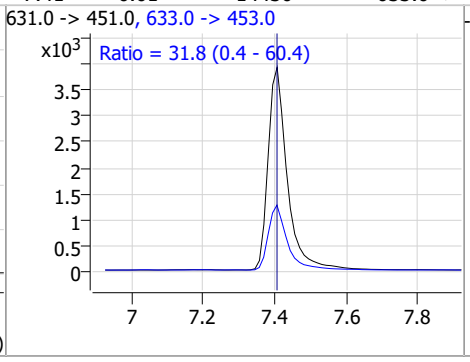


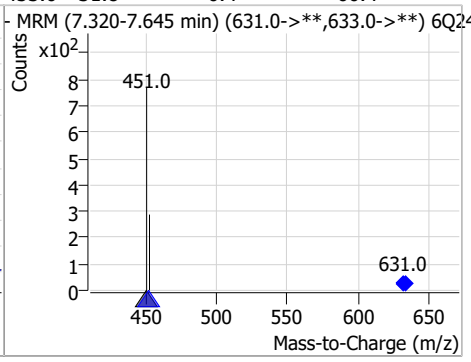




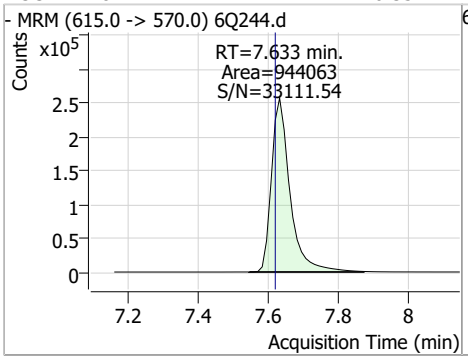
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	7.41	0.01	14430	633.0 -> 453.0	31.8	0.4	60.4

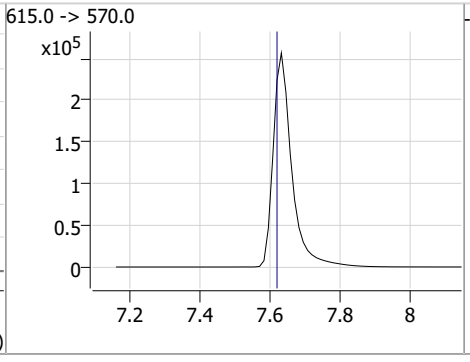


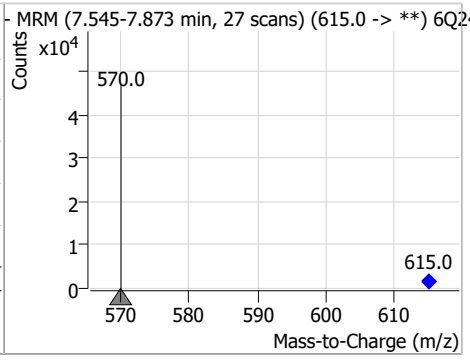




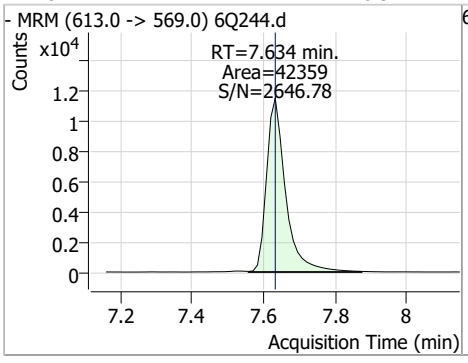
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.35	7.63	0.01	944063				

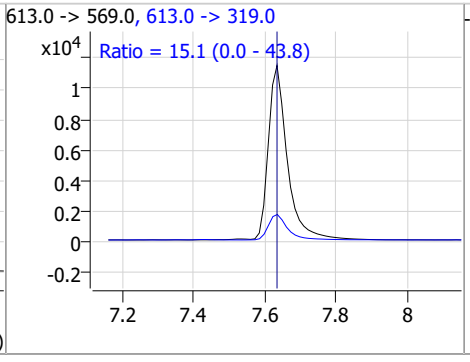


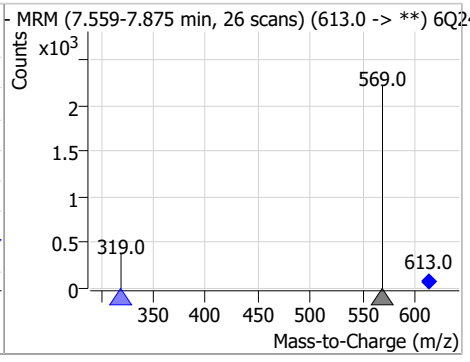




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.97	7.63	0.01	42359	613.0 -> 319.0	15.1	0.0	43.8

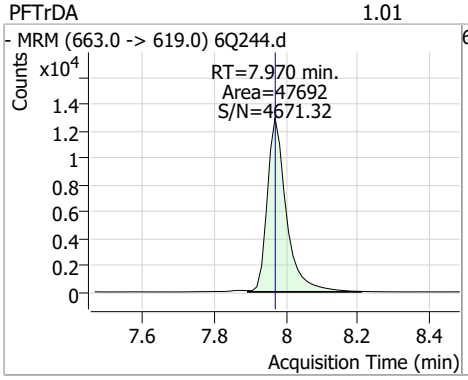


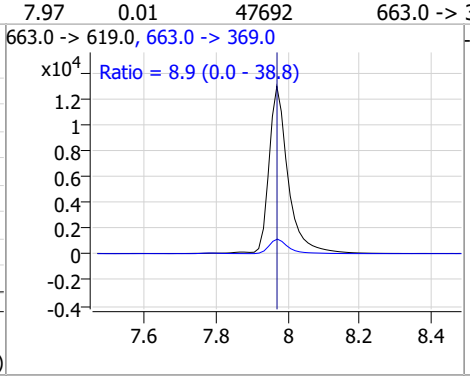


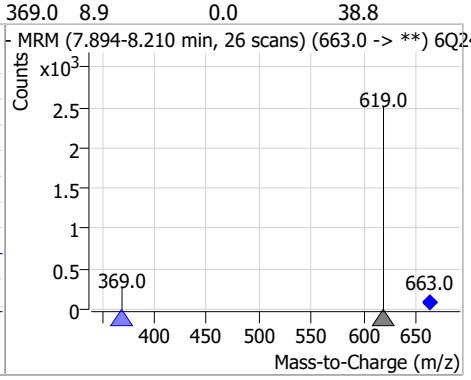


Perfluorinated Compounds by LC/MS/MS

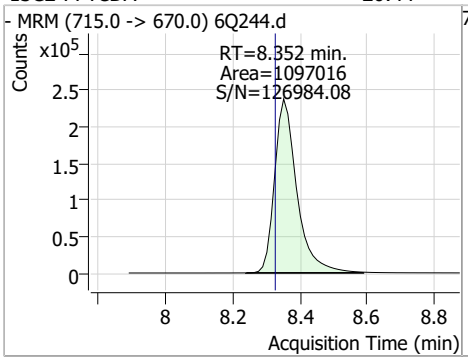
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.01	7.97	0.01	47692	663.0 -> 369.0	8.9	0.0	38.8

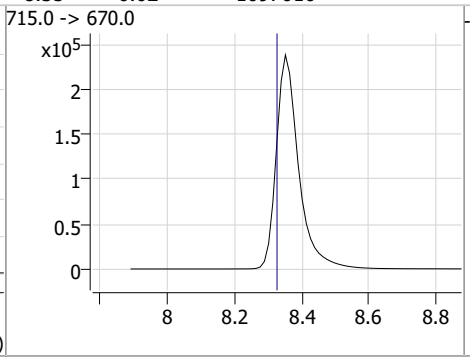


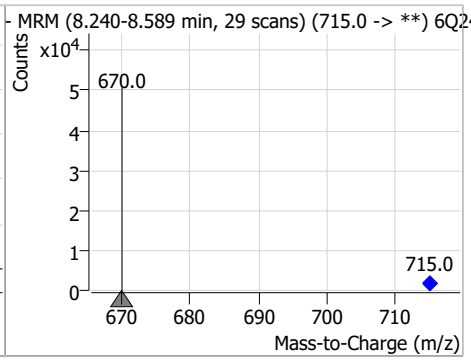




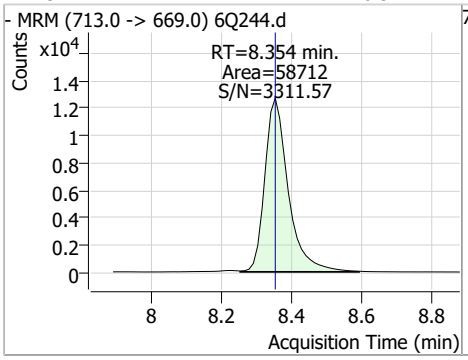
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.44	8.35	0.02	1097016				

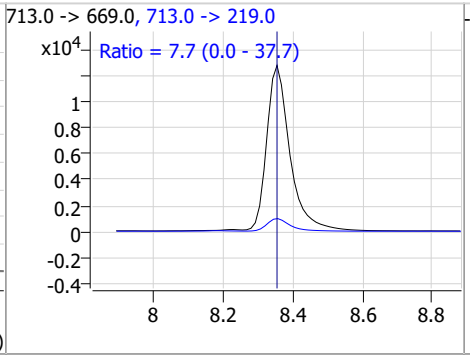


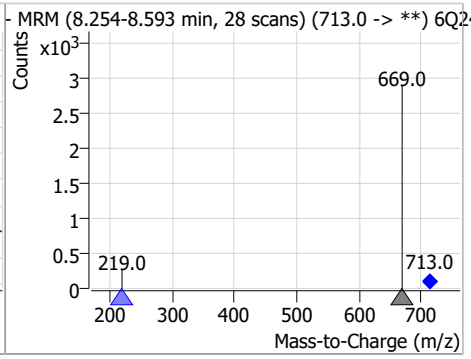




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.97	8.35	0.02	58712	713.0 -> 219.0	7.7	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q244.D
Injection Time: 05/19/22 11:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.16	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.31	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q245.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 11:22:56 AM
Sample Name : ic6-2
Vial : P1-A4
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

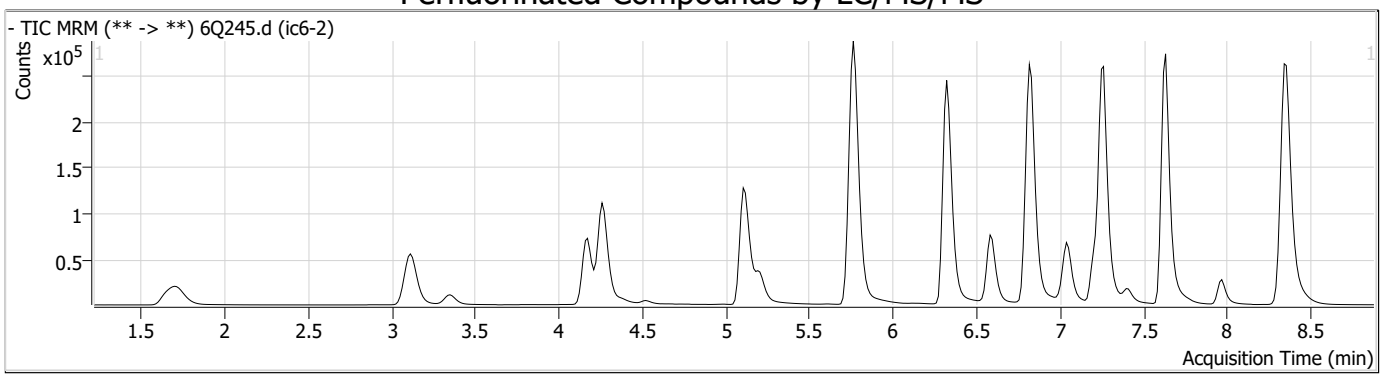
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	164836	20.00	µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	283008	20.00	µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	420726	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	456806	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	768410	20.00	µg/L	0.000
M9-PFNA	6.329	472.0 -> 427.0	877988	20.00	µg/L	0.000
M6-PFDA	6.821	519.0 -> 474.0	719076	20.00	µg/L	0.012
M7-PFUnDA	7.263	570.0 -> 525.0	884760	20.00	µg/L	0.012
M2-PFDoDA	7.633	615.0 -> 570.0	918612	20.00	µg/L	0.012
M2-PFTeDA	8.339	715.0 -> 670.0	1111714	20.00	µg/L	0.012
M8-FOSA	6.588	506.0 -> 78.0	219863	20.00	µg/L	0.000
M3-PFBS	3.348	302.0 -> 99.0	36076	20.00	µg/L	0.000
M3-PFHxS	5.152	402.0 -> 99.0	34076	20.00	µg/L	0.012
M8-PFOS	6.312	507.0 -> 99.0	42953	20.00	µg/L	0.000
M2-4:2FTS	4.172	329.0 -> 309.0	277497	20.00	µg/L	0.012
M2-6:2FTS	5.753	429.0 -> 409.0	336896	20.00	µg/L	0.012
M2-8:2FTS	6.832	529.0 -> 509.0	236763	20.00	µg/L	0.000
M3-MeFOSAA	7.039	573.0 -> 419.0	181784	20.00	µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	11608	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	53478	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	167343	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.172	329.0 -> 309.0	277497	18.87	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	5.753	429.0 -> 409.0	336896	19.78	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-8:2FTS	6.832	529.0 -> 509.0	236763	19.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-PFDoDA	7.633	615.0 -> 570.0	918612	19.80	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-PFTeDA	8.339	715.0 -> 670.0	1111714	20.72	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-PFBS	3.348	302.0 -> 99.0	36076	20.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	5.152	402.0 -> 99.0	34076	20.74	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C4-PFBA	1.699	217.0 -> 172.0	164836	20.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C4-PFHpA	5.110	367.0 -> 322.0	456806	20.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C5-PFHxA	4.264	318.0 -> 273.0	420726	20.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFPeA	3.118	268.0 -> 223.0	283008	20.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C6-PFDA	6.821	519.0 -> 474.0	719076	19.61	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

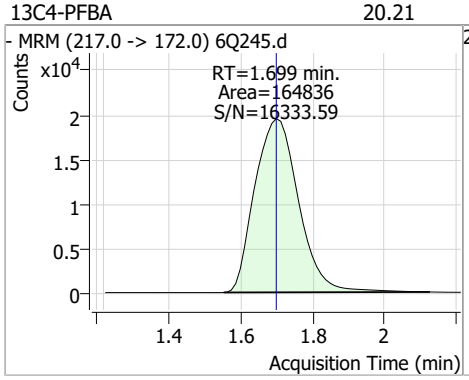
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C7-PFUnDA	7.263	570.0 -> 525.0	884760	20.44 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C8-FOSA	6.588	506.0 -> 78.0	219863	20.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C8-PFOA	5.770	421.0 -> 376.0	768410	20.62 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C8-PFOS	6.312	507.0 -> 99.0	42953	19.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C9-PFNA	6.329	472.0 -> 427.0	877988	20.29 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	7.039	573.0 -> 419.0	181784	19.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	11644	19.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
d3-MeFOSA	7.020	515.0 -> 169.0	53478	20.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
d5-EtFOSAA	7.200	589.0 -> 419.0	167448	20.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
Target Compounds						**QValue**
4:2FTS	4.175	327.0 -> 307.0	31736	2.10 µg/L		97
6:2FTS	5.755	427.0 -> 407.0	34084	2.00 µg/L		97
8:2FTS	6.833	527.0 -> 507.0	25245	2.15 µg/L		97
EtFOSAA	7.213	584.0 -> 419.0	14588	1.81 µg/L	m	89
FOSA	6.590	498.0 -> 78.0	19853	1.84 µg/L		100
MeFOSAA	7.052	570.0 -> 419.0	16720	2.06 µg/L	m	93
PFBA	1.705	213.0 -> 169.0	7187	1.92 µg/L		100
PFBS	3.353	299.0 -> 80.0	10896	1.94 µg/L		99
PFDA	6.822	513.0 -> 469.0	88117	1.93 µg/L		98
PFDoDA	7.634	613.0 -> 569.0	87584	2.07 µg/L		100
PFDS	7.211	599.0 -> 80.0	6404	1.95 µg/L		97
PFHpA	5.112	363.0 -> 319.0	60875	2.01 µg/L		99
PFHpS	5.777	449.0 -> 80.0	7760	1.98 µg/L		97
PFHxA	4.265	313.0 -> 269.0	44818	1.97 µg/L		100
PFHxS	5.155	399.0 -> 80.0	8609	1.90 µg/L	m	97
PFNA	6.330	463.0 -> 419.0	71483	1.91 µg/L		99
PFNS	6.794	549.0 -> 80.0	8313	1.96 µg/L		98
PFOA	5.771	413.0 -> 369.0	75151	1.93 µg/L		100
PFOS	6.314	499.0 -> 80.0	7931	1.96 µg/L	m	83
PFPeA	3.121	263.0 -> 219.0	23804	1.92 µg/L		100
PFPeS	4.370	349.0 -> 80.0	9041	1.93 µg/L		100
PFTeDA	8.342	713.0 -> 669.0	116472	1.91 µg/L		100
PFTrDA	7.970	663.0 -> 619.0	93032	2.03 µg/L		99
PFUnDA	7.252	563.0 -> 519.0	77095	1.86 µg/L		96
11Cl-PF3OUdS	7.407	631.0 -> 451.0	30506	2.00 µg/L		98
9Cl-PF3ONS	6.570	531.0 -> 351.0	39255	1.84 µg/L		93
ADONA	5.207	377.0 -> 251.0	91804	1.86 µg/L		99
HFPO-DA	4.530	285.0 -> 169.0	1309	2.40 µg/L		100
MeFOSA	7.034	512.0 -> 169.0	5101	1.84 µg/L		91

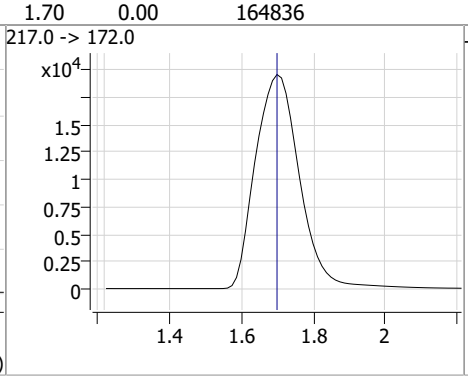
 # = Qualifier out of range, m = manually integrated, + = Area summed

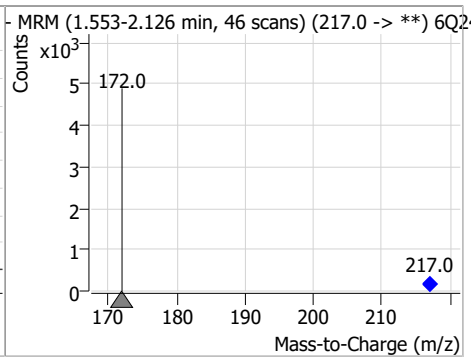
Perfluorinated Compounds by LC/MS/MS



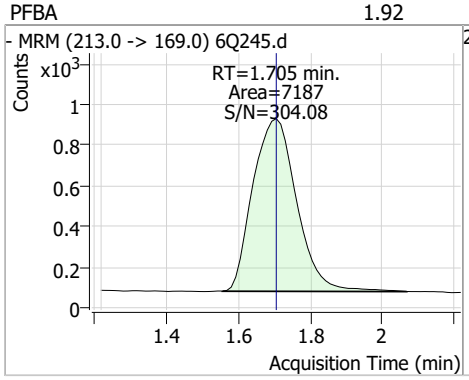
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.21	1.70	0.00	164836				

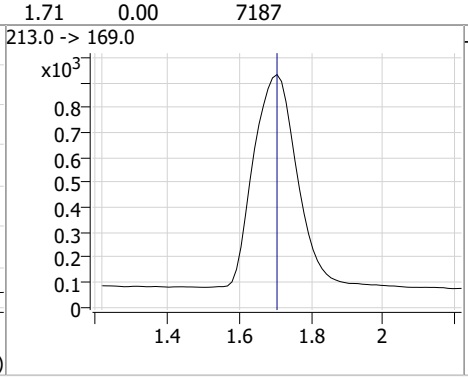


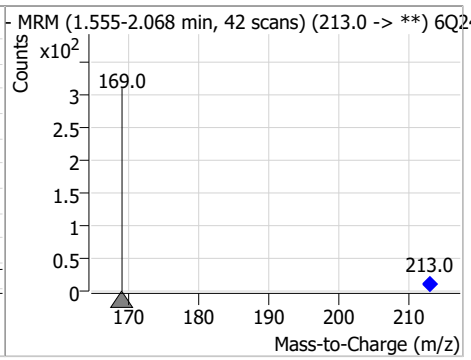




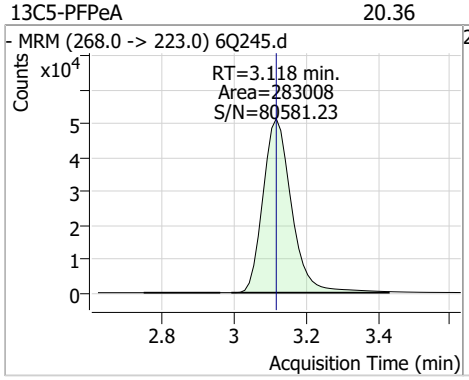
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.92	1.71	0.00	7187				

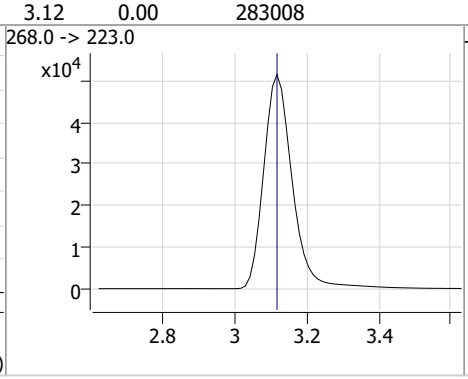


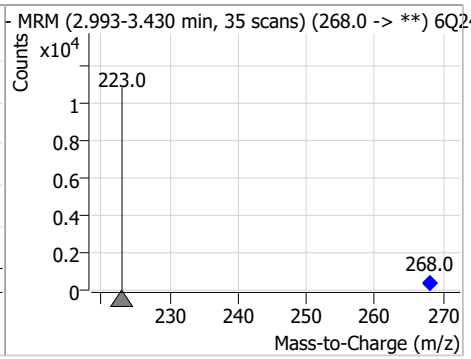




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.36	3.12	0.00	283008				

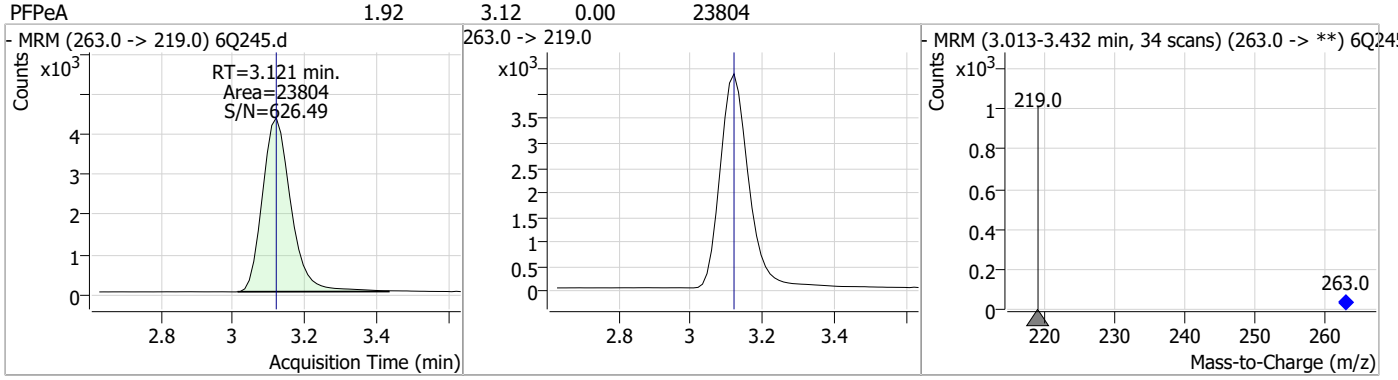




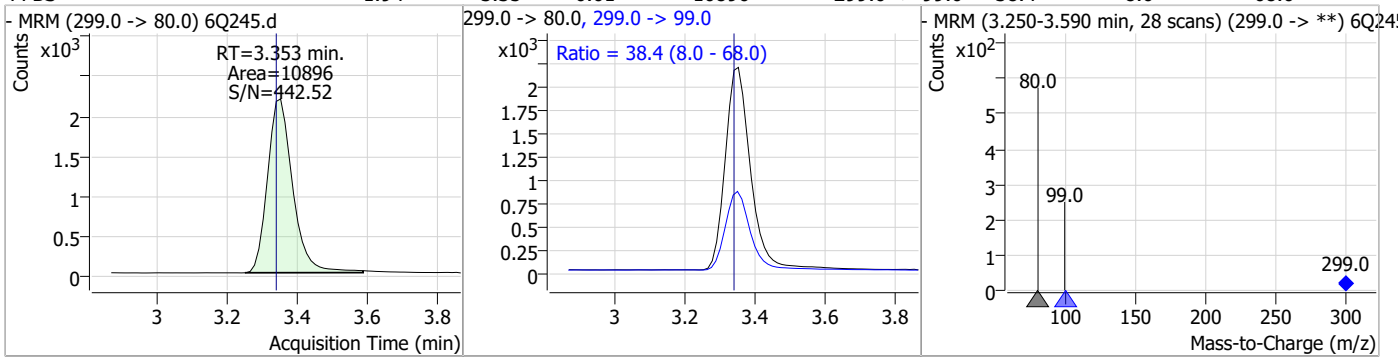


Perfluorinated Compounds by LC/MS/MS

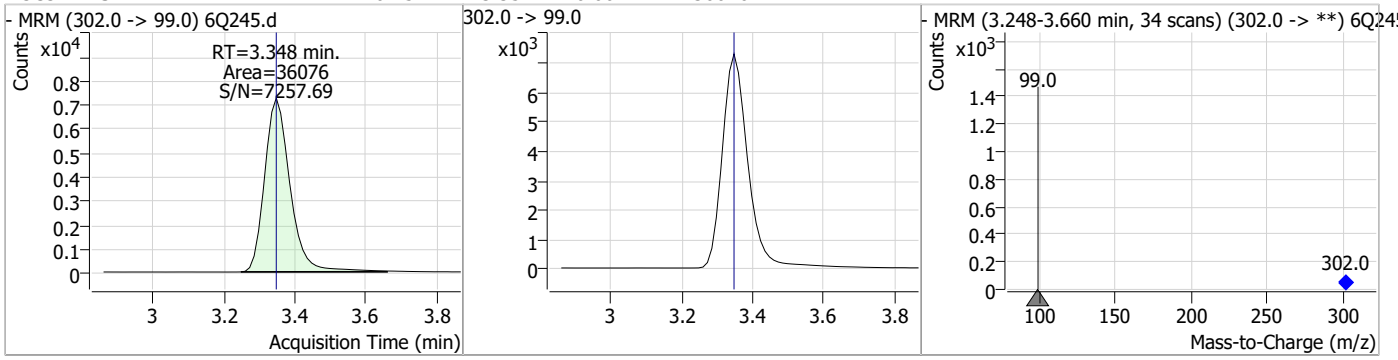
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.92	3.12	0.00	23804				



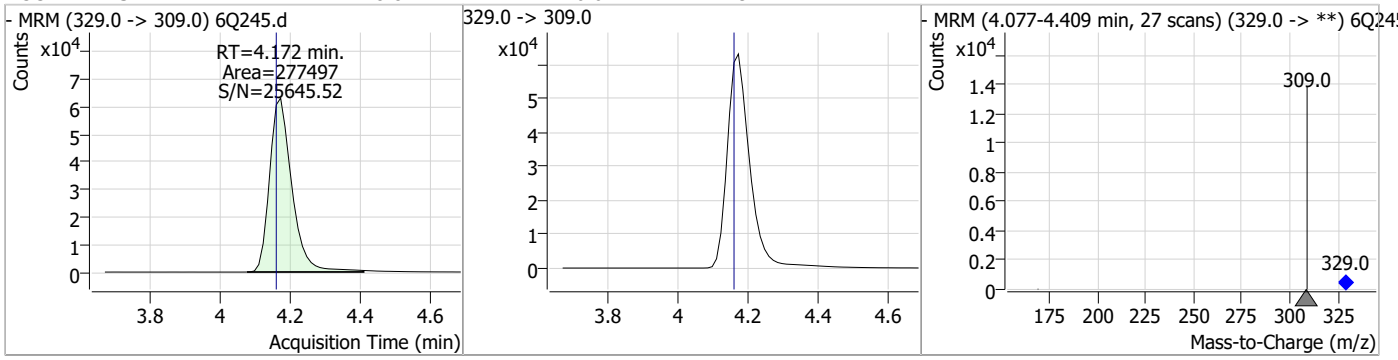
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.94	3.35	0.01	10896	299.0 -> 99.0	38.4	8.0	68.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.45	3.35	0.00	36076				

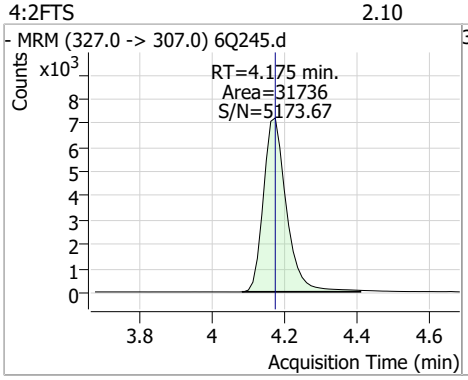


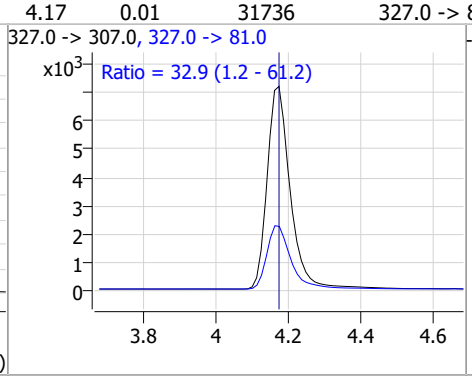
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.87	4.17	0.01	277497				

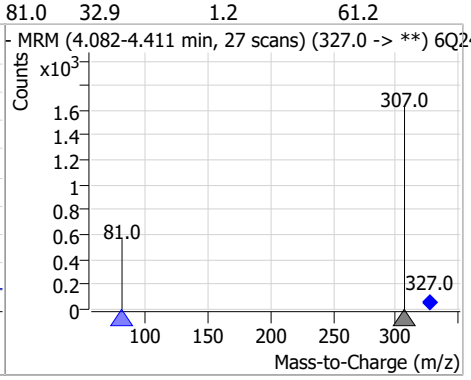


Perfluorinated Compounds by LC/MS/MS

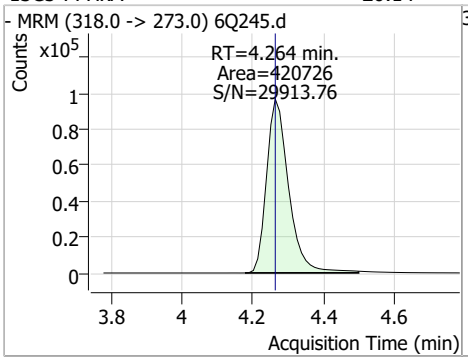
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.10	4.17	0.01	31736	327.0 -> 81.0	32.9	1.2	61.2

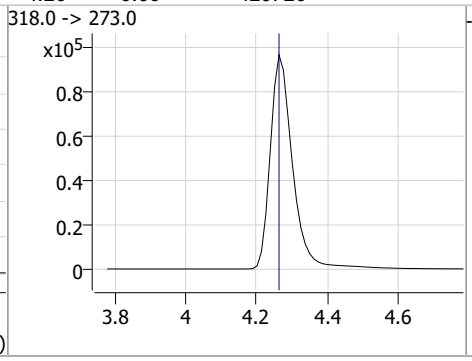


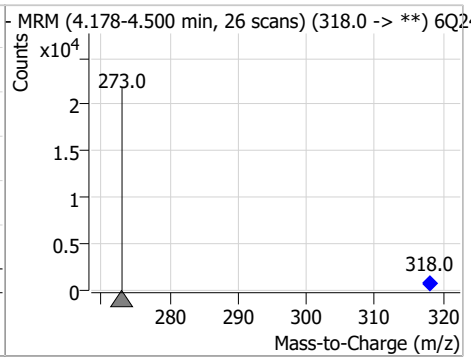




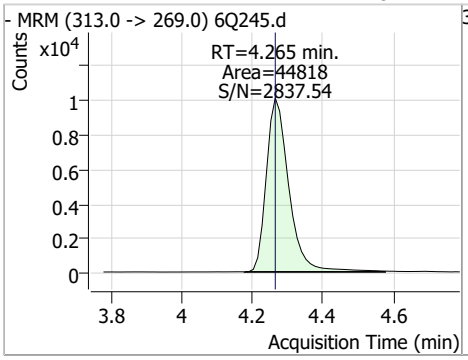
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.14	4.26	0.00	420726				

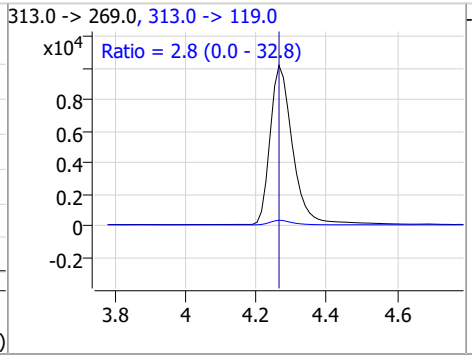


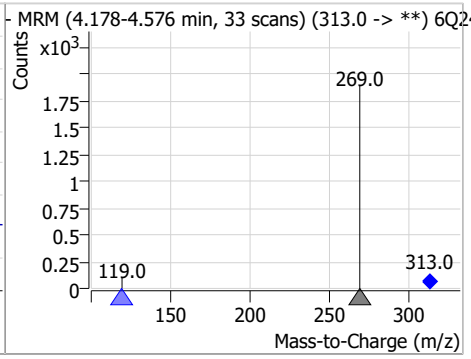




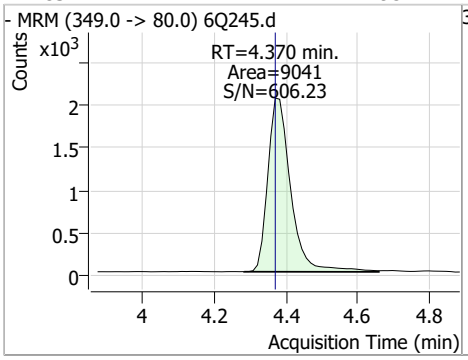
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.97	4.26	0.00	44818	313.0 -> 119.0	2.8	0.0	32.8

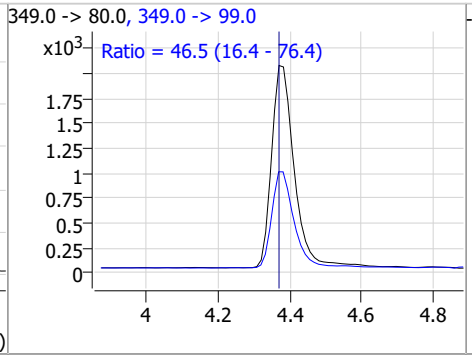


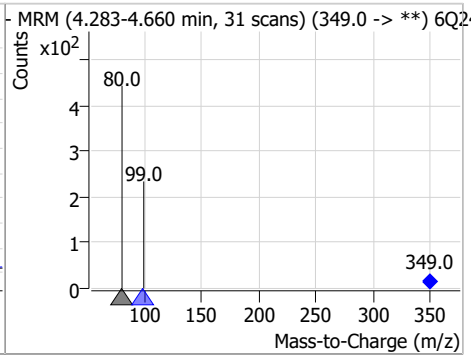




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.93	4.37	0.00	9041	349.0 -> 99.0	46.5	16.4	76.4

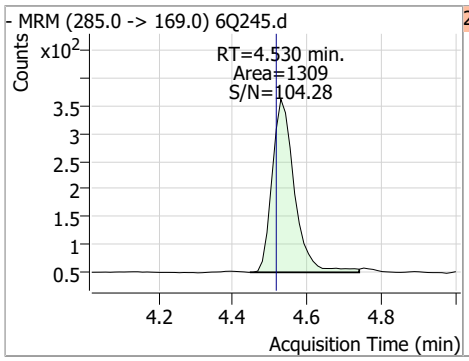


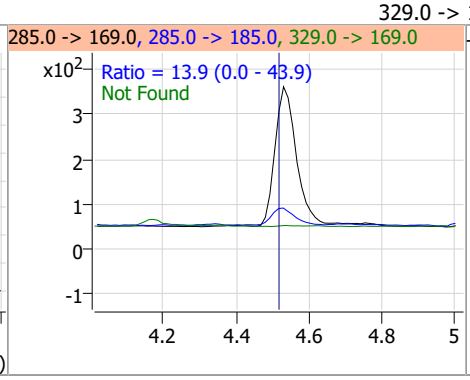


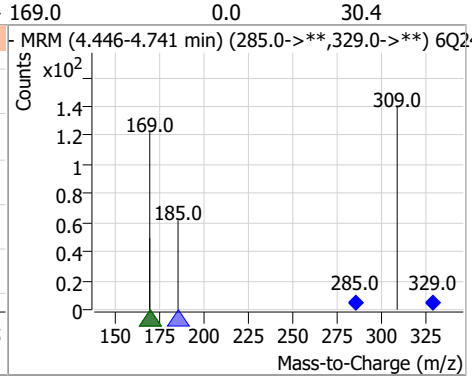


Perfluorinated Compounds by LC/MS/MS

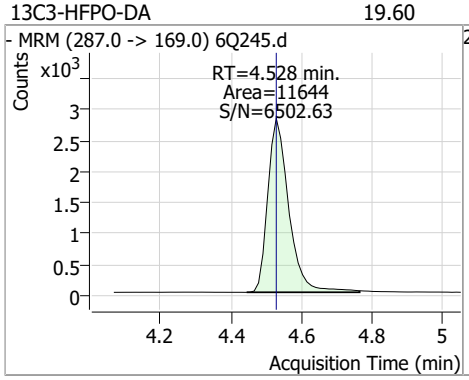
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.40	4.53	0.01	1309	285.0 -> 185.0	13.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

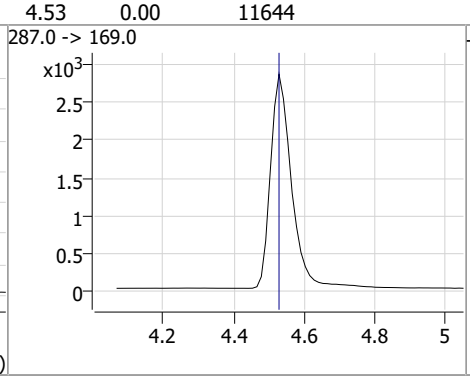


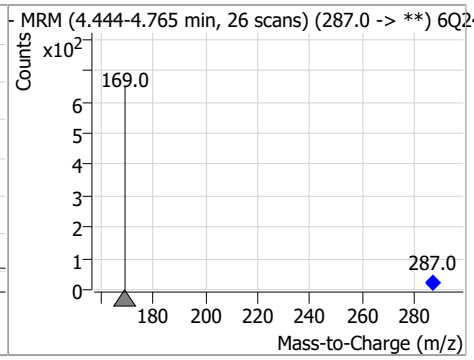




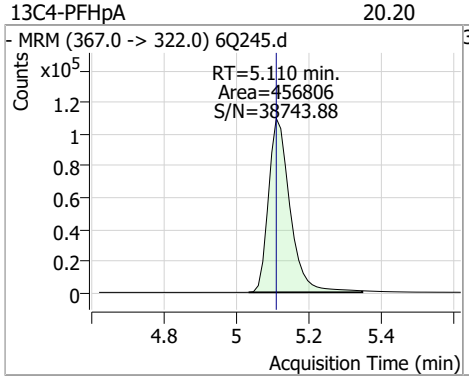
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.60	4.53	0.00	11644				

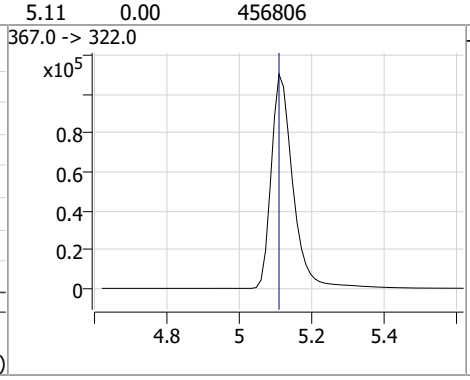


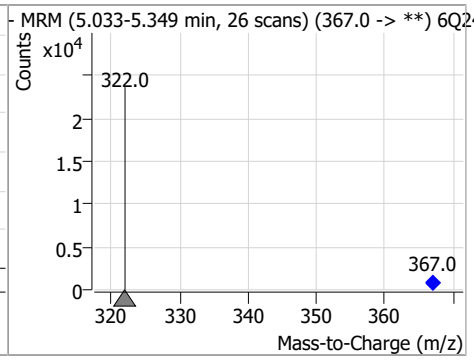




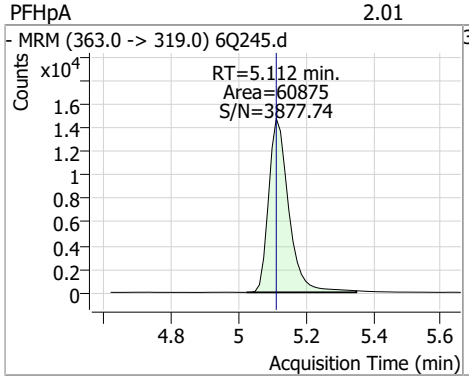
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.20	5.11	0.00	456806				

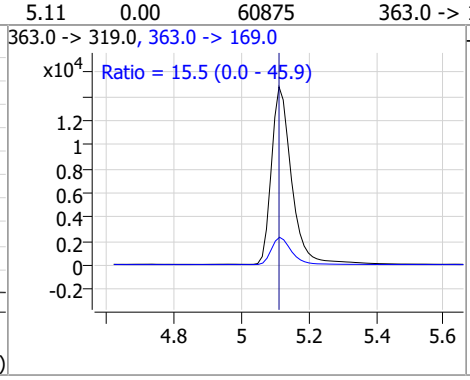


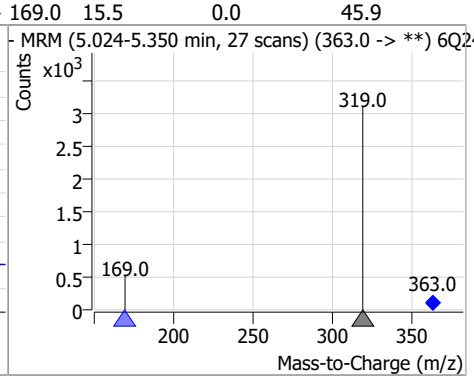




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.01	5.11	0.00	60875	363.0 -> 169.0	15.5	0.0	45.9

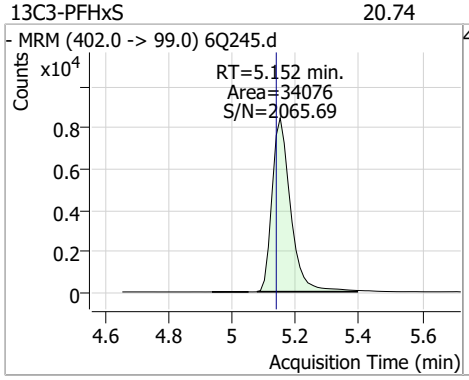


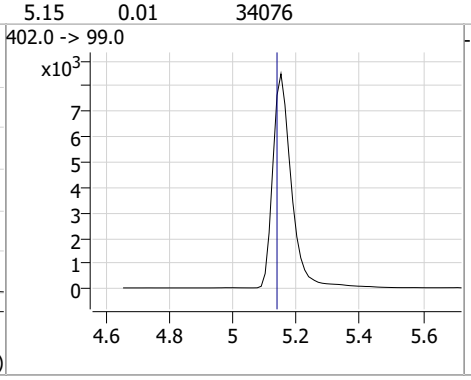


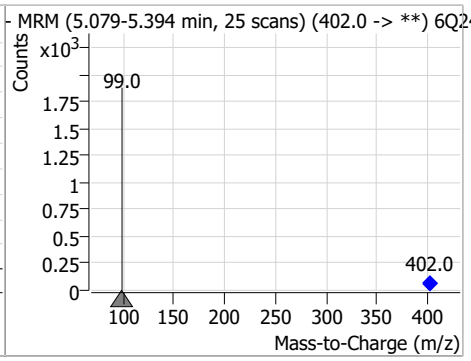


Perfluorinated Compounds by LC/MS/MS

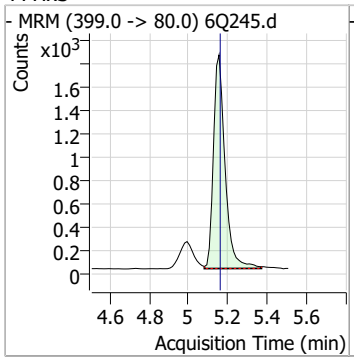
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.74	5.15	0.01	34076				

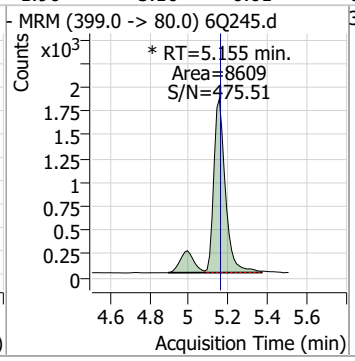


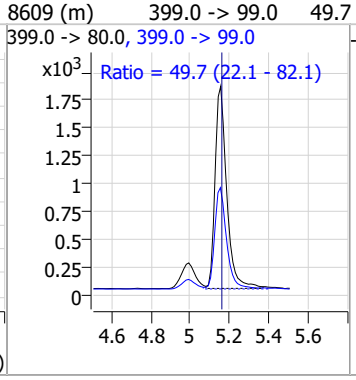


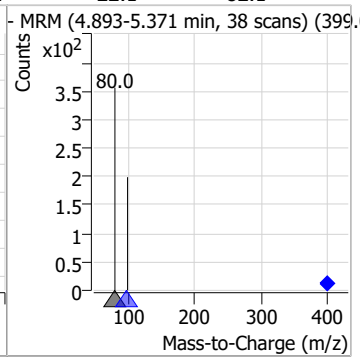


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.90	5.16	0.01	8609 (m)	399.0 -> 99.0	49.7	22.1	82.1

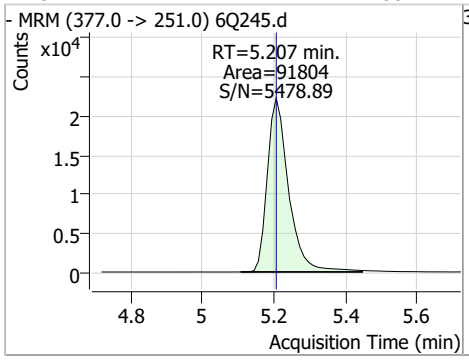


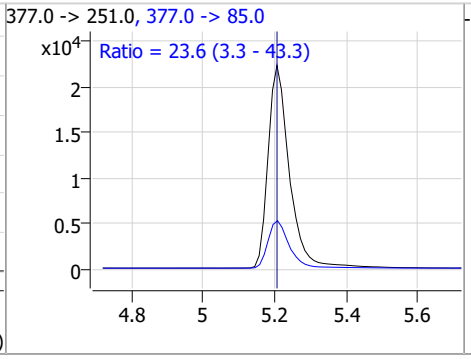


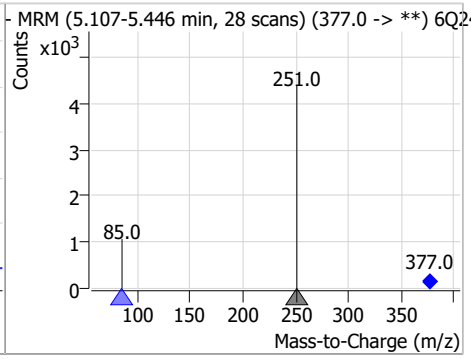




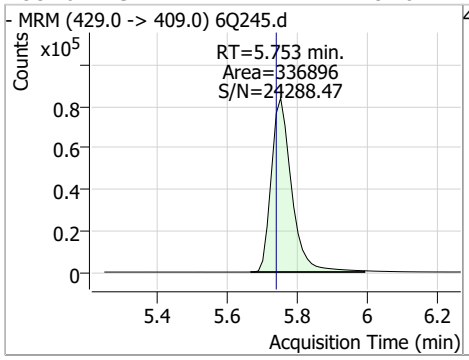
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.86	5.21	0.01	91804	377.0 -> 85.0	23.6	3.3	43.3

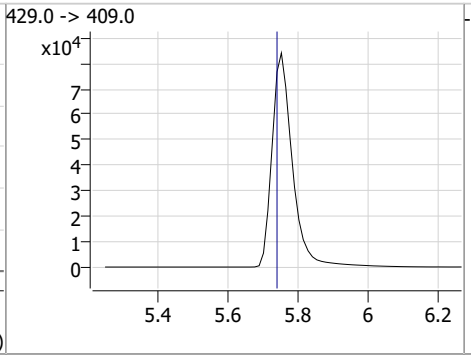


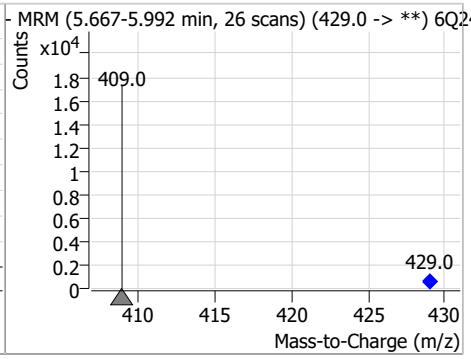




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.78	5.75	0.01	336896				

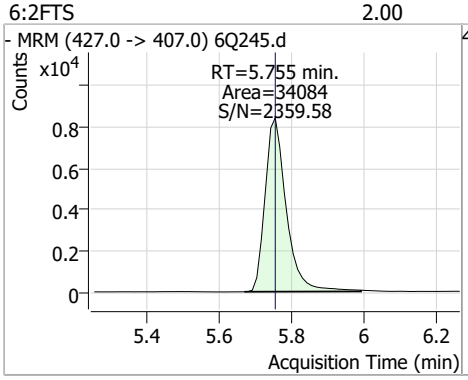


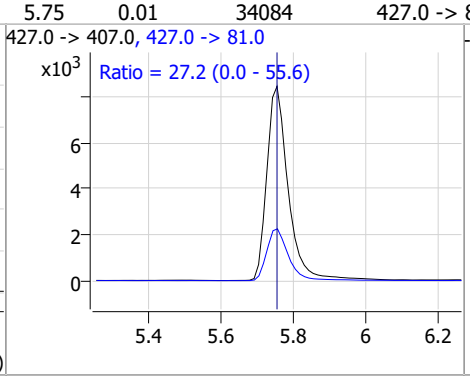


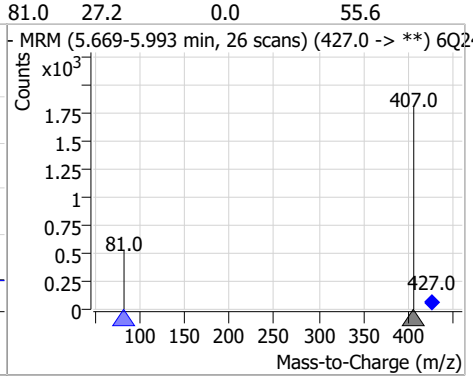


Perfluorinated Compounds by LC/MS/MS

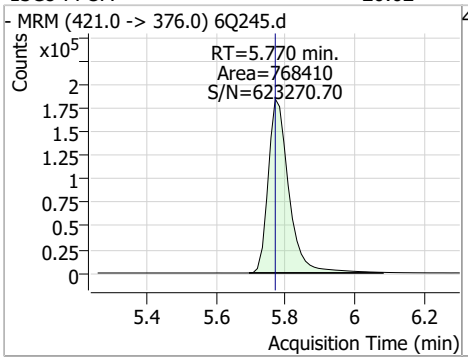
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.00	5.75	0.01	34084	427.0 -> 81.0	27.2	0.0	55.6

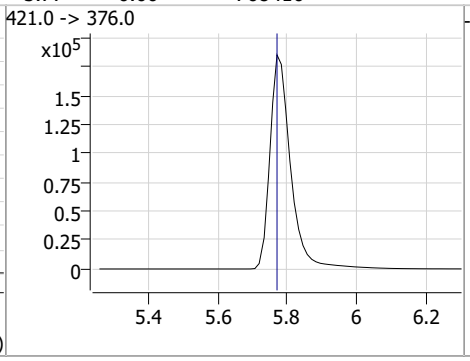


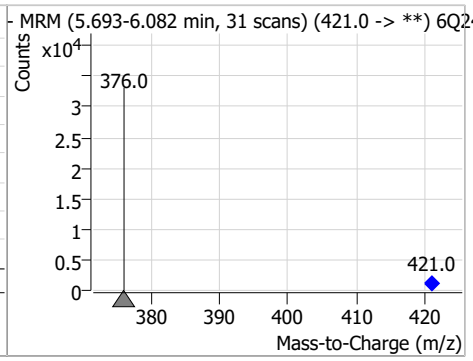




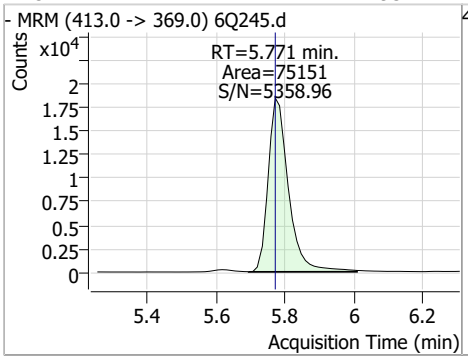
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.62	5.77	0.00	768410				

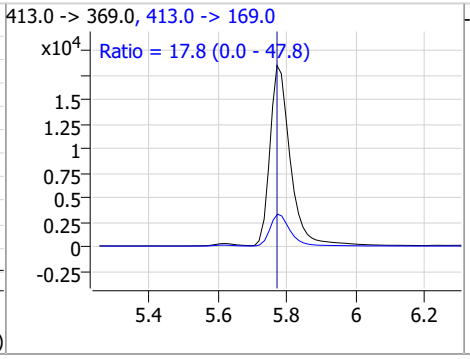


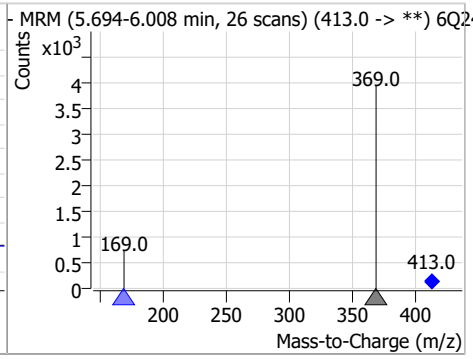




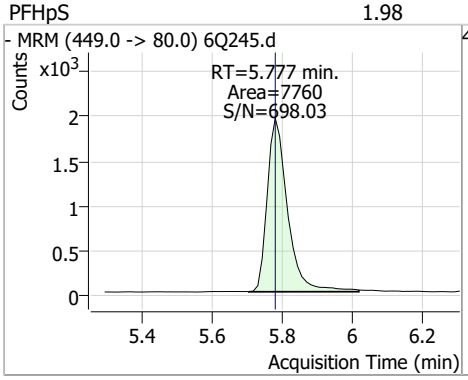
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.93	5.77	0.00	75151	413.0 -> 169.0	17.8	0.0	47.8

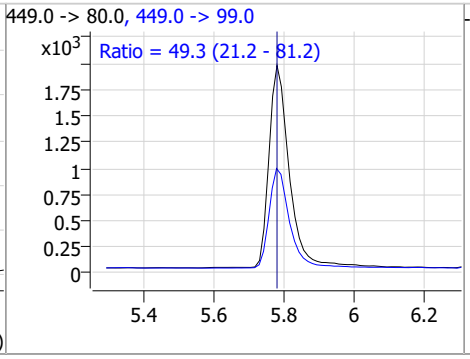


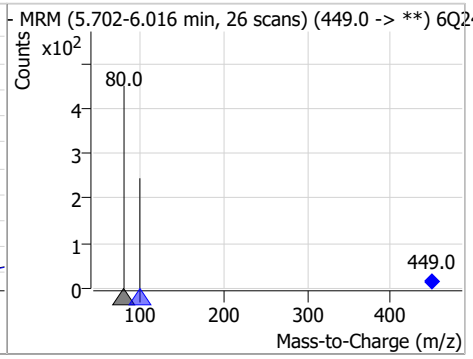




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.98	5.78	0.00	7760	449.0 -> 99.0	49.3	21.2	81.2

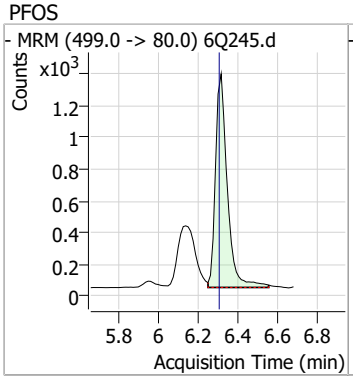


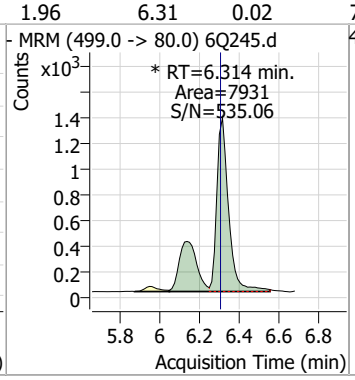


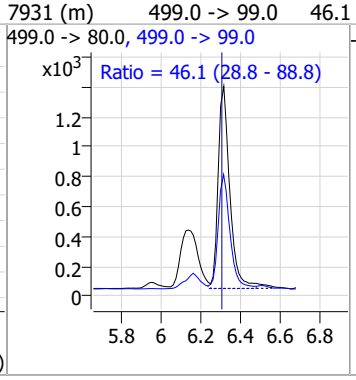


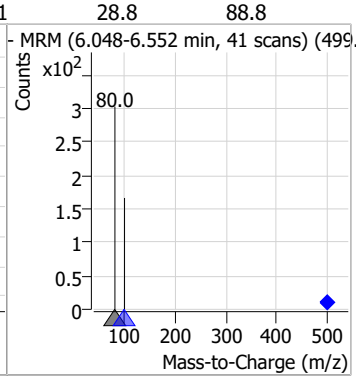
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.96	6.31	0.02	7931 (m)	499.0 -> 99.0	46.1	28.8	88.8

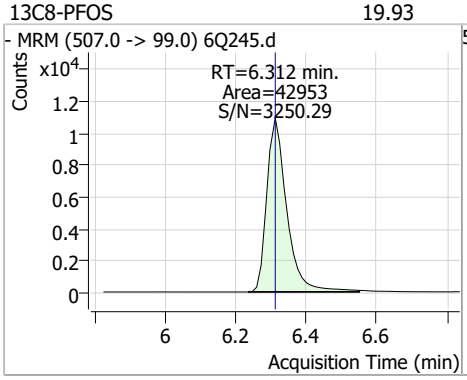


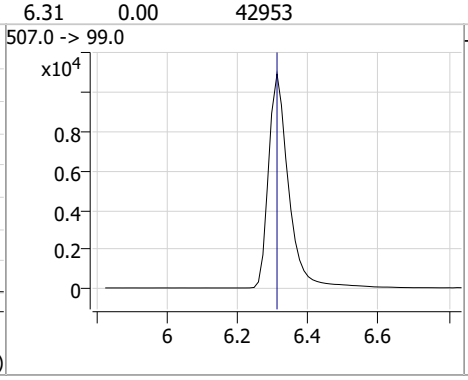


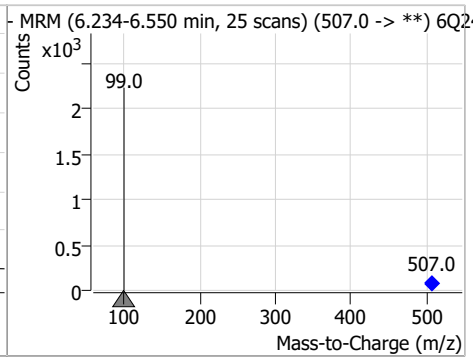




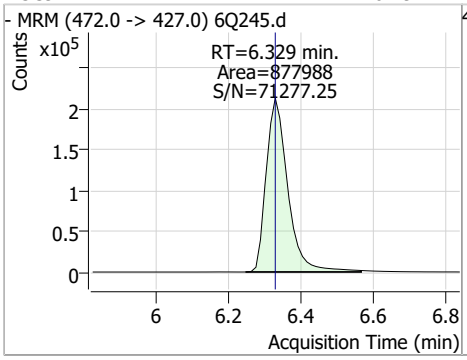
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.93	6.31	0.00	42953				

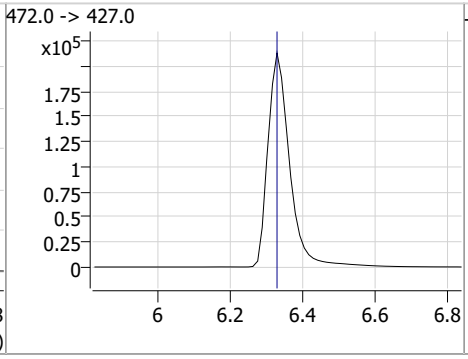


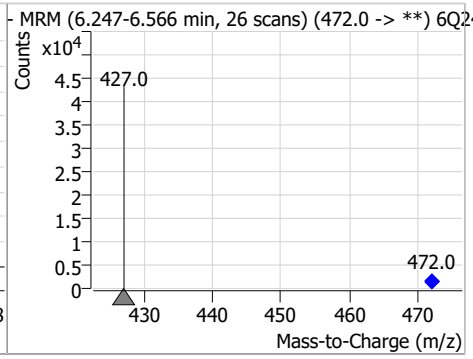




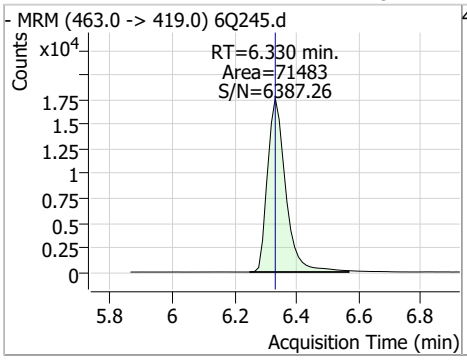
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.29	6.33	0.00	877988				

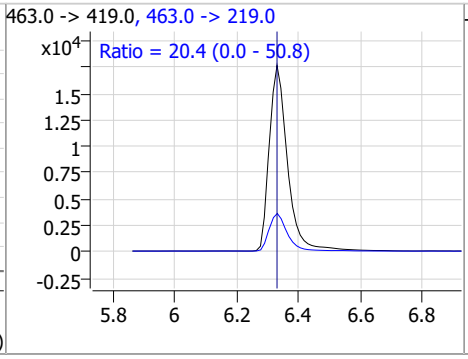


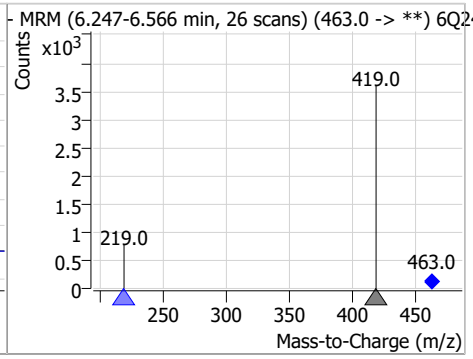




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.91	6.33	0.00	71483	463.0 -> 219.0	20.4	0.0	50.8

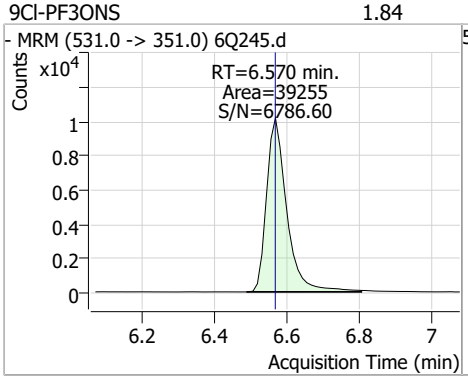


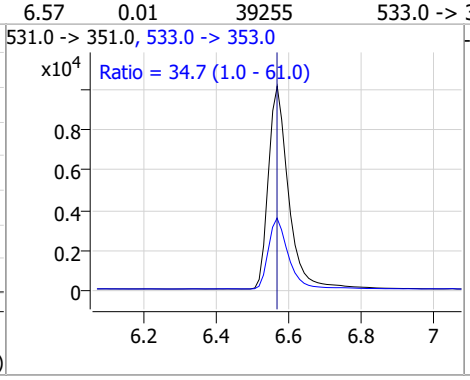


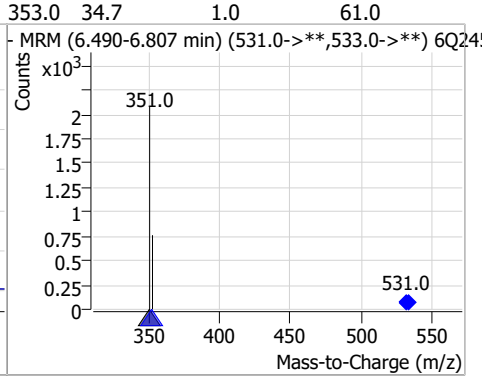


Perfluorinated Compounds by LC/MS/MS

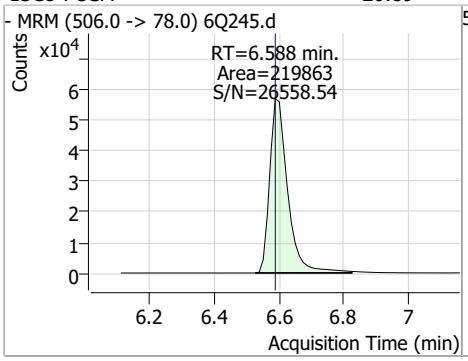
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.84	6.57	0.01	39255	533.0 -> 353.0	34.7	1.0	61.0

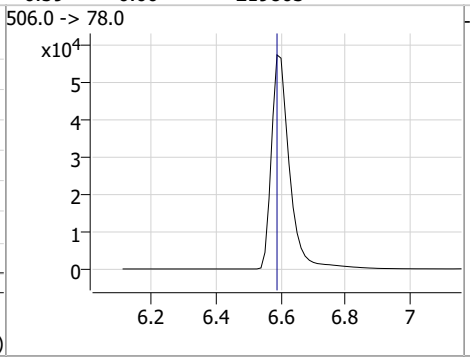


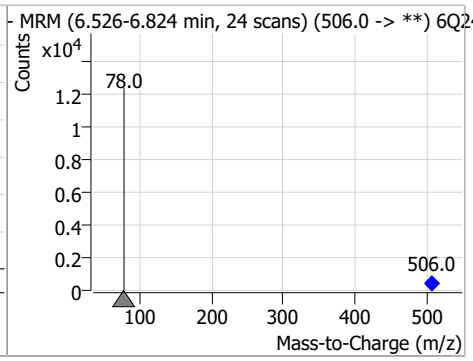




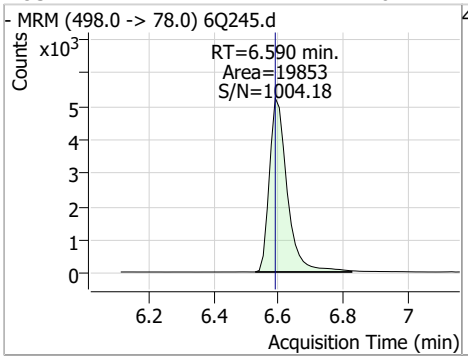
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.89	6.59	0.00	219863				

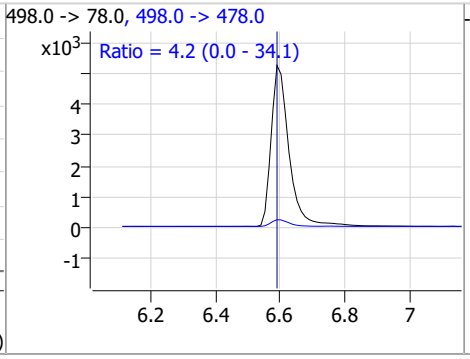


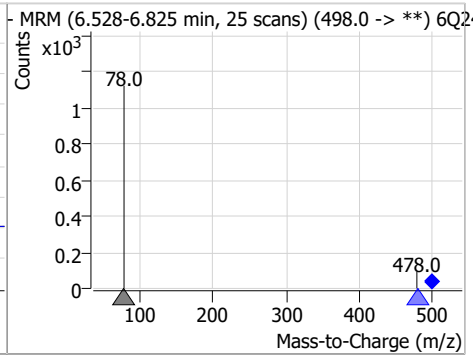




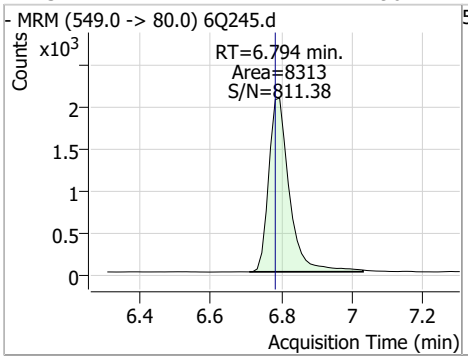
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.84	6.59	0.00	19853	498.0 -> 478.0	4.2	0.0	34.1

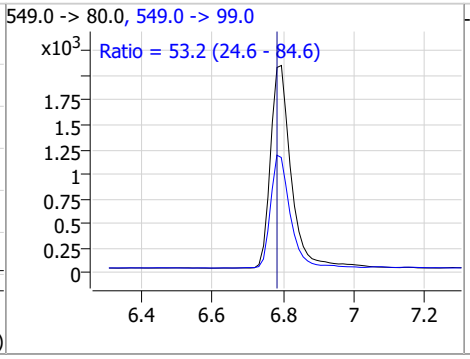


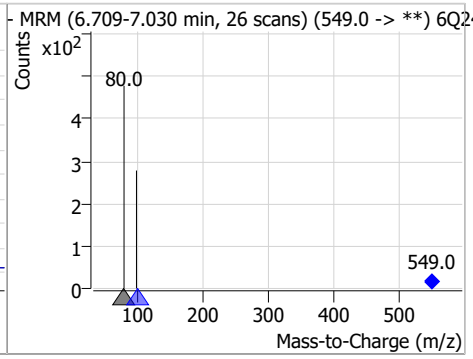




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.96	6.79	0.01	8313	549.0 -> 99.0	53.2	24.6	84.6

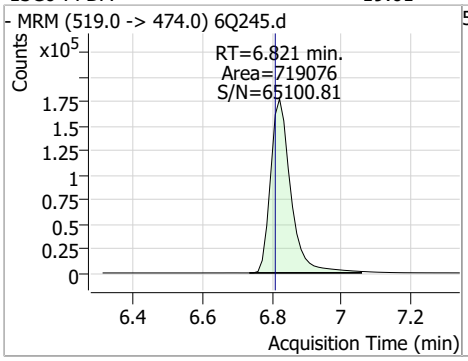


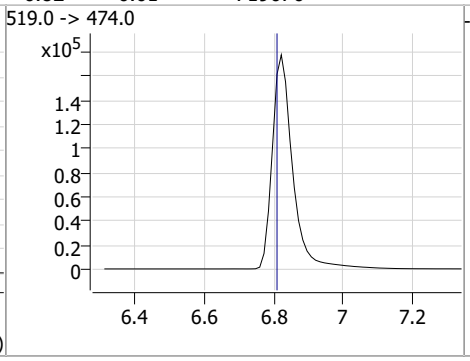


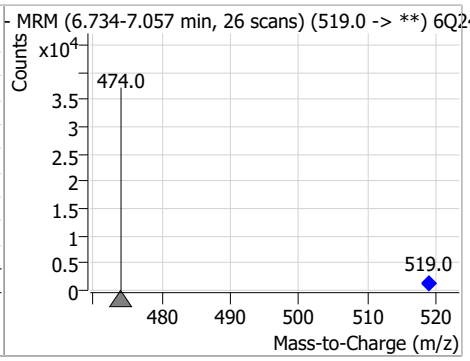


Perfluorinated Compounds by LC/MS/MS

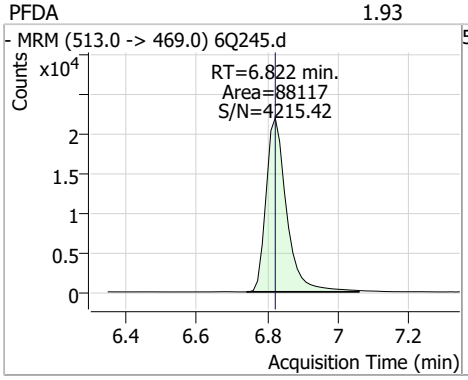
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.61	6.82	0.01	719076				

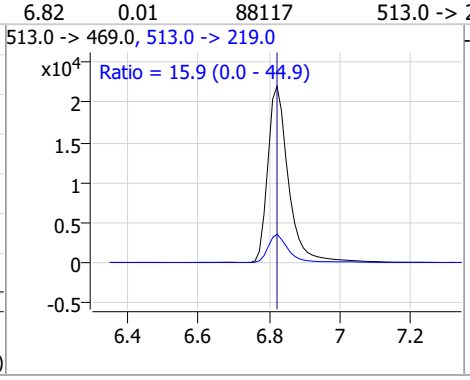


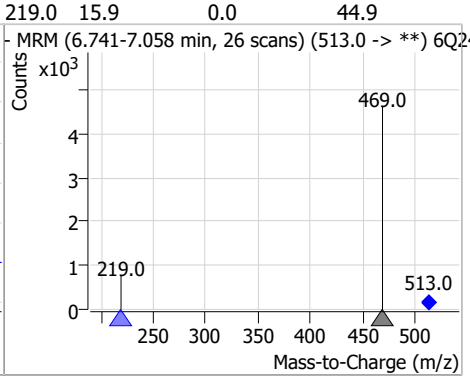




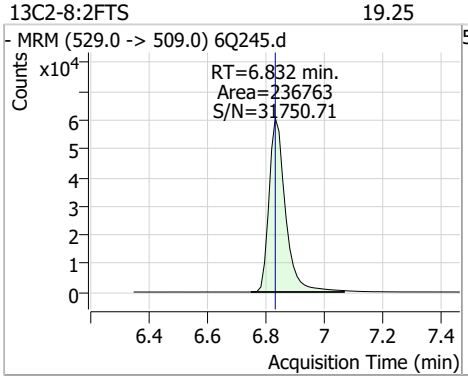
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.93	6.82	0.01	88117	513.0 -> 219.0	15.9	0.0	44.9

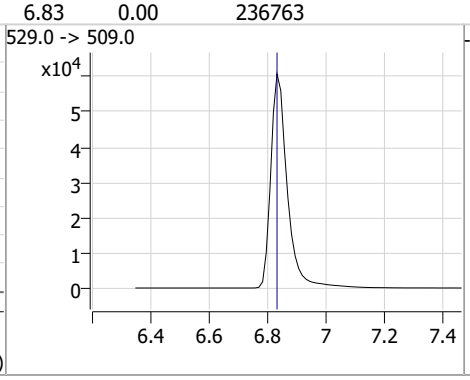


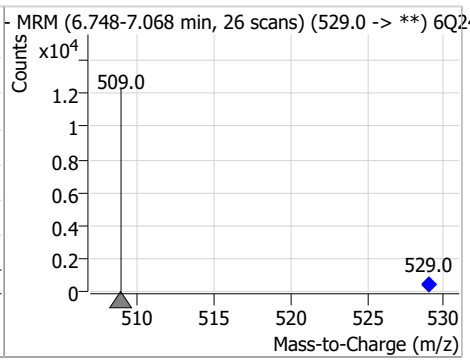




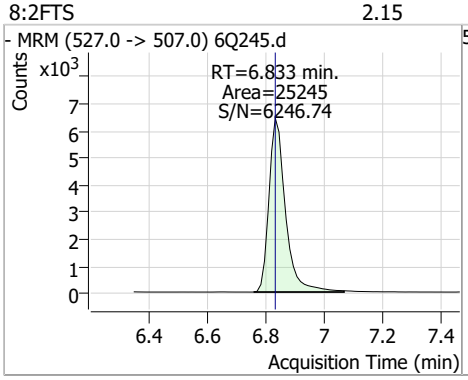
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.25	6.83	0.00	236763				

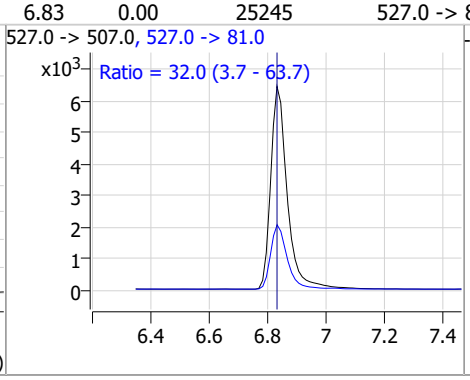


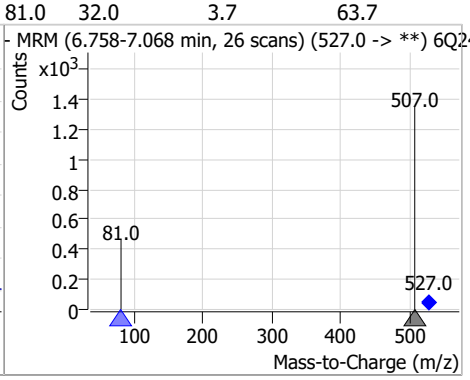




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.15	6.83	0.00	25245	527.0 -> 81.0	32.0	3.7	63.7

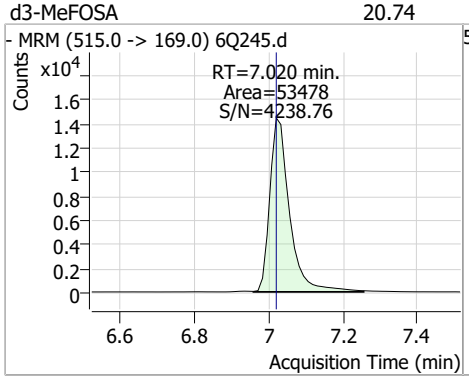


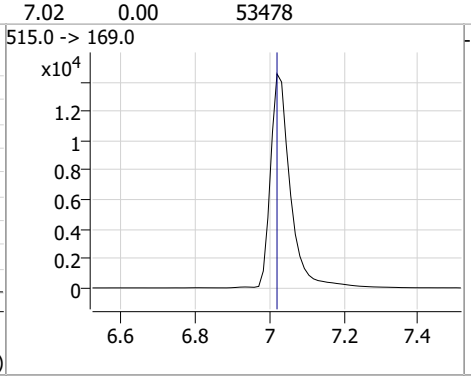


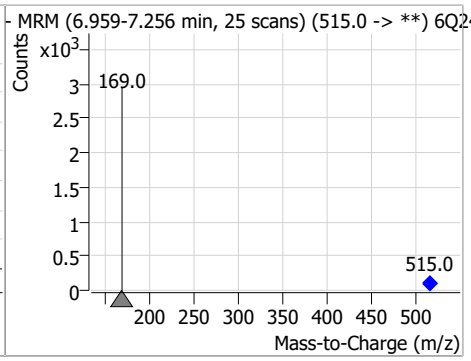


Perfluorinated Compounds by LC/MS/MS

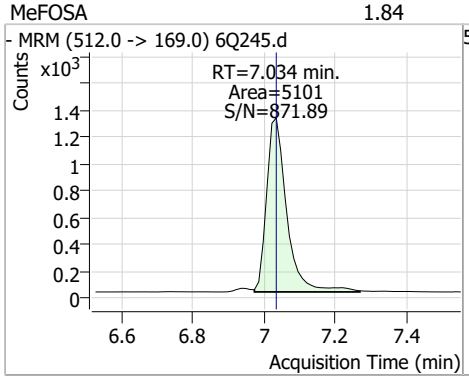
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.74	7.02	0.00	53478				

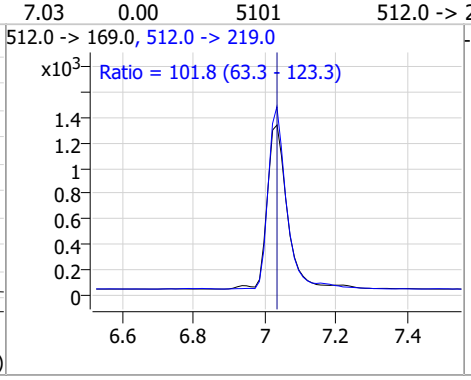


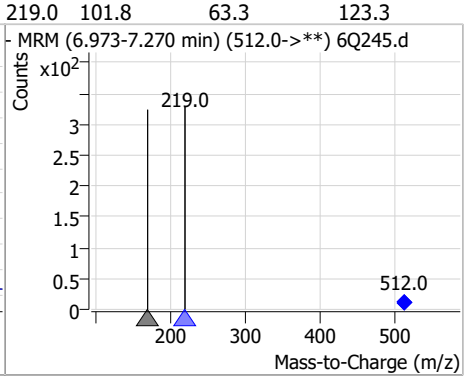




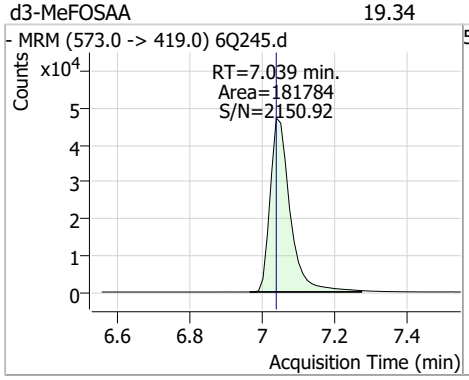
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.84	7.03	0.00	5101	512.0 -> 219.0	101.8	63.3	123.3

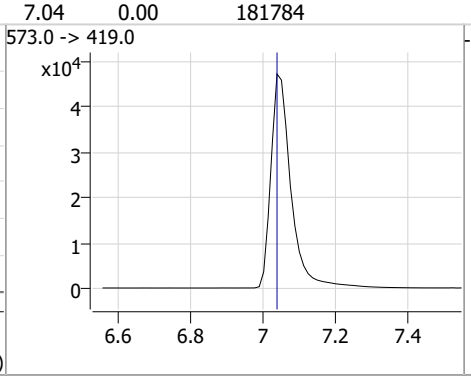


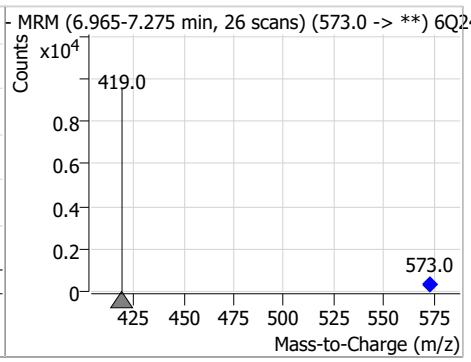




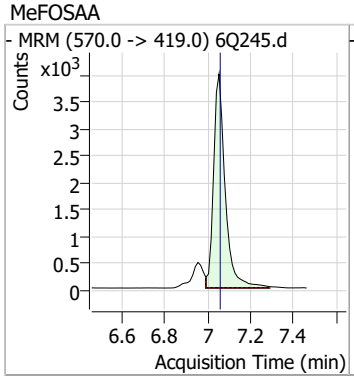
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.34	7.04	0.00	181784				

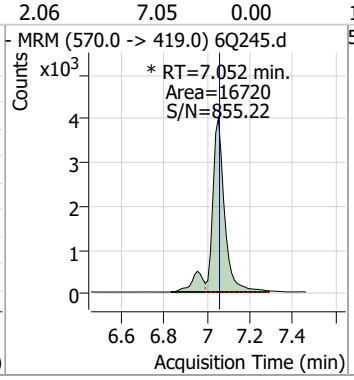


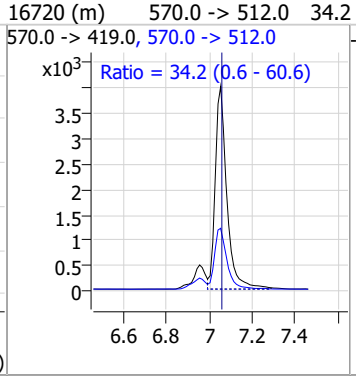


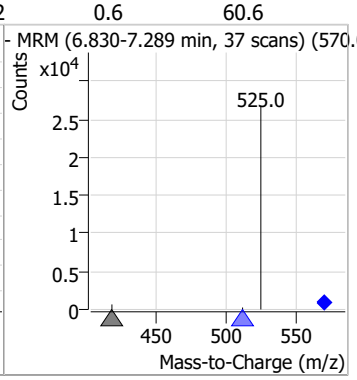


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	2.06	7.05	0.00	16720 (m)	570.0 -> 512.0	34.2	0.6	60.6



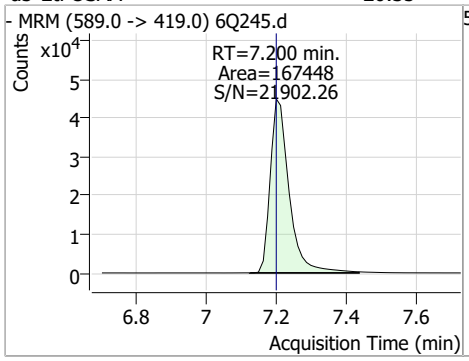


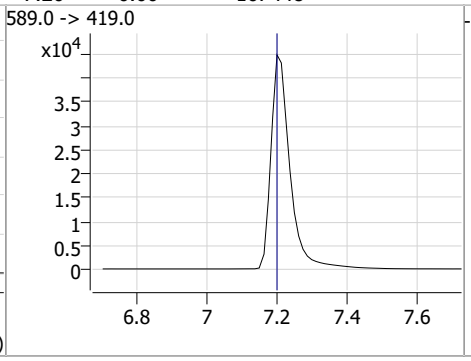


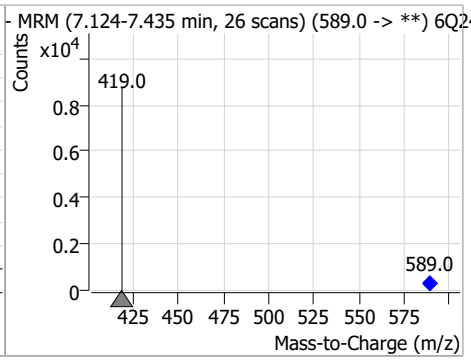


Perfluorinated Compounds by LC/MS/MS

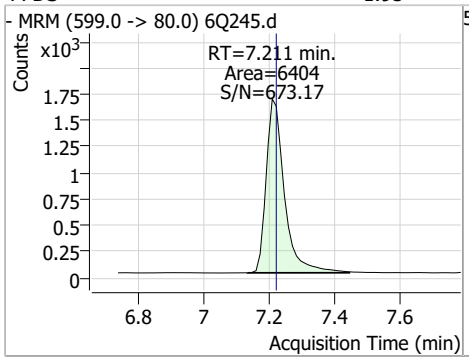
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.35	7.20	0.00	167448				

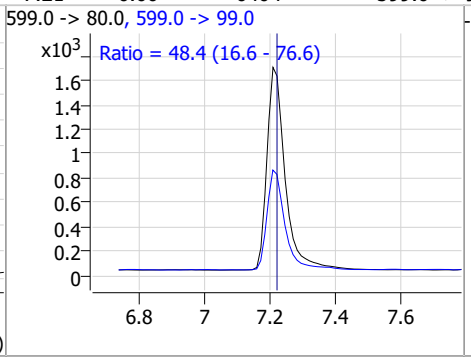


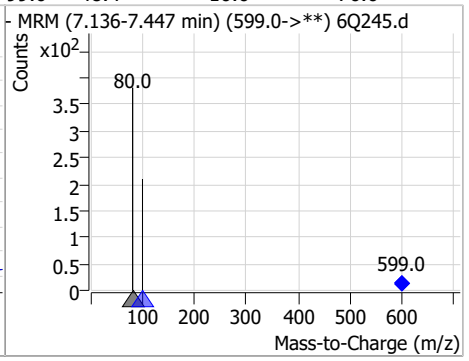




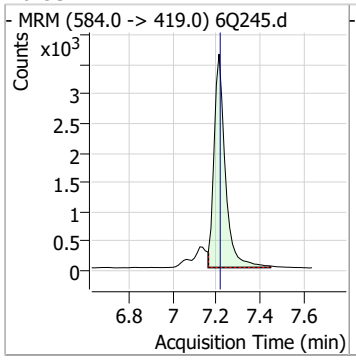
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.95	7.21	0.00	6404	599.0 -> 99.0	48.4	16.6	76.6

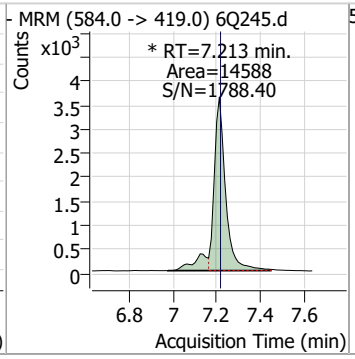


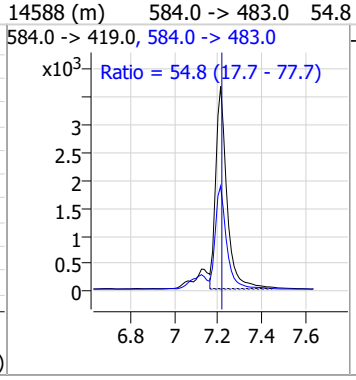


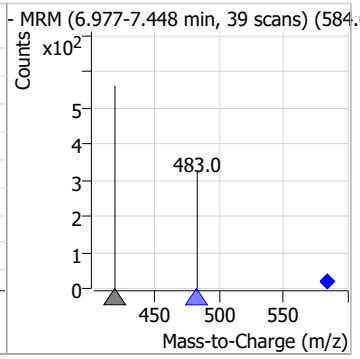


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.81	7.21	0.00	14588 (m)	584.0 -> 483.0	54.8	17.7	77.7

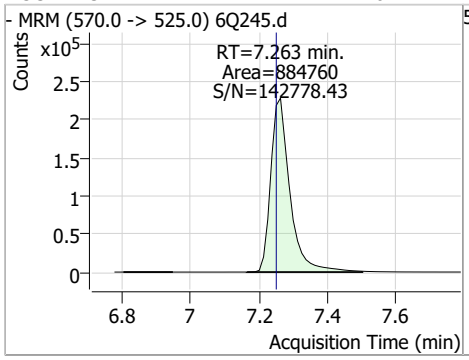


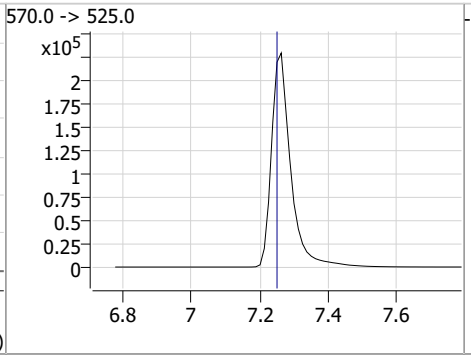


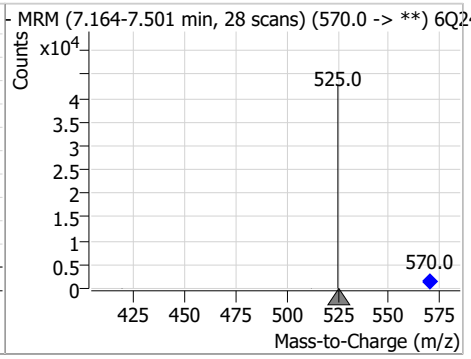




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.44	7.26	0.01	884760				





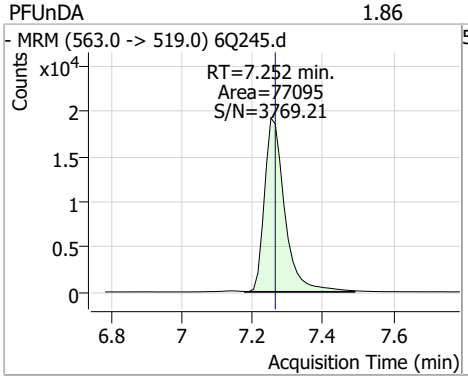


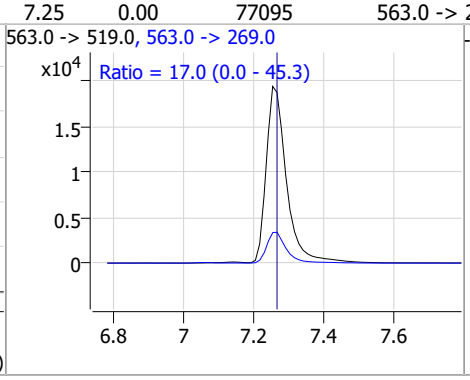
7.7.34

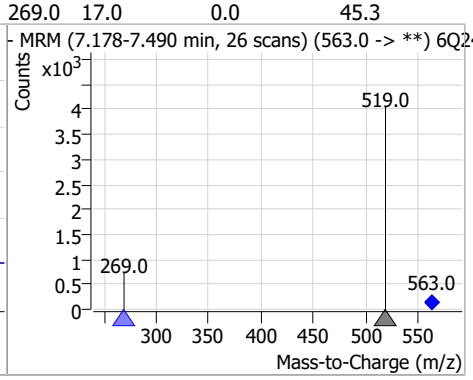
7

Perfluorinated Compounds by LC/MS/MS

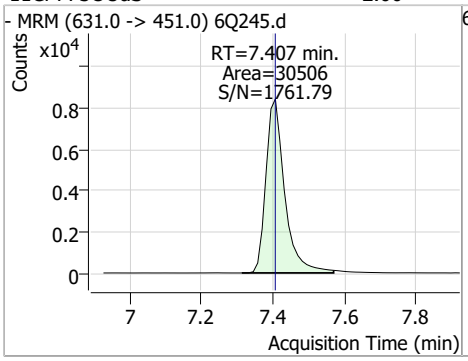
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.86	7.25	0.00	77095	563.0 -> 269.0	17.0	0.0	45.3

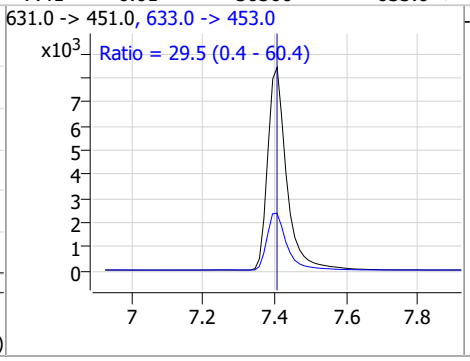


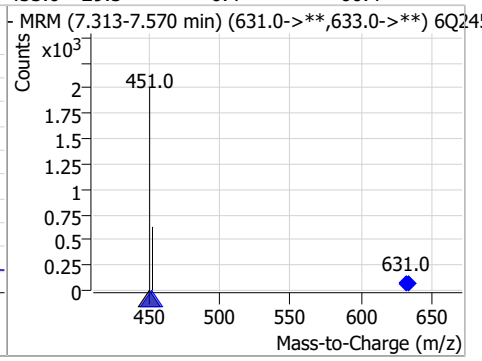




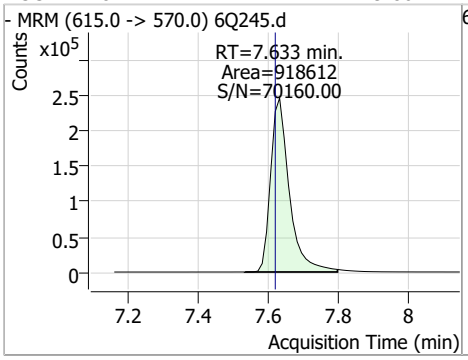
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	2.00	7.41	0.01	30506	633.0 -> 453.0	29.5	0.4	60.4

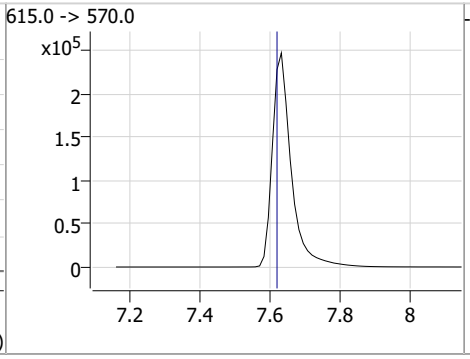


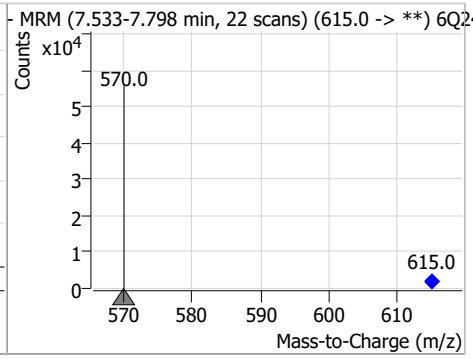




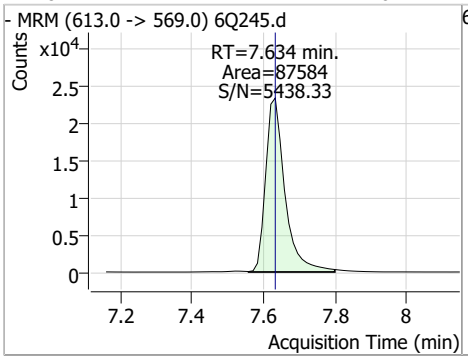
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.80	7.63	0.01	918612				

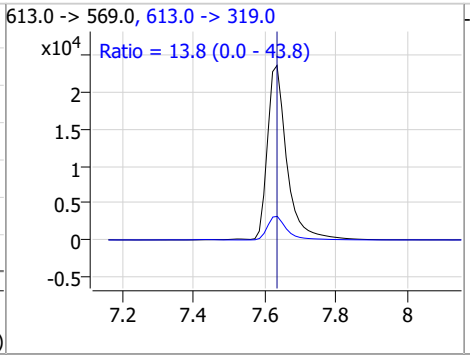


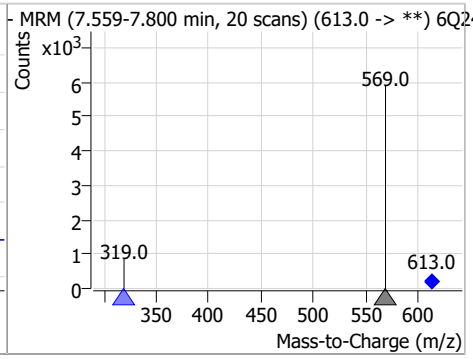




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.07	7.63	0.01	87584	613.0 -> 319.0	13.8	0.0	43.8

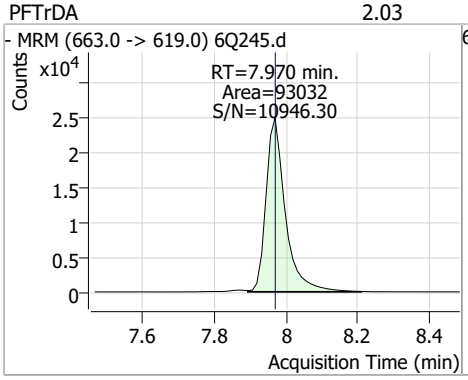


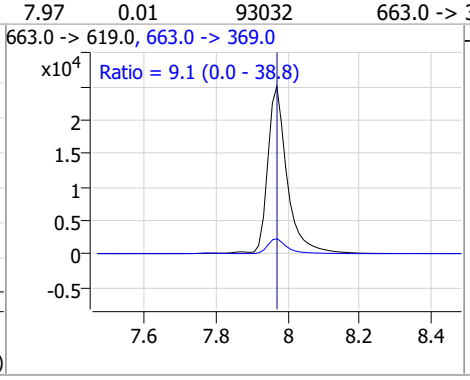


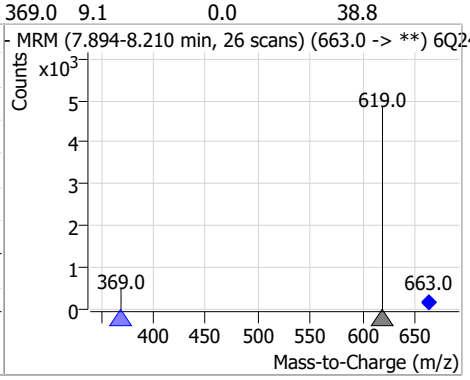


Perfluorinated Compounds by LC/MS/MS

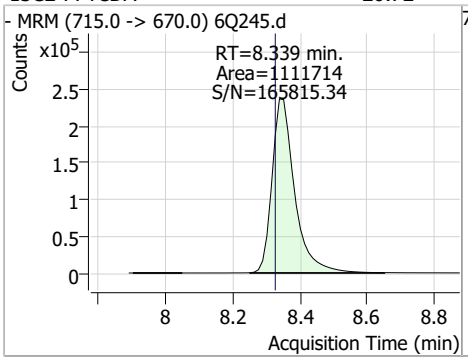
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	2.03	7.97	0.01	93032	663.0 -> 369.0	9.1	0.0	38.8

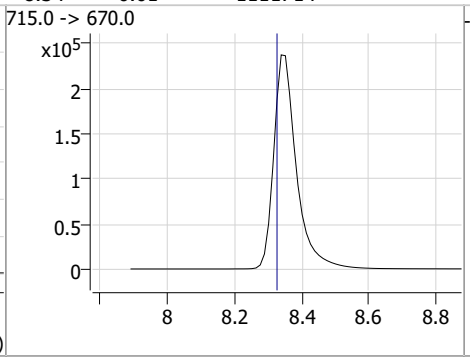


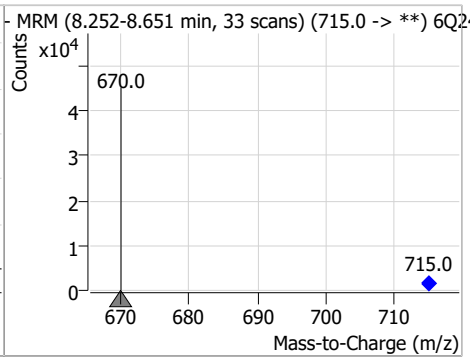




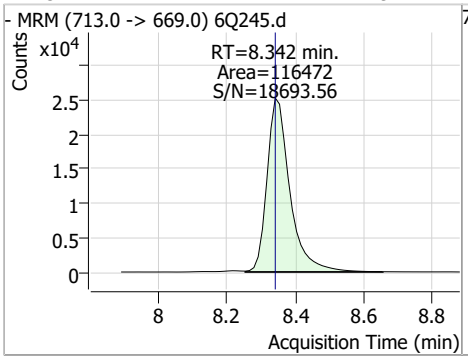
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.72	8.34	0.01	1111714				

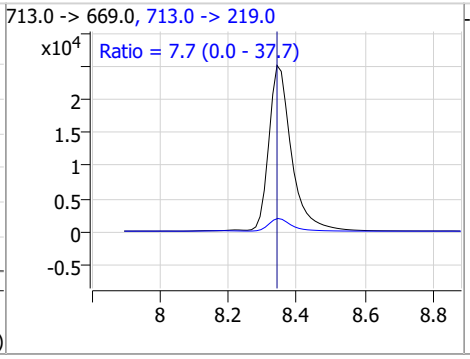


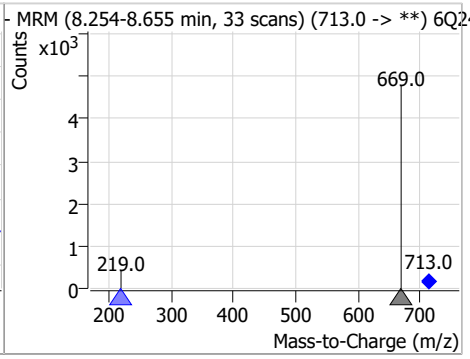




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.91	8.34	0.01	116472	713.0 -> 219.0	7.7	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q245.D
Injection Time: 05/19/22 11:22
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.16	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.31	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q246.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 11:37:59 AM
Sample Name : ic6-5
Vial : P1-A5
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

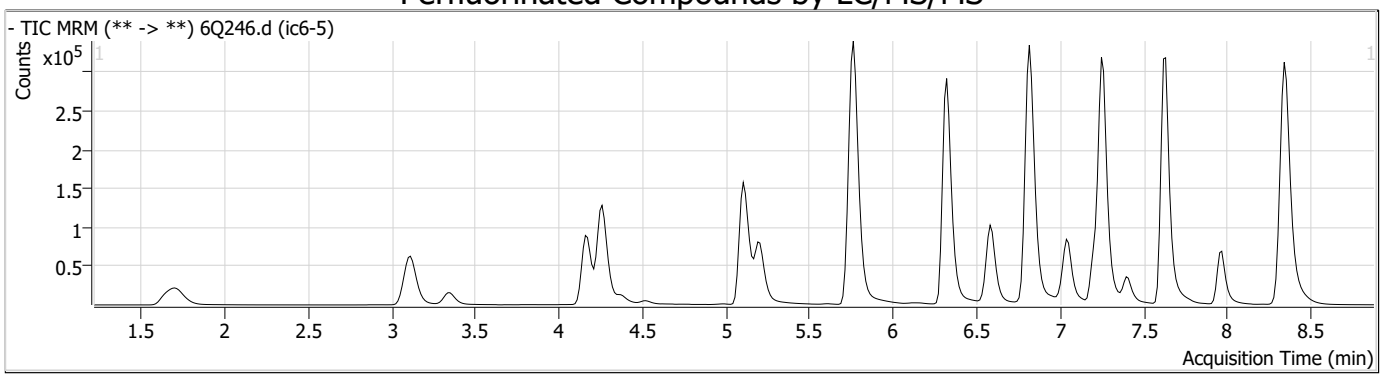
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	165533	20.00	µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	283976	20.00	µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	424913	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	463683	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	770906	20.00	µg/L	0.000
M9-PFNA	6.329	472.0 -> 427.0	903911	20.00	µg/L	0.000
M6-PFDA	6.821	519.0 -> 474.0	767071	20.00	µg/L	0.012
M7-PFUnDA	7.251	570.0 -> 525.0	911840	20.00	µg/L	0.000
M2-PFDoDA	7.633	615.0 -> 570.0	961072	20.00	µg/L	0.012
M2-PFTeDA	8.339	715.0 -> 670.0	1111298	20.00	µg/L	0.012
M8-FOSA	6.600	506.0 -> 78.0	221126	20.00	µg/L	0.012
M3-PFBS	3.348	302.0 -> 99.0	35646	20.00	µg/L	0.000
M3-PFHxS	5.152	402.0 -> 99.0	33401	20.00	µg/L	0.012
M8-PFOS	6.311	507.0 -> 99.0	43002	20.00	µg/L	0.000
M2-4:2FTS	4.160	329.0 -> 309.0	288198	20.00	µg/L	0.000
M2-6:2FTS	5.753	429.0 -> 409.0	332182	20.00	µg/L	0.012
M2-8:2FTS	6.832	529.0 -> 509.0	245527	20.00	µg/L	0.000
M3-MeFOSAA	7.051	573.0 -> 419.0	195384	20.00	µg/L	0.012
M3-HFPO-DA	4.528	287.0 -> 169.0	11931	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	54122	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	168694	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.160	329.0 -> 309.0	288198	19.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-6:2FTS	5.753	429.0 -> 409.0	332182	19.51	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-8:2FTS	6.832	529.0 -> 509.0	245527	19.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	7.633	615.0 -> 570.0	961072	20.71	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFTeDA	8.339	715.0 -> 670.0	1111298	20.71	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFBS	3.348	302.0 -> 99.0	35646	20.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-PFHxS	5.152	402.0 -> 99.0	33401	20.33	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFBA	1.699	217.0 -> 172.0	165533	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C4-PFHpA	5.110	367.0 -> 322.0	463683	20.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C5-PFHxA	4.264	318.0 -> 273.0	424913	20.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFPeA	3.118	268.0 -> 223.0	283976	20.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C6-PFDA	6.821	519.0 -> 474.0	767071	20.92	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

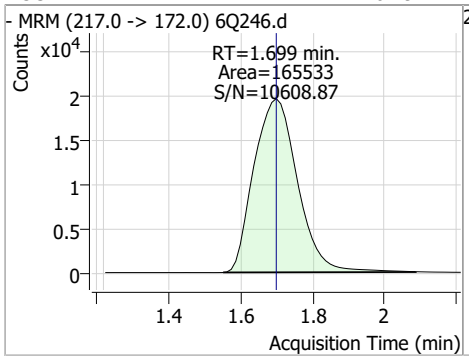
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C7-PFUnDA	7.251	570.0 -> 525.0	911840	21.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C8-FOSA	6.600	506.0 -> 78.0	221126	21.01 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-PFOA	5.770	421.0 -> 376.0	770906	20.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C8-PFOS	6.311	507.0 -> 99.0	43002	19.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C9-PFNA	6.329	472.0 -> 427.0	903911	20.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
d3-MeFOSAA	7.051	573.0 -> 419.0	195384	20.79 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	11950	20.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
d3-MeFOSA	7.020	515.0 -> 169.0	54122	20.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
d5-EtFOSAA	7.200	589.0 -> 419.0	168734	20.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
Target Compounds						**QValue**
4:2FTS	4.162	327.0 -> 307.0	81611	5.21 µg/L		99
6:2FTS	5.755	427.0 -> 407.0	89496	5.31 µg/L		99
8:2FTS	6.833	527.0 -> 507.0	62389	5.12 µg/L		99
EtFOSAA	7.213	584.0 -> 419.0	39688	4.90 µg/L	m	100
FOSA	6.590	498.0 -> 78.0	48952	4.51 µg/L		100
MeFOSAA	7.052	570.0 -> 419.0	43948	5.05 µg/L	m	96
PFBA	1.705	213.0 -> 169.0	18376	4.90 µg/L		100
PFBS	3.340	299.0 -> 80.0	28397	5.12 µg/L		99
PFDA	6.822	513.0 -> 469.0	222694	4.56 µg/L		99
PFDoDA	7.621	613.0 -> 569.0	214398	4.84 µg/L		97
PFDS	7.211	599.0 -> 80.0	15945	4.71 µg/L		92
PFHpA	5.112	363.0 -> 319.0	152291	4.95 µg/L		100
PFHpS	5.777	449.0 -> 80.0	19882	5.06 µg/L		99
PFHxA	4.265	313.0 -> 269.0	113622	4.93 µg/L		100
PFHxS	5.143	399.0 -> 80.0	21403	4.82 µg/L	m	97
PFNA	6.330	463.0 -> 419.0	183841	4.78 µg/L		99
PFNS	6.782	549.0 -> 80.0	22592	5.33 µg/L		88
PFOA	5.771	413.0 -> 369.0	191352	4.91 µg/L		99
PFOS	6.314	499.0 -> 80.0	19449	4.81 µg/L	m	85
PFPeA	3.121	263.0 -> 219.0	60431	4.87 µg/L		100
PFPeS	4.370	349.0 -> 80.0	22379	4.83 µg/L		97
PFTeDA	8.342	713.0 -> 669.0	293512	4.81 µg/L		100
PFTrDA	7.970	663.0 -> 619.0	239323	4.98 µg/L		99
PFUnDA	7.252	563.0 -> 519.0	205616	4.83 µg/L		98
11Cl-PF3OUdS	7.394	631.0 -> 451.0	79837	4.99 µg/L		98
9Cl-PF3ONS	6.570	531.0 -> 351.0	108931	4.78 µg/L		97
ADONA	5.207	377.0 -> 251.0	237663	4.91 µg/L		100
HFPO-DA	4.530	285.0 -> 169.0	2914	5.21 µg/L		89
MeFOSA	7.034	512.0 -> 169.0	14076	5.02 µg/L		100

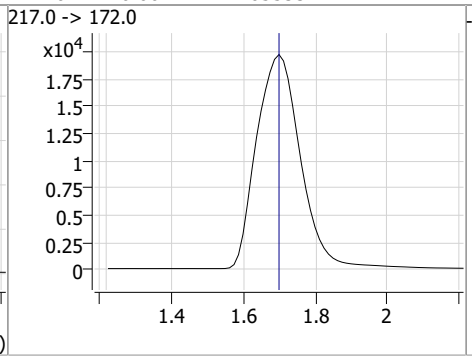
 # = Qualifier out of range, m = manually integrated, + = Area summed

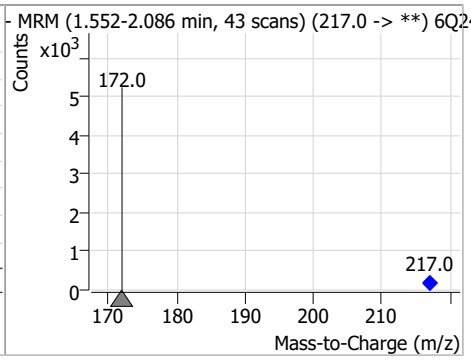
Perfluorinated Compounds by LC/MS/MS



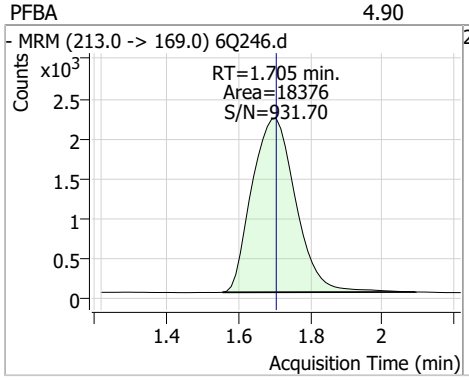
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.29	1.70	0.00	165533				

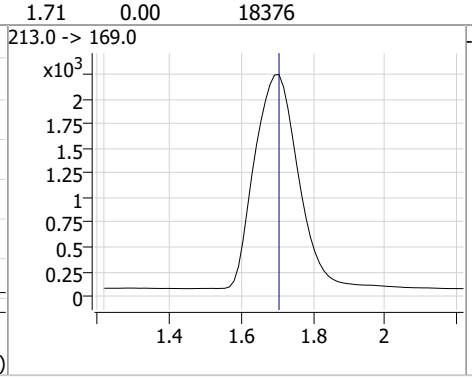


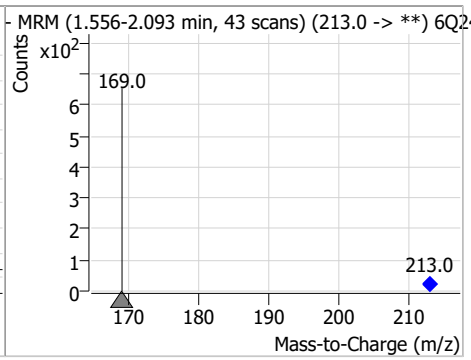




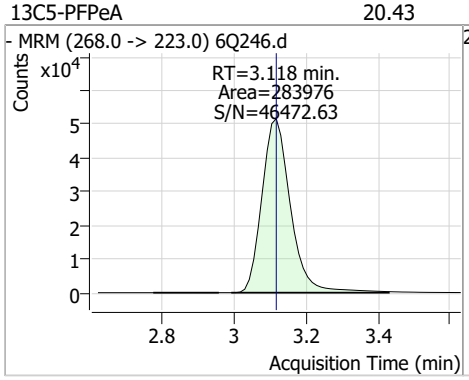
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.90	1.71	0.00	18376				

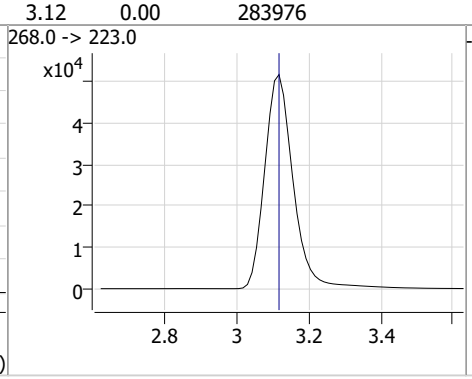


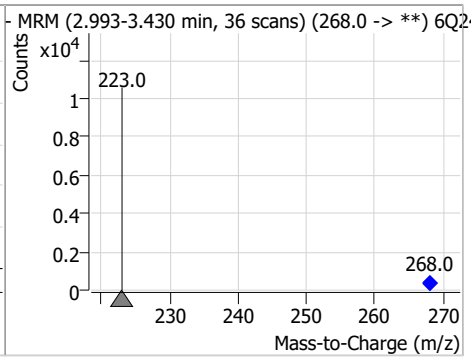




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.43	3.12	0.00	283976				

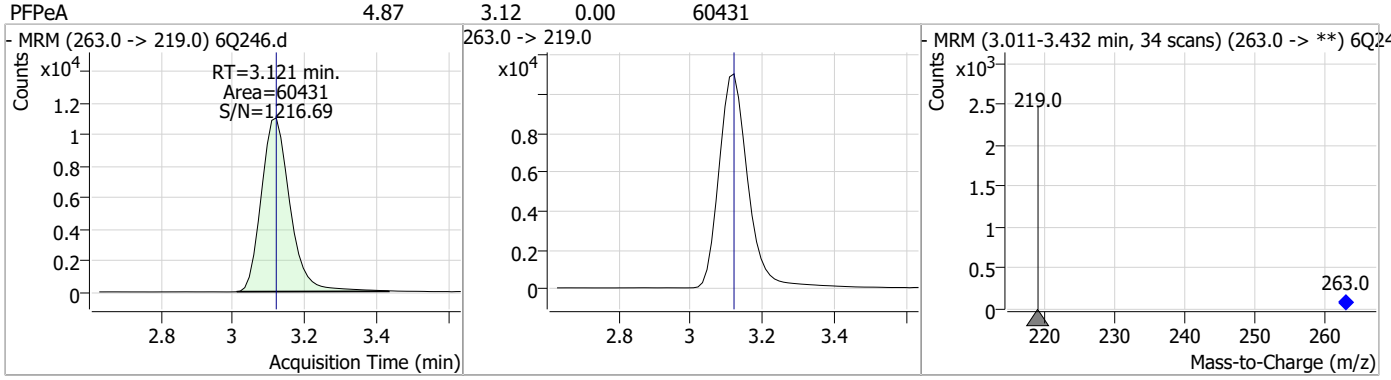




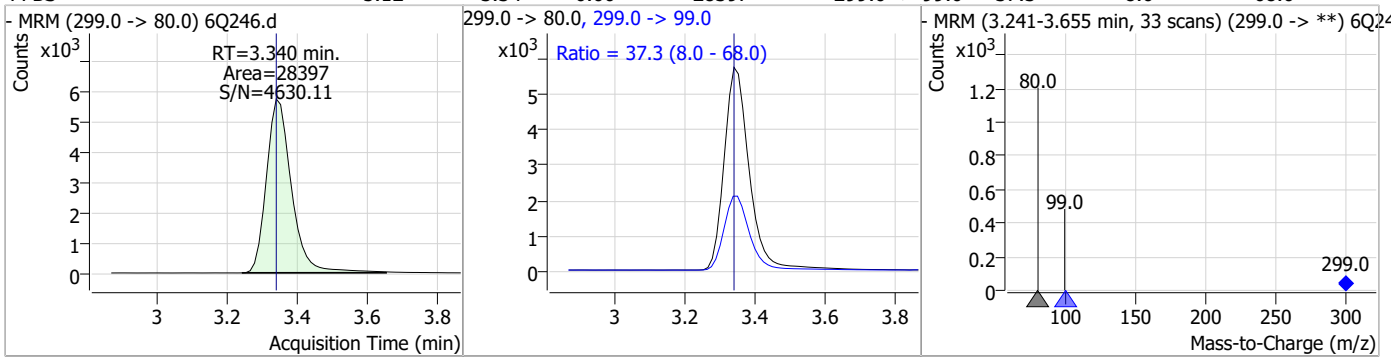


Perfluorinated Compounds by LC/MS/MS

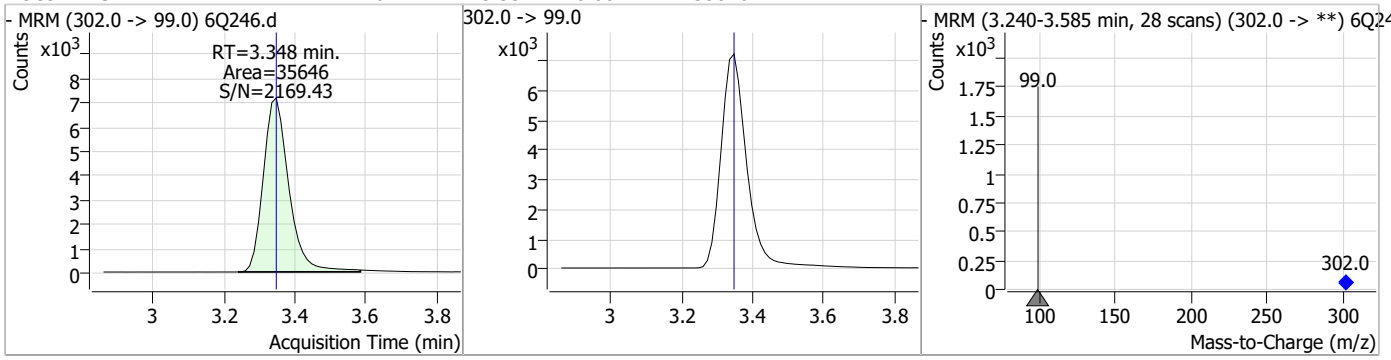
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.87	3.12	0.00	60431				



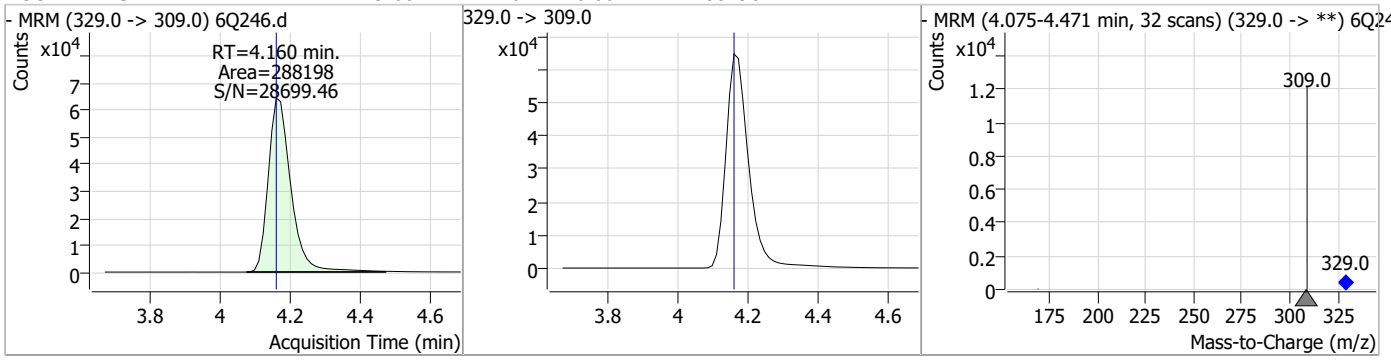
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.12	3.34	0.00	28397	299.0 -> 99.0	37.3	8.0	68.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.21	3.35	0.00	35646				

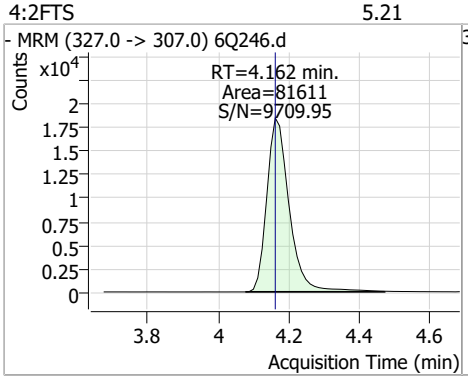


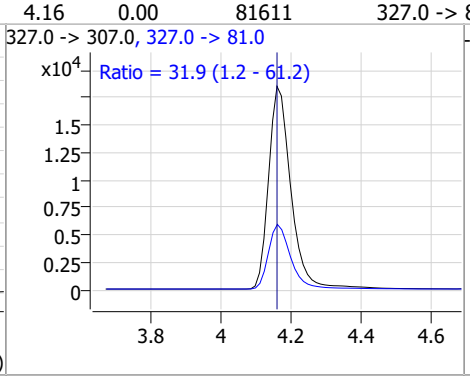
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.60	4.16	0.00	288198				

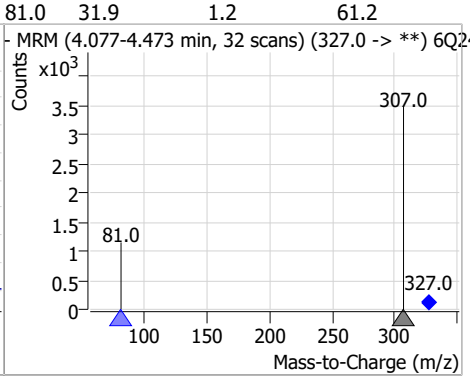


Perfluorinated Compounds by LC/MS/MS

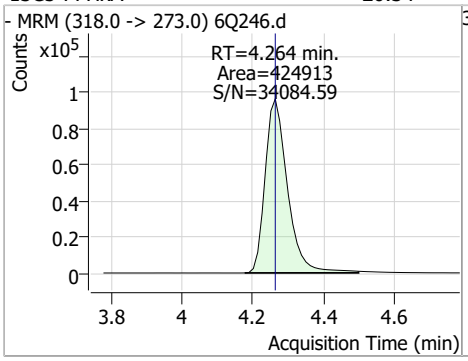
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.21	4.16	0.00	81611	327.0 -> 81.0	31.9	1.2	61.2

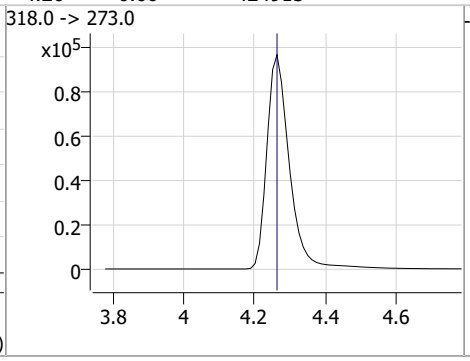


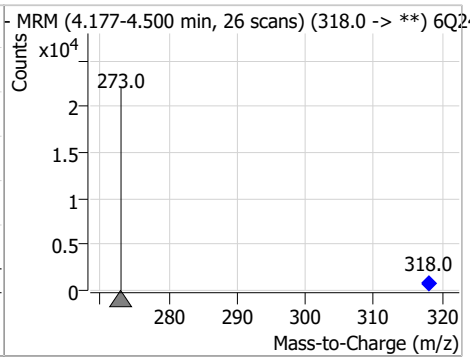




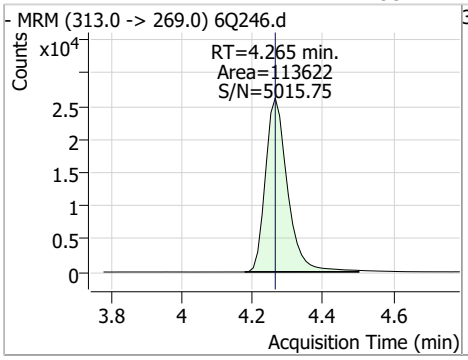
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.34	4.26	0.00	424913				

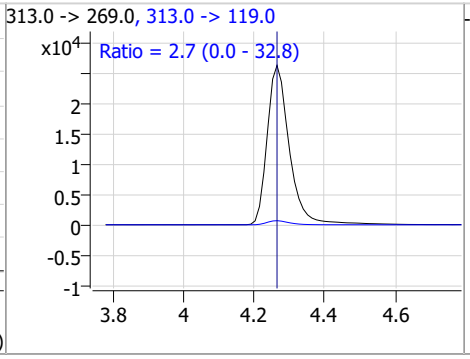


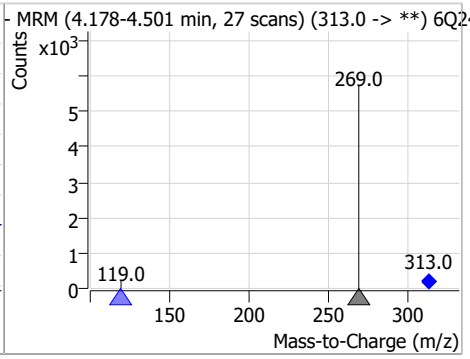




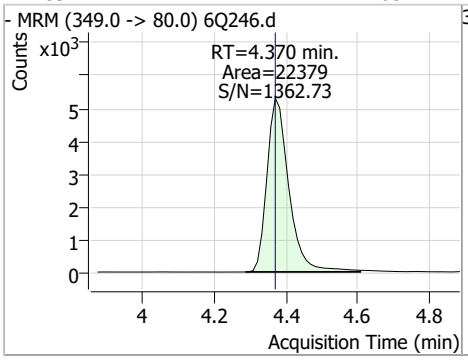
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.93	4.26	0.00	113622	313.0 -> 119.0	2.7	0.0	32.8

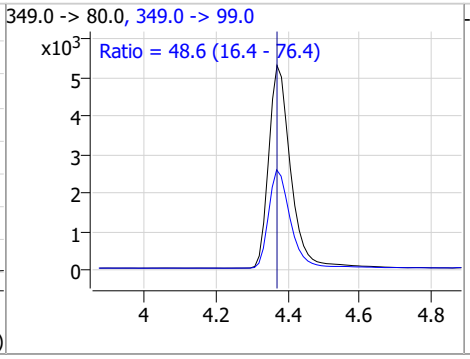


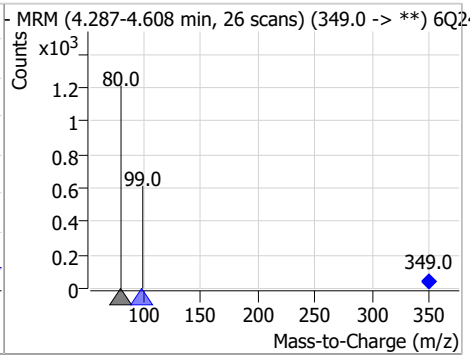




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.83	4.37	0.00	22379	349.0 -> 99.0	48.6	16.4	76.4

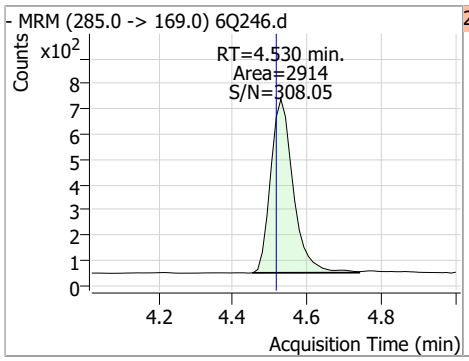


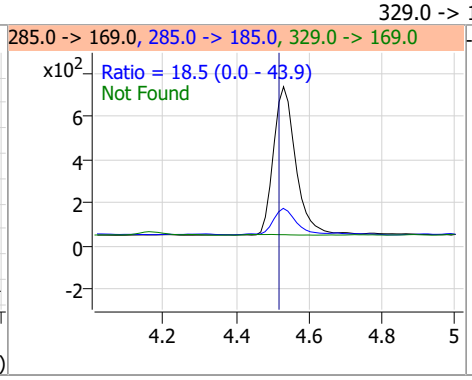


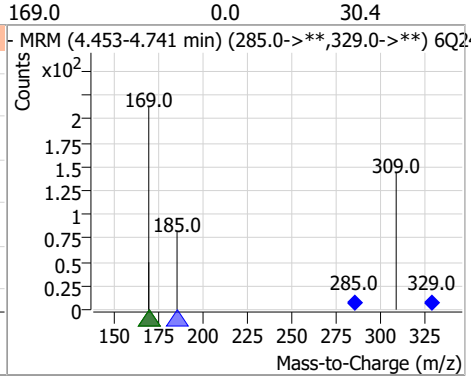


Perfluorinated Compounds by LC/MS/MS

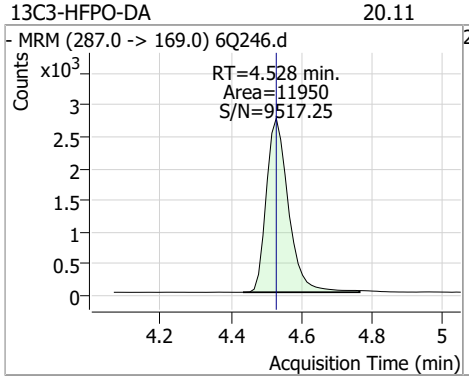
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.21	4.53	0.01	2914	285.0 -> 185.0	18.5	0.0	43.9
					329.0 -> 169.0		0.0	30.4

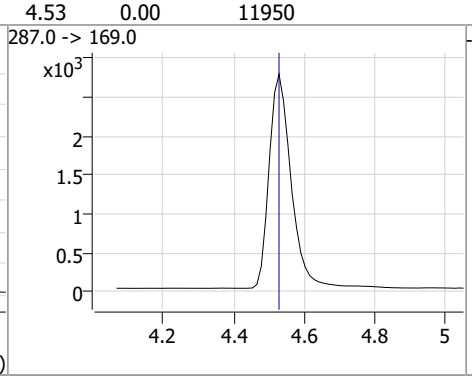


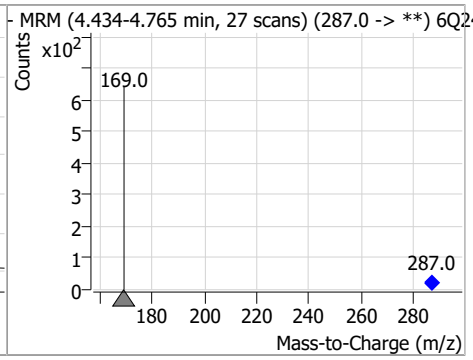




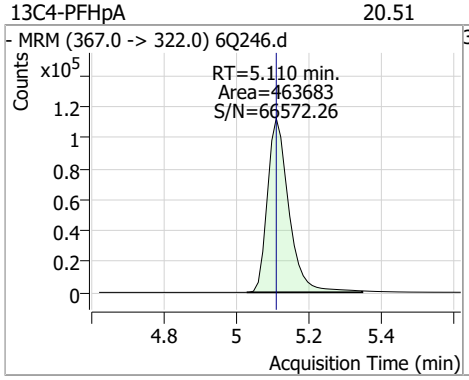
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.11	4.53	0.00	11950				

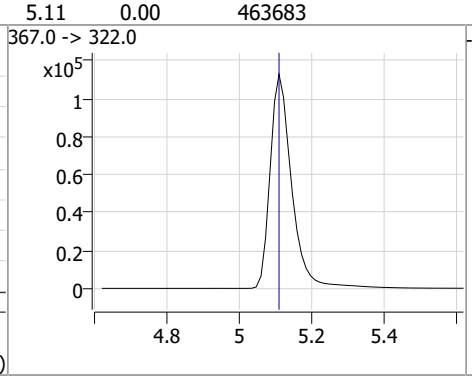


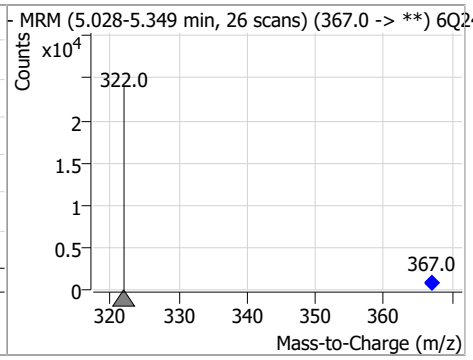




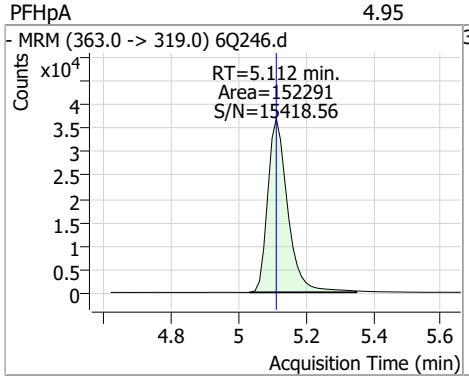
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.51	5.11	0.00	463683				

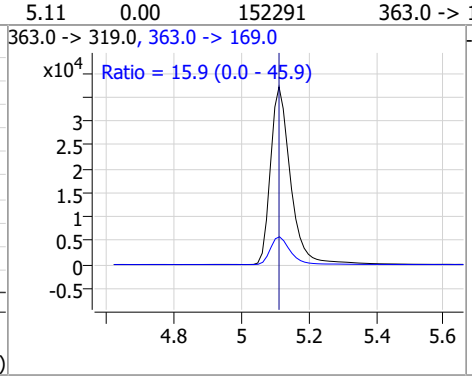


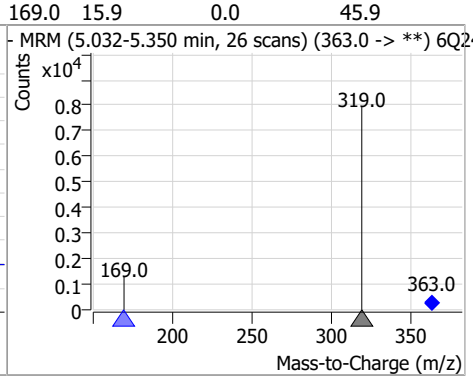




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.95	5.11	0.00	152291	363.0 -> 169.0	15.9	0.0	45.9

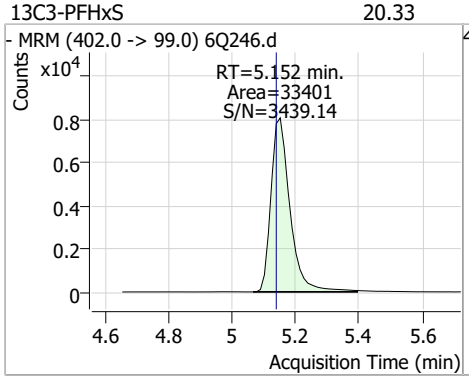


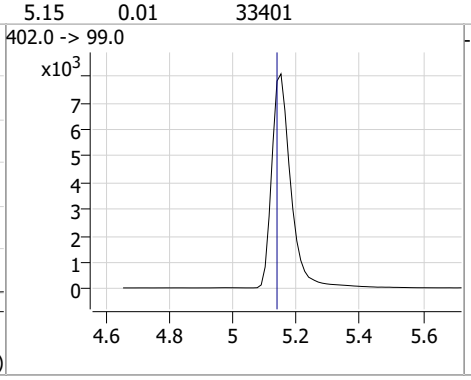


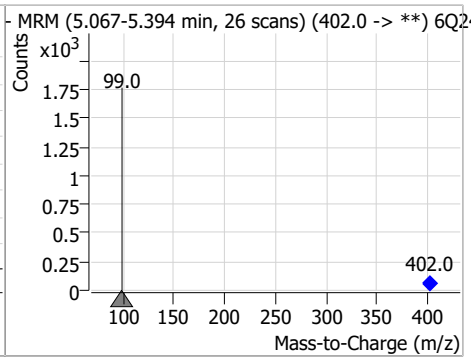


Perfluorinated Compounds by LC/MS/MS

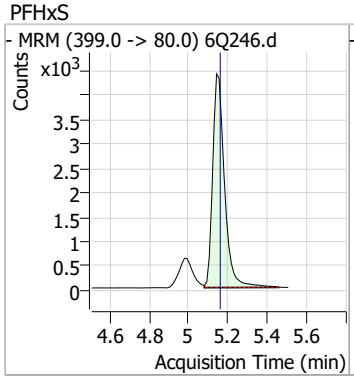
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.33	5.15	0.01	33401				

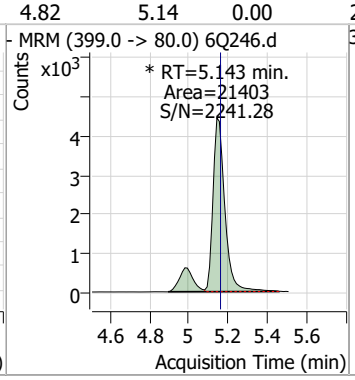


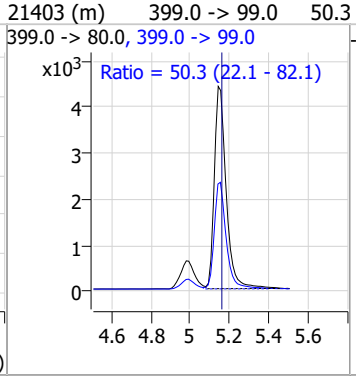


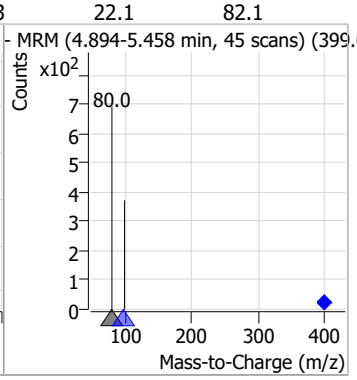


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.82	5.14	0.00	21403 (m)	399.0 -> 99.0	50.3	22.1	82.1

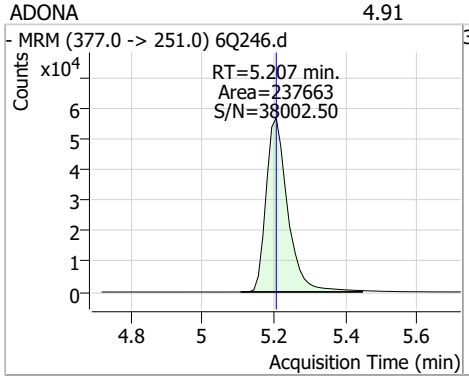


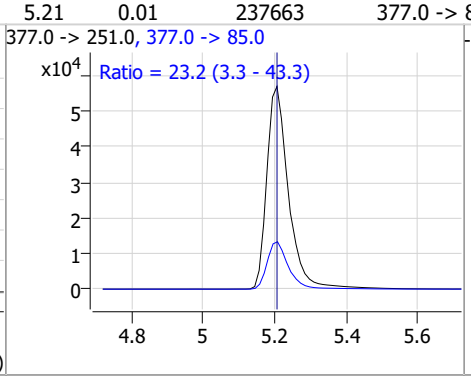


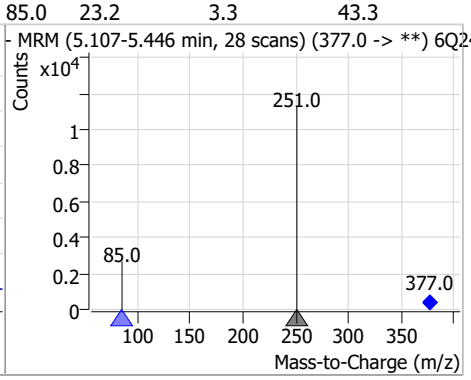




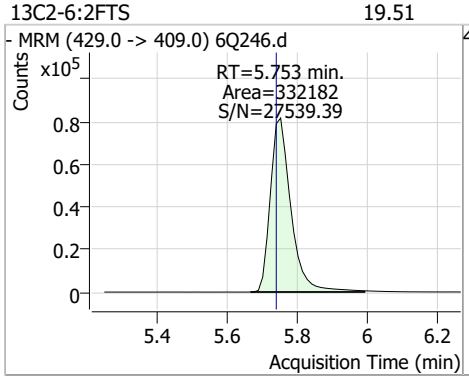
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.91	5.21	0.01	237663	377.0 -> 85.0	23.2	3.3	43.3

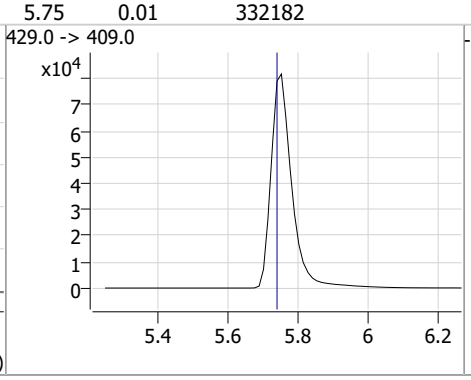


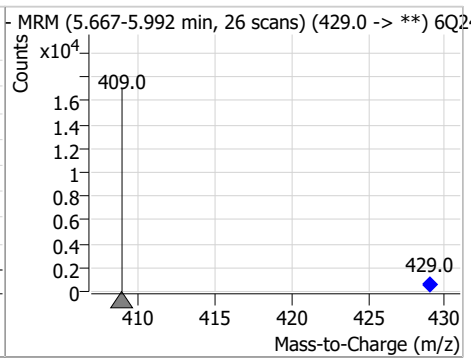




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.51	5.75	0.01	332182				

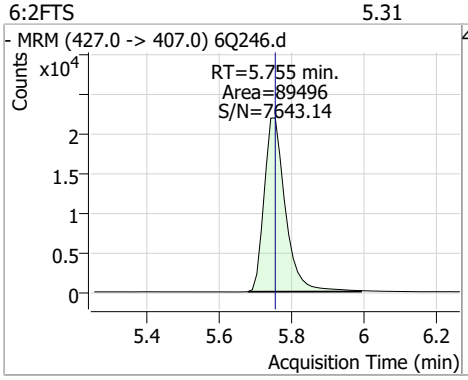


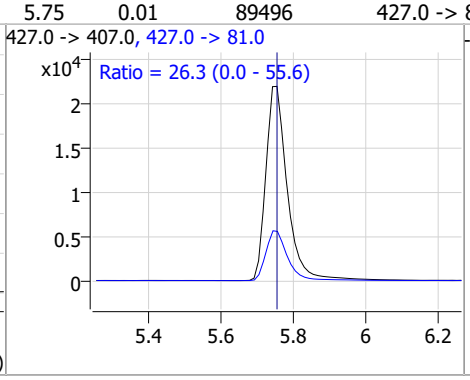


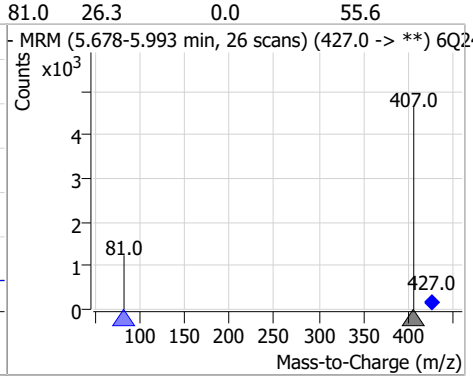


Perfluorinated Compounds by LC/MS/MS

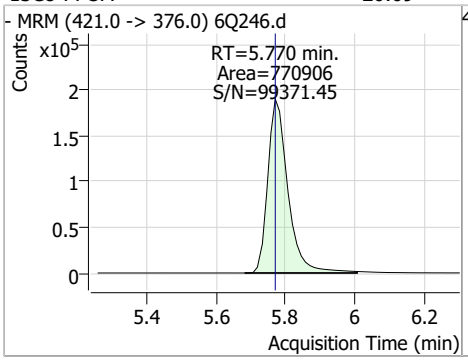
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.31	5.75	0.01	89496	427.0 -> 81.0	26.3	0.0	55.6

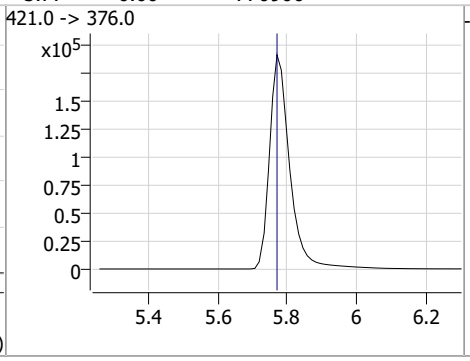


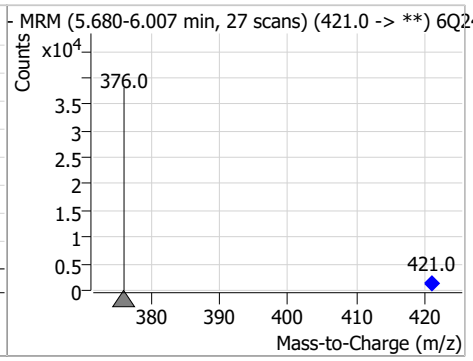




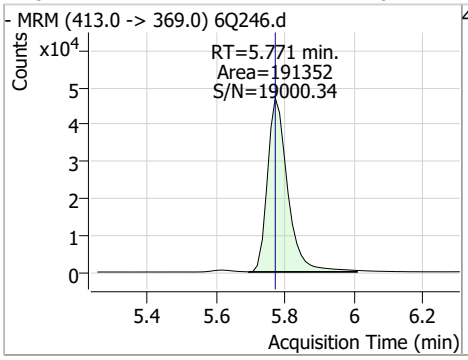
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.69	5.77	0.00	770906				

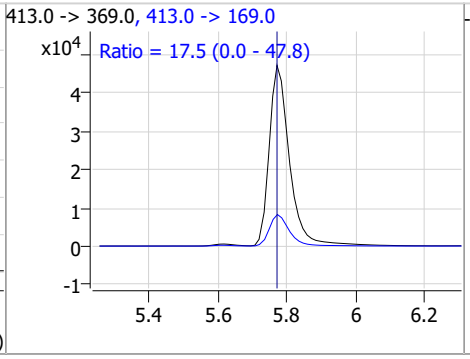


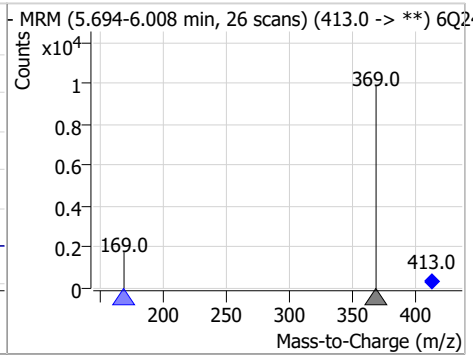




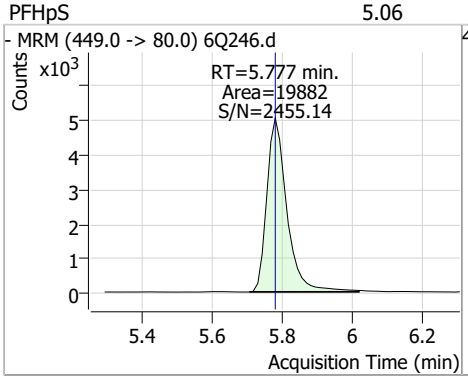
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.91	5.77	0.00	191352	413.0 -> 169.0	17.5	0.0	47.8

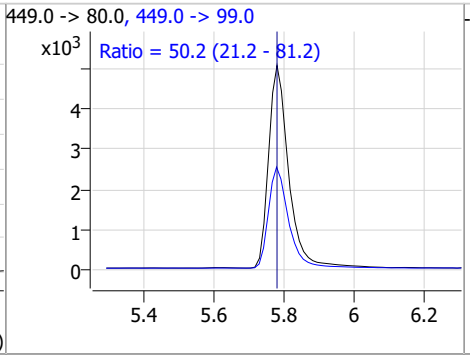


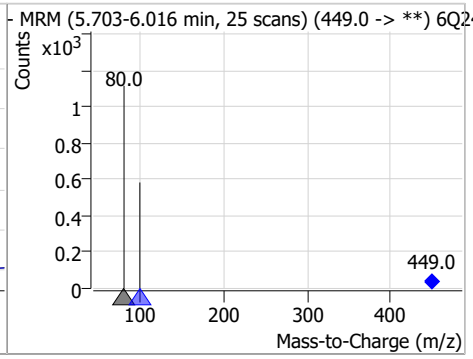




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.06	5.78	0.00	19882	449.0 -> 99.0	50.2	21.2	81.2

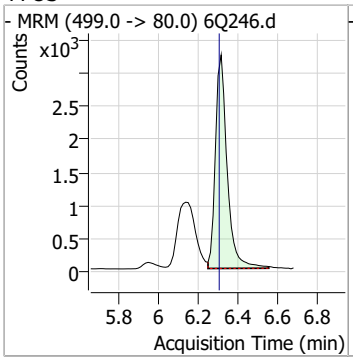


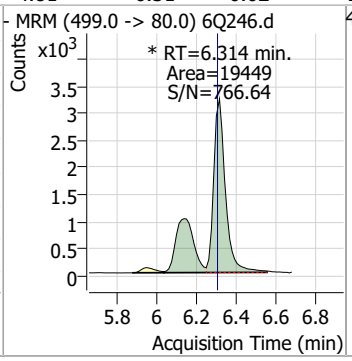


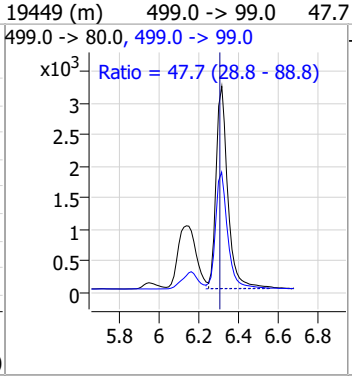


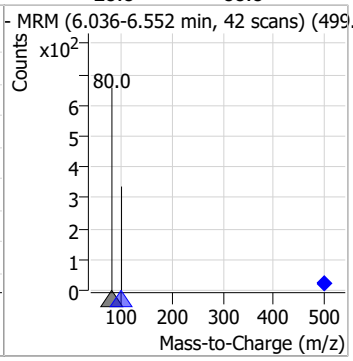
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.81	6.31	0.02	19449 (m)	499.0 -> 99.0	47.7	28.8	88.8

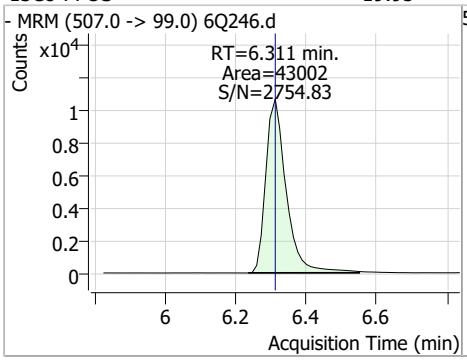


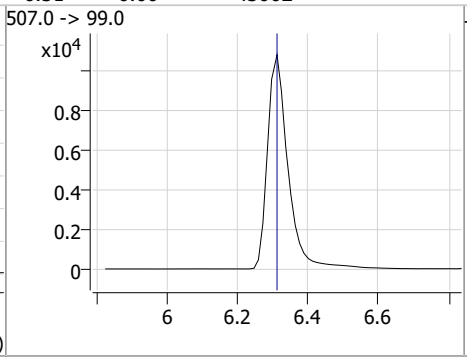


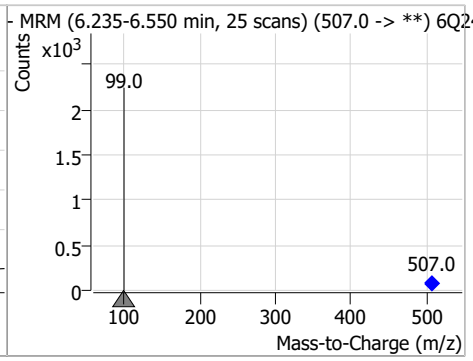




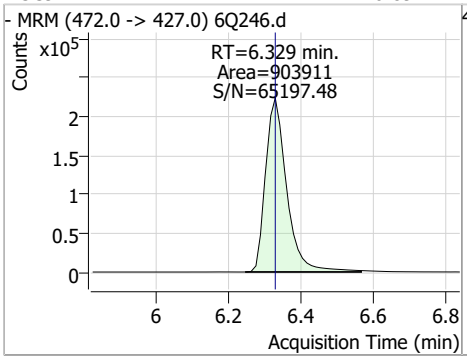
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.95	6.31	0.00	43002				

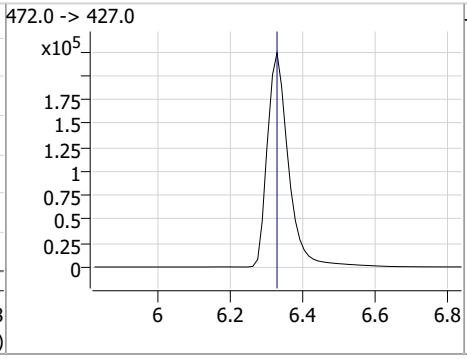


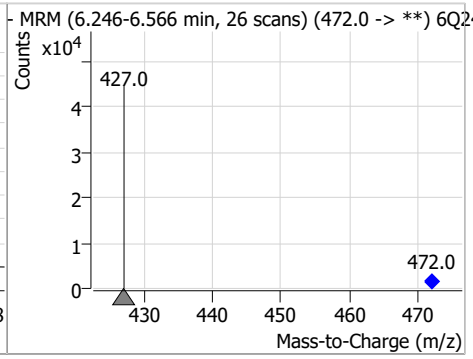




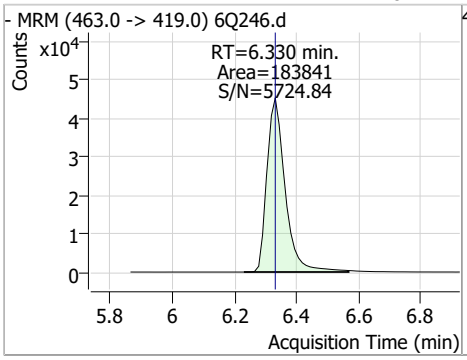
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.89	6.33	0.00	903911				

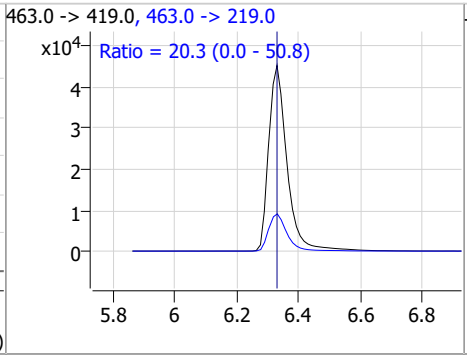


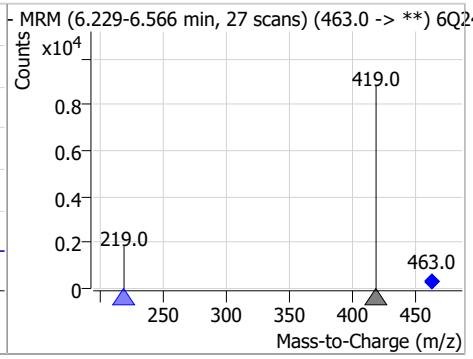




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.78	6.33	0.00	183841	463.0 -> 219.0	20.3	0.0	50.8

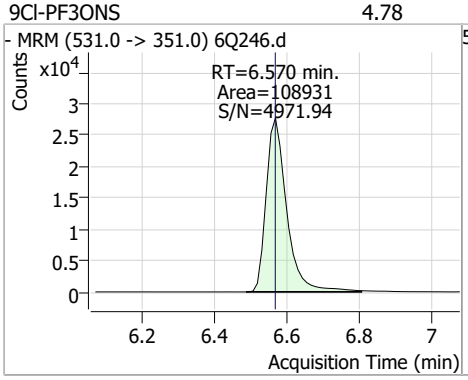


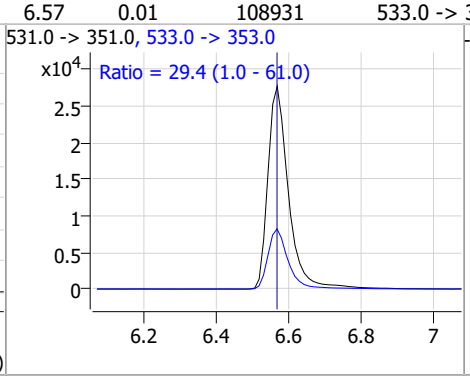


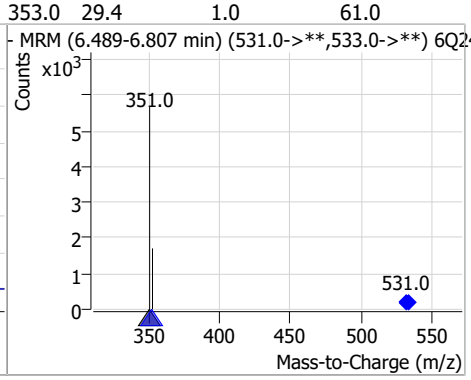


Perfluorinated Compounds by LC/MS/MS

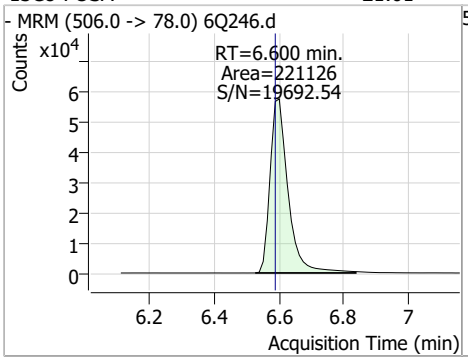
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.78	6.57	0.01	108931	533.0 -> 353.0	29.4	1.0	61.0

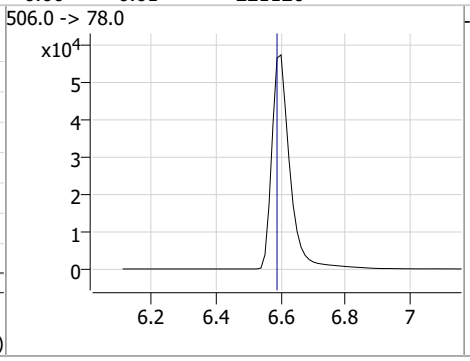


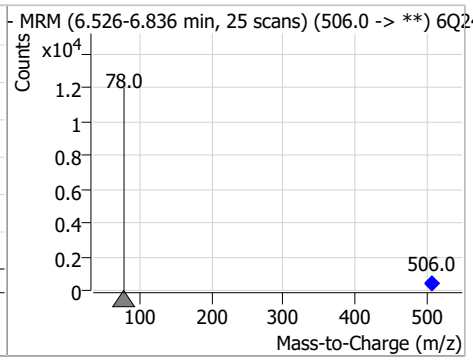




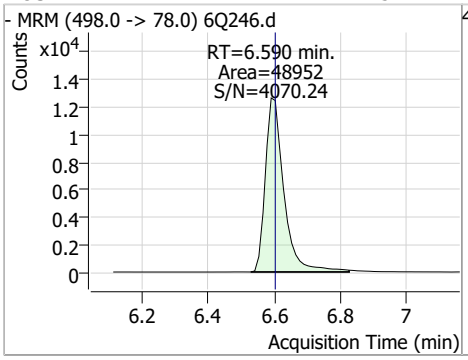
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.01	6.60	0.01	221126				

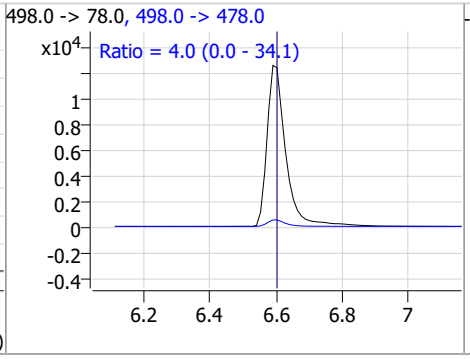


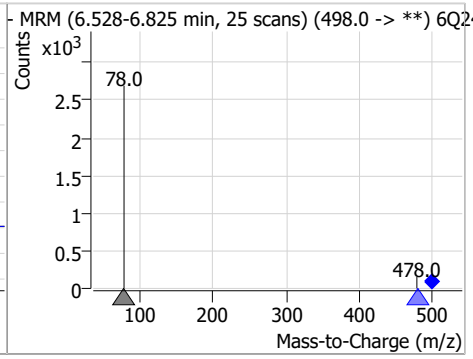




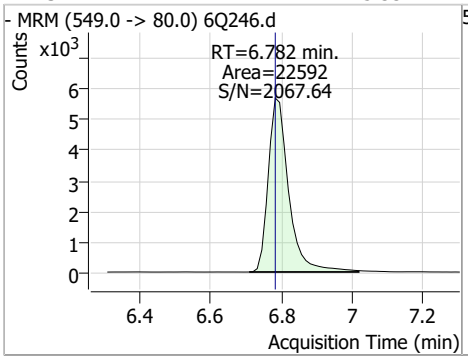
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.51	6.59	0.00	48952	498.0 -> 478.0	4.0	0.0	34.1

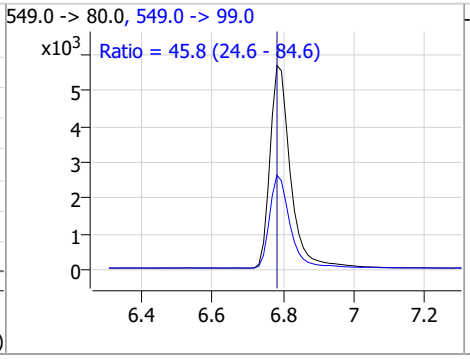


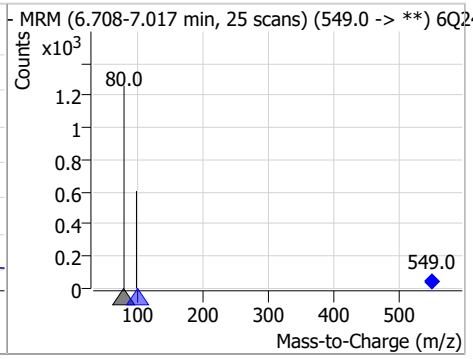




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.33	6.78	0.00	22592	549.0 -> 99.0	45.8	24.6	84.6

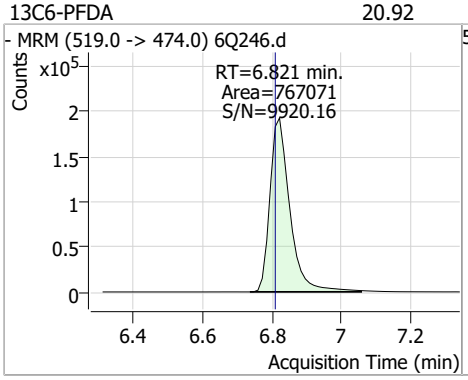


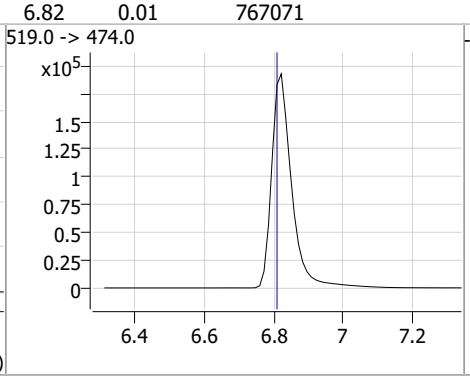


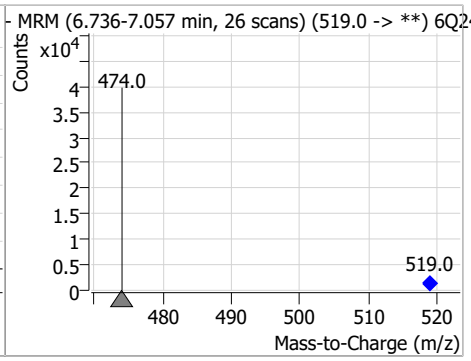


Perfluorinated Compounds by LC/MS/MS

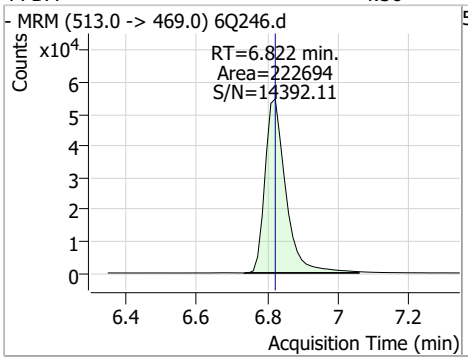
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.92	6.82	0.01	767071				

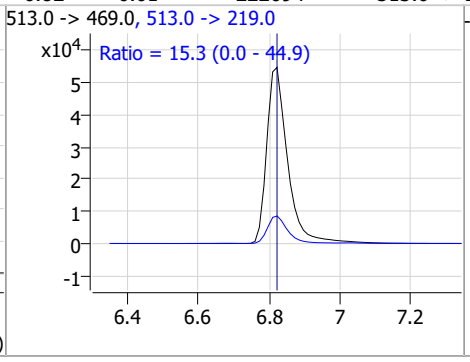


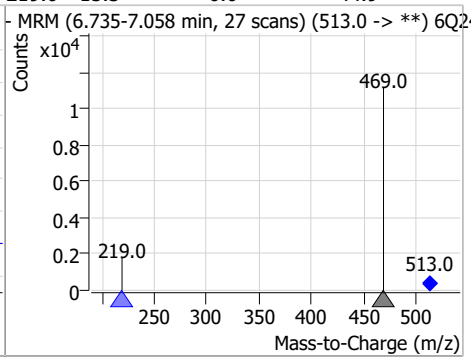




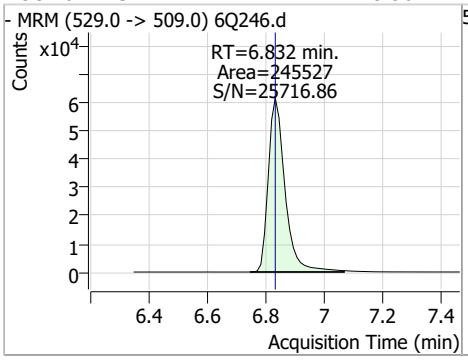
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.56	6.82	0.01	222694	513.0 -> 219.0	15.3	0.0	44.9

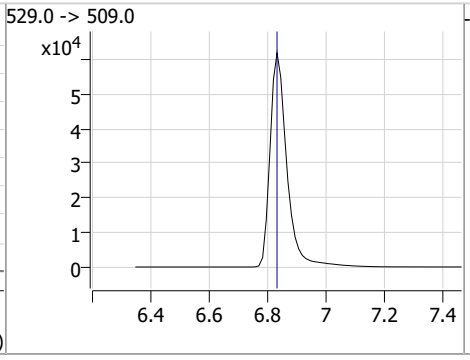


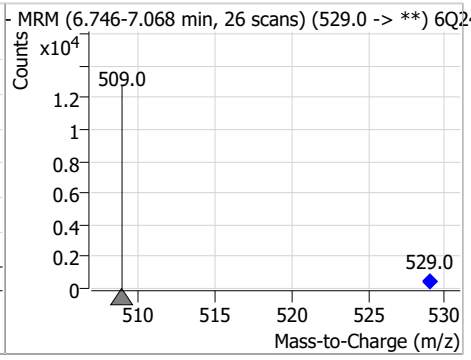




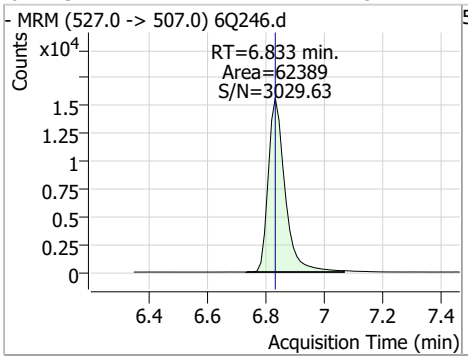
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.96	6.83	0.00	245527				

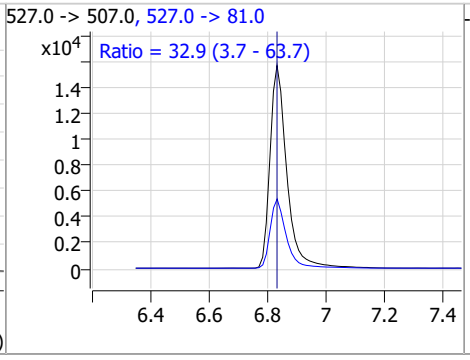


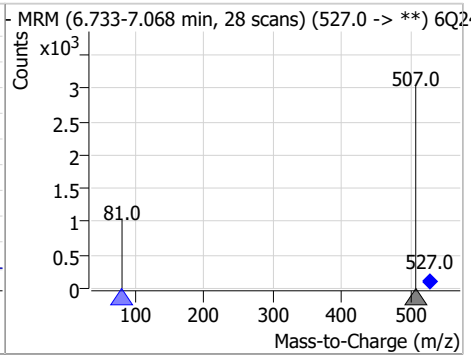




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.12	6.83	0.00	62389	527.0 -> 81.0	32.9	3.7	63.7

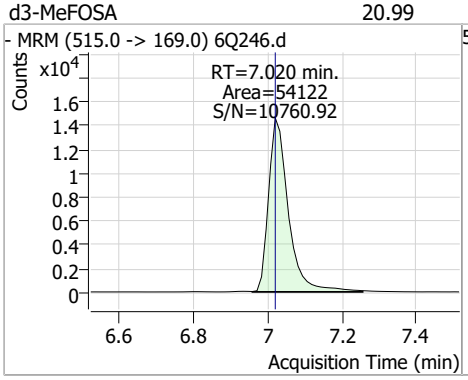


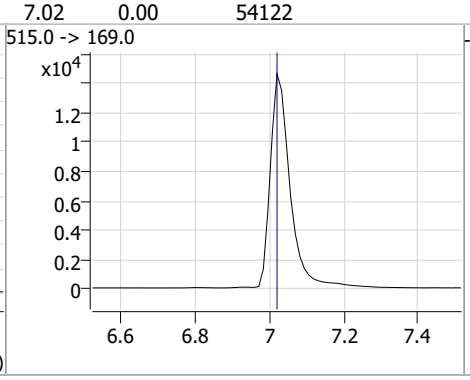


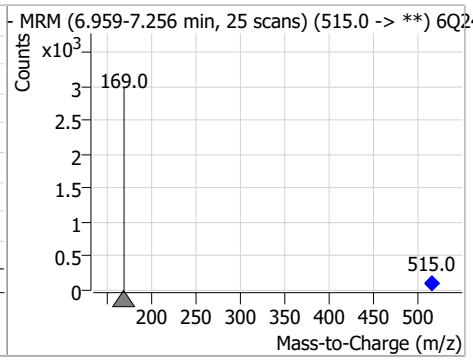


Perfluorinated Compounds by LC/MS/MS

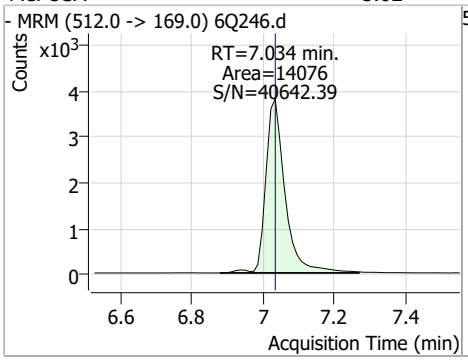
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.99	7.02	0.00	54122				

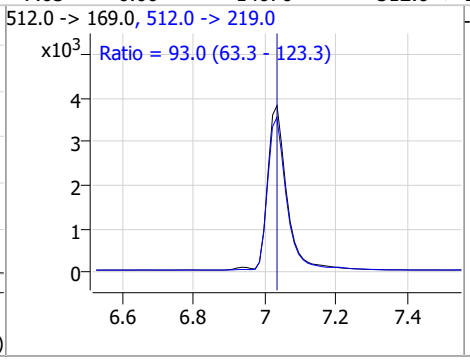


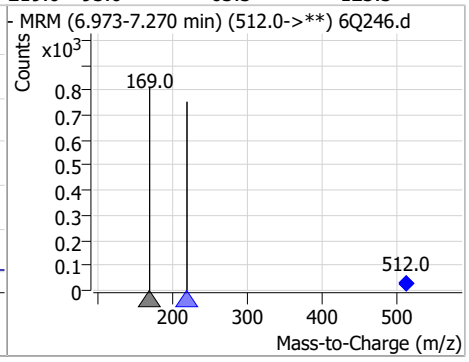




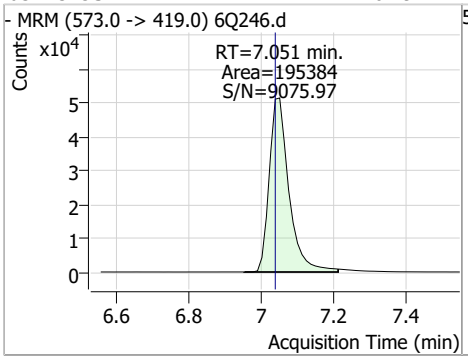
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.02	7.03	0.00	14076	512.0 -> 219.0	93.0	63.3	123.3

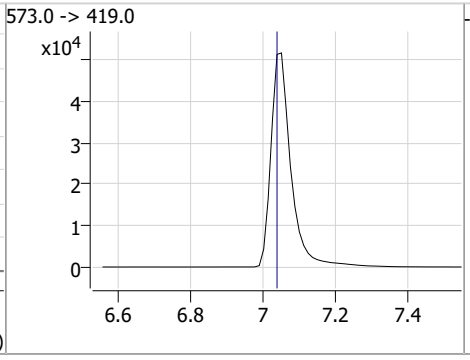


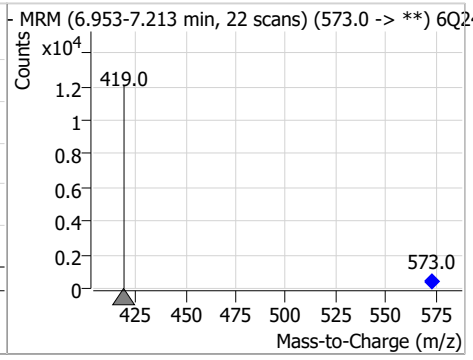




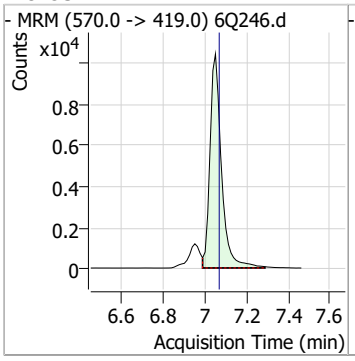
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.79	7.05	0.01	195384				

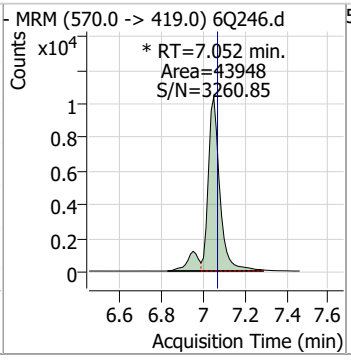


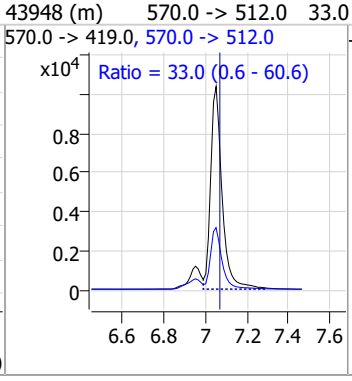


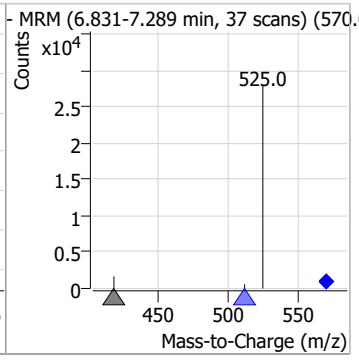


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.05	7.05	0.00	43948 (m)	570.0 -> 512.0	33.0	0.6	60.6



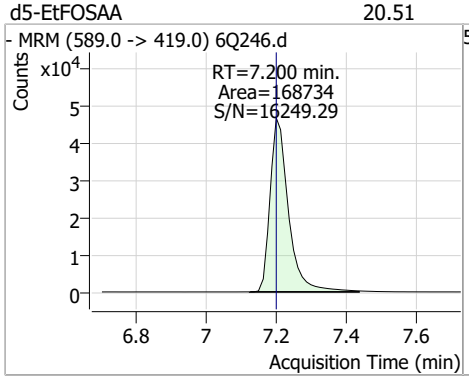


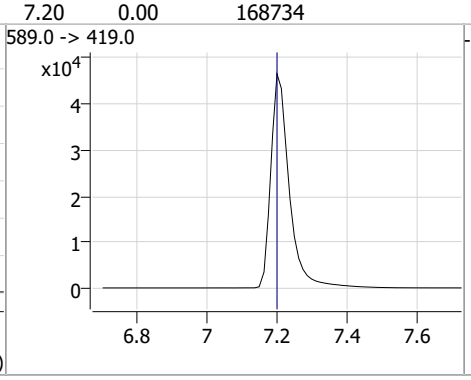


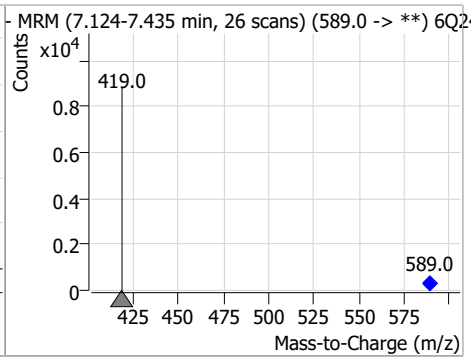


Perfluorinated Compounds by LC/MS/MS

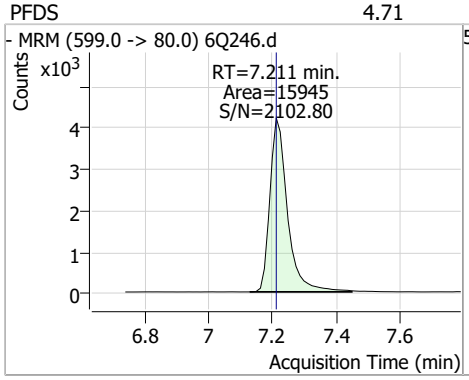
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.51	7.20	0.00	168734				

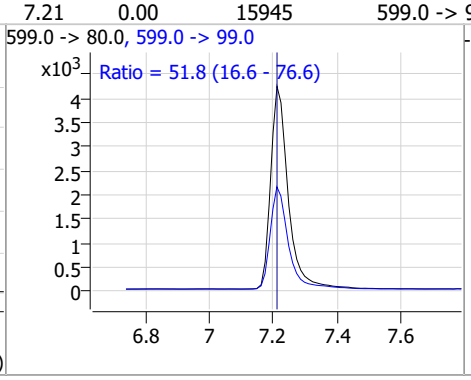


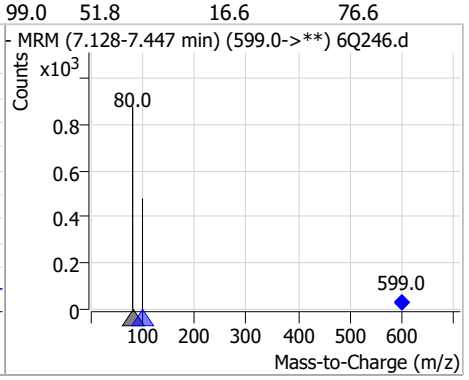




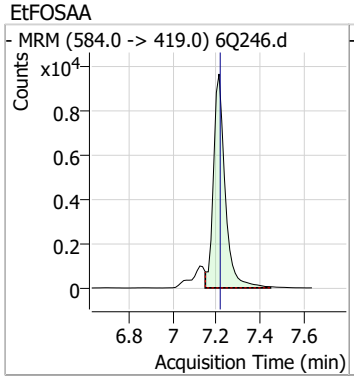
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.71	7.21	0.00	15945	599.0 -> 99.0	51.8	16.6	76.6

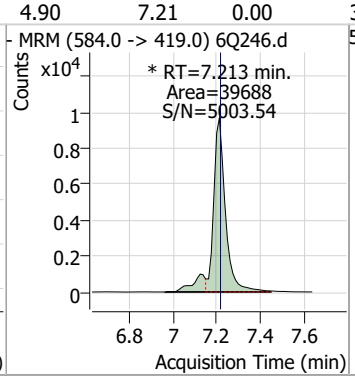


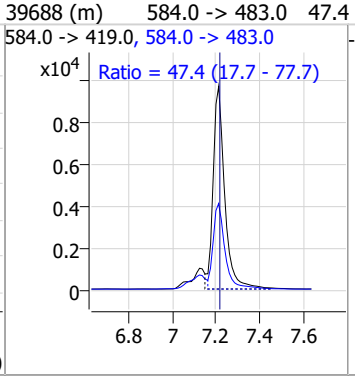


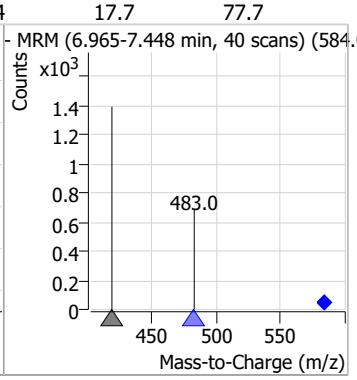


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.90	7.21	0.00	39688 (m)	584.0 -> 483.0	47.4	17.7	77.7

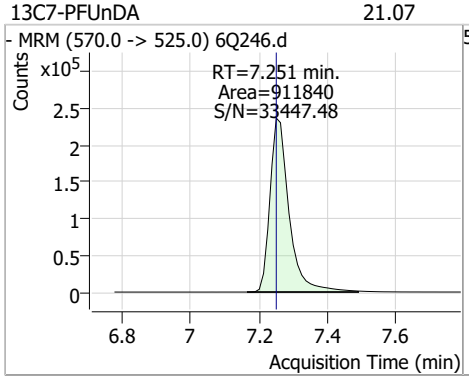


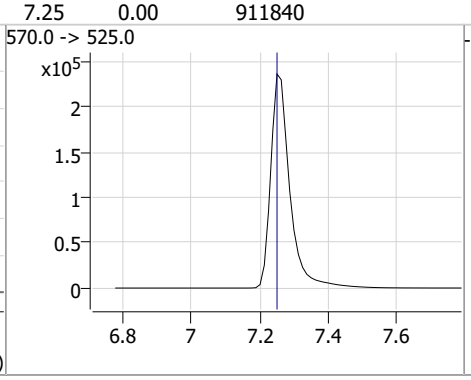


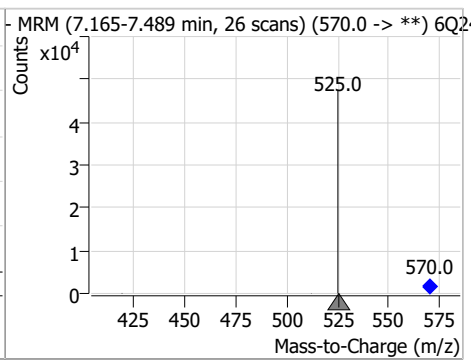




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.07	7.25	0.00	911840				

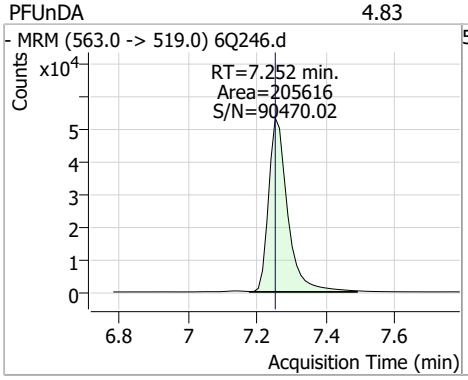


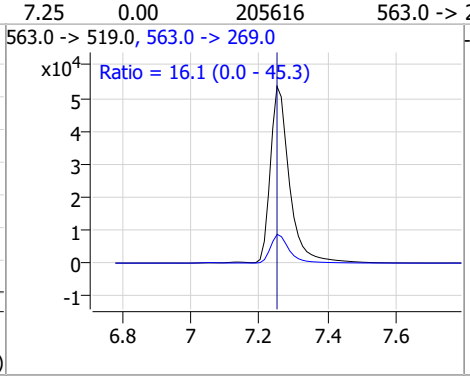


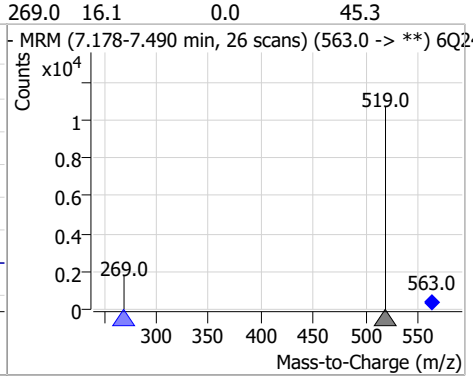


Perfluorinated Compounds by LC/MS/MS

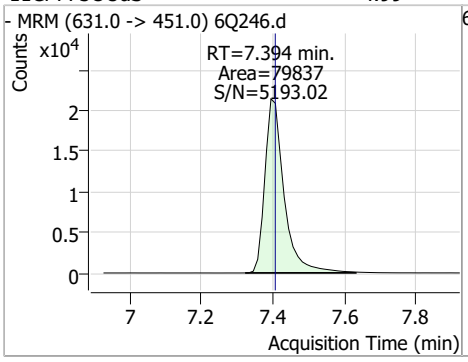
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.83	7.25	0.00	205616	563.0 -> 269.0	16.1	0.0	45.3

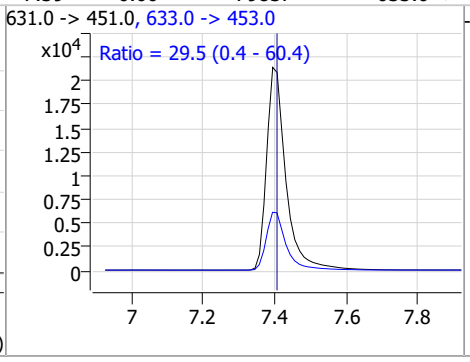


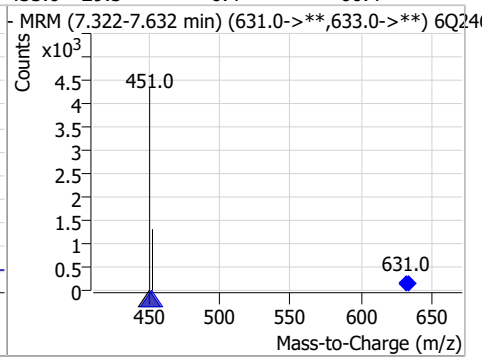




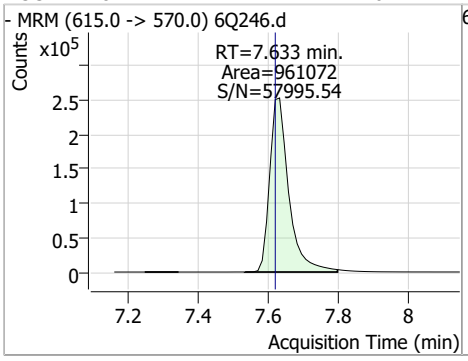
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.99	7.39	0.00	79837	633.0 -> 453.0	29.5	0.4	60.4

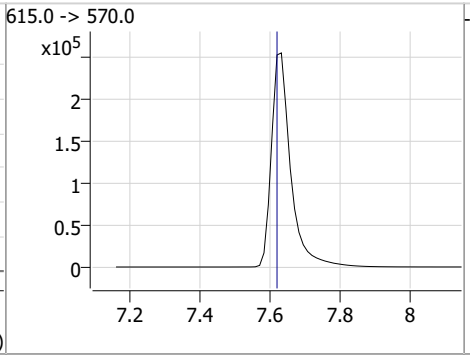


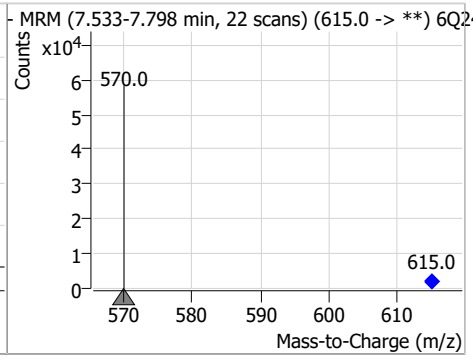




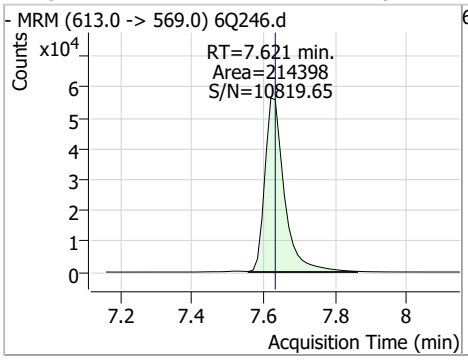
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.71	7.63	0.01	961072				

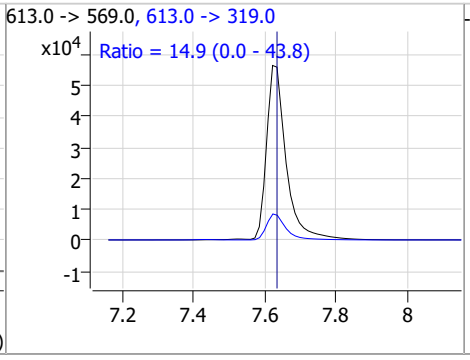


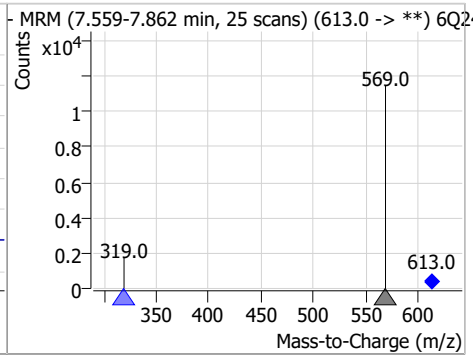




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.84	7.62	0.00	214398	613.0 -> 319.0	14.9	0.0	43.8

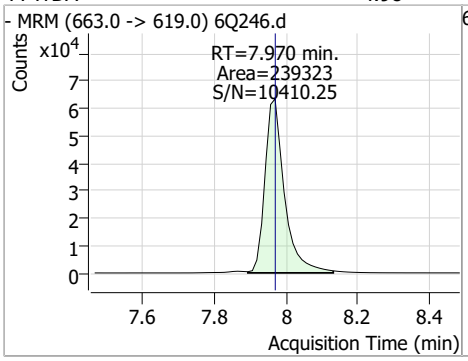


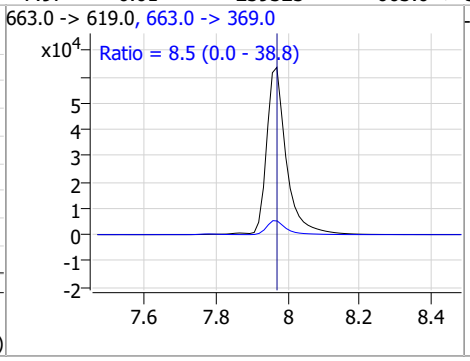


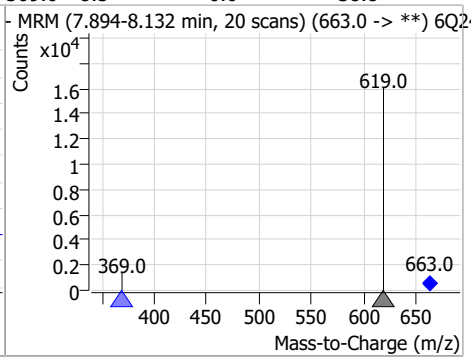


Perfluorinated Compounds by LC/MS/MS

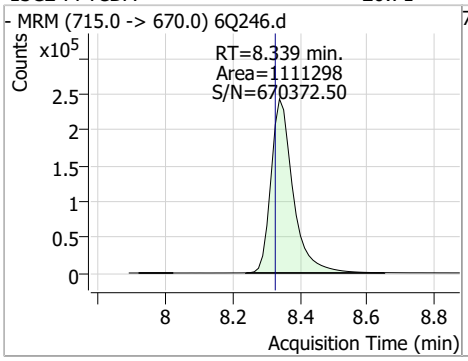
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.98	7.97	0.01	239323	663.0 -> 369.0	8.5	0.0	38.8

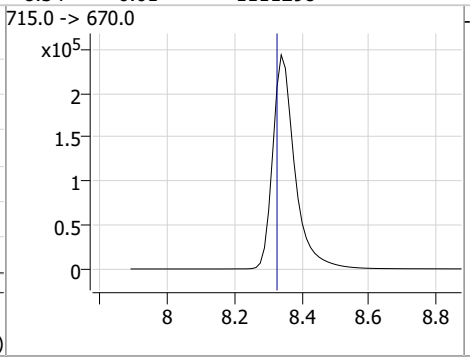


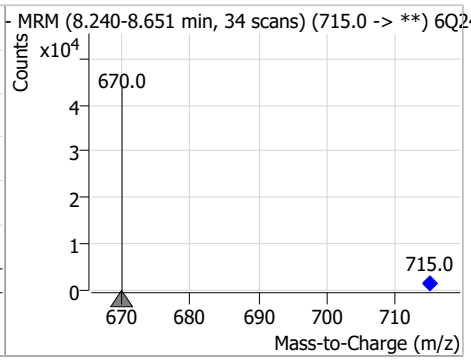




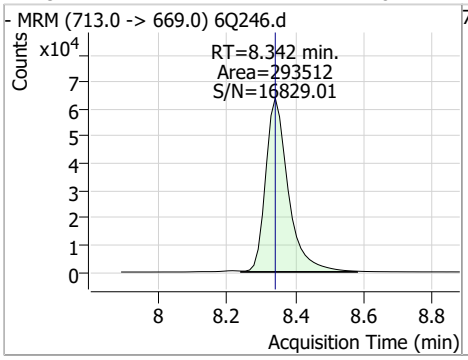
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.71	8.34	0.01	1111298				

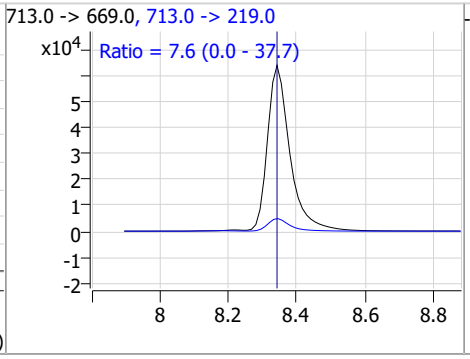


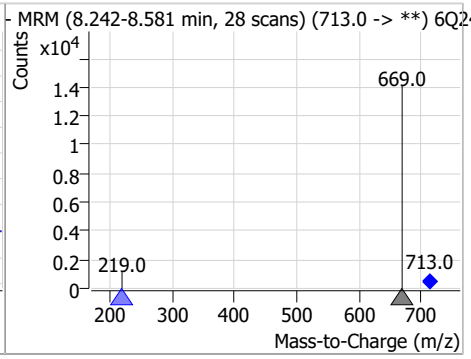




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.81	8.34	0.01	293512	713.0 -> 219.0	7.6	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q246.D
Injection Time: 05/19/22 11:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.31	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q247.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 11:53:02 AM
Sample Name : ic6-10
Vial : P1-A6
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

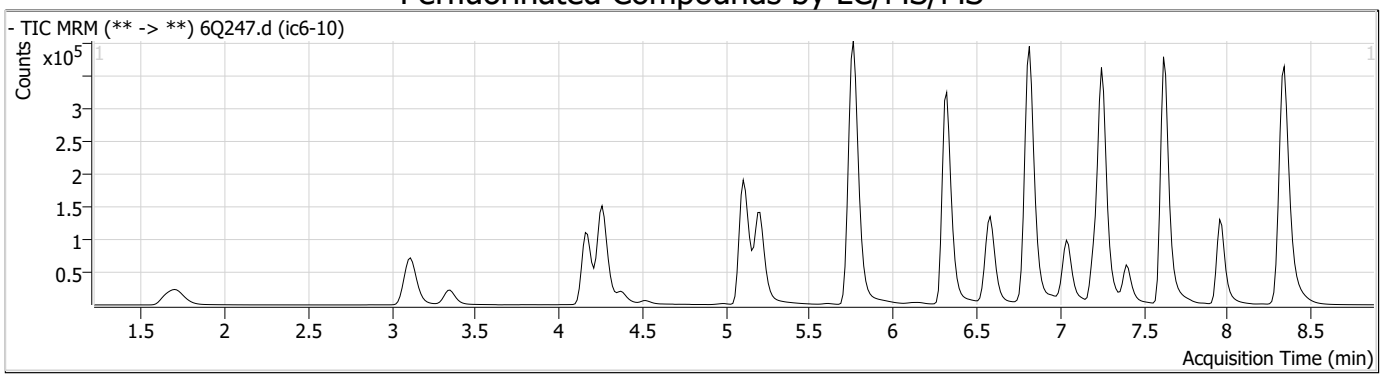
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	164328	20.00	µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	279398	20.00	µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	422645	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	450895	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	746496	20.00	µg/L	0.000
M9-PFNA	6.329	472.0 -> 427.0	863490	20.00	µg/L	0.000
M6-PFDA	6.821	519.0 -> 474.0	698759	20.00	µg/L	0.012
M7-PFUnDA	7.251	570.0 -> 525.0	861270	20.00	µg/L	0.000
M2-PFDoDA	7.620	615.0 -> 570.0	932991	20.00	µg/L	0.000
M2-PFTeDA	8.339	715.0 -> 670.0	1085415	20.00	µg/L	0.012
M8-FOSA	6.588	506.0 -> 78.0	210241	20.00	µg/L	0.000
M3-PFBS	3.348	302.0 -> 99.0	35196	20.00	µg/L	0.000
M3-PFHxS	5.152	402.0 -> 99.0	33125	20.00	µg/L	0.012
M8-PFOS	6.312	507.0 -> 99.0	42621	20.00	µg/L	0.000
M2-4:2FTS	4.160	329.0 -> 309.0	286949	20.00	µg/L	0.000
M2-6:2FTS	5.753	429.0 -> 409.0	336447	20.00	µg/L	0.012
M2-8:2FTS	6.832	529.0 -> 509.0	232466	20.00	µg/L	0.000
M3-MeFOSAA	7.039	573.0 -> 419.0	186832	20.00	µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	11794	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	50443	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	165269	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.160	329.0 -> 309.0	286949	19.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-6:2FTS	5.753	429.0 -> 409.0	336447	19.76	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-8:2FTS	6.832	529.0 -> 509.0	232466	18.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C2-PFDoDA	7.620	615.0 -> 570.0	932991	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFTeDA	8.339	715.0 -> 670.0	1085415	20.23	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C3-PFBS	3.348	302.0 -> 99.0	35196	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-PFHxS	5.152	402.0 -> 99.0	33125	20.16	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C4-PFBA	1.699	217.0 -> 172.0	164328	20.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C4-PFHpA	5.110	367.0 -> 322.0	450895	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFHxA	4.264	318.0 -> 273.0	422645	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFPeA	3.118	268.0 -> 223.0	279398	20.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C6-PFDA	6.821	519.0 -> 474.0	698759	19.05	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

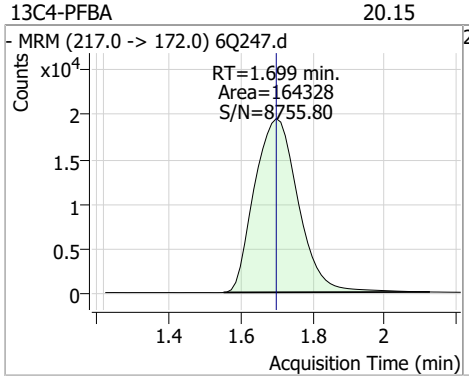
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
13C7-PFUnDA	7.251	570.0 -> 525.0	861270	19.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C8-FOSA	6.588	506.0 -> 78.0	210241	19.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C8-PFOA	5.770	421.0 -> 376.0	746496	20.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
13C8-PFOS	6.312	507.0 -> 99.0	42621	19.77	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C9-PFNA	6.329	472.0 -> 427.0	863490	19.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
d3-MeFOSAA	7.039	573.0 -> 419.0	186832	19.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C3-HFPO-DA	4.528	287.0 -> 169.0	11786	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
d3-MeFOSA	7.020	515.0 -> 169.0	50443	19.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%			
d5-EtFOSAA	7.200	589.0 -> 419.0	165242	20.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
Target Compounds							**QValue**
4:2FTS	4.162	327.0 -> 307.0	154093	9.88	µg/L		99
6:2FTS	5.742	427.0 -> 407.0	162907	9.55	µg/L		96
8:2FTS	6.833	527.0 -> 507.0	118051	10.24	µg/L		98
EtFOSAA	7.213	584.0 -> 419.0	74135	9.34	µg/L	m	95
FOSA	6.590	498.0 -> 78.0	94650	9.18	µg/L		99
MeFOSAA	7.052	570.0 -> 419.0	83207	9.99	µg/L	m	98
PFBA	1.705	213.0 -> 169.0	34464	9.25	µg/L		100
PFBS	3.340	299.0 -> 80.0	52804	9.65	µg/L		99
PFDA	6.810	513.0 -> 469.0	442195	9.95	µg/L		99
PFDoDA	7.621	613.0 -> 569.0	417590	9.72	µg/L		99
PFDS	7.211	599.0 -> 80.0	30724	9.62	µg/L		95
PFHpA	5.112	363.0 -> 319.0	282938	9.46	µg/L		99
PFHpS	5.777	449.0 -> 80.0	36875	9.47	µg/L		100
PFHxA	4.265	313.0 -> 269.0	208257	9.09	µg/L		100
PFHxS	5.143	399.0 -> 80.0	39977	9.07	µg/L	m	96
PFNA	6.330	463.0 -> 419.0	339160	9.23	µg/L		100
PFNS	6.782	549.0 -> 80.0	40362	9.61	µg/L		99
PFOA	5.771	413.0 -> 369.0	356866	9.45	µg/L		99
PFOS	6.314	499.0 -> 80.0	36920	9.21	µg/L	m	83
PFPeA	3.121	263.0 -> 219.0	115246	9.44	µg/L		100
PFPeS	4.370	349.0 -> 80.0	43083	9.42	µg/L		99
PFTeDA	8.342	713.0 -> 669.0	529992	8.88	µg/L		99
PFTrDA	7.958	663.0 -> 619.0	447384	9.59	µg/L		100
PFUnDA	7.252	563.0 -> 519.0	378612	9.41	µg/L		97
11Cl-PF3OUdS	7.394	631.0 -> 451.0	143529	9.24	µg/L		99
9Cl-PF3ONS	6.570	531.0 -> 351.0	199821	9.64	µg/L		100
ADONA	5.207	377.0 -> 251.0	436748	9.09	µg/L		99
HFPO-DA	4.518	285.0 -> 169.0	6031	10.91	µg/L		95
MeFOSA	7.034	512.0 -> 169.0	27286	10.44	µg/L		96

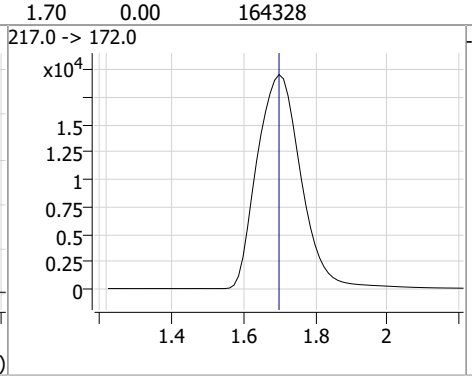
 # = Qualifier out of range, m = manually integrated, + = Area summed

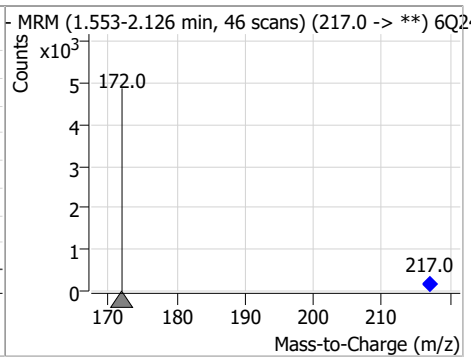
Perfluorinated Compounds by LC/MS/MS



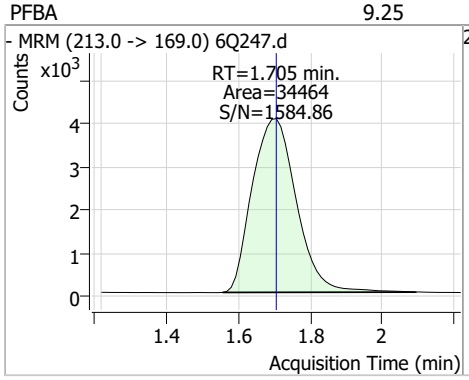
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.15	1.70	0.00	164328				

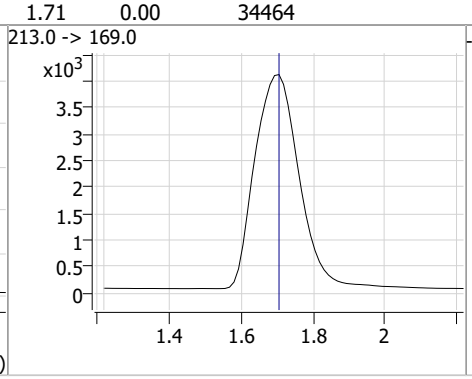


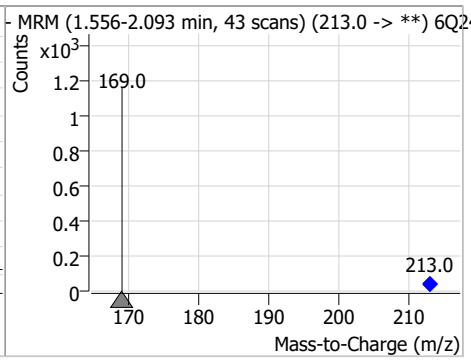




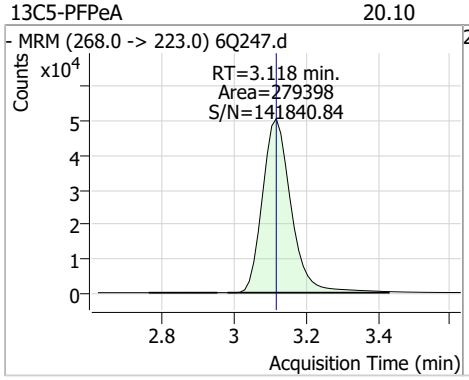
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.25	1.71	0.00	34464				

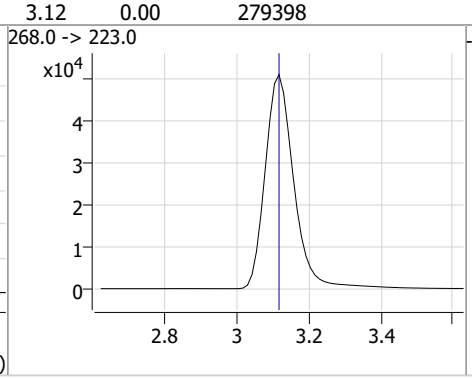


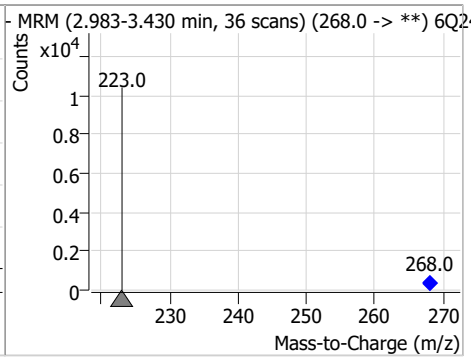




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.10	3.12	0.00	279398				

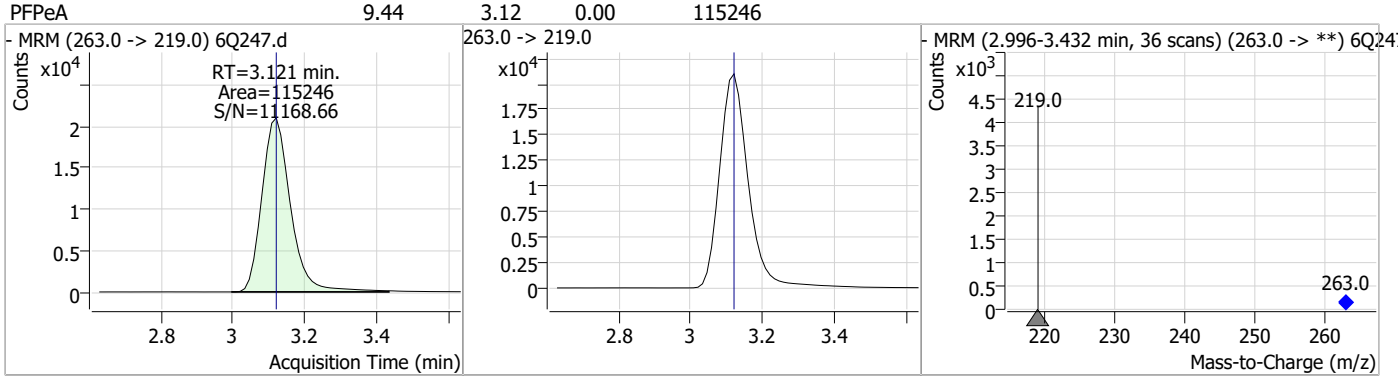




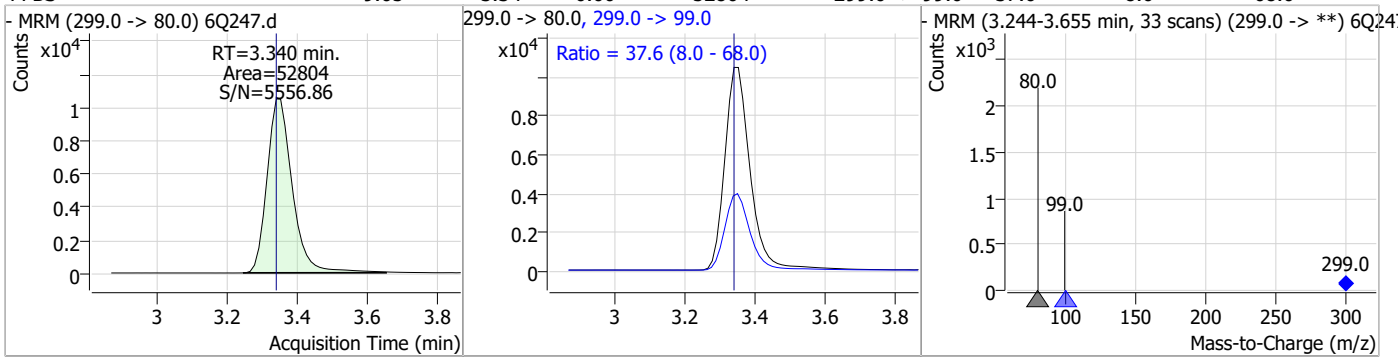


Perfluorinated Compounds by LC/MS/MS

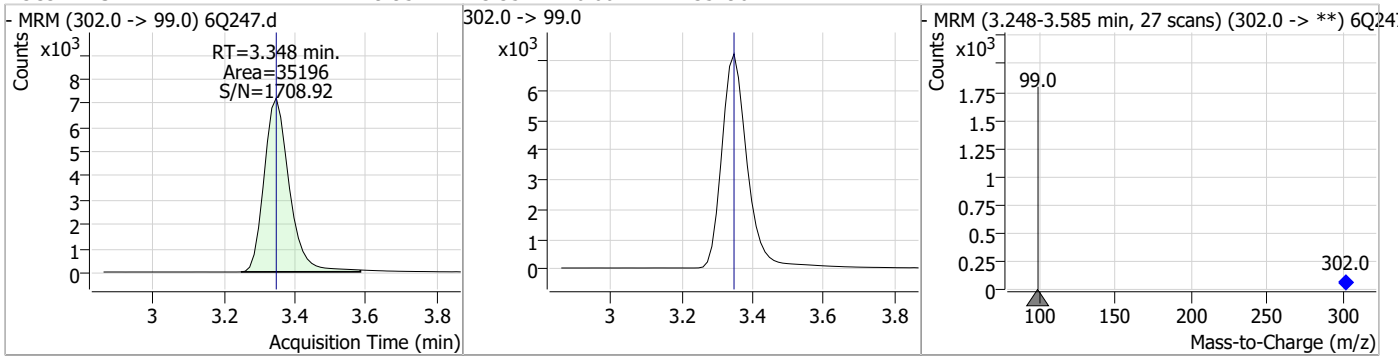
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.44	3.12	0.00	115246				



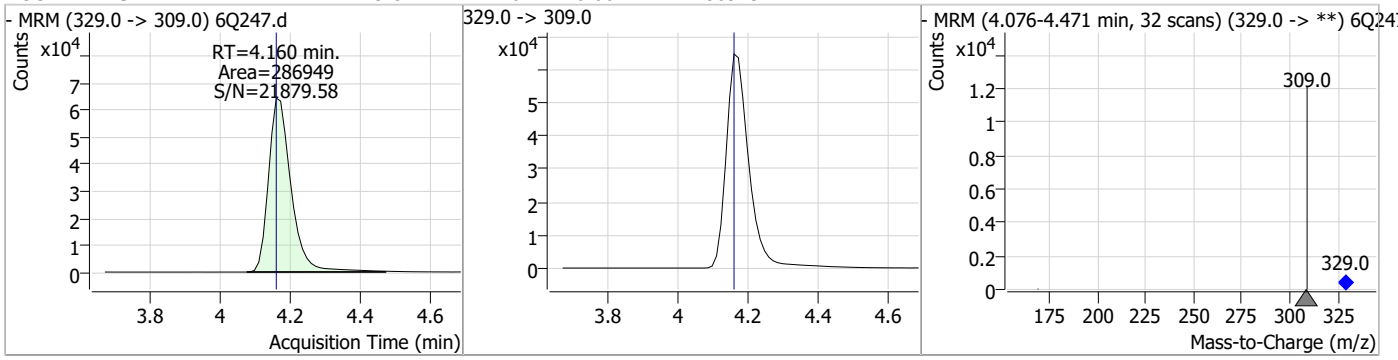
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.65	3.34	0.00	52804	299.0 -> 99.0	37.6	8.0	68.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.95	3.35	0.00	35196				

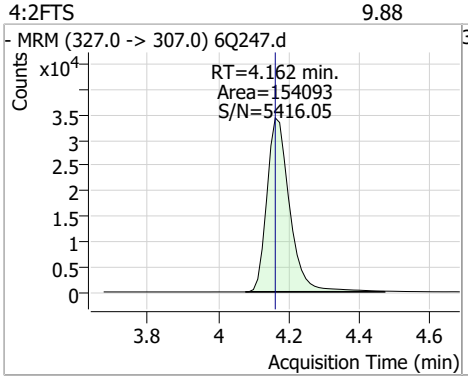


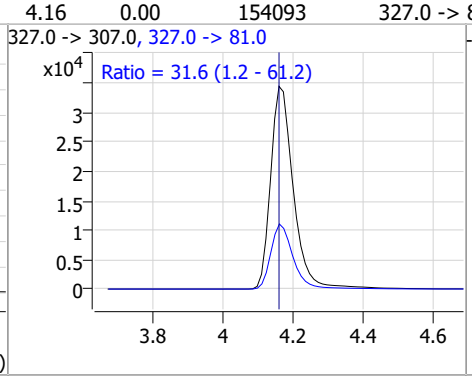
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.51	4.16	0.00	286949				

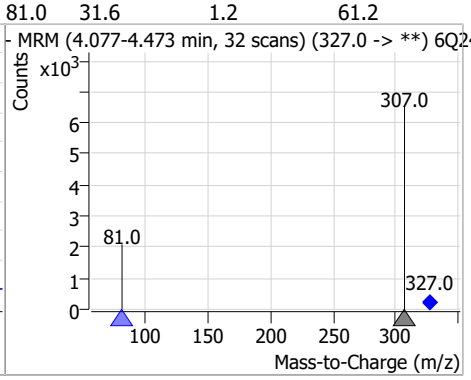


Perfluorinated Compounds by LC/MS/MS

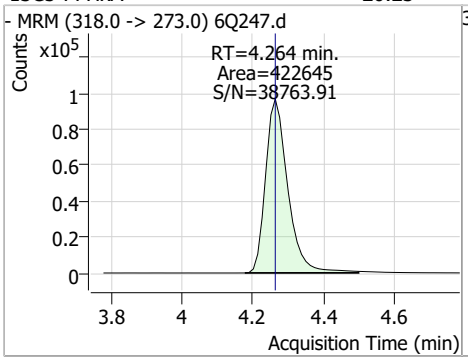
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	9.88	4.16	0.00	154093	327.0 -> 81.0	31.6	1.2	61.2

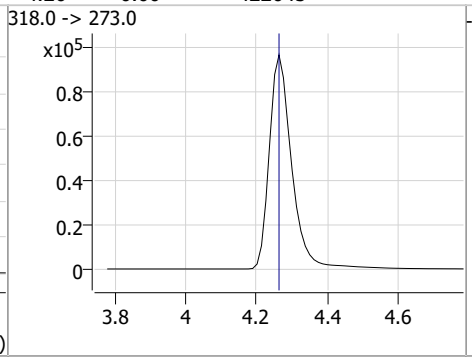


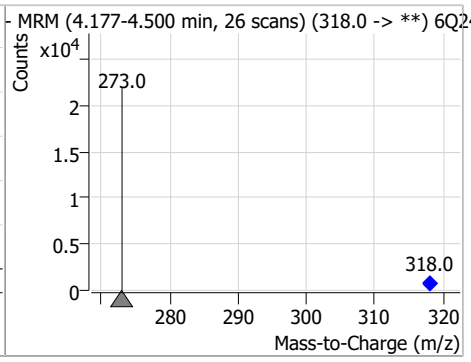




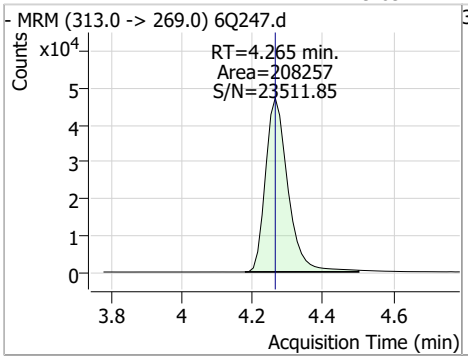
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.23	4.26	0.00	422645				

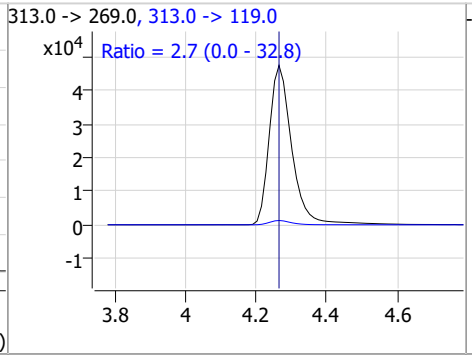


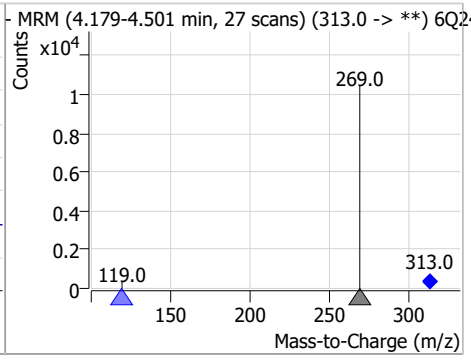




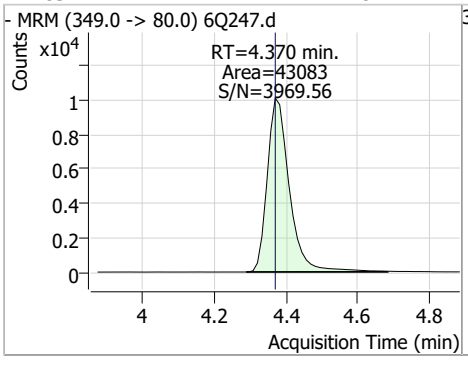
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.09	4.26	0.00	208257	313.0 -> 119.0	2.7	0.0	32.8

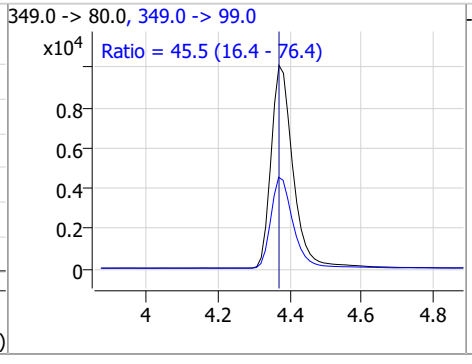


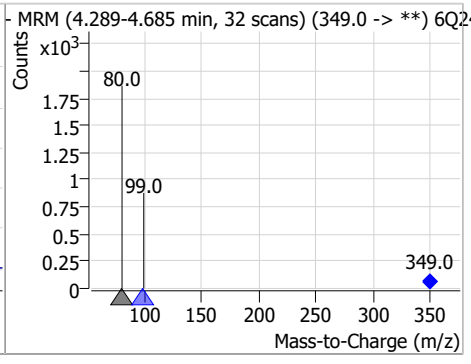




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.42	4.37	0.00	43083	349.0 -> 99.0	45.5	16.4	76.4

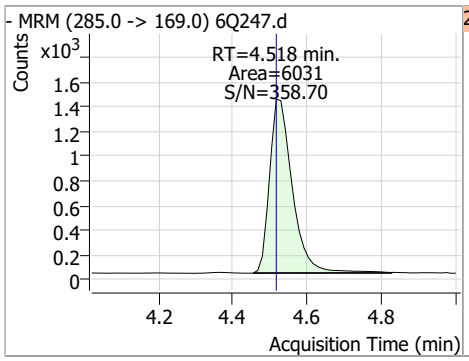


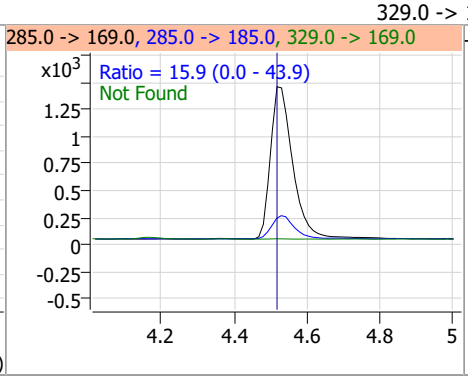


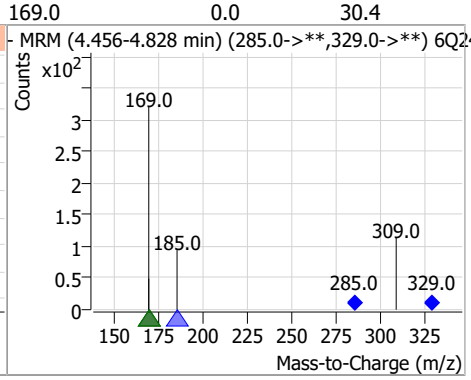


Perfluorinated Compounds by LC/MS/MS

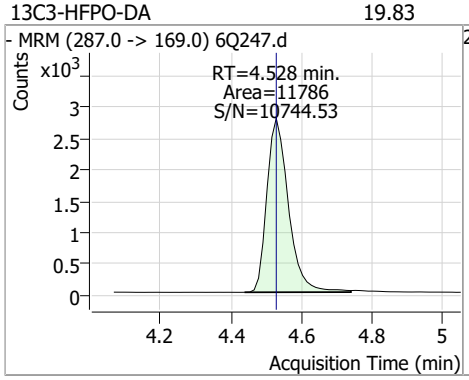
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.91	4.52	0.00	6031	285.0 -> 185.0	15.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

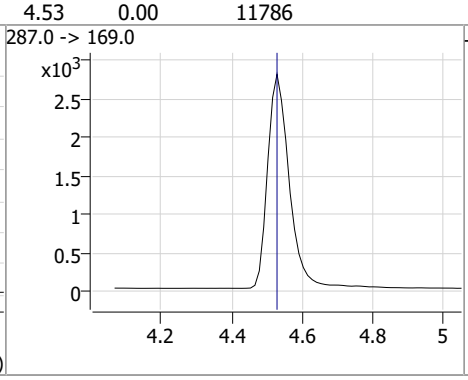


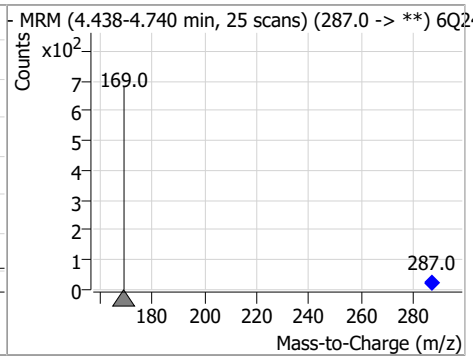




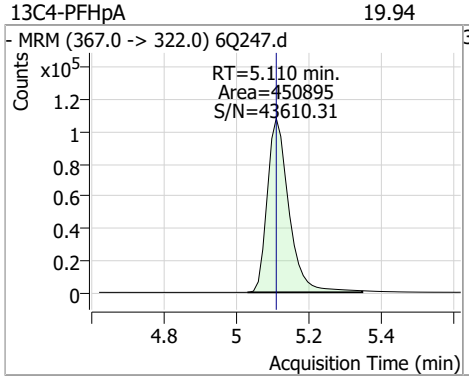
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.83	4.53	0.00	11786				

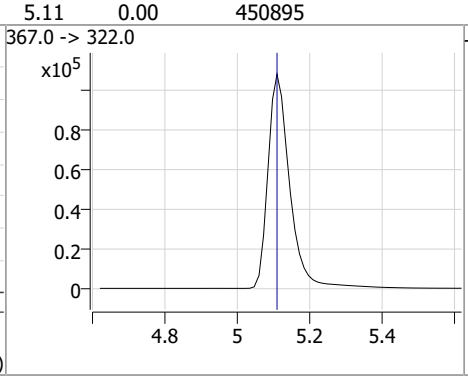


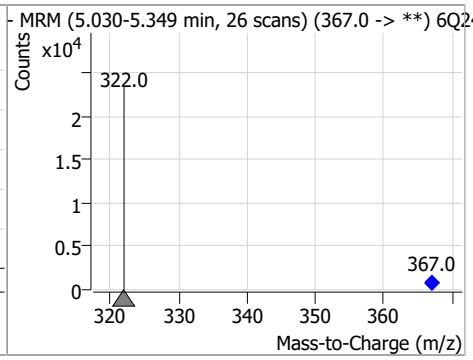




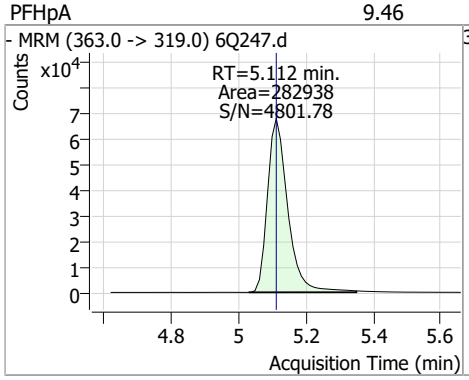
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.94	5.11	0.00	450895				

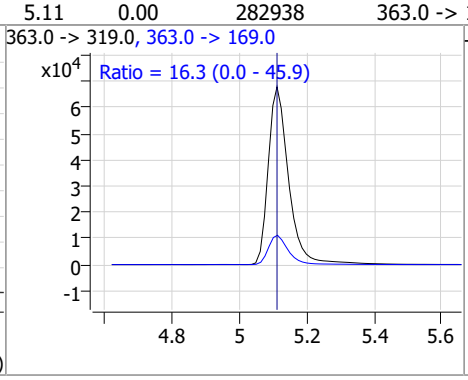


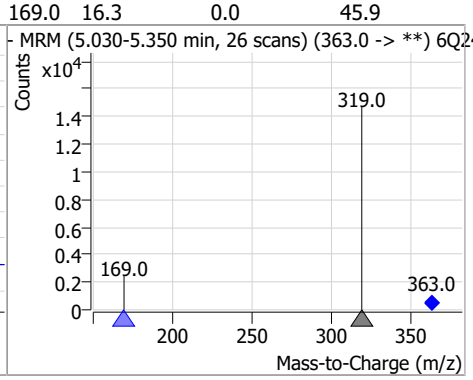




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.46	5.11	0.00	282938	363.0 -> 169.0	16.3	0.0	45.9

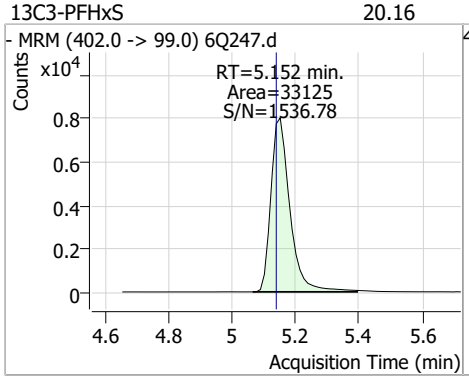


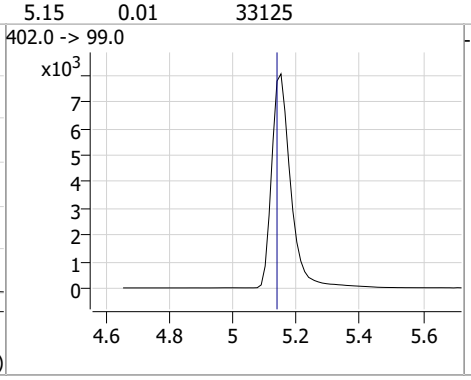


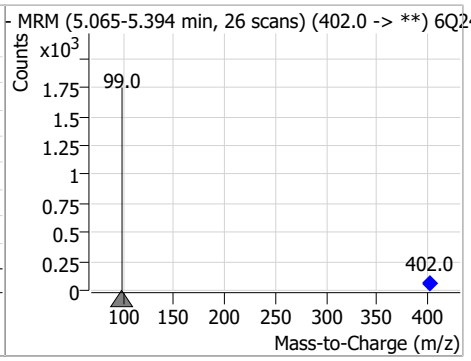


Perfluorinated Compounds by LC/MS/MS

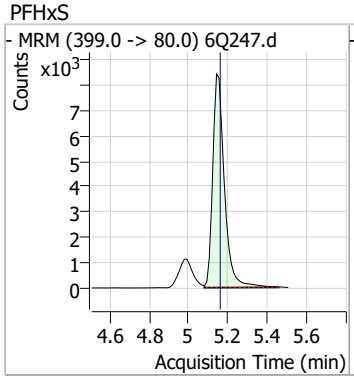
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.16	5.15	0.01	33125				

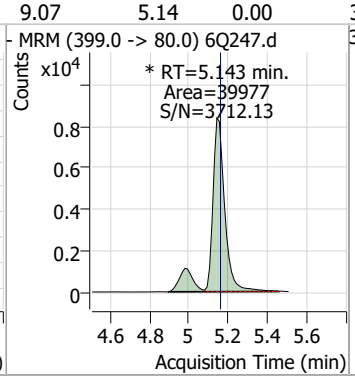


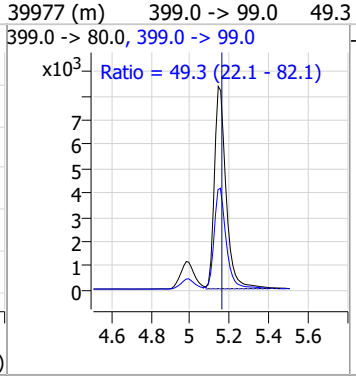


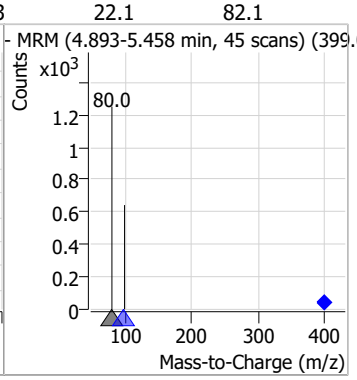


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.07	5.14	0.00	39977 (m)	399.0 -> 99.0	49.3	22.1	82.1

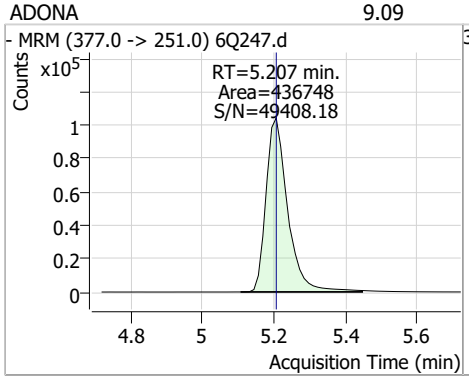


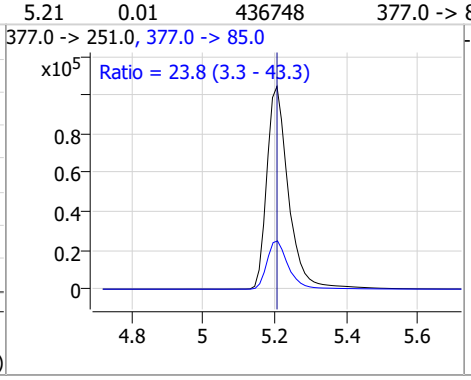


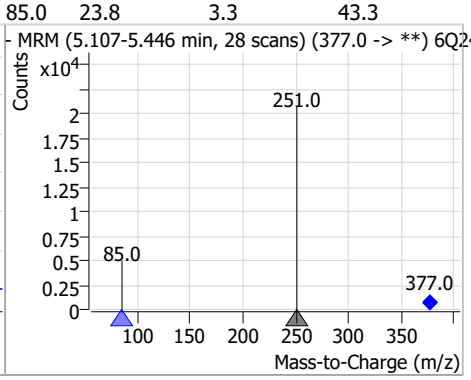




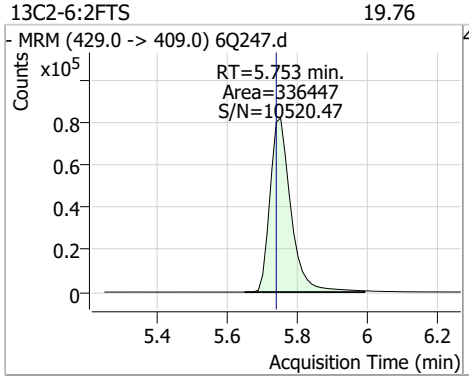
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.09	5.21	0.01	436748	377.0 -> 85.0	23.8	3.3	43.3

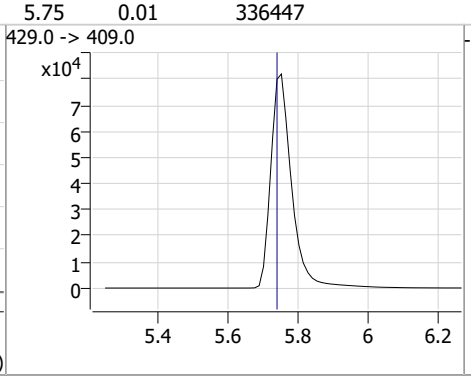


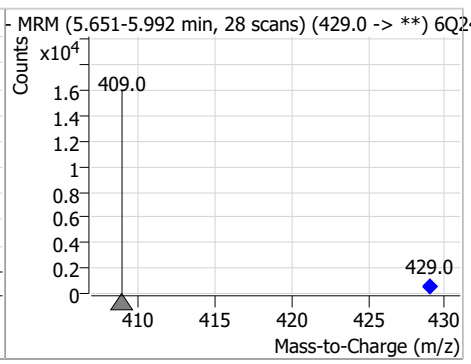




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.76	5.75	0.01	336447				

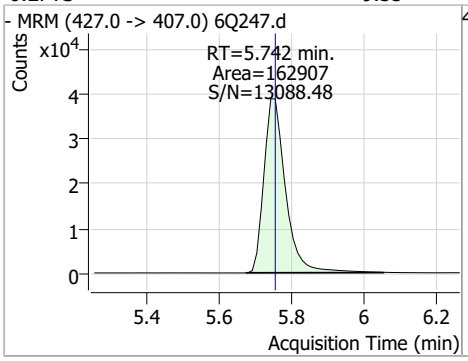


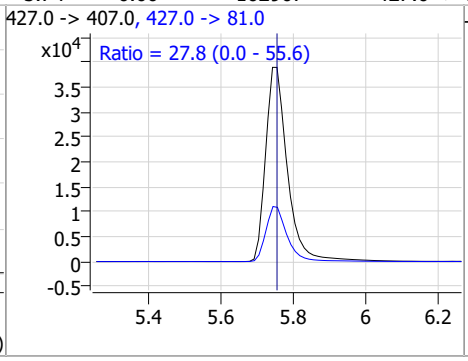


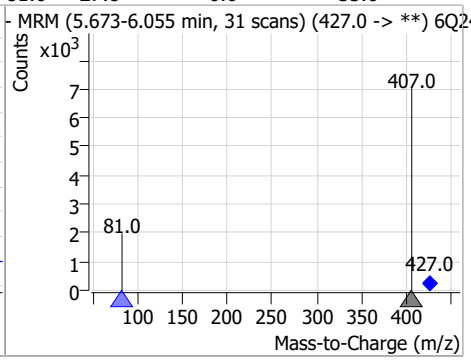


Perfluorinated Compounds by LC/MS/MS

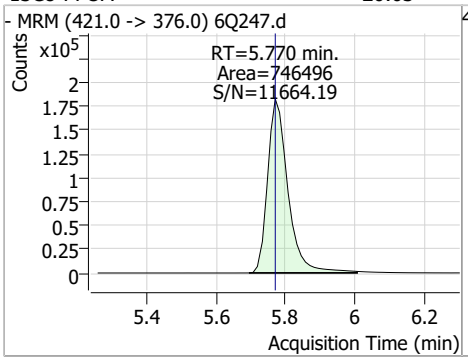
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	9.55	5.74	0.00	162907	427.0 -> 81.0	27.8	0.0	55.6

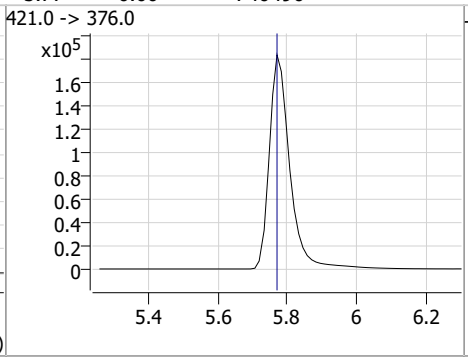


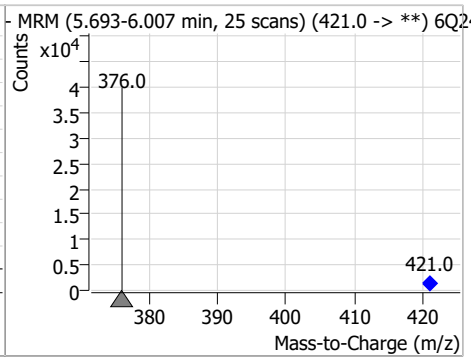




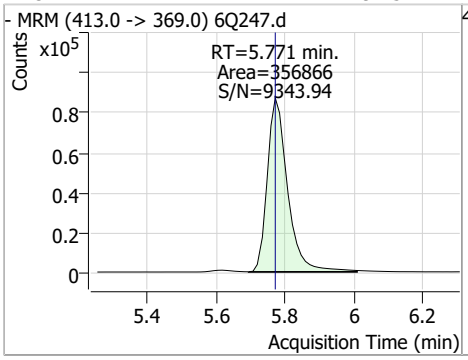
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.03	5.77	0.00	746496				

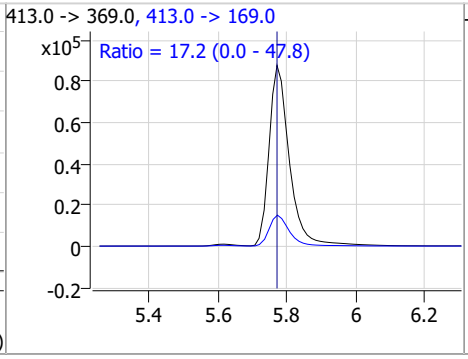


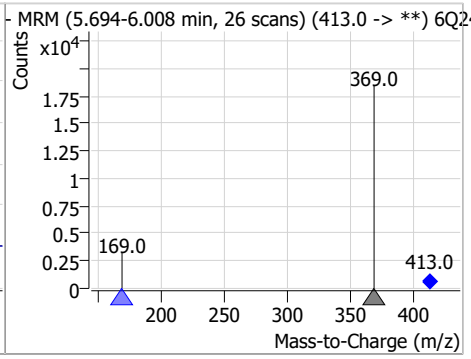




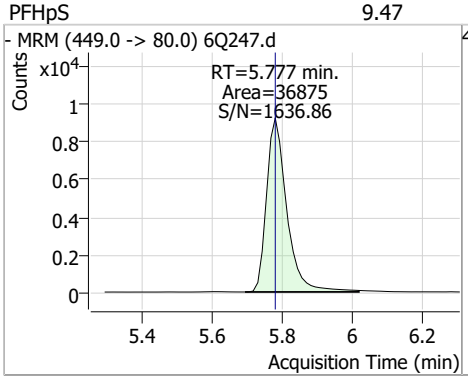
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.45	5.77	0.00	356866	413.0 -> 169.0	17.2	0.0	47.8

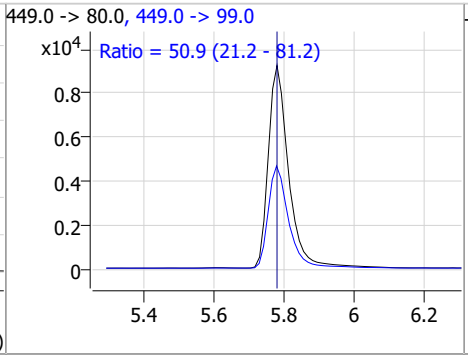


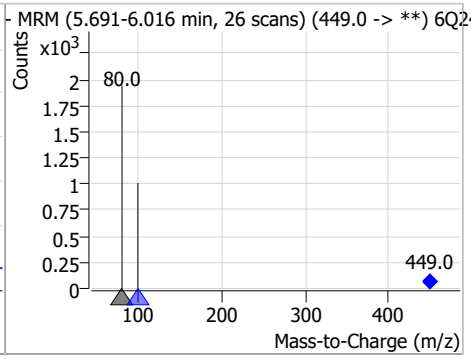




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.47	5.78	0.00	36875	449.0 -> 99.0	50.9	21.2	81.2

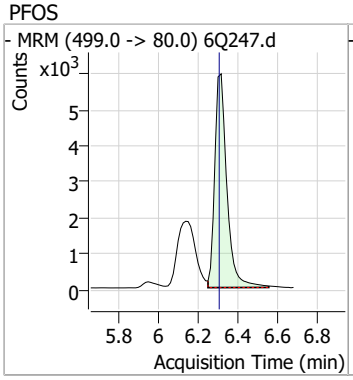


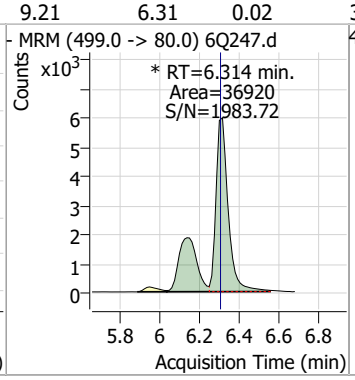


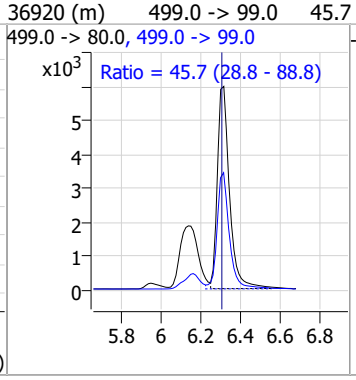


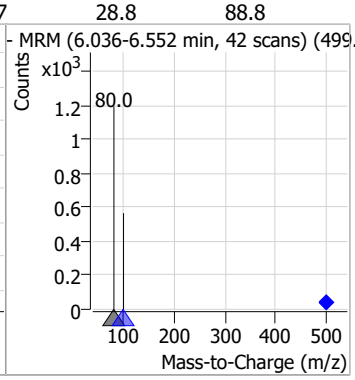
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.21	6.31	0.02	36920 (m)	499.0 -> 99.0	45.7	28.8	88.8

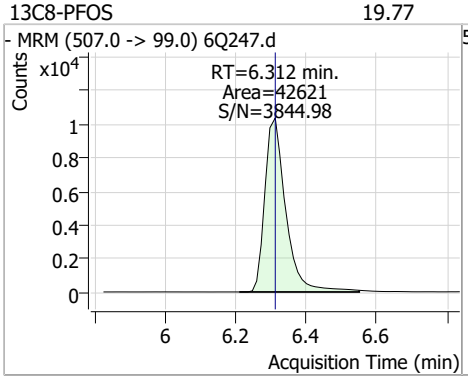


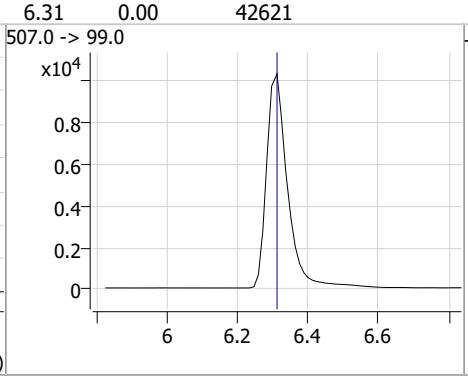


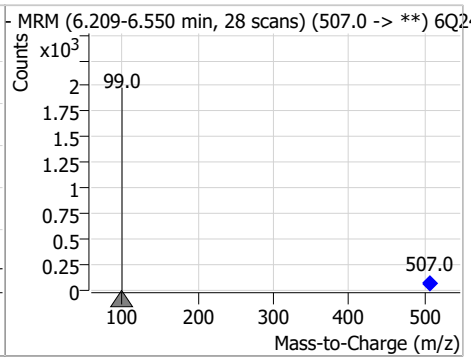




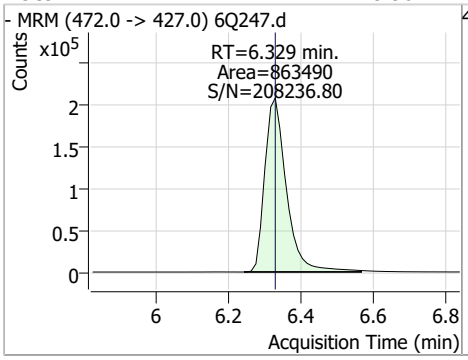
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.77	6.31	0.00	42621				

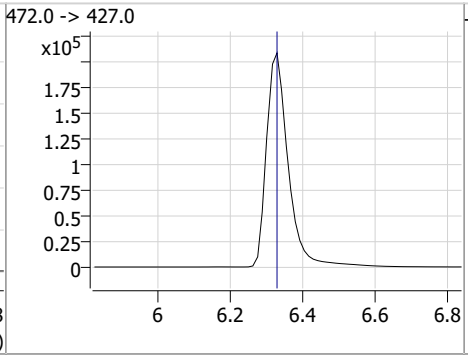


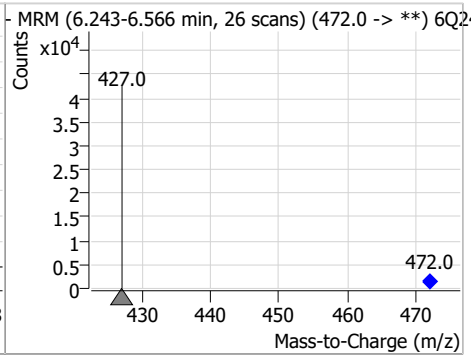




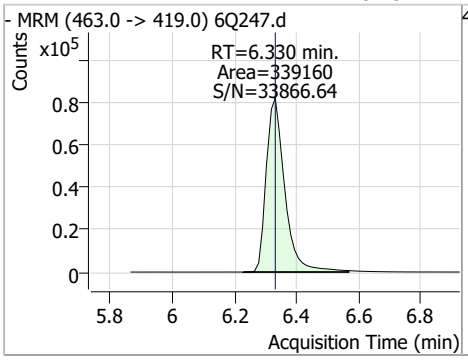
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.96	6.33	0.00	863490				

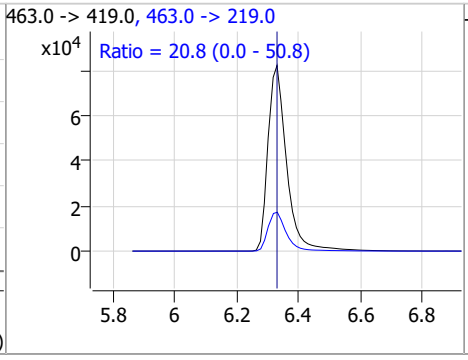


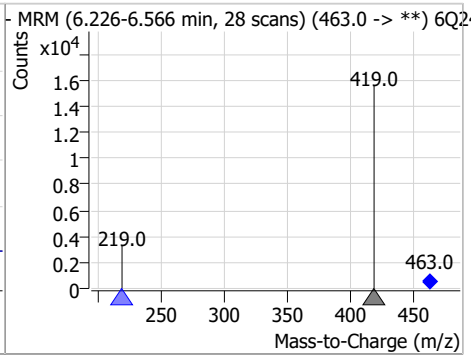




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.23	6.33	0.00	339160	463.0 -> 219.0	20.8	0.0	50.8

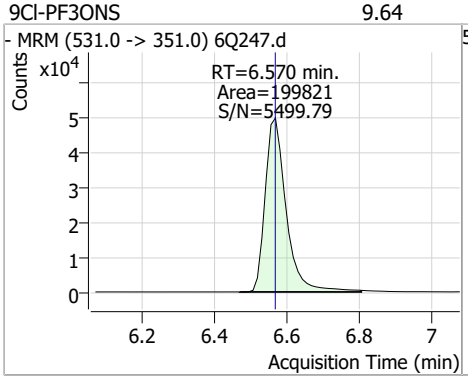


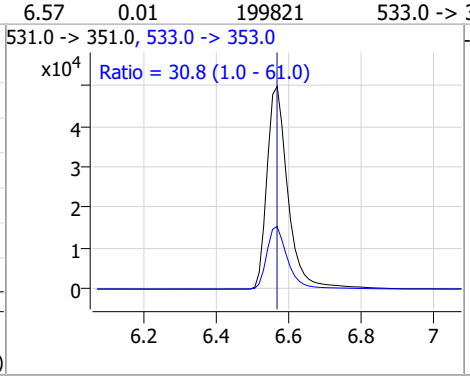


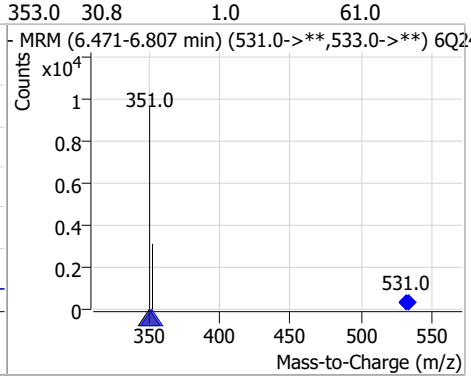


Perfluorinated Compounds by LC/MS/MS

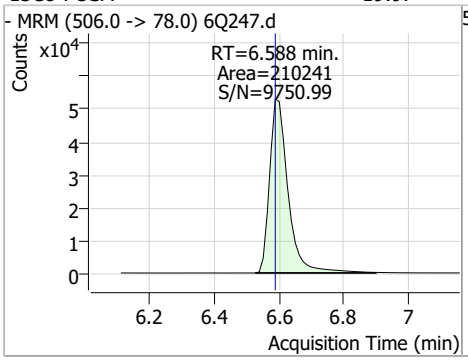
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.64	6.57	0.01	199821	533.0 -> 353.0	30.8	1.0	61.0

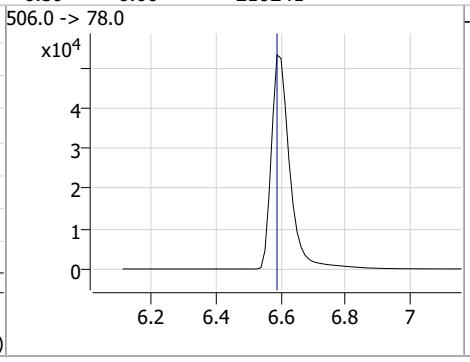


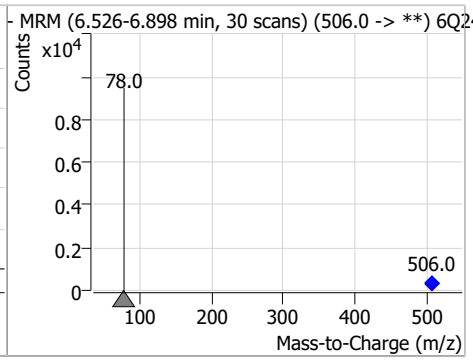




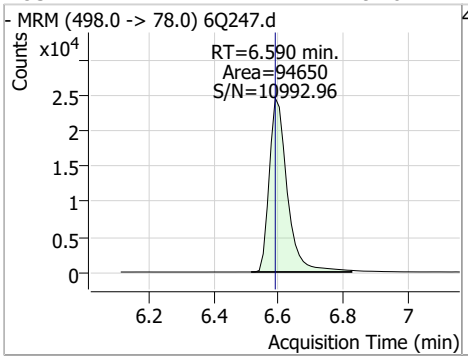
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.97	6.59	0.00	210241				

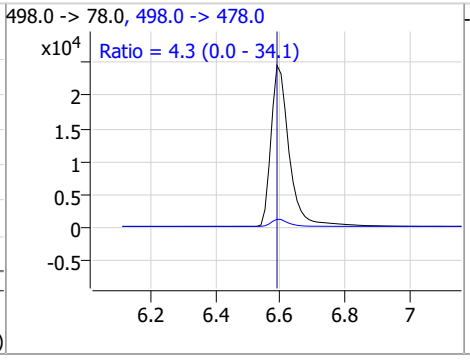


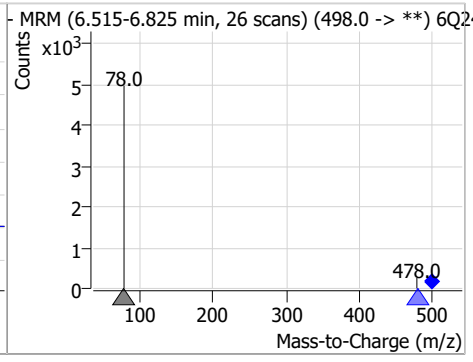




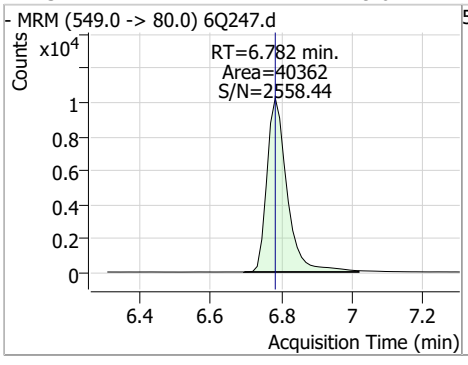
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.18	6.59	0.00	94650	498.0 -> 478.0	4.3	0.0	34.1

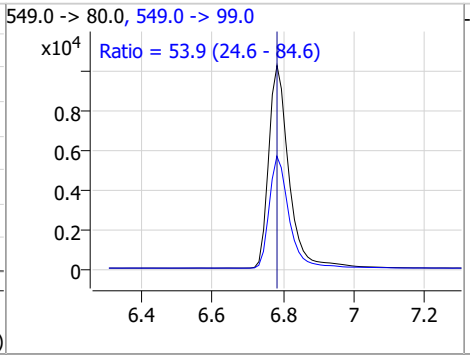


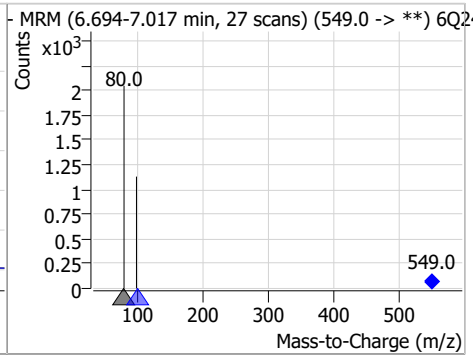




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.61	6.78	0.00	40362	549.0 -> 99.0	53.9	24.6	84.6

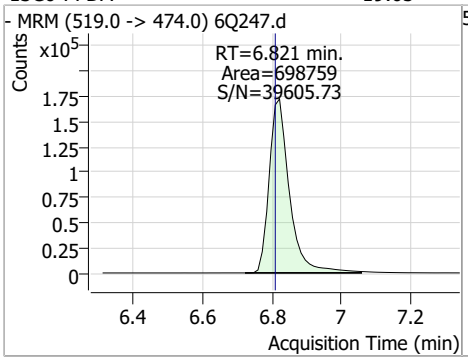


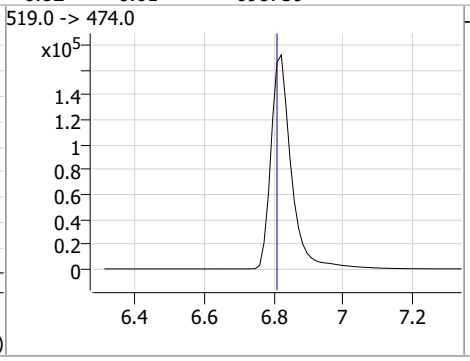


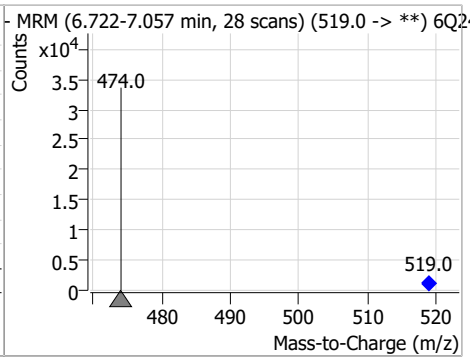


Perfluorinated Compounds by LC/MS/MS

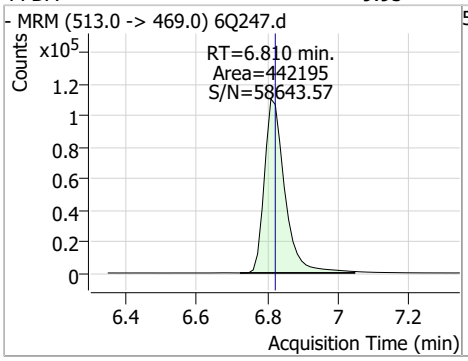
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.05	6.82	0.01	698759				

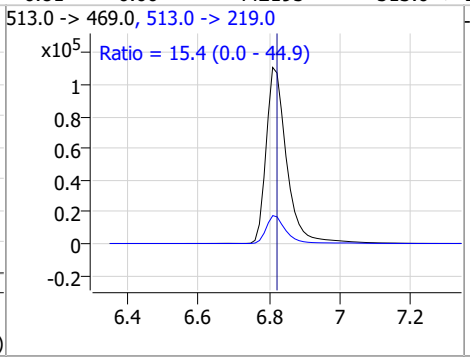


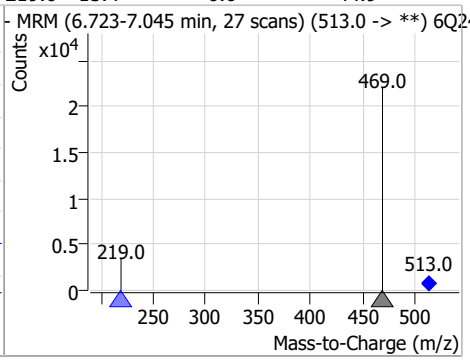




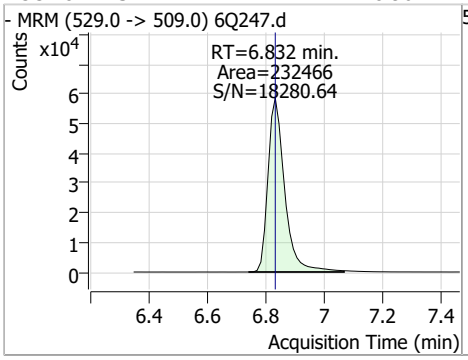
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.95	6.81	0.00	442195	513.0 -> 219.0	15.4	0.0	44.9

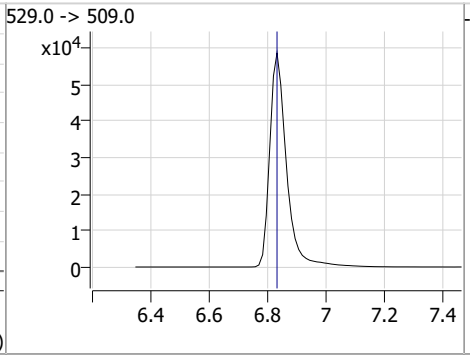


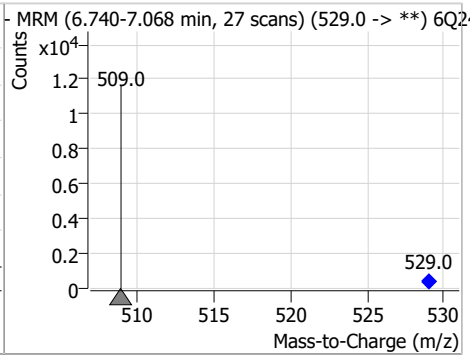




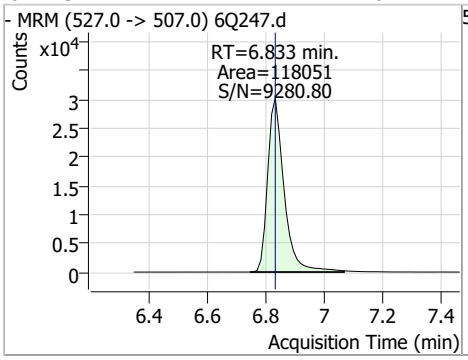
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.90	6.83	0.00	232466				

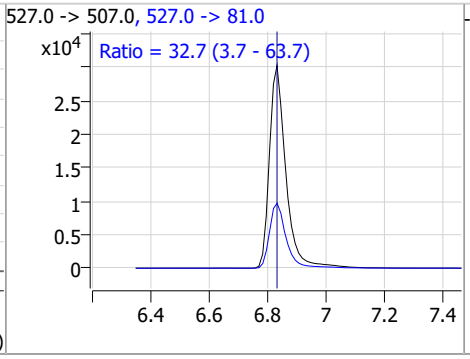


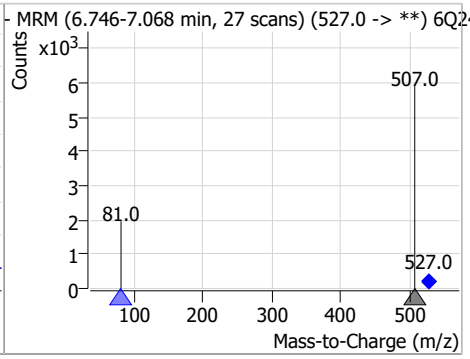




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.24	6.83	0.00	118051	527.0 -> 81.0	32.7	3.7	63.7

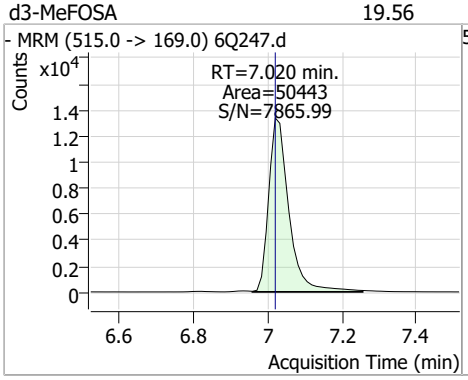


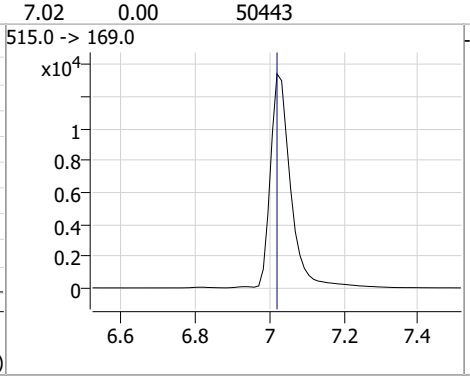


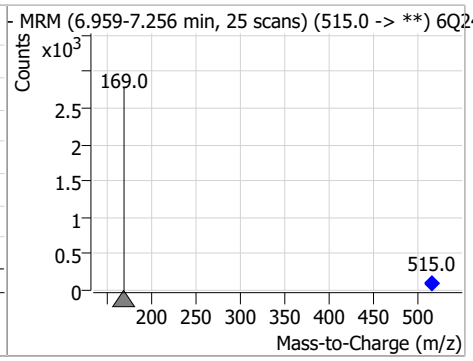


Perfluorinated Compounds by LC/MS/MS

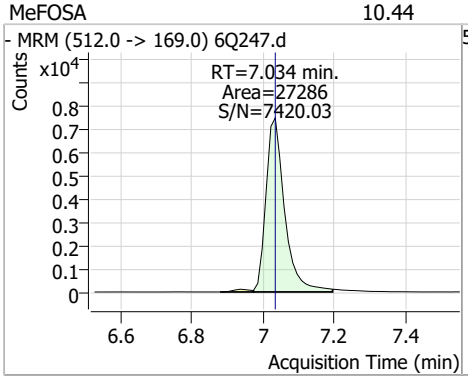
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.56	7.02	0.00	50443				

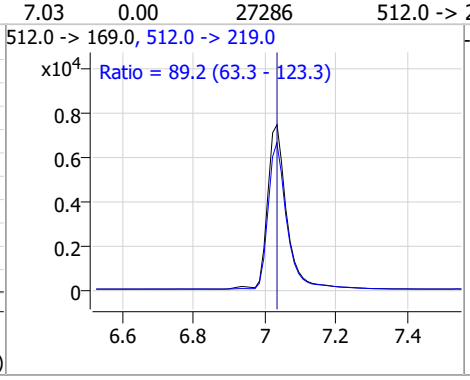


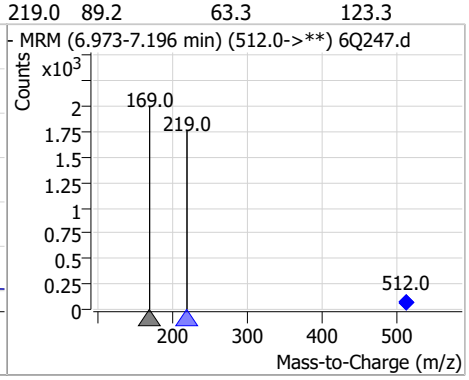




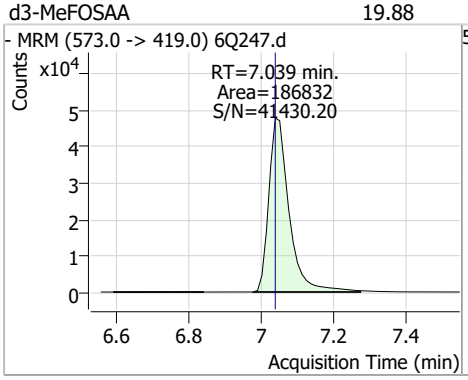
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.44	7.03	0.00	27286	512.0 -> 219.0	89.2	63.3	123.3

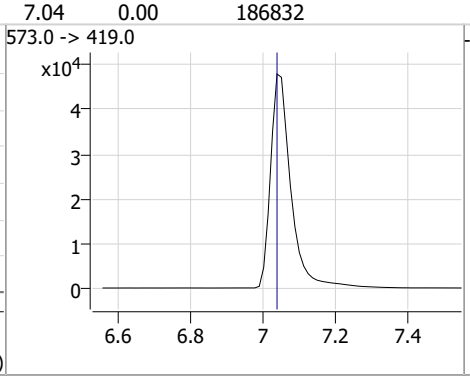


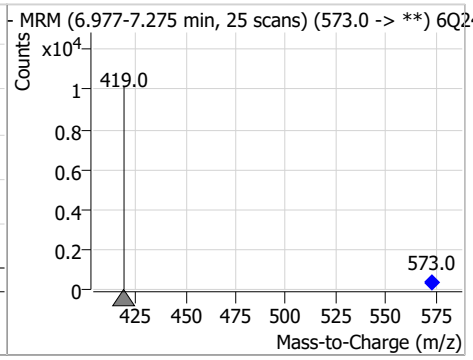




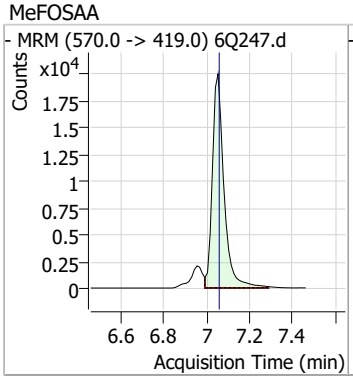
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.88	7.04	0.00	186832				

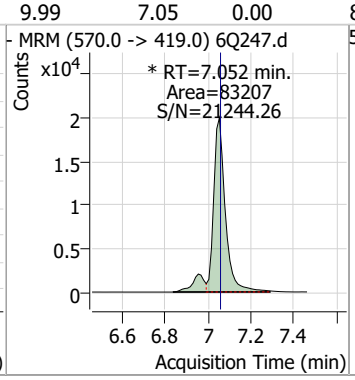


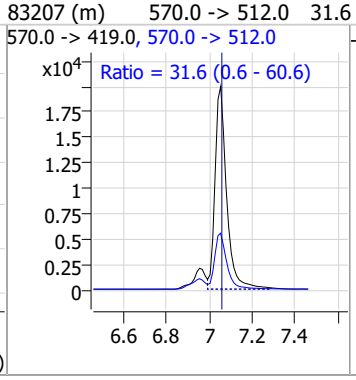


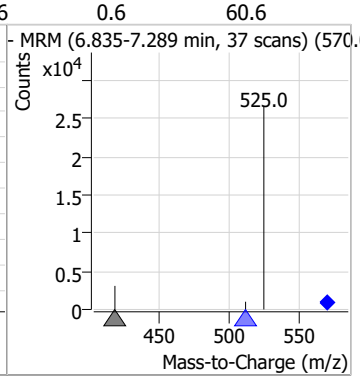


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.99	7.05	0.00	83207 (m)	570.0 -> 512.0	31.6	0.6	60.6







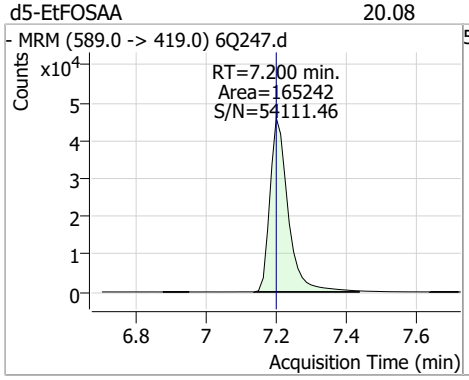


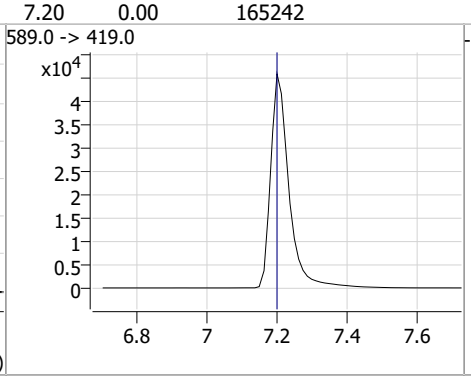
7.7.36

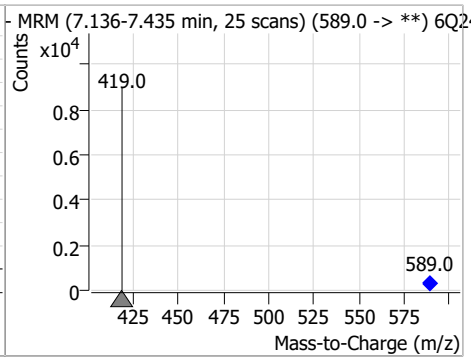
7

Perfluorinated Compounds by LC/MS/MS

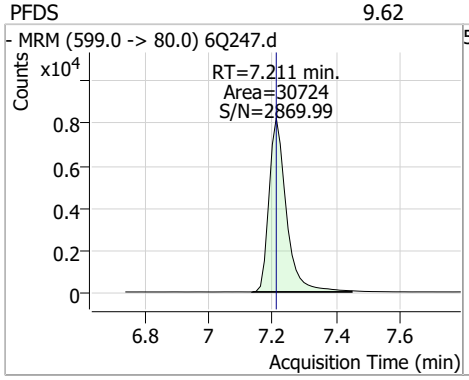
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.08	7.20	0.00	165242				

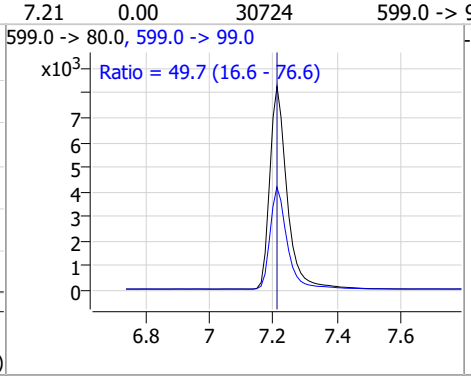


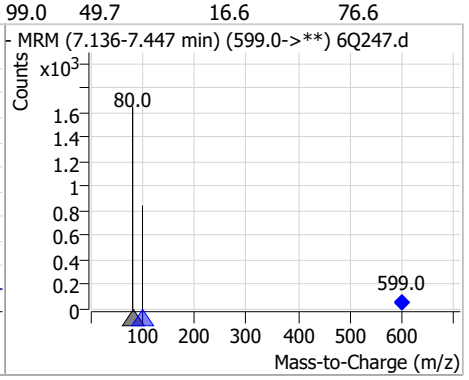




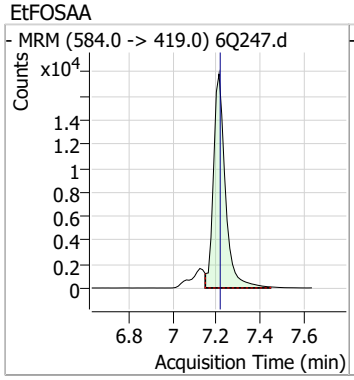
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.62	7.21	0.00	30724	599.0 -> 99.0	49.7	16.6	76.6

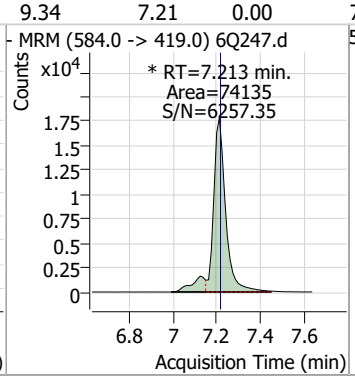


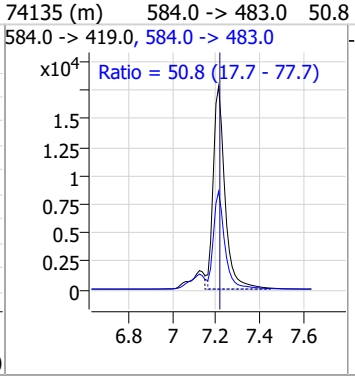


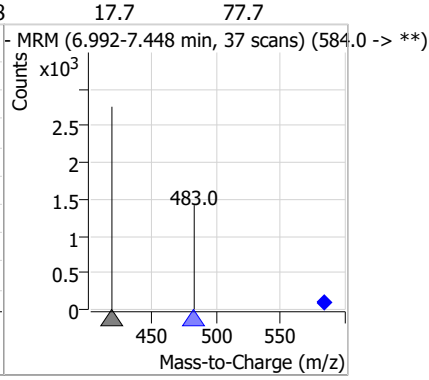


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.34	7.21	0.00	74135 (m)	584.0 -> 483.0	50.8	17.7	77.7

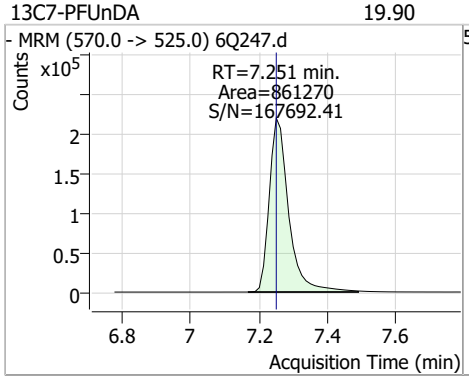


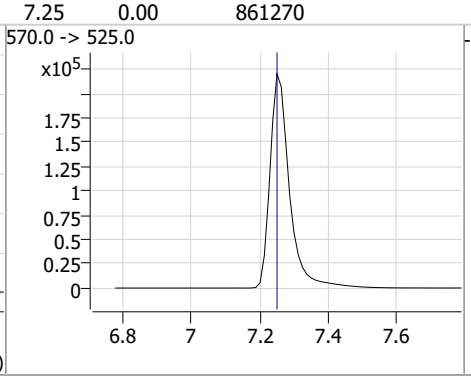


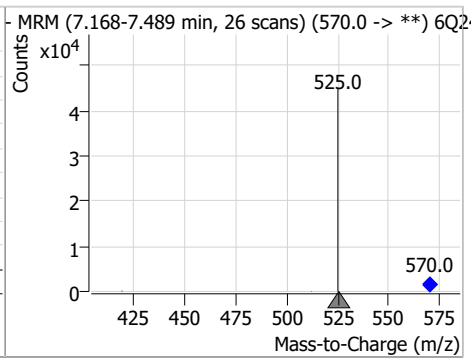




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.90	7.25	0.00	861270				

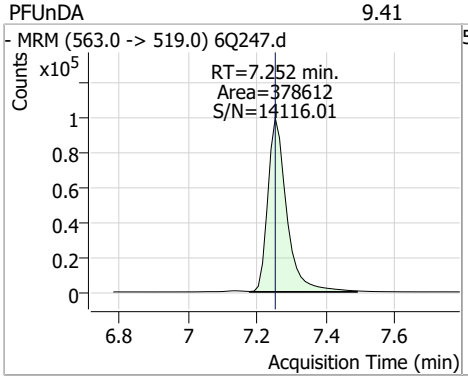


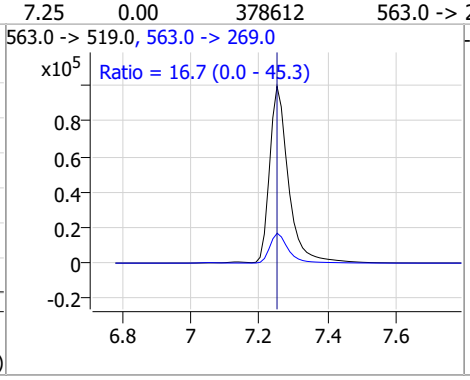


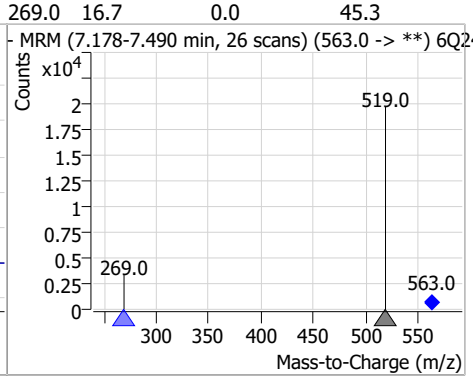


Perfluorinated Compounds by LC/MS/MS

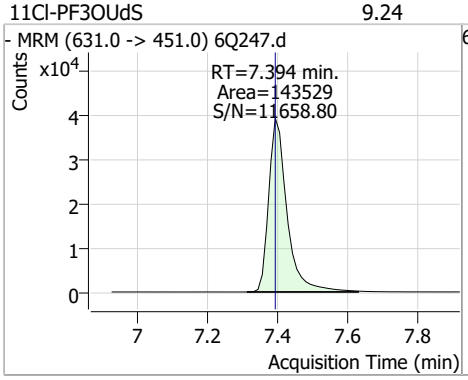
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.41	7.25	0.00	378612	563.0 -> 269.0	16.7	0.0	45.3

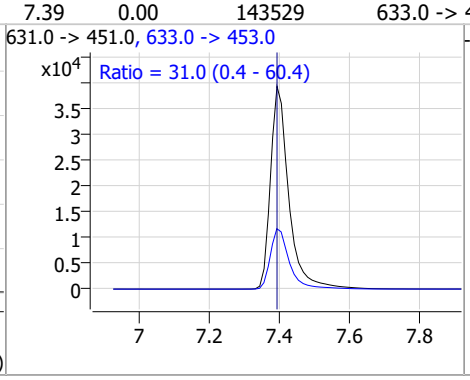


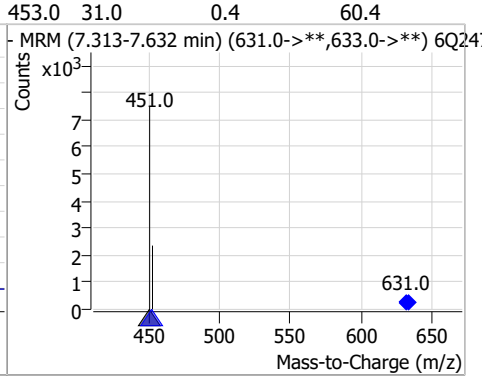




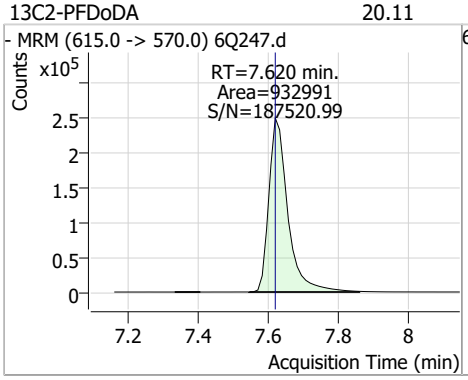
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.24	7.39	0.00	143529	633.0 -> 453.0	31.0	0.4	60.4

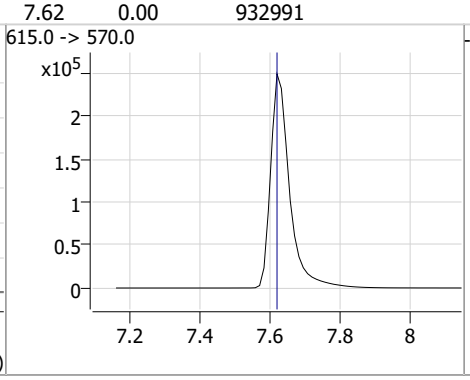


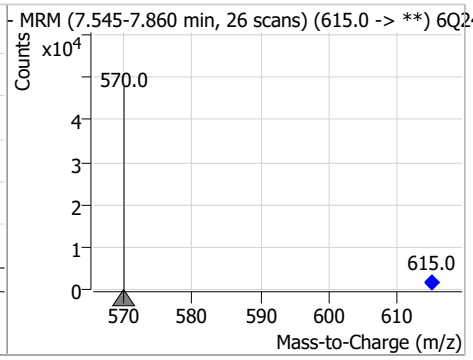




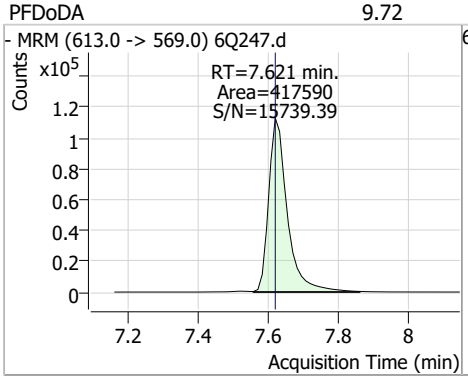
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.11	7.62	0.00	932991				

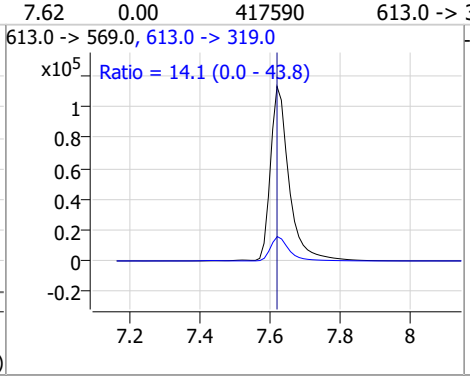


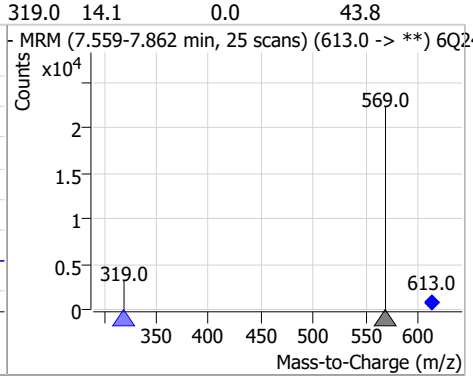




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.72	7.62	0.00	417590	613.0 -> 319.0	14.1	0.0	43.8

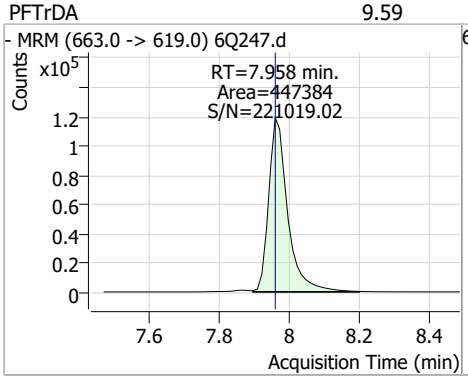


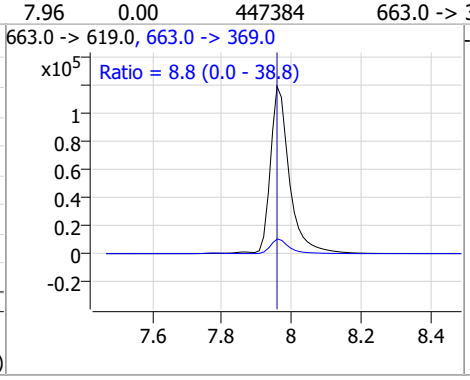


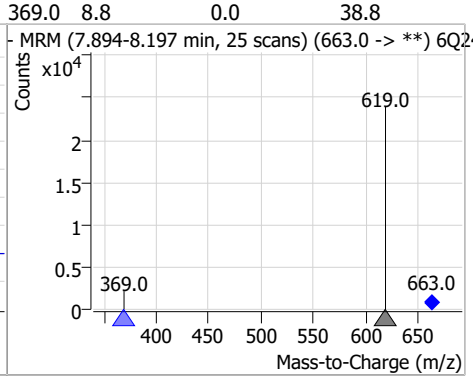


Perfluorinated Compounds by LC/MS/MS

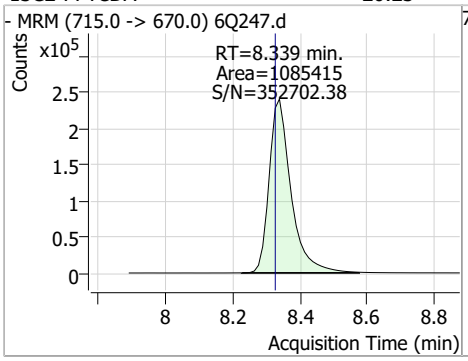
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.59	7.96	0.00	447384	663.0 -> 369.0	8.8	0.0	38.8

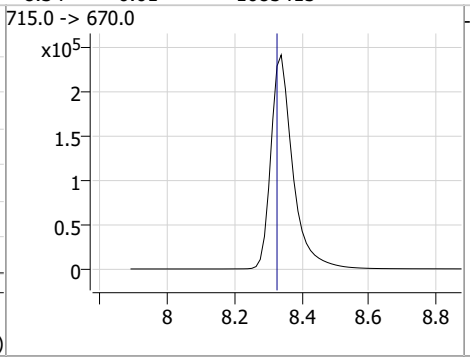


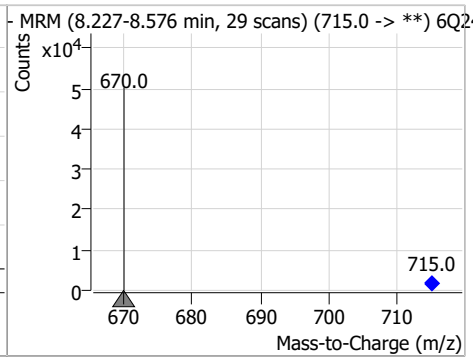




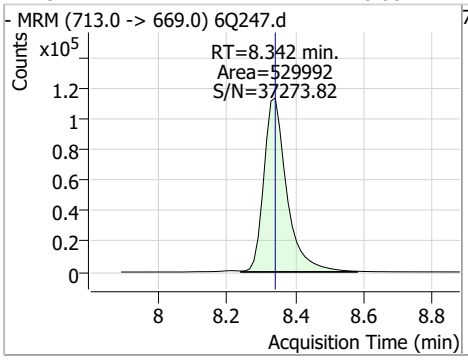
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.23	8.34	0.01	1085415				

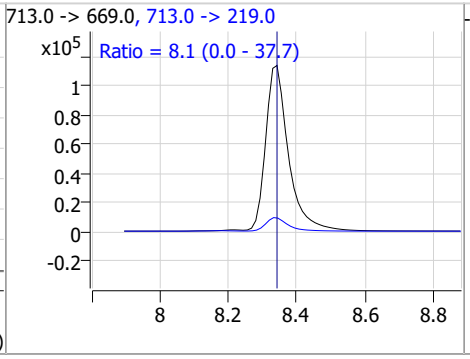


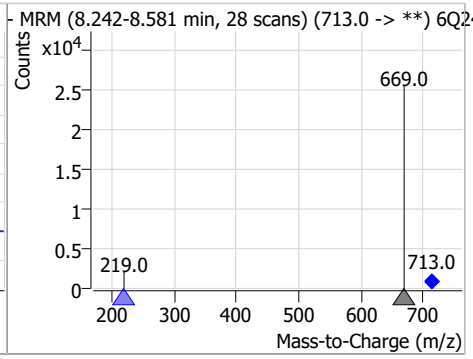




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	8.88	8.34	0.01	529992	713.0 -> 219.0	8.1	0.0	37.7







7.7.36

7

Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q247.D
Injection Time: 05/19/22 11:53
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.31	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

6Q248.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q248.d
Operator	:	natashag
Acq. Method	:	537_ID.m
Acq. Date-Time	:	5/19/2022 12:08:05 PM
Sample Name	:	icc6-20
Vial	:	P1-A7
DA Method File	:	ID_051922_S6Q6.quantmethod.xml
Batch Name	:	s6q6.batch.bin
Sample Information	:	OP91029,S6Q6,250,,,1.0,1,water

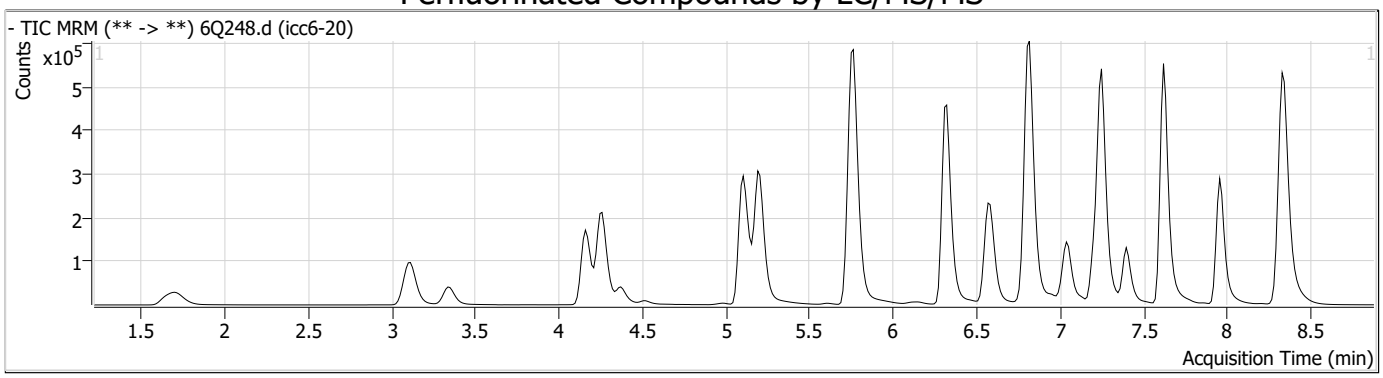
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	168058	20.00	µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	285864	20.00	µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	431136	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	462454	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	765059	20.00	µg/L	0.000
M9-PFNA	6.329	472.0 -> 427.0	895456	20.00	µg/L	0.000
M6-PFDA	6.809	519.0 -> 474.0	784577	20.00	µg/L	0.000
M7-PFUnDA	7.251	570.0 -> 525.0	876115	20.00	µg/L	0.000
M2-PFDoDA	7.620	615.0 -> 570.0	933065	20.00	µg/L	0.000
M2-PFTeDA	8.327	715.0 -> 670.0	1114109	20.00	µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	219673	20.00	µg/L	0.000
M3-PFBS	3.348	302.0 -> 99.0	36160	20.00	µg/L	0.000
M3-PFHxS	5.140	402.0 -> 99.0	34132	20.00	µg/L	0.000
M8-PFOS	6.311	507.0 -> 99.0	45663	20.00	µg/L	0.000
M2-4:2FTS	4.160	329.0 -> 309.0	302981	20.00	µg/L	0.000
M2-6:2FTS	5.741	429.0 -> 409.0	336411	20.00	µg/L	0.000
M2-8:2FTS	6.832	529.0 -> 509.0	252544	20.00	µg/L	0.000
M3-MeFOSAA	7.039	573.0 -> 419.0	192187	20.00	µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	12445	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	52185	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	173946	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.160	329.0 -> 309.0	302981	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C2-6:2FTS	5.741	429.0 -> 409.0	336411	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-8:2FTS	6.832	529.0 -> 509.0	252544	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFDoDA	7.620	615.0 -> 570.0	933065	20.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFTeDA	8.327	715.0 -> 670.0	1114109	20.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C3-PFBS	3.348	302.0 -> 99.0	36160	20.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C3-PFHxS	5.140	402.0 -> 99.0	34132	20.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C4-PFBA	1.699	217.0 -> 172.0	168058	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFHpA	5.110	367.0 -> 322.0	462454	20.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C5-PFHxA	4.264	318.0 -> 273.0	431136	20.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFPeA	3.118	268.0 -> 223.0	285864	20.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C6-PFDA	6.809	519.0 -> 474.0	784577	21.39	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

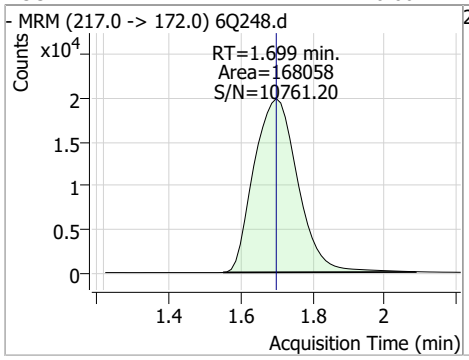
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C7-PFUnDA	7.251	570.0 -> 525.0	876115	20.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-FOSA	6.588	506.0 -> 78.0	219673	20.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C8-PFOA	5.770	421.0 -> 376.0	765059	20.53 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C8-PFOS	6.311	507.0 -> 99.0	45663	21.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C9-PFNA	6.329	472.0 -> 427.0	895456	20.70 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	7.039	573.0 -> 419.0	192187	20.45 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	12443	20.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
d3-MeFOSA	7.020	515.0 -> 169.0	52185	20.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
d5-EtFOSAA	7.200	589.0 -> 419.0	174033	21.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
Target Compounds						**QValue**
4:2FTS	4.162	327.0 -> 307.0	342466	20.80 µg/L		100
6:2FTS	5.742	427.0 -> 407.0	372951	21.87 µg/L		100
8:2FTS	6.833	527.0 -> 507.0	252112	20.13 µg/L		100
EtFOSAA	7.213	584.0 -> 419.0	162526	19.45 µg/L	m	93
FOSA	6.590	498.0 -> 78.0	212859	19.76 µg/L		100
MeFOSAA	7.052	570.0 -> 419.0	181145	21.15 µg/L	m	96
PFBA	1.705	213.0 -> 169.0	78332	20.57 µg/L		100
PFBS	3.340	299.0 -> 80.0	118483	21.08 µg/L		100
PFDA	6.810	513.0 -> 469.0	958461	19.20 µg/L		100
PFDoDA	7.621	613.0 -> 569.0	953060	22.17 µg/L		100
PFDS	7.211	599.0 -> 80.0	71922	22.13 µg/L		100
PFHpA	5.112	363.0 -> 319.0	640231	20.86 µg/L		100
PFHpS	5.777	449.0 -> 80.0	81672	19.58 µg/L		100
PFHxA	4.265	313.0 -> 269.0	462904	19.81 µg/L		100
PFHxS	5.143	399.0 -> 80.0	89676	19.75 µg/L	m	96
PFNA	6.330	463.0 -> 419.0	750546	19.69 µg/L		100
PFNS	6.782	549.0 -> 80.0	88008	19.56 µg/L		100
PFOA	5.771	413.0 -> 369.0	788431	20.37 µg/L		100
PFOS	6.299	499.0 -> 80.0	83156	19.36 µg/L	m	84
PFPeA	3.121	263.0 -> 219.0	254066	20.34 µg/L		100
PFPeS	4.370	349.0 -> 80.0	94998	20.21 µg/L		100
PFTeDA	8.329	713.0 -> 669.0	1237999	20.22 µg/L		100
PFTrDA	7.958	663.0 -> 619.0	990369	21.22 µg/L		100
PFUnDA	7.252	563.0 -> 519.0	881916	21.54 µg/L		100
11Cl-PF3OUdS	7.394	631.0 -> 451.0	328042	21.12 µg/L		100
9Cl-PF3ONS	6.558	531.0 -> 351.0	449801	19.32 µg/L		100
ADONA	5.194	377.0 -> 251.0	974216	19.69 µg/L		100
HFPO-DA	4.518	285.0 -> 169.0	13329	22.84 µg/L		100
MeFOSA	7.034	512.0 -> 169.0	58733	21.72 µg/L		100

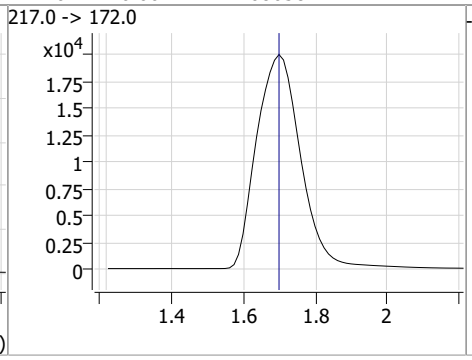
 # = Qualifier out of range, m = manually integrated, + = Area summed

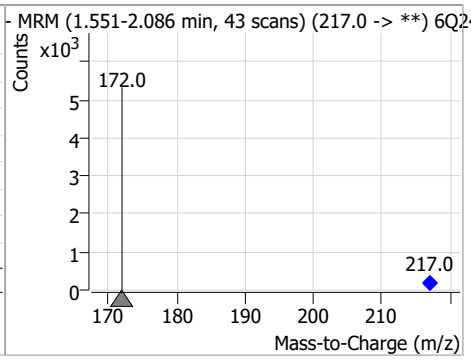
Perfluorinated Compounds by LC/MS/MS



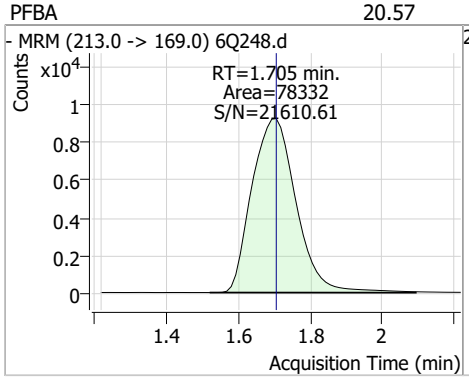
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.60	1.70	0.00	168058				

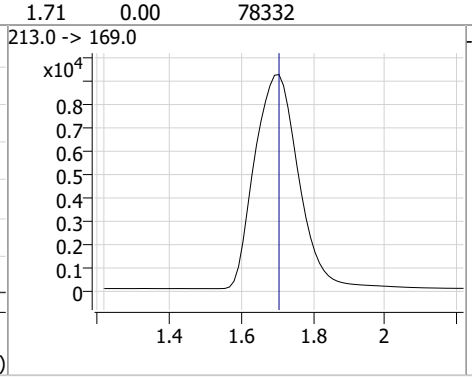


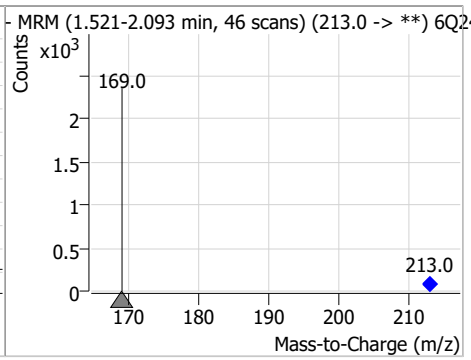




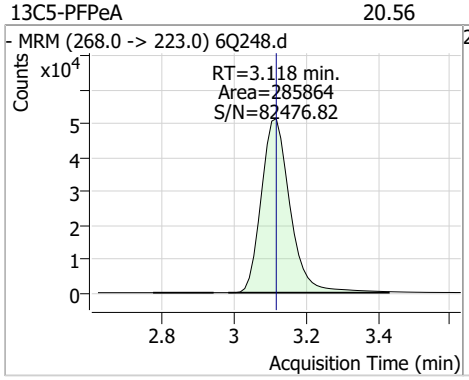
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.57	1.71	0.00	78332				

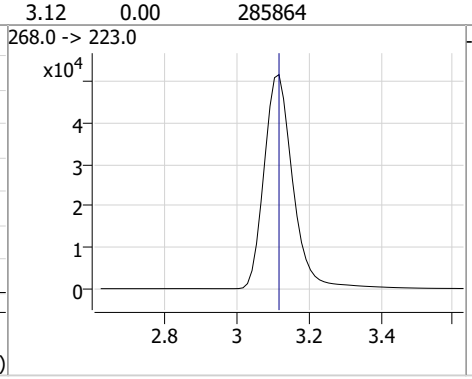


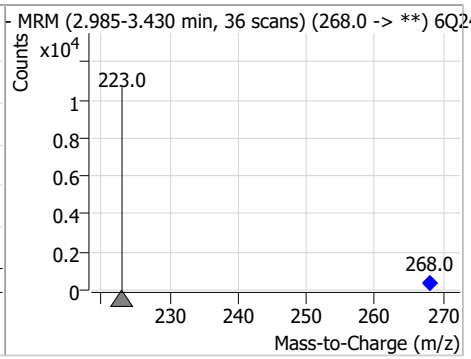




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.56	3.12	0.00	285864				

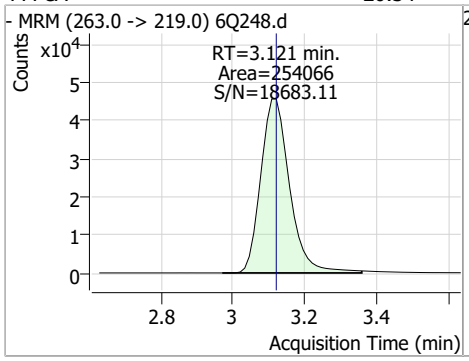


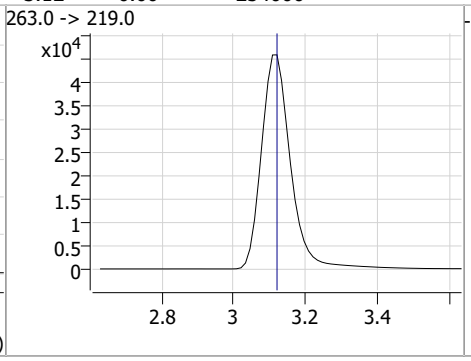


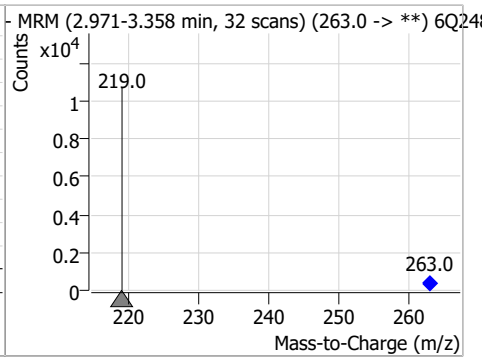


Perfluorinated Compounds by LC/MS/MS

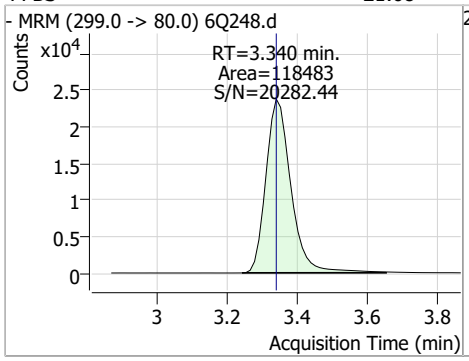
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.34	3.12	0.00	254066				

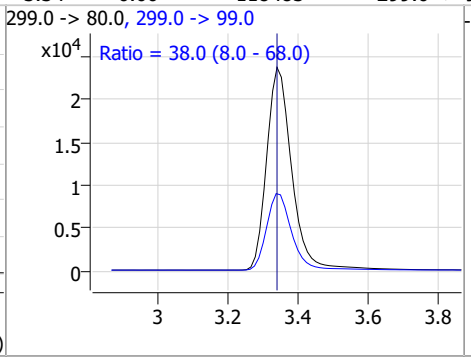


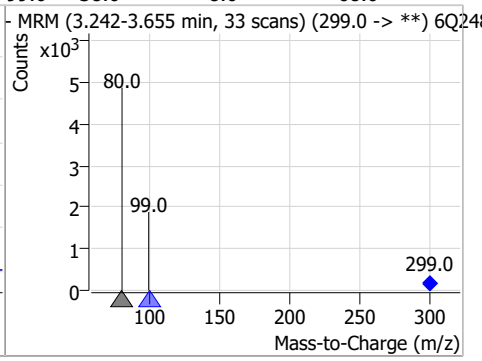




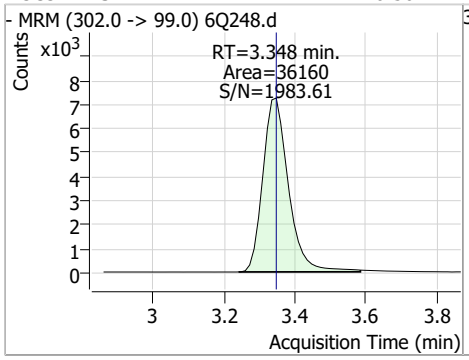
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	21.08	3.34	0.00	118483	299.0 -> 99.0	38.0	8.0	68.0

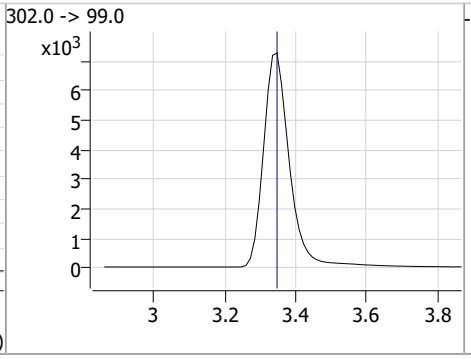


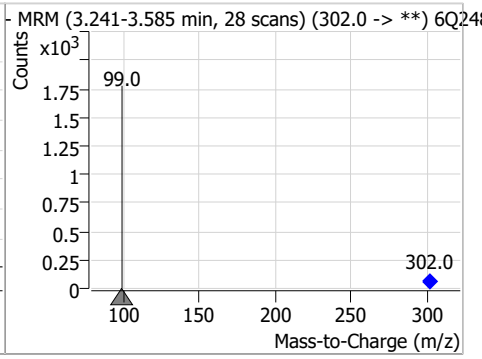




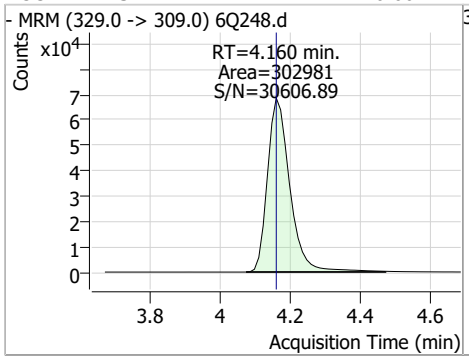
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.50	3.35	0.00	36160				

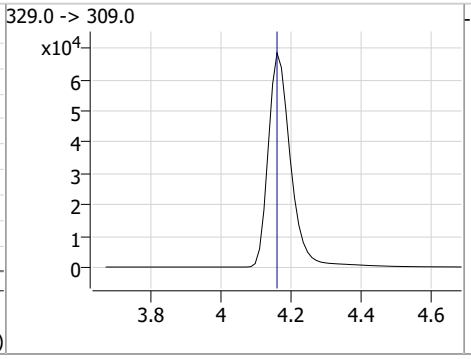


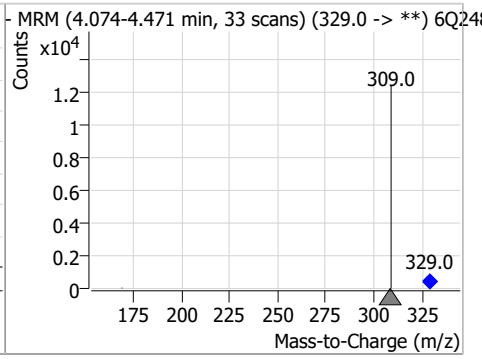




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.60	4.16	0.00	302981				

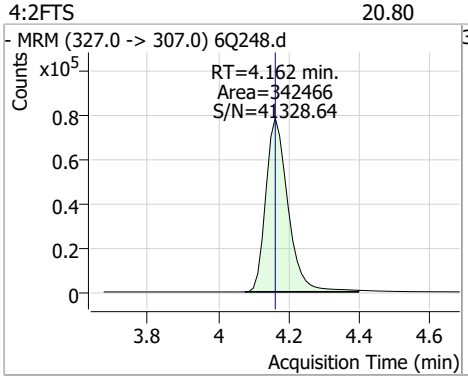


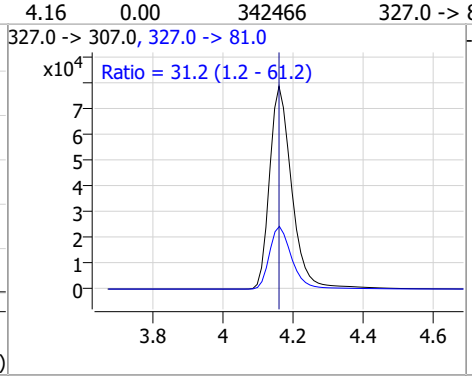


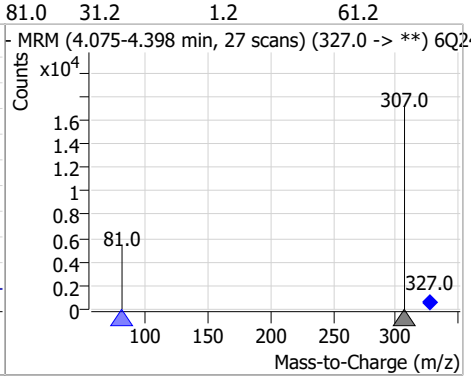


Perfluorinated Compounds by LC/MS/MS

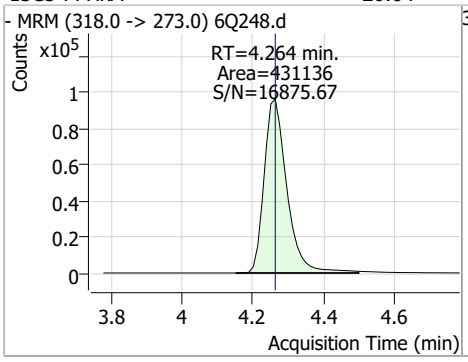
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.80	4.16	0.00	342466	327.0 -> 81.0	31.2	1.2	61.2

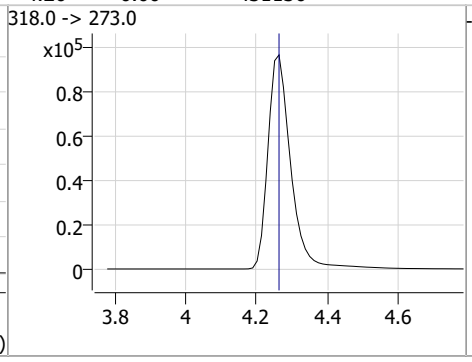


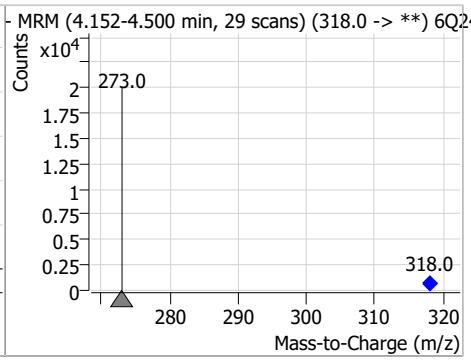




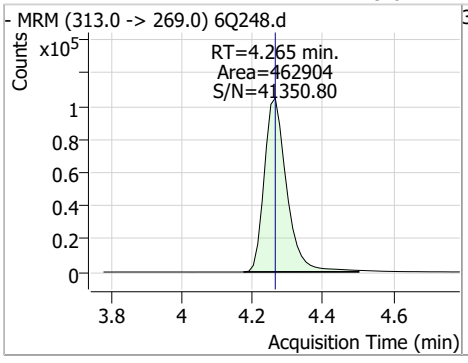
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.64	4.26	0.00	431136				

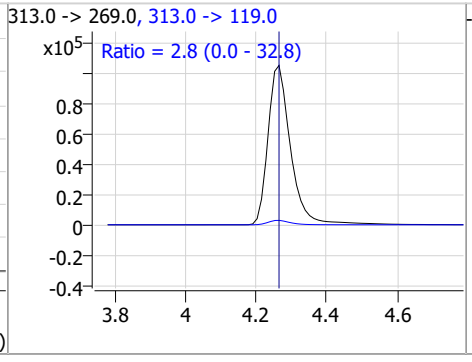


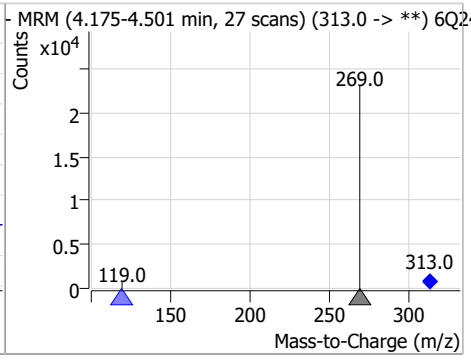




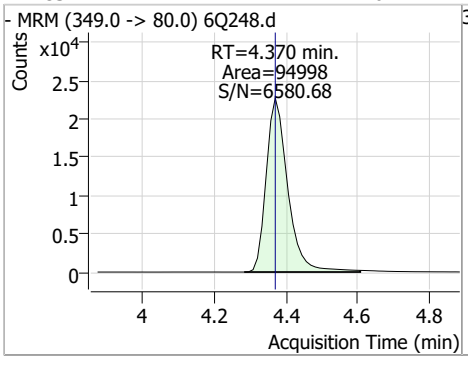
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.81	4.26	0.00	462904	313.0 -> 119.0	2.8	0.0	32.8

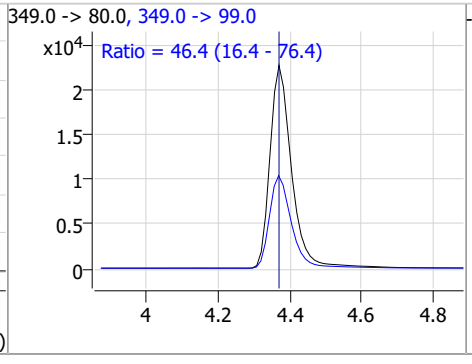


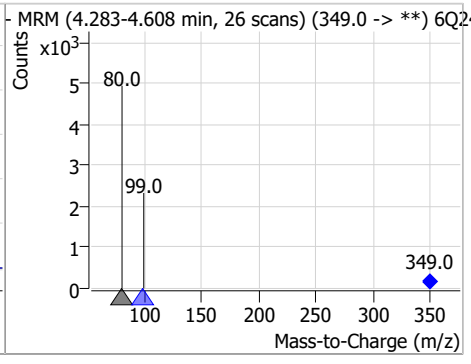




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.21	4.37	0.00	94998	349.0 -> 99.0	46.4	16.4	76.4

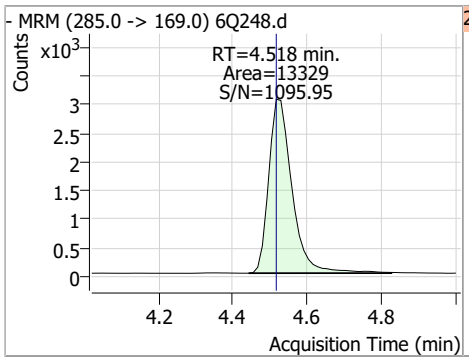


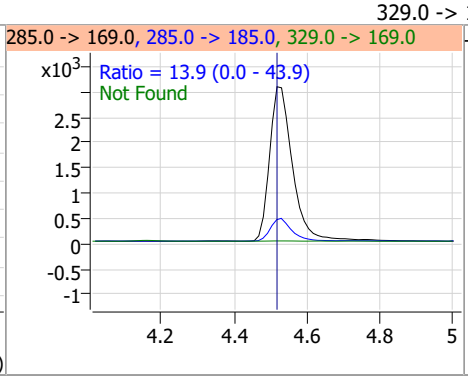


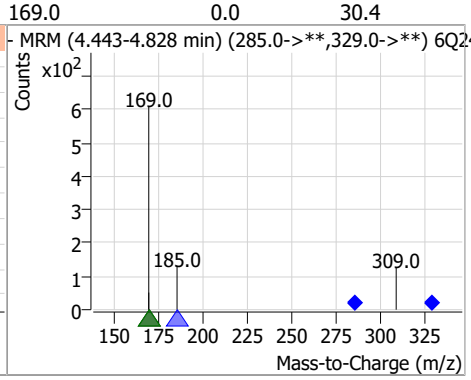


Perfluorinated Compounds by LC/MS/MS

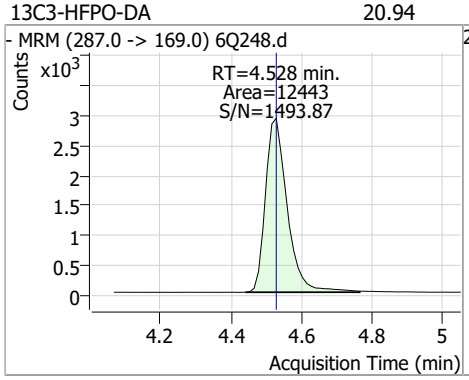
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.84	4.52	0.00	13329	285.0 -> 185.0	13.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

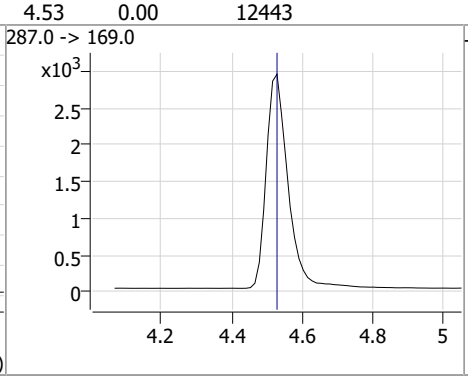


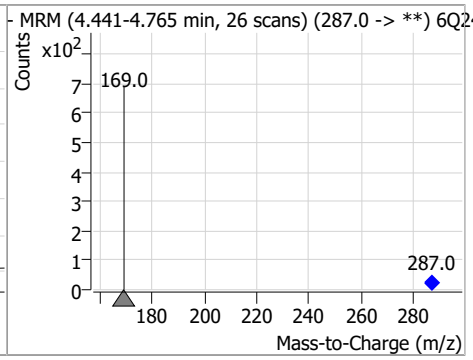




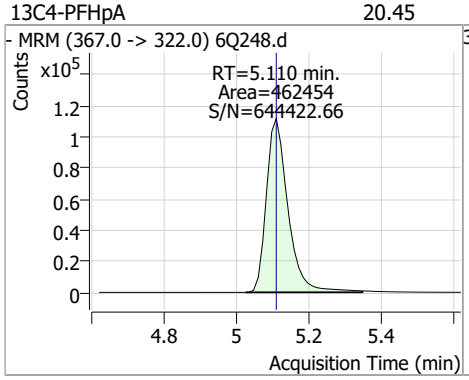
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.94	4.53	0.00	12443				

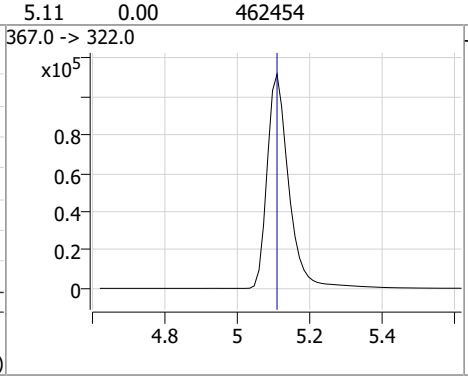


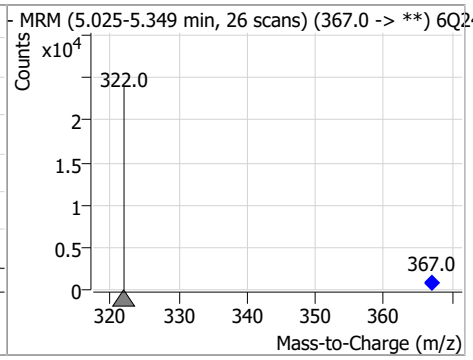




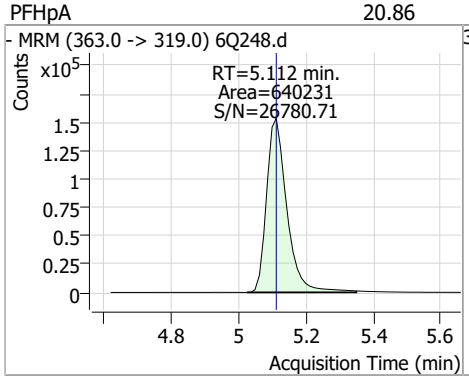
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.45	5.11	0.00	462454				

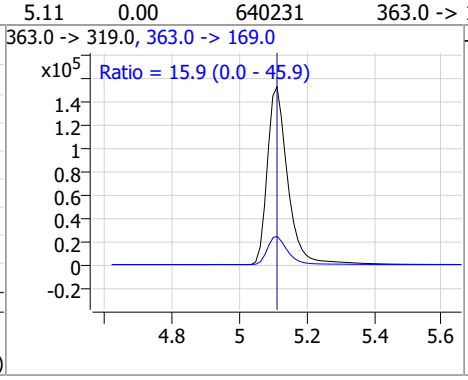


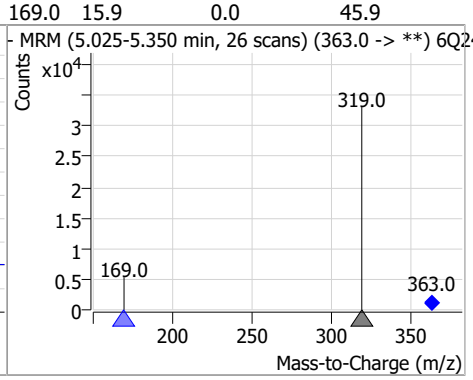




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.86	5.11	0.00	640231	363.0 -> 169.0	15.9	0.0	45.9

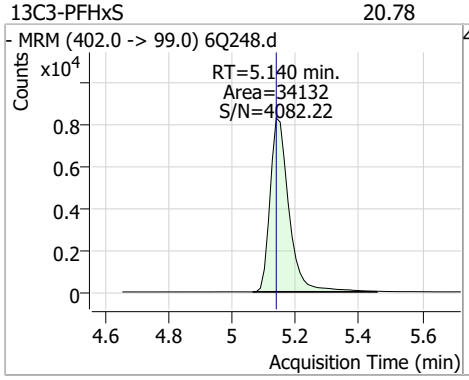


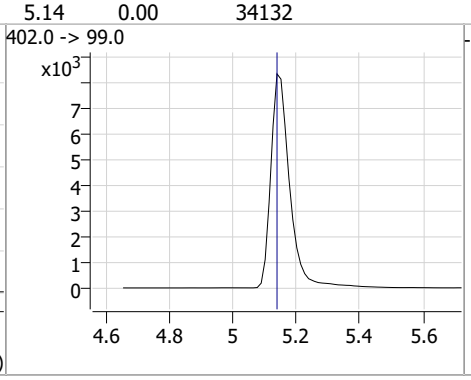


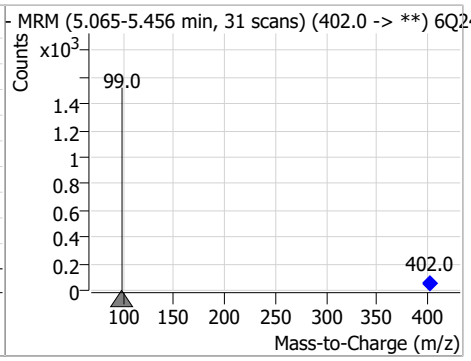


Perfluorinated Compounds by LC/MS/MS

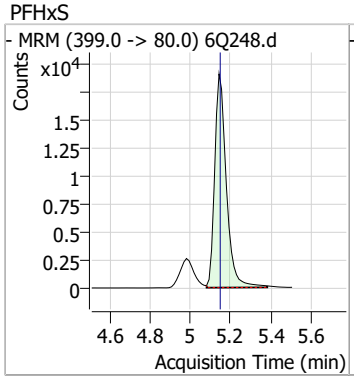
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.78	5.14	0.00	34132				

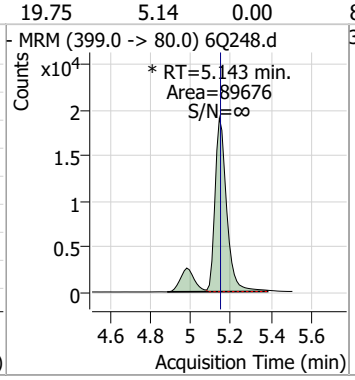


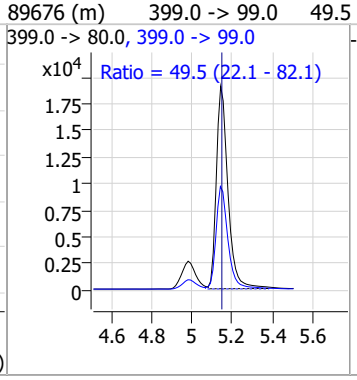


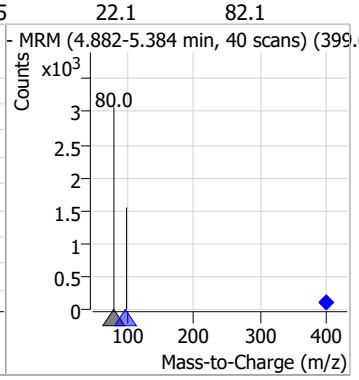


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.75	5.14	0.00	89676 (m)	399.0 -> 99.0	49.5	22.1	82.1

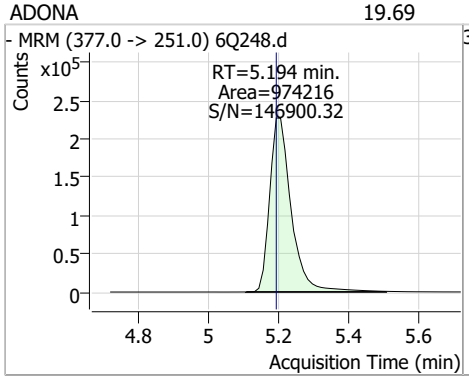


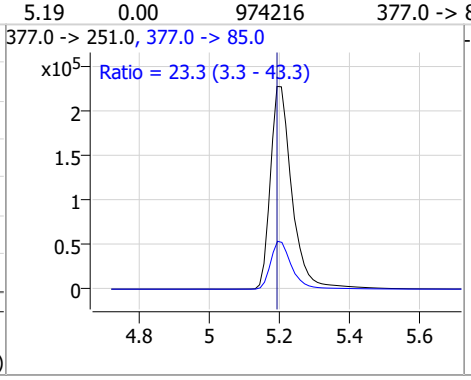


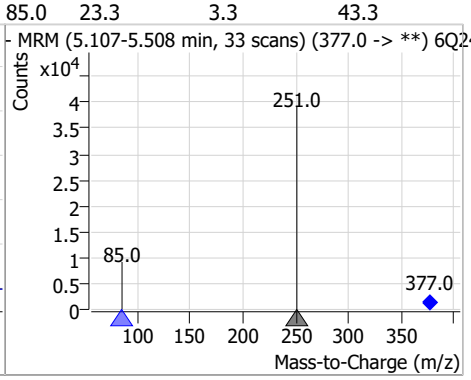




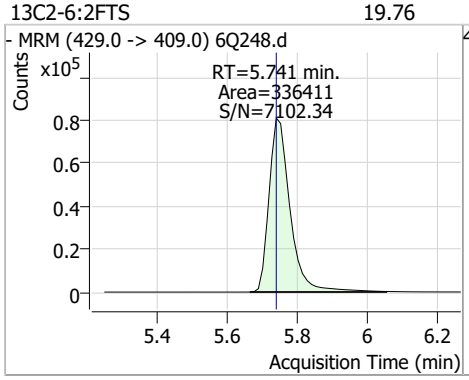
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.69	5.19	0.00	974216	377.0 -> 85.0	23.3	3.3	43.3

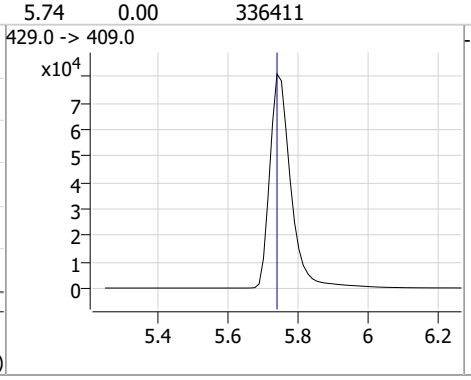


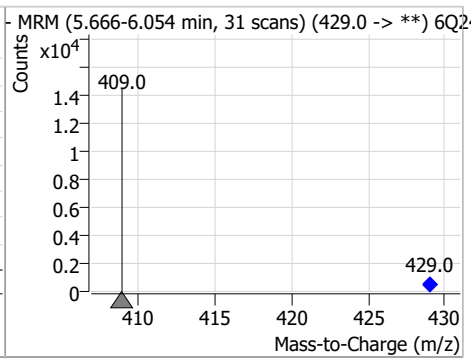




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.76	5.74	0.00	336411				

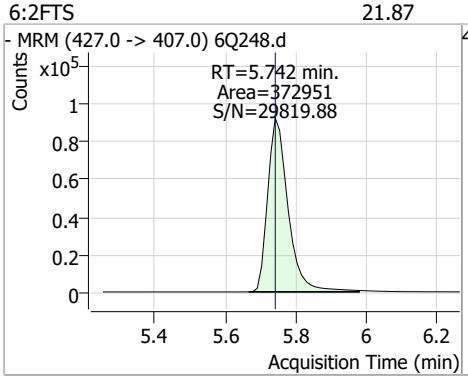


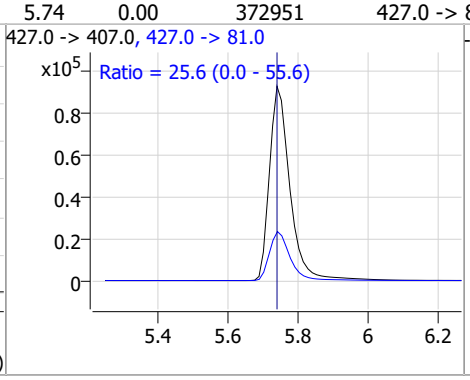


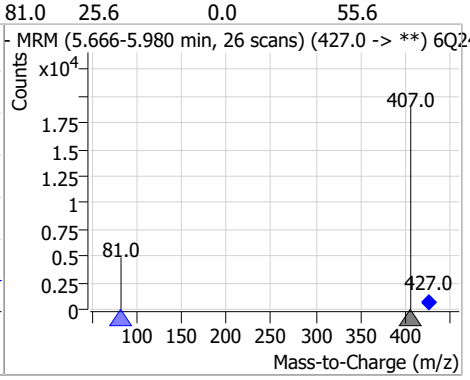


Perfluorinated Compounds by LC/MS/MS

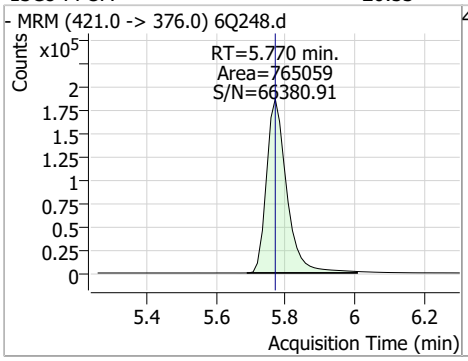
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.87	5.74	0.00	372951	427.0 -> 81.0	25.6	0.0	55.6

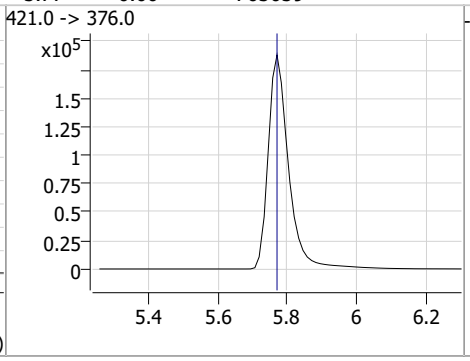


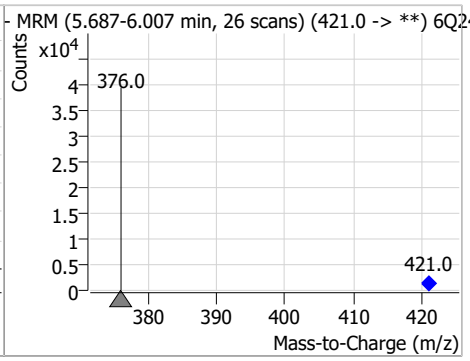




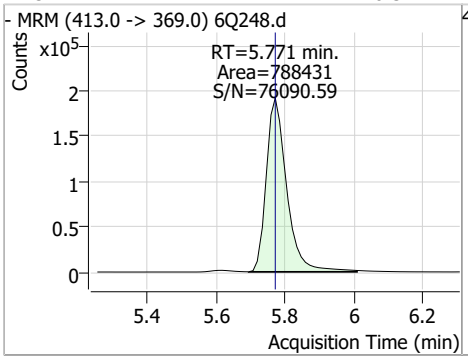
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.53	5.77	0.00	765059				

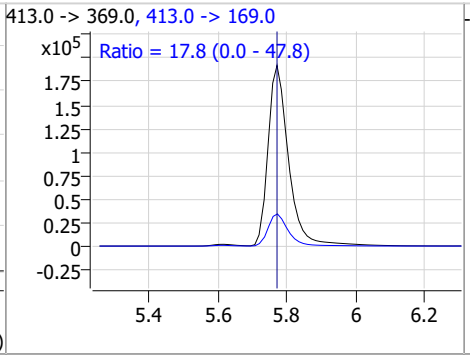


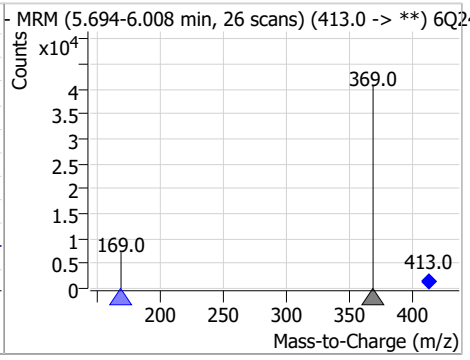




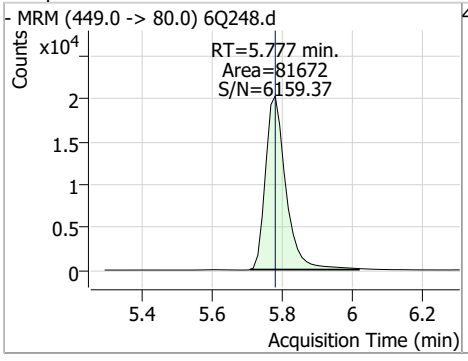
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.37	5.77	0.00	788431	413.0 -> 169.0	17.8	0.0	47.8

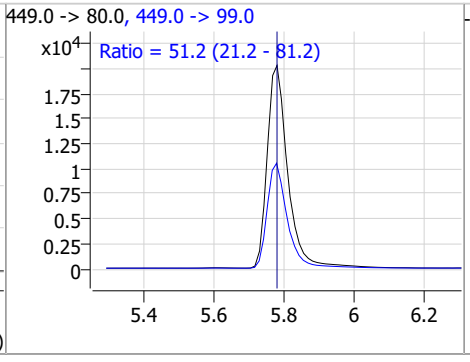


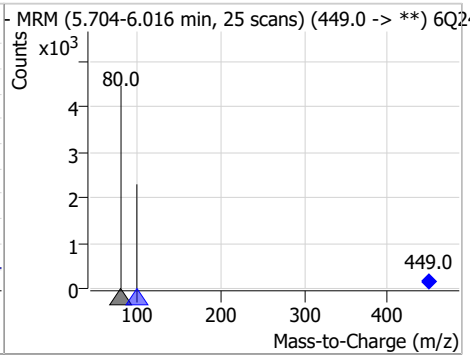




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.58	5.78	0.00	81672	449.0 -> 99.0	51.2	21.2	81.2

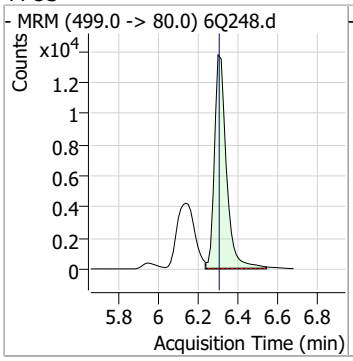


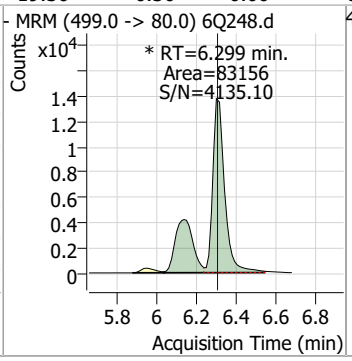


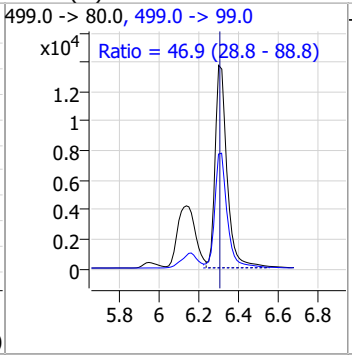


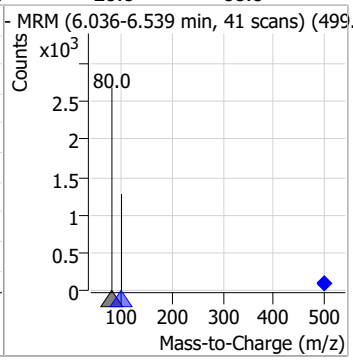
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.36	6.30	0.00	83156 (m)	499.0 -> 99.0	46.9	28.8	88.8

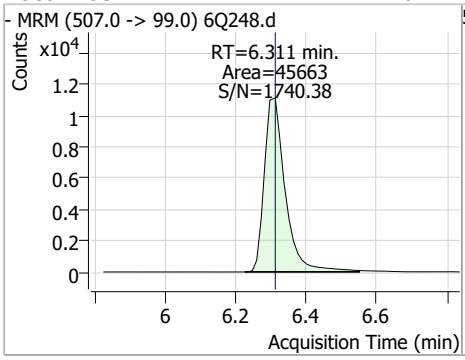


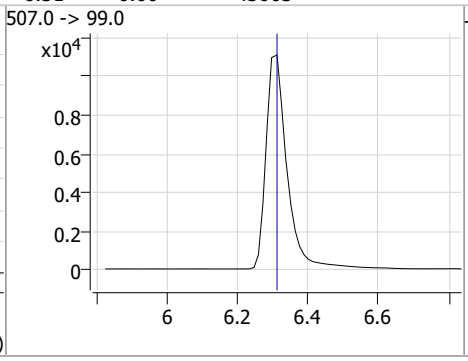


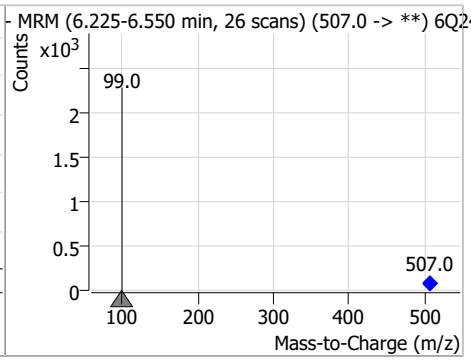




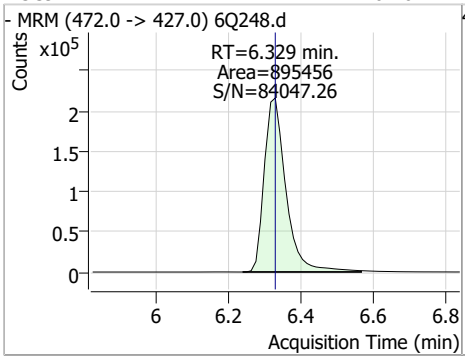
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.18	6.31	0.00	45663				

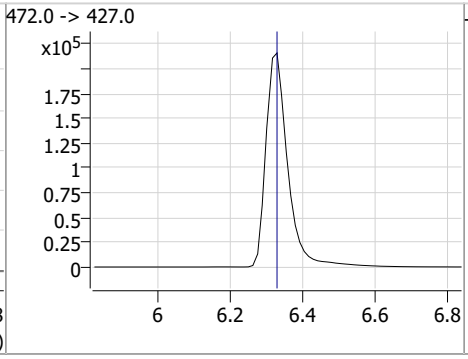


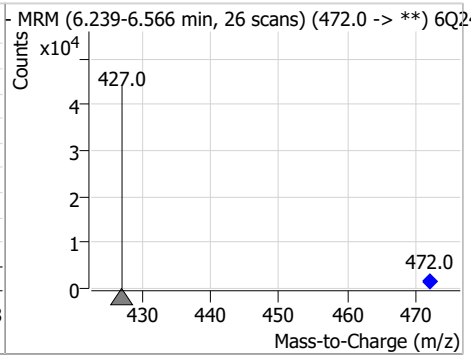




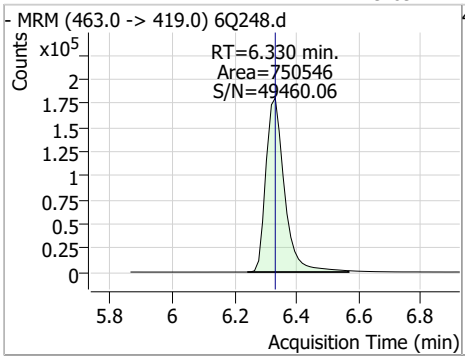
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.70	6.33	0.00	895456				

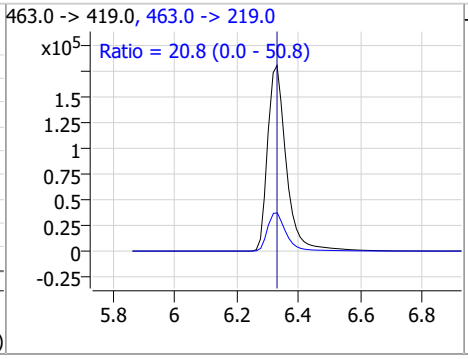


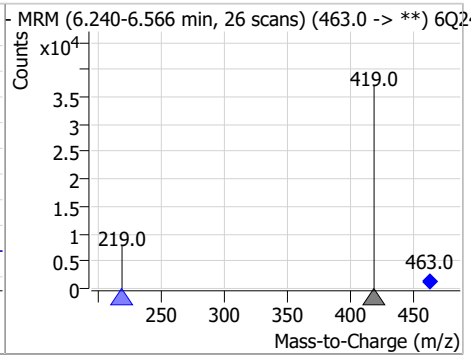




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.69	6.33	0.00	750546	463.0 -> 219.0	20.8	0.0	50.8

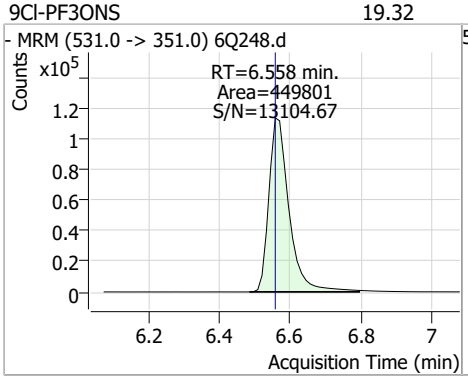


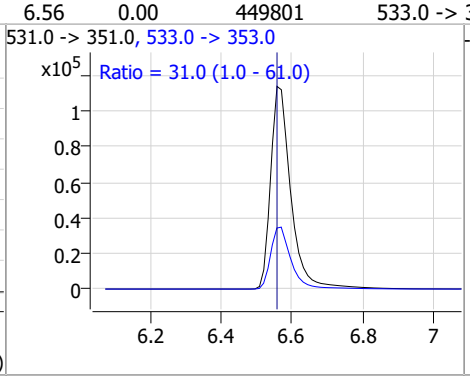


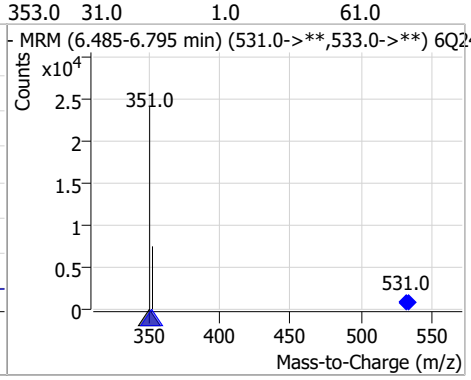


Perfluorinated Compounds by LC/MS/MS

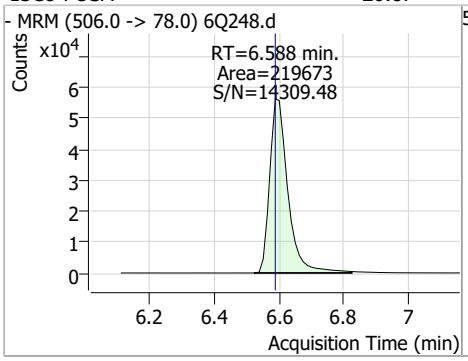
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.32	6.56	0.00	449801	533.0 -> 353.0	31.0	1.0	61.0

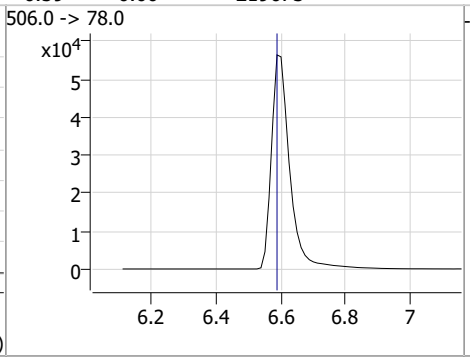


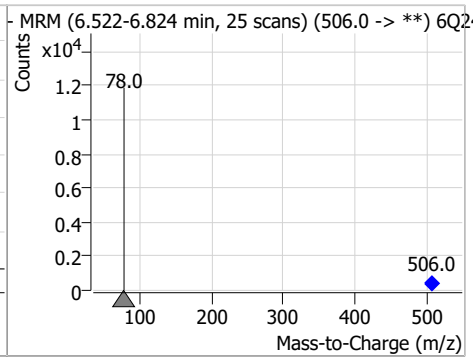




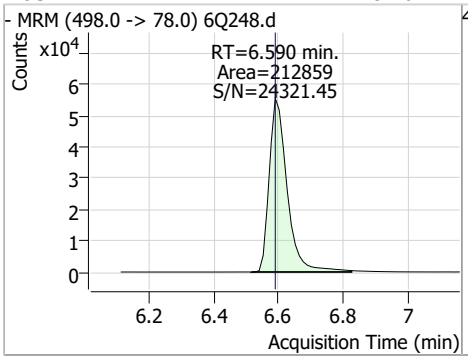
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.87	6.59	0.00	219673				

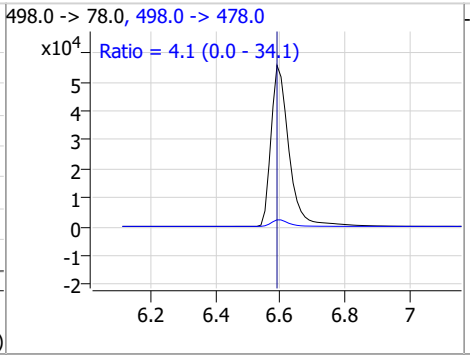


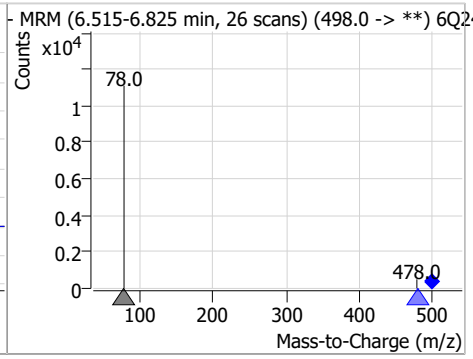




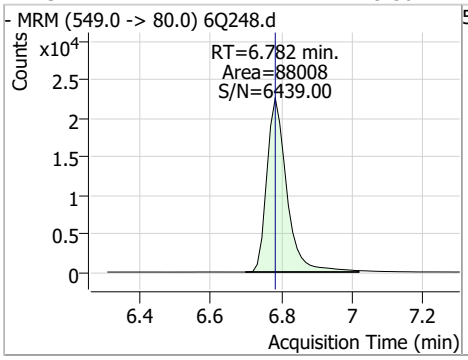
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.76	6.59	0.00	212859	498.0 -> 478.0	4.1	0.0	34.1

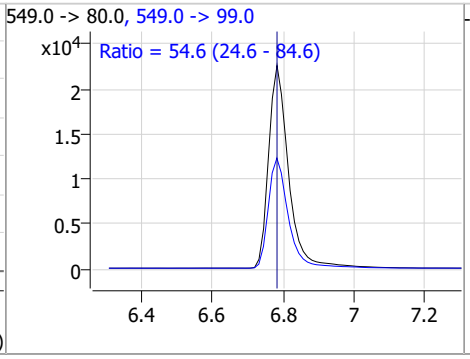


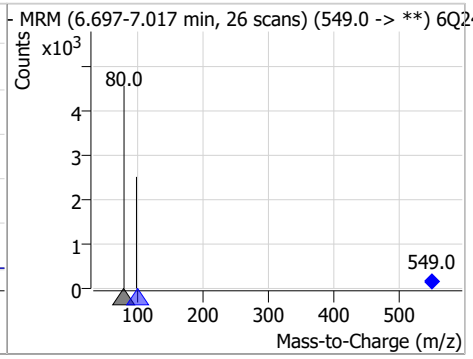




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.56	6.78	0.00	88008	549.0 -> 99.0	54.6	24.6	84.6

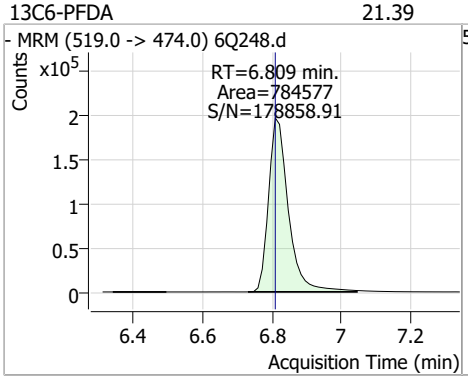


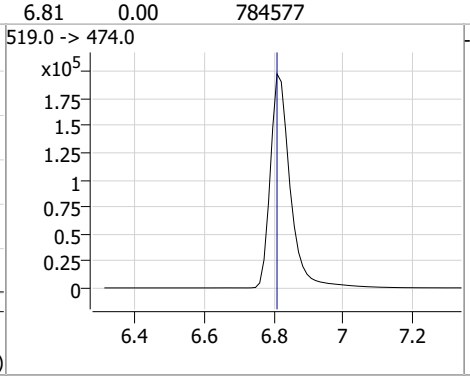


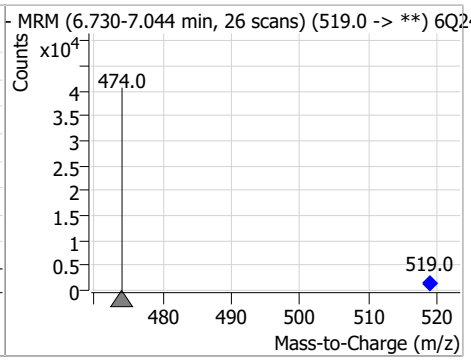


Perfluorinated Compounds by LC/MS/MS

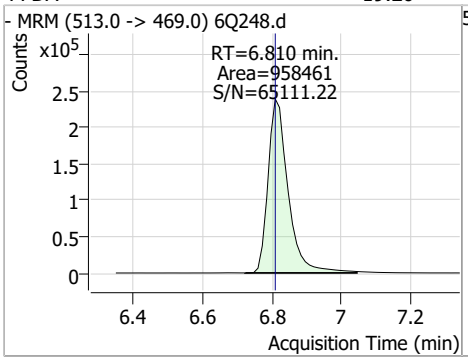
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.39	6.81	0.00	784577				

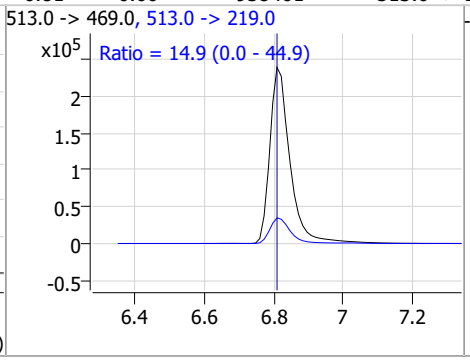


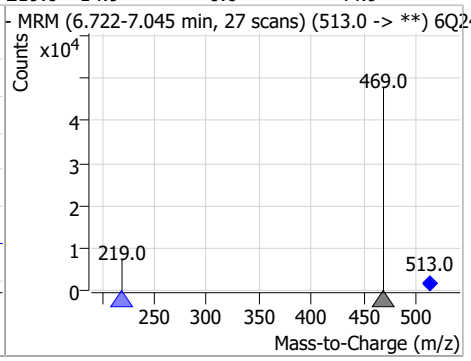




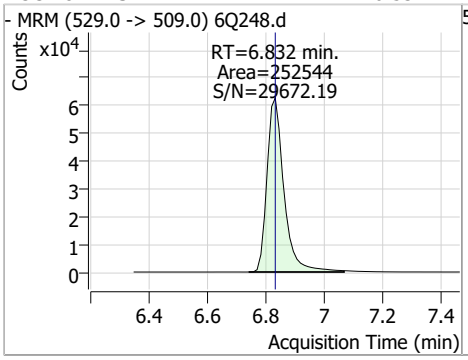
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.20	6.81	0.00	958461	513.0 -> 219.0	14.9	0.0	44.9

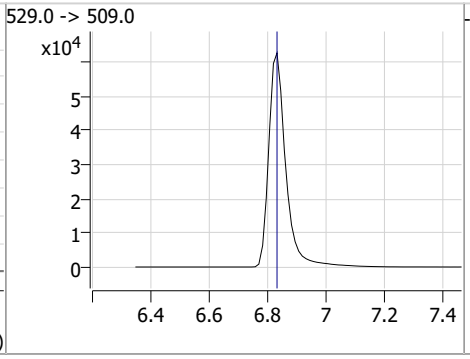


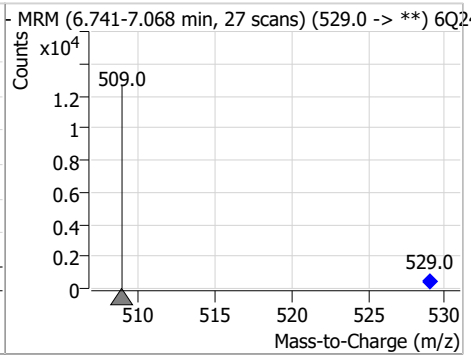




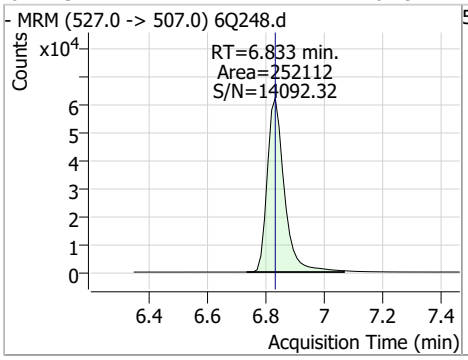
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.53	6.83	0.00	252544				

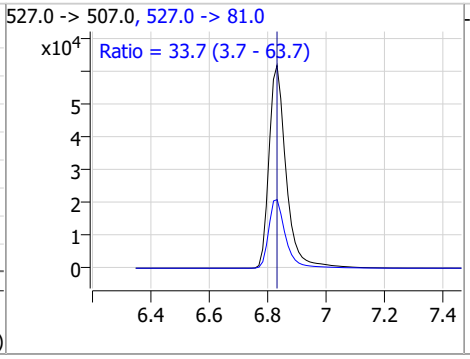


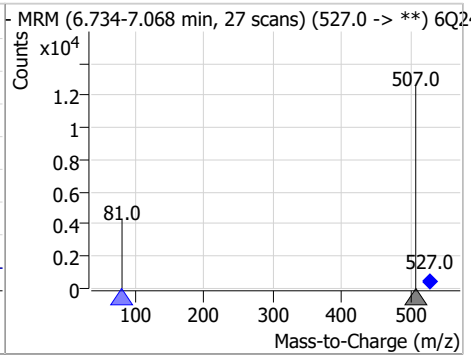




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.13	6.83	0.00	252112	527.0 -> 81.0	33.7	3.7	63.7

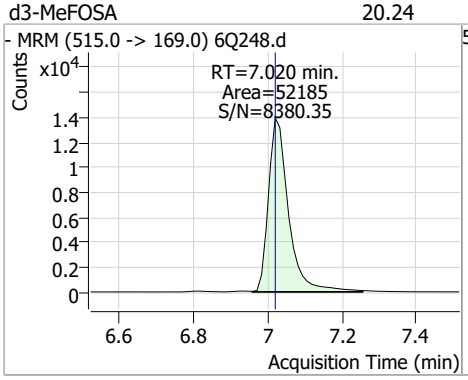


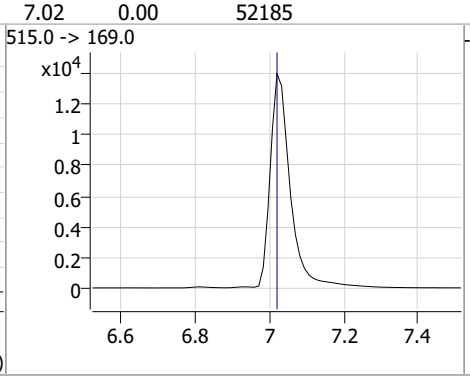


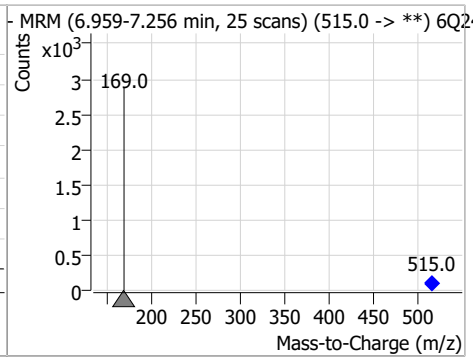


Perfluorinated Compounds by LC/MS/MS

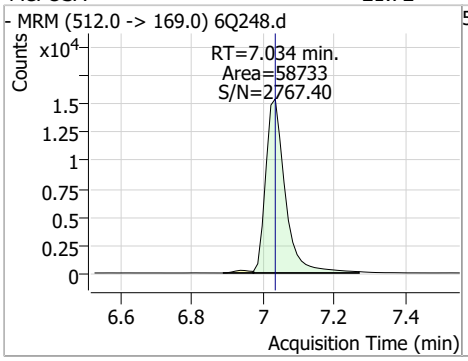
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.24	7.02	0.00	52185				

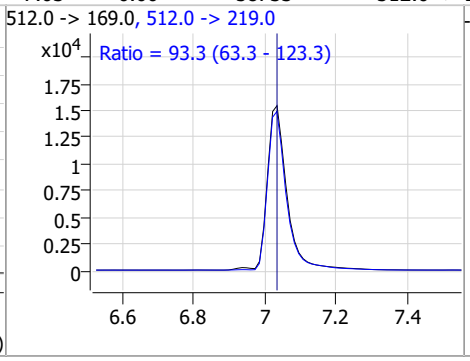


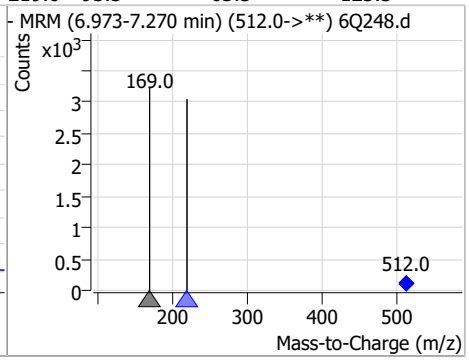




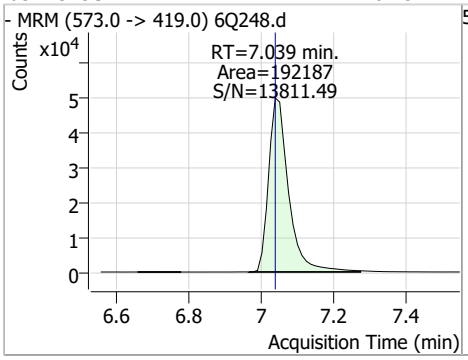
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.72	7.03	0.00	58733	512.0 -> 219.0	93.3	63.3	123.3

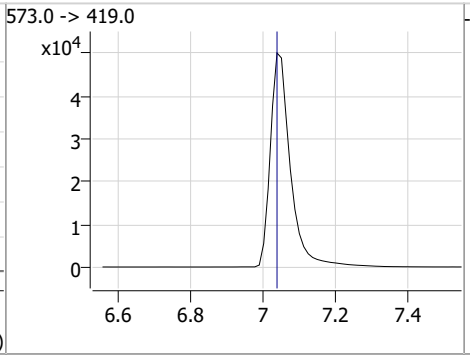


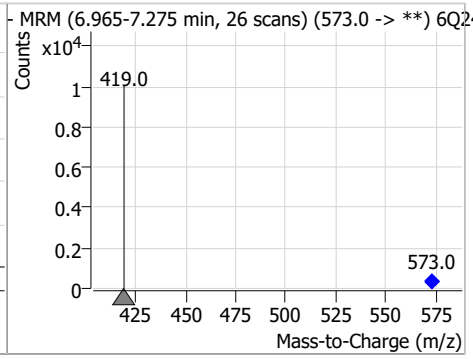




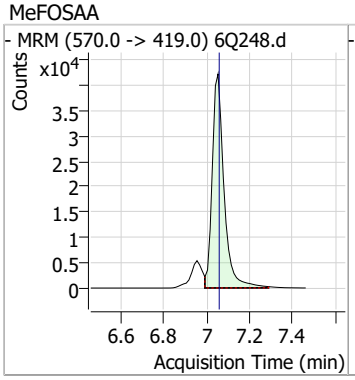
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.45	7.04	0.00	192187				

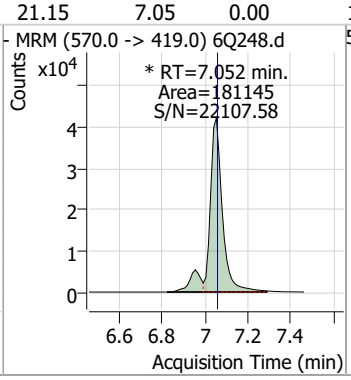


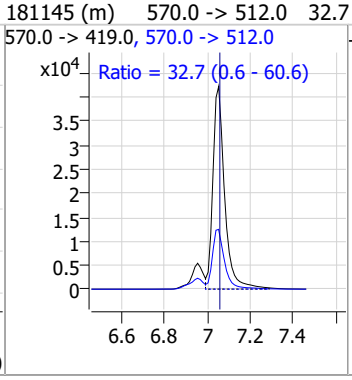


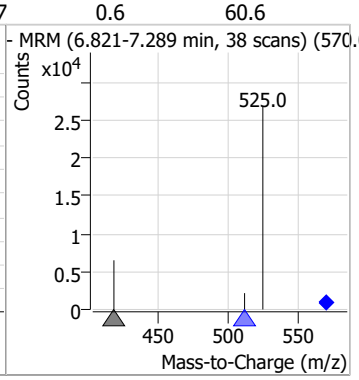


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.15	7.05	0.00	181145 (m)	570.0 -> 512.0	32.7	0.6	60.6



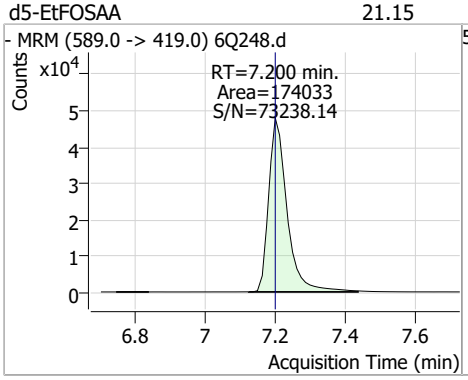


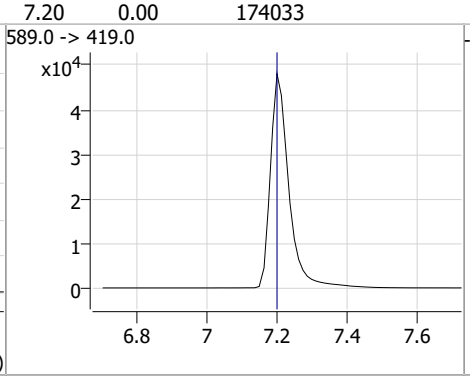


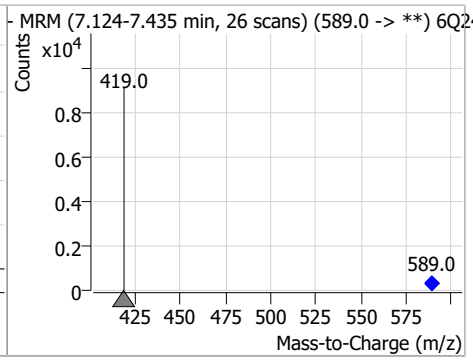


Perfluorinated Compounds by LC/MS/MS

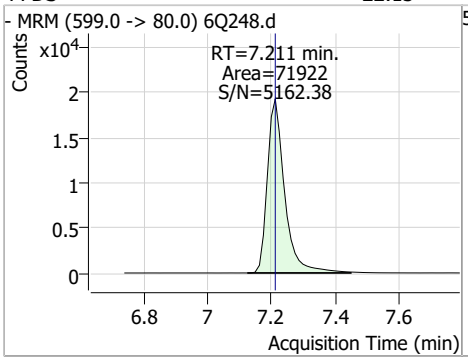
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.15	7.20	0.00	174033				

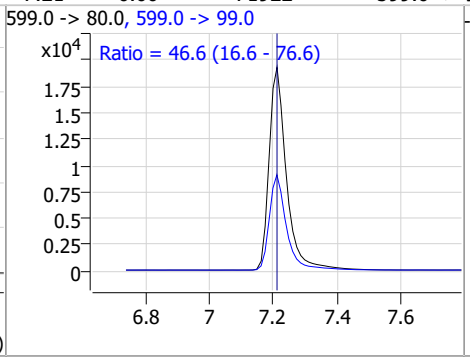


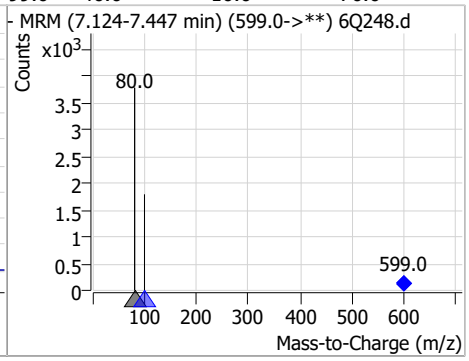




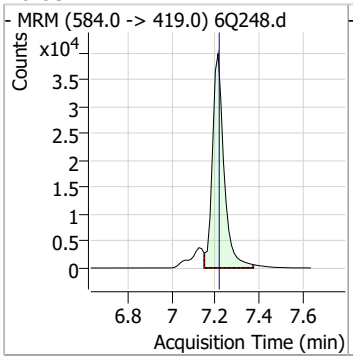
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	22.13	7.21	0.00	71922	599.0 -> 99.0	46.6	16.6	76.6

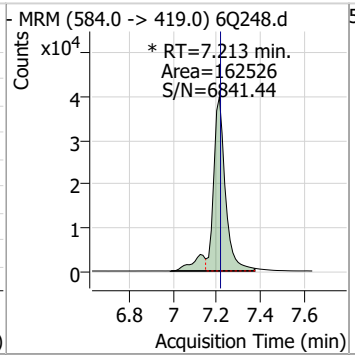


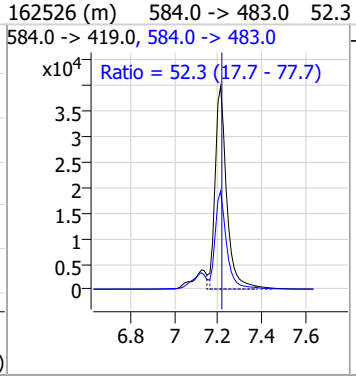


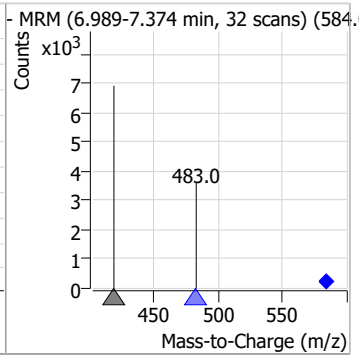


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.45	7.21	0.00	162526 (m)	584.0 -> 483.0	52.3	17.7	77.7

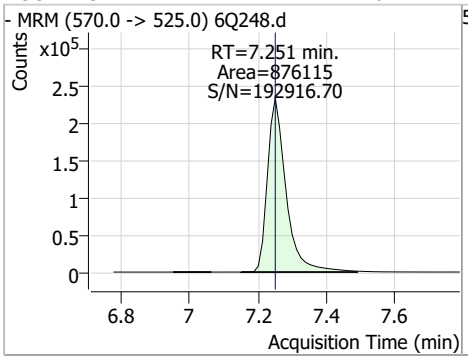


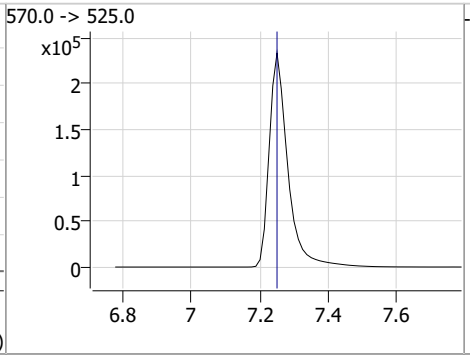


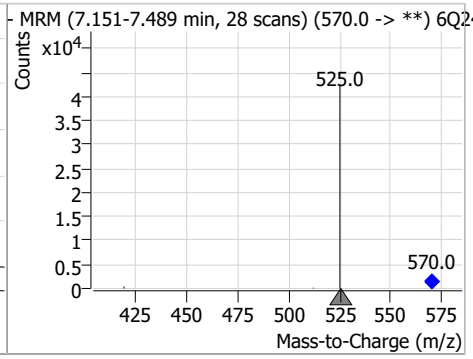




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.24	7.25	0.00	876115				

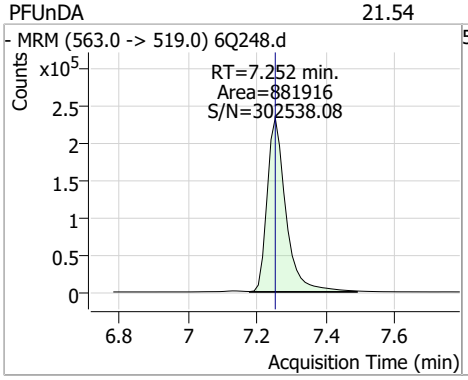


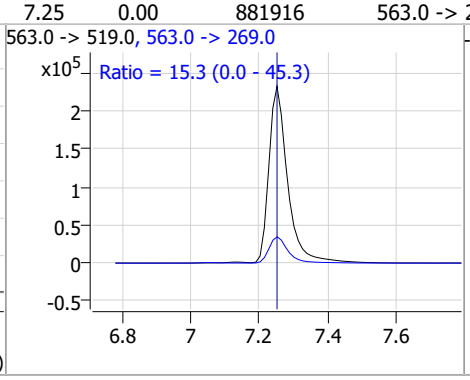


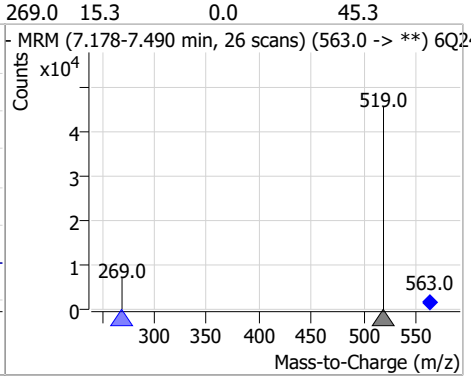


Perfluorinated Compounds by LC/MS/MS

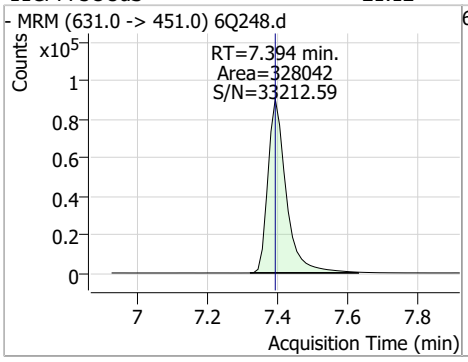
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.54	7.25	0.00	881916	563.0 -> 269.0	15.3	0.0	45.3

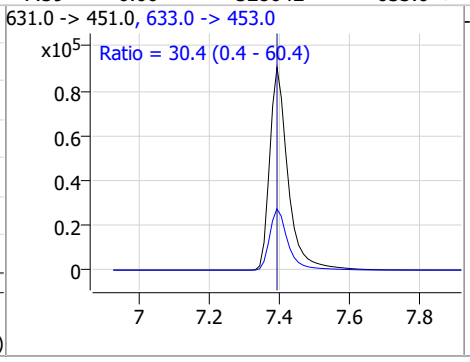


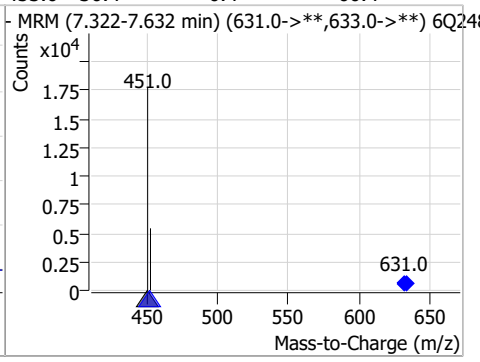




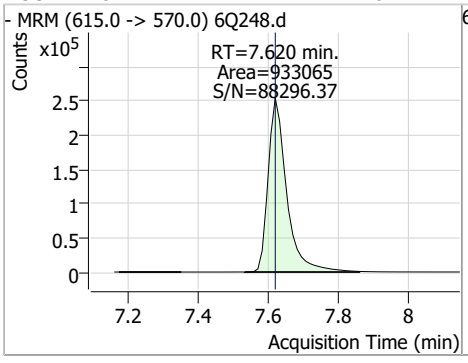
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.12	7.39	0.00	328042	633.0 -> 453.0	30.4	0.4	60.4

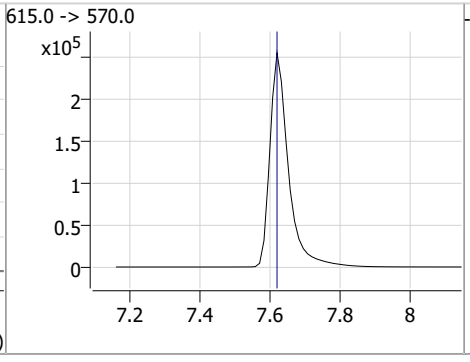


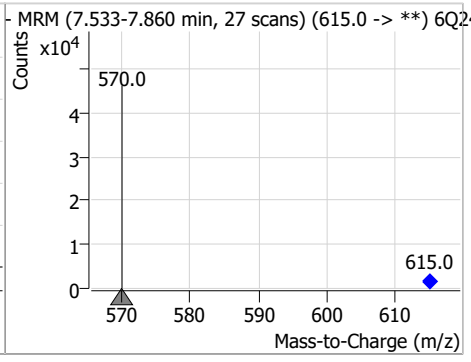




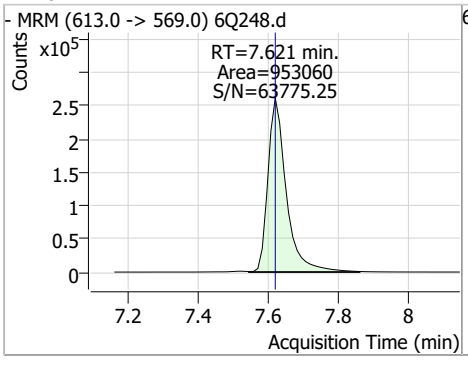
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.11	7.62	0.00	933065				

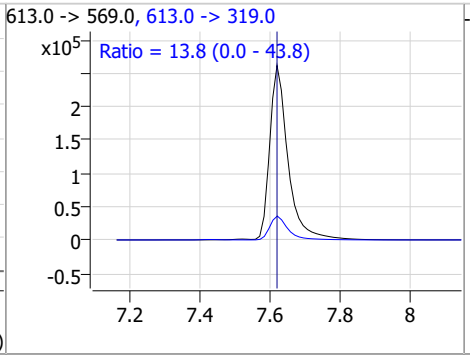


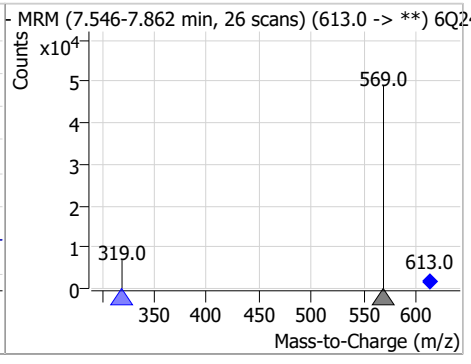




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.17	7.62	0.00	953060	613.0 -> 319.0	13.8	0.0	43.8

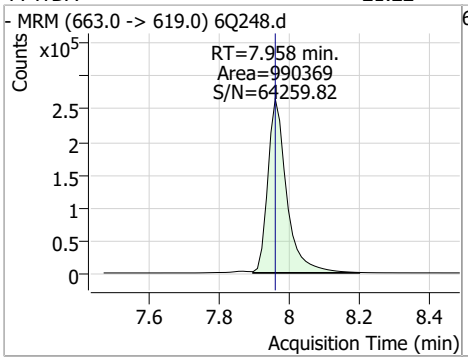


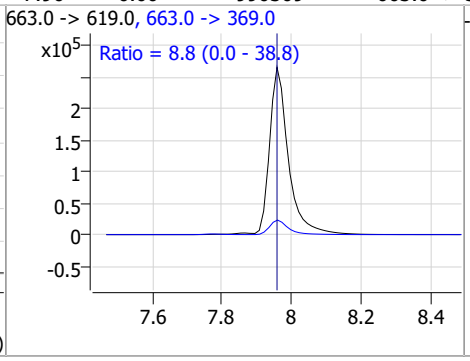


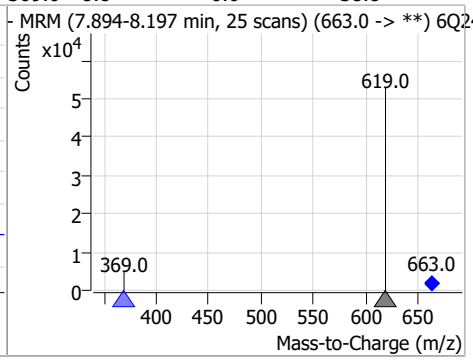


Perfluorinated Compounds by LC/MS/MS

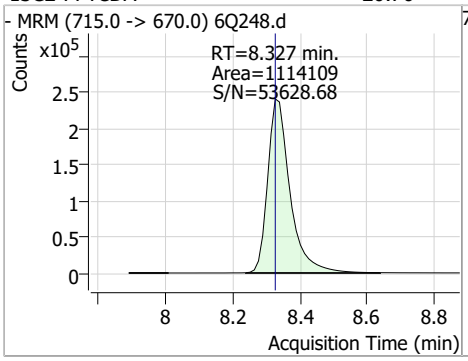
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.22	7.96	0.00	990369	663.0 -> 369.0	8.8	0.0	38.8

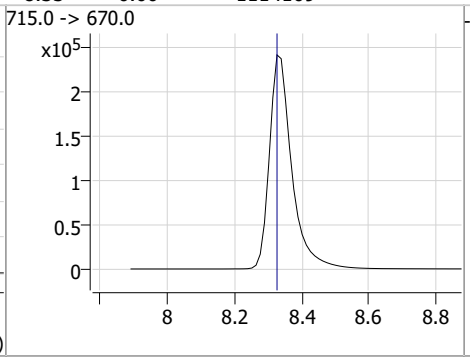


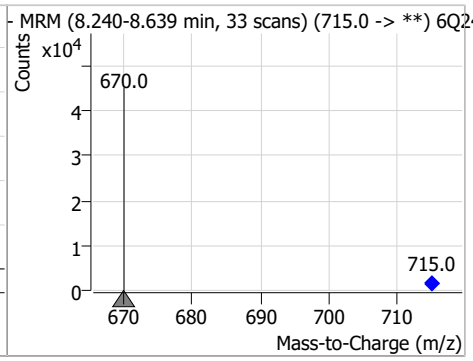




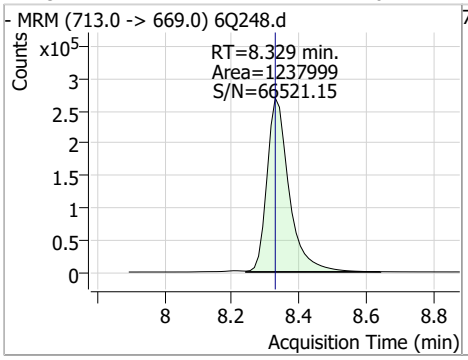
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.76	8.33	0.00	1114109				

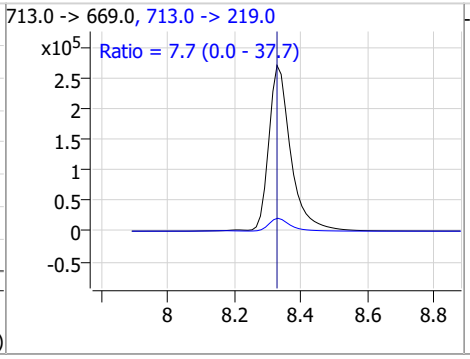


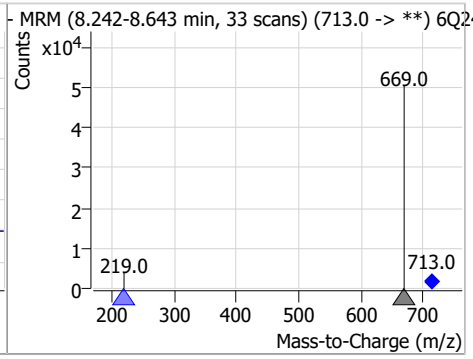




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.22	8.33	0.00	1237999	713.0 -> 219.0	7.7	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-ICC6
Lab FileID: 6Q248.D
Injection Time: 05/19/22 12:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.30	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q249.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 12:23:08 PM
Sample Name : ic6-50
Vial : P1-A8
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

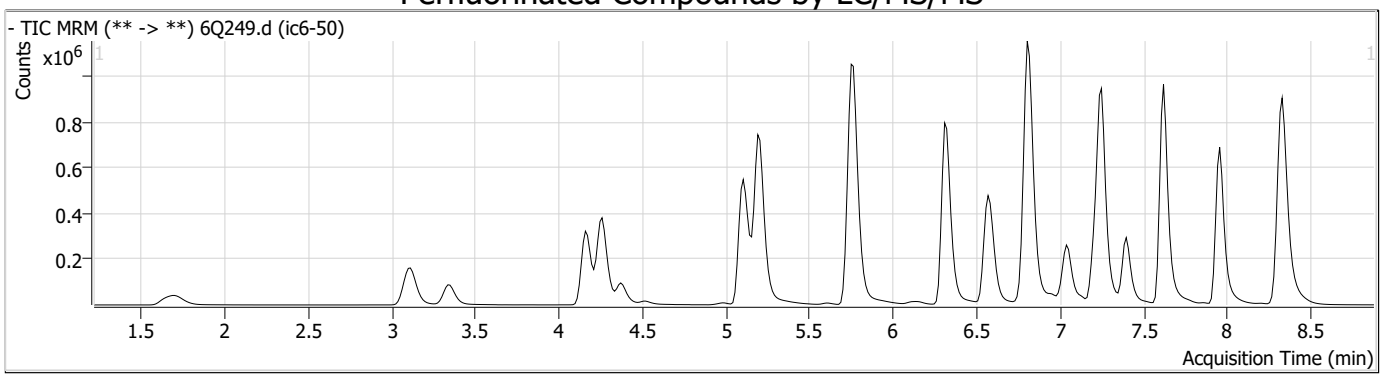
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.699	217.0 -> 172.0	166492	20.00 µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	283147	20.00 µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	421995	20.00 µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	462846	20.00 µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	747054	20.00 µg/L	0.000
M9-PFNA	6.317	472.0 -> 427.0	878945	20.00 µg/L	-0.012
M6-PFDA	6.809	519.0 -> 474.0	765912	20.00 µg/L	0.000
M7-PFUnDA	7.251	570.0 -> 525.0	863333	20.00 µg/L	0.000
M2-PFDoDA	7.620	615.0 -> 570.0	948050	20.00 µg/L	0.000
M2-PFTeDA	8.327	715.0 -> 670.0	1036208	20.00 µg/L	0.000
M8-FOSA	6.600	506.0 -> 78.0	206681	20.00 µg/L	0.012
M3-PFBS	3.348	302.0 -> 99.0	36003	20.00 µg/L	0.000
M3-PFHxS	5.140	402.0 -> 99.0	32789	20.00 µg/L	0.000
M8-PFOS	6.312	507.0 -> 99.0	43866	20.00 µg/L	0.000
M2-4:2FTS	4.160	329.0 -> 309.0	323264	20.00 µg/L	0.000
M2-6:2FTS	5.741	429.0 -> 409.0	360053	20.00 µg/L	0.000
M2-8:2FTS	6.820	529.0 -> 509.0	269883	20.00 µg/L	-0.012
M3-MeFOSAA	7.039	573.0 -> 419.0	204891	20.00 µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	12176	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	55006	20.00 µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	170173	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.160	329.0 -> 309.0	323264	21.98 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C2-6:2FTS	5.741	429.0 -> 409.0	360053	21.14 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C2-8:2FTS	6.820	529.0 -> 509.0	269883	21.94 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C2-PFDoDA	7.620	615.0 -> 570.0	948050	20.43 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%	
13C2-PFTeDA	8.327	715.0 -> 670.0	1036208	19.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%	
13C3-PFBS	3.348	302.0 -> 99.0	36003	20.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C3-PFHxS	5.140	402.0 -> 99.0	32789	19.96 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C4-PFBA	1.699	217.0 -> 172.0	166492	20.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C4-PFHpA	5.110	367.0 -> 322.0	462846	20.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C5-PFHxA	4.264	318.0 -> 273.0	421995	20.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	3.118	268.0 -> 223.0	283147	20.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C6-PFDA	6.809	519.0 -> 474.0	765912	20.89 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

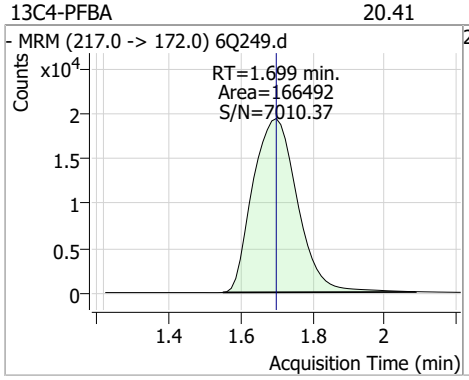
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C7-PFUnDA	7.251	570.0 -> 525.0	863333	19.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C8-FOSA	6.600	506.0 -> 78.0	206681	19.64 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C8-PFOA	5.770	421.0 -> 376.0	747054	20.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C8-PFOS	6.312	507.0 -> 99.0	43866	20.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C9-PFNA	6.317	472.0 -> 427.0	878945	20.31 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d3-MeFOSAA	7.039	573.0 -> 419.0	204891	21.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	12196	20.52 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
d3-MeFOSA	7.020	515.0 -> 169.0	55006	21.33 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
d5-EtFOSAA	7.200	589.0 -> 419.0	170116	20.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
Target Compounds						**QValue**
4:2FTS	4.162	327.0 -> 307.0	845498	48.12 µg/L		99
6:2FTS	5.742	427.0 -> 407.0	880319	48.22 µg/L		99
8:2FTS	6.820	527.0 -> 507.0	625542	46.74 µg/L		97
EtFOSAA	7.213	584.0 -> 419.0	418738	51.21 µg/L	m	100
FOSA	6.590	498.0 -> 78.0	494376	48.77 µg/L		100
MeFOSAA	7.052	570.0 -> 419.0	436228	47.77 µg/L	m	95
PFBA	1.693	213.0 -> 169.0	193363	51.24 µg/L		100
PFBS	3.340	299.0 -> 80.0	289610	51.74 µg/L		100
PFDA	6.810	513.0 -> 469.0	2417964	49.63 µg/L		99
PFDoDA	7.621	613.0 -> 569.0	2260494	51.76 µg/L		99
PFDS	7.211	599.0 -> 80.0	168043	52.47 µg/L		94
PFHpA	5.112	363.0 -> 319.0	1539191	50.11 µg/L		99
PFHpS	5.777	449.0 -> 80.0	195760	48.84 µg/L		98
PFHxA	4.265	313.0 -> 269.0	1153851	50.46 µg/L		99
PFHxS	5.143	399.0 -> 80.0	222008	50.89 µg/L	m	96
PFNA	6.318	463.0 -> 419.0	1860134	49.71 µg/L		99
PFNS	6.782	549.0 -> 80.0	220224	50.96 µg/L		94
PFOA	5.771	413.0 -> 369.0	1905513	50.42 µg/L		100
PFOS	6.299	499.0 -> 80.0	199053	48.24 µg/L	m	85
PFPeA	3.121	263.0 -> 219.0	627955	50.75 µg/L		100
PFPeS	4.370	349.0 -> 80.0	231629	49.48 µg/L		98
PFTeDA	8.329	713.0 -> 669.0	2872804	50.44 µg/L		100
PFTrDA	7.958	663.0 -> 619.0	2390577	50.42 µg/L		100
PFUnDA	7.252	563.0 -> 519.0	2126319	52.71 µg/L		98
11Cl-PF3OUdS	7.394	631.0 -> 451.0	769488	48.76 µg/L		97
9Cl-PF3ONS	6.558	531.0 -> 351.0	1039932	45.75 µg/L		94
ADONA	5.194	377.0 -> 251.0	2427372	51.07 µg/L		99
HFPO-DA	4.530	285.0 -> 169.0	31235	54.70 µg/L		99
MeFOSA	7.034	512.0 -> 169.0	140415	49.26 µg/L		98

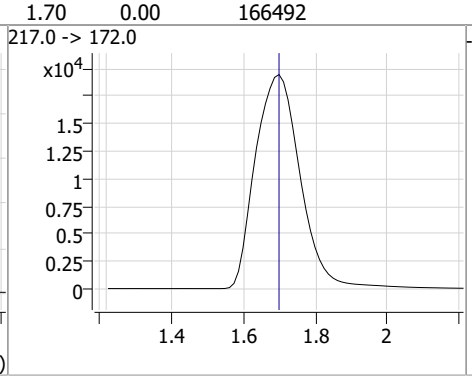
 # = Qualifier out of range, m = manually integrated, + = Area summed

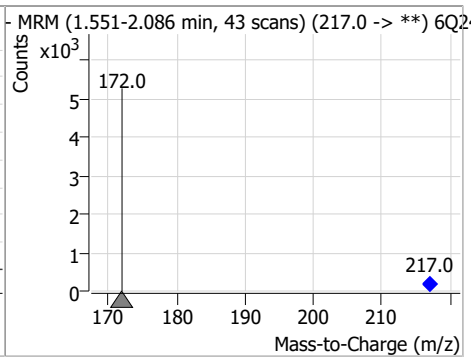
Perfluorinated Compounds by LC/MS/MS



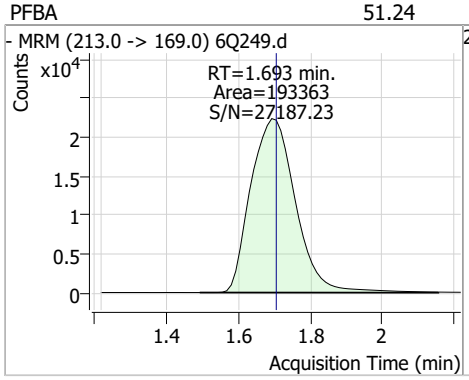
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.41	1.70	0.00	166492				

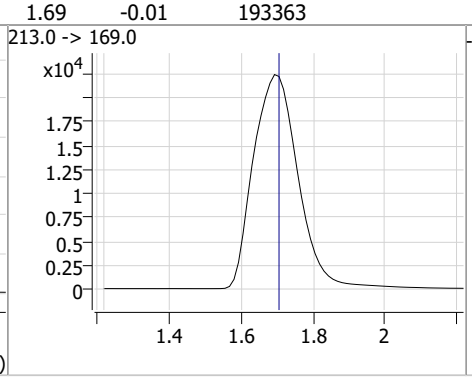


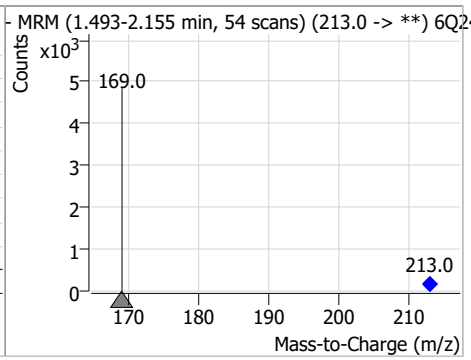




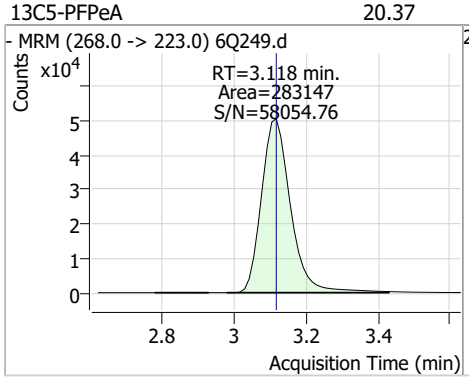
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	51.24	1.69	-0.01	193363				

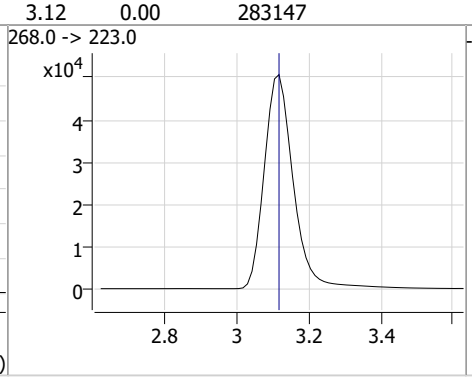


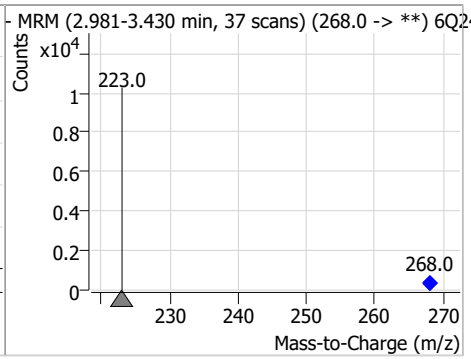




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.37	3.12	0.00	283147				

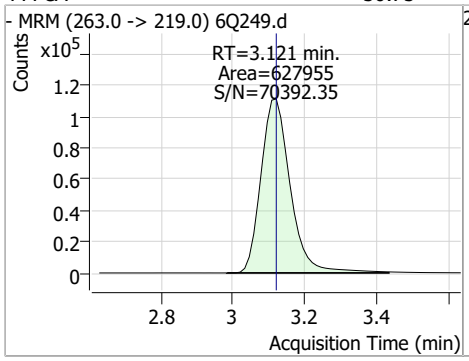


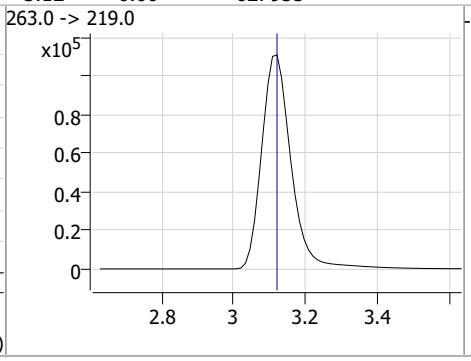


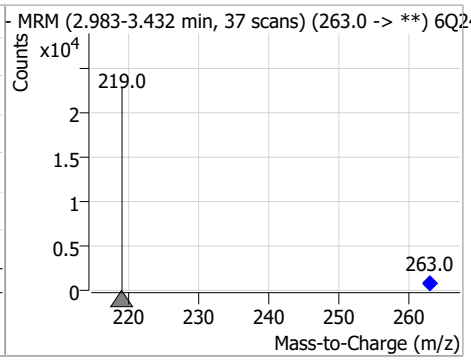


Perfluorinated Compounds by LC/MS/MS

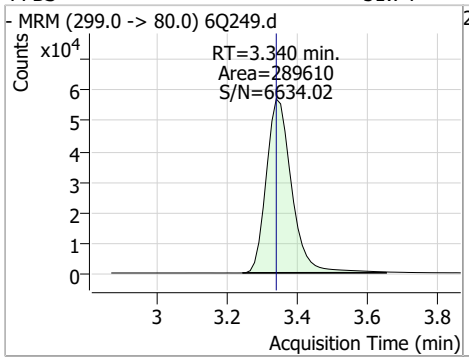
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	50.75	3.12	0.00	627955				

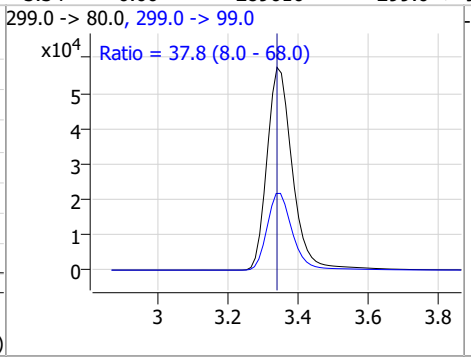


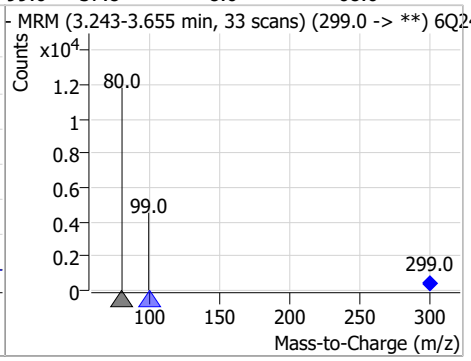




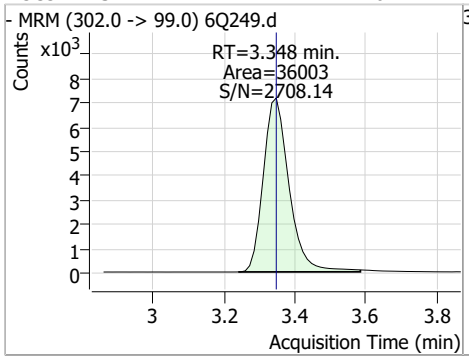
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	51.74	3.34	0.00	289610	299.0 -> 99.0	37.8	8.0	68.0

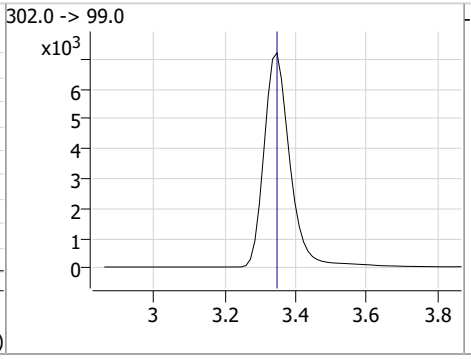


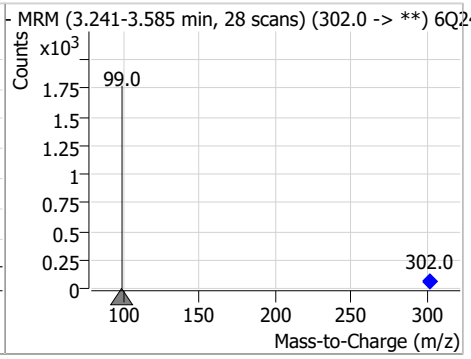




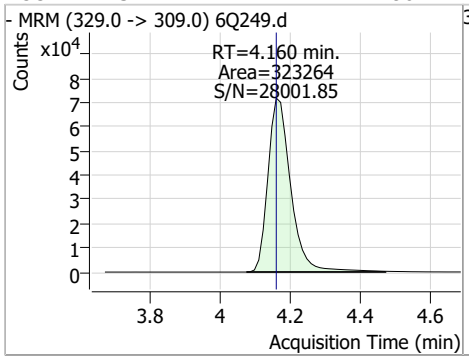
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.41	3.35	0.00	36003				

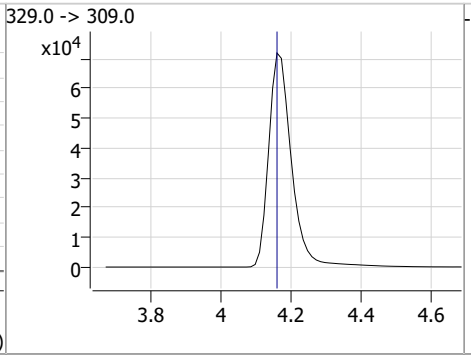


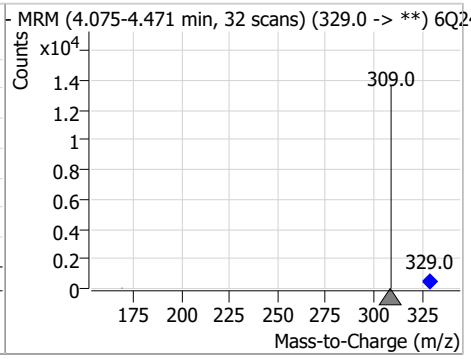




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.98	4.16	0.00	323264				

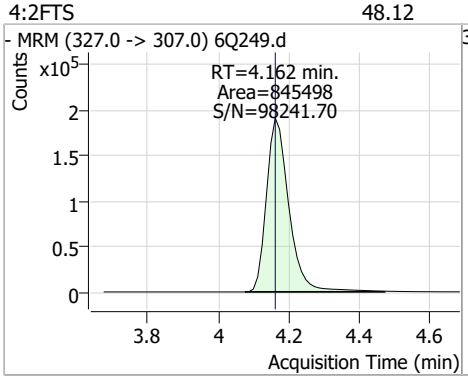


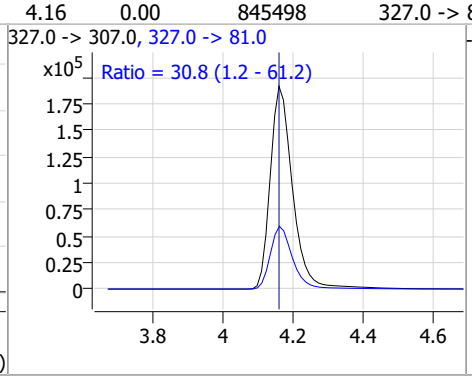


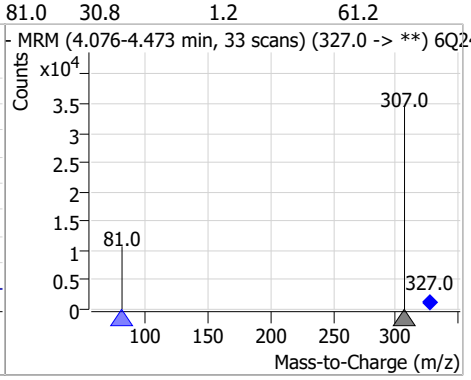


Perfluorinated Compounds by LC/MS/MS

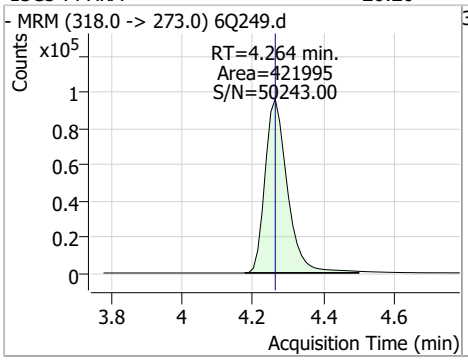
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.12	4.16	0.00	845498	327.0 -> 81.0	30.8	1.2	61.2

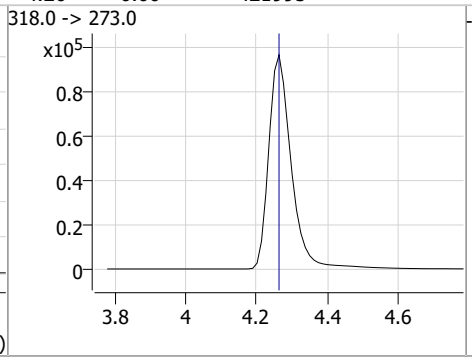


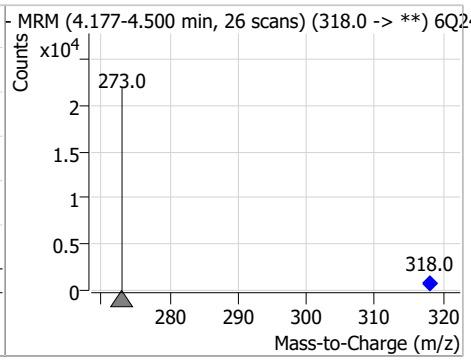




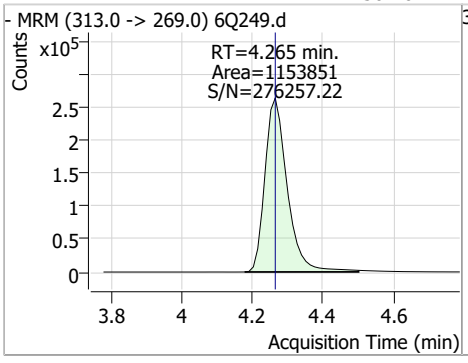
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.20	4.26	0.00	421995				

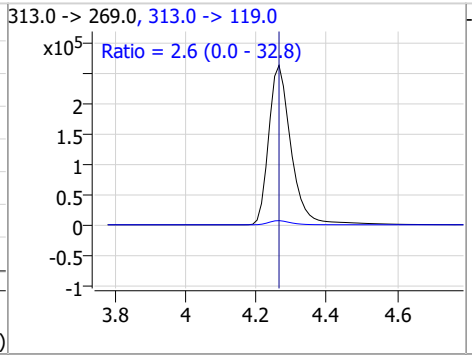


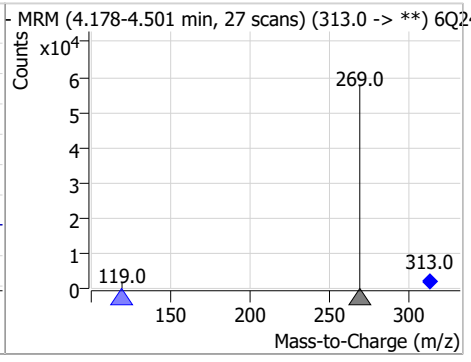




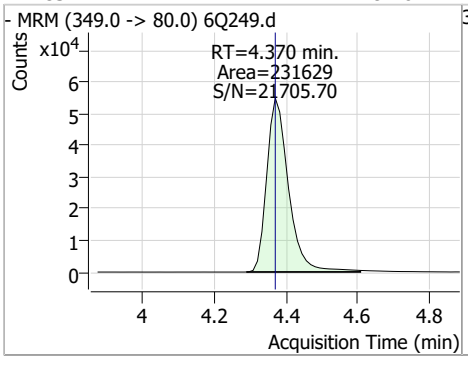
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	50.46	4.26	0.00	1153851	313.0 -> 119.0	2.6	0.0	32.8

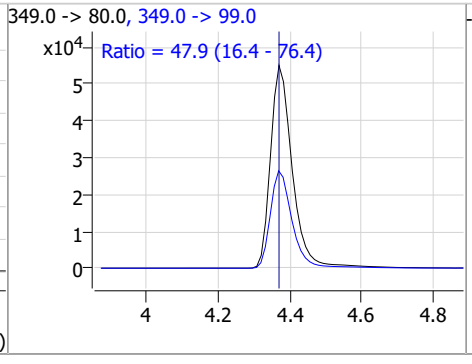


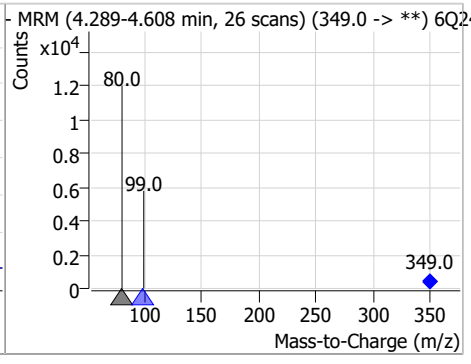




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.48	4.37	0.00	231629	349.0 -> 99.0	47.9	16.4	76.4

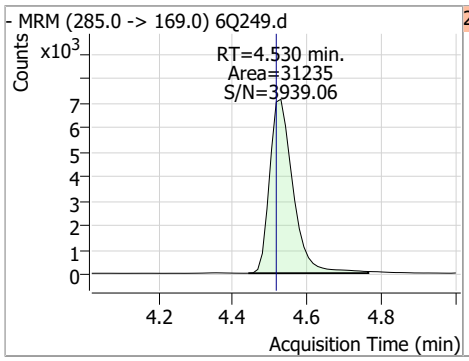


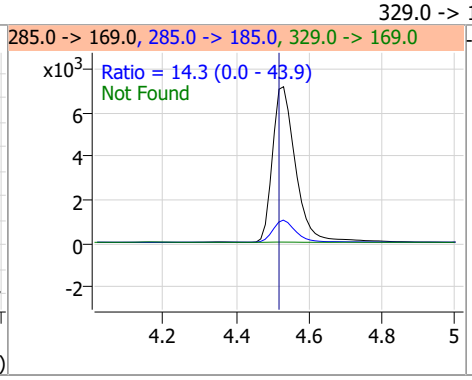


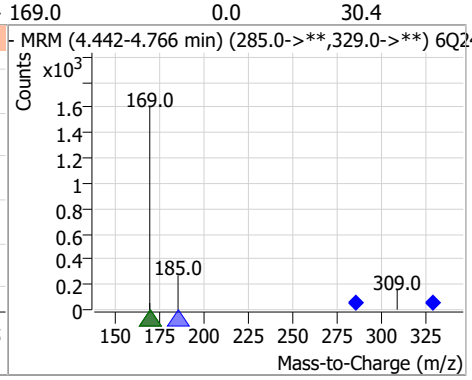


Perfluorinated Compounds by LC/MS/MS

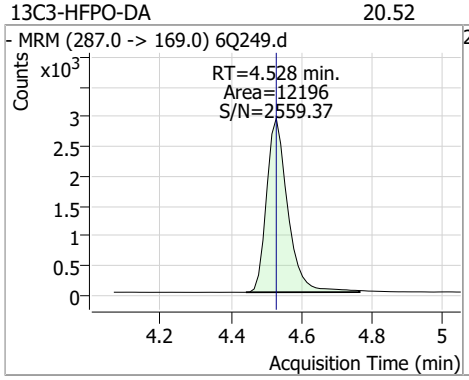
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	54.70	4.53	0.01	31235	285.0 -> 185.0	14.3	0.0	43.9
					329.0 -> 169.0		0.0	30.4

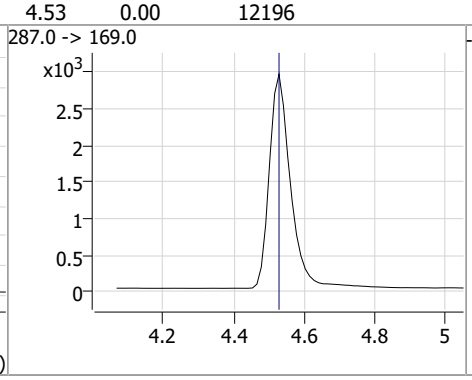


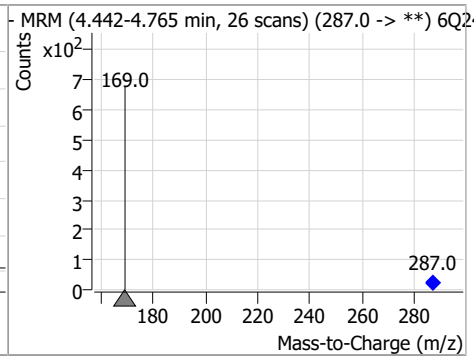




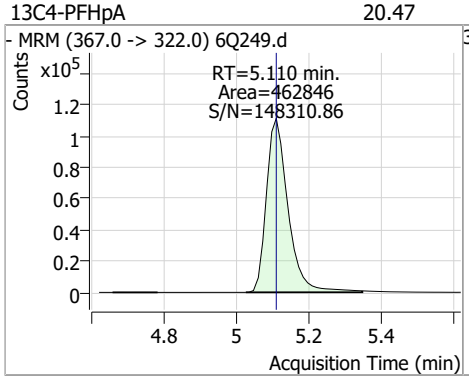
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.52	4.53	0.00	12196				

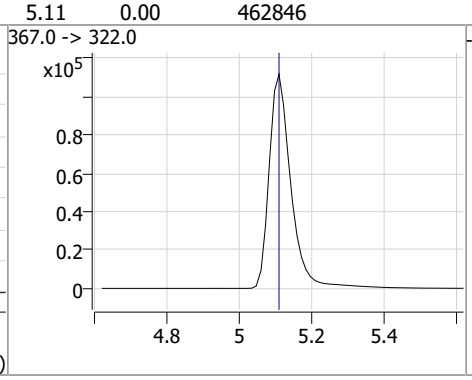


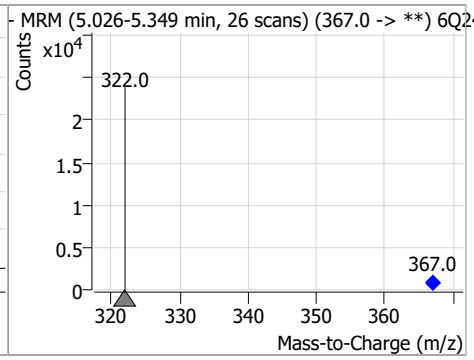




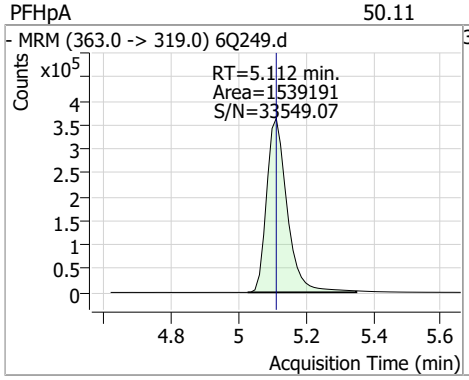
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.47	5.11	0.00	462846				

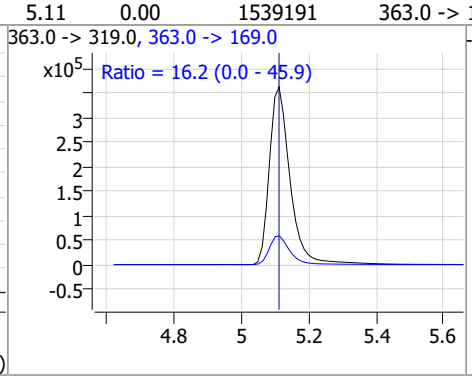


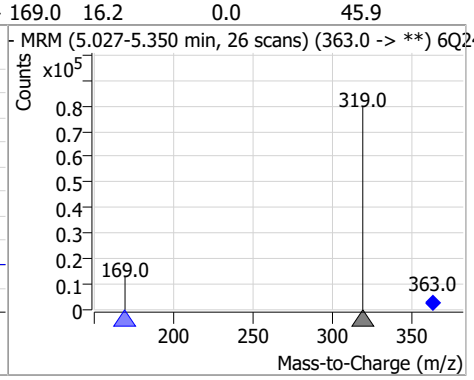




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.11	5.11	0.00	1539191	363.0 -> 169.0	16.2	0.0	45.9

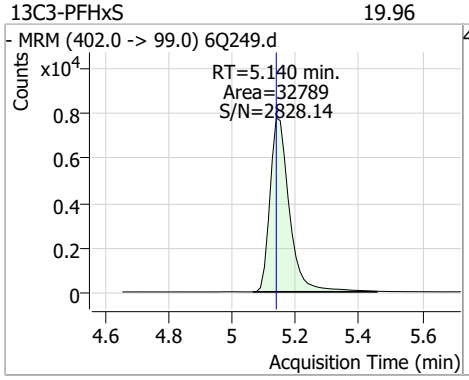


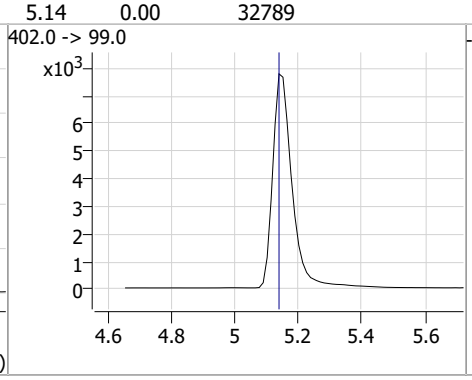


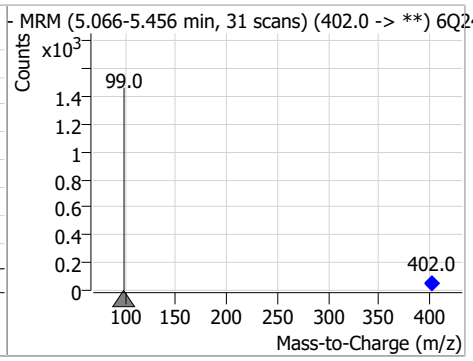


Perfluorinated Compounds by LC/MS/MS

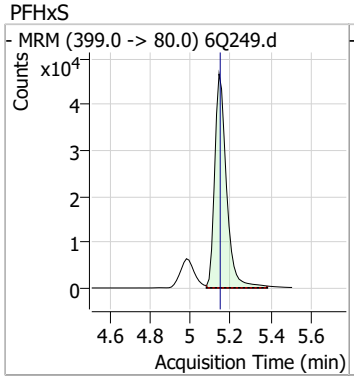
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.96	5.14	0.00	32789				

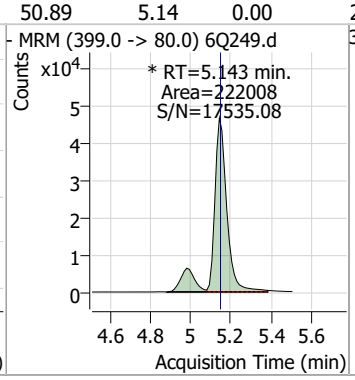


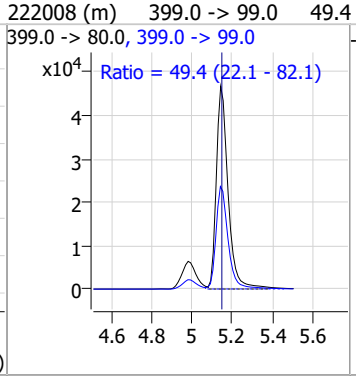


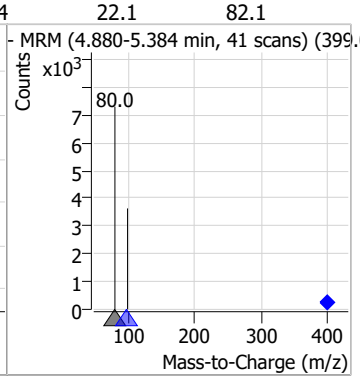


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	50.89	5.14	0.00	222008 (m)	399.0 -> 99.0	49.4	22.1	82.1

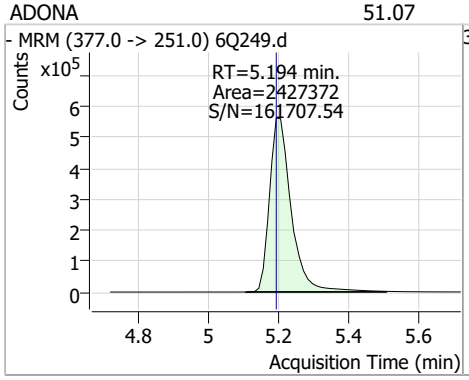


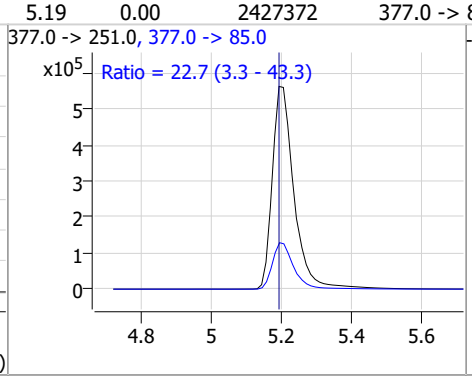


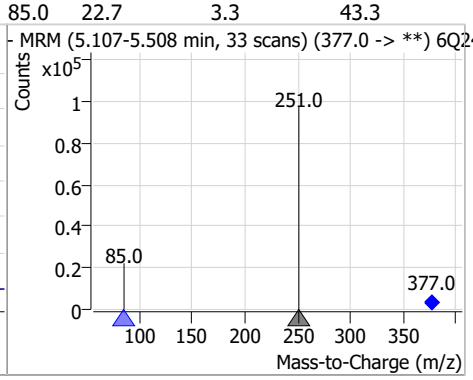




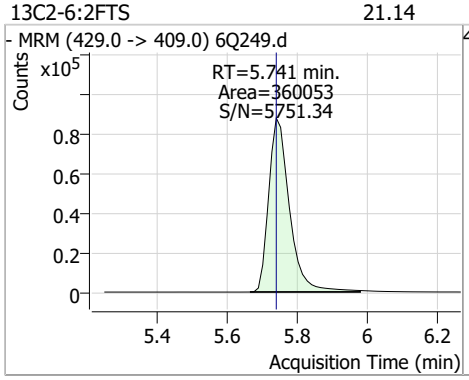
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	51.07	5.19	0.00	2427372	377.0 -> 85.0	22.7	3.3	43.3

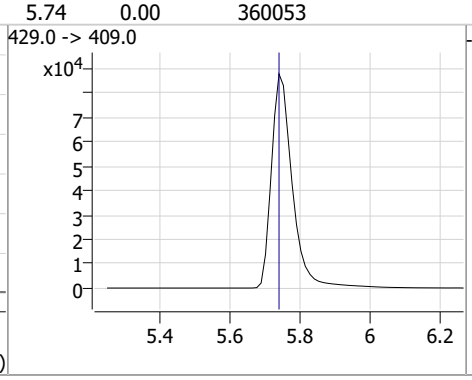


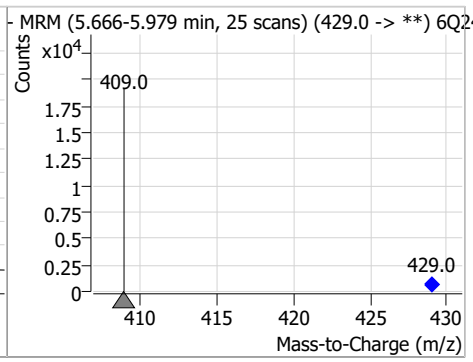




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.14	5.74	0.00	360053				

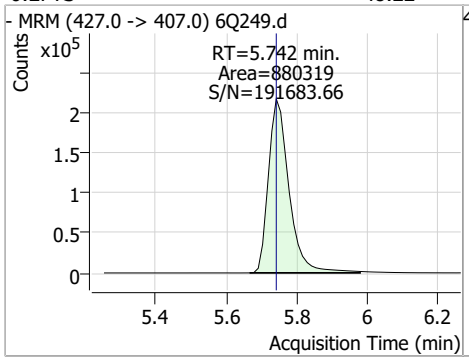


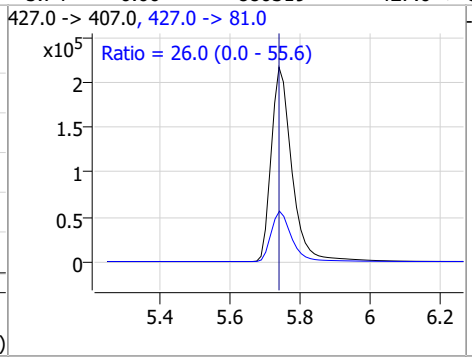


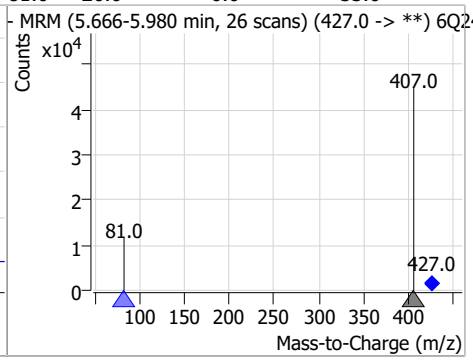


Perfluorinated Compounds by LC/MS/MS

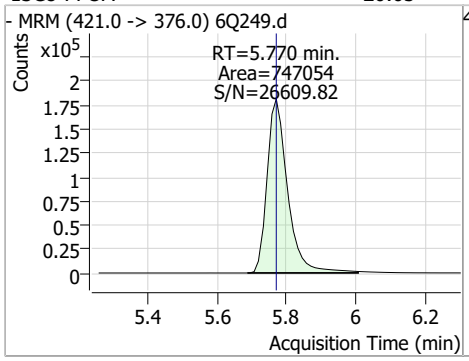
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.22	5.74	0.00	880319	427.0 -> 81.0	26.0	0.0	55.6

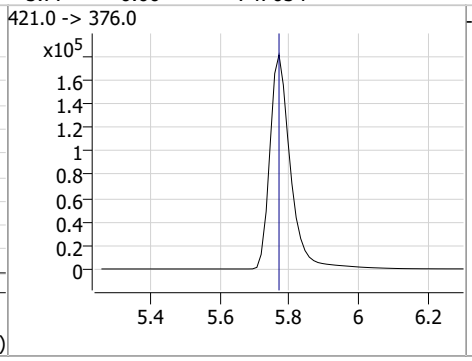


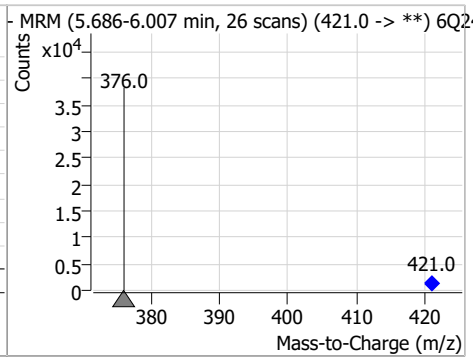




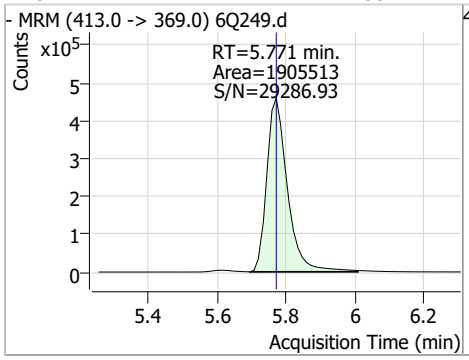
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.05	5.77	0.00	747054				

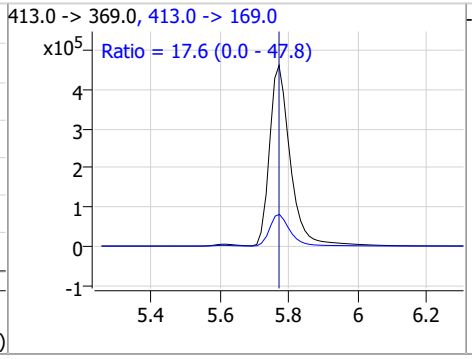


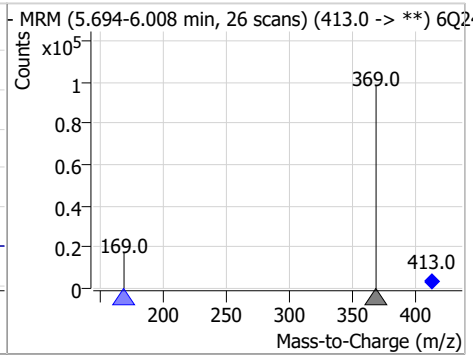




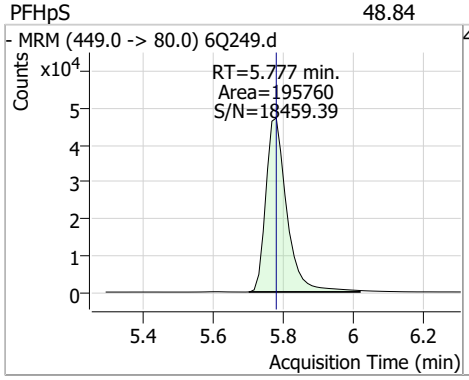
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	50.42	5.77	0.00	1905513	413.0 -> 169.0	17.6	0.0	47.8

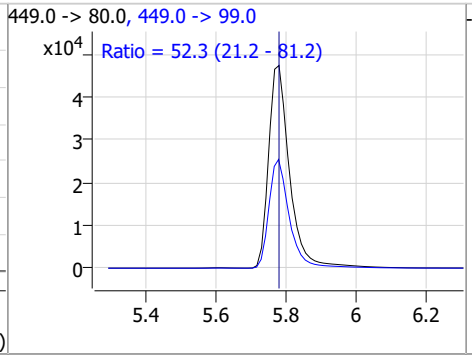


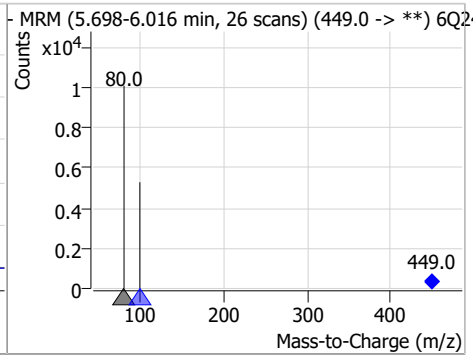




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	48.84	5.78	0.00	195760	449.0 -> 99.0	52.3	21.2	81.2

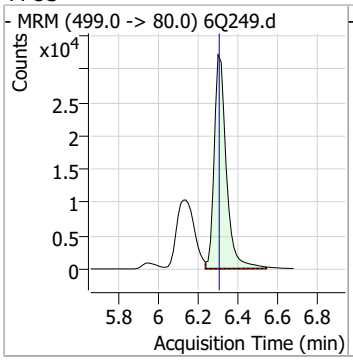


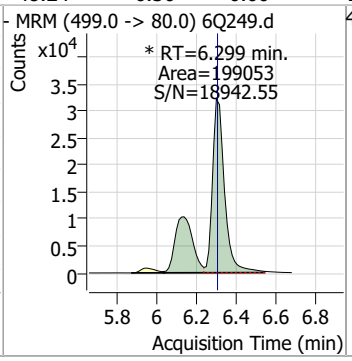


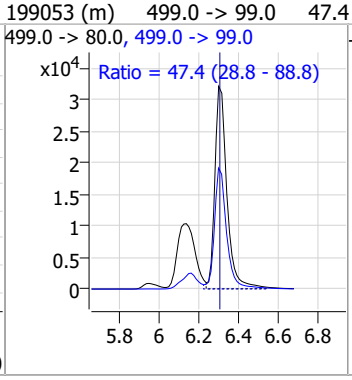


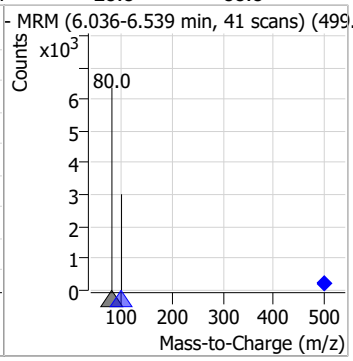
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.24	6.30	0.00	199053 (m)	499.0 -> 99.0	47.4	28.8	88.8

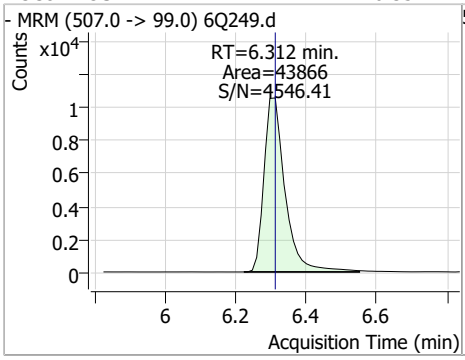


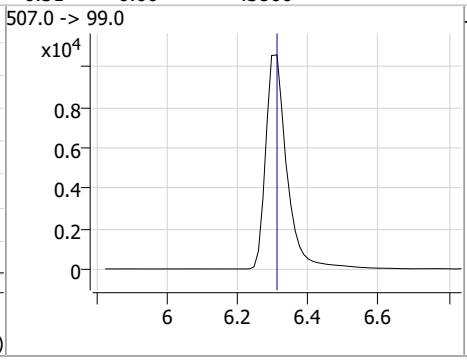


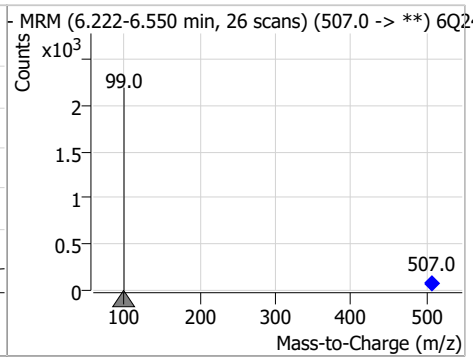




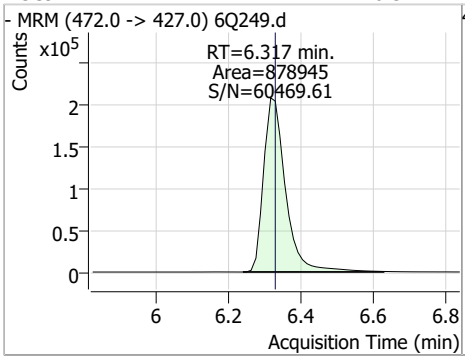
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.35	6.31	0.00	43866				

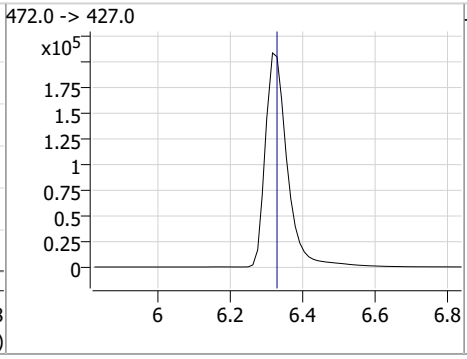


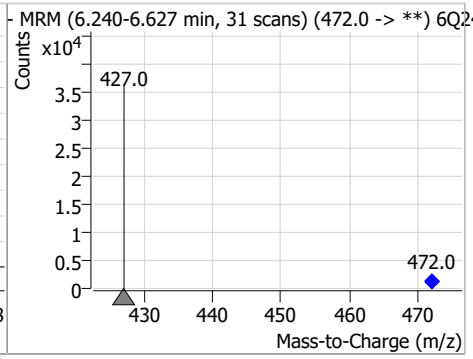




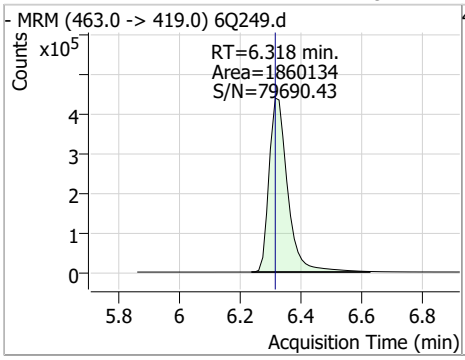
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.31	6.32	-0.01	878945				

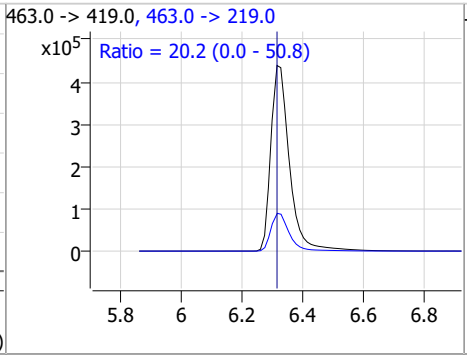


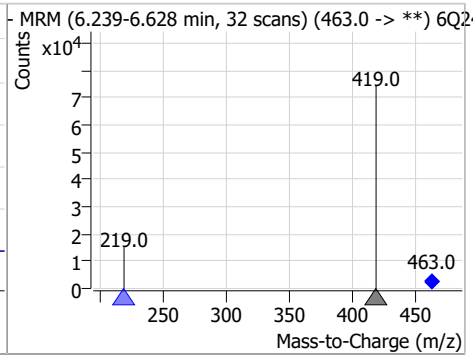




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.71	6.32	-0.01	1860134	463.0 -> 219.0	20.2	0.0	50.8

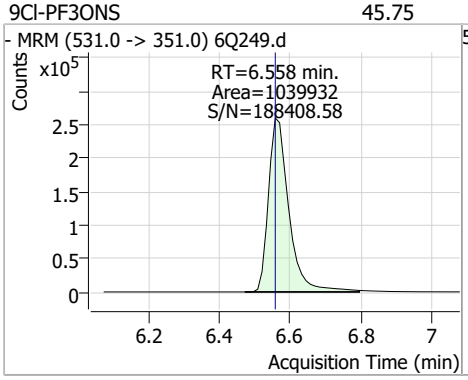


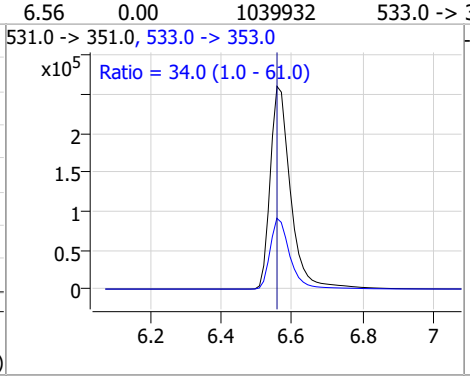


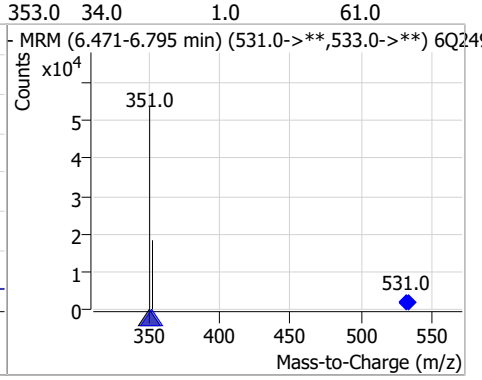


Perfluorinated Compounds by LC/MS/MS

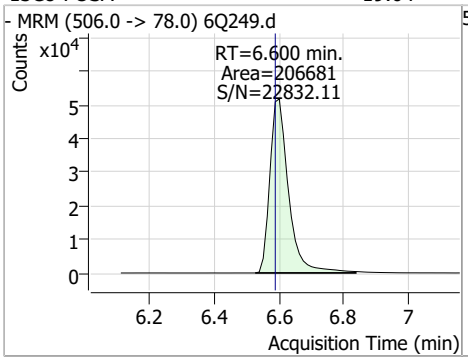
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	45.75	6.56	0.00	1039932	533.0 -> 353.0	34.0	1.0	61.0

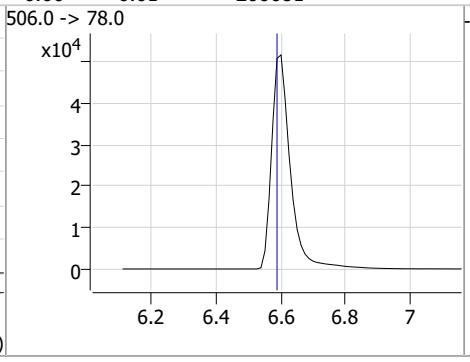


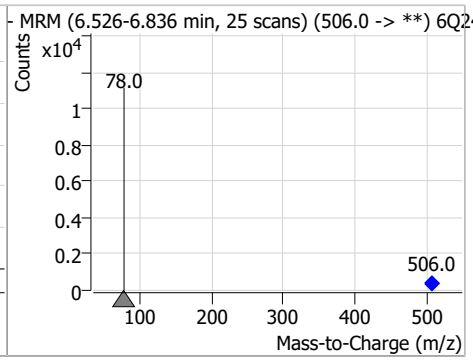




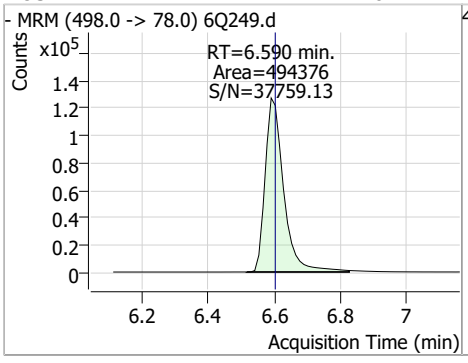
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.64	6.60	0.01	206681				

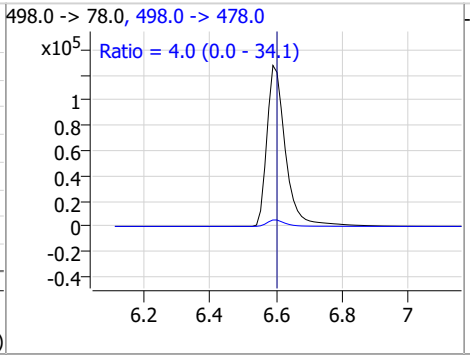


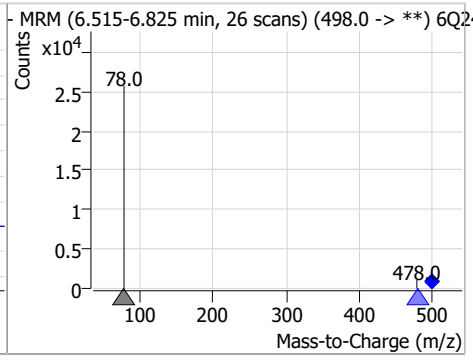




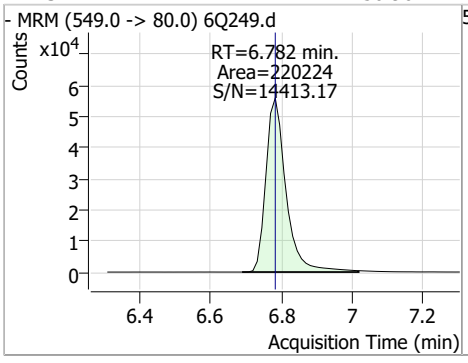
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.77	6.59	0.00	494376	498.0 -> 478.0	4.0	0.0	34.1

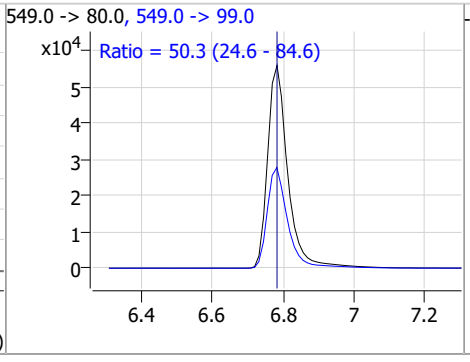


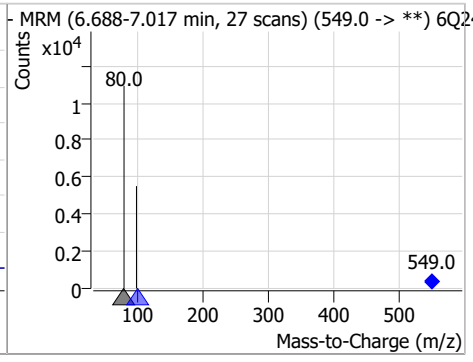




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.96	6.78	0.00	220224	549.0 -> 99.0	50.3	24.6	84.6

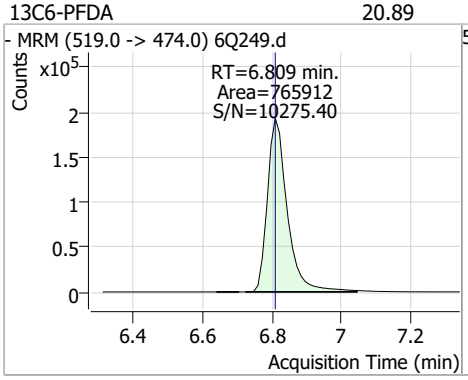


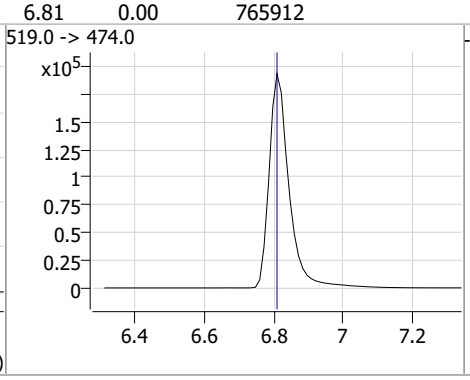


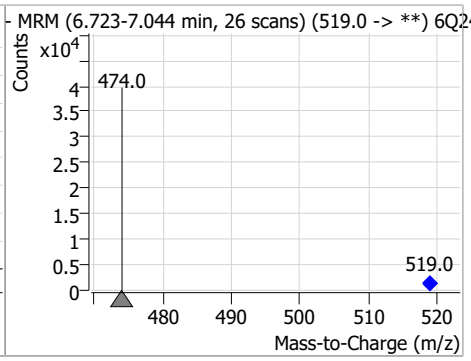


Perfluorinated Compounds by LC/MS/MS

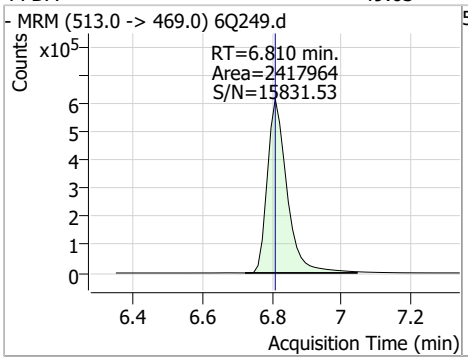
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.89	6.81	0.00	765912				

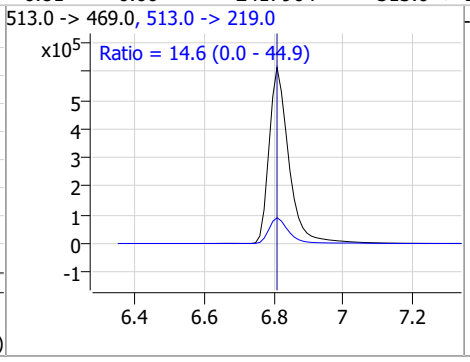


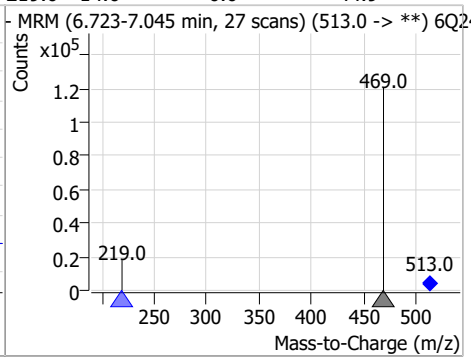




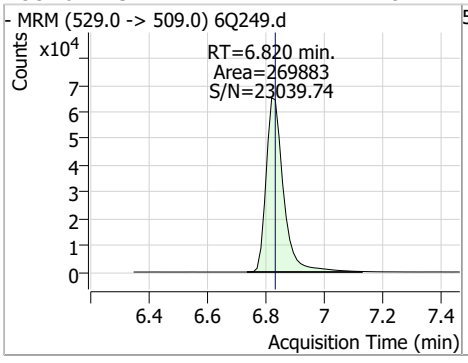
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.63	6.81	0.00	2417964	513.0 -> 219.0	14.6	0.0	44.9

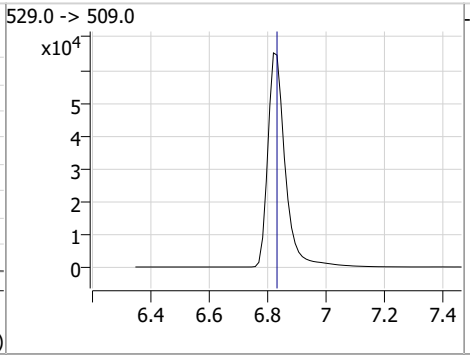


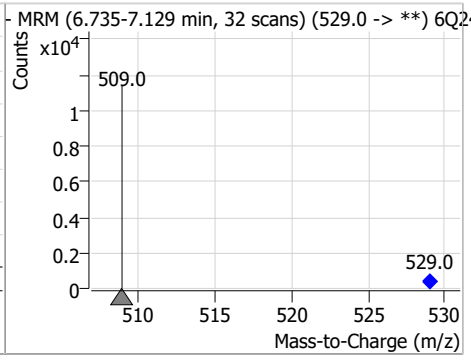




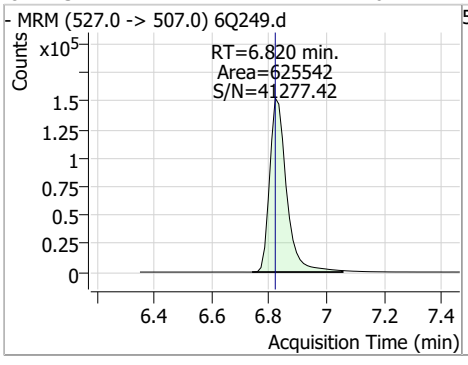
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.94	6.82	-0.01	269883				

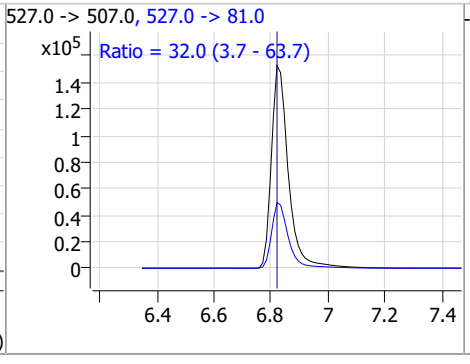


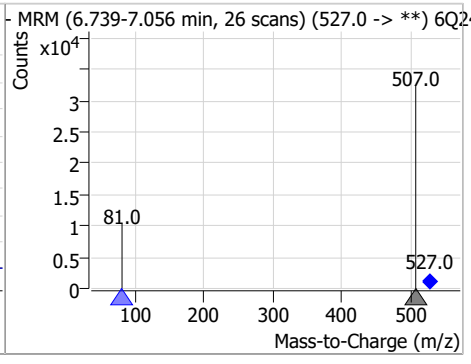




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	46.74	6.82	-0.01	625542	527.0 -> 81.0	32.0	3.7	63.7

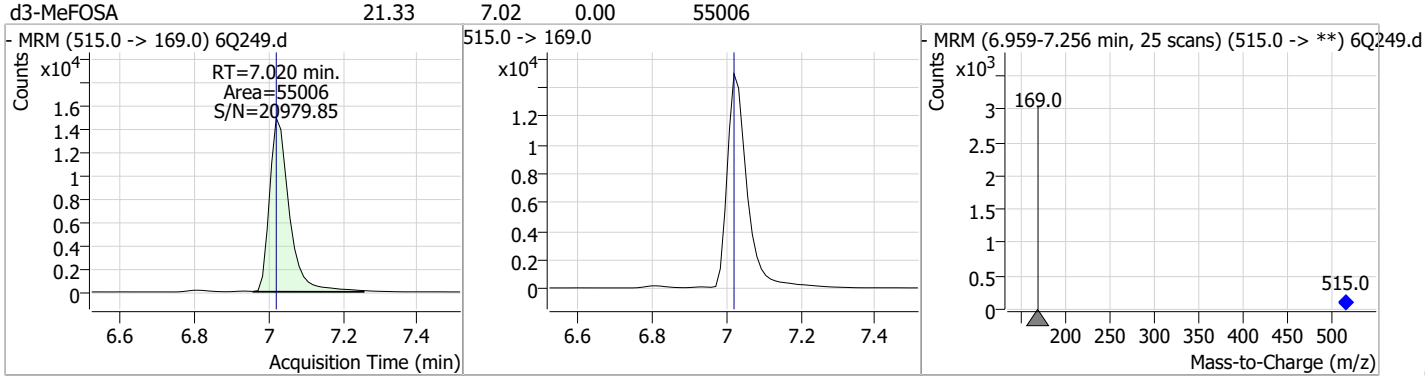




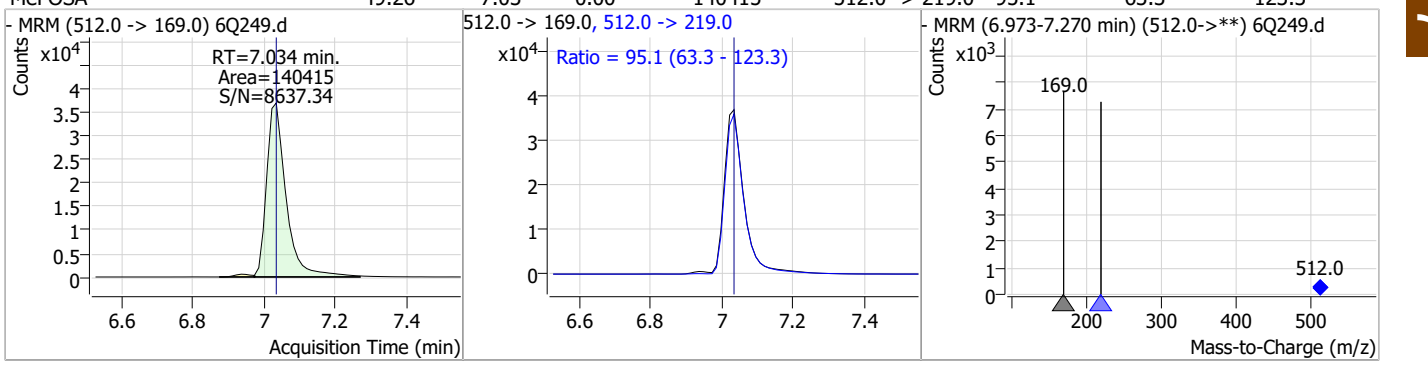


Perfluorinated Compounds by LC/MS/MS

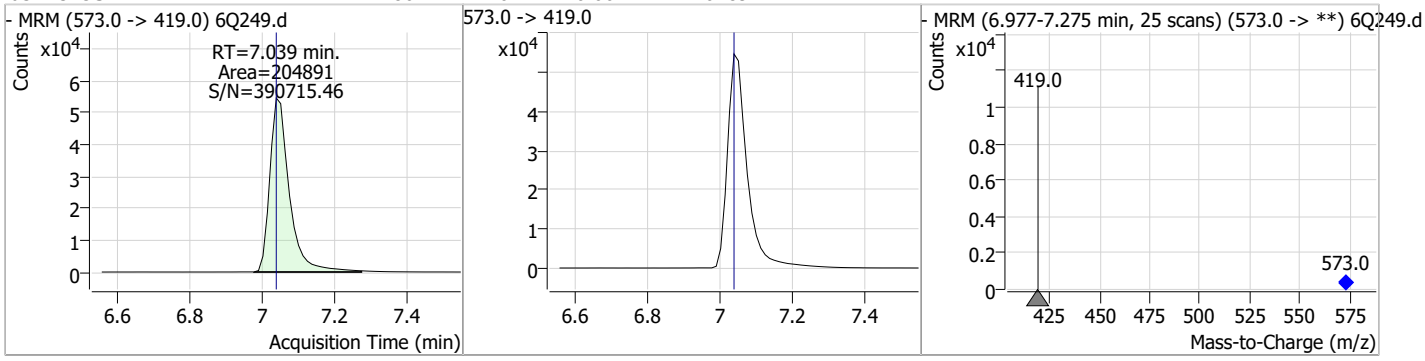
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.33	7.02	0.00	55006				



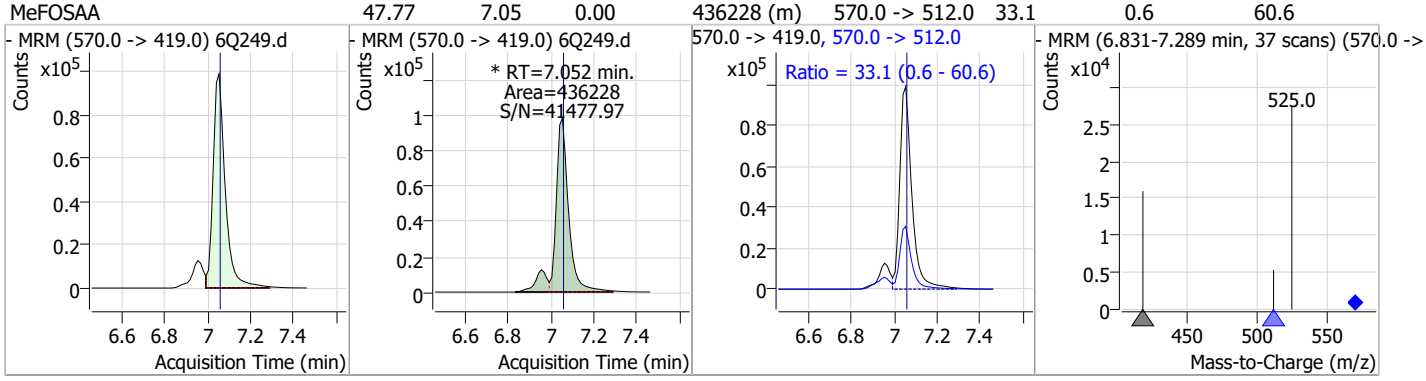
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.26	7.03	0.00	140415	512.0 -> 219.0	95.1	63.3	123.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.80	7.04	0.00	204891				

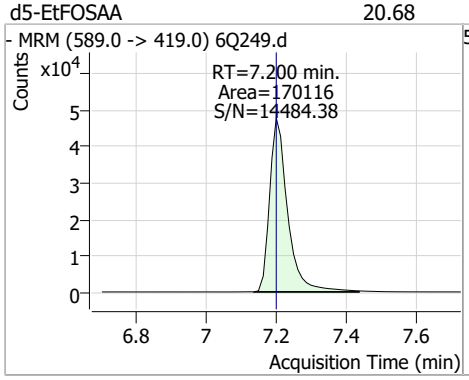


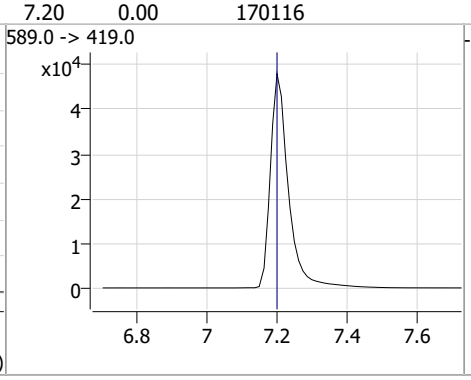
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	47.77	7.05	0.00	436228 (m)	570.0 -> 512.0	33.1	0.6	60.6

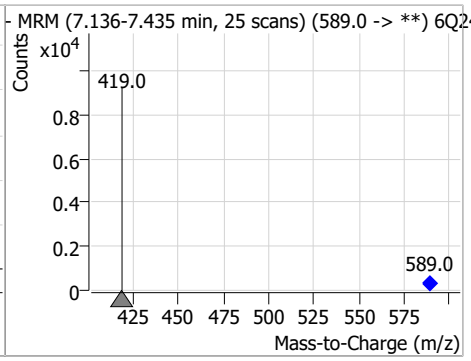


Perfluorinated Compounds by LC/MS/MS

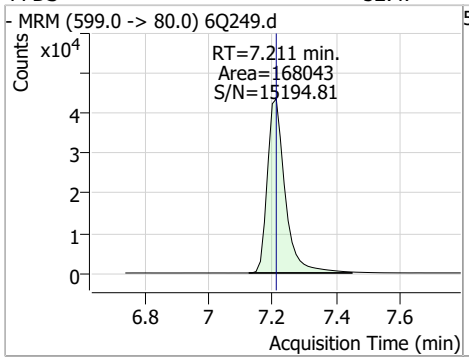
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.68	7.20	0.00	170116				

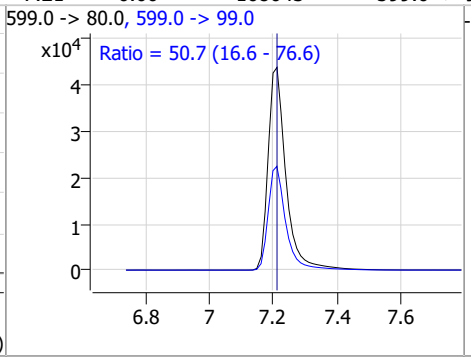


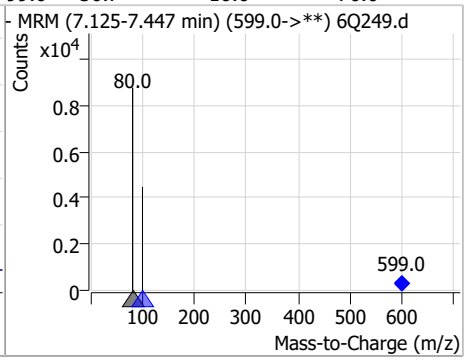




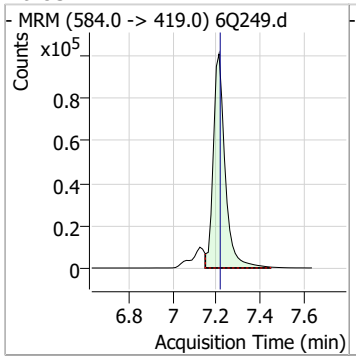
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	52.47	7.21	0.00	168043	599.0 -> 99.0	50.7	16.6	76.6

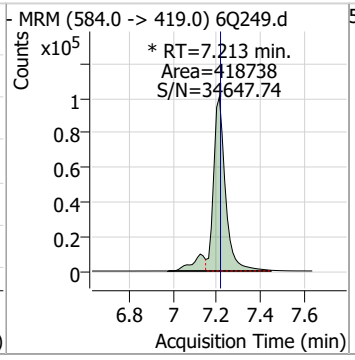


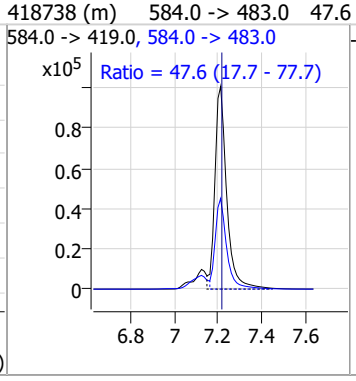


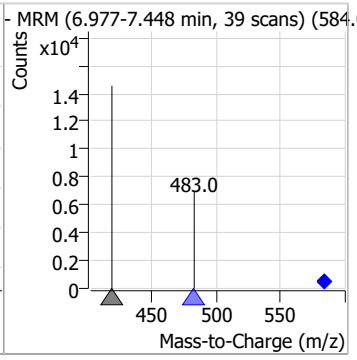


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.21	7.21	0.00	418738 (m)	584.0 -> 483.0	47.6	17.7	77.7

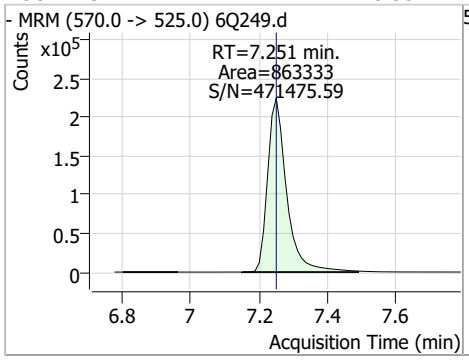


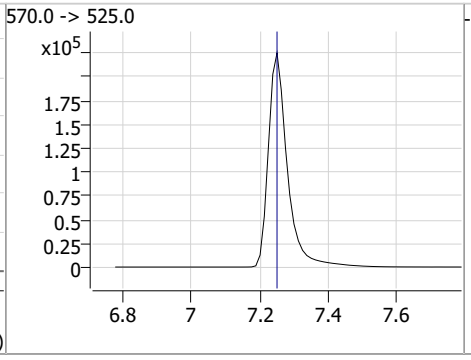


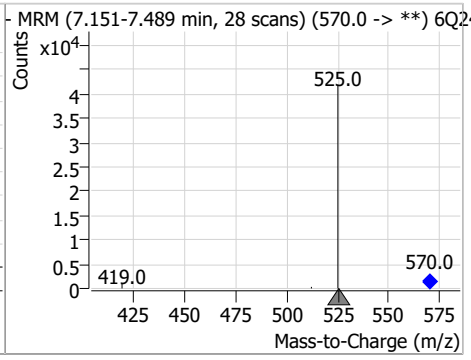




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.95	7.25	0.00	863333				





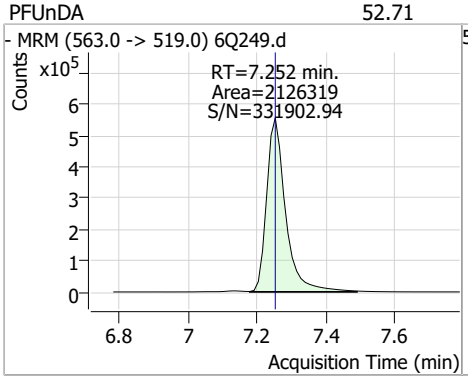


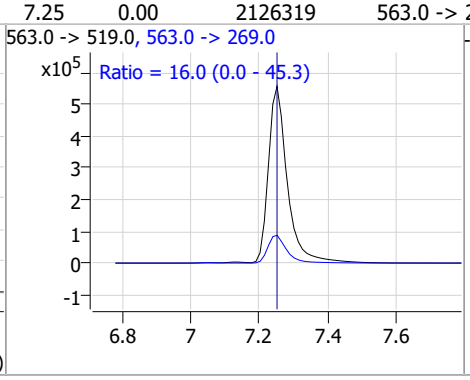
7.7.38

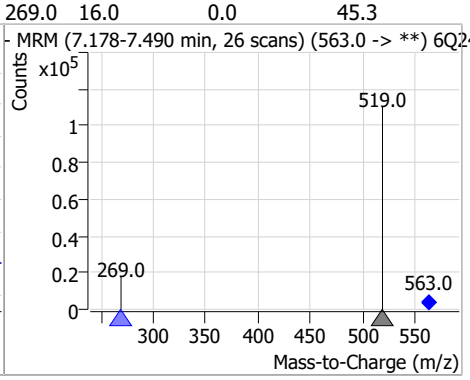
7

Perfluorinated Compounds by LC/MS/MS

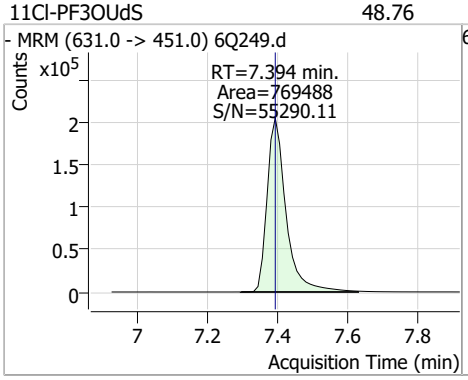
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	52.71	7.25	0.00	2126319	563.0 -> 269.0	16.0	0.0	45.3

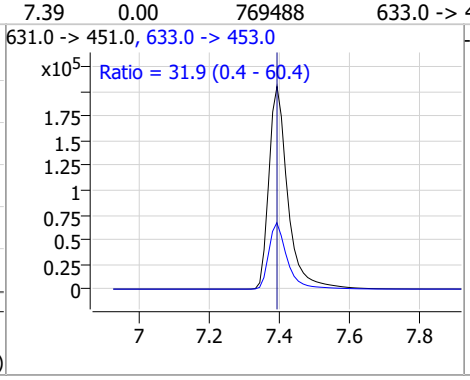


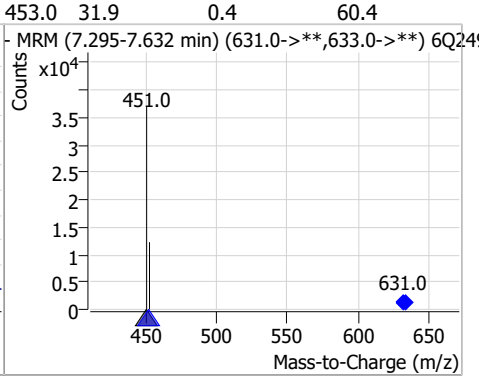




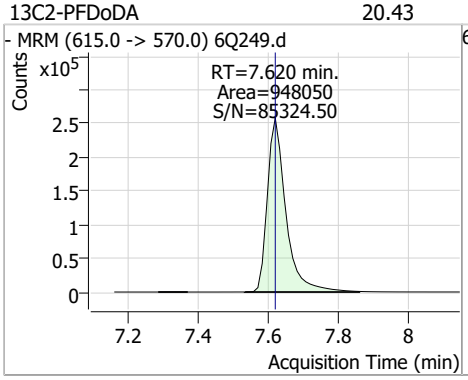
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	48.76	7.39	0.00	769488	633.0 -> 453.0	31.9	0.4	60.4

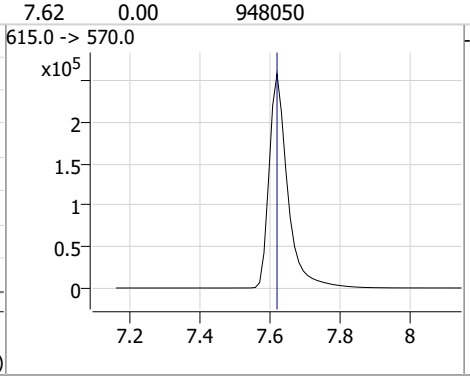


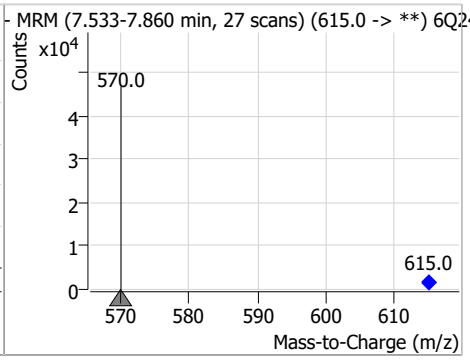




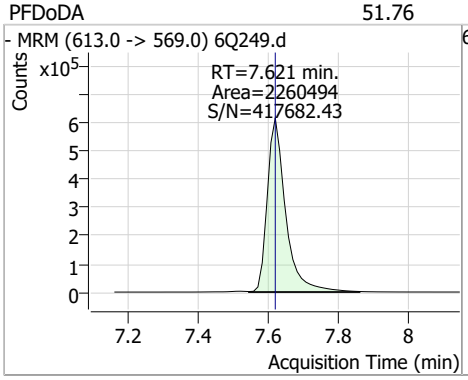
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.43	7.62	0.00	948050				

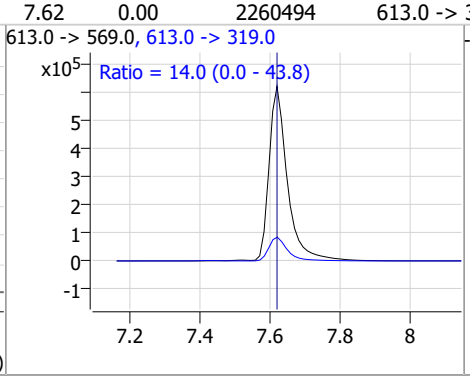


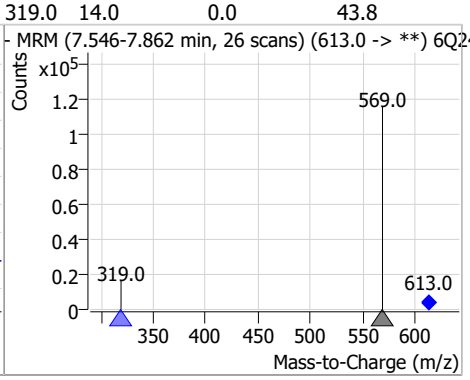




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	51.76	7.62	0.00	2260494	613.0 -> 319.0	14.0	0.0	43.8

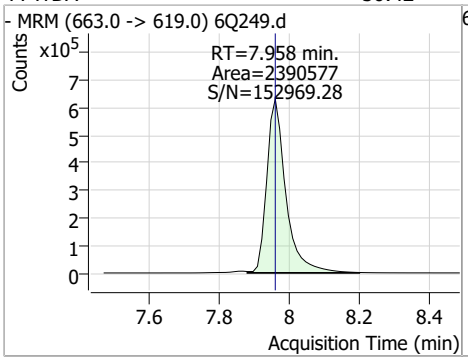


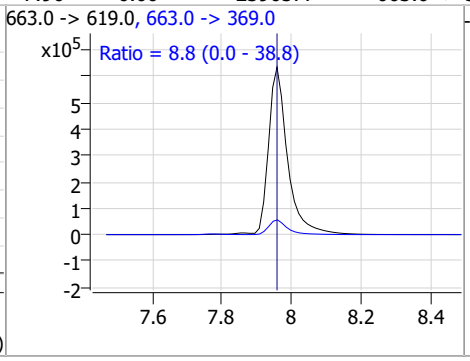


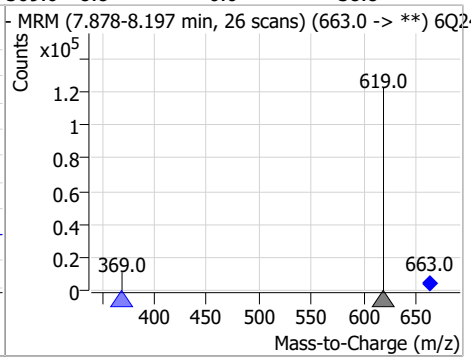


Perfluorinated Compounds by LC/MS/MS

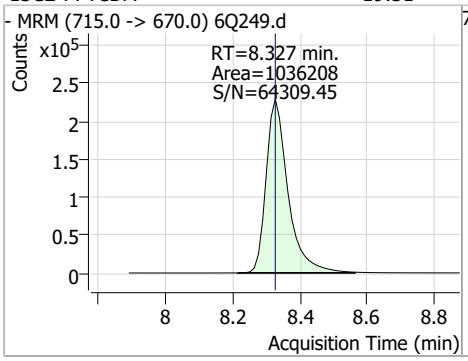
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	50.42	7.96	0.00	2390577	663.0 -> 369.0	8.8	0.0	38.8

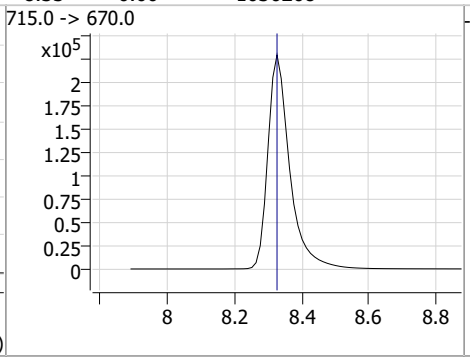


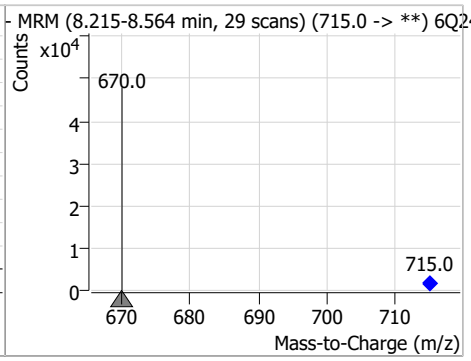




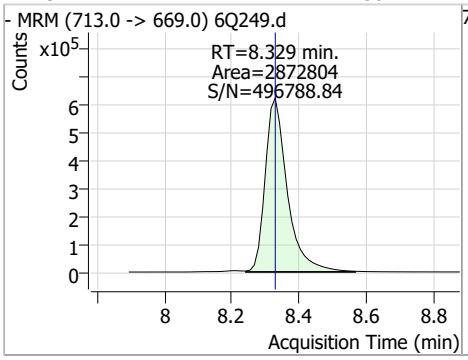
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.31	8.33	0.00	1036208				

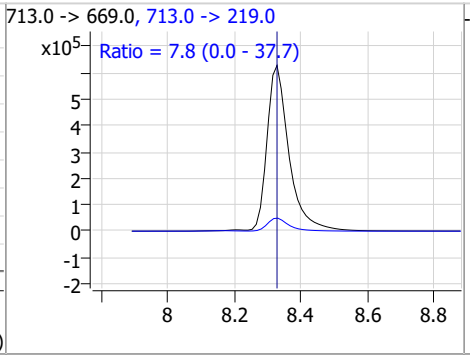


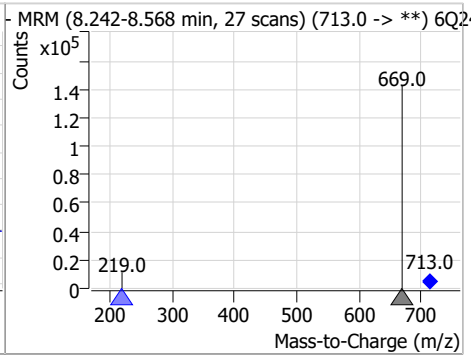




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	50.44	8.33	0.00	2872804	713.0 -> 219.0	7.8	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q249.D
Injection Time: 05/19/22 12:23
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.30	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q250.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 12:38:11 PM
Sample Name : ic6-100
Vial : P1-A9
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

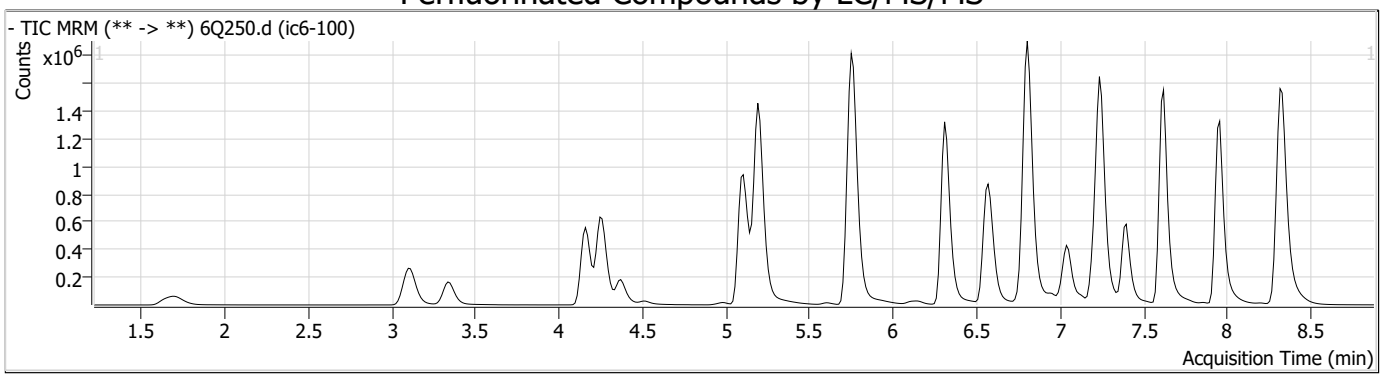
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	165362	20.00	µg/L	0.000
M5-PFPeA	3.106	268.0 -> 223.0	277449	20.00	µg/L	-0.012
M5-PFHxA	4.264	318.0 -> 273.0	415751	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	450632	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	724706	20.00	µg/L	0.000
M9-PFNA	6.317	472.0 -> 427.0	822140	20.00	µg/L	-0.012
M6-PFDA	6.809	519.0 -> 474.0	692011	20.00	µg/L	0.000
M7-PFUnDA	7.251	570.0 -> 525.0	889806	20.00	µg/L	0.000
M2-PFDoDA	7.620	615.0 -> 570.0	936443	20.00	µg/L	0.000
M2-PFTeDA	8.327	715.0 -> 670.0	1048681	20.00	µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	187851	20.00	µg/L	0.000
M3-PFBS	3.335	302.0 -> 99.0	34958	20.00	µg/L	-0.012
M3-PFHxS	5.140	402.0 -> 99.0	32306	20.00	µg/L	0.000
M8-PFOS	6.296	507.0 -> 99.0	41751	20.00	µg/L	-0.015
M2-4:2FTS	4.160	329.0 -> 309.0	356109	20.00	µg/L	0.000
M2-6:2FTS	5.741	429.0 -> 409.0	398160	20.00	µg/L	0.000
M2-8:2FTS	6.820	529.0 -> 509.0	294951	20.00	µg/L	-0.012
M3-MeFOSAA	7.039	573.0 -> 419.0	181596	20.00	µg/L	0.000
M3-HFPO-DA	4.516	287.0 -> 169.0	12862	20.00	µg/L	-0.012
M3-MeFOSA	7.020	515.0 -> 169.0	50228	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	153728	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.160	329.0 -> 309.0	356109	24.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%		
13C2-6:2FTS	5.741	429.0 -> 409.0	398160	23.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C2-8:2FTS	6.820	529.0 -> 509.0	294951	23.98	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.9%		
13C2-PFDoDA	7.620	615.0 -> 570.0	936443	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C2-PFTeDA	8.327	715.0 -> 670.0	1048681	19.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C3-PFBS	3.335	302.0 -> 99.0	34958	19.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFHxS	5.140	402.0 -> 99.0	32306	19.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C4-PFBA	1.699	217.0 -> 172.0	165362	20.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFHpA	5.110	367.0 -> 322.0	450632	19.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C5-PFHxA	4.264	318.0 -> 273.0	415751	19.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C5-PFPeA	3.106	268.0 -> 223.0	277449	19.96	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C6-PFDA	6.809	519.0 -> 474.0	692011	18.87	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

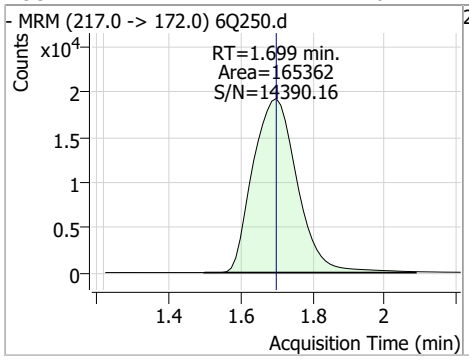
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C7-PFUnDA	7.251	570.0 -> 525.0	889806	20.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%			
13C8-FOSA	6.588	506.0 -> 78.0	187851	17.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
13C8-PFOA	5.770	421.0 -> 376.0	724706	19.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
13C8-PFOS	6.296	507.0 -> 99.0	41751	19.37	µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C9-PFNA	6.317	472.0 -> 427.0	822140	19.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
d3-MeFOSAA	7.039	573.0 -> 419.0	181596	19.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
13C3-HFPO-DA	4.516	287.0 -> 169.0	12625	21.25	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%			
d3-MeFOSA	7.020	515.0 -> 169.0	50228	19.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
d5-EtFOSAA	7.200	589.0 -> 419.0	153661	18.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
Target Compounds							**QValue**
4:2FTS	4.162	327.0 -> 307.0	1604687	82.91	µg/L		100
6:2FTS	5.742	427.0 -> 407.0	1714083	84.91	µg/L		99
8:2FTS	6.820	527.0 -> 507.0	1174729	80.31	µg/L		98
EtFOSAA	7.213	584.0 -> 419.0	735564	99.58	µg/L	m	92
FOSA	6.590	498.0 -> 78.0	928368	100.77	µg/L		99
MeFOSAA	7.052	570.0 -> 419.0	816600	100.89	µg/L	m	92
PFBA	1.693	213.0 -> 169.0	372327	99.35	µg/L		100
PFBS	3.340	299.0 -> 80.0	563069	103.60	µg/L		100
PFDA	6.810	513.0 -> 469.0	4418468	100.37	µg/L		99
PFDoDA	7.621	613.0 -> 569.0	4258215	98.72	µg/L		99
PFDS	7.199	599.0 -> 80.0	324793	98.39	µg/L		98
PFHpA	5.099	363.0 -> 319.0	2985235	99.83	µg/L		100
PFHpS	5.765	449.0 -> 80.0	384200	100.71	µg/L		99
PFHxA	4.252	313.0 -> 269.0	2250691	99.90	µg/L		99
PFHxS	5.143	399.0 -> 80.0	428620	99.71	µg/L	m	95
PFNA	6.318	463.0 -> 419.0	3510607	100.30	µg/L		98
PFNS	6.769	549.0 -> 80.0	409820	99.63	µg/L		97
PFOA	5.771	413.0 -> 369.0	3658120	99.78	µg/L		99
PFOS	6.299	499.0 -> 80.0	397006	101.10	µg/L	m	81
PFPeA	3.108	263.0 -> 219.0	1207717	99.62	µg/L		100
PFPeS	4.370	349.0 -> 80.0	455780	100.29	µg/L		99
PFTeDA	8.317	713.0 -> 669.0	5755447	99.86	µg/L		99
PFTrDA	7.958	663.0 -> 619.0	4663495	99.58	µg/L		99
PFUnDA	7.240	563.0 -> 519.0	4091921	98.41	µg/L		97
11Cl-PF3OUdS	7.394	631.0 -> 451.0	1566148	100.47	µg/L		98
9Cl-PF3ONS	6.558	531.0 -> 351.0	2101383	102.31	µg/L		100
ADONA	5.194	377.0 -> 251.0	4666090	99.63	µg/L		99
HFPO-DA	4.530	285.0 -> 169.0	58489	96.97	µg/L		98
MeFOSA	7.034	512.0 -> 169.0	260253	99.99	µg/L		98

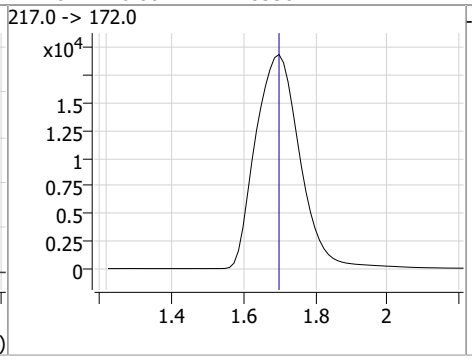
 # = Qualifier out of range, m = manually integrated, + = Area summed

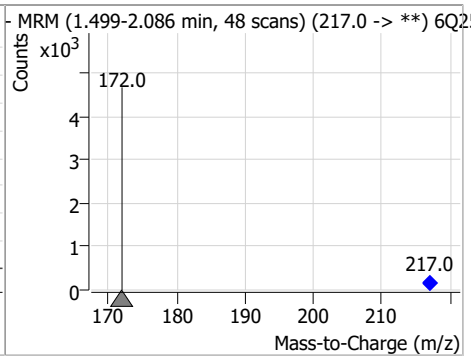
Perfluorinated Compounds by LC/MS/MS



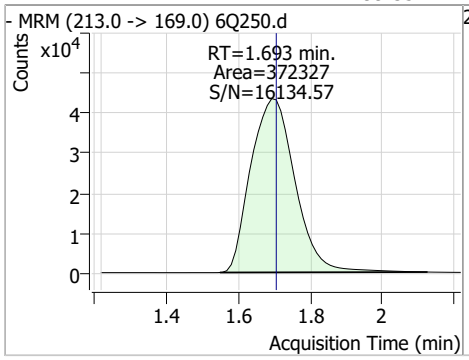
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.27	1.70	0.00	165362				

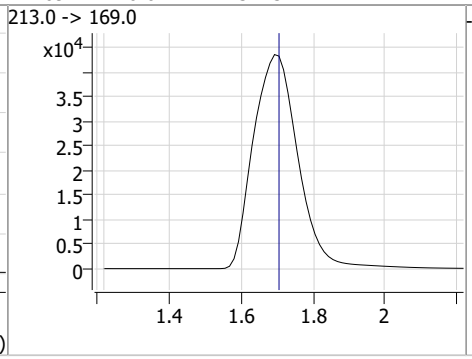


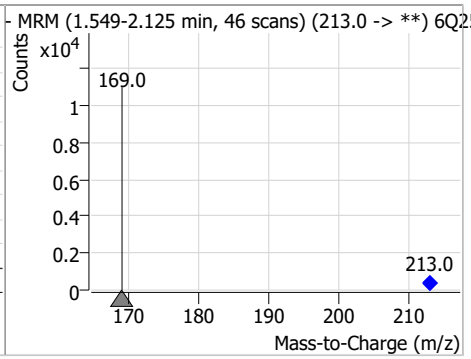




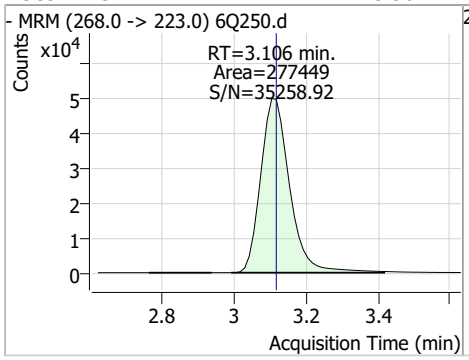
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	99.35	1.69	-0.01	372327				

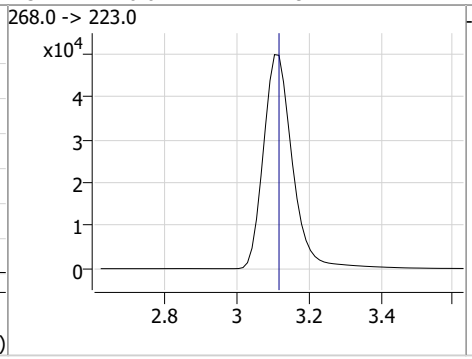


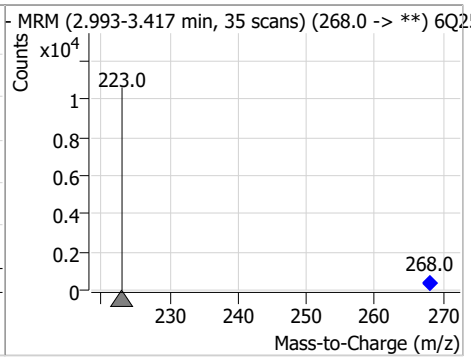




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.96	3.11	-0.01	277449				

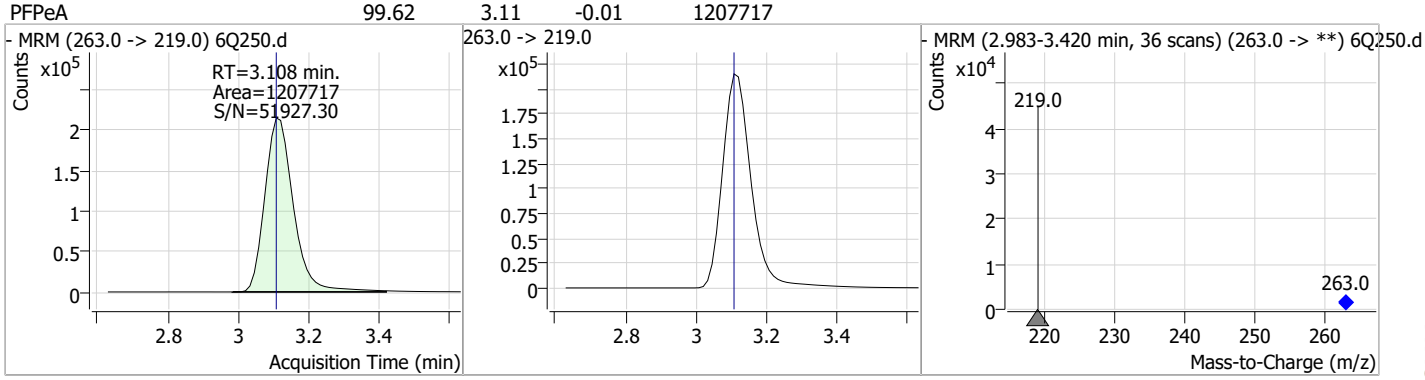




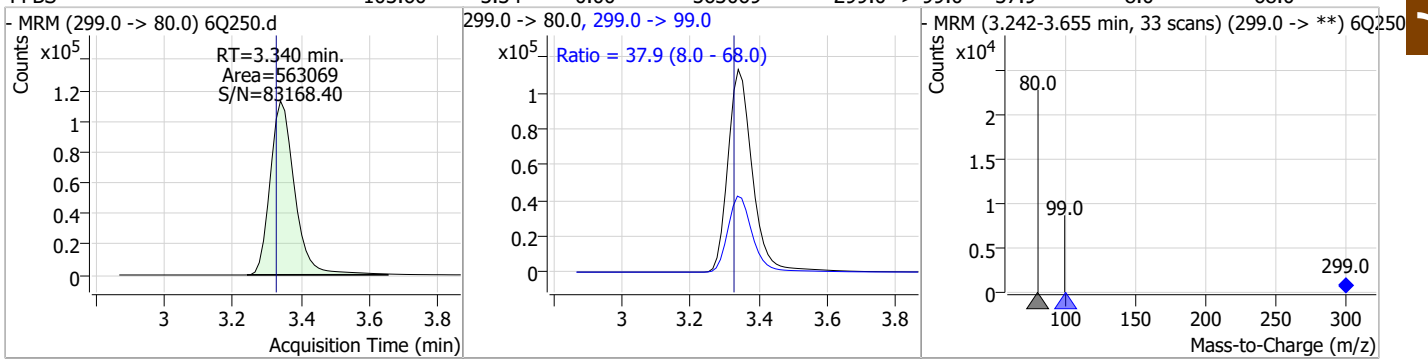


Perfluorinated Compounds by LC/MS/MS

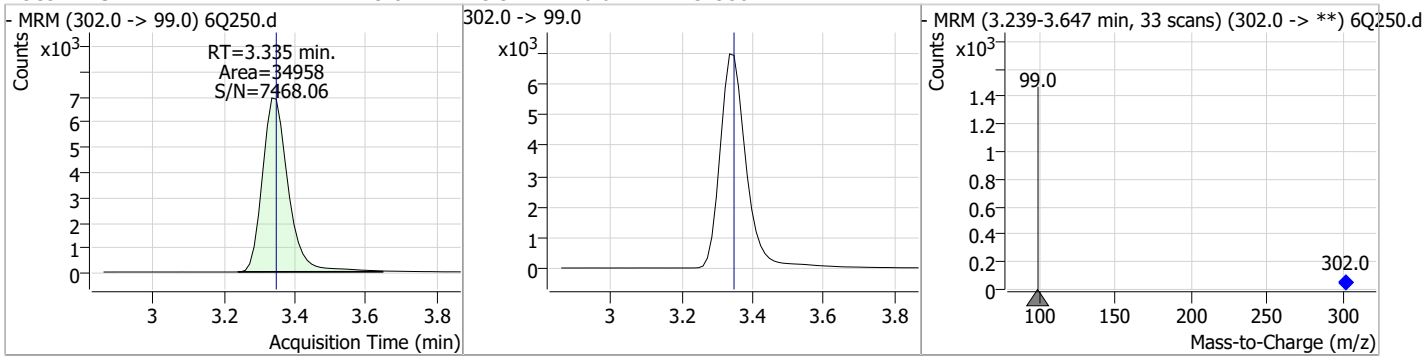
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	99.62	3.11	-0.01	1207717				



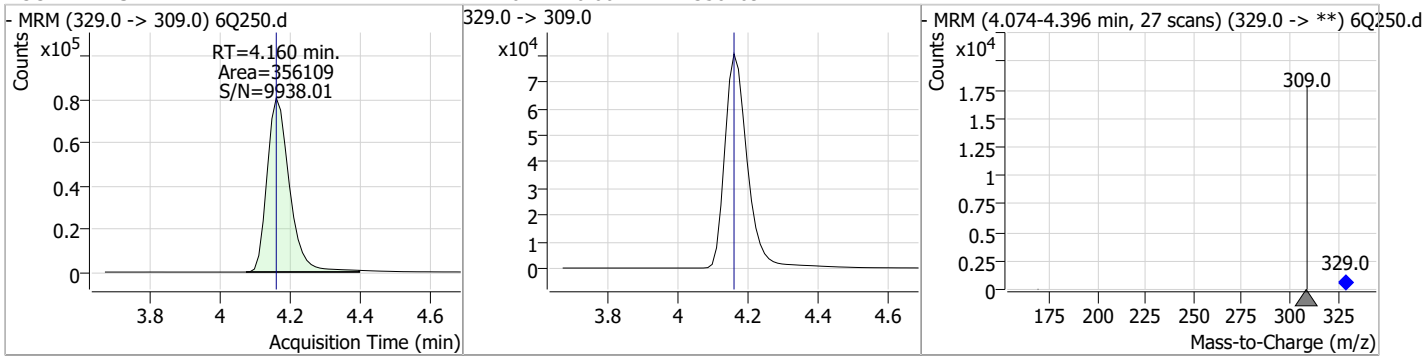
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	103.60	3.34	0.00	563069	299.0 -> 99.0	37.9	8.0	68.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.82	3.34	-0.01	34958				

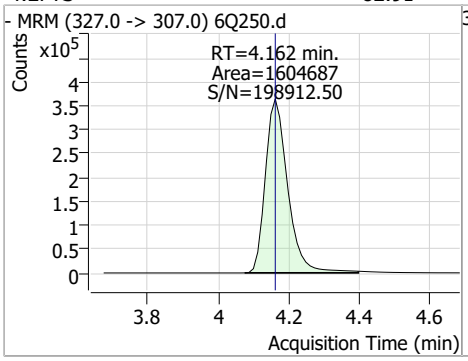


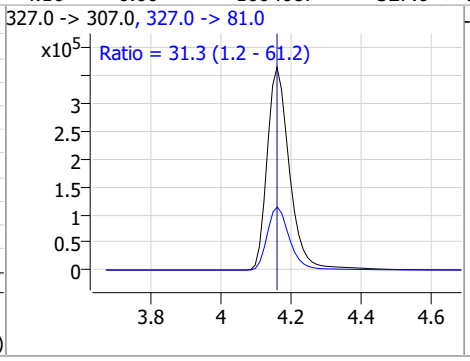
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.22	4.16	0.00	356109				

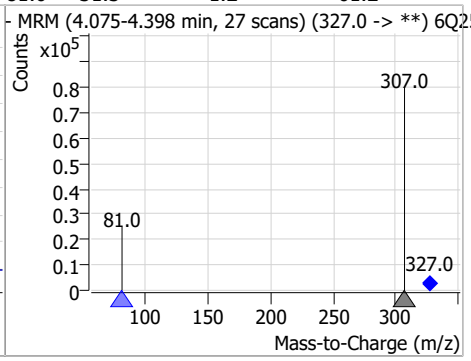


Perfluorinated Compounds by LC/MS/MS

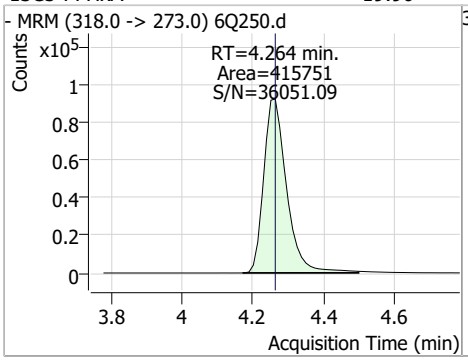
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	82.91	4.16	0.00	1604687	327.0 -> 81.0	31.3	1.2	61.2

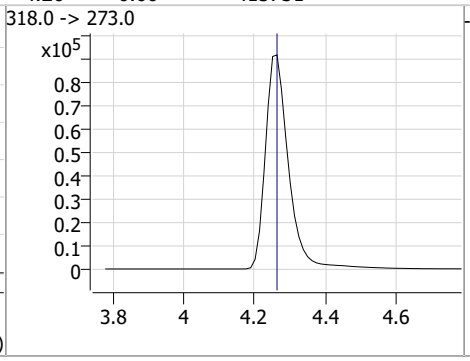


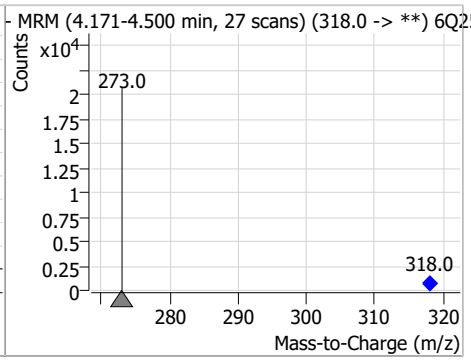




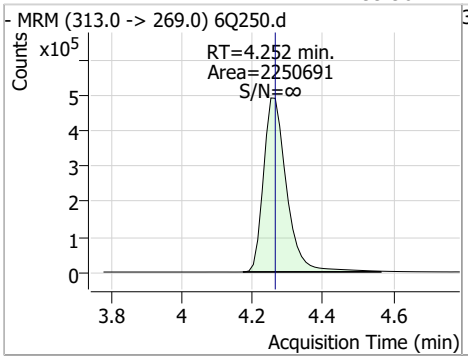
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.90	4.26	0.00	415751				

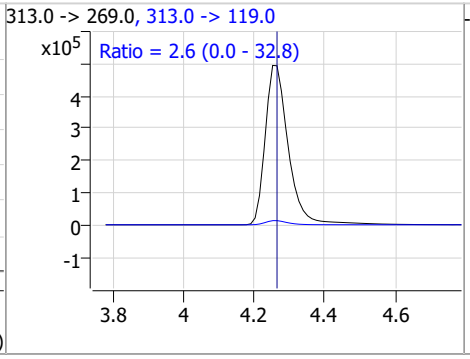


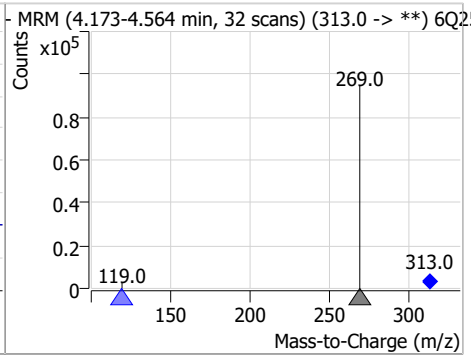




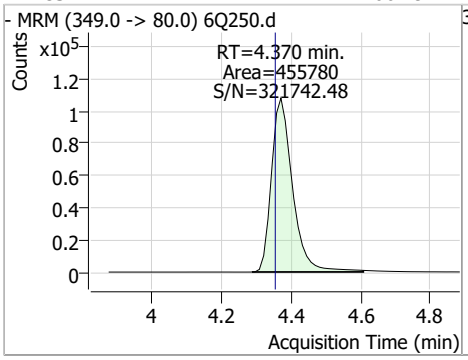
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	99.90	4.25	-0.01	2250691	313.0 -> 119.0	2.6	0.0	32.8

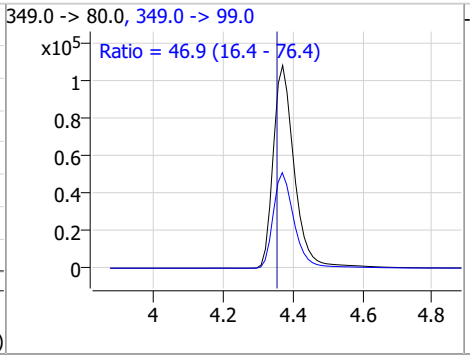


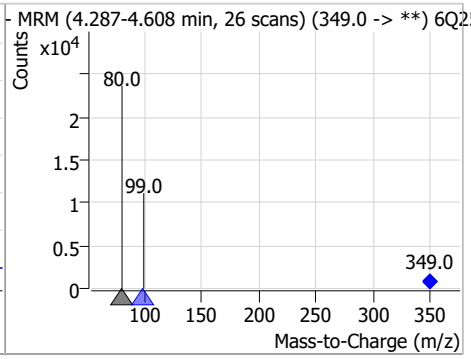




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.29	4.37	0.00	455780	349.0 -> 99.0	46.9	16.4	76.4

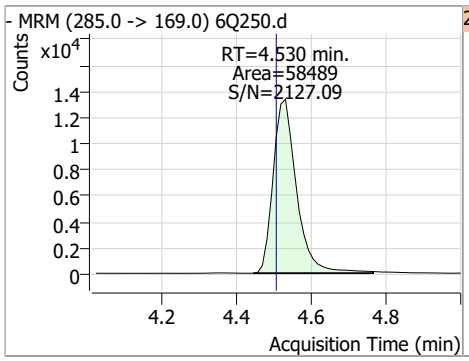


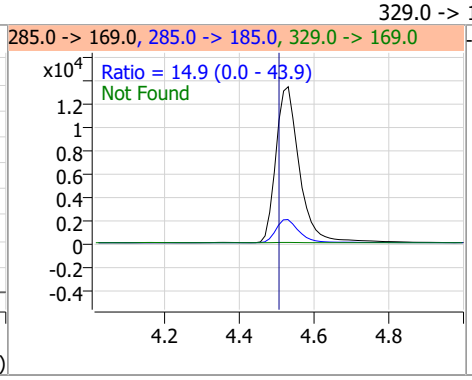


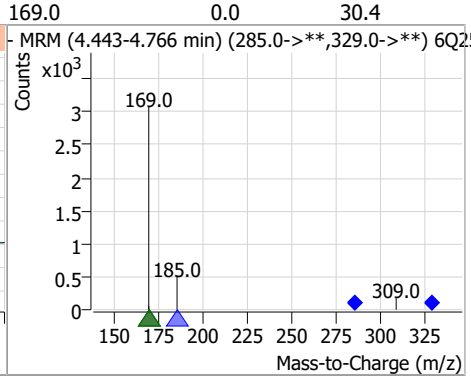


Perfluorinated Compounds by LC/MS/MS

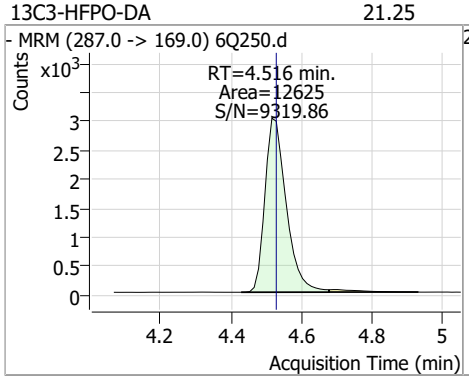
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	96.97	4.53	0.01	58489	285.0 -> 185.0	14.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

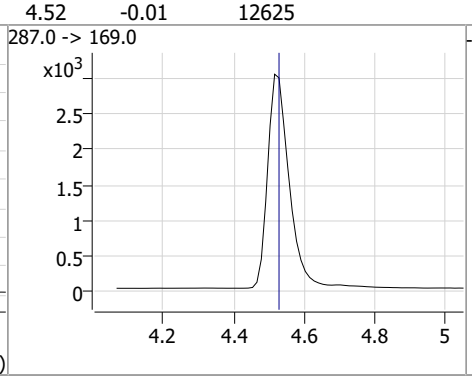


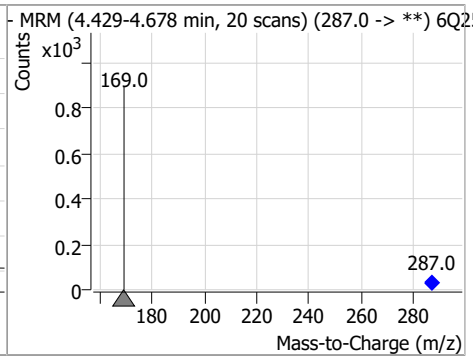




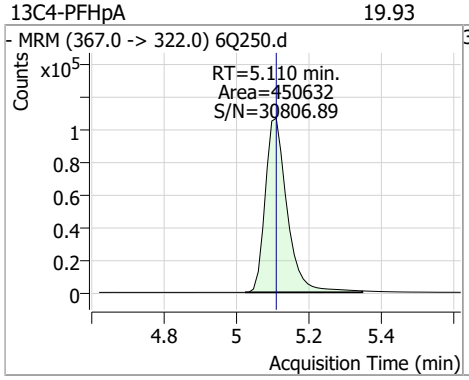
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.25	4.52	-0.01	12625				

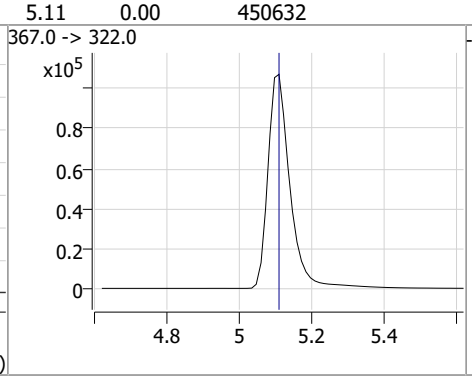


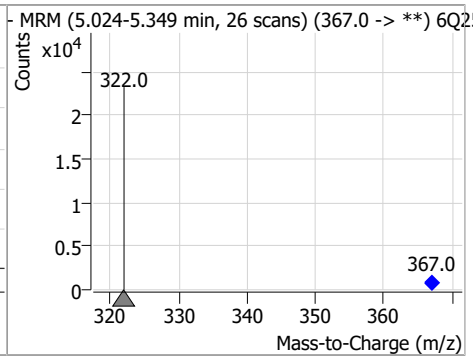




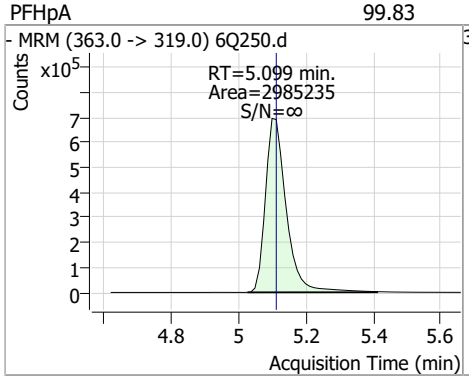
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.93	5.11	0.00	450632				

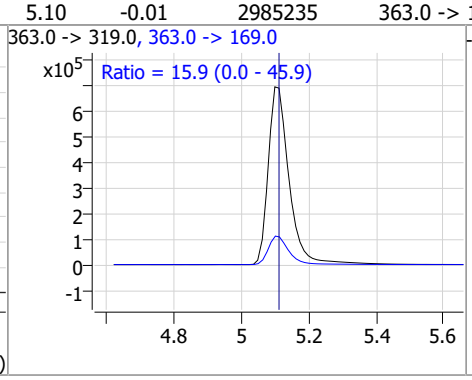


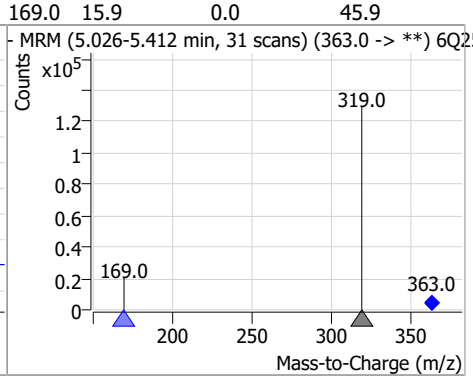




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	99.83	5.10	-0.01	2985235	363.0 -> 169.0	15.9	0.0	45.9

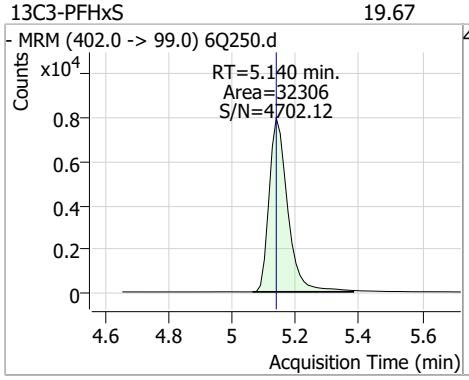


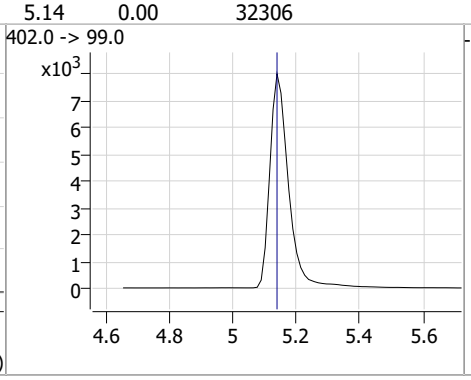


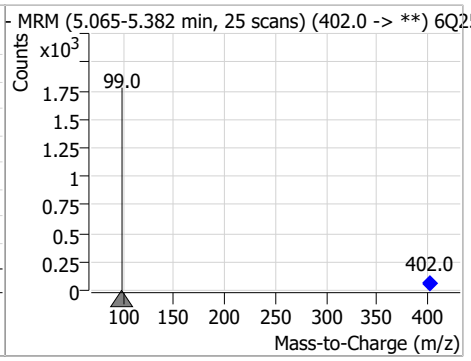


Perfluorinated Compounds by LC/MS/MS

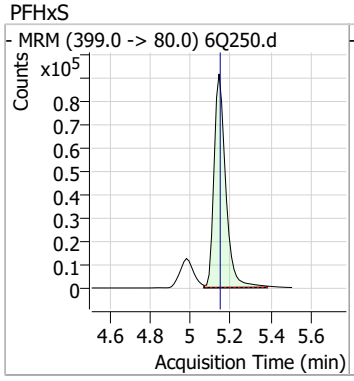
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.67	5.14	0.00	32306				

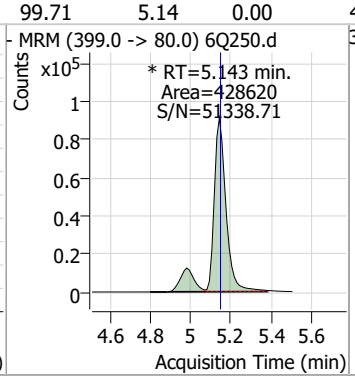


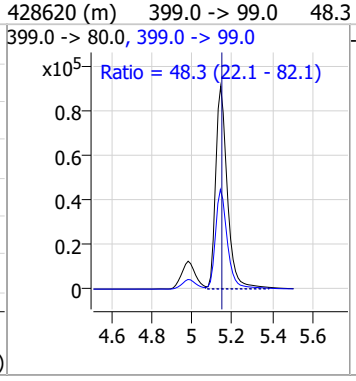


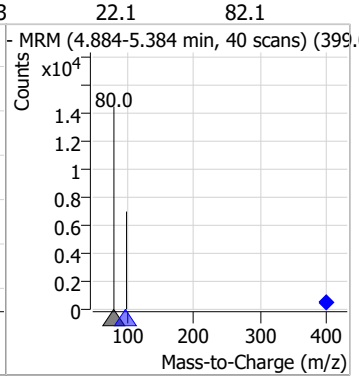


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	99.71	5.14	0.00	428620 (m)	399.0 -> 99.0	48.3	22.1	82.1

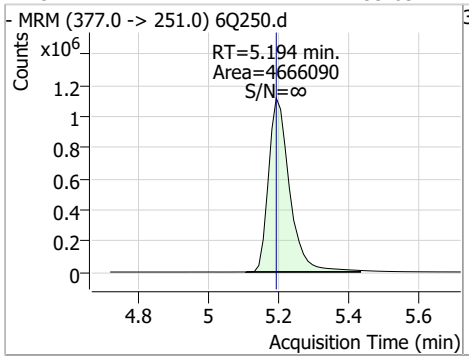


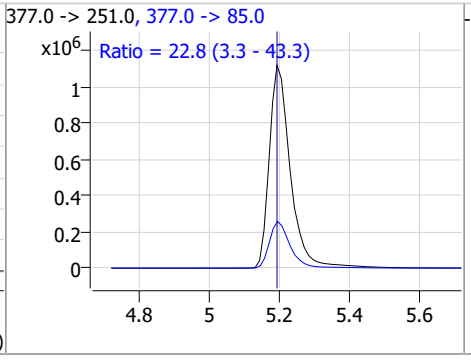


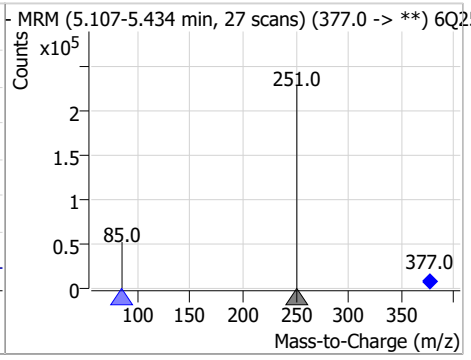




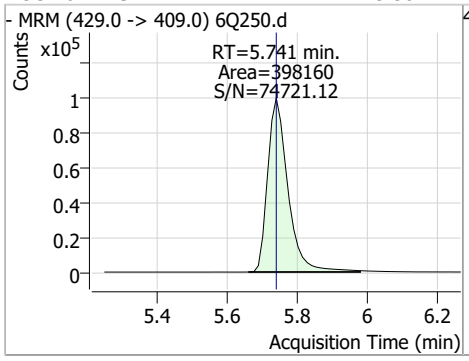
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	99.63	5.19	0.00	4666090	377.0 -> 85.0	22.8	3.3	43.3

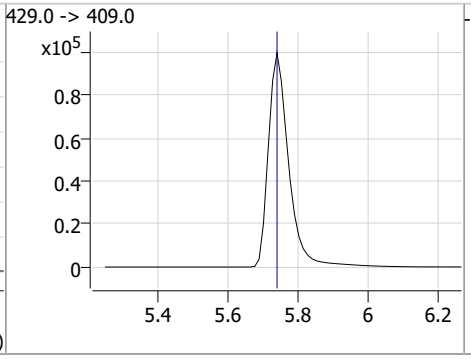


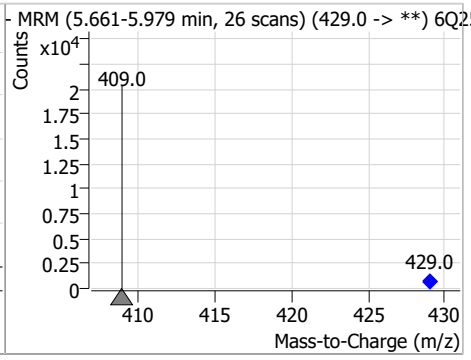




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.38	5.74	0.00	398160				

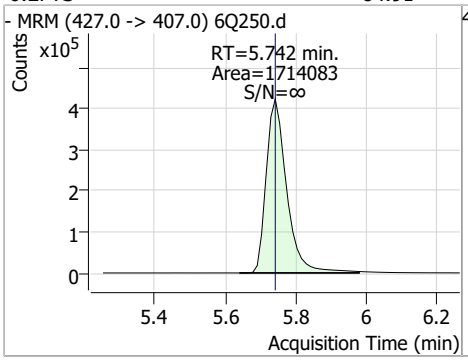


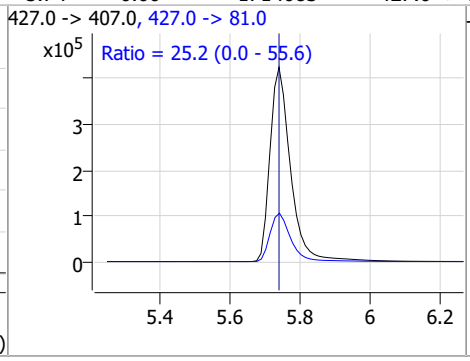


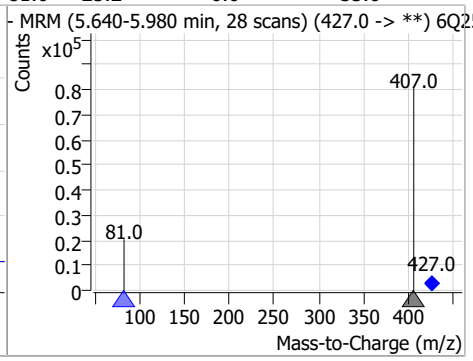


Perfluorinated Compounds by LC/MS/MS

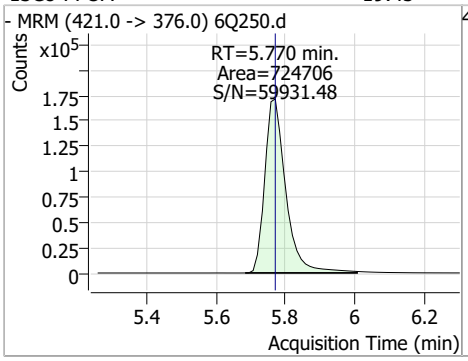
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	84.91	5.74	0.00	1714083	427.0 -> 81.0	25.2	0.0	55.6

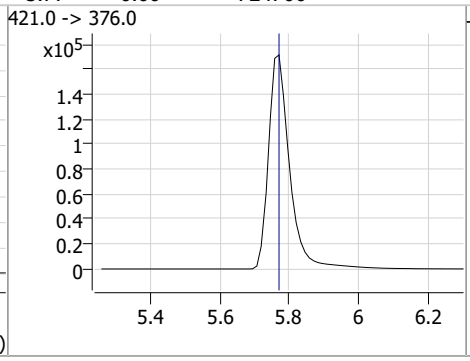


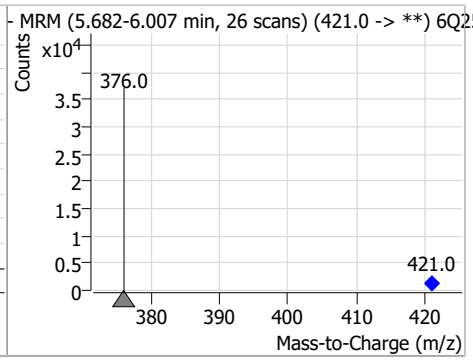




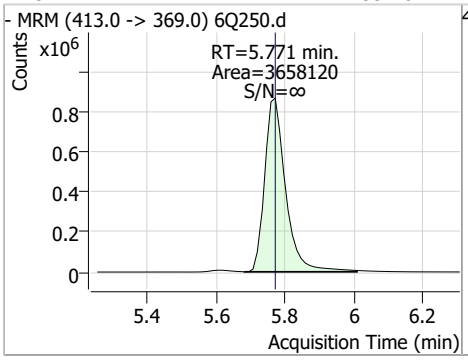
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.45	5.77	0.00	724706				

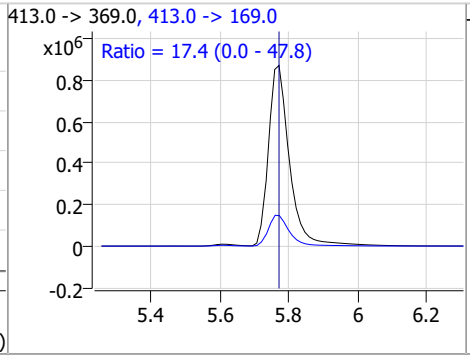


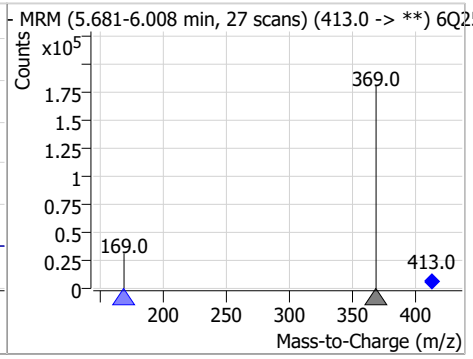




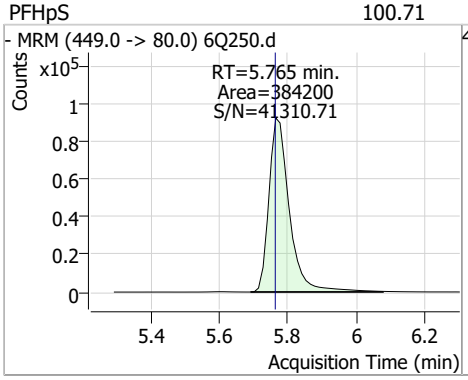
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	99.78	5.77	0.00	3658120	413.0 -> 169.0	17.4	0.0	47.8

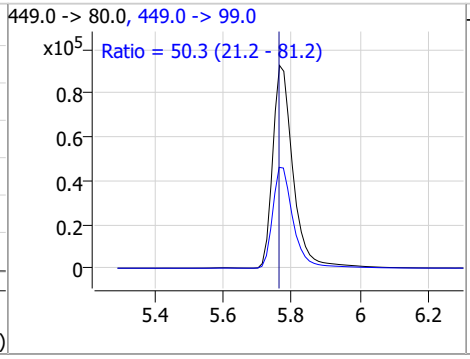


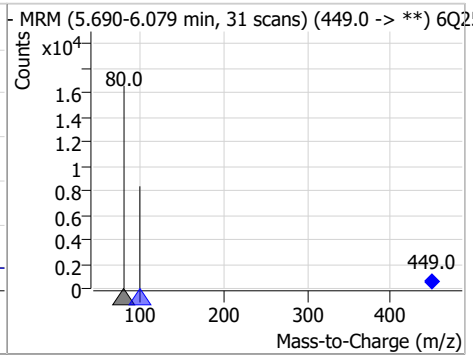




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.71	5.76	-0.01	384200	449.0 -> 99.0	50.3	21.2	81.2

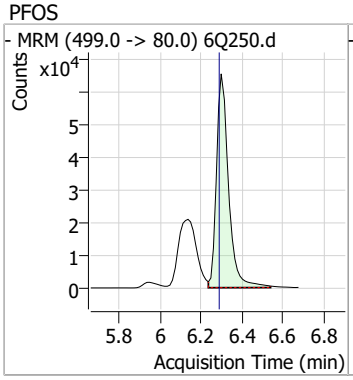


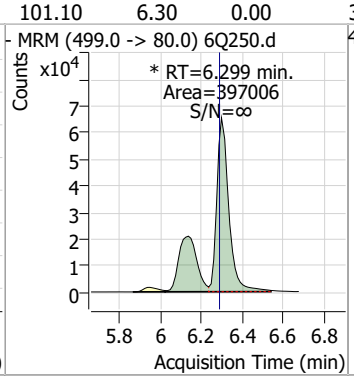


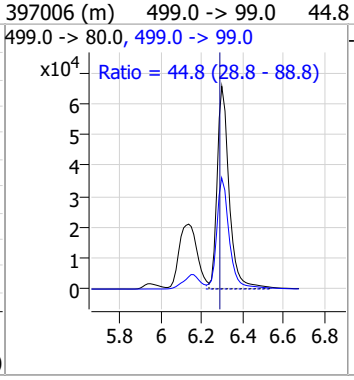


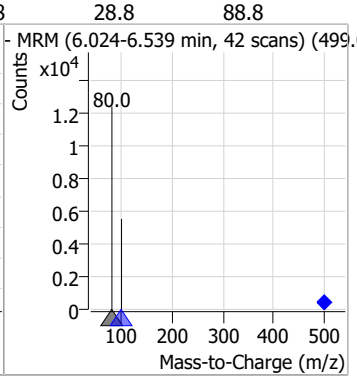
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	101.10	6.30	0.00	397006 (m)	499.0 -> 99.0	44.8	28.8	88.8

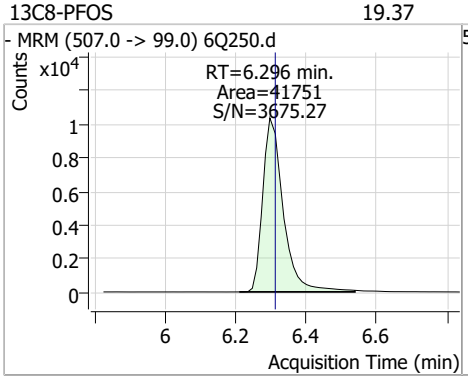


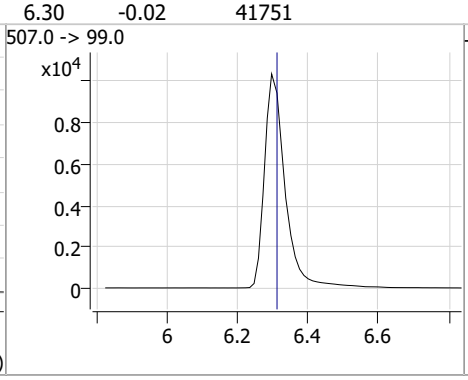


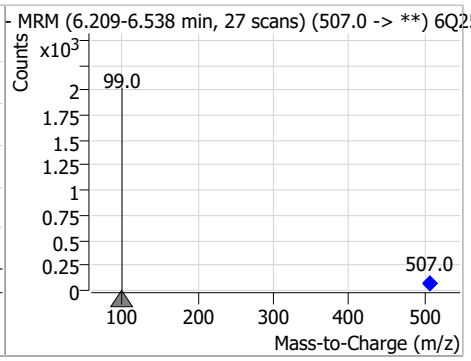




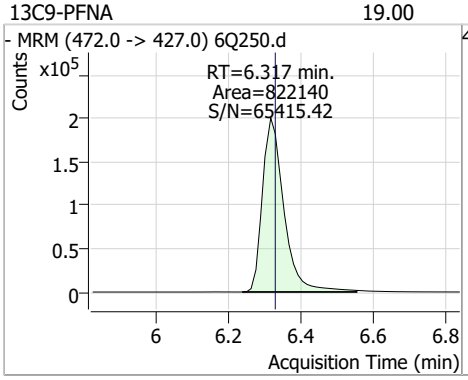
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.37	6.30	-0.02	41751				

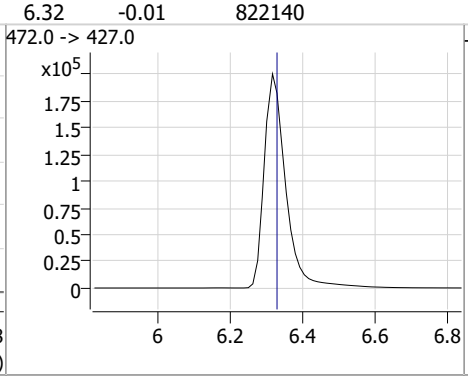


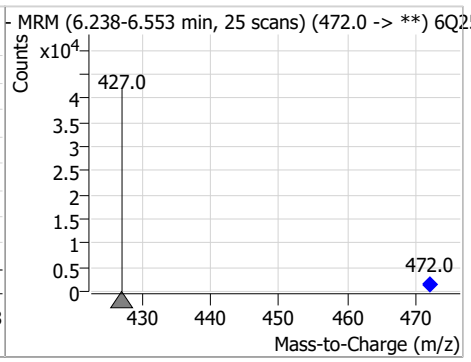




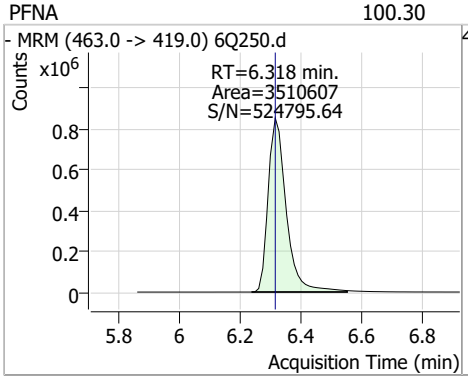
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.00	6.32	-0.01	822140				

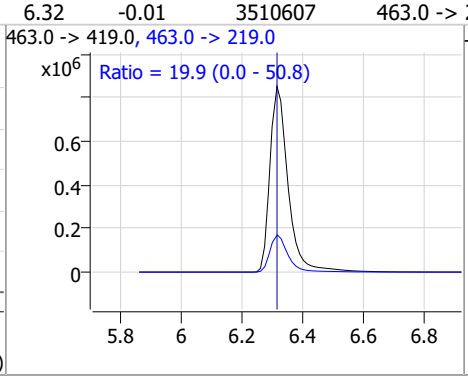


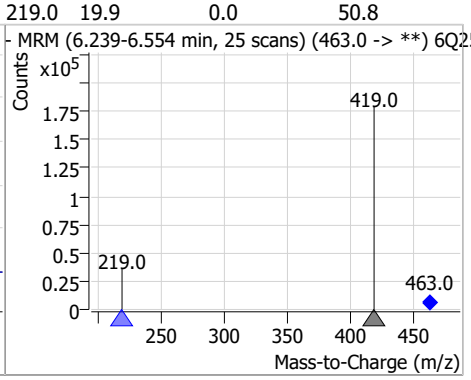




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.30	6.32	-0.01	3510607	463.0 -> 219.0	19.9	0.0	50.8

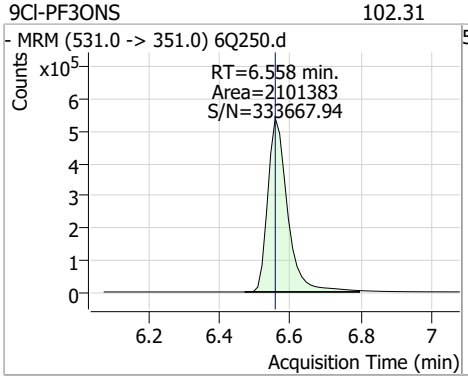


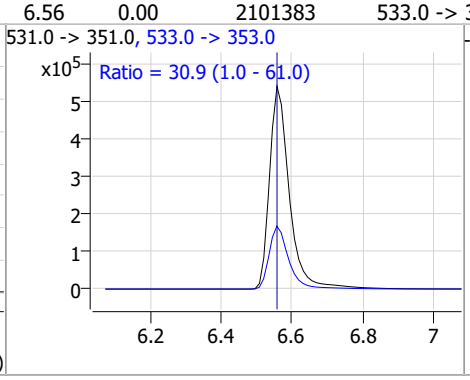


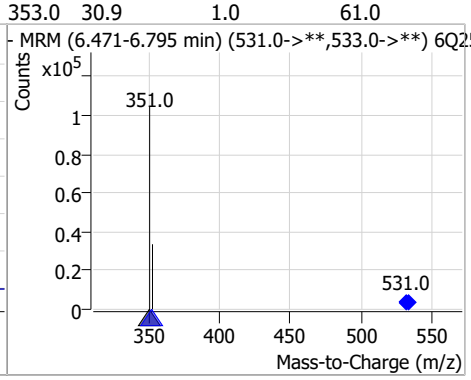


Perfluorinated Compounds by LC/MS/MS

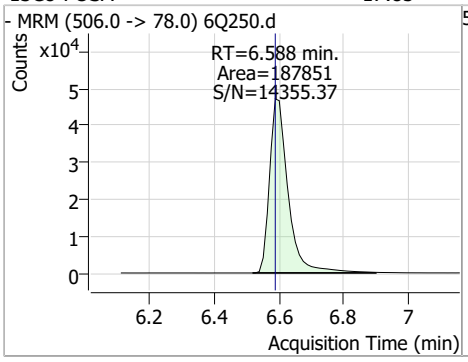
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	102.31	6.56	0.00	2101383	533.0 -> 353.0	30.9	1.0	61.0

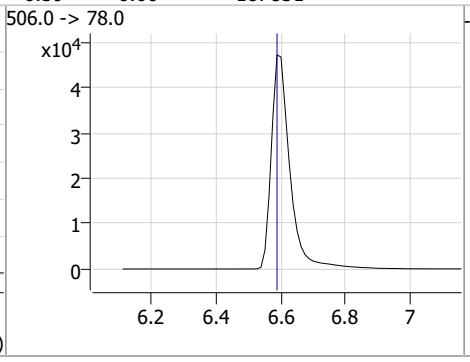


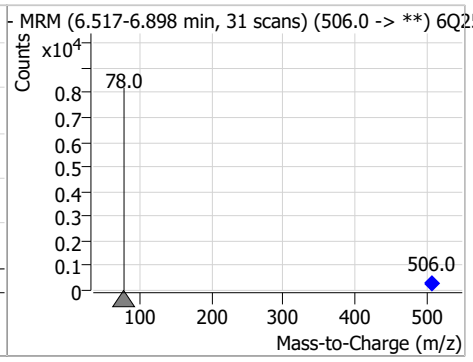




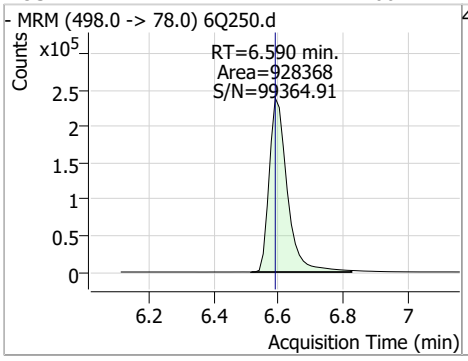
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.85	6.59	0.00	187851				

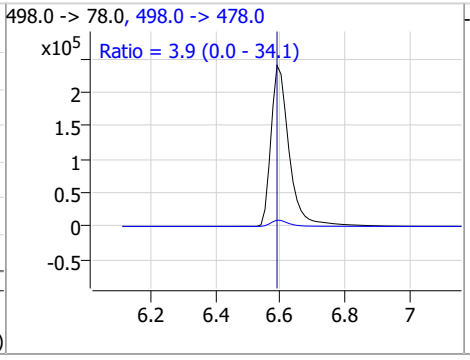


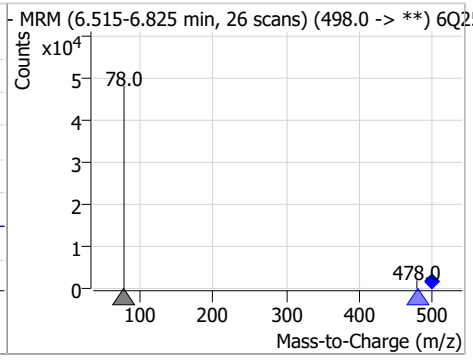




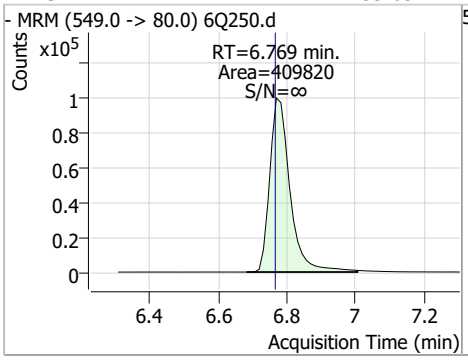
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.77	6.59	0.00	928368	498.0 -> 478.0	3.9	0.0	34.1

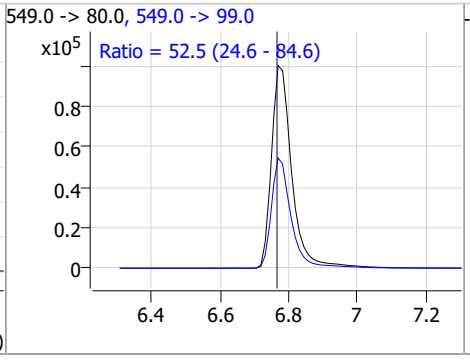


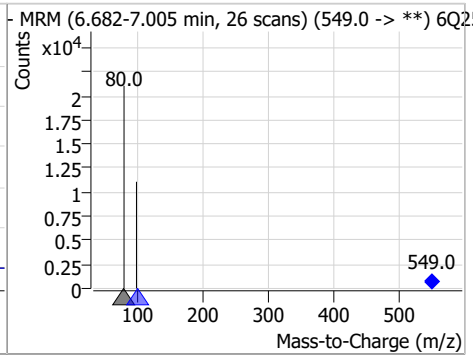




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.63	6.77	-0.01	409820	549.0 -> 99.0	52.5	24.6	84.6

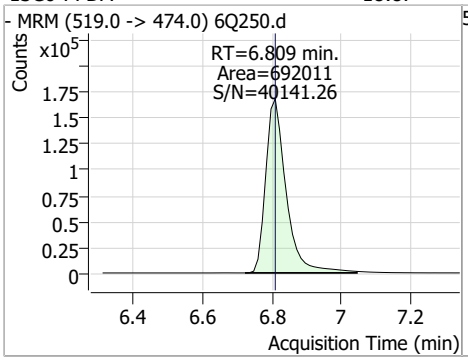


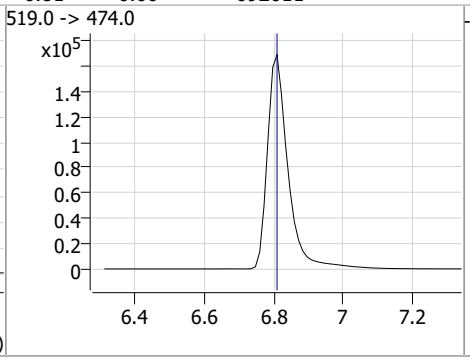


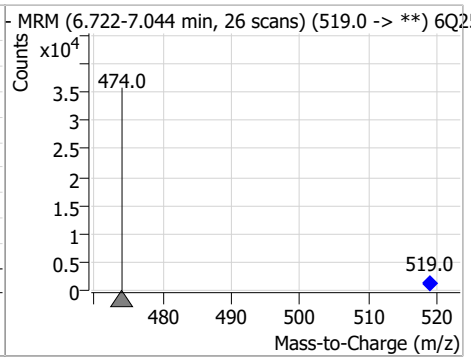


Perfluorinated Compounds by LC/MS/MS

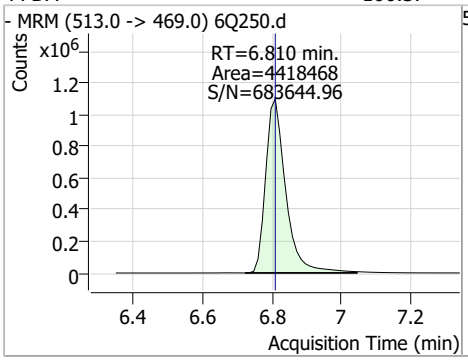
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.87	6.81	0.00	692011				

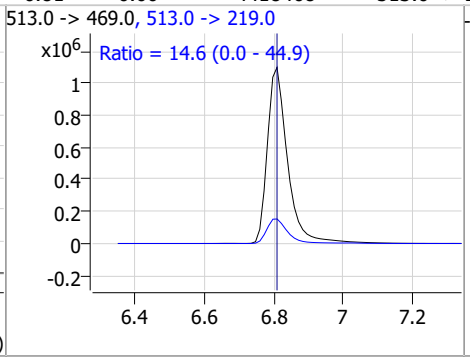


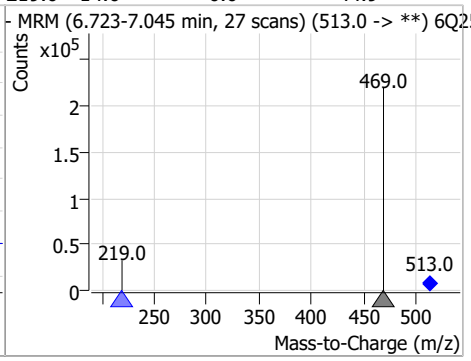




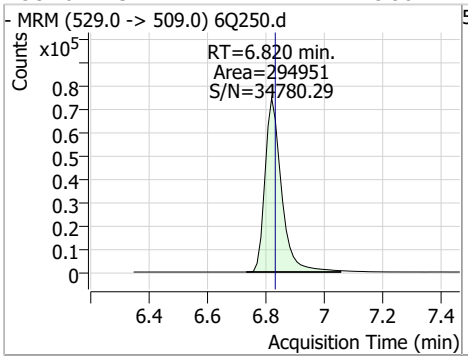
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.37	6.81	0.00	4418468	513.0 -> 219.0	14.6	0.0	44.9

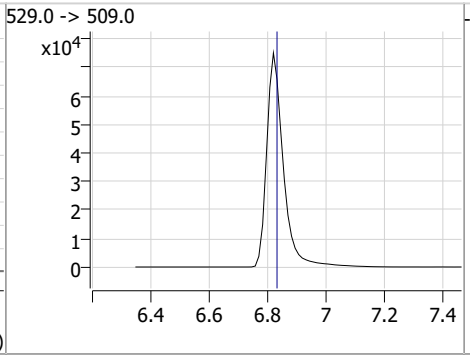


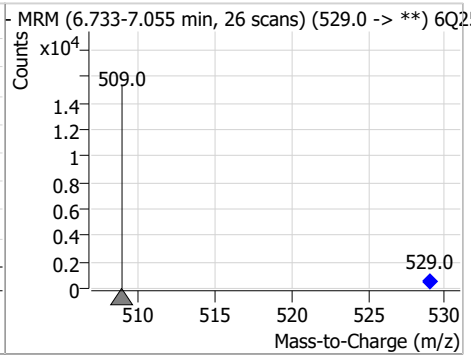




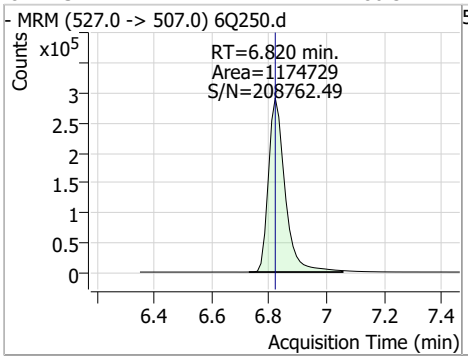
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.98	6.82	-0.01	294951				

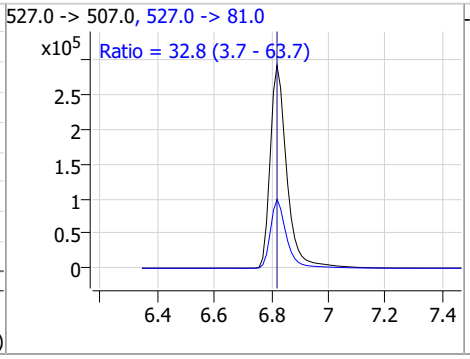


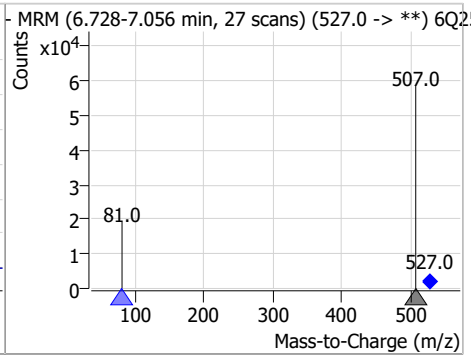




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	80.31	6.82	-0.01	1174729	527.0 -> 81.0	32.8	3.7	63.7

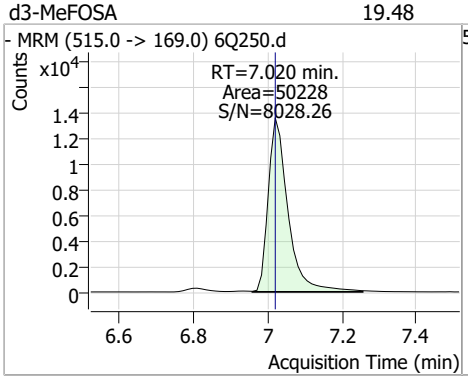


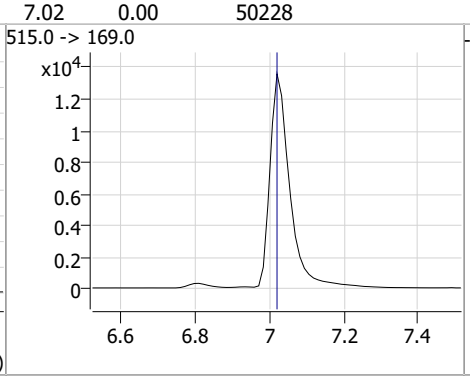


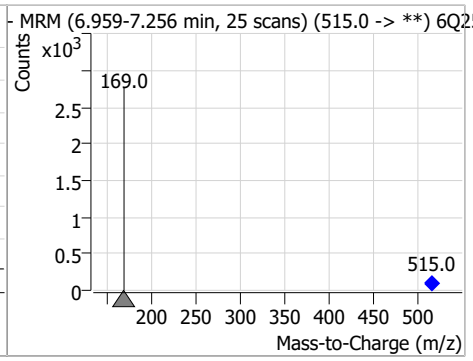


Perfluorinated Compounds by LC/MS/MS

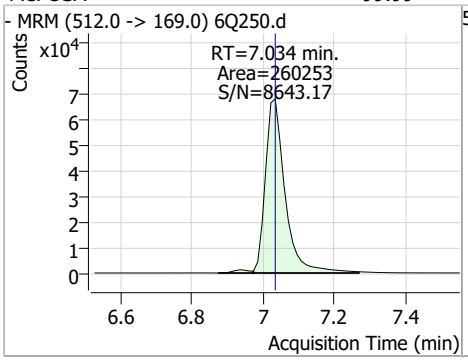
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.48	7.02	0.00	50228				

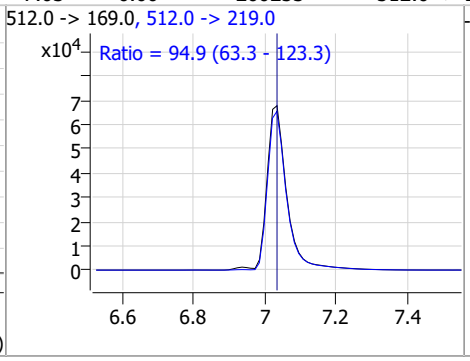


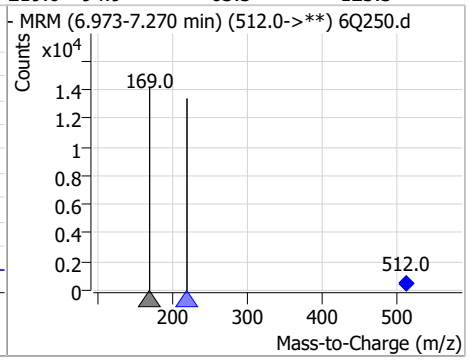




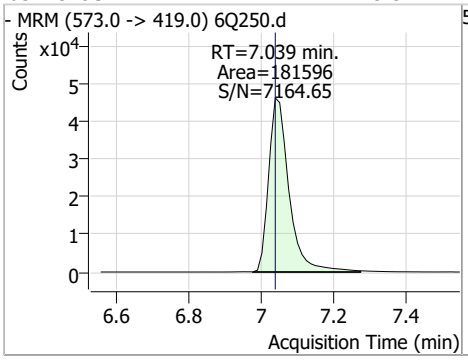
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	99.99	7.03	0.00	260253	512.0 -> 219.0	94.9	63.3	123.3

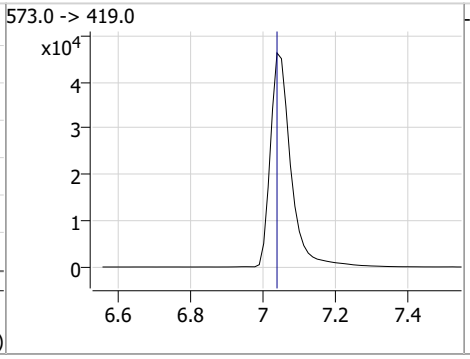


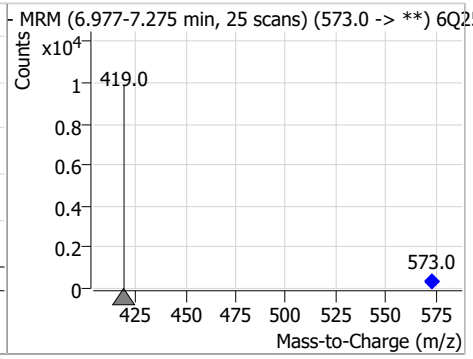




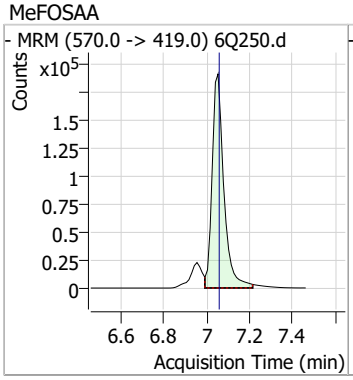
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.32	7.04	0.00	181596				

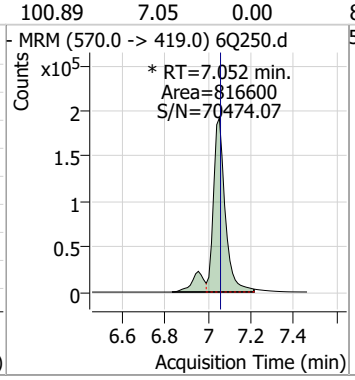


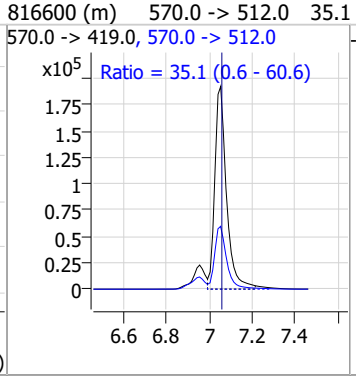


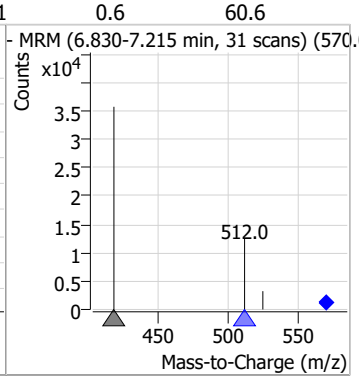


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.89	7.05	0.00	816600 (m)	570.0 -> 512.0	35.1	0.6	60.6



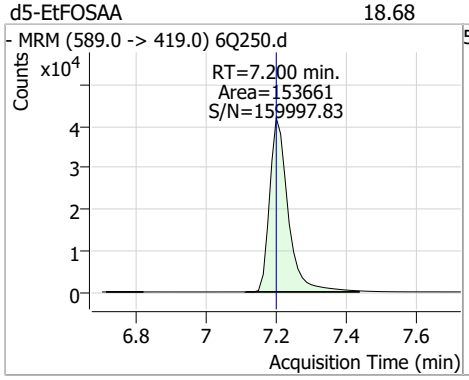


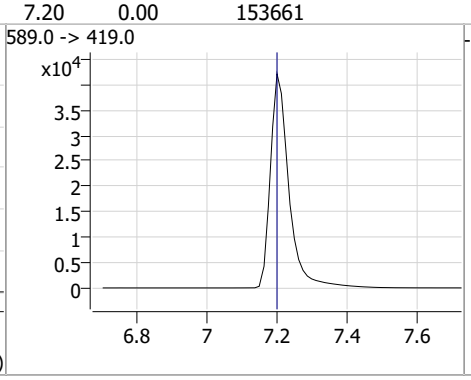


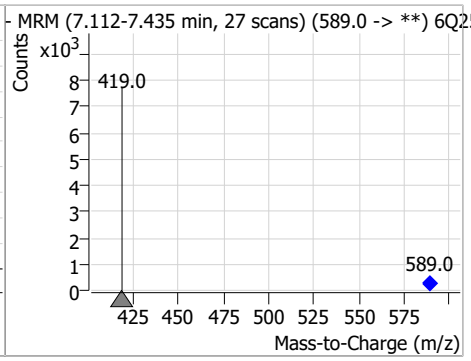


Perfluorinated Compounds by LC/MS/MS

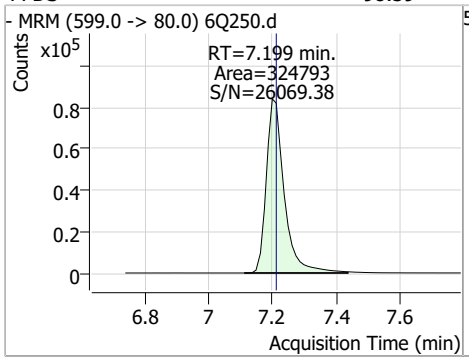
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.68	7.20	0.00	153661				

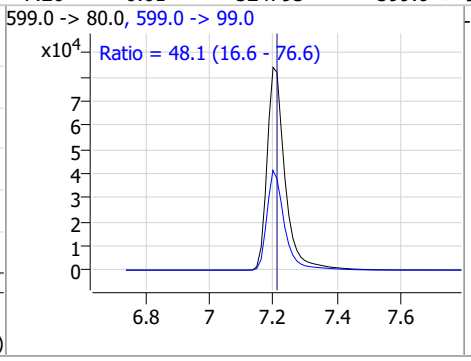


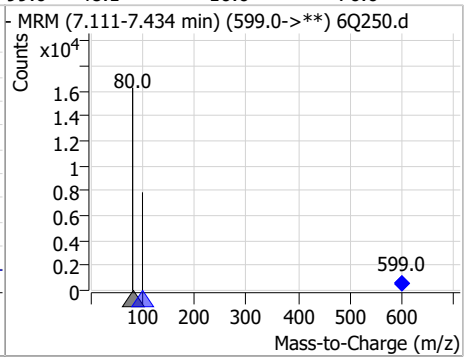




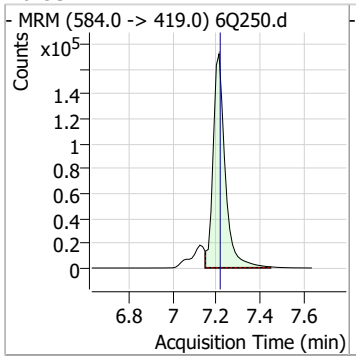
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	98.39	7.20	-0.01	324793	599.0 -> 99.0	48.1	16.6	76.6

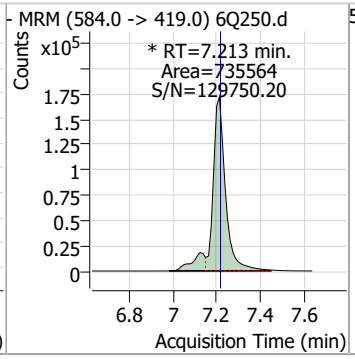


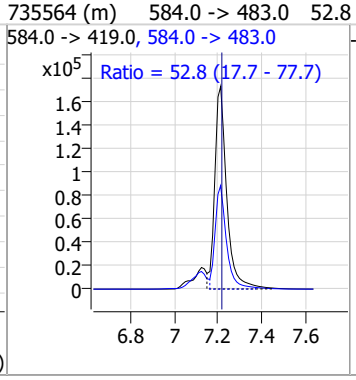


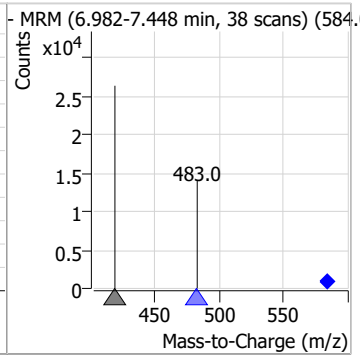


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.58	7.21	0.00	735564 (m)	584.0 -> 483.0	52.8	17.7	77.7

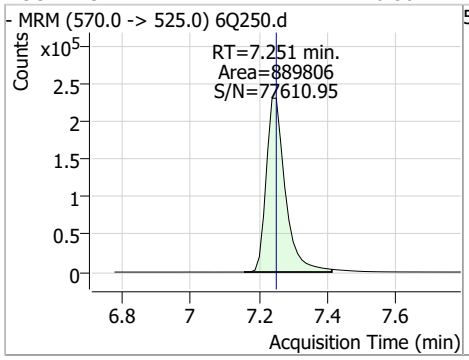


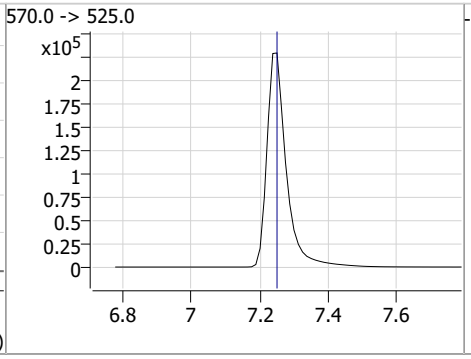


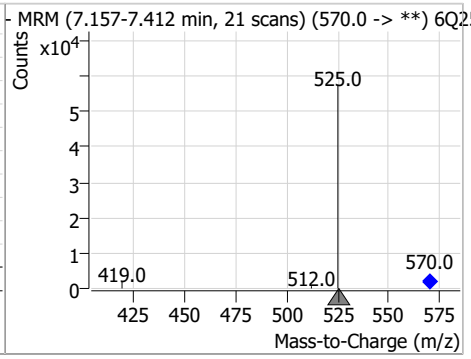




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.56	7.25	0.00	889806				

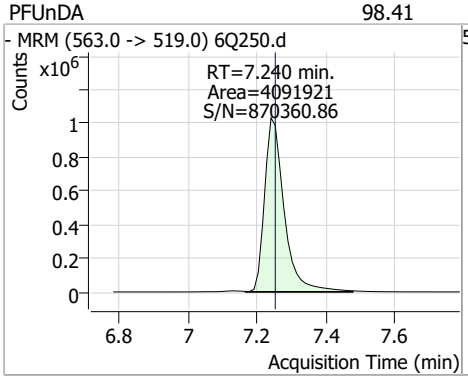


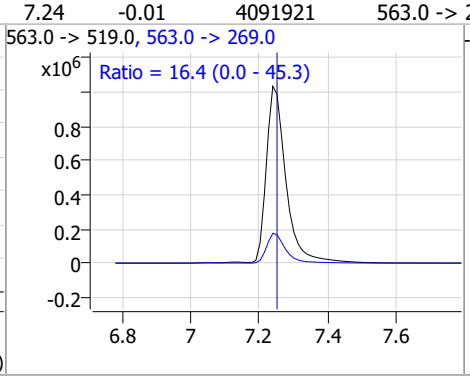


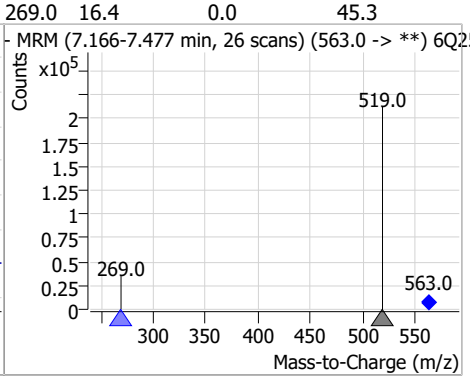


Perfluorinated Compounds by LC/MS/MS

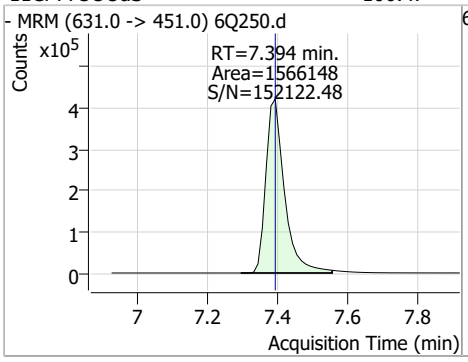
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	98.41	7.24	-0.01	4091921	563.0 -> 269.0	16.4	0.0	45.3

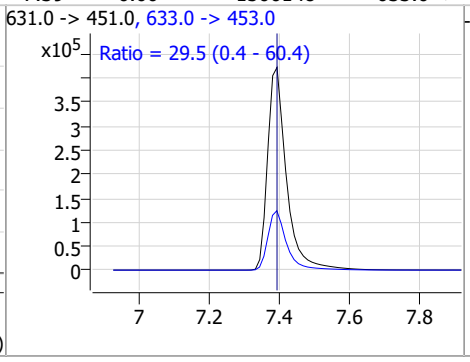


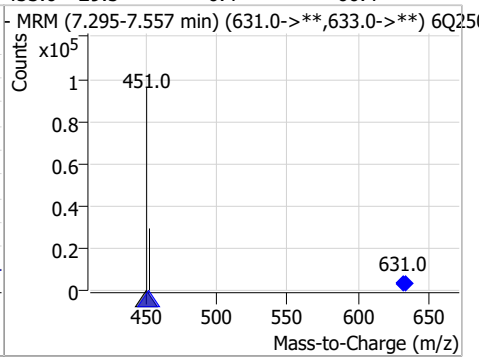




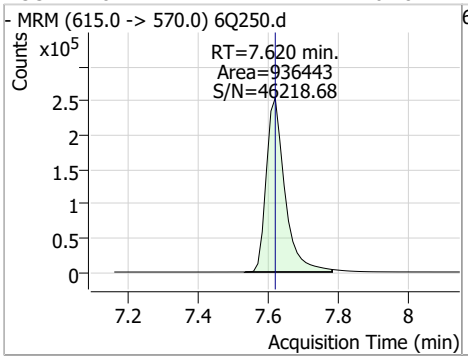
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.47	7.39	0.00	1566148	633.0 -> 453.0	29.5	0.4	60.4

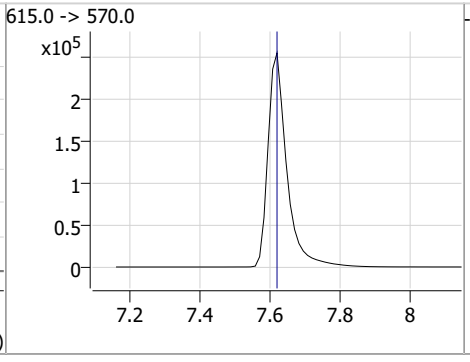


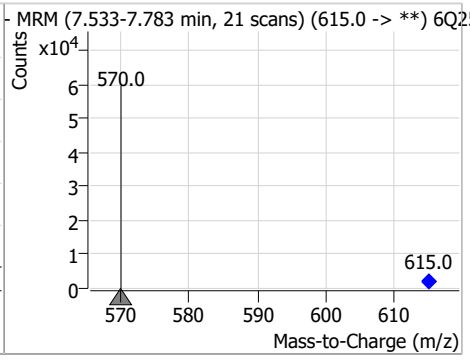




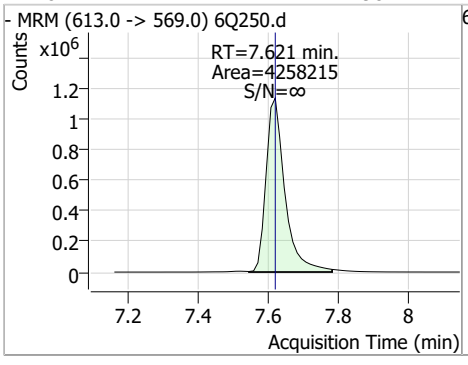
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.18	7.62	0.00	936443				

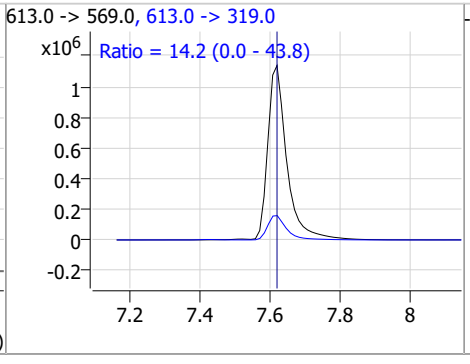


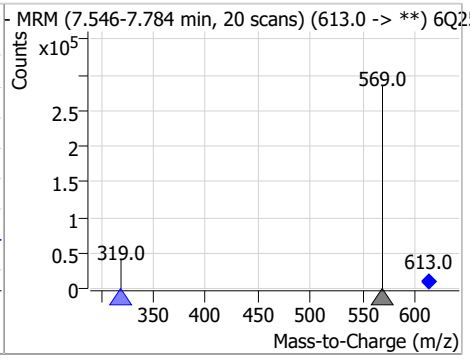




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	98.72	7.62	0.00	4258215	613.0 -> 319.0	14.2	0.0	43.8

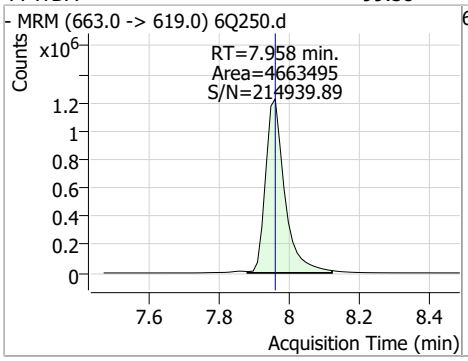


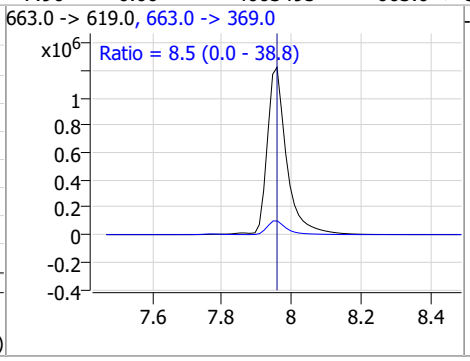


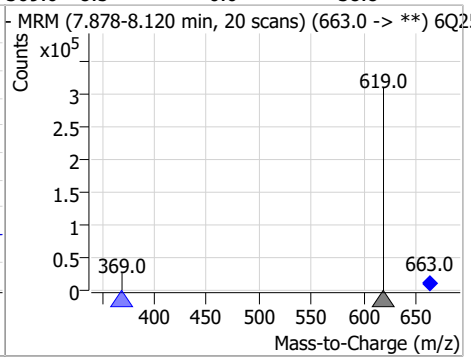


Perfluorinated Compounds by LC/MS/MS

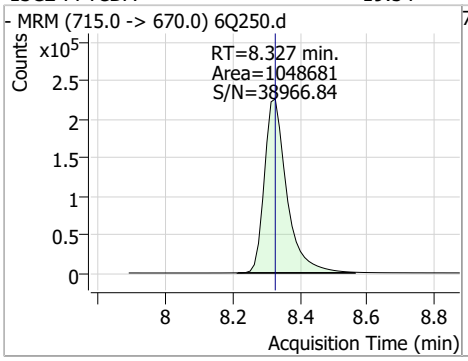
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	99.58	7.96	0.00	4663495	663.0 -> 369.0	8.5	0.0	38.8

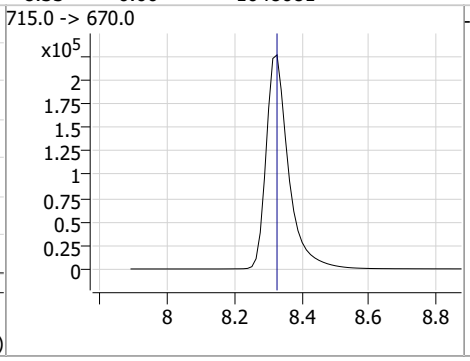


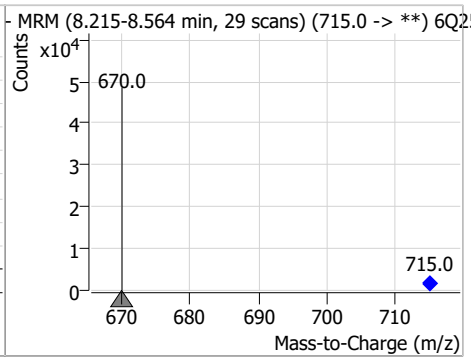




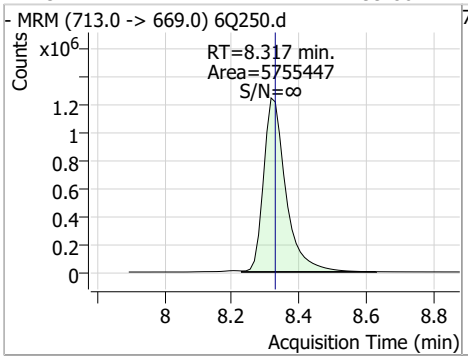
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.54	8.33	0.00	1048681				

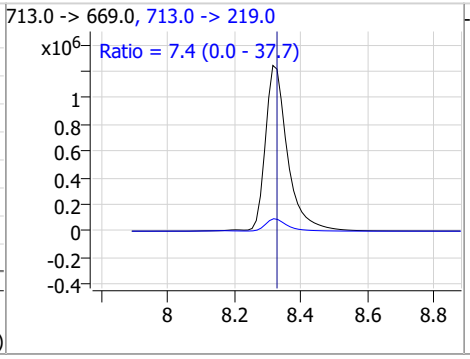


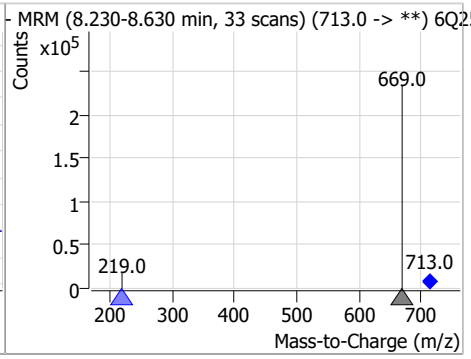




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	99.86	8.32	-0.01	5755447	713.0 -> 219.0	7.4	0.0	37.7







7.7.39

7

Manual Integration Approval Summary

Sample Number: S6Q6-IC6
Lab FileID: 6Q250.D
Injection Time: 05/19/22 12:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.30	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/20/22 21:49

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q252.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/19/2022 1:08:18 PM
Sample Name : icv6-20
Vial : P1-B1
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q6.batch.bin
Sample Information : OP91029,S6Q6,250,,,1.0,1,water

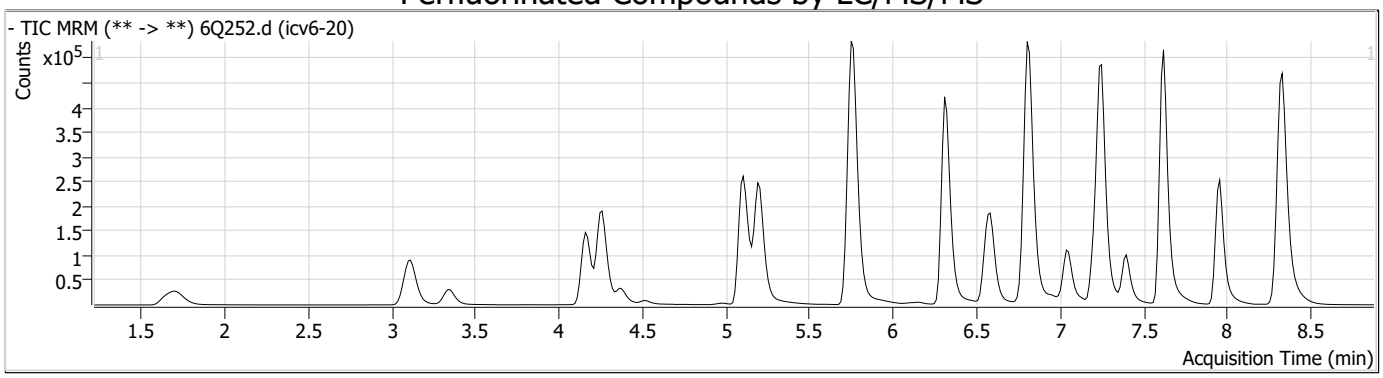
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.699	217.0 -> 172.0	170280	20.00	µg/L	0.000
M5-PFPeA	3.118	268.0 -> 223.0	290407	20.00	µg/L	0.000
M5-PFHxA	4.264	318.0 -> 273.0	430220	20.00	µg/L	0.000
M4-PFHpA	5.110	367.0 -> 322.0	466423	20.00	µg/L	0.000
M8-PFOA	5.770	421.0 -> 376.0	749430	20.00	µg/L	0.000
M9-PFNA	6.317	472.0 -> 427.0	891875	20.00	µg/L	-0.012
M6-PFDA	6.809	519.0 -> 474.0	738278	20.00	µg/L	0.000
M7-PFUnDA	7.251	570.0 -> 525.0	902434	20.00	µg/L	0.000
M2-PFDoDA	7.620	615.0 -> 570.0	981677	20.00	µg/L	0.000
M2-PFTeDA	8.327	715.0 -> 670.0	1101909	20.00	µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	218272	20.00	µg/L	0.000
M3-PFBS	3.348	302.0 -> 99.0	36215	20.00	µg/L	0.000
M3-PFHxS	5.140	402.0 -> 99.0	33842	20.00	µg/L	0.000
M8-PFOS	6.296	507.0 -> 99.0	44174	20.00	µg/L	-0.015
M2-4:2FTS	4.160	329.0 -> 309.0	295847	20.00	µg/L	0.000
M2-6:2FTS	5.741	429.0 -> 409.0	343715	20.00	µg/L	0.000
M2-8:2FTS	6.820	529.0 -> 509.0	247352	20.00	µg/L	-0.012
M3-MeFOSAA	7.039	573.0 -> 419.0	193076	20.00	µg/L	0.000
M3-HFPO-DA	4.528	287.0 -> 169.0	12757	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	57761	20.00	µg/L	0.000
M5-EtFOSAA	7.200	589.0 -> 419.0	181762	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.160	329.0 -> 309.0	295847	20.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-6:2FTS	5.741	429.0 -> 409.0	343715	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C2-8:2FTS	6.820	529.0 -> 509.0	247352	20.11	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFDoDA	7.620	615.0 -> 570.0	981677	21.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C2-PFTeDA	8.327	715.0 -> 670.0	1101909	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C3-PFBS	3.348	302.0 -> 99.0	36215	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C3-PFHxS	5.140	402.0 -> 99.0	33842	20.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C4-PFBA	1.699	217.0 -> 172.0	170280	20.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C4-PFHpA	5.110	367.0 -> 322.0	466423	20.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFHxA	4.264	318.0 -> 273.0	430220	20.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C5-PFPeA	3.118	268.0 -> 223.0	290407	20.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C6-PFDA	6.809	519.0 -> 474.0	738278	20.13	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

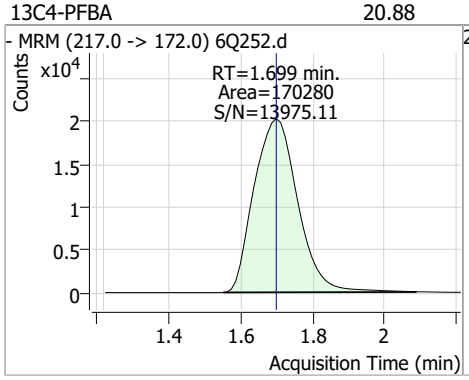
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C7-PFUnDA	7.251	570.0 -> 525.0	902434	20.85 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C8-FOSA	6.588	506.0 -> 78.0	218272	20.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C8-PFOA	5.770	421.0 -> 376.0	749430	20.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C8-PFOS	6.296	507.0 -> 99.0	44174	20.49 µg/L		-0.015
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C9-PFNA	6.317	472.0 -> 427.0	891875	20.61 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
d3-MeFOSAA	7.039	573.0 -> 419.0	193076	20.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C3-HFPO-DA	4.528	287.0 -> 169.0	12778	21.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
d3-MeFOSA	7.020	515.0 -> 169.0	57761	22.40 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
d5-EtFOSAA	7.200	589.0 -> 419.0	181752	22.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
Target Compounds						**QValue**
4:2FTS	4.162	327.0 -> 307.0	266244	16.56 µg/L		100
6:2FTS	5.742	427.0 -> 407.0	282560	16.21 µg/L		98
8:2FTS	6.820	527.0 -> 507.0	210746	17.18 µg/L		98
EtFOSAA	7.213	584.0 -> 419.0	132296	15.15 µg/L	m	95
FOSA	6.590	498.0 -> 78.0	178980	16.72 µg/L		100
MeFOSAA	7.052	570.0 -> 419.0	151704	17.63 µg/L	m	99
PFBA	1.705	213.0 -> 169.0	66562	17.25 µg/L		100
PFBS	3.340	299.0 -> 80.0	82450	14.64 µg/L		100
PFDA	6.810	513.0 -> 469.0	774870	16.50 µg/L		97
PFDoDA	7.621	613.0 -> 569.0	811116	17.94 µg/L		98
PFDS	7.199	599.0 -> 80.0	52775	15.76 µg/L		93
PFHpA	5.112	363.0 -> 319.0	522526	16.88 µg/L		100
PFHpS	5.777	449.0 -> 80.0	64906	16.08 µg/L		100
PFHxA	4.265	313.0 -> 269.0	371221	15.92 µg/L		99
PFHxS	5.143	399.0 -> 80.0	64769	14.38 µg/L	m	99
PFNA	6.318	463.0 -> 419.0	589443	15.52 µg/L		99
PFNS	6.782	549.0 -> 80.0	71979	16.54 µg/L		99
PFOA	5.771	413.0 -> 369.0	689807	18.19 µg/L		100
PFOS	6.299	499.0 -> 80.0	68622	16.52 µg/L	m	88
PFPeA	3.121	263.0 -> 219.0	211511	16.67 µg/L		100
PFPeS	4.370	349.0 -> 80.0	75640	16.07 µg/L		100
PFTeDA	8.329	713.0 -> 669.0	962917	15.90 µg/L		100
PFTrDA	7.958	663.0 -> 619.0	871001	17.74 µg/L		99
PFUnDA	7.252	563.0 -> 519.0	740571	17.56 µg/L		97
11Cl-PF3OUdS	7.394	631.0 -> 451.0	249451	15.27 µg/L		97
9Cl-PF3ONS	6.558	531.0 -> 351.0	339018	15.47 µg/L		98
ADONA	5.194	377.0 -> 251.0	775986	15.82 µg/L		100
HFPO-DA	4.530	285.0 -> 169.0	11421	19.09 µg/L		99
MeFOSA	-	512.0 -> 169.0	-	N.D.		

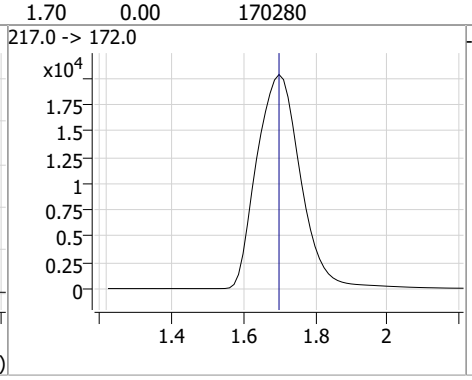
 # = Qualifier out of range, m = manually integrated, + = Area summed

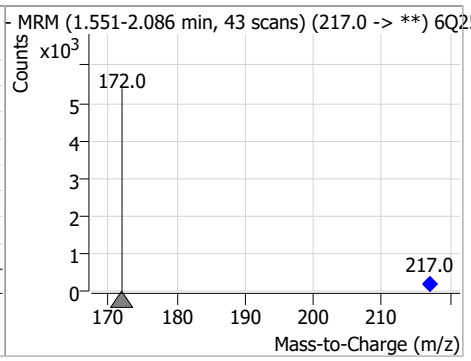
Perfluorinated Compounds by LC/MS/MS



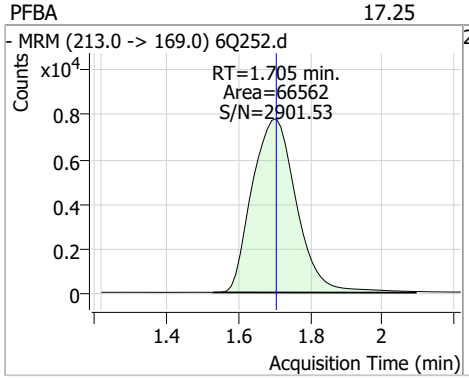
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.88	1.70	0.00	170280				

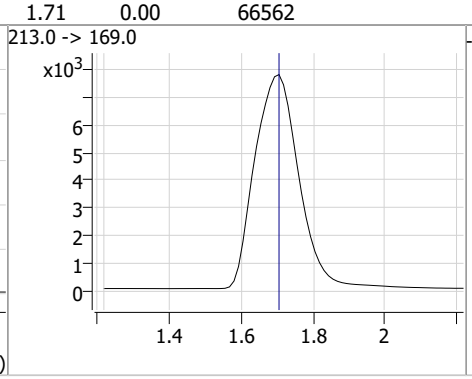


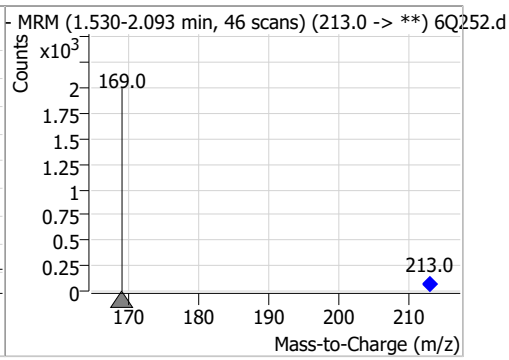




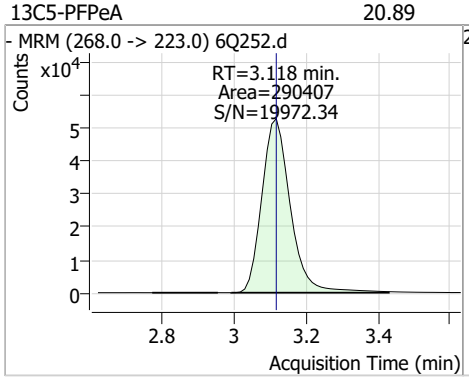
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.25	1.71	0.00	66562				

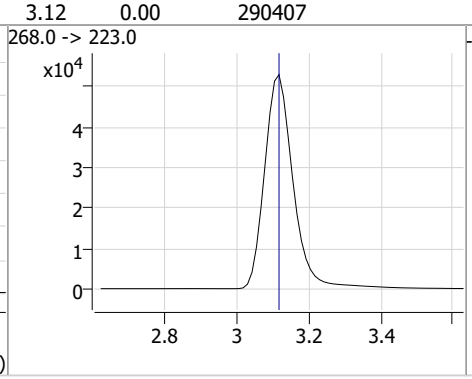


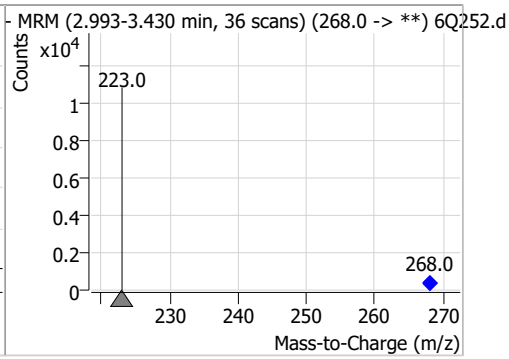




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.89	3.12	0.00	290407				

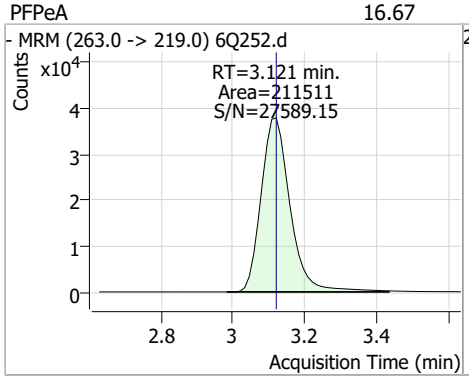


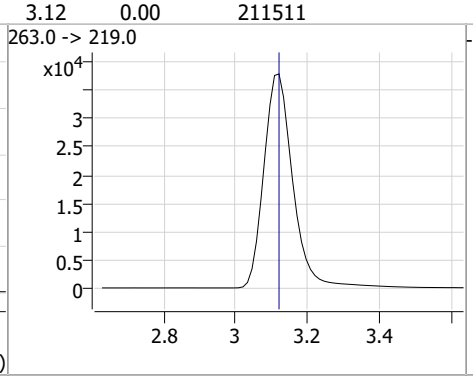


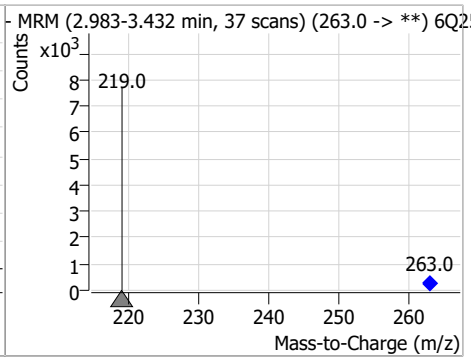


Perfluorinated Compounds by LC/MS/MS

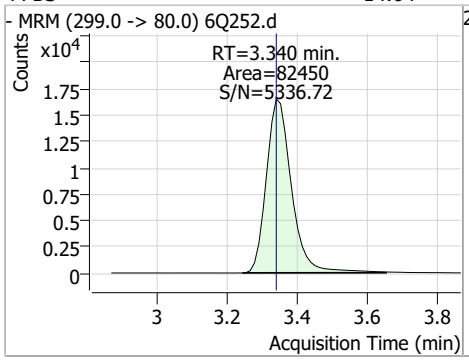
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.67	3.12	0.00	211511				

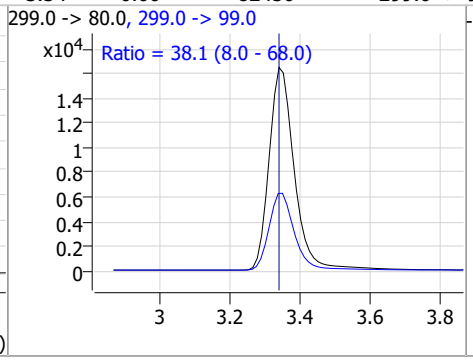


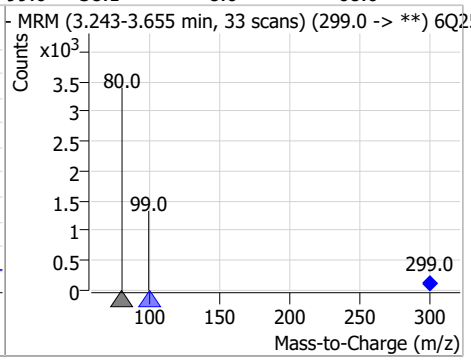




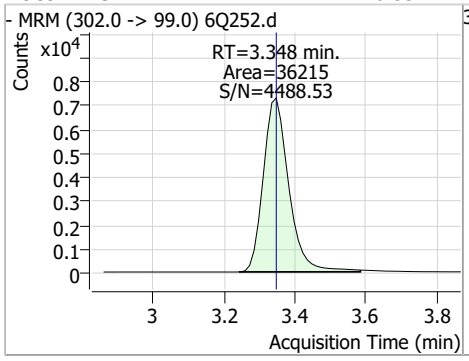
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	14.64	3.34	0.00	82450	299.0 -> 99.0	38.1	8.0	68.0

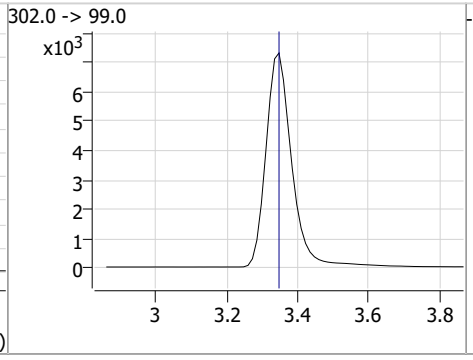


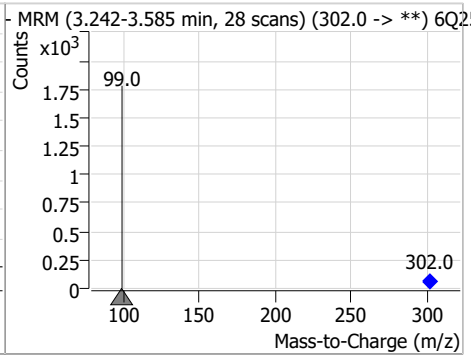




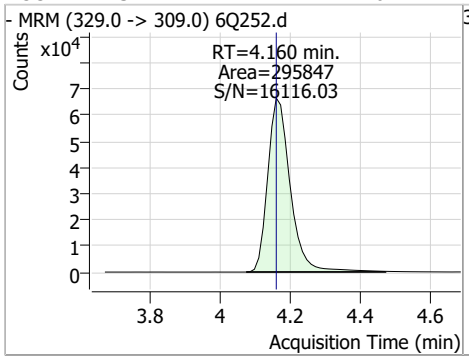
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.53	3.35	0.00	36215				

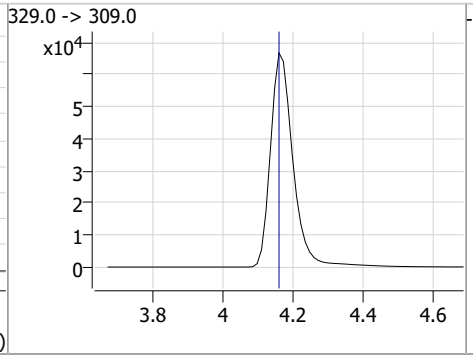


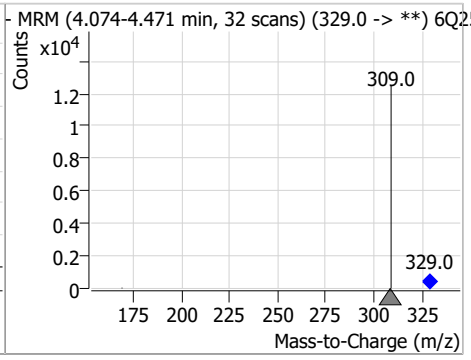




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.12	4.16	0.00	295847				

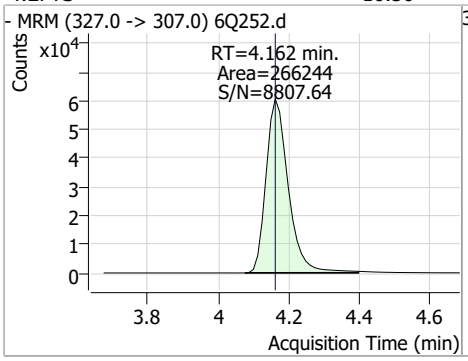


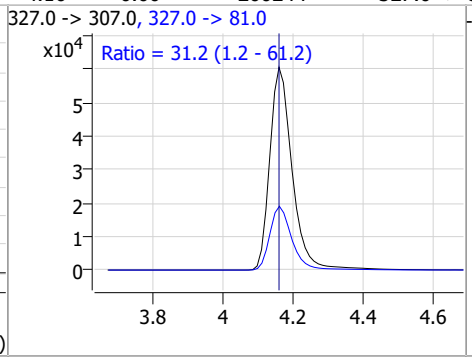


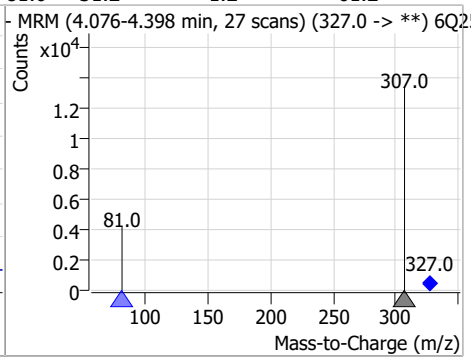


Perfluorinated Compounds by LC/MS/MS

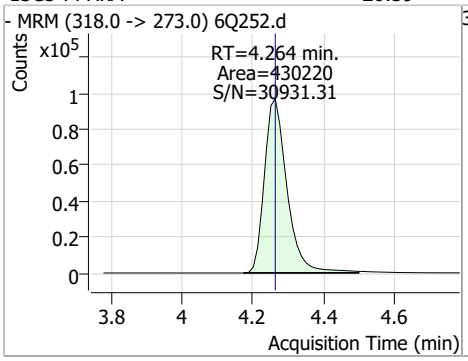
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	16.56	4.16	0.00	266244	327.0 -> 81.0	31.2	1.2	61.2

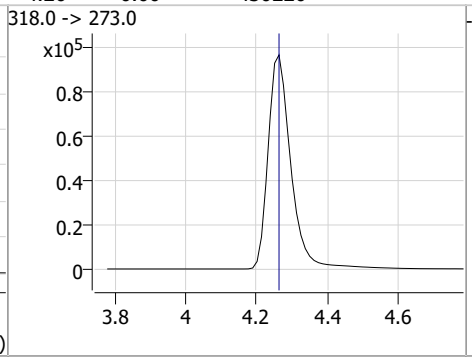


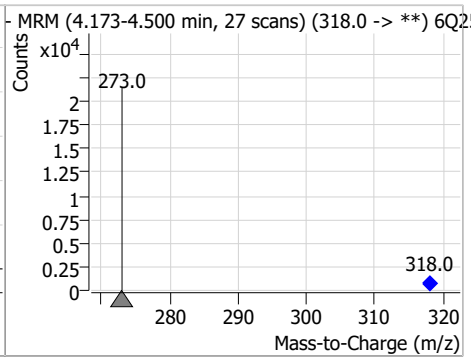




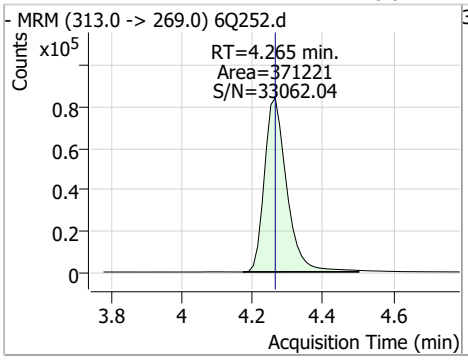
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.59	4.26	0.00	430220				

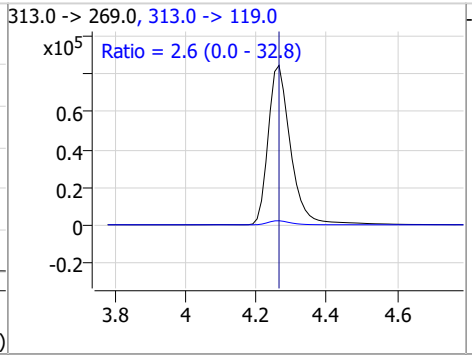


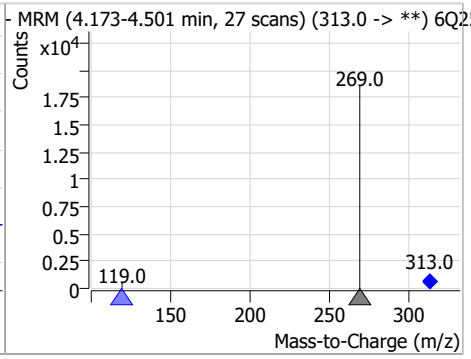




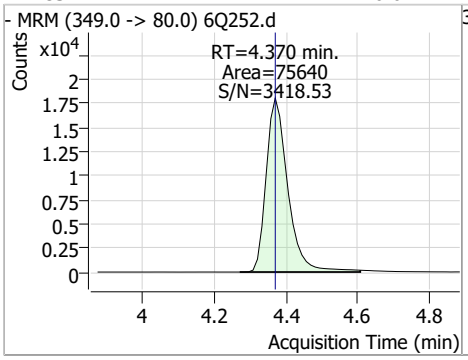
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.92	4.26	0.00	371221	313.0 -> 119.0	2.6	0.0	32.8

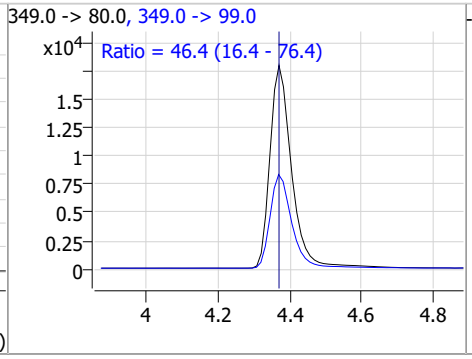


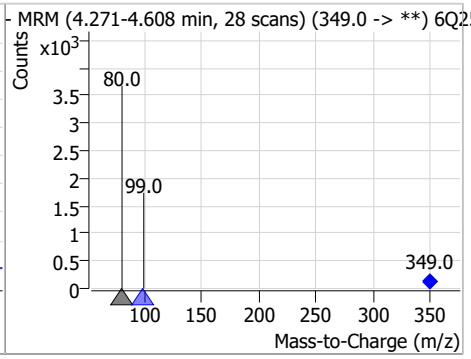




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.07	4.37	0.00	75640	349.0 -> 99.0	46.4	16.4	76.4

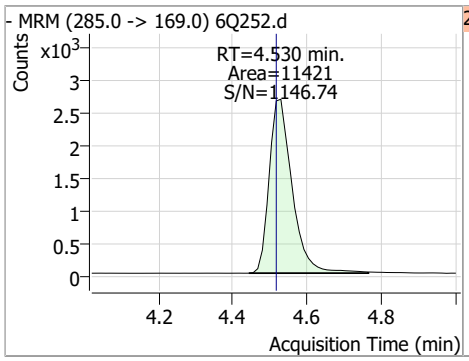


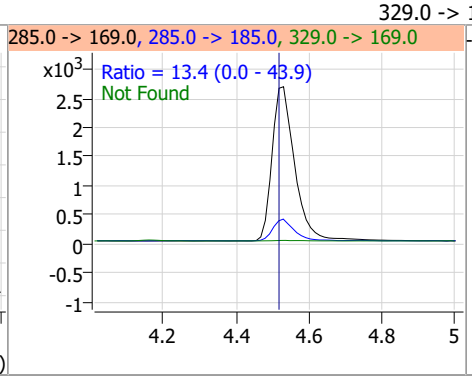


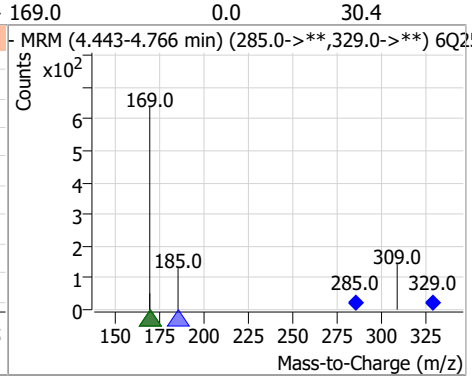


Perfluorinated Compounds by LC/MS/MS

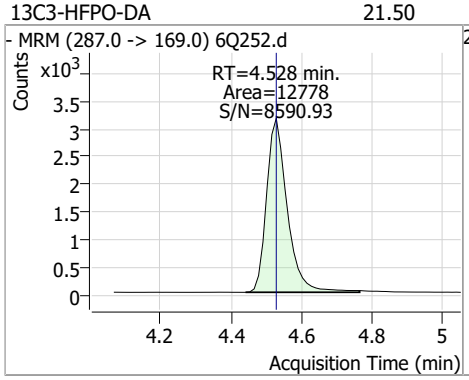
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.09	4.53	0.01	11421	285.0 -> 185.0	13.4	0.0	43.9
					329.0 -> 169.0		0.0	30.4

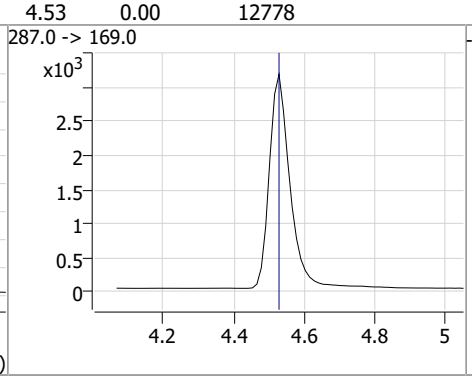


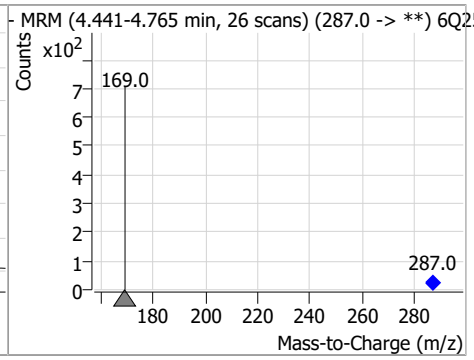




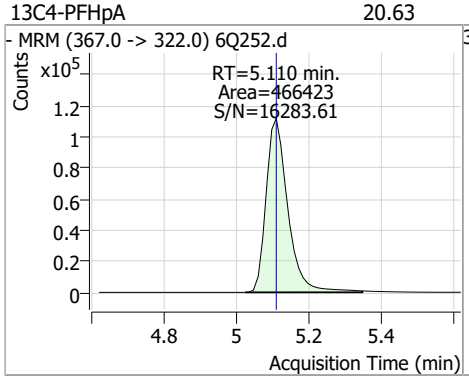
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.50	4.53	0.00	12778				

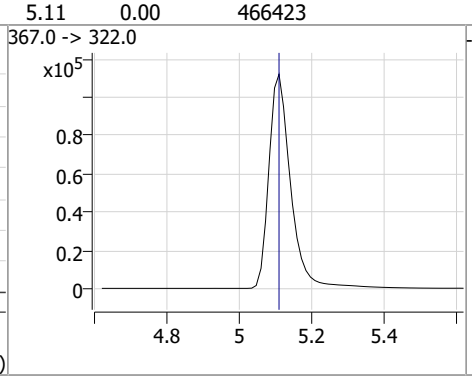


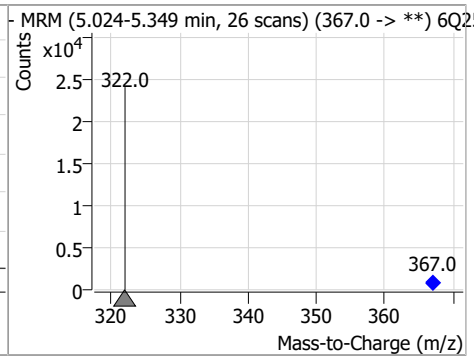




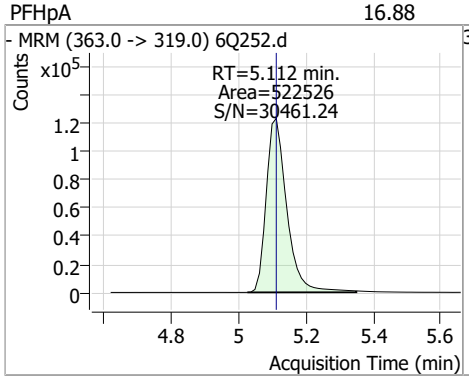
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.63	5.11	0.00	466423				

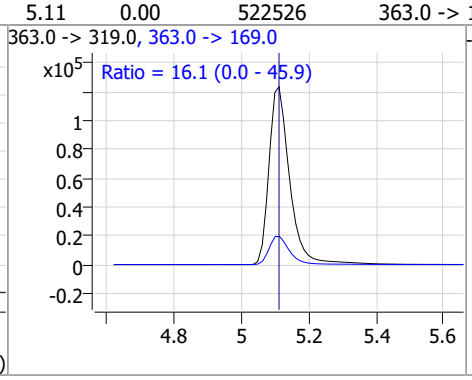


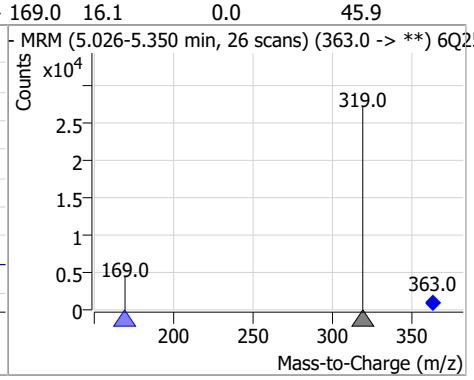




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.88	5.11	0.00	522526	363.0 -> 169.0	16.1	0.0	45.9

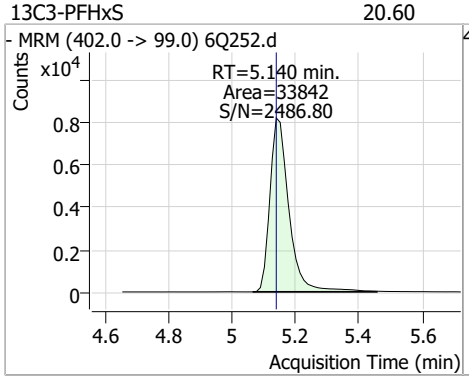


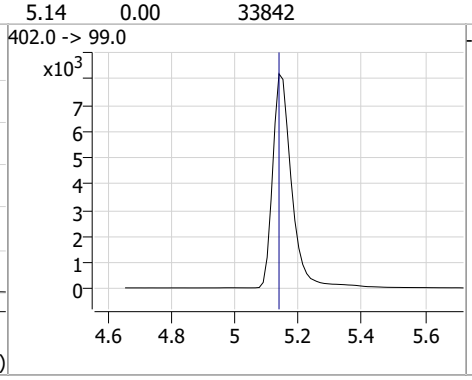


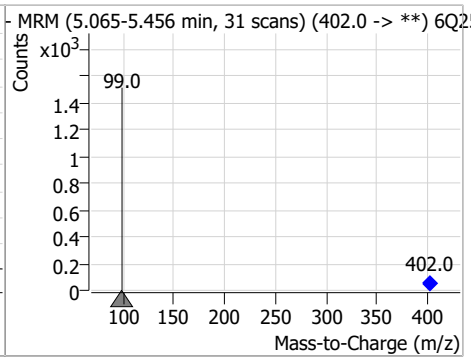


Perfluorinated Compounds by LC/MS/MS

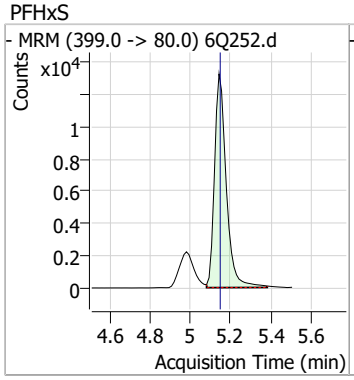
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.60	5.14	0.00	33842				

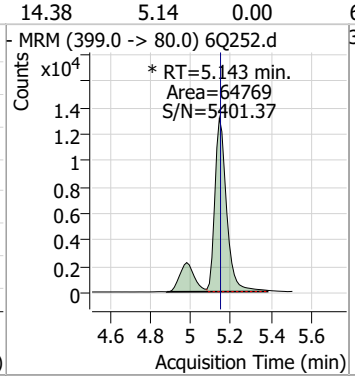


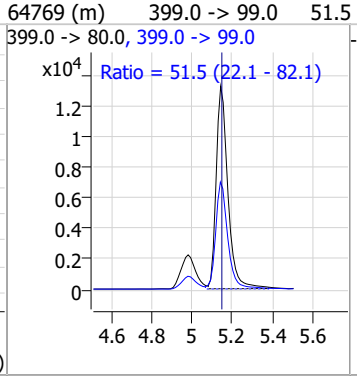


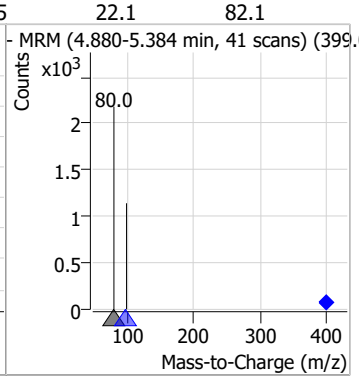


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	14.38	5.14	0.00	64769 (m)	399.0 -> 99.0	51.5	22.1	82.1

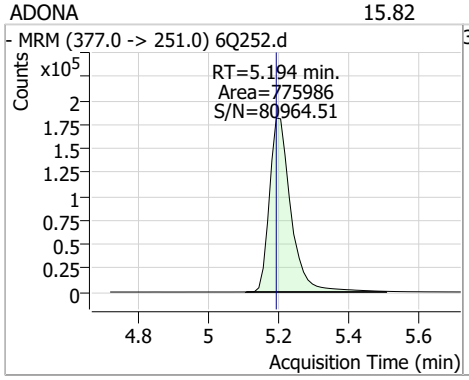


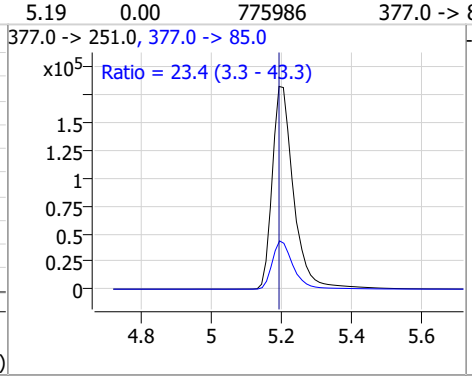


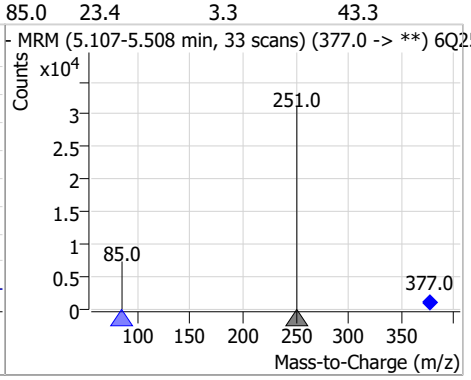




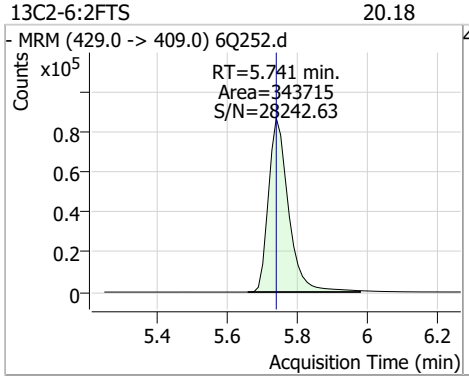
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	15.82	5.19	0.00	775986	377.0 -> 85.0	23.4	3.3	43.3

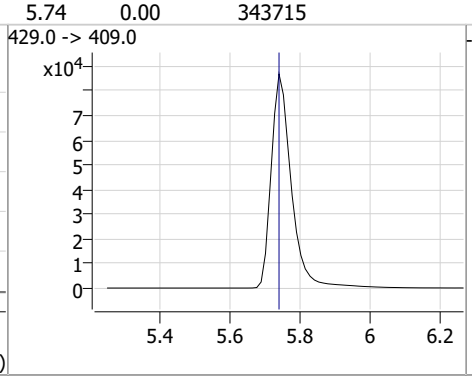


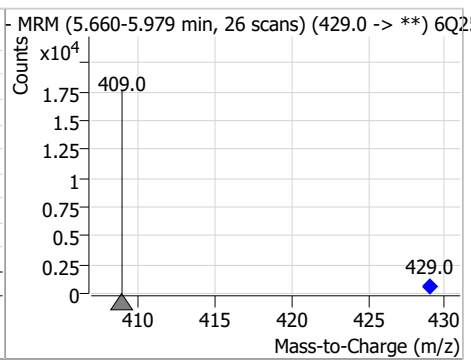




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.18	5.74	0.00	343715				

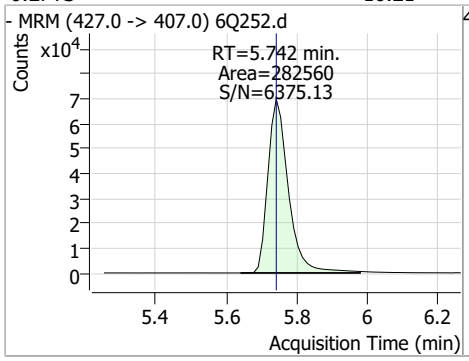


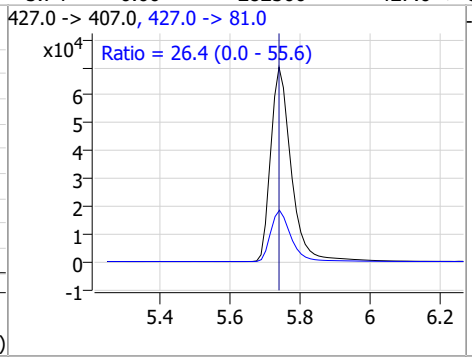


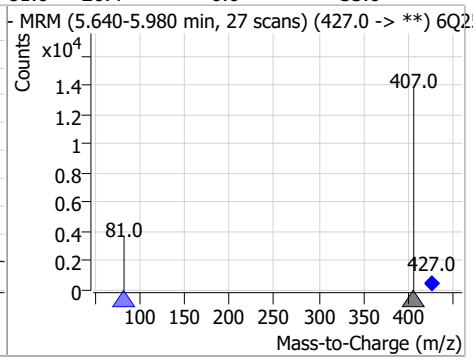


Perfluorinated Compounds by LC/MS/MS

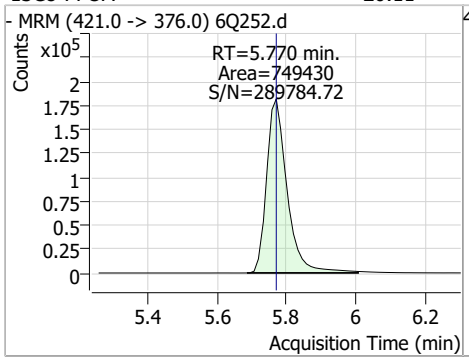
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	16.21	5.74	0.00	282560	427.0 -> 81.0	26.4	0.0	55.6

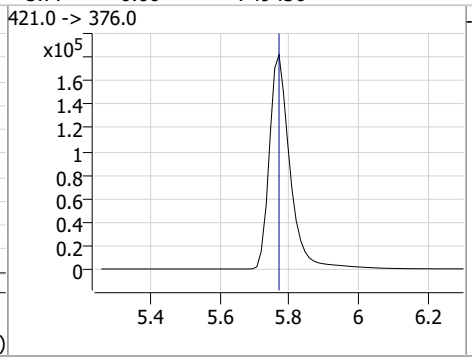


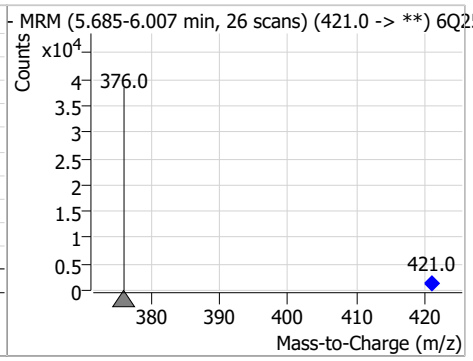




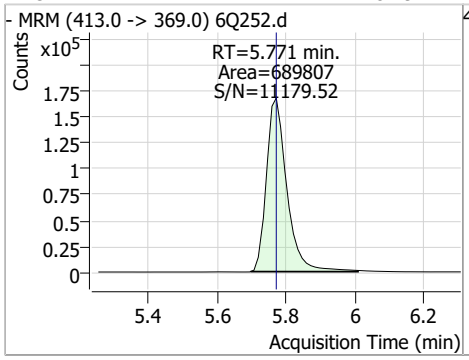
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.11	5.77	0.00	749430				

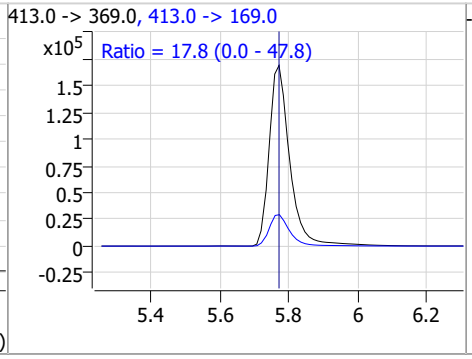


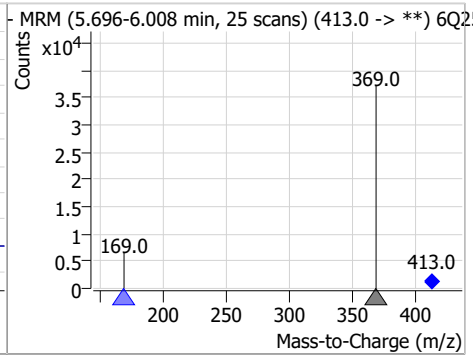




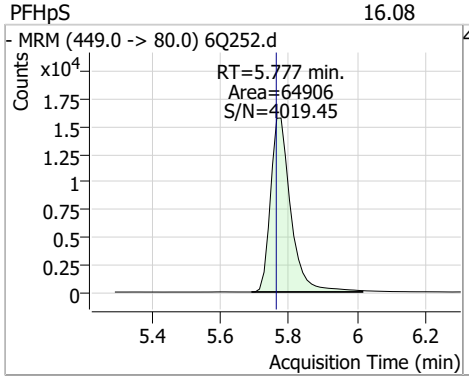
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.19	5.77	0.00	689807	413.0 -> 169.0	17.8	0.0	47.8

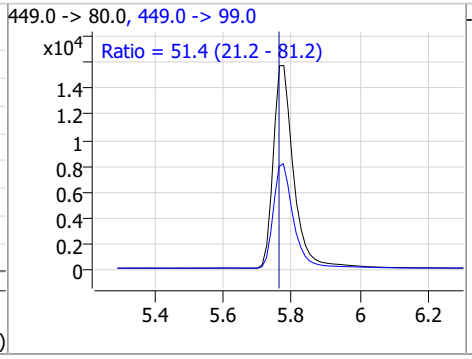


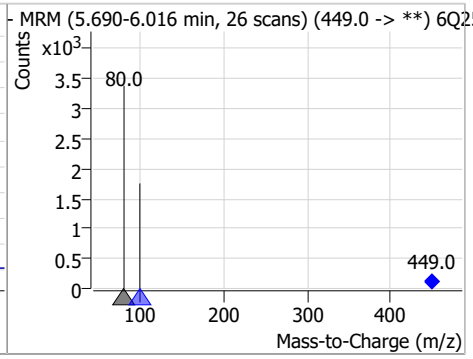




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	16.08	5.78	0.00	64906	449.0 -> 99.0	51.4	21.2	81.2

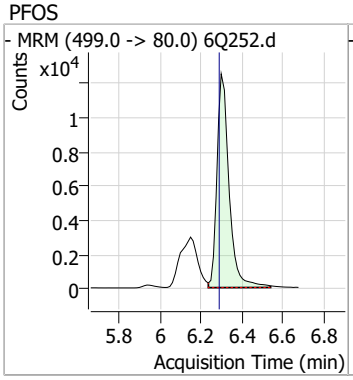


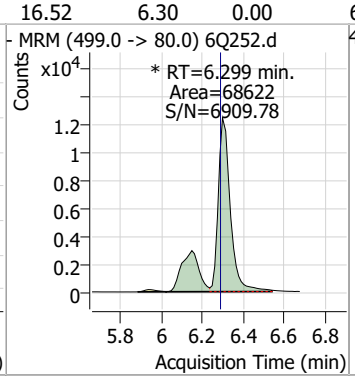


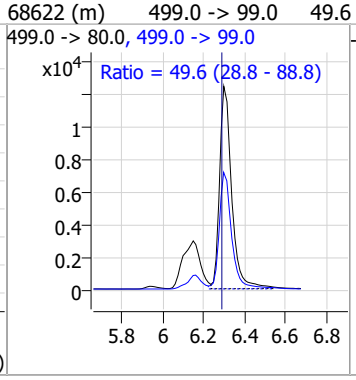


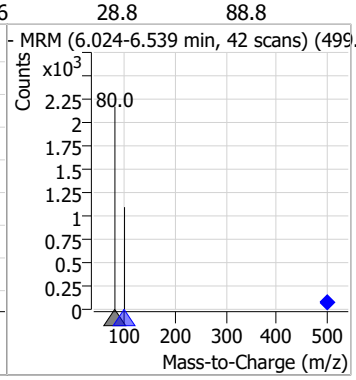
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.52	6.30	0.00	68622 (m)	499.0 -> 99.0	49.6	28.8	88.8

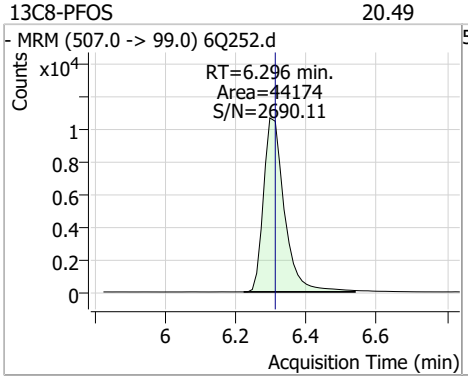


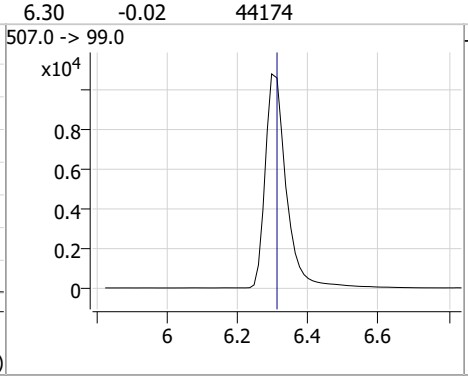


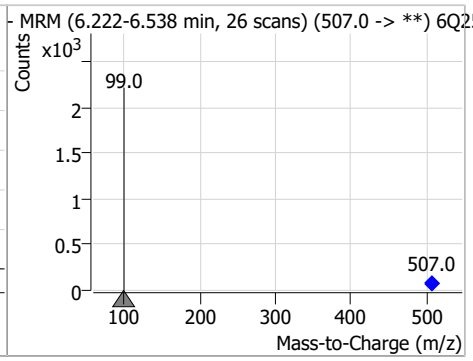




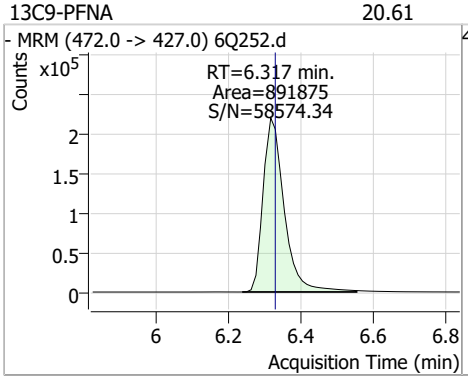
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.49	6.30	-0.02	44174				

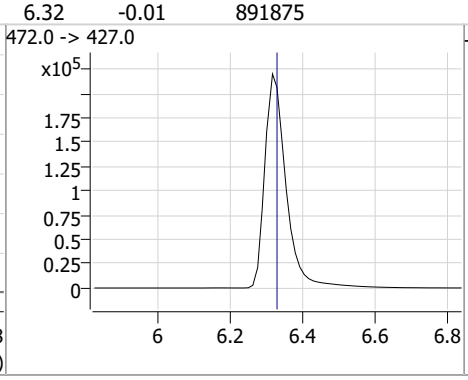


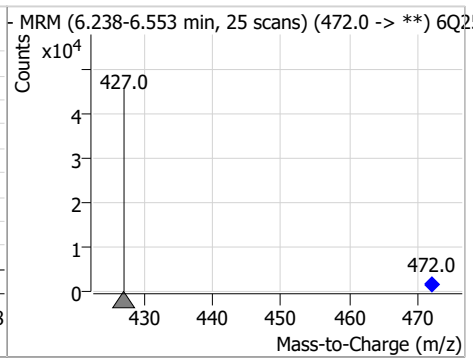




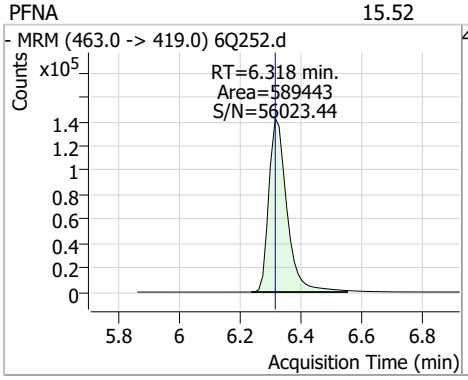
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.61	6.32	-0.01	891875				

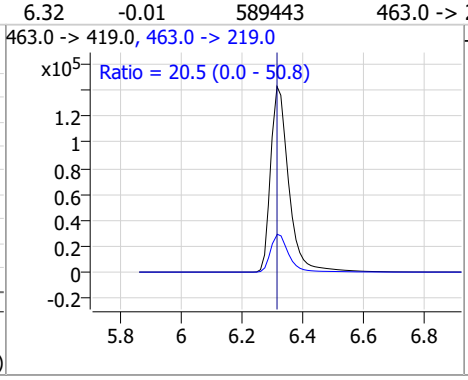


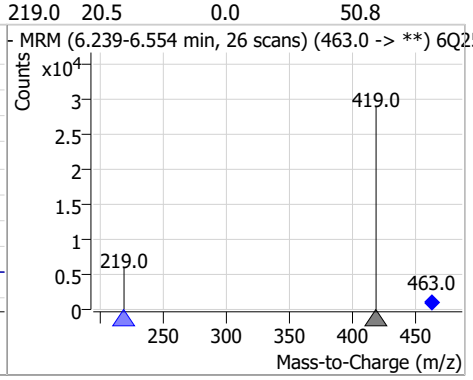




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	15.52	6.32	-0.01	589443	463.0 -> 219.0	20.5	0.0	50.8

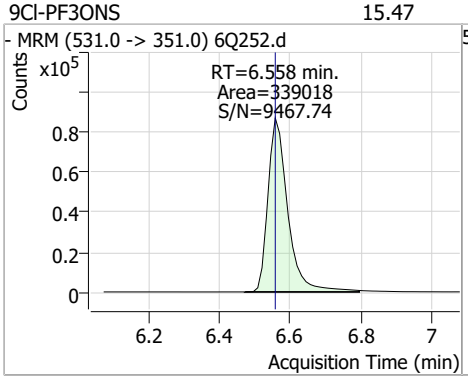


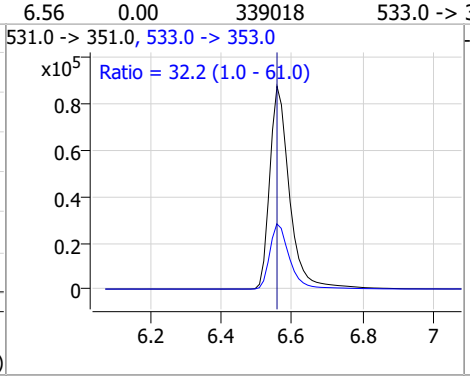


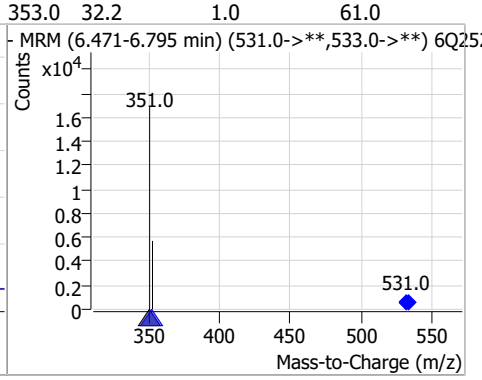


Perfluorinated Compounds by LC/MS/MS

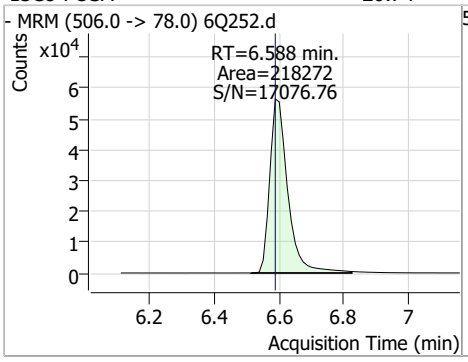
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.47	6.56	0.00	339018	533.0 -> 353.0	32.2	1.0	61.0

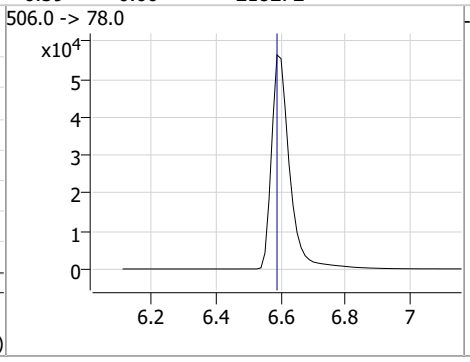


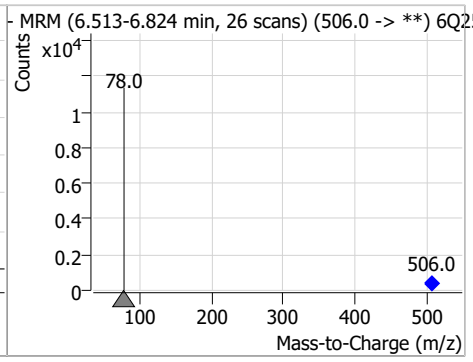




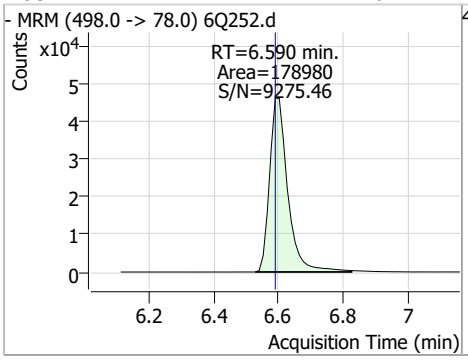
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.74	6.59	0.00	218272				

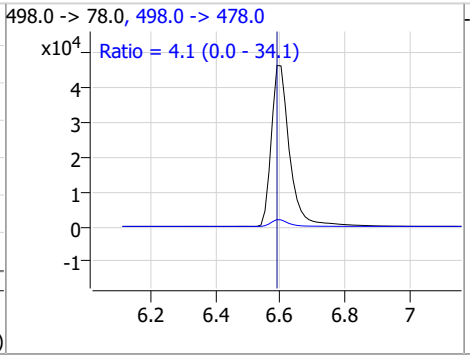


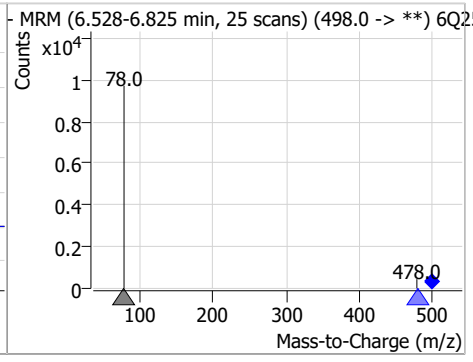




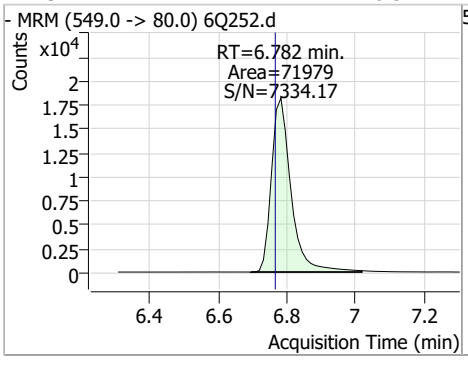
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	16.72	6.59	0.00	178980	498.0 -> 478.0	4.1	0.0	34.1

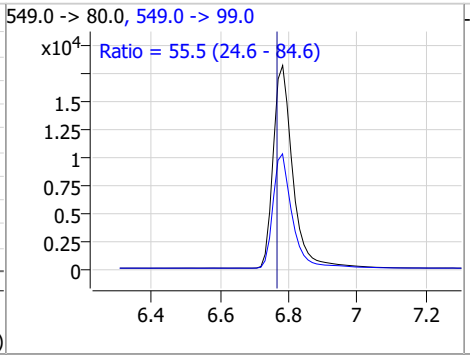


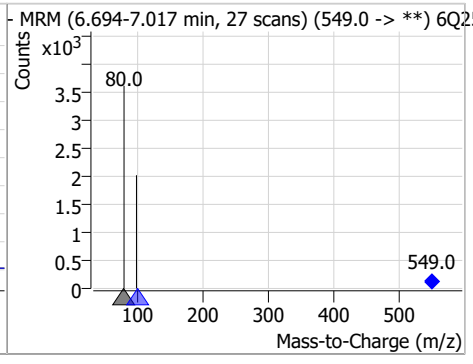




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.54	6.78	0.00	71979	549.0 -> 99.0	55.5	24.6	84.6

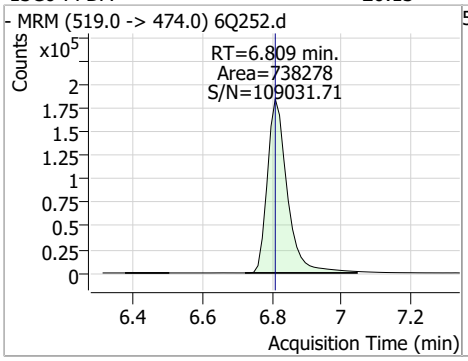


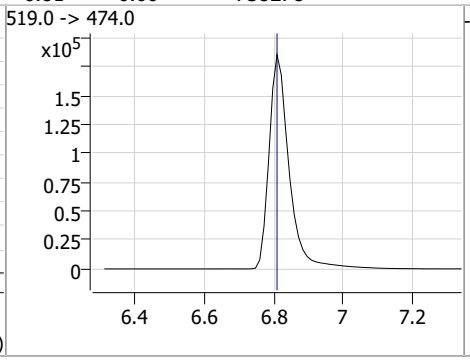


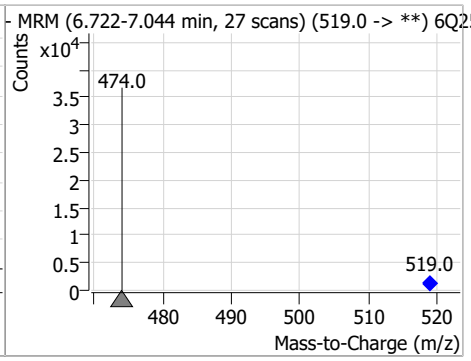


Perfluorinated Compounds by LC/MS/MS

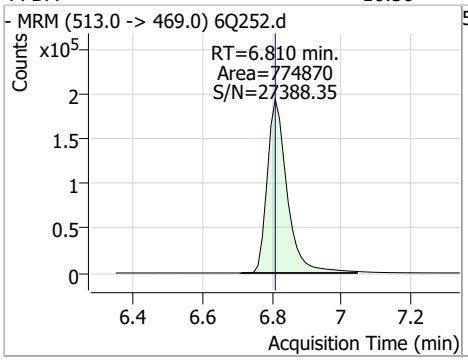
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.13	6.81	0.00	738278				

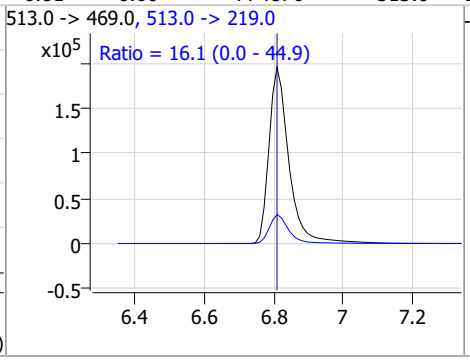


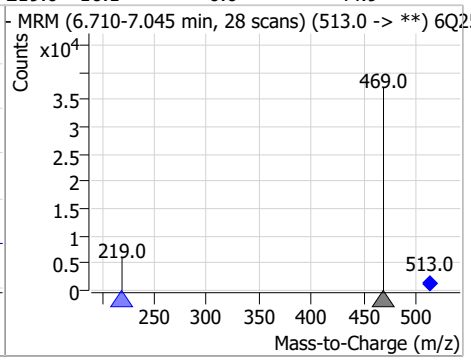




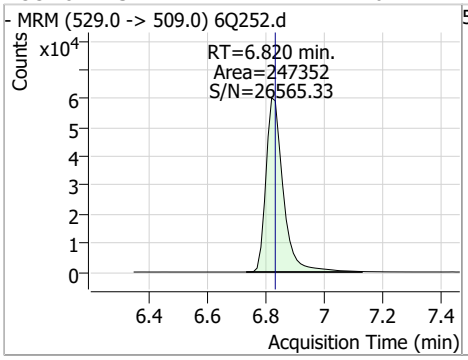
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.50	6.81	0.00	774870	513.0 -> 219.0	16.1	0.0	44.9

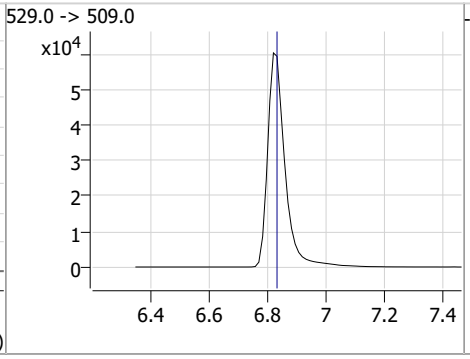


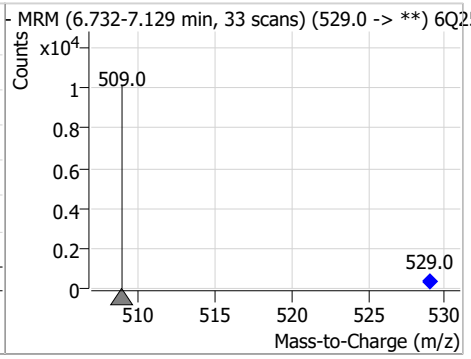




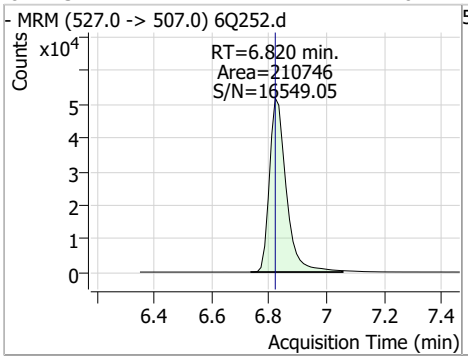
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.11	6.82	-0.01	247352				

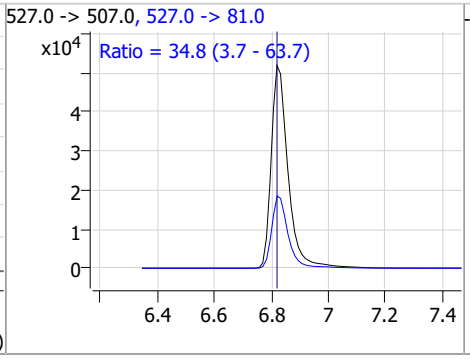


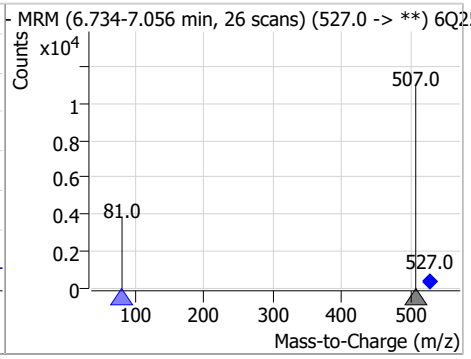




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	17.18	6.82	-0.01	210746	527.0 -> 81.0	34.8	3.7	63.7

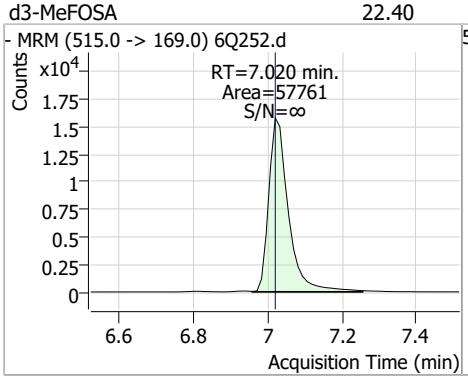


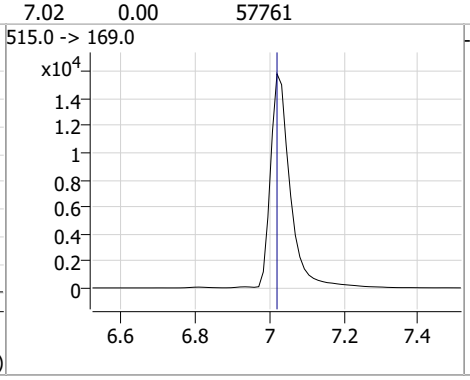


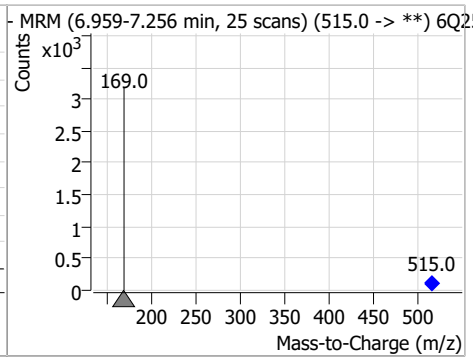


Perfluorinated Compounds by LC/MS/MS

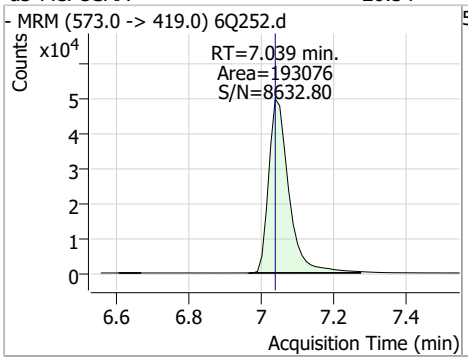
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.40	7.02	0.00	57761				

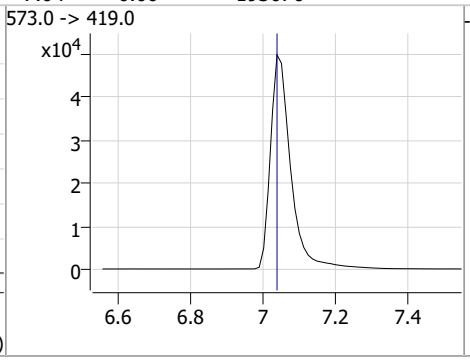


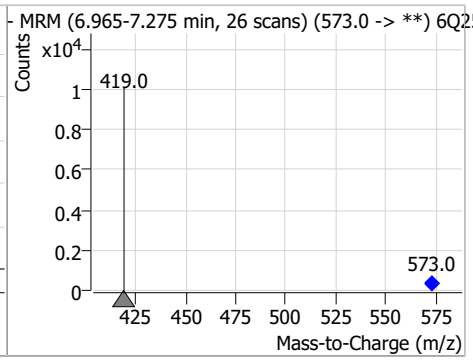




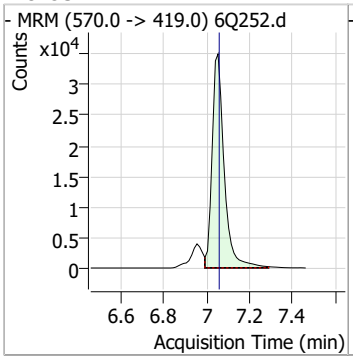
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.54	7.04	0.00	193076				

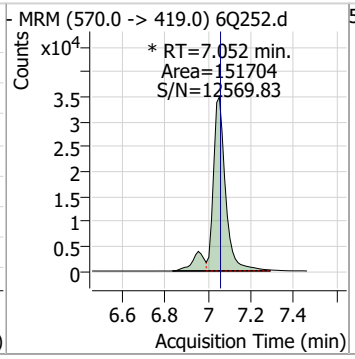


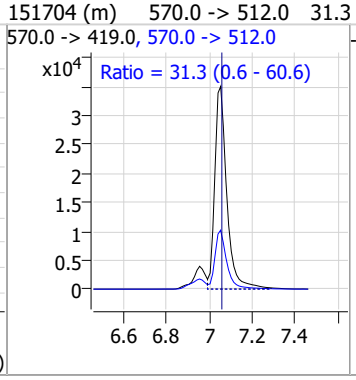


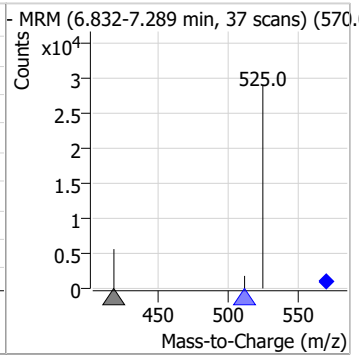


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.63	7.05	0.00	151704 (m)	570.0 -> 512.0	31.3	0.6	60.6

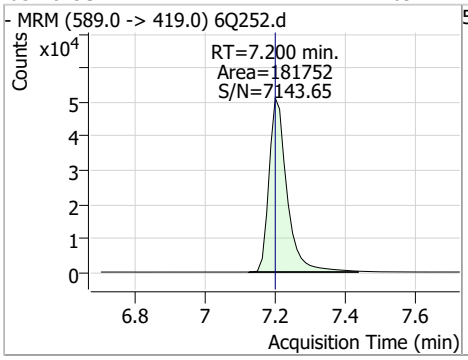


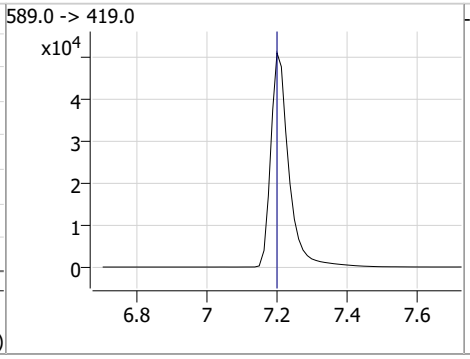


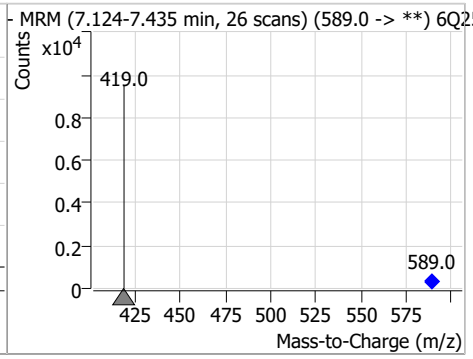




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.09	7.20	0.00	181752				

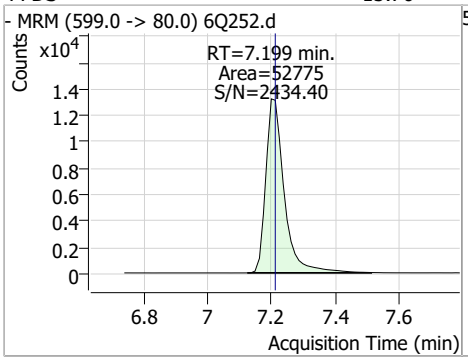


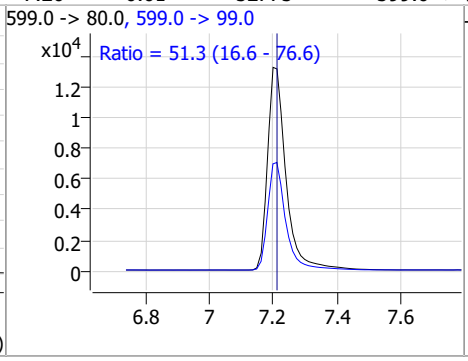


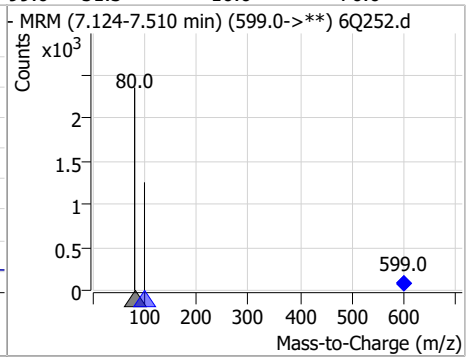


Perfluorinated Compounds by LC/MS/MS

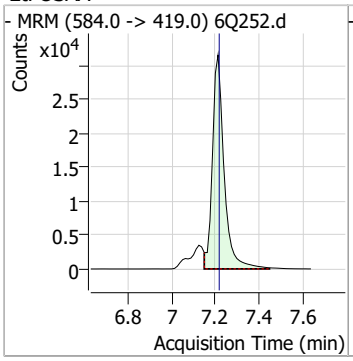
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	15.76	7.20	-0.01	52775	599.0 -> 99.0	51.3	16.6	76.6

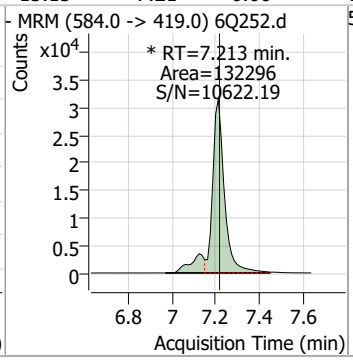


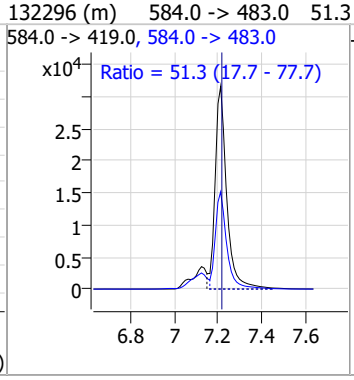


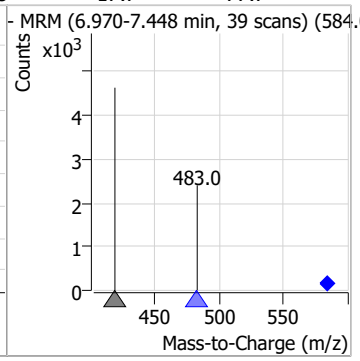


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.15	7.21	0.00	132296 (m)	584.0 -> 483.0	51.3	17.7	77.7

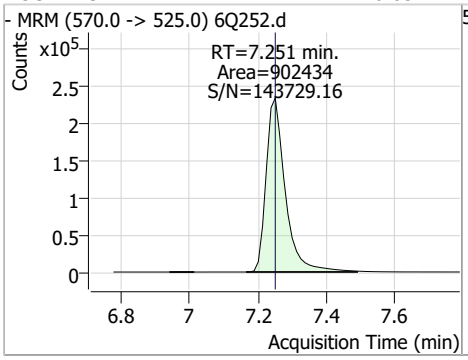


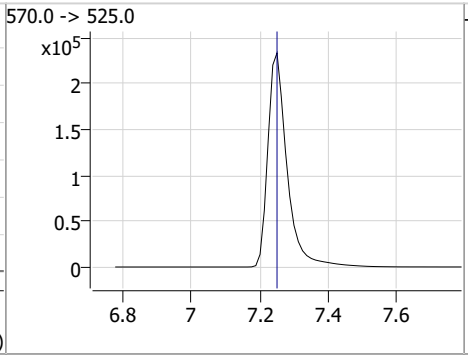


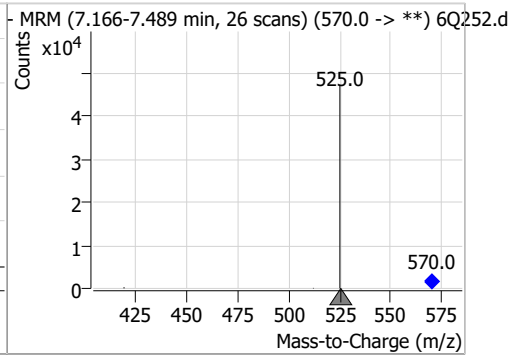




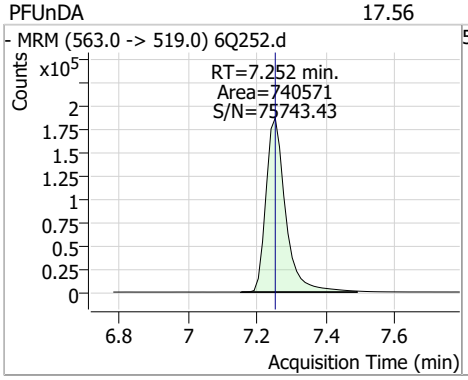
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.85	7.25	0.00	902434				

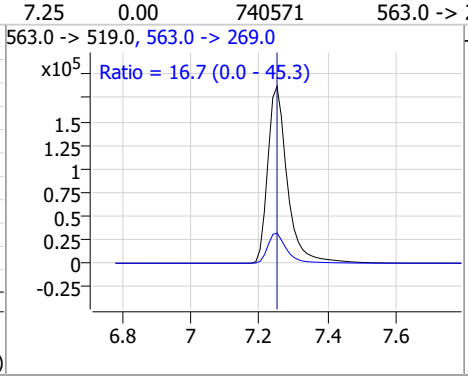


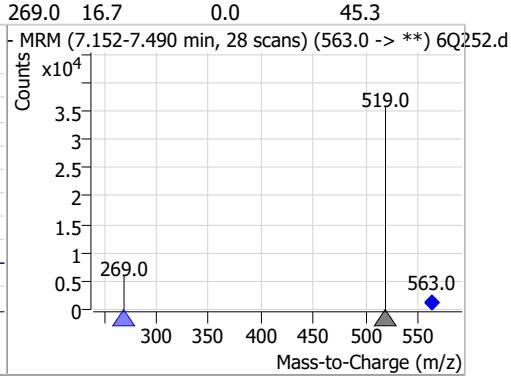




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.56	7.25	0.00	740571	563.0 -> 269.0	16.7	0.0	45.3

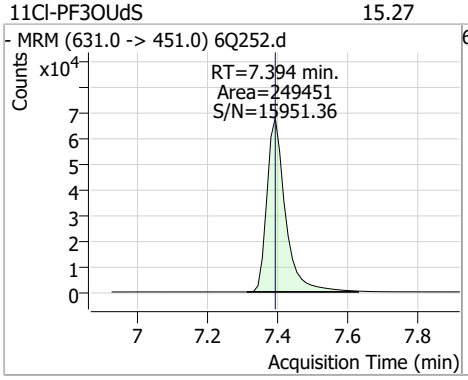


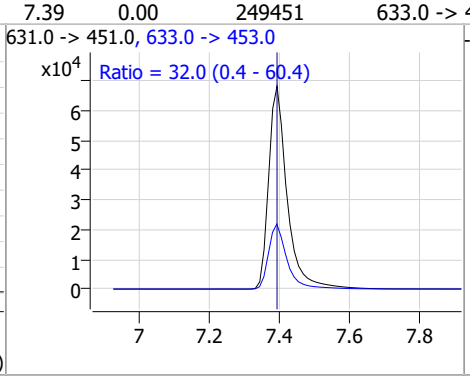


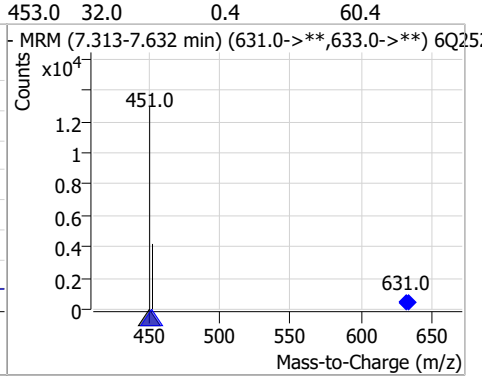


Perfluorinated Compounds by LC/MS/MS

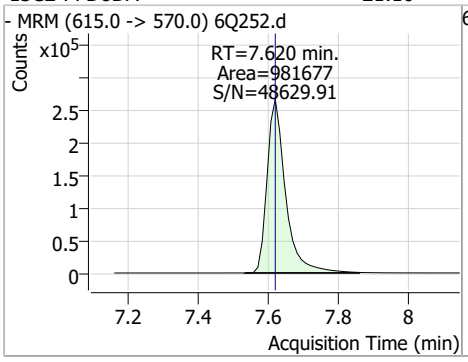
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	15.27	7.39	0.00	249451	633.0 -> 453.0	32.0	0.4	60.4

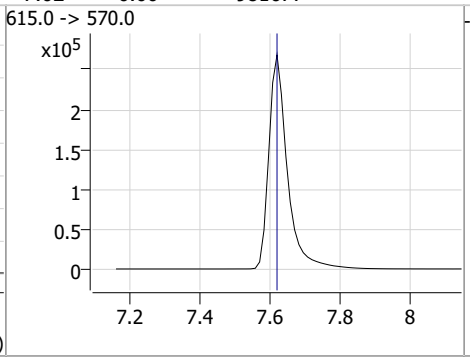


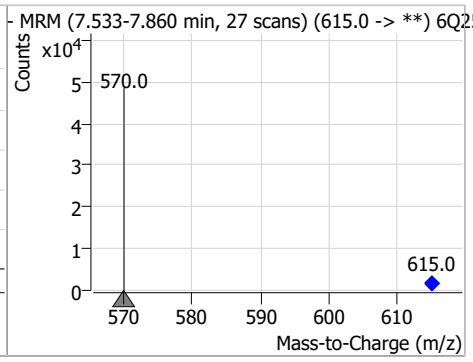




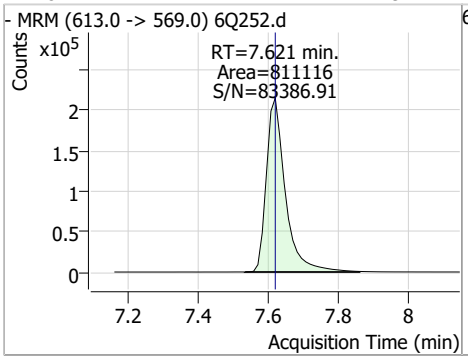
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.16	7.62	0.00	981677				

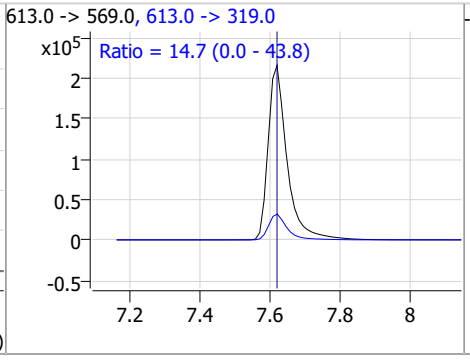


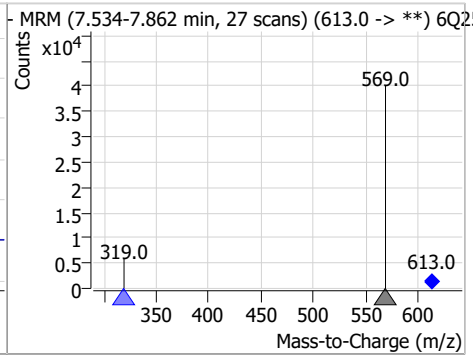




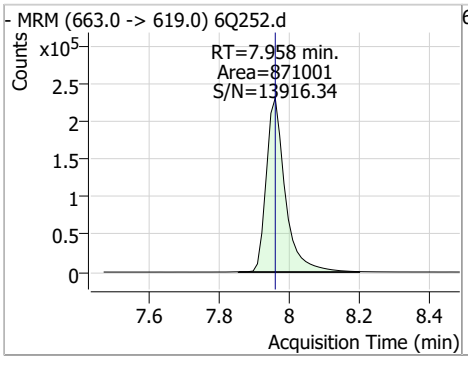
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	17.94	7.62	0.00	811116	613.0 -> 319.0	14.7	0.0	43.8

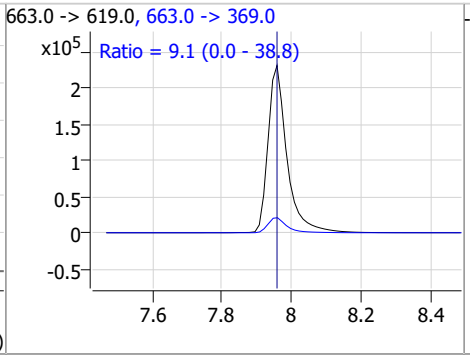


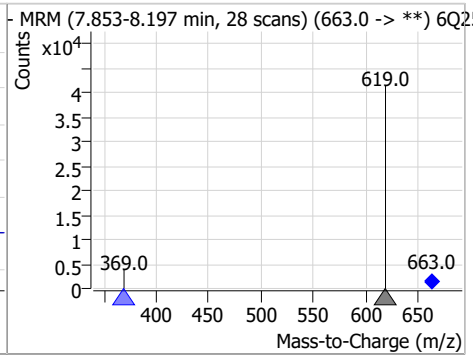




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	17.74	7.96	0.00	871001	663.0 -> 369.0	9.1	0.0	38.8

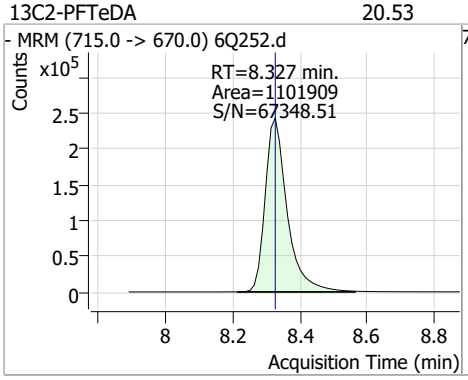


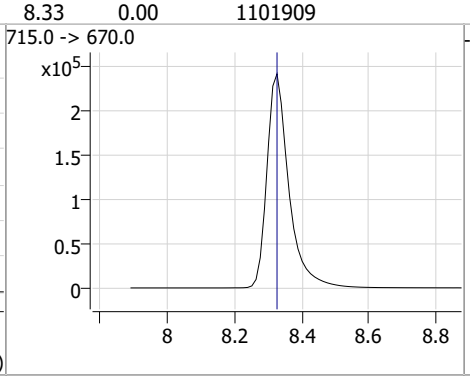


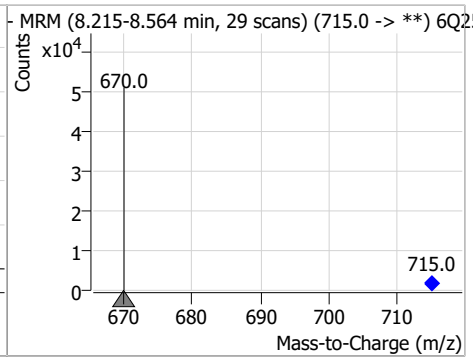


Perfluorinated Compounds by LC/MS/MS

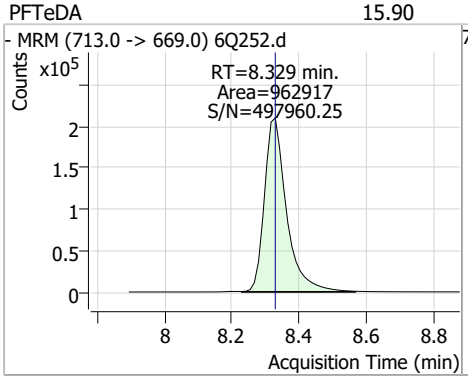
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.53	8.33	0.00	1101909				

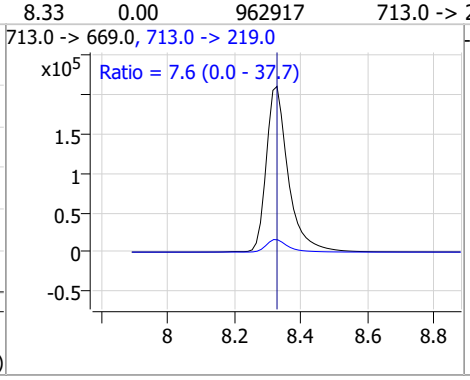


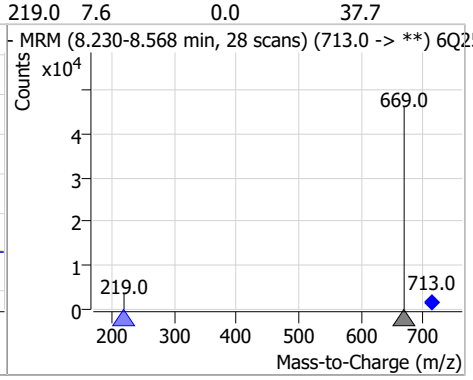




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	15.90	8.33	0.00	962917	713.0 -> 219.0	7.6	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q6-ICV6
Lab FileID: 6Q252.D
Injection Time: 05/19/22 13:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/20/22 14:49 Natasha Gumtie
Supervisor approved: 05/20/22 21:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.30	Split peak
MeFOSAA	2355-31-9		7.05	Split peak
EtFOSAA	2991-50-6		7.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:44

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q577.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 6:13:42 PM
Sample Name : cc6-20
Vial : P1-A7
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

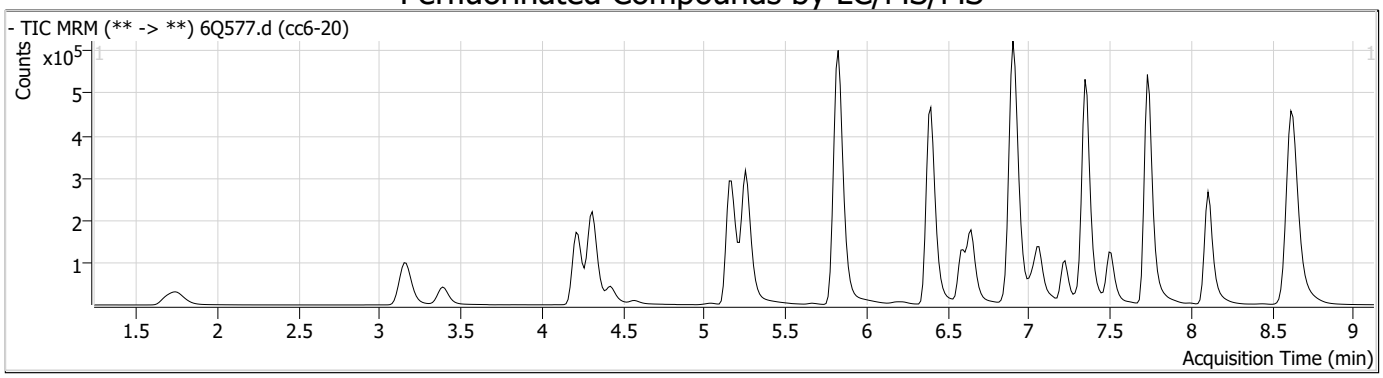
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.737	217.0 -> 172.0	180776	20.00	µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	300193	20.00	µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	442646	20.00	µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	483499	20.00	µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	776783	20.00	µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	912501	20.00	µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	828559	20.00	µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	927731	20.00	µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	975305	20.00	µg/L	0.000
M2-PFTeDA	8.614	715.0 -> 670.0	1176473	20.00	µg/L	-0.013
M8-FOSA	6.588	506.0 -> 78.0	233381	20.00	µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	37661	20.00	µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	34162	20.00	µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	47091	20.00	µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	305368	20.00	µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	329047	20.00	µg/L	0.000
M2-8:2FTS	6.919	529.0 -> 509.0	246113	20.00	µg/L	-0.013
M3-MeFOSAA	7.064	573.0 -> 419.0	188483	20.00	µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12767	20.00	µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	56519	20.00	µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	158774	20.00	µg/L	-0.001
System Monitoring Compounds						
13C2-4:2FTS	4.210	329.0 -> 309.0	305368	20.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C2-6:2FTS	5.816	429.0 -> 409.0	329047	19.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-8:2FTS	6.919	529.0 -> 509.0	246113	20.01	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-PFDoDA	7.733	615.0 -> 570.0	975305	21.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-PFTeDA	8.614	715.0 -> 670.0	1176473	21.92	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C3-PFBS	3.385	302.0 -> 99.0	37661	21.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C3-PFHxS	5.202	402.0 -> 99.0	34162	20.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C4-PFBA	1.737	217.0 -> 172.0	180776	22.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C4-PFHpA	5.160	367.0 -> 322.0	483499	21.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C5-PFHxA	4.314	318.0 -> 273.0	442646	21.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C5-PFPeA	3.155	268.0 -> 223.0	300193	21.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C6-PFDA	6.908	519.0 -> 474.0	828559	22.59	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

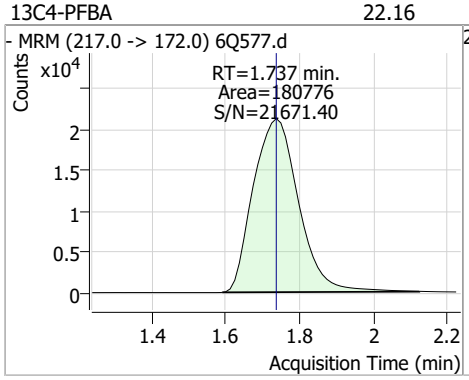
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C7-PFUnDA	7.350	570.0 -> 525.0	927731	21.43 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C8-FOSA	6.588	506.0 -> 78.0	233381	22.17 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C8-PFOA	5.832	421.0 -> 376.0	776783	20.84 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C8-PFOS	6.386	507.0 -> 99.0	47091	21.85 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C9-PFNA	6.404	472.0 -> 427.0	912501	21.09 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
d3-MeFOSAA	7.064	573.0 -> 419.0	188483	20.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	12776	21.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
d3-MeFOSA	7.033	515.0 -> 169.0	56519	21.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
d5-EtFOSAA	7.211	589.0 -> 419.0	158893	19.31 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
Target Compounds						**QValue**
4:2FTS	4.212	327.0 -> 307.0	354313	21.35 µg/L		99
6:2FTS	5.817	427.0 -> 407.0	353971	21.22 µg/L		97
8:2FTS	6.932	527.0 -> 507.0	272897	22.36 µg/L		100
EtFOSAA	7.225	584.0 -> 419.0	155131	20.33 µg/L	m	94
FOSA	6.590	498.0 -> 78.0	219670	19.19 µg/L		100
MeFOSAA	7.065	570.0 -> 419.0	172233	20.50 µg/L	m	96
PFBA	1.743	213.0 -> 169.0	85015	20.75 µg/L		100
PFBS	3.390	299.0 -> 80.0	120855	20.64 µg/L		100
PFDA	6.909	513.0 -> 469.0	968362	18.37 µg/L		99
PFDoDA	7.734	613.0 -> 569.0	950121	21.15 µg/L		98
PFDS	7.311	599.0 -> 80.0	73940	21.48 µg/L		96
PFHpA	5.161	363.0 -> 319.0	644582	20.09 µg/L		99
PFHpS	5.839	449.0 -> 80.0	83255	19.35 µg/L		98
PFHxA	4.315	313.0 -> 269.0	475415	19.82 µg/L		100
PFHxS	5.205	399.0 -> 80.0	92103	20.26 µg/L	m	97
PFNA	6.405	463.0 -> 419.0	769560	19.81 µg/L		98
PFNS	6.869	549.0 -> 80.0	95499	20.58 µg/L		100
PFOA	5.833	413.0 -> 369.0	790533	20.12 µg/L		100
PFOS	6.376	499.0 -> 80.0	87511	19.76 µg/L	m	87
PFPeA	3.158	263.0 -> 219.0	259552	19.79 µg/L		100
PFPeS	4.420	349.0 -> 80.0	97192	19.85 µg/L		99
PFTeDA	8.616	713.0 -> 669.0	1265069	19.56 µg/L		99
PFTrDA	8.103	663.0 -> 619.0	999545	20.49 µg/L		100
PFUnDA	7.351	563.0 -> 519.0	926295	21.37 µg/L		99
11Cl-PF3OUdS	7.494	631.0 -> 451.0	327036	20.14 µg/L		99
9Cl-PF3ONS	6.645	531.0 -> 351.0	442961	18.01 µg/L		96
ADONA	5.256	377.0 -> 251.0	980631	19.80 µg/L		99
HFPO-DA	4.580	285.0 -> 169.0	13416	22.41 µg/L		98
MeFOSA	7.035	512.0 -> 169.0	58036	19.81 µg/L		88

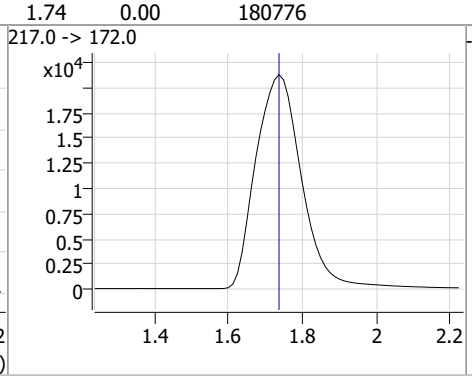
 # = Qualifier out of range, m = manually integrated, + = Area summed

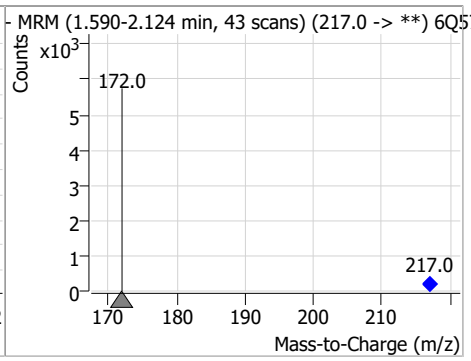
Perfluorinated Compounds by LC/MS/MS



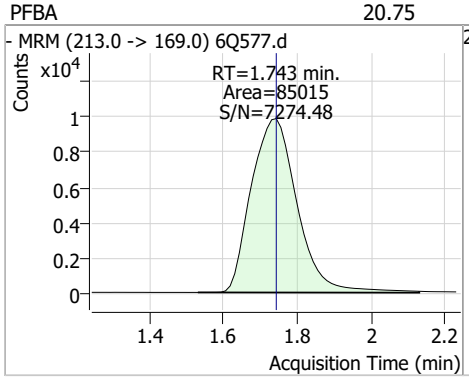
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.16	1.74	0.00	180776				

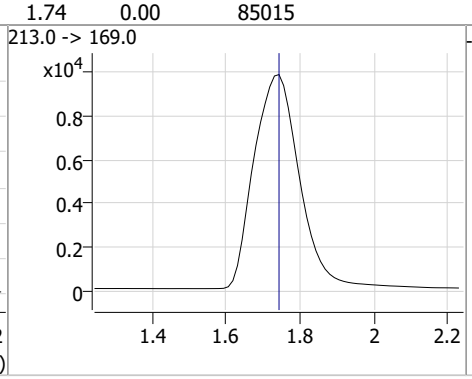


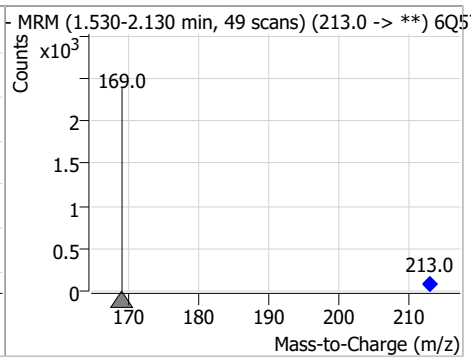




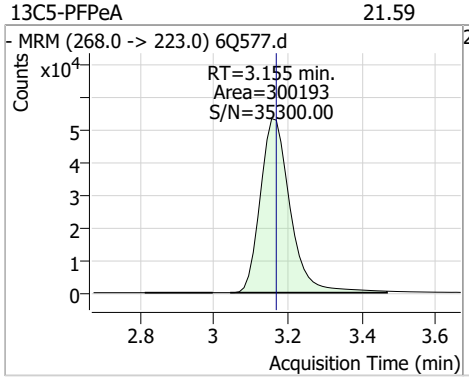
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.75	1.74	0.00	85015				

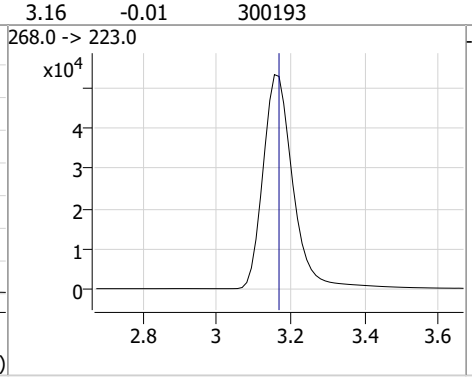


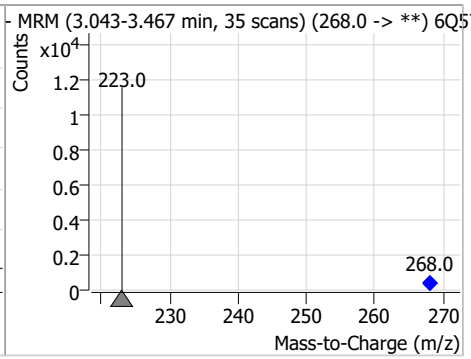




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.59	3.16	-0.01	300193				

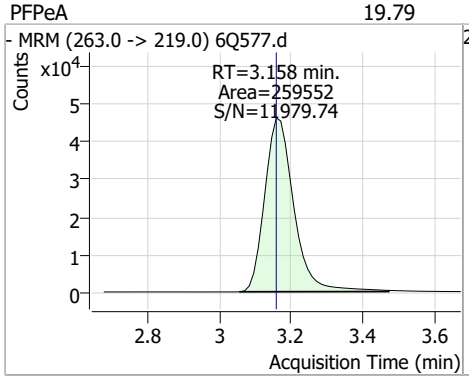


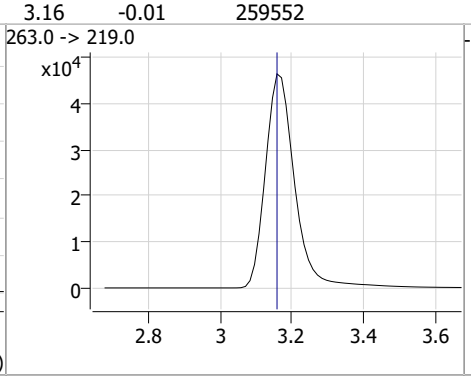


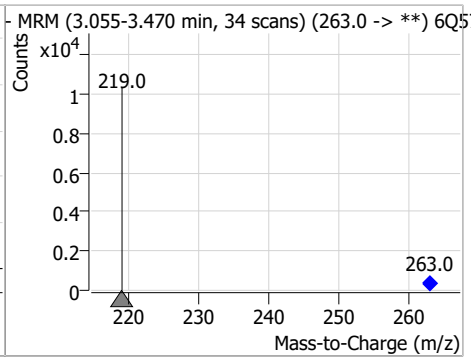


Perfluorinated Compounds by LC/MS/MS

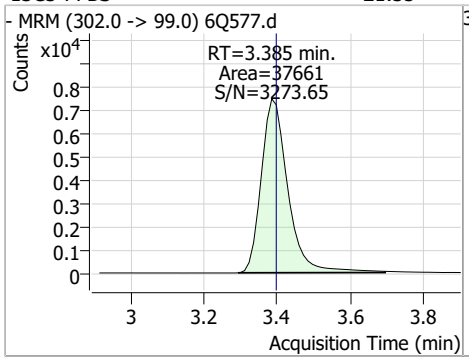
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.79	3.16	-0.01	259552				

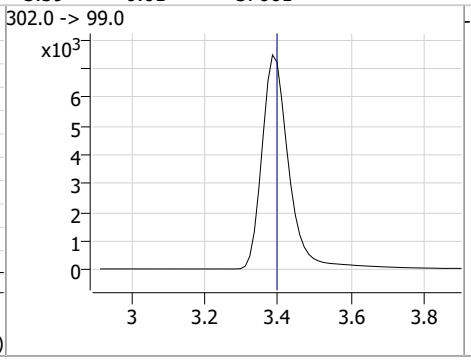


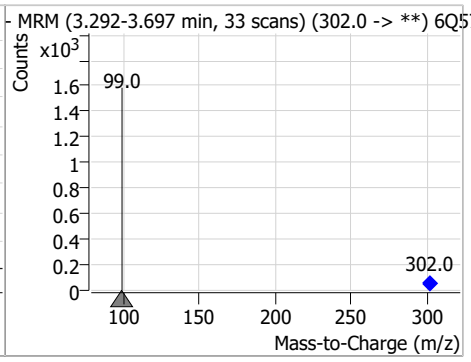




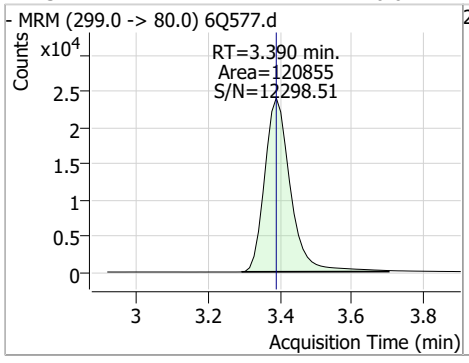
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.35	3.39	-0.01	37661				

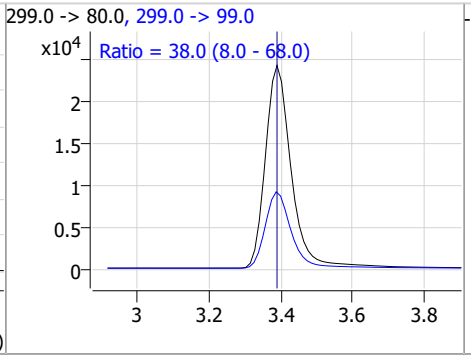


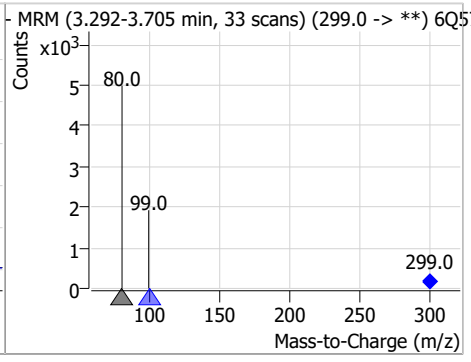




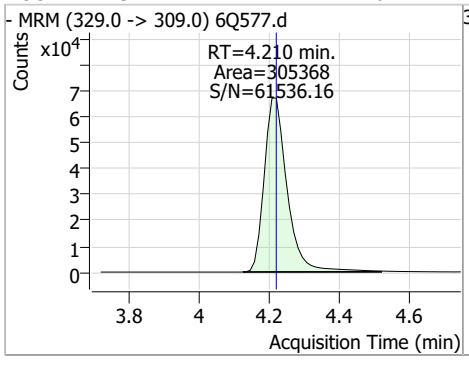
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.64	3.39	-0.01	120855	299.0 -> 99.0	38.0	8.0	68.0

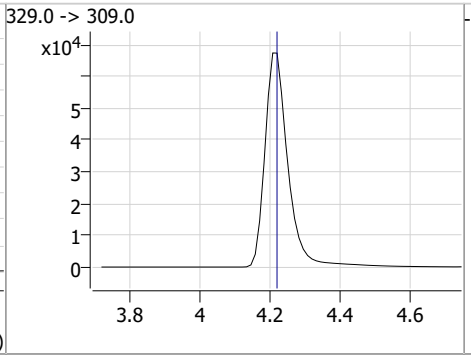


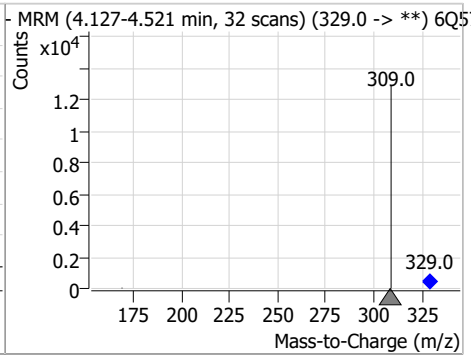




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.77	4.21	-0.01	305368				

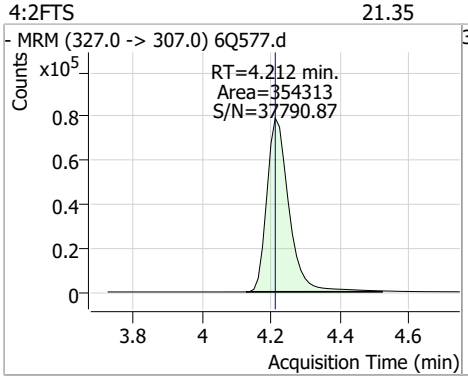


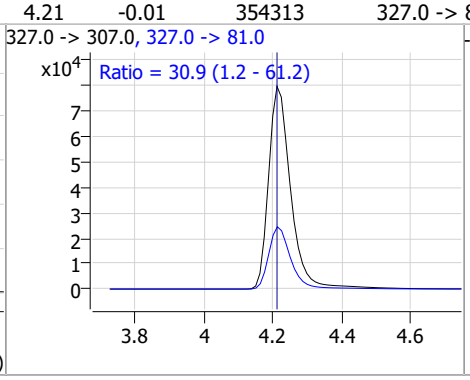


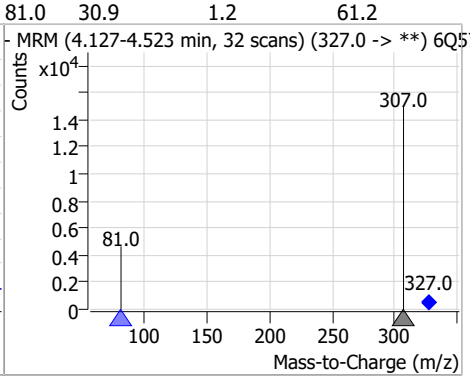


Perfluorinated Compounds by LC/MS/MS

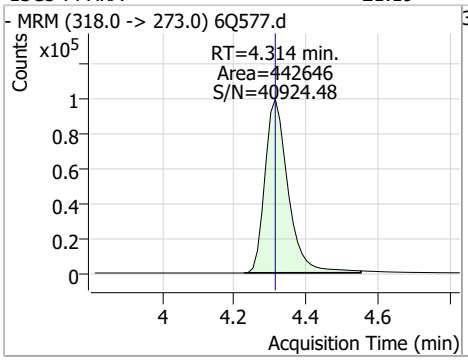
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.35	4.21	-0.01	354313	327.0 -> 81.0	30.9	1.2	61.2

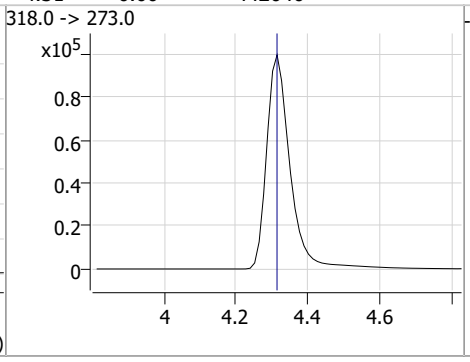


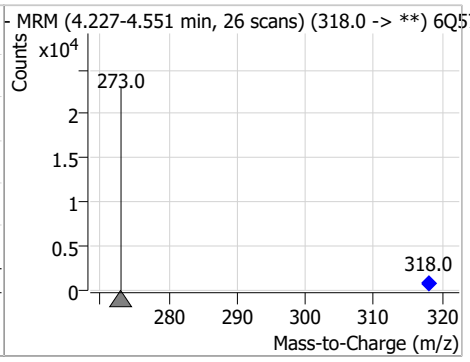




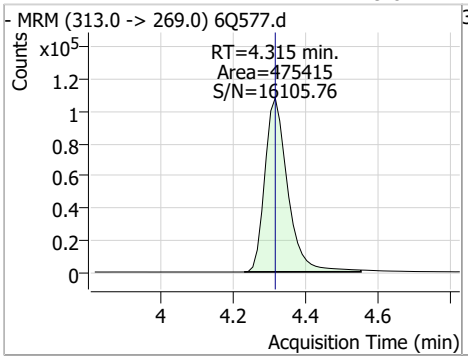
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.19	4.31	0.00	442646				

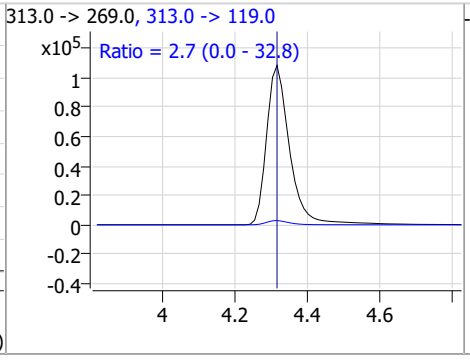


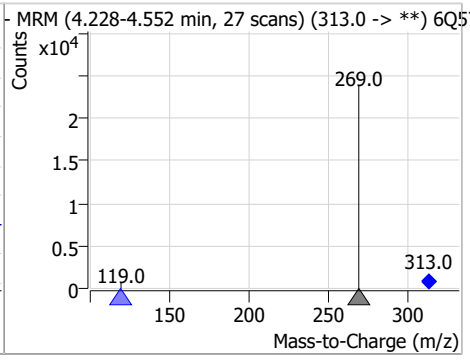




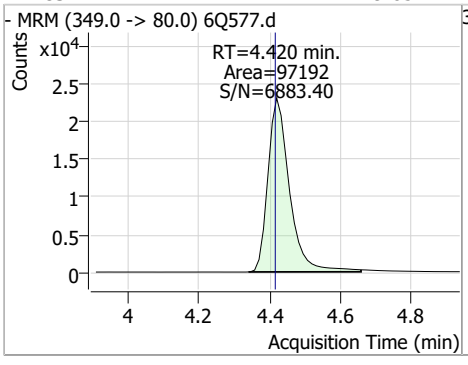
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.82	4.31	0.00	475415	313.0 -> 119.0	2.7	0.0	32.8

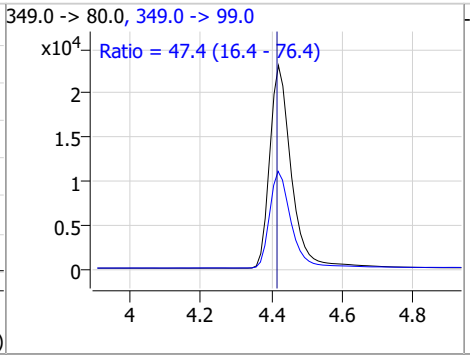


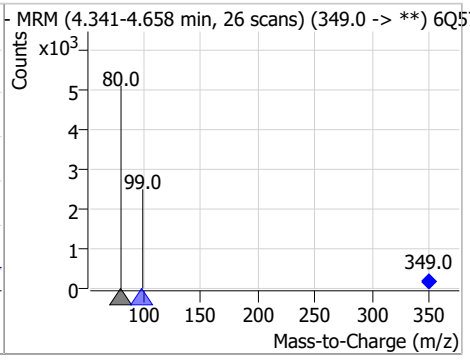




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.85	4.42	-0.01	97192	349.0 -> 99.0	47.4	16.4	76.4

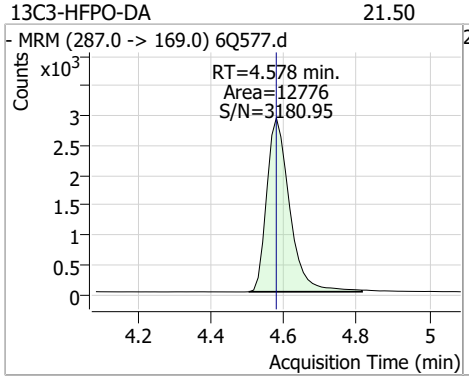


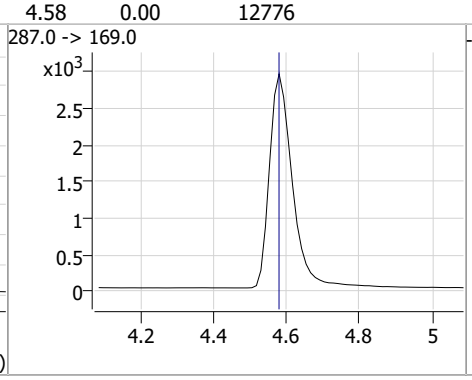


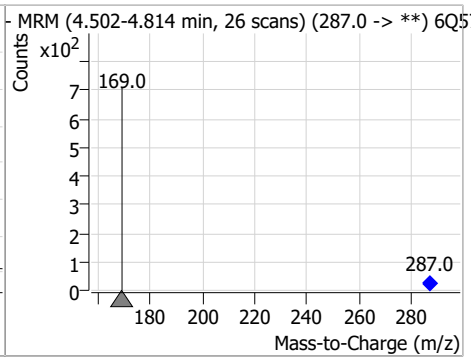


Perfluorinated Compounds by LC/MS/MS

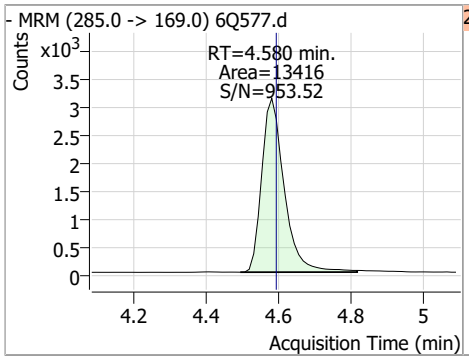
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.50	4.58	0.00	12776				

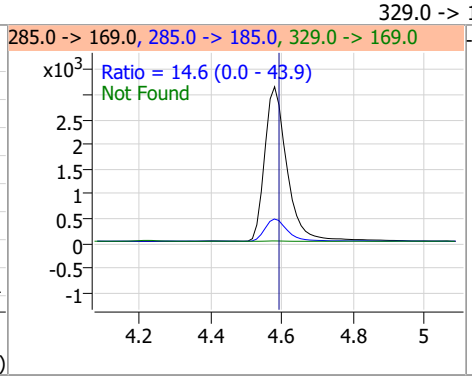


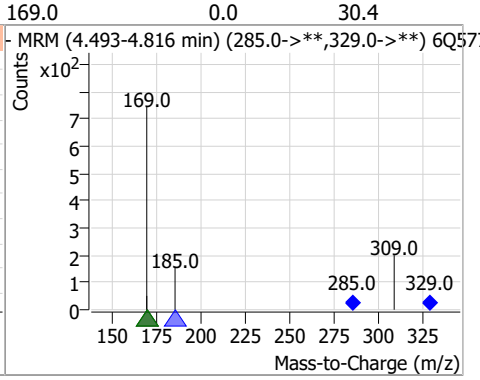




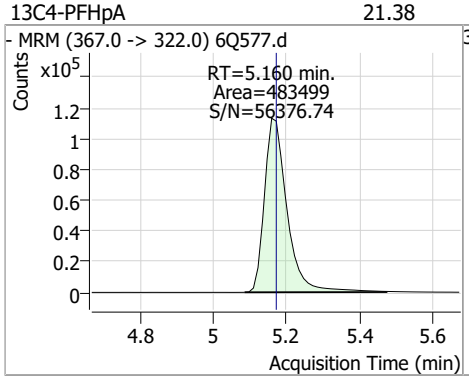
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.41	4.58	-0.01	13416	285.0 -> 185.0	14.6	0.0	43.9
					329.0 -> 169.0		0.0	30.4

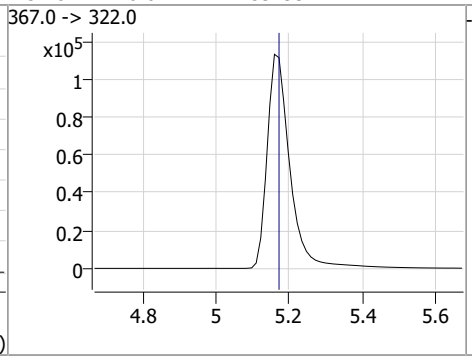


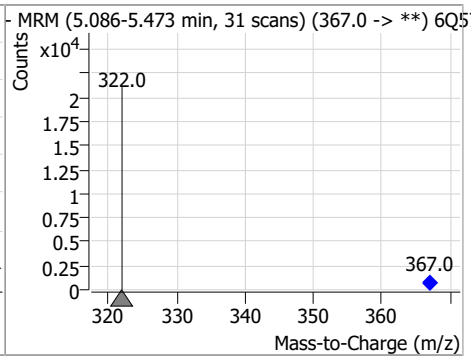




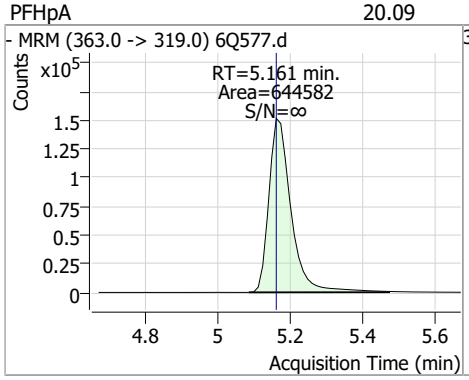
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.38	5.16	-0.01	483499				

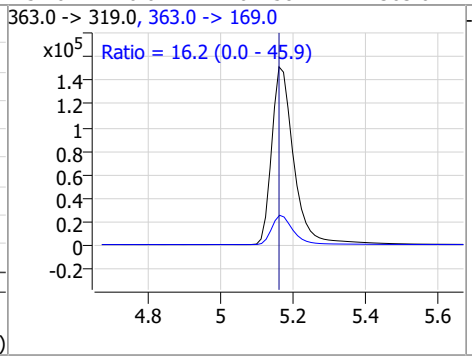


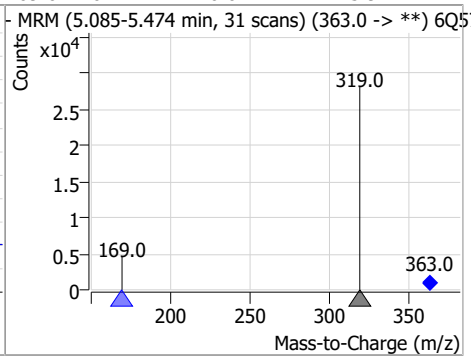




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.09	5.16	-0.01	644582	363.0 -> 169.0	16.2	0.0	45.9

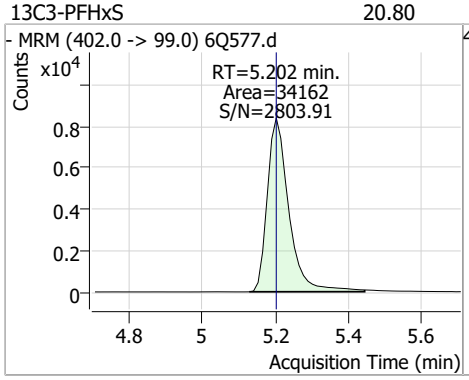


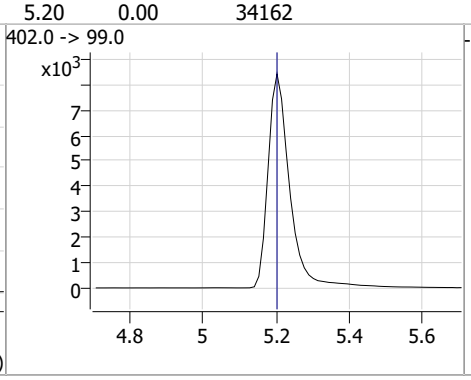


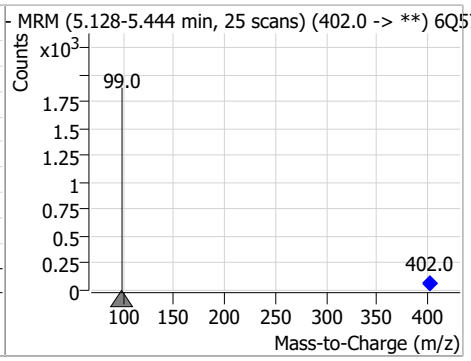


Perfluorinated Compounds by LC/MS/MS

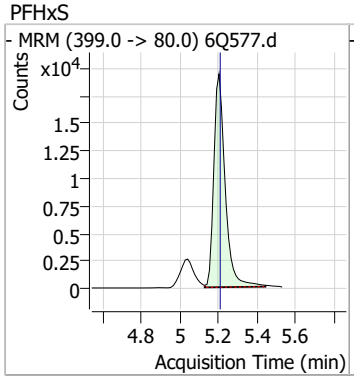
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.80	5.20	0.00	34162				

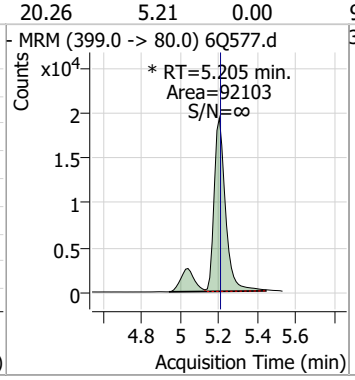


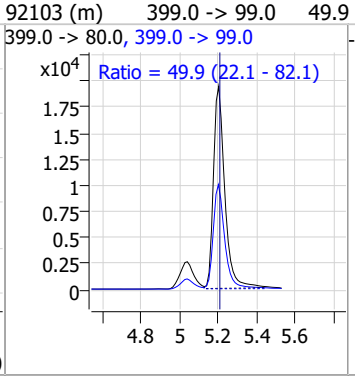


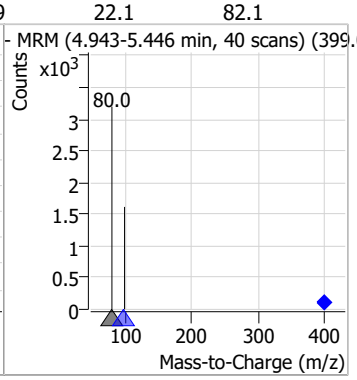


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.26	5.21	0.00	92103 (m)	399.0 -> 99.0	49.9	22.1	82.1

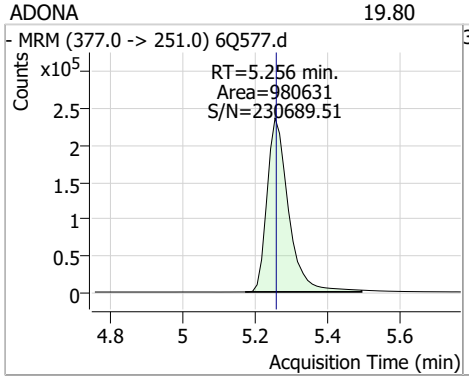


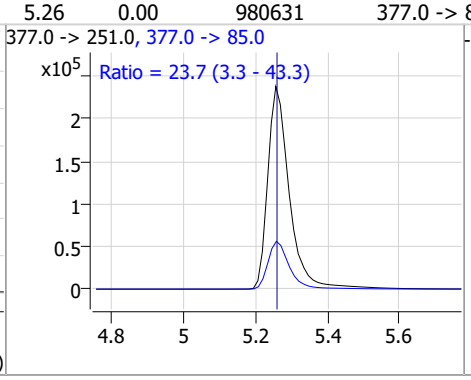


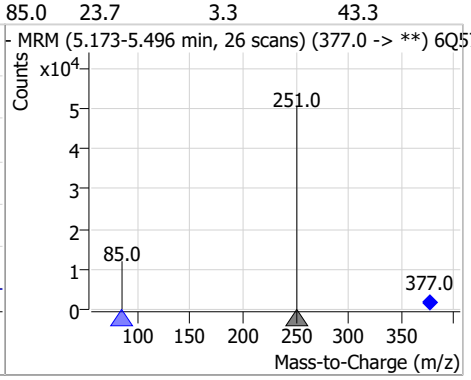




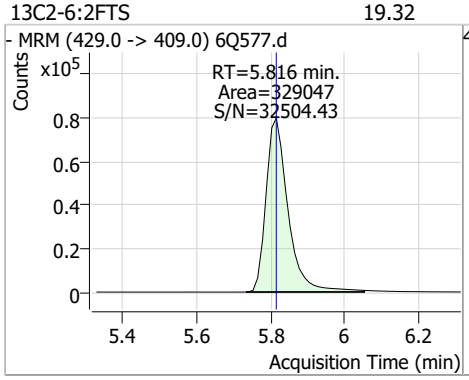
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.80	5.26	0.00	980631	377.0 -> 85.0	23.7	3.3	43.3

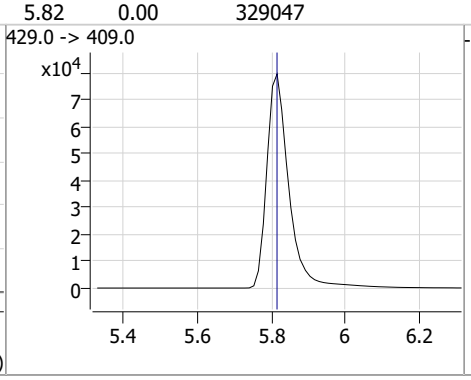


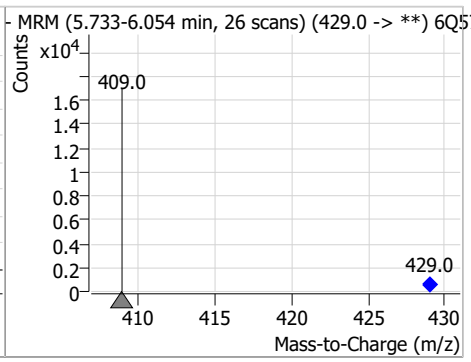




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.32	5.82	0.00	329047				

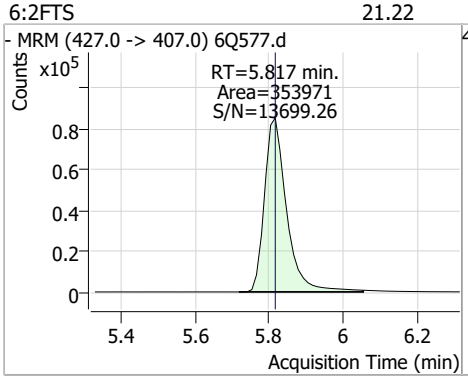


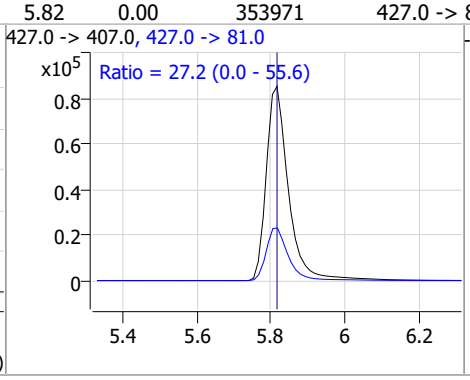


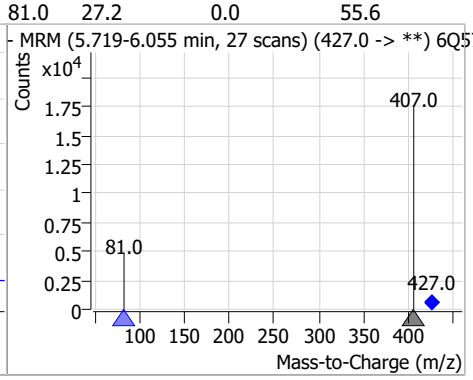


Perfluorinated Compounds by LC/MS/MS

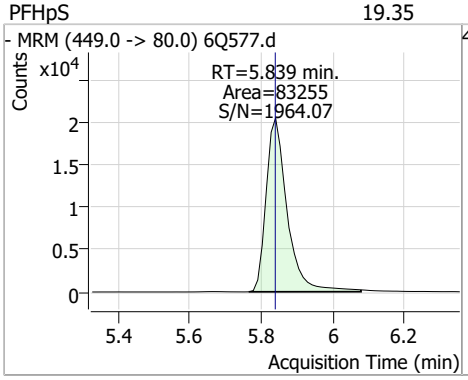
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.22	5.82	0.00	353971	427.0 -> 81.0	27.2	0.0	55.6

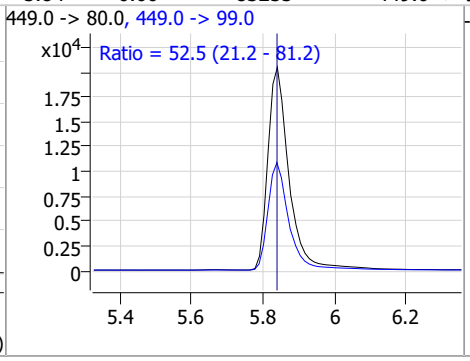


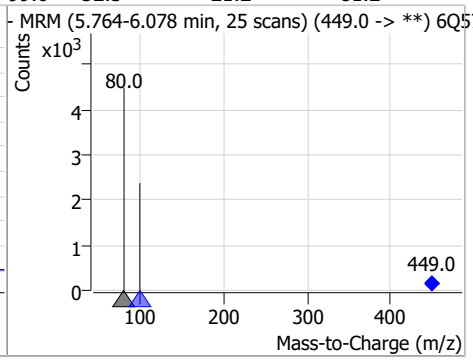




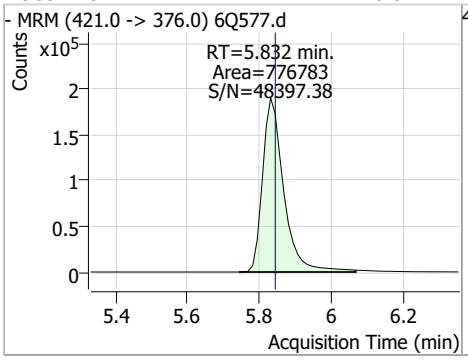
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.35	5.84	0.00	83255	449.0 -> 99.0	52.5	21.2	81.2

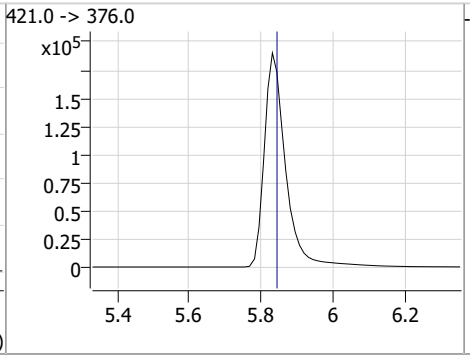


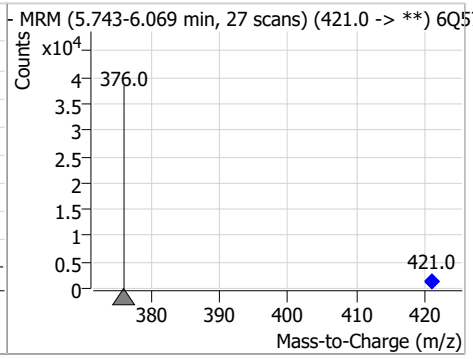




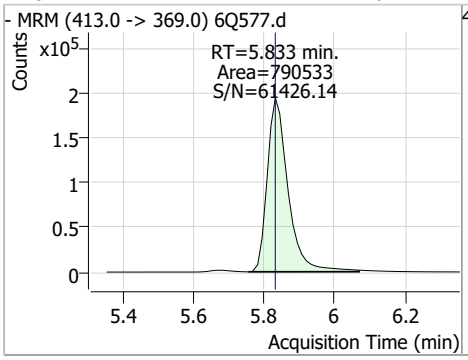
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.84	5.83	-0.01	776783				

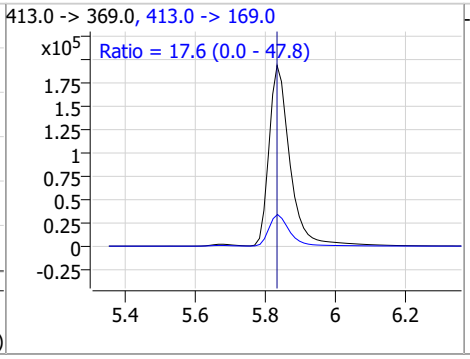


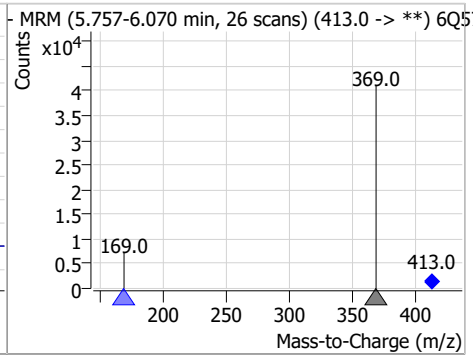




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.12	5.83	-0.01	790533	413.0 -> 169.0	17.6	0.0	47.8

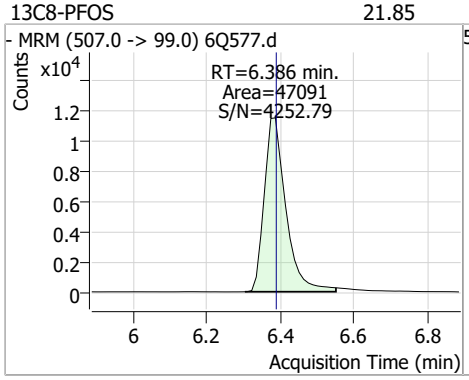


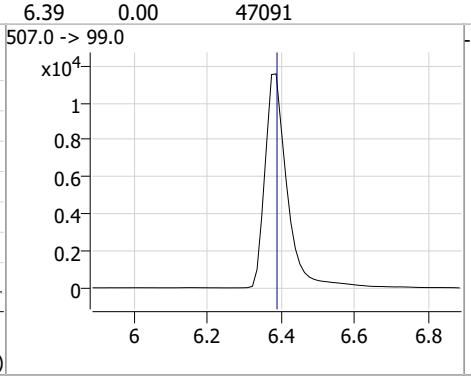


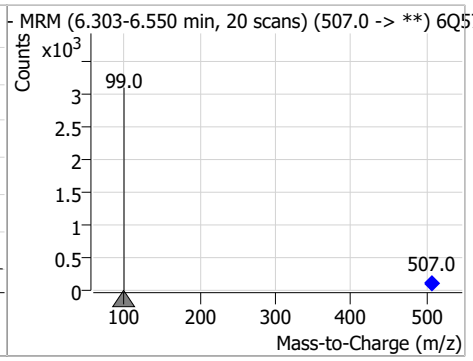


Perfluorinated Compounds by LC/MS/MS

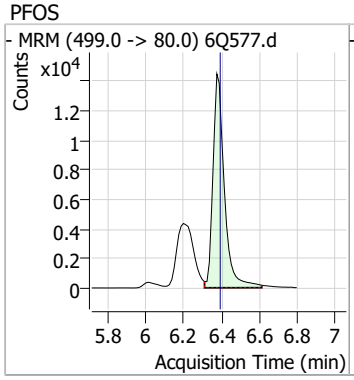
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.85	6.39	0.00	47091				

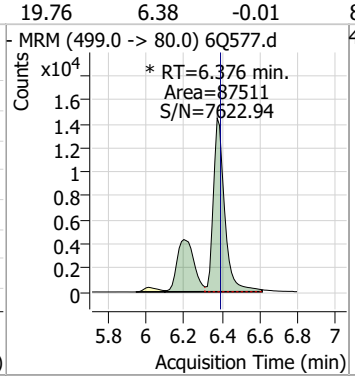


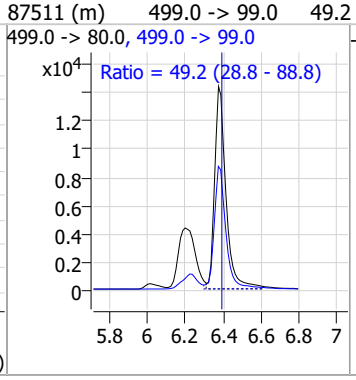


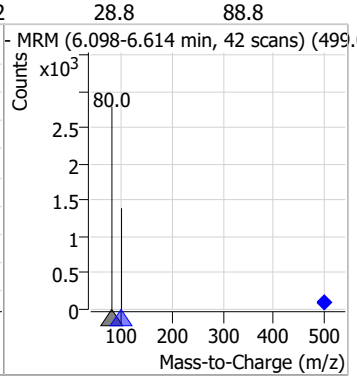


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.76	6.38	-0.01	87511 (m)	499.0 -> 99.0	49.2	28.8	88.8

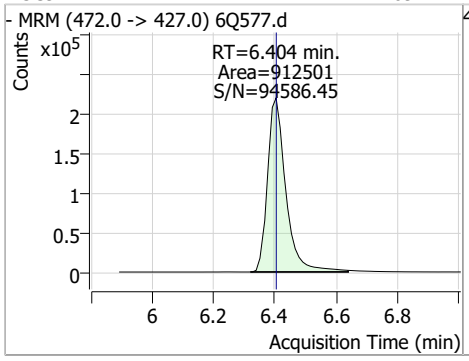


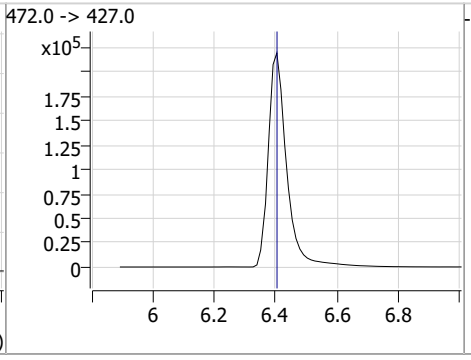


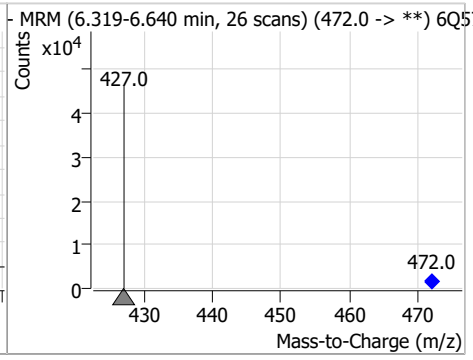




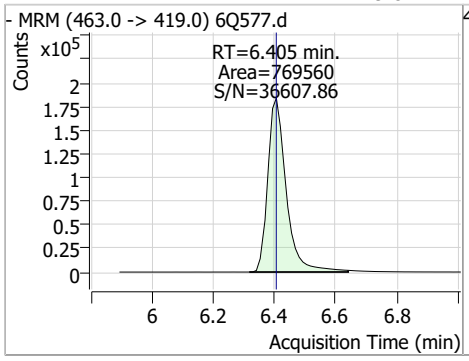
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.09	6.40	0.00	912501				

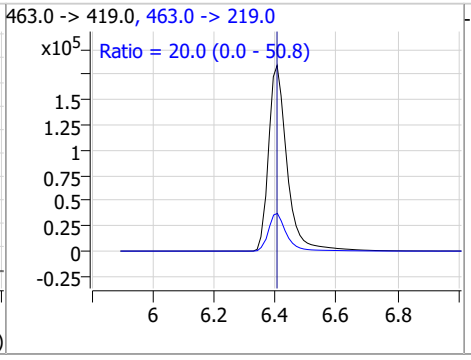


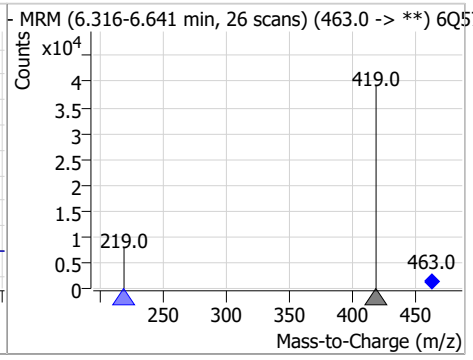




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.81	6.40	0.00	769560	463.0 -> 219.0	20.0	0.0	50.8

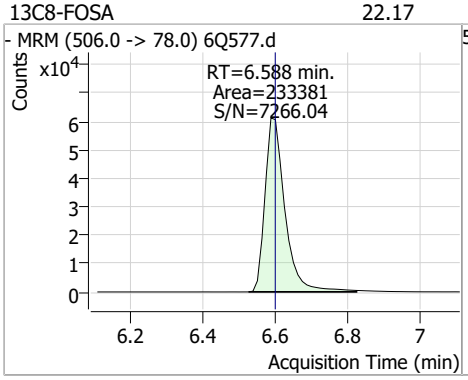


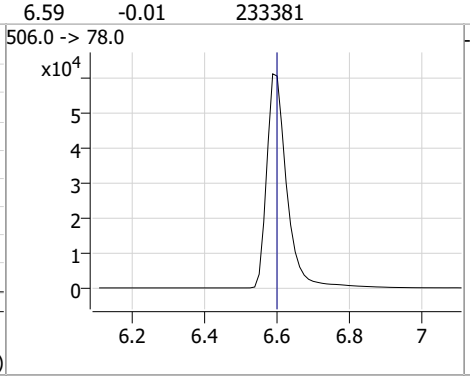


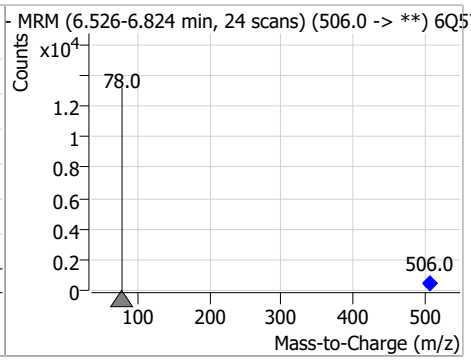


Perfluorinated Compounds by LC/MS/MS

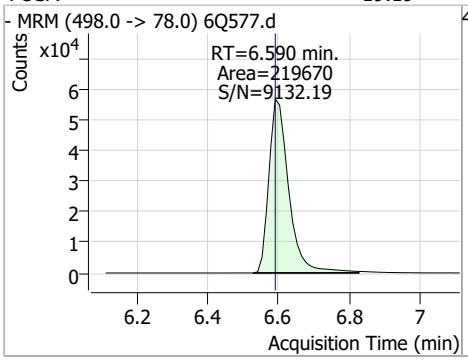
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.17	6.59	-0.01	233381				

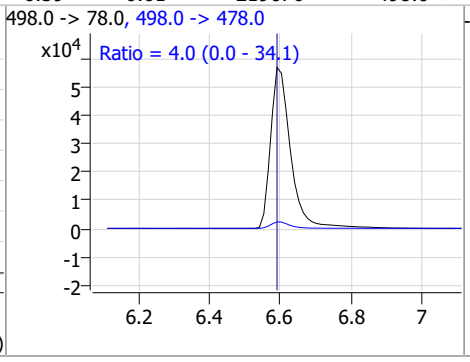


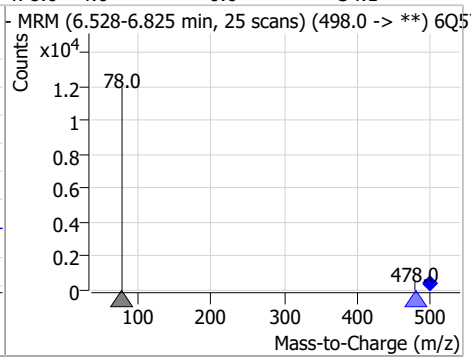




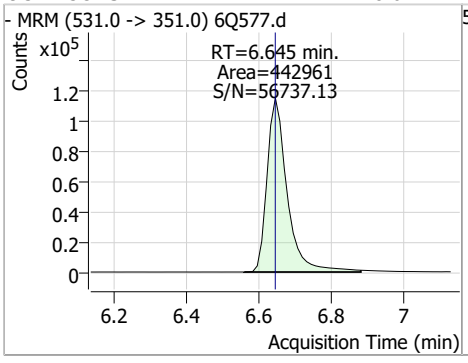
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.19	6.59	-0.01	219670	498.0 -> 478.0	4.0	0.0	34.1

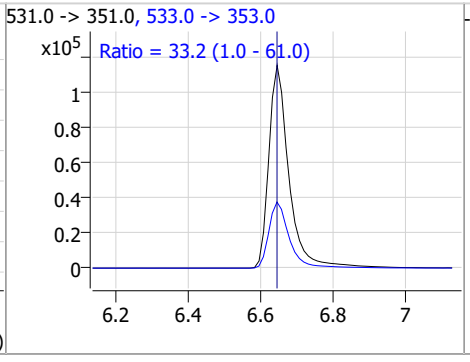


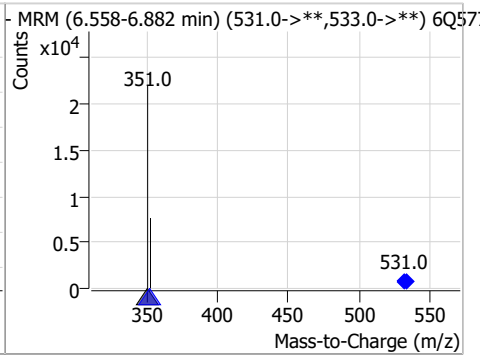




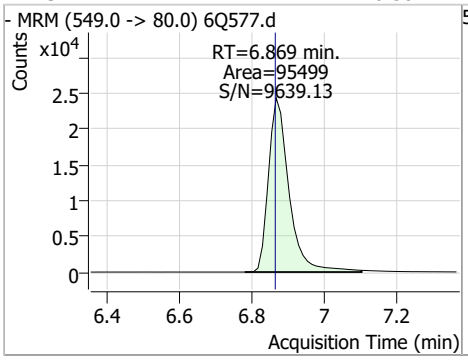
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.01	6.65	0.00	442961	533.0 -> 353.0	33.2	1.0	61.0

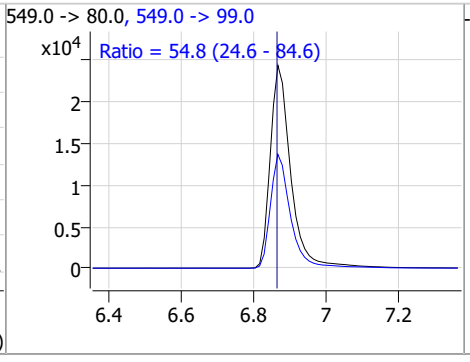


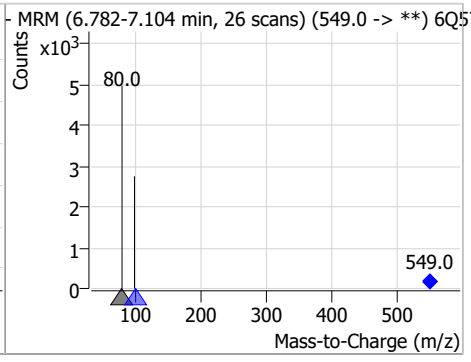




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.58	6.87	0.00	95499	549.0 -> 99.0	54.8	24.6	84.6

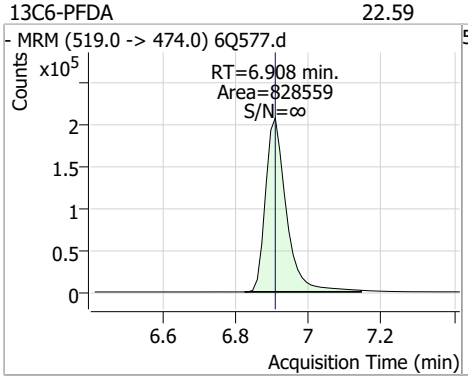


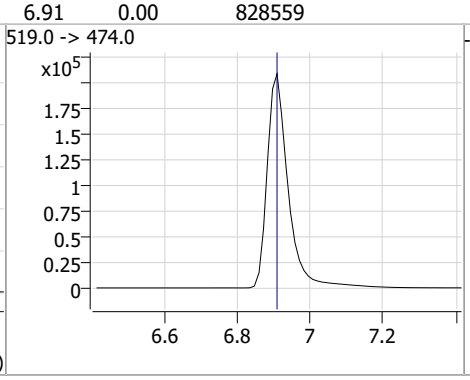


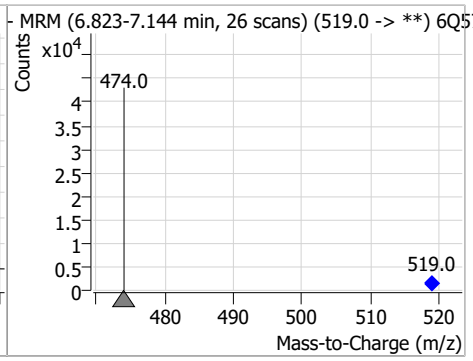


Perfluorinated Compounds by LC/MS/MS

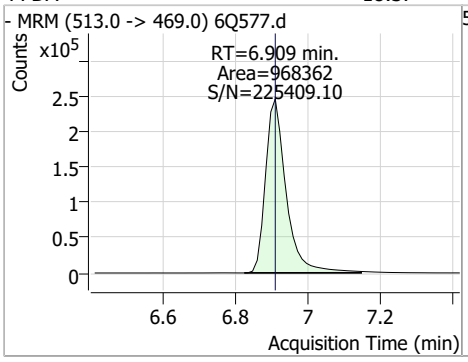
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.59	6.91	0.00	828559				

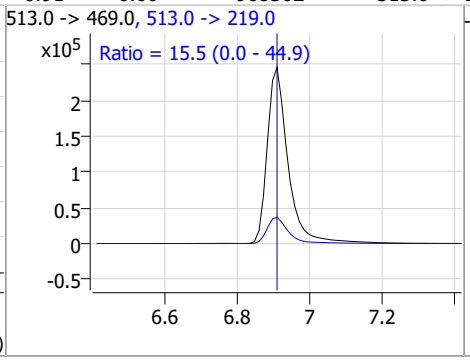


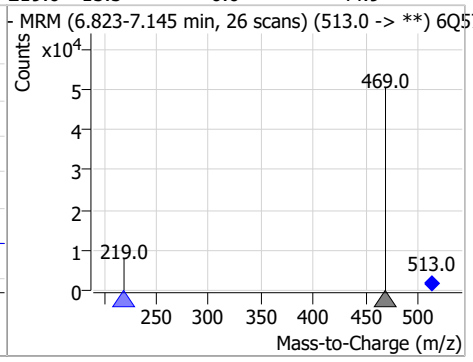




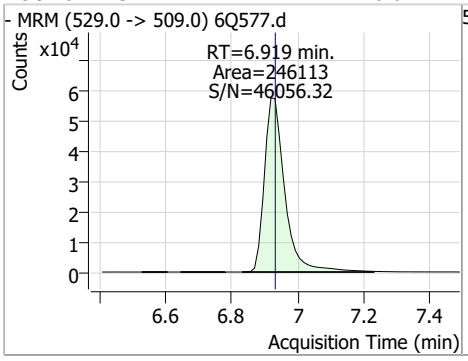
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.37	6.91	0.00	968362	513.0 -> 219.0	15.5	0.0	44.9

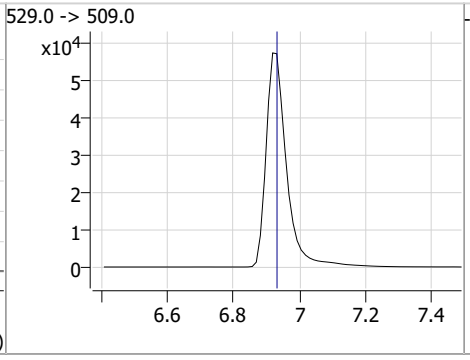


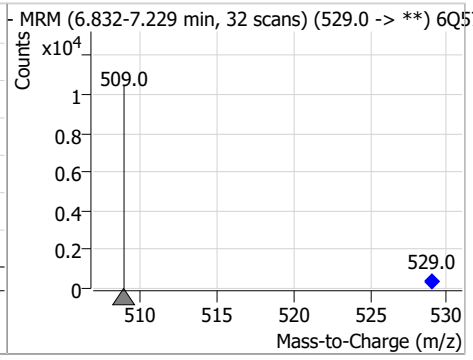




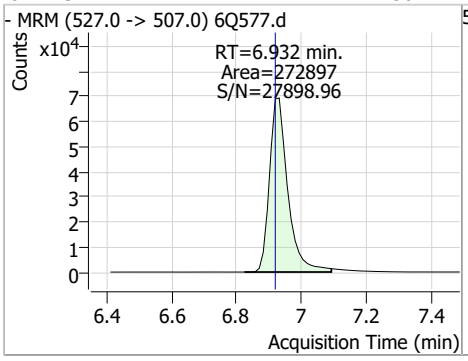
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.01	6.92	-0.01	246113				

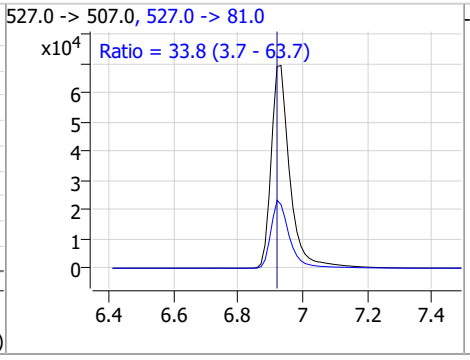


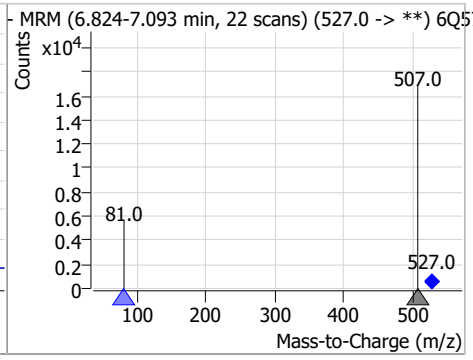




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.36	6.93	0.00	272897	527.0 -> 81.0	33.8	3.7	63.7

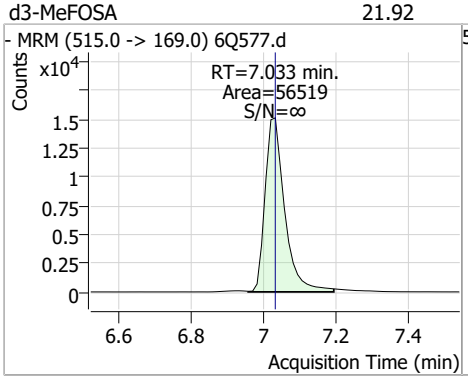


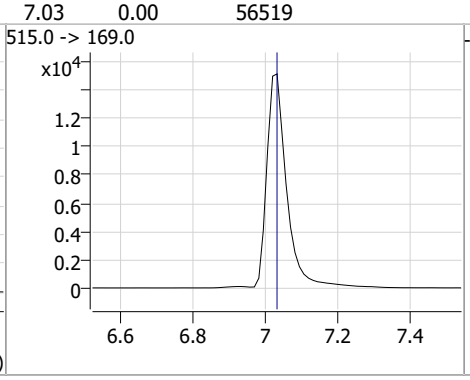


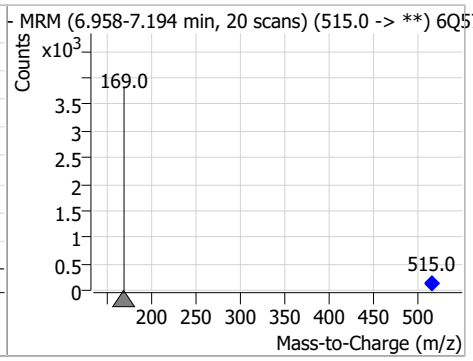


Perfluorinated Compounds by LC/MS/MS

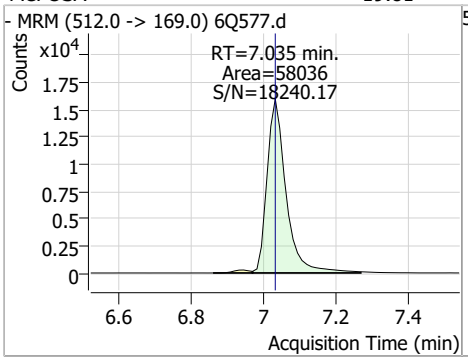
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.92	7.03	0.00	56519				

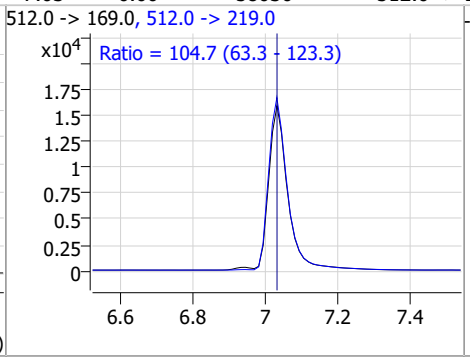


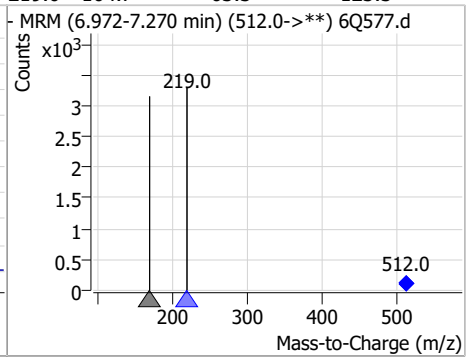




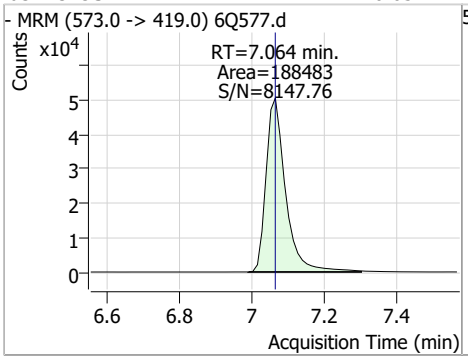
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.81	7.03	0.00	58036	512.0 -> 219.0	104.7	63.3	123.3

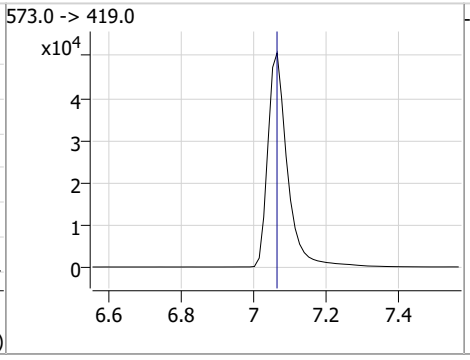


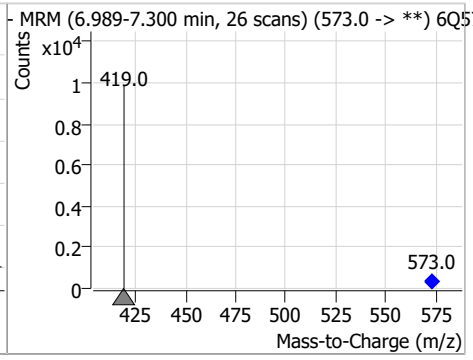




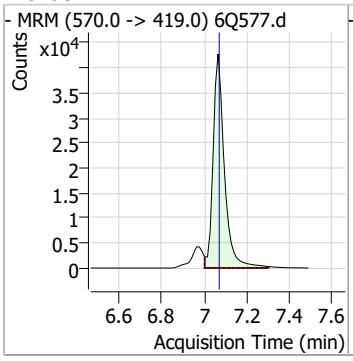
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.05	7.06	0.00	188483				

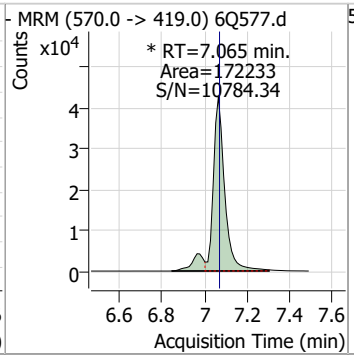


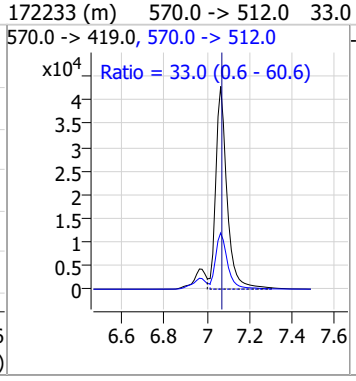


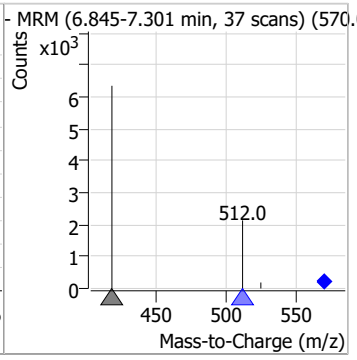


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.50	7.07	0.00	172233 (m)	570.0 -> 512.0	33.0	0.6	60.6



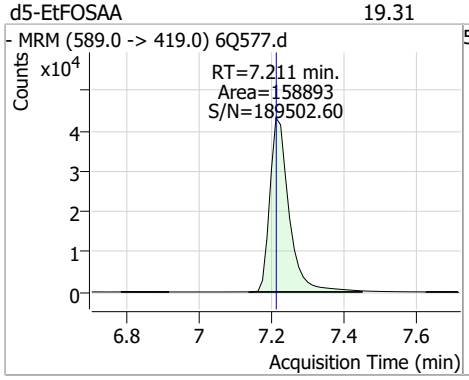


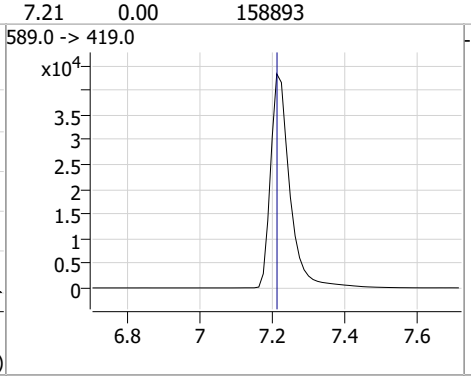


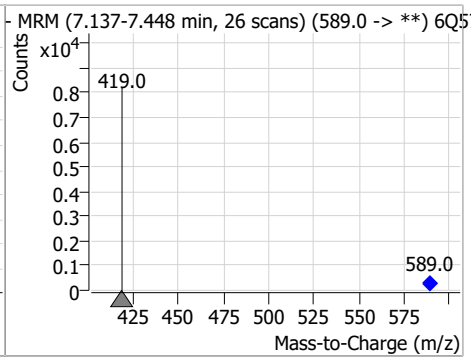


Perfluorinated Compounds by LC/MS/MS

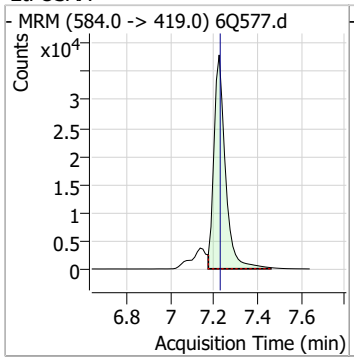
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.31	7.21	0.00	158893				

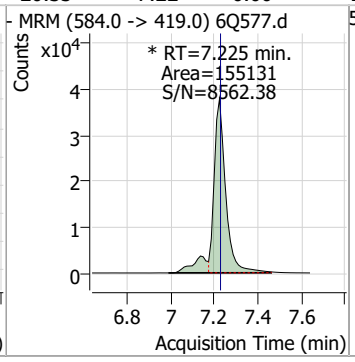


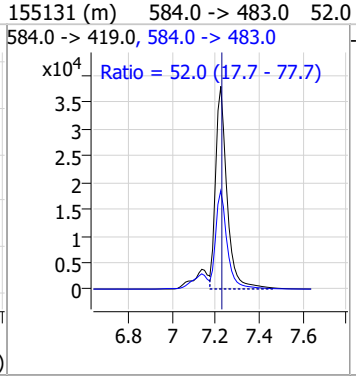


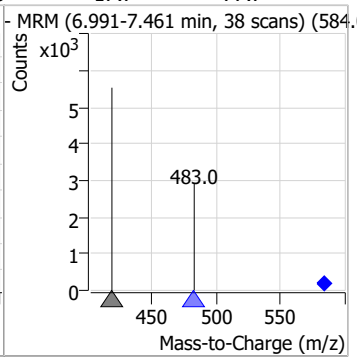


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.33	7.22	0.00	155131 (m)	584.0 -> 483.0	52.0	17.7	77.7

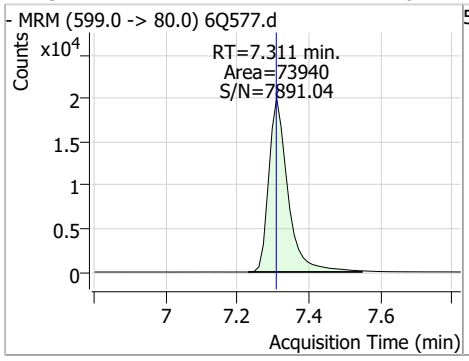


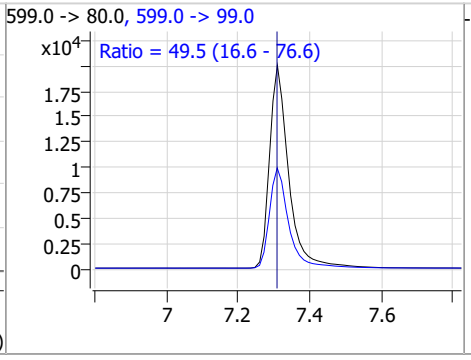


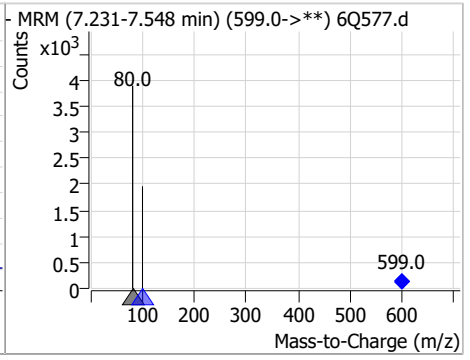




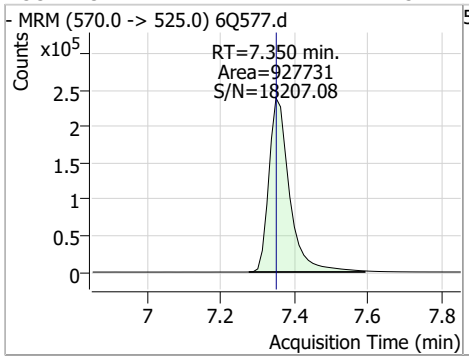
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.48	7.31	0.00	73940	599.0 -> 99.0	49.5	16.6	76.6

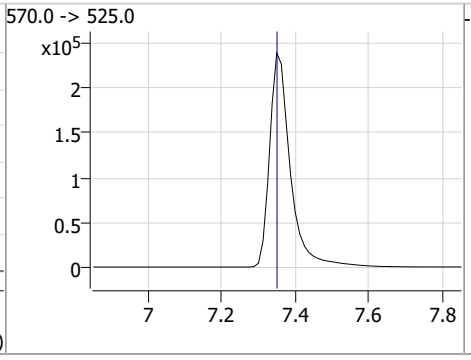


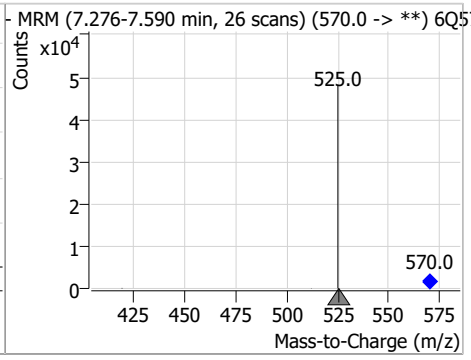




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.43	7.35	0.00	927731				

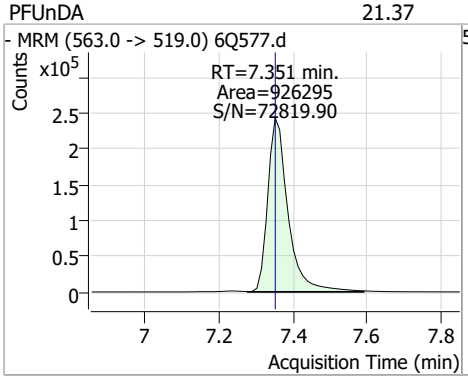


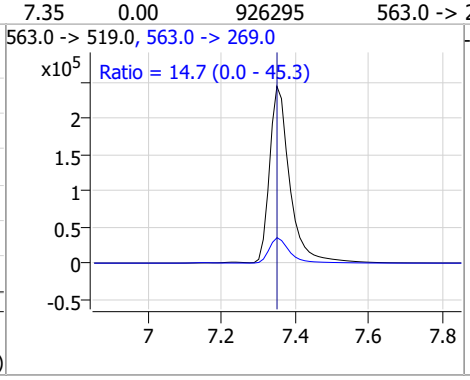


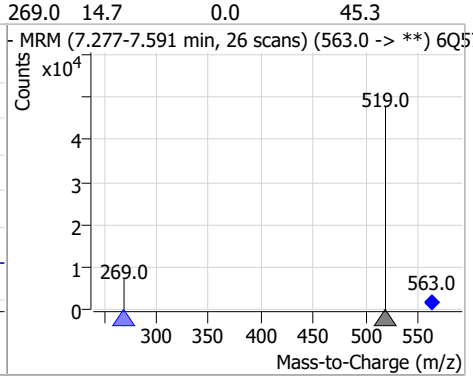


Perfluorinated Compounds by LC/MS/MS

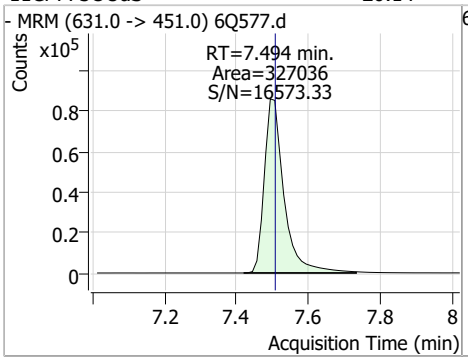
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.37	7.35	0.00	926295	563.0 -> 269.0	14.7	0.0	45.3

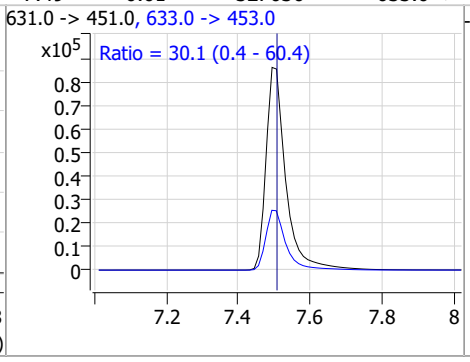


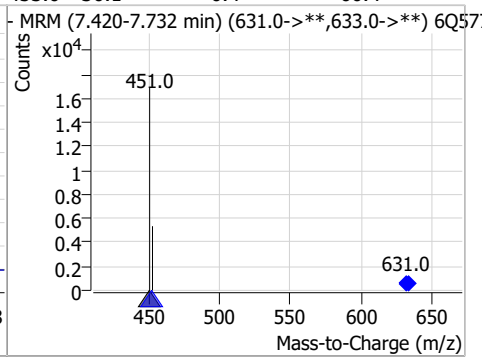




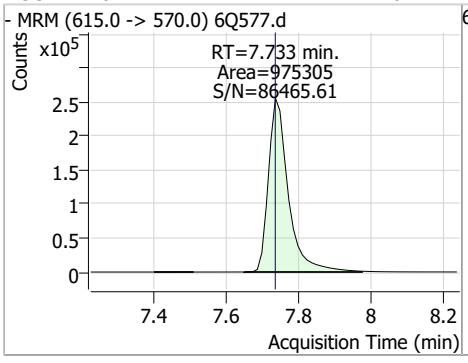
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.14	7.49	-0.01	327036	633.0 -> 453.0	30.1	0.4	60.4

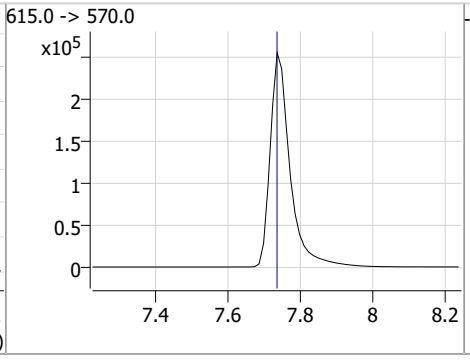


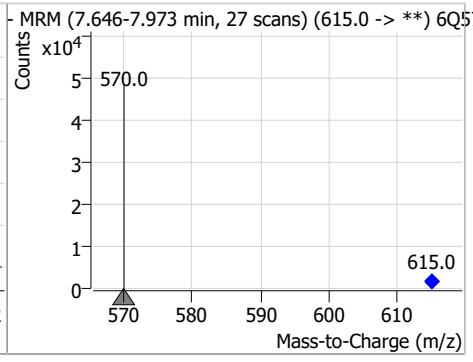




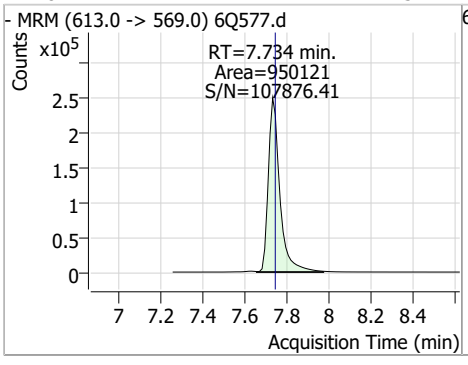
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.02	7.73	0.00	975305				

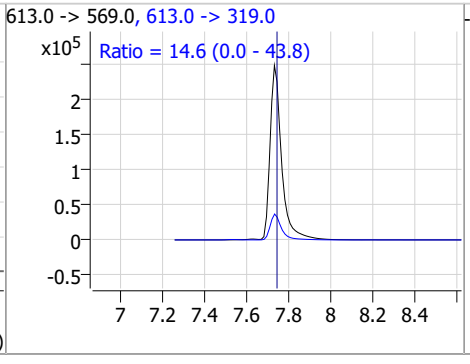


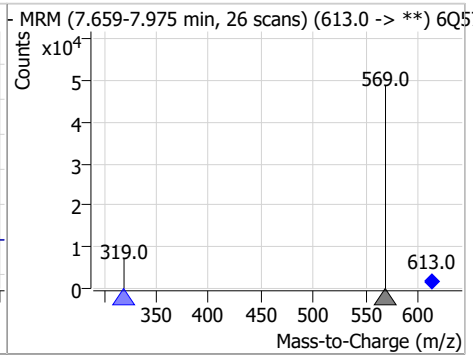




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.15	7.73	-0.01	950121	613.0 -> 319.0	14.6	0.0	43.8

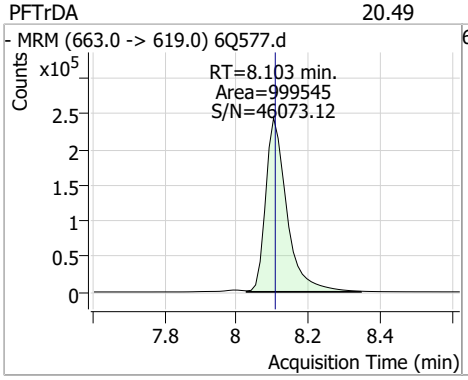


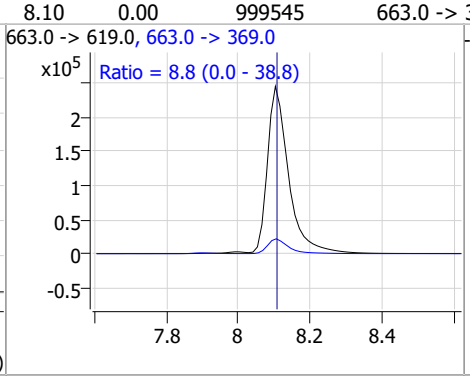


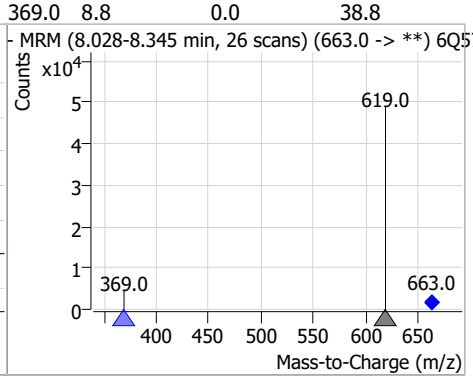


Perfluorinated Compounds by LC/MS/MS

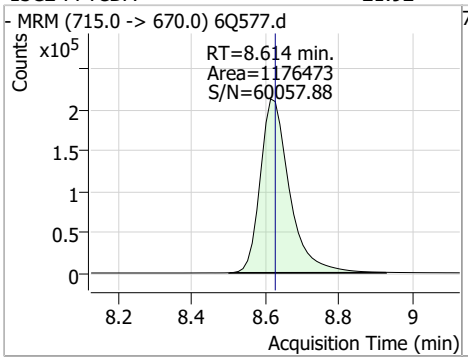
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.49	8.10	0.00	999545	663.0 -> 369.0	8.8	0.0	38.8

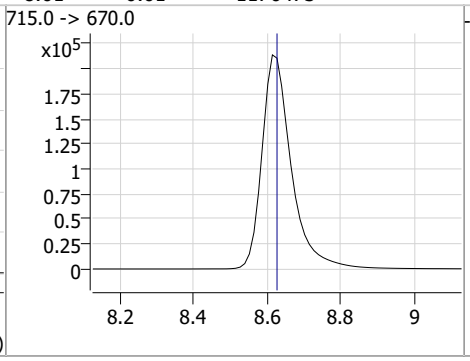


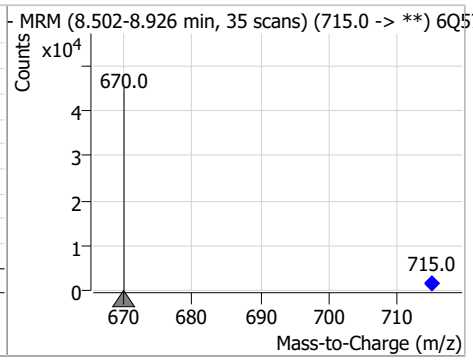




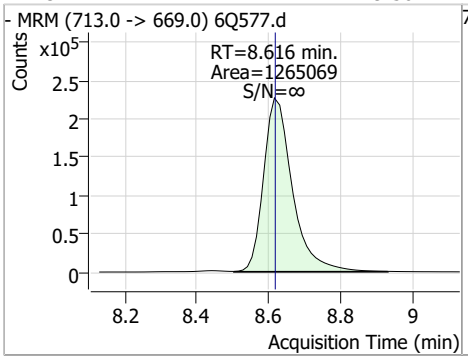
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.92	8.61	-0.01	1176473				

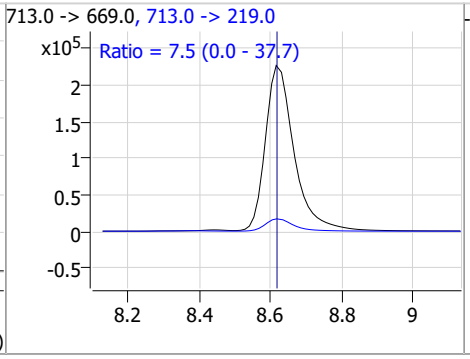


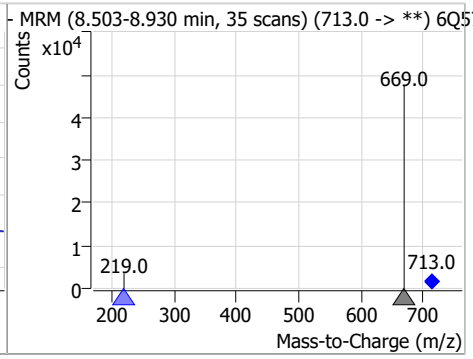




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.56	8.62	-0.01	1265069	713.0 -> 219.0	7.5	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q11-CC6
Lab FileID: 6Q577.D
Injection Time: 05/26/22 18:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.38	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:44

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q579.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 6:43:49 PM
Sample Name : cc6-1.0LL
Vial : P1-A3
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

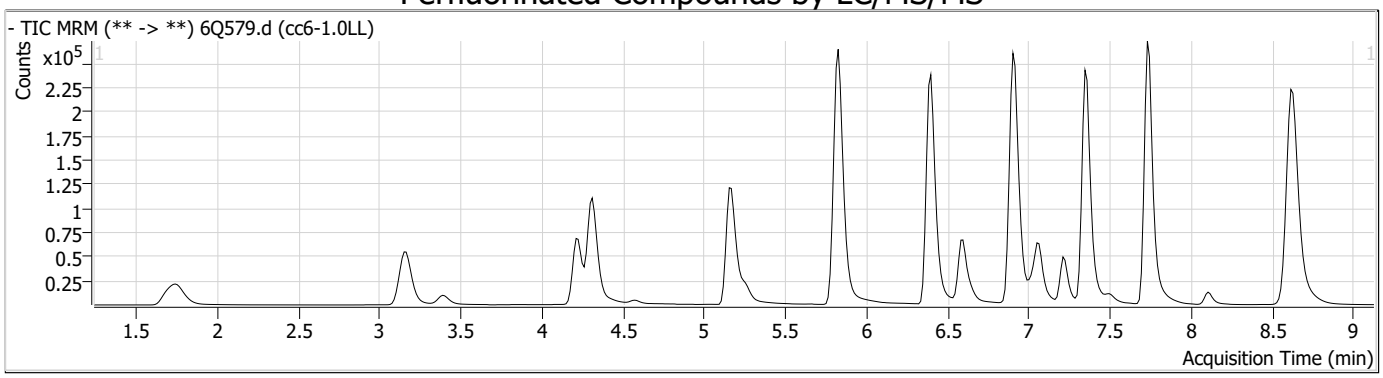
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.737	217.0 -> 172.0	176478	20.00	µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	294719	20.00	µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	449196	20.00	µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	480611	20.00	µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	760943	20.00	µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	906387	20.00	µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	792690	20.00	µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	893923	20.00	µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	988538	20.00	µg/L	0.000
M2-PFTeDA	8.614	715.0 -> 670.0	1159497	20.00	µg/L	-0.013
M8-FOSA	6.601	506.0 -> 78.0	232508	20.00	µg/L	0.000
M3-PFBS	3.385	302.0 -> 99.0	37057	20.00	µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	33946	20.00	µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	45968	20.00	µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	287149	20.00	µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	313980	20.00	µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	234847	20.00	µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	183773	20.00	µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12247	20.00	µg/L	0.000
M3-MeFOSA	7.033	515.0 -> 169.0	57648	20.00	µg/L	0.000
M5-EtFOSAA	7.211	589.0 -> 419.0	160350	20.00	µg/L	-0.001
System Monitoring Compounds						
13C2-4:2FTS	4.210	329.0 -> 309.0	287149	19.53	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-6:2FTS	5.816	429.0 -> 409.0	313980	18.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C2-8:2FTS	6.931	529.0 -> 509.0	234847	19.09	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C2-PFDoDA	7.733	615.0 -> 570.0	988538	21.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C2-PFTeDA	8.614	715.0 -> 670.0	1159497	21.61	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C3-PFBS	3.385	302.0 -> 99.0	37057	21.01	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C3-PFHxS	5.202	402.0 -> 99.0	33946	20.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFBA	1.737	217.0 -> 172.0	176478	21.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C4-PFHpA	5.160	367.0 -> 322.0	480611	21.26	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C5-PFHxA	4.314	318.0 -> 273.0	449196	21.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C5-PFPeA	3.155	268.0 -> 223.0	294719	21.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C6-PFDA	6.908	519.0 -> 474.0	792690	21.62	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

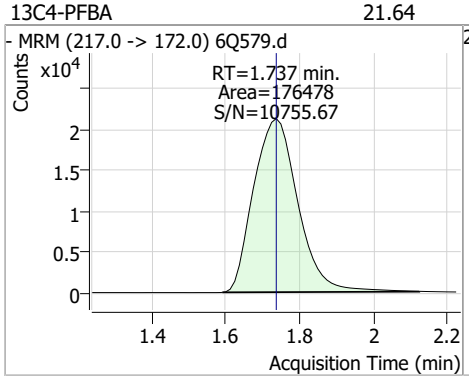
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C7-PFUnDA	7.350	570.0 -> 525.0	893923	20.65 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-FOSA	6.601	506.0 -> 78.0	232508	22.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C8-PFOA	5.832	421.0 -> 376.0	760943	20.42 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C8-PFOS	6.386	507.0 -> 99.0	45968	21.33 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C9-PFNA	6.404	472.0 -> 427.0	906387	20.95 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
d3-MeFOSAA	7.064	573.0 -> 419.0	183773	19.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	12260	20.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
d3-MeFOSA	7.033	515.0 -> 169.0	57648	22.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%		
d5-EtFOSAA	7.211	589.0 -> 419.0	160382	19.49 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
Target Compounds						**QValue**
4:2FTS	4.212	327.0 -> 307.0	16162	1.04 µg/L		95
6:2FTS	5.817	427.0 -> 407.0	16760	1.05 µg/L		95
8:2FTS	6.920	527.0 -> 507.0	12148	1.04 µg/L		93
EtFOSAA	7.225	584.0 -> 419.0	6688	0.87 µg/L	m	86
FOSA	6.590	498.0 -> 78.0	10671	0.94 µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	8255	1.01 µg/L	m	99
PFBA	1.743	213.0 -> 169.0	3875	0.97 µg/L		100
PFBS	3.390	299.0 -> 80.0	5725	0.99 µg/L		99
PFDA	6.909	513.0 -> 469.0	46560	0.92 µg/L		98
PFDoDA	7.734	613.0 -> 569.0	46572	1.02 µg/L		99
PFDS	7.311	599.0 -> 80.0	3356	1.01 µg/L		97
PFHpA	5.161	363.0 -> 319.0	30361	0.95 µg/L		100
PFHpS	5.839	449.0 -> 80.0	4042	0.96 µg/L		99
PFHxA	4.315	313.0 -> 269.0	21725	0.89 µg/L		100
PFHxS	5.205	399.0 -> 80.0	4317	0.96 µg/L	m	97
PFNA	6.405	463.0 -> 419.0	36054	0.93 µg/L		100
PFNS	6.869	549.0 -> 80.0	4334	0.96 µg/L		90
PFOA	5.833	413.0 -> 369.0	37864	0.98 µg/L		100
PFOS	6.376	499.0 -> 80.0	4279	0.99 µg/L	m	83
PFPeA	3.158	263.0 -> 219.0	12393	0.96 µg/L		100
PFPeS	4.420	349.0 -> 80.0	4671	0.97 µg/L		97
PFTeDA	8.616	713.0 -> 669.0	61315	0.96 µg/L		100
PFTrDA	8.103	663.0 -> 619.0	47842	0.97 µg/L		99
PFUnDA	7.351	563.0 -> 519.0	42634	1.02 µg/L		99
11Cl-PF3OUdS	7.494	631.0 -> 451.0	14337	0.87 µg/L		96
9Cl-PF3ONS	6.645	531.0 -> 351.0	21198	0.90 µg/L		98
ADONA	5.256	377.0 -> 251.0	46611	0.95 µg/L		99
HFPO-DA	4.580	285.0 -> 169.0	638	1.11 µg/L		99
MeFOSA	7.035	512.0 -> 169.0	2984	1.00 µg/L		99

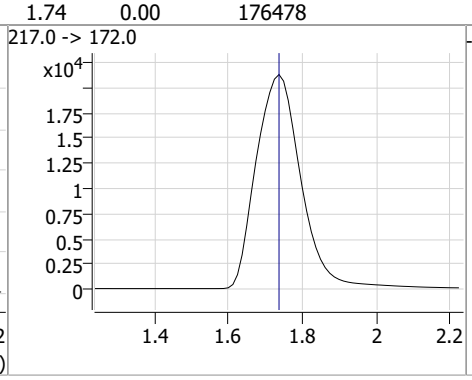
 # = Qualifier out of range, m = manually integrated, + = Area summed

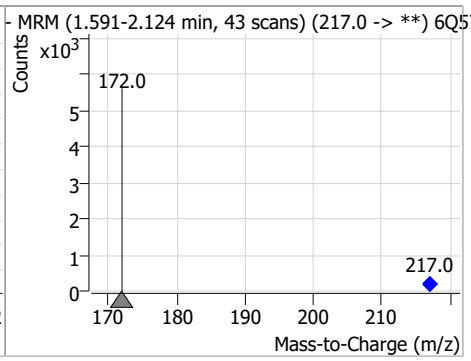
Perfluorinated Compounds by LC/MS/MS



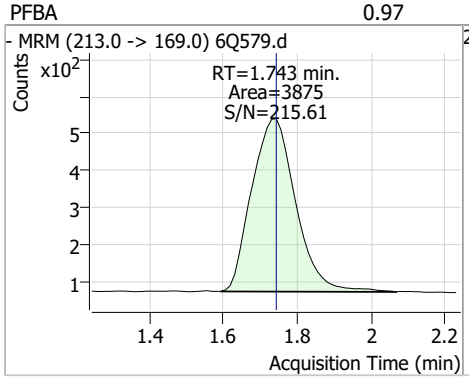
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.64	1.74	0.00	176478				

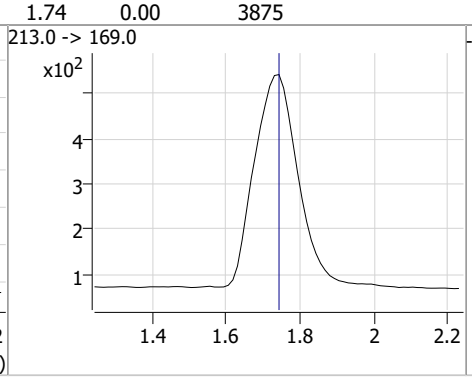


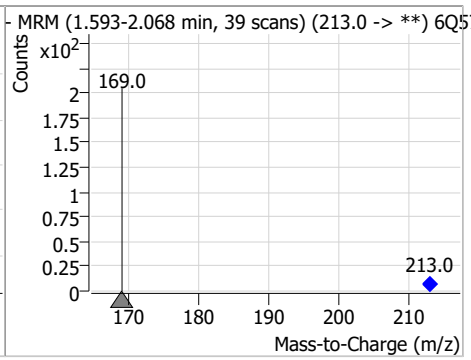




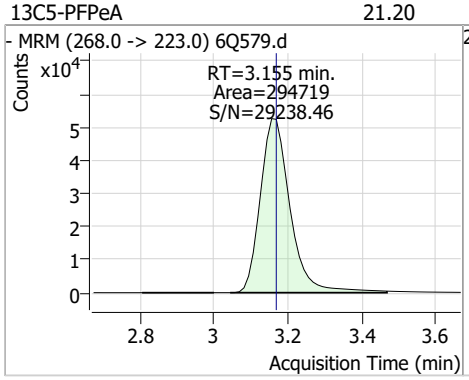
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.97	1.74	0.00	3875				

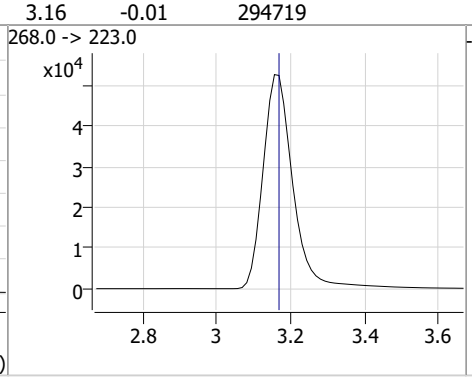


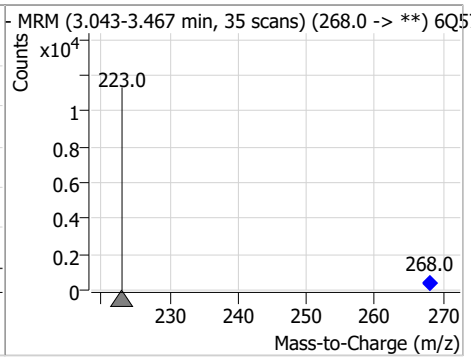




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.20	3.16	-0.01	294719				

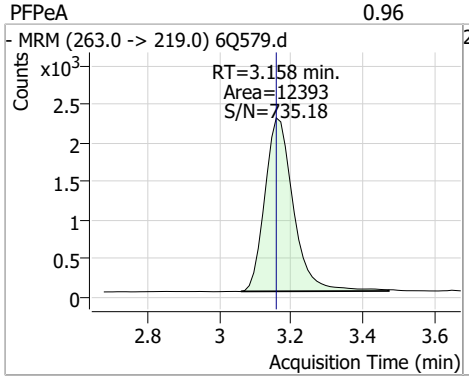


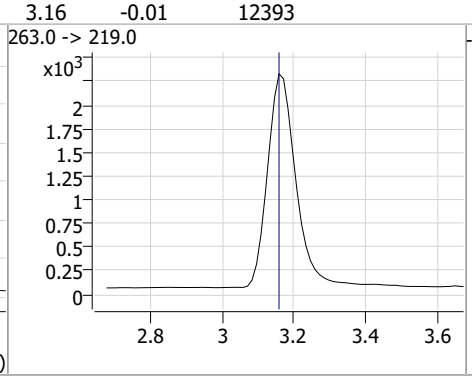


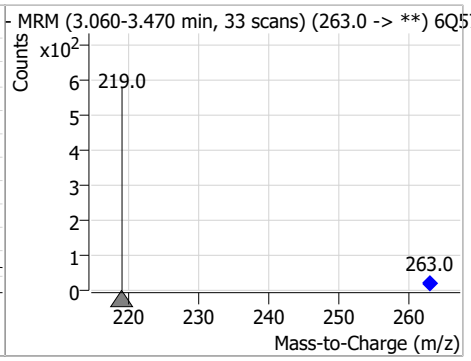


Perfluorinated Compounds by LC/MS/MS

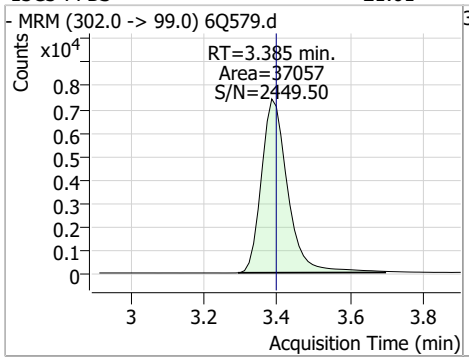
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.96	3.16	-0.01	12393				

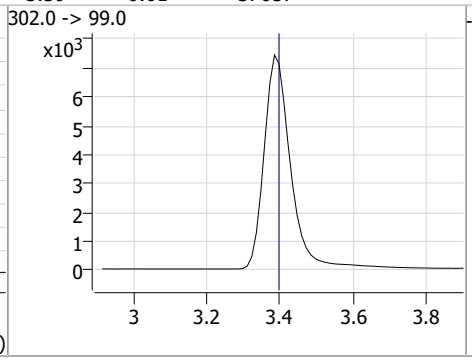


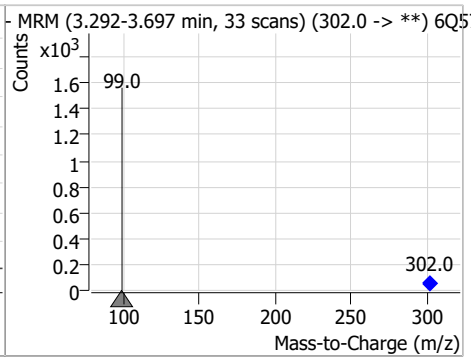




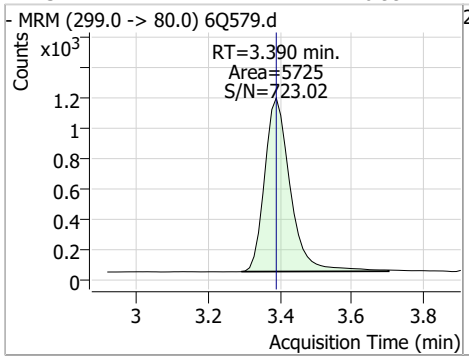
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.01	3.39	-0.01	37057				

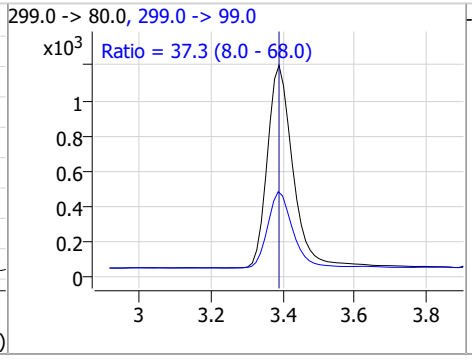


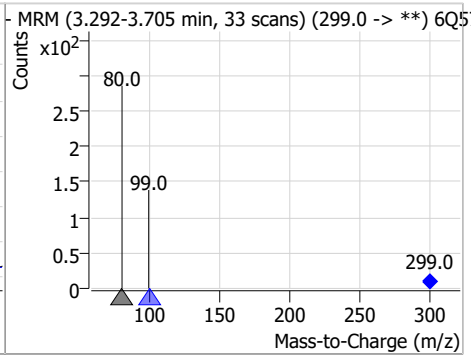




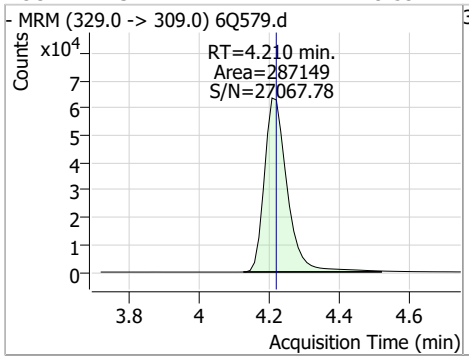
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.99	3.39	-0.01	5725	299.0 -> 99.0	37.3	8.0	68.0

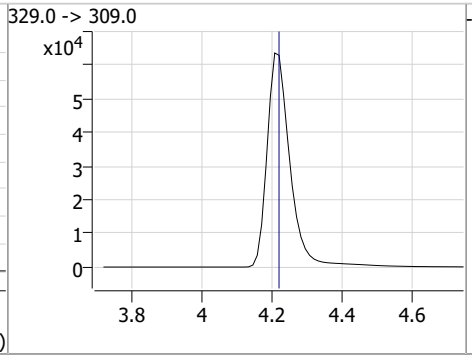


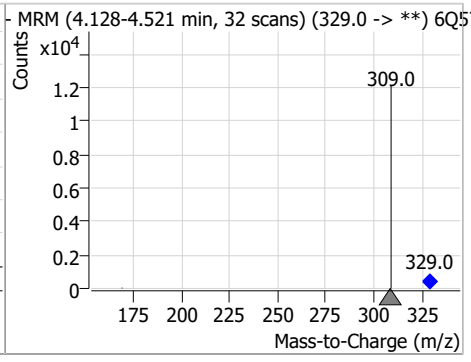




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.53	4.21	-0.01	287149				

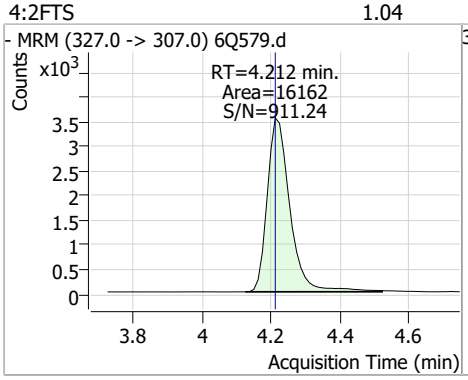


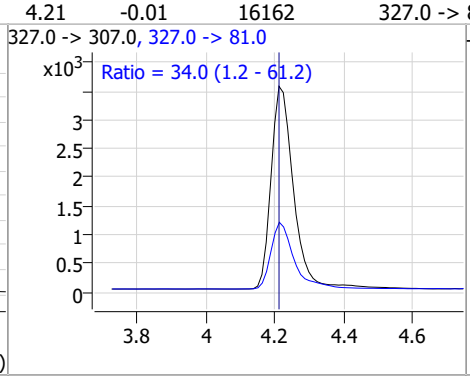


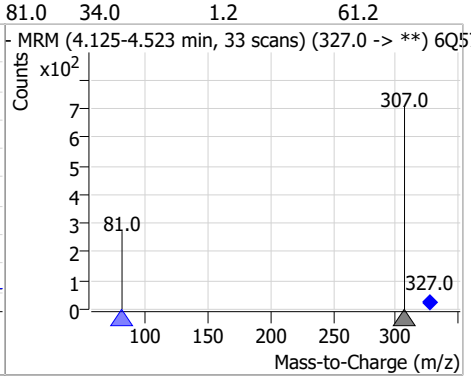


Perfluorinated Compounds by LC/MS/MS

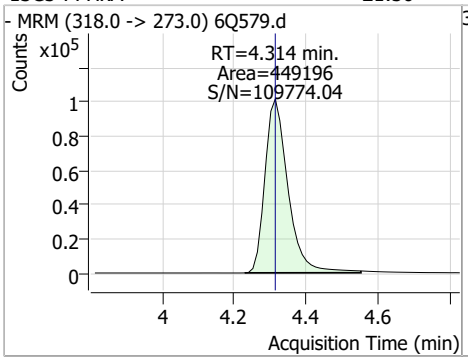
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.04	4.21	-0.01	16162	327.0 -> 81.0	34.0	1.2	61.2

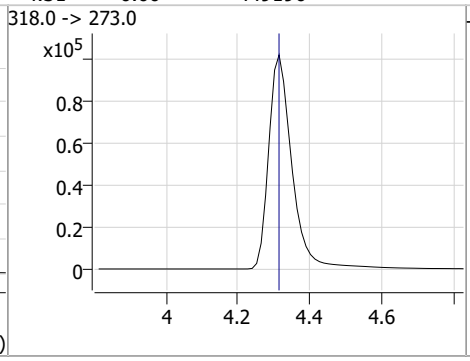


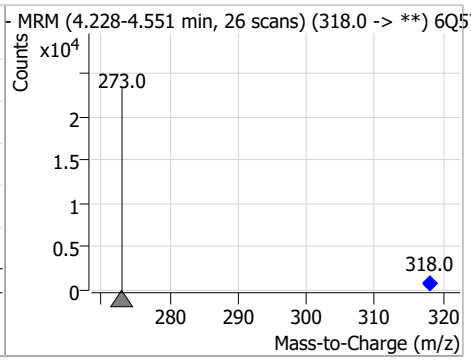




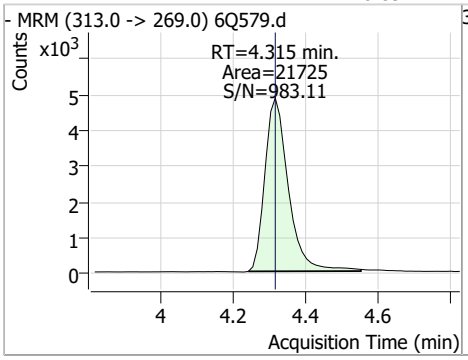
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.50	4.31	0.00	449196				

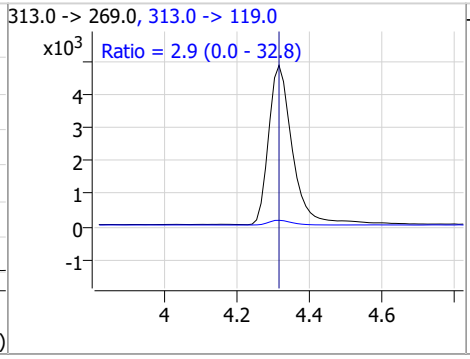


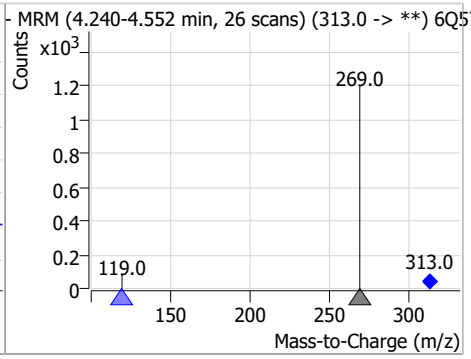




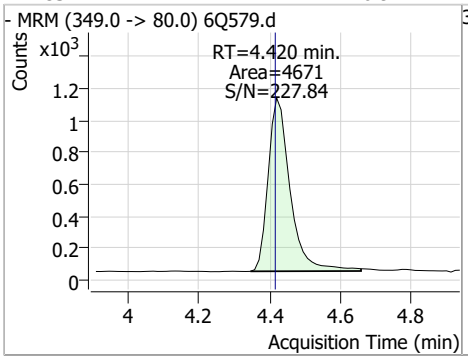
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.89	4.31	0.00	21725	313.0 -> 119.0	2.9	0.0	32.8

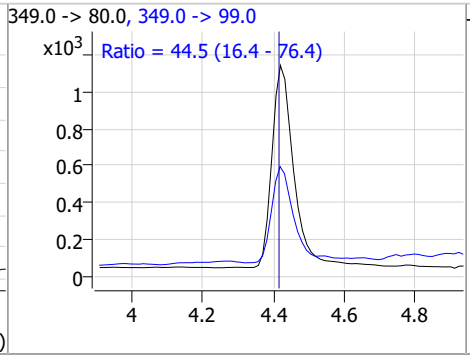


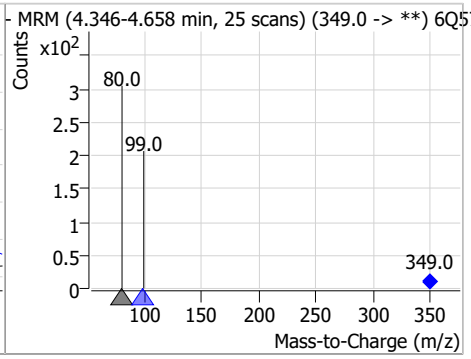




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.97	4.42	-0.01	4671	349.0 -> 99.0	44.5	16.4	76.4

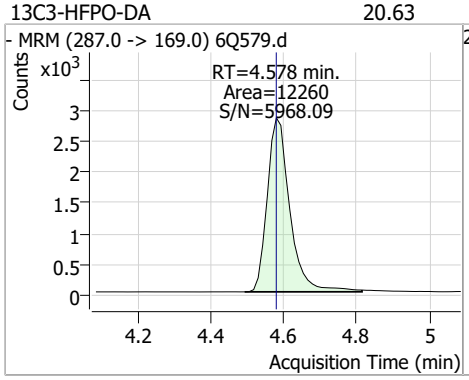


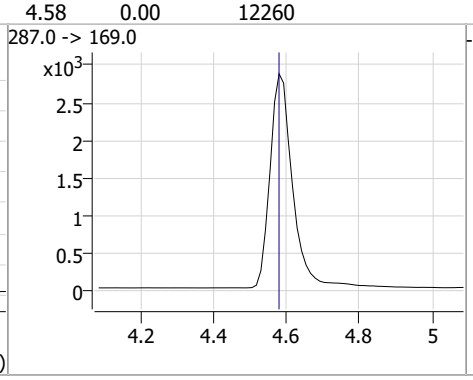


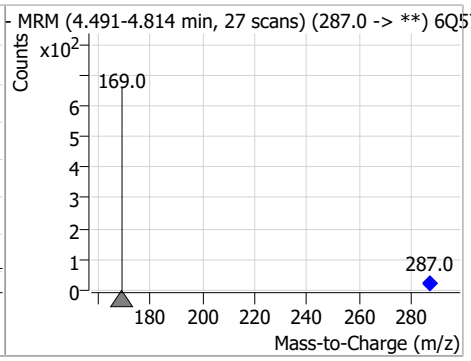


Perfluorinated Compounds by LC/MS/MS

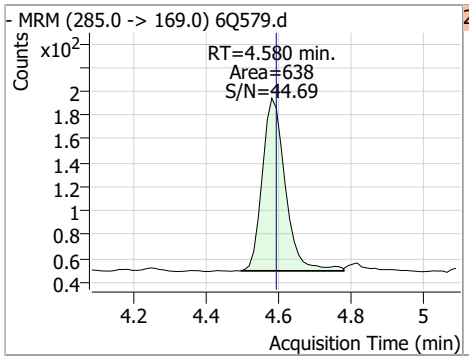
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.63	4.58	0.00	12260				

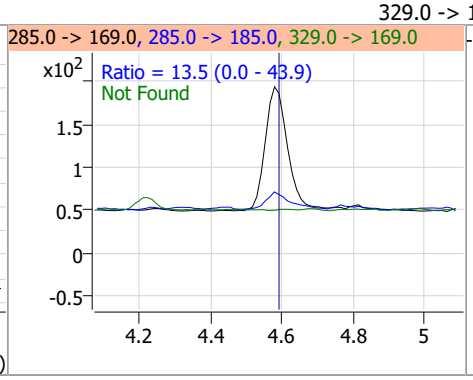


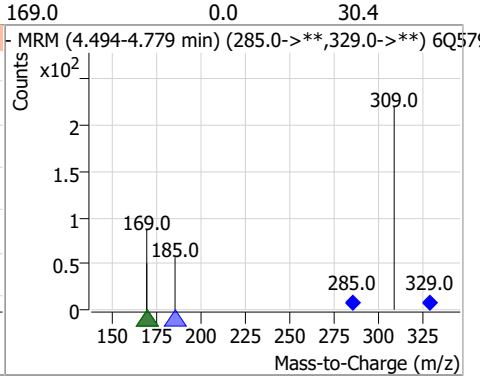




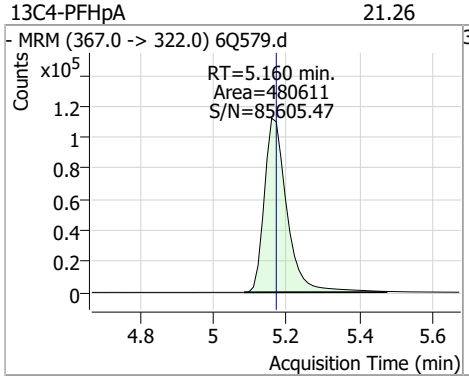
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.11	4.58	-0.01	638	285.0 -> 185.0	13.5	0.0	43.9
					329.0 -> 169.0		0.0	30.4

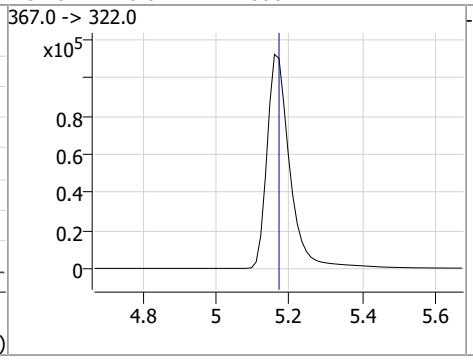


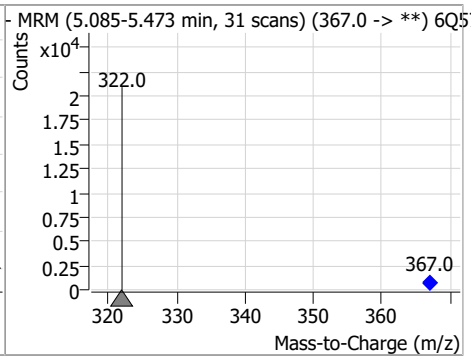




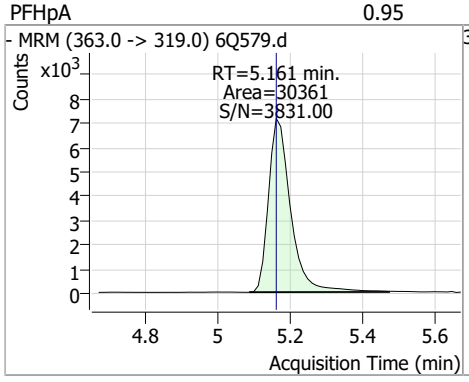
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.26	5.16	-0.01	480611				

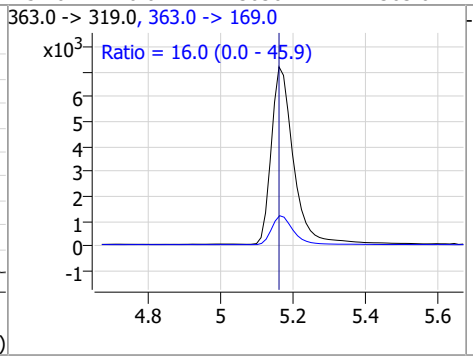


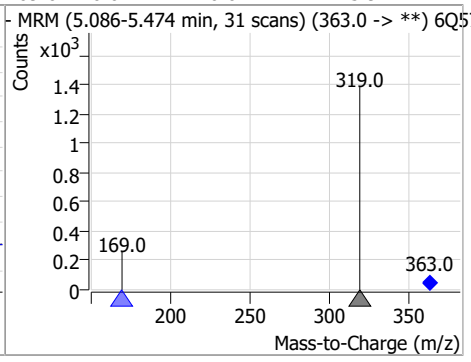




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	5.16	-0.01	30361	363.0 -> 169.0	16.0	0.0	45.9

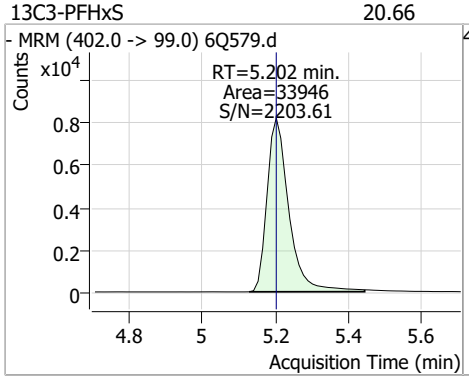


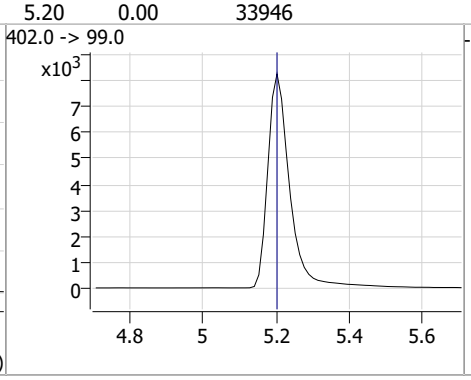


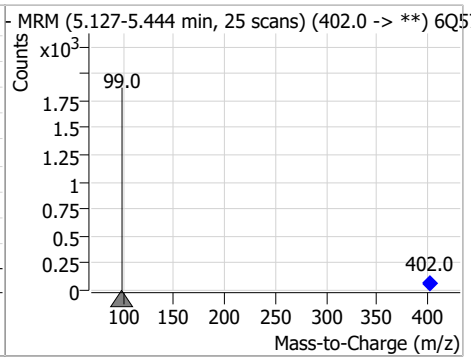


Perfluorinated Compounds by LC/MS/MS

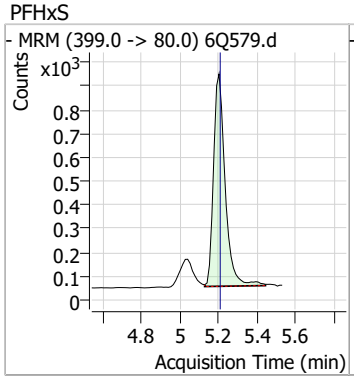
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.66	5.20	0.00	33946				

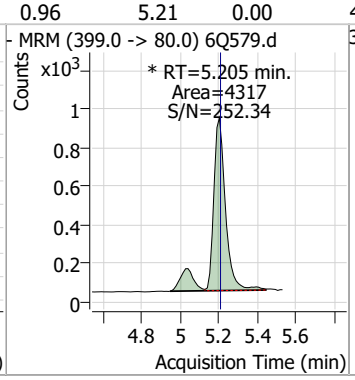


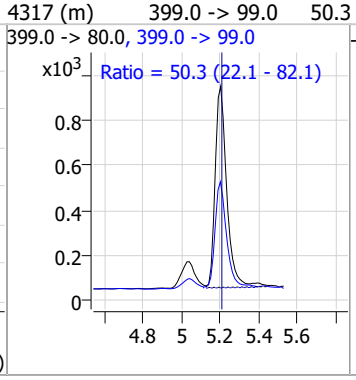


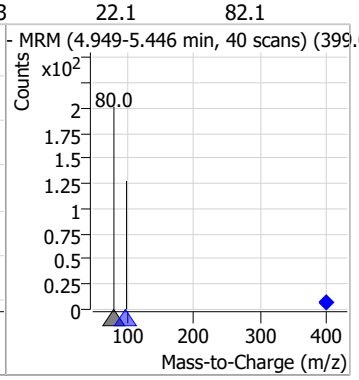


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.96	5.21	0.00	4317 (m)	399.0 -> 99.0	50.3	22.1	82.1

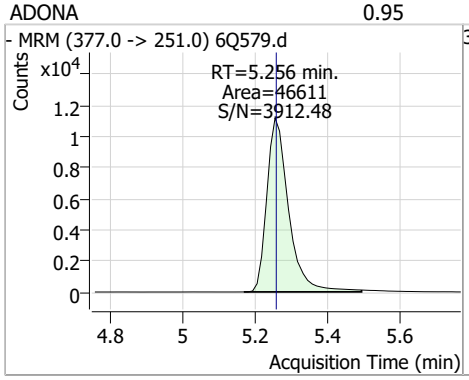


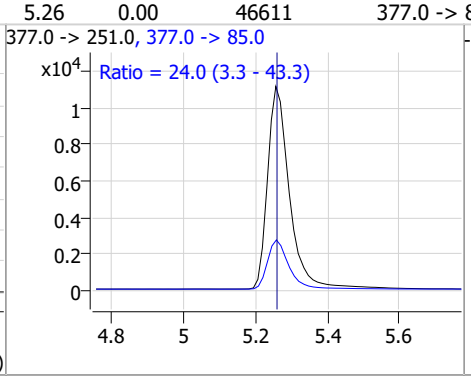


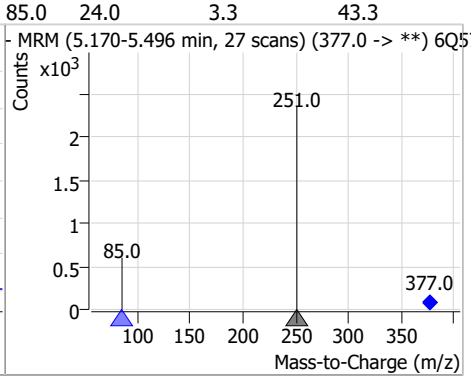




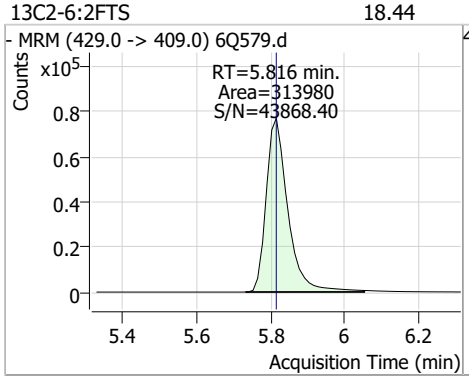
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.95	5.26	0.00	46611	377.0 -> 85.0	24.0	3.3	43.3

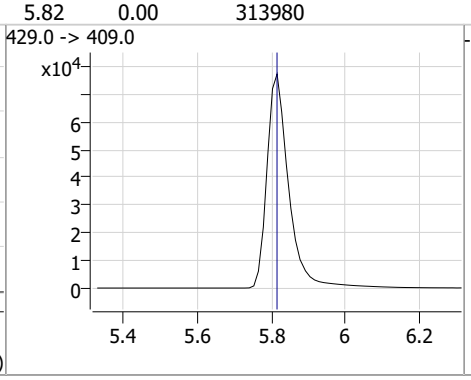


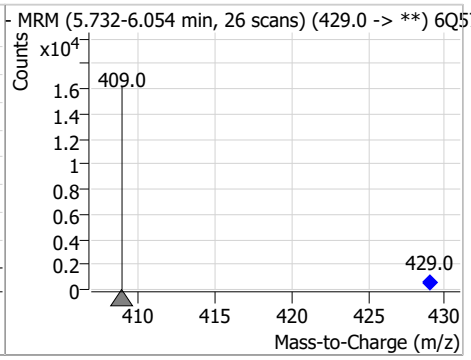




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.44	5.82	0.00	313980				

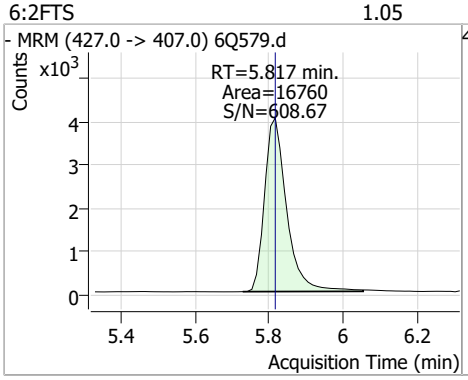


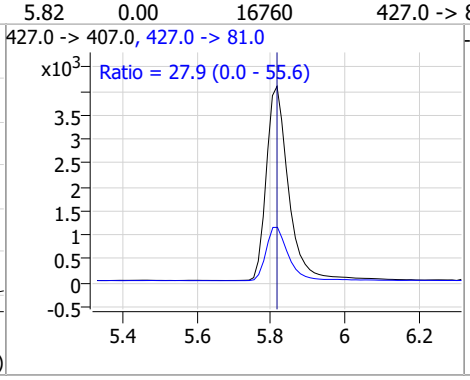


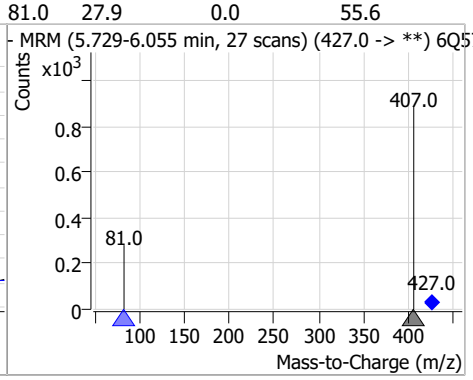


Perfluorinated Compounds by LC/MS/MS

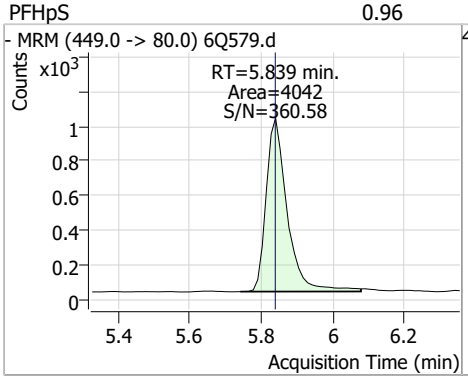
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.82	0.00	16760	427.0 -> 81.0	27.9	0.0	55.6

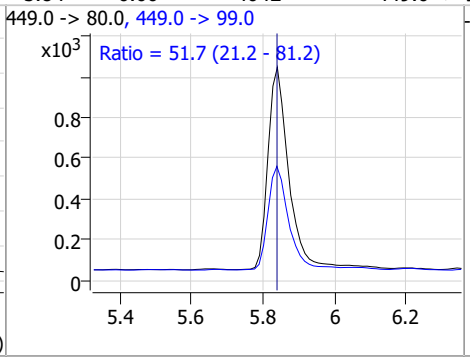


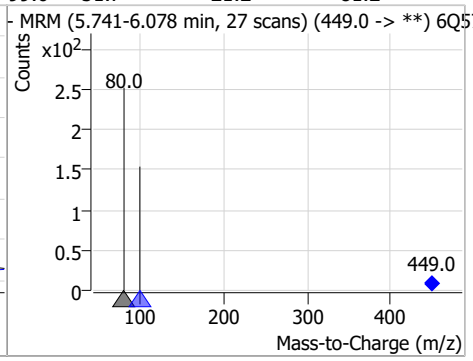




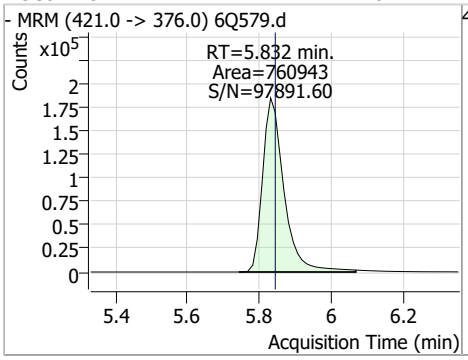
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.96	5.84	0.00	4042	449.0 -> 99.0	51.7	21.2	81.2

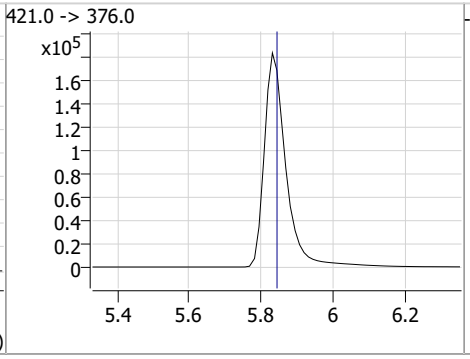


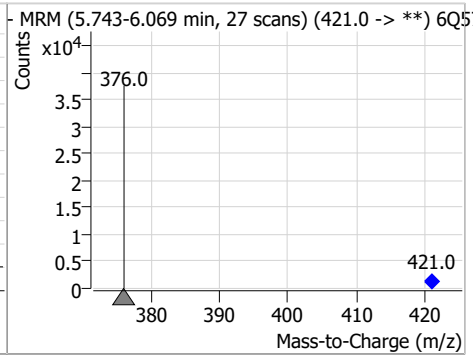




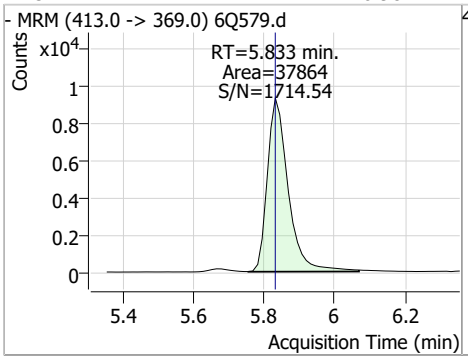
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.42	5.83	-0.01	760943				

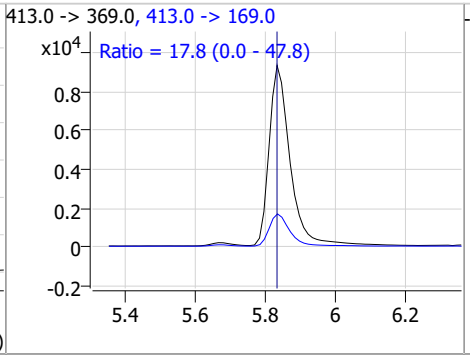


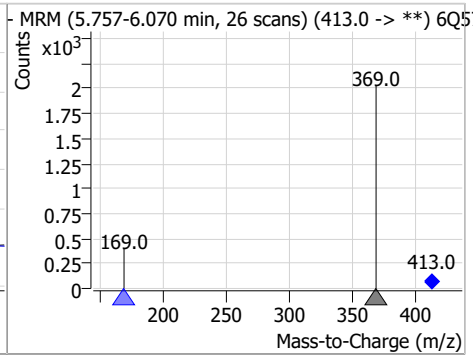




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.98	5.83	-0.01	37864	413.0 -> 169.0	17.8	0.0	47.8

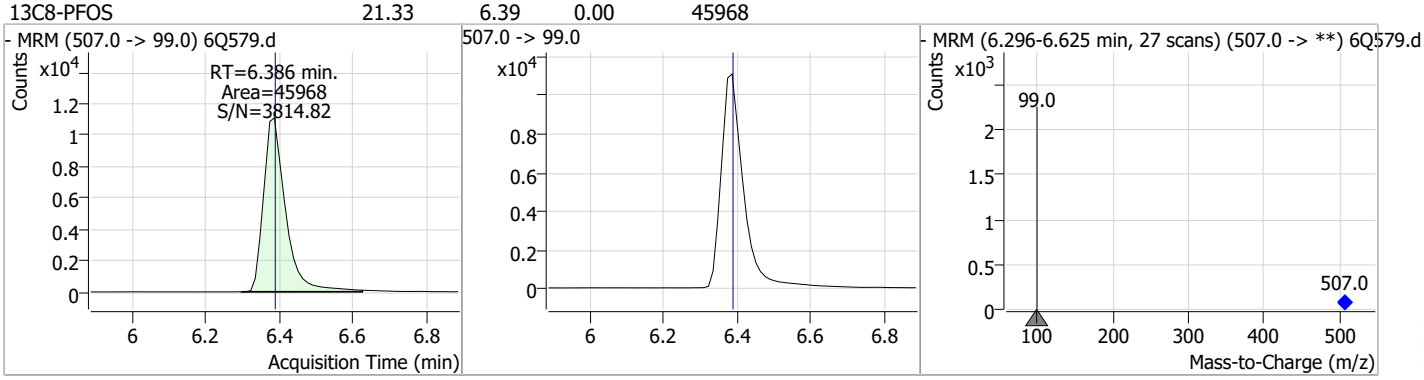




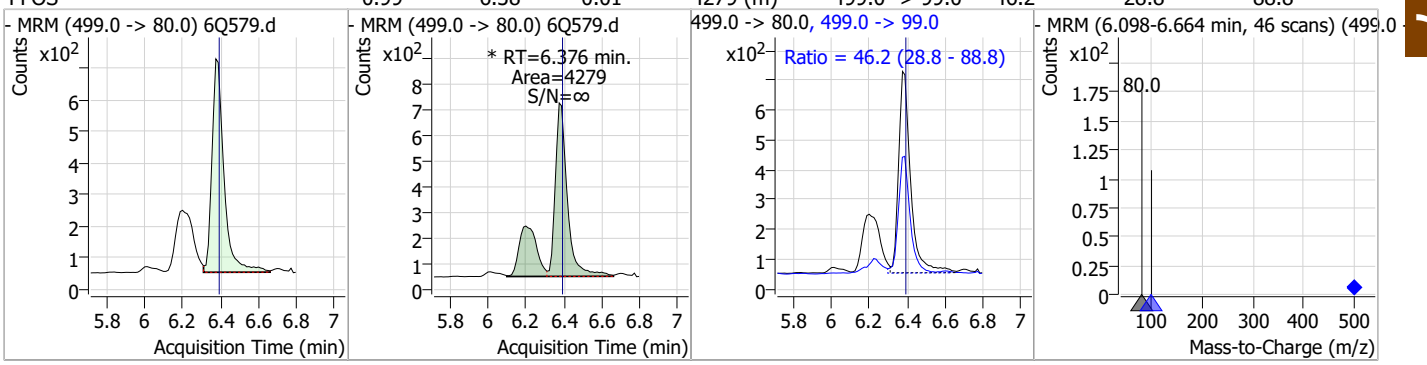


Perfluorinated Compounds by LC/MS/MS

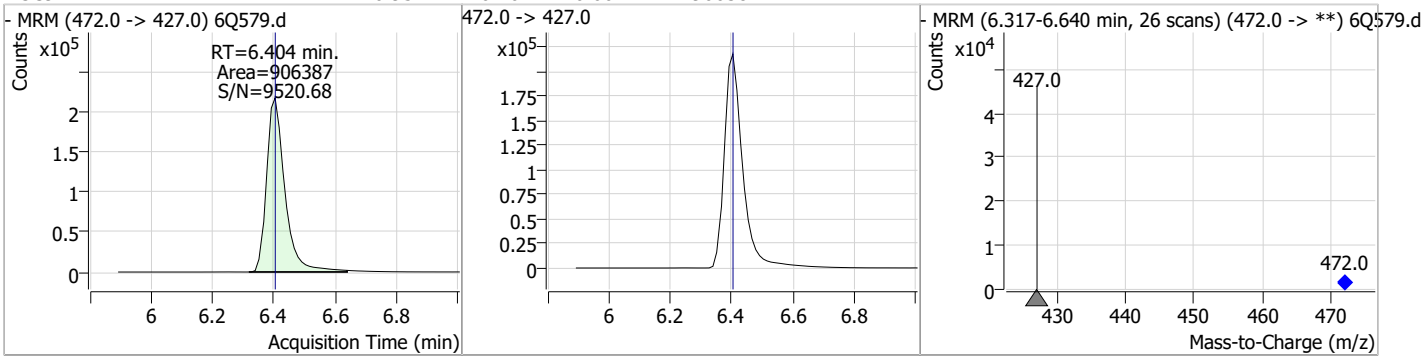
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.33	6.39	0.00	45968				



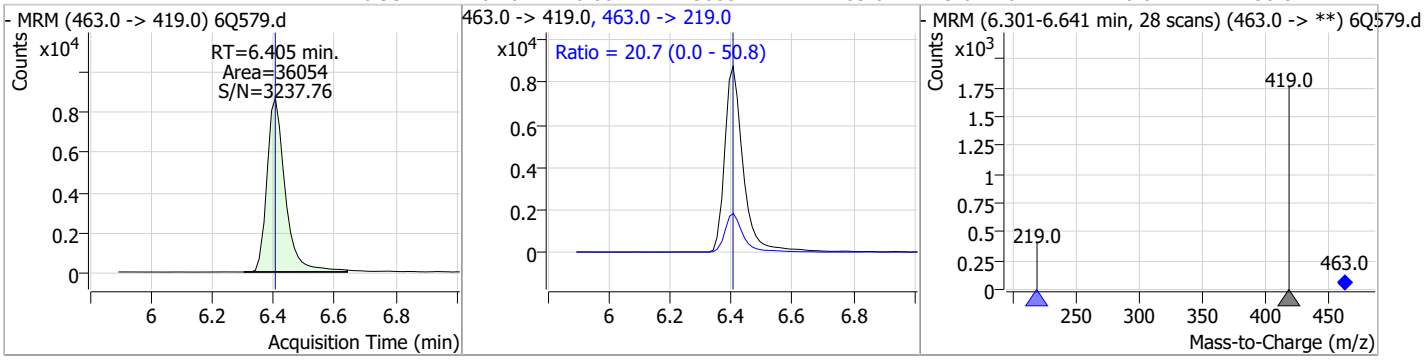
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.99	6.38	-0.01	4279 (m)	499.0 -> 99.0	46.2	28.8	88.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.95	6.40	0.00	906387				

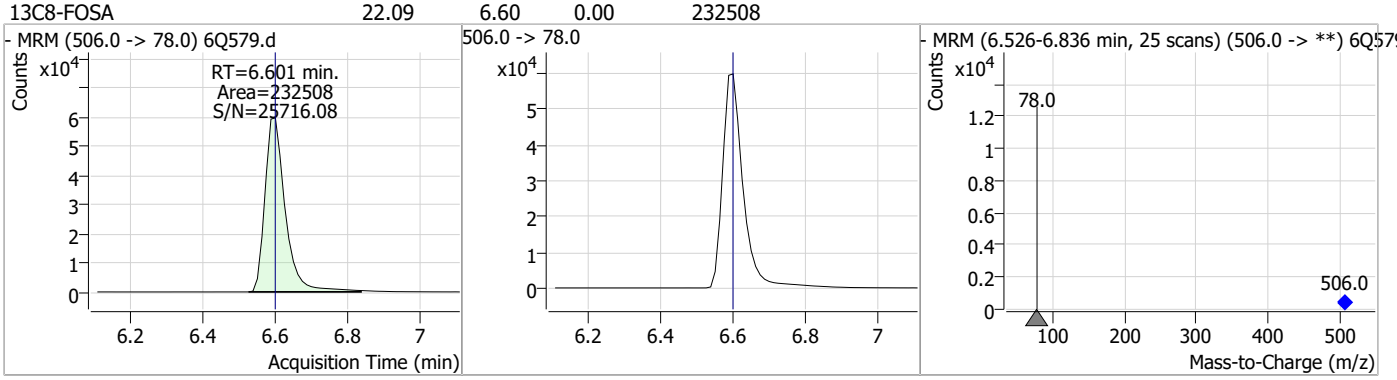


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	6.40	0.00	36054	463.0 -> 219.0	20.7	0.0	50.8

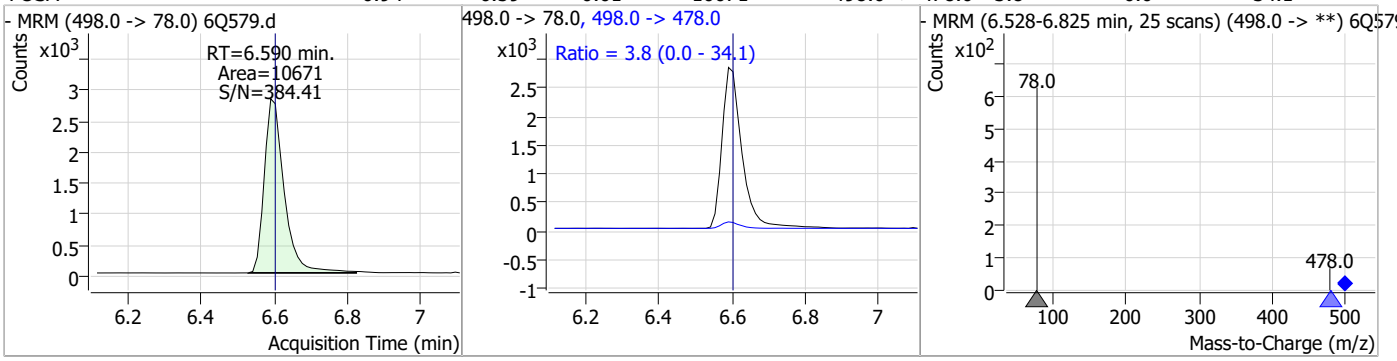


Perfluorinated Compounds by LC/MS/MS

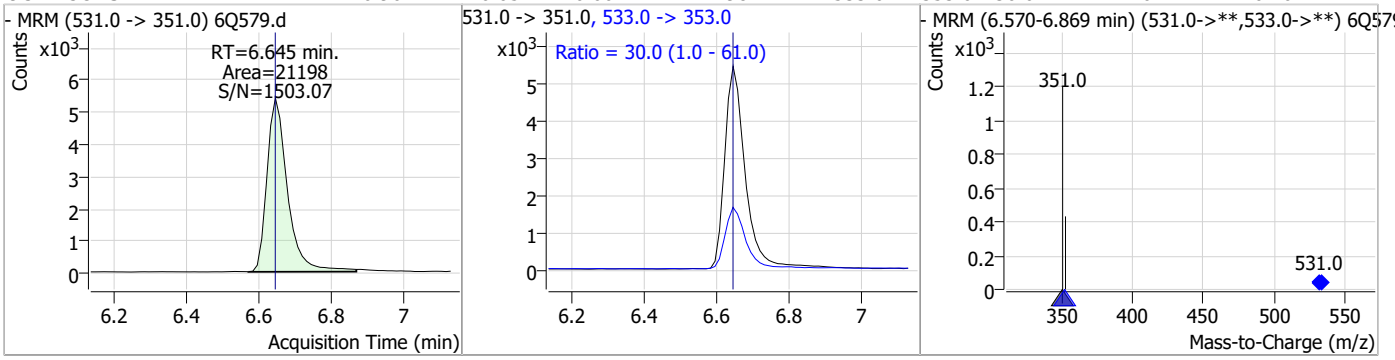
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.09	6.60	0.00	232508				



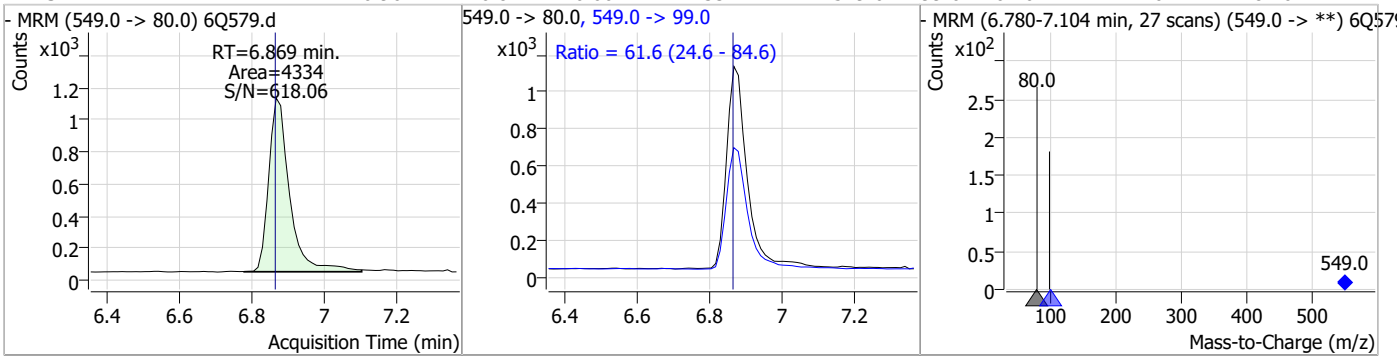
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.94	6.59	-0.01	10671	498.0 -> 478.0	3.8	0.0	34.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.90	6.65	0.00	21198	533.0 -> 353.0	30.0	1.0	61.0

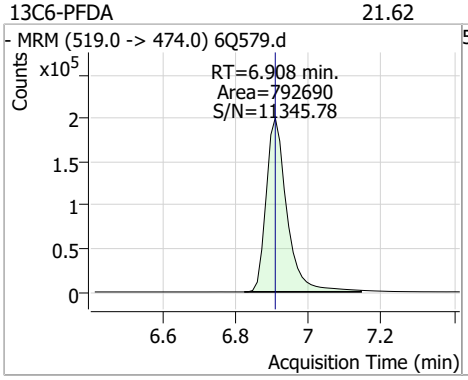


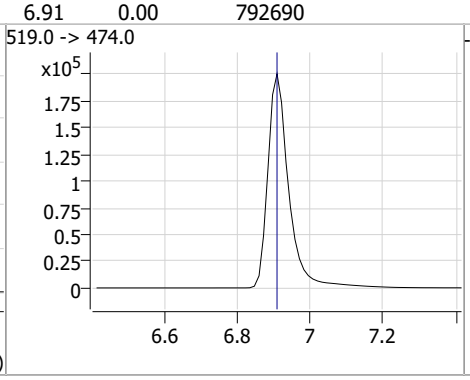
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.96	6.87	0.00	4334	549.0 -> 99.0	61.6	24.6	84.6

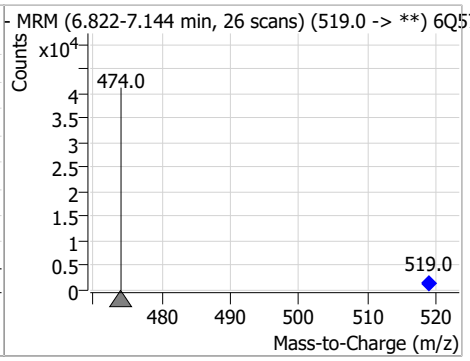


Perfluorinated Compounds by LC/MS/MS

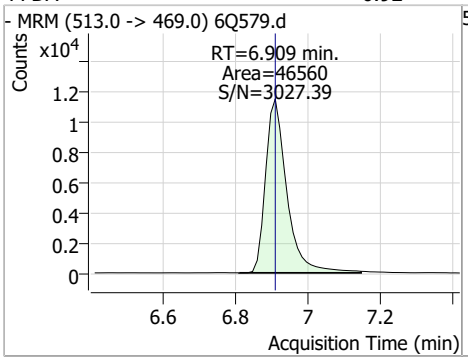
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.62	6.91	0.00	792690				

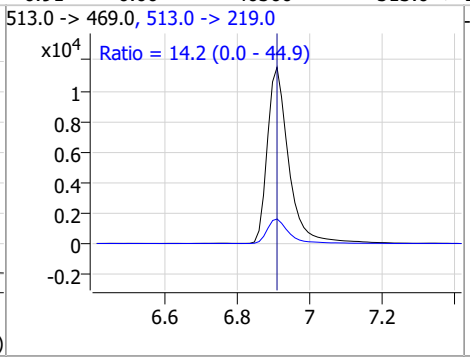


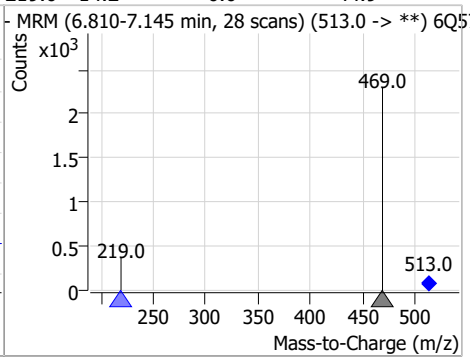




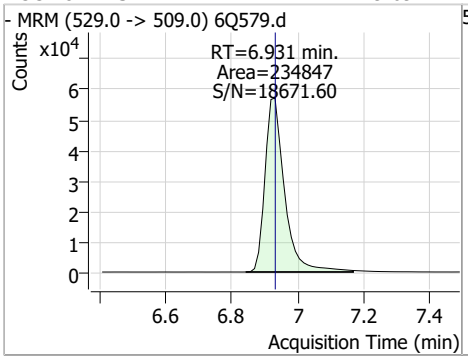
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.92	6.91	0.00	46560	513.0 -> 219.0	14.2	0.0	44.9

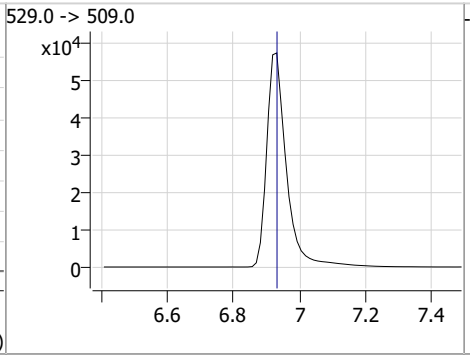


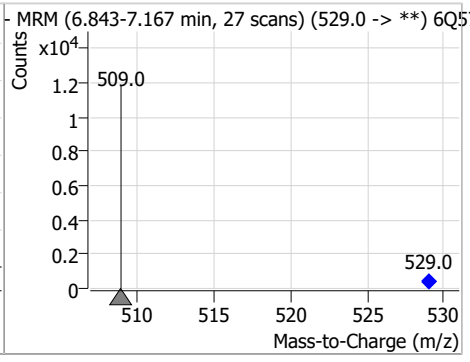




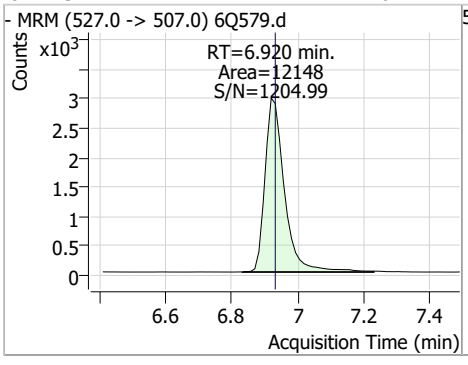
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.09	6.93	0.00	234847				

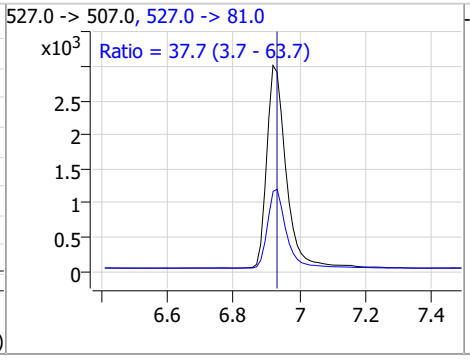


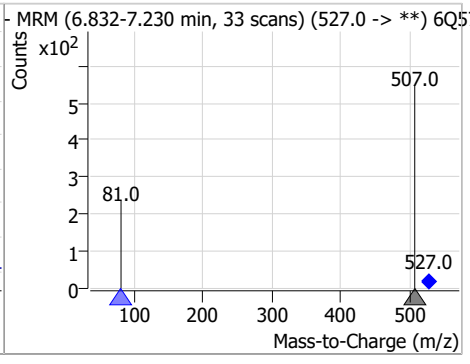




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	6.92	-0.01	12148	527.0 -> 81.0	37.7	3.7	63.7

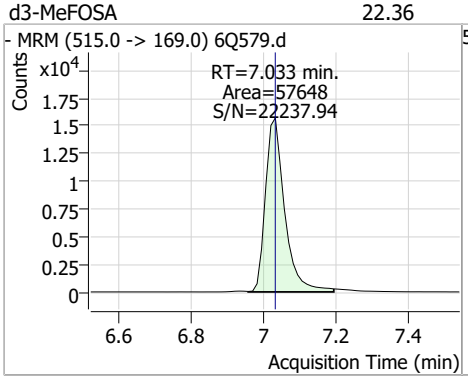


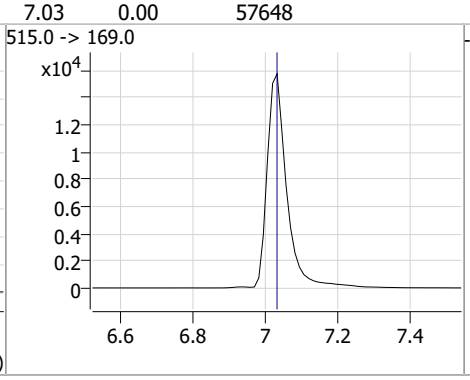


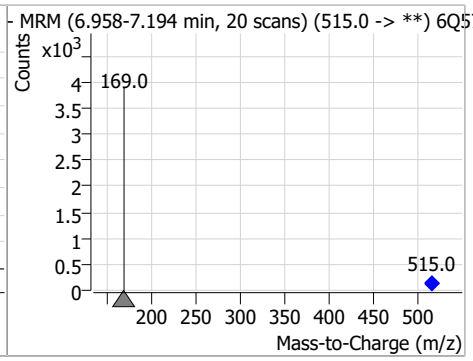


Perfluorinated Compounds by LC/MS/MS

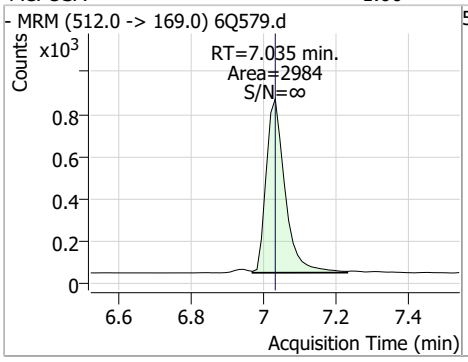
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.36	7.03	0.00	57648				

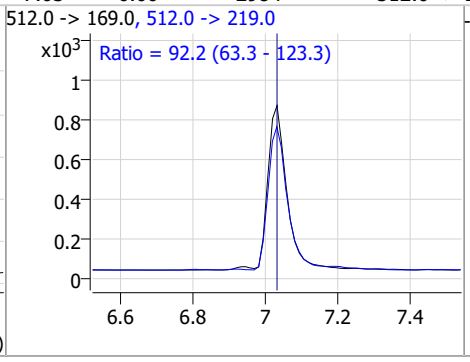


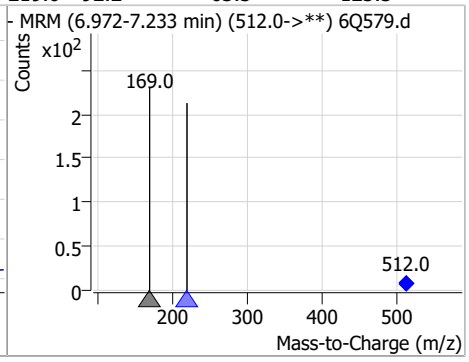




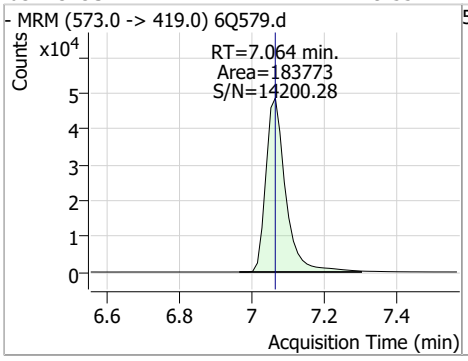
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.00	7.03	0.00	2984	512.0 -> 219.0	92.2	63.3	123.3

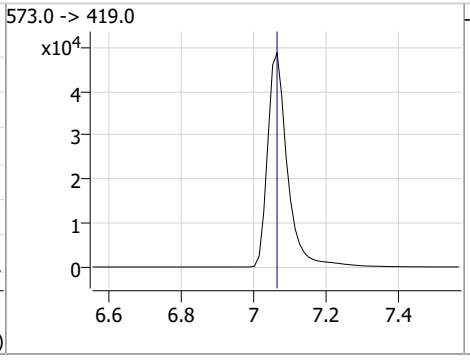


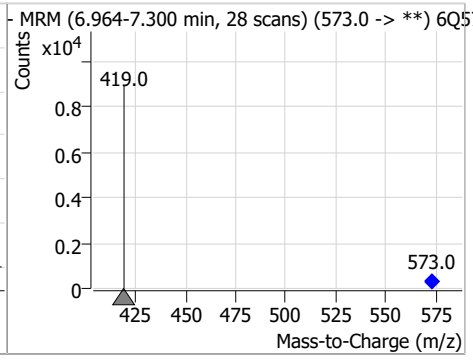




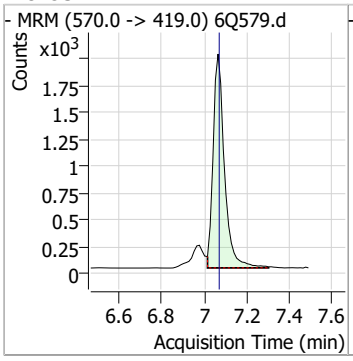
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.55	7.06	0.00	183773				

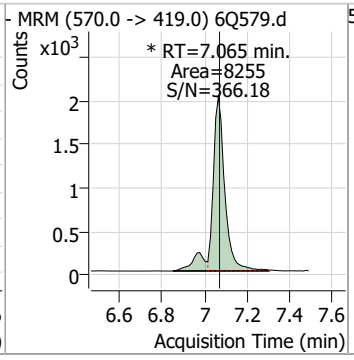


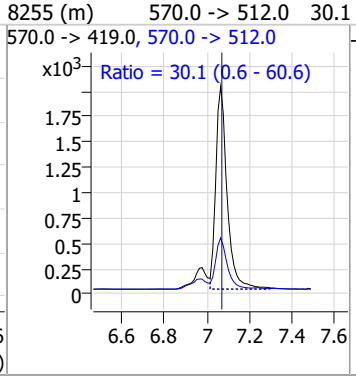


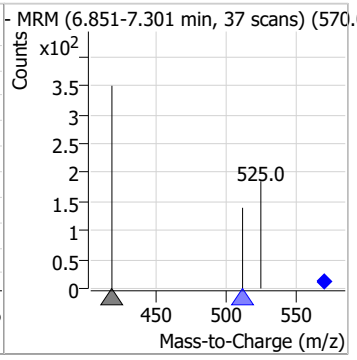


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.01	7.07	0.00	8255 (m)	570.0 -> 512.0	30.1	0.6	60.6



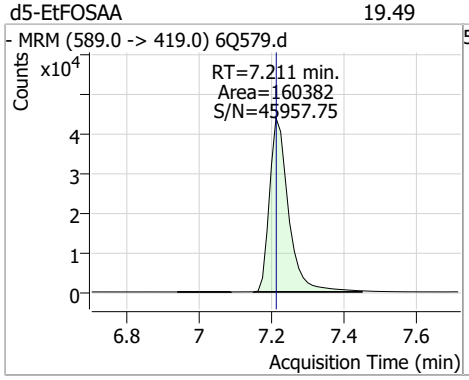


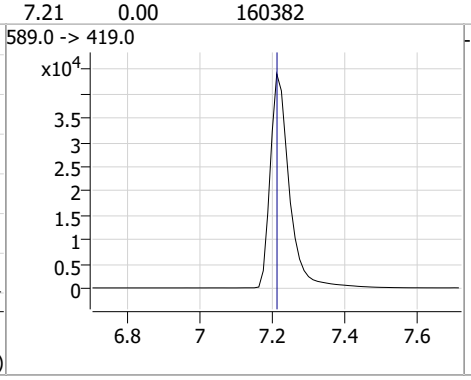


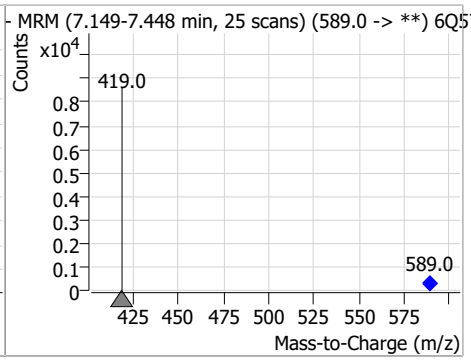


Perfluorinated Compounds by LC/MS/MS

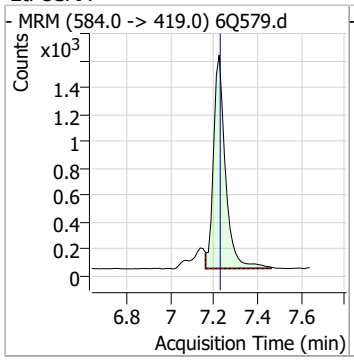
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.49	7.21	0.00	160382				

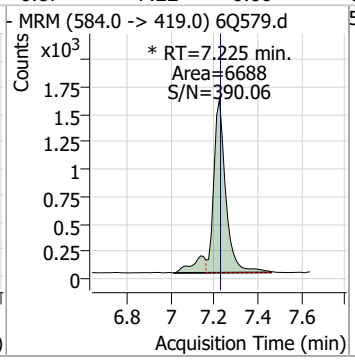


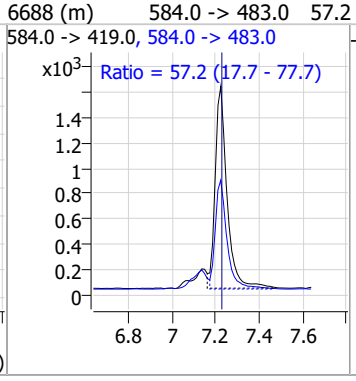


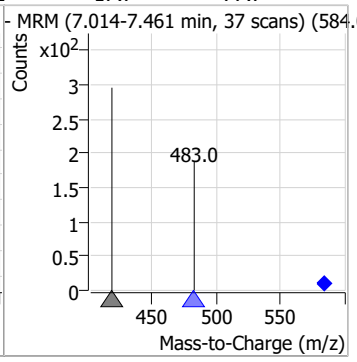


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.87	7.22	0.00	6688 (m)	584.0 -> 483.0	57.2	17.7	77.7

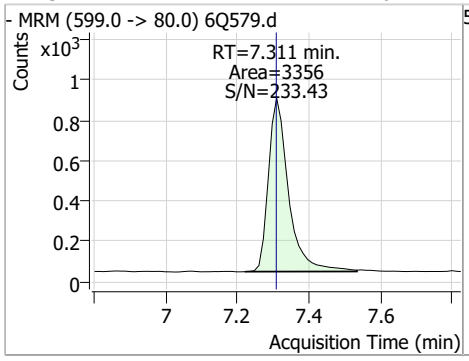


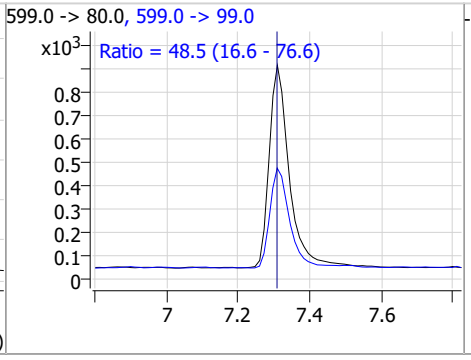


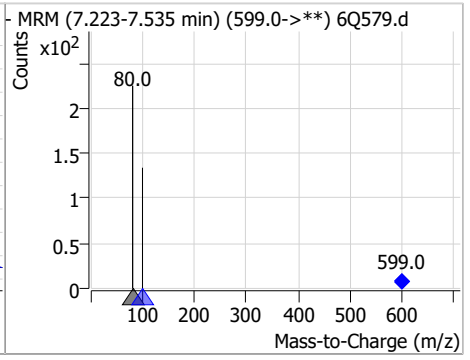




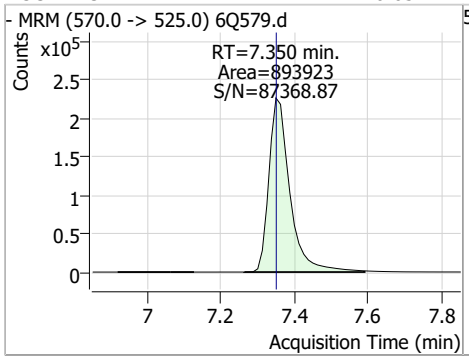
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.01	7.31	0.00	3356	599.0 -> 99.0	48.5	16.6	76.6

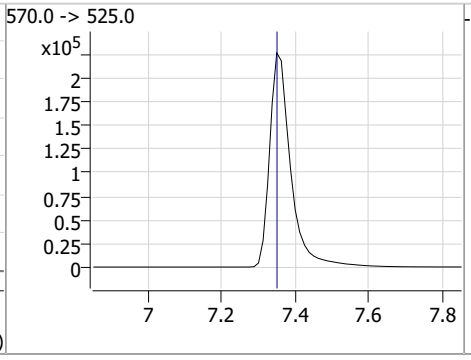


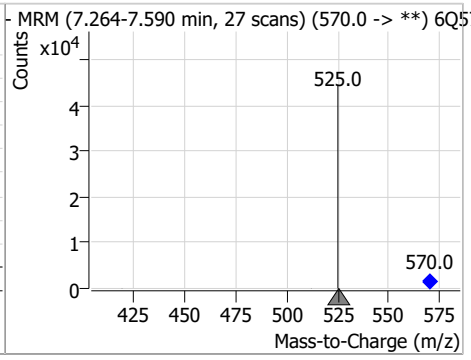




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.65	7.35	0.00	893923				

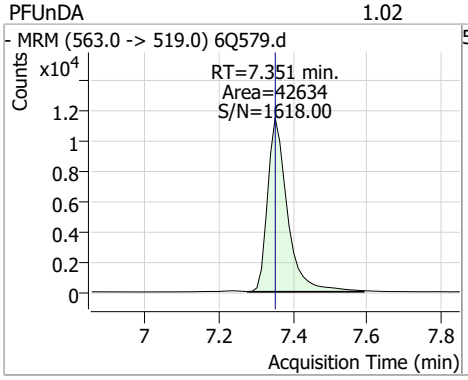


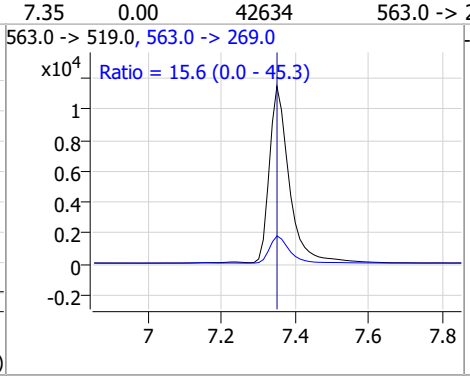


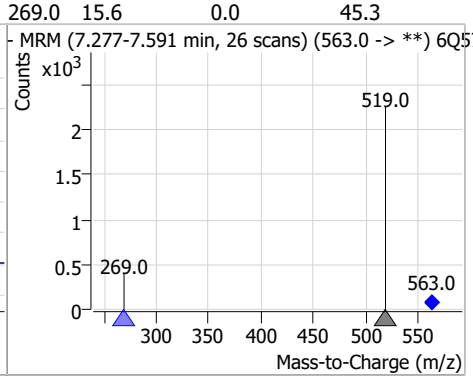


Perfluorinated Compounds by LC/MS/MS

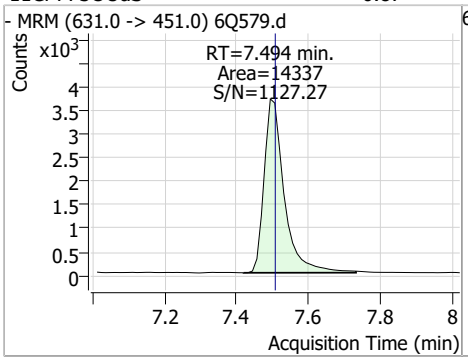
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.02	7.35	0.00	42634	563.0 -> 269.0	15.6	0.0	45.3

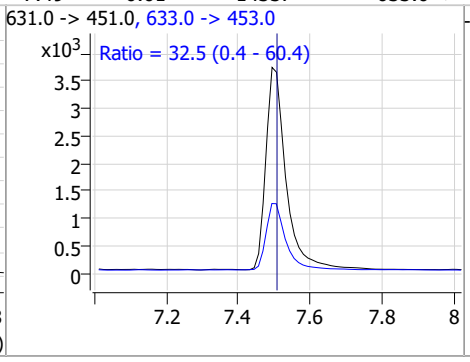


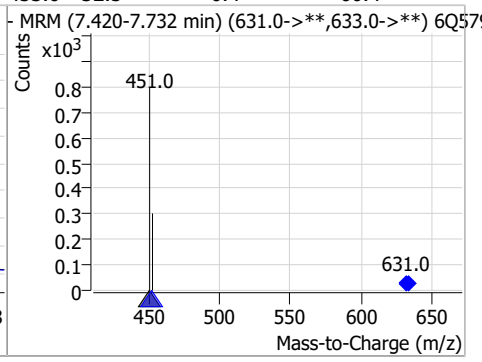




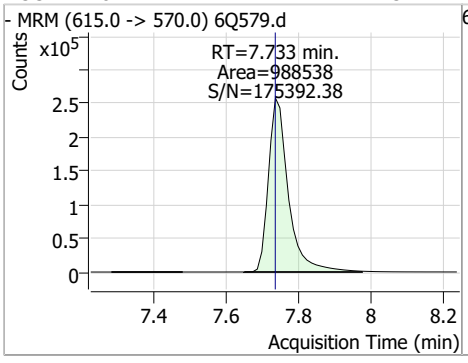
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.87	7.49	-0.01	14337	633.0 -> 453.0	32.5	0.4	60.4

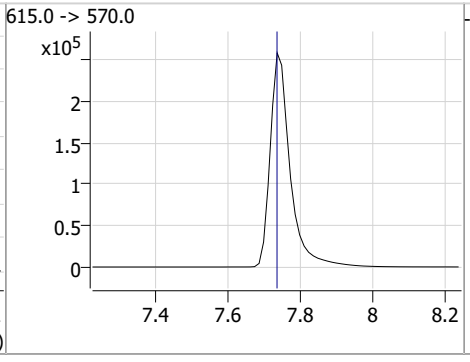


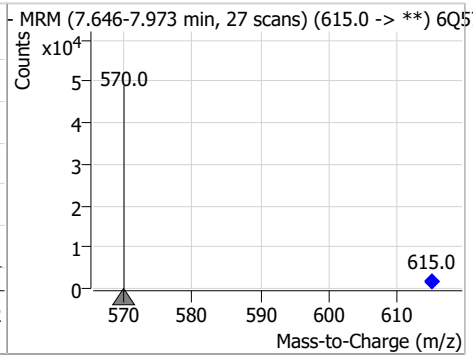




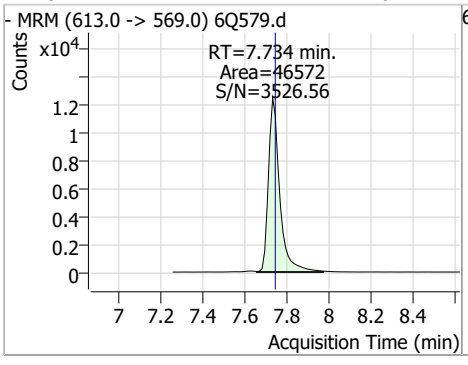
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.31	7.73	0.00	988538				

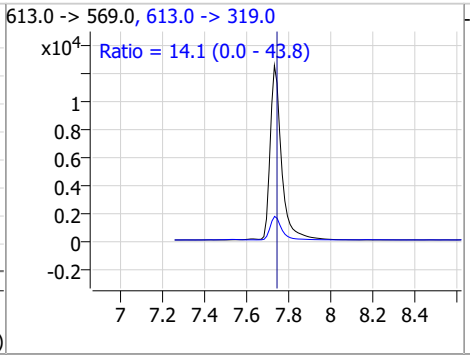


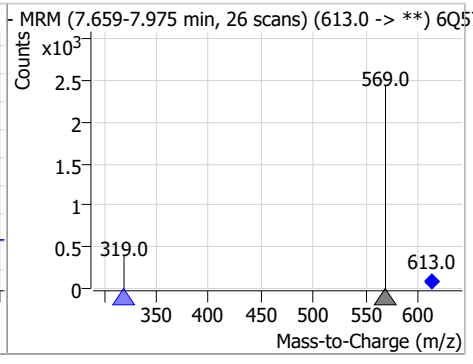




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.02	7.73	-0.01	46572	613.0 -> 319.0	14.1	0.0	43.8

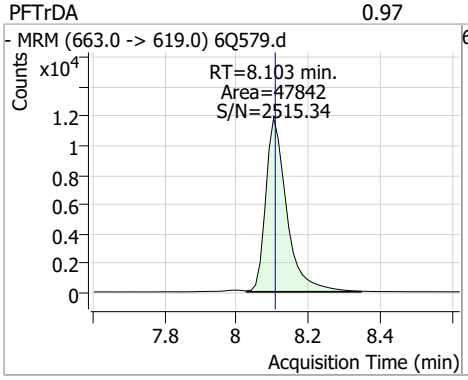


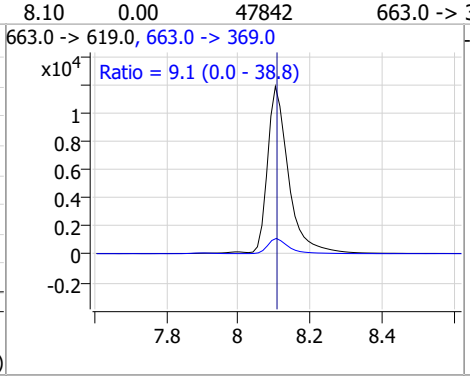


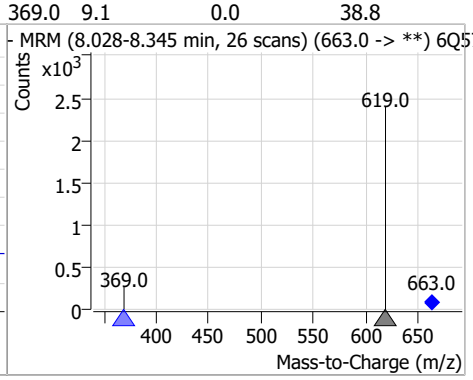


Perfluorinated Compounds by LC/MS/MS

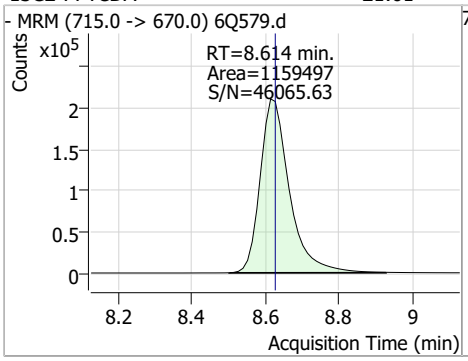
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.97	8.10	0.00	47842	663.0 -> 369.0	9.1	0.0	38.8

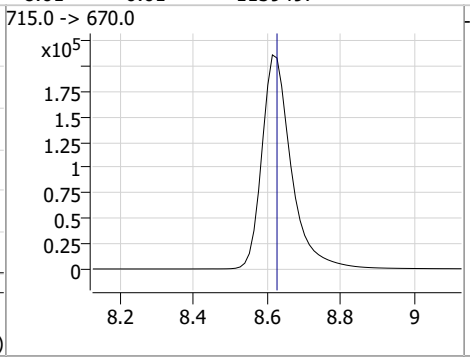


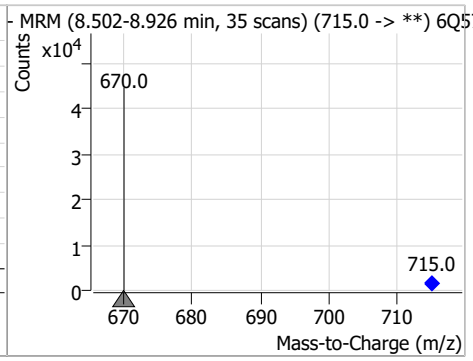




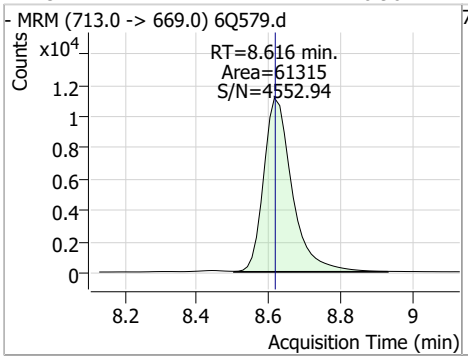
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.61	8.61	-0.01	1159497				

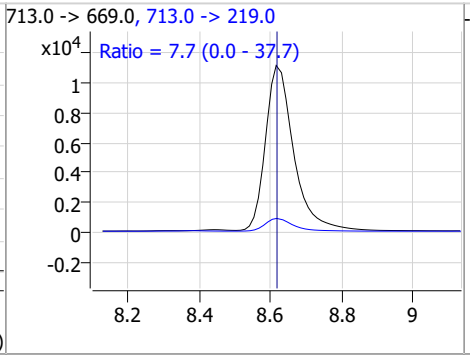


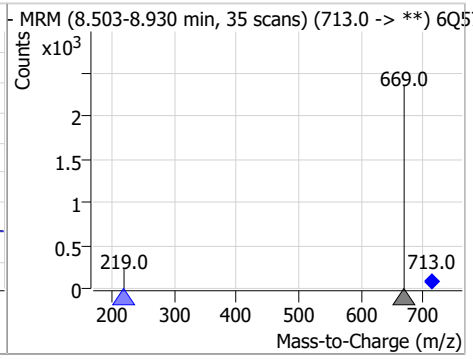




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.96	8.62	-0.01	61315	713.0 -> 219.0	7.7	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q11-CC6
Lab FileID: 6Q579.D
Injection Time: 05/26/22 18:43
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.38	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q589.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/26/2022 9:14:20 PM
Sample Name : cc6-20
Vial : P1-A7
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

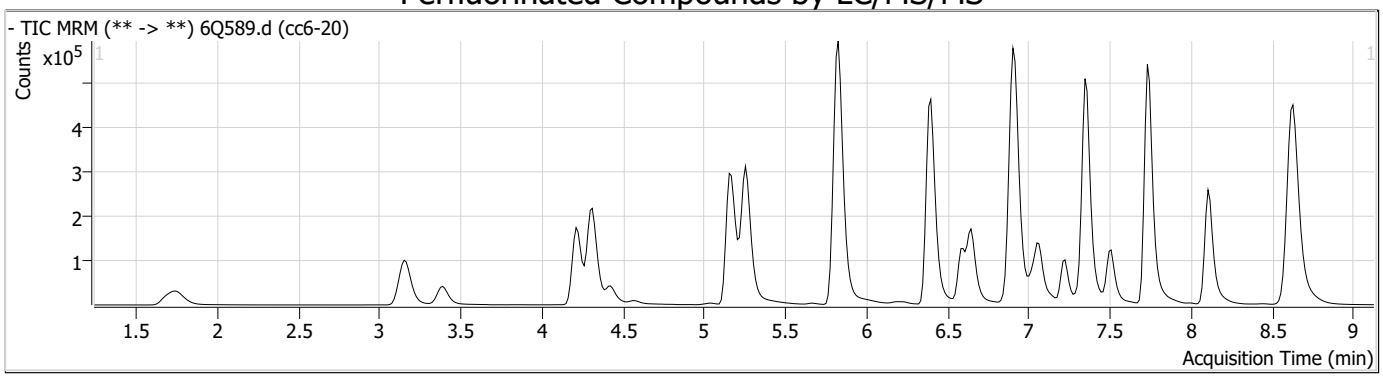
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.737	217.0 -> 172.0	183675	20.00 µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	300536	20.00 µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	443744	20.00 µg/L	0.000
M4-PFHpA	5.160	367.0 -> 322.0	484113	20.00 µg/L	-0.012
M8-PFOA	5.832	421.0 -> 376.0	759579	20.00 µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	904168	20.00 µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	751666	20.00 µg/L	0.000
M7-PFUnDA	7.350	570.0 -> 525.0	903021	20.00 µg/L	-0.001
M2-PFDoDA	7.733	615.0 -> 570.0	988184	20.00 µg/L	0.000
M2-PFTeDA	8.626	715.0 -> 670.0	1159426	20.00 µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	218695	20.00 µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	37611	20.00 µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	33981	20.00 µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	48190	20.00 µg/L	-0.002
M2-4:2FTS	4.210	329.0 -> 309.0	307609	20.00 µg/L	-0.012
M2-6:2FTS	5.816	429.0 -> 409.0	337386	20.00 µg/L	0.000
M2-8:2FTS	6.919	529.0 -> 509.0	272325	20.00 µg/L	-0.013
M3-MeFOSAA	7.064	573.0 -> 419.0	195176	20.00 µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	11476	20.00 µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	53782	20.00 µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	158489	20.00 µg/L	-0.001
System Monitoring Compounds					
13C2-4:2FTS	4.210	329.0 -> 309.0	307609	20.92 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%	
13C2-6:2FTS	5.816	429.0 -> 409.0	337386	19.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C2-8:2FTS	6.919	529.0 -> 509.0	272325	22.14 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
13C2-PFDoDA	7.733	615.0 -> 570.0	988184	21.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%	
13C2-PFTeDA	8.626	715.0 -> 670.0	1159426	21.61 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C3-PFBS	3.385	302.0 -> 99.0	37611	21.32 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C3-PFHxS	5.202	402.0 -> 99.0	33981	20.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	1.737	217.0 -> 172.0	183675	22.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C4-PFHpA	5.160	367.0 -> 322.0	484113	21.41 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C5-PFHxA	4.314	318.0 -> 273.0	443744	21.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C5-PFPeA	3.155	268.0 -> 223.0	300536	21.62 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C6-PFDA	6.908	519.0 -> 474.0	751666	20.50 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

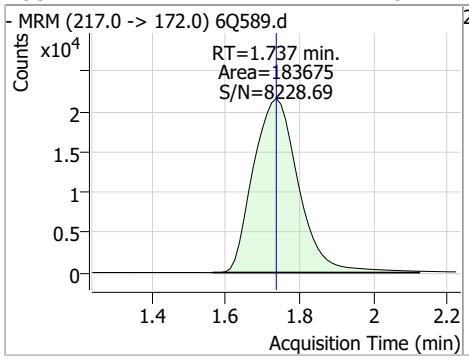
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
13C7-PFUnDA	7.350	570.0 -> 525.0	903021	20.86	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
13C8-FOSA	6.588	506.0 -> 78.0	218695	20.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
13C8-PFOA	5.832	421.0 -> 376.0	759579	20.38	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-PFOS	6.386	507.0 -> 99.0	48190	22.36	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%			
13C9-PFNA	6.404	472.0 -> 427.0	904168	20.90	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%			
d3-MeFOSAA	7.064	573.0 -> 419.0	195176	20.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
13C3-HFPO-DA	4.578	287.0 -> 169.0	11486	19.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
d3-MeFOSA	7.020	515.0 -> 169.0	53782	20.86	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
d5-EtFOSAA	7.211	589.0 -> 419.0	158483	19.26	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
Target Compounds							**QValue**
4:2FTS	4.212	327.0 -> 307.0	353274	21.13	µg/L		100
6:2FTS	5.817	427.0 -> 407.0	349980	20.46	µg/L		97
8:2FTS	6.932	527.0 -> 507.0	254577	18.85	µg/L		96
EtFOSAA	7.225	584.0 -> 419.0	148374	19.48	µg/L	m	91
FOSA	6.590	498.0 -> 78.0	225121	20.99	µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	176051	20.24	µg/L	m	97
PFBA	1.743	213.0 -> 169.0	83594	20.08	µg/L		100
PFBS	3.390	299.0 -> 80.0	118129	20.20	µg/L		99
PFDA	6.909	513.0 -> 469.0	946332	19.79	µg/L		97
PFDoDA	7.734	613.0 -> 569.0	938248	20.61	µg/L		98
PFDS	7.311	599.0 -> 80.0	72532	21.65	µg/L		96
PFHpA	5.161	363.0 -> 319.0	654809	20.38	µg/L		99
PFHpS	5.839	449.0 -> 80.0	82972	18.84	µg/L		99
PFHxA	4.315	313.0 -> 269.0	478206	19.89	µg/L		100
PFHxS	5.205	399.0 -> 80.0	90907	20.11	µg/L	m	97
PFNA	6.405	463.0 -> 419.0	769944	20.00	µg/L		98
PFNS	6.869	549.0 -> 80.0	96900	20.41	µg/L		93
PFOA	5.833	413.0 -> 369.0	792893	20.63	µg/L		100
PFOS	6.376	499.0 -> 80.0	87816	19.37	µg/L	m	86
PFPeA	3.158	263.0 -> 219.0	259976	19.80	µg/L		100
PFPeS	4.420	349.0 -> 80.0	96352	19.70	µg/L		97
PFTeDA	8.630	713.0 -> 669.0	1261072	19.79	µg/L		99
PFTrDA	8.103	663.0 -> 619.0	972205	19.67	µg/L		99
PFUnDA	7.351	563.0 -> 519.0	882030	20.90	µg/L		99
11Cl-PF3OUdS	7.506	631.0 -> 451.0	327401	19.90	µg/L		97
9Cl-PF3ONS	6.645	531.0 -> 351.0	442798	19.85	µg/L		99
ADONA	5.256	377.0 -> 251.0	978798	19.87	µg/L		100
HFPO-DA	4.580	285.0 -> 169.0	12363	22.97	µg/L		98
MeFOSA	7.035	512.0 -> 169.0	56770	20.37	µg/L		85

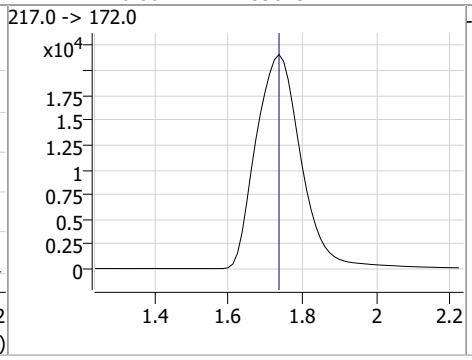
 # = Qualifier out of range, m = manually integrated, + = Area summed

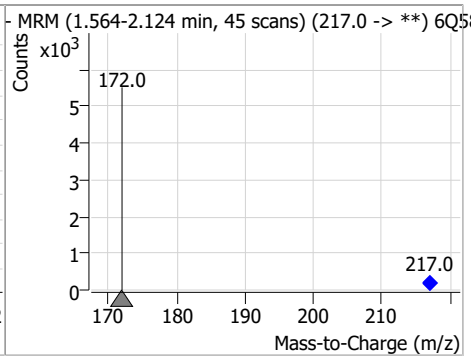
Perfluorinated Compounds by LC/MS/MS



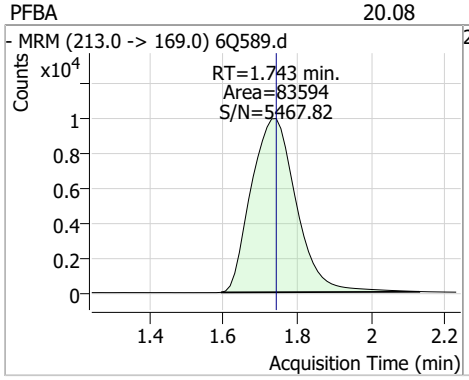
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.52	1.74	0.00	183675				

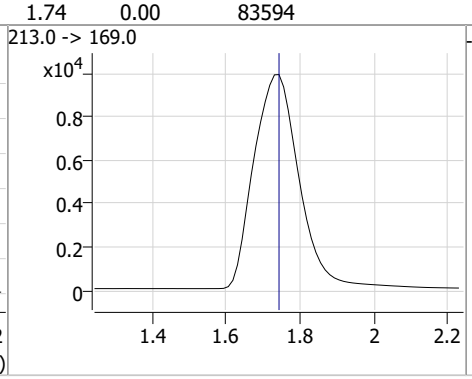


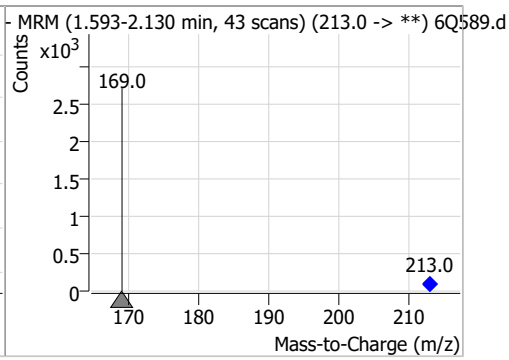




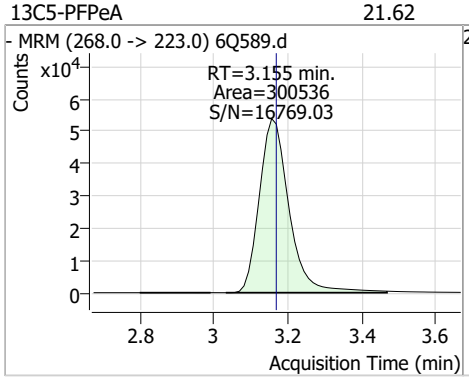
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.08	1.74	0.00	83594				

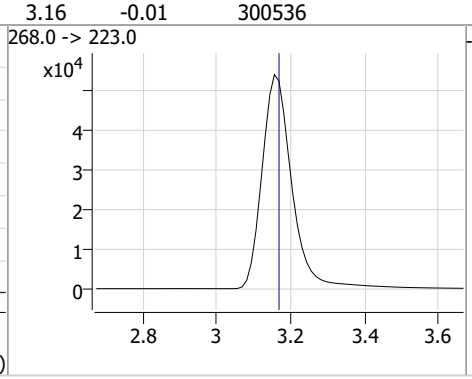


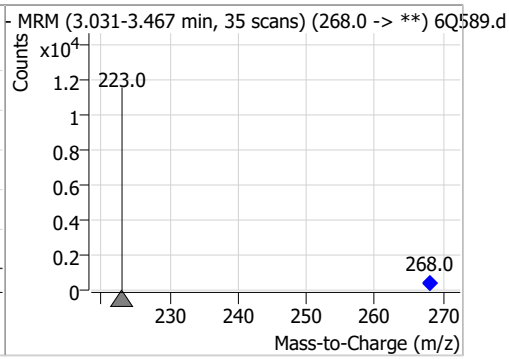




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.62	3.16	-0.01	300536				

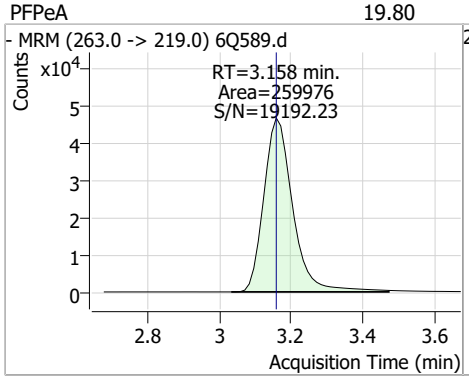


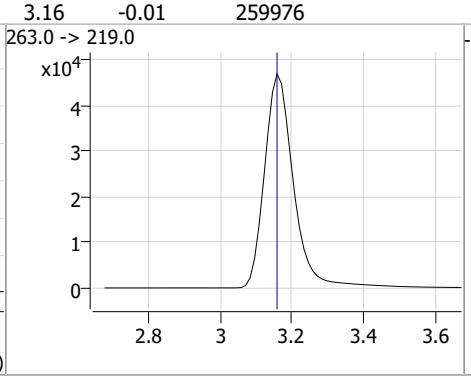


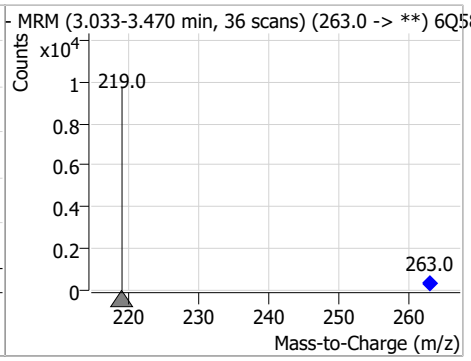


Perfluorinated Compounds by LC/MS/MS

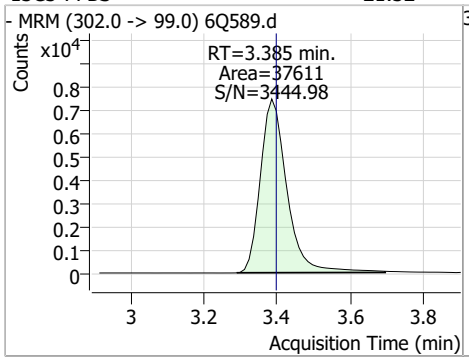
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.80	3.16	-0.01	259976				

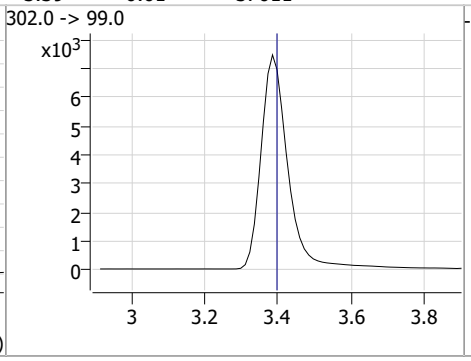


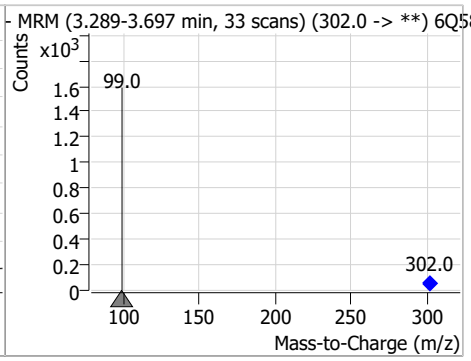




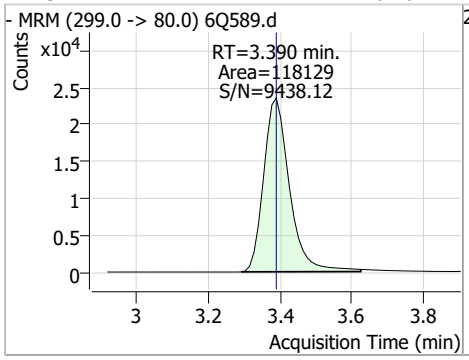
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.32	3.39	-0.01	37611				

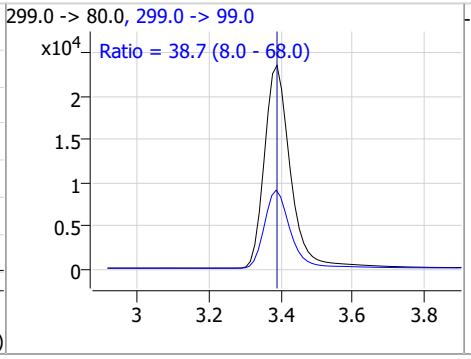


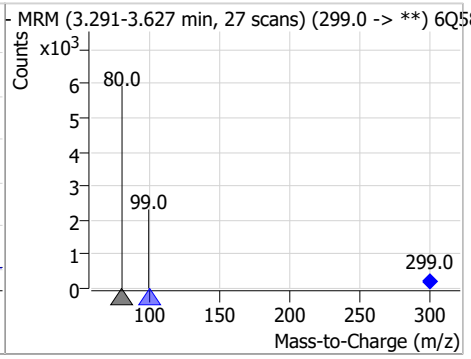




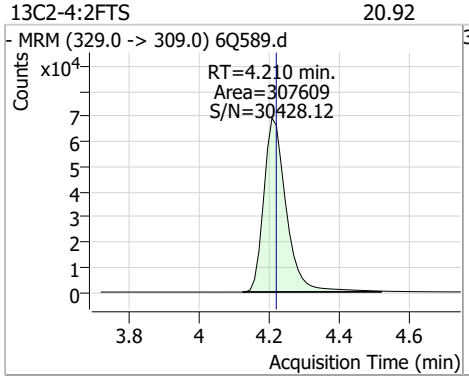
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.20	3.39	-0.01	118129	299.0 -> 99.0	38.7	8.0	68.0

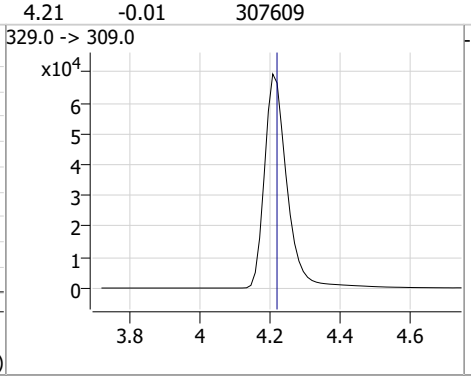


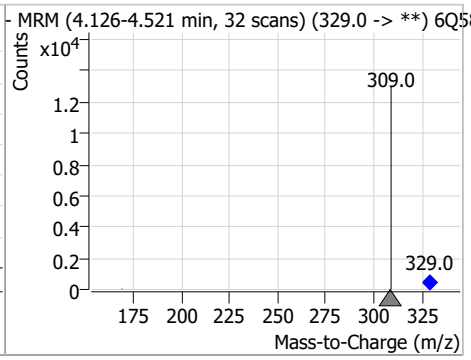




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.92	4.21	-0.01	307609				

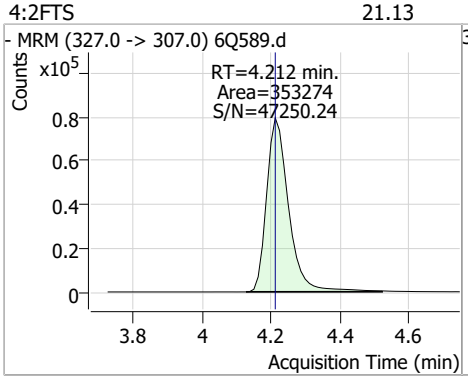


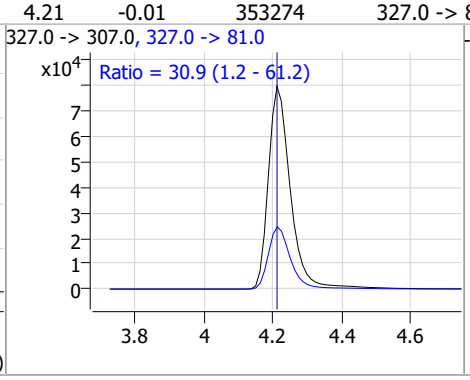


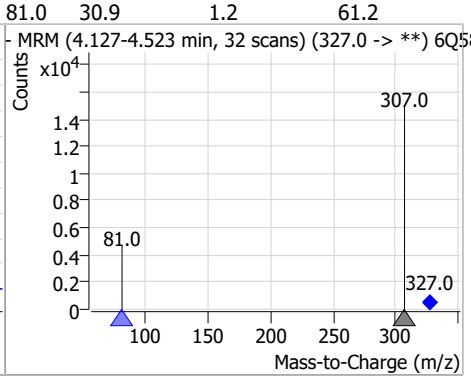


Perfluorinated Compounds by LC/MS/MS

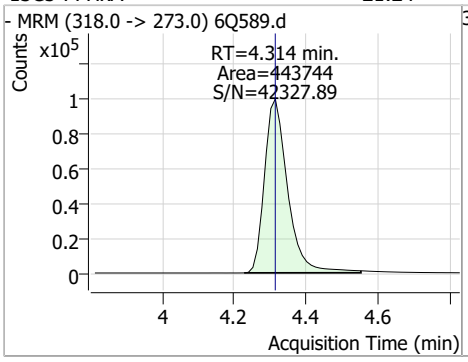
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.13	4.21	-0.01	353274	327.0 -> 81.0	30.9	1.2	61.2

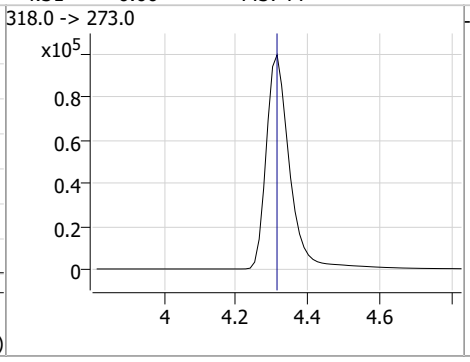


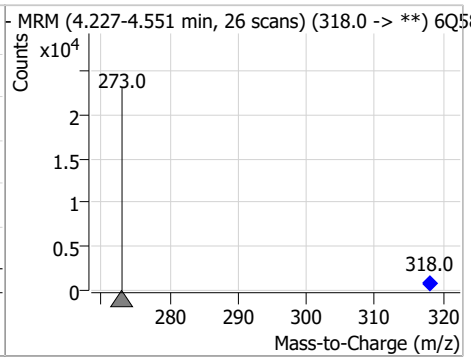




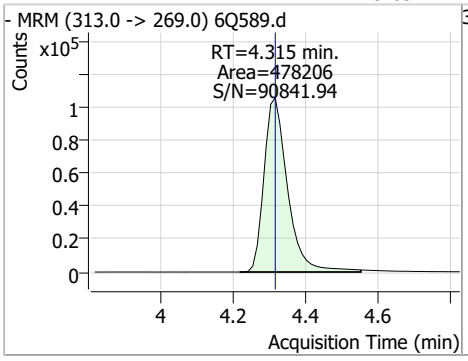
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.24	4.31	0.00	443744				

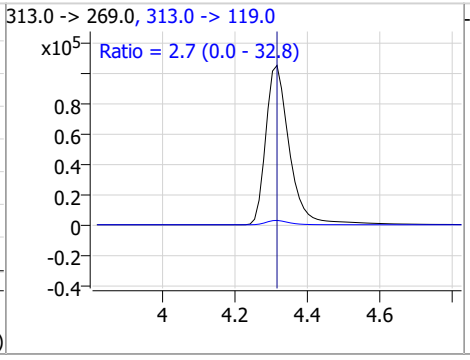


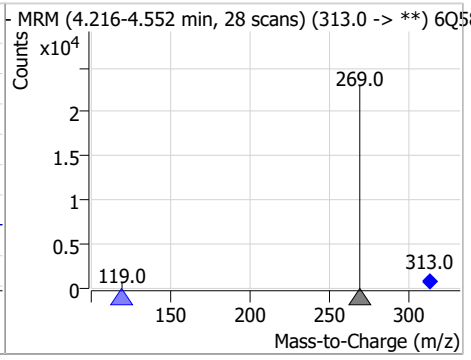




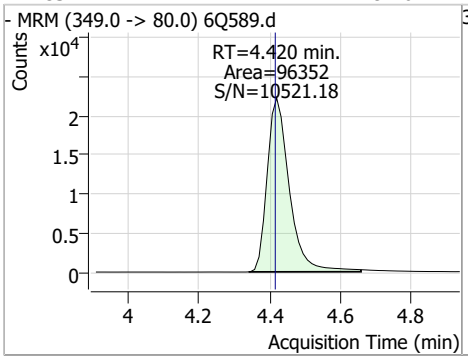
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.89	4.31	0.00	478206	313.0 -> 119.0	2.7	0.0	32.8

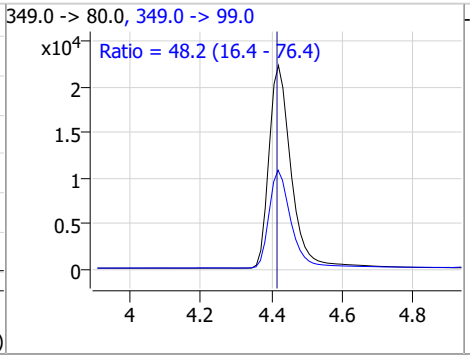


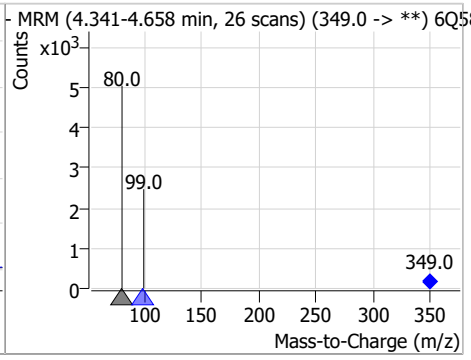




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.70	4.42	-0.01	96352	349.0 -> 99.0	48.2	16.4	76.4

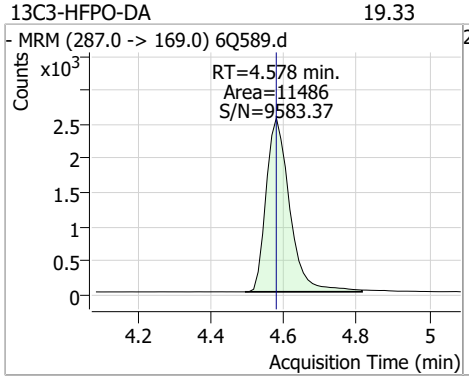


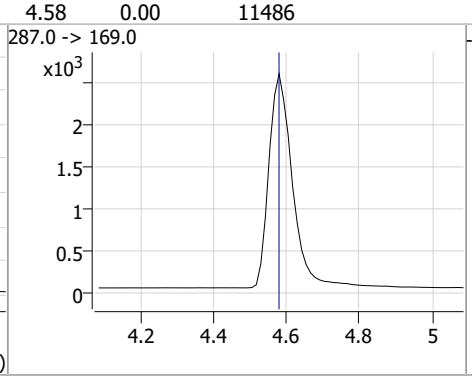


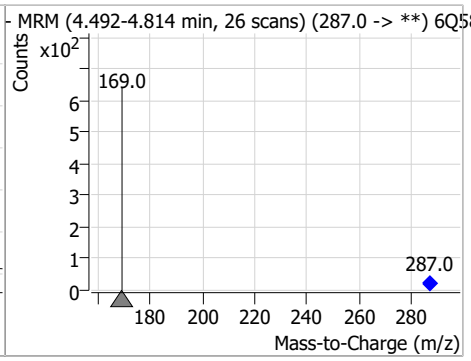


Perfluorinated Compounds by LC/MS/MS

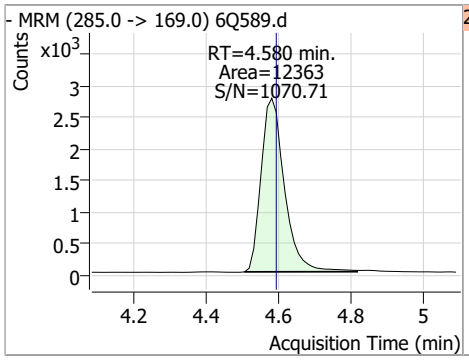
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.33	4.58	0.00	11486				

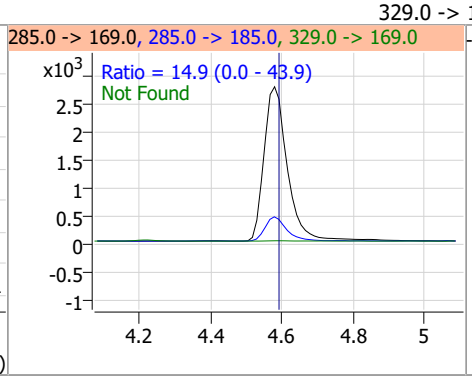


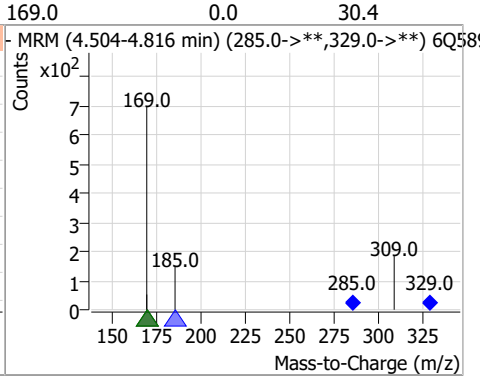




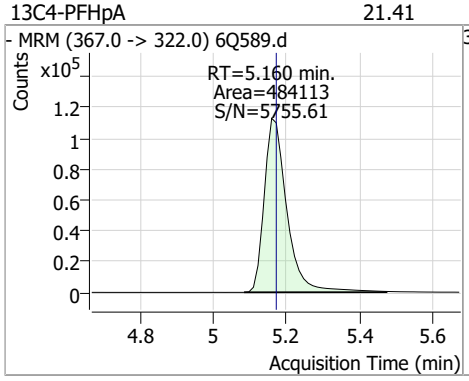
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.97	4.58	-0.01	12363	285.0 -> 185.0	14.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

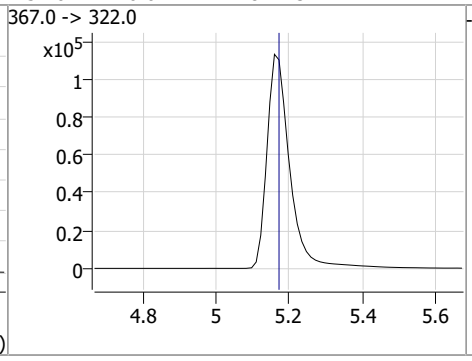


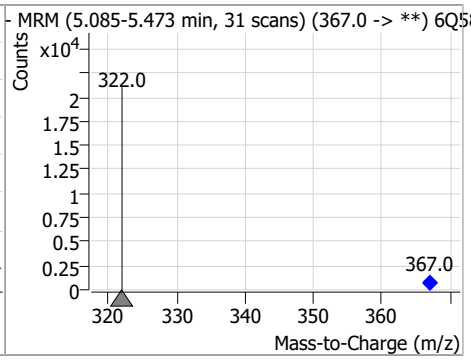




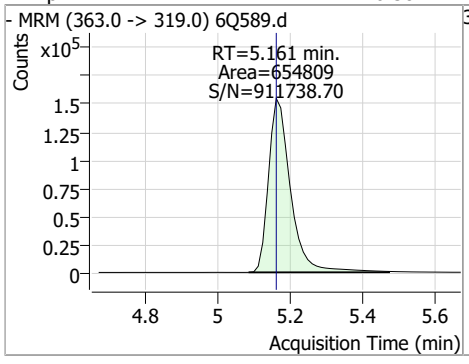
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.41	5.16	-0.01	484113				

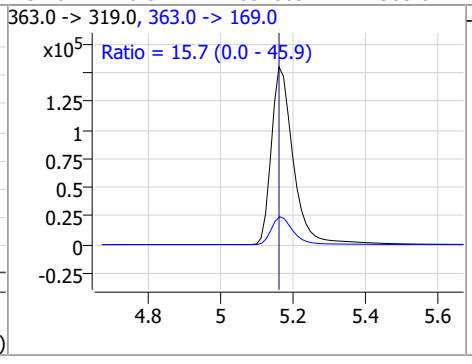


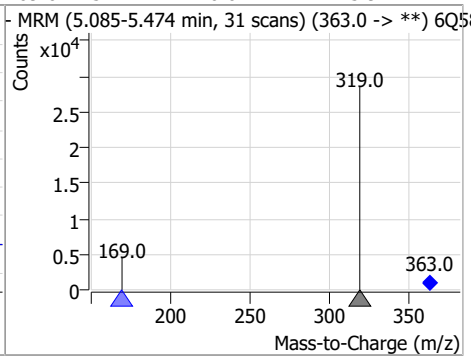




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.38	5.16	-0.01	654809	363.0 -> 169.0	15.7	0.0	45.9

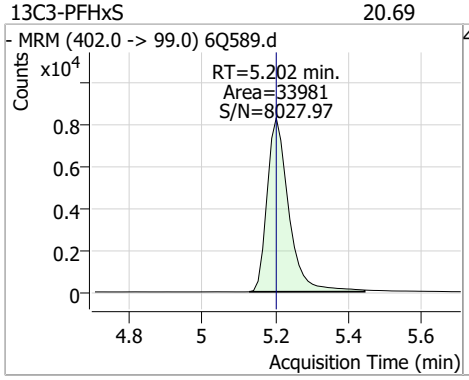


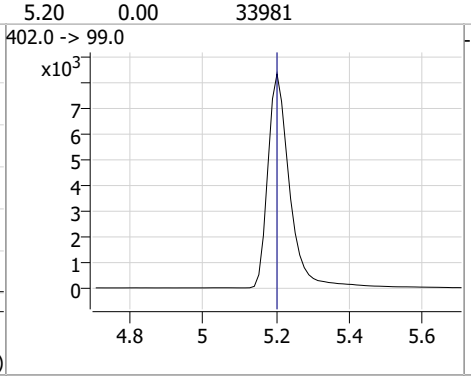


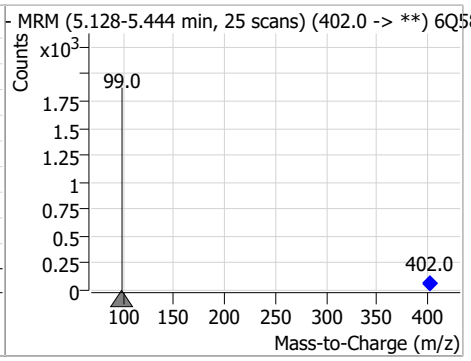


Perfluorinated Compounds by LC/MS/MS

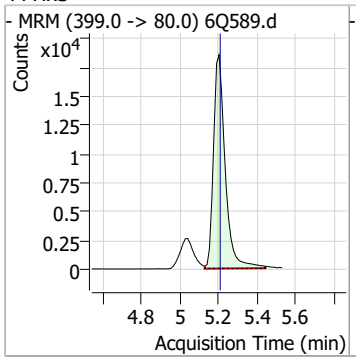
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.69	5.20	0.00	33981				

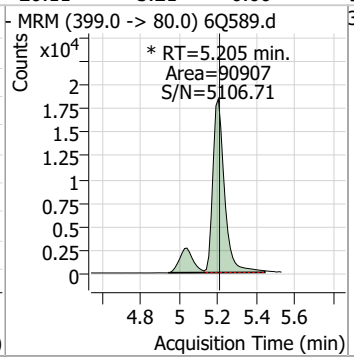


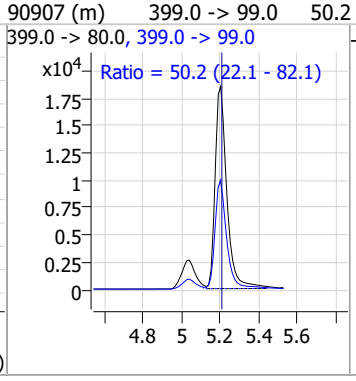


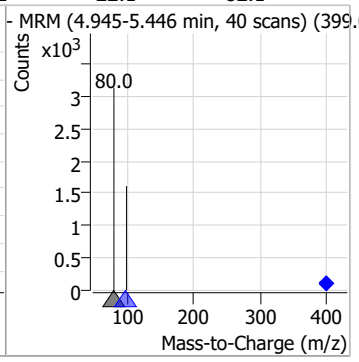


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.11	5.21	0.00	90907 (m)	399.0 -> 99.0	50.2	22.1	82.1

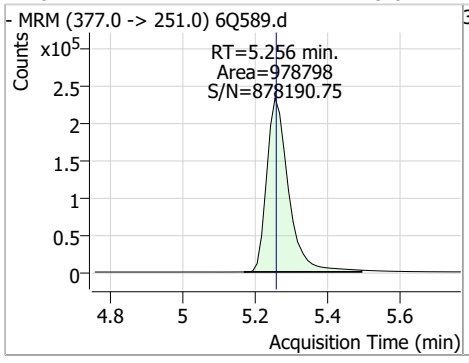


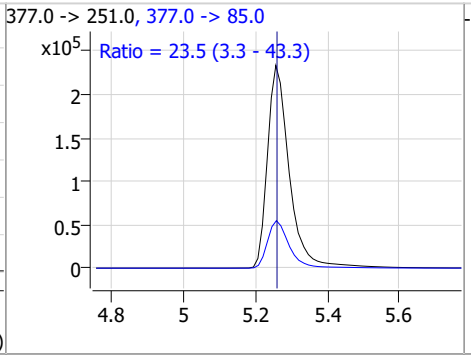


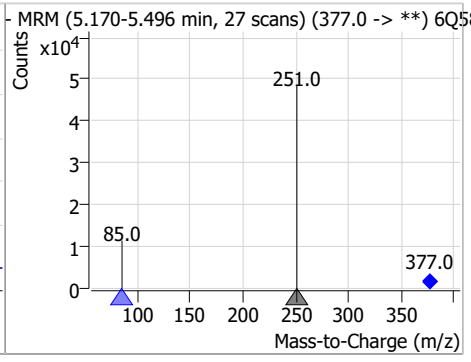




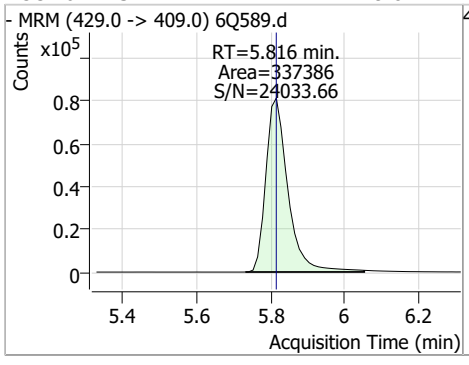
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.87	5.26	0.00	978798	377.0 -> 85.0	23.5	3.3	43.3

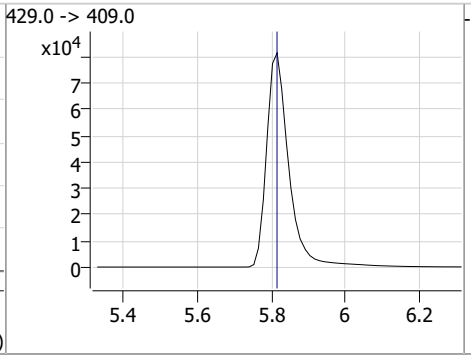


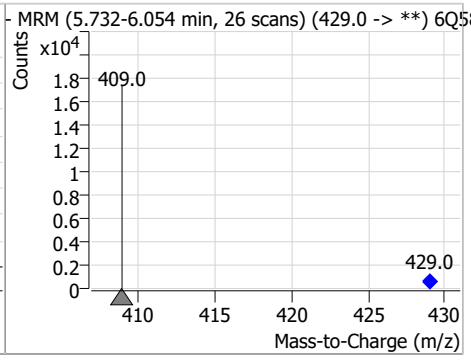




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.81	5.82	0.00	337386				

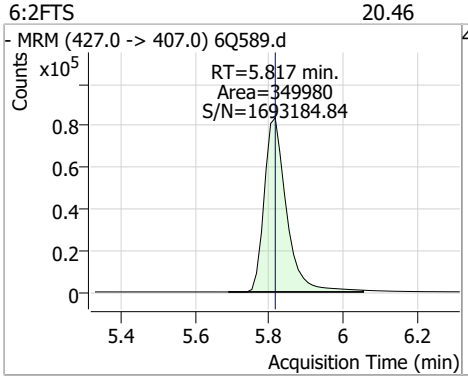


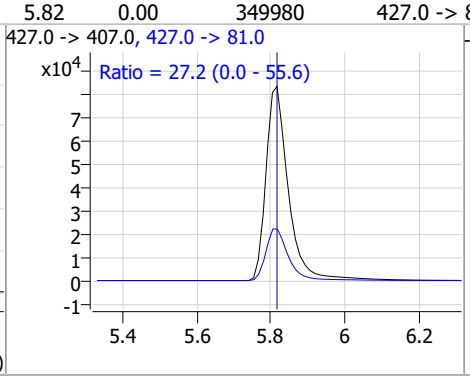


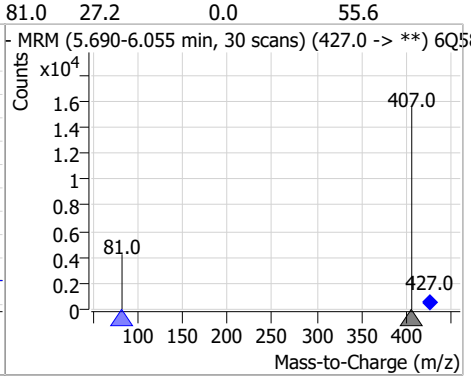


Perfluorinated Compounds by LC/MS/MS

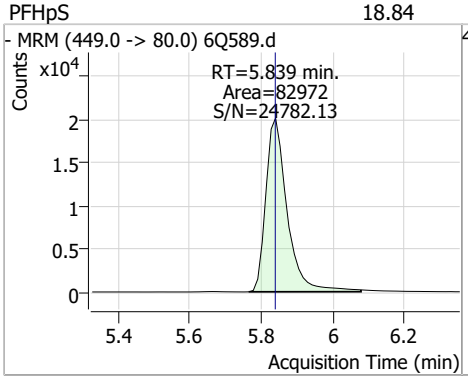
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.46	5.82	0.00	349980	427.0 -> 81.0	27.2	0.0	55.6

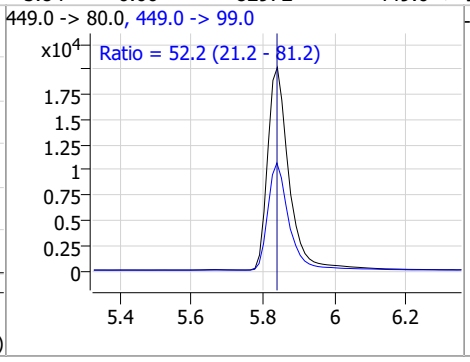


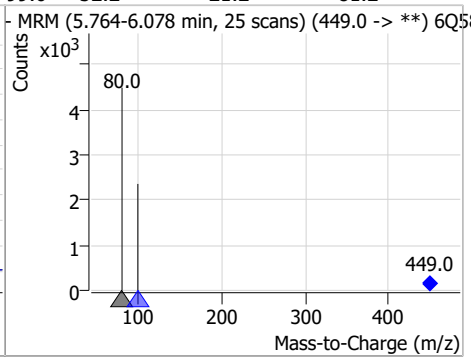




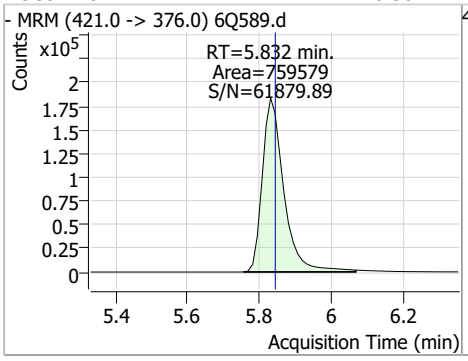
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.84	5.84	0.00	82972	449.0 -> 99.0	52.2	21.2	81.2

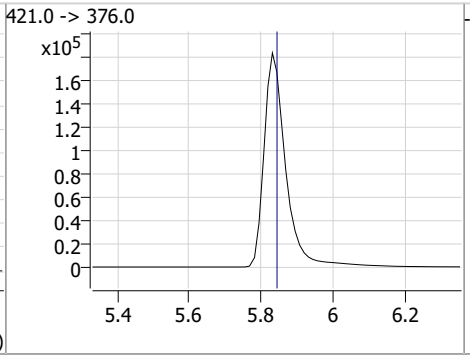


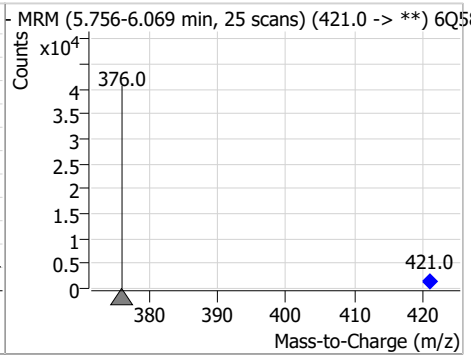




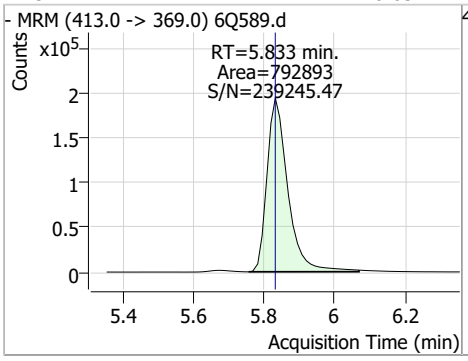
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.38	5.83	-0.01	759579				

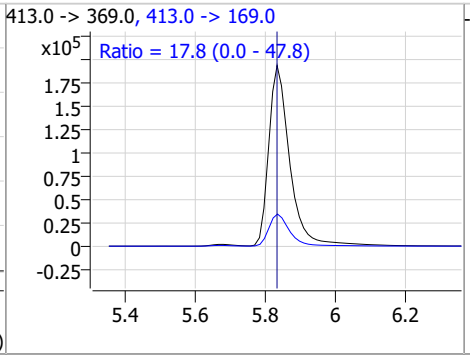


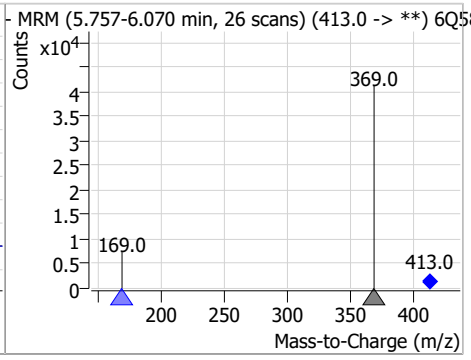




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.63	5.83	-0.01	792893	413.0 -> 169.0	17.8	0.0	47.8

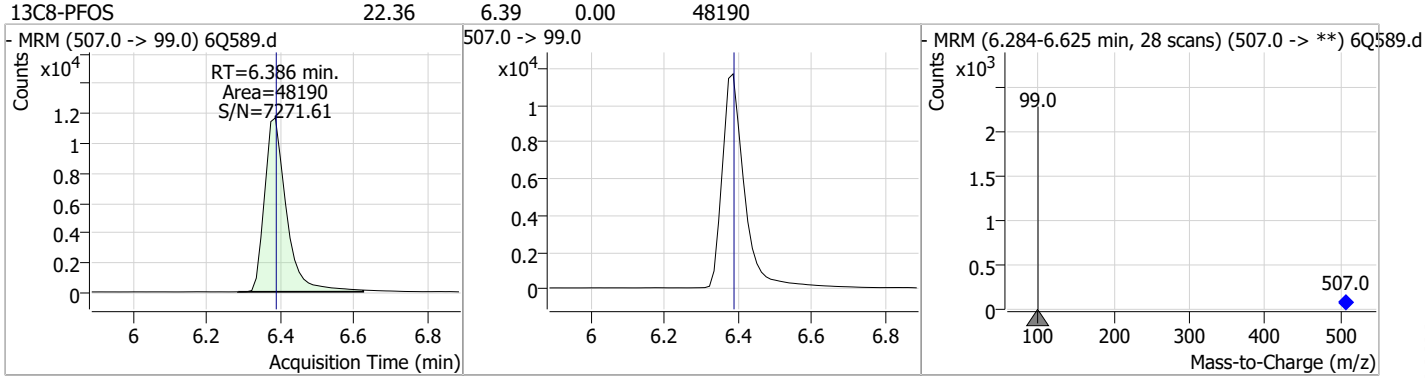




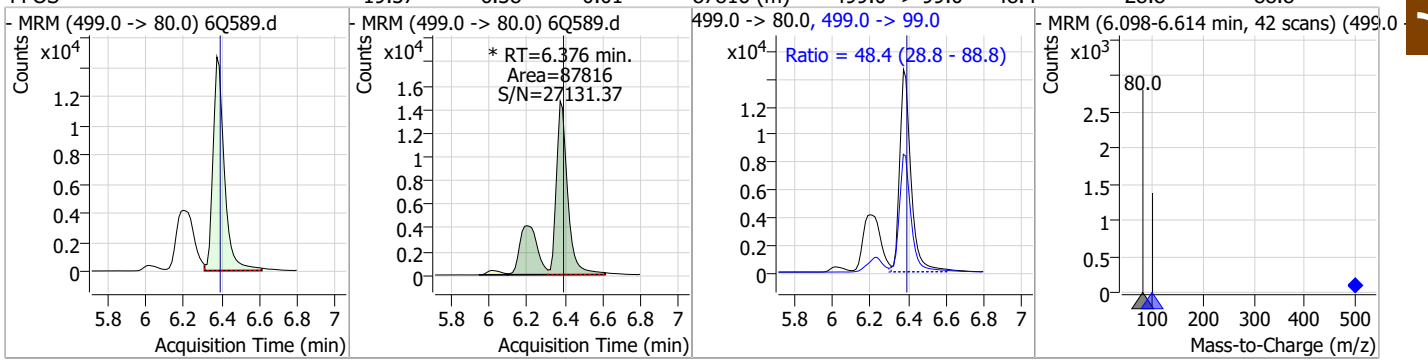


Perfluorinated Compounds by LC/MS/MS

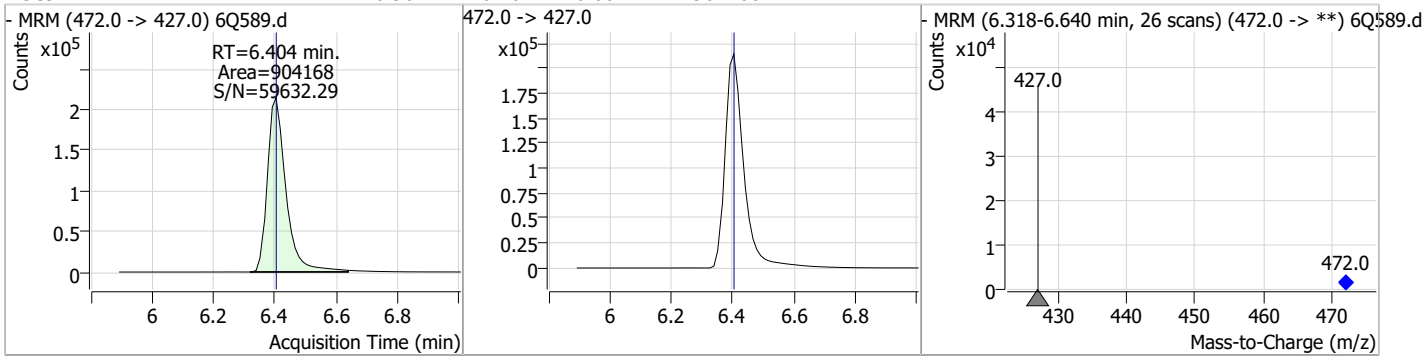
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.36	6.39	0.00	48190				



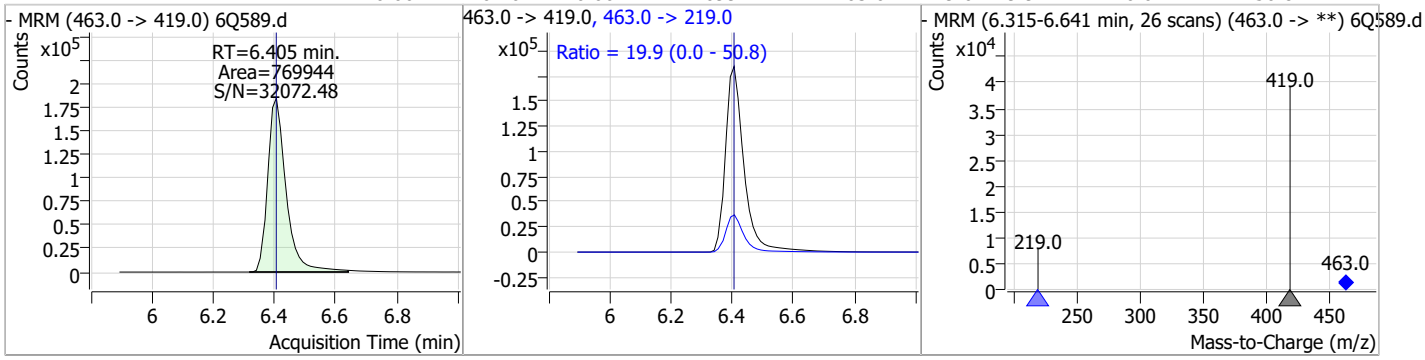
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.37	6.38	-0.01	87816 (m)	499.0 -> 99.0	48.4	28.8	88.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.90	6.40	0.00	904168				

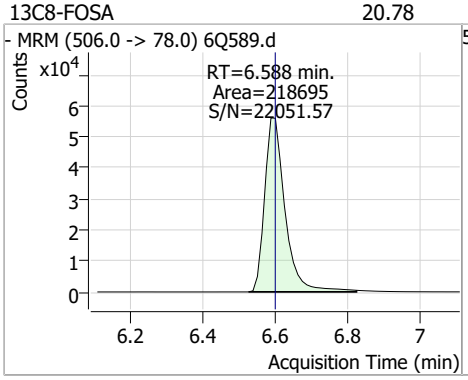


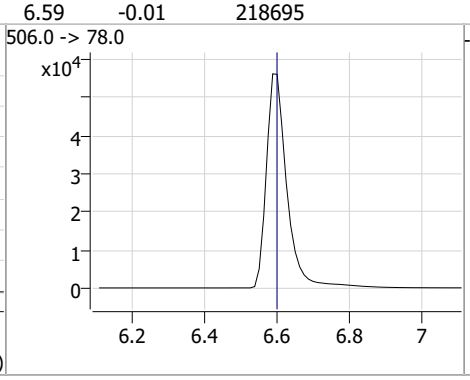
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.00	6.40	0.00	769944	463.0 -> 219.0	19.9	0.0	50.8

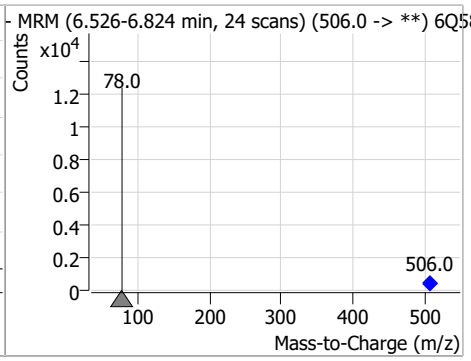


Perfluorinated Compounds by LC/MS/MS

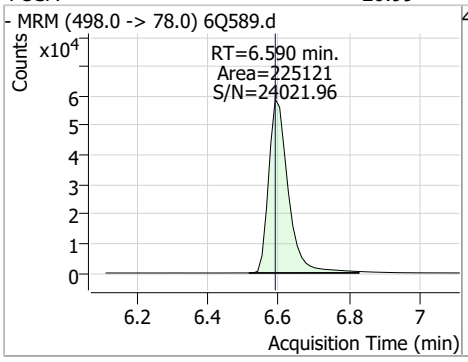
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.78	6.59	-0.01	218695				

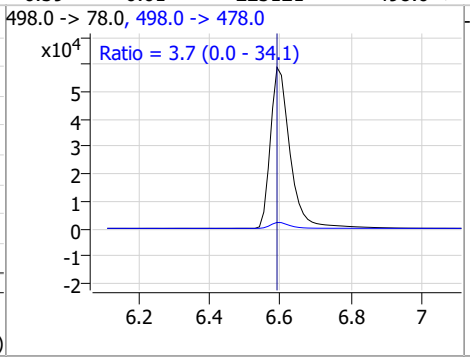


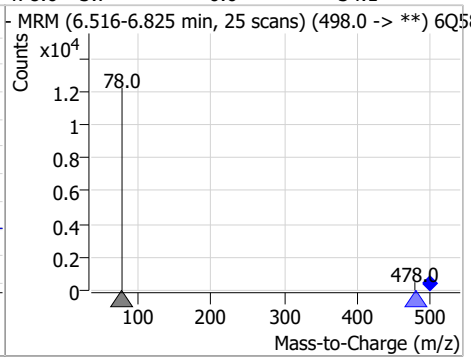




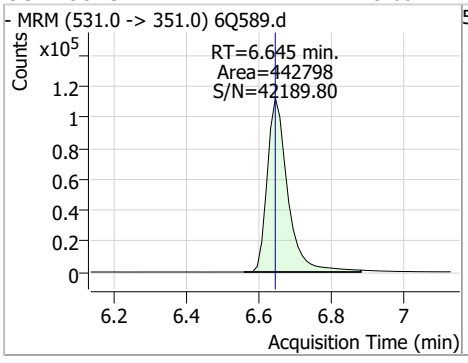
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.99	6.59	-0.01	225121	498.0 -> 478.0	3.7	0.0	34.1

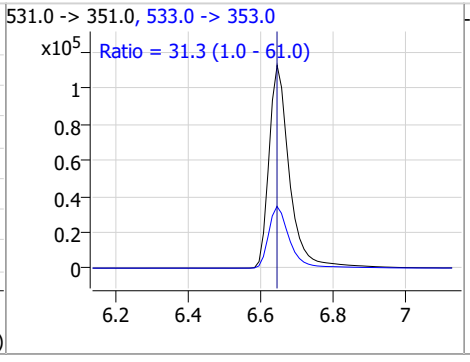


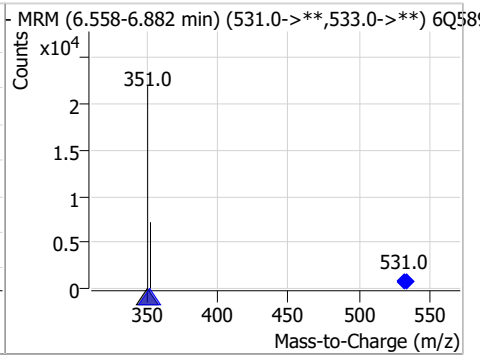




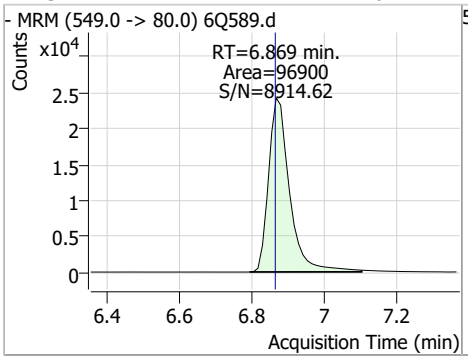
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.85	6.65	0.00	442798	533.0 -> 353.0	31.3	1.0	61.0

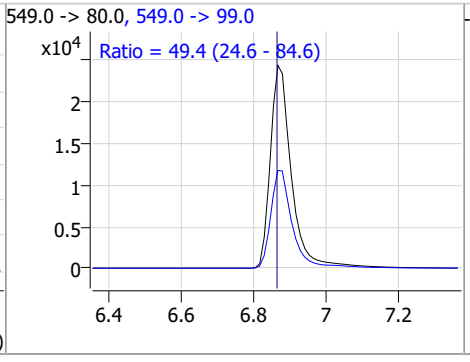


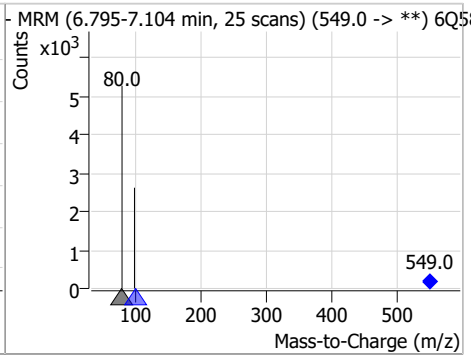




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.41	6.87	0.00	96900	549.0 -> 99.0	49.4	24.6	84.6

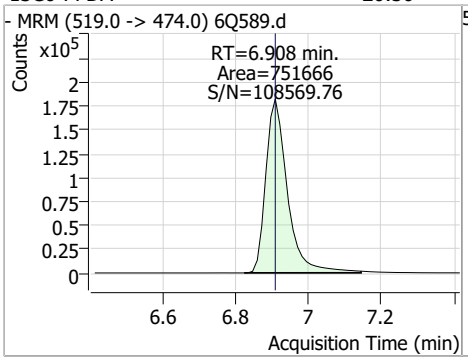


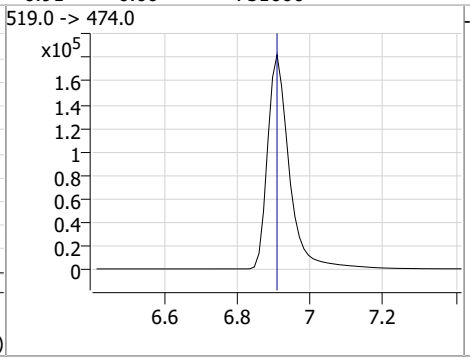


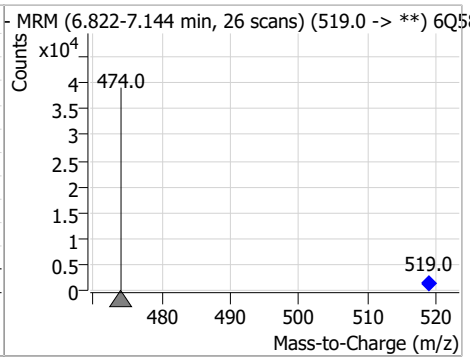


Perfluorinated Compounds by LC/MS/MS

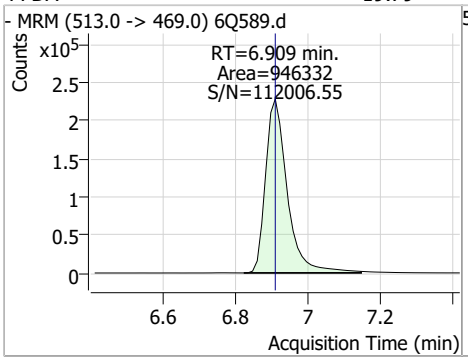
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.50	6.91	0.00	751666				

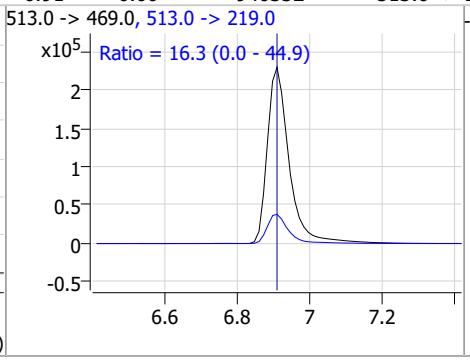


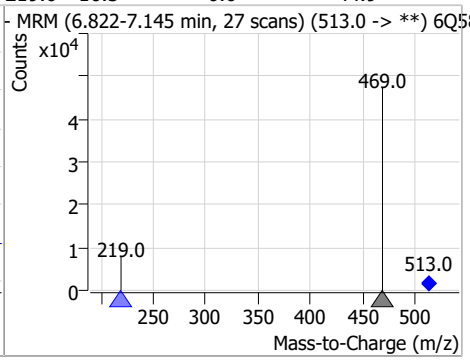




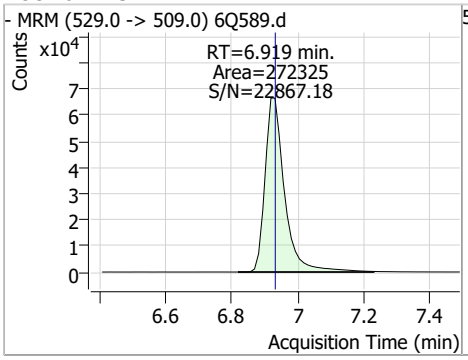
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.79	6.91	0.00	946332	513.0 -> 219.0	16.3	0.0	44.9

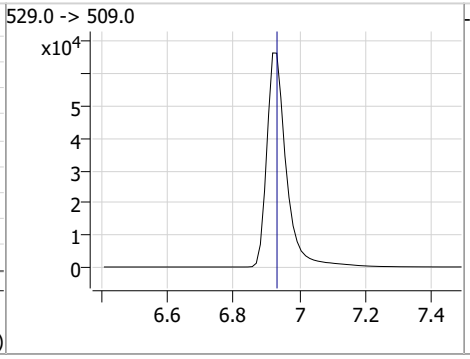


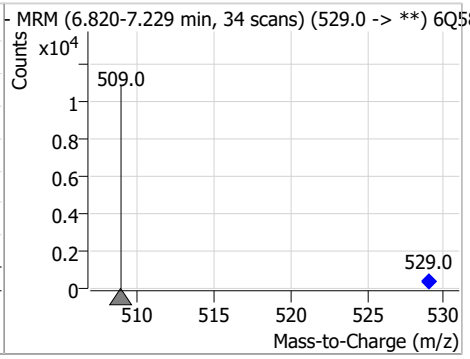




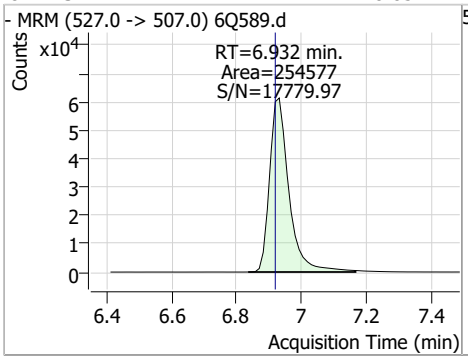
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.14	6.92	-0.01	272325				

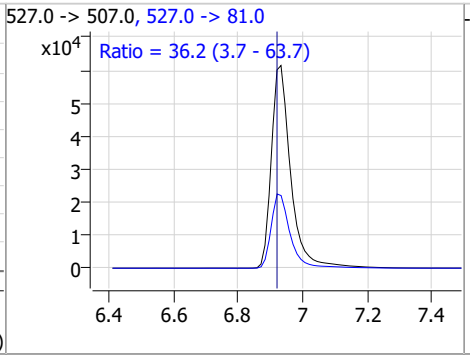


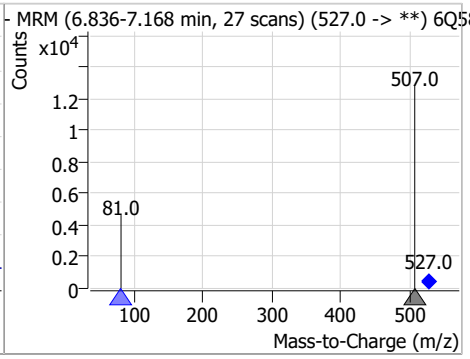




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.85	6.93	0.00	254577	527.0 -> 81.0	36.2	3.7	63.7

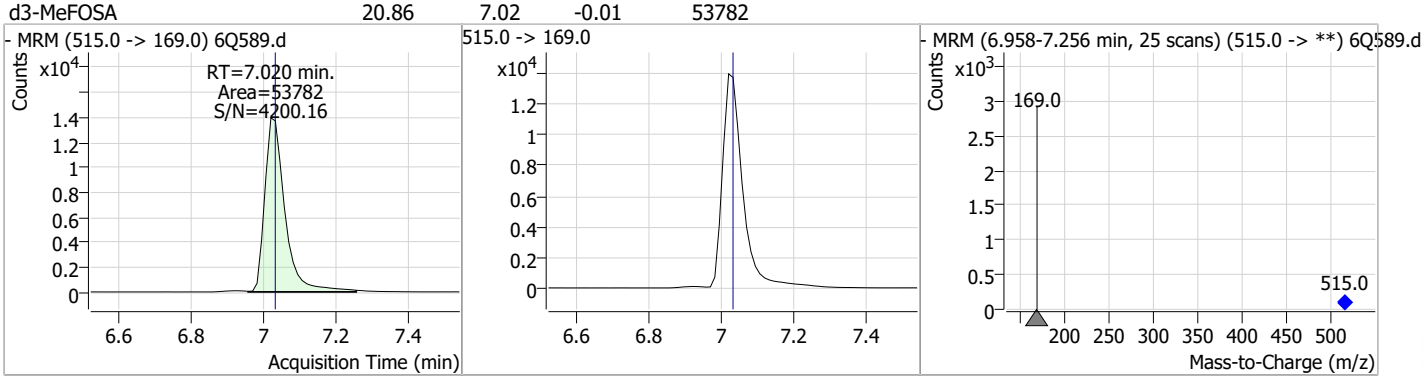




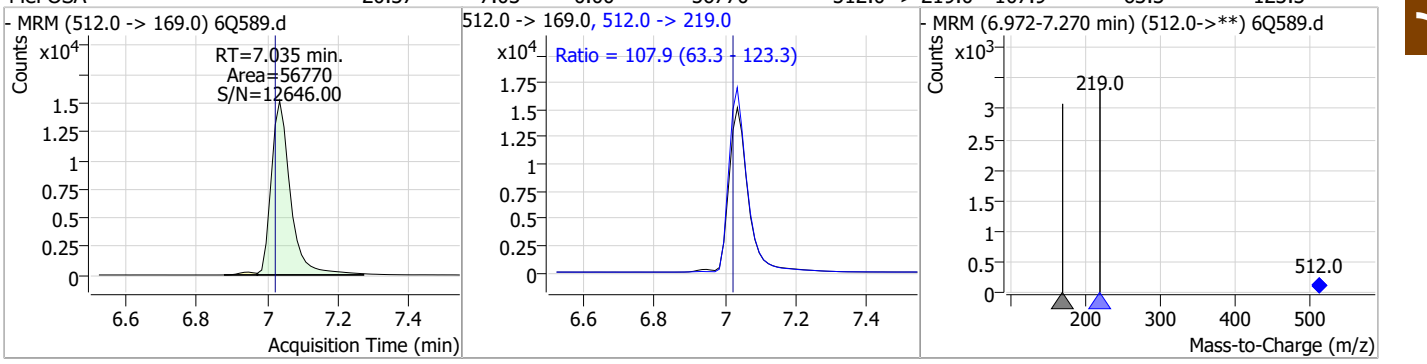


Perfluorinated Compounds by LC/MS/MS

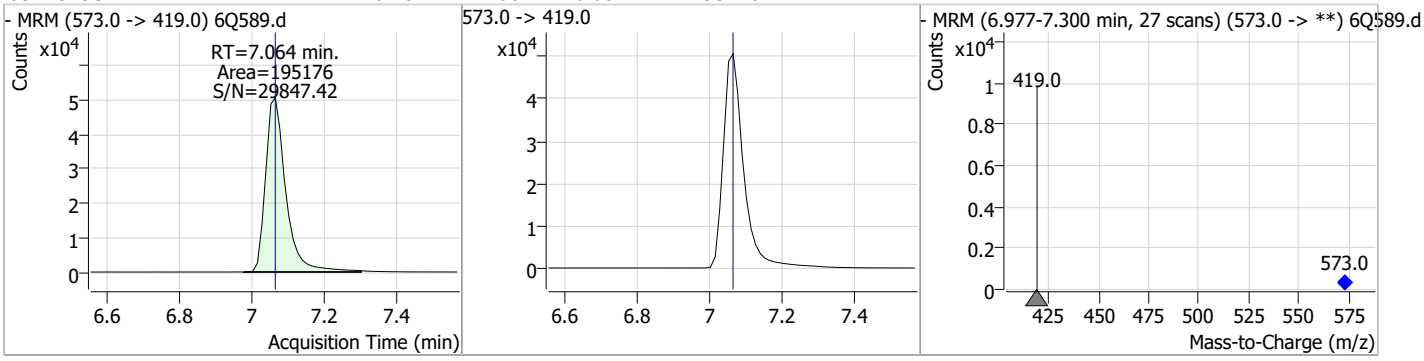
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.86	7.02	-0.01	53782				



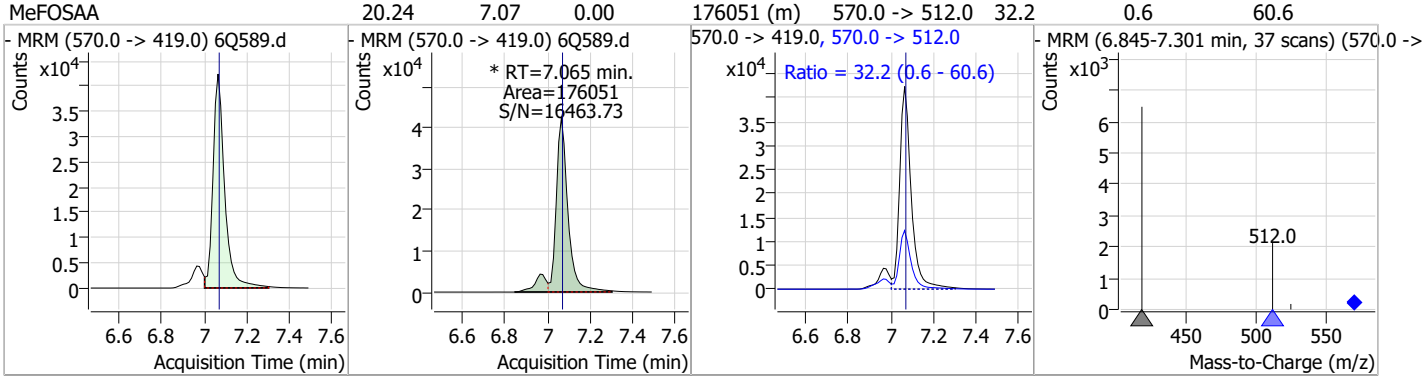
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.37	7.03	0.00	56770	512.0 -> 219.0	107.9	63.3	123.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.76	7.06	0.00	195176				

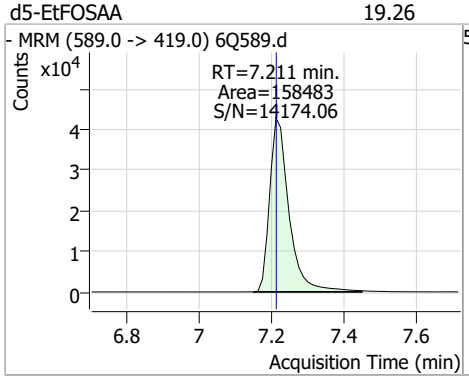


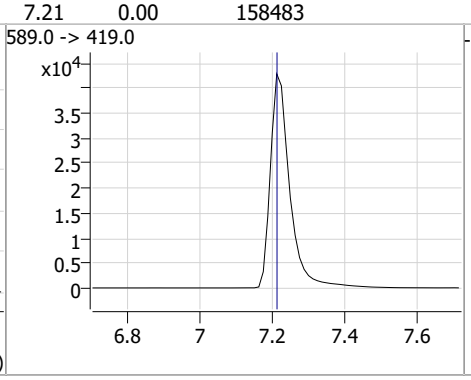
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.24	7.07	0.00	176051 (m)	570.0 -> 512.0	32.2	0.6	60.6

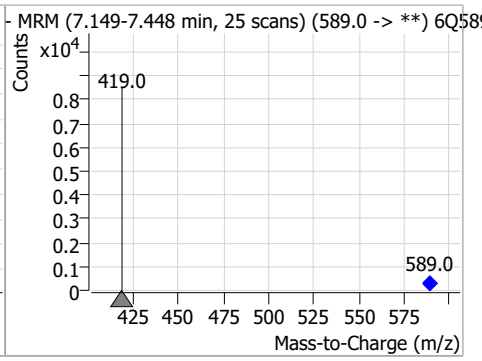


Perfluorinated Compounds by LC/MS/MS

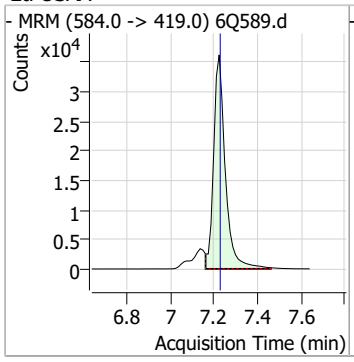
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.26	7.21	0.00	158483				

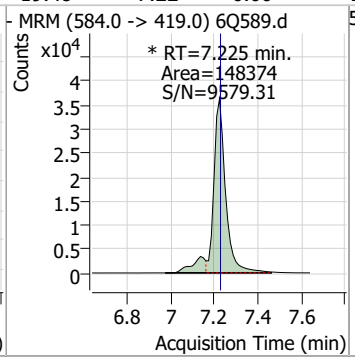


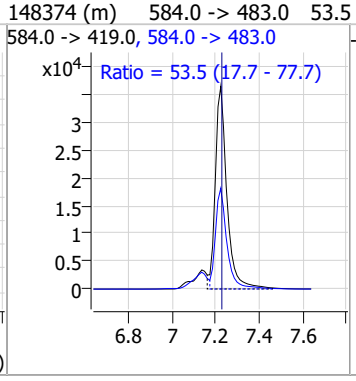


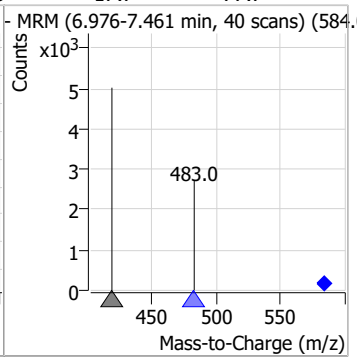


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.48	7.22	0.00	148374 (m)	584.0 -> 483.0	53.5	17.7	77.7

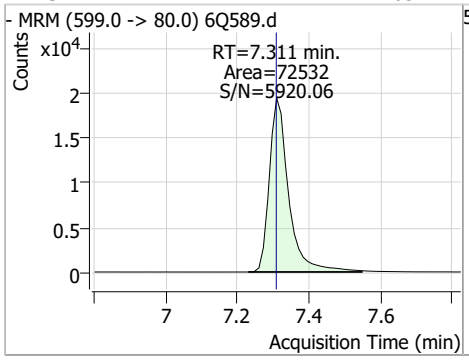


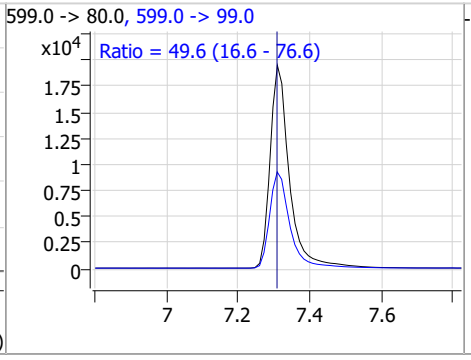


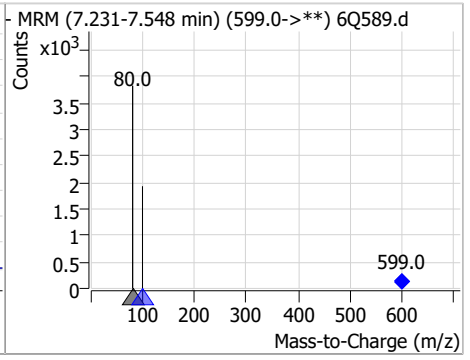




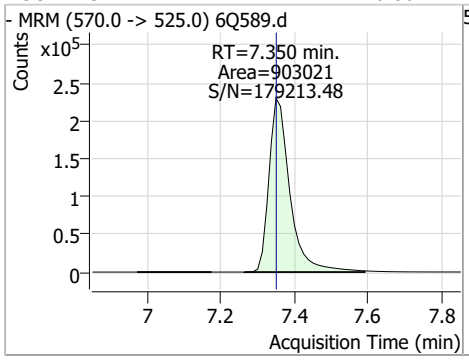
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.65	7.31	0.00	72532	599.0 -> 99.0	49.6	16.6	76.6

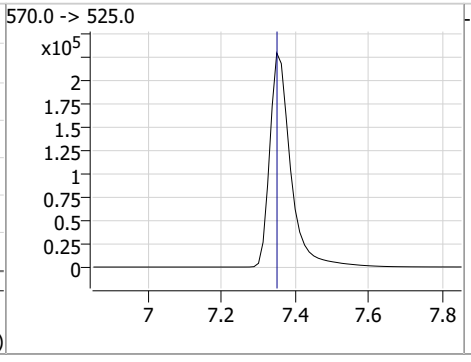


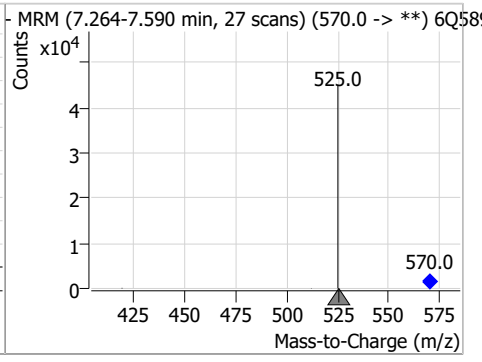




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.86	7.35	0.00	903021				

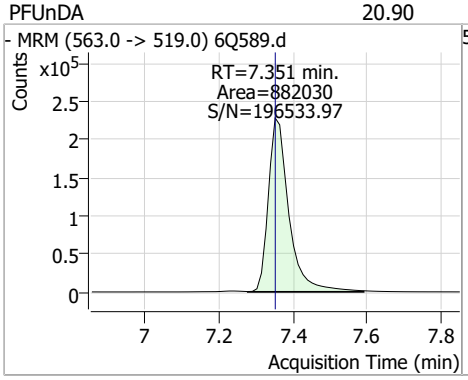


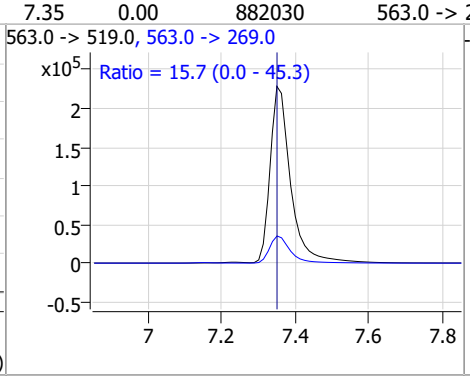


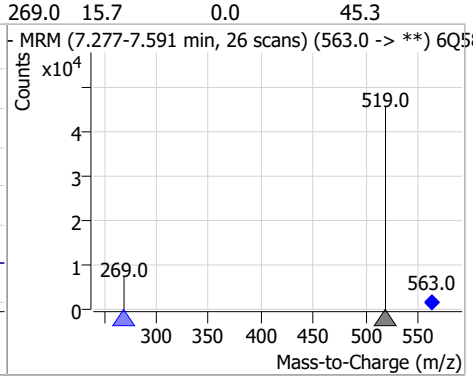


Perfluorinated Compounds by LC/MS/MS

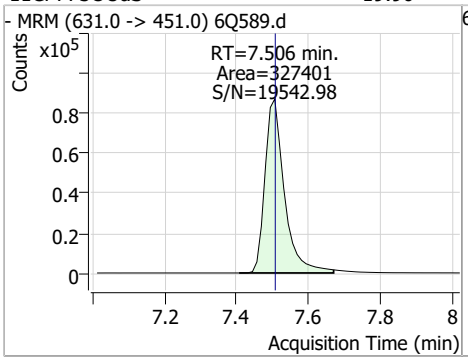
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.90	7.35	0.00	882030	563.0 -> 269.0	15.7	0.0	45.3

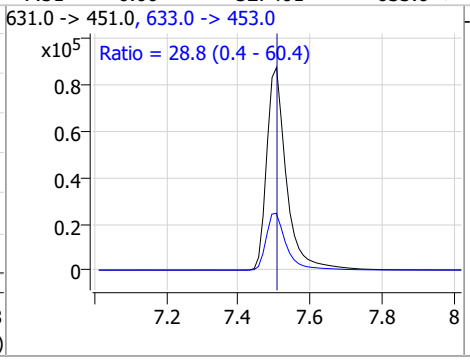


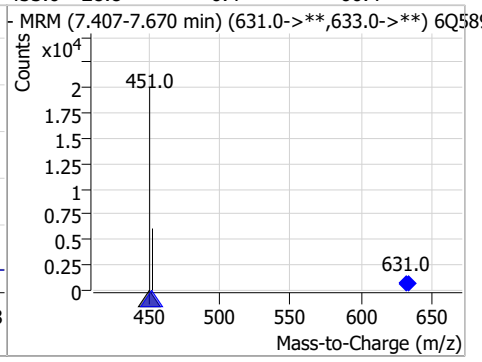




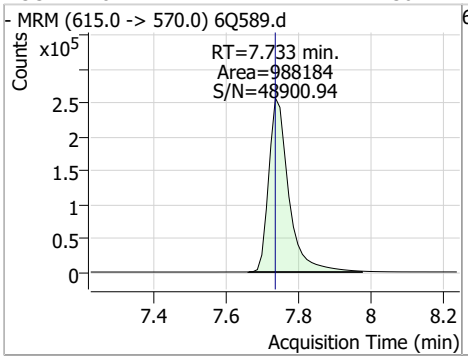
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.90	7.51	0.00	327401	633.0 -> 453.0	28.8	0.4	60.4

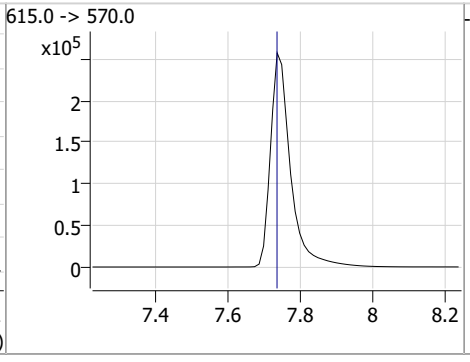


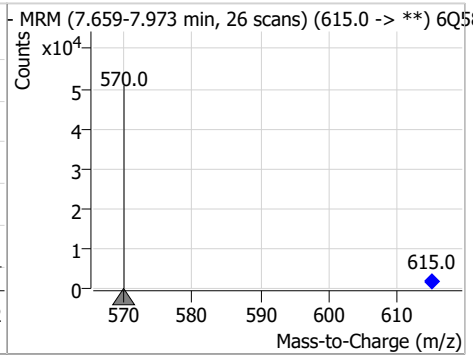




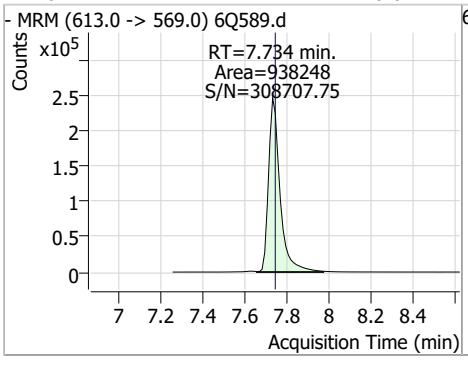
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.30	7.73	0.00	988184				

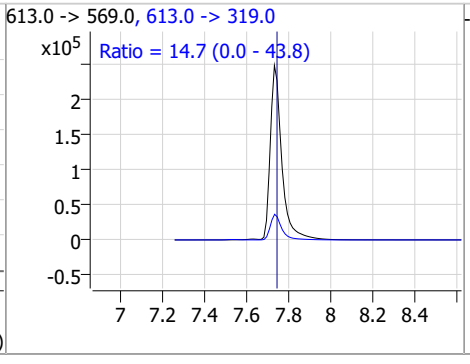


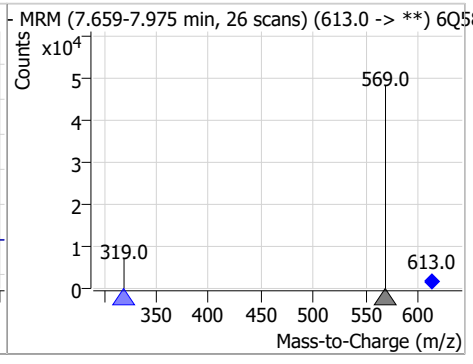




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.61	7.73	-0.01	938248	613.0 -> 319.0	14.7	0.0	43.8

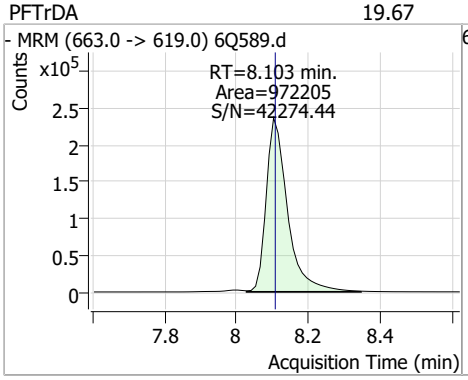


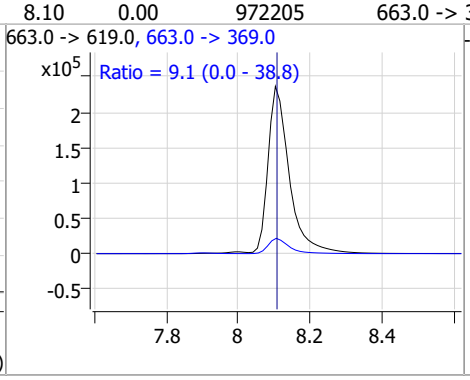


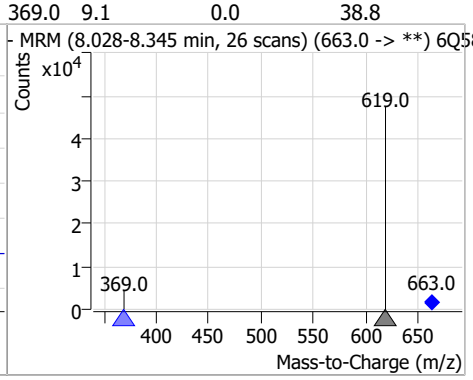


Perfluorinated Compounds by LC/MS/MS

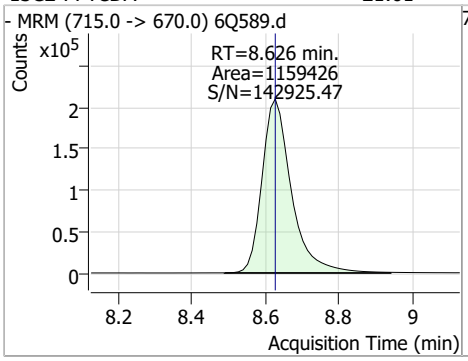
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.67	8.10	0.00	972205	663.0 -> 369.0	9.1	0.0	38.8

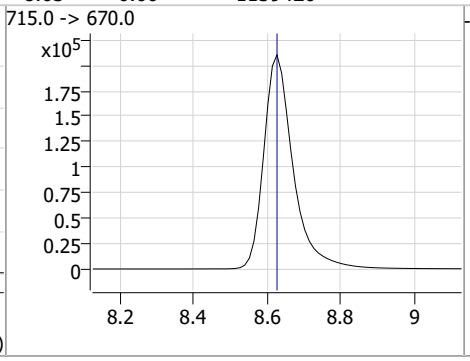


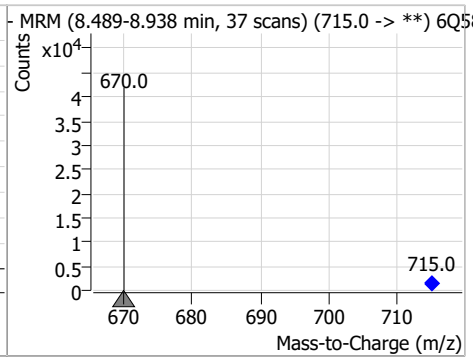




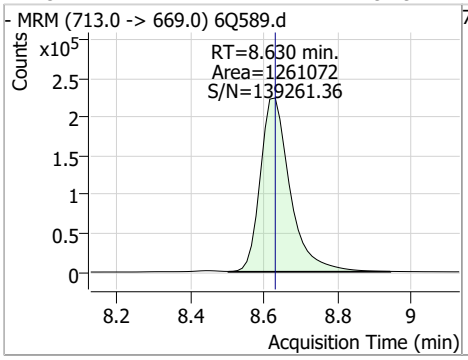
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.61	8.63	0.00	1159426				

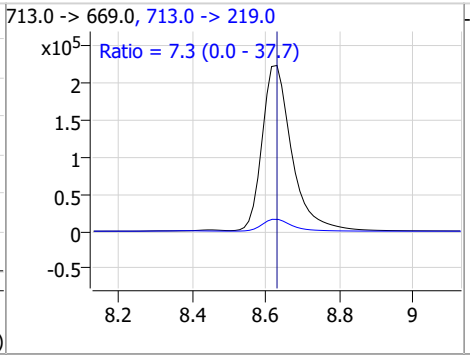


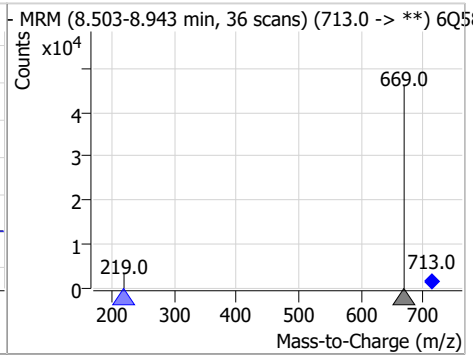




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.79	8.63	0.00	1261072	713.0 -> 219.0	7.3	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q11-CC6
Lab FileID: 6Q589.D
Injection Time: 05/26/22 21:14
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.38	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:45

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q601.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 12:14:59 AM
Sample Name : cc6-20
Vial : P1-A7
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

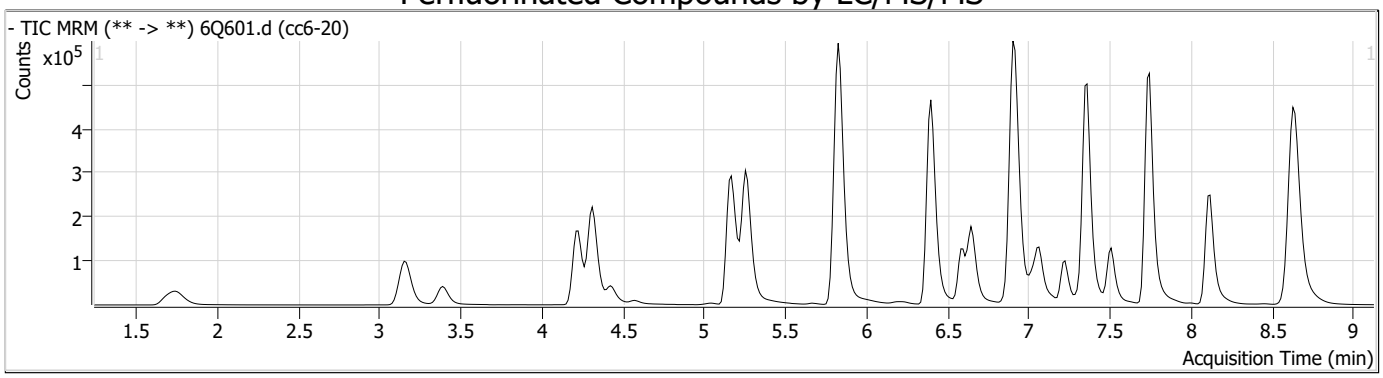
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.737	217.0 -> 172.0	179458	20.00	µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	298095	20.00	µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	455896	20.00	µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	476142	20.00	µg/L	0.000
M8-PFOA	5.832	421.0 -> 376.0	763464	20.00	µg/L	-0.013
M9-PFNA	6.404	472.0 -> 427.0	901864	20.00	µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	812034	20.00	µg/L	0.000
M7-PFUnDA	7.362	570.0 -> 525.0	946353	20.00	µg/L	0.012
M2-PFDoDA	7.746	615.0 -> 570.0	963403	20.00	µg/L	0.013
M2-PFTeDA	8.626	715.0 -> 670.0	1147513	20.00	µg/L	0.000
M8-FOSA	6.588	506.0 -> 78.0	231169	20.00	µg/L	-0.012
M3-PFBS	3.385	302.0 -> 99.0	37363	20.00	µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	33946	20.00	µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	46626	20.00	µg/L	-0.002
M2-4:2FTS	4.222	329.0 -> 309.0	301489	20.00	µg/L	0.000
M2-6:2FTS	5.816	429.0 -> 409.0	327215	20.00	µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	247754	20.00	µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	181179	20.00	µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12537	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	56282	20.00	µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	156864	20.00	µg/L	-0.001
System Monitoring Compounds						
13C2-4:2FTS	4.222	329.0 -> 309.0	301489	20.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C2-6:2FTS	5.816	429.0 -> 409.0	327215	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-8:2FTS	6.931	529.0 -> 509.0	247754	20.14	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-PFDoDA	7.746	615.0 -> 570.0	963403	20.77	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C2-PFTeDA	8.626	715.0 -> 670.0	1147513	21.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C3-PFBS	3.385	302.0 -> 99.0	37363	21.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C3-PFHxS	5.202	402.0 -> 99.0	33946	20.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFBA	1.737	217.0 -> 172.0	179458	22.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C4-PFHpA	5.172	367.0 -> 322.0	476142	21.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C5-PFHxA	4.314	318.0 -> 273.0	455896	21.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C5-PFPeA	3.155	268.0 -> 223.0	298095	21.44	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C6-PFDA	6.908	519.0 -> 474.0	812034	22.14	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

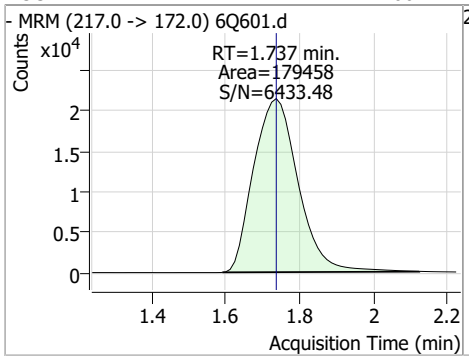
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%			
13C7-PFUnDA	7.362	570.0 -> 525.0	946353	21.86	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
13C8-FOSA	6.588	506.0 -> 78.0	231169	21.96	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%			
13C8-PFOA	5.832	421.0 -> 376.0	763464	20.49	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C8-PFOS	6.386	507.0 -> 99.0	46626	21.63	µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%			
13C9-PFNA	6.404	472.0 -> 427.0	901864	20.84	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
d3-MeFOSAA	7.064	573.0 -> 419.0	181179	19.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
13C3-HFPO-DA	4.578	287.0 -> 169.0	12609	21.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%			
d3-MeFOSA	7.020	515.0 -> 169.0	56282	21.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%			
d5-EtFOSAA	7.211	589.0 -> 419.0	156872	19.07	µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
Target Compounds							**QValue**
4:2FTS	4.212	327.0 -> 307.0	353880	21.60	µg/L		99
6:2FTS	5.817	427.0 -> 407.0	349457	21.06	µg/L		98
8:2FTS	6.932	527.0 -> 507.0	260154	21.17	µg/L		96
EtFOSAA	7.225	584.0 -> 419.0	145590	19.32	µg/L	m	90
FOSA	6.590	498.0 -> 78.0	215177	18.98	µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	165083	20.44	µg/L	m	93
PFBA	1.743	213.0 -> 169.0	82993	20.41	µg/L		100
PFBS	3.390	299.0 -> 80.0	118267	20.36	µg/L		99
PFDA	6.909	513.0 -> 469.0	970867	18.80	µg/L		97
PFDoDA	7.747	613.0 -> 569.0	930163	20.96	µg/L		98
PFDS	7.311	599.0 -> 80.0	68361	19.47	µg/L		95
PFHpA	5.174	363.0 -> 319.0	646001	20.45	µg/L		100
PFHpS	5.839	449.0 -> 80.0	81454	19.12	µg/L		95
PFHxA	4.315	313.0 -> 269.0	470132	19.03	µg/L		99
PFHxS	5.205	399.0 -> 80.0	90828	20.11	µg/L	m	97
PFNA	6.405	463.0 -> 419.0	751149	19.56	µg/L		100
PFNS	6.881	549.0 -> 80.0	98169	21.37	µg/L		93
PFOA	5.833	413.0 -> 369.0	802750	20.78	µg/L		99
PFOS	6.388	499.0 -> 80.0	87650	19.99	µg/L	m	86
PFPeA	3.158	263.0 -> 219.0	257506	19.77	µg/L		100
PFPeS	4.420	349.0 -> 80.0	95544	19.67	µg/L		97
PFTeDA	8.630	713.0 -> 669.0	1253370	19.87	µg/L		99
PFTrDA	8.115	663.0 -> 619.0	977988	20.30	µg/L		100
PFUnDA	7.364	563.0 -> 519.0	847772	19.17	µg/L		99
11Cl-PF3OUdS	7.506	631.0 -> 451.0	333868	20.82	µg/L		99
9Cl-PF3ONS	6.645	531.0 -> 351.0	463174	19.22	µg/L		97
ADONA	5.256	377.0 -> 251.0	961125	19.53	µg/L		99
HFPO-DA	4.580	285.0 -> 169.0	12189	20.73	µg/L		98
MeFOSA	7.035	512.0 -> 169.0	57251	19.63	µg/L		94

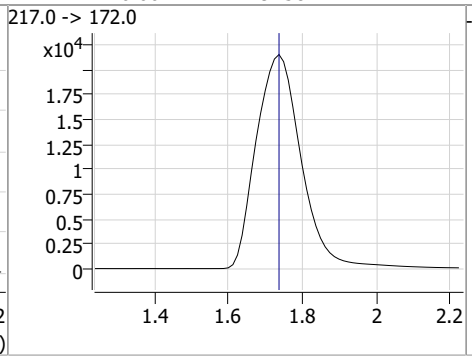
 # = Qualifier out of range, m = manually integrated, + = Area summed

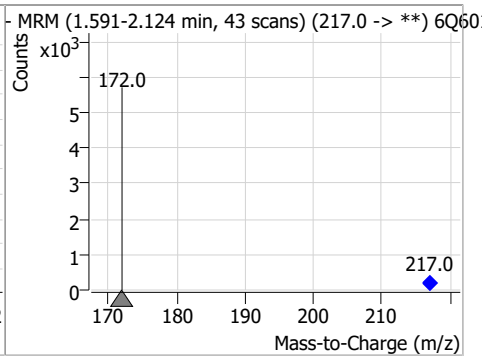
Perfluorinated Compounds by LC/MS/MS



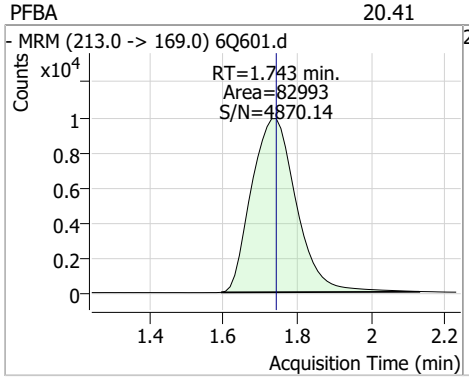
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.00	1.74	0.00	179458				

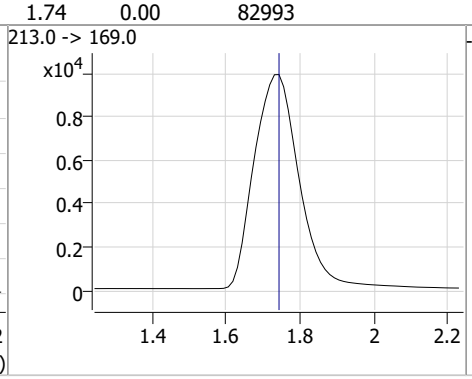


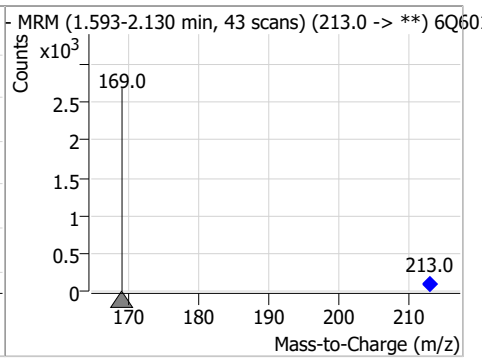




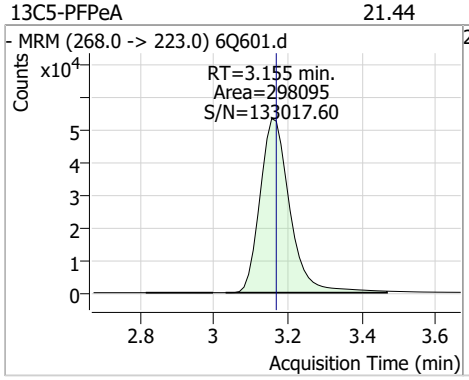
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.41	1.74	0.00	82993				

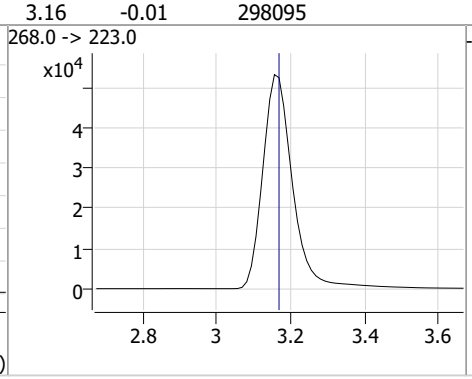


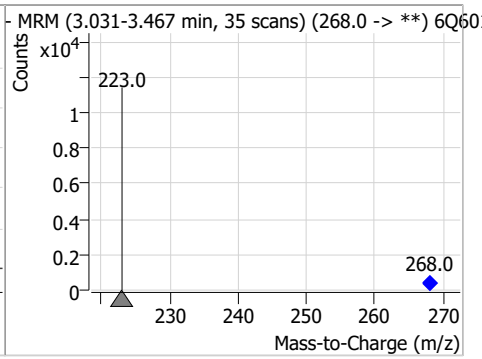




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.44	3.16	-0.01	298095				

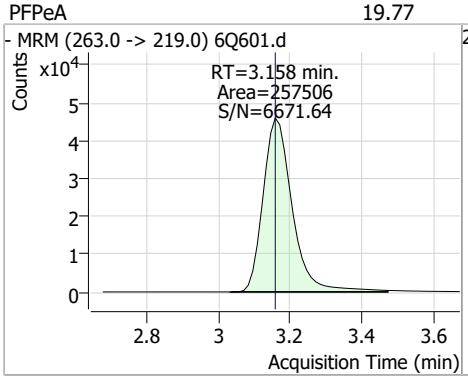


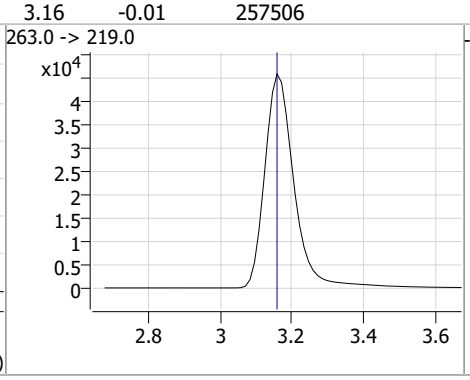


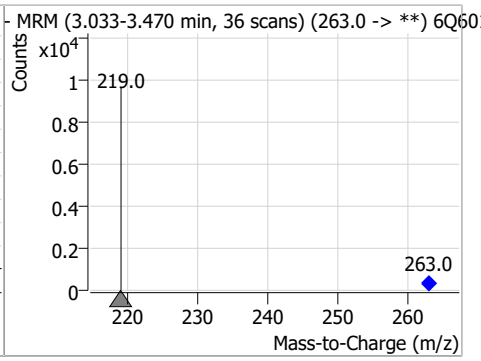


Perfluorinated Compounds by LC/MS/MS

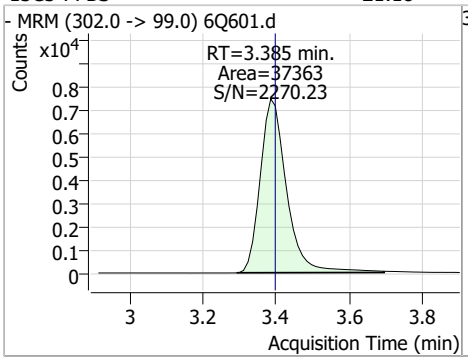
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.77	3.16	-0.01	257506				

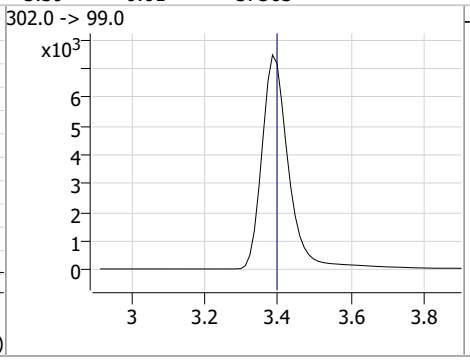


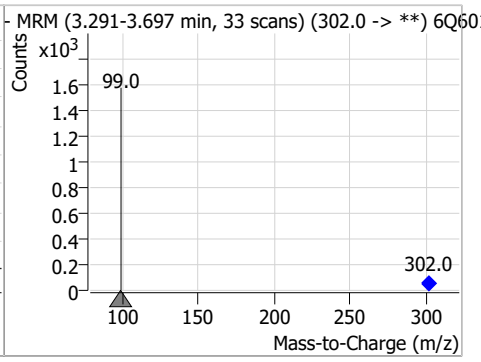




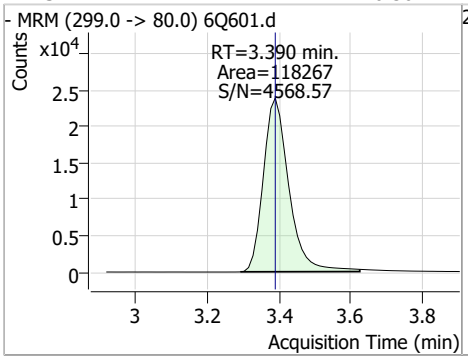
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.18	3.39	-0.01	37363				

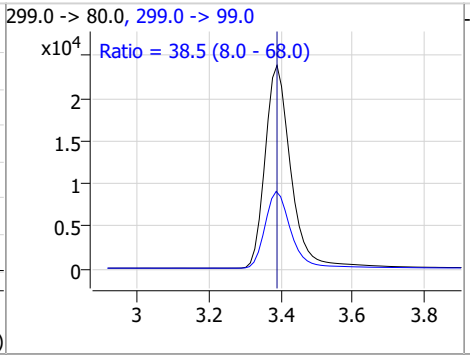


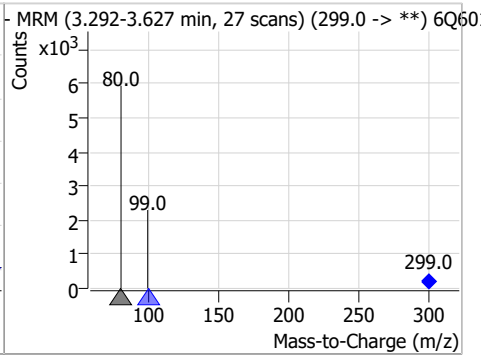




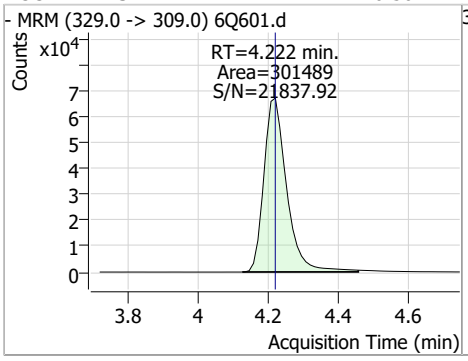
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.36	3.39	-0.01	118267	299.0 -> 99.0	38.5	8.0	68.0

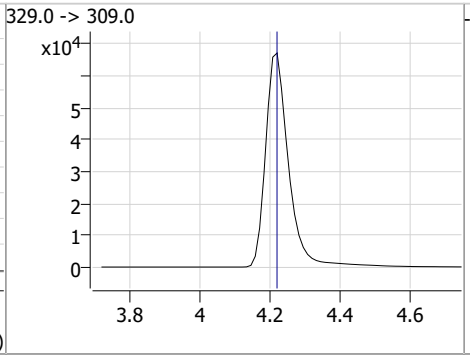


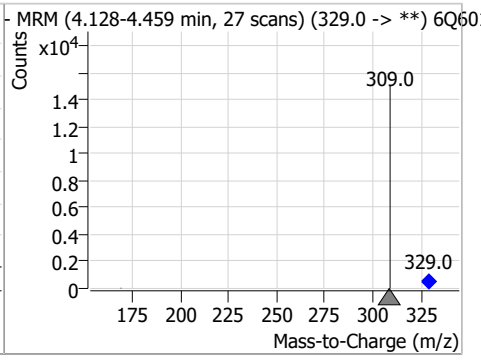




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.50	4.22	0.00	301489				

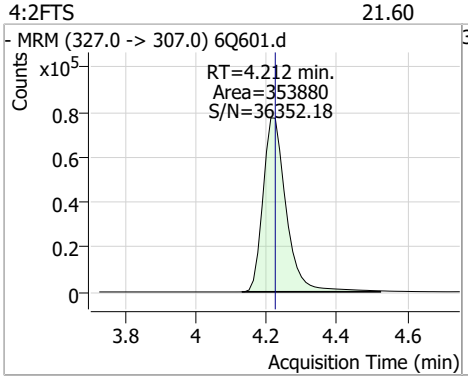


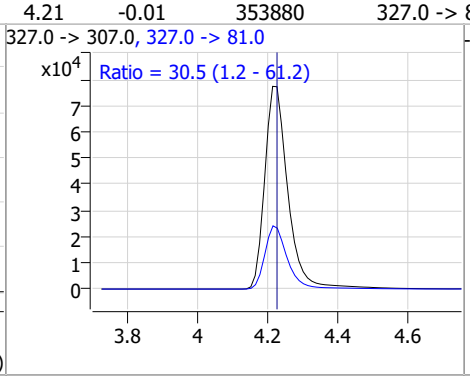


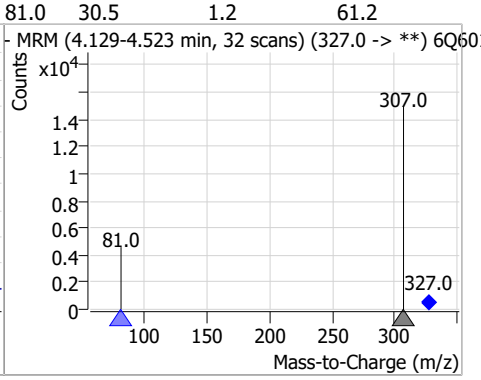


Perfluorinated Compounds by LC/MS/MS

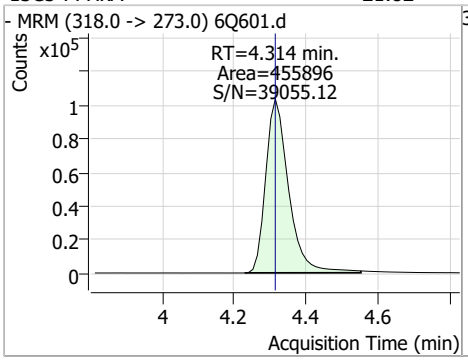
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.60	4.21	-0.01	353880	327.0 -> 81.0	30.5	1.2	61.2

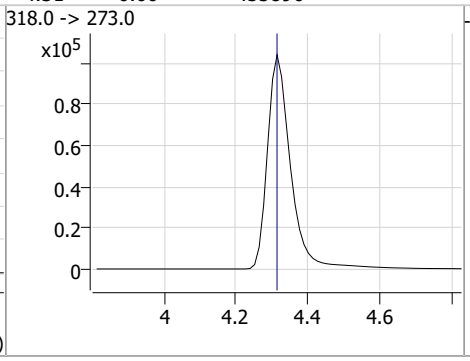


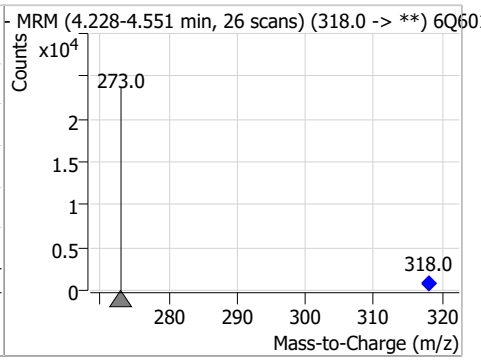




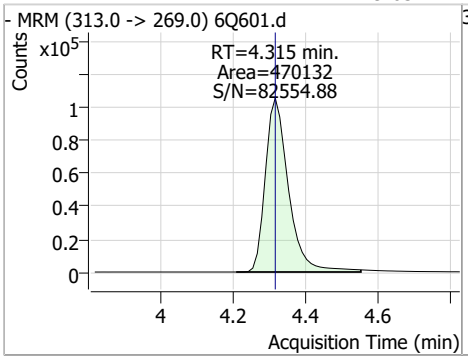
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.82	4.31	0.00	455896				

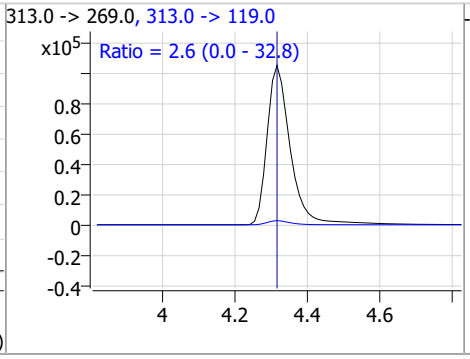


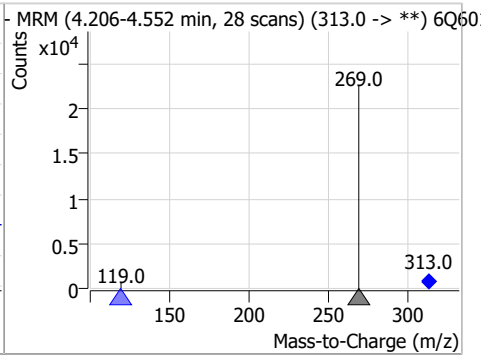




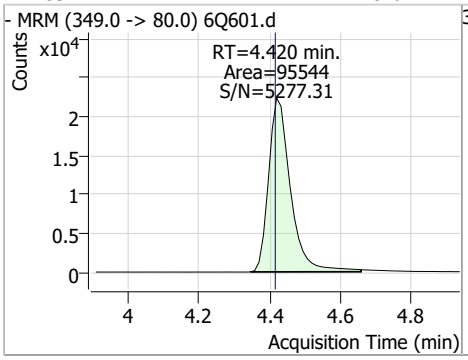
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.03	4.31	0.00	470132	313.0 -> 119.0	2.6	0.0	32.8

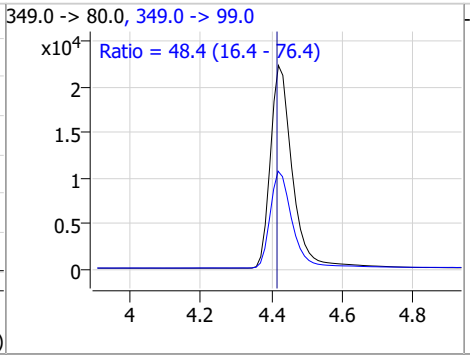


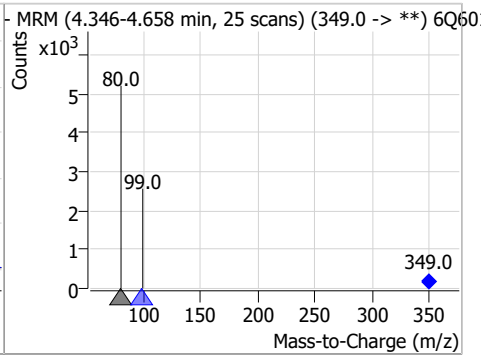




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.67	4.42	-0.01	95544	349.0 -> 99.0	48.4	16.4	76.4

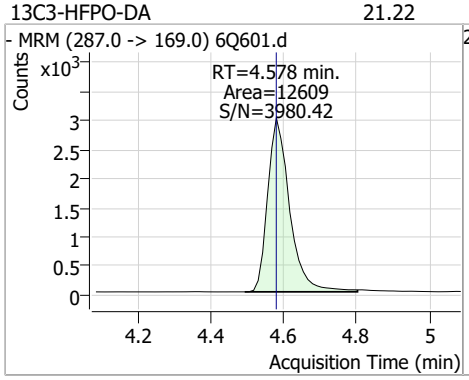


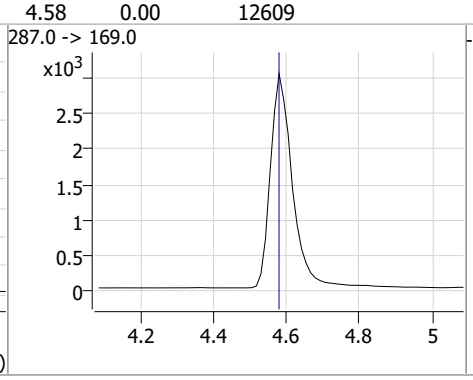


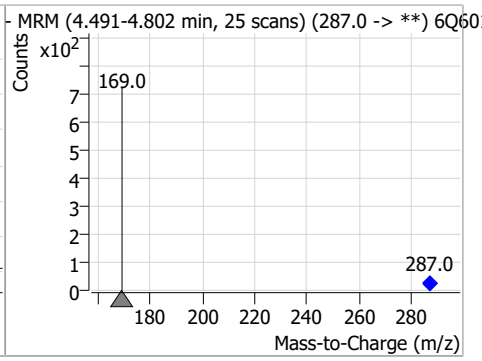


Perfluorinated Compounds by LC/MS/MS

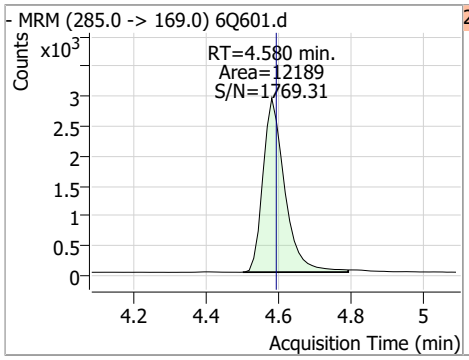
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.22	4.58	0.00	12609				

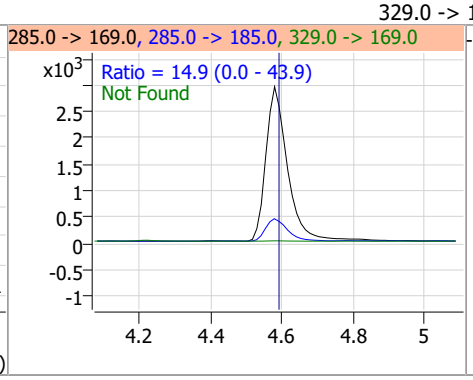


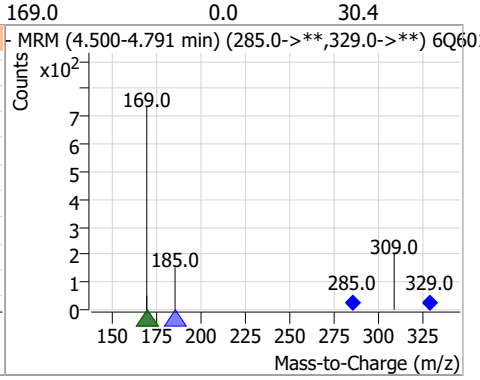




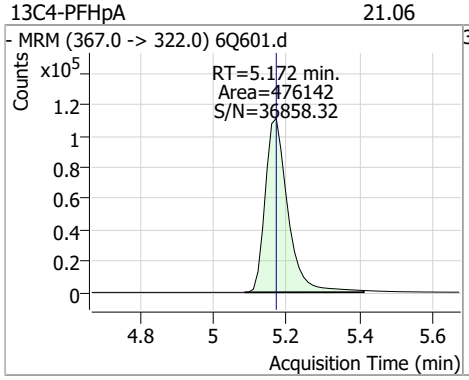
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.73	4.58	-0.01	12189	285.0 -> 185.0	14.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

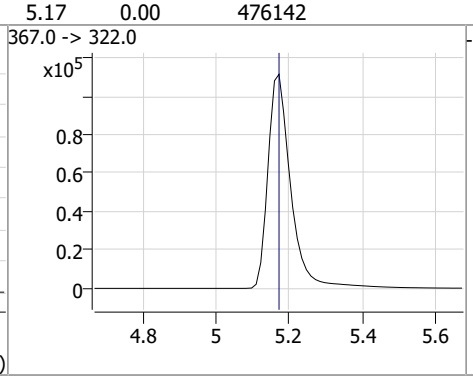


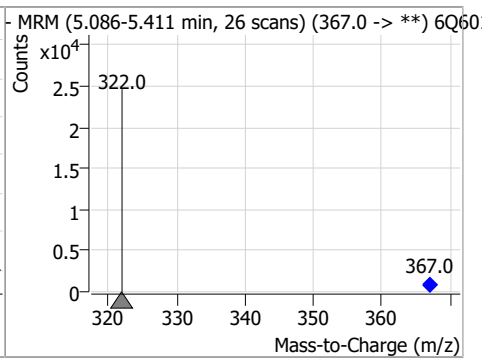




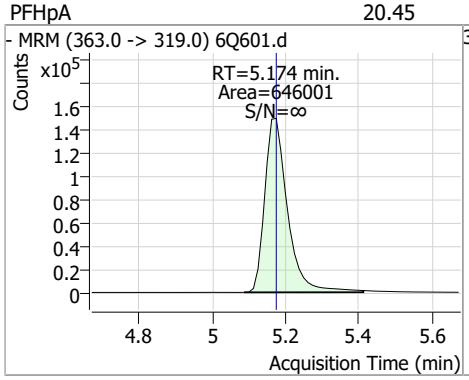
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.06	5.17	0.00	476142				

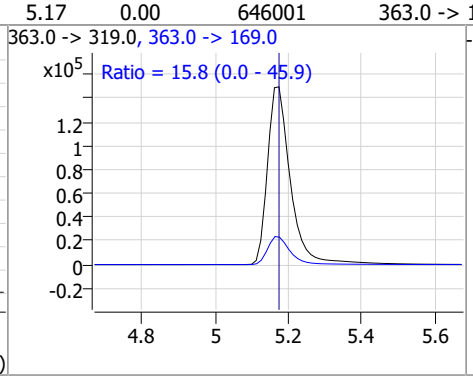


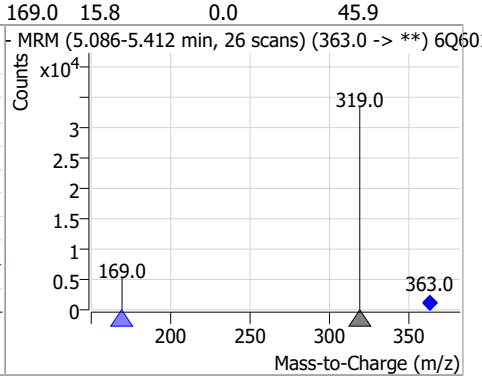




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.45	5.17	0.00	646001	363.0 -> 169.0	15.8	0.0	45.9

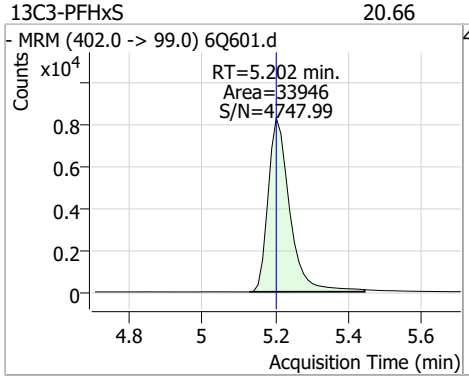


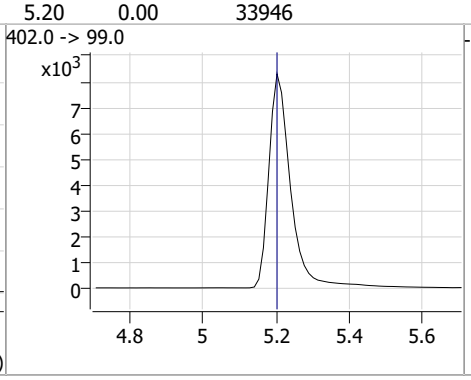


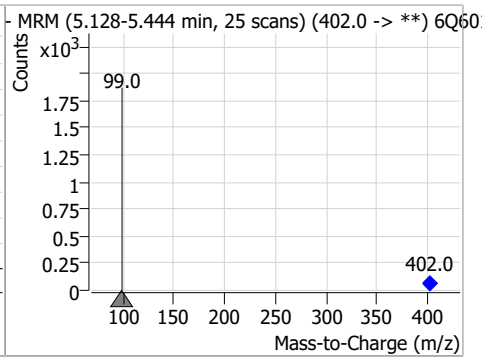


Perfluorinated Compounds by LC/MS/MS

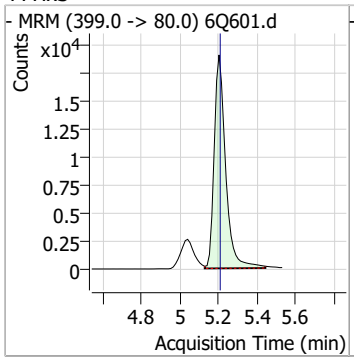
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.66	5.20	0.00	33946				

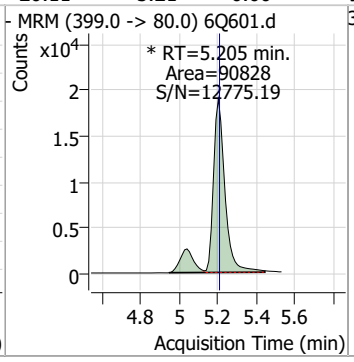


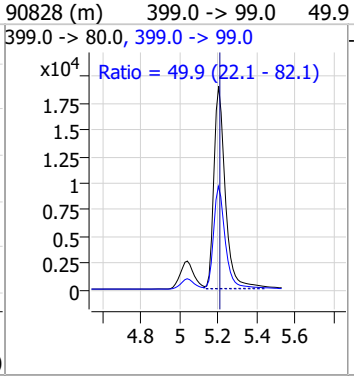


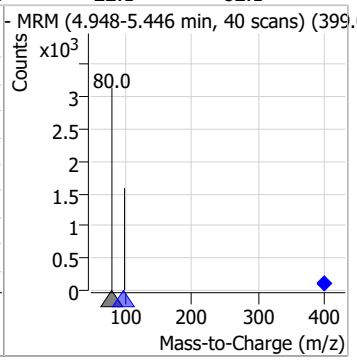


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.11	5.21	0.00	90828 (m)	399.0 -> 99.0	49.9	22.1	82.1

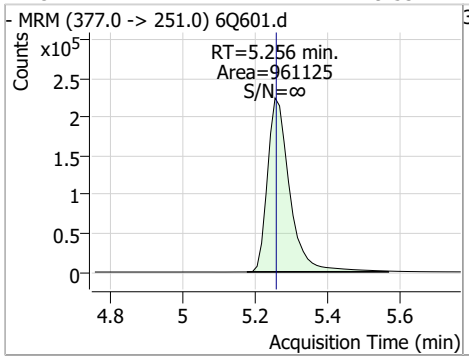


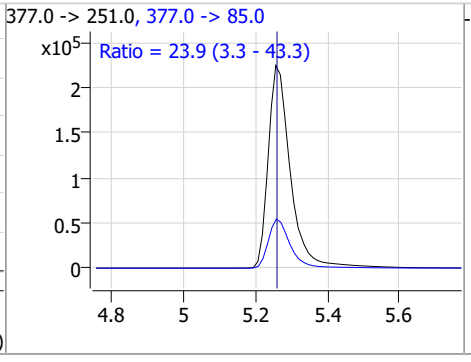


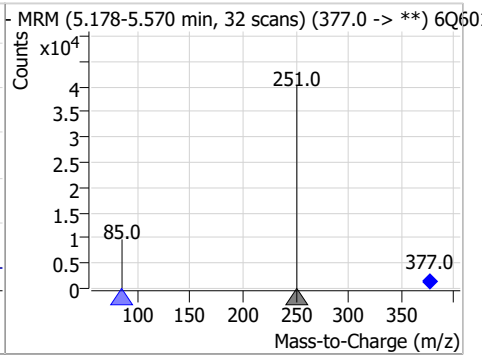




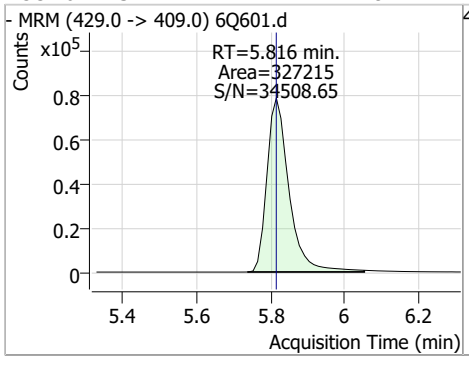
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.53	5.26	0.00	961125	377.0 -> 85.0	23.9	3.3	43.3

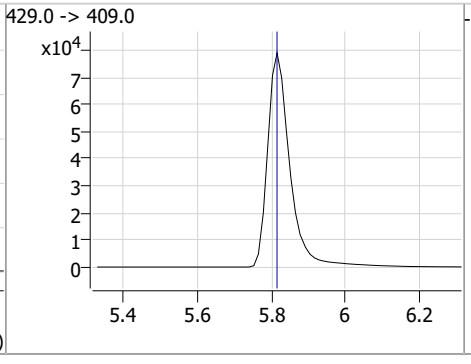


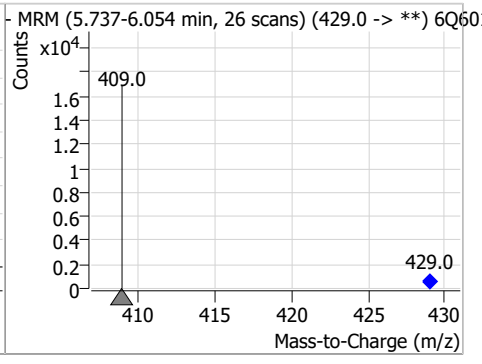




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.22	5.82	0.00	327215				

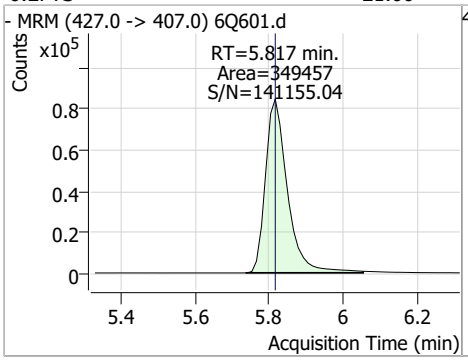


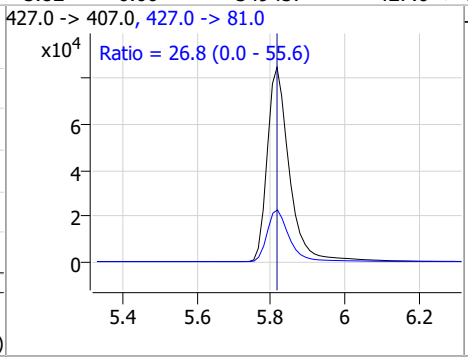


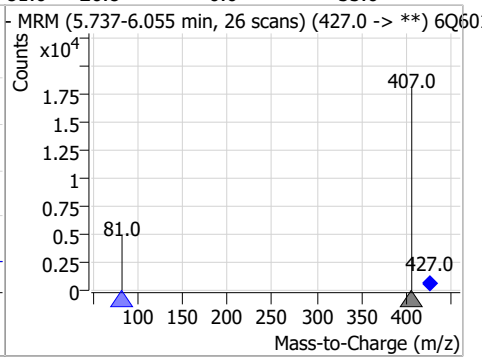


Perfluorinated Compounds by LC/MS/MS

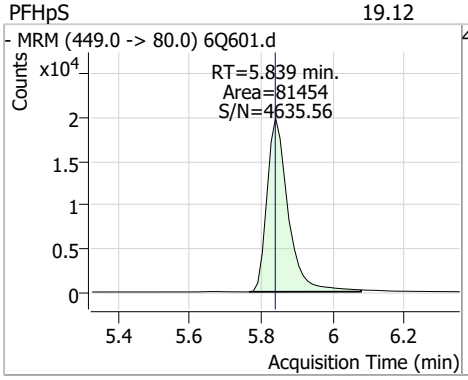
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.06	5.82	0.00	349457	427.0 -> 81.0	26.8	0.0	55.6

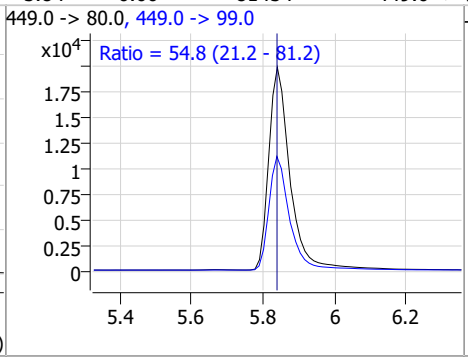


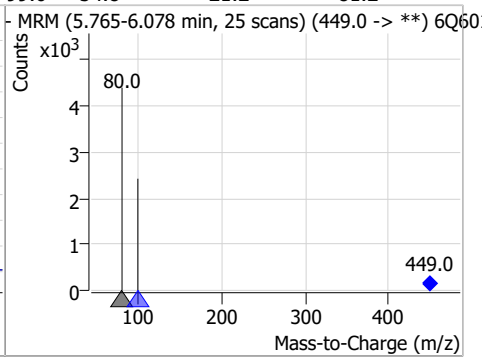




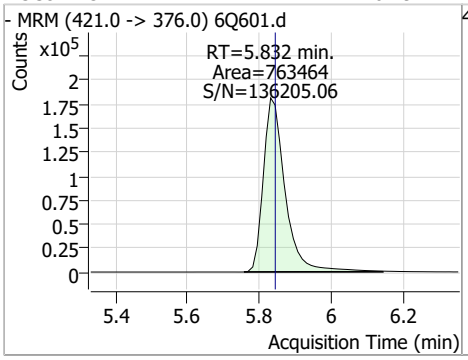
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.12	5.84	0.00	81454	449.0 -> 99.0	54.8	21.2	81.2

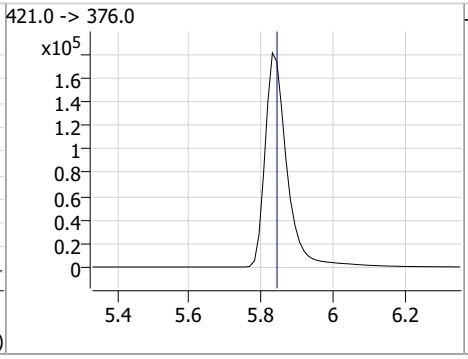


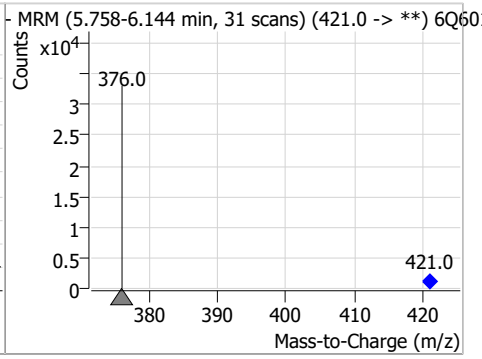




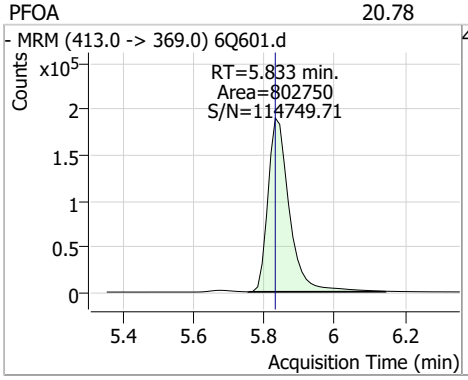
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.49	5.83	-0.01	763464				

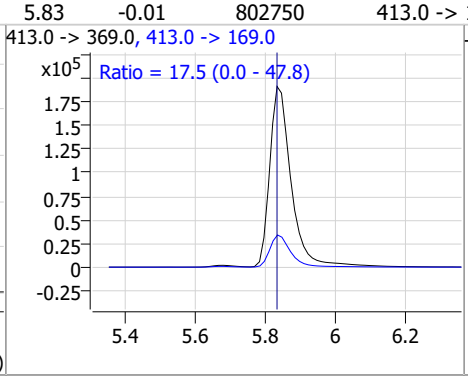


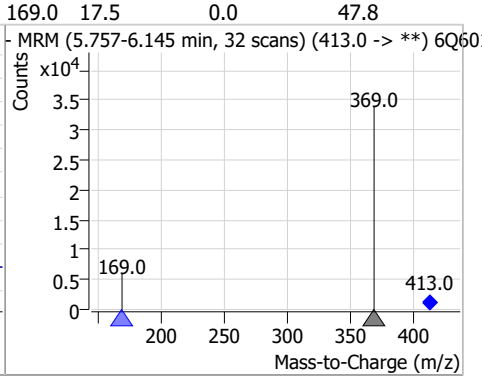




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.78	5.83	-0.01	802750	413.0 -> 169.0	17.5	0.0	47.8

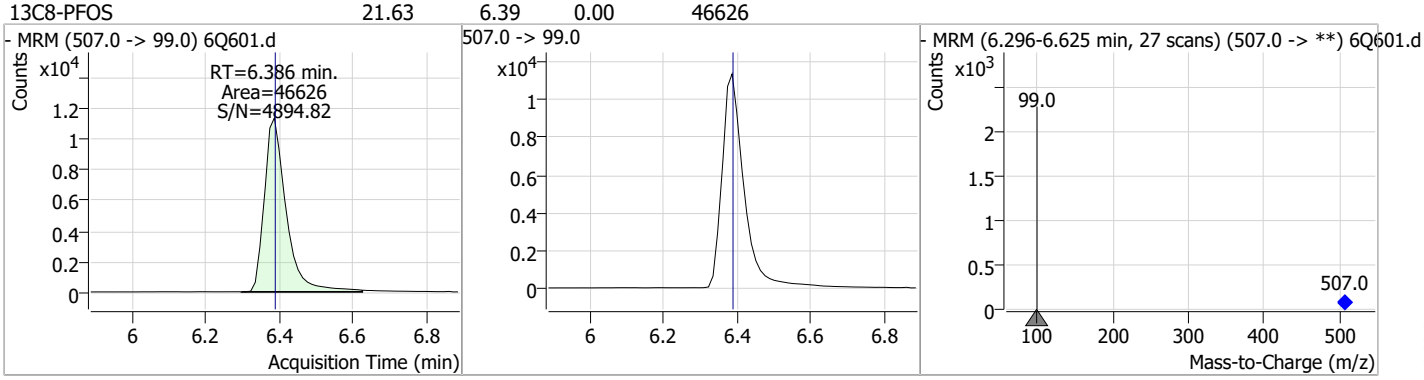




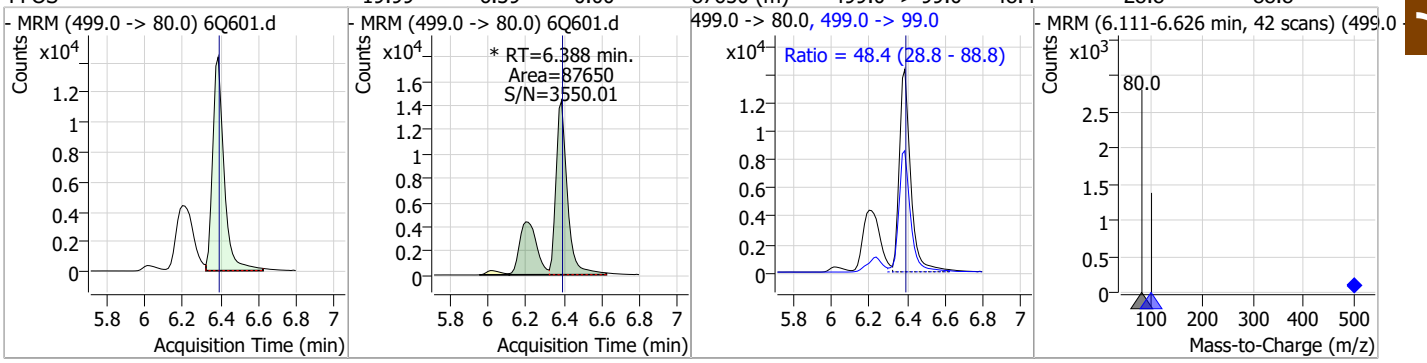


Perfluorinated Compounds by LC/MS/MS

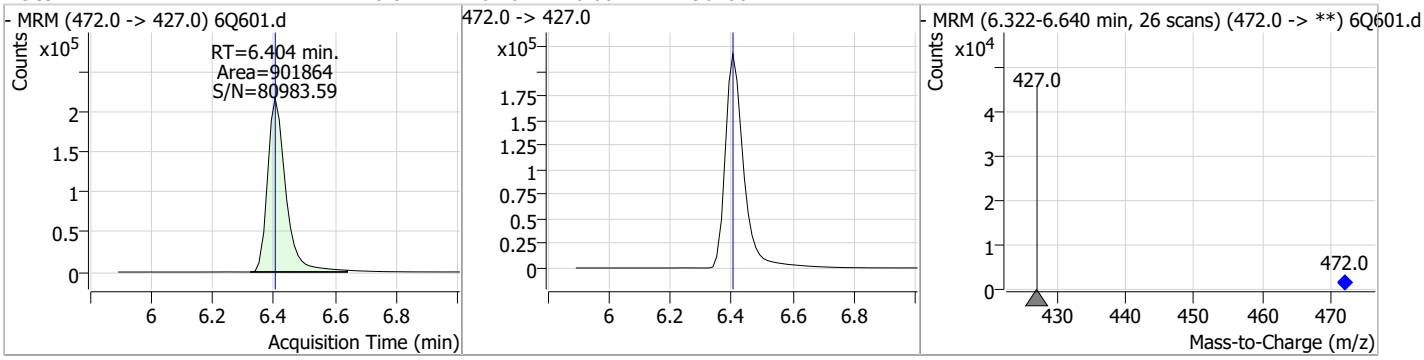
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.63	6.39	0.00	46626				



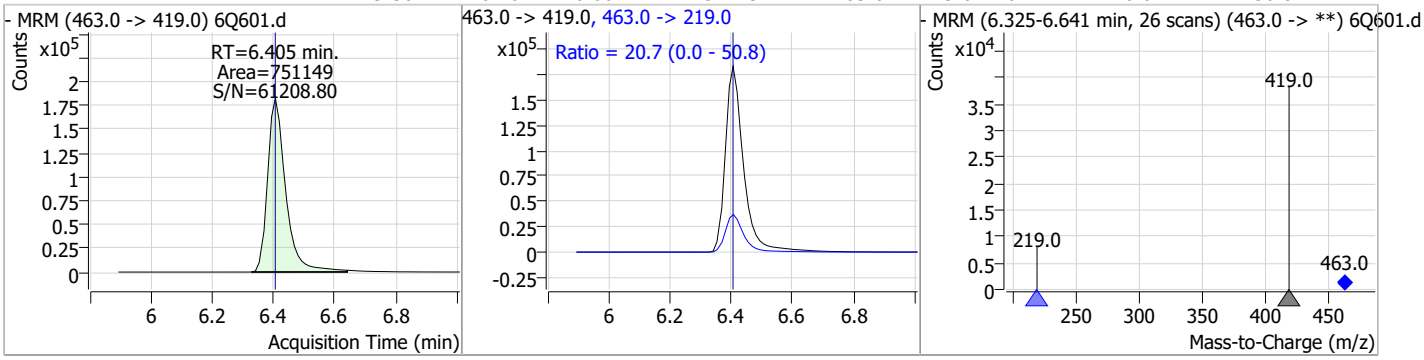
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.99	6.39	0.00	87650 (m)	499.0 -> 99.0	48.4	28.8	88.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.84	6.40	0.00	901864				

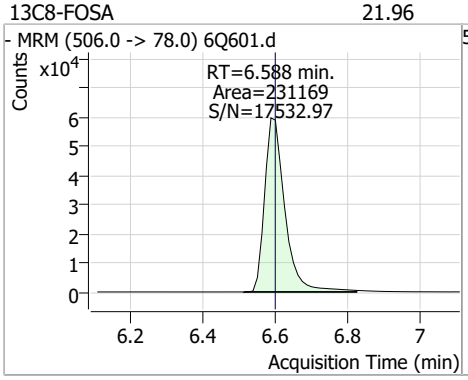


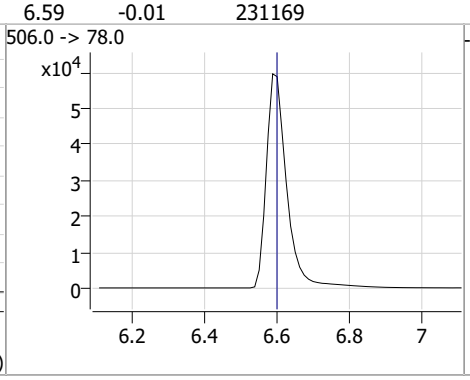
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.56	6.40	0.00	751149	463.0 -> 219.0	20.7	0.0	50.8

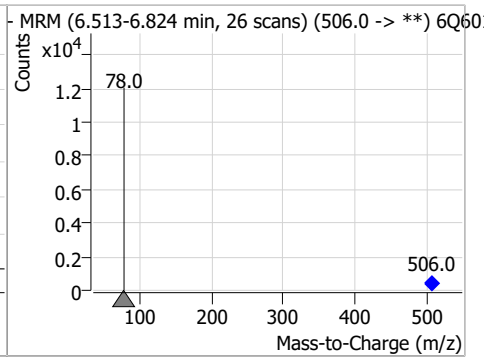


Perfluorinated Compounds by LC/MS/MS

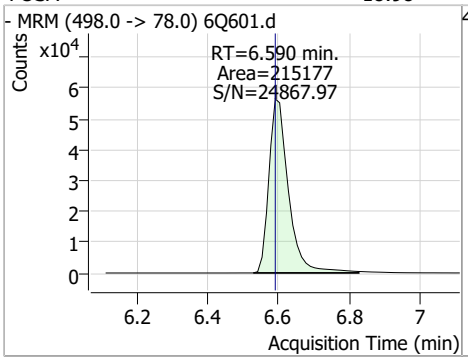
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.96	6.59	-0.01	231169				

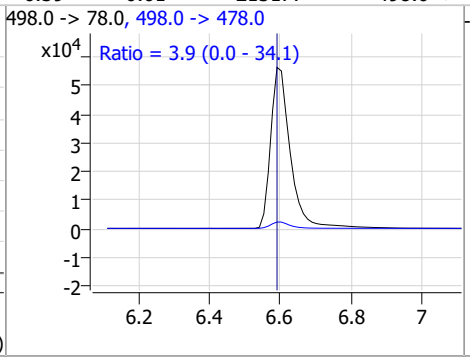


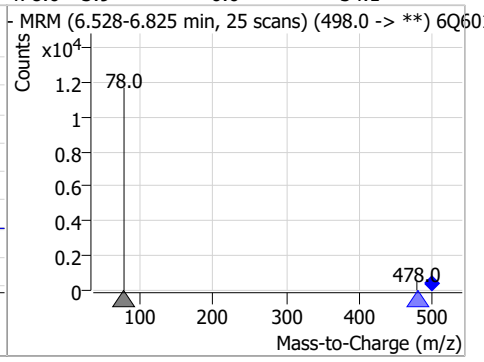




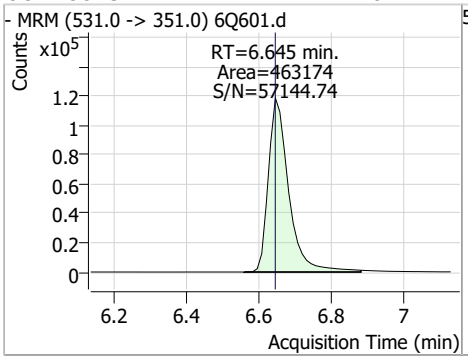
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.98	6.59	-0.01	215177	498.0 -> 478.0	3.9	0.0	34.1

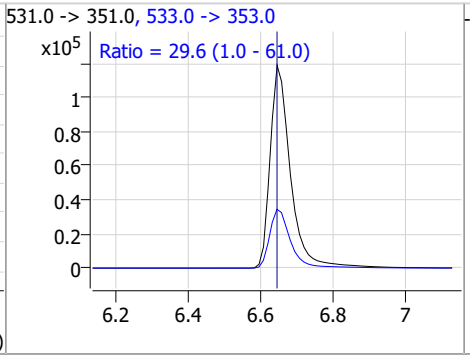


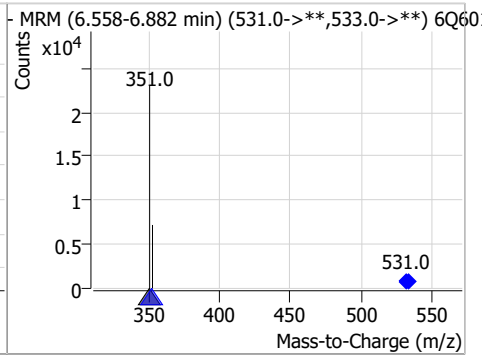




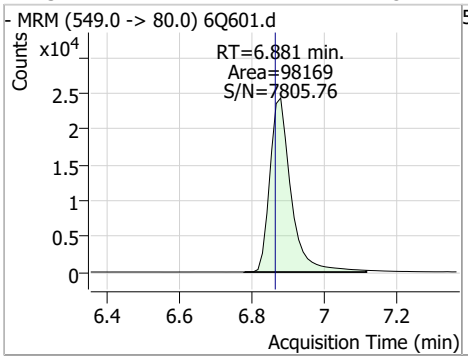
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.22	6.65	0.00	463174	533.0 -> 353.0	29.6	1.0	61.0

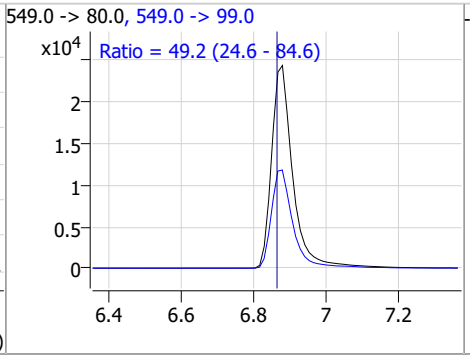


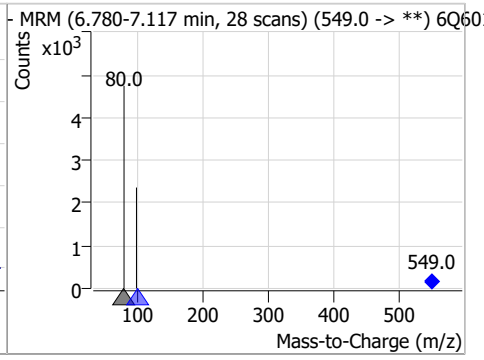




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.37	6.88	0.01	98169	549.0 -> 99.0	49.2	24.6	84.6

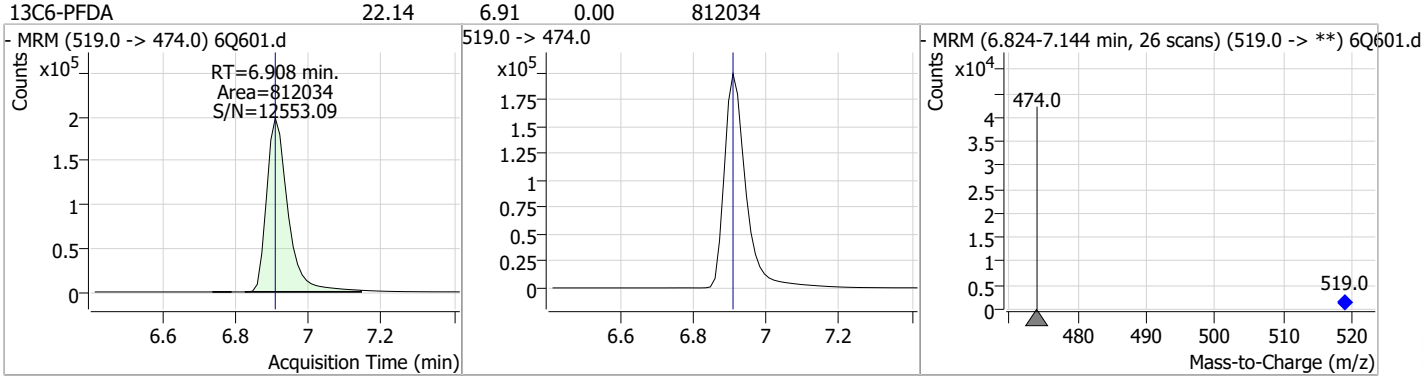




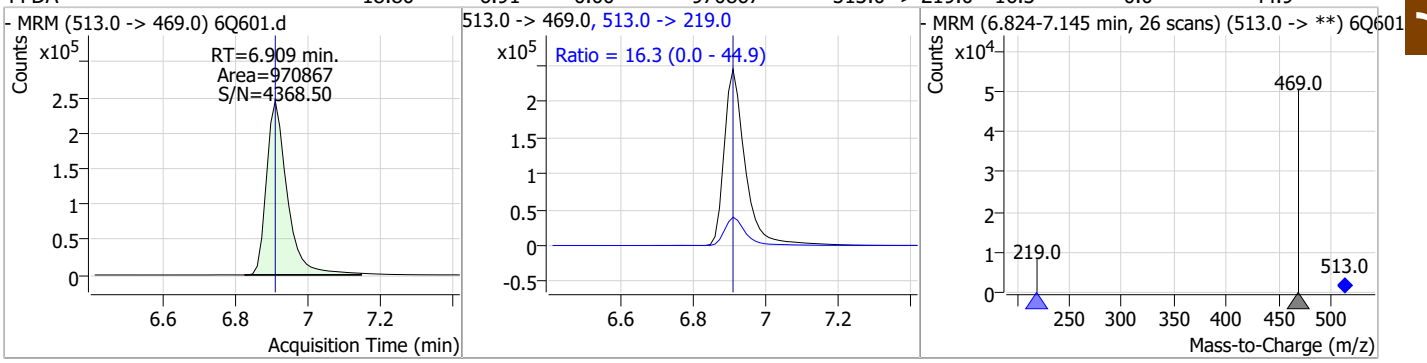


Perfluorinated Compounds by LC/MS/MS

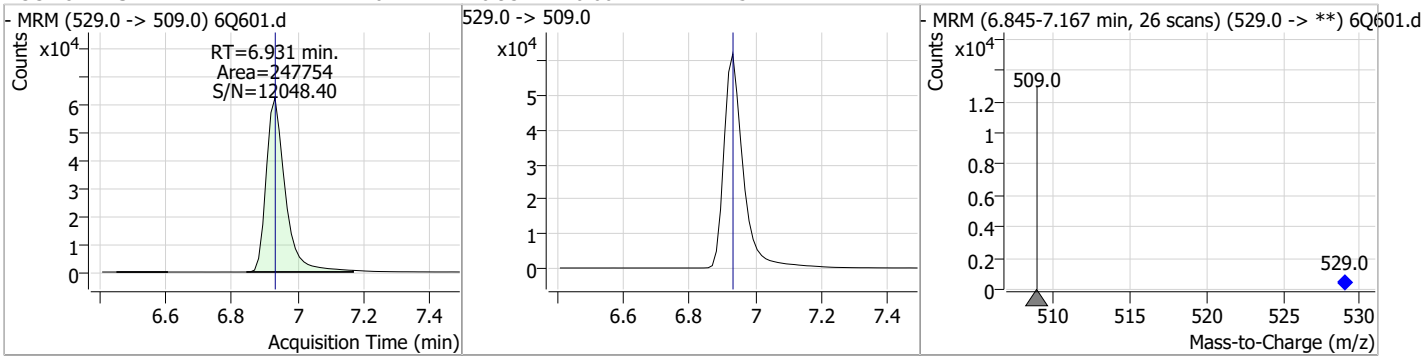
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.14	6.91	0.00	812034				



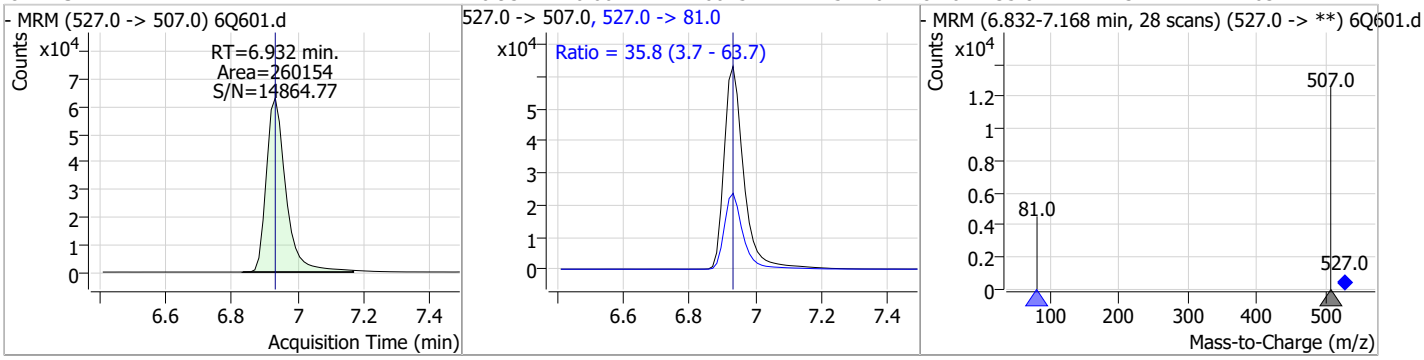
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.80	6.91	0.00	970867	513.0 -> 219.0	16.3	0.0	44.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.14	6.93	0.00	247754				

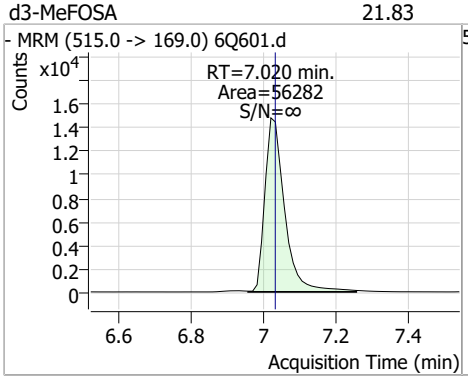


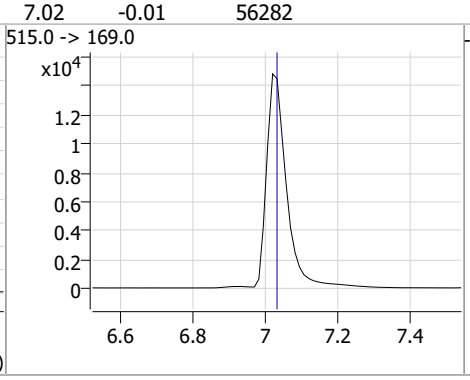
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.17	6.93	0.00	260154	527.0 -> 81.0	35.8	3.7	63.7

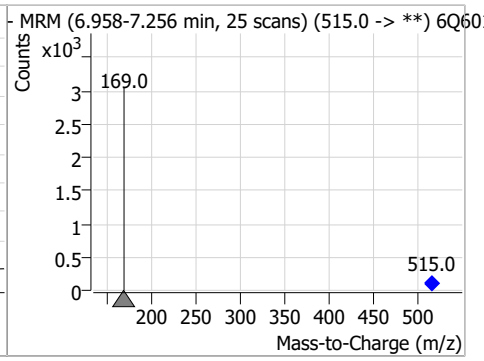


Perfluorinated Compounds by LC/MS/MS

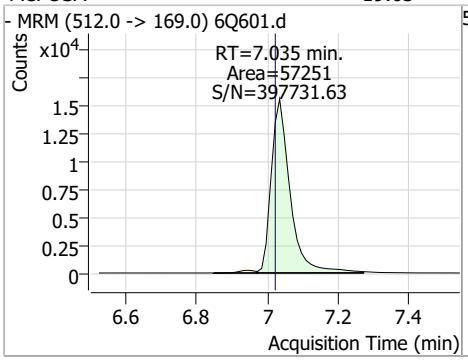
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.83	7.02	-0.01	56282				

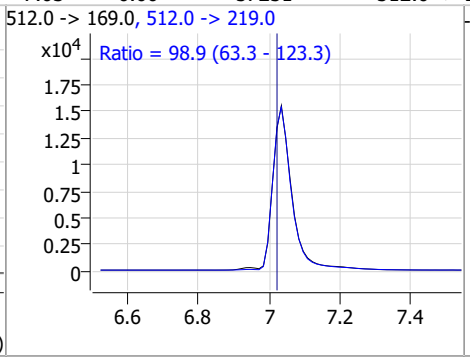


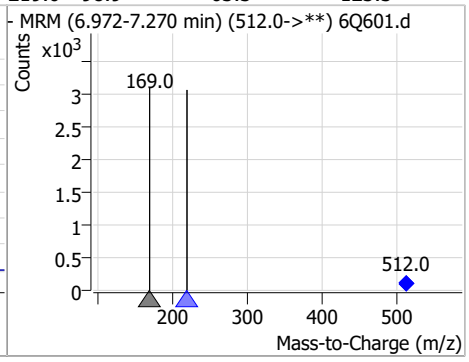




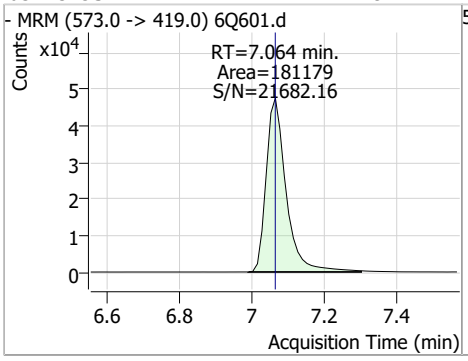
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.63	7.03	0.00	57251	512.0 -> 219.0	98.9	63.3	123.3

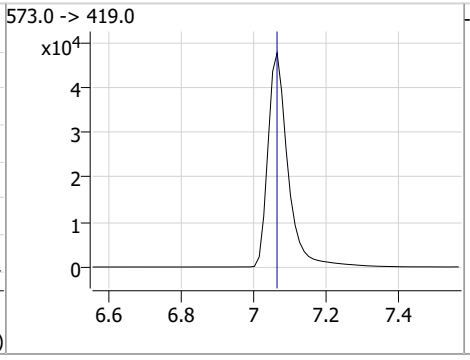


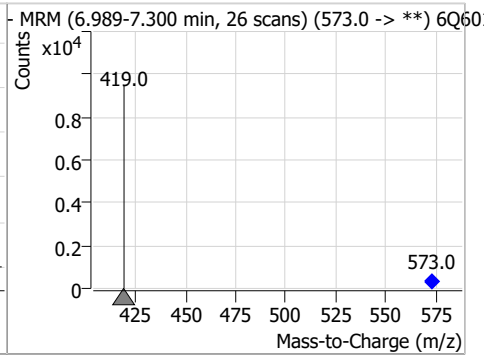




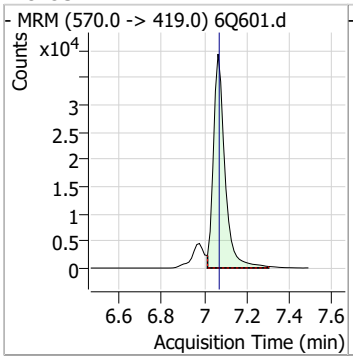
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.27	7.06	0.00	181179				

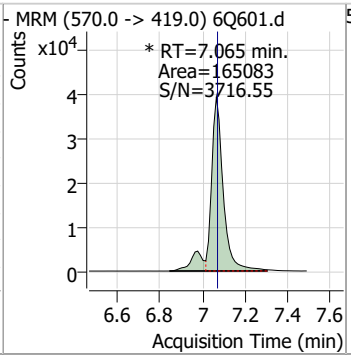


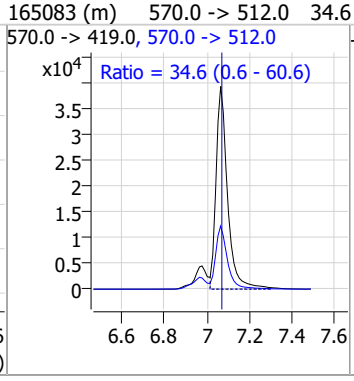


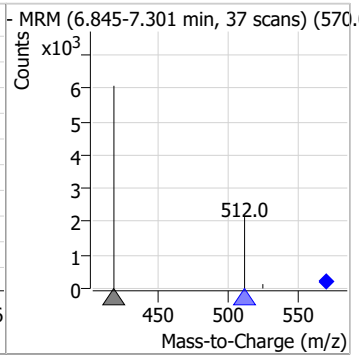


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.44	7.07	0.00	165083 (m)	570.0 -> 512.0	34.6	0.6	60.6



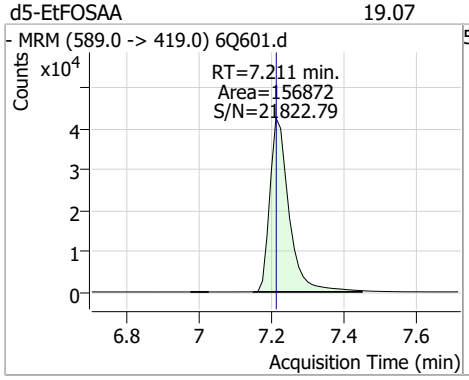


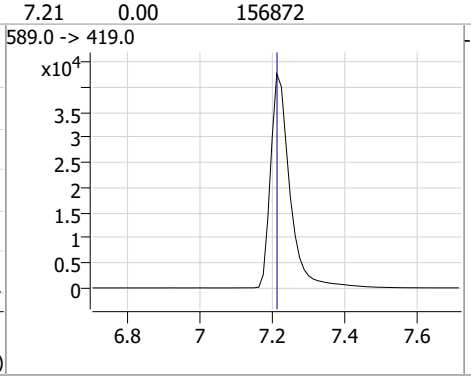


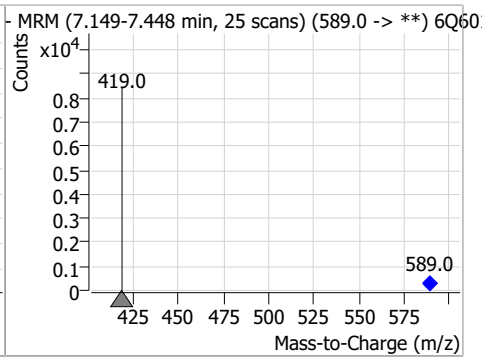


Perfluorinated Compounds by LC/MS/MS

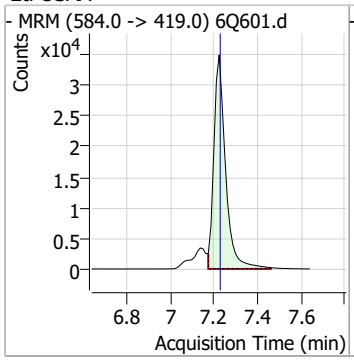
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.07	7.21	0.00	156872				

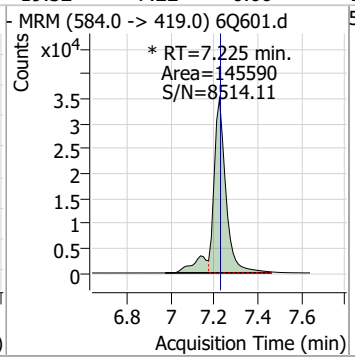


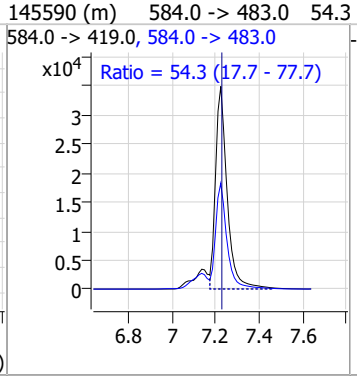


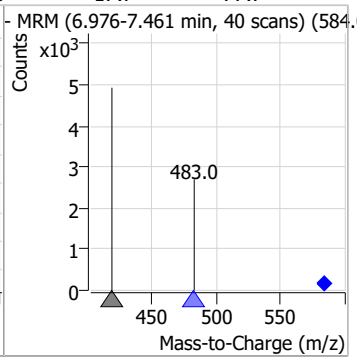


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.32	7.22	0.00	145590 (m)	584.0 -> 483.0	54.3	17.7	77.7

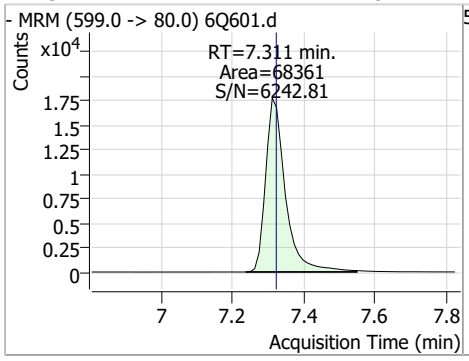


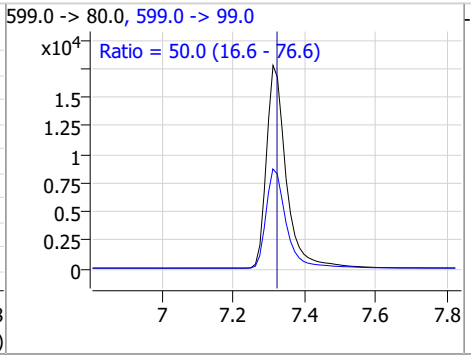


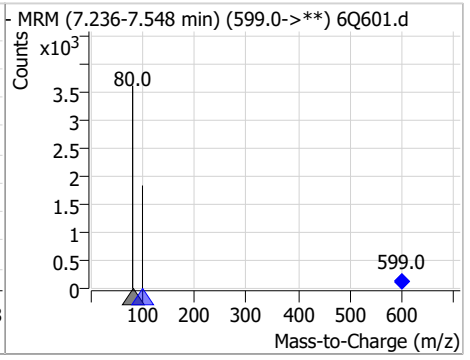




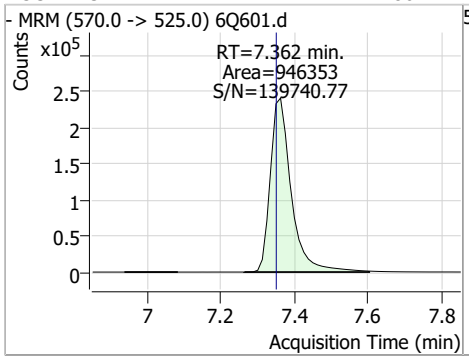
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.47	7.31	0.00	68361	599.0 -> 99.0	50.0	16.6	76.6

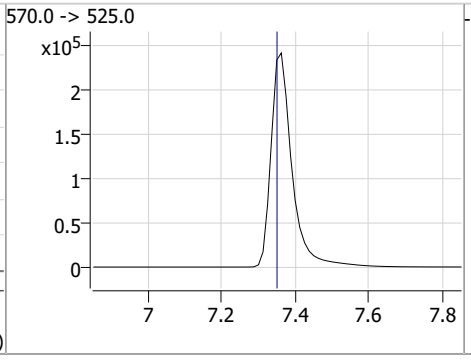


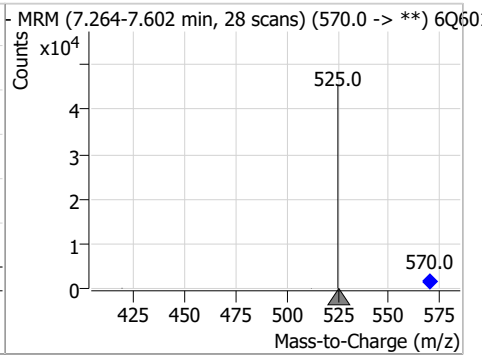




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.86	7.36	0.01	946353				

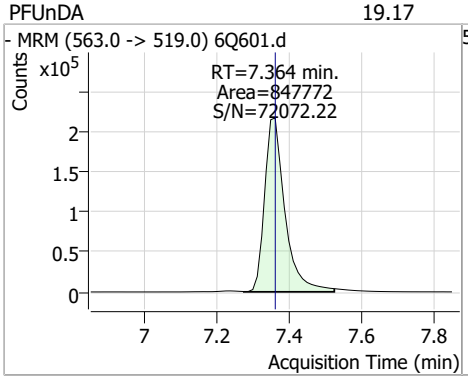


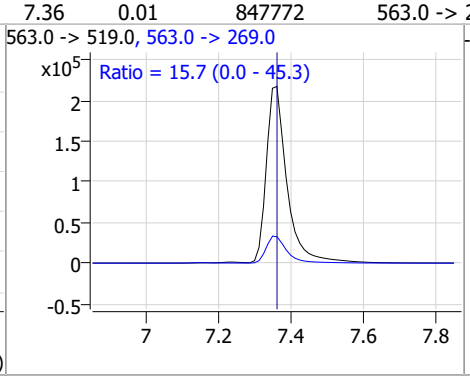


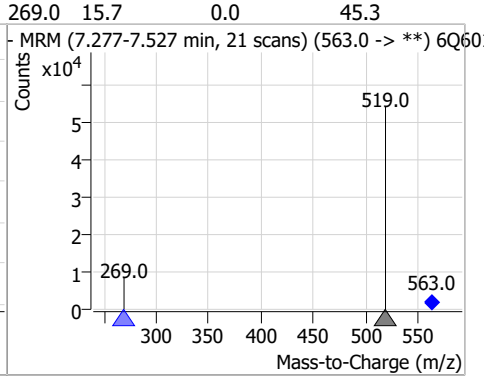


Perfluorinated Compounds by LC/MS/MS

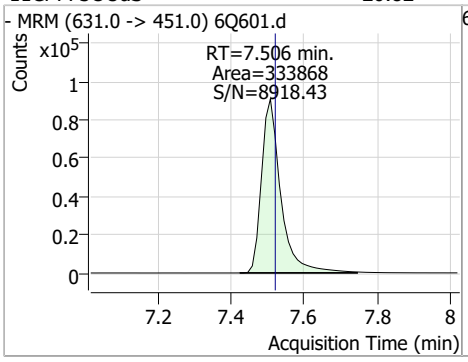
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.17	7.36	0.01	847772	563.0 -> 269.0	15.7	0.0	45.3

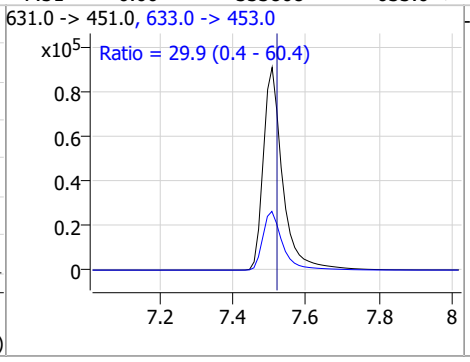


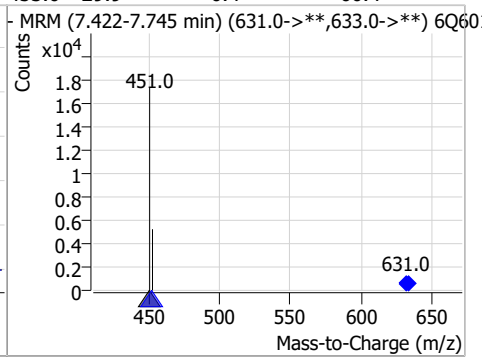




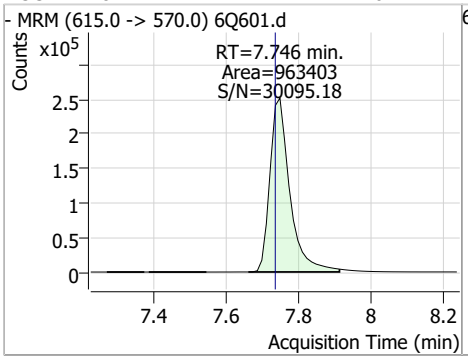
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.82	7.51	0.00	333868	633.0 -> 453.0	29.9	0.4	60.4

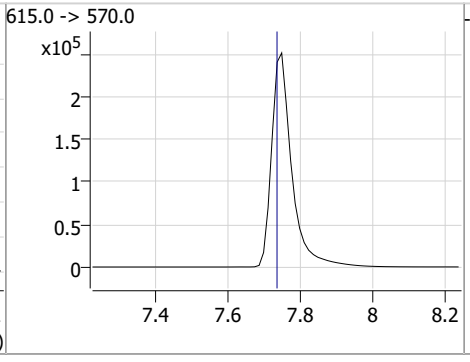


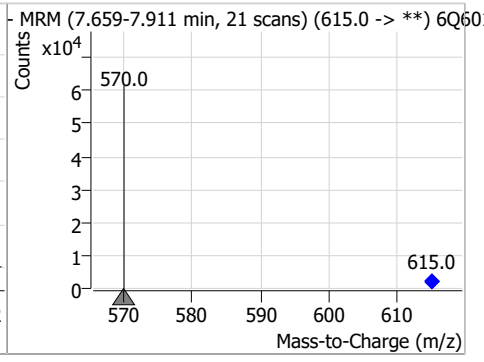




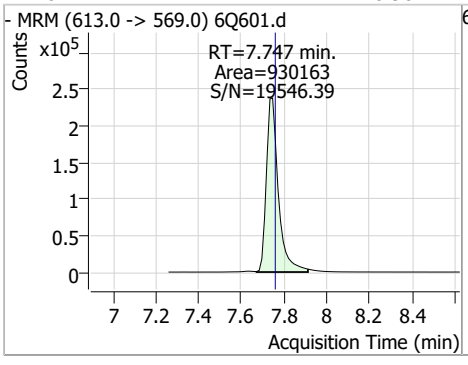
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.77	7.75	0.01	963403				

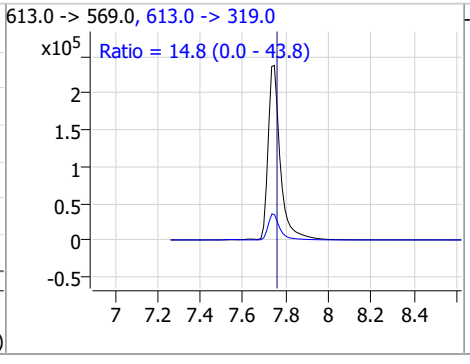


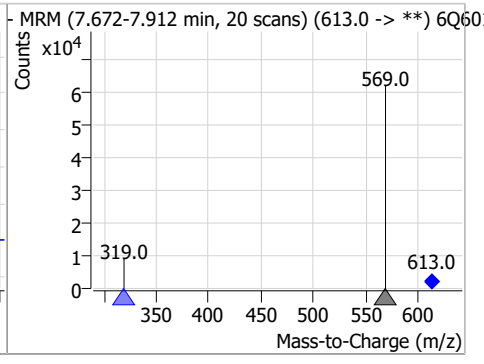




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.96	7.75	0.00	930163	613.0 -> 319.0	14.8	0.0	43.8

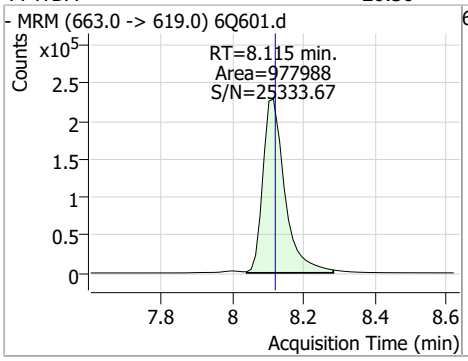


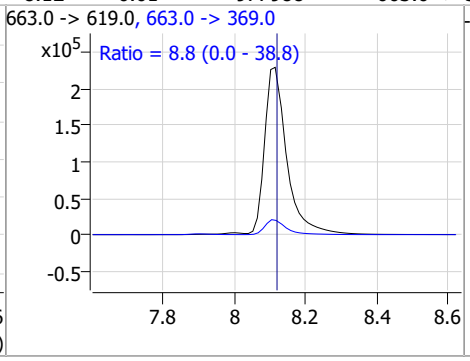


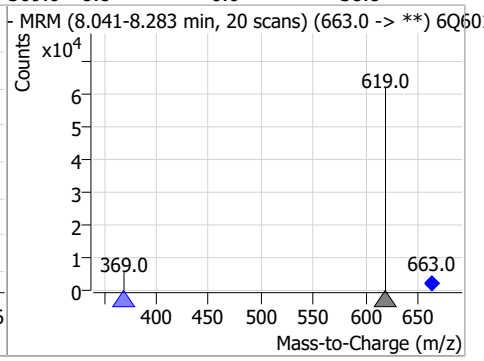


Perfluorinated Compounds by LC/MS/MS

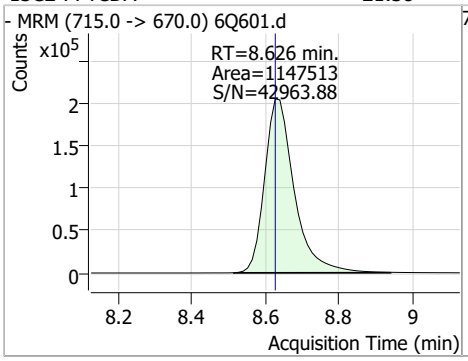
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.30	8.12	0.01	977988	663.0 -> 369.0	8.8	0.0	38.8

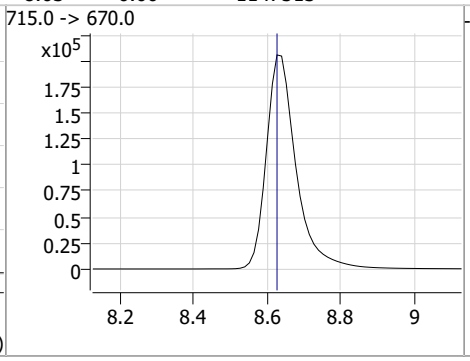


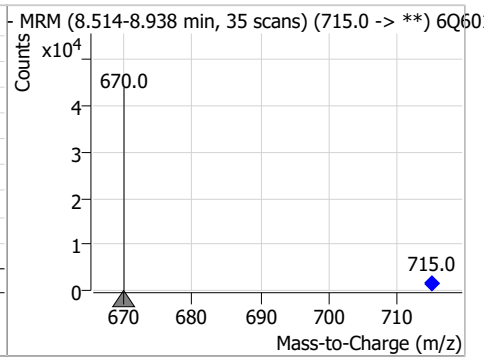




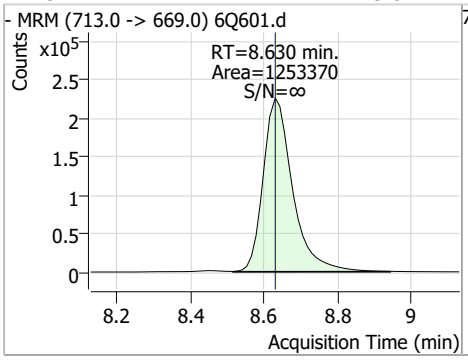
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.38	8.63	0.00	1147513				

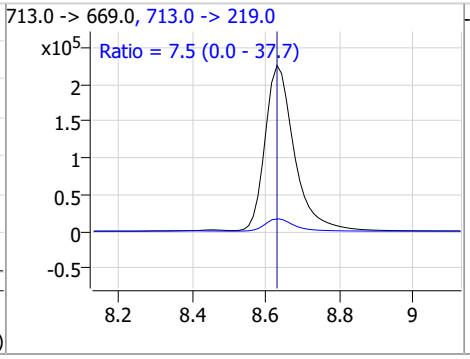


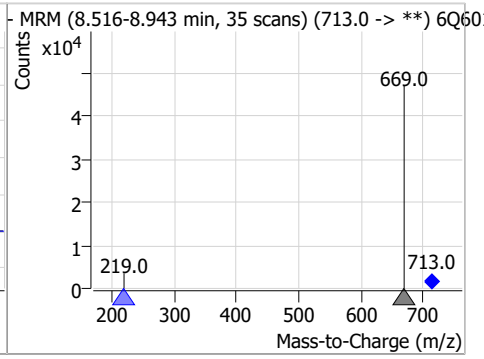




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.87	8.63	0.00	1253370	713.0 -> 219.0	7.5	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q11-CC6
Lab FileID: 6Q601.D
Injection Time: 05/27/22 00:14
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:45 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.39	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 05/27/22 12:46

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q612.d
Operator : natashag
Acq. Method : 537_ID.m
Acq. Date-Time : 5/27/2022 3:00:37 AM
Sample Name : ecc6-20
Vial : P1-A7
DA Method File : ID_051922_S6Q6.quantmethod.xml
Batch Name : s6q11.batch.bin
Sample Information : OP91029,S6Q11,250,,,1.0,1,water

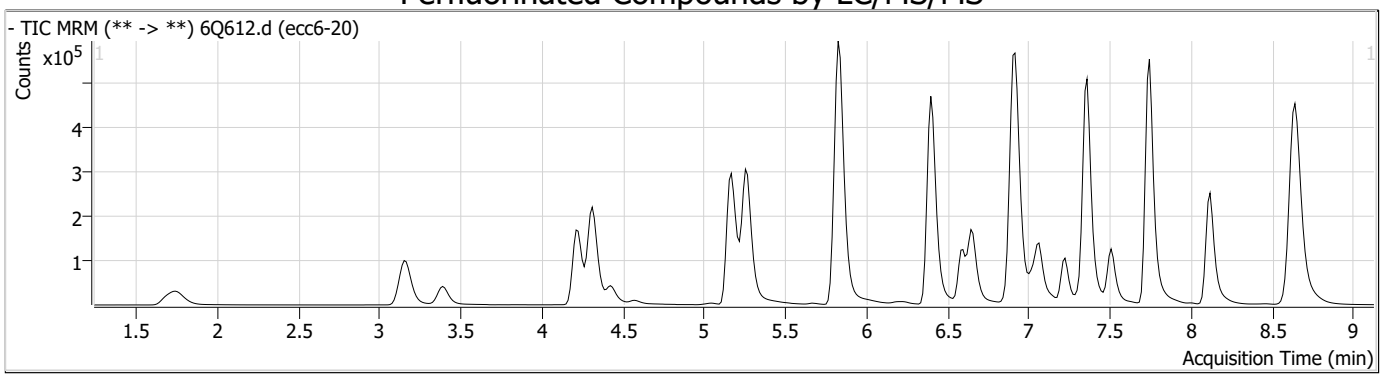
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.737	217.0 -> 172.0	177675	20.00	µg/L	0.000
M5-PFPeA	3.155	268.0 -> 223.0	295174	20.00	µg/L	-0.012
M5-PFHxA	4.314	318.0 -> 273.0	448215	20.00	µg/L	0.000
M4-PFHpA	5.172	367.0 -> 322.0	479030	20.00	µg/L	0.000
M8-PFOA	5.844	421.0 -> 376.0	758500	20.00	µg/L	0.000
M9-PFNA	6.404	472.0 -> 427.0	895405	20.00	µg/L	-0.001
M6-PFDA	6.908	519.0 -> 474.0	783249	20.00	µg/L	0.000
M7-PFUnDA	7.362	570.0 -> 525.0	943766	20.00	µg/L	0.012
M2-PFDoDA	7.746	615.0 -> 570.0	992541	20.00	µg/L	0.013
M2-PFTeDA	8.639	715.0 -> 670.0	1154681	20.00	µg/L	0.012
M8-FOSA	6.601	506.0 -> 78.0	220284	20.00	µg/L	0.000
M3-PFBS	3.385	302.0 -> 99.0	37270	20.00	µg/L	-0.012
M3-PFHxS	5.202	402.0 -> 99.0	33926	20.00	µg/L	0.000
M8-PFOS	6.386	507.0 -> 99.0	47737	20.00	µg/L	-0.002
M2-4:2FTS	4.222	329.0 -> 309.0	300066	20.00	µg/L	0.000
M2-6:2FTS	5.816	429.0 -> 409.0	328101	20.00	µg/L	0.000
M2-8:2FTS	6.931	529.0 -> 509.0	254672	20.00	µg/L	-0.001
M3-MeFOSAA	7.064	573.0 -> 419.0	181123	20.00	µg/L	0.000
M3-HFPO-DA	4.578	287.0 -> 169.0	12551	20.00	µg/L	0.000
M3-MeFOSA	7.020	515.0 -> 169.0	54638	20.00	µg/L	-0.012
M5-EtFOSAA	7.211	589.0 -> 419.0	157986	20.00	µg/L	-0.001
System Monitoring Compounds						
13C2-4:2FTS	4.222	329.0 -> 309.0	300066	20.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-6:2FTS	5.816	429.0 -> 409.0	328101	19.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-8:2FTS	6.931	529.0 -> 509.0	254672	20.70	µg/L	-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFDoDA	7.746	615.0 -> 570.0	992541	21.39	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C2-PFTeDA	8.639	715.0 -> 670.0	1154681	21.52	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C3-PFBS	3.385	302.0 -> 99.0	37270	21.13	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C3-PFHxS	5.202	402.0 -> 99.0	33926	20.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFBA	1.737	217.0 -> 172.0	177675	21.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C4-PFHpA	5.172	367.0 -> 322.0	479030	21.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C5-PFHxA	4.314	318.0 -> 273.0	448215	21.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C5-PFPeA	3.155	268.0 -> 223.0	295174	21.23	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
13C6-PFDA	6.908	519.0 -> 474.0	783249	21.36	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

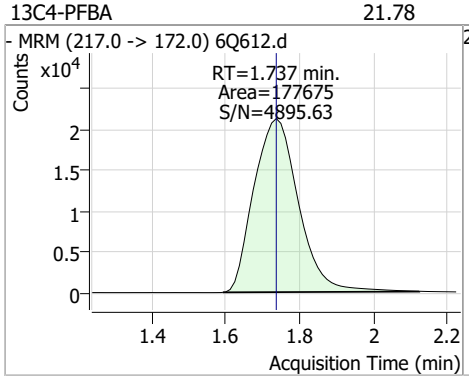
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C7-PFUnDA	7.362	570.0 -> 525.0	943766	21.80 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C8-FOSA	6.601	506.0 -> 78.0	220284	20.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-PFOA	5.844	421.0 -> 376.0	758500	20.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C8-PFOS	6.386	507.0 -> 99.0	47737	22.15 µg/L		-0.002
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%		
13C9-PFNA	6.404	472.0 -> 427.0	895405	20.69 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
d3-MeFOSAA	7.064	573.0 -> 419.0	181123	19.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C3-HFPO-DA	4.578	287.0 -> 169.0	12585	21.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
d3-MeFOSA	7.020	515.0 -> 169.0	54638	21.19 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
d5-EtFOSAA	7.211	589.0 -> 419.0	158044	19.21 µg/L		-0.001
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
Target Compounds						**QValue**
4:2FTS	4.212	327.0 -> 307.0	348800	21.39 µg/L		100
6:2FTS	5.817	427.0 -> 407.0	354217	21.29 µg/L		98
8:2FTS	6.932	527.0 -> 507.0	256183	20.28 µg/L		99
EtFOSAA	7.225	584.0 -> 419.0	153011	20.16 µg/L	m	90
FOSA	6.590	498.0 -> 78.0	214588	19.86 µg/L		99
MeFOSAA	7.065	570.0 -> 419.0	176174	21.82 µg/L	m	95
PFBA	1.743	213.0 -> 169.0	82106	20.39 µg/L		100
PFBS	3.390	299.0 -> 80.0	117483	20.27 µg/L		99
PFDA	6.909	513.0 -> 469.0	924190	18.55 µg/L		97
PFDoDA	7.747	613.0 -> 569.0	968518	21.18 µg/L		100
PFDS	7.311	599.0 -> 80.0	74348	21.24 µg/L		98
PFHpA	5.174	363.0 -> 319.0	636216	20.01 µg/L		99
PFHpS	5.839	449.0 -> 80.0	82443	18.90 µg/L		99
PFHxA	4.315	313.0 -> 269.0	469381	19.33 µg/L		100
PFHxS	5.205	399.0 -> 80.0	90649	20.08 µg/L	m	95
PFNA	6.405	463.0 -> 419.0	751365	19.71 µg/L		99
PFNS	6.881	549.0 -> 80.0	95722	20.35 µg/L		97
PFOA	5.833	413.0 -> 369.0	798544	20.81 µg/L		99
PFOS	6.388	499.0 -> 80.0	87351	19.45 µg/L	m	84
PFPeA	3.158	263.0 -> 219.0	257573	19.97 µg/L		100
PFPeS	4.420	349.0 -> 80.0	95614	19.73 µg/L		97
PFTeDA	8.643	713.0 -> 669.0	1261407	19.88 µg/L		99
PFTrDA	8.115	663.0 -> 619.0	970316	19.55 µg/L		99
PFUnDA	7.364	563.0 -> 519.0	840663	19.06 µg/L		96
11Cl-PF3OUdS	7.506	631.0 -> 451.0	320228	19.38 µg/L		98
9Cl-PF3ONS	6.658	531.0 -> 351.0	441720	19.00 µg/L		96
ADONA	5.256	377.0 -> 251.0	971208	19.75 µg/L		99
HFPO-DA	4.580	285.0 -> 169.0	13127	22.30 µg/L		100
MeFOSA	7.035	512.0 -> 169.0	61617	21.76 µg/L		96

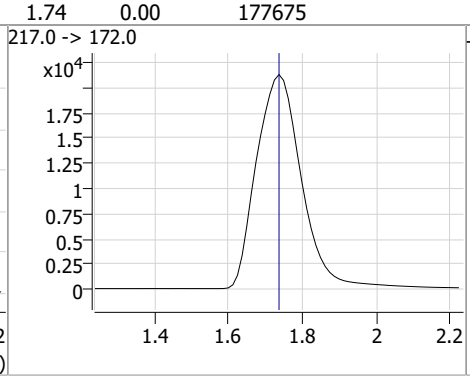
 # = Qualifier out of range, m = manually integrated, + = Area summed

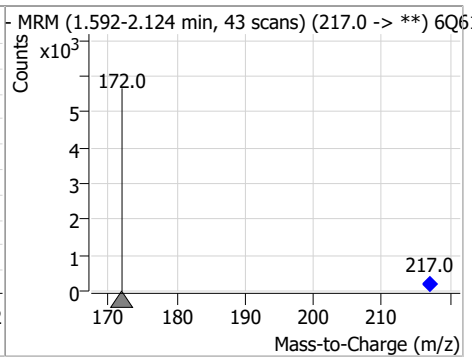
Perfluorinated Compounds by LC/MS/MS



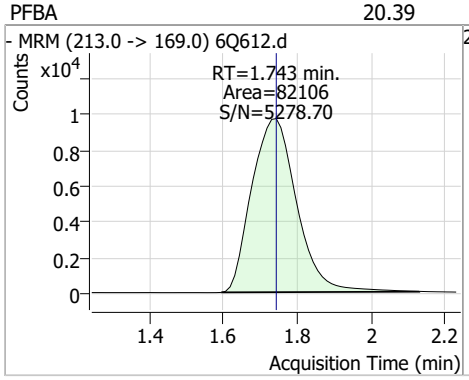
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.78	1.74	0.00	177675				

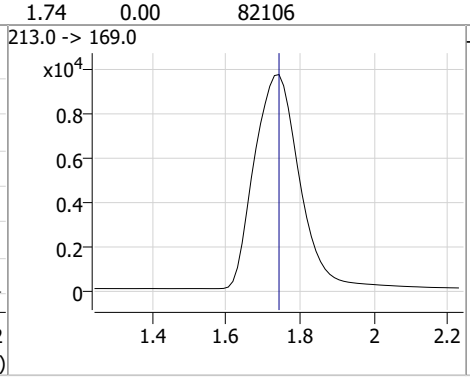


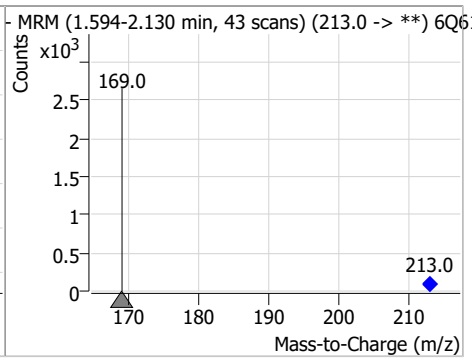




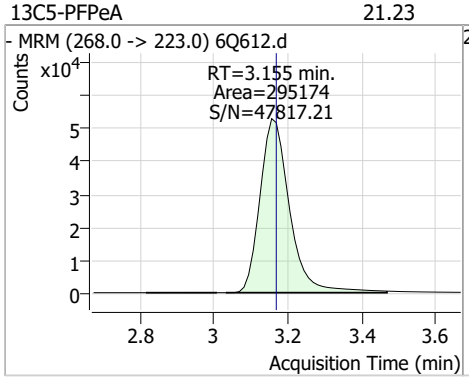
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.39	1.74	0.00	82106				

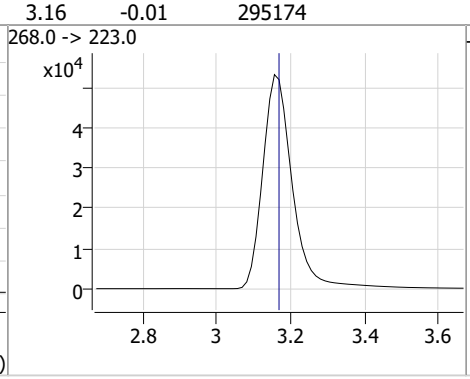


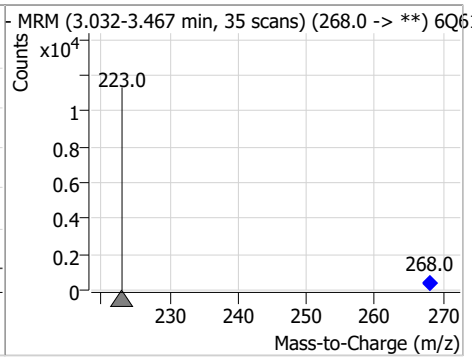




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.23	3.16	-0.01	295174				

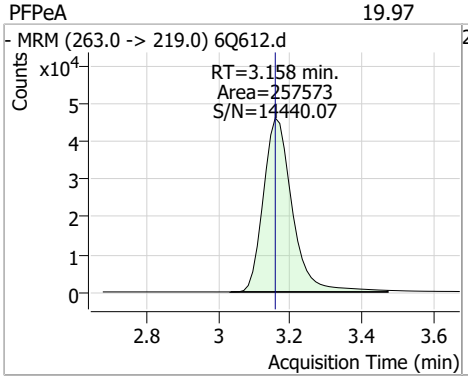


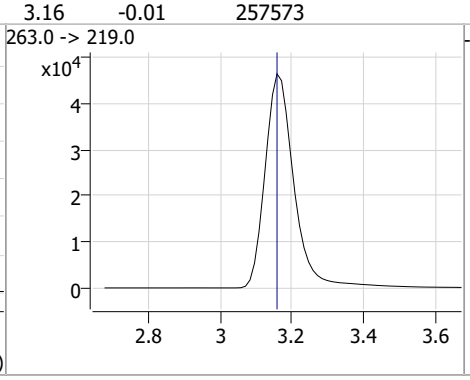


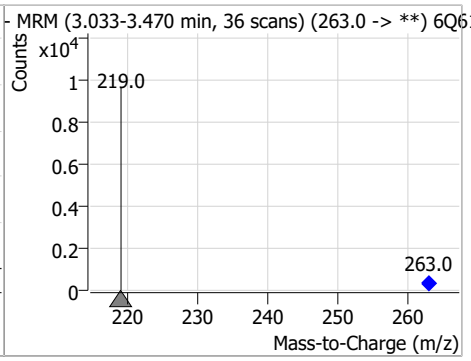


Perfluorinated Compounds by LC/MS/MS

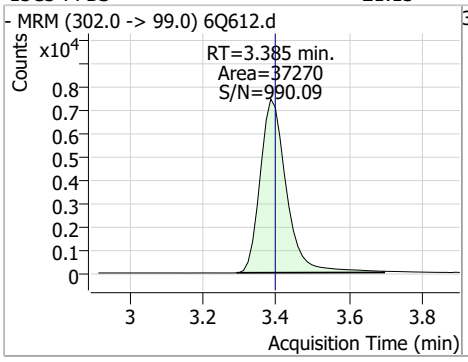
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.97	3.16	-0.01	257573				

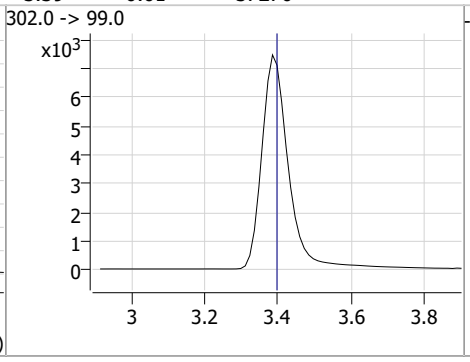


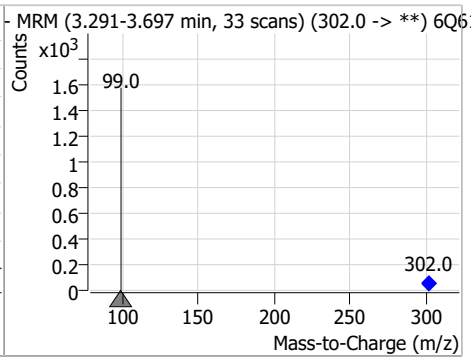




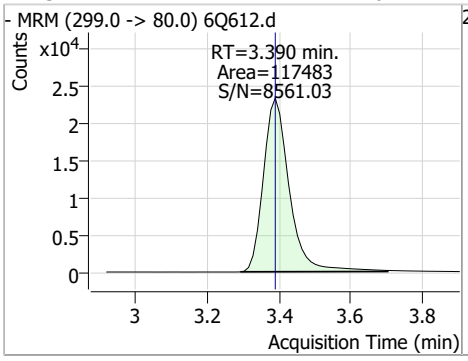
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.13	3.39	-0.01	37270				

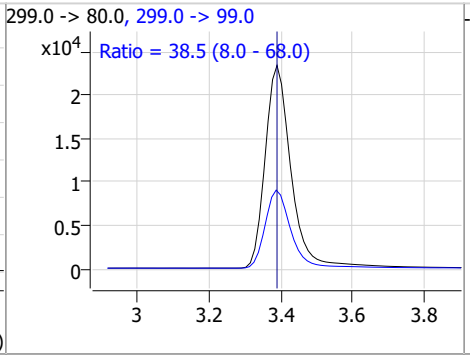


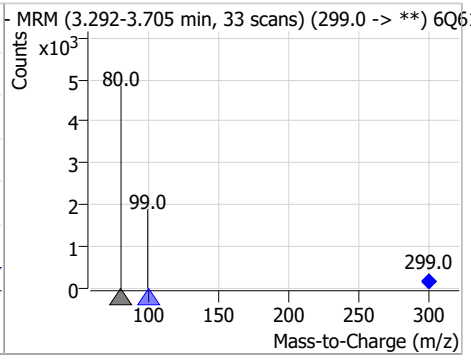




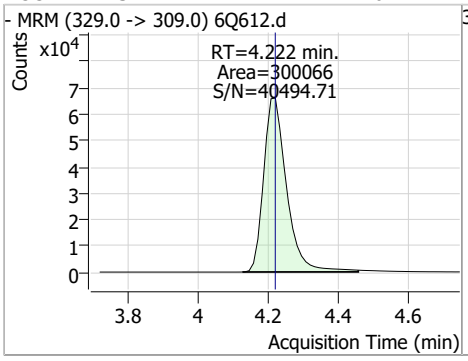
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.27	3.39	-0.01	117483	299.0 -> 99.0	38.5	8.0	68.0

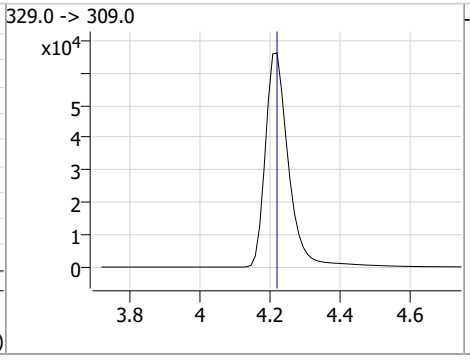


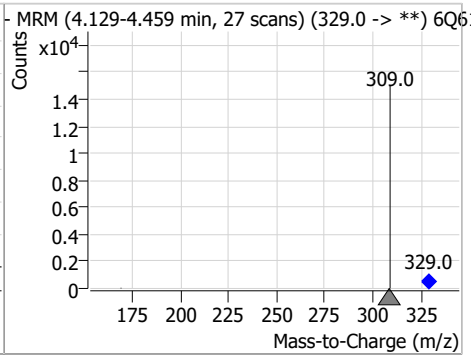




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.41	4.22	0.00	300066				

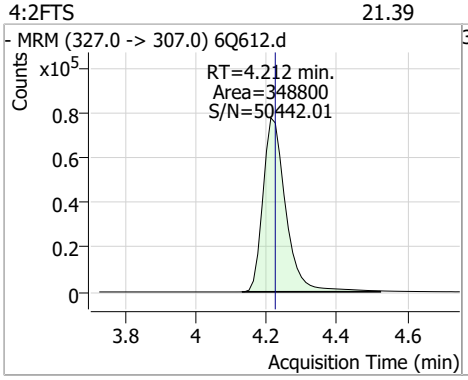


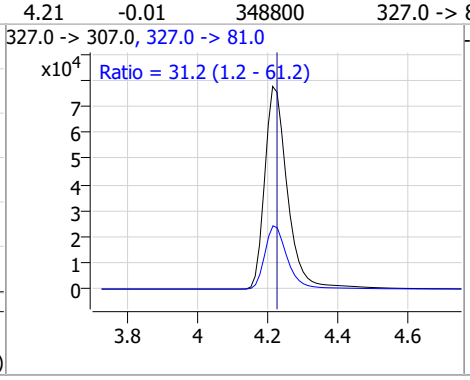


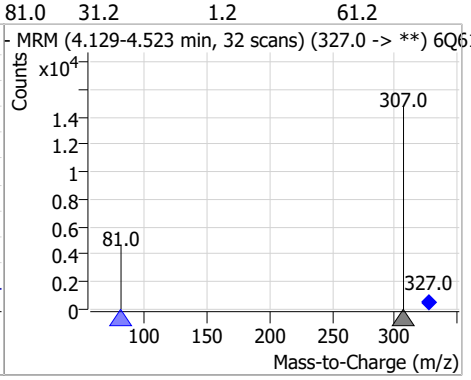


Perfluorinated Compounds by LC/MS/MS

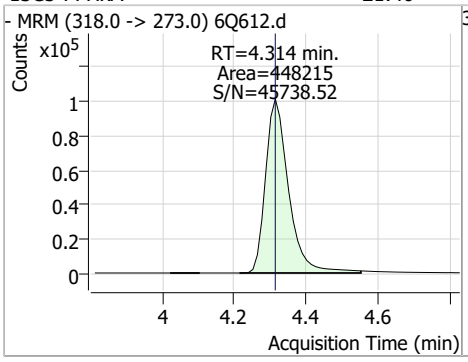
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.39	4.21	-0.01	348800	327.0 -> 81.0	31.2	1.2	61.2

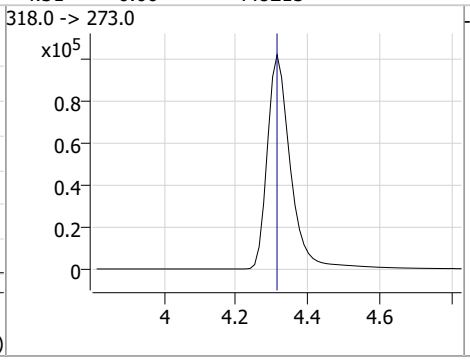


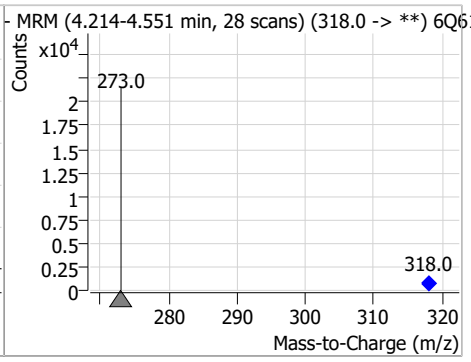




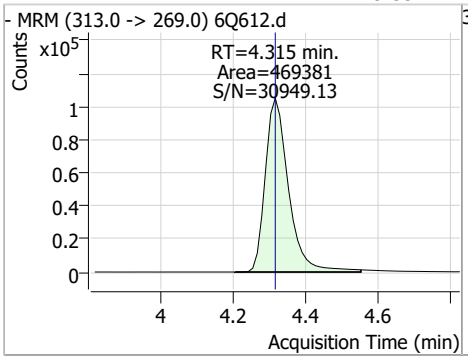
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.46	4.31	0.00	448215				

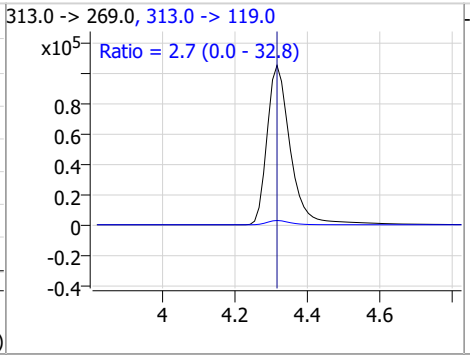


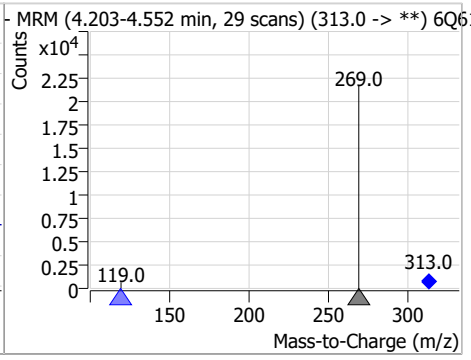




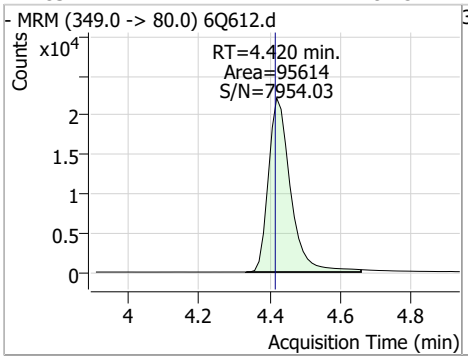
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.33	4.31	0.00	469381	313.0 -> 119.0	2.7	0.0	32.8

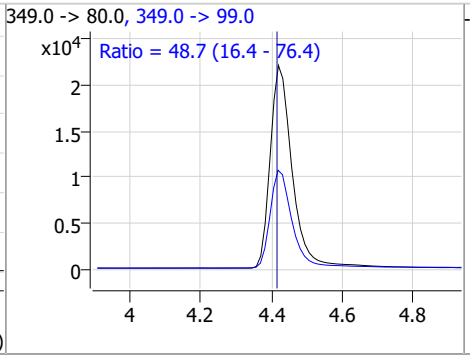


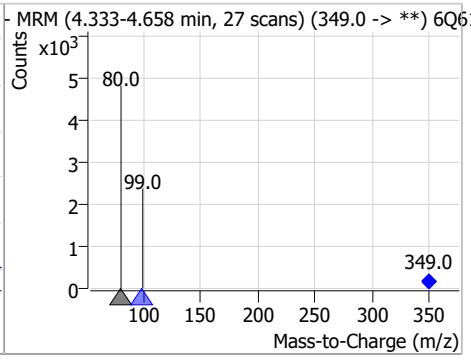




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.73	4.42	-0.01	95614	349.0 -> 99.0	48.7	16.4	76.4

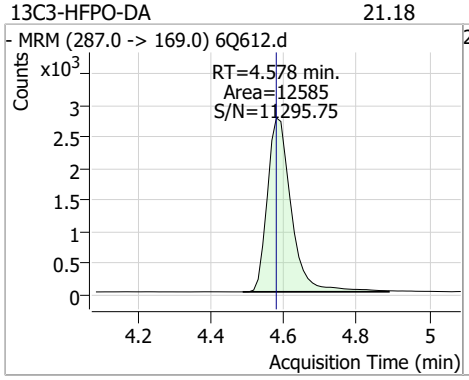


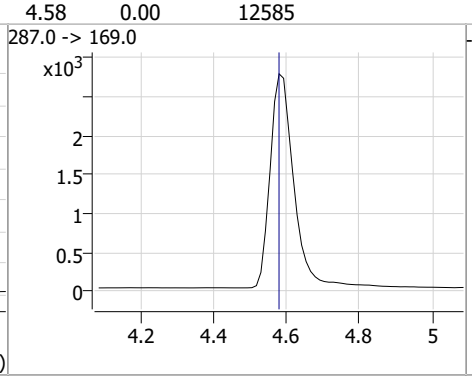


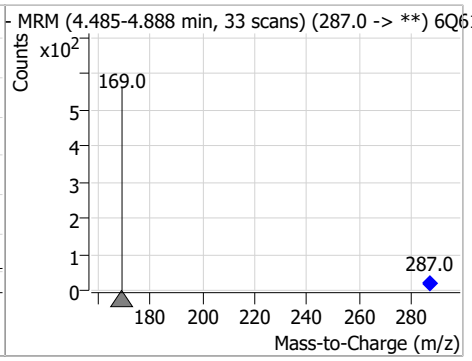


Perfluorinated Compounds by LC/MS/MS

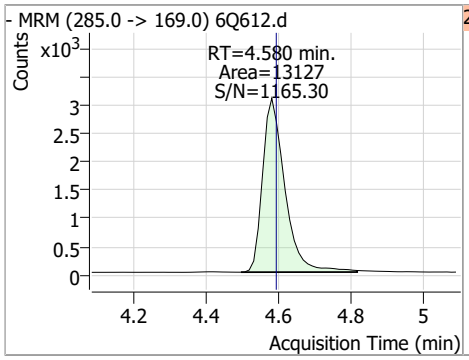
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.18	4.58	0.00	12585				

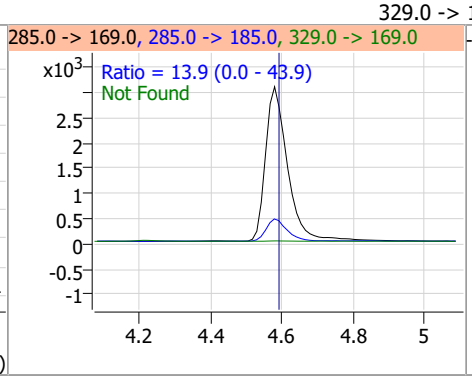


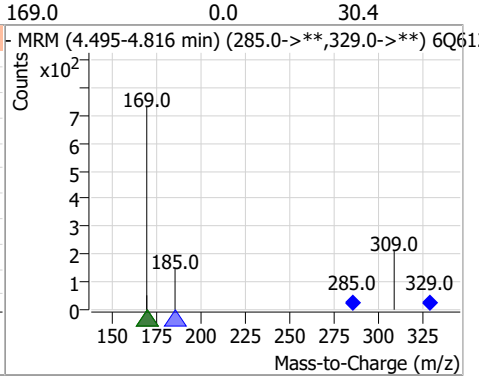




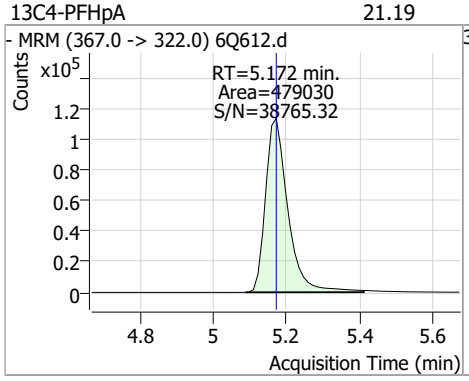
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.30	4.58	-0.01	13127	285.0 -> 185.0	13.9	0.0	43.9
					329.0 -> 169.0		0.0	30.4

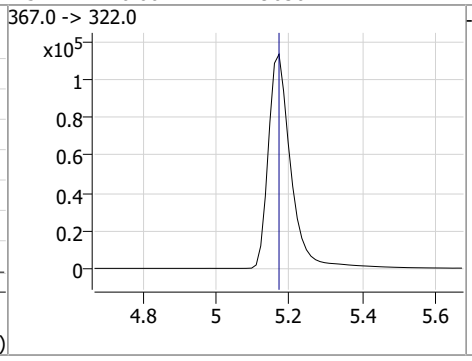


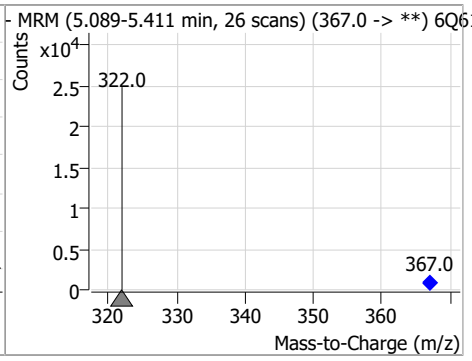




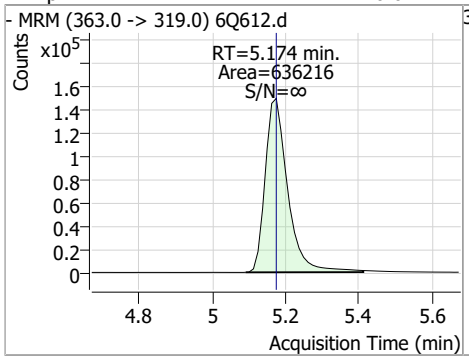
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.19	5.17	0.00	479030				

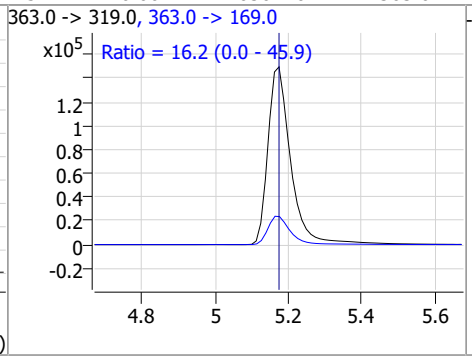


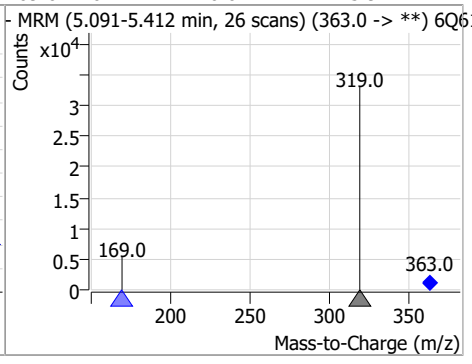




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.01	5.17	0.00	636216	363.0 -> 169.0	16.2	0.0	45.9

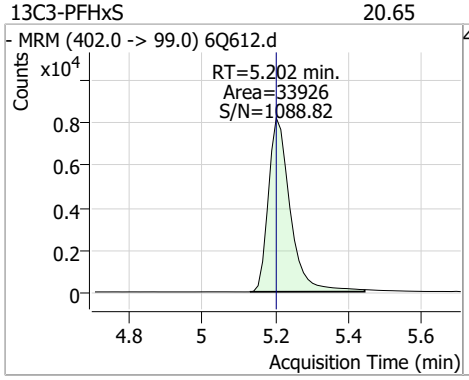


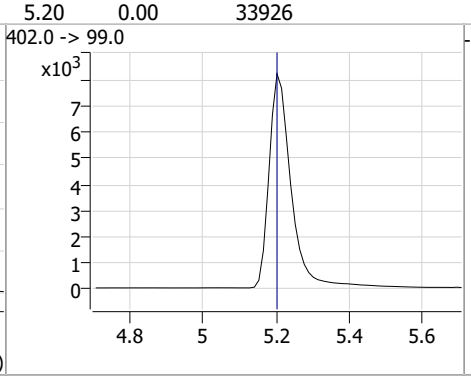


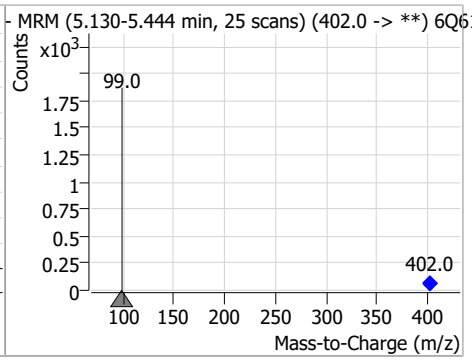


Perfluorinated Compounds by LC/MS/MS

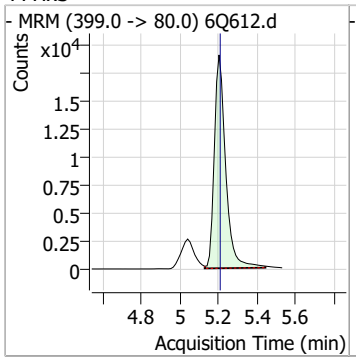
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.65	5.20	0.00	33926				

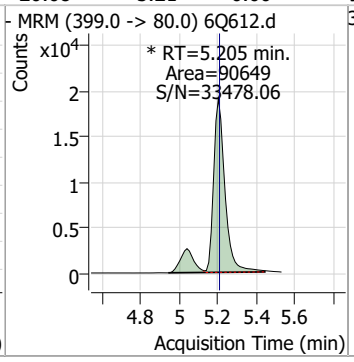


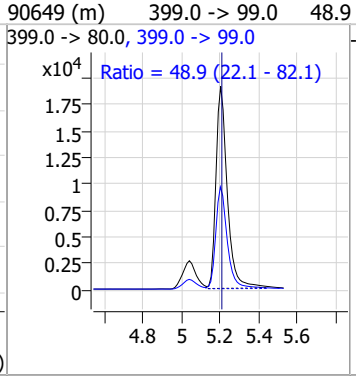


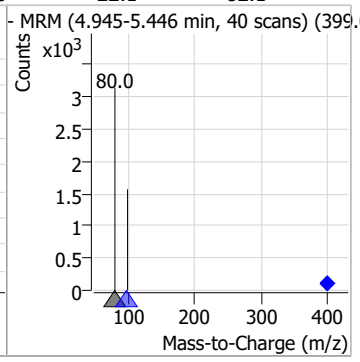


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.08	5.21	0.00	90649 (m)	399.0 -> 99.0	48.9	22.1	82.1

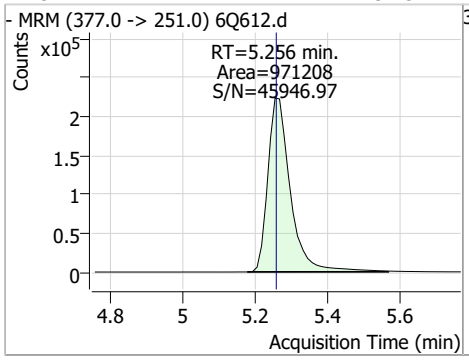


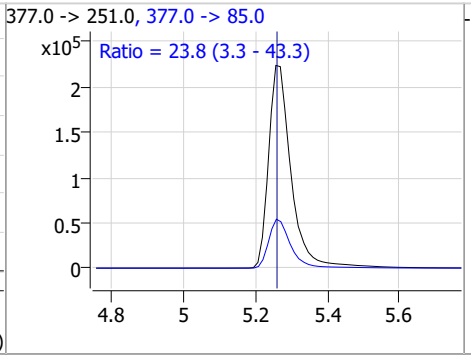


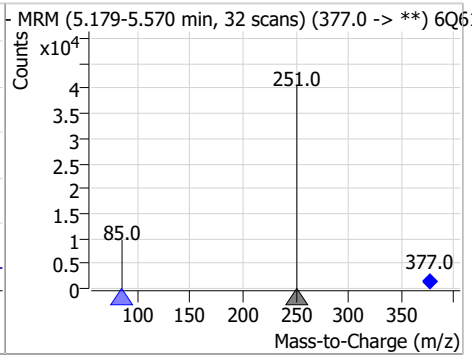




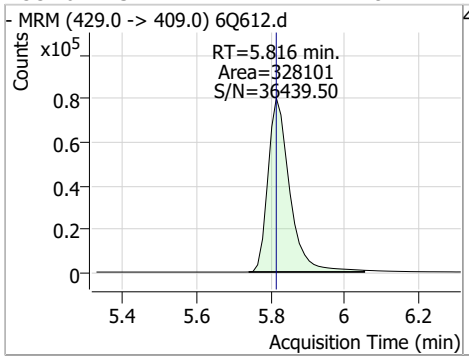
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.75	5.26	0.00	971208	377.0 -> 85.0	23.8	3.3	43.3

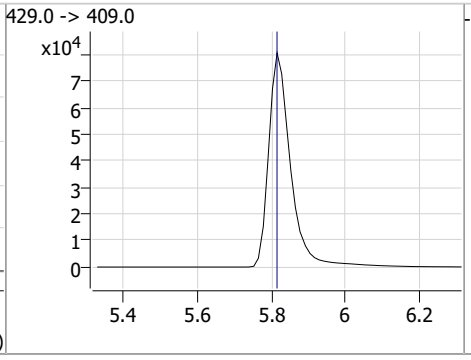


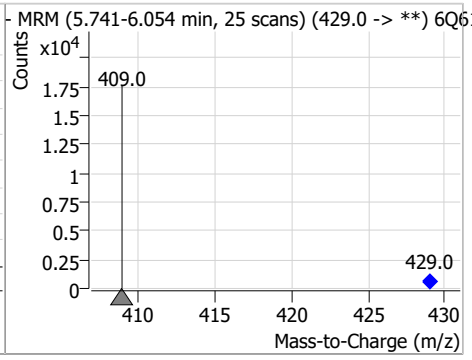




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.27	5.82	0.00	328101				

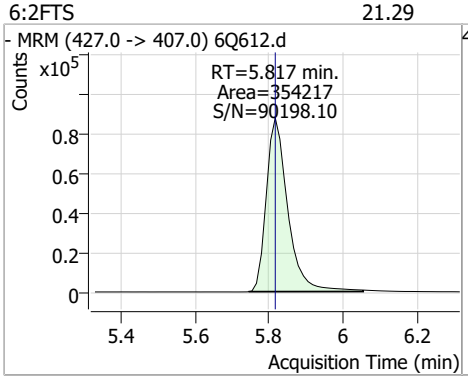


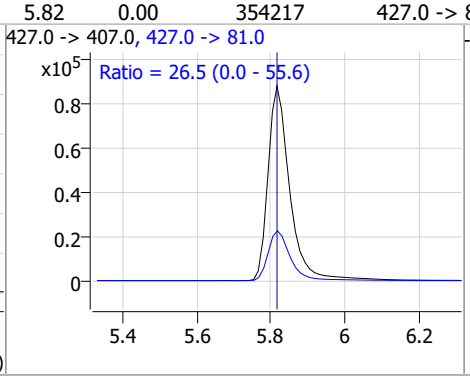


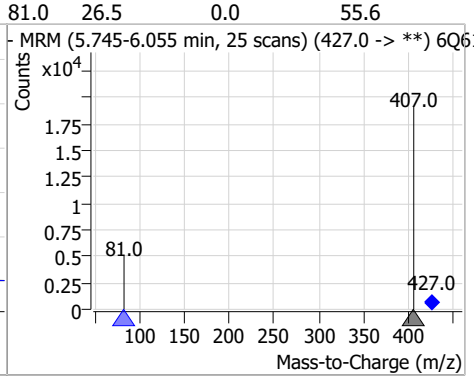


Perfluorinated Compounds by LC/MS/MS

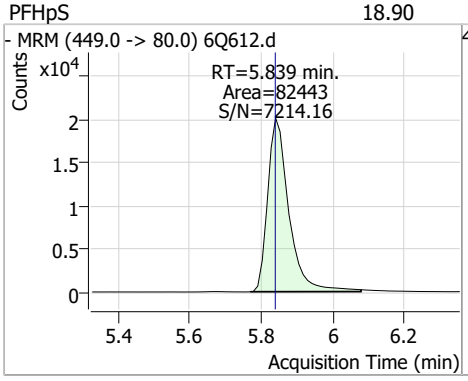
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.29	5.82	0.00	354217	427.0 -> 81.0	26.5	0.0	55.6

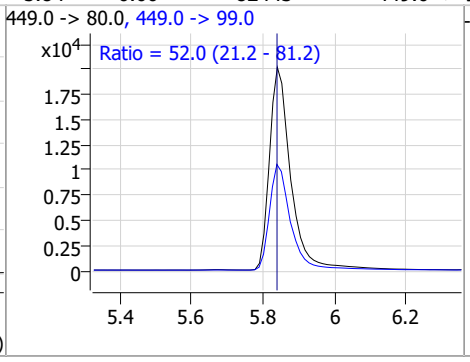


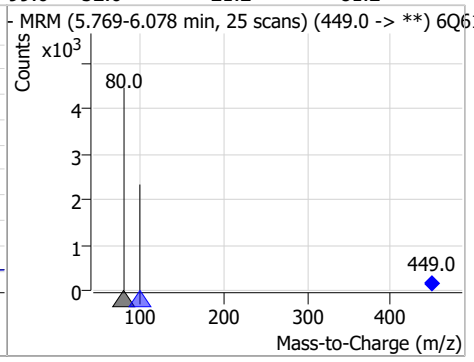




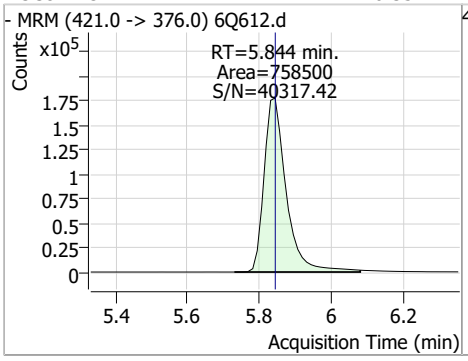
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.90	5.84	0.00	82443	449.0 -> 99.0	52.0	21.2	81.2

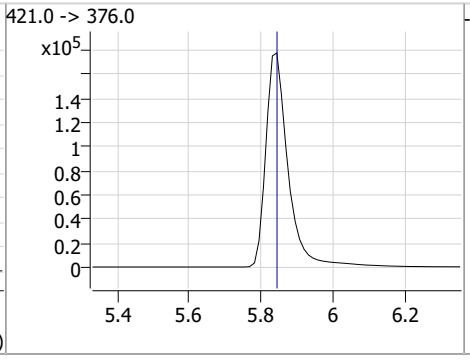


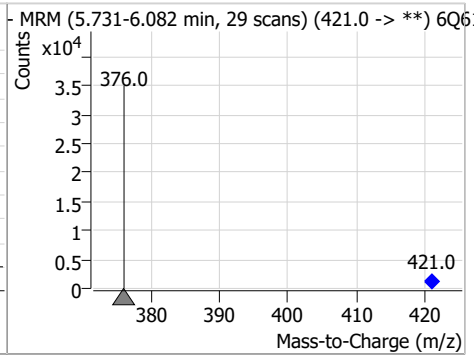




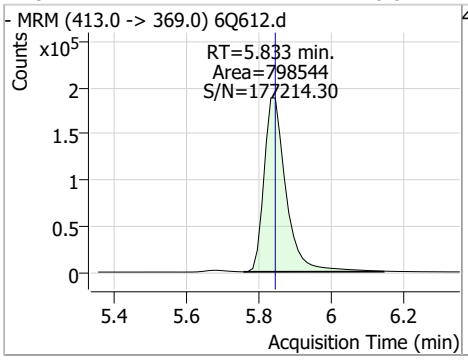
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.35	5.84	0.00	758500				

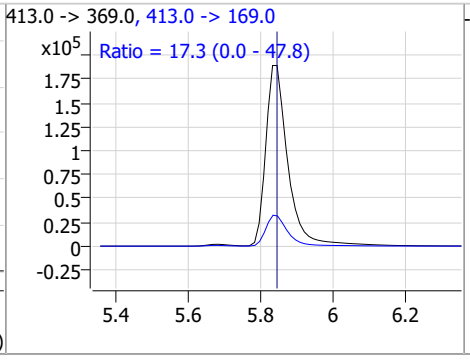


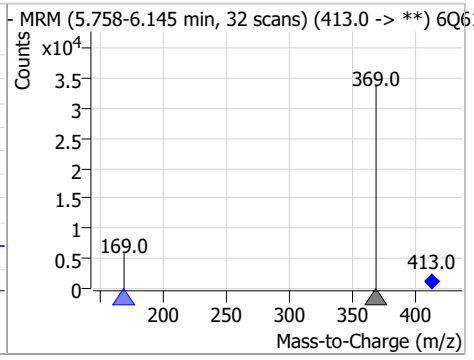




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.81	5.83	-0.01	798544	413.0 -> 169.0	17.3	0.0	47.8

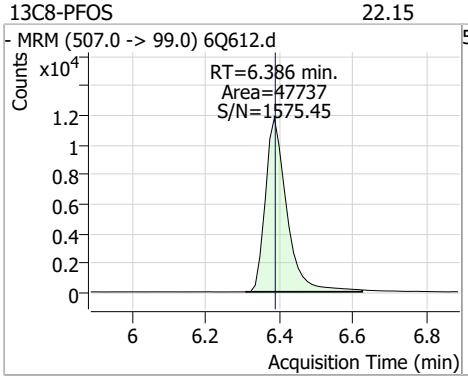


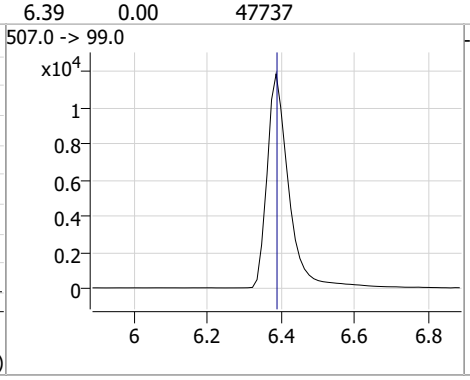


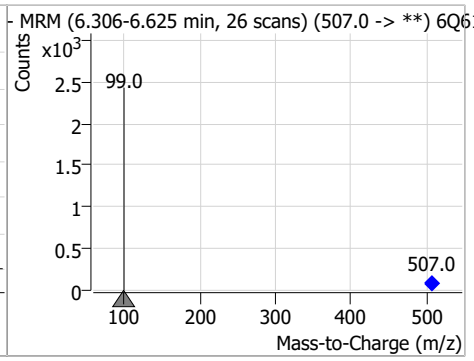


Perfluorinated Compounds by LC/MS/MS

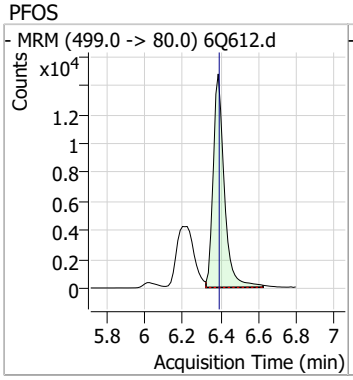
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.15	6.39	0.00	47737				

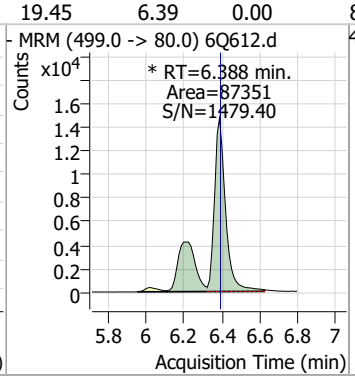


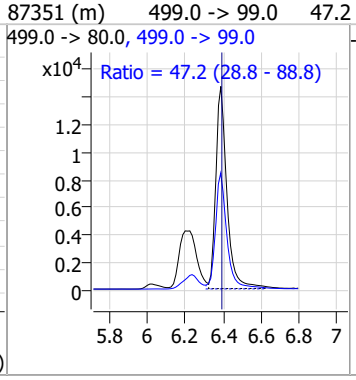


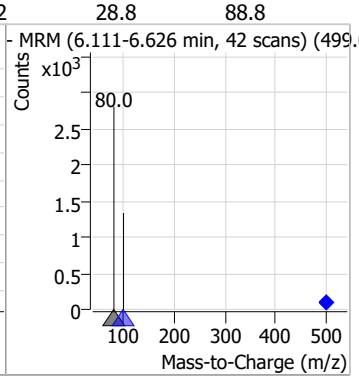


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.45	6.39	0.00	87351 (m)	499.0 -> 99.0	47.2	28.8	88.8

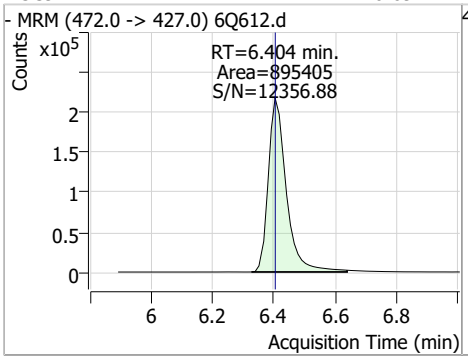


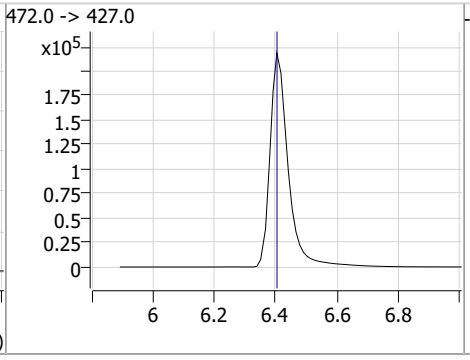


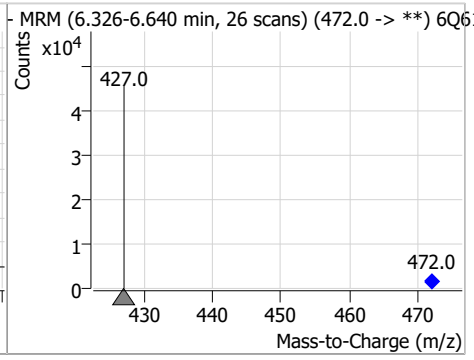




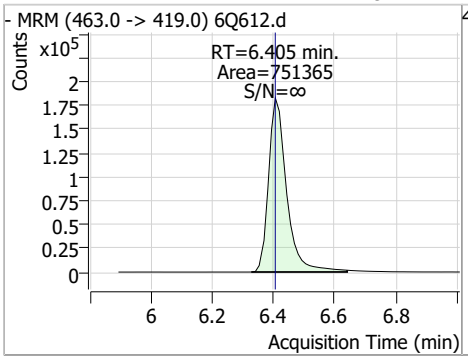
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.69	6.40	0.00	895405				

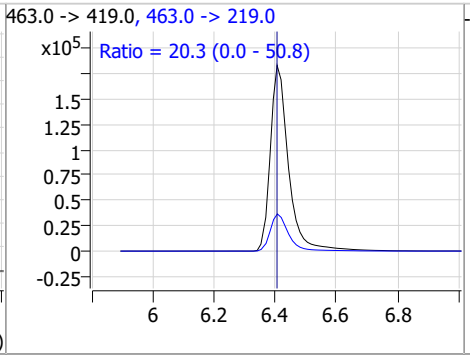


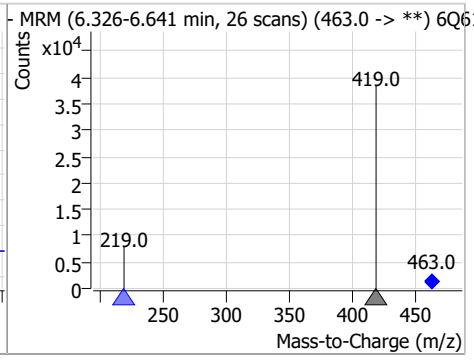




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.71	6.40	0.00	751365	463.0 -> 219.0	20.3	0.0	50.8

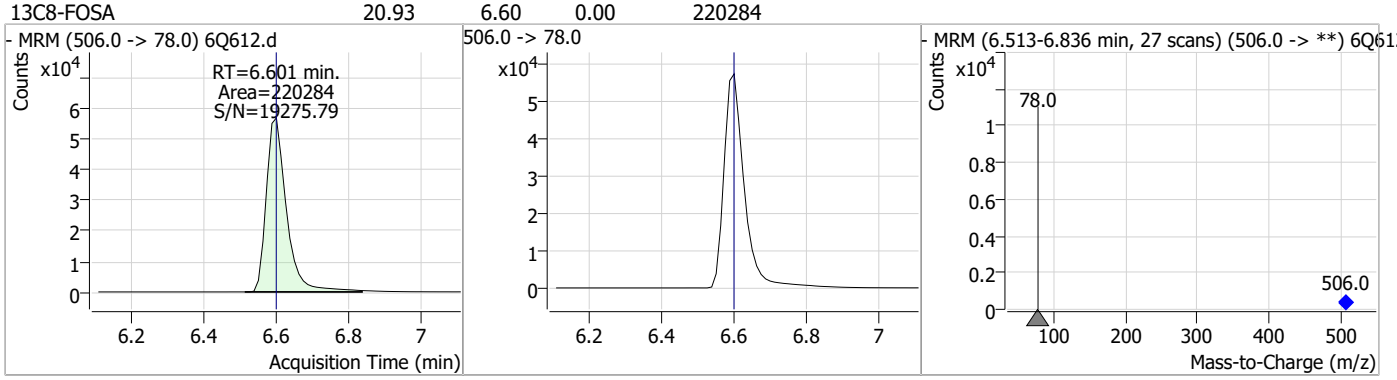




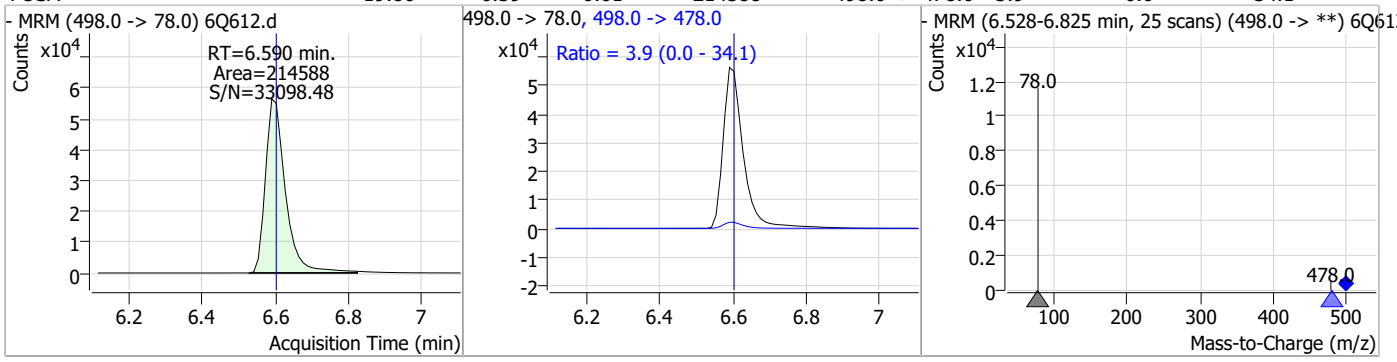


Perfluorinated Compounds by LC/MS/MS

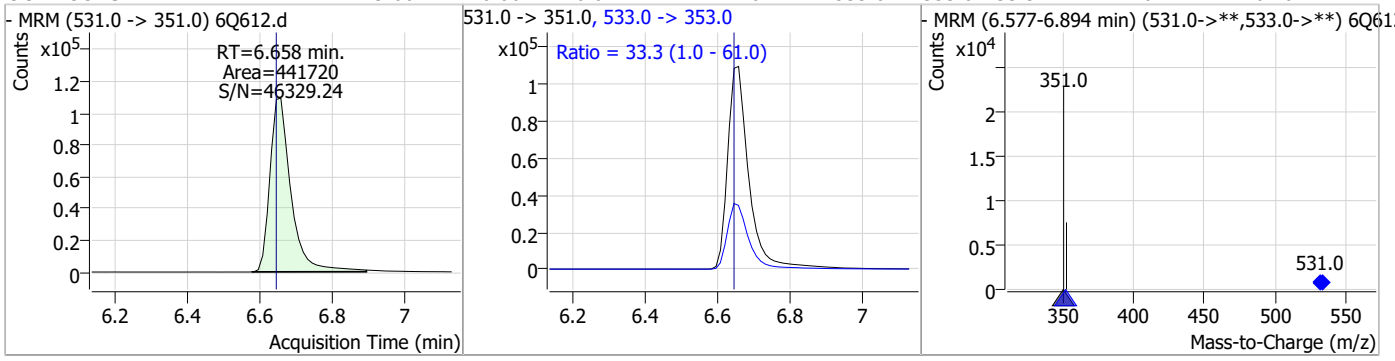
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.93	6.60	0.00	220284				



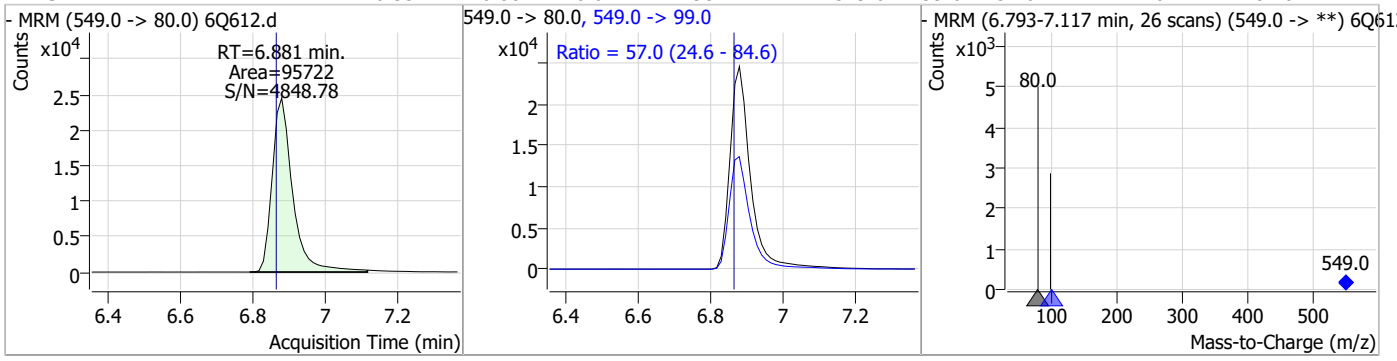
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.86	6.59	-0.01	214588	498.0 -> 478.0	3.9	0.0	34.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.00	6.66	0.01	441720	533.0 -> 353.0	33.3	1.0	61.0

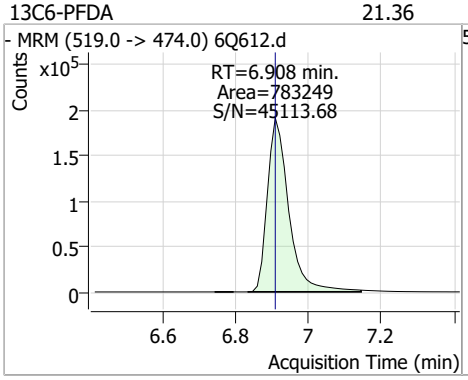


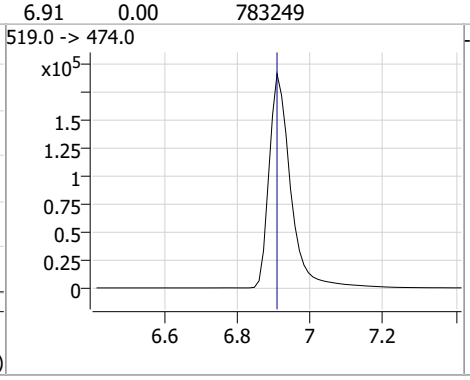
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.35	6.88	0.01	95722	549.0 -> 99.0	57.0	24.6	84.6

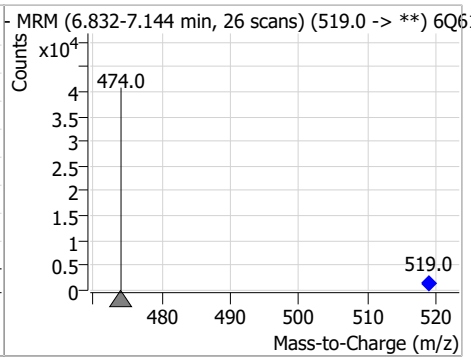


Perfluorinated Compounds by LC/MS/MS

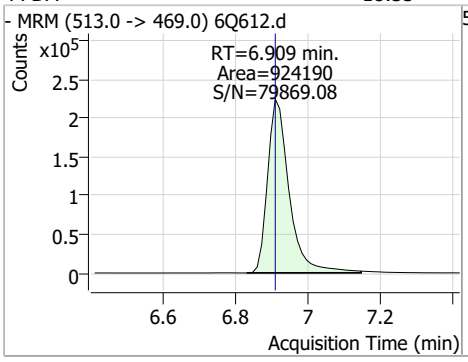
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.36	6.91	0.00	783249				

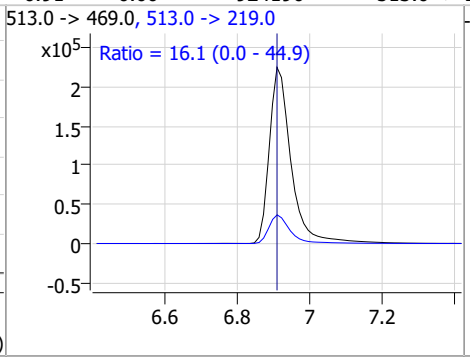


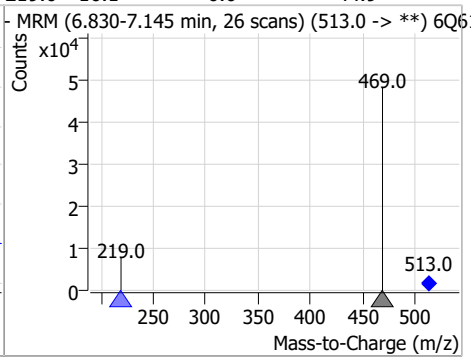




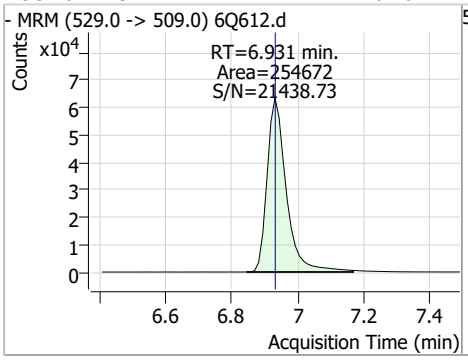
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.55	6.91	0.00	924190	513.0 -> 219.0	16.1	0.0	44.9

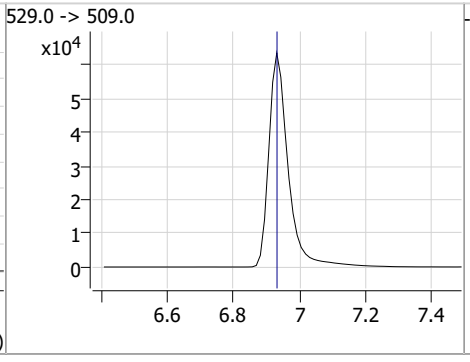


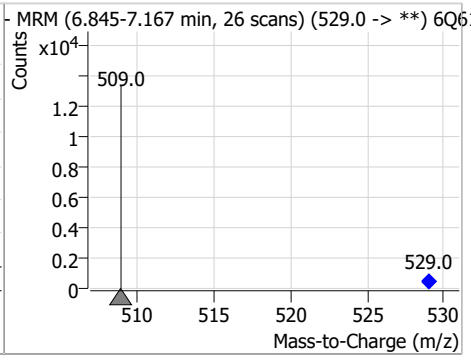




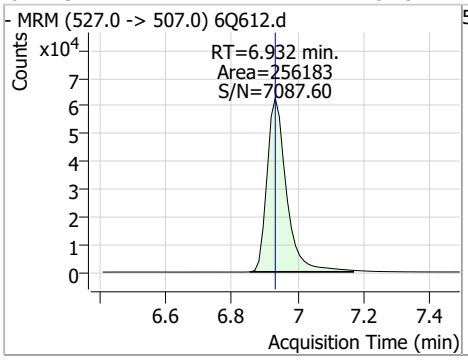
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.70	6.93	0.00	254672				

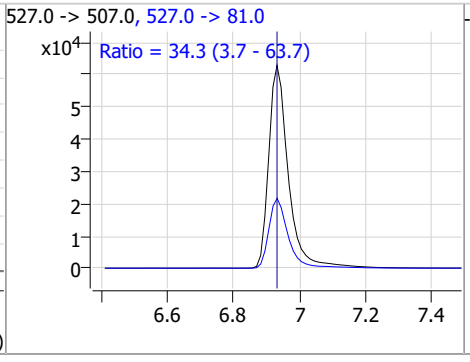


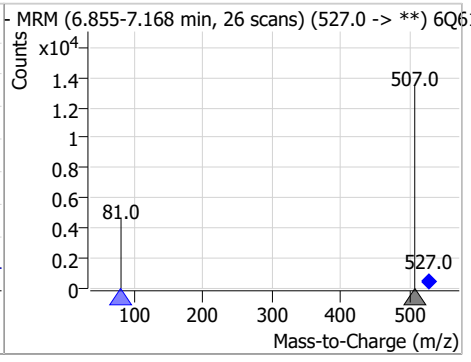




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.28	6.93	0.00	256183	527.0 -> 81.0	34.3	3.7	63.7

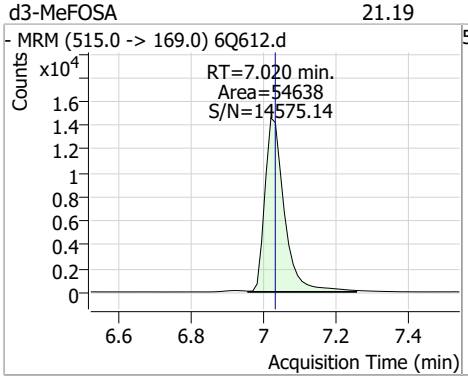


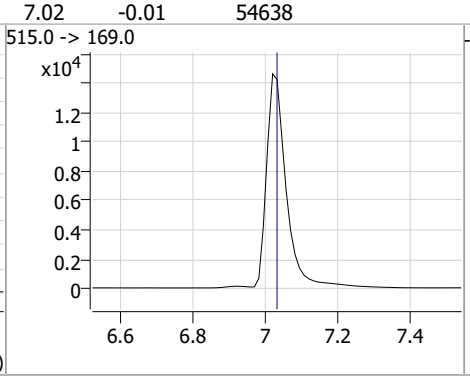


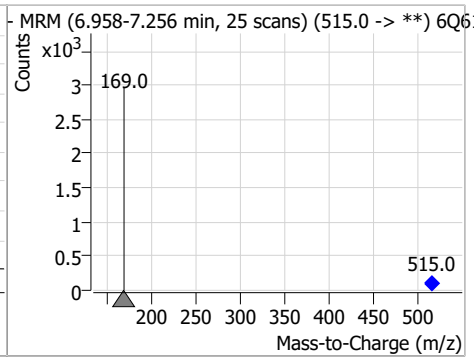


Perfluorinated Compounds by LC/MS/MS

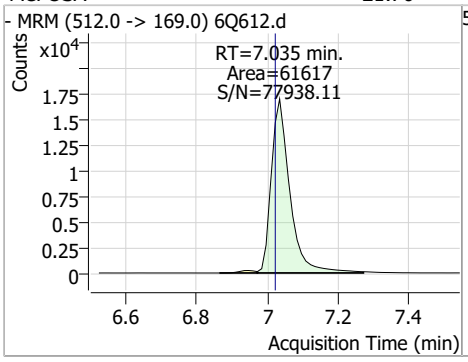
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.19	7.02	-0.01	54638				

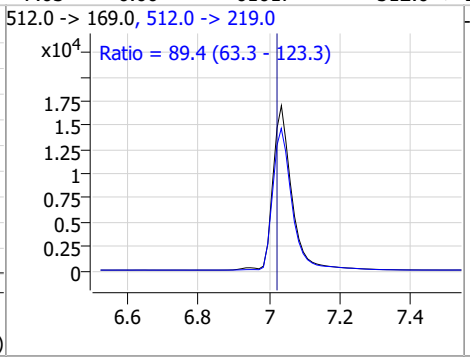


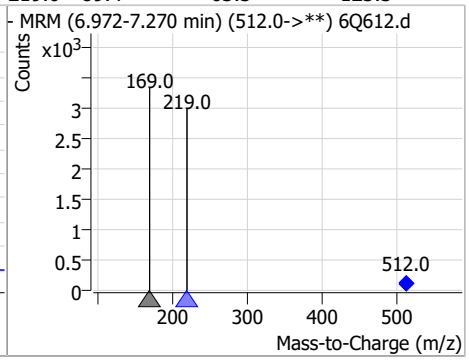




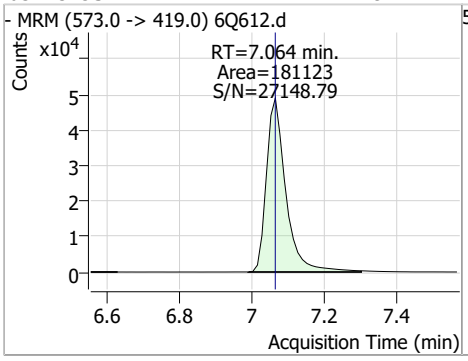
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.76	7.03	0.00	61617	512.0 -> 219.0	89.4	63.3	123.3

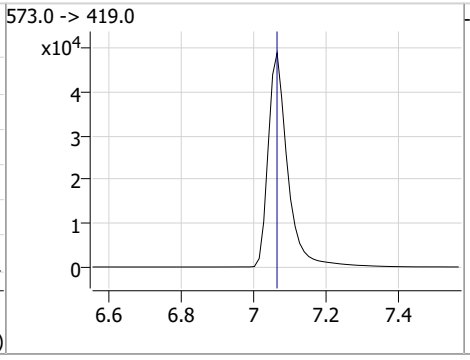


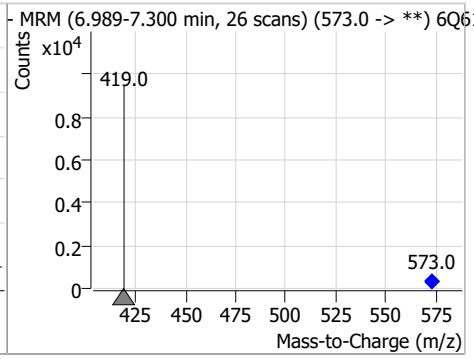




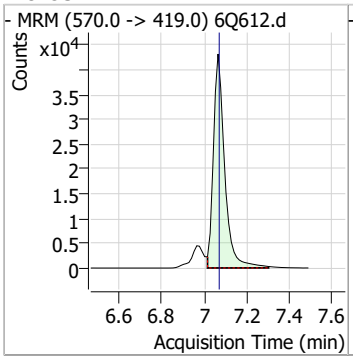
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.27	7.06	0.00	181123				

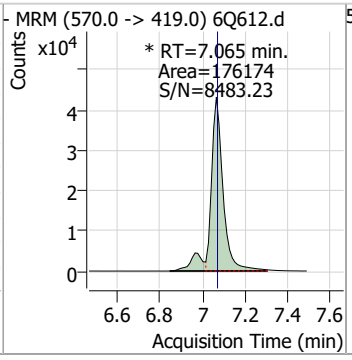


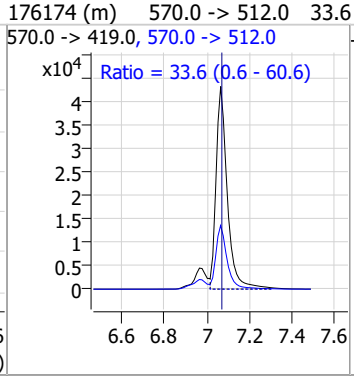


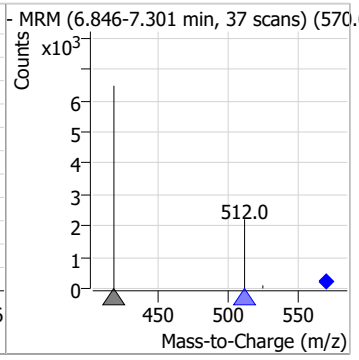


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.82	7.07	0.00	176174 (m)	570.0 -> 512.0	33.6	0.6	60.6



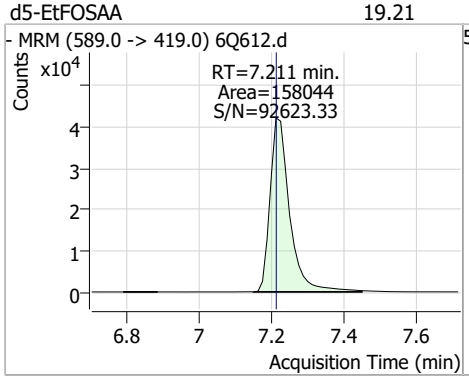


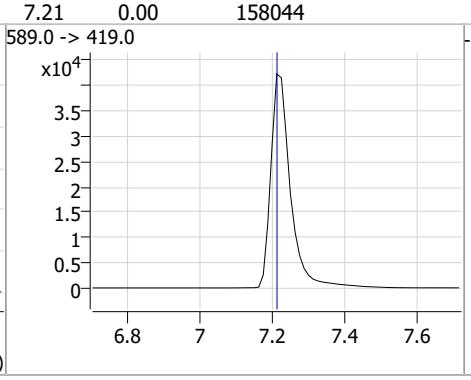


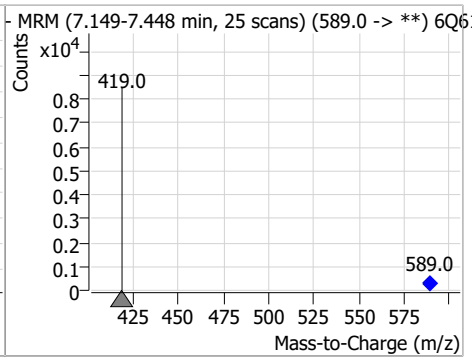


Perfluorinated Compounds by LC/MS/MS

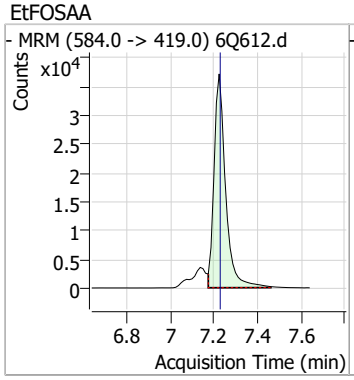
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.21	7.21	0.00	158044				

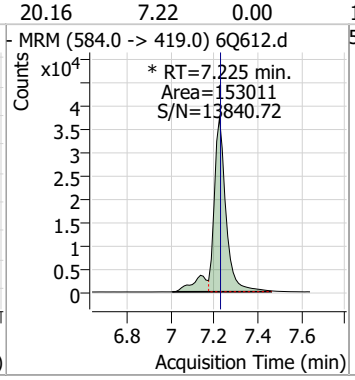


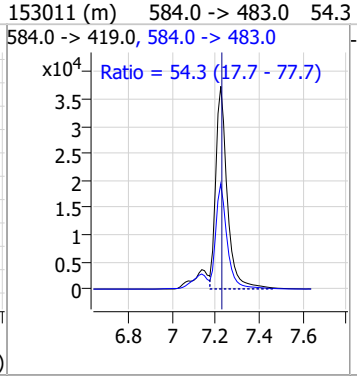


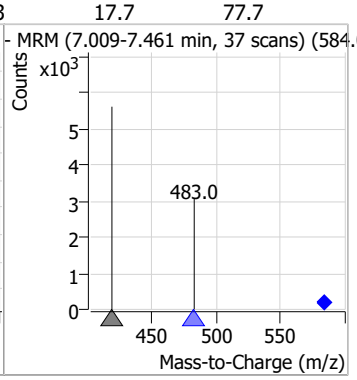


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.16	7.22	0.00	153011 (m)	584.0 -> 483.0	54.3	17.7	77.7

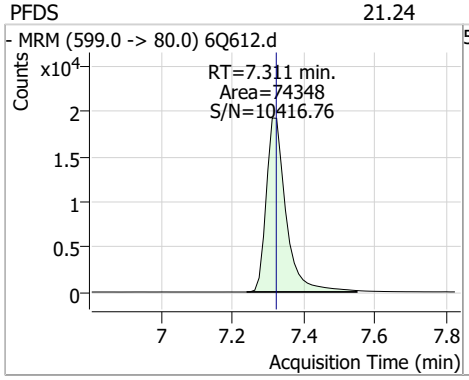


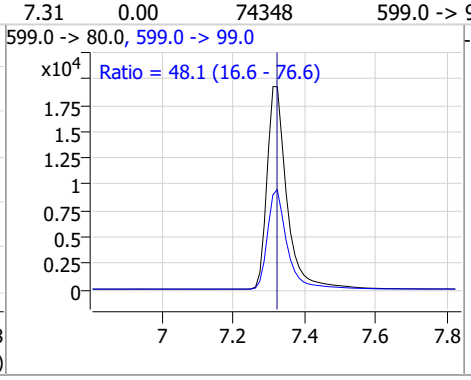


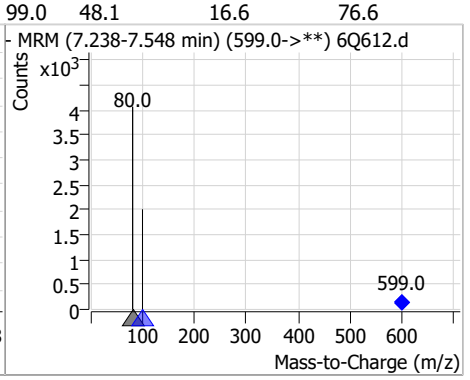




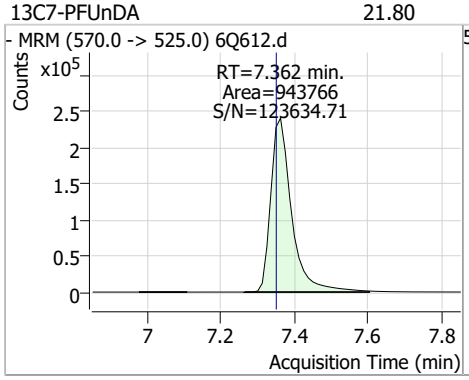
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.24	7.31	0.00	74348	599.0 -> 99.0	48.1	16.6	76.6

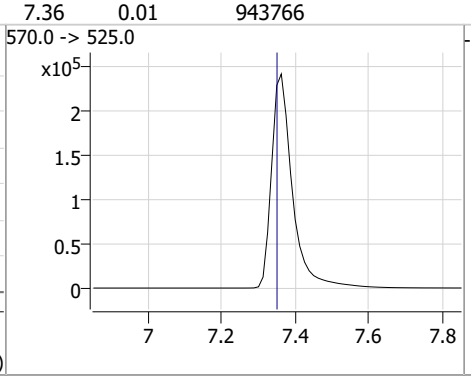


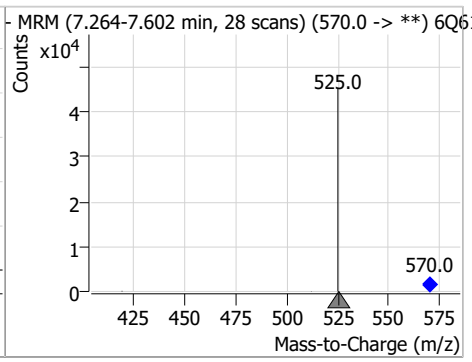




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.80	7.36	0.01	943766				

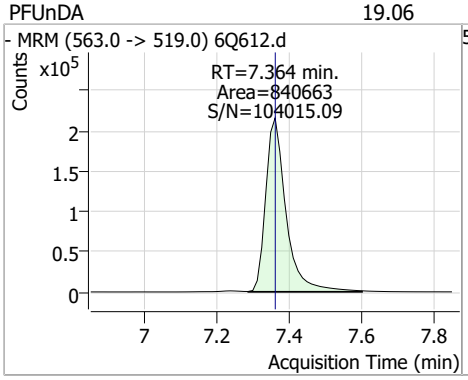


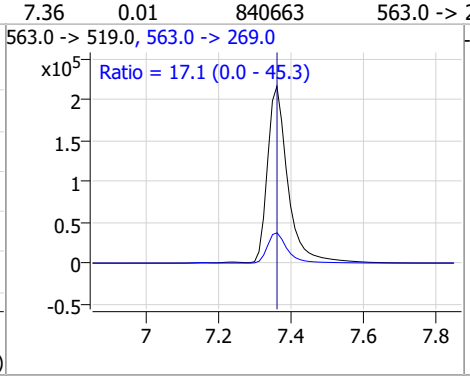


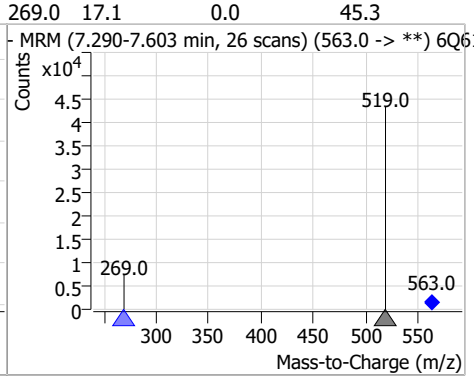


Perfluorinated Compounds by LC/MS/MS

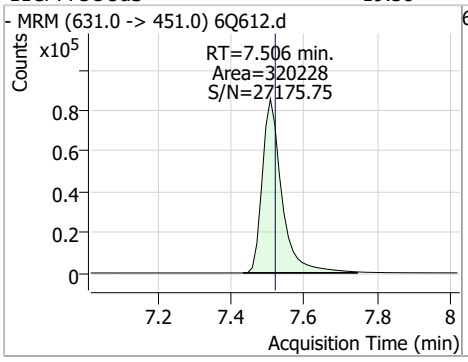
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.06	7.36	0.01	840663	563.0 -> 269.0	17.1	0.0	45.3

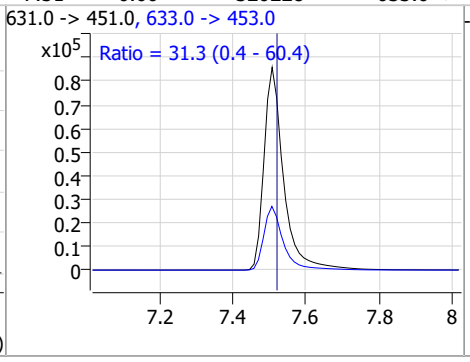


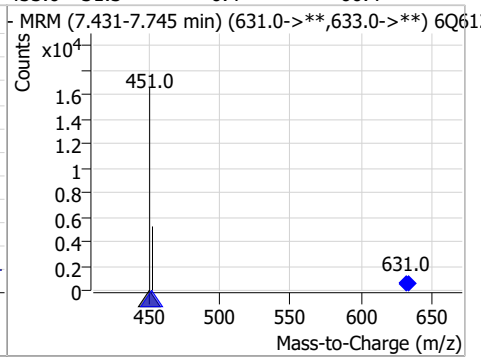




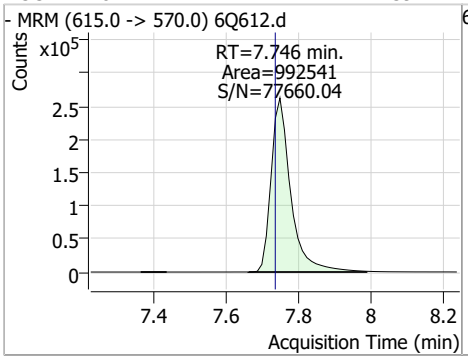
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.38	7.51	0.00	320228	633.0 -> 453.0	31.3	0.4	60.4

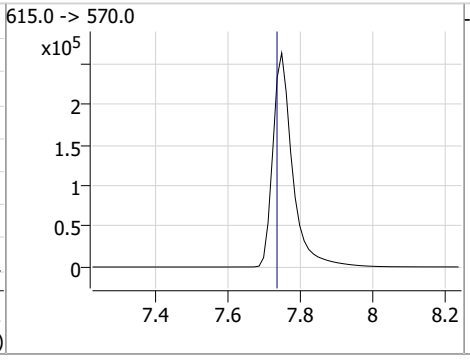


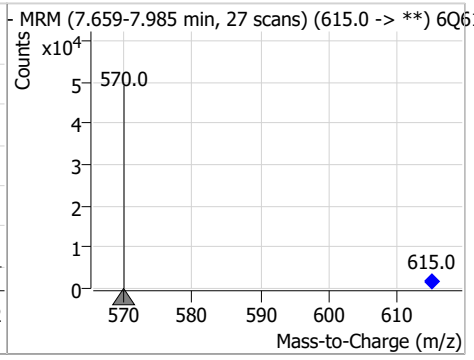




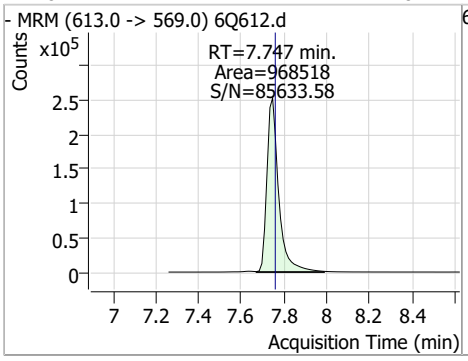
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.39	7.75	0.01	992541				

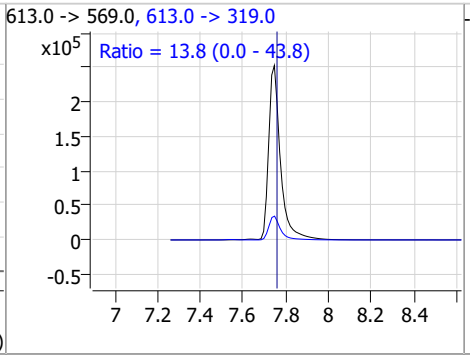


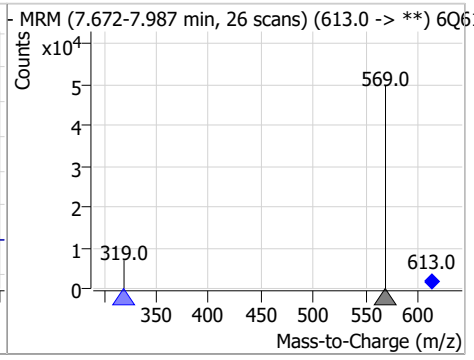




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.18	7.75	0.00	968518	613.0 -> 319.0	13.8	0.0	43.8

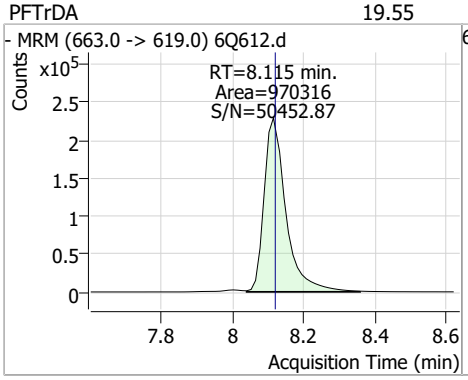


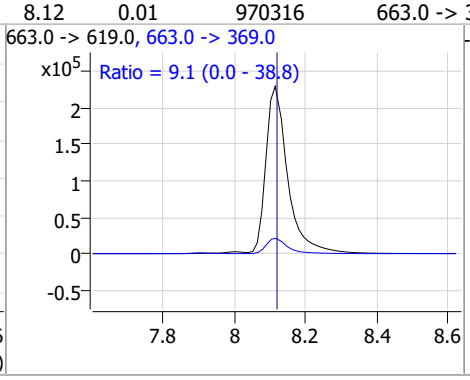


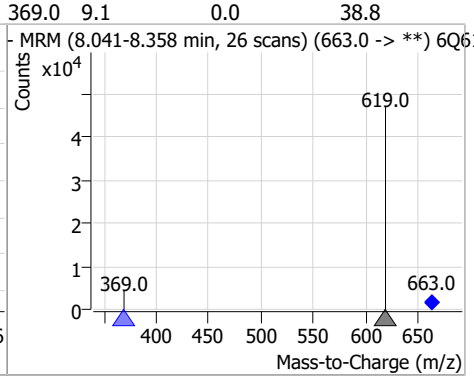


Perfluorinated Compounds by LC/MS/MS

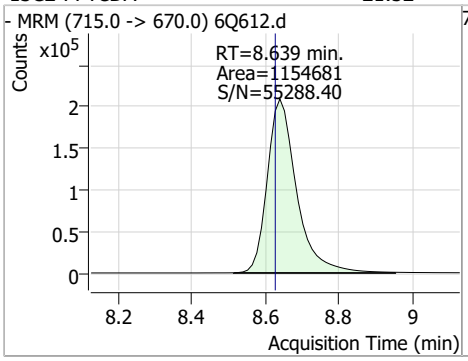
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.55	8.12	0.01	970316	663.0 -> 369.0	9.1	0.0	38.8

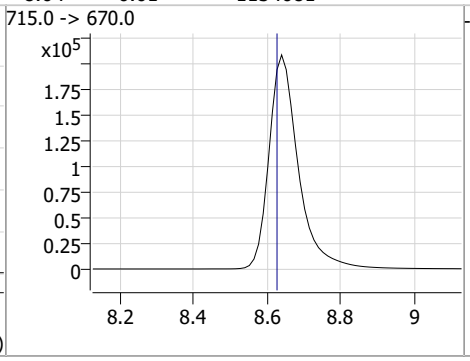


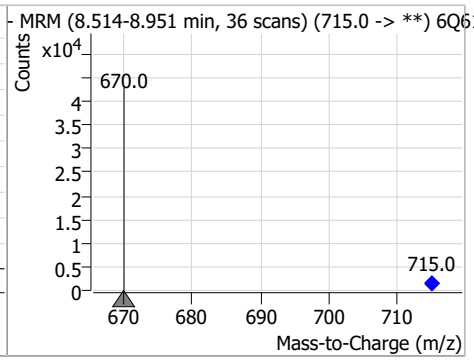




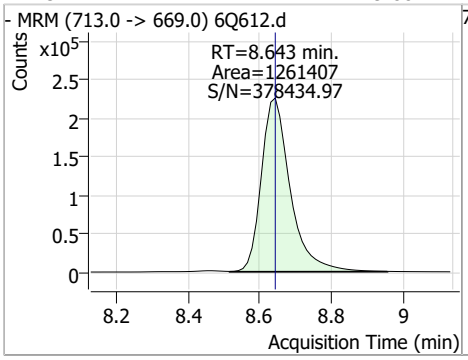
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.52	8.64	0.01	1154681				

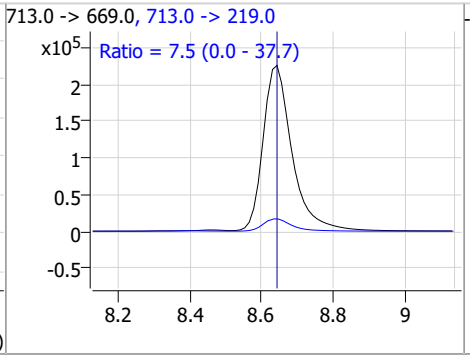


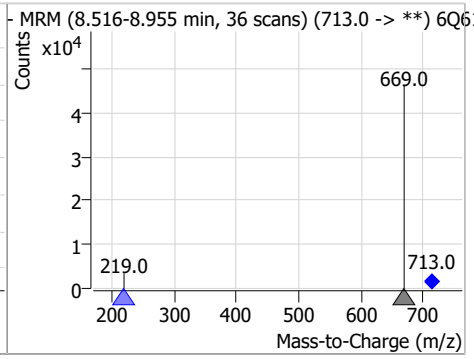




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.88	8.64	0.01	1261407	713.0 -> 219.0	7.5	0.0	37.7







Manual Integration Approval Summary

Sample Number: S6Q11-ECC6
Lab FileID: 6Q612.D
Injection Time: 05/27/22 03:00
Method: EPA 537M QSM5.3 B-15
Analyst approved: 05/27/22 11:17 Natasha Gumtie
Supervisor approved: 05/27/22 12:46 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.39	Split peak
MeFOSAA	2355-31-9		7.07	Split peak
EtFOSAA	2991-50-6		7.22	Split peak

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LCMS3-3Q ANALYSIS LOG

DATE:	05/28/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS3-3Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_052722_S3Q824
CAL DATE:	05/27/22
ANALYST:	M.Valls
RUN BATCH:	S3Q824

ELUENT A LOT #:	219210 W/0.1% AA 194003
ELUENT B LOT #:	218262 W/0.1% AA 194003
IC/CC STD LOT #:	LCMS1864
ICV STD LOT #:	10947 PFOA:LCMS1859
ISTD/ID STD LOT #:	LCMS1867-k

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	3q60338.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
2	3q60339.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
3	3q60340.d	P1-A7	RT check	537_ID.m	QC	6	op91139,S3Q824,250,,,1,1,water	✓
4	3q60341.d	P1-A7	RT check	537_ID.m	QC	6	op91139,S3Q824,250,,,1,1,water	✓
5	3q60342.d	P1-A8	RT check	537_ID.m	QC	7	op91139,S3Q824,250,,,1,1,water	✓
6	3q60343.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
7	3q60344.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
8	3q60345.d	P1-A1	ic824-0	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
9	3q60346.d	P1-A2	ic824-0.5	537_ID.m	Calibration	2.5/500	op91139,S3Q824,250,,,1,1,water	✓
10	3q60347.d	P1-A3	ic824-1	537_ID.m	Calibration	5/500	op91139,S3Q824,250,,,1,1,water	✓
11	3q60348.d	P1-A4	ic824-2	537_ID.m	Calibration	10/500	op91139,S3Q824,250,,,1,1,water	✓
12	3q60349.d	P1-A5	ic824-5	537_ID.m	Calibration	25/500	op91139,S3Q824,250,,,1,1,water	✓
13	3q60350.d	P1-A6	ic824-10	537_ID.m	Calibration	50/500	op91139,S3Q824,250,,,1,1,water	✓
14	3q60351.d	P1-A7	icc824-20	537_ID.m	Calibration	100/500	op91139,S3Q824,250,,,1,1,water	✓
15	3q60352.d	P1-A8	ic824-50	537_ID.m	Calibration	250/500	op91139,S3Q824,250,,,1,1,water	✓
16	3q60353.d	P1-A9	ic824-100	537_ID.m	Calibration	500	op91139,S3Q824,250,,,1,1,water	✓
17	3q60354.d	P1-A1	IBLK	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
18	3q60355.d	P1-B1	icv824-20	537_ID.m	QC	10/500	op91139,S3Q824,250,,,1,1,water	✓
19	3q60356.d	P1-B2	RT	537_ID.m	QC		op91139,S3Q824,250,,,1,1,water	✓
20	3q60357.d	P1-A7	cc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓
21	3q60358.d	P1-A3	cc824-1.0LL	537_ID.m	QC	5/500	op91139,S3Q824,250,,,1,1,water	✓
22	3q60359.d	P3-A1	op91345-bs	537_ID.m	Sample		op91345,S3Q824,125,,,1,1,water	✓
23	3q60360.d	P3-A2	op91345-mb	537_ID.m	Sample		op91345,S3Q824,125,,,1,1,water	✓
24	3q60361.d	P1-B9	fa95633-26	537_ID.m	Sample	50/500	op91345,S3Q824,120,,,1,10,water	✓
25	3q60362.d	P3-A3	fa95633-32	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	✓
26	3q60363.d	P3-A4	fa95633-33	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	✓
27	3q60364.d	P3-A5	fa95633-34	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	✓
28	3q60365.d	P3-A6	fa95633-35	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	rr 1x to confirm
29	3q60366.d	P3-A7	fa95633-36	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	✓
30	3q60367.d	P3-A8	fa95656-1	537_ID.m	Sample		op91345,S3Q824,120,,,1,1,water	rr 1x to confirm
31	3q60368.d	P3-A9	fs95412-4	537_ID.m	Sample	250/500	op91196,S3Q824,125,,,1,2,water	✓
32	3q60369.d	P1-A7	cc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓

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LCMS3-3Q ANALYSIS LOG

33	3q60370.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
34	3q60371.d	P3-B1	op91274-lbs	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
35	3q60372.d	P3-B2	op91274-lb	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
36	3q60373.d	P3-B3	fa95502-1	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
37	3q60374.d	P3-B4	fa95502-1	537_ID.m	Sample	100/500	op91274,S3Q824,250,,,1,5,water	✓
38	3q60375.d	P3-B5	op91274-ms	537_ID.m	Sample	100/500	op91274,S3Q824,250,,,1,5,water	✓
39	3q60376.d	P3-B6	fa95502-2	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
40	3q60377.d	P3-B7	fa95502-2	537_ID.m	Sample	100/500	op91274,S3Q824,250,,,1,5,water	✓
41	3q60378.d	P3-B8	op91274-dup	537_ID.m	Sample	50/500	op91274,S3Q824,250,,,1,10,water	✓
42	3q60379.d	P3-B9	fa95502-3	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	rr5x, low surr
43	3q60380.d	P3-C1	fa95502-4	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
44	3q60381.d	P1-A7	cc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓
45	3q60382.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
46	3q60383.d	P3-C2	fa95502-5	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
47	3q60384.d	P3-C3	fa95502-6	537_ID.m	Sample		op91274,S3Q824,250,,,1,1,water	✓
48	3q60385.d	P3-C4	fa95502-6	537_ID.m	Sample	25/500	op91274,S3Q824,250,,,1,20,water	✓
49	3q60386.d	P3-C5	op91306-bs	537_ID.m	Sample		op91306,S3Q824,125,,,1,,water	Pass
50	3q60387.d	P3-C6	op91306-mb	537_ID.m	Sample		op91306,S3Q824,125,,,1,,water	ND
51	3q60388.d	P3-C7	fa95585-21	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
52	3q60389.d	P3-C8	fa95585-22	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
53	3q60390.d	P3-C9	fa95585-23	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
54	3q60391.d	P3-D1	fa95585-24	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
55	3q60392.d	P3-D2	fa95585-25	537_ID.m	Sample	100/500	op91306,S3Q824,115,,,1,1,water	✓ + 5x
56	3q60393.d	P1-A7	cc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓
57	3q60394.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
58	3q60395.d	P1-A3	cc824-1.0LL	537_ID.m	QC	5/500	op91139,S3Q824,250,,,1,1,water	✓
59	3q60396.d	P3-D3	fa95585-26	537_ID.m	Sample	25/500	op91306,S3Q824,125,,,1,1,water	rr10x
60	3q60397.d	P3-D4	fa95585-27	537_ID.m	Sample		op91306,S3Q824,125,,,1,1,water	rr1x co
61	3q60398.d	P3-D5	fa95585-28	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
62	3q60399.d	P3-D6	fa95585-29	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
63	3q60400.d	P3-D7	fa95585-30	537_ID.m	Sample		op91306,S3Q824,125,,,1,1,water	✓
64	3q60401.d	P3-D8	fa95585-31	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
65	3q60402.d	P3-D9	fa95585-32	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
66	3q60403.d	P3-E1	fa95585-33	537_ID.m	Sample		op91306,S3Q824,125,,,1,1,water	✓
67	3q60404.d	P3-E2	op91306-ms	537_ID.m	Sample		op91306,S3Q824,125,,,1,,water	✓
68	3q60405.d	P3-E3	op91306-msd	537_ID.m	Sample		op91306,S3Q824,125,,,1,,water	✓
69	3q60406.d	P1-A7	cc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓
70	3q60407.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓
71	3q60408.d	P3-E4	fa95585-34	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
72	3q60409.d	P3-E5	fa95585-35	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓

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LCMS3-3Q ANALYSIS LOG

73	3q60410.d	P3-E6	fa95585-36	537_ID.m	Sample		op91306,S3Q824,120,,,1,1,water	✓
74	3q60411.d	P1-A7	ecc824-20	537_ID.m	QC	100/500	op91139,S3Q824,250,,,1,1,water	✓
75	3q60412.d	P1-A1	ccb	537_ID.m	Sample		op91139,S3Q824,250,,,1,1,water	✓

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DATE:	05/27/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS4-4Q

LCMS4-4Q ANALYSIS LOG

METHODS:	537MOD MS014 MS015
PROC. METH:	ID_052722_S4Q419
CAL DATE:	05/27/22
ANALYST:	M. Valls
RUN BATCH:	S4Q419

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS 1864
ICV STD LOT #:	10452A
ISTD/ID STD LOT #:	LCMS1867

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q29169.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
2	4Q29170.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
3	4Q29171.d	P1-A1	ic419-0	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
4	4Q29172.d	P1-A2	ic419-0.5	537_ID.m	Calibration	2.5/500	op91245,S4Q419,250,,,1.0,1,water	✓
5	4Q29173.d	P1-A3	ic419-1	537_ID.m	Calibration	5/500	op91245,S4Q419,250,,,1.0,1,water	✓
6	4Q29174.d	P1-A4	ic419-2	537_ID.m	Calibration	10/500	op91245,S4Q419,250,,,1.0,1,water	✓
7	4Q29175.d	P1-A5	ic419-5	537_ID.m	Calibration	25/500	op91245,S4Q419,250,,,1.0,1,water	✓
8	4Q29176.d	P1-A6	ic419-10	537_ID.m	Calibration	50/500	op91245,S4Q419,250,,,1.0,1,water	✓
9	4Q29177.d	P1-A7	icc419-20	537_ID.m	Calibration	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
10	4Q29178.d	P1-A8	ic419-50	537_ID.m	Calibration	250/500	op91245,S4Q419,250,,,1.0,1,water	✓
11	4Q29179.d	P1-A9	ic419-100	537_ID.m	Calibration	500	op91245,S4Q419,250,,,1.0,1,water	✓
12	4Q29180.d	P1-A1	IBLK	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
13	4Q29181.d	P1-B1	icv419-20	537_ID.m	QC	10/500	op91245,S4Q419,250,,,1.0,1,water	✓
14	4Q29182.d	P1-B2	RT	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
15	4Q29183.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
16	4Q29184.d	P1-A3	cc419-1.0LL	537_ID.m	QC	2	op91245,S4Q419,250,,,1.0,1,water	✓
17	4Q29185.d	P2-A1	op91275-bs	537_ID.m	Sample		op91275,S4Q419,125,,,1.0,1,water	✓
18	4Q29186.d	P2-A2	op91275-mb	537_ID.m	Sample		op91275,S4Q419,125,,,1.0,1,water	✓
19	4Q29187.d	P2-A3	fa95497-1	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
20	4Q29188.d	P2-A4	fa95497-2	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
21	4Q29189.d	P2-A5	fa95497-3	537_ID.m	Sample		op91275,S4Q419,110,,,1.0,1,water	✓
22	4Q29190.d	P2-A6	fa95497-4	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
23	4Q29191.d	P2-A7	op91275-ms	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
24	4Q29192.d	P2-A8	fa95497-5	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
25	4Q29193.d	P2-A9	fa95497-6	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
26	4Q29194.d	P2-B1	fa95497-8	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
27	4Q29195.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
28	4Q29196.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
29	4Q29197.d	P2-B2	fa95497-7	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
30	4Q29198.d	P2-B3	op91275-dup	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
31	4Q29199.d	P2-B4	fa95497-9	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
32	4Q29200.d	P2-B5	fa95497-10	537_ID.m	Sample		op91275,S4Q419,110,,,1.0,1,water	✓
33	4Q29201.d	P2-B6	fa95497-11	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
34	4Q29202.d	P2-B7	fa95497-12	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
35	4Q29203.d	P2-B8	fa95497-13	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓

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SGS ORLANDO LCMS4-4Q ANALYSIS LOG

36	4Q29204.d	P2-B9	fa95497-14	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
37	4Q29205.d	P2-C1	fa95497-15	537_ID.m	Sample		op91275,S4Q419,110,,,1.0,1,water	✓
38	4Q29206.d	P2-C2	fa95497-16	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
39	4Q29207.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
40	4Q29208.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
41	4Q29209.d	P1-A3	cc419-1.0LL	537_ID.m	QC	2	op91245,S4Q419,250,,,1.0,1,water	✓
42	4Q29210.d	P2-C3	fa95497-17	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
43	4Q29211.d	P2-C4	fa95497-18	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
44	4Q29212.d	P2-C5	fa95497-19	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓ + rr10x
45	4Q29213.d	P2-C6	fa95497-20	537_ID.m	Sample		op91275,S4Q419,120,,,1.0,1,water	✓
46	4Q29214.d	P2-C7	op91384-bs	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	Pass
47	4Q29215.d	P2-C8	op91384-mb	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	ND
48	4Q29216.d	P2-C9	fa95674-1	537_ID.m	Sample	50/500	op91384,S4Q419,125,,,1.0,10,water	✓
49	4Q29217.d	P2-D1	fa95674-1	537_ID.m	Sample	10/500	op91384,S4Q419,125,,,1.0,100,water	✓
50	4Q29218.d	P2-D2	fa95674-1	537_ID.m	Sample		op91384,S4Q419,125,,,1.0,5000,water	5000X
51	4Q29219.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
52	4Q29220.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
53	4Q29221.d	P2-D3	fa95674-2	537_ID.m	Sample		op91384,S4Q419,125,,,1.0,1,water	✓
54	4Q29222.d	P2-D4	fa95674-2	537_ID.m	Sample	25/500	op91384,S4Q419,125,,,1.0,20,water	✓
55	4Q29223.d	P2-D5	fa95674-2	537_ID.m	Sample	5/500	op91384,S4Q419,125,,,1.0,100,water	✓
56	4Q29224.d	P2-D6	op91384-ms	537_ID.m	Sample	50/500	op91384,S4Q419,250,,,1.0,10,water	✓
57	4Q29225.d	P2-D7	op91384-msd	537_ID.m	Sample	50/500	op91384,S4Q419,250,,,1.0,10,water	✓
58	4Q29226.d	P2-D8	fa95674-3	537_ID.m	Sample		op91384,S4Q419,125,,,1.0,1,water	✓
59	4Q29227.d	P2-D9	fa95674-4	537_ID.m	Sample		op91384,S4Q419,125,,,1.0,1,water	✓
60	4Q29228.d	P2-E1	fa95784-1	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	mefosa low
61	4Q29229.d	P2-E2	fa95784-2	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	✓
62	4Q29230.d	P2-E3	fa95784-2	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,10,water	✓
63	4Q29231.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
64	4Q29232.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓
65	4Q29233.d	P2-E4	fa95784-3	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	✓
66	4Q29234.d	P2-E5	fa95784-4	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	✓
67	4Q29235.d	P2-E6	fa95784-5	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	✓
68	4Q29236.d	P2-E7	fa95784-6	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	mefosa low, rr5x
69	4Q29237.d	P2-E8	fa95784-7	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	mefosa low, rr5x
70	4Q29238.d	P2-E9	fa95784-8	537_ID.m	Sample		op91384,S4Q419,250,,,1.0,1,water	mefosa low, rr5x
71	4Q29239.d	P2-F1	fa95336-13	537_ID.m	Sample		op91211,S4Q419,120,,,1.0,1,water	✓
72	4Q29240.d	P2-F2	fa95336-67	537_ID.m	Sample		op91211,S4Q419,120,,,1.0,1,water	✓
73	4Q29241.d	P1-A7	Ecc419-20	537_ID.m	QC	100/500	op91245,S4Q419,250,,,1.0,1,water	✓
74	4Q29242.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q419,250,,,1.0,1,water	✓

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LCMS4-4Q ANALYSIS LOG

DATE:	05/31/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS4-4Q

METHODS:	537MOD MS014 MS015
PROC. METH:	ID_052722_S4Q419
CAL DATE:	05/27/22
ANALYST:	M. Valls
RUN BATCH:	S4Q422

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS 1864
ICV STD LOT #:	10452A
ISTD/ID STD LOT #:	LCMS1867

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	4Q29375.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
2	4Q29376.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
3	4Q29377.d	P1-A9	High Std	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
4	4Q29378.d	P1-A1	IBLK	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
5	4Q29379.d	P1-B2	RT	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
6	4Q29380.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	✓
7	4Q29381.d	P1-A3	cc419-1.0LL	537_ID.m	QC	5/500	op91245,S4Q422,250,,,1.0,1,water	✓
8	4Q29382.d	P1-B2	RT	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	data file skip
9	4Q29383.d	P1-C1	fa95497-19	537_ID.m	Sample	50/500	op91275,S4Q422,120,,,1.0,10,water	✓
10	4Q29384.d	P1-C2	fa95784-1	537_ID.m	Sample	100/500	op91384,S4Q422,250,,,1.0,5,water	✓
11	4Q29385.d	P1-C3	fa95784-6	537_ID.m	Sample	100/500	op91384,S4Q422,250,,,1.0,5,water	✓
12	4Q29386.d	P1-C4	fa95784-7	537_ID.m	Sample	100/500	op91384,S4Q422,250,,,1.0,5,water	✓
13	4Q29387.d	P1-C5	fa95784-8	537_ID.m	Sample	100/500	op91384,S4Q422,250,,,1.0,5,water	✓
14	4Q29388.d	P1-C6	fa95585-14	537_ID.m	Sample	100/500	op91305,S4Q422,120,,,1.0,5,water	✓
15	4Q29389.d	P1-C7	fa95650-3	537_ID.m	Sample	100/500	op91346,S4Q422,280,,,1.0,5,water	✓
16	4Q29390.d	P1-C8	fa95650-4	537_ID.m	Sample	100/500	op91346,S4Q422,280,,,1.0,5,water	redo, teda fail low
17	4Q29391.d	P1-C9	fa95606-2	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,1,water	✓
18	4Q29392.d	P5-A8	fa95606-6	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,1,water	✓
19	4Q29393.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	✓
20	4Q29394.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	✓
21	4Q29395.d	P1-D1	fa95606-1	537_ID.m	Sample	250/500	op91324,S4Q422,270,,,1.0,2,water	
22	4Q29396.d	P1-D2	fa95606-5	537_ID.m	Sample	50/500	op91324,S4Q422,270,,,1.0,10,water	
23	4Q29397.d	P1-D3	fa95606-6	537_ID.m	Sample	250/500	op91324,S4Q422,270,,,1.0,2,water	
24	4Q29398.d	P1-D4	fa95606-9	537_ID.m	Sample	250/500	op91324,S4Q422,270,,,1.0,2,water	
25	4Q29399.d	P1-D5	fa95606-10	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,10,water	
26	4Q29400.d	P1-D6	fa95606-10	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,100,water	
27	4Q29401.d	P1-D7	fa95606-11	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,1,water	
28	4Q29402.d	P1-D8	fa95606-14	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,1,water	
29	4Q29403.d	P1-D9	fa95606-16	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,10,water	10x
30	4Q29404.d	P1-E1	fa95606-16	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,100,water	100x
31	4Q29405.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	
32	4Q29406.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	
33	4Q29407.d	P1-E2	fa95606-17	537_ID.m	Sample		op91324,S4Q422,270,,,1.0,1,water	
34	4Q29408.d	P1-E3	fa95606-17	537_ID.m	Sample	100/500	op91324,S4Q422,270,,,1.0,5,water	5x
35	4Q29409.d	P1-E4	fa95606-19	537_ID.m	Sample	100/500	op91324,S4Q422,270,,,1.0,5,water	5x

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36	4Q29410.d	P1-E5	fa95633-35	537_ID.m	Sample		op91345,S4Q422,120,,,1.0,1,water	
37	4Q29411.d	P1-E6	fa95656-1	537_ID.m	Sample		op91345,S4Q422,120,,,1.0,1,water	
38	4Q29412.d	P1-E7	fa95871-27	537_ID.m	Sample	100/500	op91342,S4Q422,1.06,,,1.0,5,soil	5x
39	4Q29413.d	P1-E8	fa95871-28	537_ID.m	Sample	250/500	op91342,S4Q422,0.99,,,1.0,2,soil	2x
40	4Q29414.d	P1-E9	op91342-ms	537_ID.m	Sample	250/500	op91342,S4Q422,1.01,,,1.0,2,soil	2x
41	4Q29415.d	P1-F1	op91342-msd	537_ID.m	Sample	250/500	op91342,S4Q422,1.05,,,1.0,2,soil	2x
42	4Q29416.d	P1-F2	fa95502-3	537_ID.m	Sample	100/500	op91274,S4Q422,250,,,1.0,5,water	5x
43	4Q29417.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	
44	4Q29418.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	
45	4Q29419.d	P1-A3	cc419-1.0LL	537_ID.m	QC	5/500	op91245,S4Q422,250,,,1.0,1,water	
46	4Q29420.d	P1-F3	fa95585-25	537_ID.m	Sample		op91306,S4Q422,115,,,1.0,5,water	5x
47	4Q29421.d	P1-F4	fa95585-26	537_ID.m	Sample		op91306,S4Q422,125,,,1.0,10,water	10x
48	4Q29422.d	P1-F5	fa95871-8	537_ID.m	Sample		op91341,S4Q422,1.03,,,1.0,5,soil	5x
49	4Q29423.d	P1-F6	fa95871-9	537_ID.m	Sample		op91341,S4Q422,0.99,,,1.0,5,soil	5x
50	4Q29424.d	P1-F7	fa95871-10	537_ID.m	Sample		op91341,S4Q422,1.02,,,1.0,5,soil	5x
51	4Q29425.d	P1-F8	fa95871-12	537_ID.m	Sample		op91341,S4Q422,1.04,,,1.0,5,soil	5x
52	4Q29426.d	P1-F9	fa95871-18	537_ID.m	Sample		op91341,S4Q422,1.04,,,1.0,2,soil	2x
53	4Q29427.d	P6-A1	fa95871-19	537_ID.m	Sample		op91341,S4Q422,1.05,,,1.0,1,soil	co
54	4Q29428.d	P6-A2	fa95871-19	537_ID.m	Sample		op91341,S4Q422,1.05,,,1.0,5,soil	5x
55	4Q29429.d	P6-A3	fa95871-20	537_ID.m	Sample		op91341,S4Q422,1.02,,,1.0,5,soil	5x
56	4Q29430.d	P1-A7	cc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	
57	4Q29431.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	
58	4Q29432.d	P6-A4	fa95871-22	537_ID.m	Sample		op91341,S4Q422,0.98,,,1.0,5,soil	5x
59	4Q29433.d	P6-A5	fa95652-5	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	10x
60	4Q29434.d	P6-A6	fa95652-5	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	100x
61	4Q29435.d	P6-A7	fa95652-5	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	1000x
62	4Q29436.d	P6-A8	fa95652-6	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	10x
63	4Q29437.d	P6-A9	fa95652-6	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	100x
64	4Q29438.d	P6-B1	fa95652-6	537_ID.m	Sample		op91347,S4Q422,280,,,1.0,10,water	1000x
65	4Q29439.d	P1-A7	ecc419-20	537_ID.m	QC	100/500	op91245,S4Q422,250,,,1.0,1,water	
66	4Q29440.d	P1-A1	ccb	537_ID.m	Sample		op91245,S4Q422,250,,,1.0,1,water	S4q421

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LCMS6-6Q ANALYSIS LOG

DATE:	05/26/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_051922_S6Q6
CAL DATE:	05/19/22
ANALYST:	NG
RUN BATCH:	S6Q11

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS 1864
ICV STD LOT #:	10452A
ISTD/ID STD LOT #:	LCMS1867

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q549.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
2	6Q550.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
3	6Q551.d	P1-A9	high std	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	✓
4	6Q552.d	P1-A1	iblk	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
5	6Q553.d	P1-B2	RT	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	✓
6	6Q554.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
7	6Q555.d	P1-A3	cc6-1.0LL	537_ID.m	QC	5/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
8	6Q556.d	P1-C1	op91303-bs	537_ID.m	Sample		OP91303,S6Q11,250,,,1.0,1,water	BS PASS
9	6Q557.d	P1-C2	op91303-mb	537_ID.m	Sample		OP91303,S6Q11,250,,,1.0,1,water	ND
10	6Q558.d	P1-C3	fa95605-1	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
11	6Q559.d	P1-C4	fa95605-2	537_ID.m	Sample		OP91303,S6Q11,280,,,1.0,1,water	✓
12	6Q560.d	P1-C5	fa95605-3	537_ID.m	Sample		OP91303,S6Q11,280,,,1.0,1,water	rr 5x fosa low
13	6Q561.d	P1-C6	fa95605-4	537_ID.m	Sample	-46	OP91303,S6Q11,210,,,1.0,1,water	✓
14	6Q562.d	P1-C7	fa95605-5	537_ID.m	Sample		OP91303,S6Q11,260,,,1.0,1,water	✓
15	6Q563.d	P1-C8	fa95605-6	537_ID.m	Sample	-70	OP91303,S6Q11,240,,,1.0,1,water	✓
16	6Q564.d	P1-C9	fa95605-7	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
17	6Q565.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
18	6Q566.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
19	6Q567.d	P1-D1	fa95605-8	537_ID.m	Sample		OP91303,S6Q11,250,,,1.0,1,water	✓
20	6Q568.d	P1-D2	op91303-ms	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
21	6Q569.d	P1-D3	op91303-msd	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
22	6Q570.d	P1-D4	fa95605-9	537_ID.m	Sample		OP91303,S6Q11,280,,,1.0,1,water	✓
23	6Q571.d	P1-D5	fa95605-12	537_ID.m	Sample		OP91303,S6Q11,240,,,1.0,1,water	✓
24	6Q572.d	P1-D6	fa95605-13	537_ID.m	Sample	-98	OP91303,S6Q11,220,,,1.0,1,water	✓
25	6Q573.d	P1-D7	fa95605-15	537_ID.m	Sample		OP91303,S6Q11,280,,,1.0,1,water	✓
26	6Q574.d	P1-D8	fa95605-20	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
27	6Q575.d	P1-D9	fa95605-21	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
28	6Q576.d	P1-E1	fa95605-22	537_ID.m	Sample		OP91303,S6Q11,260,,,1.0,1,water	✓
29	6Q577.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
30	6Q578.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
31	6Q579.d	P1-A3	cc6-1.0LL	537_ID.m	QC	5/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
32	6Q580.d	P1-E2	fa95605-23	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
33	6Q581.d	P1-E3	fa95605-24	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
34	6Q582.d	P1-E4	fa95605-25	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓
35	6Q583.d	P1-E5	fa95605-26	537_ID.m	Sample		OP91303,S6Q11,270,,,1.0,1,water	✓

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LCMS6-6Q ANALYSIS LOG

36	6Q584.d	P1-E6	op91243-bs	537_ID.m	Sample		OP91243,S6Q11,250,,,1.0,1,water	✓
37	6Q585.d	P1-E7	op91243-mb	537_ID.m	Sample		OP91243,S6Q11,250,,,1.0,1,water	✓
38	6Q586.d	P1-E8	fa95484-1	537_ID.m	Sample		OP91243,S6Q11,280,,,1.0,1,water	✓
39	6Q587.d	P1-E9	fa95484-2	537_ID.m	Sample		OP91243,S6Q11,280,,,1.0,1,water	✓
40	6Q588.d	P1-F1	fa95484-3	537_ID.m	Sample		OP91243,S6Q11,280,,,1.0,1,water	✓
41	6Q589.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
42	6Q590.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
43	6Q591.d	P1-F2	fa95491-1	537_ID.m	Sample		OP91243,S6Q11,260,,,1.0,1,water	✓
44	6Q592.d	P1-F3	fa95491-2	537_ID.m	Sample		OP91243,S6Q11,270,,,1.0,1,water	rr 5x teda low
45	6Q593.d	P1-F4	fa95500-1	537_ID.m	Sample		OP91243,S6Q11,260,,,1.0,1,water	✓
46	6Q594.d	P1-F5	fa95500-2	537_ID.m	Sample		OP91243,S6Q11,270,,,1.0,1,water	✓
47	6Q595.d	P1-F6	op91243-ms	537_ID.m	Sample		OP91243,S6Q11,270,,,1.0,1,water	✓
48	6Q596.d	P1-F7	fa95500-3	537_ID.m	Sample		OP91243,S6Q11,235,,,1.0,1,water	✓
49	6Q597.d	P1-F8	fa95500-4	537_ID.m	Sample		OP91243,S6Q11,235,,,1.0,1,water	✓
50	6Q598.d	P1-F9	fa95500-5	537_ID.m	Sample		OP91243,S6Q11,210,,,1.0,1,water	✓
51	6Q599.d	P2-A1	op91243-dup	537_ID.m	Sample		OP91243,S6Q11,220,,,1.0,1,water	✓
52	6Q600.d	P2-A2	fa95500-6	537_ID.m	Sample		OP91243,S6Q11,230,,,1.0,1,water	✓
53	6Q601.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
54	6Q602.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND
55	6Q603.d	P2-A3	fa95500-7	537_ID.m	Sample		OP91243,S6Q11,230,,,1.0,1,water	✓
56	6Q604.d	P2-A4	fa95500-8	537_ID.m	Sample		OP91243,S6Q11,210,,,1.0,1,water	✓
57	6Q605.d	P2-A5	fa95500-9	537_ID.m	Sample		OP91243,S6Q11,200,,,1.0,1,water	✓
58	6Q606.d	P2-A6	fa95500-10	537_ID.m	Sample		OP91243,S6Q11,220,,,1.0,1,water	✓
59	6Q607.d	P2-A7	fa95500-11	537_ID.m	Sample		OP91243,S6Q11,220,,,1.0,1,water	rr 5x teda low
60	6Q608.d	P2-A8	fa95500-12	537_ID.m	Sample		OP91243,S6Q11,220,,,1.0,1,water	✓
61	6Q609.d	P2-A9	fa95500-13	537_ID.m	Sample		OP91243,S6Q11,230,,,1.0,1,water	✓
62	6Q610.d	P2-B1	fa95502-7	537_ID.m	Sample		OP91243,S6Q11,120,,,1.0,1,water	✓
63	6Q611.d	P2-B2	fa95502-8	537_ID.m	Sample		OP91243,S6Q11,120,,,1.0,1,water	✓
64	6Q612.d	P1-A7	ecc6-20	537_ID.m	QC	100/500	OP91029,S6Q11,250,,,1.0,1,water	PASS
65	6Q613.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q11,250,,,1.0,1,water	ND

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LCMS6-6Q ANALYSIS LOG

DATE:	05/19/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_051922_S6Q6
CAL DATE:	05/19/22
ANALYST:	NG
RUN BATCH:	S6Q6

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS 1864
ICV STD LOT #:	10452A
ISTD/ID STD LOT #:	LCMS1867

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q239.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
2	6Q240.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
3	6Q241.d	P1-A8	retention time update	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	retention time update
4	6Q242.d	P1-A1	ic6-0	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	Check Tune File
5	6Q243.d	P1-A2	ic6-0.5	537_ID.m	Calibration	2.5/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
6	6Q244.d	P1-A3	ic6-1	537_ID.m	Calibration	5/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
7	6Q245.d	P1-A4	ic6-2	537_ID.m	Calibration	10/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
8	6Q246.d	P1-A5	ic6-5	537_ID.m	Calibration	25/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
9	6Q247.d	P1-A6	ic6-10	537_ID.m	Calibration	50/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
10	6Q248.d	P1-A7	icc6-20	537_ID.m	Calibration	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
11	6Q249.d	P1-A8	ic6-50	537_ID.m	Calibration	250/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
12	6Q250.d	P1-A9	ic6-100	537_ID.m	Calibration	1x	OP91029,S6Q6,250,,,1.0,1,water	PASS
13	6Q251.d	P1-A1	iblk	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
14	6Q252.d	P1-B1	icv6-20	537_ID.m	QC	10/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
15	6Q253.d	P1-B2	RT	537_ID.m	Sample	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
16	6Q254.d	P1-A3	cc6-1.0LL	537_ID.m	QC	5/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
17	6Q255.d	P1-B3	op91213-bs	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	BS PASS
18	6Q256.d	P1-B4	op91213-mb	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	ND
19	6Q257.d	P1-B5	fa95583-18	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
20	6Q258.d	P1-B6	op91213-ms	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
21	6Q259.d	P1-B7	op91213-msd	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
22	6Q260.d	P1-B8	fa95583-19	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
23	6Q261.d	P1-B9	fa95583-20	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
24	6Q262.d	P1-C1	fa95583-21	537_ID.m	Sample		OP91213,S6Q6,280,,,1.0,1,water	✓
25	6Q263.d	P1-C2	fa95583-22	537_ID.m	Sample		OP91213,S6Q6,280,,,1.0,1,water	✓
26	6Q264.d	P1-C3	fa95583-23	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
27	6Q265.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
28	6Q266.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
29	6Q267.d	P1-C4	fa95583-24	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
30	6Q268.d	P1-C5	fa95583-25	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
31	6Q269.d	P1-C6	fa95583-26	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
32	6Q270.d	P1-C7	fa95583-27	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
33	6Q271.d	P1-C8	fa95583-28	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
34	6Q272.d	P1-C9	fa95583-29	537_ID.m	Sample		OP91213,S6Q6,280,,,1.0,1,water	✓
35	6Q273.d	P1-D1	fa95583-30	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	d3mefosa low rr 5x

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LCMS6-6Q ANALYSIS LOG

36	6Q274.d	P1-D2	fa95583-31	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
37	6Q275.d	P1-D3	fa95583-32	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
38	6Q276.d	P1-D4	fa95583-33	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	✓
39	6Q277.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
40	6Q278.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
41	6Q279.d	P1-A3	cc6-1.0LL	537_ID.m	QC	5/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
42	6Q280.d	P1-D5	fa95583-34	537_ID.m	Sample		OP91213,S6Q6,290,,,1.0,1,water	d3mefosa low rr 5x
43	6Q281.d	P1-D6	fa95583-35	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	✓
44	6Q282.d	P1-D7	fa95583-36	537_ID.m	Sample		OP91213,S6Q6,250,,,1.0,1,water	rr 10x
45	6Q283.d	P1-D8	op91222-bs	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	BS PASS
46	6Q284.d	P1-D9	op91222-mb	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	ND
47	6Q285.d	P1-E1	fa95204-19	537_ID.m	Sample		OP91222,S6Q6,120,,,1.0,1,water	✓
48	6Q286.d	P1-E2	fa95595-1	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	✓
49	6Q287.d	P1-E3	fa95595-2	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	d3mefosa low rr 5x
50	6Q288.d	P1-E4	fa95595-3	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	✓
51	6Q289.d	P1-E5	fa95595-4	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
52	6Q290.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
53	6Q291.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
54	6Q292.d	P1-E6	fa95595-5	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
55	6Q293.d	P1-E7	fa95595-6	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
56	6Q294.d	P1-E8	op91222-ms	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	✓
57	6Q295.d	P1-E9	op91222-msd	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	✓
58	6Q296.d	P1-F1	fa95595-7	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
59	6Q297.d	P1-F2	fa95595-8	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	d3mefosa low rr 5x
60	6Q298.d	P1-F3	fa95595-9	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	✓
61	6Q299.d	P1-F4	fa95595-10	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
62	6Q300.d	P1-F5	fa95595-11	537_ID.m	Sample		OP91222,S6Q6,290,,,1.0,1,water	low EIS rr 5x
63	6Q301.d	P1-F6	fa95595-12	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	d3mefosa low rr 5x
64	6Q302.d	P1-A7	cc6-20	537_ID.m	QC	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
65	6Q303.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND
66	6Q304.d	P1-F7	fa95595-13	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
67	6Q305.d	P1-F8	fa95595-14	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	d3mefosa low rr 5x
68	6Q306.d	P1-F9	fa95595-15	537_ID.m	Sample		OP91222,S6Q6,250,,,1.0,1,water	✓
69	6Q307.d	P2-A1	fa95535-1R	537_ID.m	Sample		OP91222,S6Q6,120,,,1.0,1,water	✓
70	6Q308.d	P2-A2	fa95535-2R	537_ID.m	Sample		OP91222,S6Q6,120,,,1.0,1,water	✓
71	6Q309.d	P1-A7	ecc6-20	537_ID.m	QC	100/500	OP91029,S6Q6,250,,,1.0,1,water	PASS
72	6Q310.d	P1-A1	ccb	537_ID.m	Sample		OP91029,S6Q6,250,,,1.0,1,water	ND

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/16/22 08:30 Started {mm/dd/yy 24:00}

Date/Time: 5/17/22 13:15 Finished {mm/dd/yy 24:00}

Batch#: OP91243 Ext. By: GH

Prep Method: 3535A or 537 or (537MOD) (circle)

Analytical Method: LCS37(1D)

Conc. By: JM Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 91243 MB	/	250	7	N/A	20		1.0ml	E	1874 I
OP 91243 BS	/	250				50			
FA95484-1	1	280							
2	1	280							
3	1	280							
FA95491-1	1	260							Cartridge clog, 1874 I
2	1	~~290~~ 270							
FA95500-1	1	260							
2	1	270							
3	1	235						E	
4	1	235						F	Cartridge clog
5	1	210							
6	1	230							
7	1	230							
8	1	210							
9	1	200							
10	1	220							
11	1	220							
12	1	220							Cartridge clog
13	1	230							
FA95502-7	1	120							
8	1	120	↓	↓	↓			F	
FA95500-2 MS	2	270	7	N/A	20	50	↓	E	1874 I
MSD									
FA95500-5DUP	2	220	7	N/A	20		1.0ml	E	1874 I

GH * 5/16/22

Comments:

Surr.1 ID: LCMS1874I Conc: 1.0 PPM Exp. Date: 11/09/22 Inj. By: GH Ver. By BO

GH * 5/16/22 Spk.1 ID: LCMS1870 Conc: 400 PPB Exp. Date: 10/28/22 Inj. By: MV GH Ver. By BO GH

~~Spk.~~ Surr.2 ID: LCMS1874G Conc: 1.0 PPM Exp. Date: 11/09/22 Inj. By: GH Ver. By BO

Spk.3 ID: Conc: Exp. Date: Inj. By: Ver. By

TurboVap Temp (Therm ID): Xcelvap-1 Observed Temp °C: 55 Corr. Temp °C:

N-Evap Temp (Therm ID): Observed Temp °C: Corr. Temp °C:

Methanol Lot # 218262 SPE Lot # 1065986T-02 pH Paper # 226621

Acetonitrile Lot # Syringe filter Lot # Reagent # 216454 (17) NH4OH

Water Lot# OP909163 Pre-filter Lot# Reagent # 204513 MeOH

Solvent# Carbon Lot# Other PF7

Relinquished By: JM Date: 5/17/22

Accepted By: JM Date: 5/17/22

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

7.9.1

7

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time: 05/18/22 09:00 Started {mm/dd/yy 24:00}

Date/Time: 5/19/22 10.00 Finished {mm/dd/yy 24:00}

Batch#: OP91274 Ext. By: GH

Prep Method: 3535A or 537 or (537MOD) (circle)

Analytical Method: LCS37(10)

Conc. By: JM Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 91274 MB	/	250	7	N/A	20		1.0ml	A4	
OP 91274 BS	/	250	7	N/A		50			
FA95502-1	N/A	250	10	6					
2	N/A	250	10	6					
3	N/A	250	10	6					
4	N/A	250	11	6					
5	N/A	250	11	5					
6	N/A	250	8	5	20			A4	
FA95502-1 MS	N/A	250	10	7	20	50	1.0ml	A4	
MSD									
FA95502-2DUP	N/A	250	10	6	20		1.0ml	A4	

Comments:

Surr.1 ID: LCMS18823 Conc: 1.0 PPM Exp. Date: 11/12/22 Inj. By: GH Ver. By BO

Spk.1 ID: LCMS 1883 Conc: 400 PPB Exp. Date: 11/17/22 Inj. By: GH Ver. By BO

Spk.2 ID: Conc: Exp. Date: Inj. By: Ver. By

Spk.3 ID: Conc: Exp. Date: Inj. By: Ver. By

TurboVap Temp (Therm ID): Xcelvap-1 Observed Temp °C: 55 Corr. Temp °C:

N-Evap Temp (Therm ID): Observed Temp °C: Corr. Temp °C:

Methanol Lot # 216548 SPE Lot # 6659867-02 pH Paper # 226621

Acetonitrile Lot # Syringe filter Lot # Reagent # 216954 (17.) NH4OH

Water Lot# OP90963 Pre-filter Lot# Reagent # 204513 MeOH

Solvent# Carbon Lot# Other PF9

Relinquished By: Date: 5/19/22

Accepted By: Date: 5/19/22

ORLD-EXT-0001-3-08-FORM-extwater_spe.xls 032718

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Percent Solids Raw Data Summary

Percent Solids Raw Data Summary

Job Number: FA95502
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: FA95502-1 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-CS0001-0.002-20220505

Wet Weight (Total)	19.62	g
Tare Weight	2.55	g
Dry Weight (Total)	18.62	g
Solids, Percent	94.1	%

Sample: FA95502-2 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-CS0001-0.002-20220505-DUP01

Wet Weight (Total)	18.79	g
Tare Weight	2.53	g
Dry Weight (Total)	17.62	g
Solids, Percent	92.8	%

Sample: FA95502-3 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-CS0002-0.002-20220505

Wet Weight (Total)	18.93	g
Tare Weight	2.42	g
Dry Weight (Total)	17.71	g
Solids, Percent	92.6	%

Sample: FA95502-4 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-CS0003-0.002-20220505

Wet Weight (Total)	19.11	g
Tare Weight	2.47	g
Dry Weight (Total)	18.13	g
Solids, Percent	94.1	%

Sample: FA95502-5 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-CS0004-0.002-20220505

Wet Weight (Total)	20.04	g
Tare Weight	2.56	g
Dry Weight (Total)	19.39	g
Solids, Percent	96.3	%

Sample: FA95502-6 **Analyzed:** 12-MAY-22 by BW **Method:** SM19 2540G
ClientID: S114-AS0005-0.002-20220505

Wet Weight (Total)	20.25	g
Tare Weight	2.51	g
Dry Weight (Total)	20.03	g
Solids, Percent	98.8	%

Misc. Raw Data

Raw Data

SGS ACCUTEST - ORLANDO

Analyst CP

Therm. ID: 17061481 7 Corr. Factor (±°C): 0

Starting Room Temp. (21-25 °C)°C: 21 / 21 {obs/corr}

Lo/Hi Room Temp. (21-25 °C)°C: 21 / 21 (obs) 21 / 21 (corr)

Tumbler ID T-4 RPM (28-32) 30 Tumbler ID — RPM (28-32) — Tumbler ID — RPM (28-32) —

SPLP SAMPLE PREP SHEET

Method: 1312SPLP Scan as: SPLPE_MMDDYY

Date / Time Tumbling Started: 05/10/22 13:30 {mm/dd/yy 24:00}

Date / Time Tumbling Finished: 05/11/22 08:30 {mm/dd/yy 24:00}

Balance ID: 834132615 8 pH Fluid 1 (4.15-4.25): 4.21 *pH Fluid 3: — *

pH Meter ID: AE950/0575 pH Fluid 2 (4.95-5.05): — *

Sample ID	Bottle Number	Analysis** M / SO / GN	Original Matrix	Amount of Solids (g)	Volume of Fluid (ml)	Fluid Type 1 / 2 / 3	Filtration Date/Time {mm/dd/yy 24:00}	Filtrate Added (ml) If Solids <100%	Extraction Bottle #
FA95502-1	1	SO	SO	45.0	900	1	05/11/22 08:30	N/A	22
(D) FA95502-1	1								21
-2	1								20
-3	1								24
-4	1								19
-5	1								18
-6	1								17
-7	1,2			0	0				16
-8	1,2			0	0				15
LB	—	—	—	—					23

Waters

CP 05/10/22

* Fluid pH must be checked with each use. Fluid is unbuffered and the exact pH may not be attainable. ** M = Metals, SO = Semivolatile Organics, GN = Cyanide or Nutrients

Fluid 1 Lot #: 44134 Fluid 2 Lot #: — Fluid 3 Lot #: N/A DI Water Filter Lot # 400174

Relinquished By: [signature] Date: 5/10/22 Accepted By: [signature] Date: 5-11-22

LM 01/17

splp sample prep sheet 011817.xls

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

NS1010.01.06

SGS Job Number: FA96546

Sampling Dates: 06/14/22 - 06/15/22

Report to:

Hydrogeologic, Inc.

hfowler@hgl.com

ATTN: Howard F. Fowler

Total number of pages in report: 85

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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Test results relate only to samples analyzed.

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Please share your ideas about
how we can serve you better at:
EHS.US.CustomerCare@sgs.com

July 29, 2022

Ms. Denise Rivers
HydroGeoLogic, Inc.
2405 N. Courtenay Parkway, Suite 203
Merritt Island, FL 32953

RE: SGS North America Inc. - Orlando job FA96546 Reissue

Dear Ms. Rivers,

The final report for job number FA96546 has been edited to reflect the following change(s) as per your request:

Sample IDs have been updated for FA96546-3 --> -10,-12,-13,-16, -17, -18.

Please let us know if we can be of further assistance.

Sincerely,

SGS North America, Inc. - Orlando

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Sample Summary

Hydrogeologic, Inc.

Job No: FA96546

NASA TQN 21- SLF PFAS Assessment
Project No: NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA96546-1	06/14/22	09:16	JV	06/16/22	AQ	Ground Water	S114-DPT1017-045.0-20220614
FA96546-2	06/14/22	10:31	JV	06/16/22	AQ	Ground Water	S114-DPT1016-045.0-20220614
FA96546-3	06/14/22	11:14	JV	06/16/22	AQ	Ground Water	S114-DPT1024-005.0-20220614
FA96546-4	06/14/22	11:29	JV	06/16/22	AQ	Ground Water	S114-DPT1024-015.0-20220614
FA96546-5	06/14/22	11:44	JV	06/16/22	AQ	Ground Water	S114-DPT1024-025.0-20220614
FA96546-6	06/14/22	12:02	JV	06/16/22	AQ	Ground Water	S114-DPT1024-035.0-20220614
FA96546-7	06/14/22	12:19	JV	06/16/22	AQ	Ground Water	S114-DPT1025-045.0-20220614
FA96546-8	06/14/22	13:55	JV	06/16/22	AQ	Ground Water	S114-DPT1025-005.0-20220614
FA96546-9	06/14/22	14:07	JV	06/16/22	AQ	Ground Water	S114-DPT1025-015.0-20220614
FA96546-10	06/14/22	14:25	JV	06/16/22	AQ	Ground Water	S114-DPT1025-025.0-20220614
FA96546-11	06/14/22	14:25	JV	06/16/22	AQ	Ground Water	S114-FD-20220614-01
FA96546-12	06/14/22	14:40	JV	06/16/22	AQ	Ground Water	S114-DPT1025-035.0-20220614
FA96546-13	06/14/22	15:46	JV	06/16/22	AQ	Ground Water	S114-DPT1026-005.0-20220614

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA96546

NASA TQN 21- SLF PFAS Assessment
Project No: NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA96546-14	06/14/22	15:55	JV	06/16/22	AQ	Equipment Blank	S114-EB-20220614-01
FA96546-15	06/14/22	16:00	JV	06/16/22	AQ	Field Blank Water	S114-FB-20220614-01
FA96546-16	06/15/22	07:25	JV	06/16/22	AQ	Ground Water	S114-DPT1026-015.0-20220615
FA96546-17	06/15/22	07:50	JV	06/16/22	AQ	Ground Water	S114-DPT1026-025.0-20220615
FA96546-18	06/15/22	08:10	JV	06/16/22	AQ	Ground Water	S114-DPT1026-035.0-20220615
FA96546-19	06/15/22	09:50	JV	06/16/22	AQ	Ground Water	S114-DPT1021-005.0-20220615
FA96546-20	06/15/22	10:15	JV	06/16/22	AQ	Ground Water	S114-DPT1021-015.0-20220615
FA96546-21	06/15/22	11:05	JV	06/16/22	AQ	Ground Water	S114-DPT1021-025.0-20220615
FA96546-22	06/15/22	11:30	JV	06/16/22	AQ	Ground Water	S114-DPT1021-035.0-20220615
FA96546-23	06/15/22	11:58	JV	06/16/22	AQ	Ground Water	S114-DPT1021-045.0-20220615
FA96546-24	06/15/22	13:48	JV	06/16/22	AQ	Ground Water	S114-DPT1022-005.0-20220615
FA96546-25	06/15/22	13:48	JV	06/16/22	AQ	Ground Water	S114-FD-20220615-01
FA96546-26	06/15/22	14:06	JV	06/16/22	AQ	Ground Water	S114-DPT1022-015.0-20220615

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA96546

NASA TQN 21- SLF PFAS Assessment
Project No: NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA96546-27	06/15/22	14:26	JV	06/16/22	AQ	Ground Water	S114-DPT1022-025.0-20220615
FA96546-28	06/15/22	14:42	JV	06/16/22	AQ	Ground Water	S114-DPT1022-035.0-20220615
FA96546-29	06/15/22	16:01	JV	06/16/22	AQ	Ground Water	S114-DPT1012-045.0-20220615
FA96546-30	06/15/22	16:06	JV	06/16/22	AQ	Equipment Blank	S114-EB-20220615-01
FA96546-31	06/15/22	16:11	JV	06/16/22	AQ	Field Blank Water	S114-FB-20220615-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA96546

Site: NASA TQN 21- SLF PFAS Assessment **Report Date:** 7/12/2022 11:03:22 AM

On 06/16/2022, 29 Sample(s), 0 Trip Blank(s) and 2 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 3 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA96546 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP91806

Sample(s) FA96546-7MS, FA96546-8DUP were used as the QC samples indicated.

Blank Spike Recovery(s) for Perfluorodecanoic acid are outside control limits.

Matrix Spike Recovery(s) for Perfluorodecanoic acid, Perfluoropentanoic acid are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA96546-19 have surrogates outside control limits.

FA96546-3 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-4 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-4: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

FA96546-5 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-6 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-7 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-8 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-9 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-10 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-11 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-11: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

FA96546-13 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-14 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-15 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-16 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-17 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-18 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-19: Confirmation run.

FA96546-20 for Perfluorodecanoic acid: Associated BS outside control limits high, sample was ND.

FA96546-20: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

Matrix: AQ **Batch ID:** OP91807

Sample(s) FA96773-6MS, FA96773-6MSD were used as the QC samples indicated.

RPD(s) for MSD for Perfluorotridecanoic acid are outside control limits for sample OP91807-MSD. Probable cause is due to sample non-homogeneity.

FA96546-24: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

FA96546-25: Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

Matrix: AQ **Batch ID:** OP91836

Sample(s) FA96552-1MS, FA96552-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorodecanoic acid, Perfluoropentanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Sample(s) FA96546-27 have surrogates outside control limits.

FA96546-27: Dilution required due to matrix interference (ID recovery standard failure).

FA96546-27 for 13C3-HFPO-DA: Outside control limits.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP91946

Sample(s) FA96552-1MS, FA96552-1MSD were used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluorodecanesulfonic acid, Perfluorononanesulfonic acid are outside control limits. Probable cause is due to matrix interference.

Matrix Spike Duplicate Recovery(s) for Perfluorotridecanoic acid are outside control limits. Probable cause is due to matrix interference.

RPD(s) for MSD for Perfluorodecanesulfonic acid, Perfluoroheptanesulfonic acid, Perfluorotridecanoic acid are outside control limits for sample OP91946-MSD. Probable cause is due to sample non-homogeneity.

Sample(s) FA96546-19 have surrogates outside control limits.

FA96546-19 for 13C2-PFTeDA: Outside control limits.

FA96546-19 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA96546
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/14/22 thru 06/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA96546-1	**S114-DPT1017-045.0-20220614**					
No hits reported in this sample.						
FA96546-2	**S114-DPT1016-045.0-20220614**					
No hits reported in this sample.						
FA96546-3	**S114-DPT1024-005.0-20220614**					
Perfluorobutanoic acid		0.0254	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0112	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0161	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0074 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0051 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0025 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0319	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA96546-4	**S114-DPT1024-015.0-20220614**					
Perfluorobutanoic acid [a]		0.0387	0.033	0.016	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid [a]		0.0171	0.016	0.0082	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid [a]		0.0233	0.016	0.0082	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid [a]		0.0088 J	0.016	0.0082	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid [a]		0.0044 J	0.016	0.0082	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		0.0399	0.016	0.0082	ug/l	EPA 537M QSM5.3 B-15
FA96546-5	**S114-DPT1024-025.0-20220614**					
Perfluorobutanoic acid		0.0146 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0046 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0061 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0029 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0037 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0028 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0025 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0285	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA96546-6	**S114-DPT1024-035.0-20220614**					
Perfluorohexanoic acid		0.0072 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0042 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0046 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0303	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA96546
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/14/22 thru 06/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA96546-7	**S114-DPT1025-045.0-20220614**					
Perfluorohexanesulfonic acid		0.0024 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
FA96546-8	**S114-DPT1025-005.0-20220614**					
No hits reported in this sample.						
FA96546-9	**S114-DPT1025-015.0-20220614**					
No hits reported in this sample.						
FA96546-10	**S114-DPT1025-025.0-20220614**					
No hits reported in this sample.						
FA96546-11	**S114-FD-20220614-01**					
No hits reported in this sample.						
FA96546-12	**S114-DPT1025-035.0-20220614**					
No hits reported in this sample.						
FA96546-13	**S114-DPT1026-005.0-20220614**					
Perfluorohexanesulfonic acid		0.0208	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.179	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA96546-14	**S114-EB-20220614-01**					
No hits reported in this sample.						
FA96546-15	**S114-FB-20220614-01**					
No hits reported in this sample.						
FA96546-16	**S114-DPT1026-015.0-20220615**					
Perfluoropentanoic acid		0.0040 J	0.010	0.0052	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0094 J	0.010	0.0052	ug/l	EPA 537M QSM5.3 B-15
FA96546-17	**S114-DPT1026-025.0-20220615**					
No hits reported in this sample.						

Summary of Hits

Job Number: FA96546
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/14/22 thru 06/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA96546-18	**S114-DPT1026-035.0-20220615**					
No hits reported in this sample.						
FA96546-19	**S114-DPT1021-005.0-20220615**					
Perfluorobutanoic acid		0.0240	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0068 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0026 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0074 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0034 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0033 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0475	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96546-20	**S114-DPT1021-015.0-20220615**					
Perfluorobutanoic acid [a]		0.0068 J	0.019	0.0096	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid [a]		0.0082 J	0.0096	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid [a]		0.0031 J	0.0096	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid [a]		0.0044 J	0.0096	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid [a]		0.0053 J	0.0096	0.0048	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		0.0391	0.0096	0.0048	ug/l	EPA 537M QSM5.3 B-15
FA96546-21	**S114-DPT1021-025.0-20220615**					
Perfluorooctanoic acid		0.0020 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96546-22	**S114-DPT1021-035.0-20220615**					
No hits reported in this sample.						
FA96546-23	**S114-DPT1021-045.0-20220615**					
No hits reported in this sample.						
FA96546-24	**S114-DPT1022-005.0-20220615**					
Perfluoropentanoic acid [a]		0.0035 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid [a]		0.0055 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid [a]		0.0042 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid [a]		0.0041 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		0.0240	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA96546
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/14/22 thru 06/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanesulfonic acid [a]		0.0051 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
FA96546-25	**S114-FD-20220615-01**					
Perfluoropentanoic acid [a]		0.0033 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid [a]		0.0061 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid [a]		0.0043 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid [a]		0.0045 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid [a]		0.0229	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid [a]		0.0063 J	0.011	0.0053	ug/l	EPA 537M QSM5.3 B-15
FA96546-26	**S114-DPT1022-015.0-20220615**					
Perfluoropentanoic acid		0.0033 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0054 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0023 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0249	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0067 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96546-27	**S114-DPT1022-025.0-20220615**					
Perfluoropentanoic acid		0.0081	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0079 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0022 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0034 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0064 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0064 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0383	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0096	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96546-28	**S114-DPT1022-035.0-20220615**					
Perfluoropentanoic acid		0.0034 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0046 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0023 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0030 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0198	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96546-29	**S114-DPT1012-045.0-20220615**					
Perfluorobutanoic acid		0.0052 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0094	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA96546
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/14/22 thru 06/15/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorohexanoic acid		0.0160	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0042 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0054 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0194	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0176	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0731	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0047 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

FA96546-30 S114-EB-20220615-01

No hits reported in this sample.

FA96546-31 S114-FB-20220615-01

No hits reported in this sample.

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: S114-DPT1017-045.0-20220614
Lab Sample ID: FA96546-1
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/14/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q62351.D	1	07/06/22 08:28	NG	06/24/22 09:00	OP91806	S3Q850
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1017-045.0-20220614
Lab Sample ID: FA96546-1 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		50-150%
	13C5-PFPeA	60%		50-150%
	13C5-PFHxA	60%		50-150%
	13C4-PFHpA	73%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	69%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	80%		50-150%
	13C2-PFDoDA	73%		50-150%
	13C2-PFTeDA	79%		50-150%
	13C3-PFBS	61%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	73%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	81%		50-150%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	90%		50-150%
	13C2-8:2FTS	79%		50-150%
	13C3-HFPO-DA	51%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1016-045.0-20220614		
Lab Sample ID:	FA96546-2	**Date Sampled:**	06/14/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q62506.D	1	07/08/22 16:15	MV	07/06/22 09:00	OP91946	S3Q853
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1016-045.0-20220614
Lab Sample ID: FA96546-2 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	97%		50-150%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	93%		50-150%
	13C8-PFOA	111%		50-150%
	13C9-PFNA	99%		50-150%
	13C6-PFDA	101%		50-150%
	13C7-PFUnDA	108%		50-150%
	13C2-PFDoDA	99%		50-150%
	13C2-PFTeDA	88%		50-150%
	13C3-PFBS	83%		50-150%
	13C3-PFHxS	102%		50-150%
	13C8-PFOS	97%		50-150%
	13C8-FOSA	75%		50-150%
	d3-MeFOSAA	100%		50-150%
	d5-EtFOSAA	90%		50-150%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	117%		50-150%
	13C2-8:2FTS	110%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-005.0-20220614
Lab Sample ID: FA96546-3 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1704.D	1	07/01/22 04:08	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0254	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0112	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0161	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0074	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0051	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0025	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0319	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-005.0-20220614
Lab Sample ID: FA96546-3 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	80%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	59%		50-150%
	13C2-PFDoDA	61%		50-150%
	13C2-PFTeDA	63%		50-150%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	74%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	77%		50-150%
	d5-EtFOSAA	70%		50-150%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	72%		50-150%
	13C3-HFPO-DA	70%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-015.0-20220614
Lab Sample ID: FA96546-4 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6Q1705.D	1.8	07/01/22 04:23	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0387	0.033	0.016	0.0082	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0171	0.016	0.0082	0.0041	ug/l	
307-24-4	Perfluorohexanoic acid	0.0233	0.016	0.0082	0.0041	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0088	0.016	0.0082	0.0041	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0044	0.016	0.0082	0.0041	ug/l	J
375-95-1	Perfluorononanoic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
335-76-2	Perfluorodecanoic acid [b]	0.0082 U	0.016	0.0082	0.0041	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
307-55-1	Perfluorododecanoic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0399	0.016	0.0082	0.0041	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0082 U	0.016	0.0082	0.0041	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0082 U	0.016	0.0082	0.0041	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.016 U	0.033	0.016	0.0082	ug/l	
2991-50-6	EtFOSAA	0.016 U	0.033	0.016	0.0082	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.016 U	0.033	0.016	0.0082	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.016 U	0.033	0.016	0.0082	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-015.0-20220614
Lab Sample ID: FA96546-4 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.016 U	0.033	0.016	0.0082	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.016 U	0.033	0.016	0.0082	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	75%		50-150%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	88%		50-150%
	13C4-PFHpA	89%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	64%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	78%		50-150%
	13C2-PFTeDA	79%		50-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	73%		50-150%
	d3-MeFOSAA	76%		50-150%
	d5-EtFOSAA	85%		50-150%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	65%		50-150%
	13C3-HFPO-DA	75%		50-150%

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.
(b) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-025.0-20220614
Lab Sample ID: FA96546-5 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1706.D	1	07/01/22 04:38	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0146	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0046	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0061	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0029	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0037	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0028	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0025	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0285	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-025.0-20220614
Lab Sample ID: FA96546-5 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	80%		50-150%
	13C2-PFDoDA	78%		50-150%
	13C2-PFTeDA	76%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	84%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	90%		50-150%
	13C2-4:2FTS	86%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	86%		50-150%
	13C3-HFPO-DA	76%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-035.0-20220614
Lab Sample ID: FA96546-6 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1707.D	1	07/01/22 04:54	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0072	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0046	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0303	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1024-035.0-20220614
Lab Sample ID: FA96546-6 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%		50-150%
	13C5-PFPeA	67%		50-150%
	13C5-PFHxA	75%		50-150%
	13C4-PFHpA	76%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	74%		50-150%
	13C2-PFDoDA	75%		50-150%
	13C2-PFTeDA	73%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	78%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	87%		50-150%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	75%		50-150%
	13C3-HFPO-DA	68%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-045.0-20220614
Lab Sample ID: FA96546-7 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1708.D	1	07/01/22 05:09	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0091 U	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0024	0.0091	0.0045	0.0023	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-045.0-20220614
Lab Sample ID: FA96546-7 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	81%		50-150%
	13C8-PFOA	87%		50-150%
	13C9-PFNA	86%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	80%		50-150%
	13C2-PFDoDA	80%		50-150%
	13C2-PFTeDA	76%		50-150%
	13C3-PFBS	81%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	87%		50-150%
	d3-MeFOSAA	93%		50-150%
	d5-EtFOSAA	93%		50-150%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	92%		50-150%
	13C2-8:2FTS	83%		50-150%
	13C3-HFPO-DA	71%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1025-005.0-20220614		
Lab Sample ID:	FA96546-8	**Date Sampled:**	06/14/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1712.D	1	07/01/22 06:10	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	115 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0087 U	0.017	0.0087	0.0043	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
307-24-4	Perfluorohexanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-67-1	Perfluorooctanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-95-1	Perfluorononanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0043 U	0.0087	0.0043	0.0022	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
307-55-1	Perfluorododecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0043 U	0.0087	0.0043	0.0022	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0087 U	0.017	0.0087	0.0043	ug/l	
2991-50-6	EtFOSAA	0.0087 U	0.017	0.0087	0.0043	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-005.0-20220614
Lab Sample ID: FA96546-8 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0087 U	0.017	0.0087	0.0043	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0087 U	0.017	0.0087	0.0043	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		50-150%
	13C5-PFPeA	74%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	73%		50-150%
	13C7-PFUnDA	79%		50-150%
	13C2-PFDoDA	77%		50-150%
	13C2-PFTeDA	69%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	81%		50-150%
	13C8-FOSA	73%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	80%		50-150%
	13C2-4:2FTS	80%		50-150%
	13C2-6:2FTS	85%		50-150%
	13C2-8:2FTS	80%		50-150%
	13C3-HFPO-DA	74%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-015.0-20220614
Lab Sample ID: FA96546-9 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1714.D	1	07/01/22 06:41	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0091 U	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1025-015.0-20220614		
Lab Sample ID:	FA96546-9	**Date Sampled:**	06/14/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	78%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	75%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	64%		50-150%
	13C7-PFUnDA	57%		50-150%
	13C2-PFDoDA	60%		50-150%
	13C2-PFTeDA	63%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	61%		50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	65%		50-150%
	d5-EtFOSAA	63%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	77%		50-150%
	13C2-8:2FTS	63%		50-150%
	13C3-HFPO-DA	71%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-025.0-20220614
Lab Sample ID: FA96546-10 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1715.D	1	07/01/22 06:56	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-025.0-20220614
Lab Sample ID: FA96546-10 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	58%		50-150%
	13C2-PFDoDA	60%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	72%		50-150%
	13C8-PFOS	61%		50-150%
	13C8-FOSA	68%		50-150%
	d3-MeFOSAA	75%		50-150%
	d5-EtFOSAA	76%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	68%		50-150%
	13C3-HFPO-DA	64%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220614-01
Lab Sample ID: FA96546-11 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6Q1716.D	1.2	07/01/22 07:12	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.011 U	0.022	0.011	0.0055	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
307-24-4	Perfluorohexanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
335-67-1	Perfluorooctanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
375-95-1	Perfluorononanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
335-76-2	Perfluorodecanoic acid [b]	0.0055 U	0.011	0.0055	0.0027	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
307-55-1	Perfluorododecanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0055 U	0.011	0.0055	0.0027	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0055 U	0.011	0.0055	0.0027	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.011 U	0.022	0.011	0.0055	ug/l	
2991-50-6	EtFOSAA	0.011 U	0.022	0.011	0.0055	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.011 U	0.022	0.011	0.0055	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.011 U	0.022	0.011	0.0055	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220614-01
Lab Sample ID: FA96546-11 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.011 U	0.022	0.011	0.0055	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.011 U	0.022	0.011	0.0055	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	87%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	70%		50-150%
	13C6-PFDA	61%		50-150%
	13C7-PFUnDA	56%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	70%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	89%		50-150%
	13C2-8:2FTS	66%		50-150%
	13C3-HFPO-DA	76%		50-150%

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.
(b) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-035.0-20220614
Lab Sample ID: FA96546-12
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/14/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q62507.D	1	07/08/22 16:34	MV	07/06/22 09:00	OP91946	S3Q853
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1025-035.0-20220614
Lab Sample ID: FA96546-12 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	92%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	83%		50-150%
	13C4-PFHpA	91%		50-150%
	13C8-PFOA	100%		50-150%
	13C9-PFNA	90%		50-150%
	13C6-PFDA	88%		50-150%
	13C7-PFUnDA	94%		50-150%
	13C2-PFDoDA	91%		50-150%
	13C2-PFTeDA	89%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	95%		50-150%
	13C8-PFOS	87%		50-150%
	13C8-FOSA	89%		50-150%
	d3-MeFOSAA	84%		50-150%
	d5-EtFOSAA	80%		50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	99%		50-150%
	13C2-8:2FTS	91%		50-150%
	13C3-HFPO-DA	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-005.0-20220614
Lab Sample ID: FA96546-13 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1718.D	1	07/01/22 07:42	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0208	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.179	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-005.0-20220614
Lab Sample ID: FA96546-13 **Date Sampled:** 06/14/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	79%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	85%		50-150%
	13C4-PFHpA	83%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	63%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	70%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	71%		50-150%
	d3-MeFOSAA	70%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	82%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	69%		50-150%
	13C3-HFPO-DA	74%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220614-01
Lab Sample ID: FA96546-14 **Date Sampled:** 06/14/22
Matrix: AQ - Equipment Blank **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1719.D	1	07/01/22 07:58	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220614-01
Lab Sample ID: FA96546-14 **Date Sampled:** 06/14/22
Matrix: AQ - Equipment Blank **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	87%		50-150%
	13C5-PFPeA	85%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	78%		50-150%
	13C2-PFDoDA	77%		50-150%
	13C2-PFTeDA	73%		50-150%
	13C3-PFBS	84%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	74%		50-150%
	13C8-FOSA	73%		50-150%
	d3-MeFOSAA	86%		50-150%
	d5-EtFOSAA	86%		50-150%
	13C2-4:2FTS	85%		50-150%
	13C2-6:2FTS	87%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	77%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220614-01
Lab Sample ID: FA96546-15
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/14/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1720.D	1	07/01/22 08:13	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220614-01
Lab Sample ID: FA96546-15 **Date Sampled:** 06/14/22
Matrix: AQ - Field Blank Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	78%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	75%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	68%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	73%		50-150%
	13C2-PFTeDA	69%		50-150%
	13C3-PFBS	75%		50-150%
	13C3-PFHxS	71%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	68%		50-150%
	d3-MeFOSAA	76%		50-150%
	d5-EtFOSAA	75%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	71%		50-150%
	13C3-HFPO-DA	75%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-015.0-20220615
Lab Sample ID: FA96546-16
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/15/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1721.D	1.3	07/01/22 08:28	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.010 U	0.021	0.010	0.0052	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040	0.010	0.0052	0.0026	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
335-67-1	Perfluorooctanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
375-95-1	Perfluorononanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0052 U	0.010	0.0052	0.0026	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
307-55-1	Perfluorododecanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0094	0.010	0.0052	0.0026	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0052 U	0.010	0.0052	0.0026	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0052 U	0.010	0.0052	0.0026	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.010 U	0.021	0.010	0.0052	ug/l	
2991-50-6	EtFOSAA	0.010 U	0.021	0.010	0.0052	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.010 U	0.021	0.010	0.0052	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.010 U	0.021	0.010	0.0052	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-015.0-20220615
Lab Sample ID: FA96546-16 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.010 U	0.021	0.010	0.0052	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.010 U	0.021	0.010	0.0052	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		50-150%
	13C5-PFPeA	84%		50-150%
	13C5-PFHxA	86%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	86%		50-150%
	13C9-PFNA	82%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	71%		50-150%
	13C2-PFTeDA	73%		50-150%
	13C3-PFBS	89%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	79%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	84%		50-150%
	13C2-4:2FTS	87%		50-150%
	13C2-6:2FTS	92%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	82%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-025.0-20220615
Lab Sample ID: FA96546-17
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/15/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1724.D	1	07/01/22 09:15	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0091 U	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-025.0-20220615
Lab Sample ID: FA96546-17 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	74%		50-150%
	13C8-PFOA	74%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	60%		50-150%
	13C7-PFUnDA	62%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	63%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	73%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	74%		50-150%
	13C2-8:2FTS	64%		50-150%
	13C3-HFPO-DA	67%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1026-035.0-20220615
Lab Sample ID: FA96546-18 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1725.D	1	07/01/22 09:30	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid [a]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1026-035.0-20220615		
Lab Sample ID:	FA96546-18	**Date Sampled:**	06/15/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	56%		50-150%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	65%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	67%		50-150%
	13C6-PFDA	59%		50-150%
	13C7-PFUnDA	56%		50-150%
	13C2-PFDoDA	57%		50-150%
	13C2-PFTeDA	54%		50-150%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	65%		50-150%
	13C8-PFOS	61%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	73%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	65%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	63%		50-150%
	13C3-HFPO-DA	59%		50-150%

(a) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-005.0-20220615
Lab Sample ID: FA96546-19 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q62510.D	1	07/08/22 17:31	MV	07/06/22 09:00	OP91946	S3Q853
Run #2 [a]	6Q1726.D	1	07/01/22 09:45	JB	06/24/22 09:00	OP91806	S6Q30

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0240	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0068	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0026	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0074	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [b]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0034	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0033	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0475	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-005.0-20220615
Lab Sample ID: FA96546-19 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%	49% [c]	50-150%
	13C5-PFPeA	63%	59%	50-150%
	13C5-PFHxA	62%	62%	50-150%
	13C4-PFHpA	72%	63%	50-150%
	13C8-PFOA	88%	66%	50-150%
	13C9-PFNA	77%	63%	50-150%
	13C6-PFDA	80%	61%	50-150%
	13C7-PFUnDA	82%	59%	50-150%
	13C2-PFDoDA	66%	57%	50-150%
	13C2-PFTeDA	28% [c]	34% [c]	50-150%
	13C3-PFBS	64%	70%	50-150%
	13C3-PFHxS	83%	72%	50-150%
	13C8-PFOS	78%	71%	50-150%
	13C8-FOSA	51%	45% [c]	50-150%
	d3-MeFOSAA	73%	63%	50-150%
	d5-EtFOSAA	66%	60%	50-150%
	13C2-4:2FTS	69%	74%	50-150%
	13C2-6:2FTS	93%	77%	50-150%
	13C2-8:2FTS	87%	74%	50-150%
	13C3-HFPO-DA	53%	52%	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits. Confirmed by re-extraction and reanalysis.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-015.0-20220615
Lab Sample ID: FA96546-20 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	6Q1727.D	1.2	07/01/22 10:01	JB	06/24/22 09:00	OP91806	S6Q30
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0068	0.019	0.0096	0.0048	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0082	0.0096	0.0048	0.0024	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0031	0.0096	0.0048	0.0024	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
335-67-1	Perfluorooctanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
375-95-1	Perfluorononanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
335-76-2	Perfluorodecanoic acid [b]	0.0048 U	0.0096	0.0048	0.0024	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
307-55-1	Perfluorododecanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0044	0.0096	0.0048	0.0024	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0053	0.0096	0.0048	0.0024	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0391	0.0096	0.0048	0.0024	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0048 U	0.0096	0.0048	0.0024	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0048 U	0.0096	0.0048	0.0024	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0096 U	0.019	0.0096	0.0048	ug/l	
2991-50-6	EtFOSAA	0.0096 U	0.019	0.0096	0.0048	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0096 U	0.019	0.0096	0.0048	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0096 U	0.019	0.0096	0.0048	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-015.0-20220615
Lab Sample ID: FA96546-20 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0096 U	0.019	0.0096	0.0048	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0096 U	0.019	0.0096	0.0048	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		50-150%
	13C5-PFPeA	75%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	92%		50-150%
	13C9-PFNA	94%		50-150%
	13C6-PFDA	85%		50-150%
	13C7-PFUnDA	91%		50-150%
	13C2-PFDoDA	92%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	86%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	90%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	103%		50-150%
	d5-EtFOSAA	97%		50-150%
	13C2-4:2FTS	89%		50-150%
	13C2-6:2FTS	95%		50-150%
	13C2-8:2FTS	92%		50-150%
	13C3-HFPO-DA	71%		50-150%

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.
(b) Associated BS outside control limits high, sample was ND.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1021-025.0-20220615		
Lab Sample ID:	FA96546-21	**Date Sampled:**	06/15/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q30118.D	1	06/27/22 19:20	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0020	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-025.0-20220615
Lab Sample ID: FA96546-21 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	82%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	100%		50-150%
	13C9-PFNA	110%		50-150%
	13C6-PFDA	116%		50-150%
	13C7-PFUnDA	115%		50-150%
	13C2-PFDoDA	106%		50-150%
	13C2-PFTeDA	98%		50-150%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	101%		50-150%
	13C8-FOSA	62%		50-150%
	d3-MeFOSAA	116%		50-150%
	d5-EtFOSAA	124%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	97%		50-150%
	13C2-8:2FTS	111%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-035.0-20220615
Lab Sample ID: FA96546-22
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/15/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q30119.D	1	06/27/22 19:36	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-035.0-20220615
Lab Sample ID: FA96546-22 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		50-150%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	99%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	108%		50-150%
	13C7-PFUnDA	102%		50-150%
	13C2-PFDoDA	95%		50-150%
	13C2-PFTeDA	86%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	74%		50-150%
	d3-MeFOSAA	101%		50-150%
	d5-EtFOSAA	100%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	94%		50-150%
	13C2-8:2FTS	97%		50-150%
	13C3-HFPO-DA	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-045.0-20220615
Lab Sample ID: FA96546-23
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/15/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q30120.D	1	06/27/22 19:53	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1021-045.0-20220615
Lab Sample ID: FA96546-23 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		50-150%
	13C5-PFPeA	81%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	84%		50-150%
	13C8-PFOA	97%		50-150%
	13C9-PFNA	102%		50-150%
	13C6-PFDA	105%		50-150%
	13C7-PFUnDA	97%		50-150%
	13C2-PFDoDA	90%		50-150%
	13C2-PFTeDA	87%		50-150%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	94%		50-150%
	13C8-FOSA	82%		50-150%
	d3-MeFOSAA	94%		50-150%
	d5-EtFOSAA	95%		50-150%
	13C2-4:2FTS	77%		50-150%
	13C2-6:2FTS	91%		50-150%
	13C2-8:2FTS	94%		50-150%
	13C3-HFPO-DA	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-005.0-20220615
Lab Sample ID: FA96546-24 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	4Q30121.D	1.09	06/27/22 20:10	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0091 U	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0035	0.0091	0.0045	0.0023	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0055	0.0091	0.0045	0.0023	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042	0.0091	0.0045	0.0023	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0041	0.0091	0.0045	0.0023	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0240	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0051	0.0091	0.0045	0.0023	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-005.0-20220615
Lab Sample ID: FA96546-24 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	94%		50-150%
	13C5-PFPeA	100%		50-150%
	13C5-PFHxA	101%		50-150%
	13C4-PFHpA	99%		50-150%
	13C8-PFOA	114%		50-150%
	13C9-PFNA	118%		50-150%
	13C6-PFDA	113%		50-150%
	13C7-PFUnDA	109%		50-150%
	13C2-PFDoDA	101%		50-150%
	13C2-PFTeDA	96%		50-150%
	13C3-PFBS	99%		50-150%
	13C3-PFHxS	93%		50-150%
	13C8-PFOS	104%		50-150%
	13C8-FOSA	82%		50-150%
	d3-MeFOSAA	111%		50-150%
	d5-EtFOSAA	111%		50-150%
	13C2-4:2FTS	102%		50-150%
	13C2-6:2FTS	110%		50-150%
	13C2-8:2FTS	107%		50-150%
	13C3-HFPO-DA	88%		50-150%

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220615-01
Lab Sample ID: FA96546-25 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	4Q30122.D	1.32	06/27/22 20:26	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.011 U	0.021	0.011	0.0053	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0033	0.011	0.0053	0.0026	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0061	0.011	0.0053	0.0026	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
335-67-1	Perfluorooctanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
375-95-1	Perfluorononanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
335-76-2	Perfluorodecanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
307-55-1	Perfluorododecanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0043	0.011	0.0053	0.0026	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0045	0.011	0.0053	0.0026	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0229	0.011	0.0053	0.0026	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0063	0.011	0.0053	0.0026	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0053 U	0.011	0.0053	0.0026	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0053 U	0.011	0.0053	0.0026	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.011 U	0.021	0.011	0.0053	ug/l	
2991-50-6	EtFOSAA	0.011 U	0.021	0.011	0.0053	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.011 U	0.021	0.011	0.0053	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.011 U	0.021	0.011	0.0053	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220615-01
Lab Sample ID: FA96546-25 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.011 U	0.021	0.011	0.0053	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.011 U	0.021	0.011	0.0053	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	98%		50-150%
	13C5-PFPeA	104%		50-150%
	13C5-PFHxA	105%		50-150%
	13C4-PFHpA	102%		50-150%
	13C8-PFOA	108%		50-150%
	13C9-PFNA	104%		50-150%
	13C6-PFDA	106%		50-150%
	13C7-PFUnDA	109%		50-150%
	13C2-PFDoDA	109%		50-150%
	13C2-PFTeDA	103%		50-150%
	13C3-PFBS	102%		50-150%
	13C3-PFHxS	91%		50-150%
	13C8-PFOS	95%		50-150%
	13C8-FOSA	88%		50-150%
	d3-MeFOSAA	108%		50-150%
	d5-EtFOSAA	116%		50-150%
	13C2-4:2FTS	103%		50-150%
	13C2-6:2FTS	100%		50-150%
	13C2-8:2FTS	96%		50-150%
	13C3-HFPO-DA	94%		50-150%

(a) Dilution due to sample clogging SPE cartridge, only partial volume was extracted.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-015.0-20220615
Lab Sample ID: FA96546-26
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/15/22
Date Received: 06/16/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	4Q30123.D	1	06/27/22 20:43	NG	06/24/22 09:00	OP91807	S4Q435
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0033	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0054	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0023	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0249	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0067	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-015.0-20220615
Lab Sample ID: FA96546-26 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	89%		50-150%
	13C5-PFPeA	96%		50-150%
	13C5-PFHxA	96%		50-150%
	13C4-PFHpA	96%		50-150%
	13C8-PFOA	106%		50-150%
	13C9-PFNA	107%		50-150%
	13C6-PFDA	102%		50-150%
	13C7-PFUnDA	100%		50-150%
	13C2-PFDoDA	86%		50-150%
	13C2-PFTeDA	88%		50-150%
	13C3-PFBS	94%		50-150%
	13C3-PFHxS	85%		50-150%
	13C8-PFOS	97%		50-150%
	13C8-FOSA	87%		50-150%
	d3-MeFOSAA	111%		50-150%
	d5-EtFOSAA	117%		50-150%
	13C2-4:2FTS	97%		50-150%
	13C2-6:2FTS	104%		50-150%
	13C2-8:2FTS	103%		50-150%
	13C3-HFPO-DA	86%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-025.0-20220615
Lab Sample ID: FA96546-27 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q94326.D	1	06/30/22 20:37	JB	06/27/22 09:05	OP91836	S2Q1318
Run #2 [a]	2Q94369.D	5	07/01/22 16:08	JB	06/27/22 09:05	OP91836	S2Q1319

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0081	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0079	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0022	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0034	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0064	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0064	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0383	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0096	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-025.0-20220615
Lab Sample ID: FA96546-27 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.040 U [b]	0.080	0.040	0.020	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	52%	61%	50-150%
	13C5-PFPeA	52%	60%	50-150%
	13C5-PFHxA	53%	62%	50-150%
	13C4-PFHpA	58%	65%	50-150%
	13C8-PFOA	60%	67%	50-150%
	13C9-PFNA	60%	67%	50-150%
	13C6-PFDA	61%	65%	50-150%
	13C7-PFUnDA	62%	65%	50-150%
	13C2-PFDoDA	62%	67%	50-150%
	13C2-PFTeDA	61%	65%	50-150%
	13C3-PFBS	55%	66%	50-150%
	13C3-PFHxS	60%	65%	50-150%
	13C8-PFOS	64%	73%	50-150%
	13C8-FOSA	59%	65%	50-150%
	d3-MeFOSAA	63%	70%	50-150%
	d5-EtFOSAA	66%	68%	50-150%
	13C2-4:2FTS	52%	63%	50-150%
	13C2-6:2FTS	59%	64%	50-150%
	13C2-8:2FTS	63%	66%	50-150%
	13C3-HFPO-DA	48% [c]	55%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1022-035.0-20220615		
Lab Sample ID:	FA96546-28	**Date Sampled:**	06/15/22
Matrix:	AQ - Ground Water	**Date Received:**	06/16/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q94327.D	1	06/30/22 20:54	JB	06/27/22 09:05	OP91836	S2Q1318
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0034	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0046	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0023	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0030	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0198	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1022-035.0-20220615
Lab Sample ID: FA96546-28 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	53%		50-150%
	13C5-PFPeA	53%		50-150%
	13C5-PFHxA	55%		50-150%
	13C4-PFHpA	60%		50-150%
	13C8-PFOA	62%		50-150%
	13C9-PFNA	63%		50-150%
	13C6-PFDA	63%		50-150%
	13C7-PFUnDA	63%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	62%		50-150%
	13C3-PFBS	57%		50-150%
	13C3-PFHxS	62%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	66%		50-150%
	d5-EtFOSAA	70%		50-150%
	13C2-4:2FTS	54%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	65%		50-150%
	13C3-HFPO-DA	51%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-045.0-20220615
Lab Sample ID: FA96546-29 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q94328.D	1	06/30/22 21:10	JB	06/27/22 09:05	OP91836	S2Q1318
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0052	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0094	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0160	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0054	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0194	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0176	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0731	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0047	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1012-045.0-20220615
Lab Sample ID: FA96546-29 **Date Sampled:** 06/15/22
Matrix: AQ - Ground Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		50-150%
	13C5-PFPeA	59%		50-150%
	13C5-PFHxA	62%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	70%		50-150%
	13C9-PFNA	72%		50-150%
	13C6-PFDA	71%		50-150%
	13C7-PFUnDA	69%		50-150%
	13C2-PFDoDA	67%		50-150%
	13C2-PFTeDA	65%		50-150%
	13C3-PFBS	62%		50-150%
	13C3-PFHxS	67%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	54%		50-150%
	d3-MeFOSAA	72%		50-150%
	d5-EtFOSAA	73%		50-150%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	70%		50-150%
	13C2-8:2FTS	71%		50-150%
	13C3-HFPO-DA	57%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220615-01
Lab Sample ID: FA96546-30 **Date Sampled:** 06/15/22
Matrix: AQ - Equipment Blank **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q94329.D	1	06/30/22 21:27	JB	06/27/22 09:05	OP91836	S2Q1318
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220615-01
Lab Sample ID: FA96546-30 **Date Sampled:** 06/15/22
Matrix: AQ - Equipment Blank **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	65%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	68%		50-150%
	13C8-PFOA	67%		50-150%
	13C9-PFNA	67%		50-150%
	13C6-PFDA	66%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	66%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	68%		50-150%
	d3-MeFOSAA	63%		50-150%
	d5-EtFOSAA	65%		50-150%
	13C2-4:2FTS	64%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	63%		50-150%
	13C3-HFPO-DA	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220615-01
Lab Sample ID: FA96546-31 **Date Sampled:** 06/15/22
Matrix: AQ - Field Blank Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2Q94330.D	1	06/30/22 21:43	JB	06/27/22 09:05	OP91836	S2Q1318
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220615-01
Lab Sample ID: FA96546-31 **Date Sampled:** 06/15/22
Matrix: AQ - Field Blank Water **Date Received:** 06/16/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	65%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	65%		50-150%
	13C6-PFDA	64%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	66%		50-150%
	13C2-PFTeDA	62%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	67%		50-150%
	13C8-FOSA	67%		50-150%
	d3-MeFOSAA	65%		50-150%
	d5-EtFOSAA	68%		50-150%
	13C2-4:2FTS	63%		50-150%
	13C2-6:2FTS	62%		50-150%
	13C2-8:2FTS	62%		50-150%
	13C3-HFPO-DA	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

FA96546

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL. 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 3

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL
Address: 2405 N. Courtney Pkwy, STE 203
City: Merritt Island State: FL Zip: 32937
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: J.Vujak Sampler 2:

Project Information

Project Name: PFAS Site Characterization
Street: Kennedy Space Center
City: Merritt Island State: FL
Project #: NS1010.01.06
Fax #:
Client Purchase Order #:

Analytical Information

Leas537 (000 Fy, LCMS)
+Gen X

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNA	DI WATER	MEOH	Leas537 (000 Fy, LCMS)	+Gen X	LAB USE ONLY
1	S114-DPT1017-045.0-20220614	6/14/22	0916	JV	GW	2		X								X	X	
2	S114-DPT1016-045.0-20220614		1031															
3	S114-DPT1018-005.0-20220614		1114															
4	S114-DPT1018-015.0-20220614		1129															
5	S114-DPT1018-025.0-20220614		1144															
6	S114-DPT1018-035.0-20220614		1202															
7	S114-DPT1018-045.0-20220614		1219															
8	S114-DPT1019-005.0-20220614		1355															
9	S114-DPT1019-015.0-20220614		1407															
10	S114-DPT1019-025.0-20220614		1425															
11	S114-FD-20220614-01		1425															
12	S114-DPT1019-035.0-20220614		1440															

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT SM
LABEL VERIFICATION 2

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1		6/16/22 16:25	2 6/16/2022 1025	3 6/16/2022 13:20		4 6/16/22 1320
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 2.6C, 0.8C IR1

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

FA96546

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 2 OF 3

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL
Address: 2405 N. Courtney Pkwy, STE 203
City: Merritt Island State: FL Zip: 32937
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) Sampler 1: J. Vaglic Sampler 2:

Project Information

Project Name: PFAS Site Characterization
Street: Kennedy Space Center
City: Merritt Island State: FL
Project #: NS1010.01.06
Fax #:
Client Purchase Order #:

Analytical Information

LC/MS/MS 537 DoD FL, LC/MS/MS Gen X

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	LAB USE ONLY
13	S114-DPT020-005.0-20220614	6/14/22	1546	JV	GW	2		X								
14	S114-EB-20220614-01		1555		WW	2		X								
15	S114-FB-20220614-01		1600		WW	2		X								
16	S114-DPT1020-015.0-20220615	6/15/22	0725		GW											
17	S114-DPT1020-025.0-20220615		0750		GW											
18	S114-DPT1020-035.0-20220615		0810													
19	S114-DPT1021-005.0-20220615		0950													
20	S114-DPT1021-015.0-20220615		1015													
21	S114-DPT1021-025.0-20220615		1105													
22	S114-DPT1021-035.0-20220615		1130													
23	S114-DPT1021-045.0-20220615		1158													
24	S114-DPT1022-005.0-20220615		1348													

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	HGL	06/16/22 10:25	2 GLW 6/16/2022 10:25	3 6/16/2022 13:00		4 6/16/22 1320
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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FA96546

SGS North America Inc - Orlando

Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL: 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 3 OF 3

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information | **Project Information** | **Analytical Information** | **Matrix Codes**

Company Name: H&L
Address: 2405 N. Courtney Pkwy, STE 203
City: Merritt Island State: FL Zip: 32937
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) Sampler 1: J.Nagle Sampler 2:

Project Name: PFAS Site Characterization
Street: Kennedy Space Center
City: Merritt Island State: FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LC/MS/MS 537.0 DOD, PFAS, LCMS	+ Gen X	LAB USE ONLY
25	S114-FD-20220615-01	6/15/22	1348	JV	GW	2		X								X	X	
26	S114-DPT1022-015.0-20220615		1406															
27	S114-DPT1022-025.0-20220615		1426															
28	S114-DPT1022-035.0-20220615		1442															
29	S114-DPT1022-045.0-20220615		1601															
30	S114-EB-20220615-01		1606		WW													
31	S114-FB-20220615-01		1611		WW													

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	H&L	06/15/22 10:25	2	3	6/14/2022 1320	4 6/16/22 1320
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

ORLD-SMT-0001-03-FORM-COC (4).xls Rev 031318

SGS Sample Receipt Summary

Job Number: FA96546 **Client:** HGL **Project:** PFAS SITE CHARACTERIZATION

Date / Time Received: 6/16/2022 1:20:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 2

Cooler Temps (Raw Measured) °C: Cooler 1: (2.6); Cooler 2: (0.8);

Cooler Temps (Corrected) °C: Cooler 1: (3.0); Cooler 2: (1.2);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SAMUELM Date: 6/16/2022 1:20:00 PM Reviewer: _____ Date: _____

Job Change Order: FA96546

Requested Date:	7/29/2022	**Received Date:**	6/16/2022
Account Name:	Hydrogeologic, Inc.	**Due Date:**	6/30/2022
Project Description:	NASA TQN 21- SLF PFAS Assessment	**Deliverable:**	FULT1
CSR:	AH	**TAT (Days):**	7

==========

Sample #: FA96546-3 **Change:** S114-DPT1024-005.0-20220614

Dept:

TAT: 7

S114-DPT1024-005.0-20220614

==========

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Sample #: FA96546-4 **Change:** S114-DPT1024-015.0-20220614

Dept:

TAT: 7

S114-DPT1024-015.0-20220614

==========

==========

Sample #: FA96546-5 **Change:** S114-DPT1024-025.0-20220614

Dept:

TAT: 7

S114-DPT1024-025.0-20220614

==========

==========

Sample #: FA96546-6 **Change:** S114-DPT1024-035.0-20220614

Dept:

TAT: 7

S114-DPT1024-035.0-20220614

==========

Above Changes Per: Client **Date/Time:** 7/29/2022 9:46:16 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: FA96546

Requested Date:	7/29/2022	**Received Date:**	6/16/2022
Account Name:	Hydrogeologic, Inc.	**Due Date:**	6/30/2022
Project Description:	NASA TQN 21- SLF PFAS Assessment	**Deliverable:**	FULT1
CSR:	AH	**TAT (Days):**	7

==========

Sample #: FA96546-7 **Change:** S114-DPT1025-045.0-20220614

Dept:

TAT: 7

S114-DPT1025-045.0-20220614

==========

==========

Sample #: FA96546-8 **Change:** S114-DPT1025-005.0-20220614

Dept:

TAT: 7

S114-DPT1025-005.0-20220614

==========

==========

Sample #: FA96546-9 **Change:** S114-DPT1025-015.0-20220614

Dept:

TAT: 7

S114-DPT1025-015.0-20220614

==========

==========

Sample #: FA96546-10 **Change:** S114-DPT1025-025.0-20220614

Dept:

TAT: 7

S114-DPT1025-025.0-20220614

==========

FA96546: Chain of Custody

Page 6 of 8

Above Changes Per: Client **Date/Time:** 7/29/2022 9:46:16 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: FA96546

Requested Date:	7/29/2022	**Received Date:**	6/16/2022
Account Name:	Hydrogeologic, Inc.	**Due Date:**	6/30/2022
Project Description:	NASA TQN 21- SLF PFAS Assessment	**Deliverable:**	FULT1
CSR:	AH	**TAT (Days):**	7

Sample #: FA96546-12 **Change:** S114-DPT1025-035.0-20220614
Dept:
TAT: 7

S114-DPT1025-035.0-20220614

Sample #: FA96546-13 **Change:** S114-DPT1026-005.0-20220614
Dept:
TAT: 7

S114-DPT1026-005.0-20220614

Sample #: FA96546-16 **Change:** S114-DPT1026-015.0-20220615
Dept:
TAT: 7

S114-DPT1026-015.0-20220615

Sample #: FA96546-17 **Change:** S114-DPT1026-025.0-20220615
Dept:
TAT: 7

S114-DPT1026-025.0-20220615

Above Changes Per: Client **Date/Time:** 7/29/2022 9:46:16 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Job Change Order: FA96546

Requested Date:	7/29/2022	**Received Date:**	6/16/2022
Account Name:	Hydrogeologic, Inc.	**Due Date:**	6/30/2022
Project Description:	NASA TQN 21- SLF PFAS Assessment	**Deliverable:**	FULT1
CSR:	AH	**TAT (Days):**	7

==========

Sample #: FA96546-18

Dept:

TAT: 7

Change:
S114-DPT1026-035.0-20220615

S114-DPT1026-035.0-20220615

==========

Above Changes Per: Client **Date/Time:** 7/29/2022 9:46:16 AM

To Client: This Change Order is confirmation of the revisions, previously discussed with the Client Service Representative.

Page 4 of 4

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

NASA TQN 21- SLF PFAS Assessment

NS1010.01.06

SGS Job Number: FA96633

Sampling Date: 06/16/22

Report to:

HGL, Inc
2405 N Courtenay Pkwy Suite 203
Merritt Island, FL 32953
drivers@hgl.com; jtracy@hgl.com

ATTN: Denise Rivers

Total number of pages in report: **49**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA96633

NASA TQN 21- SLF PFAS Assessment
Project No: NS1010.01.06

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA96633-1	06/16/22	08:20	JB	06/17/22	AQ	Ground Water	S114-DPT1014-045.0-20220616
FA96633-2	06/16/22	09:49	JB	06/17/22	AQ	Ground Water	S114-DPT1023-005.0-20220616
FA96633-3	06/16/22	10:01	JB	06/17/22	AQ	Ground Water	S114-DPT1023-015.0-20220616
FA96633-4	06/16/22	10:16	JB	06/17/22	AQ	Ground Water	S114-DPT1023-025.0-20220616
FA96633-5	06/16/22	10:28	JB	06/17/22	AQ	Ground Water	S114-DPT1023-035.0-20220616
FA96633-6	06/16/22	10:28	JB	06/17/22	AQ	Ground Water	S114-FD-20220616-01
FA96633-7	06/16/22	10:55	JB	06/17/22	AQ	Equipment Blank	S114-EB-20220616-01
FA96633-8	06/16/22	11:00	JB	06/17/22	AQ	Field Blank Water	S114-FB-20220616-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA96633

Site: NASA TQN 21- SLF PFAS Assessment **Report Date:** 7/25/2022 2:11:39 PM

On 06/17/2022, 7 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 5 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA96633 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP91949

Sample(s) FA96632-1MS, FA96632-2DUP were used as the QC samples indicated.

Sample(s) FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6 have surrogates outside control limits.

OP91949-DUP for PFOSA: Outside control limits.

OP91949-DUP: Dilution required due to matrix interference.

FA96633-1 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.

FA96633-1 for 13C2-PFTeDA: Outside control limits.

FA96633-1 for 13C8-FOSA: Outside control limits.

FA96633-1: Dilution required due to matrix interference (ID recovery standard failure).

FA96633-2 for 13C8-FOSA: Outside control limits.

FA96633-2 for PFOSA: Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.

FA96633-3 for 13C2-PFTeDA: Outside control limits.

FA96633-3: Dilution required due to matrix interference (ID recovery standard failure).

FA96633-4 for 13C2-PFTeDA: Outside control limits.

FA96633-4 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits, Confirmed by re-analysis.

FA96633-4: Dilution required due to matrix interference (ID recovery standard failure).

FA96633-5 for 13C4-PFBA: Outside control limits.

FA96633-5: Dilution required due to matrix interference (ID recovery standard failure).

FA96633-6 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.

FA96633-6: Dilution required due to matrix interference (ID recovery standard failure).

FA96633-6 for 13C8-FOSA: Outside control limits.

FA96633-6 for 13C5-PFPeA: Outside control limits.

FA96633-6 for 13C4-PFBA: Outside control limits.

FA96633-6 for 13C2-PFTeDA: Outside control limits.

Matrix: AQ **Batch ID:** OP91950

Sample(s) FA96619-10MS, FA96619-10MSD were used as the QC samples indicated.

Matrix: AQ **Batch ID:** OP92135

Sample(s) FA96633-2 have surrogates outside control limits.

FA96633-1: Confirmation run.

FA96633-2: Confirmation run.

FA96633-4: Confirmation run.

FA96633-6: Confirmation run.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA96633
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/16/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA96633-1	**S114-DPT1014-045.0-20220616**					
Perfluoropentanoic acid		0.0148	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0179	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0032 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0026 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0134	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0128	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0623	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96633-2	**S114-DPT1023-005.0-20220616**					
Perfluorobutanoic acid		0.0600	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0039 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96633-3	**S114-DPT1023-015.0-20220616**					
Perfluorobutanoic acid		0.0096 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96633-4	**S114-DPT1023-025.0-20220616**					
Perfluorobutanoic acid		0.0071 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0078 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96633-5	**S114-DPT1023-035.0-20220616**					
Perfluoropentanoic acid		0.0051 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA96633-6	**S114-FD-20220616-01**					
No hits reported in this sample.						
FA96633-7	**S114-EB-20220616-01**					
No hits reported in this sample.						
FA96633-8	**S114-FB-20220616-01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID:	S114-DPT1014-045.0-20220616		
Lab Sample ID:	FA96633-1	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2066.D	1	07/14/22 07:25	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2447.D	1	07/21/22 06:02	JB	07/18/22 09:00	OP92135	S6Q43
Run #3 [b]	6Q2067.D	5	07/14/22 07:41	JB	07/06/22 09:15	OP91949	S6Q38

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0148	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0179	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0032	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0026	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [c]	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0134	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0128	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0623	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1014-045.0-20220616		
Lab Sample ID:	FA96633-1	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	52%	80%	63%	50-150%
	13C5-PFPeA	58%	89%	64%	50-150%
	13C5-PFHxA	61%	95%	66%	50-150%
	13C4-PFHpA	64%	99%	67%	50-150%
	13C8-PFOA	65%	100%	68%	50-150%
	13C9-PFNA	65%	97%	68%	50-150%
	13C6-PFDA	63%	95%	63%	50-150%
	13C7-PFUnDA	55%	89%	61%	50-150%
	13C2-PFDoDA	51%	80%	55%	50-150%
	13C2-PFTeDA	30% [e]	71%	44% [e]	50-150%
	13C3-PFBS	62%	94%	66%	50-150%
	13C3-PFHxS	66%	101%	71%	50-150%
	13C8-PFOS	64%	94%	64%	50-150%
	13C8-FOSA	49% [e]	57%	53%	50-150%
	d3-MeFOSAA	66%	100%	63%	50-150%
	d5-EtFOSAA	59%	92%	60%	50-150%
	13C2-4:2FTS	62%	96%	62%	50-150%
	13C2-6:2FTS	65%	103%	64%	50-150%
	13C2-8:2FTS	57%	94%	61%	50-150%
	13C3-HFPO-DA	63%	99%	65%	50-150%

(a) Confirmation run.
(b) Dilution required due to matrix interference (ID recovery standard failure).
(c) Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.
(d) Result is from Run# 3
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1023-005.0-20220616
Lab Sample ID: FA96633-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/16/22
Date Received: 06/17/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2068.D	1	07/14/22 07:56	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2450.D	1	07/21/22 06:49	JB	07/18/22 09:00	OP92135	S6Q43

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0600	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0039	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [b]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1023-005.0-20220616
Lab Sample ID: FA96633-2 **Date Sampled:** 06/16/22
Matrix: AQ - Ground Water **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	53%	67%	50-150%
	13C5-PFPeA	60%	75%	50-150%
	13C5-PFHxA	66%	82%	50-150%
	13C4-PFHpA	66%	86%	50-150%
	13C8-PFOA	68%	88%	50-150%
	13C9-PFNA	70%	90%	50-150%
	13C6-PFDA	69%	85%	50-150%
	13C7-PFUnDA	68%	76%	50-150%
	13C2-PFDoDA	64%	72%	50-150%
	13C2-PFTeDA	60%	69%	50-150%
	13C3-PFBS	68%	83%	50-150%
	13C3-PFHxS	72%	89%	50-150%
	13C8-PFOS	68%	85%	50-150%
	13C8-FOSA	43% [c]	34% [c]	50-150%
	d3-MeFOSAA	72%	85%	50-150%
	d5-EtFOSAA	65%	81%	50-150%
	13C2-4:2FTS	66%	85%	50-150%
	13C2-6:2FTS	72%	92%	50-150%
	13C2-8:2FTS	66%	82%	50-150%
	13C3-HFPO-DA	64%	93%	50-150%

(a) Confirmation run.
(b) Associated ID Standard outside control limits due to matrix interference. Confirmed by re-extraction and reanalysis.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1023-015.0-20220616
Lab Sample ID: FA96633-3
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/16/22
Date Received: 06/17/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2069.D	1	07/14/22 08:11	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2070.D	5	07/14/22 08:27	JB	07/06/22 09:15	OP91949	S6Q38

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0096	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1023-015.0-20220616		
Lab Sample ID:	FA96633-3	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	53%	69%	50-150%
	13C5-PFPeA	59%	70%	50-150%
	13C5-PFHxA	63%	71%	50-150%
	13C4-PFHpA	63%	72%	50-150%
	13C8-PFOA	64%	73%	50-150%
	13C9-PFNA	66%	73%	50-150%
	13C6-PFDA	65%	68%	50-150%
	13C7-PFUnDA	63%	68%	50-150%
	13C2-PFDoDA	58%	66%	50-150%
	13C2-PFTeDA	46% [c]	50%	50-150%
	13C3-PFBS	63%	73%	50-150%
	13C3-PFHxS	67%	73%	50-150%
	13C8-PFOS	64%	71%	50-150%
	13C8-FOSA	51%	59%	50-150%
	d3-MeFOSAA	66%	73%	50-150%
	d5-EtFOSAA	62%	70%	50-150%
	13C2-4:2FTS	63%	68%	50-150%
	13C2-6:2FTS	65%	71%	50-150%
	13C2-8:2FTS	63%	69%	50-150%
	13C3-HFPO-DA	59%	76%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1023-025.0-20220616		
Lab Sample ID:	FA96633-4	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2071.D	1	07/14/22 08:42	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2451.D	1	07/21/22 07:04	JB	07/18/22 09:00	OP92135	S6Q43
Run #3 [b]	6Q2072.D	5	07/14/22 08:57	JB	07/06/22 09:15	OP91949	S6Q38

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0071	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0078	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [c]	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1023-025.0-20220616
Lab Sample ID: FA96633-4 **Date Sampled:** 06/16/22
Matrix: AQ - Ground Water **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	50%	66%	69%	50-150%
	13C5-PFPeA	58%	74%	75%	50-150%
	13C5-PFHxA	64%	84%	77%	50-150%
	13C4-PFHpA	68%	89%	79%	50-150%
	13C8-PFOA	71%	95%	84%	50-150%
	13C9-PFNA	70%	96%	82%	50-150%
	13C6-PFDA	74%	96%	80%	50-150%
	13C7-PFUnDA	68%	94%	74%	50-150%
	13C2-PFDoDA	66%	86%	66%	50-150%
	13C2-PFTeDA	44% [e]	78%	41% [e]	50-150%
	13C3-PFBS	65%	87%	77%	50-150%
	13C3-PFHxS	71%	92%	82%	50-150%
	13C8-PFOS	70%	93%	81%	50-150%
	13C8-FOSA	56%	60%	65%	50-150%
	d3-MeFOSAA	80%	100%	82%	50-150%
	d5-EtFOSAA	80%	102%	79%	50-150%
	13C2-4:2FTS	68%	94%	76%	50-150%
	13C2-6:2FTS	76%	107%	85%	50-150%
	13C2-8:2FTS	76%	95%	81%	50-150%
	13C3-HFPO-DA	59%	84%	84%	50-150%

(a) Confirmation run.
(b) Dilution required due to matrix interference (ID recovery standard failure).
(c) Associated ID Standard outside control limits, Confirmed by re-analysis.
(d) Result is from Run# 3
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-DPT1023-035.0-20220616		
Lab Sample ID:	FA96633-5	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2073.D	1	07/14/22 09:13	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2074.D	5	07/14/22 09:28	JB	07/06/22 09:15	OP91949	S6Q38

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.040 U [b]	0.080	0.040	0.020	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0051	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-DPT1023-035.0-20220616
Lab Sample ID: FA96633-5 **Date Sampled:** 06/16/22
Matrix: AQ - Ground Water **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	49% [c]	67%	50-150%
	13C5-PFPeA	52%	69%	50-150%
	13C5-PFHxA	58%	74%	50-150%
	13C4-PFHpA	63%	73%	50-150%
	13C8-PFOA	67%	79%	50-150%
	13C9-PFNA	67%	77%	50-150%
	13C6-PFDA	67%	80%	50-150%
	13C7-PFUnDA	65%	71%	50-150%
	13C2-PFDoDA	63%	70%	50-150%
	13C2-PFTeDA	59%	66%	50-150%
	13C3-PFBS	60%	73%	50-150%
	13C3-PFHxS	66%	77%	50-150%
	13C8-PFOS	67%	78%	50-150%
	13C8-FOSA	57%	65%	50-150%
	d3-MeFOSAA	69%	76%	50-150%
	d5-EtFOSAA	67%	76%	50-150%
	13C2-4:2FTS	61%	72%	50-150%
	13C2-6:2FTS	71%	79%	50-150%
	13C2-8:2FTS	65%	74%	50-150%
	13C3-HFPO-DA	59%	72%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FD-20220616-01		
Lab Sample ID:	FA96633-6	**Date Sampled:**	06/16/22
Matrix:	AQ - Ground Water	**Date Received:**	06/17/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	NASA TQN 21- SLF PFAS Assessment		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2078.D	1	07/14/22 10:29	JB	07/06/22 09:15	OP91949	S6Q38
Run #2 [a]	6Q2452.D	1	07/21/22 07:20	JB	07/18/22 09:00	OP92135	S6Q43
Run #3 [b]	6Q2079.D	5	07/14/22 10:45	JB	07/06/22 09:15	OP91949	S6Q38

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.040 U [c]	0.080	0.040	0.020	ug/l	
2706-90-3	Perfluoropentanoic acid	0.020 U [c]	0.040	0.020	0.010	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [d]	0.020 U [c]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [c]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220616-01
Lab Sample ID: FA96633-6 **Date Sampled:** 06/16/22
Matrix: AQ - Ground Water **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	47% [e]	71%	64%	50-150%
	13C5-PFPeA	49% [e]	74%	67%	50-150%
	13C5-PFHxA	56%	88%	72%	50-150%
	13C4-PFHpA	61%	94%	72%	50-150%
	13C8-PFOA	65%	104%	76%	50-150%
	13C9-PFNA	68%	108%	74%	50-150%
	13C6-PFDA	65%	105%	68%	50-150%
	13C7-PFUnDA	62%	103%	61%	50-150%
	13C2-PFDoDA	57%	101%	55%	50-150%
	13C2-PFTeDA	35% [e]	95%	34% [e]	50-150%
	13C3-PFBS	60%	92%	72%	50-150%
	13C3-PFHxS	65%	99%	78%	50-150%
	13C8-PFOS	62%	103%	70%	50-150%
	13C8-FOSA	45% [e]	85%	51%	50-150%
	d3-MeFOSAA	71%	124%	73%	50-150%
	d5-EtFOSAA	66%	116%	64%	50-150%
	13C2-4:2FTS	59%	97%	68%	50-150%
	13C2-6:2FTS	70%	114%	71%	50-150%
	13C2-8:2FTS	62%	105%	69%	50-150%
	13C3-HFPO-DA	51%	84%	67%	50-150%

(a) Confirmation run.
(b) Dilution required due to matrix interference (ID recovery standard failure).
(c) Result is from Run# 3
(d) Associated ID Standard outside control limits due to matrix interference. Confirmed by reanalysis.
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220616-01
Lab Sample ID: FA96633-7
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/16/22
Date Received: 06/17/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q2034.D	1	07/13/22 23:14	JB	07/06/22 09:15	OP91949	S6Q38
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220616-01
Lab Sample ID: FA96633-7 **Date Sampled:** 06/16/22
Matrix: AQ - Equipment Blank **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	66%		50-150%
	13C9-PFNA	62%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	58%		50-150%
	13C2-PFDoDA	56%		50-150%
	13C2-PFTeDA	50%		50-150%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	67%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	60%		50-150%
	d3-MeFOSAA	58%		50-150%
	d5-EtFOSAA	54%		50-150%
	13C2-4:2FTS	63%		50-150%
	13C2-6:2FTS	63%		50-150%
	13C2-8:2FTS	58%		50-150%
	13C3-HFPO-DA	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220616-01
Lab Sample ID: FA96633-8
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: NASA TQN 21- SLF PFAS Assessment

Date Sampled: 06/16/22
Date Received: 06/17/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q1886.D	1	07/08/22 19:52	JB	07/06/22 09:05	OP91950	S6Q34
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220616-01
Lab Sample ID: FA96633-8 **Date Sampled:** 06/16/22
Matrix: AQ - Field Blank Water **Date Received:** 06/17/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: NASA TQN 21- SLF PFAS Assessment

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	63%		50-150%
	13C5-PFPeA	63%		50-150%
	13C5-PFHxA	66%		50-150%
	13C4-PFHpA	66%		50-150%
	13C8-PFOA	68%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	65%		50-150%
	13C7-PFUnDA	63%		50-150%
	13C2-PFDoDA	62%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	67%		50-150%
	13C3-PFHxS	66%		50-150%
	13C8-PFOS	65%		50-150%
	13C8-FOSA	68%		50-150%
	d3-MeFOSAA	61%		50-150%
	d5-EtFOSAA	59%		50-150%
	13C2-4:2FTS	60%		50-150%
	13C2-6:2FTS	66%		50-150%
	13C2-8:2FTS	63%		50-150%
	13C3-HFPO-DA	64%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA96633

SGS North America Inc - Orlando
Chain of Custody

4405 Vineland Road, Suite C-15 Orlando, Fl 32811
TEL 407-425-6700 FAX: 407-425-0707
www.sgs.com

SGS - ORLANDO JOB # : PAGE 1 OF 1

SGS - ORLANDO Quote # SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway, STE 203
City: Merrit Island State: FL Zip:32953
Project Contact: Denise Rivers Email:drivers@hgl.com
Phone #:910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1:Jason Bublitz Sampler 2:

Project Information

Project Name: SWMU 114 PFAS Assessment
Street Kennedy Space Center
City Merritt Island State FL
Project # NS1010.01.06
Fax #
Client Purchase Order #

Analytical Information

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	LCQSM537DODFL-24 analytes + GenX	LAB USE ONLY
1	S114-DPT1014-045.0-20220616	6/16/22	0820	JB	GW	2		X								X	
2	S114-DPT1023-005.0-20220616	6/16/22	0949	JB	GW	2		X								X	
3	S114-DPT1023-015.0-20220616	6/16/22	1001	JB	GW	2		X								X	
4	S114-DPT1023-025.0-20220616	6/16/22	1016	JB	GW	2		X								X	
5	S114-DPT1023-035.0-20220616	6/16/22	1028	JB	GW	2		X								X	
6	S114-FD-20220616-01	6/16/22	1028	JB	GW	2		X								X	
7	S114-EB-20220616-01	6/16/22	1055	JB	WW	2		X								X	
8	S114-FB-20220616-01	6/16/22	1100	JB	WW	2		X								X	

Turnaround Time (Business days)

X 10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
vailable VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT NG
LABEL VERIFICATION SM

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
	6-17-22/1535	2 TLC 6/17/2022 15:35	3 TLC 6/17/22 16:40		4 6/17/22 1640
Relinquished by/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
		6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected): 3.2C, 1.8C, 4.6C IK1

http://www.sgs.com/en/terms-and-conditions

SGS COC_20220616 Rev 031318

FA96633: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: FA96633 **Client:** HGL, INC. **Project:** SWMU 114 PFAS ASSESSMENT

Date / Time Received: 6/17/2022 4:40:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.4; **# of Coolers:** 3

Cooler Temps (Raw Measured) °C: Cooler 1: (3.2); Cooler 2: (1.8); Cooler 3: (4.6);

Cooler Temps (Corrected) °C: Cooler 1: (3.6); Cooler 2: (2.2); Cooler 3: (5.0);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SAMUELM Date: 6/17/2022 4:40:00 PM Reviewer: _____ Date: _____

5.1

5

FA96633: Chain of Custody
Page 2 of 2

QC Evaluation: DOD QSM5.x Limits

Job Number: FA96633
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/16/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP91949	EPA 537M QSM5.3 B-15						
OP91949-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	101	%	73-129
OP91949-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	114	%	72-129
OP91949-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	109	%	72-129
OP91949-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	107	%	72-130
OP91949-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	105	%	71-133
OP91949-BS	375-95-1	Perfluorononanoic acid	BSP	REC	104	%	69-130
OP91949-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	110	%	71-129
OP91949-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	98	%	69-133
OP91949-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	104	%	72-134
OP91949-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	104	%	65-144
OP91949-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	110	%	71-132
OP91949-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	107	%	72-130
OP91949-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	106	%	71-127
OP91949-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	108	%	68-131
OP91949-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	113	%	69-134
OP91949-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	118	%	65-140
OP91949-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	111	%	69-127
OP91949-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	96	%	53-142
OP91949-BS	754-91-6	PFOSA	BSP	REC	99	%	67-137
OP91949-BS	2355-31-9	MeFOSAA	BSP	REC	104	%	65-136
OP91949-BS	2991-50-6	EtFOSAA	BSP	REC	111	%	61-135
OP91949-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	106	%	63-143
OP91949-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	103	%	64-140
OP91949-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	101	%	67-138
OP91949-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	110	%	73-129
OP91949-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	119	%	72-129
OP91949-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	113	%	72-129
OP91949-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	115	%	72-130
OP91949-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	114	%	71-133
OP91949-MS*	375-95-1	Perfluorononanoic acid	MS	REC	109	%	69-130
OP91949-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	113	%	71-129
OP91949-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	103	%	69-133
OP91949-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	110	%	72-134
OP91949-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	102	%	65-144
OP91949-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	113	%	71-132
OP91949-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	115	%	72-130
OP91949-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	119	%	71-127
OP91949-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	119	%	68-131
OP91949-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	114	%	69-134
OP91949-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	119	%	65-140
OP91949-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	121	%	69-127
OP91949-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	98	%	53-142

* Sample used for QC is not from job FA96633

QC Evaluation: DOD QSM5.x Limits

Job Number: FA96633
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/16/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP91949-MS*	754-91-6	PFOSA	MS	REC	110	%	67-137
OP91949-MS*	2355-31-9	MeFOSAA	MS	REC	106	%	65-136
OP91949-MS*	2991-50-6	EtFOSAA	MS	REC	119	%	61-135
OP91949-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	114	%	63-143
OP91949-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	105	%	64-140
OP91949-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	116	%	67-138
OP91949-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP91949-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP91949-DUP*	754-91-6	PFOSA	DUP	RPD	0 [a]	%	30
OP91949-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP91949-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP91949-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP91949-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP91949-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP91950	EPA 537M QSM5.3 B-15						
OP91950-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	109	%	73-129
OP91950-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	113	%	72-129
OP91950-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	113	%	72-129
OP91950-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	114	%	72-130
OP91950-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	114	%	71-133
OP91950-BS	375-95-1	Perfluorononanoic acid	BSP	REC	110	%	69-130
OP91950-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	111	%	71-129
OP91950-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	104	%	69-133
OP91950-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	113	%	72-134
OP91950-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	109	%	65-144
OP91950-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	106	%	71-132
OP91950-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	114	%	72-130

* Sample used for QC is not from job FA96633

QC Evaluation: DOD QSM5.x Limits

Job Number: FA96633
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/16/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP91950-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	111	%	71-127
OP91950-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	114	%	68-131
OP91950-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	114	%	69-134
OP91950-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	113	%	65-140
OP91950-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	111	%	69-127
OP91950-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	93	%	53-142
OP91950-BS	754-91-6	PFOSA	BSP	REC	112	%	67-137
OP91950-BS	2355-31-9	MeFOSAA	BSP	REC	109	%	65-136
OP91950-BS	2991-50-6	EtFOSAA	BSP	REC	111	%	61-135
OP91950-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	113	%	63-143
OP91950-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	105	%	64-140
OP91950-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	114	%	67-138
OP91950-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	113	%	73-129
OP91950-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	116	%	72-129
OP91950-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	112	%	72-129
OP91950-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	113	%	72-130
OP91950-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	114	%	71-133
OP91950-MS*	375-95-1	Perfluorononanoic acid	MS	REC	107	%	69-130
OP91950-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	119	%	71-129
OP91950-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	104	%	69-133
OP91950-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	113	%	72-134
OP91950-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	108	%	65-144
OP91950-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	119	%	71-132
OP91950-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	114	%	72-130
OP91950-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	114	%	71-127
OP91950-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	116	%	68-131
OP91950-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	121	%	69-134
OP91950-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	117	%	65-140
OP91950-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	114	%	69-127
OP91950-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	101	%	53-142
OP91950-MS*	754-91-6	PFOSA	MS	REC	113	%	67-137
OP91950-MS*	2355-31-9	MeFOSAA	MS	REC	117	%	65-136
OP91950-MS*	2991-50-6	EtFOSAA	MS	REC	121	%	61-135
OP91950-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	119	%	63-143
OP91950-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	113	%	64-140
OP91950-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	121	%	67-138
OP91950-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	108	%	73-129
OP91950-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	5	%	30
OP91950-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	116	%	72-129
OP91950-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	1	%	30
OP91950-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	112	%	72-129
OP91950-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	0	%	30
OP91950-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	117	%	72-130
OP91950-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	4	%	30
OP91950-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	115	%	71-133

* Sample used for QC is not from job FA96633

QC Evaluation: DOD QSM5.x Limits

Job Number: FA96633
Account: Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment
Collected: 06/16/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP91950-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	1	%	30
OP91950-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	114	%	69-130
OP91950-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	6	%	30
OP91950-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	112	%	71-129
OP91950-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	6	%	30
OP91950-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	106	%	69-133
OP91950-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	2	%	30
OP91950-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	109	%	72-134
OP91950-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	3	%	30
OP91950-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	109	%	65-144
OP91950-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	1	%	30
OP91950-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	119	%	71-132
OP91950-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	1	%	30
OP91950-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	113	%	72-130
OP91950-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	1	%	30
OP91950-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	116	%	71-127
OP91950-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	2	%	30
OP91950-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	118	%	68-131
OP91950-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	2	%	30
OP91950-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	118	%	69-134
OP91950-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	3	%	30
OP91950-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	114	%	65-140
OP91950-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	2	%	30
OP91950-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	111	%	69-127
OP91950-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	3	%	30
OP91950-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	99	%	53-142
OP91950-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	3	%	30
OP91950-MSD*	754-91-6	PFOSA	MSD	REC	116	%	67-137
OP91950-MSD*	754-91-6	PFOSA	MSD	RPD	2	%	30
OP91950-MSD*	2355-31-9	MeFOSAA	MSD	REC	114	%	65-136
OP91950-MSD*	2355-31-9	MeFOSAA	MSD	RPD	3	%	30
OP91950-MSD*	2991-50-6	EtFOSAA	MSD	REC	123	%	61-135
OP91950-MSD*	2991-50-6	EtFOSAA	MSD	RPD	2	%	30
OP91950-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	118	%	63-143
OP91950-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	1	%	30
OP91950-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	107	%	64-140
OP91950-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	5	%	30
OP91950-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	116	%	67-138
OP91950-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	4	%	30

(a) Outside control limits.

* Sample used for QC is not from job FA96633

MS Semi-volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Instrument Blank

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q34-IBLK	6Q1868.D	1	07/08/22	JB	n/a	n/a	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	50-150%
	13C5-PFPeA	99%	50-150%
	13C5-PFHxA	102%	50-150%
	13C4-PFHpA	103%	50-150%
	13C8-PFOA	103%	50-150%
	13C9-PFNA	104%	50-150%
	13C6-PFDA	103%	50-150%

Instrument Blank

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q34-IBLK	6Q1868.D	1	07/08/22	JB	n/a	n/a	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	101%	50-150%
	13C2-PFDoDA	100%	50-150%
	13C2-PFTeDA	103%	50-150%
	13C3-PFBS	101%	50-150%
	13C3-PFHxS	98%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	103%	50-150%
	d3-MeFOSA	103%	50-150%
	d3-MeFOSAA	96%	50-150%
	d5-EtFOSAA	91%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	97%	50-150%
	13C2-8:2FTS	98%	50-150%
	13C3-HFPO-DA	95%	50-150%

Instrument Blank

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q38-IBLK	6Q2024.D	1	07/13/22	JB	n/a	n/a	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	96%	50-150%
	13C8-PFOA	95%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	95%	50-150%

Instrument Blank

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q38-IBLK	6Q2024.D	1	07/13/22	JB	n/a	n/a	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	101%	50-150%
	13C2-PFDoDA	96%	50-150%
	13C2-PFTeDA	98%	50-150%
	13C3-PFBS	94%	50-150%
	13C3-PFHxS	97%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	97%	50-150%
	d3-MeFOSA	96%	50-150%
	d3-MeFOSAA	100%	50-150%
	d5-EtFOSAA	103%	50-150%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	92%	50-150%
	13C2-8:2FTS	86%	50-150%
	13C3-HFPO-DA	95%	50-150%

Method Blank Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-MB	6Q1885.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	79%	50-150%
	13C5-PFPeA	77%	50-150%
	13C5-PFHxA	79%	50-150%
	13C4-PFHpA	79%	50-150%
	13C8-PFOA	80%	50-150%
	13C9-PFNA	80%	50-150%
	13C6-PFDA	79%	50-150%

Method Blank Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-MB	6Q1885.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	80%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	70%	50-150%
	13C3-PFBS	78%	50-150%
	13C3-PFHxS	77%	50-150%
	13C8-PFOS	77%	50-150%
	13C8-FOSA	75%	50-150%
	d3-MeFOSAA	74%	50-150%
	d5-EtFOSAA	67%	50-150%
	13C2-4:2FTS	73%	50-150%
	13C2-6:2FTS	77%	50-150%
	13C2-8:2FTS	78%	50-150%
	13C3-HFPO-DA	76%	50-150%

Method Blank Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-MB	6Q2031.D	1	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	83%	50-150%
	13C5-PFPeA	84%	50-150%
	13C5-PFHxA	85%	50-150%
	13C4-PFHpA	84%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	84%	50-150%
	13C6-PFDA	85%	50-150%

Method Blank Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-MB	6Q2031.D	1	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	82%	50-150%
	13C2-PFDoDA	75%	50-150%
	13C2-PFTeDA	67%	50-150%
	13C3-PFBS	83%	50-150%
	13C3-PFHxS	85%	50-150%
	13C8-PFOS	83%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSAA	82%	50-150%
	d5-EtFOSAA	75%	50-150%
	13C2-4:2FTS	79%	50-150%
	13C2-6:2FTS	82%	50-150%
	13C2-8:2FTS	80%	50-150%
	13C3-HFPO-DA	86%	50-150%

Blank Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-BS	6Q1884.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.175	109	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.180	113	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.180	113	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.182	114	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.182	114	71-133
375-95-1	Perfluorononanoic acid	0.16	0.176	110	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.178	111	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.166	104	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.181	113	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.175	109	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.170	106	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.183	114	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.177	111	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.182	114	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.183	114	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.180	113	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.178	111	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.148	93	53-142
754-91-6	PFOSA	0.16	0.179	112	67-137
2355-31-9	MeFOSAA	0.16	0.175	109	65-136
2991-50-6	EtFOSAA	0.16	0.178	111	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.181	113	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.168	105	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.183	114	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.186	116	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	86%	50-150%
	13C5-PFPeA	86%	50-150%
	13C5-PFHxA	85%	50-150%
	13C4-PFHpA	87%	50-150%
	13C8-PFOA	87%	50-150%
	13C9-PFNA	87%	50-150%
	13C6-PFDA	88%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-BS	6Q1884.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	84%	50-150%
	13C2-PFDoDA	75%	50-150%
	13C2-PFTeDA	71%	50-150%
	13C3-PFBS	86%	50-150%
	13C3-PFHxS	84%	50-150%
	13C8-PFOS	85%	50-150%
	13C8-FOSA	80%	50-150%
	d3-MeFOSAA	83%	50-150%
	d5-EtFOSAA	77%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	91%	50-150%
	13C2-8:2FTS	87%	50-150%
	13C3-HFPO-DA	82%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-BS	6Q2030.D	1	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.161	101	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.182	114	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.174	109	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.171	107	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.168	105	71-133
375-95-1	Perfluorononanoic acid	0.16	0.167	104	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.176	110	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.157	98	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.166	104	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.167	104	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.176	110	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.171	107	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.169	106	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.173	108	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.181	113	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.188	118	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.178	111	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.153	96	53-142
754-91-6	PFOSA	0.16	0.158	99	67-137
2355-31-9	MeFOSAA	0.16	0.166	104	65-136
2991-50-6	EtFOSAA	0.16	0.177	111	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.169	106	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.165	103	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.161	101	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.181	113	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	86%	50-150%
	13C5-PFPeA	88%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	87%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	89%	50-150%
	13C6-PFDA	84%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-BS	6Q2030.D	1	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	83%	50-150%
	13C2-PFDoDA	77%	50-150%
	13C2-PFTeDA	72%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	90%	50-150%
	13C8-PFOS	83%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSAA	81%	50-150%
	d5-EtFOSAA	76%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	88%	50-150%
	13C2-8:2FTS	85%	50-150%
	13C3-HFPO-DA	89%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-MS	6Q2037.D	1.7	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-1 [a]	6Q2035.D	1.7	07/13/22	JB	07/06/22	OP91949	S6Q38
FA96632-1 [b]	6Q2036.D	8.3	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	Compound	FA96632-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.027	U	0.16	0.176	110	73-129
2706-90-3	Perfluoropentanoic acid	0.014	U	0.16	0.191	119	72-129
307-24-4	Perfluorohexanoic acid	0.014	U	0.16	0.180	113	72-129
375-85-9	Perfluoroheptanoic acid	0.014	U	0.16	0.184	115	72-130
335-67-1	Perfluorooctanoic acid	0.014	U	0.16	0.183	114	71-133
375-95-1	Perfluorononanoic acid	0.014	U	0.16	0.174	109	69-130
335-76-2	Perfluorodecanoic acid	0.014	U	0.16	0.181	113	71-129
2058-94-8	Perfluoroundecanoic acid	0.014	U	0.16	0.164	103	69-133
307-55-1	Perfluorododecanoic acid	0.014	U	0.16	0.176	110	72-134
72629-94-8	Perfluorotridecanoic acid	0.014	U	0.16	0.163	102	65-144
376-06-7	Perfluorotetradecanoic acid	0.014	U	0.16	0.180	113	71-132
375-73-5	Perfluorobutanesulfonic acid	0.014	U	0.16	0.184	115	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.014	U	0.16	0.191	119	71-127
355-46-4	Perfluorohexanesulfonic acid	0.014	U	0.16	0.190	119	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.014	U	0.16	0.183	114	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.014	U	0.16	0.191	119	65-140
68259-12-1	Perfluorononanesulfonic acid	0.014	U	0.16	0.193	121	69-127
335-77-3	Perfluorodecanesulfonic acid	0.014	U	0.16	0.156	98	53-142
754-91-6	PFOSA	0.066	U [c]	0.16	0.176	110	67-137
2355-31-9	MeFOSAA	0.027	U	0.16	0.170	106	65-136
2991-50-6	EtFOSAA	0.027	U	0.16	0.190	119	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.027	U	0.16	0.183	114	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.027	U	0.16	0.168	105	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.027	U	0.16	0.185	116	67-138
13252-13-6	HFPO-DA (GenX)	0.027	U	0.16	0.224	140	60-140

CAS No.	ID Standard Recoveries	MS	FA96632-1	FA96632-1	Limits
	13C4-PFBA	63%	58%	72%	50-150%
	13C5-PFPeA	70%	66%	75%	50-150%
	13C5-PFHxA	82%	72%	80%	50-150%
	13C4-PFHpA	83%	77%	76%	50-150%
	13C8-PFOA	87%	73%	77%	50-150%
	13C9-PFNA	90%	67%	65%	50-150%
	13C6-PFDA	94%	70%	63%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-MS	6Q2037.D	1.7	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-1 [a]	6Q2035.D	1.7	07/13/22	JB	07/06/22	OP91949	S6Q38
FA96632-1 [b]	6Q2036.D	8.3	07/13/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	ID Standard Recoveries	MS	FA96632-1	FA96632-1	Limits
	13C7-PFUnDA	97%	63%	64%	50-150%
	13C2-PFDoDA	88%	70%	71%	50-150%
	13C2-PFTeDA	66%	62%	56%	50-150%
	13C3-PFBS	85%	77%	84%	50-150%
	13C3-PFHxS	93%	76%	83%	50-150%
	13C8-PFOS	95%	64%	66%	50-150%
	13C8-FOSA	68%	31%* [d]	35%*	50-150%
	d3-MeFOSAA	101%	68%	68%	50-150%
	d5-EtFOSAA	92%	67%	71%	50-150%
	13C2-4:2FTS	93%	77%	77%	50-150%
	13C2-6:2FTS	104%	81%	78%	50-150%
	13C2-8:2FTS	98%	69%	67%	50-150%
	13C3-HFPO-DA		70%	74%	50-150%

(a) Insufficient sample for re-extraction.
(b) Dilution required due to matrix interference (ID recovery standard failure).
(c) Result is from Run #2.
(d) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-MS	6Q1898.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
OP91950-MSD	6Q1899.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
FA96619-10	6Q1900.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
FA96619-10 [a]	6Q2082.D	5	07/14/22	JB	07/06/22	OP91950	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	Compound	FA96619-10 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.016	U	0.16	0.180	113	0.16	0.172	108	5	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0080	U	0.16	0.186	116	0.16	0.185	116	1	72-129/30
307-24-4	Perfluorohexanoic acid	0.0080	U	0.16	0.179	112	0.16	0.179	112	0	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0080	U	0.16	0.180	113	0.16	0.187	117	4	72-130/30
335-67-1	Perfluorooctanoic acid	0.0080	U	0.16	0.182	114	0.16	0.184	115	1	71-133/30
375-95-1	Perfluorononanoic acid	0.0080	U	0.16	0.171	107	0.16	0.182	114	6	69-130/30
335-76-2	Perfluorodecanoic acid	0.0080	U	0.16	0.191	119	0.16	0.179	112	6	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.16	0.166	104	0.16	0.170	106	2	69-133/30
307-55-1	Perfluorododecanoic acid	0.040	U [b]	0.16	0.180	113	0.16	0.174	109	3	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.040	U [b]	0.16	0.173	108	0.16	0.175	109	1	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.040	U [b]	0.16	0.191	119	0.16	0.190	119	1	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	0.16	0.182	114	0.16	0.181	113	1	72-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	0.16	0.183	114	0.16	0.186	116	2	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	0.16	0.185	116	0.16	0.188	118	2	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	0.16	0.193	121	0.16	0.188	118	3	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0080	U	0.16	0.187	117	0.16	0.183	114	2	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.16	0.183	114	0.16	0.178	111	3	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.16	0.162	101	0.16	0.158	99	3	53-142/30
754-91-6	PFOSA	0.0080	U	0.16	0.181	113	0.16	0.185	116	2	67-137/30
2355-31-9	MeFOSAA	0.016	U	0.16	0.187	117	0.16	0.182	114	3	65-136/30
2991-50-6	EtFOSAA	0.080	U [b]	0.16	0.193	121	0.16	0.197	123	2	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.16	0.190	119	0.16	0.188	118	1	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.16	0.180	113	0.16	0.171	107	5	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.080	U [b]	0.16	0.193	121	0.16	0.186	116	4	67-138/30
13252-13-6	HFPO-DA (GenX)	0.016	U	0.16	0.191	119	0.16	0.195	122	2	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA96619-10	FA96619-10	Limits
	13C4-PFBA	60%	64%			50-150%
	13C5-PFPeA	62%	63%			50-150%
	13C5-PFHxA	63%	64%	54%	58%	50-150%
	13C4-PFHpA	64%	64%	52%	53%	50-150%
	13C8-PFOA	64%	65%	53%	57%	50-150%
	13C9-PFNA	64%	66%	52%	56%	50-150%
	13C6-PFDA	57%	64%	52%	55%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91950-MS	6Q1898.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
OP91950-MSD	6Q1899.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
FA96619-10	6Q1900.D	1	07/08/22	JB	07/06/22	OP91950	S6Q34
FA96619-10 [a]	6Q2082.D	5	07/14/22	JB	07/06/22	OP91950	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-8

CAS No.	ID Standard Recoveries	MS	MSD	FA96619-10	FA96619-10	Limits
	13C7-PFUnDA	61%	64%	50%	56%	50-150%
	13C2-PFDoDA	59%	64%	48%* [c]	52%	50-150%
	13C2-PFTeDA	55%	62%	39%* [c]	43%* [c]	50-150%
	13C3-PFBS	63%	65%	53%	56%	50-150%
	13C3-PFHxS	62%	63%	52%	57%	50-150%
	13C8-PFOS	61%	64%	52%	53%	50-150%
	13C8-FOSA	67%	66%			50-150%
	d3-MeFOSAA	57%	59%	50%	58%	50-150%
	d5-EtFOSAA	57%	58%	49%* [c]	56%	50-150%
	13C2-4:2FTS	62%	64%			50-150%
	13C2-6:2FTS	64%	67%	51%	52%	50-150%
	13C2-8:2FTS	64%	65%	49%* [c]	52%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-DUP [a]	6Q2043.D	5	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-2 [b]	6Q2038.D	1	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-2 [c]	6Q2039.D	5	07/14/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	Compound	FA96632-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.080 U [d]		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.040 U [d]		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0080 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0080 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0080 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0080 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.040 U [d]		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0080 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0080 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0080 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0080 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0080 U		ND		nc	30
68259-12-1	Perfluorononanesulfonic acid	0.0080 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080 U		ND		nc	30
754-91-6	PFOSA	0.040 U [d]		ND		nc	30
2355-31-9	MeFOSAA	0.016 U		ND		nc	30
2991-50-6	EtFOSAA	0.016 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA96632-2	FA96632-2	Limits
	13C4-PFBA	60%	42%* [e]	57%	50-150%
	13C5-PFPeA	63%	48%* [e]	61%	50-150%
	13C5-PFHxA	66%	54%	64%	50-150%
	13C4-PFHpA	68%	58%	65%	50-150%
	13C8-PFOA	70%	62%	68%	50-150%
	13C9-PFNA	70%	62%	68%	50-150%
	13C6-PFDA	68%	66%	67%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA96633
Account: HGLFLMI Hydrogeologic, Inc.
Project: NASA TQN 21- SLF PFAS Assessment

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP91949-DUP [a]	6Q2043.D	5	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-2 [b]	6Q2038.D	1	07/14/22	JB	07/06/22	OP91949	S6Q38
FA96632-2 [c]	6Q2039.D	5	07/14/22	JB	07/06/22	OP91949	S6Q38

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA96633-1, FA96633-2, FA96633-3, FA96633-4, FA96633-5, FA96633-6, FA96633-7

CAS No.	ID Standard Recoveries	DUP	FA96632-2	FA96632-2	Limits
	13C7-PFUnDA	65%	65%	68%	50-150%
	13C2-PFDoDA	61%	58%	60%	50-150%
	13C2-PFTeDA	54%	45%* [e]	48%* [e]	50-150%
	13C3-PFBS	67%	56%	64%	50-150%
	13C3-PFHxS	71%	62%	69%	50-150%
	13C8-PFOS	67%	63%	68%	50-150%
	13C8-FOSA	49%* [f]	47%* [e]	52%	50-150%
	d3-MeFOSAA	67%	68%	69%	50-150%
	d5-EtFOSAA	65%	64%	67%	50-150%
	13C2-4:2FTS	63%	55%	60%	50-150%
	13C2-6:2FTS	70%	63%	66%	50-150%
	13C2-8:2FTS	66%	61%	65%	50-150%
	13C3-HFPO-DA		54%	66%	50-150%

(a) Dilution required due to matrix interference.
(b) Insufficient sample for re-extraction.
(c) Dilution required due to matrix interference (ID recovery standard failure).
(d) Result is from Run #2.
(e) Outside control limits.
(f) Associated ID Standard outside control limits due to matrix interference.

* = Outside of Control Limits.

The results set forth herein are provided by SGS North America Inc.

e-Hardcopy 2.0
Automated Report

Technical Report for

Hydrogeologic, Inc.

SWMU 114 Fire Station 2; KSC, FL

NS1010.01.05

SGS Job Number: FA98286

Sampling Dates: 08/16/22 - 08/19/22

Report to:

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Merritt Island, FL 32953
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ATTN: Denise Rivers

Total number of pages in report: **3233**

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Norm Farmer
Technical Director

Client Service contact: Ariel Hartney 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(ANAB L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AL, AK, AR, CT, IA, KY, MA, MI. MS, ND, NH, NV, OK, OR, IL, UT, VT, WA, WI, WV

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SGS North America Inc.

Sample Summary

Hydrogeologic, Inc.

Job No: FA98286

SWMU 114 Fire Station 2; KSC, FL
Project No: NS1010.01.05

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA98286-1	08/16/22	10:34	JVDL	08/19/22	AQ	Ground Water	S114-MW0017S-009.0-20220816
FA98286-2	08/16/22	10:34	JVDL	08/19/22	AQ	Ground Water	S114-FD-20220816-01
FA98286-3	08/16/22	11:13	JVDL	08/19/22	AQ	Ground Water	S114-MW0017I-030.0-20220816
FA98286-4	08/16/22	12:07	JVDL	08/19/22	AQ	Ground Water	S114-MW0019S-009.0-20220816
FA98286-5	08/16/22	12:41	JVDL	08/19/22	AQ	Ground Water	S114-MW0019I-030.0-20220816
FA98286-6	08/16/22	13:30	JVDL	08/19/22	AQ	Ground Water	S114-MW0020I-030.0-20220816
FA98286-7	08/16/22	14:03	JVDL	08/19/22	AQ	Ground Water	S114-MW0020S-008.0-20220816
FA98286-8	08/16/22	14:50	JVDL	08/19/22	AQ	Field Blank Water	S114-FB-20220816-01
FA98286-9	08/16/22	14:55	JVDL	08/19/22	AQ	Equipment Blank	S114-EB-20220816-01
FA98286-10	08/17/22	13:07	JVDL	08/19/22	AQ	Ground Water	S114-MW0018S-010.0-20220817
FA98286-11	08/17/22	13:50	JVDL	08/19/22	AQ	Ground Water	S114-MW0018I-030.0-20220817
FA98286-12	08/17/22	14:05	JVDL	08/19/22	AQ	Field Blank Water	S114-FB-20220817-01
FA98286-13	08/17/22	14:10	JVDL	08/19/22	AQ	Equipment Blank	S114-EB-20220817-01

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA98286

SWMU 114 Fire Station 2; KSC, FL
Project No: NS1010.01.05

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA98286-14	08/17/22	13:22	JVDL	08/19/22	AQ	Ground Water	S114-MW0001S-007.0-20220817
FA98286-15	08/17/22	14:05	JVDL	08/19/22	AQ	Ground Water	S114-MW0001I-003.0-20220817
FA98286-16	08/17/22	14:05	JVDL	08/19/22	AQ	Ground Water	S114-FD-20220817-01
FA98286-17	08/18/22	09:57	JVDL	08/19/22	AQ	Ground Water	S114-MW0015S-008.0-20220818
FA98286-18	08/18/22	10:39	JVDL	08/19/22	AQ	Ground Water	S114-MW0015I-030.0-20220818
FA98286-19	08/18/22	10:39	JVDL	08/19/22	AQ	Ground Water	S114-FD-20220818-01
FA98286-20	08/18/22	11:47	JVDL	08/19/22	AQ	Ground Water	S114-MW0012S-007.0-20220818
FA98286-21	08/18/22	12:30	JVDL	08/19/22	AQ	Ground Water	S114-MW0012I-030.0-20220818
FA98286-22	08/18/22	09:55	JVDL	08/19/22	AQ	Ground Water	S114-MW0002S-009.0-20220818
FA98286-23	08/18/22	10:35	JVDL	08/19/22	AQ	Ground Water	S114-MW0002I-029.0-20220818
FA98286-24	08/18/22	11:35	JVDL	08/19/22	AQ	Ground Water	S114-MW0016I-030.0-20220818
FA98286-25	08/18/22	12:15	JVDL	08/19/22	AQ	Ground Water	S114-MW0016S-010.0-20220818
FA98286-26	08/18/22	13:12	JVDL	08/19/22	AQ	Ground Water	S114-MW0003S-008.0-20220818

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA98286

SWMU 114 Fire Station 2; KSC, FL
Project No: NS1010.01.05

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA98286-27	08/18/22	13:58	JVDL	08/19/22	AQ	Ground Water	S114-MW0003I-030.0-20220818
FA98286-28	08/18/22	15:00	JVDL	08/19/22	AQ	Ground Water	S114-MW0004I-029.0-20220818
FA98286-29	08/18/22	15:10	JVDL	08/19/22	AQ	Field Blank Water	S114-FB-20220818-01
FA98286-30	08/18/22	15:15	JVDL	08/19/22	AQ	Equipment Blank	S114-EB-20220818-01
FA98286-31	08/19/22	09:30	JVDL	08/19/22	AQ	Ground Water	S114-MW0005S-008.0-20220819
FA98286-32	08/19/22	10:22	JVDL	08/19/22	AQ	Ground Water	S114-MW0005I-029.0-20220819
FA98286-33	08/19/22	11:15	JVDL	08/19/22	AQ	Ground Water	S114-MW0006S-007.0-20220819
FA98286-34	08/19/22	11:15	JVDL	08/19/22	AQ	Ground Water	S114-FD-20220819-01
FA98286-35	08/19/22	11:52	JVDL	08/19/22	AQ	Ground Water	S114-MW0006I-030.0-20220819
FA98286-36	08/19/22	12:40	JVDL	08/19/22	AQ	Ground Water	S114-MW0007S-009.0-20220819
FA98286-37	08/19/22	13:05	JVDL	08/19/22	AQ	Ground Water	S114-MW0007I-029.0-20220819
FA98286-38	08/19/22	14:15	JVDL	08/19/22	AQ	Ground Water	S114-MW0008S-008.0-20220819
FA98286-39	08/18/22	14:01	JVDL	08/19/22	AQ	Ground Water	S114-MW0013S-007.0-20220818

Sample Summary
(continued)

Hydrogeologic, Inc.

Job No: FA98286

SWMU 114 Fire Station 2; KSC, FL
Project No: NS1010.01.05

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
FA98286-40	08/18/22	14:40	JVDL	08/19/22	AQ	Ground Water	S114-MW0013I-030.0-20220818
FA98286-41	08/19/22	09:11	JVDL	08/19/22	AQ	Ground Water	S114-MW0010S-010.0-20220819
FA98286-42	08/19/22	09:50	JVDL	08/19/22	AQ	Ground Water	S114-MW0010I-029.0-20220819
FA98286-43	08/19/22	10:50	JVDL	08/19/22	AQ	Ground Water	S114-MW0009S-008.0-20220819
FA98286-44	08/19/22	11:38	JVDL	08/19/22	AQ	Ground Water	S114-MW0009I-030.0-20220819
FA98286-45	08/19/22	12:37	JVDL	08/19/22	AQ	Ground Water	S114-MW0011I-030.0-20220819
FA98286-46	08/19/22	13:18	JVDL	08/19/22	AQ	Ground Water	S114-MW0011S-010.0-20220819
FA98286-47	08/19/22	14:09	JVDL	08/19/22	AQ	Ground Water	S114-MW0008I-029.0-20220819
FA98286-48	08/19/22	14:20	JVDL	08/19/22	AQ	Field Blank Water	S114-FB-20220819-01
FA98286-49	08/19/22	14:25	JVDL	08/19/22	AQ	Equipment Blank	S114-EB-20220819-01

SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Hydrogeologic, Inc. **Job No:** FA98286

Site: SWMU 114 Fire Station 2; KSC, FL **Report Date:** 9/22/2022 3:35:56 PM

On 08/19/2022, 45 Sample(s), 0 Trip Blank(s) and 4 Field Blank(s) were received at SGS North America Inc - Orlando. at a maximum corrected temperature of 4.8 C. Samples were intact and chemically preserved, unless noted below. A SGS North America Inc. - Orlando Job Number of FA98286 was assigned to the project.

Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section. Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP92762

Sample(s) FA98281-2MS, FA98281-2MSD were used as the QC samples indicated.

Sample(s) FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-46, FA98286-47 have surrogates outside control limits.

FA98286-41 for 13C2-4:2FTS: Outside control limits.

FA98286-41 for 13C2-PFTeDA: Outside control limits.

FA98286-41 for 13C4-PFBA: Outside control limits.

FA98286-41 for 13C5-PFHxA: Outside control limits.

FA98286-41 for 13C5-PFPeA: Outside control limits.

FA98286-41 for 13C8-FOSA: Outside control limits.

FA98286-41 for 13C8-FOSA: Outside control limits.

FA98286-41 for PFOSA: Associated ID Standard outside control limits.

FA98286-42 for 13C2-PFTeDA: Outside control limits.

FA98286-42 for 13C2-PFTeDA: Outside control limits.

FA98286-42 for 13C4-PFBA: Outside control limits.

FA98286-42 for 13C8-FOSA: Outside control limits.

FA98286-42 for 13C8-FOSA: Outside control limits.

FA98286-42 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA98286-42 for PFOSA: Associated ID Standard outside control limits.

FA98286-43 for 13C2-PFDoDA: Outside control limits.

FA98286-43 for 13C2-PFTeDA: Outside control limits.

FA98286-43 for 13C8-FOSA: Outside control limits.

FA98286-43 for 13C8-FOSA: Outside control limits.

FA98286-43 for PFOSA: Associated ID Standard outside control limits.

FA98286-44 for 13C4-PFBA: Outside control limits.

FA98286-44 for 13C5-PFPeA: Outside control limits.

FA98286-44 for 13C8-FOSA: Outside control limits.

FA98286-44 for Perfluorobutanoic acid: Associated ID Standard outside control limits.

FA98286-44: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-46 for 13C8-FOSA: Outside control limits.

FA98286-46: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-47 for 13C2-4:2FTS: Outside control limits.

FA98286-47 for 13C2-PFTeDA: Outside control limits.

FA98286-47 for 13C3-HFPO-DA: Outside control limits.

FA98286-47 for 13C3-PFBS: Outside control limits.

FA98286-47 for 13C4-PFBA: Outside control limits.

FA98286-47 for 13C4-PFBA: Outside control limits.

FA98286-47 for 13C4-PFHpA: Outside control limits.

FA98286-47 for 13C5-PFHxA: Outside control limits.

FA98286-47 for 13C5-PFPeA: Outside control limits.

FA98286-47 for 13C8-FOSA: Outside control limits.

FA98286-47 for 13C8-FOSA: Outside control limits.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP92762

FA98286-47 for HFPO-DA (GenX): Associated ID Standard outside control limits.

FA98286-47 for Perfluorobutanoic acid: Associated ID Standard outside control limits.

FA98286-47 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA98286-47 for PFOSA: Associated ID Standard outside control limits.

Matrix: AQ **Batch ID:** OP92763

Sample(s) FA98286-1MS, FA98286-2DUP were used as the QC samples indicated.

Sample(s) FA98286-10, FA98286-11, FA98286-20, FA98286-4, FA98286-5, FA98286-7 have surrogates outside control limits.

FA98286-4 for 13C2-6:2FTS: Outside control limits.

FA98286-4 for 13C2-6:2FTS: Outside control limits.

FA98286-4 for 13C3-HFPO-DA: Outside control limits.

FA98286-4 for 13C4-PFBA: Outside control limits.

FA98286-4 for 13C5-PFHxA: Outside control limits.

FA98286-4 for 13C5-PFPeA: Outside control limits.

FA98286-4 for 13C8-FOSA: Outside control limits.

FA98286-4 for HFPO-DA (GenX): Associated ID Standard outside control limits.

FA98286-5 for 13C2-6:2FTS: Outside control limits.

FA98286-5 for 13C2-6:2FTS: Outside control limits.

FA98286-5 for 13C2-6:2FTS: Outside control limits.

FA98286-5 for 13C8-FOSA: Outside control limits.

FA98286-5 for 13C8-FOSA: Outside control limits.

FA98286-5 for 13C8-FOSA: Outside control limits.

FA98286-5 for PFOSA: Associated ID Standard outside control limits due to matrix interference.

FA98286-7 for 13C2-6:2FTS: Outside control limits.

FA98286-7 for 13C2-6:2FTS: Outside control limits.

FA98286-7 for 13C8-FOSA: Outside control limits.

FA98286-7 for 13C8-FOSA: Outside control limits.

FA98286-8: Confirmation run.

FA98286-10 for 13C8-FOSA: Outside control limits.

FA98286-10 for PFOSA: Associated ID Standard outside control limits due to matrix interference.

FA98286-10: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-11 for 13C8-FOSA: Outside control limits.

FA98286-11 for PFOSA: Associated ID Standard outside control limits due to matrix interference.

FA98286-11: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-20 for 13C2-PFTeDA: Outside control limits.

FA98286-20 for 13C4-PFBA: Outside control limits.

FA98286-20 for 13C5-PFPeA: Outside control limits.

FA98286-20 for Perfluorobutanoic acid: Associated ID Standard outside control limits.

FA98286-20 for Perfluoropentanoic acid: Associated ID Standard outside control limits.

FA98286-20 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits due to matrix interference.

FA98286-20: Dilution required due to matrix interference (ID recovery standard failure).

Matrix: AQ **Batch ID:** OP92764

Sample(s) FA98286-21MS, FA98286-22DUP, FA98286-21MS were used as the QC samples indicated.

Sample(s) FA98286-21, FA98286-25, FA98286-31, FA98286-33, FA98286-34, FA98286-35, FA98286-37, FA98286-39 have surrogates outside control limits.

FA98286-21 for 13C8-FOSA: Outside control limits.

FA98286-21: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-25 for 13C2-PFDoDA: Outside control limits.

FA98286-25 for 13C2-PFDoDA: Outside control limits.

FA98286-25 for 13C2-PFTeDA: Outside control limits.

FA98286-25 for 13C2-PFTeDA: Outside control limits.

FA98286-25 for 13C4-PFBA: Outside control limits.

FA98286-25 for Perfluorododecanoic acid: Associated ID Standard outside control limits.

FA98286-25 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

MS Semi-volatiles By Method EPA 537M QSM5.3 B-15

Matrix: AQ **Batch ID:** OP92764

FA98286-25 for Perfluorotridecanoic acid: Associated ID Standard outside control limits.

FA98286-31 for 13C8-FOSA: Outside control limits.

FA98286-31: Dilution required due to matrix interference (ID recovery standard failure).

FA98286-33 for 13C4-PFBA: Outside control limits.

FA98286-34 for 13C8-FOSA: Outside control limits.

FA98286-35 for 13C8-FOSA: Outside control limits.

FA98286-35 for 13C8-FOSA: Outside control limits.

FA98286-35 for PFOSA: Associated ID Standard outside control limits.

FA98286-37 for 13C4-PFBA: Outside control limits.

FA98286-39 for 13C2-PFTeDA: Outside control limits.

FA98286-39 for 13C2-PFTeDA: Outside control limits.

FA98286-39 for 13C8-FOSA: Outside control limits.

FA98286-39 for 13C8-FOSA: Outside control limits.

FA98286-39 for Perfluorotetradecanoic acid: Associated ID Standard outside control limits.

FA98286-39 for PFOSA: Associated ID Standard outside control limits.

Matrix: AQ **Batch ID:** OP92794

Sample(s) FA98296-3MS, FA98296-7DUPwere used as the QC samples indicated.

Matrix Spike Recovery(s) for Perfluoroheptanesulfonic acid, Perfluorononanesulfonic acid, Perfluorooctanesulfonic acid, PFOSA are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Sample(s) FA98286-48 have surrogates outside control limits.

FA98286-48: Dilution required due to matrix interference (ID recovery standard failure).

OP92794-MS for 13C9-PFNA: Outside control limits.

OP92794-MS for 13C8-PFOS: Outside control limits.

OP92794-MS for 13C8-FOSA: Outside control limits.

OP92794-MS for 13C2-PFTeDA: Outside control limits.

OP92794-MB for 13C2-PFTeDA: Outside control limits.

FA98286-48 for HFPO-DA (GenX): Associated ID Standard outside control limits.

SGS North America Inc. - Orlando certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting the Quality System precision, accuracy and completeness objectives except as noted. Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria. SGS North America Inc.- Orlando is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety.

Narrative prepared by:

_____

Kim Benham, Client Services *(Signature on File)*

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA98286-1	**S114-MW0017S-009.0-20220816**					
Perfluorooctanesulfonic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-2	**S114-FD-20220816-01**					
Perfluorooctanesulfonic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-3	**S114-MW0017I-030.0-20220816**					
No hits reported in this sample.						
FA98286-4	**S114-MW0019S-009.0-20220816**					
Perfluorobutanoic acid		2.72	0.64	0.32	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		9.95	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		9.42	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		1.93	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		1.88	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0402	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		3.86	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		4.34	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		21.7	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.615	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		2.88	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
4:2 Fluorotelomer sulfonate		0.154	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		22.8	4.0	2.0	ug/l	EPA 537M QSM5.3 B-15
FA98286-5	**S114-MW0019I-030.0-20220816**					
Perfluorobutanoic acid		0.613	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		2.47	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		1.93	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.625	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.615	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0961	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0036 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		1.39	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		1.43	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		8.41	0.16	0.080	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.607	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		13.4	0.16	0.080	ug/l	EPA 537M QSM5.3 B-15
4:2 Fluorotelomer sulfonate		0.0214	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		6.02	4.0	2.0	ug/l	EPA 537M QSM5.3 B-15
8:2 Fluorotelomer sulfonate		0.0540	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA98286-6	**S114-MW0020I-030.0-20220816**					
Perfluorobutanoic acid		0.0423	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0651	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.109	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0352	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0550	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0022 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0554	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.120	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		1.93	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0471	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.227	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0287	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA98286-7	**S114-MW0020S-008.0-20220816**					
Perfluorobutanoic acid		0.772	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		3.14	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		1.77	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.780	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.191	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0243	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0377	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.148	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		3.54	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.248	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		5.86	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		4.56	4.0	2.0	ug/l	EPA 537M QSM5.3 B-15
FA98286-8	**S114-FB-20220816-01**					
No hits reported in this sample.						
FA98286-9	**S114-EB-20220816-01**					
No hits reported in this sample.						
FA98286-10	**S114-MW0018S-010.0-20220817**					
Perfluorobutanoic acid		0.0208	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0256	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0233	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0140	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanoic acid		0.0071 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0036 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0051 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0490	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0665	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA98286-11	**S114-MW0018I-030.0-20220817**					
Perfluorohexanesulfonic acid		0.0050 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0044 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
FA98286-12	**S114-FB-20220817-01**					
No hits reported in this sample.						
FA98286-13	**S114-EB-20220817-01**					
No hits reported in this sample.						
FA98286-14	**S114-MW0001S-007.0-20220817**					
Perfluoropentanoic acid		0.0038 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0068 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0026 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0046 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0054 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0290	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-15	**S114-MW0001I-003.0-20220817**					
Perfluoropentanoic acid		0.0041 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0081	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0024 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0030 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0055 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0064 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0339	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0077 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-16	**S114-FD-20220817-01**					
Perfluorobutanoic acid		0.0041 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0051 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0083	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0024 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluorooctanoic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0052 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0063 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0346	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0073 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-17	**S114-MW0015S-008.0-20220818**					
Perfluorobutanoic acid		0.0657	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.157	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.263	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0790	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.112	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0205	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0544	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0843	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		3.56	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.477	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		28.0	0.32	0.16	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0055 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA98286-18	**S114-MW0015I-030.0-20220818**					
Perfluorobutanoic acid		0.0227	0.018	0.0091	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0498	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0617	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0186	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0149	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0230	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0403	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.314	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0294	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.393	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0269	0.018	0.0091	ug/l	EPA 537M QSM5.3 B-15
FA98286-19	**S114-FD-20220818-01**					
Perfluorobutanoic acid		0.0211	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0402	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0567	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0178	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0138	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0205	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0374	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.295	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanesulfonic acid		0.0258	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.309	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0247	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15

FA98286-20 S114-MW0012S-007.0-20220818

No hits reported in this sample.

FA98286-21 S114-MW0012I-030.0-20220818

No hits reported in this sample.

FA98286-22 S114-MW0002S-009.0-20220818

Perfluorobutanoic acid		0.0279	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0097	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0080	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0035 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0031 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0049 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0354	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0037 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.117	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

FA98286-23 S114-MW0002I-029.0-20220818

No hits reported in this sample.

FA98286-24 S114-MW0016I-030.0-20220818

No hits reported in this sample.

FA98286-25 S114-MW0016S-010.0-20220818

Perfluorobutanoic acid		0.211	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0179	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0135	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0119	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0120	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0076 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0030 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0104	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0052 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA98286-26	**S114-MW0003S-008.0-20220818**					
No hits reported in this sample.						
FA98286-27	**S114-MW0003I-030.0-20220818**					
No hits reported in this sample.						
FA98286-28	**S114-MW0004I-029.0-20220818**					
No hits reported in this sample.						
FA98286-29	**S114-FB-20220818-01**					
No hits reported in this sample.						
FA98286-30	**S114-EB-20220818-01**					
No hits reported in this sample.						
FA98286-31	**S114-MW0005S-008.0-20220819**					
Perfluorobutanoic acid		0.0668	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0049 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-32	**S114-MW0005I-029.0-20220819**					
No hits reported in this sample.						
FA98286-33	**S114-MW0006S-007.0-20220819**					
Perfluorobutanoic acid		0.0681 J	0.080	0.040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0183	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0516	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0235	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0350	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0234	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0399	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.765	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0800	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		1.55	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
FA98286-34	**S114-FD-20220819-01**					
Perfluorobutanoic acid		0.0755	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoropentanoic acid		0.0202	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0559	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0260	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0380	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0241	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0422	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.809	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0931	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		1.70	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
FA98286-35	**S114-MW0006I-030.0-20220819**					
No hits reported in this sample.						
FA98286-36	**S114-MW0007S-009.0-20220819**					
Perfluorobutanoic acid		0.0729	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.155	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.235	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.127	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.126	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorononanoic acid		0.0281	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorodecanoic acid		0.0048 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0477	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0827	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		1.71	0.33	0.17	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.233	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		16.3	0.33	0.17	ug/l	EPA 537M QSM5.3 B-15
PFOSA		0.0053 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.204	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
FA98286-37	**S114-MW0007I-029.0-20220819**					
No hits reported in this sample.						
FA98286-38	**S114-MW0008S-008.0-20220819**					
Perfluorobutanoic acid		0.0313	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0342	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0957	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0247	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0329	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0447	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0633	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.611	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
Perfluoroheptanesulfonic acid		0.0476	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		1.74	0.040	0.020	ug/l	EPA 537M QSM5.3 B-15
6:2 Fluorotelomer sulfonate		0.0042 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
FA98286-39	**S114-MW0013S-007.0-20220818**					
Perfluorobutanoic acid		0.0427	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0124	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0046 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0030 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0034 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0030 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0043 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0053 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-40	**S114-MW0013I-030.0-20220818**					
Perfluorobutanoic acid		0.0066 J	0.016	0.0080	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0028 J	0.0080	0.0040	ug/l	EPA 537M QSM5.3 B-15
FA98286-41	**S114-MW0010S-010.0-20220819**					
No hits reported in this sample.						
FA98286-42	**S114-MW0010I-029.0-20220819**					
Perfluorobutanoic acid		0.0263	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0063 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0132	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0034 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0063 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0069 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0099	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.135	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0049 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.221	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA98286-43	**S114-MW0009S-008.0-20220819**					
Perfluorooctanoic acid		0.0027 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0061 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0055 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15

Summary of Hits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	LOQ	LOD	Units	Method
FA98286-44	**S114-MW0009I-030.0-20220819**					
Perfluorohexanoic acid		0.0154	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0035 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0053 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0143	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0174	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.116	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0044 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.115	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
FA98286-45	**S114-MW0011I-030.0-20220819**					
Perfluorobutanoic acid		0.0187	0.018	0.0091	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0293	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0327	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanoic acid		0.0116	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0098	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorobutanesulfonic acid		0.0157	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanesulfonic acid		0.0190	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.140	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluoroheptanesulfonic acid		0.0068 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.196	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
FA98286-46	**S114-MW0011S-010.0-20220819**					
Perfluorobutanoic acid		0.0144 J	0.017	0.0083	ug/l	EPA 537M QSM5.3 B-15
Perfluoropentanoic acid		0.0052 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanoic acid		0.0041 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanoic acid		0.0023 J	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorohexanesulfonic acid		0.0130	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
Perfluorooctanesulfonic acid		0.0165	0.0083	0.0042	ug/l	EPA 537M QSM5.3 B-15
FA98286-47	**S114-MW0008I-029.0-20220819**					
Perfluorohexanesulfonic acid		0.0037 J	0.0091	0.0045	ug/l	EPA 537M QSM5.3 B-15
FA98286-48	**S114-FB-20220819-01**					
No hits reported in this sample.						
FA98286-49	**S114-EB-20220819-01**					
No hits reported in this sample.						

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0017S-009.0-20220816		
Lab Sample ID:	FA98286-1	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4632.D	1	09/15/22 05:51	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0017S-009.0-20220816
Lab Sample ID: FA98286-1 **Date Sampled:** 08/16/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	81%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	59%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	86%		50-150%
	d5-EtFOSAA	73%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	79%		50-150%
	13C2-8:2FTS	77%		50-150%
	13C3-HFPO-DA	70%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FD-20220816-01
Lab Sample ID: FA98286-2
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/16/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4634.D	1	09/15/22 06:22	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220816-01
Lab Sample ID: FA98286-2 **Date Sampled:** 08/16/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	69%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	78%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	62%		50-150%
	13C2-PFDoDA	60%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	73%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	57%		50-150%
	d3-MeFOSAA	82%		50-150%
	d5-EtFOSAA	71%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	78%		50-150%
	13C2-8:2FTS	72%		50-150%
	13C3-HFPO-DA	67%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0017I-030.0-20220816		
Lab Sample ID:	FA98286-3	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4636.D	1	09/15/22 06:53	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0017I-030.0-20220816
Lab Sample ID: FA98286-3 **Date Sampled:** 08/16/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%		50-150%
	13C5-PFPeA	64%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	81%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	78%		50-150%
	13C7-PFUnDA	69%		50-150%
	13C2-PFDoDA	69%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	76%		50-150%
	13C8-FOSA	61%		50-150%
	d3-MeFOSAA	90%		50-150%
	d5-EtFOSAA	80%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	64%		50-150%

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0019S-009.0-20220816		
Lab Sample ID:	FA98286-4	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4637.D	1	09/15/22 07:08	AL	08/26/22 10:35	OP92763	S5Q71
Run #2	5Q4914.D	40	09/19/22 18:41	AL	08/26/22 10:35	OP92763	S5Q74
Run #3	5Q4714.D	250	09/16/22 04:52	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	2.72 [a]	0.64	0.32	0.16	ug/l	
2706-90-3	Perfluoropentanoic acid	9.95 [a]	0.32	0.16	0.080	ug/l	
307-24-4	Perfluorohexanoic acid	9.42 [a]	0.32	0.16	0.080	ug/l	
375-85-9	Perfluoroheptanoic acid	1.93 [a]	0.32	0.16	0.080	ug/l	
335-67-1	Perfluorooctanoic acid	1.88 [a]	0.32	0.16	0.080	ug/l	
375-95-1	Perfluorononanoic acid	0.0402	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	3.86 [a]	0.32	0.16	0.080	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	4.34 [a]	0.32	0.16	0.080	ug/l	
355-46-4	Perfluorohexanesulfonic acid	21.7 [a]	0.32	0.16	0.080	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.615	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	2.88 [a]	0.32	0.16	0.080	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.16 U [a]	0.32	0.16	0.080	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0019S-009.0-20220816		
Lab Sample ID:	FA98286-4	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.154	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	22.8 [b]	4.0	2.0	1.0	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX) [c]	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	40% [d]	64%	124%	50-150%
	13C5-PFPeA	42% [d]	69%	121%	50-150%
	13C5-PFHxA	49% [d]	69%	122%	50-150%
	13C4-PFHpA	50%	71%	123%	50-150%
	13C8-PFOA	56%	69%	123%	50-150%
	13C9-PFNA	76%	72%	124%	50-150%
	13C6-PFDA	75%	72%	124%	50-150%
	13C7-PFUnDA	69%	66%	122%	50-150%
	13C2-PFDoDA	70%	61%	127%	50-150%
	13C2-PFTeDA	69%	63%	127%	50-150%
	13C3-PFBS	50%	69%	122%	50-150%
	13C3-PFHxS	57%	82%	123%	50-150%
	13C8-PFOS	72%	72%	123%	50-150%
	13C8-FOSA	49% [d]	55%	123%	50-150%
	d3-MeFOSAA	87%	81%	136%	50-150%
	d5-EtFOSAA	79%	80%	136%	50-150%
	13C2-4:2FTS	54%	69%	113%	50-150%
	13C2-6:2FTS	895% [d]	1195% [d]	119%	50-150%
	13C2-8:2FTS	76%	72%	115%	50-150%
	13C3-HFPO-DA	49% [d]	73%	110%	50-150%

(a) Result is from Run# 2
(b) Result is from Run# 3
(c) Associated ID Standard outside control limits.
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0019I-030.0-20220816		
Lab Sample ID:	FA98286-5	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4638.D	1	09/15/22 07:23	AL	08/26/22 10:35	OP92763	S5Q71
Run #2	5Q4716.D	5	09/16/22 05:23	AL	08/26/22 10:35	OP92763	S5Q72
Run #3	5Q4717.D	20	09/16/22 05:38	AL	08/26/22 10:35	OP92763	S5Q72
Run #4	5Q4718.D	250	09/16/22 05:54	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml
Run #4	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.613	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	2.47 [a]	0.040	0.020	0.010	ug/l	
307-24-4	Perfluorohexanoic acid	1.93 [a]	0.040	0.020	0.010	ug/l	
375-85-9	Perfluoroheptanoic acid	0.625	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.615	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0961	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0036	0.0080	0.0040	0.0020	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	1.39 [a]	0.040	0.020	0.010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	1.43 [a]	0.040	0.020	0.010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	8.41 [b]	0.16	0.080	0.040	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.607	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	13.4 [b]	0.16	0.080	0.040	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [c]	0.020 U [a]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0019I-030.0-20220816
Lab Sample ID: FA98286-5 **Date Sampled:** 08/16/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0214	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	6.02 [d]	4.0	2.0	1.0	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0540	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	55%	71%	69%	50-150%
	13C5-PFPeA	56%	70%	75%	50-150%
	13C5-PFHxA	67%	76%	81%	50-150%
	13C4-PFHpA	70%	78%	84%	50-150%
	13C8-PFOA	75%	80%	83%	50-150%
	13C9-PFNA	76%	81%	85%	50-150%
	13C6-PFDA	81%	80%	79%	50-150%
	13C7-PFUnDA	69%	68%	69%	50-150%
	13C2-PFDoDA	65%	64%	64%	50-150%
	13C2-PFTeDA	63%	58%	60%	50-150%
	13C3-PFBS	64%	74%	73%	50-150%
	13C3-PFHxS	73%	81%	80%	50-150%
	13C8-PFOS	70%	79%	87%	50-150%
	13C8-FOSA	38% [e]	46% [e]	47% [e]	50-150%
	d3-MeFOSAA	89%	83%	83%	50-150%
	d5-EtFOSAA	80%	75%	75%	50-150%
	13C2-4:2FTS	66%	73%	73%	50-150%
	13C2-6:2FTS	352% [e]	375% [e]	392% [e]	50-150%
	13C2-8:2FTS	80%	77%	79%	50-150%
	13C3-HFPO-DA	63%	67%	71%	50-150%

(a) Result is from Run# 2
(b) Result is from Run# 3
(c) Associated ID Standard outside control limits due to matrix interference.
(d) Result is from Run# 4
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0020I-030.0-20220816		
Lab Sample ID:	FA98286-6	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4639.D	1	09/15/22 07:39	AL	08/26/22 10:35	OP92763	S5Q71
Run #2	5Q4719.D	5	09/16/22 06:09	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0423	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0651	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.109	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0352	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0550	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0022	0.0080	0.0040	0.0020	ug/l	J
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0554	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.120	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	1.93 [a]	0.040	0.020	0.010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0471	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.227	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0287	0.016	0.0080	0.0040	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0020I-030.0-20220816		
Lab Sample ID:	FA98286-6	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%	79%	50-150%
	13C5-PFPeA	68%	79%	50-150%
	13C5-PFHxA	77%	83%	50-150%
	13C4-PFHpA	81%	84%	50-150%
	13C8-PFOA	87%	85%	50-150%
	13C9-PFNA	86%	84%	50-150%
	13C6-PFDA	81%	81%	50-150%
	13C7-PFUnDA	68%	67%	50-150%
	13C2-PFDoDA	65%	65%	50-150%
	13C2-PFTeDA	57%	59%	50-150%
	13C3-PFBS	74%	77%	50-150%
	13C3-PFHxS	81%	85%	50-150%
	13C8-PFOS	77%	80%	50-150%
	13C8-FOSA	55%	59%	50-150%
	d3-MeFOSAA	90%	85%	50-150%
	d5-EtFOSAA	78%	75%	50-150%
	13C2-4:2FTS	76%	79%	50-150%
	13C2-6:2FTS	89%	84%	50-150%
	13C2-8:2FTS	81%	78%	50-150%
	13C3-HFPO-DA	70%	75%	50-150%

(a) Result is from Run# 2

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E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0020S-008.0-20220816		
Lab Sample ID:	FA98286-7	**Date Sampled:**	08/16/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4642.D	1	09/15/22 08:25	AL	08/26/22 10:35	OP92763	S5Q71
Run #2	5Q4720.D	10	09/16/22 06:24	AL	08/26/22 10:35	OP92763	S5Q72
Run #3	5Q4829.D	250	09/17/22 15:52	AL	08/26/22 10:35	OP92763	S5Q73

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml
Run #3	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.772	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	3.14 [a]	0.080	0.040	0.020	ug/l	
307-24-4	Perfluorohexanoic acid	1.77 [a]	0.080	0.040	0.020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.780	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.191	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0243	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0377	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.148	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	3.54 [a]	0.080	0.040	0.020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.248	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	5.86 [a]	0.080	0.040	0.020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	1.0 U [b]	2.0	1.0	0.50	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0020S-008.0-20220816
Lab Sample ID: FA98286-7 **Date Sampled:** 08/16/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	4.56 [b]	4.0	2.0	1.0	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Run# 3	Limits
	13C4-PFBA	56%	72%	116%	50-150%
	13C5-PFPeA	59%	76%	118%	50-150%
	13C5-PFHxA	66%	80%	118%	50-150%
	13C4-PFHpA	67%	80%	119%	50-150%
	13C8-PFOA	69%	80%	118%	50-150%
	13C9-PFNA	74%	80%	118%	50-150%
	13C6-PFDA	74%	80%	119%	50-150%
	13C7-PFUnDA	67%	71%	120%	50-150%
	13C2-PFDoDA	64%	67%	121%	50-150%
	13C2-PFTeDA	53%	57%	124%	50-150%
	13C3-PFBS	66%	81%	118%	50-150%
	13C3-PFHxS	69%	82%	119%	50-150%
	13C8-PFOS	69%	80%	116%	50-150%
	13C8-FOSA	35% [c]	45% [c]	117%	50-150%
	d3-MeFOSAA	82%	86%	118%	50-150%
	d5-EtFOSAA	72%	74%	118%	50-150%
	13C2-4:2FTS	66%	76%	111%	50-150%
	13C2-6:2FTS	296% [c]	345% [c]	111%	50-150%
	13C2-8:2FTS	74%	78%	110%	50-150%
	13C3-HFPO-DA	61%	70%	114%	50-150%

(a) Result is from Run# 2
(b) Result is from Run# 3
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-FB-20220816-01		
Lab Sample ID:	FA98286-8	**Date Sampled:**	08/16/22
Matrix:	AQ - Field Blank Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4643.D	1	09/15/22 08:40	AL	08/26/22 10:35	OP92763	S5Q71
Run #2 [a]	5Q4721.D	1	09/16/22 06:40	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220816-01
Lab Sample ID: FA98286-8 **Date Sampled:** 08/16/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	73%	73%	50-150%
	13C5-PFPeA	75%	75%	50-150%
	13C5-PFHxA	76%	76%	50-150%
	13C4-PFHpA	77%	76%	50-150%
	13C8-PFOA	78%	77%	50-150%
	13C9-PFNA	77%	74%	50-150%
	13C6-PFDA	75%	73%	50-150%
	13C7-PFUnDA	71%	70%	50-150%
	13C2-PFDoDA	74%	73%	50-150%
	13C2-PFTeDA	77%	74%	50-150%
	13C3-PFBS	76%	78%	50-150%
	13C3-PFHxS	76%	77%	50-150%
	13C8-PFOS	71%	72%	50-150%
	13C8-FOSA	72%	70%	50-150%
	d3-MeFOSAA	86%	78%	50-150%
	d5-EtFOSAA	80%	75%	50-150%
	13C2-4:2FTS	71%	71%	50-150%
	13C2-6:2FTS	76%	75%	50-150%
	13C2-8:2FTS	72%	68%	50-150%
	13C3-HFPO-DA		69%	50-150%

(a) Confirmation run.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-EB-20220816-01
Lab Sample ID: FA98286-9 **Date Sampled:** 08/16/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4644.D	1	09/15/22 08:55	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220816-01
Lab Sample ID: FA98286-9 **Date Sampled:** 08/16/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	77%		50-150%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	79%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	69%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	69%		50-150%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	71%		50-150%
	13C8-FOSA	69%		50-150%
	d3-MeFOSAA	85%		50-150%
	d5-EtFOSAA	79%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	78%		50-150%
	13C2-8:2FTS	69%		50-150%
	13C3-HFPO-DA	71%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0018S-010.0-20220817		
Lab Sample ID:	FA98286-10	**Date Sampled:**	08/17/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4645.D	1	09/15/22 09:11	AL	08/26/22 10:35	OP92763	S5Q71
Run #2 [a]	5Q4724.D	5	09/16/22 07:26	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0208	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0256	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0233	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0140	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0071	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0036	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0051	0.0083	0.0042	0.0021	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0490	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0665	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [b]	0.021 U [c]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0018S-010.0-20220817
Lab Sample ID: FA98286-10 **Date Sampled:** 08/17/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%	55%	50-150%
	13C5-PFPeA	57%	65%	50-150%
	13C5-PFHxA	66%	69%	50-150%
	13C4-PFHpA	69%	71%	50-150%
	13C8-PFOA	71%	72%	50-150%
	13C9-PFNA	71%	70%	50-150%
	13C6-PFDA	65%	65%	50-150%
	13C7-PFUnDA	53%	53%	50-150%
	13C2-PFDoDA	50%	49% d	50-150%
	13C2-PFTeDA	51%	51%	50-150%
	13C3-PFBS	63%	63%	50-150%
	13C3-PFHxS	70%	72%	50-150%
	13C8-PFOS	63%	62%	50-150%
	13C8-FOSA	44% d	45% d	50-150%
	d3-MeFOSAA	71%	73%	50-150%
	d5-EtFOSAA	61%	61%	50-150%
	13C2-4:2FTS	65%	66%	50-150%
	13C2-6:2FTS	72%	70%	50-150%
	13C2-8:2FTS	67%	64%	50-150%
	13C3-HFPO-DA	61%	66%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Associated ID Standard outside control limits due to matrix interference.
(c) Result is from Run# 2
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0018I-030.0-20220817		
Lab Sample ID:	FA98286-11	**Date Sampled:**	08/17/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4646.D	1	09/15/22 09:26	AL	08/26/22 10:35	OP92763	S5Q71
Run #2 [a]	5Q4725.D	5	09/16/22 07:41	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0083 U	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0050	0.0083	0.0042	0.0021	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [b]	0.021 U [c]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0044	0.017	0.0083	0.0042	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0018I-030.0-20220817
Lab Sample ID: FA98286-11 **Date Sampled:** 08/17/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	51%	45% d	50-150%
	13C5-PFPeA	52%	57%	50-150%
	13C5-PFHxA	60%	62%	50-150%
	13C4-PFHpA	65%	63%	50-150%
	13C8-PFOA	68%	64%	50-150%
	13C9-PFNA	68%	64%	50-150%
	13C6-PFDA	66%	62%	50-150%
	13C7-PFUnDA	59%	56%	50-150%
	13C2-PFDoDA	60%	58%	50-150%
	13C2-PFTeDA	61%	57%	50-150%
	13C3-PFBS	59%	58%	50-150%
	13C3-PFHxS	67%	64%	50-150%
	13C8-PFOS	61%	62%	50-150%
	13C8-FOSA	46% d	47% d	50-150%
	d3-MeFOSAA	75%	72%	50-150%
	d5-EtFOSAA	69%	67%	50-150%
	13C2-4:2FTS	60%	60%	50-150%
	13C2-6:2FTS	70%	63%	50-150%
	13C2-8:2FTS	65%	58%	50-150%
	13C3-HFPO-DA	58%	52%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Associated ID Standard outside control limits due to matrix interference.
(c) Result is from Run# 2
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FB-20220817-01
Lab Sample ID: FA98286-12 **Date Sampled:** 08/17/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4647.D	1	09/15/22 09:42	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220817-01
Lab Sample ID: FA98286-12 **Date Sampled:** 08/17/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	84%		50-150%
	13C5-PFPeA	83%		50-150%
	13C5-PFHxA	84%		50-150%
	13C4-PFHpA	85%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	67%		50-150%
	13C2-PFDoDA	73%		50-150%
	13C2-PFTeDA	78%		50-150%
	13C3-PFBS	85%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	71%		50-150%
	d3-MeFOSAA	80%		50-150%
	d5-EtFOSAA	77%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	80%		50-150%
	13C2-8:2FTS	67%		50-150%
	13C3-HFPO-DA	79%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-EB-20220817-01
Lab Sample ID: FA98286-13
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/17/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4648.D	1	09/15/22 09:57	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220817-01
Lab Sample ID: FA98286-13 **Date Sampled:** 08/17/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	74%		50-150%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	77%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	73%		50-150%
	13C6-PFDA	67%		50-150%
	13C7-PFUnDA	61%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	68%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	66%		50-150%
	13C8-FOSA	64%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	69%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	63%		50-150%
	13C3-HFPO-DA	74%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0001S-007.0-20220817
Lab Sample ID: FA98286-14
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/17/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4649.D	1	09/15/22 10:12	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0038	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0068	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0026	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0046	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0054	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0290	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0001S-007.0-20220817
Lab Sample ID: FA98286-14 **Date Sampled:** 08/17/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	61%		50-150%
	13C5-PFPeA	61%		50-150%
	13C5-PFHxA	71%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	57%		50-150%
	13C2-PFDoDA	55%		50-150%
	13C2-PFTeDA	53%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	77%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	54%		50-150%
	d3-MeFOSAA	77%		50-150%
	d5-EtFOSAA	66%		50-150%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	70%		50-150%
	13C3-HFPO-DA	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0001I-003.0-20220817
Lab Sample ID: FA98286-15
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/17/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4650.D	1	09/15/22 10:28	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0041	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0081	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0024	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0030	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0055	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0064	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0339	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0077	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0001I-003.0-20220817
Lab Sample ID: FA98286-15 **Date Sampled:** 08/17/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		50-150%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	82%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	85%		50-150%
	13C6-PFDA	81%		50-150%
	13C7-PFUnDA	70%		50-150%
	13C2-PFDoDA	68%		50-150%
	13C2-PFTeDA	62%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	84%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	59%		50-150%
	d3-MeFOSAA	88%		50-150%
	d5-EtFOSAA	80%		50-150%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	79%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-FD-20220817-01		
Lab Sample ID:	FA98286-16	**Date Sampled:**	08/17/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4651.D	1	09/15/22 10:43	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0041	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0051	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0083	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0024	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0052	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0063	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0346	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0073	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220817-01
Lab Sample ID: FA98286-16 **Date Sampled:** 08/17/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	66%		50-150%
	13C5-PFHxA	76%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	83%		50-150%
	13C9-PFNA	84%		50-150%
	13C6-PFDA	83%		50-150%
	13C7-PFUnDA	71%		50-150%
	13C2-PFDoDA	68%		50-150%
	13C2-PFTeDA	57%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	82%		50-150%
	13C8-PFOS	82%		50-150%
	13C8-FOSA	67%		50-150%
	d3-MeFOSAA	88%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	81%		50-150%
	13C3-HFPO-DA	73%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0015S-008.0-20220818		
Lab Sample ID:	FA98286-17	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4654.D	1	09/15/22 11:29	AL	08/26/22 10:35	OP92763	S5Q71
Run #2	5Q4726.D	40	09/16/22 07:56	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0657	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.157	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.263	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0790	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.112	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0205	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0544	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0843	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	3.56 [a]	0.32	0.16	0.080	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.477	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	28.0 [a]	0.32	0.16	0.080	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0055	0.016	0.0080	0.0040	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0015S-008.0-20220818		
Lab Sample ID:	FA98286-17	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%	70%	50-150%
	13C5-PFPeA	63%	70%	50-150%
	13C5-PFHxA	71%	73%	50-150%
	13C4-PFHpA	72%	72%	50-150%
	13C8-PFOA	77%	71%	50-150%
	13C9-PFNA	55%	73%	50-150%
	13C6-PFDA	75%	70%	50-150%
	13C7-PFUnDA	68%	62%	50-150%
	13C2-PFDoDA	65%	61%	50-150%
	13C2-PFTeDA	56%	61%	50-150%
	13C3-PFBS	71%	74%	50-150%
	13C3-PFHxS	73%	69%	50-150%
	13C8-PFOS	59%	72%	50-150%
	13C8-FOSA	55%	65%	50-150%
	d3-MeFOSAA	77%	97%	50-150%
	d5-EtFOSAA	76%	71%	50-150%
	13C2-4:2FTS	67%	66%	50-150%
	13C2-6:2FTS	75%	77%	50-150%
	13C2-8:2FTS	71%	67%	50-150%
	13C3-HFPO-DA	69%	79%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0015I-030.0-20220818
Lab Sample ID: FA98286-18
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4727.D	1	09/16/22 08:12	AL	08/26/22 10:35	OP92763	S5Q72
Run #2	5Q4655.D	1	09/15/22 11:44	AL	08/26/22 10:35	OP92763	S5Q71

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2	110 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0227	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0498	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0617	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0186	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0149	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0230	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0403	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.314	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0294	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.393	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U [a]	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U [a]	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0269	0.018	0.0091	0.0045	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0015I-030.0-20220818		
Lab Sample ID:	FA98286-18	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%	64%	50-150%
	13C5-PFPeA	63%	67%	50-150%
	13C5-PFHxA	73%	76%	50-150%
	13C4-PFHpA	75%	79%	50-150%
	13C8-PFOA	77%	82%	50-150%
	13C9-PFNA	75%	79%	50-150%
	13C6-PFDA	70%	74%	50-150%
	13C7-PFUnDA	63%	64%	50-150%
	13C2-PFDoDA	64%	65%	50-150%
	13C2-PFTeDA	62%	64%	50-150%
	13C3-PFBS	70%	76%	50-150%
	13C3-PFHxS	78%	83%	50-150%
	13C8-PFOS	68%	75%	50-150%
	13C8-FOSA	70%	77%	50-150%
	d3-MeFOSAA	84%	79%	50-150%
	d5-EtFOSAA	79%	80%	50-150%
	13C2-4:2FTS	73%	75%	50-150%
	13C2-6:2FTS	83%	86%	50-150%
	13C2-8:2FTS	72%	72%	50-150%
	13C3-HFPO-DA	68%		50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FD-20220818-01
Lab Sample ID: FA98286-19
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4656.D	1	09/15/22 12:00	AL	08/26/22 10:35	OP92763	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0211	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0402	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.0567	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0178	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0138	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0205	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0374	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.295	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0258	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.309	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0247	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FD-20220818-01
Lab Sample ID: FA98286-19 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	65%		50-150%
	13C2-PFTeDA	55%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	61%		50-150%
	d3-MeFOSAA	81%		50-150%
	d5-EtFOSAA	81%		50-150%
	13C2-4:2FTS	76%		50-150%
	13C2-6:2FTS	86%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	77%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0012S-007.0-20220818		
Lab Sample ID:	FA98286-20	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4657.D	1	09/15/22 12:15	AL	08/26/22 10:35	OP92763	S5Q71
Run #2 [a]	5Q4728.D	5	09/16/22 08:27	AL	08/26/22 10:35	OP92763	S5Q72

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid [b]	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid [b]	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [c]	0.020 U [d]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0012S-007.0-20220818
Lab Sample ID: FA98286-20 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	41% e	43% e	50-150%
	13C5-PFPeA	44% e	50%	50-150%
	13C5-PFHxA	53%	61%	50-150%
	13C4-PFHpA	60%	63%	50-150%
	13C8-PFOA	65%	66%	50-150%
	13C9-PFNA	65%	65%	50-150%
	13C6-PFDA	64%	63%	50-150%
	13C7-PFUnDA	55%	56%	50-150%
	13C2-PFDoDA	50%	50%	50-150%
	13C2-PFTeDA	42% e	48% e	50-150%
	13C3-PFBS	54%	57%	50-150%
	13C3-PFHxS	68%	69%	50-150%
	13C8-PFOS	68%	62%	50-150%
	13C8-FOSA	53%	54%	50-150%
	d3-MeFOSAA	61%	72%	50-150%
	d5-EtFOSAA	60%	66%	50-150%
	13C2-4:2FTS	51%	60%	50-150%
	13C2-6:2FTS	65%	66%	50-150%
	13C2-8:2FTS	60%	63%	50-150%
	13C3-HFPO-DA	54%	56%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Associated ID Standard outside control limits.
(c) Associated ID Standard outside control limits due to matrix interference.
(d) Result is from Run# 2
(e) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0012I-030.0-20220818		
Lab Sample ID:	FA98286-21	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4673.D	1	09/15/22 01:09	AL	08/26/22 10:40	OP92764	S6Q85
Run #2 [a]	6Q4748.D	5	09/16/22 03:38	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0012I-030.0-20220818		
Lab Sample ID:	FA98286-21	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	64%	80%	50-150%
	13C5-PFPeA	71%	80%	50-150%
	13C5-PFHxA	77%	87%	50-150%
	13C4-PFHpA	81%	83%	50-150%
	13C8-PFOA	88%	88%	50-150%
	13C9-PFNA	83%	84%	50-150%
	13C6-PFDA	73%	73%	50-150%
	13C7-PFUnDA	60%	61%	50-150%
	13C2-PFDoDA	54%	52%	50-150%
	13C2-PFTeDA	53%	56%	50-150%
	13C3-PFBS	78%	83%	50-150%
	13C3-PFHxS	86%	90%	50-150%
	13C8-PFOS	75%	83%	50-150%
	13C8-FOSA	49% [c]	52%	50-150%
	d3-MeFOSAA	67%	68%	50-150%
	d5-EtFOSAA	64%	67%	50-150%
	13C2-4:2FTS	76%	77%	50-150%
	13C2-6:2FTS	84%	76%	50-150%
	13C2-8:2FTS	70%	69%	50-150%
	13C3-HFPO-DA	72%	75%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0002S-009.0-20220818		
Lab Sample ID:	FA98286-22	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4675.D	1	09/15/22 01:41	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0279	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0097	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0080	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0035	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0031	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0049	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0354	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0037	0.0080	0.0040	0.0020	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.117	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0002S-009.0-20220818
Lab Sample ID: FA98286-22 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	67%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	73%		50-150%
	13C4-PFHpA	75%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	75%		50-150%
	13C6-PFDA	68%		50-150%
	13C7-PFUnDA	61%		50-150%
	13C2-PFDoDA	54%		50-150%
	13C2-PFTeDA	59%		50-150%
	13C3-PFBS	76%		50-150%
	13C3-PFHxS	75%		50-150%
	13C8-PFOS	64%		50-150%
	13C8-FOSA	69%		50-150%
	d3-MeFOSAA	60%		50-150%
	d5-EtFOSAA	64%		50-150%
	13C2-4:2FTS	70%		50-150%
	13C2-6:2FTS	72%		50-150%
	13C2-8:2FTS	62%		50-150%
	13C3-HFPO-DA	77%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0002I-029.0-20220818		
Lab Sample ID:	FA98286-23	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4677.D	1	09/15/22 02:13	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

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LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0002I-029.0-20220818
Lab Sample ID: FA98286-23 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	70%		50-150%
	13C5-PFHxA	72%		50-150%
	13C4-PFHpA	71%		50-150%
	13C8-PFOA	76%		50-150%
	13C9-PFNA	71%		50-150%
	13C6-PFDA	62%		50-150%
	13C7-PFUnDA	59%		50-150%
	13C2-PFDoDA	58%		50-150%
	13C2-PFTeDA	66%		50-150%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	66%		50-150%
	d3-MeFOSAA	63%		50-150%
	d5-EtFOSAA	64%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	64%		50-150%
	13C3-HFPO-DA	69%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0016I-030.0-20220818		
Lab Sample ID:	FA98286-24	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4678.D	1	09/15/22 02:29	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0016I-030.0-20220818
Lab Sample ID: FA98286-24 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	66%		50-150%
	13C5-PFPeA	72%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	84%		50-150%
	13C9-PFNA	87%		50-150%
	13C6-PFDA	75%		50-150%
	13C7-PFUnDA	60%		50-150%
	13C2-PFDoDA	51%		50-150%
	13C2-PFTeDA	52%		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	86%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	77%		50-150%
	d3-MeFOSAA	67%		50-150%
	d5-EtFOSAA	66%		50-150%
	13C2-4:2FTS	78%		50-150%
	13C2-6:2FTS	83%		50-150%
	13C2-8:2FTS	73%		50-150%
	13C3-HFPO-DA	75%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0016S-010.0-20220818
Lab Sample ID: FA98286-25 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4679.D	1	09/15/22 02:45	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4749.D	5	09/16/22 03:54	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.211 [a]	0.080	0.040	0.020	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0179	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0135	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0119	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0120	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid [b]	0.020 U [a]	0.040	0.020	0.010	ug/l	
72629-94-8	Perfluorotridecanoic acid [b]	0.020 U [a]	0.040	0.020	0.010	ug/l	
376-06-7	Perfluorotetradecanoic acid [b]	0.020 U [a]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0076	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0030	0.0080	0.0040	0.0020	ug/l	J
355-46-4	Perfluorohexanesulfonic acid	0.0104	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0052	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0016S-010.0-20220818		
Lab Sample ID:	FA98286-25	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	42% [c]	66%	50-150%
	13C5-PFPeA	56%	75%	50-150%
	13C5-PFHxA	67%	81%	50-150%
	13C4-PFHpA	72%	82%	50-150%
	13C8-PFOA	78%	87%	50-150%
	13C9-PFNA	79%	89%	50-150%
	13C6-PFDA	74%	77%	50-150%
	13C7-PFUnDA	60%	64%	50-150%
	13C2-PFDoDA	42% [c]	45% [c]	50-150%
	13C2-PFTeDA	33% [c]	36% [c]	50-150%
	13C3-PFBS	68%	80%	50-150%
	13C3-PFHxS	77%	84%	50-150%
	13C8-PFOS	72%	77%	50-150%
	13C8-FOSA	60%	64%	50-150%
	d3-MeFOSAA	70%	72%	50-150%
	d5-EtFOSAA	64%	69%	50-150%
	13C2-4:2FTS	67%	76%	50-150%
	13C2-6:2FTS	76%	82%	50-150%
	13C2-8:2FTS	70%	78%	50-150%
	13C3-HFPO-DA	59%	77%	50-150%

(a) Result is from Run# 2
(b) Associated ID Standard outside control limits.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0003S-008.0-20220818
Lab Sample ID: FA98286-26
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4680.D	1	09/15/22 03:01	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0003S-008.0-20220818
Lab Sample ID: FA98286-26 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%		50-150%
	13C5-PFPeA	71%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	85%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	77%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	52%		50-150%
	13C2-PFTeDA	52%		50-150%
	13C3-PFBS	77%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	79%		50-150%
	13C8-FOSA	53%		50-150%
	d3-MeFOSAA	58%		50-150%
	d5-EtFOSAA	53%		50-150%
	13C2-4:2FTS	75%		50-150%
	13C2-6:2FTS	84%		50-150%
	13C2-8:2FTS	76%		50-150%
	13C3-HFPO-DA	72%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0003I-030.0-20220818
Lab Sample ID: FA98286-27
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4683.D	1	09/15/22 03:49	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0003I-030.0-20220818
Lab Sample ID: FA98286-27 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	69%		50-150%
	13C5-PFPeA	73%		50-150%
	13C5-PFHxA	77%		50-150%
	13C4-PFHpA	79%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	76%		50-150%
	13C6-PFDA	61%		50-150%
	13C7-PFUnDA	57%		50-150%
	13C2-PFDoDA	56%		50-150%
	13C2-PFTeDA	64%		50-150%
	13C3-PFBS	78%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	63%		50-150%
	13C8-FOSA	68%		50-150%
	d3-MeFOSAA	61%		50-150%
	d5-EtFOSAA	66%		50-150%
	13C2-4:2FTS	73%		50-150%
	13C2-6:2FTS	75%		50-150%
	13C2-8:2FTS	58%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0004I-029.0-20220818		
Lab Sample ID:	FA98286-28	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4684.D	1	09/15/22 04:05	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0004I-029.0-20220818
Lab Sample ID: FA98286-28 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	57%		50-150%
	13C5-PFPeA	62%		50-150%
	13C5-PFHxA	68%		50-150%
	13C4-PFHpA	74%		50-150%
	13C8-PFOA	80%		50-150%
	13C9-PFNA	82%		50-150%
	13C6-PFDA	79%		50-150%
	13C7-PFUnDA	77%		50-150%
	13C2-PFDoDA	69%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	71%		50-150%
	13C3-PFHxS	81%		50-150%
	13C8-PFOS	77%		50-150%
	13C8-FOSA	60%		50-150%
	d3-MeFOSAA	78%		50-150%
	d5-EtFOSAA	82%		50-150%
	13C2-4:2FTS	68%		50-150%
	13C2-6:2FTS	76%		50-150%
	13C2-8:2FTS	74%		50-150%
	13C3-HFPO-DA	65%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FB-20220818-01
Lab Sample ID: FA98286-29
Matrix: AQ - Field Blank Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4685.D	1	09/15/22 04:21	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220818-01
Lab Sample ID: FA98286-29 **Date Sampled:** 08/18/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	80%		50-150%
	13C5-PFPeA	80%		50-150%
	13C5-PFHxA	81%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	74%		50-150%
	13C7-PFUnDA	73%		50-150%
	13C2-PFDoDA	71%		50-150%
	13C2-PFTeDA	75%		50-150%
	13C3-PFBS	82%		50-150%
	13C3-PFHxS	76%		50-150%
	13C8-PFOS	69%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	74%		50-150%
	d5-EtFOSAA	79%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	71%		50-150%
	13C2-8:2FTS	66%		50-150%
	13C3-HFPO-DA	83%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-EB-20220818-01
Lab Sample ID: FA98286-30
Matrix: AQ - Equipment Blank
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4686.D	1	09/15/22 04:37	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220818-01
Lab Sample ID: FA98286-30 **Date Sampled:** 08/18/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	76%		50-150%
	13C5-PFPeA	77%		50-150%
	13C5-PFHxA	78%		50-150%
	13C4-PFHpA	78%		50-150%
	13C8-PFOA	77%		50-150%
	13C9-PFNA	69%		50-150%
	13C6-PFDA	62%		50-150%
	13C7-PFUnDA	63%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	71%		50-150%
	13C3-PFBS	79%		50-150%
	13C3-PFHxS	78%		50-150%
	13C8-PFOS	62%		50-150%
	13C8-FOSA	65%		50-150%
	d3-MeFOSAA	64%		50-150%
	d5-EtFOSAA	67%		50-150%
	13C2-4:2FTS	72%		50-150%
	13C2-6:2FTS	72%		50-150%
	13C2-8:2FTS	61%		50-150%
	13C3-HFPO-DA	76%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0005S-008.0-20220819
Lab Sample ID: FA98286-31 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4687.D	1	09/15/22 04:53	AL	08/26/22 10:40	OP92764	S6Q85
Run #2 [a]	6Q4750.D	5	09/16/22 04:10	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0668	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0049	0.0080	0.0040	0.0020	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0005S-008.0-20220819		
Lab Sample ID:	FA98286-31	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	52%	65%	50-150%
	13C5-PFPeA	59%	68%	50-150%
	13C5-PFHxA	64%	72%	50-150%
	13C4-PFHpA	70%	74%	50-150%
	13C8-PFOA	73%	79%	50-150%
	13C9-PFNA	76%	82%	50-150%
	13C6-PFDA	71%	73%	50-150%
	13C7-PFUnDA	70%	73%	50-150%
	13C2-PFDoDA	64%	65%	50-150%
	13C2-PFTeDA	52%	55%	50-150%
	13C3-PFBS	67%	74%	50-150%
	13C3-PFHxS	78%	81%	50-150%
	13C8-PFOS	78%	81%	50-150%
	13C8-FOSA	45% [c]	52%	50-150%
	d3-MeFOSAA	80%	80%	50-150%
	d5-EtFOSAA	78%	76%	50-150%
	13C2-4:2FTS	64%	66%	50-150%
	13C2-6:2FTS	75%	76%	50-150%
	13C2-8:2FTS	72%	71%	50-150%
	13C3-HFPO-DA	55%	69%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0005I-029.0-20220819
Lab Sample ID: FA98286-32
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/19/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4688.D	1	09/15/22 05:09	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0005I-029.0-20220819
Lab Sample ID: FA98286-32 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	54%		50-150%
	13C5-PFPeA	58%		50-150%
	13C5-PFHxA	67%		50-150%
	13C4-PFHpA	72%		50-150%
	13C8-PFOA	78%		50-150%
	13C9-PFNA	77%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	63%		50-150%
	13C2-PFDoDA	59%		50-150%
	13C2-PFTeDA	61%		50-150%
	13C3-PFBS	68%		50-150%
	13C3-PFHxS	79%		50-150%
	13C8-PFOS	75%		50-150%
	13C8-FOSA	55%		50-150%
	d3-MeFOSAA	69%		50-150%
	d5-EtFOSAA	73%		50-150%
	13C2-4:2FTS	67%		50-150%
	13C2-6:2FTS	82%		50-150%
	13C2-8:2FTS	68%		50-150%
	13C3-HFPO-DA	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0006S-007.0-20220819
Lab Sample ID: FA98286-33
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/19/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4689.D	1	09/15/22 05:25	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4751.D	5	09/16/22 04:27	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0681 [a]	0.080	0.040	0.020	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0183	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0516	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0235	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0350	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0234	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0399	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.765	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0800	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	1.55 [a]	0.040	0.020	0.010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0006S-007.0-20220819
Lab Sample ID: FA98286-33 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	47% [b]	55%	50-150%
	13C5-PFPeA	55%	60%	50-150%
	13C5-PFHxA	61%	65%	50-150%
	13C4-PFHpA	65%	65%	50-150%
	13C8-PFOA	69%	69%	50-150%
	13C9-PFNA	68%	67%	50-150%
	13C6-PFDA	68%	68%	50-150%
	13C7-PFUnDA	69%	64%	50-150%
	13C2-PFDoDA	60%	59%	50-150%
	13C2-PFTeDA	64%	64%	50-150%
	13C3-PFBS	65%	66%	50-150%
	13C3-PFHxS	71%	73%	50-150%
	13C8-PFOS	71%	71%	50-150%
	13C8-FOSA	54%	55%	50-150%
	d3-MeFOSAA	68%	72%	50-150%
	d5-EtFOSAA	74%	75%	50-150%
	13C2-4:2FTS	59%	61%	50-150%
	13C2-6:2FTS	66%	65%	50-150%
	13C2-8:2FTS	66%	64%	50-150%
	13C3-HFPO-DA	54%	53%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-FD-20220819-01		
Lab Sample ID:	FA98286-34	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4752.D	1	09/16/22 04:43	JB	08/26/22 10:40	OP92764	S6Q86
Run #2	6Q4753.D	5	09/16/22 04:59	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0755	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0202	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0559	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0260	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0380	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0241	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0422	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.809 [a]	0.040	0.020	0.010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0931	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	1.70 [a]	0.040	0.020	0.010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.020 U [a]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-FD-20220819-01		
Lab Sample ID:	FA98286-34	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	56%	72%	50-150%
	13C5-PFPeA	65%	76%	50-150%
	13C5-PFHxA	72%	78%	50-150%
	13C4-PFHpA	75%	82%	50-150%
	13C8-PFOA	80%	87%	50-150%
	13C9-PFNA	82%	85%	50-150%
	13C6-PFDA	78%	80%	50-150%
	13C7-PFUnDA	63%	71%	50-150%
	13C2-PFDoDA	60%	63%	50-150%
	13C2-PFTeDA	64%	69%	50-150%
	13C3-PFBS	75%	83%	50-150%
	13C3-PFHxS	80%	86%	50-150%
	13C8-PFOS	72%	81%	50-150%
	13C8-FOSA	43% b	50%	50-150%
	d3-MeFOSAA	76%	74%	50-150%
	d5-EtFOSAA	74%	76%	50-150%
	13C2-4:2FTS	72%	76%	50-150%
	13C2-6:2FTS	81%	81%	50-150%
	13C2-8:2FTS	73%	78%	50-150%
	13C3-HFPO-DA	60%	73%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0006I-030.0-20220819
Lab Sample ID: FA98286-35
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/19/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4691.D	1	09/15/22 05:57	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4756.D	5	09/16/22 05:47	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0006I-030.0-20220819
Lab Sample ID: FA98286-35 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%	81%	50-150%
	13C5-PFPeA	65%	82%	50-150%
	13C5-PFHxA	77%	88%	50-150%
	13C4-PFHpA	81%	90%	50-150%
	13C8-PFOA	89%	96%	50-150%
	13C9-PFNA	84%	90%	50-150%
	13C6-PFDA	71%	78%	50-150%
	13C7-PFUnDA	69%	71%	50-150%
	13C2-PFDoDA	61%	65%	50-150%
	13C2-PFTeDA	62%	68%	50-150%
	13C3-PFBS	78%	89%	50-150%
	13C3-PFHxS	86%	98%	50-150%
	13C8-PFOS	75%	81%	50-150%
	13C8-FOSA	37% [c]	46% [c]	50-150%
	d3-MeFOSAA	70%	79%	50-150%
	d5-EtFOSAA	77%	82%	50-150%
	13C2-4:2FTS	75%	84%	50-150%
	13C2-6:2FTS	87%	93%	50-150%
	13C2-8:2FTS	70%	72%	50-150%
	13C3-HFPO-DA	72%	80%	50-150%

(a) Associated ID Standard outside control limits.
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0007S-009.0-20220819
Lab Sample ID: FA98286-36 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4692.D	1	09/15/22 06:13	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4757.D	40	09/16/22 06:03	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0729	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.155	0.0083	0.0042	0.0021	ug/l	
307-24-4	Perfluorohexanoic acid	0.235	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.127	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.126	0.0083	0.0042	0.0021	ug/l	
375-95-1	Perfluorononanoic acid	0.0281	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0048	0.0083	0.0042	0.0021	ug/l	J
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0477	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0827	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	1.71 [a]	0.33	0.17	0.083	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.233	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	16.3 [a]	0.33	0.17	0.083	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0053	0.0083	0.0042	0.0021	ug/l	J
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.204	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0007S-009.0-20220819
Lab Sample ID: FA98286-36 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	70%	83%	50-150%
	13C5-PFPeA	74%	83%	50-150%
	13C5-PFHxA	79%	88%	50-150%
	13C4-PFHpA	77%	86%	50-150%
	13C8-PFOA	80%	93%	50-150%
	13C9-PFNA	61%	93%	50-150%
	13C6-PFDA	76%	89%	50-150%
	13C7-PFUnDA	73%	78%	50-150%
	13C2-PFDoDA	70%	78%	50-150%
	13C2-PFTeDA	74%	87%	50-150%
	13C3-PFBS	80%	93%	50-150%
	13C3-PFHxS	83%	89%	50-150%
	13C8-PFOS	62%	93%	50-150%
	13C8-FOSA	50%	69%	50-150%
	d3-MeFOSAA	80%	93%	50-150%
	d5-EtFOSAA	84%	94%	50-150%
	13C2-4:2FTS	74%	81%	50-150%
	13C2-6:2FTS	86%	96%	50-150%
	13C2-8:2FTS	75%	79%	50-150%
	13C3-HFPO-DA	72%	74%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0007I-029.0-20220819
Lab Sample ID: FA98286-37
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/19/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4695.D	1	09/15/22 07:02	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4758.D	5	09/16/22 06:19	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.040 U [a]	0.080	0.040	0.020	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0007I-029.0-20220819
Lab Sample ID: FA98286-37 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	44% [b]	60%	50-150%
	13C5-PFPeA	50%	66%	50-150%
	13C5-PFHxA	59%	71%	50-150%
	13C4-PFHpA	67%	75%	50-150%
	13C8-PFOA	71%	79%	50-150%
	13C9-PFNA	77%	85%	50-150%
	13C6-PFDA	73%	81%	50-150%
	13C7-PFUnDA	71%	75%	50-150%
	13C2-PFDoDA	69%	72%	50-150%
	13C2-PFTeDA	69%	75%	50-150%
	13C3-PFBS	64%	73%	50-150%
	13C3-PFHxS	72%	79%	50-150%
	13C8-PFOS	72%	79%	50-150%
	13C8-FOSA	52%	60%	50-150%
	d3-MeFOSAA	82%	80%	50-150%
	d5-EtFOSAA	80%	81%	50-150%
	13C2-4:2FTS	62%	67%	50-150%
	13C2-6:2FTS	70%	75%	50-150%
	13C2-8:2FTS	68%	69%	50-150%
	13C3-HFPO-DA	57%	65%	50-150%

(a) Result is from Run# 2
(b) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0008S-008.0-20220819
Lab Sample ID: FA98286-38 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4696.D	1	09/15/22 07:18	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4759.D	5	09/16/22 06:35	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0313	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0342	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0957	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0247	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0329	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0447	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0633	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.611	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0476	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	1.74 [a]	0.040	0.020	0.010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0042	0.016	0.0080	0.0040	ug/l	J

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0008S-008.0-20220819
Lab Sample ID: FA98286-38 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	58%	72%	50-150%
	13C5-PFPeA	67%	76%	50-150%
	13C5-PFHxA	72%	83%	50-150%
	13C4-PFHpA	76%	81%	50-150%
	13C8-PFOA	80%	87%	50-150%
	13C9-PFNA	84%	86%	50-150%
	13C6-PFDA	87%	85%	50-150%
	13C7-PFUnDA	80%	80%	50-150%
	13C2-PFDoDA	73%	72%	50-150%
	13C2-PFTeDA	65%	55%	50-150%
	13C3-PFBS	76%	82%	50-150%
	13C3-PFHxS	83%	87%	50-150%
	13C8-PFOS	81%	87%	50-150%
	13C8-FOSA	60%	65%	50-150%
	d3-MeFOSAA	89%	94%	50-150%
	d5-EtFOSAA	93%	90%	50-150%
	13C2-4:2FTS	79%	78%	50-150%
	13C2-6:2FTS	85%	82%	50-150%
	13C2-8:2FTS	80%	80%	50-150%
	13C3-HFPO-DA	65%	85%	50-150%

(a) Result is from Run# 2

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0013S-007.0-20220818
Lab Sample ID: FA98286-39 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4697.D	1	09/15/22 07:34	AL	08/26/22 10:40	OP92764	S6Q85
Run #2	6Q4760.D	5	09/16/22 06:51	JB	08/26/22 10:40	OP92764	S6Q86

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0427	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0124	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0046	0.0080	0.0040	0.0020	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0030	0.0080	0.0040	0.0020	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0034	0.0080	0.0040	0.0020	ug/l	J
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0030	0.0080	0.0040	0.0020	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0043	0.0080	0.0040	0.0020	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0053	0.0080	0.0040	0.0020	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0013S-007.0-20220818		
Lab Sample ID:	FA98286-39	**Date Sampled:**	08/18/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	52%	79%	50-150%
	13C5-PFPeA	64%	85%	50-150%
	13C5-PFHxA	73%	91%	50-150%
	13C4-PFHpA	79%	92%	50-150%
	13C8-PFOA	86%	97%	50-150%
	13C9-PFNA	88%	95%	50-150%
	13C6-PFDA	83%	91%	50-150%
	13C7-PFUnDA	81%	84%	50-150%
	13C2-PFDoDA	70%	76%	50-150%
	13C2-PFTeDA	45% [c]	44% [c]	50-150%
	13C3-PFBS	76%	92%	50-150%
	13C3-PFHxS	88%	98%	50-150%
	13C8-PFOS	80%	89%	50-150%
	13C8-FOSA	32% [c]	44% [c]	50-150%
	d3-MeFOSAA	89%	83%	50-150%
	d5-EtFOSAA	90%	90%	50-150%
	13C2-4:2FTS	76%	84%	50-150%
	13C2-6:2FTS	87%	93%	50-150%
	13C2-8:2FTS	80%	88%	50-150%
	13C3-HFPO-DA	64%	70%	50-150%

(a) Associated ID Standard outside control limits.
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0013I-030.0-20220818
Lab Sample ID: FA98286-40
Matrix: AQ - Ground Water
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD
Project: SWMU 114 Fire Station 2; KSC, FL

Date Sampled: 08/18/22
Date Received: 08/19/22
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	6Q4698.D	1	09/15/22 07:50	AL	08/26/22 10:40	OP92764	S6Q85
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0066	0.016	0.0080	0.0040	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0028	0.0080	0.0040	0.0020	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0013I-030.0-20220818
Lab Sample ID: FA98286-40 **Date Sampled:** 08/18/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	72%		50-150%
	13C5-PFPeA	76%		50-150%
	13C5-PFHxA	79%		50-150%
	13C4-PFHpA	80%		50-150%
	13C8-PFOA	82%		50-150%
	13C9-PFNA	83%		50-150%
	13C6-PFDA	80%		50-150%
	13C7-PFUnDA	80%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	72%		50-150%
	13C3-PFBS	80%		50-150%
	13C3-PFHxS	83%		50-150%
	13C8-PFOS	80%		50-150%
	13C8-FOSA	76%		50-150%
	d3-MeFOSAA	87%		50-150%
	d5-EtFOSAA	86%		50-150%
	13C2-4:2FTS	74%		50-150%
	13C2-6:2FTS	81%		50-150%
	13C2-8:2FTS	78%		50-150%
	13C3-HFPO-DA	81%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0010S-010.0-20220819
Lab Sample ID: FA98286-41 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65711.D	1	09/14/22 02:36	MV	08/26/22 09:30	OP92762	S3Q898
Run #2	3Q65839.D	5	09/15/22 22:43	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.020 U [b]	0.040	0.020	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0010S-010.0-20220819		
Lab Sample ID:	FA98286-41	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	55%	47% [c]	50-150%
	13C5-PFPeA	54%	48% [c]	50-150%
	13C5-PFHxA	55%	49% [c]	50-150%
	13C4-PFHpA	59%	51%	50-150%
	13C8-PFOA	62%	52%	50-150%
	13C9-PFNA	65%	53%	50-150%
	13C6-PFDA	69%	53%	50-150%
	13C7-PFUnDA	62%	53%	50-150%
	13C2-PFDoDA	58%	53%	50-150%
	13C2-PFTeDA	55%	48% [c]	50-150%
	13C3-PFBS	55%	51%	50-150%
	13C3-PFHxS	59%	53%	50-150%
	13C8-PFOS	62%	57%	50-150%
	13C8-FOSA	43% [c]	45% [c]	50-150%
	d3-MeFOSAA	68%	57%	50-150%
	d5-EtFOSAA	63%	59%	50-150%
	13C2-4:2FTS	53%	46% [c]	50-150%
	13C2-6:2FTS	63%	52%	50-150%
	13C2-8:2FTS	68%	51%	50-150%
	13C3-HFPO-DA	51%	50%	50-150%

(a) Associated ID Standard outside control limits.
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0010I-029.0-20220819		
Lab Sample ID:	FA98286-42	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65712.D	1	09/14/22 02:55	MV	08/26/22 09:30	OP92762	S3Q898
Run #2	3Q65840.D	5	09/15/22 23:02	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0263	0.017	0.0083	0.0042	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0063	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0132	0.0083	0.0042	0.0021	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0034	0.0083	0.0042	0.0021	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0063	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0069	0.0083	0.0042	0.0021	ug/l	J
2706-91-4	Perfluoropentanesulfonic acid	0.0099	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.135	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0049	0.0083	0.0042	0.0021	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.221	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0010I-029.0-20220819
Lab Sample ID: FA98286-42 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	59%	42% [c]	50-150%
	13C5-PFPeA	57%	55%	50-150%
	13C5-PFHxA	59%	57%	50-150%
	13C4-PFHpA	67%	61%	50-150%
	13C8-PFOA	75%	63%	50-150%
	13C9-PFNA	80%	64%	50-150%
	13C6-PFDA	81%	60%	50-150%
	13C7-PFUnDA	73%	57%	50-150%
	13C2-PFDoDA	68%	54%	50-150%
	13C2-PFTeDA	48% [c]	39% [c]	50-150%
	13C3-PFBS	59%	59%	50-150%
	13C3-PFHxS	72%	65%	50-150%
	13C8-PFOS	78%	64%	50-150%
	13C8-FOSA	27% [c]	33% [c]	50-150%
	d3-MeFOSAA	78%	62%	50-150%
	d5-EtFOSAA	72%	62%	50-150%
	13C2-4:2FTS	59%	57%	50-150%
	13C2-6:2FTS	77%	63%	50-150%
	13C2-8:2FTS	77%	60%	50-150%
	13C3-HFPO-DA	57%	58%	50-150%

(a) Associated ID Standard outside control limits.
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0009S-008.0-20220819
Lab Sample ID: FA98286-43 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65713.D	1	09/14/22 03:15	MV	08/26/22 09:30	OP92762	S3Q898
Run #2	3Q65841.D	5	09/15/22 23:22	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2	110 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0091 U	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0027	0.0091	0.0045	0.0023	ug/l	J
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.023 U [a]	0.045	0.023	0.011	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.023 U [a]	0.045	0.023	0.011	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.023 U [a]	0.045	0.023	0.011	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0061	0.0091	0.0045	0.0023	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0055	0.0091	0.0045	0.0023	ug/l	J
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [b]	0.023 U [a]	0.045	0.023	0.011	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0009S-008.0-20220819		
Lab Sample ID:	FA98286-43	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%	59%	50-150%
	13C5-PFPeA	56%	75%	50-150%
	13C5-PFHxA	60%	79%	50-150%
	13C4-PFHpA	67%	83%	50-150%
	13C8-PFOA	77%	86%	50-150%
	13C9-PFNA	77%	83%	50-150%
	13C6-PFDA	69%	71%	50-150%
	13C7-PFUnDA	51%	56%	50-150%
	13C2-PFDoDA	45% [c]	51%	50-150%
	13C2-PFTeDA	37% [c]	50%	50-150%
	13C3-PFBS	58%	79%	50-150%
	13C3-PFHxS	70%	84%	50-150%
	13C8-PFOS	65%	72%	50-150%
	13C8-FOSA	25% [c]	36% [c]	50-150%
	d3-MeFOSAA	58%	66%	50-150%
	d5-EtFOSAA	50%	61%	50-150%
	13C2-4:2FTS	59%	77%	50-150%
	13C2-6:2FTS	76%	85%	50-150%
	13C2-8:2FTS	65%	72%	50-150%
	13C3-HFPO-DA	58%	80%	50-150%

(a) Result is from Run# 2
(b) Associated ID Standard outside control limits.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0009I-030.0-20220819
Lab Sample ID: FA98286-44 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65716.D	1	09/14/22 04:13	MV	08/26/22 09:30	OP92762	S3Q898
Run #2 [a]	3Q65842.D	5	09/15/22 23:41	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2	110 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid [b]	0.045 U [c]	0.091	0.045	0.023	ug/l	
2706-90-3	Perfluoropentanoic acid	0.023 U [c]	0.045	0.023	0.011	ug/l	
307-24-4	Perfluorohexanoic acid	0.0154	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0035	0.0091	0.0045	0.0023	ug/l	J
335-67-1	Perfluorooctanoic acid	0.0053	0.0091	0.0045	0.0023	ug/l	J
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0143	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0174	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.116	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0044	0.0091	0.0045	0.0023	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.115	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.023 U [c]	0.045	0.023	0.011	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0009I-030.0-20220819		
Lab Sample ID:	FA98286-44	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	49% d	44% d	50-150%
	13C5-PFPeA	47% d	58%	50-150%
	13C5-PFHxA	51%	63%	50-150%
	13C4-PFHpA	58%	68%	50-150%
	13C8-PFOA	64%	71%	50-150%
	13C9-PFNA	67%	70%	50-150%
	13C6-PFDA	67%	64%	50-150%
	13C7-PFUnDA	59%	61%	50-150%
	13C2-PFDoDA	56%	61%	50-150%
	13C2-PFTeDA	51%	60%	50-150%
	13C3-PFBS	51%	62%	50-150%
	13C3-PFHxS	61%	72%	50-150%
	13C8-PFOS	61%	70%	50-150%
	13C8-FOSA	38% d	51%	50-150%
	d3-MeFOSAA	66%	70%	50-150%
	d5-EtFOSAA	61%	69%	50-150%
	13C2-4:2FTS	50%	63%	50-150%
	13C2-6:2FTS	65%	71%	50-150%
	13C2-8:2FTS	68%	66%	50-150%
	13C3-HFPO-DA	50%	64%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Associated ID Standard outside control limits.
(c) Result is from Run# 2
(d) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0011I-030.0-20220819		
Lab Sample ID:	FA98286-45	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65717.D	1	09/14/22 04:33	MV	08/26/22 09:30	OP92762	S3Q898
Run #2							

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0187	0.018	0.0091	0.0045	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0293	0.0091	0.0045	0.0023	ug/l	
307-24-4	Perfluorohexanoic acid	0.0327	0.0091	0.0045	0.0023	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0116	0.0091	0.0045	0.0023	ug/l	
335-67-1	Perfluorooctanoic acid	0.0098	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0157	0.0091	0.0045	0.0023	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0190	0.0091	0.0045	0.0023	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.140	0.0091	0.0045	0.0023	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0068	0.0091	0.0045	0.0023	ug/l	J
1763-23-1	Perfluorooctanesulfonic acid	0.196	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0011I-030.0-20220819
Lab Sample ID: FA98286-45 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	60%		50-150%
	13C5-PFPeA	60%		50-150%
	13C5-PFHxA	62%		50-150%
	13C4-PFHpA	67%		50-150%
	13C8-PFOA	73%		50-150%
	13C9-PFNA	74%		50-150%
	13C6-PFDA	72%		50-150%
	13C7-PFUnDA	66%		50-150%
	13C2-PFDoDA	64%		50-150%
	13C2-PFTeDA	62%		50-150%
	13C3-PFBS	65%		50-150%
	13C3-PFHxS	68%		50-150%
	13C8-PFOS	70%		50-150%
	13C8-FOSA	60%		50-150%
	d3-MeFOSAA	75%		50-150%
	d5-EtFOSAA	69%		50-150%
	13C2-4:2FTS	62%		50-150%
	13C2-6:2FTS	73%		50-150%
	13C2-8:2FTS	70%		50-150%
	13C3-HFPO-DA	59%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-MW0011S-010.0-20220819
Lab Sample ID: FA98286-46 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65718.D	1	09/14/22 04:52	MV	08/26/22 09:30	OP92762	S3Q898
Run #2 [a]	3Q65843.D	5	09/16/22 00:01	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	120 ml	1.0 ml
Run #2	120 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0144	0.017	0.0083	0.0042	ug/l	J
2706-90-3	Perfluoropentanoic acid	0.0052	0.0083	0.0042	0.0021	ug/l	J
307-24-4	Perfluorohexanoic acid	0.0041	0.0083	0.0042	0.0021	ug/l	J
375-85-9	Perfluoroheptanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-67-1	Perfluorooctanoic acid	0.0023	0.0083	0.0042	0.0021	ug/l	J
375-95-1	Perfluorononanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-76-2	Perfluorodecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
307-55-1	Perfluorododecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0130	0.0083	0.0042	0.0021	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0165	0.0083	0.0042	0.0021	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0042 U	0.0083	0.0042	0.0021	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.021 U [b]	0.042	0.021	0.010	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
2991-50-6	EtFOSAA	0.0083 U	0.017	0.0083	0.0042	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-MW0011S-010.0-20220819
Lab Sample ID: FA98286-46 **Date Sampled:** 08/19/22
Matrix: AQ - Ground Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0083 U	0.017	0.0083	0.0042	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0083 U	0.017	0.0083	0.0042	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	65%	61%	50-150%
	13C5-PFPeA	65%	63%	50-150%
	13C5-PFHxA	65%	65%	50-150%
	13C4-PFHpA	70%	68%	50-150%
	13C8-PFOA	75%	71%	50-150%
	13C9-PFNA	78%	70%	50-150%
	13C6-PFDA	78%	67%	50-150%
	13C7-PFUnDA	69%	64%	50-150%
	13C2-PFDoDA	64%	65%	50-150%
	13C2-PFTeDA	56%	57%	50-150%
	13C3-PFBS	67%	68%	50-150%
	13C3-PFHxS	72%	68%	50-150%
	13C8-PFOS	74%	72%	50-150%
	13C8-FOSA	47% [c]	50%	50-150%
	d3-MeFOSAA	79%	72%	50-150%
	d5-EtFOSAA	73%	72%	50-150%
	13C2-4:2FTS	65%	63%	50-150%
	13C2-6:2FTS	76%	69%	50-150%
	13C2-8:2FTS	78%	67%	50-150%
	13C3-HFPO-DA	62%	66%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	S114-MW0008I-029.0-20220819		
Lab Sample ID:	FA98286-47	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3Q65719.D	1	09/14/22 05:12	MV	08/26/22 09:30	OP92762	S3Q898
Run #2	3Q65844.D	5	09/16/22 00:20	MV	08/26/22 09:30	OP92762	S3Q900

	Initial Volume	Final Volume
Run #1	110 ml	1.0 ml
Run #2	110 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid [a]	0.045 U [b]	0.091	0.045	0.023	ug/l	
2706-90-3	Perfluoropentanoic acid	0.023 U [b]	0.045	0.023	0.011	ug/l	
307-24-4	Perfluorohexanoic acid	0.023 U [b]	0.045	0.023	0.011	ug/l	
375-85-9	Perfluoroheptanoic acid	0.023 U [b]	0.045	0.023	0.011	ug/l	
335-67-1	Perfluorooctanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
375-95-1	Perfluorononanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-76-2	Perfluorodecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
307-55-1	Perfluorododecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
376-06-7	Perfluorotetradecanoic acid [a]	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.023 U [b]	0.045	0.023	0.011	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.023 U [b]	0.045	0.023	0.011	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0037	0.0091	0.0045	0.0023	ug/l	J
375-92-8	Perfluoroheptanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0045 U	0.0091	0.0045	0.0023	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA [a]	0.023 U [b]	0.045	0.023	0.011	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
2991-50-6	EtFOSAA	0.0091 U	0.018	0.0091	0.0045	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.045 U [b]	0.091	0.045	0.023	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	S114-MW0008I-029.0-20220819		
Lab Sample ID:	FA98286-47	**Date Sampled:**	08/19/22
Matrix:	AQ - Ground Water	**Date Received:**	08/19/22
Method:	EPA 537M QSM5.3 B-15 EPA 537 MOD	**Percent Solids:**	n/a
Project:	SWMU 114 Fire Station 2; KSC, FL		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0091 U	0.018	0.0091	0.0045	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX) [a]	0.0091 U	0.018	0.0091	0.0045	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	40% [c]	39% [c]	50-150%
	13C5-PFPeA	39% [c]	53%	50-150%
	13C5-PFHxA	42% [c]	56%	50-150%
	13C4-PFHpA	48% [c]	60%	50-150%
	13C8-PFOA	55%	64%	50-150%
	13C9-PFNA	59%	64%	50-150%
	13C6-PFDA	58%	61%	50-150%
	13C7-PFUnDA	54%	58%	50-150%
	13C2-PFDoDA	51%	57%	50-150%
	13C2-PFTeDA	47% [c]	53%	50-150%
	13C3-PFBS	42% [c]	55%	50-150%
	13C3-PFHxS	50%	63%	50-150%
	13C8-PFOS	57%	65%	50-150%
	13C8-FOSA	25% [c]	35% [c]	50-150%
	d3-MeFOSAA	57%	64%	50-150%
	d5-EtFOSAA	54%	64%	50-150%
	13C2-4:2FTS	41% [c]	55%	50-150%
	13C2-6:2FTS	55%	63%	50-150%
	13C2-8:2FTS	54%	61%	50-150%
	13C3-HFPO-DA	40% [c]	54%	50-150%

(a) Associated ID Standard outside control limits.
(b) Result is from Run# 2
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-FB-20220819-01
Lab Sample ID: FA98286-48 **Date Sampled:** 08/19/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4603.D	1	09/14/22 22:26	AL	08/29/22 11:17	OP92794	S5Q71
Run #2 [a]	5Q4893.D	2	09/18/22 08:14	AL	08/29/22 11:17	OP92794	S5Q73

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2	125 ml	1.0 ml

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-FB-20220819-01
Lab Sample ID: FA98286-48 **Date Sampled:** 08/19/22
Matrix: AQ - Field Blank Water **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX) [b]	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	53%	49% [c]	50-150%
	13C5-PFPeA	56%	53%	50-150%
	13C5-PFHxA	59%	54%	50-150%
	13C4-PFHpA	62%	58%	50-150%
	13C8-PFOA	67%	61%	50-150%
	13C9-PFNA	69%	62%	50-150%
	13C6-PFDA	70%	63%	50-150%
	13C7-PFUnDA	66%	62%	50-150%
	13C2-PFDoDA	67%	60%	50-150%
	13C2-PFTeDA	58%	59%	50-150%
	13C3-PFBS	65%	62%	50-150%
	13C3-PFHxS	68%	62%	50-150%
	13C8-PFOS	68%	60%	50-150%
	13C8-FOSA	69%	60%	50-150%
	d3-MeFOSAA	86%	77%	50-150%
	d5-EtFOSAA	81%	70%	50-150%
	13C2-4:2FTS	56%	53%	50-150%
	13C2-6:2FTS	64%	60%	50-150%
	13C2-8:2FTS	65%	61%	50-150%
	13C3-HFPO-DA	48%	51%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Associated ID Standard outside control limits.
(c) Outside control limits.

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID: S114-EB-20220819-01
Lab Sample ID: FA98286-49 **Date Sampled:** 08/19/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	5Q4604.D	1	09/14/22 22:42	AL	08/29/22 11:17	OP92794	S5Q71
Run #2							

	Initial Volume	Final Volume
Run #1	125 ml	1.0 ml
Run #2		

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
PERFLUOROALKYLCARBOXYLIC ACIDS							
375-22-4	Perfluorobutanoic acid	0.0080 U	0.016	0.0080	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROALKYLSULFONIC ACIDS							
375-73-5	Perfluorobutanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDES							
754-91-6	PFOSA	0.0040 U	0.0080	0.0040	0.0020	ug/l	
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS							
2355-31-9	MeFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
2991-50-6	EtFOSAA	0.0080 U	0.016	0.0080	0.0040	ug/l	
FLUOROTELOMER SULFONATES							
757124-72-4	4:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: S114-EB-20220819-01
Lab Sample ID: FA98286-49 **Date Sampled:** 08/19/22
Matrix: AQ - Equipment Blank **Date Received:** 08/19/22
Method: EPA 537M QSM5.3 B-15 EPA 537 MOD **Percent Solids:** n/a
Project: SWMU 114 Fire Station 2; KSC, FL

CAS No.	Compound	Result	LOQ	LOD	DL	Units	Q
39108-34-4	8:2 Fluorotelomer sulfonate	0.0080 U	0.016	0.0080	0.0040	ug/l	
NEXT GENERATION PFAS ANALYTES							
13252-13-6	HFPO-DA (GenX)	0.0080 U	0.016	0.0080	0.0040	ug/l	

CAS No.	ID Standard Recoveries	Run# 1	Run# 2	Limits
	13C4-PFBA	68%		50-150%
	13C5-PFPeA	68%		50-150%
	13C5-PFHxA	70%		50-150%
	13C4-PFHpA	70%		50-150%
	13C8-PFOA	69%		50-150%
	13C9-PFNA	68%		50-150%
	13C6-PFDA	70%		50-150%
	13C7-PFUnDA	68%		50-150%
	13C2-PFDoDA	72%		50-150%
	13C2-PFTeDA	67%		50-150%
	13C3-PFBS	74%		50-150%
	13C3-PFHxS	69%		50-150%
	13C8-PFOS	68%		50-150%
	13C8-FOSA	70%		50-150%
	d3-MeFOSAA	86%		50-150%
	d5-EtFOSAA	85%		50-150%
	13C2-4:2FTS	66%		50-150%
	13C2-6:2FTS	68%		50-150%
	13C2-8:2FTS	64%		50-150%
	13C3-HFPO-DA	61%		50-150%

U = Not detected LOD = Limit of Detection J = Indicates an estimated value
LOQ = Limit of Quantitation DL = Detection Limit B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody
- QC Evaluation: DOD QSM5.x Limits

FA98286

SGS North America Inc - Orlando

Chain of Custody

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www.sgs.com

SGS _ ORLANDO JOB #: PAGE 1 OF 15

SGS - ORLANDO Quote: SKIFF #

Client / Reporting Information

Company Name: HGL, Inc.
Address: 2405 N. Courtney Parkway STE. 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed) Sampler 1: Justin Vojak Sampler 2:

Project Information

Project Name: SWMU114 GW Sampling
Street ICBM Rd: Kennedy PKWY
City Cape Canaveral State FL
Project # NS1010.01.05
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY	MATRIX	TOTAL # OF BOTTLES	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MEOH	LCQSM537/DODFL-24+GENX	LAB USE ONLY
1	S114-MW0017S-009.0-20220816	8/16/22	1034	JV	GW	2	X								X	
2	S114-FD-20220816-01	8/16/22	1034	JV	GW	2	X								X	
3	S114-MW0017I-030.0-20220816	8/16/22	1113	JV	GW	2	X								X	
4	S114-MW0019S-009.0-20220816	8/16/22	1207	JV	GW	2	X								X	
5	S114-MW0019J-030.0-20220816	8/16/22	1241	JV	GW	2	X								X	
6	S114-MW0020I-030.0-20220816	8/16/22	1330	JV	GW	2	X								X	
7	S114-MW0020S-008.0-20220816	8/16/22	1403	JV	GW	2	X								X	
8	S114-FB-20220816-01	8/16/22	1450	JV	WW	2	X								X	
9	S114-EB-20220816-01	8/16/22	1455	JV	WW	2	X								X	

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other

Turnaround Time (Business days)

Std. 10 Business Days
7 Day *RUSH*
5 Day *RUSH*
3 Day *EMERGENCY*
2 Day *EMERGENCY*
1 Day *EMERGENCY*
Other
Approved By: / Date/Rush Code:
Emergency or Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

INITIAL ASSESSMENT CRV
LABEL VERIFICATION

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	J. Vojak/HGL	8/19/22 1445	2	3	8/19/22 1715	4 8/19/22 1745
5			6	7		8

Lab Use Only: Custody Seal in Place: Y N Temp Blank Provided: Y N Preserved Where Applicable: Y N Total # of Coolers: Cooler Temperature (s) Celsius: 3.0, 2.2, 1.4, 4.2 CRV

5.1 5

FA98286: Chain of Custody
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FA98286

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Chain of Custody

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SGS - ORLANDO JOB # : PAGE 2 OF 5

SGS - ORLANDO Quote #	SKIFF #

Client / Reporting Information

Company Name: HGL Inc
Address: 2405 N. Courtenay Pkwy Ste 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: driversd@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Justin Vojak Sampler 2: Dustin Lupis

Project Information

Project Name: SWMU S114 GW Sampling
Street Kennedy Pkwy
City Kennedy Space Center State FL
Project # NS1010.01.05
Fax #
Client Purchase Order #

Analytical Information

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	CONTAINER INFORMATION: NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnA	DI WATER	MEOH	VOA 537 pod RL 2+ 6mX												LAB USE ONLY
10	S114-MW00195-010.0-20220817	8/17/22	1307	JV	GW	2		X								X											
11	S114-MW0018I-030.0-20220817		1350		GW																						
12	S114-FB-20220817-01		1405		WW																						
13	S114-EB-20220817-01		1410		WW																						
14	S114-MW00015-007.0-20220817	8/17/22	1322	DL	GW	2		X								X											
15	S114-MW0001I-030.0-20220817	8/17/22	1405	DL	GW	2		X								X											
16	S114-FB-20220817-01	8/17/22	1405	DL	GW	2		X								X											
17	S114-MW155-009.0-20220818	8/18/22	0957	JV	GW	2		X								X											
18	S114-MW15I-030.0-20220818		1039																								
19	S114-FB-20220818-01		1039																								
20	S114-MW00125-007.0-20220818		1147																								
21	S114-MW0012I-030.0-20220818		1230																								

Matrix Codes
DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL - Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	J.Vojak/HGL	8/19/22 1645	2	3	8/19/22 1740	4 8/19/22 1745
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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Chain of Custody

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SGS - ORLANDO JOB # : PAGE 3 OF 5

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL Inc.
Address: 2405 N. Courtenay Pkwy STE 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Justin Vojick Sampler 2: Dustin Lupis

Project Information

Project Name: SWMU SITE GW Sampling
Street: Kennedy Pkwy
City: Kennedy Space Center State: FL
Project #: NS1010.01.05
Fax #:
Client Purchase Order #:

Analytical Information

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	1,4-DIOXANE 537 DODFL + GEN X	LAB USE ONLY
22	5114 - MW00025-009.0-20220818	8/18/22	0955	DL	GW	2		X								X	
23	5114 - MW00021-029.0-20220818	8/18/22	1035	DL	GW	2		X								X	
24	5114 - MW00016I - 030.0-20220818	8/18/22	1135	DL	GW	2		X								X	
25	5114 - MW00016S - 010.0-20220818	8/18/22	1215	DL	GW	2		X								X	
26	5114 - MW00035 - 008.0-20220818	8/18/22	1312	DL	GW	2		X								X	
27	5114 - MW00031 - 030.0-20220818	8/18/22	1358	DL	GW	2		X								X	
28	5114 - MW00041 - 029.0-20220818	8/18/22	1500	DL	GW	2		X								X	
29	5114 - FB-20220818-01	8/18/22	1510	DL	GW	2		X								X	
30	5114 - EB-20220818-01	8/18/22	1515	DL	GW	2		X								X	

Turnaround Time (Business days)

- 10 Day (Business) — Approved By: / Date:
- 7 Day
- 5 Day
- 3 Day *RUSH*
- 2 Day *RUSH*
- 1 Day *RUSH*
- Other

Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- ☐ COMMERCIAL "A" (RESULTS ONLY)
- ☐ COMMERCIAL "B" (RESULTS PLUS QC)
- ☐ REDT1 (EPA LEVEL 3)
- ☐ FULLT1 (EPA LEVEL 4)
- ☐ EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	J. Vojick/HGL	8/19/22 1615	2	3	8/19/22 1748	4 8/19/22 1745
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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SGS - ORLANDO JOB # : PAGE 4 OF 5

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL Inc
Address: 2405 N. Courtenay PKWY STE 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: drivers@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: ~~Eric~~ Justin Cubis Sampler 2:

Project Information

Project Name: SWMU 5114 GW Sampling
Street: Kennedy PKWY
City: Kennedy Space Center State: FL
Project #: NS1010.01.05
Fax #
Client Purchase Order #

Analytical Information

LL@CM537DODFL+GENX

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	TIME	SAMPLED BY:	MATRIX	TOTAL # OF BOTTLES	CONTAINER INFORMATION: OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NaOH+ZnAc	DI WATER	MeOH	LL@CM537DODFL+GENX	LAB USE ONLY
31	5114-MW00055-008.0-20220819	8/19/22	0930	DL	GW	2		X								X	
32	5114-MW0005E-029.0-20220819		1022					X								X	
33	5114-MW00063-007.0-20220819		1115					X								X	
34	5114-FD-20220819-01		1115					X								X	
35	5114-MW0006E-030.0-20220819		1152					X								X	
36	5114-MW00075-009.0-20220819		1240					X								X	
37	5114-MW0007E-029.0-20220819		1305					X								X	
38	5114-MW00085-008.0-20220819	↓	1415	↓	↓	↓		X								X	

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	J. Vogel C/HGL	8/19/22 1615	2	3	8/19/22 1745	4 8/19/22 1745
5			6	7		8

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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Chain of Custody

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www.sgs.com

SGS - ORLANDO JOB # : PAGE 5 OF 5

SGS - ORLANDO Quote # | SKIFF #

Client / Reporting Information

Company Name: HGL Inc.
Address: 2405 N. Courtenay PKWY STE 203
City: Merritt Island State: FL Zip: 32953
Project Contact: Denise Rivers Email: DriversD@hgl.com
Phone #: 910-233-8460
Sampler(s) Name(s) (Printed)
Sampler 1: Justin Voiik Sampler 2:

Project Information

Project Name: SWMU S114 GW Sampling
Street: Kennedy PKWY
City: Kennedy Space Center State: FL
Project #: NS1010.01.05
Fax #:
Client Purchase Order #:

Analytical Information

LGASMS37100FL-24 4Gas X

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid

SGS Orlando Sample #	Field ID / Point of Collection	COLLECTION DATE	COLLECTION TIME	SAMPLED BY:	CONTAINER INFORMATION MATRIX	TOTAL # OF BOTTLES	OTHER	NONE	HCl	NaOH	HNO3	H2SO4	NAOH+ZNAC	DI WATER	MEOH	LAB USE ONLY
39	S114-MW00135-007.0-20220818	8/18/22	1401	JV	GW	2		X								X
40	S114-MW0013I-030.0-20220818	11	1440	JV	11	2		X								X
41	S114-MW00105-010.0-20220819	8/19/22	0911													
42	S114-MW0010I-029.0-20220819		0950													
43	S114-MW0009S-008.0-20220819		1050													
44	S114-MW0009I-030.0-20220819		1138													
45	S114-MW0011I-030.0-20220819		1237													
46	S114-MW0011S-010.0-20220819		1318													
47	S114-MW0008I-029.0-20220819		1409													
48	S114-FB-20220819-01		1420		WW											
49	S114-EB-20220819-01		1425		WW											

Turnaround Time (Business days)

10 Day (Business) Approved By: / Date:
7 Day
5 Day
3 Day *RUSH*
2 Day *RUSH*
1 Day *RUSH*
Other
Rush T/A Data Available VIA Email or Lablink

Data Deliverable Information

- [ ] COMMERCIAL "A" (RESULTS ONLY)
- [ ] COMMERCIAL "B" (RESULTS PLUS QC)
- [ ] REDT1 (EPA LEVEL 3)
- [ ] FULLT1 (EPA LEVEL 4)
- [ ] EDD'S

Comments / Remarks

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler/Affiliation	Date Time:	Received By/Affiliation	Relinquished By/Affiliation	Date Time:	Received By/Affiliation
1	J.Voiik/HGL	8/19/22 1615	2	3	8/19/22 1745	4 8/19/22 1745
5	Relinquished by/Affiliation	Date Time:	6 Received By/Affiliation	7 Relinquished By/Affiliation	Date Time:	8 Received By/Affiliation

Lab Use Only : Cooler Temperature (s) Celsius (corrected):

http://www.sgs.com/en/terms-and-conditions

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SGS Sample Receipt Summary

Job Number: FA98286 **Client:** HGL **Project:** SWMU114 GW SAMPLING

Date / Time Received: 8/19/2022 5:45:00 PM **Delivery Method:** COURIER **Airbill #'s:**

Therm ID: IR 1; **Therm CF:** 0.6; **# of Coolers:** 4

Cooler Temps (Raw Measured) °C: Cooler 1: (3.0); Cooler 2: (2.2); Cooler 3: (1.4); Cooler 4: (4.2);

Cooler Temps (Corrected) °C: Cooler 1: (3.6); Cooler 2: (2.8); Cooler 3: (2.0); Cooler 4: (4.8);

Cooler Information	Y	or	N
1. Custody Seals Present	☑		☐
2. Custody Seals Intact	☑		☐
3. Temp criteria achieved	☑		☐
4. Cooler temp verification	IR Gun		
5. Cooler media	Ice (Bag)		

Trip Blank Information	Y	or	N	N/A
1. Trip Blank present / cooler	☐		☐	☑
2. Trip Blank listed on COC	☐		☐	☑

	W	or	S	N/A
3. Type Of TB Received	☐		☐	☑

Sample Information	Y	or	N	N/A
1. Sample labels present on bottles	☑		☐	
2. Samples preserved properly	☑		☐	
3. Sufficient volume/containers recvd for analysis:	☑		☐	
4. Condition of sample	Intact			
5. Sample recvd within HT	☑		☐	
6. Dates/Times/IDs on COC match Sample Label	☑		☐	
7. VOCs have headspace	☐		☐	☑
8. Bottles received for unspecified tests	☐		☑	
9. Compositing instructions clear	☐		☐	☑
10. Voa Soil Kits/Jars received past 48hrs?	☐		☐	☑
11. % Solids Jar received?	☐		☐	☑
12. Residual Chlorine Present?	☐		☐	☑

Misc. Information

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments FOR SAMPLE -29, ID: "S114-FB-20220818-01", ONE BOTTLE WAS RECEIVED WITH LOW VOLUME.

SM001
Rev. Date 05/24/17

Technician: SAMUELM Date: 8/19/2022 5:45:00 PM Reviewer: _____ Date: _____

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92762	EPA 537M QSM5.3 B-15						
OP92762-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	98	%	73-129
OP92762-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	99	%	72-129
OP92762-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	100	%	72-129
OP92762-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	99	%	72-130
OP92762-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	98	%	71-133
OP92762-BS	375-95-1	Perfluorononanoic acid	BSP	REC	98	%	69-130
OP92762-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	98	%	71-129
OP92762-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	100	%	69-133
OP92762-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	99	%	72-134
OP92762-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	111	%	65-144
OP92762-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	102	%	71-132
OP92762-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	97	%	72-130
OP92762-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	96	%	71-127
OP92762-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	98	%	68-131
OP92762-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	103	%	69-134
OP92762-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	99	%	65-140
OP92762-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	90	%	69-127
OP92762-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	96	%	53-142
OP92762-BS	754-91-6	PFOSA	BSP	REC	100	%	67-137
OP92762-BS	2355-31-9	MeFOSAA	BSP	REC	95	%	65-136
OP92762-BS	2991-50-6	EtFOSAA	BSP	REC	97	%	61-135
OP92762-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	98	%	63-143
OP92762-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	100	%	64-140
OP92762-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	97	%	67-138
OP92762-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	101	%	73-129
OP92762-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	103	%	72-129
OP92762-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	100	%	72-129
OP92762-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	101	%	72-130
OP92762-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	102	%	71-133
OP92762-MS*	375-95-1	Perfluorononanoic acid	MS	REC	100	%	69-130
OP92762-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	102	%	71-129
OP92762-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	102	%	69-133
OP92762-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	102	%	72-134
OP92762-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	105	%	65-144
OP92762-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	103	%	71-132
OP92762-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	101	%	72-130
OP92762-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	102	%	71-127
OP92762-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	103	%	68-131
OP92762-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	109	%	69-134
OP92762-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	92	%	65-140
OP92762-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	93	%	69-127
OP92762-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	104	%	53-142

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92762-MS*	754-91-6	PFOSA	MS	REC	104	%	67-137
OP92762-MS*	2355-31-9	MeFOSAA	MS	REC	100	%	65-136
OP92762-MS*	2991-50-6	EtFOSAA	MS	REC	104	%	61-135
OP92762-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	102	%	63-143
OP92762-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	102	%	64-140
OP92762-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	100	%	67-138
OP92762-MSD*	375-22-4	Perfluorobutanoic acid	MSD	REC	100	%	73-129
OP92762-MSD*	375-22-4	Perfluorobutanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	REC	101	%	72-129
OP92762-MSD*	2706-90-3	Perfluoropentanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	307-24-4	Perfluorohexanoic acid	MSD	REC	99	%	72-129
OP92762-MSD*	307-24-4	Perfluorohexanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	REC	99	%	72-130
OP92762-MSD*	375-85-9	Perfluoroheptanoic acid	MSD	RPD	1	%	30
OP92762-MSD*	335-67-1	Perfluorooctanoic acid	MSD	REC	100	%	71-133
OP92762-MSD*	335-67-1	Perfluorooctanoic acid	MSD	RPD	1	%	30
OP92762-MSD*	375-95-1	Perfluorononanoic acid	MSD	REC	98	%	69-130
OP92762-MSD*	375-95-1	Perfluorononanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	335-76-2	Perfluorodecanoic acid	MSD	REC	99	%	71-129
OP92762-MSD*	335-76-2	Perfluorodecanoic acid	MSD	RPD	1	%	30
OP92762-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	REC	100	%	69-133
OP92762-MSD*	2058-94-8	Perfluoroundecanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	307-55-1	Perfluorododecanoic acid	MSD	REC	99	%	72-134
OP92762-MSD*	307-55-1	Perfluorododecanoic acid	MSD	RPD	1	%	30
OP92762-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	REC	101	%	65-144
OP92762-MSD*	72629-94-8	Perfluorotridecanoic acid	MSD	RPD	0	%	30
OP92762-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	REC	101	%	71-132
OP92762-MSD*	376-06-7	Perfluorotetradecanoic acid	MSD	RPD	2	%	30
OP92762-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	REC	98	%	72-130
OP92762-MSD*	375-73-5	Perfluorobutanesulfonic acid	MSD	RPD	0	%	30
OP92762-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	REC	99	%	71-127
OP92762-MSD*	2706-91-4	Perfluoropentanesulfonic acid	MSD	RPD	0	%	30
OP92762-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	REC	99	%	68-131
OP92762-MSD*	355-46-4	Perfluorohexanesulfonic acid	MSD	RPD	0	%	30
OP92762-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	REC	105	%	69-134
OP92762-MSD*	375-92-8	Perfluoroheptanesulfonic acid	MSD	RPD	0	%	30
OP92762-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	REC	97	%	65-140
OP92762-MSD*	1763-23-1	Perfluorooctanesulfonic acid	MSD	RPD	6	%	30
OP92762-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	REC	91	%	69-127
OP92762-MSD*	68259-12-1	Perfluorononanesulfonic acid	MSD	RPD	2	%	30
OP92762-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	REC	98	%	53-142
OP92762-MSD*	335-77-3	Perfluorodecanesulfonic acid	MSD	RPD	2	%	30
OP92762-MSD*	754-91-6	PFOSA	MSD	REC	102	%	67-137
OP92762-MSD*	754-91-6	PFOSA	MSD	RPD	3	%	30
OP92762-MSD*	2355-31-9	MeFOSAA	MSD	REC	98	%	65-136

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92762-MSD*	2355-31-9	MeFOSAA	MSD	RPD	1	%	30
OP92762-MSD*	2991-50-6	EtFOSAA	MSD	REC	100	%	61-135
OP92762-MSD*	2991-50-6	EtFOSAA	MSD	RPD	1	%	30
OP92762-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	REC	100	%	63-143
OP92762-MSD*	757124-72-4	4:2 Fluorotelomer sulfonate	MSD	RPD	1	%	30
OP92762-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	REC	100	%	64-140
OP92762-MSD*	27619-97-2	6:2 Fluorotelomer sulfonate	MSD	RPD	2	%	30
OP92762-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	REC	98	%	67-138
OP92762-MSD*	39108-34-4	8:2 Fluorotelomer sulfonate	MSD	RPD	1	%	30
OP92763	EPA 537M QSM5.3 B-15						
OP92763-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	101	%	73-129
OP92763-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	95	%	72-129
OP92763-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	94	%	72-129
OP92763-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	98	%	72-130
OP92763-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	96	%	71-133
OP92763-BS	375-95-1	Perfluorononanoic acid	BSP	REC	98	%	69-130
OP92763-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	96	%	71-129
OP92763-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	100	%	69-133
OP92763-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	99	%	72-134
OP92763-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	84	%	65-144
OP92763-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	95	%	71-132
OP92763-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	96	%	72-130
OP92763-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	94	%	71-127
OP92763-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	95	%	68-131
OP92763-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	101	%	69-134
OP92763-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	94	%	65-140
OP92763-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	95	%	69-127
OP92763-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	90	%	53-142
OP92763-BS	754-91-6	PFOSA	BSP	REC	94	%	67-137
OP92763-BS	2355-31-9	MeFOSAA	BSP	REC	96	%	65-136
OP92763-BS	2991-50-6	EtFOSAA	BSP	REC	102	%	61-135
OP92763-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	95	%	63-143
OP92763-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	102	%	64-140
OP92763-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	97	%	67-138
OP92763-MS	375-22-4	Perfluorobutanoic acid	MS	REC	101	%	73-129
OP92763-MS	2706-90-3	Perfluoropentanoic acid	MS	REC	97	%	72-129
OP92763-MS	307-24-4	Perfluorohexanoic acid	MS	REC	96	%	72-129
OP92763-MS	375-85-9	Perfluoroheptanoic acid	MS	REC	98	%	72-130
OP92763-MS	335-67-1	Perfluorooctanoic acid	MS	REC	97	%	71-133
OP92763-MS	375-95-1	Perfluorononanoic acid	MS	REC	98	%	69-130
OP92763-MS	335-76-2	Perfluorodecanoic acid	MS	REC	95	%	71-129
OP92763-MS	2058-94-8	Perfluoroundecanoic acid	MS	REC	101	%	69-133
OP92763-MS	307-55-1	Perfluorododecanoic acid	MS	REC	101	%	72-134

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92763-MS	72629-94-8	Perfluorotridecanoic acid	MS	REC	89	%	65-144
OP92763-MS	376-06-7	Perfluorotetradecanoic acid	MS	REC	92	%	71-132
OP92763-MS	375-73-5	Perfluorobutanesulfonic acid	MS	REC	97	%	72-130
OP92763-MS	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	102	%	71-127
OP92763-MS	355-46-4	Perfluorohexanesulfonic acid	MS	REC	97	%	68-131
OP92763-MS	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	104	%	69-134
OP92763-MS	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	93	%	65-140
OP92763-MS	68259-12-1	Perfluorononanesulfonic acid	MS	REC	91	%	69-127
OP92763-MS	335-77-3	Perfluorodecanesulfonic acid	MS	REC	91	%	53-142
OP92763-MS	754-91-6	PFOSA	MS	REC	103	%	67-137
OP92763-MS	2355-31-9	MeFOSAA	MS	REC	102	%	65-136
OP92763-MS	2991-50-6	EtFOSAA	MS	REC	104	%	61-135
OP92763-MS	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	97	%	63-143
OP92763-MS	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	102	%	64-140
OP92763-MS	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	99	%	67-138
OP92763-DUP	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP92763-DUP	2706-90-3	Perfluoropentanoic acid	DUP	RPD	0	%	30
OP92763-DUP	307-24-4	Perfluorohexanoic acid	DUP	RPD	0	%	30
OP92763-DUP	375-85-9	Perfluoroheptanoic acid	DUP	RPD	0	%	30
OP92763-DUP	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP92763-DUP	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP92763-DUP	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP92763-DUP	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP92763-DUP	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP92763-DUP	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP92763-DUP	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP92763-DUP	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	10	%	30
OP92763-DUP	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP92763-DUP	754-91-6	PFOSA	DUP	RPD	0	%	30
OP92763-DUP	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP92763-DUP	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP92763-DUP	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92763-DUP	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92763-DUP	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92764	EPA 537M QSM5.3 B-15						
OP92764-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	106	%	73-129
OP92764-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	101	%	72-129
OP92764-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	99	%	72-129

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92764-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	104	%	72-130
OP92764-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	99	%	71-133
OP92764-BS	375-95-1	Perfluorononanoic acid	BSP	REC	89	%	69-130
OP92764-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	96	%	71-129
OP92764-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	101	%	69-133
OP92764-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	106	%	72-134
OP92764-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	92	%	65-144
OP92764-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	100	%	71-132
OP92764-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	102	%	72-130
OP92764-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	102	%	71-127
OP92764-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	104	%	68-131
OP92764-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	113	%	69-134
OP92764-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	93	%	65-140
OP92764-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	80	%	69-127
OP92764-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	84	%	53-142
OP92764-BS	754-91-6	PFOSA	BSP	REC	104	%	67-137
OP92764-BS	2355-31-9	MeFOSAA	BSP	REC	113	%	65-136
OP92764-BS	2991-50-6	EtFOSAA	BSP	REC	89	%	61-135
OP92764-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	102	%	63-143
OP92764-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	109	%	64-140
OP92764-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	104	%	67-138
OP92764-MS	375-22-4	Perfluorobutanoic acid	MS	REC	104	%	73-129
OP92764-MS	2706-90-3	Perfluoropentanoic acid	MS	REC	98	%	72-129
OP92764-MS	307-24-4	Perfluorohexanoic acid	MS	REC	92	%	72-129
OP92764-MS	375-85-9	Perfluoroheptanoic acid	MS	REC	95	%	72-130
OP92764-MS	335-67-1	Perfluorooctanoic acid	MS	REC	96	%	71-133
OP92764-MS	375-95-1	Perfluorononanoic acid	MS	REC	92	%	69-130
OP92764-MS	335-76-2	Perfluorodecanoic acid	MS	REC	92	%	71-129
OP92764-MS	2058-94-8	Perfluoroundecanoic acid	MS	REC	101	%	69-133
OP92764-MS	307-55-1	Perfluorododecanoic acid	MS	REC	100	%	72-134
OP92764-MS	72629-94-8	Perfluorotridecanoic acid	MS	REC	89	%	65-144
OP92764-MS	376-06-7	Perfluorotetradecanoic acid	MS	REC	95	%	71-132
OP92764-MS	375-73-5	Perfluorobutanesulfonic acid	MS	REC	100	%	72-130
OP92764-MS	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	101	%	71-127
OP92764-MS	355-46-4	Perfluorohexanesulfonic acid	MS	REC	85	%	68-131
OP92764-MS	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	116	%	69-134
OP92764-MS	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	102	%	65-140
OP92764-MS	68259-12-1	Perfluorononanesulfonic acid	MS	REC	92	%	69-127
OP92764-MS	335-77-3	Perfluorodecanesulfonic acid	MS	REC	96	%	53-142
OP92764-MS	754-91-6	PFOSA	MS	REC	102	%	67-137
OP92764-MS	2355-31-9	MeFOSAA	MS	REC	98	%	65-136
OP92764-MS	2991-50-6	EtFOSAA	MS	REC	94	%	61-135
OP92764-MS	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	100	%	63-143
OP92764-MS	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	106	%	64-140
OP92764-MS	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	101	%	67-138

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92764-DUP	375-22-4	Perfluorobutanoic acid	DUP	RPD	7	%	30
OP92764-DUP	2706-90-3	Perfluoropentanoic acid	DUP	RPD	3	%	30
OP92764-DUP	307-24-4	Perfluorohexanoic acid	DUP	RPD	11	%	30
OP92764-DUP	375-85-9	Perfluoroheptanoic acid	DUP	RPD	3	%	30
OP92764-DUP	335-67-1	Perfluorooctanoic acid	DUP	RPD	0	%	30
OP92764-DUP	375-95-1	Perfluorononanoic acid	DUP	RPD	0	%	30
OP92764-DUP	335-76-2	Perfluorodecanoic acid	DUP	RPD	0	%	30
OP92764-DUP	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP92764-DUP	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP92764-DUP	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP92764-DUP	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP92764-DUP	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	3	%	30
OP92764-DUP	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	9	%	30
OP92764-DUP	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	13	%	30
OP92764-DUP	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	11	%	30
OP92764-DUP	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	15	%	30
OP92764-DUP	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP92764-DUP	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP92764-DUP	754-91-6	PFOSA	DUP	RPD	0	%	30
OP92764-DUP	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP92764-DUP	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP92764-DUP	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92764-DUP	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92764-DUP	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92794	EPA 537M QSM5.3 B-15						
OP92794-BS	375-22-4	Perfluorobutanoic acid	BSP	REC	98	%	73-129
OP92794-BS	2706-90-3	Perfluoropentanoic acid	BSP	REC	89	%	72-129
OP92794-BS	307-24-4	Perfluorohexanoic acid	BSP	REC	89	%	72-129
OP92794-BS	375-85-9	Perfluoroheptanoic acid	BSP	REC	91	%	72-130
OP92794-BS	335-67-1	Perfluorooctanoic acid	BSP	REC	91	%	71-133
OP92794-BS	375-95-1	Perfluorononanoic acid	BSP	REC	91	%	69-130
OP92794-BS	335-76-2	Perfluorodecanoic acid	BSP	REC	88	%	71-129
OP92794-BS	2058-94-8	Perfluoroundecanoic acid	BSP	REC	94	%	69-133
OP92794-BS	307-55-1	Perfluorododecanoic acid	BSP	REC	94	%	72-134
OP92794-BS	72629-94-8	Perfluorotridecanoic acid	BSP	REC	74	%	65-144
OP92794-BS	376-06-7	Perfluorotetradecanoic acid	BSP	REC	93	%	71-132
OP92794-BS	375-73-5	Perfluorobutanesulfonic acid	BSP	REC	90	%	72-130
OP92794-BS	2706-91-4	Perfluoropentanesulfonic acid	BSP	REC	90	%	71-127
OP92794-BS	355-46-4	Perfluorohexanesulfonic acid	BSP	REC	88	%	68-131
OP92794-BS	375-92-8	Perfluoroheptanesulfonic acid	BSP	REC	94	%	69-134
OP92794-BS	1763-23-1	Perfluorooctanesulfonic acid	BSP	REC	87	%	65-140
OP92794-BS	68259-12-1	Perfluorononanesulfonic acid	BSP	REC	90	%	69-127
OP92794-BS	335-77-3	Perfluorodecanesulfonic acid	BSP	REC	90	%	53-142

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92794-BS	754-91-6	PFOSA	BSP	REC	94	%	67-137
OP92794-BS	2355-31-9	MeFOSAA	BSP	REC	91	%	65-136
OP92794-BS	2991-50-6	EtFOSAA	BSP	REC	95	%	61-135
OP92794-BS	757124-72-4	4:2 Fluorotelomer sulfonate	BSP	REC	88	%	63-143
OP92794-BS	27619-97-2	6:2 Fluorotelomer sulfonate	BSP	REC	96	%	64-140
OP92794-BS	39108-34-4	8:2 Fluorotelomer sulfonate	BSP	REC	93	%	67-138
OP92794-MS*	375-22-4	Perfluorobutanoic acid	MS	REC	97	%	73-129
OP92794-MS*	2706-90-3	Perfluoropentanoic acid	MS	REC	92	%	72-129
OP92794-MS*	307-24-4	Perfluorohexanoic acid	MS	REC	92	%	72-129
OP92794-MS*	375-85-9	Perfluoroheptanoic acid	MS	REC	94	%	72-130
OP92794-MS*	335-67-1	Perfluorooctanoic acid	MS	REC	96	%	71-133
OP92794-MS*	375-95-1	Perfluorononanoic acid	MS	REC	104	%	69-130
OP92794-MS*	335-76-2	Perfluorodecanoic acid	MS	REC	92	%	71-129
OP92794-MS*	2058-94-8	Perfluoroundecanoic acid	MS	REC	93	%	69-133
OP92794-MS*	307-55-1	Perfluorododecanoic acid	MS	REC	95	%	72-134
OP92794-MS*	72629-94-8	Perfluorotridecanoic acid	MS	REC	78	%	65-144
OP92794-MS*	376-06-7	Perfluorotetradecanoic acid	MS	REC	95	%	71-132
OP92794-MS*	375-73-5	Perfluorobutanesulfonic acid	MS	REC	93	%	72-130
OP92794-MS*	2706-91-4	Perfluoropentanesulfonic acid	MS	REC	101	%	71-127
OP92794-MS*	355-46-4	Perfluorohexanesulfonic acid	MS	REC	98	%	68-131
OP92794-MS*	375-92-8	Perfluoroheptanesulfonic acid	MS	REC	153	%	69-134
OP92794-MS*	1763-23-1	Perfluorooctanesulfonic acid	MS	REC	12112 [a]	%	65-140
OP92794-MS*	68259-12-1	Perfluorononanesulfonic acid	MS	REC	68	%	69-127
OP92794-MS*	335-77-3	Perfluorodecanesulfonic acid	MS	REC	81	%	53-142
OP92794-MS*	754-91-6	PFOSA	MS	REC	-14 [a]	%	67-137
OP92794-MS*	2355-31-9	MeFOSAA	MS	REC	96	%	65-136
OP92794-MS*	2991-50-6	EtFOSAA	MS	REC	97	%	61-135
OP92794-MS*	757124-72-4	4:2 Fluorotelomer sulfonate	MS	REC	93	%	63-143
OP92794-MS*	27619-97-2	6:2 Fluorotelomer sulfonate	MS	REC	96	%	64-140
OP92794-MS*	39108-34-4	8:2 Fluorotelomer sulfonate	MS	REC	96	%	67-138
OP92794-DUP*	375-22-4	Perfluorobutanoic acid	DUP	RPD	0	%	30
OP92794-DUP*	2706-90-3	Perfluoropentanoic acid	DUP	RPD	13	%	30
OP92794-DUP*	307-24-4	Perfluorohexanoic acid	DUP	RPD	5	%	30
OP92794-DUP*	375-85-9	Perfluoroheptanoic acid	DUP	RPD	8	%	30
OP92794-DUP*	335-67-1	Perfluorooctanoic acid	DUP	RPD	3	%	30
OP92794-DUP*	375-95-1	Perfluorononanoic acid	DUP	RPD	1	%	30
OP92794-DUP*	335-76-2	Perfluorodecanoic acid	DUP	RPD	17	%	30
OP92794-DUP*	2058-94-8	Perfluoroundecanoic acid	DUP	RPD	0	%	30
OP92794-DUP*	307-55-1	Perfluorododecanoic acid	DUP	RPD	0	%	30
OP92794-DUP*	72629-94-8	Perfluorotridecanoic acid	DUP	RPD	0	%	30
OP92794-DUP*	376-06-7	Perfluorotetradecanoic acid	DUP	RPD	0	%	30
OP92794-DUP*	375-73-5	Perfluorobutanesulfonic acid	DUP	RPD	0	%	30
OP92794-DUP*	2706-91-4	Perfluoropentanesulfonic acid	DUP	RPD	0	%	30
OP92794-DUP*	355-46-4	Perfluorohexanesulfonic acid	DUP	RPD	4	%	30
OP92794-DUP*	375-92-8	Perfluoroheptanesulfonic acid	DUP	RPD	0	%	30

* Sample used for QC is not from job FA98286

QC Evaluation: DOD QSM5.x Limits

Job Number: FA98286
Account: Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL
Collected: 08/16/22 thru 08/19/22

QC Sample ID	CAS#	Analyte	Sample Type	Result Type	Result	Units	Limits
OP92794-DUP*	1763-23-1	Perfluorooctanesulfonic acid	DUP	RPD	0	%	30
OP92794-DUP*	68259-12-1	Perfluorononanesulfonic acid	DUP	RPD	0	%	30
OP92794-DUP*	335-77-3	Perfluorodecanesulfonic acid	DUP	RPD	0	%	30
OP92794-DUP*	754-91-6	PFOSA	DUP	RPD	4	%	30
OP92794-DUP*	2355-31-9	MeFOSAA	DUP	RPD	0	%	30
OP92794-DUP*	2991-50-6	EtFOSAA	DUP	RPD	0	%	30
OP92794-DUP*	757124-72-4	4:2 Fluorotelomer sulfonate	DUP	RPD	0	%	30
OP92794-DUP*	27619-97-2	6:2 Fluorotelomer sulfonate	DUP	RPD	5	%	30
OP92794-DUP*	39108-34-4	8:2 Fluorotelomer sulfonate	DUP	RPD	6	%	30

(a) Outside control limits due to high level in sample relative to spike amount.

* Sample used for QC is not from job FA98286

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Isotope Dilution Standard Recovery Summaries
- Initial and Continuing Calibration Summaries
- Run Sequence Reports

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q898-IBLK	3Q65686.D	1	09/13/22	MV	n/a	n/a	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0040	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0020	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0020	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0020	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0020	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0020	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0020	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0020	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0020	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0020	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0020	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0020	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0020	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0020	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0020	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0020	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0020	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0020	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.0040	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0040	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0040	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	92%	35-135%
	13C5-PFPeA	93%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	94%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	99%	50-150%
	13C6-PFDA	99%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q898-IBLK	3Q65686.D	1	09/13/22	MV	n/a	n/a	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M BY ID

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	96%	40-140%
	13C2-PFDoDA	93%	40-140%
	13C2-PFTeDA	93%	30-130%
	13C3-PFBS	92%	50-150%
	13C3-PFHxS	94%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	97%	30-130%
	d3-MeFOSA	158%* [a]	10-130%
	d3-MeFOSAA	99%	40-140%
	d5-EtFOSAA	98%	40-140%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	97%	50-150%
	13C3-HFPO-DA	110%	50-150%

(a) Outside control limits.

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q71-IBLK	5Q4565.D	1	09/14/22	AL	n/a	n/a	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20, FA98286-48, FA98286-49

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	98%	50-150%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	97%	50-150%
	13C8-PFOA	97%	50-150%
	13C9-PFNA	98%	50-150%
	13C6-PFDA	99%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q71-IBLK	5Q4565.D	1	09/14/22	AL	n/a	n/a	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20, FA98286-48, FA98286-49

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	99%	50-150%
	13C2-PFDoDA	102%	50-150%
	13C2-PFTeDA	92%	50-150%
	13C3-PFBS	98%	50-150%
	13C3-PFHxS	99%	50-150%
	13C8-PFOS	97%	50-150%
	13C8-FOSA	99%	50-150%
	d3-MeFOSA	102%	50-150%
	d3-MeFOSAA	102%	50-150%
	d5-EtFOSAA	102%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	91%	50-150%
	13C2-8:2FTS	93%	50-150%
	13C3-HFPO-DA	94%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q85-IBLK	6Q4627.D	1	09/14/22	AL	n/a	n/a	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	101%	50-150%
	13C5-PFPeA	102%	50-150%
	13C5-PFHxA	102%	50-150%
	13C4-PFHpA	102%	50-150%
	13C8-PFOA	105%	50-150%
	13C9-PFNA	106%	50-150%
	13C6-PFDA	101%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q85-IBLK	6Q4627.D	1	09/14/22	AL	n/a	n/a	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	105%	50-150%
	13C2-PFDoDA	102%	50-150%
	13C2-PFTeDA	102%	50-150%
	13C3-PFBS	102%	50-150%
	13C3-PFHxS	105%	50-150%
	13C8-PFOS	102%	50-150%
	13C8-FOSA	106%	50-150%
	d3-MeFOSA	109%	50-150%
	d3-MeFOSAA	102%	50-150%
	d5-EtFOSAA	112%	50-150%
	13C2-4:2FTS	95%	50-150%
	13C2-6:2FTS	98%	50-150%
	13C2-8:2FTS	99%	50-150%
	13C3-HFPO-DA	105%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q86-IBLK	6Q4704.D	1	09/15/22	JB	n/a	n/a	S6Q86

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-25, FA98286-31, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	108%	50-150%
	13C5-PFPeA	107%	50-150%
	13C5-PFHxA	109%	50-150%
	13C4-PFHpA	108%	50-150%
	13C8-PFOA	111%	50-150%
	13C9-PFNA	114%	50-150%
	13C6-PFDA	110%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S6Q86-IBLK	6Q4704.D	1	09/15/22	JB	n/a	n/a	S6Q86

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-25, FA98286-31, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	110%	50-150%
	13C2-PFDoDA	105%	50-150%
	13C2-PFTeDA	109%	50-150%
	13C3-PFBS	108%	50-150%
	13C3-PFHxS	109%	50-150%
	13C8-PFOS	110%	50-150%
	13C8-FOSA	112%	50-150%
	d3-MeFOSA	111%	50-150%
	d3-MeFOSAA	103%	50-150%
	d5-EtFOSAA	102%	50-150%
	13C2-4:2FTS	98%	50-150%
	13C2-6:2FTS	102%	50-150%
	13C2-8:2FTS	98%	50-150%
	13C3-HFPO-DA	111%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q72-IBLK	5Q4665.D	1	09/15/22	AL	n/a	n/a	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-10, FA98286-11, FA98286-17, FA98286-18, FA98286-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	89%	50-150%
	13C5-PFPeA	91%	50-150%
	13C5-PFHxA	86%	50-150%
	13C4-PFHpA	84%	50-150%
	13C8-PFOA	80%	50-150%
	13C9-PFNA	80%	50-150%
	13C6-PFDA	81%	50-150%
	13C7-PFUnDA	77%	50-150%
	13C2-PFDoDA	77%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q72-IBLK	5Q4665.D	1	09/15/22	AL	n/a	n/a	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-10, FA98286-11, FA98286-17, FA98286-18, FA98286-20

CAS No.	ID Standard Recoveries		Limits
	13C2-PFTeDA	75%	50-150%
	13C3-PFBS	104%	50-150%
	13C3-PFHxS	103%	50-150%
	13C8-PFOS	99%	50-150%
	13C8-FOSA	91%	50-150%
	d3-MeFOSA	99%	50-150%
	d3-MeFOSAA	69%	50-150%
	d5-EtFOSAA	84%	50-150%
	13C2-4:2FTS	82%	50-150%
	13C2-6:2FTS	80%	50-150%
	13C2-8:2FTS	79%	50-150%
	13C3-HFPO-DA	95%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S3Q900-IBLK	3Q65833.D	1	09/15/22	MV	n/a	n/a	S3Q900

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-46, FA98286-47

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	102%	50-150%
	13C5-PFPeA	101%	50-150%
	13C5-PFHxA	103%	50-150%
	13C4-PFHpA	104%	50-150%
	13C8-PFOA	106%	50-150%
	13C9-PFNA	104%	50-150%
	13C6-PFDA	102%	50-150%
	13C7-PFUnDA	102%	50-150%
	13C2-PFDoDA	103%	50-150%
	13C2-PFTeDA	103%	50-150%
	13C3-PFBS	102%	50-150%
	13C3-PFHxS	103%	50-150%
	13C8-PFOS	102%	50-150%
	13C8-FOSA	108%	50-150%
	d3-MeFOSAA	107%	50-150%
	d5-EtFOSAA	105%	50-150%
	13C2-4:2FTS	96%	50-150%
	13C2-6:2FTS	101%	50-150%
	13C2-8:2FTS	98%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q73-IBLK	5Q4823.D	1	09/17/22	AL	n/a	n/a	S5Q73

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-7, FA98286-48

CAS No.	Compound	Result	RL	MDL	Units	Q
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	88%	50-150%
	13C5-PFPeA	89%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	88%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	88%	50-150%
	13C6-PFDA	89%	50-150%
	13C7-PFUnDA	88%	50-150%
	13C2-PFDoDA	89%	50-150%
	13C2-PFTeDA	89%	50-150%
	13C3-PFBS	89%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	91%	50-150%
	13C8-FOSA	89%	50-150%
	d3-MeFOSA	92%	50-150%
	d3-MeFOSAA	85%	50-150%
	d5-EtFOSAA	87%	50-150%
	13C2-4:2FTS	82%	50-150%
	13C2-6:2FTS	82%	50-150%
	13C2-8:2FTS	83%	50-150%
	13C3-HFPO-DA	87%	50-150%

Instrument Blank

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
S5Q74-IBLK	5Q4910.D	1	09/19/22	AL	n/a	n/a	S5Q74

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-4

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	121%	50-150%
	13C5-PFPeA	124%	50-150%
	13C5-PFHxA	123%	50-150%
	13C4-PFHpA	120%	50-150%
	13C8-PFOA	117%	50-150%
	13C9-PFNA	116%	50-150%
	13C6-PFDA	115%	50-150%
	13C7-PFUnDA	116%	50-150%
	13C2-PFDoDA	117%	50-150%
	13C2-PFTeDA	119%	50-150%
	13C3-PFBS	126%	50-150%
	13C3-PFHxS	124%	50-150%
	13C8-PFOS	127%	50-150%
	13C8-FOSA	116%	50-150%
	d3-MeFOSA	109%	50-150%
	d3-MeFOSAA	121%	50-150%
	d5-EtFOSAA	128%	50-150%
	13C2-4:2FTS	115%	50-150%
	13C2-6:2FTS	116%	50-150%
	13C2-8:2FTS	115%	50-150%
	13C3-HFPO-DA	131%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-MB	3Q65693.D	1	09/13/22	MV	08/26/22	OP92762	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	92%	50-150%
	13C5-PFHxA	92%	50-150%
	13C4-PFHpA	94%	50-150%
	13C8-PFOA	95%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	92%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-MB	3Q65693.D	1	09/13/22	MV	08/26/22	OP92762	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	87%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	55%	50-150%
	13C3-PFBS	91%	50-150%
	13C3-PFHxS	93%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	89%	50-150%
	d3-MeFOSA	36%* [a]	50-150%
	d3-MeFOSAA	91%	50-150%
	d5-EtFOSAA	84%	50-150%
	13C2-4:2FTS	87%	50-150%
	13C2-6:2FTS	93%	50-150%
	13C2-8:2FTS	91%	50-150%
	13C3-HFPO-DA	88%	50-150%

(a) Outside control limits.

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-MB	5Q4631.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	87%	50-150%
	13C5-PFHxA	88%	50-150%
	13C4-PFHpA	89%	50-150%
	13C8-PFOA	91%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	93%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-MB	5Q4631.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	89%	50-150%
	13C2-PFDoDA	80%	50-150%
	13C2-PFTeDA	63%	50-150%
	13C3-PFBS	89%	50-150%
	13C3-PFHxS	89%	50-150%
	13C8-PFOS	89%	50-150%
	13C8-FOSA	76%	50-150%
	d3-MeFOSAA	108%	50-150%
	d5-EtFOSAA	96%	50-150%
	13C2-4:2FTS	84%	50-150%
	13C2-6:2FTS	88%	50-150%
	13C2-8:2FTS	89%	50-150%
	13C3-HFPO-DA	78%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-MB	6Q4672.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.016	0.0040	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0080	0.0020	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0080	0.0020	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0080	0.0020	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0080	0.0020	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0080	0.0020	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0080	0.0020	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0080	0.0020	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0080	0.0020	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0080	0.0020	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0080	0.0020	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0080	0.0020	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0080	0.0020	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0080	0.0020	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0080	0.0020	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0080	0.0020	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0080	0.0020	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0080	0.0020	ug/l	
754-91-6	PFOSA	ND	0.0080	0.0020	ug/l	
2355-31-9	MeFOSAA	ND	0.016	0.0040	ug/l	
2991-50-6	EtFOSAA	ND	0.016	0.0040	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.016	0.0040	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.016	0.0040	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	87%	50-150%
	13C5-PFPeA	88%	50-150%
	13C5-PFHxA	89%	50-150%
	13C4-PFHpA	88%	50-150%
	13C8-PFOA	90%	50-150%
	13C9-PFNA	92%	50-150%
	13C6-PFDA	83%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-MB	6Q4672.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	86%	50-150%
	13C2-PFDoDA	74%	50-150%
	13C2-PFTeDA	59%	50-150%
	13C3-PFBS	87%	50-150%
	13C3-PFHxS	88%	50-150%
	13C8-PFOS	85%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSAA	88%	50-150%
	d5-EtFOSAA	78%	50-150%
	13C2-4:2FTS	83%	50-150%
	13C2-6:2FTS	87%	50-150%
	13C2-8:2FTS	79%	50-150%
	13C3-HFPO-DA	75%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-MB	5Q4602.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	Compound	Result	RL	MDL	Units	Q
375-22-4	Perfluorobutanoic acid	ND	0.0080	0.0020	ug/l	
2706-90-3	Perfluoropentanoic acid	ND	0.0040	0.0010	ug/l	
307-24-4	Perfluorohexanoic acid	ND	0.0040	0.0010	ug/l	
375-85-9	Perfluoroheptanoic acid	ND	0.0040	0.0010	ug/l	
335-67-1	Perfluorooctanoic acid	ND	0.0040	0.0010	ug/l	
375-95-1	Perfluorononanoic acid	ND	0.0040	0.0010	ug/l	
335-76-2	Perfluorodecanoic acid	ND	0.0040	0.0010	ug/l	
2058-94-8	Perfluoroundecanoic acid	ND	0.0040	0.0010	ug/l	
307-55-1	Perfluorododecanoic acid	ND	0.0040	0.0010	ug/l	
72629-94-8	Perfluorotridecanoic acid	ND	0.0040	0.0010	ug/l	
376-06-7	Perfluorotetradecanoic acid	ND	0.0040	0.0010	ug/l	
375-73-5	Perfluorobutanesulfonic acid	ND	0.0040	0.0010	ug/l	
2706-91-4	Perfluoropentanesulfonic acid	ND	0.0040	0.0010	ug/l	
355-46-4	Perfluorohexanesulfonic acid	ND	0.0040	0.0010	ug/l	
375-92-8	Perfluoroheptanesulfonic acid	ND	0.0040	0.0010	ug/l	
1763-23-1	Perfluorooctanesulfonic acid	ND	0.0040	0.0010	ug/l	
68259-12-1	Perfluorononanesulfonic acid	ND	0.0040	0.0010	ug/l	
335-77-3	Perfluorodecanesulfonic acid	ND	0.0040	0.0010	ug/l	
754-91-6	PFOSA	ND	0.0040	0.0010	ug/l	
2355-31-9	MeFOSAA	ND	0.0080	0.0020	ug/l	
2991-50-6	EtFOSAA	ND	0.0080	0.0020	ug/l	
757124-72-4	4:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
27619-97-2	6:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
39108-34-4	8:2 Fluorotelomer sulfonate	ND	0.0080	0.0020	ug/l	
13252-13-6	HFPO-DA (GenX)	ND	0.0080	0.0020	ug/l	

CAS No.	ID Standard Recoveries		Limits
	13C4-PFBA	98%	50-150%
	13C5-PFPeA	97%	50-150%
	13C5-PFHxA	97%	50-150%
	13C4-PFHpA	98%	50-150%
	13C8-PFOA	98%	50-150%
	13C9-PFNA	98%	50-150%
	13C6-PFDA	98%	50-150%

Method Blank Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-MB	5Q4602.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	ID Standard Recoveries		Limits
	13C7-PFUnDA	88%	50-150%
	13C2-PFDoDA	79%	50-150%
	13C2-PFTeDA	35%* [a]	50-150%
	13C3-PFBS	97%	50-150%
	13C3-PFHxS	95%	50-150%
	13C8-PFOS	91%	50-150%
	13C8-FOSA	79%	50-150%
	d3-MeFOSA	5%* [a]	50-150%
	d3-MeFOSAA	107%	50-150%
	d5-EtFOSAA	92%	50-150%
	13C2-4:2FTS	90%	50-150%
	13C2-6:2FTS	94%	50-150%
	13C2-8:2FTS	90%	50-150%

(a) Outside control limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-BS	3Q65692.D	1	09/13/22	MV	08/26/22	OP92762	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0786	98	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0792	99	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0796	100	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0793	99	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0787	98	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0783	98	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0785	98	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0796	100	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0788	99	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0886	111	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0817	102	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0776	97	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0769	96	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0782	98	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0822	103	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0790	99	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0719	90	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0770	96	53-142
754-91-6	PFOSA	0.08	0.0802	100	67-137
2355-31-9	MeFOSAA	0.08	0.0762	95	65-136
2991-50-6	EtFOSAA	0.08	0.0772	97	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0784	98	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0798	100	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0778	97	67-138
13252-13-6	HFPO-DA (GenX)	0.08	0.0806	101	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	81%	50-150%
	13C5-PFPeA	81%	50-150%
	13C5-PFHxA	81%	50-150%
	13C4-PFHpA	82%	50-150%
	13C8-PFOA	82%	50-150%
	13C9-PFNA	84%	50-150%
	13C6-PFDA	84%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-BS	3Q65692.D	1	09/13/22	MV	08/26/22	OP92762	S3Q898

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	79%	50-150%
	13C2-PFDoDA	72%	50-150%
	13C2-PFTeDA	54%	50-150%
	13C3-PFBS	83%	50-150%
	13C3-PFHxS	82%	50-150%
	13C8-PFOS	82%	50-150%
	13C8-FOSA	69%	50-150%
	d3-MeFOSA	16%* [a]	50-150%
	d3-MeFOSAA	78%	50-150%
	d5-EtFOSAA	69%	50-150%
	13C2-4:2FTS	82%	50-150%
	13C2-6:2FTS	83%	50-150%
	13C2-8:2FTS	84%	50-150%
	13C3-HFPO-DA	79%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-BS	5Q4630.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.162	101	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.152	95	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.151	94	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.156	98	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.154	96	71-133
375-95-1	Perfluorononanoic acid	0.16	0.156	98	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.153	96	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.160	100	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.159	99	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.134	84	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.152	95	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.153	96	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.151	94	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.152	95	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.162	101	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.150	94	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.152	95	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.144	90	53-142
754-91-6	PFOSA	0.16	0.151	94	67-137
2355-31-9	MeFOSAA	0.16	0.153	96	65-136
2991-50-6	EtFOSAA	0.16	0.163	102	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.152	95	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.163	102	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.155	97	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.156	98	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	83%	50-150%
	13C5-PFPeA	82%	50-150%
	13C5-PFHxA	83%	50-150%
	13C4-PFHpA	83%	50-150%
	13C8-PFOA	84%	50-150%
	13C9-PFNA	86%	50-150%
	13C6-PFDA	85%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-BS	5Q4630.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	80%	50-150%
	13C2-PFDoDA	71%	50-150%
	13C2-PFTeDA	60%	50-150%
	13C3-PFBS	83%	50-150%
	13C3-PFHxS	83%	50-150%
	13C8-PFOS	81%	50-150%
	13C8-FOSA	60%	50-150%
	d3-MeFOSAA	91%	50-150%
	d5-EtFOSAA	77%	50-150%
	13C2-4:2FTS	83%	50-150%
	13C2-6:2FTS	86%	50-150%
	13C2-8:2FTS	89%	50-150%
	13C3-HFPO-DA	74%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-BS	6Q4671.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.16	0.170	106	73-129
2706-90-3	Perfluoropentanoic acid	0.16	0.162	101	72-129
307-24-4	Perfluorohexanoic acid	0.16	0.159	99	72-129
375-85-9	Perfluoroheptanoic acid	0.16	0.167	104	72-130
335-67-1	Perfluorooctanoic acid	0.16	0.158	99	71-133
375-95-1	Perfluorononanoic acid	0.16	0.143	89	69-130
335-76-2	Perfluorodecanoic acid	0.16	0.153	96	71-129
2058-94-8	Perfluoroundecanoic acid	0.16	0.161	101	69-133
307-55-1	Perfluorododecanoic acid	0.16	0.169	106	72-134
72629-94-8	Perfluorotridecanoic acid	0.16	0.147	92	65-144
376-06-7	Perfluorotetradecanoic acid	0.16	0.160	100	71-132
375-73-5	Perfluorobutanesulfonic acid	0.16	0.163	102	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.16	0.163	102	71-127
355-46-4	Perfluorohexanesulfonic acid	0.16	0.166	104	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.16	0.180	113	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.16	0.148	93	65-140
68259-12-1	Perfluorononanesulfonic acid	0.16	0.128	80	69-127
335-77-3	Perfluorodecanesulfonic acid	0.16	0.135	84	53-142
754-91-6	PFOSA	0.16	0.166	104	67-137
2355-31-9	MeFOSAA	0.16	0.181	113	65-136
2991-50-6	EtFOSAA	0.16	0.143	89	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.16	0.163	102	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.16	0.174	109	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.16	0.167	104	67-138
13252-13-6	HFPO-DA (GenX)	0.16	0.177	111	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	90%	50-150%
	13C5-PFPeA	88%	50-150%
	13C5-PFHxA	89%	50-150%
	13C4-PFHpA	87%	50-150%
	13C8-PFOA	88%	50-150%
	13C9-PFNA	94%	50-150%
	13C6-PFDA	84%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-BS	6Q4671.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	79%	50-150%
	13C2-PFDoDA	63%	50-150%
	13C2-PFTeDA	57%	50-150%
	13C3-PFBS	88%	50-150%
	13C3-PFHxS	86%	50-150%
	13C8-PFOS	83%	50-150%
	13C8-FOSA	72%	50-150%
	d3-MeFOSAA	79%	50-150%
	d5-EtFOSAA	75%	50-150%
	13C2-4:2FTS	88%	50-150%
	13C2-6:2FTS	89%	50-150%
	13C2-8:2FTS	82%	50-150%
	13C3-HFPO-DA	90%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-BS	5Q4601.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
375-22-4	Perfluorobutanoic acid	0.08	0.0786	98	73-129
2706-90-3	Perfluoropentanoic acid	0.08	0.0712	89	72-129
307-24-4	Perfluorohexanoic acid	0.08	0.0712	89	72-129
375-85-9	Perfluoroheptanoic acid	0.08	0.0727	91	72-130
335-67-1	Perfluorooctanoic acid	0.08	0.0725	91	71-133
375-95-1	Perfluorononanoic acid	0.08	0.0730	91	69-130
335-76-2	Perfluorodecanoic acid	0.08	0.0707	88	71-129
2058-94-8	Perfluoroundecanoic acid	0.08	0.0752	94	69-133
307-55-1	Perfluorododecanoic acid	0.08	0.0750	94	72-134
72629-94-8	Perfluorotridecanoic acid	0.08	0.0595	74	65-144
376-06-7	Perfluorotetradecanoic acid	0.08	0.0741	93	71-132
375-73-5	Perfluorobutanesulfonic acid	0.08	0.0721	90	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.08	0.0717	90	71-127
355-46-4	Perfluorohexanesulfonic acid	0.08	0.0702	88	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.08	0.0750	94	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.08	0.0693	87	65-140
68259-12-1	Perfluorononanesulfonic acid	0.08	0.0718	90	69-127
335-77-3	Perfluorodecanesulfonic acid	0.08	0.0722	90	53-142
754-91-6	PFOSA	0.08	0.0754	94	67-137
2355-31-9	MeFOSAA	0.08	0.0730	91	65-136
2991-50-6	EtFOSAA	0.08	0.0759	95	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.08	0.0707	88	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.08	0.0766	96	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.08	0.0743	93	67-138
13252-13-6	HFPO-DA (GenX)	0.08	0.0742	93	60-140

CAS No.	ID Standard Recoveries	BSP	Limits
	13C4-PFBA	94%	50-150%
	13C5-PFPeA	95%	50-150%
	13C5-PFHxA	95%	50-150%
	13C4-PFHpA	95%	50-150%
	13C8-PFOA	96%	50-150%
	13C9-PFNA	98%	50-150%
	13C6-PFDA	100%	50-150%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-BS	5Q4601.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	ID Standard Recoveries	BSP	Limits
	13C7-PFUnDA	93%	50-150%
	13C2-PFDoDA	90%	50-150%
	13C2-PFTeDA	70%	50-150%
	13C3-PFBS	95%	50-150%
	13C3-PFHxS	96%	50-150%
	13C8-PFOS	95%	50-150%
	13C8-FOSA	82%	50-150%
	d3-MeFOSA	35%* [a]	50-150%
	d3-MeFOSAA	108%	50-150%
	d5-EtFOSAA	99%	50-150%
	13C2-4:2FTS	94%	50-150%
	13C2-6:2FTS	96%	50-150%
	13C2-8:2FTS	96%	50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-MS	5Q4633.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71
FA98286-1	5Q4632.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	Compound	FA98286-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.016	U	0.167	0.168	101	73-129
2706-90-3	Perfluoropentanoic acid	0.0080	U	0.167	0.162	97	72-129
307-24-4	Perfluorohexanoic acid	0.0080	U	0.167	0.160	96	72-129
375-85-9	Perfluoroheptanoic acid	0.0080	U	0.167	0.164	98	72-130
335-67-1	Perfluorooctanoic acid	0.0080	U	0.167	0.162	97	71-133
375-95-1	Perfluorononanoic acid	0.0080	U	0.167	0.163	98	69-130
335-76-2	Perfluorodecanoic acid	0.0080	U	0.167	0.158	95	71-129
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.167	0.168	101	69-133
307-55-1	Perfluorododecanoic acid	0.0080	U	0.167	0.168	101	72-134
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.167	0.149	89	65-144
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.167	0.153	92	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	0.167	0.162	97	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	0.167	0.170	102	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	0.167	0.161	97	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	0.167	0.174	104	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0043	J	0.167	0.160	93	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.167	0.152	91	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.167	0.151	91	53-142
754-91-6	PFOSA	0.0080	U	0.167	0.171	103	67-137
2355-31-9	MeFOSAA	0.016	U	0.167	0.170	102	65-136
2991-50-6	EtFOSAA	0.016	U	0.167	0.173	104	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.167	0.161	97	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.167	0.170	102	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.167	0.165	99	67-138
13252-13-6	HFPO-DA (GenX)	0.016	U	0.167	0.169	101	60-140

CAS No.	ID Standard Recoveries	MS	FA98286-1	Limits
	13C4-PFBA	66%	68%	50-150%
	13C5-PFPeA	69%	71%	50-150%
	13C5-PFHxA	74%	76%	50-150%
	13C4-PFHpA	76%	79%	50-150%
	13C8-PFOA	78%	80%	50-150%
	13C9-PFNA	79%	81%	50-150%
	13C6-PFDA	77%	79%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-MS	5Q4633.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71
FA98286-1	5Q4632.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	ID Standard Recoveries	MS	FA98286-1	Limits
	13C7-PFUnDA	69%	66%	50-150%
	13C2-PFDoDA	68%	59%	50-150%
	13C2-PFTeDA	67%	61%	50-150%
	13C3-PFBS	72%	76%	50-150%
	13C3-PFHxS	77%	79%	50-150%
	13C8-PFOS	73%	75%	50-150%
	13C8-FOSA	54%	64%	50-150%
	d3-MeFOSAA	85%	86%	50-150%
	d5-EtFOSAA	78%	73%	50-150%
	13C2-4:2FTS	76%	74%	50-150%
	13C2-6:2FTS	83%	79%	50-150%
	13C2-8:2FTS	78%	77%	50-150%
	13C3-HFPO-DA	65%	70%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-MS	6Q4674.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-21	6Q4673.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-21 [a]	6Q4748.D	5	09/16/22	JB	08/26/22	OP92764	S6Q86

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	Compound	FA98286-21 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.016	U	0.167	0.173	104	73-129
2706-90-3	Perfluoropentanoic acid	0.0080	U	0.167	0.164	98	72-129
307-24-4	Perfluorohexanoic acid	0.0080	U	0.167	0.154	92	72-129
375-85-9	Perfluoroheptanoic acid	0.0080	U	0.167	0.159	95	72-130
335-67-1	Perfluorooctanoic acid	0.0080	U	0.167	0.160	96	71-133
375-95-1	Perfluorononanoic acid	0.0080	U	0.167	0.154	92	69-130
335-76-2	Perfluorodecanoic acid	0.0080	U	0.167	0.154	92	71-129
2058-94-8	Perfluoroundecanoic acid	0.0080	U	0.167	0.168	101	69-133
307-55-1	Perfluorododecanoic acid	0.0080	U	0.167	0.166	100	72-134
72629-94-8	Perfluorotridecanoic acid	0.0080	U	0.167	0.148	89	65-144
376-06-7	Perfluorotetradecanoic acid	0.0080	U	0.167	0.158	95	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0080	U	0.167	0.166	100	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.0080	U	0.167	0.168	101	71-127
355-46-4	Perfluorohexanesulfonic acid	0.0080	U	0.167	0.142	85	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.0080	U	0.167	0.194	116	69-134
1763-23-1	Perfluorooctanesulfonic acid	0.0080	U	0.167	0.170	102	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	0.167	0.153	92	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	0.167	0.160	96	53-142
754-91-6	PFOSA	0.040	U [b]	0.167	0.170	102	67-137
2355-31-9	MeFOSAA	0.016	U	0.167	0.163	98	65-136
2991-50-6	EtFOSAA	0.016	U	0.167	0.156	94	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	0.167	0.167	100	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	0.167	0.176	106	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	0.167	0.169	101	67-138
13252-13-6	HFPO-DA (GenX)	0.016	U	0.167	0.181	109	60-140

CAS No.	ID Standard Recoveries	MS	FA98286-21	FA98286-21	Limits
	13C4-PFBA	67%	64%	80%	50-150%
	13C5-PFPeA	72%	71%	80%	50-150%
	13C5-PFHxA	80%	77%	87%	50-150%
	13C4-PFHpA	83%	81%	83%	50-150%
	13C8-PFOA	85%	88%	88%	50-150%
	13C9-PFNA	87%	83%	84%	50-150%
	13C6-PFDA	77%	73%	73%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-MS	6Q4674.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-21	6Q4673.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-21 [a]	6Q4748.D	5	09/16/22	JB	08/26/22	OP92764	S6Q86

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	ID Standard Recoveries	MS	FA98286-21	FA98286-21	Limits
	13C7-PFUnDA	63%	60%	61%	50-150%
	13C2-PFDoDA	57%	54%	52%	50-150%
	13C2-PFTeDA	45%* [c]	53%	56%	50-150%
	13C3-PFBS	78%	78%	83%	50-150%
	13C3-PFHxS	85%	86%	90%	50-150%
	13C8-PFOS	73%	75%	83%	50-150%
	13C8-FOSA	53%	49%* [c]	52%	50-150%
	d3-MeFOSAA	73%	67%	68%	50-150%
	d5-EtFOSAA	68%	64%	67%	50-150%
	13C2-4:2FTS	83%	76%	77%	50-150%
	13C2-6:2FTS	89%	84%	76%	50-150%
	13C2-8:2FTS	80%	70%	69%	50-150%
	13C3-HFPO-DA	75%	72%	75%	50-150%

(a) Dilution required due to matrix interference (ID recovery standard failure).
(b) Result is from Run #2.
(c) Outside control limits.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-MS	5Q4608.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71
FA98296-3	5Q4607.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71
FA98296-3	5Q4674.D	5	09/15/22	AL	08/29/22	OP92794	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	Compound	FA98296-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
375-22-4	Perfluorobutanoic acid	0.0036	J	0.0784	0.0796	97	73-129
2706-90-3	Perfluoropentanoic acid	0.0089		0.0784	0.0814	92	72-129
307-24-4	Perfluorohexanoic acid	0.0150		0.0784	0.0870	92	72-129
375-85-9	Perfluoroheptanoic acid	0.0116		0.0784	0.0853	94	72-130
335-67-1	Perfluorooctanoic acid	0.102		0.0784	0.177	96	71-133
375-95-1	Perfluorononanoic acid	0.0967 [a]		0.0784	0.179	104	69-130
335-76-2	Perfluorodecanoic acid	0.0501		0.0784	0.122	92	71-129
2058-94-8	Perfluoroundecanoic acid	0.0130		0.0784	0.0863	93	69-133
307-55-1	Perfluorododecanoic acid	0.0039	U	0.0784	0.0743	95	72-134
72629-94-8	Perfluorotridecanoic acid	0.0039	U	0.0784	0.0614	78	65-144
376-06-7	Perfluorotetradecanoic acid	0.0039	U	0.0784	0.0744	95	71-132
375-73-5	Perfluorobutanesulfonic acid	0.0012	J	0.0784	0.0739	93	72-130
2706-91-4	Perfluoropentanesulfonic acid	0.0050		0.0784	0.0841	101	71-127
355-46-4	Perfluorohexanesulfonic acid	0.422 [a]		0.0784	0.499	98	68-131
375-92-8	Perfluoroheptanesulfonic acid	0.104		0.0784	0.224	153*	69-134
1763-23-1	Perfluorooctanesulfonic acid	11.4 [c]		0.0784	20.9	12112* [b]	65-140
68259-12-1	Perfluorononanesulfonic acid	0.0583		0.0784	0.112	68*	69-127
335-77-3	Perfluorodecanesulfonic acid	0.0039	U	0.0784	0.0632	81	53-142
754-91-6	PFOSA	0.847 [a]		0.0784	0.836	-14* [b]	67-137
2355-31-9	MeFOSAA	0.0078	U	0.0784	0.0750	96	65-136
2991-50-6	EtFOSAA	0.0078	U	0.0784	0.0757	97	61-135
757124-72-4	4:2 Fluorotelomer sulfonate	0.0078	U	0.0784	0.0726	93	63-143
27619-97-2	6:2 Fluorotelomer sulfonate	0.0096		0.0784	0.0850	96	64-140
39108-34-4	8:2 Fluorotelomer sulfonate	0.0260		0.0784	0.101	96	67-138
13252-13-6	HFPO-DA (GenX)	0.0078	U	0.0784	0.0730	93	60-140

CAS No.	ID Standard Recoveries	MS	FA98296-3	FA98296-3	Limits
	13C4-PFBA	59%	58%	58%	50-150%
	13C5-PFPeA	60%	60%	63%	50-150%
	13C5-PFHxA	71%	70%	65%	50-150%
	13C4-PFHpA	72%	71%	66%	50-150%
	13C8-PFOA	74%	74%	65%	50-150%
	13C9-PFNA	48%* [d]	49%* [d]	54%	50-150%
	13C6-PFDA	69%	74%	63%	50-150%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-MS	5Q4608.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71
FA98296-3	5Q4607.D	1	09/14/22	AL	08/29/22	OP92794	S5Q71
FA98296-3	5Q4674.D	5	09/15/22	AL	08/29/22	OP92794	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	ID Standard Recoveries	MS	FA98296-3	FA98296-3	Limits
	13C7-PFUnDA	64%	67%	56%	50-150%
	13C2-PFDoDA	64%	68%	53%	50-150%
	13C2-PFTeDA	45%* d	59%	47%* d	50-150%
	13C3-PFBS	70%	72%	81%	50-150%
	13C3-PFHxS	74%	80%	82%	50-150%
	13C8-PFOS	46%* d	51%	71%	50-150%
	13C8-FOSA	47%* d	50%	64%	50-150%
	d3-MeFOSA	16%* d	19%* d	26%* d	50-150%
	d3-MeFOSAA	87%	93%	57%	50-150%
	d5-EtFOSAA	85%	92%	66%	50-150%
	13C2-4:2FTS	75%	71%	64%	50-150%
	13C2-6:2FTS	83%	81%	70%	50-150%
	13C2-8:2FTS	78%	81%	68%	50-150%

(a) Result is from Run #2.
(b) Outside control limits due to high level in sample relative to spike amount.
(c) Result is from Run #3.
(d) Outside control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-MS	3Q65707.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
OP92762-MSD	3Q65708.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
FA98281-2	3Q65709.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
FA98281-2	3Q66036.D	5	09/19/22	MV	08/26/22	OP92762	S3Q901

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	Compound	FA98281-2 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
375-22-4	Perfluorobutanoic acid	0.0077	U	0.0741	0.0750	101	0.0769	0.0767	100	2	73-129/30
2706-90-3	Perfluoropentanoic acid	0.0038	U	0.0741	0.0765	103	0.0769	0.0778	101	2	72-129/30
307-24-4	Perfluorohexanoic acid	0.0011	J	0.0741	0.0751	100	0.0769	0.0770	99	2	72-129/30
375-85-9	Perfluoroheptanoic acid	0.0038	U	0.0741	0.0749	101	0.0769	0.0758	99	1	72-130/30
335-67-1	Perfluorooctanoic acid	0.0038	U	0.0741	0.0759	102	0.0769	0.0770	100	1	71-133/30
375-95-1	Perfluorononanoic acid	0.0038	U	0.0741	0.0744	100	0.0769	0.0756	98	2	69-130/30
335-76-2	Perfluorodecanoic acid	0.0038	U	0.0741	0.0757	102	0.0769	0.0765	99	1	71-129/30
2058-94-8	Perfluoroundecanoic acid	0.0038	U	0.0741	0.0755	102	0.0769	0.0767	100	2	69-133/30
307-55-1	Perfluorododecanoic acid	0.0038	U	0.0741	0.0753	102	0.0769	0.0764	99	1	72-134/30
72629-94-8	Perfluorotridecanoic acid	0.0038	U	0.0741	0.0776	105	0.0769	0.0777	101	0	65-144/30
376-06-7	Perfluorotetradecanoic acid	0.0038	U	0.0741	0.0763	103	0.0769	0.0779	101	2	71-132/30
375-73-5	Perfluorobutanesulfonic acid	0.0015	J	0.0741	0.0766	101	0.0769	0.0766	98	0	72-130/30
2706-91-4	Perfluoropentanesulfonic acid	0.0019	J	0.0741	0.0778	102	0.0769	0.0778	99	0	71-127/30
355-46-4	Perfluorohexanesulfonic acid	0.0158		0.0741	0.0921	103	0.0769	0.0919	99	0	68-131/30
375-92-8	Perfluoroheptanesulfonic acid	0.0012	J	0.0741	0.0816	109	0.0769	0.0816	105	0	69-134/30
1763-23-1	Perfluorooctanesulfonic acid	0.0357		0.0741	0.104	92	0.0769	0.110	97	6	65-140/30
68259-12-1	Perfluorononanesulfonic acid	0.0038	U	0.0741	0.0689	93	0.0769	0.0701	91	2	69-127/30
335-77-3	Perfluorodecanesulfonic acid	0.0038	U	0.0741	0.0767	104	0.0769	0.0750	98	2	53-142/30
754-91-6	PFOSA	0.0038	U	0.0741	0.0768	104	0.0769	0.0788	102	3	67-137/30
2355-31-9	MeFOSAA	0.0077	U	0.0741	0.0744	100	0.0769	0.0752	98	1	65-136/30
2991-50-6	EtFOSAA	0.0077	U	0.0741	0.0773	104	0.0769	0.0768	100	1	61-135/30
757124-72-4	4:2 Fluorotelomer sulfonate	0.0077	U	0.0741	0.0755	102	0.0769	0.0766	100	1	63-143/30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0077	U	0.0741	0.0758	102	0.0769	0.0772	100	2	64-140/30
39108-34-4	8:2 Fluorotelomer sulfonate	0.0077	U	0.0741	0.0739	100	0.0769	0.0750	98	1	67-138/30
13252-13-6	HFPO-DA (GenX)	0.0077	U	0.0741	0.0769	104	0.0769	0.0772	100	0	60-140/30

CAS No.	ID Standard Recoveries	MS	MSD	FA98281-2	FA98281-2	Limits
	13C4-PFBA	71%	54%	60%	54%	50-150%
	13C5-PFPeA	72%	55%	61%	55%	50-150%
	13C5-PFHxA	74%	56%	63%	57%	50-150%
	13C4-PFHpA	73%	57%	65%	61%	50-150%
	13C8-PFOA	77%	58%	67%	63%	50-150%
	13C9-PFNA	78%	59%	66%	57%	50-150%
	13C6-PFDA	74%	59%	61%	51%	50-150%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92762-MS	3Q65707.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
OP92762-MSD	3Q65708.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
FA98281-2	3Q65709.D	1	09/14/22	MV	08/26/22	OP92762	S3Q898
FA98281-2	3Q66036.D	5	09/19/22	MV	08/26/22	OP92762	S3Q901

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-41, FA98286-42, FA98286-43, FA98286-44, FA98286-45, FA98286-46, FA98286-47

CAS No.	ID Standard Recoveries	MS	MSD	FA98281-2	FA98281-2	Limits
	13C7-PFUnDA	71%	57%	54%	47%* [a]	50-150%
	13C2-PFDoDA	71%	54%	52%	48%* [a]	50-150%
	13C2-PFTeDA	68%	55%	53%	47%* [a]	50-150%
	13C3-PFBS	76%	57%	64%	60%	50-150%
	13C3-PFHxS	65%	58%	65%	63%	50-150%
	13C8-PFOS	75%	60%	59%	53%	50-150%
	13C8-FOSA	68%	54%	57%	87%	50-150%
	d3-MeFOSA	17%* [a]	10%* [a]	5%* [a]	21%* [a]	50-150%
	d3-MeFOSAA	78%	63%	60%	51%	50-150%
	d5-EtFOSAA	74%	58%	56%	49%* [a]	50-150%
	13C2-4:2FTS	75%	56%	60%	56%	50-150%
	13C2-6:2FTS	80%	61%	68%	55%	50-150%
	13C2-8:2FTS	77%	62%	59%	46%* [a]	50-150%
	13C3-HFPO-DA	69%	52%			50-150%

(a) Outside control limits.

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-DUP	5Q4635.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71
FA98286-2	5Q4634.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	Compound	FA98286-2 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.016 U		ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0080 U		ND		nc	30
307-24-4	Perfluorohexanoic acid	0.0080 U		ND		nc	30
375-85-9	Perfluoroheptanoic acid	0.0080 U		ND		nc	30
335-67-1	Perfluorooctanoic acid	0.0080 U		ND		nc	30
375-95-1	Perfluorononanoic acid	0.0080 U		ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080 U		ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080 U		ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080 U		ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080 U		ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080 U		ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0080 U		ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0080 U		ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0080 U		ND		nc	30
375-92-8	Perfluoroheptanesulfonic acid	0.0080 U		ND		nc	30
1763-23-1	Perfluorooctanesulfonic acid	0.0043	J	0.0039	J	10	30
68259-12-1	Perfluorononanesulfonic acid	0.0080 U		ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080 U		ND		nc	30
754-91-6	PFOSA	0.0080 U		ND		nc	30
2355-31-9	MeFOSAA	0.016 U		ND		nc	30
2991-50-6	EtFOSAA	0.016 U		ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016 U		ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016 U		ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA98286-2	Limits
	13C4-PFBA	62%	65%	50-150%
	13C5-PFPeA	64%	69%	50-150%
	13C5-PFHxA	71%	73%	50-150%
	13C4-PFHpA	74%	77%	50-150%
	13C8-PFOA	77%	78%	50-150%
	13C9-PFNA	77%	78%	50-150%
	13C6-PFDA	76%	74%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92763-DUP	5Q4635.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71
FA98286-2	5Q4634.D	1	09/15/22	AL	08/26/22	OP92763	S5Q71

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-1, FA98286-2, FA98286-3, FA98286-4, FA98286-5, FA98286-6, FA98286-7, FA98286-8, FA98286-9, FA98286-10, FA98286-11, FA98286-12, FA98286-13, FA98286-14, FA98286-15, FA98286-16, FA98286-17, FA98286-18, FA98286-19, FA98286-20

CAS No.	ID Standard Recoveries	DUP	FA98286-2	Limits
	13C7-PFUnDA	66%	62%	50-150%
	13C2-PFDoDA	62%	60%	50-150%
	13C2-PFTeDA	59%	57%	50-150%
	13C3-PFBS	72%	73%	50-150%
	13C3-PFHxS	77%	78%	50-150%
	13C8-PFOS	73%	69%	50-150%
	13C8-FOSA	58%	57%	50-150%
	d3-MeFOSAA	85%	82%	50-150%
	d5-EtFOSAA	76%	71%	50-150%
	13C2-4:2FTS	69%	72%	50-150%
	13C2-6:2FTS	78%	78%	50-150%
	13C2-8:2FTS	74%	72%	50-150%
	13C3-HFPO-DA	64%	67%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-DUP	6Q4676.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-22	6Q4675.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	Compound	FA98286-22 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0279		0.0259		7	30
2706-90-3	Perfluoropentanoic acid	0.0097		0.0094		3	30
307-24-4	Perfluorohexanoic acid	0.0080		0.0072	J	11	30
375-85-9	Perfluoroheptanoic acid	0.0035	J	0.0036	J	3	30
335-67-1	Perfluorooctanoic acid	0.0080	U	ND		nc	30
375-95-1	Perfluorononanoic acid	0.0080	U	ND		nc	30
335-76-2	Perfluorodecanoic acid	0.0080	U	ND		nc	30
2058-94-8	Perfluoroundecanoic acid	0.0080	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0080	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0080	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0080	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0031	J	0.0030	J	3	30
2706-91-4	Perfluoropentanesulfonic acid	0.0049	J	0.0045	J	9	30
355-46-4	Perfluorohexanesulfonic acid	0.0354		0.0312		13	30
375-92-8	Perfluoroheptanesulfonic acid	0.0037	J	0.0033	J	11	30
1763-23-1	Perfluorooctanesulfonic acid	0.117		0.101		15	30
68259-12-1	Perfluorononanesulfonic acid	0.0080	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0080	U	ND		nc	30
754-91-6	PFOSA	0.0080	U	ND		nc	30
2355-31-9	MeFOSAA	0.016	U	ND		nc	30
2991-50-6	EtFOSAA	0.016	U	ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.016	U	ND		nc	30
13252-13-6	HFPO-DA (GenX)	0.016	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA98286-22	Limits
	13C4-PFBA	78%	67%	50-150%
	13C5-PFPeA	83%	71%	50-150%
	13C5-PFHxA	86%	73%	50-150%
	13C4-PFHpA	87%	75%	50-150%
	13C8-PFOA	90%	78%	50-150%
	13C9-PFNA	86%	75%	50-150%
	13C6-PFDA	78%	68%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92764-DUP	6Q4676.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85
FA98286-22	6Q4675.D	1	09/15/22	AL	08/26/22	OP92764	S6Q85

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-21, FA98286-22, FA98286-23, FA98286-24, FA98286-25, FA98286-26, FA98286-27, FA98286-28, FA98286-29, FA98286-30, FA98286-31, FA98286-32, FA98286-33, FA98286-34, FA98286-35, FA98286-36, FA98286-37, FA98286-38, FA98286-39, FA98286-40

CAS No.	ID Standard Recoveries	DUP	FA98286-22	Limits
	13C7-PFUnDA	70%	61%	50-150%
	13C2-PFDoDA	59%	54%	50-150%
	13C2-PFTeDA	67%	59%	50-150%
	13C3-PFBS	87%	76%	50-150%
	13C3-PFHxS	89%	75%	50-150%
	13C8-PFOS	79%	64%	50-150%
	13C8-FOSA	69%	69%	50-150%
	d3-MeFOSAA	73%	60%	50-150%
	d5-EtFOSAA	74%	64%	50-150%
	13C2-4:2FTS	81%	70%	50-150%
	13C2-6:2FTS	81%	72%	50-150%
	13C2-8:2FTS	77%	62%	50-150%
	13C3-HFPO-DA	82%	77%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-DUP	5Q4615.D	1	09/15/22	AL	08/29/22	OP92794	S5Q71
FA98296-7	5Q4614.D	1	09/15/22	AL	08/29/22	OP92794	S5Q71
FA98296-7	5Q4687.D	5	09/15/22	AL	08/29/22	OP92794	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	Compound	FA98296-7 ug/l	Q	DUP ug/l	Q	RPD	Limits
375-22-4	Perfluorobutanoic acid	0.0077	U	ND		nc	30
2706-90-3	Perfluoropentanoic acid	0.0017	J	0.0015	J	13	30
307-24-4	Perfluorohexanoic acid	0.0042		0.0040		5	30
375-85-9	Perfluoroheptanoic acid	0.0026	J	0.0024	J	8	30
335-67-1	Perfluorooctanoic acid	0.0141		0.0137		3	30
375-95-1	Perfluorononanoic acid	0.0068		0.0069		1	30
335-76-2	Perfluorodecanoic acid	0.0013	J	0.0011	J	17	30
2058-94-8	Perfluoroundecanoic acid	0.0038	U	ND		nc	30
307-55-1	Perfluorododecanoic acid	0.0038	U	ND		nc	30
72629-94-8	Perfluorotridecanoic acid	0.0038	U	ND		nc	30
376-06-7	Perfluorotetradecanoic acid	0.0038	U	ND		nc	30
375-73-5	Perfluorobutanesulfonic acid	0.0038	U	ND		nc	30
2706-91-4	Perfluoropentanesulfonic acid	0.0038	U	ND		nc	30
355-46-4	Perfluorohexanesulfonic acid	0.0822		0.0787		4	30
375-92-8	Perfluoroheptanesulfonic acid	0.0079		0.0079		0	30
1763-23-1	Perfluorooctanesulfonic acid	1.34 [a]		1.34	E	0	30
68259-12-1	Perfluorononanesulfonic acid	0.0038	U	ND		nc	30
335-77-3	Perfluorodecanesulfonic acid	0.0038	U	ND		nc	30
754-91-6	PFOSA	0.0070		0.0067		4	30
2355-31-9	MeFOSAA	0.0077	U	ND		nc	30
2991-50-6	EtFOSAA	0.0077	U	ND		nc	30
757124-72-4	4:2 Fluorotelomer sulfonate	0.0077	U	ND		nc	30
27619-97-2	6:2 Fluorotelomer sulfonate	0.0063	J	0.0060	J	5	30
39108-34-4	8:2 Fluorotelomer sulfonate	0.0034	J	0.0032	J	6	30
13252-13-6	HFPO-DA (GenX)	0.0077	U	ND		nc	30

CAS No.	ID Standard Recoveries	DUP	FA98296-7	FA98296-7	Limits
	13C4-PFBA	55%	57%	60%	50-150%
	13C5-PFPeA	56%	57%	61%	50-150%
	13C5-PFHxA	63%	63%	61%	50-150%
	13C4-PFHpA	64%	63%	60%	50-150%
	13C8-PFOA	66%	64%	59%	50-150%
	13C9-PFNA	66%	64%	57%	50-150%
	13C6-PFDA	66%	65%	59%	50-150%

* = Outside of Control Limits.

Duplicate Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP92794-DUP	5Q4615.D	1	09/15/22	AL	08/29/22	OP92794	S5Q71
FA98296-7	5Q4614.D	1	09/15/22	AL	08/29/22	OP92794	S5Q71
FA98296-7	5Q4687.D	5	09/15/22	AL	08/29/22	OP92794	S5Q72

The QC reported here applies to the following samples: **Method:** EPA 537M QSM5.3 B-15

FA98286-48, FA98286-49

CAS No.	ID Standard Recoveries	DUP	FA98296-7	FA98296-7	Limits
	13C7-PFUnDA	59%	58%	51%	50-150%
	13C2-PFDoDA	55%	55%	50%	50-150%
	13C2-PFTeDA	60%	55%	48%* [b]	50-150%
	13C3-PFBS	63%	62%	67%	50-150%
	13C3-PFHxS	67%	65%	67%	50-150%
	13C8-PFOS	63%	61%	67%	50-150%
	13C8-FOSA	65%	62%	59%	50-150%
	d3-MeFOSA	38%* [b]	12%* [b]	23%* [b]	50-150%
	d3-MeFOSAA	94%	90%	55%	50-150%
	d5-EtFOSAA	88%	86%	61%	50-150%
	13C2-4:2FTS	60%	62%	57%	50-150%
	13C2-6:2FTS	68%	68%	57%	50-150%
	13C2-8:2FTS	71%	68%	58%	50-150%

(a) Result is from Run #2.
(b) Outside control limits.

* = Outside of Control Limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA98286-1	5Q4632.D	68	71	76	79	80	81	79	66
FA98286-2	5Q4634.D	65	69	73	77	78	78	74	62
FA98286-3	5Q4636.D	64	64	73	78	81	83	78	69
FA98286-4	5Q4714.D	124	121	122	123	123	124	124	122
FA98286-4	5Q4914.D	64	69	69	71	69	72	72	66
FA98286-4	5Q4637.D	40* [a]	42* [a]	49* [a]	50	56	76	75	69
FA98286-5	5Q4717.D	69	75	81	84	83	85	79	69
FA98286-5	5Q4716.D	71	70	76	78	80	81	80	68
FA98286-5	5Q4718.D	121	120	120	120	120	121	122	119
FA98286-5	5Q4638.D	55	56	67	70	75	76	81	69
FA98286-6	5Q4719.D	79	79	83	84	85	84	81	67
FA98286-6	5Q4639.D	67	68	77	81	87	86	81	68
FA98286-7	5Q4720.D	72	76	80	80	80	80	80	71
FA98286-7	5Q4829.D	116	118	118	119	118	118	119	120
FA98286-7	5Q4642.D	56	59	66	67	69	74	74	67
FA98286-8	5Q4721.D	73	75	76	76	77	74	73	70
FA98286-8	5Q4643.D	73	75	76	77	78	77	75	71
FA98286-9	5Q4644.D	77	77	78	78	79	75	72	69
FA98286-10	5Q4724.D	55	65	69	71	72	70	65	53
FA98286-10	5Q4645.D	55	57	66	69	71	71	65	53
FA98286-11	5Q4725.D	45* [a]	57	62	63	64	64	62	56
FA98286-11	5Q4646.D	51	52	60	65	68	68	66	59
FA98286-12	5Q4647.D	84	83	84	85	82	76	70	67
FA98286-13	5Q4648.D	74	76	77	77	78	73	67	61
FA98286-14	5Q4649.D	61	61	71	75	77	76	72	57
FA98286-15	5Q4650.D	66	66	77	82	85	85	81	70
FA98286-16	5Q4651.D	65	66	76	80	83	84	83	71
FA98286-17	5Q4726.D	70	70	73	72	71	73	70	62
FA98286-17	5Q4654.D	60	63	71	72	77	55	75	68
FA98286-18	5Q4727.D	59	63	73	75	77	75	70	63
FA98286-18	5Q4655.D	64	67	76	79	82	79	74	64
FA98286-19	5Q4656.D	66	68	78	80	84	83	79	66
FA98286-20	5Q4728.D	43* [a]	50	61	63	66	65	63	56
FA98286-20	5Q4657.D	41* [a]	44* [a]	53	60	65	65	64	55
FA98286-21	6Q4748.D	80	80	87	83	88	84	73	61
FA98286-21	6Q4673.D	64	71	77	81	88	83	73	60
FA98286-22	6Q4675.D	67	71	73	75	78	75	68	61
FA98286-23	6Q4677.D	68	70	72	71	76	71	62	59
FA98286-24	6Q4678.D	66	72	78	79	84	87	75	60
FA98286-25	6Q4749.D	66	75	81	82	87	89	77	64

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
FA98286-25	6Q4679.D	42* [a]	56	67	72	78	79	74	60
FA98286-26	6Q4680.D	65	71	77	80	85	83	77	66
FA98286-27	6Q4683.D	69	73	77	79	80	76	61	57
FA98286-28	6Q4684.D	57	62	68	74	80	82	79	77
FA98286-29	6Q4685.D	80	80	81	80	78	74	74	73
FA98286-30	6Q4686.D	76	77	78	78	77	69	62	63
FA98286-31	6Q4750.D	65	68	72	74	79	82	73	73
FA98286-31	6Q4687.D	52	59	64	70	73	76	71	70
FA98286-32	6Q4688.D	54	58	67	72	78	77	72	63
FA98286-33	6Q4751.D	55	60	65	65	69	67	68	64
FA98286-33	6Q4689.D	47* [a]	55	61	65	69	68	68	69
FA98286-34	6Q4752.D	56	65	72	75	80	82	78	63
FA98286-34	6Q4753.D	72	76	78	82	87	85	80	71
FA98286-35	6Q4756.D	81	82	88	90	96	90	78	71
FA98286-35	6Q4691.D	60	65	77	81	89	84	71	69
FA98286-36	6Q4757.D	83	83	88	86	93	93	89	78
FA98286-36	6Q4692.D	70	74	79	77	80	61	76	73
FA98286-37	6Q4758.D	60	66	71	75	79	85	81	75
FA98286-37	6Q4695.D	44* [a]	50	59	67	71	77	73	71
FA98286-38	6Q4759.D	72	76	83	81	87	86	85	80
FA98286-38	6Q4696.D	58	67	72	76	80	84	87	80
FA98286-39	6Q4760.D	79	85	91	92	97	95	91	84
FA98286-39	6Q4697.D	52	64	73	79	86	88	83	81
FA98286-40	6Q4698.D	72	76	79	80	82	83	80	80
FA98286-41	3Q65839.D	47* [a]	48* [a]	49* [a]	51	52	53	53	53
FA98286-41	3Q65711.D	55	54	55	59	62	65	69	62
FA98286-42	3Q65840.D	42* [a]	55	57	61	63	64	60	57
FA98286-42	3Q65712.D	59	57	59	67	75	80	81	73
FA98286-43	3Q65841.D	59	75	79	83	86	83	71	56
FA98286-43	3Q65713.D	60	56	60	67	77	77	69	51
FA98286-44	3Q65842.D	44* [a]	58	63	68	71	70	64	61
FA98286-44	3Q65716.D	49* [a]	47* [a]	51	58	64	67	67	59
FA98286-45	3Q65717.D	60	60	62	67	73	74	72	66
FA98286-46	3Q65843.D	61	63	65	68	71	70	67	64
FA98286-46	3Q65718.D	65	65	65	70	75	78	78	69
FA98286-47	3Q65844.D	39* [a]	53	56	60	64	64	61	58
FA98286-47	3Q65719.D	40* [a]	39* [a]	42* [a]	48* [a]	55	59	58	54
FA98286-48	5Q4893.D	49* [a]	53	54	58	61	62	63	62
FA98286-48	5Q4603.D	53	56	59	62	67	69	70	66
FA98286-49	5Q4604.D	68	68	70	70	69	68	70	68

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6	S7	S8
OP92762-BS	3Q65692.D	81	81	81	82	82	84	84	79
OP92762-MB	3Q65693.D	90	92	92	94	95	94	92	87
OP92762-MS	3Q65707.D	71	72	74	73	77	78	74	71
OP92762-MSD	3Q65708.D	54	55	56	57	58	59	59	57
OP92763-BS	5Q4630.D	83	82	83	83	84	86	85	80
OP92763-DUP	5Q4635.D	62	64	71	74	77	77	76	66
OP92763-MB	5Q4631.D	90	87	88	89	91	92	93	89
OP92763-MS	5Q4633.D	66	69	74	76	78	79	77	69
OP92764-BS	6Q4671.D	90	88	89	87	88	94	84	79
OP92764-DUP	6Q4676.D	78	83	86	87	90	86	78	70
OP92764-MB	6Q4672.D	87	88	89	88	90	92	83	86
OP92764-MS	6Q4674.D	67	72	80	83	85	87	77	63
OP92794-BS	5Q4601.D	94	95	95	95	96	98	100	93
OP92794-DUP	5Q4615.D	55	56	63	64	66	66	66	59
OP92794-MB	5Q4602.D	98	97	97	98	98	98	98	88
OP92794-MS	5Q4608.D	59	60	71	72	74	48* [a]	69	64
S3Q900-IBLK	3Q65833.D	102	101	103	104	106	104	102	102
S5Q71-IBLK	5Q4565.D	98	97	97	97	97	98	99	99
S5Q72-IBLK	5Q4665.D	89	91	86	84	80	80	81	77
S5Q73-IBLK	5Q4823.D	88	89	88	88	88	88	89	88
S5Q74-IBLK	5Q4910.D	121	124	123	120	117	116	115	116
S6Q85-IBLK	6Q4627.D	101	102	102	102	105	106	101	105
S6Q86-IBLK	6Q4704.D	108	107	109	108	111	114	110	110

Isotope Dilution Standards	Recovery Limits
S1 = 13C4-PFBA	50-150%
S2 = 13C5-PFPeA	50-150%
S3 = 13C5-PFHxA	50-150%
S4 = 13C4-PFHpA	50-150%
S5 = 13C8-PFOA	50-150%
S6 = 13C9-PFNA	50-150%
S7 = 13C6-PFDA	50-150%
S8 = 13C7-PFUnDA	50-150%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FA98286-1	5Q4632.D	59	61	76	79	75	64	86	73
FA98286-2	5Q4634.D	60	57	73	78	69	57	82	71
FA98286-3	5Q4636.D	69	71	71	81	76	61	90	80
FA98286-4	5Q4714.D	127	127	122	123	123	123	136	136
FA98286-4	5Q4914.D	61	63	69	82	72	55	81	80
FA98286-4	5Q4637.D	70	69	50	57	72	49* [a]	87	79
FA98286-5	5Q4717.D	64	60	73	80	87	47* [a]	83	75
FA98286-5	5Q4716.D	64	58	74	81	79	46* [a]	83	75
FA98286-5	5Q4718.D	126	125	120	119	120	120	136	135
FA98286-5	5Q4638.D	65	63	64	73	70	38* [a]	89	80
FA98286-6	5Q4719.D	65	59	77	85	80	59	85	75
FA98286-6	5Q4639.D	65	57	74	81	77	55	90	78
FA98286-7	5Q4720.D	67	57	81	82	80	45* [a]	86	74
FA98286-7	5Q4829.D	121	124	118	119	116	117	118	118
FA98286-7	5Q4642.D	64	53	66	69	69	35* [a]	82	72
FA98286-8	5Q4721.D	73	74	78	77	72	70	78	75
FA98286-8	5Q4643.D	74	77	76	76	71	72	86	80
FA98286-9	5Q4644.D	72	69	80	79	71	69	85	79
FA98286-10	5Q4724.D	49* [a]	51	63	72	62	45* [a]	73	61
FA98286-10	5Q4645.D	50	51	63	70	63	44* [a]	71	61
FA98286-11	5Q4725.D	58	57	58	64	62	47* [a]	72	67
FA98286-11	5Q4646.D	60	61	59	67	61	46* [a]	75	69
FA98286-12	5Q4647.D	73	78	85	81	68	71	80	77
FA98286-13	5Q4648.D	64	68	79	78	66	64	74	69
FA98286-14	5Q4649.D	55	53	68	77	69	54	77	66
FA98286-15	5Q4650.D	68	62	74	84	79	59	88	80
FA98286-16	5Q4651.D	68	57	74	82	82	67	88	82
FA98286-17	5Q4726.D	61	61	74	69	72	65	97	71
FA98286-17	5Q4654.D	65	56	71	73	59	55	77	76
FA98286-18	5Q4727.D	64	62	70	78	68	70	84	79
FA98286-18	5Q4655.D	65	64	76	83	75	77	79	80
FA98286-19	5Q4656.D	65	55	76	83	79	61	81	81
FA98286-20	5Q4728.D	50	48* [a]	57	69	62	54	72	66
FA98286-20	5Q4657.D	50	42* [a]	54	68	68	53	61	60
FA98286-21	6Q4748.D	52	56	83	90	83	52	68	67
FA98286-21	6Q4673.D	54	53	78	86	75	49* [a]	67	64
FA98286-22	6Q4675.D	54	59	76	75	64	69	60	64
FA98286-23	6Q4677.D	58	66	77	79	69	66	63	64
FA98286-24	6Q4678.D	51	52	78	86	77	77	67	66
FA98286-25	6Q4749.D	45* [a]	36* [a]	80	84	77	64	72	69

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
FA98286-25	6Q4679.D	42* [a]	33* [a]	68	77	72	60	70	64
FA98286-26	6Q4680.D	52	52	77	83	79	53	58	53
FA98286-27	6Q4683.D	56	64	78	78	63	68	61	66
FA98286-28	6Q4684.D	69	71	71	81	77	60	78	82
FA98286-29	6Q4685.D	71	75	82	76	69	70	74	79
FA98286-30	6Q4686.D	64	71	79	78	62	65	64	67
FA98286-31	6Q4750.D	65	55	74	81	81	52	80	76
FA98286-31	6Q4687.D	64	52	67	78	78	45* [a]	80	78
FA98286-32	6Q4688.D	59	61	68	79	75	55	69	73
FA98286-33	6Q4751.D	59	64	66	73	71	55	72	75
FA98286-33	6Q4689.D	60	64	65	71	71	54	68	74
FA98286-34	6Q4752.D	60	64	75	80	72	43* [a]	76	74
FA98286-34	6Q4753.D	63	69	83	86	81	50	74	76
FA98286-35	6Q4756.D	65	68	89	98	81	46* [a]	79	82
FA98286-35	6Q4691.D	61	62	78	86	75	37* [a]	70	77
FA98286-36	6Q4757.D	78	87	93	89	93	69	93	94
FA98286-36	6Q4692.D	70	74	80	83	62	50	80	84
FA98286-37	6Q4758.D	72	75	73	79	79	60	80	81
FA98286-37	6Q4695.D	69	69	64	72	72	52	82	80
FA98286-38	6Q4759.D	72	55	82	87	87	65	94	90
FA98286-38	6Q4696.D	73	65	76	83	81	60	89	93
FA98286-39	6Q4760.D	76	44* [a]	92	98	89	44* [a]	83	90
FA98286-39	6Q4697.D	70	45* [a]	76	88	80	32* [a]	89	90
FA98286-40	6Q4698.D	72	72	80	83	80	76	87	86
FA98286-41	3Q65839.D	53	48* [a]	51	53	57	45* [a]	57	59
FA98286-41	3Q65711.D	58	55	55	59	62	43* [a]	68	63
FA98286-42	3Q65840.D	54	39* [a]	59	65	64	33* [a]	62	62
FA98286-42	3Q65712.D	68	48* [a]	59	72	78	27* [a]	78	72
FA98286-43	3Q65841.D	51	50	79	84	72	36* [a]	66	61
FA98286-43	3Q65713.D	45* [a]	37* [a]	58	70	65	25* [a]	58	50
FA98286-44	3Q65842.D	61	60	62	72	70	51	70	69
FA98286-44	3Q65716.D	56	51	51	61	61	38* [a]	66	61
FA98286-45	3Q65717.D	64	62	65	68	70	60	75	69
FA98286-46	3Q65843.D	65	57	68	68	72	50	72	72
FA98286-46	3Q65718.D	64	56	67	72	74	47* [a]	79	73
FA98286-47	3Q65844.D	57	53	55	63	65	35* [a]	64	64
FA98286-47	3Q65719.D	51	47* [a]	42* [a]	50	57	25* [a]	57	54
FA98286-48	5Q4893.D	60	59	62	62	60	60	77	70
FA98286-48	5Q4603.D	67	58	65	68	68	69	86	81
FA98286-49	5Q4604.D	72	67	74	69	68	70	86	85

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S9	S10	S11	S12	S13	S14	S15	S16
OP92762-BS	3Q65692.D	72	54	83	82	82	69	78	69
OP92762-MB	3Q65693.D	72	55	91	93	89	89	91	84
OP92762-MS	3Q65707.D	71	68	76	65	75	68	78	74
OP92762-MSD	3Q65708.D	54	55	57	58	60	54	63	58
OP92763-BS	5Q4630.D	71	60	83	83	81	60	91	77
OP92763-DUP	5Q4635.D	62	59	72	77	73	58	85	76
OP92763-MB	5Q4631.D	80	63	89	89	89	76	108	96
OP92763-MS	5Q4633.D	68	67	72	77	73	54	85	78
OP92764-BS	6Q4671.D	63	57	88	86	83	72	79	75
OP92764-DUP	6Q4676.D	59	67	87	89	79	69	73	74
OP92764-MB	6Q4672.D	74	59	87	88	85	79	88	78
OP92764-MS	6Q4674.D	57	45* [a]	78	85	73	53	73	68
OP92794-BS	5Q4601.D	90	70	95	96	95	82	108	99
OP92794-DUP	5Q4615.D	55	60	63	67	63	65	94	88
OP92794-MB	5Q4602.D	79	35* [a]	97	95	91	79	107	92
OP92794-MS	5Q4608.D	64	45* [a]	70	74	46* [a]	47* [a]	87	85
S3Q900-IBLK	3Q65833.D	103	103	102	103	102	108	107	105
S5Q71-IBLK	5Q4565.D	102	92	98	99	97	99	102	102
S5Q72-IBLK	5Q4665.D	77	75	104	103	99	91	69	84
S5Q73-IBLK	5Q4823.D	89	89	89	89	91	89	85	87
S5Q74-IBLK	5Q4910.D	117	119	126	124	127	116	121	128
S6Q85-IBLK	6Q4627.D	102	102	102	105	102	106	102	112
S6Q86-IBLK	6Q4704.D	105	109	108	109	110	112	103	102

Isotope Dilution Standards	Recovery Limits
S9 = 13C2-PFDoDA	50-150%
S10 = 13C2-PFTeDA	50-150%
S11 = 13C3-PFBS	50-150%
S12 = 13C3-PFHxS	50-150%
S13 = 13C8-PFOS	50-150%
S14 = 13C8-FOSA	50-150%
S15 = d3-MeFOSAA	50-150%
S16 = d5-EtFOSAA	50-150%

(a) Outside control limits.

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20
FA98286-1	5Q4632.D	74	79	77	70
FA98286-2	5Q4634.D	72	78	72	67
FA98286-3	5Q4636.D	72	83	78	64
FA98286-4	5Q4714.D	113	119	115	110
FA98286-4	5Q4914.D	69	1195* [a]	72	73
FA98286-4	5Q4637.D	54	895* [a]	76	49* [a]
FA98286-5	5Q4717.D	73	392* [a]	79	71
FA98286-5	5Q4716.D	73	375* [a]	77	67
FA98286-5	5Q4718.D	112	116	115	110
FA98286-5	5Q4638.D	66	352* [a]	80	63
FA98286-6	5Q4719.D	79	84	78	75
FA98286-6	5Q4639.D	76	89	81	70
FA98286-7	5Q4720.D	76	345* [a]	78	70
FA98286-7	5Q4829.D	111	111	110	114
FA98286-7	5Q4642.D	66	296* [a]	74	61
FA98286-8	5Q4721.D	71	75	68	69
FA98286-8	5Q4643.D	71	76	72	
FA98286-9	5Q4644.D	74	78	69	71
FA98286-10	5Q4724.D	66	70	64	66
FA98286-10	5Q4645.D	65	72	67	61
FA98286-11	5Q4725.D	60	63	58	52
FA98286-11	5Q4646.D	60	70	65	58
FA98286-12	5Q4647.D	78	80	67	79
FA98286-13	5Q4648.D	72	76	63	74
FA98286-14	5Q4649.D	70	76	70	69
FA98286-15	5Q4650.D	76	86	79	76
FA98286-16	5Q4651.D	74	84	81	73
FA98286-17	5Q4726.D	66	77	67	79
FA98286-17	5Q4654.D	67	75	71	69
FA98286-18	5Q4727.D	73	83	72	68
FA98286-18	5Q4655.D	75	86	72	
FA98286-19	5Q4656.D	76	86	78	77
FA98286-20	5Q4728.D	60	66	63	56
FA98286-20	5Q4657.D	51	65	60	54
FA98286-21	6Q4748.D	77	76	69	75
FA98286-21	6Q4673.D	76	84	70	72
FA98286-22	6Q4675.D	70	72	62	77
FA98286-23	6Q4677.D	72	73	64	69
FA98286-24	6Q4678.D	78	83	73	75
FA98286-25	6Q4749.D	76	82	78	77

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20
FA98286-25	6Q4679.D	67	76	70	59
FA98286-26	6Q4680.D	75	84	76	72
FA98286-27	6Q4683.D	73	75	58	76
FA98286-28	6Q4684.D	68	76	74	65
FA98286-29	6Q4685.D	74	71	66	83
FA98286-30	6Q4686.D	72	72	61	76
FA98286-31	6Q4750.D	66	76	71	69
FA98286-31	6Q4687.D	64	75	72	55
FA98286-32	6Q4688.D	67	82	68	61
FA98286-33	6Q4751.D	61	65	64	53
FA98286-33	6Q4689.D	59	66	66	54
FA98286-34	6Q4752.D	72	81	73	60
FA98286-34	6Q4753.D	76	81	78	73
FA98286-35	6Q4756.D	84	93	72	80
FA98286-35	6Q4691.D	75	87	70	72
FA98286-36	6Q4757.D	81	96	79	74
FA98286-36	6Q4692.D	74	86	75	72
FA98286-37	6Q4758.D	67	75	69	65
FA98286-37	6Q4695.D	62	70	68	57
FA98286-38	6Q4759.D	78	82	80	85
FA98286-38	6Q4696.D	79	85	80	65
FA98286-39	6Q4760.D	84	93	88	70
FA98286-39	6Q4697.D	76	87	80	64
FA98286-40	6Q4698.D	74	81	78	81
FA98286-41	3Q65839.D	46* [a]	52	51	50
FA98286-41	3Q65711.D	53	63	68	51
FA98286-42	3Q65840.D	57	63	60	58
FA98286-42	3Q65712.D	59	77	77	57
FA98286-43	3Q65841.D	77	85	72	80
FA98286-43	3Q65713.D	59	76	65	58
FA98286-44	3Q65842.D	63	71	66	64
FA98286-44	3Q65716.D	50	65	68	50
FA98286-45	3Q65717.D	62	73	70	59
FA98286-46	3Q65843.D	63	69	67	66
FA98286-46	3Q65718.D	65	76	78	62
FA98286-47	3Q65844.D	55	63	61	54
FA98286-47	3Q65719.D	41* [a]	55	54	40* [a]
FA98286-48	5Q4893.D	53	60	61	51
FA98286-48	5Q4603.D	56	64	65	48*
FA98286-49	5Q4604.D	66	68	64	61

Isotope Dilution Standard Recovery Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Method: EPA 537M QSM5.3 B-15 **Matrix:** AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S17	S18	S19	S20
OP92762-BS	3Q65692.D	82	83	84	79
OP92762-MB	3Q65693.D	87	93	91	88
OP92762-MS	3Q65707.D	75	80	77	69
OP92762-MSD	3Q65708.D	56	61	62	52
OP92763-BS	5Q4630.D	83	86	89	74
OP92763-DUP	5Q4635.D	69	78	74	64
OP92763-MB	5Q4631.D	84	88	89	78
OP92763-MS	5Q4633.D	76	83	78	65
OP92764-BS	6Q4671.D	88	89	82	90
OP92764-DUP	6Q4676.D	81	81	77	82
OP92764-MB	6Q4672.D	83	87	79	75
OP92764-MS	6Q4674.D	83	89	80	75
OP92794-BS	5Q4601.D	94	96	96	
OP92794-DUP	5Q4615.D	60	68	71	
OP92794-MB	5Q4602.D	90	94	90	
OP92794-MS	5Q4608.D	75	83	78	
S3Q900-IBLK	3Q65833.D	96	101	98	
S5Q71-IBLK	5Q4565.D	90	91	93	94
S5Q72-IBLK	5Q4665.D	82	80	79	95
S5Q73-IBLK	5Q4823.D	82	82	83	87
S5Q74-IBLK	5Q4910.D	115	116	115	131
S6Q85-IBLK	6Q4627.D	95	98	99	105
S6Q86-IBLK	6Q4704.D	98	102	98	111

Isotope Dilution Standards	Recovery Limits
S17 = 13C2-4:2FTS	50-150%
S18 = 13C2-6:2FTS	50-150%
S19 = 13C2-8:2FTS	50-150%
S20 = 13C3-HFPO-DA	50-150%

(a) Outside control limits.

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICC898
Lab FileID: 3Q65683.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_091322_S3Q898.quantmethod.xml
Batch Name	D:\MassHunter\Data\091322_ID_S3Q898\QuantResults\s3q898.batch.bin
Last Calib Update	9/14/2022 9:15:31 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d	9/13/2022 3:50:20 PM	9/14/2022 9:15:31 AM
2	D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d	9/13/2022 4:09:53 PM	9/14/2022 9:15:31 AM
3	D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d	9/13/2022 4:29:26 PM	9/14/2022 9:15:31 AM
4	D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d	9/13/2022 4:48:59 PM	9/14/2022 9:15:31 AM
5	D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d	9/13/2022 5:08:33 PM	9/14/2022 9:15:31 AM
6	D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d	9/13/2022 5:28:06 PM	9/14/2022 9:15:31 AM
7	D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d	9/13/2022 5:47:45 PM	9/14/2022 9:15:31 AM
8	D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d	9/13/2022 6:07:18 PM	9/14/2022 9:15:31 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	8156	8110	8445	7261	8108	7223	8640	7716	7957	6.500
S 13C5-PFPeA	Linear	11769	11805	12081	10723	11862	10627	12725	11146	11592	6.149
S 13C3-PFBS	Linear	1074	1078	1106	982.8	1083	972.1	1165	1004	1058	6.288
S 13C2-4:2FTS	Linear	5466	5534	5685	5037	5749	5231	6893	6608	5775	11.234
S 13C5-PFHxA	Linear	15336	15318	15908	14089	15717	13890	16861	14344	15183	6.698
S 13C3-HFPO-DA	Linear	1322	1296	1370	1194	1321	1146	1404	1212	1283	7.029
S 13C4-PFHpA	Linear	15571	15063	16159	14059	15693	13870	16287	13853	15069	6.753
S 13C3-PFHxS	Linear	1336	1286	1365	1209	1336	1194	1423	1188	1292	6.783
S 13C8-FOSA	Linear	3990	3419	4288	3733	4056	3524	3901	3308	3777	9.026
S 13C2-6:2FTS	Linear	7718	8016	8053	7129	7867	7161	8862	7818	7828	6.999
S 13C8-PFOA	Linear	21022	21136	21803	19121	20804	18558	21338	17268	20131	8.011
S d3-MeFOSA	Linear	923.1	769.1	989.2	855.5	923.0	817.7	968.1	836.4	885.3	8.733
S d3-MeFOSAA	Linear	4582	4573	4969	4161	4656	4088	4805	4138	4497	7.351
S d5-EtFOSAA	Linear	4855	4704	4963	4495	4927	4363	5129	4022	4682	7.832
S 13C8-PFOS	Linear	2001	2031	2078	1827	2016	1781	2131	1832	1962	6.656
S 13C9-PFNA	Linear	22828	22771	23896	20520	22495	19595	24378	20261	22093	7.970
S 13C6-PFDA	Linear	32129	32631	34636	29027	31947	27072	35948	30755	31768	8.998
S 13C2-8:2FTS	Linear	13912	13634	14617	12668	14326	12868	17845	16408	14535	12.191
S 13C7-PFUnDA	Linear	41852	40854	44120	38421	42299	37716	45301	39708	41284	6.417
S 13C2-PFDoDA	Linear	55521	53313	57091	50122	55941	49888	59112	51784	54096	6.211
S 13C2-PFTeDA	Linear	22256	22880	23971	21170	23378	20792	24835	21971	22657	6.098
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.4813	0.4699	0.4601	0.4648	0.4570	0.4640	0.4511	0.4583	0.4633	1.984
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.9506	0.8914	0.8741	0.8805	0.8732	0.8952	0.8647	0.8746	0.8880	3.058
I M5-PFHxA				---------- ISTD ----------							
T FBSA	Linear	0.3637	0.3508	0.3565	0.3532	0.3474	0.3590	0.3390	0.3404	0.3512	2.478
T PFHxA	Linear	1.1319	1.0920	1.0749	1.0860	1.0633	1.0889	1.0466	1.0703	1.0817	2.328

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICC898
Lab FileID: 3Q65683.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.4506	1.4484	1.4209	1.4449	1.4126	1.4550	1.4053	1.4367	1.4343	1.318
I M8-PFOA						ISTD					
T FHxSA	Linear	0.3078	0.2333	0.2998	0.2990	0.3043	0.2917	0.2844	0.2976	0.2897	8.258
T 4-PFECHS	Linear	0.4267	0.4068	0.4006	0.4011	0.4128	0.4222	0.4203	0.4603	0.4189	4.622
T PFOA	Linear	1.2588	1.2394	1.2096	1.2275	1.2088	1.2311	1.1980	1.2269	1.2250	1.582
I M9-PFNA						ISTD					
T PFNA	Linear	0.9091	0.8729	0.8800	0.8749	0.8669	0.8790	0.8504	0.8695	0.8753	1.886
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.3659	0.3626	0.3389	0.3582	0.3543	0.3726	0.3418	0.3437	0.3548	3.468
T PFDA	Linear	0.9977	0.9683	0.9507	0.9607	0.9506	0.9850	0.9435	0.9681	0.9656	1.910
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0922	0.0900	0.0868	0.0876	0.0861	0.0889	0.0846	0.0877	0.0880	2.696
T PFUnDA	Linear	1.1152	1.0714	1.0574	1.0833	1.0686	1.0956	1.0574	1.0815	1.0788	1.822
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.2926	0.2874	0.2831	0.2840	0.2819	0.2914	0.2853	0.2915	0.2872	1.473
T PFDoDA	Linear	0.9605	0.9290	0.9292	0.9388	0.9231	0.9481	0.9154	0.9316	0.9345	1.537
I M2-PFTeDA						ISTD					
T PFTrDA	Linear	1.8596	1.7641	1.7564	1.7787	1.7750	1.8143	1.7577	1.7831	1.7861	1.957
T PFTeDA	Linear	1.4364	1.3747	1.3527	1.3608	1.3586	1.3840	1.3395	1.3568	1.3704	2.179
I M8-FOSA						ISTD					
T FOSA	Linear	1.0418	0.9711	0.9609	0.9791	0.9578	0.9921	0.9489	0.9510	0.9753	3.132
I M3-PFBS						ISTD					
T PFBS	Linear	3.1102	2.8637	2.8652	2.8666	2.8488	2.8861	2.7887	2.8536	2.8854	3.300
T PFPeS	Linear	2.3408	2.1920	2.2648	2.2387	2.2267	2.2646	2.2126	2.2038	2.2430	2.122
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.5633	2.4282	2.3744	2.3286	2.3302	2.3851	2.2769	2.3439	2.3788	3.659
T ADONA	Linear	24.79	24.57	24.73	24.92	24.59	25.32	24.37	25.61	24.86	1.660
I M8-PFOS						ISTD					
T PFHpS	Linear	1.4054	1.4625	1.3721	1.3765	1.3646	1.4056	1.3523	1.2878	1.3784	3.645
T PFOS	Linear	1.7565	1.6925	1.6392	1.6700	1.6510	1.6725	1.6122	1.6548	1.6686	2.568
T PFNS	Linear	1.6048	1.6348	1.5840	1.5604	1.5326	1.5611	1.5611	1.6527	1.5864	2.603
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.1540	1.1215	1.0874	1.1087	1.0646	1.0744	0.9571	0.8681	1.0545	9.008
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.1047	1.1236	1.0752	1.0828	1.0680	1.0678	0.9410	0.8508	1.0392	9.012

Generated at 9:16 AM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICC898
Lab FileID: 3Q65683.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	1.1681	1.0758	1.0538	1.0389	1.0209	1.0167	0.9138	0.8140	1.0127	10.547
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.8693	0.9222	0.8685	0.9038	0.8697	0.9086	0.8914	0.8932	0.8908	2.281
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	2.5803	2.5716	2.4381	2.4647	2.4025	2.5291	2.4085	2.3708	2.4707	3.253
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	1.0734	1.1250	1.0878	1.1311	1.1093	1.1036	1.0662	1.0774	1.0967	2.209
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.8681	0.7825	0.7889	0.7895	0.7786	0.8093	0.7925	0.7984	0.8010	3.586

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICC898
Lab FileID: 3Q65683.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.457137 * x	0.999930
S 13C4-PFBA	Linear	y = 7957.448280 * x	0.000000
S 13C5-PFPeA	Linear	y = 11592.360445 * x	0.000000
T PFPeA	Linear	y = 0.873377 * x	0.999939
S 13C3-PFBS	Linear	y = 1058.117017 * x	0.000000
T PFBS	Linear	y = 2.842121 * x	0.999867
T FBSA	Linear	y = 0.340794 * x	0.999847
S 13C2-4:2FTS	Linear	y = 5775.306110 * x	0.000000
S 13C5-PFHxA	Linear	y = 15182.857032 * x	0.000000
T PFHxA	Linear	y = 1.066298 * x	0.999862
T PFPeS	Linear	y = 2.207629 * x	0.999962
S 13C3-HFPO-DA	Linear	y = 1283.326564 * x	0.000000
T HFPO-DA	Linear	y = 2.383363 * x	0.999754
T FHxSA	Linear	y = 0.294912 * x	0.999519
S 13C4-PFHpA	Linear	y = 15069.439602 * x	0.000000
T PFHpA	Linear	y = 1.431072 * x	0.999873
S 13C3-PFHxS	Linear	y = 1292.030809 * x	0.000000
T PFHxS	Linear	y = 2.332207 * x	0.999783
T ADONA	Linear	y = 25.353626 * x	0.999438
T 4-PFECHS	Linear	y = 0.450973 * x	0.997890
S 13C8-FOSA	Linear	y = 3777.383328 * x	0.000000
T FOSA	Linear	y = 0.951960 * x	0.999909
T PFHpS	Linear	y = 1.304579 * x	0.999086
S 13C2-6:2FTS	Linear	y = 7828.125341 * x	0.000000
S 13C8-PFOA	Linear	y = 20131.102063 * x	0.000000
T PFOA	Linear	y = 1.221313 * x	0.999865
S d3-MeFOSA	Linear	y = 885.284567 * x	0.000000
T MeFOSA	Linear	y = 1.076439 * x	0.999924
S d3-MeFOSAA	Linear	y = 4496.505025 * x	0.000000
T MeFOSAA	Linear	y = 0.893180 * x	0.999976
S d5-EtFOSAA	Linear	y = 4682.150260 * x	0.000000
T EtFOSAA	Linear	y = 0.797448 * x	0.999970
S 13C8-PFOS	Linear	y = 1962.126733 * x	0.000000
T PFOS	Linear	y = 1.647194 * x	0.999832
S 13C9-PFNA	Linear	y = 22093.146400 * x	0.000000
T PFNA	Linear	y = 0.866118 * x	0.999875
T 9Cl-PF3ONS	Linear	y = 0.344347 * x	0.999648
T PFNS	Linear	y = 1.631189 * x	0.999138
S 13C6-PFDA	Linear	y = 31768.193940 * x	0.000000
T PFDA	Linear	y = 0.963730 * x	0.999823
S 13C2-8:2FTS	Linear	y = 14534.719489 * x	0.000000
T PFDS	Linear	y = 0.087159 * x	0.999675
S 13C7-PFUnDA	Linear	y = 41283.816861 * x	0.000000

Generated at 9:16 AM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICC898
Lab FileID: 3Q65683.D

Initial Calibration Report

T PFUnDA	Linear	y = 1.077224 * x	0.999869
T 11Cl-PF3OUdS	Linear	y = 0.290253 * x	0.999881
S 13C2-PFDoDA	Linear	y = 54096.466482 * x	0.000000
T PFDoDA	Linear	y = 0.928924 * x	0.999908
T PFTrDA	Linear	y = 1.779086 * x	0.999934
S 13C2-PFTeDA	Linear	y = 22656.515336 * x	0.000000
T PFTeDA	Linear	y = 1.354359 * x	0.999938

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICV898
Lab FileID: 3Q65687.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d
2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65687
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.450	7.3	107.3
13C2-6:2FTS	20.000	21.505	7.5	107.5
13C2-8:2FTS	20.000	22.094	10.5	110.5
13C2-PFDoDA	20.000	22.034	10.2	110.2
13C2-PFTeDA	20.000	21.938	9.7	109.7
13C3-PFBS	20.000	21.619	8.1	108.1
13C3-PFHxS	20.000	21.766	8.8	108.8
13C4-PFBA	20.000	21.642	8.2	108.2
13C4-PFHpA	20.000	21.826	9.1	109.1
13C5-PFHxA	20.000	21.460	7.3	107.3
13C5-PFPeA	20.000	21.647	8.2	108.2
13C6-PFDA	20.000	22.055	10.3	110.3
13C7-PFUnDA	20.000	21.826	9.1	109.1
13C8-FOSA	20.000	22.991	15.0	115.0
13C8-PFOA	20.000	21.579	7.9	107.9
13C8-PFOS	20.000	21.372	6.9	106.9
13C9-PFNA	20.000	22.071	10.4	110.4
4:2FTS	20.000	19.803	-1.0	99.0
6:2FTS	20.000	19.918	-0.4	99.6
8:2FTS	20.000	20.305	1.5	101.5
d3-MeFOSAA	20.000	21.822	9.1	109.1
EtFOSAA	20.000	22.363	11.8	111.8
FOSA	20.000	21.836	9.2	109.2
MeFOSAA	20.000	21.793	9.0	109.0
PFBA	20.000	20.905	4.5	104.5
PFBS	20.000	18.335	-8.3	91.7
PFDA	20.000	21.585	7.9	107.9
PFDoDA	20.000	22.904	14.5	114.5
PFDS	20.000	20.212	1.1	101.1
PFHpA	20.000	21.472	7.4	107.4
PFHpS	20.000	21.852	9.3	109.3
PFHxA	20.000	20.589	2.9	102.9
PFHxS	20.000	19.202	-4.0	96.0
PFNA	20.000	20.424	2.1	102.1
PFNS	20.000	20.283	1.4	101.4
PFOA	20.000	22.729	13.6	113.6
PFOS	20.000	23.292	16.5	116.5

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICV898
Lab FileID: 3Q65687.D

PFPeA	20.000	21.618	8.1	108.1
PFPeS	20.000	19.998	0.0	100.0
PFTeDA	20.000	20.790	3.9	103.9
PFTrDA	20.000	23.721	18.6	118.6
PFUnDA	20.000	22.550	12.7	112.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.802	-1.0	99.0
13C3-HFPO-DA	20.000	20.977	4.9	104.9
9Cl-PF3ONS	20.000	20.137	0.7	100.7
ADONA	20.000	20.428	2.1	102.1
HFPO-DA	20.000	22.191	11.0	111.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	22.747	13.7	113.7
MeFOSA	20.000	0.000	# -100.0	0.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.866	9.3	109.3
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	23.307	16.5	116.5
FHxSA	20.000	23.369	16.8	116.8

CC Criteria: +/- 20%

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICV898
Lab FileID: 3Q65688.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d
2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65688
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.830	9.2	109.2
13C2-6:2FTS	20.000	21.857	9.3	109.3
13C2-8:2FTS	20.000	22.206	11.0	111.0
13C2-PFDoDA	20.000	22.523	12.6	112.6
13C2-PFTeDA	20.000	22.224	11.1	111.1
13C3-PFBS	20.000	21.897	9.5	109.5
13C3-PFHxS	20.000	22.566	12.8	112.8
13C4-PFBA	20.000	21.882	9.4	109.4
13C4-PFHpA	20.000	22.408	12.0	112.0
13C5-PFHxA	20.000	22.283	11.4	111.4
13C5-PFPeA	20.000	22.040	10.2	110.2
13C6-PFDA	20.000	23.199	16.0	116.0
13C7-PFUnDA	20.000	22.585	12.9	112.9
13C8-FOSA	20.000	23.576	17.9	117.9
13C8-PFOA	20.000	22.101	10.5	110.5
13C8-PFOS	20.000	21.993	10.0	110.0
13C9-PFNA	20.000	22.610	13.0	113.0
4:2FTS	20.000	19.688	-1.6	98.4
6:2FTS	20.000	18.531	-7.3	92.7
8:2FTS	20.000	19.354	-3.2	96.8
d3-MeFOSAA	20.000	23.074	15.4	115.4
EtFOSAA	20.000	17.451	-12.7	87.3
FOSA	20.000	18.922	-5.4	94.6
MeFOSAA	20.000	17.315	-13.4	86.6
PFBA	20.000	18.568	-7.2	92.8
PFBS	20.000	18.175	-9.1	90.9
PFDA	20.000	19.291	-3.5	96.5
PFDoDA	20.000	20.683	3.4	103.4
PFDS	20.000	19.075	-4.6	95.4
PFHpA	20.000	17.531	-12.3	87.7
PFHpS	20.000	21.107	5.5	105.5
PFHxA	20.000	18.519	-7.4	92.6
PFHxS	20.000	19.443	-2.8	97.2
PFNA	20.000	18.775	-6.1	93.9
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	20.111	0.6	100.6
PFOS	20.000	21.677	8.4	108.4

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-ICV898
Lab FileID: 3Q65688.D

PFPeA	20.000	19.443	-2.8	97.2
PFPeS	20.000	19.950	-0.2	99.8
PFTeDA	20.000	18.683	-6.6	93.4
PFTrDA	20.000	22.915	14.6	114.6
PFUnDA	20.000	21.528	7.6	107.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	21.751	8.8	108.8
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	22.595	13.0	113.0
MeFOSA	20.000	19.677	-1.6	98.4
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.255	11.3	111.3
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65690.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d
2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65690
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.047	5.2	105.2
13C2-6:2FTS	20.000	21.070	5.3	105.3
13C2-8:2FTS	20.000	20.398	2.0	102.0
13C2-PFDoDA	20.000	21.358	6.8	106.8
13C2-PFTeDA	20.000	21.063	5.3	105.3
13C3-PFBS	20.000	21.226	6.1	106.1
13C3-PFHxS	20.000	21.232	6.2	106.2
13C4-PFBA	20.000	20.865	4.3	104.3
13C4-PFHpA	20.000	21.259	6.3	106.3
13C5-PFHxA	20.000	21.192	6.0	106.0
13C5-PFPeA	20.000	21.145	5.7	105.7
13C6-PFDA	20.000	19.310	-3.4	96.6
13C7-PFUnDA	20.000	21.010	5.0	105.0
13C8-FOSA	20.000	21.687	8.4	108.4
13C8-PFOA	20.000	21.273	6.4	106.4
13C8-PFOS	20.000	21.097	5.5	105.5
13C9-PFNA	20.000	20.514	2.6	102.6
4:2FTS	20.000	20.474	2.4	102.4
6:2FTS	20.000	20.361	1.8	101.8
8:2FTS	20.000	19.932	-0.3	99.7
d3-MeFOSAA	20.000	20.890	4.4	104.4
EtFOSAA	20.000	20.028	0.1	100.1
FOSA	20.000	20.910	4.5	104.5
MeFOSAA	20.000	20.170	0.9	100.9
PFBA	20.000	20.429	2.1	102.1
PFBS	20.000	20.312	1.6	101.6
PFDA	20.000	20.217	1.1	101.1
PFDoDA	20.000	20.466	2.3	102.3
PFDS	20.000	20.383	1.9	101.9
PFHpA	20.000	20.272	1.4	101.4
PFHpS	20.000	21.419	7.1	107.1
PFHxA	20.000	20.252	1.3	101.3
PFHxS	20.000	20.487	2.4	102.4
PFNA	20.000	20.066	0.3	100.3
PFNS	20.000	18.805	-6.0	94.0
PFOA	20.000	19.897	-0.5	99.5
PFOS	20.000	20.065	0.3	100.3

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S3Q898-CC898
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65690.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	20.529	2.6	102.6
PFPeS	20.000	20.358	1.8	101.8
PFTeDA	20.000	20.452	2.3	102.3
PFTrDA	20.000	20.521	2.6	102.6
PFUnDA	20.000	20.275	1.4	101.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.998	0.0	100.0
13C3-HFPO-DA	20.000	20.503	2.5	102.5
9Cl-PF3ONS	20.000	21.810	9.0	109.0
ADONA	20.000	19.963	-0.2	99.8
HFPO-DA	20.000	20.832	4.2	104.2
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.061	5.3	105.3
MeFOSA	20.000	20.618	3.1	103.1
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.615	8.1	108.1
4-PFECHS	20.000	18.558	-7.2	92.8
FBSA	20.000	21.099	5.5	105.5
FHxSA	20.000	19.825	-0.9	99.1

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65691.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
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2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65691
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.829	-10.9	89.1
13C2-6:2FTS	20.000	18.956	-5.2	94.8
13C2-8:2FTS	20.000	18.710	-6.4	93.6
13C2-PFDoDA	20.000	19.339	-3.3	96.7
13C2-PFTeDA	20.000	19.096	-4.5	95.5
13C3-PFBS	20.000	19.109	-4.5	95.5
13C3-PFHxS	20.000	19.200	-4.0	96.0
13C4-PFBA	20.000	18.786	-6.1	93.9
13C4-PFHpA	20.000	19.336	-3.3	96.7
13C5-PFHxA	20.000	19.177	-4.1	95.9
13C5-PFPeA	20.000	19.034	-4.8	95.2
13C6-PFDA	20.000	19.897	-0.5	99.5
13C7-PFUnDA	20.000	19.271	-3.6	96.4
13C8-FOSA	20.000	20.811	4.1	104.1
13C8-PFOA	20.000	19.659	-1.7	98.3
13C8-PFOS	20.000	19.178	-4.1	95.9
13C9-PFNA	20.000	19.725	-1.4	98.6
4:2FTS	1.000	1.091	9.1	109.1
6:2FTS	1.000	1.060	6.0	106.0
8:2FTS	1.000	1.042	4.2	104.2
d3-MeFOSAA	20.000	20.249	1.2	101.2
EtFOSAA	1.000	1.097	9.7	109.7
FOSA	1.000	1.060	6.0	106.0
MeFOSAA	1.000	1.028	2.8	102.8
PFBA	1.000	1.033	3.3	103.3
PFBS	1.000	0.989	-1.1	98.9
PFDA	1.000	1.003	0.3	100.3
PFDoDA	1.000	1.022	2.2	102.2
PFDS	1.000	1.038	3.8	103.8
PFHpA	1.000	1.023	2.3	102.3
PFHpS	1.000	1.070	7.0	107.0
PFHxA	1.000	1.018	1.8	101.8
PFHxS	1.000	1.029	2.9	102.9
PFNA	1.000	1.014	1.4	101.4
PFNS	1.000	0.949	-5.1	94.9
PFOA	1.000	0.999	-0.1	99.9
PFOS	1.000	1.025	2.5	102.5

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S3Q898-CC898
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65691.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	1.000	1.027	2.7	102.7
PFPeS	1.000	1.059	5.9	105.9
PFTeDA	1.000	1.047	4.7	104.7
PFTrDA	1.000	1.021	2.1	102.1
PFUnDA	1.000	1.004	0.4	100.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.983	-1.7	98.3
13C3-HFPO-DA	20.000	18.010	-9.9	90.1
9Cl-PF3ONS	1.000	1.000	0.0	100.0
ADONA	1.000	0.993	-0.7	99.3
HFPO-DA	1.000	1.090	9.0	109.0
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	19.931	-0.3	99.7
MeFOSA	1.000	1.154	15.4	115.4
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.013	0.1	100.1
4-PFECHS	1.000	0.888	-11.2	88.8
FBSA	1.000	1.059	5.9	105.9
FHxSA	1.000	1.042	4.2	104.2

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65702.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d
2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65702
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.142	5.7	105.7
13C2-6:2FTS	20.000	21.334	6.7	106.7
13C2-8:2FTS	20.000	21.105	5.5	105.5
13C2-PFDoDA	20.000	21.743	8.7	108.7
13C2-PFTeDA	20.000	21.662	8.3	108.3
13C3-PFBS	20.000	21.284	6.4	106.4
13C3-PFHxS	20.000	21.603	8.0	108.0
13C4-PFBA	20.000	21.181	5.9	105.9
13C4-PFHpA	20.000	21.377	6.9	106.9
13C5-PFHxA	20.000	21.342	6.7	106.7
13C5-PFPeA	20.000	21.232	6.2	106.2
13C6-PFDA	20.000	20.056	0.3	100.3
13C7-PFUnDA	20.000	21.475	7.4	107.4
13C8-FOSA	20.000	21.031	5.2	105.2
13C8-PFOA	20.000	21.313	6.6	106.6
13C8-PFOS	20.000	20.773	3.9	103.9
13C9-PFNA	20.000	20.755	3.8	103.8
4:2FTS	20.000	20.563	2.8	102.8
6:2FTS	20.000	20.311	1.6	101.6
8:2FTS	20.000	20.048	0.2	100.2
d3-MeFOSAA	20.000	22.048	10.2	110.2
EtFOSAA	20.000	20.471	2.4	102.4
FOSA	20.000	20.896	4.5	104.5
MeFOSAA	20.000	19.943	-0.3	99.7
PFBA	20.000	20.354	1.8	101.8
PFBS	20.000	20.287	1.4	101.4
PFDA	20.000	20.275	1.4	101.4
PFDoDA	20.000	20.416	2.1	102.1
PFDS	20.000	20.332	1.7	101.7
PFHpA	20.000	20.261	1.3	101.3
PFHpS	20.000	21.834	9.2	109.2
PFHxA	20.000	20.514	2.6	102.6
PFHxS	20.000	20.327	1.6	101.6
PFNA	20.000	20.264	1.3	101.3
PFNS	20.000	19.546	-2.3	97.7
PFOA	20.000	20.348	1.7	101.7
PFOS	20.000	20.835	4.2	104.2

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S3Q898-CC898
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65702.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	20.537	2.7	102.7
PFPeS	20.000	20.451	2.3	102.3
PFTeDA	20.000	20.456	2.3	102.3
PFTrDA	20.000	20.604	3.0	103.0
PFUnDA	20.000	20.547	2.7	102.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.145	0.7	100.7
13C3-HFPO-DA	20.000	20.453	2.3	102.3
9Cl-PF3ONS	20.000	21.155	5.8	105.8
ADONA	20.000	19.874	-0.6	99.4
HFPO-DA	20.000	20.538	2.7	102.7
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.012	5.1	105.1
MeFOSA	20.000	20.410	2.0	102.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.453	12.3	112.3
4-PFECHS	20.000	18.509	-7.5	92.5
FBSA	20.000	20.980	4.9	104.9
FHxSA	20.000	19.497	-2.5	97.5

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65714.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091322_ID_S3Q898\3q65678.d
2:D:\MassHunter\Data\091322_ID_S3Q898\3q65679.d
3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65714
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.412	7.1	107.1
13C2-6:2FTS	20.000	22.167	10.8	110.8
13C2-8:2FTS	20.000	24.405	22.0	122.0
13C2-PFDoDA	20.000	22.304	11.5	111.5
13C2-PFTeDA	20.000	21.884	9.4	109.4
13C3-PFBS	20.000	21.767	8.8	108.8
13C3-PFHxS	20.000	22.075	10.4	110.4
13C4-PFBA	20.000	21.642	8.2	108.2
13C4-PFHpA	20.000	21.804	9.0	109.0
13C5-PFHxA	20.000	21.597	8.0	108.0
13C5-PFPeA	20.000	21.750	8.8	108.8
13C6-PFDA	20.000	21.110	5.6	105.6
13C7-PFUnDA	20.000	22.561	12.8	112.8
13C8-FOSA	20.000	21.899	9.5	109.5
13C8-PFOA	20.000	22.066	10.3	110.3
13C8-PFOS	20.000	21.938	9.7	109.7
13C9-PFNA	20.000	21.520	7.6	107.6
4:2FTS	20.000	20.333	1.7	101.7
6:2FTS	20.000	20.167	0.8	100.8
8:2FTS	20.000	19.945	-0.3	99.7
d3-MeFOSAA	20.000	22.443	12.2	112.2
EtFOSAA	20.000	20.519	2.6	102.6
FOSA	20.000	21.105	5.5	105.5
MeFOSAA	20.000	20.083	0.4	100.4
PFBA	20.000	20.174	0.9	100.9
PFBS	20.000	20.250	1.3	101.3
PFDA	20.000	20.358	1.8	101.8
PFDoDA	20.000	20.401	2.0	102.0
PFDS	20.000	19.594	-2.0	98.0
PFHpA	20.000	20.331	1.7	101.7
PFHpS	20.000	21.339	6.7	106.7
PFHxA	20.000	20.414	2.1	102.1
PFHxS	20.000	20.231	1.2	101.2
PFNA	20.000	20.362	1.8	101.8
PFNS	20.000	19.535	-2.3	97.7
PFOA	20.000	20.335	1.7	101.7
PFOS	20.000	20.037	0.2	100.2

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65714.D

PFPeA	20.000	20.663	3.3	103.3
PFPeS	20.000	20.299	1.5	101.5
PFTeDA	20.000	20.553	2.8	102.8
PFTrDA	20.000	20.865	4.3	104.3
PFUnDA	20.000	20.340	1.7	101.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.951	-0.2	99.8
13C3-HFPO-DA	20.000	20.834	4.2	104.2
9Cl-PF3ONS	20.000	21.322	6.6	106.6
ADONA	20.000	19.850	-0.7	99.3
HFPO-DA	20.000	20.722	3.6	103.6
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.917	9.6	109.6
MeFOSA	20.000	20.590	3.0	103.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.781	13.9	113.9
4-PFECHS	20.000	18.755	-6.2	93.8
FBSA	20.000	21.002	5.0	105.0
FHxSA	20.000	19.322	-3.4	96.6

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65721.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
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3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65721
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.003	-5.0	95.0
13C2-6:2FTS	20.000	19.920	-0.4	99.6
13C2-8:2FTS	20.000	21.281	6.4	106.4
13C2-PFDoDA	20.000	19.902	-0.5	99.5
13C2-PFTeDA	20.000	19.187	-4.1	95.9
13C3-PFBS	20.000	19.057	-4.7	95.3
13C3-PFHxS	20.000	19.624	-1.9	98.1
13C4-PFBA	20.000	19.220	-3.9	96.1
13C4-PFHpA	20.000	19.503	-2.5	97.5
13C5-PFHxA	20.000	19.264	-3.7	96.3
13C5-PFPeA	20.000	19.188	-4.1	95.9
13C6-PFDA	20.000	18.489	-7.6	92.4
13C7-PFUnDA	20.000	19.596	-2.0	98.0
13C8-FOSA	20.000	20.215	1.1	101.1
13C8-PFOA	20.000	19.542	-2.3	97.7
13C8-PFOS	20.000	19.105	-4.5	95.5
13C9-PFNA	20.000	19.404	-3.0	97.0
4:2FTS	20.000	20.369	1.8	101.8
6:2FTS	20.000	20.430	2.1	102.1
8:2FTS	20.000	20.043	0.2	100.2
d3-MeFOSAA	20.000	20.182	0.9	100.9
EtFOSAA	20.000	20.129	0.6	100.6
FOSA	20.000	20.792	4.0	104.0
MeFOSAA	20.000	20.615	3.1	103.1
PFBA	20.000	20.160	0.8	100.8
PFBS	20.000	20.525	2.6	102.6
PFDA	20.000	20.360	1.8	101.8
PFDoDA	20.000	20.388	1.9	101.9
PFDS	20.000	19.937	-0.3	99.7
PFHpA	20.000	20.473	2.4	102.4
PFHpS	20.000	21.615	8.1	108.1
PFHxA	20.000	20.325	1.6	101.6
PFHxS	20.000	20.118	0.6	100.6
PFNA	20.000	20.299	1.5	101.5
PFNS	20.000	19.592	-2.0	98.0
PFOA	20.000	20.389	1.9	101.9
PFOS	20.000	20.662	3.3	103.3

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65721.D

PFPeA	20.000	20.836	4.2	104.2
PFPeS	20.000	20.533	2.7	102.7
PFTeDA	20.000	20.676	3.4	103.4
PFTrDA	20.000	20.863	4.3	104.3
PFUnDA	20.000	20.622	3.1	103.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.106	0.5	100.5
13C3-HFPO-DA	20.000	18.496	-7.5	92.5
9Cl-PF3ONS	20.000	21.561	7.8	107.8
ADONA	20.000	19.902	-0.5	99.5
HFPO-DA	20.000	20.774	3.9	103.9
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	19.332	-3.3	96.7
MeFOSA	20.000	20.491	2.5	102.5
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.685	3.4	103.4
4-PFECHS	20.000	18.917	-5.4	94.6
FBSA	20.000	20.891	4.5	104.5
FHxSA	20.000	19.838	-0.8	99.2

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q898-CC898
Lab FileID: 3Q65723.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091322_ID_S3Q898\s3q898.batch.bin

Level ID:Calibration File
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3:D:\MassHunter\Data\091322_ID_S3Q898\3q65680.d
4:D:\MassHunter\Data\091322_ID_S3Q898\3q65681.d
5:D:\MassHunter\Data\091322_ID_S3Q898\3q65682.d
6:D:\MassHunter\Data\091322_ID_S3Q898\3q65683.d
7:D:\MassHunter\Data\091322_ID_S3Q898\3q65684.d
8:D:\MassHunter\Data\091322_ID_S3Q898\3q65685.d

Data File: 3q65723
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.655	8.3	108.3
13C2-6:2FTS	20.000	23.470	17.4	117.4
13C2-8:2FTS	20.000	24.844	24.2	124.2
13C2-PFDoDA	20.000	23.634	18.2	118.2
13C2-PFTeDA	20.000	22.786	13.9	113.9
13C3-PFBS	20.000	22.816	14.1	114.1
13C3-PFHxS	20.000	23.528	17.6	117.6
13C4-PFBA	20.000	22.834	14.2	114.2
13C4-PFHpA	20.000	23.567	17.8	117.8
13C5-PFHxA	20.000	23.288	16.4	116.4
13C5-PFPeA	20.000	23.042	15.2	115.2
13C6-PFDA	20.000	24.122	20.6	120.6
13C7-PFUnDA	20.000	23.621	18.1	118.1
13C8-FOSA	20.000	25.356	26.8	126.8
13C8-PFOA	20.000	24.292	21.5	121.5
13C8-PFOS	20.000	23.410	17.1	117.1
13C9-PFNA	20.000	24.509	22.5	122.5
4:2FTS	1.000	1.055	5.5	105.5
6:2FTS	1.000	1.039	3.9	103.9
8:2FTS	1.000	1.051	5.1	105.1
d3-MeFOSAA	20.000	25.432	27.2	127.2
EtFOSAA	1.000	0.971	-2.9	97.1
FOSA	1.000	1.009	0.9	100.9
MeFOSAA	1.000	0.973	-2.7	97.3
PFBA	1.000	1.072	7.2	107.2
PFBS	1.000	1.025	2.5	102.5
PFDA	1.000	1.014	1.4	101.4
PFDoDA	1.000	1.008	0.8	100.8
PFDS	1.000	1.003	0.3	100.3
PFHpA	1.000	1.010	1.0	101.0
PFHpS	1.000	1.076	7.6	107.6
PFHxA	1.000	1.011	1.1	101.1
PFHxS	1.000	1.022	2.2	102.2
PFNA	1.000	1.037	3.7	103.7
PFNS	1.000	1.018	1.8	101.8
PFOA	1.000	1.001	0.1	100.1
PFOS	1.000	1.039	3.9	103.9

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S3Q898-CC898
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65723.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	1.000	1.041	4.1	104.1
PFPeS	1.000	1.056	5.6	105.6
PFTeDA	1.000	1.036	3.6	103.6
PFTrDA	1.000	1.020	2.0	102.0
PFUnDA	1.000	1.013	1.3	101.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.980	-2.0	98.0
13C3-HFPO-DA	20.000	22.422	12.1	112.1
9Cl-PF3ONS	1.000	1.013	1.3	101.3
ADONA	1.000	0.979	-2.1	97.9
HFPO-DA	1.000	1.046	4.6	104.6
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	24.017	20.1	120.1
MeFOSA	1.000	1.034	3.4	103.4
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	25.438	27.2	127.2
4-PFECHS	1.000	0.881	-11.9	88.1
FBSA	1.000	1.052	5.2	105.2
FHxSA	1.000	1.024	2.4	102.4

CC Criteria: +/- 20%

Initial Calibration Summary

Job Number: FA98286 **Sample:** S3Q900-ICC900
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65830.D
Project: SWMU 114 Fire Station 2; KSC, FL

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_091522_S3Q900.quantmethod.xml
Batch Name	D:\MassHunter\Data\091522_ID_S3Q900\QuantResults\S3Q900.batch.bin
Last Calib Update	9/16/2022 12:18:14 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d	9/15/2022 6:09:16 PM	9/16/2022 12:18:14 PM
2	D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d	9/15/2022 6:28:49 PM	9/16/2022 12:18:14 PM
3	D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d	9/15/2022 6:48:22 PM	9/16/2022 12:18:14 PM
4	D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d	9/15/2022 7:07:55 PM	9/16/2022 12:18:14 PM
5	D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d	9/15/2022 7:27:29 PM	9/16/2022 12:18:14 PM
6	D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d	9/15/2022 7:47:03 PM	9/16/2022 12:18:14 PM
7	D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d	9/15/2022 8:06:37 PM	9/16/2022 12:18:14 PM
8	D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d	9/15/2022 8:26:11 PM	9/16/2022 12:18:14 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	8116	8076	9236	8053	8322	8895	7914	7707	8290	6.246
S 13C5-PFPeA	Linear	11921	11771	13499	11773	12131	13018	11531	11115	12095	6.512
S 13C3-PFBS	Linear	1085	1085	1235	1078	1113	1181	1054	1022	1107	6.283
S 13C2-4:2FTS	Linear	5621	5644	6450	5657	5973	6545	6334	6880	6138	7.841
S 13C5-PFHxA	Linear	15791	15757	18083	15632	16121	17236	15173	14506	16037	7.080
S 13C3-HFPO-DA	Linear	1300	1279	1447	1268	1295	1363	1207	1172	1291	6.635
S 13C4-PFHpA	Linear	15642	15636	17960	15632	16047	16913	14718	13635	15773	8.266
S 13C3-PFHxS	Linear	1320	1320	1526	1330	1365	1454	1268	1193	1347	7.716
S 13C8-FOSA	Linear	3429	3563	4101	3596	3732	3898	3254	2934	3563	10.286
S 13C2-6:2FTS	Linear	8330	8341	9504	8375	8595	9200	8430	8243	8627	5.399
S 13C8-PFOA	Linear	21208	21294	24398	21278	21919	22879	19571	17639	21273	9.547
S d3-MeFOSA	Linear	789.8	809.3	916.5	778.6	842.0	863.6	745.9	709.4	806.9	8.220
S d3-MeFOSAA	Linear	5601	5629	6355	5626	5770	6095	5259	4954	5661	7.755
S d5-EtFOSAA	Linear	5652	5723	6544	5570	5819	6133	5347	4780	5696	9.155
S 13C8-PFOS	Linear	2019	2025	2320	2022	2113	2231	1944	1877	2069	7.071
S 13C9-PFNA	Linear	23663	23446	27117	23420	24221	25890	22331	20778	23858	8.246
S 13C6-PFDA	Linear	36122	35499	41004	36268	36883	38952	34168	31909	36350	7.640
S 13C2-8:2FTS	Linear	16114	16111	18383	15968	16823	18161	17102	18320	17123	6.070
S 13C7-PFUnDA	Linear	46987	46939	53811	46840	48115	51200	44781	42363	47629	7.468
S 13C2-PFDoDA	Linear	59431	59473	68159	59431	61009	65314	57520	55568	60738	6.765
S 13C2-PFTeDA	Linear	24928	24855	28457	24966	25641	27468	24313	23644	25534	6.368
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.5076	0.4496	0.4316	0.4566	0.4466	0.4398	0.4485	0.4582	0.4548	5.054
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.9676	0.9078	0.8762	0.9141	0.9030	0.8903	0.9008	0.9284	0.9110	3.029
I M5-PFHxA				---------- ISTD ----------							
T FBSA	Linear	0.3466	0.3204	0.3166	0.3278	0.3243	0.3176	0.3189	0.3220	0.3243	2.998
T PFHxA	Linear	1.1791	1.0842	1.0602	1.1160	1.1005	1.0817	1.0979	1.1283	1.1060	3.278

Generated at 12:18 PM on 9/16/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICC900
Lab FileID: 3Q65830.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.5547	1.4501	1.4274	1.4860	1.4681	1.4630	1.4823	1.5353	1.4834	2.869
I M8-PFOA						ISTD					
T FHxSA	Linear	0.2382	0.2307	0.2247	0.2311	0.2298	0.2278	0.2300	0.2429	0.2319	2.522
T 4-PFECHS	Linear	0.3352	0.3135	0.3025	0.3174	0.3108	0.3188	0.3349	0.3694	0.3253	6.476
T PFOA	Linear	1.3400	1.2298	1.2109	1.2718	1.2284	1.2321	1.2502	1.2924	1.2570	3.390
I M9-PFNA						ISTD					
T PFNA	Linear	0.9351	0.8756	0.8289	0.8778	0.8557	0.8464	0.8726	0.8918	0.8730	3.671
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.3403	0.3079	0.3137	0.3210	0.3251	0.3204	0.3313	0.3488	0.3261	4.159
T PFDA	Linear	1.0291	0.9695	0.9457	0.9848	0.9823	0.9753	0.9877	1.0215	0.9870	2.744
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.0860	0.0788	0.0773	0.0794	0.0785	0.0785	0.0811	0.0852	0.0806	4.057
T PFUnDA	Linear	1.1103	1.0426	1.0308	1.0816	1.0643	1.0633	1.0821	1.1183	1.0742	2.828
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.2753	0.2567	0.2503	0.2640	0.2609	0.2624	0.2697	0.2802	0.2649	3.696
T PFDoDA	Linear	0.9794	0.9088	0.8907	0.9393	0.9198	0.9162	0.9289	0.9535	0.9296	2.979
T PFTrDA	Linear	0.8292	0.7817	0.7644	0.8079	0.8020	0.7954	0.8051	0.8220	0.8010	2.602
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	1.5162	1.3912	1.3576	1.4154	1.4040	1.3837	1.4101	1.4325	1.4138	3.330
I M8-FOSA						ISTD					
T FOSA	Linear	1.0216	0.9830	0.9540	0.9709	0.9483	0.9517	0.9488	0.9938	0.9715	2.720
I M3-PFBS						ISTD					
T PFBS	Linear	3.1701	2.8535	2.8127	2.9198	2.8707	2.8705	2.8966	2.9277	2.9152	3.754
T PFPeS	Linear	2.3849	2.2949	2.1656	2.2550	2.2379	2.2392	2.2494	2.2654	2.2615	2.737
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.5065	2.4941	2.4019	2.4197	2.3901	2.3857	2.4346	2.4803	2.4391	1.979
T ADONA	Linear	26.06	24.68	24.37	25.59	25.14	25.15	25.65	26.60	25.41	2.855
I M8-PFOS						ISTD					
T PFHpS	Linear	1.4917	1.4312	1.3635	1.4005	1.3776	1.3525	1.3650	1.3252	1.3884	3.775
T PFOS	Linear	2.1237	1.7298	1.7510	1.7686	1.7415	1.7265	1.7900	1.7915	1.8028	7.324
T PFNS	Linear	1.8495	1.6450	1.6547	1.6883	1.6404	1.6537	1.6853	1.6635	1.6851	4.076
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.3108	1.1628	1.1343	1.1582	1.1410	1.0998	1.0152	0.9174	1.1174	10.299
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.1227	1.0600	1.0834	1.0909	1.0764	1.0330	0.9515	0.8771	1.0369	7.934

Generated at 12:18 PM on 9/16/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICC900
Lab FileID: 3Q65830.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	1.1432	1.0642	1.0555	1.0761	1.0505	1.0100	0.9433	0.8467	1.0237	8.921
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.9879	0.8858	0.8711	0.9340	0.9005	0.8934	0.9139	0.9103	0.9121	3.949
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	2.8013	2.4994	2.3421	2.5258	2.4406	2.4158	2.4264	2.4959	2.4934	5.509
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	1.3198	1.0723	1.0691	1.1125	1.0628	1.0986	1.0887	1.0863	1.1138	7.617
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.9276	0.8372	0.7980	0.8874	0.8591	0.8487	0.8413	0.8647	0.8580	4.440

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 12:18 PM on 9/16/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICC900
Lab FileID: 3Q65830.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.455680 * x	0.999830
S 13C4-PFBA	Linear	y = 8289.800243 * x	0.000000
S 13C5-PFPeA	Linear	y = 12094.823462 * x	0.000000
T PFPeA	Linear	y = 0.921672 * x	0.999732
S 13C3-PFBS	Linear	y = 1106.771578 * x	0.000000
T PFBS	Linear	y = 2.919469 * x	0.999956
T FBSA	Linear	y = 0.321324 * x	0.999969
S 13C2-4:2FTS	Linear	y = 638.076776 * x	0.000000
S 13C5-PFHxA	Linear	y = 16037.319228 * x	0.000000
T PFHxA	Linear	y = 1.120783 * x	0.999765
T PFPeS	Linear	y = 2.261289 * x	0.999981
S 13C3-HFPO-DA	Linear	y = 1291.374043 * x	0.000000
T HFPO-DA	Linear	y = 2.479690 * x	0.999780
T FHxSA	Linear	y = 0.239812 * x	0.999195
S 13C4-PFHpA	Linear	y = 15772.934947 * x	0.000000
T PFHpA	Linear	y = 1.522270 * x	0.999628
S 13C3-PFHxS	Linear	y = 1347.008993 * x	0.000000
T PFHxS	Linear	y = 2.467804 * x	0.999854
T ADONA	Linear	y = 26.362619 * x	0.999569
T 4-PFECHS	Linear	y = 0.360637 * x	0.997024
S 13C8-FOSA	Linear	y = 3563.275130 * x	0.000000
T FOSA	Linear	y = 0.983485 * x	0.999451
T PFHpS	Linear	y = 1.334240 * x	0.999761
S 13C2-6:2FTS	Linear	y = 8627.389001 * x	0.000000
S 13C8-PFOA	Linear	y = 21273.318878 * x	0.000000
T PFOA	Linear	y = 1.281923 * x	0.999654
S d3-MeFOSA	Linear	y = 806.896328 * x	0.000000
T MeFOSA	Linear	y = 1.086990 * x	0.999985
S d3-MeFOSAA	Linear	y = 5661.075841 * x	0.000000
T MeFOSAA	Linear	y = 0.910475 * x	0.999975
S d5-EtFOSAA	Linear	y = 5695.995391 * x	0.000000
T EtFOSAA	Linear	y = 0.859728 * x	0.999814
S 13C8-PFOS	Linear	y = 2068.934483 * x	0.000000
T PFOS	Linear	y = 1.788794 * x	0.999931
S 13C9-PFNA	Linear	y = 23858.366843 * x	0.000000
T PFNA	Linear	y = 0.886388 * x	0.999778
T 9Cl-PF3ONS	Linear	y = 0.344320 * x	0.999125
T PFNS	Linear	y = 1.667287 * x	0.999953
S 13C6-PFDA	Linear	y = 36350.459878 * x	0.000000
T PFDA	Linear	y = 1.013161 * x	0.999661
S 13C2-8:2FTS	Linear	y = 17122.744399 * x	0.000000
T PFDS	Linear	y = 0.084172 * x	0.999182
S 13C7-PFUnDA	Linear	y = 47629.417857 * x	0.000000

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICC900
Lab FileID: 3Q65830.D

Initial Calibration Report

T PFUnDA	Linear	y = 1.109155 * x	0.999649
T 11Cl-PF3OUdS	Linear	y = 0.277475 * x	0.999471
S 13C2-PFDoDA	Linear	y = 60738.024146 * x	0.000000
T PFDoDA	Linear	y = 0.947369 * x	0.999780
T PFTrDA	Linear	y = 0.817720 * x	0.999859
S 13C2-PFTeDA	Linear	y = 25534.043558 * x	0.000000
T PFTeDA	Linear	y = 1.426438 * x	0.999895

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICV900
Lab FileID: 3Q65834.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S3Q900\S3Q900.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d
2:D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d
3:D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d
4:D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d
5:D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d
6:D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d
7:D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d
8:D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d

Data File: 3q65834
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.397	-8.0	92.0
13C2-6:2FTS	20.000	18.890	-5.5	94.5
13C2-8:2FTS	20.000	18.859	-5.7	94.3
13C2-PFDoDA	20.000	18.680	-6.6	93.4
13C2-PFTeDA	20.000	18.631	-6.8	93.2
13C3-PFBS	20.000	18.597	-7.0	93.0
13C3-PFHxS	20.000	18.719	-6.4	93.6
13C4-PFBA	20.000	18.509	-7.5	92.5
13C4-PFHpA	20.000	18.743	-6.3	93.7
13C5-PFHxA	20.000	18.634	-6.8	93.2
13C5-PFPeA	20.000	18.583	-7.1	92.9
13C6-PFDA	20.000	18.525	-7.4	92.6
13C7-PFUnDA	20.000	18.610	-6.9	93.1
13C8-FOSA	20.000	19.297	-3.5	96.5
13C8-PFOA	20.000	18.808	-6.0	94.0
13C8-PFOS	20.000	19.161	-4.2	95.8
13C9-PFNA	20.000	19.038	-4.8	95.2
4:2FTS	20.000	17.216	-13.9	86.1
6:2FTS	20.000	18.311	-8.4	91.6
8:2FTS	20.000	18.721	-6.4	93.6
d3-MeFOSAA	20.000	19.022	-4.9	95.1
EtFOSAA	20.000	19.492	-2.5	97.5
FOSA	20.000	19.171	-4.1	95.9
MeFOSAA	20.000	19.292	-3.5	96.5
PFBA	20.000	19.223	-3.9	96.1
PFBS	20.000	16.187	-19.1	80.9
PFDA	20.000	18.706	-6.5	93.5
PFDoDA	20.000	20.611	3.1	103.1
PFDS	20.000	17.678	-11.6	88.4
PFHpA	20.000	18.461	-7.7	92.3
PFHpS	20.000	18.648	-6.8	93.2
PFHxA	20.000	17.752	-11.2	88.8
PFHxS	20.000	16.274	-18.6	81.4
PFNA	20.000	18.183	-9.1	90.9
PFNS	20.000	17.921	-10.4	89.6
PFOA	20.000	19.917	-0.4	99.6
PFOS	20.000	19.375	-3.1	96.9

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICV900
Lab FileID: 3Q65834.D

PFPeA	20.000	18.849	-5.8	94.2
PFPeS	20.000	17.926	-10.4	89.6
PFTeDA	20.000	18.185	-9.1	90.9
PFTrDA	20.000	20.543	2.7	102.7
PFUnDA	20.000	20.095	0.5	100.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.911	-10.4	89.6
13C3-HFPO-DA	20.000	18.622	-6.9	93.1
9Cl-PF3ONS	20.000	17.782	-11.1	88.9
ADONA	20.000	17.859	-10.7	89.3
HFPO-DA	20.000	18.861	-5.7	94.3
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	19.102	-4.5	95.5
MeFOSA	20.000	0.000	# -100.0	0.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.835	-5.8	94.2
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	21.631	8.2	108.2
FHxSA	20.000	22.334	11.7	111.7

CC Criteria: +/- 20%

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICV900
Lab FileID: 3Q65835.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S3Q900\S3Q900.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d
2:D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d
3:D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d
4:D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d
5:D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d
6:D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d
7:D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d
8:D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d

Data File: 3q65835
Type : MeFOSA Only
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.596	8.0	108.0
MeFOSA	20.000	17.927	-10.4	89.6
13C2-4:2FTS	20.000	0.000	# -100.0	0.0
13C2-6:2FTS	20.000	0.000	# -100.0	0.0
13C2-8:2FTS	20.000	0.000	# -100.0	0.0
13C2-PFDoDA	20.000	0.000	# -100.0	0.0
13C2-PFTeDA	20.000	0.000	# -100.0	0.0
13C3-PFBS	20.000	0.000	# -100.0	0.0
13C3-PFHxS	20.000	0.000	# -100.0	0.0
13C4-PFBA	20.000	0.000	# -100.0	0.0
13C4-PFHpA	20.000	0.000	# -100.0	0.0
13C5-PFHxA	20.000	0.000	# -100.0	0.0
13C5-PFPeA	20.000	0.000	# -100.0	0.0
13C6-PFDA	20.000	0.000	# -100.0	0.0
13C7-PFUnDA	20.000	0.000	# -100.0	0.0
13C8-FOSA	20.000	0.000	# -100.0	0.0
13C8-PFOA	20.000	0.000	# -100.0	0.0
13C8-PFOS	20.000	0.000	# -100.0	0.0
13C9-PFNA	20.000	0.000	# -100.0	0.0
4:2FTS	20.000	0.000	# -100.0	0.0
6:2FTS	20.000	0.000	# -100.0	0.0
8:2FTS	20.000	0.000	# -100.0	0.0
d3-MeFOSAA	20.000	0.000	# -100.0	0.0
EtFOSAA	20.000	0.000	# -100.0	0.0
FOSA	20.000	0.000	# -100.0	0.0
MeFOSAA	20.000	0.000	# -100.0	0.0
PFBA	20.000	0.000	# -100.0	0.0
PFBS	20.000	0.000	# -100.0	0.0
PFDA	20.000	0.000	# -100.0	0.0
PFDoDA	20.000	0.000	# -100.0	0.0
PFDS	20.000	0.000	# -100.0	0.0
PFHpA	20.000	0.000	# -100.0	0.0
PFHpS	20.000	0.000	# -100.0	0.0
PFHxA	20.000	0.000	# -100.0	0.0
PFHxS	20.000	0.000	# -100.0	0.0
PFNA	20.000	0.000	# -100.0	0.0
PFNS	20.000	0.000	# -100.0	0.0

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-ICV900
Lab FileID: 3Q65835.D

PFOA	20.000	0.000	# -100.0	0.0
PFOS	20.000	0.000	# -100.0	0.0
PFPeA	20.000	0.000	# -100.0	0.0
PFPeS	20.000	0.000	# -100.0	0.0
PFTeDA	20.000	0.000	# -100.0	0.0
PFTrDA	20.000	0.000	# -100.0	0.0
PFUnDA	20.000	0.000	# -100.0	0.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	0.000	# -100.0	0.0
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	0.000	# -100.0	0.0
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-CC900
Lab FileID: 3Q65837.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S3Q900\S3Q900.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d
2:D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d
3:D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d
4:D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d
5:D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d
6:D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d
7:D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d
8:D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d

Data File: 3q65837
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.218	1.1	101.1
13C2-6:2FTS	20.000	20.300	1.5	101.5
13C2-8:2FTS	20.000	21.729	8.6	108.6
13C2-PFDoDA	20.000	20.399	2.0	102.0
13C2-PFTeDA	20.000	20.144	0.7	100.7
13C3-PFBS	20.000	20.240	1.2	101.2
13C3-PFHxS	20.000	20.635	3.2	103.2
13C4-PFBA	20.000	20.087	0.4	100.4
13C4-PFHpA	20.000	20.408	2.0	102.0
13C5-PFHxA	20.000	20.223	1.1	101.1
13C5-PFPeA	20.000	20.129	0.6	100.6
13C6-PFDA	20.000	21.011	5.1	105.1
13C7-PFUnDA	20.000	20.411	2.1	102.1
13C8-FOSA	20.000	23.431	17.2	117.2
13C8-PFOA	20.000	20.634	3.2	103.2
13C8-PFOS	20.000	20.607	3.0	103.0
13C9-PFNA	20.000	20.930	4.6	104.6
4:2FTS	20.000	19.598	-2.0	98.0
6:2FTS	20.000	19.694	-1.5	98.5
8:2FTS	20.000	19.697	-1.5	98.5
d3-MeFOSAA	20.000	21.024	5.1	105.1
EtFOSAA	20.000	19.458	-2.7	97.3
FOSA	20.000	19.407	-3.0	97.0
MeFOSAA	20.000	19.654	-1.7	98.3
PFBA	20.000	19.295	-3.5	96.5
PFBS	20.000	19.522	-2.4	97.6
PFDA	20.000	19.372	-3.1	96.9
PFDoDA	20.000	19.363	-3.2	96.8
PFDS	20.000	18.176	-9.1	90.9
PFHpA	20.000	19.173	-4.1	95.9
PFHpS	20.000	20.236	1.2	101.2
PFHxA	20.000	19.465	-2.7	97.3
PFHxS	20.000	19.287	-3.6	96.4
PFNA	20.000	19.273	-3.6	96.4
PFNS	20.000	19.833	-0.8	99.2
PFOA	20.000	19.224	-3.9	96.1
PFOS	20.000	19.496	-2.5	97.5

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-CC900
Lab FileID: 3Q65837.D

PFPeA	20.000	19.500	-2.5	97.5
PFPeS	20.000	19.777	-1.1	98.9
PFTeDA	20.000	19.233	-3.8	96.2
PFTrDA	20.000	19.192	-4.0	96.0
PFUnDA	20.000	19.266	-3.7	96.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.736	-6.3	93.7
13C3-HFPO-DA	20.000	19.885	-0.6	99.4
9Cl-PF3ONS	20.000	18.627	-6.9	93.1
ADONA	20.000	18.960	-5.2	94.8
HFPO-DA	20.000	19.616	-1.9	98.1
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	22.908	14.5	114.5
MeFOSA	20.000	19.126	-4.4	95.6
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.741	3.7	103.7
4-PFECHS	20.000	17.734	-11.3	88.7
FBSA	20.000	19.883	-0.6	99.4
FHxSA	20.000	20.323	1.6	101.6

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-CC900
Lab FileID: 3Q65838.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S3Q900\S3Q900.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d
2:D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d
3:D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d
4:D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d
5:D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d
6:D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d
7:D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d
8:D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d

Data File: 3q65838
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.007	-5.0	95.0
13C2-6:2FTS	20.000	20.376	1.9	101.9
13C2-8:2FTS	20.000	19.420	-2.9	97.1
13C2-PFDoDA	20.000	20.387	1.9	101.9
13C2-PFTeDA	20.000	20.109	0.5	100.5
13C3-PFBS	20.000	20.296	1.5	101.5
13C3-PFHxS	20.000	20.537	2.7	102.7
13C4-PFBA	20.000	20.123	0.6	100.6
13C4-PFHpA	20.000	20.643	3.2	103.2
13C5-PFHxA	20.000	20.378	1.9	101.9
13C5-PFPeA	20.000	20.199	1.0	101.0
13C6-PFDA	20.000	20.278	1.4	101.4
13C7-PFUnDA	20.000	20.008	0.0	100.0
13C8-FOSA	20.000	21.419	7.1	107.1
13C8-PFOA	20.000	21.025	5.1	105.1
13C8-PFOS	20.000	20.440	2.2	102.2
13C9-PFNA	20.000	20.805	4.0	104.0
4:2FTS	1.000	1.042	4.2	104.2
6:2FTS	1.000	1.035	3.5	103.5
8:2FTS	1.000	1.038	3.8	103.8
d3-MeFOSAA	20.000	21.169	5.8	105.8
EtFOSAA	1.000	1.013	1.3	101.3
FOSA	1.000	1.005	0.5	100.5
MeFOSAA	1.000	1.005	0.5	100.5
PFBA	1.000	1.014	1.4	101.4
PFBS	1.000	0.993	-0.7	99.3
PFDA	1.000	0.969	-3.1	96.9
PFDoDA	1.000	0.972	-2.8	97.2
PFDS	1.000	0.983	-1.7	98.3
PFHpA	1.000	0.958	-4.2	95.8
PFHpS	1.000	1.057	5.7	105.7
PFHxA	1.000	0.954	-4.6	95.4
PFHxS	1.000	0.982	-1.8	98.2
PFNA	1.000	1.007	0.7	100.7
PFNS	1.000	0.984	-1.6	98.4
PFOA	1.000	0.963	-3.7	96.3
PFOS	1.000	1.003	0.3	100.3

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S3Q900-CC900
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 3Q65838.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	1.000	0.990	-1.0	99.0
PFPeS	1.000	1.013	1.3	101.3
PFTeDA	1.000	0.990	-1.0	99.0
PFTrDA	1.000	0.951	-4.9	95.1
PFUnDA	1.000	0.956	-4.4	95.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.952	-4.8	95.2
13C3-HFPO-DA	20.000	20.184	0.9	100.9
9Cl-PF3ONS	1.000	0.948	-5.2	94.8
ADONA	1.000	0.939	-6.1	93.9
HFPO-DA	1.000	0.978	-2.2	97.8
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	21.231	6.2	106.2
MeFOSA	1.000	1.050	5.0	105.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.114	5.6	105.6
4-PFECHS	1.000	0.839	-16.1	83.9
FBSA	1.000	1.005	0.5	100.5
FHxSA	1.000	1.027	2.7	102.7

CC Criteria: +/- 20%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-CC900
Lab FileID: 3Q65849.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S3Q900\S3Q900.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091522_ID_S3Q900\3q65825.d
2:D:\MassHunter\Data\091522_ID_S3Q900\3q65826.d
3:D:\MassHunter\Data\091522_ID_S3Q900\3q65827.d
4:D:\MassHunter\Data\091522_ID_S3Q900\3q65828.d
5:D:\MassHunter\Data\091522_ID_S3Q900\3q65829.d
6:D:\MassHunter\Data\091522_ID_S3Q900\3q65830.d
7:D:\MassHunter\Data\091522_ID_S3Q900\3q65831.d
8:D:\MassHunter\Data\091522_ID_S3Q900\3q65832.d

Data File: 3q65849
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.369	-8.2	91.8
13C2-6:2FTS	20.000	18.448	-7.8	92.2
13C2-8:2FTS	20.000	18.502	-7.5	92.5
13C2-PFDoDA	20.000	18.398	-8.0	92.0
13C2-PFTeDA	20.000	17.956	-10.2	89.8
13C3-PFBS	20.000	18.489	-7.6	92.4
13C3-PFHxS	20.000	18.376	-8.1	91.9
13C4-PFBA	20.000	18.469	-7.7	92.3
13C4-PFHpA	20.000	18.420	-7.9	92.1
13C5-PFHxA	20.000	18.244	-8.8	91.2
13C5-PFPeA	20.000	18.284	-8.6	91.4
13C6-PFDA	20.000	17.887	-10.6	89.4
13C7-PFUnDA	20.000	17.932	-10.3	89.7
13C8-FOSA	20.000	19.031	-4.8	95.2
13C8-PFOA	20.000	18.445	-7.8	92.2
13C8-PFOS	20.000	17.860	-10.7	89.3
13C9-PFNA	20.000	18.481	-7.6	92.4
4:2FTS	20.000	19.463	-2.7	97.3
6:2FTS	20.000	20.007	0.0	100.0
8:2FTS	20.000	19.625	-1.9	98.1
d3-MeFOSAA	20.000	19.303	-3.5	96.5
EtFOSAA	20.000	19.653	-1.7	98.3
FOSA	20.000	19.418	-2.9	97.1
MeFOSAA	20.000	19.357	-3.2	96.8
PFBA	20.000	19.063	-4.7	95.3
PFBS	20.000	19.346	-3.3	96.7
PFDA	20.000	19.440	-2.8	97.2
PFDoDA	20.000	19.297	-3.5	96.5
PFDS	20.000	19.101	-4.5	95.5
PFHpA	20.000	19.259	-3.7	96.3
PFHpS	20.000	20.636	3.2	103.2
PFHxA	20.000	19.333	-3.3	96.7
PFHxS	20.000	19.639	-1.8	98.2
PFNA	20.000	19.015	-4.9	95.1
PFNS	20.000	19.891	-0.5	99.5
PFOA	20.000	19.200	-4.0	96.0
PFOS	20.000	19.689	-1.6	98.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S3Q900-CC900
Lab FileID: 3Q65849.D

PFPeA	20.000	19.682	-1.6	98.4
PFPeS	20.000	19.201	-4.0	96.0
PFTeDA	20.000	19.361	-3.2	96.8
PFTrDA	20.000	18.847	-5.8	94.2
PFUnDA	20.000	19.435	-2.8	97.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.279	-3.6	96.4
13C3-HFPO-DA	20.000	18.166	-9.2	90.8
9Cl-PF3ONS	20.000	18.928	-5.4	94.6
ADONA	20.000	19.185	-4.1	95.9
HFPO-DA	20.000	19.348	-3.3	96.7
M3-HFPO-DA	---	--ISTD--		
M3-MeFOSA	---	--ISTD--		
d3-MeFOSA	20.000	18.306	-8.5	91.5
MeFOSA	20.000	18.998	-5.0	95.0
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.359	-3.2	96.8
4-PFECHS	20.000	17.776	-11.1	88.9
FBSA	20.000	19.845	-0.8	99.2
FHxSA	20.000	21.094	5.5	105.5

CC Criteria: +/- 20%

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICC71
Lab FileID: 5Q4562.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_091422_S5Q71.quantmethod.xml
Batch Name	D:\MassHunter\Data\091422_ID_S5Q71\QuantResults\s5q71.batch.bin
Last Calib Update	9/14/2022 3:04:48 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d	9/14/2022 10:40:58 AM	9/14/2022 3:04:48 PM
2	D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d	9/14/2022 10:56:18 AM	9/14/2022 3:04:48 PM
3	D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d	9/14/2022 11:11:39 AM	9/14/2022 3:04:48 PM
4	D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d	9/14/2022 11:26:59 AM	9/14/2022 3:04:48 PM
5	D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d	9/14/2022 11:42:19 AM	9/14/2022 3:04:48 PM
6	D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d	9/14/2022 11:57:41 AM	9/14/2022 3:04:48 PM
7	D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d	9/14/2022 12:13:02 PM	9/14/2022 3:04:48 PM
8	D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d	9/14/2022 12:28:24 PM	9/14/2022 3:04:48 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	1700	1759	1728	1862	1774	1891	1776	1810	1788	3.599
S 13C5-PFPeA	Linear	2778	2863	2817	3015	2868	3064	2897	2947	2906	3.346
S 13C3-PFBS	Linear	314.7	322.5	317.0	339.1	321.2	344.0	322.9	324.8	325.8	3.173
S 13C2-4:2FTS	Linear	1299	1346	1338	1443	1417	1515	1565	1826	1469	11.601
S 13C5-PFHxA	Linear	4180	4289	4228	4567	4365	4605	4317	4426	4372	3.487
S 13C3-HFPO-DA	Linear	326.9	332.4	331.8	347.7	326.8	347.1	330.3	343.4	335.8	2.630
S 13C4-PFHpA	Linear	3895	4035	3957	4240	4037	4313	4068	4114	4082	3.393
S 13C3-PFHxS	Linear	321.8	335.0	333.7	360.9	340.4	356.8	337.3	342.5	341.1	3.710
S 13C2-6:2FTS	Linear	2051	2094	2068	2200	2118	2330	2357	2668	2236	9.386
S 13C8-PFOA	Linear	5801	5996	5917	6364	5970	6387	5929	6020	6048	3.514
S 13C8-PFOS	Linear	613.5	638.0	630.0	682.6	644.0	690.0	656.2	669.1	652.9	4.056
S 13C9-PFNA	Linear	6299	6553	6341	6779	6461	6889	6619	6613	6569	3.084
S 13C8-FOSA	Linear	1067	1112	1078	1183	1144	1215	1135	1144	1135	4.360
S d3-MeFOSA	Linear	279.7	293.3	288.9	316.0	310.5	331.9	319.9	295.9	304.5	5.847
S 13C6-PFDA	Linear	5162	5344	5272	5600	5368	5707	5375	5237	5383	3.415
S d3-MeFOSAA	Linear	958.4	988.7	954.6	990.9	962.4	1029	959.0	931.7	971.9	3.088
S 13C2-8:2FTS	Linear	2053	2143	2085	2222	2137	2303	2319	2707	2246	9.326
S d5-EtFOSAA	Linear	1058	1091	1064	1140	1103	1226	1147	1139	1121	4.866
S 13C7-PFUnDA	Linear	6649	6894	6885	7300	7059	7484	7064	6996	7041	3.663
S 13C2-PFDoDA	Linear	6931	7185	6941	7353	7085	7509	7314	7660	7248	3.608
S 13C2-PFTeDA	Linear	6736	7064	7715	8110	7696	7479	7939	7630	7546	5.977
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.4218	0.4424	0.4423	0.4604	0.4844	0.4620	0.4691	0.4719	0.4568	4.394
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.9660	0.9514	0.9343	0.9578	1.0046	0.9624	0.9768	0.9922	0.9682	2.325
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	0.9440	0.9088	0.9212	0.9501	0.9778	0.9577	0.9707	0.9797	0.9512	2.723
T FBSA	Linear	0.3344	0.3235	0.3343	0.3404	0.3468	0.3293	0.3343	0.3310	0.3343	2.104

Generated at 3:05 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICC71
Lab FileID: 5Q4562.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.2847	1.2869	1.2657	1.3237	1.3631	1.3145	1.3272	1.3452	1.3139	2.505
I M8-PFOA						ISTD					
T FHxSA	Linear	0.2227	0.2071	0.1969	0.1993	0.2065	0.1968	0.2033	0.2037	0.2045	4.090
T 4-PFECHS	Linear	0.3480	0.3309	0.3268	0.3400	0.3574	0.3430	0.3573	0.3613	0.3456	3.688
T PFOA	Linear	1.1370	1.0941	1.1274	1.1679	1.2186	1.1840	1.2062	1.2157	1.1689	3.908
I M9-PFNA						ISTD					
T PFNA	Linear	0.8036	0.8116	0.8353	0.8664	0.8932	0.8864	0.8780	0.9011	0.8594	4.394
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.6119	0.6198	0.5967	0.6468	0.6639	0.6516	0.6623	0.7004	0.6442	5.190
T PFDA	Linear	1.1664	1.1880	1.1395	1.1743	1.2261	1.2198	1.2062	1.2347	1.1944	2.768
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.1241	0.1161	0.1167	0.1270	0.1343	0.1294	0.1309	0.1362	0.1268	5.906
T PFUnDA	Linear	0.9718	0.9550	0.9098	0.9360	0.9809	0.9605	0.9654	1.0093	0.9611	3.084
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.4526	0.4544	0.4594	0.4785	0.5019	0.4932	0.4938	0.4979	0.4790	4.313
T PFDoDA	Linear	0.9226	0.9322	0.9314	0.9603	1.0103	0.9624	0.9727	0.9836	0.9594	3.112
T PFTrDA	Linear	1.0591	1.1599	1.1619	1.1873	1.1842	1.1156	1.1465	1.1813	1.1495	3.784
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	1.1027	1.0290	0.8900	0.9285	0.9764	1.0364	0.9521	1.0643	0.9974	7.276
I M8-FOSA						ISTD					
T FOSA	Linear	0.9958	0.9771	0.9909	1.0047	1.0311	0.9949	1.0361	1.0288	1.0074	2.166
I M3-PFBS						ISTD					
T PFBS	Linear	2.7845	2.8026	2.8147	2.9482	3.0829	2.9321	2.9638	3.0164	2.9182	3.707
T PFPeS	Linear	2.0289	2.1198	2.1521	2.2777	2.3625	2.2687	2.2854	2.3524	2.2310	5.304
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.6292	2.7352	2.7387	2.8567	3.0080	2.9268	2.9636	2.9735	2.8540	4.834
T ADONA	Linear	19.63	19.31	18.91	19.51	20.59	20.22	20.45	20.60	19.90	3.255
I M8-PFOS						ISTD					
T PFHpS	Linear	1.4215	1.4696	1.4737	1.4843	1.6028	1.5292	1.5102	1.5001	1.4989	3.525
T PFOS	Linear	2.1480	2.0743	1.8590	1.7463	1.8224	1.7635	1.7531	1.7628	1.8662	8.426
T PFNS	Linear	1.3798	1.4894	1.4732	1.4688	1.5449	1.4876	1.4883	1.4722	1.4755	3.089
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.2168	1.1548	1.1428	1.1716	1.1840	1.1238	1.0406	0.9230	1.1197	8.473
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.0852	1.1136	1.0670	1.1161	1.1325	1.0665	1.0015	0.9036	1.0608	7.117

Generated at 3:05 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICC71
Lab FileID: 5Q4562.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	1.1586	1.0762	1.1073	1.0991	1.1388	1.0844	0.9989	0.8643	1.0659	8.852
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.9115	0.8512	0.8679	0.8762	0.9264	0.9012	0.9085	0.9185	0.8952	2.996
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	3.2245	3.2907	3.2458	3.3544	3.5833	3.3579	3.3835	3.3709	3.3514	3.311
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	1.0783	1.0698	0.9428	1.1137	1.1460	1.0954	1.0649	1.0786	1.0737	5.519
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.7056	0.6587	0.6665	0.6657	0.7117	0.6820	0.6976	0.7112	0.6874	3.182

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 3:05 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICC71
Lab FileID: 5Q4562.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
T PFBA	Linear	y = 0.471107 * x	0.999961
S 13C4-PFBA	Linear	y = 1787.556292 * x	0.000000
S 13C5-PFPeA	Linear	y = 2906.150791 * x	0.000000
T PFPeA	Linear	y = 0.988356 * x	0.999903
S 13C3-PFBS	Linear	y = 325.758727 * x	0.000000
T PFBS	Linear	y = 3.004059 * x	0.999890
S 13C2-4:2FTS	Linear	y = 1468.653765 * x	0.000000
S 13C5-PFHxA	Linear	y = 4372.101989 * x	0.000000
T PFHxA	Linear	y = 0.977188 * x	0.999957
T FBSA	Linear	y = 0.331683 * x	0.999948
T PFPeS	Linear	y = 2.336841 * x	0.999762
S 13C3-HFPO-DA	Linear	y = 335.795977 * x	0.000000
T HFPO-DA	Linear	y = 3.374473 * x	0.999950
S 13C4-PFHpA	Linear	y = 4082.462795 * x	0.000000
T PFHpA	Linear	y = 1.313878 * x	0.999168
S 13C3-PFHxS	Linear	y = 341.070426 * x	0.000000
T PFHxS	Linear	y = 2.970101 * x	0.999977
T ADONA	Linear	y = 20.558020 * x	0.999963
T FHxSA	Linear	y = 0.203434 * x	0.999944
T 4-PFECHS	Linear	y = 0.359926 * x	0.999851
S 13C2-6:2FTS	Linear	y = 2235.788598 * x	0.000000
S 13C8-PFOA	Linear	y = 6048.118212 * x	0.000000
T PFOA	Linear	y = 1.212750 * x	0.999951
T PFHpS	Linear	y = 1.503676 * x	0.999923
S 13C8-PFOS	Linear	y = 652.940805 * x	0.000000
T PFOS	Linear	y = 1.761414 * x	0.999972
S 13C9-PFNA	Linear	y = 6569.224746 * x	0.000000
T PFNA	Linear	y = 0.896037 * x	0.999834
S 13C8-FOSA	Linear	y = 1134.683808 * x	0.000000
T FOSA	Linear	y = 1.029087 * x	0.999932
T 9Cl-PF3ONS	Linear	y = 0.691131 * x	0.999108
S d3-MeFOSA	Linear	y = 304.512779 * x	0.000000
T PFNS	Linear	y = 1.476314 * x	0.999944
T MeFOSA	Linear	y = 1.077064 * x	0.999888
S 13C6-PFDA	Linear	y = 5383.039332 * x	0.000000
T PFDA	Linear	y = 1.228567 * x	0.999865
S d3-MeFOSAA	Linear	y = 971.904527 * x	0.000000
T MeFOSAA	Linear	y = 0.915997 * x	0.999951
S 13C2-8:2FTS	Linear	y = 2245.980200 * x	0.000000
S d5-EtFOSAA	Linear	y = 1121.126689 * x	0.000000
T EtFOSAA	Linear	y = 0.707577 * x	0.999839
T PFDS	Linear	y = 0.134932 * x	0.999542
S 13C7-PFUnDA	Linear	y = 7041.346633 * x	0.000000

Generated at 3:05 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICC71
Lab FileID: 5Q4562.D

Initial Calibration Report

T PFUnDA	Linear	y = 0.998995 * x	0.999465
T 11Cl-PF3OUdS	Linear	y = 0.496913 * x	0.999973
S 13C2-PFDoDA	Linear	y = 7247.505425 * x	0.000000
T PFDoDA	Linear	y = 0.981005 * x	0.999941
T PFTrDA	Linear	y = 1.172613 * x	0.999682
S 13C2-PFTeDA	Linear	y = 7545.927484 * x	0.000000
T PFTeDA	Linear	y = 1.040963 * x	0.997265

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICV71
Lab FileID: 5Q4566.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4566
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.699	-1.5	98.5
13C2-6:2FTS	20.000	19.922	-0.4	99.6
13C2-8:2FTS	20.000	20.117	0.6	100.6
13C2-PFDoDA	20.000	20.705	3.5	103.5
13C2-PFTeDA	20.000	19.642	-1.8	98.2
13C3-PFBS	20.000	19.977	-0.1	99.9
13C3-PFHxS	20.000	20.086	0.4	100.4
13C4-PFBA	20.000	19.935	-0.3	99.7
13C4-PFHpA	20.000	20.022	0.1	100.1
13C5-PFHxA	20.000	20.032	0.2	100.2
13C5-PFPeA	20.000	19.881	-0.6	99.4
13C6-PFDA	20.000	20.219	1.1	101.1
13C7-PFUnDA	20.000	20.235	1.2	101.2
13C8-FOSA	20.000	20.174	0.9	100.9
13C8-PFOA	20.000	20.013	0.1	100.1
13C8-PFOS	20.000	20.130	0.6	100.6
13C9-PFNA	20.000	19.960	-0.2	99.8
4:2FTS	20.000	16.171	-19.1	80.9
6:2FTS	20.000	17.381	-13.1	86.9
8:2FTS	20.000	17.659	-11.7	88.3
d3-MeFOSAA	20.000	20.636	3.2	103.2
EtFOSAA	20.000	18.373	-8.1	91.9
FOSA	20.000	17.944	-10.3	89.7
MeFOSAA	20.000	17.975	-10.1	89.9
PFBA	20.000	18.226	-8.9	91.1
PFBS	20.000	15.024	-24.9	75.1
PFDA	20.000	17.582	-12.1	87.9
PFDoDA	20.000	19.411	-2.9	97.1
PFDS	20.000	16.908	-15.5	84.5
PFHpA	20.000	18.071	-9.6	90.4
PFHpS	20.000	17.410	-12.9	87.1
PFHxA	20.000	16.718	-16.4	83.6
PFHxS	20.000	15.170	-24.1	75.9
PFNA	20.000	17.344	-13.3	86.7
PFNS	20.000	16.987	-15.1	84.9
PFOA	20.000	18.697	-6.5	93.5
PFOS	20.000	18.523	-7.4	92.6

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICV71
Lab FileID: 5Q4566.D

PFPeA	20.000	17.696	-11.5	88.5
PFPeS	20.000	16.216	-18.9	81.1
PFTeDA	20.000	17.385	-13.1	86.9
PFTrDA	20.000	19.182	-4.1	95.9
PFUnDA	20.000	18.893	-5.5	94.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	16.675	-16.6	83.4
13C3-HFPO-DA	20.000	19.586	-2.1	97.9
9Cl-PF3ONS	20.000	15.962	-20.2	79.8
ADONA	20.000	16.867	-15.7	84.3
HFPO-DA	20.000	18.103	-9.5	90.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.128	0.6	100.6
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.201	1.0	101.0
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	20.292	1.5	101.5
FHxSA	20.000	20.840	4.2	104.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICV71
Lab FileID: 5Q4567.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4567
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.747	3.7	103.7
13C2-6:2FTS	20.000	20.759	3.8	103.8
13C2-8:2FTS	20.000	20.904	4.5	104.5
13C2-PFDoDA	20.000	21.816	9.1	109.1
13C2-PFTeDA	20.000	20.888	4.4	104.4
13C3-PFBS	20.000	21.128	5.6	105.6
13C3-PFHxS	20.000	21.091	5.5	105.5
13C4-PFBA	20.000	21.103	5.5	105.5
13C4-PFHpA	20.000	21.204	6.0	106.0
13C5-PFHxA	20.000	20.981	4.9	104.9
13C5-PFPeA	20.000	20.897	4.5	104.5
13C6-PFDA	20.000	21.492	7.5	107.5
13C7-PFUnDA	20.000	21.340	6.7	106.7
13C8-FOSA	20.000	21.169	5.8	105.8
13C8-PFOA	20.000	21.020	5.1	105.1
13C8-PFOS	20.000	21.129	5.6	105.6
13C9-PFNA	20.000	21.389	6.9	106.9
4:2FTS	20.000	16.976	-15.1	84.9
6:2FTS	20.000	17.254	-13.7	86.3
8:2FTS	20.000	17.762	-11.2	88.8
d3-MeFOSAA	20.000	21.895	9.5	109.5
EtFOSAA	20.000	15.404	-23.0	77.0
FOSA	20.000	17.039	-14.8	85.2
MeFOSAA	20.000	15.560	-22.2	77.8
PFBA	20.000	17.218	-13.9	86.1
PFBS	20.000	15.738	-21.3	78.7
PFDA	20.000	16.517	-17.4	82.6
PFDoDA	20.000	18.377	-8.1	91.9
PFDS	20.000	17.068	-14.7	85.3
PFHpA	20.000	15.412	-22.9	77.1
PFHpS	20.000	17.846	-10.8	89.2
PFHxA	20.000	15.996	-20.0	80.0
PFHxS	20.000	16.737	-16.3	83.7
PFNA	20.000	16.652	-16.7	83.3
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	17.400	-13.0	87.0
PFOS	20.000	18.018	-9.9	90.1

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ICV71
Lab FileID: 5Q4567.D

PFPeA	20.000	16.859	-15.7	84.3
PFPeS	20.000	17.027	-14.9	85.1
PFTeDA	20.000	16.558	-17.2	82.8
PFTrDA	20.000	20.257	1.3	101.3
PFUnDA	20.000	18.946	-5.3	94.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	20.190	0.9	100.9
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.861	9.3	109.3
MeFOSA	20.000	17.464	-12.7	87.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.328	6.6	106.6
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4569.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4569
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.085	0.4	100.4
13C2-6:2FTS	20.000	20.222	1.1	101.1
13C2-8:2FTS	20.000	20.193	1.0	101.0
13C2-PFDoDA	20.000	20.361	1.8	101.8
13C2-PFTeDA	20.000	19.648	-1.8	98.2
13C3-PFBS	20.000	20.284	1.4	101.4
13C3-PFHxS	20.000	20.045	0.2	100.2
13C4-PFBA	20.000	20.170	0.8	100.8
13C4-PFHpA	20.000	20.082	0.4	100.4
13C5-PFHxA	20.000	20.125	0.6	100.6
13C5-PFPeA	20.000	20.153	0.8	100.8
13C6-PFDA	20.000	20.338	1.7	101.7
13C7-PFUnDA	20.000	20.396	2.0	102.0
13C8-FOSA	20.000	20.212	1.1	101.1
13C8-PFOA	20.000	20.091	0.5	100.5
13C8-PFOS	20.000	20.182	0.9	100.9
13C9-PFNA	20.000	20.335	1.7	101.7
4:2FTS	20.000	19.857	-0.7	99.3
6:2FTS	20.000	20.378	1.9	101.9
8:2FTS	20.000	19.860	-0.7	99.3
d3-MeFOSAA	20.000	20.308	1.5	101.5
EtFOSAA	20.000	19.645	-1.8	98.2
FOSA	20.000	19.742	-1.3	98.7
MeFOSAA	20.000	19.624	-1.9	98.1
PFBA	20.000	19.646	-1.8	98.2
PFBS	20.000	19.461	-2.7	97.3
PFDA	20.000	19.591	-2.0	98.0
PFDoDA	20.000	19.809	-1.0	99.0
PFDS	20.000	18.909	-5.5	94.5
PFHpA	20.000	20.146	0.7	100.7
PFHpS	20.000	19.924	-0.4	99.6
PFHxA	20.000	19.559	-2.2	97.8
PFHxS	20.000	19.701	-1.5	98.5
PFNA	20.000	19.327	-3.4	96.6
PFNS	20.000	19.883	-0.6	99.4
PFOA	20.000	19.692	-1.5	98.5
PFOS	20.000	19.685	-1.6	98.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4569.D

PFPeA	20.000	19.620	-1.9	98.1
PFPeS	20.000	19.291	-3.5	96.5
PFTeDA	20.000	20.075	0.4	100.4
PFTrDA	20.000	19.421	-2.9	97.1
PFUnDA	20.000	19.316	-3.4	96.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.464	-2.7	97.3
13C3-HFPO-DA	20.000	19.891	-0.5	99.5
9Cl-PF3ONS	20.000	18.705	-6.5	93.5
ADONA	20.000	19.600	-2.0	98.0
HFPO-DA	20.000	19.907	-0.5	99.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.251	1.3	101.3
MeFOSA	20.000	20.744	3.7	103.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.500	2.5	102.5
4-PFECHS	20.000	19.179	-4.1	95.9
FBSA	20.000	20.343	1.7	101.7
FHxSA	20.000	19.496	-2.5	97.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4570.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4570
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.555	-7.2	92.8
13C2-6:2FTS	20.000	19.234	-3.8	96.2
13C2-8:2FTS	20.000	18.797	-6.0	94.0
13C2-PFDoDA	20.000	20.215	1.1	101.1
13C2-PFTeDA	20.000	19.045	-4.8	95.2
13C3-PFBS	20.000	20.196	1.0	101.0
13C3-PFHxS	20.000	20.379	1.9	101.9
13C4-PFBA	20.000	20.116	0.6	100.6
13C4-PFHpA	20.000	19.937	-0.3	99.7
13C5-PFHxA	20.000	19.837	-0.8	99.2
13C5-PFPeA	20.000	19.857	-0.7	99.3
13C6-PFDA	20.000	20.484	2.4	102.4
13C7-PFUnDA	20.000	20.335	1.7	101.7
13C8-FOSA	20.000	19.985	-0.1	99.9
13C8-PFOA	20.000	20.013	0.1	100.1
13C8-PFOS	20.000	19.779	-1.1	98.9
13C9-PFNA	20.000	20.150	0.7	100.7
4:2FTS	1.000	1.020	2.0	102.0
6:2FTS	1.000	1.031	3.1	103.1
8:2FTS	1.000	1.010	1.0	101.0
d3-MeFOSAA	20.000	20.780	3.9	103.9
EtFOSAA	1.000	0.982	-1.8	98.2
FOSA	1.000	1.033	3.3	103.3
MeFOSAA	1.000	0.961	-3.9	96.1
PFBA	1.000	0.968	-3.2	96.8
PFBS	1.000	0.943	-5.7	94.3
PFDA	1.000	0.990	-1.0	99.0
PFDoDA	1.000	0.964	-3.6	96.4
PFDS	1.000	0.835	-16.5	83.5
PFHpA	1.000	0.959	-4.1	95.9
PFHpS	1.000	0.977	-2.3	97.7
PFHxA	1.000	0.956	-4.4	95.6
PFHxS	1.000	0.924	-7.6	92.4
PFNA	1.000	0.932	-6.8	93.2
PFNS	1.000	0.952	-4.8	95.2
PFOA	1.000	0.947	-5.3	94.7
PFOS	1.000	0.988	-1.2	98.8

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4570.D

PFPeA	1.000	0.973	-2.7	97.3
PFPeS	1.000	0.937	-6.3	93.7
PFTeDA	1.000	1.068	6.8	106.8
PFTrDA	1.000	0.993	-0.7	99.3
PFUnDA	1.000	0.937	-6.3	93.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.900	-10.0	90.0
13C3-HFPO-DA	20.000	19.604	-2.0	98.0
9Cl-PF3ONS	1.000	0.877	-12.3	87.7
ADONA	1.000	0.923	-7.7	92.3
HFPO-DA	1.000	0.930	-7.0	93.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.147	5.7	105.7
MeFOSA	1.000	0.986	-1.4	98.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.275	1.4	101.4
4-PFECHS	1.000	0.980	-2.0	98.0
FBSA	1.000	0.998	-0.2	99.8
FHxSA	1.000	1.025	2.5	102.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4598.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4598
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.095	0.5	100.5
13C2-6:2FTS	20.000	20.295	1.5	101.5
13C2-8:2FTS	20.000	19.910	-0.4	99.6
13C2-PFDoDA	20.000	20.375	1.9	101.9
13C2-PFTeDA	20.000	20.298	1.5	101.5
13C3-PFBS	20.000	20.397	2.0	102.0
13C3-PFHxS	20.000	20.362	1.8	101.8
13C4-PFBA	20.000	20.816	4.1	104.1
13C4-PFHpA	20.000	20.395	2.0	102.0
13C5-PFHxA	20.000	20.411	2.1	102.1
13C5-PFPeA	20.000	20.341	1.7	101.7
13C6-PFDA	20.000	21.102	5.5	105.5
13C7-PFUnDA	20.000	20.346	1.7	101.7
13C8-FOSA	20.000	21.024	5.1	105.1
13C8-PFOA	20.000	20.446	2.2	102.2
13C8-PFOS	20.000	20.374	1.9	101.9
13C9-PFNA	20.000	20.689	3.4	103.4
4:2FTS	20.000	20.042	0.2	100.2
6:2FTS	20.000	20.547	2.7	102.7
8:2FTS	20.000	20.253	1.3	101.3
d3-MeFOSAA	20.000	22.883	14.4	114.4
EtFOSAA	20.000	19.724	-1.4	98.6
FOSA	20.000	20.071	0.4	100.4
MeFOSAA	20.000	19.342	-3.3	96.7
PFBA	20.000	19.929	-0.4	99.6
PFBS	20.000	19.664	-1.7	98.3
PFDA	20.000	19.742	-1.3	98.7
PFDoDA	20.000	19.817	-0.9	99.1
PFDS	20.000	19.314	-3.4	96.6
PFHpA	20.000	20.051	0.3	100.3
PFHpS	20.000	20.157	0.8	100.8
PFHxA	20.000	19.456	-2.7	97.3
PFHxS	20.000	19.879	-0.6	99.4
PFNA	20.000	19.564	-2.2	97.8
PFNS	20.000	20.059	0.3	100.3
PFOA	20.000	19.539	-2.3	97.7
PFOS	20.000	19.988	-0.1	99.9

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S5Q71-CC71
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5Q4598.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.791	-1.0	99.0
PFPeS	20.000	19.488	-2.6	97.4
PFTeDA	20.000	18.196	-9.0	91.0
PFTrDA	20.000	18.498	-7.5	92.5
PFUnDA	20.000	20.039	0.2	100.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.836	-0.8	99.2
13C3-HFPO-DA	20.000	18.131	-9.3	90.7
9Cl-PF3ONS	20.000	18.161	-9.2	90.8
ADONA	20.000	19.529	-2.4	97.6
HFPO-DA	20.000	20.071	0.4	100.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.890	9.4	109.4
MeFOSA	20.000	19.883	-0.6	99.4
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.313	11.6	111.6
4-PFECHS	20.000	19.309	-3.5	96.5
FBSA	20.000	20.332	1.7	101.7
FHxSA	20.000	19.556	-2.2	97.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4600.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4600
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.145	-4.3	95.7
13C2-6:2FTS	20.000	19.518	-2.4	97.6
13C2-8:2FTS	20.000	19.304	-3.5	96.5
13C2-PFDoDA	20.000	20.855	4.3	104.3
13C2-PFTeDA	20.000	20.687	3.4	103.4
13C3-PFBS	20.000	20.562	2.8	102.8
13C3-PFHxS	20.000	20.636	3.2	103.2
13C4-PFBA	20.000	20.888	4.4	104.4
13C4-PFHpA	20.000	20.387	1.9	101.9
13C5-PFHxA	20.000	20.485	2.4	102.4
13C5-PFPeA	20.000	20.330	1.7	101.7
13C6-PFDA	20.000	21.450	7.3	107.3
13C7-PFUnDA	20.000	20.574	2.9	102.9
13C8-FOSA	20.000	21.662	8.3	108.3
13C8-PFOA	20.000	20.706	3.5	103.5
13C8-PFOS	20.000	20.309	1.5	101.5
13C9-PFNA	20.000	20.830	4.1	104.1
4:2FTS	1.000	0.974	-2.6	97.4
6:2FTS	1.000	1.046	4.6	104.6
8:2FTS	1.000	0.974	-2.6	97.4
d3-MeFOSAA	20.000	24.777	23.9	123.9
EtFOSAA	1.000	0.926	-7.4	92.6
FOSA	1.000	0.905	-9.5	90.5
MeFOSAA	1.000	1.012	1.2	101.2
PFBA	1.000	0.955	-4.5	95.5
PFBS	1.000	0.949	-5.1	94.9
PFDA	1.000	0.954	-4.6	95.4
PFDoDA	1.000	0.964	-3.6	96.4
PFDS	1.000	0.924	-7.6	92.4
PFHpA	1.000	0.976	-2.4	97.6
PFHpS	1.000	0.957	-4.3	95.7
PFHxA	1.000	0.941	-5.9	94.1
PFHxS	1.000	0.929	-7.1	92.9
PFNA	1.000	0.932	-6.8	93.2
PFNS	1.000	0.895	-10.5	89.5
PFOA	1.000	0.954	-4.6	95.4
PFOS	1.000	0.846	-15.4	84.6

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4600.D

PFPeA	1.000	0.952	-4.8	95.2
PFPeS	1.000	0.969	-3.1	96.9
PFTeDA	1.000	0.982	-1.8	98.2
PFTrDA	1.000	0.889	-11.1	88.9
PFUnDA	1.000	0.818	-18.2	81.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.917	-8.3	91.7
13C3-HFPO-DA	20.000	18.174	-9.1	90.9
9Cl-PF3ONS	1.000	0.850	-15.0	85.0
ADONA	1.000	0.928	-7.2	92.8
HFPO-DA	1.000	0.924	-7.6	92.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.845	14.2	114.2
MeFOSA	1.000	1.011	1.1	101.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.990	19.9	119.9
4-PFECHS	1.000	0.932	-6.8	93.2
FBSA	1.000	1.014	1.4	101.4
FHxSA	1.000	0.995	-0.5	99.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4611.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4611
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.523	2.6	102.6
13C2-6:2FTS	20.000	21.369	6.8	106.8
13C2-8:2FTS	20.000	21.809	9.0	109.0
13C2-PFDoDA	20.000	21.879	9.4	109.4
13C2-PFTeDA	20.000	22.220	11.1	111.1
13C3-PFBS	20.000	20.692	3.5	103.5
13C3-PFHxS	20.000	20.785	3.9	103.9
13C4-PFBA	20.000	21.213	6.1	106.1
13C4-PFHpA	20.000	20.767	3.8	103.8
13C5-PFHxA	20.000	20.653	3.3	103.3
13C5-PFPeA	20.000	20.703	3.5	103.5
13C6-PFDA	20.000	21.785	8.9	108.9
13C7-PFUnDA	20.000	21.251	6.3	106.3
13C8-FOSA	20.000	21.463	7.3	107.3
13C8-PFOA	20.000	21.152	5.8	105.8
13C8-PFOS	20.000	20.693	3.5	103.5
13C9-PFNA	20.000	21.443	7.2	107.2
4:2FTS	20.000	20.094	0.5	100.5
6:2FTS	20.000	20.367	1.8	101.8
8:2FTS	20.000	20.081	0.4	100.4
d3-MeFOSAA	20.000	26.839	# 34.2	134.2
EtFOSAA	20.000	22.022	10.1	110.1
FOSA	20.000	19.559	-2.2	97.8
MeFOSAA	20.000	19.335	-3.3	96.7
PFBA	20.000	19.466	-2.7	97.3
PFBS	20.000	19.700	-1.5	98.5
PFDA	20.000	19.992	0.0	100.0
PFDoDA	20.000	19.672	-1.6	98.4
PFDS	20.000	18.895	-5.5	94.5
PFHpA	20.000	20.146	0.7	100.7
PFHpS	20.000	20.172	0.9	100.9
PFHxA	20.000	19.575	-2.1	97.9
PFHxS	20.000	19.525	-2.4	97.6
PFNA	20.000	19.441	-2.8	97.2
PFNS	20.000	20.059	0.3	100.3
PFOA	20.000	19.647	-1.8	98.2
PFOS	20.000	19.538	-2.3	97.7

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4611.D

PFPeA	20.000	19.713	-1.4	98.6
PFPeS	20.000	19.641	-1.8	98.2
PFTeDA	20.000	18.806	-6.0	94.0
PFTrDA	20.000	18.913	-5.4	94.6
PFUnDA	20.000	19.963	-0.2	99.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.808	-6.0	94.0
13C3-HFPO-DA	20.000	18.625	-6.9	93.1
9Cl-PF3ONS	20.000	17.862	-10.7	89.3
ADONA	20.000	19.623	-1.9	98.1
HFPO-DA	20.000	19.652	-1.7	98.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.765	8.8	108.8
MeFOSA	20.000	19.897	-0.5	99.5
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	25.208	26.0	126.0
4-PFECHS	20.000	18.977	-5.1	94.9
FBSA	20.000	20.504	2.5	102.5
FHxSA	20.000	19.807	-1.0	99.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4623.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4623
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.040	0.2	100.2
13C2-6:2FTS	20.000	20.522	2.6	102.6
13C2-8:2FTS	20.000	20.952	4.8	104.8
13C2-PFDoDA	20.000	20.842	4.2	104.2
13C2-PFTeDA	20.000	19.717	-1.4	98.6
13C3-PFBS	20.000	20.006	0.0	100.0
13C3-PFHxS	20.000	20.140	0.7	100.7
13C4-PFBA	20.000	20.223	1.1	101.1
13C4-PFHpA	20.000	20.085	0.4	100.4
13C5-PFHxA	20.000	19.933	-0.3	99.7
13C5-PFPeA	20.000	19.859	-0.7	99.3
13C6-PFDA	20.000	20.901	4.5	104.5
13C7-PFUnDA	20.000	20.410	2.1	102.1
13C8-FOSA	20.000	19.993	0.0	100.0
13C8-PFOA	20.000	20.246	1.2	101.2
13C8-PFOS	20.000	19.528	-2.4	97.6
13C9-PFNA	20.000	20.474	2.4	102.4
4:2FTS	20.000	19.823	-0.9	99.1
6:2FTS	20.000	20.657	3.3	103.3
8:2FTS	20.000	20.039	0.2	100.2
d3-MeFOSAA	20.000	24.940	24.7	124.7
EtFOSAA	20.000	21.696	8.5	108.5
FOSA	20.000	20.036	0.2	100.2
MeFOSAA	20.000	19.910	-0.4	99.6
PFBA	20.000	19.697	-1.5	98.5
PFBS	20.000	19.551	-2.2	97.8
PFDA	20.000	19.671	-1.6	98.4
PFDoDA	20.000	19.708	-1.5	98.5
PFDS	20.000	18.724	-6.4	93.6
PFHpA	20.000	20.029	0.1	100.1
PFHpS	20.000	20.392	2.0	102.0
PFHxA	20.000	19.616	-1.9	98.1
PFHxS	20.000	19.474	-2.6	97.4
PFNA	20.000	19.723	-1.4	98.6
PFNS	20.000	20.064	0.3	100.3
PFOA	20.000	19.716	-1.4	98.6
PFOS	20.000	19.954	-0.2	99.8

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4623.D

PFPeA	20.000	19.702	-1.5	98.5
PFPeS	20.000	19.487	-2.6	97.4
PFTeDA	20.000	20.493	2.5	102.5
PFTrDA	20.000	19.086	-4.6	95.4
PFUnDA	20.000	19.850	-0.7	99.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.828	-5.9	94.1
13C3-HFPO-DA	20.000	17.674	-11.6	88.4
9Cl-PF3ONS	20.000	17.872	-10.6	89.4
ADONA	20.000	19.384	-3.1	96.9
HFPO-DA	20.000	20.229	1.1	101.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.323	1.6	101.6
MeFOSA	20.000	20.354	1.8	101.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.085	20.4	120.4
4-PFECHS	20.000	19.090	-4.6	95.4
FBSA	20.000	20.420	2.1	102.1
FHxSA	20.000	19.517	-2.4	97.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4627.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4627
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.822	-0.9	99.1
13C2-6:2FTS	20.000	20.788	3.9	103.9
13C2-8:2FTS	20.000	21.103	5.5	105.5
13C2-PFDoDA	20.000	21.005	5.0	105.0
13C2-PFTeDA	20.000	21.633	8.2	108.2
13C3-PFBS	20.000	19.988	-0.1	99.9
13C3-PFHxS	20.000	20.035	0.2	100.2
13C4-PFBA	20.000	20.113	0.6	100.6
13C4-PFHpA	20.000	19.953	-0.2	99.8
13C5-PFHxA	20.000	19.914	-0.4	99.6
13C5-PFPeA	20.000	19.804	-1.0	99.0
13C6-PFDA	20.000	20.850	4.2	104.2
13C7-PFUnDA	20.000	20.450	2.2	102.2
13C8-FOSA	20.000	20.065	0.3	100.3
13C8-PFOA	20.000	20.315	1.6	101.6
13C8-PFOS	20.000	19.985	-0.1	99.9
13C9-PFNA	20.000	20.652	3.3	103.3
4:2FTS	20.000	20.035	0.2	100.2
6:2FTS	20.000	20.130	0.6	100.6
8:2FTS	20.000	19.665	-1.7	98.3
d3-MeFOSAA	20.000	25.087	25.4	125.4
EtFOSAA	20.000	21.348	6.7	106.7
FOSA	20.000	19.687	-1.6	98.4
MeFOSAA	20.000	19.607	-2.0	98.0
PFBA	20.000	19.645	-1.8	98.2
PFBS	20.000	19.548	-2.3	97.7
PFDA	20.000	19.768	-1.2	98.8
PFDoDA	20.000	19.611	-1.9	98.1
PFDS	20.000	18.791	-6.0	94.0
PFHpA	20.000	20.193	1.0	101.0
PFHpS	20.000	19.794	-1.0	99.0
PFHxA	20.000	19.503	-2.5	97.5
PFHxS	20.000	19.350	-3.3	96.7
PFNA	20.000	19.601	-2.0	98.0
PFNS	20.000	19.638	-1.8	98.2
PFOA	20.000	19.589	-2.1	97.9
PFOS	20.000	19.640	-1.8	98.2

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4627.D

PFPeA	20.000	19.735	-1.3	98.7
PFPeS	20.000	19.164	-4.2	95.8
PFTeDA	20.000	18.746	-6.3	93.7
PFTrDA	20.000	20.138	0.7	100.7
PFUnDA	20.000	19.976	-0.1	99.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.776	-6.1	93.9
13C3-HFPO-DA	20.000	17.857	-10.7	89.3
9Cl-PF3ONS	20.000	17.975	-10.1	89.9
ADONA	20.000	19.380	-3.1	96.9
HFPO-DA	20.000	20.048	0.2	100.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.299	1.5	101.5
MeFOSA	20.000	20.382	1.9	101.9
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.288	21.4	121.4
4-PFECHS	20.000	18.964	-5.2	94.8
FBSA	20.000	20.499	2.5	102.5
FHxSA	20.000	19.211	-3.9	96.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4629.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4629
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.525	-7.4	92.6
13C2-6:2FTS	20.000	19.257	-3.7	96.3
13C2-8:2FTS	20.000	19.897	-0.5	99.5
13C2-PFDoDA	20.000	20.848	4.2	104.2
13C2-PFTeDA	20.000	21.039	5.2	105.2
13C3-PFBS	20.000	19.743	-1.3	98.7
13C3-PFHxS	20.000	19.695	-1.5	98.5
13C4-PFBA	20.000	20.177	0.9	100.9
13C4-PFHpA	20.000	19.677	-1.6	98.4
13C5-PFHxA	20.000	19.619	-1.9	98.1
13C5-PFPeA	20.000	19.337	-3.3	96.7
13C6-PFDA	20.000	20.443	2.2	102.2
13C7-PFUnDA	20.000	20.213	1.1	101.1
13C8-FOSA	20.000	20.051	0.3	100.3
13C8-PFOA	20.000	19.994	0.0	100.0
13C8-PFOS	20.000	19.521	-2.4	97.6
13C9-PFNA	20.000	20.340	1.7	101.7
4:2FTS	1.000	1.006	0.6	100.6
6:2FTS	1.000	1.024	2.4	102.4
8:2FTS	1.000	1.042	4.2	104.2
d3-MeFOSAA	20.000	25.232	26.2	126.2
EtFOSAA	1.000	1.032	3.2	103.2
FOSA	1.000	0.927	-7.3	92.7
MeFOSAA	1.000	1.003	0.3	100.3
PFBA	1.000	0.908	-9.2	90.8
PFBS	1.000	0.936	-6.4	93.6
PFDA	1.000	0.945	-5.5	94.5
PFDoDA	1.000	0.970	-3.0	97.0
PFDS	1.000	0.917	-8.3	91.7
PFHpA	1.000	0.985	-1.5	98.5
PFHpS	1.000	1.000	0.0	100.0
PFHxA	1.000	0.952	-4.8	95.2
PFHxS	1.000	0.950	-5.0	95.0
PFNA	1.000	0.940	-6.0	94.0
PFNS	1.000	1.003	0.3	100.3
PFOA	1.000	0.930	-7.0	93.0
PFOS	1.000	0.955	-4.5	95.5

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4629.D

PFPeA	1.000	0.991	-0.9	99.1
PFPeS	1.000	0.915	-8.5	91.5
PFTeDA	1.000	0.993	-0.7	99.3
PFTrDA	1.000	0.975	-2.5	97.5
PFUnDA	1.000	0.951	-4.9	95.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.902	-9.8	90.2
13C3-HFPO-DA	20.000	17.454	-12.7	87.3
9Cl-PF3ONS	1.000	0.827	-17.3	82.7
ADONA	1.000	0.932	-6.8	93.2
HFPO-DA	1.000	0.953	-4.7	95.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.652	3.3	103.3
MeFOSA	1.000	0.798	-20.2	79.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.704	18.5	118.5
4-PFECHS	1.000	0.958	-4.2	95.8
FBSA	1.000	1.006	0.6	100.6
FHxSA	1.000	1.008	0.8	100.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4640.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4640
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.969	-0.2	99.8
13C2-6:2FTS	20.000	20.701	3.5	103.5
13C2-8:2FTS	20.000	21.154	5.8	105.8
13C2-PFDoDA	20.000	20.823	4.1	104.1
13C2-PFTeDA	20.000	21.670	8.4	108.4
13C3-PFBS	20.000	20.092	0.5	100.5
13C3-PFHxS	20.000	19.891	-0.5	99.5
13C4-PFBA	20.000	20.019	0.1	100.1
13C4-PFHpA	20.000	20.112	0.6	100.6
13C5-PFHxA	20.000	19.916	-0.4	99.6
13C5-PFPeA	20.000	19.807	-1.0	99.0
13C6-PFDA	20.000	20.529	2.6	102.6
13C7-PFUnDA	20.000	20.405	2.0	102.0
13C8-FOSA	20.000	20.083	0.4	100.4
13C8-PFOA	20.000	20.274	1.4	101.4
13C8-PFOS	20.000	20.128	0.6	100.6
13C9-PFNA	20.000	20.576	2.9	102.9
4:2FTS	20.000	20.105	0.5	100.5
6:2FTS	20.000	20.403	2.0	102.0
8:2FTS	20.000	20.004	0.0	100.0
d3-MeFOSAA	20.000	24.393	22.0	122.0
EtFOSAA	20.000	21.533	7.7	107.7
FOSA	20.000	19.715	-1.4	98.6
MeFOSAA	20.000	19.788	-1.1	98.9
PFBA	20.000	19.748	-1.3	98.7
PFBS	20.000	19.376	-3.1	96.9
PFDA	20.000	19.777	-1.1	98.9
PFDoDA	20.000	19.756	-1.2	98.8
PFDS	20.000	18.570	-7.1	92.9
PFHpA	20.000	20.118	0.6	100.6
PFHpS	20.000	19.966	-0.2	99.8
PFHxA	20.000	19.494	-2.5	97.5
PFHxS	20.000	19.668	-1.7	98.3
PFNA	20.000	19.432	-2.8	97.2
PFNS	20.000	19.409	-3.0	97.0
PFOA	20.000	19.604	-2.0	98.0
PFOS	20.000	19.257	-3.7	96.3

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4640.D

PFPeA	20.000	19.724	-1.4	98.6
PFPeS	20.000	18.990	-5.1	94.9
PFTeDA	20.000	18.688	-6.6	93.4
PFTrDA	20.000	19.177	-4.1	95.9
PFUnDA	20.000	19.907	-0.5	99.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.979	-5.1	94.9
13C3-HFPO-DA	20.000	18.306	-8.5	91.5
9Cl-PF3ONS	20.000	18.123	-9.4	90.6
ADONA	20.000	19.711	-1.4	98.6
HFPO-DA	20.000	20.113	0.6	100.6
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.717	-1.4	98.6
MeFOSA	20.000	19.483	-2.6	97.4
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.239	16.2	116.2
4-PFECHS	20.000	18.731	-6.3	93.7
FBSA	20.000	20.198	1.0	101.0
FHxSA	20.000	19.252	-3.7	96.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4652.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4652
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.014	0.1	100.1
13C2-6:2FTS	20.000	20.702	3.5	103.5
13C2-8:2FTS	20.000	20.287	1.4	101.4
13C2-PFDoDA	20.000	20.803	4.0	104.0
13C2-PFTeDA	20.000	19.207	-4.0	96.0
13C3-PFBS	20.000	20.371	1.9	101.9
13C3-PFHxS	20.000	20.678	3.4	103.4
13C4-PFBA	20.000	20.715	3.6	103.6
13C4-PFHpA	20.000	20.375	1.9	101.9
13C5-PFHxA	20.000	20.264	1.3	101.3
13C5-PFPeA	20.000	20.323	1.6	101.6
13C6-PFDA	20.000	20.672	3.4	103.4
13C7-PFUnDA	20.000	20.285	1.4	101.4
13C8-FOSA	20.000	20.506	2.5	102.5
13C8-PFOA	20.000	20.602	3.0	103.0
13C8-PFOS	20.000	20.457	2.3	102.3
13C9-PFNA	20.000	20.934	4.7	104.7
4:2FTS	20.000	20.003	0.0	100.0
6:2FTS	20.000	20.303	1.5	101.5
8:2FTS	20.000	20.236	1.2	101.2
d3-MeFOSAA	20.000	23.367	16.8	116.8
EtFOSAA	20.000	19.731	-1.3	98.7
FOSA	20.000	20.004	0.0	100.0
MeFOSAA	20.000	19.280	-3.6	96.4
PFBA	20.000	19.782	-1.1	98.9
PFBS	20.000	19.687	-1.6	98.4
PFDA	20.000	20.050	0.3	100.3
PFDoDA	20.000	19.726	-1.4	98.6
PFDS	20.000	19.130	-4.3	95.7
PFHpA	20.000	20.175	0.9	100.9
PFHpS	20.000	20.253	1.3	101.3
PFHxA	20.000	19.572	-2.1	97.9
PFHxS	20.000	19.459	-2.7	97.3
PFNA	20.000	19.304	-3.5	96.5
PFNS	20.000	20.047	0.2	100.2
PFOA	20.000	19.773	-1.1	98.9
PFOS	20.000	19.899	-0.5	99.5

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-CC71
Lab FileID: 5Q4652.D

PFPeA	20.000	19.543	-2.3	97.7
PFPeS	20.000	19.332	-3.3	96.7
PFTeDA	20.000	20.406	2.0	102.0
PFTrDA	20.000	19.949	-0.3	99.7
PFUnDA	20.000	20.128	0.6	100.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.643	-1.8	98.2
13C3-HFPO-DA	20.000	20.006	0.0	100.0
9Cl-PF3ONS	20.000	18.541	-7.3	92.7
ADONA	20.000	19.281	-3.6	96.4
HFPO-DA	20.000	20.409	2.0	102.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.907	4.5	104.5
MeFOSA	20.000	20.474	2.4	102.4
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.054	15.3	115.3
4-PFECHS	20.000	19.309	-3.5	96.5
FBSA	20.000	20.349	1.7	101.7
FHxSA	20.000	19.384	-3.1	96.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ECC71
Lab FileID: 5Q4658.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S5Q71\s5q71.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4658
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.398	-3.0	97.0
13C2-6:2FTS	20.000	19.642	-1.8	98.2
13C2-8:2FTS	20.000	19.179	-4.1	95.9
13C2-PFDoDA	20.000	19.197	-4.0	96.0
13C2-PFTeDA	20.000	17.436	-12.8	87.2
13C3-PFBS	20.000	20.304	1.5	101.5
13C3-PFHxS	20.000	20.480	2.4	102.4
13C4-PFBA	20.000	20.260	1.3	101.3
13C4-PFHpA	20.000	19.867	-0.7	99.3
13C5-PFHxA	20.000	19.850	-0.7	99.3
13C5-PFPeA	20.000	20.077	0.4	100.4
13C6-PFDA	20.000	19.402	-3.0	97.0
13C7-PFUnDA	20.000	18.806	-6.0	94.0
13C8-FOSA	20.000	20.306	1.5	101.5
13C8-PFOA	20.000	19.523	-2.4	97.6
13C8-PFOS	20.000	20.750	3.8	103.8
13C9-PFNA	20.000	19.519	-2.4	97.6
4:2FTS	20.000	20.265	1.3	101.3
6:2FTS	20.000	20.363	1.8	101.8
8:2FTS	20.000	20.095	0.5	100.5
d3-MeFOSAA	20.000	19.130	-4.3	95.7
EtFOSAA	20.000	17.686	-11.6	88.4
FOSA	20.000	19.900	-0.5	99.5
MeFOSAA	20.000	18.996	-5.0	95.0
PFBA	20.000	20.132	0.7	100.7
PFBS	20.000	19.706	-1.5	98.5
PFDA	20.000	20.227	1.1	101.1
PFDoDA	20.000	19.831	-0.8	99.2
PFDS	20.000	20.589	2.9	102.9
PFHpA	20.000	20.038	0.2	100.2
PFHpS	20.000	19.790	-1.0	99.0
PFHxA	20.000	19.574	-2.1	97.9
PFHxS	20.000	19.649	-1.8	98.2
PFNA	20.000	19.576	-2.1	97.9
PFNS	20.000	19.526	-2.4	97.6
PFOA	20.000	19.939	-0.3	99.7
PFOS	20.000	19.238	-3.8	96.2

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q71-ECC71
Lab FileID: 5Q4658.D

PFPeA	20.000	19.796	-1.0	99.0
PFPeS	20.000	19.394	-3.0	97.0
PFTeDA	20.000	20.405	2.0	102.0
PFTrDA	20.000	18.956	-5.2	94.8
PFUnDA	20.000	20.341	1.7	101.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	21.364	6.8	106.8
13C3-HFPO-DA	20.000	20.250	1.3	101.3
9Cl-PF3ONS	20.000	20.229	1.1	101.1
ADONA	20.000	18.840	-5.8	94.2
HFPO-DA	20.000	19.600	-2.0	98.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.551	7.8	107.8
MeFOSA	20.000	20.302	1.5	101.5
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.314	1.6	101.6
4-PFECHS	20.000	20.348	1.7	101.7
FBSA	20.000	20.185	0.9	100.9
FHxSA	20.000	19.799	-1.0	99.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4668.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S5Q72\s5q72.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4668
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.037	-14.8	85.2
13C2-6:2FTS	20.000	16.746	-16.3	83.7
13C2-8:2FTS	20.000	15.924	-20.4	79.6
13C2-PFDoDA	20.000	15.601	-22.0	78.0
13C2-PFTeDA	20.000	14.326	-28.4	71.6
13C3-PFBS	20.000	21.415	7.1	107.1
13C3-PFHxS	20.000	20.578	2.9	102.9
13C4-PFBA	20.000	18.374	-8.1	91.9
13C4-PFHpA	20.000	17.343	-13.3	86.7
13C5-PFHxA	20.000	17.899	-10.5	89.5
13C5-PFPeA	20.000	18.775	-6.1	93.9
13C6-PFDA	20.000	16.626	-16.9	83.1
13C7-PFUnDA	20.000	15.779	-21.1	78.9
13C8-FOSA	20.000	18.876	-5.6	94.4
13C8-PFOA	20.000	16.417	-17.9	82.1
13C8-PFOS	20.000	20.666	3.3	103.3
13C9-PFNA	20.000	16.459	-17.7	82.3
4:2FTS	1.000	0.976	-2.4	97.6
6:2FTS	1.000	1.011	1.1	101.1
8:2FTS	1.000	1.070	7.0	107.0
d3-MeFOSAA	20.000	14.378	-28.1	71.9
EtFOSAA	1.000	0.591	# -40.9	59.1
FOSA	1.000	0.967	-3.3	96.7
MeFOSAA	1.000	0.855	-14.5	85.5
PFBA	1.000	0.954	-4.6	95.4
PFBS	1.000	0.950	-5.0	95.0
PFDA	1.000	0.989	-1.1	98.9
PFDoDA	1.000	0.981	-1.9	98.1
PFDS	1.000	1.229	22.9	122.9
PFHpA	1.000	0.965	-3.5	96.5
PFHpS	1.000	0.955	-4.5	95.5
PFHxA	1.000	0.969	-3.1	96.9
PFHxS	1.000	0.952	-4.8	95.2
PFNA	1.000	0.926	-7.4	92.6
PFNS	1.000	0.962	-3.8	96.2
PFOA	1.000	0.961	-3.9	96.1
PFOS	1.000	0.947	-5.3	94.7

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4668.D

PFPeA	1.000	0.971	-2.9	97.1
PFPeS	1.000	0.895	-10.5	89.5
PFTeDA	1.000	1.002	0.2	100.2
PFTrDA	1.000	0.897	-10.3	89.7
PFUnDA	1.000	0.991	-0.9	99.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	1.203	20.3	120.3
13C3-HFPO-DA	20.000	19.707	-1.5	98.5
9Cl-PF3ONS	1.000	1.146	14.6	114.6
ADONA	1.000	0.773	-22.7	77.3
HFPO-DA	1.000	0.917	-8.3	91.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.533	2.7	102.7
MeFOSA	1.000	1.068	6.8	106.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	17.502	-12.5	87.5
4-PFECHS	1.000	1.176	17.6	117.6
FBSA	1.000	0.983	-1.7	98.3
FHxSA	1.000	1.128	12.8	112.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4678.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S5Q72\s5q72.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4678
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.404	-8.0	92.0
13C2-6:2FTS	20.000	17.958	-10.2	89.8
13C2-8:2FTS	20.000	17.777	-11.1	88.9
13C2-PFDoDA	20.000	16.766	-16.2	83.8
13C2-PFTeDA	20.000	17.067	-14.7	85.3
13C3-PFBS	20.000	20.999	5.0	105.0
13C3-PFHxS	20.000	20.674	3.4	103.4
13C4-PFBA	20.000	18.711	-6.4	93.6
13C4-PFHpA	20.000	17.897	-10.5	89.5
13C5-PFHxA	20.000	18.385	-8.1	91.9
13C5-PFPeA	20.000	19.184	-4.1	95.9
13C6-PFDA	20.000	17.097	-14.5	85.5
13C7-PFUnDA	20.000	16.512	-17.4	82.6
13C8-FOSA	20.000	19.511	-2.4	97.6
13C8-PFOA	20.000	17.077	-14.6	85.4
13C8-PFOS	20.000	20.920	4.6	104.6
13C9-PFNA	20.000	17.160	-14.2	85.8
4:2FTS	20.000	20.019	0.1	100.1
6:2FTS	20.000	20.568	2.8	102.8
8:2FTS	20.000	20.317	1.6	101.6
d3-MeFOSAA	20.000	14.547	-27.3	72.7
EtFOSAA	20.000	14.220	-28.9	71.1
FOSA	20.000	19.782	-1.1	98.9
MeFOSAA	20.000	18.745	-6.3	93.7
PFBA	20.000	20.169	0.8	100.8
PFBS	20.000	19.802	-1.0	99.0
PFDA	20.000	20.269	1.3	101.3
PFDoDA	20.000	19.604	-2.0	98.0
PFDS	20.000	24.252	21.3	121.3
PFHpA	20.000	19.928	-0.4	99.6
PFHpS	20.000	20.260	1.3	101.3
PFHxA	20.000	19.603	-2.0	98.0
PFHxS	20.000	19.467	-2.7	97.3
PFNA	20.000	19.656	-1.7	98.3
PFNS	20.000	20.228	1.1	101.1
PFOA	20.000	19.908	-0.5	99.5
PFOS	20.000	19.801	-1.0	99.0

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4678.D

PFPeA	20.000	19.572	-2.1	97.9
PFPeS	20.000	19.399	-3.0	97.0
PFTeDA	20.000	19.022	-4.9	95.1
PFTrDA	20.000	19.007	-5.0	95.0
PFUnDA	20.000	20.913	4.6	104.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	24.644	23.2	123.2
13C3-HFPO-DA	20.000	19.044	-4.8	95.2
9Cl-PF3ONS	20.000	23.666	18.3	118.3
ADONA	20.000	16.576	-17.1	82.9
HFPO-DA	20.000	18.326	-8.4	91.6
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.317	1.6	101.6
MeFOSA	20.000	20.363	1.8	101.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.152	-9.2	90.8
4-PFECHS	20.000	23.789	18.9	118.9
FBSA	20.000	20.243	1.2	101.2
FHxSA	20.000	20.958	4.8	104.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4710.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S5Q72\s5q72.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4710
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.466	-2.7	97.3
13C2-6:2FTS	20.000	19.534	-2.3	97.7
13C2-8:2FTS	20.000	19.921	-0.4	99.6
13C2-PFDoDA	20.000	20.084	0.4	100.4
13C2-PFTeDA	20.000	20.469	2.3	102.3
13C3-PFBS	20.000	19.911	-0.4	99.6
13C3-PFHxS	20.000	19.802	-1.0	99.0
13C4-PFBA	20.000	19.995	0.0	100.0
13C4-PFHpA	20.000	19.808	-1.0	99.0
13C5-PFHxA	20.000	19.866	-0.7	99.3
13C5-PFPeA	20.000	19.663	-1.7	98.3
13C6-PFDA	20.000	19.650	-1.8	98.2
13C7-PFUnDA	20.000	19.303	-3.5	96.5
13C8-FOSA	20.000	19.921	-0.4	99.6
13C8-PFOA	20.000	19.616	-1.9	98.1
13C8-PFOS	20.000	19.835	-0.8	99.2
13C9-PFNA	20.000	19.474	-2.6	97.4
4:2FTS	20.000	19.866	-0.7	99.3
6:2FTS	20.000	20.577	2.9	102.9
8:2FTS	20.000	19.977	-0.1	99.9
d3-MeFOSAA	20.000	20.688	3.4	103.4
EtFOSAA	20.000	19.128	-4.4	95.6
FOSA	20.000	19.437	-2.8	97.2
MeFOSAA	20.000	19.120	-4.4	95.6
PFBA	20.000	19.776	-1.1	98.9
PFBS	20.000	19.525	-2.4	97.6
PFDA	20.000	20.102	0.5	100.5
PFDoDA	20.000	19.567	-2.2	97.8
PFDS	20.000	20.014	0.1	100.1
PFHpA	20.000	20.068	0.3	100.3
PFHpS	20.000	20.114	0.6	100.6
PFHxA	20.000	19.409	-3.0	97.0
PFHxS	20.000	19.806	-1.0	99.0
PFNA	20.000	19.704	-1.5	98.5
PFNS	20.000	20.211	1.1	101.1
PFOA	20.000	19.806	-1.0	99.0
PFOS	20.000	19.746	-1.3	98.7

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4710.D

PFPeA	20.000	19.841	-0.8	99.2
PFPeS	20.000	19.400	-3.0	97.0
PFTeDA	20.000	19.182	-4.1	95.9
PFTrDA	20.000	19.828	-0.9	99.1
PFUnDA	20.000	20.320	1.6	101.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.701	-1.5	98.5
13C3-HFPO-DA	20.000	18.206	-9.0	91.0
9Cl-PF3ONS	20.000	19.289	-3.6	96.4
ADONA	20.000	19.392	-3.0	97.0
HFPO-DA	20.000	19.668	-1.7	98.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.516	-2.4	97.6
MeFOSA	20.000	20.806	4.0	104.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.225	6.1	106.1
4-PFECHS	20.000	19.497	-2.5	97.5
FBSA	20.000	19.966	-0.2	99.8
FHxSA	20.000	19.413	-2.9	97.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4722.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S5Q72\s5q72.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4722
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.612	-1.9	98.1
13C2-6:2FTS	20.000	20.233	1.2	101.2
13C2-8:2FTS	20.000	20.095	0.5	100.5
13C2-PFDoDA	20.000	20.403	2.0	102.0
13C2-PFTeDA	20.000	21.028	5.1	105.1
13C3-PFBS	20.000	19.790	-1.0	99.0
13C3-PFHxS	20.000	19.680	-1.6	98.4
13C4-PFBA	20.000	19.948	-0.3	99.7
13C4-PFHpA	20.000	19.832	-0.8	99.2
13C5-PFHxA	20.000	19.844	-0.8	99.2
13C5-PFPeA	20.000	19.724	-1.4	98.6
13C6-PFDA	20.000	20.047	0.2	100.2
13C7-PFUnDA	20.000	19.844	-0.8	99.2
13C8-FOSA	20.000	20.037	0.2	100.2
13C8-PFOA	20.000	19.749	-1.3	98.7
13C8-PFOS	20.000	19.623	-1.9	98.1
13C9-PFNA	20.000	19.904	-0.5	99.5
4:2FTS	20.000	20.034	0.2	100.2
6:2FTS	20.000	20.313	1.6	101.6
8:2FTS	20.000	20.077	0.4	100.4
d3-MeFOSAA	20.000	22.963	14.8	114.8
EtFOSAA	20.000	20.722	3.6	103.6
FOSA	20.000	19.625	-1.9	98.1
MeFOSAA	20.000	20.023	0.1	100.1
PFBA	20.000	19.793	-1.0	99.0
PFBS	20.000	19.620	-1.9	98.1
PFDA	20.000	19.944	-0.3	99.7
PFDoDA	20.000	19.649	-1.8	98.2
PFDS	20.000	18.972	-5.1	94.9
PFHpA	20.000	20.083	0.4	100.4
PFHpS	20.000	20.189	0.9	100.9
PFHxA	20.000	19.395	-3.0	97.0
PFHxS	20.000	19.715	-1.4	98.6
PFNA	20.000	19.461	-2.7	97.3
PFNS	20.000	19.971	-0.1	99.9
PFOA	20.000	19.780	-1.1	98.9
PFOS	20.000	19.457	-2.7	97.3

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-CC71
Lab FileID: 5Q4722.D

PFPeA	20.000	19.735	-1.3	98.7
PFPeS	20.000	19.512	-2.4	97.6
PFTeDA	20.000	19.287	-3.6	96.4
PFTrDA	20.000	19.812	-0.9	99.1
PFUnDA	20.000	20.001	0.0	100.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.915	-5.4	94.6
13C3-HFPO-DA	20.000	17.793	-11.0	89.0
9Cl-PF3ONS	20.000	18.623	-6.9	93.1
ADONA	20.000	19.563	-2.2	97.8
HFPO-DA	20.000	20.136	0.7	100.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.906	-0.5	99.5
MeFOSA	20.000	20.360	1.8	101.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.303	11.5	111.5
4-PFECHS	20.000	19.427	-2.9	97.1
FBSA	20.000	19.995	0.0	100.0
FHxSA	20.000	19.384	-3.1	96.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-ECC71
Lab FileID: 5Q4730.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S5Q72\s5q72.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S5Q71\5Q4557.d
2:D:\MassHunter\Data\091422_ID_S5Q71\5Q4558.d
3:D:\MassHunter\Data\091422_ID_S5Q71\5Q4559.d
4:D:\MassHunter\Data\091422_ID_S5Q71\5Q4560.d
5:D:\MassHunter\Data\091422_ID_S5Q71\5Q4561.d
6:D:\MassHunter\Data\091422_ID_S5Q71\5Q4562.d
7:D:\MassHunter\Data\091422_ID_S5Q71\5Q4563.d
8:D:\MassHunter\Data\091422_ID_S5Q71\5Q4564.d

Data File: 5Q4730
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.711	-1.4	98.6
13C2-6:2FTS	20.000	20.508	2.5	102.5
13C2-8:2FTS	20.000	20.821	4.1	104.1
13C2-PFDoDA	20.000	21.016	5.1	105.1
13C2-PFTeDA	20.000	20.119	0.6	100.6
13C3-PFBS	20.000	19.791	-1.0	99.0
13C3-PFHxS	20.000	19.788	-1.1	98.9
13C4-PFBA	20.000	20.135	0.7	100.7
13C4-PFHpA	20.000	19.992	0.0	100.0
13C5-PFHxA	20.000	19.908	-0.5	99.5
13C5-PFPeA	20.000	19.697	-1.5	98.5
13C6-PFDA	20.000	20.457	2.3	102.3
13C7-PFUnDA	20.000	20.183	0.9	100.9
13C8-FOSA	20.000	20.032	0.2	100.2
13C8-PFOA	20.000	19.986	-0.1	99.9
13C8-PFOS	20.000	19.515	-2.4	97.6
13C9-PFNA	20.000	20.303	1.5	101.5
4:2FTS	20.000	20.135	0.7	100.7
6:2FTS	20.000	20.331	1.7	101.7
8:2FTS	20.000	20.052	0.3	100.3
d3-MeFOSAA	20.000	24.337	21.7	121.7
EtFOSAA	20.000	20.595	3.0	103.0
FOSA	20.000	19.565	-2.2	97.8
MeFOSAA	20.000	20.119	0.6	100.6
PFBA	20.000	19.817	-0.9	99.1
PFBS	20.000	19.520	-2.4	97.6
PFDA	20.000	19.800	-1.0	99.0
PFDoDA	20.000	19.652	-1.7	98.3
PFDS	20.000	18.582	-7.1	92.9
PFHpA	20.000	20.087	0.4	100.4
PFHpS	20.000	20.334	1.7	101.7
PFHxA	20.000	19.502	-2.5	97.5
PFHxS	20.000	19.540	-2.3	97.7
PFNA	20.000	19.289	-3.6	96.4
PFNS	20.000	19.961	-0.2	99.8
PFOA	20.000	19.857	-0.7	99.3
PFOS	20.000	19.978	-0.1	99.9

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q72-ECC71
Lab FileID: 5Q4730.D

PFPeA	20.000	19.911	-0.4	99.6
PFPeS	20.000	19.286	-3.6	96.4
PFTeDA	20.000	20.490	2.4	102.4
PFTrDA	20.000	19.562	-2.2	97.8
PFUnDA	20.000	19.882	-0.6	99.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.789	-6.1	93.9
13C3-HFPO-DA	20.000	19.121	-4.4	95.6
9Cl-PF3ONS	20.000	18.216	-8.9	91.1
ADONA	20.000	19.658	-1.7	98.3
HFPO-DA	20.000	19.286	-3.6	96.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.758	-1.2	98.8
MeFOSA	20.000	19.514	-2.4	97.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.885	19.4	119.4
4-PFECHS	20.000	19.200	-4.0	96.0
FBSA	20.000	20.305	1.5	101.5
FHxSA	20.000	19.183	-4.1	95.9

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: 5Q73-ICC73
Lab FileID: 5Q4820.D

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_091722_S5Q73.quantmethod.xml
Batch Name	D:\MassHunter\Data\091722_ID_S5Q73\QuantResults\s5q73.batch.bin
Last Calib Update	9/19/2022 10:55:37 AM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d	9/17/2022 12:17:23 PM	9/19/2022 10:55:37 AM
2	D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d	9/17/2022 12:32:43 PM	9/19/2022 10:55:37 AM
3	D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d	9/17/2022 12:48:03 PM	9/19/2022 10:55:37 AM
4	D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d	9/17/2022 1:03:26 PM	9/19/2022 10:55:37 AM
5	D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d	9/17/2022 1:18:46 PM	9/19/2022 10:55:37 AM
6	D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d	9/17/2022 1:34:07 PM	9/19/2022 10:55:37 AM
7	D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d	9/17/2022 1:49:28 PM	9/19/2022 10:55:37 AM
8	D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d	9/17/2022 2:04:48 PM	9/19/2022 10:55:37 AM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	4730	3856	4036	3416	3302	3427	3321	3417	3688	13.496
S 13C5-PFPeA	Linear	7445	6189	6449	5486	5283	5548	5370	5477	5906	12.650
S 13C3-PFBS	Linear	841.8	705.1	744.3	621.6	597.3	625.0	602.1	611.6	668.6	13.128
S 13C2-4:2FTS	Linear	3708	3058	3207	2785	2726	2913	3089	3602	3136	11.428
S 13C5-PFHxA	Linear	12047	9876	10375	8821	8467	8838	8544	8672	9455	13.224
S 13C3-HFPO-DA	Linear	743.7	599.5	620.8	528.6	518.6	525.7	509.1	536.7	572.8	13.950
S 13C4-PFHpA	Linear	11301	9256	9679	8113	7845	8222	7943	8002	8795	13.807
S 13C3-PFHxS	Linear	869.0	711.2	735.5	638.1	618.3	639.7	630.2	641.0	685.4	12.420
S 13C2-6:2FTS	Linear	5198	4264	4458	3813	3725	3997	4115	4727	4287	11.525
S 13C8-PFOA	Linear	15107	12464	12919	10999	10570	11023	10577	10570	11779	13.762
S 13C8-PFOS	Linear	1446	1217	1279	1065	1031	1081	1046	1052	1152	12.914
S 13C9-PFNA	Linear	15063	12430	12977	10903	10511	11128	10568	10718	11787	13.617
S 13C8-FOSA	Linear	2955	2473	2579	2186	2121	2211	2135	2140	2350	12.679
S d3-MeFOSA	Linear	662.7	604.0	632.1	527.0	513.9	536.2	525.2	498.2	562.4	10.933
S 13C6-PFDA	Linear	11769	9970	10374	8739	8328	8760	8276	8088	9288	13.960
S 13C2-8:2FTS	Linear	4731	3860	4062	3401	3305	3575	3659	4145	3842	12.122
S d3-MeFOSAA	Linear	2250	1932	1996	1601	1533	1578	1476	1354	1715	17.983
S d5-EtFOSAA	Linear	2682	2310	2369	1981	1894	1974	1831	1828	2109	14.709
S 13C7-PFUnDA	Linear	14597	12411	13018	10916	10500	10838	10342	10086	11589	13.756
S 13C2-PFDoDA	Linear	17186	14420	14818	12472	11962	12540	12146	12331	13485	13.650
S 13C2-PFTeDA	Linear	22815	18671	18312	16464	14895	16236	14316	14589	17037	16.696
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.2863	0.3725	0.3750	0.3813	0.3987	0.3909	0.3959	0.3988	0.3749	9.944
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.7424	0.9025	0.9067	0.9266	0.9689	0.9264	0.9464	0.9618	0.9102	7.898
I M5-PFHxA				---------- ISTD ----------							
T PFHxA	Linear	0.7415	0.9275	0.8930	0.9560	0.9964	0.9694	0.9795	0.9965	0.9325	9.095
T FBSA	Linear	0.2689	0.3404	0.3366	0.3459	0.3587	0.3420	0.3488	0.3443	0.3357	8.280

Generated at 10:55 AM on 9/19/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICC73
Lab FileID: 5Q4820.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	0.9841	1.2886	1.2301	1.3278	1.3740	1.3298	1.3498	1.3676	1.2815	10.055
I M8-PFOA						ISTD					
T FHxSA	Linear	0.1739	0.2321	0.2221	0.2297	0.2373	0.2273	0.2325	0.2359	0.2238	9.272
T 4-PFECHS	Quadratic	0.2490	0.3222	0.3263	0.3299	0.3460	0.3341	0.3485	0.3593	0.3269	10.366
T PFOA	Linear	0.9104	1.1445	1.1293	1.1555	1.2176	1.1763	1.2018	1.2216	1.1446	8.782
I M9-PFNA						ISTD					
T PFNA	Linear	0.6502	0.8272	0.8296	0.8547	0.9089	0.8712	0.9059	0.9132	0.8451	10.173
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Quadratic	0.5261	0.6288	0.6675	0.6928	0.7262	0.7130	0.7463	0.7844	0.6856	11.679
T PFDA	Linear	0.9278	1.1831	1.1655	1.1829	1.2831	1.2249	1.2429	1.2461	1.1820	9.310
I M7-PFUnDA						ISTD					
T PFDS	Quadratic	0.1109	0.1413	0.1427	0.1435	0.1542	0.1506	0.1566	0.1634	0.1454	10.948
T PFUnDA	Quadratic	0.7329	0.9972	0.9684	0.9880	1.0546	1.0258	1.0441	1.0561	0.9834	10.805
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.4053	0.5086	0.5179	0.5352	0.5743	0.5596	0.5672	0.5809	0.5311	10.790
T PFDoDA	Linear	0.7348	0.9373	0.9117	0.9585	1.0046	0.9694	0.9941	0.9907	0.9376	9.344
T PFTrDA	Linear	0.9689	1.2959	1.2156	1.2590	1.4328	1.2840	1.3377	1.3485	1.2678	10.825
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	0.8242	0.9042	0.9500	1.0193	1.0265	0.9372	1.0651	1.0824	0.9761	9.004
I M8-FOSA						ISTD					
T FOSA	Quadratic	0.7309	1.0060	0.9632	1.0223	1.0640	1.0162	1.0339	1.0556	0.9865	10.934
I M3-PFBS						ISTD					
T PFBS	Linear	2.2268	2.8277	2.8107	2.9346	3.0829	2.9735	3.0133	3.0086	2.8598	9.513
T PFPeS	Linear	1.7866	2.0435	2.1436	2.3265	2.4217	2.3075	2.3791	2.4099	2.2273	9.974
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.2193	2.7053	2.7722	2.8275	2.9454	2.8533	2.8515	2.9150	2.7612	8.388
T ADONA	Linear	15.68	20.00	20.19	21.15	22.01	21.48	21.34	21.56	20.43	9.970
I M8-PFOS						ISTD					
T PFHpS	Linear	1.1484	1.4577	1.4898	1.5717	1.6256	1.5627	1.6015	1.6248	1.5103	10.480
T PFOS	Linear	1.6028	1.7920	1.6472	1.7362	1.8083	1.7807	1.7886	1.7930	1.7436	4.418
T PFNS	Quadratic	1.0634	1.4702	1.4102	1.4960	1.5907	1.4919	1.5060	1.5330	1.4452	11.249
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	0.9165	1.1438	1.1322	1.1700	1.1889	1.1454	1.0549	0.9385	1.0863	9.725
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	0.8745	1.0925	1.0858	1.1333	1.1607	1.0586	1.0234	0.9062	1.0419	9.871

Generated at 10:55 AM on 9/19/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICC73
Lab FileID: 5Q4820.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	0.8745	1.0504	1.0430	1.0984	1.1529	1.0755	1.0153	0.9089	1.0274	9.118
I M3-MeFOSAA						ISTD					
T MeFOSAA	Quadratic	0.6879	0.9086	0.7936	0.8770	0.9248	0.8725	0.8807	0.9437	0.8611	9.665
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	2.6695	3.2632	3.3526	3.5389	3.5653	3.5568	3.5967	3.5349	3.3847	9.214
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	0.9954	1.0071	1.0288	1.0845	1.1758	1.0731	1.0471	1.0476	1.0574	5.348
I M5-EtFOSAA						ISTD					
T EtFOSAA	Quadratic	0.4391	0.6009	0.6100	0.6275	0.6517	0.6051	0.6471	0.6402	0.6027	11.430

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 10:55 AM on 9/19/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICC73
Lab FileID: 5Q4820.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 3688.060602 * x	0.000000
T PFBA	Linear	y = 0.397967 * x	0.999963
S 13C5-PFPeA	Linear	y = 5905.606914 * x	0.000000
T PFPeA	Linear	y = 0.957750 * x	0.999881
T PFBS	Linear	y = 3.008769 * x	0.999980
S 13C3-PFBS	Linear	y = 668.603211 * x	0.000000
S 13C2-4:2FTS	Linear	y = 3135.990406 * x	0.000000
S 13C5-PFHxA	Linear	y = 9454.922515 * x	0.000000
T PFHxA	Linear	y = 0.992284 * x	0.999896
T FBSA	Linear	y = 0.345190 * x	0.999937
T PFPeS	Linear	y = 2.400655 * x	0.999877
S 13C3-HFPO-DA	Linear	y = 572.832965 * x	0.000000
T HFPO-DA	Linear	y = 3.547587 * x	0.999925
S 13C4-PFHpA	Linear	y = 8795.097957 * x	0.000000
T PFHpA	Linear	y = 1.362929 * x	0.999923
S 13C3-PFHxS	Linear	y = 685.393677 * x	0.000000
T PFHxS	Linear	y = 2.900885 * x	0.999869
T ADONA	Linear	y = 21.513960 * x	0.999965
T FHxSA	Linear	y = 0.234966 * x	0.999894
T 4-PFECHS	Quadratic	y = 0.004836 * x ^ 2 + 0.335262 * x	0.999975
S 13C2-6:2FTS	Linear	y = 4287.162909 * x	0.000000
S 13C8-PFOA	Linear	y = 11778.657607 * x	0.000000
T PFOA	Linear	y = 1.216228 * x	0.999875
T PFHpS	Linear	y = 1.618245 * x	0.999886
S 13C8-PFOS	Linear	y = 1152.041827 * x	0.000000
T PFOS	Linear	y = 1.791771 * x	0.999990
S 13C9-PFNA	Linear	y = 11787.274502 * x	0.000000
T PFNA	Linear	y = 0.910282 * x	0.999879
S 13C8-FOSA	Linear	y = 2350.105775 * x	0.000000
T FOSA	Quadratic	y = 0.008078 * x ^ 2 + 1.015052 * x	0.999973
T 9Cl-PF3ONS	Quadratic	y = 0.015915 * x ^ 2 + 0.704944 * x	0.999986
T PFNS	Quadratic	y = 0.008539 * x ^ 2 + 1.489736 * x	0.999946
S d3-MeFOSA	Linear	y = 562.410108 * x	0.000000
T MeFOSA	Linear	y = 1.049316 * x	0.999797
S 13C6-PFDA	Linear	y = 9288.042173 * x	0.000000
T PFDA	Linear	y = 1.244993 * x	0.999964
S 13C2-8:2FTS	Linear	y = 3842.120084 * x	0.000000
S d3-MeFOSAA	Linear	y = 1714.993640 * x	0.000000
T MeFOSAA	Quadratic	y = 0.020999 * x ^ 2 + 0.837744 * x	0.999874
S d5-EtFOSAA	Linear	y = 2108.601272 * x	0.000000
T EtFOSAA	Quadratic	y = 0.003729 * x ^ 2 + 0.624155 * x	0.999254
T PFDS	Quadratic	y = 0.002819 * x ^ 2 + 0.149296 * x	0.999982
S 13C7-PFUnDA	Linear	y = 11588.503446 * x	0.000000

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICC73
Lab FileID: 5Q4820.D

Initial Calibration Report

T PFUnDA	Quadratic	y = 0.005505 * x ^ 2 + 1.028752 * x	0.999982
T 11Cl-PF3OUdS	Linear	y = 0.577481 * x	0.999798
S 13C2-PFDoDA	Linear	y = 13484.561805 * x	0.000000
T PFDoDA	Linear	y = 0.990709 * x	0.999965
T PFTrDA	Linear	y = 1.344858 * x	0.999821
S 13C2-PFTeDA	Linear	y = 17037.221484 * x	0.000000
T PFTeDA	Linear	y = 1.074026 * x	0.999129

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICV73
Lab FileID: 5Q4824.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4824
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.484	-7.6	92.4
13C2-6:2FTS	20.000	18.398	-8.0	92.0
13C2-8:2FTS	20.000	18.704	-6.5	93.5
13C2-PFDoDA	20.000	18.623	-6.9	93.1
13C2-PFTeDA	20.000	19.345	-3.3	96.7
13C3-PFBS	20.000	19.000	-5.0	95.0
13C3-PFHxS	20.000	18.555	-7.2	92.8
13C4-PFBA	20.000	18.741	-6.3	93.7
13C4-PFHpA	20.000	18.726	-6.4	93.6
13C5-PFHxA	20.000	18.624	-6.9	93.1
13C5-PFPeA	20.000	18.885	-5.6	94.4
13C6-PFDA	20.000	18.889	-5.6	94.4
13C7-PFUnDA	20.000	18.922	-5.4	94.6
13C8-FOSA	20.000	18.833	-5.8	94.2
13C8-PFOA	20.000	18.814	-5.9	94.1
13C8-PFOS	20.000	19.365	-3.2	96.8
13C9-PFNA	20.000	18.913	-5.4	94.6
4:2FTS	20.000	16.971	-15.1	84.9
6:2FTS	20.000	17.874	-10.6	89.4
8:2FTS	20.000	18.621	-6.9	93.1
d3-MeFOSAA	20.000	18.159	-9.2	90.8
EtFOSAA	20.000	18.177	-9.1	90.9
FOSA	20.000	18.325	-8.4	91.6
MeFOSAA	20.000	18.760	-6.2	93.8
PFBA	20.000	18.103	-9.5	90.5
PFBS	20.000	14.969	-25.2	74.8
PFDA	20.000	17.469	-12.7	87.3
PFDoDA	20.000	19.579	-2.1	97.9
PFDS	20.000	17.664	-11.7	88.3
PFHpA	20.000	17.543	-12.3	87.7
PFHpS	20.000	16.604	-17.0	83.0
PFHxA	20.000	16.760	-16.2	83.8
PFHxS	20.000	15.754	-21.2	78.8
PFNA	20.000	16.799	-16.0	84.0
PFNS	20.000	16.810	-16.0	84.0
PFOA	20.000	18.489	-7.6	92.4
PFOS	20.000	18.416	-7.9	92.1

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICV73
Lab FileID: 5Q4824.D

PFPeA	20.000	17.332	-13.3	86.7
PFPeS	20.000	15.997	-20.0	80.0
PFTeDA	20.000	15.222	-23.9	76.1
PFTrDA	20.000	20.443	2.2	102.2
PFUnDA	20.000	19.117	-4.4	95.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	17.016	-14.9	85.1
13C3-HFPO-DA	20.000	18.579	-7.1	92.9
9Cl-PF3ONS	20.000	16.988	-15.1	84.9
ADONA	20.000	17.531	-12.3	87.7
HFPO-DA	20.000	17.862	-10.7	89.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.457	-2.7	97.3
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.730	-6.4	93.6
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	20.231	1.2	101.2
FHxSA	20.000	20.651	3.3	103.3

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICV73
Lab FileID: 5Q4825.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4825
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.506	2.5	102.5
13C2-6:2FTS	20.000	20.190	1.0	101.0
13C2-8:2FTS	20.000	20.217	1.1	101.1
13C2-PFDoDA	20.000	20.563	2.8	102.8
13C2-PFTeDA	20.000	21.243	6.2	106.2
13C3-PFBS	20.000	20.630	3.1	103.1
13C3-PFHxS	20.000	21.053	5.3	105.3
13C4-PFBA	20.000	20.726	3.6	103.6
13C4-PFHpA	20.000	20.666	3.3	103.3
13C5-PFHxA	20.000	20.856	4.3	104.3
13C5-PFPeA	20.000	20.834	4.2	104.2
13C6-PFDA	20.000	20.855	4.3	104.3
13C7-PFUnDA	20.000	20.720	3.6	103.6
13C8-FOSA	20.000	20.840	4.2	104.2
13C8-PFOA	20.000	20.381	1.9	101.9
13C8-PFOS	20.000	20.429	2.1	102.1
13C9-PFNA	20.000	20.467	2.3	102.3
4:2FTS	20.000	17.718	-11.4	88.6
6:2FTS	20.000	17.603	-12.0	88.0
8:2FTS	20.000	18.441	-7.8	92.2
d3-MeFOSAA	20.000	19.697	-1.5	98.5
EtFOSAA	20.000	15.115	-24.4	75.6
FOSA	20.000	17.169	-14.2	85.8
MeFOSAA	20.000	16.632	-16.8	83.2
PFBA	20.000	17.089	-14.6	85.4
PFBS	20.000	16.127	-19.4	80.6
PFDA	20.000	16.246	-18.8	81.2
PFDoDA	20.000	18.514	-7.4	92.6
PFDS	20.000	18.143	-9.3	90.7
PFHpA	20.000	14.990	-25.0	75.0
PFHpS	20.000	17.718	-11.4	88.6
PFHxA	20.000	15.881	-20.6	79.4
PFHxS	20.000	16.552	-17.2	82.8
PFNA	20.000	16.703	-16.5	83.5
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	17.288	-13.6	86.4
PFOS	20.000	18.771	-6.1	93.9

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ICV73
Lab FileID: 5Q4825.D

PFPeA	20.000	16.476	-17.6	82.4
PFPeS	20.000	17.062	-14.7	85.3
PFTeDA	20.000	14.483	-27.6	72.4
PFTrDA	20.000	20.783	3.9	103.9
PFUnDA	20.000	19.118	-4.4	95.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	20.018	0.1	100.1
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.398	7.0	107.0
MeFOSA	20.000	18.397	-8.0	92.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.534	2.7	102.7
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4827.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4827
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.932	-5.3	94.7
13C2-6:2FTS	20.000	18.549	-7.3	92.7
13C2-8:2FTS	20.000	18.899	-5.5	94.5
13C2-PFDoDA	20.000	18.691	-6.5	93.5
13C2-PFTeDA	20.000	17.609	-12.0	88.0
13C3-PFBS	20.000	18.857	-5.7	94.3
13C3-PFHxS	20.000	18.923	-5.4	94.6
13C4-PFBA	20.000	18.632	-6.8	93.2
13C4-PFHpA	20.000	18.857	-5.7	94.3
13C5-PFHxA	20.000	18.911	-5.4	94.6
13C5-PFPeA	20.000	18.957	-5.2	94.8
13C6-PFDA	20.000	19.020	-4.9	95.1
13C7-PFUnDA	20.000	18.856	-5.7	94.3
13C8-FOSA	20.000	18.818	-5.9	94.1
13C8-PFOA	20.000	18.822	-5.9	94.1
13C8-PFOS	20.000	19.298	-3.5	96.5
13C9-PFNA	20.000	18.704	-6.5	93.5
4:2FTS	20.000	20.619	3.1	103.1
6:2FTS	20.000	21.197	6.0	106.0
8:2FTS	20.000	20.983	4.9	104.9
d3-MeFOSAA	20.000	17.786	-11.1	88.9
EtFOSAA	20.000	19.434	-2.8	97.2
FOSA	20.000	19.926	-0.4	99.6
MeFOSAA	20.000	20.400	2.0	102.0
PFBA	20.000	19.746	-1.3	98.7
PFBS	20.000	19.749	-1.3	98.7
PFDA	20.000	19.411	-2.9	97.1
PFDoDA	20.000	19.494	-2.5	97.5
PFDS	20.000	19.740	-1.3	98.7
PFHpA	20.000	19.406	-3.0	97.0
PFHpS	20.000	19.367	-3.2	96.8
PFHxA	20.000	19.470	-2.6	97.4
PFHxS	20.000	19.765	-1.2	98.8
PFNA	20.000	19.297	-3.5	96.5
PFNS	20.000	19.989	-0.1	99.9
PFOA	20.000	19.482	-2.6	97.4
PFOS	20.000	19.814	-0.9	99.1

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4827.D

PFPeA	20.000	19.376	-3.1	96.9
PFPeS	20.000	19.543	-2.3	97.7
PFTeDA	20.000	19.509	-2.5	97.5
PFTrDA	20.000	19.363	-3.2	96.8
PFUnDA	20.000	19.697	-1.5	98.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.585	-2.1	97.9
13C3-HFPO-DA	20.000	18.417	-7.9	92.1
9Cl-PF3ONS	20.000	19.798	-1.0	99.0
ADONA	20.000	19.770	-1.2	98.8
HFPO-DA	20.000	19.846	-0.8	99.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.879	-5.6	94.4
MeFOSA	20.000	20.725	3.6	103.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.442	-7.8	92.2
4-PFECHS	20.000	20.101	0.5	100.5
FBSA	20.000	19.856	-0.7	99.3
FHxSA	20.000	18.924	-5.4	94.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4828.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4828
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.134	-9.3	90.7
13C2-6:2FTS	20.000	18.020	-9.9	90.1
13C2-8:2FTS	20.000	18.011	-9.9	90.1
13C2-PFDoDA	20.000	19.124	-4.4	95.6
13C2-PFTeDA	20.000	17.824	-10.9	89.1
13C3-PFBS	20.000	19.270	-3.6	96.4
13C3-PFHxS	20.000	19.450	-2.7	97.3
13C4-PFBA	20.000	19.009	-5.0	95.0
13C4-PFHpA	20.000	19.138	-4.3	95.7
13C5-PFHxA	20.000	19.141	-4.3	95.7
13C5-PFPeA	20.000	19.112	-4.4	95.6
13C6-PFDA	20.000	19.348	-3.3	96.7
13C7-PFUnDA	20.000	19.164	-4.2	95.8
13C8-FOSA	20.000	18.896	-5.5	94.5
13C8-PFOA	20.000	19.179	-4.1	95.9
13C8-PFOS	20.000	19.233	-3.8	96.2
13C9-PFNA	20.000	18.973	-5.1	94.9
4:2FTS	1.000	1.068	6.8	106.8
6:2FTS	1.000	1.008	0.8	100.8
8:2FTS	1.000	1.108	10.8	110.8
d3-MeFOSAA	20.000	18.647	-6.8	93.2
EtFOSAA	1.000	0.927	-7.3	92.7
FOSA	1.000	1.014	1.4	101.4
MeFOSAA	1.000	1.073	7.3	107.3
PFBA	1.000	0.916	-8.4	91.6
PFBS	1.000	0.962	-3.8	96.2
PFDA	1.000	0.954	-4.6	95.4
PFDoDA	1.000	0.952	-4.8	95.2
PFDS	1.000	1.009	0.9	100.9
PFHpA	1.000	0.952	-4.8	95.2
PFHpS	1.000	0.918	-8.2	91.8
PFHxA	1.000	0.921	-7.9	92.1
PFHxS	1.000	0.926	-7.4	92.6
PFNA	1.000	0.914	-8.6	91.4
PFNS	1.000	0.931	-6.9	93.1
PFOA	1.000	0.938	-6.2	93.8
PFOS	1.000	1.004	0.4	100.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4828.D

PFPeA	1.000	0.942	-5.8	94.2
PFPeS	1.000	0.893	-10.7	89.3
PFTeDA	1.000	1.067	6.7	106.7
PFTrDA	1.000	0.936	-6.4	93.6
PFUnDA	1.000	0.963	-3.7	96.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.956	-4.4	95.6
13C3-HFPO-DA	20.000	18.672	-6.6	93.4
9Cl-PF3ONS	1.000	0.964	-3.6	96.4
ADONA	1.000	0.895	-10.5	89.5
HFPO-DA	1.000	0.967	-3.3	96.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	19.411	-2.9	97.1
MeFOSA	1.000	0.953	-4.7	95.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.985	-5.1	94.9
4-PFECHS	1.000	0.937	-6.3	93.7
FBSA	1.000	0.994	-0.6	99.4
FHxSA	1.000	0.951	-4.9	95.1

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4832.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4832
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.630	-6.8	93.2
13C2-6:2FTS	20.000	18.444	-7.8	92.2
13C2-8:2FTS	20.000	18.663	-6.7	93.3
13C2-PFDoDA	20.000	18.589	-7.1	92.9
13C2-PFTeDA	20.000	17.724	-11.4	88.6
13C3-PFBS	20.000	18.679	-6.6	93.4
13C3-PFHxS	20.000	18.783	-6.1	93.9
13C4-PFBA	20.000	18.627	-6.9	93.1
13C4-PFHpA	20.000	18.739	-6.3	93.7
13C5-PFHxA	20.000	18.636	-6.8	93.2
13C5-PFPeA	20.000	18.658	-6.7	93.3
13C6-PFDA	20.000	18.456	-7.7	92.3
13C7-PFUnDA	20.000	18.239	-8.8	91.2
13C8-FOSA	20.000	18.330	-8.3	91.7
13C8-PFOA	20.000	18.653	-6.7	93.3
13C8-PFOS	20.000	19.088	-4.6	95.4
13C9-PFNA	20.000	18.560	-7.2	92.8
4:2FTS	20.000	20.998	5.0	105.0
6:2FTS	20.000	21.010	5.1	105.1
8:2FTS	20.000	20.751	3.8	103.8
d3-MeFOSAA	20.000	18.307	-8.5	91.5
EtFOSAA	20.000	19.434	-2.8	97.2
FOSA	20.000	20.397	2.0	102.0
MeFOSAA	20.000	20.620	3.1	103.1
PFBA	20.000	19.302	-3.5	96.5
PFBS	20.000	19.700	-1.5	98.5
PFDA	20.000	19.946	-0.3	99.7
PFDoDA	20.000	19.698	-1.5	98.5
PFDS	20.000	20.274	1.4	101.4
PFHpA	20.000	19.375	-3.1	96.9
PFHpS	20.000	19.432	-2.8	97.2
PFHxA	20.000	19.445	-2.8	97.2
PFHxS	20.000	19.603	-2.0	98.0
PFNA	20.000	19.226	-3.9	96.1
PFNS	20.000	19.845	-0.8	99.2
PFOA	20.000	19.434	-2.8	97.2
PFOS	20.000	19.535	-2.3	97.7

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4832.D

PFPeA	20.000	19.482	-2.6	97.4
PFPeS	20.000	19.336	-3.3	96.7
PFTeDA	20.000	19.527	-2.4	97.6
PFTrDA	20.000	19.379	-3.1	96.9
PFUnDA	20.000	20.164	0.8	100.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.965	-0.2	99.8
13C3-HFPO-DA	20.000	18.236	-8.8	91.2
9Cl-PF3ONS	20.000	20.198	1.0	101.0
ADONA	20.000	19.807	-1.0	99.0
HFPO-DA	20.000	19.932	-0.3	99.7
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.800	-6.0	94.0
MeFOSA	20.000	20.936	4.7	104.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	18.791	-6.0	94.0
4-PFECHS	20.000	20.251	1.3	101.3
FBSA	20.000	19.707	-1.5	98.5
FHxSA	20.000	19.380	-3.1	96.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4864.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4864
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.789	-11.1	88.9
13C2-6:2FTS	20.000	18.109	-9.5	90.5
13C2-8:2FTS	20.000	18.499	-7.5	92.5
13C2-PFDoDA	20.000	18.977	-5.1	94.9
13C2-PFTeDA	20.000	19.846	-0.8	99.2
13C3-PFBS	20.000	18.657	-6.7	93.3
13C3-PFHxS	20.000	18.157	-9.2	90.8
13C4-PFBA	20.000	18.669	-6.7	93.3
13C4-PFHpA	20.000	18.908	-5.5	94.5
13C5-PFHxA	20.000	18.755	-6.2	93.8
13C5-PFPeA	20.000	18.775	-6.1	93.9
13C6-PFDA	20.000	19.207	-4.0	96.0
13C7-PFUnDA	20.000	19.092	-4.5	95.5
13C8-FOSA	20.000	18.713	-6.4	93.6
13C8-PFOA	20.000	18.966	-5.2	94.8
13C8-PFOS	20.000	18.536	-7.3	92.7
13C9-PFNA	20.000	18.819	-5.9	94.1
4:2FTS	1.000	1.046	4.6	104.6
6:2FTS	1.000	1.054	5.4	105.4
8:2FTS	1.000	1.035	3.5	103.5
d3-MeFOSAA	20.000	22.126	10.6	110.6
EtFOSAA	1.000	1.003	0.3	100.3
FOSA	1.000	1.008	0.8	100.8
MeFOSAA	1.000	1.080	8.0	108.0
PFBA	1.000	0.909	-9.1	90.9
PFBS	1.000	0.963	-3.7	96.3
PFDA	1.000	0.942	-5.8	94.2
PFDoDA	1.000	0.939	-6.1	93.9
PFDS	1.000	0.870	-13.0	87.0
PFHpA	1.000	0.941	-5.9	94.1
PFHpS	1.000	0.941	-5.9	94.1
PFHxA	1.000	0.939	-6.1	93.9
PFHxS	1.000	0.933	-6.7	93.3
PFNA	1.000	0.905	-9.5	90.5
PFNS	1.000	0.929	-7.1	92.9
PFOA	1.000	0.914	-8.6	91.4
PFOS	1.000	1.014	1.4	101.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4864.D

PFPeA	1.000	0.962	-3.8	96.2
PFPeS	1.000	0.898	-10.2	89.8
PFTeDA	1.000	0.957	-4.3	95.7
PFTrDA	1.000	0.894	-10.6	89.4
PFUnDA	1.000	0.968	-3.2	96.8
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.892	-10.8	89.2
13C3-HFPO-DA	20.000	18.587	-7.1	92.9
9Cl-PF3ONS	1.000	0.893	-10.7	89.3
ADONA	1.000	0.984	-1.6	98.4
HFPO-DA	1.000	0.930	-7.0	93.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.588	-7.1	92.9
MeFOSA	1.000	0.967	-3.3	96.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.693	3.5	103.5
4-PFECHS	1.000	0.919	-8.1	91.9
FBSA	1.000	1.003	0.3	100.3
FHxSA	1.000	1.018	1.8	101.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4875.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4875
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.853	-5.7	94.3
13C2-6:2FTS	20.000	19.176	-4.1	95.9
13C2-8:2FTS	20.000	19.335	-3.3	96.7
13C2-PFDoDA	20.000	18.647	-6.8	93.2
13C2-PFTeDA	20.000	19.457	-2.7	97.3
13C3-PFBS	20.000	18.470	-7.6	92.4
13C3-PFHxS	20.000	18.442	-7.8	92.2
13C4-PFBA	20.000	18.535	-7.3	92.7
13C4-PFHpA	20.000	18.844	-5.8	94.2
13C5-PFHxA	20.000	18.754	-6.2	93.8
13C5-PFPeA	20.000	18.599	-7.0	93.0
13C6-PFDA	20.000	18.977	-5.1	94.9
13C7-PFUnDA	20.000	18.551	-7.2	92.8
13C8-FOSA	20.000	18.634	-6.8	93.2
13C8-PFOA	20.000	18.899	-5.5	94.5
13C8-PFOS	20.000	17.997	-10.0	90.0
13C9-PFNA	20.000	18.857	-5.7	94.3
4:2FTS	20.000	20.642	3.2	103.2
6:2FTS	20.000	21.039	5.2	105.2
8:2FTS	20.000	21.147	5.7	105.7
d3-MeFOSAA	20.000	22.233	11.2	111.2
EtFOSAA	20.000	22.506	12.5	112.5
FOSA	20.000	19.774	-1.1	98.9
MeFOSAA	20.000	20.634	3.2	103.2
PFBA	20.000	19.203	-4.0	96.0
PFBS	20.000	19.520	-2.4	97.6
PFDA	20.000	19.582	-2.1	97.9
PFDoDA	20.000	19.534	-2.3	97.7
PFDS	20.000	18.853	-5.7	94.3
PFHpA	20.000	19.426	-2.9	97.1
PFHpS	20.000	19.784	-1.1	98.9
PFHxA	20.000	19.555	-2.2	97.8
PFHxS	20.000	19.426	-2.9	97.1
PFNA	20.000	19.500	-2.5	97.5
PFNS	20.000	19.823	-0.9	99.1
PFOA	20.000	19.670	-1.6	98.4
PFOS	20.000	20.391	2.0	102.0

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S5Q73-CC73
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 5Q4875.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.642	-1.8	98.2
PFPeS	20.000	19.134	-4.3	95.7
PFTeDA	20.000	17.522	-12.4	87.6
PFTrDA	20.000	20.096	0.5	100.5
PFUnDA	20.000	20.016	0.1	100.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.827	-5.9	94.1
13C3-HFPO-DA	20.000	18.262	-8.7	91.3
9Cl-PF3ONS	20.000	18.725	-6.4	93.6
ADONA	20.000	20.448	2.2	102.2
HFPO-DA	20.000	20.007	0.0	100.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.405	-8.0	92.0
MeFOSA	20.000	20.611	3.1	103.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.476	2.4	102.4
4-PFECHS	20.000	19.235	-3.8	96.2
FBSA	20.000	20.310	1.5	101.5
FHxSA	20.000	19.854	-0.7	99.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4887.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4887
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.885	-5.6	94.4
13C2-6:2FTS	20.000	19.437	-2.8	97.2
13C2-8:2FTS	20.000	19.557	-2.2	97.8
13C2-PFDoDA	20.000	18.559	-7.2	92.8
13C2-PFTeDA	20.000	19.299	-3.5	96.5
13C3-PFBS	20.000	18.341	-8.3	91.7
13C3-PFHxS	20.000	18.388	-8.1	91.9
13C4-PFBA	20.000	18.646	-6.8	93.2
13C4-PFHpA	20.000	18.912	-5.4	94.6
13C5-PFHxA	20.000	18.687	-6.6	93.4
13C5-PFPeA	20.000	18.817	-5.9	94.1
13C6-PFDA	20.000	18.780	-6.1	93.9
13C7-PFUnDA	20.000	18.534	-7.3	92.7
13C8-FOSA	20.000	18.198	-9.0	91.0
13C8-PFOA	20.000	19.107	-4.5	95.5
13C8-PFOS	20.000	18.078	-9.6	90.4
13C9-PFNA	20.000	18.816	-5.9	94.1
4:2FTS	20.000	20.741	3.7	103.7
6:2FTS	20.000	20.875	4.4	104.4
8:2FTS	20.000	21.356	6.8	106.8
d3-MeFOSAA	20.000	22.632	13.2	113.2
EtFOSAA	20.000	23.636	18.2	118.2
FOSA	20.000	20.420	2.1	102.1
MeFOSAA	20.000	20.805	4.0	104.0
PFBA	20.000	18.888	-5.6	94.4
PFBS	20.000	19.746	-1.3	98.7
PFDA	20.000	19.995	0.0	100.0
PFDoDA	20.000	19.385	-3.1	96.9
PFDS	20.000	18.893	-5.5	94.5
PFHpA	20.000	19.649	-1.8	98.2
PFHpS	20.000	19.800	-1.0	99.0
PFHxA	20.000	19.501	-2.5	97.5
PFHxS	20.000	19.485	-2.6	97.4
PFNA	20.000	19.390	-3.1	96.9
PFNS	20.000	19.903	-0.5	99.5
PFOA	20.000	19.690	-1.6	98.4
PFOS	20.000	19.631	-1.8	98.2

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-CC73
Lab FileID: 5Q4887.D

PFPeA	20.000	19.452	-2.7	97.3
PFPeS	20.000	19.344	-3.3	96.7
PFTeDA	20.000	17.527	-12.4	87.6
PFTrDA	20.000	20.019	0.1	100.1
PFUnDA	20.000	19.891	-0.5	99.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.749	-6.3	93.7
13C3-HFPO-DA	20.000	17.994	-10.0	90.0
9Cl-PF3ONS	20.000	19.159	-4.2	95.8
ADONA	20.000	20.443	2.2	102.2
HFPO-DA	20.000	20.753	3.8	103.8
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	17.854	-10.7	89.3
MeFOSA	20.000	20.722	3.6	103.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.739	3.7	103.7
4-PFECHS	20.000	19.193	-4.0	96.0
FBSA	20.000	20.367	1.8	101.8
FHxSA	20.000	19.785	-1.1	98.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ECC73
Lab FileID: 5Q4894.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091722_ID_S5Q73\s5q73.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4894
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.944	-5.3	94.7
13C2-6:2FTS	20.000	19.334	-3.3	96.7
13C2-8:2FTS	20.000	19.609	-2.0	98.0
13C2-PFDoDA	20.000	18.527	-7.4	92.6
13C2-PFTeDA	20.000	17.836	-10.8	89.2
13C3-PFBS	20.000	18.621	-6.9	93.1
13C3-PFHxS	20.000	18.722	-6.4	93.6
13C4-PFBA	20.000	18.567	-7.2	92.8
13C4-PFHpA	20.000	19.059	-4.7	95.3
13C5-PFHxA	20.000	18.826	-5.9	94.1
13C5-PFPeA	20.000	18.834	-5.8	94.2
13C6-PFDA	20.000	19.068	-4.7	95.3
13C7-PFUnDA	20.000	18.739	-6.3	93.7
13C8-FOSA	20.000	18.343	-8.3	91.7
13C8-PFOA	20.000	19.152	-4.2	95.8
13C8-PFOS	20.000	18.200	-9.0	91.0
13C9-PFNA	20.000	18.983	-5.1	94.9
4:2FTS	20.000	20.603	3.0	103.0
6:2FTS	20.000	20.824	4.1	104.1
8:2FTS	20.000	20.935	4.7	104.7
d3-MeFOSAA	20.000	22.537	12.7	112.7
EtFOSAA	20.000	23.396	17.0	117.0
FOSA	20.000	19.899	-0.5	99.5
MeFOSAA	20.000	21.238	6.2	106.2
PFBA	20.000	19.045	-4.8	95.2
PFBS	20.000	19.684	-1.6	98.4
PFDA	20.000	19.465	-2.7	97.3
PFDoDA	20.000	19.513	-2.4	97.6
PFDS	20.000	18.692	-6.5	93.5
PFHpA	20.000	19.429	-2.9	97.1
PFHpS	20.000	19.515	-2.4	97.6
PFHxA	20.000	19.498	-2.5	97.5
PFHxS	20.000	19.339	-3.3	96.7
PFNA	20.000	19.363	-3.2	96.8
PFNS	20.000	19.312	-3.4	96.6
PFOA	20.000	19.604	-2.0	98.0
PFOS	20.000	19.963	-0.2	99.8

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q73-ECC73
Lab FileID: 5Q4894.D

PFPeA	20.000	19.581	-2.1	97.9
PFPeS	20.000	18.993	-5.0	95.0
PFTeDA	20.000	18.780	-6.1	93.9
PFTrDA	20.000	18.570	-7.1	92.9
PFUnDA	20.000	19.572	-2.1	97.9
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	18.750	-6.3	93.7
13C3-HFPO-DA	20.000	18.786	-6.1	93.9
9Cl-PF3ONS	20.000	18.773	-6.1	93.9
ADONA	20.000	20.160	0.8	100.8
HFPO-DA	20.000	19.921	-0.4	99.6
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	17.755	-11.2	88.8
MeFOSA	20.000	21.226	6.1	106.1
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.106	5.5	105.5
4-PFECHS	20.000	19.404	-3.0	97.0
FBSA	20.000	20.574	2.9	102.9
FHxSA	20.000	19.887	-0.6	99.4

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4912.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091922_ID_S5Q74\s5q74.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4912
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	18.696	-6.5	93.5
13C2-6:2FTS	20.000	18.578	-7.1	92.9
13C2-8:2FTS	20.000	19.036	-4.8	95.2
13C2-PFDoDA	20.000	17.469	-12.7	87.3
13C2-PFTeDA	20.000	18.129	-9.4	90.6
13C3-PFBS	20.000	19.245	-3.8	96.2
13C3-PFHxS	20.000	18.667	-6.7	93.3
13C4-PFBA	20.000	18.650	-6.8	93.2
13C4-PFHpA	20.000	18.384	-8.1	91.9
13C5-PFHxA	20.000	18.758	-6.2	93.8
13C5-PFPeA	20.000	18.963	-5.2	94.8
13C6-PFDA	20.000	17.218	-13.9	86.1
13C7-PFUnDA	20.000	17.337	-13.3	86.7
13C8-FOSA	20.000	17.925	-10.4	89.6
13C8-PFOA	20.000	17.716	-11.4	88.6
13C8-PFOS	20.000	19.331	-3.3	96.7
13C9-PFNA	20.000	17.779	-11.1	88.9
4:2FTS	20.000	20.952	4.8	104.8
6:2FTS	20.000	21.011	5.1	105.1
8:2FTS	20.000	20.465	2.3	102.3
d3-MeFOSAA	20.000	18.232	-8.8	91.2
EtFOSAA	20.000	18.358	-8.2	91.8
FOSA	20.000	20.397	2.0	102.0
MeFOSAA	20.000	19.591	-2.0	98.0
PFBA	20.000	19.407	-3.0	97.0
PFBS	20.000	19.778	-1.1	98.9
PFDA	20.000	19.968	-0.2	99.8
PFDoDA	20.000	19.661	-1.7	98.3
PFDS	20.000	21.213	6.1	106.1
PFHpA	20.000	19.471	-2.6	97.4
PFHpS	20.000	19.317	-3.4	96.6
PFHxA	20.000	19.435	-2.8	97.2
PFHxS	20.000	20.263	1.3	101.3
PFNA	20.000	19.411	-2.9	97.1
PFNS	20.000	20.051	0.3	100.3
PFOA	20.000	19.828	-0.9	99.1
PFOS	20.000	19.262	-3.7	96.3

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4912.D

PFPeA	20.000	19.505	-2.5	97.5
PFPeS	20.000	19.169	-4.2	95.8
PFTeDA	20.000	17.895	-10.5	89.5
PFTrDA	20.000	21.762	8.8	108.8
PFUnDA	20.000	20.219	1.1	101.1
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.986	4.9	104.9
13C3-HFPO-DA	20.000	19.804	-1.0	99.0
9Cl-PF3ONS	20.000	21.872	9.4	109.4
ADONA	20.000	19.460	-2.7	97.3
HFPO-DA	20.000	19.785	-1.1	98.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	17.793	-11.0	89.0
MeFOSA	20.000	21.039	5.2	105.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.254	-3.7	96.3
4-PFECHS	20.000	21.529	7.6	107.6
FBSA	20.000	19.750	-1.2	98.8
FHxSA	20.000	19.778	-1.1	98.9

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4913.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091922_ID_S5Q74\s5q74.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4913
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	17.531	-12.3	87.7
13C2-6:2FTS	20.000	17.555	-12.2	87.8
13C2-8:2FTS	20.000	17.826	-10.9	89.1
13C2-PFDoDA	20.000	17.901	-10.5	89.5
13C2-PFTeDA	20.000	15.734	-21.3	78.7
13C3-PFBS	20.000	19.089	-4.6	95.4
13C3-PFHxS	20.000	19.072	-4.6	95.4
13C4-PFBA	20.000	18.519	-7.4	92.6
13C4-PFHpA	20.000	18.440	-7.8	92.2
13C5-PFHxA	20.000	18.654	-6.7	93.3
13C5-PFPeA	20.000	18.866	-5.7	94.3
13C6-PFDA	20.000	17.519	-12.4	87.6
13C7-PFUnDA	20.000	17.765	-11.2	88.8
13C8-FOSA	20.000	18.006	-10.0	90.0
13C8-PFOA	20.000	17.719	-11.4	88.6
13C8-PFOS	20.000	19.150	-4.3	95.7
13C9-PFNA	20.000	17.798	-11.0	89.0
4:2FTS	1.000	1.052	5.2	105.2
6:2FTS	1.000	1.003	0.3	100.3
8:2FTS	1.000	1.071	7.1	107.1
d3-MeFOSAA	20.000	18.951	-5.2	94.8
EtFOSAA	1.000	0.876	-12.4	87.6
FOSA	1.000	0.975	-2.5	97.5
MeFOSAA	1.000	1.019	1.9	101.9
PFBA	1.000	0.946	-5.4	94.6
PFBS	1.000	0.967	-3.3	96.7
PFDA	1.000	0.972	-2.8	97.2
PFDoDA	1.000	0.949	-5.1	94.9
PFDS	1.000	1.038	3.8	103.8
PFHpA	1.000	0.925	-7.5	92.5
PFHpS	1.000	0.950	-5.0	95.0
PFHxA	1.000	0.941	-5.9	94.1
PFHxS	1.000	0.982	-1.8	98.2
PFNA	1.000	0.911	-8.9	91.1
PFNS	1.000	0.954	-4.6	95.4
PFOA	1.000	0.950	-5.0	95.0
PFOS	1.000	0.997	-0.3	99.7

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4913.D

PFPeA	1.000	0.950	-5.0	95.0
PFPeS	1.000	0.910	-9.0	91.0
PFTeDA	1.000	0.976	-2.4	97.6
PFTrDA	1.000	1.014	1.4	101.4
PFUnDA	1.000	0.964	-3.6	96.4
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.999	-0.1	99.9
13C3-HFPO-DA	20.000	19.070	-4.7	95.3
9Cl-PF3ONS	1.000	1.032	3.2	103.2
ADONA	1.000	0.903	-9.7	90.3
HFPO-DA	1.000	1.004	0.4	100.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.250	-8.7	91.3
MeFOSA	1.000	1.063	6.3	106.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	19.584	-2.1	97.9
4-PFECHS	1.000	1.058	5.8	105.8
FBSA	1.000	0.955	-4.5	95.5
FHxSA	1.000	1.007	0.7	100.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4924.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091922_ID_S5Q74\s5q74.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091722_ID_S5Q73\5Q4815.d
2:D:\MassHunter\Data\091722_ID_S5Q73\5Q4816.d
3:D:\MassHunter\Data\091722_ID_S5Q73\5Q4817.d
4:D:\MassHunter\Data\091722_ID_S5Q73\5Q4818.d
5:D:\MassHunter\Data\091722_ID_S5Q73\5Q4819.d
6:D:\MassHunter\Data\091722_ID_S5Q73\5Q4820.d
7:D:\MassHunter\Data\091722_ID_S5Q73\5Q4821.d
8:D:\MassHunter\Data\091722_ID_S5Q73\5Q4822.d

Data File: 5Q4924
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.002	-5.0	95.0
13C2-6:2FTS	20.000	19.463	-2.7	97.3
13C2-8:2FTS	20.000	19.986	-0.1	99.9
13C2-PFDoDA	20.000	19.393	-3.0	97.0
13C2-PFTeDA	20.000	20.260	1.3	101.3
13C3-PFBS	20.000	19.116	-4.4	95.6
13C3-PFHxS	20.000	18.653	-6.7	93.3
13C4-PFBA	20.000	18.898	-5.5	94.5
13C4-PFHpA	20.000	18.988	-5.1	94.9
13C5-PFHxA	20.000	19.204	-4.0	96.0
13C5-PFPeA	20.000	19.183	-4.1	95.9
13C6-PFDA	20.000	18.801	-6.0	94.0
13C7-PFUnDA	20.000	18.723	-6.4	93.6
13C8-FOSA	20.000	18.912	-5.4	94.6
13C8-PFOA	20.000	18.719	-6.4	93.6
13C8-PFOS	20.000	19.100	-4.5	95.5
13C9-PFNA	20.000	18.944	-5.3	94.7
4:2FTS	20.000	20.885	4.4	104.4
6:2FTS	20.000	20.620	3.1	103.1
8:2FTS	20.000	20.482	2.4	102.4
d3-MeFOSAA	20.000	22.350	11.7	111.7
EtFOSAA	20.000	20.462	2.3	102.3
FOSA	20.000	19.678	-1.6	98.4
MeFOSAA	20.000	20.239	1.2	101.2
PFBA	20.000	19.646	-1.8	98.2
PFBS	20.000	19.593	-2.0	98.0
PFDA	20.000	19.871	-0.6	99.4
PFDoDA	20.000	19.757	-1.2	98.8
PFDS	20.000	20.061	0.3	100.3
PFHpA	20.000	19.431	-2.8	97.2
PFHpS	20.000	19.522	-2.4	97.6
PFHxA	20.000	19.332	-3.3	96.7
PFHxS	20.000	19.917	-0.4	99.6
PFNA	20.000	19.325	-3.4	96.6
PFNS	20.000	20.170	0.8	100.8
PFOA	20.000	19.971	-0.1	99.9
PFOS	20.000	19.642	-1.8	98.2

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S5Q74-CC73
Lab FileID: 5Q4924.D

PFPeA	20.000	19.477	-2.6	97.4
PFPeS	20.000	19.216	-3.9	96.1
PFTeDA	20.000	17.847	-10.8	89.2
PFTrDA	20.000	19.404	-3.0	97.0
PFUnDA	20.000	20.503	2.5	102.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.035	-4.8	95.2
13C3-HFPO-DA	20.000	19.093	-4.5	95.5
9Cl-PF3ONS	20.000	20.284	1.4	101.4
ADONA	20.000	20.214	1.1	101.1
HFPO-DA	20.000	19.620	-1.9	98.1
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	18.401	-8.0	92.0
MeFOSA	20.000	20.550	2.7	102.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.968	9.8	109.8
4-PFECHS	20.000	20.091	0.5	100.5
FBSA	20.000	19.792	-1.0	99.0
FHxSA	20.000	19.159	-4.2	95.8

CC Criteria: +/- 30%

Initial Calibration Summary

Job Number: FA98286 **Sample:** S6Q85-ICC85
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 6Q4624.D
Project: SWMU 114 Fire Station 2; KSC, FL

Initial Calibration Report

Method Path	D:\MassHunter\Methods
Method File	ID_091422_S6Q85.quantmethod.xml
Batch Name	D:\MassHunter\Data\091422_ID_S6Q85\QuantResults\s6q85.batch.bin
Last Calib Update	9/14/2022 3:56:52 PM

Level Name	Calibration Files	Acq. Date-Time	Level Last Update Time
1	D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d	9/14/2022 10:43:54 AM	9/14/2022 3:56:52 PM
2	D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d	9/14/2022 10:59:55 AM	9/14/2022 3:56:52 PM
3	D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d	9/14/2022 11:15:56 AM	9/14/2022 3:56:52 PM
4	D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d	9/14/2022 11:31:57 AM	9/14/2022 3:56:52 PM
5	D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d	9/14/2022 11:47:59 AM	9/14/2022 3:56:52 PM
6	D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d	9/14/2022 12:04:01 PM	9/14/2022 3:56:52 PM
7	D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d	9/14/2022 12:20:03 PM	9/14/2022 3:56:52 PM
8	D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d	9/14/2022 12:36:08 PM	9/14/2022 3:56:52 PM

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
S 13C4-PFBA	Linear	3939	4017	4037	3909	4173	3932	4031	3804	3980	2.758
S 13C5-PFPeA	Linear	6978	7042	7135	6949	7334	6937	7075	6639	7011	2.822
S 13C3-PFBS	Linear	1522	1534	1582	1509	1611	1516	1534	1444	1531	3.243
S 13C2-4:2FTS	Linear	12678	13112	12979	12605	13503	13304	14588	15279	13506	7.016
S 13C5-PFHxA	Linear	10589	10942	10997	10579	11024	10660	10664	10053	10688	2.956
S 13C3-HFPO-DA	Linear	264.7	258.5	267.6	248.0	266.8	263.9	289.0	267.8	265.8	4.310
S 13C4-PFHpA	Linear	12166	12266	12770	12280	12956	12255	12717	11578	12373	3.516
S 13C3-PFHxS	Linear	1387	1434	1418	1345	1461	1310	1383	1323	1383	3.898
S 13C2-6:2FTS	Linear	16548	16329	16453	16214	16965	16847	17987	19207	17069	6.025
S 13C8-PFOA	Linear	21878	22054	22200	21714	22058	20514	20640	18672	21216	5.734
S 13C8-FOSA	Linear	10278	9297	10517	9691	10190	9541	9732	9002	9781	5.277
S 13C8-PFOS	Linear	2053	2100	2183	2082	2288	2066	2165	2031	2121	4.044
S 13C9-PFNA	Linear	25510	25683	27372	26148	27685	24863	25315	23552	25766	5.165
S d3-MeFOSA	Linear	2233	2037	2306	2199	2499	2385	2302	2139	2262	6.370
S d3-MeFOSAA	Linear	8633	8397	9153	7945	8842	8767	9325	8170	8654	5.436
S 13C6-PFDA	Linear	20036	19991	21060	19806	23024	19616	19882	19357	20346	5.851
S d5-EtFOSAA	Linear	6822	7166	6976	6921	7231	6906	6314	5973	6789	6.337
S 13C2-8:2FTS	Linear	12643	12353	13012	12206	13304	12286	14149	14323	13034	6.380
S 13C7-PFUnDA	Linear	26782	26213	27329	26083	27772	26709	26645	24867	26550	3.294
S 13C2-PFDoDA	Linear	36610	36819	37770	37055	38245	36340	36542	34855	36780	2.755
S 13C2-PFTeDA	Linear	30009	30428	31100	29732	31060	29518	30102	28043	29999	3.252
I M4-PFBA				---------- ISTD ----------							
T PFBA	Linear	0.4361	0.3929	0.4019	0.4311	0.4177	0.4358	0.4260	0.4394	0.4226	4.057
I M5-PFPeA				---------- ISTD ----------							
T PFPeA	Linear	0.8591	0.7777	0.7801	0.8109	0.8092	0.8461	0.8199	0.8486	0.8189	3.749
I M5-PFHxA				---------- ISTD ----------							
T FBSA	Linear	1.0181	0.8930	0.9346	0.9922	0.9778	0.9778	0.9636	0.9767	0.9667	3.932
T PFHxA	Linear	1.0702	0.9167	0.9494	0.9887	1.0017	1.0626	1.0089	1.0629	1.0076	5.572

Generated at 3:57 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICC85
Lab FileID: 6Q4624.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M4-PFHpA						ISTD					
T PFHpA	Linear	1.3120	1.1961	1.1835	1.2866	1.2675	1.3074	1.2539	1.3128	1.2650	4.040
I M8-PFOA						ISTD					
T FHxSA	Linear	0.4548	0.3807	0.3945	0.4083	0.4159	0.4377	0.4244	0.4462	0.4203	6.084
T 4-PFECHS	Linear	0.5887	0.5321	0.5532	0.5846	0.6060	0.6175	0.6125	0.6533	0.5935	6.421
T PFOA	Linear	1.0601	0.9145	0.9940	1.0445	1.0462	1.0792	1.0456	1.0895	1.0342	5.429
I M9-PFNA						ISTD					
T PFNA	Linear	0.8700	0.7905	0.8056	0.8516	0.8068	0.8964	0.8885	0.9594	0.8586	6.646
I M6-PFDA						ISTD					
T 9Cl-PF3ONS	Linear	0.9422	0.9059	0.9102	1.0121	0.8761	1.0541	1.0019	1.0217	0.9655	6.740
T PFDA	Linear	1.4341	1.2920	1.2910	1.3923	1.2301	1.4675	1.3830	1.5029	1.3741	6.943
I M7-PFUnDA						ISTD					
T PFDS	Linear	0.1272	0.1208	0.1123	0.1249	0.1211	0.1208	0.1187	0.1255	0.1214	3.858
T PFUnDA	Linear	0.9840	0.9509	0.9109	1.0281	0.9636	1.0437	1.0032	1.0422	0.9908	4.789
I M2-PFDoDA						ISTD					
T 11Cl-PF3OUdS	Linear	0.4046	0.3929	0.3981	0.4166	0.4239	0.4273	0.4150	0.4325	0.4139	3.431
T PFDoDA	Linear	0.9273	0.8412	0.8384	0.8885	0.9186	0.9365	0.9158	0.9376	0.9005	4.494
T PFTrDA	Linear	1.0232	0.9310	0.9102	0.9467	0.9614	0.9917	0.9525	0.9682	0.9606	3.653
I M2-PFTeDA						ISTD					
T PFTeDA	Linear	1.2642	1.1057	1.1081	1.1804	1.1822	1.2254	1.1869	1.2368	1.1862	4.813
I M8-FOSA						ISTD					
T FOSA	Linear	0.9404	0.9701	0.8972	1.0230	0.9938	1.0583	0.9727	1.0088	0.9830	5.085
I M3-PFBS						ISTD					
T PFBS	Linear	3.3306	2.9768	2.9967	3.2093	3.1545	3.3097	3.2337	3.3515	3.1954	4.525
T PFPeS	Linear	2.6903	2.4627	2.4760	2.6671	2.6096	2.7638	2.6816	2.7926	2.6430	4.585
I M3-PFHxS						ISTD					
T PFHxS	Linear	2.9440	2.5703	2.6836	2.8588	2.8015	3.0005	2.8599	2.8627	2.8227	4.904
T ADONA	Linear	17.67	16.05	17.18	19.38	18.02	20.08	18.45	18.51	18.17	6.911
I M8-PFOS						ISTD					
T PFHpS	Linear	1.9303	1.6874	1.7278	1.7976	1.7476	1.8238	1.7938	1.7312	1.7799	4.234
T PFOS	Linear	1.7249	1.7057	1.6645	1.8517	1.6372	1.8872	1.7433	1.8827	1.7622	5.604
T PFNS	Linear	2.0065	1.9144	1.9124	1.9941	1.9337	2.0519	1.9709	2.0478	1.9790	2.817
I M2-4:2FTS						ISTD					
T 4:2FTS	Avg RF	1.2007	1.0593	1.1187	1.1580	1.0996	1.1025	0.9924	0.9185	1.0812	8.361
I M2-6:2FTS						ISTD					
T 6:2FTS	Avg RF	1.0484	0.9768	1.0496	1.0996	1.0789	1.0244	0.9730	0.8522	1.0129	7.770

Generated at 3:57 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICC85
Lab FileID: 6Q4624.D

Initial Calibration Report

Compound	Curve Fit	1	2	3	4	5	6	7	8	Avg RF	%RSD
I M2-8:2FTS						ISTD					
T 8:2FTS	Avg RF	1.1340	1.0107	0.9618	1.0719	1.0133	1.0681	0.9123	0.8741	1.0058	8.633
I M3-MeFOSAA						ISTD					
T MeFOSAA	Linear	0.9245	0.8688	0.8184	0.9486	0.9390	0.9445	0.8261	0.9380	0.9010	6.078
I M3-HFPO-DA						ISTD					
T HFPO-DA	Linear	1.0270	1.0329	1.0846	1.0448	0.9460	1.0340	0.8269	0.9716	0.9960	8.111
I M3-MeFOSA						ISTD					
T MeFOSA	Linear	1.0663	1.0614	1.1407	1.1496	1.1021	1.0967	1.0675	1.0968	1.0976	3.039
I M5-EtFOSAA						ISTD					
T EtFOSAA	Linear	0.9385	0.8401	0.9091	0.9561	0.9236	1.0169	1.1003	1.0614	0.9682	8.853

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Generated at 3:57 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICC85
Lab FileID: 6Q4624.D

Initial Calibration Report

Compounds with Curve fitting not using Avg Response Factor:

Compound	Curve Fit	Curve Fit Formula	Curve Fit R2
S 13C4-PFBA	Linear	y = 3980.388032 * x	0.000000
T PFBA	Linear	y = 0.436534 * x	0.999755
S 13C5-PFPeA	Linear	y = 7011.084484 * x	0.000000
T PFPeA	Linear	y = 0.842612 * x	0.999706
S 13C3-PFBS	Linear	y = 1531.459273 * x	0.000000
T PFBS	Linear	y = 3.325684 * x	0.999669
S 13C2-4:2FTS	Linear	y = 13505.942983 * x	0.000000
T FBSA	Linear	y = 0.974229 * x	0.999954
S 13C5-PFHxA	Linear	y = 10688.416753 * x	0.000000
T PFHxA	Linear	y = 1.051902 * x	0.999343
T PFPeS	Linear	y = 2.768637 * x	0.999581
T HFPO-DA	Linear	y = 0.945745 * x	0.994145
S 13C3-HFPO-DA	Linear	y = 265.785940 * x	0.000000
S 13C4-PFHpA	Linear	y = 12373.367427 * x	0.000000
T PFHpA	Linear	y = 1.300854 * x	0.999513
S 13C3-PFHxS	Linear	y = 1382.725888 * x	0.000000
T PFHxS	Linear	y = 2.865803 * x	0.999885
T ADONA	Linear	y = 18.543505 * x	0.999649
T FHxSA	Linear	y = 0.441455 * x	0.999371
T 4-PFECHS	Linear	y = 0.643844 * x	0.998921
S 13C2-6:2FTS	Linear	y = 17068.759992 * x	0.000000
S 13C8-PFOA	Linear	y = 21216.093030 * x	0.000000
T PFOA	Linear	y = 1.080315 * x	0.999598
T PFHpS	Linear	y = 1.746316 * x	0.999600
S 13C8-FOSA	Linear	y = 9780.930096 * x	0.000000
T FOSA	Linear	y = 1.003287 * x	0.999547
S 13C8-PFOS	Linear	y = 2121.020934 * x	0.000000
T PFOS	Linear	y = 1.854105 * x	0.998526
S 13C9-PFNA	Linear	y = 25765.973426 * x	0.000000
T PFNA	Linear	y = 0.942434 * x	0.998321
T 9Cl-PF3ONS	Linear	y = 1.017691 * x	0.999623
S d3-MeFOSA	Linear	y = 2262.419144 * x	0.000000
T MeFOSA	Linear	y = 1.091315 * x	0.999820
S d3-MeFOSAA	Linear	y = 8654.021263 * x	0.000000
T MeFOSAA	Linear	y = 0.916700 * x	0.996519
T PFNS	Linear	y = 2.032162 * x	0.999635
S 13C6-PFDA	Linear	y = 20346.441376 * x	0.000000
T PFDA	Linear	y = 1.476436 * x	0.998157
S d5-EtFOSAA	Linear	y = 6788.645593 * x	0.000000
T EtFOSAA	Linear	y = 1.066169 * x	0.999332
S 13C2-8:2FTS	Linear	y = 13034.396199 * x	0.000000
T PFDS	Linear	y = 0.124017 * x	0.999266
S 13C7-PFUnDA	Linear	y = 26550.165113 * x	0.000000

Generated at 3:57 PM on 9/14/2022

Initial Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICC85
Lab FileID: 6Q4624.D

Initial Calibration Report

T PFUnDA	Linear	y = 1.034111 * x	0.999606
T 11Cl-PF3OUdS	Linear	y = 0.428879 * x	0.999607
S 13C2-PFDoDA	Linear	y = 36779.519537 * x	0.000000
T PFDoDA	Linear	y = 0.933110 * x	0.999857
T PFTrDA	Linear	y = 0.965837 * x	0.999901
S 13C2-PFTeDA	Linear	y = 29999.156635 * x	0.000000
T PFTeDA	Linear	y = 1.226321 * x	0.999593

(RedFont and #) = Outlier Flag; (I) = Internal Standard; (T) = Target; (S) = Surrogate; (M) = Matrix Spike

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICV85
Lab FileID: 6Q4629.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4629
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.092	0.5	100.5
13C2-6:2FTS	20.000	20.402	2.0	102.0
13C2-8:2FTS	20.000	20.914	4.6	104.6
13C2-PFDoDA	20.000	20.531	2.7	102.7
13C2-PFTeDA	20.000	20.576	2.9	102.9
13C3-PFBS	20.000	20.674	3.4	103.4
13C3-PFHxS	20.000	20.658	3.3	103.3
13C4-PFBA	20.000	20.666	3.3	103.3
13C4-PFHpA	20.000	20.433	2.2	102.2
13C5-PFHxA	20.000	20.386	1.9	101.9
13C5-PFPeA	20.000	20.877	4.4	104.4
13C6-PFDA	20.000	20.606	3.0	103.0
13C7-PFUnDA	20.000	20.312	1.6	101.6
13C8-FOSA	20.000	21.654	8.3	108.3
13C8-PFOA	20.000	20.980	4.9	104.9
13C8-PFOS	20.000	21.024	5.1	105.1
13C9-PFNA	20.000	20.415	2.1	102.1
4:2FTS	20.000	16.049	-19.8	80.2
6:2FTS	20.000	15.904	-20.5	79.5
8:2FTS	20.000	16.188	-19.1	80.9
d3-MeFOSAA	20.000	20.560	2.8	102.8
EtFOSAA	20.000	15.396	-23.0	77.0
FOSA	20.000	16.051	-19.7	80.3
MeFOSAA	20.000	17.609	-12.0	88.0
PFBA	20.000	17.283	-13.6	86.4
PFBS	20.000	14.247	-28.8	71.2
PFDA	20.000	16.218	-18.9	81.1
PFDoDA	20.000	18.371	-8.1	91.9
PFDS	20.000	16.209	-19.0	81.0
PFHpA	20.000	16.928	-15.4	84.6
PFHpS	20.000	17.405	-13.0	87.0
PFHxA	20.000	15.992	-20.0	80.0
PFHxS	20.000	15.045	-24.8	75.2
PFNA	20.000	15.371	-23.1	76.9
PFNS	20.000	16.385	-18.1	81.9
PFOA	20.000	17.143	-14.3	85.7
PFOS	20.000	16.978	-15.1	84.9

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICV85
Lab FileID: 6Q4629.D

PFPeA	20.000	16.657	-16.7	83.3
PFPeS	20.000	15.414	-22.9	77.1
PFTeDA	20.000	16.372	-18.1	81.9
PFTrDA	20.000	18.954	-5.2	94.8
PFUnDA	20.000	17.803	-11.0	89.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	16.663	-16.7	83.3
13C3-HFPO-DA	20.000	21.333	6.7	106.7
9Cl-PF3ONS	20.000	15.234	-23.8	76.2
ADONA	20.000	16.673	-16.6	83.4
HFPO-DA	20.000	14.977	-25.1	74.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.684	8.4	108.4
MeFOSA	20.000	0.000	# -100.0	0.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.920	9.6	109.6
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	20.052	0.3	100.3
FHxSA	20.000	19.031	-4.8	95.2

CC Criteria: +/- 30%

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICV85
Lab FileID: 6Q4630.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4630
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.199	1.0	101.0
13C2-6:2FTS	20.000	20.317	1.6	101.6
13C2-8:2FTS	20.000	19.781	-1.1	98.9
13C2-PFDoDA	20.000	20.424	2.1	102.1
13C2-PFTeDA	20.000	20.377	1.9	101.9
13C3-PFBS	20.000	20.508	2.5	102.5
13C3-PFHxS	20.000	21.126	5.6	105.6
13C4-PFBA	20.000	20.533	2.7	102.7
13C4-PFHpA	20.000	20.458	2.3	102.3
13C5-PFHxA	20.000	20.649	3.2	103.2
13C5-PFPeA	20.000	20.453	2.3	102.3
13C6-PFDA	20.000	20.936	4.7	104.7
13C7-PFUnDA	20.000	20.444	2.2	102.2
13C8-FOSA	20.000	21.723	8.6	108.6
13C8-PFOA	20.000	20.678	3.4	103.4
13C8-PFOS	20.000	19.825	-0.9	99.1
13C9-PFNA	20.000	20.129	0.6	100.6
4:2FTS	20.000	17.675	-11.6	88.4
6:2FTS	20.000	17.321	-13.4	86.6
8:2FTS	20.000	18.409	-8.0	92.0
d3-MeFOSAA	20.000	20.801	4.0	104.0
EtFOSAA	20.000	14.487	-27.6	72.4
FOSA	20.000	17.042	-14.8	85.2
MeFOSAA	20.000	16.269	-18.7	81.3
PFBA	20.000	17.194	-14.0	86.0
PFBS	20.000	15.885	-20.6	79.4
PFDA	20.000	15.376	-23.1	76.9
PFDoDA	20.000	18.662	-6.7	93.3
PFDS	20.000	18.158	-9.2	90.8
PFHpA	20.000	15.648	-21.8	78.2
PFHpS	20.000	19.339	-3.3	96.7
PFHxA	20.000	15.685	-21.6	78.4
PFHxS	20.000	17.049	-14.8	85.2
PFNA	20.000	16.676	-16.6	83.4
PFNS	20.000	0.000	# -100.0	0.0
PFOA	20.000	17.493	-12.5	87.5
PFOS	20.000	17.841	-10.8	89.2

Initial Calibration Verification

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ICV85
Lab FileID: 6Q4630.D

PFPeA	20.000	16.796	-16.0	84.0
PFPeS	20.000	16.910	-15.4	84.6
PFTeDA	20.000	16.420	-17.9	82.1
PFTrDA	20.000	20.164	0.8	100.8
PFUnDA	20.000	19.707	-1.5	98.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	0.000	# -100.0	0.0
13C3-HFPO-DA	20.000	19.442	-2.8	97.2
9Cl-PF3ONS	20.000	0.000	# -100.0	0.0
ADONA	20.000	0.000	# -100.0	0.0
HFPO-DA	20.000	0.000	# -100.0	0.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.417	12.1	112.1
MeFOSA	20.000	17.242	-13.8	86.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.628	8.1	108.1
4-PFECHS	20.000	0.000	# -100.0	0.0
FBSA	20.000	0.000	# -100.0	0.0
FHxSA	20.000	0.000	# -100.0	0.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4631.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4631
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.794	-1.0	99.0
13C2-6:2FTS	20.000	19.446	-2.8	97.2
13C2-8:2FTS	20.000	19.329	-3.4	96.6
13C2-PFDoDA	20.000	19.455	-2.7	97.3
13C2-PFTeDA	20.000	19.540	-2.3	97.7
13C3-PFBS	20.000	19.796	-1.0	99.0
13C3-PFHxS	20.000	19.941	-0.3	99.7
13C4-PFBA	20.000	19.761	-1.2	98.8
13C4-PFHpA	20.000	20.134	0.7	100.7
13C5-PFHxA	20.000	19.745	-1.3	98.7
13C5-PFPeA	20.000	19.722	-1.4	98.6
13C6-PFDA	20.000	19.722	-1.4	98.6
13C7-PFUnDA	20.000	19.195	-4.0	96.0
13C8-FOSA	20.000	20.654	3.3	103.3
13C8-PFOA	20.000	19.969	-0.2	99.8
13C8-PFOS	20.000	20.542	2.7	102.7
13C9-PFNA	20.000	20.027	0.1	100.1
4:2FTS	20.000	20.913	4.6	104.6
6:2FTS	20.000	20.461	2.3	102.3
8:2FTS	20.000	22.002	10.0	110.0
d3-MeFOSAA	20.000	19.439	-2.8	97.2
EtFOSAA	20.000	18.155	-9.2	90.8
FOSA	20.000	19.452	-2.7	97.3
MeFOSAA	20.000	21.393	7.0	107.0
PFBA	20.000	20.035	0.2	100.2
PFBS	20.000	19.906	-0.5	99.5
PFDA	20.000	18.513	-7.4	92.6
PFDoDA	20.000	20.258	1.3	101.3
PFDS	20.000	20.168	0.8	100.8
PFHpA	20.000	19.605	-2.0	98.0
PFHpS	20.000	19.412	-2.9	97.1
PFHxA	20.000	19.867	-0.7	99.3
PFHxS	20.000	20.364	1.8	101.8
PFNA	20.000	18.271	-8.6	91.4
PFNS	20.000	20.266	1.3	101.3
PFOA	20.000	19.357	-3.2	96.8
PFOS	20.000	20.394	2.0	102.0

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4631.D

PFPeA	20.000	19.985	-0.1	99.9
PFPeS	20.000	19.930	-0.4	99.6
PFTeDA	20.000	20.068	0.3	100.3
PFTrDA	20.000	20.511	2.6	102.6
PFUnDA	20.000	21.238	6.2	106.2
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.350	1.7	101.7
13C3-HFPO-DA	20.000	19.476	-2.6	97.4
9Cl-PF3ONS	20.000	19.403	-3.0	97.0
ADONA	20.000	20.072	0.4	100.4
HFPO-DA	20.000	20.649	3.2	103.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.989	4.9	104.9
MeFOSA	20.000	20.914	4.6	104.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	20.660	3.3	103.3
4-PFECHS	20.000	18.987	-5.1	94.9
FBSA	20.000	20.548	2.7	102.7
FHxSA	20.000	19.307	-3.5	96.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4632.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4632
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	19.434	-2.8	97.2
13C2-6:2FTS	20.000	20.020	0.1	100.1
13C2-8:2FTS	20.000	19.279	-3.6	96.4
13C2-PFDoDA	20.000	20.663	3.3	103.3
13C2-PFTeDA	20.000	21.038	5.2	105.2
13C3-PFBS	20.000	20.560	2.8	102.8
13C3-PFHxS	20.000	21.097	5.5	105.5
13C4-PFBA	20.000	20.891	4.5	104.5
13C4-PFHpA	20.000	21.000	5.0	105.0
13C5-PFHxA	20.000	20.994	5.0	105.0
13C5-PFPeA	20.000	20.740	3.7	103.7
13C6-PFDA	20.000	20.575	2.9	102.9
13C7-PFUnDA	20.000	20.710	3.5	103.5
13C8-FOSA	20.000	21.465	7.3	107.3
13C8-PFOA	20.000	20.854	4.3	104.3
13C8-PFOS	20.000	19.173	-4.1	95.9
13C9-PFNA	20.000	21.946	9.7	109.7
4:2FTS	1.000	0.973	-2.7	97.3
6:2FTS	1.000	0.964	-3.6	96.4
8:2FTS	1.000	0.982	-1.8	98.2
d3-MeFOSAA	20.000	21.215	6.1	106.1
EtFOSAA	1.000	0.867	-13.3	86.7
FOSA	1.000	0.917	-8.3	91.7
MeFOSAA	1.000	0.987	-1.3	98.7
PFBA	1.000	0.885	-11.5	88.5
PFBS	1.000	0.907	-9.3	90.7
PFDA	1.000	0.885	-11.5	88.5
PFDoDA	1.000	0.925	-7.5	92.5
PFDS	1.000	0.892	-10.8	89.2
PFHpA	1.000	0.923	-7.7	92.3
PFHpS	1.000	1.048	4.8	104.8
PFHxA	1.000	0.880	-12.0	88.0
PFHxS	1.000	0.901	-9.9	90.1
PFNA	1.000	0.815	-18.5	81.5
PFNS	1.000	1.041	4.1	104.1
PFOA	1.000	0.924	-7.6	92.4
PFOS	1.000	0.974	-2.6	97.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4632.D

PFPeA	1.000	0.885	-11.5	88.5
PFPeS	1.000	0.911	-8.9	91.1
PFTeDA	1.000	0.927	-7.3	92.7
PFTrDA	1.000	0.941	-5.9	94.1
PFUnDA	1.000	0.920	-8.0	92.0
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.896	-10.4	89.6
13C3-HFPO-DA	20.000	20.347	1.7	101.7
9Cl-PF3ONS	1.000	0.913	-8.7	91.3
ADONA	1.000	0.891	-10.9	89.1
HFPO-DA	1.000	0.982	-1.8	98.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.222	11.1	111.1
MeFOSA	1.000	0.952	-4.8	95.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.088	5.4	105.4
4-PFECHS	1.000	0.842	-15.8	84.2
FBSA	1.000	0.925	-7.5	92.5
FHxSA	1.000	0.960	-4.0	96.0

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4660.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4660
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.713	3.6	103.6
13C2-6:2FTS	20.000	20.637	3.2	103.2
13C2-8:2FTS	20.000	20.378	1.9	101.9
13C2-PFDoDA	20.000	21.158	5.8	105.8
13C2-PFTeDA	20.000	21.961	9.8	109.8
13C3-PFBS	20.000	21.739	8.7	108.7
13C3-PFHxS	20.000	22.384	11.9	111.9
13C4-PFBA	20.000	22.053	10.3	110.3
13C4-PFHpA	20.000	21.797	9.0	109.0
13C5-PFHxA	20.000	21.923	9.6	109.6
13C5-PFPeA	20.000	22.016	10.1	110.1
13C6-PFDA	20.000	21.440	7.2	107.2
13C7-PFUnDA	20.000	21.770	8.9	108.9
13C8-FOSA	20.000	24.045	20.2	120.2
13C8-PFOA	20.000	21.974	9.9	109.9
13C8-PFOS	20.000	22.293	11.5	111.5
13C9-PFNA	20.000	22.101	10.5	110.5
4:2FTS	1.000	0.991	-0.9	99.1
6:2FTS	1.000	0.964	-3.6	96.4
8:2FTS	1.000	1.008	0.8	100.8
d3-MeFOSAA	20.000	24.531	22.7	122.7
EtFOSAA	1.000	0.861	-13.9	86.1
FOSA	1.000	0.881	-11.9	88.1
MeFOSAA	1.000	0.824	-17.6	82.4
PFBA	1.000	0.910	-9.0	91.0
PFBS	1.000	0.899	-10.1	89.9
PFDA	1.000	0.866	-13.4	86.6
PFDoDA	1.000	0.888	-11.2	88.8
PFDS	1.000	0.860	-14.0	86.0
PFHpA	1.000	0.920	-8.0	92.0
PFHpS	1.000	0.937	-6.3	93.7
PFHxA	1.000	0.900	-10.0	90.0
PFHxS	1.000	0.890	-11.0	89.0
PFNA	1.000	0.814	-18.6	81.4
PFNS	1.000	0.855	-14.5	85.5
PFOA	1.000	0.902	-9.8	90.2
PFOS	1.000	0.854	-14.6	85.4

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4660.D

PFPeA	1.000	0.896	-10.4	89.6
PFPeS	1.000	0.890	-11.0	89.0
PFTeDA	1.000	0.886	-11.4	88.6
PFTrDA	1.000	0.962	-3.8	96.2
PFUnDA	1.000	0.905	-9.5	90.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.913	-8.7	91.3
13C3-HFPO-DA	20.000	21.270	6.3	106.3
9Cl-PF3ONS	1.000	0.902	-9.8	90.2
ADONA	1.000	0.861	-13.9	86.1
HFPO-DA	1.000	0.913	-8.7	91.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.798	14.0	114.0
MeFOSA	1.000	0.993	-0.7	99.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.151	15.8	115.8
4-PFECHS	1.000	0.869	-13.1	86.9
FBSA	1.000	0.928	-7.2	92.8
FHxSA	1.000	0.935	-6.5	93.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4669.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4669
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.185	0.9	100.9
13C2-6:2FTS	20.000	20.074	0.4	100.4
13C2-8:2FTS	20.000	20.435	2.2	102.2
13C2-PFDoDA	20.000	19.724	-1.4	98.6
13C2-PFTeDA	20.000	20.084	0.4	100.4
13C3-PFBS	20.000	20.465	2.3	102.3
13C3-PFHxS	20.000	20.393	2.0	102.0
13C4-PFBA	20.000	20.805	4.0	104.0
13C4-PFHpA	20.000	20.053	0.3	100.3
13C5-PFHxA	20.000	20.651	3.3	103.3
13C5-PFPeA	20.000	20.431	2.2	102.2
13C6-PFDA	20.000	20.302	1.5	101.5
13C7-PFUnDA	20.000	20.706	3.5	103.5
13C8-FOSA	20.000	22.098	10.5	110.5
13C8-PFOA	20.000	20.738	3.7	103.7
13C8-PFOS	20.000	21.015	5.1	105.1
13C9-PFNA	20.000	20.918	4.6	104.6
4:2FTS	20.000	21.125	5.6	105.6
6:2FTS	20.000	20.236	1.2	101.2
8:2FTS	20.000	20.115	0.6	100.6
d3-MeFOSAA	20.000	22.424	12.1	112.1
EtFOSAA	20.000	18.776	-6.1	93.9
FOSA	20.000	19.608	-2.0	98.0
MeFOSAA	20.000	19.072	-4.6	95.4
PFBA	20.000	19.750	-1.3	98.7
PFBS	20.000	19.717	-1.4	98.6
PFDA	20.000	17.845	-10.8	89.2
PFDoDA	20.000	20.521	2.6	102.6
PFDS	20.000	19.531	-2.3	97.7
PFHpA	20.000	20.742	3.7	103.7
PFHpS	20.000	20.592	3.0	103.0
PFHxA	20.000	19.104	-4.5	95.5
PFHxS	20.000	20.543	2.7	102.7
PFNA	20.000	18.639	-6.8	93.2
PFNS	20.000	19.860	-0.7	99.3
PFOA	20.000	19.441	-2.8	97.2
PFOS	20.000	19.024	-4.9	95.1

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4669.D

PFPeA	20.000	19.893	-0.5	99.5
PFPeS	20.000	19.587	-2.1	97.9
PFTeDA	20.000	19.950	-0.3	99.7
PFTrDA	20.000	20.805	4.0	104.0
PFUnDA	20.000	20.054	0.3	100.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.462	2.3	102.3
13C3-HFPO-DA	20.000	20.377	1.9	101.9
9Cl-PF3ONS	20.000	19.966	-0.2	99.8
ADONA	20.000	20.041	0.2	100.2
HFPO-DA	20.000	22.383	11.9	111.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	20.844	4.2	104.2
MeFOSA	20.000	21.354	6.8	106.8
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.231	11.2	111.2
4-PFECHS	20.000	18.756	-6.2	93.8
FBSA	20.000	19.848	-0.8	99.2
FHxSA	20.000	18.699	-6.5	93.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4681.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4681
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.396	2.0	102.0
13C2-6:2FTS	20.000	20.369	1.8	101.8
13C2-8:2FTS	20.000	20.955	4.8	104.8
13C2-PFDoDA	20.000	20.337	1.7	101.7
13C2-PFTeDA	20.000	20.832	4.2	104.2
13C3-PFBS	20.000	20.740	3.7	103.7
13C3-PFHxS	20.000	20.680	3.4	103.4
13C4-PFBA	20.000	21.491	7.5	107.5
13C4-PFHpA	20.000	21.108	5.5	105.5
13C5-PFHxA	20.000	20.411	2.1	102.1
13C5-PFPeA	20.000	21.219	6.1	106.1
13C6-PFDA	20.000	20.937	4.7	104.7
13C7-PFUnDA	20.000	22.238	11.2	111.2
13C8-FOSA	20.000	21.637	8.2	108.2
13C8-PFOA	20.000	21.224	6.1	106.1
13C8-PFOS	20.000	20.564	2.8	102.8
13C9-PFNA	20.000	21.219	6.1	106.1
4:2FTS	20.000	21.572	7.9	107.9
6:2FTS	20.000	21.675	8.4	108.4
8:2FTS	20.000	20.490	2.5	102.5
d3-MeFOSAA	20.000	22.046	10.2	110.2
EtFOSAA	20.000	17.965	-10.2	89.8
FOSA	20.000	20.105	0.5	100.5
MeFOSAA	20.000	20.943	4.7	104.7
PFBA	20.000	19.782	-1.1	98.9
PFBS	20.000	20.138	0.7	100.7
PFDA	20.000	18.906	-5.5	94.5
PFDoDA	20.000	20.449	2.2	102.2
PFDS	20.000	18.933	-5.3	94.7
PFHpA	20.000	19.957	-0.2	99.8
PFHpS	20.000	22.420	12.1	112.1
PFHxA	20.000	20.397	2.0	102.0
PFHxS	20.000	20.749	3.7	103.7
PFNA	20.000	18.737	-6.3	93.7
PFNS	20.000	21.952	9.8	109.8
PFOA	20.000	19.827	-0.9	99.1
PFOS	20.000	20.326	1.6	101.6

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4681.D

PFPeA	20.000	19.898	-0.5	99.5
PFPeS	20.000	19.854	-0.7	99.3
PFTeDA	20.000	19.723	-1.4	98.6
PFTrDA	20.000	20.639	3.2	103.2
PFUnDA	20.000	18.254	-8.7	91.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	19.769	-1.2	98.8
13C3-HFPO-DA	20.000	19.873	-0.6	99.4
9Cl-PF3ONS	20.000	20.136	0.7	100.7
ADONA	20.000	20.431	2.2	102.2
HFPO-DA	20.000	24.302	21.5	121.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.935	9.7	109.7
MeFOSA	20.000	21.441	7.2	107.2
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	22.249	11.2	111.2
4-PFECHS	20.000	18.651	-6.7	93.3
FBSA	20.000	20.702	3.5	103.5
FHxSA	20.000	18.657	-6.7	93.3

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4693.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4693
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.732	3.7	103.7
13C2-6:2FTS	20.000	20.725	3.6	103.6
13C2-8:2FTS	20.000	20.701	3.5	103.5
13C2-PFDoDA	20.000	20.293	1.5	101.5
13C2-PFTeDA	20.000	20.773	3.9	103.9
13C3-PFBS	20.000	21.030	5.1	105.1
13C3-PFHxS	20.000	21.281	6.4	106.4
13C4-PFBA	20.000	21.435	7.2	107.2
13C4-PFHpA	20.000	20.945	4.7	104.7
13C5-PFHxA	20.000	21.278	6.4	106.4
13C5-PFPeA	20.000	21.199	6.0	106.0
13C6-PFDA	20.000	21.804	9.0	109.0
13C7-PFUnDA	20.000	21.031	5.2	105.2
13C8-FOSA	20.000	22.116	10.6	110.6
13C8-PFOA	20.000	21.447	7.2	107.2
13C8-PFOS	20.000	21.409	7.0	107.0
13C9-PFNA	20.000	20.323	1.6	101.6
4:2FTS	20.000	20.957	4.8	104.8
6:2FTS	20.000	20.945	4.7	104.7
8:2FTS	20.000	21.127	5.6	105.6
d3-MeFOSAA	20.000	23.048	15.2	115.2
EtFOSAA	20.000	18.477	-7.6	92.4
FOSA	20.000	20.352	1.8	101.8
MeFOSAA	20.000	19.055	-4.7	95.3
PFBA	20.000	19.868	-0.7	99.3
PFBS	20.000	19.835	-0.8	99.2
PFDA	20.000	17.631	-11.8	88.2
PFDoDA	20.000	20.613	3.1	103.1
PFDS	20.000	18.695	-6.5	93.5
PFHpA	20.000	19.959	-0.2	99.8
PFHpS	20.000	20.485	2.4	102.4
PFHxA	20.000	19.518	-2.4	97.6
PFHxS	20.000	20.427	2.1	102.1
PFNA	20.000	20.041	0.2	100.2
PFNS	20.000	20.112	0.6	100.6
PFOA	20.000	18.756	-6.2	93.8
PFOS	20.000	19.381	-3.1	96.9

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-CC85
Lab FileID: 6Q4693.D

PFPeA	20.000	19.749	-1.3	98.7
PFPeS	20.000	19.520	-2.4	97.6
PFTeDA	20.000	19.754	-1.2	98.8
PFTrDA	20.000	20.788	3.9	103.9
PFUnDA	20.000	19.946	-0.3	99.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.394	2.0	102.0
13C3-HFPO-DA	20.000	19.978	-0.1	99.9
9Cl-PF3ONS	20.000	18.545	-7.3	92.7
ADONA	20.000	20.077	0.4	100.4
HFPO-DA	20.000	20.796	4.0	104.0
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.002	10.0	110.0
MeFOSA	20.000	20.785	3.9	103.9
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.039	15.2	115.2
4-PFECHS	20.000	18.447	-7.8	92.2
FBSA	20.000	20.024	0.1	100.1
FHxSA	20.000	18.910	-5.5	94.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q85-ECC85
Lab FileID: 6Q4699.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091422_ID_S6Q85\s6q85.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4699
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.832	4.2	104.2
13C2-6:2FTS	20.000	21.482	7.4	107.4
13C2-8:2FTS	20.000	20.364	1.8	101.8
13C2-PFDoDA	20.000	20.377	1.9	101.9
13C2-PFTeDA	20.000	21.125	5.6	105.6
13C3-PFBS	20.000	20.999	5.0	105.0
13C3-PFHxS	20.000	21.489	7.4	107.4
13C4-PFBA	20.000	21.537	7.7	107.7
13C4-PFHpA	20.000	21.143	5.7	105.7
13C5-PFHxA	20.000	21.290	6.5	106.5
13C5-PFPeA	20.000	21.419	7.1	107.1
13C6-PFDA	20.000	20.882	4.4	104.4
13C7-PFUnDA	20.000	20.858	4.3	104.3
13C8-FOSA	20.000	22.550	12.8	112.8
13C8-PFOA	20.000	21.115	5.6	105.6
13C8-PFOS	20.000	23.060	15.3	115.3
13C9-PFNA	20.000	21.283	6.4	106.4
4:2FTS	20.000	20.776	3.9	103.9
6:2FTS	20.000	20.720	3.6	103.6
8:2FTS	20.000	20.814	4.1	104.1
d3-MeFOSAA	20.000	21.867	9.3	109.3
EtFOSAA	20.000	18.808	-6.0	94.0
FOSA	20.000	19.459	-2.7	97.3
MeFOSAA	20.000	21.293	6.5	106.5
PFBA	20.000	19.979	-0.1	99.9
PFBS	20.000	19.879	-0.6	99.4
PFDA	20.000	18.325	-8.4	91.6
PFDoDA	20.000	20.443	2.2	102.2
PFDS	20.000	19.517	-2.4	97.6
PFHpA	20.000	20.037	0.2	100.2
PFHpS	20.000	19.240	-3.8	96.2
PFHxA	20.000	19.517	-2.4	97.6
PFHxS	20.000	19.750	-1.3	98.7
PFNA	20.000	19.211	-3.9	96.1
PFNS	20.000	18.537	-7.3	92.7
PFOA	20.000	19.198	-4.0	96.0
PFOS	20.000	18.786	-6.1	93.9

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S6Q85-ECC85
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 6Q4699.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.657	-1.7	98.3
PFPeS	20.000	19.819	-0.9	99.1
PFTeDA	20.000	19.739	-1.3	98.7
PFTrDA	20.000	21.219	6.1	106.1
PFUnDA	20.000	19.937	-0.3	99.7
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.322	1.6	101.6
13C3-HFPO-DA	20.000	19.845	-0.8	99.2
9Cl-PF3ONS	20.000	19.262	-3.7	96.3
ADONA	20.000	19.319	-3.4	96.6
HFPO-DA	20.000	22.777	13.9	113.9
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.401	12.0	112.0
MeFOSA	20.000	20.667	3.3	103.3
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.391	17.0	117.0
4-PFECHS	20.000	18.988	-5.1	94.9
FBSA	20.000	20.113	0.6	100.6
FHxSA	20.000	19.319	-3.4	96.6

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4707.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S6Q86\S6Q86.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4707
Type : QC
Level : 2

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.211	1.1	101.1
13C2-6:2FTS	20.000	20.513	2.6	102.6
13C2-8:2FTS	20.000	19.160	-4.2	95.8
13C2-PFDoDA	20.000	21.214	6.1	106.1
13C2-PFTeDA	20.000	21.307	6.5	106.5
13C3-PFBS	20.000	21.523	7.6	107.6
13C3-PFHxS	20.000	22.437	12.2	112.2
13C4-PFBA	20.000	21.903	9.5	109.5
13C4-PFHpA	20.000	22.060	10.3	110.3
13C5-PFHxA	20.000	21.369	6.8	106.8
13C5-PFPeA	20.000	21.783	8.9	108.9
13C6-PFDA	20.000	20.577	2.9	102.9
13C7-PFUnDA	20.000	22.293	11.5	111.5
13C8-FOSA	20.000	21.751	8.8	108.8
13C8-PFOA	20.000	22.225	11.1	111.1
13C8-PFOS	20.000	21.271	6.4	106.4
13C9-PFNA	20.000	21.430	7.1	107.1
4:2FTS	1.000	0.990	-1.0	99.0
6:2FTS	1.000	0.952	-4.8	95.2
8:2FTS	1.000	1.043	4.3	104.3
d3-MeFOSAA	20.000	22.609	13.0	113.0
EtFOSAA	1.000	0.890	-11.0	89.0
FOSA	1.000	0.925	-7.5	92.5
MeFOSAA	1.000	0.966	-3.4	96.6
PFBA	1.000	0.883	-11.7	88.3
PFBS	1.000	0.900	-10.0	90.0
PFDA	1.000	0.885	-11.5	88.5
PFDoDA	1.000	0.911	-8.9	91.1
PFDS	1.000	0.842	-15.8	84.2
PFHpA	1.000	0.856	-14.4	85.6
PFHpS	1.000	0.988	-1.2	98.8
PFHxA	1.000	0.901	-9.9	90.1
PFHxS	1.000	0.874	-12.6	87.4
PFNA	1.000	0.852	-14.8	85.2
PFNS	1.000	0.992	-0.8	99.2
PFOA	1.000	0.873	-12.7	87.3
PFOS	1.000	0.908	-9.2	90.8

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4707.D

PFPeA	1.000	0.905	-9.5	90.5
PFPeS	1.000	0.887	-11.3	88.7
PFTeDA	1.000	0.931	-6.9	93.1
PFTrDA	1.000	0.943	-5.7	94.3
PFUnDA	1.000	0.806	-19.4	80.6
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	1.000	0.896	-10.4	89.6
13C3-HFPO-DA	20.000	20.372	1.9	101.9
9Cl-PF3ONS	1.000	0.885	-11.5	88.5
ADONA	1.000	0.864	-13.6	86.4
HFPO-DA	1.000	0.866	-13.4	86.6
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.016	10.1	110.1
MeFOSA	1.000	0.884	-11.6	88.4
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.644	8.2	108.2
4-PFECHS	1.000	0.816	-18.4	81.6
FBSA	1.000	0.939	-6.1	93.9
FHxSA	1.000	0.952	-4.8	95.2

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4718.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S6Q86\S6Q86.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4718
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.320	1.6	101.6
13C2-6:2FTS	20.000	20.646	3.2	103.2
13C2-8:2FTS	20.000	19.965	-0.2	99.8
13C2-PFDoDA	20.000	20.129	0.6	100.6
13C2-PFTeDA	20.000	20.563	2.8	102.8
13C3-PFBS	20.000	20.888	4.4	104.4
13C3-PFHxS	20.000	20.902	4.5	104.5
13C4-PFBA	20.000	21.372	6.9	106.9
13C4-PFHpA	20.000	20.671	3.4	103.4
13C5-PFHxA	20.000	21.002	5.0	105.0
13C5-PFPeA	20.000	20.939	4.7	104.7
13C6-PFDA	20.000	19.833	-0.8	99.2
13C7-PFUnDA	20.000	20.017	0.1	100.1
13C8-FOSA	20.000	21.807	9.0	109.0
13C8-PFOA	20.000	20.262	1.3	101.3
13C8-PFOS	20.000	20.433	2.2	102.2
13C9-PFNA	20.000	21.599	8.0	108.0
4:2FTS	20.000	20.865	4.3	104.3
6:2FTS	20.000	20.502	2.5	102.5
8:2FTS	20.000	21.357	6.8	106.8
d3-MeFOSAA	20.000	21.104	5.5	105.5
EtFOSAA	20.000	18.561	-7.2	92.8
FOSA	20.000	20.137	0.7	100.7
MeFOSAA	20.000	21.131	5.7	105.7
PFBA	20.000	19.704	-1.5	98.5
PFBS	20.000	19.838	-0.8	99.2
PFDA	20.000	19.416	-2.9	97.1
PFDoDA	20.000	20.152	0.8	100.8
PFDS	20.000	20.837	4.2	104.2
PFHpA	20.000	20.382	1.9	101.9
PFHpS	20.000	21.173	5.9	105.9
PFHxA	20.000	18.734	-6.3	93.7
PFHxS	20.000	20.213	1.1	101.1
PFNA	20.000	17.977	-10.1	89.9
PFNS	20.000	20.018	0.1	100.1
PFOA	20.000	19.844	-0.8	99.2
PFOS	20.000	19.896	-0.5	99.5

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4718.D

PFPeA	20.000	19.697	-1.5	98.5
PFPeS	20.000	19.250	-3.7	96.3
PFTeDA	20.000	19.743	-1.3	98.7
PFTrDA	20.000	20.690	3.4	103.4
PFUnDA	20.000	20.863	4.3	104.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.528	2.6	102.6
13C3-HFPO-DA	20.000	17.464	-12.7	87.3
9Cl-PF3ONS	20.000	20.373	1.9	101.9
ADONA	20.000	20.188	0.9	100.9
HFPO-DA	20.000	22.259	11.3	111.3
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	21.645	8.2	108.2
MeFOSA	20.000	21.710	8.5	108.5
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.565	7.8	107.8
4-PFECHS	20.000	19.212	-3.9	96.1
FBSA	20.000	20.066	0.3	100.3
FHxSA	20.000	19.340	-3.3	96.7

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4742.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S6Q86\S6Q86.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4742
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	20.539	2.7	102.7
13C2-6:2FTS	20.000	20.867	4.3	104.3
13C2-8:2FTS	20.000	19.706	-1.5	98.5
13C2-PFDoDA	20.000	20.565	2.8	102.8
13C2-PFTeDA	20.000	20.927	4.6	104.6
13C3-PFBS	20.000	20.986	4.9	104.9
13C3-PFHxS	20.000	21.504	7.5	107.5
13C4-PFBA	20.000	21.728	8.6	108.6
13C4-PFHpA	20.000	21.154	5.8	105.8
13C5-PFHxA	20.000	21.284	6.4	106.4
13C5-PFPeA	20.000	21.211	6.1	106.1
13C6-PFDA	20.000	20.640	3.2	103.2
13C7-PFUnDA	20.000	21.449	7.2	107.2
13C8-FOSA	20.000	21.622	8.1	108.1
13C8-PFOA	20.000	20.759	3.8	103.8
13C8-PFOS	20.000	19.981	-0.1	99.9
13C9-PFNA	20.000	22.113	10.6	110.6
4:2FTS	20.000	21.295	6.5	106.5
6:2FTS	20.000	20.676	3.4	103.4
8:2FTS	20.000	21.790	9.0	109.0
d3-MeFOSAA	20.000	21.969	9.8	109.8
EtFOSAA	20.000	19.055	-4.7	95.3
FOSA	20.000	21.774	8.9	108.9
MeFOSAA	20.000	21.642	8.2	108.2
PFBA	20.000	19.812	-0.9	99.1
PFBS	20.000	20.085	0.4	100.4
PFDA	20.000	19.218	-3.9	96.1
PFDoDA	20.000	20.264	1.3	101.3
PFDS	20.000	18.769	-6.2	93.8
PFHpA	20.000	20.011	0.1	100.1
PFHpS	20.000	22.193	11.0	111.0
PFHxA	20.000	19.575	-2.1	97.9
PFHxS	20.000	20.228	1.1	101.1
PFNA	20.000	17.123	-14.4	85.6
PFNS	20.000	21.345	6.7	106.7
PFOA	20.000	19.649	-1.8	98.2
PFOS	20.000	22.381	11.9	111.9

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S6Q86-CC85
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 6Q4742.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.900	-0.5	99.5
PFPeS	20.000	19.891	-0.5	99.5
PFTeDA	20.000	19.760	-1.2	98.8
PFTrDA	20.000	20.627	3.1	103.1
PFUnDA	20.000	20.098	0.5	100.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.112	0.6	100.6
13C3-HFPO-DA	20.000	20.183	0.9	100.9
9Cl-PF3ONS	20.000	20.956	4.8	104.8
ADONA	20.000	19.626	-1.9	98.1
HFPO-DA	20.000	22.508	12.5	112.5
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.509	12.5	112.5
MeFOSA	20.000	21.141	5.7	105.7
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	21.972	9.9	109.9
4-PFECHS	20.000	19.190	-4.1	95.9
FBSA	20.000	19.999	0.0	100.0
FHxSA	20.000	19.702	-1.5	98.5

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-CC85
Lab FileID: 6Q4754.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S6Q86\S6Q86.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4754
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	22.061	10.3	110.3
13C2-6:2FTS	20.000	22.385	11.9	111.9
13C2-8:2FTS	20.000	21.279	6.4	106.4
13C2-PFDoDA	20.000	21.051	5.3	105.3
13C2-PFTeDA	20.000	21.718	8.6	108.6
13C3-PFBS	20.000	21.909	9.5	109.5
13C3-PFHxS	20.000	21.932	9.7	109.7
13C4-PFBA	20.000	22.548	12.7	112.7
13C4-PFHpA	20.000	21.714	8.6	108.6
13C5-PFHxA	20.000	22.059	10.3	110.3
13C5-PFPeA	20.000	21.976	9.9	109.9
13C6-PFDA	20.000	21.374	6.9	106.9
13C7-PFUnDA	20.000	22.705	13.5	113.5
13C8-FOSA	20.000	22.784	13.9	113.9
13C8-PFOA	20.000	21.781	8.9	108.9
13C8-PFOS	20.000	21.912	9.6	109.6
13C9-PFNA	20.000	22.866	14.3	114.3
4:2FTS	20.000	20.484	2.4	102.4
6:2FTS	20.000	19.442	-2.8	97.2
8:2FTS	20.000	20.810	4.1	104.1
d3-MeFOSAA	20.000	24.534	22.7	122.7
EtFOSAA	20.000	16.514	-17.4	82.6
FOSA	20.000	21.059	5.3	105.3
MeFOSAA	20.000	19.945	-0.3	99.7
PFBA	20.000	19.663	-1.7	98.3
PFBS	20.000	19.553	-2.2	97.8
PFDA	20.000	20.004	0.0	100.0
PFDoDA	20.000	20.132	0.7	100.7
PFDS	20.000	18.060	-9.7	90.3
PFHpA	20.000	20.052	0.3	100.3
PFHpS	20.000	20.498	2.5	102.5
PFHxA	20.000	18.958	-5.2	94.8
PFHxS	20.000	20.503	2.5	102.5
PFNA	20.000	17.807	-11.0	89.0
PFNS	20.000	19.676	-1.6	98.4
PFOA	20.000	19.105	-4.5	95.5
PFOS	20.000	19.618	-1.9	98.1

Continuing Calibration Summary

Job Number: FA98286 **Sample:** S6Q86-CC85
Account: HGLFLMI Hydrogeologic, Inc. **Lab FileID:** 6Q4754.D
Project: SWMU 114 Fire Station 2; KSC, FL

PFPeA	20.000	19.843	-0.8	99.2
PFPeS	20.000	19.298	-3.5	96.5
PFTeDA	20.000	19.594	-2.0	98.0
PFTrDA	20.000	20.579	2.9	102.9
PFUnDA	20.000	19.070	-4.7	95.3
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.318	1.6	101.6
13C3-HFPO-DA	20.000	19.731	-1.3	98.7
9Cl-PF3ONS	20.000	20.727	3.6	103.6
ADONA	20.000	20.264	1.3	101.3
HFPO-DA	20.000	23.275	16.4	116.4
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	22.781	13.9	113.9
MeFOSA	20.000	20.118	0.6	100.6
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	24.866	24.3	124.3
4-PFECHS	20.000	19.856	-0.7	99.3
FBSA	20.000	19.777	-1.1	98.9
FHxSA	20.000	19.167	-4.2	95.8

CC Criteria: +/- 30%

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-ECC85
Lab FileID: 6Q4761.D

Continuing Calibration Report

Batch: D:\MassHunter\Data\091522_ID_S6Q86\S6Q86.batch.bin

Level ID:Calibration File
1:D:\MassHunter\Data\091422_ID_S6Q85\6Q4619.d
2:D:\MassHunter\Data\091422_ID_S6Q85\6Q4620.d
3:D:\MassHunter\Data\091422_ID_S6Q85\6Q4621.d
4:D:\MassHunter\Data\091422_ID_S6Q85\6Q4622.d
5:D:\MassHunter\Data\091422_ID_S6Q85\6Q4623.d
6:D:\MassHunter\Data\091422_ID_S6Q85\6Q4624.d
7:D:\MassHunter\Data\091422_ID_S6Q85\6Q4625.d
8:D:\MassHunter\Data\091422_ID_S6Q85\6Q4626.d

Data File: 6Q4761
Type : QC
Level : 6

Cpnd Name	Exp. Conc	Final Conc	Dev %	Area %
13C2-4:2FTS	20.000	21.768	8.8	108.8
13C2-6:2FTS	20.000	20.988	4.9	104.9
13C2-8:2FTS	20.000	21.094	5.5	105.5
13C2-PFDoDA	20.000	20.835	4.2	104.2
13C2-PFTeDA	20.000	21.498	7.5	107.5
13C3-PFBS	20.000	21.765	8.8	108.8
13C3-PFHxS	20.000	21.966	9.8	109.8
13C4-PFBA	20.000	22.456	12.3	112.3
13C4-PFHpA	20.000	22.276	11.4	111.4
13C5-PFHxA	20.000	22.284	11.4	111.4
13C5-PFPeA	20.000	22.005	10.0	110.0
13C6-PFDA	20.000	20.784	3.9	103.9
13C7-PFUnDA	20.000	22.887	14.4	114.4
13C8-FOSA	20.000	23.908	19.5	119.5
13C8-PFOA	20.000	22.678	13.4	113.4
13C8-PFOS	20.000	21.733	8.7	108.7
13C9-PFNA	20.000	22.384	11.9	111.9
4:2FTS	20.000	21.072	5.4	105.4
6:2FTS	20.000	21.086	5.4	105.4
8:2FTS	20.000	20.663	3.3	103.3
d3-MeFOSAA	20.000	23.370	16.9	116.9
EtFOSAA	20.000	17.984	-10.1	89.9
FOSA	20.000	19.649	-1.8	98.2
MeFOSAA	20.000	20.532	2.7	102.7
PFBA	20.000	19.744	-1.3	98.7
PFBS	20.000	19.686	-1.6	98.4
PFDA	20.000	20.388	1.9	101.9
PFDoDA	20.000	20.468	2.3	102.3
PFDS	20.000	19.003	-5.0	95.0
PFHpA	20.000	19.292	-3.5	96.5
PFHpS	20.000	21.046	5.2	105.2
PFHxA	20.000	18.772	-6.1	93.9
PFHxS	20.000	20.272	1.4	101.4
PFNA	20.000	18.798	-6.0	94.0
PFNS	20.000	19.801	-1.0	99.0
PFOA	20.000	19.089	-4.6	95.4
PFOS	20.000	20.096	0.5	100.5

Continuing Calibration Summary

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Sample: S6Q86-ECC85
Lab FileID: 6Q4761.D

PFPeA	20.000	19.593	-2.0	98.0
PFPeS	20.000	20.033	0.2	100.2
PFTeDA	20.000	20.022	0.1	100.1
PFTrDA	20.000	21.018	5.1	105.1
PFUnDA	20.000	19.101	-4.5	95.5
M4-PFBA	---	--ISTD--		
M5-PFPeA	---	--ISTD--		
M5-PFHxA	---	--ISTD--		
M4-PFHpA	---	--ISTD--		
M8-PFOA	---	--ISTD--		
M9-PFNA	---	--ISTD--		
M6-PFDA	---	--ISTD--		
M7-PFUnDA	---	--ISTD--		
M2-PFDoDA	---	--ISTD--		
M2-PFTeDA	---	--ISTD--		
M8-FOSA	---	--ISTD--		
M3-PFBS	---	--ISTD--		
M3-PFHxS	---	--ISTD--		
M8-PFOS	---	--ISTD--		
M2-4:2FTS	---	--ISTD--		
M2-6:2FTS	---	--ISTD--		
M2-8:2FTS	---	--ISTD--		
M3-MeFOSAA	---	--ISTD--		
11Cl-PF3OUdS	20.000	20.927	4.6	104.6
13C3-HFPO-DA	20.000	19.980	-0.1	99.9
9Cl-PF3ONS	20.000	21.980	9.9	109.9
ADONA	20.000	19.562	-2.2	97.8
HFPO-DA	20.000	21.234	6.2	106.2
M3-HFPO-DA	---	--ISTD--		
d3-MeFOSA	20.000	24.269	21.3	121.3
MeFOSA	20.000	19.407	-3.0	97.0
M3-MeFOSA	---	--ISTD--		
M5-EtFOSAA	---	--ISTD--		
d5-EtFOSAA	20.000	23.312	16.6	116.6
4-PFECHS	20.000	19.067	-4.7	95.3
FBSA	20.000	19.673	-1.6	98.4
FHxSA	20.000	18.657	-6.7	93.3

CC Criteria: +/- 30%

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q898 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S3Q898-IC898	3Q65677.D	09/13/22 15:30	n/a	Mass Calibration Verification
S3Q898-IC898	3Q65678.D	09/13/22 15:50	n/a	Initial cal 0.5
S3Q898-IC898	3Q65679.D	09/13/22 16:09	n/a	Initial cal 1
S3Q898-IC898	3Q65680.D	09/13/22 16:29	n/a	Initial cal 2
S3Q898-IC898	3Q65681.D	09/13/22 16:48	n/a	Initial cal 5
S3Q898-IC898	3Q65682.D	09/13/22 17:08	n/a	Initial cal 10
S3Q898-ICC898	3Q65683.D	09/13/22 17:28	n/a	Initial cal 20
S3Q898-IC898	3Q65684.D	09/13/22 17:47	n/a	Initial cal 50
S3Q898-IC898	3Q65685.D	09/13/22 18:07	n/a	Initial cal 100
S3Q898-IBLK	3Q65686.D	09/13/22 18:26	n/a	Instrument Blank
S3Q898-IBLK	3Q65686.D	09/13/22 18:26	n/a	Instrument Blank
S3Q898-ICV898	3Q65687.D	09/13/22 18:46	n/a	Initial cal verification 20
S3Q898-ICV898	3Q65688.D	09/13/22 19:05	n/a	Initial cal verification 20
S3Q898-RT	3Q65689.D	09/13/22 19:25	n/a	Retention Time Marker
S3Q898-CC898	3Q65690.D	09/13/22 19:45	n/a	Continuing cal 20
S3Q898-CC898	3Q65691.D	09/13/22 20:04	n/a	Continuing cal 1.0LL
OP92762-BS	3Q65692.D	09/13/22 20:24	OP92762	Blank Spike
OP92762-MB	3Q65693.D	09/13/22 20:43	OP92762	Method Blank
ZZZZZZ	3Q65697.D	09/13/22 22:02	OP92762	(unrelated sample)
ZZZZZZ	3Q65698.D	09/13/22 22:21	OP92762	(unrelated sample)
ZZZZZZ	3Q65699.D	09/13/22 22:41	OP92762	(unrelated sample)
ZZZZZZ	3Q65701.D	09/13/22 23:20	OP92762	(unrelated sample)
S3Q898-CC898	3Q65702.D	09/13/22 23:39	n/a	Continuing cal 20
ZZZZZZ	3Q65704.D	09/14/22 00:19	OP92762	(unrelated sample)
ZZZZZZ	3Q65705.D	09/14/22 00:38	OP92762	(unrelated sample)
ZZZZZZ	3Q65706.D	09/14/22 00:58	OP92762	(unrelated sample)
OP92762-MS	3Q65707.D	09/14/22 01:17	OP92762	Matrix Spike
OP92762-MSD	3Q65708.D	09/14/22 01:37	OP92762	Matrix Spike Duplicate
FA98281-2	3Q65709.D	09/14/22 01:56	OP92762	(used for QC only; not part of job FA98286)
ZZZZZZ	3Q65710.D	09/14/22 02:16	OP92762	(unrelated sample)
FA98286-41	3Q65711.D	09/14/22 02:36	OP92762	S114-MW0010S-010.0-20220819
FA98286-42	3Q65712.D	09/14/22 02:55	OP92762	S114-MW0010I-029.0-20220819
FA98286-43	3Q65713.D	09/14/22 03:15	OP92762	S114-MW0009S-008.0-20220819
S3Q898-CC898	3Q65714.D	09/14/22 03:34	n/a	Continuing cal 20
FA98286-44	3Q65716.D	09/14/22 04:13	OP92762	S114-MW0009I-030.0-20220819
FA98286-45	3Q65717.D	09/14/22 04:33	OP92762	S114-MW0011I-030.0-20220819
FA98286-46	3Q65718.D	09/14/22 04:52	OP92762	S114-MW0011S-010.0-20220819
FA98286-47	3Q65719.D	09/14/22 05:12	OP92762	S114-MW0008I-029.0-20220819
ZZZZZZ	3Q65720.D	09/14/22 05:32	OP92966	(unrelated sample)
S3Q898-CC898	3Q65721.D	09/14/22 05:51	n/a	Continuing cal 20
S3Q898-CC898	3Q65723.D	09/14/22 06:30	n/a	Continuing cal 1.0LL
OP92987A-BS	3Q65724.D	09/14/22 06:50	OP92987A	Blank Spike
OP92987A-MB	3Q65725.D	09/14/22 07:09	OP92987A	Method Blank
ZZZZZZ	3Q65726.D	09/14/22 07:29	OP92987A	(unrelated sample)
ZZZZZZ	3Q65728.D	09/14/22 08:08	OP92987A	(unrelated sample)
ZZZZZZ	3Q65729.D	09/14/22 08:28	OP92987A	(unrelated sample)

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q898 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	3Q65731.D	09/14/22 09:07	OP92987A	(unrelated sample)
ZZZZZZ	3Q65732.D	09/14/22 09:26	OP92987A	(unrelated sample)
ZZZZZZ	3Q65733.D	09/14/22 09:46	OP92987A	(unrelated sample)
S3Q898-CC898	3Q65734.D	09/14/22 10:05	n/a	Continuing cal 20
ZZZZZZ	3Q65736.D	09/14/22 10:45	OP92987A	(unrelated sample)
ZZZZZZ	3Q65739.D	09/14/22 11:43	OP92987A	(unrelated sample)
ZZZZZZ	3Q65740.D	09/14/22 12:03	OP92987A	(unrelated sample)
ZZZZZZ	3Q65741.D	09/14/22 12:22	OP92987A	(unrelated sample)
ZZZZZZ	3Q65742.D	09/14/22 12:42	OP92987A	(unrelated sample)
ZZZZZZ	3Q65744.D	09/14/22 13:21	OP92987A	(unrelated sample)
S3Q898-ECC898	3Q65745.D	09/14/22 13:41	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q900 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S3Q900-IC900	3Q65824.D	09/15/22 17:49	n/a	Mass Calibration Verification
S3Q900-IC900	3Q65825.D	09/15/22 18:09	n/a	Initial cal 0.5
S3Q900-IC900	3Q65826.D	09/15/22 18:28	n/a	Initial cal 1
S3Q900-IC900	3Q65827.D	09/15/22 18:48	n/a	Initial cal 2
S3Q900-IC900	3Q65828.D	09/15/22 19:07	n/a	Initial cal 5
S3Q900-IC900	3Q65829.D	09/15/22 19:27	n/a	Initial cal 10
S3Q900-ICC900	3Q65830.D	09/15/22 19:47	n/a	Initial cal 20
S3Q900-IC900	3Q65831.D	09/15/22 20:06	n/a	Initial cal 50
S3Q900-IC900	3Q65832.D	09/15/22 20:26	n/a	Initial cal 100
S3Q900-IBLK	3Q65833.D	09/15/22 20:45	n/a	Instrument Blank
S3Q900-IBLK	3Q65833.D	09/15/22 20:45	n/a	Instrument Blank
S3Q900-ICV900	3Q65834.D	09/15/22 21:05	n/a	Initial cal verification 20
S3Q900-ICV900	3Q65835.D	09/15/22 21:24	n/a	Initial cal verification 20
S3Q900-RT	3Q65836.D	09/15/22 21:44	n/a	Retention Time Marker
S3Q900-CC900	3Q65837.D	09/15/22 22:04	n/a	Continuing cal 20
S3Q900-CC900	3Q65838.D	09/15/22 22:23	n/a	Continuing cal 1.0LL
FA98286-41	3Q65839.D	09/15/22 22:43	OP92762	S114-MW0010S-010.0-20220819
FA98286-42	3Q65840.D	09/15/22 23:02	OP92762	S114-MW0010I-029.0-20220819
FA98286-43	3Q65841.D	09/15/22 23:22	OP92762	S114-MW0009S-008.0-20220819
FA98286-44	3Q65842.D	09/15/22 23:41	OP92762	S114-MW0009I-030.0-20220819
FA98286-46	3Q65843.D	09/16/22 00:01	OP92762	S114-MW0011S-010.0-20220819
FA98286-47	3Q65844.D	09/16/22 00:20	OP92762	S114-MW0008I-029.0-20220819
ZZZZZZ	3Q65845.D	09/16/22 00:40	OP92987A	(unrelated sample)
ZZZZZZ	3Q65846.D	09/16/22 01:00	OP92987A	(unrelated sample)
ZZZZZZ	3Q65847.D	09/16/22 01:19	OP92987A	(unrelated sample)
ZZZZZZ	3Q65848.D	09/16/22 01:39	OP92987A	(unrelated sample)
S3Q900-CC900	3Q65849.D	09/16/22 01:58	n/a	Continuing cal 20
ZZZZZZ	3Q65851.D	09/16/22 02:37	OP92762	(unrelated sample)
ZZZZZZ	3Q65852.D	09/16/22 02:57	OP92762	(unrelated sample)
ZZZZZZ	3Q65853.D	09/16/22 03:17	OP92987A	(unrelated sample)
ZZZZZZ	3Q65854.D	09/16/22 03:36	OP92987A	(unrelated sample)
ZZZZZZ	3Q65855.D	09/16/22 03:56	OP92987A	(unrelated sample)
ZZZZZZ	3Q65856.D	09/16/22 04:15	OP92987A	(unrelated sample)
ZZZZZZ	3Q65858.D	09/16/22 04:54	OP92987A	(unrelated sample)
ZZZZZZ	3Q65859.D	09/16/22 05:14	OP92987A	(unrelated sample)
S3Q900-CC900	3Q65860.D	09/16/22 05:33	n/a	Continuing cal 20
OP93055-BS	3Q65862.D	09/16/22 06:13	OP93055	Blank Spike
OP93055-MB	3Q65863.D	09/16/22 06:32	OP93055	Method Blank
ZZZZZZ	3Q65864.D	09/16/22 06:52	OP93055	(unrelated sample)
ZZZZZZ	3Q65866.D	09/16/22 07:31	OP93055	(unrelated sample)
ZZZZZZ	3Q65868.D	09/16/22 08:10	OP93055	(unrelated sample)
S3Q900-CC900	3Q65869.D	09/16/22 08:29	n/a	Continuing cal 20
S3Q900-CC900	3Q65876.D	09/16/22 11:15	n/a	Continuing cal 20
S3Q900-CC900	3Q65878.D	09/16/22 11:54	n/a	Continuing cal 1.0LL
OP92823-BS	3Q65879.D	09/16/22 12:14	OP92823	Blank Spike
OP92823-MB	3Q65880.D	09/16/22 12:33	OP92823	Method Blank

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S3Q900 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS3Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	3Q65881.D	09/16/22 12:53	OP92823	(unrelated sample)
ZZZZZZ	3Q65882.D	09/16/22 13:12	OP92823	(unrelated sample)
FA98308-2	3Q65883.D	09/16/22 13:32	OP92823	(used for QC only; not part of job FA98286)
OP92823-MS	3Q65884.D	09/16/22 13:51	OP92823	Matrix Spike
OP92823-MSD	3Q65885.D	09/16/22 14:11	OP92823	Matrix Spike Duplicate
ZZZZZZ	3Q65886.D	09/16/22 14:30	OP92823	(unrelated sample)
ZZZZZZ	3Q65887.D	09/16/22 14:50	OP92823	(unrelated sample)
ZZZZZZ	3Q65888.D	09/16/22 15:10	OP92823	(unrelated sample)
S3Q900-CC900	3Q65889.D	09/16/22 15:29	n/a	Continuing cal 20
ZZZZZZ	3Q65891.D	09/16/22 16:08	OP92823	(unrelated sample)
ZZZZZZ	3Q65892.D	09/16/22 16:28	OP92823	(unrelated sample)
ZZZZZZ	3Q65893.D	09/16/22 16:47	OP92823	(unrelated sample)
ZZZZZZ	3Q65894.D	09/16/22 17:07	OP92823	(unrelated sample)
ZZZZZZ	3Q65895.D	09/16/22 17:26	OP92823	(unrelated sample)
ZZZZZZ	3Q65896.D	09/16/22 17:46	OP92823	(unrelated sample)
ZZZZZZ	3Q65897.D	09/16/22 18:06	OP92823	(unrelated sample)
ZZZZZZ	3Q65898.D	09/16/22 18:25	OP92823	(unrelated sample)
S3Q900-CC900	3Q65899.D	09/16/22 18:45	n/a	Continuing cal 20
ZZZZZZ	3Q65901.D	09/16/22 19:24	OP92823	(unrelated sample)
ZZZZZZ	3Q65902.D	09/16/22 19:43	OP92823	(unrelated sample)
ZZZZZZ	3Q65903.D	09/16/22 20:03	OP92823	(unrelated sample)
ZZZZZZ	3Q65904.D	09/16/22 20:23	OP92823	(unrelated sample)
S3Q900-CC900	3Q65905.D	09/16/22 20:42	n/a	Continuing cal 20
S3Q900-CC900	3Q65907.D	09/16/22 21:21	n/a	Continuing cal 1.0LL
S3Q900-CC900	3Q65918.D	09/17/22 00:57	n/a	Continuing cal 20
S3Q900-CC900	3Q65930.D	09/17/22 04:51	n/a	Continuing cal 20
S3Q900-ECC900	3Q65940.D	09/17/22 08:07	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q71 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q71-IC71	5Q4556.D	09/14/22 10:25	n/a	Mass Calibration Verification
S5Q71-IC71	5Q4557.D	09/14/22 10:40	n/a	Initial cal 0.5
S5Q71-IC71	5Q4558.D	09/14/22 10:56	n/a	Initial cal 1.0
S5Q71-IC71	5Q4559.D	09/14/22 11:11	n/a	Initial cal 2
S5Q71-IC71	5Q4560.D	09/14/22 11:26	n/a	Initial cal 5
S5Q71-IC71	5Q4561.D	09/14/22 11:42	n/a	Initial cal 10
S5Q71-ICC71	5Q4562.D	09/14/22 11:57	n/a	Initial cal 20
S5Q71-IC71	5Q4563.D	09/14/22 12:13	n/a	Initial cal 50
S5Q71-IC71	5Q4564.D	09/14/22 12:28	n/a	Initial cal 100
S5Q71-IBLK	5Q4565.D	09/14/22 12:43	n/a	Instrument Blank
S5Q71-IBLK	5Q4565.D	09/14/22 12:43	n/a	Instrument Blank
S5Q71-ICV71	5Q4566.D	09/14/22 12:59	n/a	Initial cal verification 20
S5Q71-ICV71	5Q4567.D	09/14/22 13:14	n/a	Initial cal verification 20
S5Q71-RT	5Q4568.D	09/14/22 13:29	n/a	Retention Time Marker
S5Q71-CC71	5Q4569.D	09/14/22 13:45	n/a	Continuing cal 20
S5Q71-CC71	5Q4570.D	09/14/22 14:00	n/a	Continuing cal 1.0LL
OP92743-BS	5Q4571.D	09/14/22 14:15	OP92743	Blank Spike
OP92743-MB	5Q4572.D	09/14/22 14:31	OP92743	Method Blank
ZZZZZZ	5Q4573.D	09/14/22 14:46	OP92743	(unrelated sample)
ZZZZZZ	5Q4574.D	09/14/22 15:01	OP92743	(unrelated sample)
ZZZZZZ	5Q4575.D	09/14/22 15:17	OP92743	(unrelated sample)
ZZZZZZ	5Q4576.D	09/14/22 15:32	OP92743	(unrelated sample)
ZZZZZZ	5Q4577.D	09/14/22 15:47	OP92743	(unrelated sample)
ZZZZZZ	5Q4578.D	09/14/22 16:03	OP92743	(unrelated sample)
ZZZZZZ	5Q4579.D	09/14/22 16:18	OP92743	(unrelated sample)
S5Q71-CC71	5Q4580.D	09/14/22 16:33	n/a	Continuing cal 20
FA98219-2	5Q4582.D	09/14/22 17:04	OP92743	(used for QC only; not part of job FA98286)
OP92743-MS	5Q4583.D	09/14/22 17:19	OP92743	Matrix Spike
OP92743-MSD	5Q4584.D	09/14/22 17:35	OP92743	Matrix Spike Duplicate
ZZZZZZ	5Q4585.D	09/14/22 17:50	OP92743	(unrelated sample)
ZZZZZZ	5Q4586.D	09/14/22 18:05	OP92743	(unrelated sample)
ZZZZZZ	5Q4587.D	09/14/22 18:21	OP92743	(unrelated sample)
ZZZZZZ	5Q4588.D	09/14/22 18:36	OP92743	(unrelated sample)
ZZZZZZ	5Q4589.D	09/14/22 18:51	OP92743	(unrelated sample)
ZZZZZZ	5Q4590.D	09/14/22 19:07	OP92743	(unrelated sample)
S5Q71-CC71	5Q4591.D	09/14/22 19:22	n/a	Continuing cal 20
ZZZZZZ	5Q4593.D	09/14/22 19:53	OP92743	(unrelated sample)
ZZZZZZ	5Q4594.D	09/14/22 20:08	OP92743	(unrelated sample)
ZZZZZZ	5Q4595.D	09/14/22 20:23	OP92743	(unrelated sample)
ZZZZZZ	5Q4596.D	09/14/22 20:39	OP92743	(unrelated sample)
ZZZZZZ	5Q4597.D	09/14/22 20:54	OP92743	(unrelated sample)
S5Q71-CC71	5Q4598.D	09/14/22 21:09	n/a	Continuing cal 20
S5Q71-CC71	5Q4600.D	09/14/22 21:40	n/a	Continuing cal 1.0LL
OP92794-BS	5Q4601.D	09/14/22 21:56	OP92794	Blank Spike
OP92794-MB	5Q4602.D	09/14/22 22:11	OP92794	Method Blank
FA98286-48	5Q4603.D	09/14/22 22:26	OP92794	S114-FB-20220819-01

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q71 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
FA98286-49	5Q4604.D	09/14/22 22:42	OP92794	S114-EB-20220819-01
ZZZZZZ	5Q4605.D	09/14/22 22:57	OP92794	(unrelated sample)
ZZZZZZ	5Q4606.D	09/14/22 23:12	OP92794	(unrelated sample)
FA98296-3	5Q4607.D	09/14/22 23:28	OP92794	(used for QC only; not part of job FA98286)
OP92794-MS	5Q4608.D	09/14/22 23:43	OP92794	Matrix Spike
ZZZZZZ	5Q4609.D	09/14/22 23:58	OP92794	(unrelated sample)
ZZZZZZ	5Q4610.D	09/15/22 00:14	OP92794	(unrelated sample)
S5Q71-CC71	5Q4611.D	09/15/22 00:29	n/a	Continuing cal 20
ZZZZZZ	5Q4613.D	09/15/22 01:00	OP92794	(unrelated sample)
FA98296-7	5Q4614.D	09/15/22 01:15	OP92794	(used for QC only; not part of job FA98286)
OP92794-DUP	5Q4615.D	09/15/22 01:30	OP92794	Duplicate
ZZZZZZ	5Q4616.D	09/15/22 01:46	OP92794	(unrelated sample)
ZZZZZZ	5Q4617.D	09/15/22 02:01	OP92794	(unrelated sample)
ZZZZZZ	5Q4618.D	09/15/22 02:16	OP92794	(unrelated sample)
ZZZZZZ	5Q4619.D	09/15/22 02:32	OP92794	(unrelated sample)
ZZZZZZ	5Q4620.D	09/15/22 02:47	OP92794	(unrelated sample)
ZZZZZZ	5Q4621.D	09/15/22 03:02	OP92794	(unrelated sample)
ZZZZZZ	5Q4622.D	09/15/22 03:18	OP92794	(unrelated sample)
S5Q71-CC71	5Q4623.D	09/15/22 03:33	n/a	Continuing cal 20
ZZZZZZ	5Q4625.D	09/15/22 04:04	OP92794	(unrelated sample)
ZZZZZZ	5Q4626.D	09/15/22 04:19	OP92794	(unrelated sample)
S5Q71-CC71	5Q4627.D	09/15/22 04:35	n/a	Continuing cal 20
S5Q71-CC71	5Q4629.D	09/15/22 05:05	n/a	Continuing cal 1.0LL
OP92763-BS	5Q4630.D	09/15/22 05:21	OP92763	Blank Spike
OP92763-MB	5Q4631.D	09/15/22 05:36	OP92763	Method Blank
FA98286-1	5Q4632.D	09/15/22 05:51	OP92763	S114-MW0017S-009.0-20220816
OP92763-MS	5Q4633.D	09/15/22 06:07	OP92763	Matrix Spike
FA98286-2	5Q4634.D	09/15/22 06:22	OP92763	S114-FD-20220816-01
OP92763-DUP	5Q4635.D	09/15/22 06:37	OP92763	Duplicate
FA98286-3	5Q4636.D	09/15/22 06:53	OP92763	S114-MW0017I-030.0-20220816
FA98286-4	5Q4637.D	09/15/22 07:08	OP92763	S114-MW0019S-009.0-20220816
FA98286-5	5Q4638.D	09/15/22 07:23	OP92763	S114-MW0019I-030.0-20220816
FA98286-6	5Q4639.D	09/15/22 07:39	OP92763	S114-MW0020I-030.0-20220816
S5Q71-CC71	5Q4640.D	09/15/22 07:54	n/a	Continuing cal 20
FA98286-7	5Q4642.D	09/15/22 08:25	OP92763	S114-MW0020S-008.0-20220816
FA98286-8	5Q4643.D	09/15/22 08:40	OP92763	S114-FB-20220816-01
FA98286-9	5Q4644.D	09/15/22 08:55	OP92763	S114-EB-20220816-01
FA98286-10	5Q4645.D	09/15/22 09:11	OP92763	S114-MW0018S-010.0-20220817
FA98286-11	5Q4646.D	09/15/22 09:26	OP92763	S114-MW0018I-030.0-20220817
FA98286-12	5Q4647.D	09/15/22 09:42	OP92763	S114-FB-20220817-01
FA98286-13	5Q4648.D	09/15/22 09:57	OP92763	S114-EB-20220817-01
FA98286-14	5Q4649.D	09/15/22 10:12	OP92763	S114-MW0001S-007.0-20220817
FA98286-15	5Q4650.D	09/15/22 10:28	OP92763	S114-MW0001I-003.0-20220817
FA98286-16	5Q4651.D	09/15/22 10:43	OP92763	S114-FD-20220817-01
S5Q71-CC71	5Q4652.D	09/15/22 10:58	n/a	Continuing cal 20
FA98286-17	5Q4654.D	09/15/22 11:29	OP92763	S114-MW0015S-008.0-20220818

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q71 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
FA98286-18	5Q4655.D	09/15/22 11:44	OP92763	S114-MW0015I-030.0-20220818
FA98286-19	5Q4656.D	09/15/22 12:00	OP92763	S114-FD-20220818-01
FA98286-20	5Q4657.D	09/15/22 12:15	OP92763	S114-MW0012S-007.0-20220818
S5Q71-ECC71	5Q4658.D	09/15/22 12:30	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q72 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q72-IBLK	5Q4665.D	09/15/22 16:22	n/a	Instrument Blank
S5Q72-IBLK	5Q4665.D	09/15/22 16:22	n/a	Instrument Blank
S5Q72-RT	5Q4666.D	09/15/22 16:38	n/a	Retention Time Marker
S5Q72-CC71	5Q4667.D	09/15/22 16:53	n/a	Continuing cal 20
S5Q72-CC71	5Q4668.D	09/15/22 17:09	n/a	Continuing cal 1.0LL
ZZZZZZ	5Q4669.D	09/15/22 17:36	OP92794	(unrelated sample)
ZZZZZZ	5Q4670.D	09/15/22 17:52	OP92794	(unrelated sample)
ZZZZZZ	5Q4671.D	09/15/22 18:08	OP92794	(unrelated sample)
ZZZZZZ	5Q4673.D	09/15/22 18:38	OP92794	(unrelated sample)
FA98296-3	5Q4674.D	09/15/22 18:54	OP92794	(used for QC only; not part of job FA98286)
FA98296-3	5Q4676.D	09/15/22 19:24	OP92794	(used for QC only; not part of job FA98286)
S5Q72-CC71	5Q4678.D	09/15/22 19:55	n/a	Continuing cal 20
ZZZZZZ	5Q4680.D	09/15/22 20:26	OP92794	(unrelated sample)
ZZZZZZ	5Q4682.D	09/15/22 20:57	OP92794	(unrelated sample)
ZZZZZZ	5Q4684.D	09/15/22 21:27	OP92794	(unrelated sample)
ZZZZZZ	5Q4686.D	09/15/22 21:58	OP92794	(unrelated sample)
FA98296-7	5Q4687.D	09/15/22 22:13	OP92794	(used for QC only; not part of job FA98286)
ZZZZZZ	5Q4689.D	09/15/22 22:44	OP92794	(unrelated sample)
S5Q72-CC71	5Q4690.D	09/15/22 22:59	n/a	Continuing cal 20
ZZZZZZ	5Q4692.D	09/15/22 23:30	OP92794	(unrelated sample)
ZZZZZZ	5Q4693.D	09/15/22 23:45	OP92794	(unrelated sample)
ZZZZZZ	5Q4694.D	09/16/22 00:01	OP92794	(unrelated sample)
ZZZZZZ	5Q4695.D	09/16/22 00:16	OP92794	(unrelated sample)
ZZZZZZ	5Q4696.D	09/16/22 00:31	OP92794	(unrelated sample)
ZZZZZZ	5Q4697.D	09/16/22 00:47	OP92794	(unrelated sample)
ZZZZZZ	5Q4698.D	09/16/22 01:02	OP92794	(unrelated sample)
S5Q72-CC71	5Q4700.D	09/16/22 01:33	n/a	Continuing cal 20
ZZZZZZ	5Q4703.D	09/16/22 02:04	OP92794	(unrelated sample)
ZZZZZZ	5Q4705.D	09/16/22 02:34	OP92794	(unrelated sample)
ZZZZZZ	5Q4706.D	09/16/22 02:50	OP92794	(unrelated sample)
ZZZZZZ	5Q4707.D	09/16/22 03:05	OP92794	(unrelated sample)
ZZZZZZ	5Q4709.D	09/16/22 03:36	OP92794	(unrelated sample)
S5Q72-CC71	5Q4710.D	09/16/22 03:51	n/a	Continuing cal 20
FA98286-4	5Q4714.D	09/16/22 04:52	OP92763	S114-MW0019S-009.0-20220816
FA98286-5	5Q4716.D	09/16/22 05:23	OP92763	S114-MW0019I-030.0-20220816
FA98286-5	5Q4717.D	09/16/22 05:38	OP92763	S114-MW0019I-030.0-20220816
FA98286-5	5Q4718.D	09/16/22 05:54	OP92763	S114-MW0019I-030.0-20220816
FA98286-6	5Q4719.D	09/16/22 06:09	OP92763	S114-MW0020I-030.0-20220816
FA98286-7	5Q4720.D	09/16/22 06:24	OP92763	S114-MW0020S-008.0-20220816
FA98286-8	5Q4721.D	09/16/22 06:40	OP92763	S114-FB-20220816-01
S5Q72-CC71	5Q4722.D	09/16/22 06:55	n/a	Continuing cal 20
FA98286-10	5Q4724.D	09/16/22 07:26	OP92763	S114-MW0018S-010.0-20220817
FA98286-11	5Q4725.D	09/16/22 07:41	OP92763	S114-MW0018I-030.0-20220817
FA98286-17	5Q4726.D	09/16/22 07:56	OP92763	S114-MW0015S-008.0-20220818
FA98286-18	5Q4727.D	09/16/22 08:12	OP92763	S114-MW0015I-030.0-20220818
FA98286-20	5Q4728.D	09/16/22 08:27	OP92763	S114-MW0012S-007.0-20220818

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q72 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
ZZZZZZ	5Q4729.D	09/16/22 08:42	OP92956	(unrelated sample)
S5Q72-ECC71	5Q4730.D	09/16/22 08:58	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q73 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q73-IC73	5Q4814.D	09/17/22 12:02	n/a	Mass Calibration Verification
S5Q73-IC73	5Q4815.D	09/17/22 12:17	n/a	Initial cal 0.5
S5Q73-IC73	5Q4816.D	09/17/22 12:32	n/a	Initial cal 1
S5Q73-IC73	5Q4817.D	09/17/22 12:48	n/a	Initial cal 2
S5Q73-IC73	5Q4818.D	09/17/22 13:03	n/a	Initial cal 5
S5Q73-IC73	5Q4819.D	09/17/22 13:18	n/a	Initial cal 10
S5Q73-ICC73	5Q4820.D	09/17/22 13:34	n/a	Initial cal 20
S5Q73-IC73	5Q4821.D	09/17/22 13:49	n/a	Initial cal 50
S5Q73-IC73	5Q4822.D	09/17/22 14:04	n/a	Initial cal 100
S5Q73-IBLK	5Q4823.D	09/17/22 14:20	n/a	Instrument Blank
S5Q73-IBLK	5Q4823.D	09/17/22 14:20	n/a	Instrument Blank
S5Q73-ICV73	5Q4824.D	09/17/22 14:35	n/a	Initial cal verification 20
S5Q73-ICV73	5Q4825.D	09/17/22 14:50	n/a	Initial cal verification 20
S5Q73-RT	5Q4826.D	09/17/22 15:06	n/a	Retention Time Marker
S5Q73-CC73	5Q4827.D	09/17/22 15:21	n/a	Continuing cal 20
S5Q73-CC73	5Q4828.D	09/17/22 15:36	n/a	Continuing cal 1.0LL
FA98286-7	5Q4829.D	09/17/22 15:52	OP92763	S114-MW0020S-008.0-20220816
S5Q73-CC73	5Q4832.D	09/17/22 16:38	n/a	Continuing cal 20
OP92830-BS	5Q4834.D	09/17/22 17:08	OP92830	Blank Spike
OP92830-MB	5Q4835.D	09/17/22 17:24	OP92830	Method Blank
ZZZZZZ	5Q4836.D	09/17/22 17:39	OP92830	(unrelated sample)
ZZZZZZ	5Q4837.D	09/17/22 17:54	OP92830	(unrelated sample)
ZZZZZZ	5Q4838.D	09/17/22 18:10	OP92830	(unrelated sample)
ZZZZZZ	5Q4839.D	09/17/22 18:25	OP92830	(unrelated sample)
ZZZZZZ	5Q4840.D	09/17/22 18:40	OP92830	(unrelated sample)
ZZZZZZ	5Q4841.D	09/17/22 18:56	OP92830	(unrelated sample)
ZZZZZZ	5Q4842.D	09/17/22 19:11	OP92830	(unrelated sample)
ZZZZZZ	5Q4843.D	09/17/22 19:26	OP92830	(unrelated sample)
S5Q73-CC73	5Q4844.D	09/17/22 19:42	n/a	Continuing cal 20
ZZZZZZ	5Q4846.D	09/17/22 20:12	OP92830	(unrelated sample)
ZZZZZZ	5Q4847.D	09/17/22 20:28	OP92830	(unrelated sample)
FA98312-14	5Q4848.D	09/17/22 20:43	OP92830	(used for QC only; not part of job FA98286)
OP92830-MS	5Q4849.D	09/17/22 20:59	OP92830	Matrix Spike
OP92830-MSD	5Q4850.D	09/17/22 21:14	OP92830	Matrix Spike Duplicate
ZZZZZZ	5Q4851.D	09/17/22 21:29	OP92830	(unrelated sample)
ZZZZZZ	5Q4852.D	09/17/22 21:45	OP92830	(unrelated sample)
ZZZZZZ	5Q4853.D	09/17/22 22:00	OP92830	(unrelated sample)
ZZZZZZ	5Q4854.D	09/17/22 22:15	OP92830	(unrelated sample)
ZZZZZZ	5Q4855.D	09/17/22 22:31	OP92830	(unrelated sample)
S5Q73-CC73	5Q4856.D	09/17/22 22:46	n/a	Continuing cal 20
ZZZZZZ	5Q4858.D	09/17/22 23:17	OP92830	(unrelated sample)
ZZZZZZ	5Q4859.D	09/17/22 23:32	OP92830	(unrelated sample)
ZZZZZZ	5Q4860.D	09/17/22 23:47	OP92830	(unrelated sample)
ZZZZZZ	5Q4861.D	09/18/22 00:03	OP92830	(unrelated sample)
S5Q73-CC73	5Q4862.D	09/18/22 00:18	n/a	Continuing cal 20
S5Q73-CC73	5Q4864.D	09/18/22 00:49	n/a	Continuing cal 1.0LL

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q73	**Method:** EPA 537M QSM5.3 B-1	**Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
OP92825-BS	5Q4865.D	09/18/22 01:04	OP92825	Blank Spike
OP92825-MB	5Q4866.D	09/18/22 01:19	OP92825	Method Blank
ZZZZZZ	5Q4867.D	09/18/22 01:35	OP92825	(unrelated sample)
ZZZZZZ	5Q4869.D	09/18/22 02:05	OP92825	(unrelated sample)
ZZZZZZ	5Q4870.D	09/18/22 02:21	OP92825	(unrelated sample)
ZZZZZZ	5Q4871.D	09/18/22 02:36	OP92825	(unrelated sample)
ZZZZZZ	5Q4872.D	09/18/22 02:51	OP92825	(unrelated sample)
ZZZZZZ	5Q4873.D	09/18/22 03:07	OP92825	(unrelated sample)
S5Q73-CC73	5Q4875.D	09/18/22 03:37	n/a	Continuing cal 20
ZZZZZZ	5Q4877.D	09/18/22 04:08	OP92825	(unrelated sample)
ZZZZZZ	5Q4878.D	09/18/22 04:23	OP92825	(unrelated sample)
ZZZZZZ	5Q4879.D	09/18/22 04:39	OP92825	(unrelated sample)
FA98304-12	5Q4880.D	09/18/22 04:54	OP92825	(used for QC only; not part of job FA98286)
OP92825-MS	5Q4881.D	09/18/22 05:09	OP92825	Matrix Spike
OP92825-MSD	5Q4882.D	09/18/22 05:25	OP92825	Matrix Spike Duplicate
ZZZZZZ	5Q4883.D	09/18/22 05:40	OP92825	(unrelated sample)
ZZZZZZ	5Q4884.D	09/18/22 05:55	OP92825	(unrelated sample)
ZZZZZZ	5Q4885.D	09/18/22 06:11	OP92825	(unrelated sample)
ZZZZZZ	5Q4886.D	09/18/22 06:26	OP92825	(unrelated sample)
S5Q73-CC73	5Q4887.D	09/18/22 06:41	n/a	Continuing cal 20
ZZZZZZ	5Q4889.D	09/18/22 07:12	OP92825	(unrelated sample)
ZZZZZZ	5Q4890.D	09/18/22 07:28	OP92825	(unrelated sample)
ZZZZZZ	5Q4891.D	09/18/22 07:43	OP92825	(unrelated sample)
ZZZZZZ	5Q4892.D	09/18/22 07:58	OP92825	(unrelated sample)
FA98286-48	5Q4893.D	09/18/22 08:14	OP92794	S114-FB-20220819-01
S5Q73-ECC73	5Q4894.D	09/18/22 08:29	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S5Q74 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS5Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S5Q74-IBLK	5Q4910.D	09/19/22 17:40	n/a	Instrument Blank
S5Q74-IBLK	5Q4910.D	09/19/22 17:40	n/a	Instrument Blank
S5Q74-RT	5Q4911.D	09/19/22 17:55	n/a	Retention Time Marker
S5Q74-CC73	5Q4912.D	09/19/22 18:10	n/a	Continuing cal 20
S5Q74-CC73	5Q4913.D	09/19/22 18:26	n/a	Continuing cal 1.0LL
FA98286-4	5Q4914.D	09/19/22 18:41	OP92763	S114-MW0019S-009.0-20220816
ZZZZZZ	5Q4915.D	09/19/22 18:56	OP92825	(unrelated sample)
ZZZZZZ	5Q4916.D	09/19/22 19:12	OP92825	(unrelated sample)
ZZZZZZ	5Q4917.D	09/19/22 19:27	OP92825	(unrelated sample)
ZZZZZZ	5Q4918.D	09/19/22 19:42	OP92825	(unrelated sample)
ZZZZZZ	5Q4919.D	09/19/22 19:58	OP92825	(unrelated sample)
ZZZZZZ	5Q4920.D	09/19/22 20:13	OP92825	(unrelated sample)
ZZZZZZ	5Q4921.D	09/19/22 20:29	OP92825	(unrelated sample)
ZZZZZZ	5Q4922.D	09/19/22 20:44	OP92825	(unrelated sample)
ZZZZZZ	5Q4923.D	09/19/22 20:59	OP92825	(unrelated sample)
S5Q74-CC73	5Q4924.D	09/19/22 21:15	n/a	Continuing cal 20
FA98304-12	5Q4926.D	09/19/22 21:45	OP92825	(used for QC only; not part of job FA98286)
ZZZZZZ	5Q4927.D	09/19/22 22:01	OP92825	(unrelated sample)
ZZZZZZ	5Q4928.D	09/19/22 22:16	OP92825	(unrelated sample)
ZZZZZZ	5Q4929.D	09/19/22 22:31	OP92825	(unrelated sample)
ZZZZZZ	5Q4930.D	09/19/22 22:47	OP92825	(unrelated sample)
ZZZZZZ	5Q4932.D	09/19/22 23:17	OP92825	(unrelated sample)
ZZZZZZ	5Q4933.D	09/19/22 23:33	OP92825	(unrelated sample)
S5Q74-ECC73	5Q4934.D	09/19/22 23:48	n/a	Ending cal 20
ZZZZZZ	5Q5088.D	09/22/22 03:21	OP92825	(unrelated sample)
ZZZZZZ	5Q5089.D	09/22/22 03:37	OP92825	(unrelated sample)
ZZZZZZ	5Q5090.D	09/22/22 03:52	OP92825	(unrelated sample)
ZZZZZZ	5Q5091.D	09/22/22 04:07	OP92912	(unrelated sample)
ZZZZZZ	5Q5092.D	09/22/22 04:22	OP92912	(unrelated sample)
ZZZZZZ	5Q5093.D	09/22/22 04:37	OP92912	(unrelated sample)
ZZZZZZ	5Q5094.D	09/22/22 04:52	OP92912	(unrelated sample)

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q85 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q85-IC85	6Q4618.D	09/14/22 10:27	n/a	Mass Calibration Verification
S6Q85-IC85	6Q4619.D	09/14/22 10:43	n/a	Initial cal 0.5
S6Q85-IC85	6Q4620.D	09/14/22 10:59	n/a	Initial cal 1
S6Q85-IC85	6Q4621.D	09/14/22 11:15	n/a	Initial cal 2
S6Q85-IC85	6Q4622.D	09/14/22 11:31	n/a	Initial cal 5
S6Q85-IC85	6Q4623.D	09/14/22 11:47	n/a	Initial cal 10
S6Q85-ICC85	6Q4624.D	09/14/22 12:04	n/a	Initial cal 20
S6Q85-IC85	6Q4625.D	09/14/22 12:20	n/a	Initial cal 50
S6Q85-IC85	6Q4626.D	09/14/22 12:36	n/a	Initial cal 100
S6Q85-IBLK	6Q4627.D	09/14/22 12:52	n/a	Instrument Blank
S6Q85-IBLK	6Q4627.D	09/14/22 12:52	n/a	Instrument Blank
S6Q85-RT	6Q4628.D	09/14/22 13:08	n/a	Retention Time Marker
S6Q85-ICV85	6Q4629.D	09/14/22 13:24	n/a	Initial cal verification 20
S6Q85-ICV85	6Q4630.D	09/14/22 13:40	n/a	Initial cal verification 20
S6Q85-CC85	6Q4631.D	09/14/22 13:56	n/a	Continuing cal 20
S6Q85-CC85	6Q4632.D	09/14/22 14:12	n/a	Continuing cal 1.0LL
OP93012-BS	6Q4635.D	09/14/22 15:00	OP93012	Blank Spike
OP93012-MB	6Q4636.D	09/14/22 15:16	OP93012	Method Blank
ZZZZZZ	6Q4637.D	09/14/22 15:32	OP93012	(unrelated sample)
ZZZZZZ	6Q4638.D	09/14/22 15:48	OP93012	(unrelated sample)
ZZZZZZ	6Q4639.D	09/14/22 16:04	OP93012	(unrelated sample)
ZZZZZZ	6Q4640.D	09/14/22 16:20	OP93012	(unrelated sample)
ZZZZZZ	6Q4641.D	09/14/22 16:36	OP93012	(unrelated sample)
ZZZZZZ	6Q4642.D	09/14/22 16:52	OP93012	(unrelated sample)
S6Q85-CC85	6Q4643.D	09/14/22 17:08	n/a	Continuing cal 20
ZZZZZZ	6Q4645.D	09/14/22 17:40	OP93012	(unrelated sample)
ZZZZZZ	6Q4646.D	09/14/22 17:56	OP93012	(unrelated sample)
ZZZZZZ	6Q4647.D	09/14/22 18:12	OP93012	(unrelated sample)
ZZZZZZ	6Q4648.D	09/14/22 18:28	OP93012	(unrelated sample)
ZZZZZZ	6Q4649.D	09/14/22 18:44	OP93012	(unrelated sample)
ZZZZZZ	6Q4650.D	09/14/22 19:00	OP93012	(unrelated sample)
ZZZZZZ	6Q4651.D	09/14/22 19:16	OP93012	(unrelated sample)
ZZZZZZ	6Q4652.D	09/14/22 19:32	OP93012	(unrelated sample)
ZZZZZZ	6Q4653.D	09/14/22 19:48	OP93012	(unrelated sample)
ZZZZZZ	6Q4654.D	09/14/22 20:04	OP93012	(unrelated sample)
S6Q85-CC85	6Q4655.D	09/14/22 20:20	n/a	Continuing cal 20
ZZZZZZ	6Q4657.D	09/14/22 20:52	OP93012	(unrelated sample)
S6Q85-CC85	6Q4658.D	09/14/22 21:08	n/a	Continuing cal 20
S6Q85-CC85	6Q4660.D	09/14/22 21:41	n/a	Continuing cal 1.0LL
OP93042-BS	6Q4661.D	09/14/22 21:57	OP93042	Blank Spike
OP93042-MB	6Q4662.D	09/14/22 22:13	OP93042	Method Blank
S6Q85-CC85	6Q4669.D	09/15/22 00:05	n/a	Continuing cal 20
OP92764-BS	6Q4671.D	09/15/22 00:37	OP92764	Blank Spike
OP92764-MB	6Q4672.D	09/15/22 00:53	OP92764	Method Blank
FA98286-21	6Q4673.D	09/15/22 01:09	OP92764	S114-MW0012I-030.0-20220818
OP92764-MS	6Q4674.D	09/15/22 01:25	OP92764	Matrix Spike

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q85	**Method:** EPA 537M QSM5.3 B-1	**Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
FA98286-22	6Q4675.D	09/15/22 01:41	OP92764	S114-MW0002S-009.0-20220818
OP92764-DUP	6Q4676.D	09/15/22 01:57	OP92764	Duplicate
FA98286-23	6Q4677.D	09/15/22 02:13	OP92764	S114-MW0002I-029.0-20220818
FA98286-24	6Q4678.D	09/15/22 02:29	OP92764	S114-MW0016I-030.0-20220818
FA98286-25	6Q4679.D	09/15/22 02:45	OP92764	S114-MW0016S-010.0-20220818
FA98286-26	6Q4680.D	09/15/22 03:01	OP92764	S114-MW0003S-008.0-20220818
S6Q85-CC85	6Q4681.D	09/15/22 03:17	n/a	Continuing cal 20
FA98286-27	6Q4683.D	09/15/22 03:49	OP92764	S114-MW0003I-030.0-20220818
FA98286-28	6Q4684.D	09/15/22 04:05	OP92764	S114-MW0004I-029.0-20220818
FA98286-29	6Q4685.D	09/15/22 04:21	OP92764	S114-FB-20220818-01
FA98286-30	6Q4686.D	09/15/22 04:37	OP92764	S114-EB-20220818-01
FA98286-31	6Q4687.D	09/15/22 04:53	OP92764	S114-MW0005S-008.0-20220819
FA98286-32	6Q4688.D	09/15/22 05:09	OP92764	S114-MW0005I-029.0-20220819
FA98286-33	6Q4689.D	09/15/22 05:25	OP92764	S114-MW0006S-007.0-20220819
FA98286-35	6Q4691.D	09/15/22 05:57	OP92764	S114-MW0006I-030.0-20220819
FA98286-36	6Q4692.D	09/15/22 06:13	OP92764	S114-MW0007S-009.0-20220819
S6Q85-CC85	6Q4693.D	09/15/22 06:29	n/a	Continuing cal 20
FA98286-37	6Q4695.D	09/15/22 07:02	OP92764	S114-MW0007I-029.0-20220819
FA98286-38	6Q4696.D	09/15/22 07:18	OP92764	S114-MW0008S-008.0-20220819
FA98286-39	6Q4697.D	09/15/22 07:34	OP92764	S114-MW0013S-007.0-20220818
FA98286-40	6Q4698.D	09/15/22 07:50	OP92764	S114-MW0013I-030.0-20220818
S6Q85-ECC85	6Q4699.D	09/15/22 08:06	n/a	Ending cal 20

Run Sequence Report

Job Number: FA98286
Account: HGLFLMI Hydrogeologic, Inc.
Project: SWMU 114 Fire Station 2; KSC, FL

Run ID: S6Q86 **Method:** EPA 537M QSM5.3 B-1 **Instrument ID:** GCMS6Q

Lab Sample ID	Lab File ID	Date/Time Analyzed	Prep QC Batch	Client Sample ID
S6Q86-IBLK	6Q4704.D	09/15/22 15:32	n/a	Instrument Blank
S6Q86-IBLK	6Q4704.D	09/15/22 15:32	n/a	Instrument Blank
S6Q86-RT	6Q4705.D	09/15/22 15:48	n/a	Retention Time Marker
S6Q86-CC85	6Q4706.D	09/15/22 16:04	n/a	Continuing cal 20
S6Q86-CC85	6Q4707.D	09/15/22 16:20	n/a	Continuing cal 1.0LL
OP92841-BS	6Q4708.D	09/15/22 16:36	OP92841	Blank Spike
OP92841-MB	6Q4709.D	09/15/22 16:52	OP92841	Method Blank
ZZZZZZ	6Q4710.D	09/15/22 17:29	OP92841	(unrelated sample)
ZZZZZZ	6Q4711.D	09/15/22 17:45	OP92841	(unrelated sample)
OP92841-MS	6Q4715.D	09/15/22 18:49	OP92841	Matrix Spike
OP92841-MSD	6Q4716.D	09/15/22 19:05	OP92841	Matrix Spike Duplicate
ZZZZZZ	6Q4717.D	09/15/22 19:22	OP92841	(unrelated sample)
S6Q86-CC85	6Q4718.D	09/15/22 19:38	n/a	Continuing cal 20
ZZZZZZ	6Q4720.D	09/15/22 20:10	OP92841	(unrelated sample)
ZZZZZZ	6Q4721.D	09/15/22 20:26	OP92841	(unrelated sample)
ZZZZZZ	6Q4722.D	09/15/22 20:42	OP92841	(unrelated sample)
ZZZZZZ	6Q4723.D	09/15/22 20:58	OP92841	(unrelated sample)
ZZZZZZ	6Q4724.D	09/15/22 21:14	OP92841	(unrelated sample)
ZZZZZZ	6Q4725.D	09/15/22 21:30	OP92841	(unrelated sample)
ZZZZZZ	6Q4726.D	09/15/22 21:46	OP92841	(unrelated sample)
ZZZZZZ	6Q4727.D	09/15/22 22:02	OP92841	(unrelated sample)
ZZZZZZ	6Q4728.D	09/15/22 22:18	OP92841	(unrelated sample)
ZZZZZZ	6Q4729.D	09/15/22 22:34	OP92841	(unrelated sample)
S6Q86-CC85	6Q4730.D	09/15/22 22:50	n/a	Continuing cal 20
ZZZZZZ	6Q4732.D	09/15/22 23:22	OP92841	(unrelated sample)
ZZZZZZ	6Q4733.D	09/15/22 23:38	OP92841	(unrelated sample)
ZZZZZZ	6Q4734.D	09/15/22 23:54	OP92841	(unrelated sample)
ZZZZZZ	6Q4735.D	09/16/22 00:10	OP92841	(unrelated sample)
ZZZZZZ	6Q4736.D	09/16/22 00:26	OP93012	(unrelated sample)
ZZZZZZ	6Q4737.D	09/16/22 00:42	OP93012	(unrelated sample)
ZZZZZZ	6Q4738.D	09/16/22 00:58	OP93012	(unrelated sample)
S6Q86-CC85	6Q4742.D	09/16/22 02:02	n/a	Continuing cal 20
FA98286-21	6Q4748.D	09/16/22 03:38	OP92764	S114-MW0012I-030.0-20220818
FA98286-25	6Q4749.D	09/16/22 03:54	OP92764	S114-MW0016S-010.0-20220818
FA98286-31	6Q4750.D	09/16/22 04:10	OP92764	S114-MW0005S-008.0-20220819
FA98286-33	6Q4751.D	09/16/22 04:27	OP92764	S114-MW0006S-007.0-20220819
FA98286-34	6Q4752.D	09/16/22 04:43	OP92764	S114-FD-20220819-01
FA98286-34	6Q4753.D	09/16/22 04:59	OP92764	S114-FD-20220819-01
S6Q86-CC85	6Q4754.D	09/16/22 05:15	n/a	Continuing cal 20
FA98286-35	6Q4756.D	09/16/22 05:47	OP92764	S114-MW0006I-030.0-20220819
FA98286-36	6Q4757.D	09/16/22 06:03	OP92764	S114-MW0007S-009.0-20220819
FA98286-37	6Q4758.D	09/16/22 06:19	OP92764	S114-MW0007I-029.0-20220819
FA98286-38	6Q4759.D	09/16/22 06:35	OP92764	S114-MW0008S-008.0-20220819
FA98286-39	6Q4760.D	09/16/22 06:51	OP92764	S114-MW0013S-007.0-20220818
S6Q86-ECC85	6Q4761.D	09/16/22 07:07	n/a	Ending cal 20

MS Semi-volatiles

Raw Data

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4632.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:51:46 AM
Sample Name : fa98286-1
Vial : P1-E1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

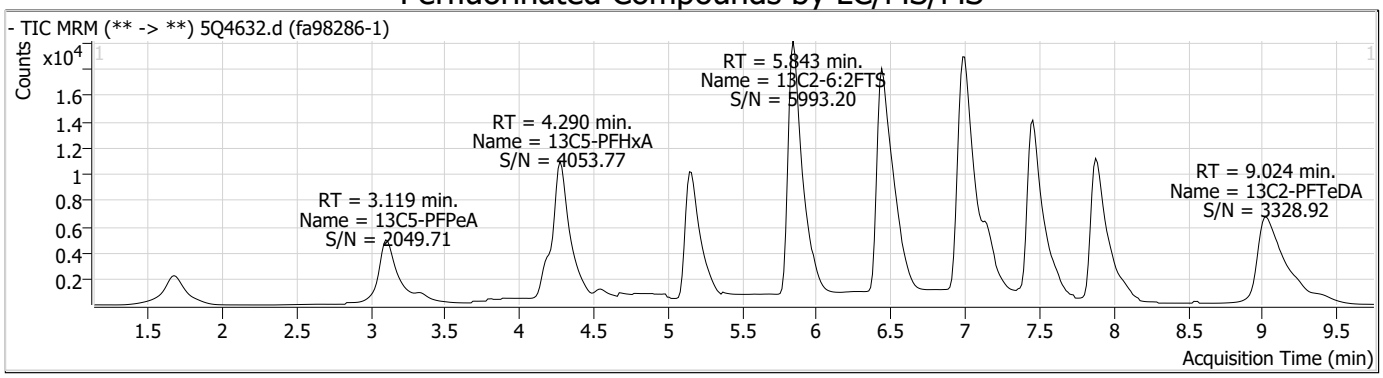
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.675	217.0 -> 172.0	24223	20.00	µg/L	-0.025
M5-PFPeA	3.119	268.0 -> 223.0	41423	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	66449	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	64293	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	96632	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	105858	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	84519	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	92984	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	85483	20.00	µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	92241	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	14633	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4936	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5389	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	9835	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	21855	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	35348	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	34429	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16633	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4702	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	680	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	16317	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	21855	14.88	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.4%		
13C2-6:2FTS	5.843	429.0 -> 409.0	35348	15.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%		
13C2-8:2FTS	7.025	529.0 -> 509.0	34429	15.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%		
13C2-PFDoDA	7.893	615.0 -> 570.0	85483	11.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.0%		
13C2-PFTeDA	9.024	715.0 -> 670.0	92241	12.22	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.1%		
13C3-PFBS	3.337	302.0 -> 99.0	4936	15.15	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.8%		
13C3-PFHxS	5.194	402.0 -> 99.0	5389	15.80	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%		
13C4-PFBA	1.675	217.0 -> 172.0	24223	13.55	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%		
13C4-PFHpA	5.163	367.0 -> 322.0	64293	15.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C5-PFHxA	4.290	318.0 -> 273.0	66449	15.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C5-PFPeA	3.119	268.0 -> 223.0	41423	14.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%		
13C6-PFDA	6.989	519.0 -> 474.0	84519	15.70	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

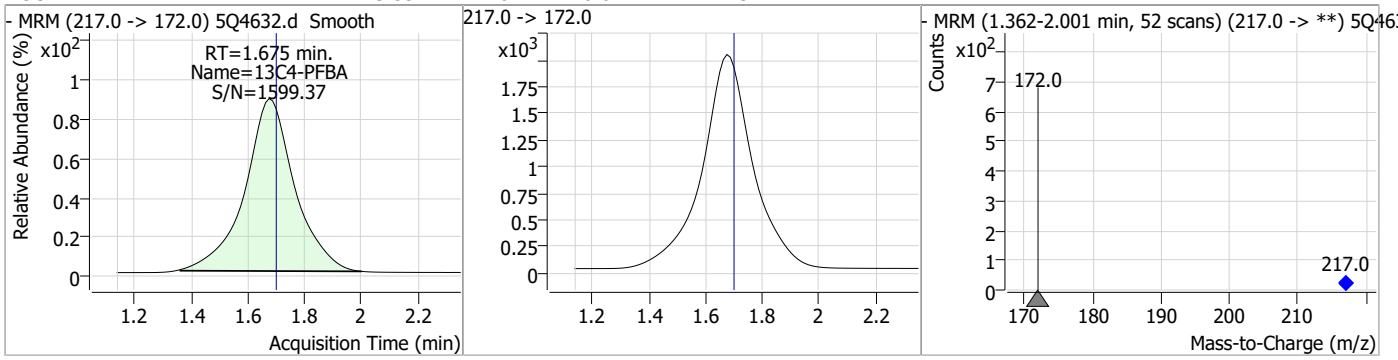
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	92984	13.21	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.0%			
13C8-FOSA	6.517	506.0 -> 78.0	14633	12.90	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%			
13C8-PFOA	5.857	421.0 -> 376.0	96632	15.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%			
13C8-PFOS	6.440	507.0 -> 99.0	9835	15.06	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C9-PFNA	6.455	472.0 -> 427.0	105858	16.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16633	17.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4702	14.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	680	2.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.2%			
d5-EtFOSAA	7.170	589.0 -> 419.0	16317	14.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.559	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.241	499.0 -> 80.0	470	0.54	µg/L	m	69
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

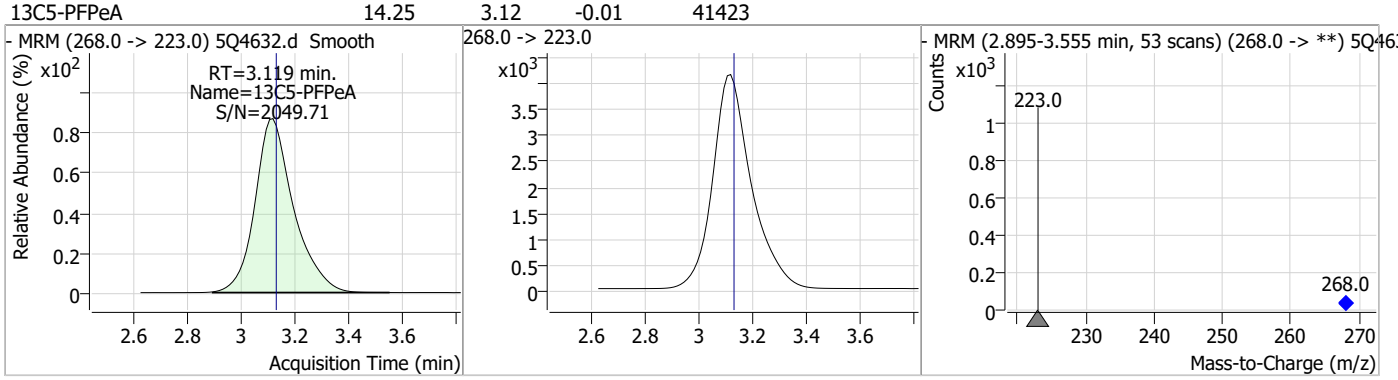
Perfluorinated Compounds by LC/MS/MS



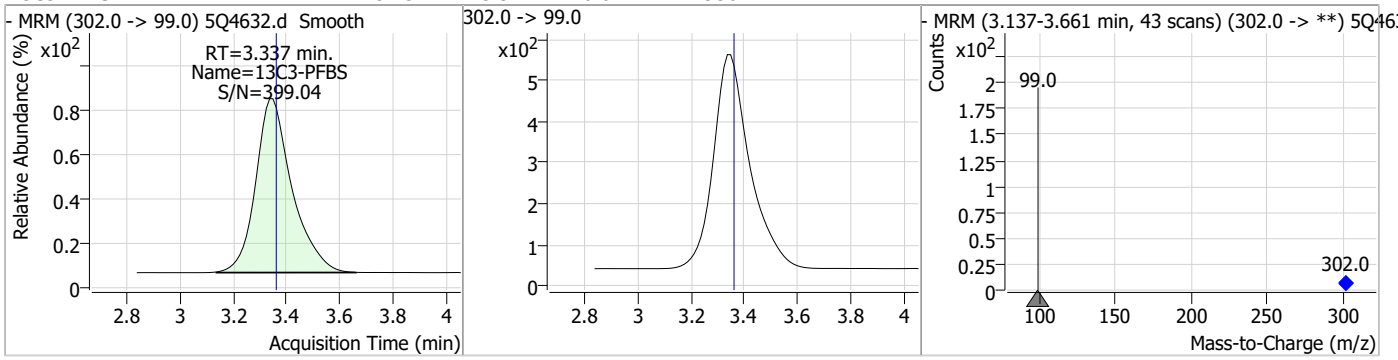
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.55	1.67	-0.02	24223				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.25	3.12	-0.01	41423				

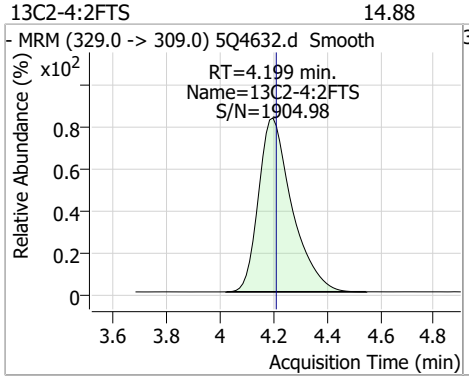


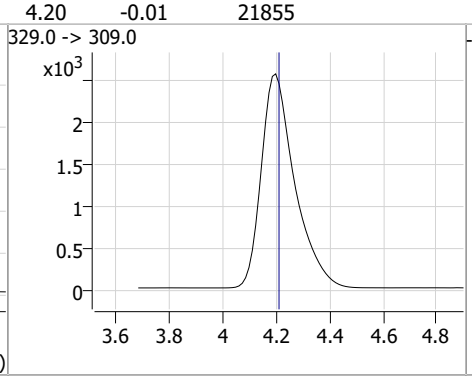
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.15	3.34	-0.02	4936				

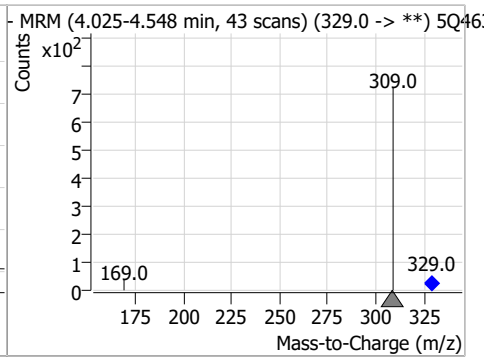


Perfluorinated Compounds by LC/MS/MS

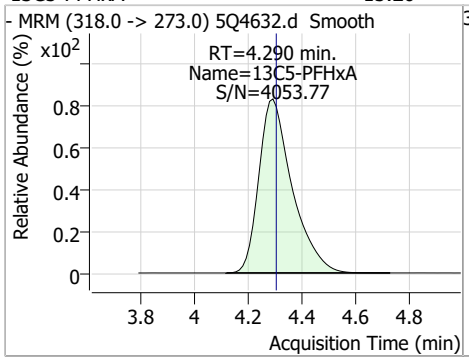
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.88	4.20	-0.01	21855				

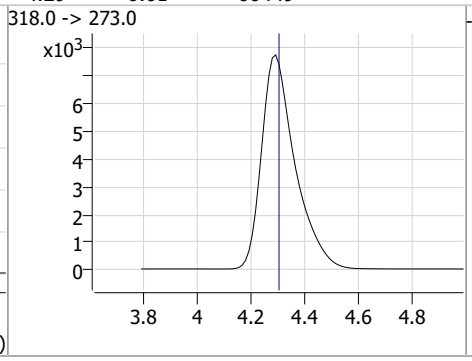


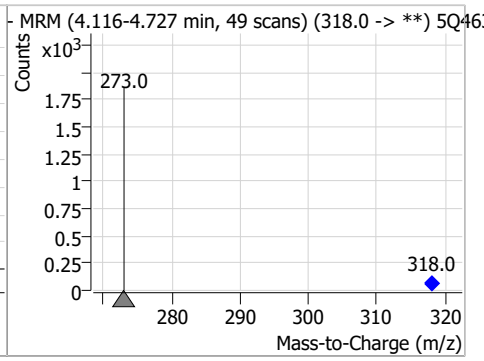




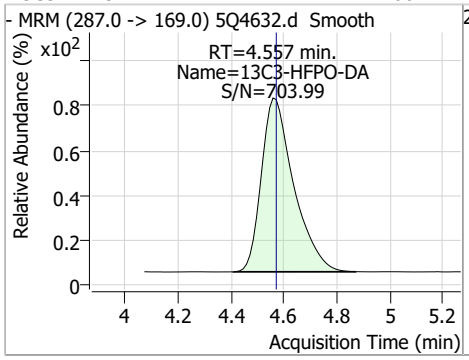
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.20	4.29	-0.01	66449				

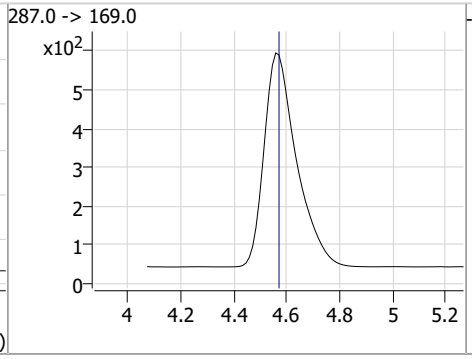


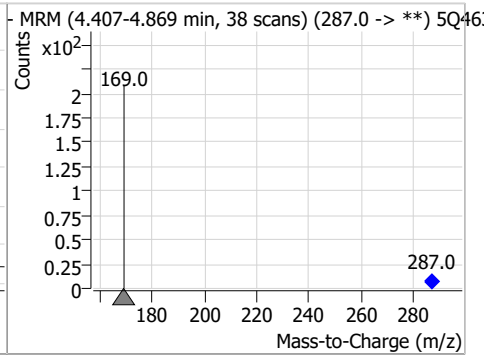




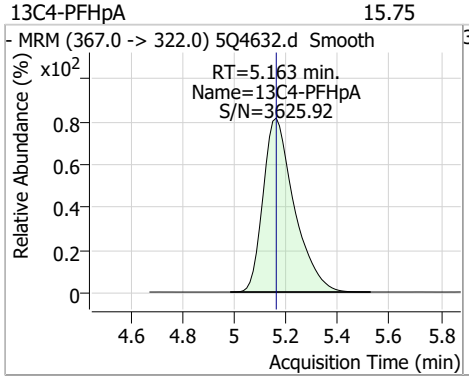
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.00	4.56	-0.01	4702				

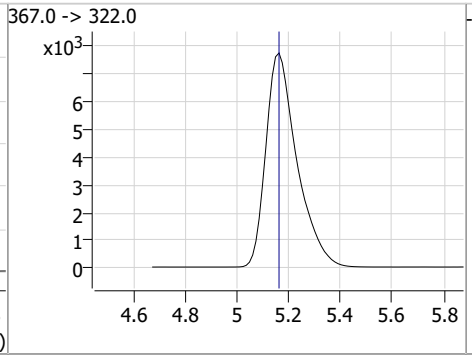


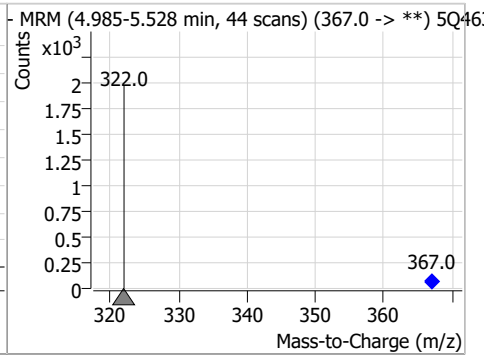




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.75	5.16	0.00	64293				

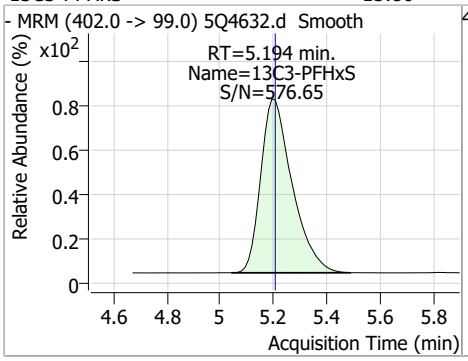


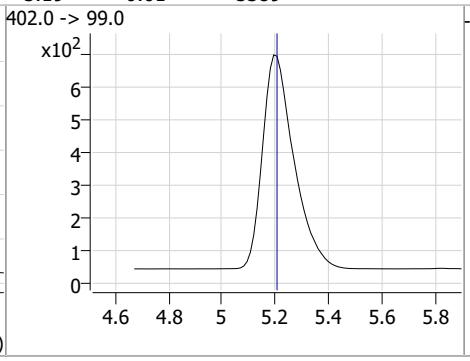


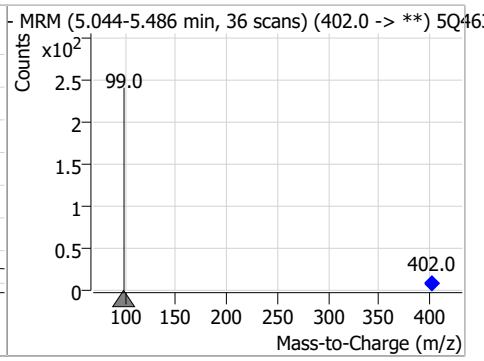


Perfluorinated Compounds by LC/MS/MS

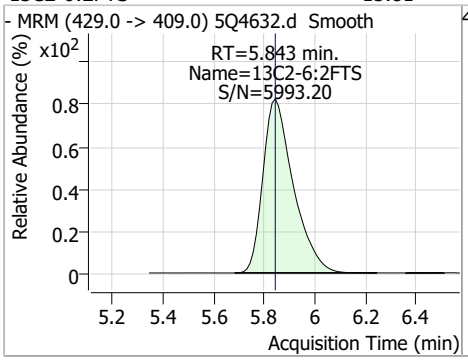
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.80	5.19	-0.01	5389				

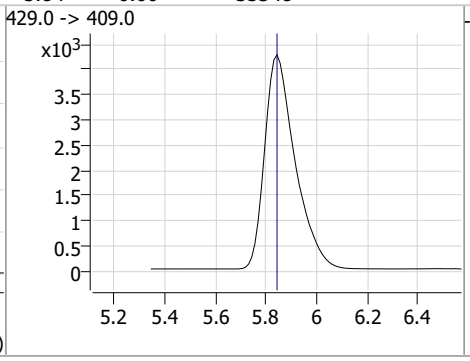


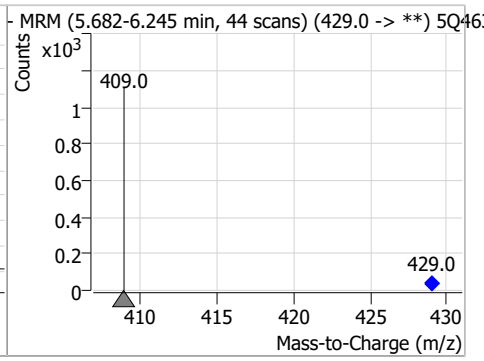




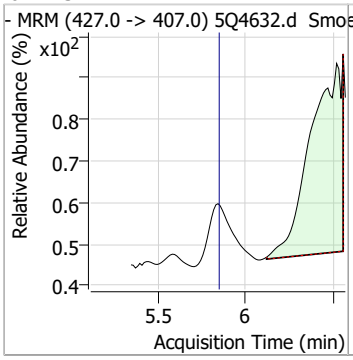
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.81	5.84	0.00	35348				

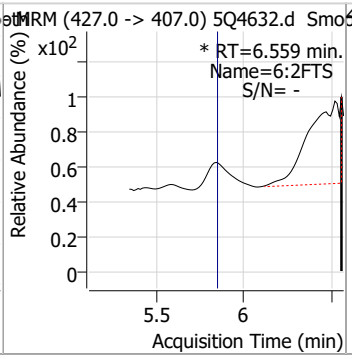


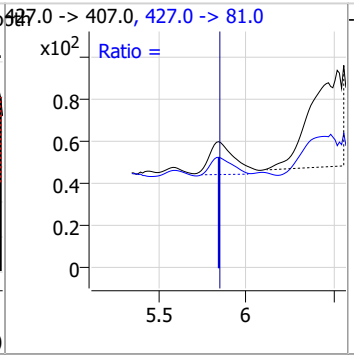


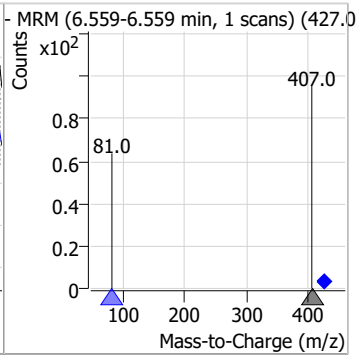


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

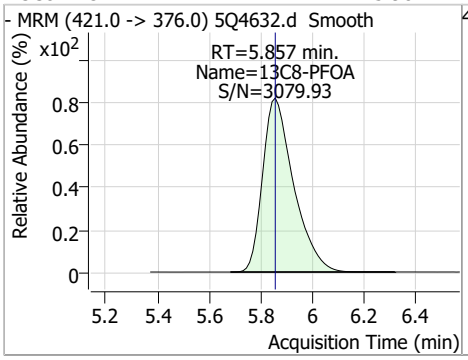


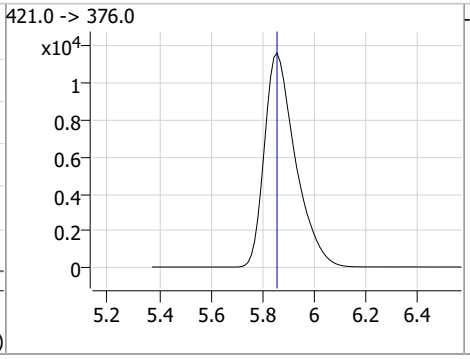


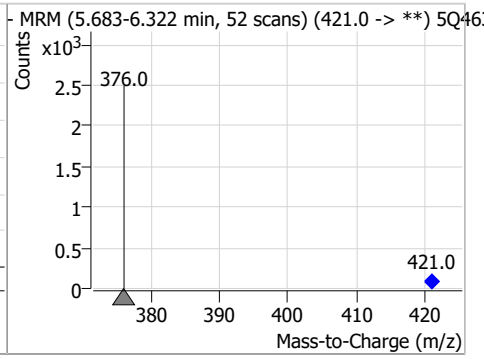




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.98	5.86	0.00	96632				

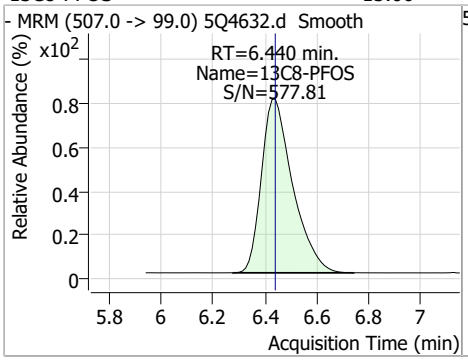


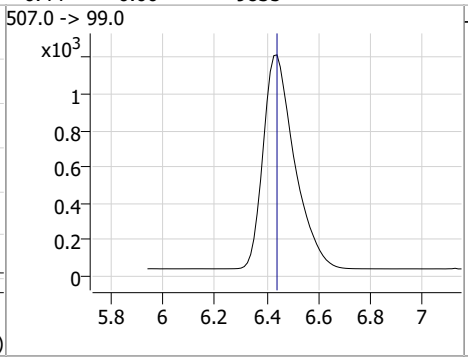


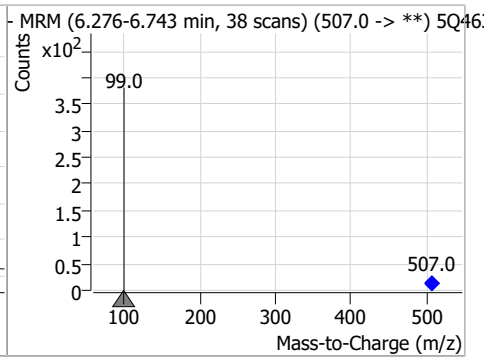


Perfluorinated Compounds by LC/MS/MS

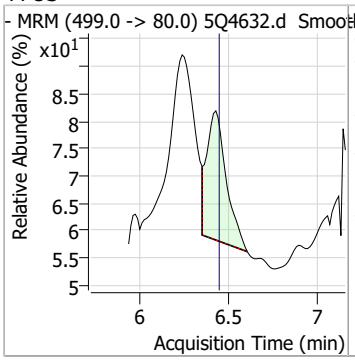
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.06	6.44	0.00	9835				

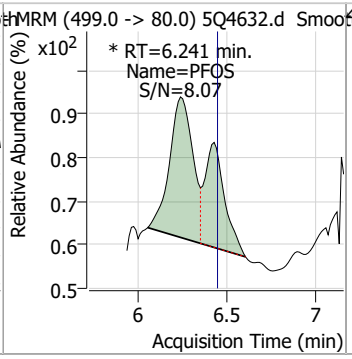


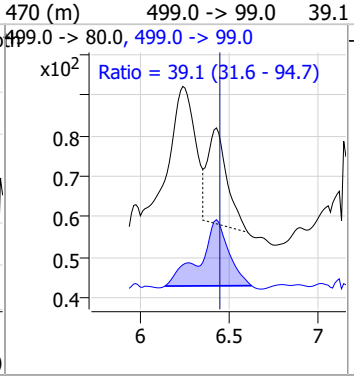


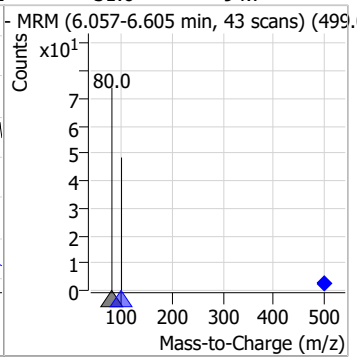


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.54	6.24	-0.20	470 (m)	499.0 -> 99.0	39.1	31.6	94.7

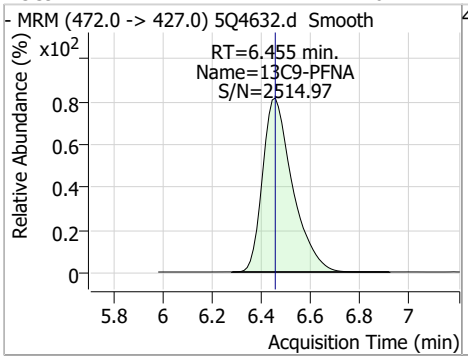


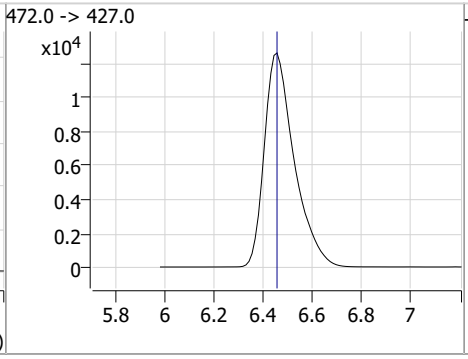


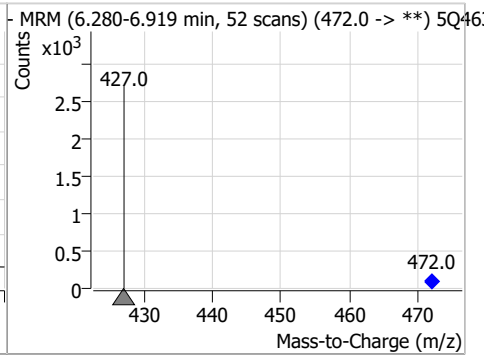




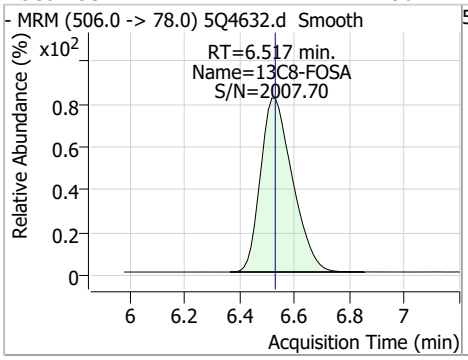
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.11	6.46	0.00	105858				

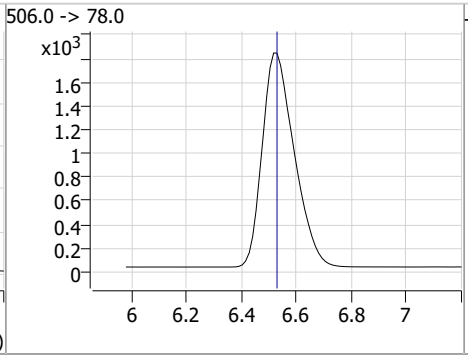


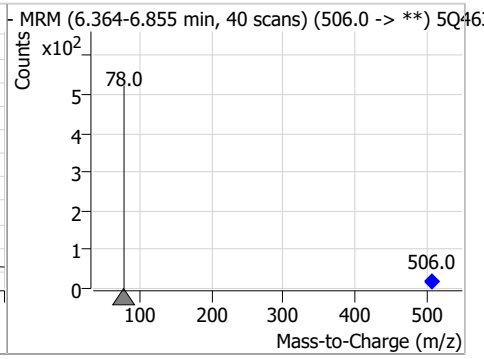




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.90	6.52	-0.01	14633				

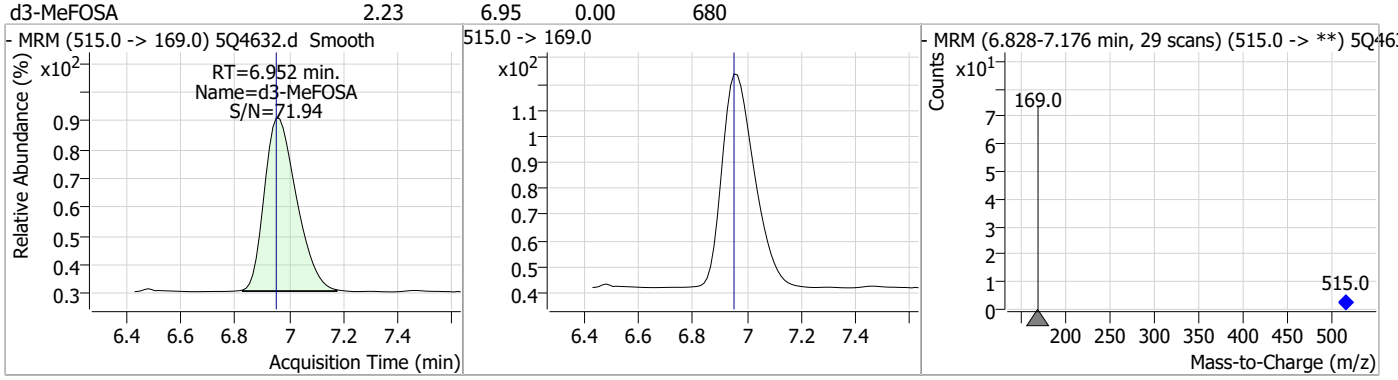




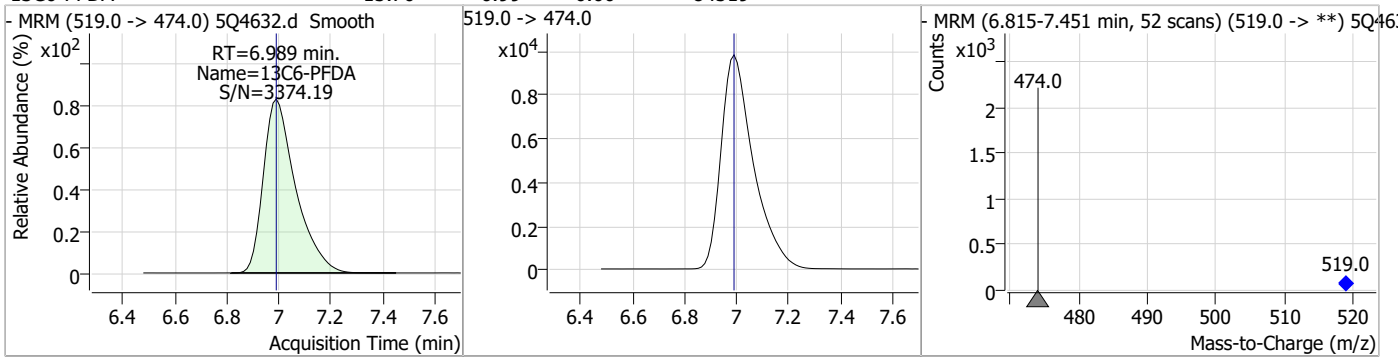


Perfluorinated Compounds by LC/MS/MS

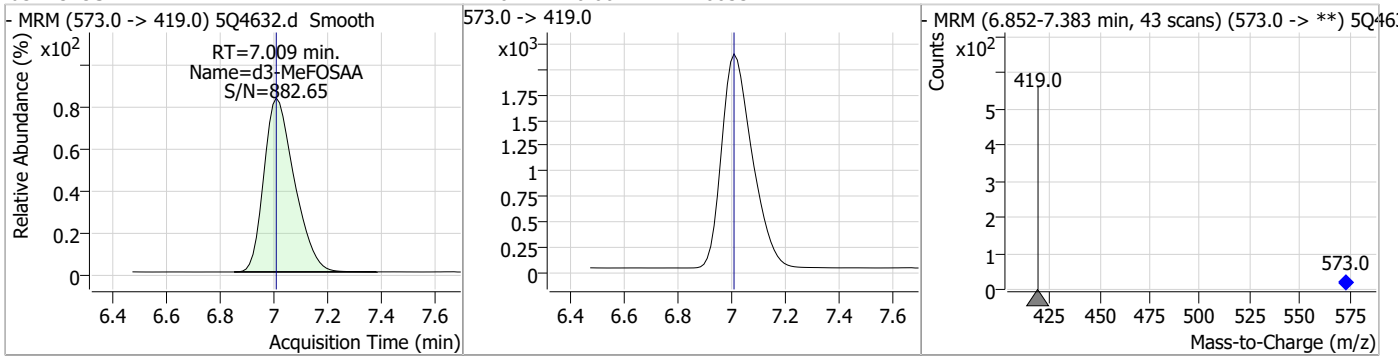
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.23	6.95	0.00	680				



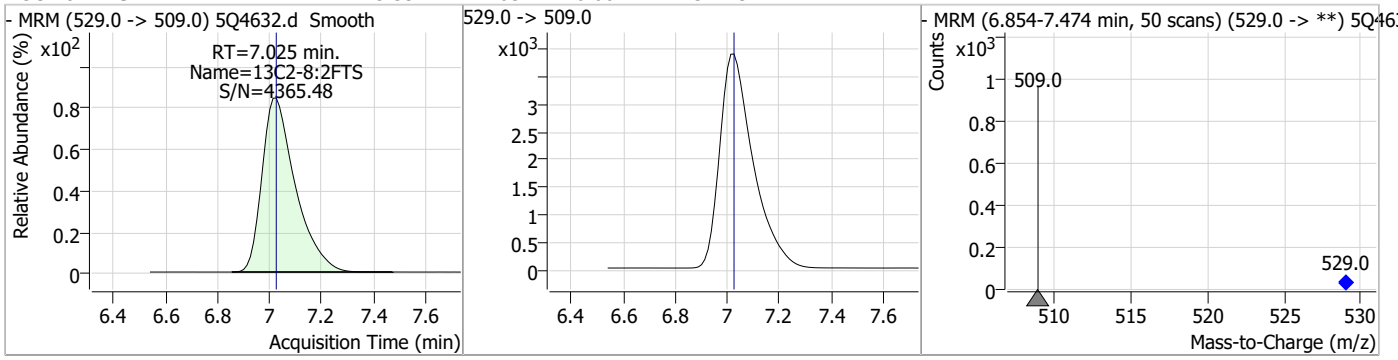
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.70	6.99	0.00	84519				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.11	7.01	0.00	16633				

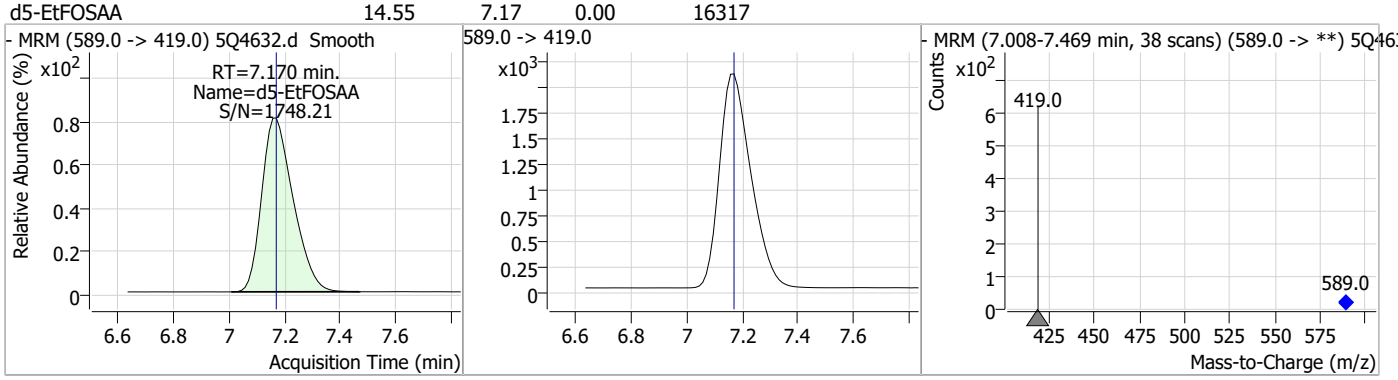


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.33	7.03	0.00	34429				

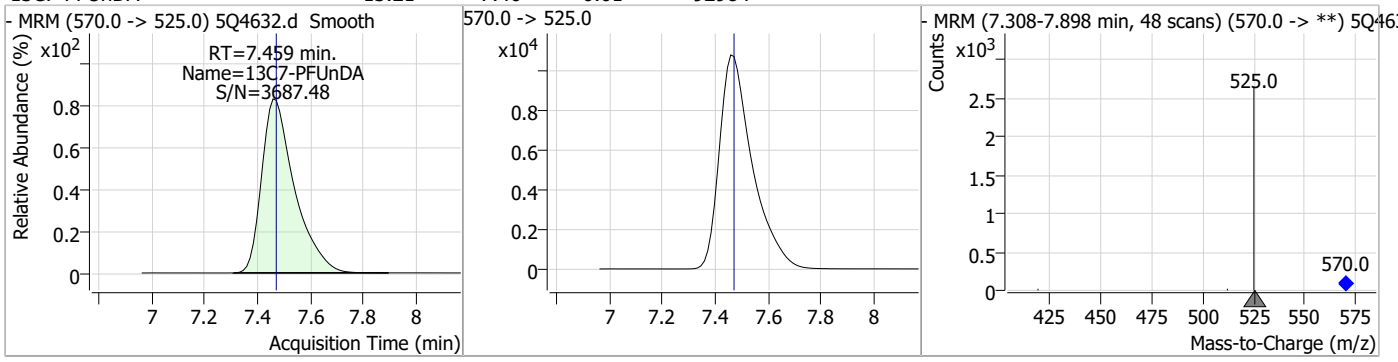


Perfluorinated Compounds by LC/MS/MS

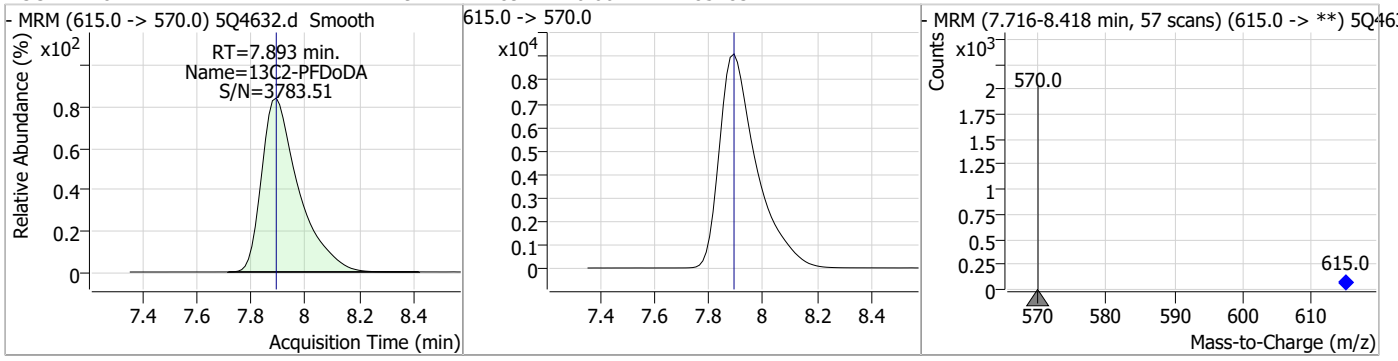
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.55	7.17	0.00	16317				



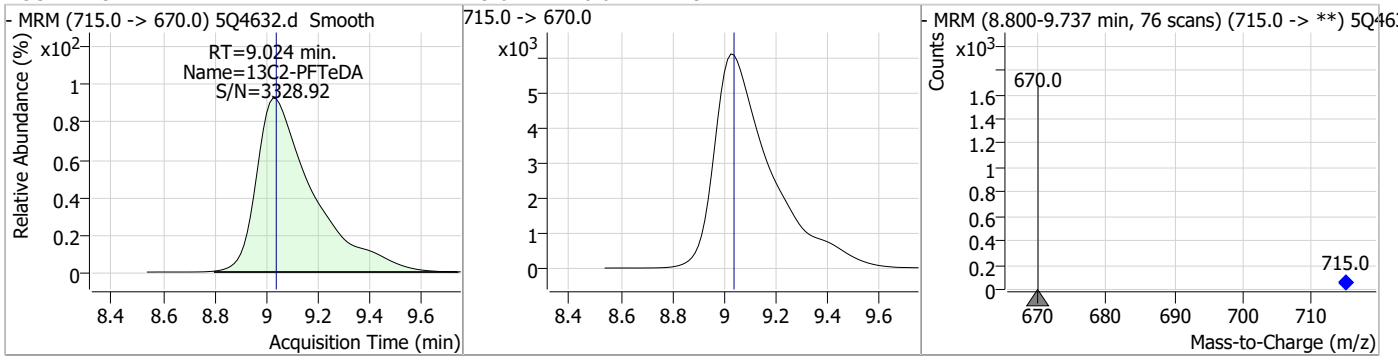
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.21	7.46	-0.01	92984				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.79	7.89	0.00	85483				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.22	9.02	-0.01	92241				



Manual Integration Approval Summary

Sample Number: FA98286-1
Lab FileID: 5Q4632.D
Injection Time: 09/15/22 05:51
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4634.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:22:26 AM
Sample Name : fa98286-2
Vial : P1-E3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

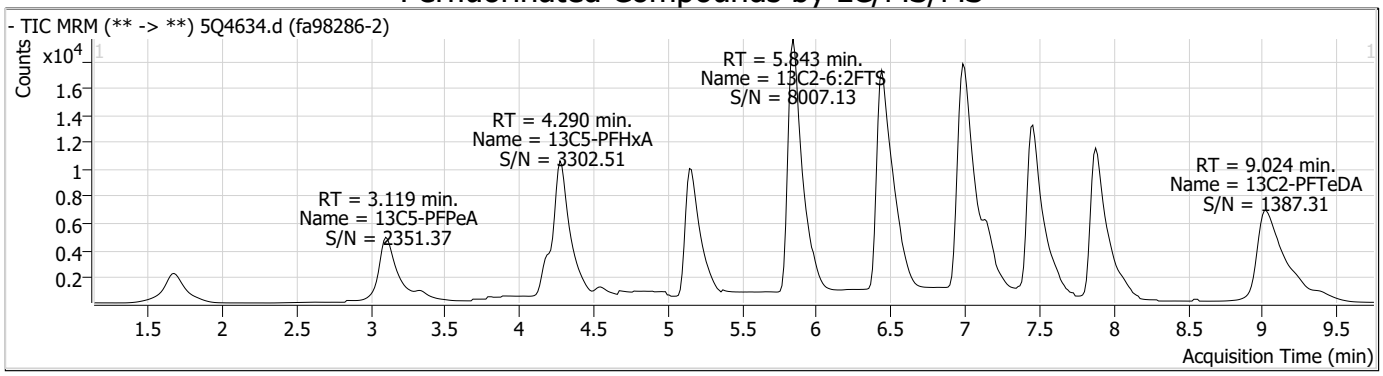
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.675	217.0 -> 172.0	23341	20.00	µg/L	-0.025
M5-PFPeA	3.119	268.0 -> 223.0	39908	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	64191	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	62826	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	94320	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	102643	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	79559	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	87816	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	87599	20.00	µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	86705	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	12896	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4787	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5325	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9075	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	21074	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	35085	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	32417	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	15965	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4522	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	419	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	15922	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	21074	14.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	35085	15.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C2-8:2FTS	7.013	529.0 -> 509.0	32417	14.43	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.2%		
13C2-PFDoDA	7.893	615.0 -> 570.0	87599	12.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.4%		
13C2-PFTeDA	9.024	715.0 -> 670.0	86705	11.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.5%		
13C3-PFBS	3.337	302.0 -> 99.0	4787	14.70	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	5325	15.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%		
13C4-PFBA	1.675	217.0 -> 172.0	23341	13.06	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%		
13C4-PFHpA	5.163	367.0 -> 322.0	62826	15.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	64191	14.68	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%		
13C5-PFPeA	3.119	268.0 -> 223.0	39908	13.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%		
13C6-PFDA	6.989	519.0 -> 474.0	79559	14.78	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

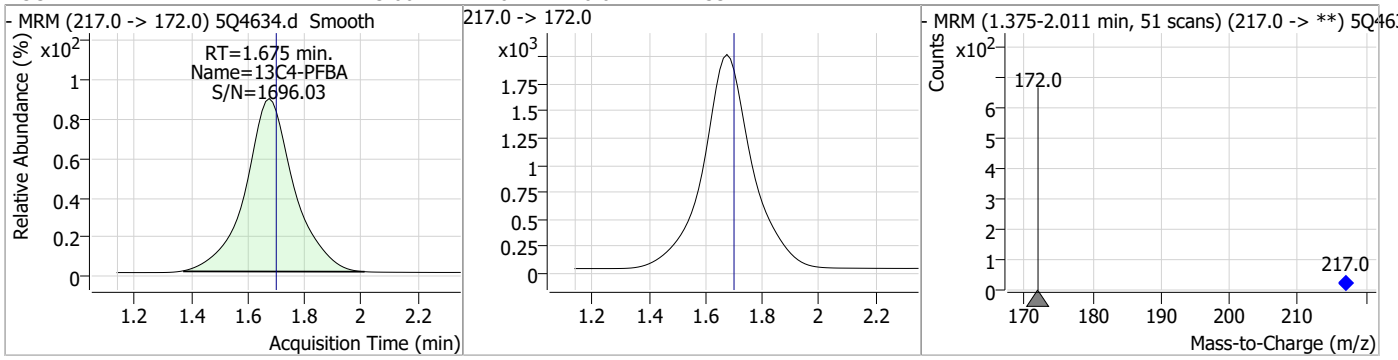
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	87816	12.47	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.4%			
13C8-FOSA	6.517	506.0 -> 78.0	12896	11.37	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.8%			
13C8-PFOA	5.857	421.0 -> 376.0	94320	15.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C8-PFOS	6.428	507.0 -> 99.0	9075	13.90	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
13C9-PFNA	6.455	472.0 -> 427.0	102643	15.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15965	16.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4522	13.47	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	419	1.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	15922	14.20	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.559	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	5.195	399.0 -> 80.0	150	0.19	µg/L		80
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.228	499.0 -> 80.0	431	0.54	µg/L	m	72
PFPeA	2.756	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

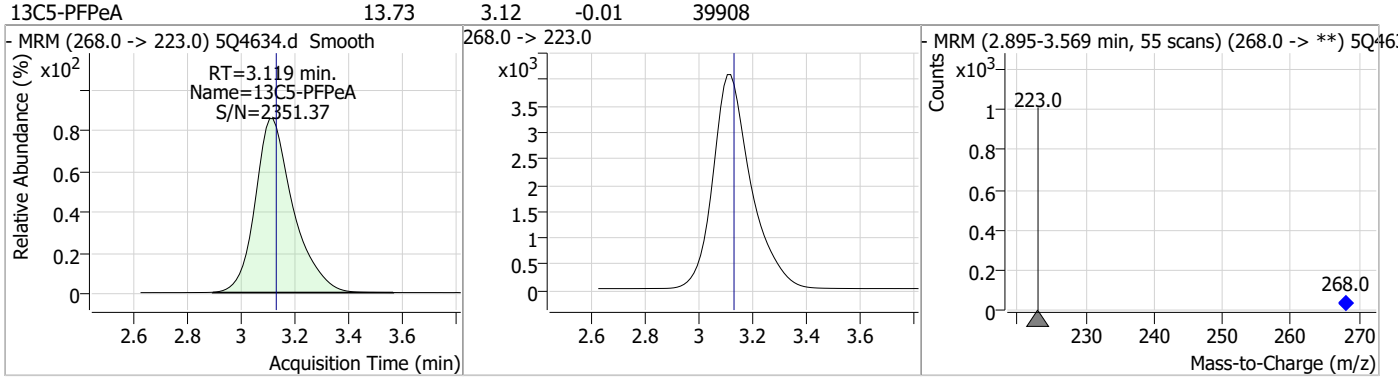
Perfluorinated Compounds by LC/MS/MS



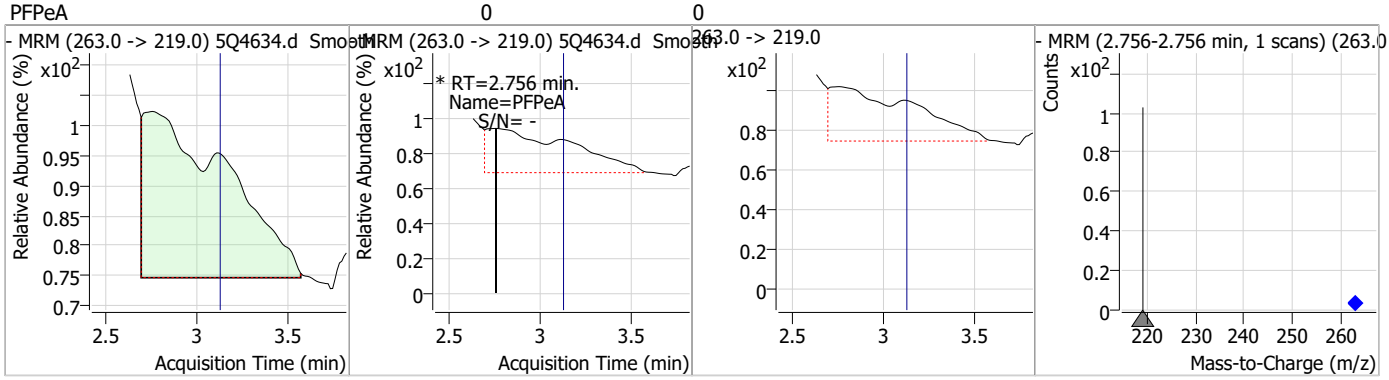
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.06	1.67	-0.02	23341				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.73	3.12	-0.01	39908				

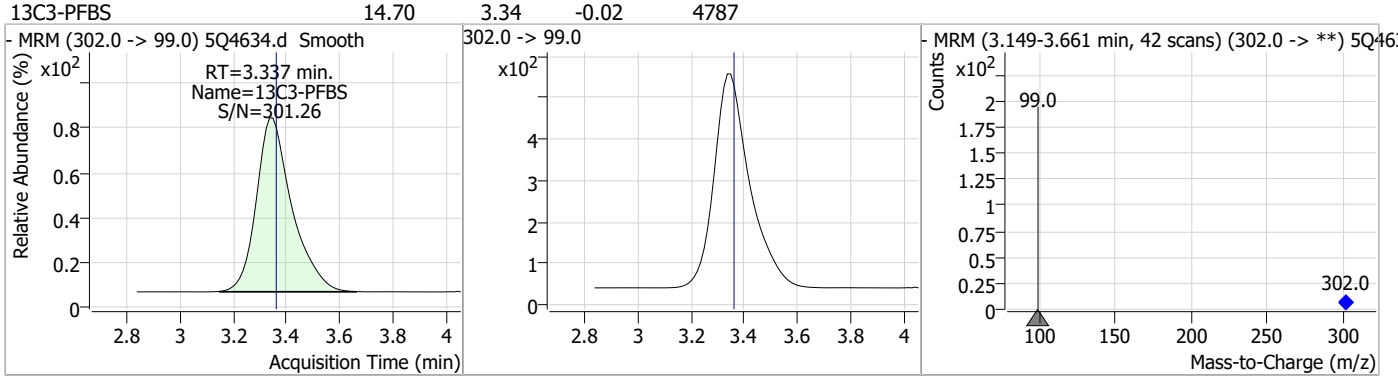


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				

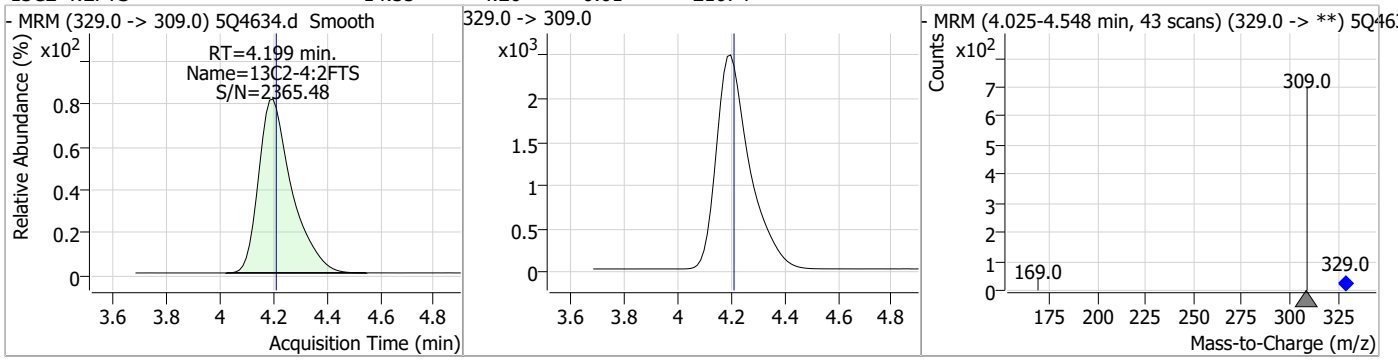


Perfluorinated Compounds by LC/MS/MS

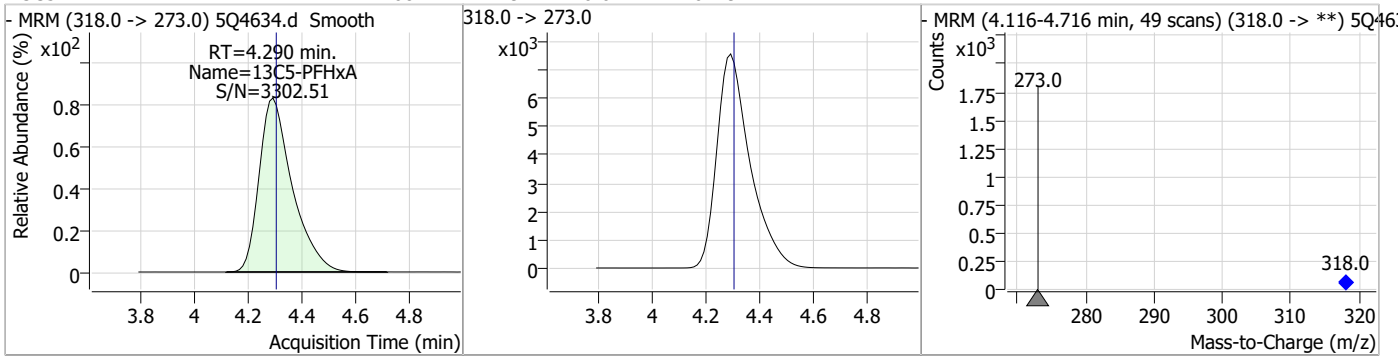
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.70	3.34	-0.02	4787				



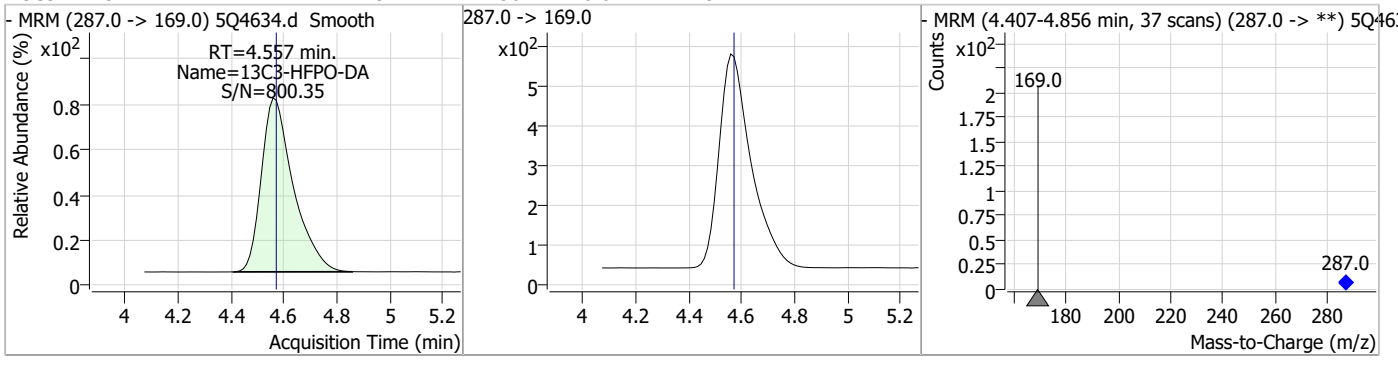
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.35	4.20	-0.01	21074				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.68	4.29	-0.01	64191				

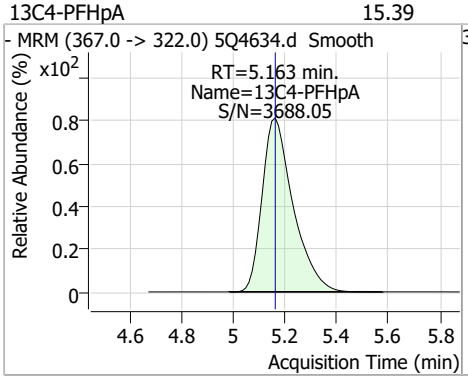


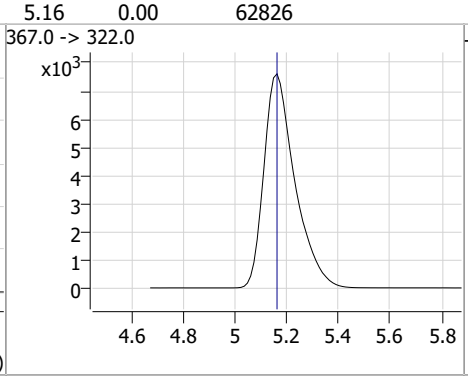
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.47	4.56	-0.01	4522				

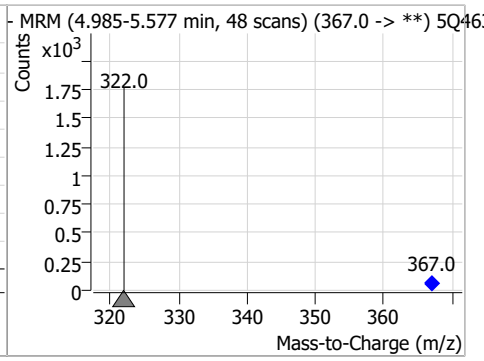


Perfluorinated Compounds by LC/MS/MS

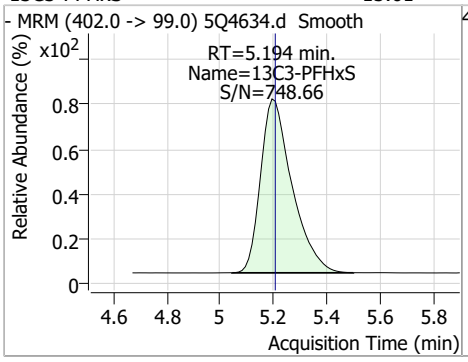
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.39	5.16	0.00	62826				

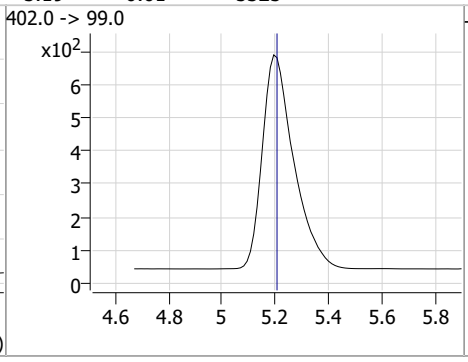


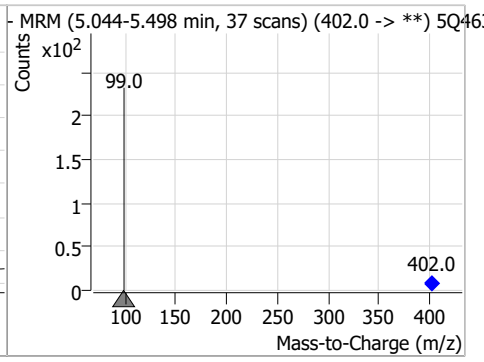




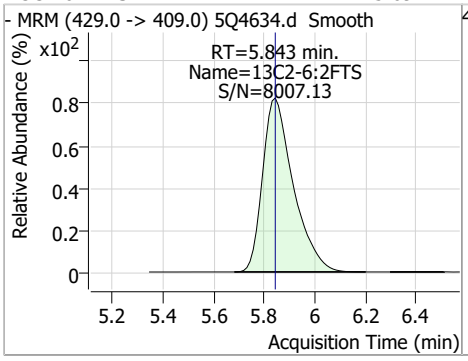
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.61	5.19	-0.01	5325				

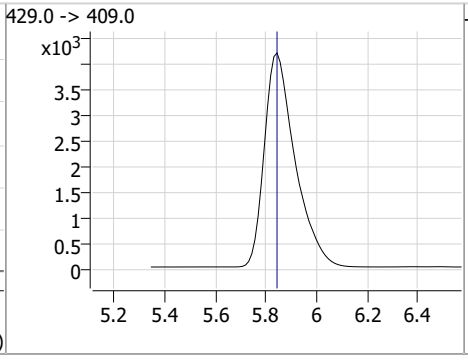


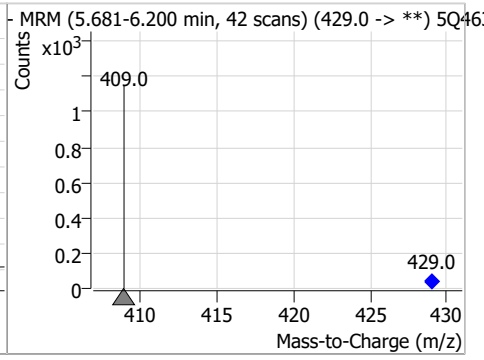




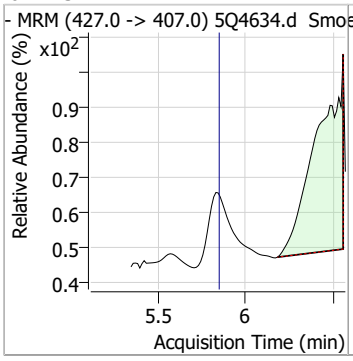
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.69	5.84	0.00	35085				

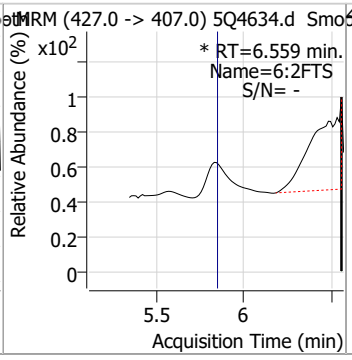


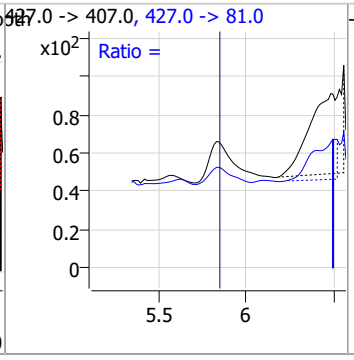


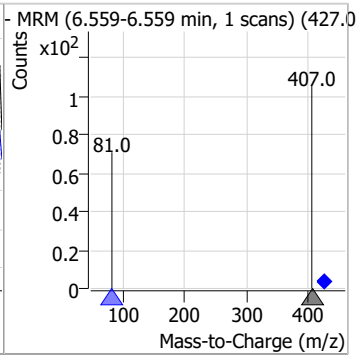


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



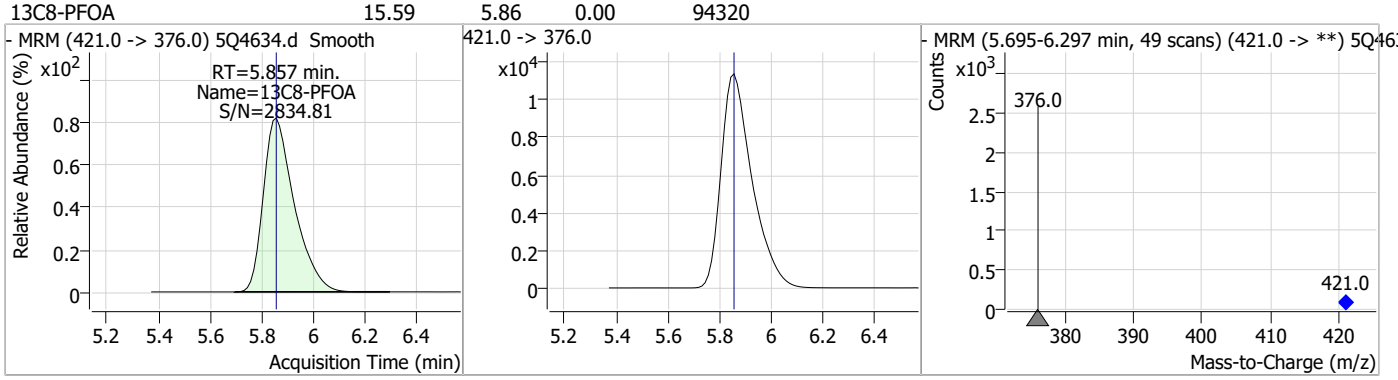




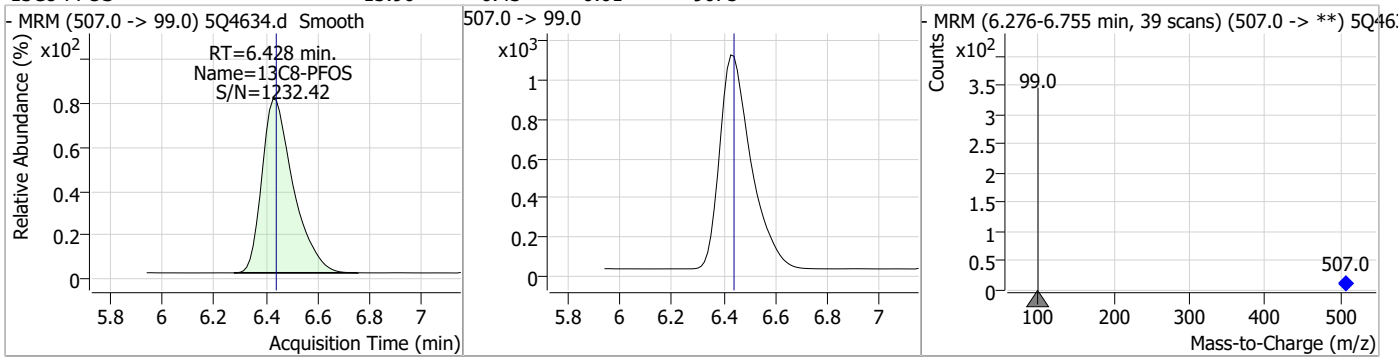


Perfluorinated Compounds by LC/MS/MS

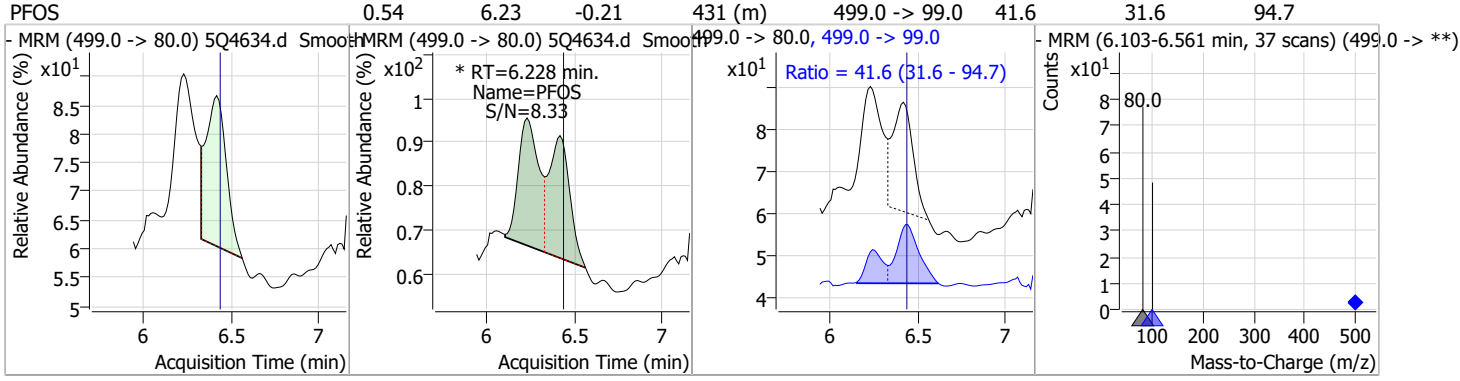
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.59	5.86	0.00	94320				



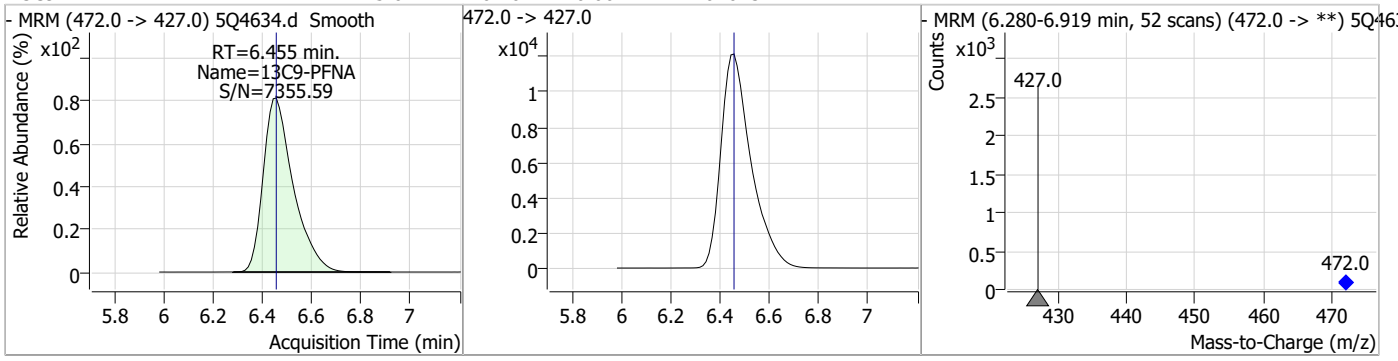
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.90	6.43	-0.01	9075				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.54	6.23	-0.21	431 (m)	499.0 -> 99.0	41.6	31.6	94.7

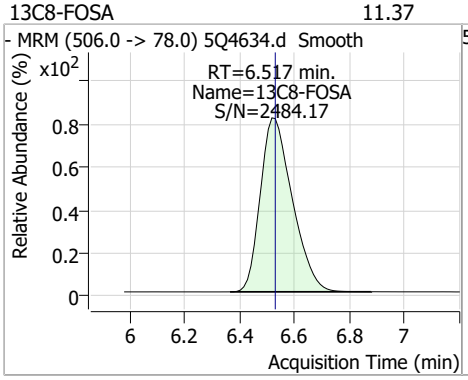


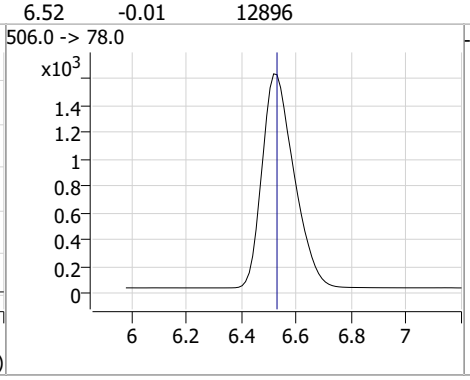
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.62	6.46	0.00	102643				

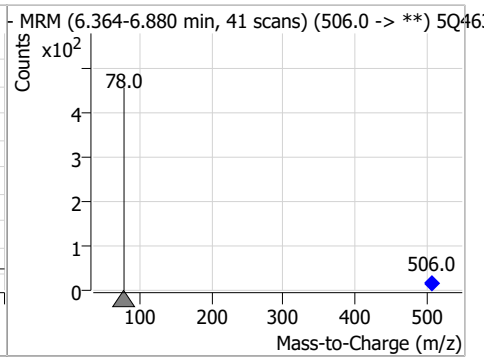


Perfluorinated Compounds by LC/MS/MS

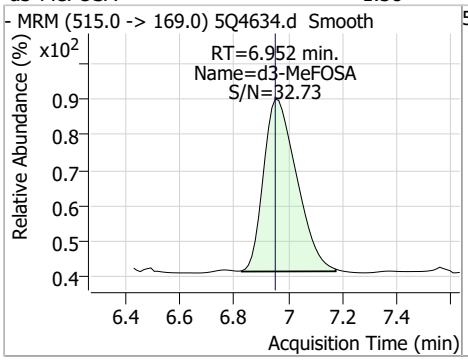
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.37	6.52	-0.01	12896				

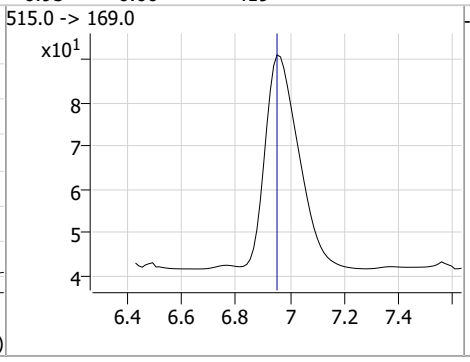


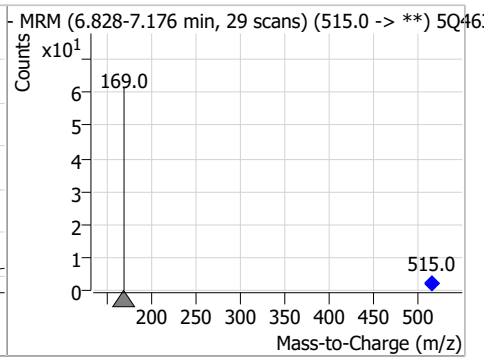




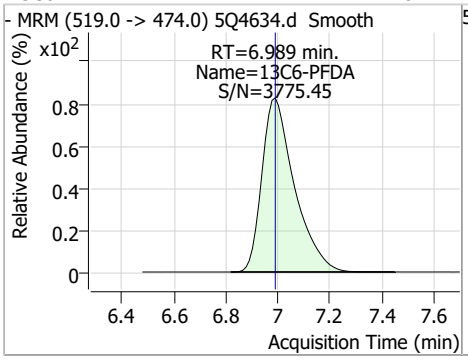
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.38	6.95	0.00	419				

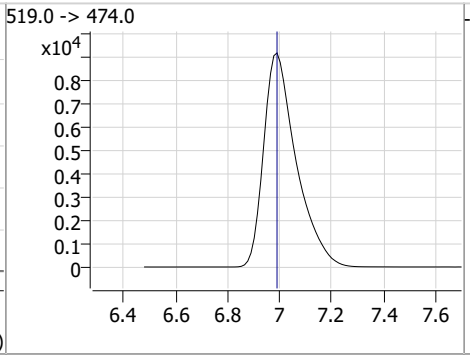


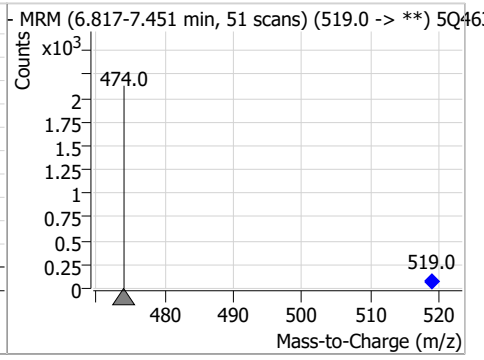




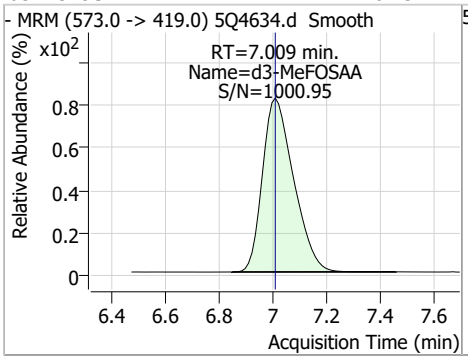
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.78	6.99	0.00	79559				

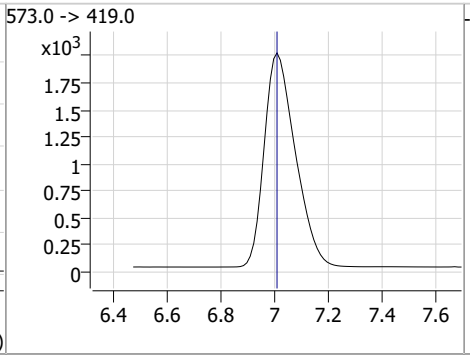


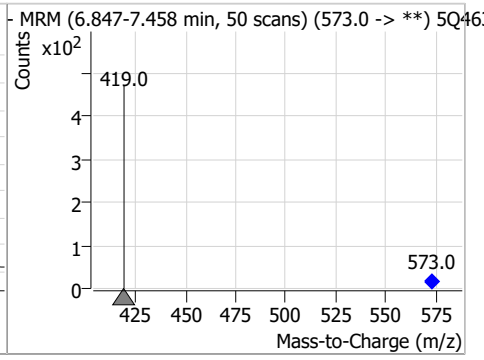




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.43	7.01	0.00	15965				

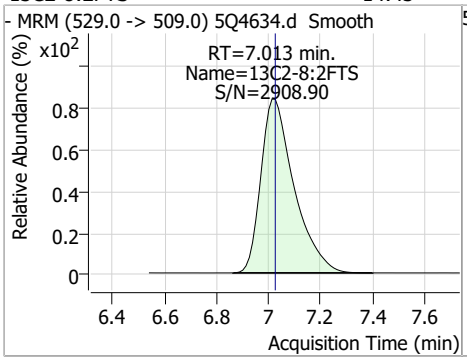


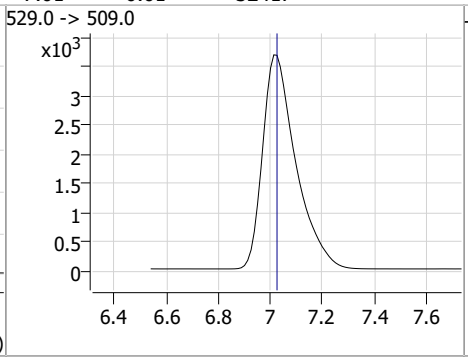


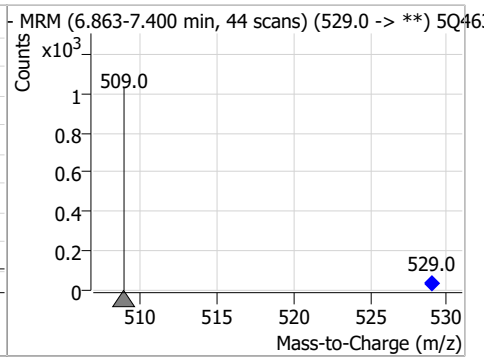


Perfluorinated Compounds by LC/MS/MS

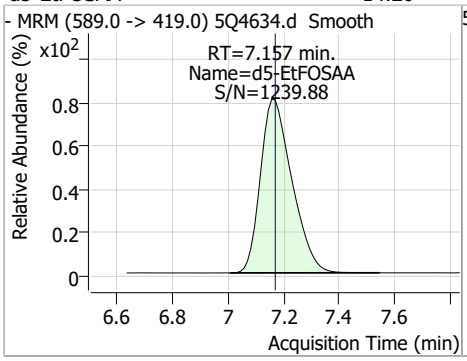
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.43	7.01	-0.01	32417				

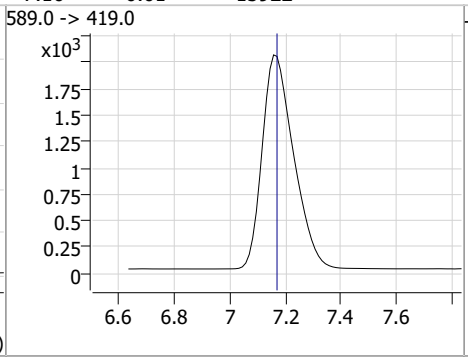


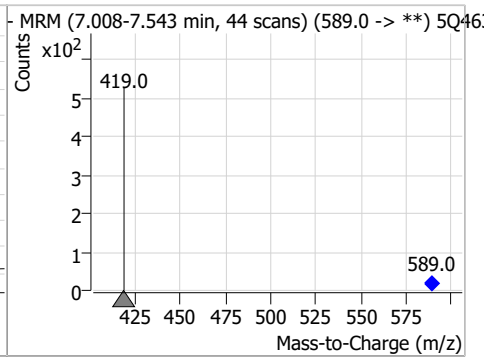




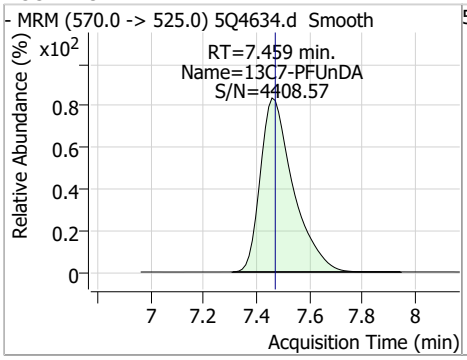
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.20	7.16	-0.01	15922				

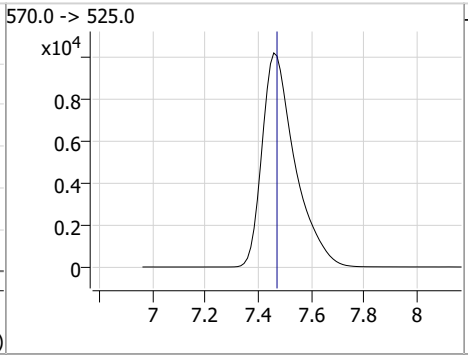


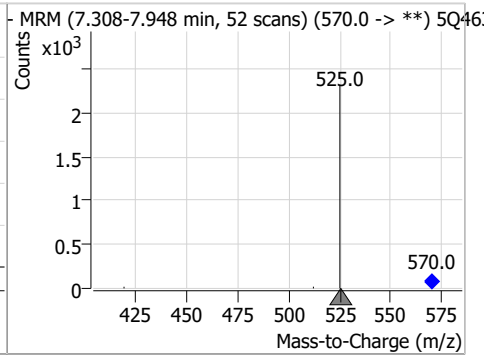




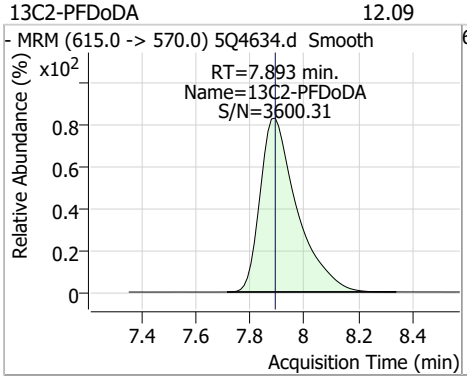
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.47	7.46	-0.01	87816				

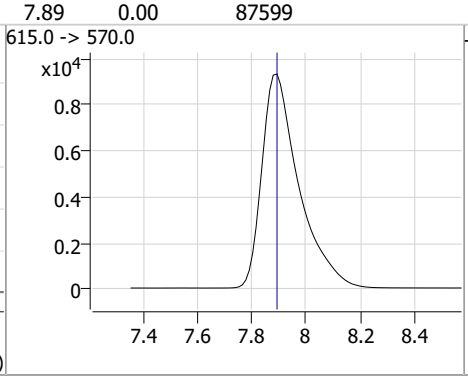


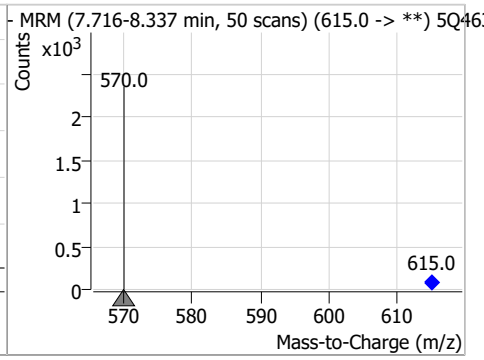




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.09	7.89	0.00	87599				

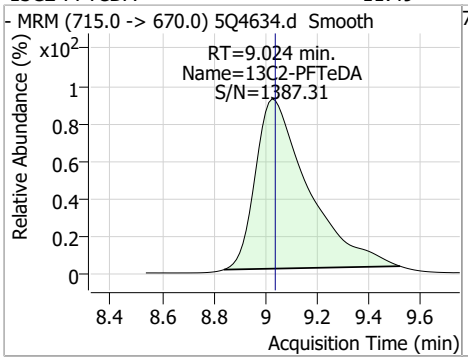


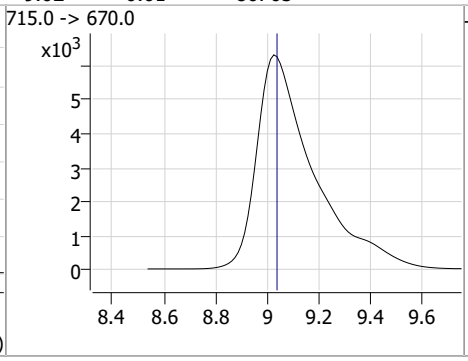


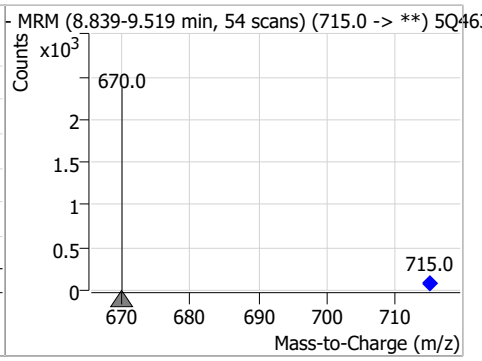


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.49	9.02	-0.01	86705				







7.1.2

7

Manual Integration Approval Summary

Sample Number: FA98286-2
Lab FileID: 5Q4634.D
Injection Time: 09/15/22 06:22
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.23	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4636.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:53:06 AM
Sample Name : fa98286-3
Vial : P1-E5
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

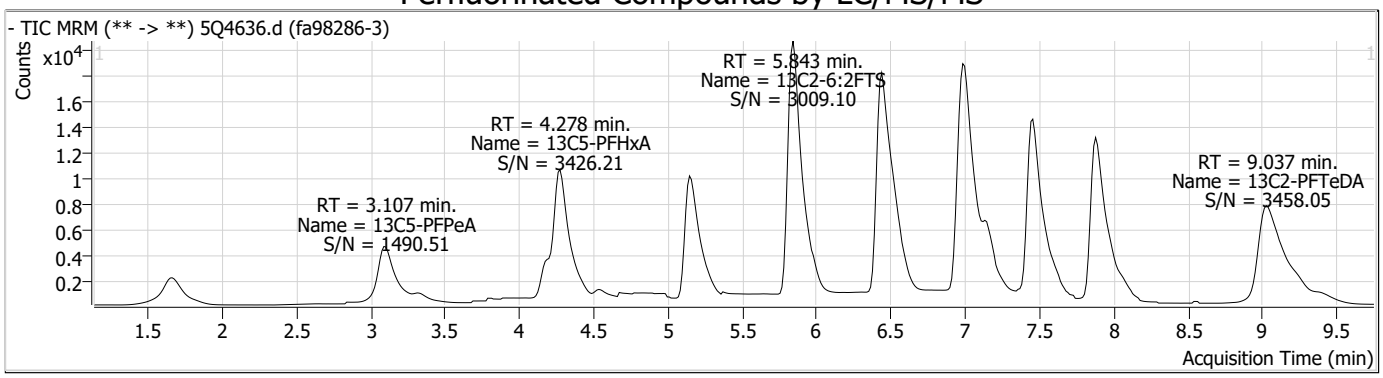
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.662	217.0 -> 172.0	22887	20.00	µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	36916	20.00	µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	63714	20.00	µg/L	-0.025
M4-PFHpA	5.163	367.0 -> 322.0	63355	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	98386	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	108989	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	84453	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	97047	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	100245	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	107277	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	13789	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4633	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5531	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9928	20.00	µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	21130	20.00	µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	37279	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	35095	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17545	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4327	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	353	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	17943	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	21130	14.39	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.9%		
13C2-6:2FTS	5.843	429.0 -> 409.0	37279	16.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.4%		
13C2-8:2FTS	7.013	529.0 -> 509.0	35095	15.63	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%		
13C2-PFDoDA	7.893	615.0 -> 570.0	100245	13.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%		
13C2-PFTeDA	9.037	715.0 -> 670.0	107277	14.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%		
13C3-PFBS	3.337	302.0 -> 99.0	4633	14.22	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	5531	16.22	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.1%		
13C4-PFBA	1.662	217.0 -> 172.0	22887	12.80	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.0%		
13C4-PFHpA	5.163	367.0 -> 322.0	63355	15.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C5-PFHxA	4.278	318.0 -> 273.0	63714	14.57	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C5-PFPeA	3.107	268.0 -> 223.0	36916	12.70	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.5%		
13C6-PFDA	6.989	519.0 -> 474.0	84453	15.69	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

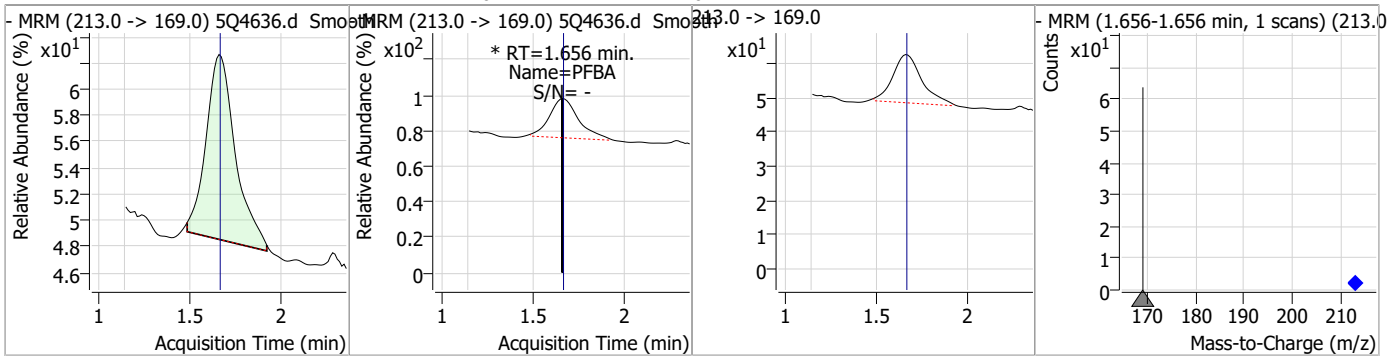
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%			
13C7-PFUnDA	7.459	570.0 -> 525.0	97047	13.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.9%			
13C8-FOSA	6.517	506.0 -> 78.0	13789	12.15	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.8%			
13C8-PFOA	5.857	421.0 -> 376.0	98386	16.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%			
13C8-PFOS	6.428	507.0 -> 99.0	9928	15.21	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%			
13C9-PFNA	6.455	472.0 -> 427.0	108989	16.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.0%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17545	18.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4327	12.89	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.4%			
d3-MeFOSA	6.965	515.0 -> 169.0	353	1.16	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.8%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17943	16.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.509	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.656	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

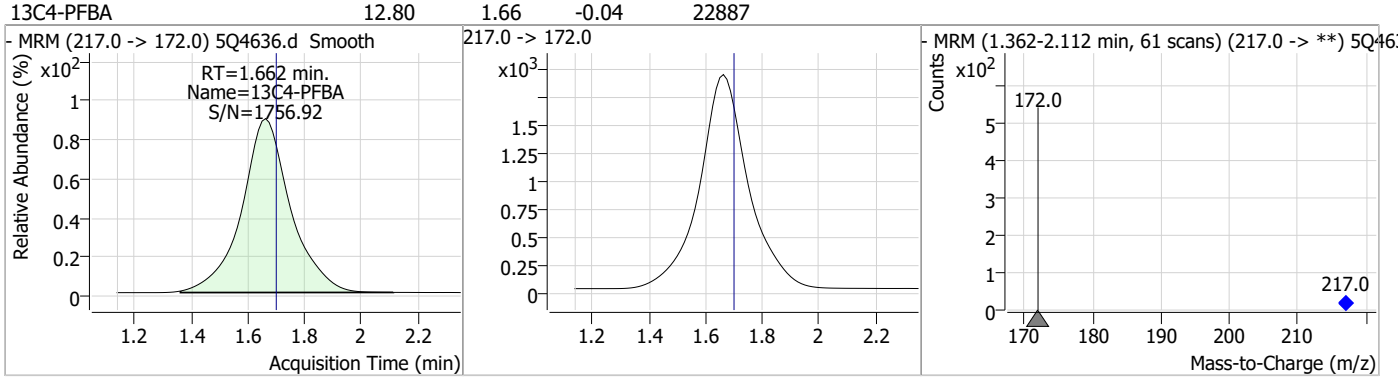
Perfluorinated Compounds by LC/MS/MS



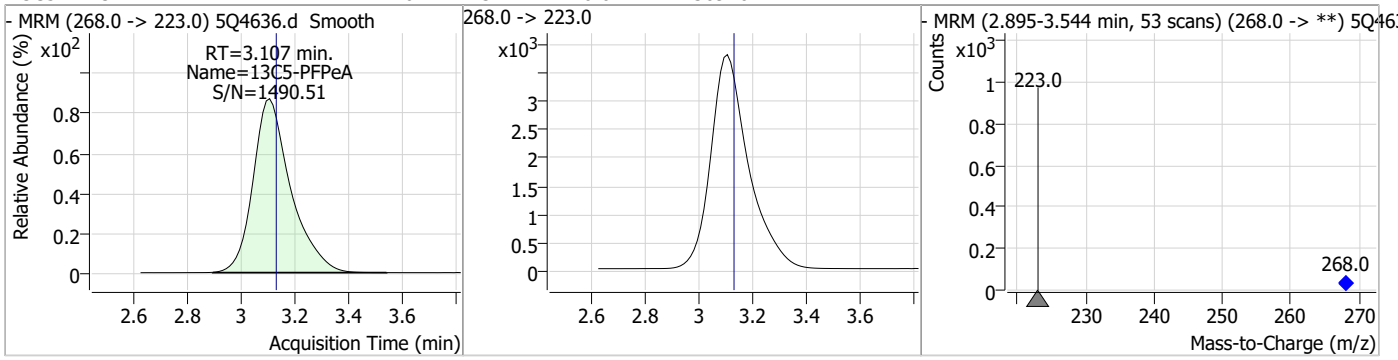
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.80	1.66	-0.04	22887				

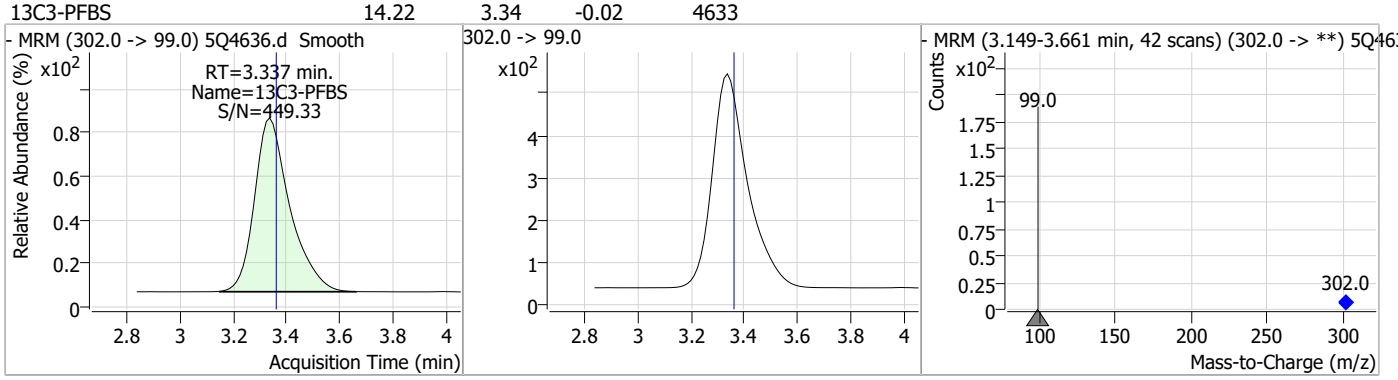


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.70	3.11	-0.02	36916				

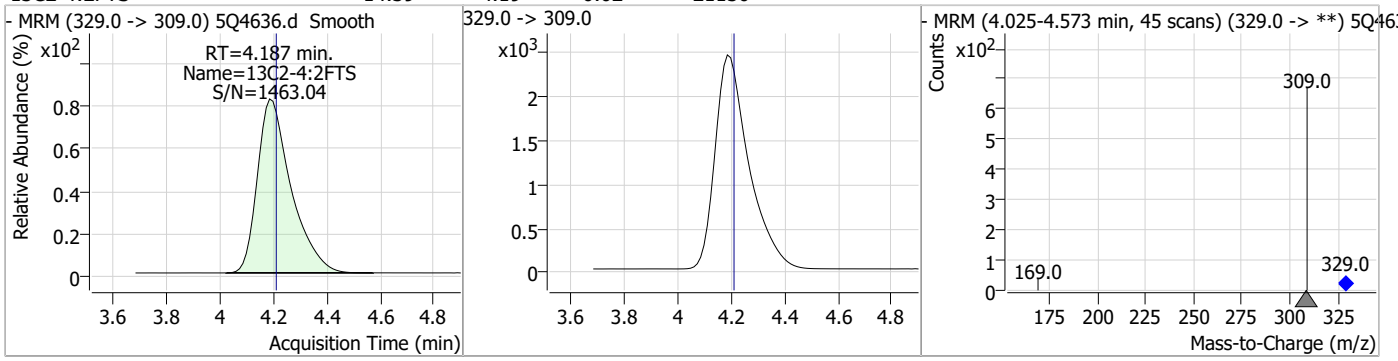


Perfluorinated Compounds by LC/MS/MS

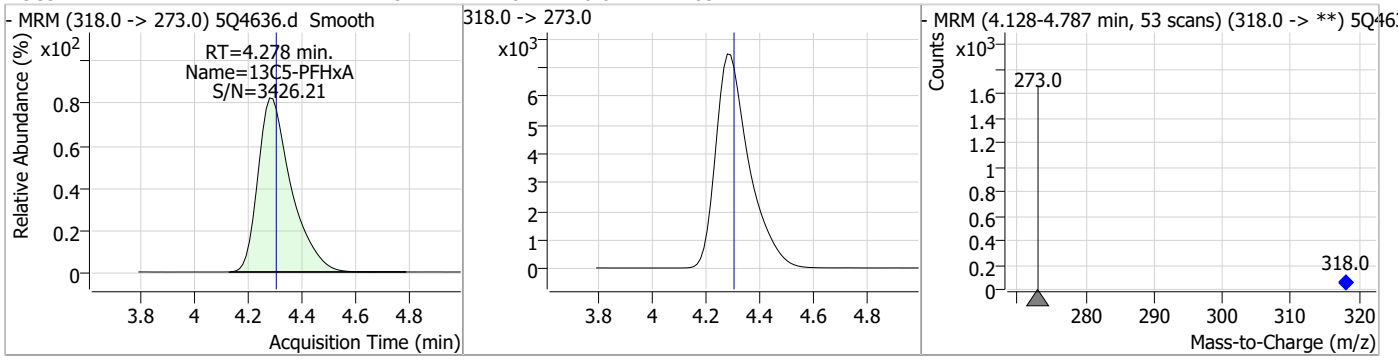
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.22	3.34	-0.02	4633				



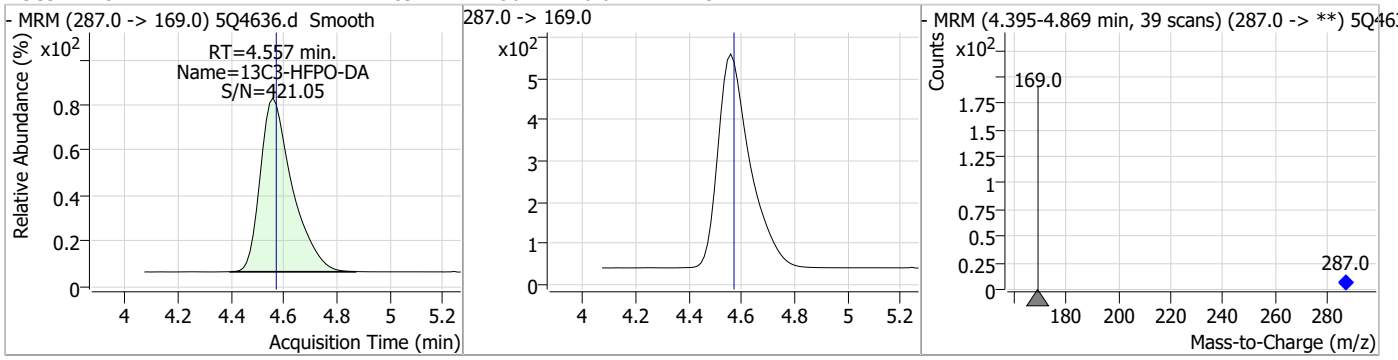
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.39	4.19	-0.02	21130				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.57	4.28	-0.02	63714				

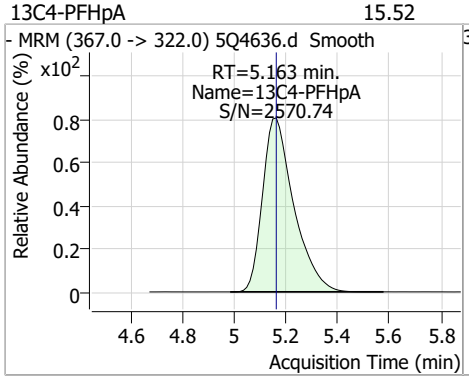


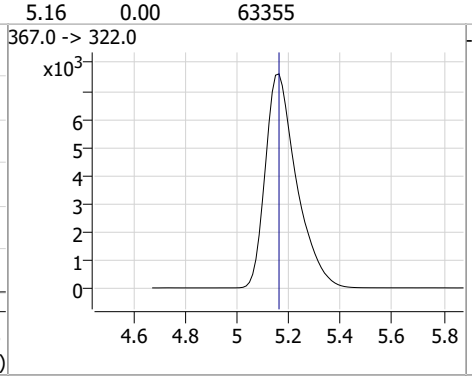
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.89	4.56	-0.01	4327				

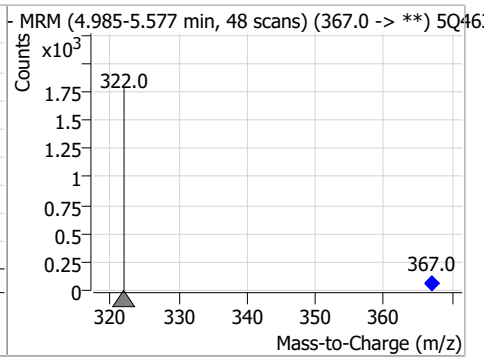


Perfluorinated Compounds by LC/MS/MS

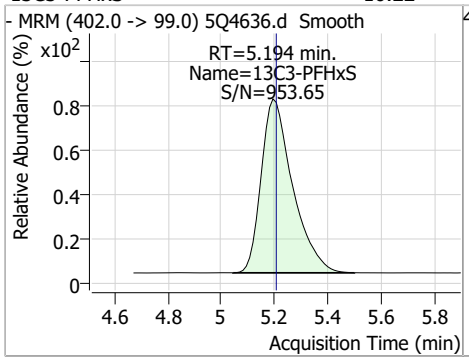
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.52	5.16	0.00	63355				

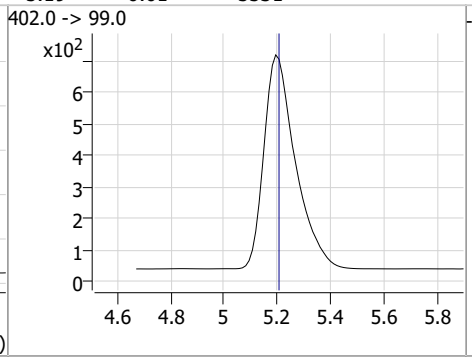


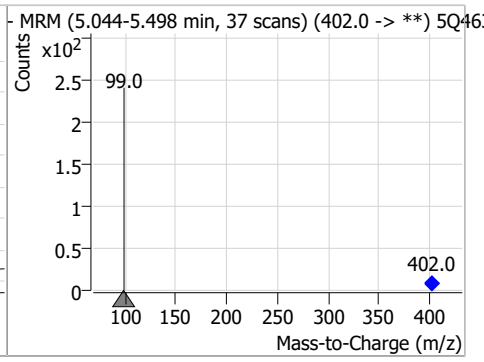




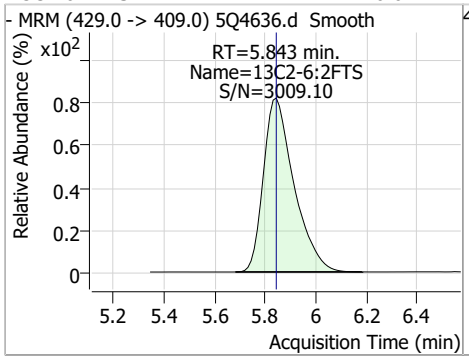
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.22	5.19	-0.01	5531				

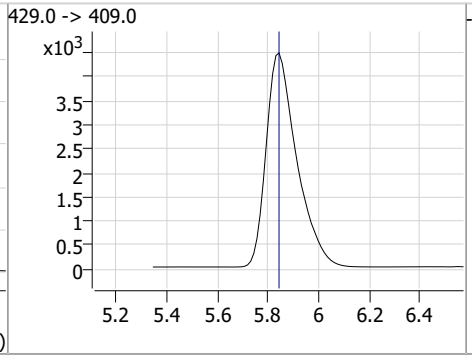


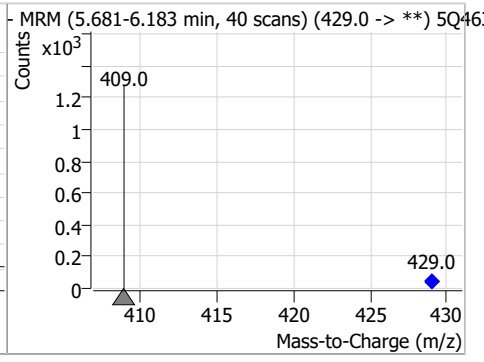




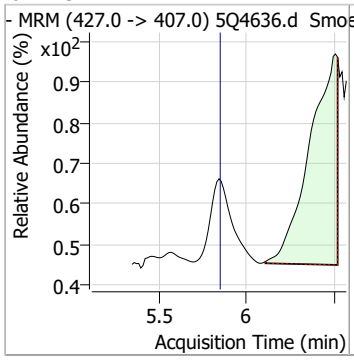
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.67	5.84	0.00	37279				

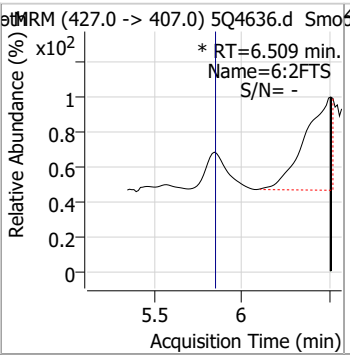


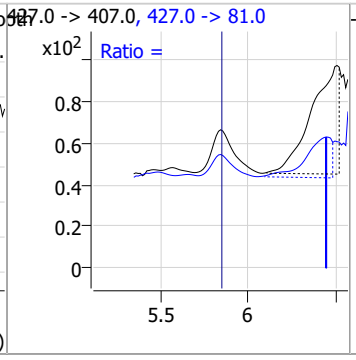


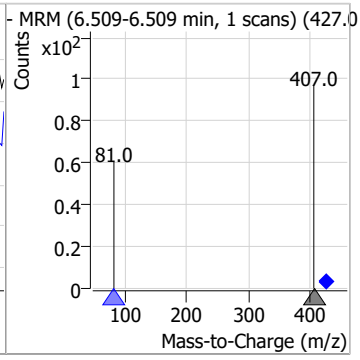


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



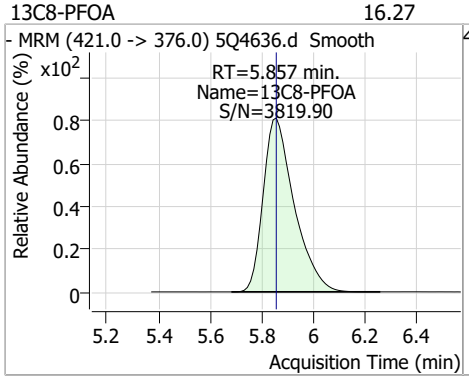


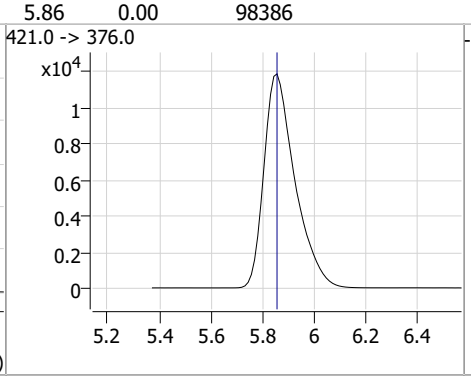


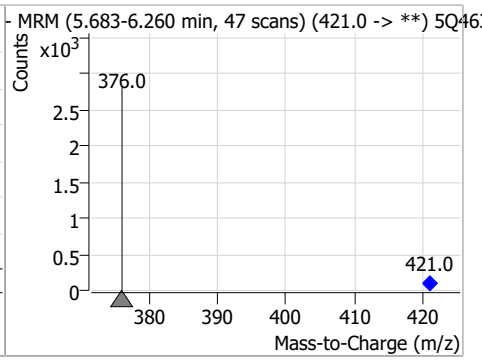


Perfluorinated Compounds by LC/MS/MS

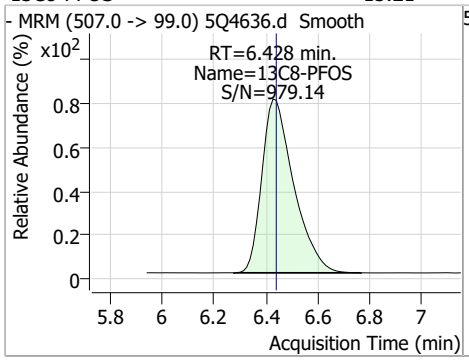
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.27	5.86	0.00	98386				

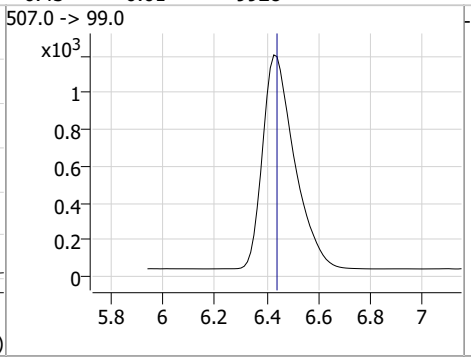


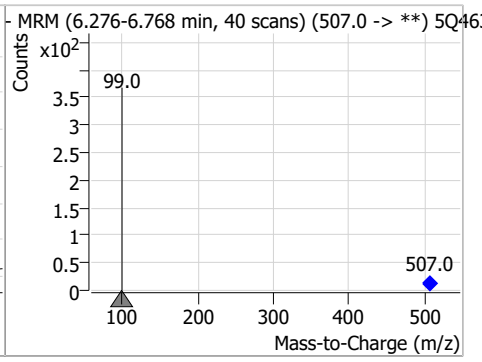




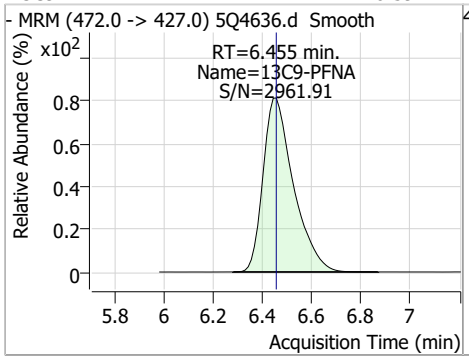
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.21	6.43	-0.01	9928				

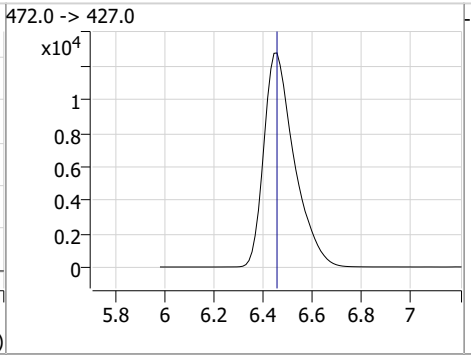


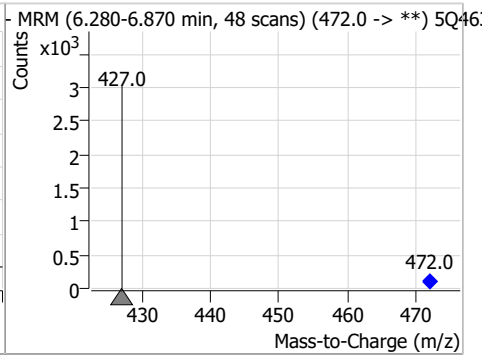




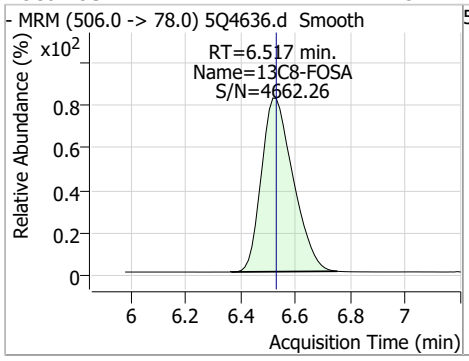
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.59	6.46	0.00	108989				

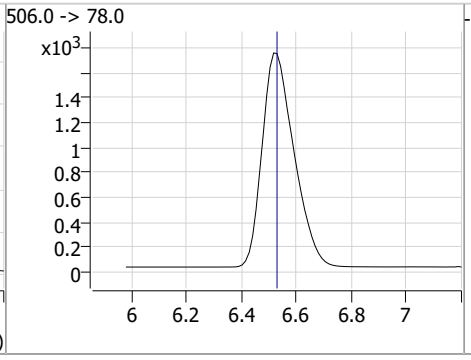


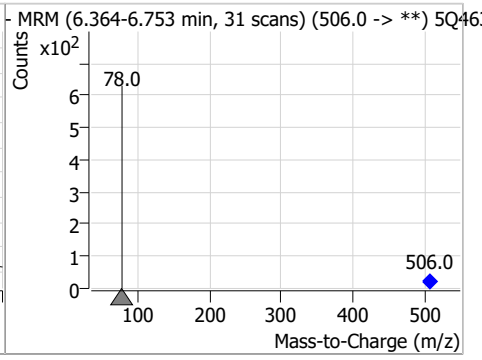




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.15	6.52	-0.01	13789				

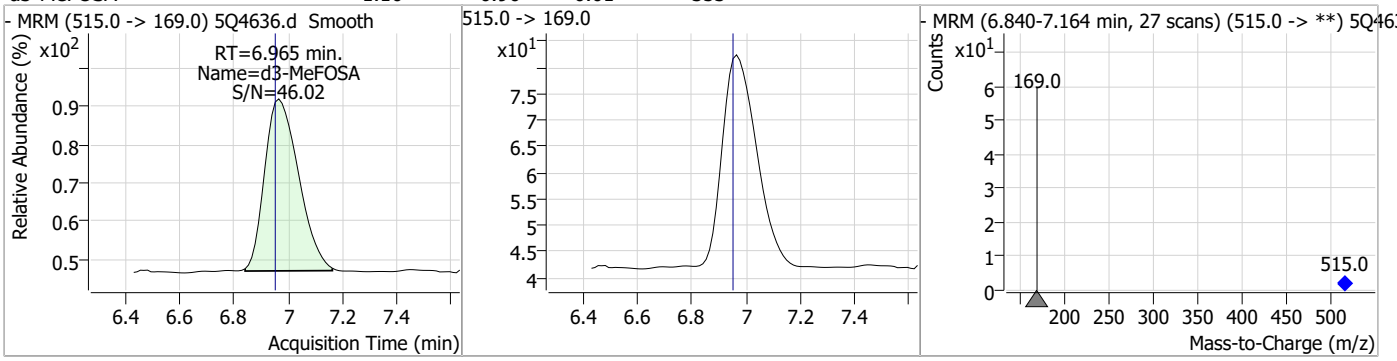




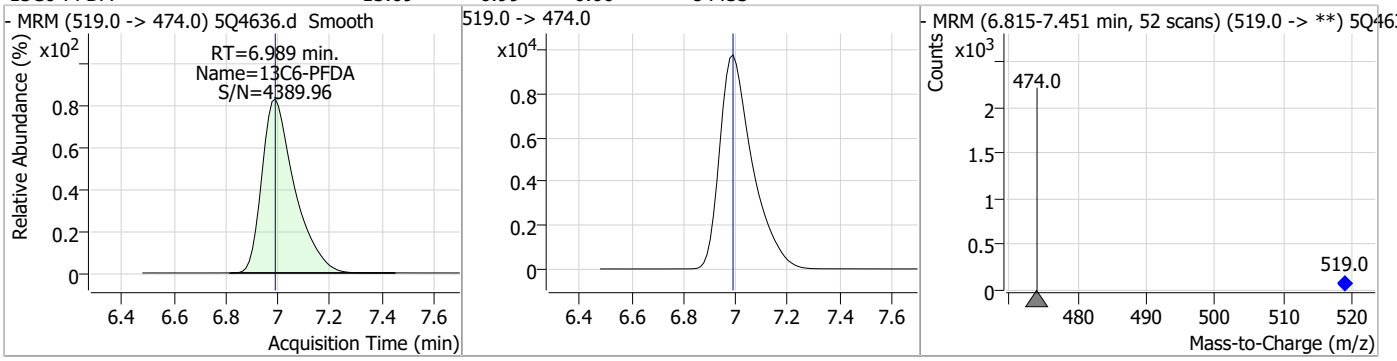


Perfluorinated Compounds by LC/MS/MS

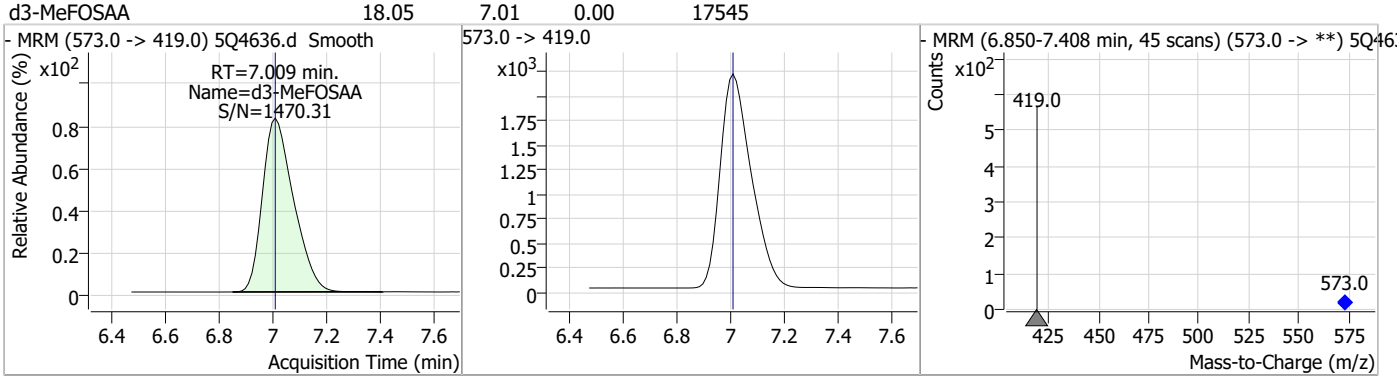
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.16	6.96	0.01	353				



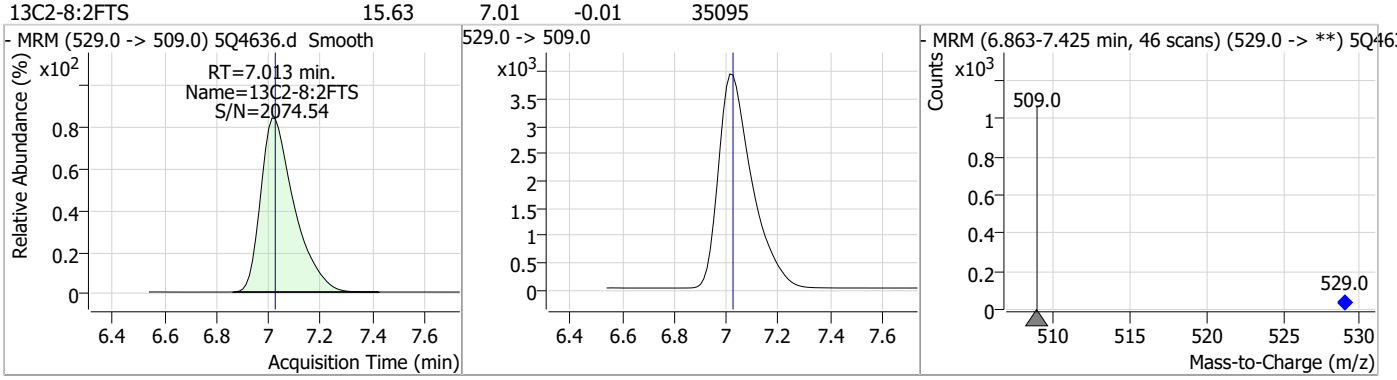
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.69	6.99	0.00	84453				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.05	7.01	0.00	17545				

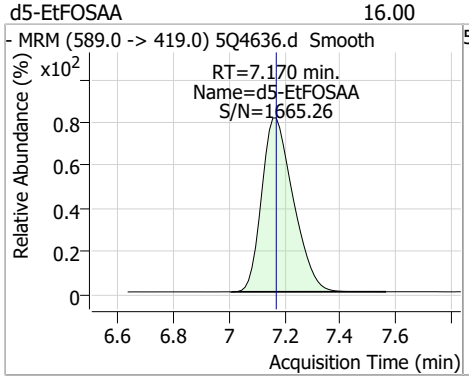


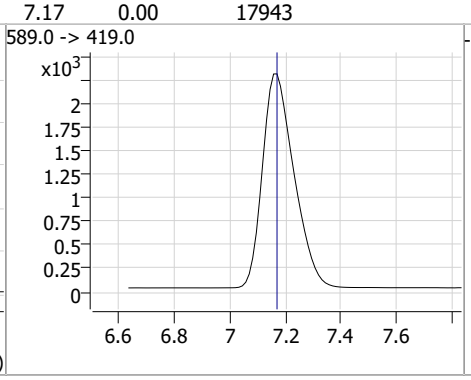
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.63	7.01	-0.01	35095				

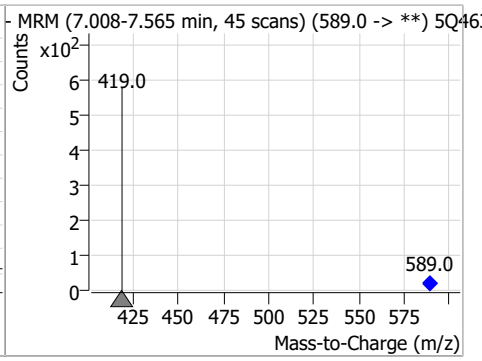


Perfluorinated Compounds by LC/MS/MS

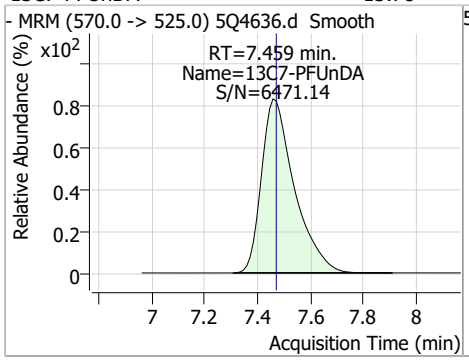
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.00	7.17	0.00	17943				

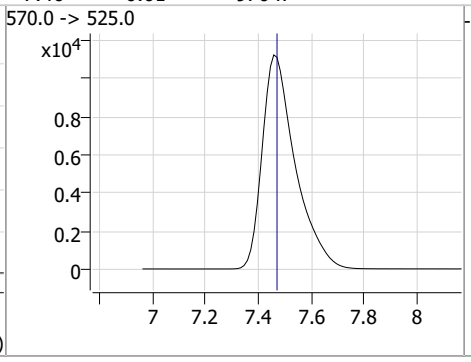


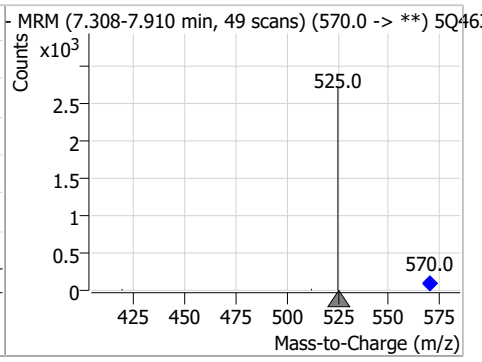




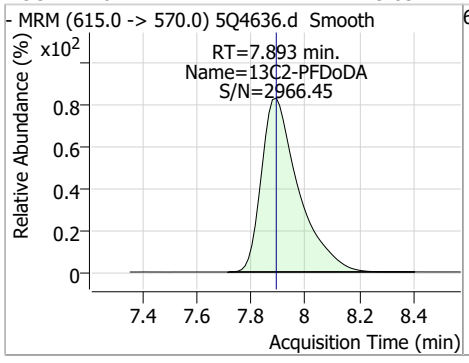
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.78	7.46	-0.01	97047				

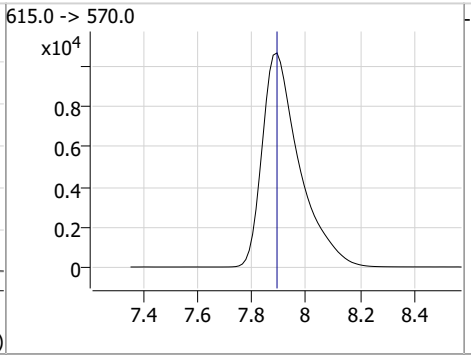


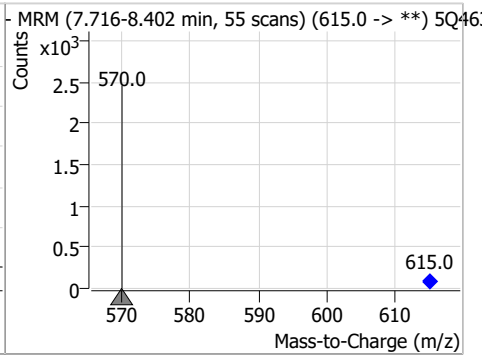




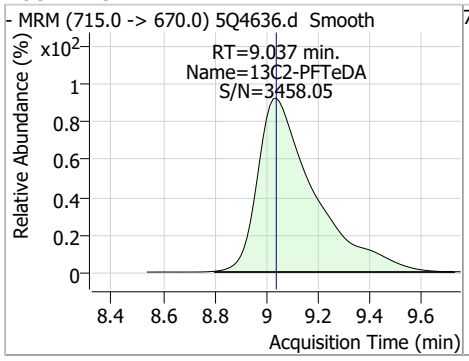
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.83	7.89	0.00	100245				

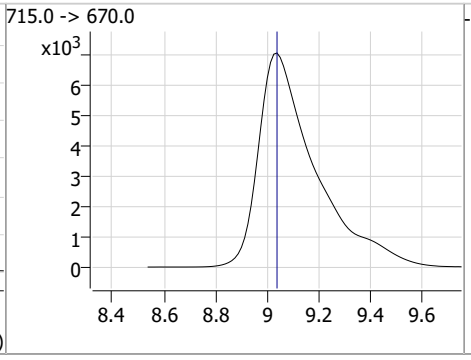


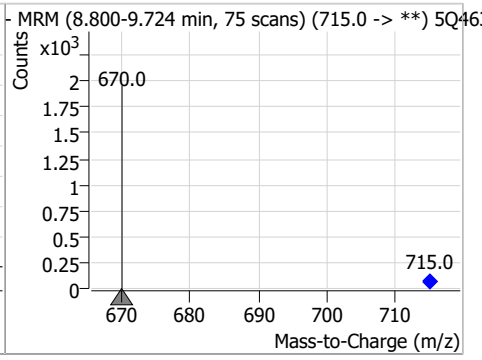




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.22	9.04	0.00	107277				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:42

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4637.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:08:28 AM
Sample Name : fa98286-4
Vial : P1-E6
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

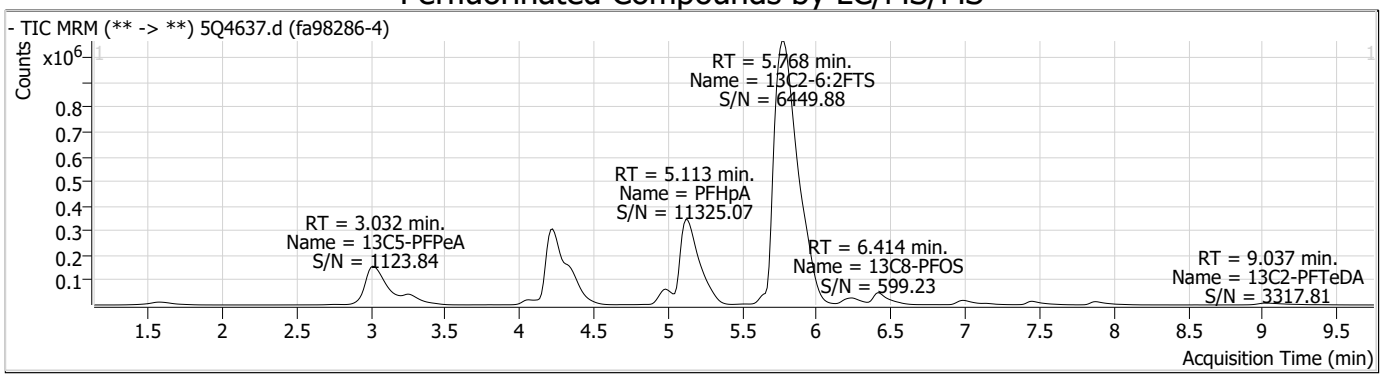
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.587	217.0 -> 172.0	14129	20.00	µg/L	-0.112
M5-PFPeA	3.032	268.0 -> 223.0	24603	20.00	µg/L	-0.100
M5-PFHxA	4.228	318.0 -> 273.0	43240	20.00	µg/L	-0.075
M4-PFHpA	5.112	367.0 -> 322.0	40692	20.00	µg/L	-0.051
M8-PFOA	5.820	421.0 -> 376.0	67201	20.00	µg/L	-0.037
M9-PFNA	6.431	472.0 -> 427.0	99289	20.00	µg/L	-0.025
M6-PFDA	6.977	519.0 -> 474.0	81199	20.00	µg/L	-0.012
M7-PFUnDA	7.459	570.0 -> 525.0	97416	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	101771	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	103818	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	11024	20.00	µg/L	0.000
M3-PFBS	3.274	302.0 -> 99.0	3245	20.00	µg/L	-0.087
M3-PFHxS	5.144	402.0 -> 99.0	3898	20.00	µg/L	-0.062
M8-PFOS	6.414	507.0 -> 99.0	9417	20.00	µg/L	-0.026
M2-4:2FTS	4.137	329.0 -> 309.0	15752	20.00	µg/L	-0.075
M2-6:2FTS	5.768	429.0 -> 409.0	400037	20.00	µg/L	-0.075
M2-8:2FTS	7.013	529.0 -> 509.0	34091	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	16876	20.00	µg/L	0.000
M3-HFPO-DA	4.519	287.0 -> 169.0	3294	20.00	µg/L	-0.050
M3-MeFOSA	6.965	515.0 -> 169.0	315	20.00	µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	17645	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.137	329.0 -> 309.0	15752	10.73	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.6%		
13C2-6:2FTS	5.768	429.0 -> 409.0	400037	178.92	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 894.6%		
13C2-8:2FTS	7.013	529.0 -> 509.0	34091	15.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	101771	14.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%		
13C2-PFTeDA	9.037	715.0 -> 670.0	103818	13.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C3-PFBS	3.274	302.0 -> 99.0	3245	9.96	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.8%		
13C3-PFHxS	5.144	402.0 -> 99.0	3898	11.43	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.1%		
13C4-PFBA	1.587	217.0 -> 172.0	14129	7.90	µg/L	-0.112
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 39.5%		
13C4-PFHpA	5.112	367.0 -> 322.0	40692	9.97	µg/L	-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.8%		
13C5-PFHxA	4.228	318.0 -> 273.0	43240	9.89	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.4%		
13C5-PFPeA	3.032	268.0 -> 223.0	24603	8.47	µg/L	-0.100
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.3%		
13C6-PFDA	6.977	519.0 -> 474.0	81199	15.08	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

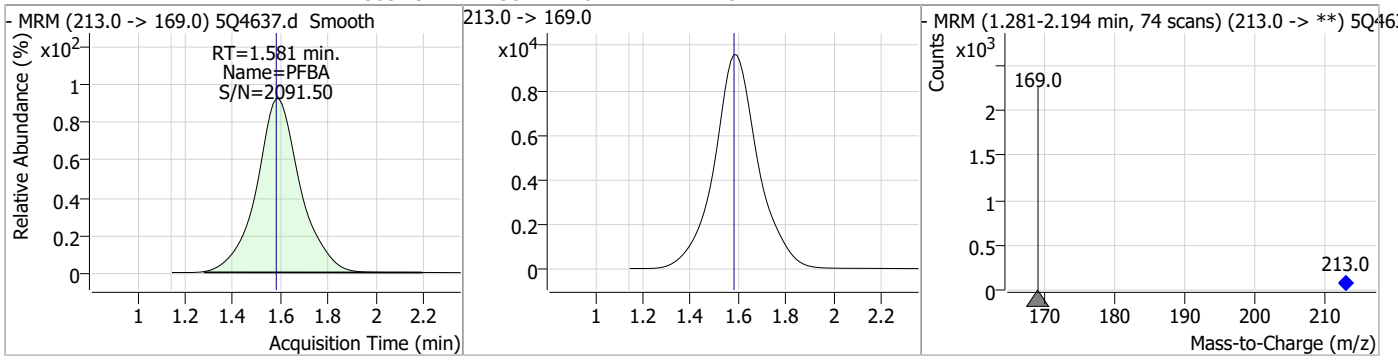
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
13C7-PFUnDA	7.459	570.0 -> 525.0	97416	13.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%			
13C8-FOSA	6.530	506.0 -> 78.0	11024	9.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.6%			
13C8-PFOA	5.820	421.0 -> 376.0	67201	11.11	µg/L		-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.6%			
13C8-PFOS	6.414	507.0 -> 99.0	9417	14.42	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%			
13C9-PFNA	6.431	472.0 -> 427.0	99289	15.11	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16876	17.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%			
13C3-HFPO-DA	4.519	287.0 -> 169.0	3294	9.81	µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.0%			
d3-MeFOSA	6.965	515.0 -> 169.0	315	1.04	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.2%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17645	15.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%			
Target Compounds							QValue
4:2FTS	4.139	327.0 -> 307.0	17020	19.30	µg/L		99
6:2FTS	5.769	427.0 -> 407.0	7085592	333.96	µg/L		97
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.581	213.0 -> 169.0	121544	365.19	µg/L		100
PFBS	3.279	299.0 -> 80.0	226265	464.23	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.113	363.0 -> 319.0	702633	262.84	µg/L	m	99
PFHpS	5.631	449.0 -> 80.0	54446	76.90	µg/L	m	92
PFHxA	4.229	313.0 -> 269.0	2456481	1162.74	µg/L	m	99
PFHxS	5.146	399.0 -> 80.0	1711981	2957.20	µg/L	m	98
PFNA	6.431	463.0 -> 419.0	22330	5.02	µg/L	m	100
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.820	413.0 -> 369.0	980442	240.61	µg/L		99
PFOS	6.228	499.0 -> 80.0	311842	375.99	µg/L	m	66
PFPeA	3.035	263.0 -> 219.0	1529551	1258.05	µg/L		100
PFPeS	4.360	349.0 -> 80.0	230205	607.16	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.691	461.0 -> 381.0	0		µg/L	m	1
FBSA	4.356	298.0 -> 78.0	191023	266.38	µg/L		100
FHxSA	5.674	398.0 -> 78.0	93495	136.78	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

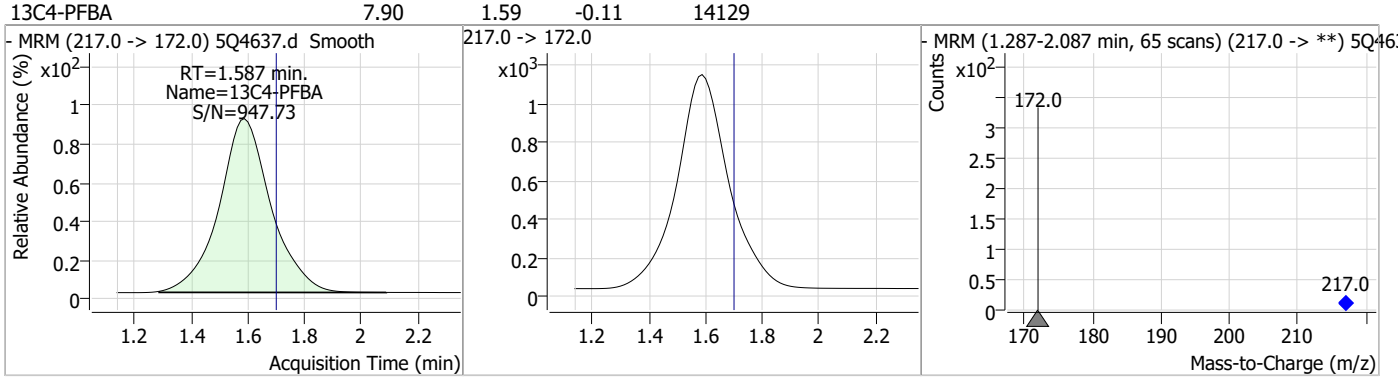
Perfluorinated Compounds by LC/MS/MS



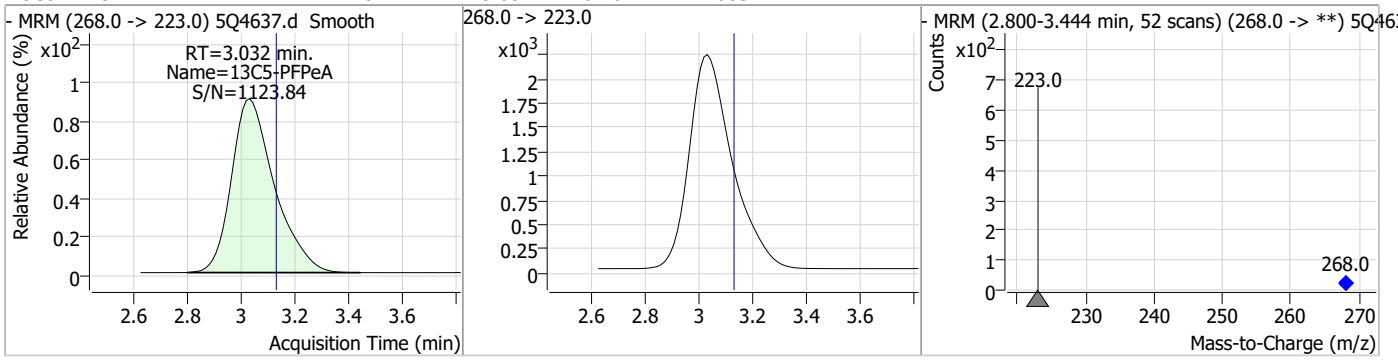
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	365.19	1.58	-0.11	121544				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	7.90	1.59	-0.11	14129				

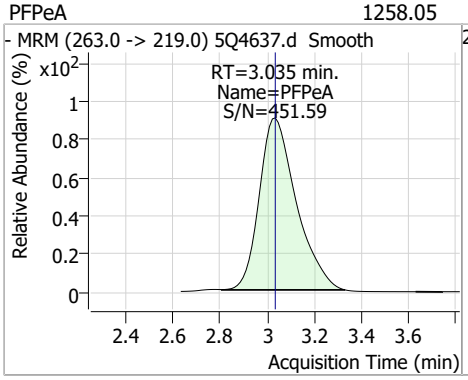


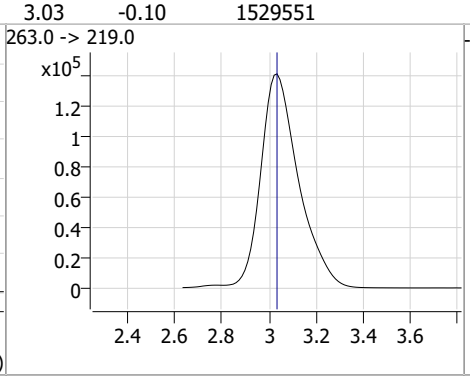
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.47	3.03	-0.10	24603				

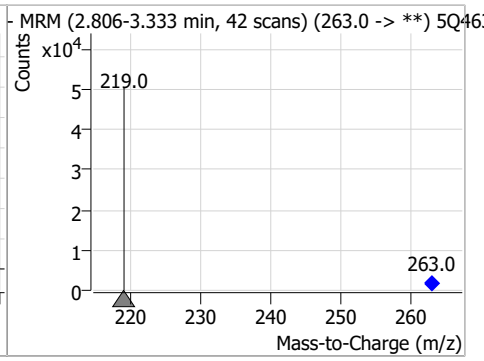


Perfluorinated Compounds by LC/MS/MS

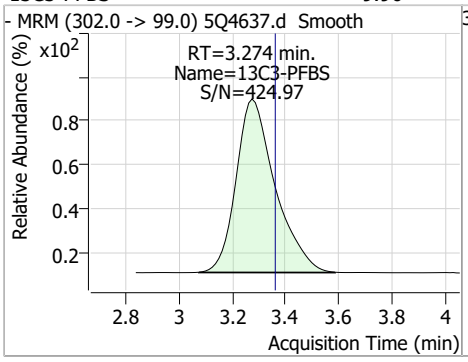
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1258.05	3.03	-0.10	1529551				

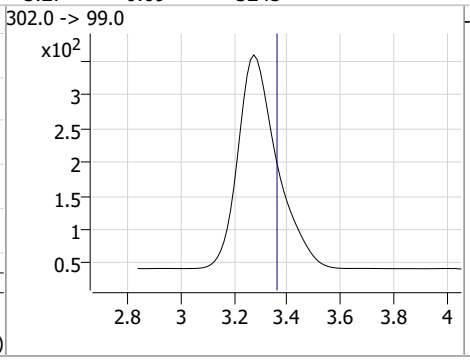


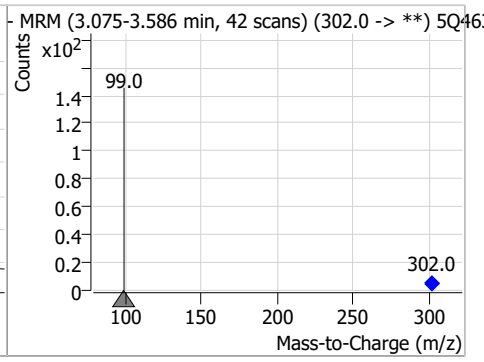




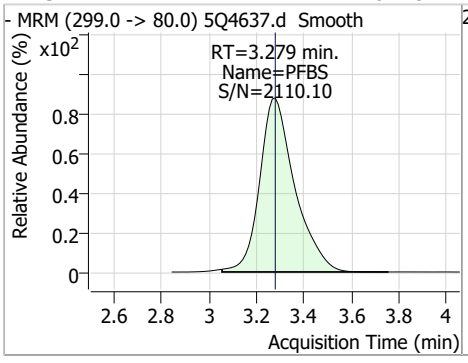
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	9.96	3.27	-0.09	3245				

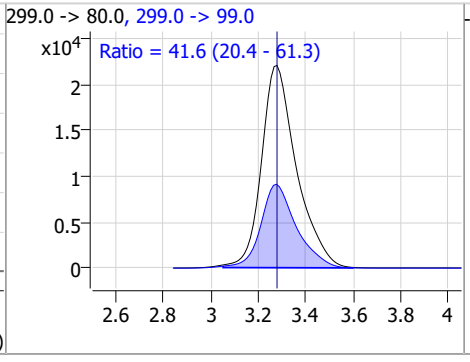


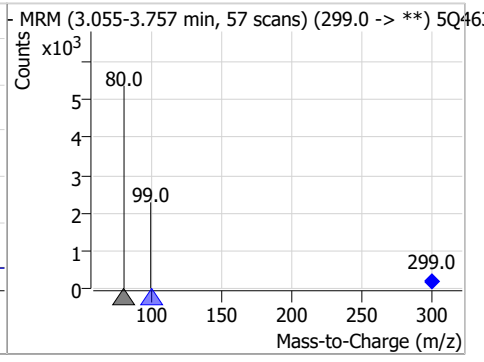




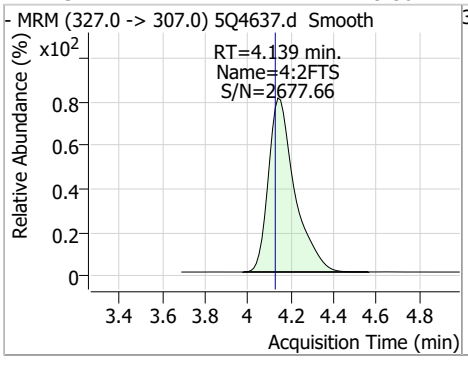
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	464.23	3.28	-0.09	226265	299.0 -> 99.0	41.6	20.4	61.3

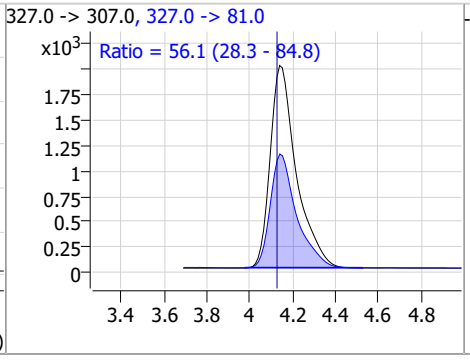


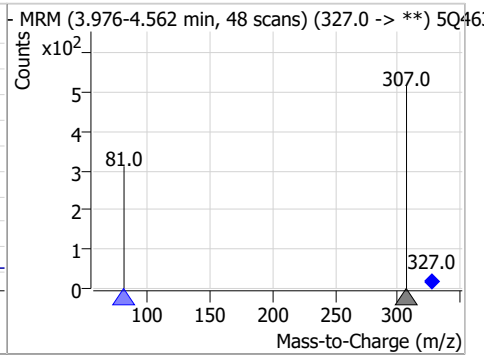




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.30	4.14	-0.06	17020	327.0 -> 81.0	56.1	28.3	84.8

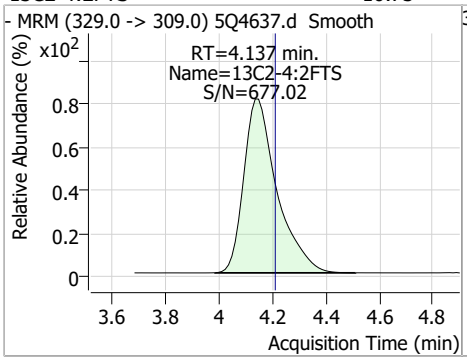


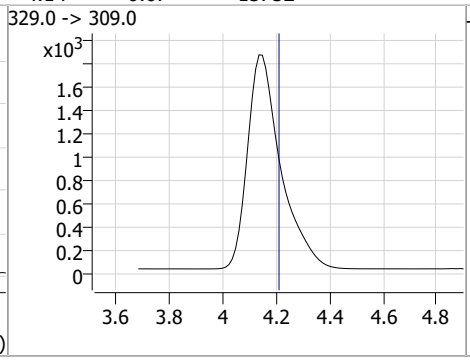


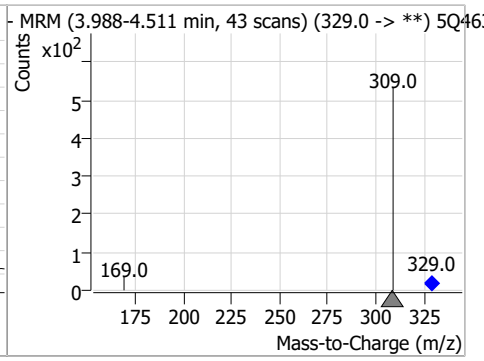


Perfluorinated Compounds by LC/MS/MS

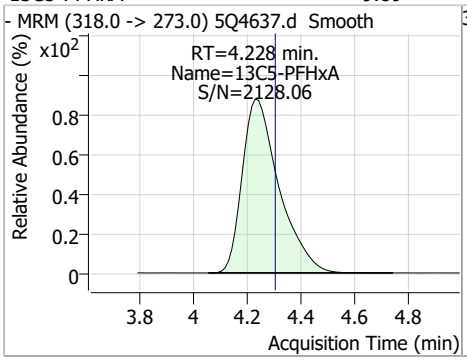
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.73	4.14	-0.07	15752				

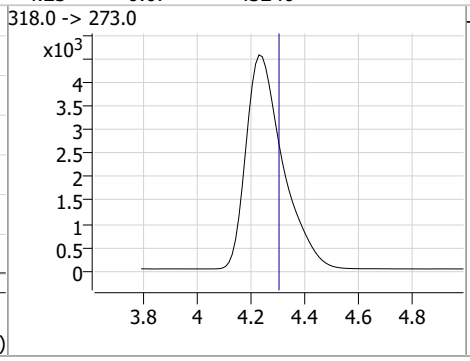


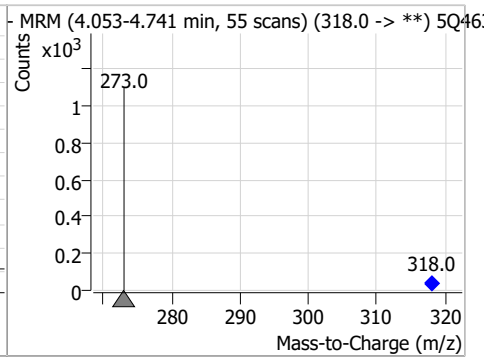




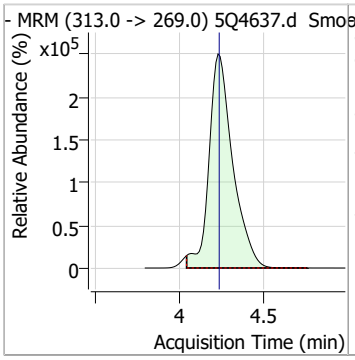
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	9.89	4.23	-0.07	43240				

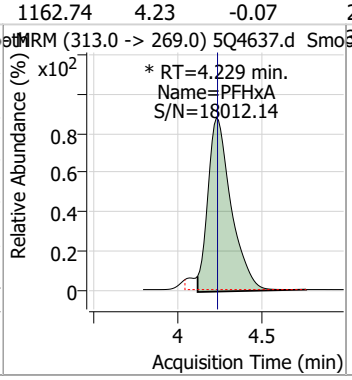


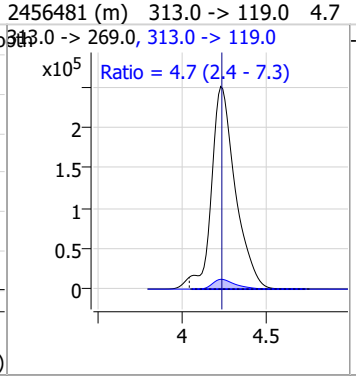


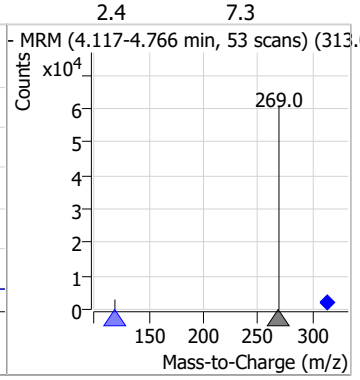


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1162.74	4.23	-0.07	2456481 (m)	313.0 -> 119.0	4.7	2.4	7.3

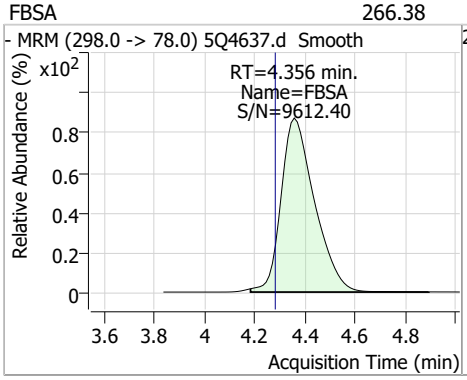


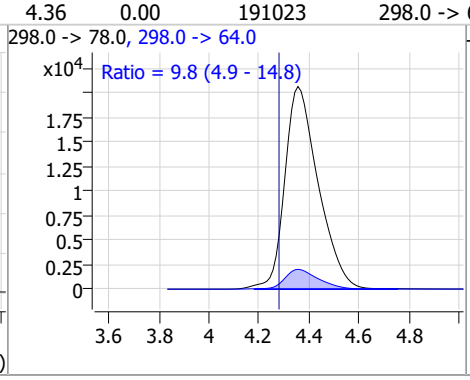


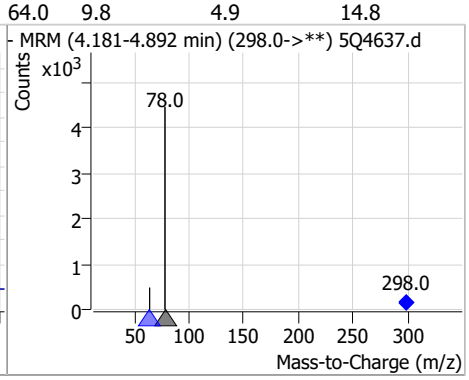




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	266.38	4.36	0.00	191023	298.0 -> 64.0	9.8	4.9	14.8

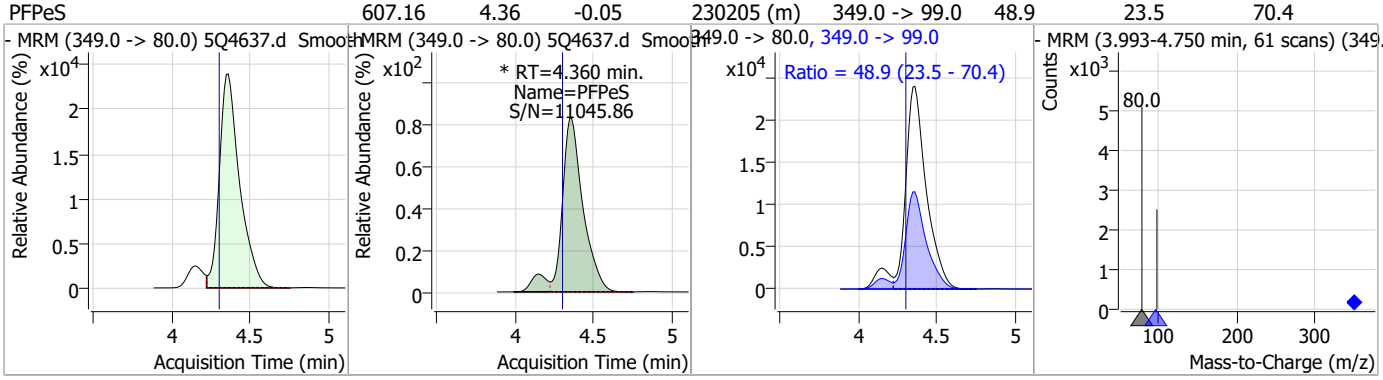




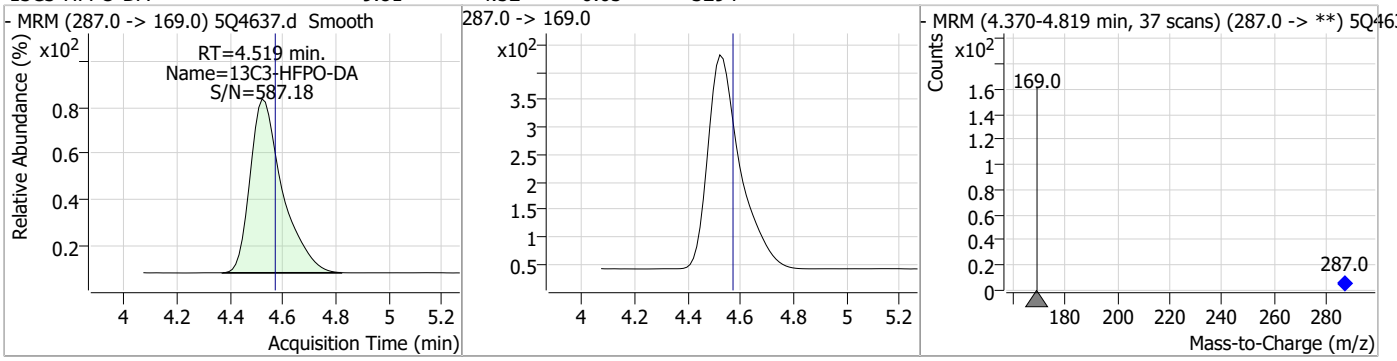


Perfluorinated Compounds by LC/MS/MS

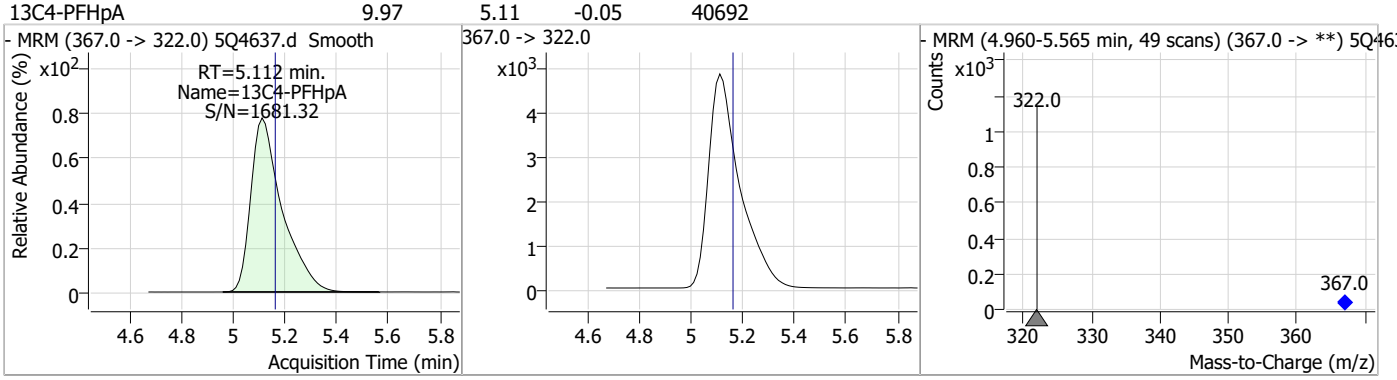
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	607.16	4.36	-0.05	230205 (m)	349.0 -> 99.0	48.9	23.5	70.4



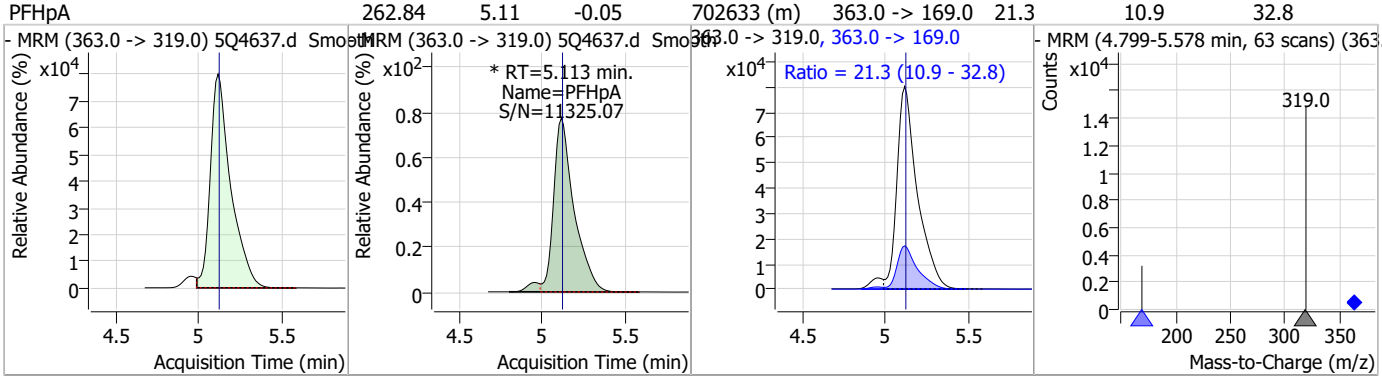
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.81	4.52	-0.05	3294				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.97	5.11	-0.05	40692				

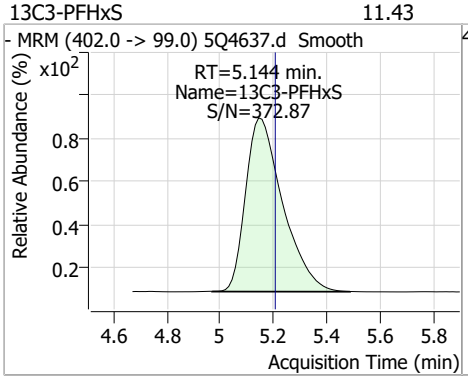


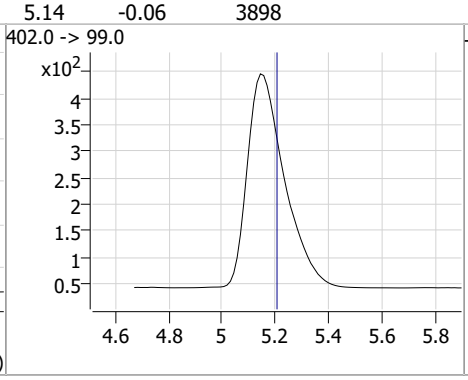
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	262.84	5.11	-0.05	702633 (m)	363.0 -> 169.0	21.3	10.9	32.8

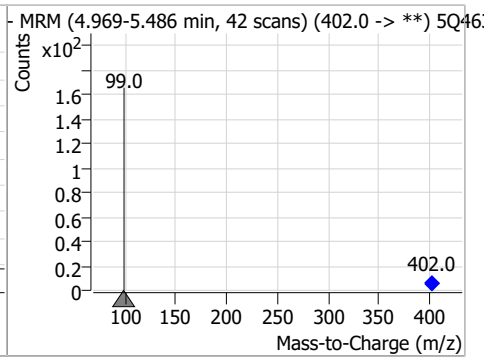


Perfluorinated Compounds by LC/MS/MS

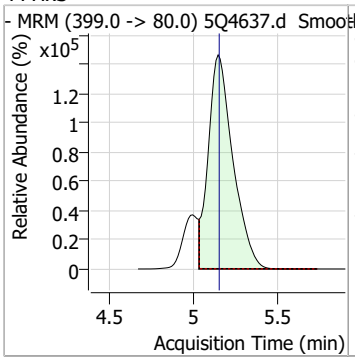
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.43	5.14	-0.06	3898				

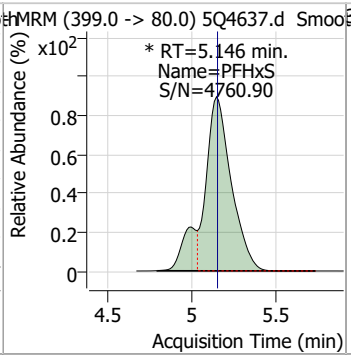


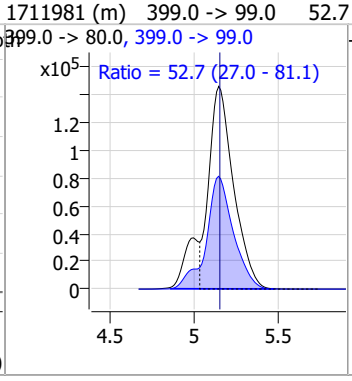


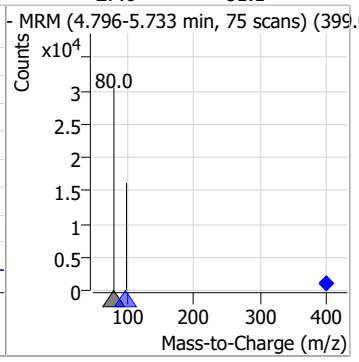


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2957.20	5.15	-0.06	1711981 (m)	399.0 -> 99.0	52.7	27.0	81.1

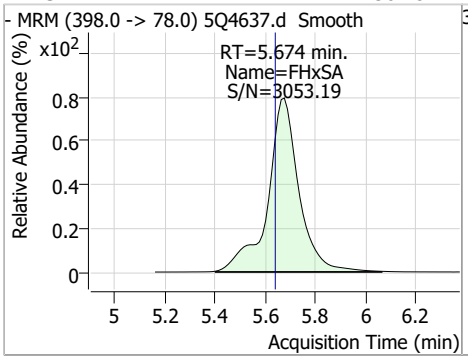


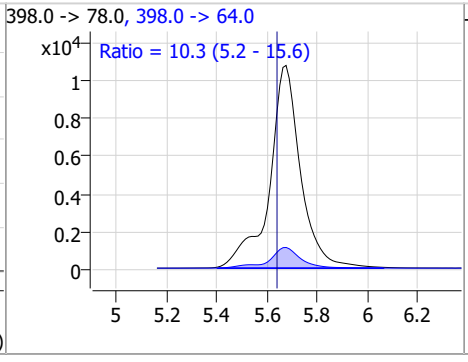


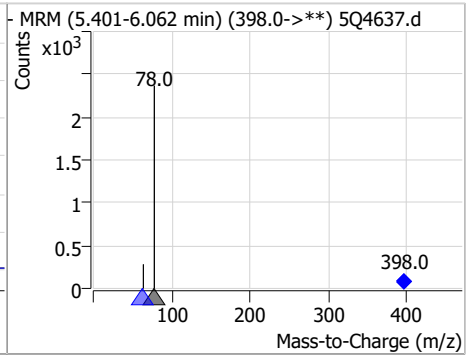




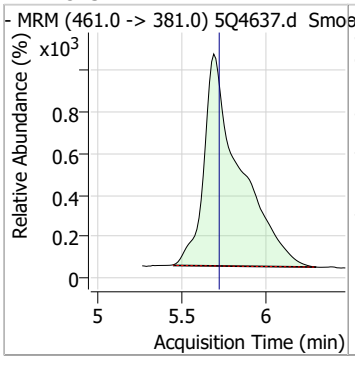
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	136.78	5.67	0.00	93495	398.0 -> 64.0	10.3	5.2	15.6

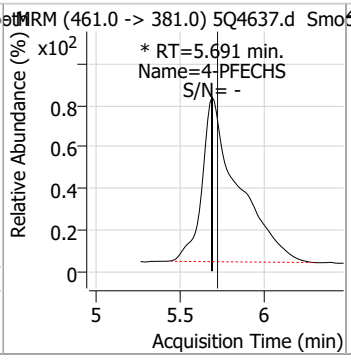


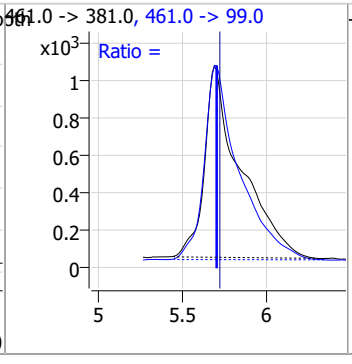


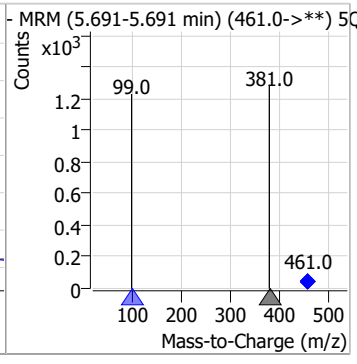


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		27.7	83.2



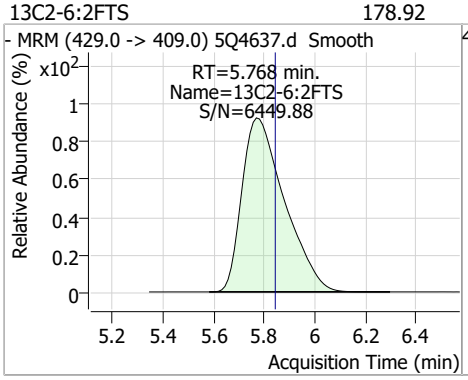


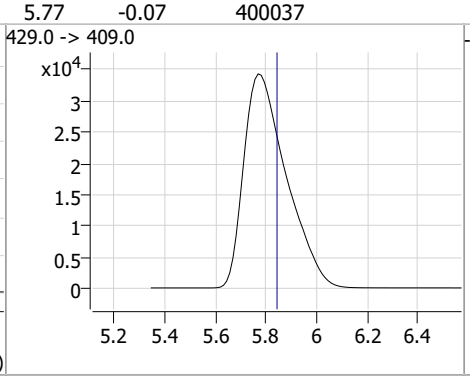


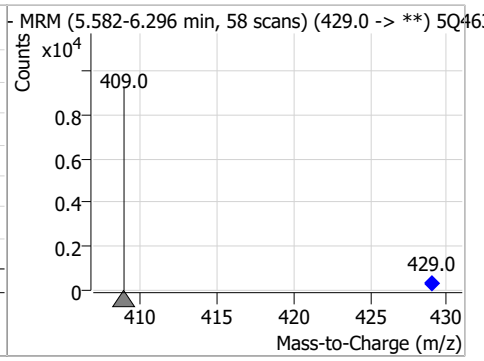


Perfluorinated Compounds by LC/MS/MS

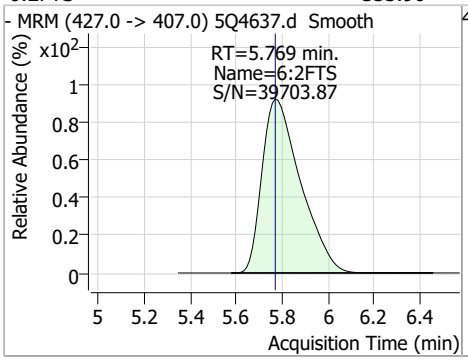
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	178.92	5.77	-0.07	400037				

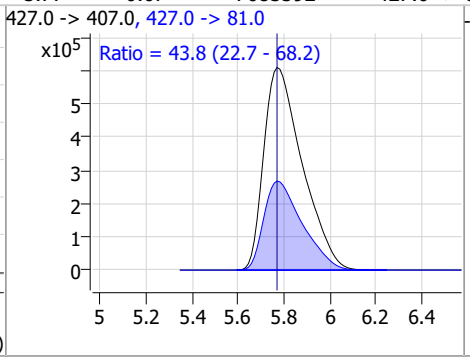


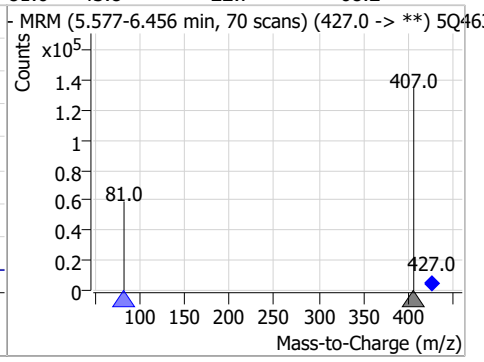




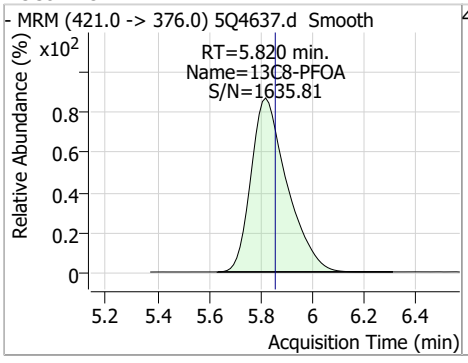
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	333.96	5.77	-0.07	7085592	427.0 -> 81.0	43.8	22.7	68.2

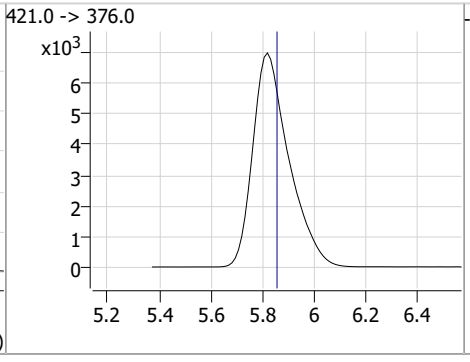


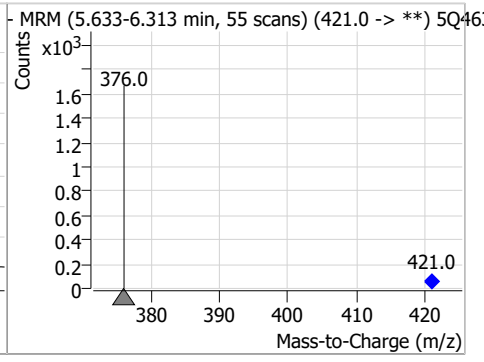




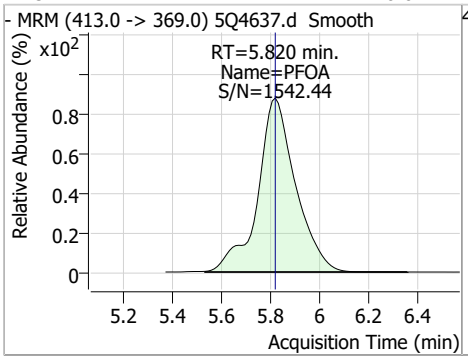
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.11	5.82	-0.04	67201				

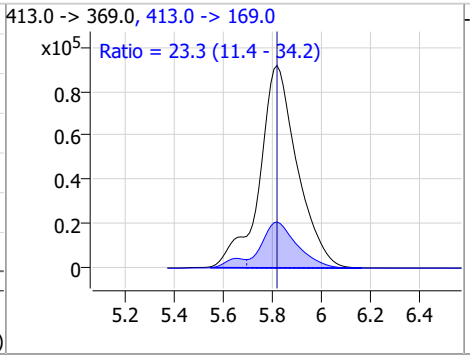


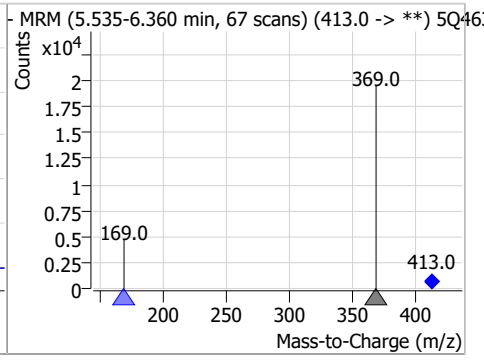




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	240.61	5.82	-0.04	980442	413.0 -> 169.0	23.3	11.4	34.2

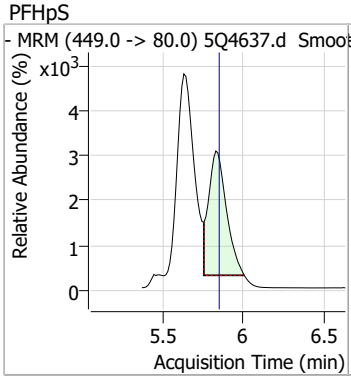


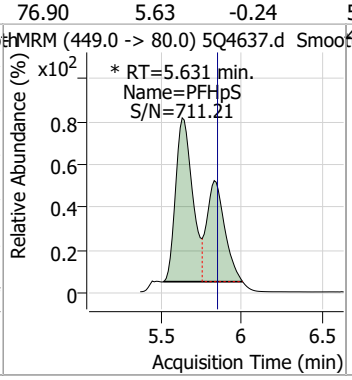


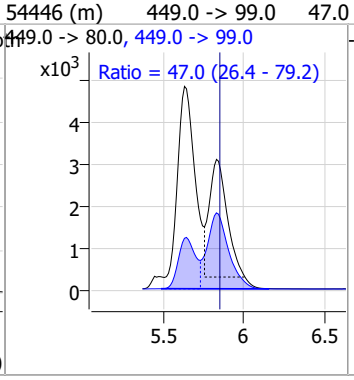


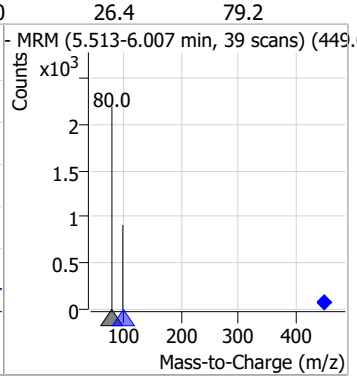
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	76.90	5.63	-0.24	54446 (m)	449.0 -> 99.0	47.0	26.4	79.2

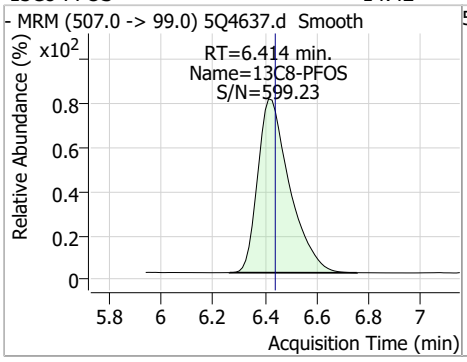


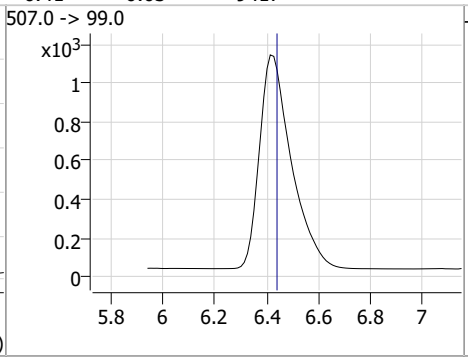


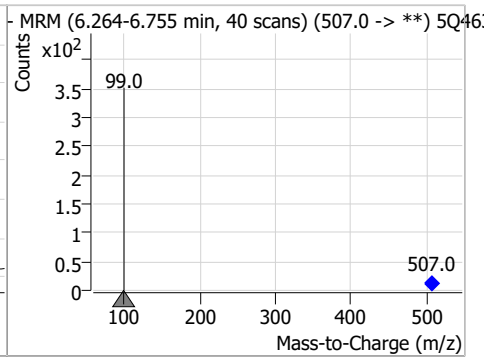




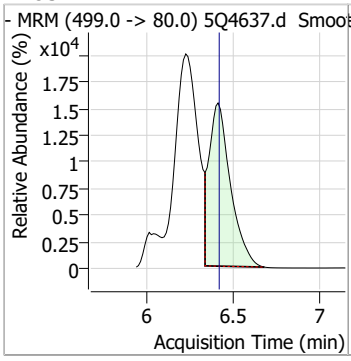
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.42	6.41	-0.03	9417				

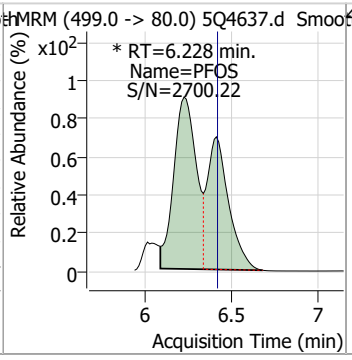


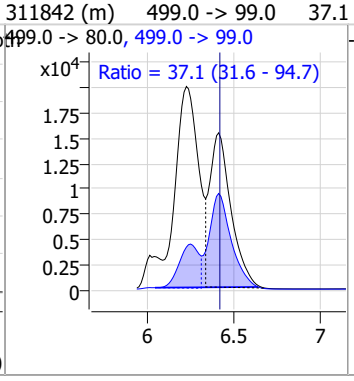


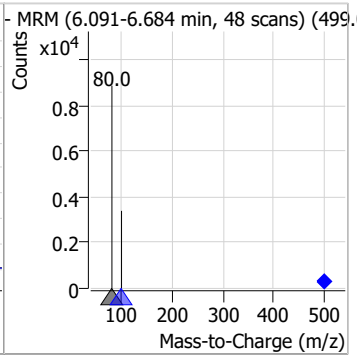


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	375.99	6.23	-0.21	311842 (m)	499.0 -> 99.0	37.1	31.6	94.7

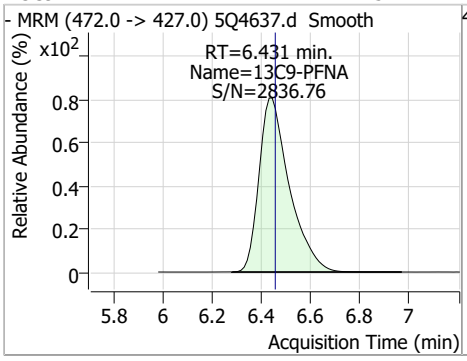


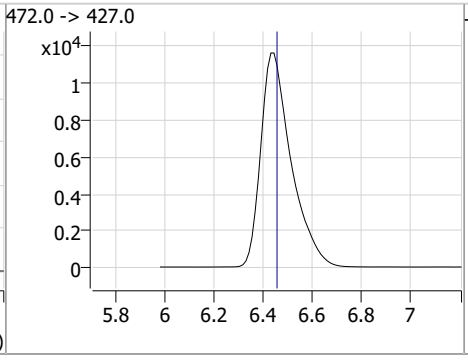


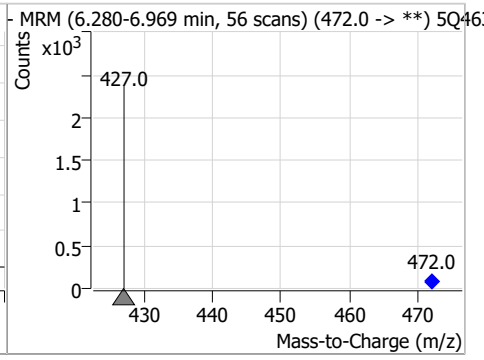




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.11	6.43	-0.02	99289				

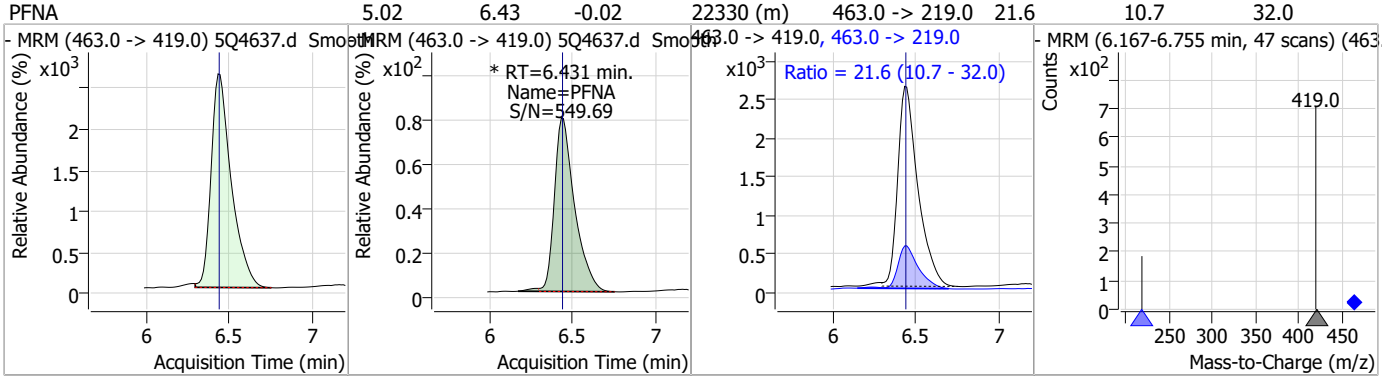




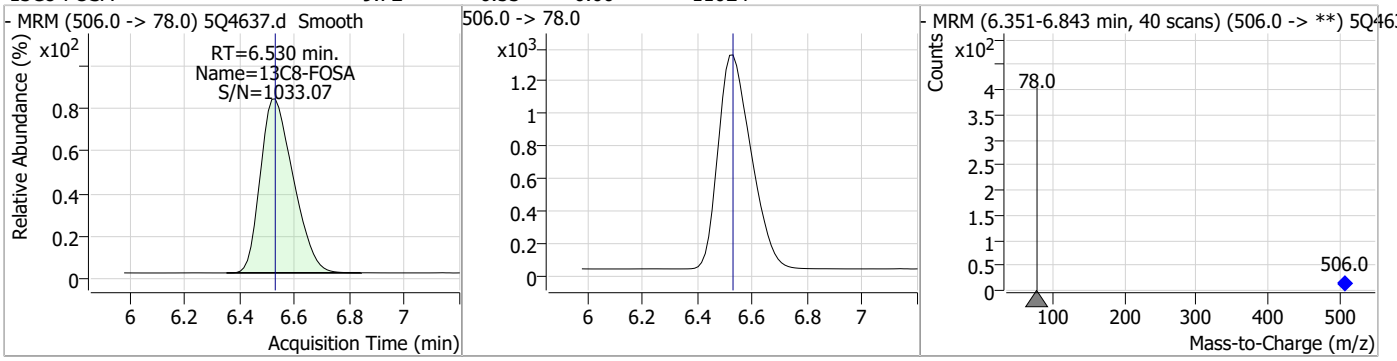


Perfluorinated Compounds by LC/MS/MS

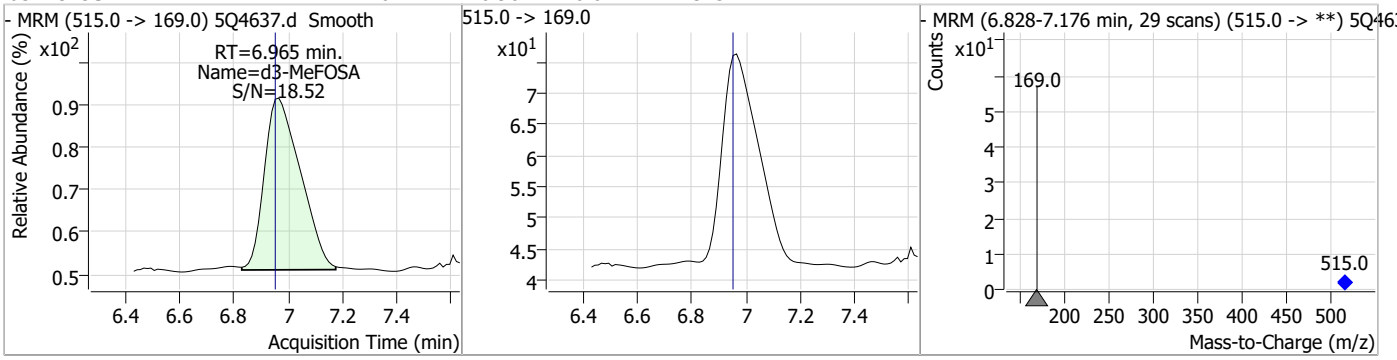
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.02	6.43	-0.02	22330 (m)	463.0 -> 219.0	21.6	10.7	32.0



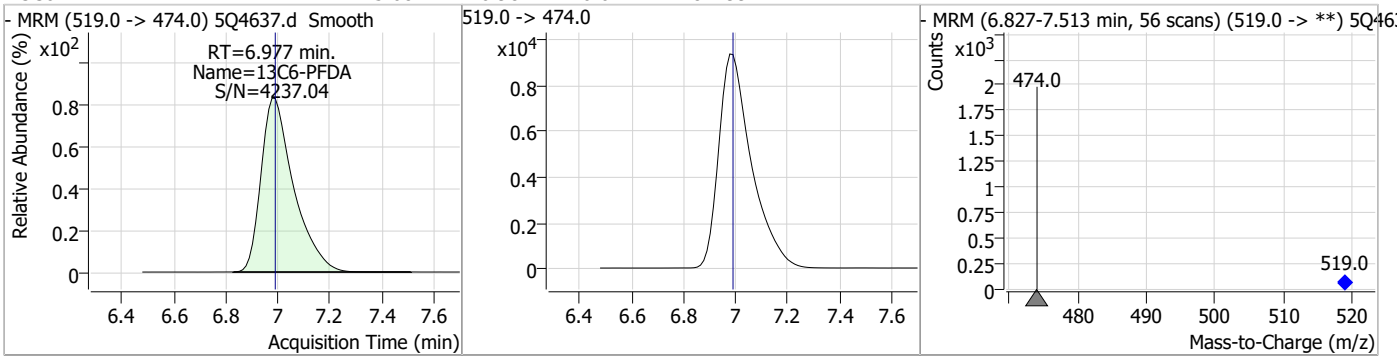
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.72	6.53	0.00	11024				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.04	6.96	0.01	315				

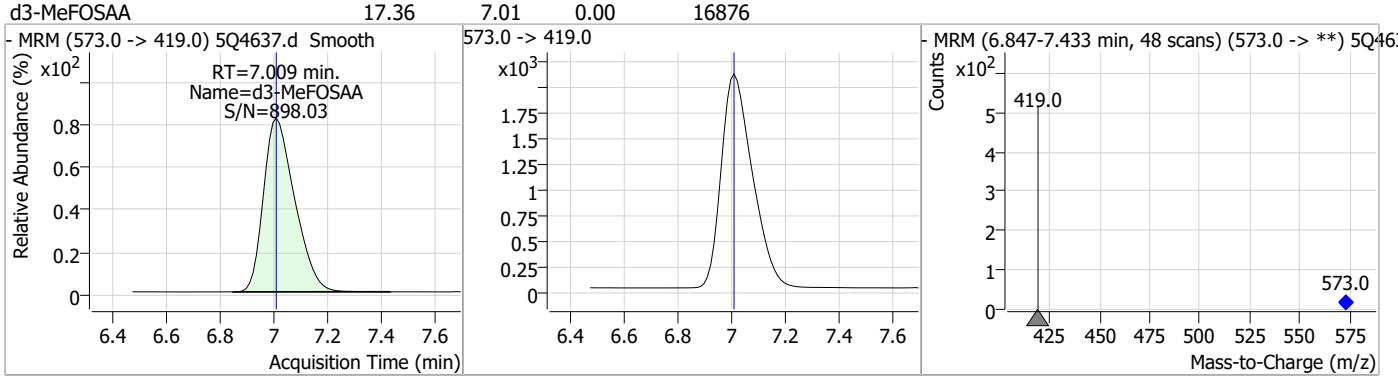


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.08	6.98	-0.01	81199				

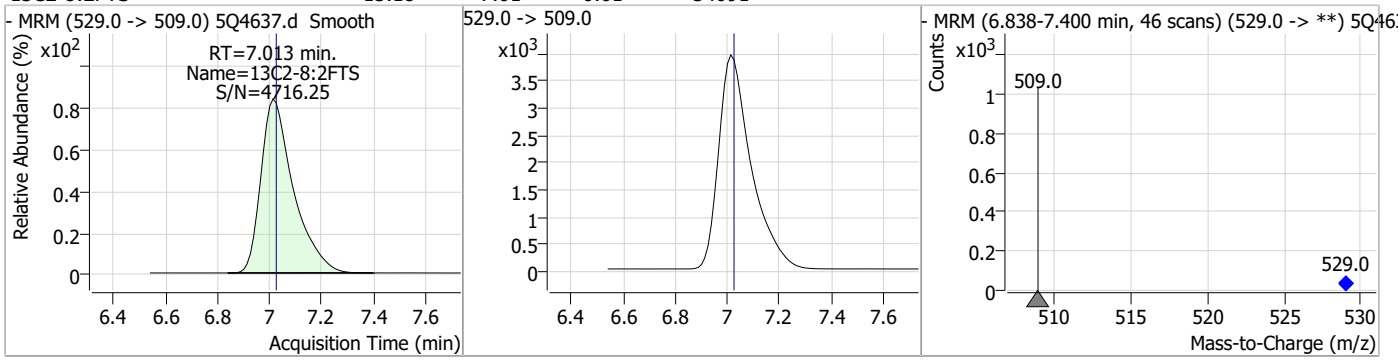


Perfluorinated Compounds by LC/MS/MS

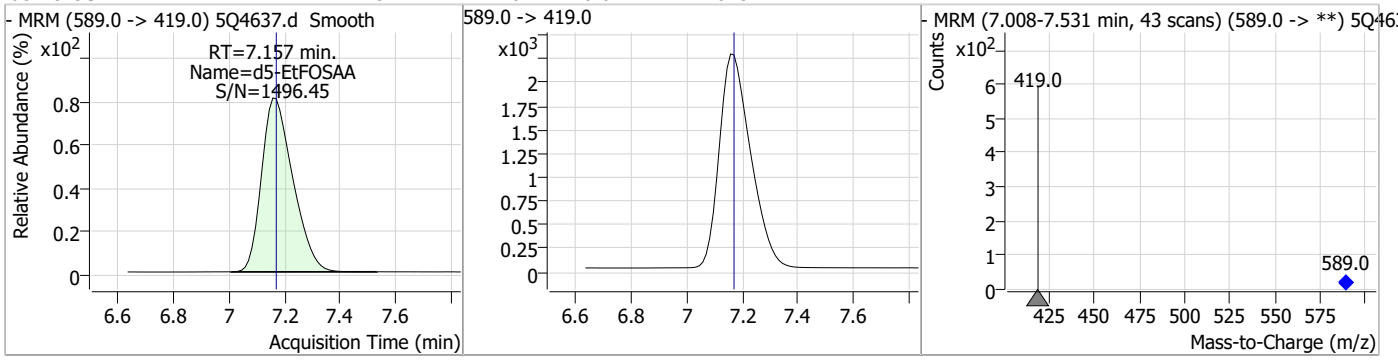
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.36	7.01	0.00	16876				



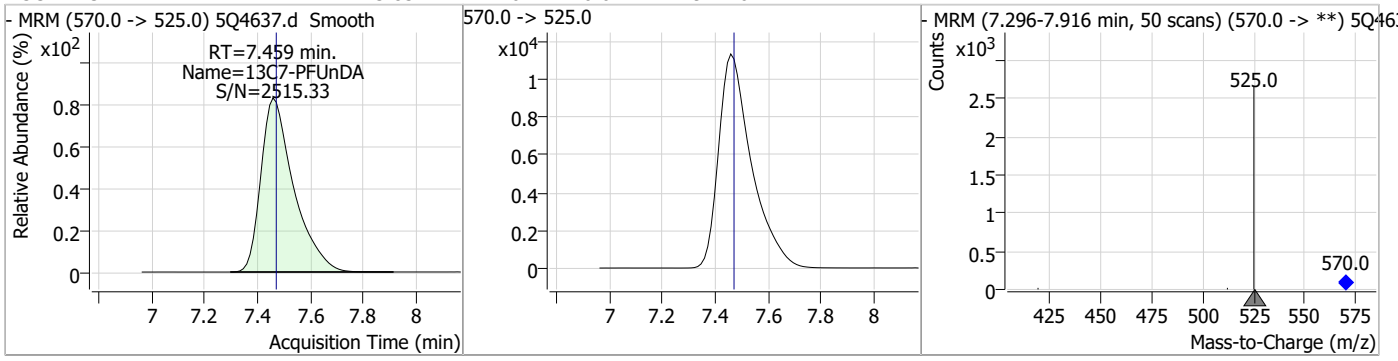
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.18	7.01	-0.01	34091				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.74	7.16	-0.01	17645				

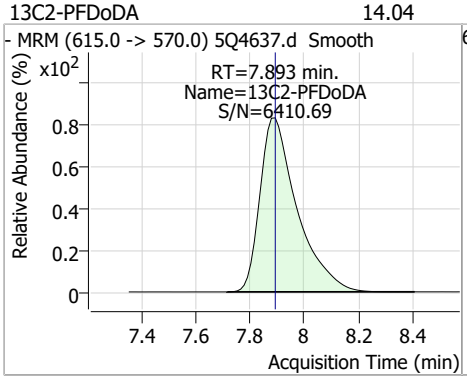


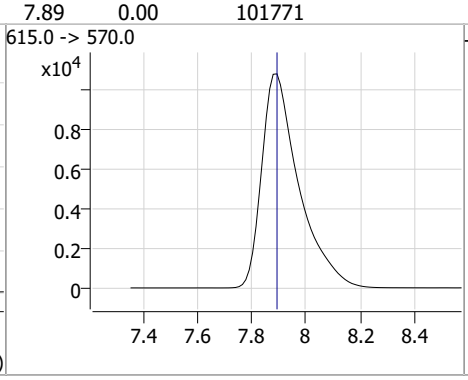
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.83	7.46	-0.01	97416				

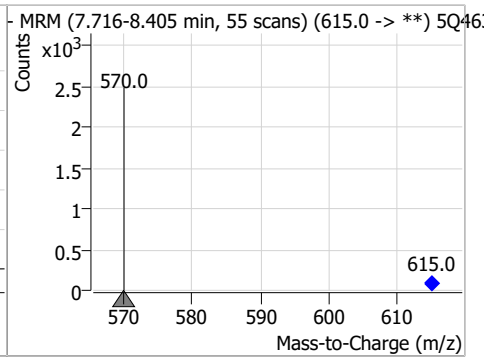


Perfluorinated Compounds by LC/MS/MS

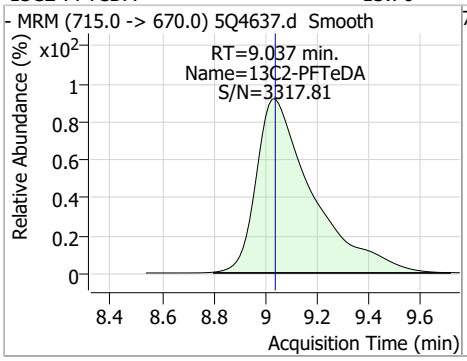
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.04	7.89	0.00	101771				

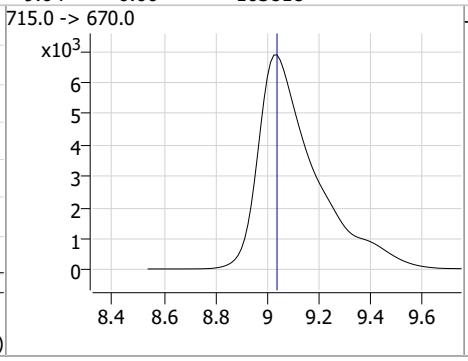


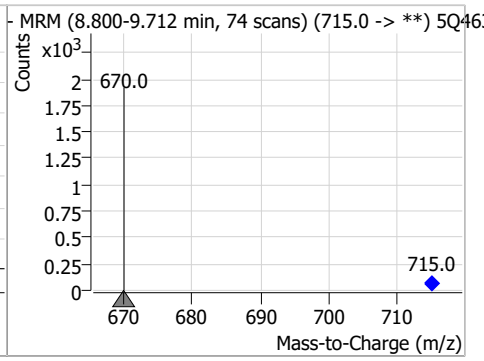




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.76	9.04	0.00	103818				







Manual Integration Approval Summary

Sample Number: FA98286-4
Lab FileID: 5Q4637.D
Injection Time: 09/15/22 07:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:52 Anna Ludwig
Supervisor approved: 09/20/22 13:42 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		4.23	Poor instrument integration
Perfluoropentanesulfonic acid	2706-91-4		4.36	Split peak
Perfluoroheptanoic acid	375-85-9		5.11	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.15	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.63	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.23	Split peak
Perfluorononanoic acid	375-95-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4714.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 4:52:46 AM
Sample Name : fa98286-4
Vial : P3-E4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,250,water

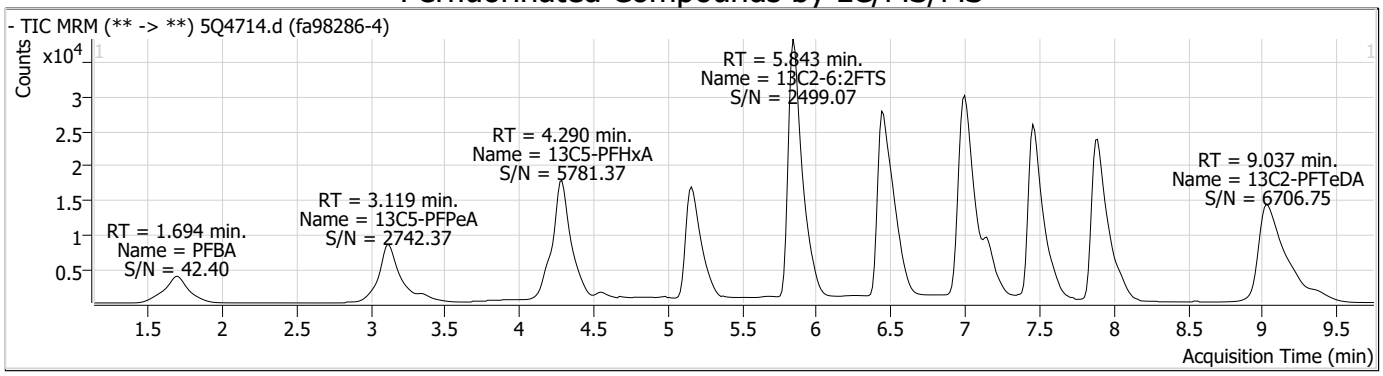
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	44291	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	70380	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	106878	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	100199	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	148860	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	162700	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	133789	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	171980	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	183399	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	191707	20.00 µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	27903	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	7930	20.00 µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	8389	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	16080	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	33188	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	53011	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	51540	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	26484	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	7409	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	7330	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	30472	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	33188	22.60 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%	
13C2-6:2FTS	5.843	429.0 -> 409.0	53011	23.71 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.6%	
13C2-8:2FTS	7.025	529.0 -> 509.0	51540	22.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.7%	
13C2-PFDoDA	7.893	615.0 -> 570.0	183399	25.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.5%	
13C2-PFTeDA	9.037	715.0 -> 670.0	191707	25.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.0%	
13C3-PFBS	3.349	302.0 -> 99.0	7930	24.34 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.7%	
13C3-PFHxS	5.206	402.0 -> 99.0	8389	24.60 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.0%	
13C4-PFBA	1.700	217.0 -> 172.0	44291	24.78 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.9%	
13C4-PFHpA	5.163	367.0 -> 322.0	100199	24.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	106878	24.45 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.2%	
13C5-PFPeA	3.119	268.0 -> 223.0	70380	24.22 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.1%	
13C6-PFDA	6.989	519.0 -> 474.0	133789	24.85 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

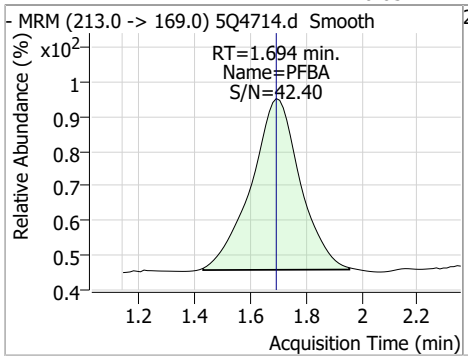
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		
13C7-PFUnDA	7.471	570.0 -> 525.0	171980	24.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.1%		
13C8-FOSA	6.530	506.0 -> 78.0	27903	24.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.0%		
13C8-PFOA	5.857	421.0 -> 376.0	148860	24.61 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.1%		
13C8-PFOS	6.440	507.0 -> 99.0	16080	24.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.1%		
13C9-PFNA	6.455	472.0 -> 427.0	162700	24.77 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.8%		
d3-MeFOSAA	7.009	573.0 -> 419.0	26484	27.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 136.2%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	7409	22.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
d3-MeFOSA	6.952	515.0 -> 169.0	7330	24.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
d5-EtFOSAA	7.170	589.0 -> 419.0	30472	27.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.9%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	5.843	427.0 -> 407.0	32071	11.41 µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.694	213.0 -> 169.0	682	0.65 µg/L		100
PFBS	3.354	299.0 -> 80.0	1100	0.92 µg/L		100
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	5.164	363.0 -> 319.0	3314	0.50 µg/L	m	99
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	4.291	313.0 -> 269.0	11700	2.24 µg/L	m	99
PFHxS	5.195	399.0 -> 80.0	7506	6.03 µg/L	m	100
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	5.858	413.0 -> 369.0	4177	0.46 µg/L	m	95
PFOS	6.253	499.0 -> 80.0	990	0.70 µg/L	m	80
PFPeA	3.122	263.0 -> 219.0	8476	2.44 µg/L		100
PFPeS	4.398	349.0 -> 80.0	987	1.06 µg/L	m	98
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	4.343	298.0 -> 78.0	1347	0.76 µg/L		98
FHxSA	5.674	398.0 -> 78.0	545	0.36 µg/L		100

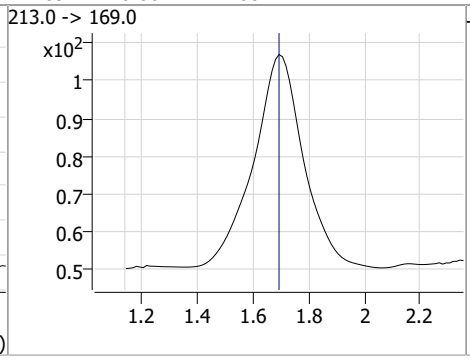
 # = Qualifier out of range, m = manually integrated, + = Area summed

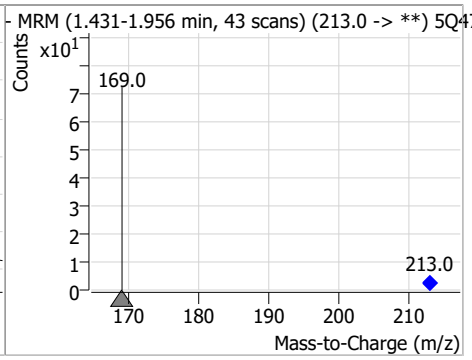
Perfluorinated Compounds by LC/MS/MS



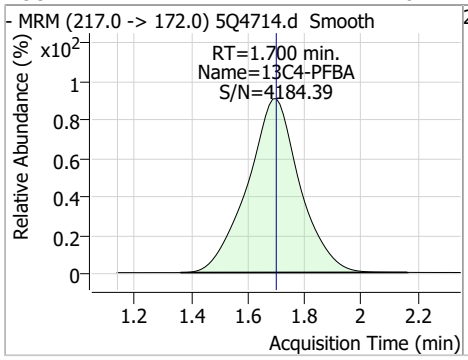
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.65	1.69	0.00	682				

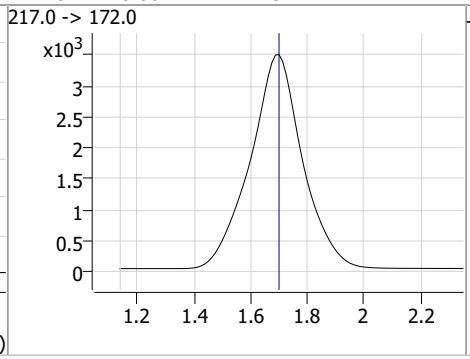


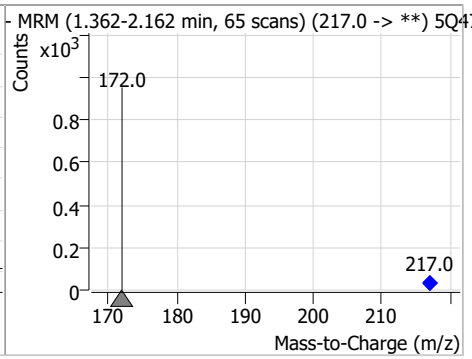




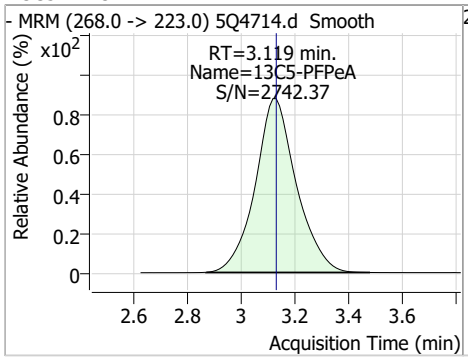
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	24.78	1.70	0.00	44291				

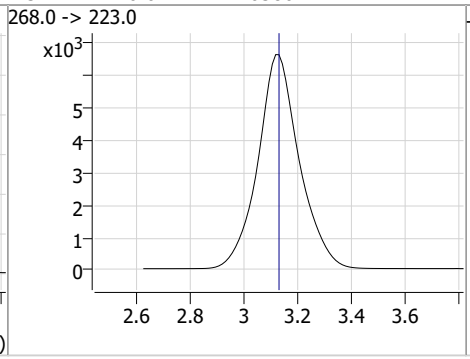


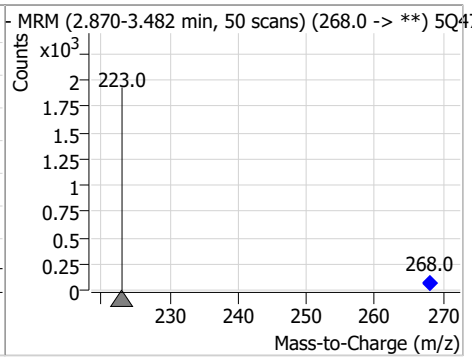




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	24.22	3.12	-0.01	70380				

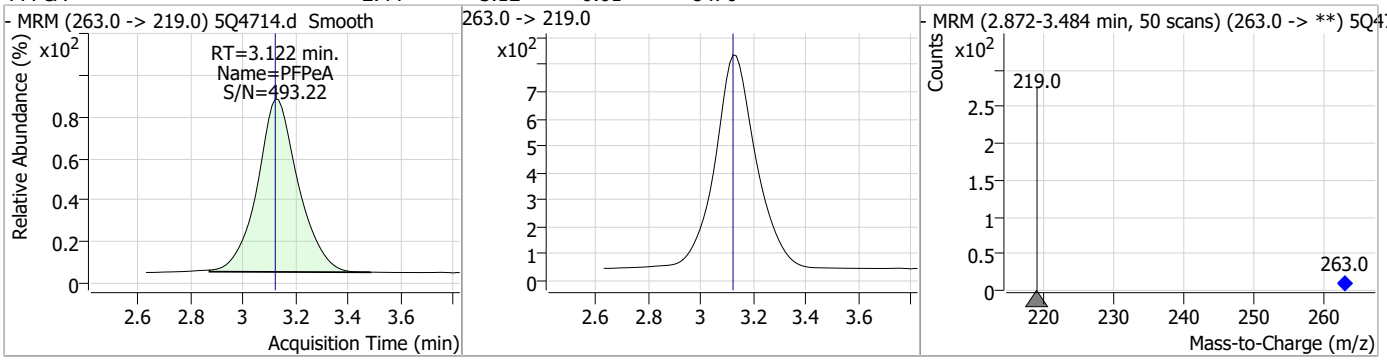




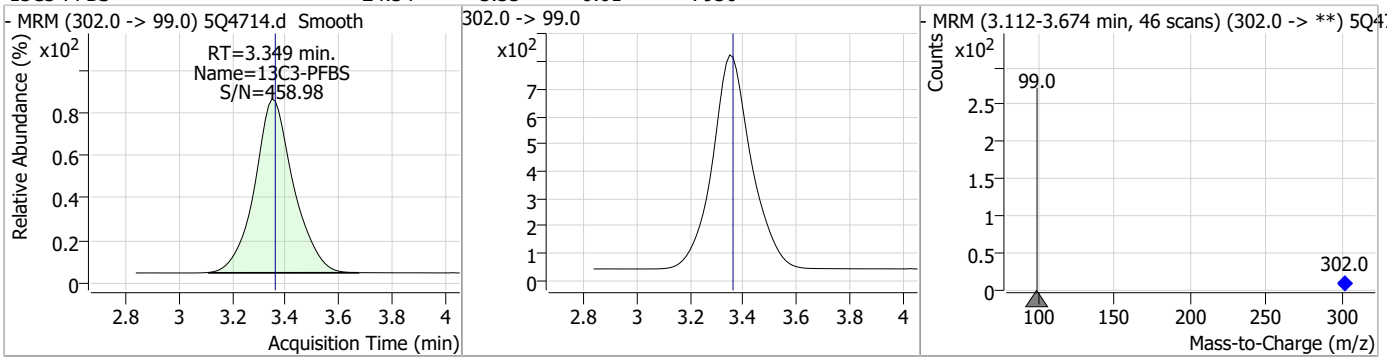


Perfluorinated Compounds by LC/MS/MS

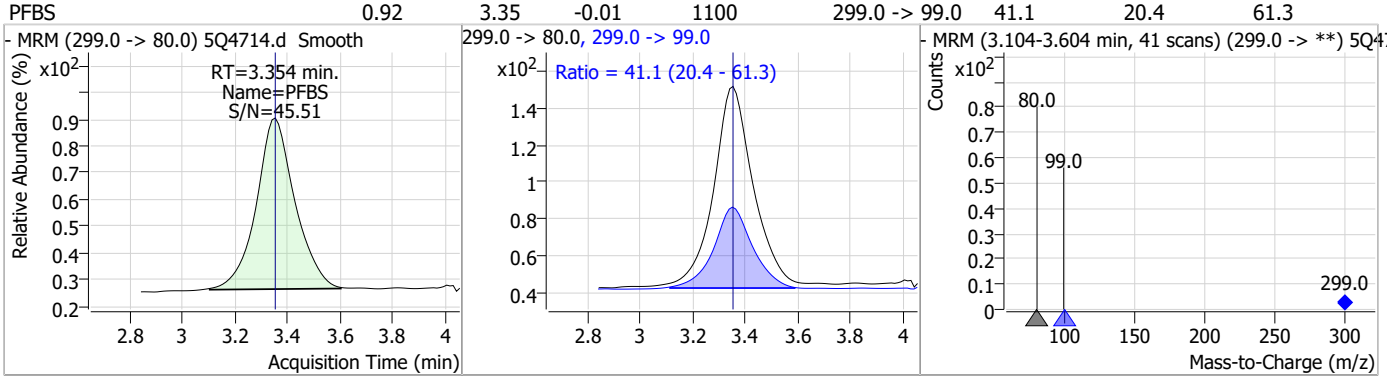
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.44	3.12	-0.01	8476				



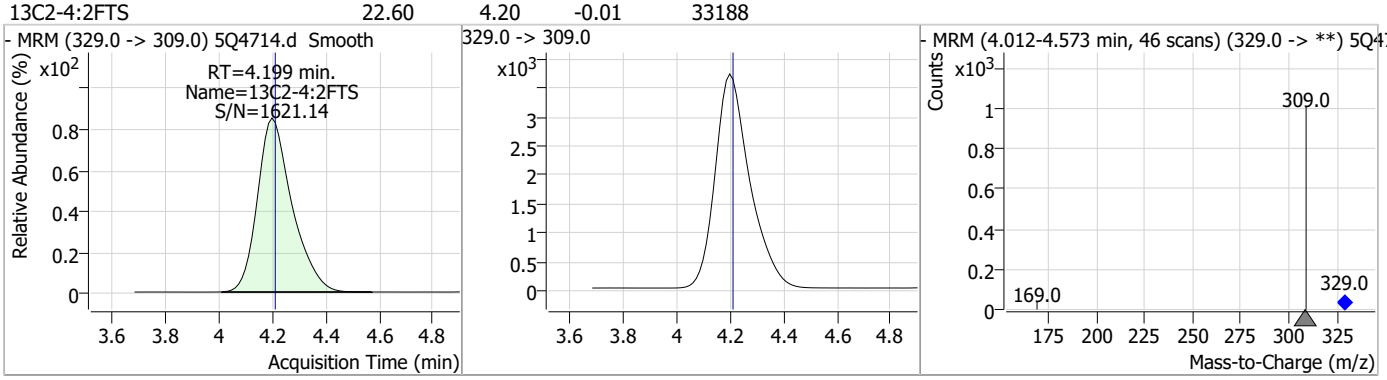
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	24.34	3.35	-0.01	7930				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.92	3.35	-0.01	1100	299.0 -> 99.0	41.1	20.4	61.3

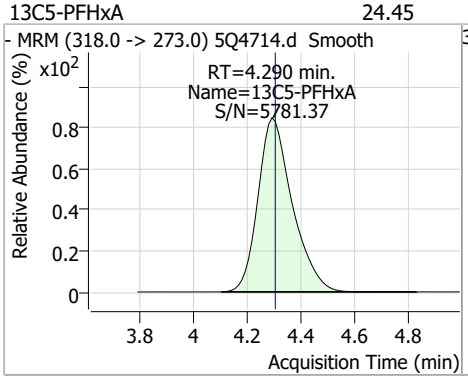


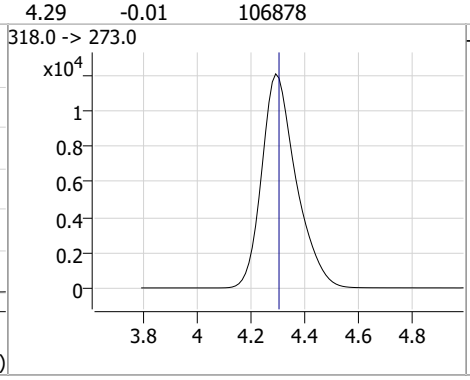
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.60	4.20	-0.01	33188				

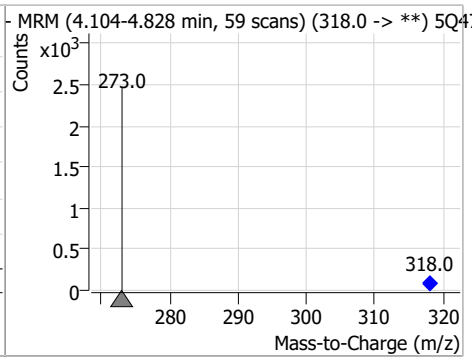


Perfluorinated Compounds by LC/MS/MS

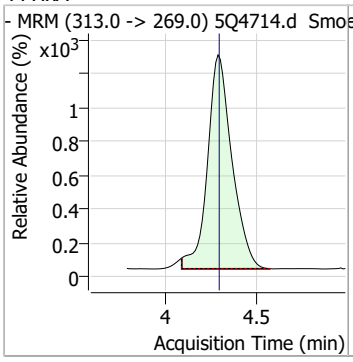
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.45	4.29	-0.01	106878				

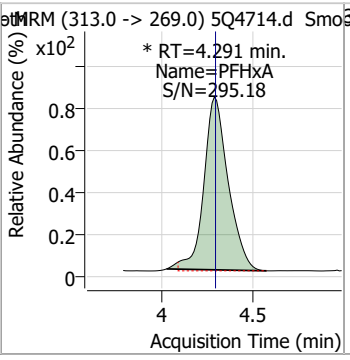


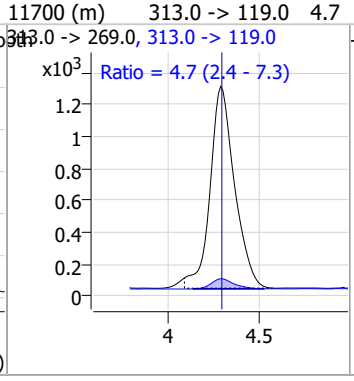


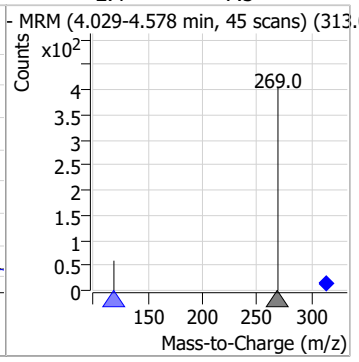


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.24	4.29	-0.01	11700 (m)	313.0 -> 119.0	4.7	2.4	7.3

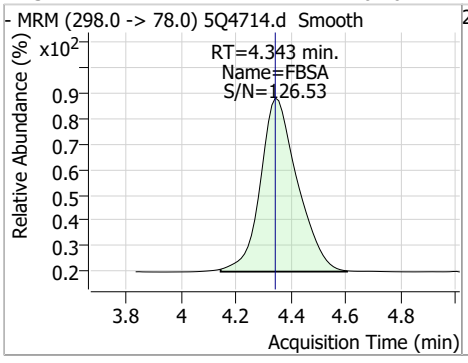


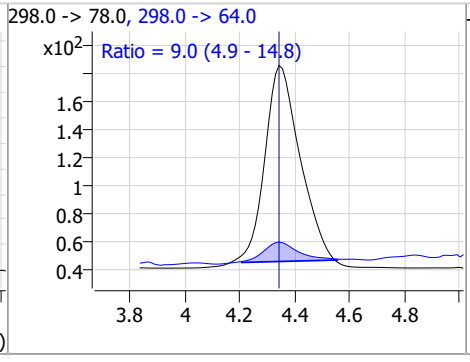


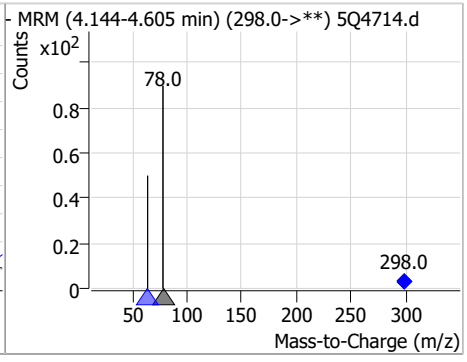




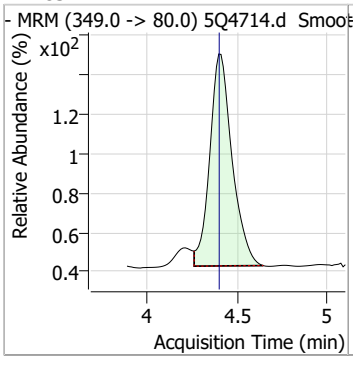
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.76	4.34	-0.01	1347	298.0 -> 64.0	9.0	4.9	14.8

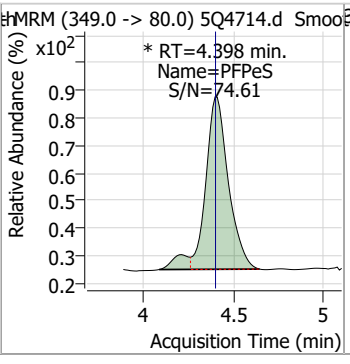


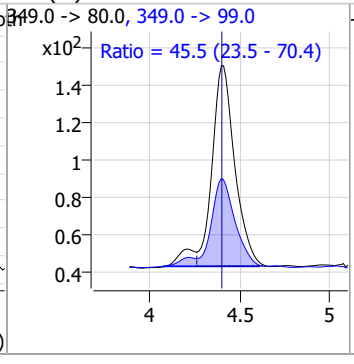


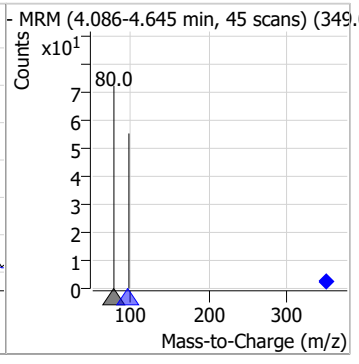


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.06	4.40	-0.01	987 (m)	349.0 -> 99.0	45.5	23.5	70.4



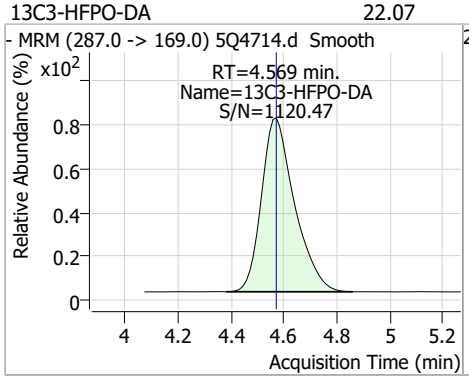


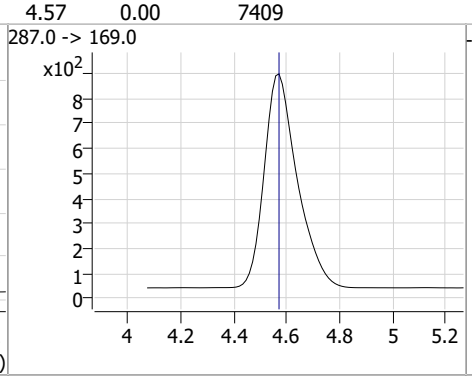


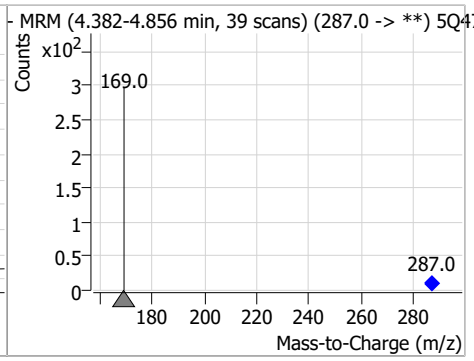


Perfluorinated Compounds by LC/MS/MS

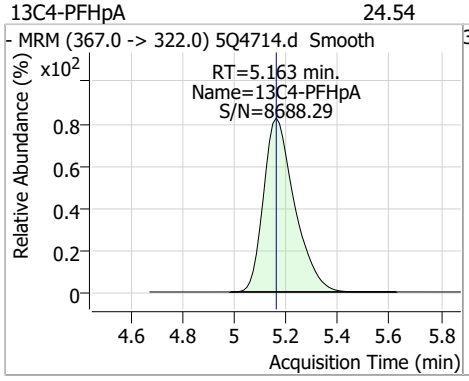
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.07	4.57	0.00	7409				

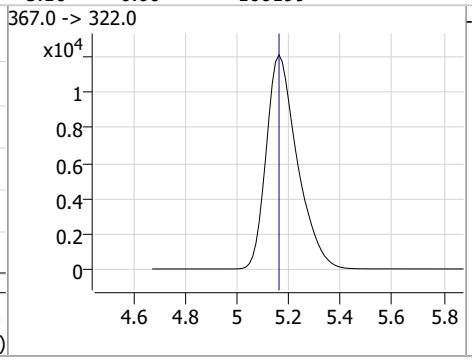


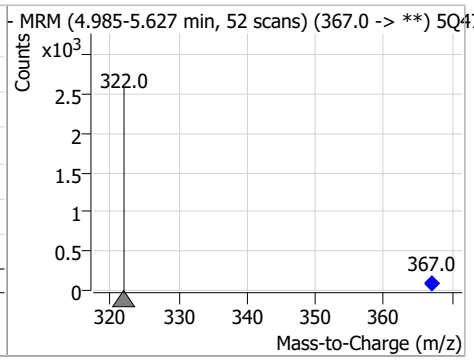




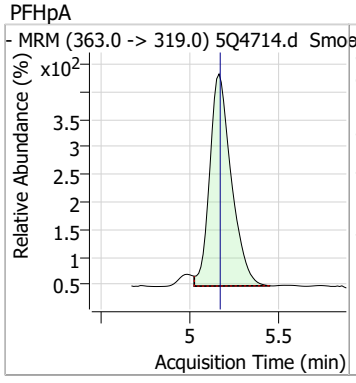
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.54	5.16	0.00	100199				

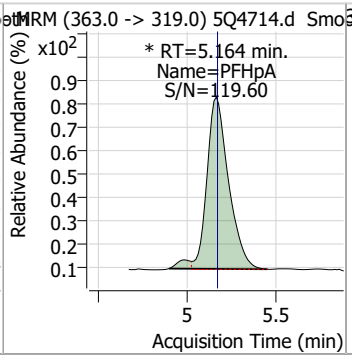


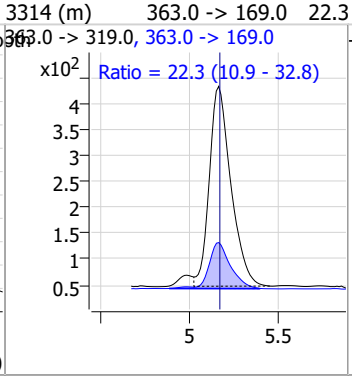


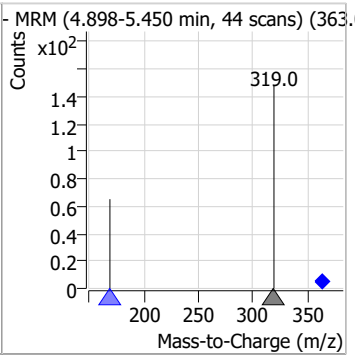


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.50	5.16	0.00	3314 (m)	363.0 -> 169.0	22.3	10.9	32.8

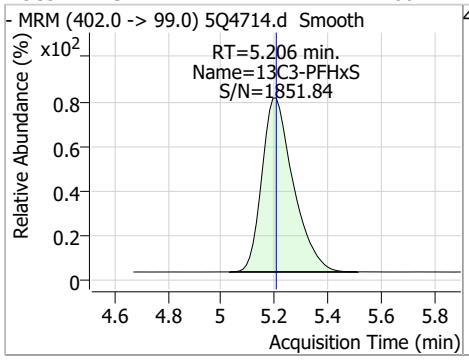


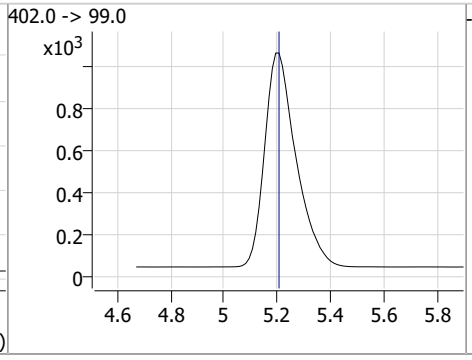


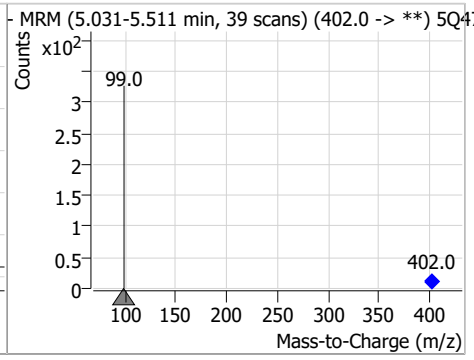




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	24.60	5.21	0.00	8389				

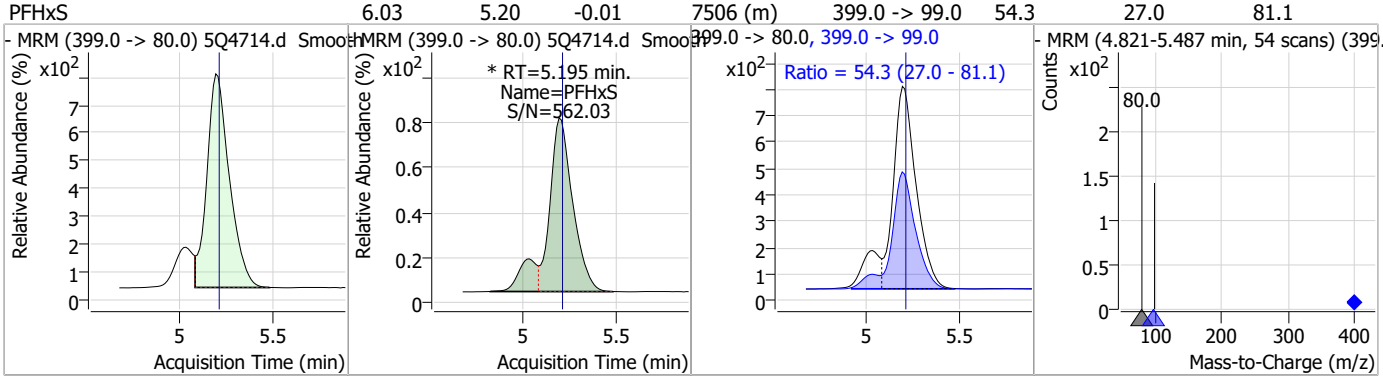




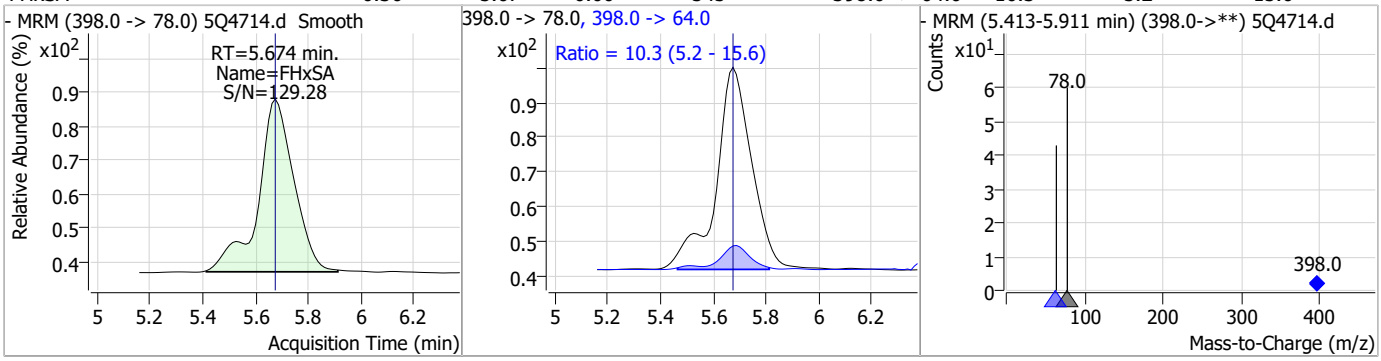


Perfluorinated Compounds by LC/MS/MS

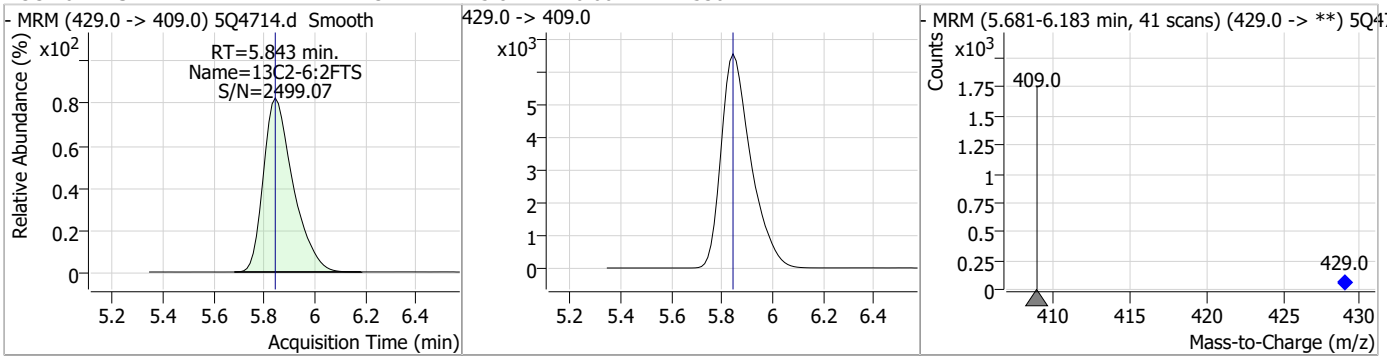
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	6.03	5.20	-0.01	7506 (m)	399.0 -> 99.0	54.3	27.0	81.1



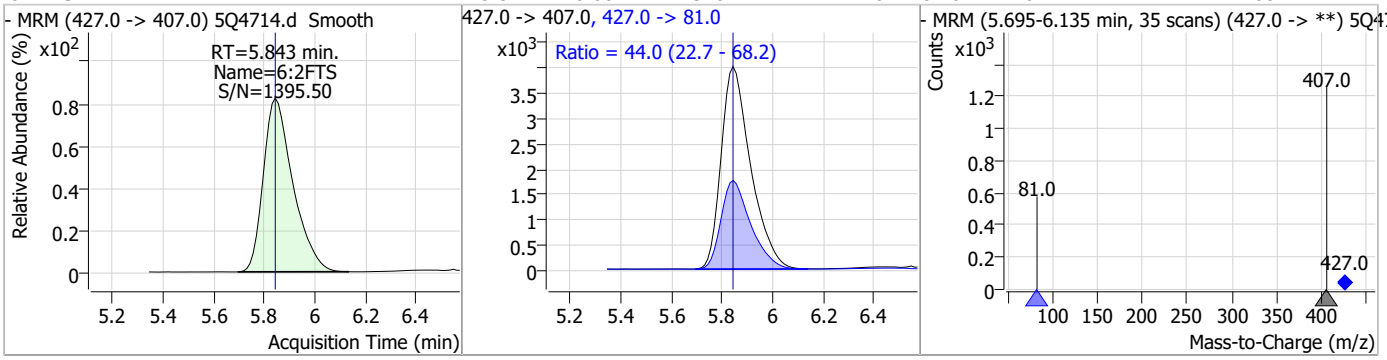
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.36	5.67	0.00	545	398.0 -> 64.0	10.3	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.71	5.84	0.00	53011				

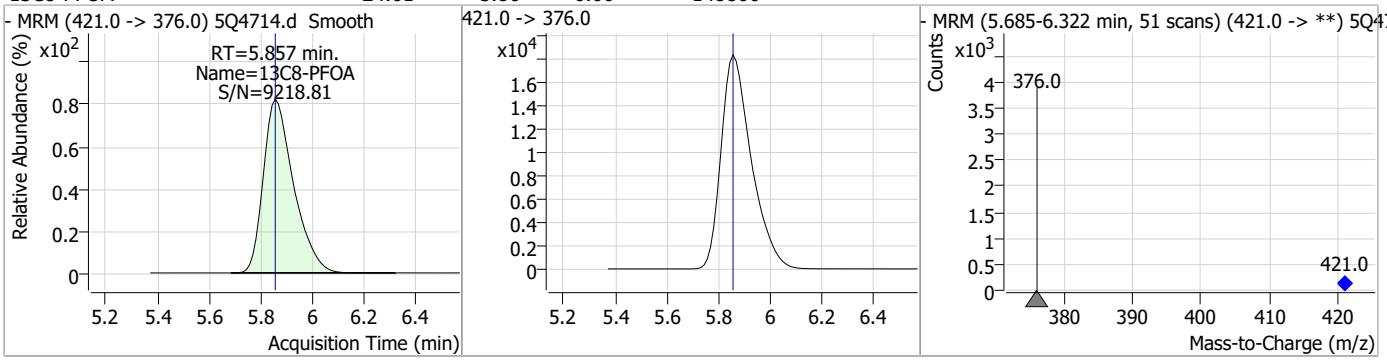


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	11.41	5.84	0.00	32071	427.0 -> 81.0	44.0	22.7	68.2

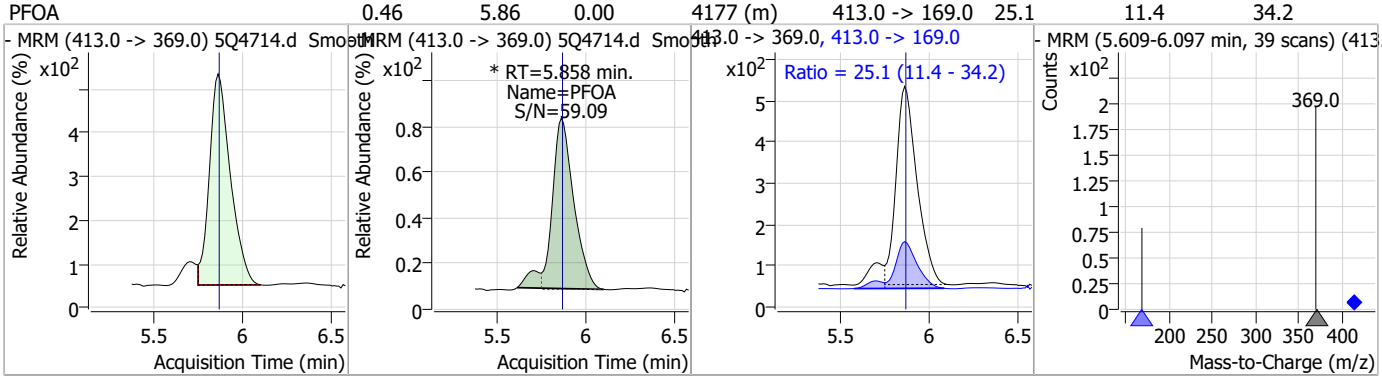


Perfluorinated Compounds by LC/MS/MS

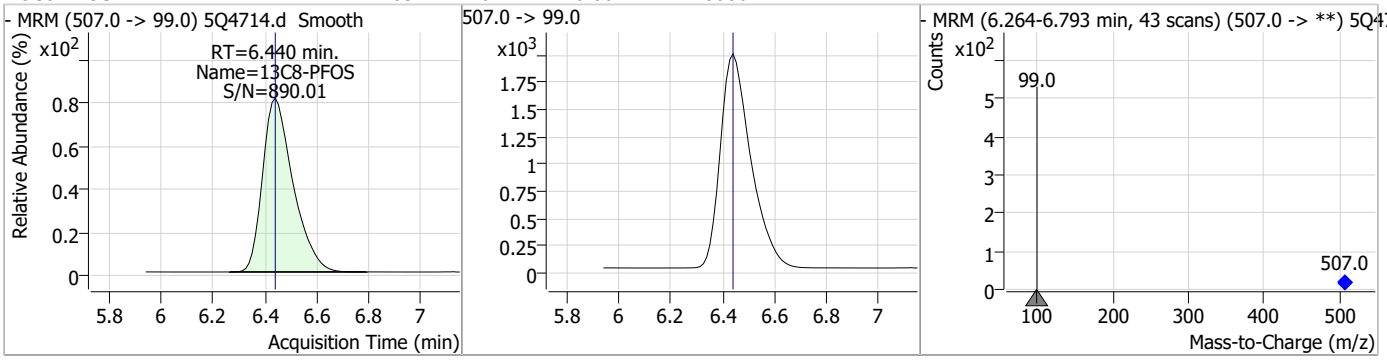
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.61	5.86	0.00	148860				



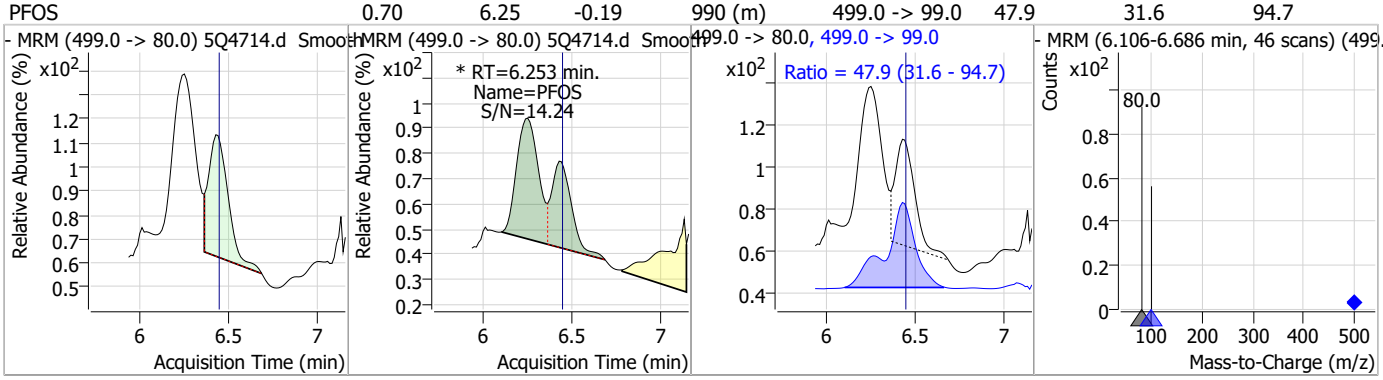
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.46	5.86	0.00	4177 (m)	413.0 -> 169.0	25.1	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	24.63	6.44	0.00	16080				

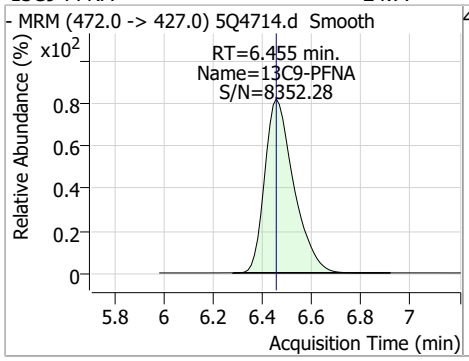


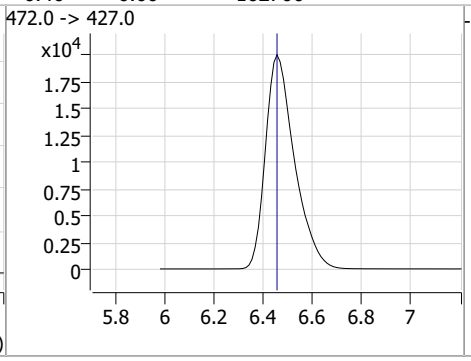
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.70	6.25	-0.19	990 (m)	499.0 -> 99.0	47.9	31.6	94.7

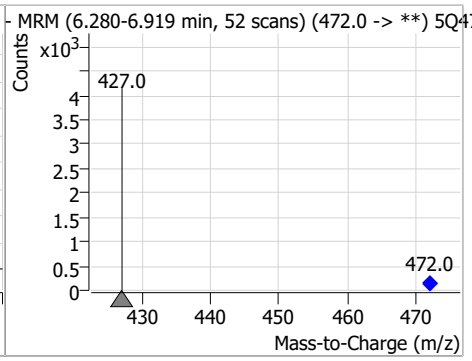


Perfluorinated Compounds by LC/MS/MS

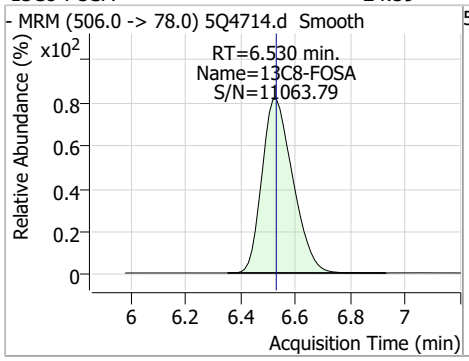
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	24.77	6.46	0.00	162700				

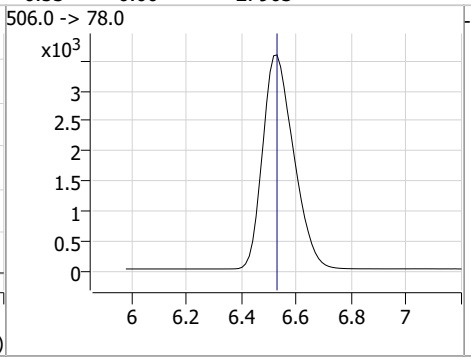


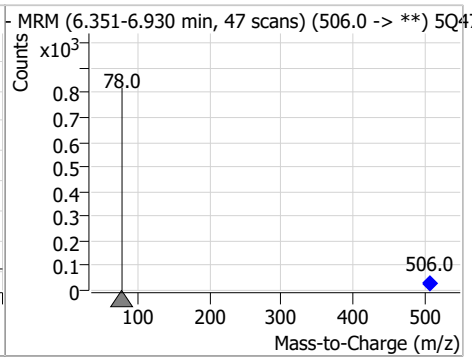




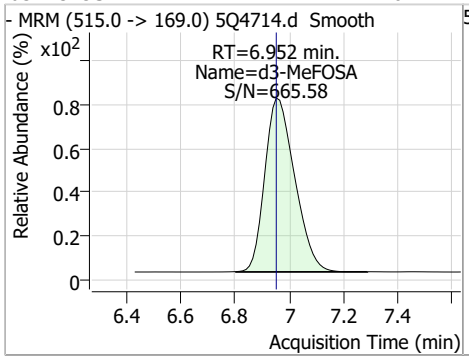
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	24.59	6.53	0.00	27903				

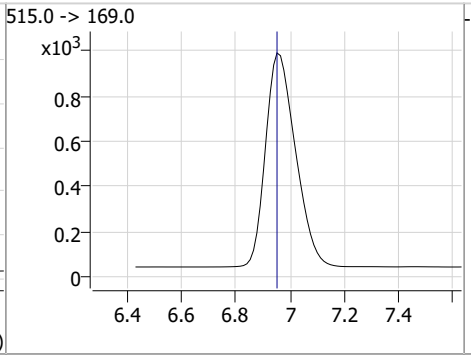


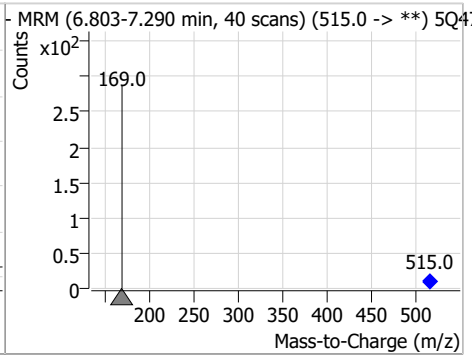




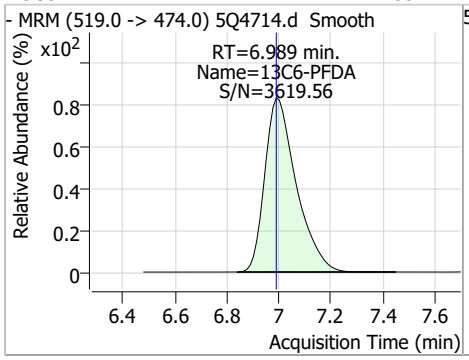
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	24.07	6.95	0.00	7330				

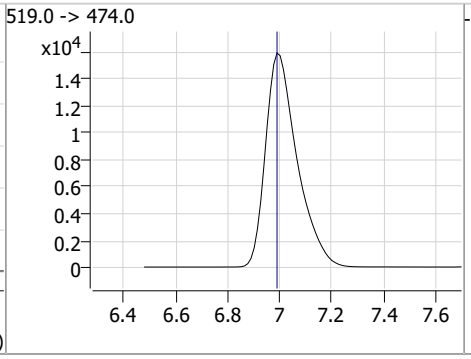


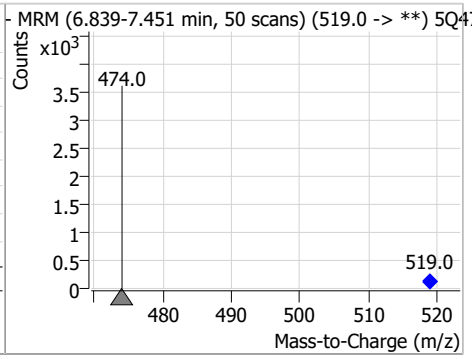




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.85	6.99	0.00	133789				

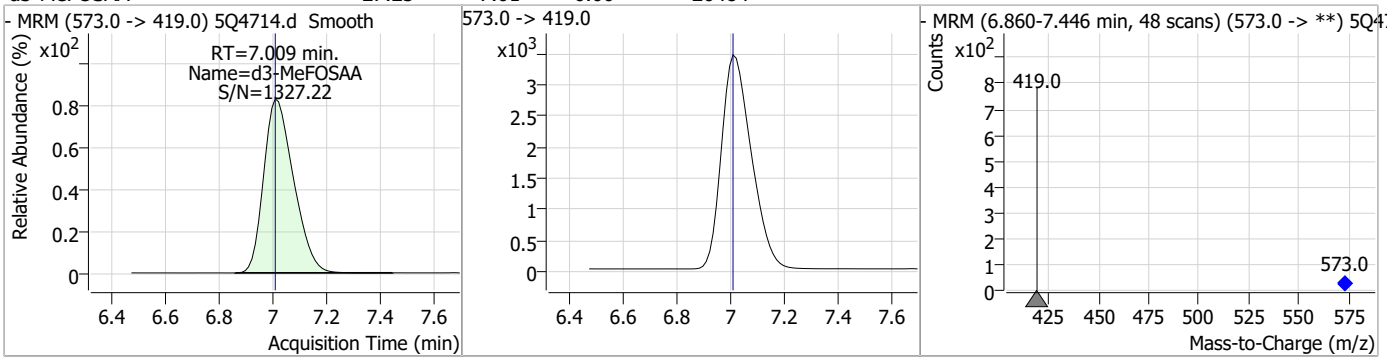




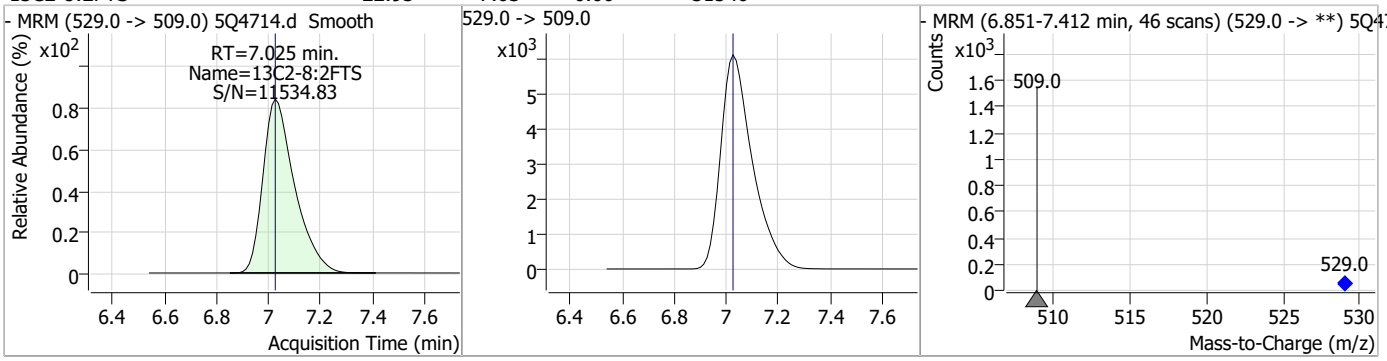


Perfluorinated Compounds by LC/MS/MS

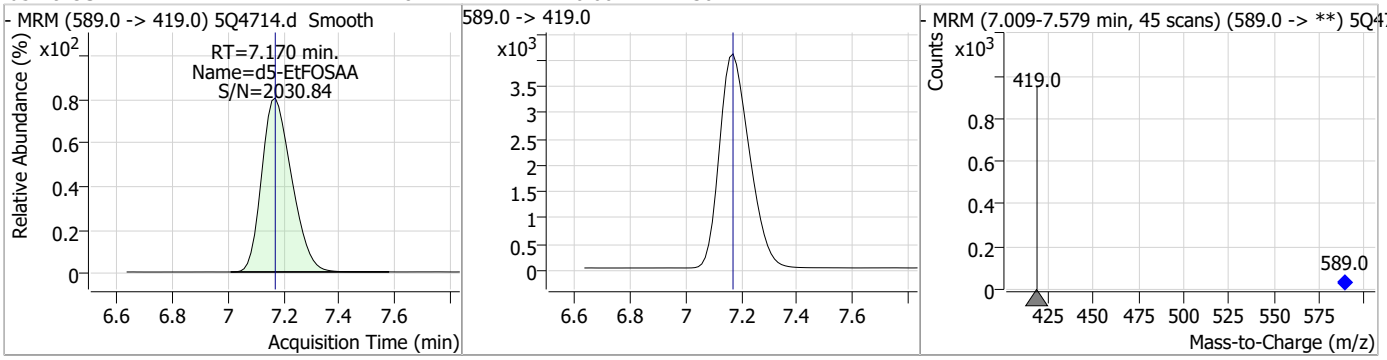
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	27.25	7.01	0.00	26484				



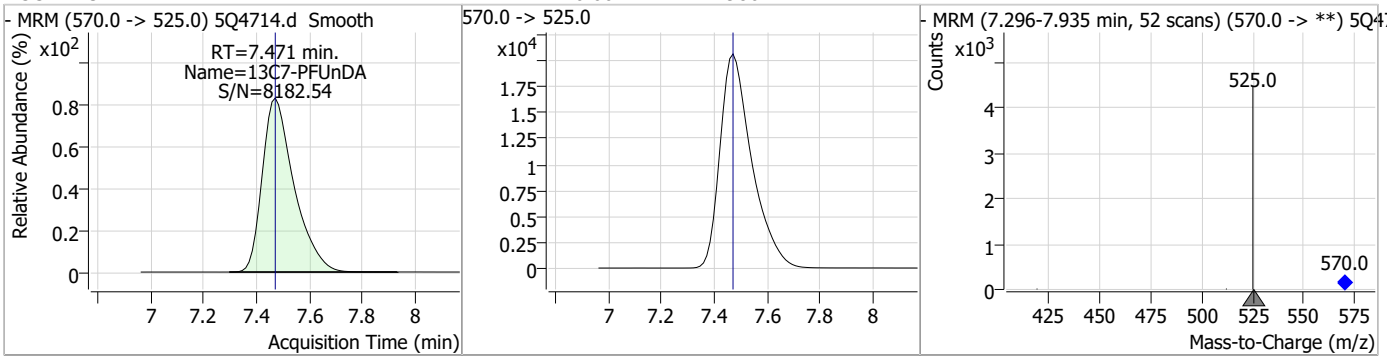
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.95	7.03	0.00	51540				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	27.18	7.17	0.00	30472				

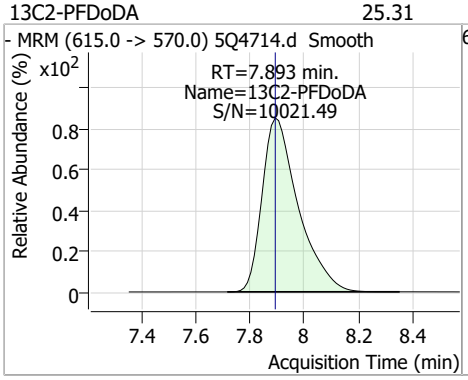


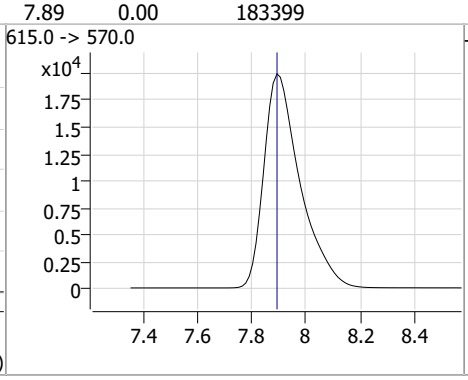
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	24.42	7.47	0.00	171980				

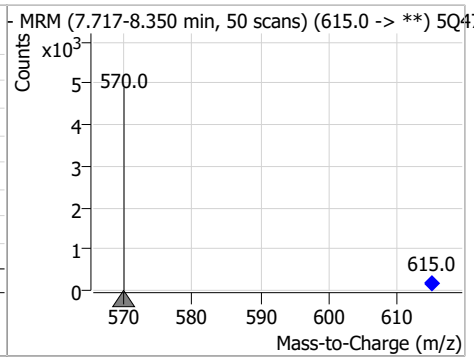


Perfluorinated Compounds by LC/MS/MS

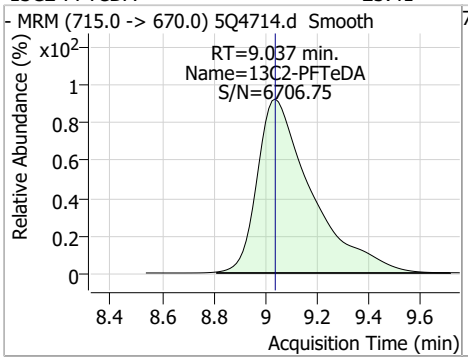
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	25.31	7.89	0.00	183399				

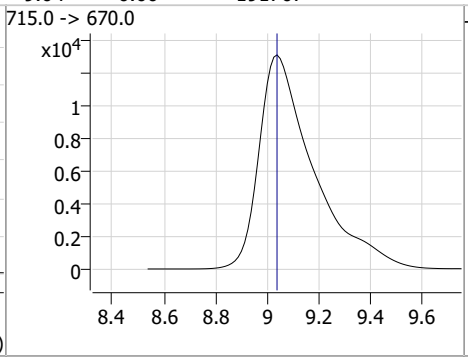


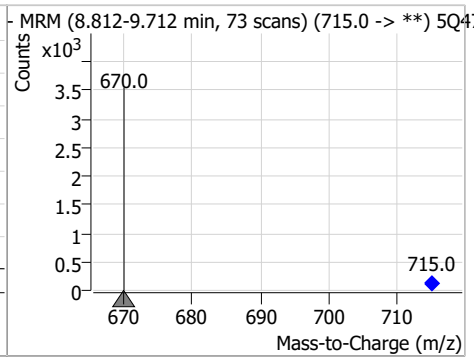




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	25.41	9.04	0.00	191707				







Manual Integration Approval Summary

Sample Number: FA98286-4
Lab FileID: 5Q4714.D
Injection Time: 09/16/22 04:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:52 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		4.29	Poor instrument integration
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.25	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:42

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4914.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/19/2022 6:41:40 PM
Sample Name : fa98286-4
Vial : P1-E1
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q74.batch.bin
Sample Information : OP92763,S5Q74,125,,,1.0,40,water

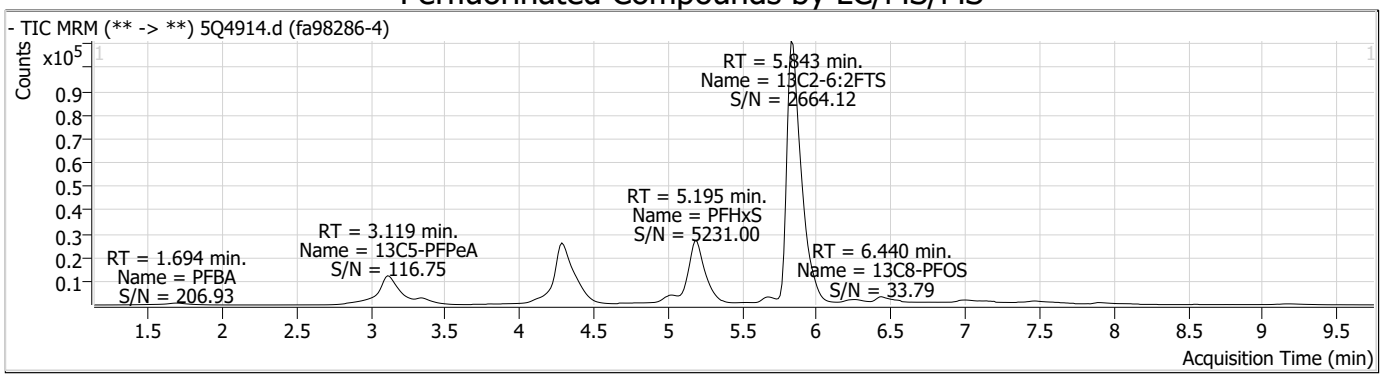
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	1179	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	2033	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	3265	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	3121	20.00	µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	4042	20.00	µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	4230	20.00	µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	3359	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	3838	20.00	µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	4108	20.00	µg/L	0.027
M2-PFTeDA	9.174	715.0 -> 670.0	5394	20.00	µg/L	0.050
M8-FOSA	6.530	506.0 -> 78.0	642	20.00	µg/L	0.012
M3-PFBS	3.362	302.0 -> 99.0	229	20.00	µg/L	0.012
M3-PFHxS	5.206	402.0 -> 99.0	281	20.00	µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	413	20.00	µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	1087	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	25619	20.00	µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	1386	20.00	µg/L	0.025
M3-MeFOSAA	7.021	573.0 -> 419.0	692	20.00	µg/L	0.012
M3-HFPO-DA	4.569	287.0 -> 169.0	209	20.00	µg/L	0.012
M3-MeFOSA	6.977	515.0 -> 169.0	43	20.00	µg/L	0.025
M5-EtFOSAA	7.170	589.0 -> 419.0	842	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	1087	0.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	25619	5.98	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 29.9%		
13C2-8:2FTS	7.025	529.0 -> 509.0	1386	0.36	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
13C2-PFDoDA	7.905	615.0 -> 570.0	4108	0.30	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.5%		
13C2-PFTeDA	9.174	715.0 -> 670.0	5394	0.32	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%		
13C3-PFBS	3.362	302.0 -> 99.0	229	0.34	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C3-PFHxS	5.206	402.0 -> 99.0	281	0.41	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%		
13C4-PFBA	1.700	217.0 -> 172.0	1179	0.32	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	3121	0.35	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
13C5-PFHxA	4.290	318.0 -> 273.0	3265	0.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C5-PFPeA	3.119	268.0 -> 223.0	2033	0.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C6-PFDA	6.989	519.0 -> 474.0	3359	0.36	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

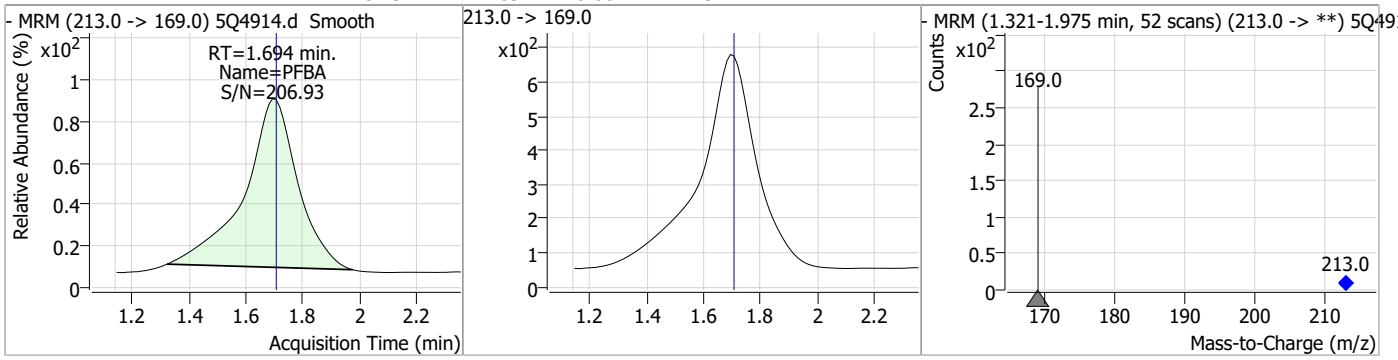
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
13C7-PFUnDA	7.471	570.0 -> 525.0	3838	0.33	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%			
13C8-FOSA	6.530	506.0 -> 78.0	642	0.27	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.4%			
13C8-PFOA	5.857	421.0 -> 376.0	4042	0.34	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%			
13C8-PFOS	6.440	507.0 -> 99.0	413	0.36	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
13C9-PFNA	6.455	472.0 -> 427.0	4230	0.36	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
d3-MeFOSAA	7.021	573.0 -> 419.0	692	0.40	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	209	0.37	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
d3-MeFOSA	6.977	515.0 -> 169.0	43	0.08	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	842	0.40	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%			
Target Compounds							QValue
4:2FTS	4.201	327.0 -> 307.0	1177	0.50	µg/L		95
6:2FTS	5.843	427.0 -> 407.0	460028	8.62	µg/L		99
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.694	213.0 -> 169.0	7972	8.49	µg/L		100
PFBS	3.354	299.0 -> 80.0	16625	12.06	µg/L		98
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	51439	6.05	µg/L	m	100
PFHpS	5.681	449.0 -> 80.0	3213	2.40	µg/L	m	87
PFHxA	4.291	313.0 -> 269.0	190815	29.44	µg/L		99
PFHxS	5.195	399.0 -> 80.0	110306	67.70	µg/L	m	99
PFNA	6.456	463.0 -> 419.0	977	0.13	µg/L		92
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	57698	5.87	µg/L	m	97
PFOS	6.253	499.0 -> 80.0	13297	8.99	µg/L	m	73
PFPeA	3.122	263.0 -> 219.0	121100	31.10	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14928	13.57	µg/L		96
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	0		µg/L	m	1
FBSA	4.343	298.0 -> 78.0	20411	9.05	µg/L		99
FHxSA	5.674	398.0 -> 78.0	8415	4.43	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

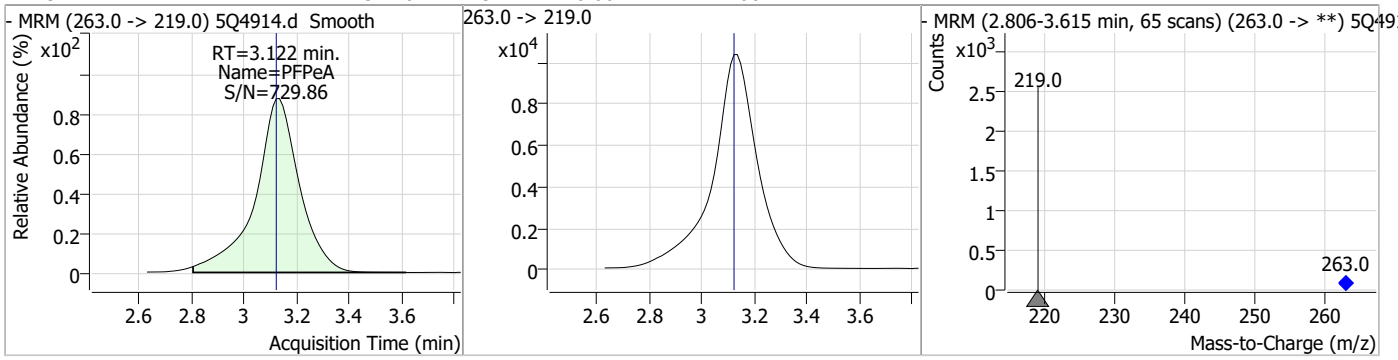
Perfluorinated Compounds by LC/MS/MS



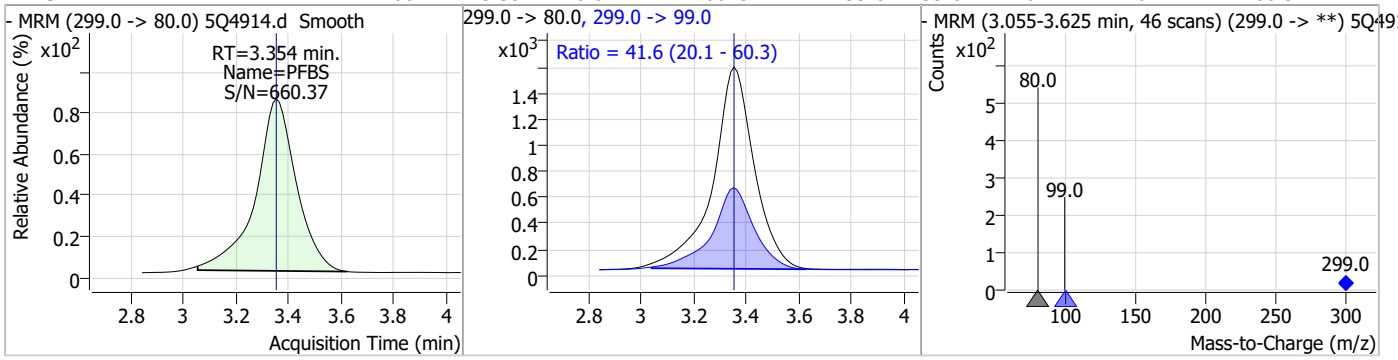
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.49	1.69	0.00	7972				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	31.10	3.12	0.00	121100				

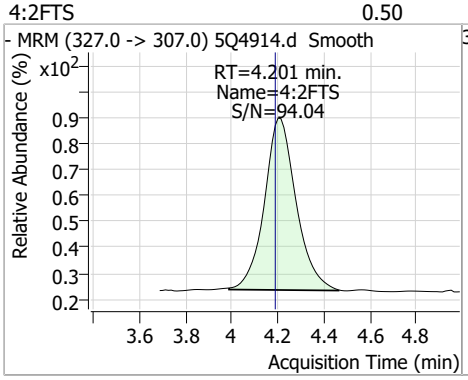


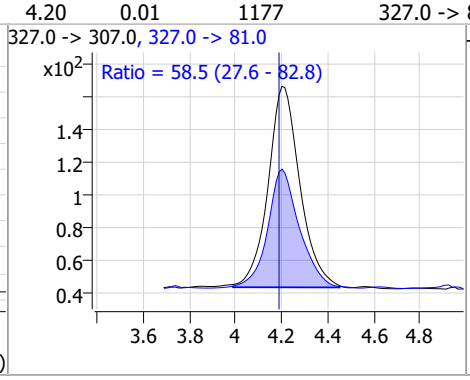
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	12.06	3.35	0.01	16625	299.0 -> 99.0	41.6	20.1	60.3

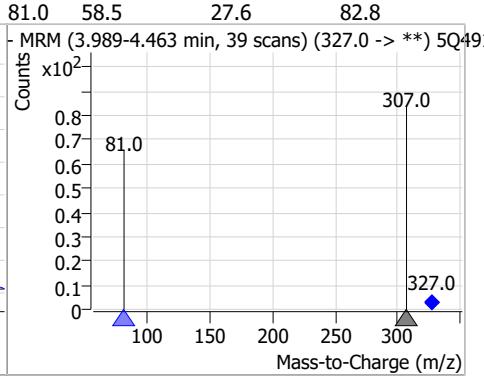


Perfluorinated Compounds by LC/MS/MS

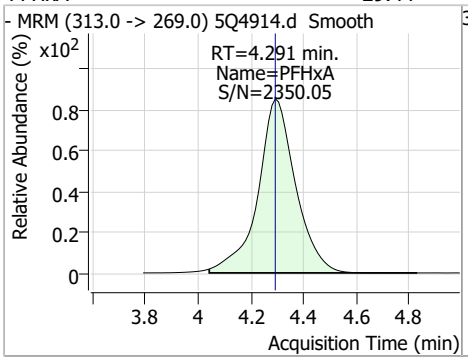
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.50	4.20	0.01	1177	327.0 -> 81.0	58.5	27.6	82.8

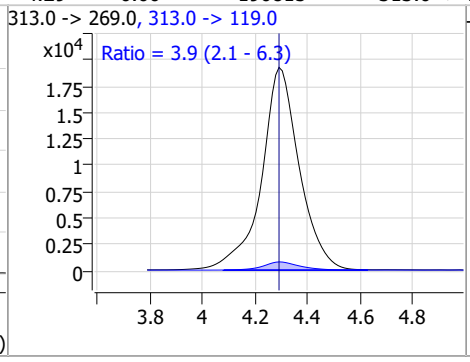


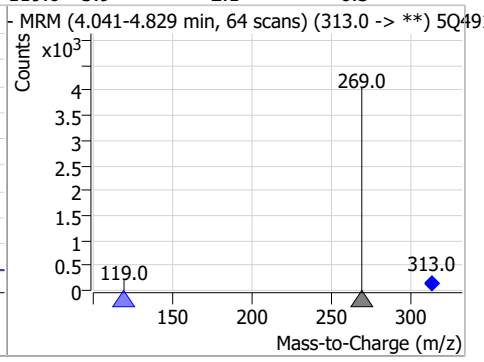




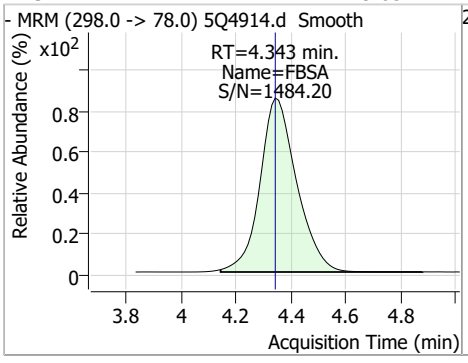
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	29.44	4.29	0.00	190815	313.0 -> 119.0	3.9	2.1	6.3

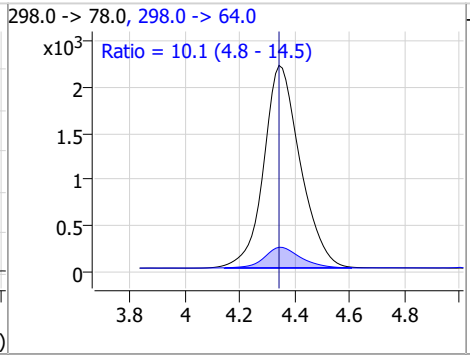


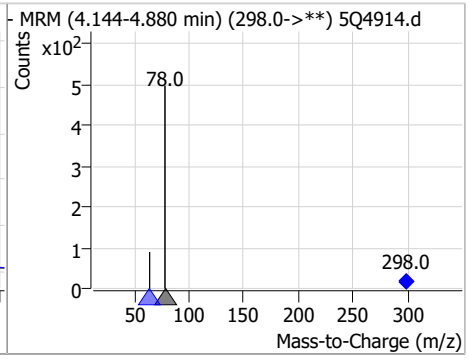




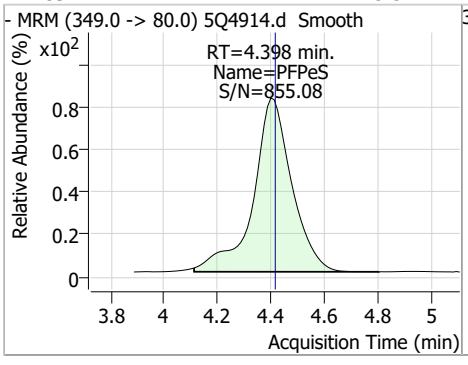
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	9.05	4.34	0.00	20411	298.0 -> 64.0	10.1	4.8	14.5

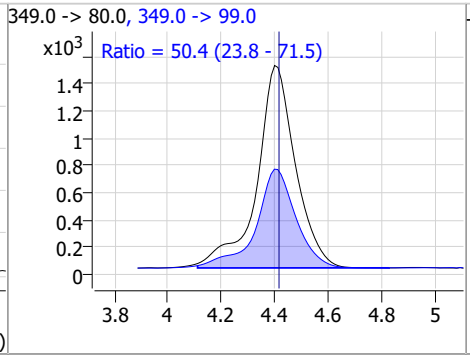


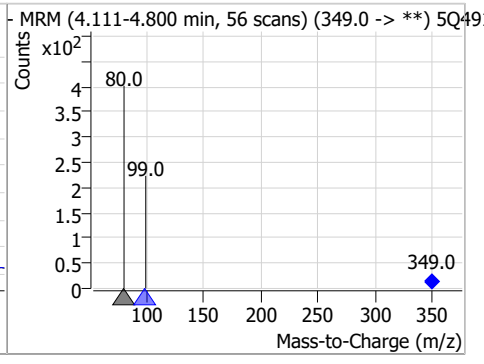




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	13.57	4.40	0.00	14928	349.0 -> 99.0	50.4	23.8	71.5

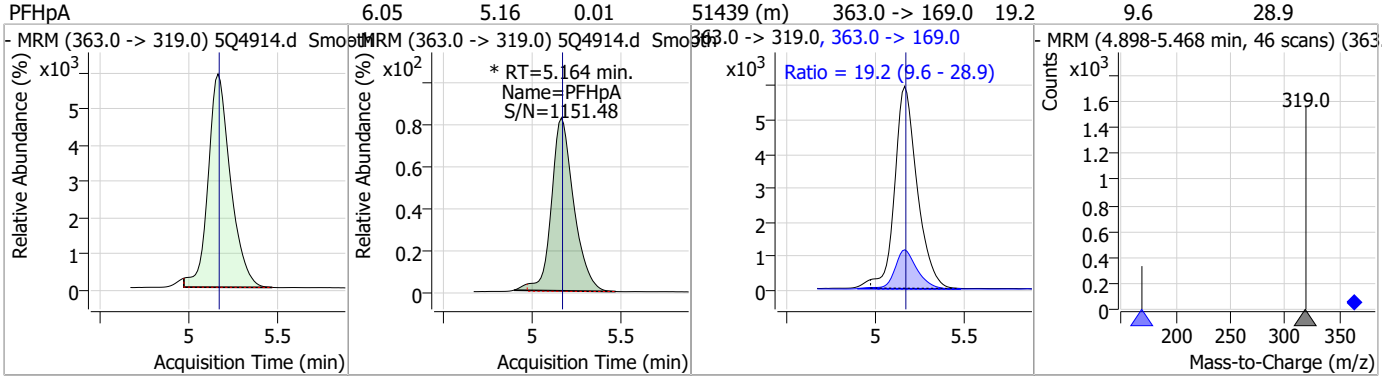




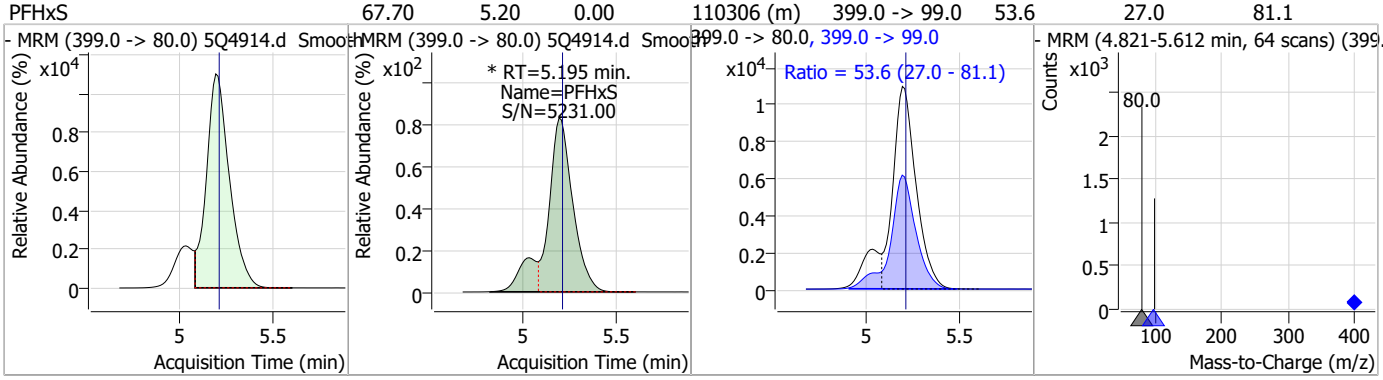


Perfluorinated Compounds by LC/MS/MS

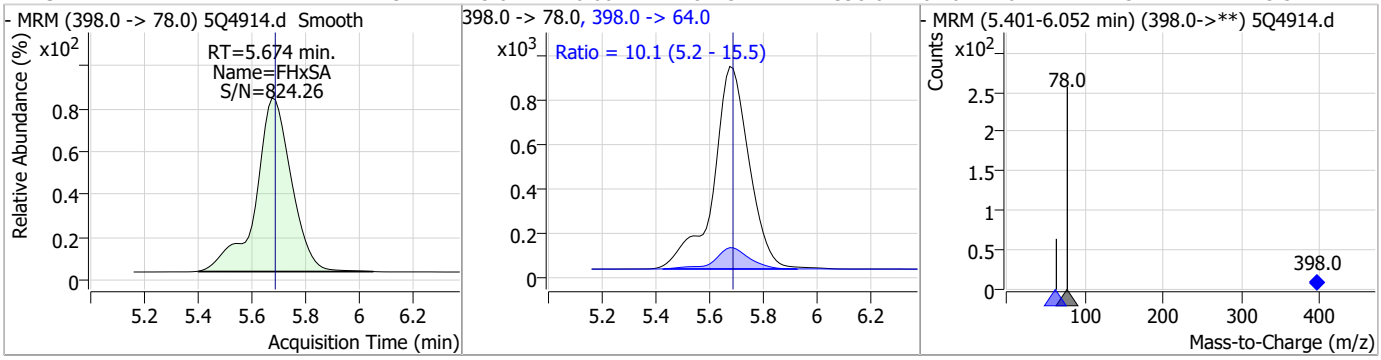
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	6.05	5.16	0.01	51439 (m)	363.0 -> 169.0	19.2	9.6	28.9



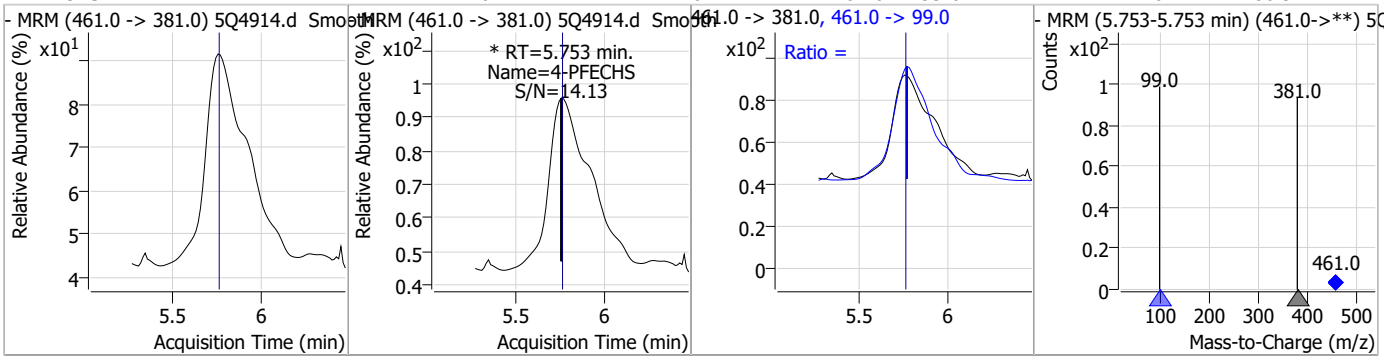
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	67.70	5.20	0.00	110306 (m)	399.0 -> 99.0	53.6	27.0	81.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.43	5.67	0.00	8415	398.0 -> 64.0	10.1	5.2	15.5

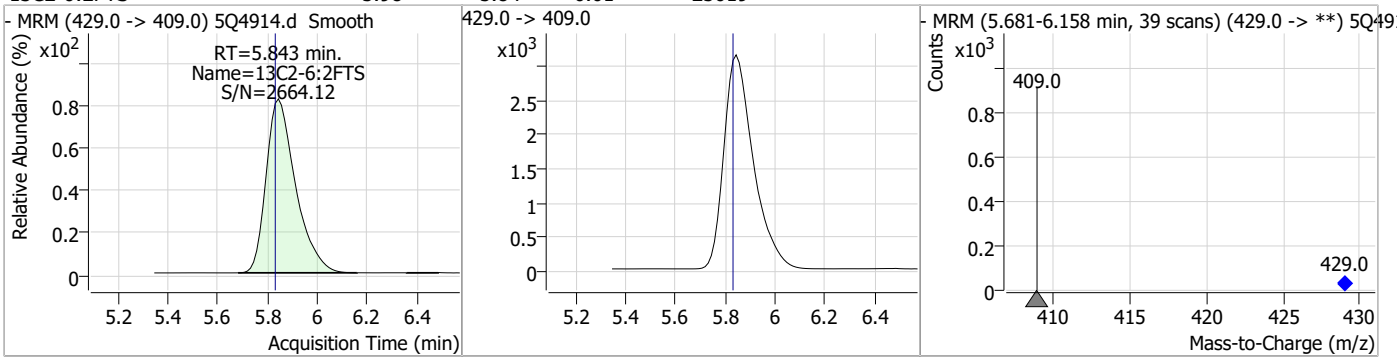


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		27.0	80.9

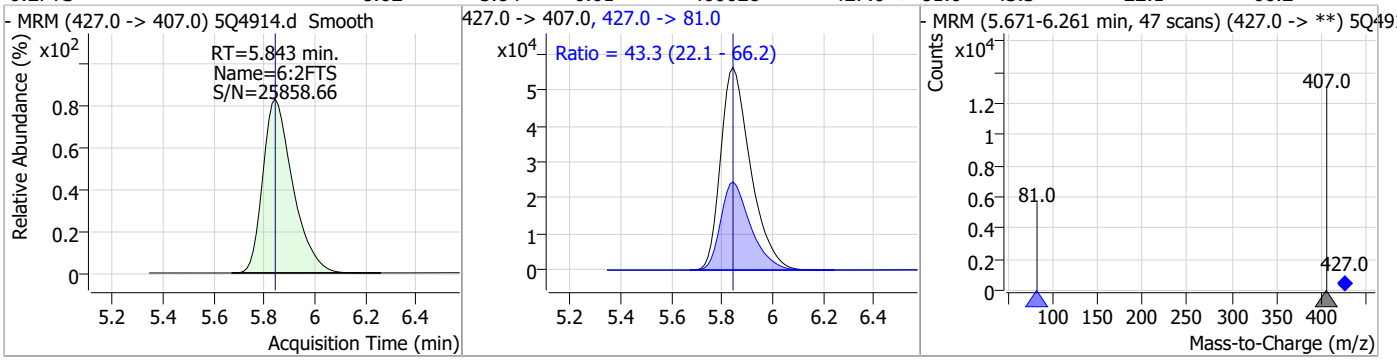


Perfluorinated Compounds by LC/MS/MS

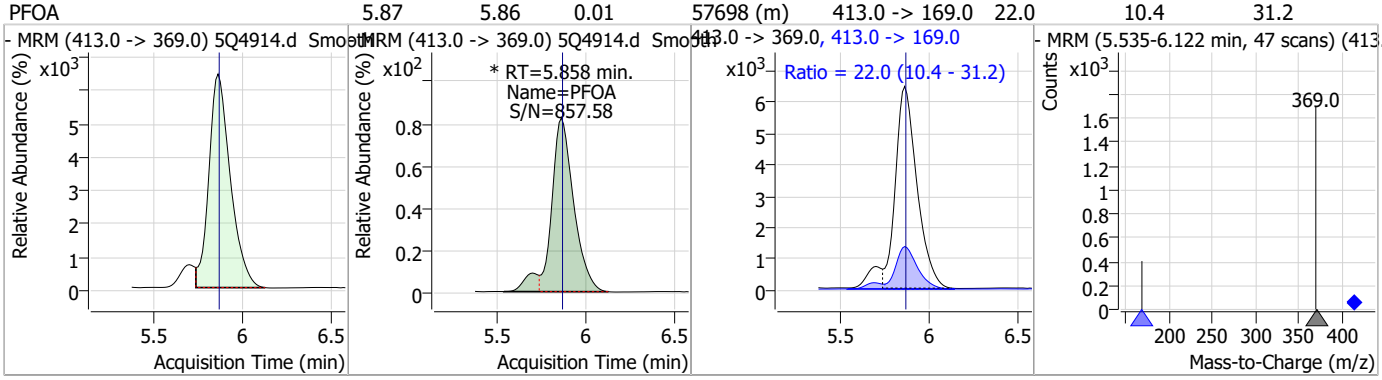
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	5.98	5.84	0.01	25619				



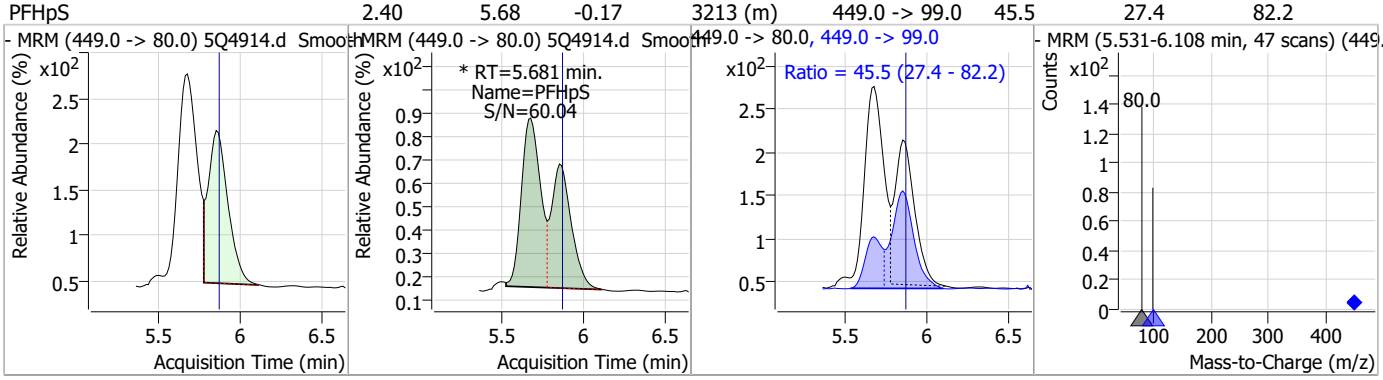
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	8.62	5.84	0.01	460028	427.0 -> 81.0	43.3	22.1	66.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.87	5.86	0.01	57698 (m)	413.0 -> 169.0	22.0	10.4	31.2

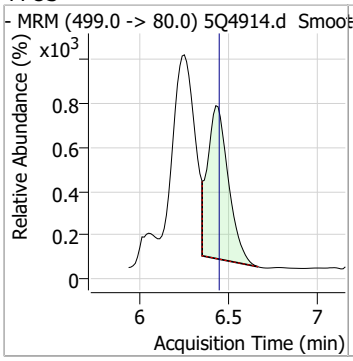


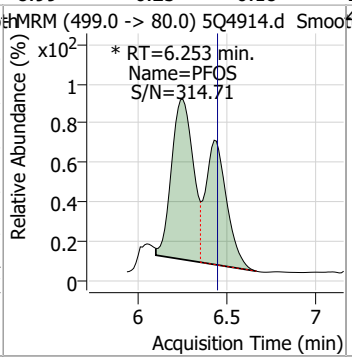
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.40	5.68	-0.17	3213 (m)	449.0 -> 99.0	45.5	27.4	82.2

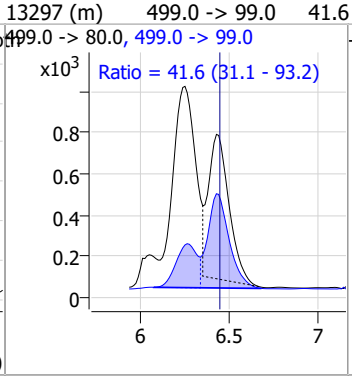


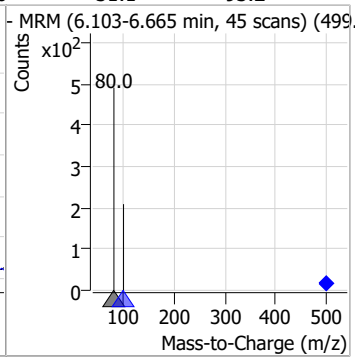
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	8.99	6.25	-0.18	13297 (m)	499.0 -> 99.0	41.6	31.1	93.2









Manual Integration Approval Summary

Sample Number: FA98286-4
Lab FileID: 5Q4914.D
Injection Time: 09/19/22 18:41
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 12:04 Anna Ludwig
Supervisor approved: 09/20/22 13:42 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.68	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.25	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:44

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4638.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:23:50 AM
Sample Name : fa98286-5
Vial : P1-E7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

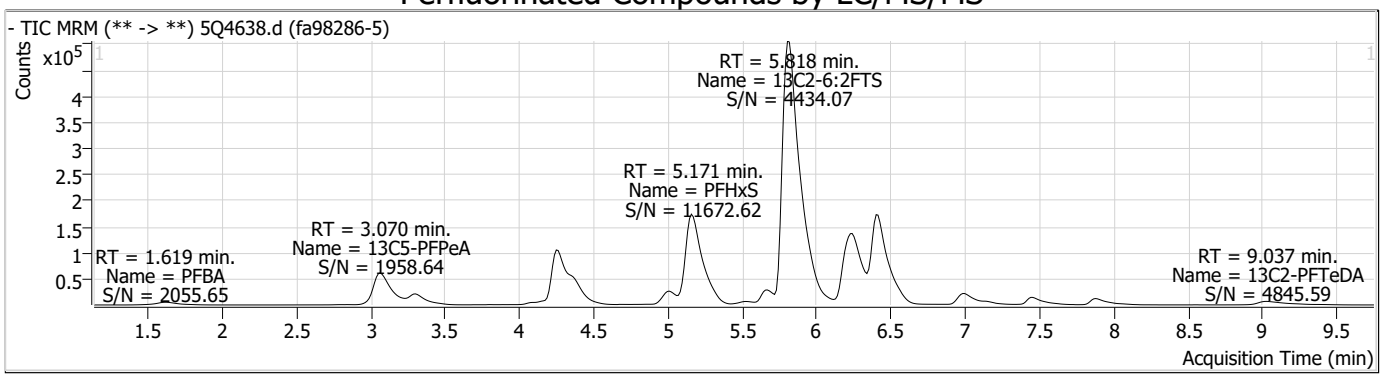
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.625	217.0 -> 172.0	19740	20.00 µg/L	-0.075
M5-PFPeA	3.070	268.0 -> 223.0	32422	20.00 µg/L	-0.062
M5-PFHxA	4.265	318.0 -> 273.0	58423	20.00 µg/L	-0.037
M4-PFHpA	5.137	367.0 -> 322.0	56799	20.00 µg/L	-0.026
M8-PFOA	5.845	421.0 -> 376.0	90572	20.00 µg/L	-0.012
M9-PFNA	6.431	472.0 -> 427.0	99987	20.00 µg/L	-0.025
M6-PFDA	6.989	519.0 -> 474.0	86714	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	97734	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	94489	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	94642	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	8735	20.00 µg/L	-0.012
M3-PFBS	3.312	302.0 -> 99.0	4158	20.00 µg/L	-0.050
M3-PFHxS	5.181	402.0 -> 99.0	4956	20.00 µg/L	-0.025
M8-PFOS	6.414	507.0 -> 99.0	9122	20.00 µg/L	-0.026
M2-4:2FTS	4.174	329.0 -> 309.0	19462	20.00 µg/L	-0.037
M2-6:2FTS	5.818	429.0 -> 409.0	157191	20.00 µg/L	-0.025
M2-8:2FTS	7.013	529.0 -> 509.0	36140	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17265	20.00 µg/L	0.000
M3-HFPO-DA	4.544	287.0 -> 169.0	4201	20.00 µg/L	-0.025
M3-MeFOSA	6.977	515.0 -> 169.0	170	20.00 µg/L	0.025
M5-EtFOSAA	7.170	589.0 -> 419.0	17891	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.174	329.0 -> 309.0	19462	13.25 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.3%	
13C2-6:2FTS	5.818	429.0 -> 409.0	157191	70.31 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 351.5%	
13C2-8:2FTS	7.013	529.0 -> 509.0	36140	16.09 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
13C2-PFDoDA	7.893	615.0 -> 570.0	94489	13.04 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%	
13C2-PFTeDA	9.037	715.0 -> 670.0	94642	12.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%	
13C3-PFBS	3.312	302.0 -> 99.0	4158	12.77 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%	
13C3-PFHxS	5.181	402.0 -> 99.0	4956	14.53 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.7%	
13C4-PFBA	1.625	217.0 -> 172.0	19740	11.04 µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.2%	
13C4-PFHpA	5.137	367.0 -> 322.0	56799	13.91 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.6%	
13C5-PFHxA	4.265	318.0 -> 273.0	58423	13.36 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%	
13C5-PFPeA	3.070	268.0 -> 223.0	32422	11.16 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.8%	
13C6-PFDA	6.989	519.0 -> 474.0	86714	16.11 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

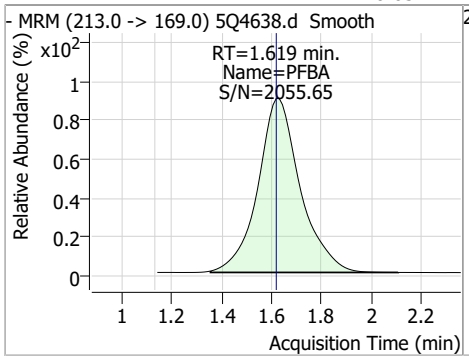
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	97734	13.88	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
13C8-FOSA	6.517	506.0 -> 78.0	8735	7.70	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 38.5%			
13C8-PFOA	5.845	421.0 -> 376.0	90572	14.98	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%			
13C8-PFOS	6.414	507.0 -> 99.0	9122	13.97	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.9%			
13C9-PFNA	6.431	472.0 -> 427.0	99987	15.22	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17265	17.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C3-HFPO-DA	4.544	287.0 -> 169.0	4201	12.51	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.5%			
d3-MeFOSA	6.977	515.0 -> 169.0	170	0.56	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.8%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17891	15.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%			
Target Compounds							**QValue**
4:2FTS	4.176	327.0 -> 307.0	2912	2.67	µg/L		98
6:2FTS	5.819	427.0 -> 407.0	2344715	281.24	µg/L		97
8:2FTS	7.013	527.0 -> 507.0	13002	6.75	µg/L		99
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.619	213.0 -> 169.0	35641	76.65	µg/L		100
PFBS	3.317	299.0 -> 80.0	104406	167.16	µg/L	m	99
PFDA	6.978	513.0 -> 469.0	2370	0.44	µg/L		100
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.138	363.0 -> 319.0	291390	78.09	µg/L	m	99
PFHpS	5.855	449.0 -> 80.0	52023	75.85	µg/L	m	93
PFHxA	4.266	313.0 -> 269.0	671297	235.17	µg/L		100
PFHxS	5.171	399.0 -> 80.0	759998	1032.53	µg/L	m	97
PFNA	6.444	463.0 -> 419.0	53839	12.02	µg/L		99
PFNS	6.725	549.0 -> 80.0	0		µg/L	m	1
PFOA	5.845	413.0 -> 369.0	422452	76.92	µg/L	m	99
PFOS	6.228	499.0 -> 80.0	1357861	1690.10	µg/L	m	82
PFPeA	3.072	263.0 -> 219.0	497682	310.62	µg/L		100
PFPeS	4.385	349.0 -> 80.0	94186	193.85	µg/L	m	98
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.741	461.0 -> 381.0	0		µg/L	m	1
FBSA	4.356	298.0 -> 78.0	58929	60.82	µg/L		99
FHxSA	5.674	398.0 -> 78.0	160137	173.82	µg/L		100

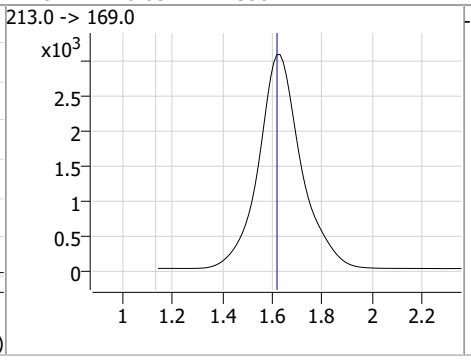
 # = Qualifier out of range, m = manually integrated, + = Area summed

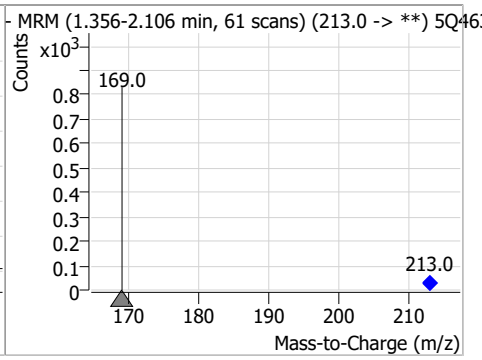
Perfluorinated Compounds by LC/MS/MS



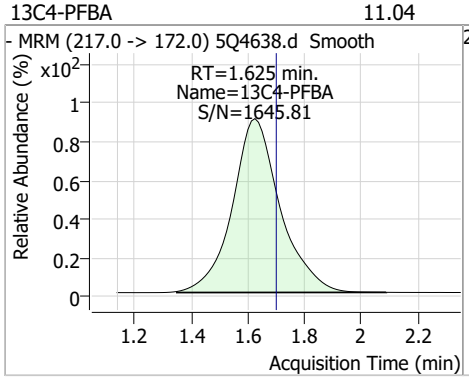
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	76.65	1.62	-0.08	35641				

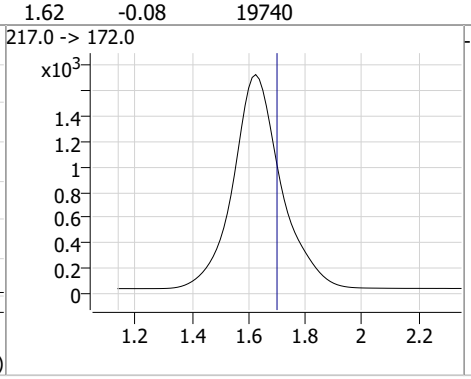


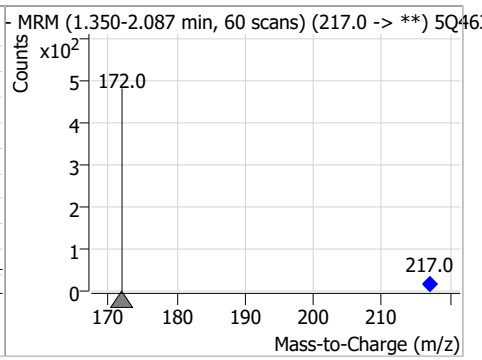




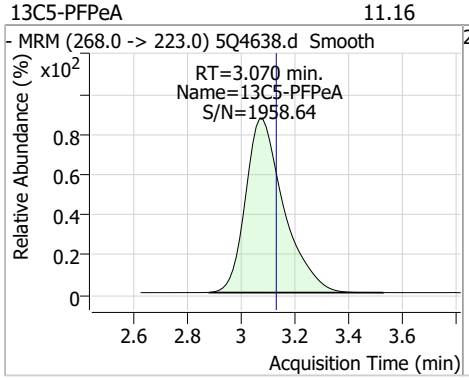
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.04	1.62	-0.08	19740				

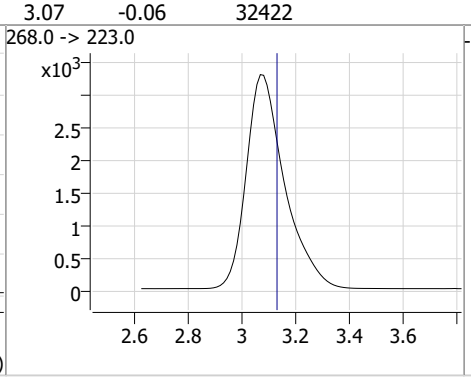


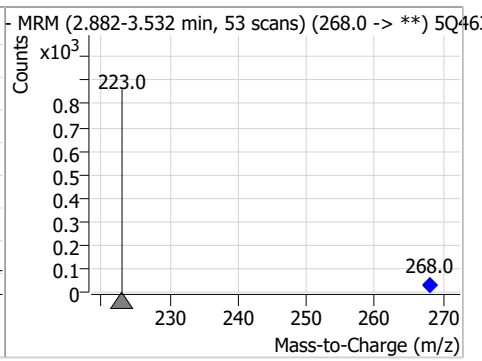




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.16	3.07	-0.06	32422				

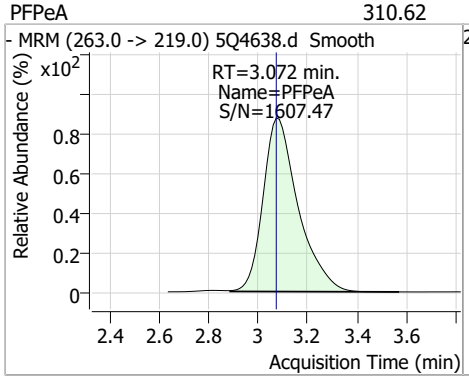


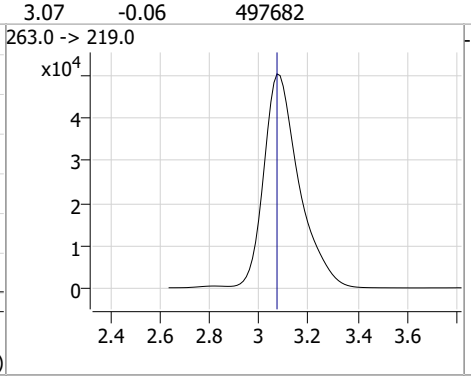


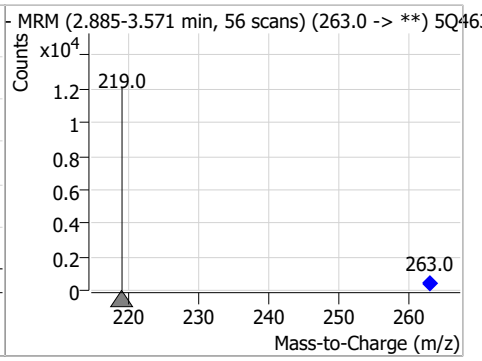


Perfluorinated Compounds by LC/MS/MS

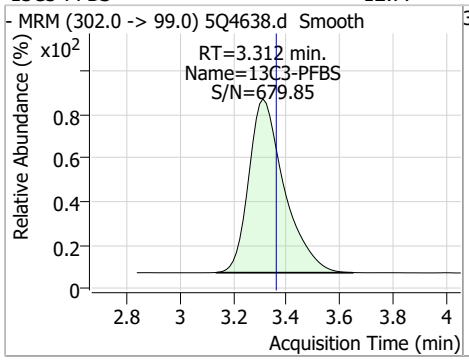
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	310.62	3.07	-0.06	497682				

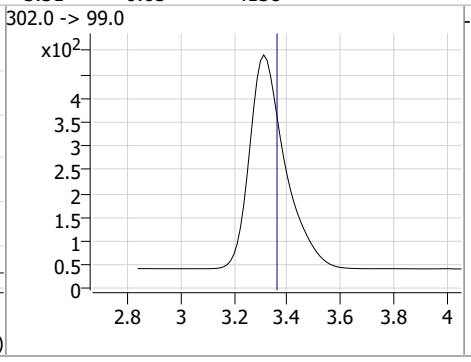


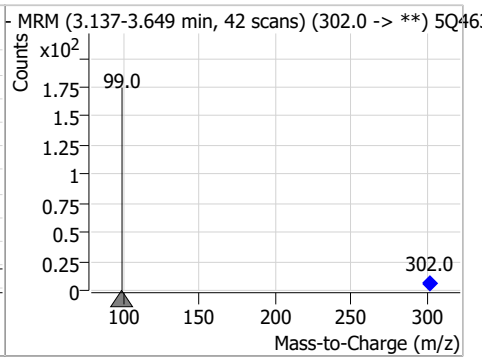




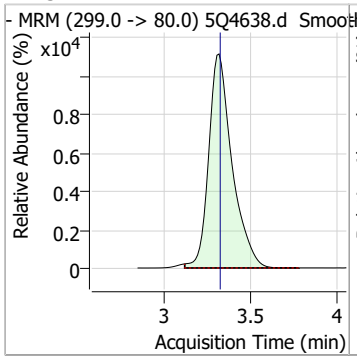
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.77	3.31	-0.05	4158				

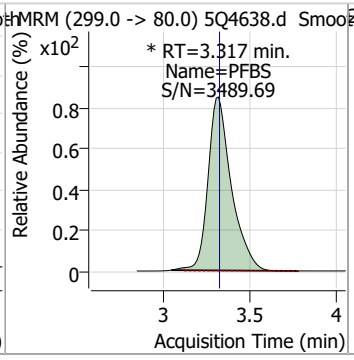


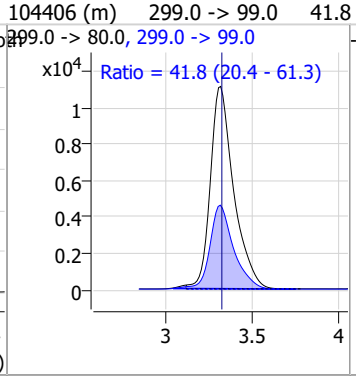


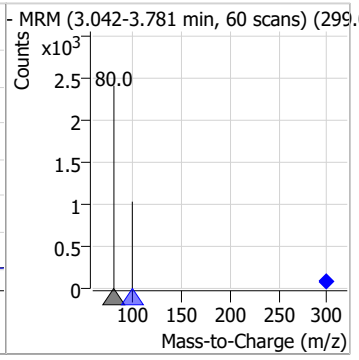


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	167.16	3.32	-0.05	104406 (m)	299.0 -> 99.0	41.8	20.4	61.3

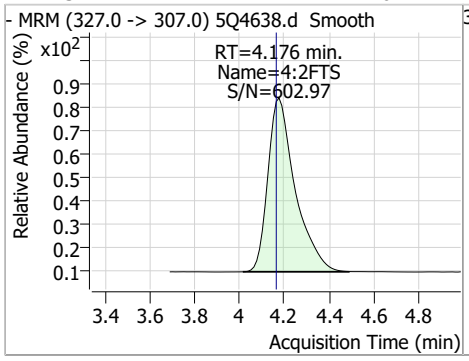


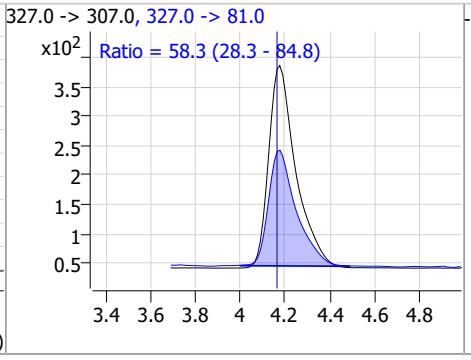


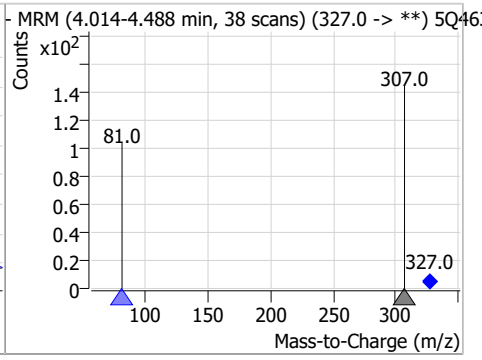




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.67	4.18	-0.02	2912	327.0 -> 81.0	58.3	28.3	84.8

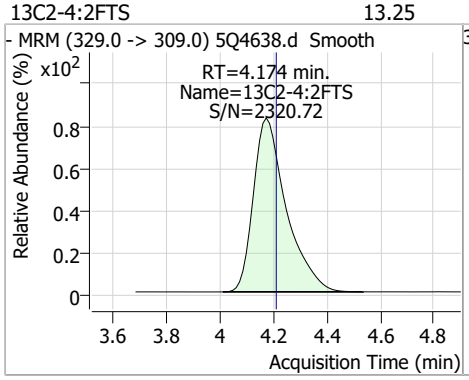


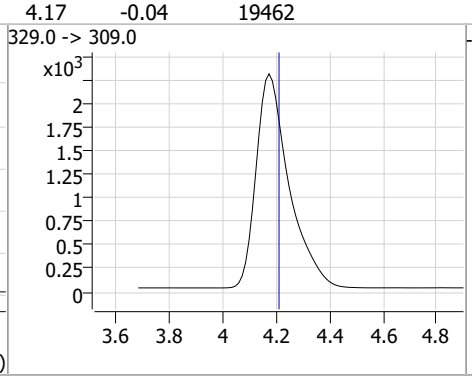


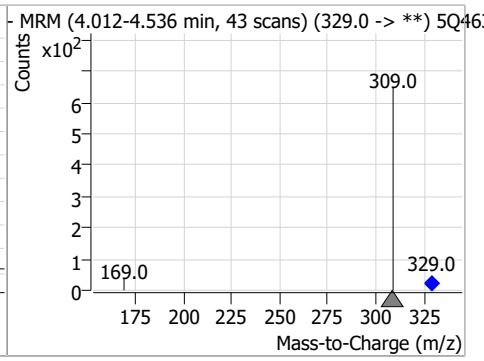


Perfluorinated Compounds by LC/MS/MS

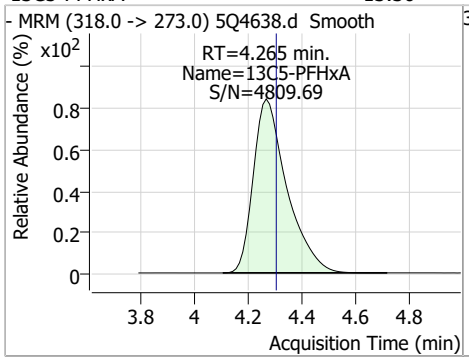
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.25	4.17	-0.04	19462				

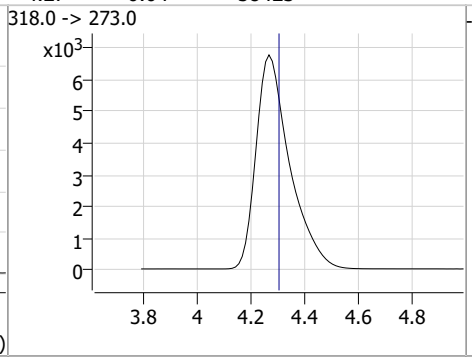


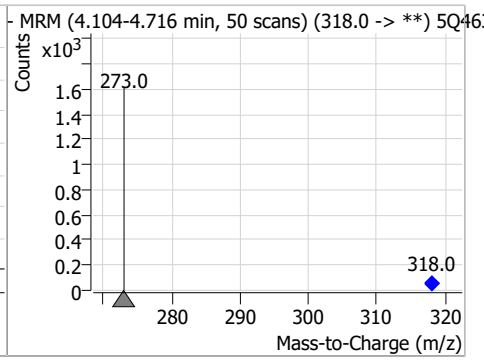




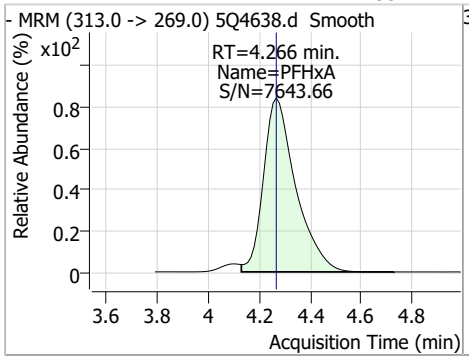
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.36	4.27	-0.04	58423				

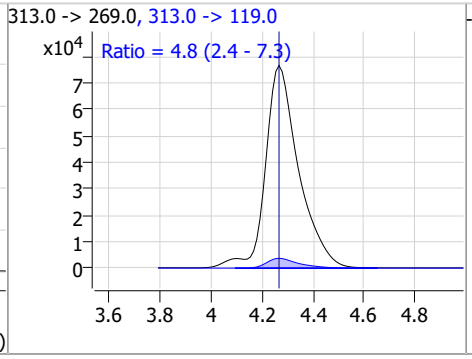


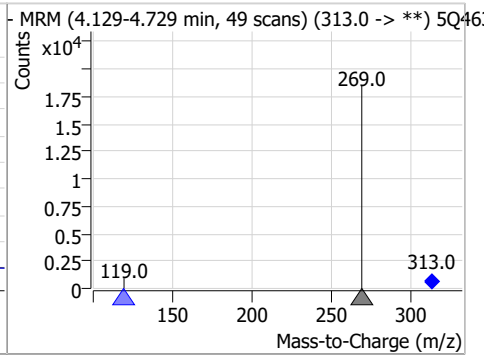




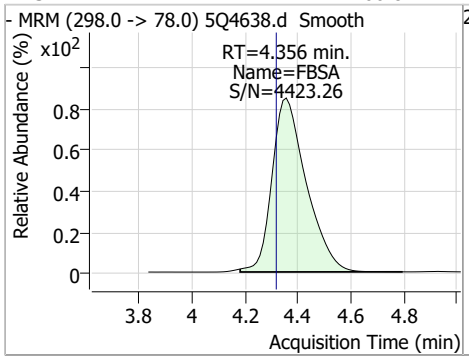
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	235.17	4.27	-0.04	671297	313.0 -> 119.0	4.8	2.4	7.3

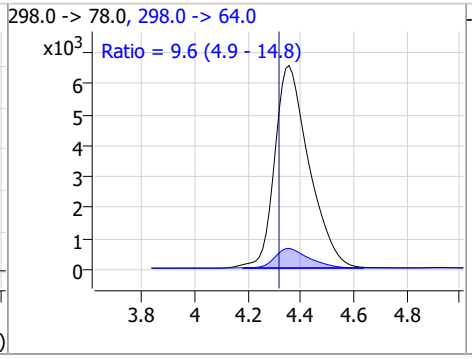


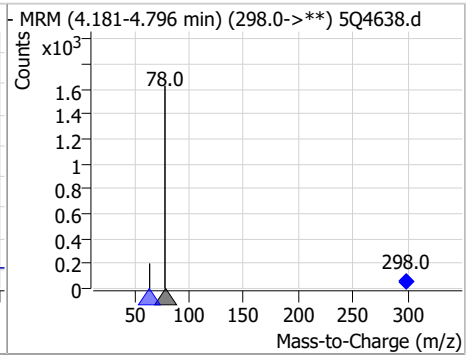




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	60.82	4.36	0.00	58929	298.0 -> 64.0	9.6	4.9	14.8

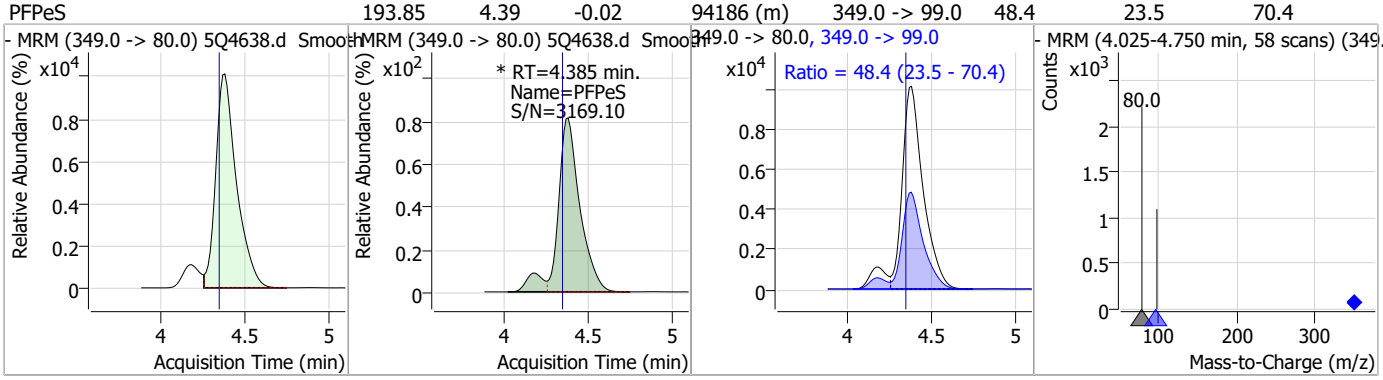




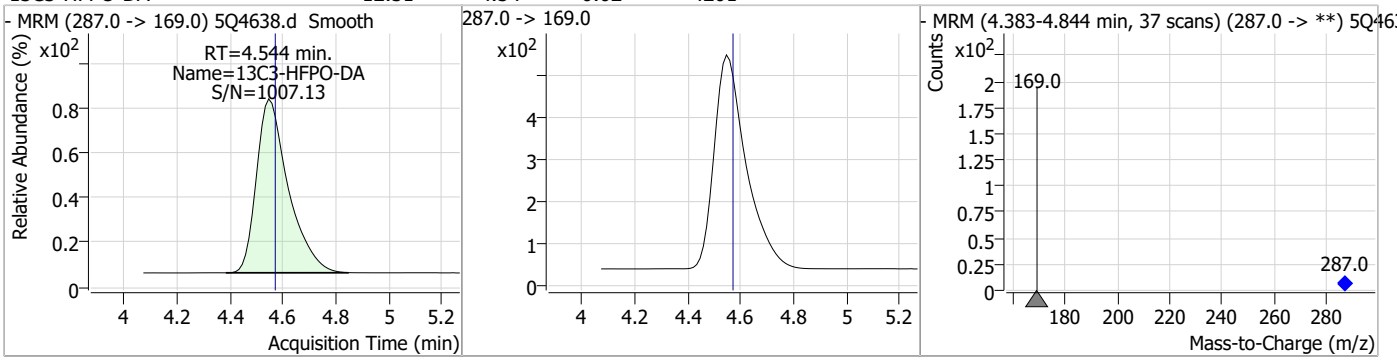


Perfluorinated Compounds by LC/MS/MS

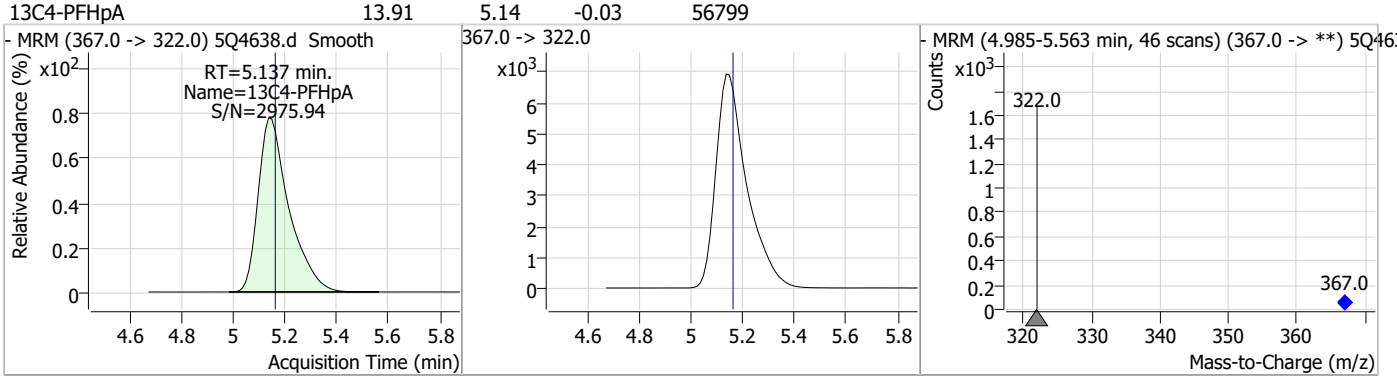
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	193.85	4.39	-0.02	94186 (m)	349.0 -> 99.0	48.4	23.5	70.4



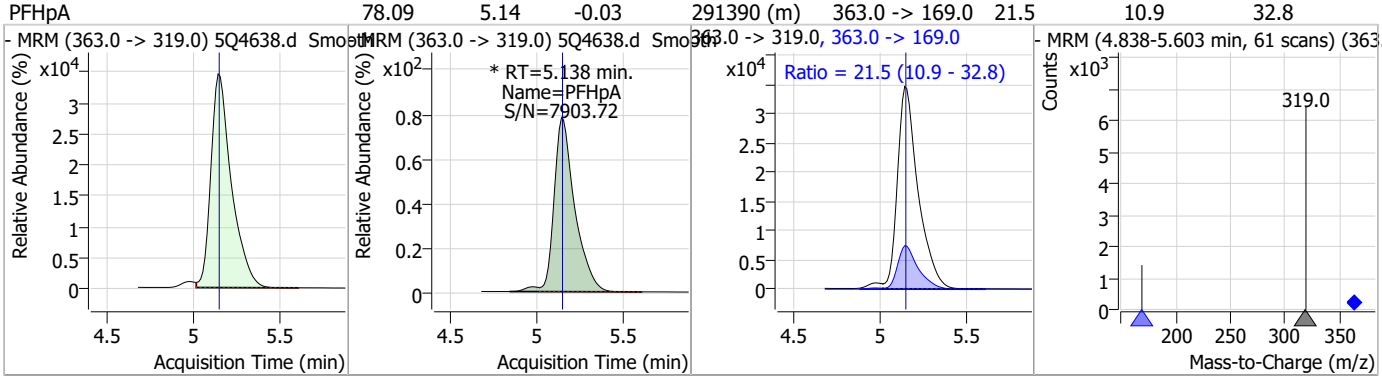
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.51	4.54	-0.02	4201				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.91	5.14	-0.03	56799				

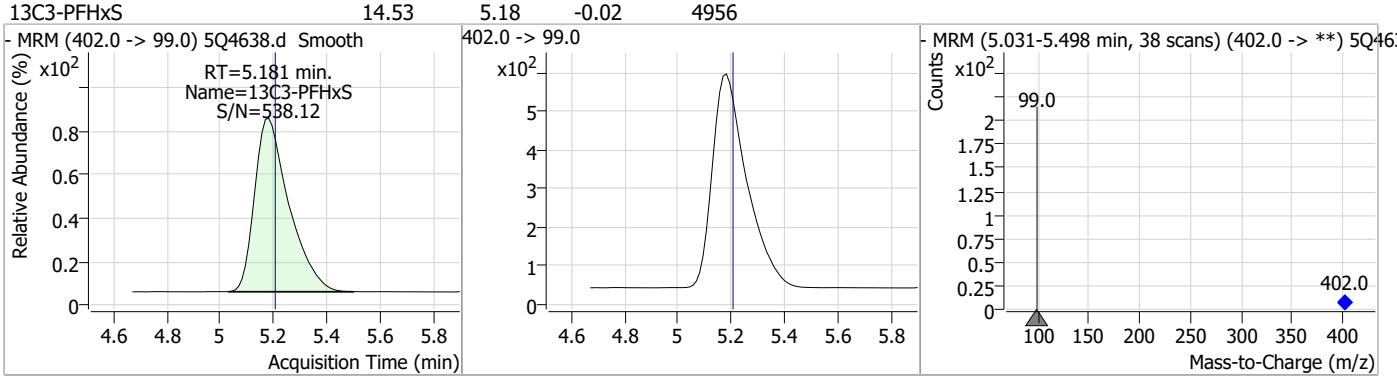


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	78.09	5.14	-0.03	291390 (m)	363.0 -> 169.0	21.5	10.9	32.8

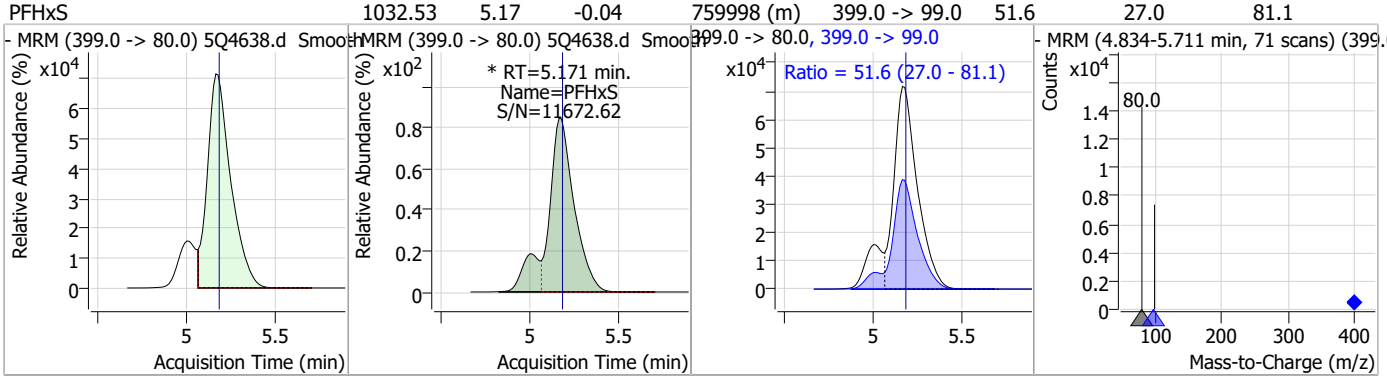


Perfluorinated Compounds by LC/MS/MS

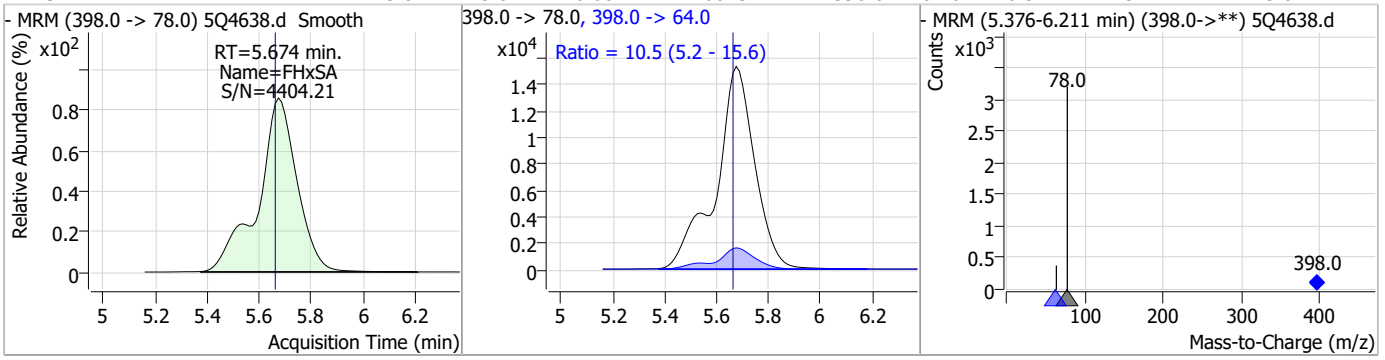
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.53	5.18	-0.02	4956				



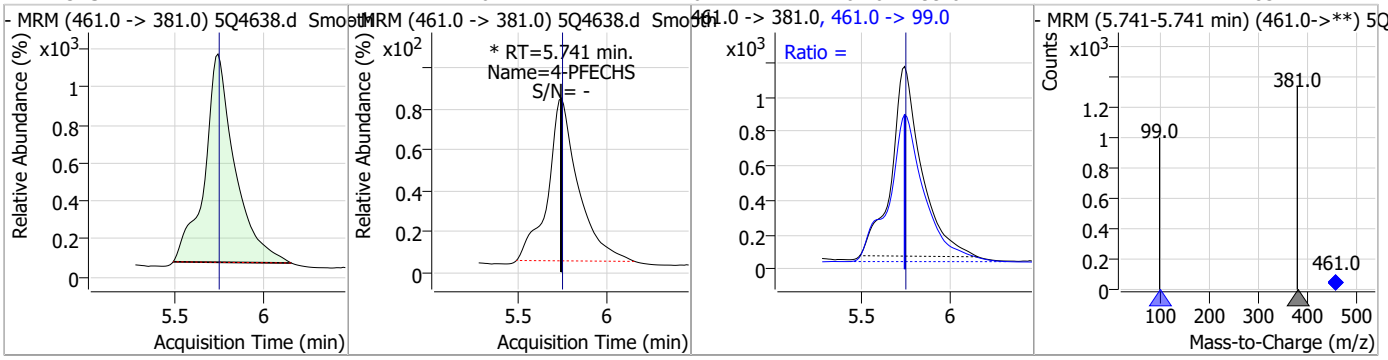
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1032.53	5.17	-0.04	759998 (m)	399.0 -> 99.0	51.6	27.0	81.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	173.82	5.67	0.00	160137	398.0 -> 64.0	10.5	5.2	15.6

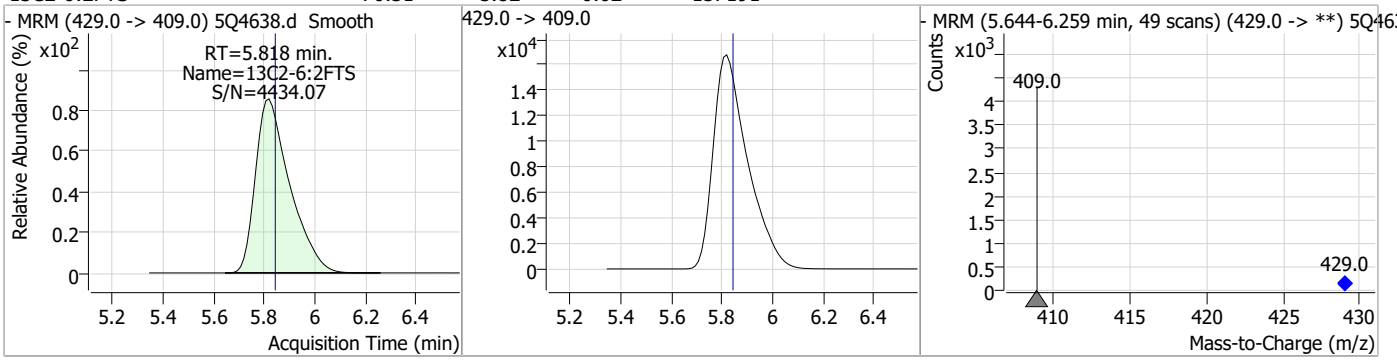


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		27.7	83.2

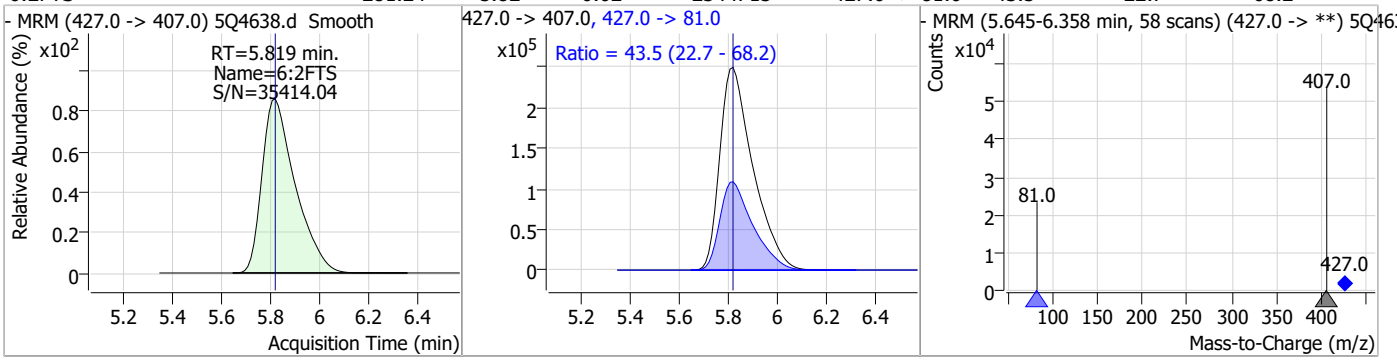


Perfluorinated Compounds by LC/MS/MS

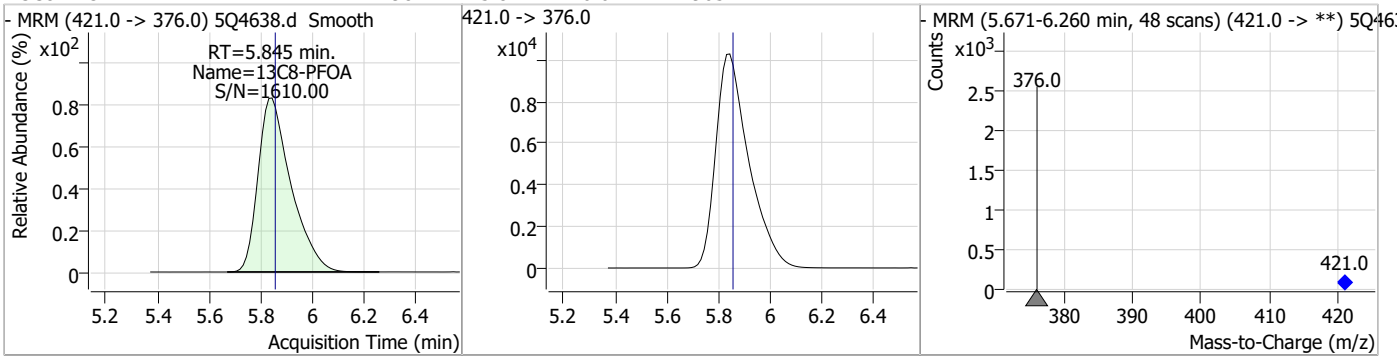
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	70.31	5.82	-0.02	157191				



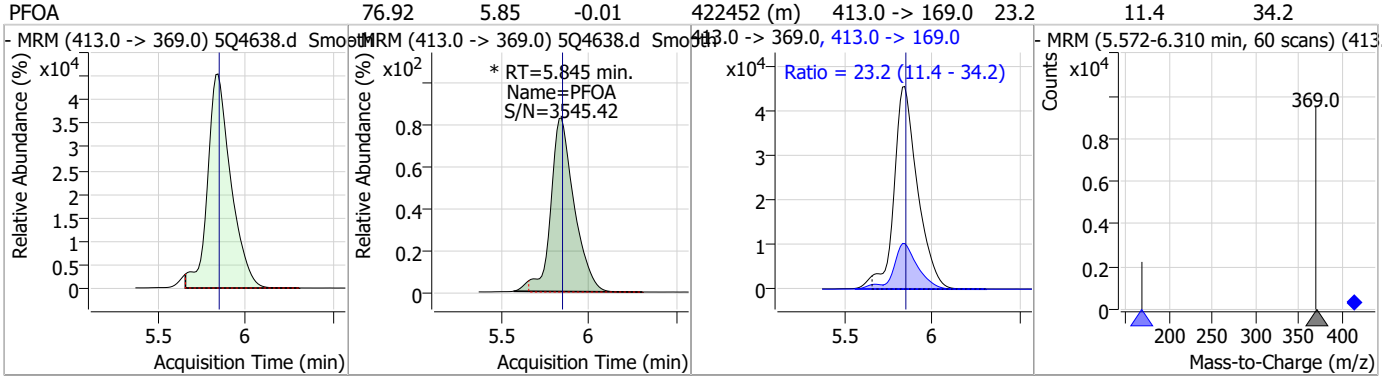
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	281.24	5.82	-0.02	2344715	427.0 -> 81.0	43.5	22.7	68.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.98	5.84	-0.01	90572				

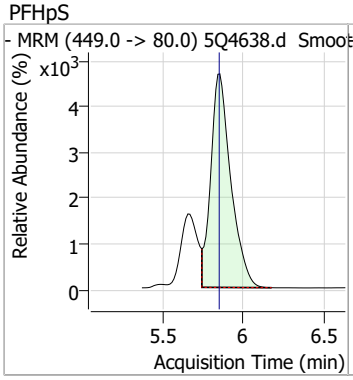


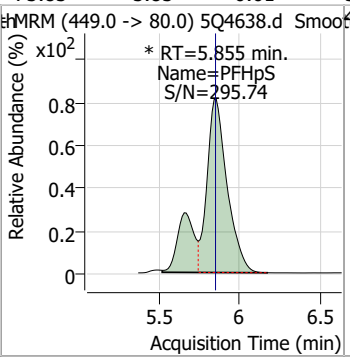
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	76.92	5.85	-0.01	422452 (m)	413.0 -> 169.0	23.2	11.4	34.2

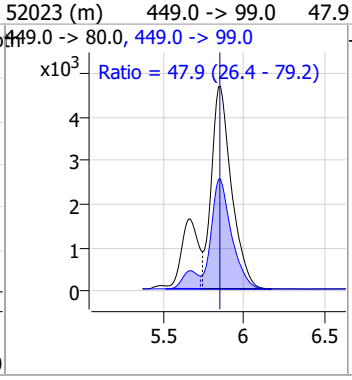


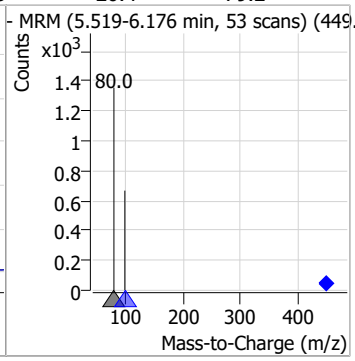
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	75.85	5.85	-0.01	52023 (m)	449.0 -> 99.0	47.9	26.4	79.2

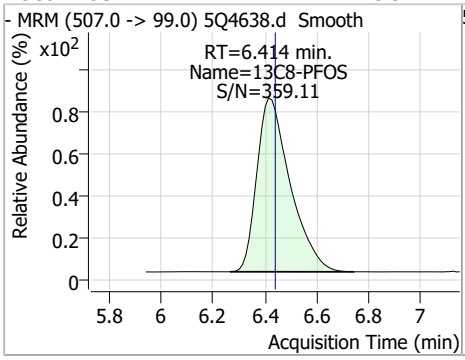


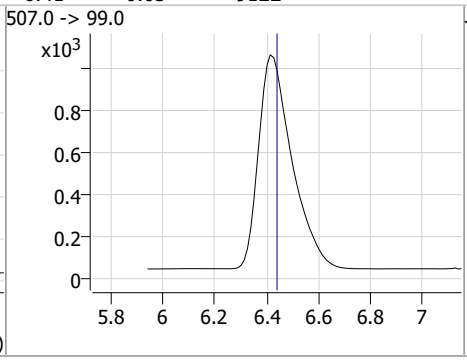


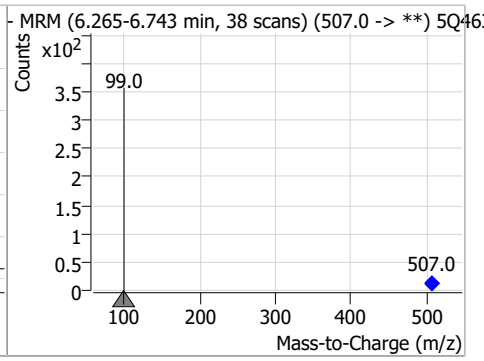




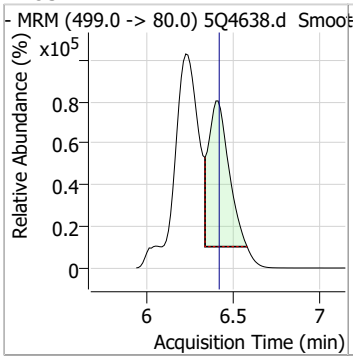
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.97	6.41	-0.03	9122				

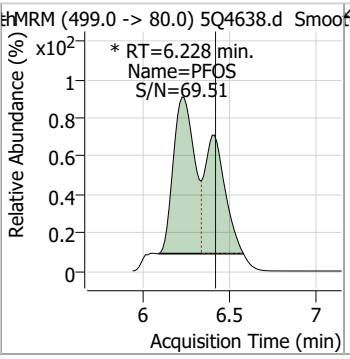


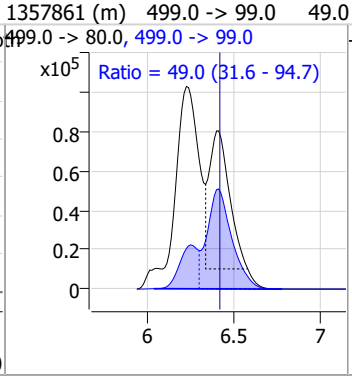


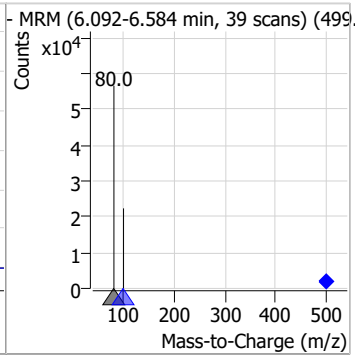


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1690.10	6.23	-0.21	1357861 (m)	499.0 -> 99.0	49.0	31.6	94.7

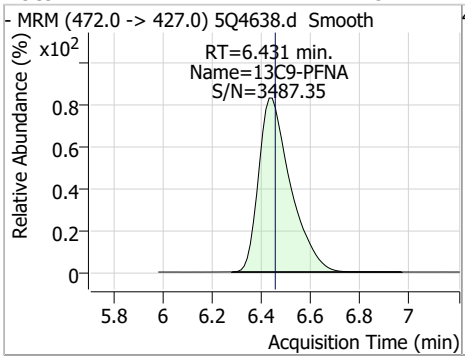


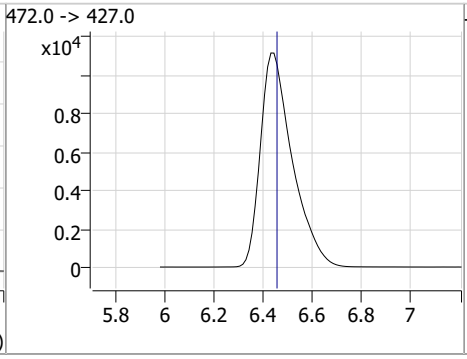


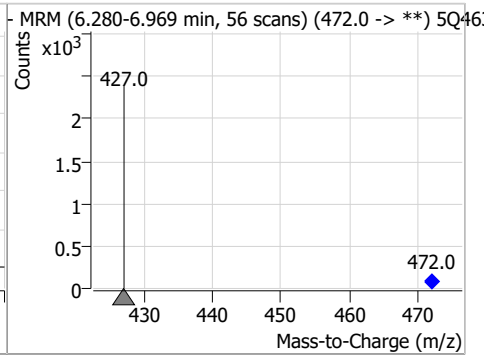




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.22	6.43	-0.02	99987				

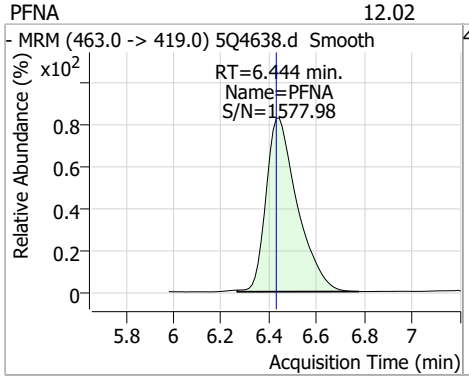


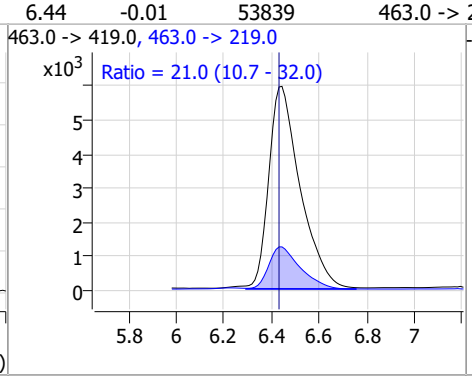


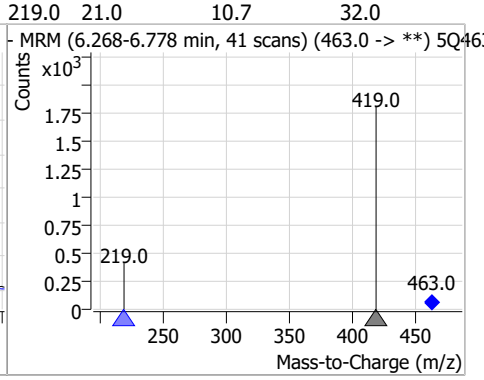


Perfluorinated Compounds by LC/MS/MS

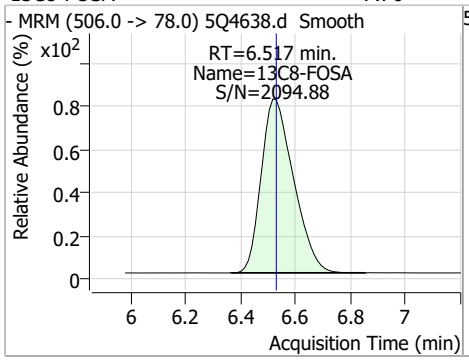
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	12.02	6.44	-0.01	53839	463.0 -> 219.0	21.0	10.7	32.0

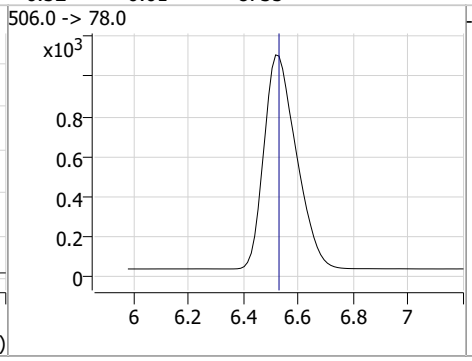


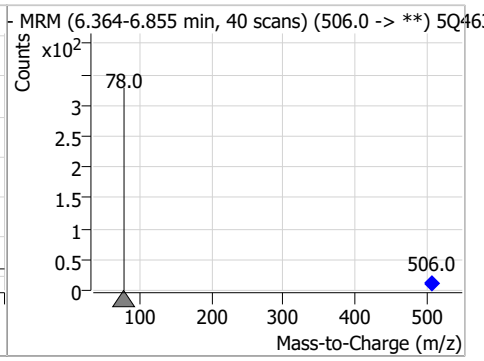




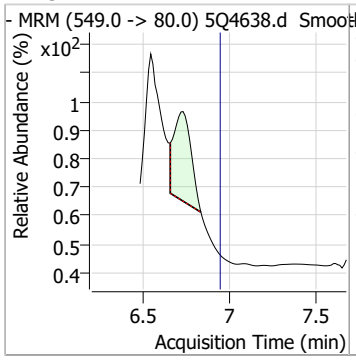
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.70	6.52	-0.01	8735				

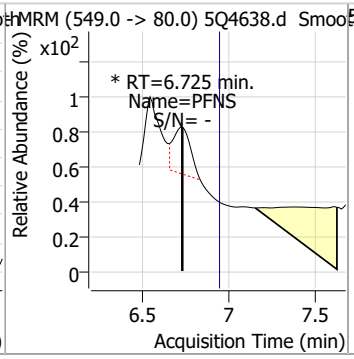


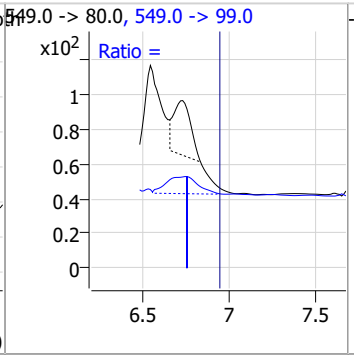


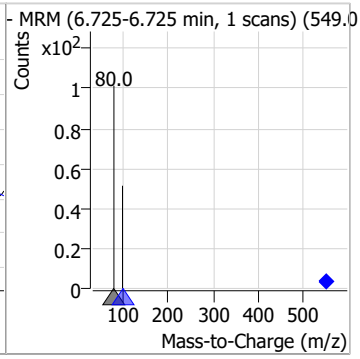


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0		0	0	549.0 -> 99.0		28.0	84.0

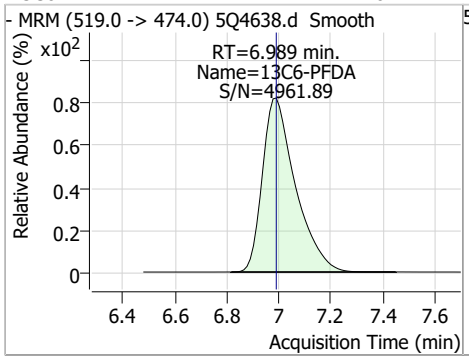


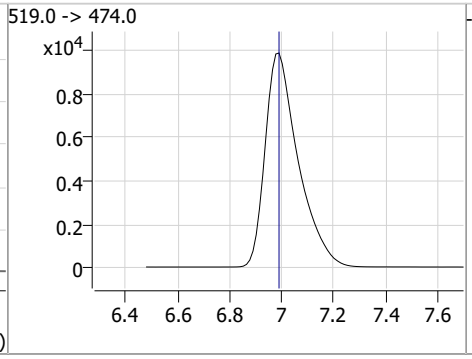


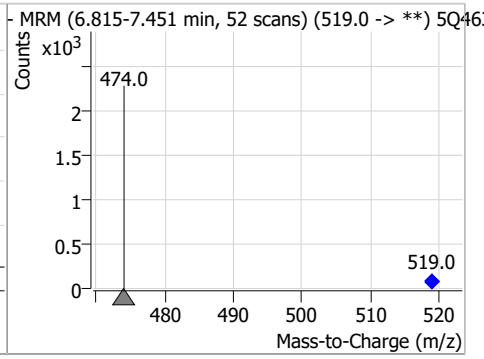




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.11	6.99	0.00	86714				

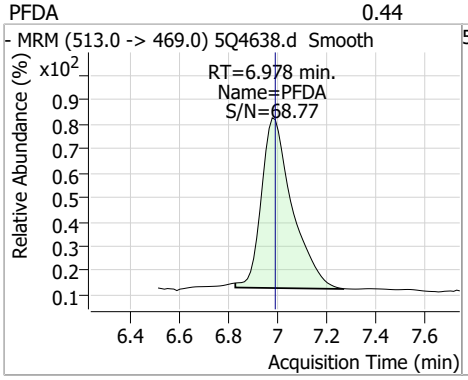


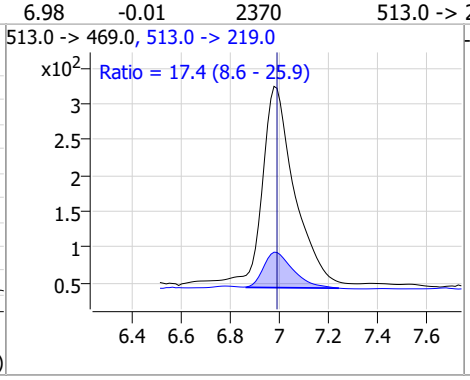


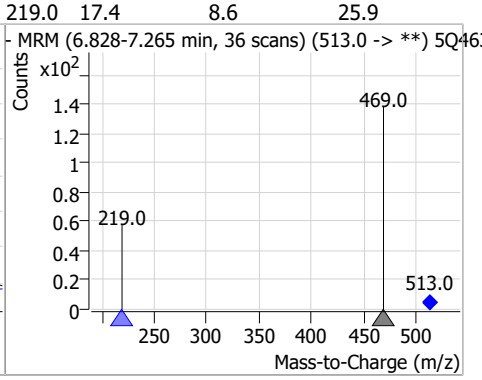


Perfluorinated Compounds by LC/MS/MS

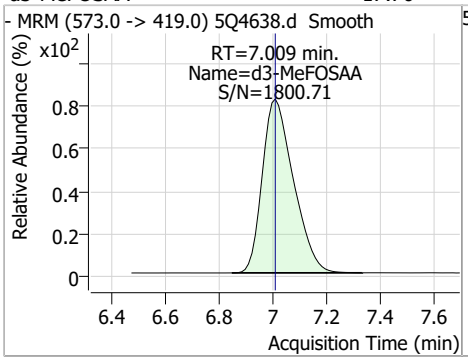
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.44	6.98	-0.01	2370	513.0 -> 219.0	17.4	8.6	25.9

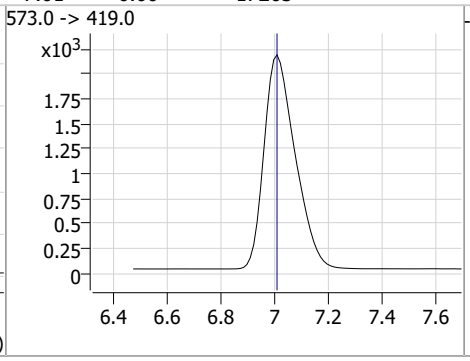


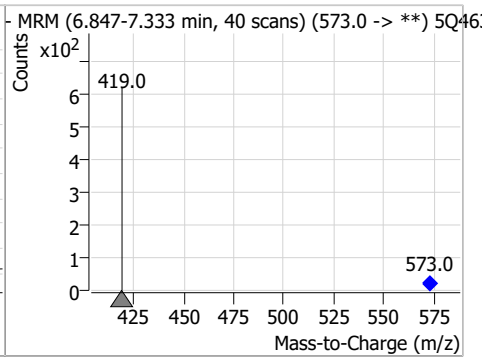




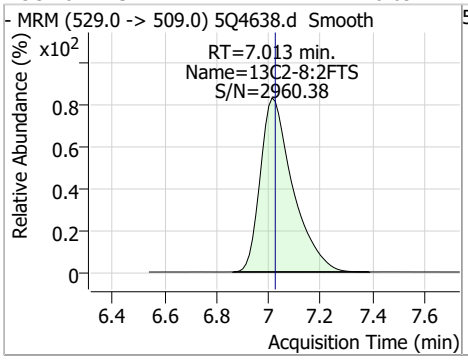
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.76	7.01	0.00	17265				

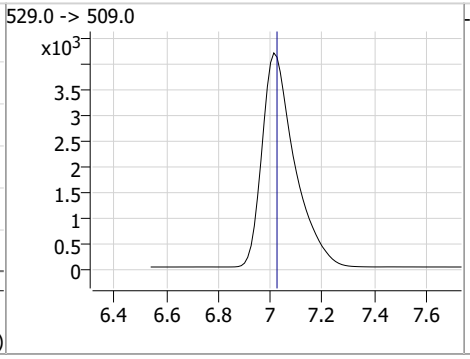


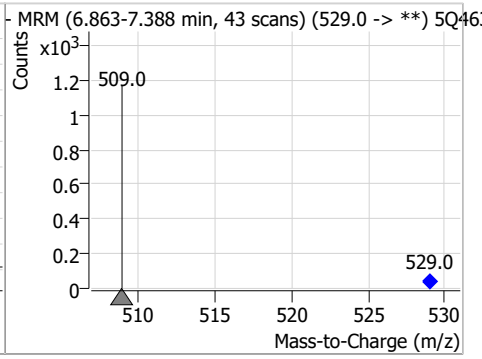




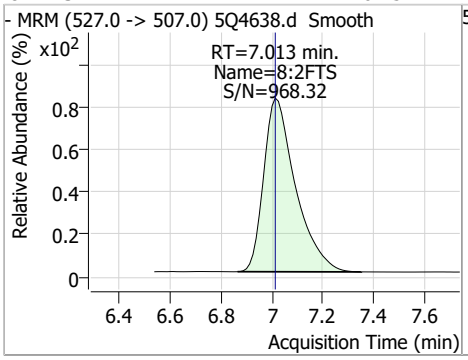
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.09	7.01	-0.01	36140				

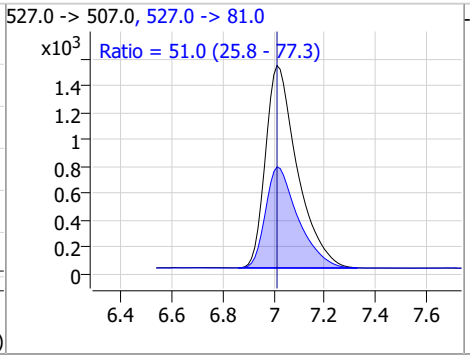


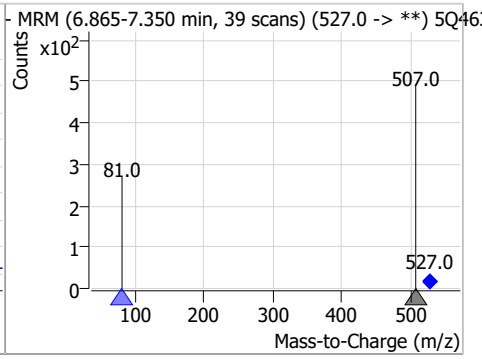




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	6.75	7.01	-0.01	13002	527.0 -> 81.0	51.0	25.8	77.3

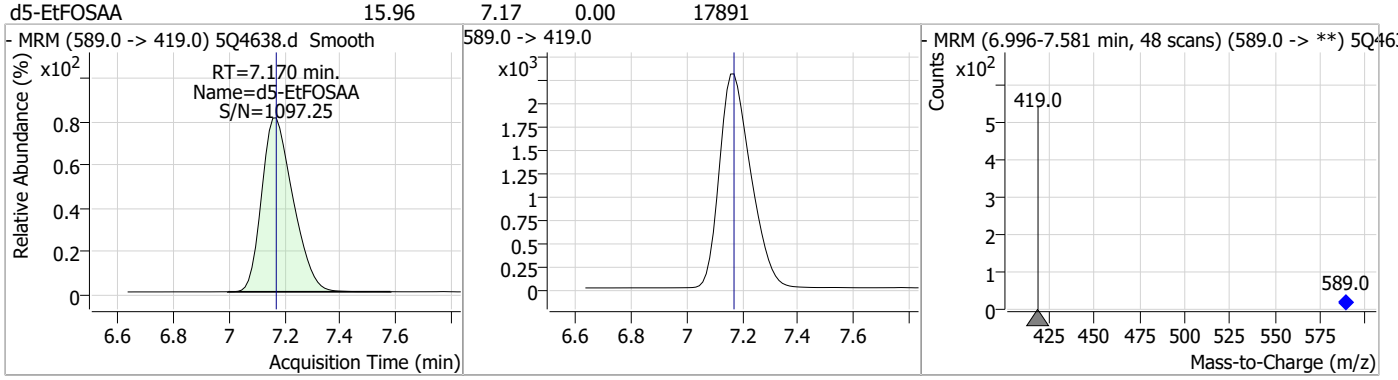




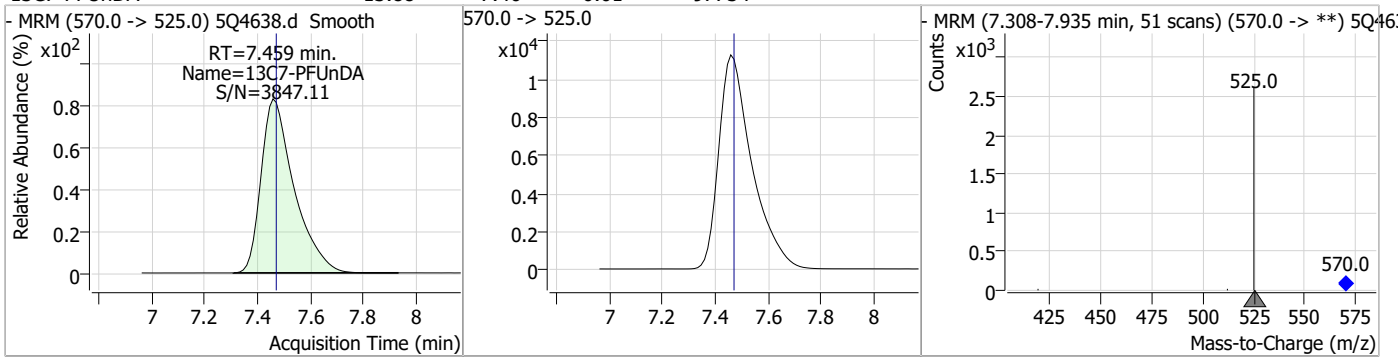


Perfluorinated Compounds by LC/MS/MS

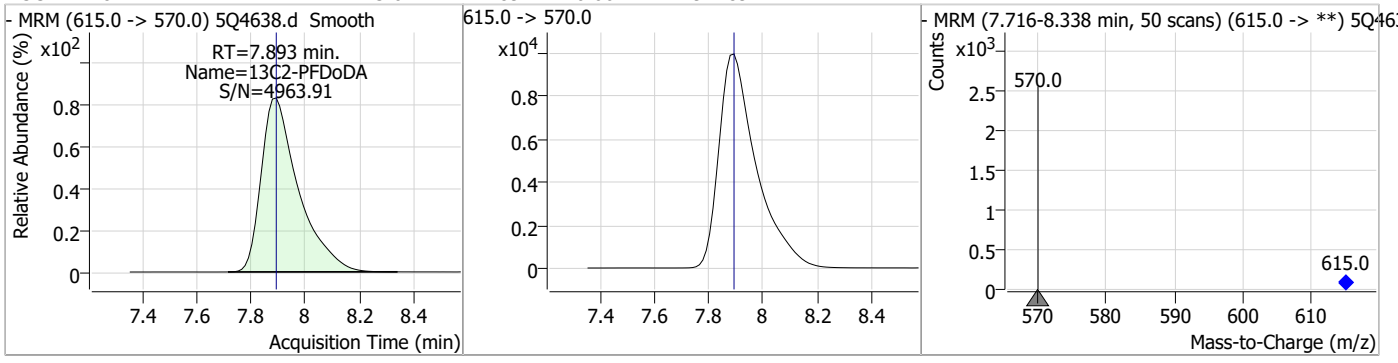
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.96	7.17	0.00	17891				



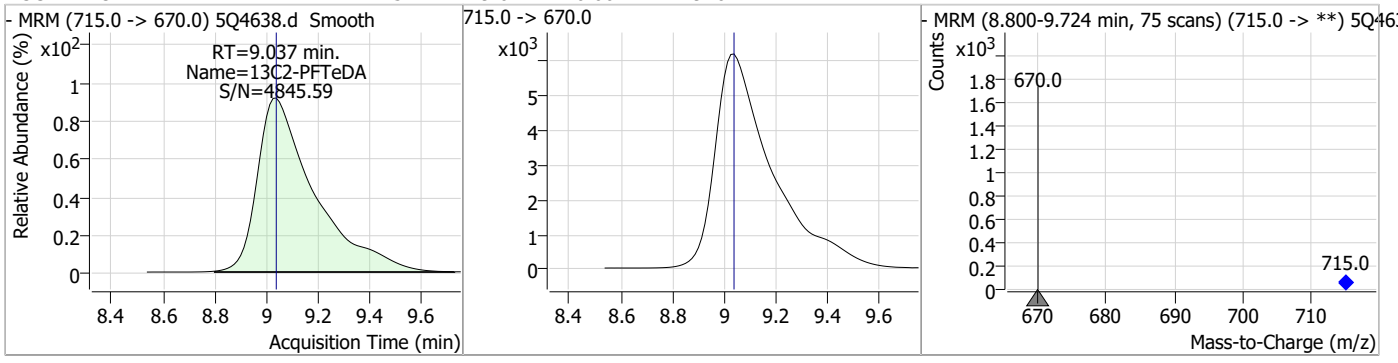
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.88	7.46	-0.01	97734				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.04	7.89	0.00	94489				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.54	9.04	0.00	94642				



7.1.7

7

Manual Integration Approval Summary

Sample Number: FA98286-5
Lab FileID: 5Q4638.D
Injection Time: 09/15/22 07:23
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:58 Anna Ludwig
Supervisor approved: 09/16/22 19:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.32	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.38	Split peak
Perfluoroheptanoic acid	375-85-9		5.14	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.17	Split peak
Perfluorooctanoic acid	335-67-1		5.84	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.23	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4716.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 5:23:28 AM
Sample Name : fa98286-5
Vial : P3-E1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,5,water

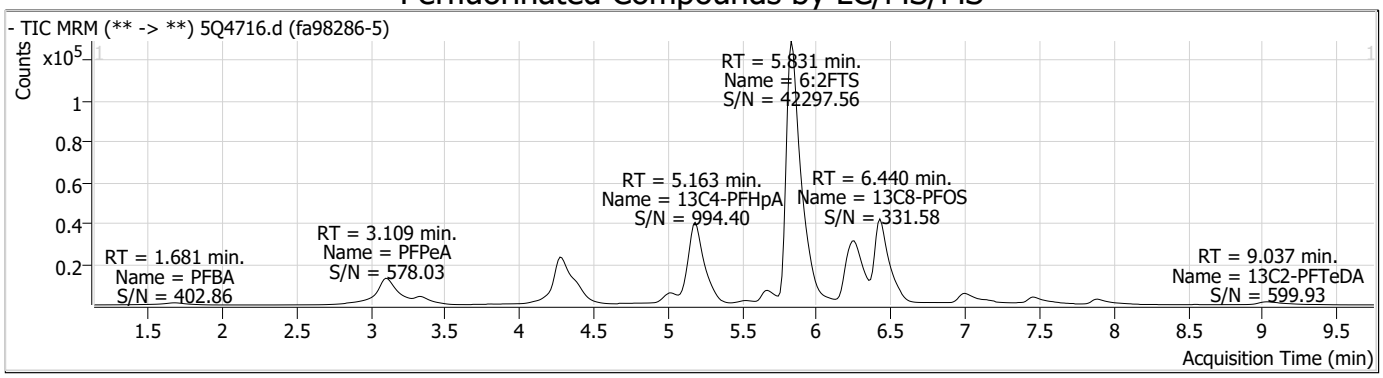
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.675	217.0 -> 172.0	5058	20.00	µg/L	-0.025
M5-PFPeA	3.119	268.0 -> 223.0	8155	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	13365	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	12812	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	19433	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	21174	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	17222	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	19136	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	18475	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	17450	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	2065	20.00	µg/L	0.000
M3-PFBS	3.337	302.0 -> 99.0	968	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	1109	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	2067	20.00	µg/L	0.000
M2-4:2FTS	4.187	329.0 -> 309.0	4310	20.00	µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	33575	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	6916	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	3223	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	900	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	86	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	3373	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	4310	2.93	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	33575	15.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C2-8:2FTS	7.025	529.0 -> 509.0	6916	3.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%		
13C2-PFDoDA	7.893	615.0 -> 570.0	18475	2.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-PFTeDA	9.037	715.0 -> 670.0	17450	2.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%		
13C3-PFBS	3.337	302.0 -> 99.0	968	2.97	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%		
13C3-PFHxS	5.194	402.0 -> 99.0	1109	3.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%		
13C4-PFBA	1.675	217.0 -> 172.0	5058	2.83	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C4-PFHpA	5.163	367.0 -> 322.0	12812	3.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C5-PFHxA	4.290	318.0 -> 273.0	13365	3.06	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%		
13C5-PFPeA	3.119	268.0 -> 223.0	8155	2.81	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C6-PFDA	6.989	519.0 -> 474.0	17222	3.20	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

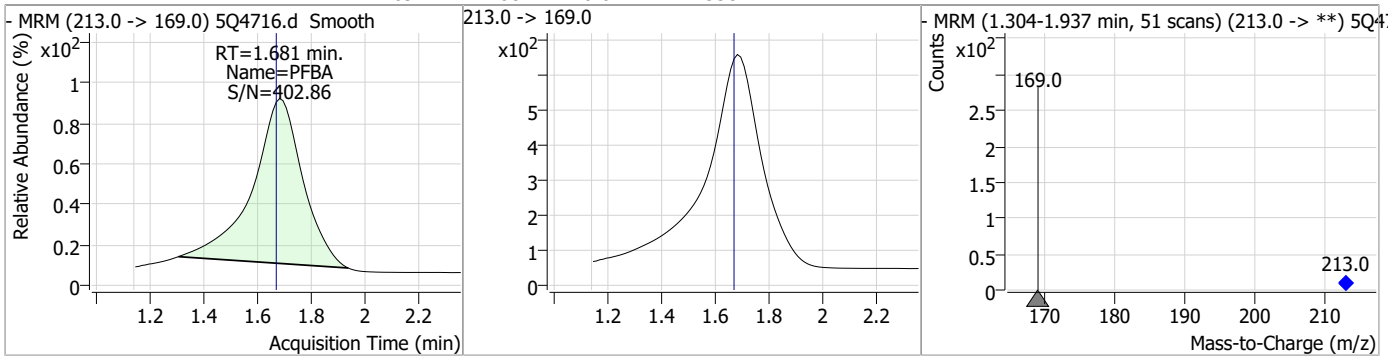
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
13C7-PFUnDA	7.471	570.0 -> 525.0	19136	2.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%			
13C8-FOSA	6.530	506.0 -> 78.0	2065	1.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.1%			
13C8-PFOA	5.857	421.0 -> 376.0	19433	3.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
13C8-PFOS	6.440	507.0 -> 99.0	2067	3.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%			
13C9-PFNA	6.455	472.0 -> 427.0	21174	3.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	3223	3.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	900	2.68	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.4%			
d3-MeFOSA	6.965	515.0 -> 169.0	86	0.28	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	3373	3.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.0%			
Target Compounds							QValue
4:2FTS	4.189	327.0 -> 307.0	687	0.57	µg/L		96
6:2FTS	5.831	427.0 -> 407.0	499261	56.07	µg/L		97
8:2FTS	7.026	527.0 -> 507.0	2500	1.36	µg/L		99
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.681	213.0 -> 169.0	7558	12.69	µg/L		100
PFBS	3.342	299.0 -> 80.0	25190	34.64	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	65153	15.48	µg/L	m	99
PFHpS	5.855	449.0 -> 80.0	10776	13.87	µg/L	m	95
PFHxA	4.279	313.0 -> 269.0	157446	48.22	µg/L		99
PFHxS	5.195	399.0 -> 80.0	166143	201.78	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	11488	2.42	µg/L	m	99
PFNS	6.550	549.0 -> 80.0	0		µg/L	m	1
PFOA	5.858	413.0 -> 369.0	89683	15.22	µg/L	m	99
PFOS	6.241	499.0 -> 80.0	295953	325.23	µg/L	m	77
PFPeA	3.109	263.0 -> 219.0	124372	61.72	µg/L		100
PFPeS	4.398	349.0 -> 80.0	20290	35.87	µg/L		98
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	2958	1.69	µg/L		66
FBSA	4.343	298.0 -> 78.0	16169	14.59	µg/L		99
FHxSA	5.674	398.0 -> 78.0	36039	36.46	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

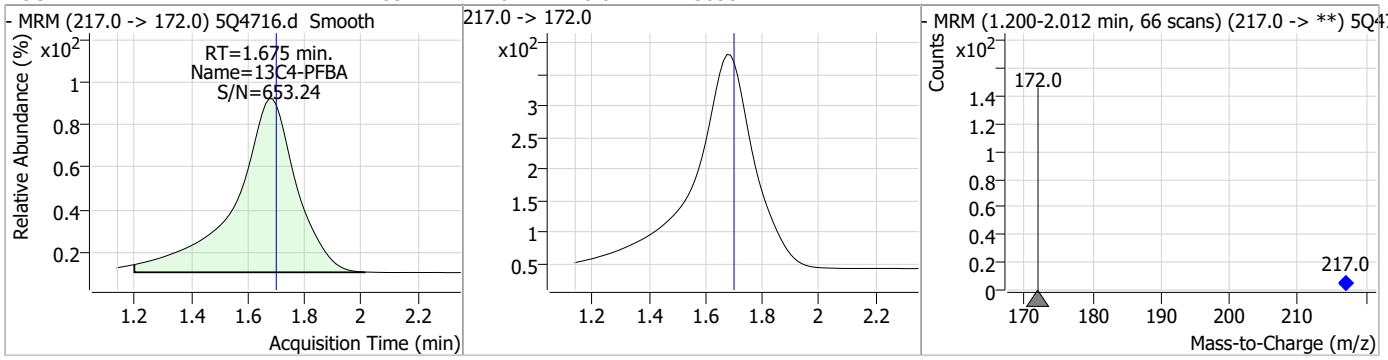
Perfluorinated Compounds by LC/MS/MS



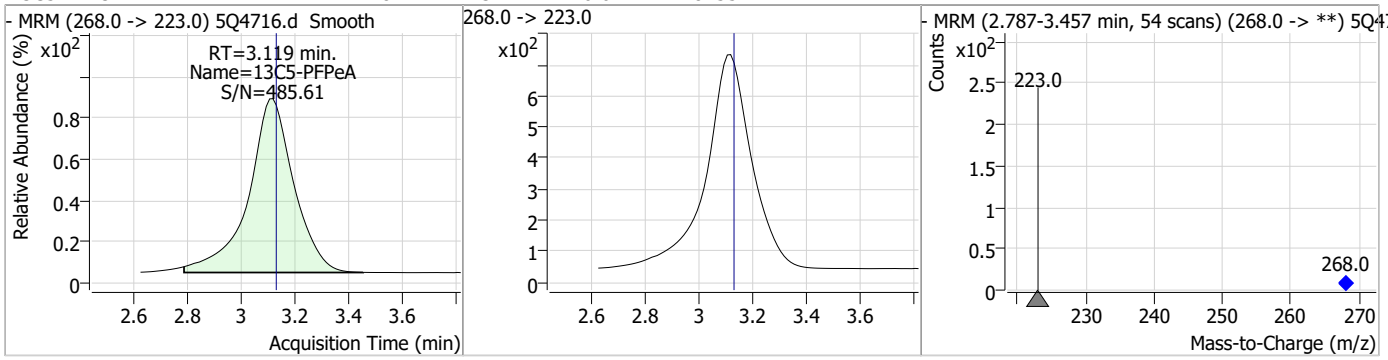
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	12.69	1.68	-0.01	7558				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.83	1.67	-0.02	5058				

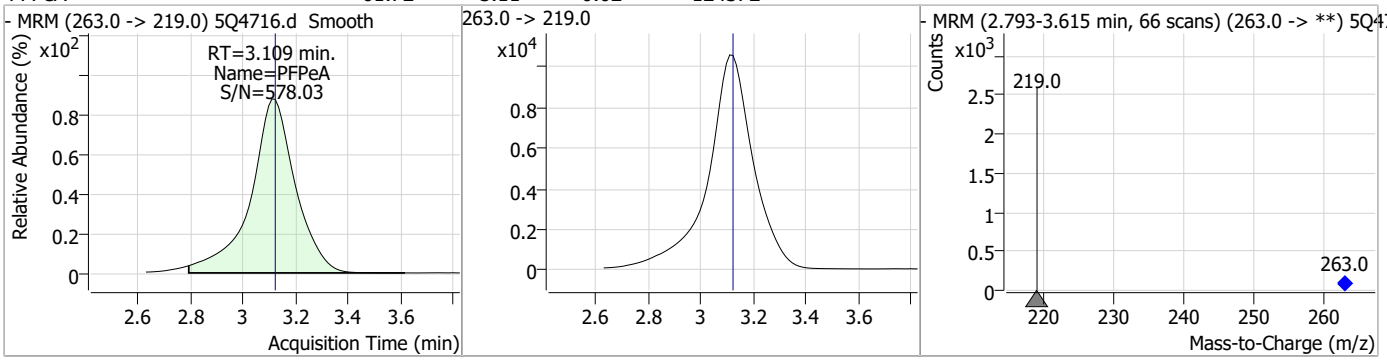


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.81	3.12	-0.01	8155				

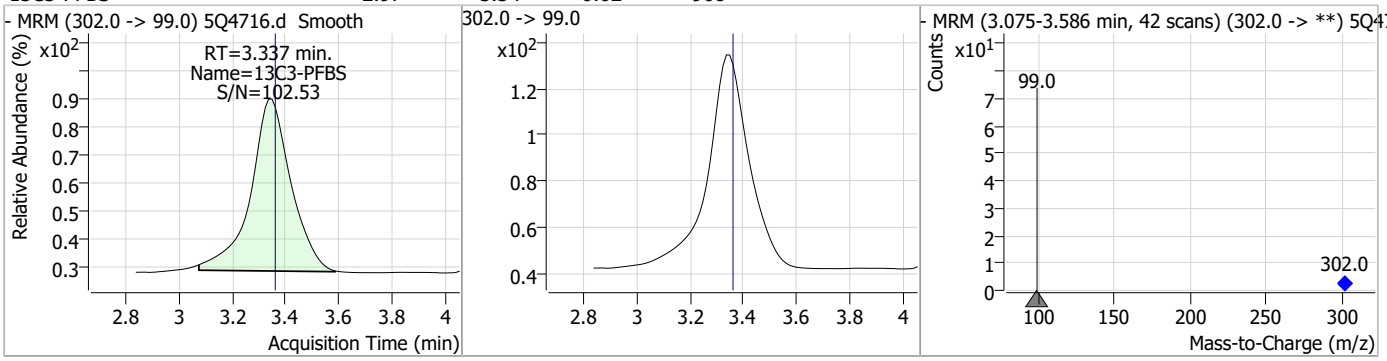


Perfluorinated Compounds by LC/MS/MS

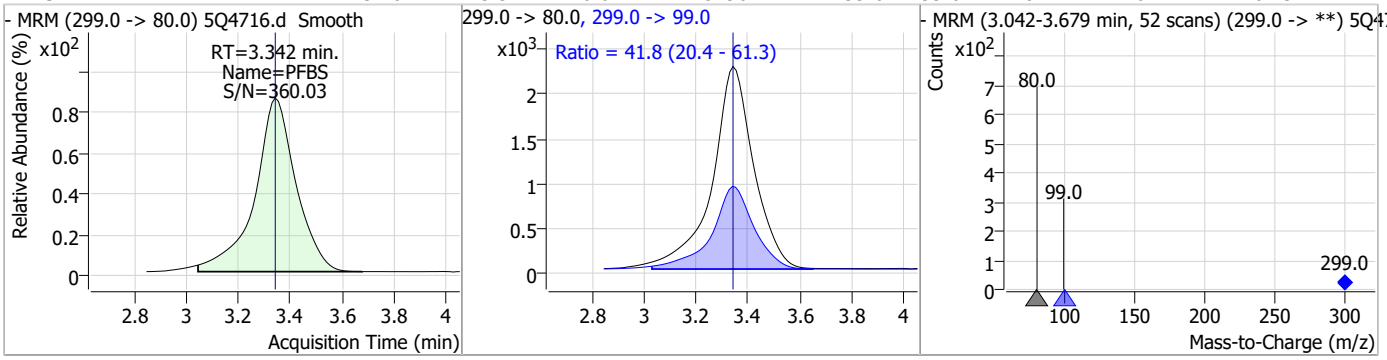
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	61.72	3.11	-0.02	124372				



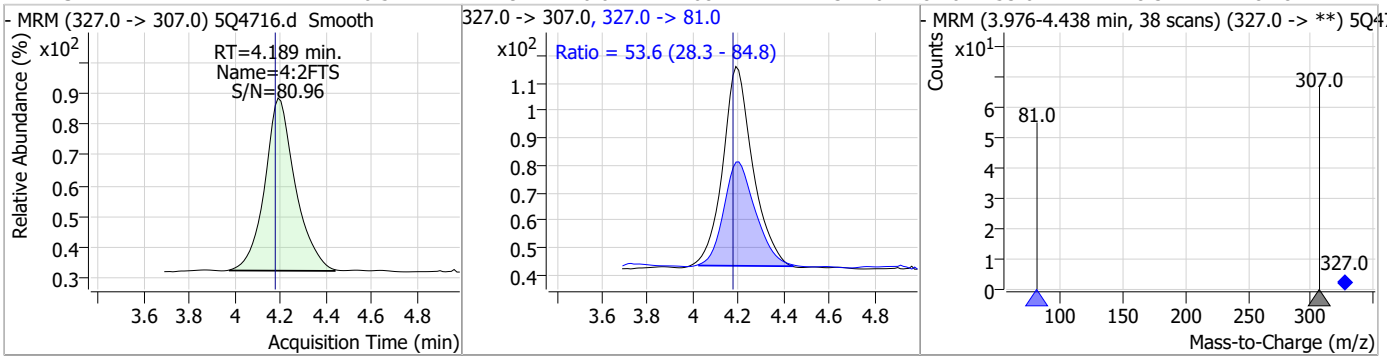
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.97	3.34	-0.02	968				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	34.64	3.34	-0.02	25190	299.0 -> 99.0	41.8	20.4	61.3

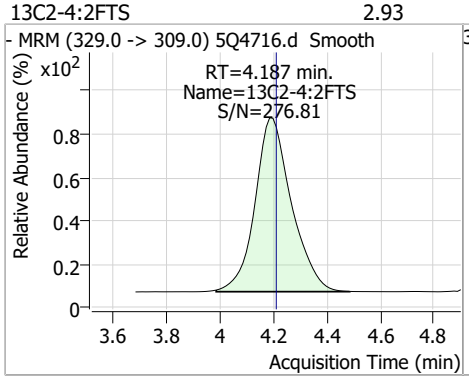


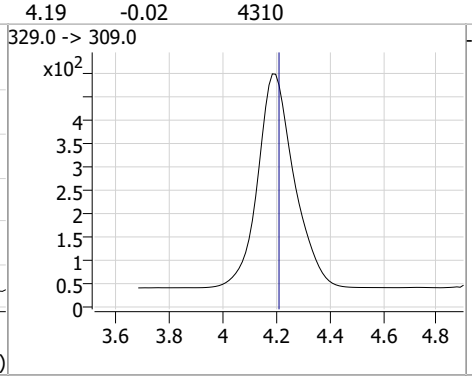
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.57	4.19	-0.01	687	327.0 -> 81.0	53.6	28.3	84.8

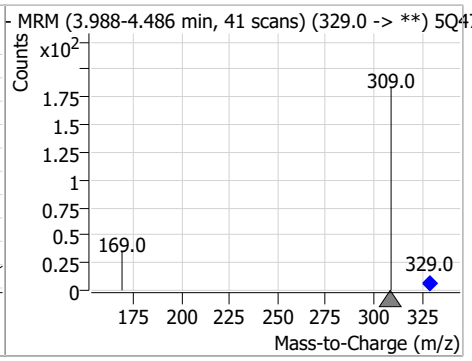


Perfluorinated Compounds by LC/MS/MS

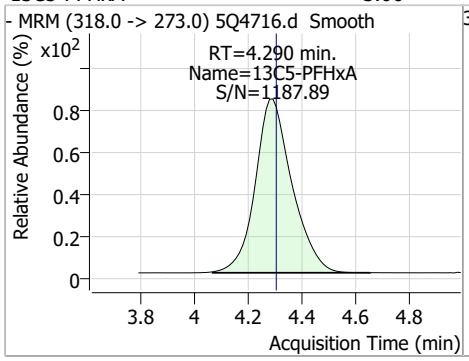
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.93	4.19	-0.02	4310				

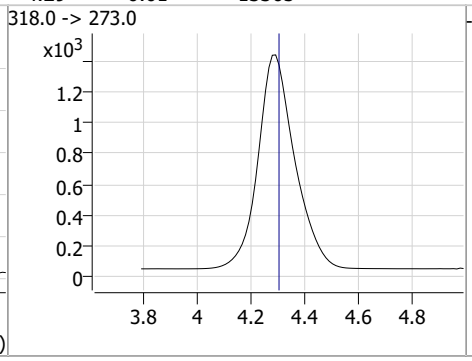


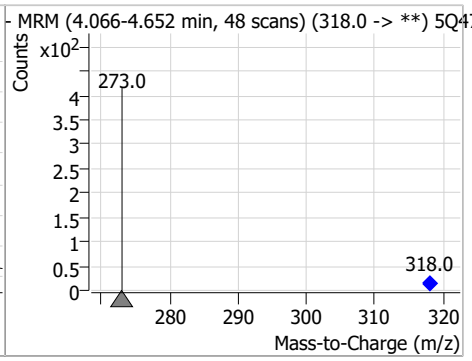




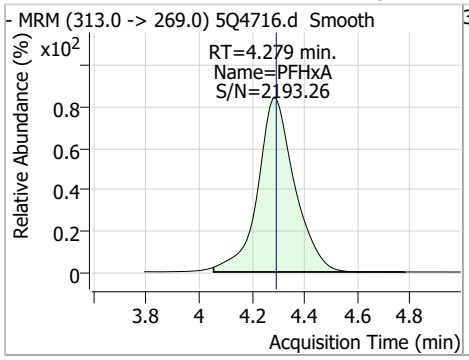
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.06	4.29	-0.01	13365				

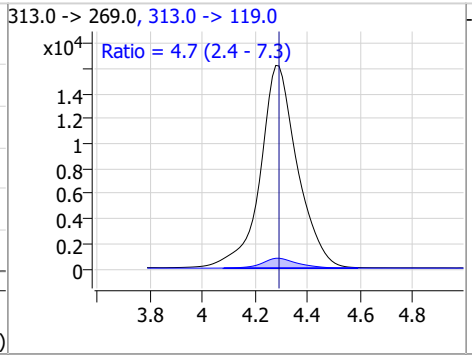


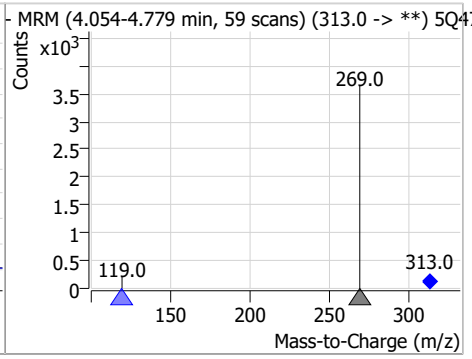




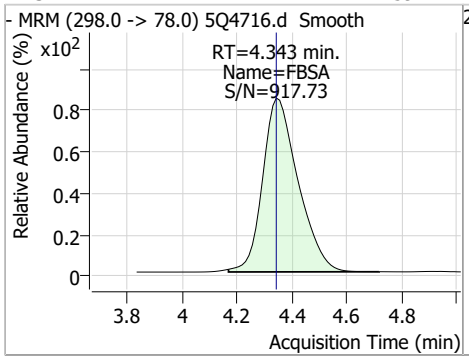
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	48.22	4.28	-0.02	157446	313.0 -> 119.0	4.7	2.4	7.3

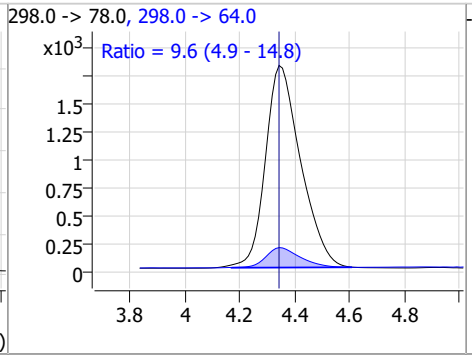


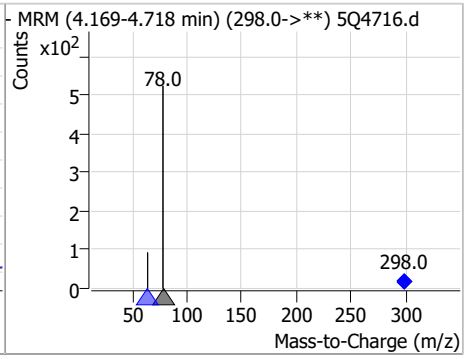




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	14.59	4.34	-0.01	16169	298.0 -> 64.0	9.6	4.9	14.8

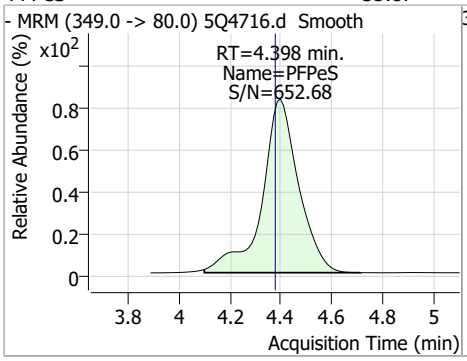


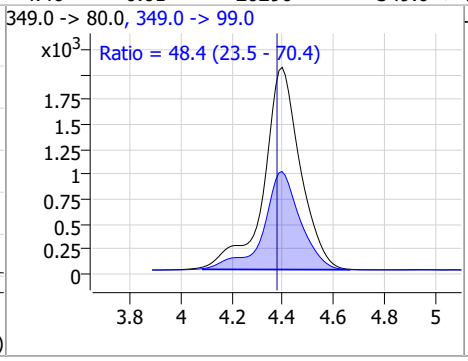


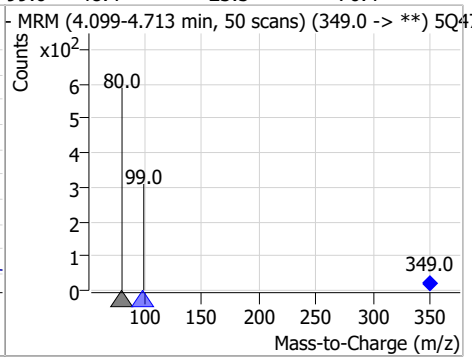


Perfluorinated Compounds by LC/MS/MS

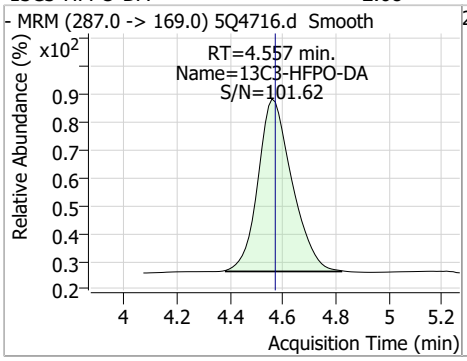
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	35.87	4.40	-0.01	20290	349.0 -> 99.0	48.4	23.5	70.4

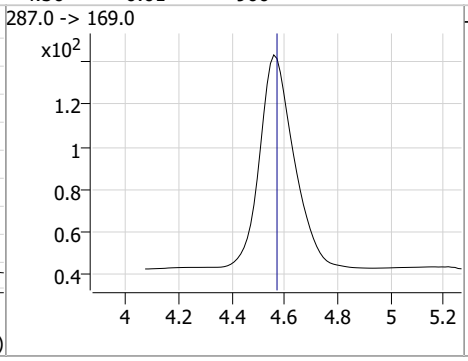


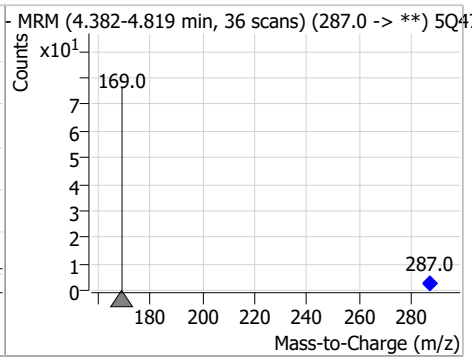




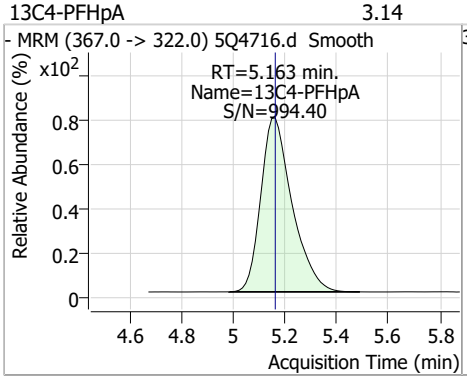
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.68	4.56	-0.01	900				

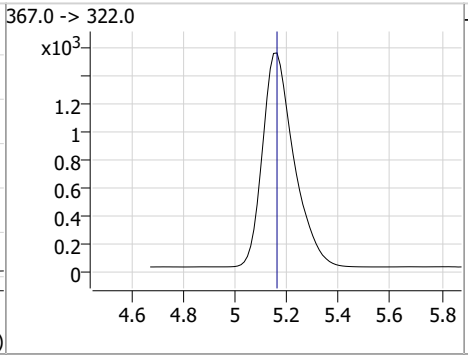


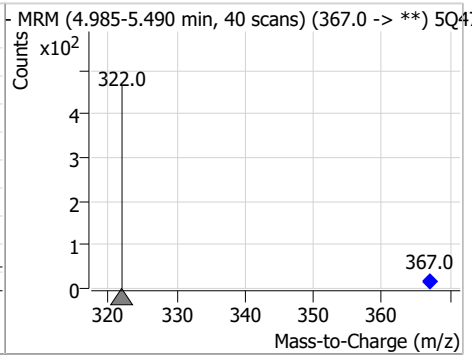




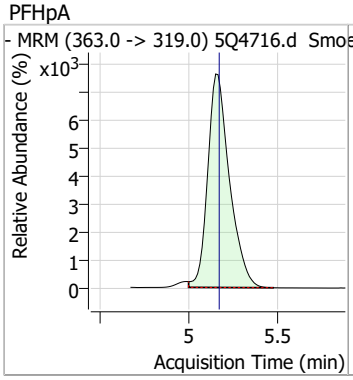
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.14	5.16	0.00	12812				

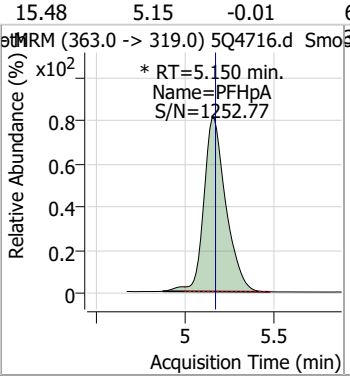


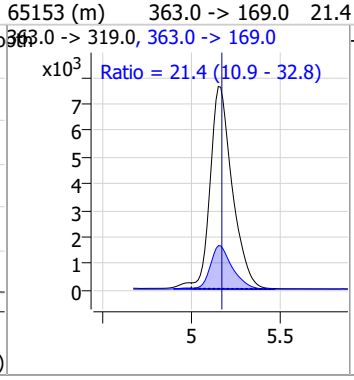


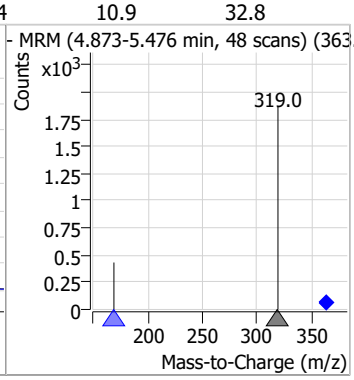


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	15.48	5.15	-0.01	65153 (m)	363.0 -> 169.0	21.4	10.9	32.8



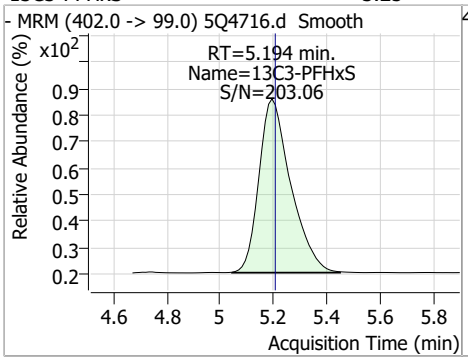


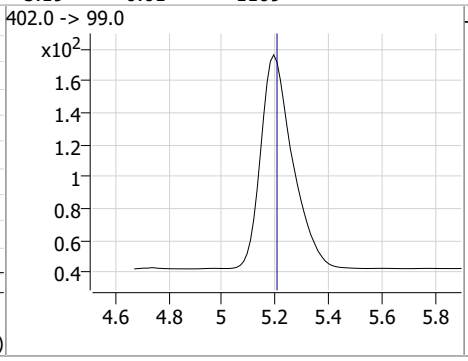


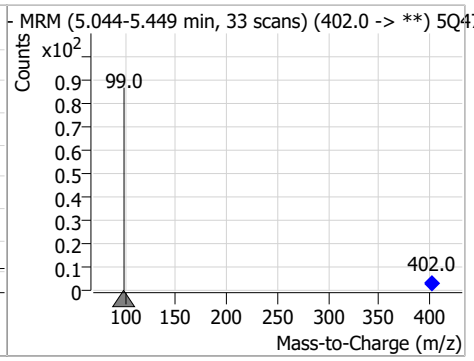


Perfluorinated Compounds by LC/MS/MS

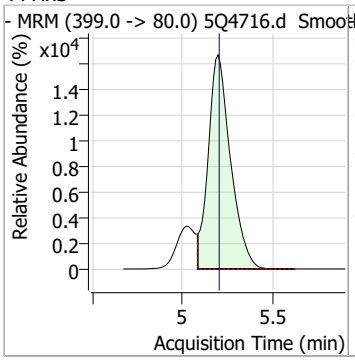
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.25	5.19	-0.01	1109				

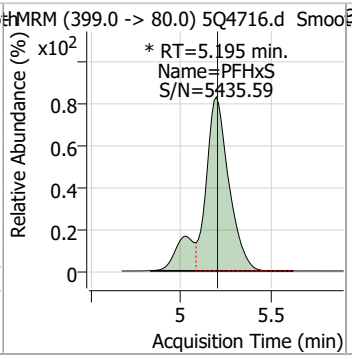


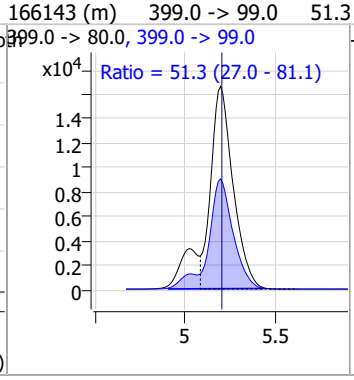


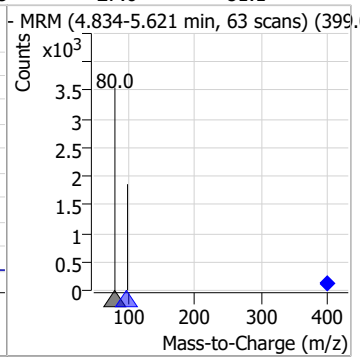


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	201.78	5.20	-0.01	166143 (m)	399.0 -> 99.0	51.3	27.0	81.1

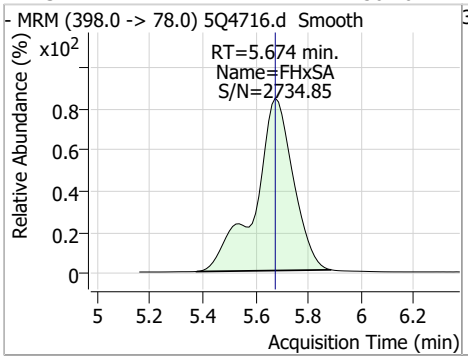


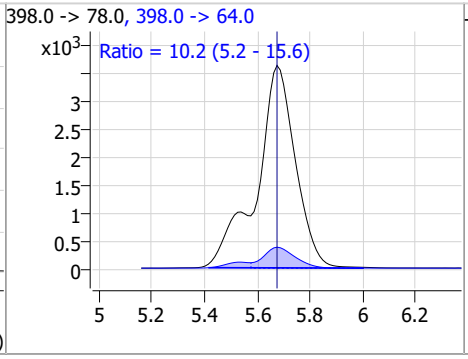


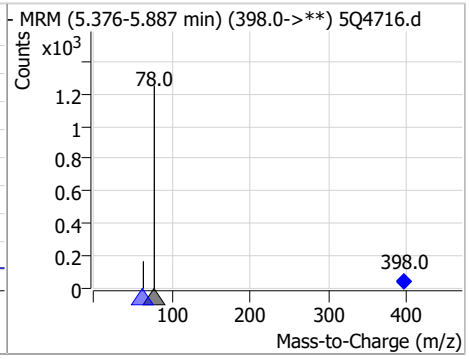




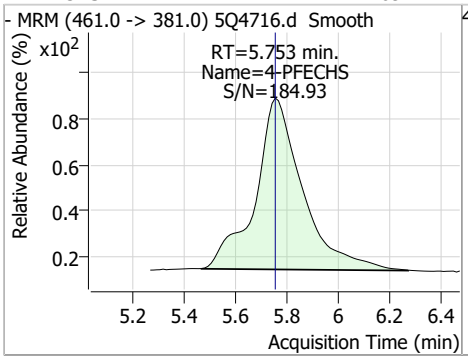
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	36.46	5.67	0.00	36039	398.0 -> 64.0	10.2	5.2	15.6

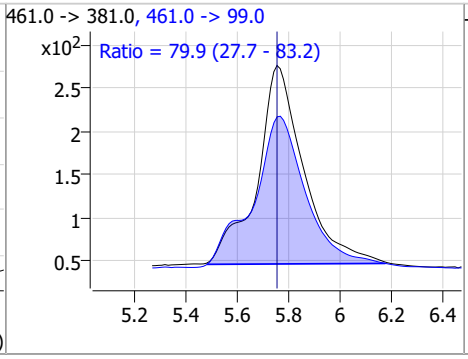


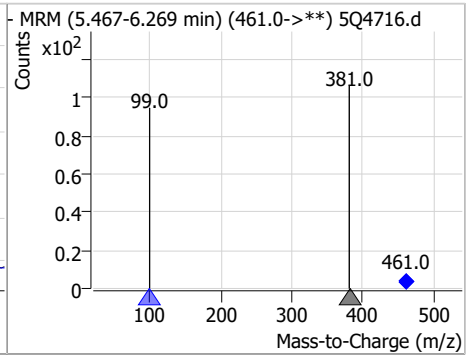




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.69	5.75	0.00	2958	461.0 -> 99.0	79.9	27.7	83.2

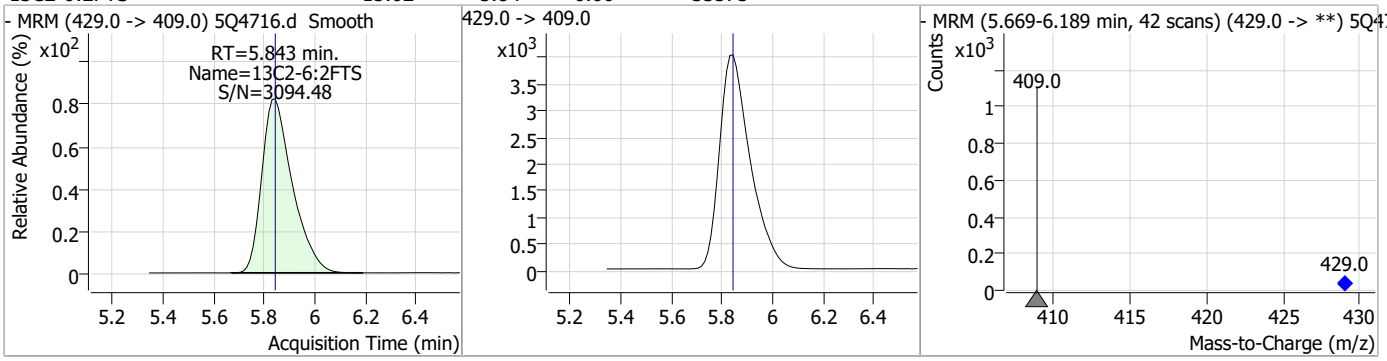




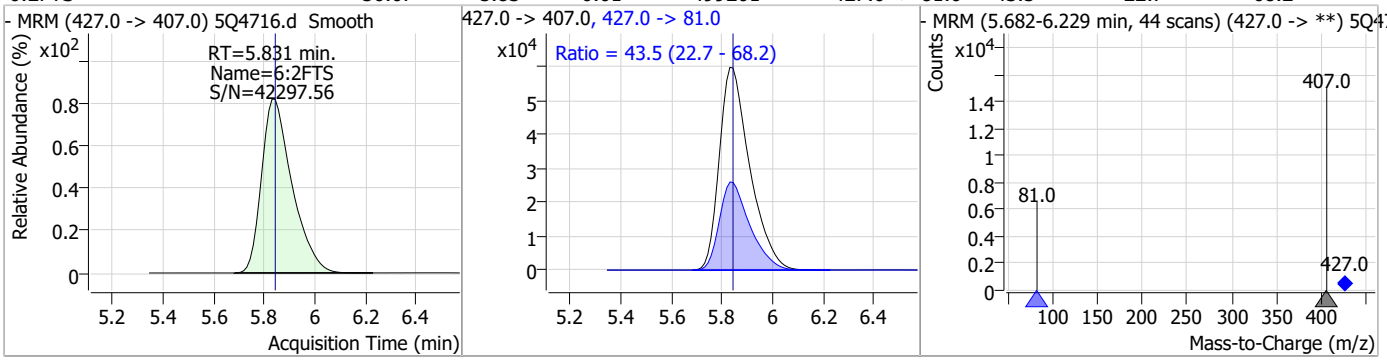


Perfluorinated Compounds by LC/MS/MS

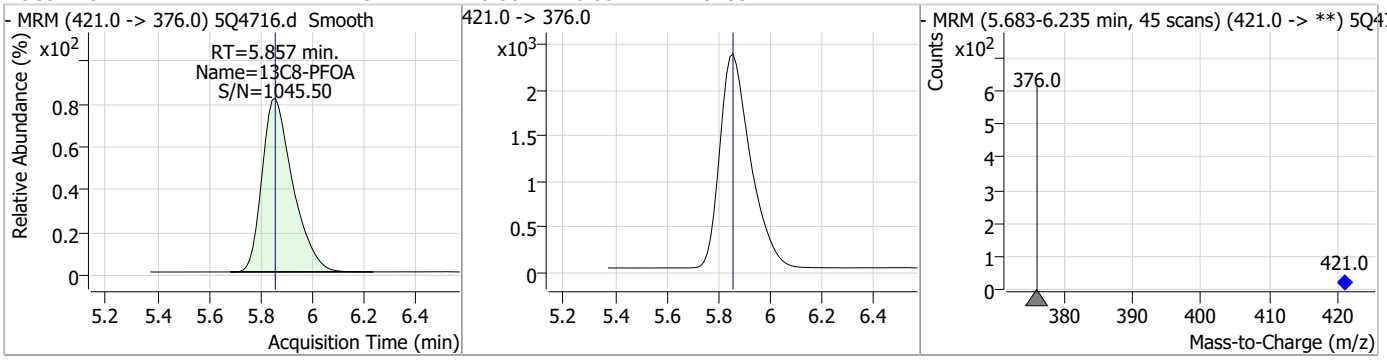
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.02	5.84	0.00	33575				



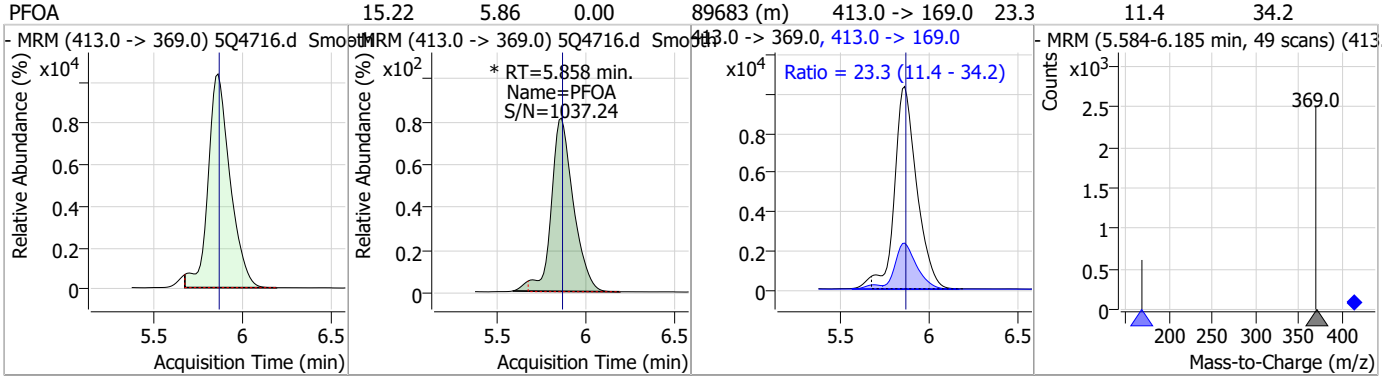
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	56.07	5.83	-0.01	499261	427.0 -> 81.0	43.5	22.7	68.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.21	5.86	0.00	19433				

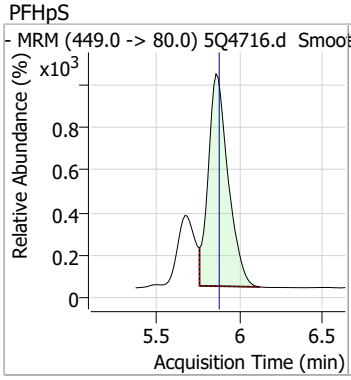


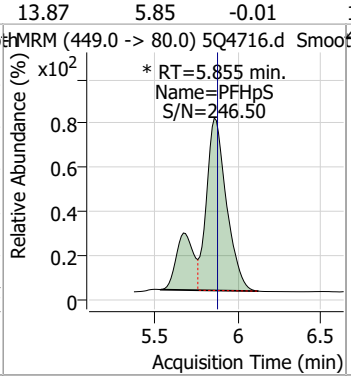
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	15.22	5.86	0.00	89683 (m)	413.0 -> 169.0	23.3	11.4	34.2

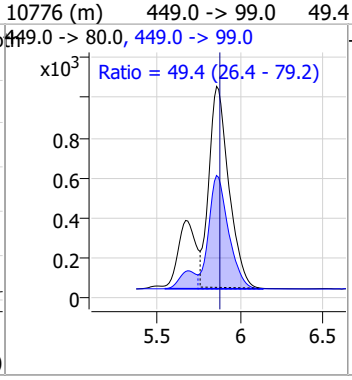


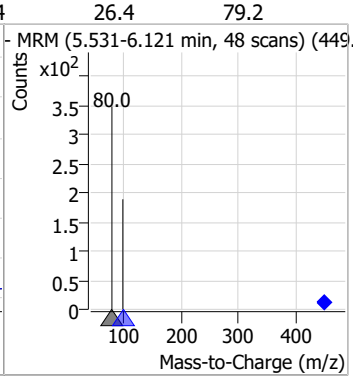
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	13.87	5.85	-0.01	10776 (m)	449.0 -> 99.0	49.4	26.4	79.2

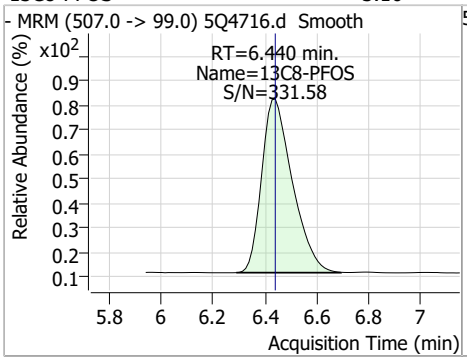


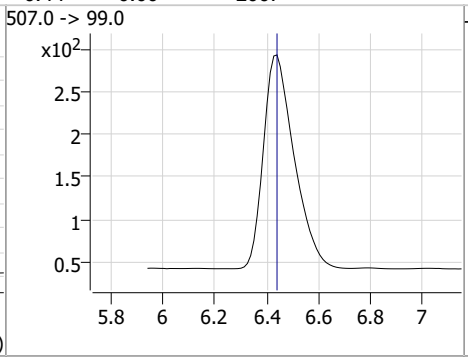


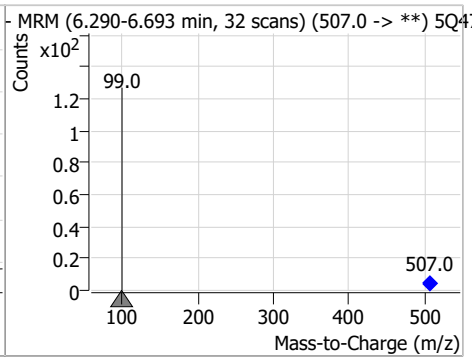




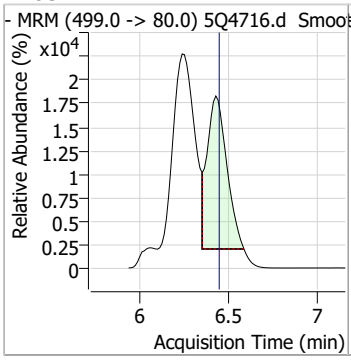
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.16	6.44	0.00	2067				

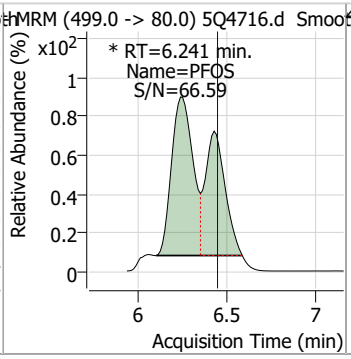


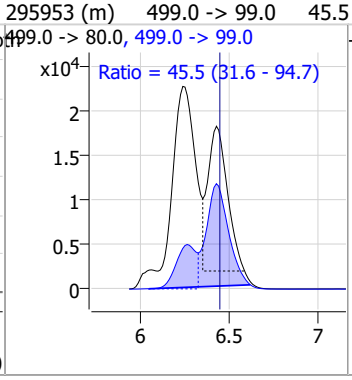


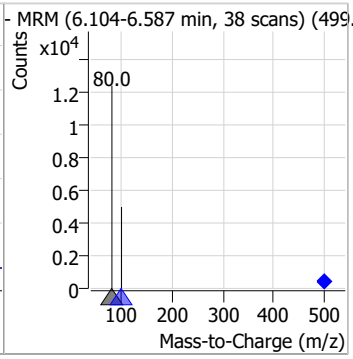


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	325.23	6.24	-0.20	295953 (m)	499.0 -> 99.0	45.5	31.6	94.7

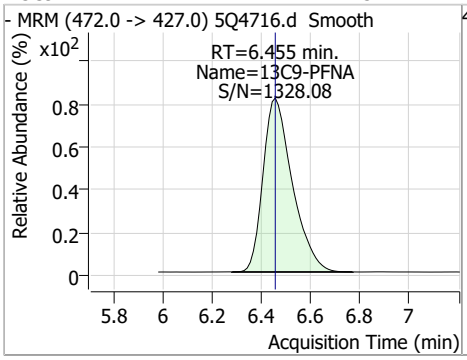


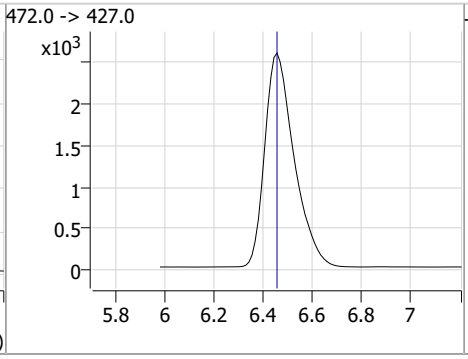


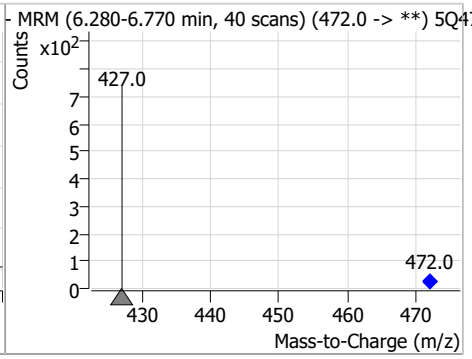




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.22	6.46	0.00	21174				

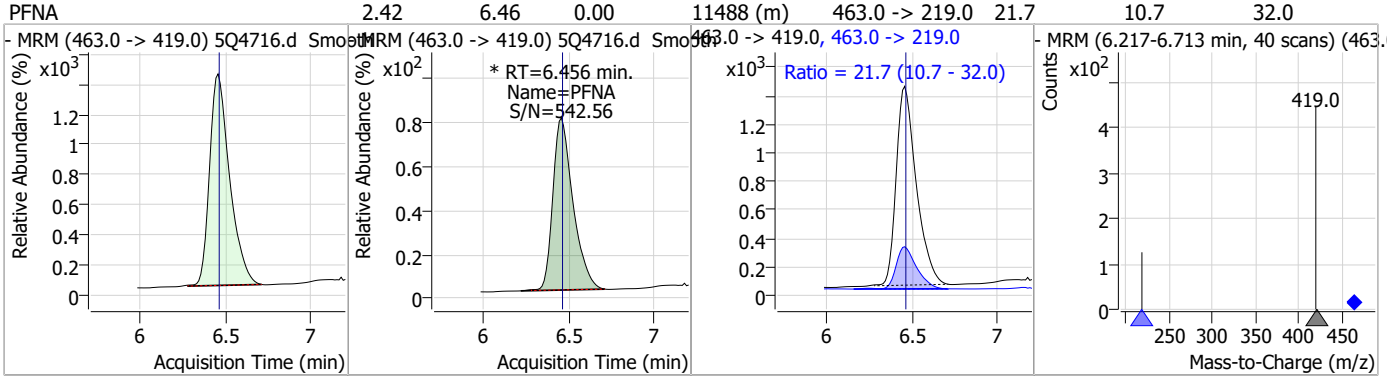




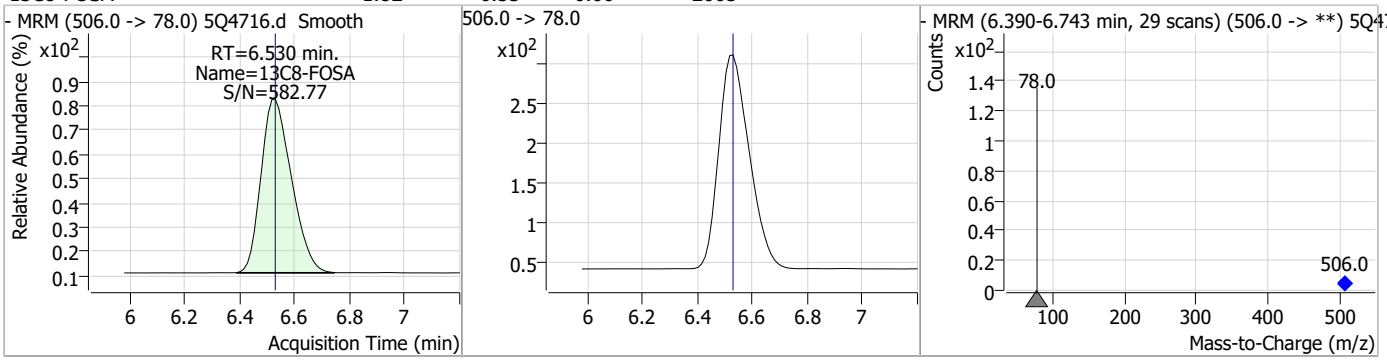


Perfluorinated Compounds by LC/MS/MS

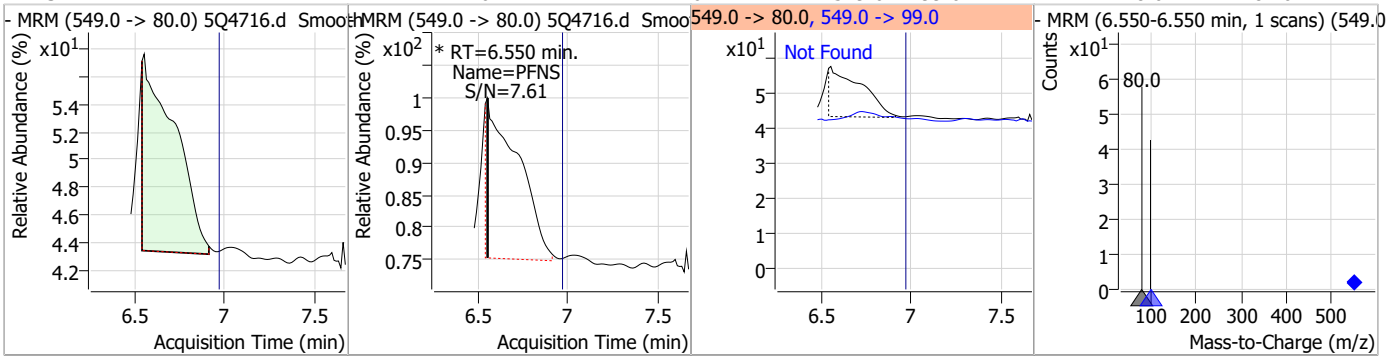
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.42	6.46	0.00	11488 (m)	463.0 -> 219.0	21.7	10.7	32.0



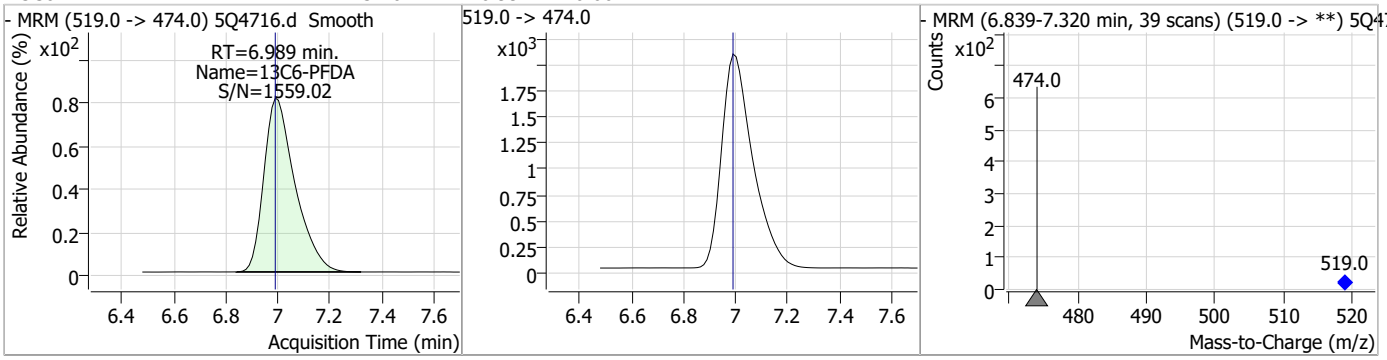
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.82	6.53	0.00	2065				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0			0	549.0 -> 99.0		28.0	84.0

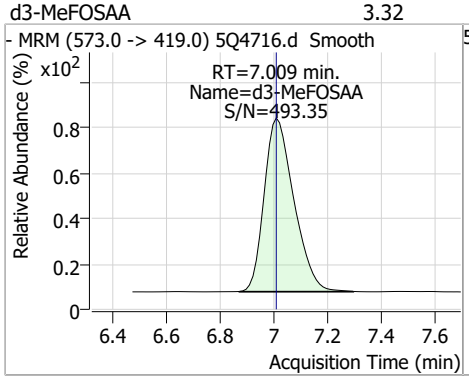


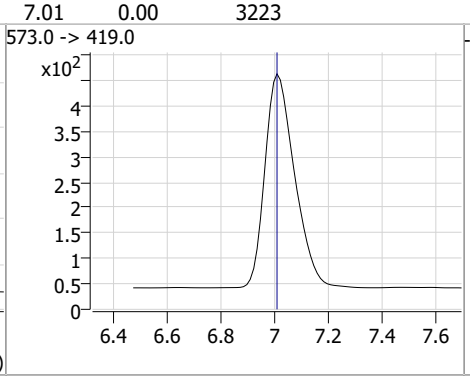
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.20	6.99	0.00	17222				

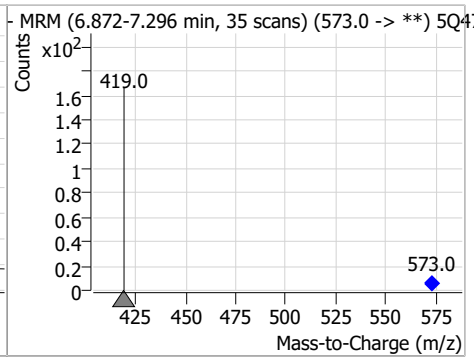


Perfluorinated Compounds by LC/MS/MS

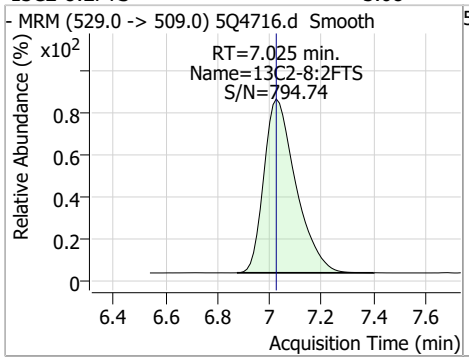
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.32	7.01	0.00	3223				

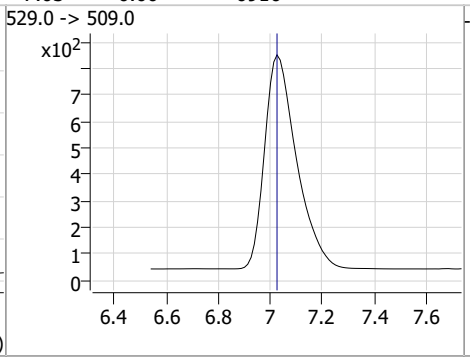


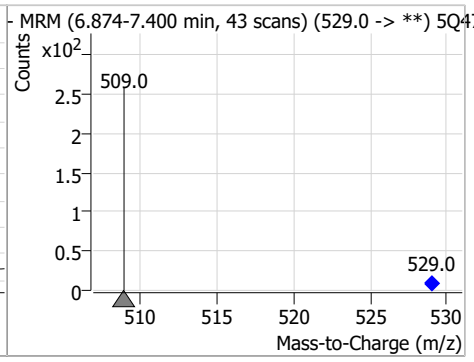




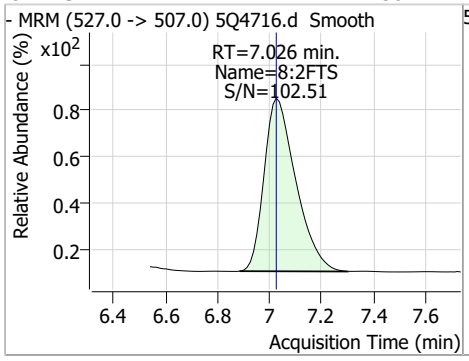
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.08	7.03	0.00	6916				

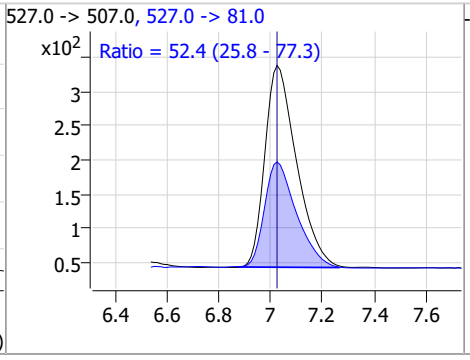


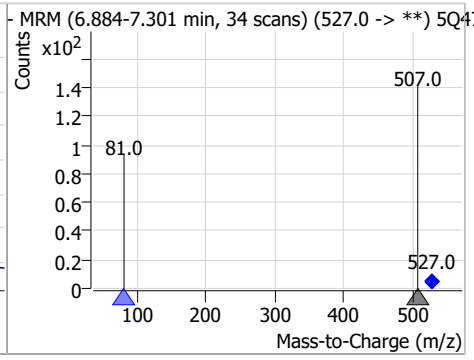




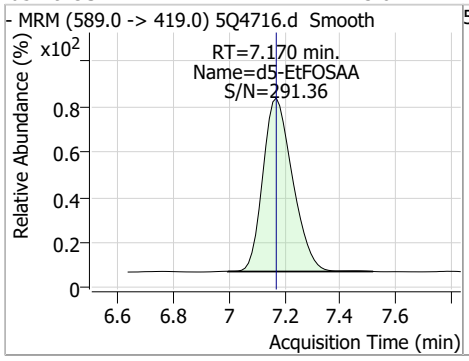
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.36	7.03	0.00	2500	527.0 -> 81.0	52.4	25.8	77.3

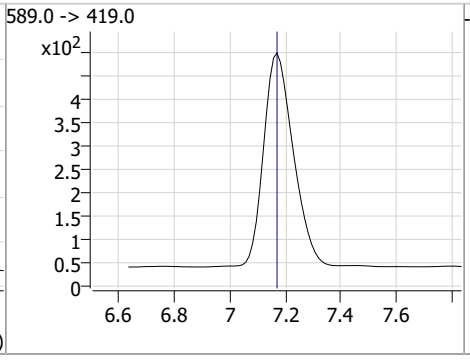


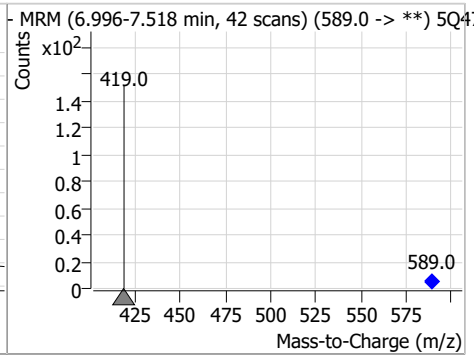




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.01	7.17	0.00	3373				

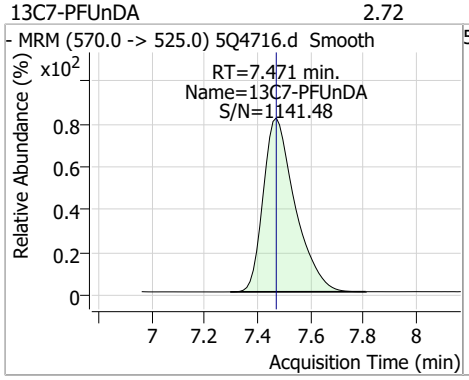


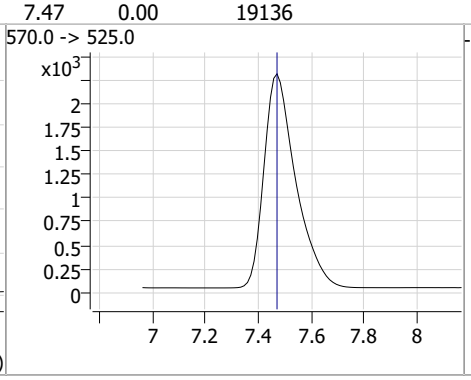


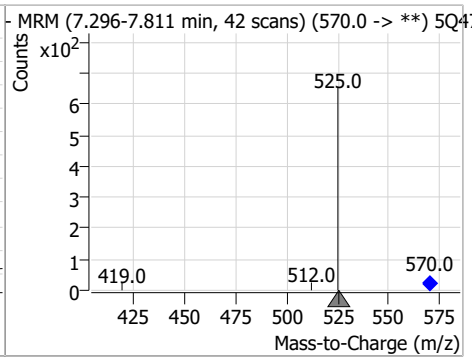


Perfluorinated Compounds by LC/MS/MS

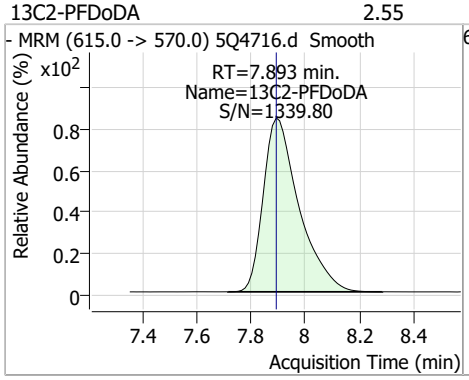
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.72	7.47	0.00	19136				

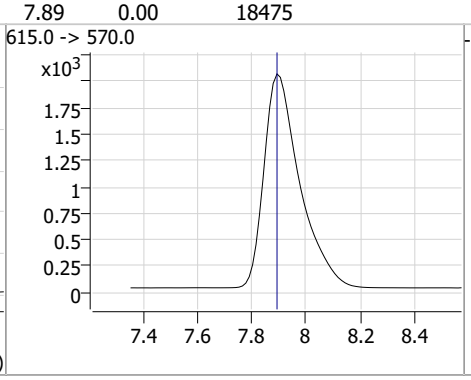


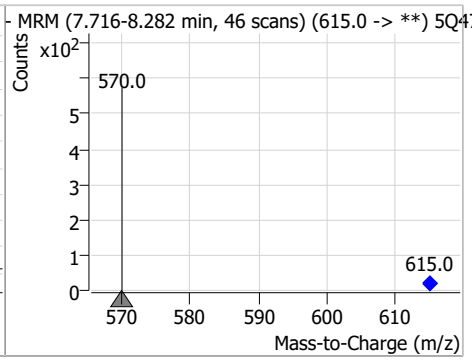




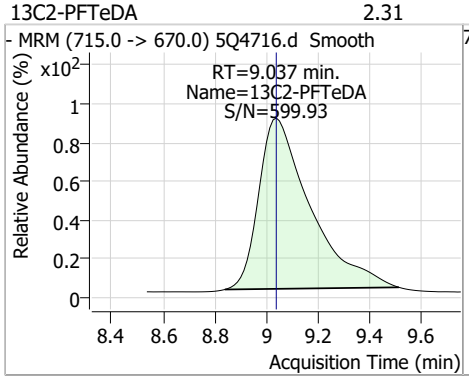
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.55	7.89	0.00	18475				

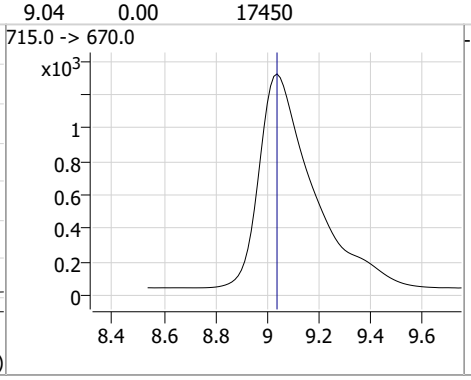


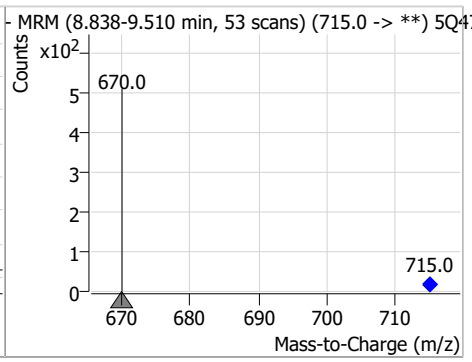




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.31	9.04	0.00	17450				







Manual Integration Approval Summary

Sample Number: FA98286-5
Lab FileID: 5Q4716.D
Injection Time: 09/16/22 05:23
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:58 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.15	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak
Perfluorononanoic acid	375-95-1		6.46	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4717.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 5:38:48 AM
Sample Name : fa98286-5
Vial : P3-E2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,20,water

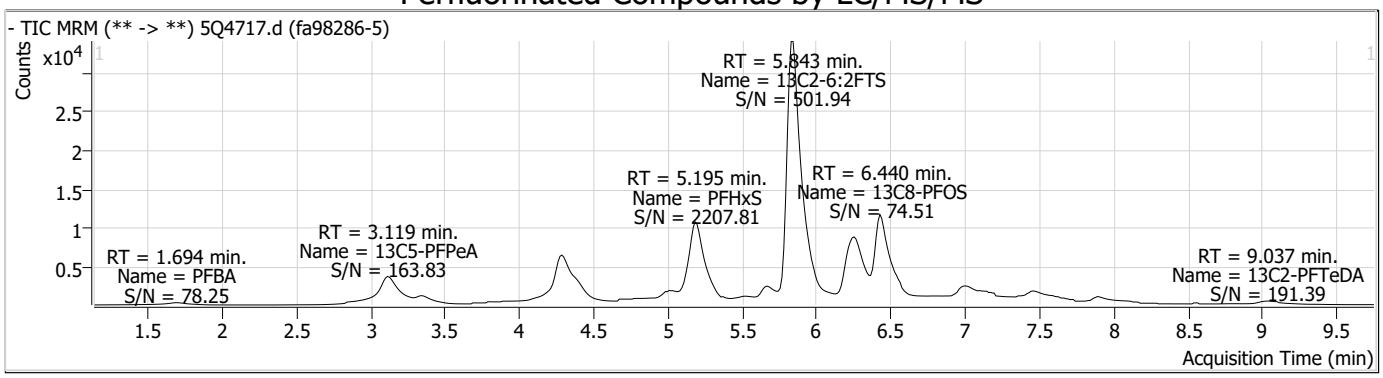
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	1241	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	2190	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	3534	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	3423	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	5047	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	5578	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	4267	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	4848	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	4618	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	4508	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	534	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	239	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	274	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	565	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	1070	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	8769	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	1773	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	810	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	239	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	31	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	836	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	1070	0.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	8769	3.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	1773	0.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	4618	0.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.2%		
13C2-PFTeDA	9.037	715.0 -> 670.0	4508	0.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.0%		
13C3-PFBS	3.349	302.0 -> 99.0	239	0.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.7%		
13C3-PFHxS	5.206	402.0 -> 99.0	274	0.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.0%		
13C4-PFBA	1.700	217.0 -> 172.0	1241	0.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	3423	0.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	3534	0.81	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.0%		
13C5-PFPeA	3.119	268.0 -> 223.0	2190	0.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.8%		
13C6-PFDA	6.989	519.0 -> 474.0	4267	0.79	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

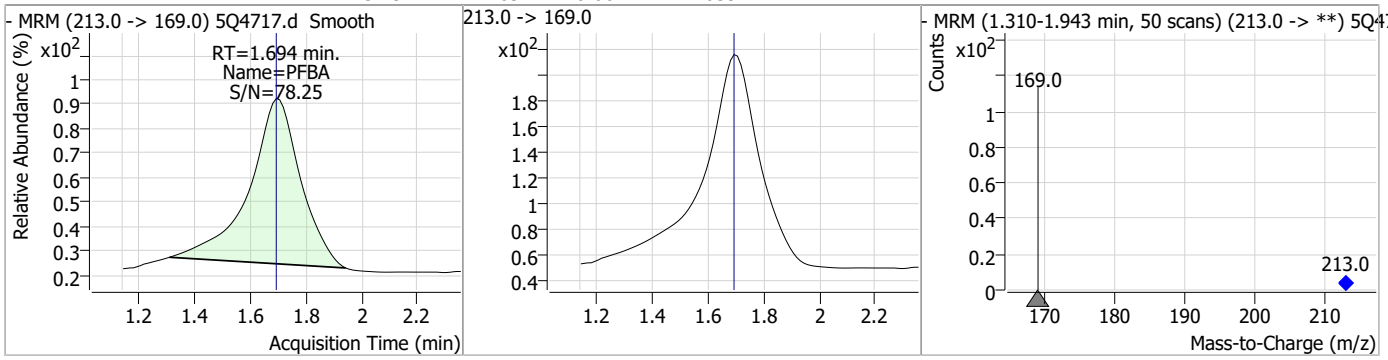
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.0%			
13C7-PFUnDA	7.471	570.0 -> 525.0	4848	0.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.4%			
13C8-FOSA	6.530	506.0 -> 78.0	534	0.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%			
13C8-PFOA	5.857	421.0 -> 376.0	5047	0.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.2%			
13C8-PFOS	6.440	507.0 -> 99.0	565	0.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.3%			
13C9-PFNA	6.455	472.0 -> 427.0	5578	0.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.2%			
d3-MeFOSAA	7.009	573.0 -> 419.0	810	0.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	239	0.71	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.6%			
d3-MeFOSA	6.965	515.0 -> 169.0	31	0.10	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	836	0.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	129070	13.88	µg/L		97
8:2FTS	7.026	527.0 -> 507.0	683	0.36	µg/L		90
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.694	213.0 -> 169.0	2039	3.49	µg/L		100
PFBS	3.354	299.0 -> 80.0	6404	8.93	µg/L		95
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	16932	3.77	µg/L		99
PFHpS	5.855	449.0 -> 80.0	2707	3.18	µg/L	m	97
PFHxA	4.291	313.0 -> 269.0	41030	11.88	µg/L		99
PFHxS	5.195	399.0 -> 80.0	42832	52.55	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	2943	0.59	µg/L		99
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	23187	3.79	µg/L	m	99
PFOS	6.253	499.0 -> 80.0	83298	83.68	µg/L	m	75
PFPeA	3.122	263.0 -> 219.0	31070	14.35	µg/L		100
PFPeS	4.398	349.0 -> 80.0	5283	9.47	µg/L		97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	0		µg/L	m	1
FBSA	4.343	298.0 -> 78.0	4371	3.73	µg/L		100
FHxSA	5.674	398.0 -> 78.0	9553	9.30	µg/L	m	99

 # = Qualifier out of range, m = manually integrated, + = Area summed

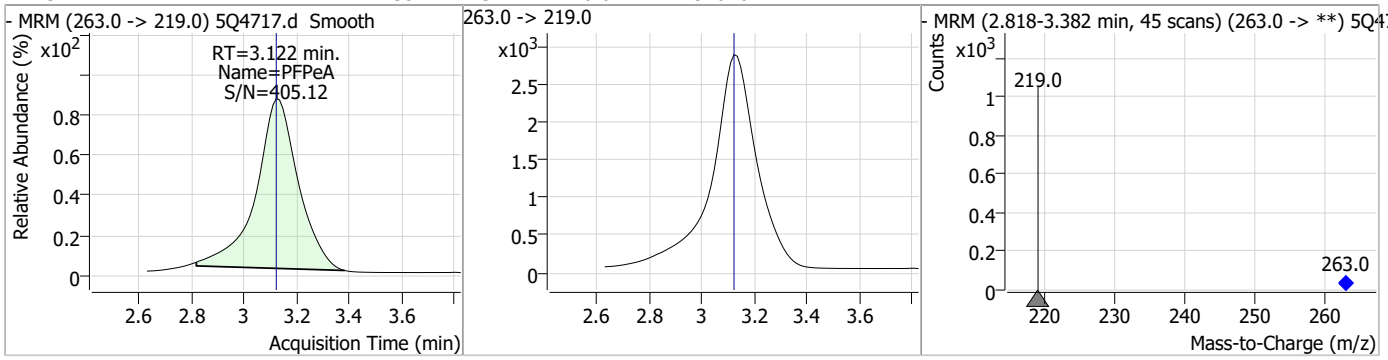
Perfluorinated Compounds by LC/MS/MS



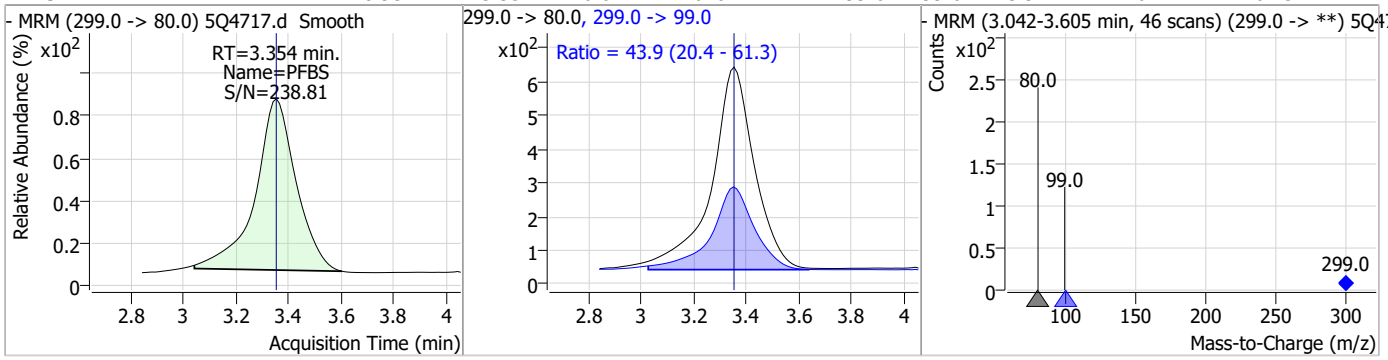
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.49	1.69	0.00	2039				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	14.35	3.12	-0.01	31070				

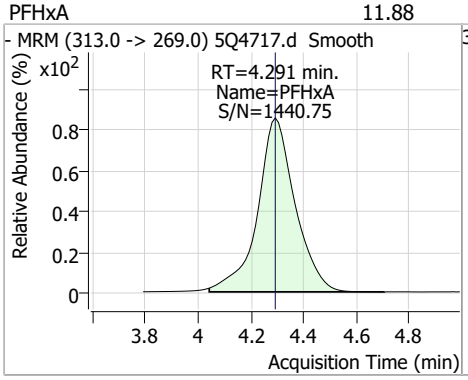


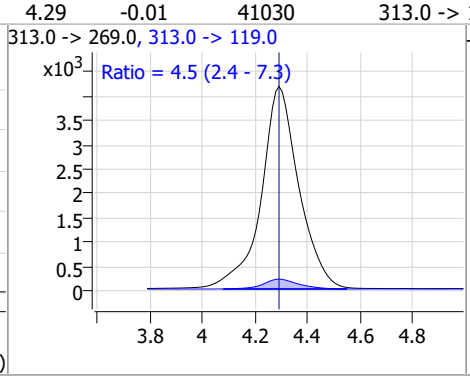
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	8.93	3.35	-0.01	6404	299.0 -> 99.0	43.9	20.4	61.3

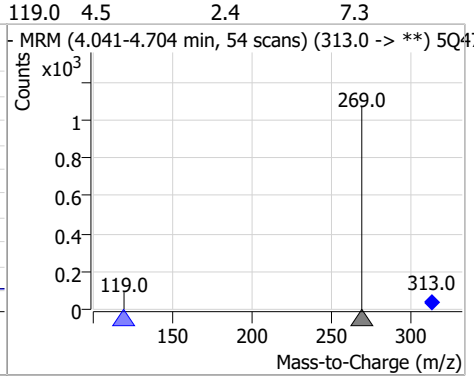


Perfluorinated Compounds by LC/MS/MS

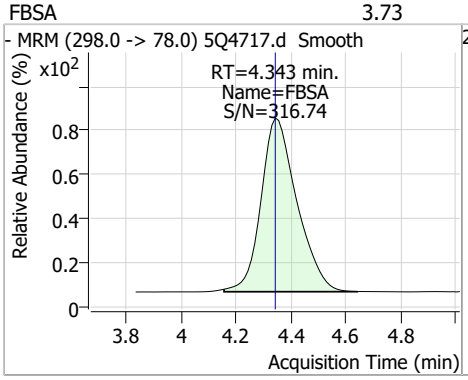
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	11.88	4.29	-0.01	41030	313.0 -> 119.0	4.5	2.4	7.3

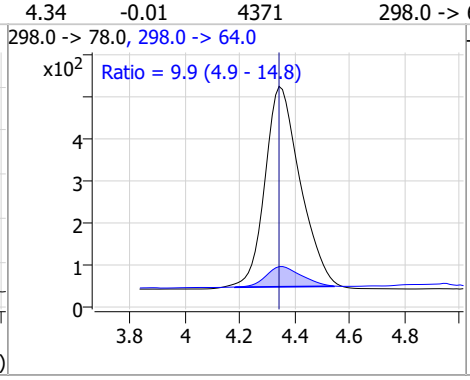


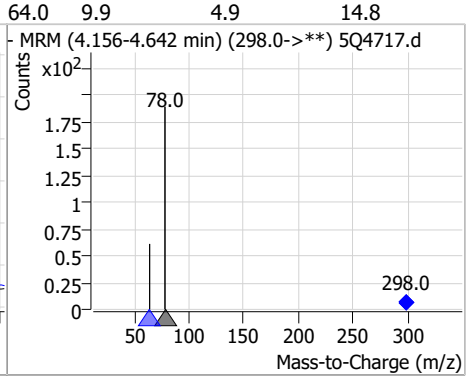




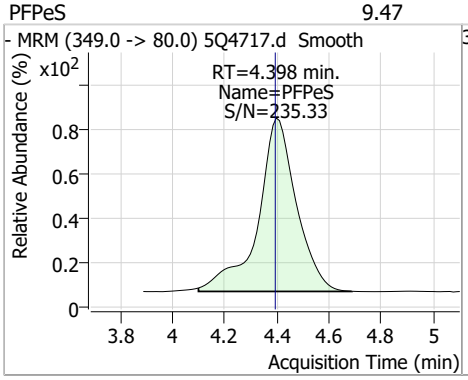
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	3.73	4.34	-0.01	4371	298.0 -> 64.0	9.9	4.9	14.8

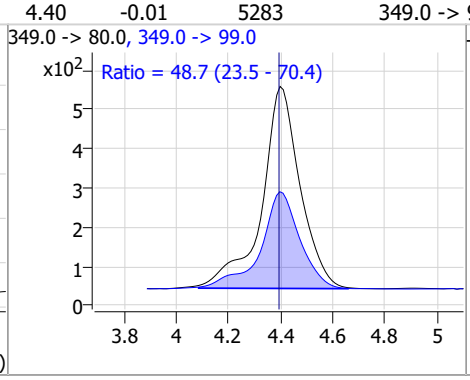


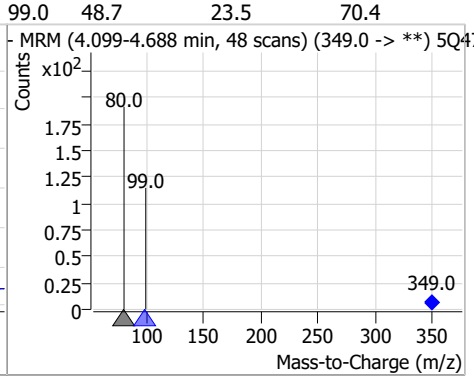




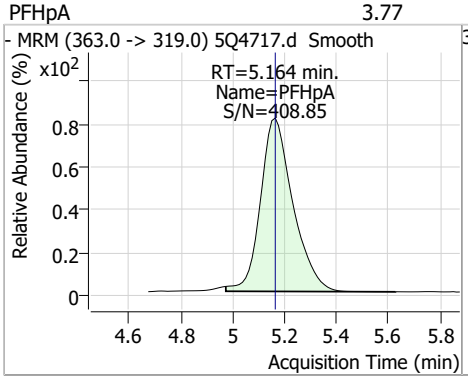
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.47	4.40	-0.01	5283	349.0 -> 99.0	48.7	23.5	70.4

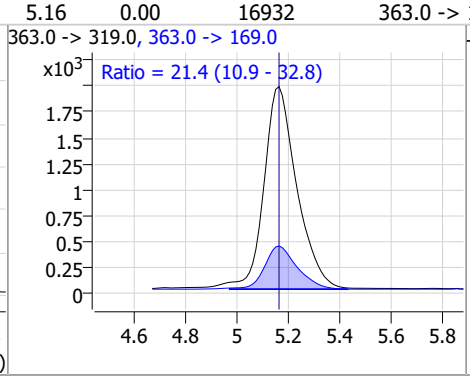


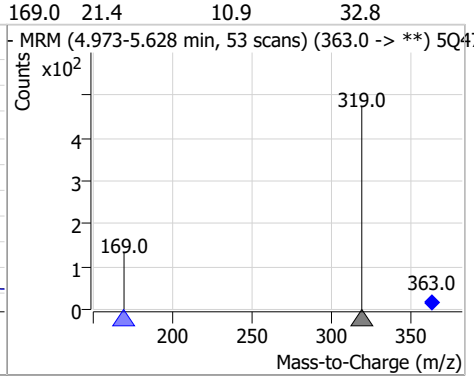




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.77	5.16	0.00	16932	363.0 -> 169.0	21.4	10.9	32.8

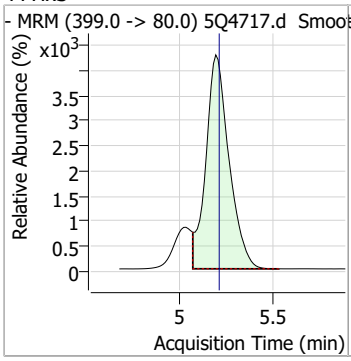


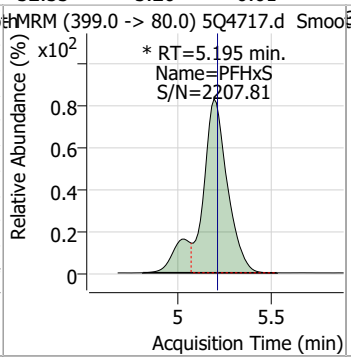


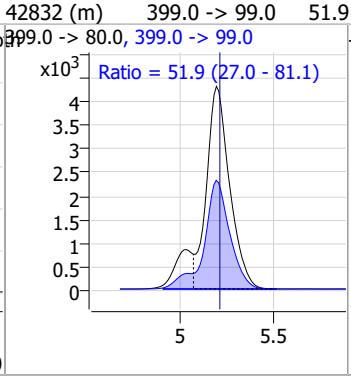


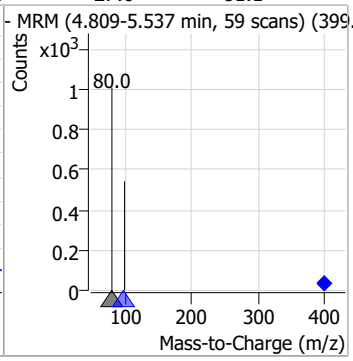
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	52.55	5.20	-0.01	42832 (m)	399.0 -> 99.0	51.9	27.0	81.1

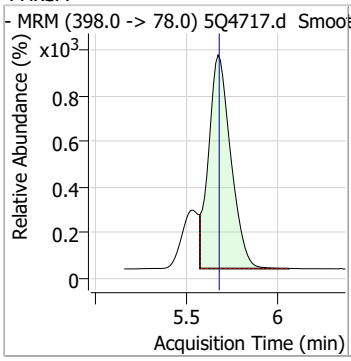


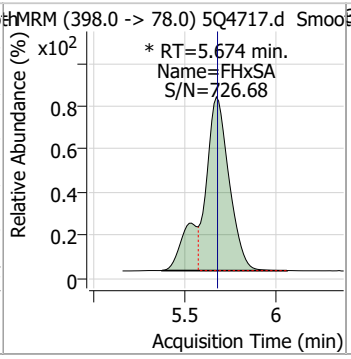


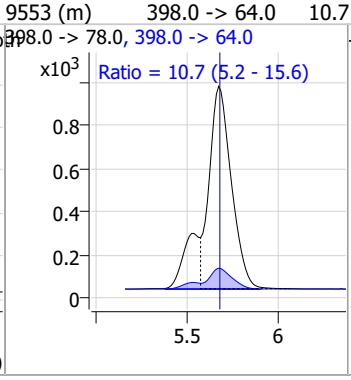


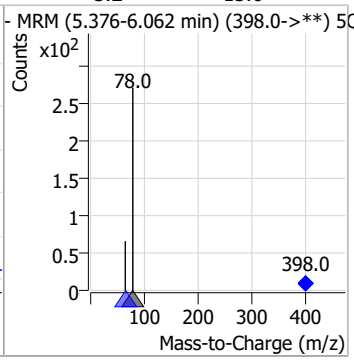


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	9.30	5.67	0.00	9553 (m)	398.0 -> 64.0	10.7	5.2	15.6

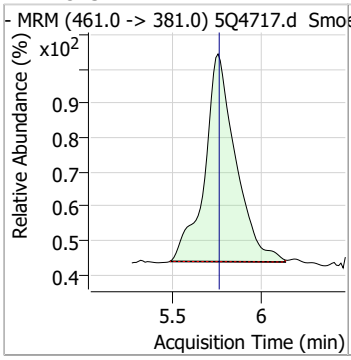


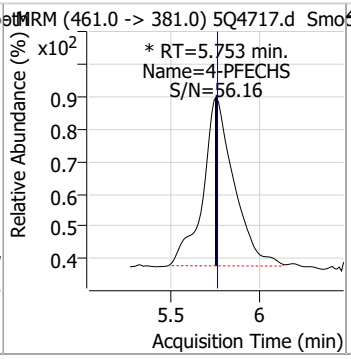


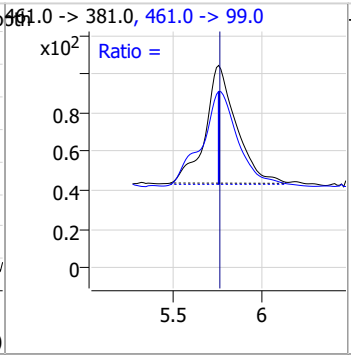


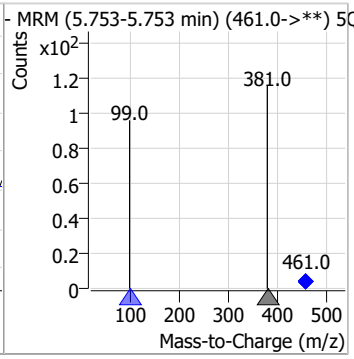


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		27.7	83.2

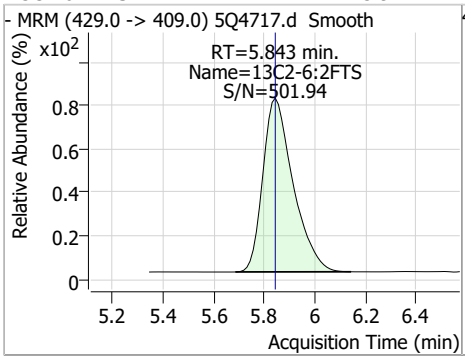


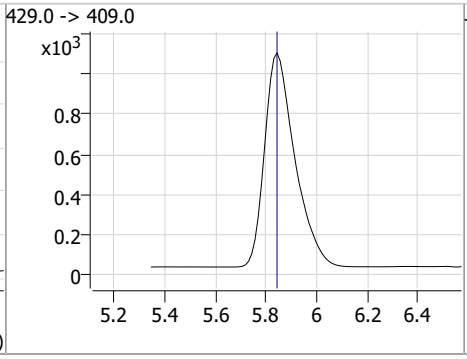


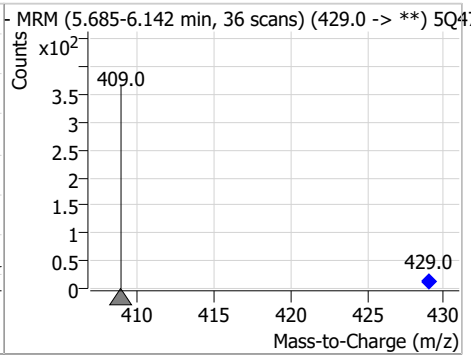




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.92	5.84	0.00	8769				

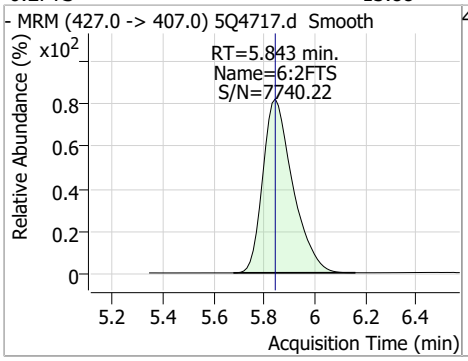


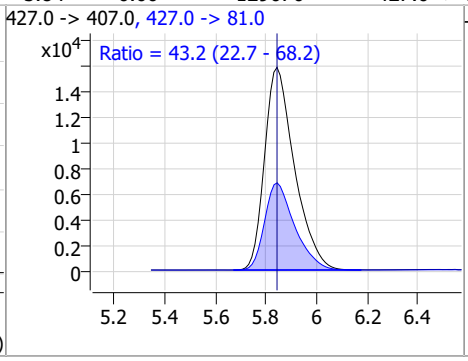


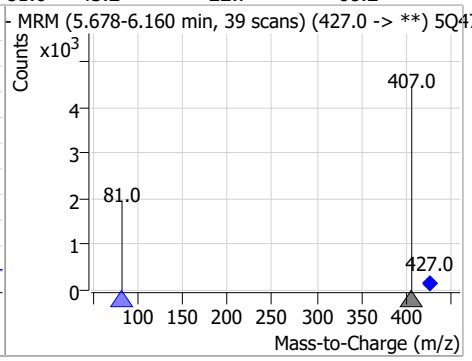


Perfluorinated Compounds by LC/MS/MS

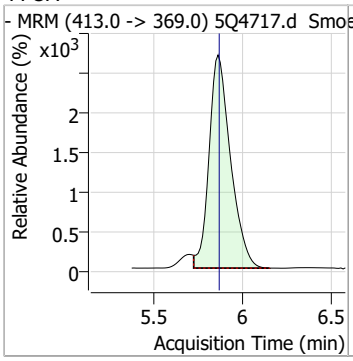
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	13.88	5.84	0.00	129070	427.0 -> 81.0	43.2	22.7	68.2

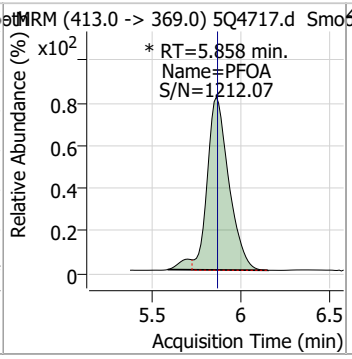


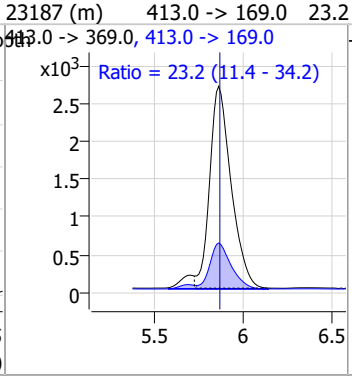


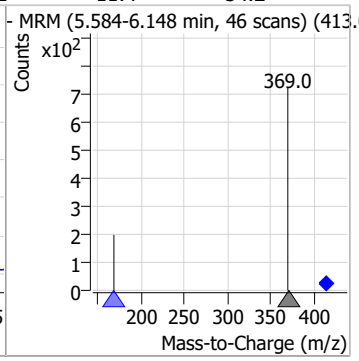


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.79	5.86	0.00	23187 (m)	413.0 -> 169.0	23.2	11.4	34.2

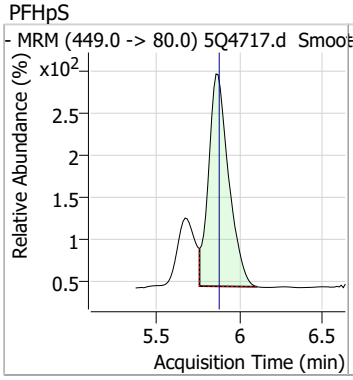


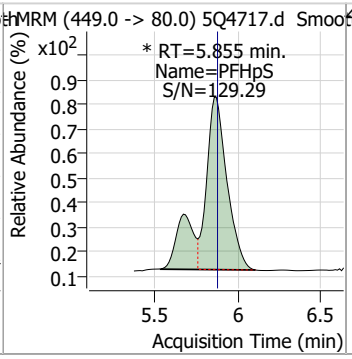


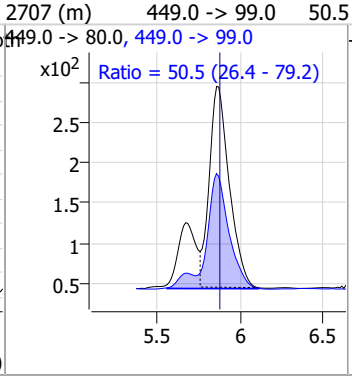


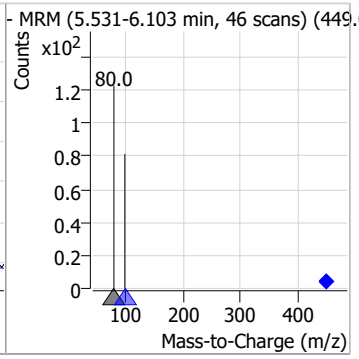


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	3.18	5.85	-0.01	2707 (m)	449.0 -> 99.0	50.5	26.4	79.2

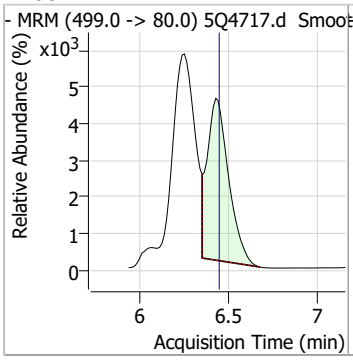


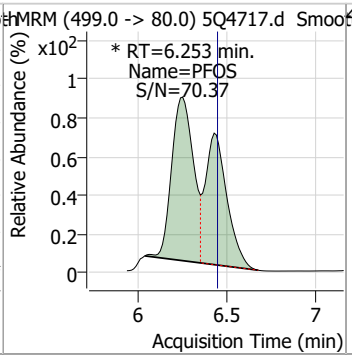


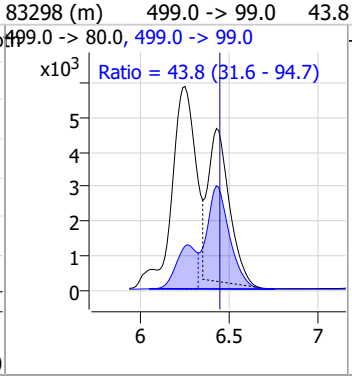


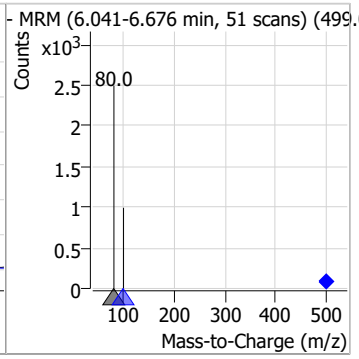


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	83.68	6.25	-0.19	83298 (m)	499.0 -> 99.0	43.8	31.6	94.7



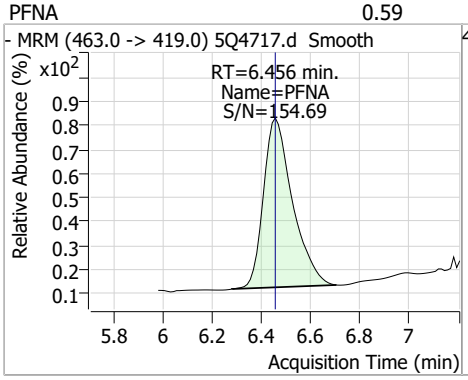


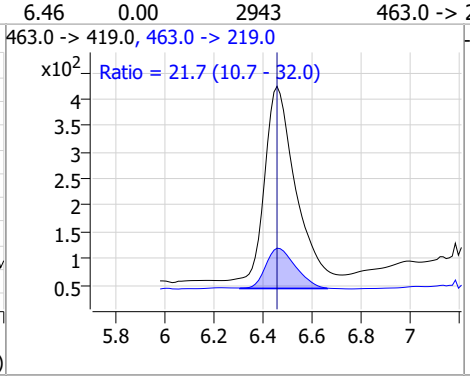


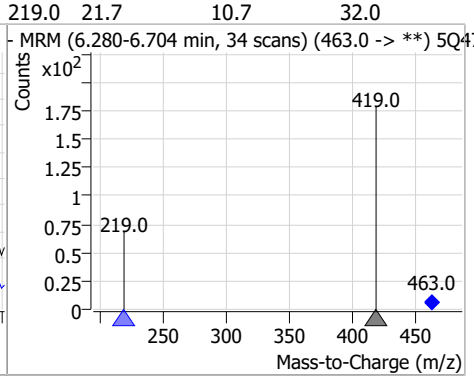


Perfluorinated Compounds by LC/MS/MS

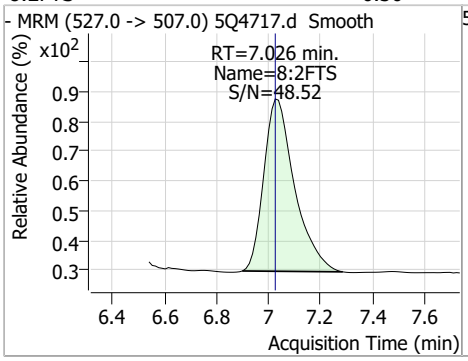
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.59	6.46	0.00	2943	463.0 -> 219.0	21.7	10.7	32.0

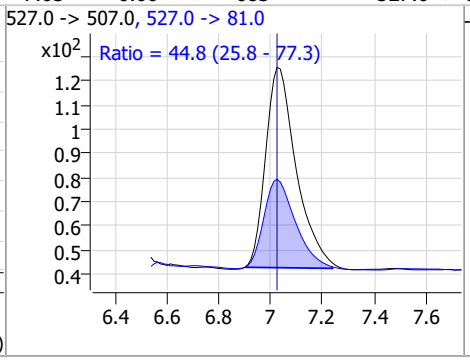


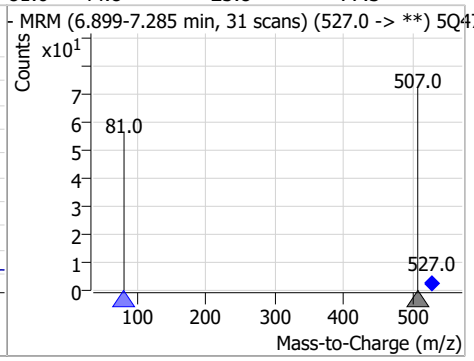




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.36	7.03	0.00	683	527.0 -> 81.0	44.8	25.8	77.3







7.1.9

7

Manual Integration Approval Summary

Sample Number: FA98286-5
Lab FileID: 5Q4717.D
Injection Time: 09/16/22 05:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:58 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
PFHxSA	41997-13-1		5.67	Poor instrument integration
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.25	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4718.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 5:54:09 AM
Sample Name : fa98286-5
Vial : P3-E6
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,250,water

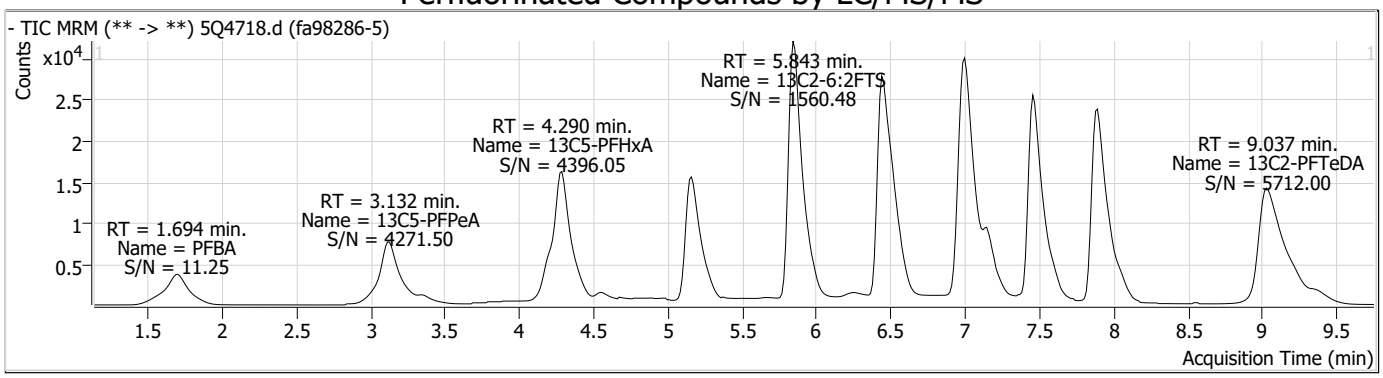
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	43087	20.00 µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	69474	20.00 µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	104812	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	97839	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	144973	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	158478	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	131108	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	167527	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	182022	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	189398	20.00 µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	27152	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	7831	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	8124	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	15726	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	32838	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	51832	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	51857	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	26511	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	7367	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	7078	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	30378	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	32838	22.36 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%	
13C2-6:2FTS	5.843	429.0 -> 409.0	51832	23.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.9%	
13C2-8:2FTS	7.025	529.0 -> 509.0	51857	23.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%	
13C2-PFDoDA	7.893	615.0 -> 570.0	182022	25.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.6%	
13C2-PFTeDA	9.037	715.0 -> 670.0	189398	25.10 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.5%	
13C3-PFBS	3.349	302.0 -> 99.0	7831	24.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.2%	
13C3-PFHxS	5.194	402.0 -> 99.0	8124	23.82 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.1%	
13C4-PFBA	1.700	217.0 -> 172.0	43087	24.10 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%	
13C4-PFHpA	5.163	367.0 -> 322.0	97839	23.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.8%	
13C5-PFHxA	4.290	318.0 -> 273.0	104812	23.97 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.9%	
13C5-PFPeA	3.132	268.0 -> 223.0	69474	23.91 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.5%	
13C6-PFDA	6.989	519.0 -> 474.0	131108	24.36 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

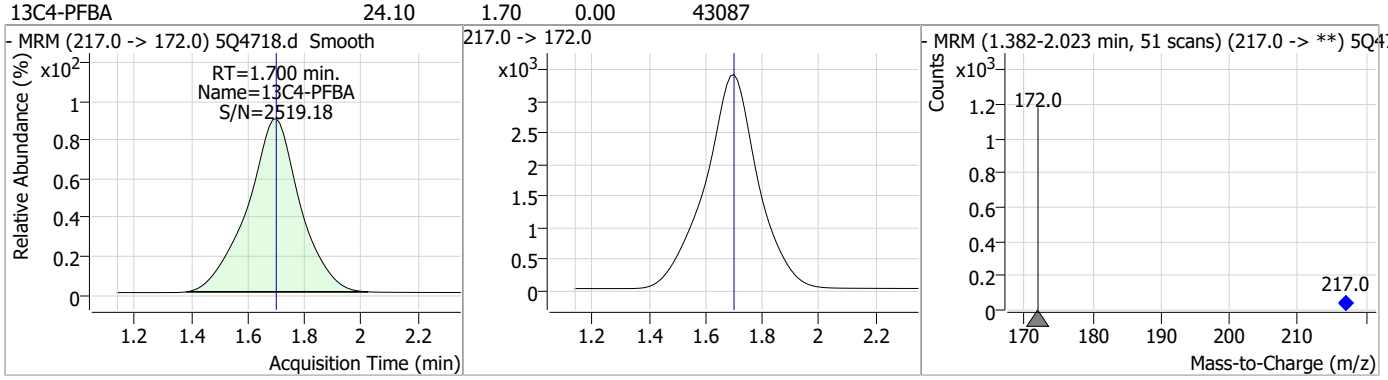
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.8%			
13C7-PFUnDA	7.471	570.0 -> 525.0	167527	23.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.0%			
13C8-FOSA	6.530	506.0 -> 78.0	27152	23.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.6%			
13C8-PFOA	5.857	421.0 -> 376.0	144973	23.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.8%			
13C8-PFOS	6.440	507.0 -> 99.0	15726	24.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.4%			
13C9-PFNA	6.455	472.0 -> 427.0	158478	24.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	26511	27.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 136.4%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	7367	21.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%			
d3-MeFOSA	6.952	515.0 -> 169.0	7078	23.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.2%			
d5-EtFOSAA	7.170	589.0 -> 419.0	30378	27.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 135.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	8275	3.01	µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.694	213.0 -> 169.0	172	0.17	µg/L		100
PFBS	3.354	299.0 -> 80.0	453	0.39	µg/L		98
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	1185	0.18	µg/L		96
PFHpS	5.867	449.0 -> 80.0	0		µg/L	m	1
PFHxA	4.291	313.0 -> 269.0	2802	0.55	µg/L		99
PFHxS	5.195	399.0 -> 80.0	2786	2.31	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	1699	0.19	µg/L	m	97
PFOS	6.253	499.0 -> 80.0	5363	3.87	µg/L	m	76
PFPeA	3.134	263.0 -> 219.0	2342	0.68	µg/L		100
PFPeS	4.398	349.0 -> 80.0	319	0.35	µg/L	m	83
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.343	298.0 -> 78.0	0		µg/L	m	1
FHxSA	5.674	398.0 -> 78.0	630	0.43	µg/L		94

 # = Qualifier out of range, m = manually integrated, + = Area summed

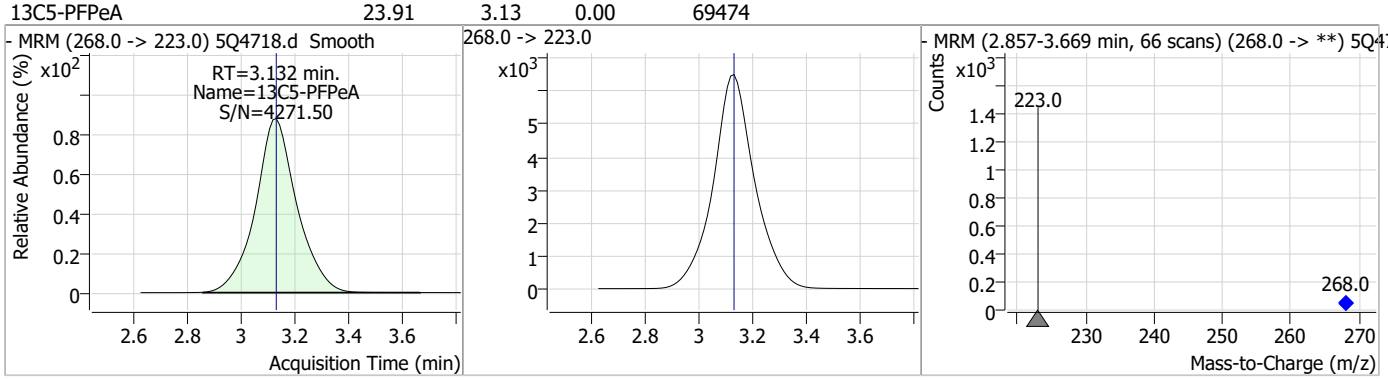
Perfluorinated Compounds by LC/MS/MS



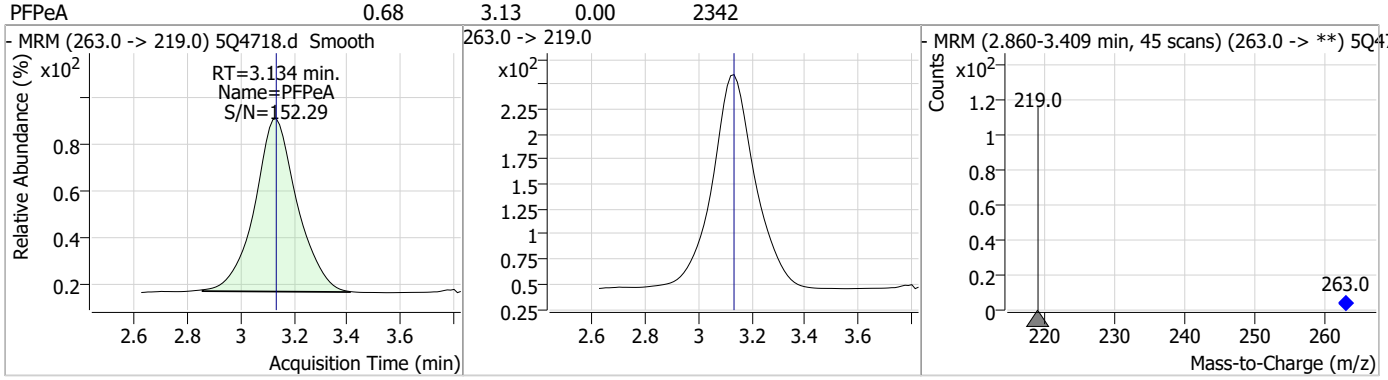
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	24.10	1.70	0.00	43087				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.91	3.13	0.00	69474				

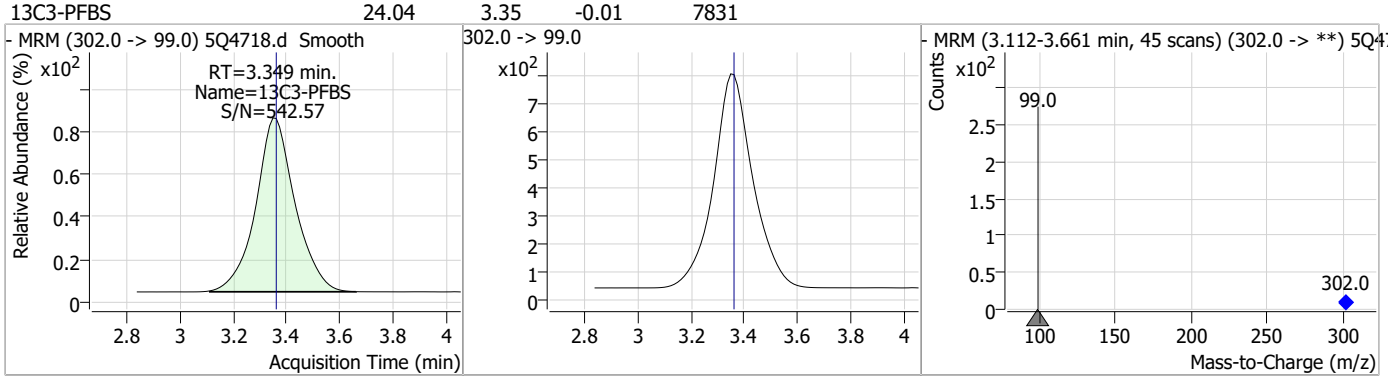


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.68	3.13	0.00	2342				

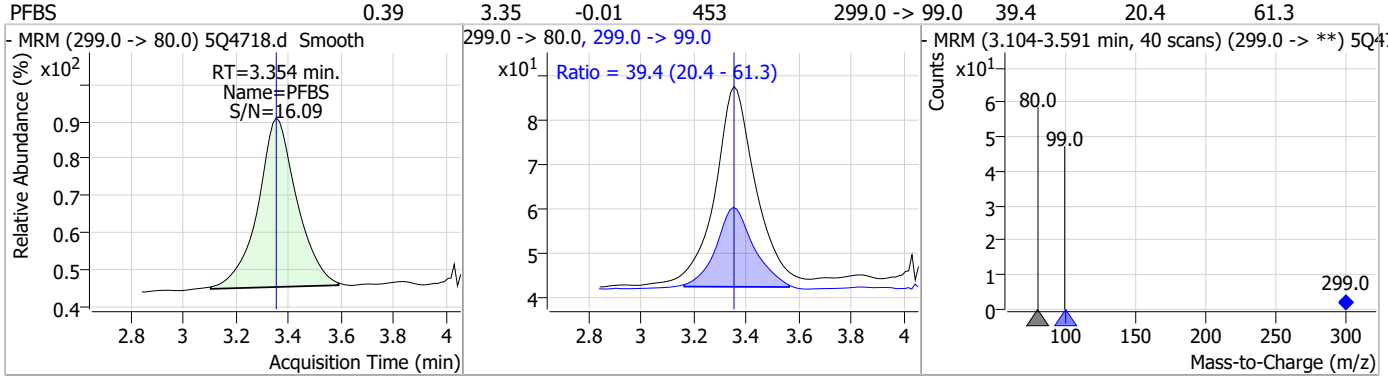


Perfluorinated Compounds by LC/MS/MS

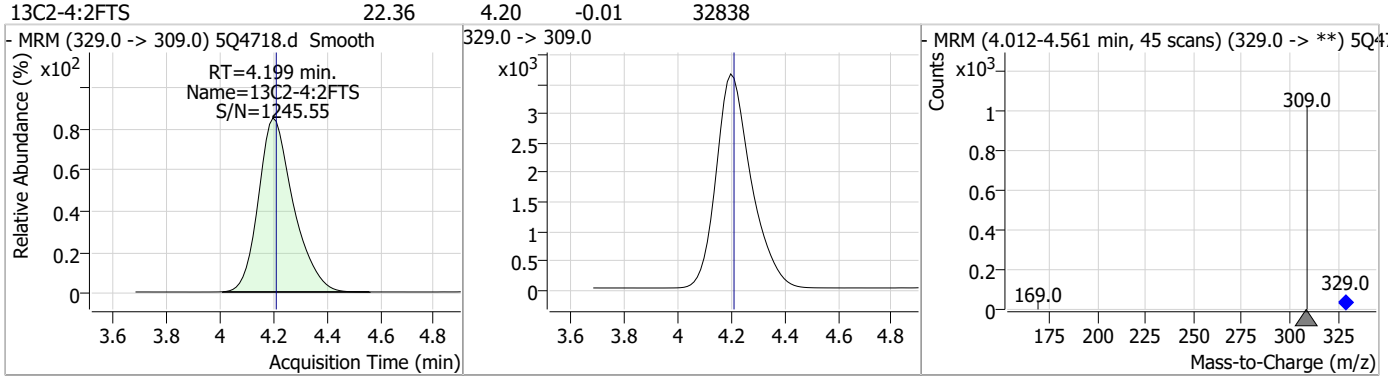
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	24.04	3.35	-0.01	7831				



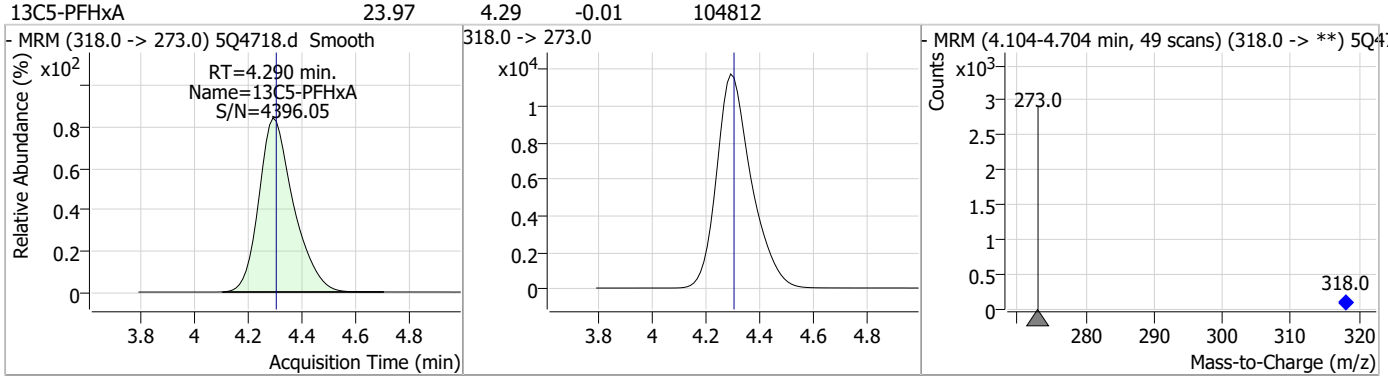
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.39	3.35	-0.01	453	299.0 -> 99.0	39.4	20.4	61.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.36	4.20	-0.01	32838				

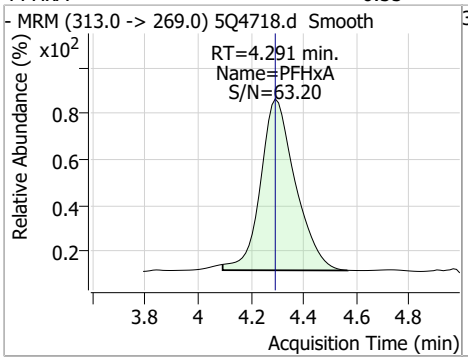


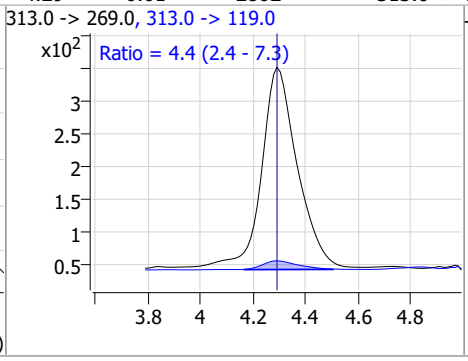
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	23.97	4.29	-0.01	104812				

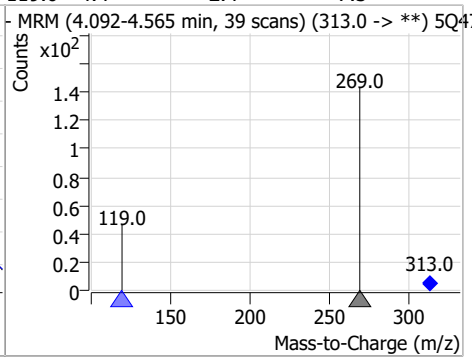


Perfluorinated Compounds by LC/MS/MS

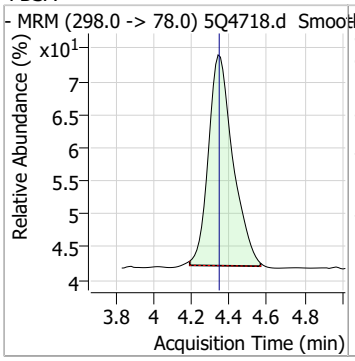
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.55	4.29	-0.01	2802	313.0 -> 119.0	4.4	2.4	7.3

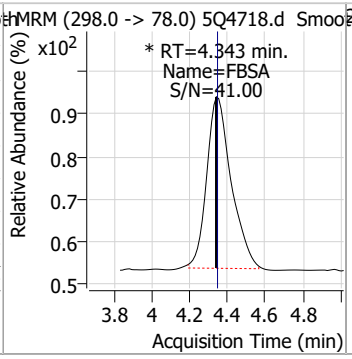


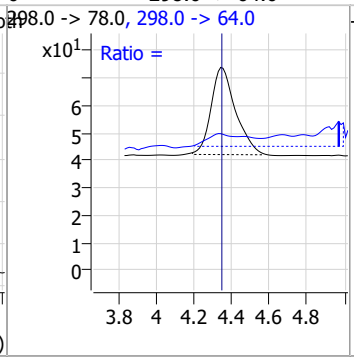


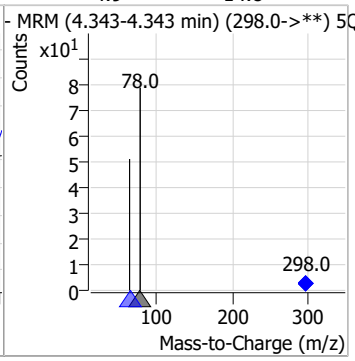


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA		0		0	298.0 -> 64.0		4.9	14.8

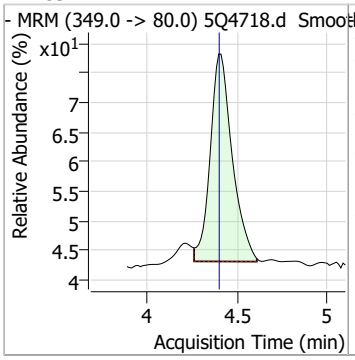


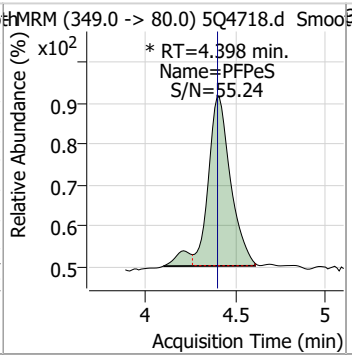


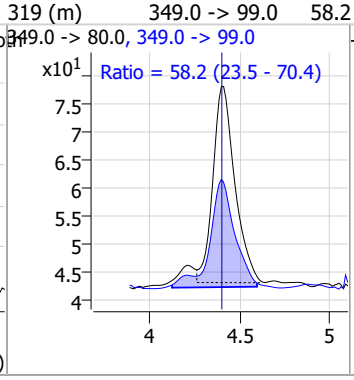


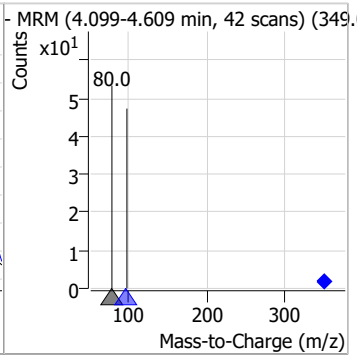


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.35	4.40	-0.01	319 (m)	349.0 -> 99.0	58.2	23.5	70.4

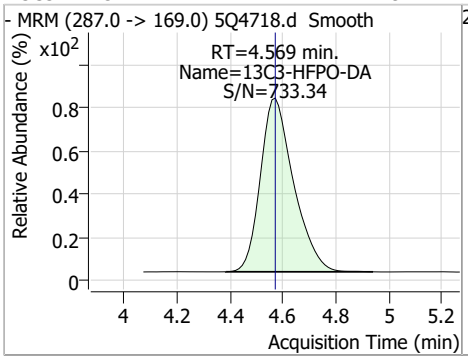


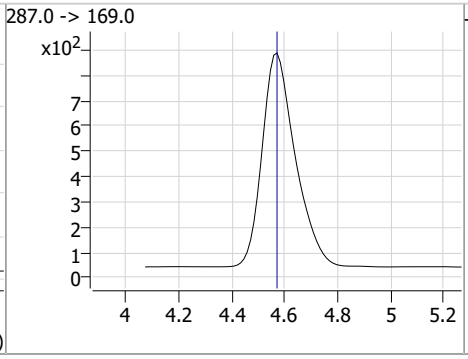


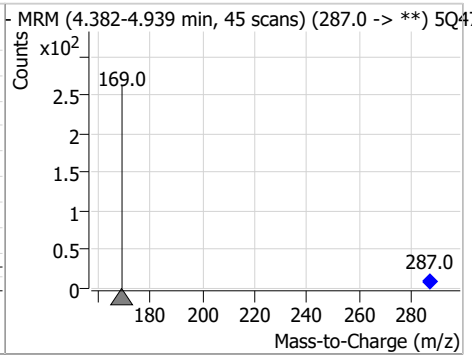




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.94	4.57	0.00	7367				

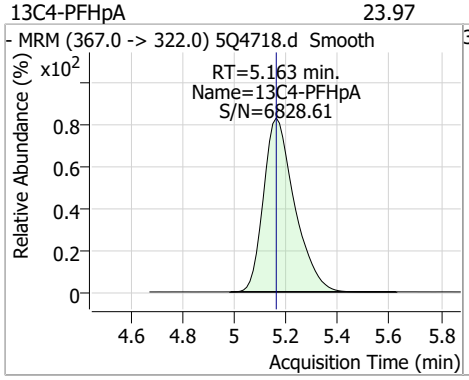


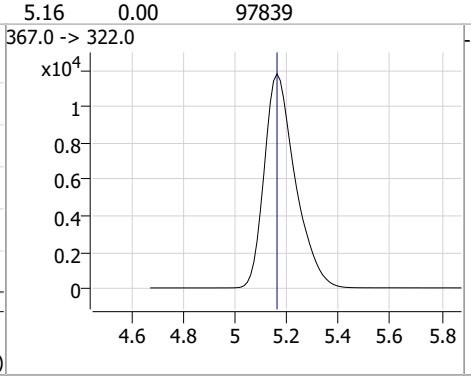


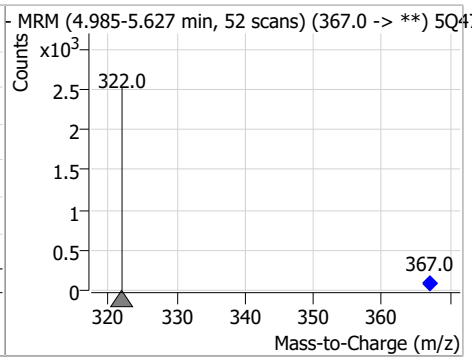


Perfluorinated Compounds by LC/MS/MS

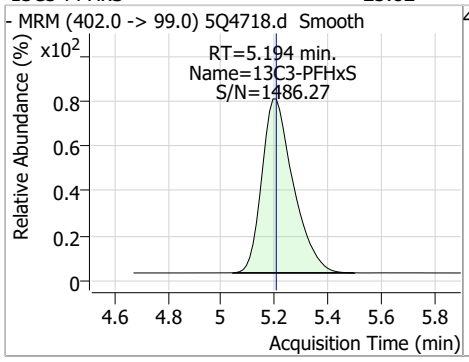
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.97	5.16	0.00	97839				

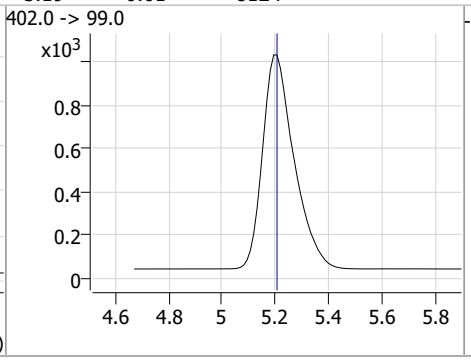


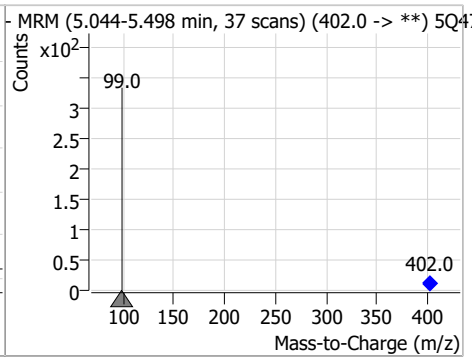




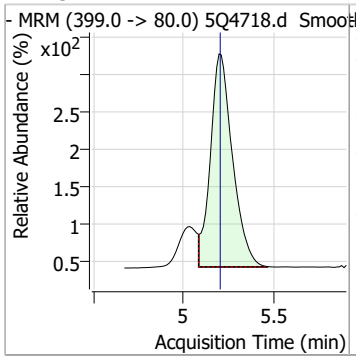
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	23.82	5.19	-0.01	8124				

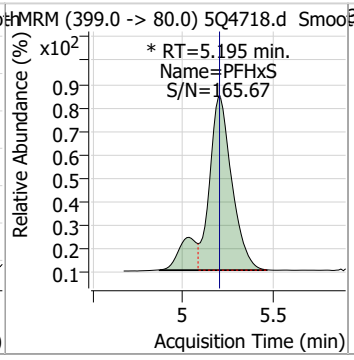


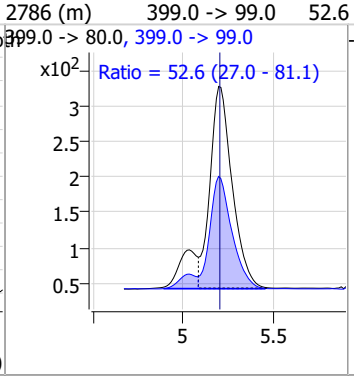


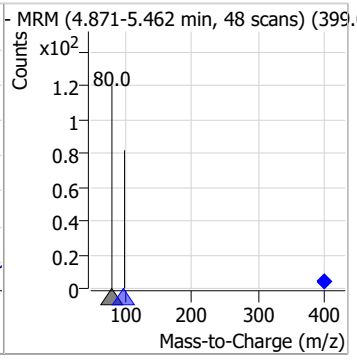


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.31	5.20	-0.01	2786 (m)	399.0 -> 99.0	52.6	27.0	81.1

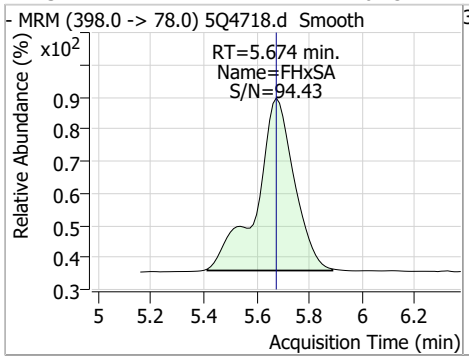


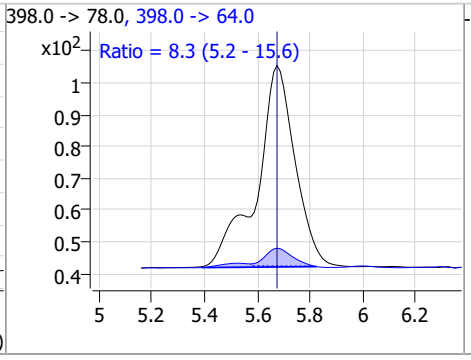


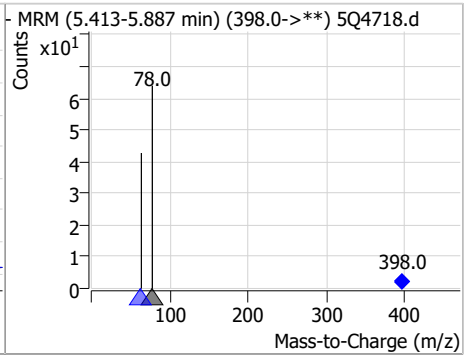




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.43	5.67	0.00	630	398.0 -> 64.0	8.3	5.2	15.6

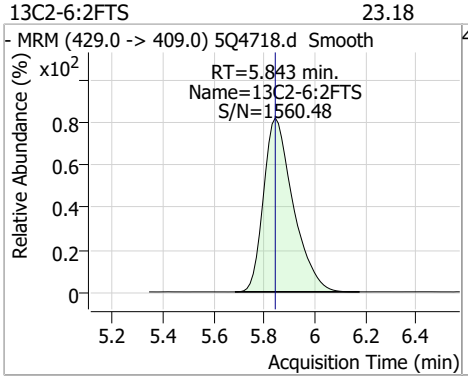


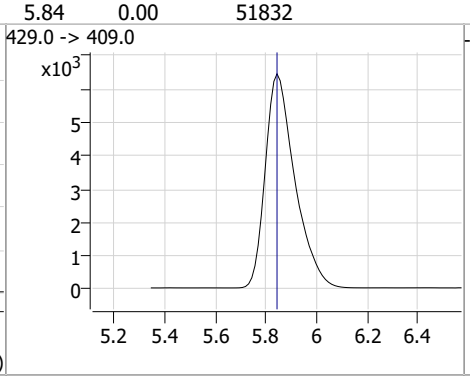


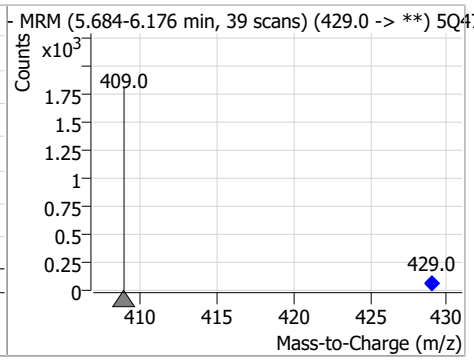


Perfluorinated Compounds by LC/MS/MS

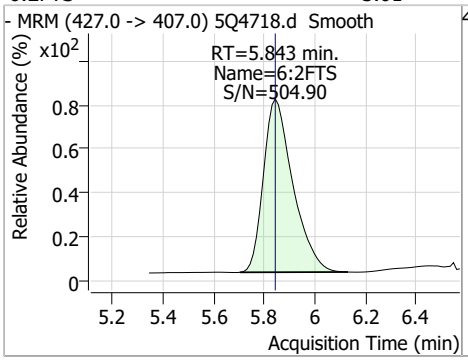
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.18	5.84	0.00	51832				

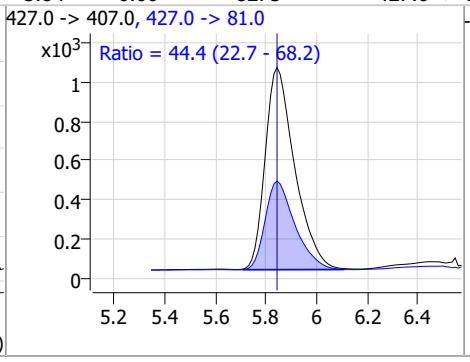


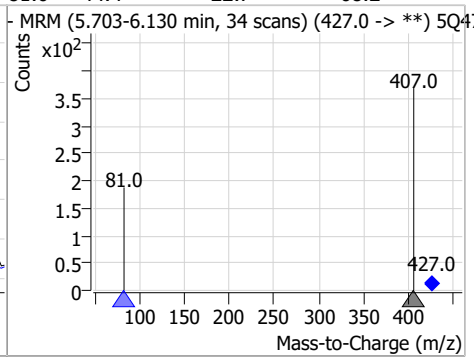




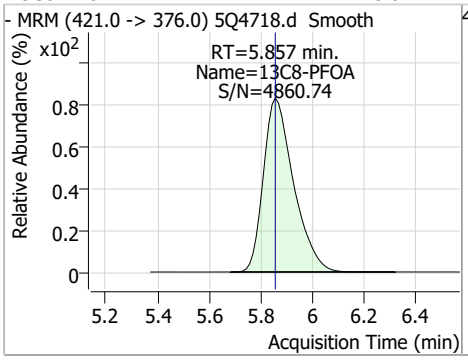
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	3.01	5.84	0.00	8275	427.0 -> 81.0	44.4	22.7	68.2

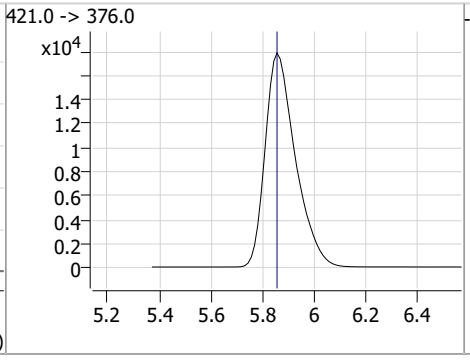


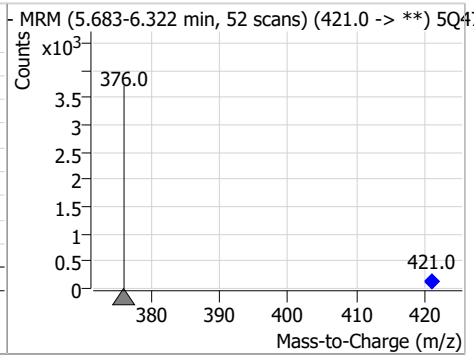




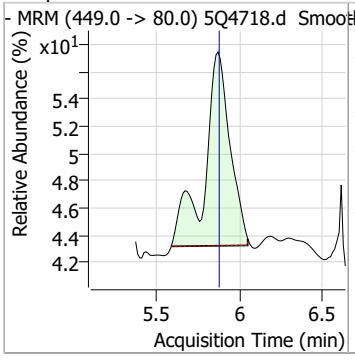
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.97	5.86	0.00	144973				

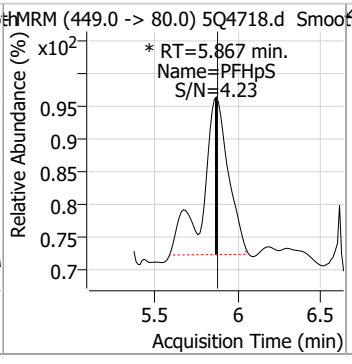


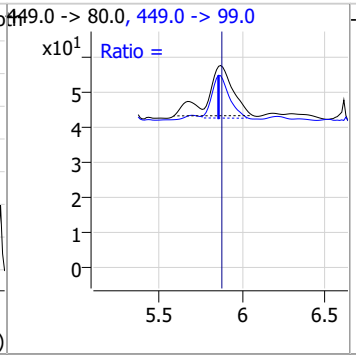


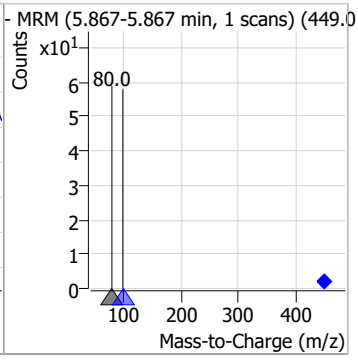


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0	0		0	449.0 -> 99.0		26.4	79.2



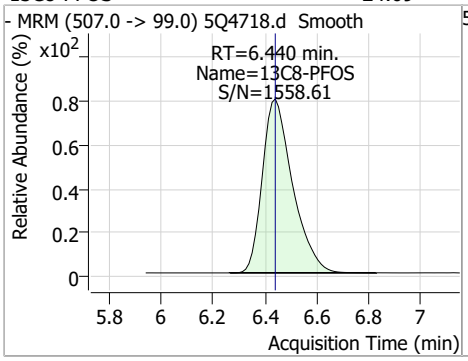


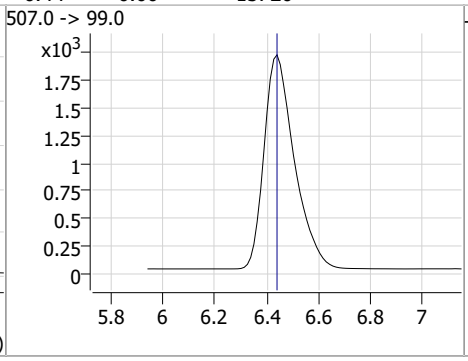


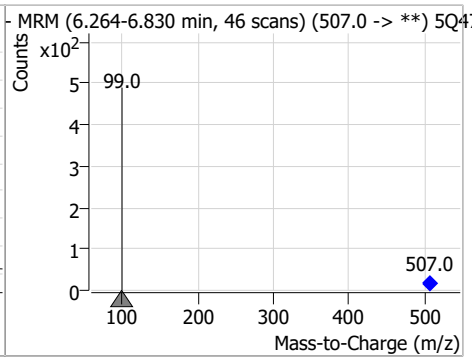


Perfluorinated Compounds by LC/MS/MS

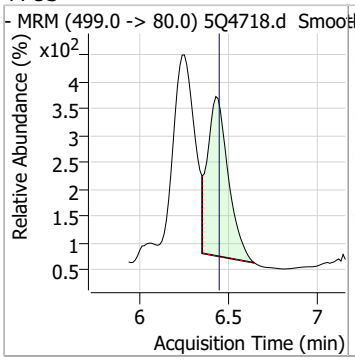
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	24.09	6.44	0.00	15726				

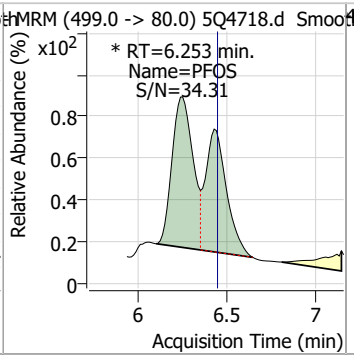


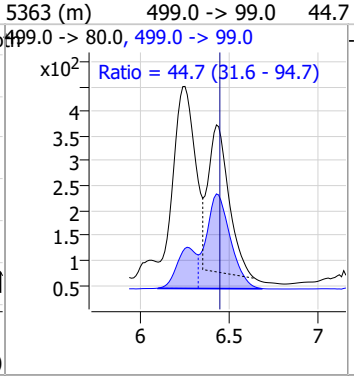


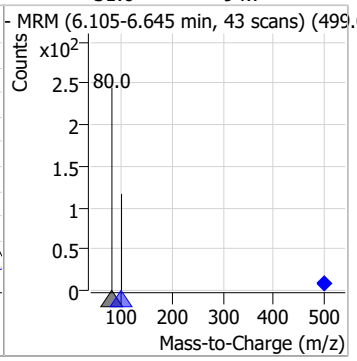


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3.87	6.25	-0.19	5363 (m)	499.0 -> 99.0	44.7	31.6	94.7

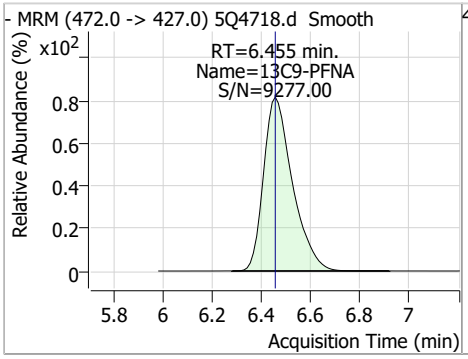


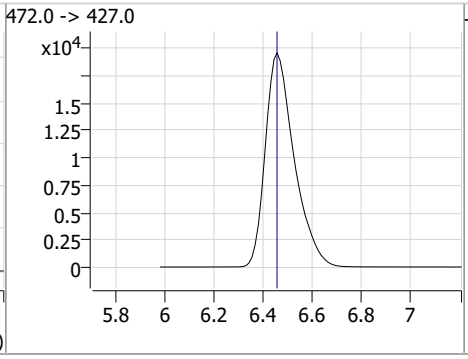


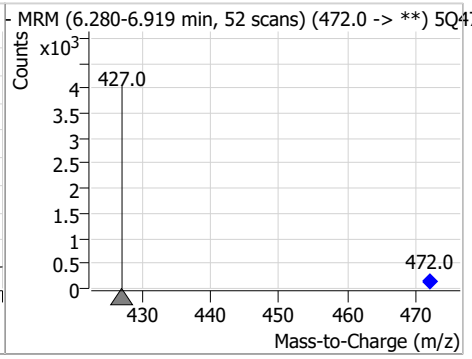




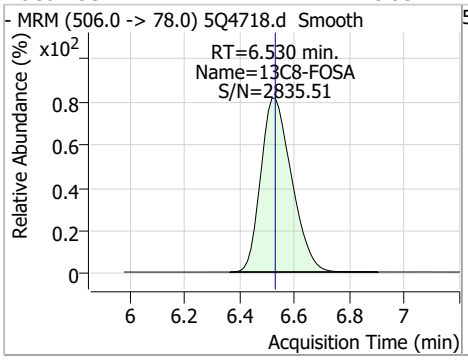
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	24.12	6.46	0.00	158478				

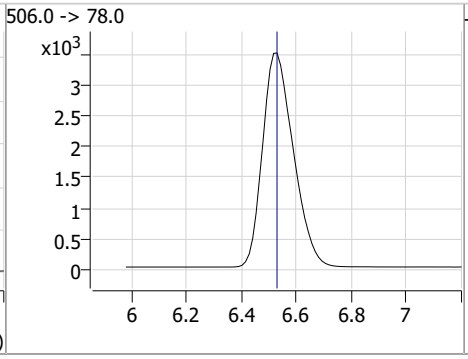


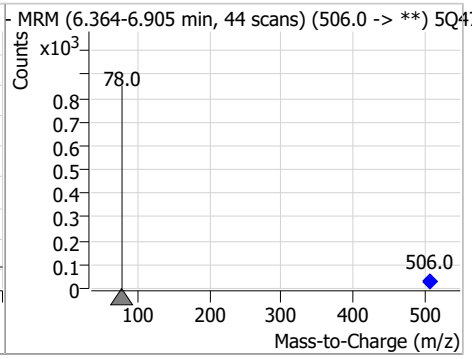




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.93	6.53	0.00	27152				

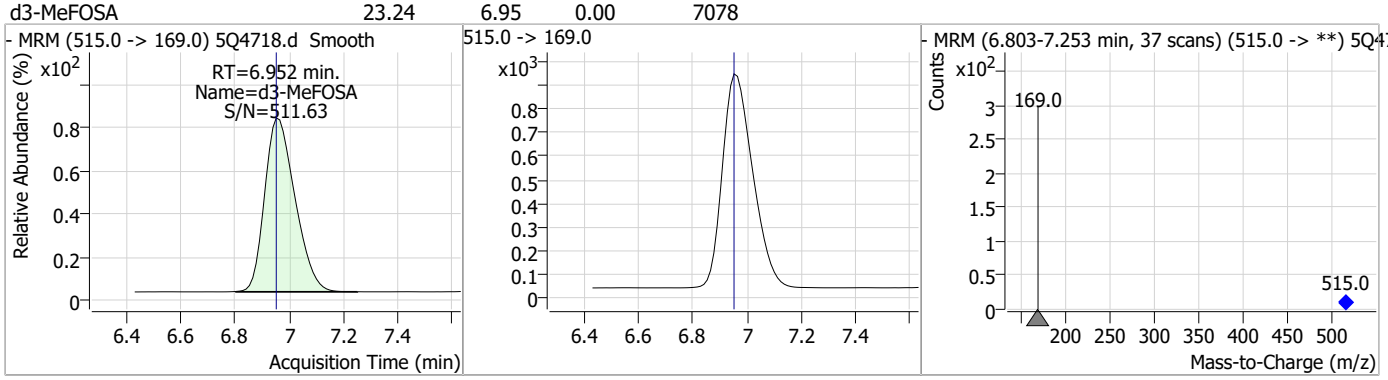




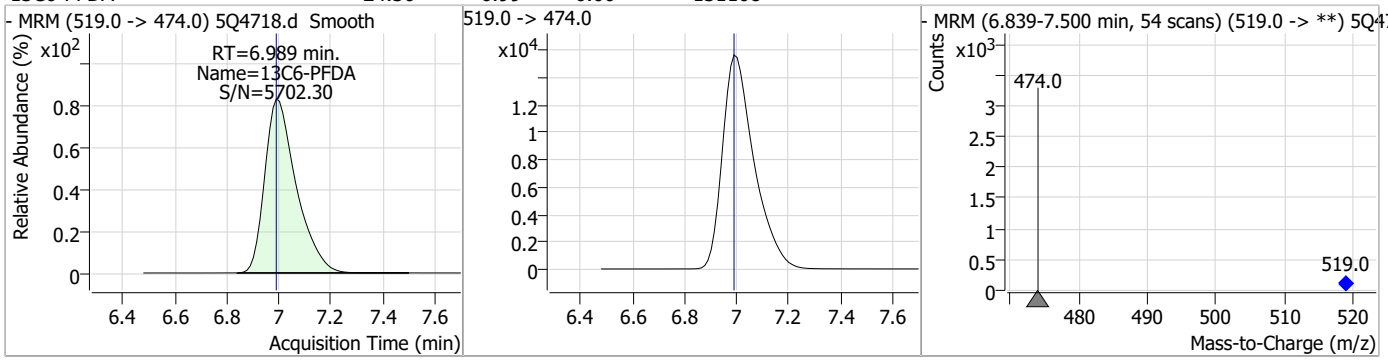


Perfluorinated Compounds by LC/MS/MS

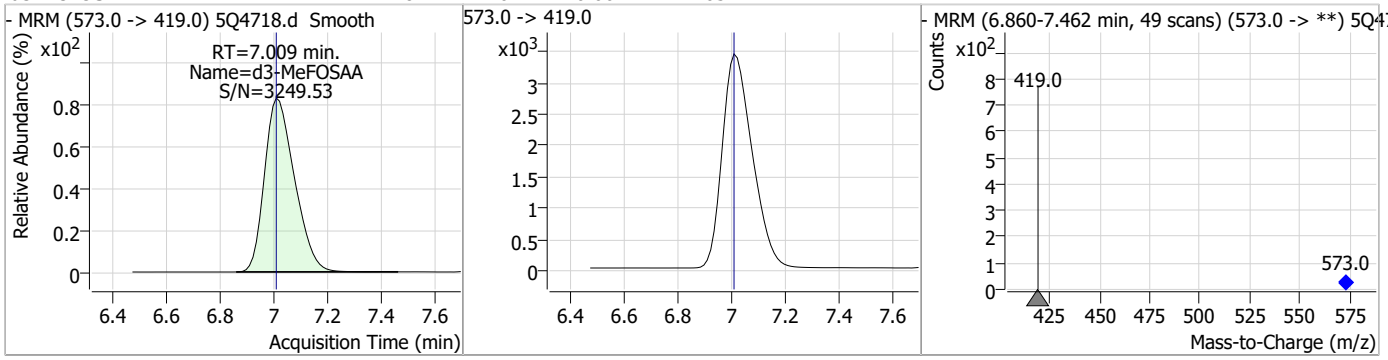
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	23.24	6.95	0.00	7078				



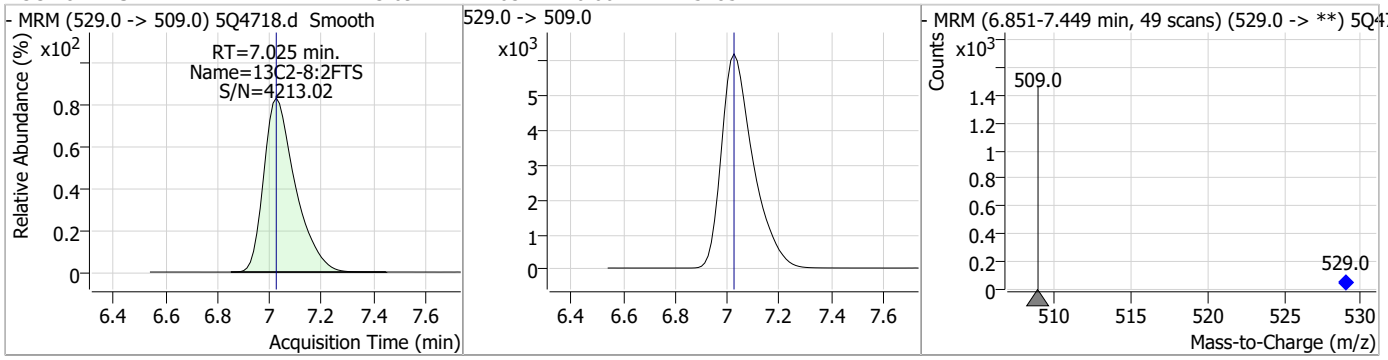
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.36	6.99	0.00	131108				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	27.28	7.01	0.00	26511				

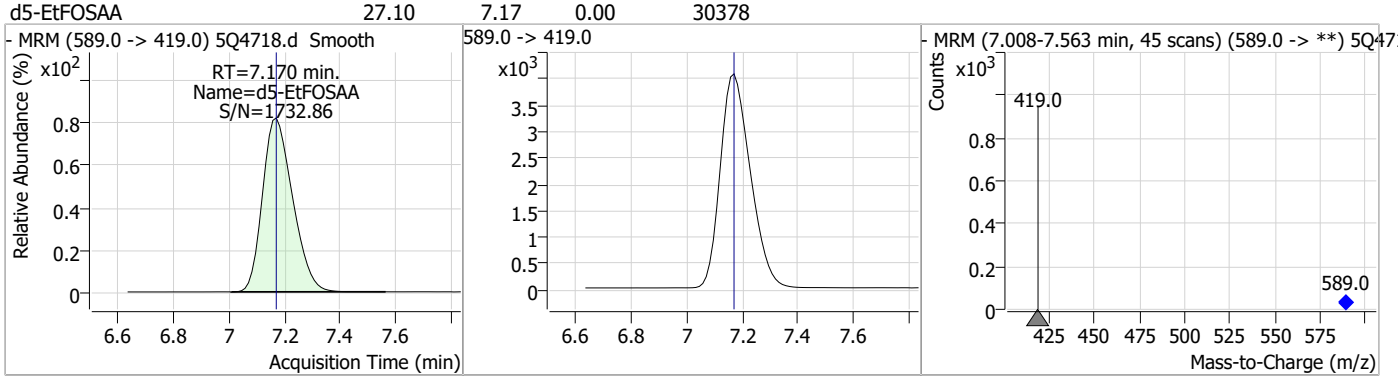


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.09	7.03	0.00	51857				

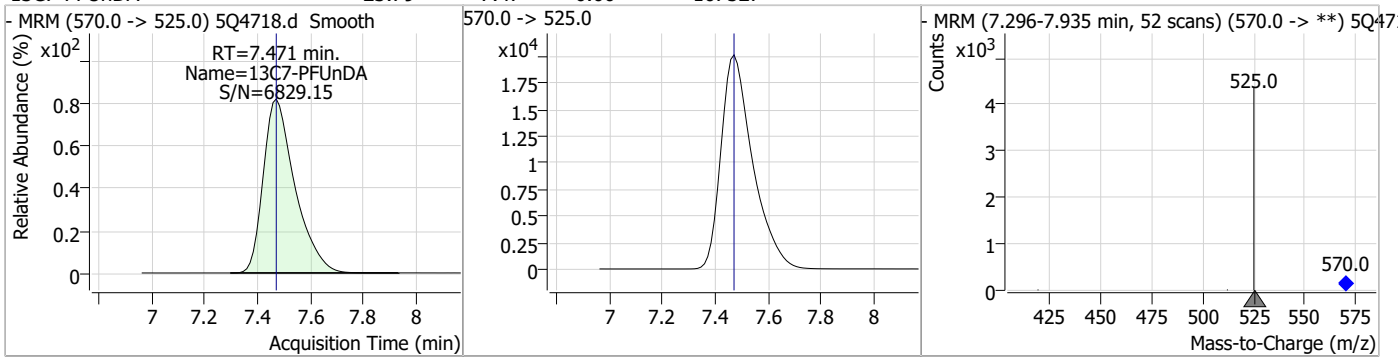


Perfluorinated Compounds by LC/MS/MS

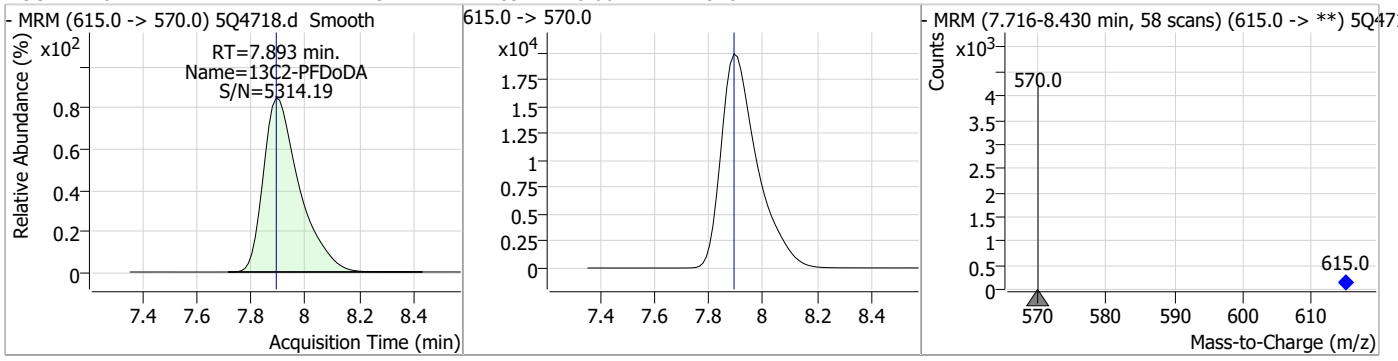
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	27.10	7.17	0.00	30378				



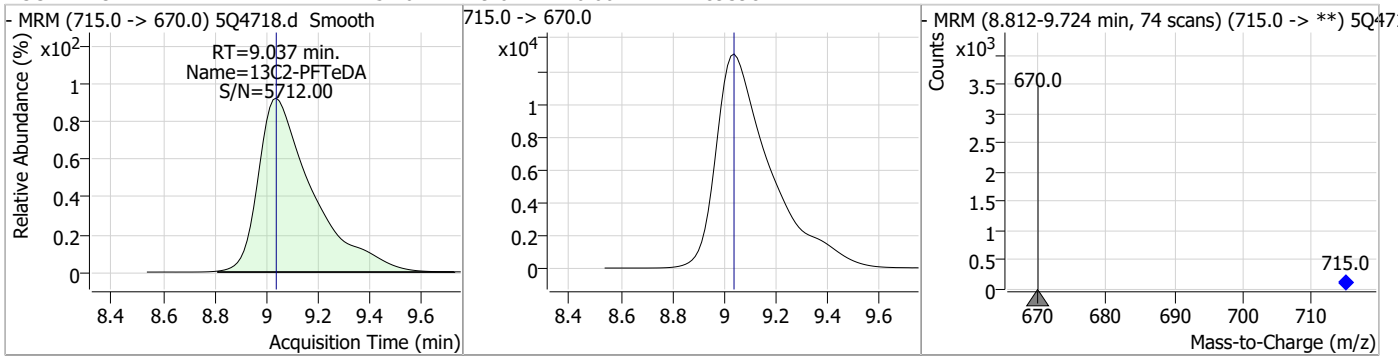
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.79	7.47	0.00	167527				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	25.12	7.89	0.00	182022				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	25.10	9.04	0.00	189398				



Manual Integration Approval Summary

Sample Number: FA98286-5
Lab FileID: 5Q4718.D
Injection Time: 09/16/22 05:54
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:58 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Poor instrument integration
Perfluorooctanesulfonic acid	1763-23-1		6.25	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:42

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4639.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:39:10 AM
Sample Name : fa98286-6
Vial : P1-E8
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

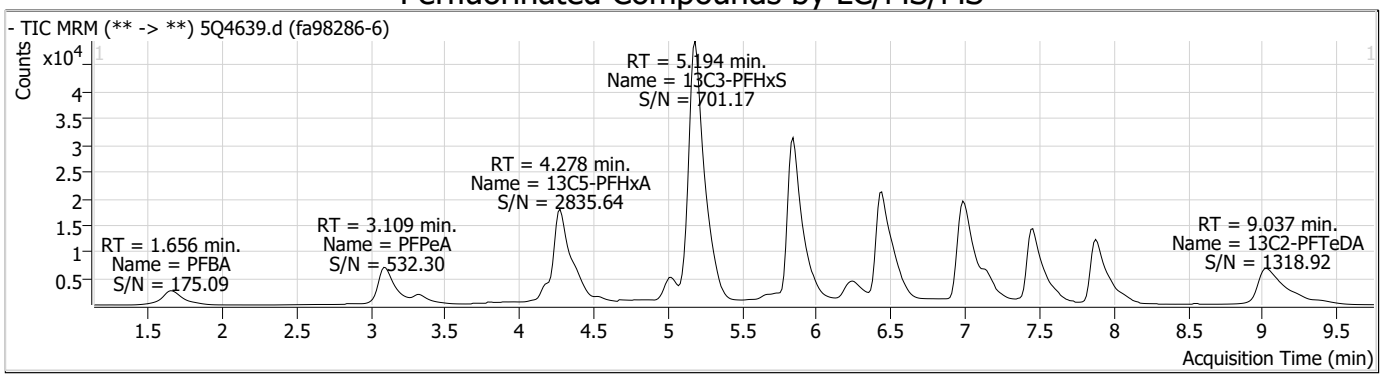
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.662	217.0 -> 172.0	24069	20.00 µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	39518	20.00 µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	67732	20.00 µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	66136	20.00 µg/L	-0.014
M8-PFOA	5.857	421.0 -> 376.0	105270	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	113636	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	87654	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	96143	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	94578	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	86387	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	12486	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4846	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5532	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	10070	20.00 µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	22218	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	39599	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	36174	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17409	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4715	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	302	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	17417	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	22218	15.13 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%	
13C2-6:2FTS	5.843	429.0 -> 409.0	39599	17.71 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
13C2-8:2FTS	7.013	529.0 -> 509.0	36174	16.11 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
13C2-PFDoDA	7.893	615.0 -> 570.0	94578	13.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%	
13C2-PFTeDA	9.037	715.0 -> 670.0	86387	11.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.2%	
13C3-PFBS	3.337	302.0 -> 99.0	4846	14.88 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.4%	
13C3-PFHxS	5.194	402.0 -> 99.0	5532	16.22 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.1%	
13C4-PFBA	1.662	217.0 -> 172.0	24069	13.46 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%	
13C4-PFHpA	5.149	367.0 -> 322.0	66136	16.20 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.0%	
13C5-PFHxA	4.278	318.0 -> 273.0	67732	15.49 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%	
13C5-PFPeA	3.107	268.0 -> 223.0	39518	13.60 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%	
13C6-PFDA	6.989	519.0 -> 474.0	87654	16.28 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

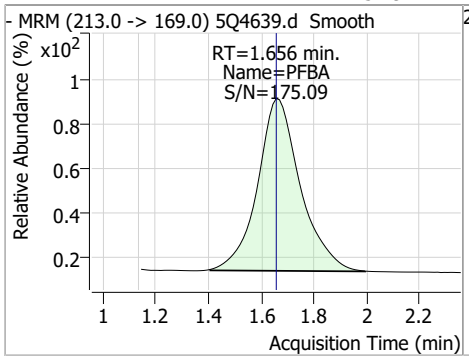
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.4%			
13C7-PFUnDA	7.459	570.0 -> 525.0	96143	13.65	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
13C8-FOSA	6.517	506.0 -> 78.0	12486	11.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.0%			
13C8-PFOA	5.857	421.0 -> 376.0	105270	17.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
13C8-PFOS	6.428	507.0 -> 99.0	10070	15.42	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
13C9-PFNA	6.443	472.0 -> 427.0	113636	17.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17409	17.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4715	14.04	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%			
d3-MeFOSA	6.965	515.0 -> 169.0	302	0.99	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.0%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17417	15.54	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.831	427.0 -> 407.0	7541	3.59	µg/L		100
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.656	213.0 -> 169.0	2998	5.29	µg/L		100
PFBS	3.329	299.0 -> 80.0	5042	6.93	µg/L		100
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	19138	4.40	µg/L	m	99
PFHpS	5.855	449.0 -> 80.0	4453	5.88	µg/L	m	88
PFHxA	4.279	313.0 -> 269.0	45146	13.64	µg/L		100
PFHxS	5.195	399.0 -> 80.0	201420	245.19	µg/L	m	95
PFNA	6.444	463.0 -> 419.0	1410	0.28	µg/L	m	95
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	43882	6.87	µg/L	m	100
PFOS	6.241	499.0 -> 80.0	25175	28.39	µg/L		81
PFPeA	3.109	263.0 -> 219.0	15902	8.14	µg/L		100
PFPeS	4.398	349.0 -> 80.0	8520	15.05	µg/L	m	100
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	5191	2.74	µg/L		89
FBSA	4.356	298.0 -> 78.0	3659	3.26	µg/L		100
FHxSA	5.674	398.0 -> 78.0	971	0.91	µg/L		100

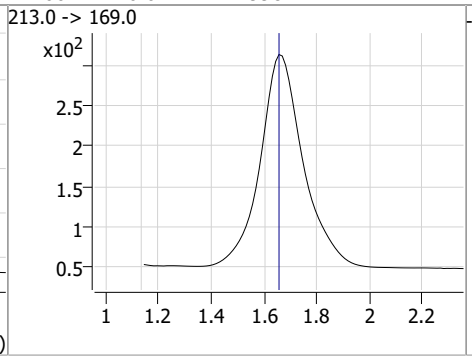
 # = Qualifier out of range, m = manually integrated, + = Area summed

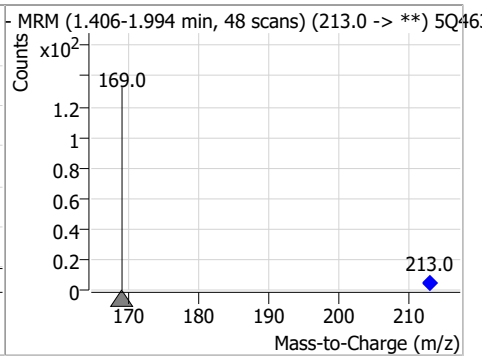
Perfluorinated Compounds by LC/MS/MS



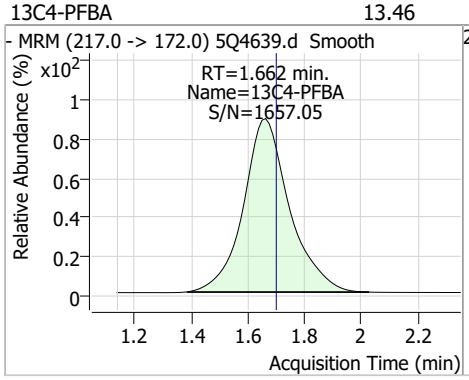
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.29	1.66	-0.04	2998				

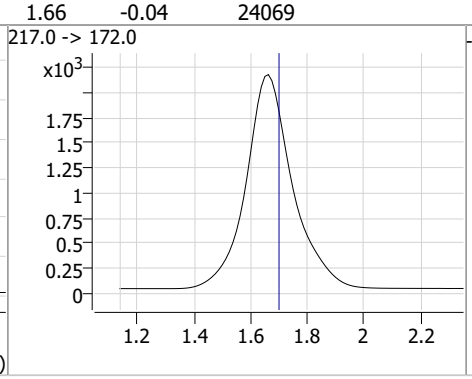


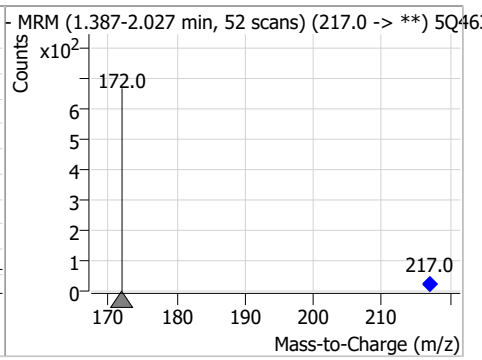




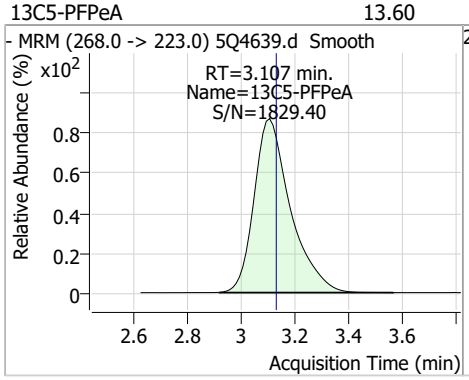
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.46	1.66	-0.04	24069				

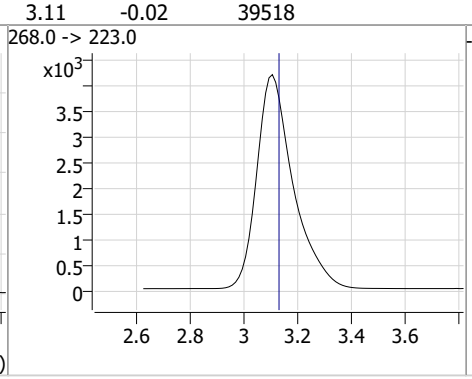


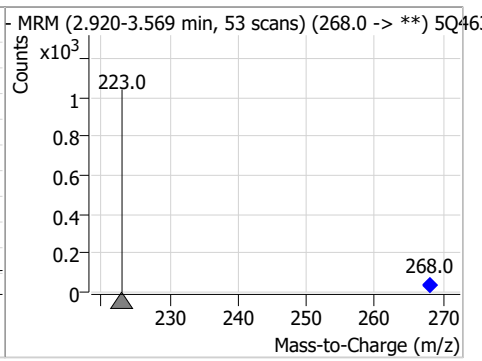




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.60	3.11	-0.02	39518				

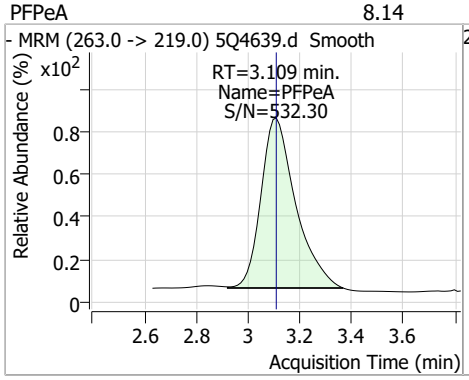


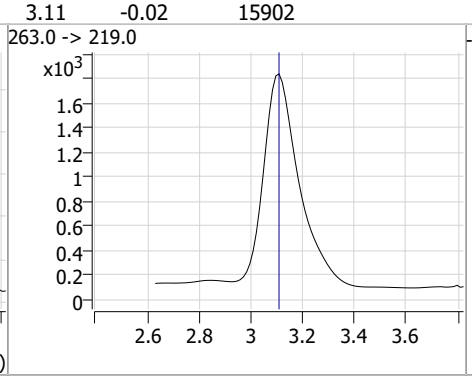


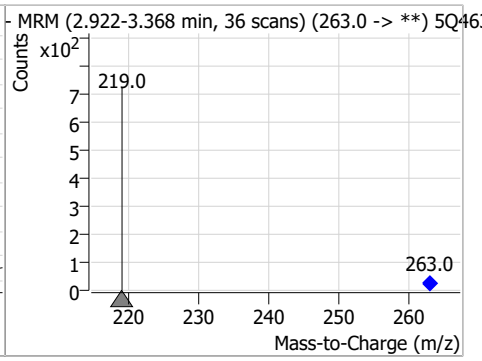


Perfluorinated Compounds by LC/MS/MS

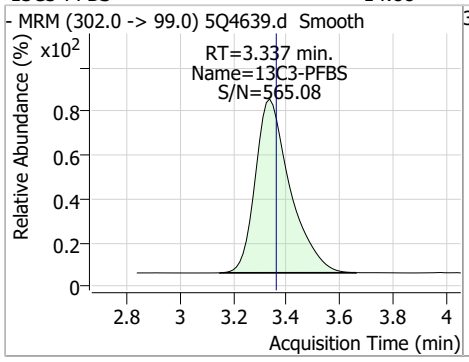
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	8.14	3.11	-0.02	15902				

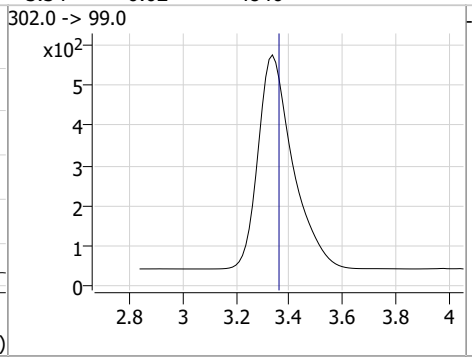


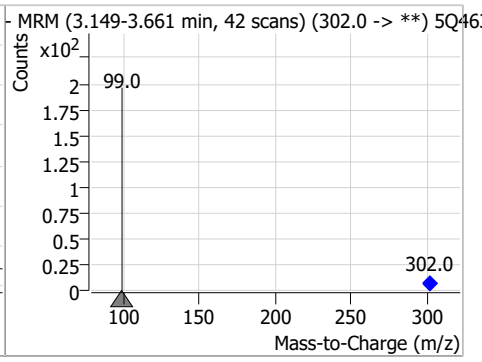




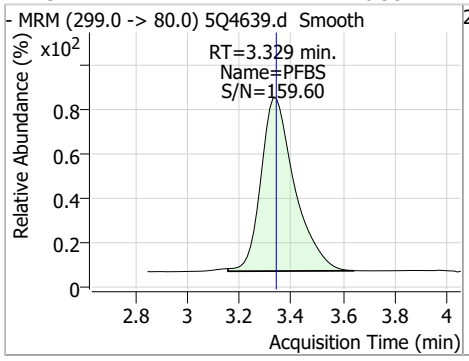
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.88	3.34	-0.02	4846				

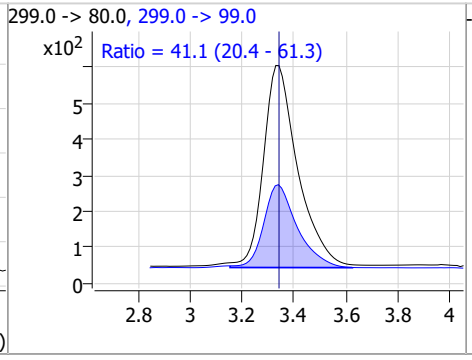


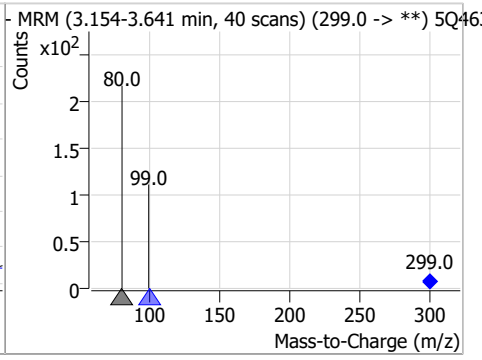




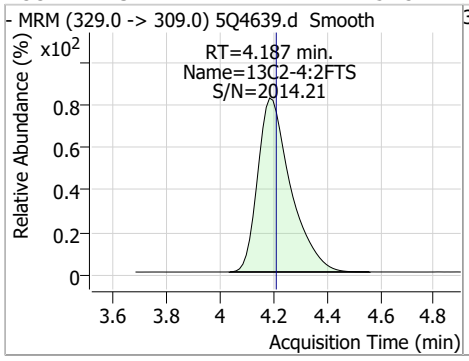
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	6.93	3.33	-0.04	5042	299.0 -> 99.0	41.1	20.4	61.3

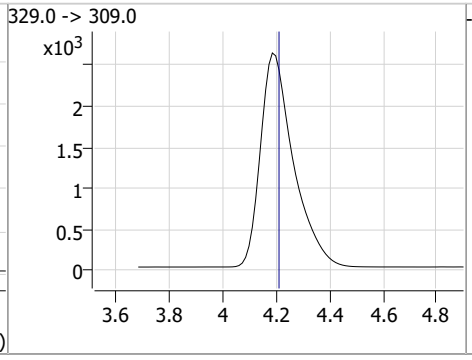


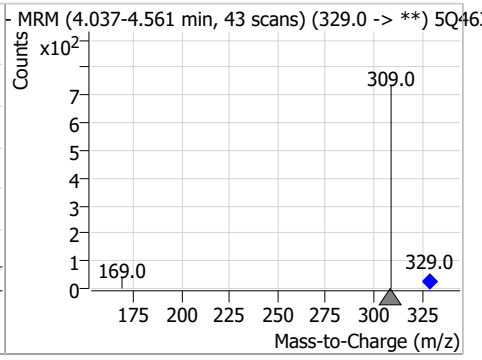




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.13	4.19	-0.02	22218				

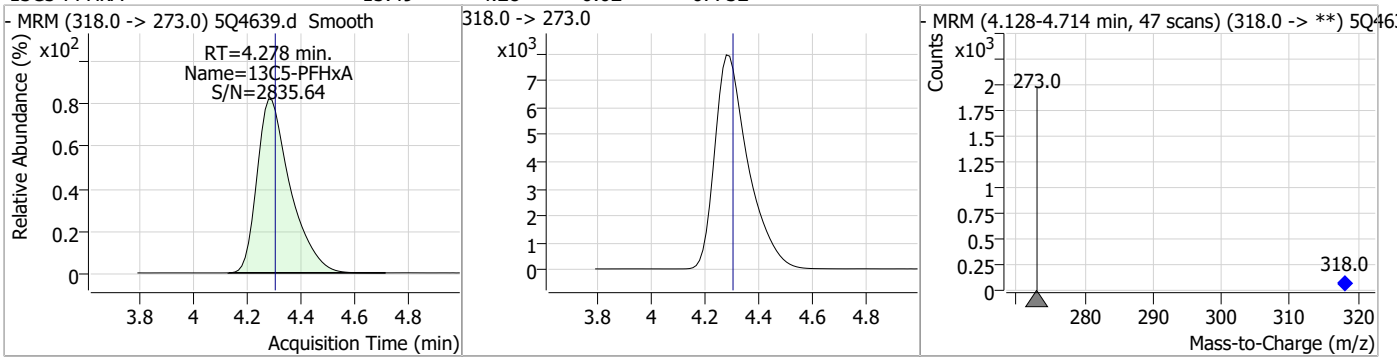




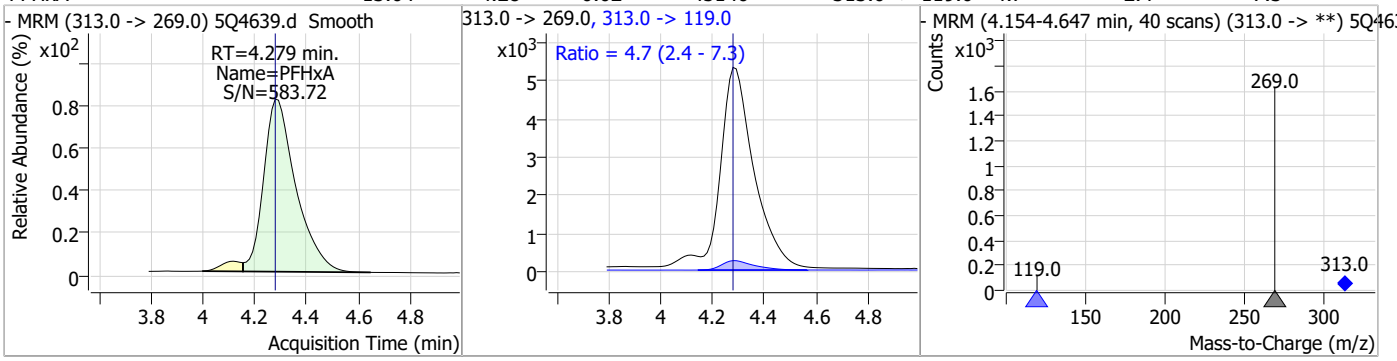


Perfluorinated Compounds by LC/MS/MS

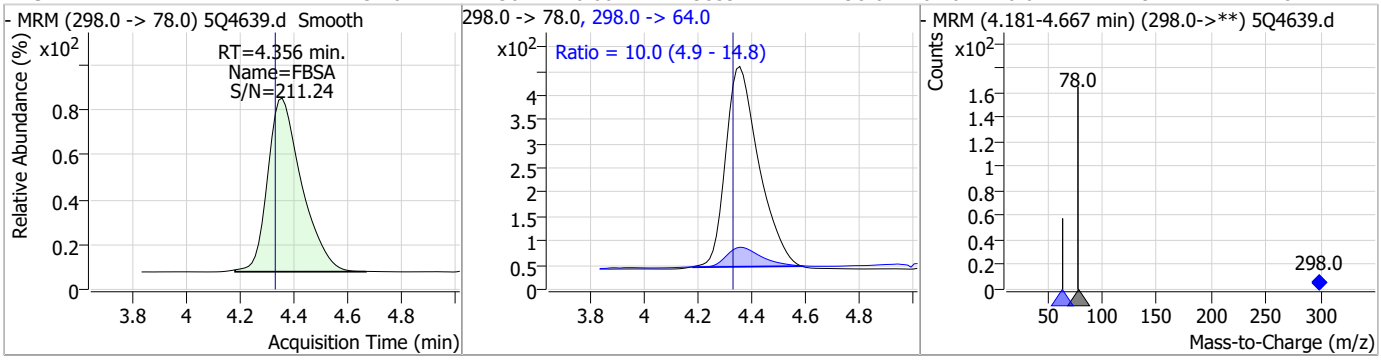
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.49	4.28	-0.02	67732				



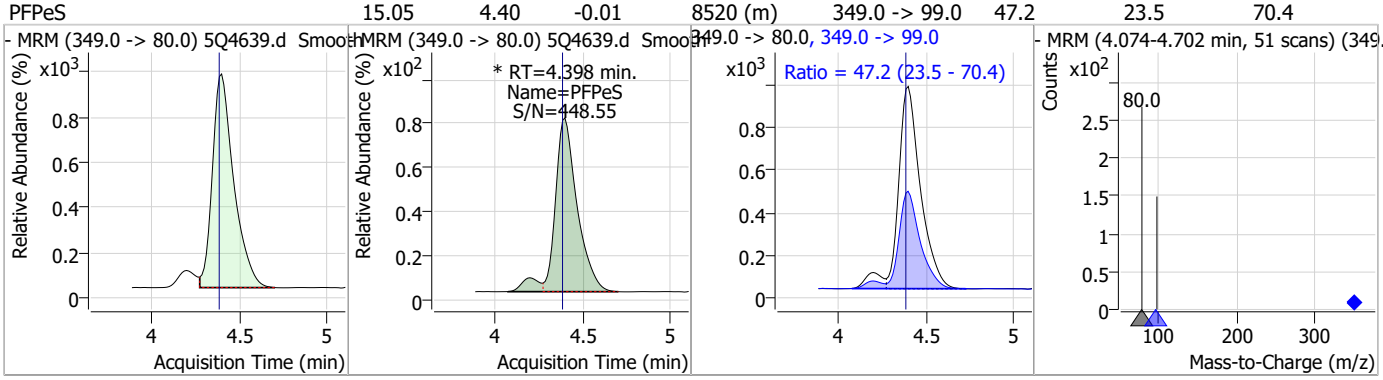
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	13.64	4.28	-0.02	45146	313.0 -> 119.0	4.7	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	3.26	4.36	0.00	3659	298.0 -> 64.0	10.0	4.9	14.8

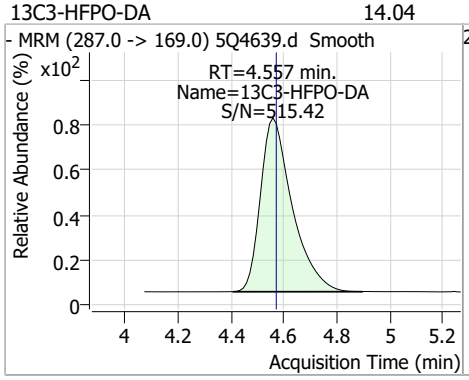


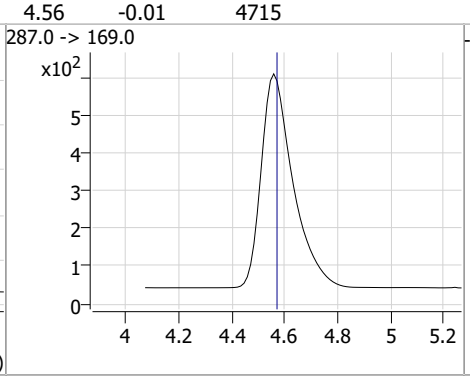
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	15.05	4.40	-0.01	8520 (m)	349.0 -> 99.0	47.2	23.5	70.4

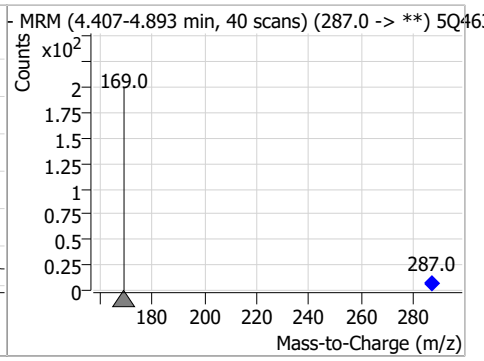


Perfluorinated Compounds by LC/MS/MS

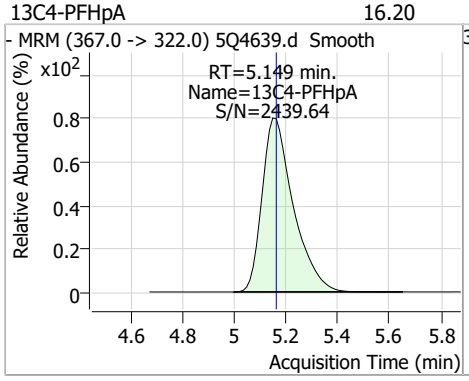
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.04	4.56	-0.01	4715				

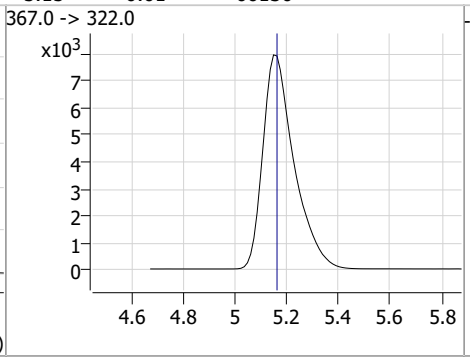


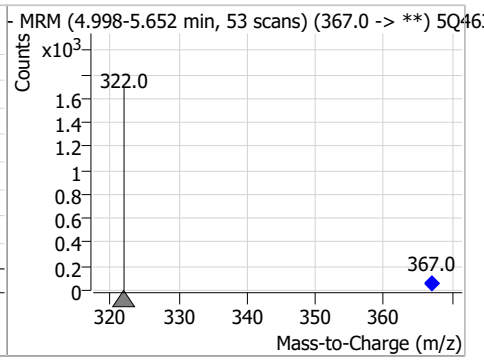




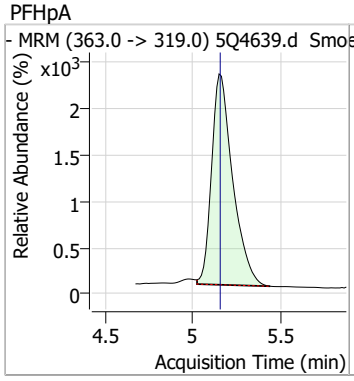
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.20	5.15	-0.01	66136				

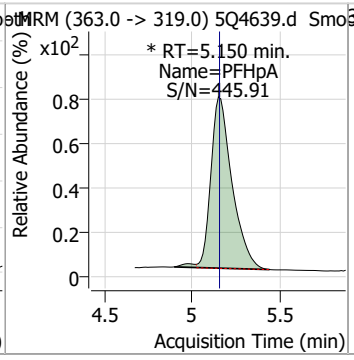


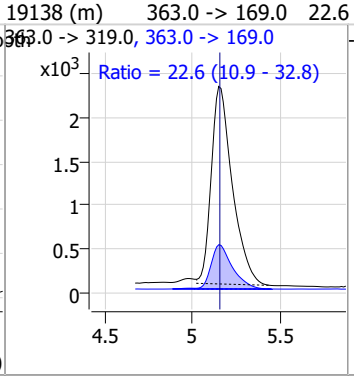


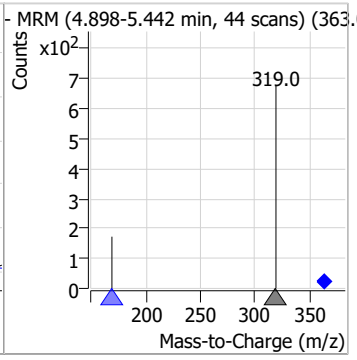


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.40	5.15	-0.01	19138 (m)	363.0 -> 169.0	22.6	10.9	32.8

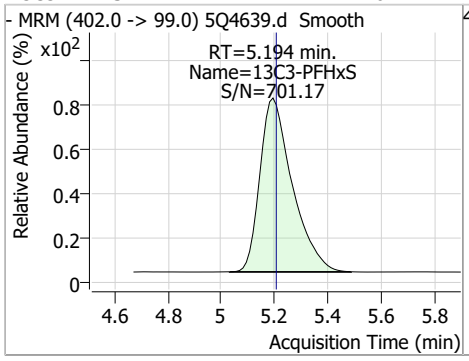


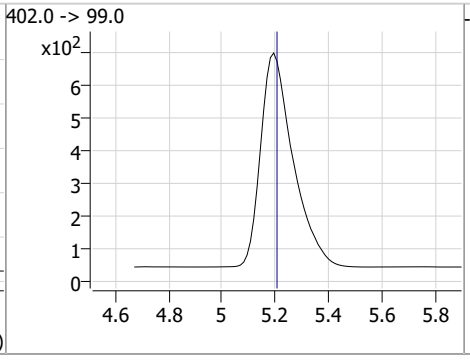


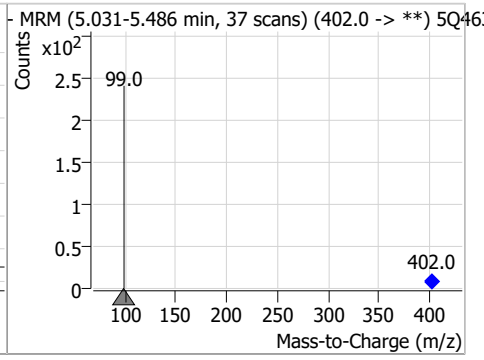




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.22	5.19	-0.01	5532				

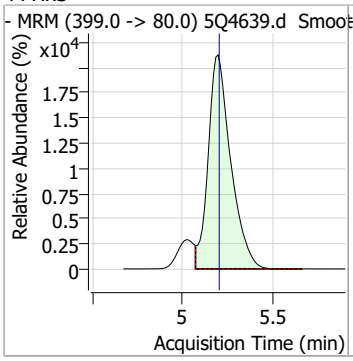


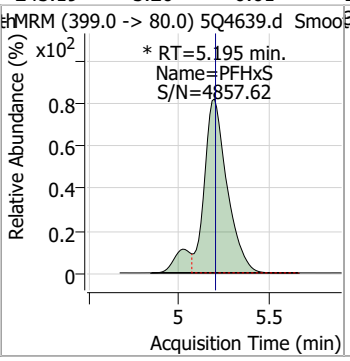


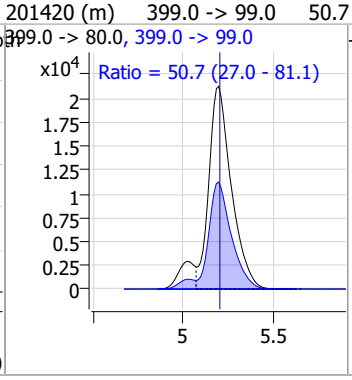


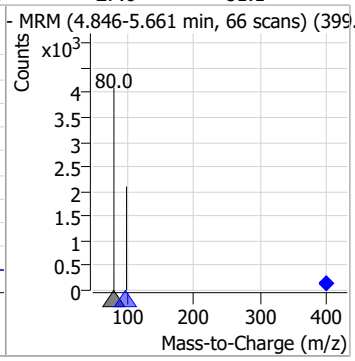
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	245.19	5.20	-0.01	201420 (m)	399.0 -> 99.0	50.7	27.0	81.1

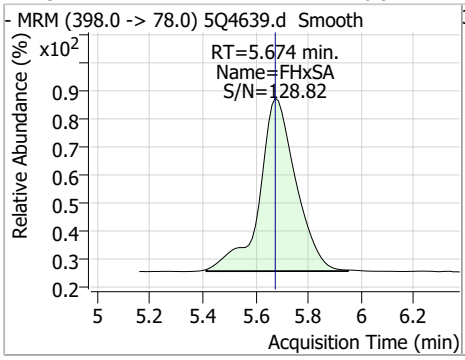


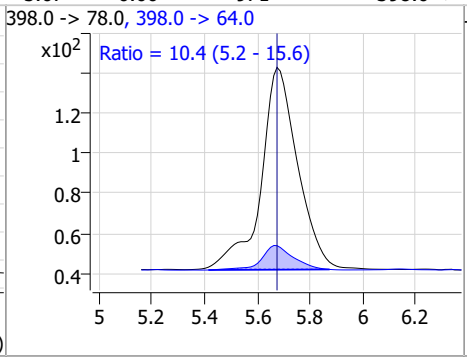


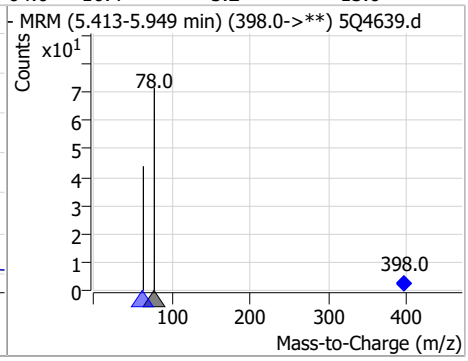




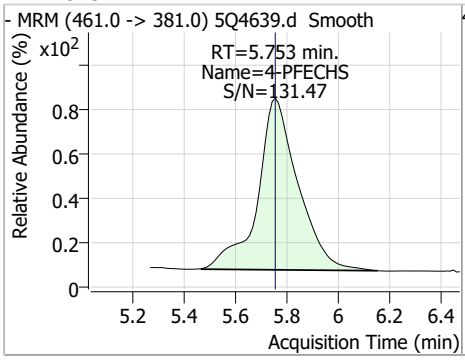
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.91	5.67	0.00	971	398.0 -> 64.0	10.4	5.2	15.6

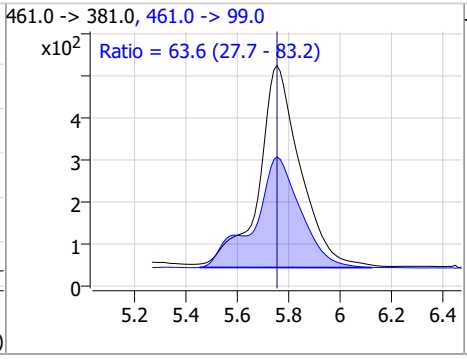


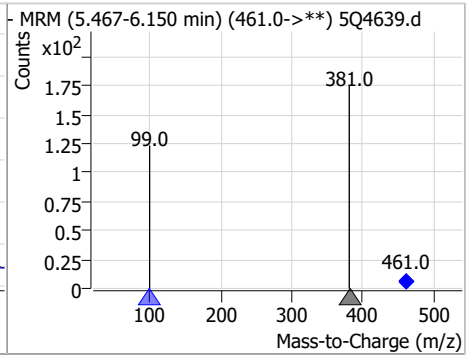




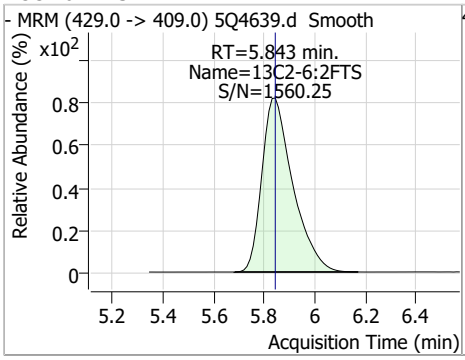
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	2.74	5.75	0.00	5191	461.0 -> 99.0	63.6	27.7	83.2

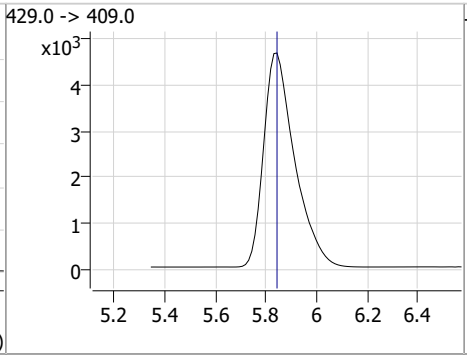


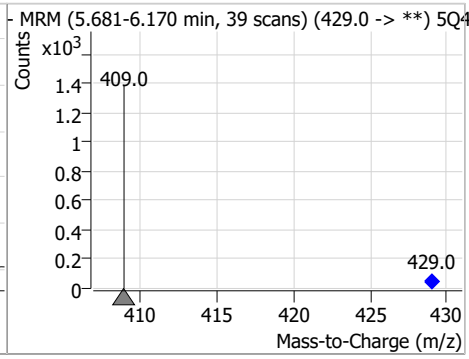




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.71	5.84	0.00	39599				

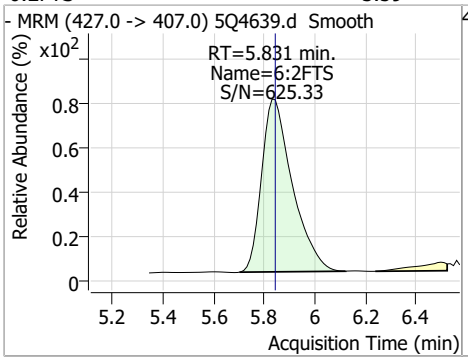


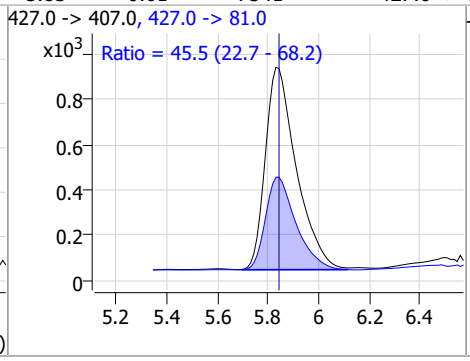


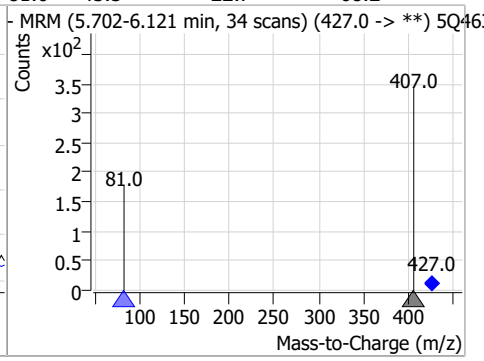


Perfluorinated Compounds by LC/MS/MS

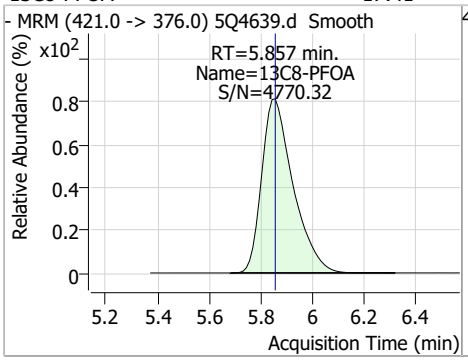
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	3.59	5.83	-0.01	7541	427.0 -> 81.0	45.5	22.7	68.2

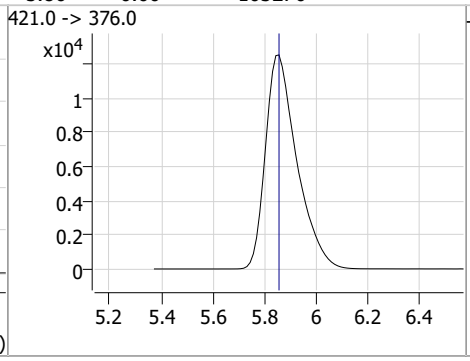


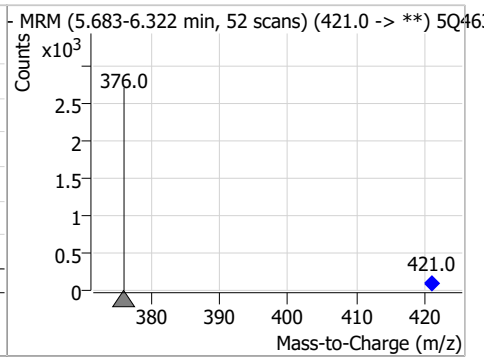




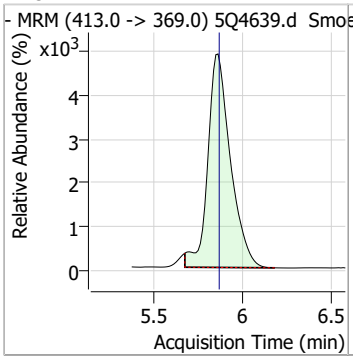
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.41	5.86	0.00	105270				

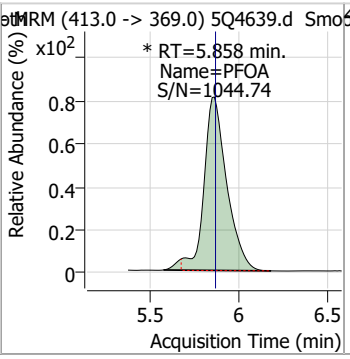


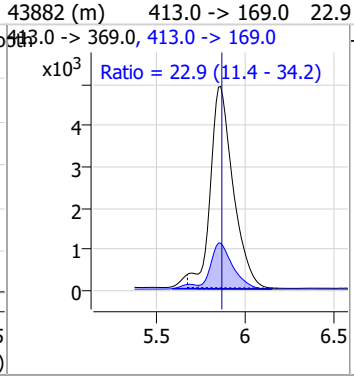


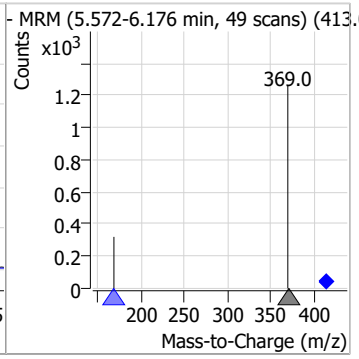


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	6.87	5.86	0.00	43882 (m)	413.0 -> 169.0	22.9	11.4	34.2

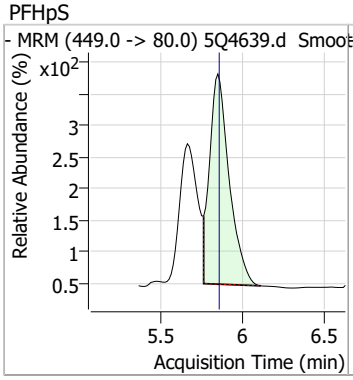


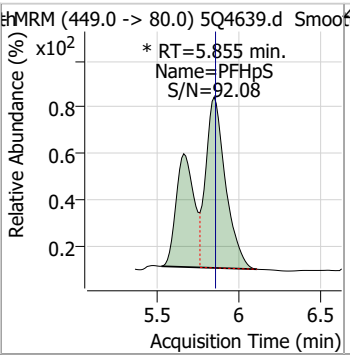


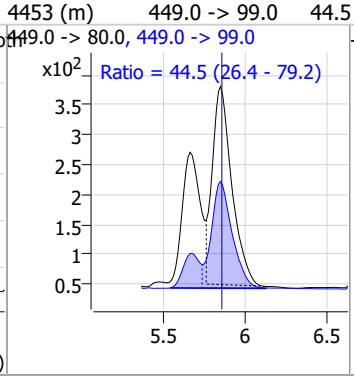


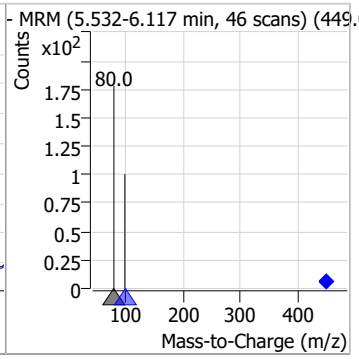


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.88	5.85	-0.01	4453 (m)	449.0 -> 99.0	44.5	26.4	79.2



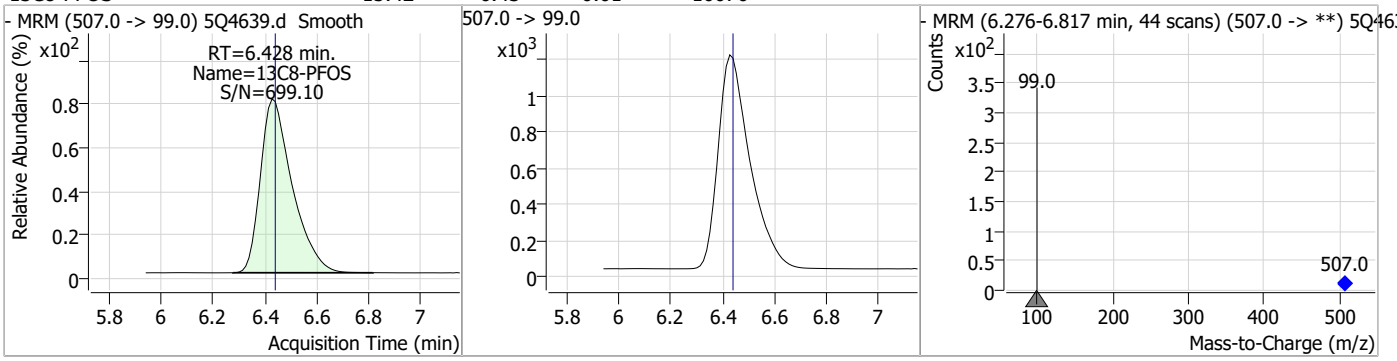




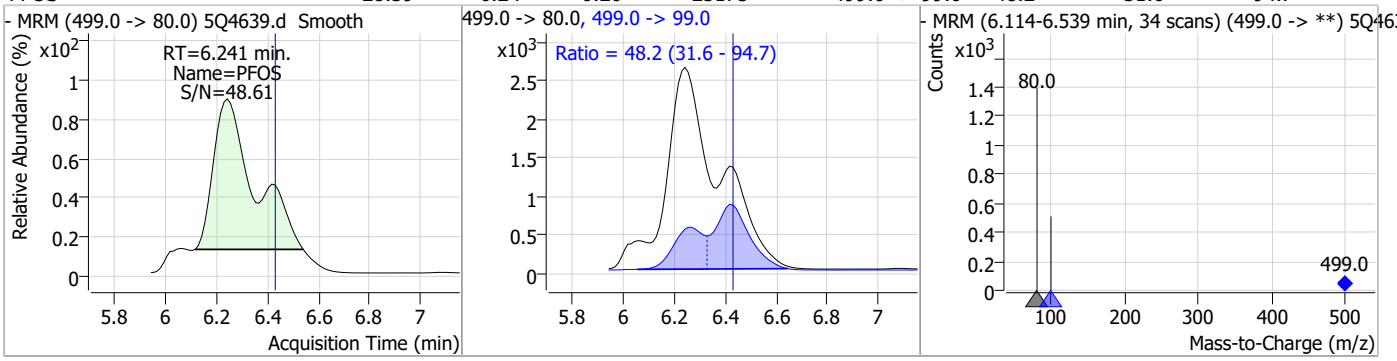


Perfluorinated Compounds by LC/MS/MS

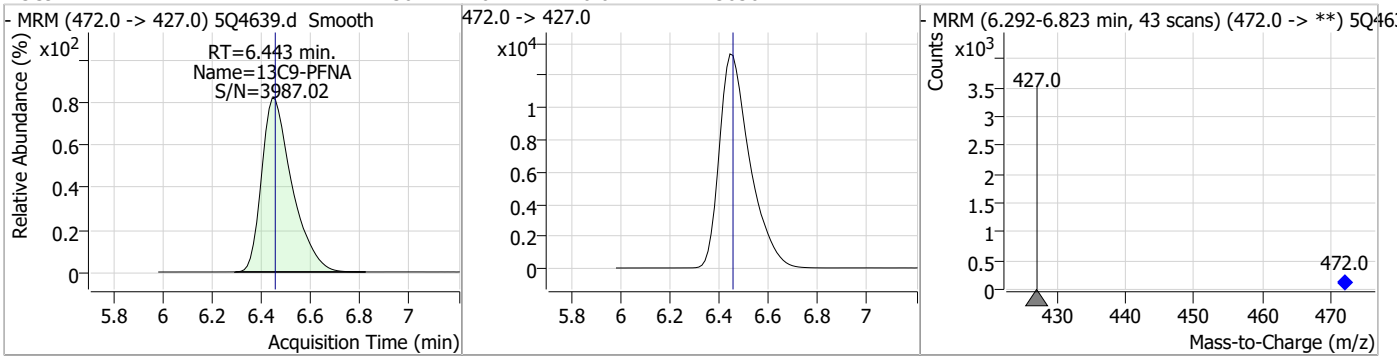
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.42	6.43	-0.01	10070				



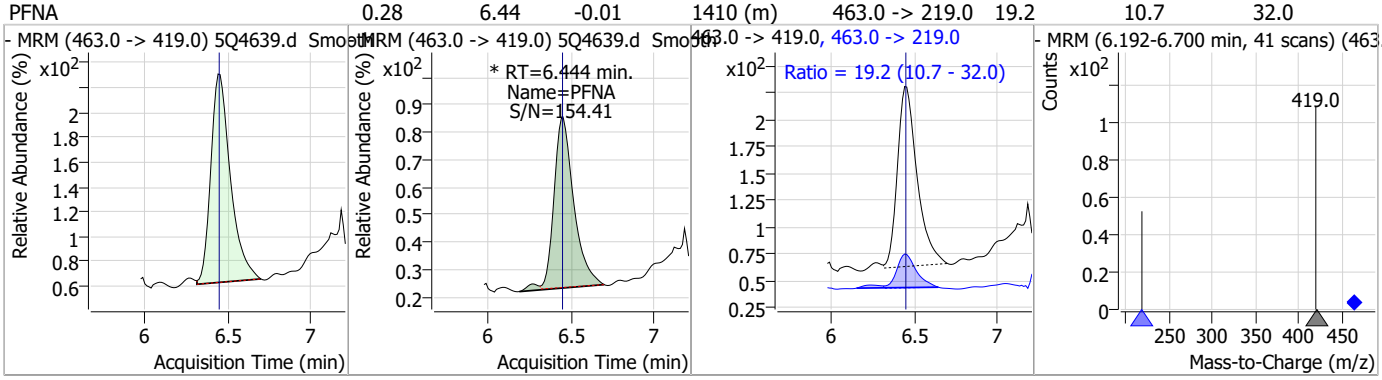
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	28.39	6.24	-0.20	25175	499.0 -> 99.0	48.2	31.6	94.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.30	6.44	-0.01	113636				

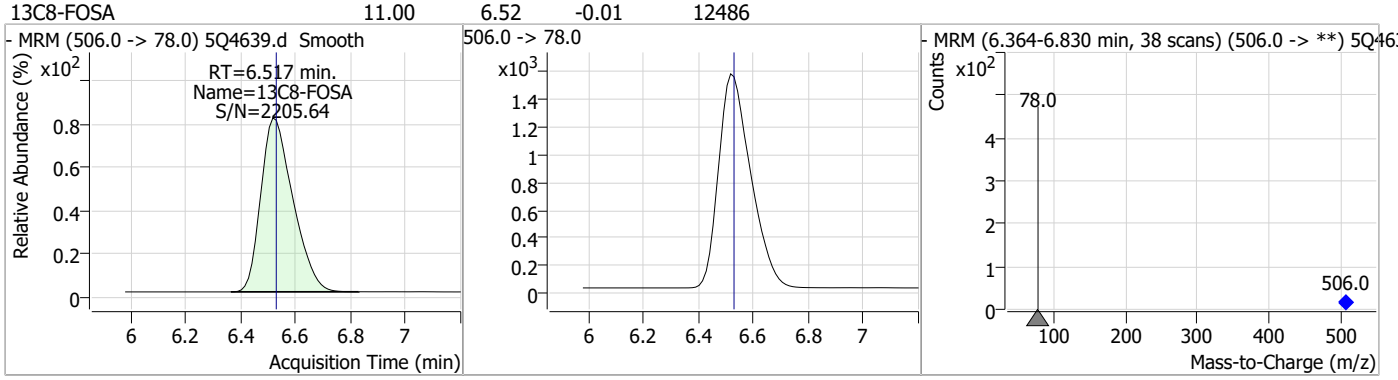


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.28	6.44	-0.01	1410 (m)	463.0 -> 219.0	19.2	10.7	32.0

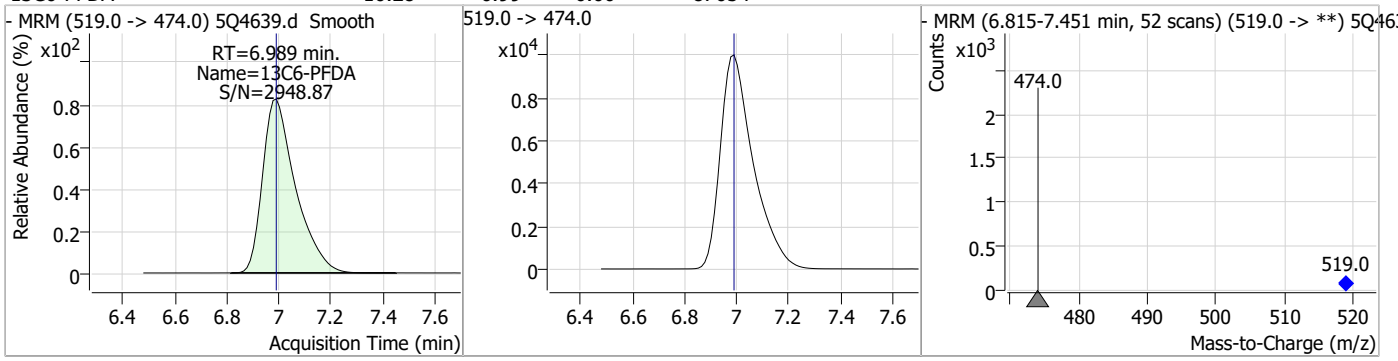


Perfluorinated Compounds by LC/MS/MS

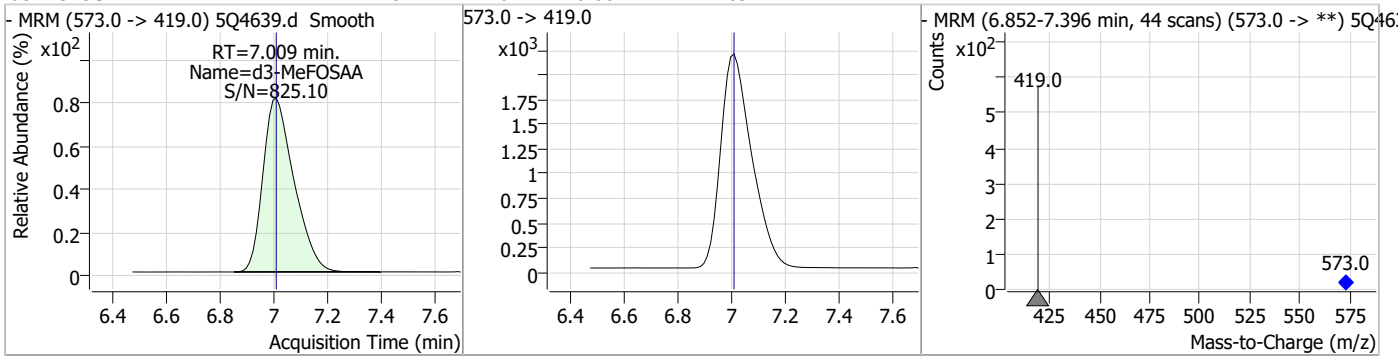
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.00	6.52	-0.01	12486				



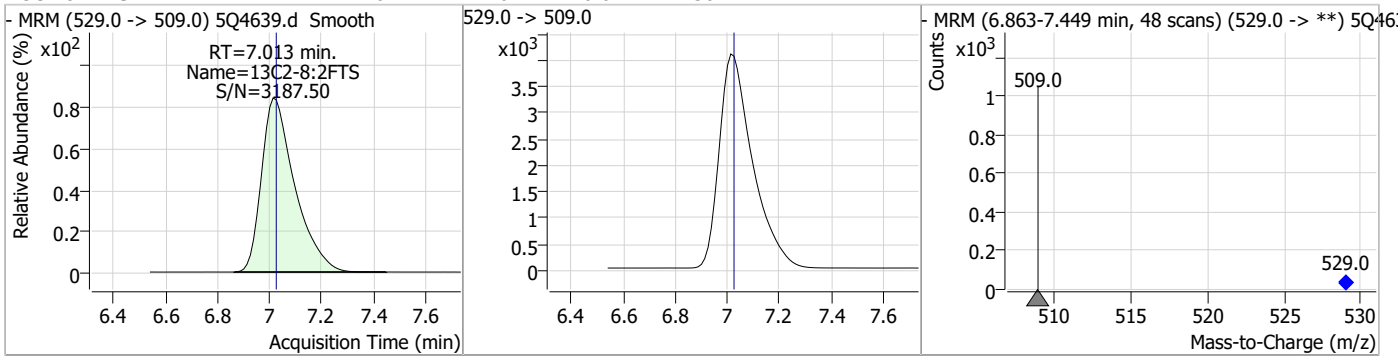
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.28	6.99	0.00	87654				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.91	7.01	0.00	17409				

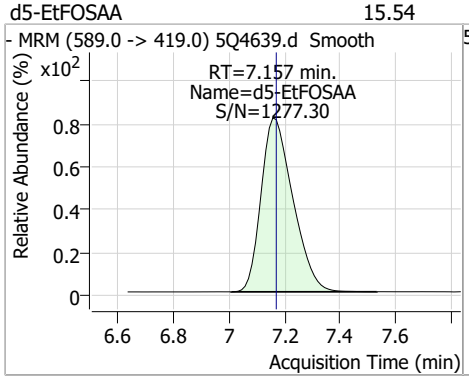


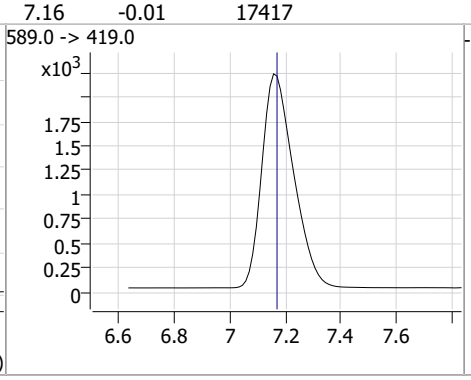
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.11	7.01	-0.01	36174				

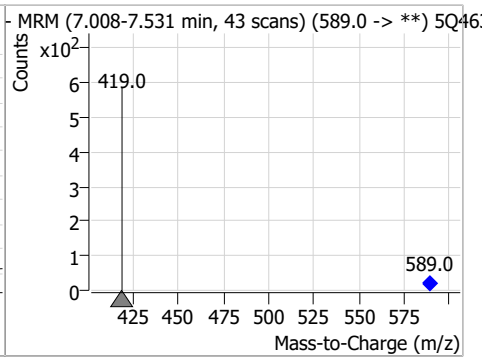


Perfluorinated Compounds by LC/MS/MS

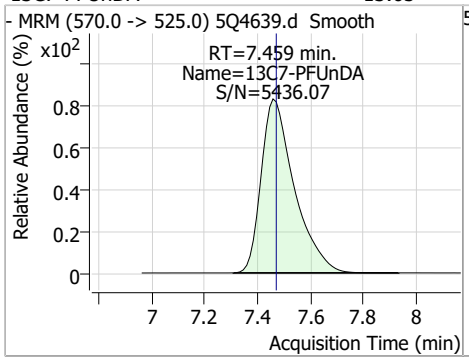
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.54	7.16	-0.01	17417				

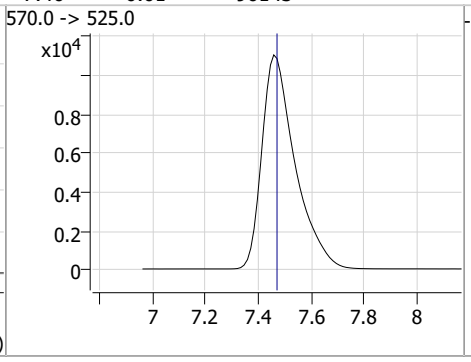


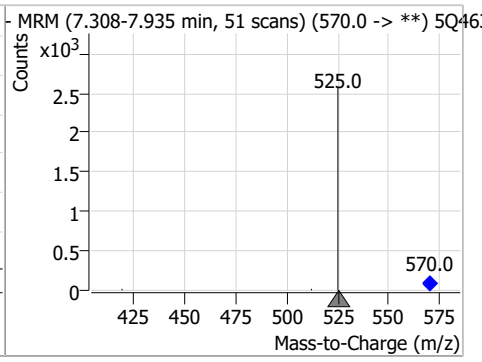




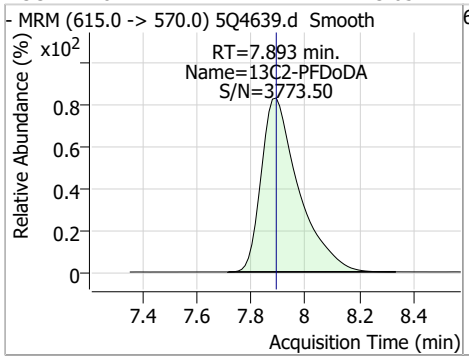
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.65	7.46	-0.01	96143				

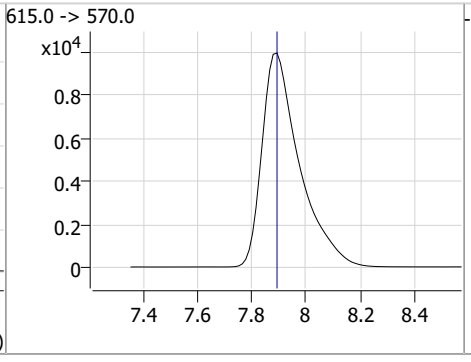


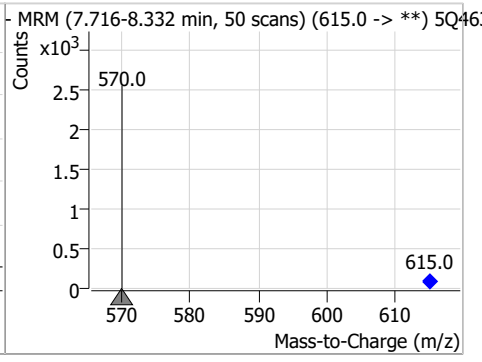




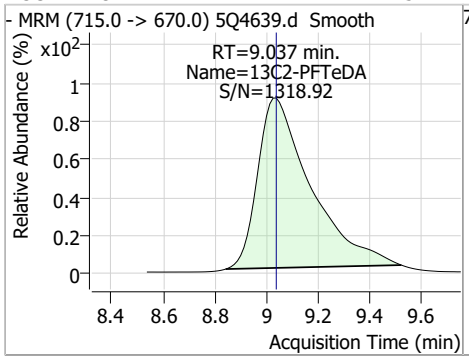
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.05	7.89	0.00	94578				

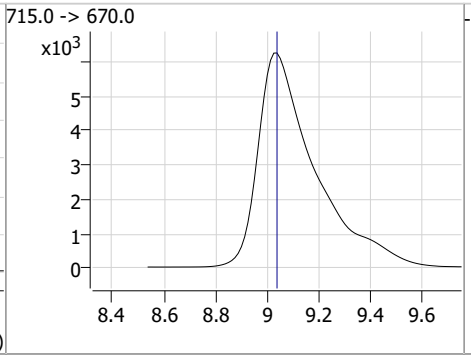


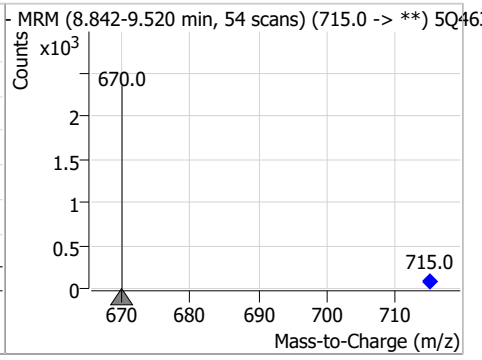




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.45	9.04	0.00	86387				







Manual Integration Approval Summary

Sample Number: FA98286-6
Lab FileID: 5Q4639.D
Injection Time: 09/15/22 07:39
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:59 Anna Ludwig
Supervisor approved: 09/16/22 19:42 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.15	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorononanoic acid	375-95-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4719.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:09:30 AM
Sample Name : fa98286-6
Vial : P3-E3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,5,water

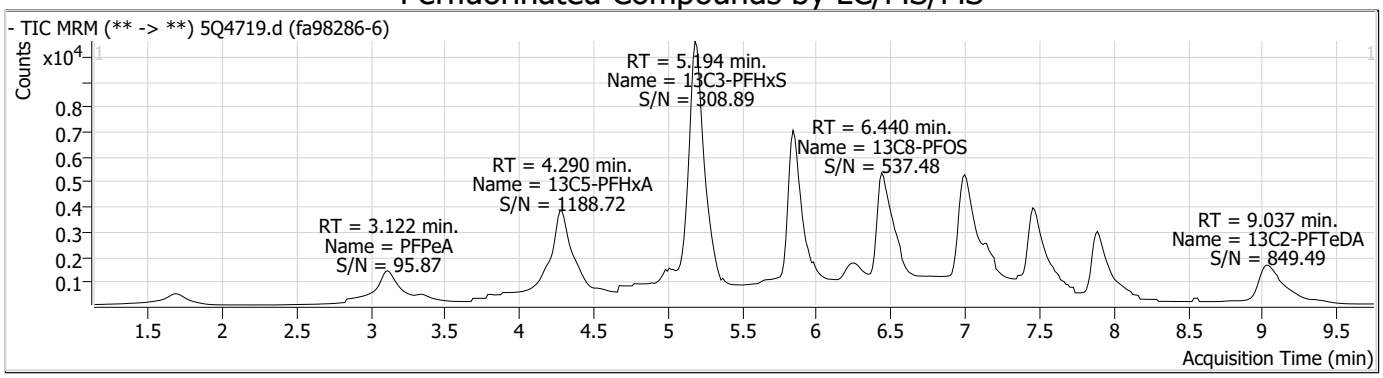
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	5676	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	9176	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	14596	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	13673	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	20644	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	22065	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	17368	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	18904	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	18709	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	17927	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	2677	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	1008	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	1166	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	2094	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	4613	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	7490	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	7019	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	3294	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	1012	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	153	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	3371	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	4613	3.14	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	7490	3.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C2-8:2FTS	7.025	529.0 -> 509.0	7019	3.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.6%		
13C2-PFDoDA	7.893	615.0 -> 570.0	18709	2.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C2-PFTeDA	9.037	715.0 -> 670.0	17927	2.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C3-PFBS	3.349	302.0 -> 99.0	1008	3.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	1166	3.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.1%		
13C4-PFBA	1.687	217.0 -> 172.0	5676	3.18	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%		
13C4-PFHpA	5.163	367.0 -> 322.0	13673	3.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C5-PFHxA	4.290	318.0 -> 273.0	14596	3.34	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C5-PFPeA	3.119	268.0 -> 223.0	9176	3.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C6-PFDA	6.989	519.0 -> 474.0	17368	3.23	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

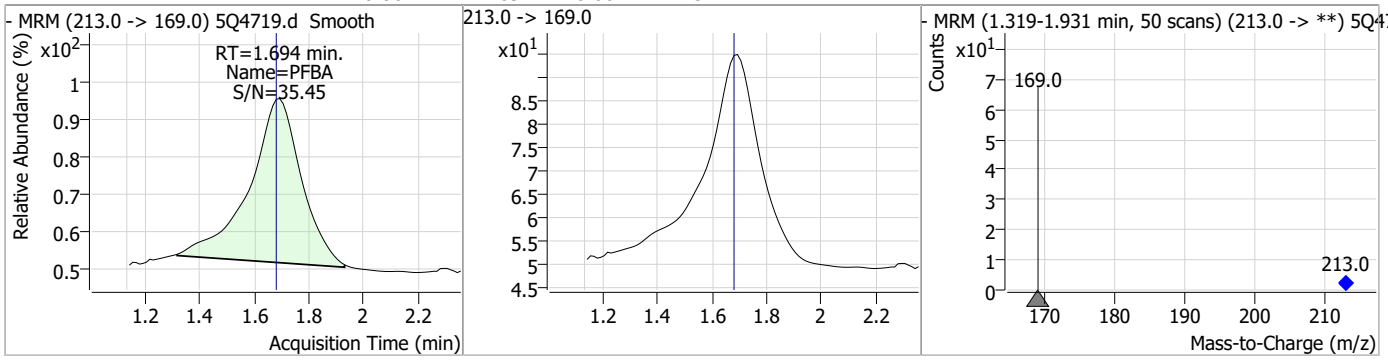
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
13C7-PFUnDA	7.471	570.0 -> 525.0	18904	2.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.4%			
13C8-FOSA	6.517	506.0 -> 78.0	2677	2.36	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.8%			
13C8-PFOA	5.857	421.0 -> 376.0	20644	3.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.1%			
13C8-PFOS	6.440	507.0 -> 99.0	2094	3.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
13C9-PFNA	6.455	472.0 -> 427.0	22065	3.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	3294	3.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	1012	3.01	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.1%			
d3-MeFOSA	6.952	515.0 -> 169.0	153	0.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	3371	3.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	1490	0.75	µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.694	213.0 -> 169.0	577	0.86	µg/L		100
PFBS	3.354	299.0 -> 80.0	1043	1.38	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	4101	0.91	µg/L		97
PFHpS	5.855	449.0 -> 80.0	979	1.24	µg/L	m	80
PFHxA	4.291	313.0 -> 269.0	10129	2.84	µg/L		99
PFHxS	5.195	399.0 -> 80.0	41814	48.29	µg/L		95
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	8975	1.43	µg/L	m	98
PFOS	6.241	499.0 -> 80.0	5475	5.94	µg/L	m	79
PFPeA	3.122	263.0 -> 219.0	4219	1.86	µg/L		100
PFPeS	4.398	349.0 -> 80.0	1699	2.89	µg/L		97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	1002	0.54	µg/L		83
FBSA	4.343	298.0 -> 78.0	0		µg/L	m	1
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

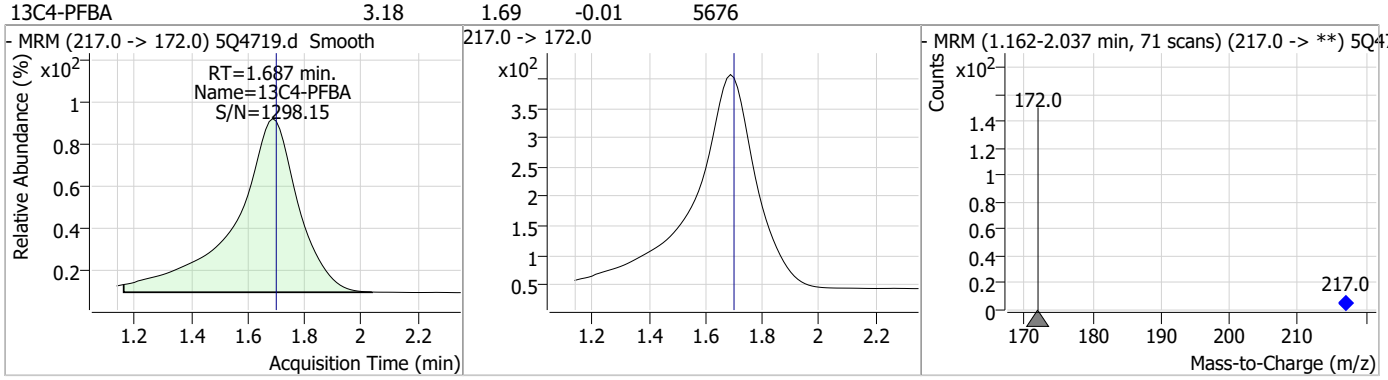
Perfluorinated Compounds by LC/MS/MS



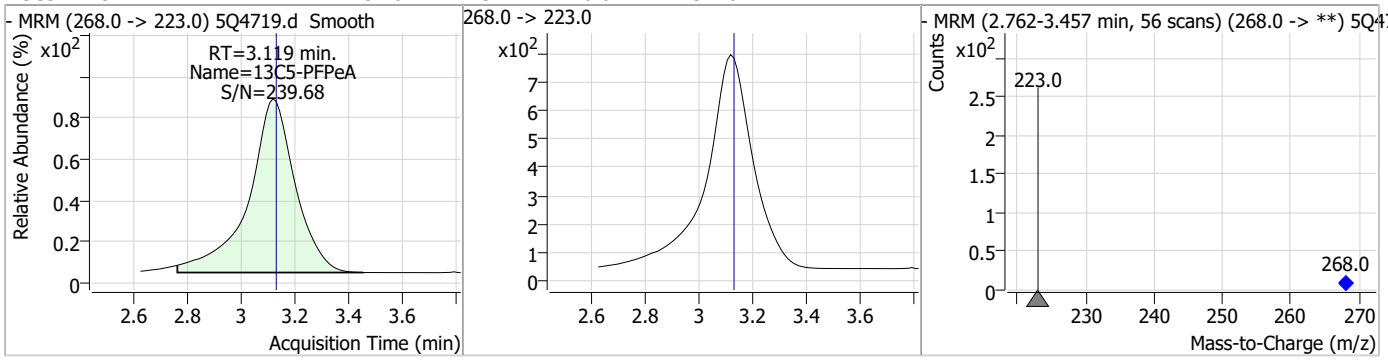
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.86	1.69	0.00	577				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.18	1.69	-0.01	5676				

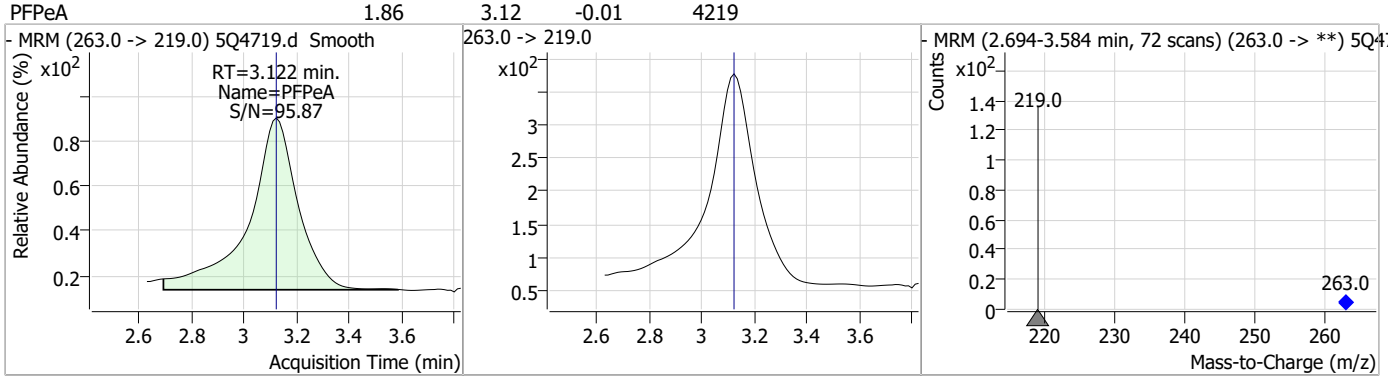


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.16	3.12	-0.01	9176				

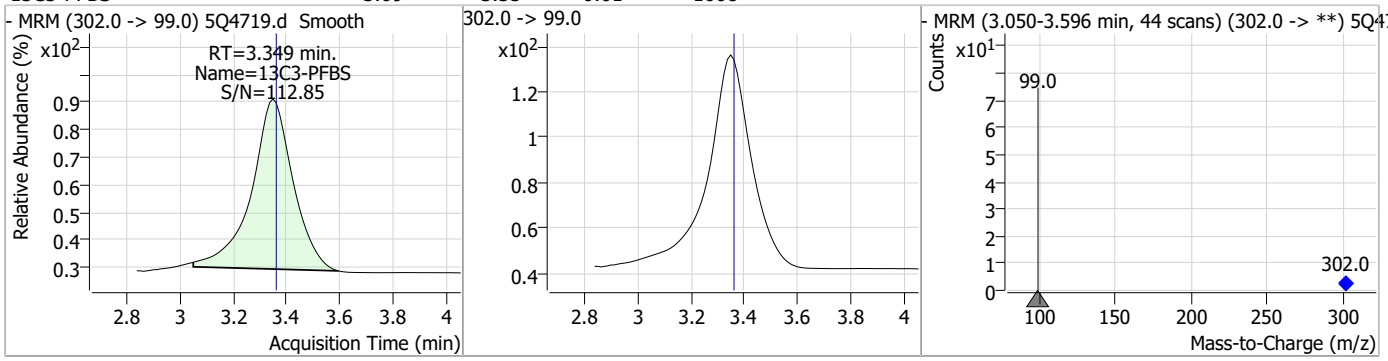


Perfluorinated Compounds by LC/MS/MS

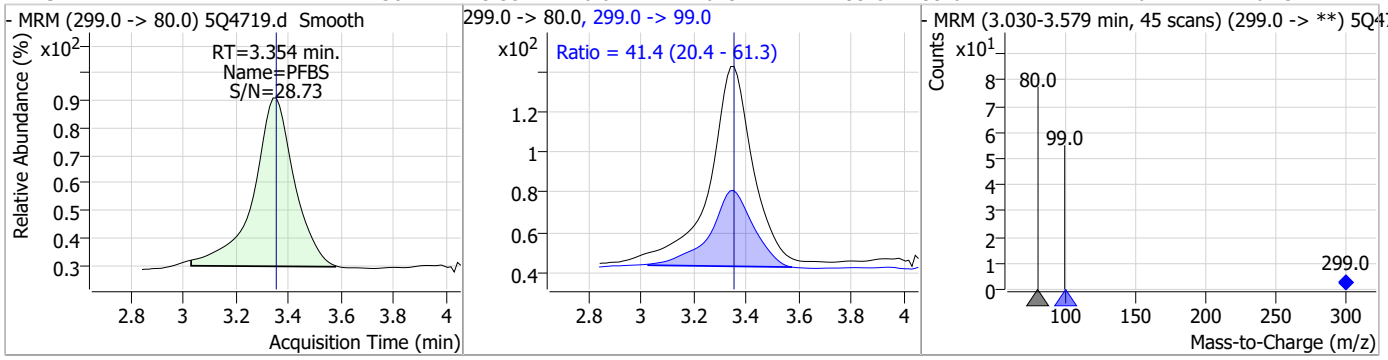
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.86	3.12	-0.01	4219				



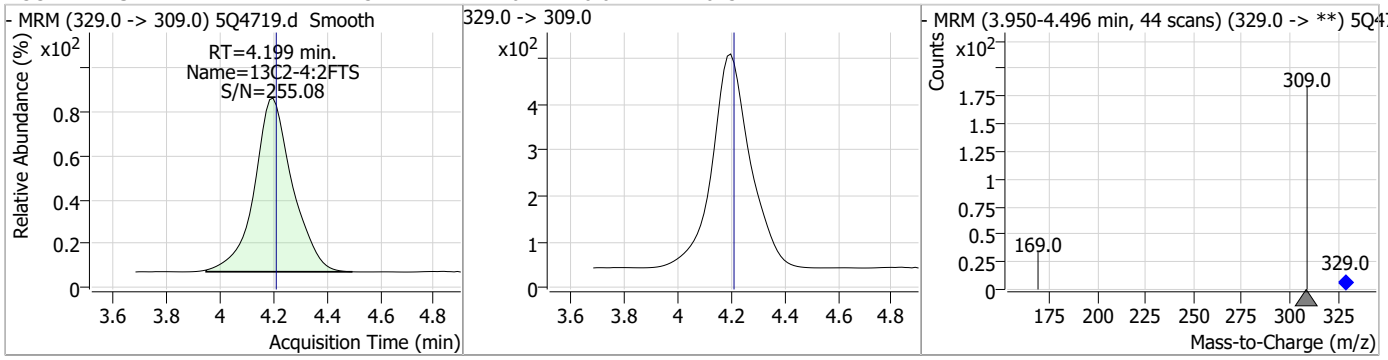
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.09	3.35	-0.01	1008				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.38	3.35	-0.01	1043	299.0 -> 99.0	41.4	20.4	61.3

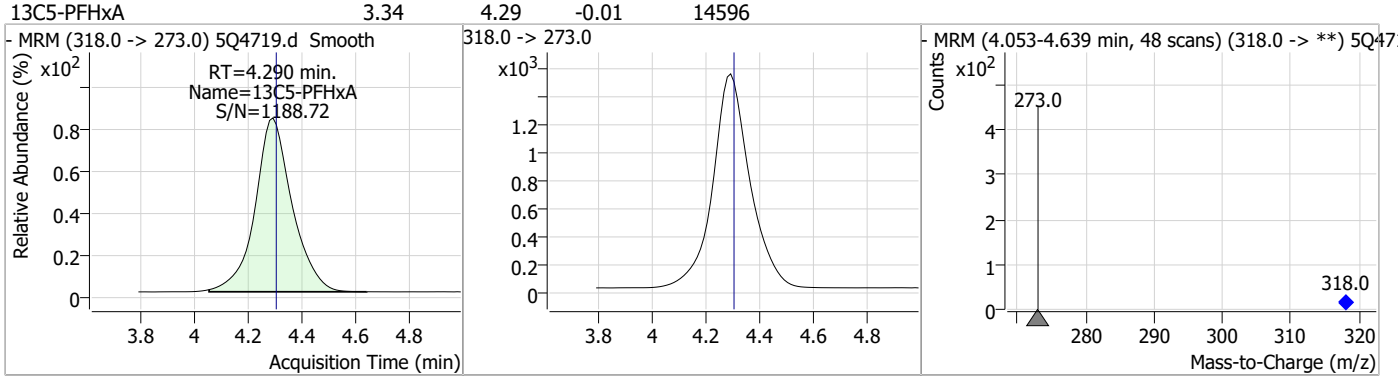


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.14	4.20	-0.01	4613				

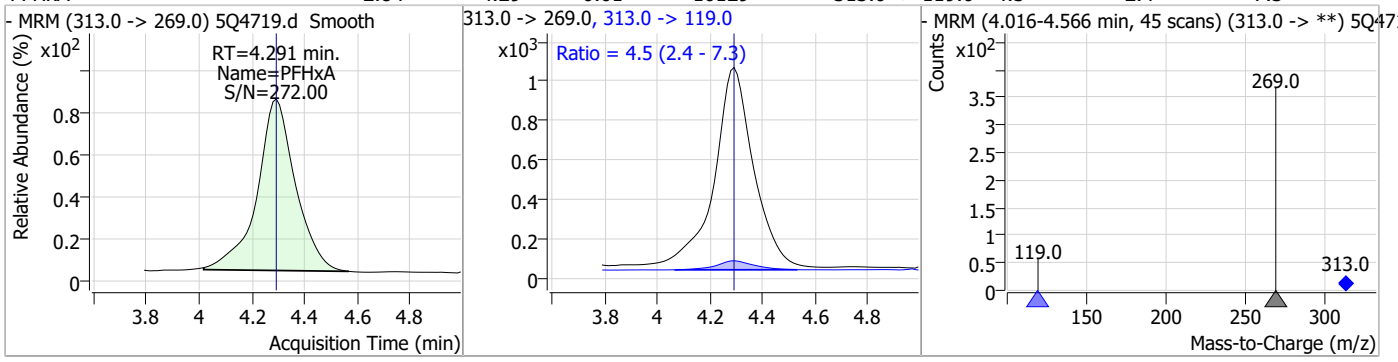


Perfluorinated Compounds by LC/MS/MS

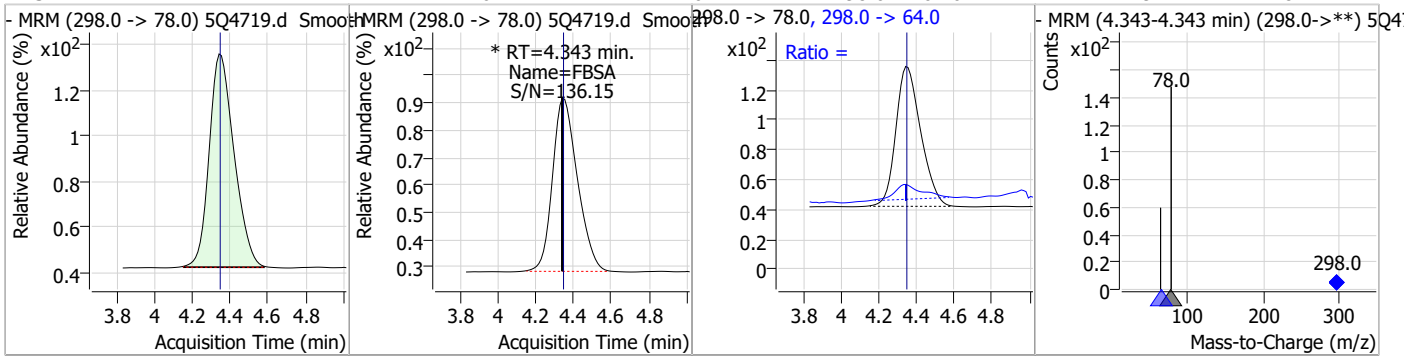
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.34	4.29	-0.01	14596				



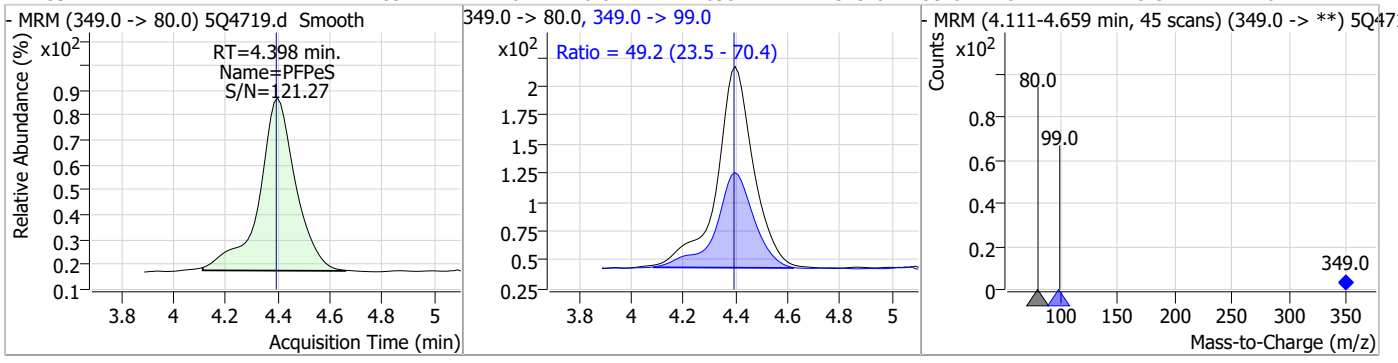
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.84	4.29	-0.01	10129	313.0 -> 119.0	4.5	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA		0		0	298.0 -> 64.0		4.9	14.8

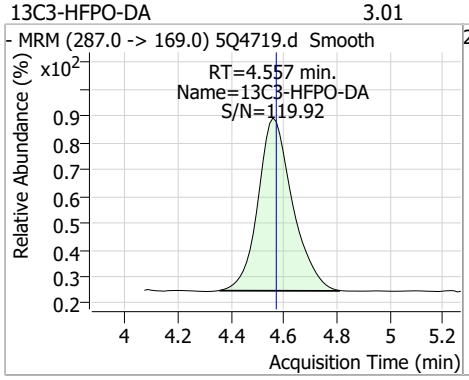


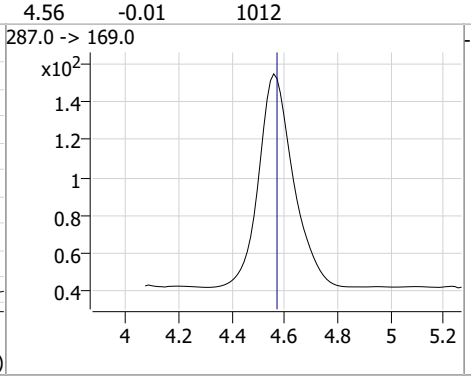
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.89	4.40	-0.01	1699	349.0 -> 99.0	49.2	23.5	70.4

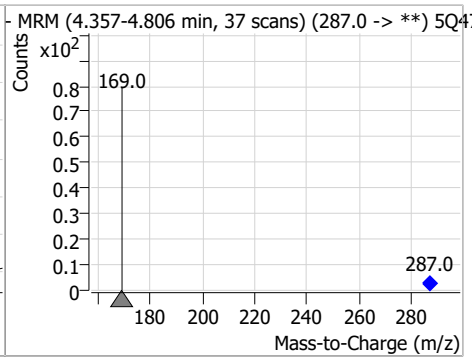


Perfluorinated Compounds by LC/MS/MS

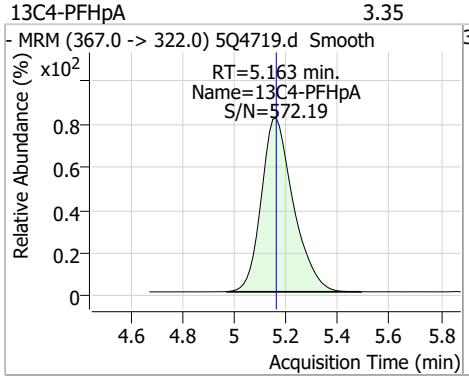
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.01	4.56	-0.01	1012				

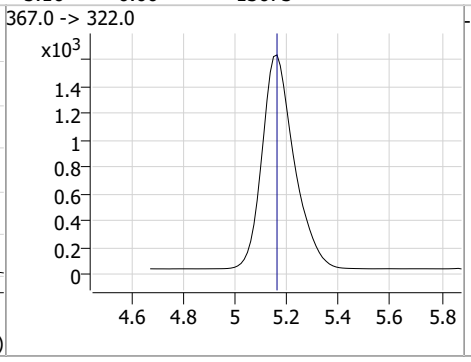


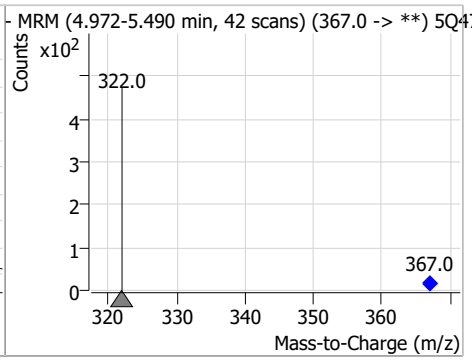




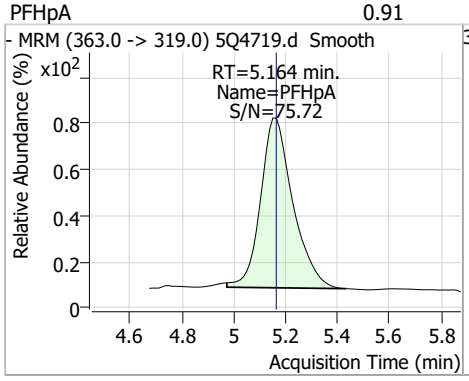
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.35	5.16	0.00	13673				

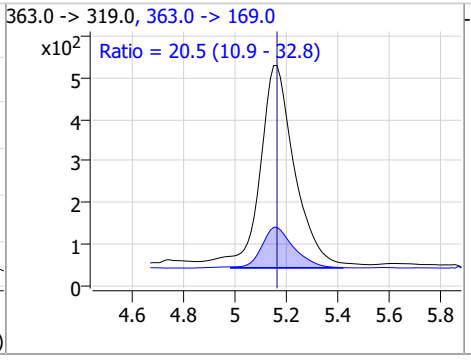


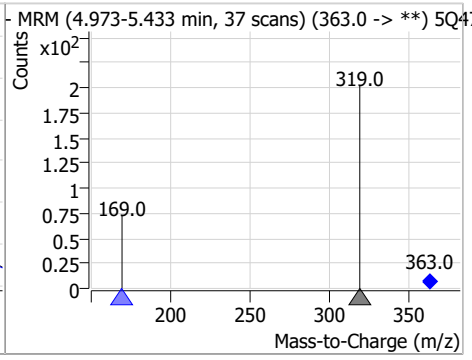




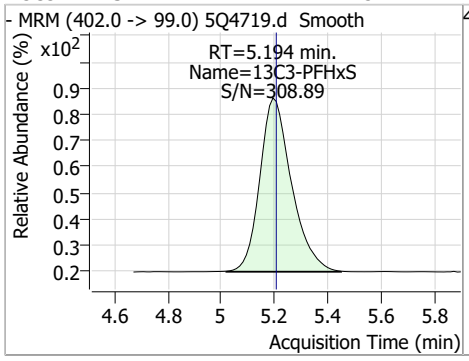
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.91	5.16	0.00	4101	363.0 -> 169.0	20.5	10.9	32.8

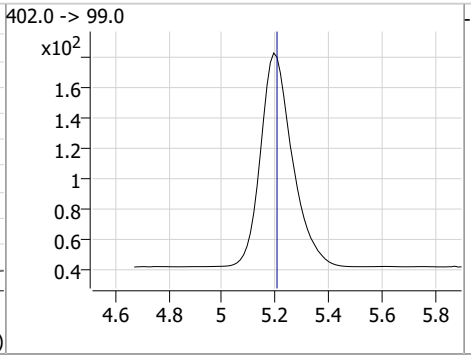


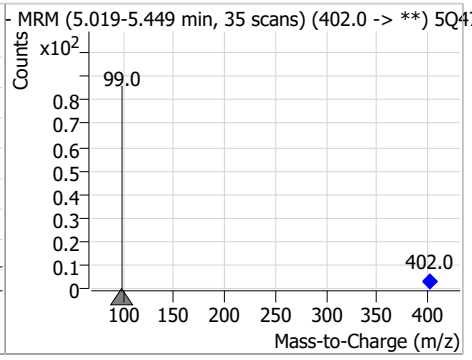




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.42	5.19	-0.01	1166				

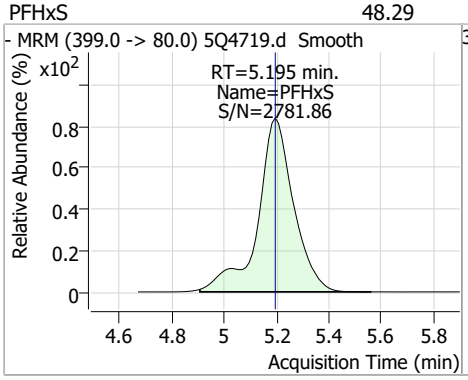


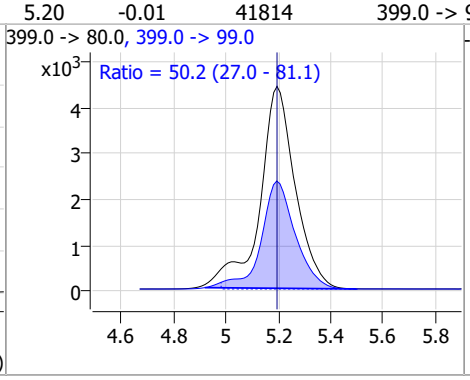


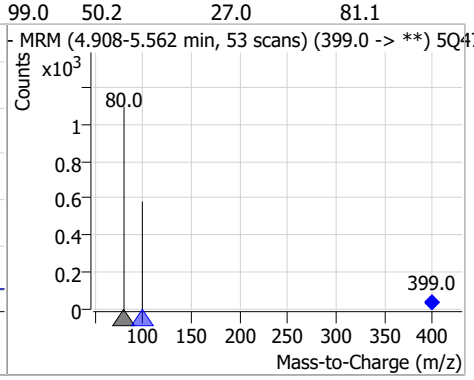


Perfluorinated Compounds by LC/MS/MS

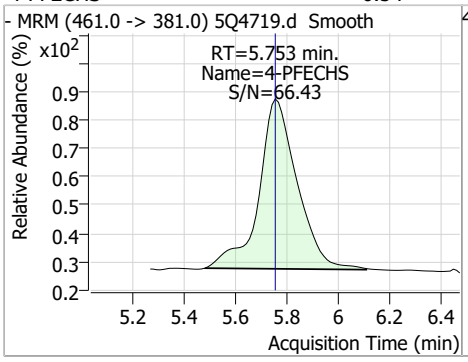
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.29	5.20	-0.01	41814	399.0 -> 99.0	50.2	27.0	81.1

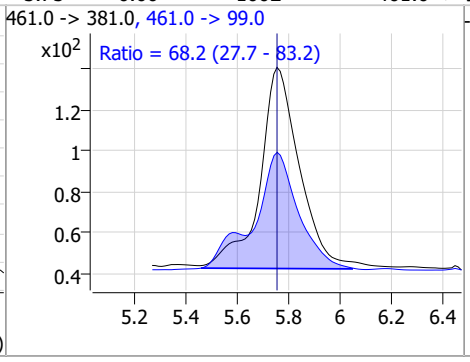


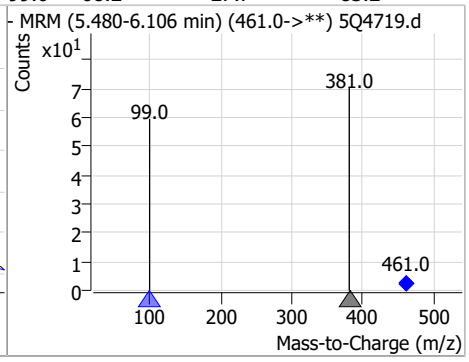




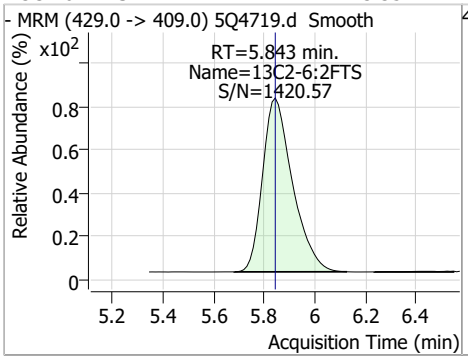
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.54	5.75	0.00	1002	461.0 -> 99.0	68.2	27.7	83.2

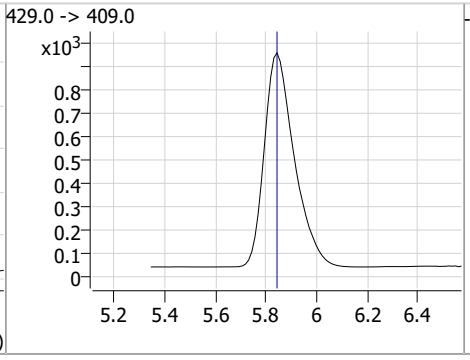


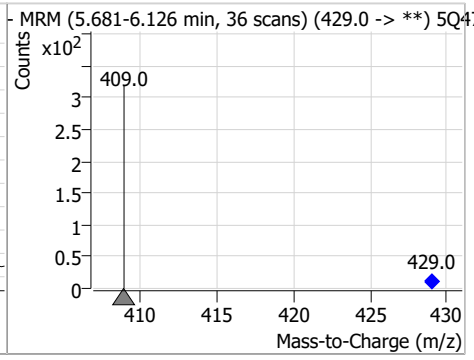




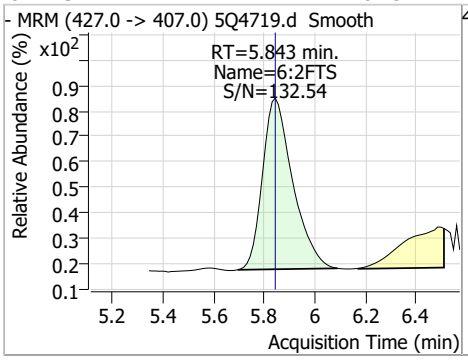
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.35	5.84	0.00	7490				

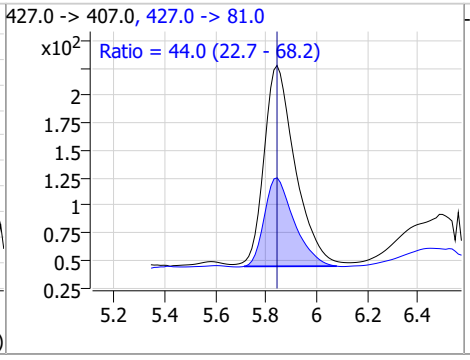


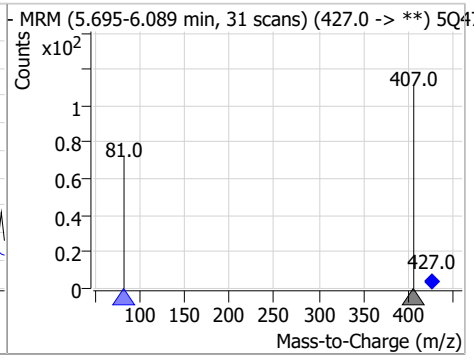




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.75	5.84	0.00	1490	427.0 -> 81.0	44.0	22.7	68.2

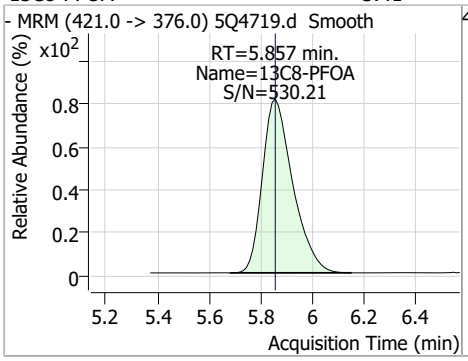


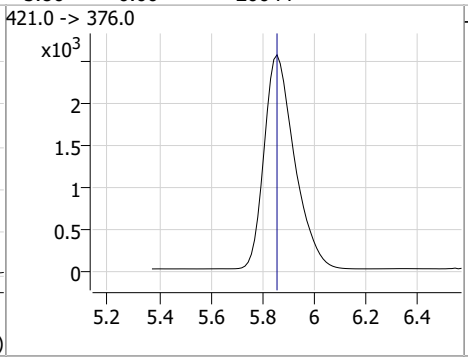


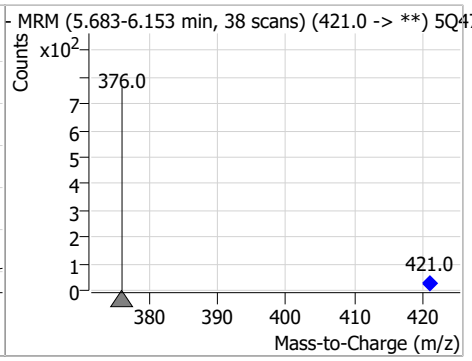


Perfluorinated Compounds by LC/MS/MS

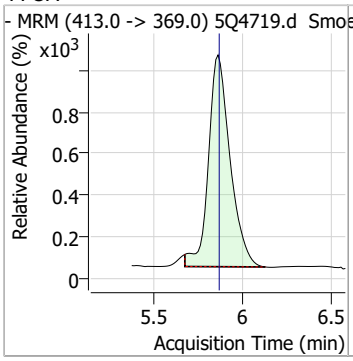
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.41	5.86	0.00	20644				

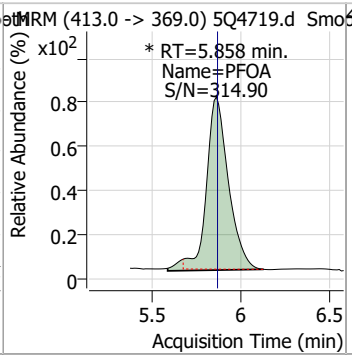


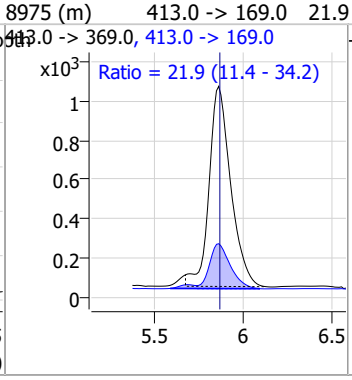


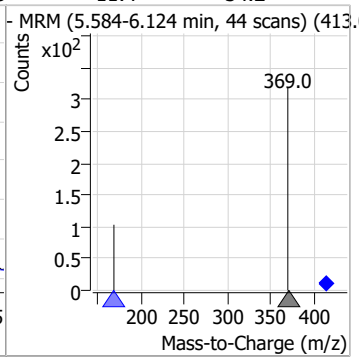


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.43	5.86	0.00	8975 (m)	413.0 -> 169.0	21.9	11.4	34.2

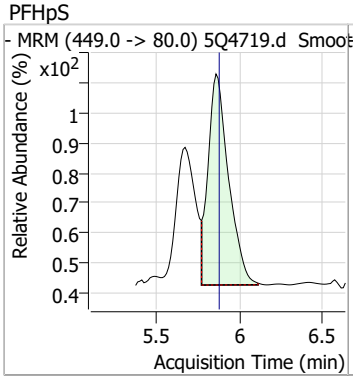


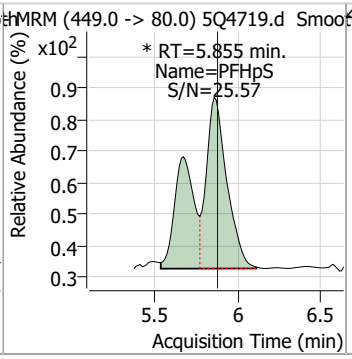


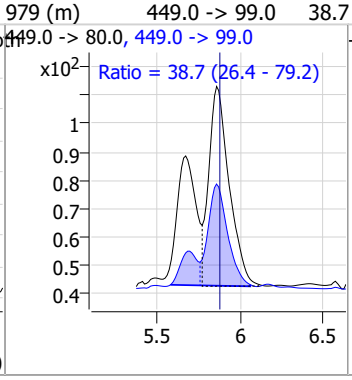


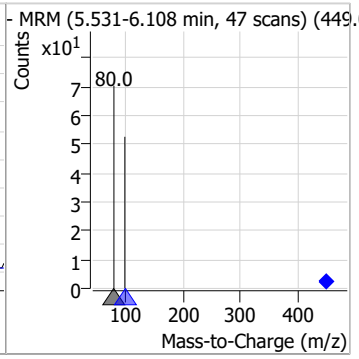


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.24	5.85	-0.01	979 (m)	449.0 -> 99.0	38.7	26.4	79.2

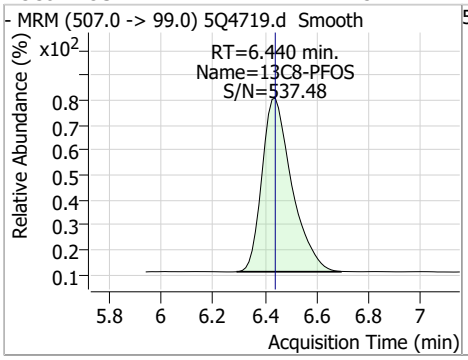


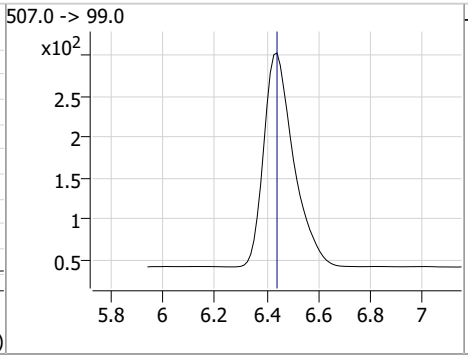


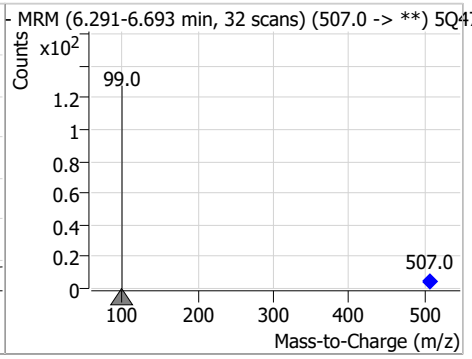




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.21	6.44	0.00	2094				

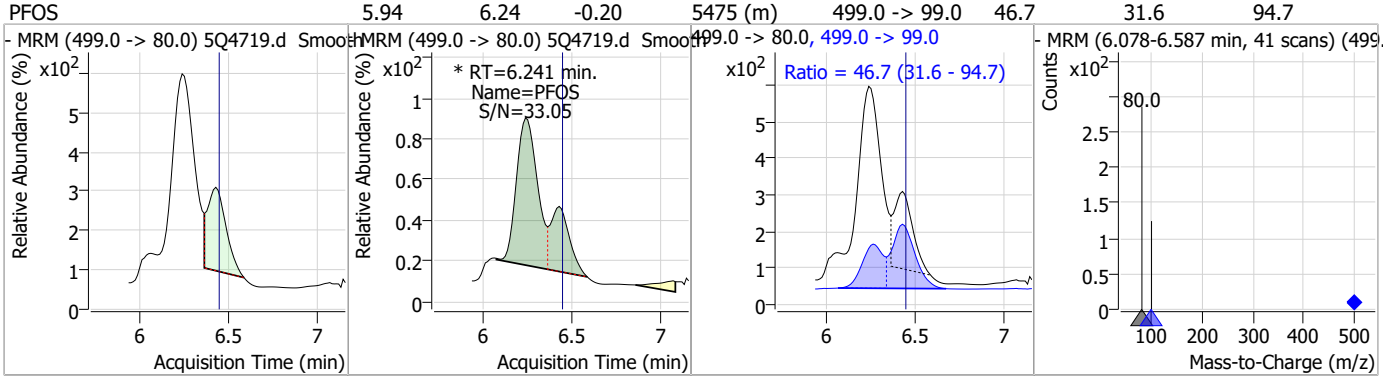




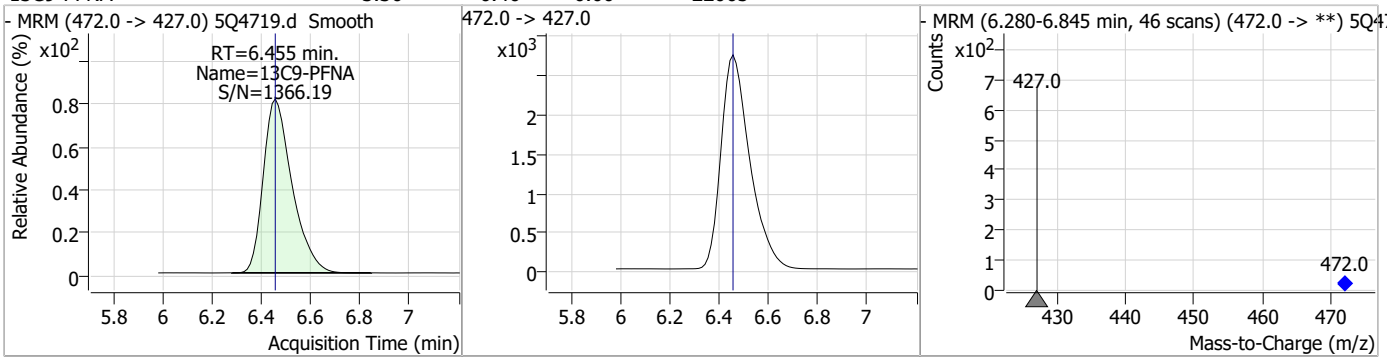


Perfluorinated Compounds by LC/MS/MS

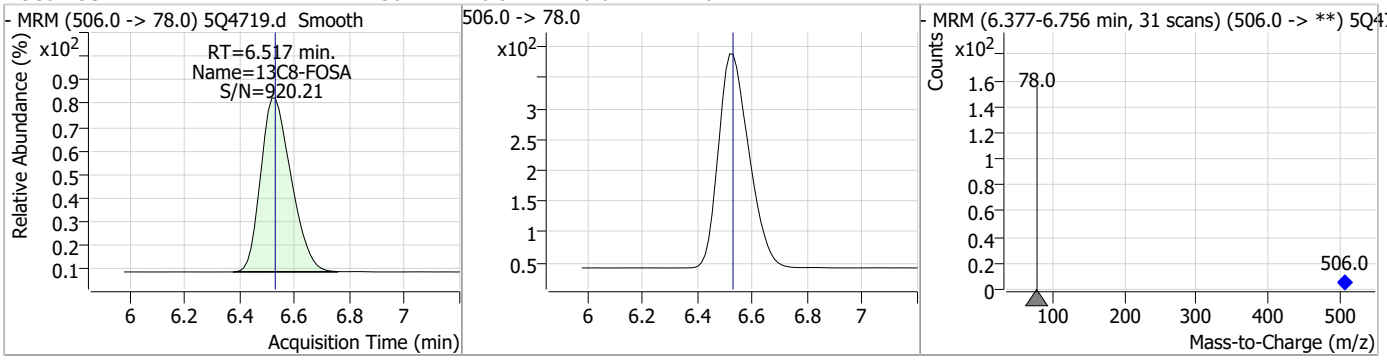
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5.94	6.24	-0.20	5475 (m)	499.0 -> 99.0	46.7	31.6	94.7



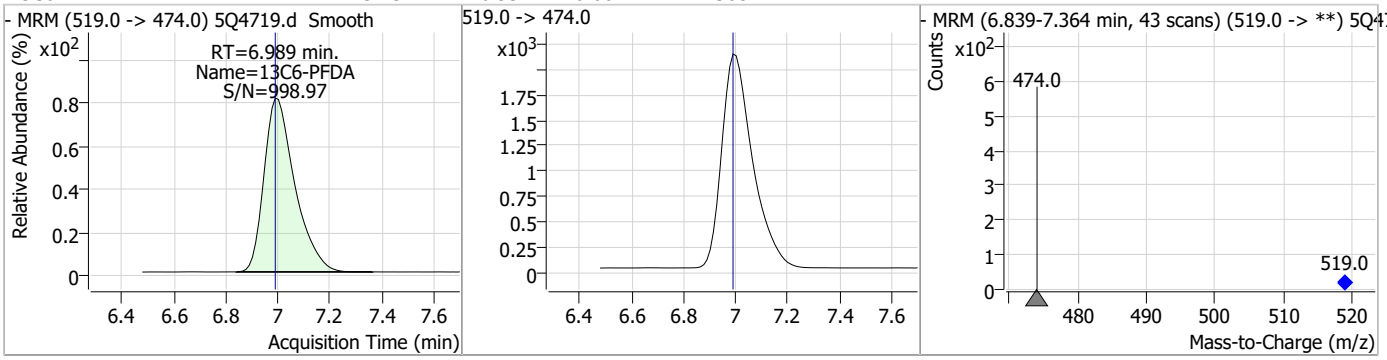
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.36	6.46	0.00	22065				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.36	6.52	-0.01	2677				

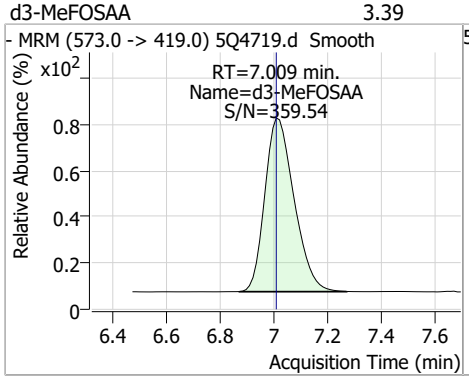


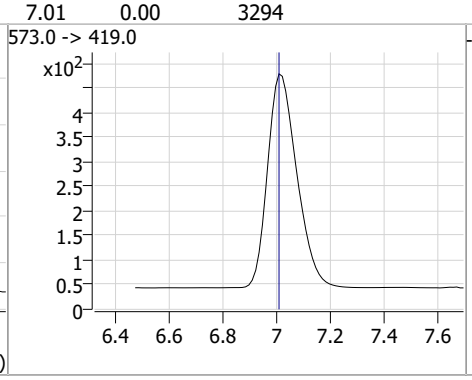
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.23	6.99	0.00	17368				

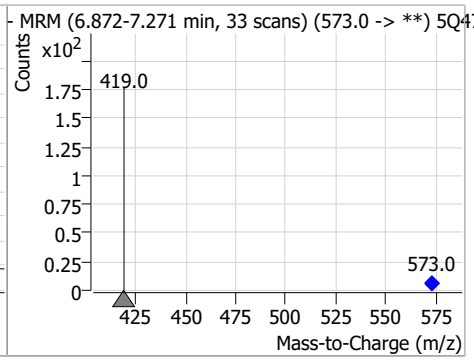


Perfluorinated Compounds by LC/MS/MS

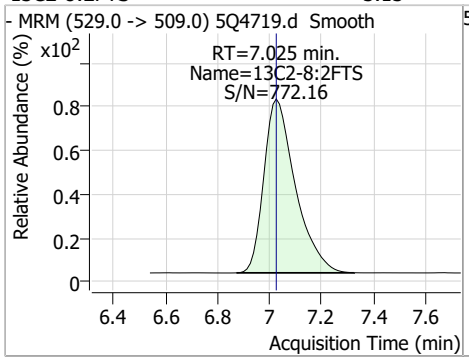
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.39	7.01	0.00	3294				

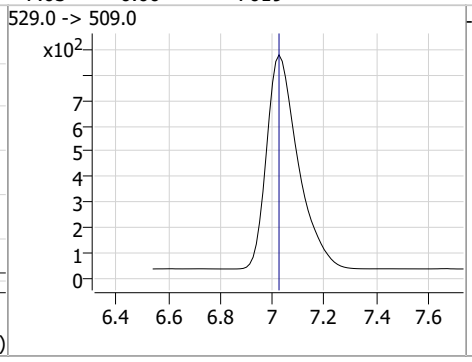


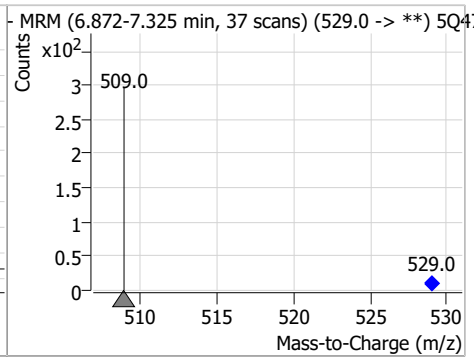




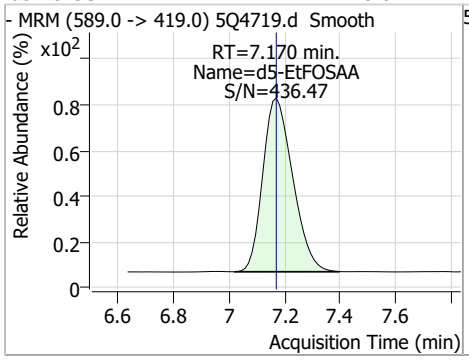
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.13	7.03	0.00	7019				

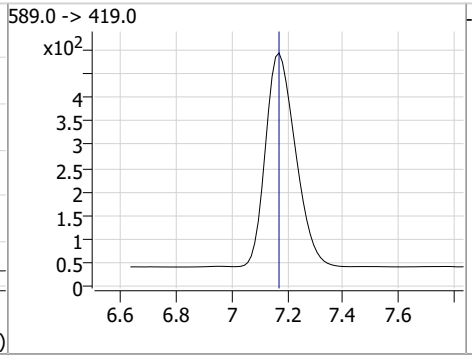


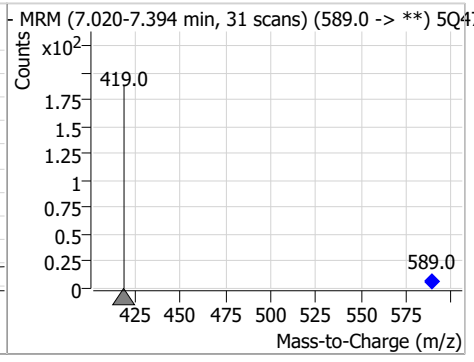




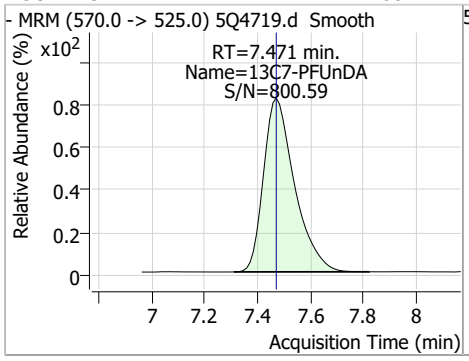
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.01	7.17	0.00	3371				

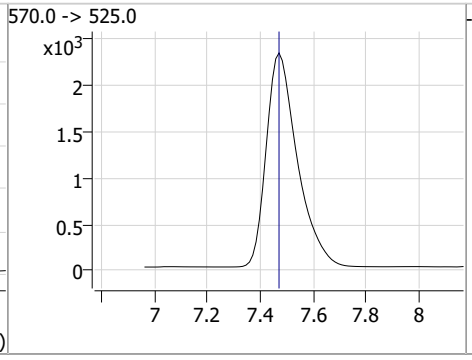


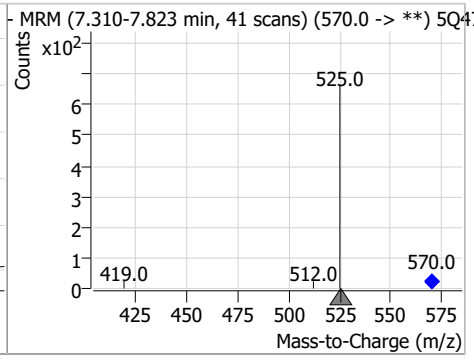




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.68	7.47	0.00	18904				

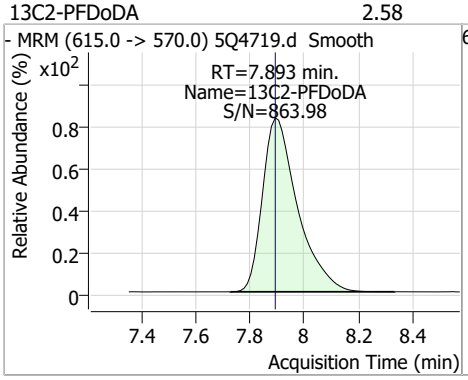


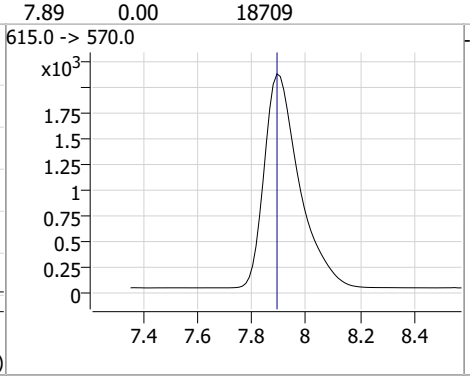


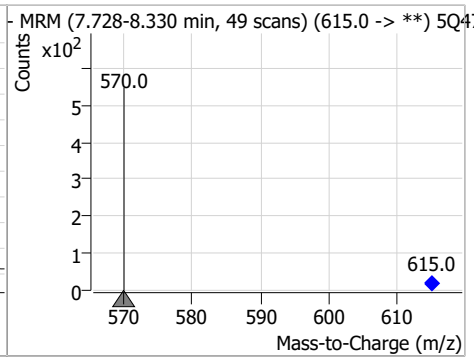


Perfluorinated Compounds by LC/MS/MS

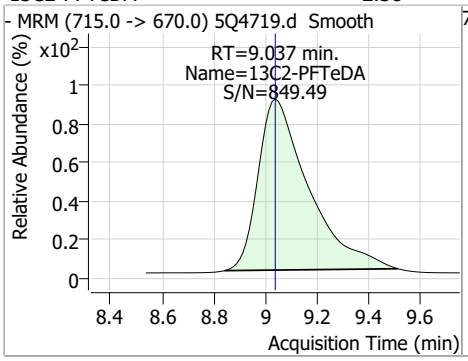
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.58	7.89	0.00	18709				

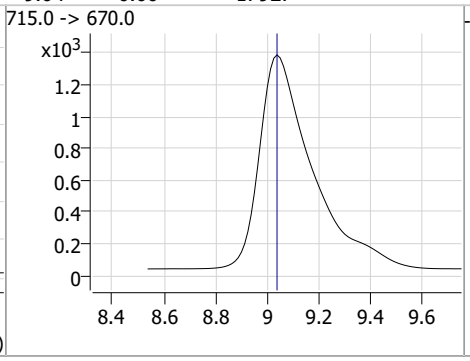


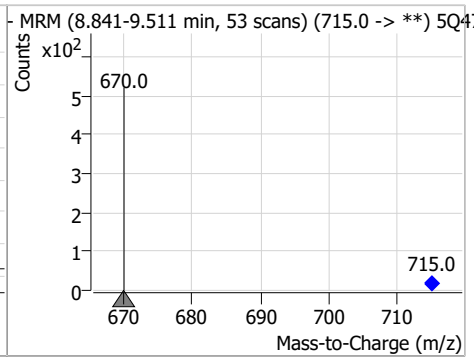




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.38	9.04	0.00	17927				







Manual Integration Approval Summary

Sample Number: FA98286-6
Lab FileID: 5Q4719.D
Injection Time: 09/16/22 06:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:59 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:12

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4642.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:25:13 AM
Sample Name : fa98286-7
Vial : P1-E9
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

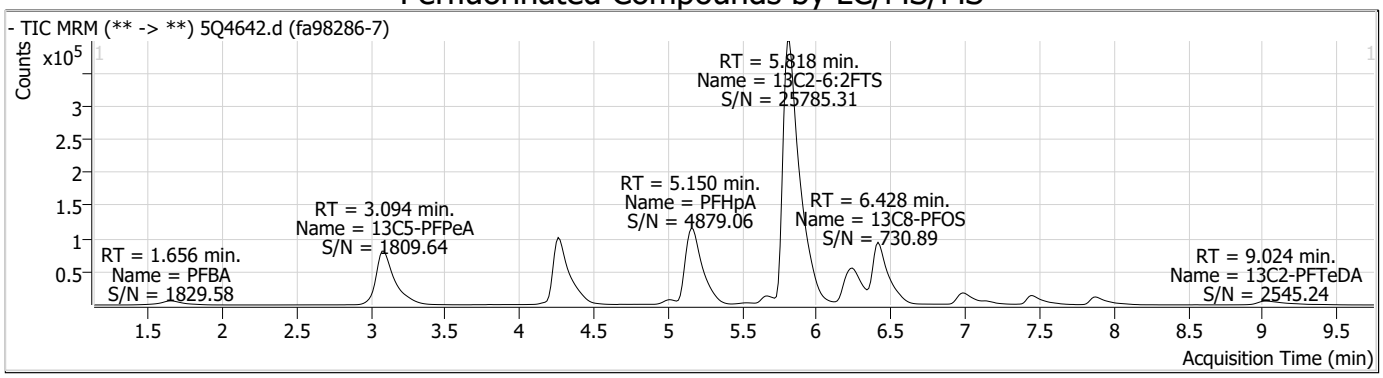
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.662	217.0 -> 172.0	19942	20.00 µg/L	-0.037
M5-PFPeA	3.094	268.0 -> 223.0	34291	20.00 µg/L	-0.037
M5-PFHxA	4.278	318.0 -> 273.0	57332	20.00 µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	55056	20.00 µg/L	-0.014
M8-PFOA	5.845	421.0 -> 376.0	83969	20.00 µg/L	-0.012
M9-PFNA	6.443	472.0 -> 427.0	96839	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	80174	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	94217	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	92258	20.00 µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	79952	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	7839	20.00 µg/L	-0.012
M3-PFBS	3.324	302.0 -> 99.0	4277	20.00 µg/L	-0.037
M3-PFHxS	5.181	402.0 -> 99.0	4735	20.00 µg/L	-0.025
M8-PFOS	6.428	507.0 -> 99.0	9065	20.00 µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	19250	20.00 µg/L	-0.025
M2-6:2FTS	5.818	429.0 -> 409.0	132209	20.00 µg/L	-0.025
M2-8:2FTS	7.013	529.0 -> 509.0	33061	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	15945	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4085	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	190	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	16158	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	19250	13.11 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.5%	
13C2-6:2FTS	5.818	429.0 -> 409.0	132209	59.13 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 295.7%	
13C2-8:2FTS	7.013	529.0 -> 509.0	33061	14.72 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%	
13C2-PFDoDA	7.879	615.0 -> 570.0	92258	12.73 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.6%	
13C2-PFTeDA	9.024	715.0 -> 670.0	79952	10.60 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.0%	
13C3-PFBS	3.324	302.0 -> 99.0	4277	13.13 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.6%	
13C3-PFHxS	5.181	402.0 -> 99.0	4735	13.88 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%	
13C4-PFBA	1.662	217.0 -> 172.0	19942	11.16 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.8%	
13C4-PFHpA	5.149	367.0 -> 322.0	55056	13.49 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.4%	
13C5-PFHxA	4.278	318.0 -> 273.0	57332	13.11 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.6%	
13C5-PFPeA	3.094	268.0 -> 223.0	34291	11.80 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.0%	
13C6-PFDA	6.989	519.0 -> 474.0	80174	14.89 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

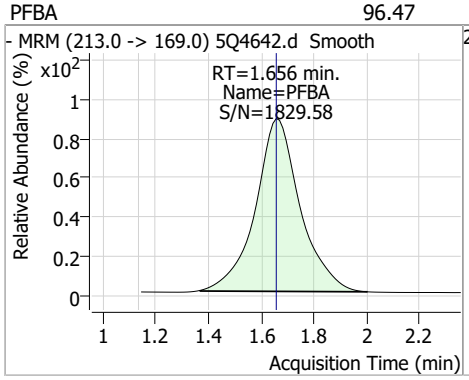
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	94217	13.38	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%			
13C8-FOSA	6.517	506.0 -> 78.0	7839	6.91	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.5%			
13C8-PFOA	5.845	421.0 -> 376.0	83969	13.88	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
13C8-PFOS	6.428	507.0 -> 99.0	9065	13.88	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
13C9-PFNA	6.443	472.0 -> 427.0	96839	14.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15945	16.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4085	12.17	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.8%			
d3-MeFOSA	6.965	515.0 -> 169.0	190	0.62	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.1%			
d5-EtFOSAA	7.157	589.0 -> 419.0	16158	14.41	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.819	427.0 -> 407.0	1901131	271.12	µg/L		97
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.656	213.0 -> 169.0	45315	96.47	µg/L		100
PFBS	3.329	299.0 -> 80.0	3030	4.72	µg/L		100
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	352441	97.44	µg/L		100
PFHpS	5.855	449.0 -> 80.0	21169	31.06	µg/L	m	93
PFHxA	4.279	313.0 -> 269.0	631717	225.52	µg/L		100
PFHxS	5.183	399.0 -> 80.0	319243	453.96	µg/L	m	97
PFNA	6.444	463.0 -> 419.0	13152	3.03	µg/L	m	97
PFNS	6.738	549.0 -> 80.0	0		µg/L	m	1
PFOA	5.845	413.0 -> 369.0	121592	23.88	µg/L	m	98
PFOS	6.241	499.0 -> 80.0	597081	747.91	µg/L	m	84
PFPeA	3.097	263.0 -> 219.0	668942	394.76	µg/L		100
PFPeS	4.385	349.0 -> 80.0	9216	18.44	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.741	461.0 -> 381.0	12407	8.21	µg/L		84
FBSA	4.356	298.0 -> 78.0	19002	19.98	µg/L	m	100
FHxSA	5.674	398.0 -> 78.0	70703	82.78	µg/L		99

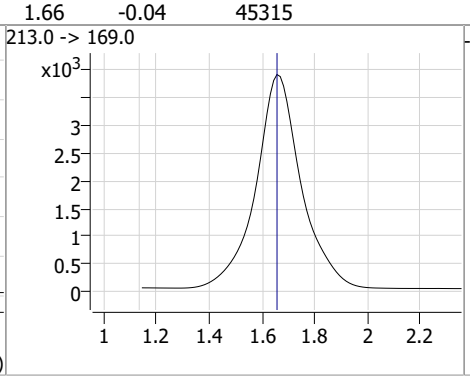
 # = Qualifier out of range, m = manually integrated, + = Area summed

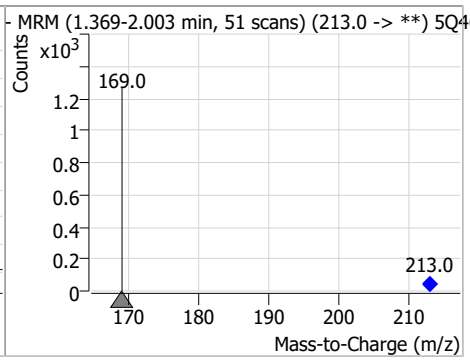
Perfluorinated Compounds by LC/MS/MS



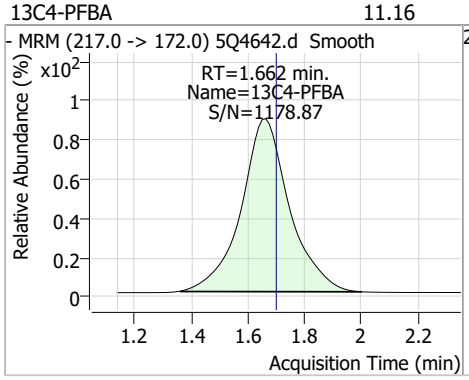
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	96.47	1.66	-0.04	45315				

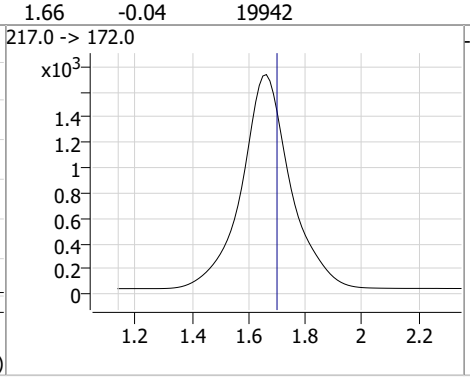


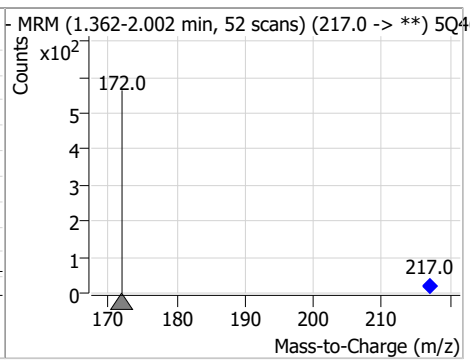




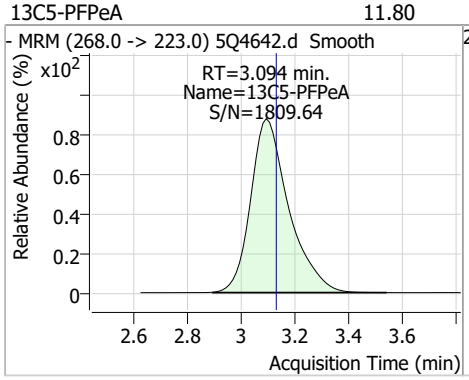
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.16	1.66	-0.04	19942				

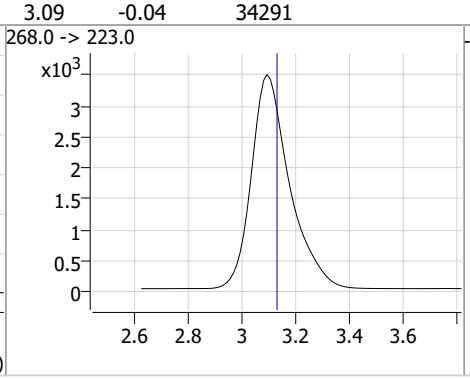


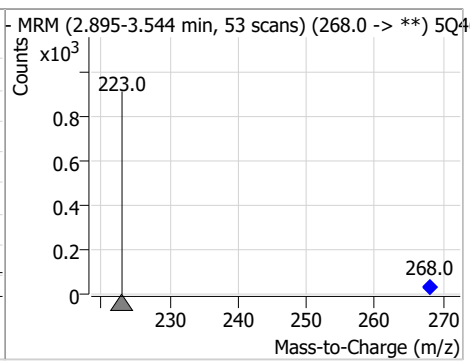




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.80	3.09	-0.04	34291				

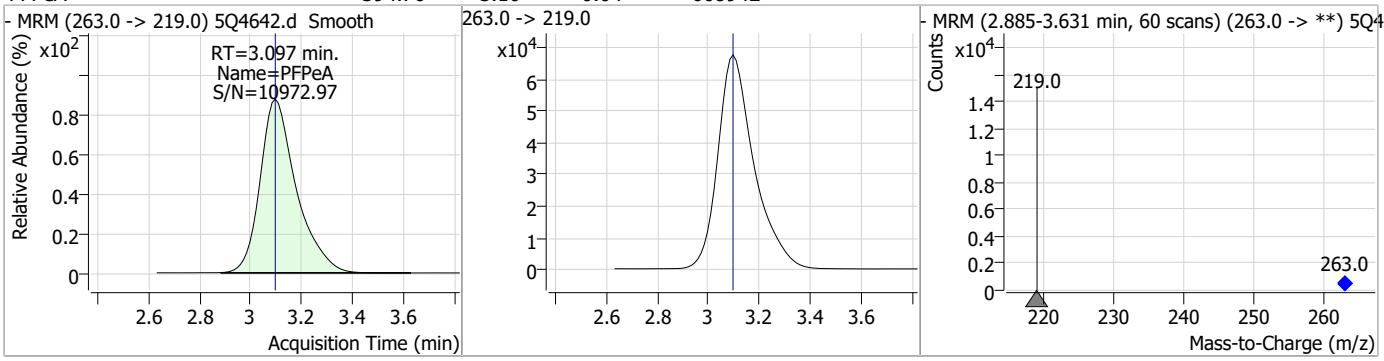




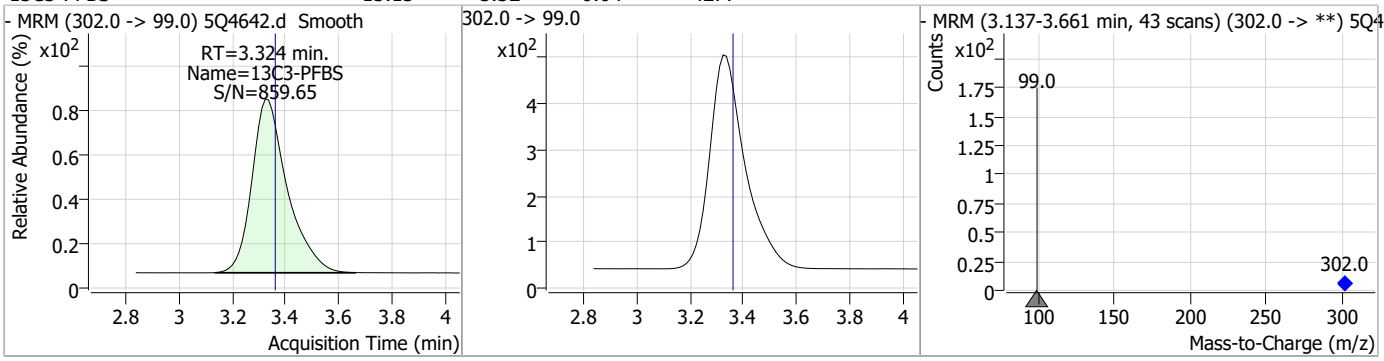


Perfluorinated Compounds by LC/MS/MS

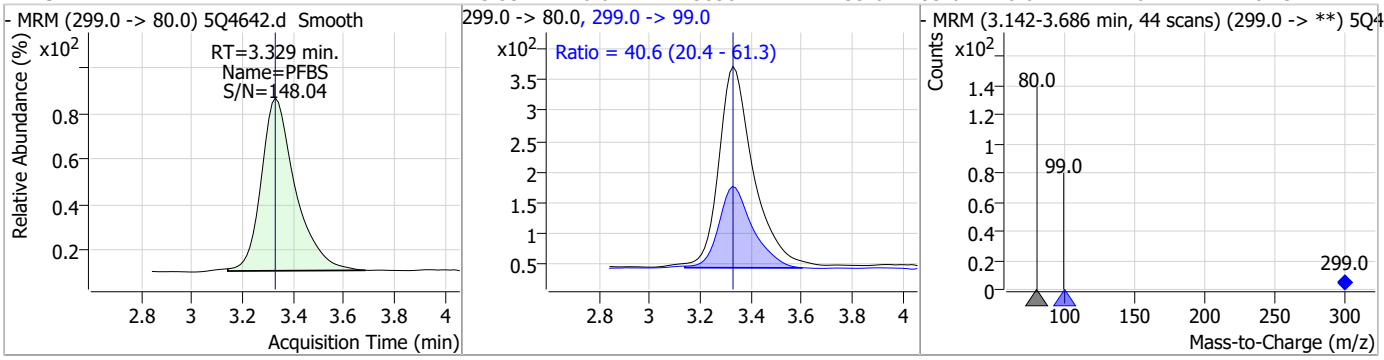
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	394.76	3.10	-0.04	668942				



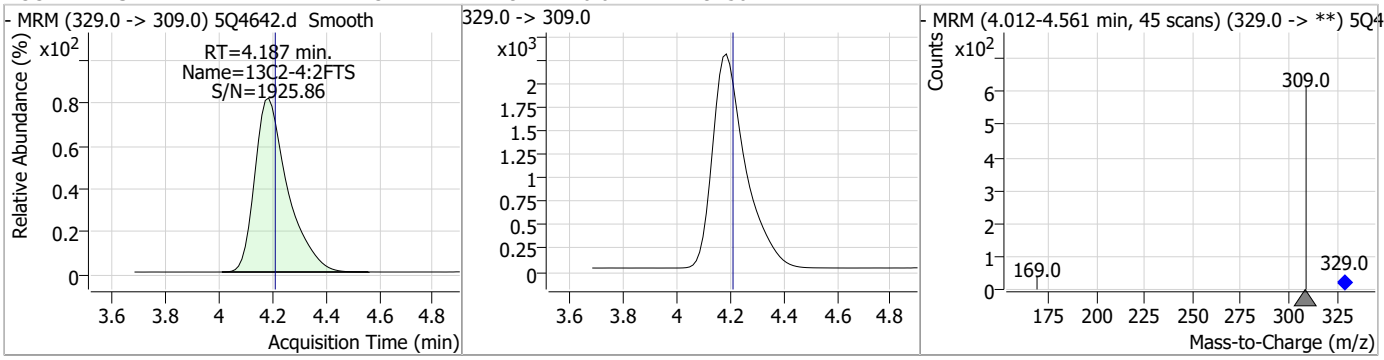
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.13	3.32	-0.04	4277				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.72	3.33	-0.04	3030	299.0 -> 99.0	40.6	20.4	61.3

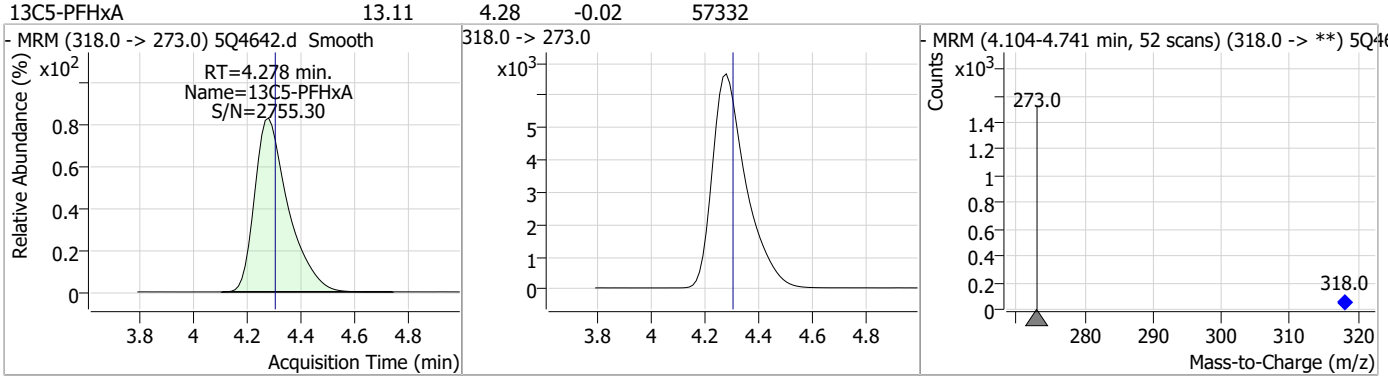


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.11	4.19	-0.02	19250				

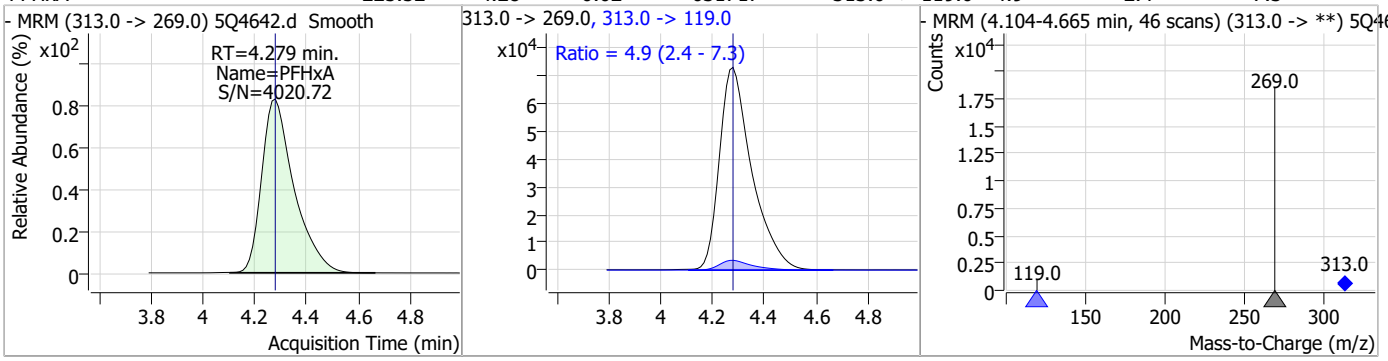


Perfluorinated Compounds by LC/MS/MS

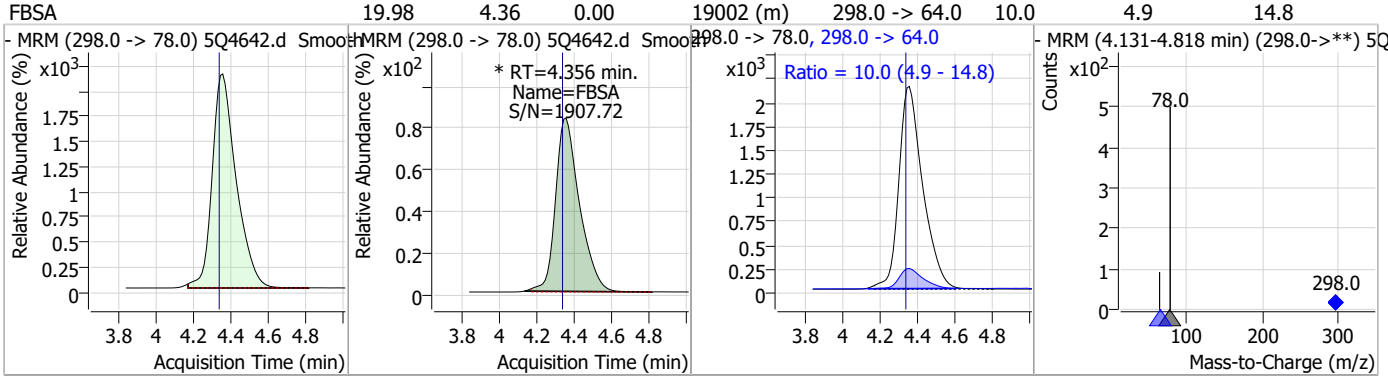
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.11	4.28	-0.02	57332				



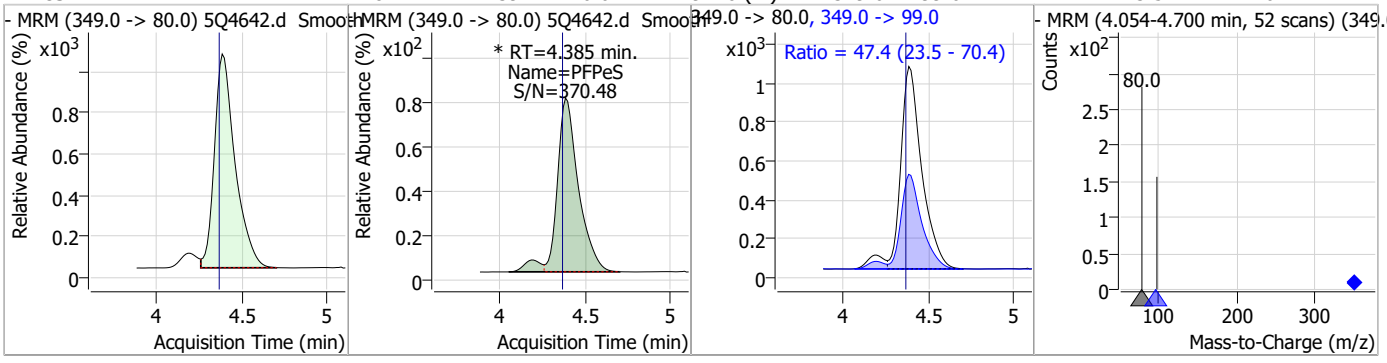
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	225.52	4.28	-0.02	631717	313.0 -> 119.0	4.9	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.98	4.36	0.00	19002 (m)	298.0 -> 64.0	10.0	4.9	14.8

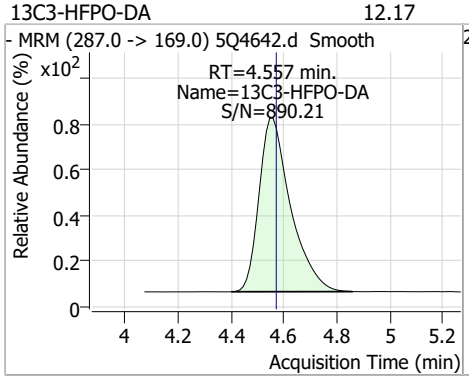


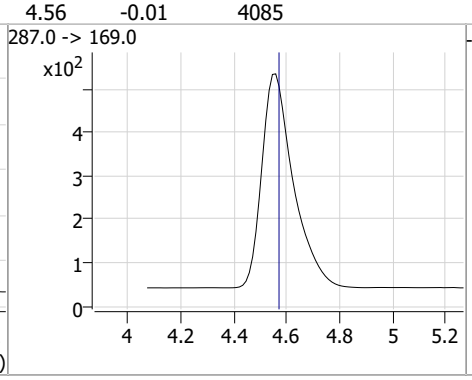
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.44	4.39	-0.02	9216 (m)	349.0 -> 99.0	47.4	23.5	70.4

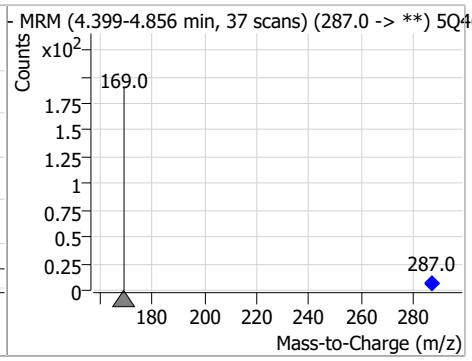


Perfluorinated Compounds by LC/MS/MS

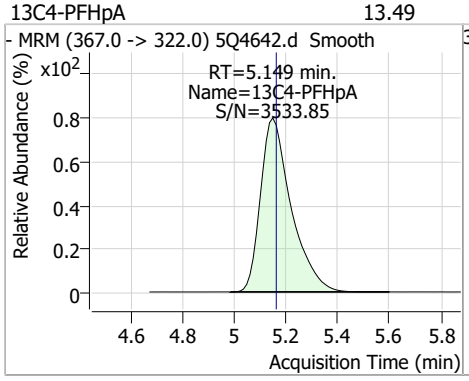
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.17	4.56	-0.01	4085				

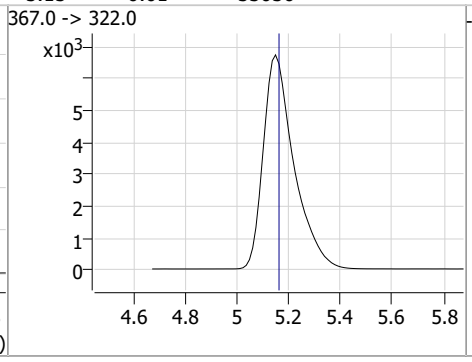


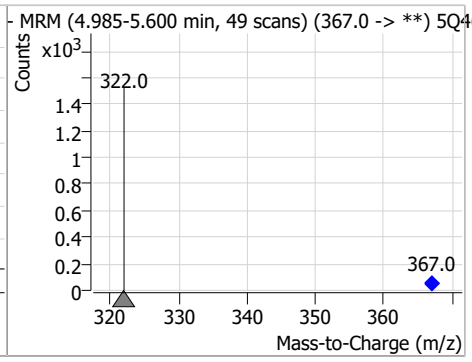




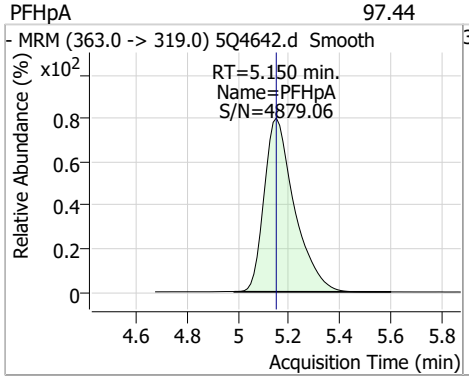
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.49	5.15	-0.01	55056				

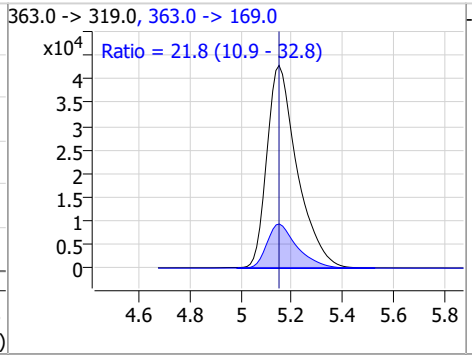


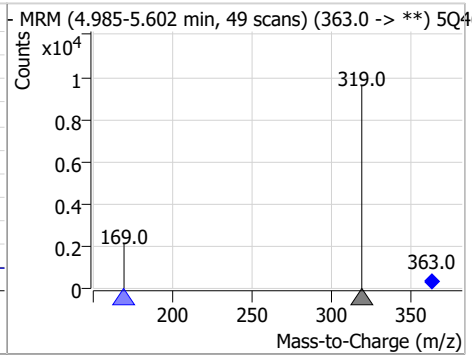




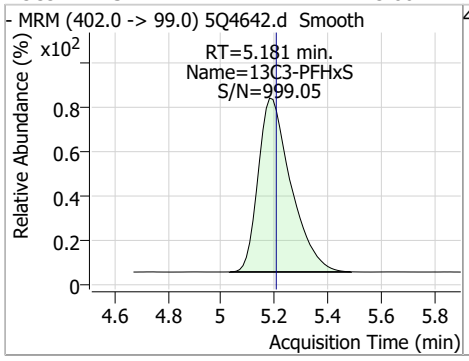
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	97.44	5.15	-0.01	352441	363.0 -> 169.0	21.8	10.9	32.8

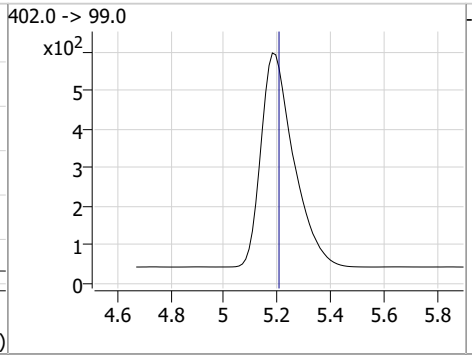


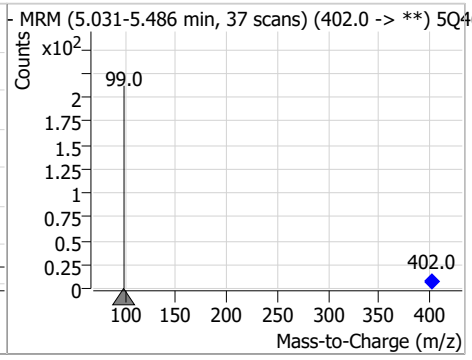




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.88	5.18	-0.02	4735				

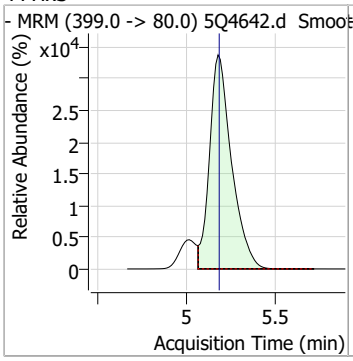


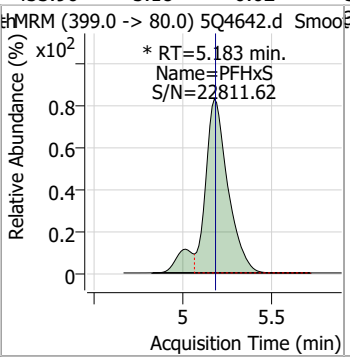


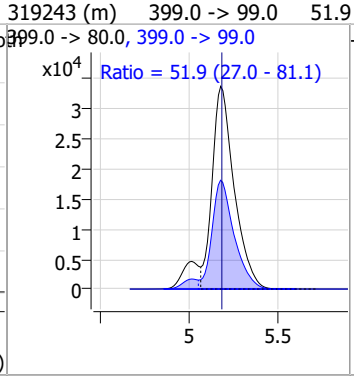


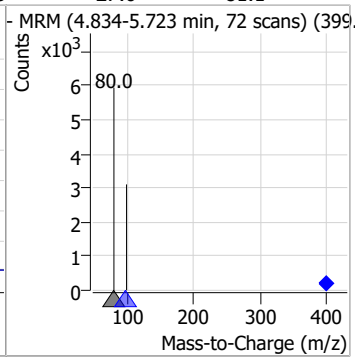
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	453.96	5.18	-0.02	319243 (m)	399.0 -> 99.0	51.9	27.0	81.1

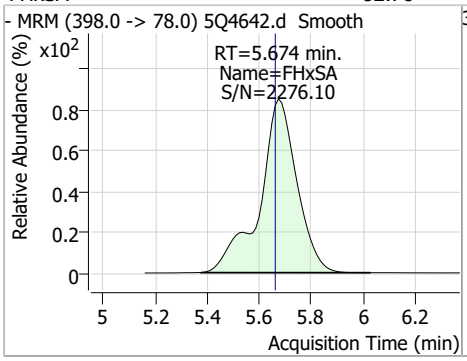


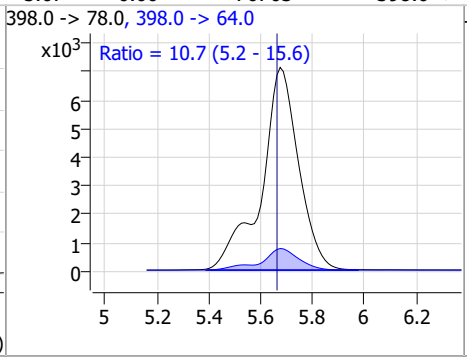


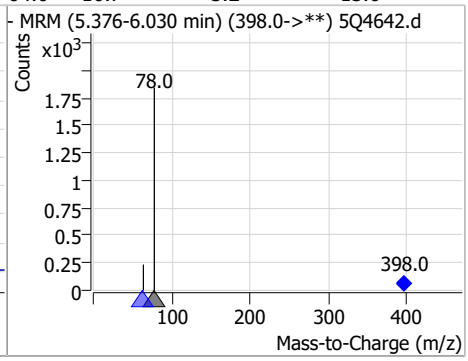




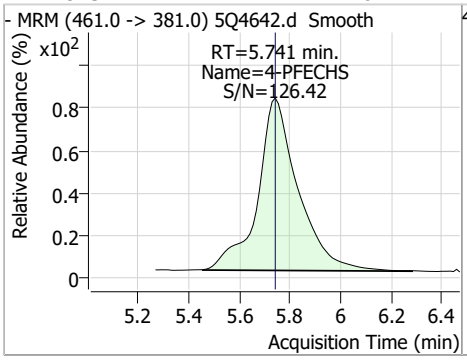
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	82.78	5.67	0.00	70703	398.0 -> 64.0	10.7	5.2	15.6

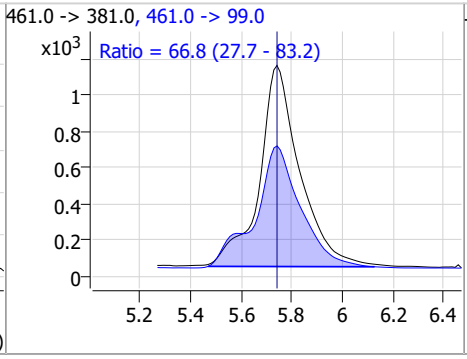


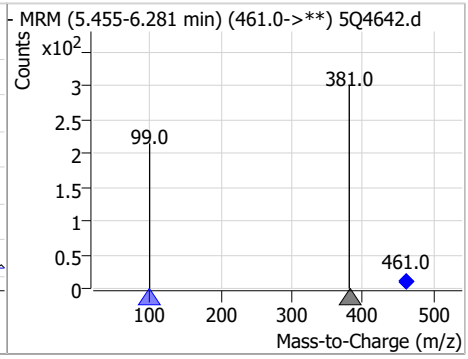




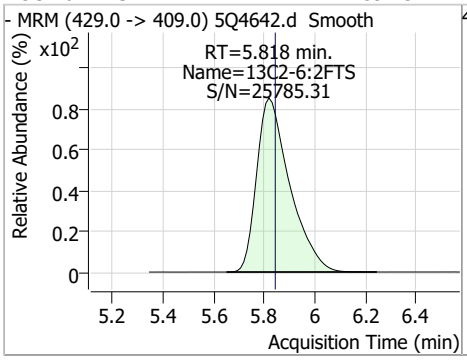
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	8.21	5.74	-0.01	12407	461.0 -> 99.0	66.8	27.7	83.2

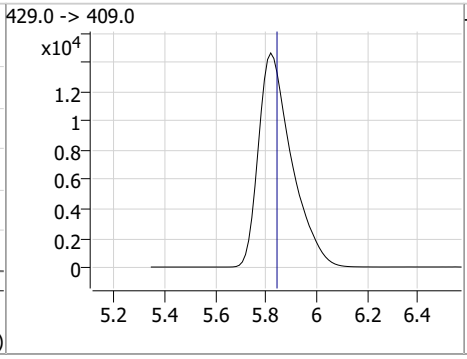


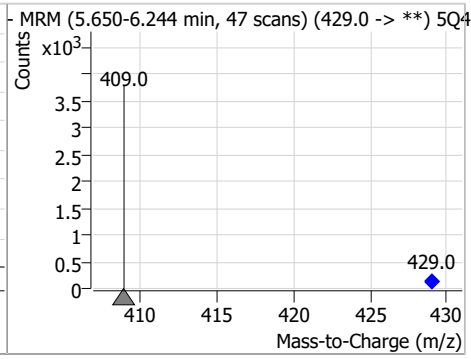




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	59.13	5.82	-0.02	132209				

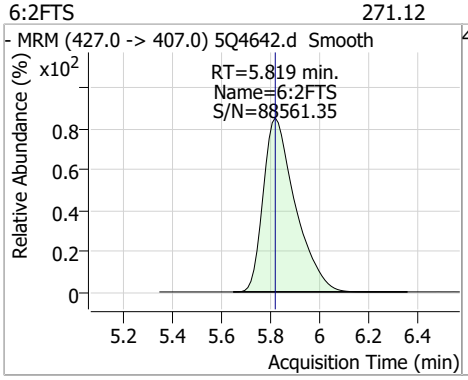


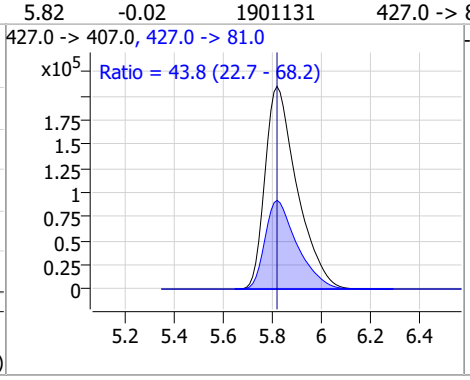


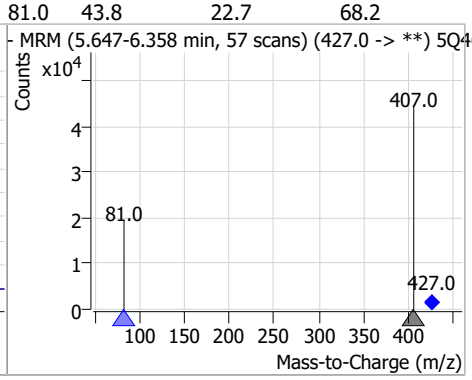


Perfluorinated Compounds by LC/MS/MS

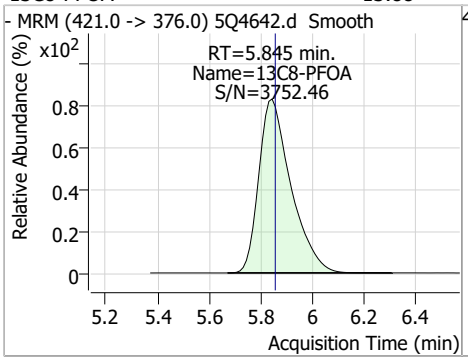
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	271.12	5.82	-0.02	1901131	427.0 -> 81.0	43.8	22.7	68.2

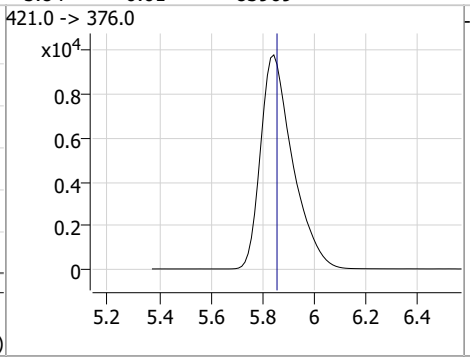


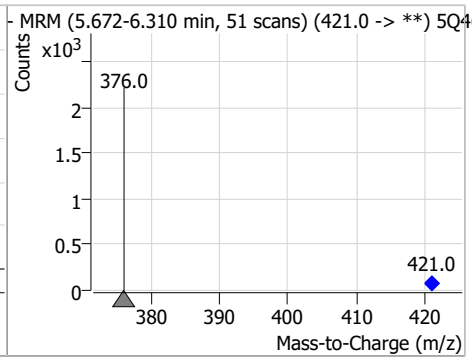




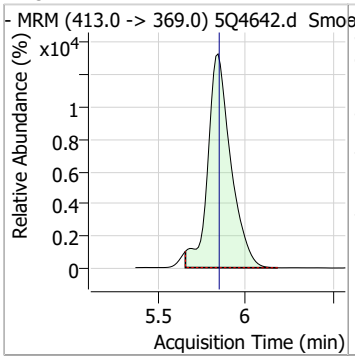
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.88	5.84	-0.01	83969				

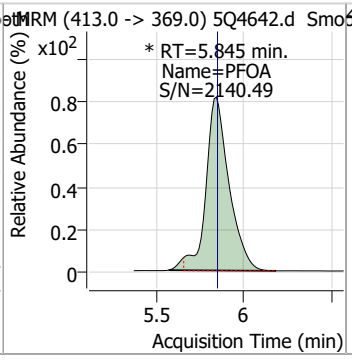


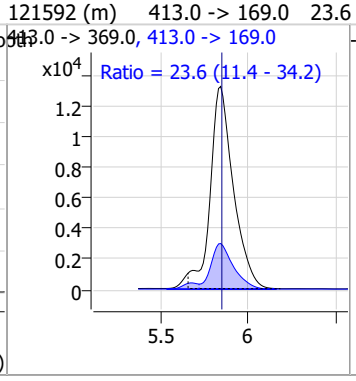


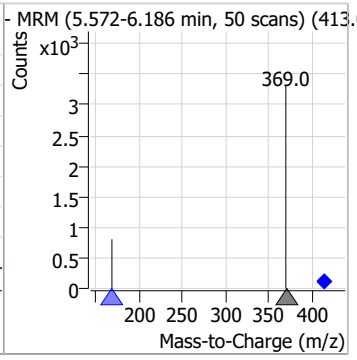


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	23.88	5.85	-0.01	121592 (m)	413.0 -> 169.0	23.6	11.4	34.2

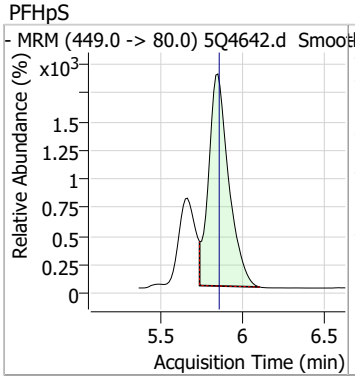


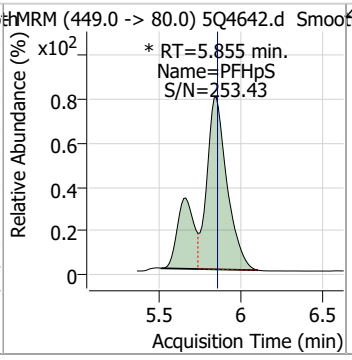


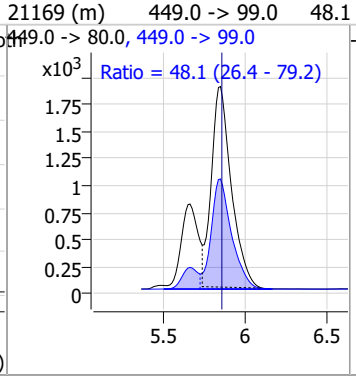


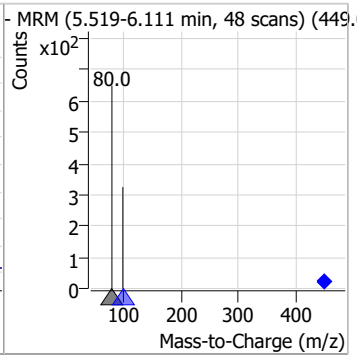


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	31.06	5.85	-0.01	21169 (m)	449.0 -> 99.0	48.1	26.4	79.2



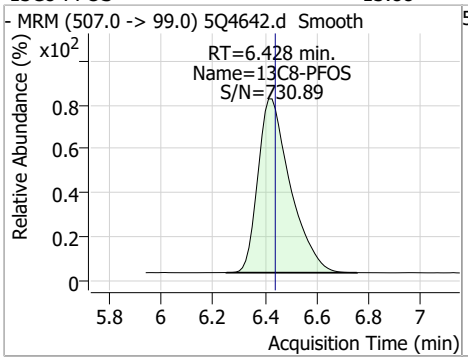


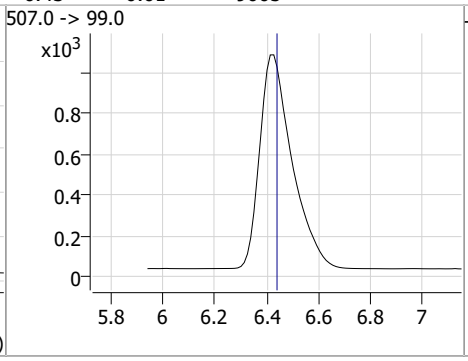


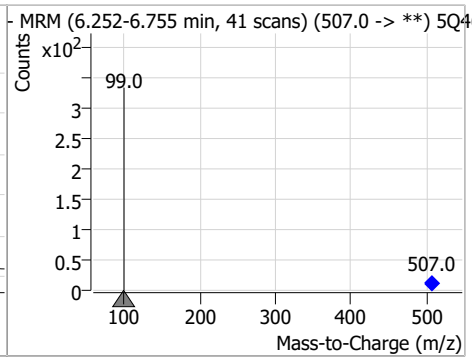


Perfluorinated Compounds by LC/MS/MS

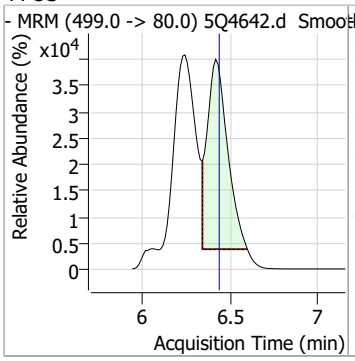
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.88	6.43	-0.01	9065				

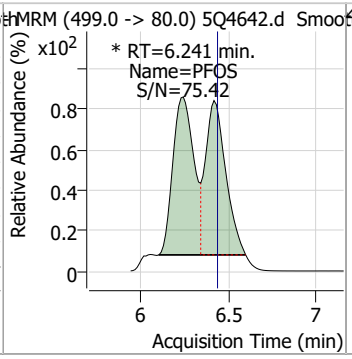


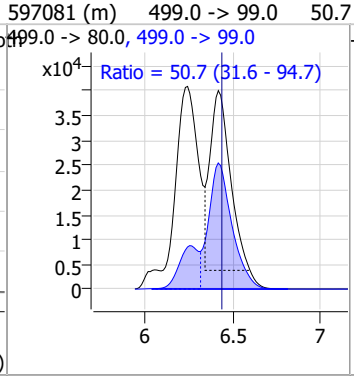


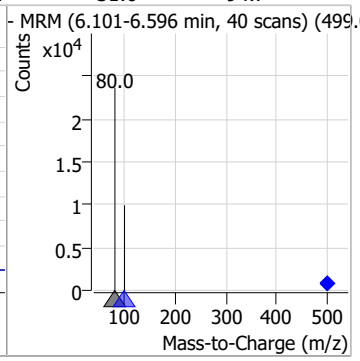


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	747.91	6.24	-0.20	597081 (m)	499.0 -> 99.0	50.7	31.6	94.7

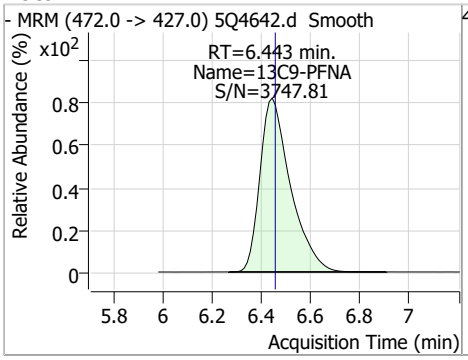


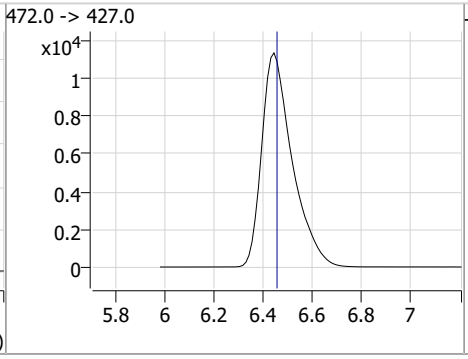


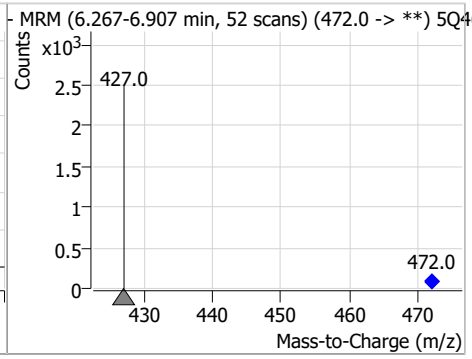




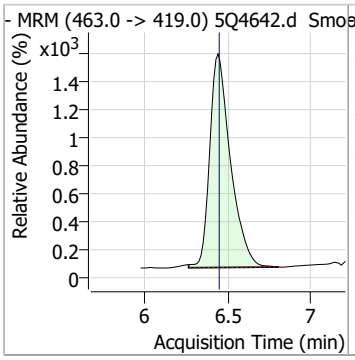
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.74	6.44	-0.01	96839				

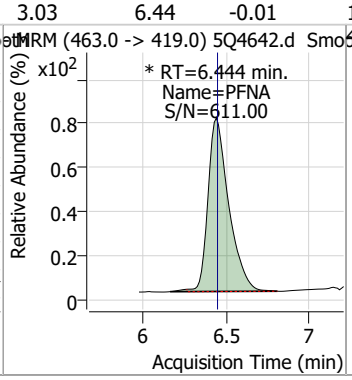


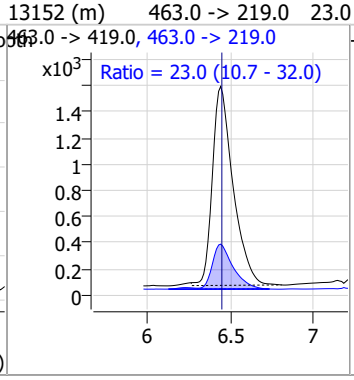


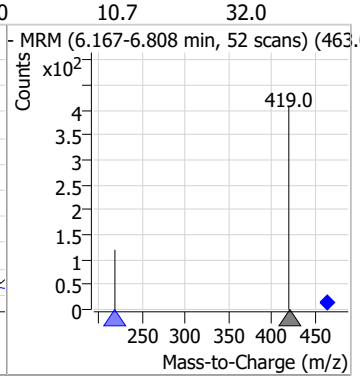


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.03	6.44	-0.01	13152 (m)	463.0 -> 219.0	23.0	10.7	32.0



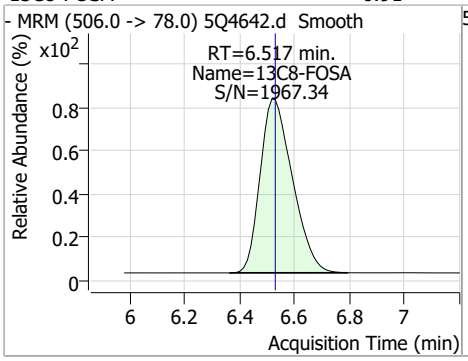


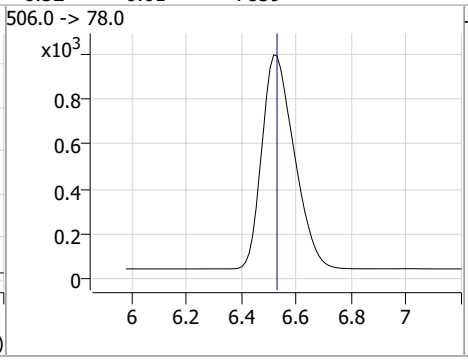


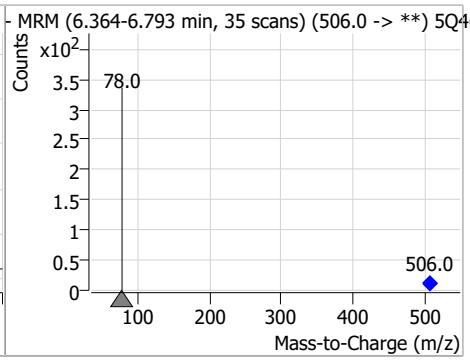


Perfluorinated Compounds by LC/MS/MS

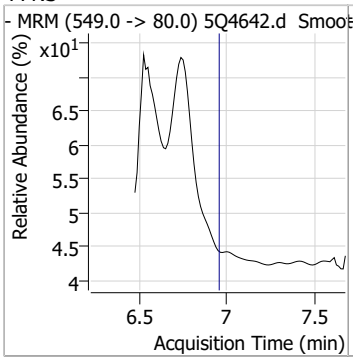
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	6.91	6.52	-0.01	7839				

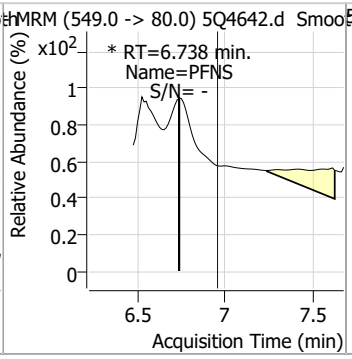


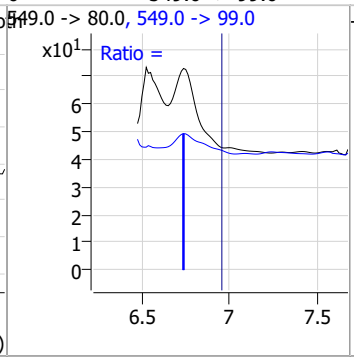


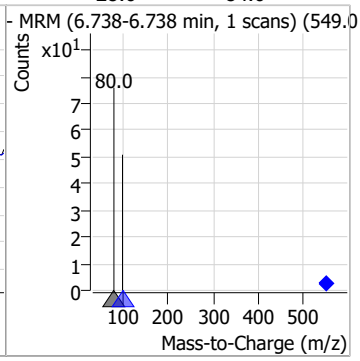


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS		0		0	549.0 -> 99.0		28.0	84.0

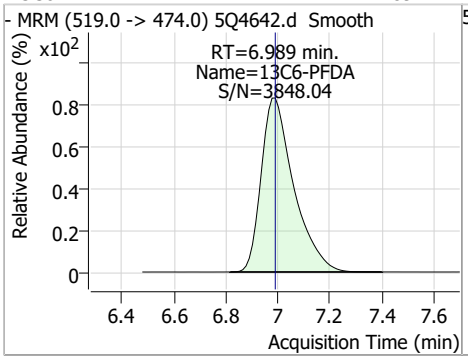


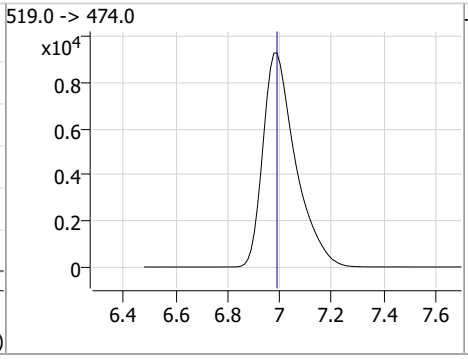


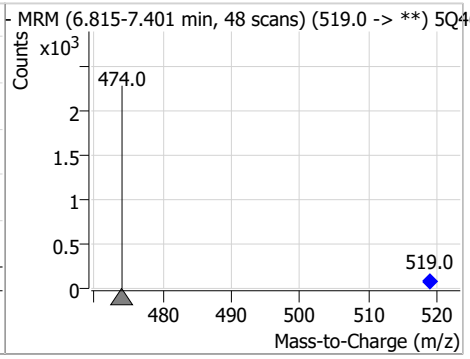




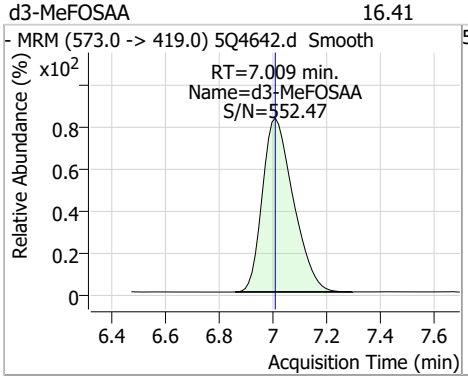
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.89	6.99	0.00	80174				

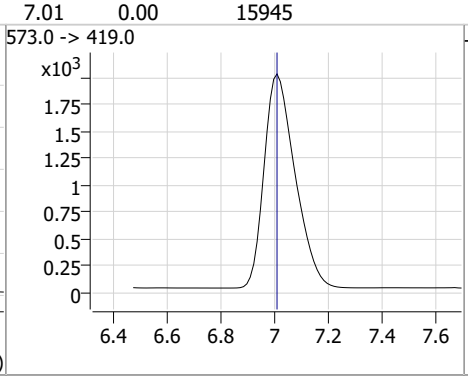


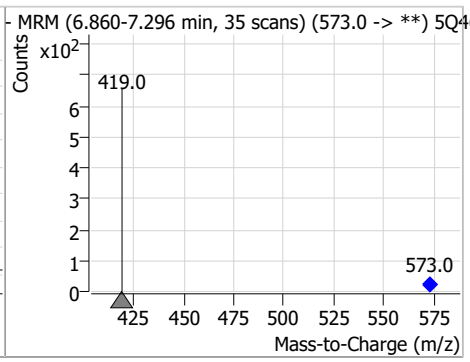




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.41	7.01	0.00	15945				

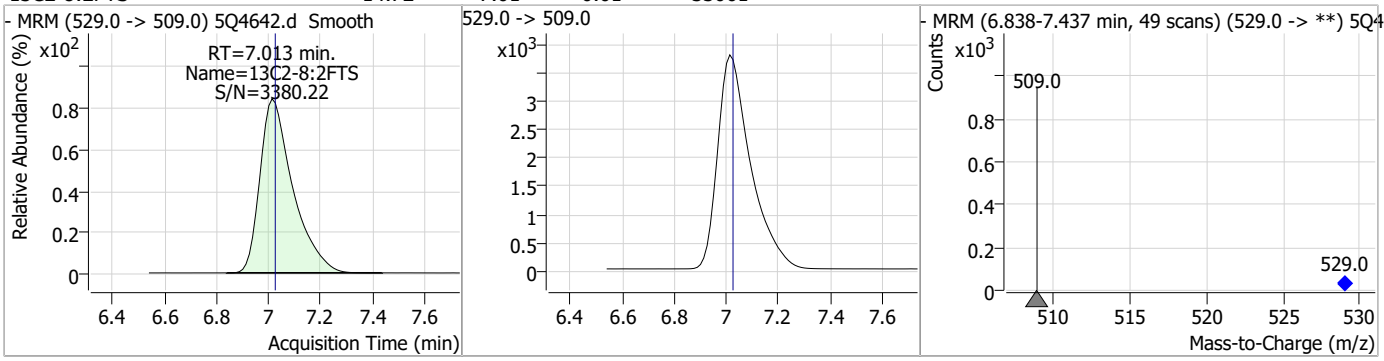




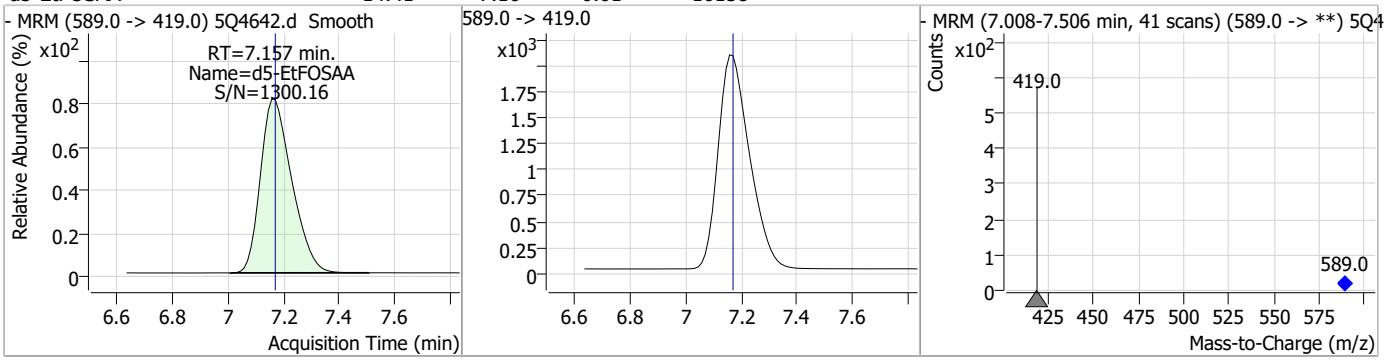


Perfluorinated Compounds by LC/MS/MS

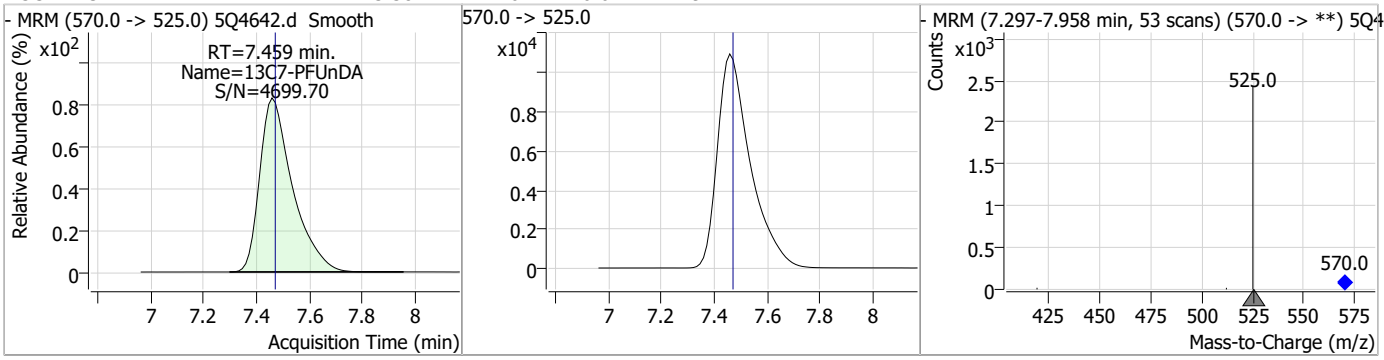
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.72	7.01	-0.01	33061				



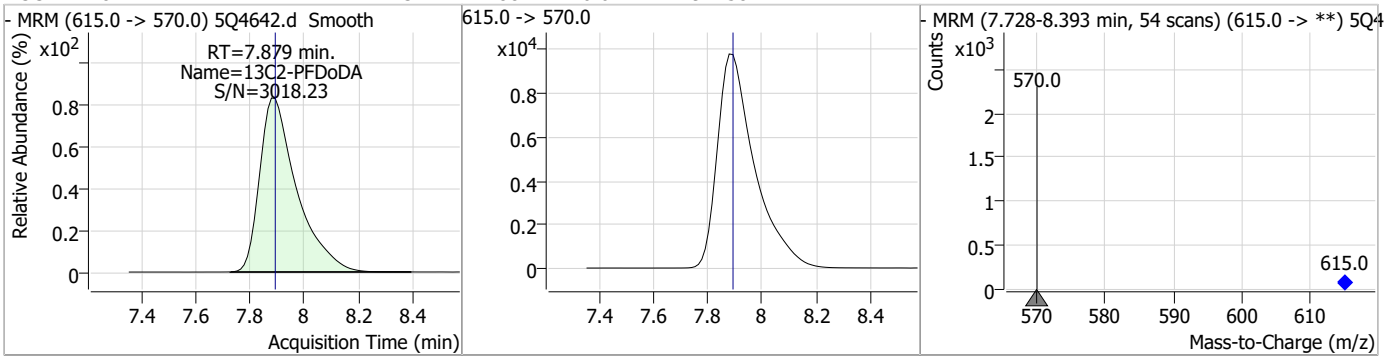
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.41	7.16	-0.01	16158				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.38	7.46	-0.01	94217				

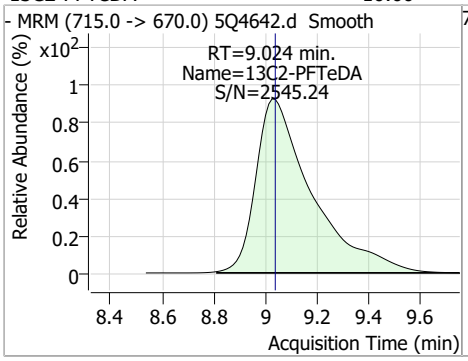


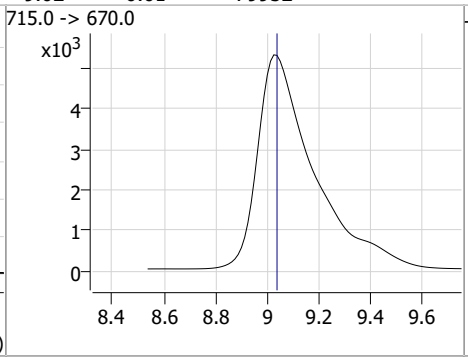
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.73	7.88	-0.01	92258				

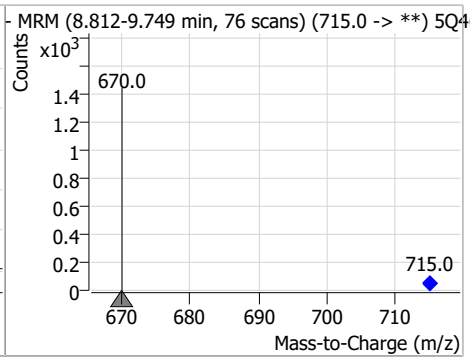


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.60	9.02	-0.01	79952				







Manual Integration Approval Summary

Sample Number: FA98286-7
Lab FileID: 5Q4642.D
Injection Time: 09/15/22 08:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:27 Anna Ludwig
Supervisor approved: 09/19/22 15:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFBSA	30334-69-1		4.36	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.38	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.18	Split peak
Perfluorooctanoic acid	335-67-1		5.84	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak
Perfluorononanoic acid	375-95-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:12

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4720.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:24:49 AM
Sample Name : fa98286-7
Vial : P3-E7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,10,water

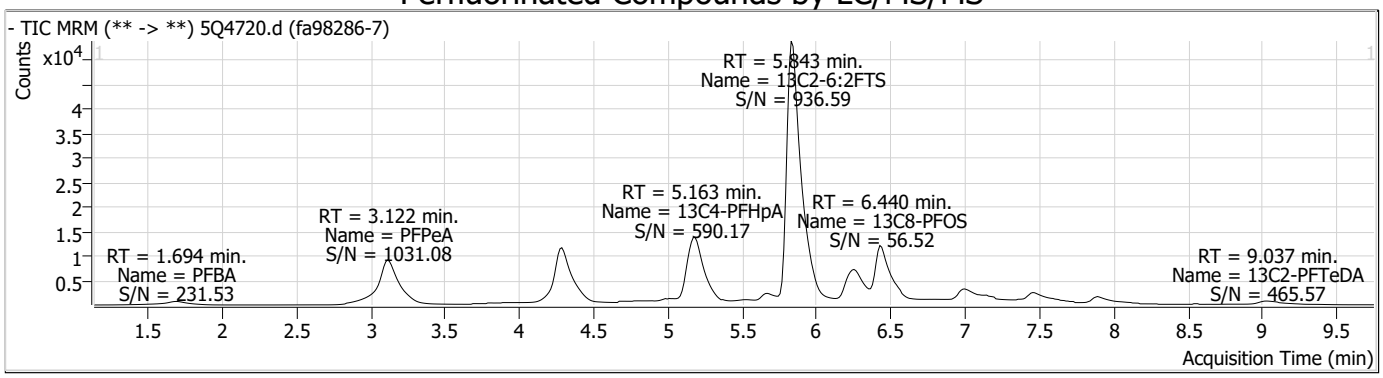
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	2571	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	4422	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	7008	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	6563	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	9681	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	10526	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	8571	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	9957	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	9701	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	8639	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	1025	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	527	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	562	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	1047	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	2226	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	15422	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	3512	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	1681	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	472	20.00	µg/L	0.000
M3-MeFOSA	6.965	515.0 -> 169.0	79	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	1660	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	2226	1.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	15422	6.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.5%		
13C2-8:2FTS	7.025	529.0 -> 509.0	3512	1.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.8%		
13C2-PFDoDA	7.893	615.0 -> 570.0	9701	1.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.7%		
13C2-PFTeDA	9.037	715.0 -> 670.0	8639	1.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.7%		
13C3-PFBS	3.349	302.0 -> 99.0	527	1.62	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	562	1.65	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.2%		
13C4-PFBA	1.700	217.0 -> 172.0	2571	1.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.2%		
13C4-PFHpA	5.163	367.0 -> 322.0	6563	1.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	7008	1.60	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C5-PFPeA	3.132	268.0 -> 223.0	4422	1.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.6%		
13C6-PFDA	6.989	519.0 -> 474.0	8571	1.59	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

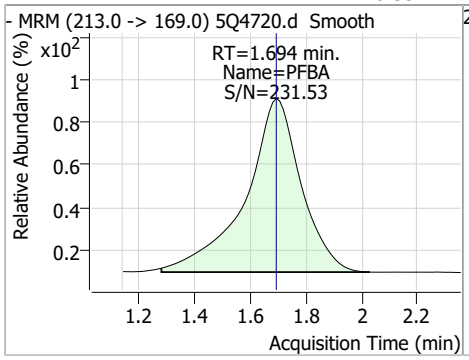
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C7-PFUnDA	7.471	570.0 -> 525.0	9957	1.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.1%		
13C8-FOSA	6.517	506.0 -> 78.0	1025	0.90 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%		
13C8-PFOA	5.857	421.0 -> 376.0	9681	1.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C8-PFOS	6.440	507.0 -> 99.0	1047	1.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
13C9-PFNA	6.455	472.0 -> 427.0	10526	1.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.0%		
d3-MeFOSAA	7.009	573.0 -> 419.0	1681	1.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.6%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	472	1.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.0%		
d3-MeFOSA	6.965	515.0 -> 169.0	79	0.26 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.3%		
d5-EtFOSAA	7.170	589.0 -> 419.0	1660	1.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.4%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	5.843	427.0 -> 407.0	221000	27.02 µg/L		96
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.694	213.0 -> 169.0	6267	10.35 µg/L		100
PFBS	3.354	299.0 -> 80.0	361	0.46 µg/L		98
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	5.164	363.0 -> 319.0	41415	9.61 µg/L		100
PFHpS	5.855	449.0 -> 80.0	2414	3.07 µg/L	m	93
PFHxA	4.291	313.0 -> 269.0	75637	22.09 µg/L		100
PFHxS	5.195	399.0 -> 80.0	36902	44.24 µg/L	m	97
PFNA	6.456	463.0 -> 419.0	1452	0.31 µg/L		95
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	5.858	413.0 -> 369.0	14060	2.40 µg/L	m	98
PFOS	6.253	499.0 -> 80.0	67578	73.30 µg/L	m	83
PFPeA	3.122	263.0 -> 219.0	85744	39.24 µg/L		100
PFPeS	4.398	349.0 -> 80.0	1020	1.66 µg/L	m	95
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	5.753	461.0 -> 381.0	1435	0.82 µg/L		86
FBSA	4.343	298.0 -> 78.0	2692	2.32 µg/L		99
FHxSA	5.674	398.0 -> 78.0	9049	9.19 µg/L	m	99

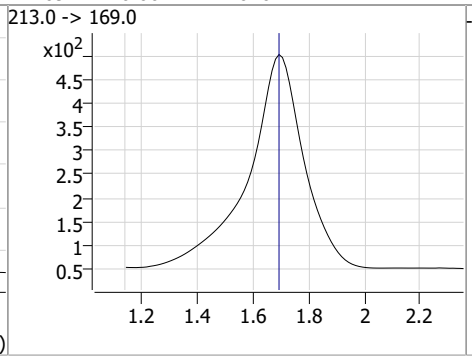
 # = Qualifier out of range, m = manually integrated, + = Area summed

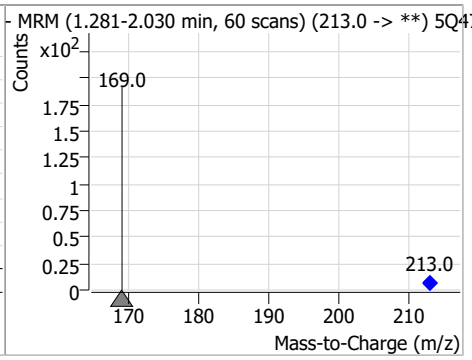
Perfluorinated Compounds by LC/MS/MS



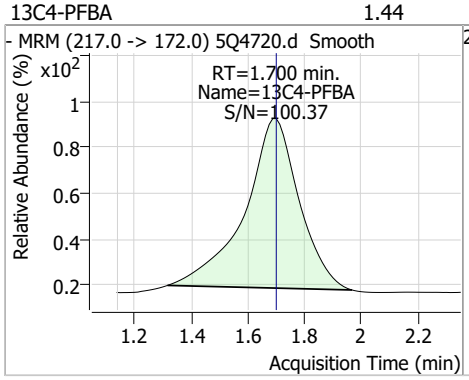
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.35	1.69	0.00	6267				

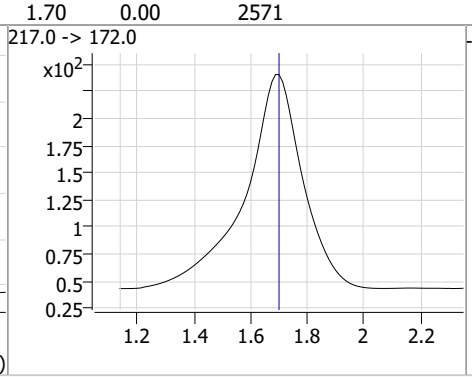


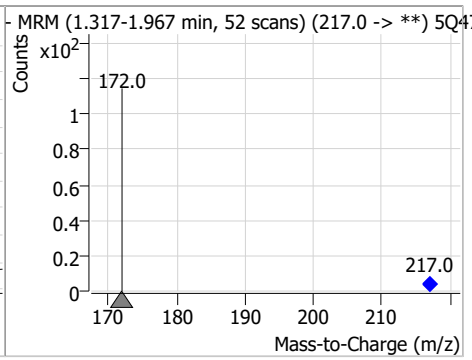




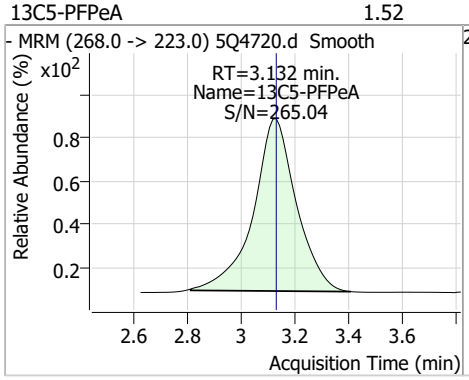
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.44	1.70	0.00	2571				

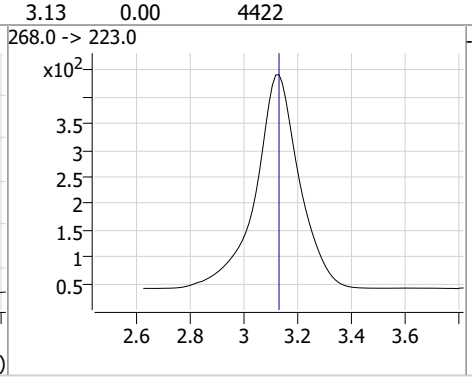


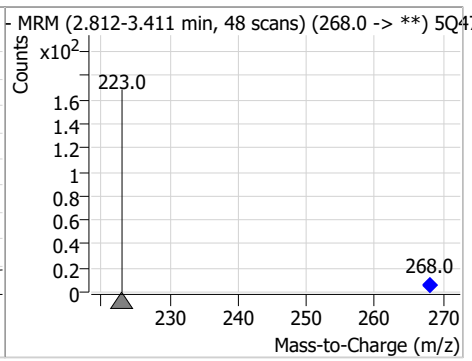




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.52	3.13	0.00	4422				

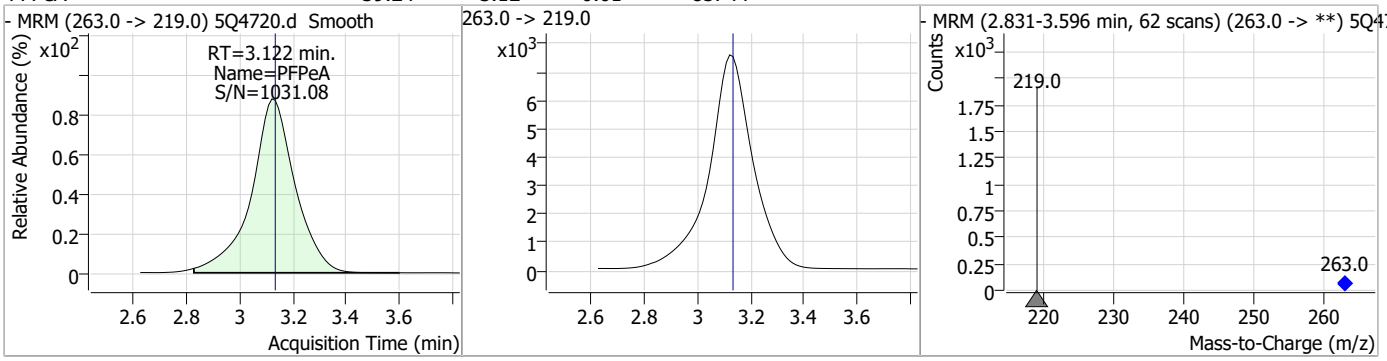




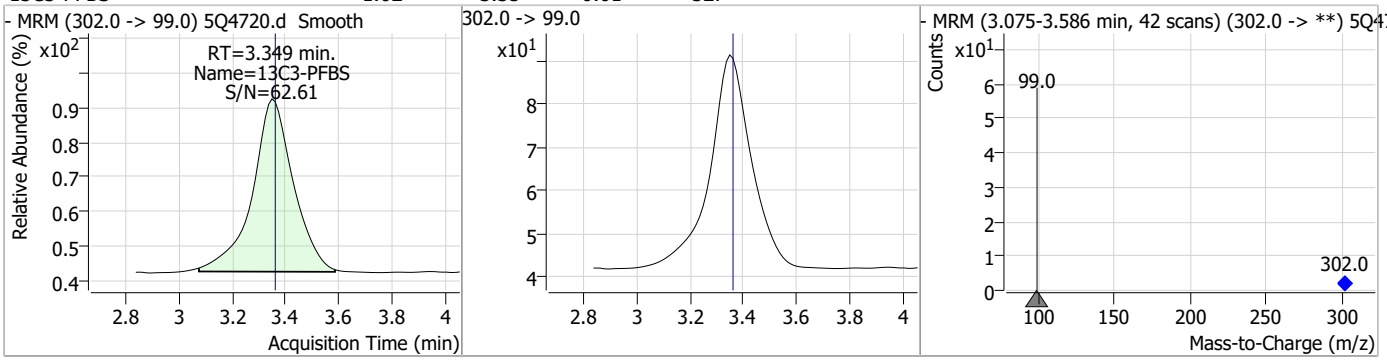


Perfluorinated Compounds by LC/MS/MS

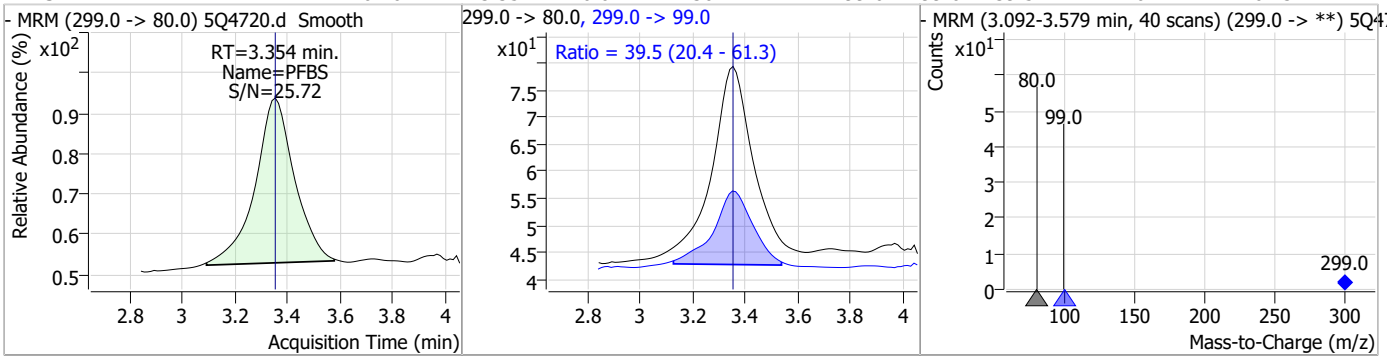
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	39.24	3.12	-0.01	85744				



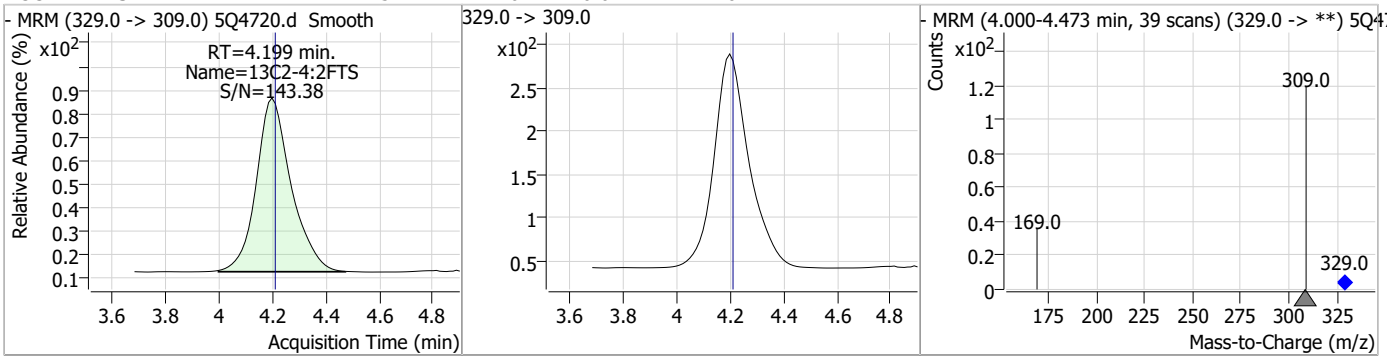
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	1.62	3.35	-0.01	527				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.46	3.35	-0.01	361	299.0 -> 99.0	39.5	20.4	61.3

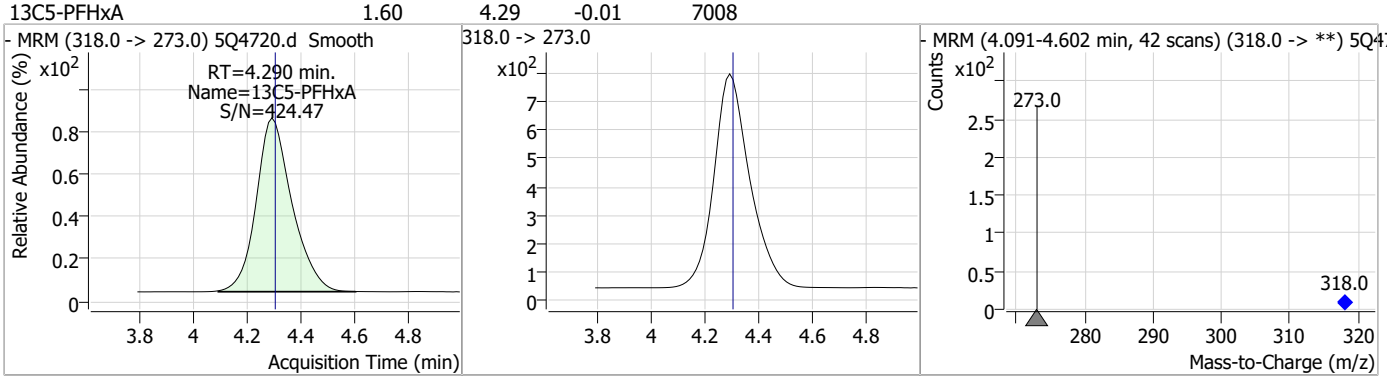


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.52	4.20	-0.01	2226				

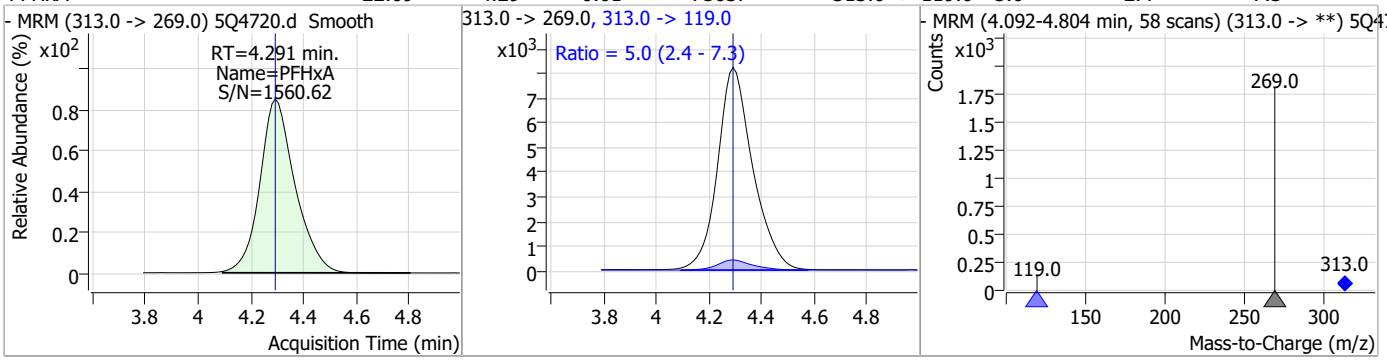


Perfluorinated Compounds by LC/MS/MS

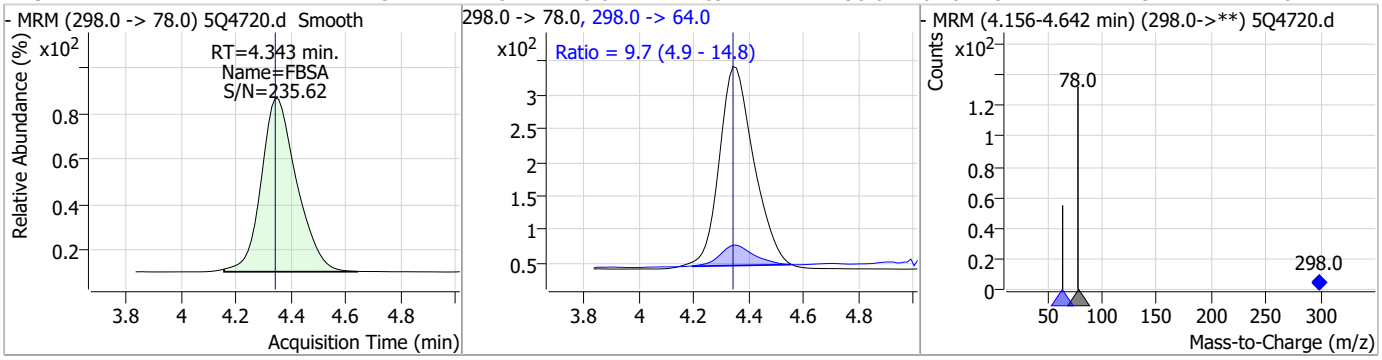
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.60	4.29	-0.01	7008				



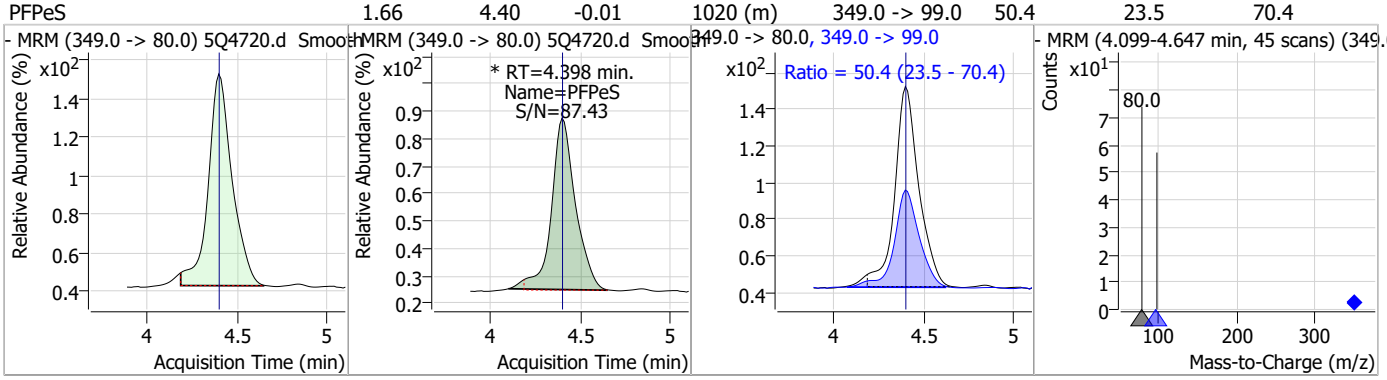
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.09	4.29	-0.01	75637	313.0 -> 119.0	5.0	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	2.32	4.34	-0.01	2692	298.0 -> 64.0	9.7	4.9	14.8

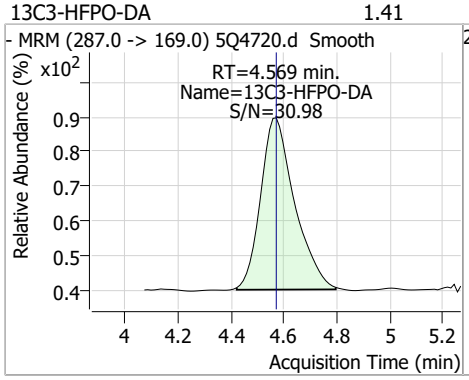


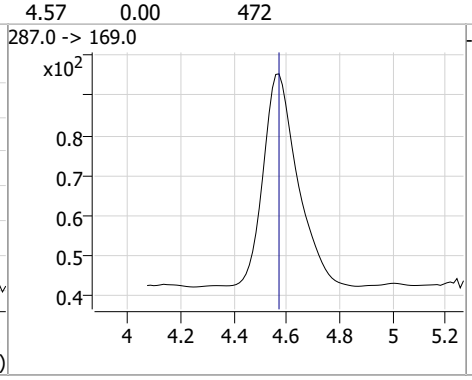
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.66	4.40	-0.01	1020 (m)	349.0 -> 99.0	50.4	23.5	70.4

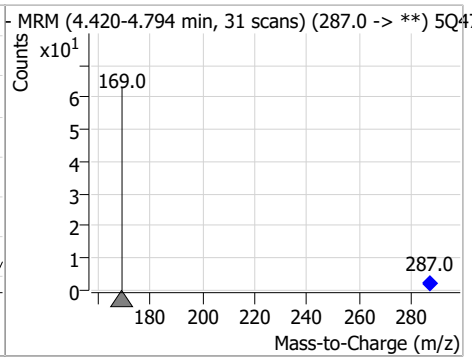


Perfluorinated Compounds by LC/MS/MS

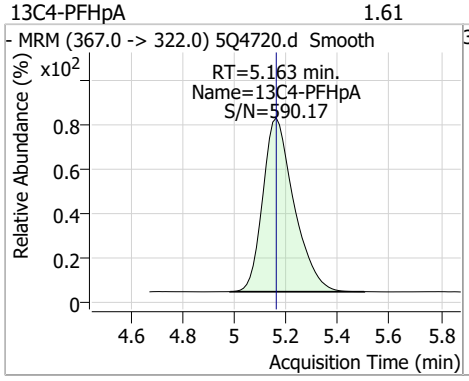
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	1.41	4.57	0.00	472				

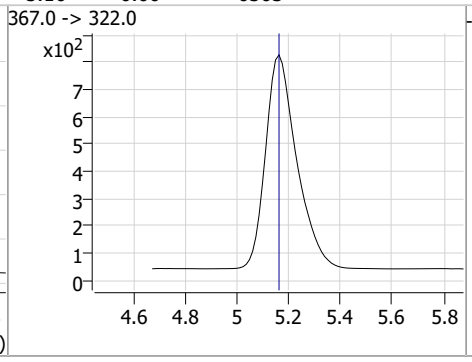


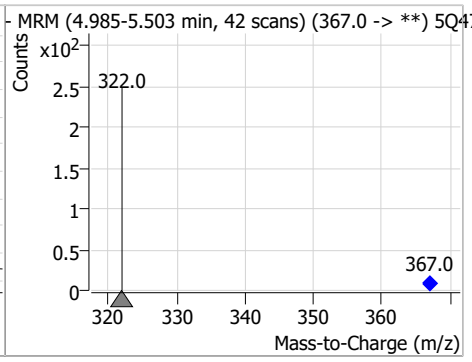




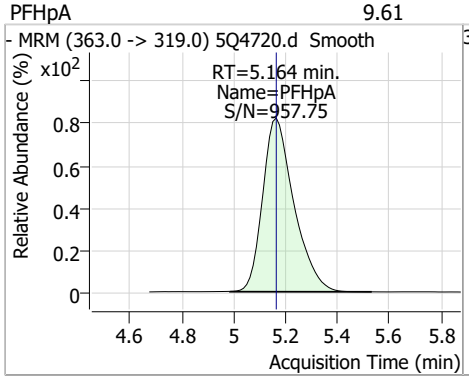
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	1.61	5.16	0.00	6563				

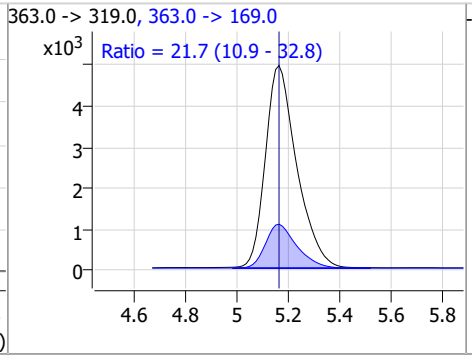


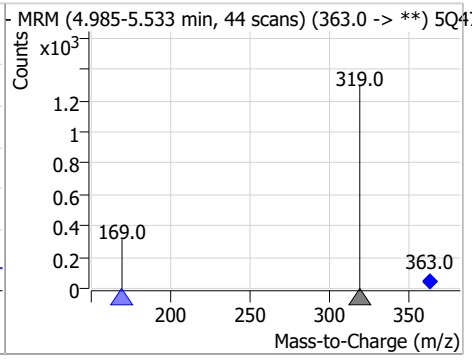




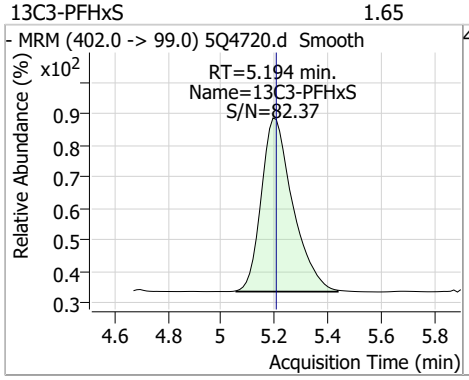
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.61	5.16	0.00	41415	363.0 -> 169.0	21.7	10.9	32.8

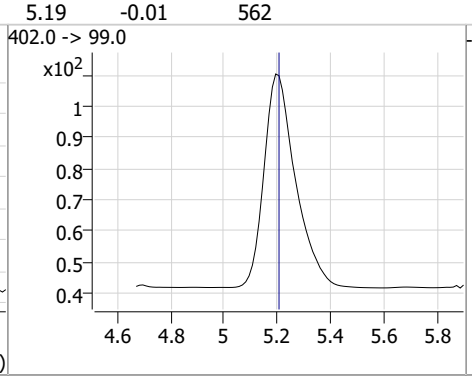


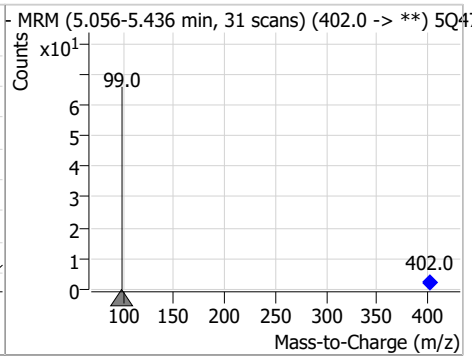




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	1.65	5.19	-0.01	562				

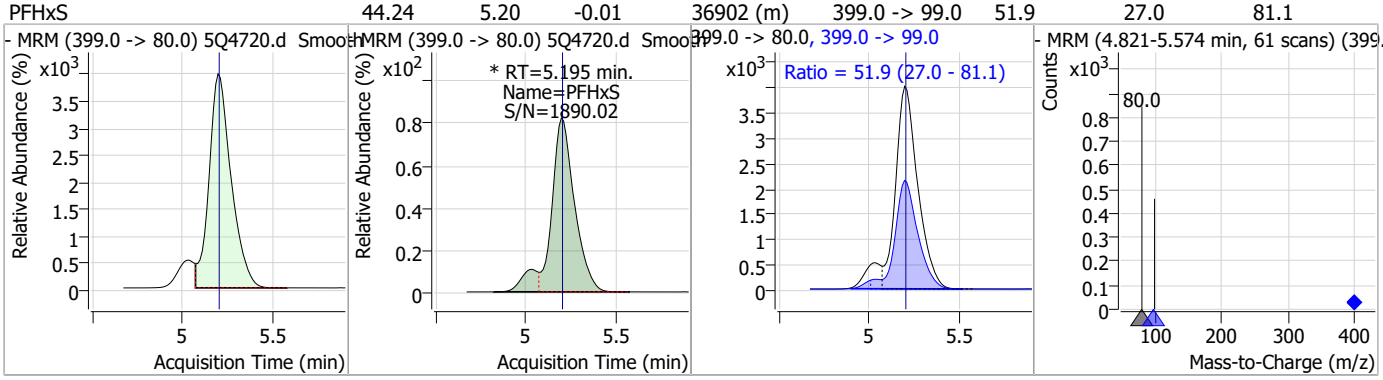




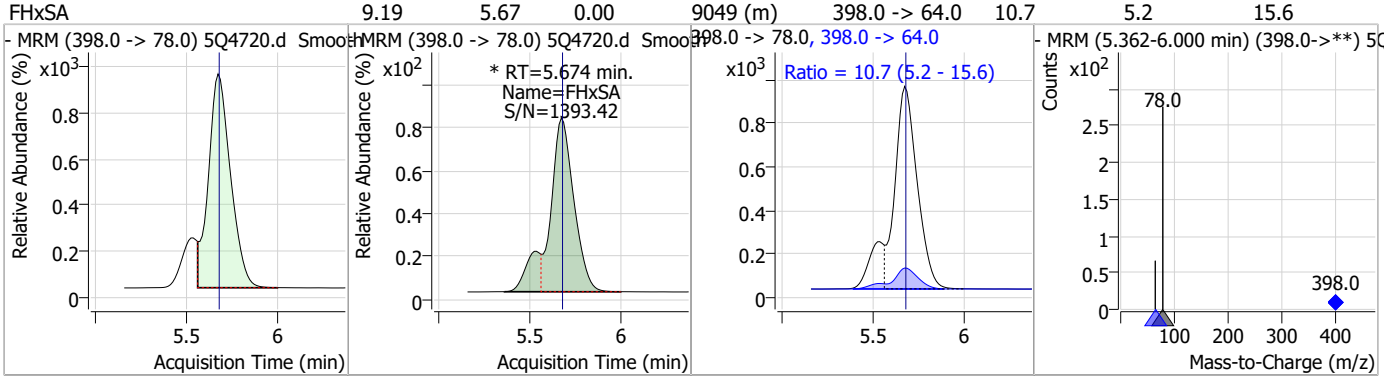


Perfluorinated Compounds by LC/MS/MS

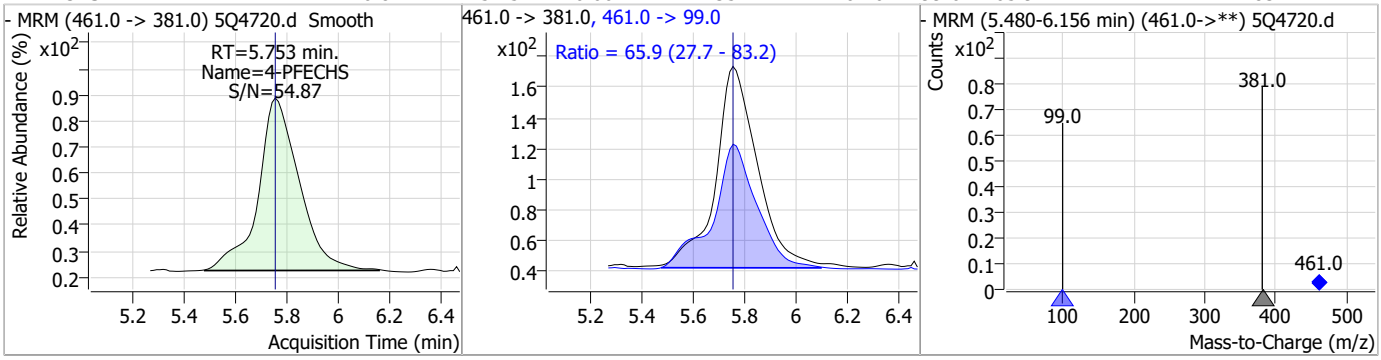
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	44.24	5.20	-0.01	36902 (m)	399.0 -> 99.0	51.9	27.0	81.1



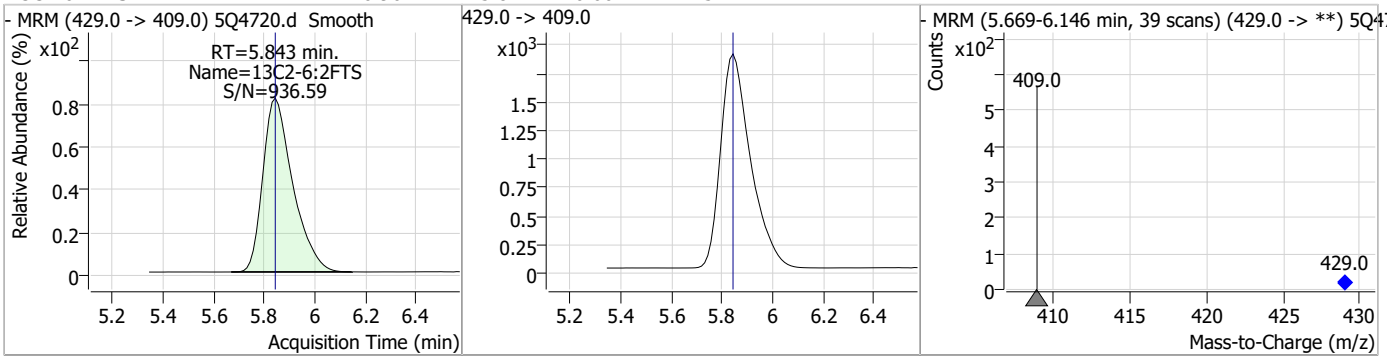
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	9.19	5.67	0.00	9049 (m)	398.0 -> 64.0	10.7	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.82	5.75	0.00	1435	461.0 -> 99.0	65.9	27.7	83.2

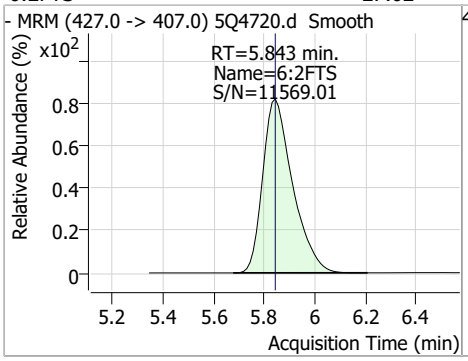


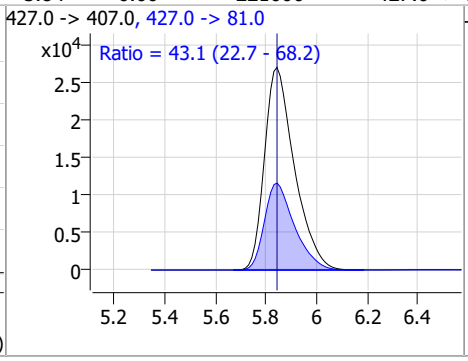
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.90	5.84	0.00	15422				

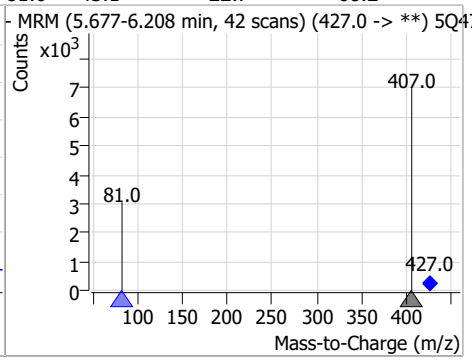


Perfluorinated Compounds by LC/MS/MS

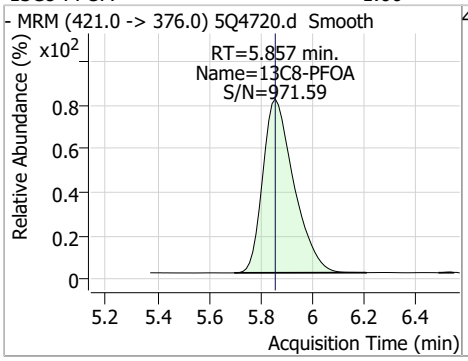
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	27.02	5.84	0.00	221000	427.0 -> 81.0	43.1	22.7	68.2

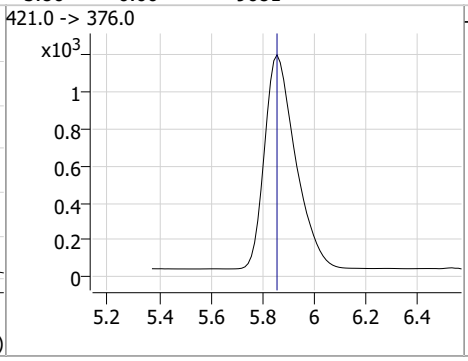


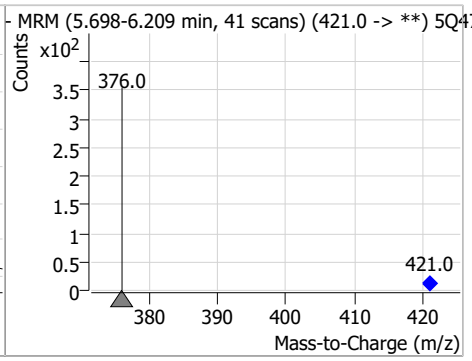




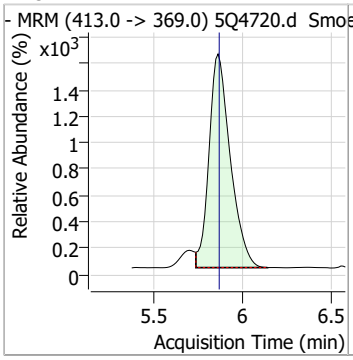
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	1.60	5.86	0.00	9681				

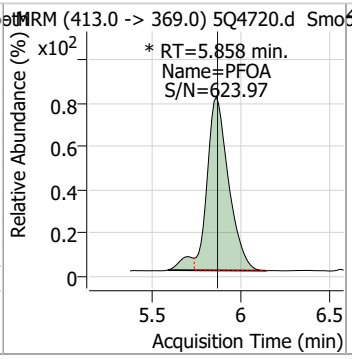


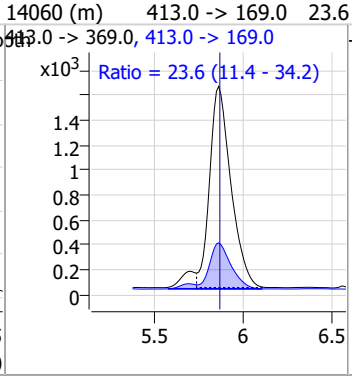


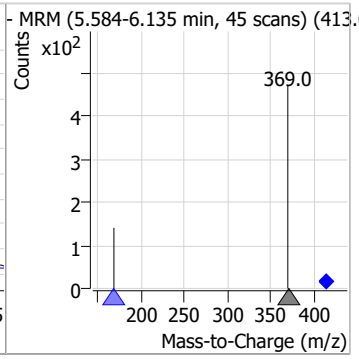


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	2.40	5.86	0.00	14060 (m)	413.0 -> 169.0	23.6	11.4	34.2

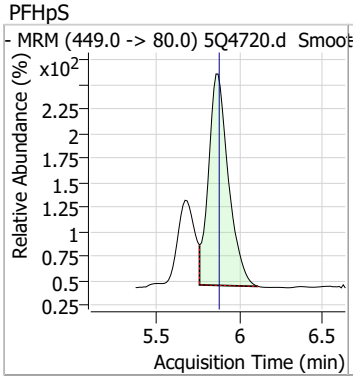


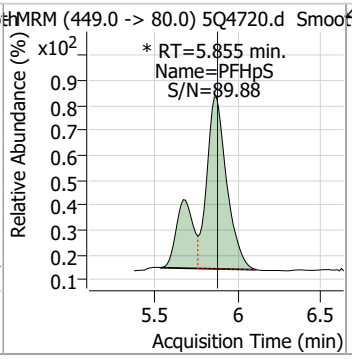


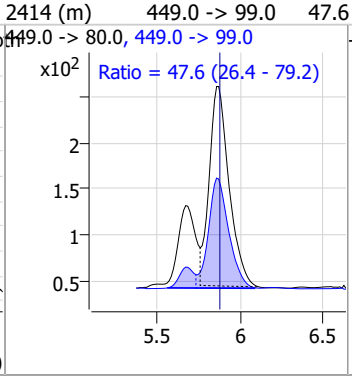


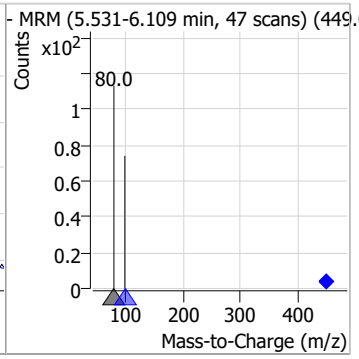


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	3.07	5.85	-0.01	2414 (m)	449.0 -> 99.0	47.6	26.4	79.2



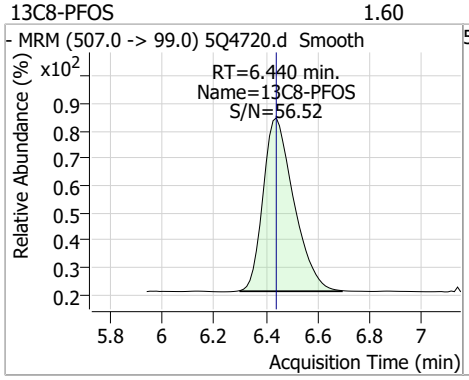


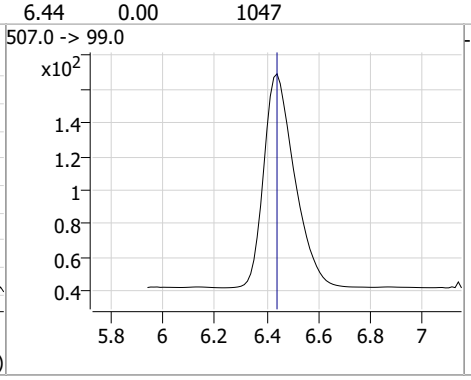


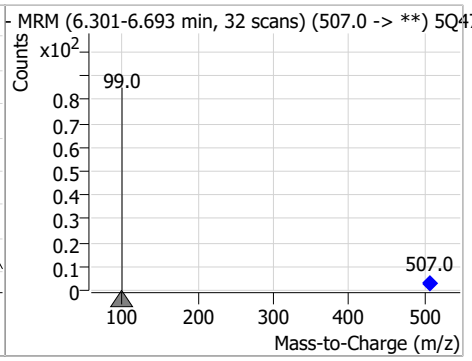


Perfluorinated Compounds by LC/MS/MS

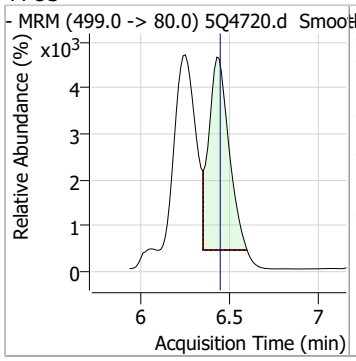
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	1.60	6.44	0.00	1047				

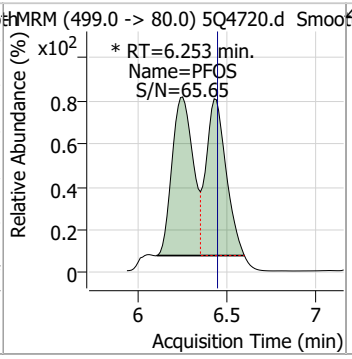


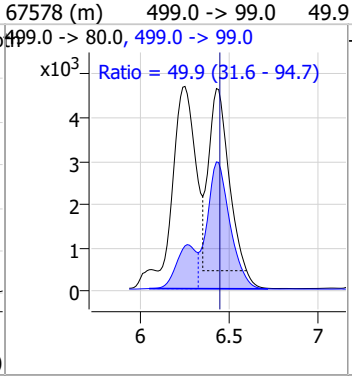


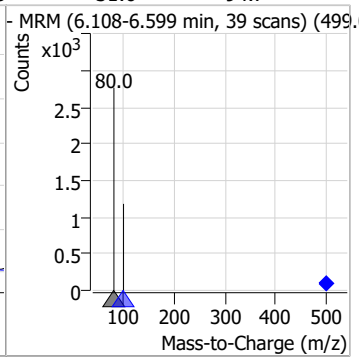


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	73.30	6.25	-0.19	67578 (m)	499.0 -> 99.0	49.9	31.6	94.7

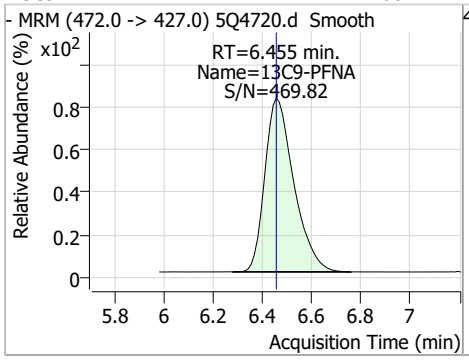


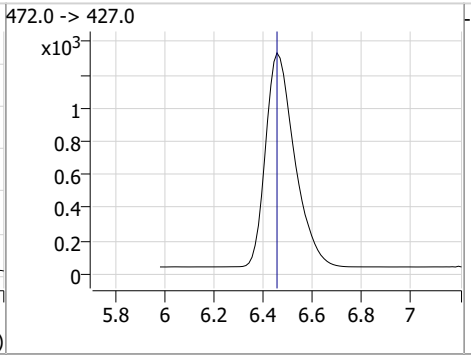


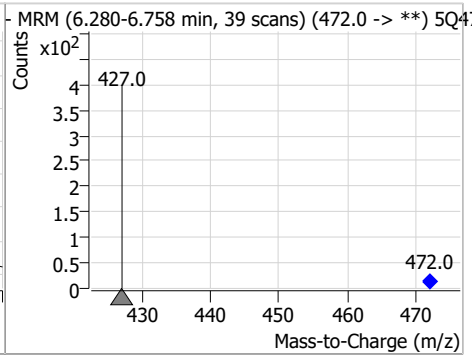




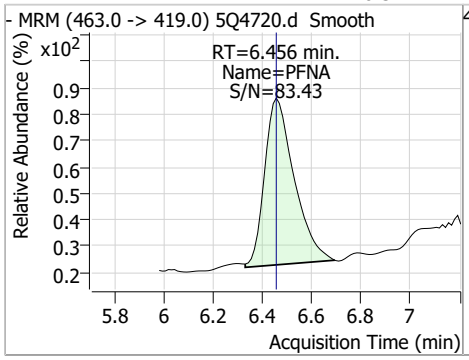
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	1.60	6.46	0.00	10526				

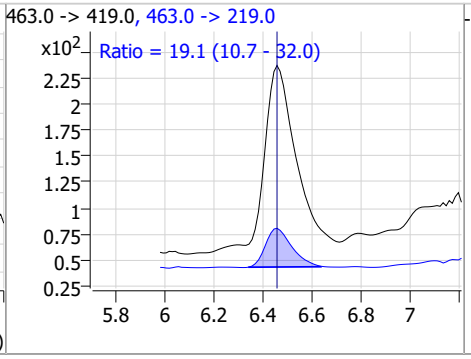


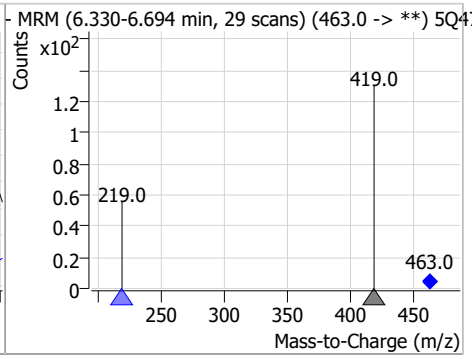




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.31	6.46	0.00	1452	463.0 -> 219.0	19.1	10.7	32.0

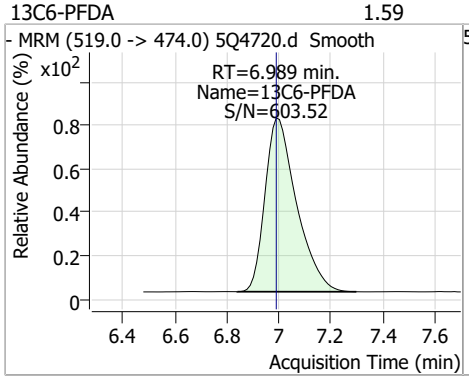


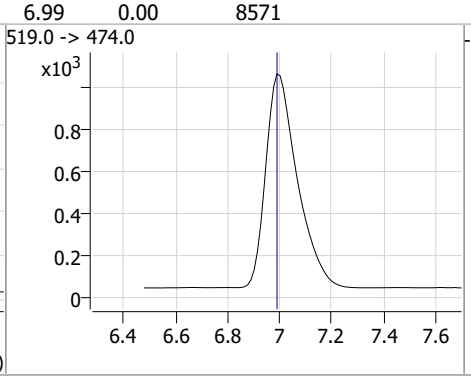


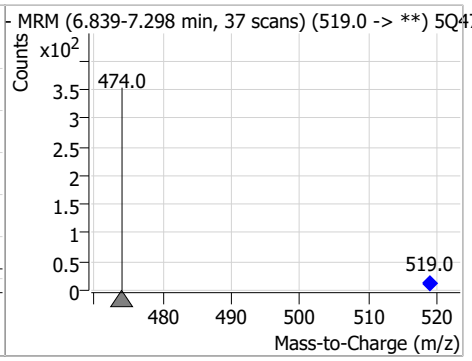


Perfluorinated Compounds by LC/MS/MS

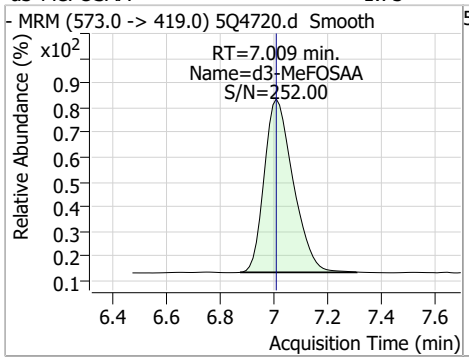
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	1.59	6.99	0.00	8571				

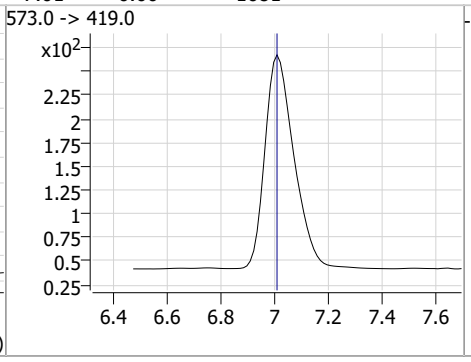


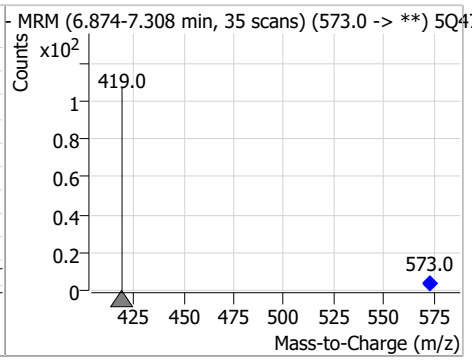




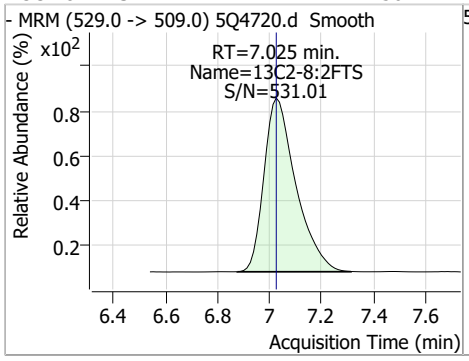
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	1.73	7.01	0.00	1681				

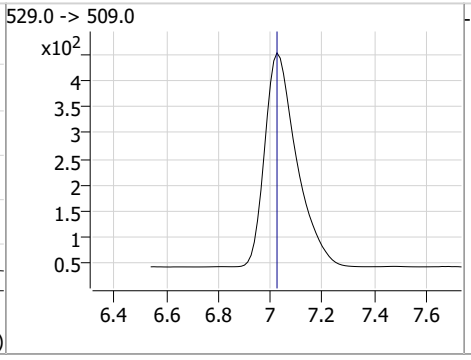


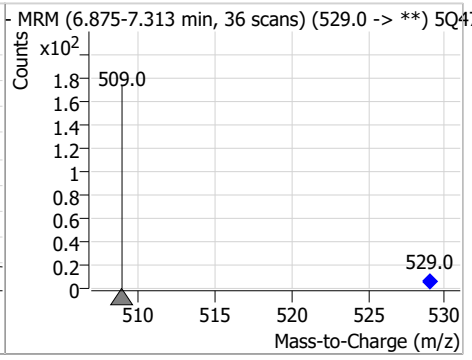




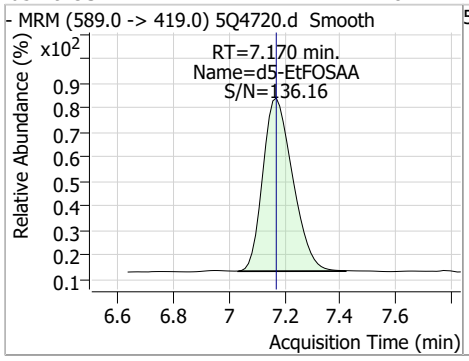
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	1.56	7.03	0.00	3512				

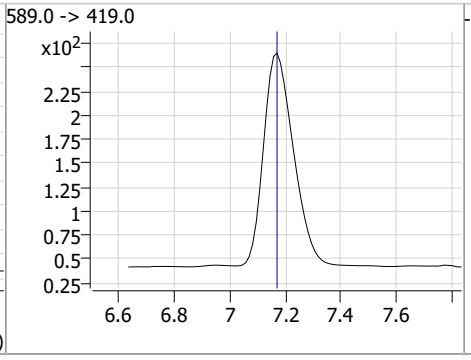


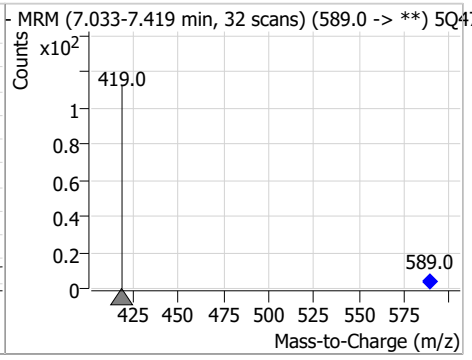




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	1.48	7.17	0.00	1660				

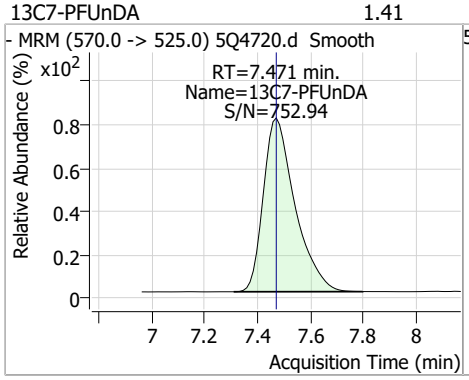


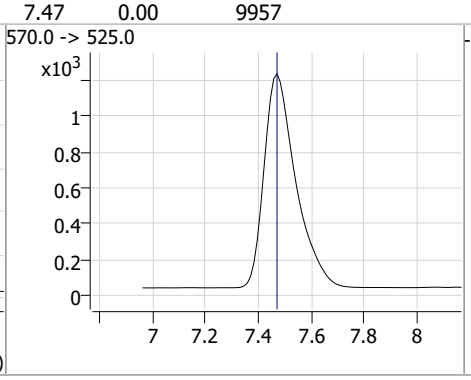


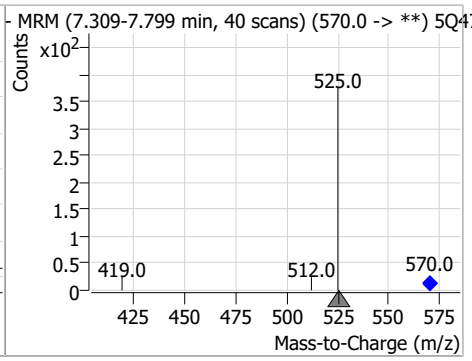


Perfluorinated Compounds by LC/MS/MS

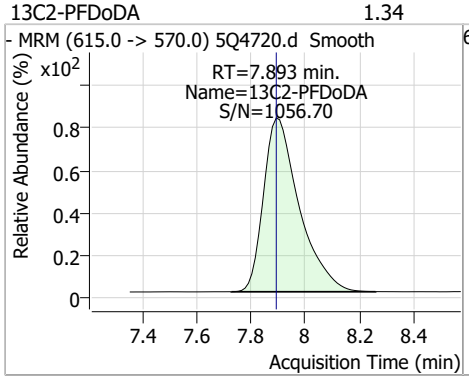
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	1.41	7.47	0.00	9957				

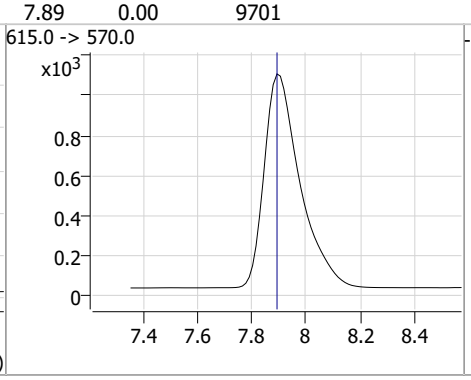


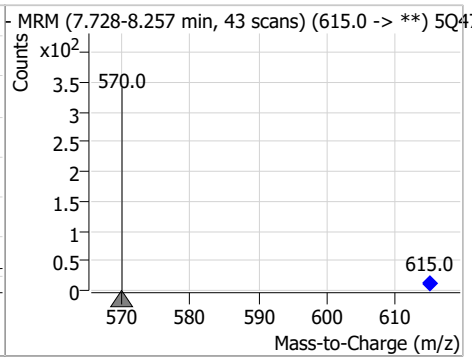




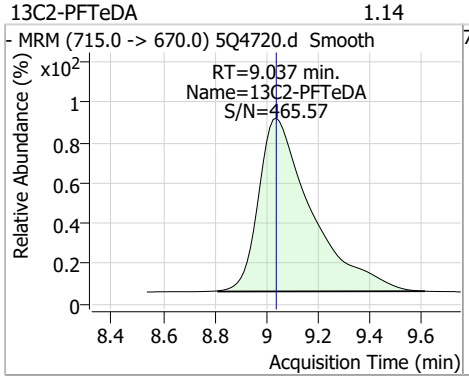
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.34	7.89	0.00	9701				

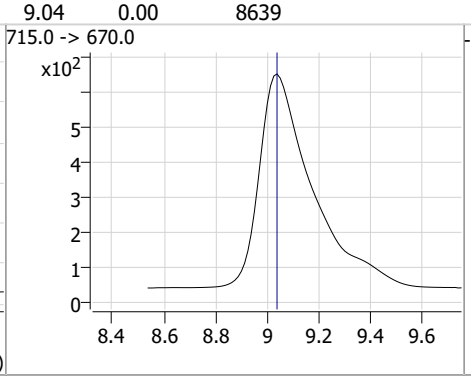


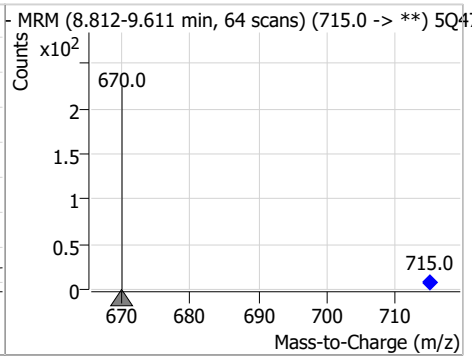




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.14	9.04	0.00	8639				







Manual Integration Approval Summary

Sample Number: FA98286-7
Lab FileID: 5Q4720.D
Injection Time: 09/16/22 06:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:27 Anna Ludwig
Supervisor approved: 09/19/22 15:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
PFHxSA	41997-13-1		5.67	Poor instrument integration
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.25	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:12

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4829.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 3:52:15 PM
Sample Name : fa98286-7
Vial : P4-F8
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92763,S5Q73,125,,,1.0,250,water

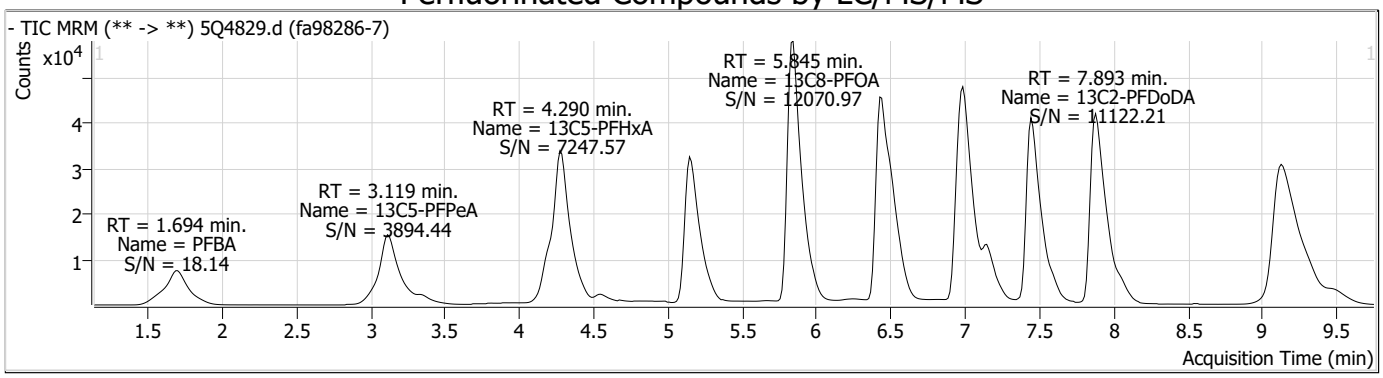
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	85927	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	139900	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	222571	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	208940	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	277825	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	277536	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	220801	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	277976	20.00	µg/L	0.012
M2-PFDoDA	7.893	615.0 -> 570.0	327288	20.00	µg/L	0.014
M2-PFTeDA	9.137	715.0 -> 670.0	423714	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	54794	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	15722	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	16320	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	26764	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	69502	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	95284	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	84509	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	40634	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	13016	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	12855	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	49633	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	69502	22.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C2-6:2FTS	5.830	429.0 -> 409.0	95284	22.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C2-8:2FTS	7.013	529.0 -> 509.0	84509	22.00	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C2-PFDoDA	7.893	615.0 -> 570.0	327288	24.27	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%		
13C2-PFTeDA	9.137	715.0 -> 670.0	423714	24.87	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		
13C3-PFBS	3.349	302.0 -> 99.0	15722	23.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.6%		
13C3-PFHxS	5.194	402.0 -> 99.0	16320	23.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.1%		
13C4-PFBA	1.700	217.0 -> 172.0	85927	23.30	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	208940	23.76	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.8%		
13C5-PFHxA	4.290	318.0 -> 273.0	222571	23.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.7%		
13C5-PFPeA	3.119	268.0 -> 223.0	139900	23.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.4%		
13C6-PFDA	6.977	519.0 -> 474.0	220801	23.77	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

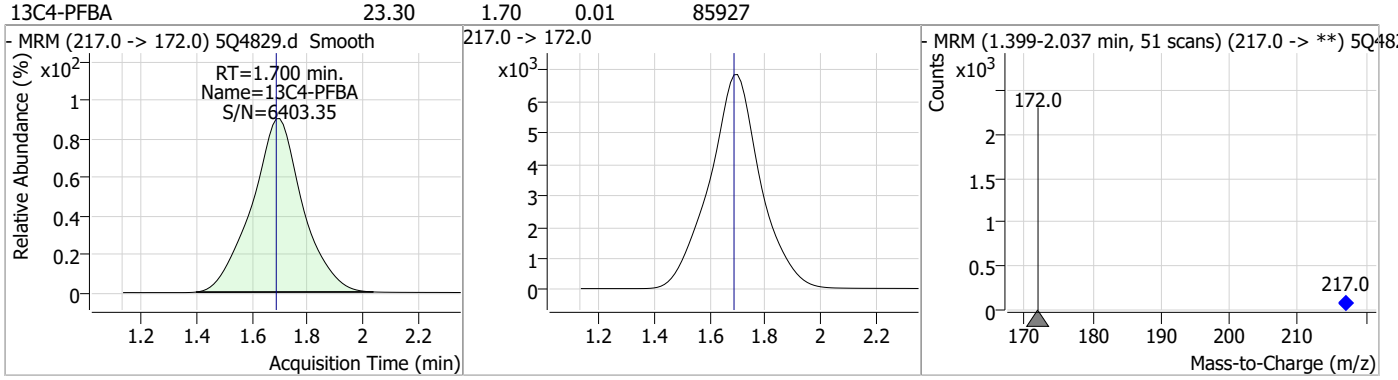
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	277976	23.99	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.9%			
13C8-FOSA	6.530	506.0 -> 78.0	54794	23.32	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.6%			
13C8-PFOA	5.845	421.0 -> 376.0	277825	23.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%			
13C8-PFOS	6.428	507.0 -> 99.0	26764	23.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.2%			
13C9-PFNA	6.443	472.0 -> 427.0	277536	23.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	40634	23.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.5%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	13016	22.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.6%			
d3-MeFOSA	6.952	515.0 -> 169.0	12855	22.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	49633	23.54	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.7%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.831	427.0 -> 407.0	11326	2.28	µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.694	213.0 -> 169.0	293	0.17	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	7.880	613.0 -> 569.0	0		µg/L	m	1
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	2778	0.20	µg/L		99
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.291	313.0 -> 269.0	4993	0.45	µg/L		100
PFHxS	5.195	399.0 -> 80.0	2129	0.90	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.429	499.0 -> 80.0	4217	1.76	µg/L	m	77
PFPeA	3.122	263.0 -> 219.0	5067	0.76	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	587	0.18	µg/L		92

 # = Qualifier out of range, m = manually integrated, + = Area summed

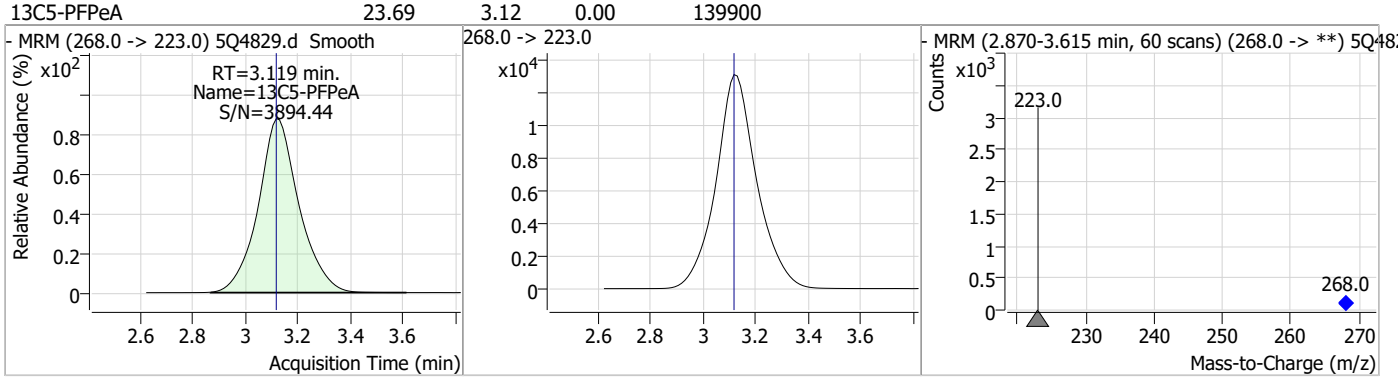
Perfluorinated Compounds by LC/MS/MS



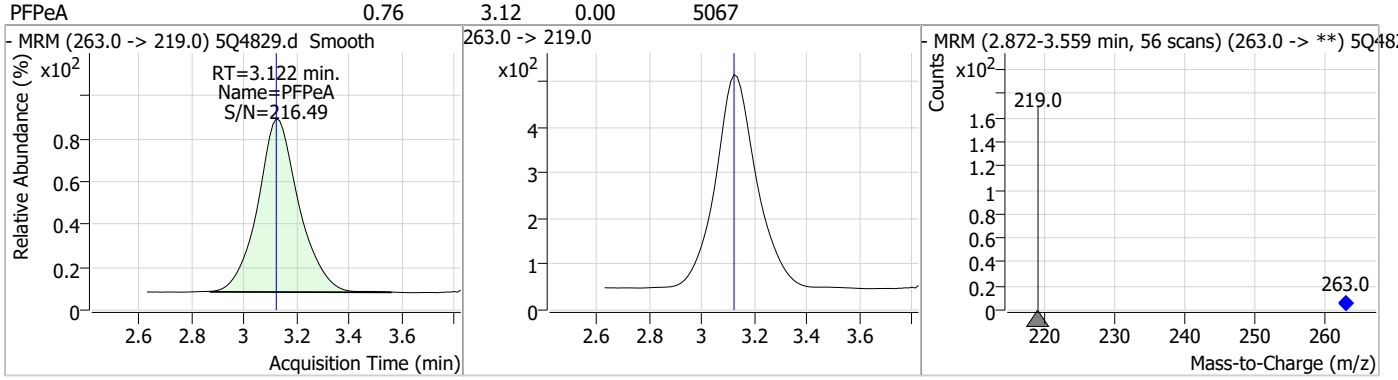
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	23.30	1.70	0.01	85927				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.69	3.12	0.00	139900				

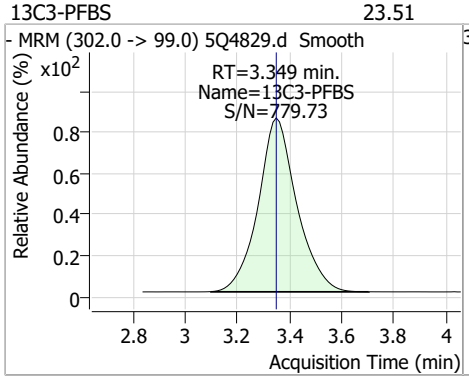


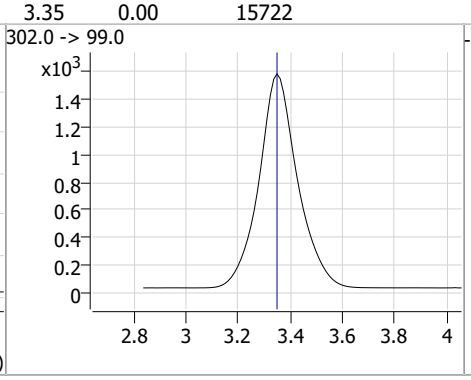
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.76	3.12	0.00	5067				

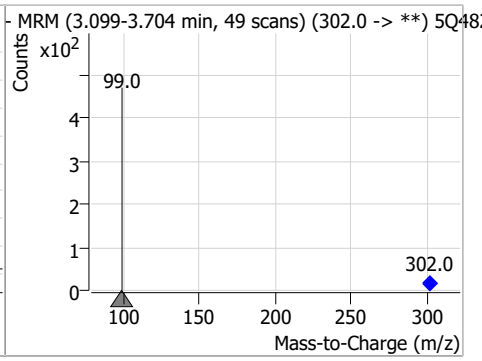


Perfluorinated Compounds by LC/MS/MS

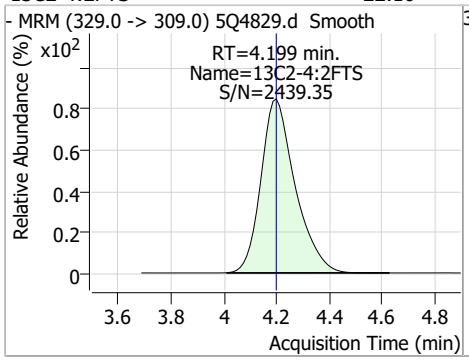
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	23.51	3.35	0.00	15722				

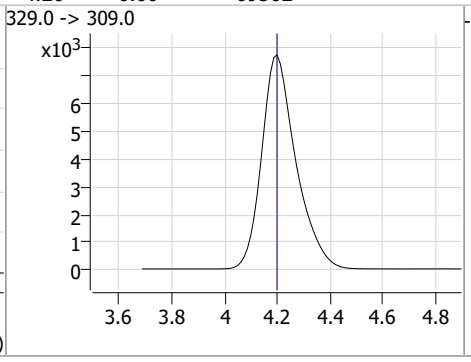


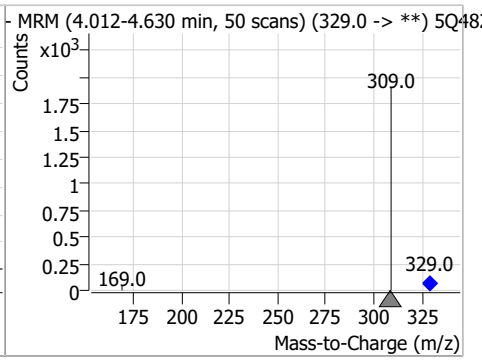




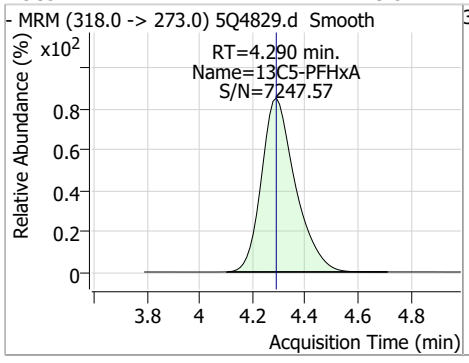
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.16	4.20	0.00	69502				

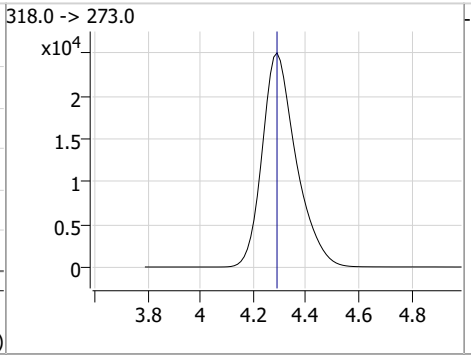


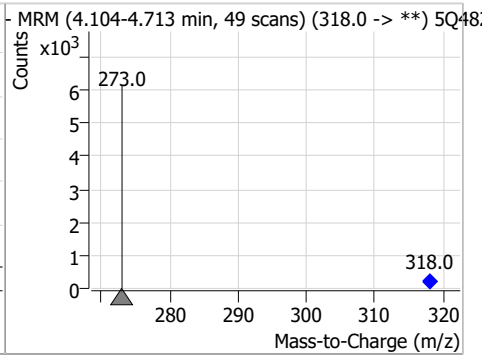




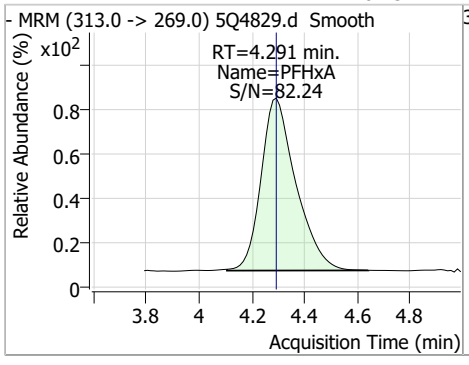
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	23.54	4.29	0.00	222571				

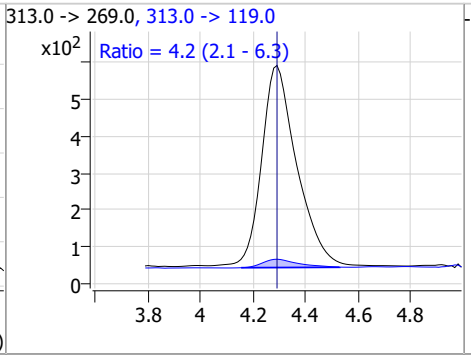


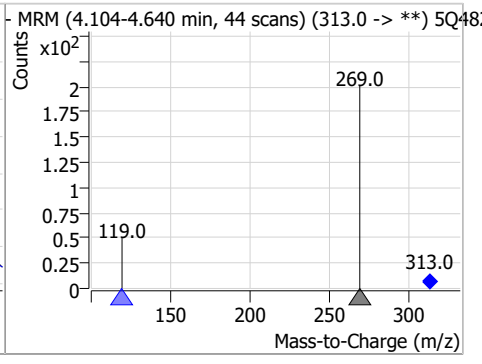




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.45	4.29	0.00	4993	313.0 -> 119.0	4.2	2.1	6.3

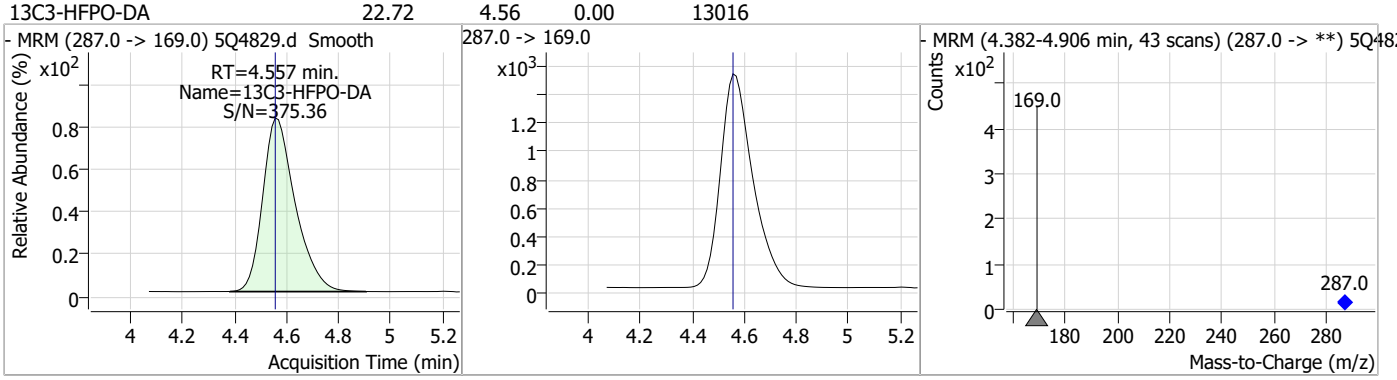




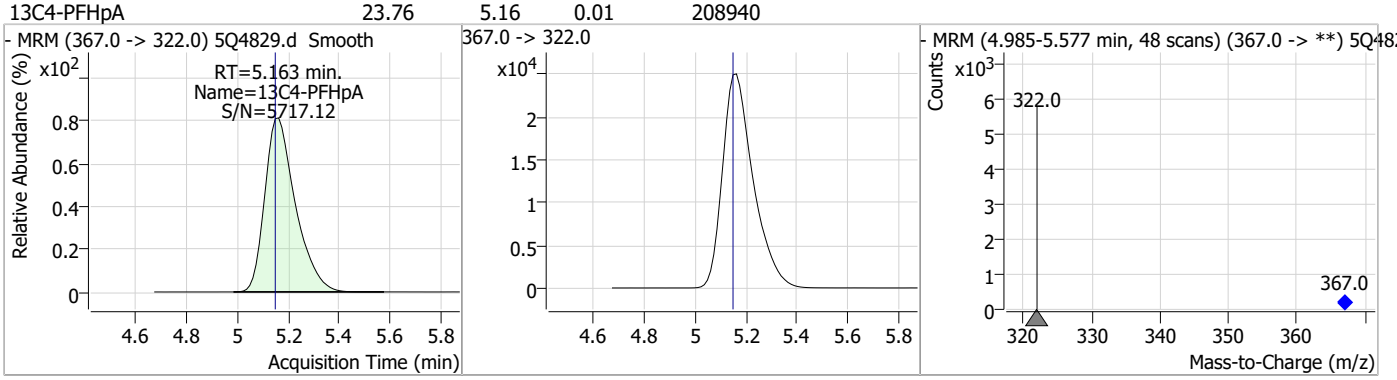


Perfluorinated Compounds by LC/MS/MS

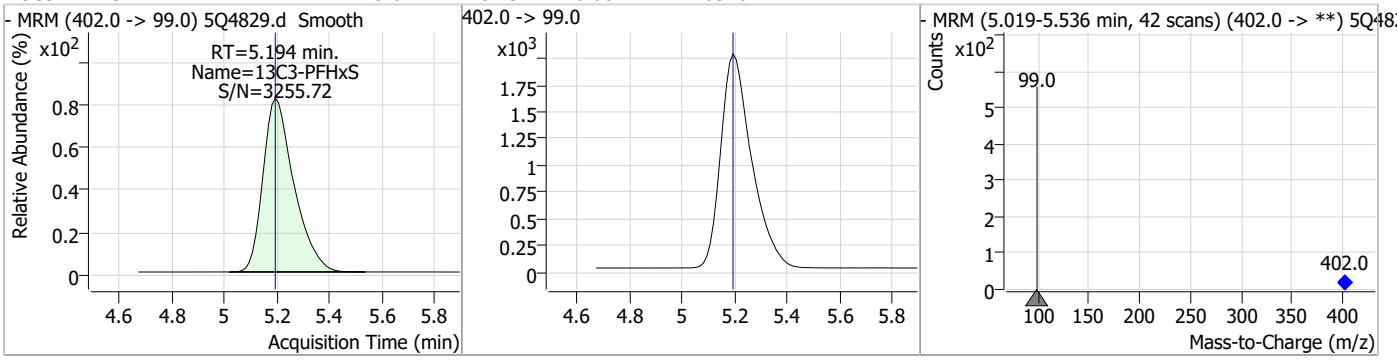
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.72	4.56	0.00	13016				



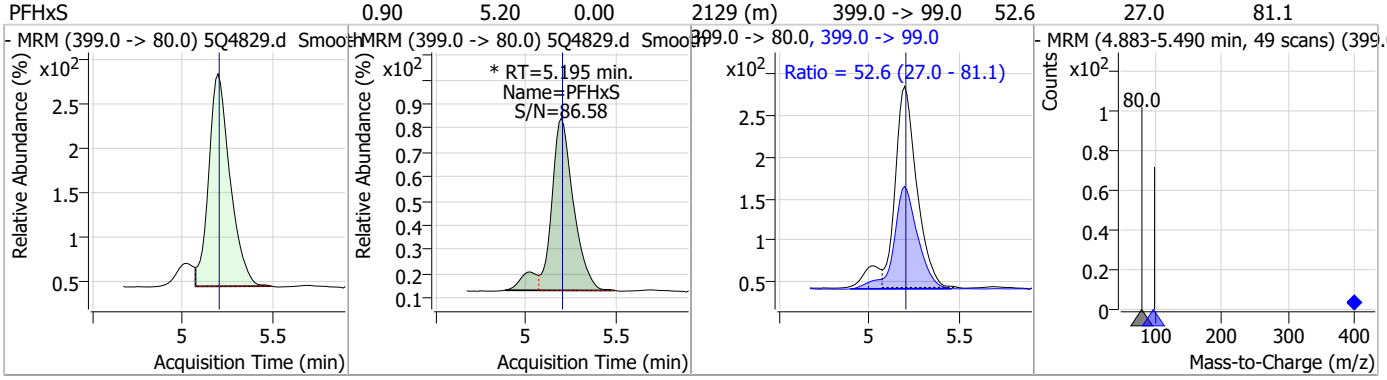
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.76	5.16	0.01	208940				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	23.81	5.19	0.00	16320				

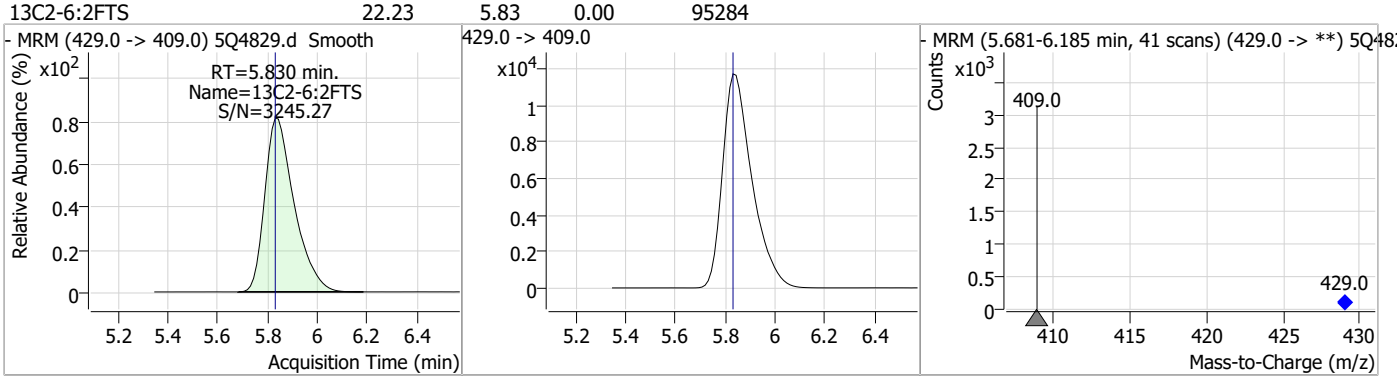


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.90	5.20	0.00	2129 (m)	399.0 -> 99.0	52.6	27.0	81.1

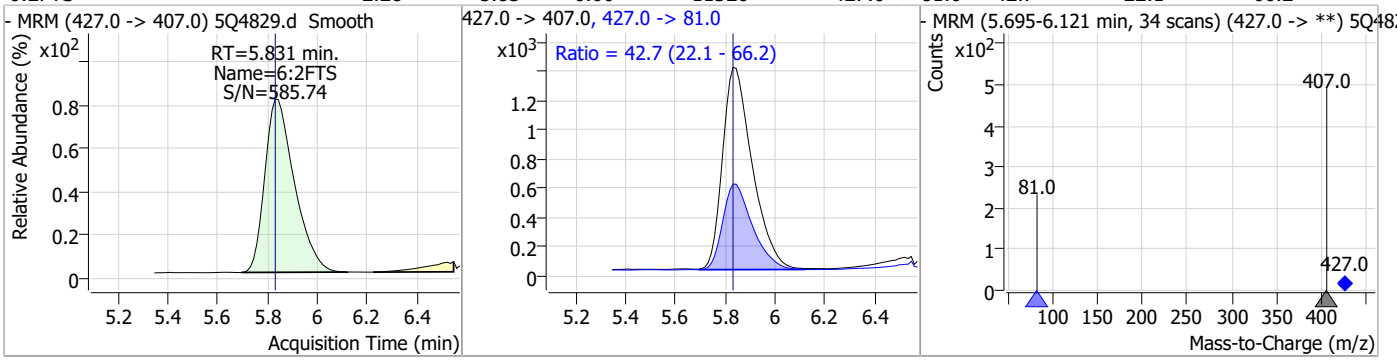


Perfluorinated Compounds by LC/MS/MS

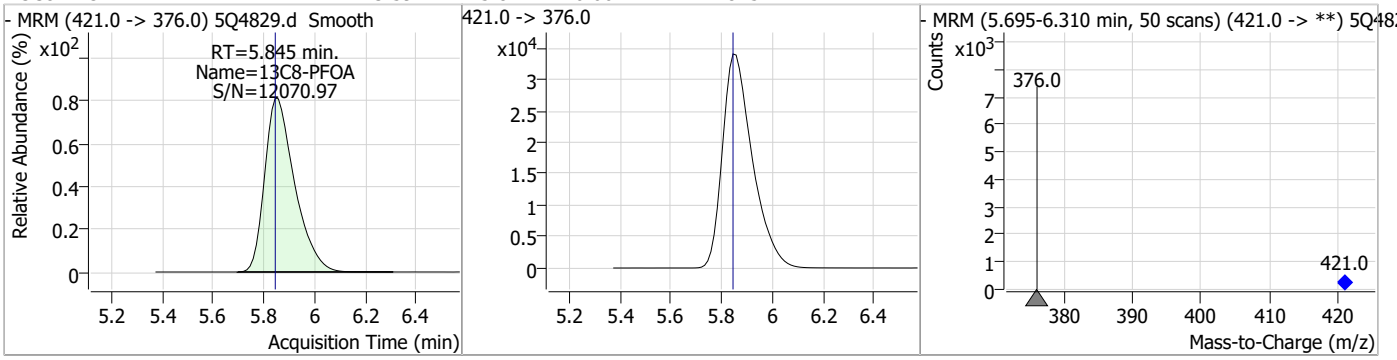
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.23	5.83	0.00	95284				



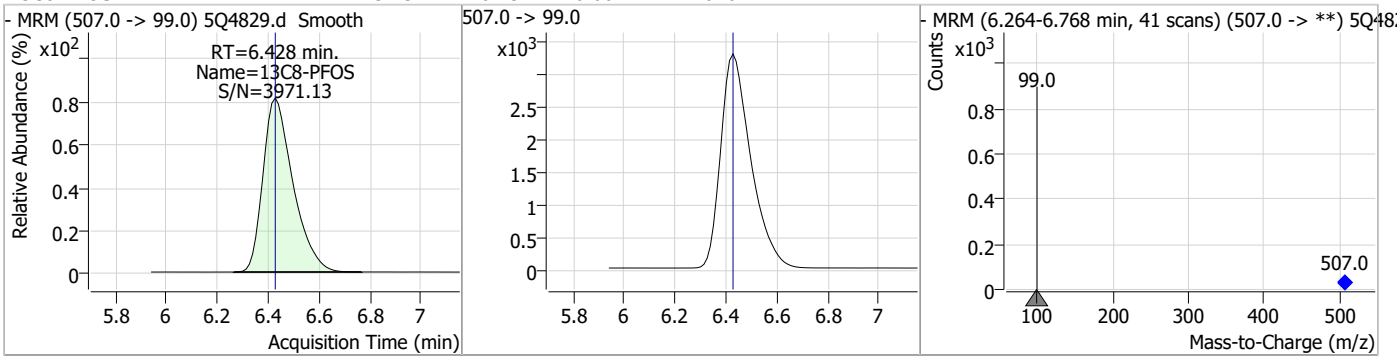
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.28	5.83	0.00	11326	427.0 -> 81.0	42.7	22.1	66.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.59	5.84	0.00	277825				

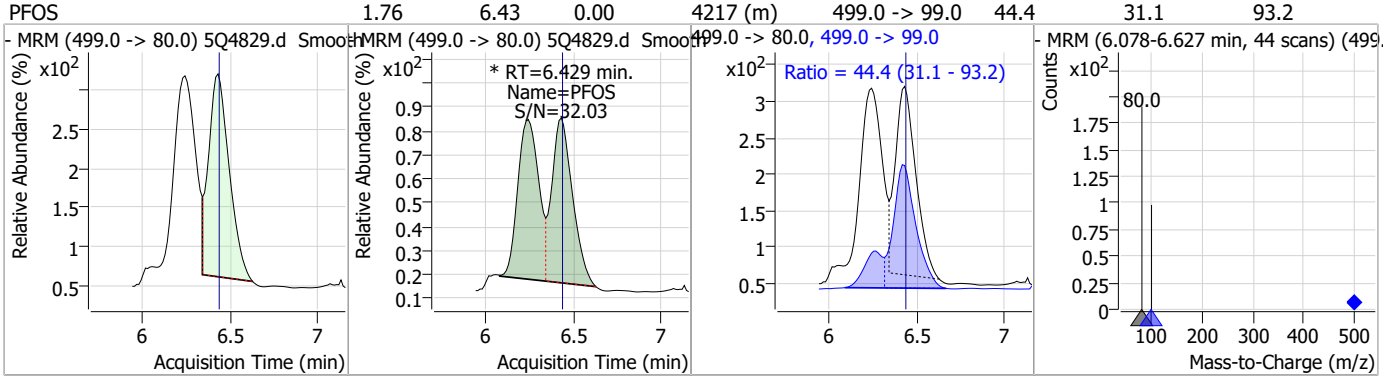


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.23	6.43	0.00	26764				

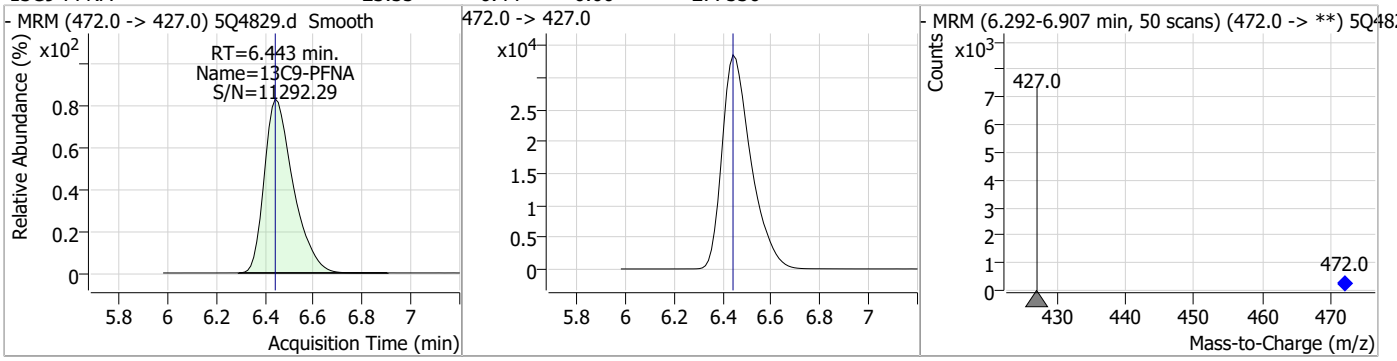


Perfluorinated Compounds by LC/MS/MS

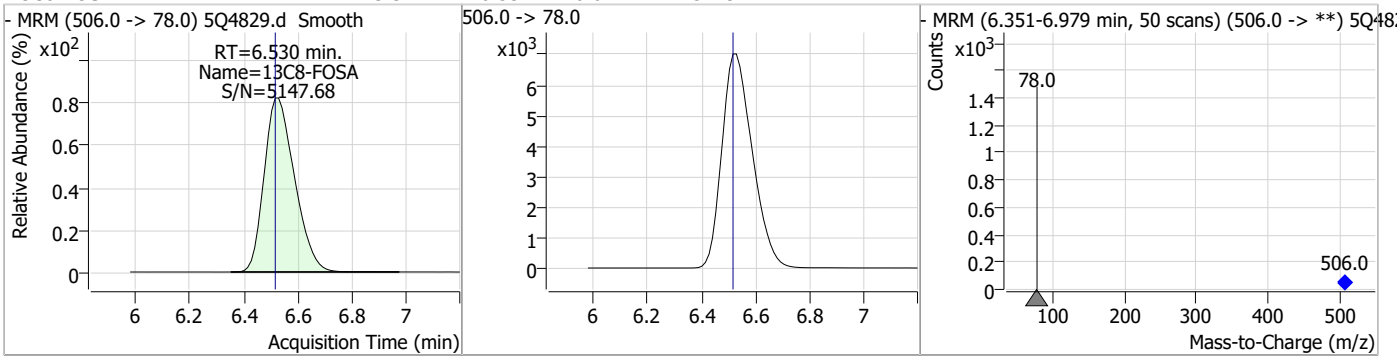
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.76	6.43	0.00	4217 (m)	499.0 -> 99.0	44.4	31.1	93.2



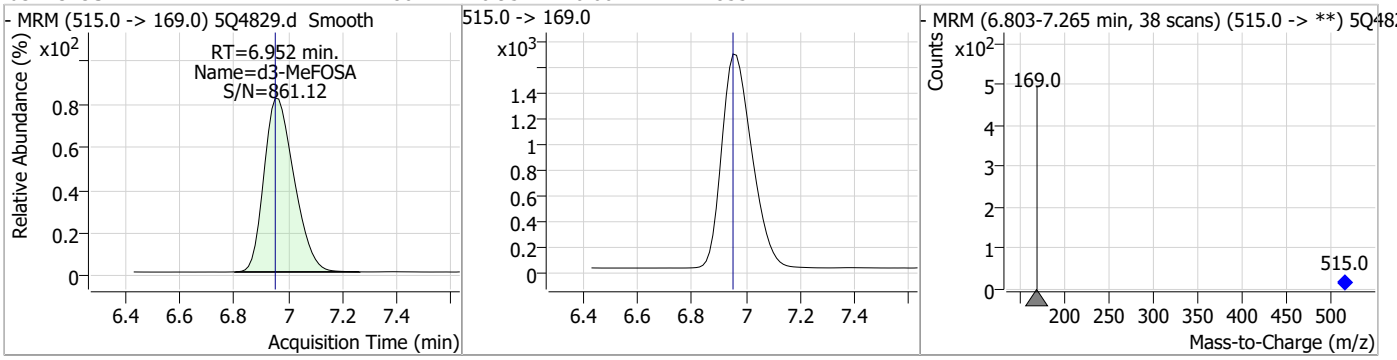
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	23.55	6.44	0.00	277536				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.32	6.53	0.01	54794				

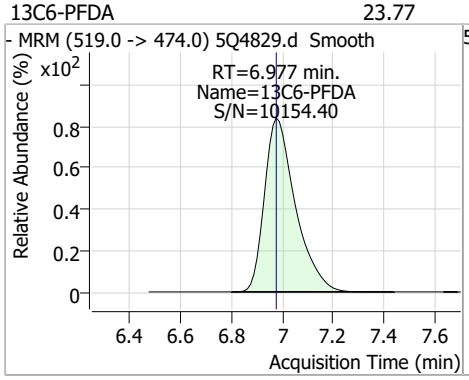


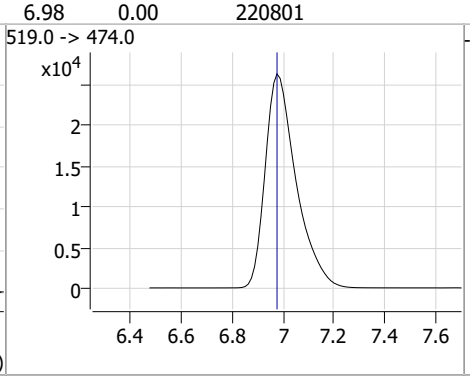
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.86	6.95	0.00	12855				

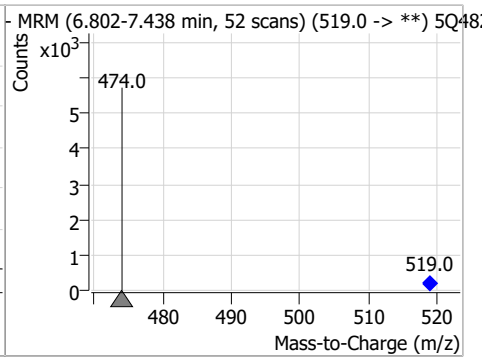


Perfluorinated Compounds by LC/MS/MS

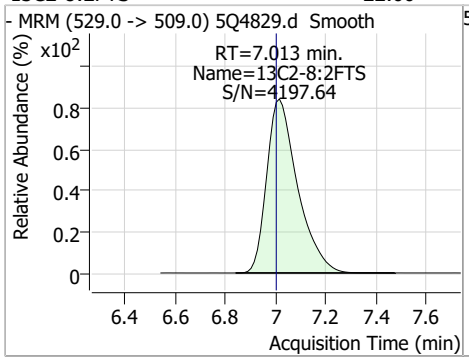
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.77	6.98	0.00	220801				

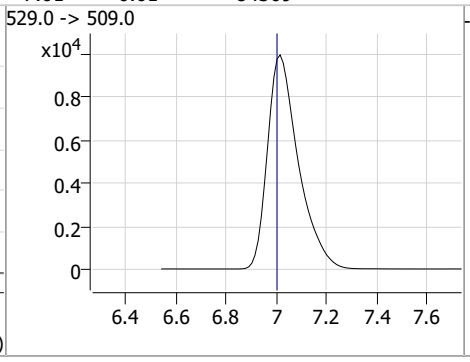


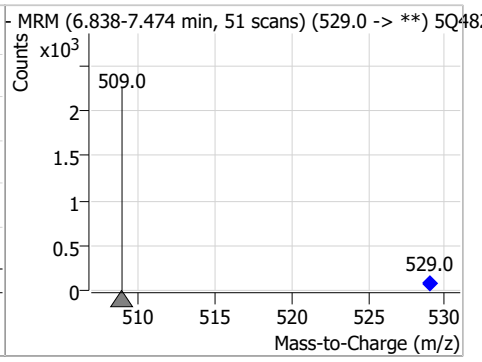




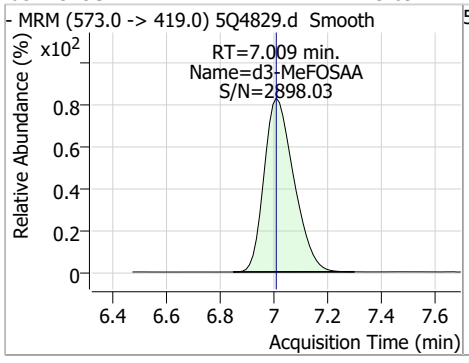
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.00	7.01	0.01	84509				

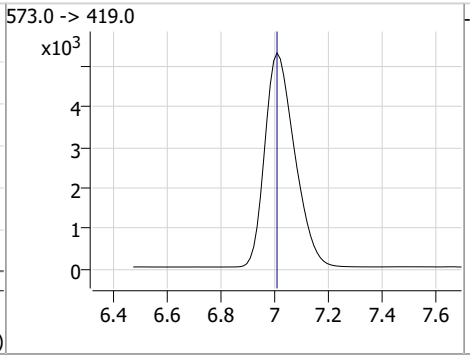


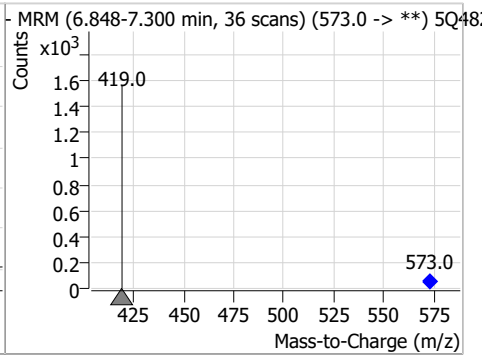




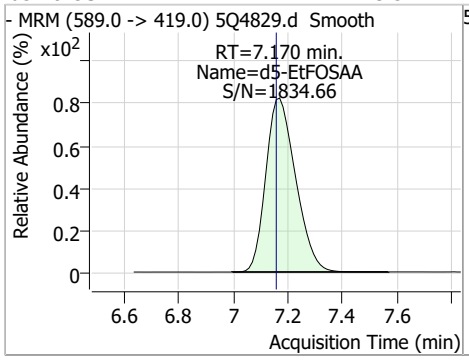
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.69	7.01	0.00	40634				

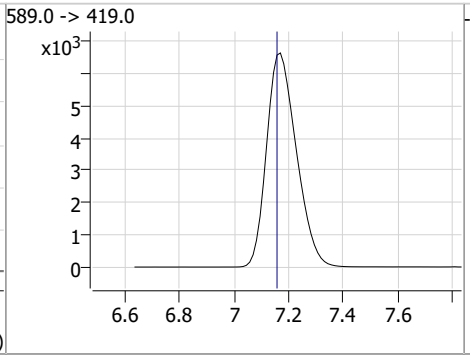


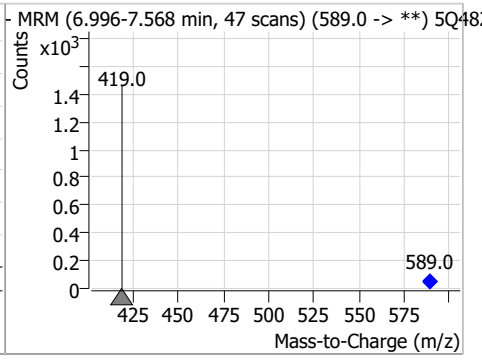




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.54	7.17	0.01	49633				

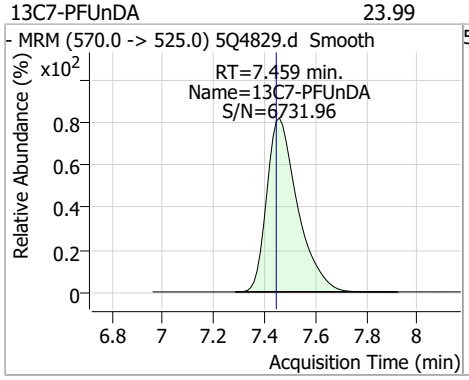


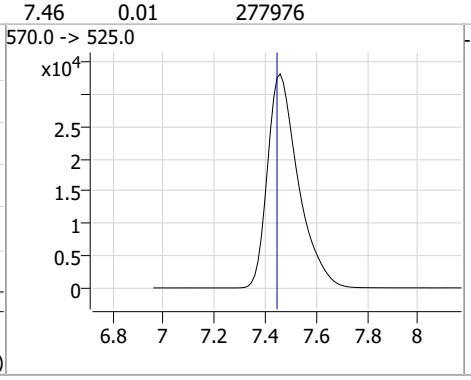


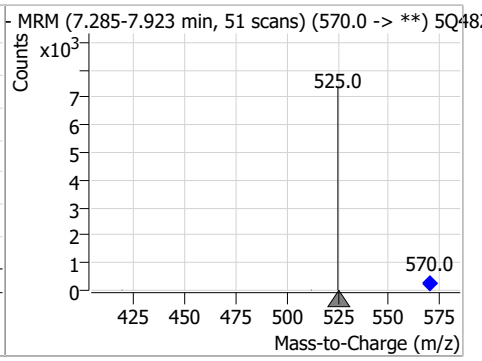


Perfluorinated Compounds by LC/MS/MS

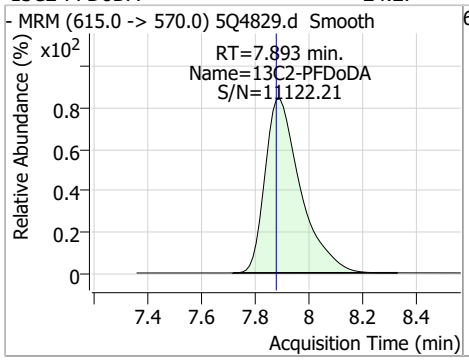
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.99	7.46	0.01	277976				

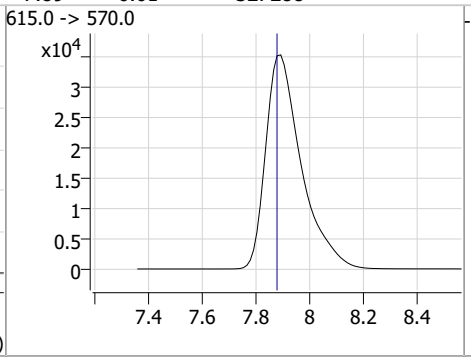


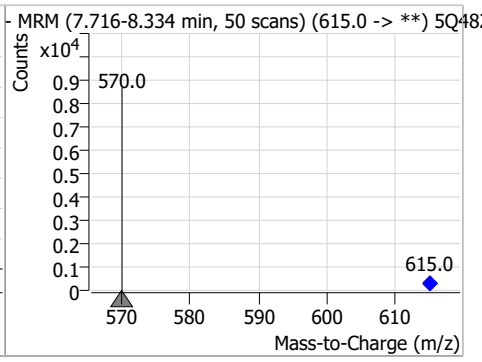




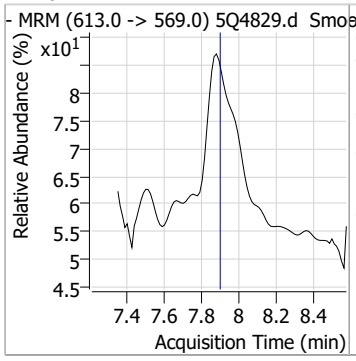
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	24.27	7.89	0.01	327288				

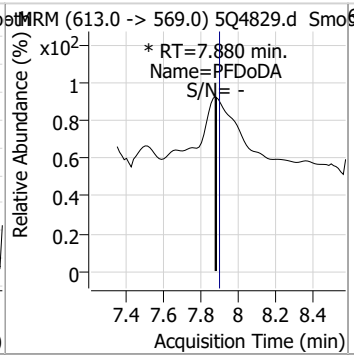


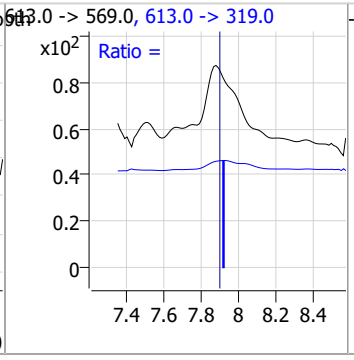


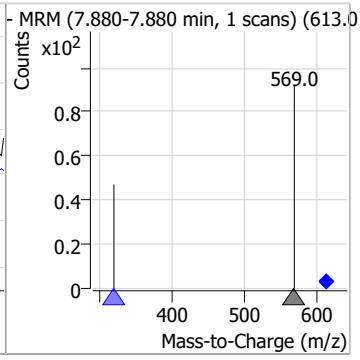


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0	0	0	613.0 -> 319.0			8.5	25.5

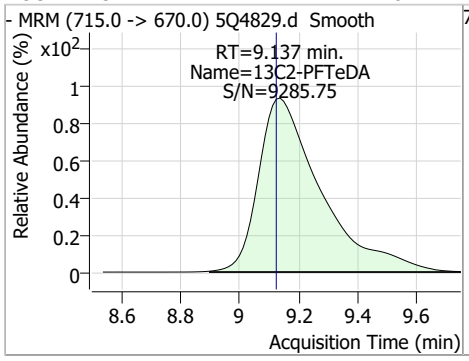


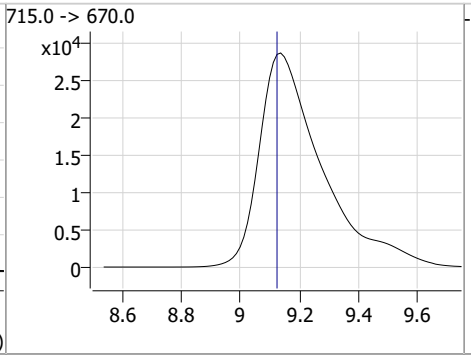


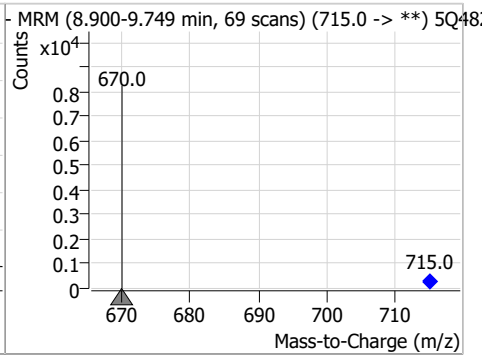




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	24.87	9.14	0.01	423714				







Manual Integration Approval Summary

Sample Number: FA98286-7
Lab FileID: 5Q4829.D
Injection Time: 09/17/22 15:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:27 Anna Ludwig
Supervisor approved: 09/19/22 15:12 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4643.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:40:33 AM
Sample Name : fa98286-8
Vial : P1-F1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

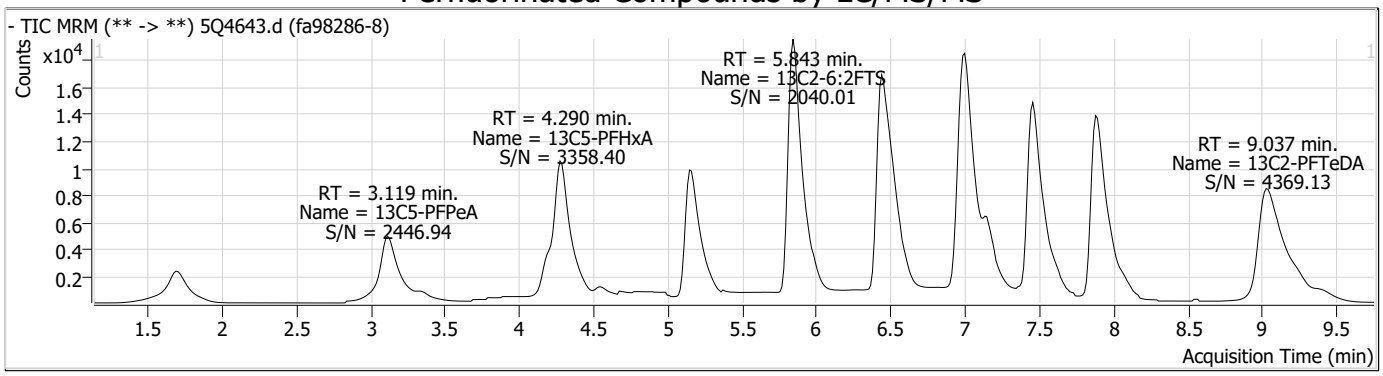
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	25970	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	43622	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	66443	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	62810	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	94364	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	100981	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	80218	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	99586	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	107722	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	115689	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	16435	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	4962	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5214	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	9321	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	20996	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	34158	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	32563	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16745	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4767	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	3513	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	17968	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	20996	14.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	34158	15.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.4%		
13C2-8:2FTS	7.025	529.0 -> 509.0	32563	14.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	107722	14.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C2-PFTeDA	9.037	715.0 -> 670.0	115689	15.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C3-PFBS	3.349	302.0 -> 99.0	4962	15.23	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.2%		
13C3-PFHxS	5.194	402.0 -> 99.0	5214	15.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.4%		
13C4-PFBA	1.700	217.0 -> 172.0	25970	14.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	62810	15.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	66443	15.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C5-PFPeA	3.119	268.0 -> 223.0	43622	15.01	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C6-PFDA	6.989	519.0 -> 474.0	80218	14.90	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

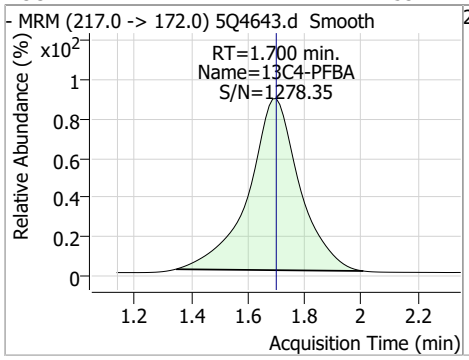
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.5%			
13C7-PFUnDA	7.471	570.0 -> 525.0	99586	14.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.7%			
13C8-FOSA	6.517	506.0 -> 78.0	16435	14.48	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%			
13C8-PFOA	5.857	421.0 -> 376.0	94364	15.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C8-PFOS	6.440	507.0 -> 99.0	9321	14.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.4%			
13C9-PFNA	6.455	472.0 -> 427.0	100981	15.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16745	17.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4767	14.20	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	3513	11.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.7%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17968	16.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.484	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	7.117	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

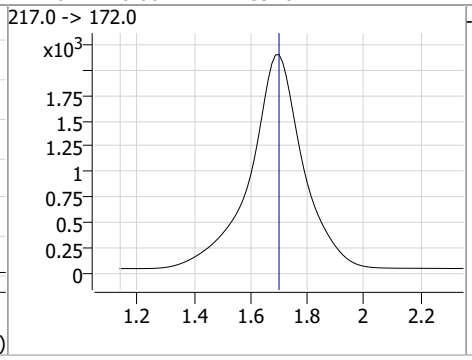
 # = Qualifier out of range, m = manually integrated, + = Area summed

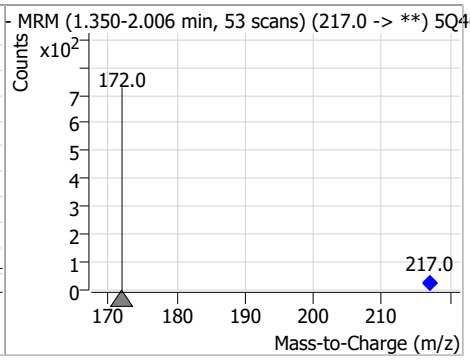
Perfluorinated Compounds by LC/MS/MS



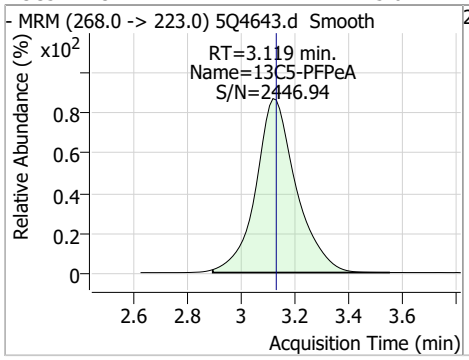
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.53	1.70	0.00	25970				

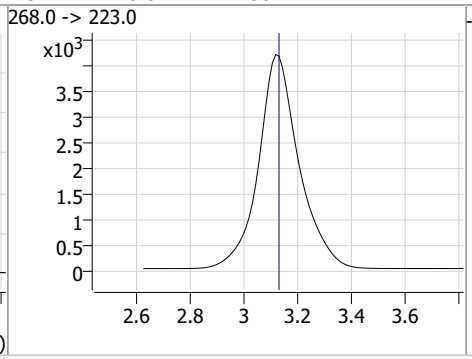


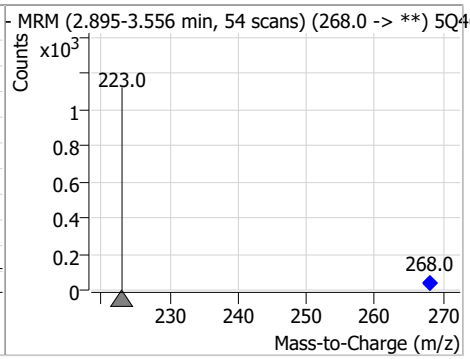




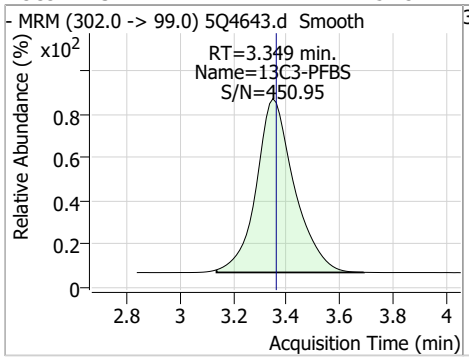
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.01	3.12	-0.01	43622				

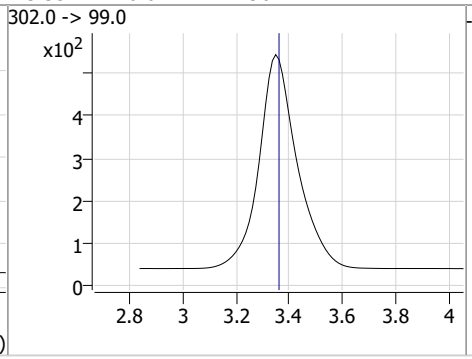


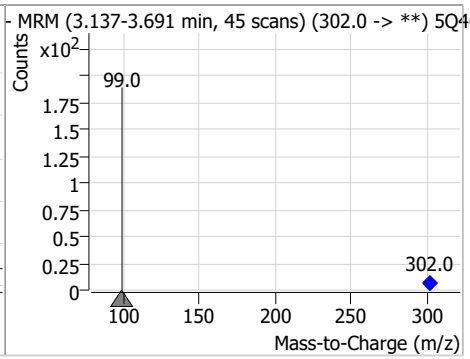




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.23	3.35	-0.01	4962				

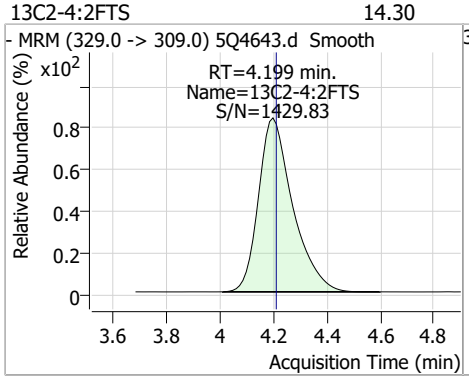


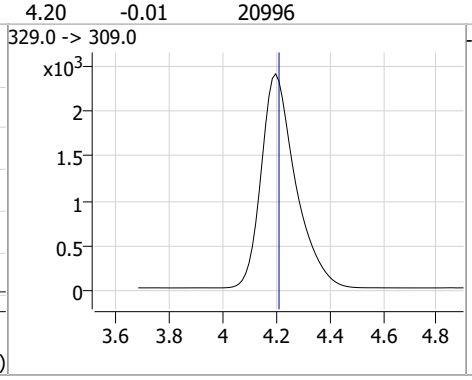


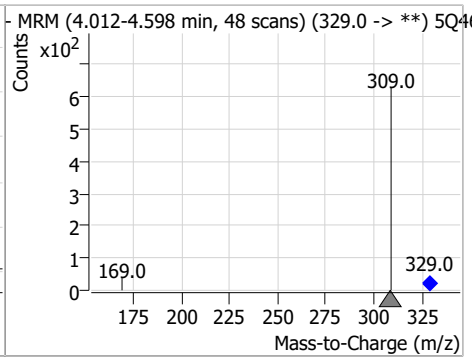


Perfluorinated Compounds by LC/MS/MS

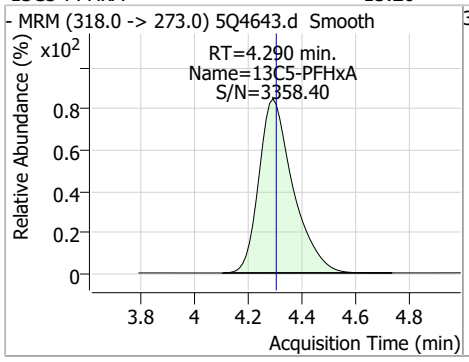
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.30	4.20	-0.01	20996				

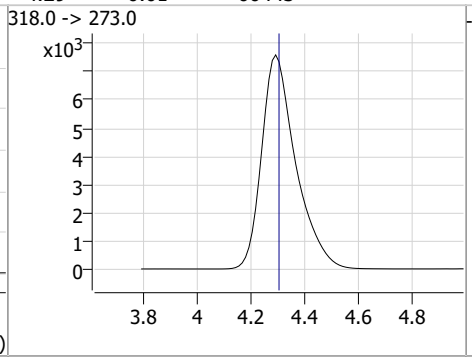


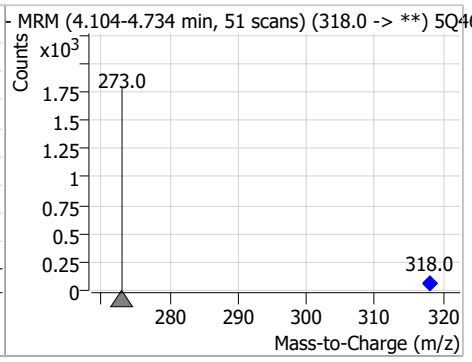




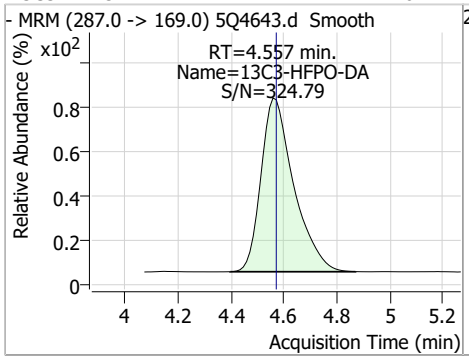
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.20	4.29	-0.01	66443				

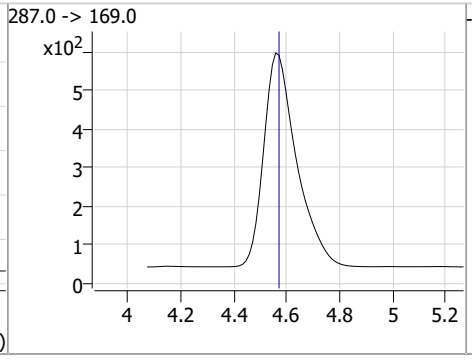


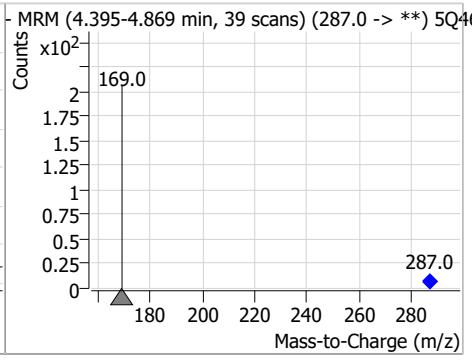




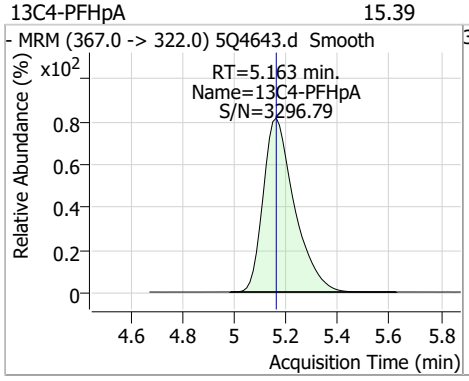
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.20	4.56	-0.01	4767				

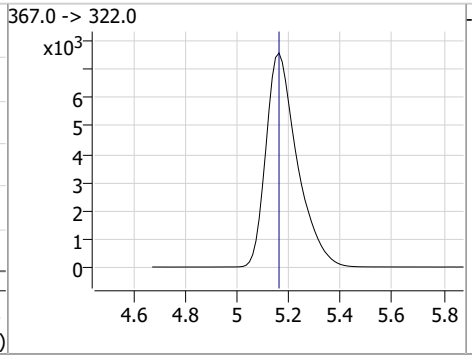


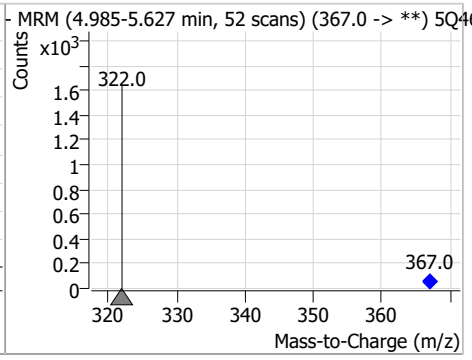




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.39	5.16	0.00	62810				

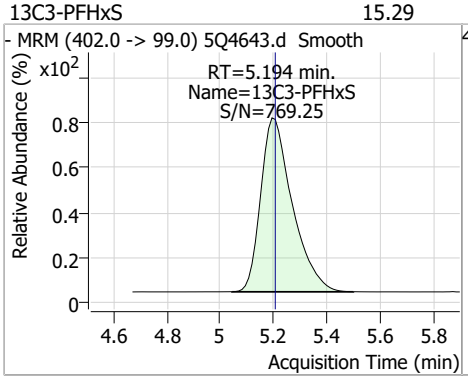


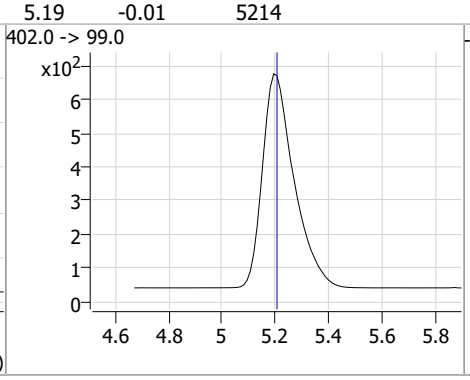


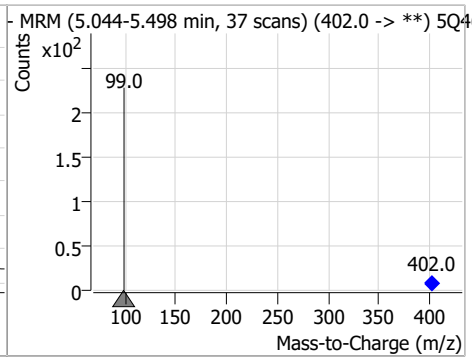


Perfluorinated Compounds by LC/MS/MS

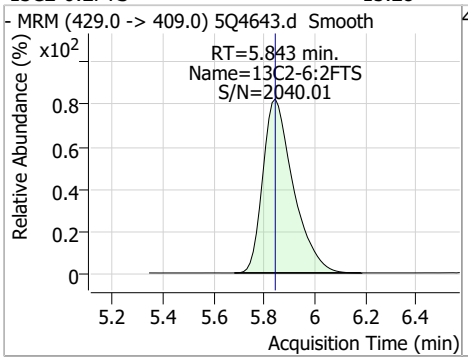
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.29	5.19	-0.01	5214				

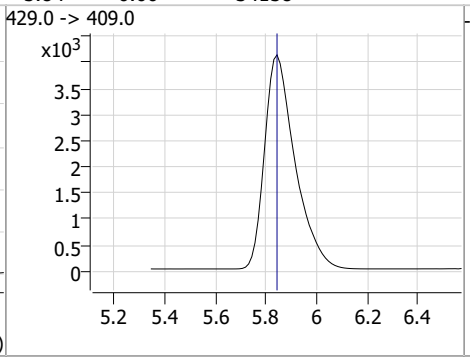


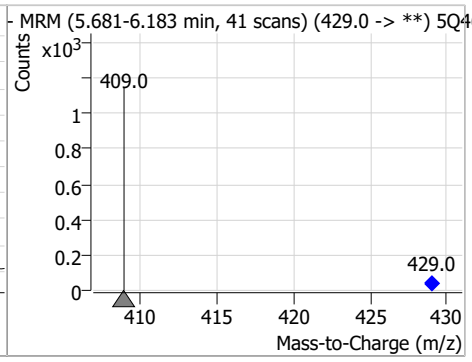




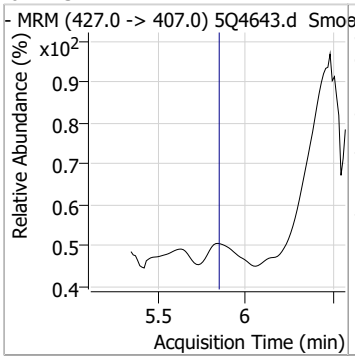
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.28	5.84	0.00	34158				

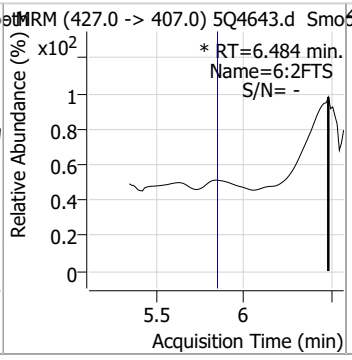


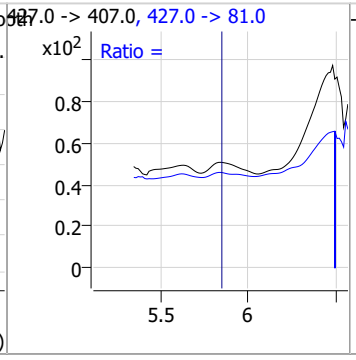


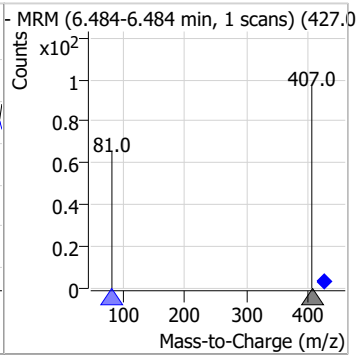


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

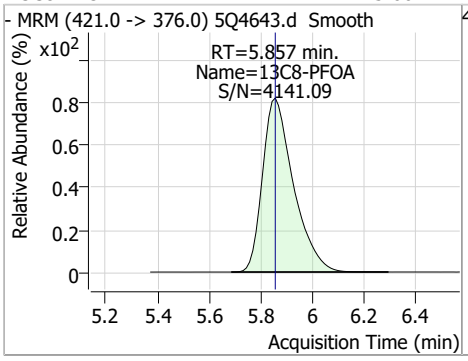


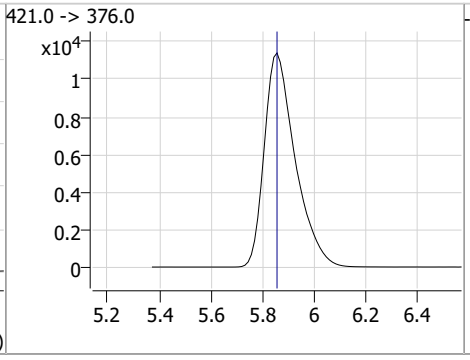


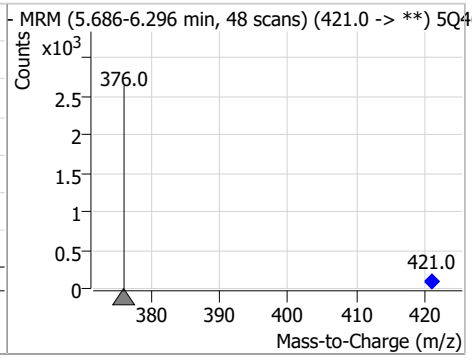




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.60	5.86	0.00	94364				

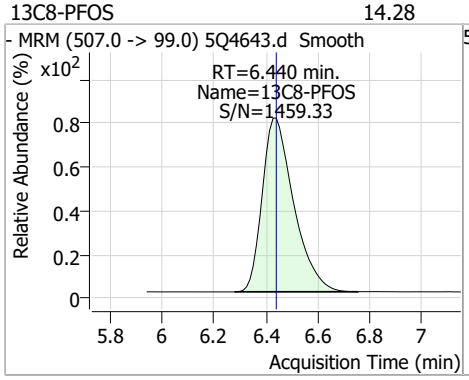


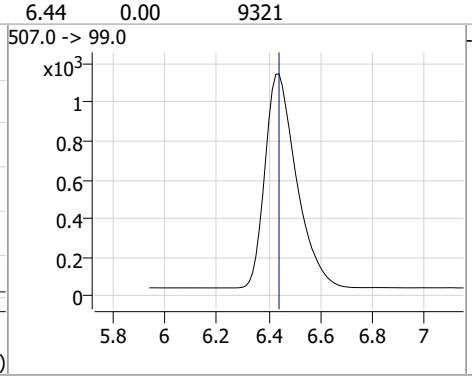


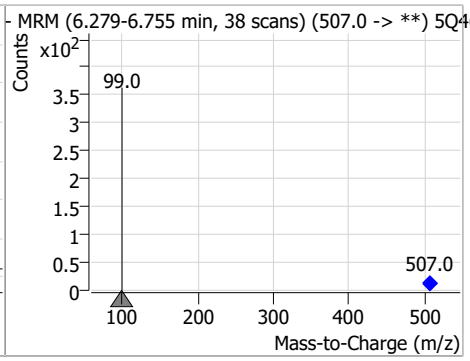


Perfluorinated Compounds by LC/MS/MS

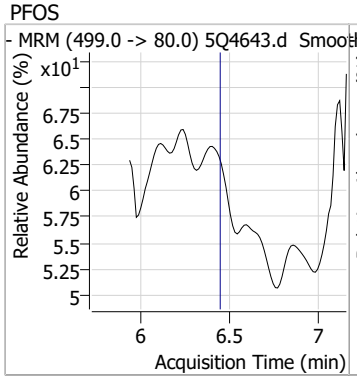
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.28	6.44	0.00	9321				

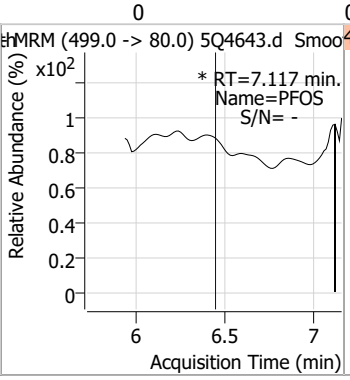


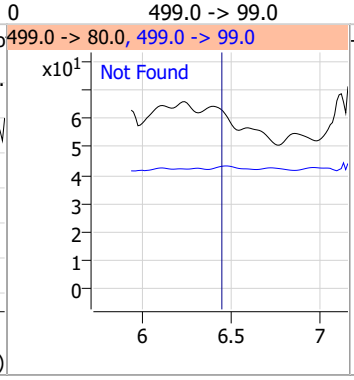


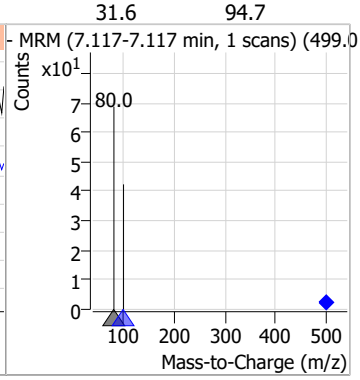


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

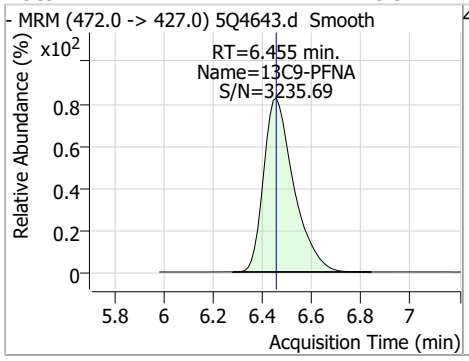


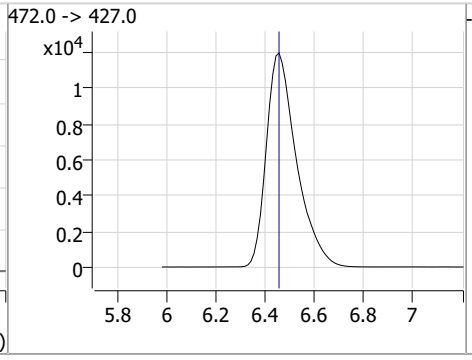


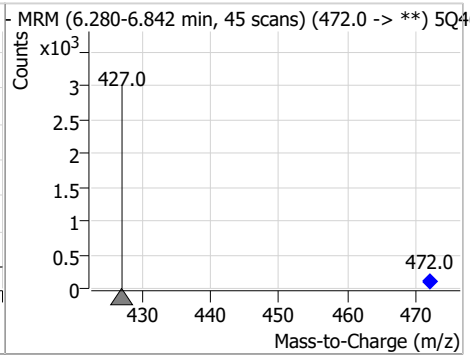




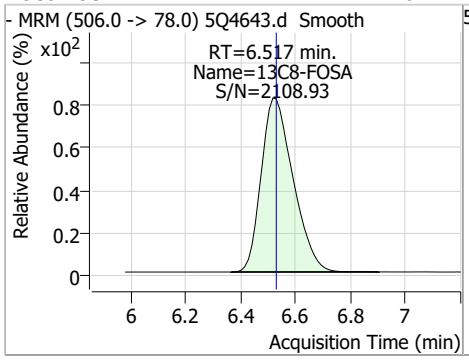
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.37	6.46	0.00	100981				

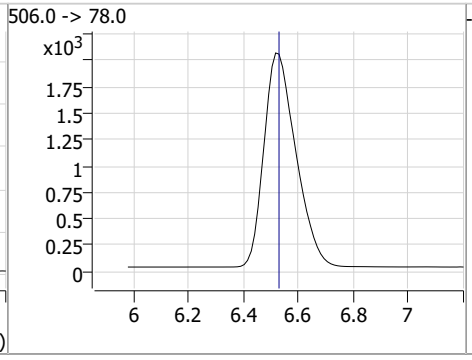


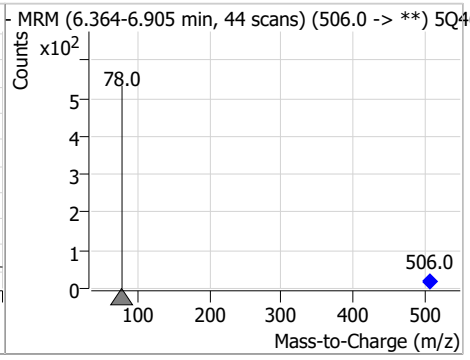




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.48	6.52	-0.01	16435				

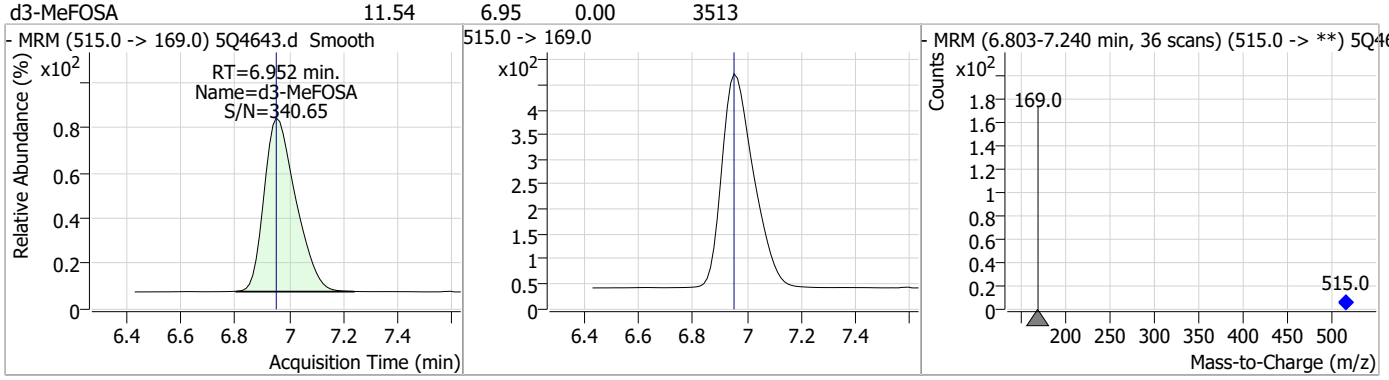




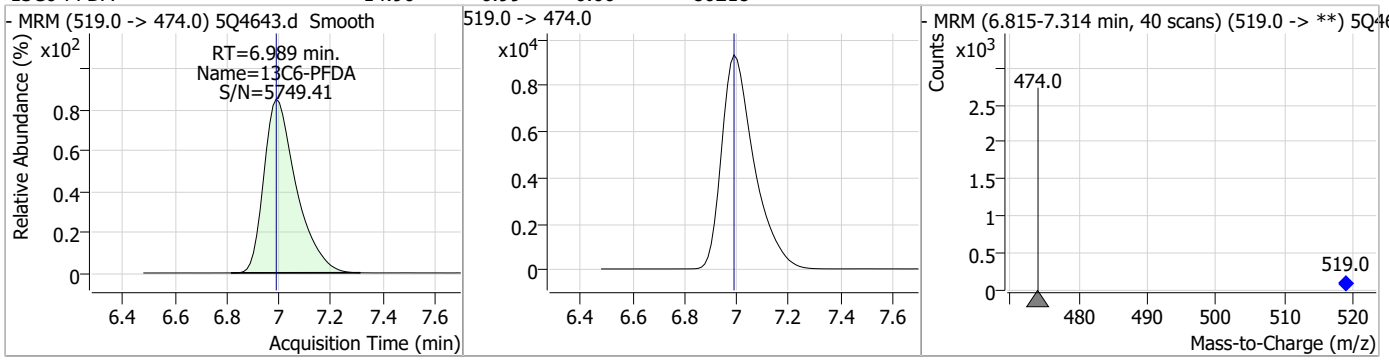


Perfluorinated Compounds by LC/MS/MS

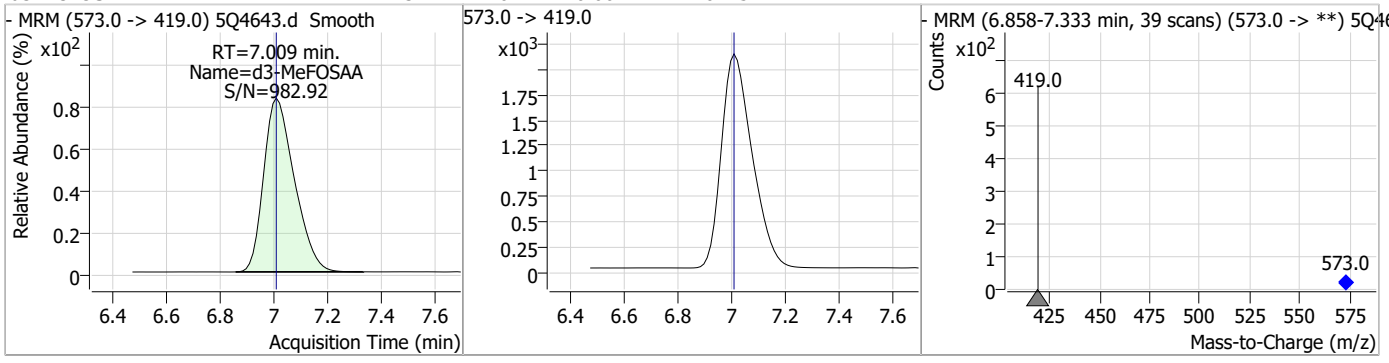
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.54	6.95	0.00	3513				



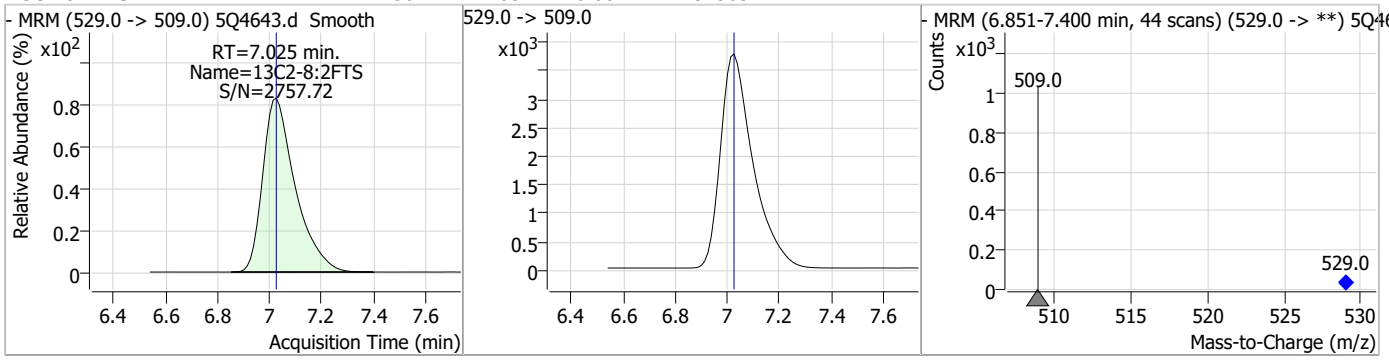
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.90	6.99	0.00	80218				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.23	7.01	0.00	16745				

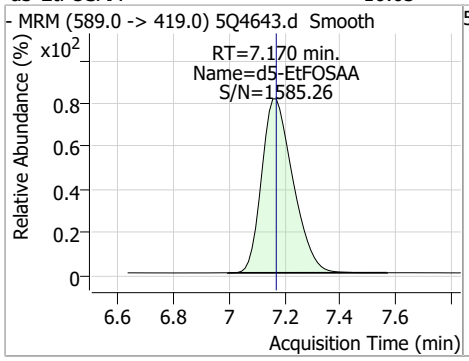


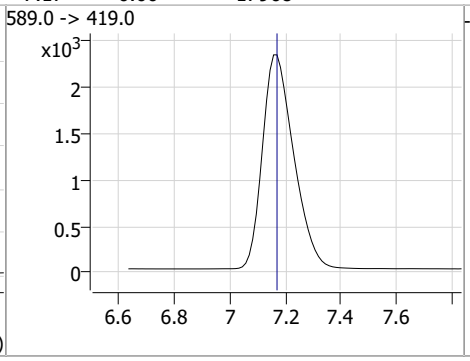
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.50	7.03	0.00	32563				

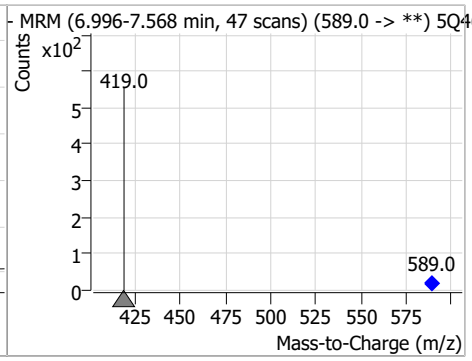


Perfluorinated Compounds by LC/MS/MS

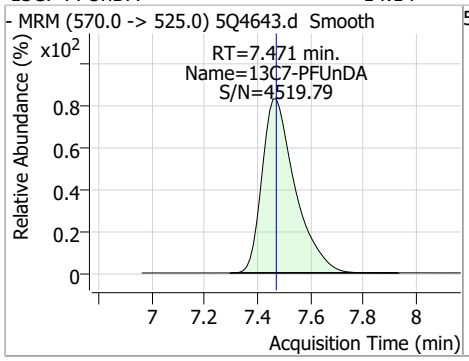
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.03	7.17	0.00	17968				

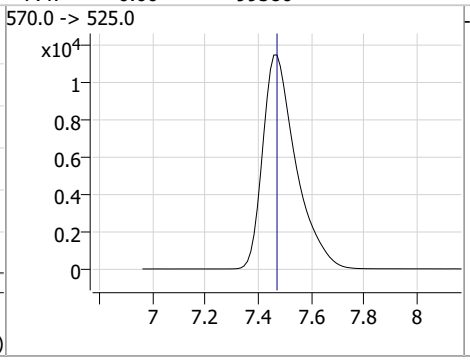


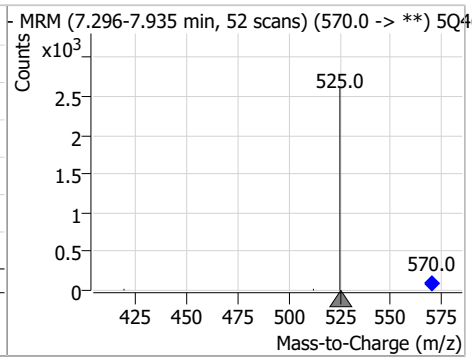




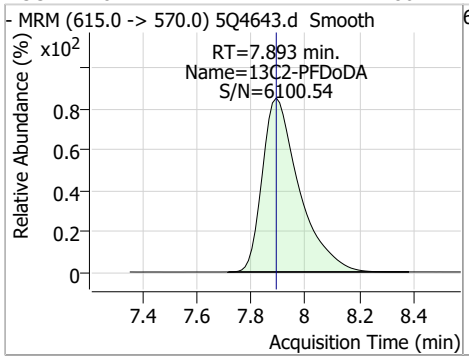
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.14	7.47	0.00	99586				

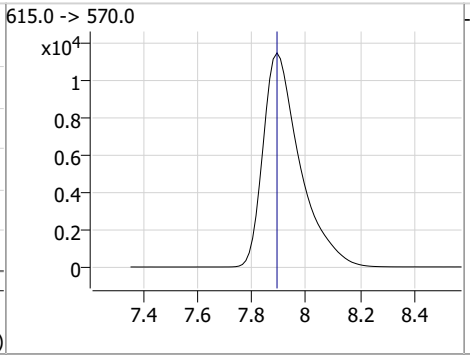


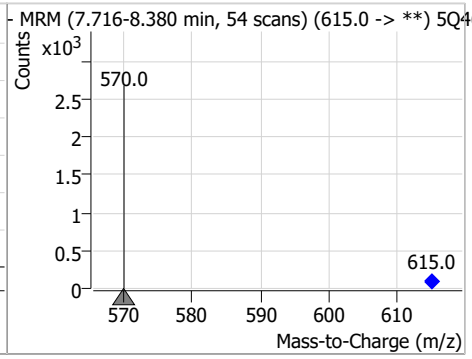




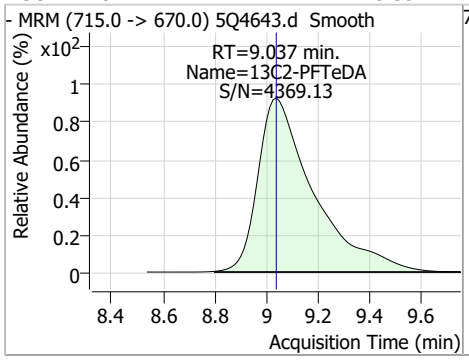
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.86	7.89	0.00	107722				

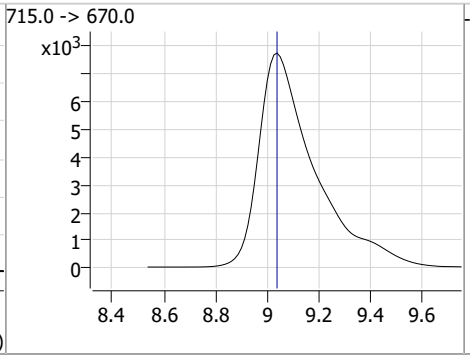


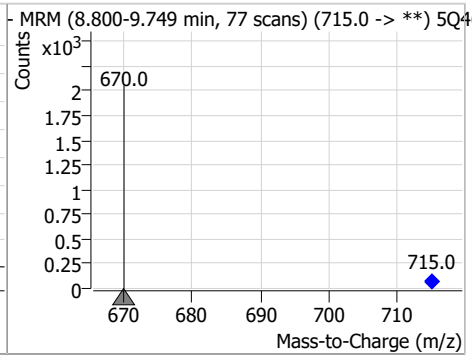




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.33	9.04	0.00	115689				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4721.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/16/2022 6:40:09 AM
Sample Name	:	fa98286-8
Vial	:	P1-F1
DA Method File	:	ID_091422_S5Q71.quantmethod.xml
Batch Name	:	s5q72.batch.bin
Sample Information	:	OP92763,S5Q72,125,,,1.0,1,water

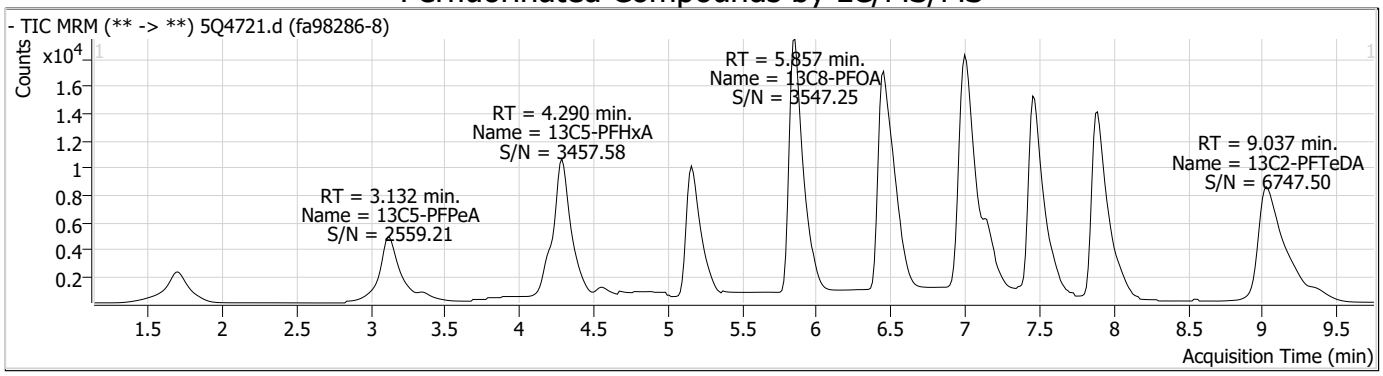
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	26004	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	43796	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	66653	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	62075	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	92644	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	97689	20.00	µg/L	0.000
M6-PFDA	7.002	519.0 -> 474.0	78139	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	98235	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	105144	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	111810	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	15821	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	5057	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	5233	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	9340	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	20848	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	33339	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	30401	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	15097	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	4651	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	3669	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	16806	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	20848	14.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%		
13C2-6:2FTS	5.843	429.0 -> 409.0	33339	14.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	30401	13.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.7%		
13C2-PFDoDA	7.893	615.0 -> 570.0	105144	14.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C2-PFTeDA	9.037	715.0 -> 670.0	111810	14.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C3-PFBS	3.362	302.0 -> 99.0	5057	15.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	5233	15.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C4-PFBA	1.700	217.0 -> 172.0	26004	14.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	62075	15.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	66653	15.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	43796	15.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C6-PFDA	7.002	519.0 -> 474.0	78139	14.52	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

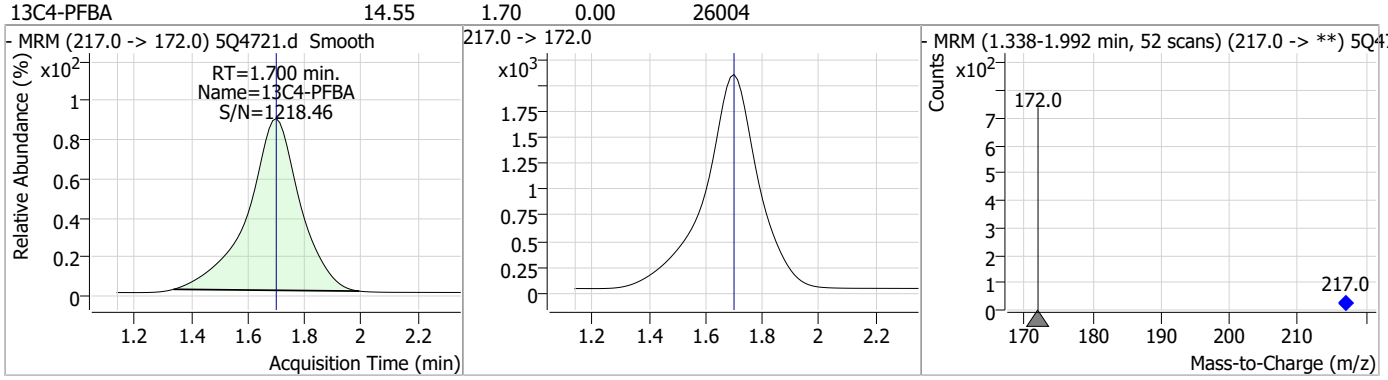
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%			
13C7-PFUnDA	7.471	570.0 -> 525.0	98235	13.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%			
13C8-FOSA	6.530	506.0 -> 78.0	15821	13.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.7%			
13C8-PFOA	5.857	421.0 -> 376.0	92644	15.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
13C8-PFOS	6.440	507.0 -> 99.0	9340	14.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%			
13C9-PFNA	6.455	472.0 -> 427.0	97689	14.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15097	15.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	4651	13.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	3669	12.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%			
d5-EtFOSAA	7.170	589.0 -> 419.0	16806	14.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	7.155	463.0 -> 419.0	0		µg/L	m	1
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	5.991	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

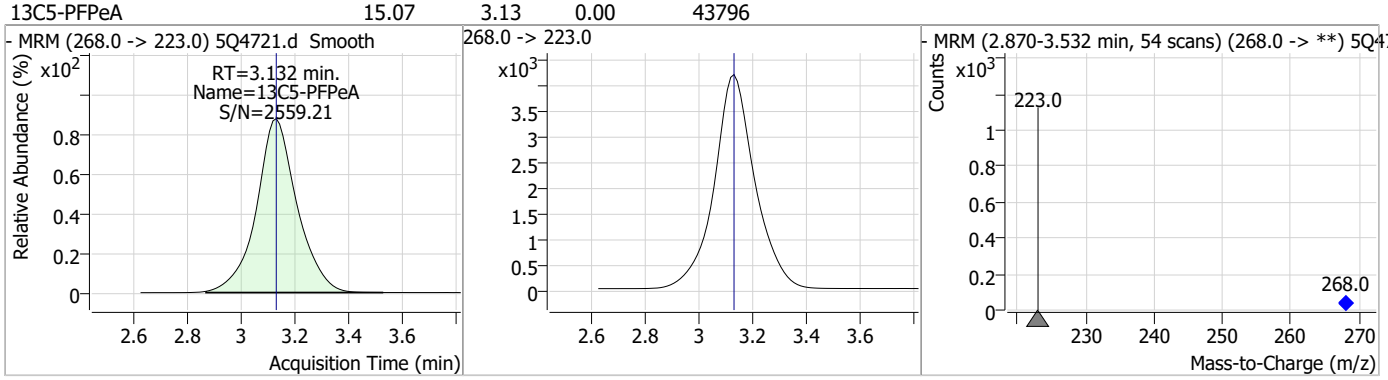
Perfluorinated Compounds by LC/MS/MS



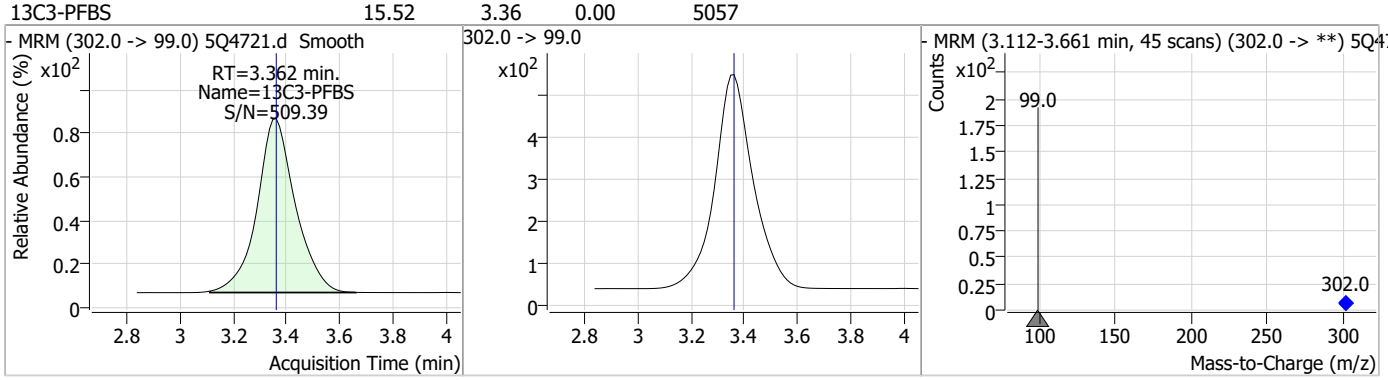
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.55	1.70	0.00	26004				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.07	3.13	0.00	43796				

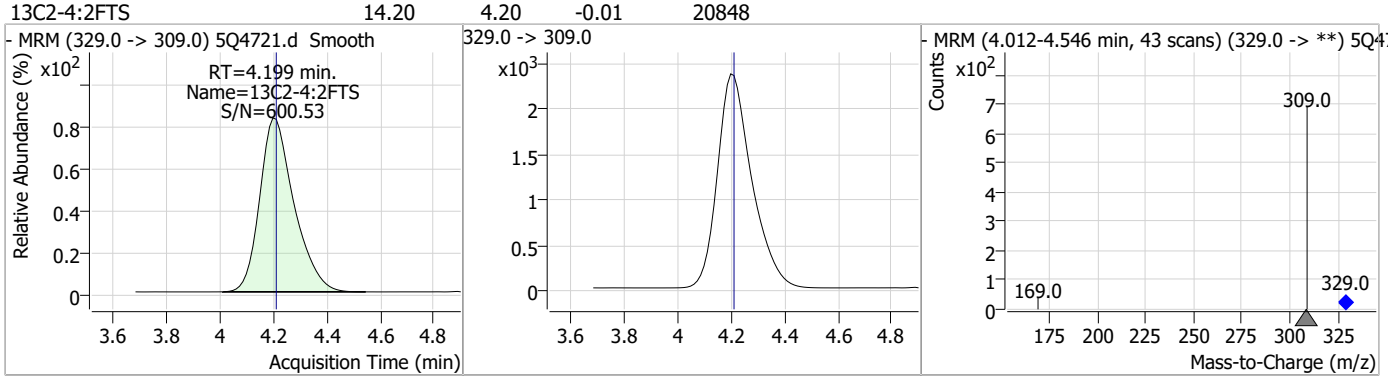


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.52	3.36	0.00	5057				

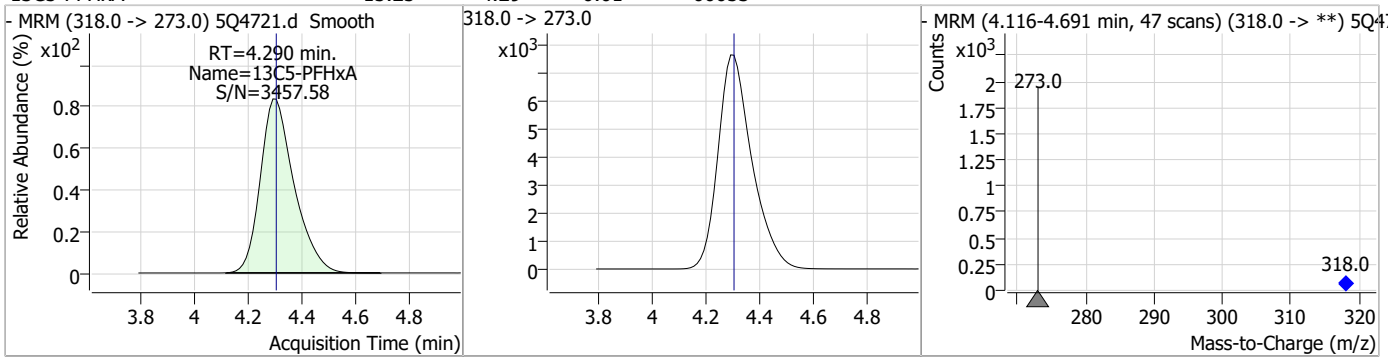


Perfluorinated Compounds by LC/MS/MS

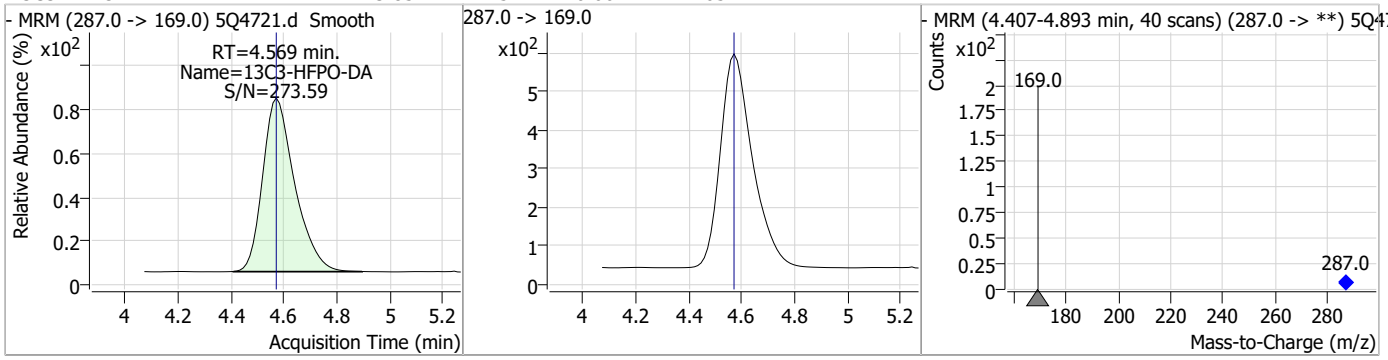
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.20	4.20	-0.01	20848				



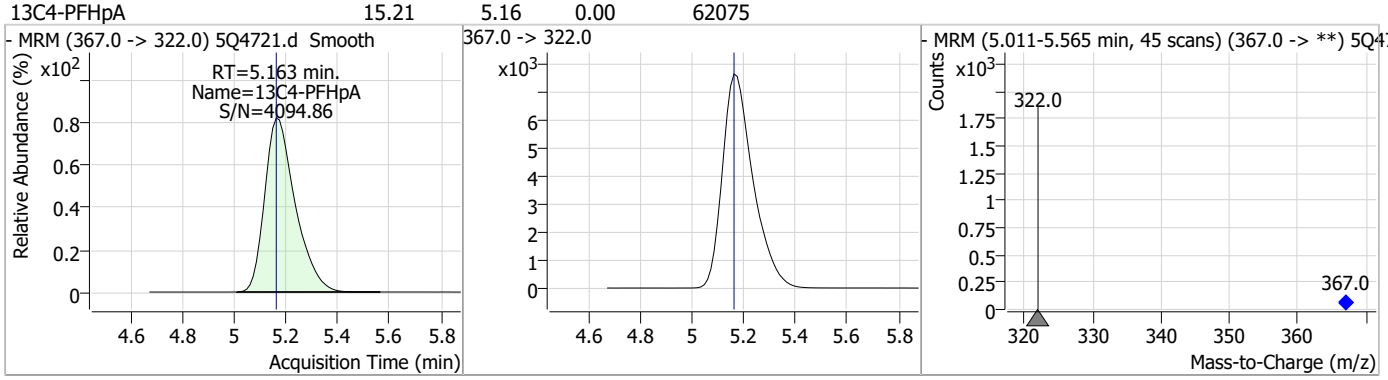
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.25	4.29	-0.01	66653				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.85	4.57	0.00	4651				

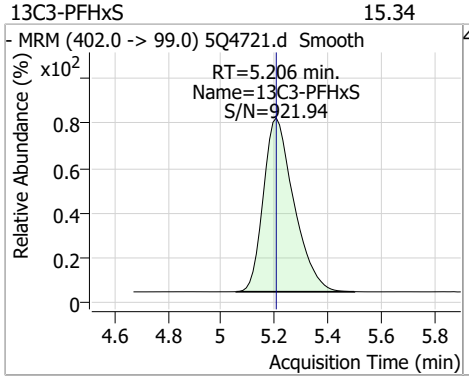


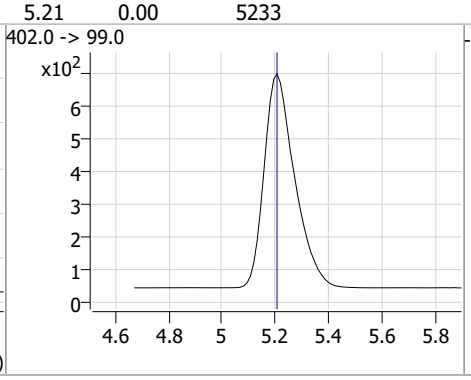
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.21	5.16	0.00	62075				

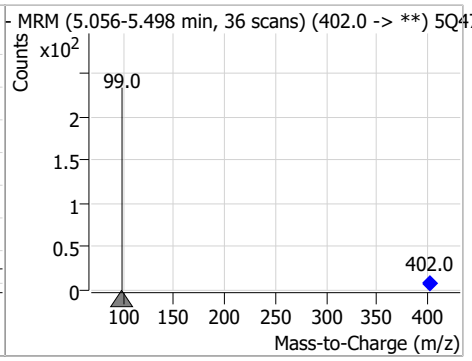


Perfluorinated Compounds by LC/MS/MS

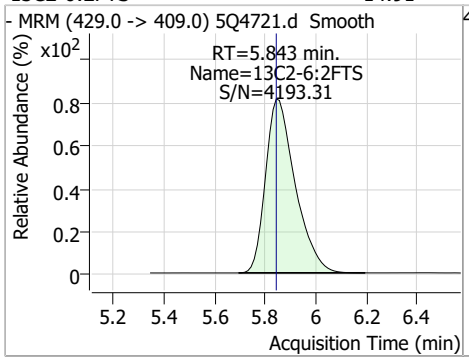
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.34	5.21	0.00	5233				

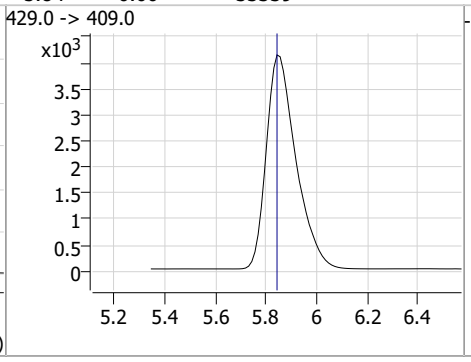


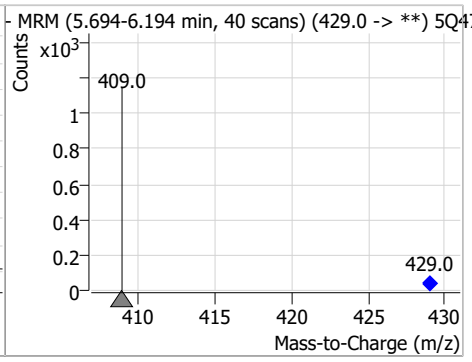




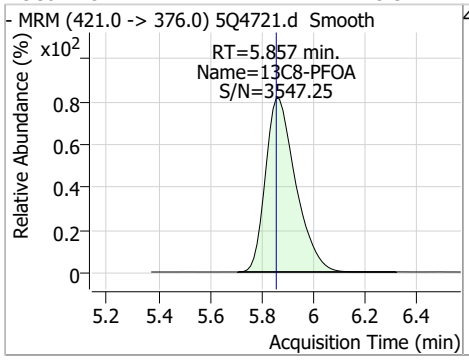
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.91	5.84	0.00	33339				

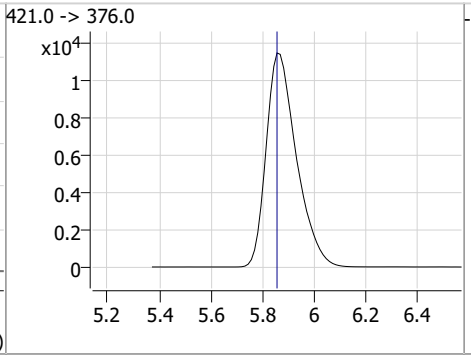


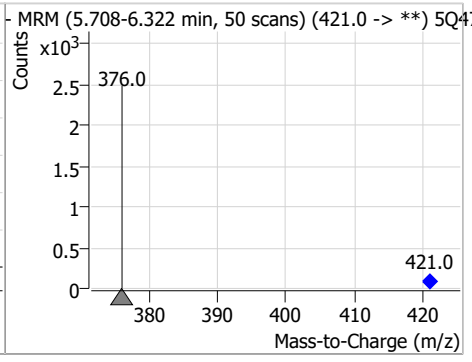




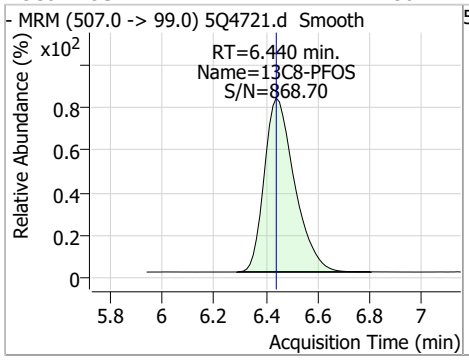
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.32	5.86	0.00	92644				

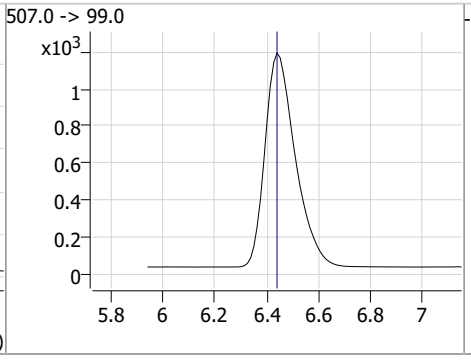


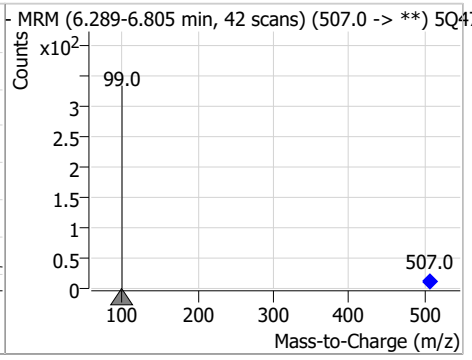




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.30	6.44	0.00	9340				

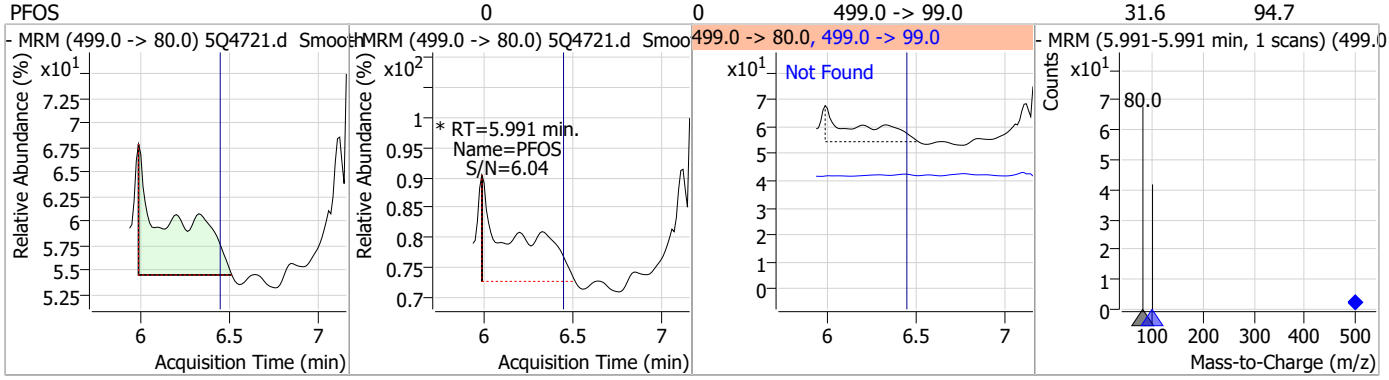




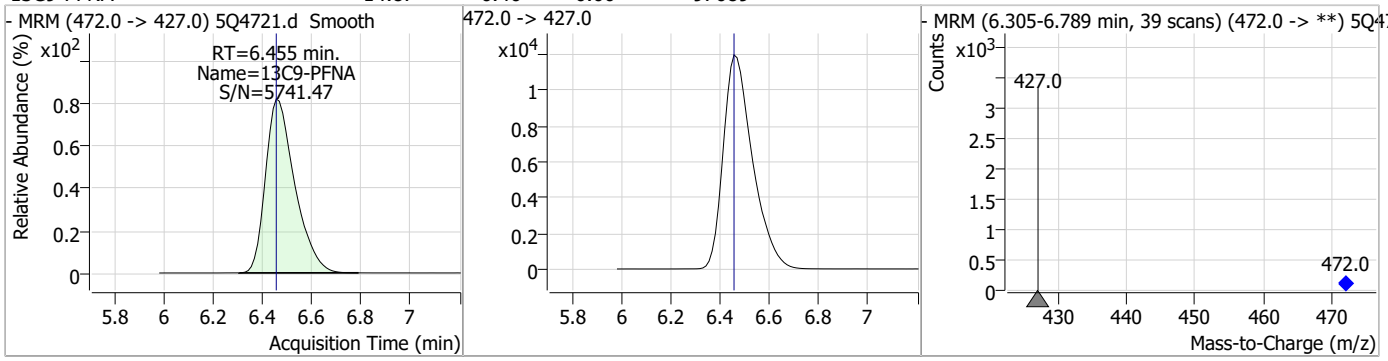


Perfluorinated Compounds by LC/MS/MS

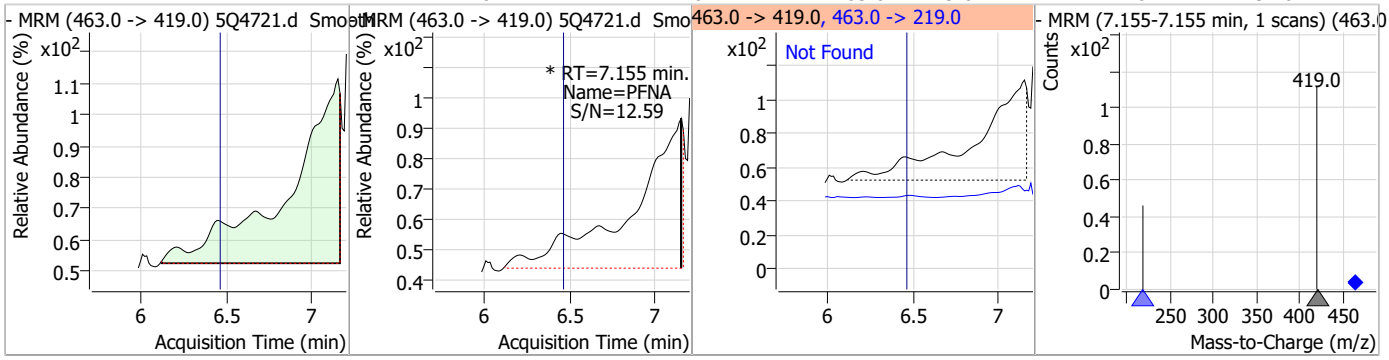
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7



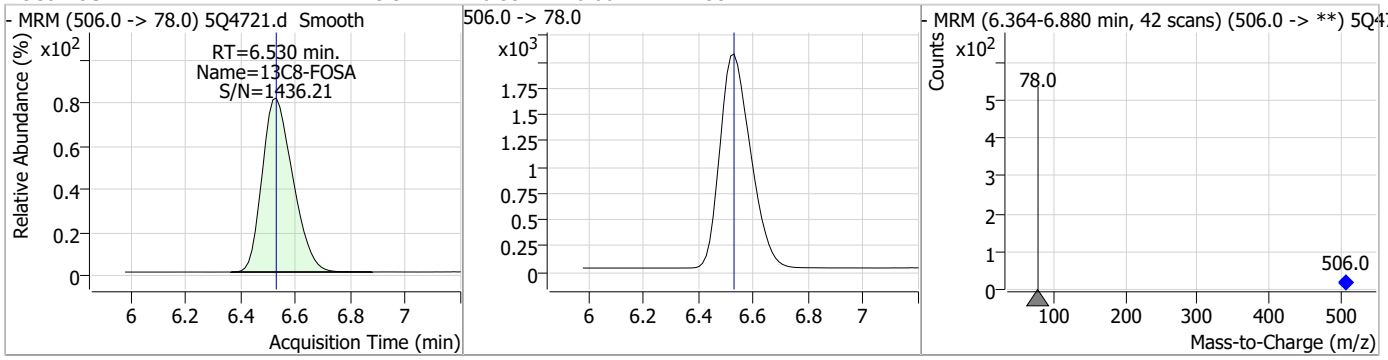
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.87	6.46	0.00	97689				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		10.7	32.0

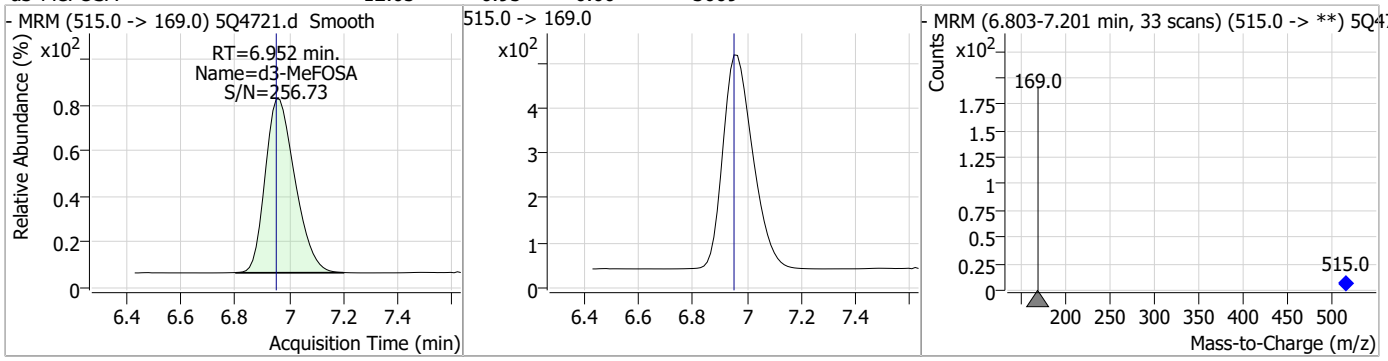


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.94	6.53	0.00	15821				

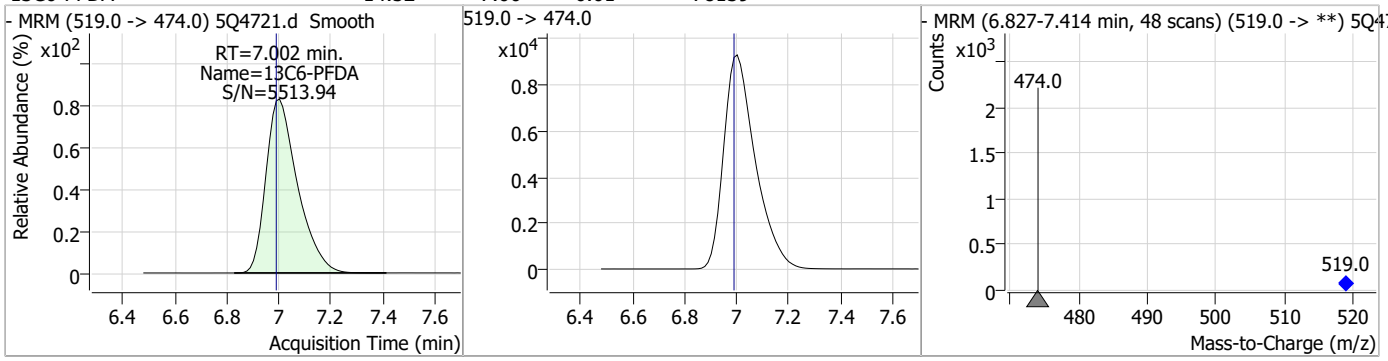


Perfluorinated Compounds by LC/MS/MS

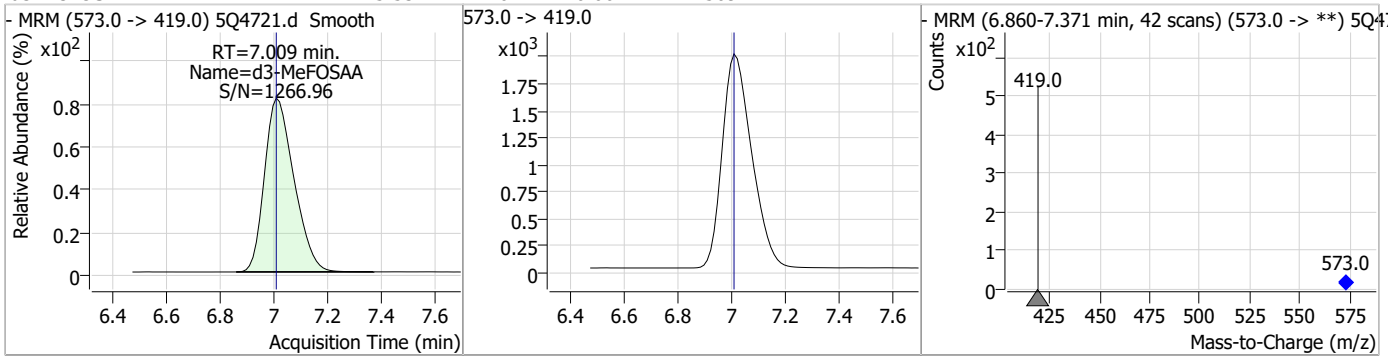
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.05	6.95	0.00	3669				



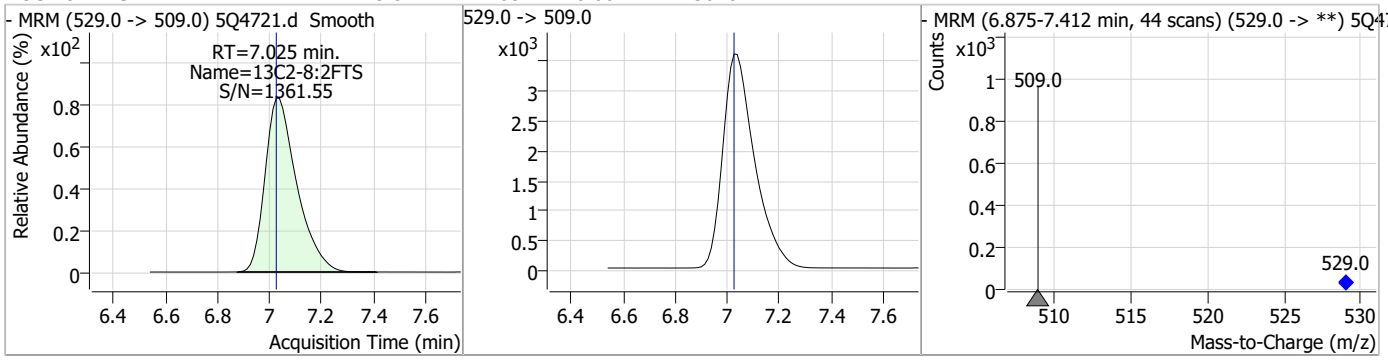
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.52	7.00	0.01	78139				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.53	7.01	0.00	15097				

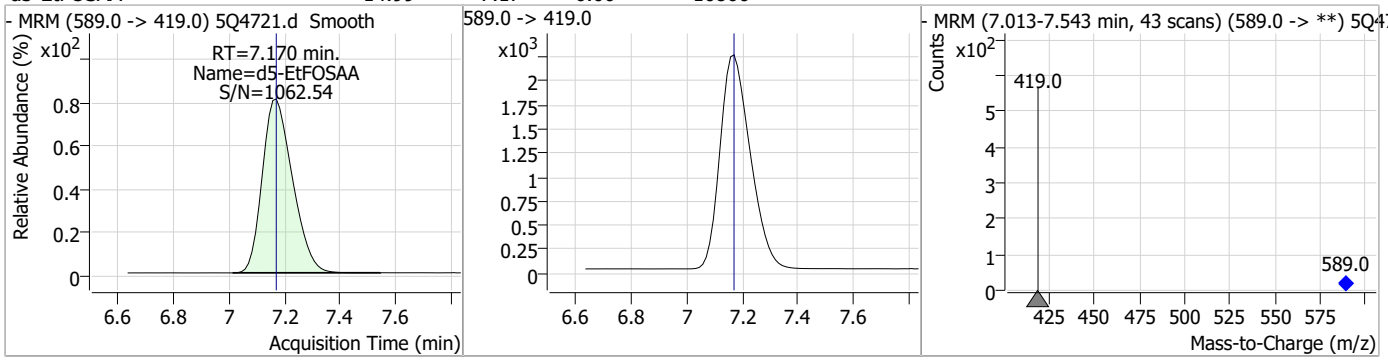


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.54	7.03	0.00	30401				

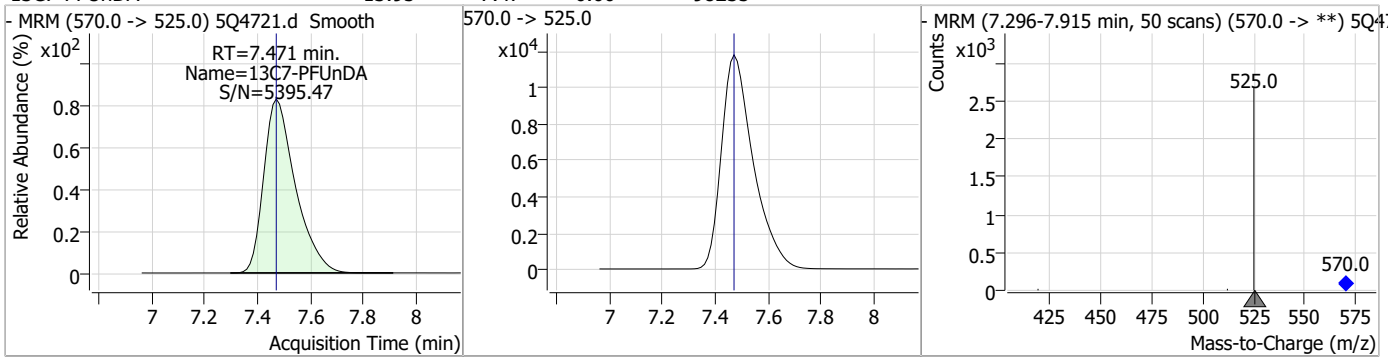


Perfluorinated Compounds by LC/MS/MS

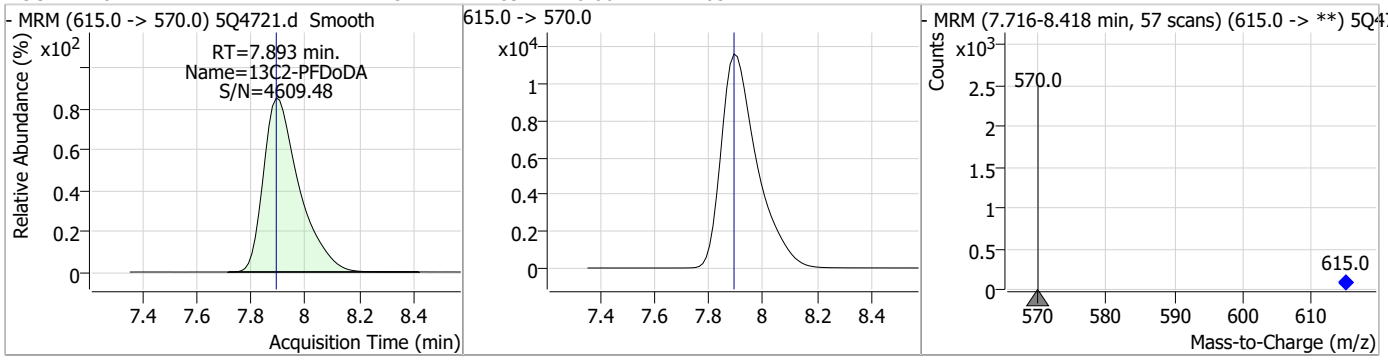
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.99	7.17	0.00	16806				



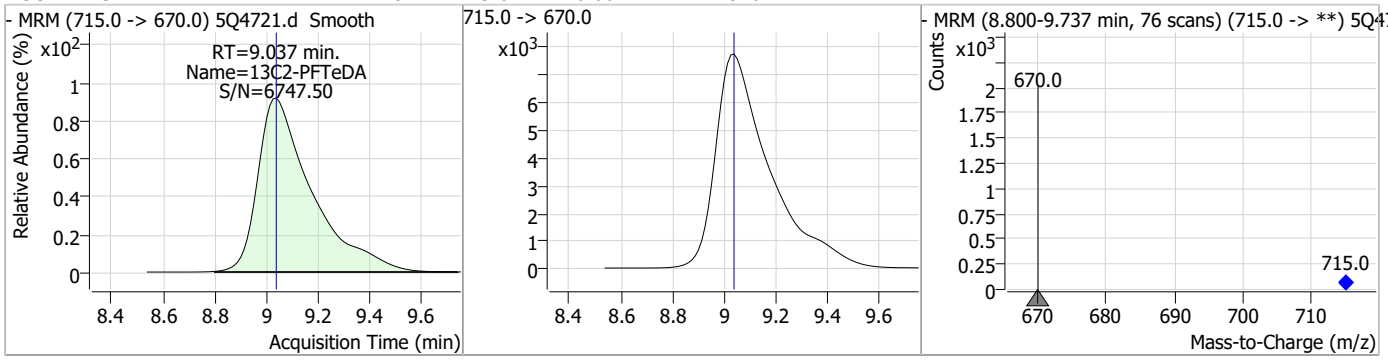
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.95	7.47	0.00	98235				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.51	7.89	0.00	105144				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.82	9.04	0.00	111810				



Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4644.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:55:53 AM
Sample Name : fa98286-9
Vial : P1-F2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

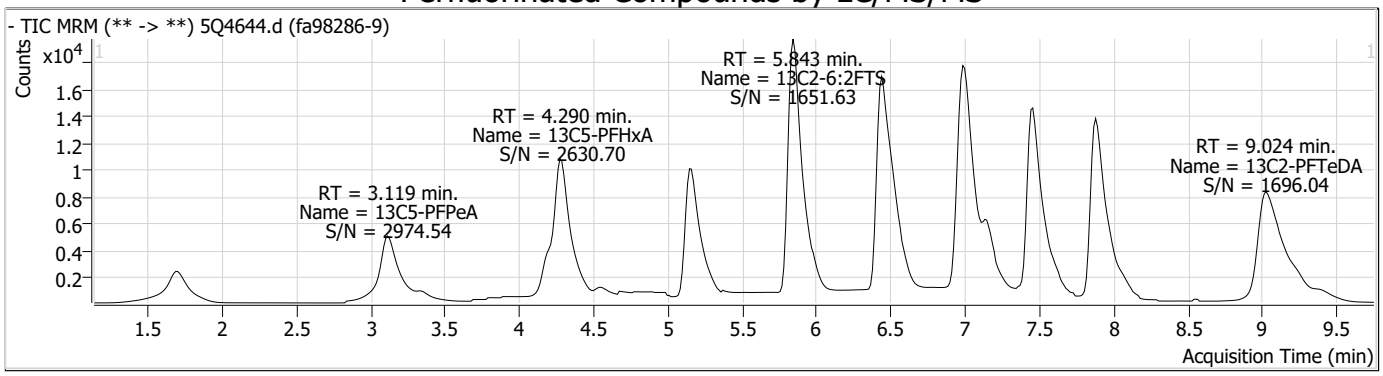
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	27662	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	44708	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	68536	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	64004	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	95900	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	99038	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	77444	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	96720	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	105030	20.00	µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	103404	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	15670	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	5181	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5366	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9288	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	21624	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	34695	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	30838	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16609	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	4796	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	3364	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	17711	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	21624	14.72	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	34695	15.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	30838	13.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%		
13C2-PFDoDA	7.893	615.0 -> 570.0	105030	14.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C2-PFTeDA	9.024	715.0 -> 670.0	103404	13.70	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%		
13C3-PFBS	3.349	302.0 -> 99.0	5181	15.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	5366	15.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C4-PFBA	1.700	217.0 -> 172.0	27662	15.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%		
13C4-PFHpA	5.163	367.0 -> 322.0	64004	15.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
13C5-PFHxA	4.290	318.0 -> 273.0	68536	15.68	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
13C5-PFPeA	3.119	268.0 -> 223.0	44708	15.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%		
13C6-PFDA	6.989	519.0 -> 474.0	77444	14.39	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

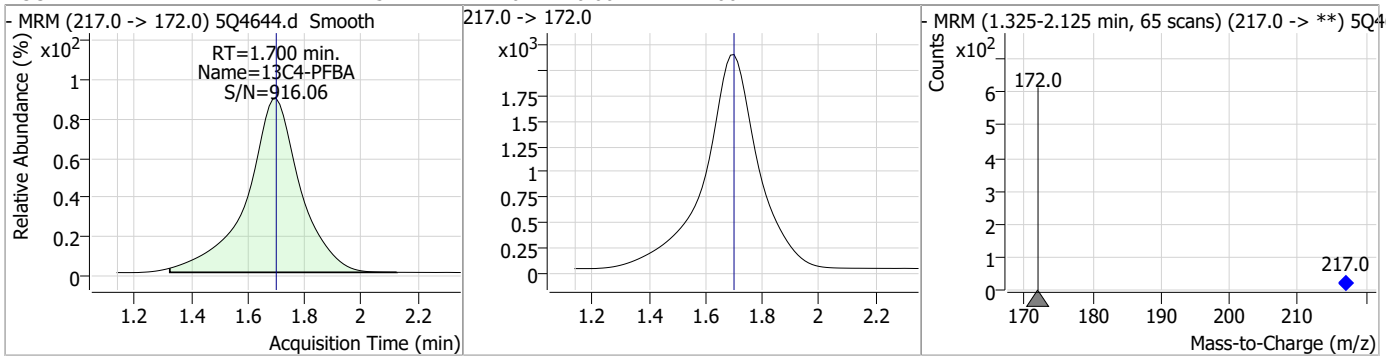
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	96720	13.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%			
13C8-FOSA	6.517	506.0 -> 78.0	15670	13.81	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%			
13C8-PFOA	5.857	421.0 -> 376.0	95900	15.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%			
13C8-PFOS	6.428	507.0 -> 99.0	9288	14.23	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%			
13C9-PFNA	6.455	472.0 -> 427.0	99038	15.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16609	17.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	4796	14.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	3364	11.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.2%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17711	15.80	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.472	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

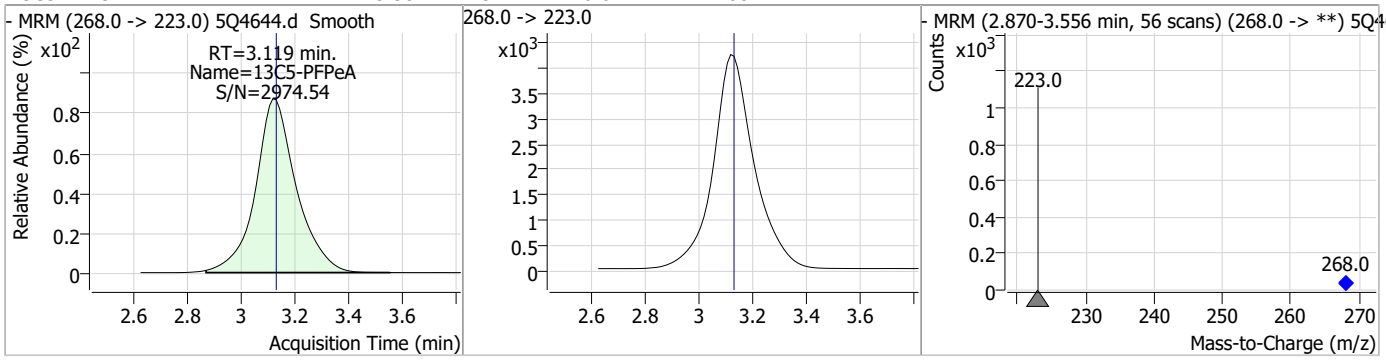
Perfluorinated Compounds by LC/MS/MS



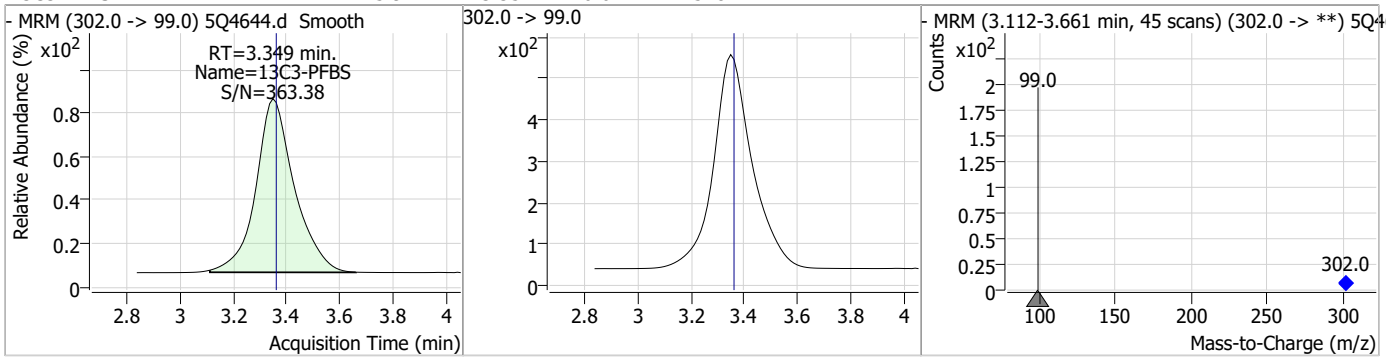
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.47	1.70	0.00	27662				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.38	3.12	-0.01	44708				

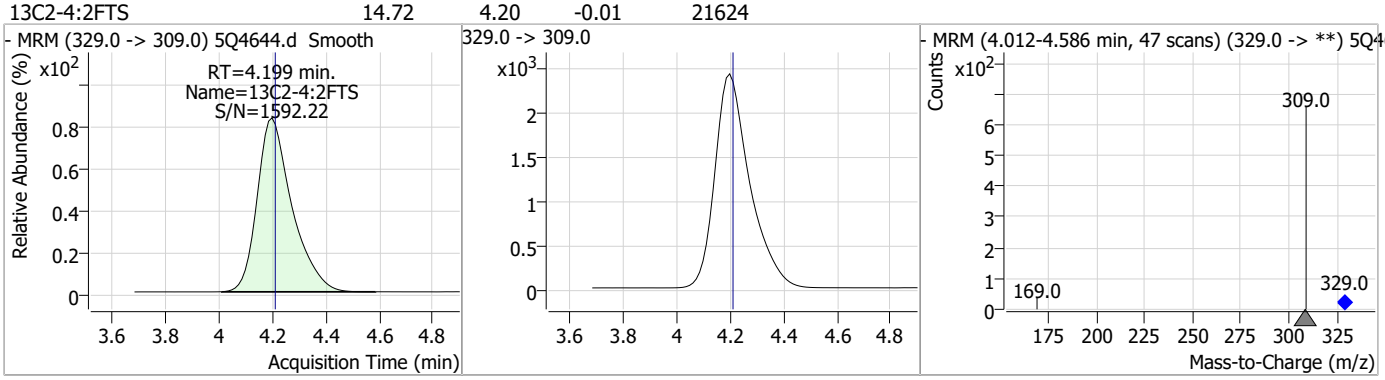


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.91	3.35	-0.01	5181				

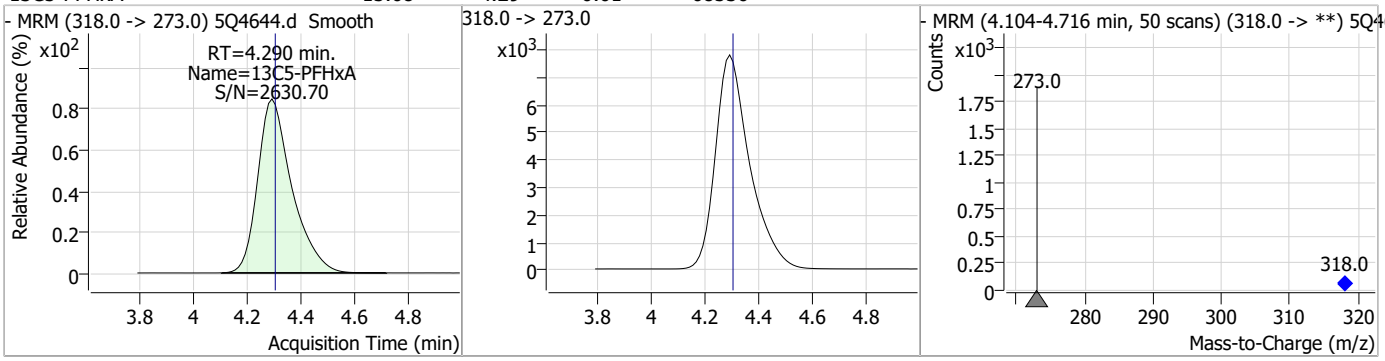


Perfluorinated Compounds by LC/MS/MS

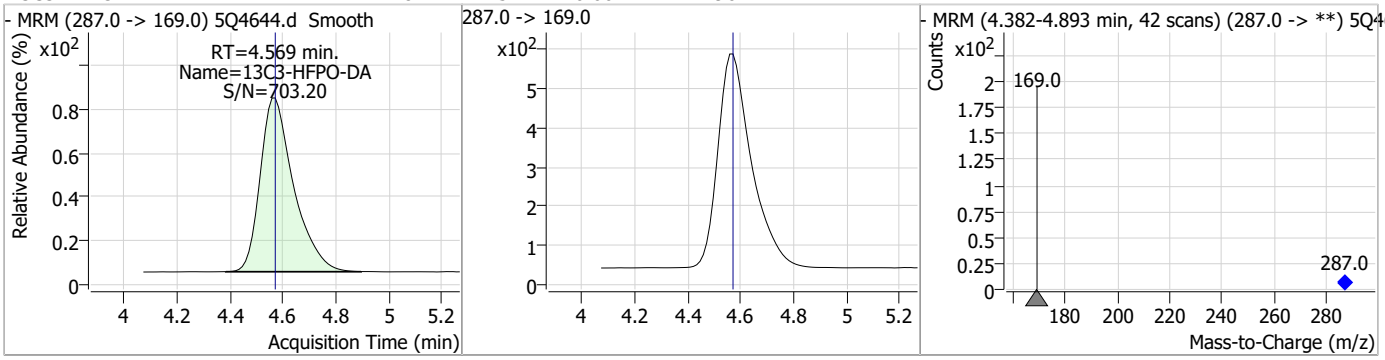
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.72	4.20	-0.01	21624				



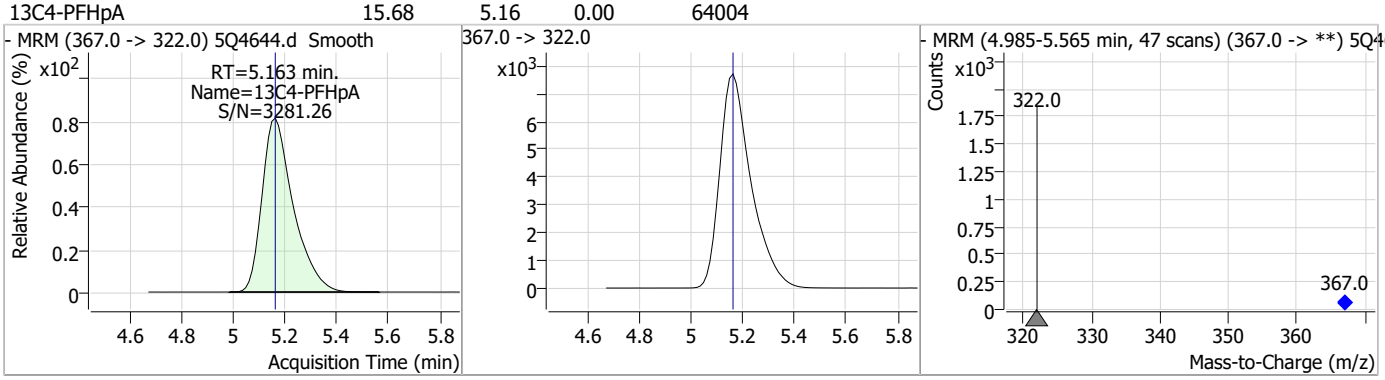
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.68	4.29	-0.01	68536				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.28	4.57	0.00	4796				

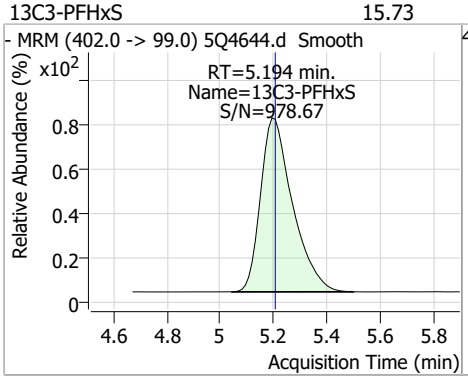


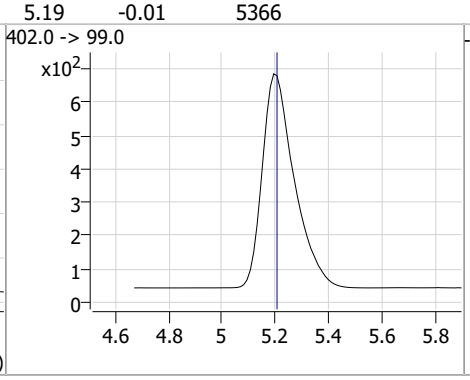
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.68	5.16	0.00	64004				

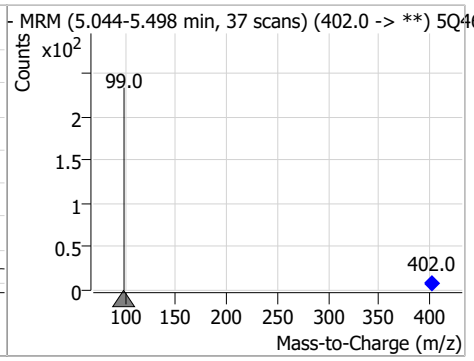


Perfluorinated Compounds by LC/MS/MS

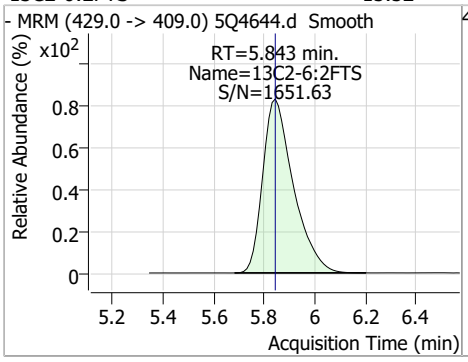
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.73	5.19	-0.01	5366				

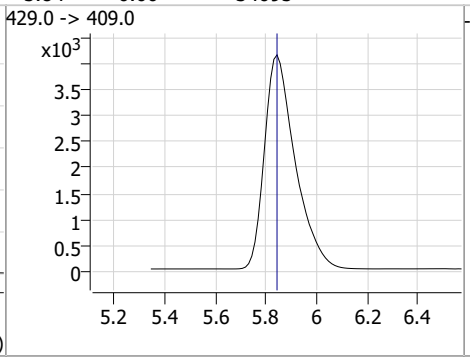


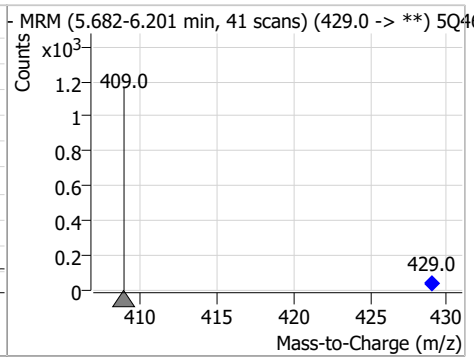




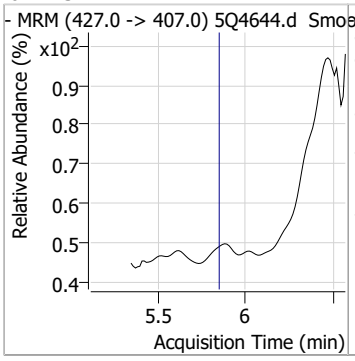
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.52	5.84	0.00	34695				

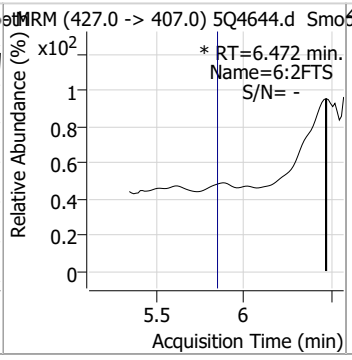


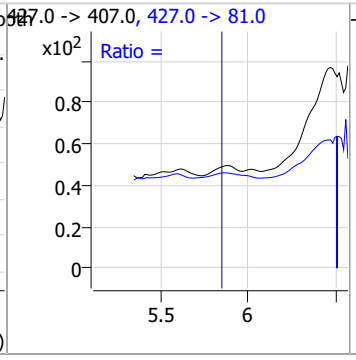


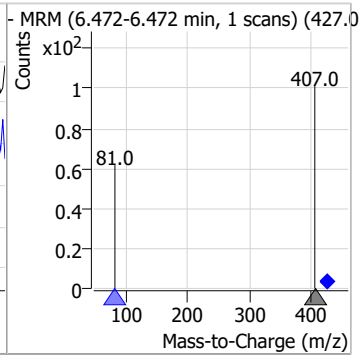


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

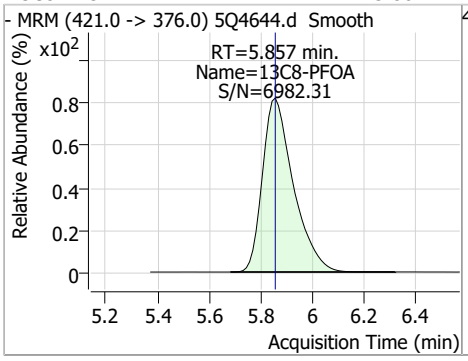


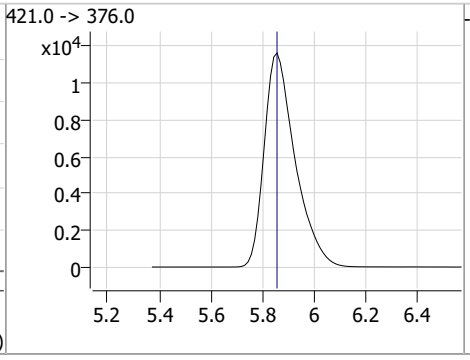


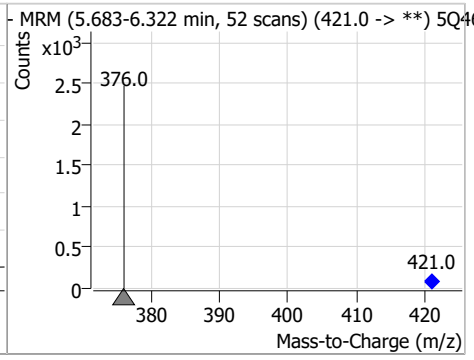




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.86	5.86	0.00	95900				

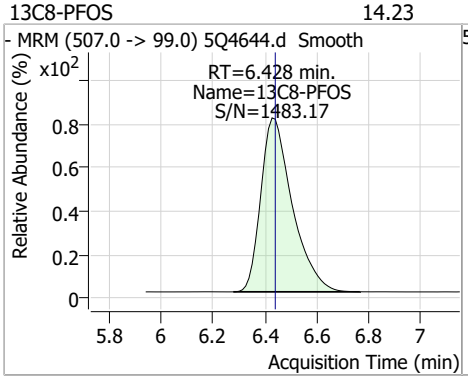


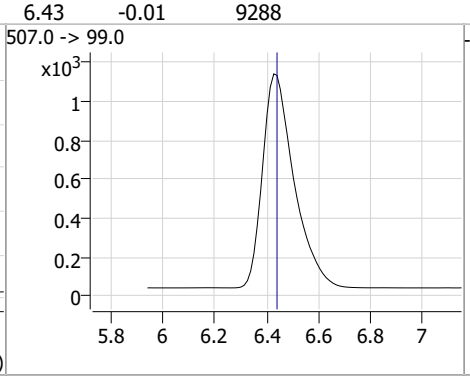


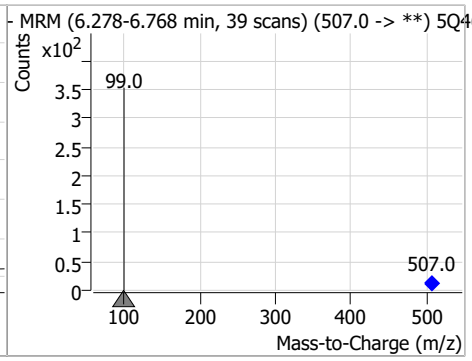


Perfluorinated Compounds by LC/MS/MS

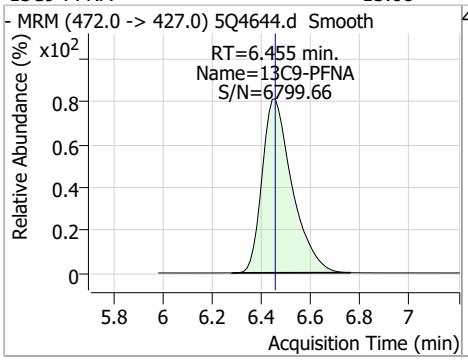
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.23	6.43	-0.01	9288				

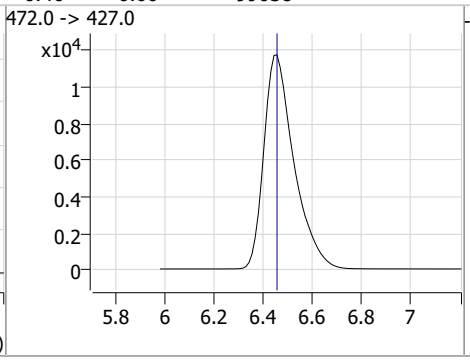


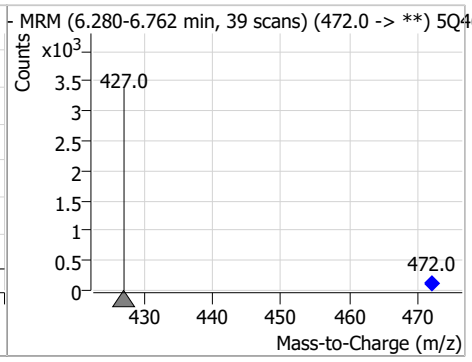




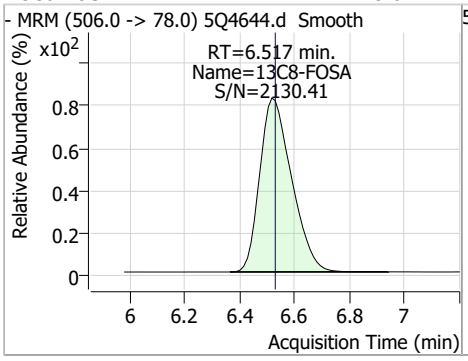
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.08	6.46	0.00	99038				

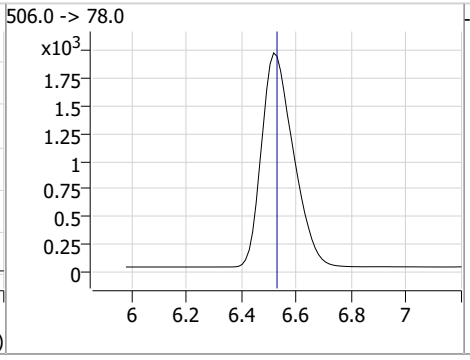


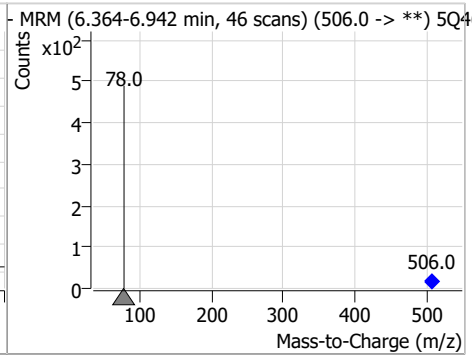




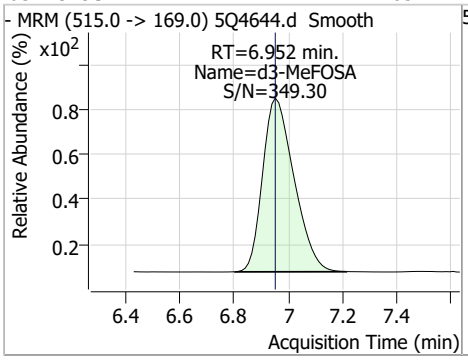
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.81	6.52	-0.01	15670				

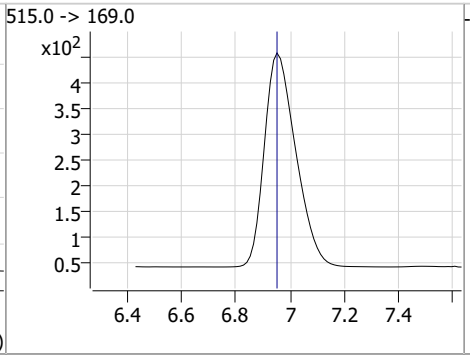


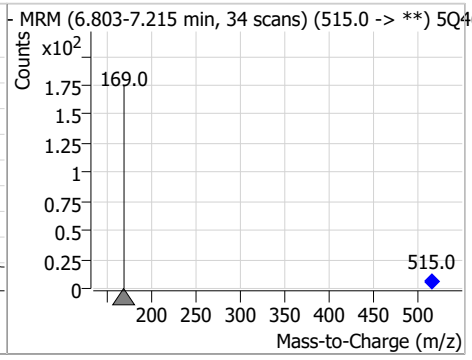




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	11.05	6.95	0.00	3364				

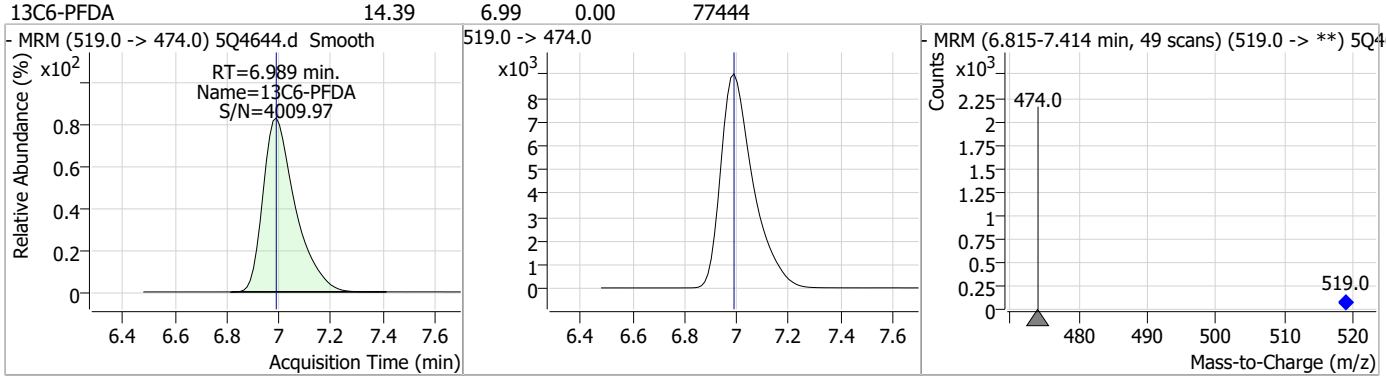




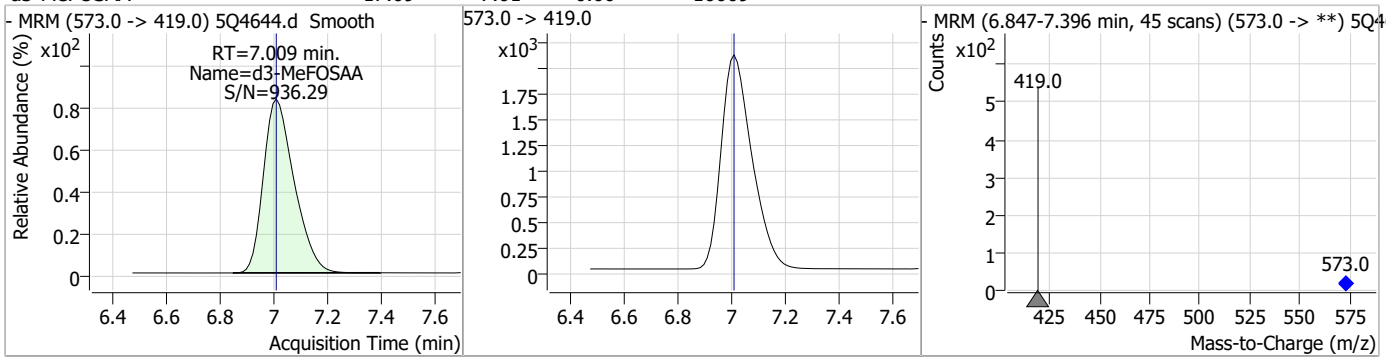


Perfluorinated Compounds by LC/MS/MS

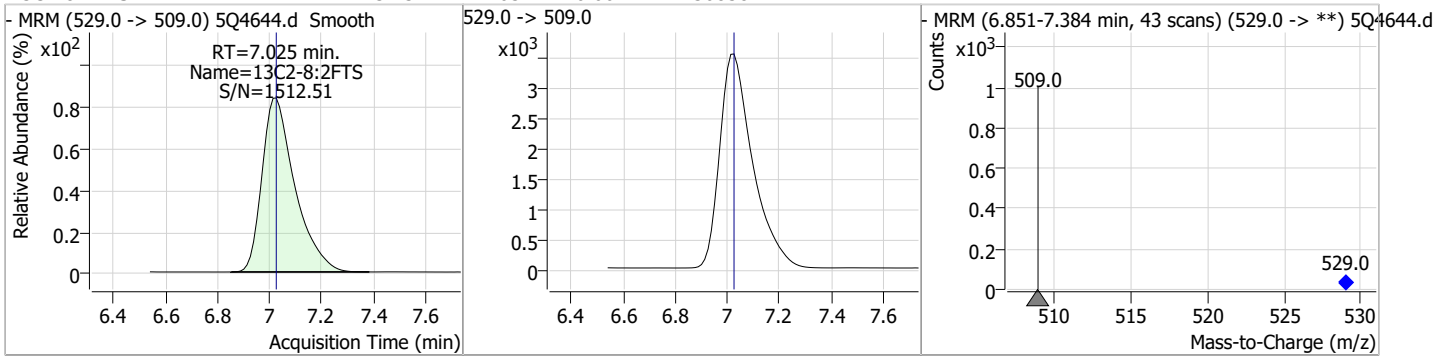
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.39	6.99	0.00	77444				



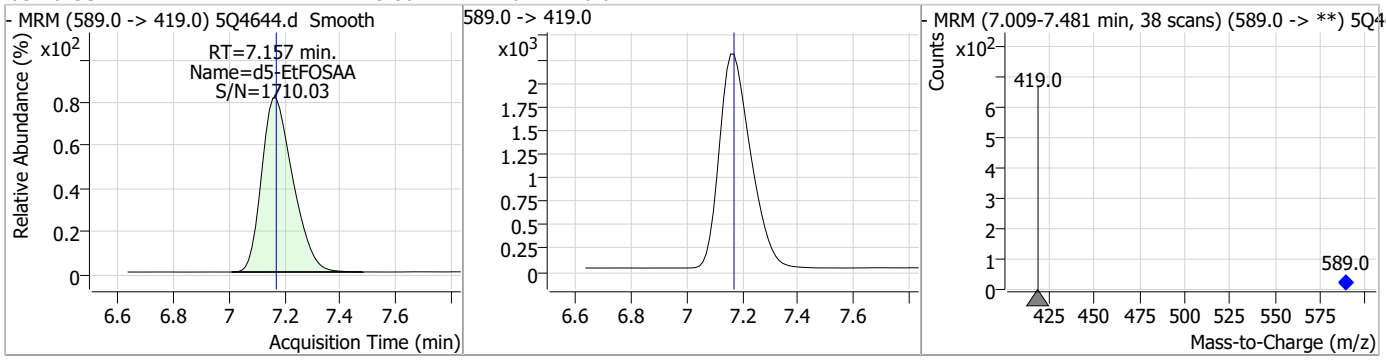
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.09	7.01	0.00	16609				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.73	7.03	0.00	30838				

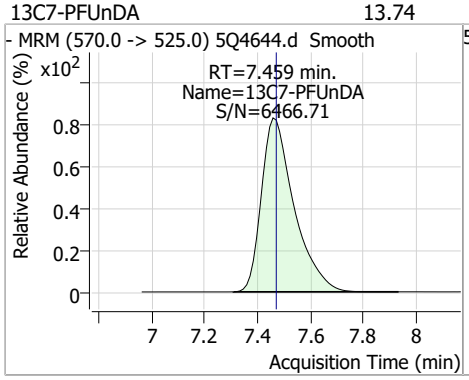


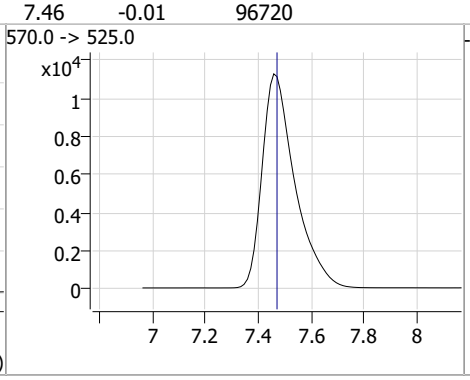
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.80	7.16	-0.01	17711				

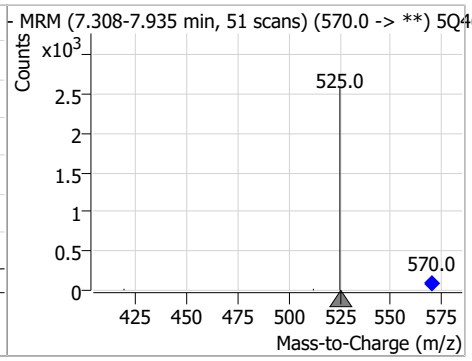


Perfluorinated Compounds by LC/MS/MS

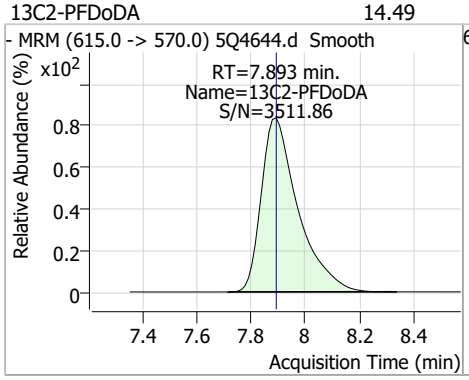
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.74	7.46	-0.01	96720				

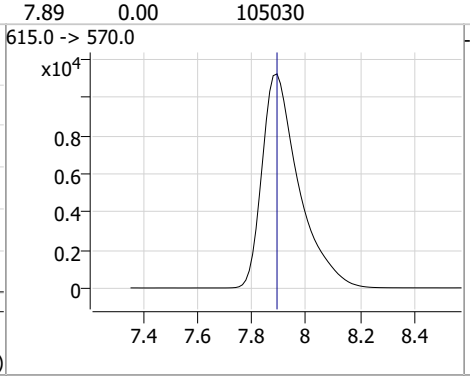


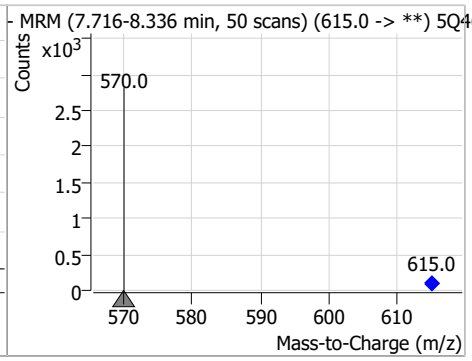




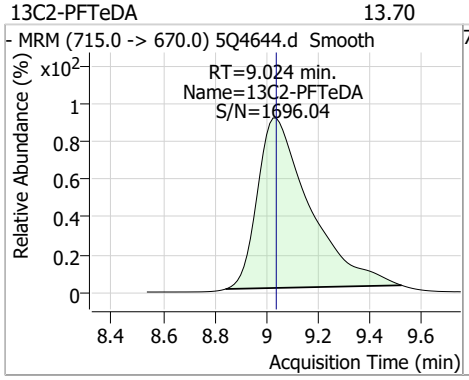
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.49	7.89	0.00	105030				

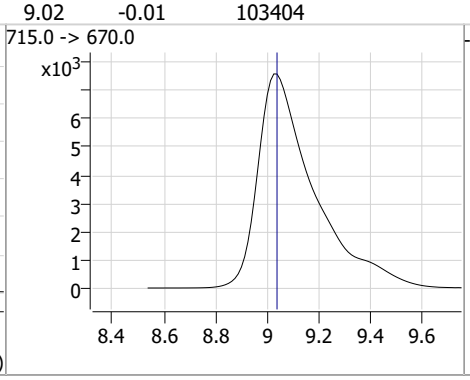


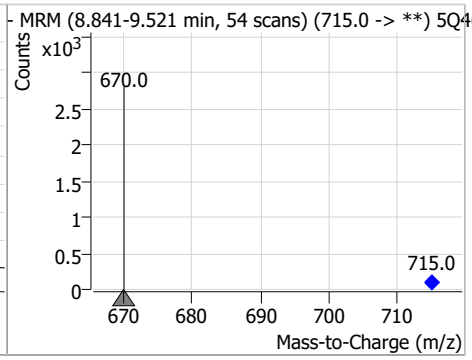




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.70	9.02	-0.01	103404				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:41

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4645.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:11:15 AM
Sample Name : fa98286-10
Vial : P1-F3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,120,,,1.0,1,water

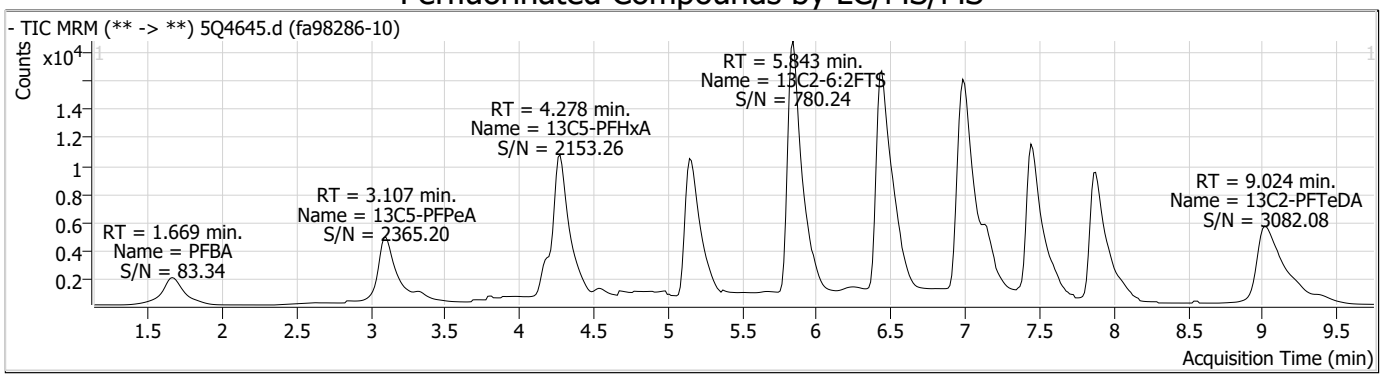
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.662	217.0 -> 172.0	19499	20.00 µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	33268	20.00 µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	57459	20.00 µg/L	-0.025
M4-PFHpA	5.163	367.0 -> 322.0	56346	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	85922	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	93645	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	70472	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	74389	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	71815	20.00 µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	77514	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	9923	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4133	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	4753	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	8190	20.00 µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	19124	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	32371	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	30206	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	13844	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4120	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	224	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	13596	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	19124	13.02 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.1%	
13C2-6:2FTS	5.843	429.0 -> 409.0	32371	14.48 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%	
13C2-8:2FTS	7.013	529.0 -> 509.0	30206	13.45 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.2%	
13C2-PFDoDA	7.879	615.0 -> 570.0	71815	9.91 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.5%	
13C2-PFTeDA	9.024	715.0 -> 670.0	77514	10.27 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.4%	
13C3-PFBS	3.337	302.0 -> 99.0	4133	12.69 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%	
13C3-PFHxS	5.194	402.0 -> 99.0	4753	13.93 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.7%	
13C4-PFBA	1.662	217.0 -> 172.0	19499	10.91 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.5%	
13C4-PFHpA	5.163	367.0 -> 322.0	56346	13.80 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%	
13C5-PFHxA	4.278	318.0 -> 273.0	57459	13.14 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%	
13C5-PFPeA	3.107	268.0 -> 223.0	33268	11.45 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.2%	
13C6-PFDA	6.989	519.0 -> 474.0	70472	13.09 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

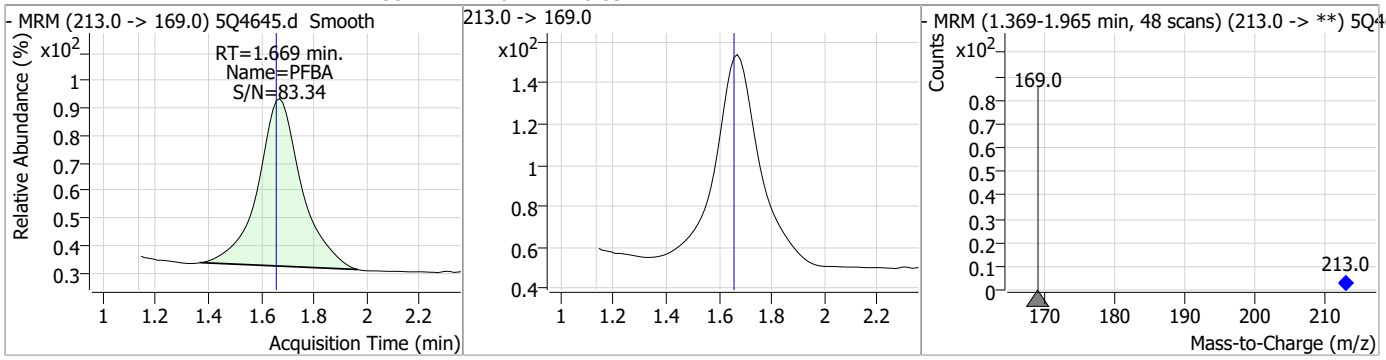
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	74389	10.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.8%			
13C8-FOSA	6.517	506.0 -> 78.0	9923	8.75	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.7%			
13C8-PFOA	5.857	421.0 -> 376.0	85922	14.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%			
13C8-PFOS	6.428	507.0 -> 99.0	8190	12.54	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%			
13C9-PFNA	6.443	472.0 -> 427.0	93645	14.26	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	13844	14.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4120	12.27	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.3%			
d3-MeFOSA	6.965	515.0 -> 169.0	224	0.74	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.7%			
d5-EtFOSAA	7.157	589.0 -> 419.0	13596	12.13	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.6%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.831	427.0 -> 407.0	607	0.35	µg/L		91
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	1147	2.50	µg/L		100
PFBS	3.329	299.0 -> 80.0	271	0.44	µg/L	m	90
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	6235	1.68	µg/L		99
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.279	313.0 -> 269.0	7850	2.80	µg/L		99
PFHxS	5.195	399.0 -> 80.0	4153	5.88	µg/L	m	96
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	4412	0.85	µg/L	m	96
PFOS	6.429	499.0 -> 80.0	5757	7.98	µg/L	m	87
PFPeA	3.109	263.0 -> 219.0	5049	3.07	µg/L		100
PFPeS	4.398	349.0 -> 80.0	295	0.61	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	367	0.42	µg/L	m	99

 # = Qualifier out of range, m = manually integrated, + = Area summed

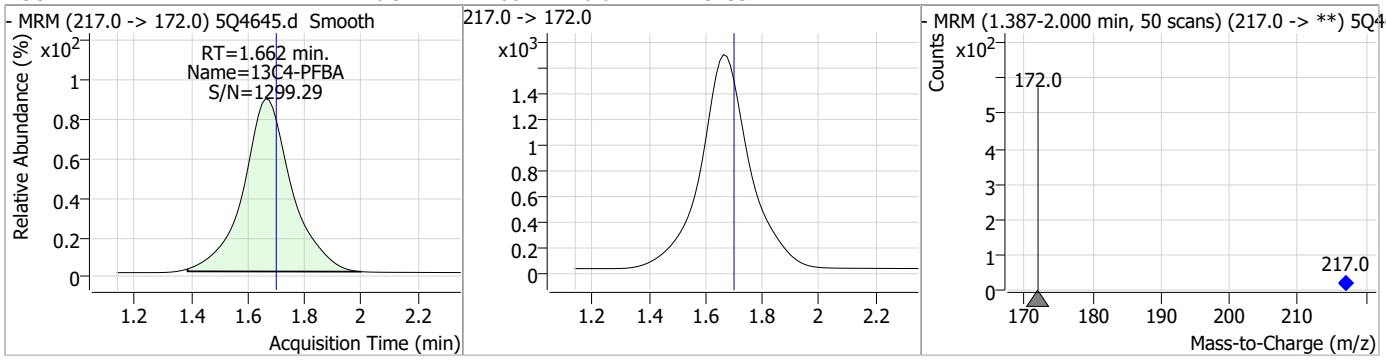
Perfluorinated Compounds by LC/MS/MS



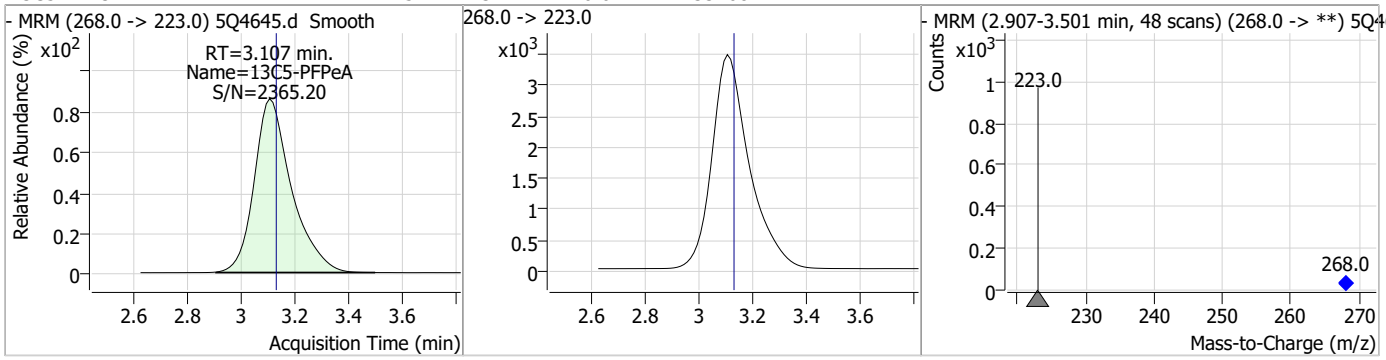
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.50	1.67	-0.03	1147				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.91	1.66	-0.04	19499				

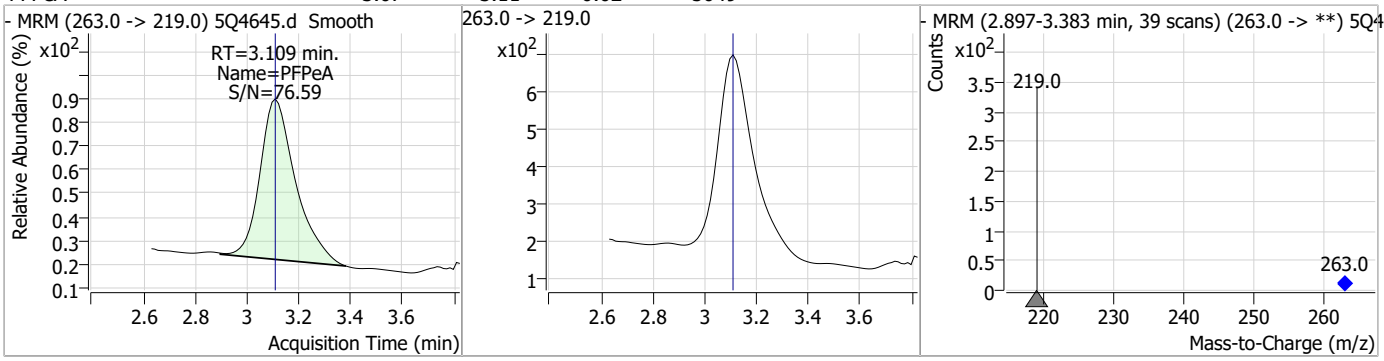


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.45	3.11	-0.02	33268				

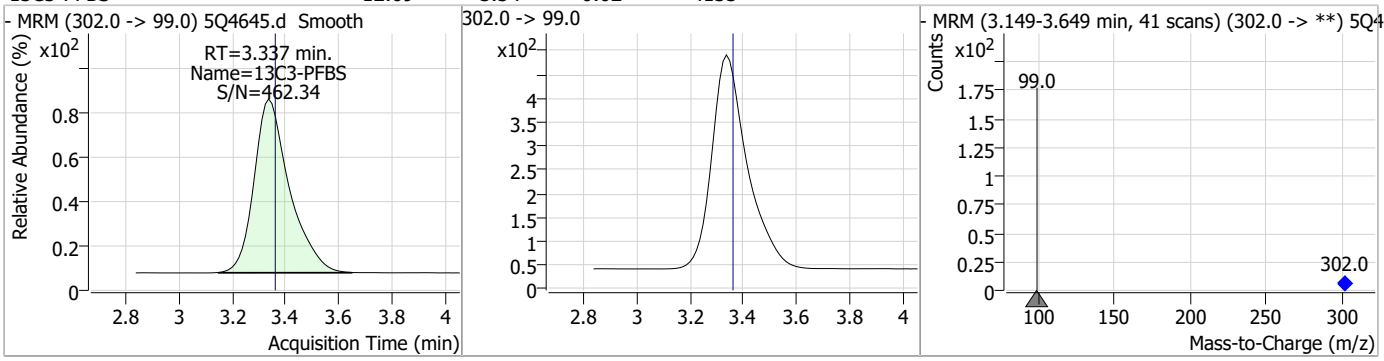


Perfluorinated Compounds by LC/MS/MS

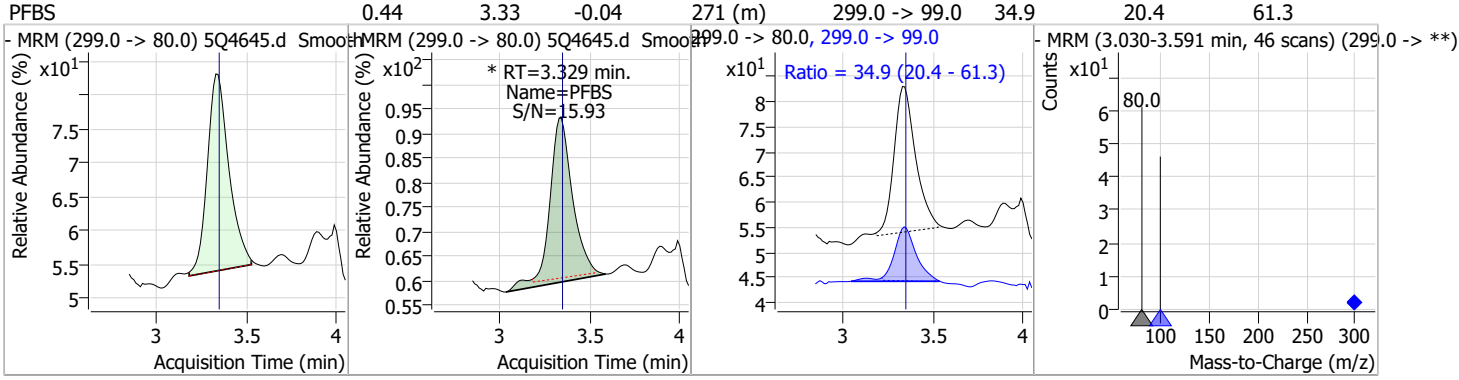
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	3.07	3.11	-0.02	5049				



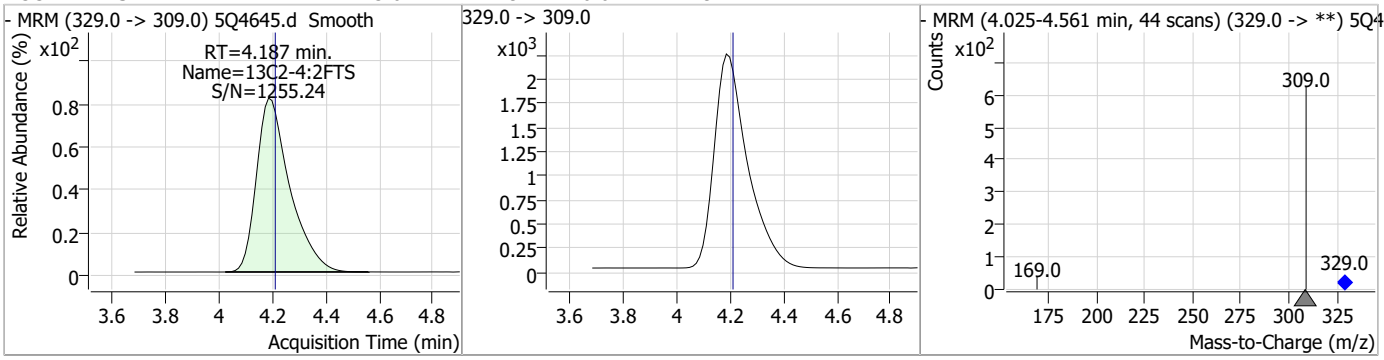
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.69	3.34	-0.02	4133				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.44	3.33	-0.04	271 (m)	299.0 -> 99.0	34.9	20.4	61.3

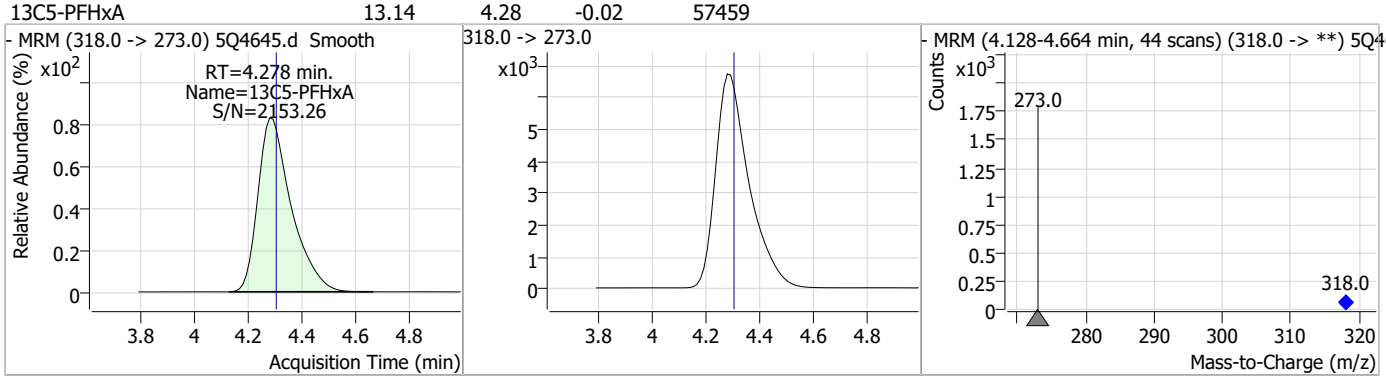


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.02	4.19	-0.02	19124				

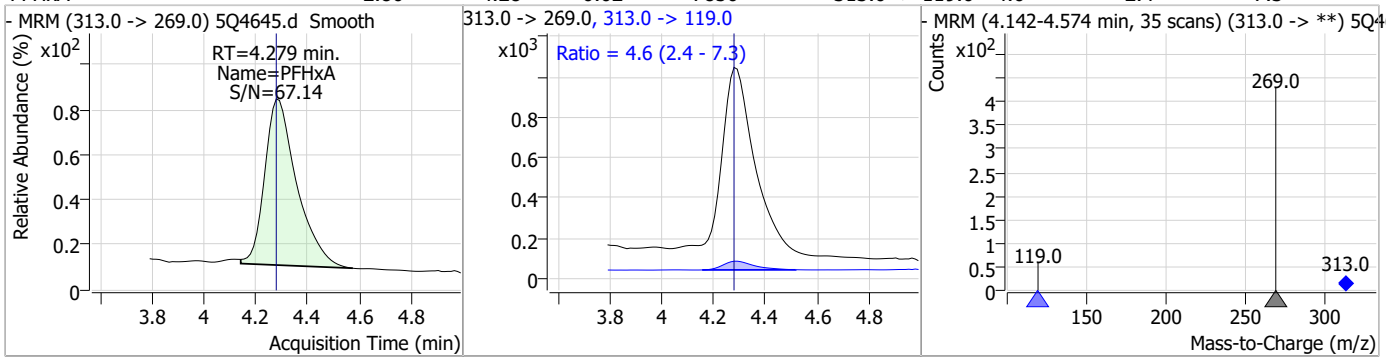


Perfluorinated Compounds by LC/MS/MS

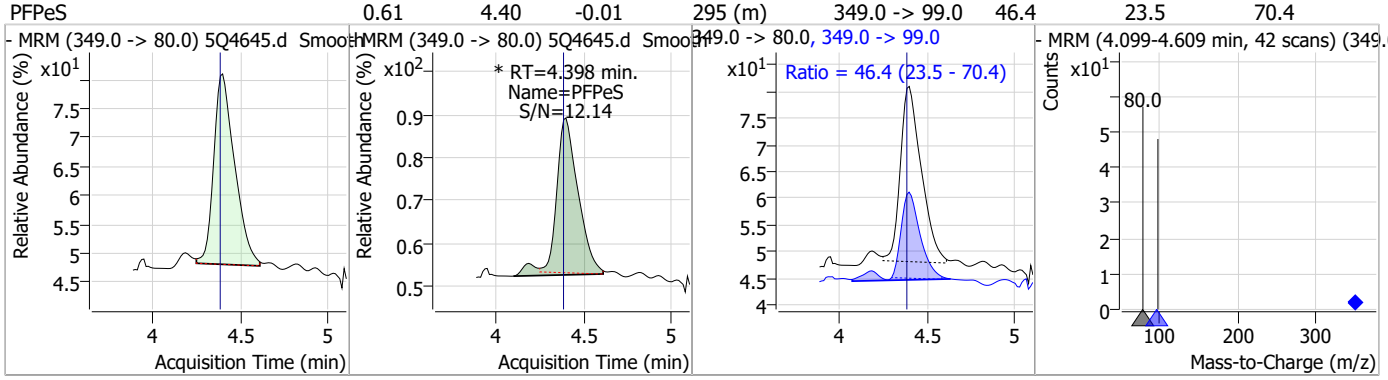
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.14	4.28	-0.02	57459				



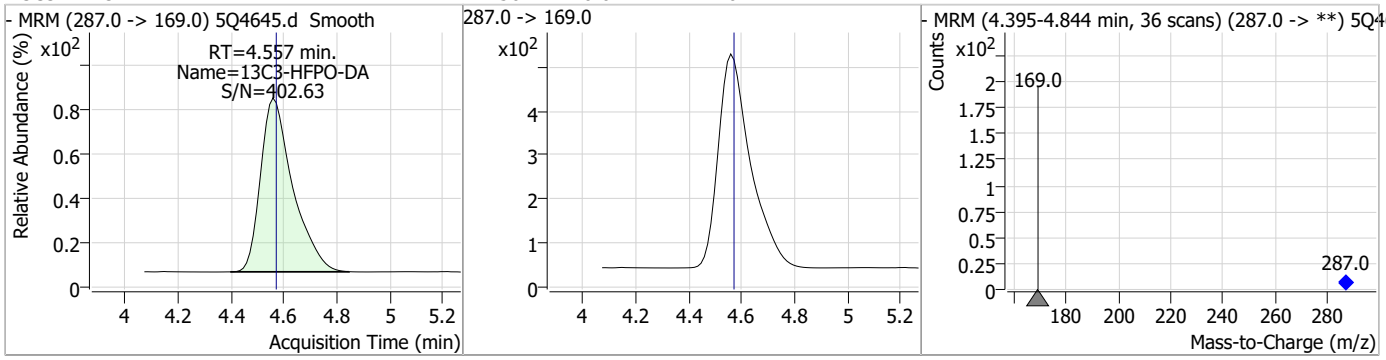
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.80	4.28	-0.02	7850	313.0 -> 119.0	4.6	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.61	4.40	-0.01	295 (m)	349.0 -> 99.0	46.4	23.5	70.4

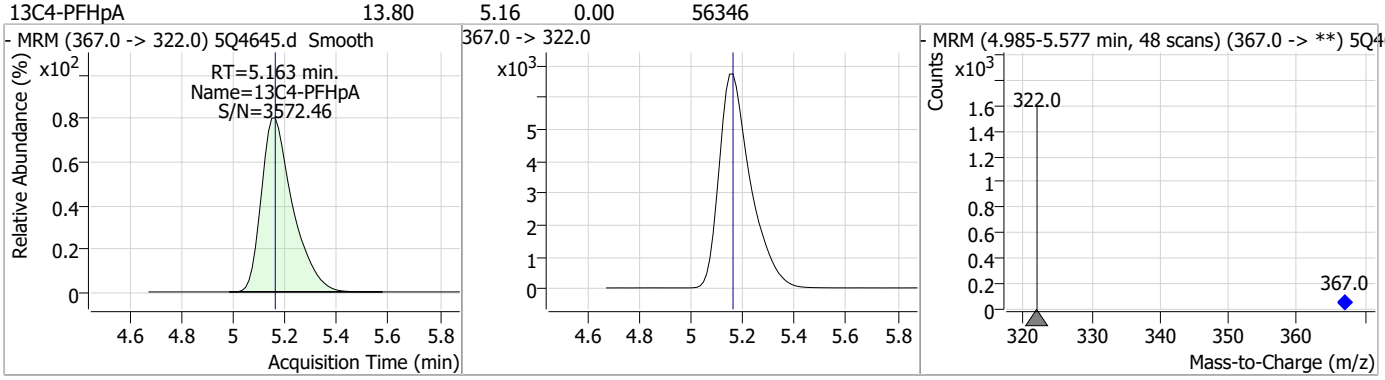


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.27	4.56	-0.01	4120				

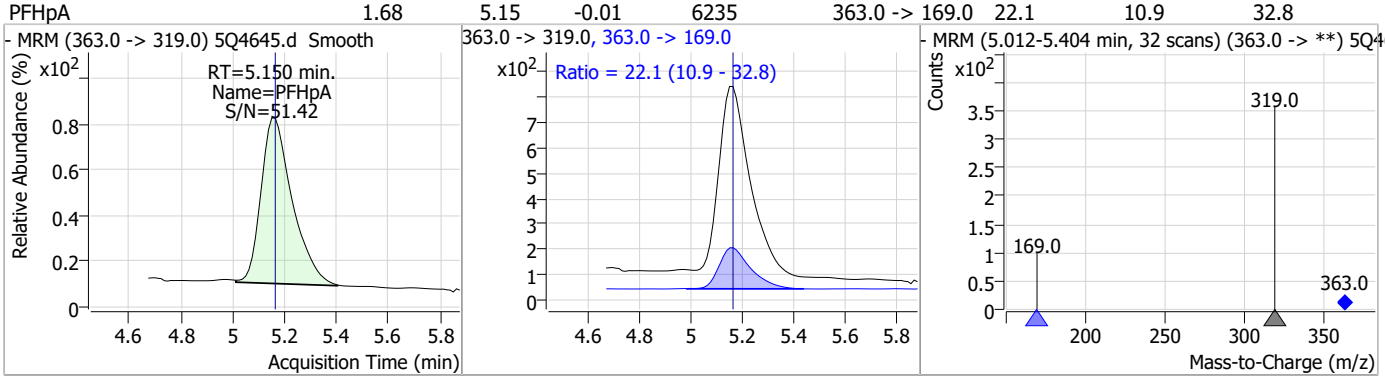


Perfluorinated Compounds by LC/MS/MS

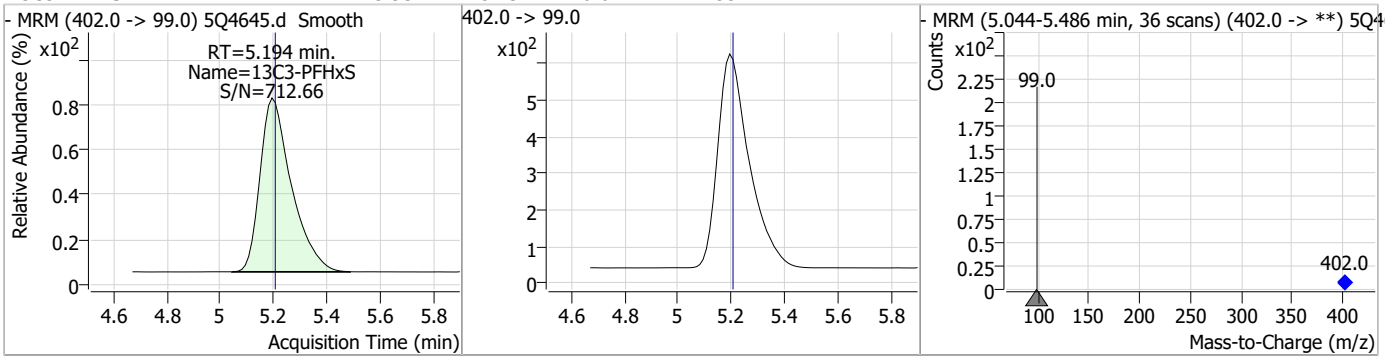
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.80	5.16	0.00	56346				



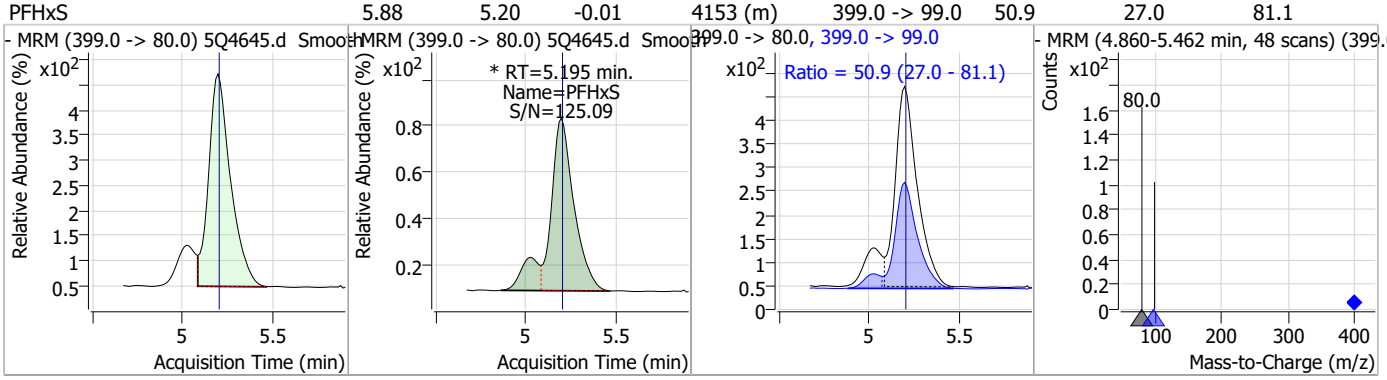
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.68	5.15	-0.01	6235	363.0 -> 169.0	22.1	10.9	32.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.93	5.19	-0.01	4753				

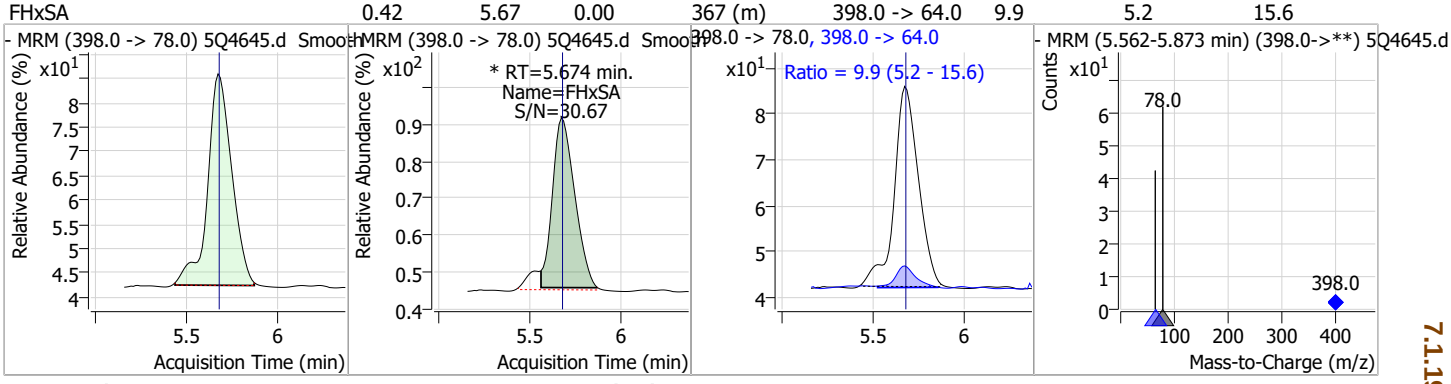


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.88	5.20	-0.01	4153 (m)	399.0 -> 99.0	50.9	27.0	81.1

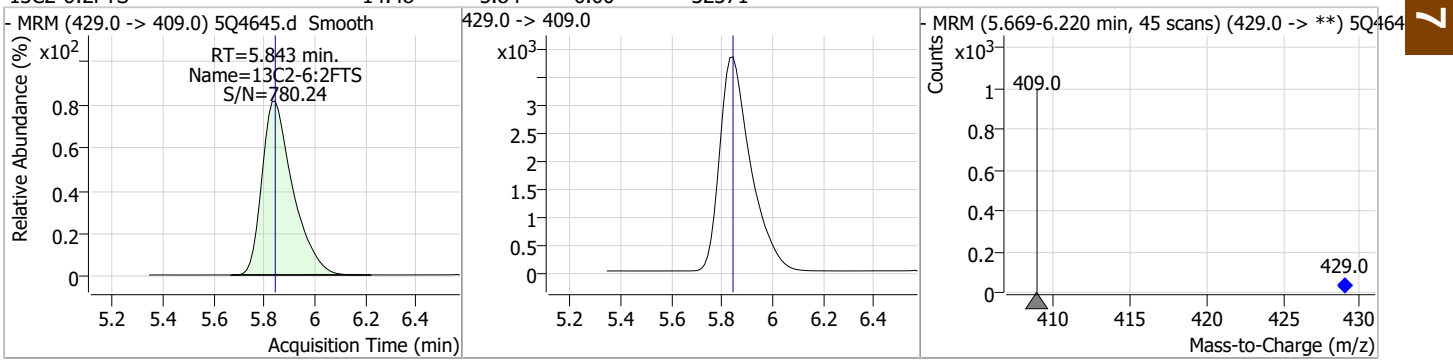


Perfluorinated Compounds by LC/MS/MS

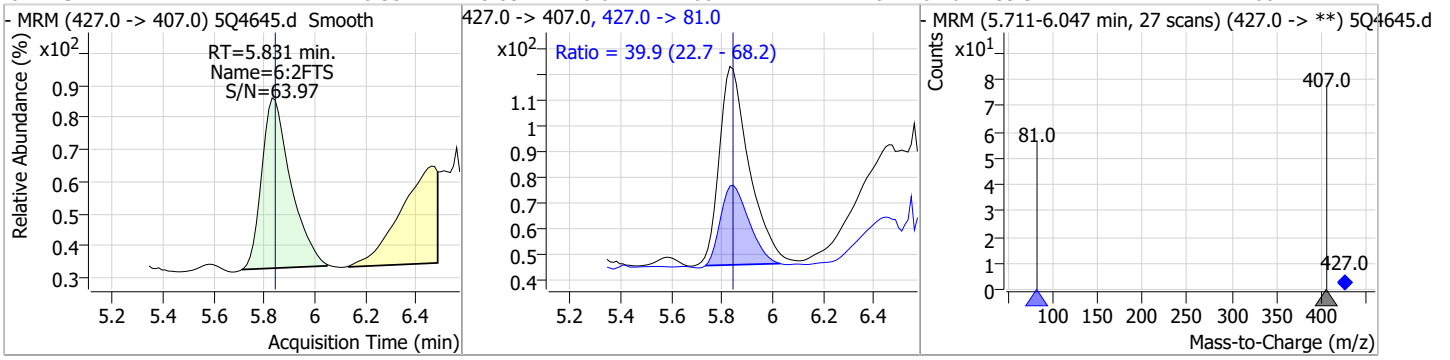
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.42	5.67	0.00	367 (m)	398.0 -> 64.0	9.9	5.2	15.6



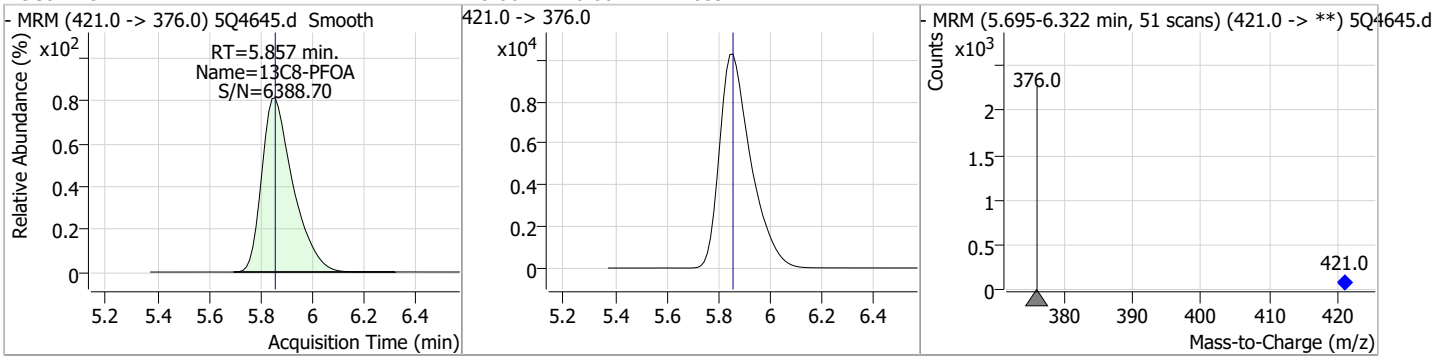
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.48	5.84	0.00	32371				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.35	5.83	-0.01	607	427.0 -> 81.0	39.9	22.7	68.2

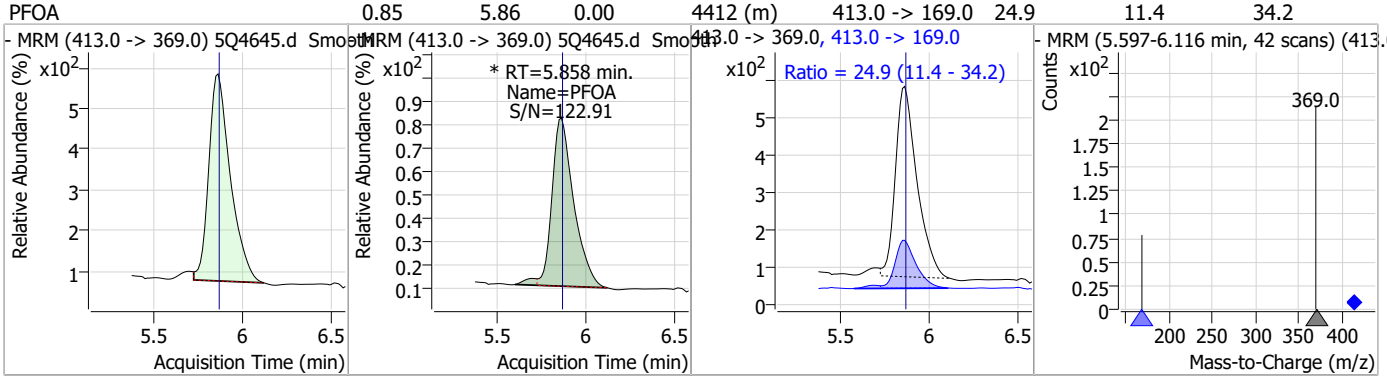


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.21	5.86	0.00	85922				

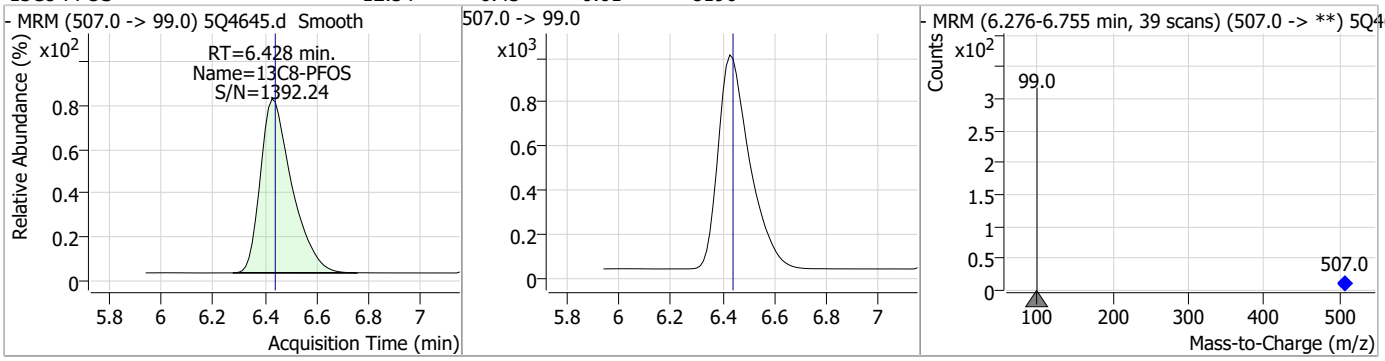


Perfluorinated Compounds by LC/MS/MS

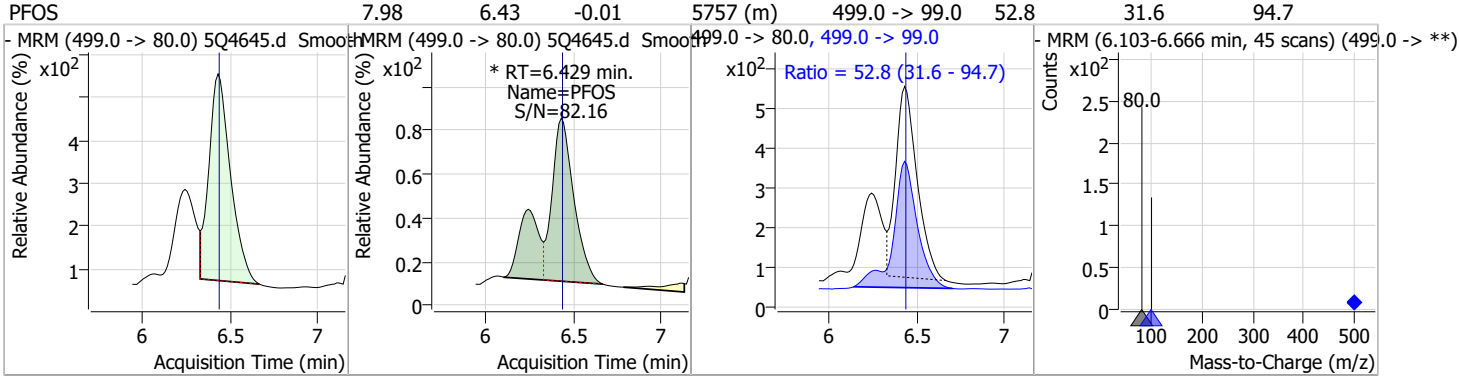
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.85	5.86	0.00	4412 (m)	413.0 -> 169.0	24.9	11.4	34.2



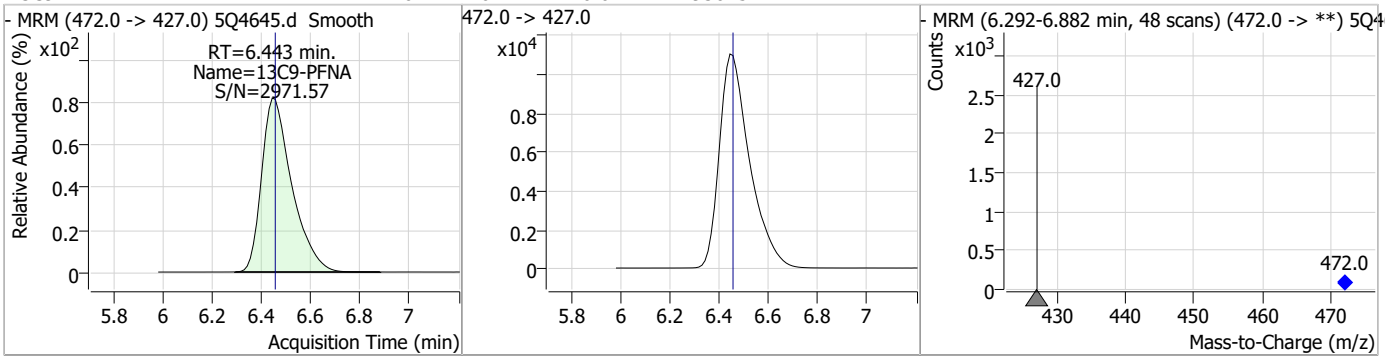
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.54	6.43	-0.01	8190				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	7.98	6.43	-0.01	5757 (m)	499.0 -> 99.0	52.8	31.6	94.7

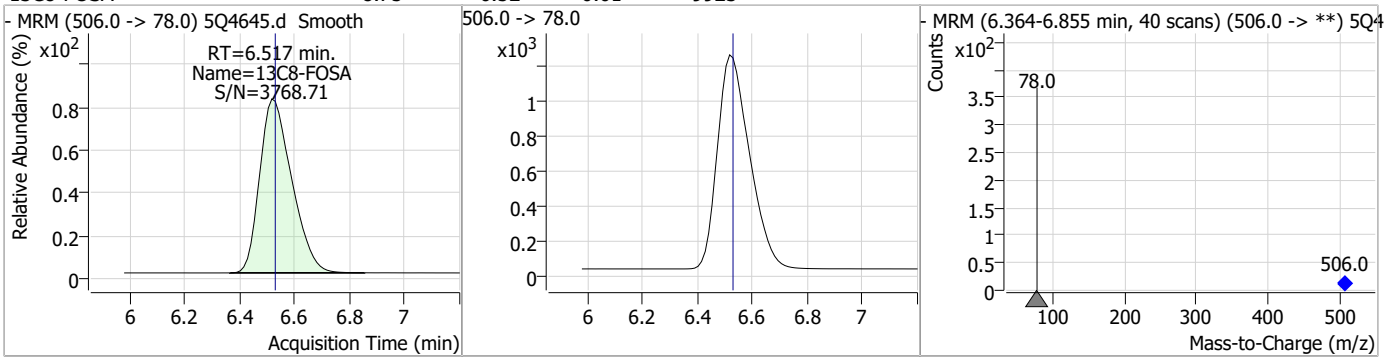


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.26	6.44	-0.01	93645				

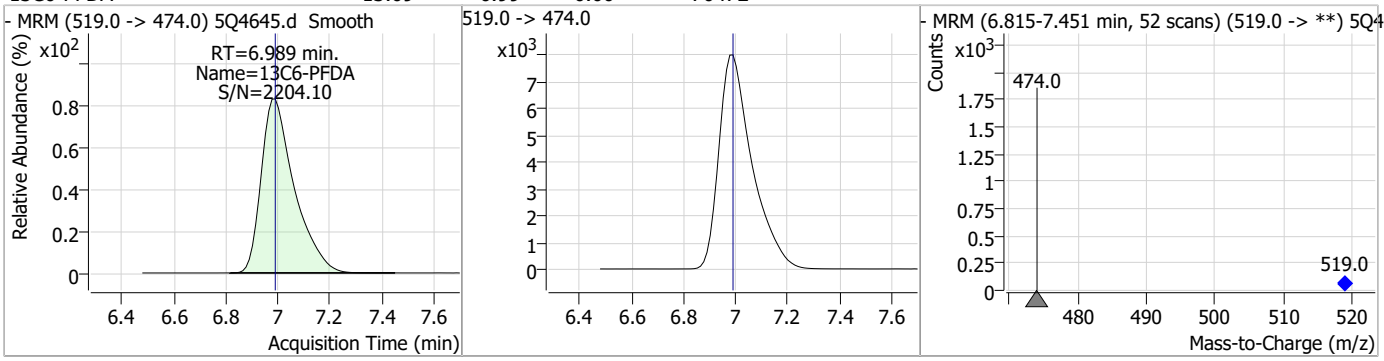


Perfluorinated Compounds by LC/MS/MS

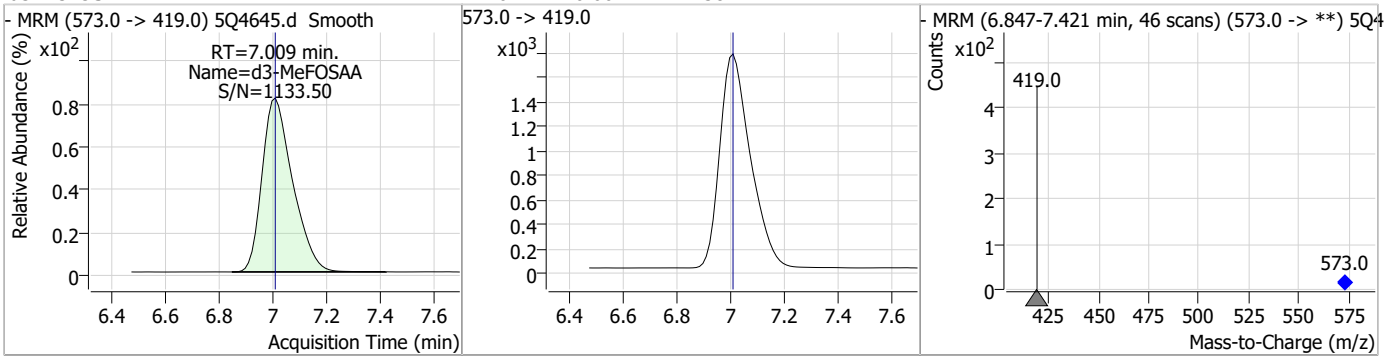
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.75	6.52	-0.01	9923				



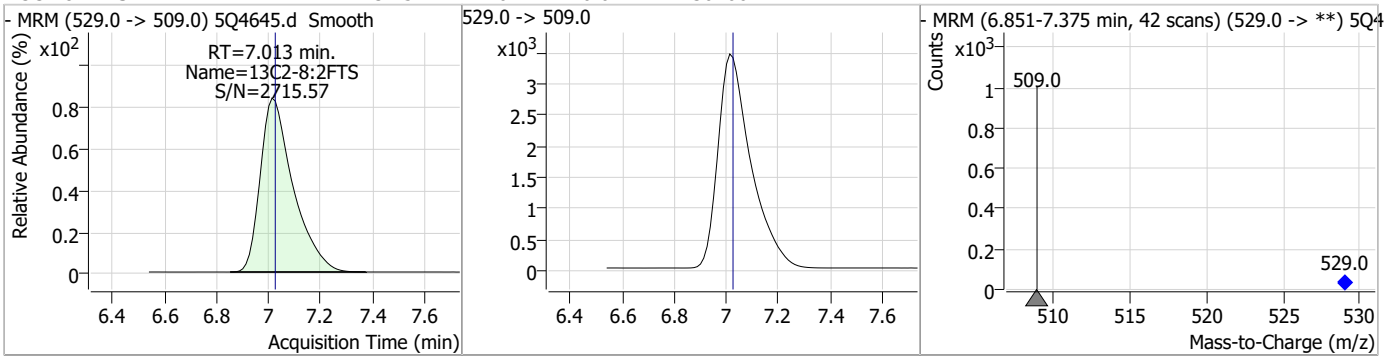
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.09	6.99	0.00	70472				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.24	7.01	0.00	13844				

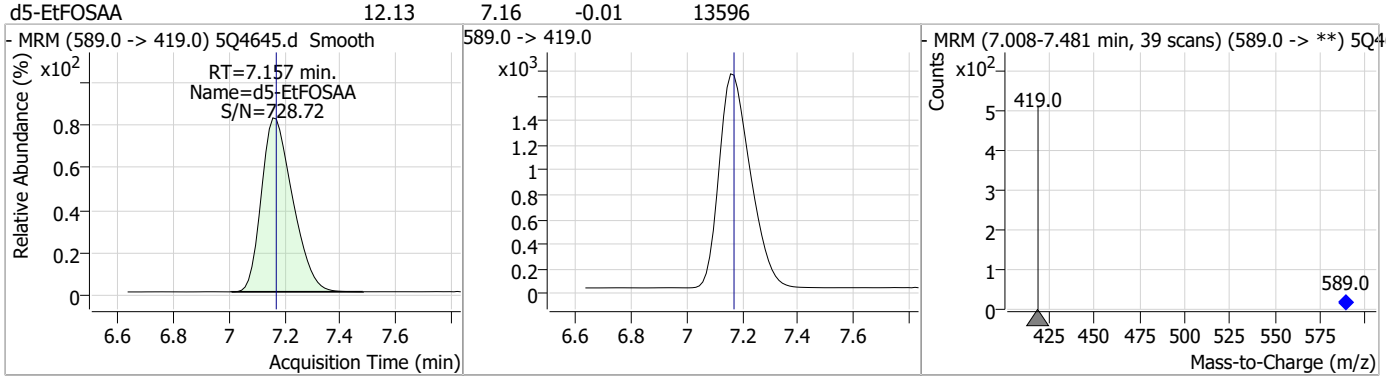


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.45	7.01	-0.01	30206				

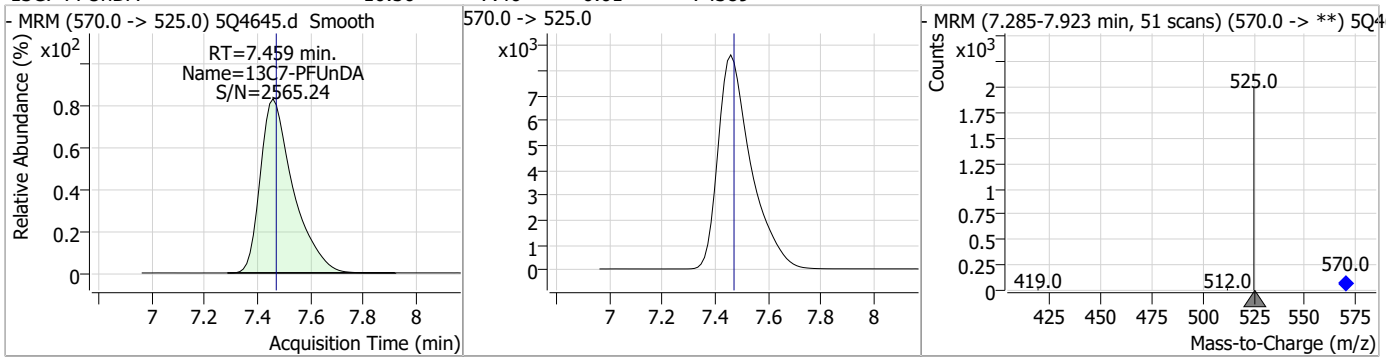


Perfluorinated Compounds by LC/MS/MS

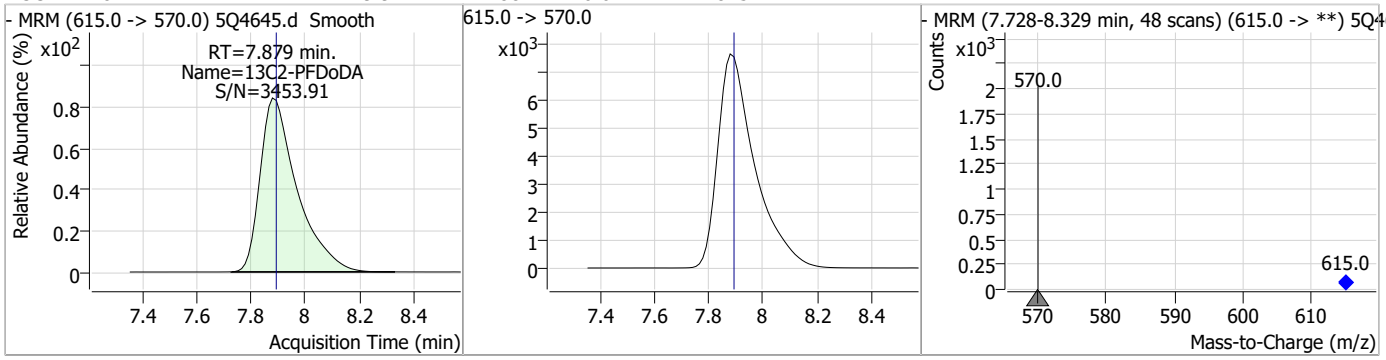
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.13	7.16	-0.01	13596				



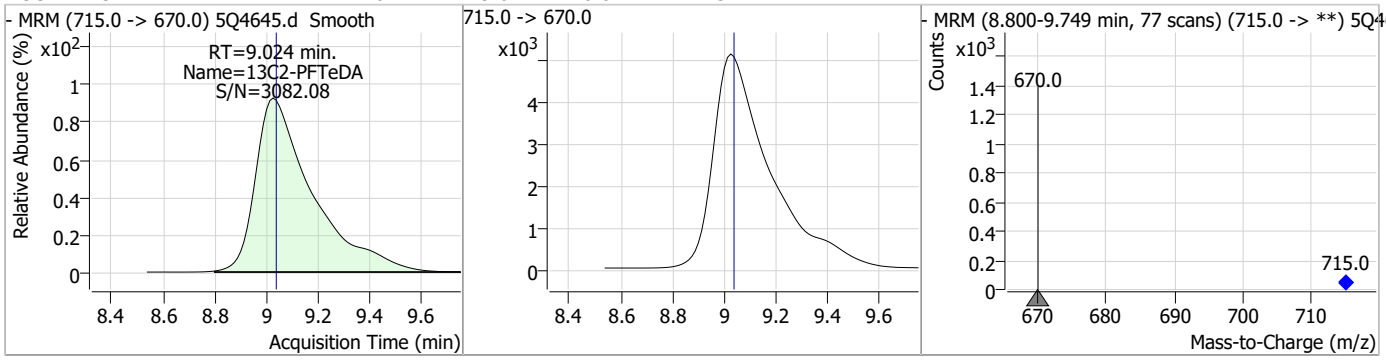
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.56	7.46	-0.01	74389				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.91	7.88	-0.01	71815				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.27	9.02	-0.01	77514				



Manual Integration Approval Summary

Sample Number: FA98286-10
Lab FileID: 5Q4645.D
Injection Time: 09/15/22 09:11
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 Anna Ludwig
Supervisor approved: 09/16/22 19:41 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.33	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
PFHxSA	41997-13-1		5.67	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4724.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 7:26:11 AM
Sample Name : fa98286-10
Vial : P3-E8
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,120,,,1.0,5,water

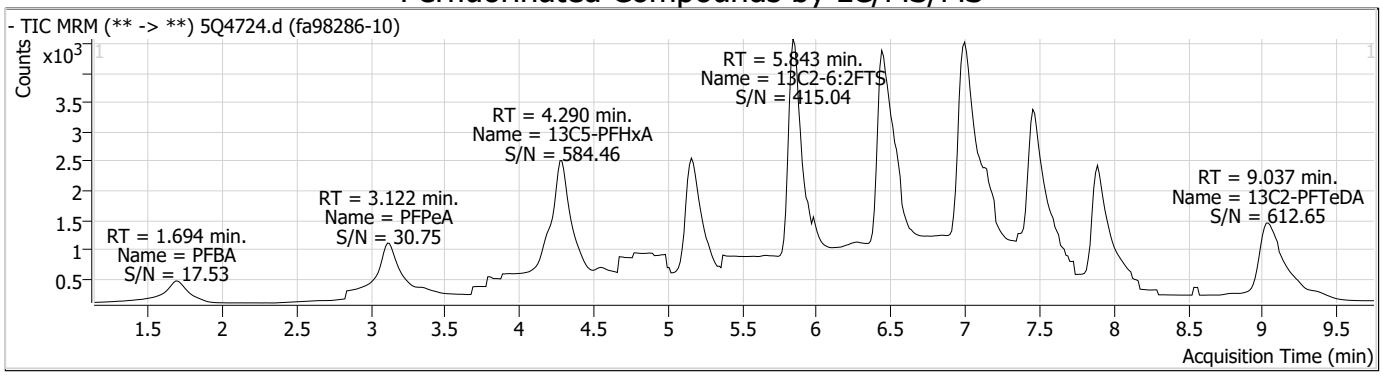
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	3901	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	7596	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	12081	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	11627	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	17418	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	18287	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	13893	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	14932	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	14304	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	15356	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	2047	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	827	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	980	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	1608	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	3887	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	6276	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	5779	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	2848	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	881	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	106	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	2737	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	3887	2.65	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%		
13C2-6:2FTS	5.843	429.0 -> 409.0	6276	2.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C2-8:2FTS	7.025	529.0 -> 509.0	5779	2.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	14304	1.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.9%		
13C2-PFTeDA	9.037	715.0 -> 670.0	15356	2.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%		
13C3-PFBS	3.349	302.0 -> 99.0	827	2.54	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C3-PFHxS	5.194	402.0 -> 99.0	980	2.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C4-PFBA	1.700	217.0 -> 172.0	3901	2.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.9%		
13C4-PFHpA	5.163	367.0 -> 322.0	11627	2.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	12081	2.76	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.8%		
13C5-PFPeA	3.132	268.0 -> 223.0	7596	2.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%		
13C6-PFDA	6.989	519.0 -> 474.0	13893	2.58	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

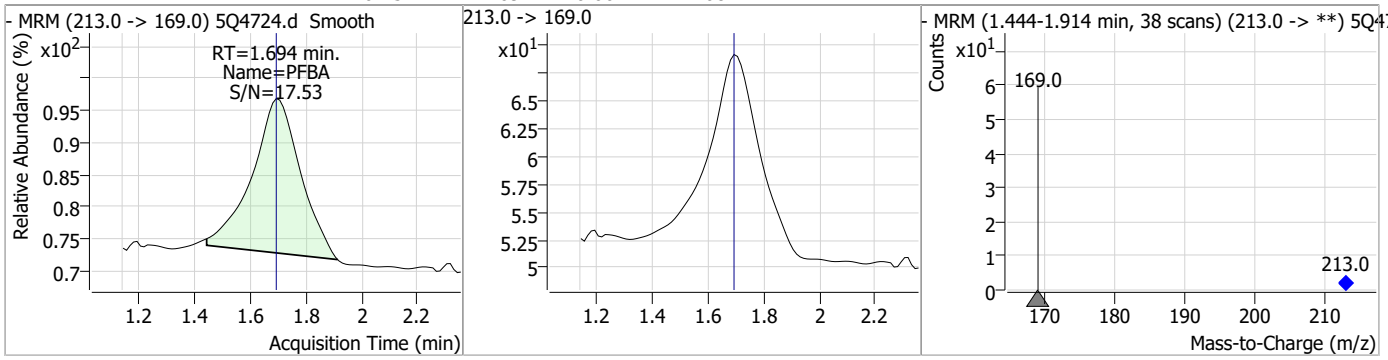
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C7-PFUnDA	7.471	570.0 -> 525.0	14932	2.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.6%		
13C8-FOSA	6.530	506.0 -> 78.0	2047	1.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.0%		
13C8-PFOA	5.857	421.0 -> 376.0	17418	2.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C8-PFOS	6.440	507.0 -> 99.0	1608	2.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.3%		
13C9-PFNA	6.455	472.0 -> 427.0	18287	2.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
d3-MeFOSAA	7.009	573.0 -> 419.0	2848	2.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.7%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	881	2.62 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%		
d3-MeFOSA	6.952	515.0 -> 169.0	106	0.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
d5-EtFOSAA	7.170	589.0 -> 419.0	2737	2.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	1.694	213.0 -> 169.0	208	0.45 µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	5.164	363.0 -> 319.0	1334	0.35 µg/L		98
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	4.291	313.0 -> 269.0	1740	0.59 µg/L		100
PFHxS	5.195	399.0 -> 80.0	853	1.17 µg/L		95
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	6.442	499.0 -> 80.0	1161	1.64 µg/L	m	82
PFPeA	3.122	263.0 -> 219.0	1144	0.61 µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

 # = Qualifier out of range, m = manually integrated, + = Area summed

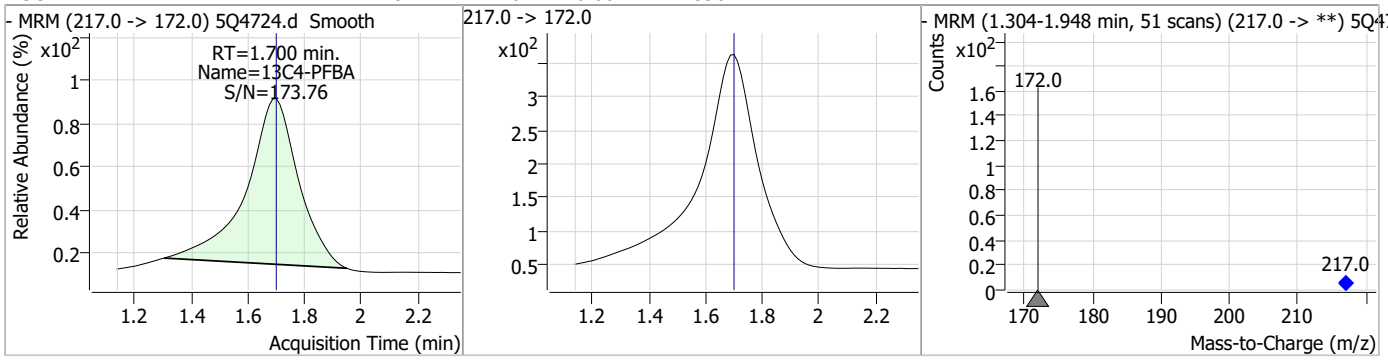
Perfluorinated Compounds by LC/MS/MS



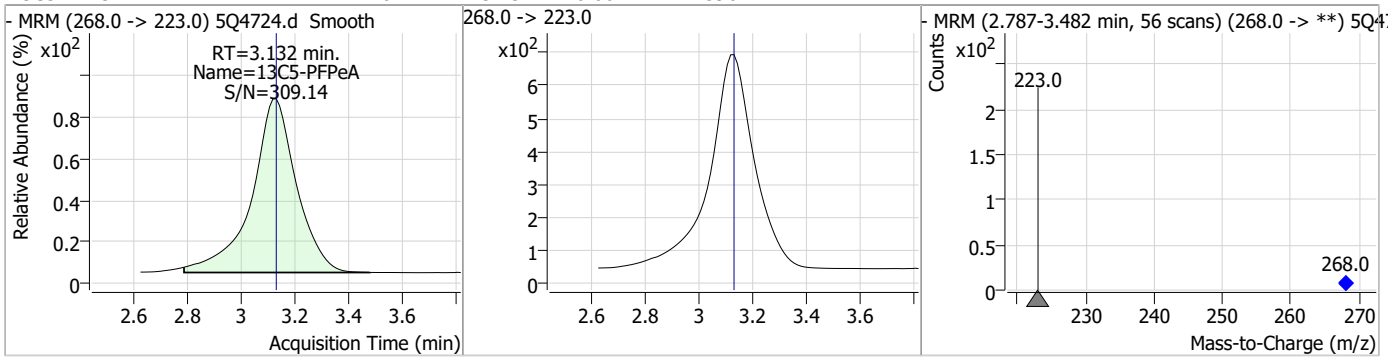
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.45	1.69	0.00	208				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.18	1.70	0.00	3901				

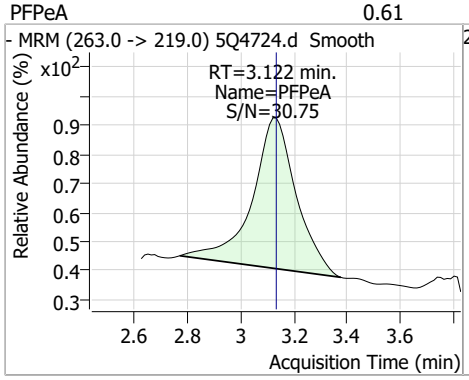


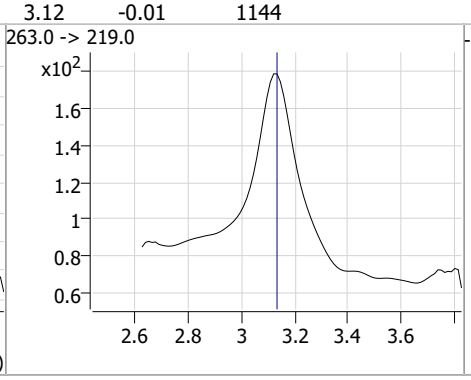
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.61	3.13	0.00	7596				

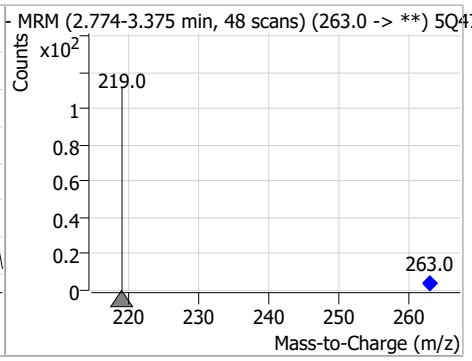


Perfluorinated Compounds by LC/MS/MS

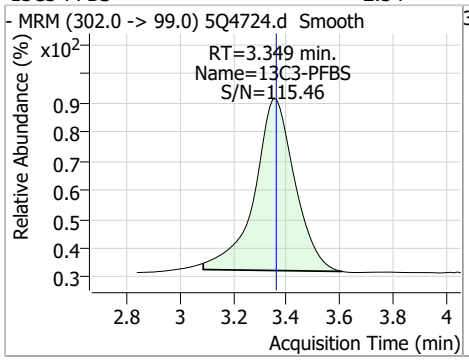
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.61	3.12	-0.01	1144				

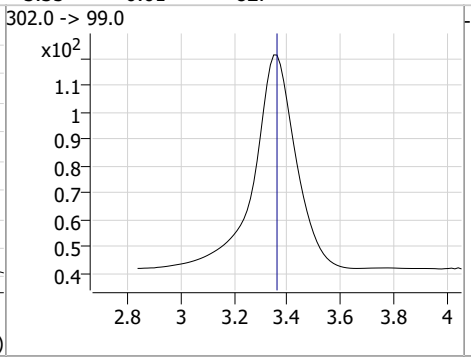


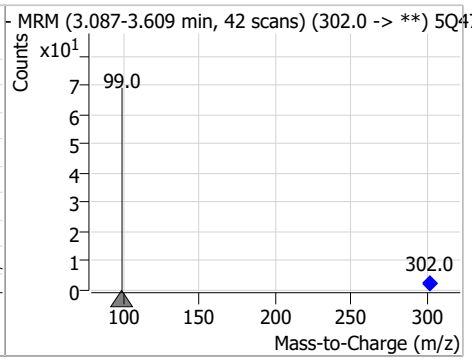




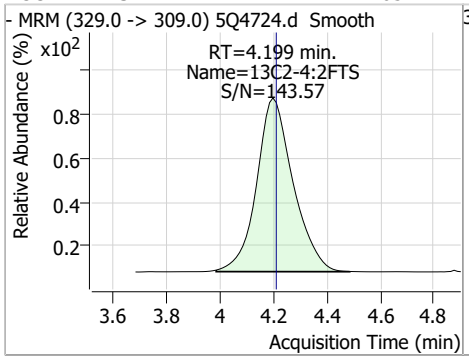
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.54	3.35	-0.01	827				

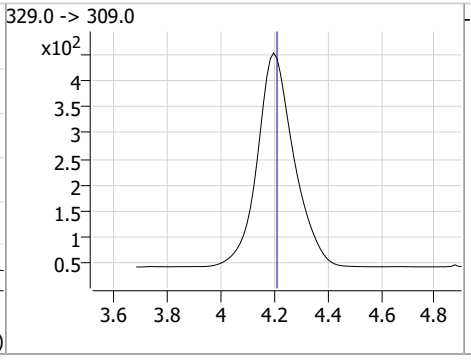


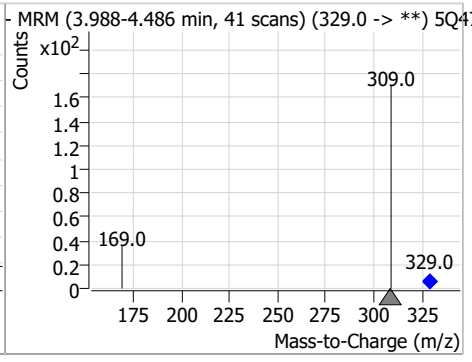




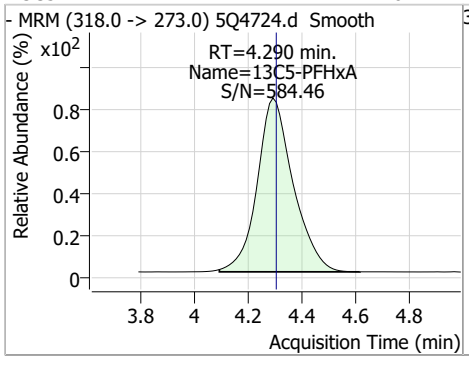
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.65	4.20	-0.01	3887				

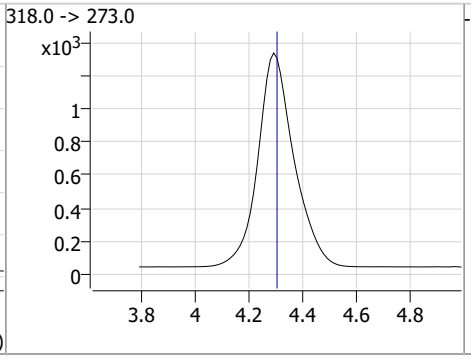


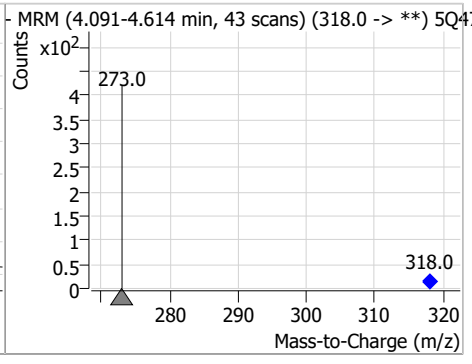




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.76	4.29	-0.01	12081				

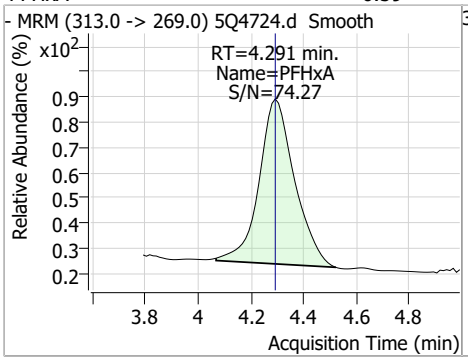


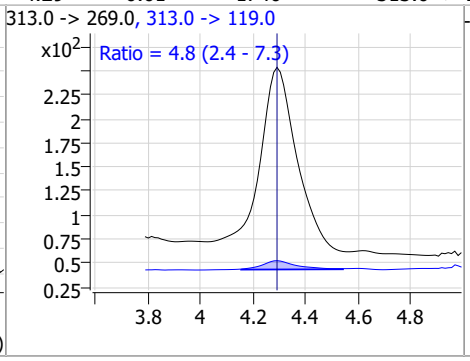


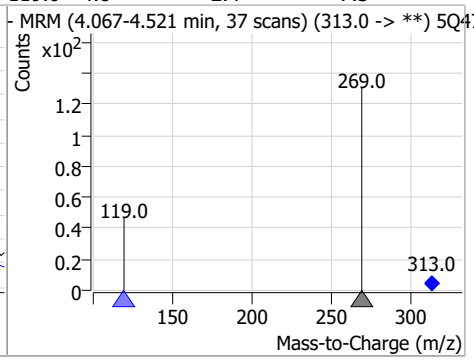


Perfluorinated Compounds by LC/MS/MS

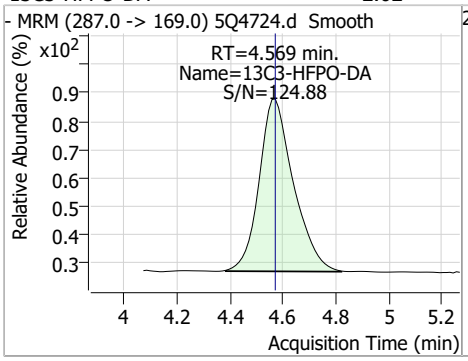
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.59	4.29	-0.01	1740	313.0 -> 119.0	4.8	2.4	7.3

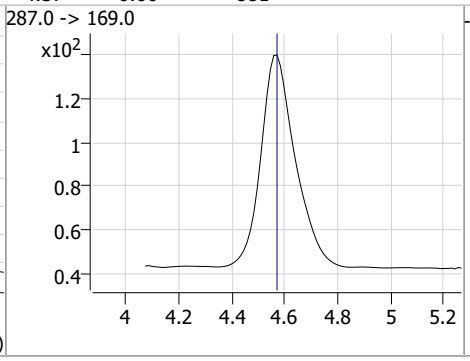


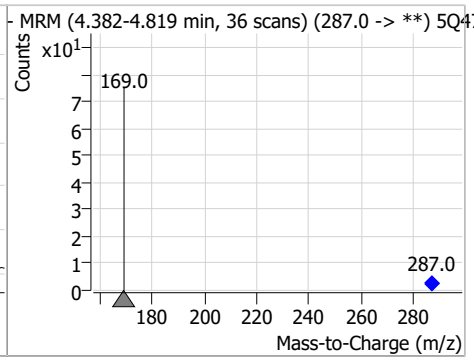




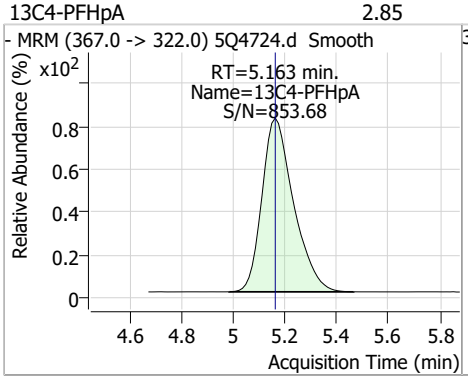
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.62	4.57	0.00	881				

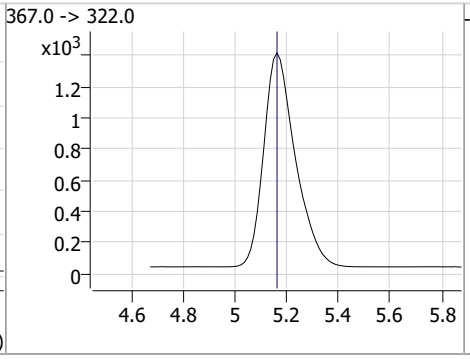


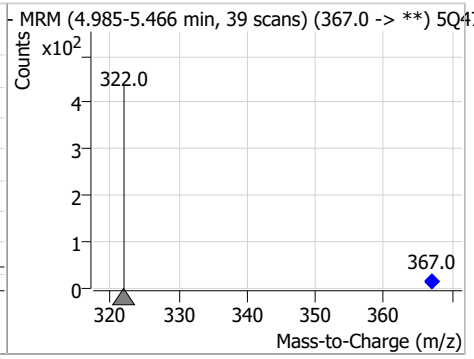




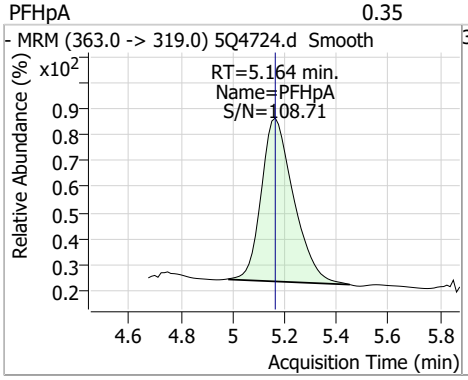
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.85	5.16	0.00	11627				

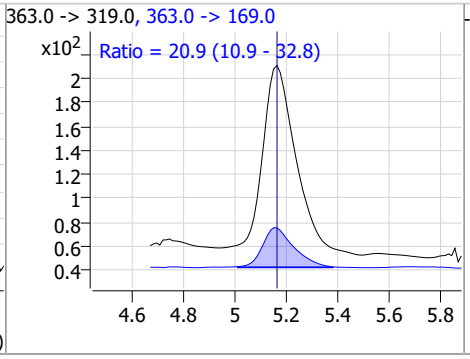


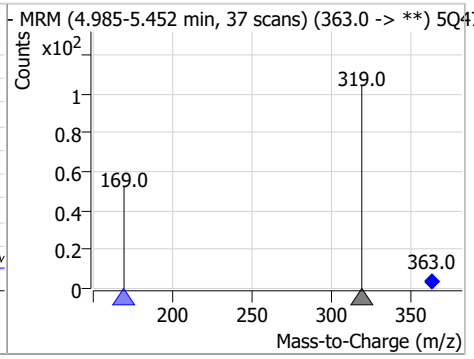




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.35	5.16	0.00	1334	363.0 -> 169.0	20.9	10.9	32.8

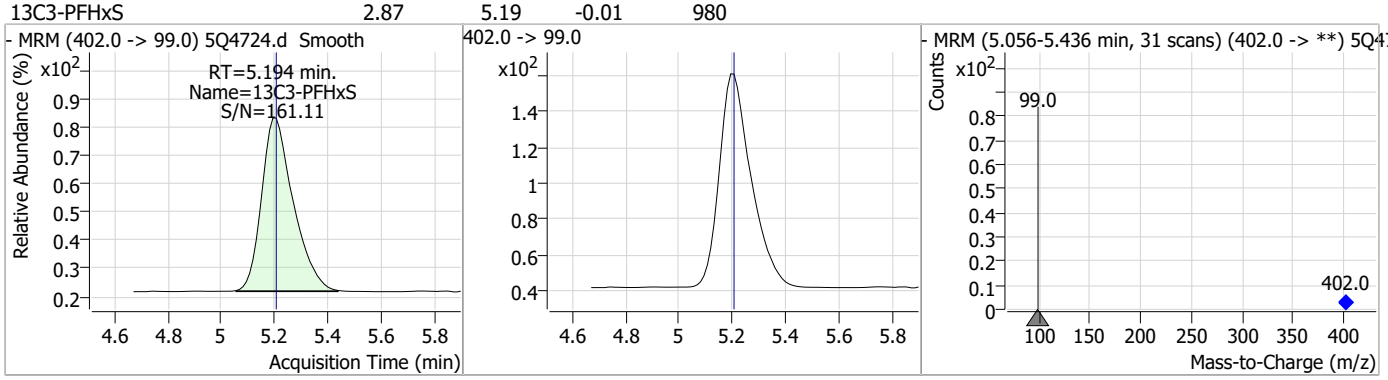




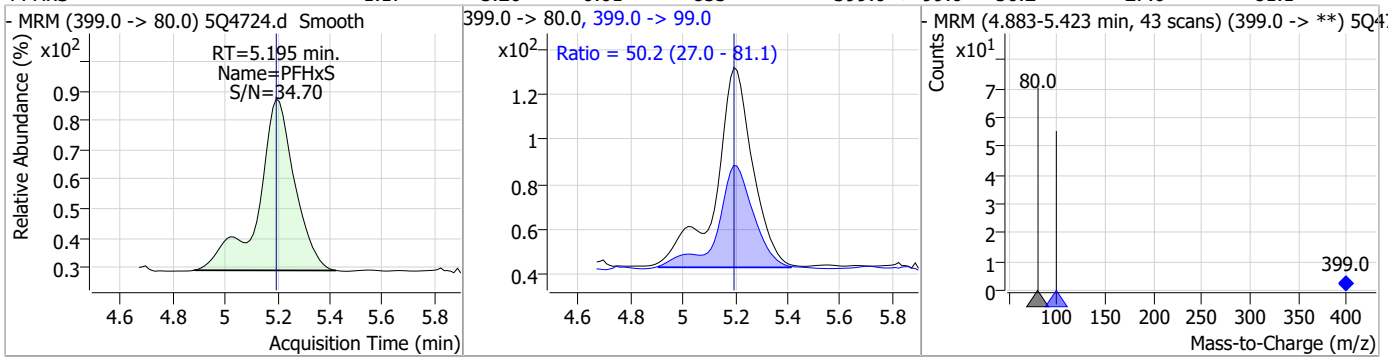


Perfluorinated Compounds by LC/MS/MS

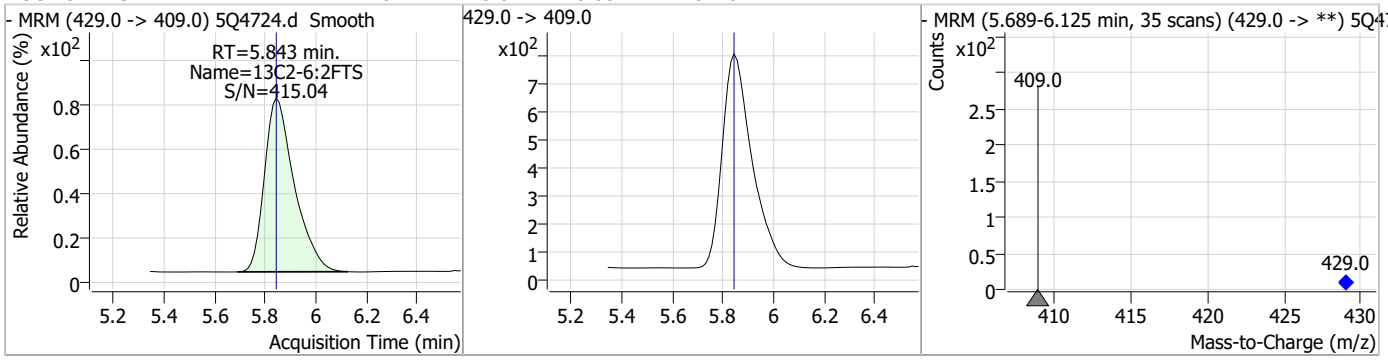
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.87	5.19	-0.01	980				



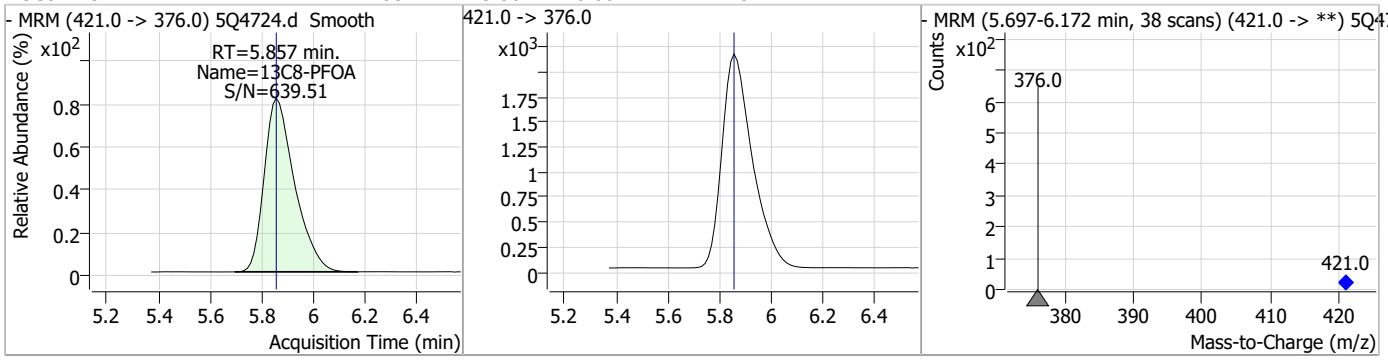
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.17	5.20	-0.01	853	399.0 -> 99.0	50.2	27.0	81.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.81	5.84	0.00	6276				

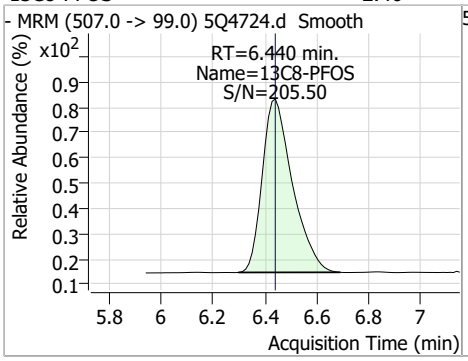


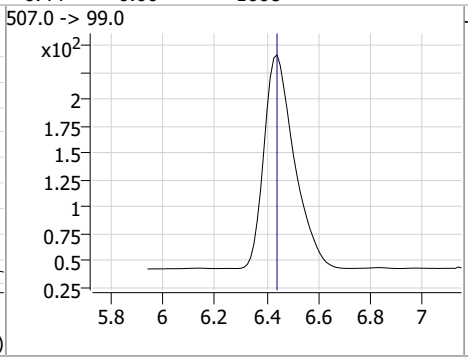
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.88	5.86	0.00	17418				

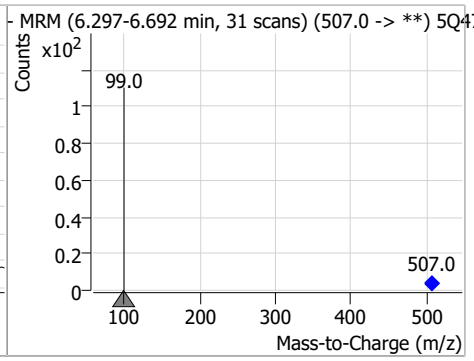


Perfluorinated Compounds by LC/MS/MS

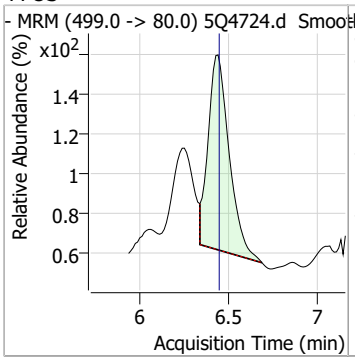
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	6.44	0.00	1608				

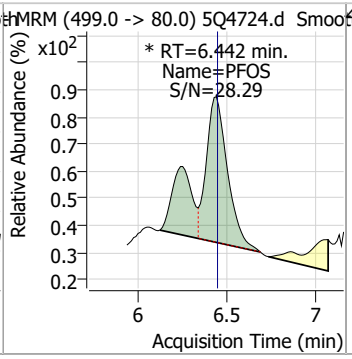


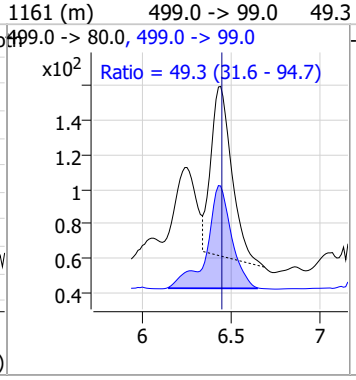


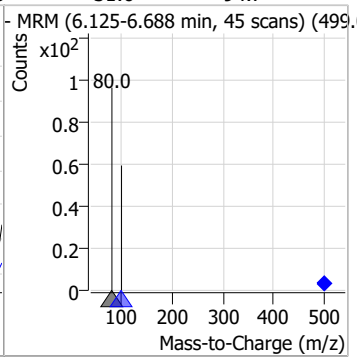


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.64	6.44	0.00	1161 (m)	499.0 -> 99.0	49.3	31.6	94.7

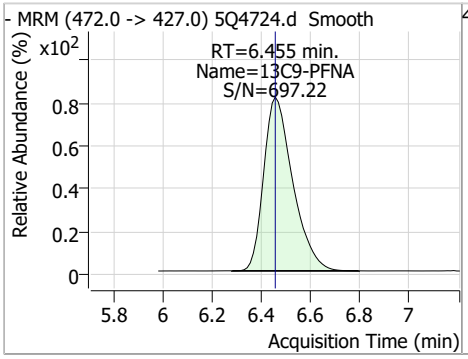


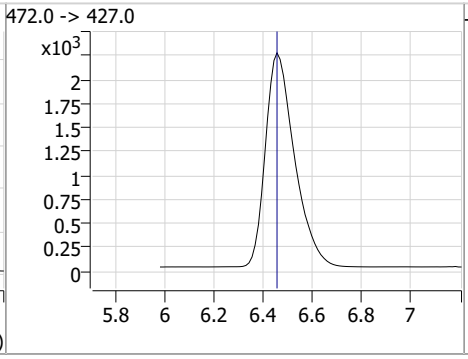


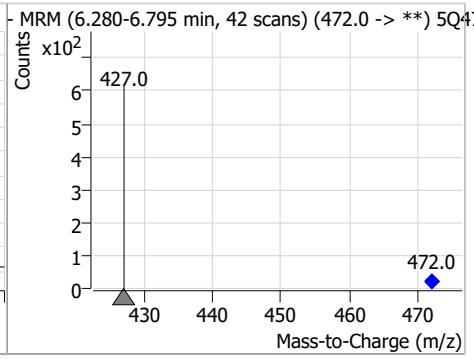




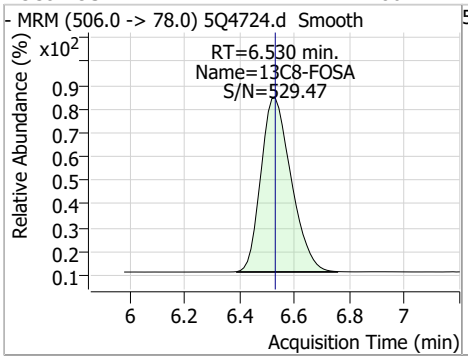
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.78	6.46	0.00	18287				

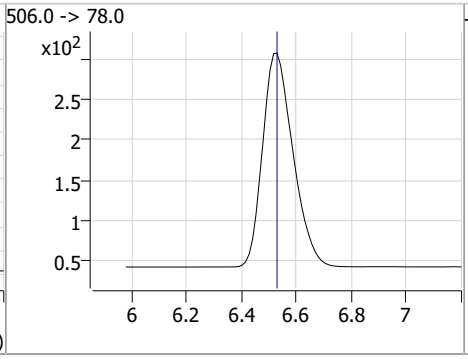


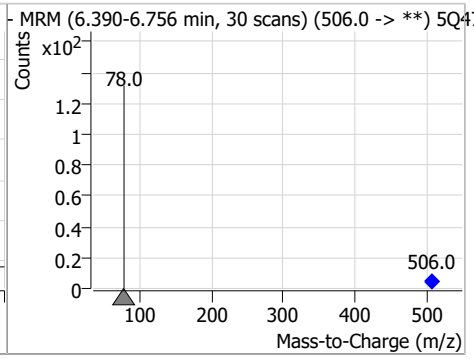




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.80	6.53	0.00	2047				

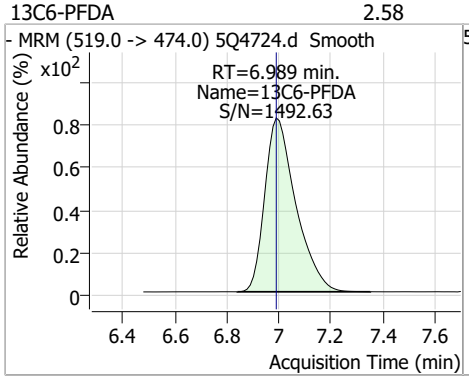


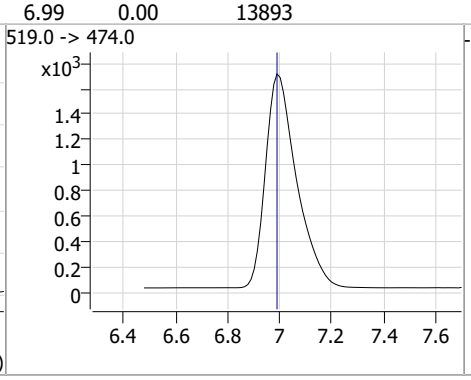


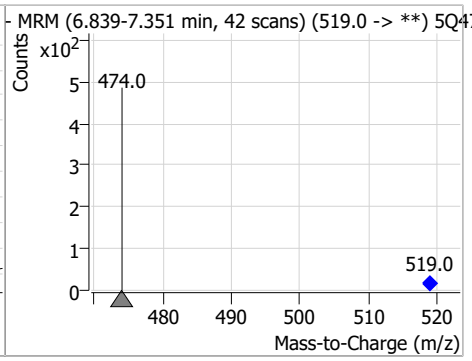


Perfluorinated Compounds by LC/MS/MS

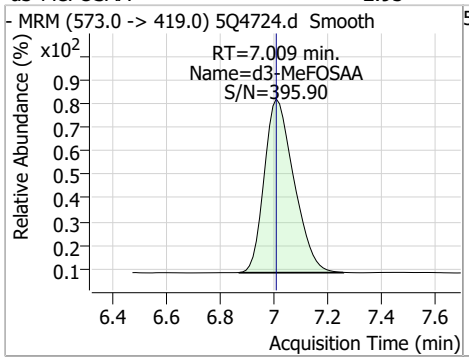
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.58	6.99	0.00	13893				

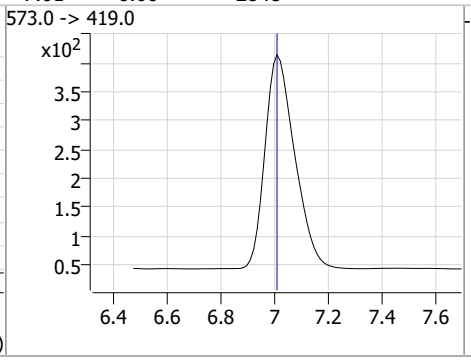


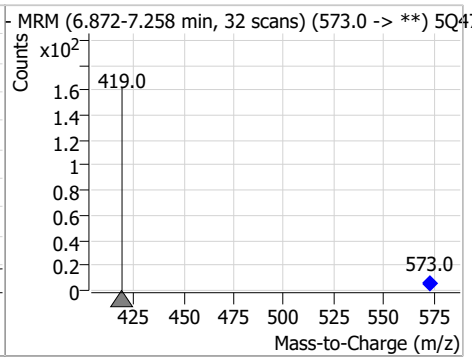




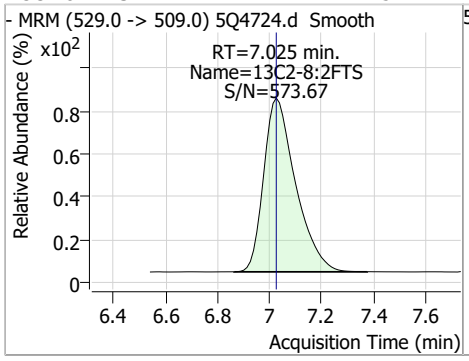
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.93	7.01	0.00	2848				

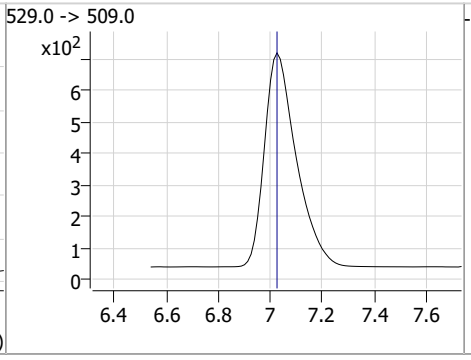


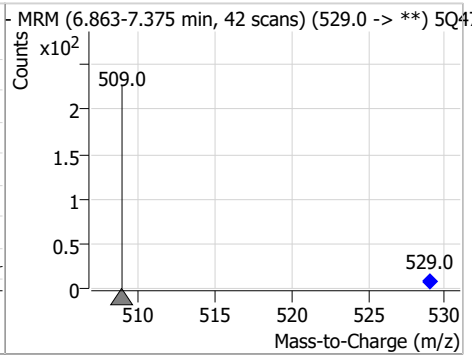




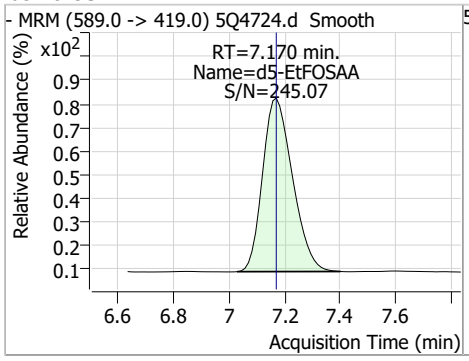
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.57	7.03	0.00	5779				

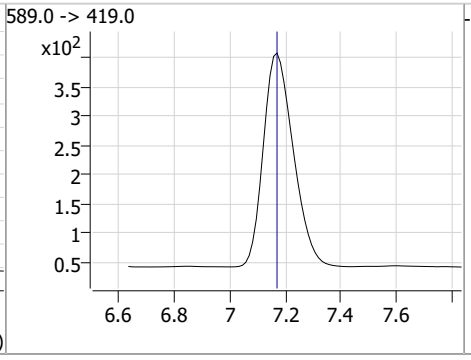


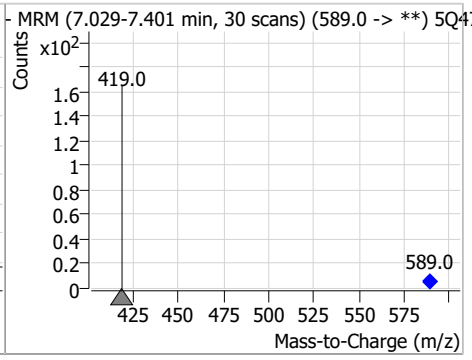




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.44	7.17	0.00	2737				

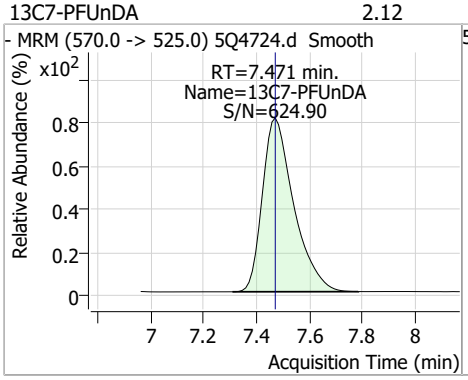


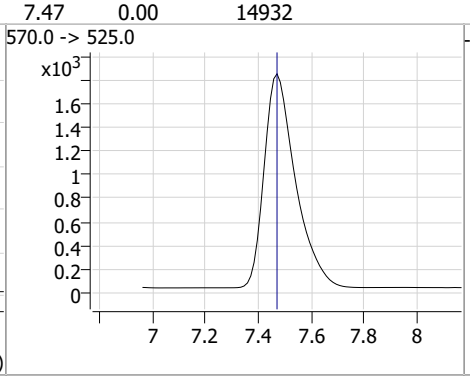


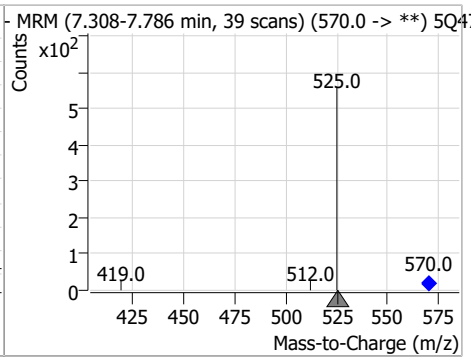


Perfluorinated Compounds by LC/MS/MS

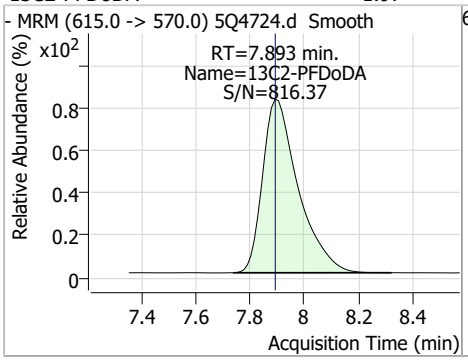
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.12	7.47	0.00	14932				

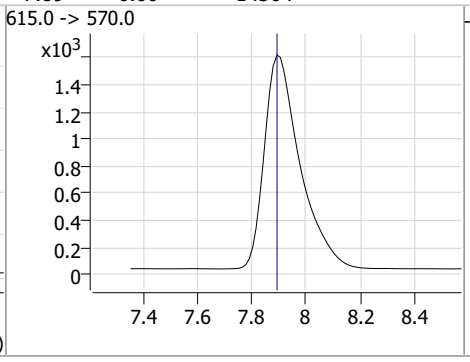


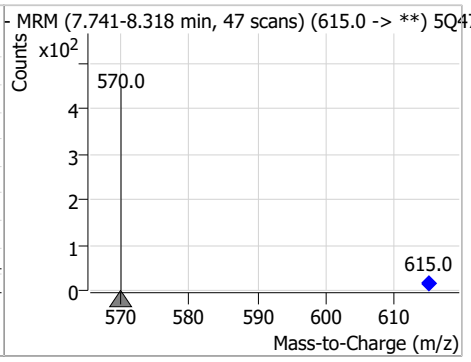




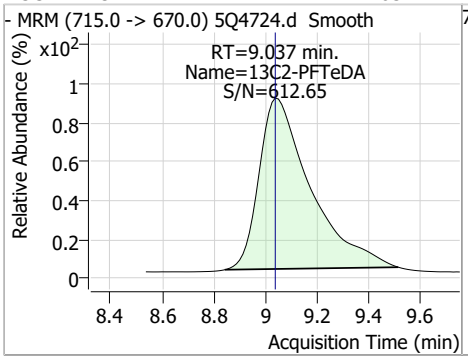
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.97	7.89	0.00	14304				

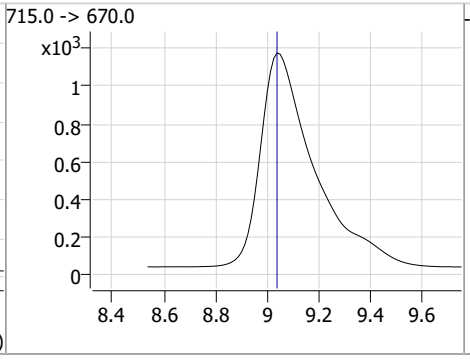


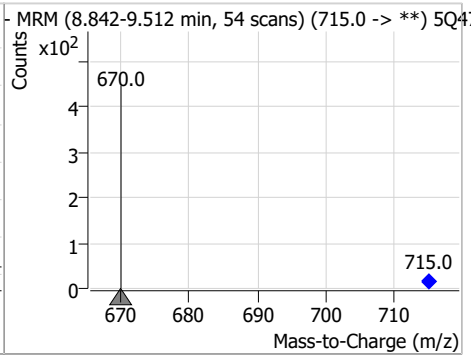




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.03	9.04	0.00	15356				







Manual Integration Approval Summary

Sample Number: FA98286-10
Lab FileID: 5Q4724.D
Injection Time: 09/16/22 07:26
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4646.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:26:36 AM
Sample Name : fa98286-11
Vial : P1-F4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,120,,,1.0,1,water

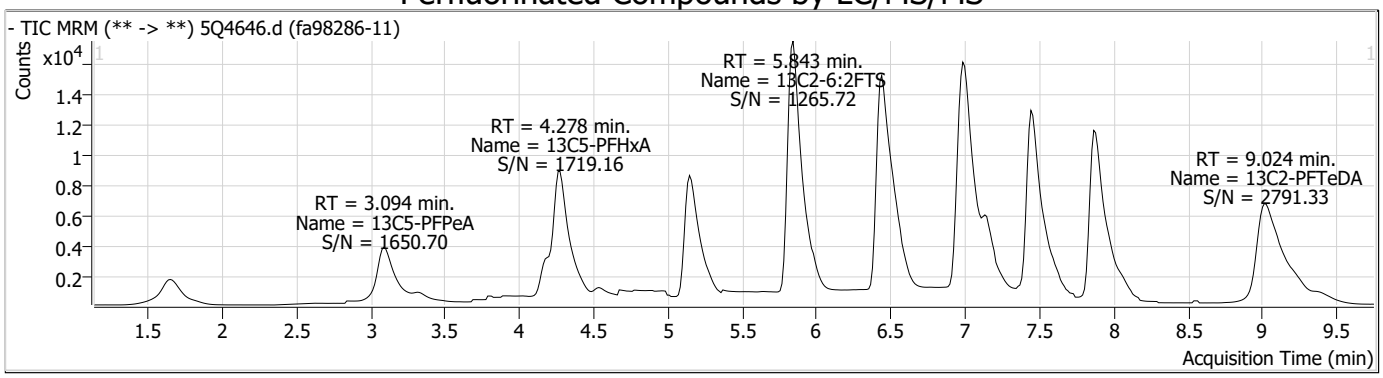
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.650	217.0 -> 172.0	18215	20.00 µg/L	-0.050
M5-PFPeA	3.094	268.0 -> 223.0	30230	20.00 µg/L	-0.037
M5-PFHxA	4.278	318.0 -> 273.0	52755	20.00 µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	52931	20.00 µg/L	-0.014
M8-PFOA	5.857	421.0 -> 376.0	82604	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	89891	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	70675	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	83704	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	87258	20.00 µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	92195	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	10489	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	3814	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	4594	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	8028	20.00 µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	17599	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	31159	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	29071	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	14555	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	3899	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	216	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	15579	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	17599	11.98 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%	
13C2-6:2FTS	5.843	429.0 -> 409.0	31159	13.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.7%	
13C2-8:2FTS	7.013	529.0 -> 509.0	29071	12.94 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.7%	
13C2-PFDoDA	7.879	615.0 -> 570.0	87258	12.04 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%	
13C2-PFTeDA	9.024	715.0 -> 670.0	92195	12.22 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.1%	
13C3-PFBS	3.337	302.0 -> 99.0	3814	11.71 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	4594	13.47 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.4%	
13C4-PFBA	1.650	217.0 -> 172.0	18215	10.19 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.9%	
13C4-PFHpA	5.149	367.0 -> 322.0	52931	12.97 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.8%	
13C5-PFHxA	4.278	318.0 -> 273.0	52755	12.07 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.3%	
13C5-PFPeA	3.094	268.0 -> 223.0	30230	10.40 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.0%	
13C6-PFDA	6.989	519.0 -> 474.0	70675	13.13 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

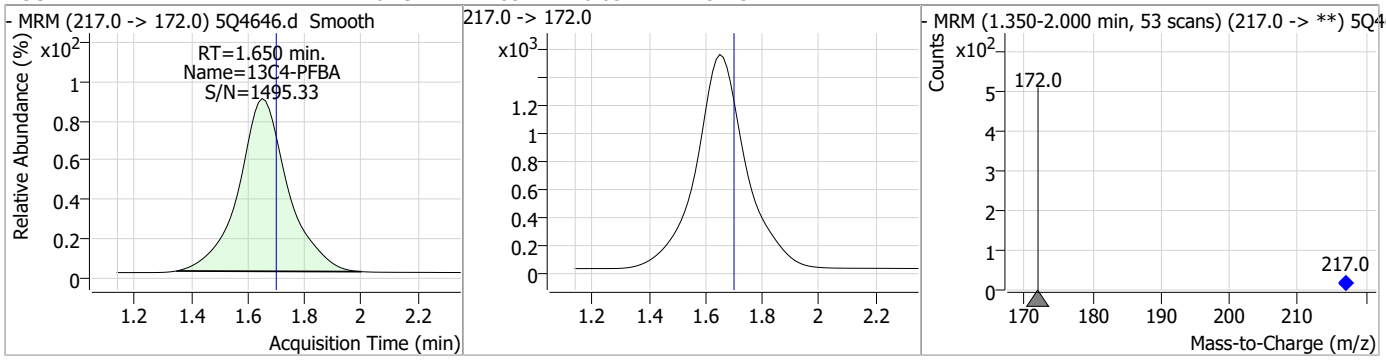
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.6%			
13C7-PFUnDA	7.459	570.0 -> 525.0	83704	11.89	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.4%			
13C8-FOSA	6.517	506.0 -> 78.0	10489	9.24	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 46.2%			
13C8-PFOA	5.857	421.0 -> 376.0	82604	13.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
13C8-PFOS	6.428	507.0 -> 99.0	8028	12.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.5%			
13C9-PFNA	6.443	472.0 -> 427.0	89891	13.68	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14555	14.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	3899	11.61	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.1%			
d3-MeFOSA	6.965	515.0 -> 169.0	216	0.71	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.6%			
d5-EtFOSAA	7.157	589.0 -> 419.0	15579	13.90	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.831	427.0 -> 407.0	879	0.53	µg/L		99
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	5.183	399.0 -> 80.0	406	0.60	µg/L		91
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	7.079	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

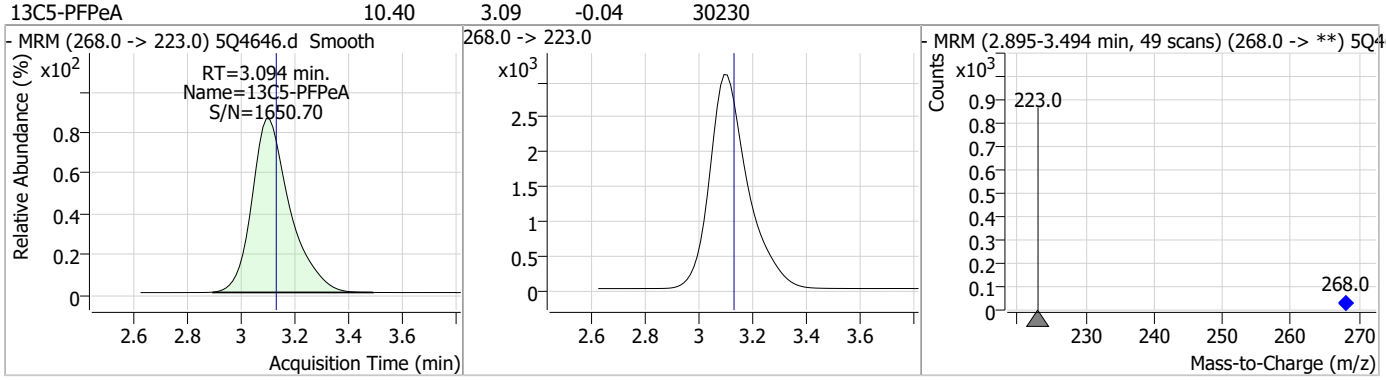
Perfluorinated Compounds by LC/MS/MS



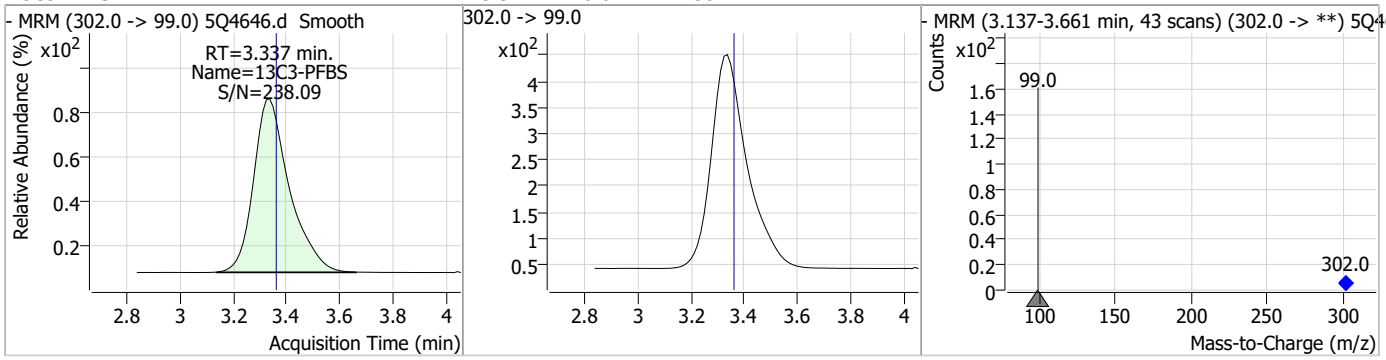
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.19	1.65	-0.05	18215				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.40	3.09	-0.04	30230				

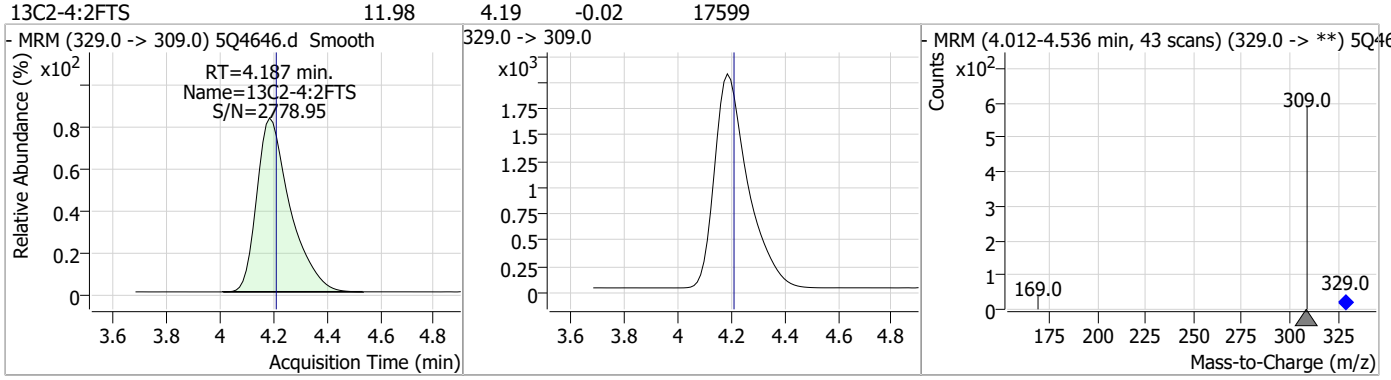


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.71	3.34	-0.02	3814				

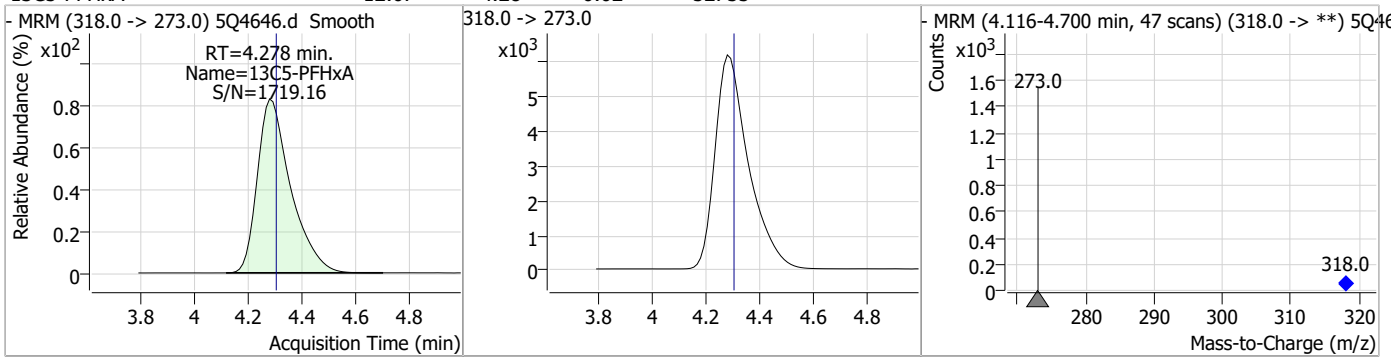


Perfluorinated Compounds by LC/MS/MS

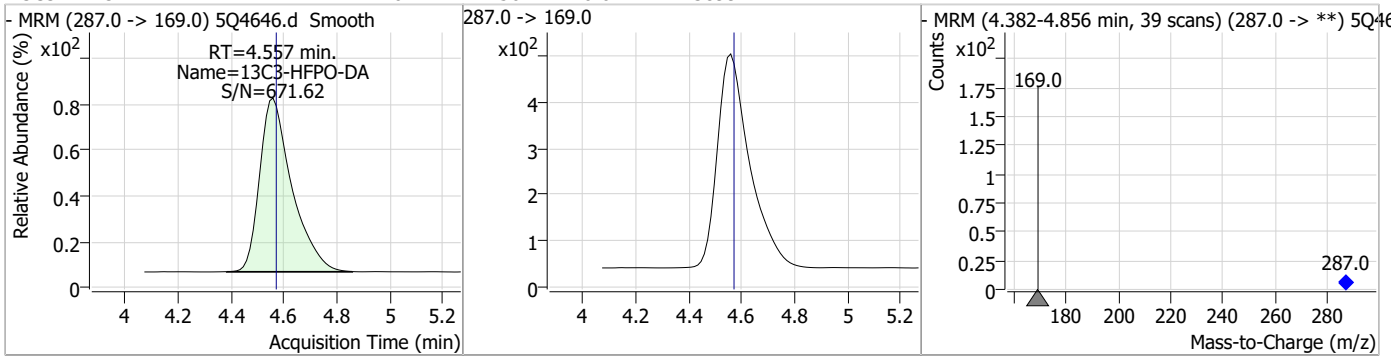
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.98	4.19	-0.02	17599				



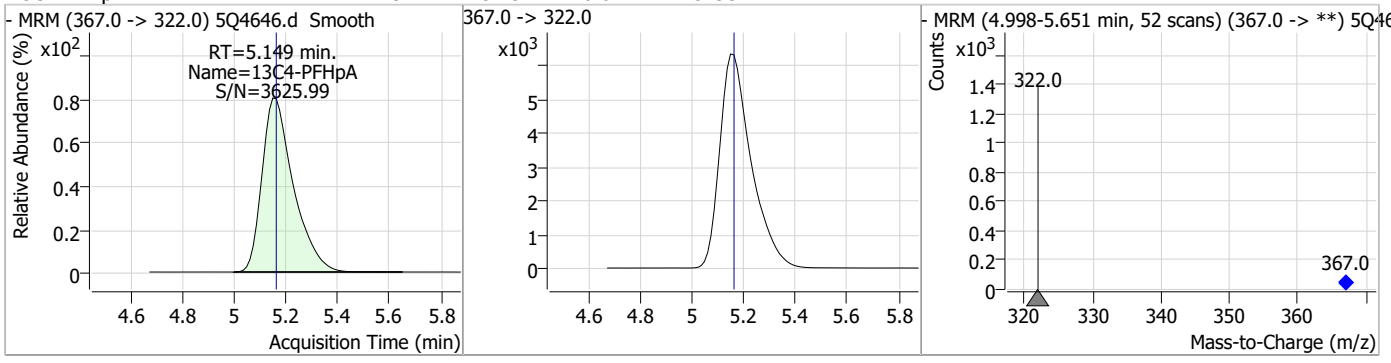
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.07	4.28	-0.02	52755				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.61	4.56	-0.01	3899				

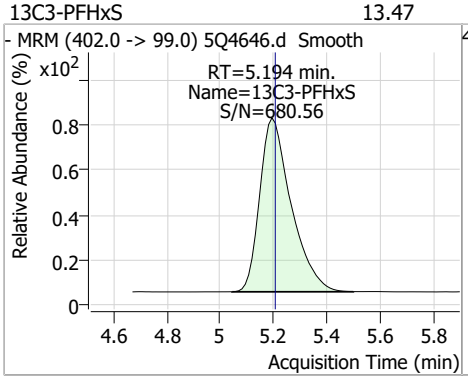


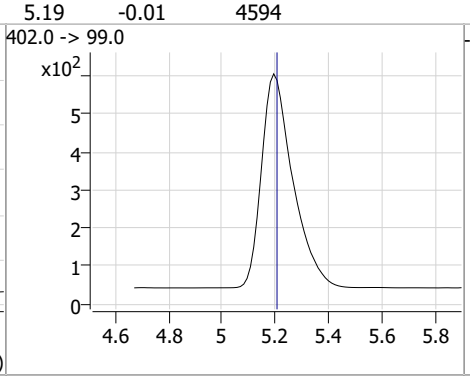
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	12.97	5.15	-0.01	52931				

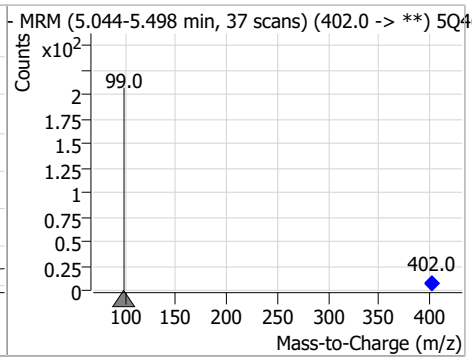


Perfluorinated Compounds by LC/MS/MS

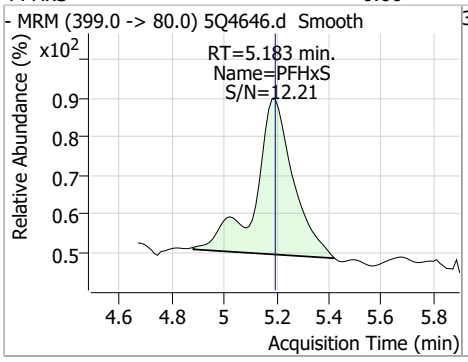
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.47	5.19	-0.01	4594				

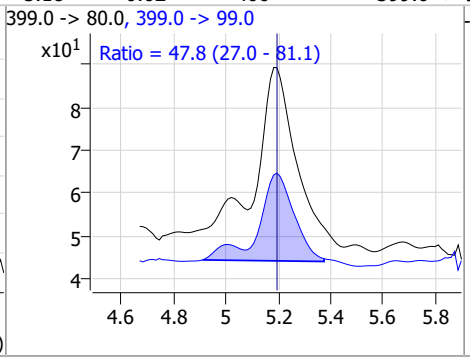


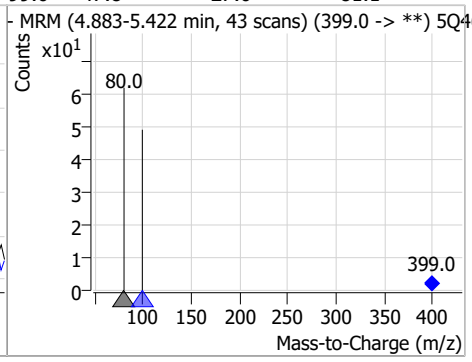




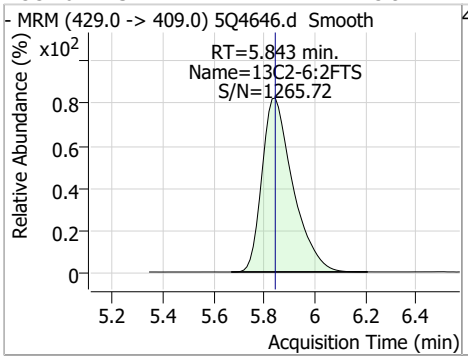
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.60	5.18	-0.02	406	399.0 -> 99.0	47.8	27.0	81.1

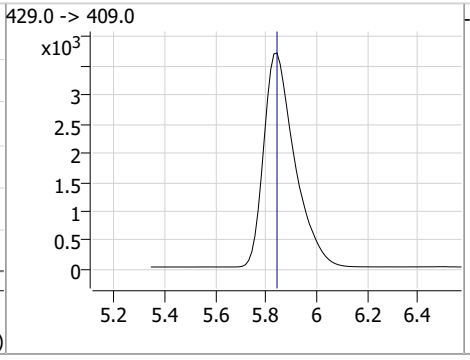


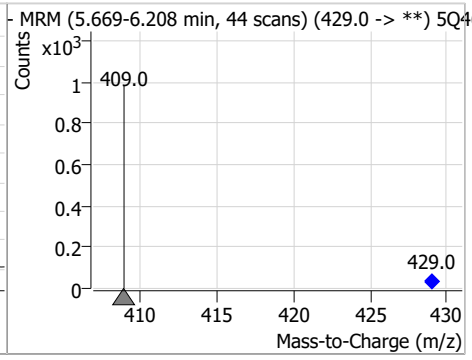




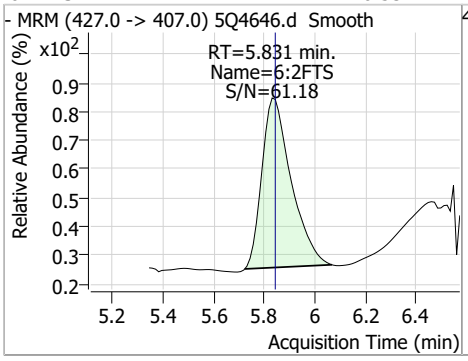
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.94	5.84	0.00	31159				

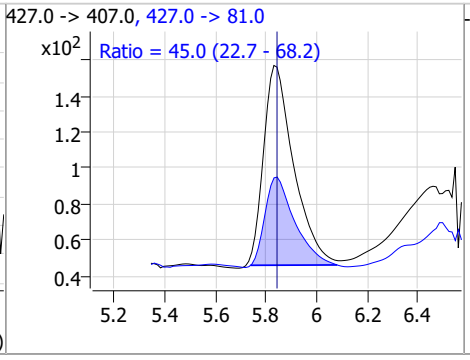


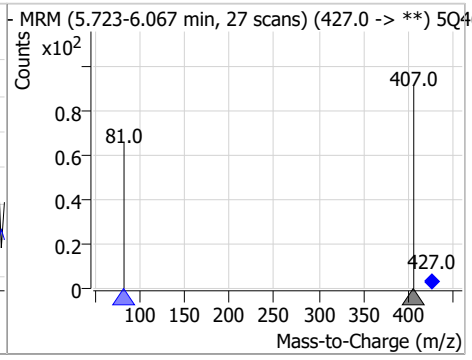




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.53	5.83	-0.01	879	427.0 -> 81.0	45.0	22.7	68.2

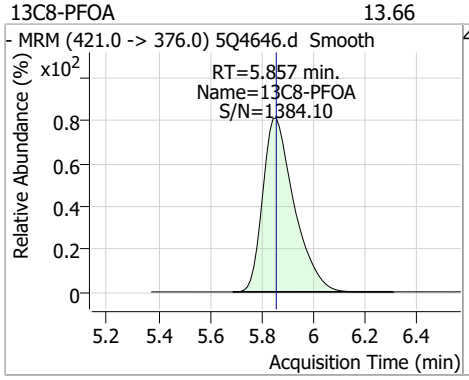


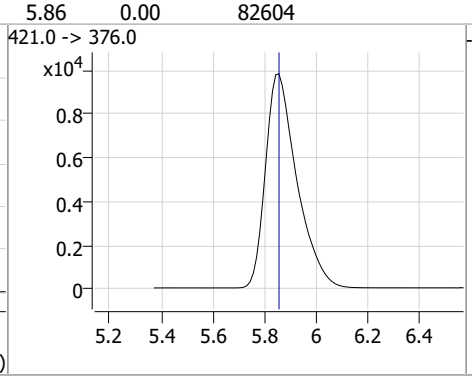


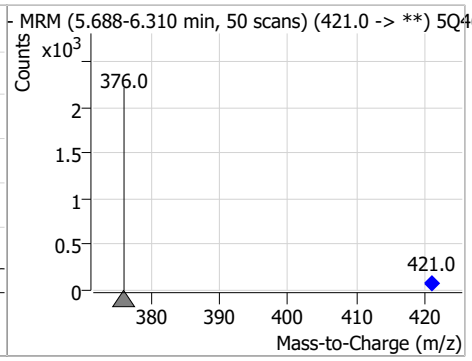


Perfluorinated Compounds by LC/MS/MS

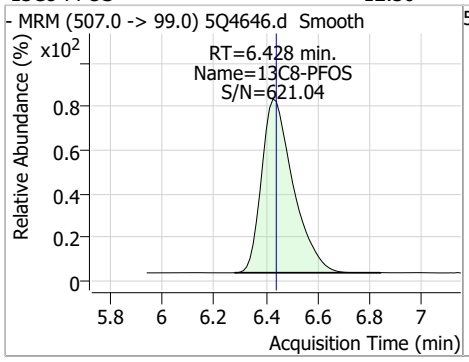
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.66	5.86	0.00	82604				

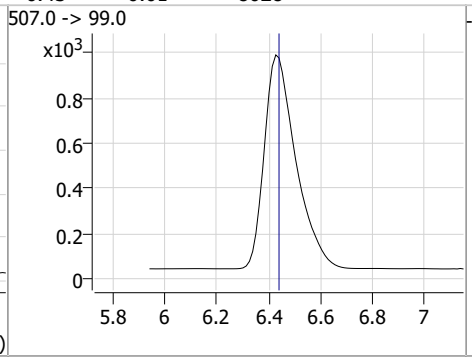


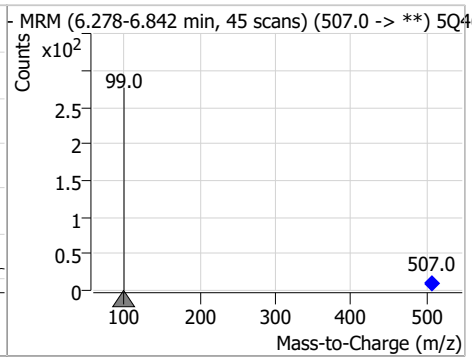




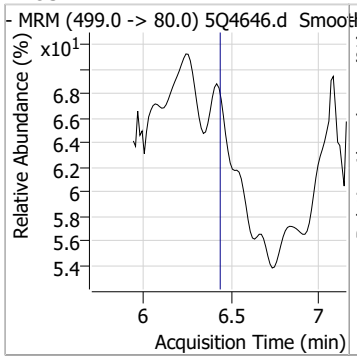
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.30	6.43	-0.01	8028				

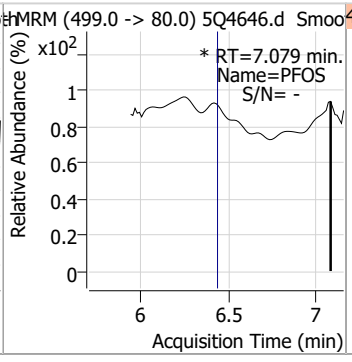


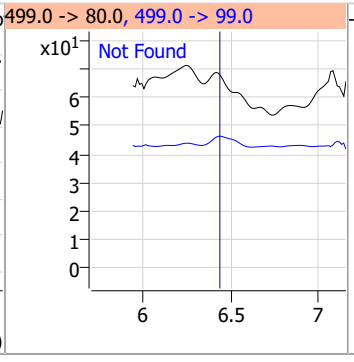


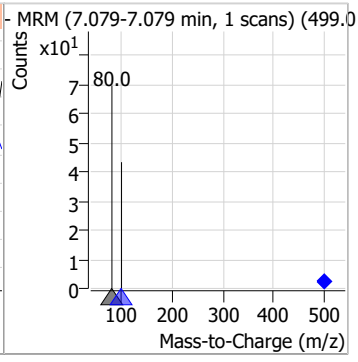


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

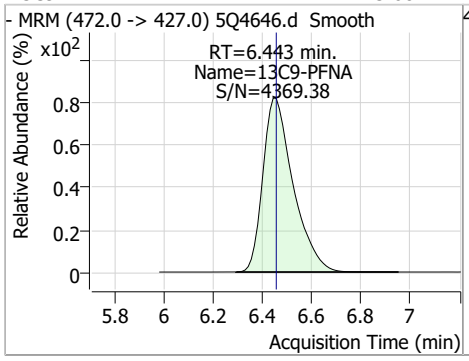


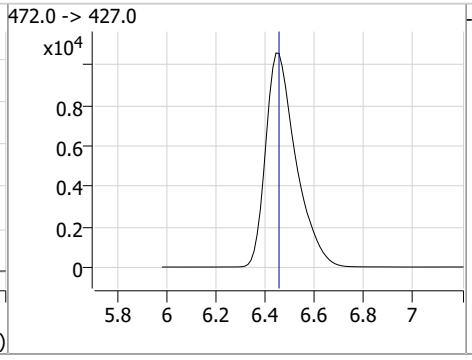


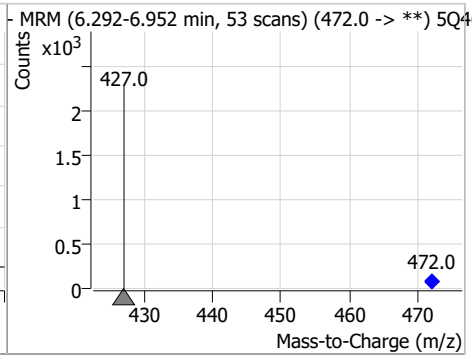




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.68	6.44	-0.01	89891				

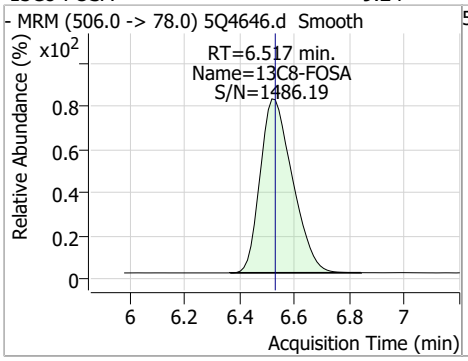


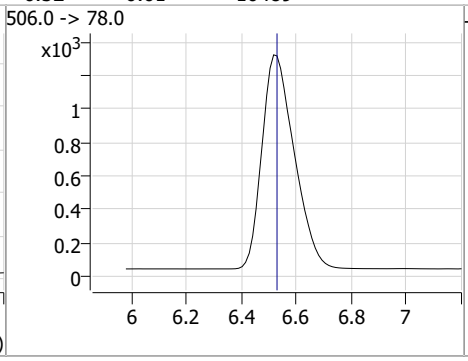


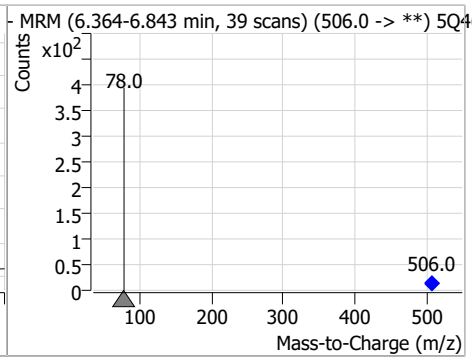


Perfluorinated Compounds by LC/MS/MS

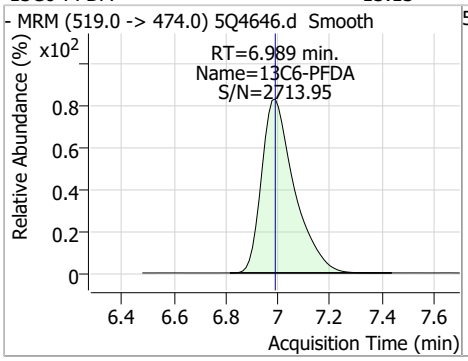
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.24	6.52	-0.01	10489				

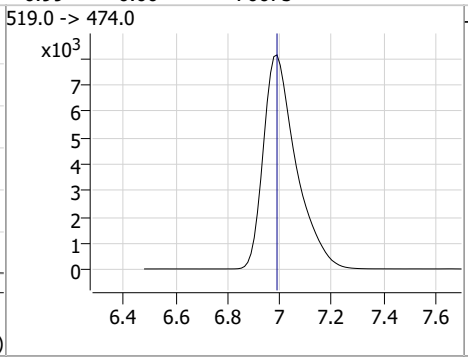


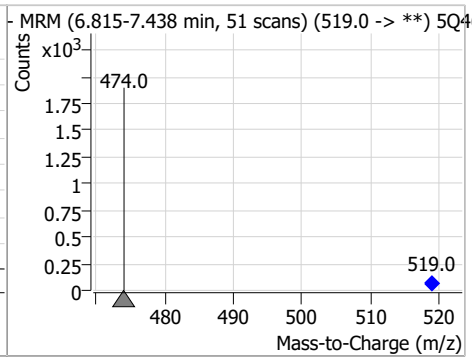




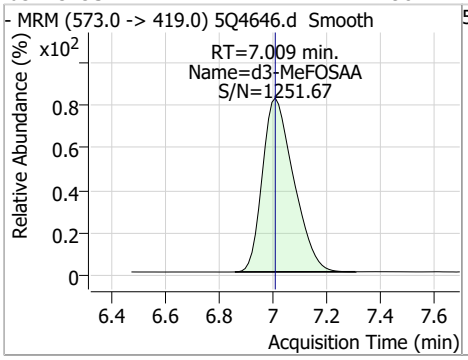
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.13	6.99	0.00	70675				

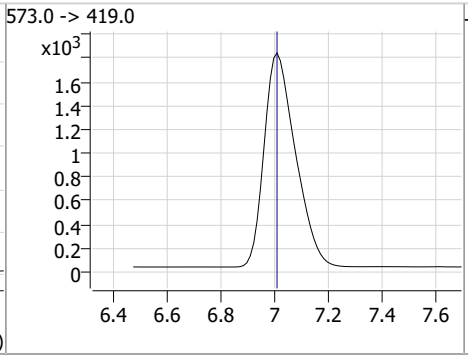


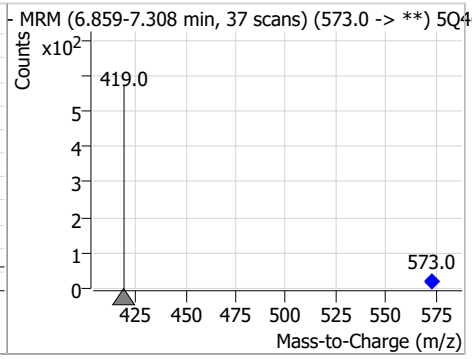




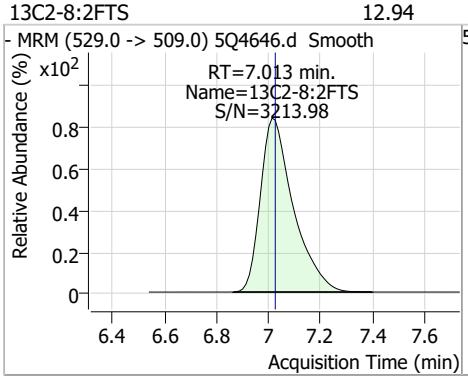
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.98	7.01	0.00	14555				

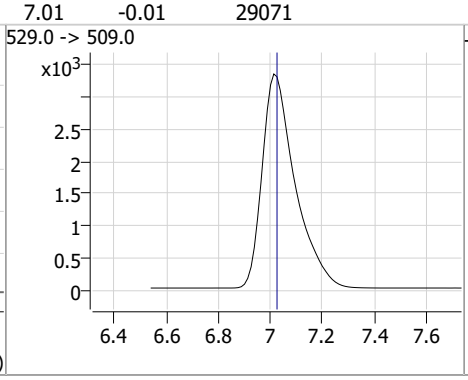


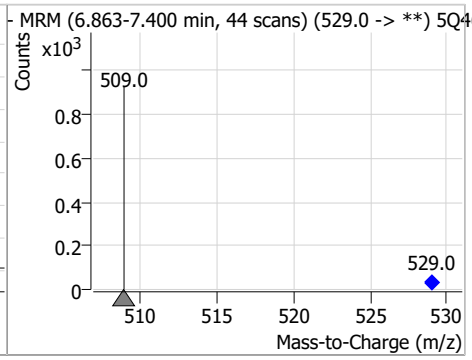




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.94	7.01	-0.01	29071				

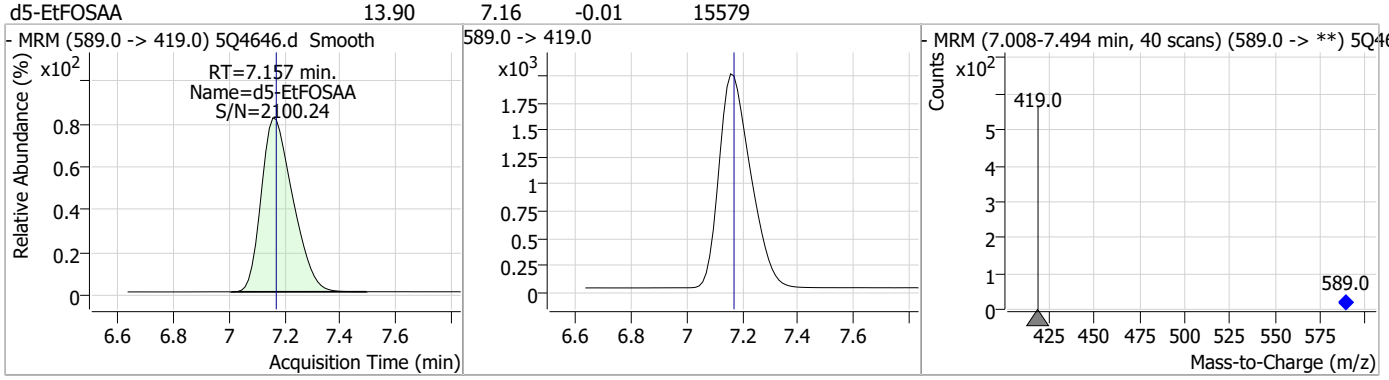




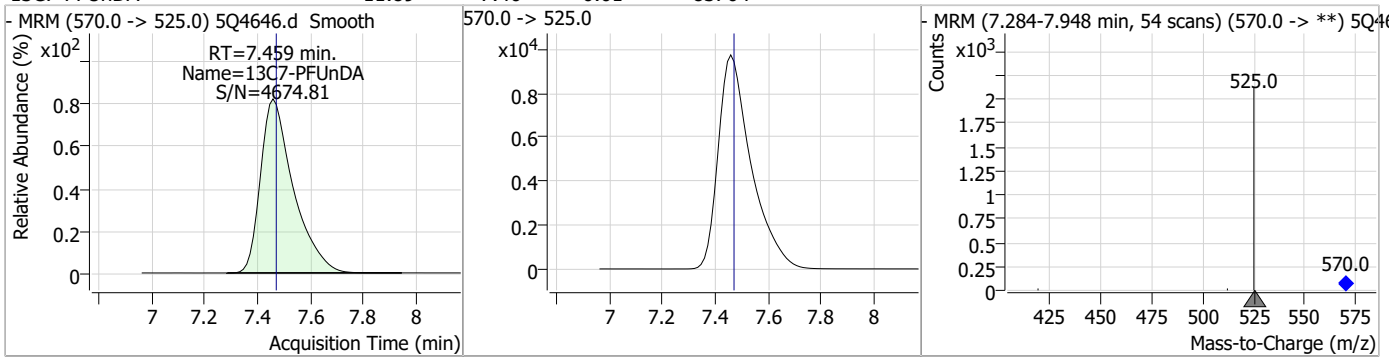


Perfluorinated Compounds by LC/MS/MS

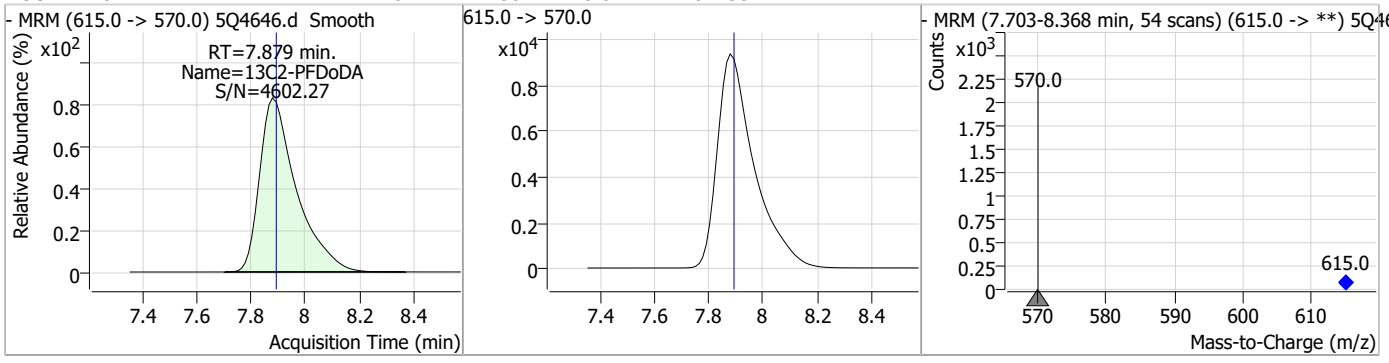
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.90	7.16	-0.01	15579				



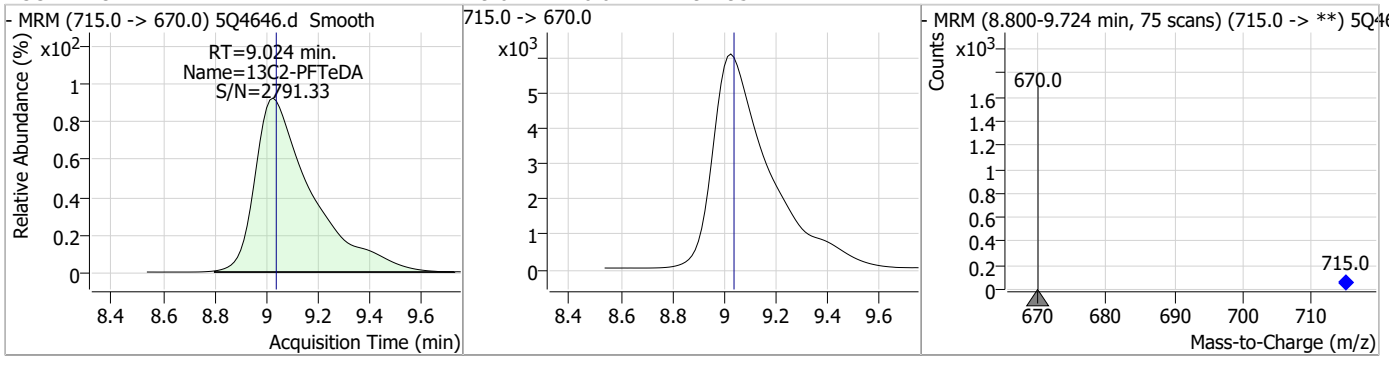
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.89	7.46	-0.01	83704				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.04	7.88	-0.01	87258				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.22	9.02	-0.01	92195				



Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4725.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 7:41:30 AM
Sample Name : fa98286-11
Vial : P3-E9
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,120,,,1.0,5,water

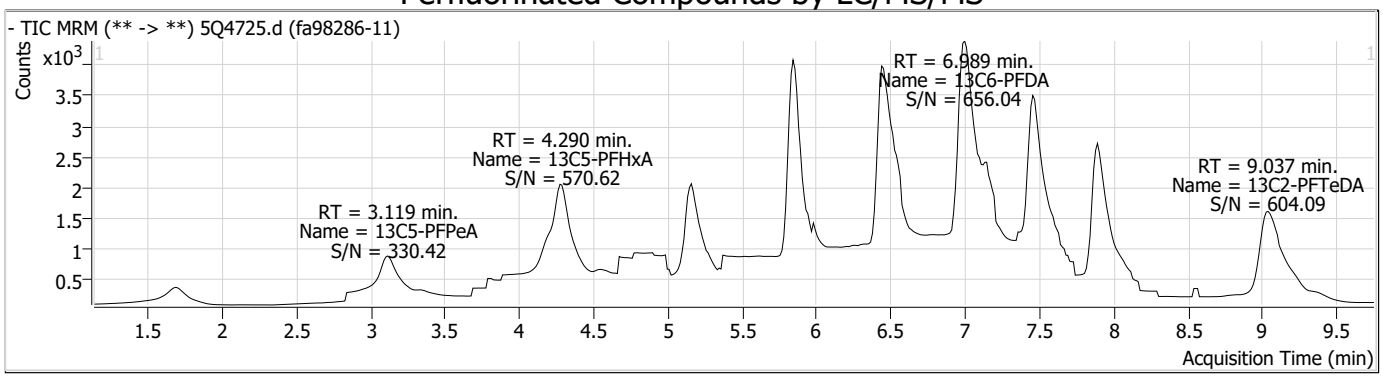
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	3194	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	6673	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	10775	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	10251	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	15460	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	16723	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	13417	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	15708	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	16717	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	17233	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	2119	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	759	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	872	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	1607	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	3502	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	5613	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	5249	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	2796	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	694	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	166	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	3016	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	3502	2.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C2-6:2FTS	5.843	429.0 -> 409.0	5613	2.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	5249	2.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.7%		
13C2-PFDoDA	7.893	615.0 -> 570.0	16717	2.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%		
13C2-PFTeDA	9.037	715.0 -> 670.0	17233	2.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.4%		
13C3-PFBS	3.349	302.0 -> 99.0	759	2.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%		
13C3-PFHxS	5.194	402.0 -> 99.0	872	2.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%		
13C4-PFBA	1.687	217.0 -> 172.0	3194	1.79	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.9%		
13C4-PFHpA	5.163	367.0 -> 322.0	10251	2.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
13C5-PFHxA	4.290	318.0 -> 273.0	10775	2.46	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.3%		
13C5-PFPeA	3.119	268.0 -> 223.0	6673	2.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%		
13C6-PFDA	6.989	519.0 -> 474.0	13417	2.49	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

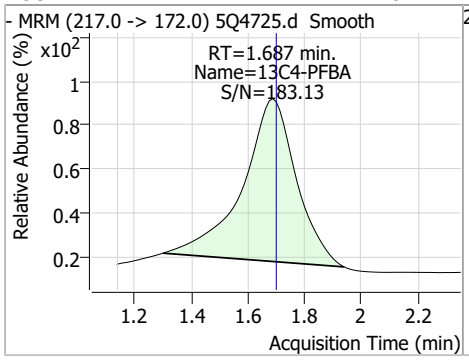
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.5%			
13C7-PFUnDA	7.471	570.0 -> 525.0	15708	2.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.2%			
13C8-FOSA	6.517	506.0 -> 78.0	2119	1.87	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.3%			
13C8-PFOA	5.857	421.0 -> 376.0	15460	2.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%			
13C8-PFOS	6.440	507.0 -> 99.0	1607	2.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.3%			
13C9-PFNA	6.455	472.0 -> 427.0	16723	2.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	2796	2.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	694	2.07	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.3%			
d3-MeFOSA	6.965	515.0 -> 169.0	166	0.54	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.7%			
d5-EtFOSAA	7.170	589.0 -> 419.0	3016	2.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.5%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.484	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

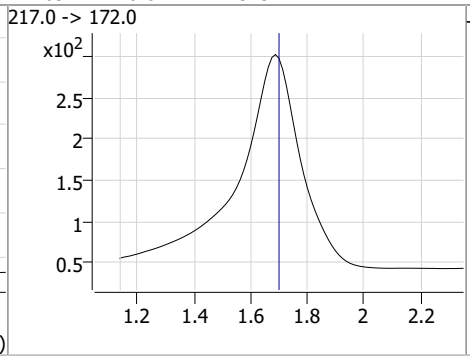
 # = Qualifier out of range, m = manually integrated, + = Area summed

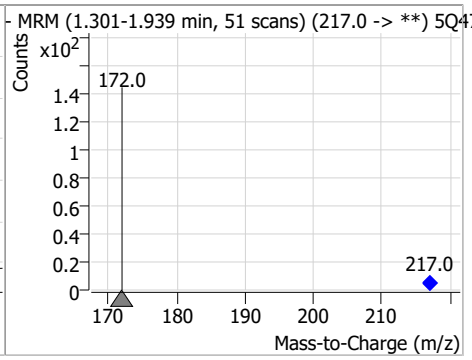
Perfluorinated Compounds by LC/MS/MS



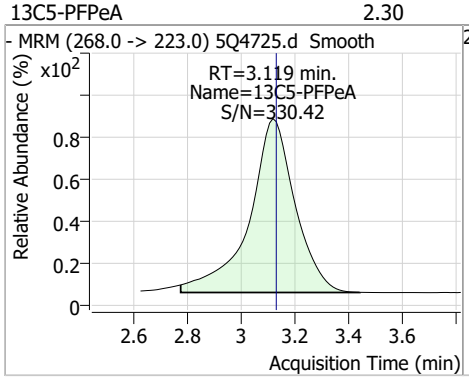
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.79	1.69	-0.01	3194				

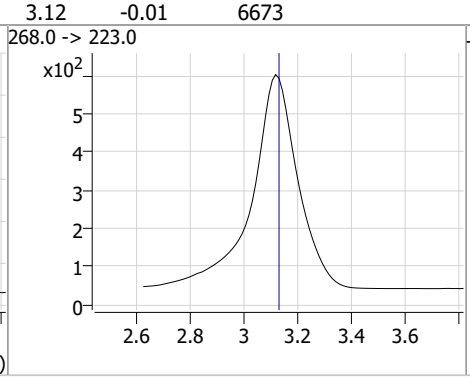


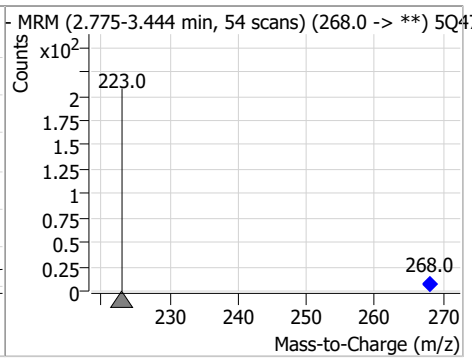




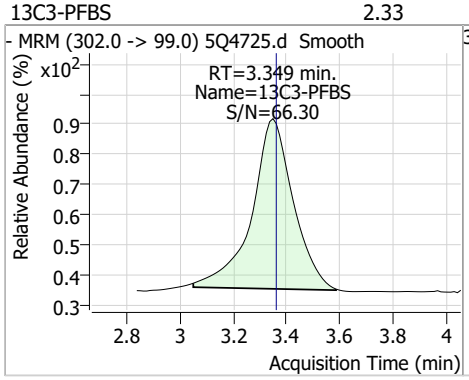
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.30	3.12	-0.01	6673				

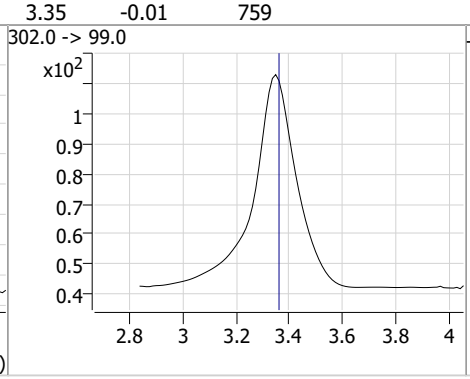


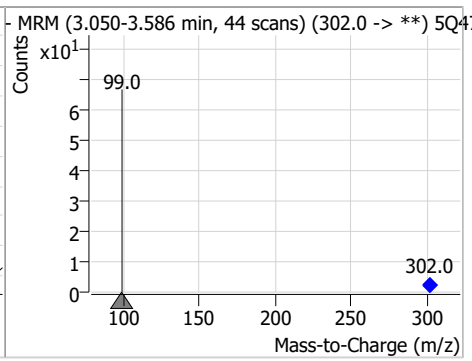




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.33	3.35	-0.01	759				

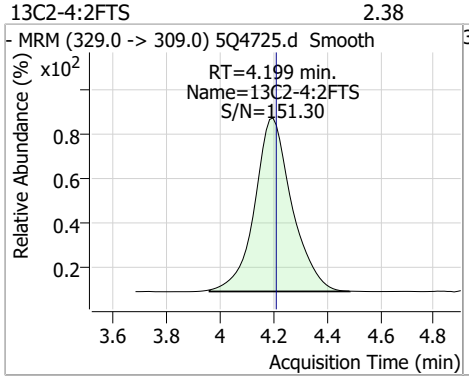


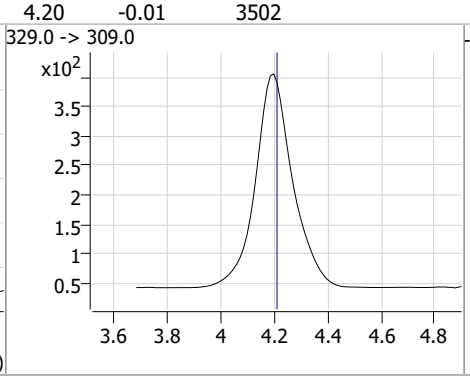


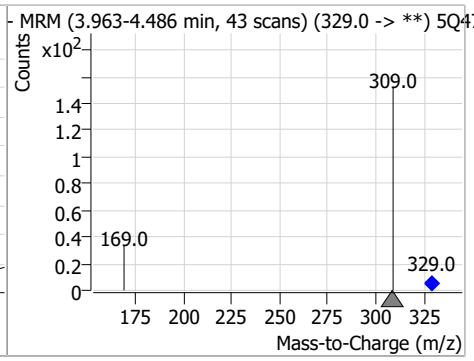


Perfluorinated Compounds by LC/MS/MS

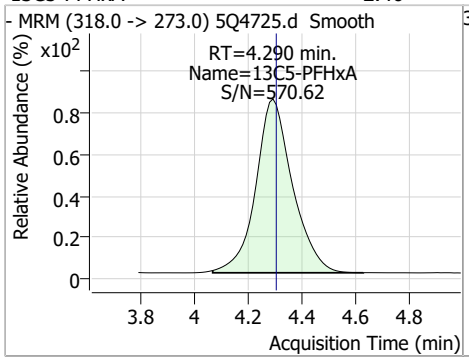
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.38	4.20	-0.01	3502				

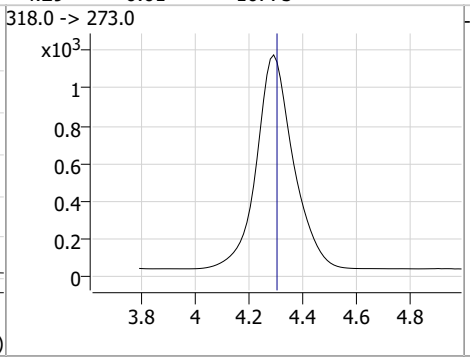


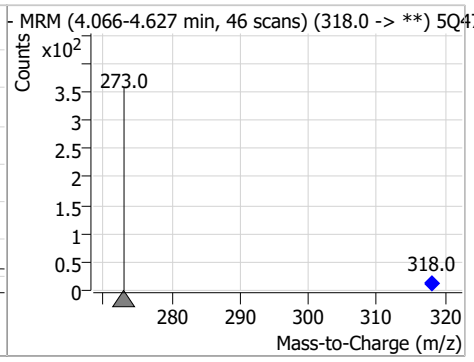




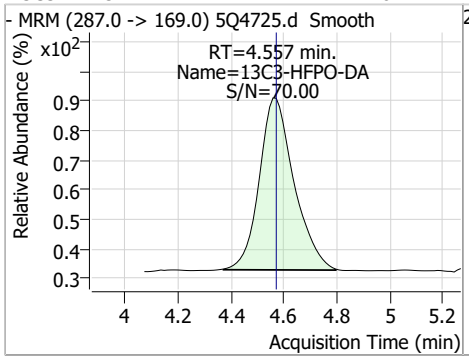
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.46	4.29	-0.01	10775				

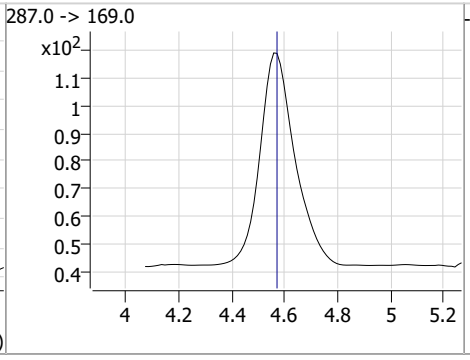


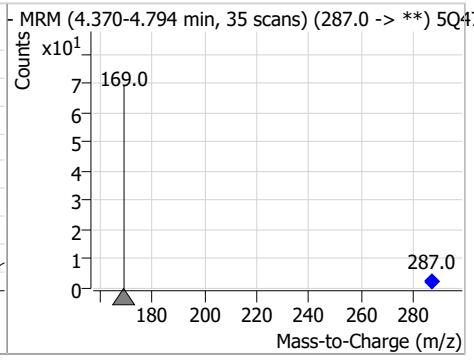




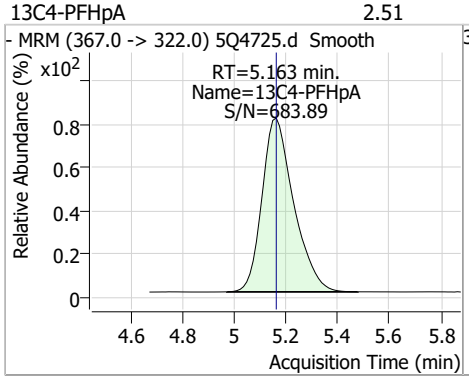
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.07	4.56	-0.01	694				

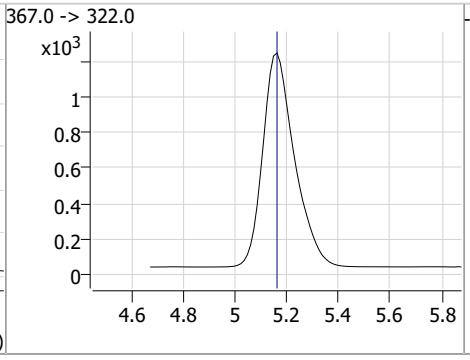


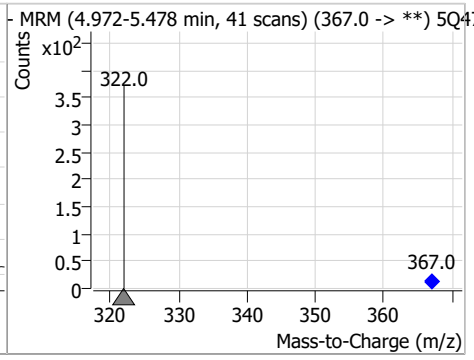




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.51	5.16	0.00	10251				

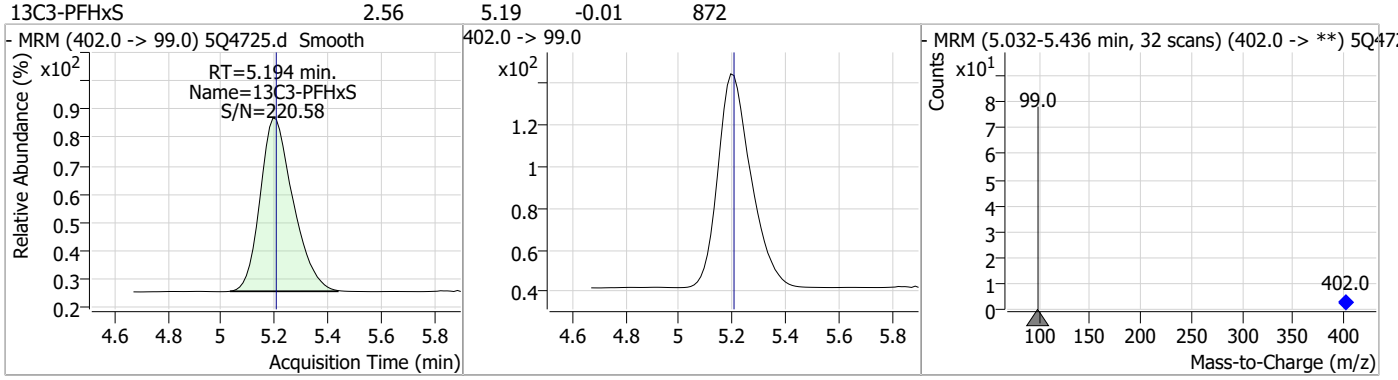




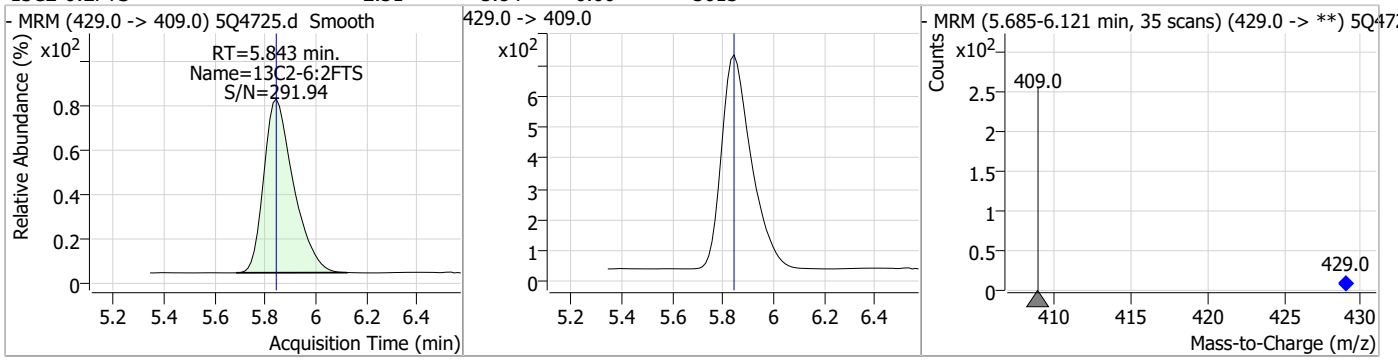


Perfluorinated Compounds by LC/MS/MS

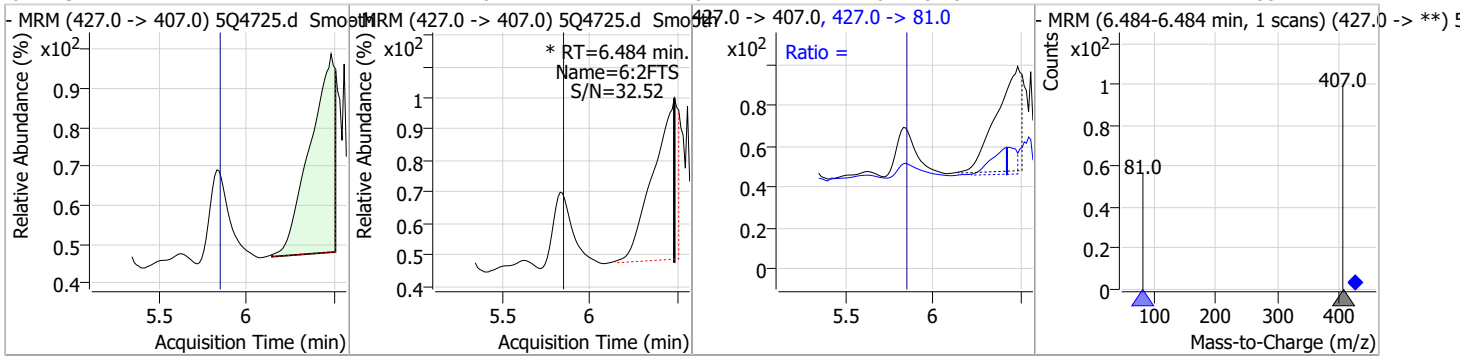
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.56	5.19	-0.01	872				



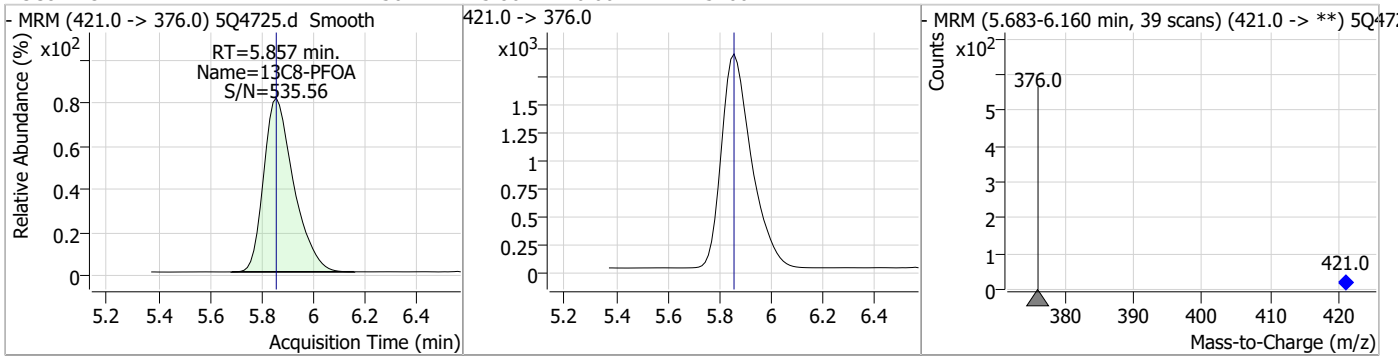
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.51	5.84	0.00	5613				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

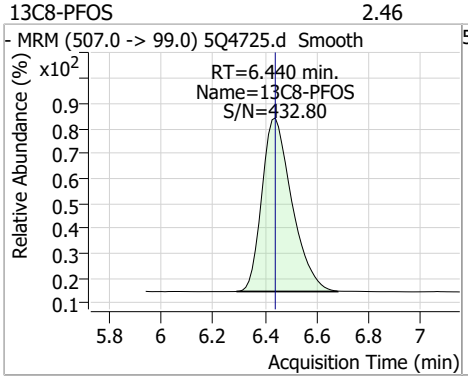


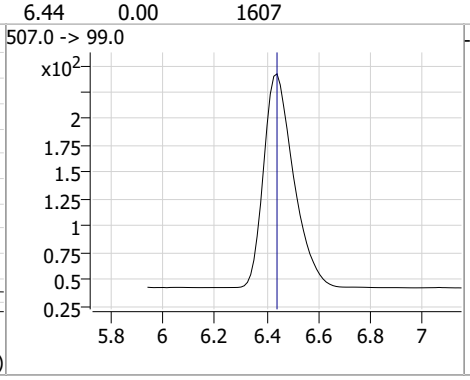
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.56	5.86	0.00	15460				

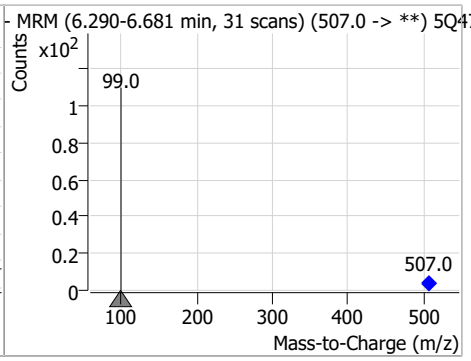


Perfluorinated Compounds by LC/MS/MS

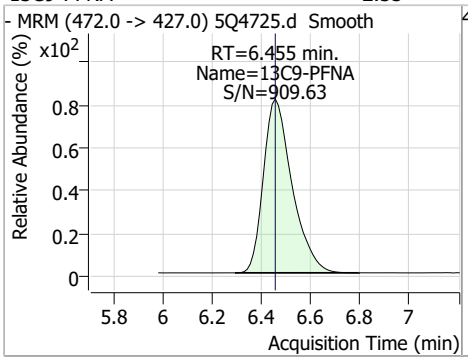
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	6.44	0.00	1607				

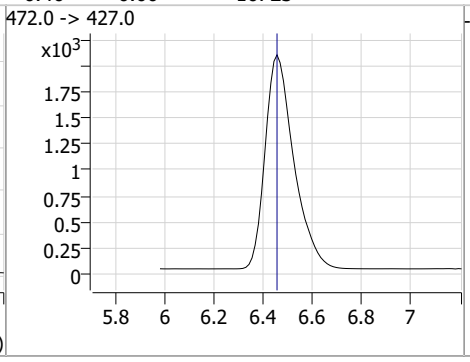


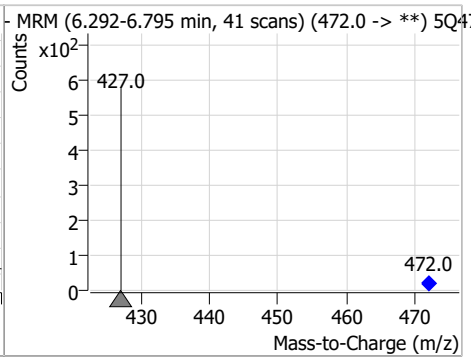




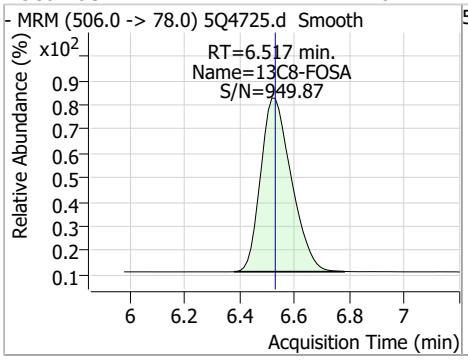
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.55	6.46	0.00	16723				

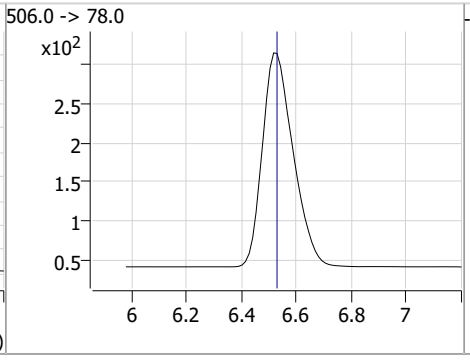


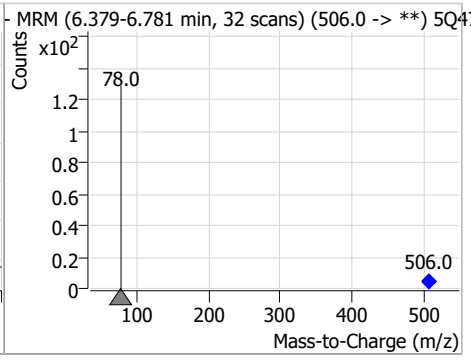




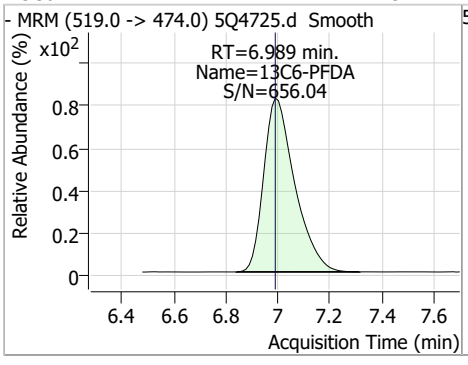
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.87	6.52	-0.01	2119				

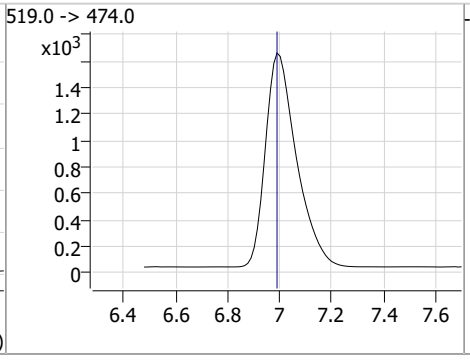


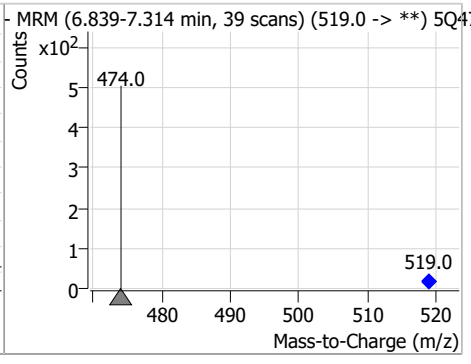




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.49	6.99	0.00	13417				

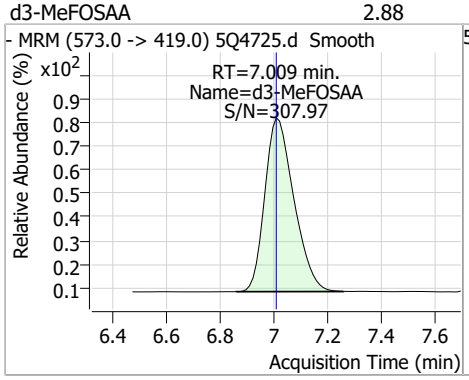


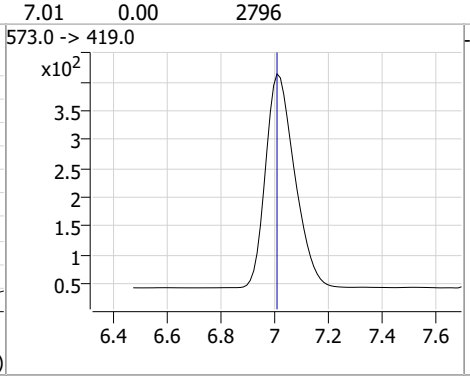


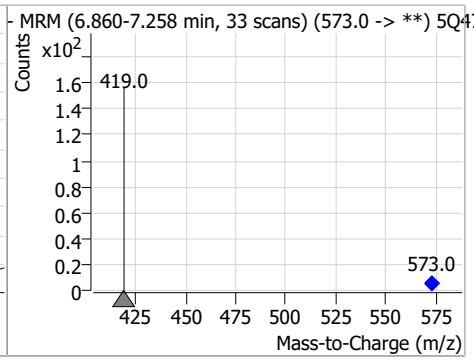


Perfluorinated Compounds by LC/MS/MS

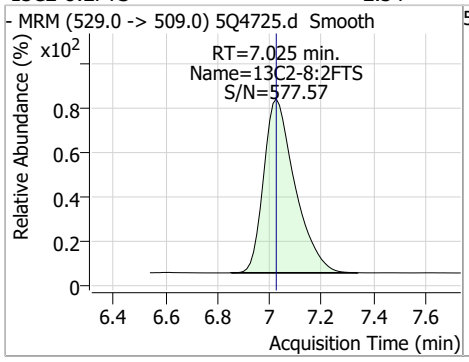
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.88	7.01	0.00	2796				

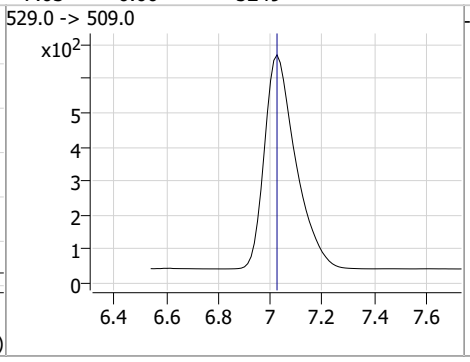


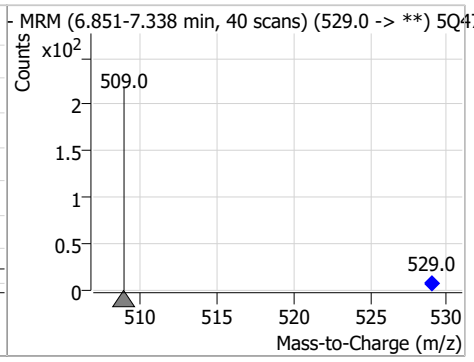




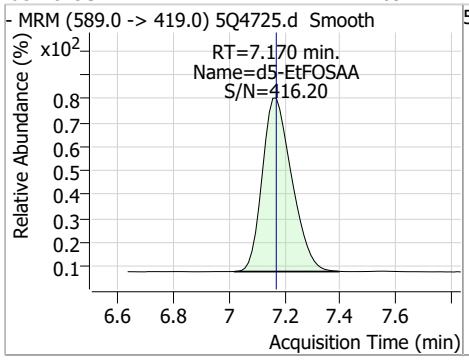
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.34	7.03	0.00	5249				

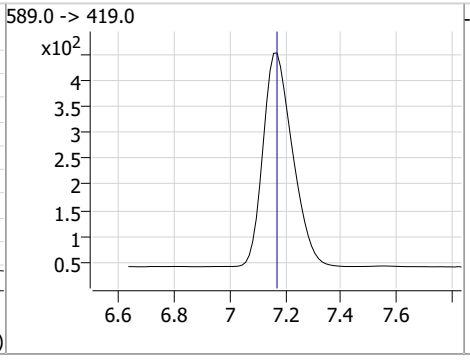


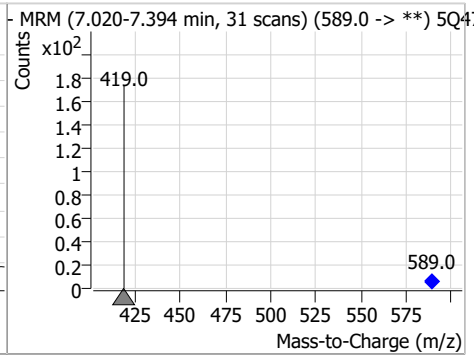




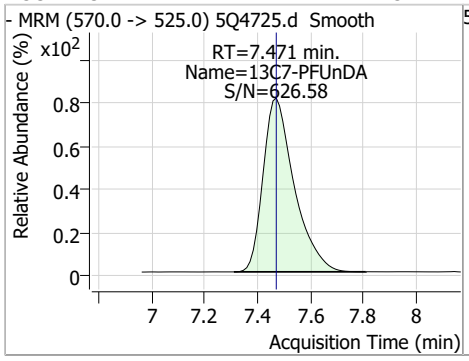
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.69	7.17	0.00	3016				

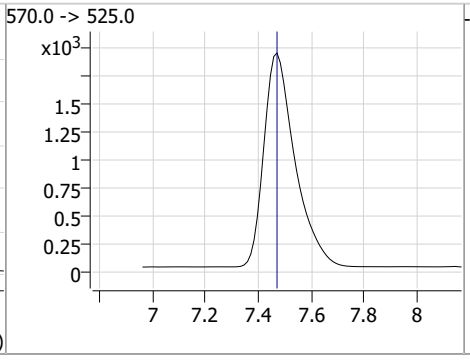


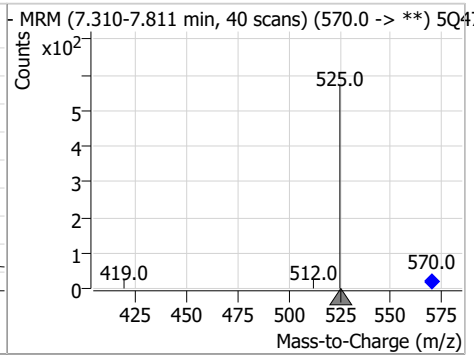




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.23	7.47	0.00	15708				

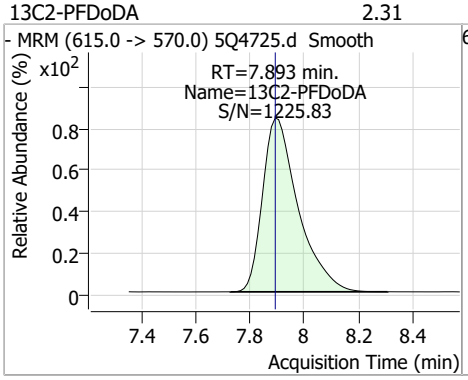


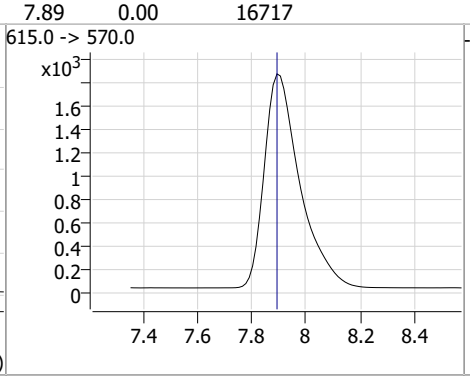


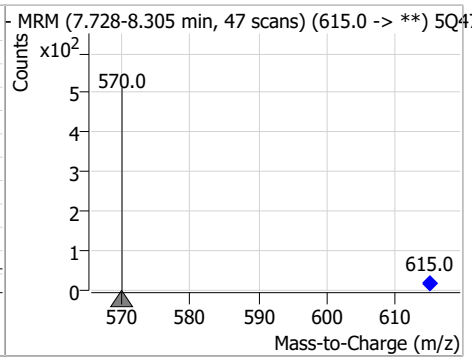


Perfluorinated Compounds by LC/MS/MS

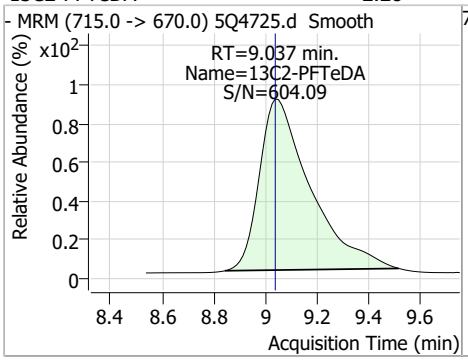
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.31	7.89	0.00	16717				

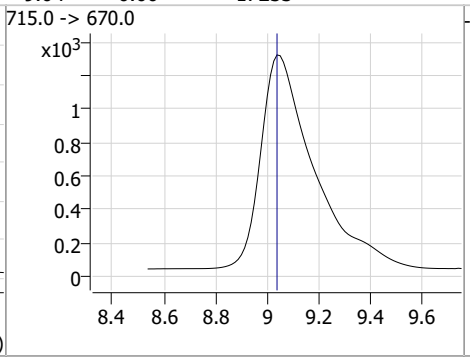


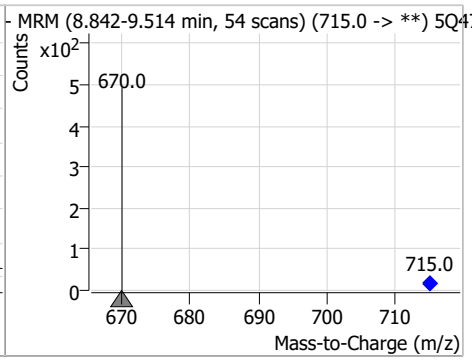




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.28	9.04	0.00	17233				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4647.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:42:00 AM
Sample Name : fa98286-12
Vial : P1-F5
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

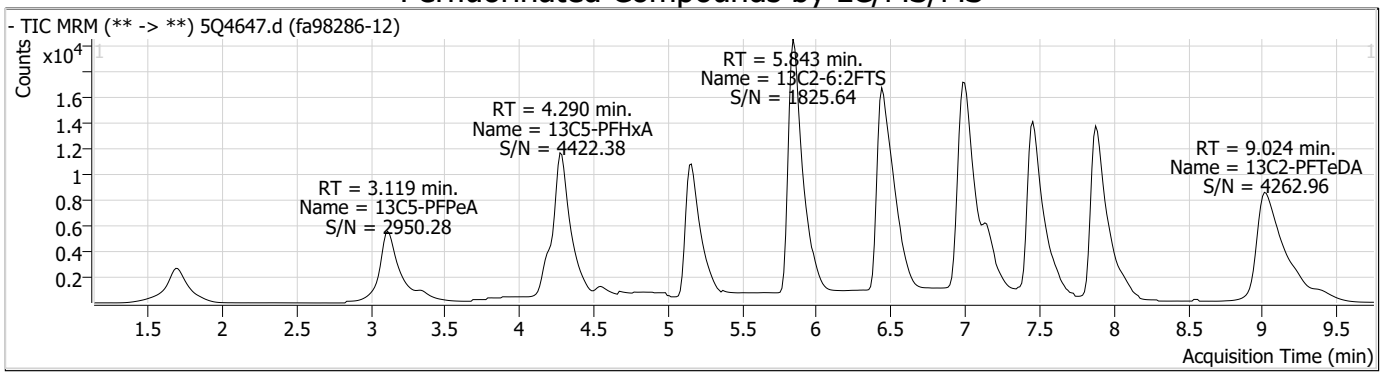
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	30028	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	48269	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	73232	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	69017	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	99595	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	99451	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	75616	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	94691	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	105624	20.00 µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	117589	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	16065	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	5532	20.00 µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	5549	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	8941	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	23047	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	35958	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	30100	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	15629	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	5331	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	2071	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	17290	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	23047	15.69 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%	
13C2-6:2FTS	5.843	429.0 -> 409.0	35958	16.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%	
13C2-8:2FTS	7.025	529.0 -> 509.0	30100	13.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%	
13C2-PFDoDA	7.893	615.0 -> 570.0	105624	14.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%	
13C2-PFTeDA	9.024	715.0 -> 670.0	117589	15.58 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%	
13C3-PFBS	3.349	302.0 -> 99.0	5532	16.98 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.9%	
13C3-PFHxS	5.206	402.0 -> 99.0	5549	16.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%	
13C4-PFBA	1.700	217.0 -> 172.0	30028	16.80 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.0%	
13C4-PFHpA	5.163	367.0 -> 322.0	69017	16.91 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.5%	
13C5-PFHxA	4.290	318.0 -> 273.0	73232	16.75 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%	
13C5-PFPeA	3.119	268.0 -> 223.0	48269	16.61 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.0%	
13C6-PFDA	6.989	519.0 -> 474.0	75616	14.05 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

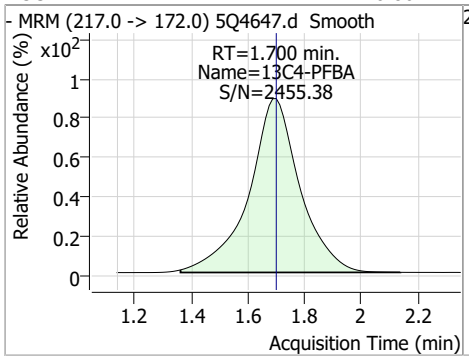
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%			
13C7-PFUnDA	7.459	570.0 -> 525.0	94691	13.45	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.2%			
13C8-FOSA	6.517	506.0 -> 78.0	16065	14.16	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%			
13C8-PFOA	5.857	421.0 -> 376.0	99595	16.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%			
13C8-PFOS	6.440	507.0 -> 99.0	8941	13.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C9-PFNA	6.455	472.0 -> 427.0	99451	15.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15629	16.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	5331	15.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	2071	6.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.0%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17290	15.42	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.447	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.004	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

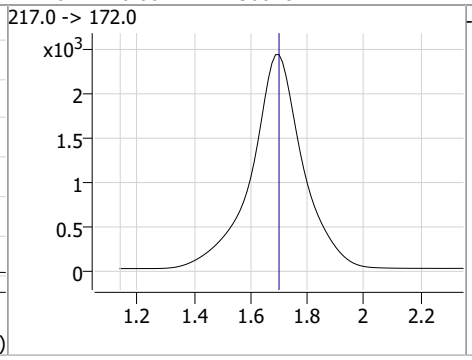
 # = Qualifier out of range, m = manually integrated, + = Area summed

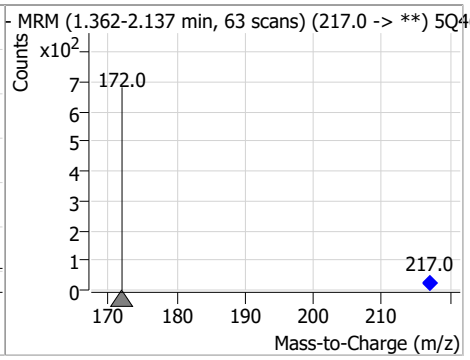
Perfluorinated Compounds by LC/MS/MS



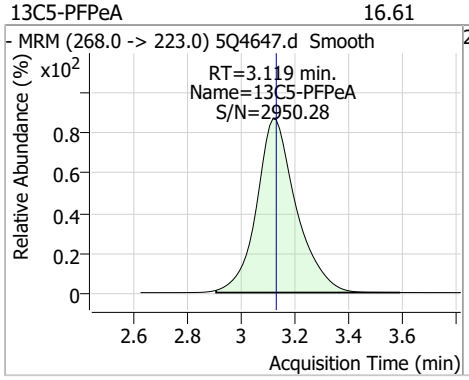
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.80	1.70	0.00	30028				

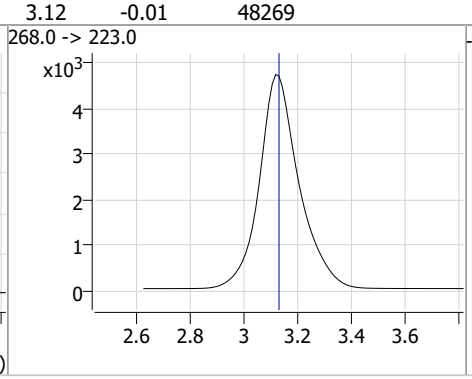


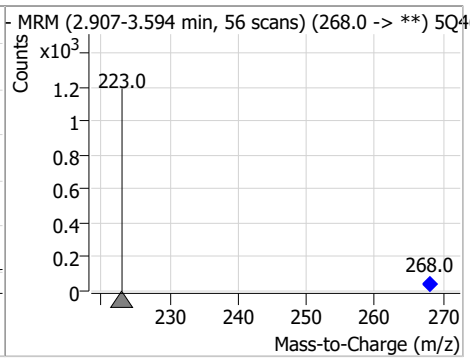




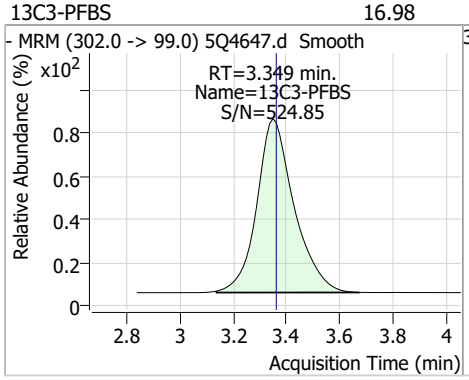
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.61	3.12	-0.01	48269				

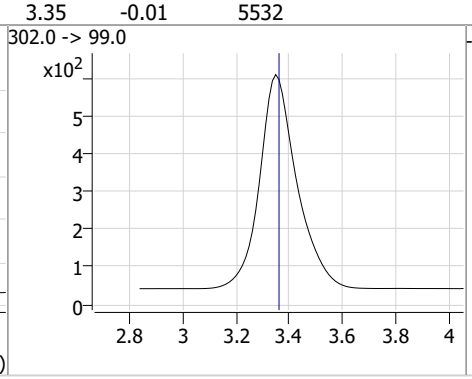


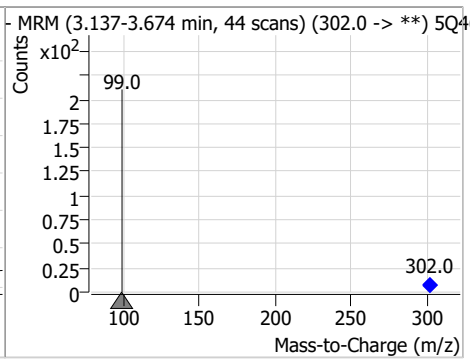




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.98	3.35	-0.01	5532				

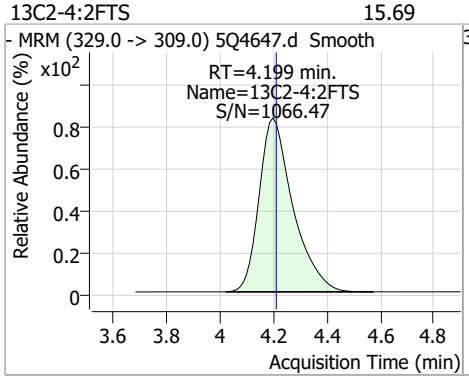


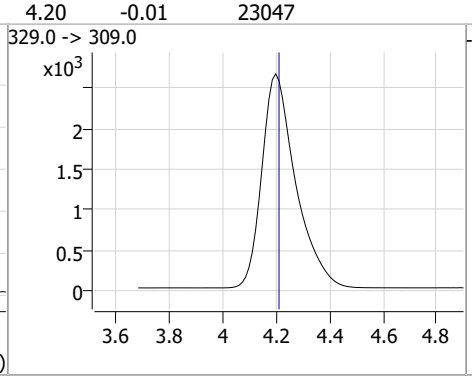


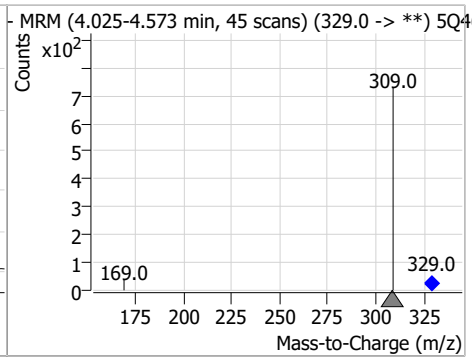


Perfluorinated Compounds by LC/MS/MS

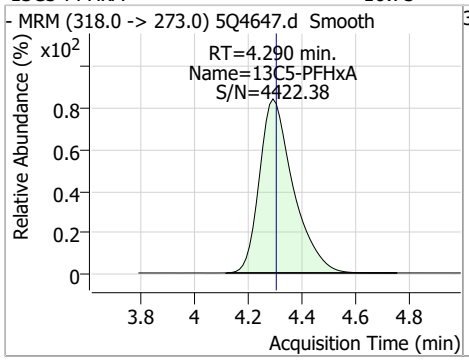
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.69	4.20	-0.01	23047				

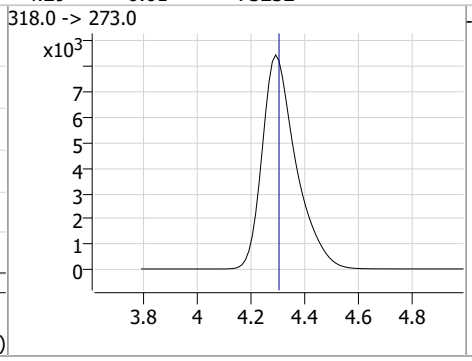


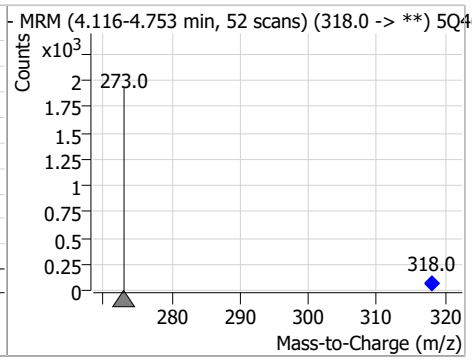




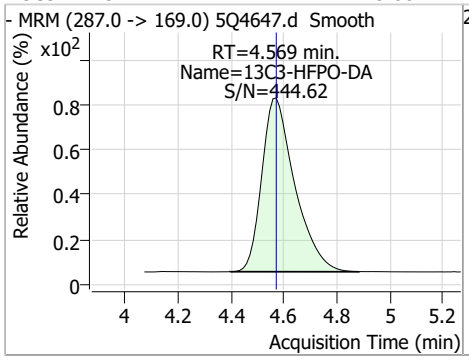
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.75	4.29	-0.01	73232				

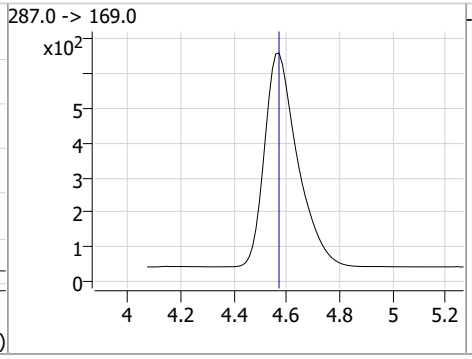


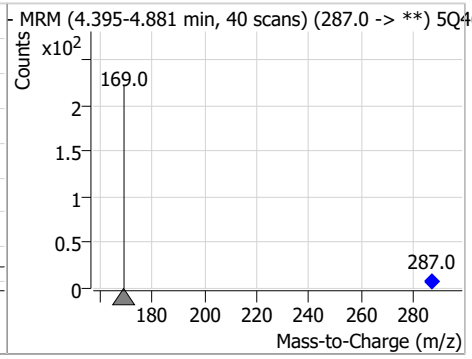




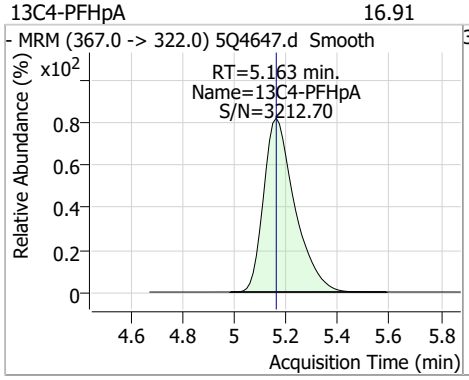
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.88	4.57	0.00	5331				

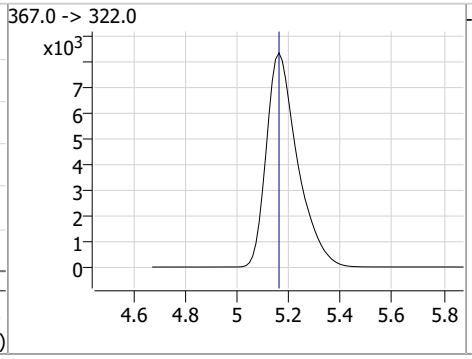


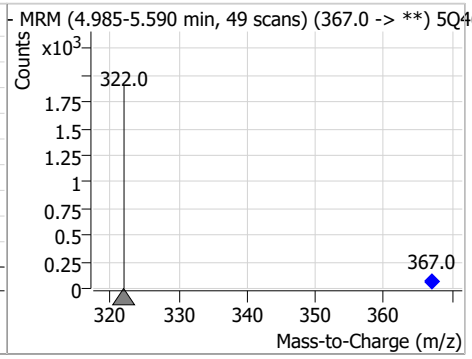




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.91	5.16	0.00	69017				

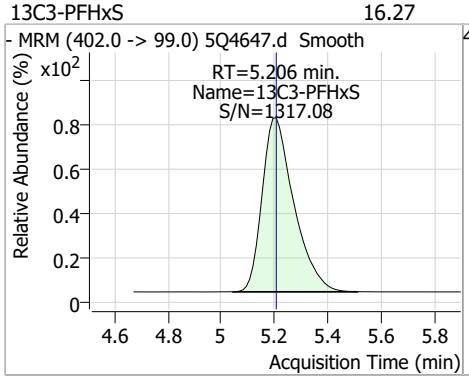


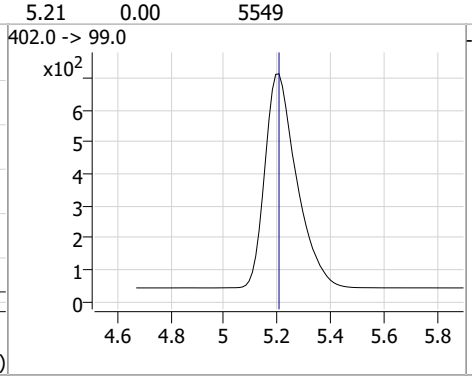


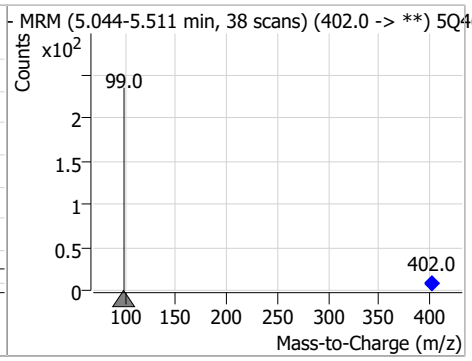


Perfluorinated Compounds by LC/MS/MS

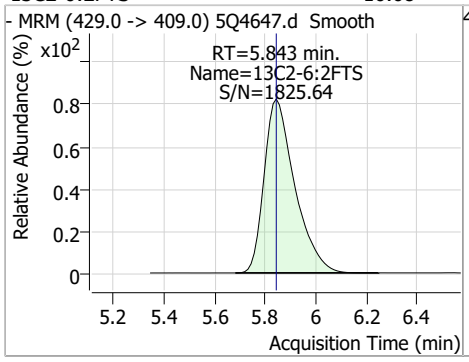
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.27	5.21	0.00	5549				

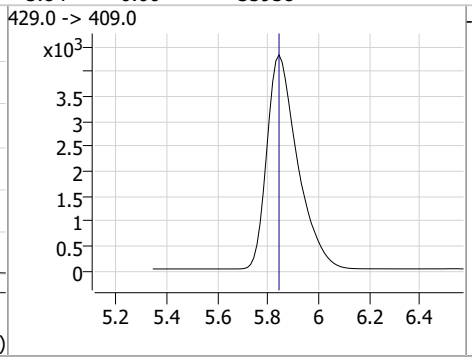


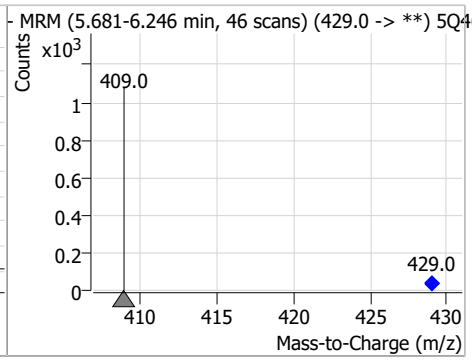




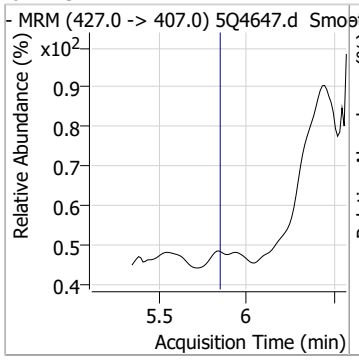
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.08	5.84	0.00	35958				

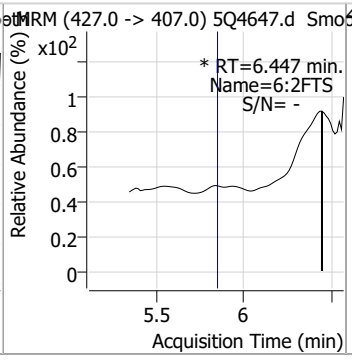


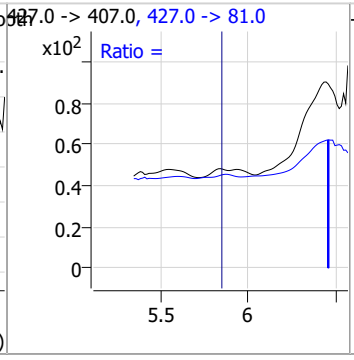


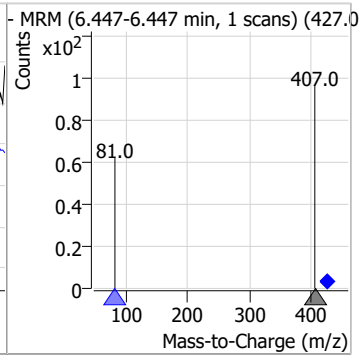


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

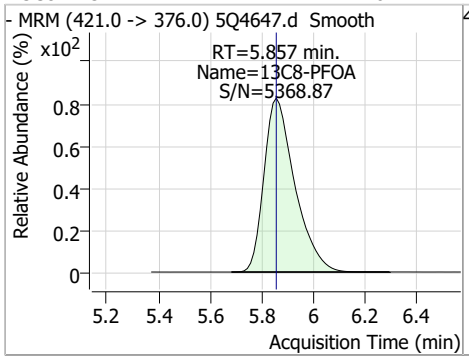


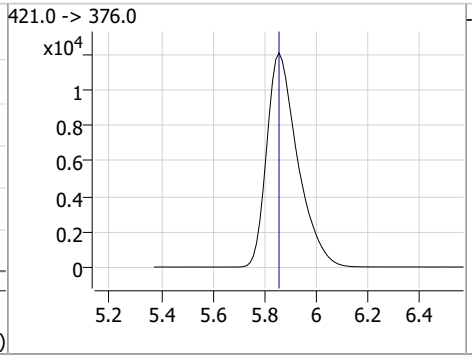


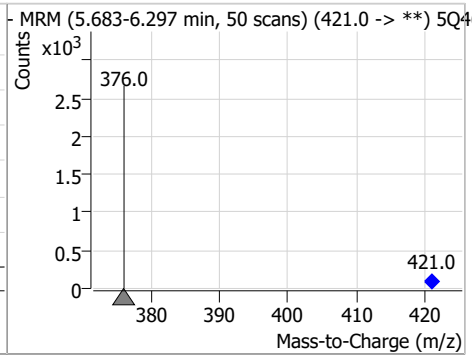




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.47	5.86	0.00	99595				

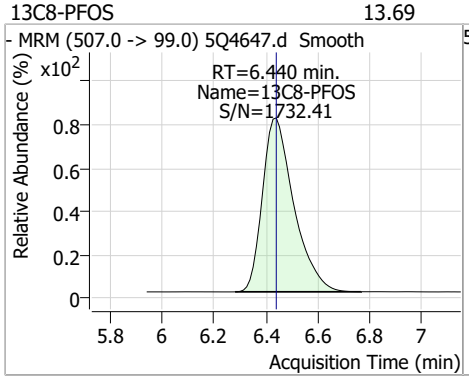


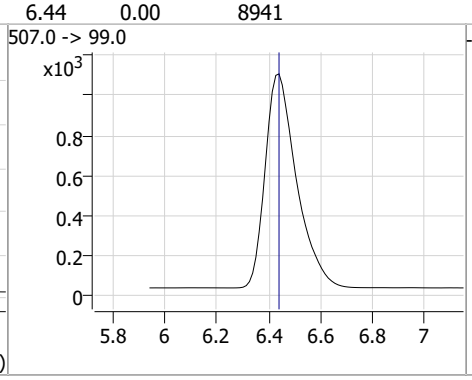


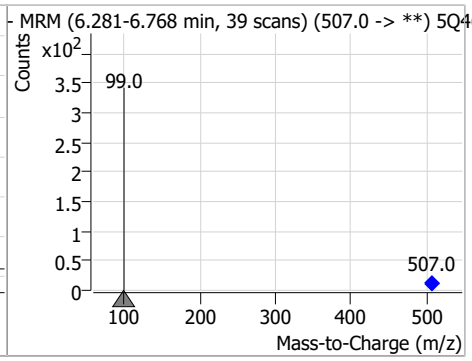


Perfluorinated Compounds by LC/MS/MS

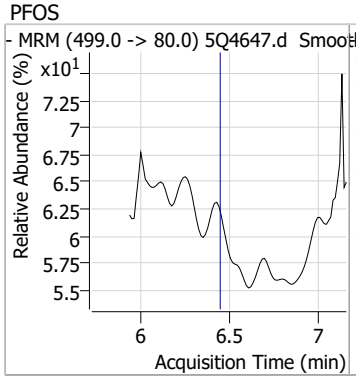
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.69	6.44	0.00	8941				

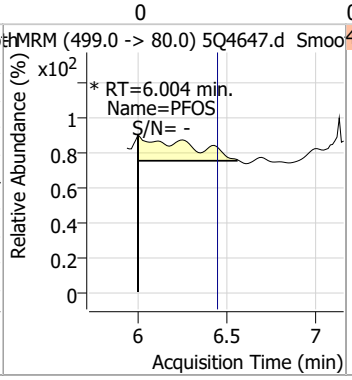


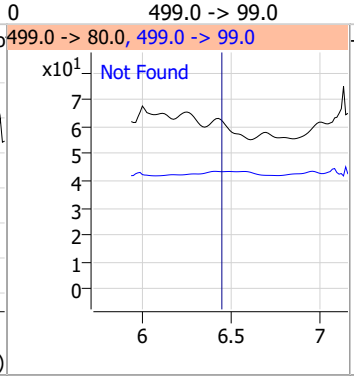


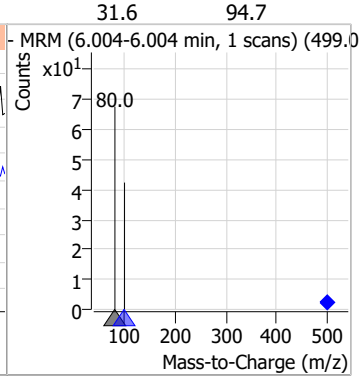


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

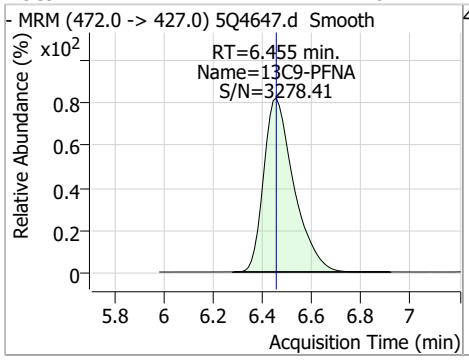


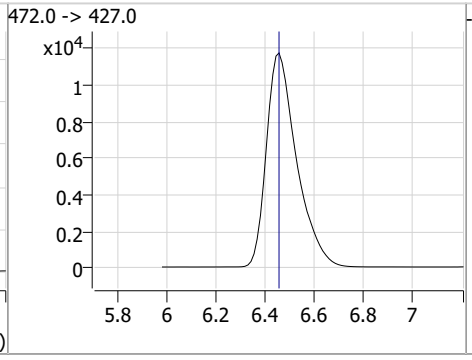


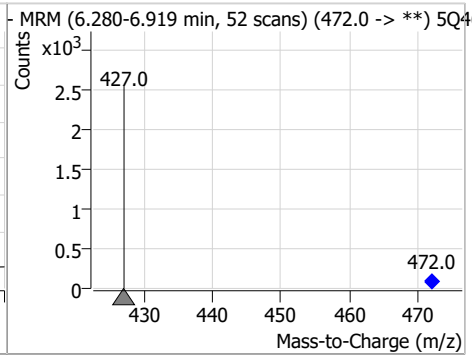




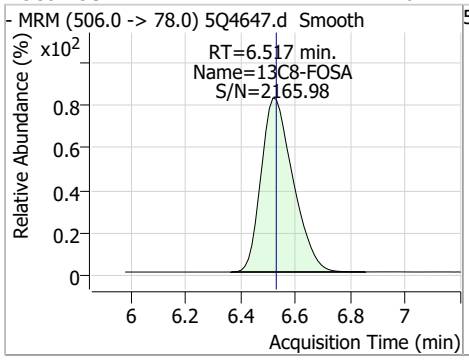
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.14	6.46	0.00	99451				

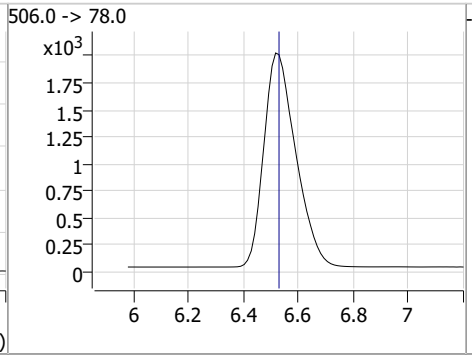


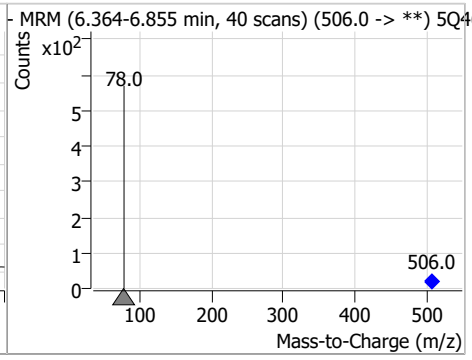




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.16	6.52	-0.01	16065				

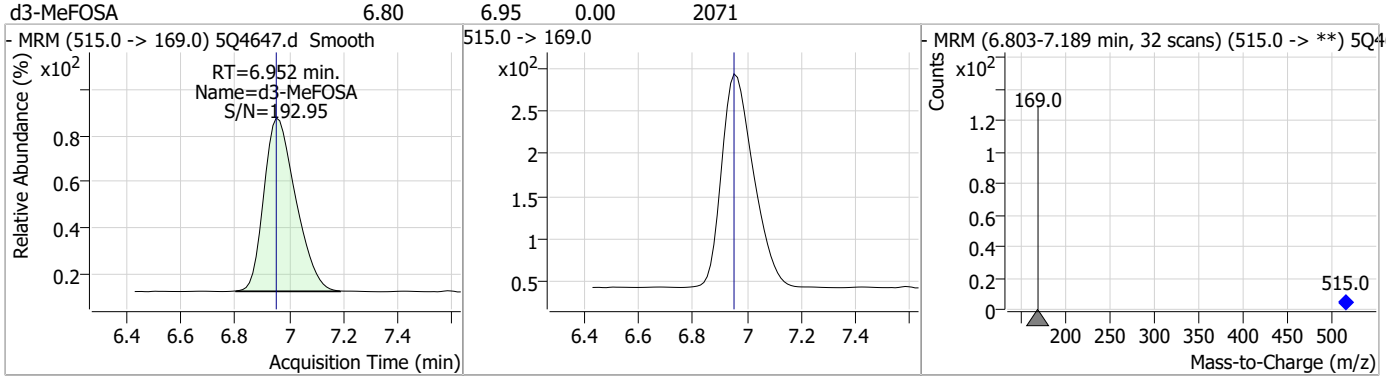




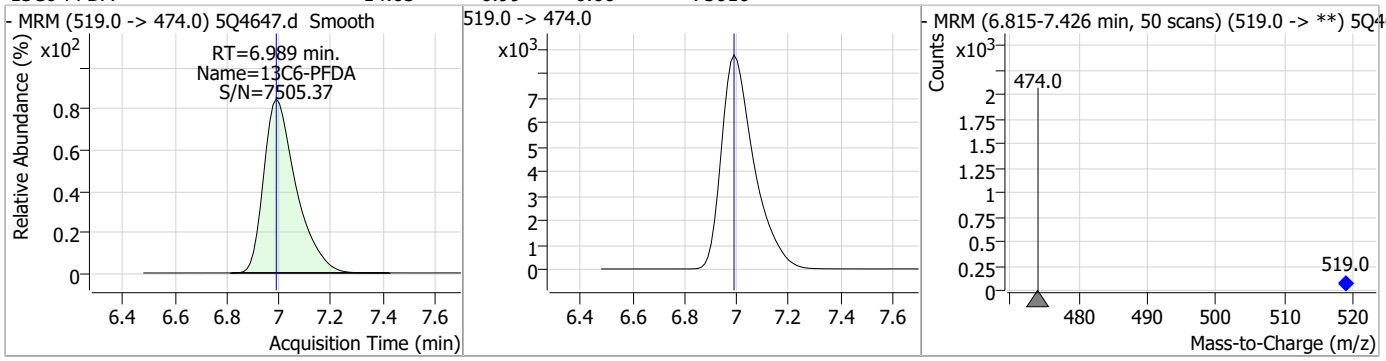


Perfluorinated Compounds by LC/MS/MS

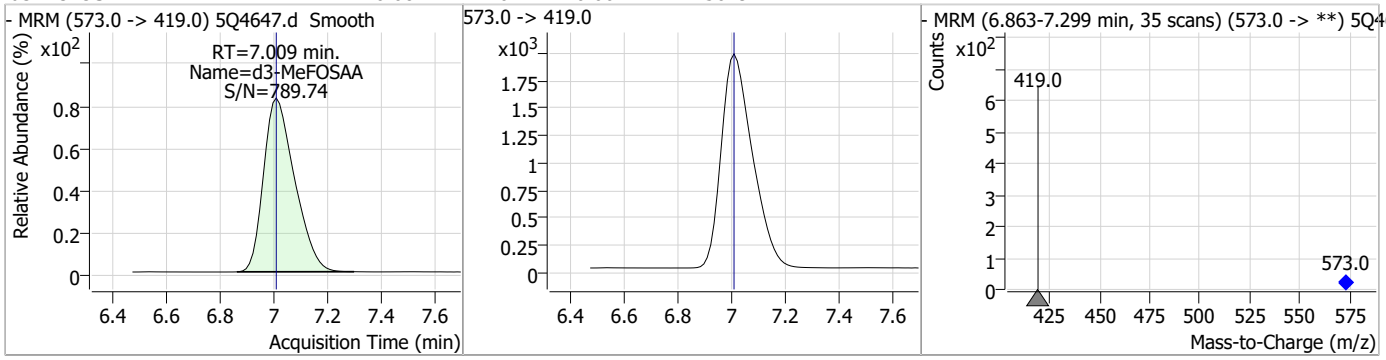
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.80	6.95	0.00	2071				



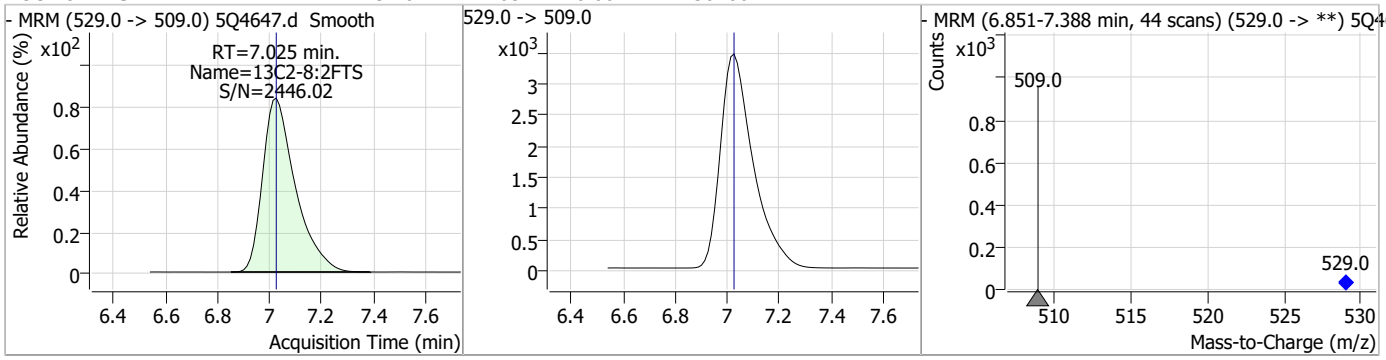
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.05	6.99	0.00	75616				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.08	7.01	0.00	15629				

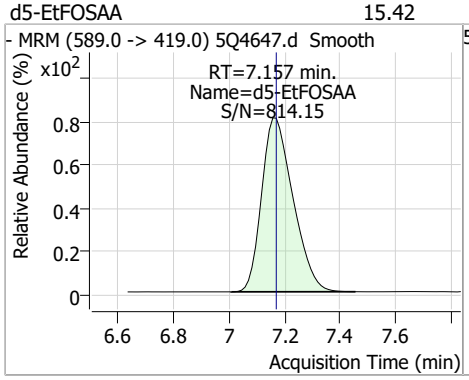


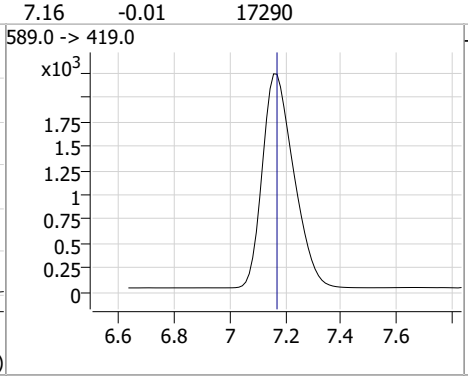
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.40	7.03	0.00	30100				

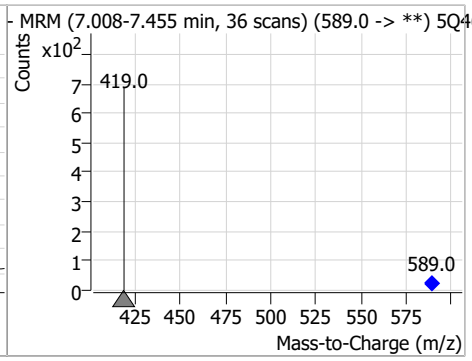


Perfluorinated Compounds by LC/MS/MS

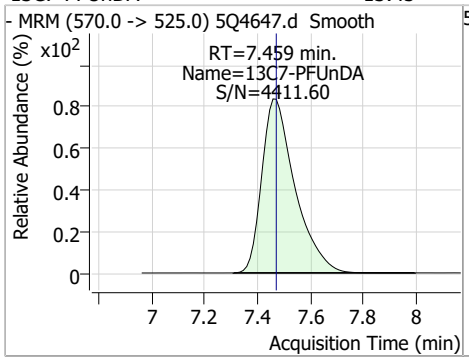
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.42	7.16	-0.01	17290				

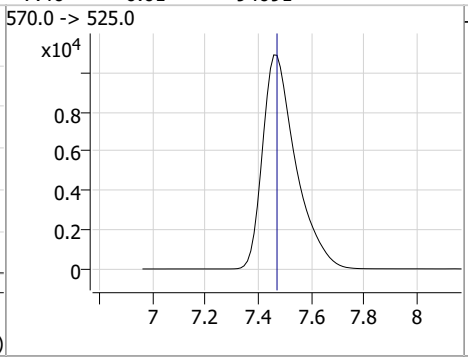


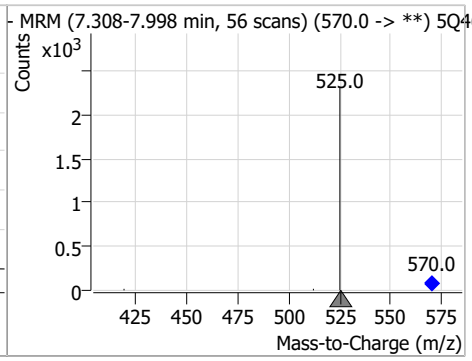




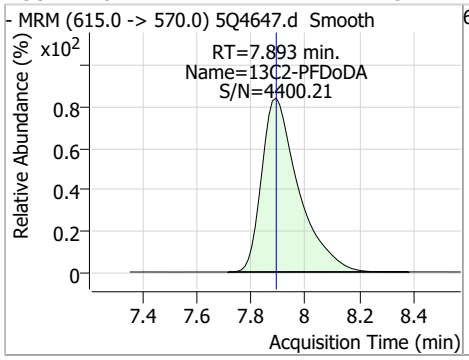
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.45	7.46	-0.01	94691				

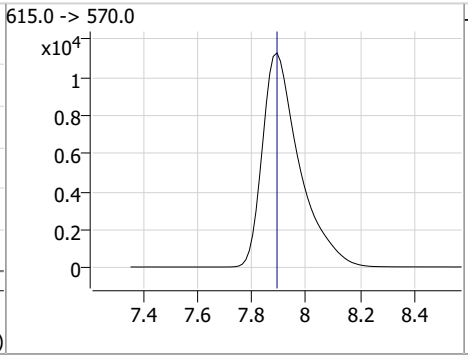


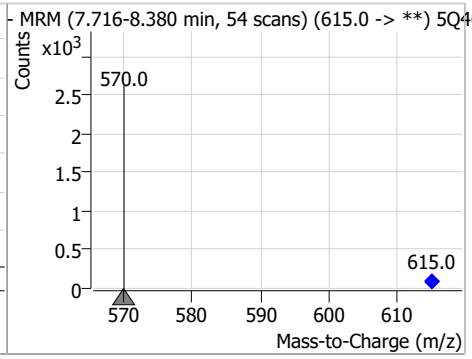




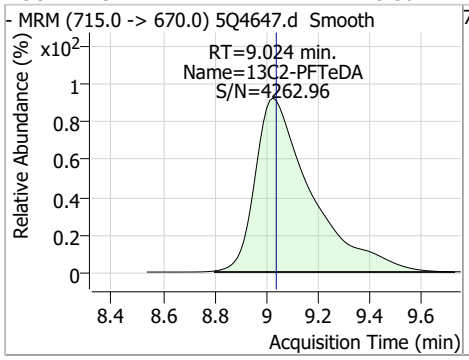
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.57	7.89	0.00	105624				

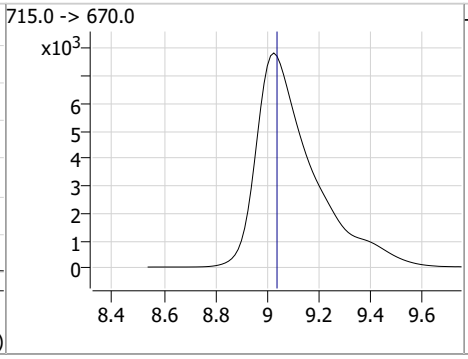


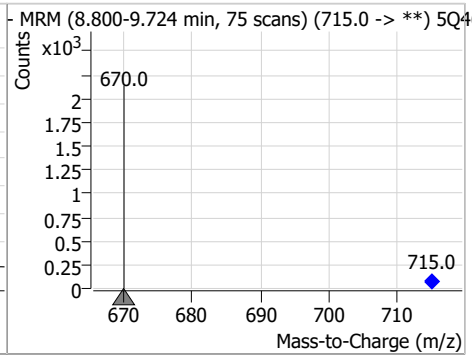




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.58	9.02	-0.01	117589				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4648.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 9:57:20 AM
Sample Name	:	fa98286-13
Vial	:	P1-F6
DA Method File	:	ID_091422_S5Q71.quantmethod.xml
Batch Name	:	s5q71.batch.bin
Sample Information	:	OP92763,S5Q71,125,,,1.0,1,water

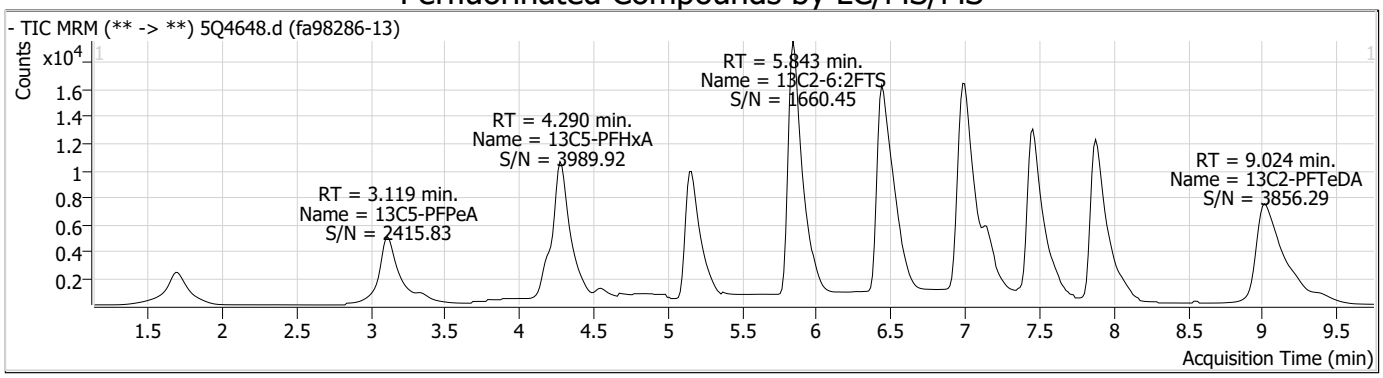
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	26369	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	44105	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	66970	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	63143	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	94110	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	96448	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	72402	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	85731	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	92900	20.00	µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	102548	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	14562	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	5153	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5307	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	8616	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	21281	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	34009	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	28255	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	14397	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4969	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	2392	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	15579	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	21281	14.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C2-6:2FTS	5.843	429.0 -> 409.0	34009	15.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C2-8:2FTS	7.025	529.0 -> 509.0	28255	12.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	92900	12.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%		
13C2-PFTeDA	9.024	715.0 -> 670.0	102548	13.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%		
13C3-PFBS	3.349	302.0 -> 99.0	5153	15.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	5307	15.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%		
13C4-PFBA	1.700	217.0 -> 172.0	26369	14.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.8%		
13C4-PFHpA	5.163	367.0 -> 322.0	63143	15.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%		
13C5-PFHxA	4.290	318.0 -> 273.0	66970	15.32	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%		
13C5-PFPeA	3.119	268.0 -> 223.0	44105	15.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		
13C6-PFDA	6.989	519.0 -> 474.0	72402	13.45	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

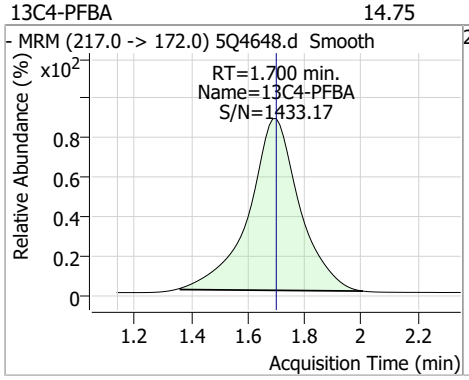
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%			
13C7-PFUnDA	7.459	570.0 -> 525.0	85731	12.18	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.9%			
13C8-FOSA	6.517	506.0 -> 78.0	14562	12.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.2%			
13C8-PFOA	5.857	421.0 -> 376.0	94110	15.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%			
13C8-PFOS	6.440	507.0 -> 99.0	8616	13.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.0%			
13C9-PFNA	6.455	472.0 -> 427.0	96448	14.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14397	14.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4969	14.80	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	2392	7.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 39.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	15579	13.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.497	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	7.143	463.0 -> 419.0	0		µg/L	m	1
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.004	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

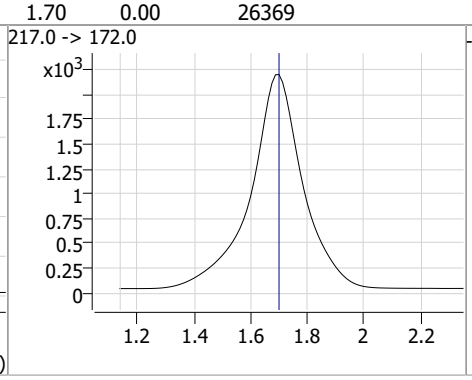
 # = Qualifier out of range, m = manually integrated, + = Area summed

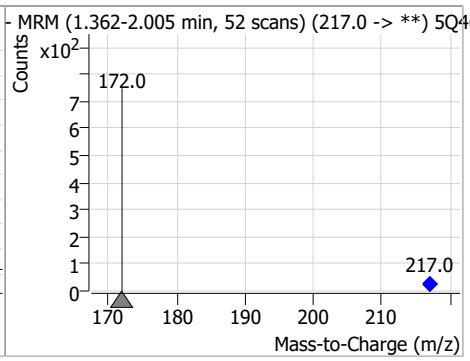
Perfluorinated Compounds by LC/MS/MS



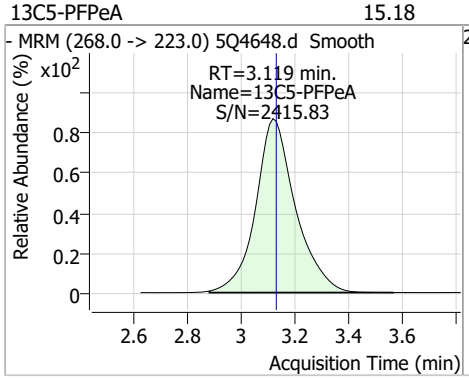
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.75	1.70	0.00	26369				

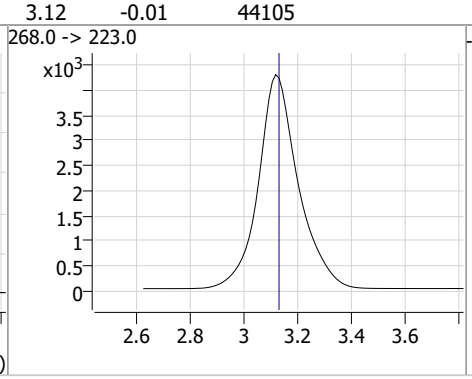


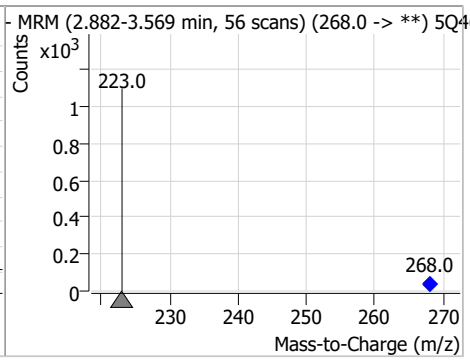




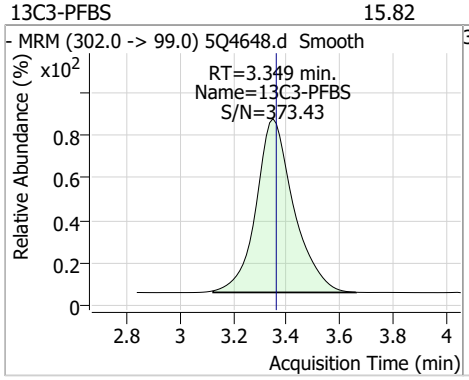
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.18	3.12	-0.01	44105				

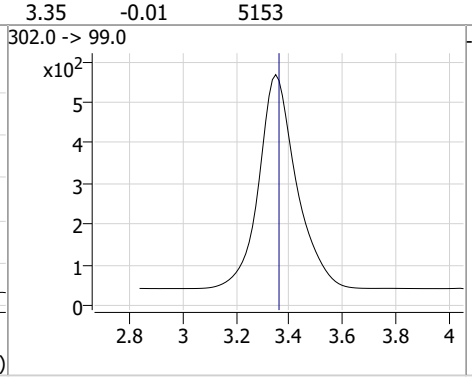


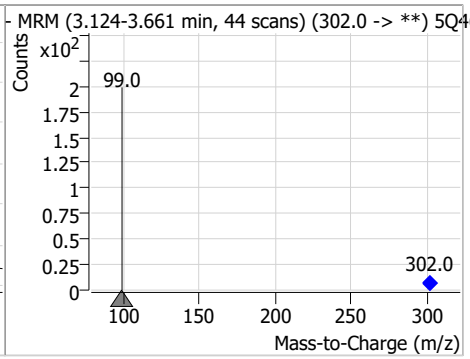




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.82	3.35	-0.01	5153				

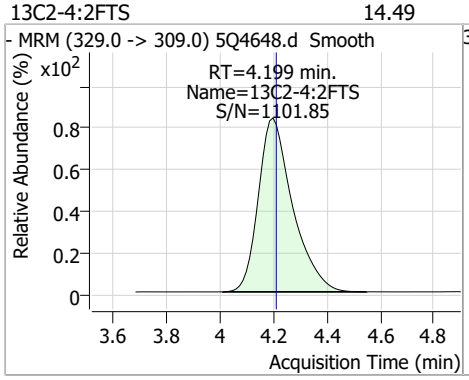


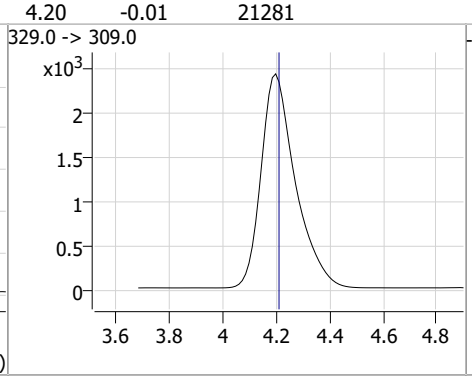


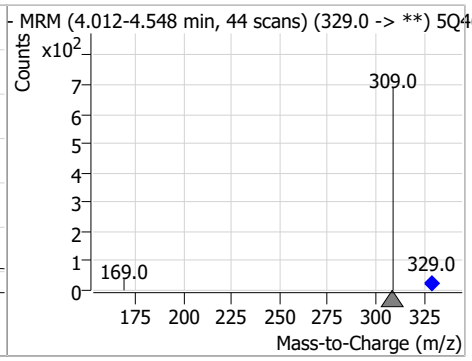


Perfluorinated Compounds by LC/MS/MS

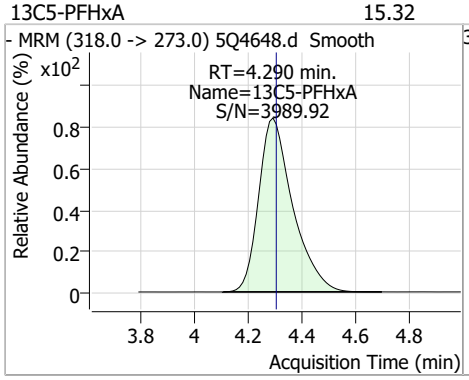
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.49	4.20	-0.01	21281				

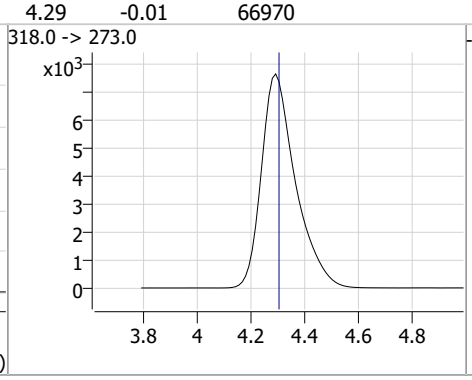


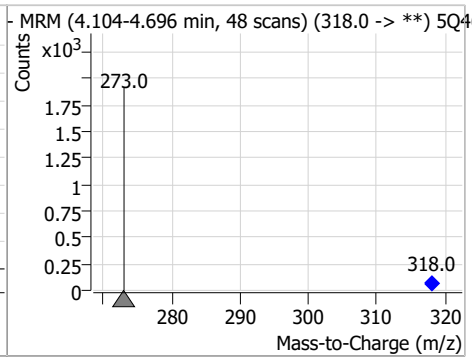




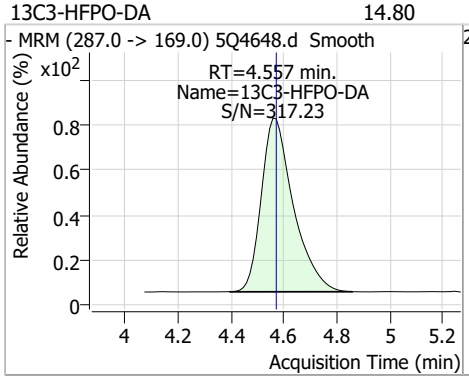
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.32	4.29	-0.01	66970				

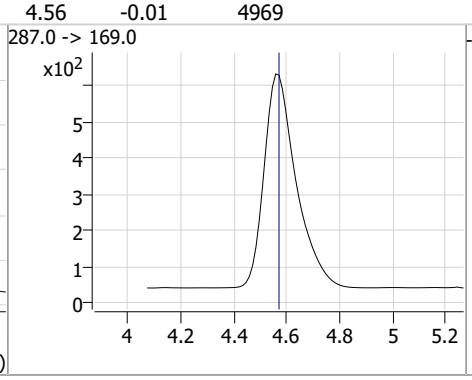


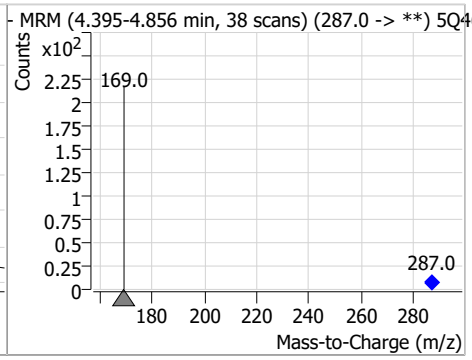




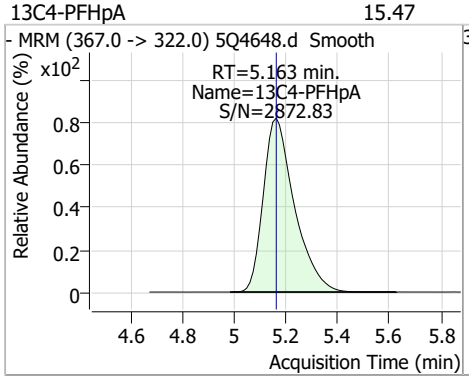
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.80	4.56	-0.01	4969				

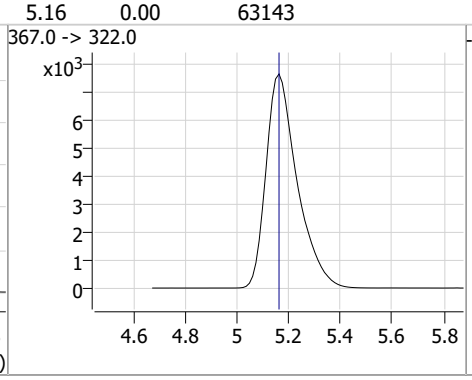


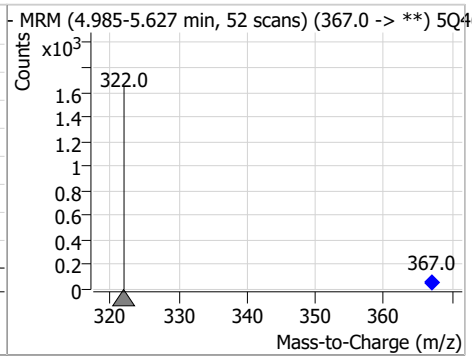




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.47	5.16	0.00	63143				

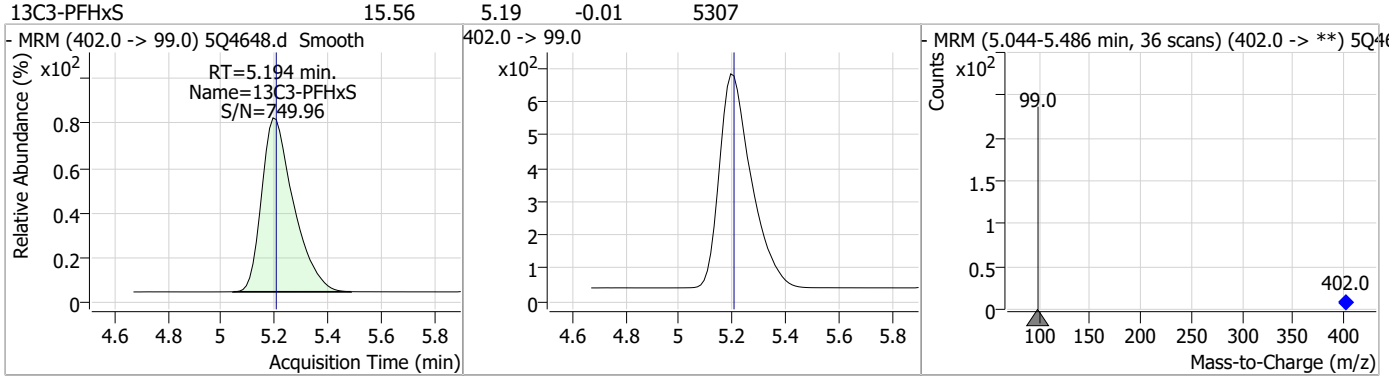




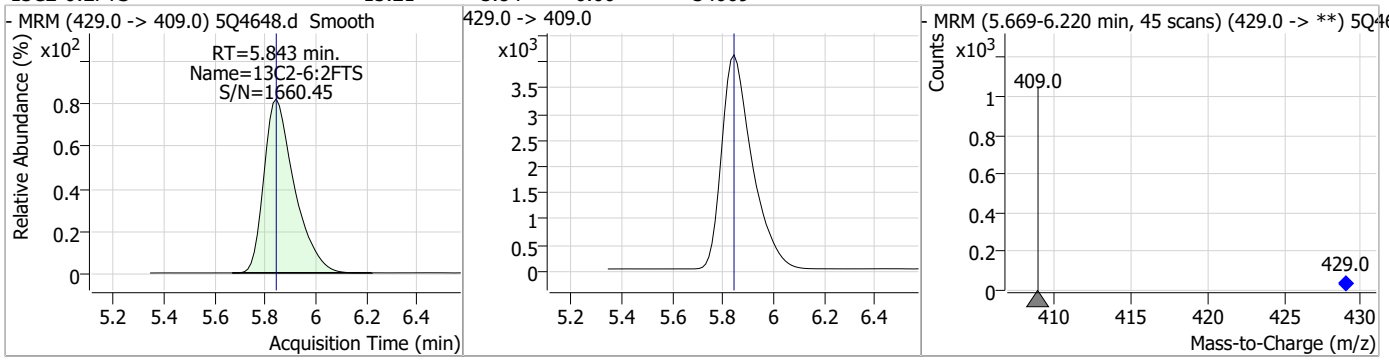


Perfluorinated Compounds by LC/MS/MS

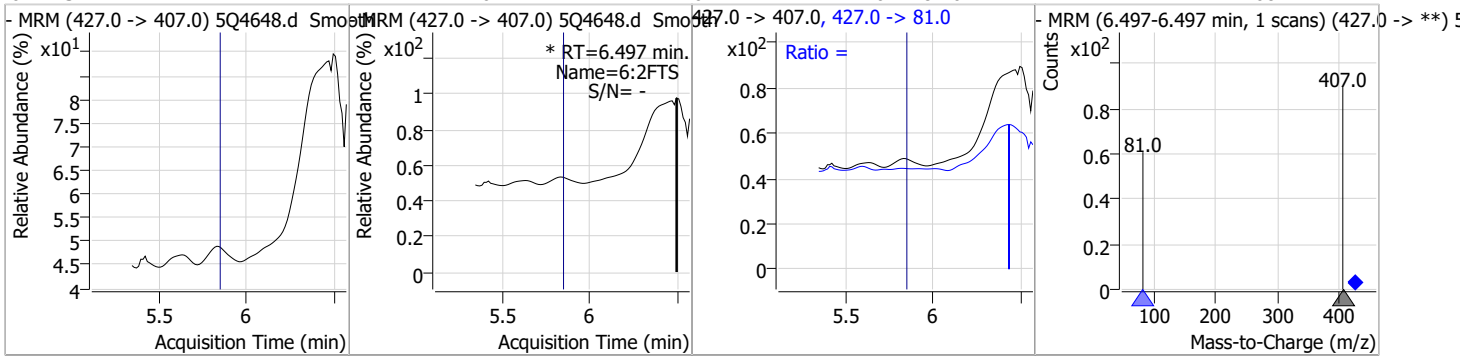
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.56	5.19	-0.01	5307				



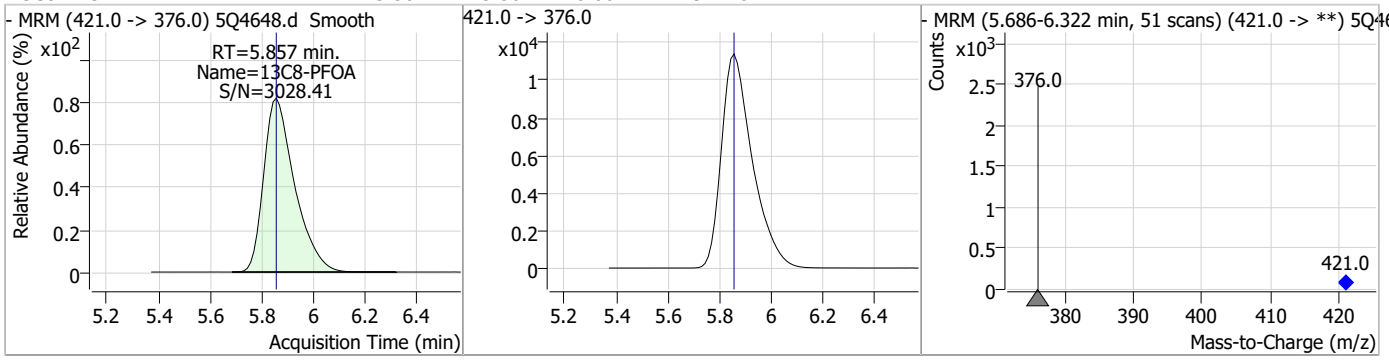
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.21	5.84	0.00	34009				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

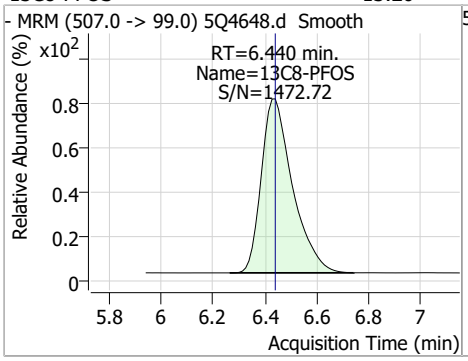


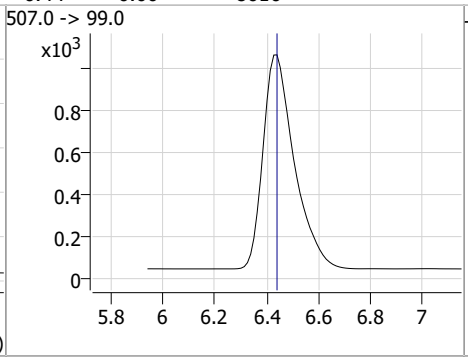
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.56	5.86	0.00	94110				

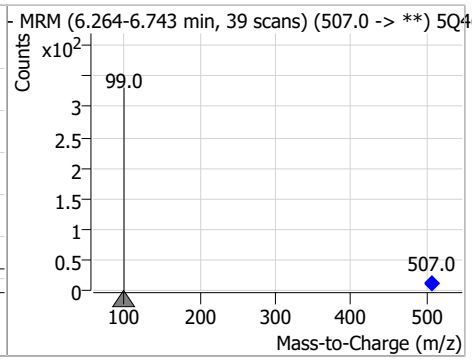


Perfluorinated Compounds by LC/MS/MS

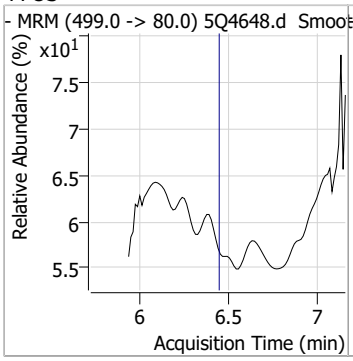
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.20	6.44	0.00	8616				

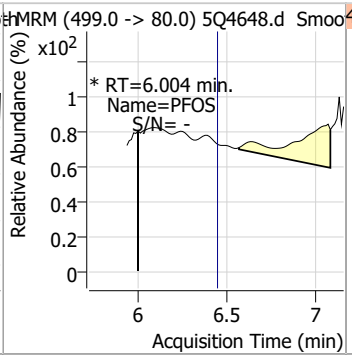


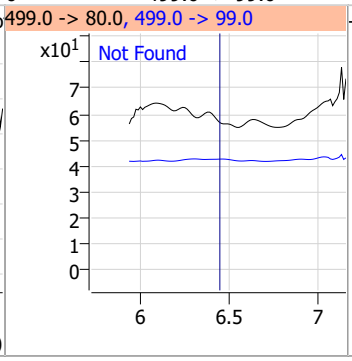


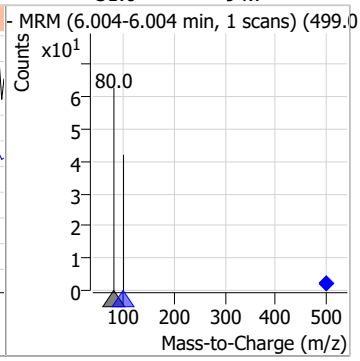


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

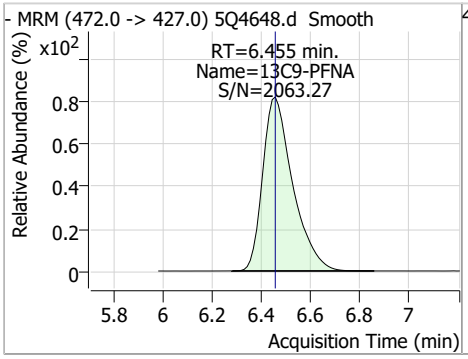


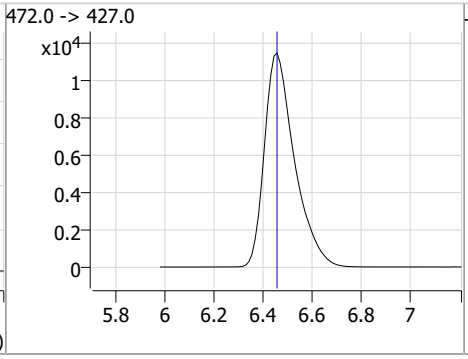


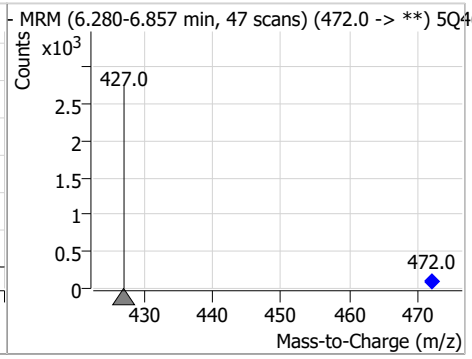




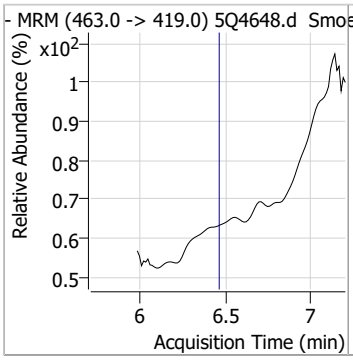
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.68	6.46	0.00	96448				

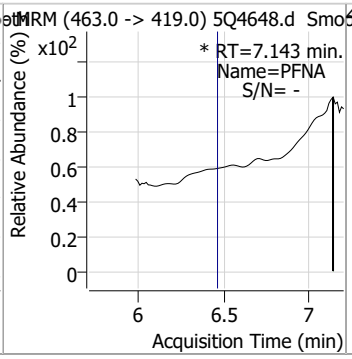


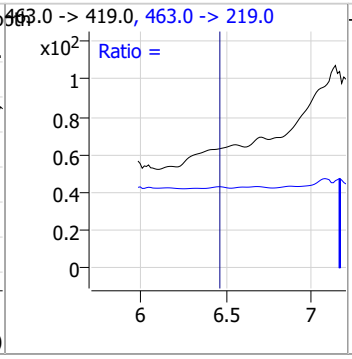


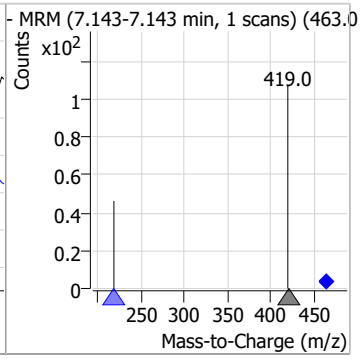


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		10.7	32.0



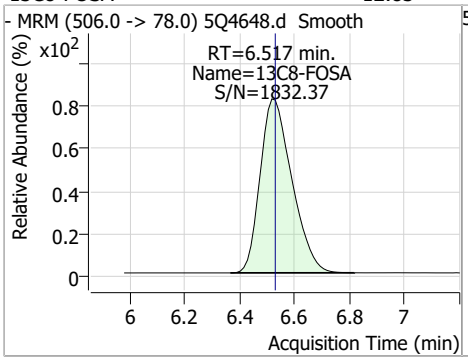


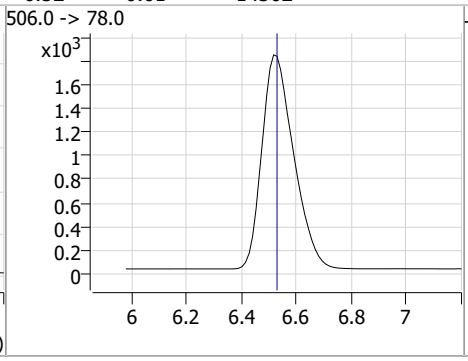


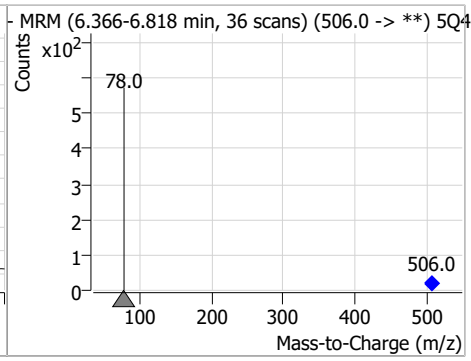


Perfluorinated Compounds by LC/MS/MS

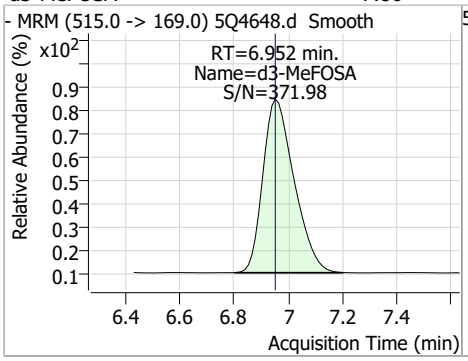
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.83	6.52	-0.01	14562				

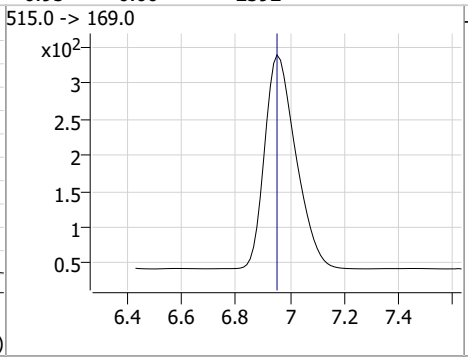


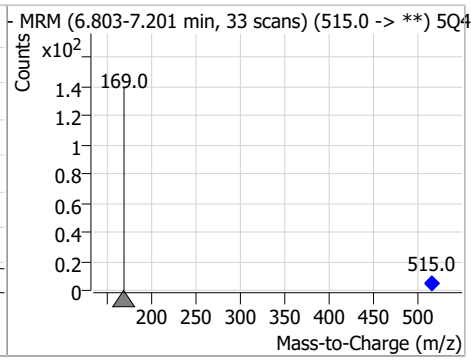




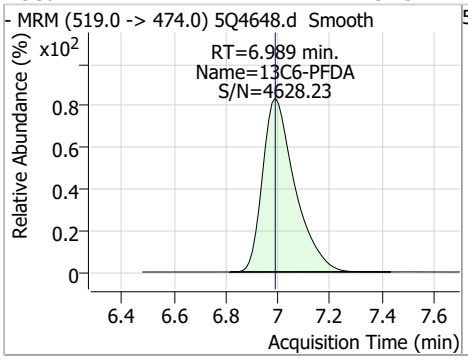
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	7.86	6.95	0.00	2392				

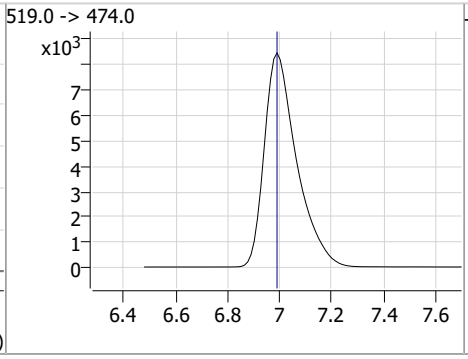


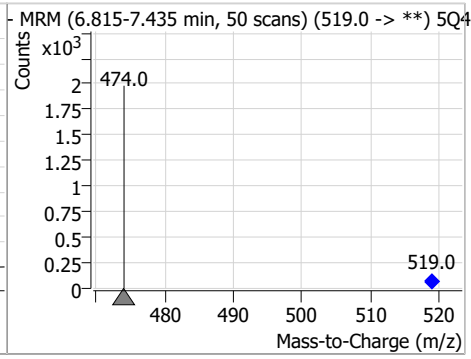




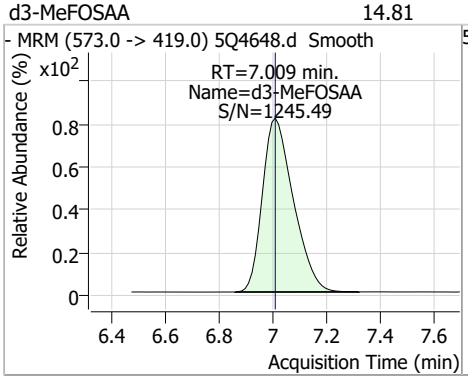
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.45	6.99	0.00	72402				

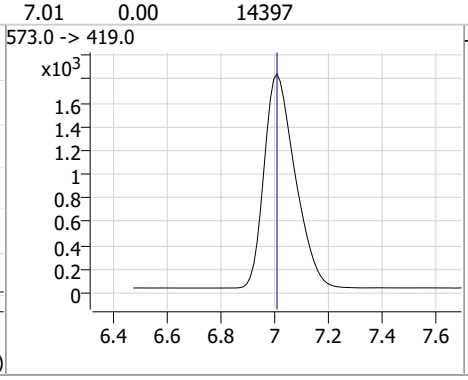


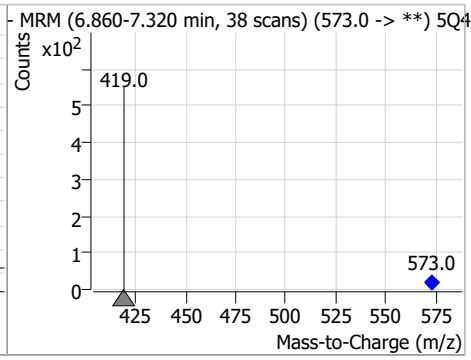




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.81	7.01	0.00	14397				

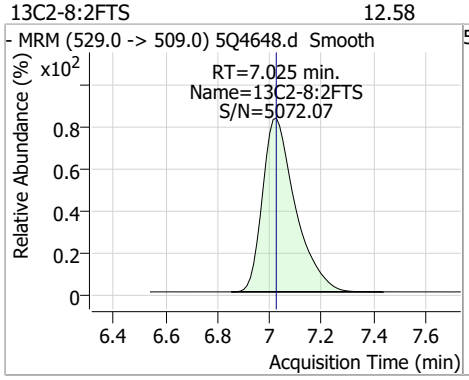


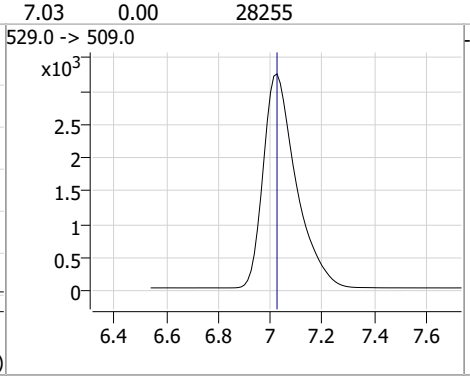


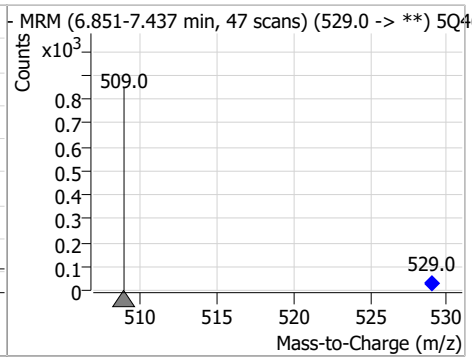


Perfluorinated Compounds by LC/MS/MS

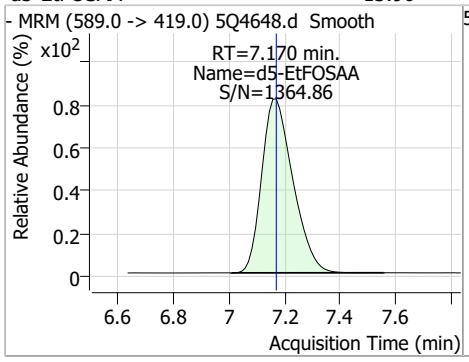
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.58	7.03	0.00	28255				

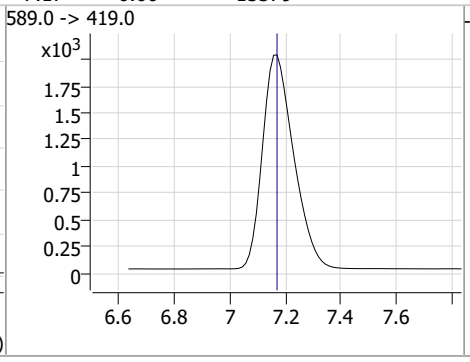


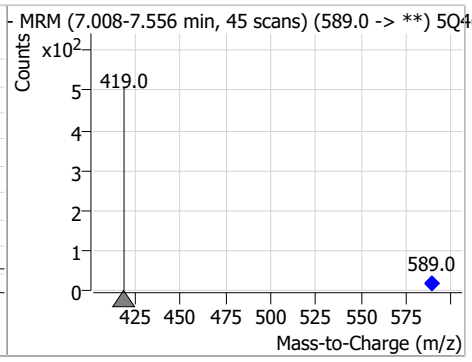




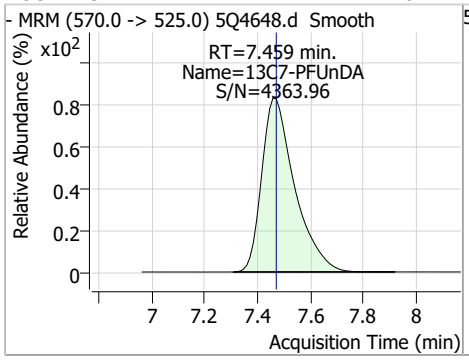
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.90	7.17	0.00	15579				

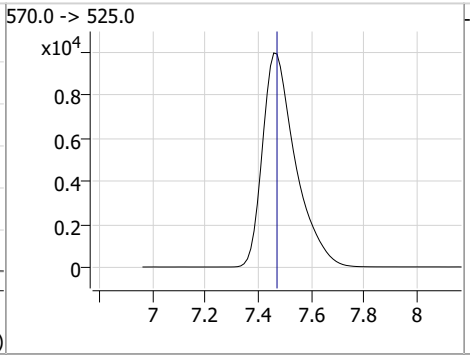


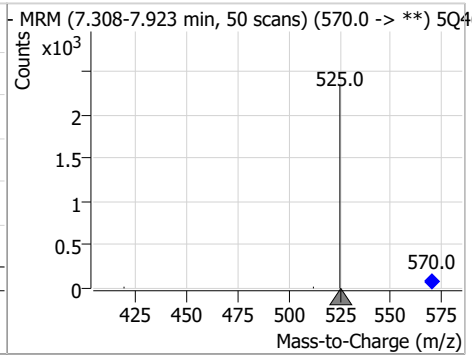




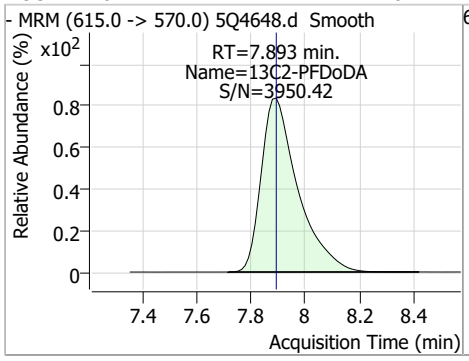
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.18	7.46	-0.01	85731				

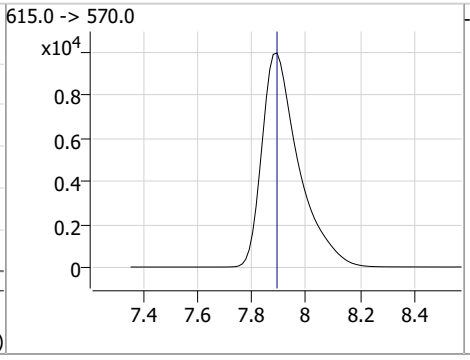


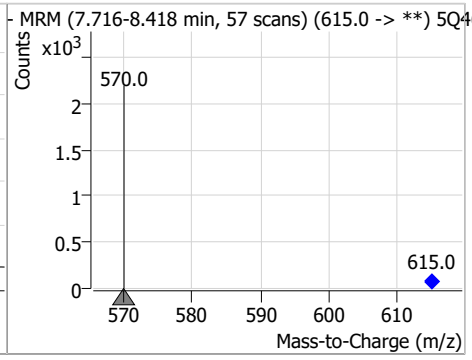




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.82	7.89	0.00	92900				

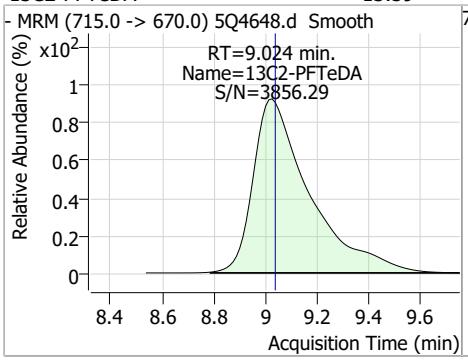


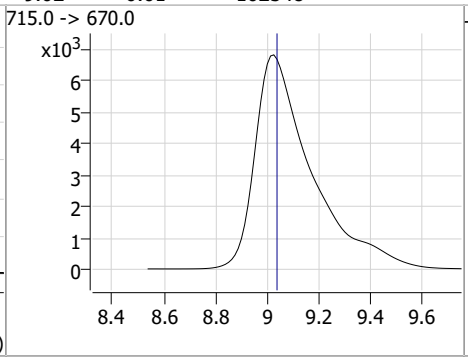


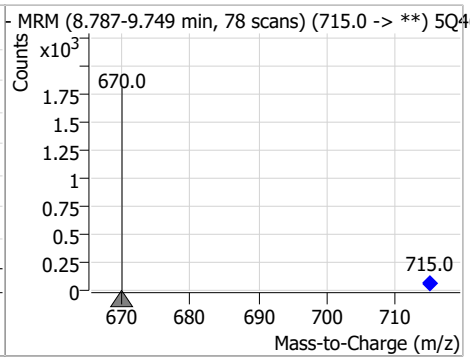


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.59	9.02	-0.01	102548				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4649.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:12:40 AM
Sample Name : fa98286-14
Vial : P1-F7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

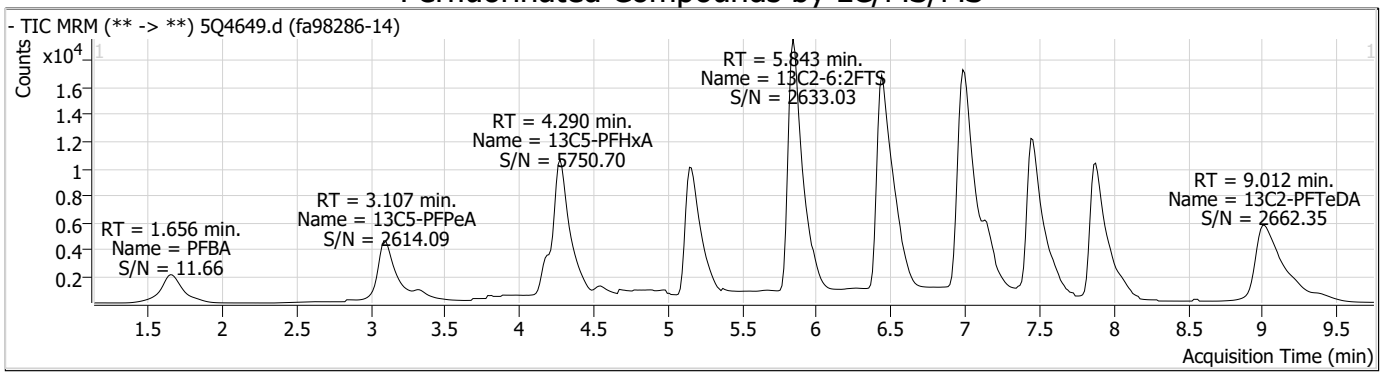
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.662	217.0 -> 172.0	21921	20.00 µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	35739	20.00 µg/L	-0.025
M5-PFHxA	4.290	318.0 -> 273.0	61650	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	60954	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	93659	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	99622	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	77116	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	80742	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	79244	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	79807	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	12280	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4432	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5246	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	9070	20.00 µg/L	0.000
M2-4:2FTS	4.187	329.0 -> 309.0	20478	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	34160	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	31356	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	14949	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4636	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	418	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	14811	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	20478	13.94 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.7%	
13C2-6:2FTS	5.843	429.0 -> 409.0	34160	15.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.4%	
13C2-8:2FTS	7.025	529.0 -> 509.0	31356	13.96 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%	
13C2-PFDoDA	7.879	615.0 -> 570.0	79244	10.93 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.7%	
13C2-PFTeDA	9.012	715.0 -> 670.0	79807	10.58 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.9%	
13C3-PFBS	3.337	302.0 -> 99.0	4432	13.60 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%	
13C3-PFHxS	5.194	402.0 -> 99.0	5246	15.38 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%	
13C4-PFBA	1.662	217.0 -> 172.0	21921	12.26 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.3%	
13C4-PFHpA	5.163	367.0 -> 322.0	60954	14.93 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	61650	14.10 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%	
13C5-PFPeA	3.107	268.0 -> 223.0	35739	12.30 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.5%	
13C6-PFDA	6.989	519.0 -> 474.0	77116	14.33 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

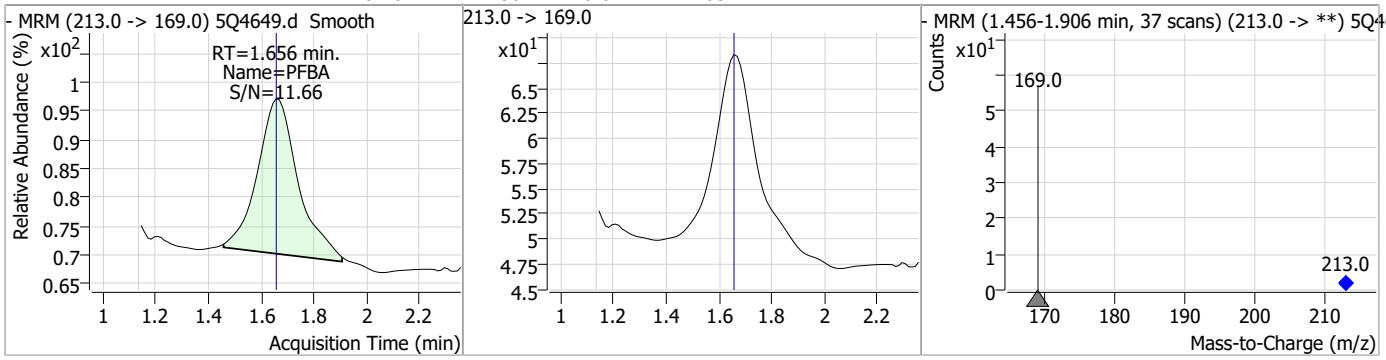
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%			
13C7-PFUnDA	7.459	570.0 -> 525.0	80742	11.47	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.3%			
13C8-FOSA	6.517	506.0 -> 78.0	12280	10.82	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.1%			
13C8-PFOA	5.857	421.0 -> 376.0	93659	15.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%			
13C8-PFOS	6.440	507.0 -> 99.0	9070	13.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
13C9-PFNA	6.455	472.0 -> 427.0	99622	15.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14949	15.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4636	13.81	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%			
d3-MeFOSA	6.965	515.0 -> 169.0	418	1.37	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	14811	13.21	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.656	213.0 -> 169.0	205	0.40	µg/L		100
PFBS	3.342	299.0 -> 80.0	385	0.58	µg/L		95
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	989	0.25	µg/L	m	98
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.291	313.0 -> 269.0	2576	0.86	µg/L		98
PFHxS	5.195	399.0 -> 80.0	2829	3.63	µg/L	m	100
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	1849	0.33	µg/L		99
PFOS	6.241	499.0 -> 80.0	0		µg/L	m	1
PFPeA	3.109	263.0 -> 219.0	846	0.48	µg/L		100
PFPeS	4.398	349.0 -> 80.0	351	0.68	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.356	298.0 -> 78.0	413	0.40	µg/L		96
FHxSA	5.674	398.0 -> 78.0	358	0.38	µg/L		94

 # = Qualifier out of range, m = manually integrated, + = Area summed

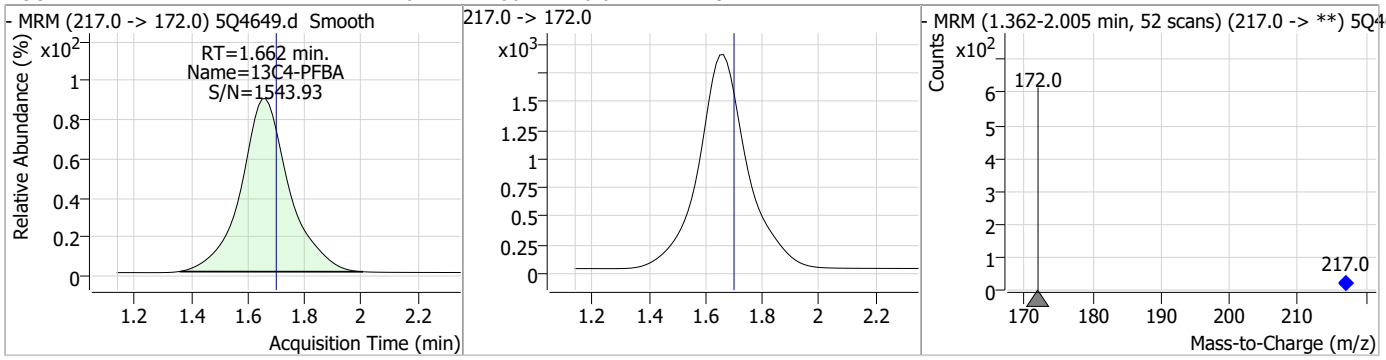
Perfluorinated Compounds by LC/MS/MS



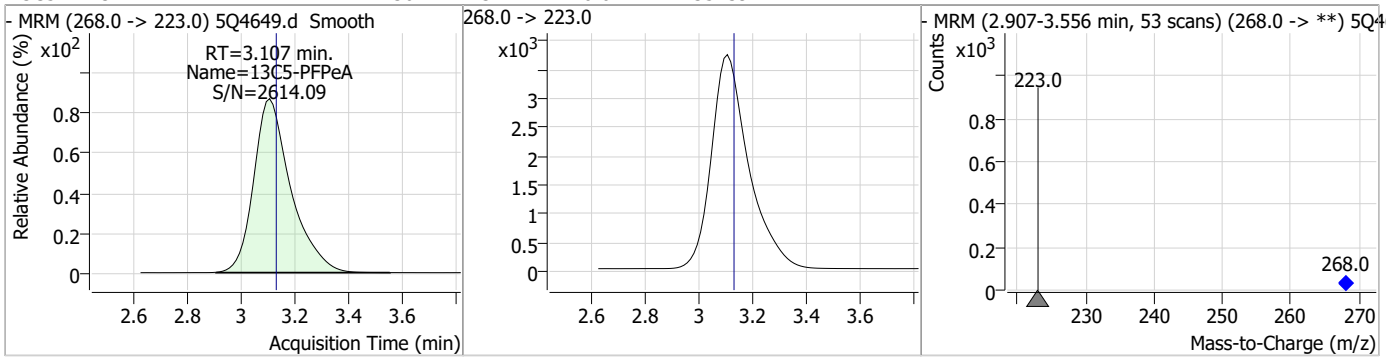
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.40	1.66	-0.04	205				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.26	1.66	-0.04	21921				

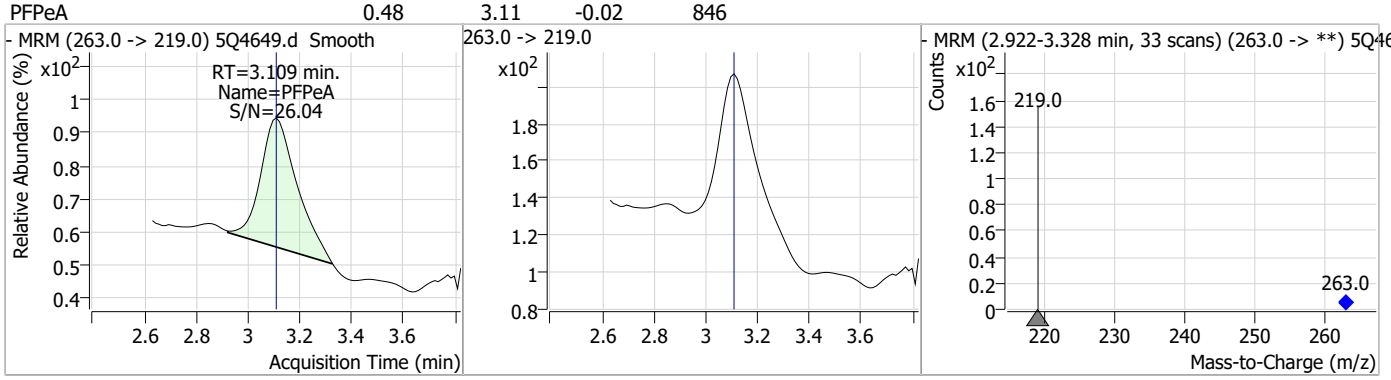


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.30	3.11	-0.02	35739				

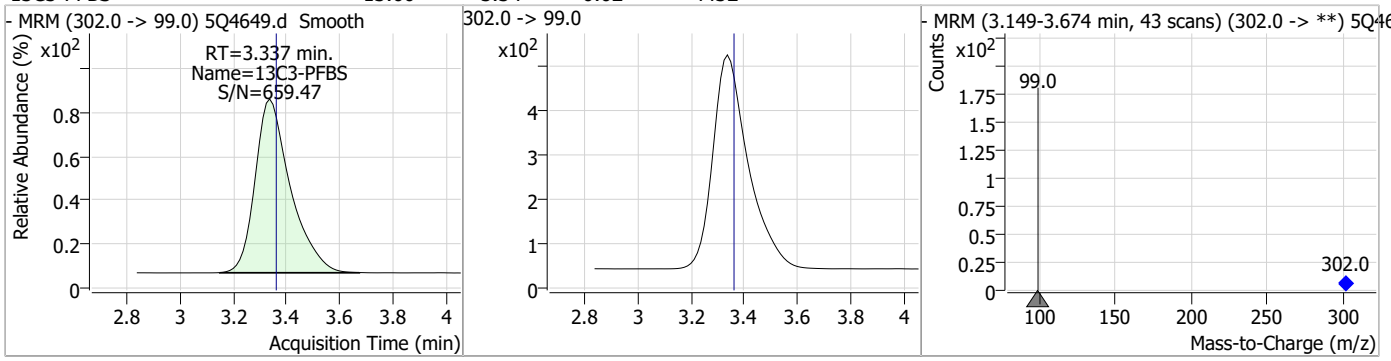


Perfluorinated Compounds by LC/MS/MS

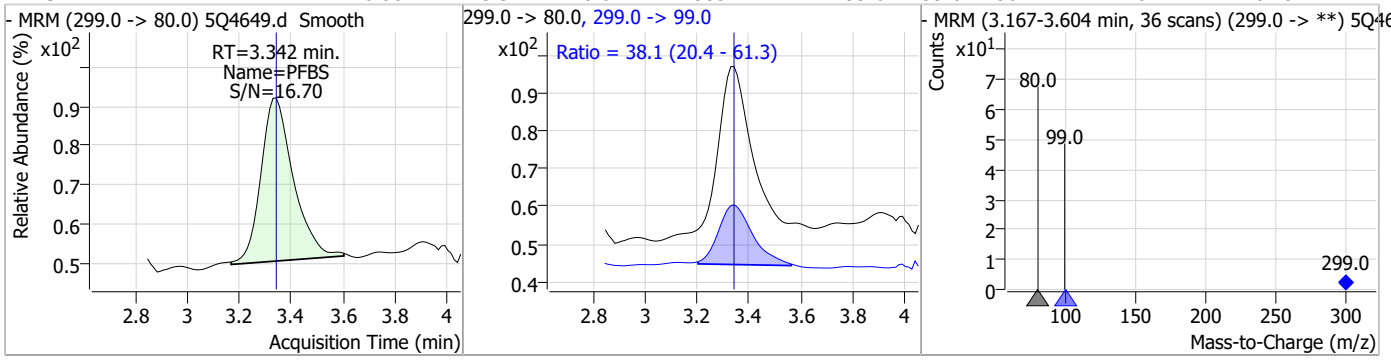
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.48	3.11	-0.02	846				



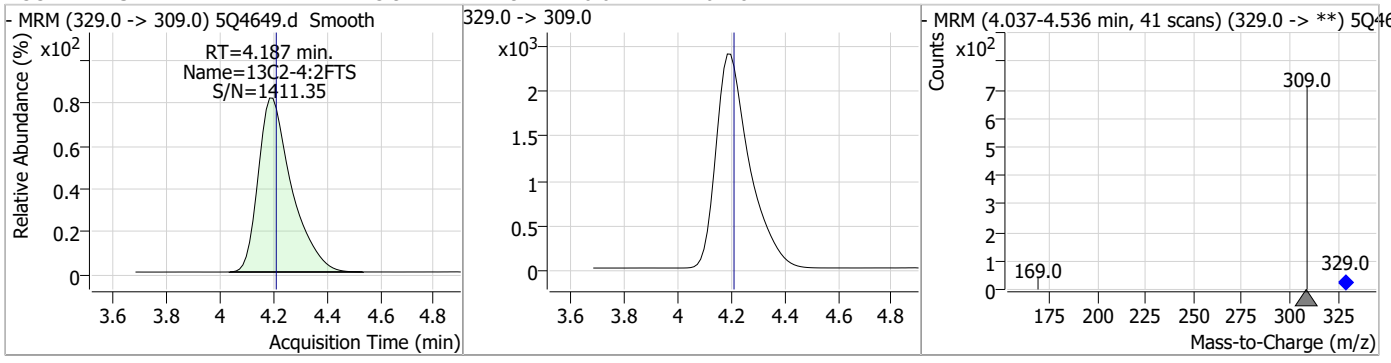
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.60	3.34	-0.02	4432				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.58	3.34	-0.02	385	299.0 -> 99.0	38.1	20.4	61.3

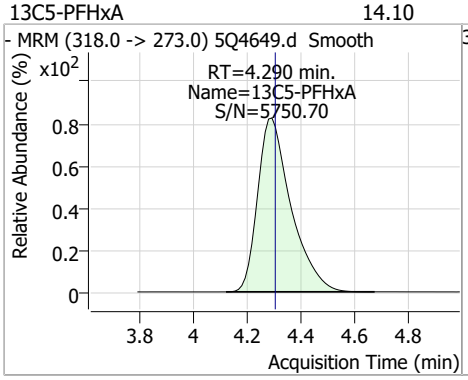


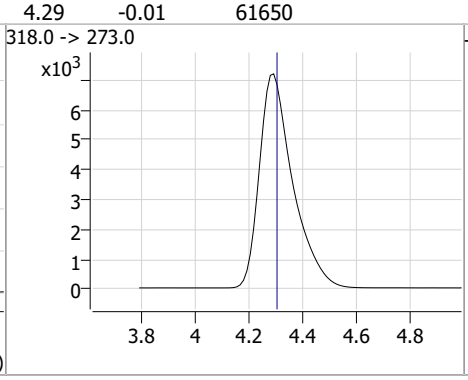
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.94	4.19	-0.02	20478				

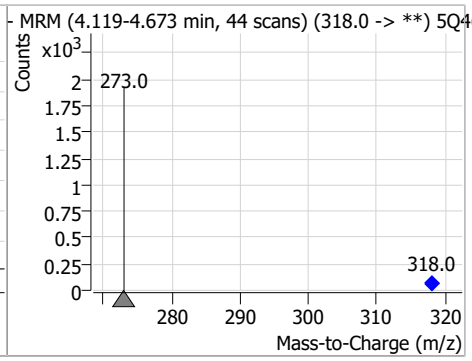


Perfluorinated Compounds by LC/MS/MS

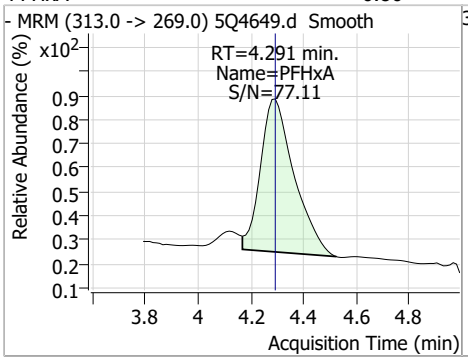
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.10	4.29	-0.01	61650				

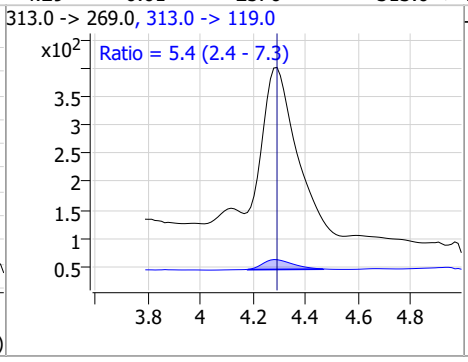


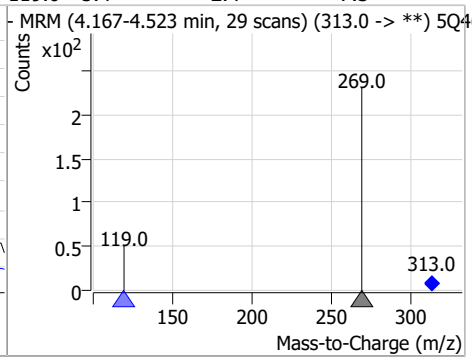




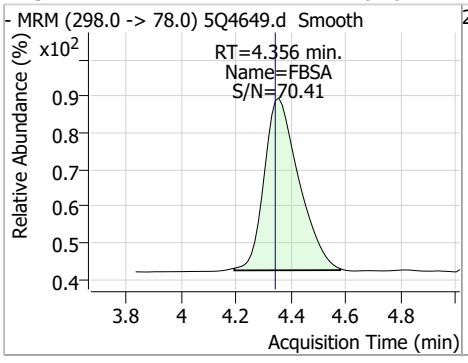
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.86	4.29	-0.01	2576	313.0 -> 119.0	5.4	2.4	7.3

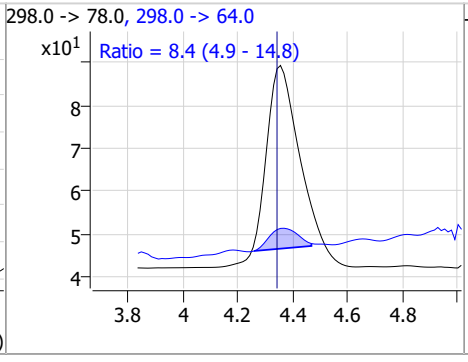


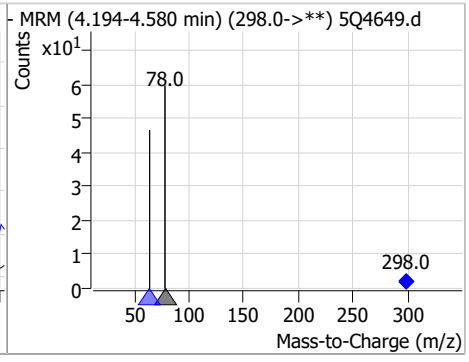




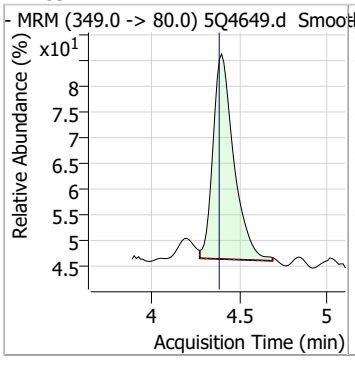
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.40	4.36	0.00	413	298.0 -> 64.0	8.4	4.9	14.8

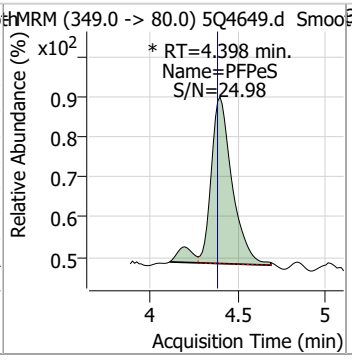


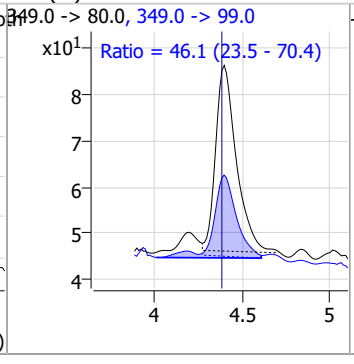


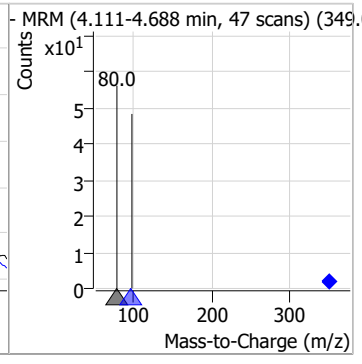


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.68	4.40	-0.01	351 (m)	349.0 -> 99.0	46.1	23.5	70.4



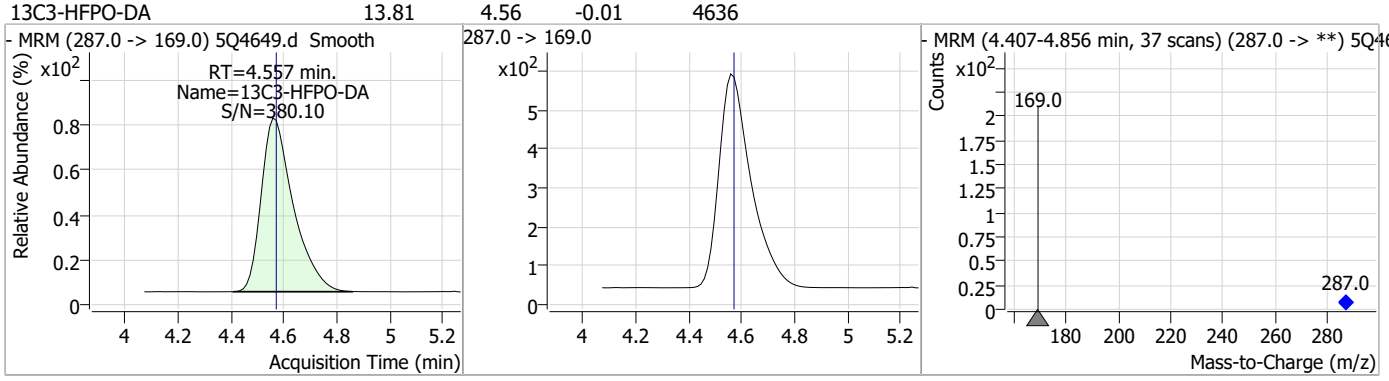




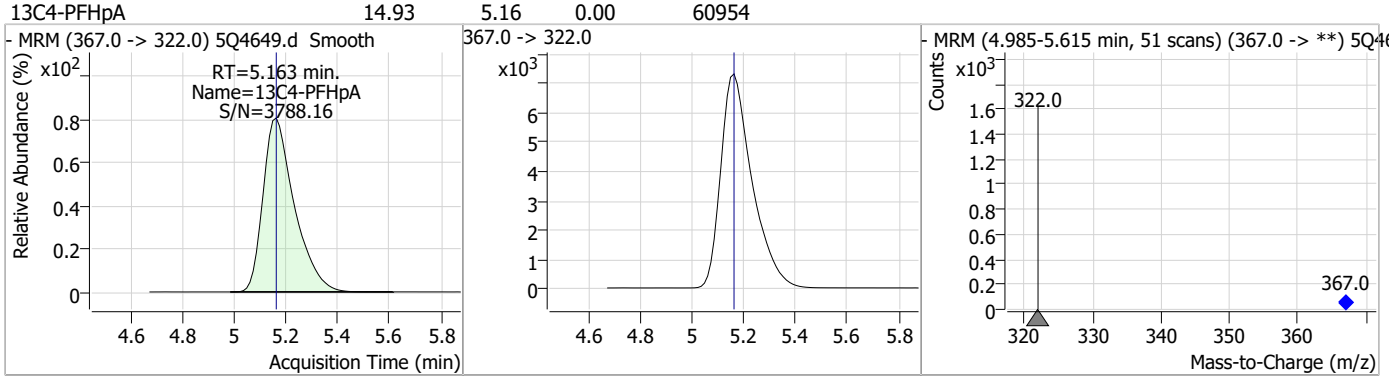


Perfluorinated Compounds by LC/MS/MS

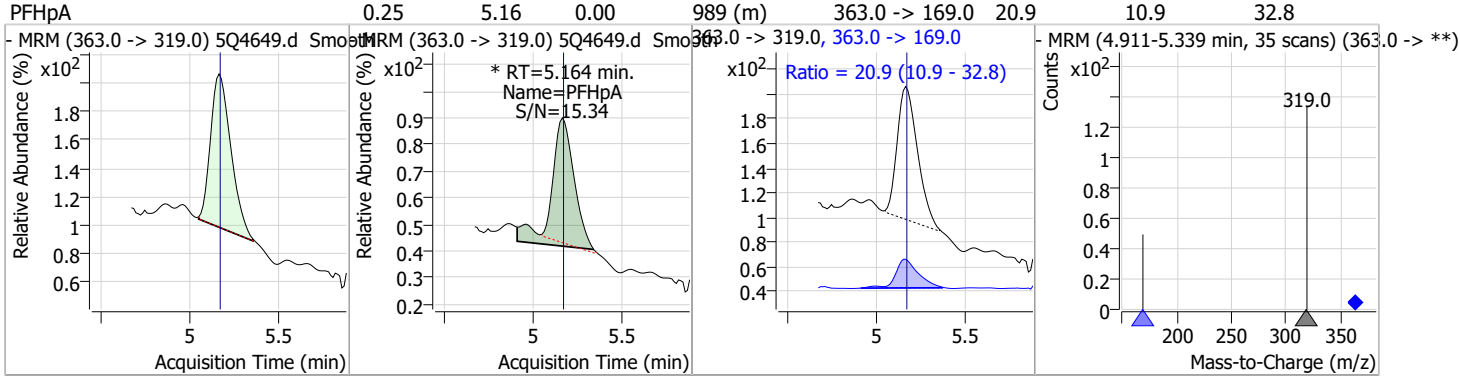
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.81	4.56	-0.01	4636				



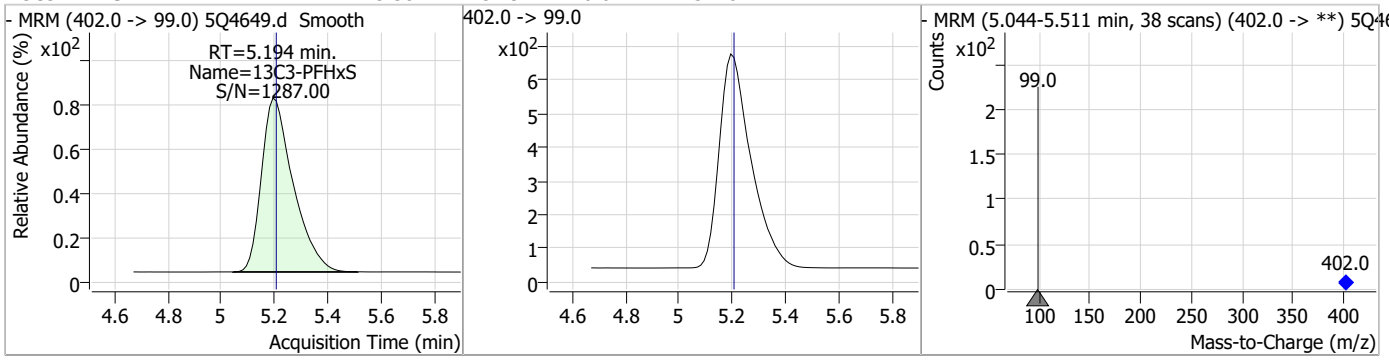
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.93	5.16	0.00	60954				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.25	5.16	0.00	989 (m)	363.0 -> 169.0	20.9	10.9	32.8

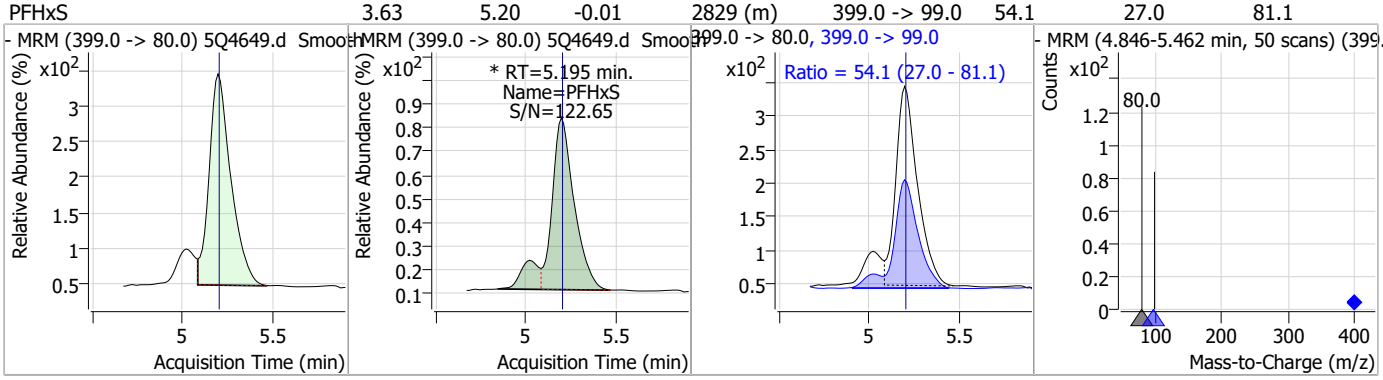


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.38	5.19	-0.01	5246				

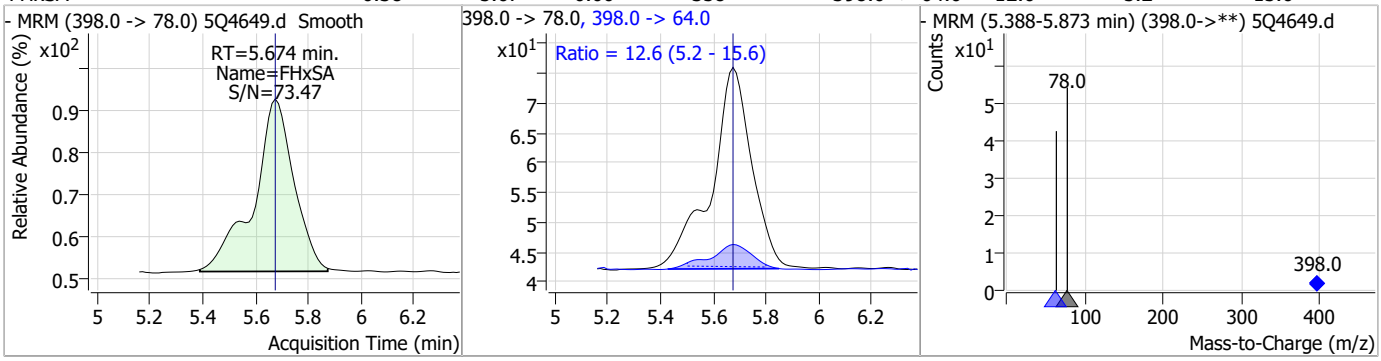


Perfluorinated Compounds by LC/MS/MS

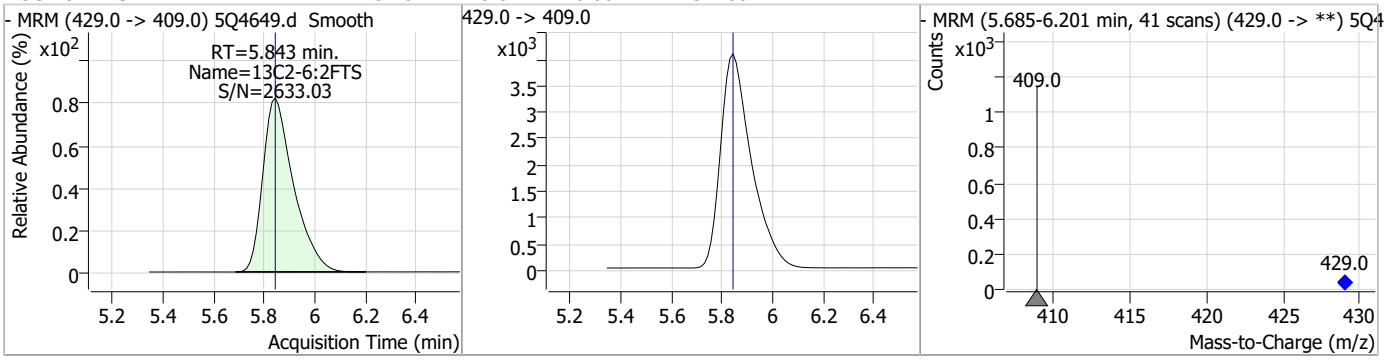
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	3.63	5.20	-0.01	2829 (m)	399.0 -> 99.0	54.1	27.0	81.1



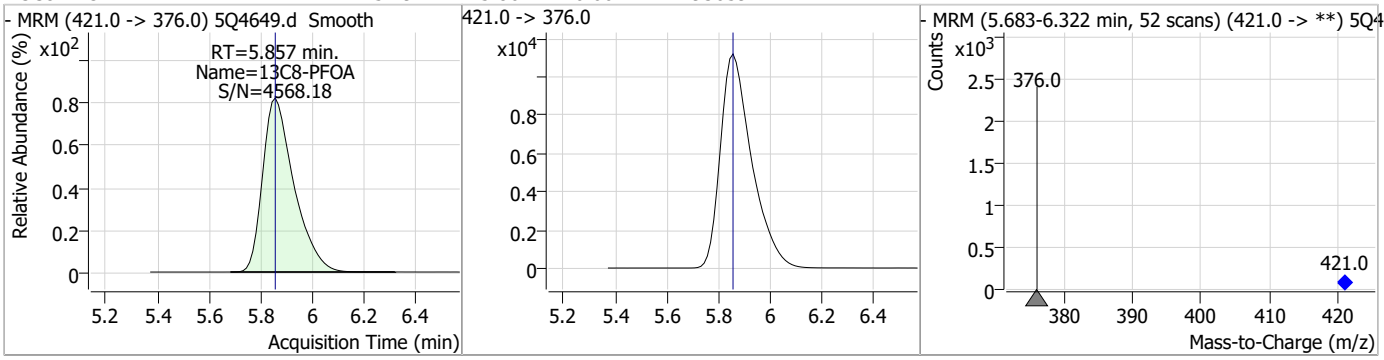
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.38	5.67	0.00	358	398.0 -> 64.0	12.6	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.28	5.84	0.00	34160				

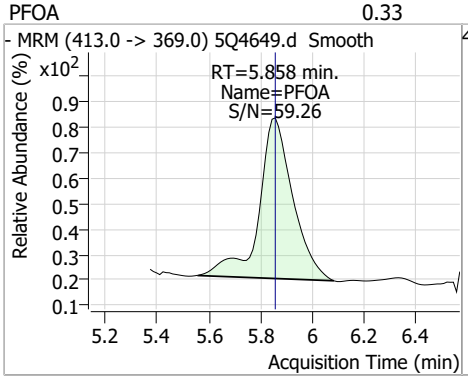


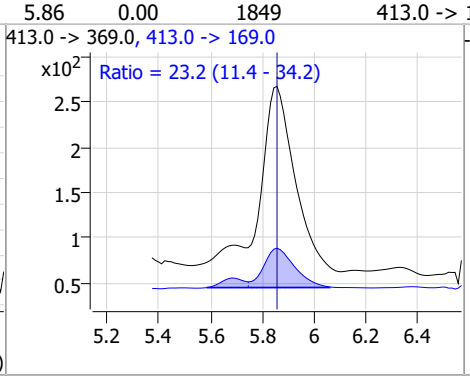
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.49	5.86	0.00	93659				

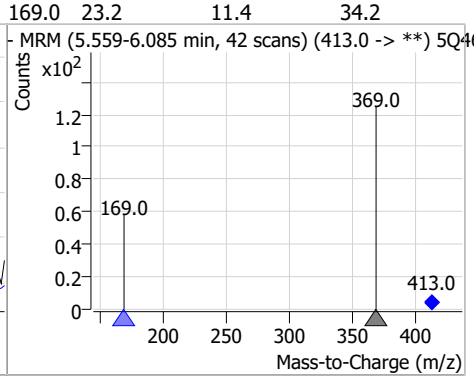


Perfluorinated Compounds by LC/MS/MS

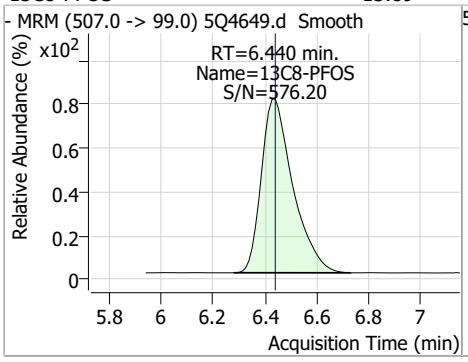
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.33	5.86	0.00	1849	413.0 -> 169.0	23.2	11.4	34.2

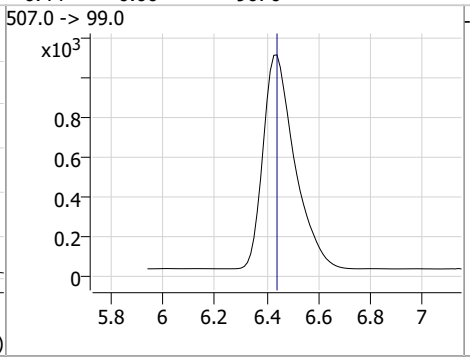


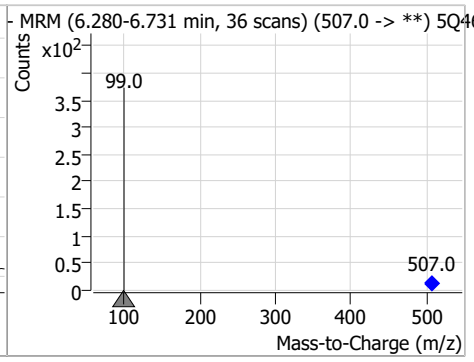




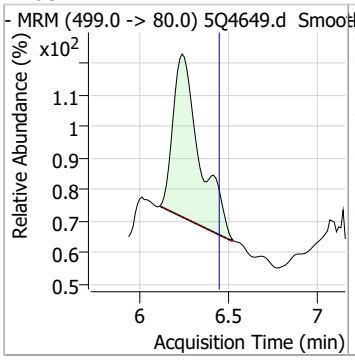
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.89	6.44	0.00	9070				

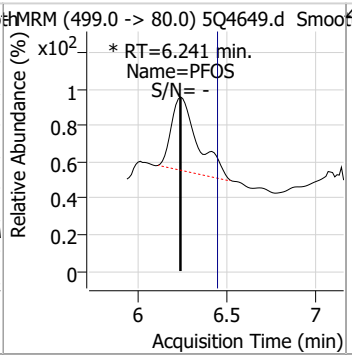


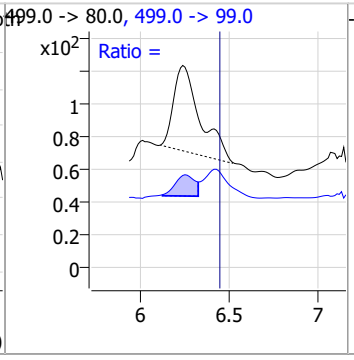


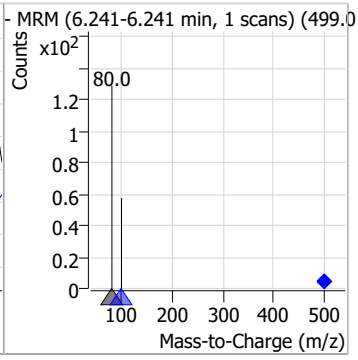


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0		0	0	499.0 -> 99.0		31.6	94.7

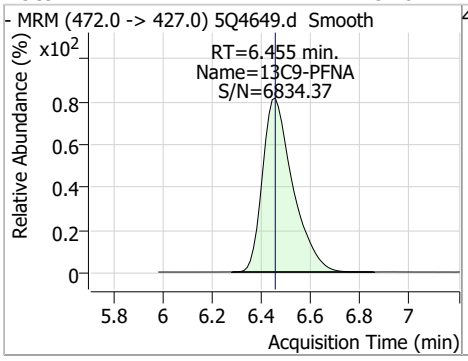


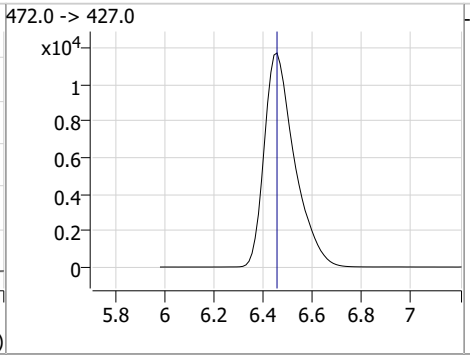


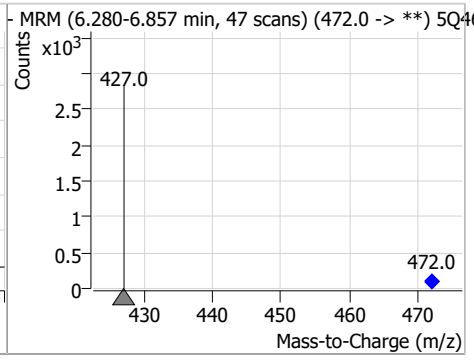




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.16	6.46	0.00	99622				

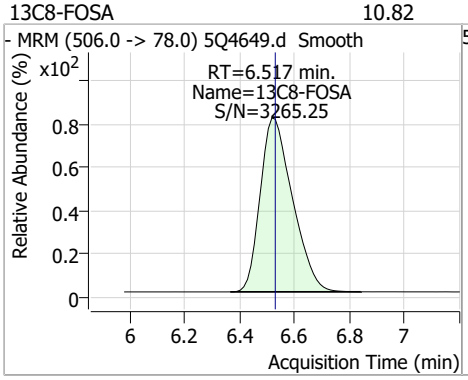


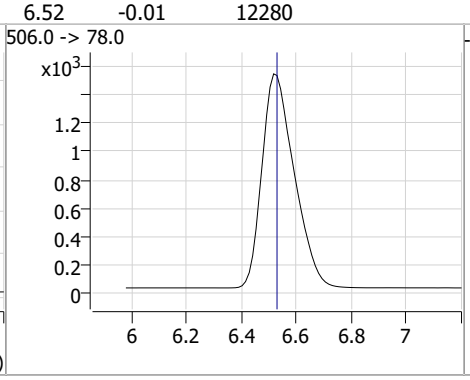


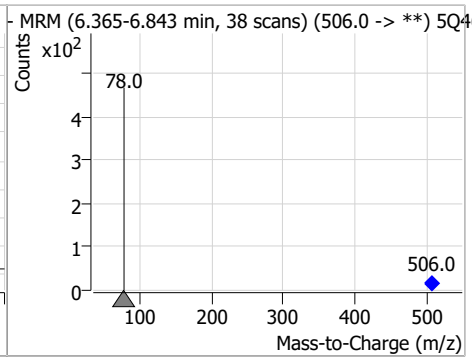


Perfluorinated Compounds by LC/MS/MS

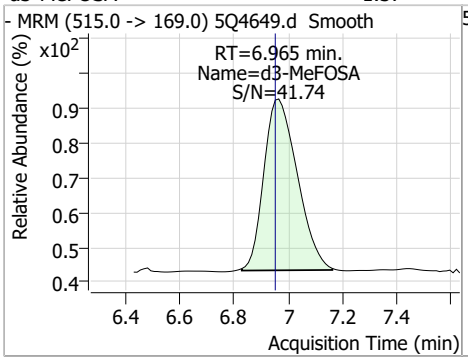
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.82	6.52	-0.01	12280				

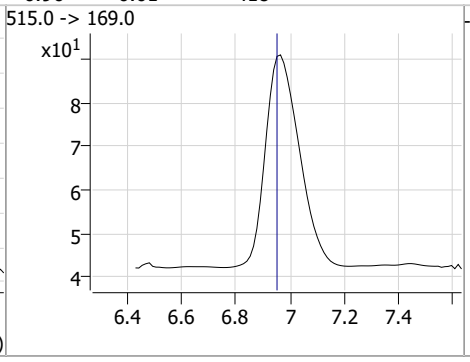


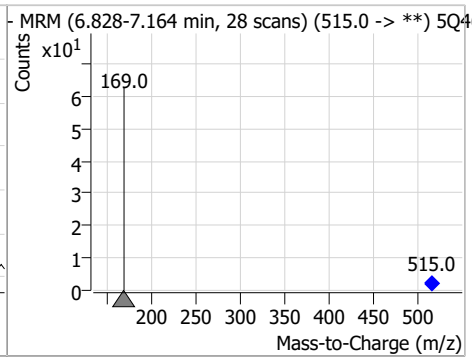




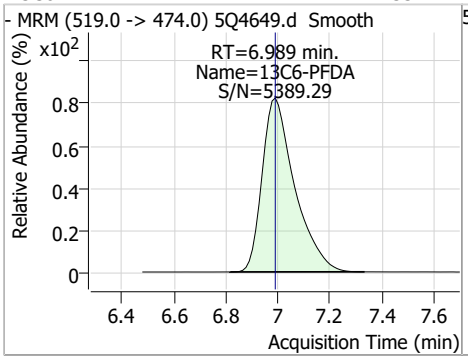
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.37	6.96	0.01	418				

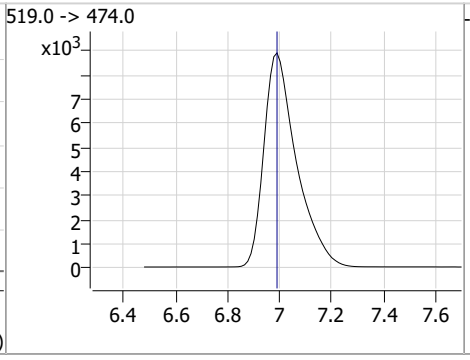


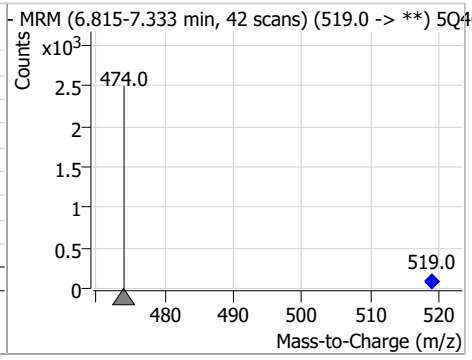




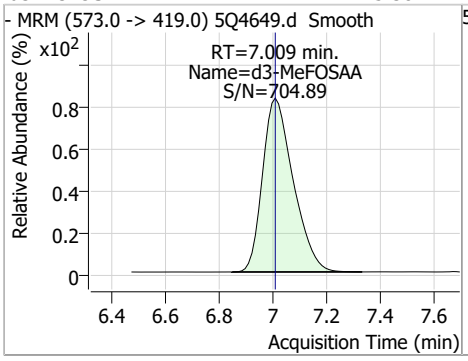
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.33	6.99	0.00	77116				

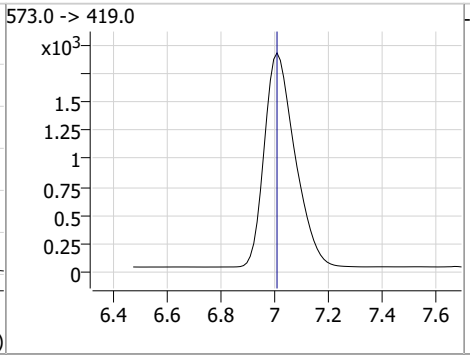


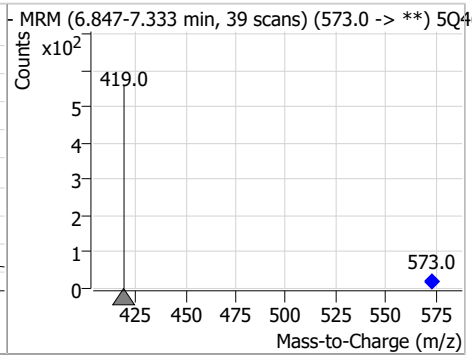




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.38	7.01	0.00	14949				

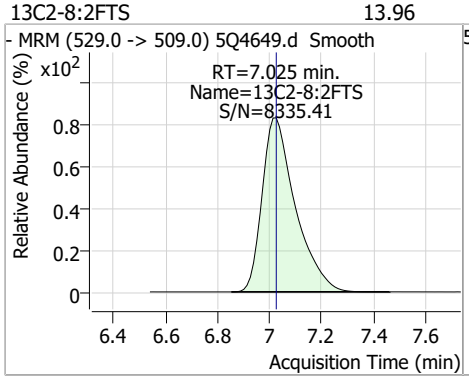


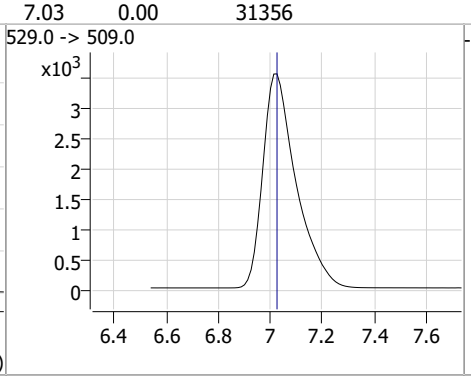


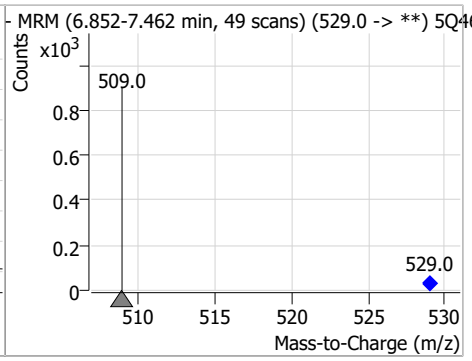


Perfluorinated Compounds by LC/MS/MS

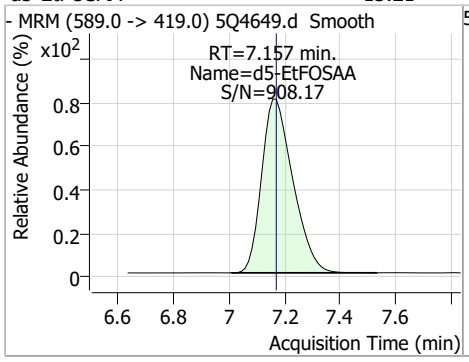
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.96	7.03	0.00	31356				

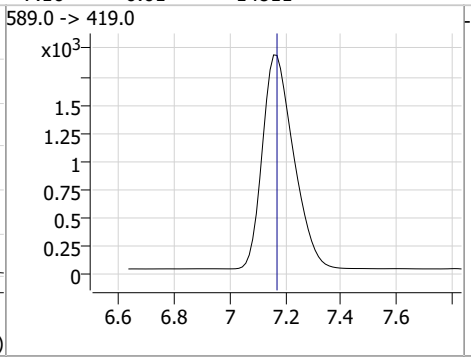


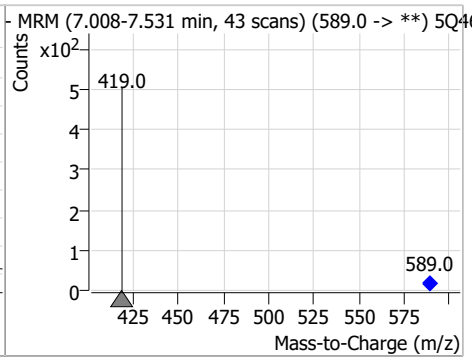




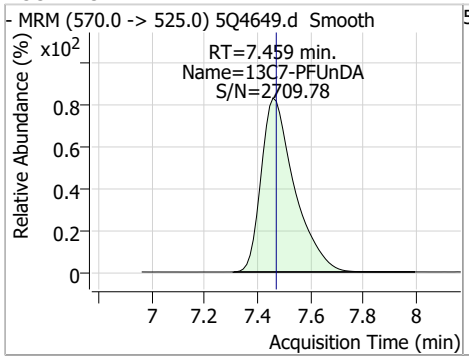
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.21	7.16	-0.01	14811				

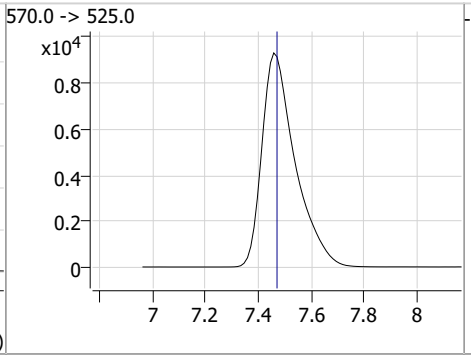


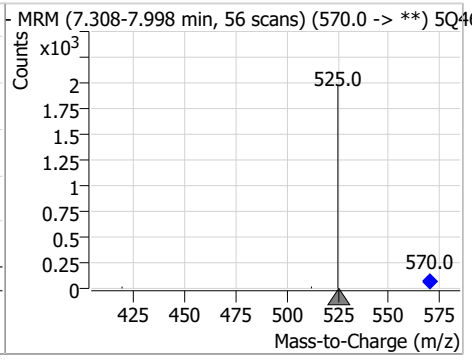




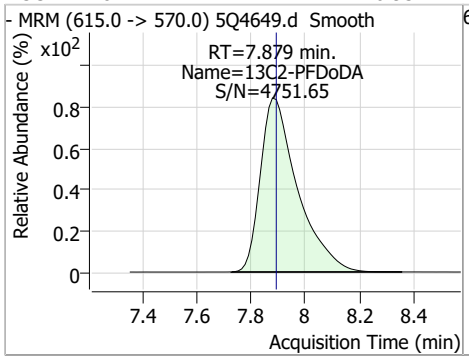
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.47	7.46	-0.01	80742				

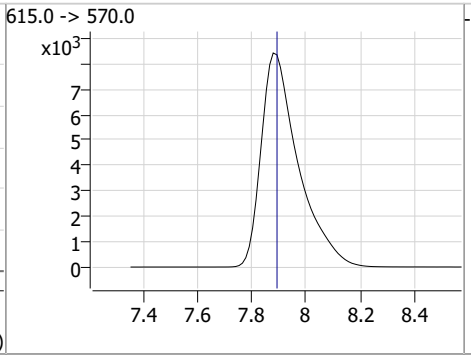


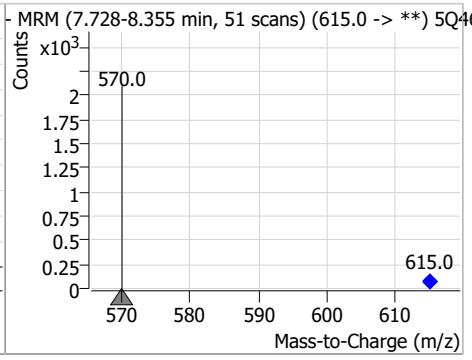




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.93	7.88	-0.01	79244				

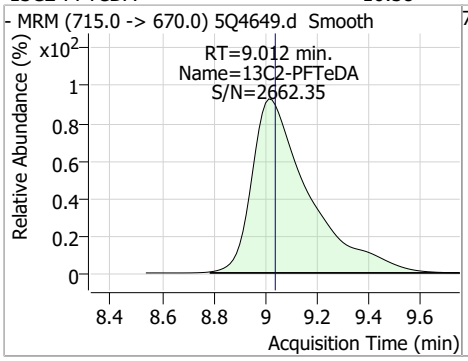


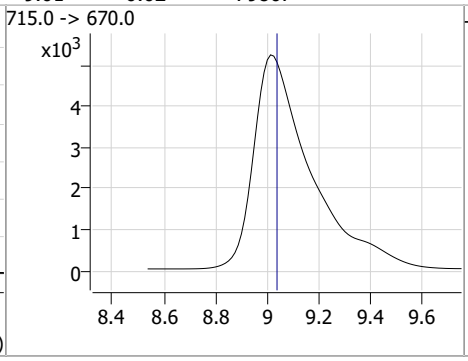


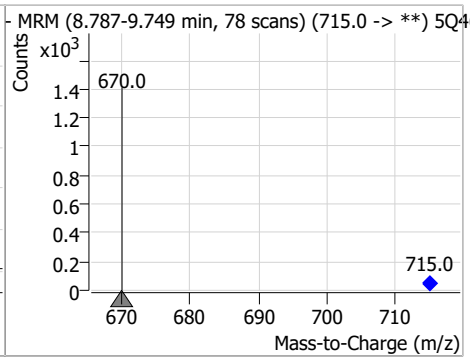


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.58	9.01	-0.02	79807				







Manual Integration Approval Summary

Sample Number: FA98286-14
Lab FileID: 5Q4649.D
Injection Time: 09/15/22 10:12
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4650.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:28:00 AM
Sample Name : fa98286-15
Vial : P1-F8
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

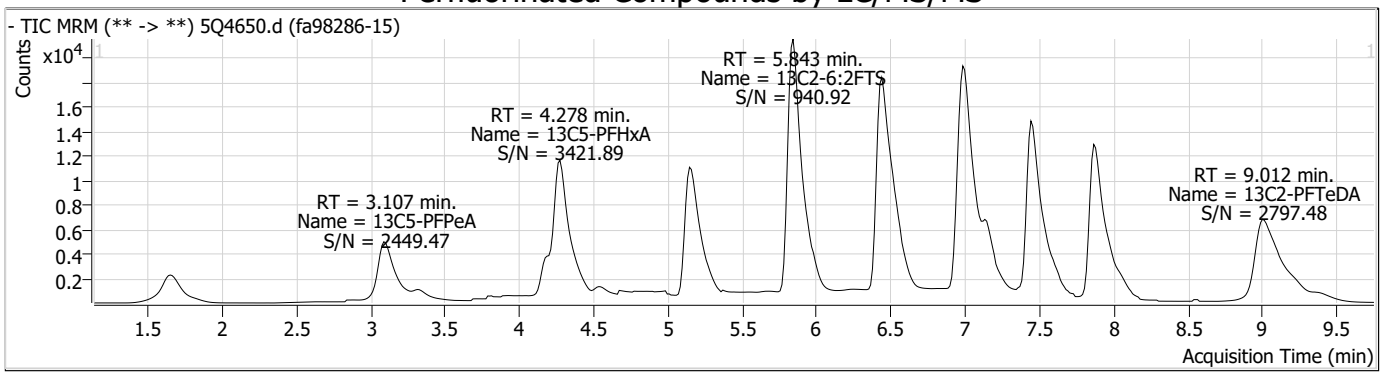
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.650	217.0 -> 172.0	23471	20.00 µg/L	-0.050
M5-PFPeA	3.107	268.0 -> 223.0	38467	20.00 µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	67170	20.00 µg/L	-0.025
M4-PFHpA	5.163	367.0 -> 322.0	66663	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	102792	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	111374	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	86795	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	98785	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	98161	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	94180	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	13446	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4841	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5759	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	10278	20.00 µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	22300	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	38532	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	35508	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17022	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5112	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	343	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	17928	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	22300	15.18 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%	
13C2-6:2FTS	5.843	429.0 -> 409.0	38532	17.23 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.2%	
13C2-8:2FTS	7.013	529.0 -> 509.0	35508	15.81 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%	
13C2-PFDoDA	7.879	615.0 -> 570.0	98161	13.54 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.7%	
13C2-PFTeDA	9.012	715.0 -> 670.0	94180	12.48 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.4%	
13C3-PFBS	3.337	302.0 -> 99.0	4841	14.86 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%	
13C3-PFHxS	5.194	402.0 -> 99.0	5759	16.89 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%	
13C4-PFBA	1.650	217.0 -> 172.0	23471	13.13 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%	
13C4-PFHpA	5.163	367.0 -> 322.0	66663	16.33 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%	
13C5-PFHxA	4.278	318.0 -> 273.0	67170	15.36 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.8%	
13C5-PFPeA	3.107	268.0 -> 223.0	38467	13.24 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.2%	
13C6-PFDA	6.989	519.0 -> 474.0	86795	16.12 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

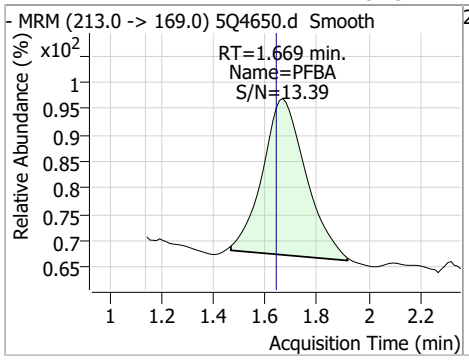
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%			
13C7-PFUnDA	7.459	570.0 -> 525.0	98785	14.03	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.1%			
13C8-FOSA	6.517	506.0 -> 78.0	13446	11.85	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.3%			
13C8-PFOA	5.857	421.0 -> 376.0	102792	17.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%			
13C8-PFOS	6.428	507.0 -> 99.0	10278	15.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%			
13C9-PFNA	6.455	472.0 -> 427.0	111374	16.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17022	17.51	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	5112	15.22	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
d3-MeFOSA	6.965	515.0 -> 169.0	343	1.13	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.6%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17928	15.99	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	255	0.46	µg/L		100
PFBS	3.329	299.0 -> 80.0	501	0.69	µg/L		95
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	1308	0.30	µg/L	m	98
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.279	313.0 -> 269.0	3337	1.02	µg/L		100
PFHxS	5.195	399.0 -> 80.0	3629	4.24	µg/L	m	99
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	2310	0.37	µg/L		98
PFOS	6.241	499.0 -> 80.0	867	0.96	µg/L	m	82
PFPeA	3.109	263.0 -> 219.0	976	0.51	µg/L	m	100
PFPeS	4.398	349.0 -> 80.0	454	0.80	µg/L	m	93
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.356	298.0 -> 78.0	564	0.51	µg/L		93
FHxSA	5.674	398.0 -> 78.0	457	0.44	µg/L		93

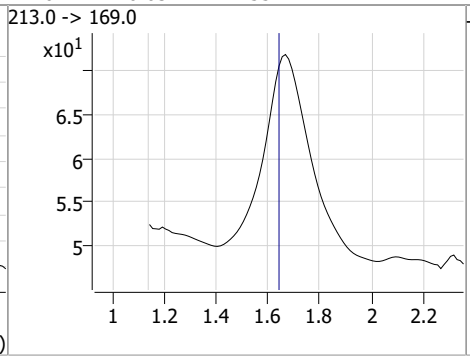
 # = Qualifier out of range, m = manually integrated, + = Area summed

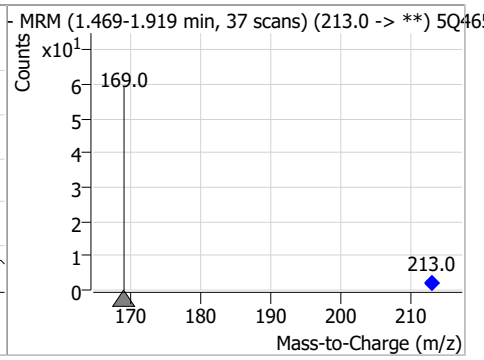
Perfluorinated Compounds by LC/MS/MS



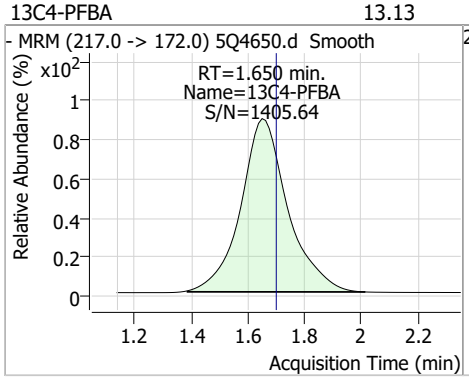
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.46	1.67	-0.03	255				

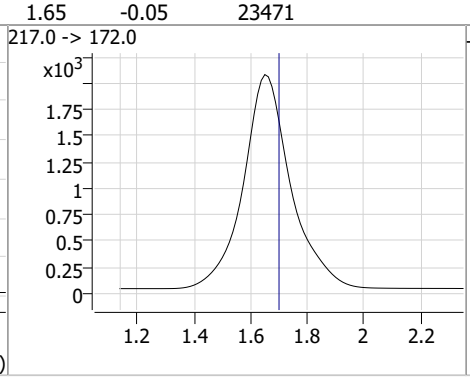


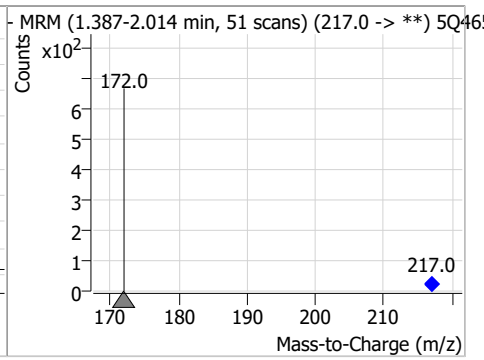




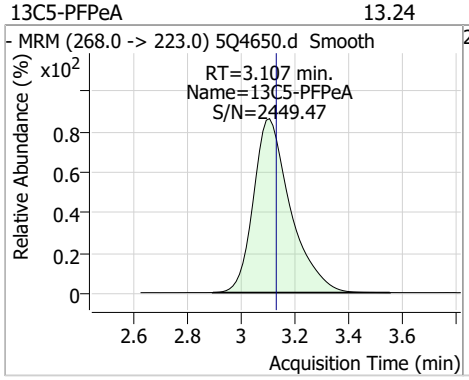
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.13	1.65	-0.05	23471				

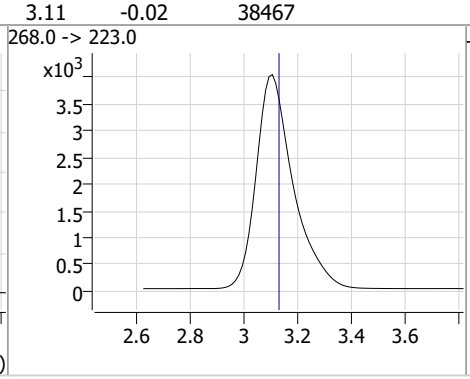


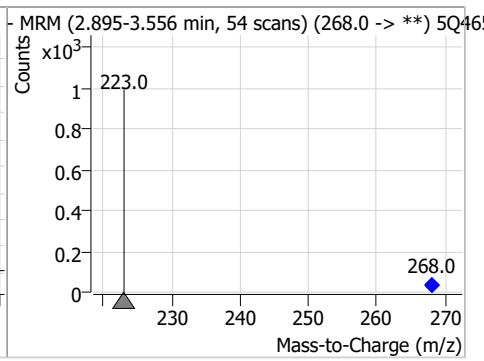




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.24	3.11	-0.02	38467				

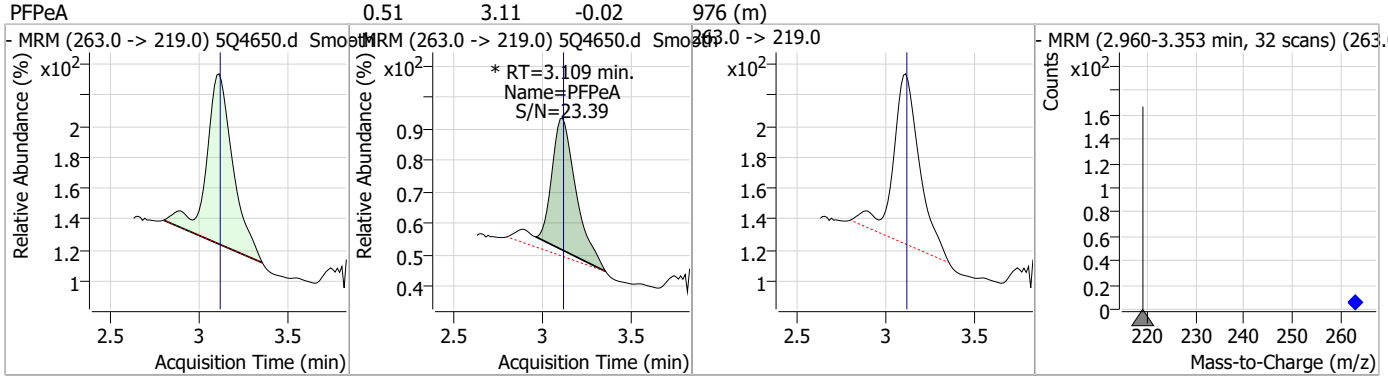




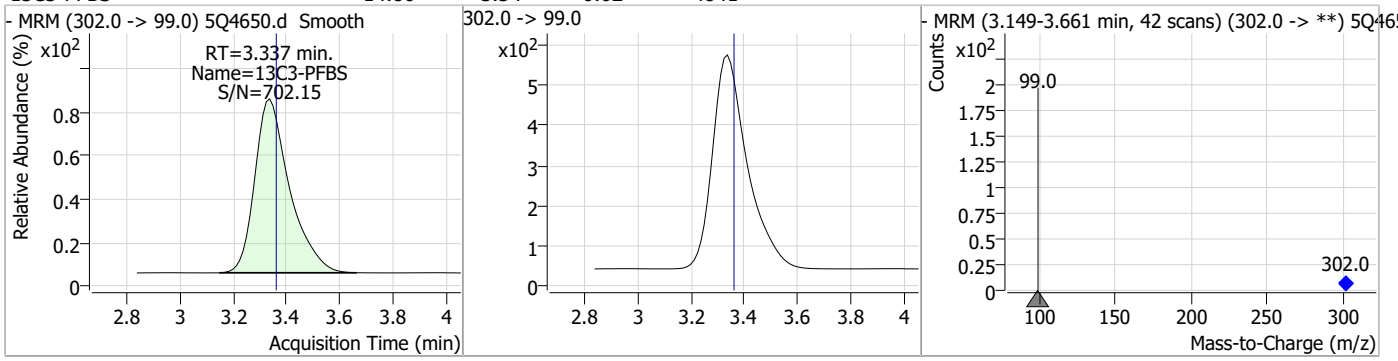


Perfluorinated Compounds by LC/MS/MS

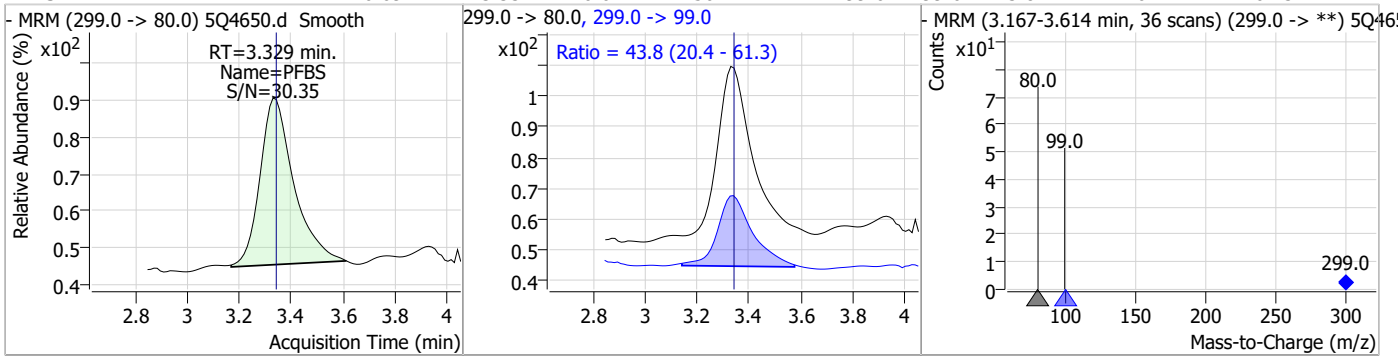
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.51	3.11	-0.02	976 (m)				



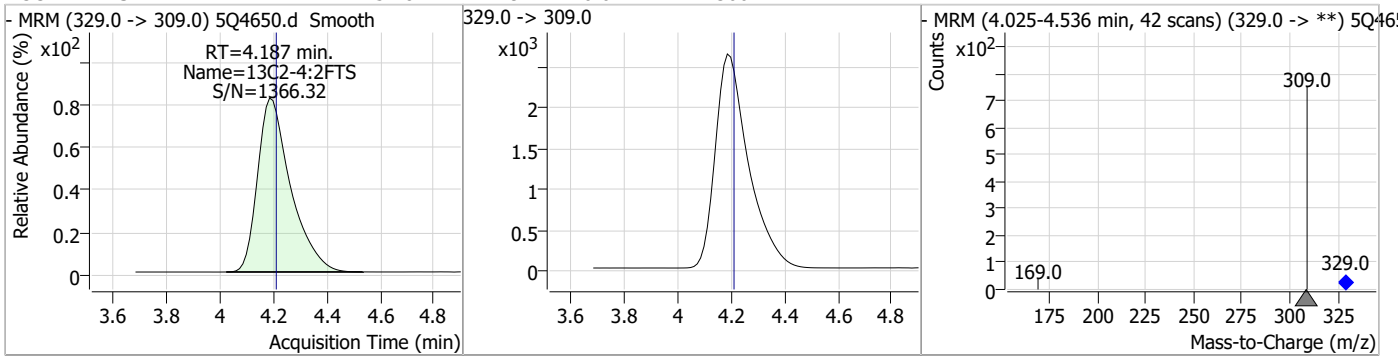
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.86	3.34	-0.02	4841				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.69	3.33	-0.04	501	299.0 -> 99.0	43.8	20.4	61.3

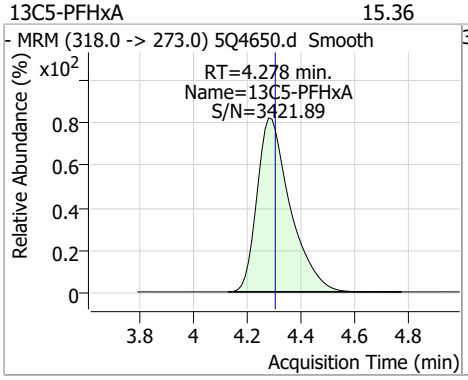


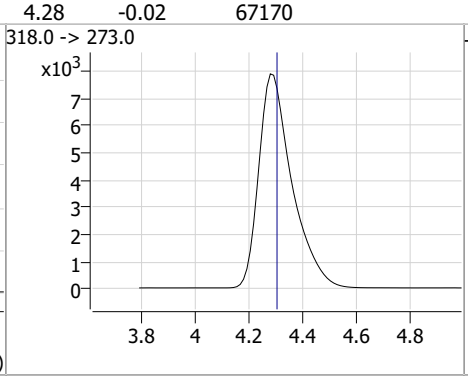
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.18	4.19	-0.02	22300				

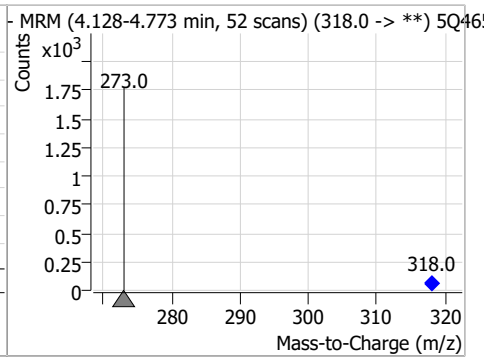


Perfluorinated Compounds by LC/MS/MS

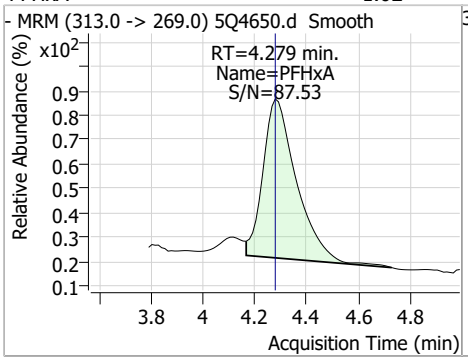
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.36	4.28	-0.02	67170				

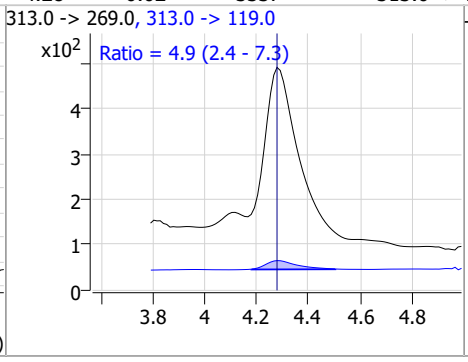


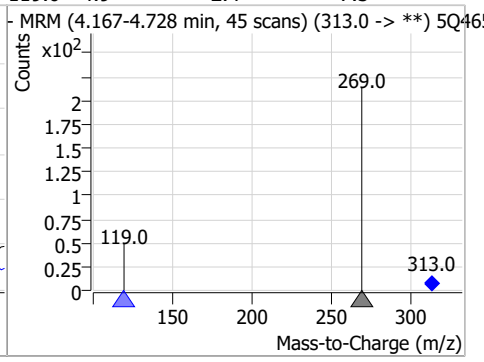




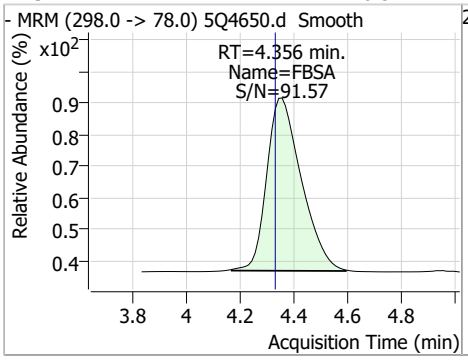
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.02	4.28	-0.02	3337	313.0 -> 119.0	4.9	2.4	7.3

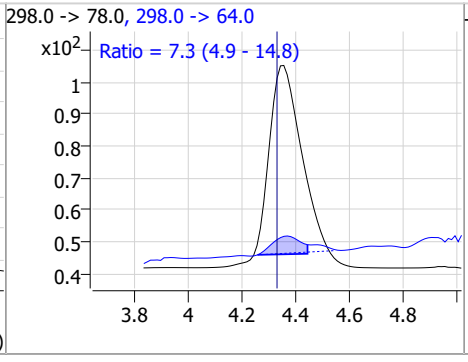


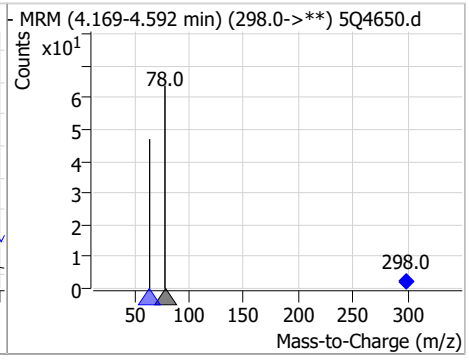




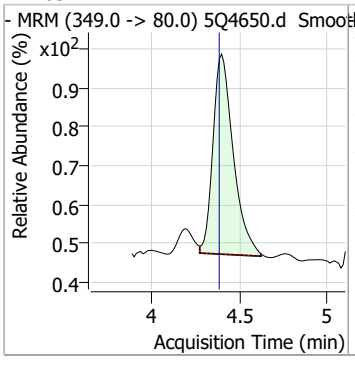
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.51	4.36	0.00	564	298.0 -> 64.0	7.3	4.9	14.8

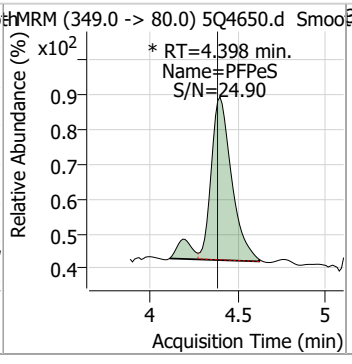


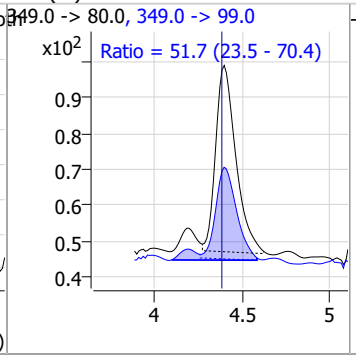


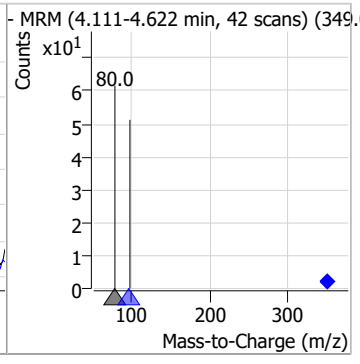


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.80	4.40	-0.01	454 (m)	349.0 -> 99.0	51.7	23.5	70.4



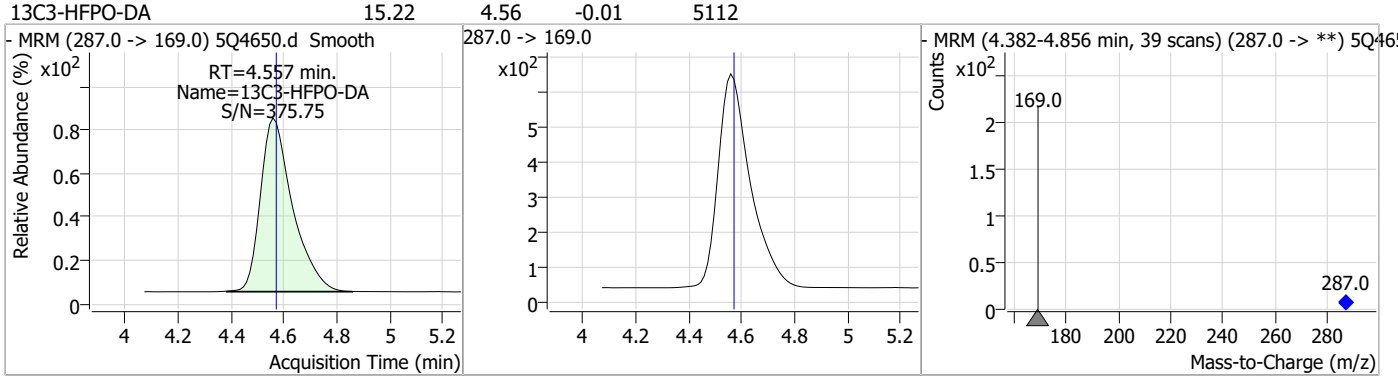




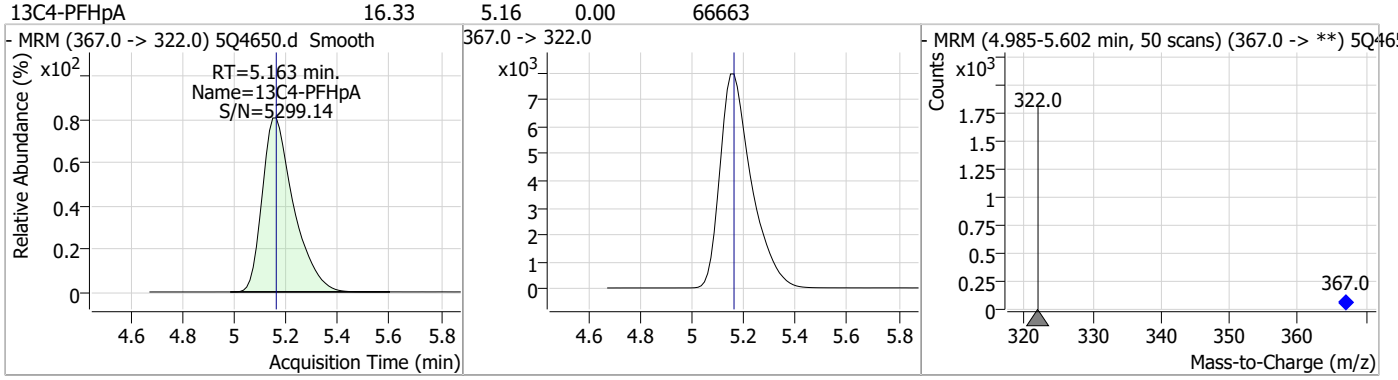


Perfluorinated Compounds by LC/MS/MS

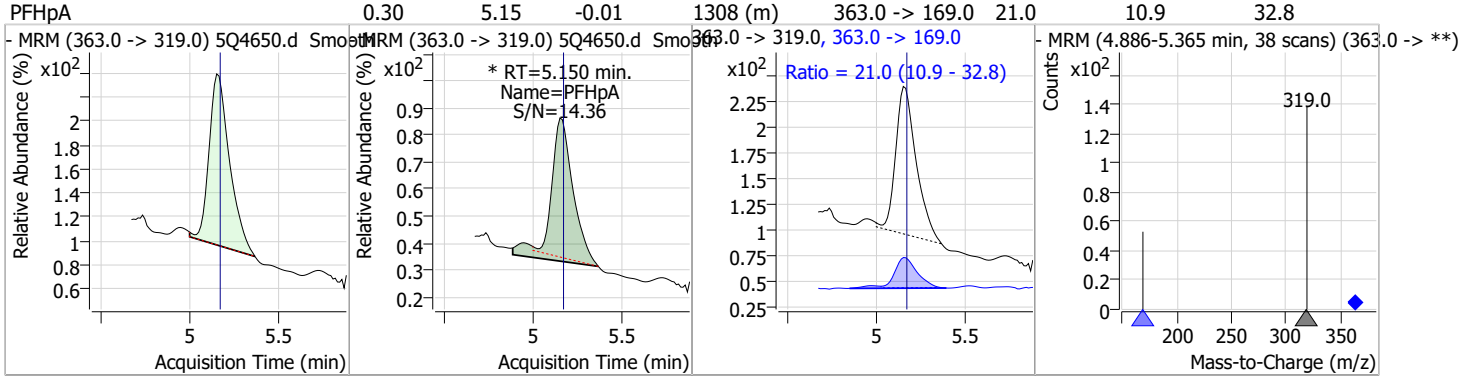
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.22	4.56	-0.01	5112				



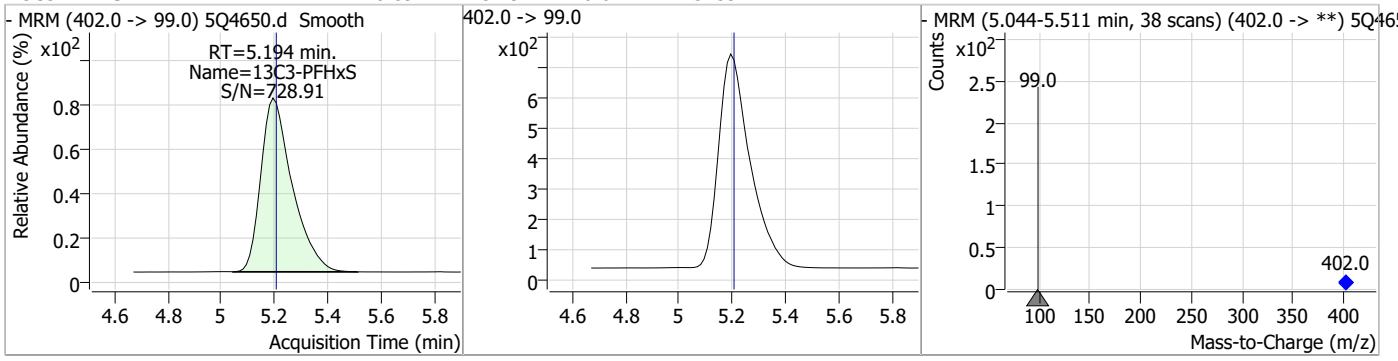
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.33	5.16	0.00	66663				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.30	5.15	-0.01	1308 (m)	363.0 -> 169.0	21.0	10.9	32.8

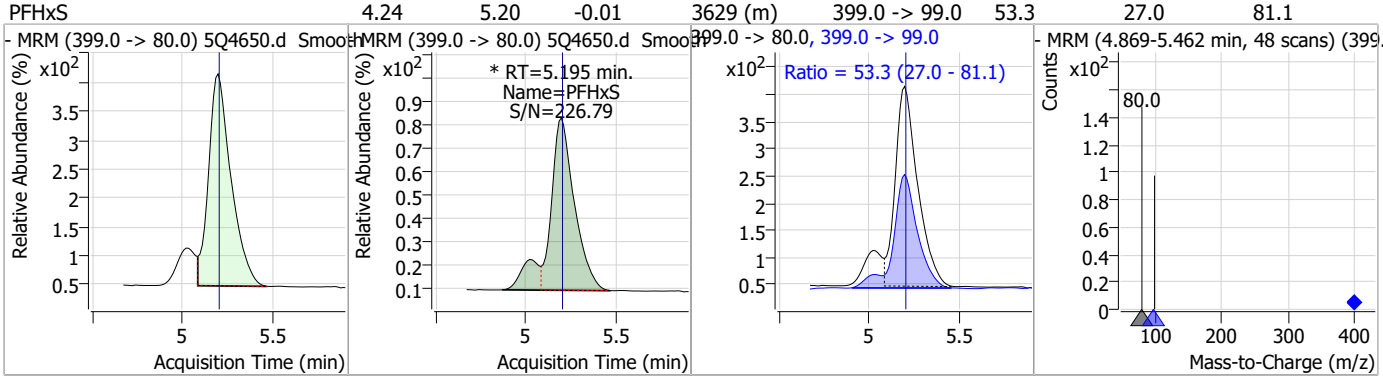


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.89	5.19	-0.01	5759				

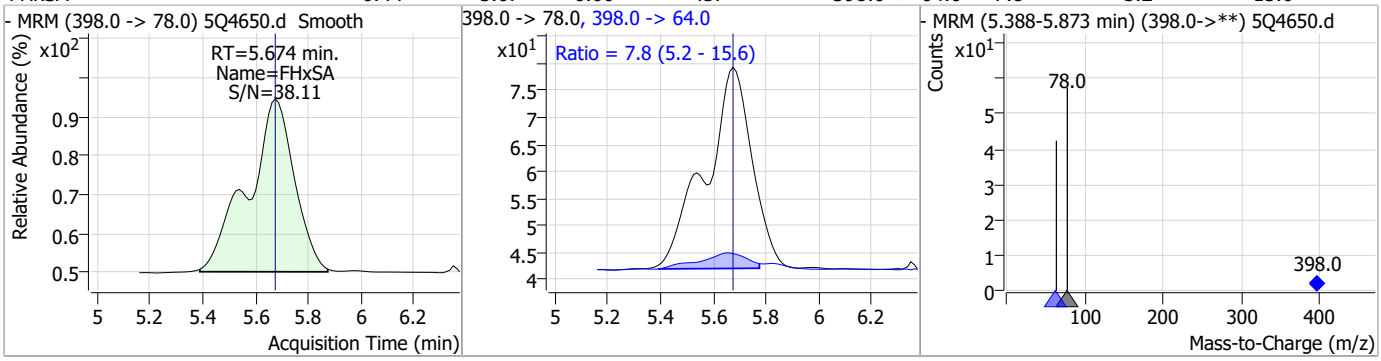


Perfluorinated Compounds by LC/MS/MS

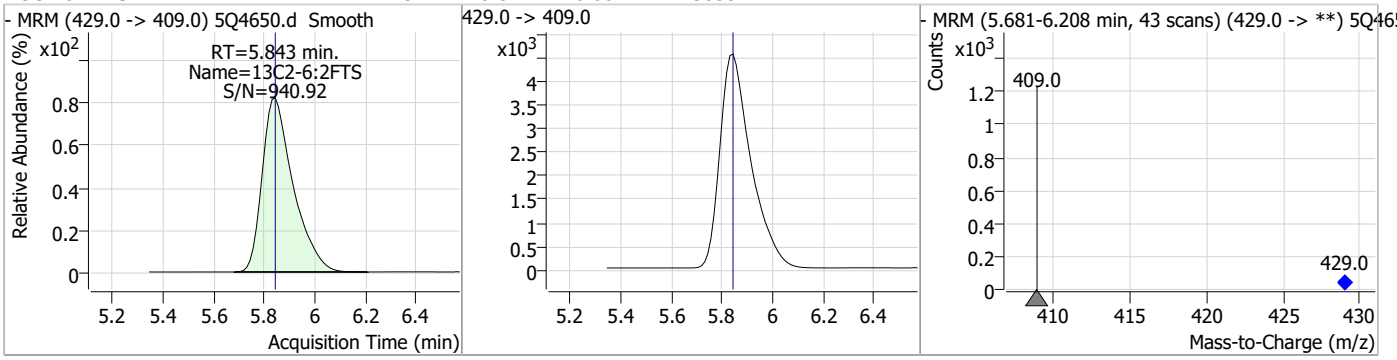
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.24	5.20	-0.01	3629 (m)	399.0 -> 99.0	53.3	27.0	81.1



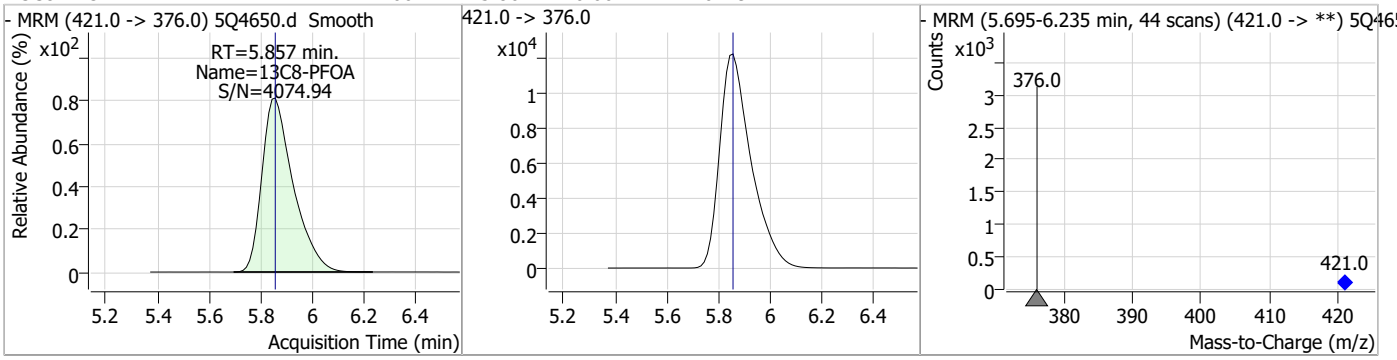
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.44	5.67	0.00	457	398.0 -> 64.0	7.8	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.23	5.84	0.00	38532				

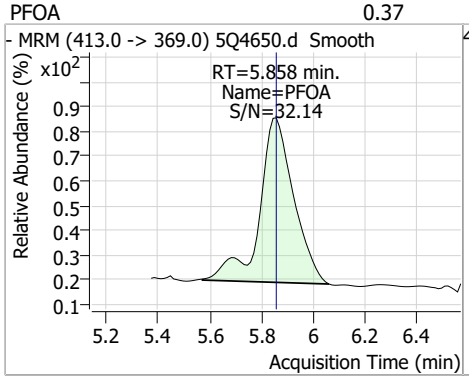


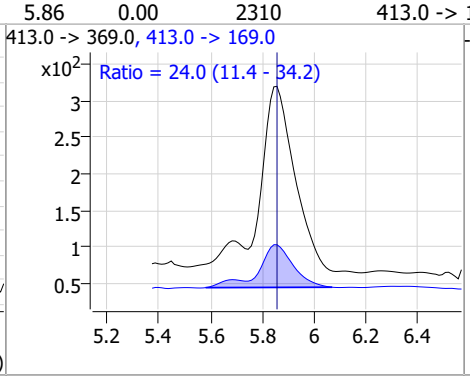
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.00	5.86	0.00	102792				

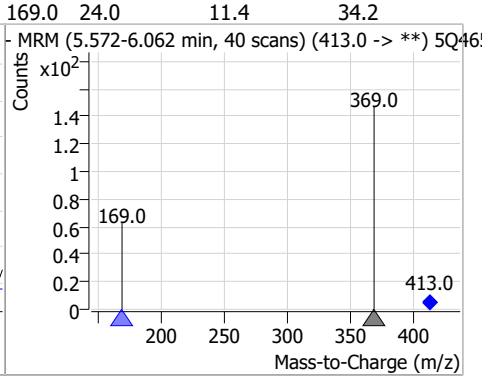


Perfluorinated Compounds by LC/MS/MS

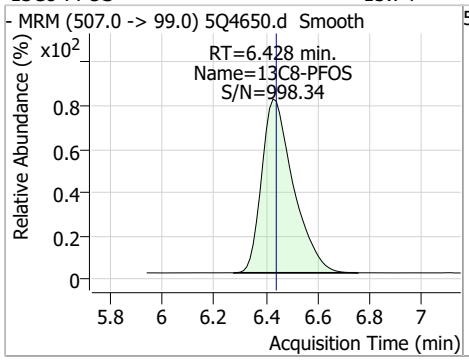
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.37	5.86	0.00	2310	413.0 -> 169.0	24.0	11.4	34.2

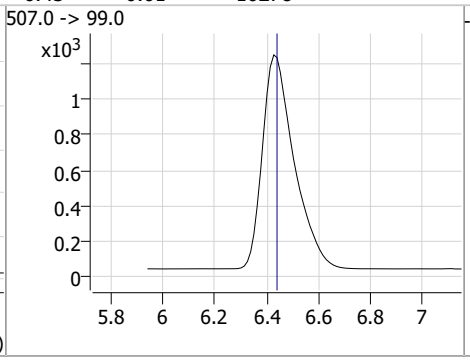


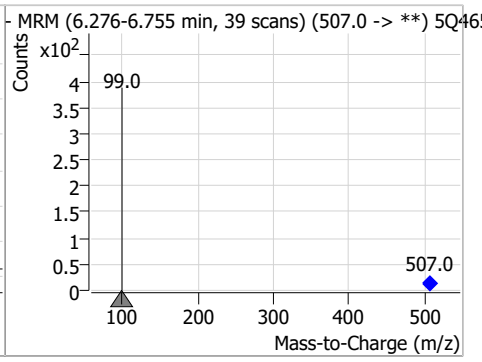




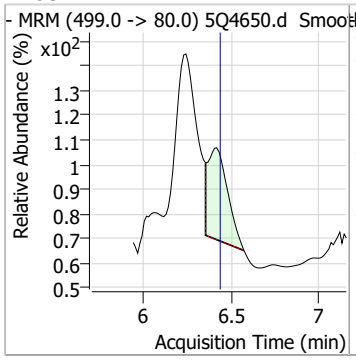
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.74	6.43	-0.01	10278				

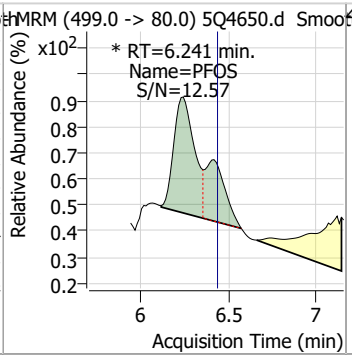


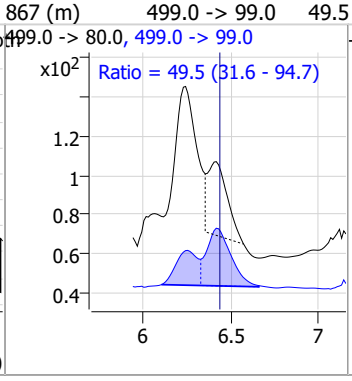


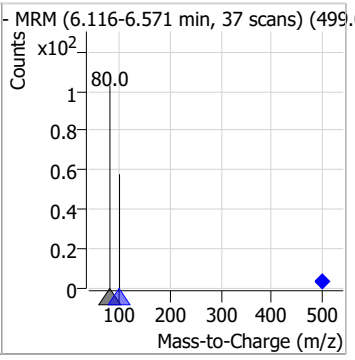


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.96	6.24	-0.20	867 (m)	499.0 -> 99.0	49.5	31.6	94.7

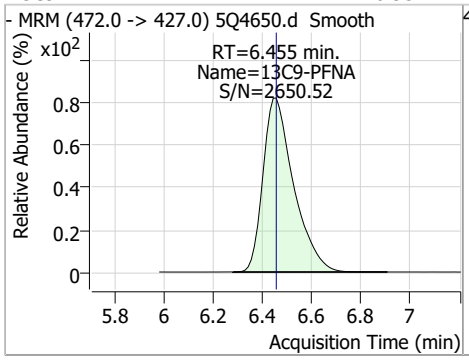


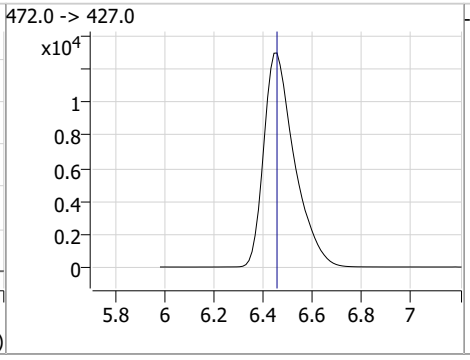


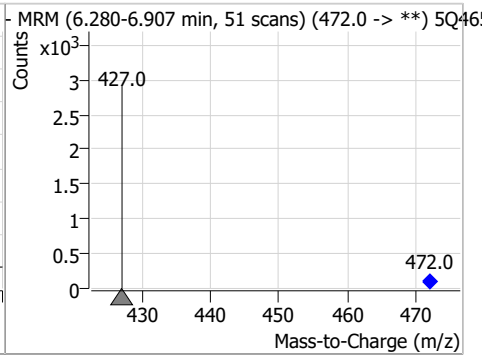




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.95	6.46	0.00	111374				

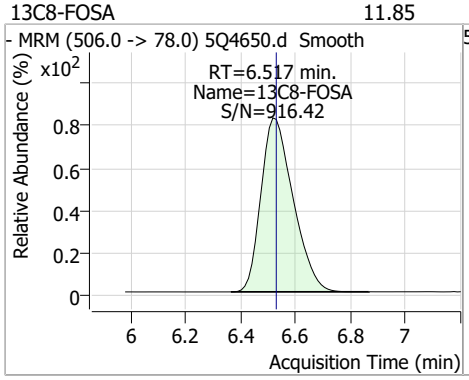


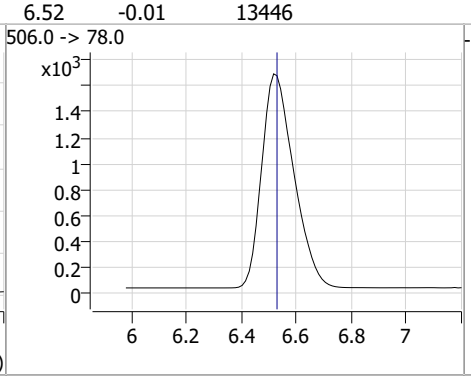


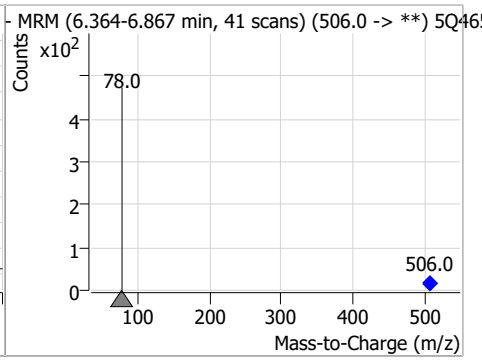


Perfluorinated Compounds by LC/MS/MS

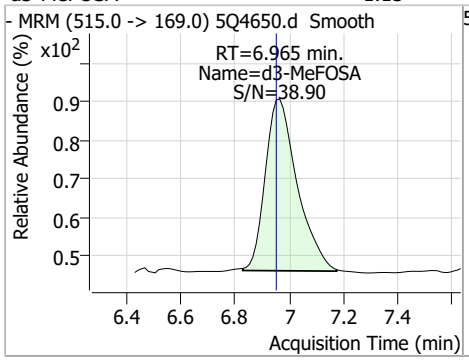
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.85	6.52	-0.01	13446				

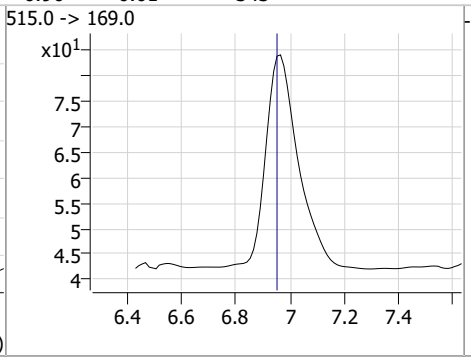


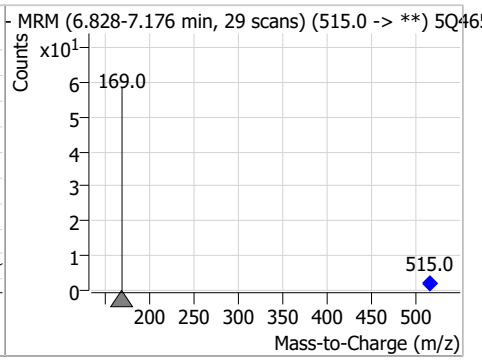




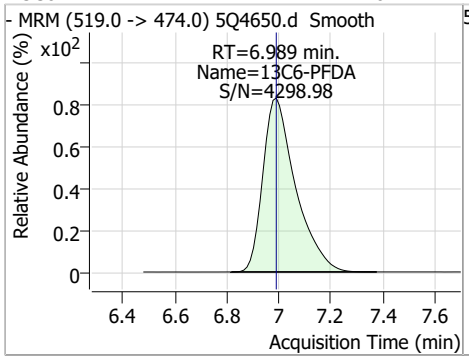
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.13	6.96	0.01	343				

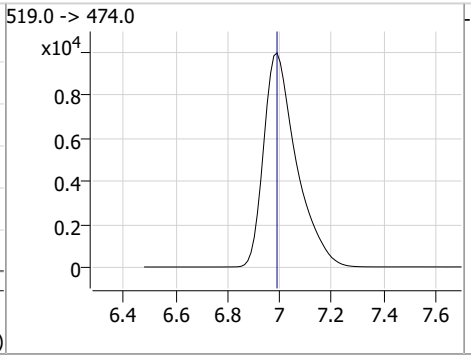


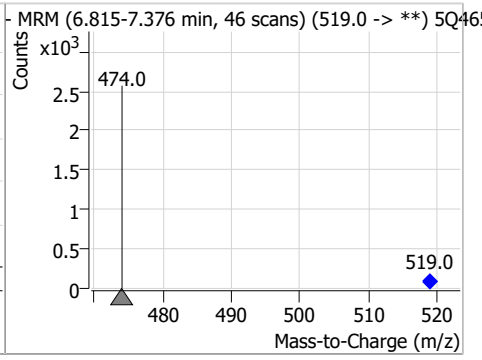




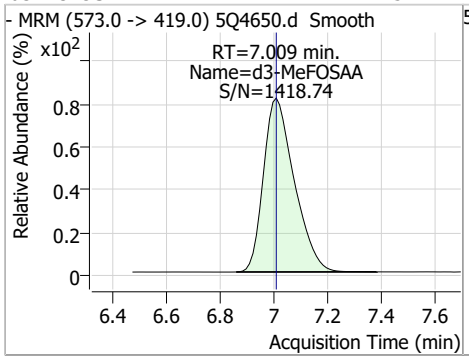
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.12	6.99	0.00	86795				

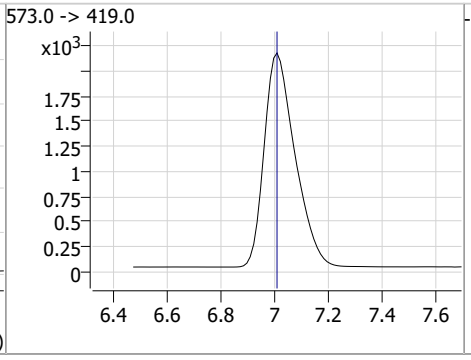


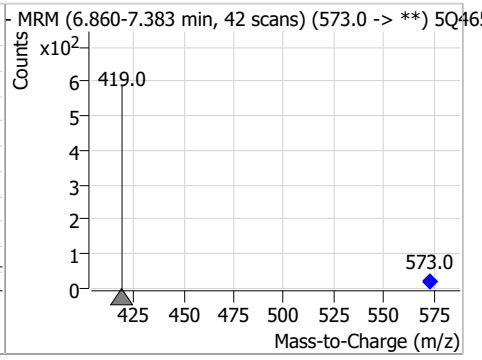




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.51	7.01	0.00	17022				

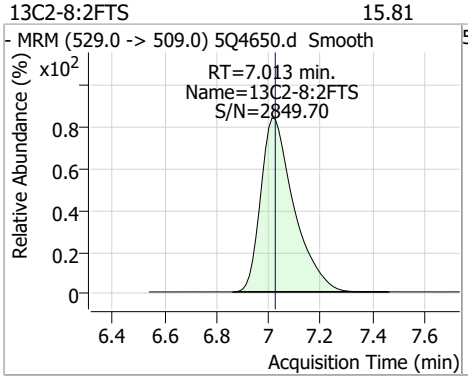


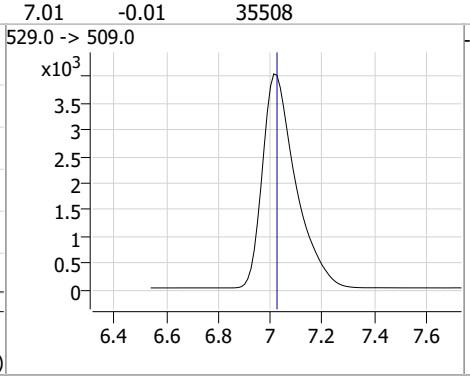


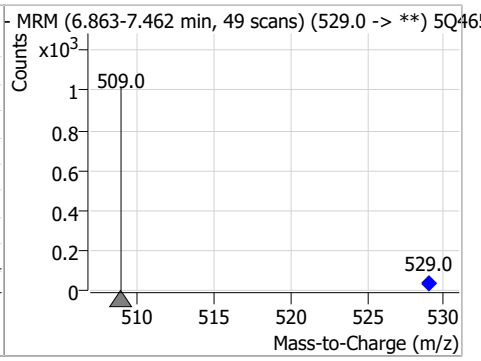


Perfluorinated Compounds by LC/MS/MS

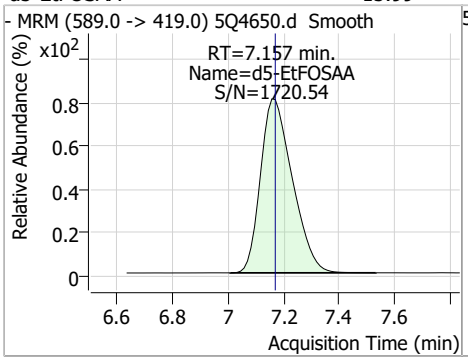
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.81	7.01	-0.01	35508				

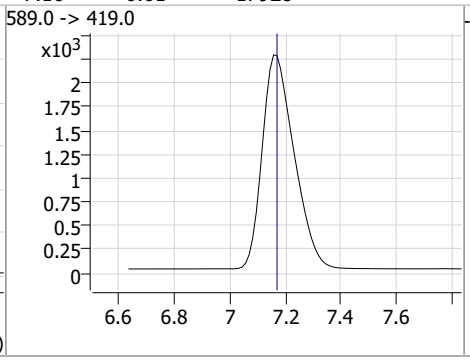


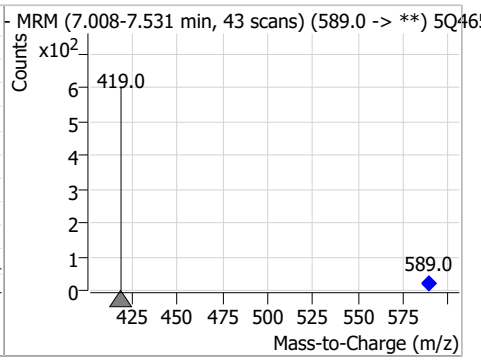




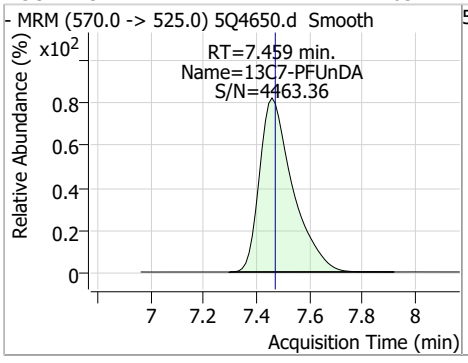
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.99	7.16	-0.01	17928				

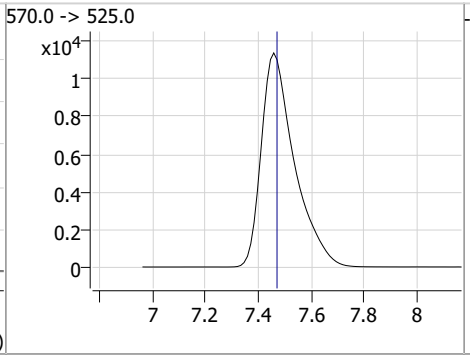


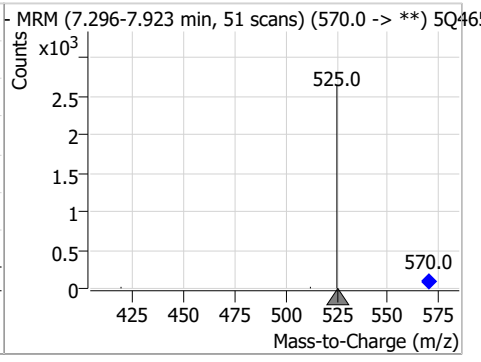




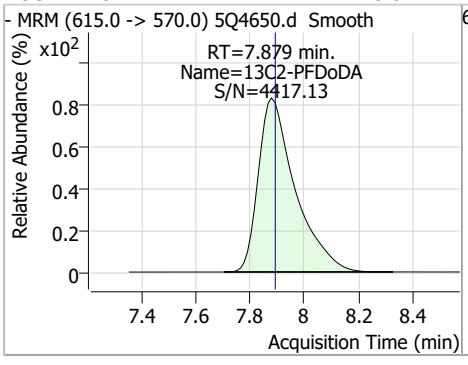
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.03	7.46	-0.01	98785				

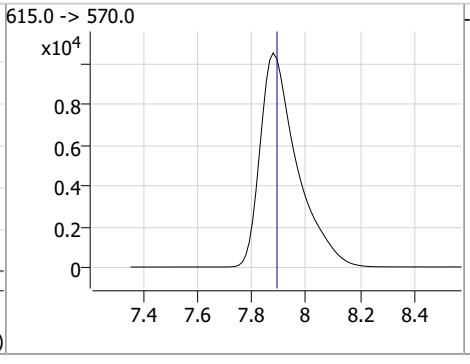


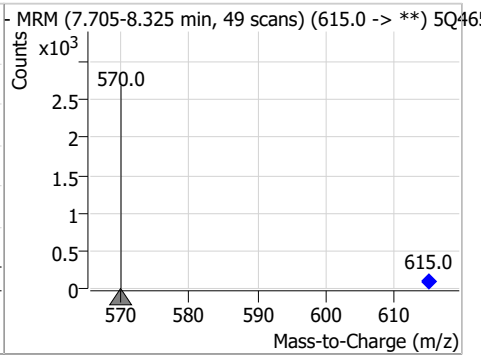




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.54	7.88	-0.01	98161				

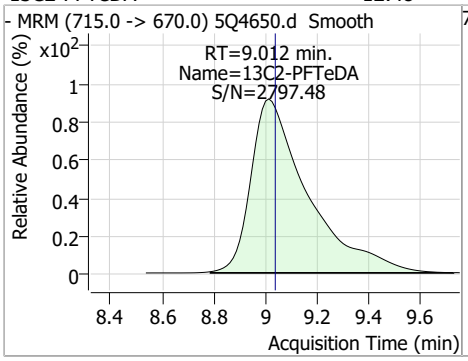


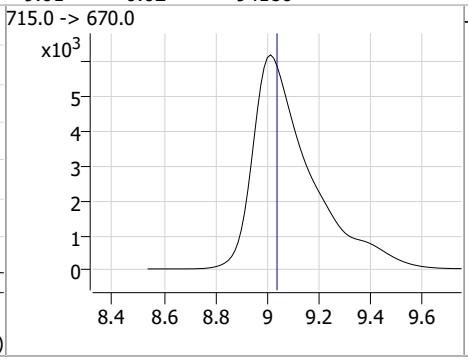


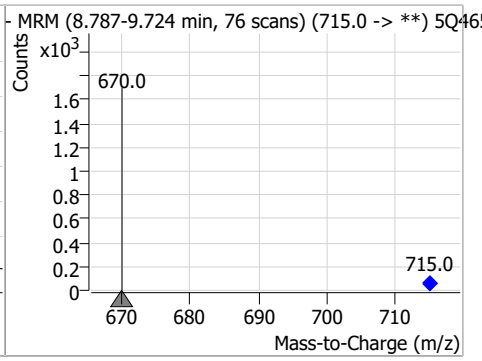


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.48	9.01	-0.02	94180				







Manual Integration Approval Summary

Sample Number: FA98286-15
Lab FileID: 5Q4650.D
Injection Time: 09/15/22 10:28
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.11	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.15	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4651.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:43:20 AM
Sample Name : fa98286-16
Vial : P1-F9
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

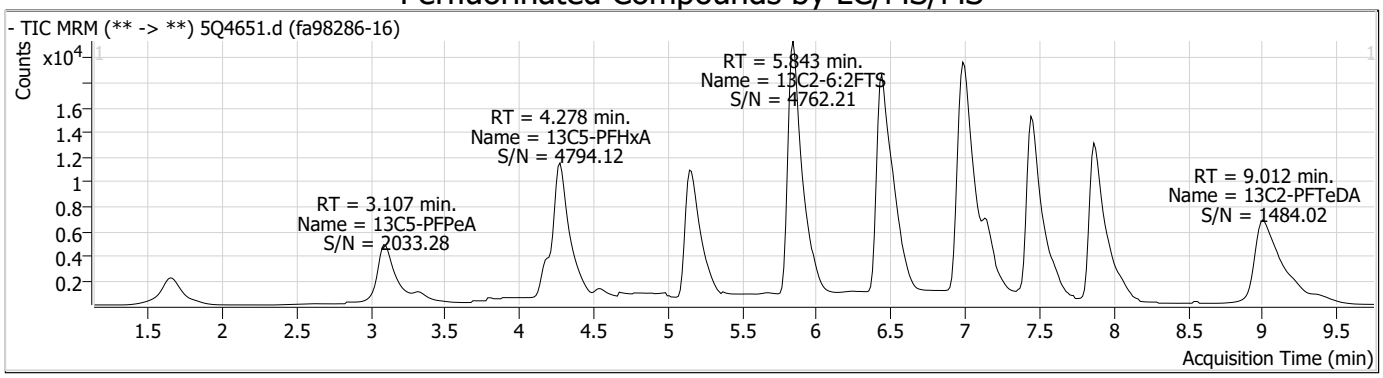
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.650	217.0 -> 172.0	23136	20.00	µg/L	-0.050
M5-PFPeA	3.107	268.0 -> 223.0	38225	20.00	µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	66547	20.00	µg/L	-0.025
M4-PFHpA	5.163	367.0 -> 322.0	65662	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	100678	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	109887	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	88984	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	100244	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	98556	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	85394	20.00	µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	15203	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4829	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5614	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	10769	20.00	µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	21865	20.00	µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	37648	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	36506	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17193	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4907	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	663	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	18399	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	21865	14.89	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.4%		
13C2-6:2FTS	5.843	429.0 -> 409.0	37648	16.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.2%		
13C2-8:2FTS	7.013	529.0 -> 509.0	36506	16.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%		
13C2-PFDoDA	7.879	615.0 -> 570.0	98556	13.60	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%		
13C2-PFTeDA	9.012	715.0 -> 670.0	85394	11.32	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.6%		
13C3-PFBS	3.337	302.0 -> 99.0	4829	14.82	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	5614	16.46	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C4-PFBA	1.650	217.0 -> 172.0	23136	12.94	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	65662	16.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C5-PFHxA	4.278	318.0 -> 273.0	66547	15.22	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%		
13C5-PFPeA	3.107	268.0 -> 223.0	38225	13.15	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.8%		
13C6-PFDA	6.989	519.0 -> 474.0	88984	16.53	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

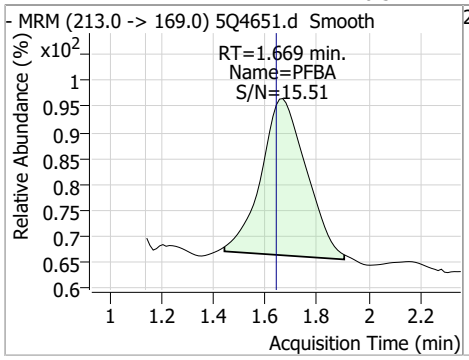
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	100244	14.24	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%			
13C8-FOSA	6.517	506.0 -> 78.0	15203	13.40	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%			
13C8-PFOA	5.857	421.0 -> 376.0	100678	16.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%			
13C8-PFOS	6.428	507.0 -> 99.0	10769	16.49	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%			
13C9-PFNA	6.455	472.0 -> 427.0	109887	16.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17193	17.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4907	14.61	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%			
d3-MeFOSA	6.952	515.0 -> 169.0	663	2.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	18399	16.41	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.434	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	279	0.51	µg/L		100
PFBS	3.342	299.0 -> 80.0	467	0.64	µg/L	m	97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	1278	0.30	µg/L		97
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	4.279	313.0 -> 269.0	3357	1.03	µg/L		99
PFHxS	5.195	399.0 -> 80.0	3610	4.33	µg/L	m	99
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	2337	0.38	µg/L	m	93
PFOS	6.241	499.0 -> 80.0	866	0.91	µg/L	m	73
PFPeA	3.109	263.0 -> 219.0	1211	0.64	µg/L		100
PFPeS	4.398	349.0 -> 80.0	444	0.79	µg/L		94
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.343	298.0 -> 78.0	573	0.52	µg/L		93
FHxSA	5.674	398.0 -> 78.0	441	0.43	µg/L		98

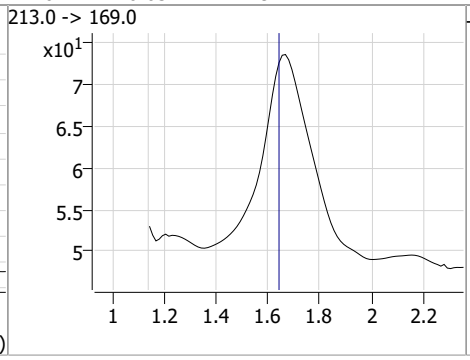
 # = Qualifier out of range, m = manually integrated, + = Area summed

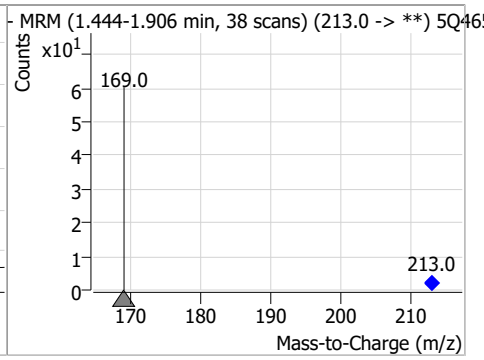
Perfluorinated Compounds by LC/MS/MS



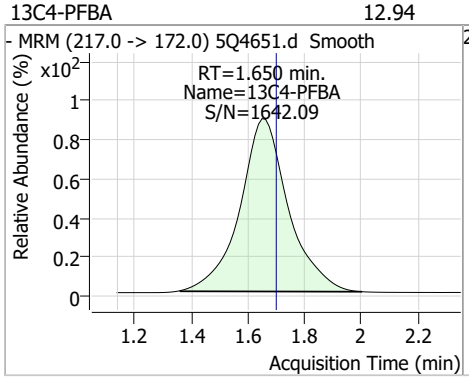
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.51	1.67	-0.03	279				

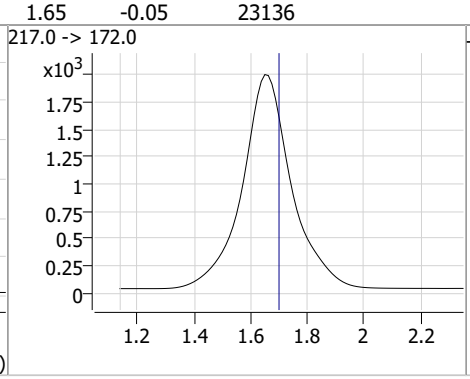


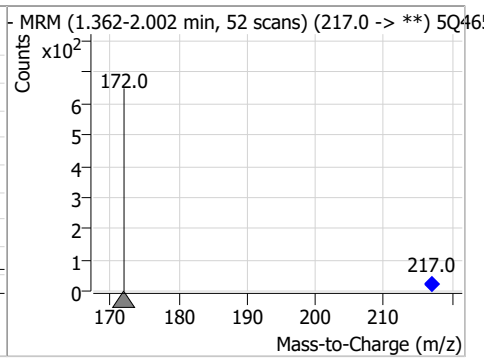




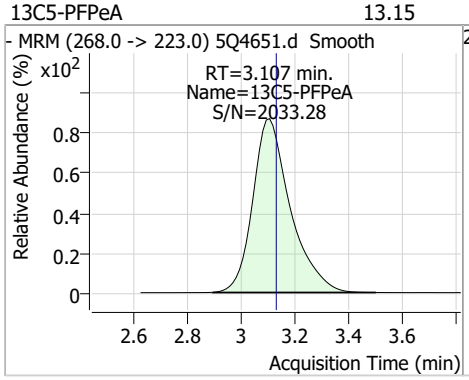
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.94	1.65	-0.05	23136				

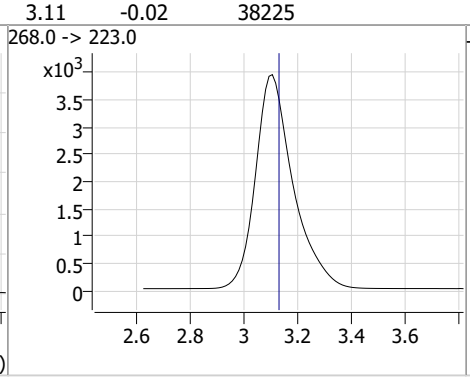


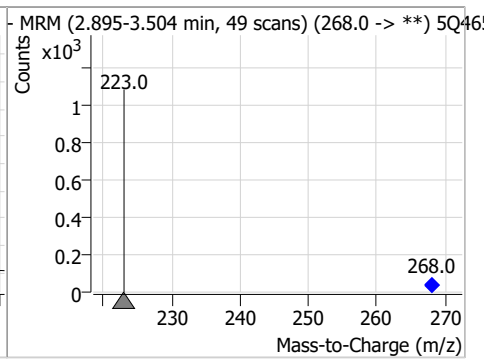




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.15	3.11	-0.02	38225				

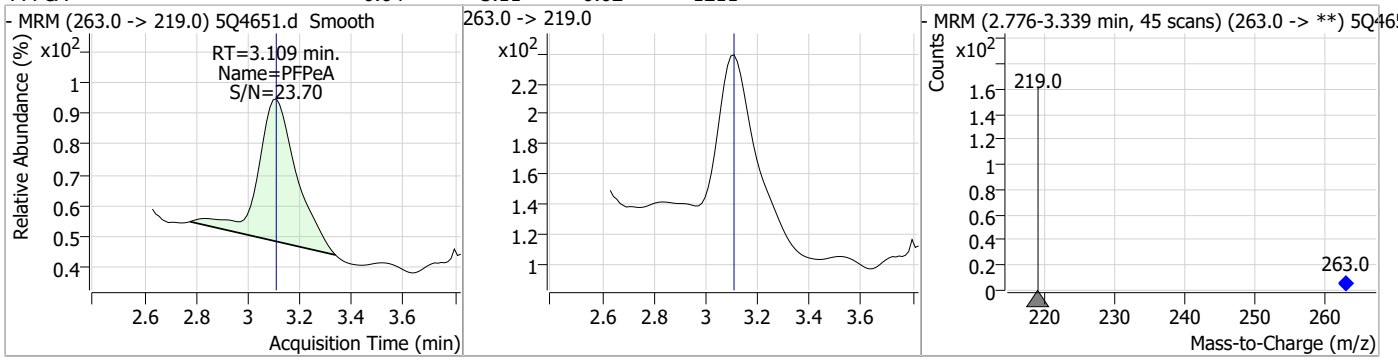




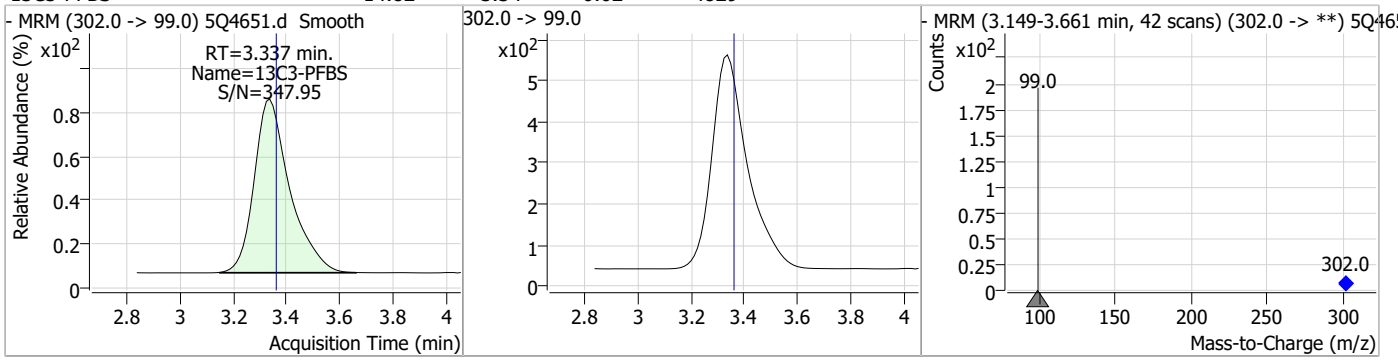


Perfluorinated Compounds by LC/MS/MS

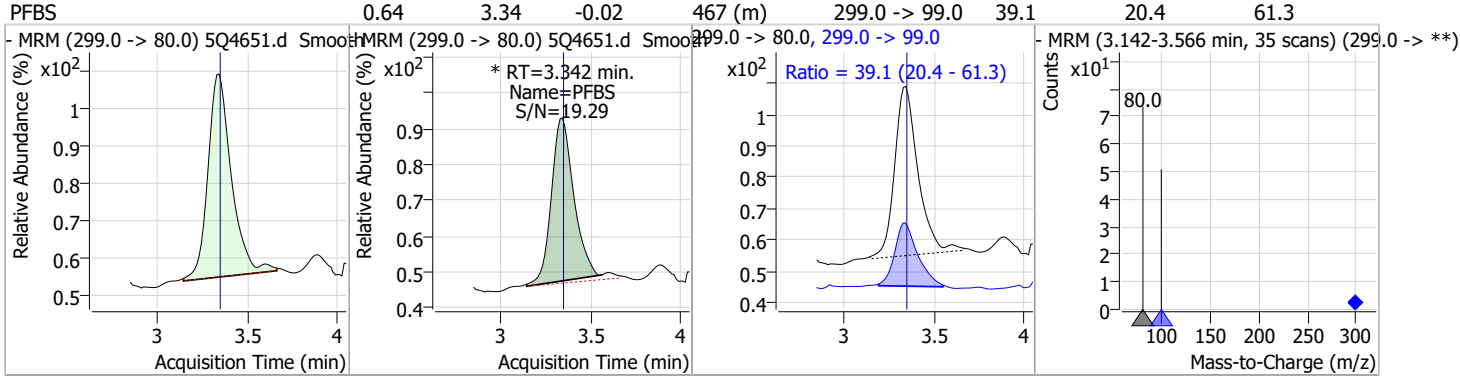
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.64	3.11	-0.02	1211				



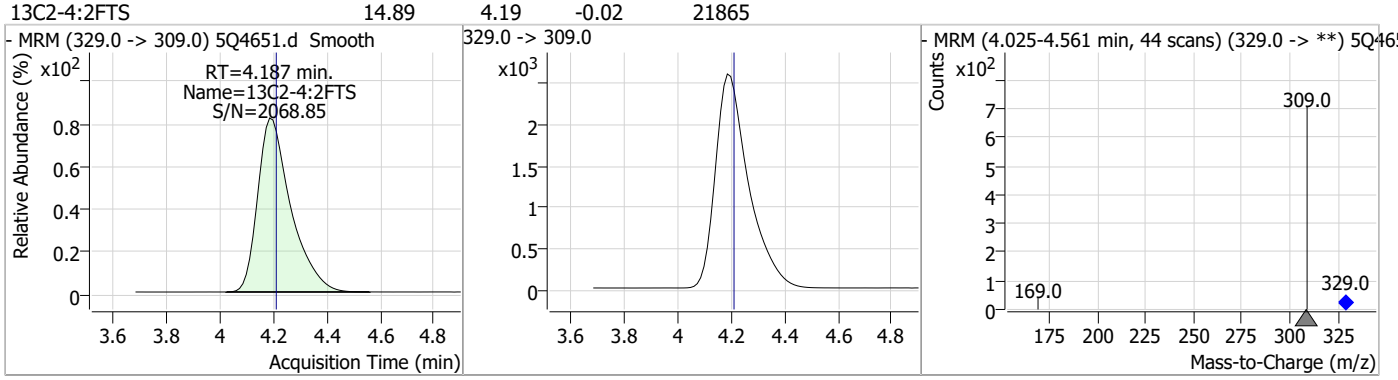
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.82	3.34	-0.02	4829				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.64	3.34	-0.02	467 (m)	299.0 -> 99.0	39.1	20.4	61.3

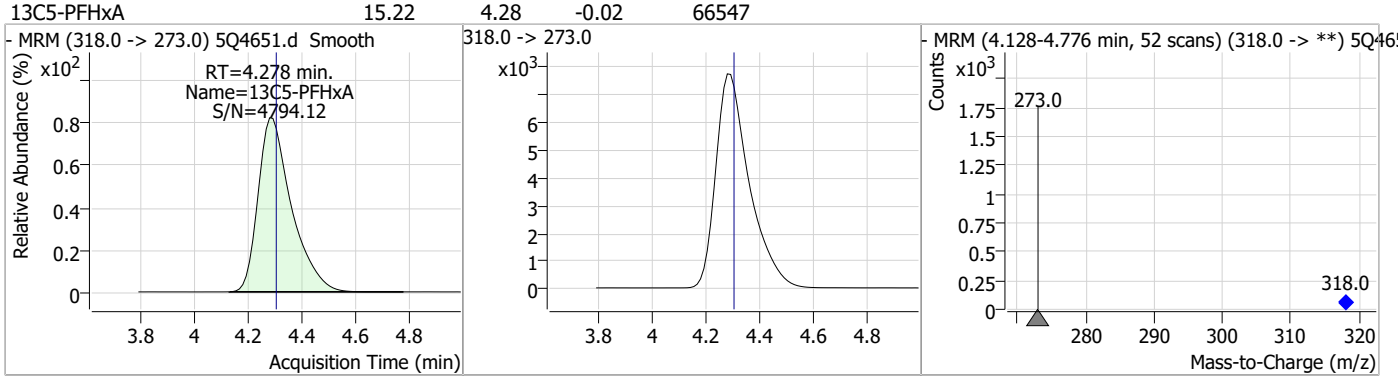


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.89	4.19	-0.02	21865				

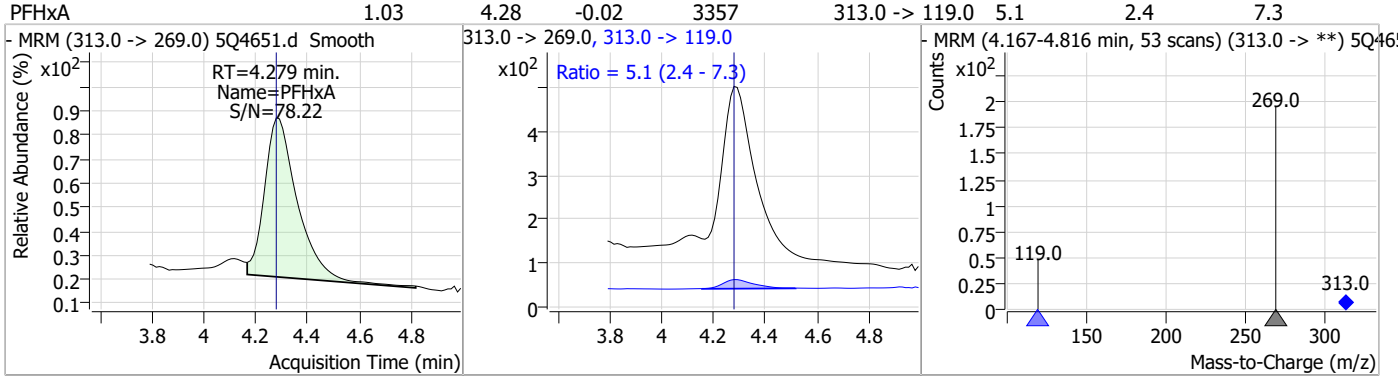


Perfluorinated Compounds by LC/MS/MS

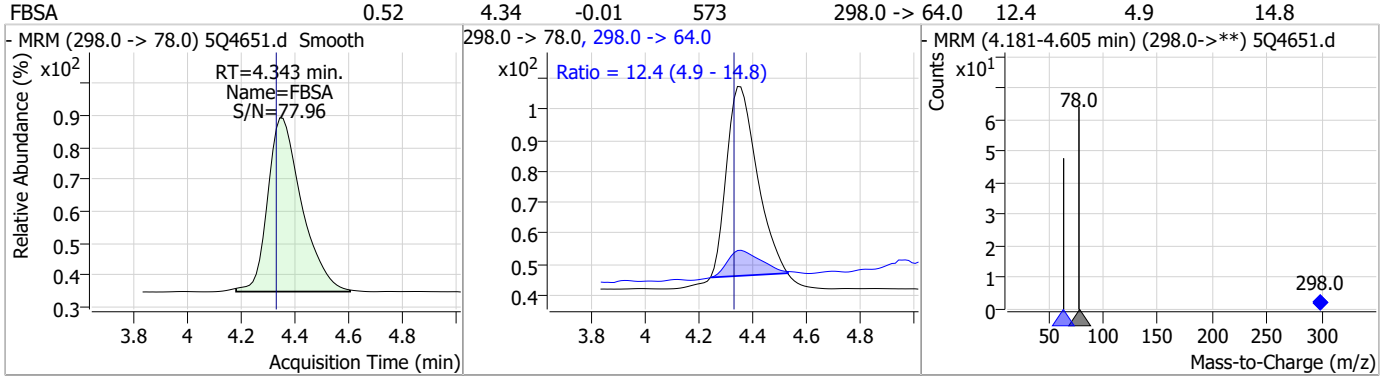
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.22	4.28	-0.02	66547				



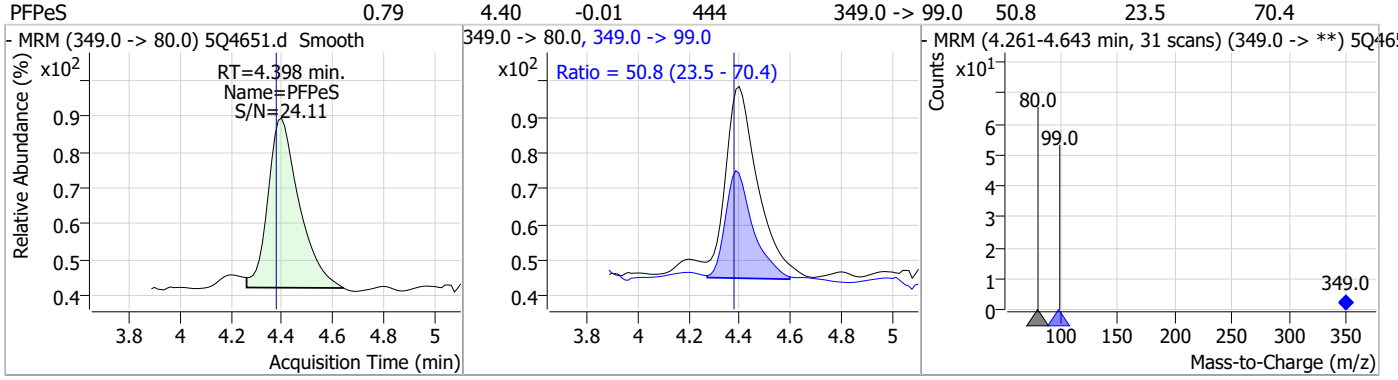
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.03	4.28	-0.02	3357	313.0 -> 119.0	5.1	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.52	4.34	-0.01	573	298.0 -> 64.0	12.4	4.9	14.8

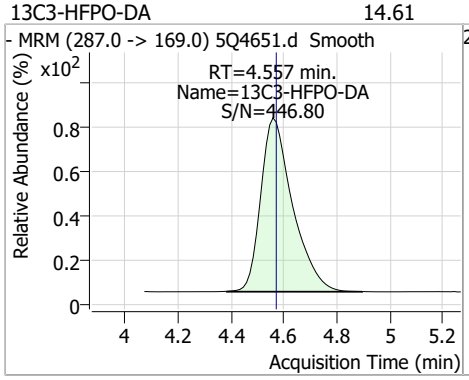


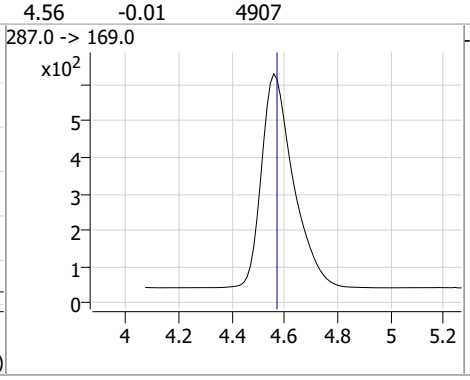
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.79	4.40	-0.01	444	349.0 -> 99.0	50.8	23.5	70.4

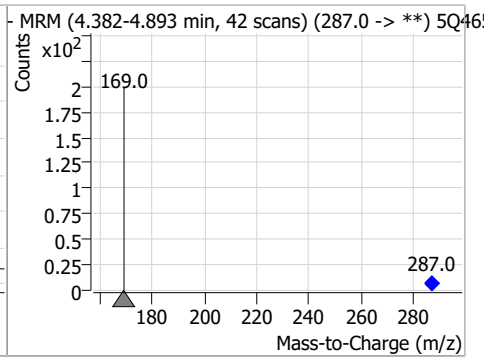


Perfluorinated Compounds by LC/MS/MS

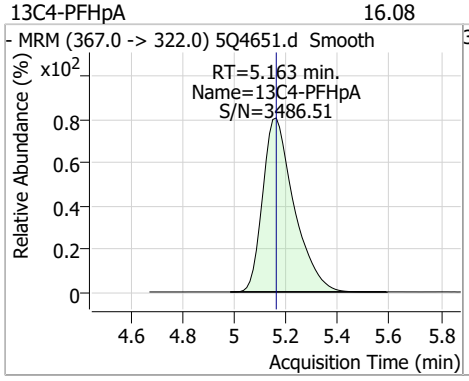
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.61	4.56	-0.01	4907				

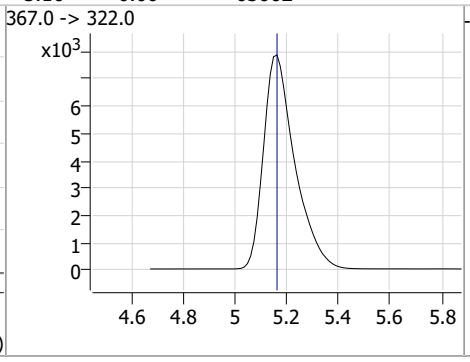


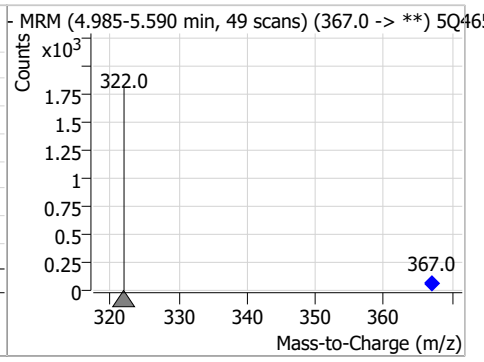




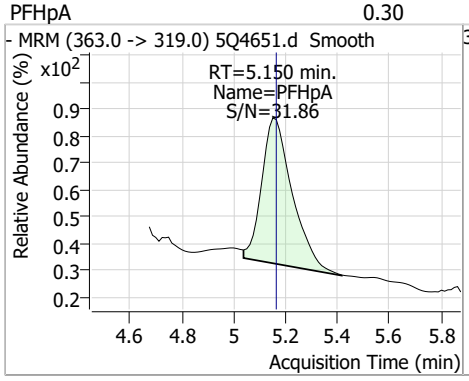
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.08	5.16	0.00	65662				

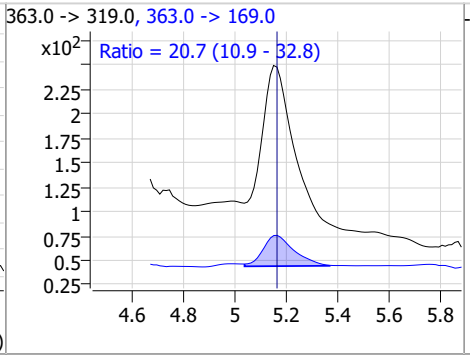


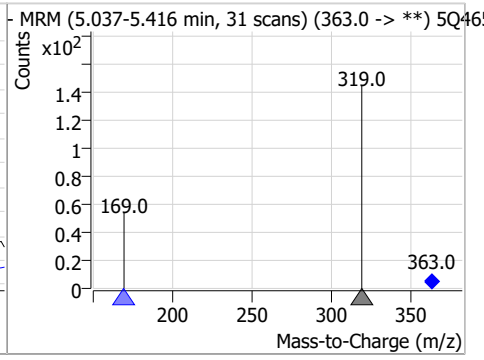




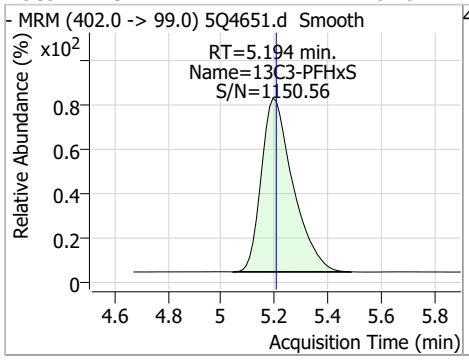
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.30	5.15	-0.01	1278	363.0 -> 169.0	20.7	10.9	32.8

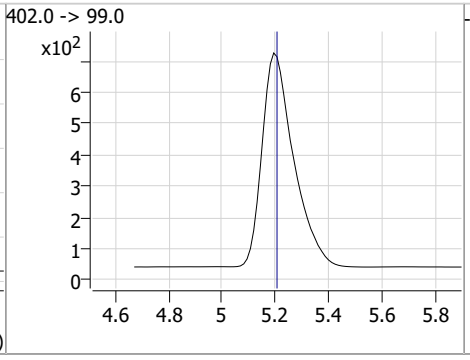


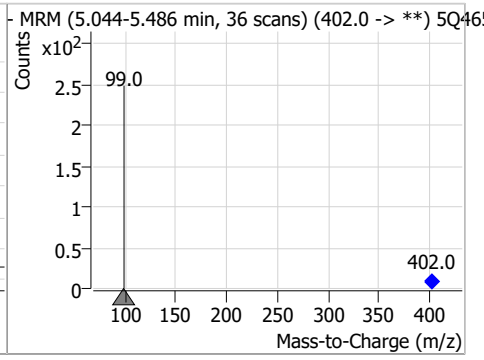




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.46	5.19	-0.01	5614				

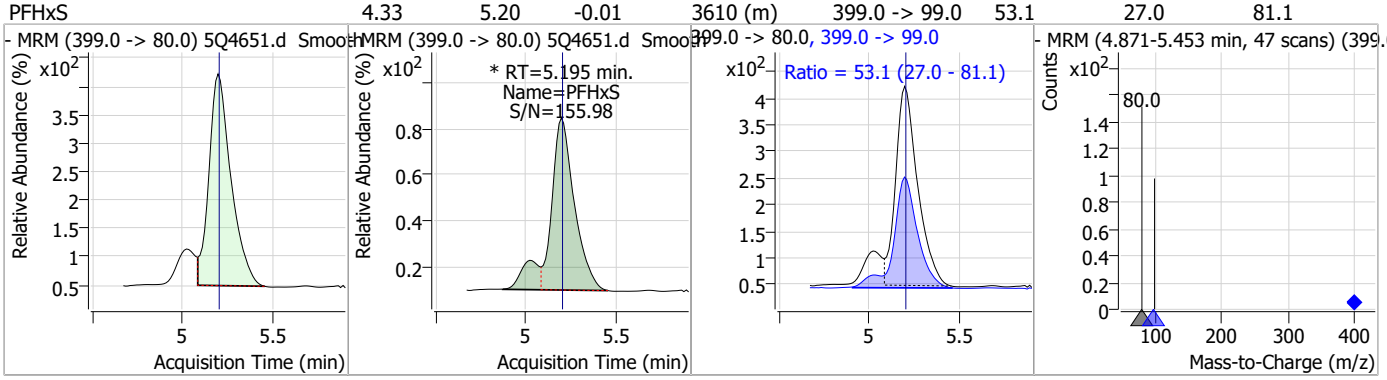




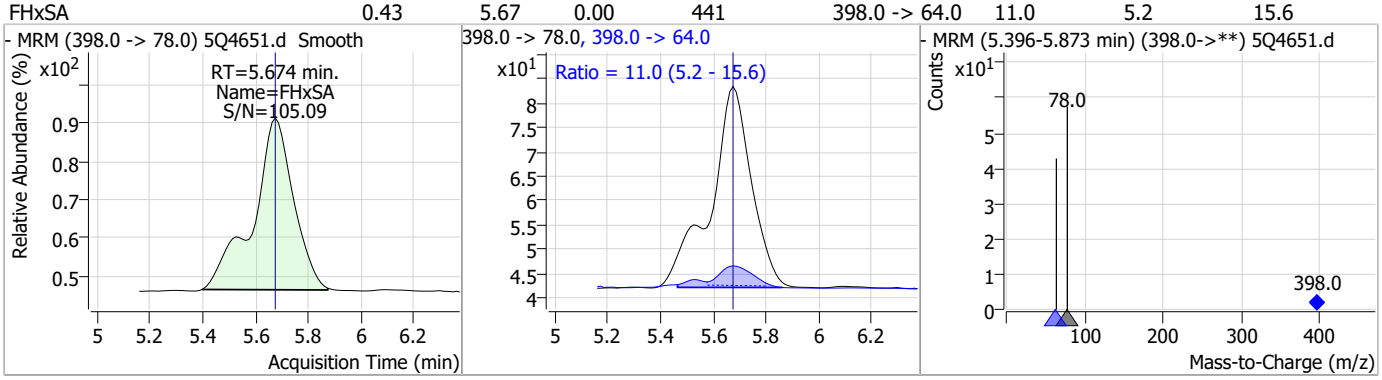


Perfluorinated Compounds by LC/MS/MS

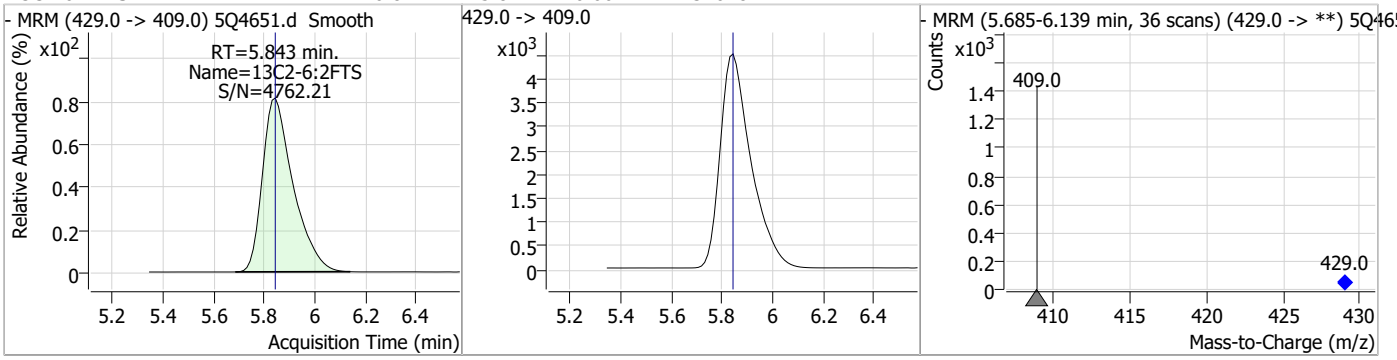
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.33	5.20	-0.01	3610 (m)	399.0 -> 99.0	53.1	27.0	81.1



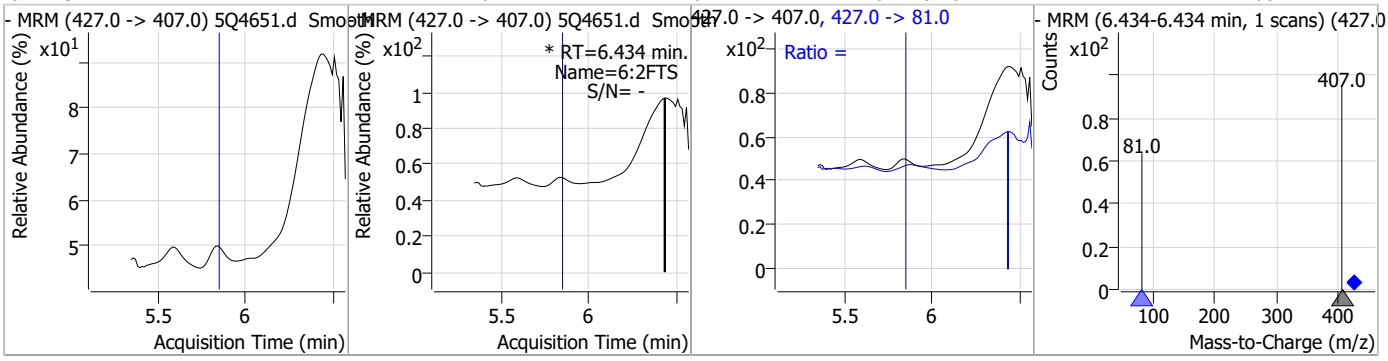
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.43	5.67	0.00	441	398.0 -> 64.0	11.0	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.84	5.84	0.00	37648				

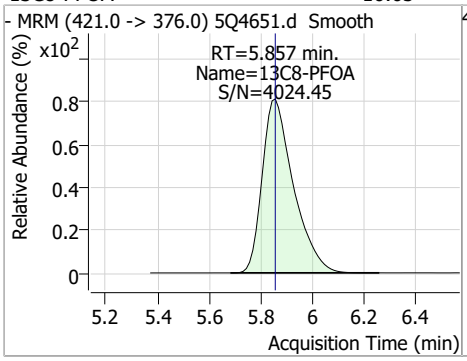


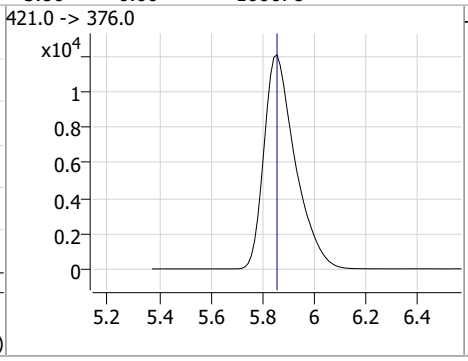
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

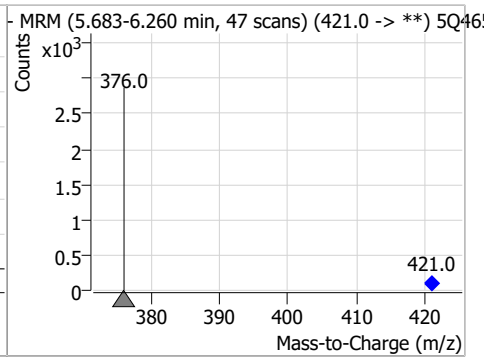


Perfluorinated Compounds by LC/MS/MS

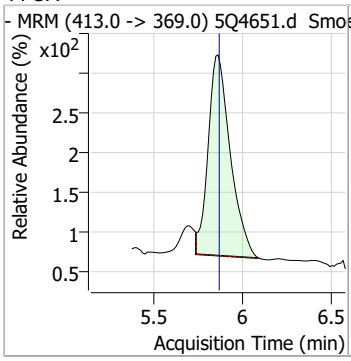
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.65	5.86	0.00	100678				

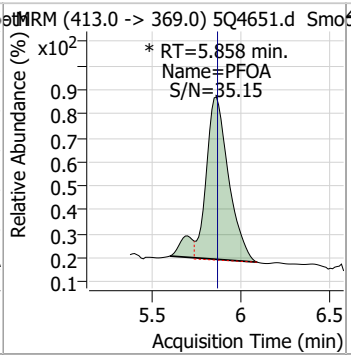


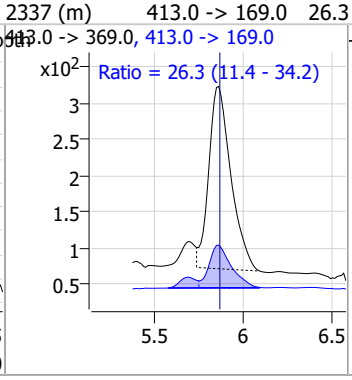


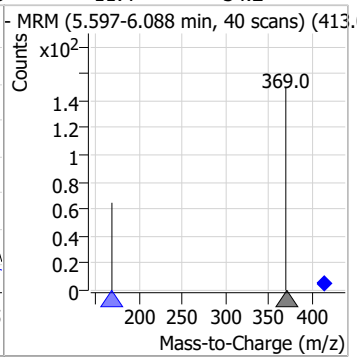


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.38	5.86	0.00	2337 (m)	413.0 -> 169.0	26.3	11.4	34.2

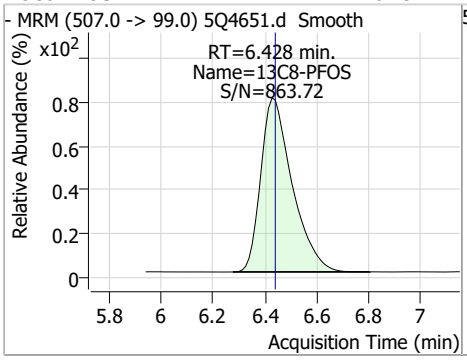


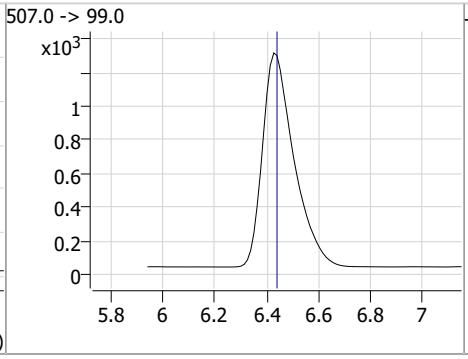


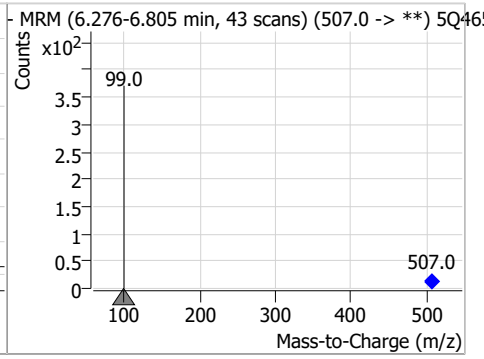




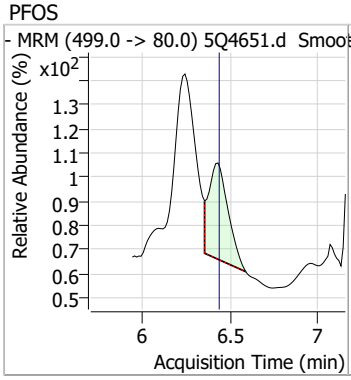
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.49	6.43	-0.01	10769				

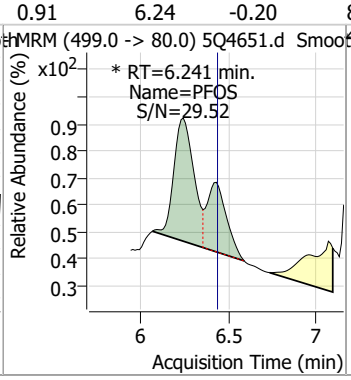


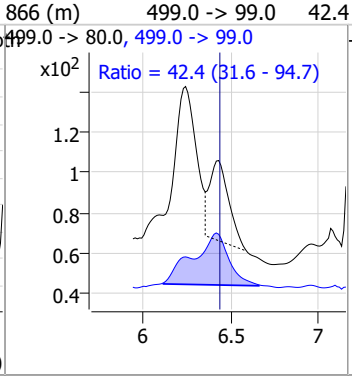


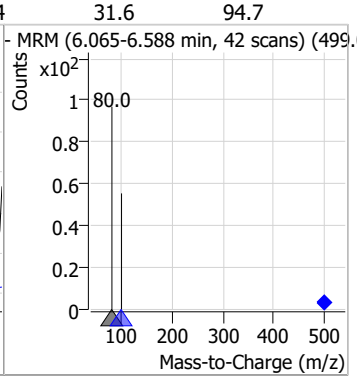


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.91	6.24	-0.20	866 (m)	499.0 -> 99.0	42.4	31.6	94.7



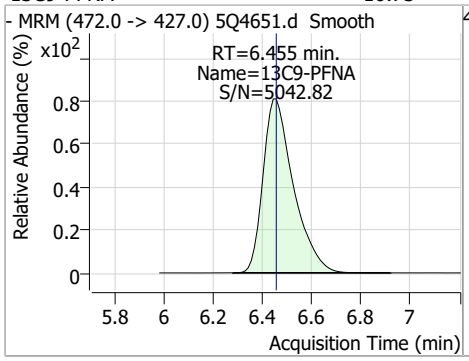


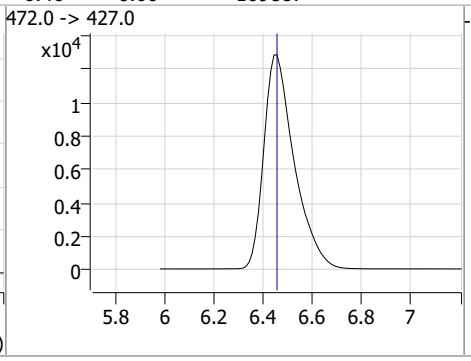


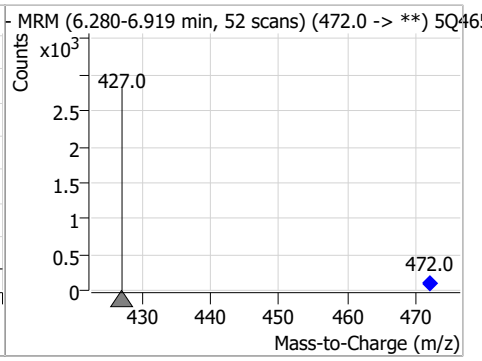


Perfluorinated Compounds by LC/MS/MS

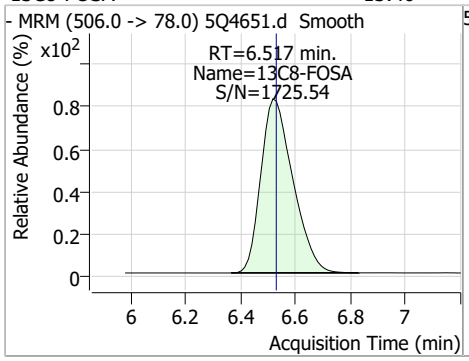
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.73	6.46	0.00	109887				

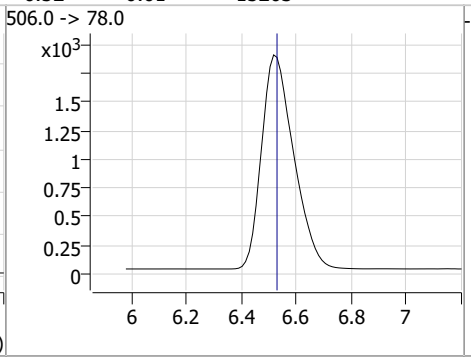


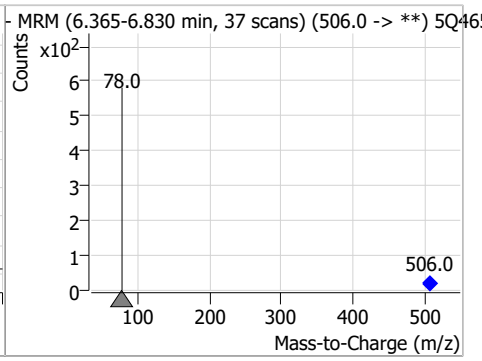




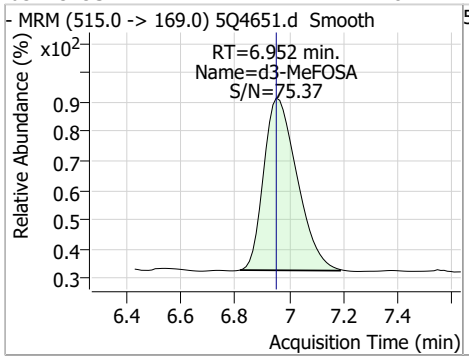
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.40	6.52	-0.01	15203				

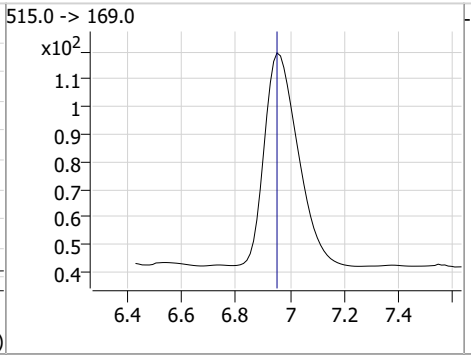


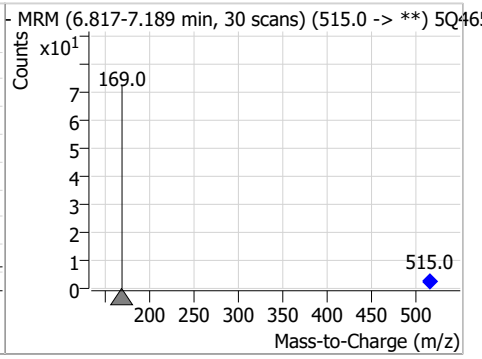




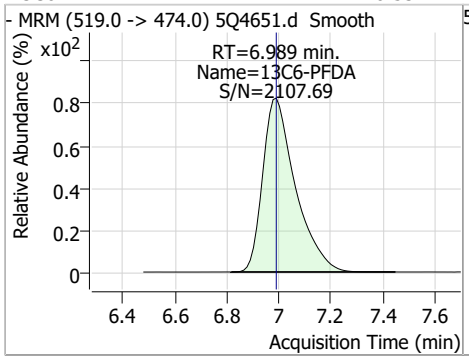
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.18	6.95	0.00	663				

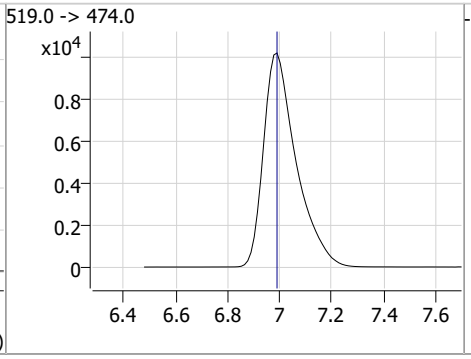


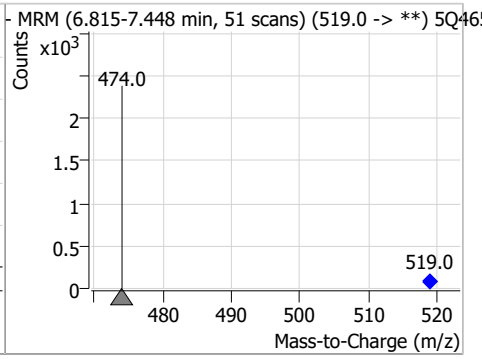




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.53	6.99	0.00	88984				

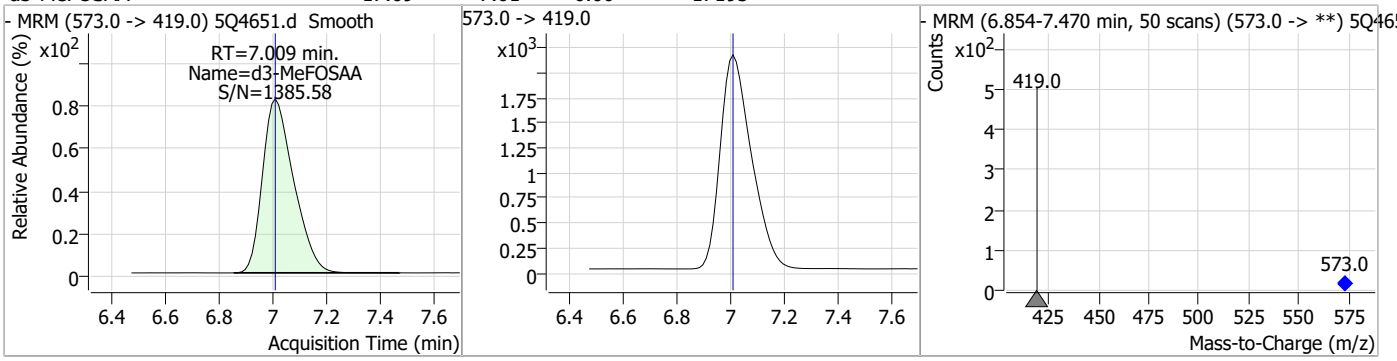




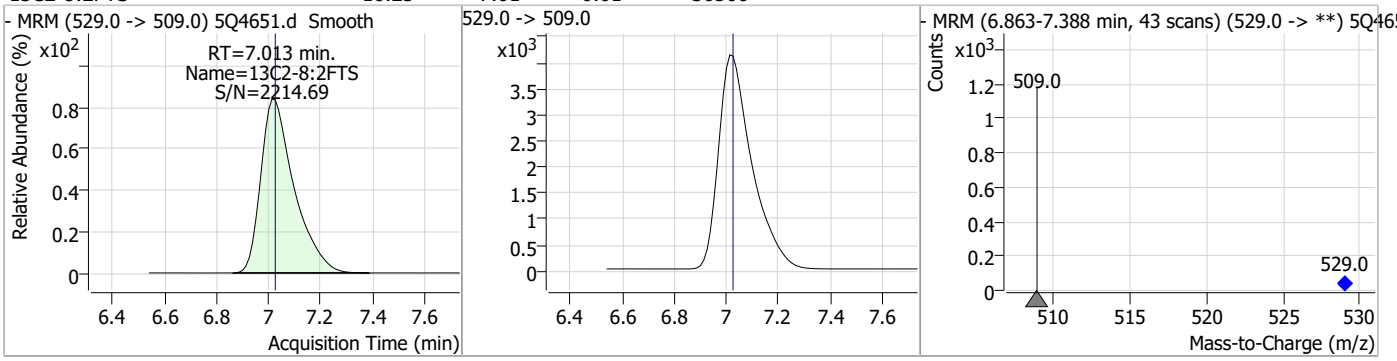


Perfluorinated Compounds by LC/MS/MS

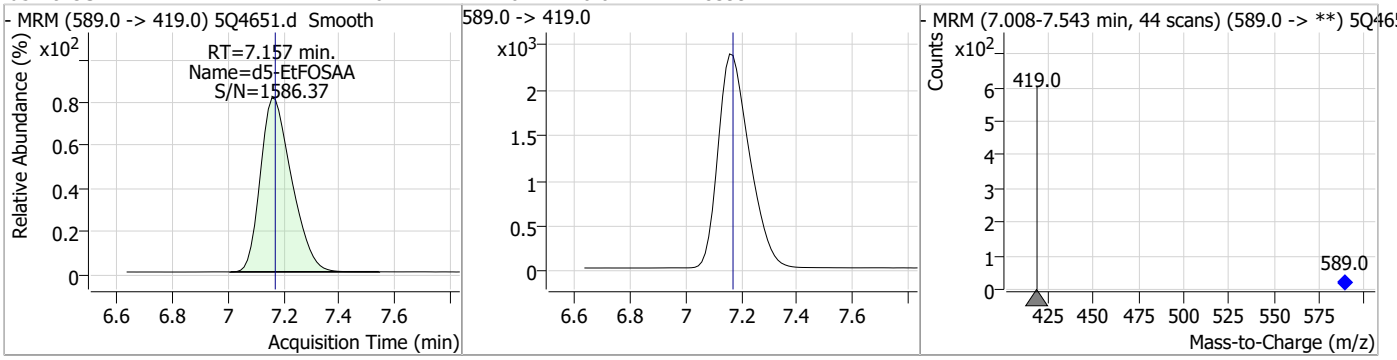
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.69	7.01	0.00	17193				



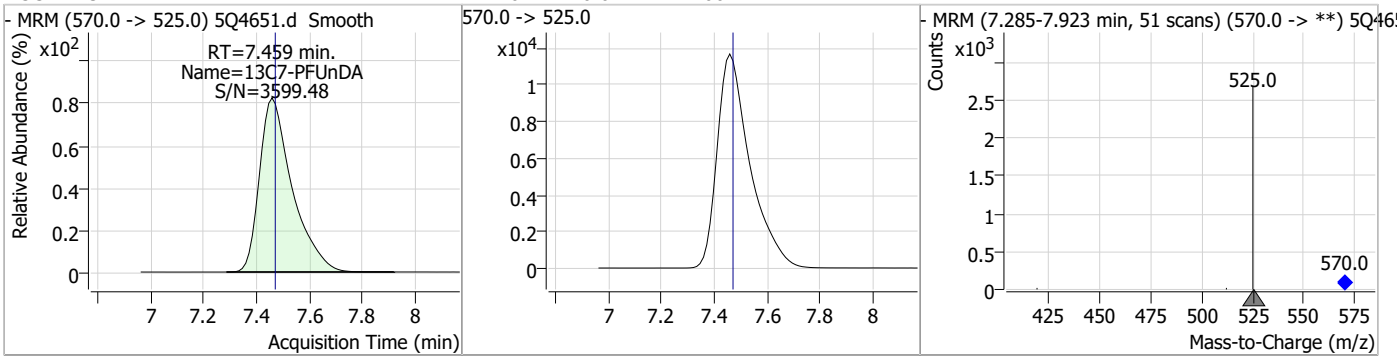
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.25	7.01	-0.01	36506				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.41	7.16	-0.01	18399				

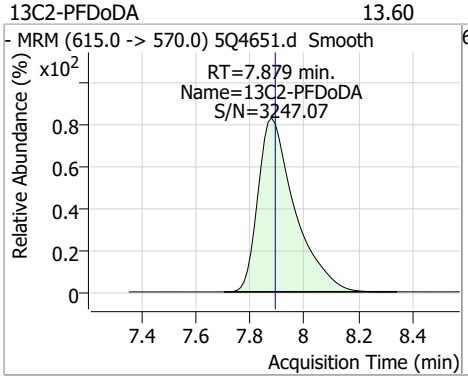


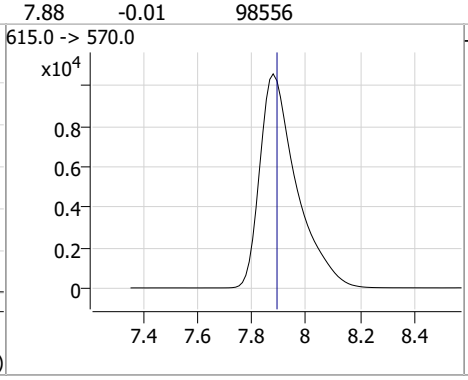
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.24	7.46	-0.01	100244				

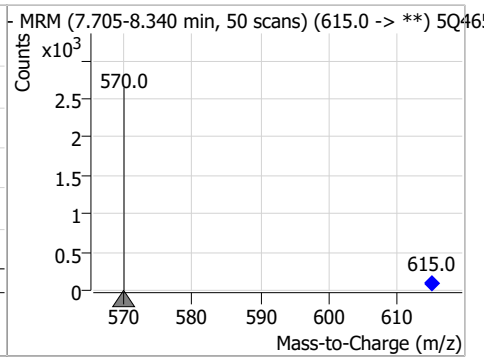


Perfluorinated Compounds by LC/MS/MS

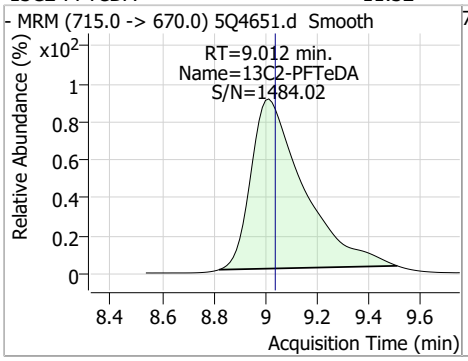
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.60	7.88	-0.01	98556				

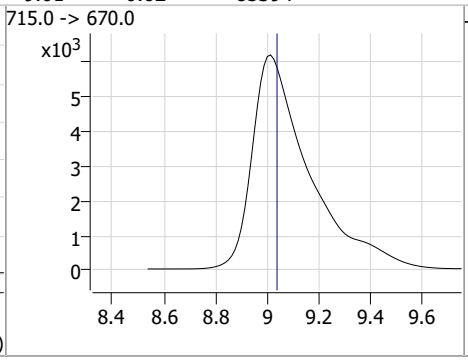


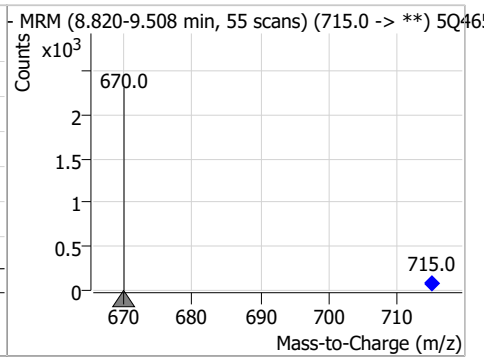




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.32	9.01	-0.02	85394				







Manual Integration Approval Summary

Sample Number: FA98286-16
Lab FileID: 5Q4651.D
Injection Time: 09/15/22 10:43
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.34	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:40

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4654.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 11:29:22 AM
Sample Name : fa98286-17
Vial : P2-A1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

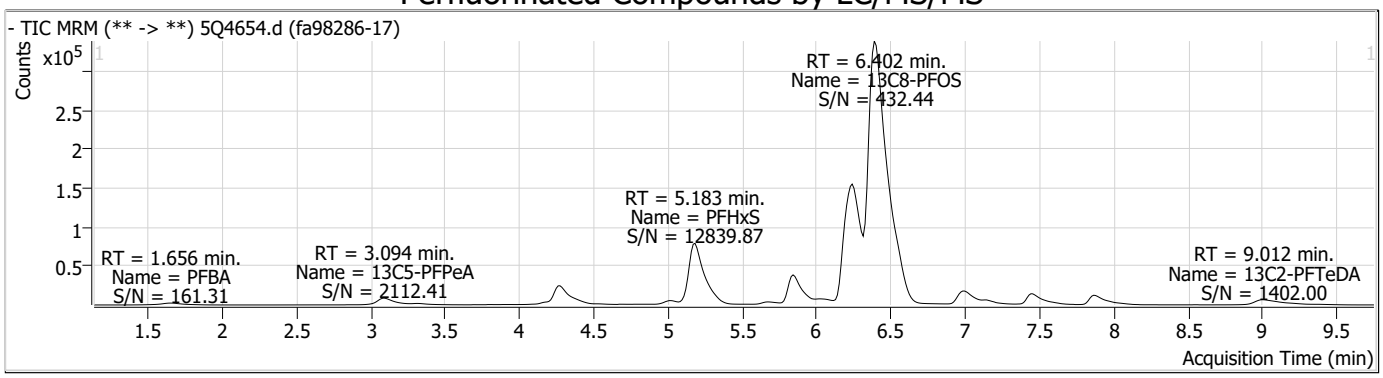
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.650	217.0 -> 172.0	21605	20.00	µg/L	-0.050
M5-PFPeA	3.094	268.0 -> 223.0	36369	20.00	µg/L	-0.037
M5-PFHxA	4.278	318.0 -> 273.0	62125	20.00	µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	58646	20.00	µg/L	-0.014
M8-PFOA	5.857	421.0 -> 376.0	92865	20.00	µg/L	0.000
M9-PFNA	6.417	472.0 -> 427.0	72744	20.00	µg/L	-0.038
M6-PFDA	6.989	519.0 -> 474.0	80753	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	95243	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	94587	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	84053	20.00	µg/L	-0.025
M8-FOSA	6.530	506.0 -> 78.0	12499	20.00	µg/L	0.000
M3-PFBS	3.337	302.0 -> 99.0	4638	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	4992	20.00	µg/L	-0.012
M8-PFOS	6.402	507.0 -> 99.0	7682	20.00	µg/L	-0.038
M2-4:2FTS	4.187	329.0 -> 309.0	19827	20.00	µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	33509	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	31897	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	14978	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4646	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	1173	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	17025	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	19827	13.50	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	33509	14.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%		
13C2-8:2FTS	7.025	529.0 -> 509.0	31897	14.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%		
13C2-PFDoDA	7.879	615.0 -> 570.0	94587	13.05	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%		
13C2-PFTeDA	9.012	715.0 -> 670.0	84053	11.14	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.7%		
13C3-PFBS	3.337	302.0 -> 99.0	4638	14.24	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.2%		
13C3-PFHxS	5.194	402.0 -> 99.0	4992	14.64	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%		
13C4-PFBA	1.650	217.0 -> 172.0	21605	12.09	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.4%		
13C4-PFHpA	5.149	367.0 -> 322.0	58646	14.37	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%		
13C5-PFHxA	4.278	318.0 -> 273.0	62125	14.21	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%		
13C5-PFPeA	3.094	268.0 -> 223.0	36369	12.51	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.6%		
13C6-PFDA	6.989	519.0 -> 474.0	80753	15.00	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

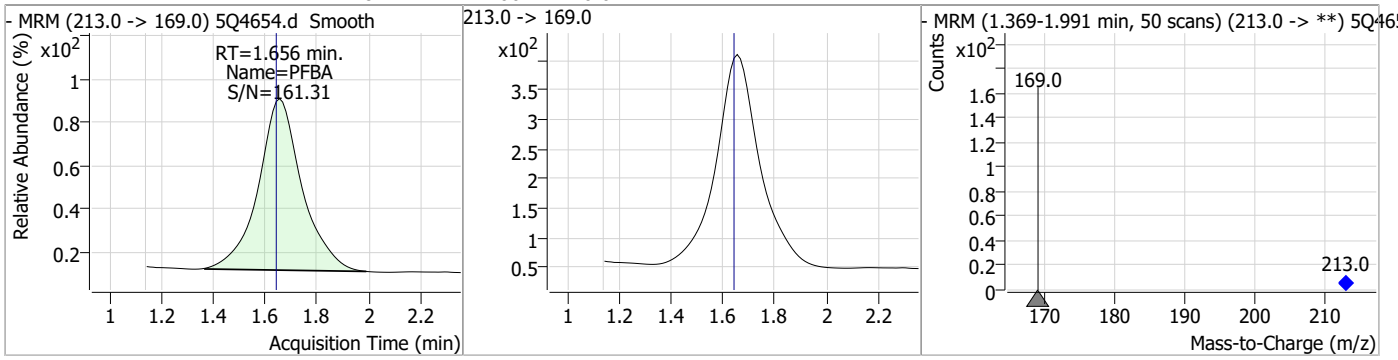
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%			
13C7-PFUnDA	7.459	570.0 -> 525.0	95243	13.53	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.6%			
13C8-FOSA	6.530	506.0 -> 78.0	12499	11.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.1%			
13C8-PFOA	5.857	421.0 -> 376.0	92865	15.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.8%			
13C8-PFOS	6.402	507.0 -> 99.0	7682	11.76	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.8%			
13C9-PFNA	6.417	472.0 -> 427.0	72744	11.07	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14978	15.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4646	13.84	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	1173	3.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.3%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17025	15.19	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	1221	0.69	µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.656	213.0 -> 169.0	4177	8.21	µg/L		100
PFBS	3.329	299.0 -> 80.0	4737	6.80	µg/L		100
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	38029	9.87	µg/L	m	100
PFHpS	5.855	449.0 -> 80.0	34400	59.56	µg/L	m	94
PFHxA	4.279	313.0 -> 269.0	99763	32.87	µg/L		100
PFHxS	5.183	399.0 -> 80.0	335349	452.33	µg/L	m	96
PFNA	6.431	463.0 -> 419.0	8363	2.57	µg/L	m	97
PFNS	6.725	549.0 -> 80.0	0		µg/L	m	1
PFOA	5.858	413.0 -> 369.0	78626	13.96	µg/L	m	98
PFOS	6.403	499.0 -> 80.0	2625294	3880.59	µg/L	m	84
PFPeA	3.097	263.0 -> 219.0	35258	19.62	µg/L		100
PFPeS	4.398	349.0 -> 80.0	5712	10.54	µg/L	m	98
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	0		µg/L	m	1
FBSA	4.356	298.0 -> 78.0	890	0.86	µg/L		96
FHxSA	5.674	398.0 -> 78.0	1005	1.06	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

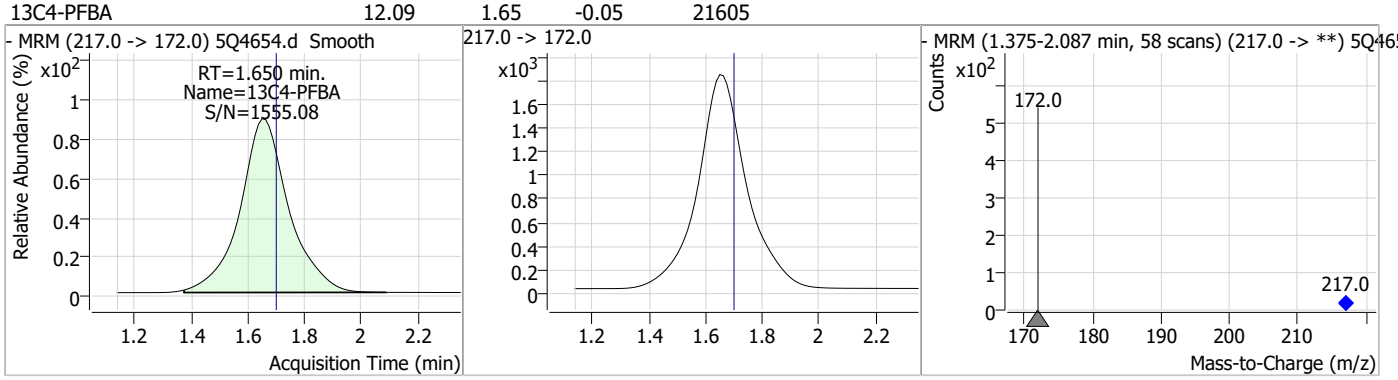
Perfluorinated Compounds by LC/MS/MS



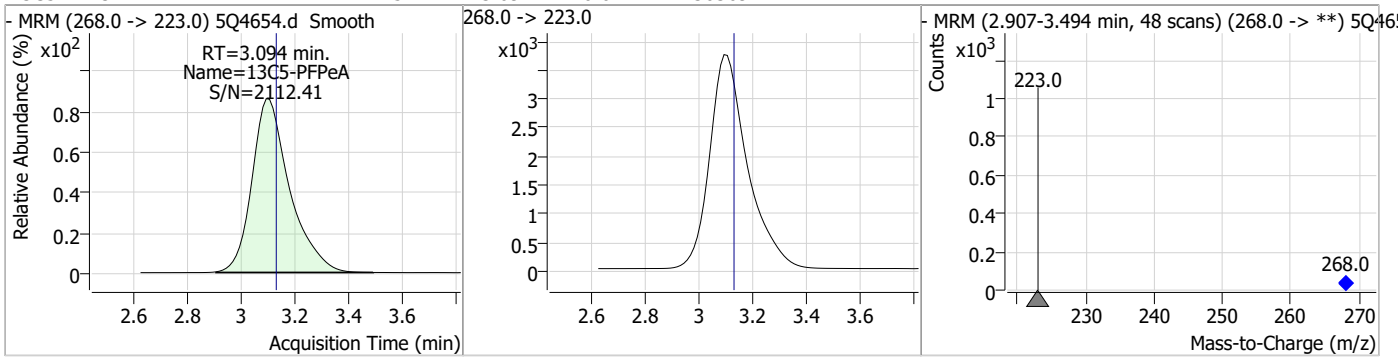
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.21	1.66	-0.04	4177				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.09	1.65	-0.05	21605				

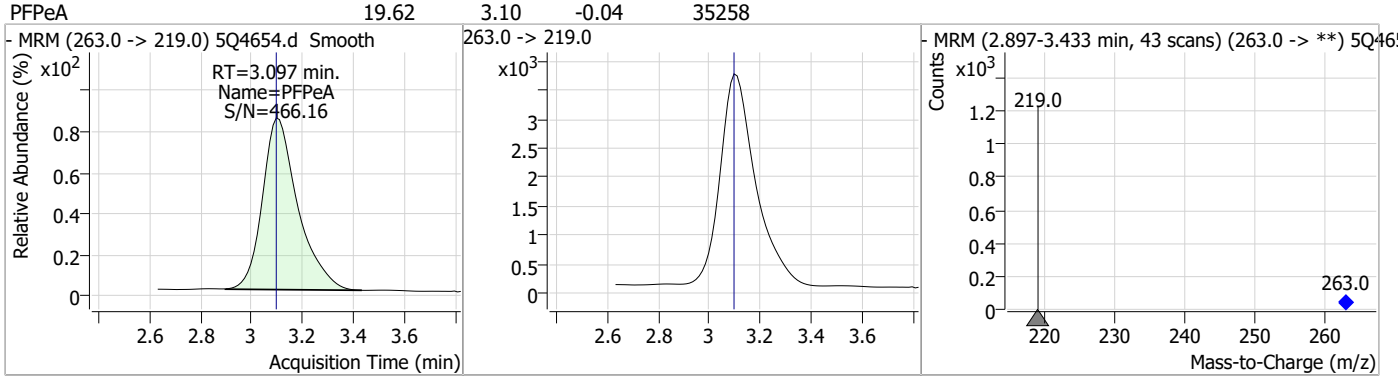


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.51	3.09	-0.04	36369				

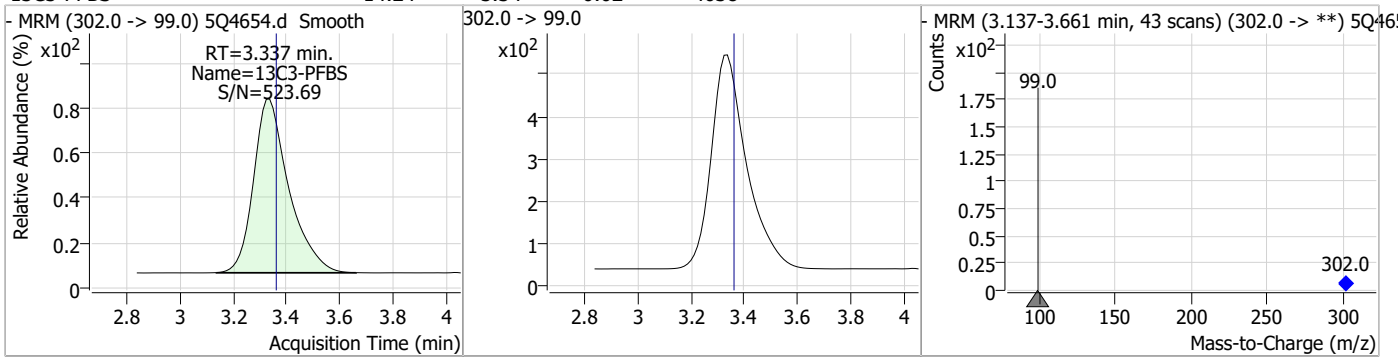


Perfluorinated Compounds by LC/MS/MS

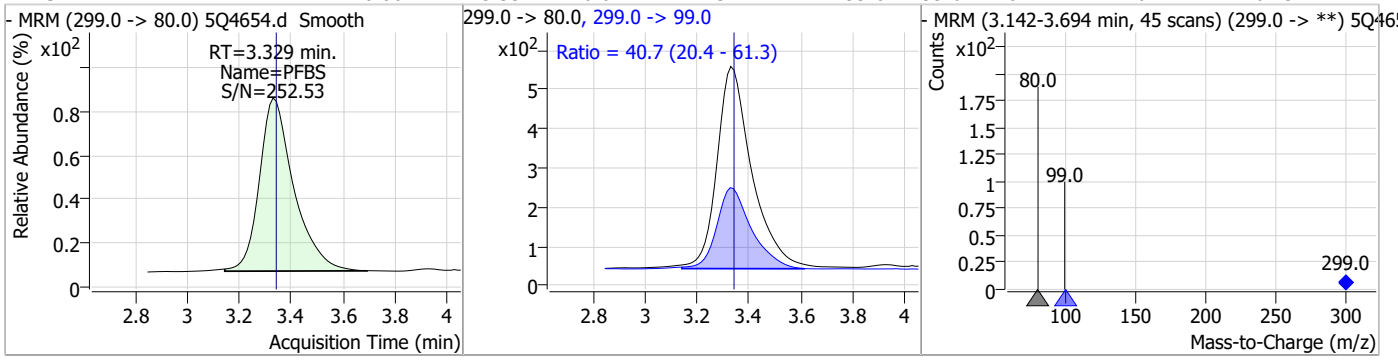
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.62	3.10	-0.04	35258				



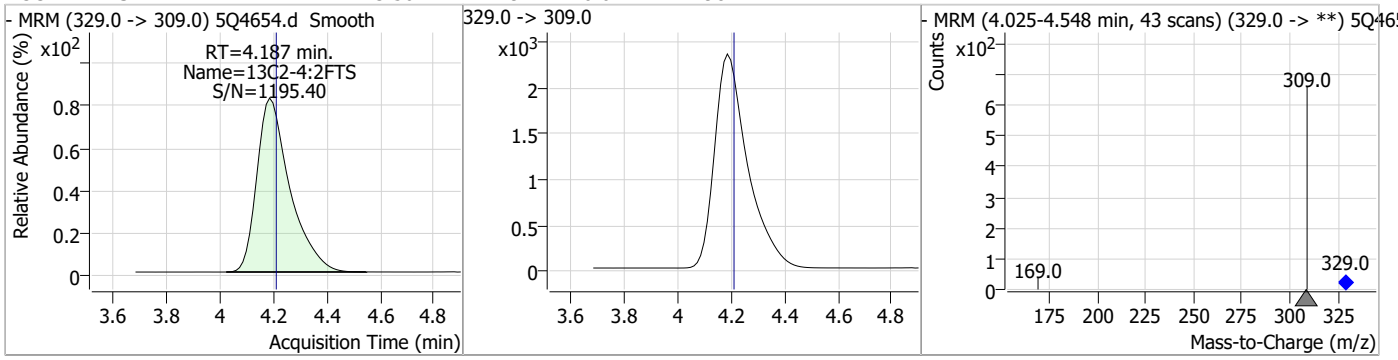
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.24	3.34	-0.02	4638				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	6.80	3.33	-0.04	4737	299.0 -> 99.0	40.7	20.4	61.3

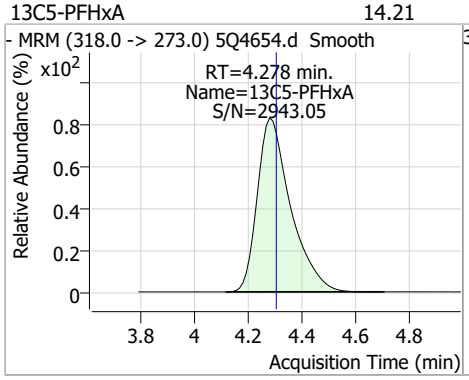


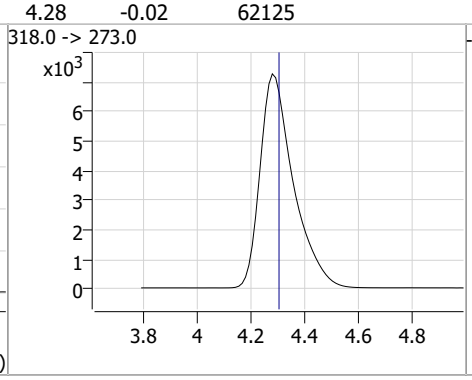
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.50	4.19	-0.02	19827				

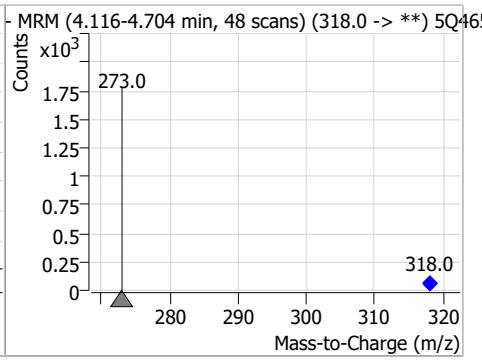


Perfluorinated Compounds by LC/MS/MS

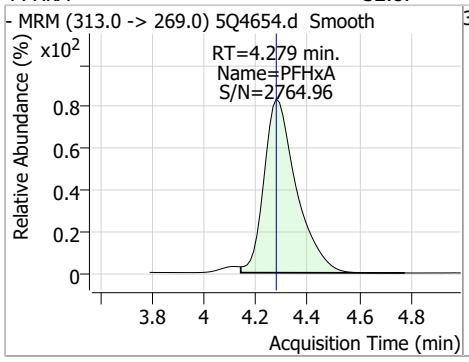
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.21	4.28	-0.02	62125				

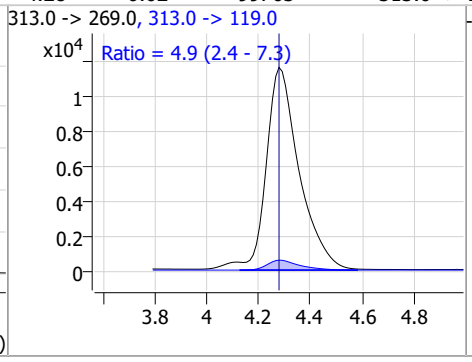


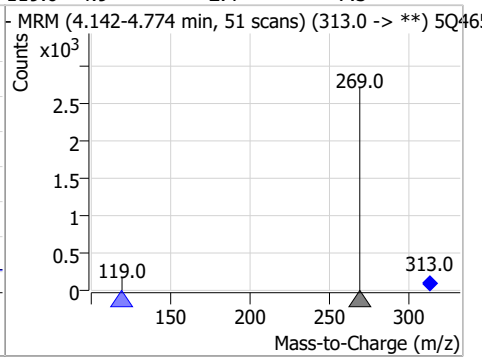




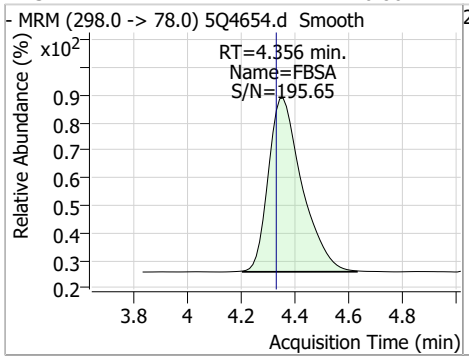
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	32.87	4.28	-0.02	99763	313.0 -> 119.0	4.9	2.4	7.3

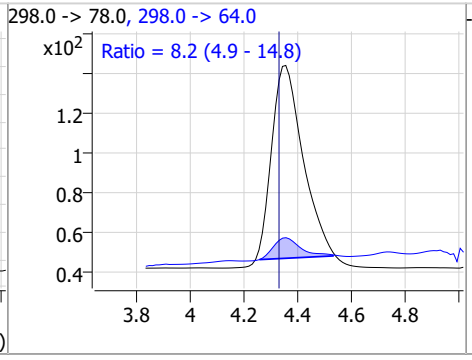


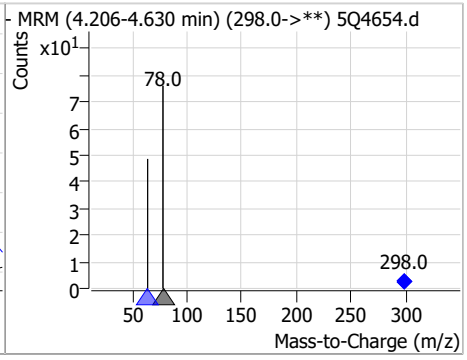




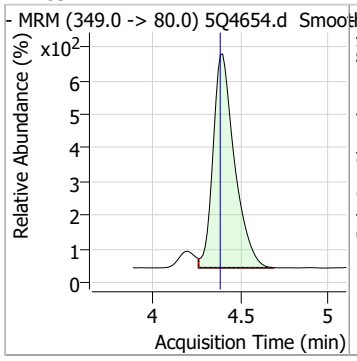
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.86	4.36	0.00	890	298.0 -> 64.0	8.2	4.9	14.8

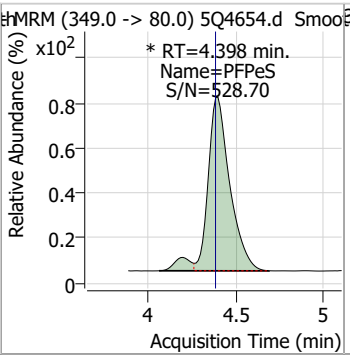


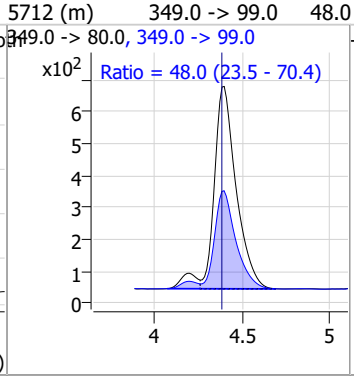


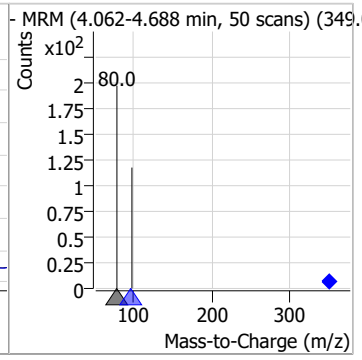


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.54	4.40	-0.01	5712 (m)	349.0 -> 99.0	48.0	23.5	70.4



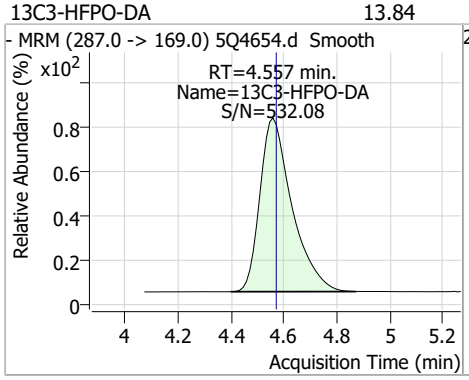


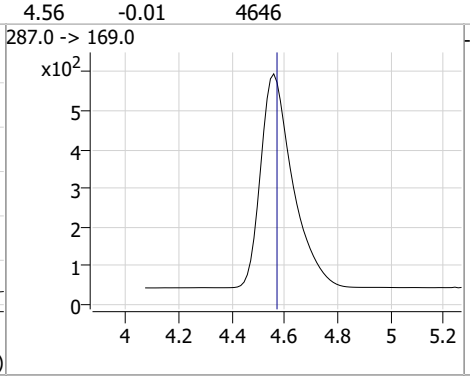


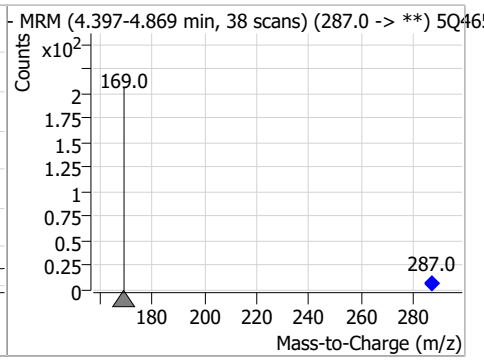


Perfluorinated Compounds by LC/MS/MS

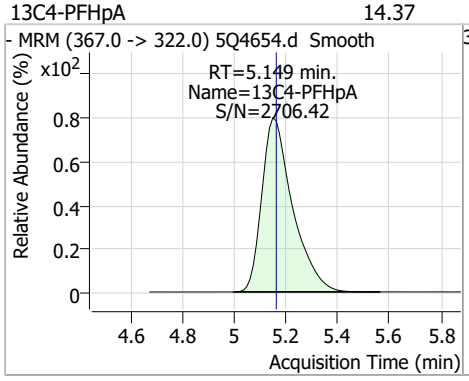
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.84	4.56	-0.01	4646				

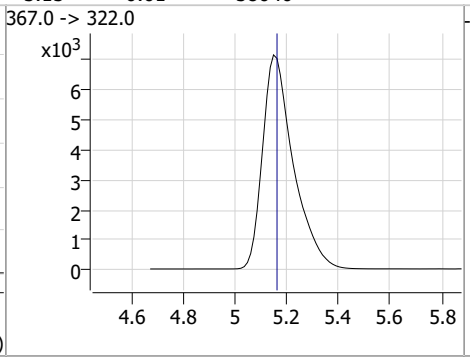


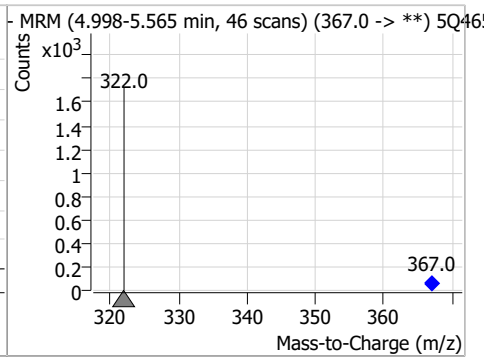




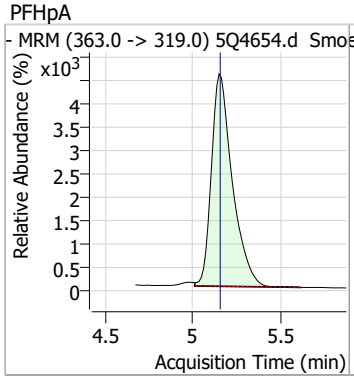
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.37	5.15	-0.01	58646				

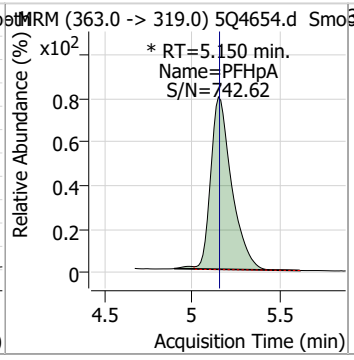


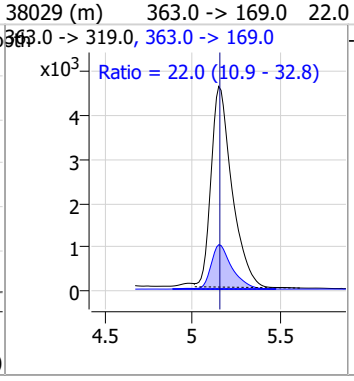


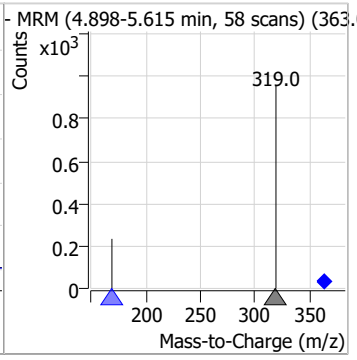


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.87	5.15	-0.01	38029 (m)	363.0 -> 169.0	22.0	10.9	32.8

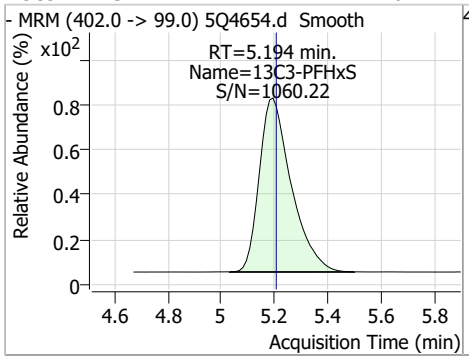


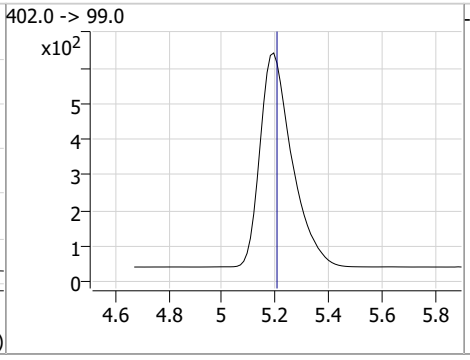


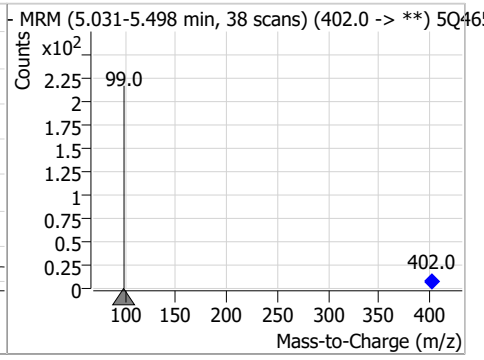




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.64	5.19	-0.01	4992				

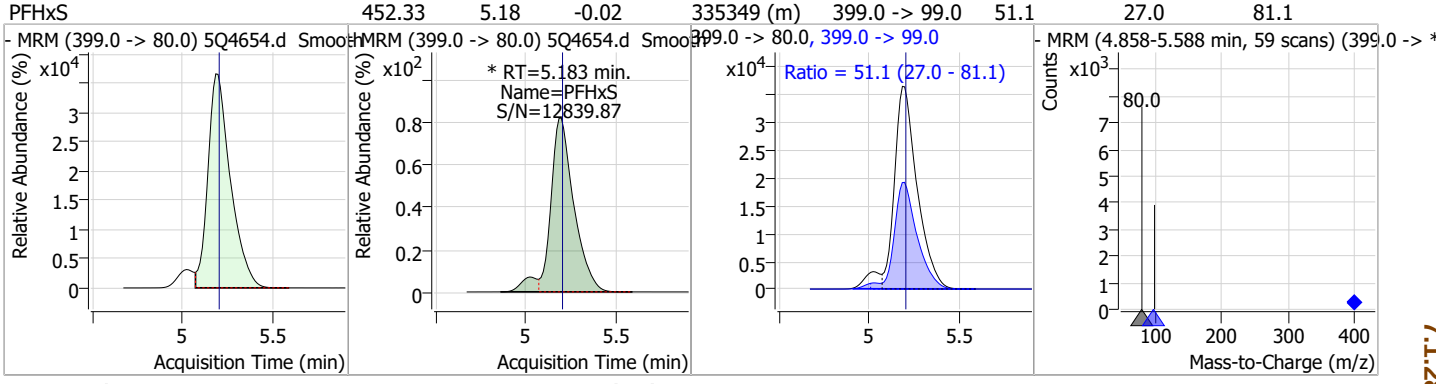




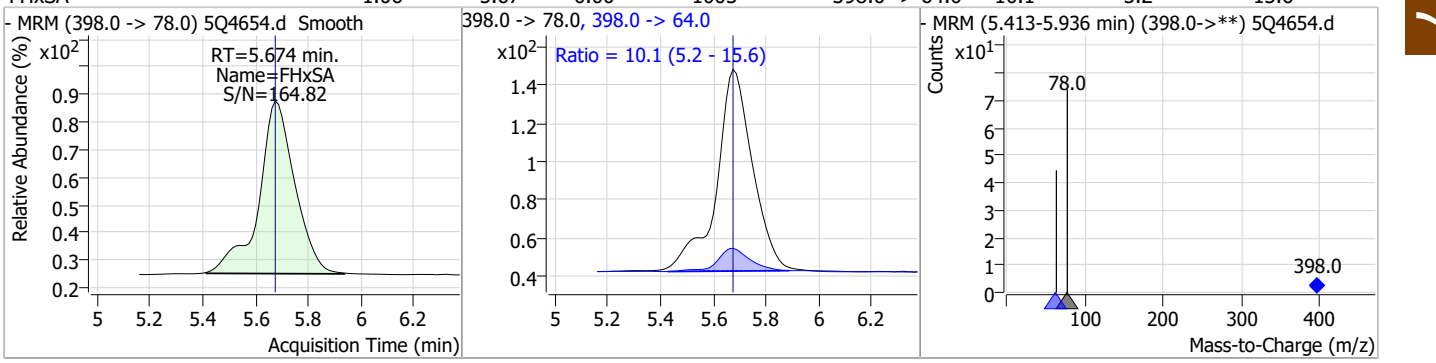


Perfluorinated Compounds by LC/MS/MS

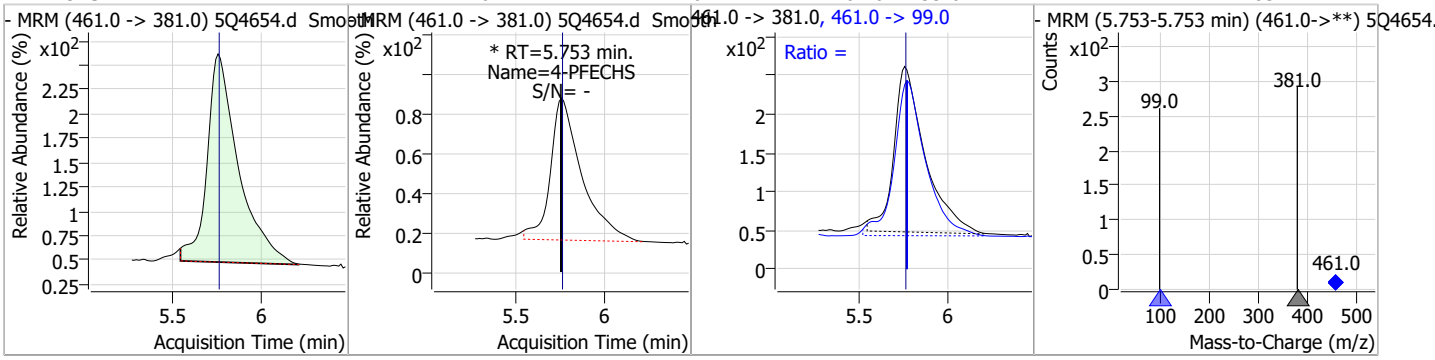
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	452.33	5.18	-0.02	335349 (m)	399.0 -> 99.0	51.1	27.0	81.1



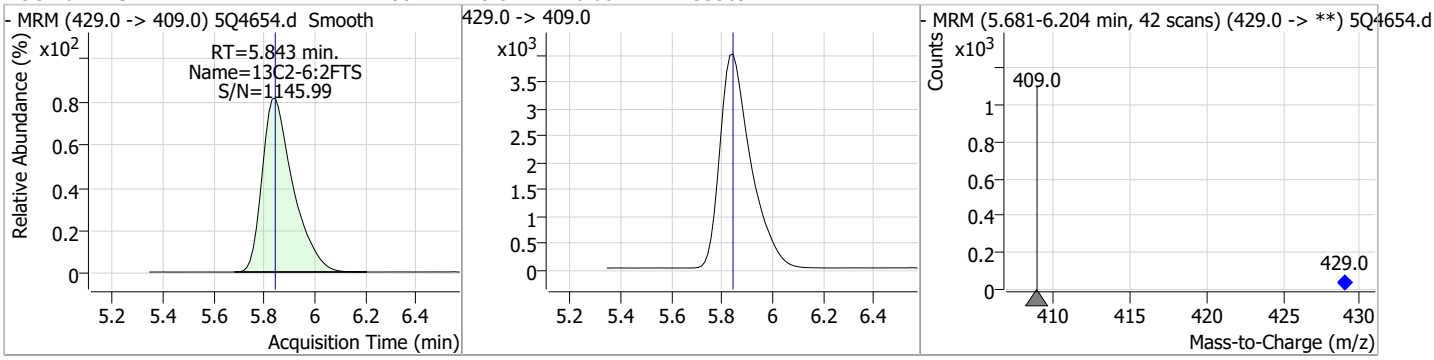
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.06	5.67	0.00	1005	398.0 -> 64.0	10.1	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		27.7	83.2

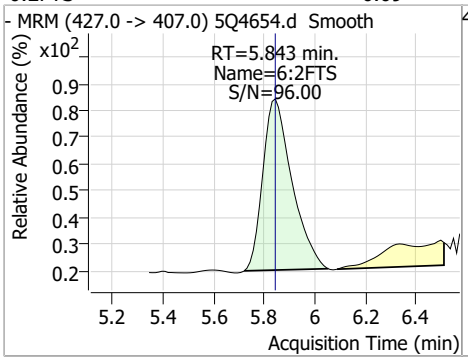


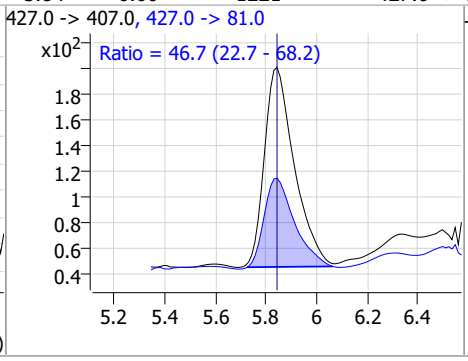
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.99	5.84	0.00	33509				

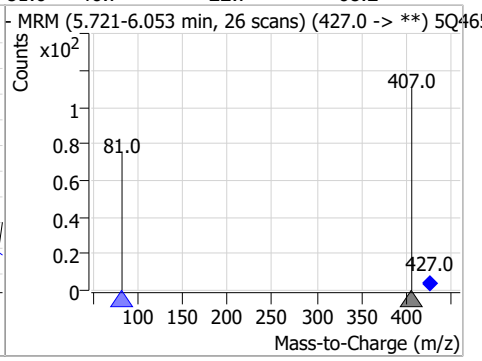


Perfluorinated Compounds by LC/MS/MS

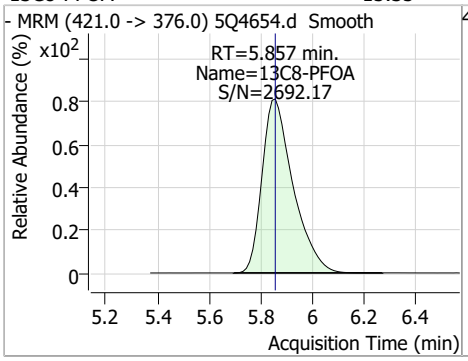
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.69	5.84	0.00	1221	427.0 -> 81.0	46.7	22.7	68.2

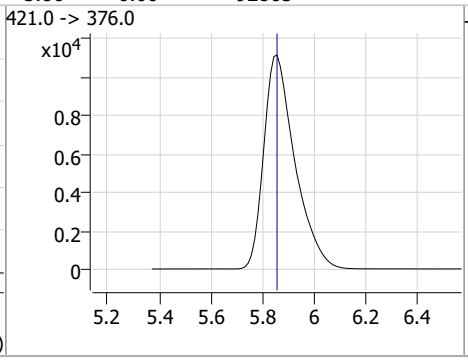


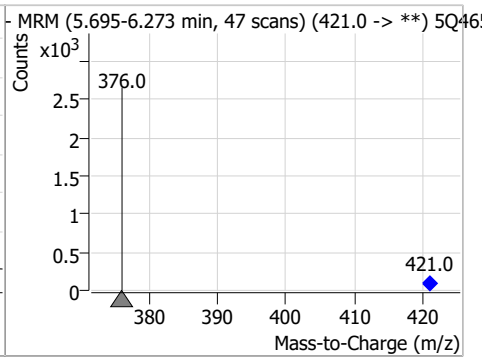




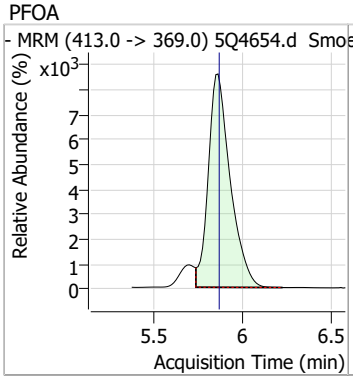
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.35	5.86	0.00	92865				

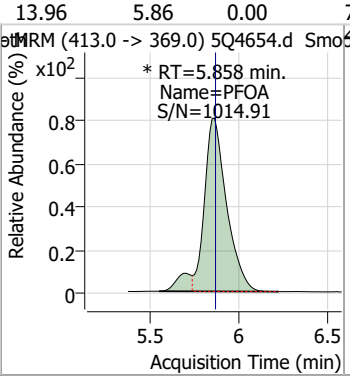


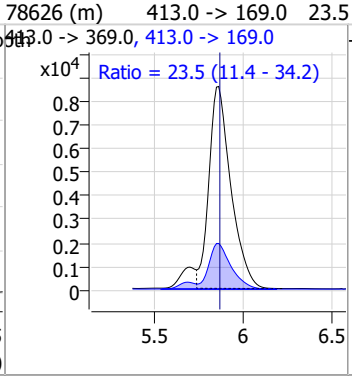


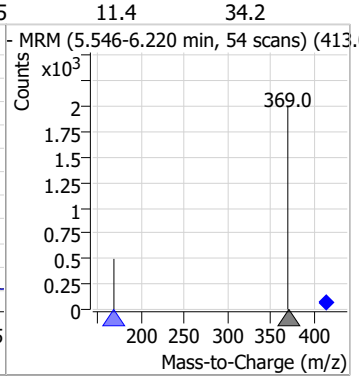


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	13.96	5.86	0.00	78626 (m)	413.0 -> 169.0	23.5	11.4	34.2

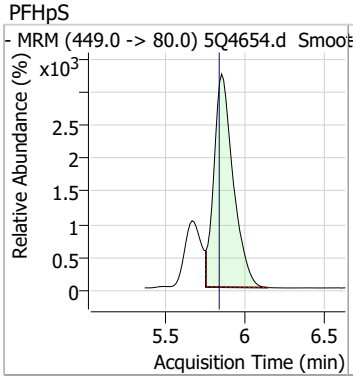


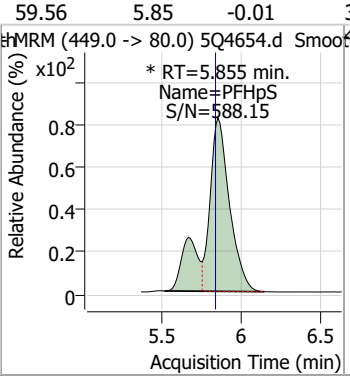


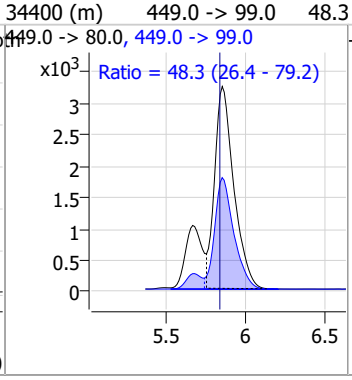


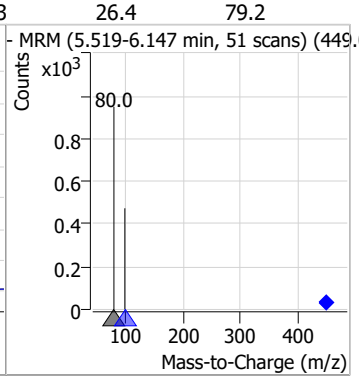


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	59.56	5.85	-0.01	34400 (m)	449.0 -> 99.0	48.3	26.4	79.2



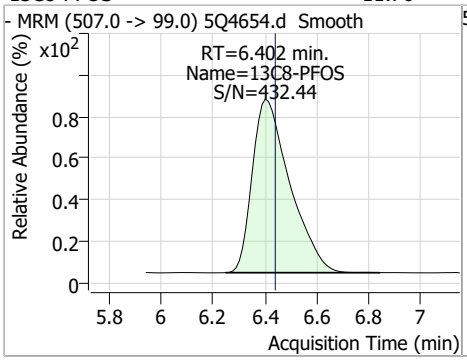


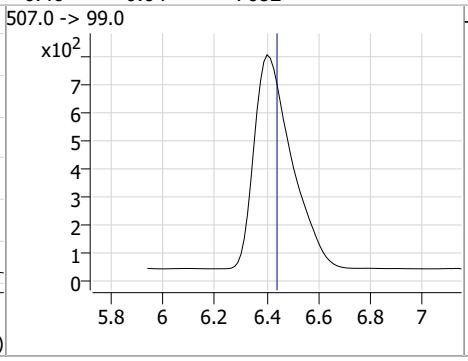


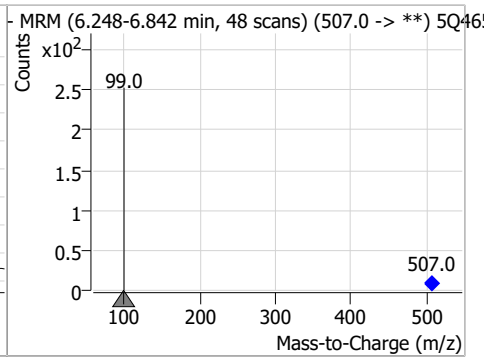


Perfluorinated Compounds by LC/MS/MS

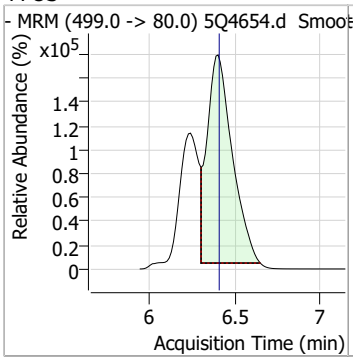
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.76	6.40	-0.04	7682				

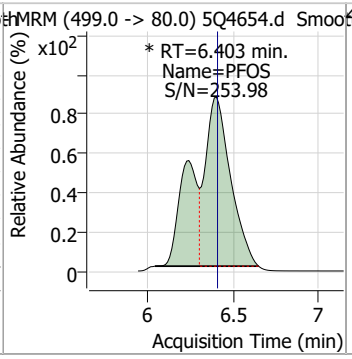


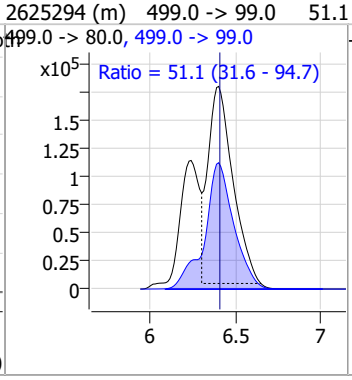


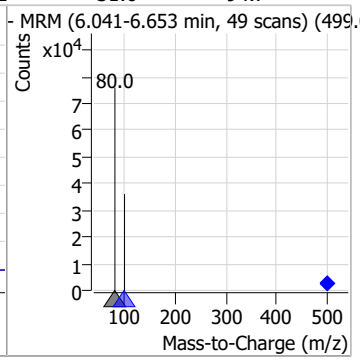


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	3880.59	6.40	-0.04	2625294 (m)	499.0 -> 99.0	51.1	31.6	94.7

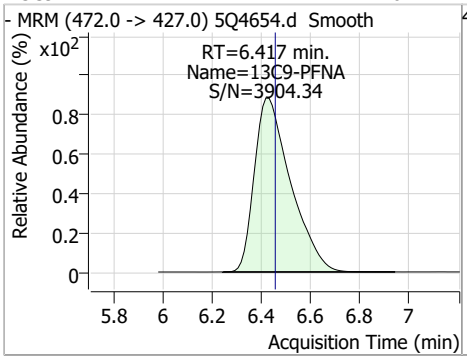


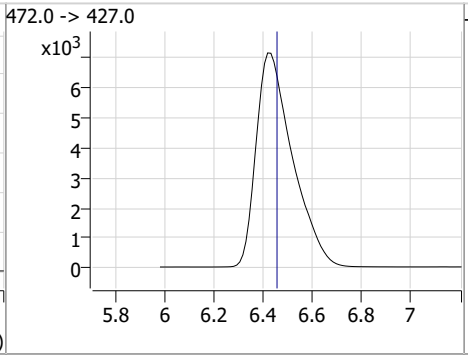


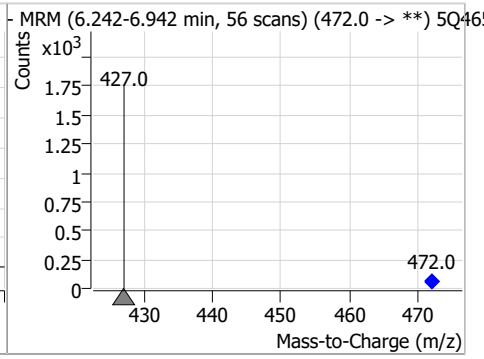




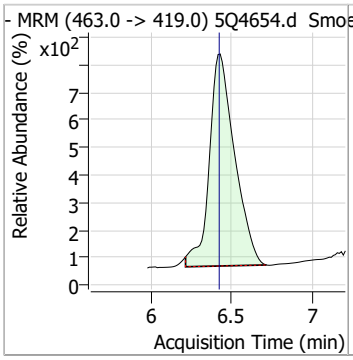
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.07	6.42	-0.04	72744				

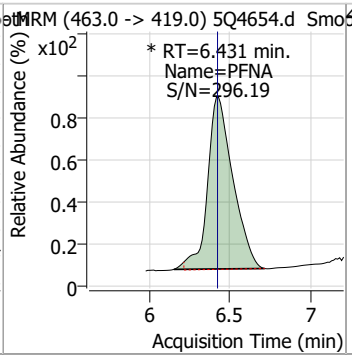


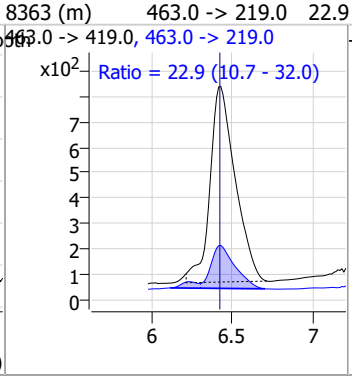


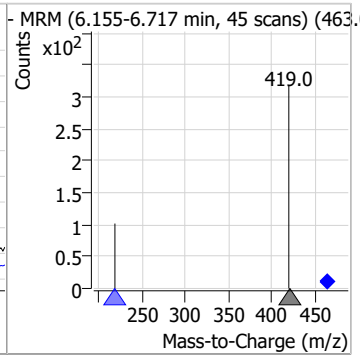


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.57	6.43	-0.02	8363 (m)	463.0 -> 219.0	22.9	10.7	32.0



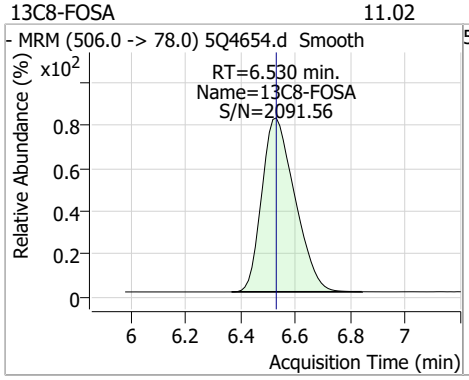


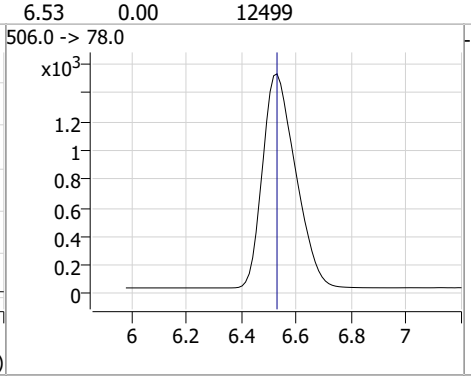


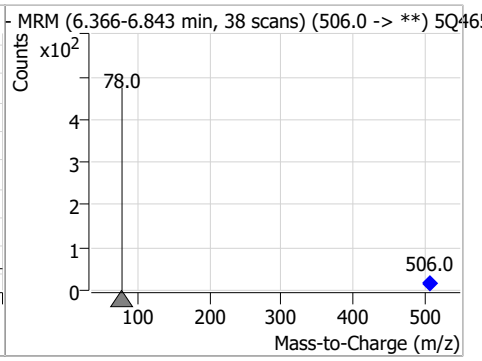


Perfluorinated Compounds by LC/MS/MS

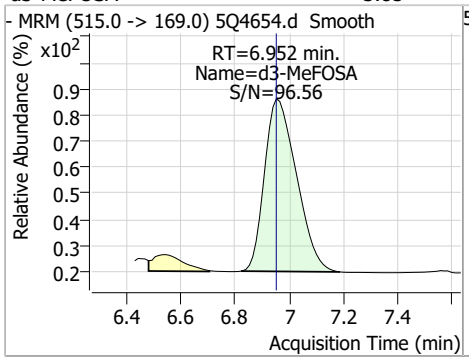
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.02	6.53	0.00	12499				

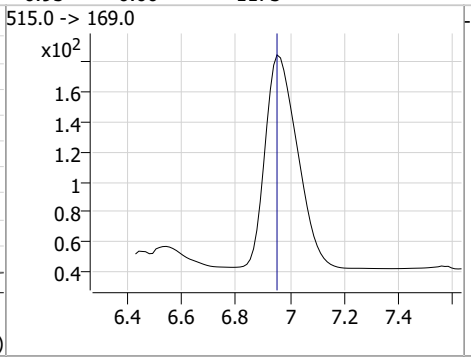


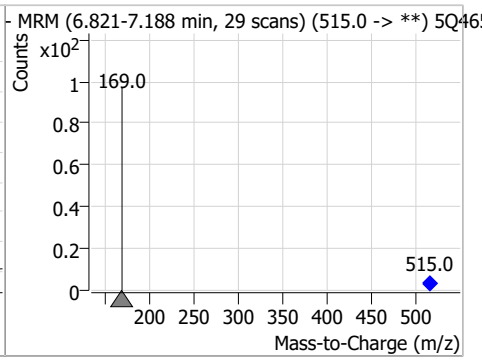




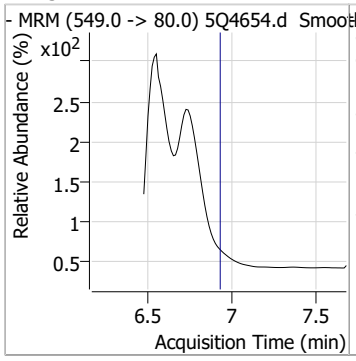
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	3.85	6.95	0.00	1173				

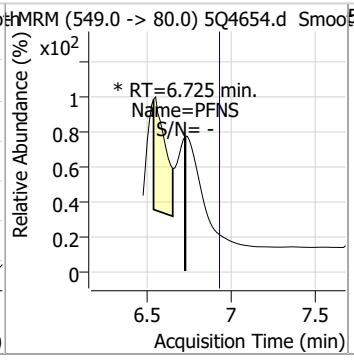


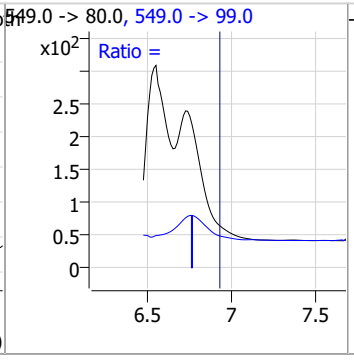


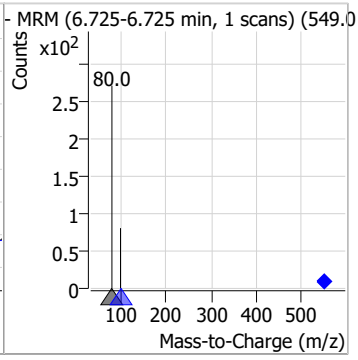


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0		0		549.0 -> 99.0		28.0	84.0

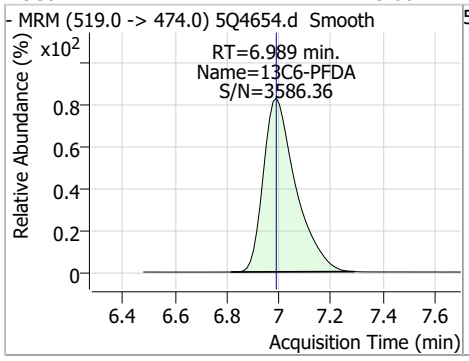


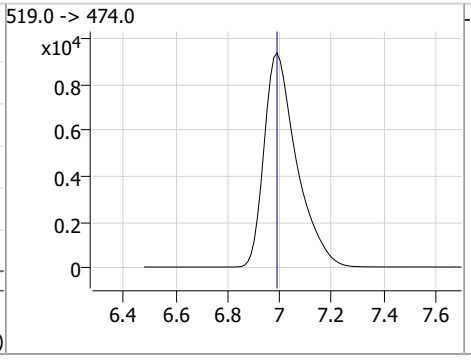


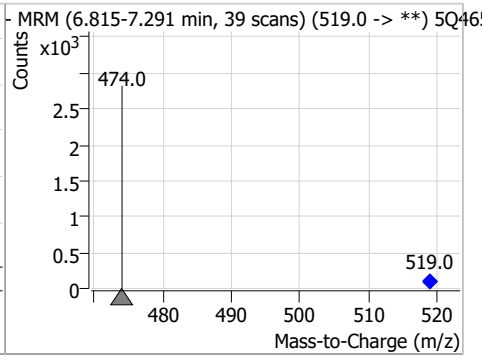




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.00	6.99	0.00	80753				

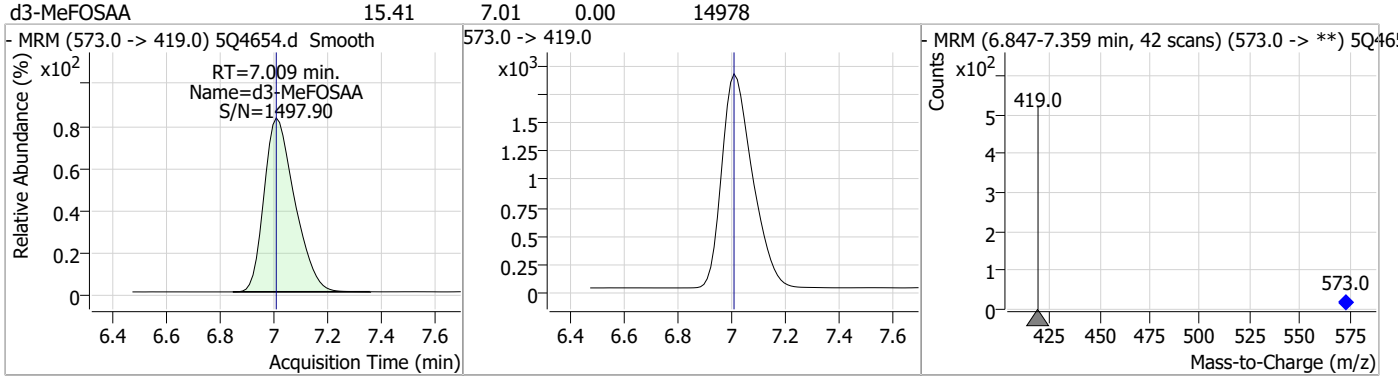




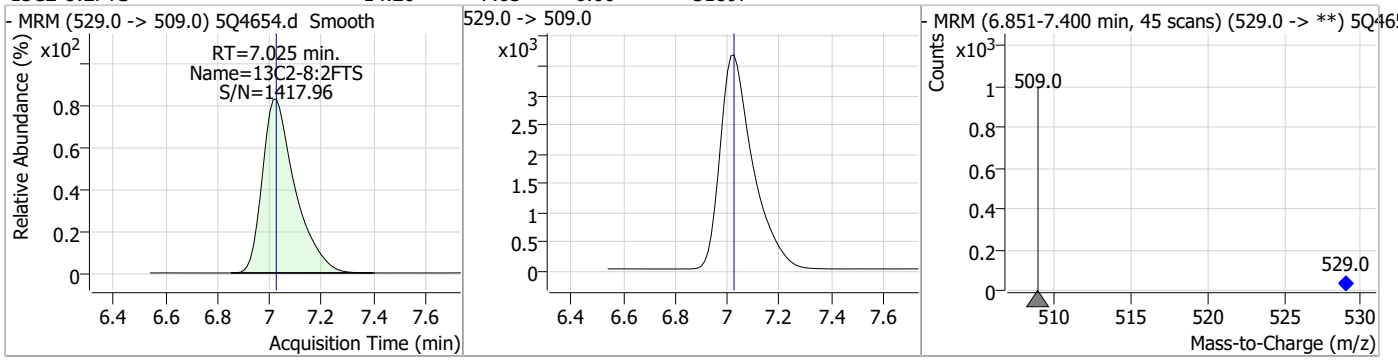


Perfluorinated Compounds by LC/MS/MS

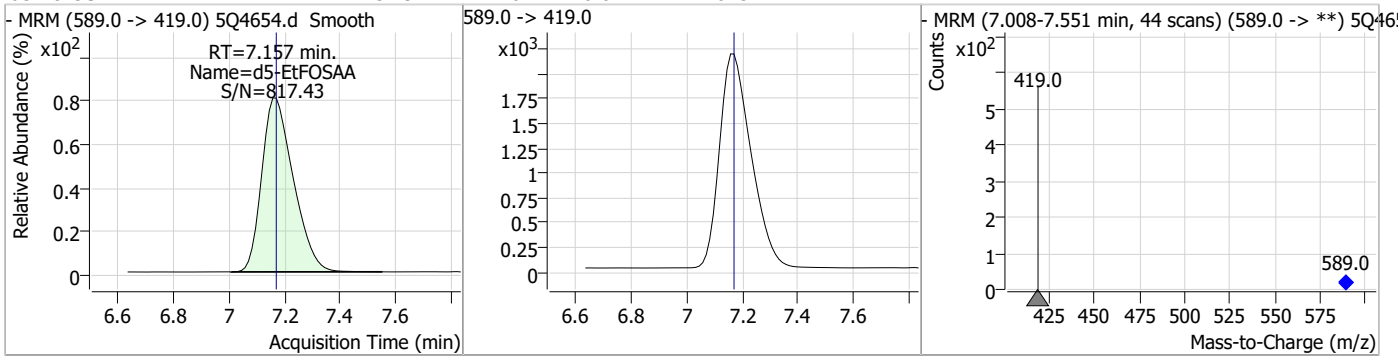
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.41	7.01	0.00	14978				



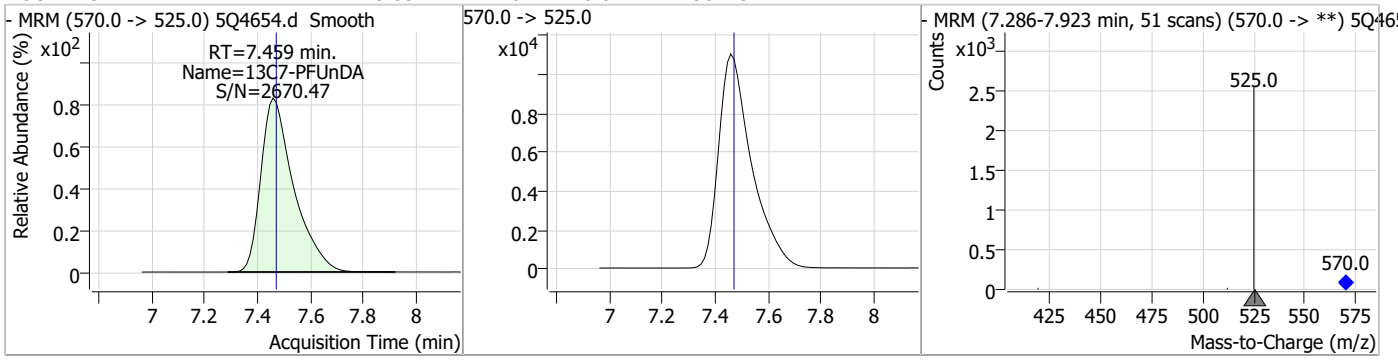
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.20	7.03	0.00	31897				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.19	7.16	-0.01	17025				

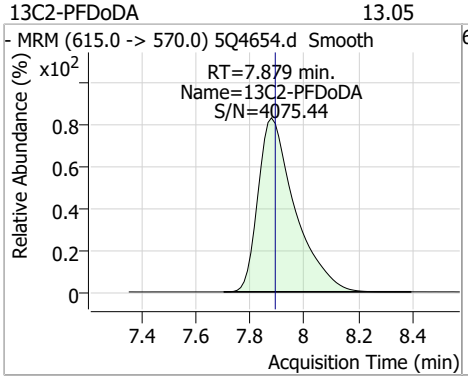


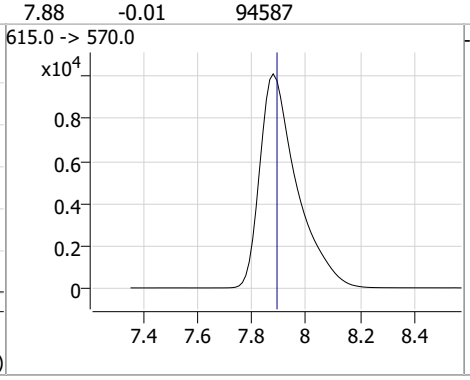
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.53	7.46	-0.01	95243				

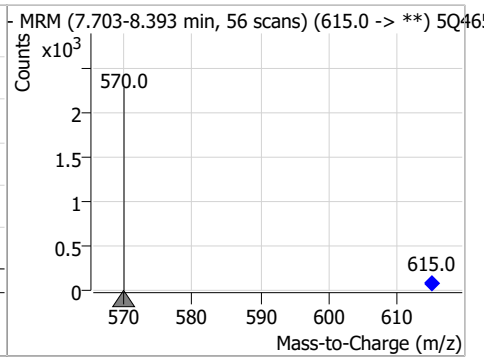


Perfluorinated Compounds by LC/MS/MS

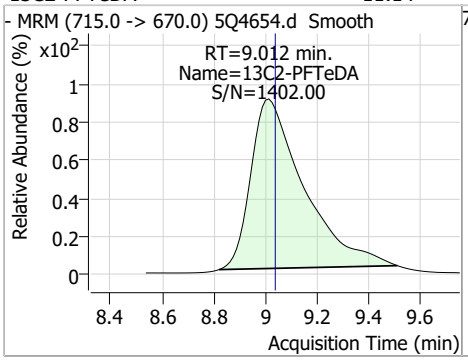
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.05	7.88	-0.01	94587				

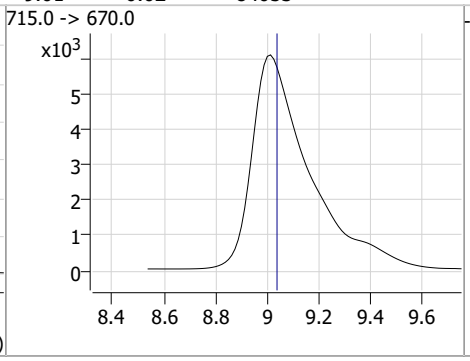


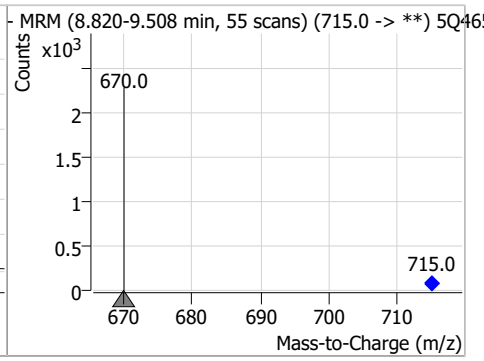




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.14	9.01	-0.02	84053				







Manual Integration Approval Summary

Sample Number: FA98286-17
Lab FileID: 5Q4654.D
Injection Time: 09/15/22 11:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:09 Anna Ludwig
Supervisor approved: 09/16/22 19:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.15	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.18	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.40	Split peak
Perfluorononanoic acid	375-95-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4726.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 7:56:51 AM
Sample Name : fa98286-17
Vial : P3-F1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,125,,,1.0,40,water

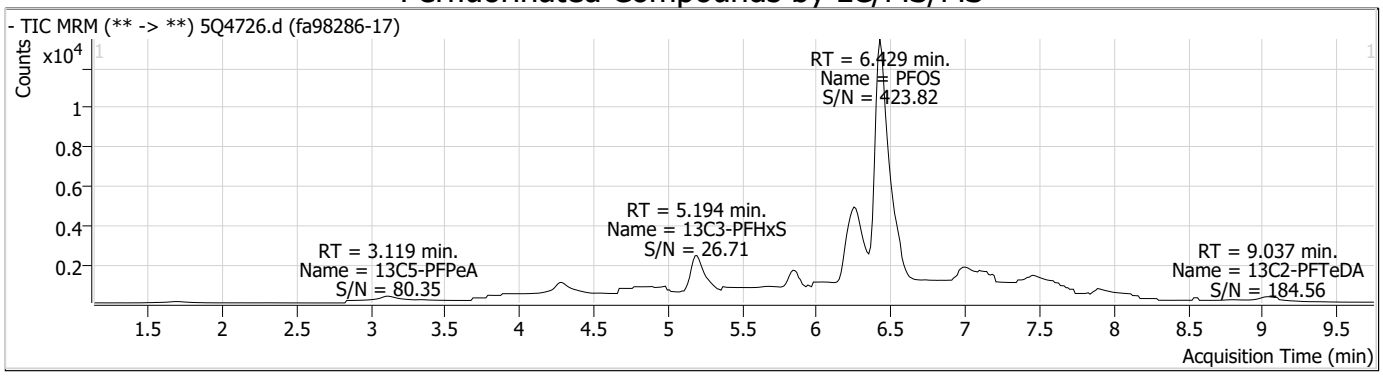
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	624	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	1022	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	1586	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	1475	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	2153	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	2405	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	1872	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	2186	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	2195	20.00	µg/L	0.012
M2-PFTeDA	9.037	715.0 -> 670.0	2302	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	369	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	121	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	118	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	235	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	487	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	861	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	756	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	470	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	132	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	30	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	399	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	487	0.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	861	0.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%		
13C2-8:2FTS	7.025	529.0 -> 509.0	756	0.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C2-PFDoDA	7.905	615.0 -> 570.0	2195	0.30	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.5%		
13C2-PFTeDA	9.037	715.0 -> 670.0	2302	0.31	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.5%		
13C3-PFBS	3.349	302.0 -> 99.0	121	0.37	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%		
13C3-PFHxS	5.194	402.0 -> 99.0	118	0.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C4-PFBA	1.687	217.0 -> 172.0	624	0.35	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	1475	0.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
13C5-PFHxA	4.290	318.0 -> 273.0	1586	0.36	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
13C5-PFPeA	3.119	268.0 -> 223.0	1022	0.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
13C6-PFDA	6.989	519.0 -> 474.0	1872	0.35	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

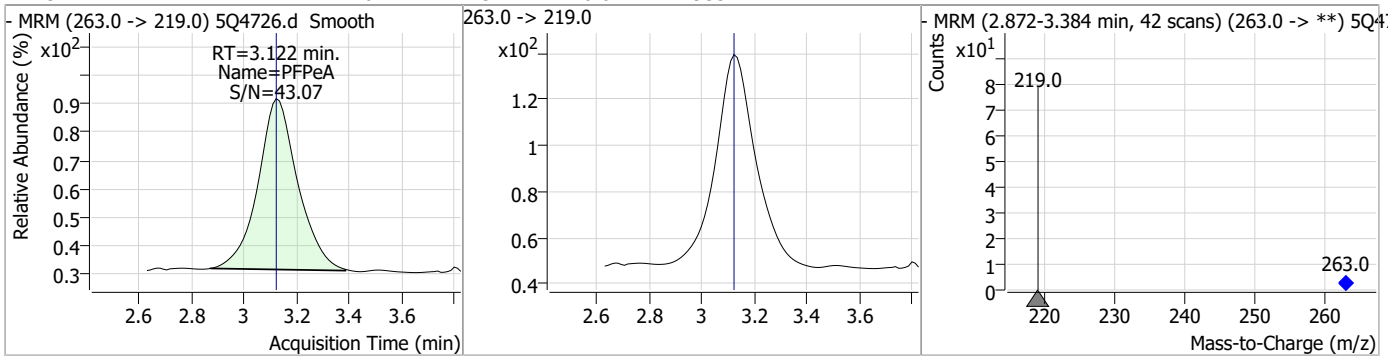
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%			
13C7-PFUnDA	7.471	570.0 -> 525.0	2186	0.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%			
13C8-FOSA	6.530	506.0 -> 78.0	369	0.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%			
13C8-PFOA	5.857	421.0 -> 376.0	2153	0.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
13C8-PFOS	6.440	507.0 -> 99.0	235	0.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
13C9-PFNA	6.455	472.0 -> 427.0	2405	0.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	470	0.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	132	0.39	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	30	0.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	399	0.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.509	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	912	0.24	µg/L		98
PFHpS	5.855	449.0 -> 80.0	761	1.08	µg/L	m	88
PFHxA	4.291	313.0 -> 269.0	2489	0.80	µg/L		97
PFHxS	5.195	399.0 -> 80.0	7825	11.12	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	1602	0.31	µg/L	m	97
PFOS	6.429	499.0 -> 80.0	72468	87.63	µg/L	m	82
PFPeA	3.122	263.0 -> 219.0	955	0.47	µg/L		100
PFPeS	4.398	349.0 -> 80.0	128	0.23	µg/L	m	91
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

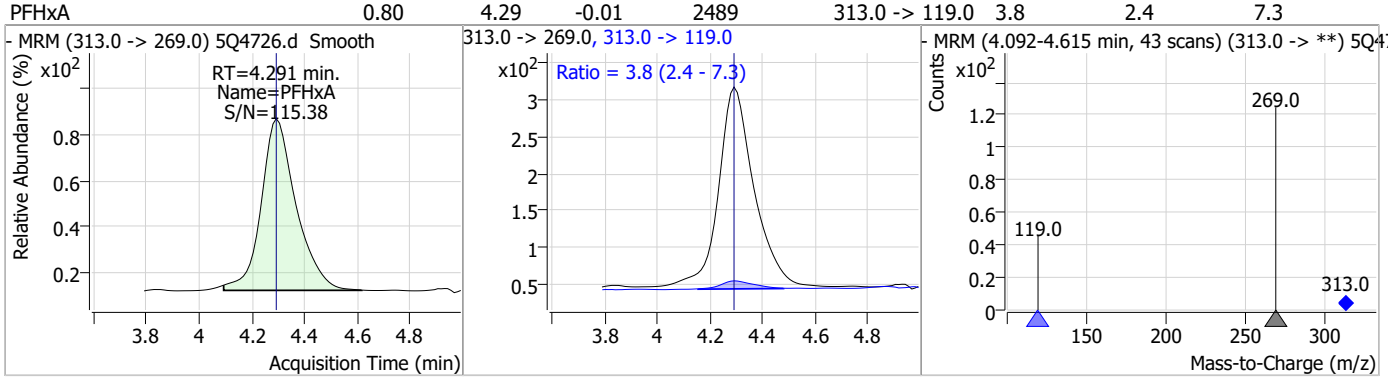
Perfluorinated Compounds by LC/MS/MS



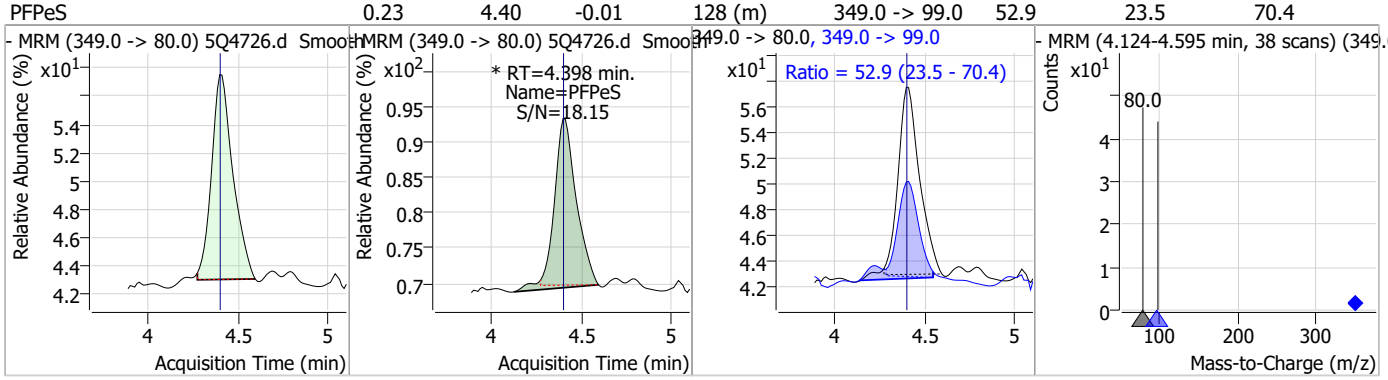
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.47	3.12	-0.01	955				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.80	4.29	-0.01	2489	313.0 -> 119.0	3.8	2.4	7.3

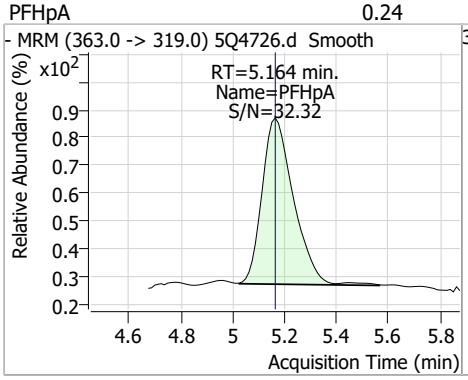


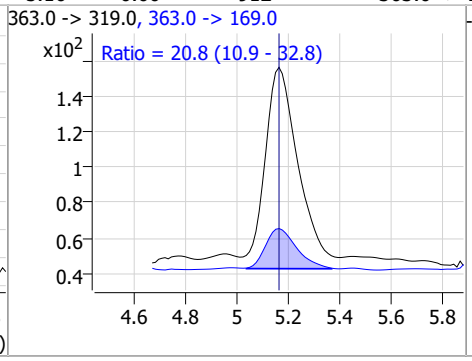
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.23	4.40	-0.01	128 (m)	349.0 -> 99.0	52.9	23.5	70.4

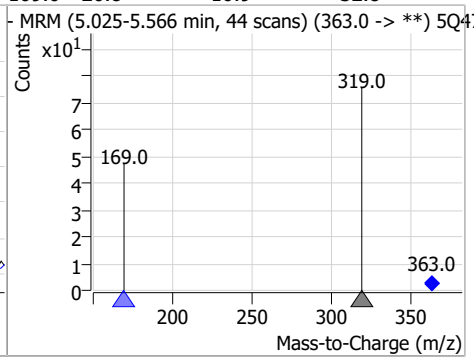


Perfluorinated Compounds by LC/MS/MS

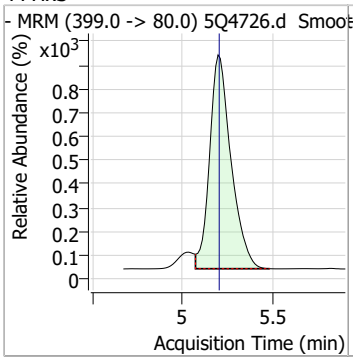
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.24	5.16	0.00	912	363.0 -> 169.0	20.8	10.9	32.8

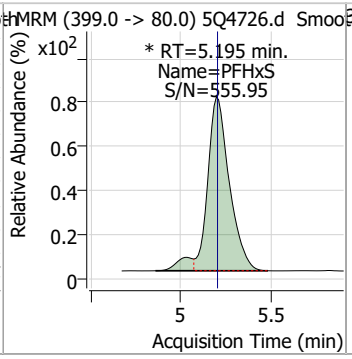


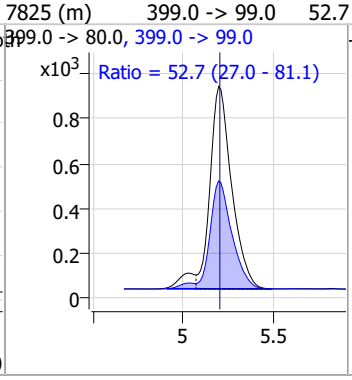


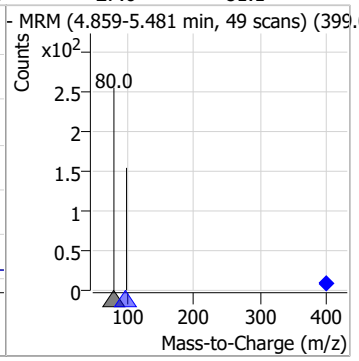


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	11.12	5.20	-0.01	7825 (m)	399.0 -> 99.0	52.7	27.0	81.1

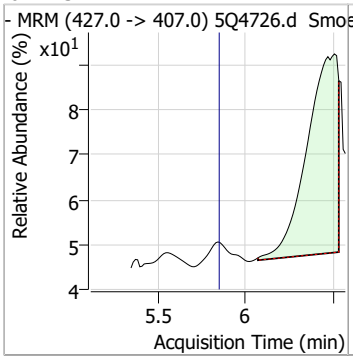


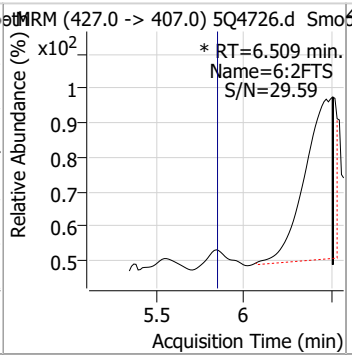


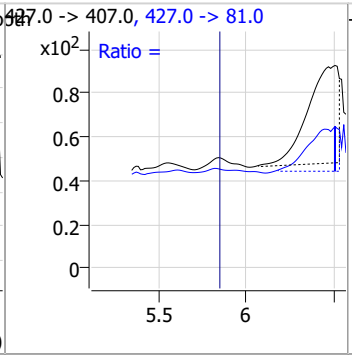


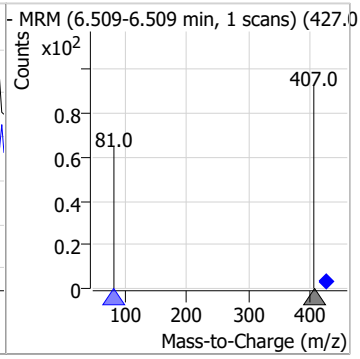


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

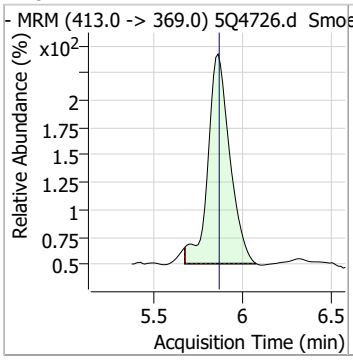


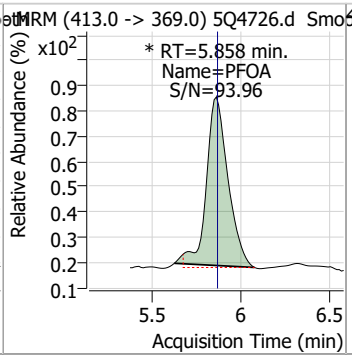


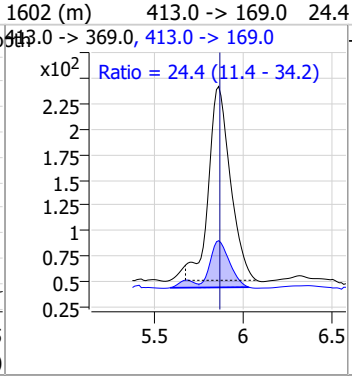


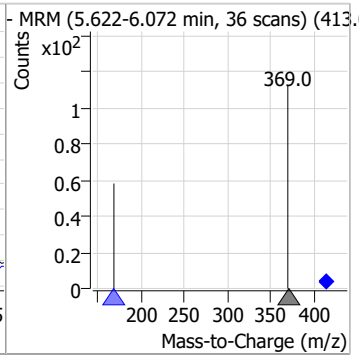


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.31	5.86	0.00	1602 (m)	413.0 -> 169.0	24.4	11.4	34.2



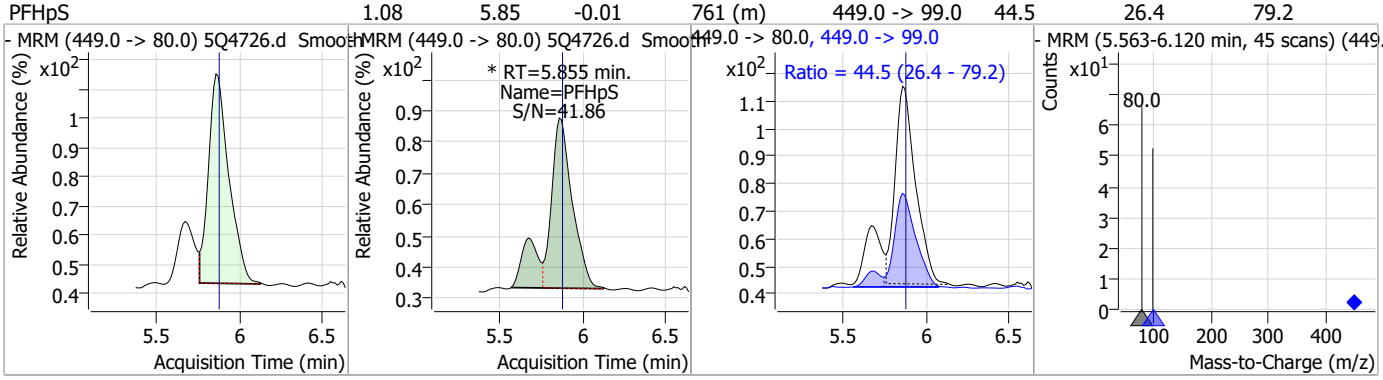




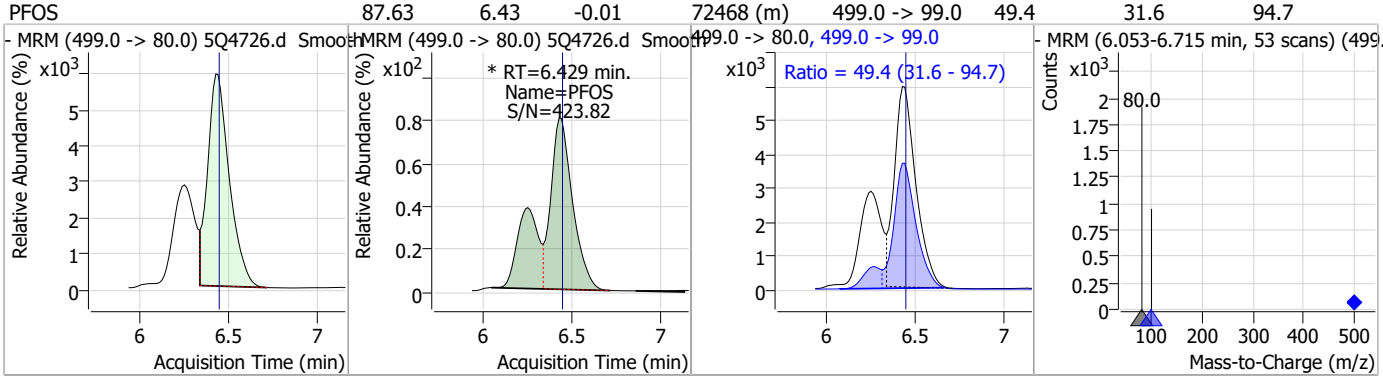


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.08	5.85	-0.01	761 (m)	449.0 -> 99.0	44.5	26.4	79.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	87.63	6.43	-0.01	72468 (m)	499.0 -> 99.0	49.4	31.6	94.7



Manual Integration Approval Summary

Sample Number: FA98286-17
Lab FileID: 5Q4726.D
Injection Time: 09/16/22 07:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:09 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:38

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4655.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 11:44:42 AM
Sample Name : fa98286-18
Vial : P2-A2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,110,,,1.0,1,water

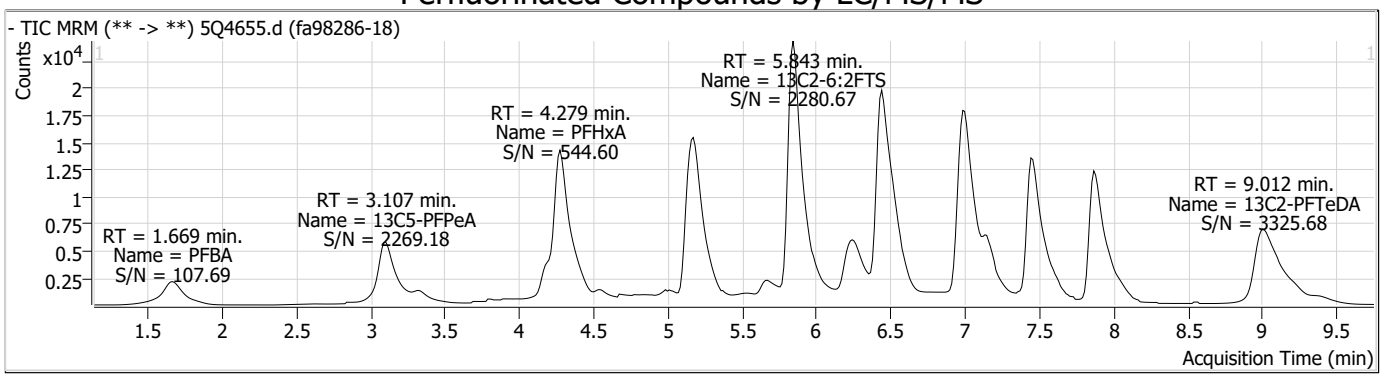
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.662	217.0 -> 172.0	22858	20.00	µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	38792	20.00	µg/L	-0.025
M5-PFHxA	4.290	318.0 -> 273.0	66778	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	64675	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	99045	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	104249	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	79848	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	90329	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	93936	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	96709	20.00	µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	17439	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4933	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5633	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9837	20.00	µg/L	-0.012
M2-4:2FTS	4.187	329.0 -> 309.0	21903	20.00	µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	38306	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	32161	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	15351	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5094	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	1901	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	17913	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	21903	14.91	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	38306	17.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.7%		
13C2-8:2FTS	7.025	529.0 -> 509.0	32161	14.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%		
13C2-PFDoDA	7.879	615.0 -> 570.0	93936	12.96	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.8%		
13C2-PFTeDA	9.012	715.0 -> 670.0	96709	12.82	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%		
13C3-PFBS	3.337	302.0 -> 99.0	4933	15.14	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%		
13C3-PFHxS	5.194	402.0 -> 99.0	5633	16.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C4-PFBA	1.662	217.0 -> 172.0	22858	12.79	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.9%		
13C4-PFHpA	5.163	367.0 -> 322.0	64675	15.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	66778	15.27	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.4%		
13C5-PFPeA	3.107	268.0 -> 223.0	38792	13.35	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.7%		
13C6-PFDA	6.989	519.0 -> 474.0	79848	14.83	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

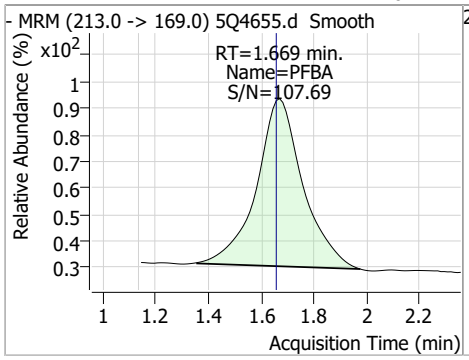
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%			
13C7-PFUnDA	7.459	570.0 -> 525.0	90329	12.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%			
13C8-FOSA	6.517	506.0 -> 78.0	17439	15.37	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.8%			
13C8-PFOA	5.857	421.0 -> 376.0	99045	16.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.9%			
13C8-PFOS	6.428	507.0 -> 99.0	9837	15.07	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C9-PFNA	6.455	472.0 -> 427.0	104249	15.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15351	15.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	5094	15.17	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	1901	6.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 31.2%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17913	15.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	6135	3.02	µg/L		97
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	1322	2.46	µg/L		100
PFBS	3.342	299.0 -> 80.0	1873	2.53	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	8902	2.10	µg/L	m	99
PFHpS	5.855	449.0 -> 80.0	2261	3.06	µg/L	m	97
PFHxA	4.279	313.0 -> 269.0	22253	6.82	µg/L		100
PFHxS	5.195	399.0 -> 80.0	29156	34.85	µg/L	m	96
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	10139	1.69	µg/L	m	99
PFOS	6.241	499.0 -> 80.0	31647	36.53	µg/L		78
PFPeA	3.109	263.0 -> 219.0	10293	5.37	µg/L		100
PFPeS	4.398	349.0 -> 80.0	2519	4.37	µg/L	m	96
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	1345	0.75	µg/L		88
FBSA	4.356	298.0 -> 78.0	1732	1.56	µg/L		99
FHxSA	5.674	398.0 -> 78.0	8728	8.66	µg/L		99

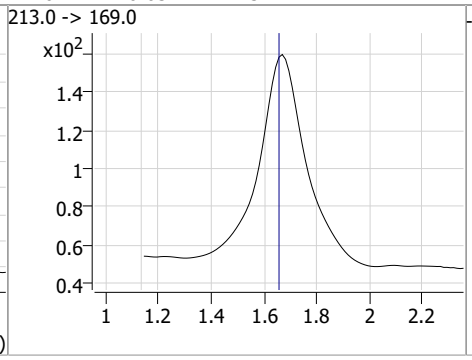
 # = Qualifier out of range, m = manually integrated, + = Area summed

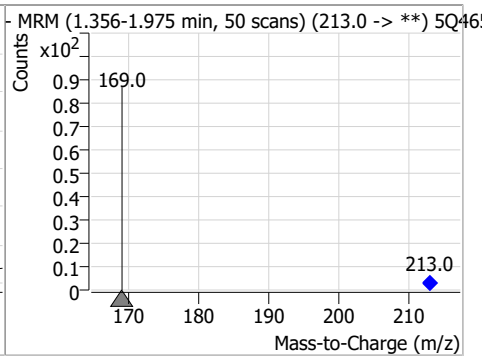
Perfluorinated Compounds by LC/MS/MS



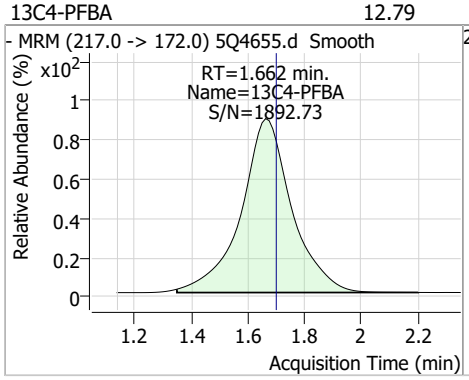
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.46	1.67	-0.03	1322				

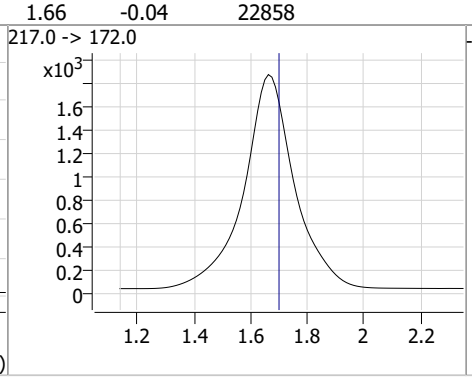


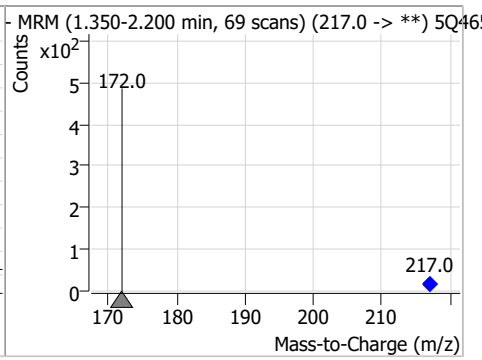




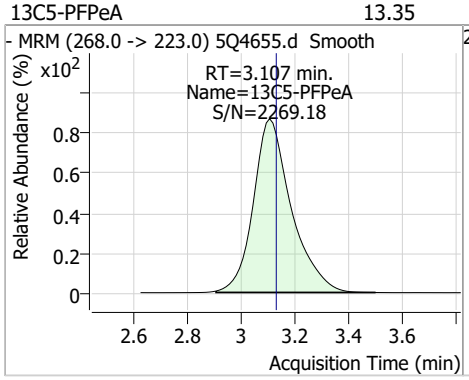
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.79	1.66	-0.04	22858				

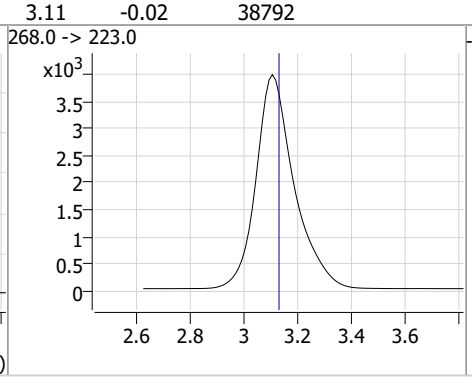


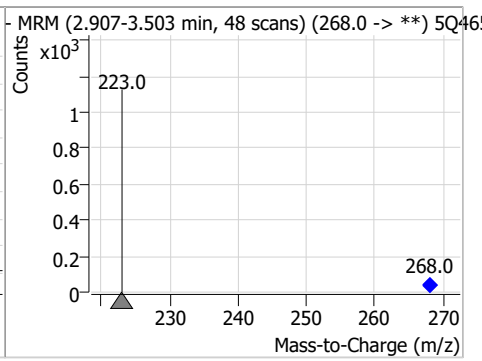




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.35	3.11	-0.02	38792				

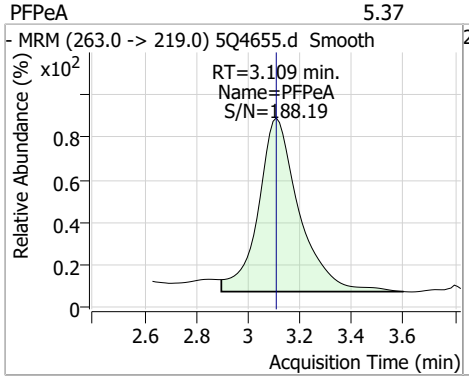


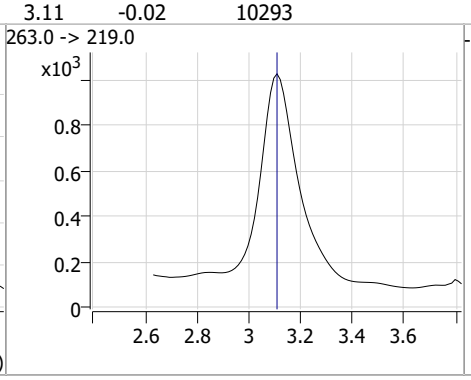


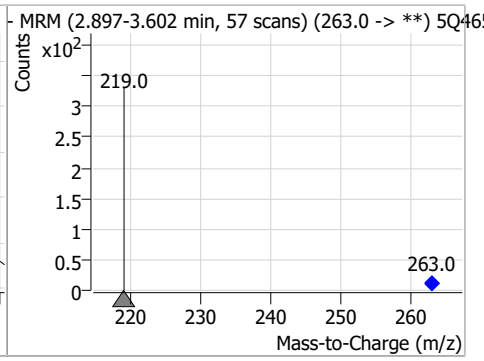


Perfluorinated Compounds by LC/MS/MS

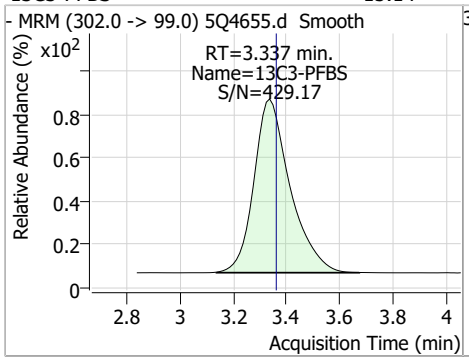
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.37	3.11	-0.02	10293				

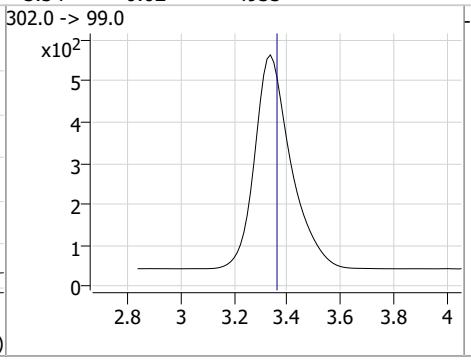


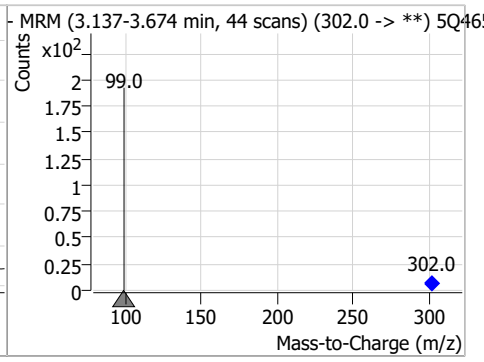




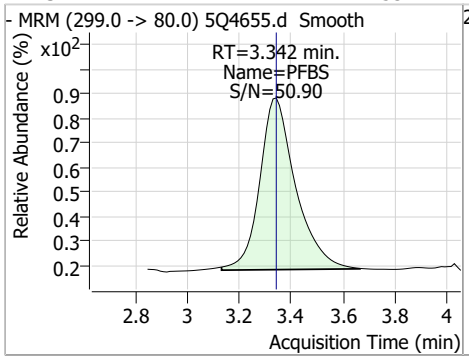
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.14	3.34	-0.02	4933				

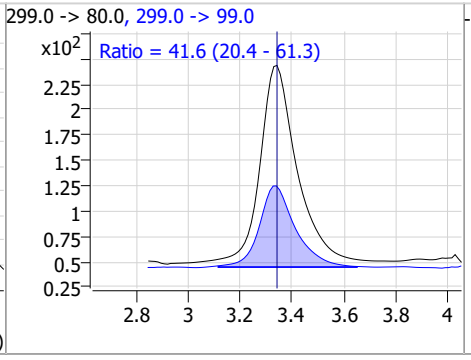


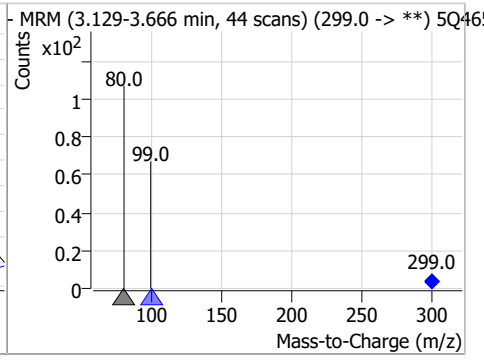




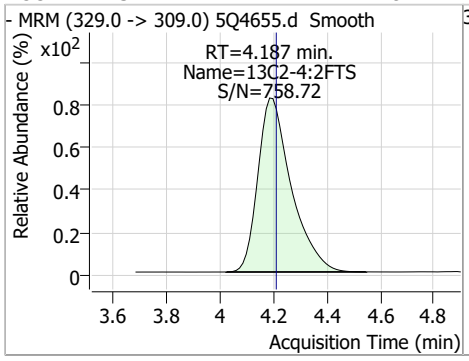
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.53	3.34	-0.02	1873	299.0 -> 99.0	41.6	20.4	61.3

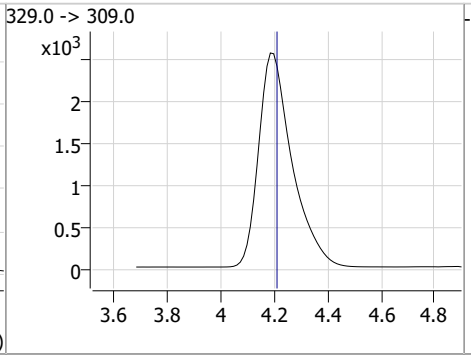


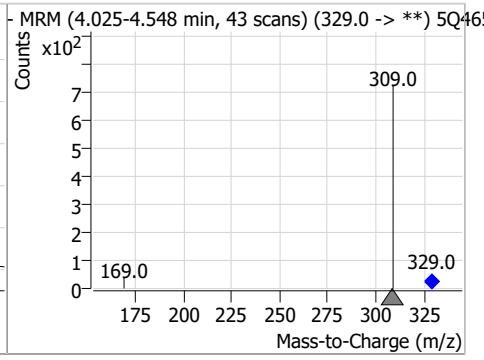




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.91	4.19	-0.02	21903				

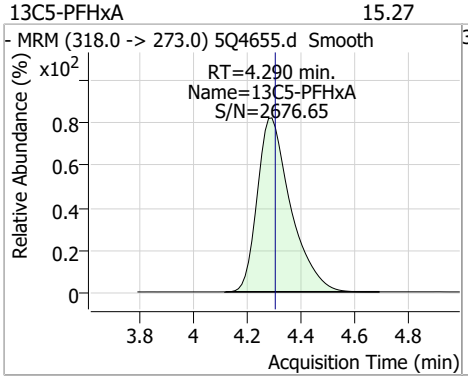


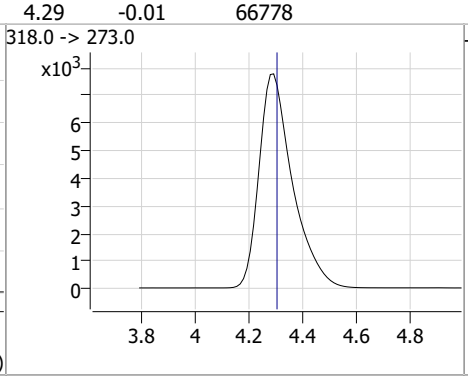


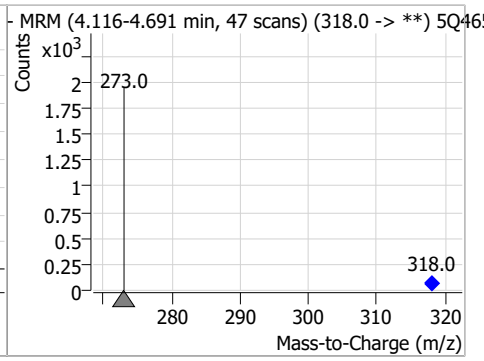


Perfluorinated Compounds by LC/MS/MS

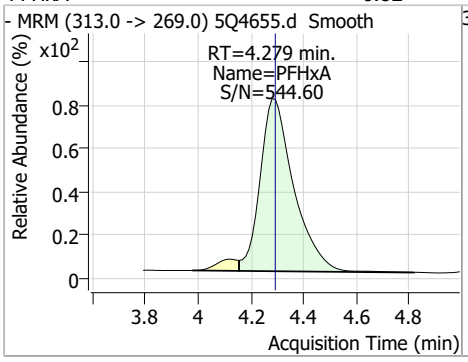
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.27	4.29	-0.01	66778				

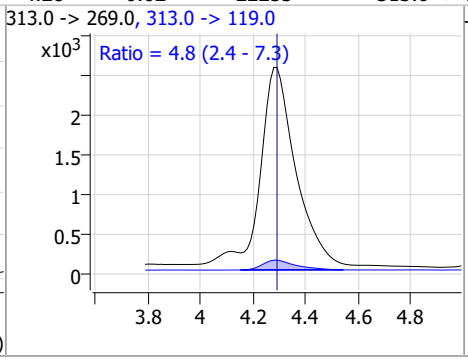


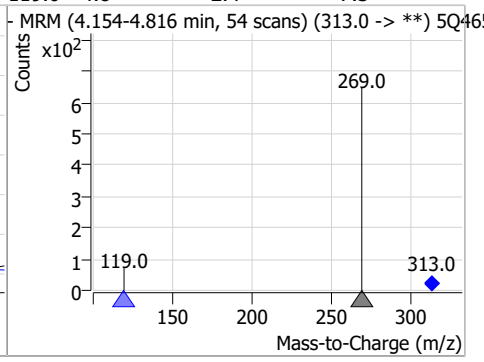




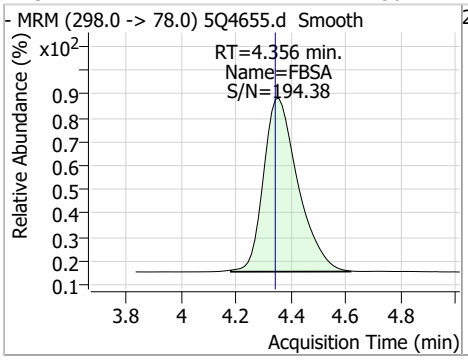
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.82	4.28	-0.02	22253	313.0 -> 119.0	4.8	2.4	7.3

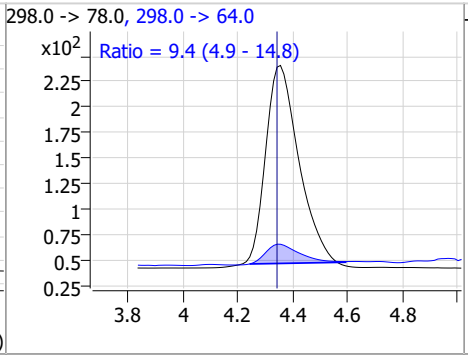


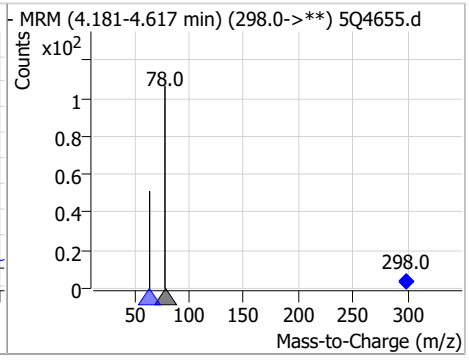




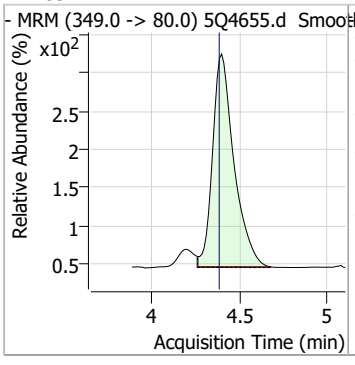
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.56	4.36	0.00	1732	298.0 -> 64.0	9.4	4.9	14.8

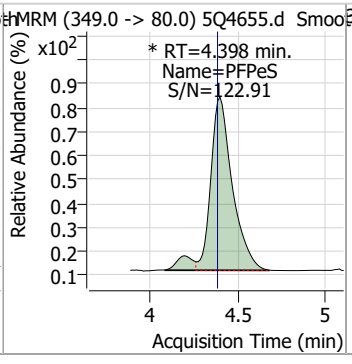


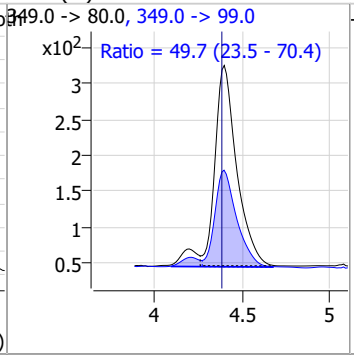


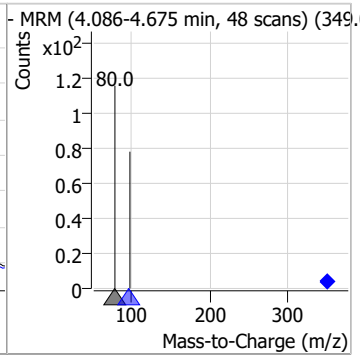


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.37	4.40	-0.01	2519 (m)	349.0 -> 99.0	49.7	23.5	70.4



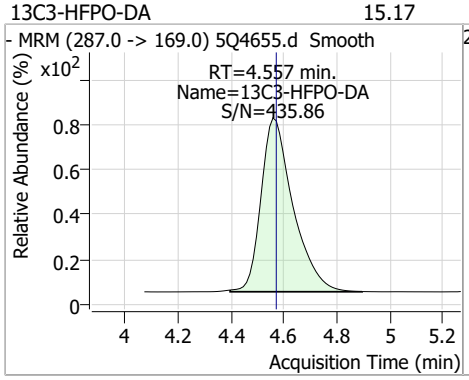


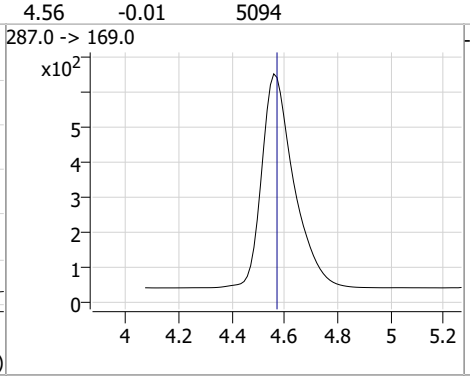


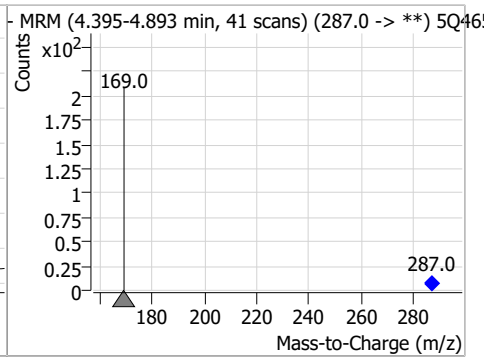


Perfluorinated Compounds by LC/MS/MS

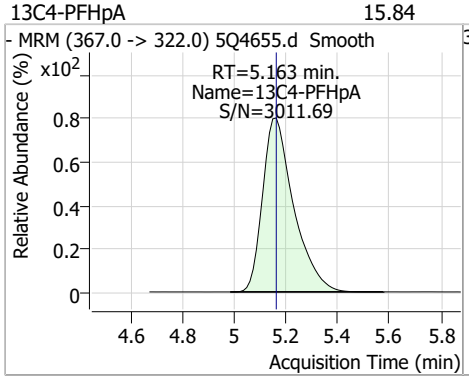
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.17	4.56	-0.01	5094				

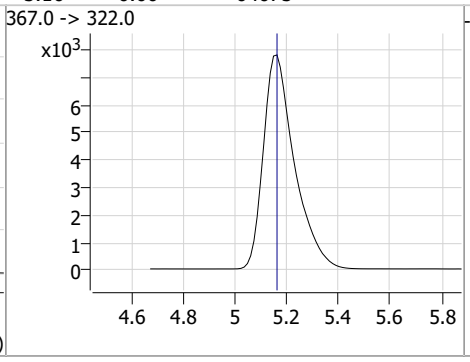


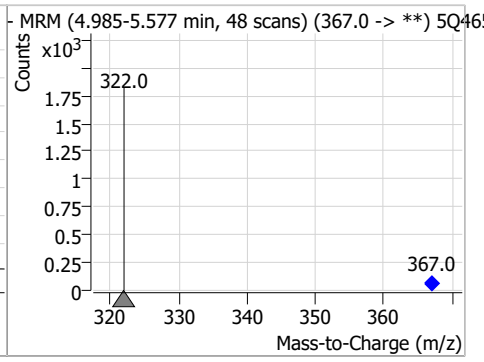




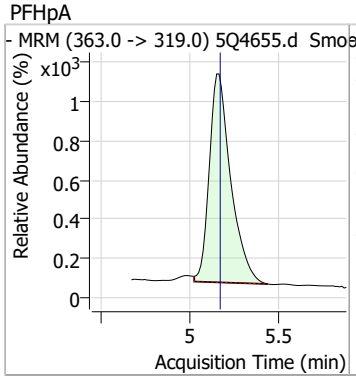
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.84	5.16	0.00	64675				

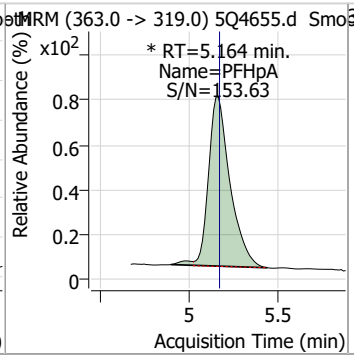


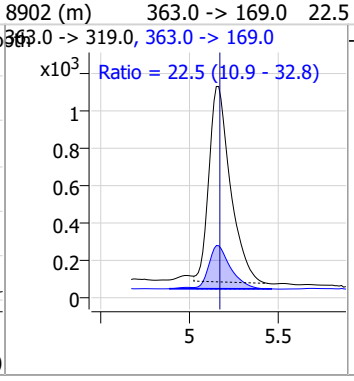


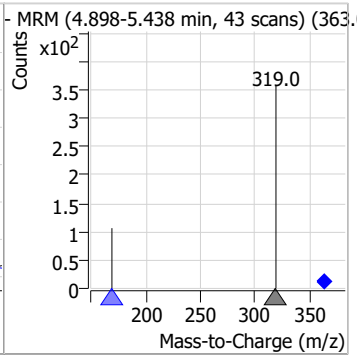


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.10	5.16	0.00	8902 (m)	363.0 -> 169.0	22.5	10.9	32.8

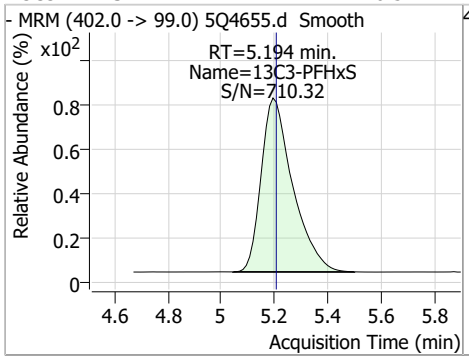


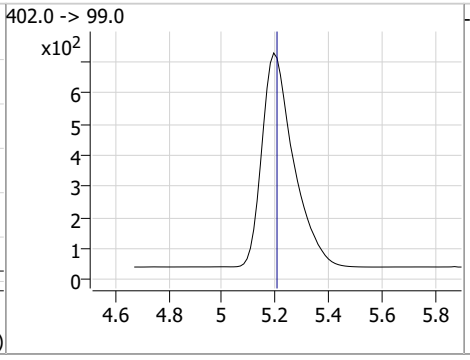


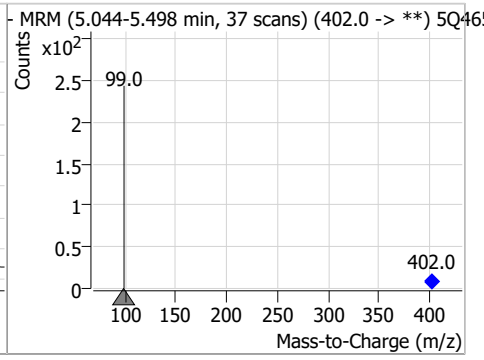




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.52	5.19	-0.01	5633				

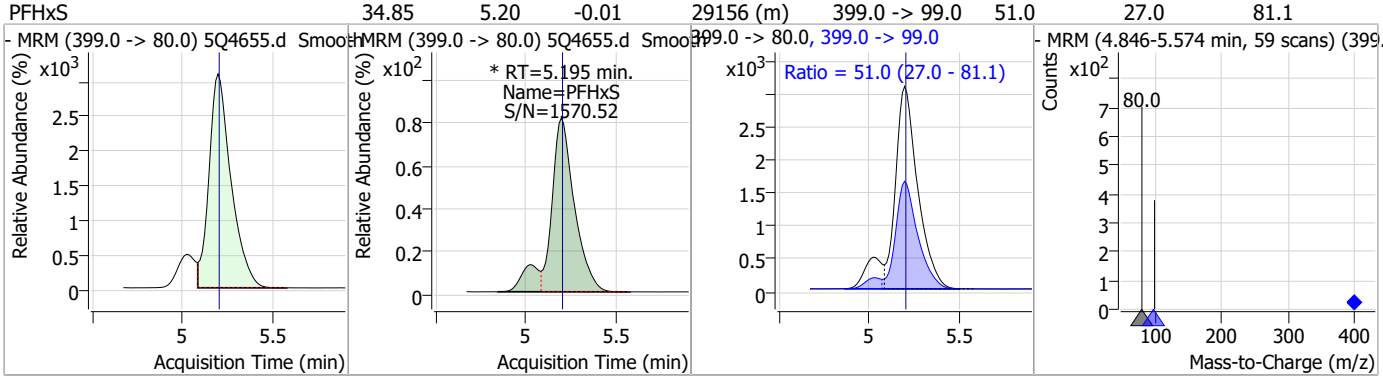




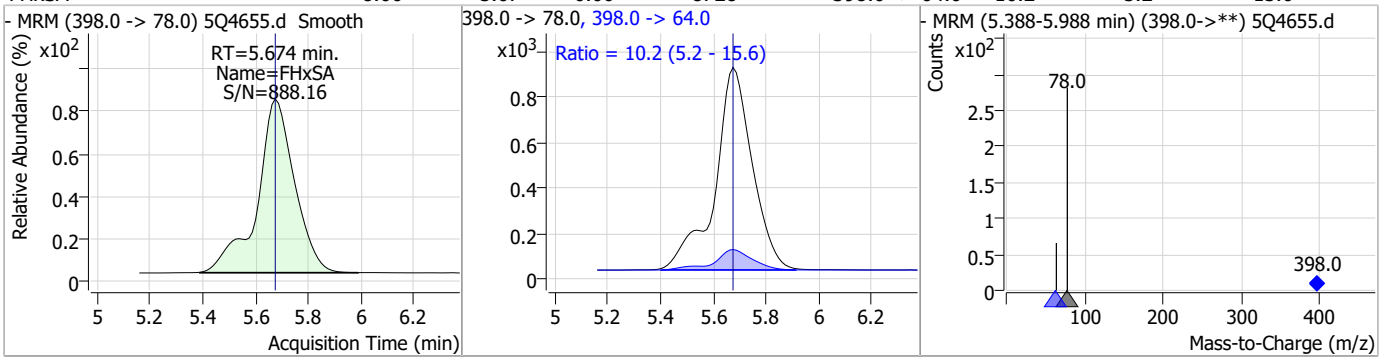


Perfluorinated Compounds by LC/MS/MS

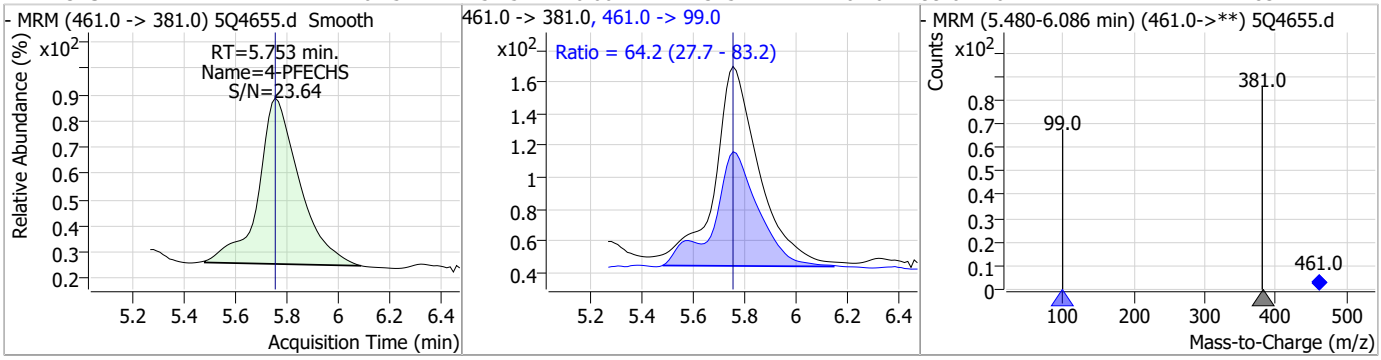
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	34.85	5.20	-0.01	29156 (m)	399.0 -> 99.0	51.0	27.0	81.1



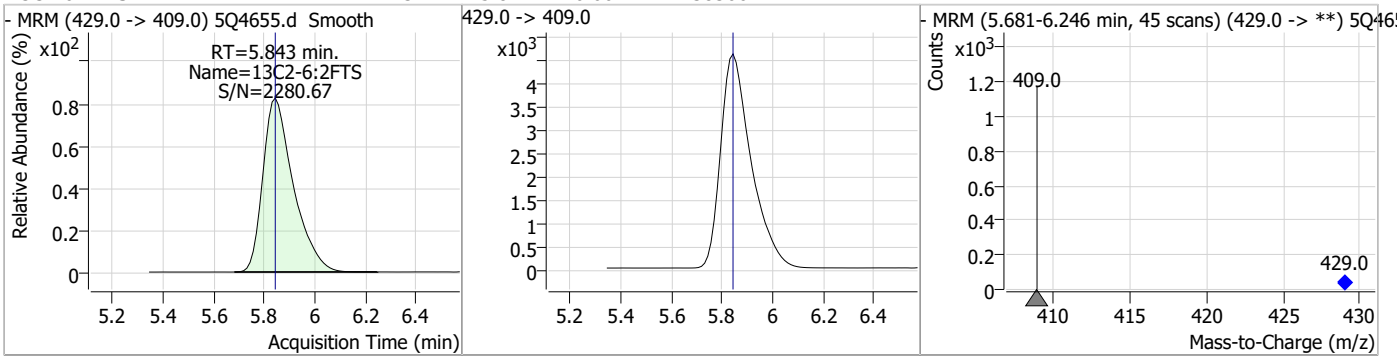
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	8.66	5.67	0.00	8728	398.0 -> 64.0	10.2	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.75	5.75	0.00	1345	461.0 -> 99.0	64.2	27.7	83.2

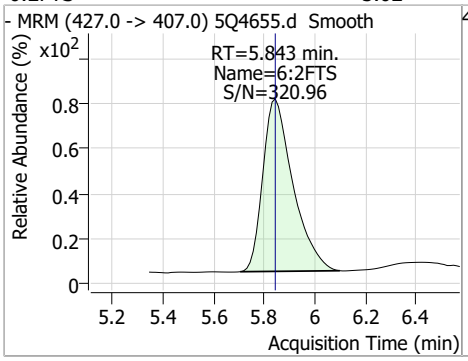


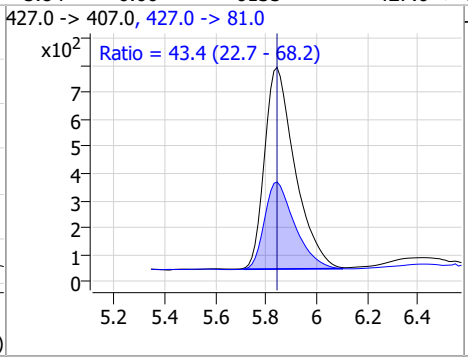
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.13	5.84	0.00	38306				

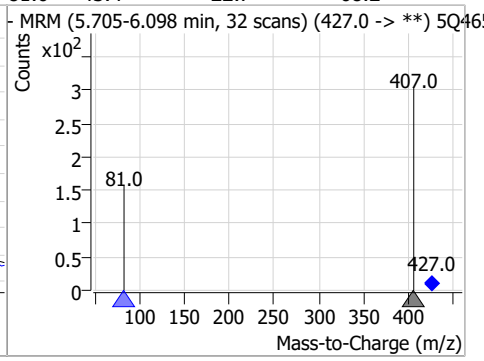


Perfluorinated Compounds by LC/MS/MS

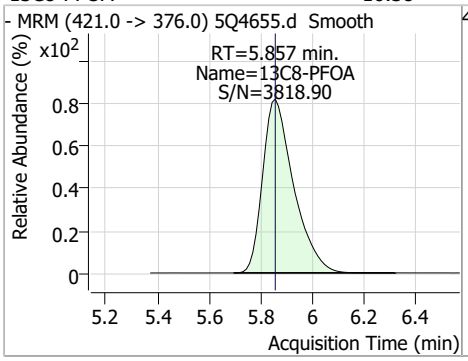
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	3.02	5.84	0.00	6135	427.0 -> 81.0	43.4	22.7	68.2

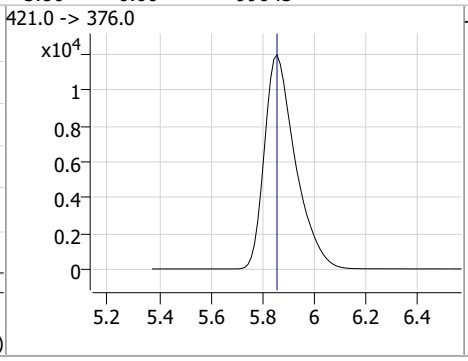


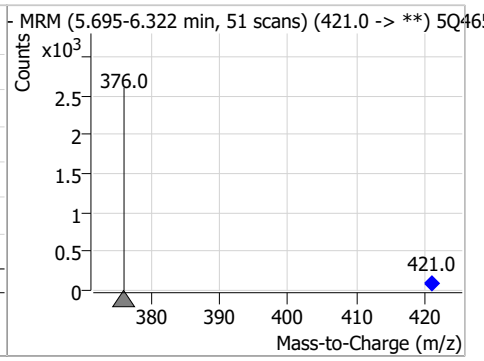




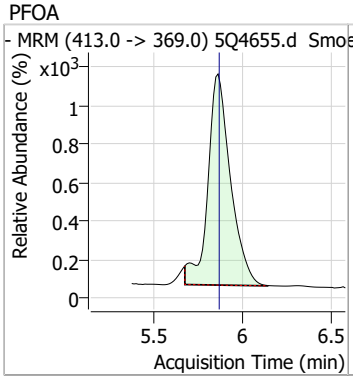
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.38	5.86	0.00	99045				

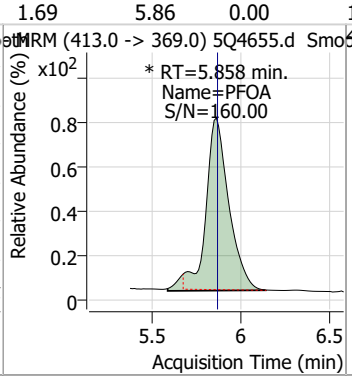


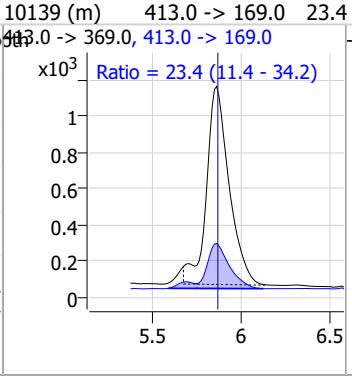


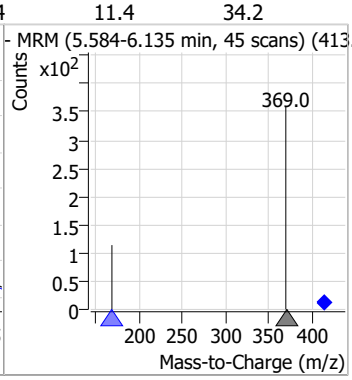


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.69	5.86	0.00	10139 (m)	413.0 -> 169.0	23.4	11.4	34.2

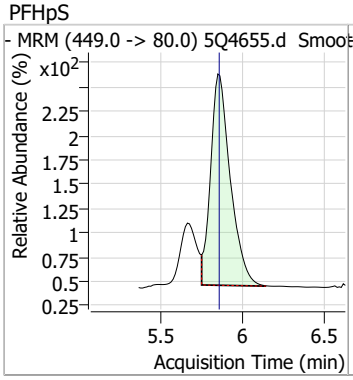


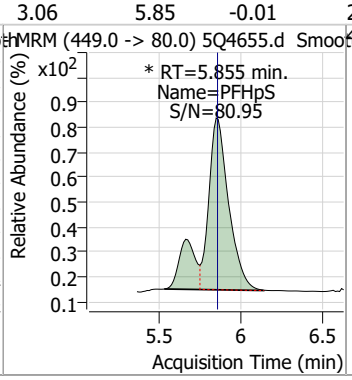


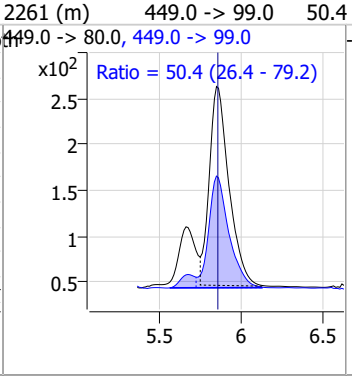


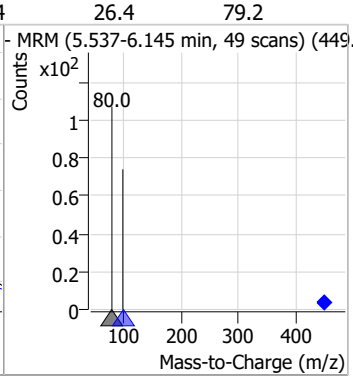


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	3.06	5.85	-0.01	2261 (m)	449.0 -> 99.0	50.4	26.4	79.2



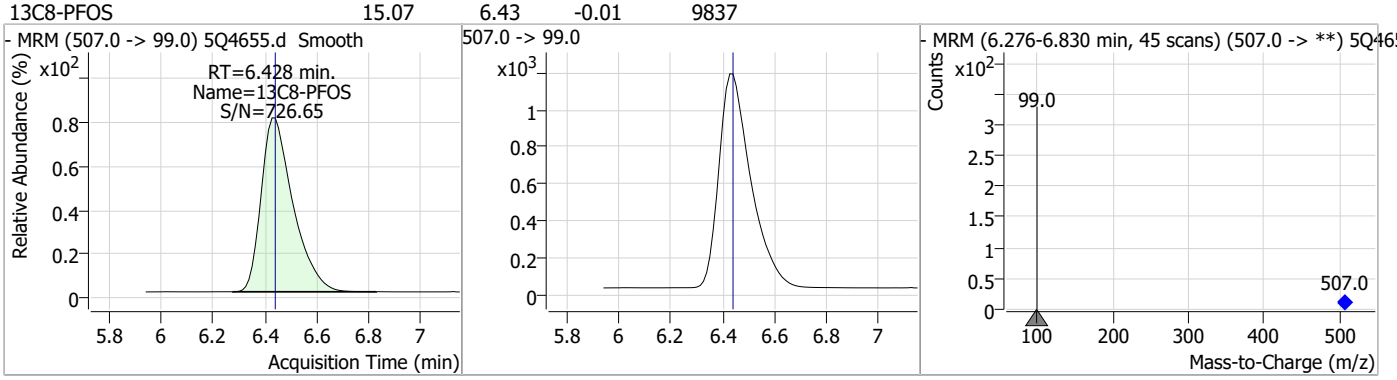




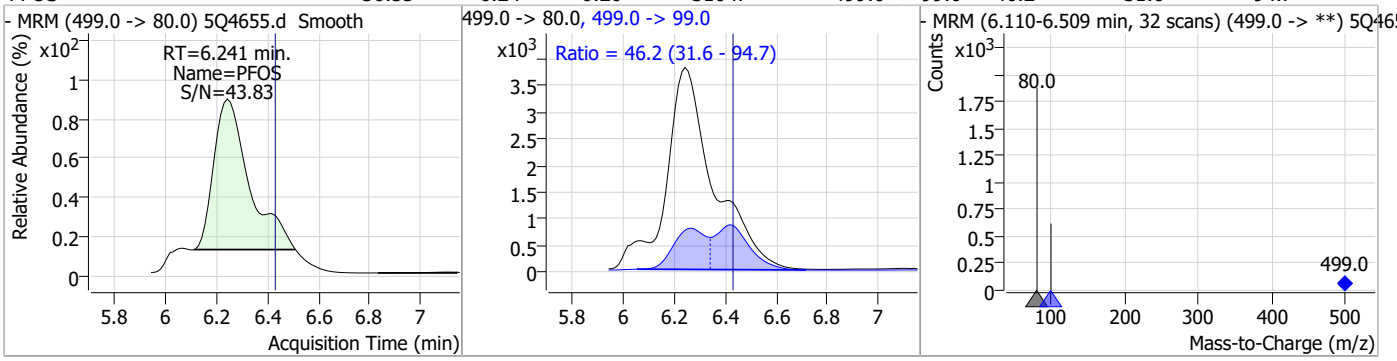


Perfluorinated Compounds by LC/MS/MS

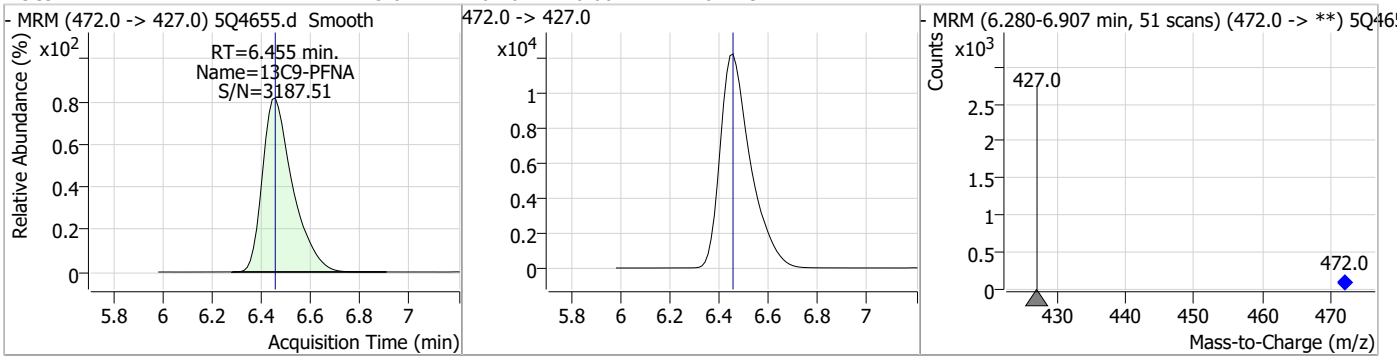
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.07	6.43	-0.01	9837				



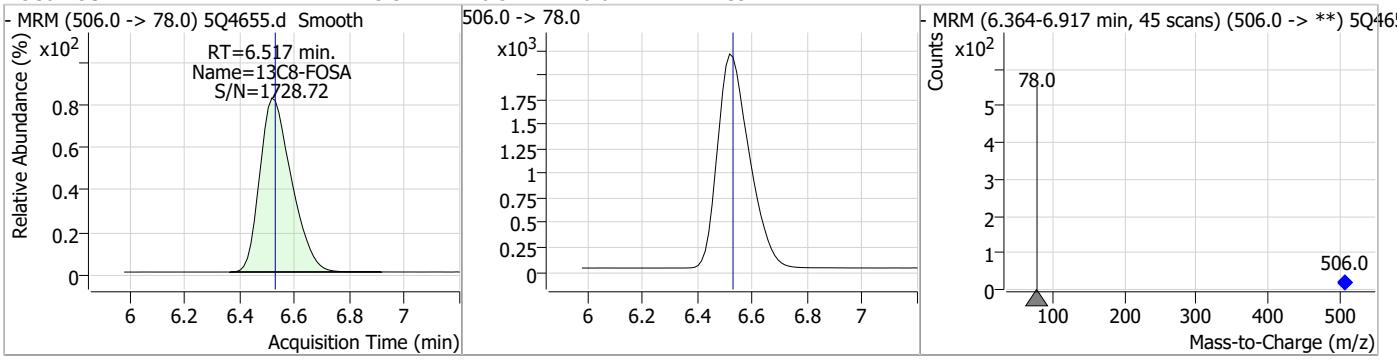
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	36.53	6.24	-0.20	31647	499.0 -> 99.0	46.2	31.6	94.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.87	6.46	0.00	104249				

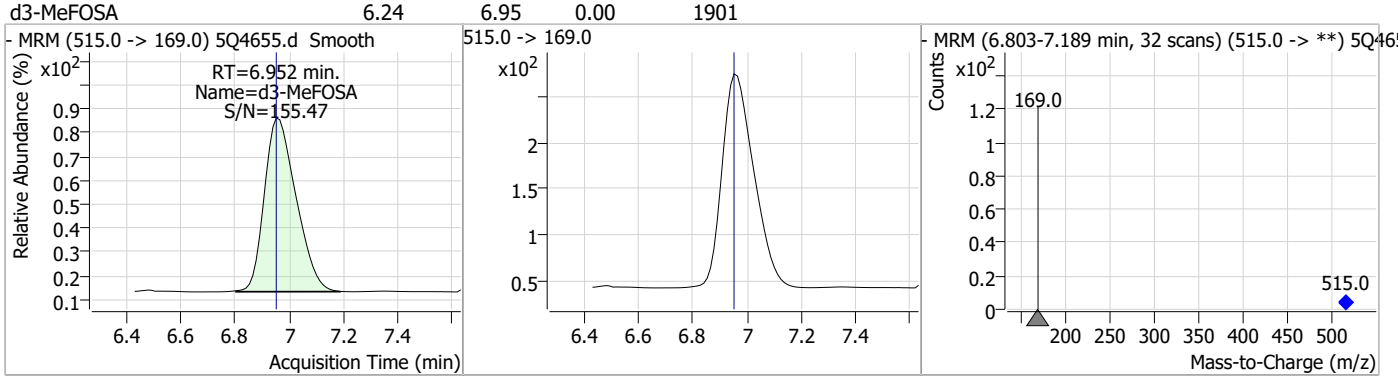


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.37	6.52	-0.01	17439				

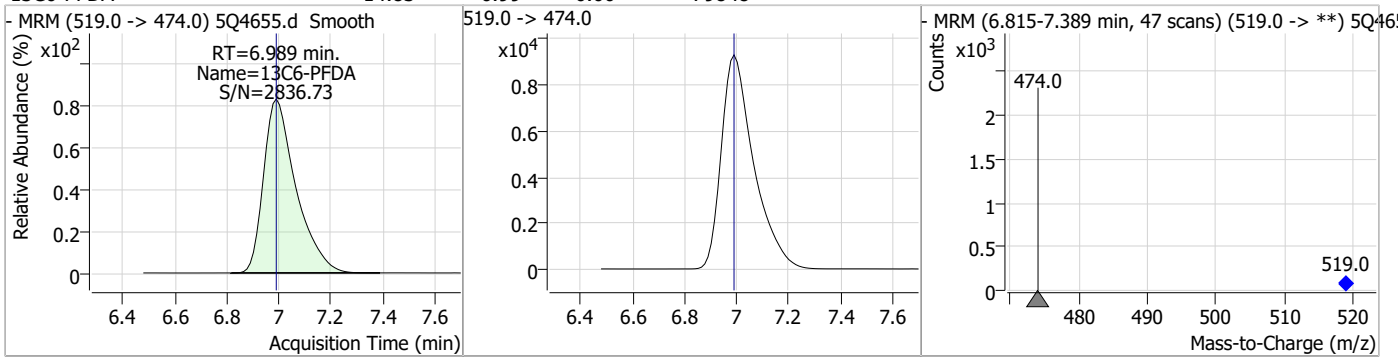


Perfluorinated Compounds by LC/MS/MS

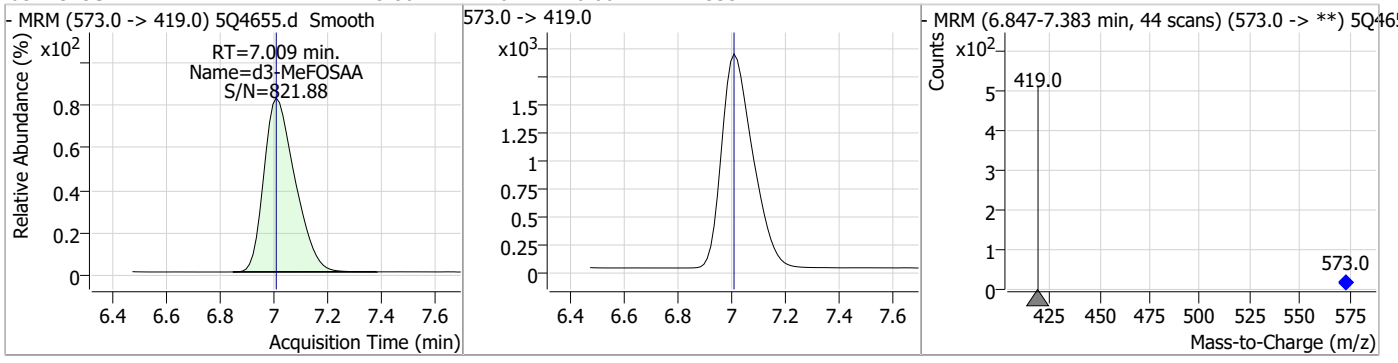
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.24	6.95	0.00	1901				



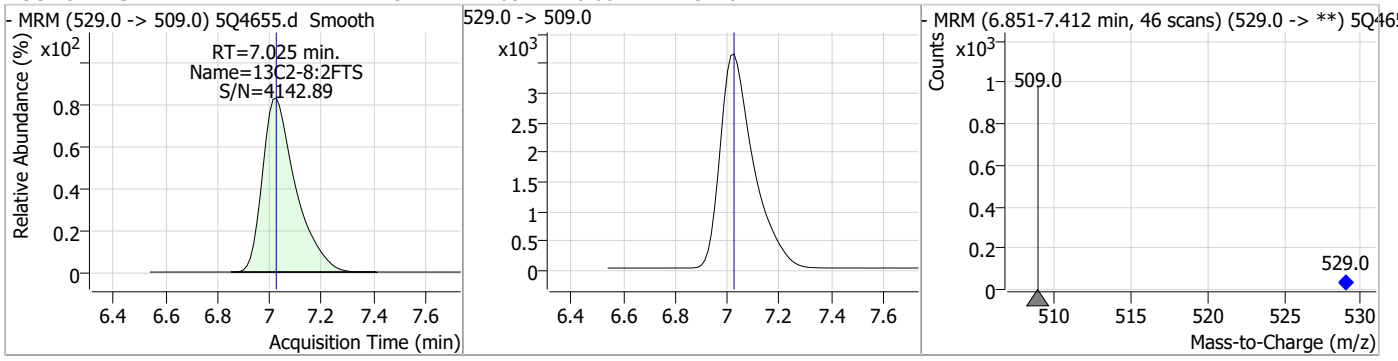
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.83	6.99	0.00	79848				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.80	7.01	0.00	15351				

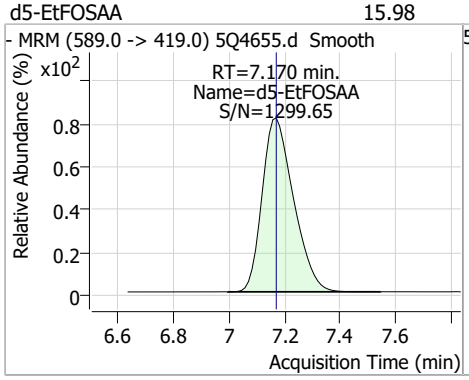


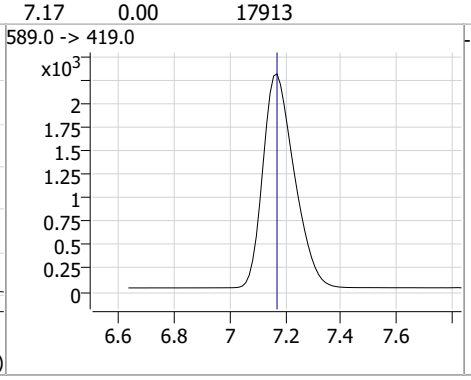
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.32	7.03	0.00	32161				

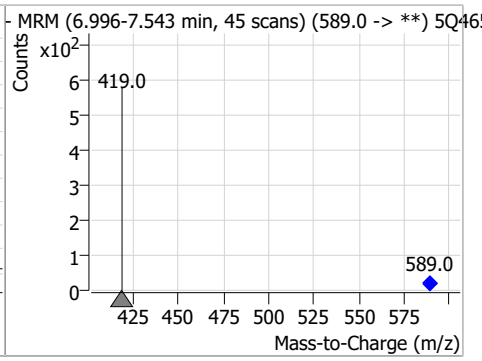


Perfluorinated Compounds by LC/MS/MS

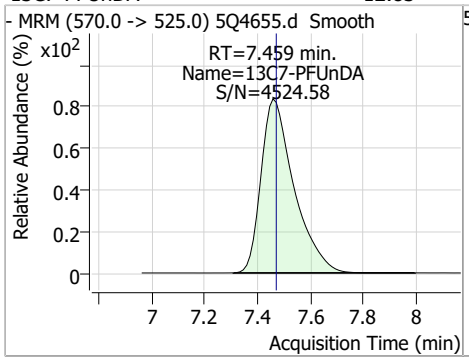
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.98	7.17	0.00	17913				

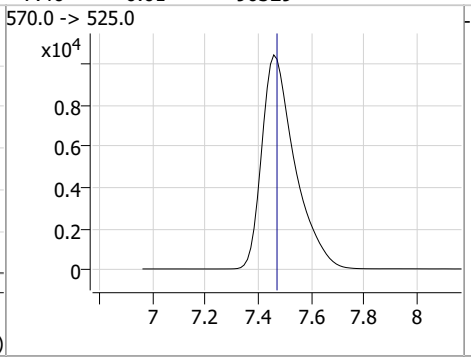


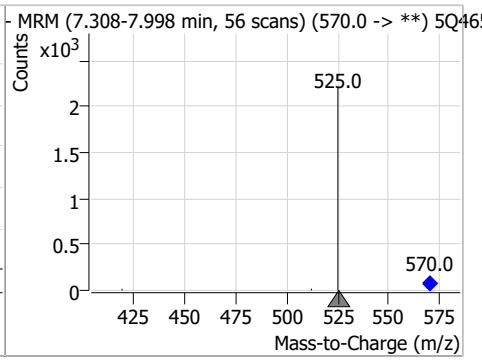




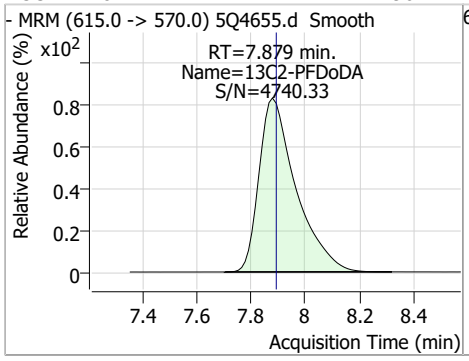
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.83	7.46	-0.01	90329				

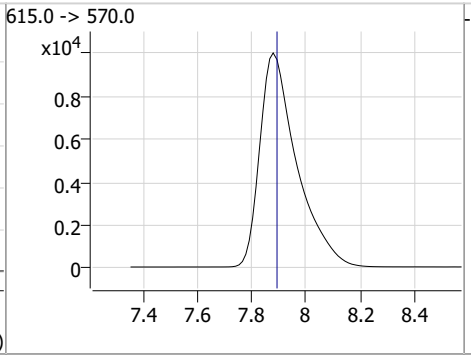


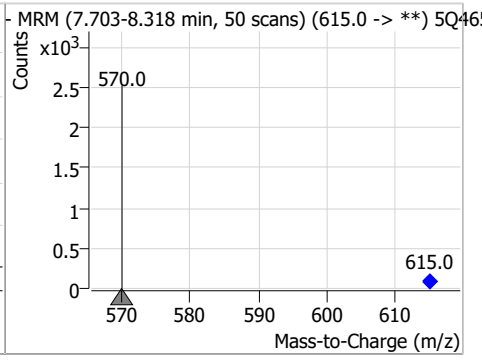




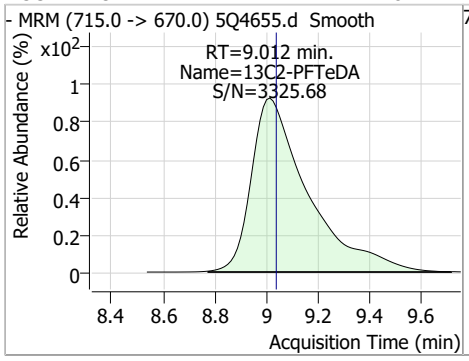
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.96	7.88	-0.01	93936				

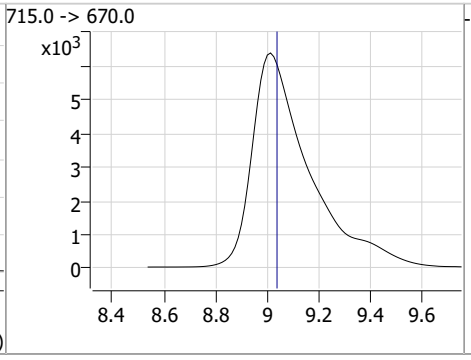


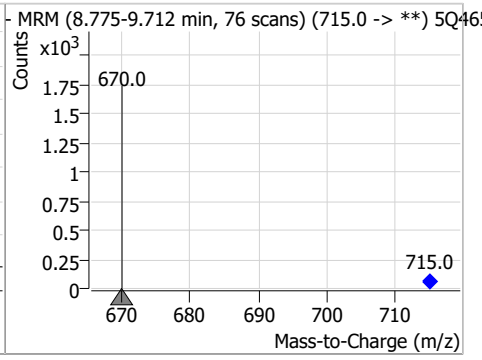




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.82	9.01	-0.02	96709				







Manual Integration Approval Summary

Sample Number: FA98286-18
Lab FileID: 5Q4655.D
Injection Time: 09/15/22 11:44
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 18:57 Norman Farmer
Supervisor approved: 09/16/22 19:38 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4727.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 8:12:10 AM
Sample Name : fa98286-18
Vial : P2-A2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92763,S5Q72,110,,,1.0,1,water

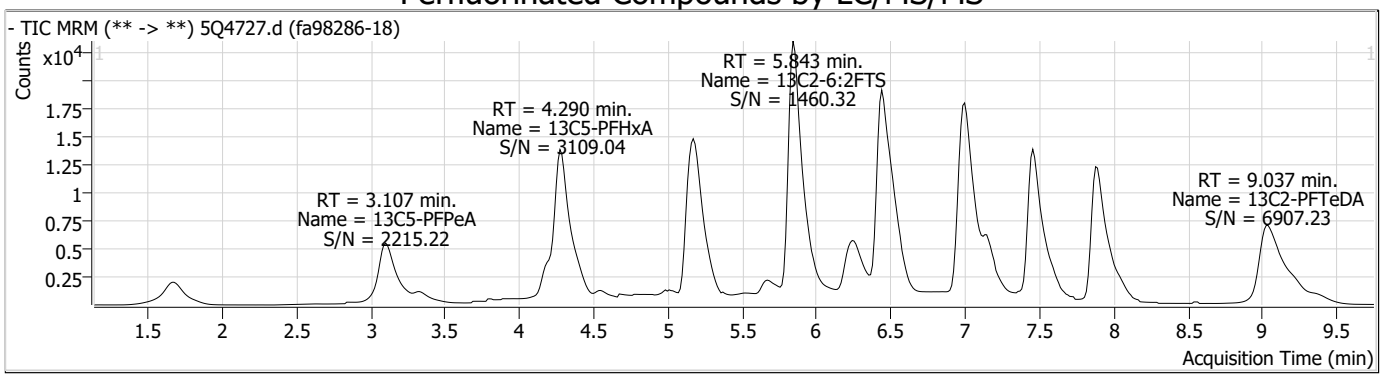
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.675	217.0 -> 172.0	21133	20.00	µg/L	-0.025
M5-PFPeA	3.107	268.0 -> 223.0	36676	20.00	µg/L	-0.025
M5-PFHxA	4.290	318.0 -> 273.0	63837	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	61556	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	93460	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	98997	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	75558	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	88217	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	92127	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	94126	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	15916	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4567	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5308	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	8871	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	21406	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	36988	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	32557	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16281	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4585	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	1673	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	17773	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	21406	14.58	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C2-6:2FTS	5.843	429.0 -> 409.0	36988	16.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%		
13C2-8:2FTS	7.025	529.0 -> 509.0	32557	14.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	92127	12.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.6%		
13C2-PFTeDA	9.037	715.0 -> 670.0	94126	12.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.4%		
13C3-PFBS	3.337	302.0 -> 99.0	4567	14.02	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	5308	15.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%		
13C4-PFBA	1.675	217.0 -> 172.0	21133	11.82	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.1%		
13C4-PFHpA	5.163	367.0 -> 322.0	61556	15.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%		
13C5-PFHxA	4.290	318.0 -> 273.0	63837	14.60	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.0%		
13C5-PFPeA	3.107	268.0 -> 223.0	36676	12.62	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.1%		
13C6-PFDA	6.989	519.0 -> 474.0	75558	14.04	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

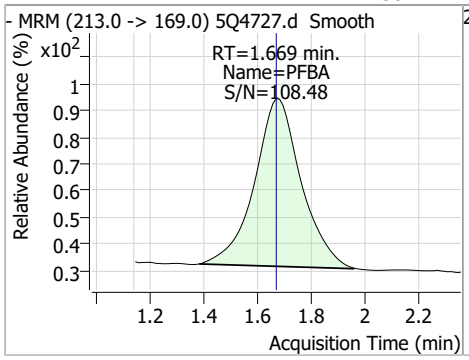
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%			
13C7-PFUnDA	7.471	570.0 -> 525.0	88217	12.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.6%			
13C8-FOSA	6.517	506.0 -> 78.0	15916	14.03	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.1%			
13C8-PFOA	5.857	421.0 -> 376.0	93460	15.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%			
13C8-PFOS	6.440	507.0 -> 99.0	8871	13.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%			
13C9-PFNA	6.455	472.0 -> 427.0	98997	15.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16281	16.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4585	13.66	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	1673	5.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 27.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17773	15.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	5805	2.96	µg/L		100
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	1246	2.50	µg/L		100
PFBS	3.342	299.0 -> 80.0	1736	2.53	µg/L		98
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	8280	2.05	µg/L	m	98
PFHpS	5.867	449.0 -> 80.0	2155	3.23	µg/L	m	91
PFHxA	4.291	313.0 -> 269.0	21177	6.79	µg/L		99
PFHxS	5.195	399.0 -> 80.0	27256	34.58	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	9266	1.63	µg/L	m	97
PFOS	6.241	499.0 -> 80.0	33793	43.25	µg/L	m	70
PFPeA	3.109	263.0 -> 219.0	9920	5.47	µg/L		100
PFPeS	4.398	349.0 -> 80.0	2364	4.43	µg/L	m	100
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	1291	0.77	µg/L		92
FBSA	4.356	298.0 -> 78.0	1632	1.54	µg/L		98
FHxSA	5.674	398.0 -> 78.0	8037	8.45	µg/L		99

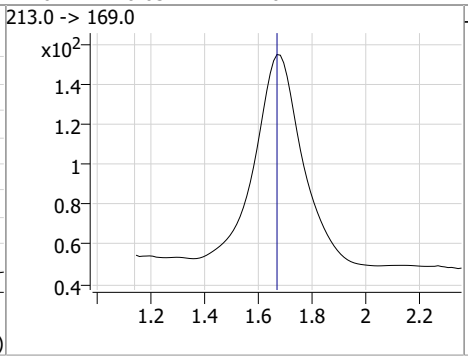
 # = Qualifier out of range, m = manually integrated, + = Area summed

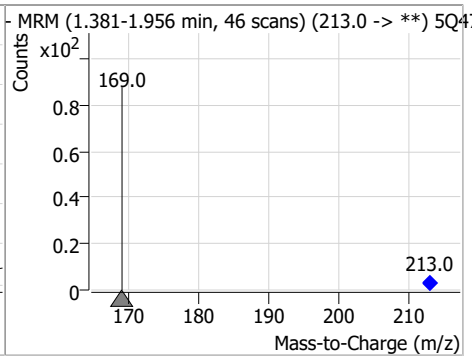
Perfluorinated Compounds by LC/MS/MS



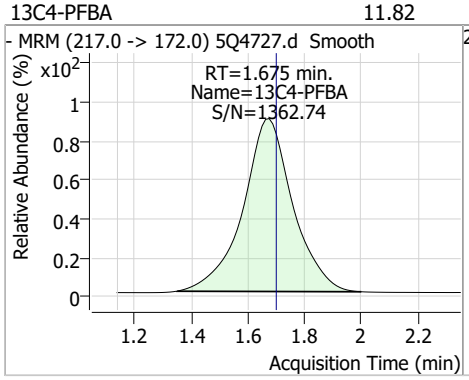
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.50	1.67	-0.03	1246				

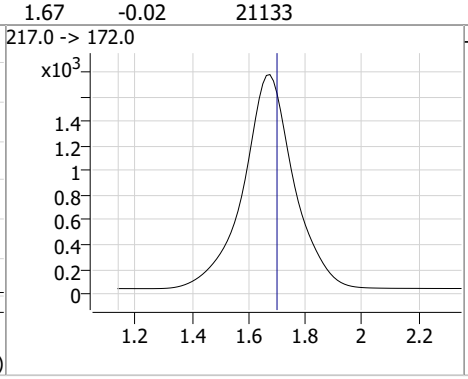


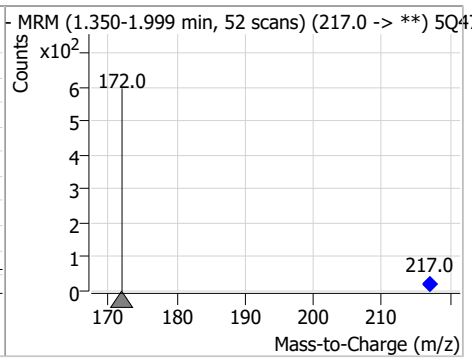




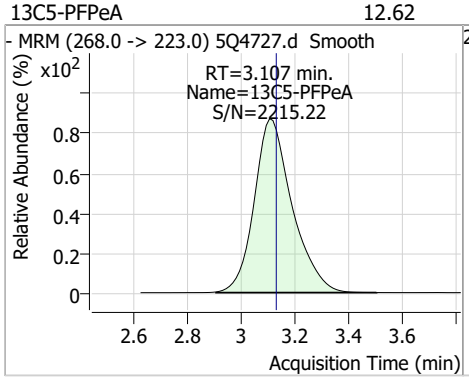
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.82	1.67	-0.02	21133				

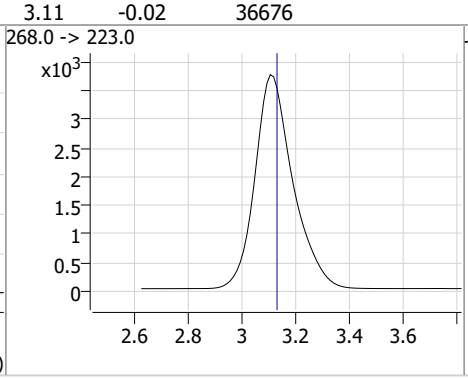


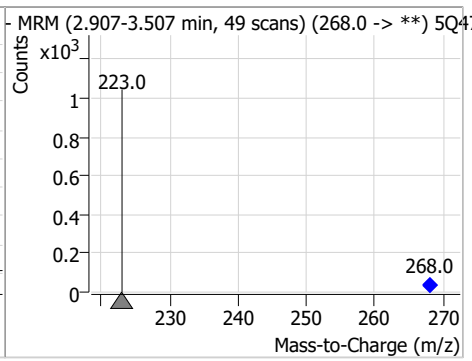




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.62	3.11	-0.02	36676				

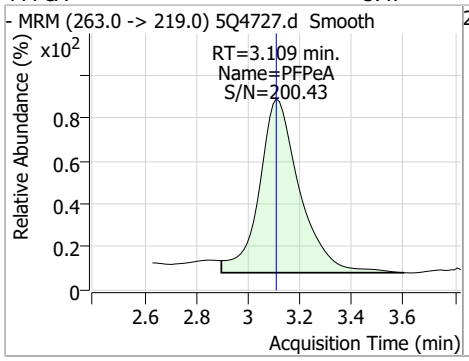


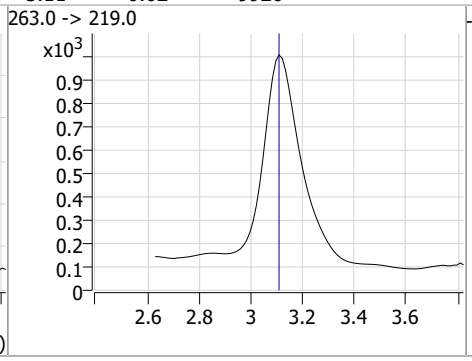


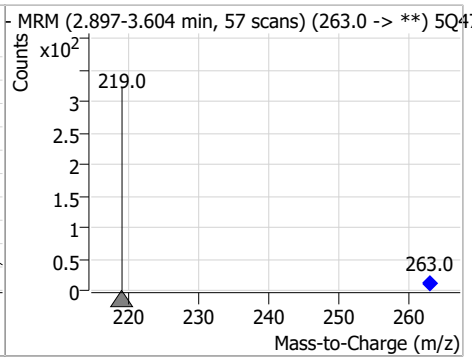


Perfluorinated Compounds by LC/MS/MS

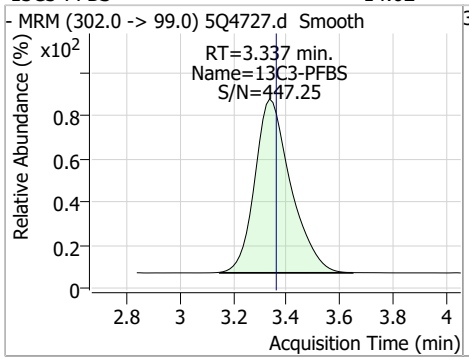
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.47	3.11	-0.02	9920				

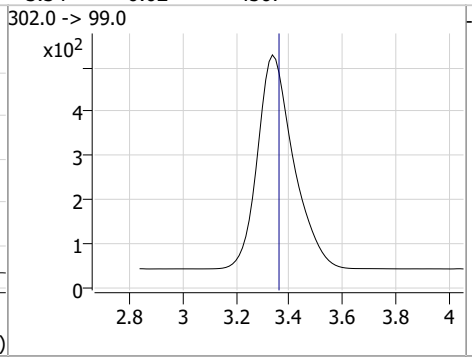


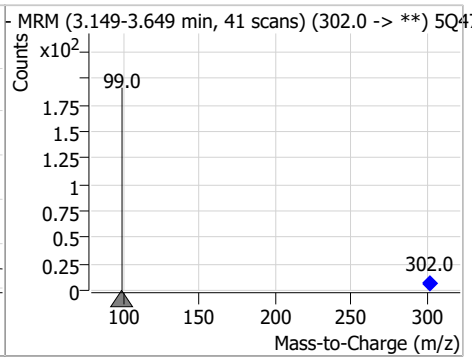




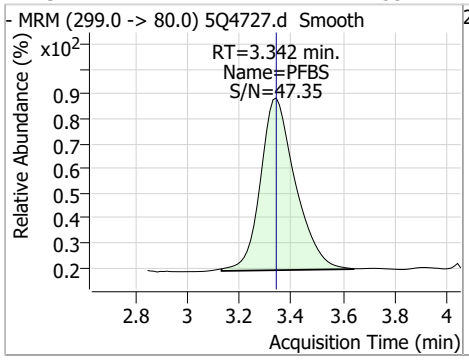
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.02	3.34	-0.02	4567				

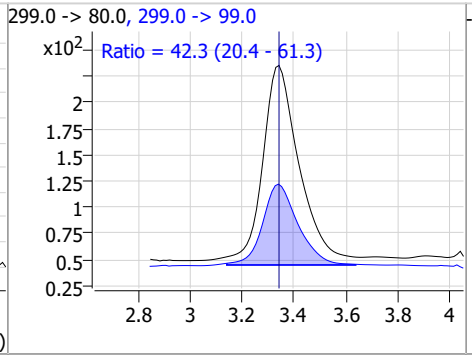


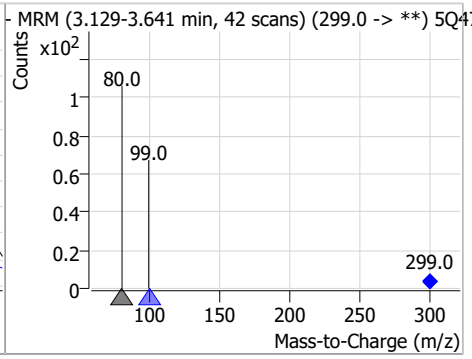




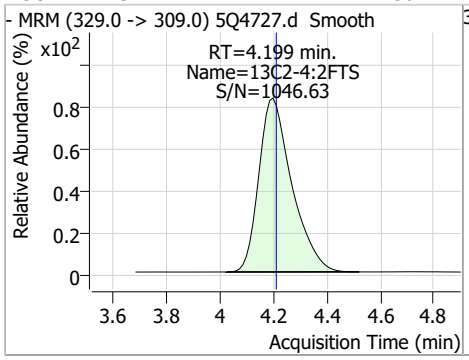
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.53	3.34	-0.02	1736	299.0 -> 99.0	42.3	20.4	61.3

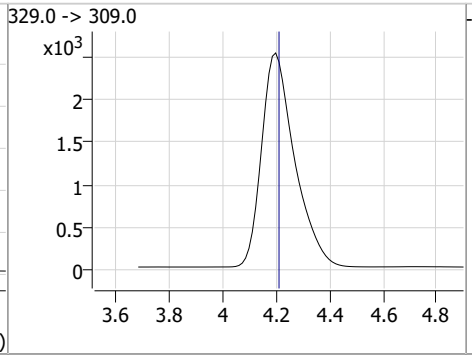


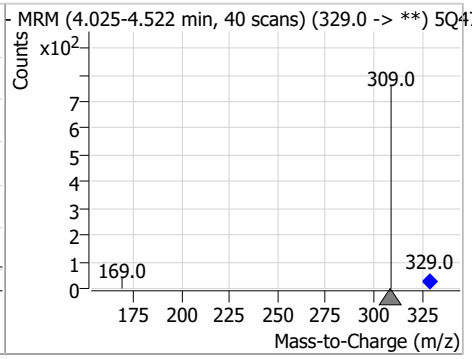




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.58	4.20	-0.01	21406				

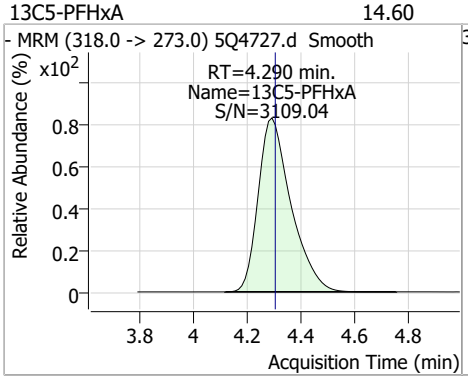


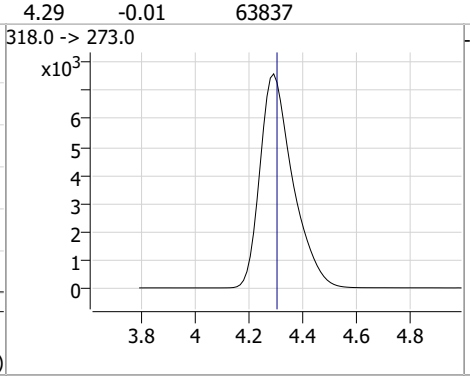


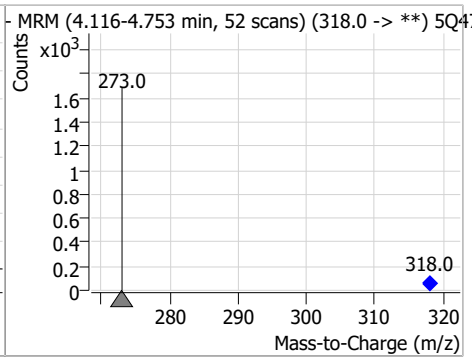


Perfluorinated Compounds by LC/MS/MS

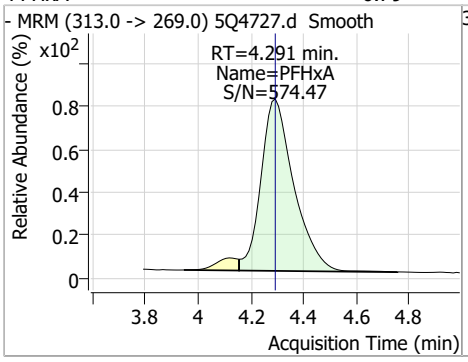
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.60	4.29	-0.01	63837				

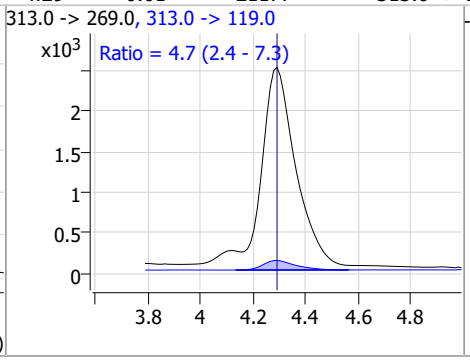


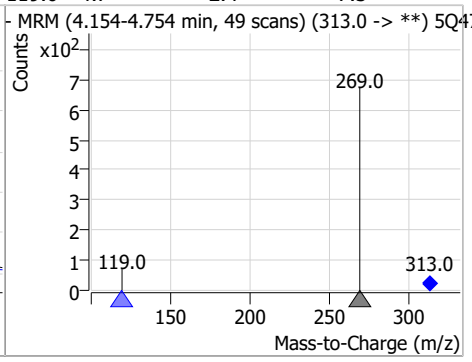




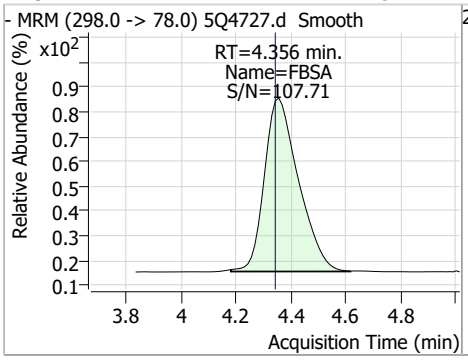
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.79	4.29	-0.01	21177	313.0 -> 119.0	4.7	2.4	7.3

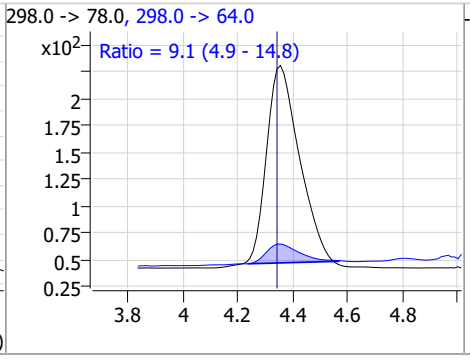


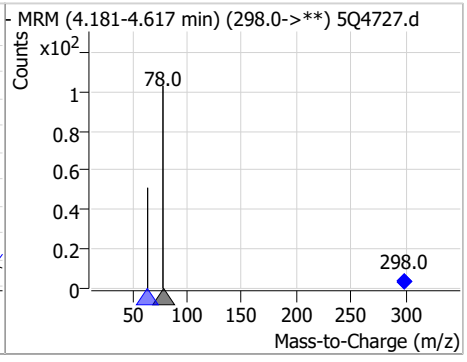




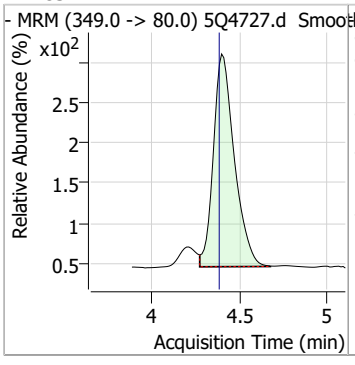
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.54	4.36	0.00	1632	298.0 -> 64.0	9.1	4.9	14.8

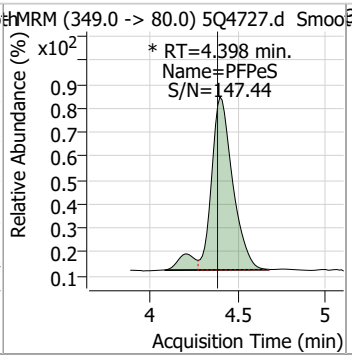


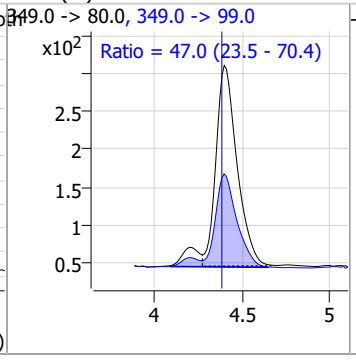


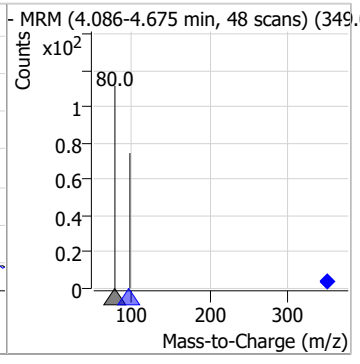


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.43	4.40	-0.01	2364 (m)	349.0 -> 99.0	47.0	23.5	70.4



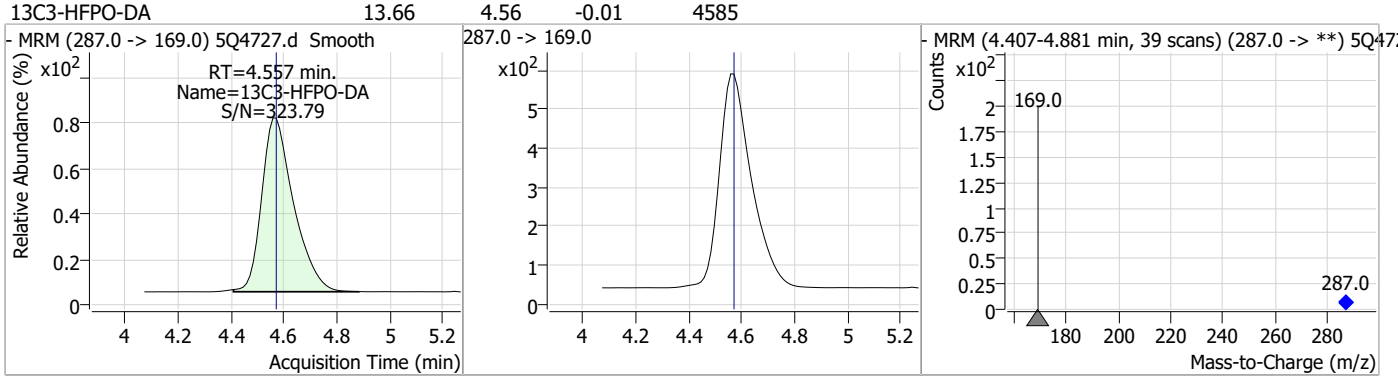




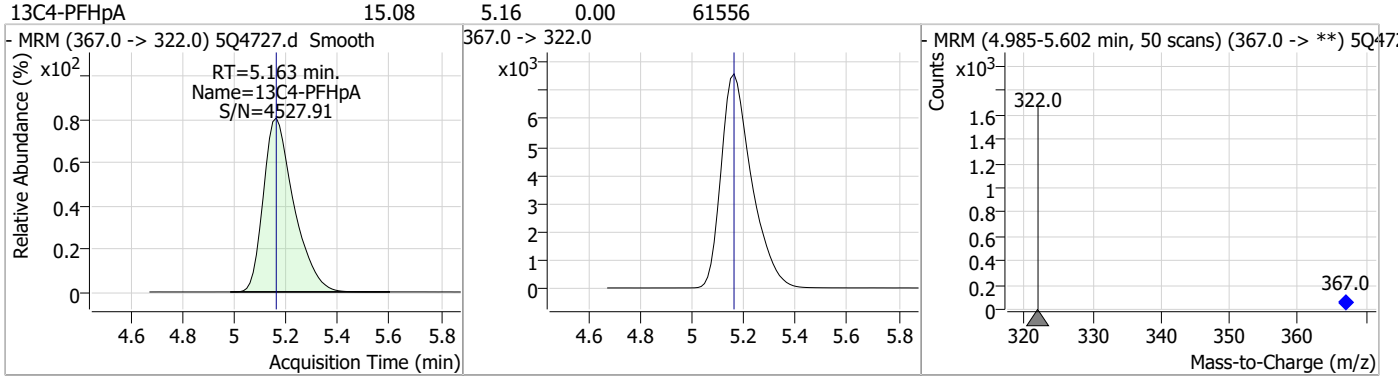


Perfluorinated Compounds by LC/MS/MS

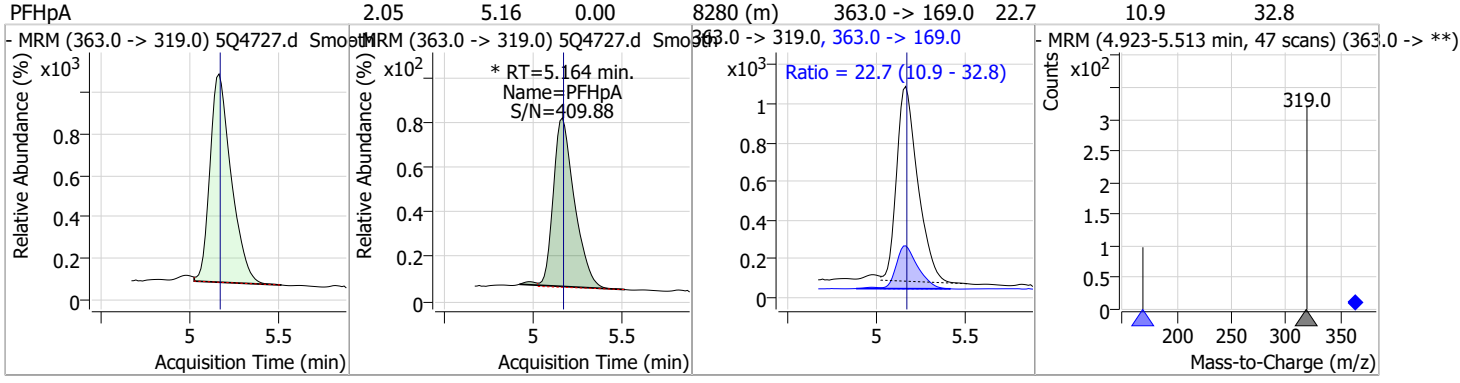
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.66	4.56	-0.01	4585				



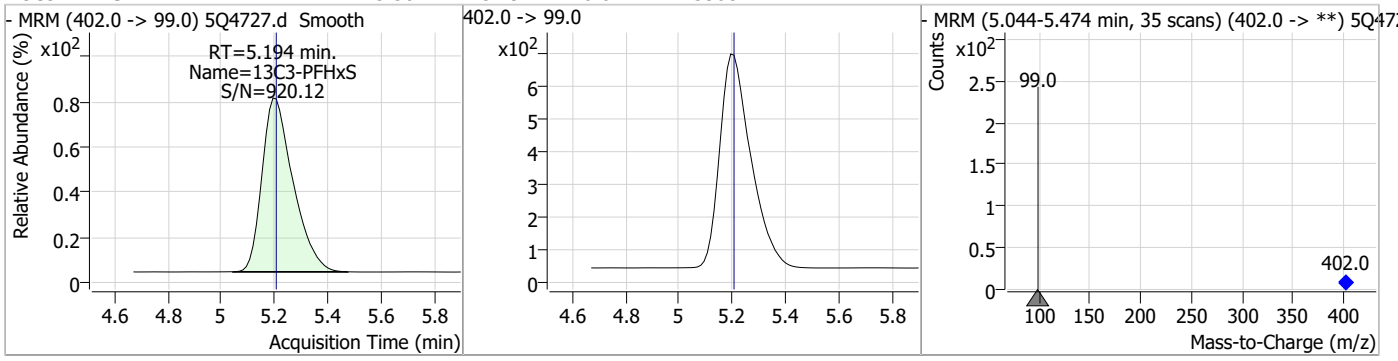
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.08	5.16	0.00	61556				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.05	5.16	0.00	8280 (m)	363.0 -> 169.0	22.7	10.9	32.8

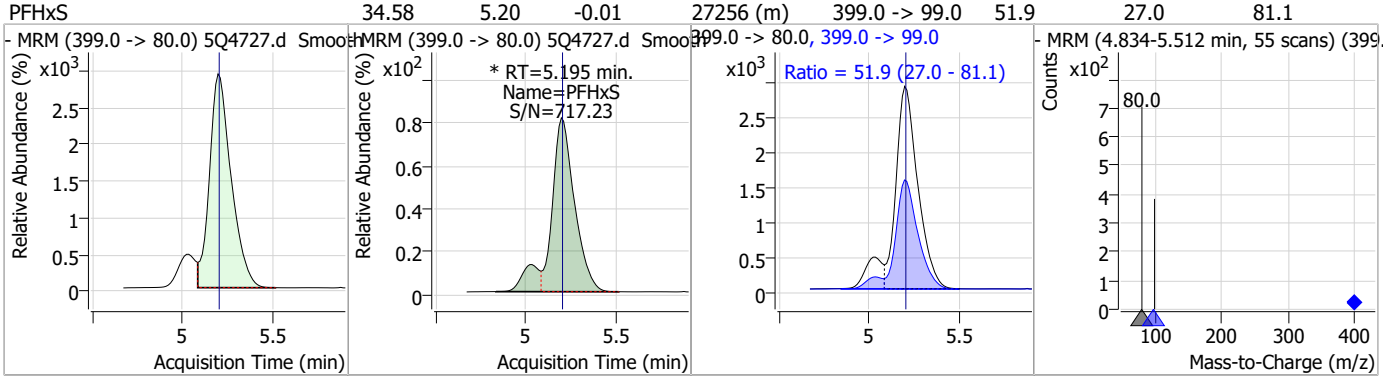


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.56	5.19	-0.01	5308				

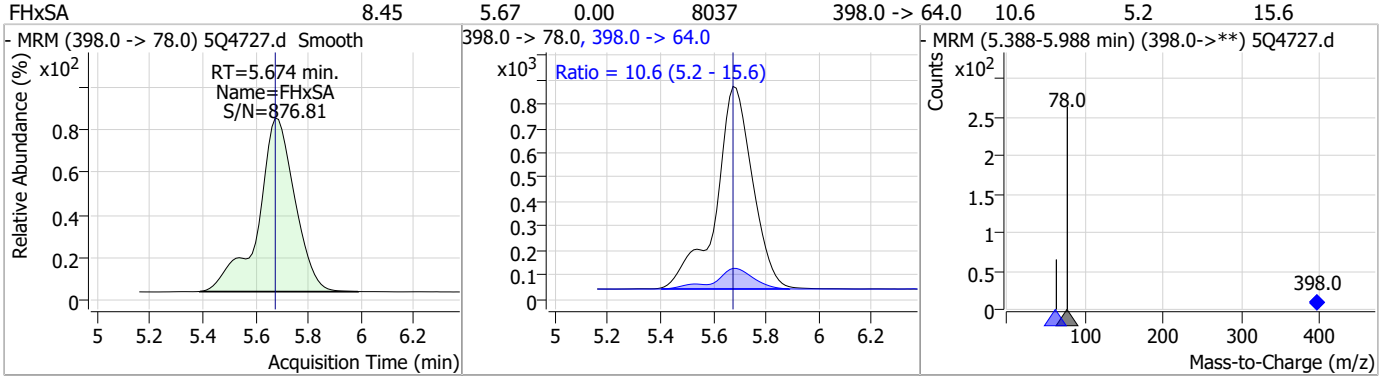


Perfluorinated Compounds by LC/MS/MS

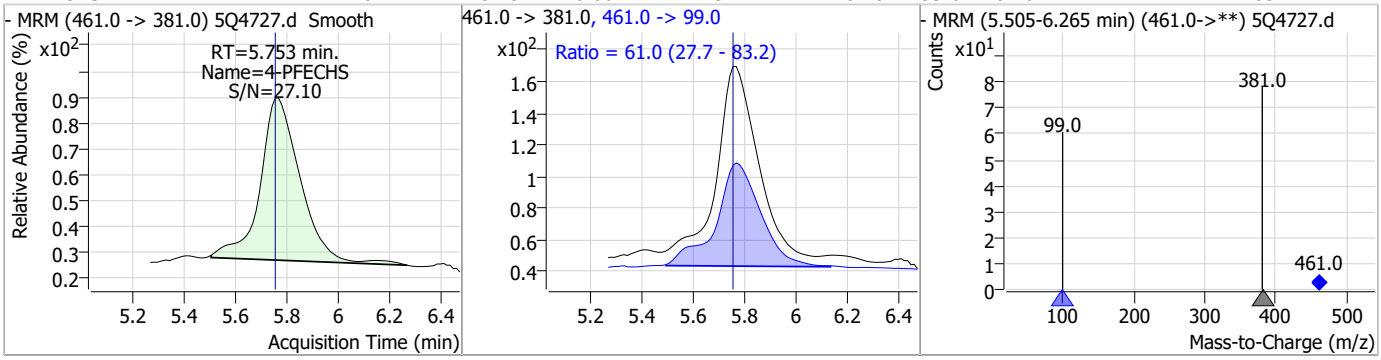
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	34.58	5.20	-0.01	27256 (m)	399.0 -> 99.0	51.9	27.0	81.1



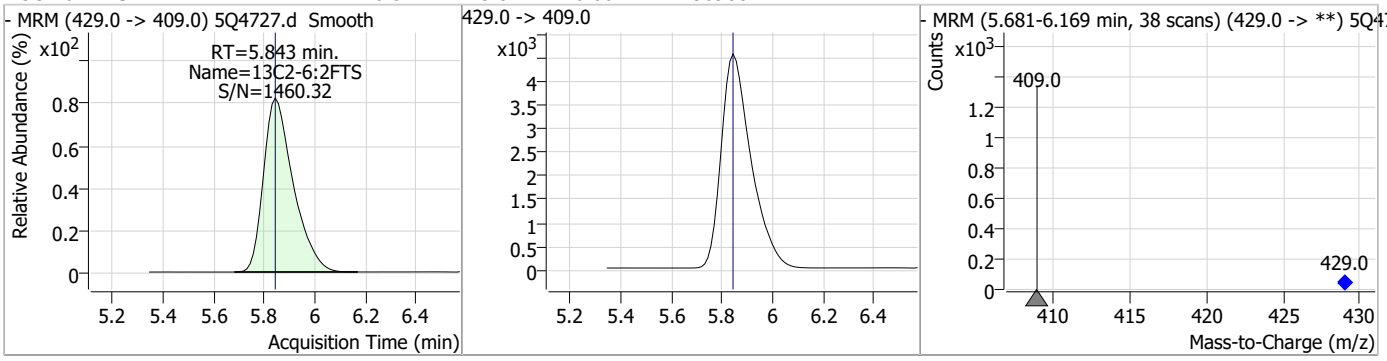
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	8.45	5.67	0.00	8037	398.0 -> 64.0	10.6	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.77	5.75	0.00	1291	461.0 -> 99.0	61.0	27.7	83.2

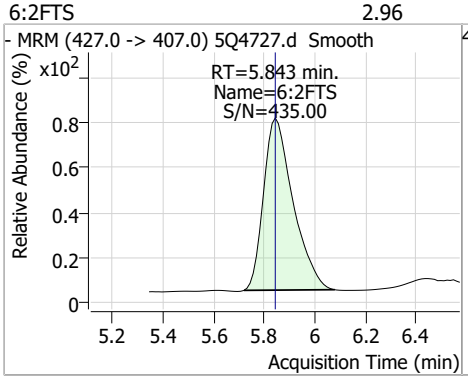


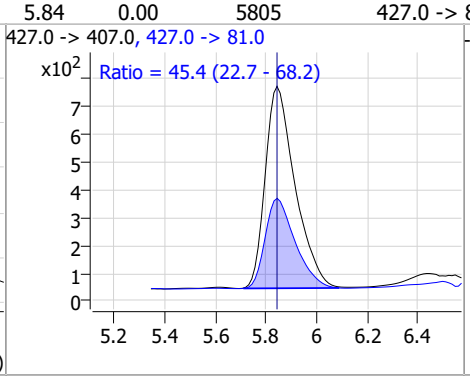
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.54	5.84	0.00	36988				

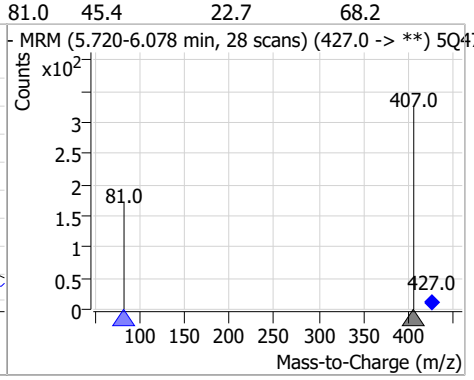


Perfluorinated Compounds by LC/MS/MS

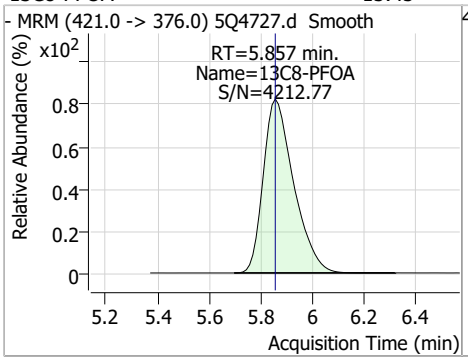
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.96	5.84	0.00	5805	427.0 -> 81.0	45.4	22.7	68.2

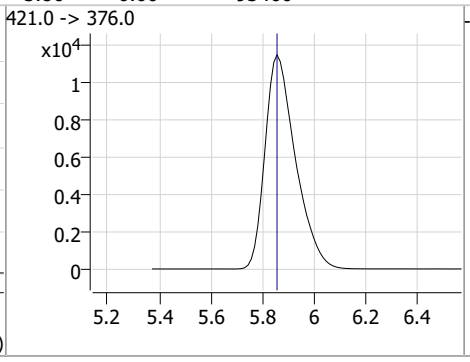


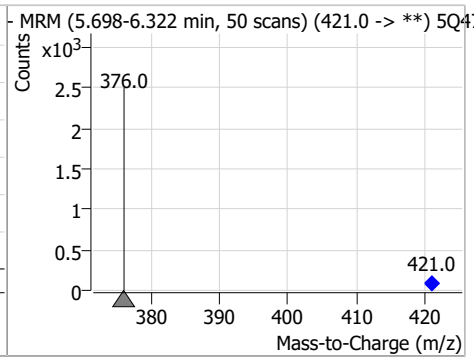




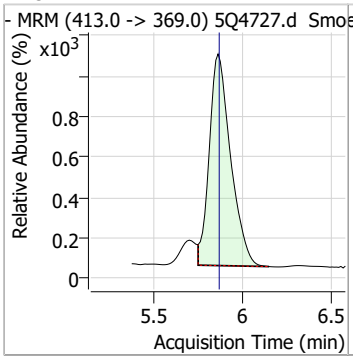
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.45	5.86	0.00	93460				

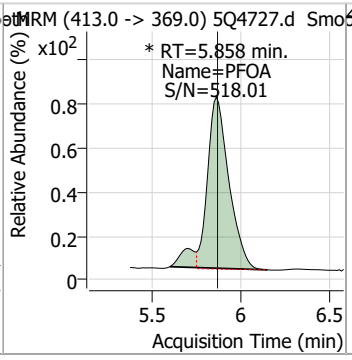


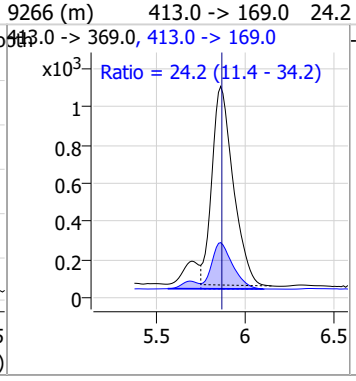


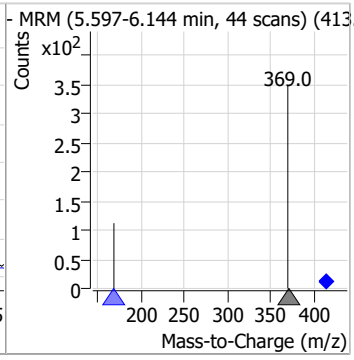


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.63	5.86	0.00	9266 (m)	413.0 -> 169.0	24.2	11.4	34.2

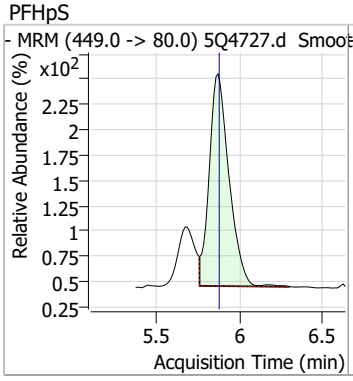


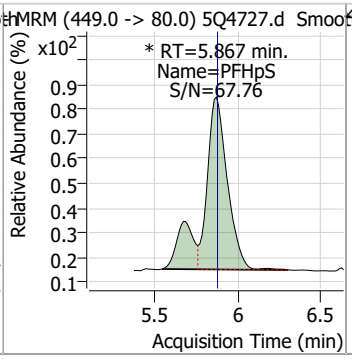


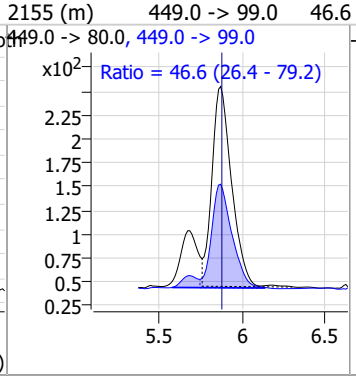


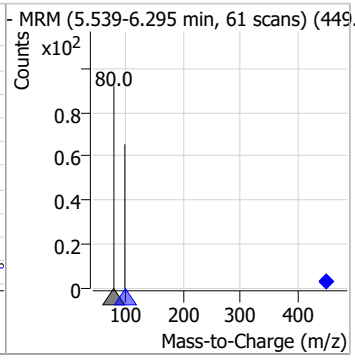


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	3.23	5.87	0.00	2155 (m)	449.0 -> 99.0	46.6	26.4	79.2



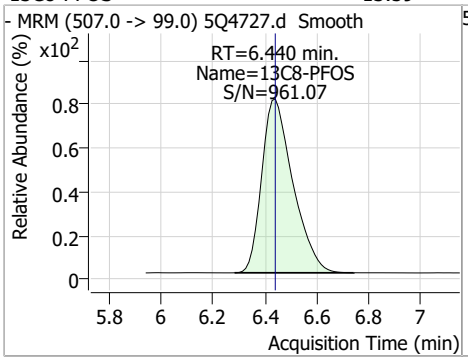


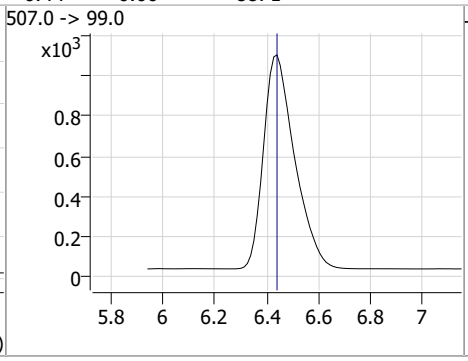


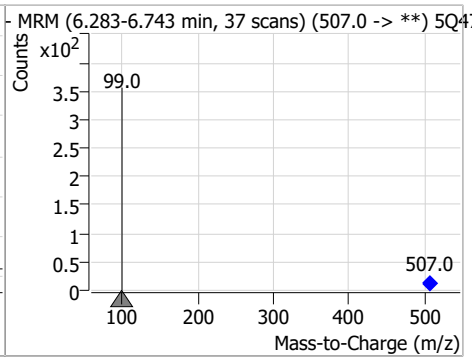


Perfluorinated Compounds by LC/MS/MS

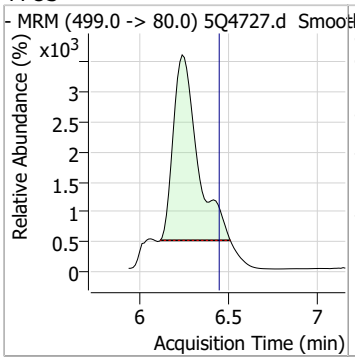
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.59	6.44	0.00	8871				

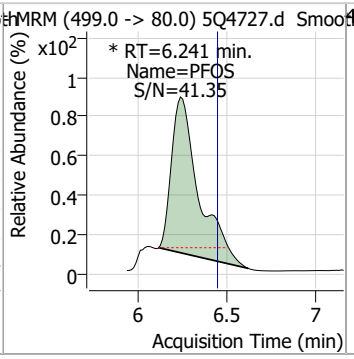


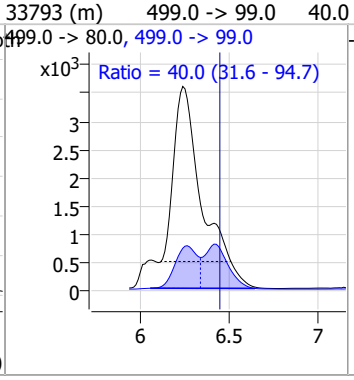


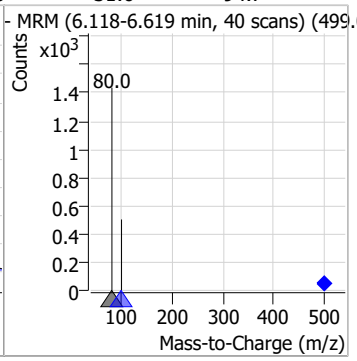


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	43.25	6.24	-0.20	33793 (m)	499.0 -> 99.0	40.0	31.6	94.7

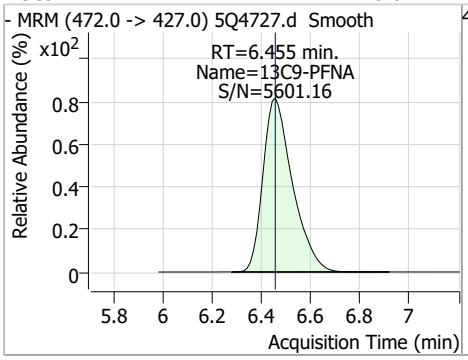


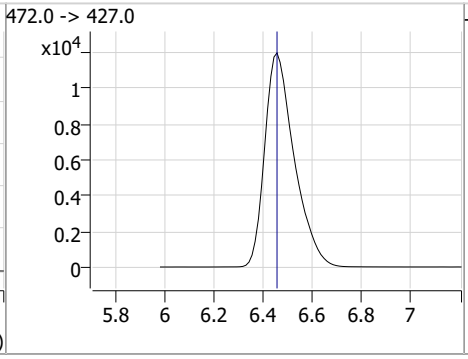


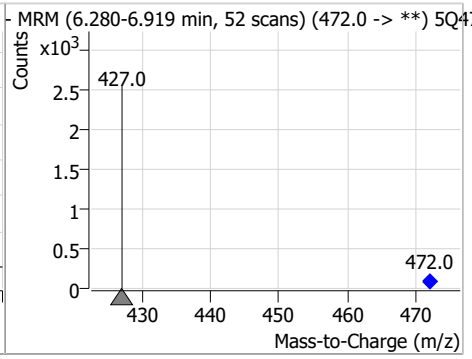




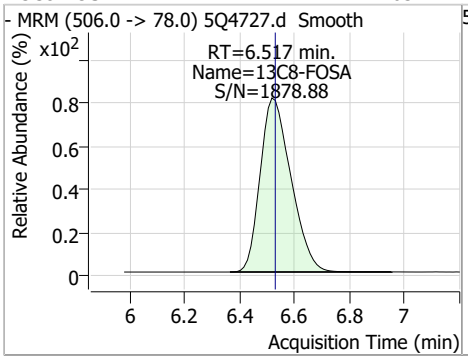
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.07	6.46	0.00	98997				

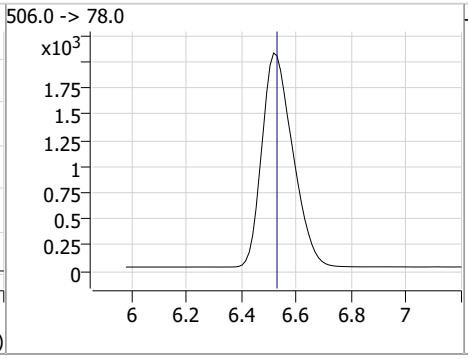


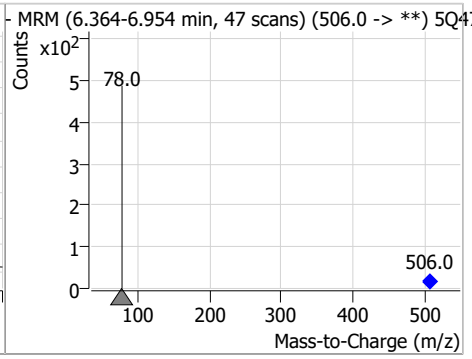




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.03	6.52	-0.01	15916				

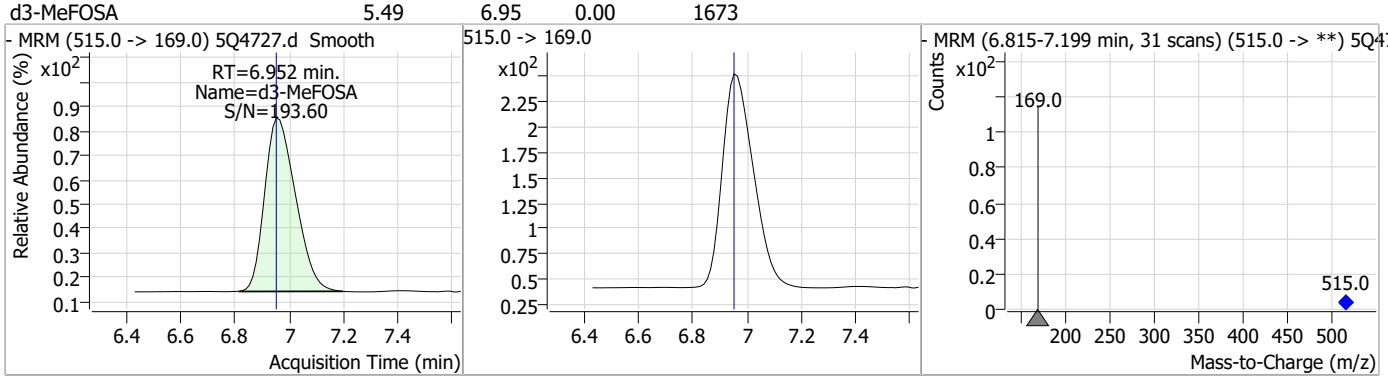




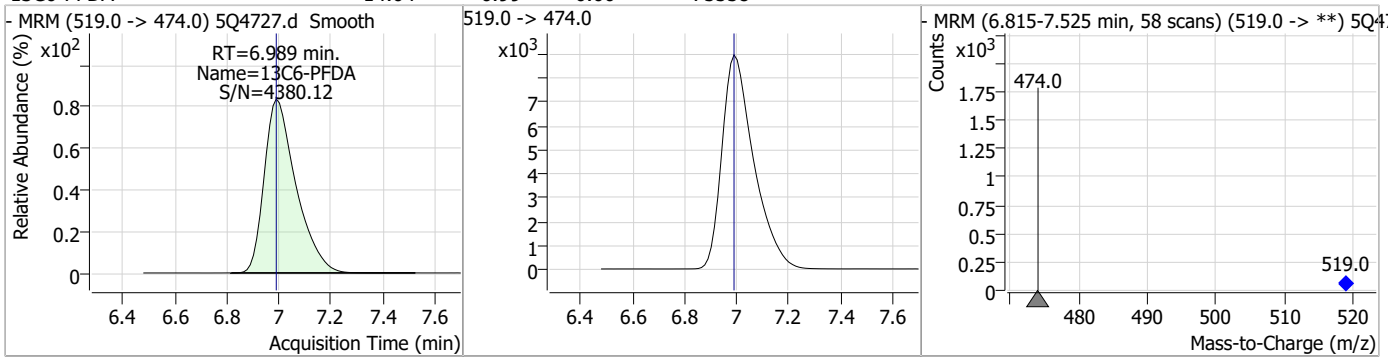


Perfluorinated Compounds by LC/MS/MS

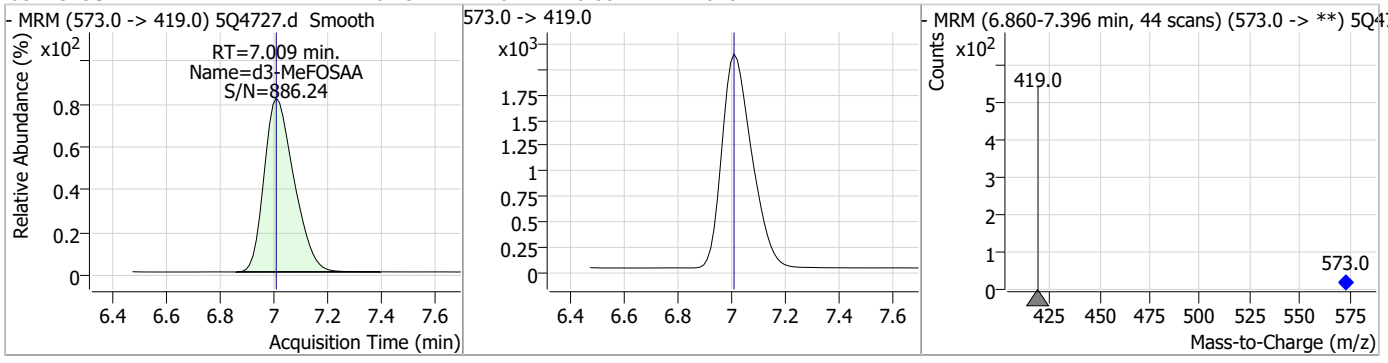
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	5.49	6.95	0.00	1673				



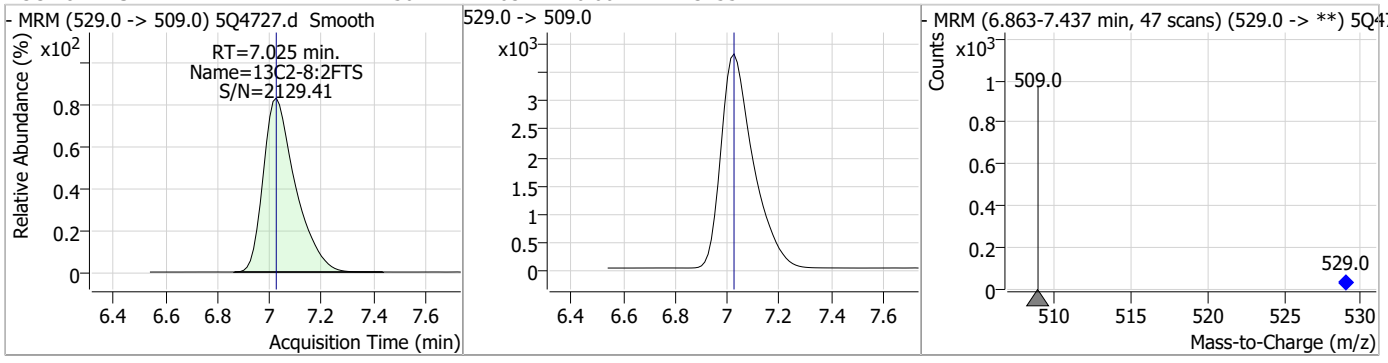
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.04	6.99	0.00	75558				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.75	7.01	0.00	16281				

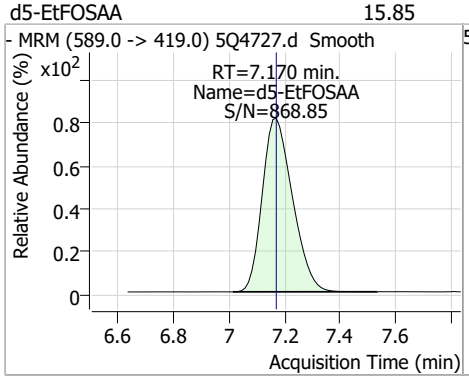


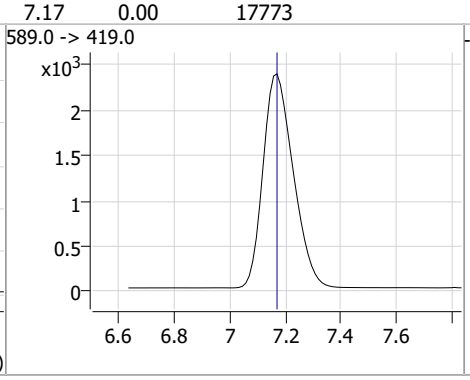
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.50	7.03	0.00	32557				

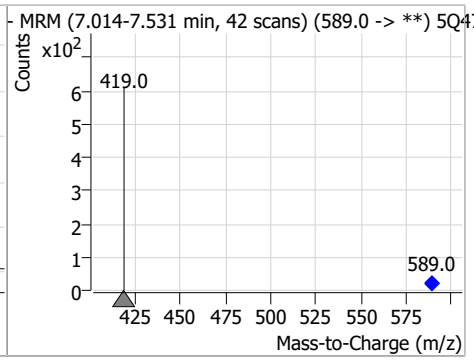


Perfluorinated Compounds by LC/MS/MS

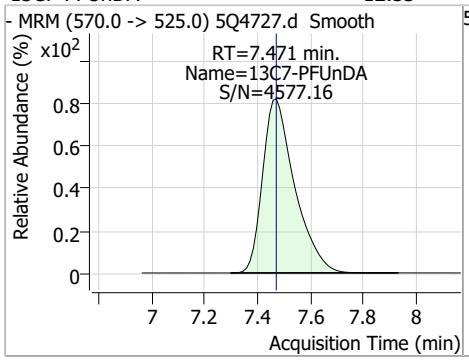
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.85	7.17	0.00	17773				

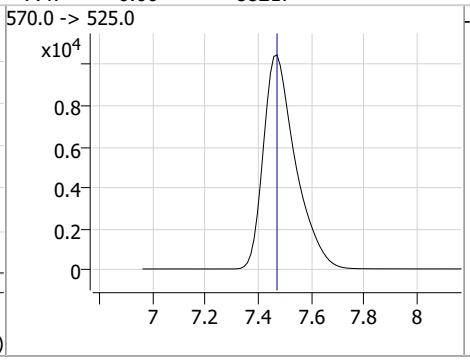


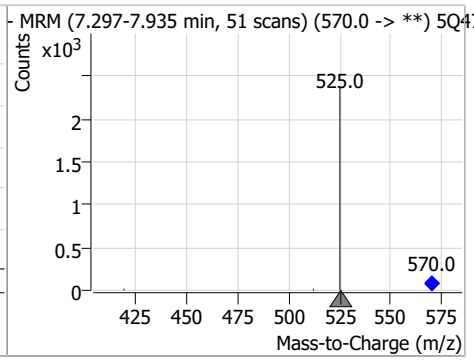




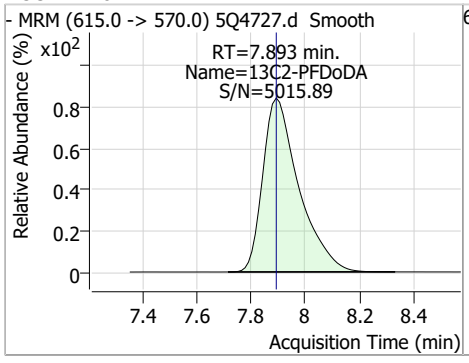
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.53	7.47	0.00	88217				

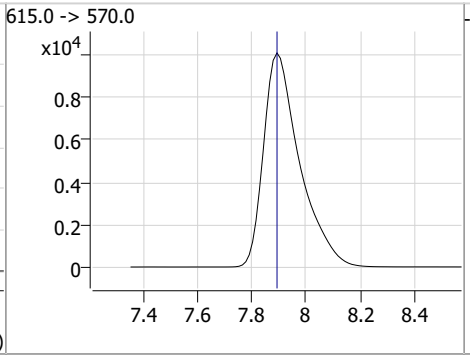


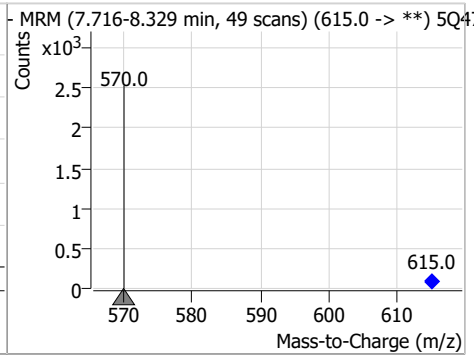




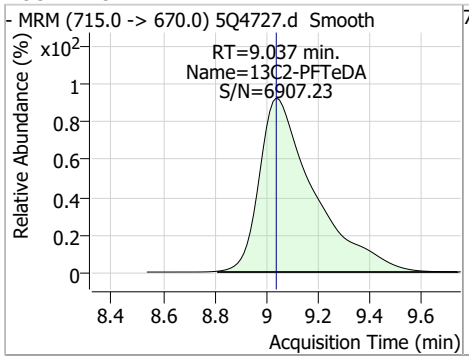
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.71	7.89	0.00	92127				

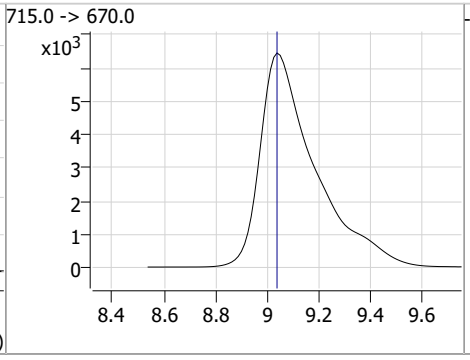


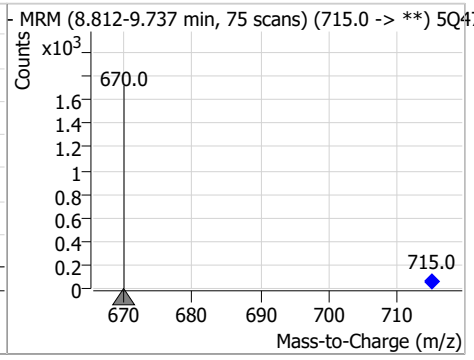




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.47	9.04	0.00	94126				







Manual Integration Approval Summary

Sample Number: FA98286-18
Lab FileID: 5Q4727.D
Injection Time: 09/16/22 08:12
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:10 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.87	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4656.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:00:03 PM
Sample Name : fa98286-19
Vial : P2-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,120,,,1.0,1,water

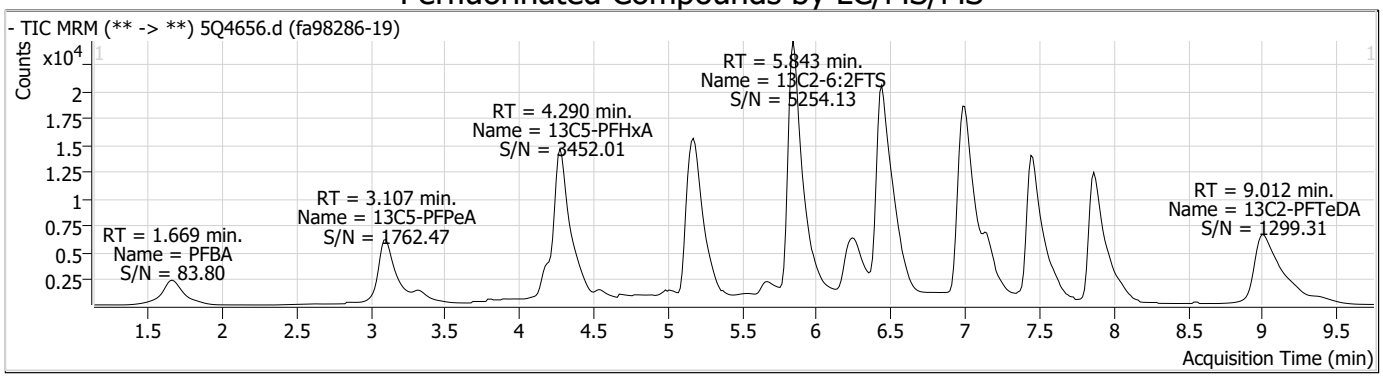
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.662	217.0 -> 172.0	23485	20.00	µg/L	-0.037
M5-PFPeA	3.107	268.0 -> 223.0	39726	20.00	µg/L	-0.025
M5-PFHxA	4.290	318.0 -> 273.0	67797	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	65594	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	101718	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	109162	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	84914	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	93473	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	93857	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	82365	20.00	µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	13746	20.00	µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	4963	20.00	µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5695	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	10351	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	22212	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	38658	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	35078	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	15801	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5142	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	453	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	18163	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	22212	15.12	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	38658	17.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%		
13C2-8:2FTS	7.025	529.0 -> 509.0	35078	15.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%		
13C2-PFDoDA	7.879	615.0 -> 570.0	93857	12.95	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.8%		
13C2-PFTeDA	9.012	715.0 -> 670.0	82365	10.92	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.6%		
13C3-PFBS	3.337	302.0 -> 99.0	4963	15.23	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.2%		
13C3-PFHxS	5.194	402.0 -> 99.0	5695	16.70	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.5%		
13C4-PFBA	1.662	217.0 -> 172.0	23485	13.14	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	65594	16.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C5-PFHxA	4.290	318.0 -> 273.0	67797	15.51	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%		
13C5-PFPeA	3.107	268.0 -> 223.0	39726	13.67	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%		
13C6-PFDA	6.989	519.0 -> 474.0	84914	15.77	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

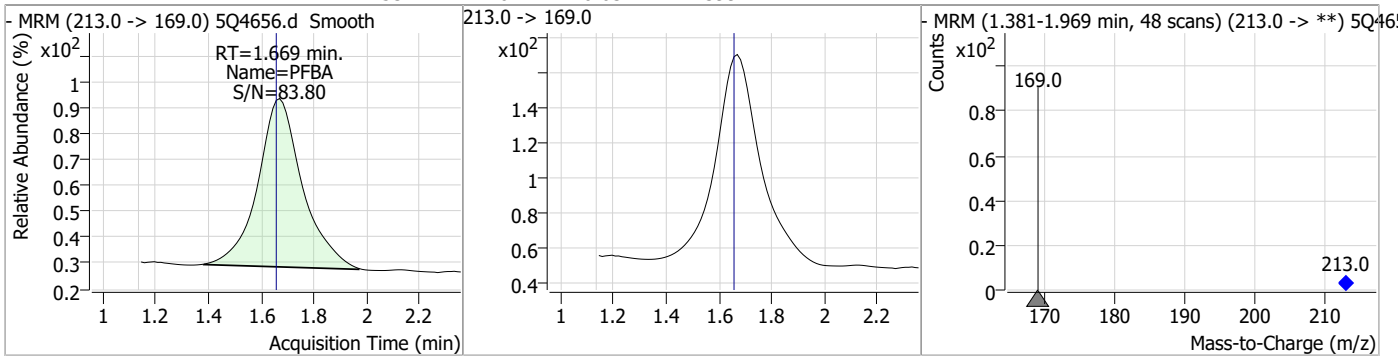
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	93473	13.27	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.4%			
13C8-FOSA	6.517	506.0 -> 78.0	13746	12.11	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.6%			
13C8-PFOA	5.857	421.0 -> 376.0	101718	16.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%			
13C8-PFOS	6.428	507.0 -> 99.0	10351	15.85	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%			
13C9-PFNA	6.455	472.0 -> 427.0	109162	16.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	15801	16.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	5142	15.31	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
d3-MeFOSA	6.965	515.0 -> 169.0	453	1.49	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	18163	16.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	6068	2.96	µg/L		98
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	1.669	213.0 -> 169.0	1399	2.53	µg/L		100
PFBS	3.342	299.0 -> 80.0	1837	2.46	µg/L		99
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	9191	2.13	µg/L	m	100
PFHpS	5.855	449.0 -> 80.0	2411	3.10	µg/L	m	94
PFHxA	4.291	313.0 -> 269.0	22554	6.81	µg/L		100
PFHxS	5.195	399.0 -> 80.0	29911	35.37	µg/L	m	96
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	10181	1.65	µg/L	m	100
PFOS	6.241	499.0 -> 80.0	33788	37.06	µg/L		77
PFPeA	3.109	263.0 -> 219.0	9480	4.83	µg/L		100
PFPeS	4.398	349.0 -> 80.0	2606	4.49	µg/L	m	97
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	5.753	461.0 -> 381.0	1410	0.77	µg/L		84
FBSA	4.356	298.0 -> 78.0	1717	1.53	µg/L		100
FHxSA	5.674	398.0 -> 78.0	8129	7.86	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

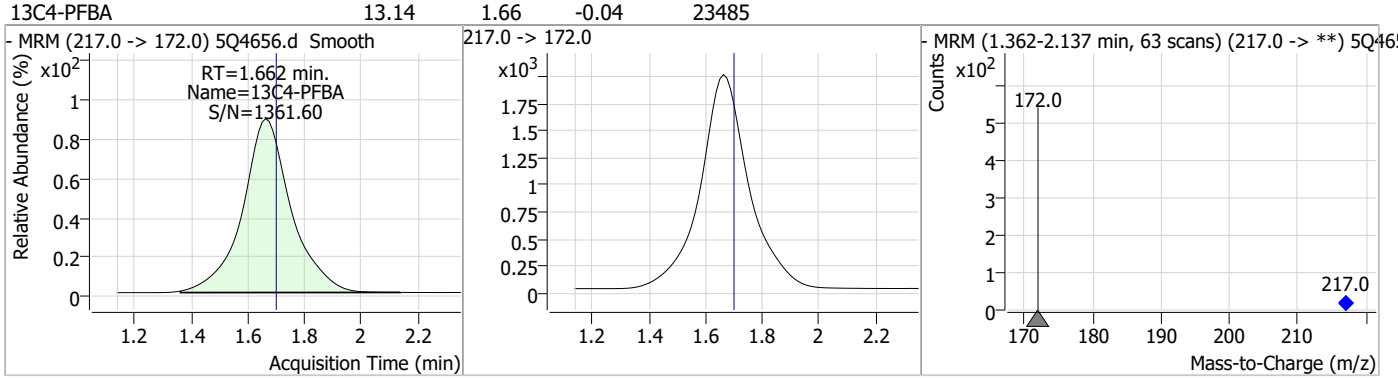
Perfluorinated Compounds by LC/MS/MS



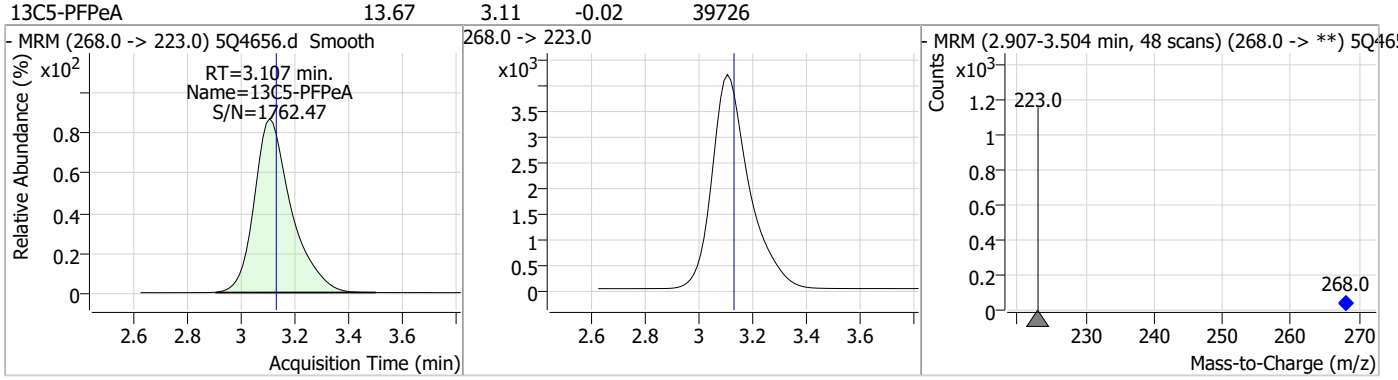
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.53	1.67	-0.03	1399				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.14	1.66	-0.04	23485				

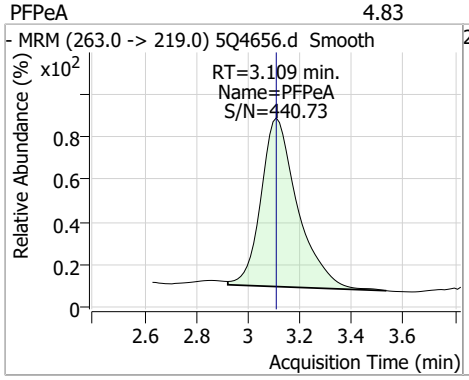


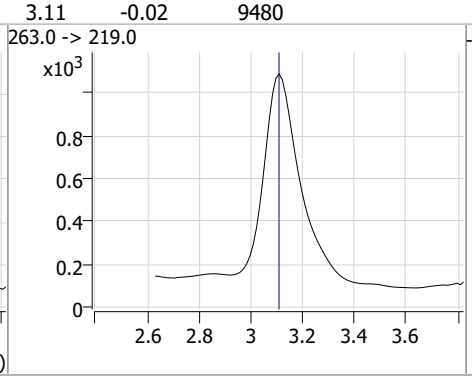
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.67	3.11	-0.02	39726				

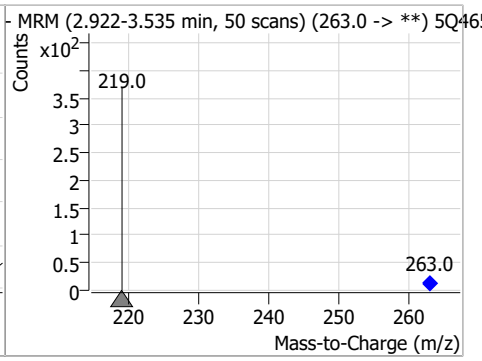


Perfluorinated Compounds by LC/MS/MS

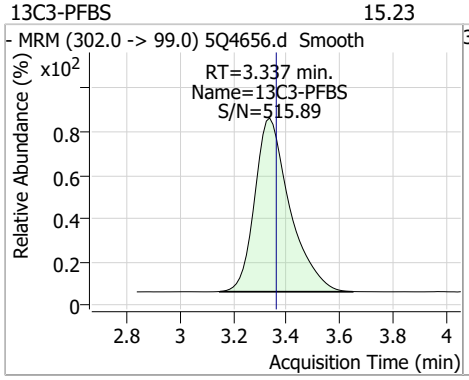
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.83	3.11	-0.02	9480				

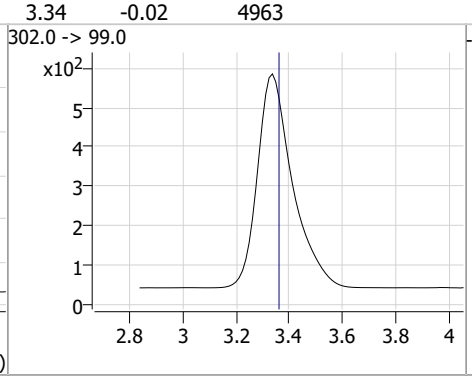


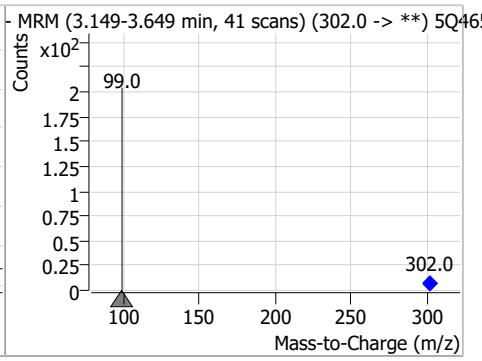




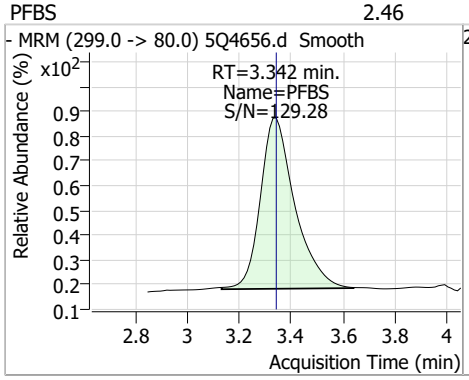
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.23	3.34	-0.02	4963				

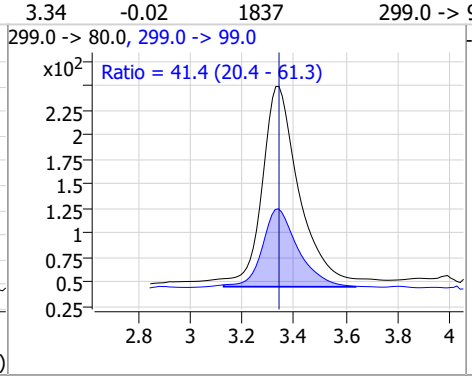


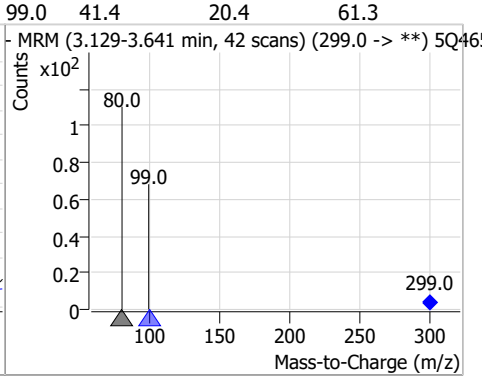




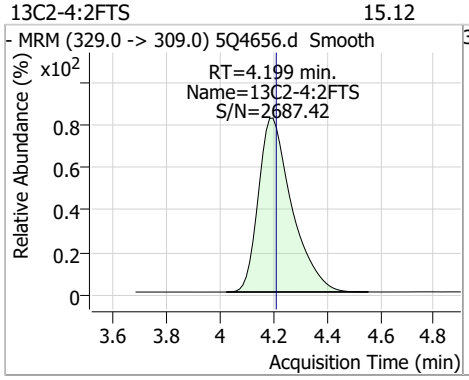
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.46	3.34	-0.02	1837	299.0 -> 99.0	41.4	20.4	61.3

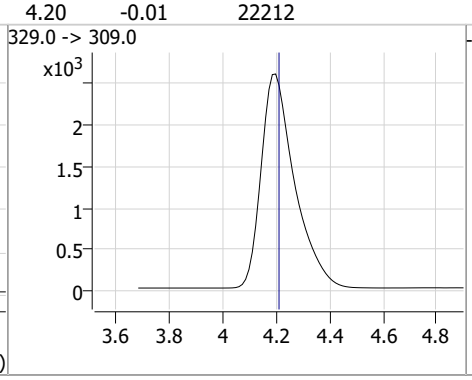


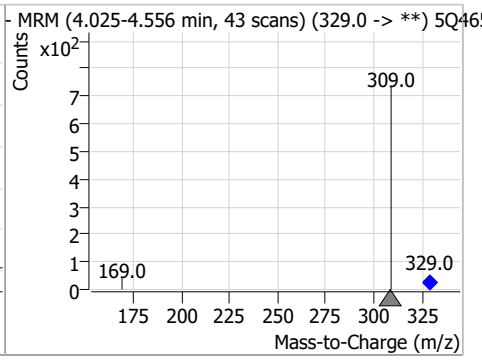




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.12	4.20	-0.01	22212				

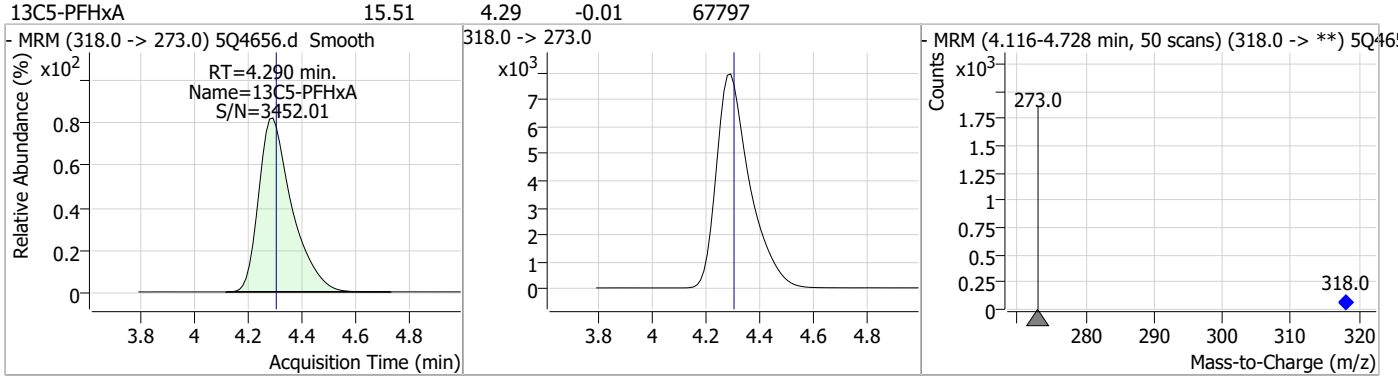




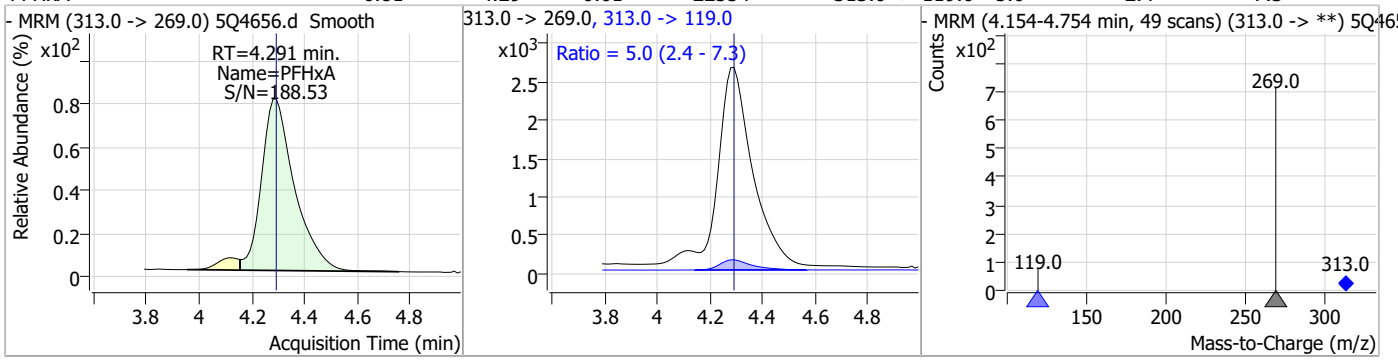


Perfluorinated Compounds by LC/MS/MS

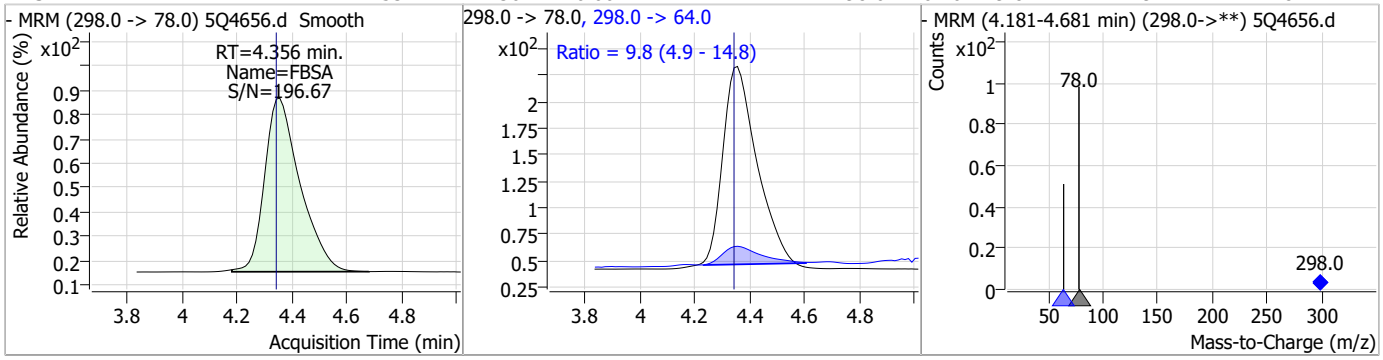
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.51	4.29	-0.01	67797				



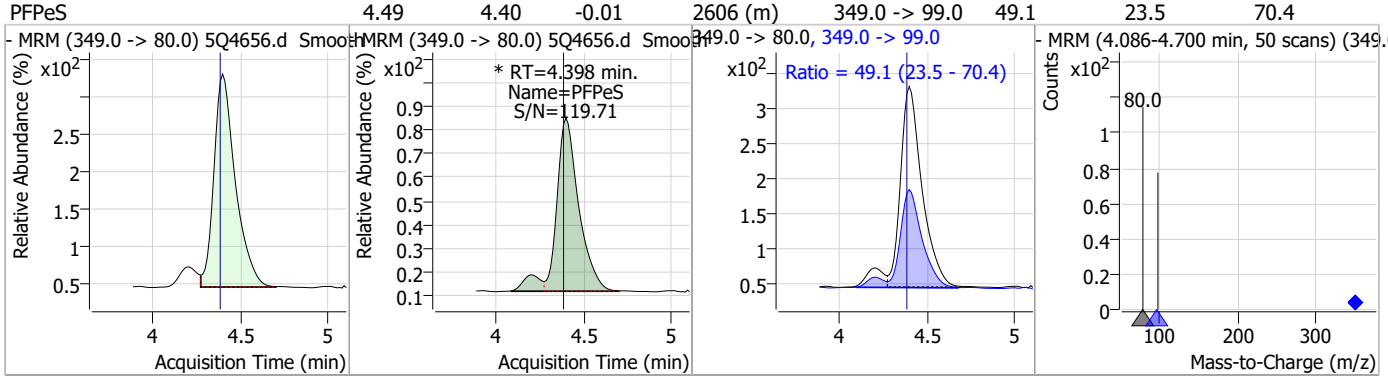
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.81	4.29	-0.01	22554	313.0 -> 119.0	5.0	2.4	7.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.53	4.36	0.00	1717	298.0 -> 64.0	9.8	4.9	14.8

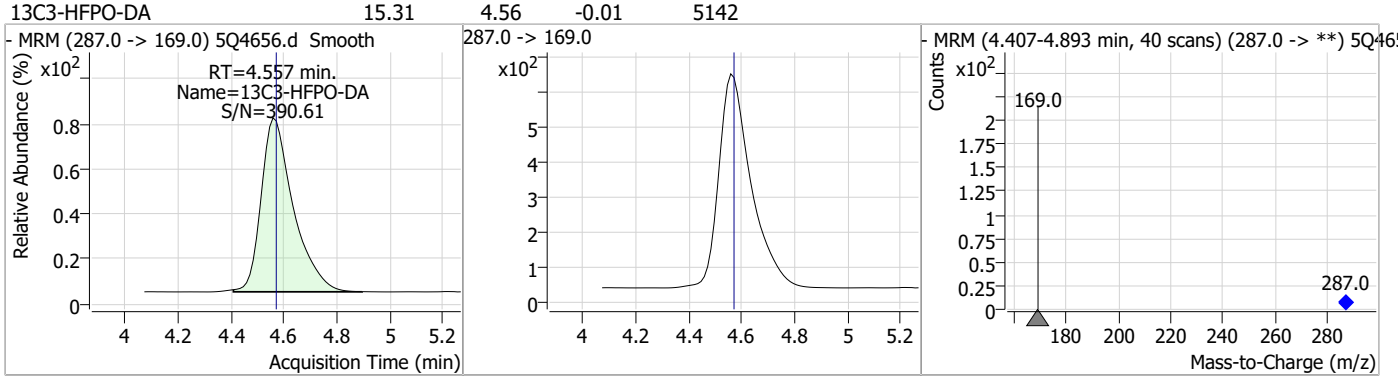


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.49	4.40	-0.01	2606 (m)	349.0 -> 99.0	49.1	23.5	70.4

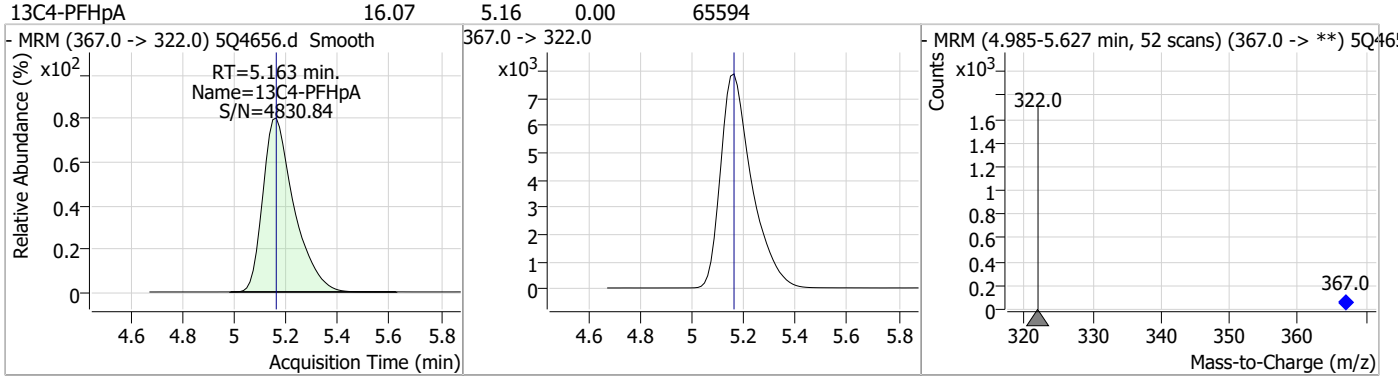


Perfluorinated Compounds by LC/MS/MS

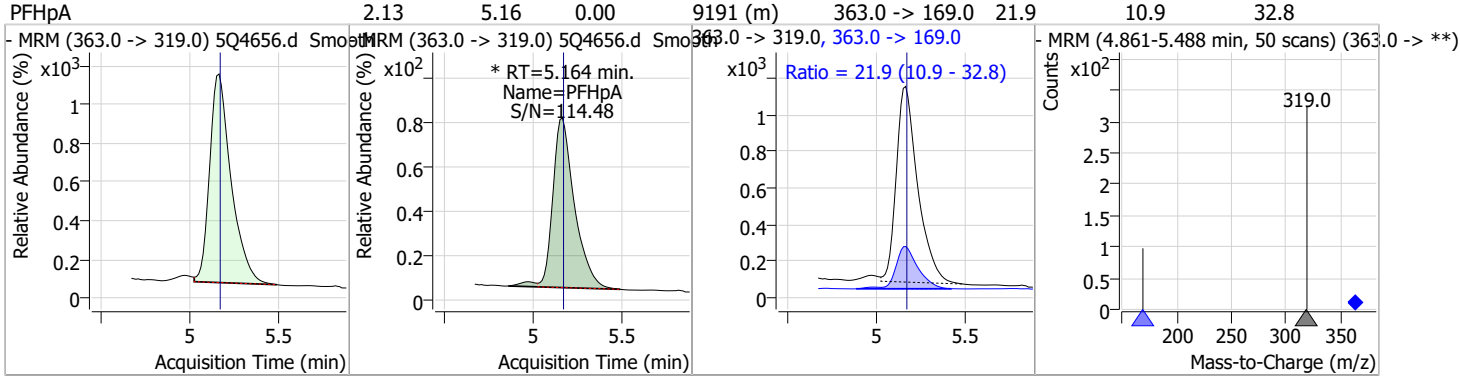
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.31	4.56	-0.01	5142				



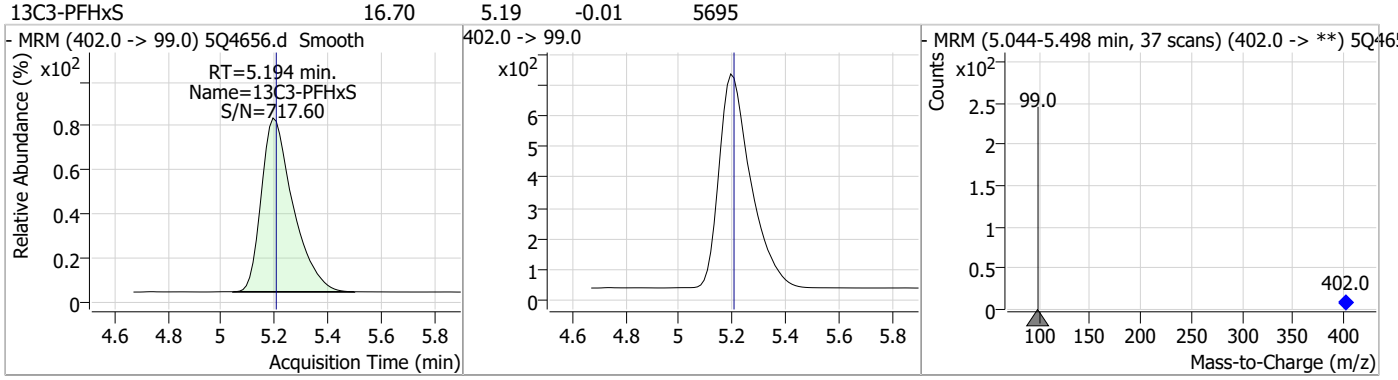
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.07	5.16	0.00	65594				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.13	5.16	0.00	9191 (m)	363.0 -> 169.0	21.9	10.9	32.8

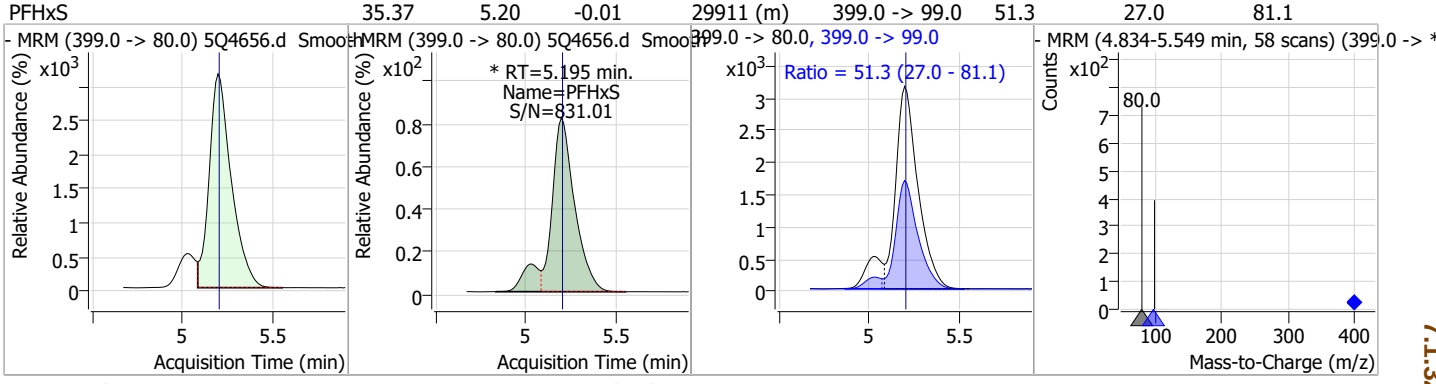


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.70	5.19	-0.01	5695				

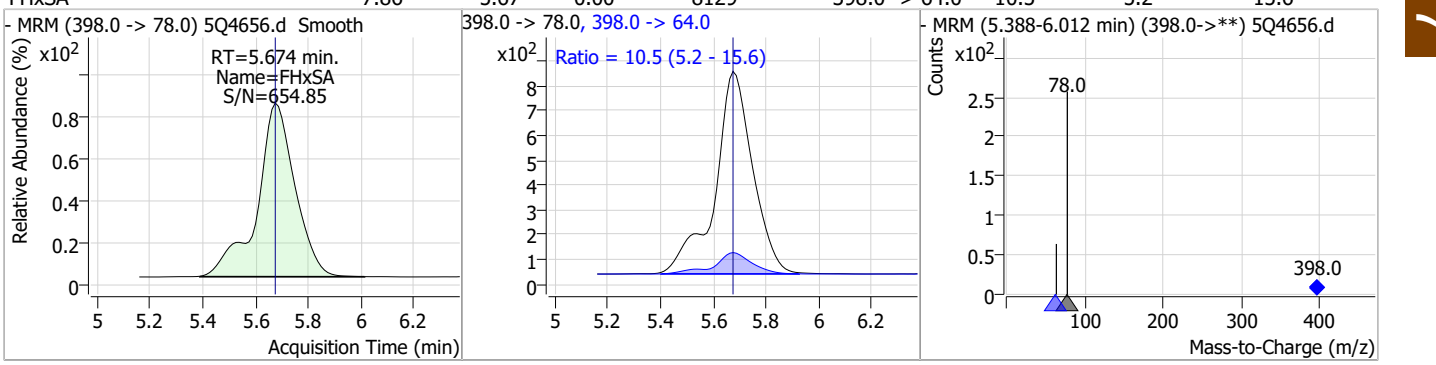


Perfluorinated Compounds by LC/MS/MS

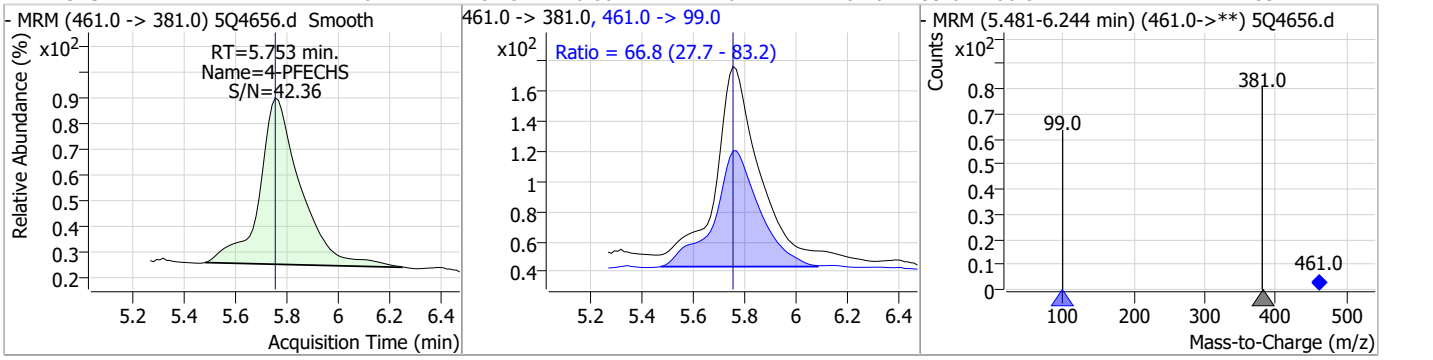
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	35.37	5.20	-0.01	29911 (m)	399.0 -> 99.0	51.3	27.0	81.1



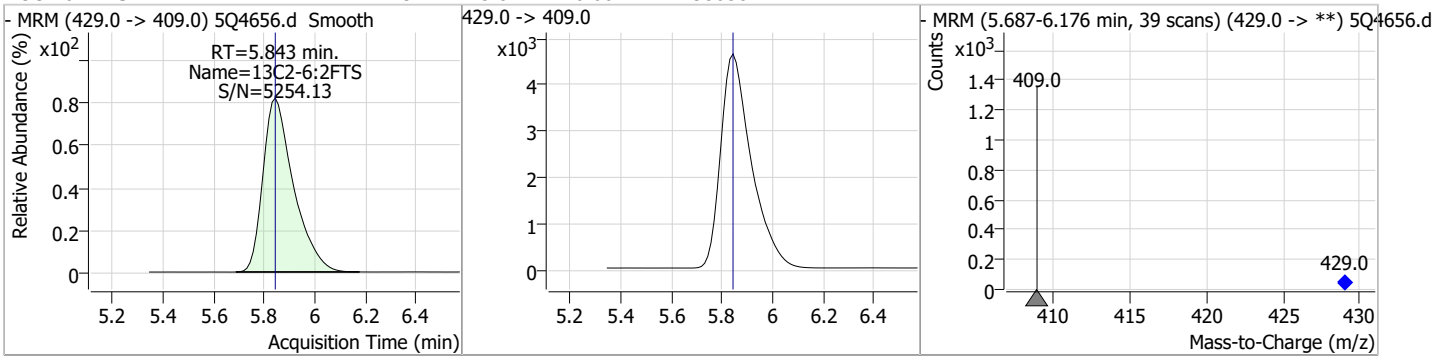
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	7.86	5.67	0.00	8129	398.0 -> 64.0	10.5	5.2	15.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.77	5.75	0.00	1410	461.0 -> 99.0	66.8	27.7	83.2

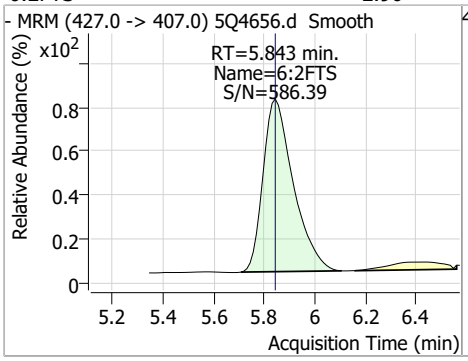


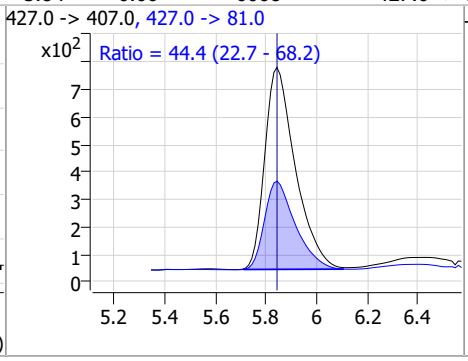
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.29	5.84	0.00	38658				

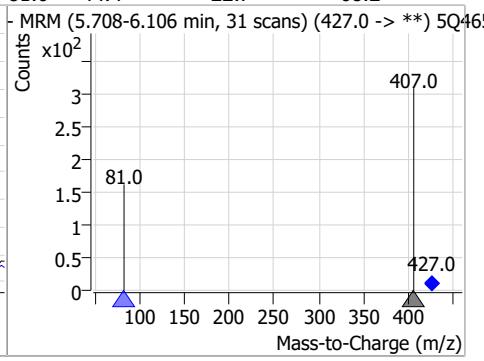


Perfluorinated Compounds by LC/MS/MS

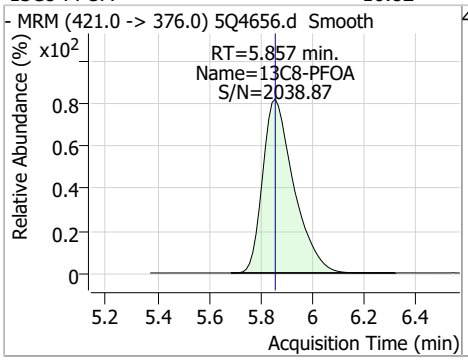
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.96	5.84	0.00	6068	427.0 -> 81.0	44.4	22.7	68.2

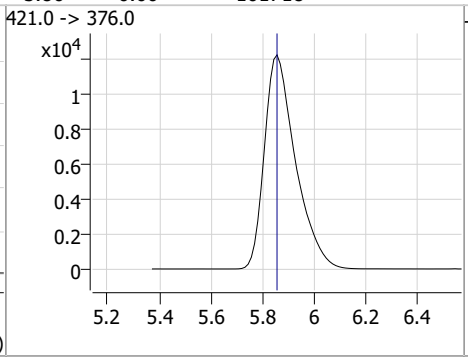


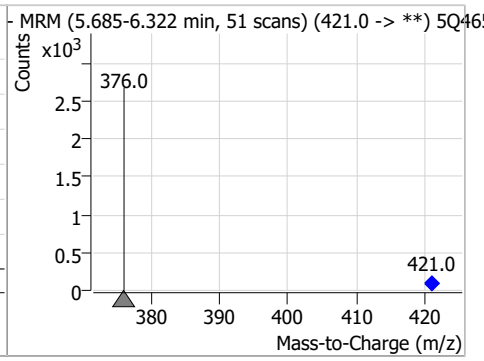




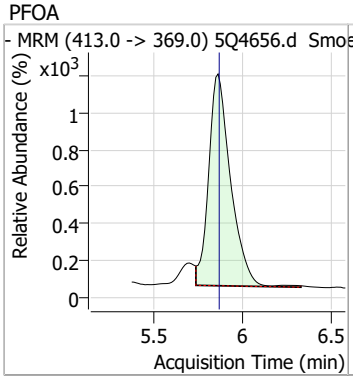
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.82	5.86	0.00	101718				

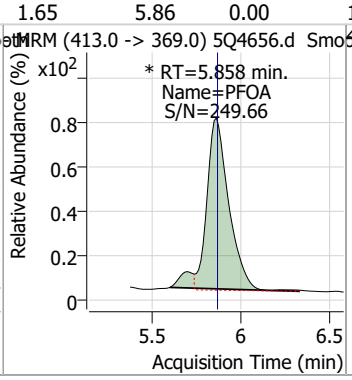


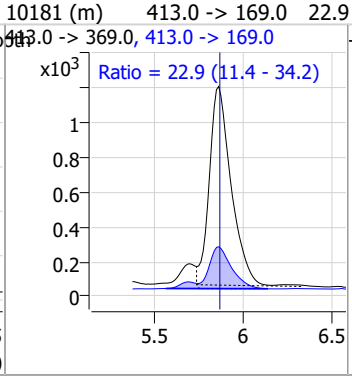


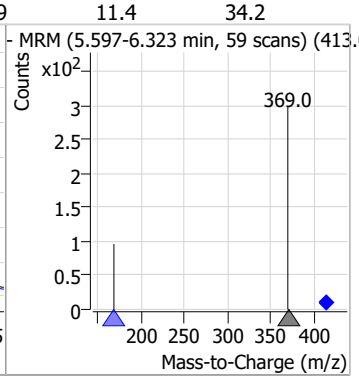


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.65	5.86	0.00	10181 (m)	413.0 -> 169.0	22.9	11.4	34.2

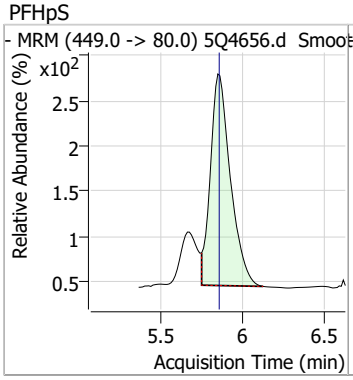


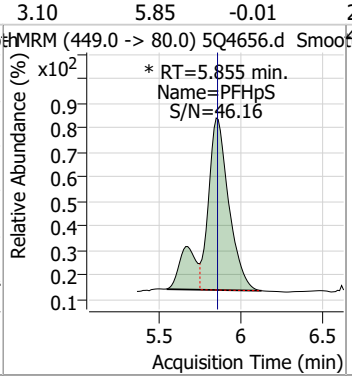


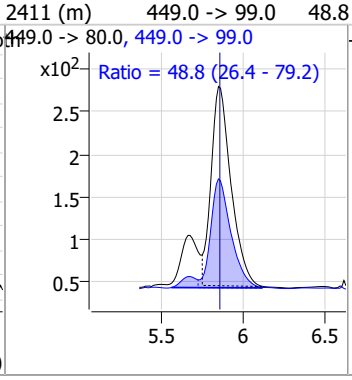


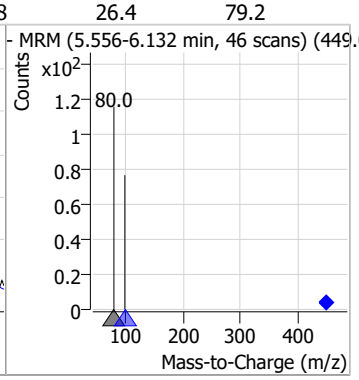


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	3.10	5.85	-0.01	2411 (m)	449.0 -> 99.0	48.8	26.4	79.2



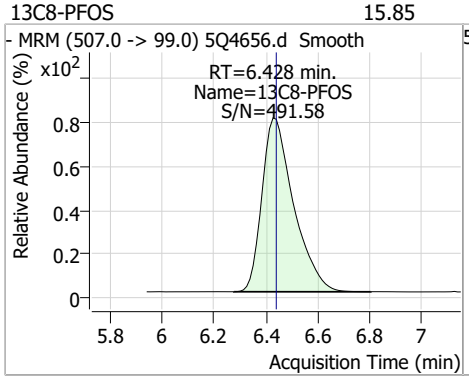


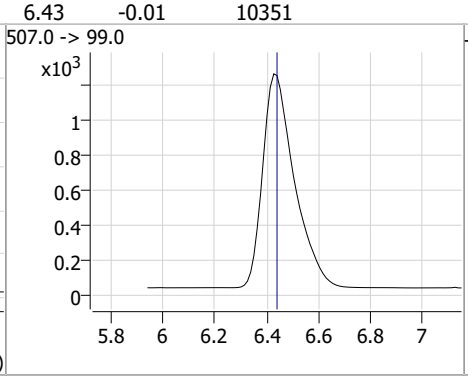


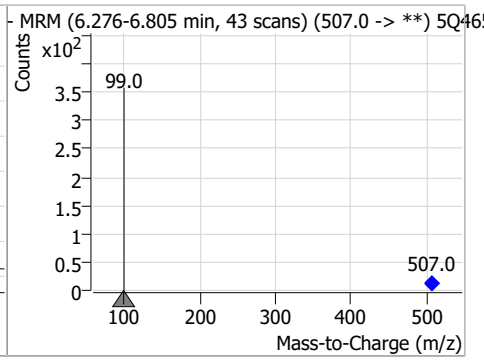


Perfluorinated Compounds by LC/MS/MS

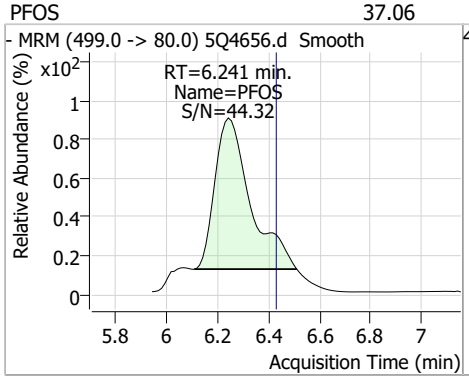
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.85	6.43	-0.01	10351				

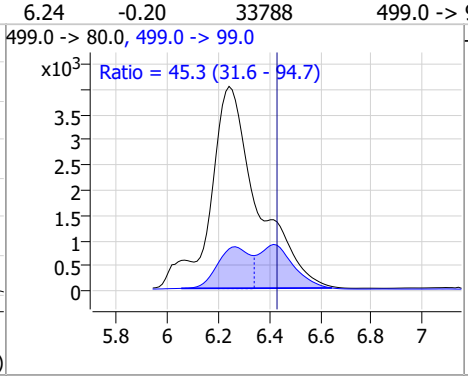


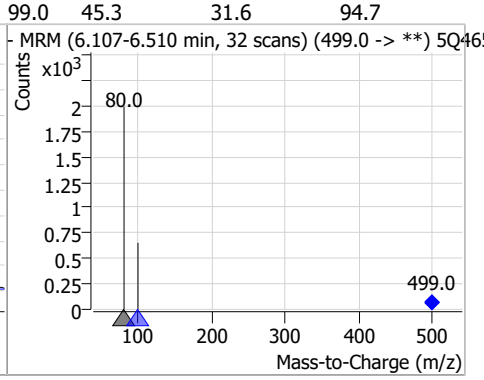




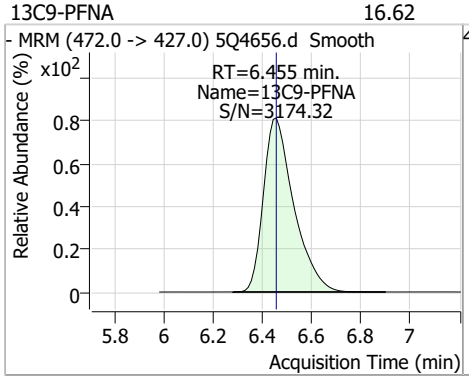
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	37.06	6.24	-0.20	33788	499.0 -> 99.0	45.3	31.6	94.7

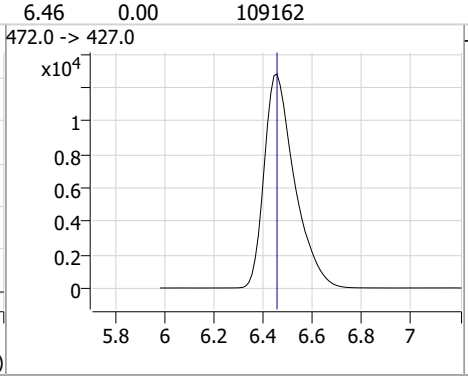


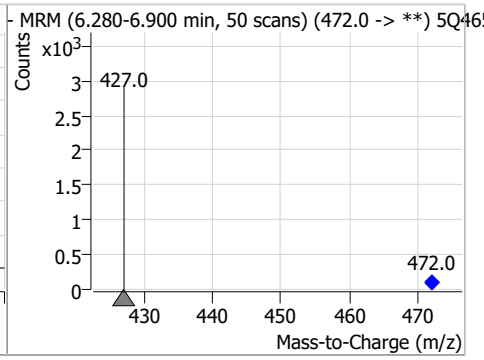




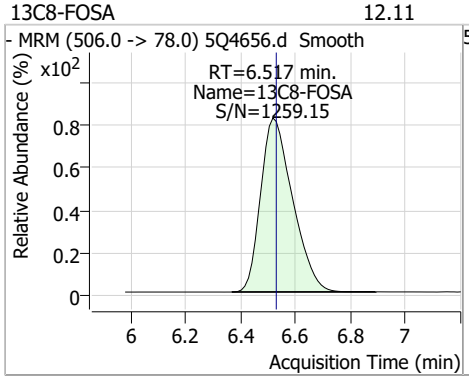
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.62	6.46	0.00	109162				

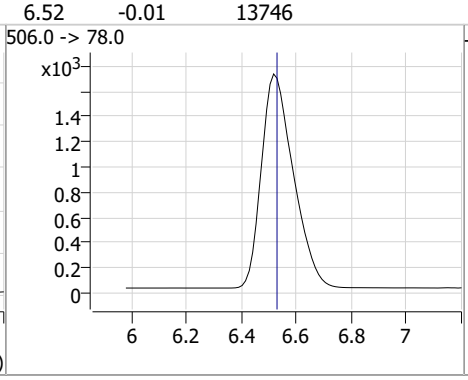


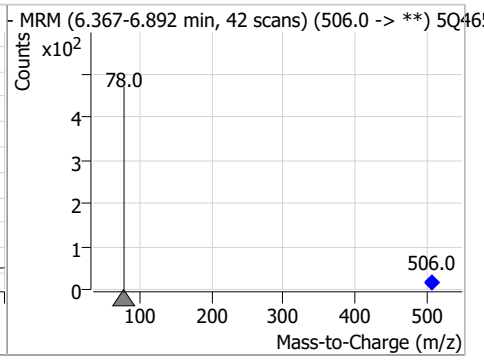




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.11	6.52	-0.01	13746				

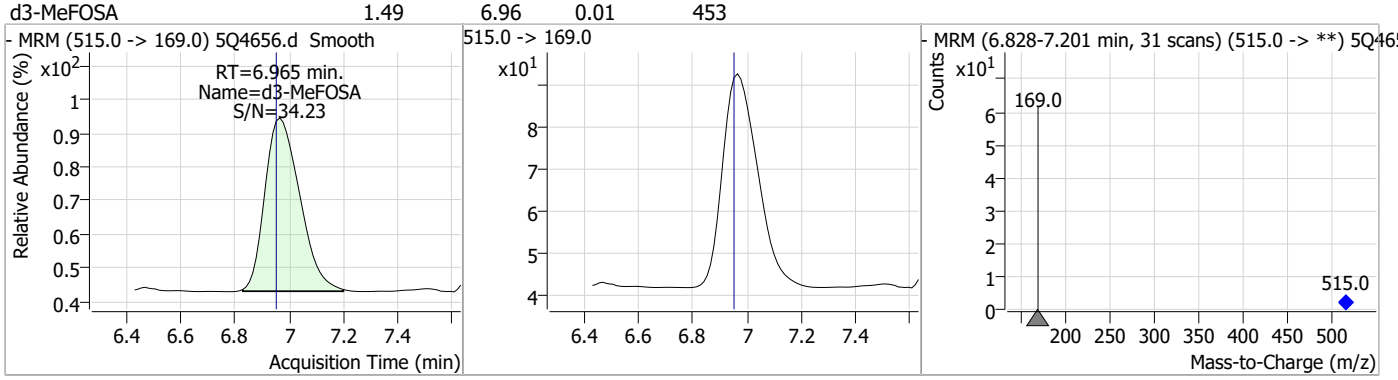




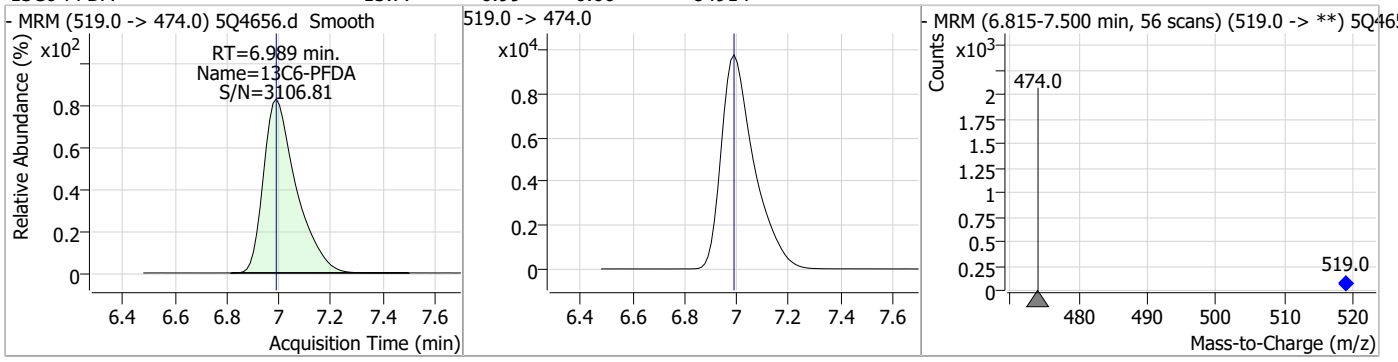


Perfluorinated Compounds by LC/MS/MS

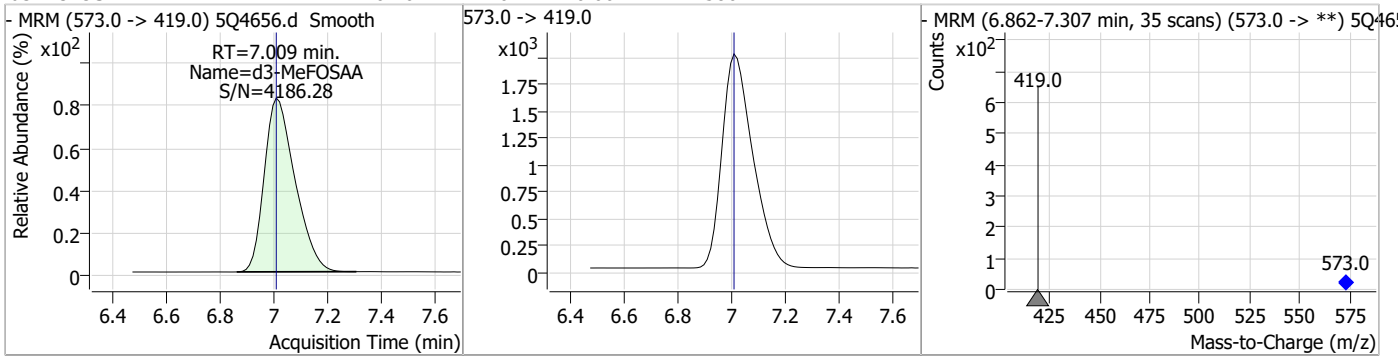
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.49	6.96	0.01	453				



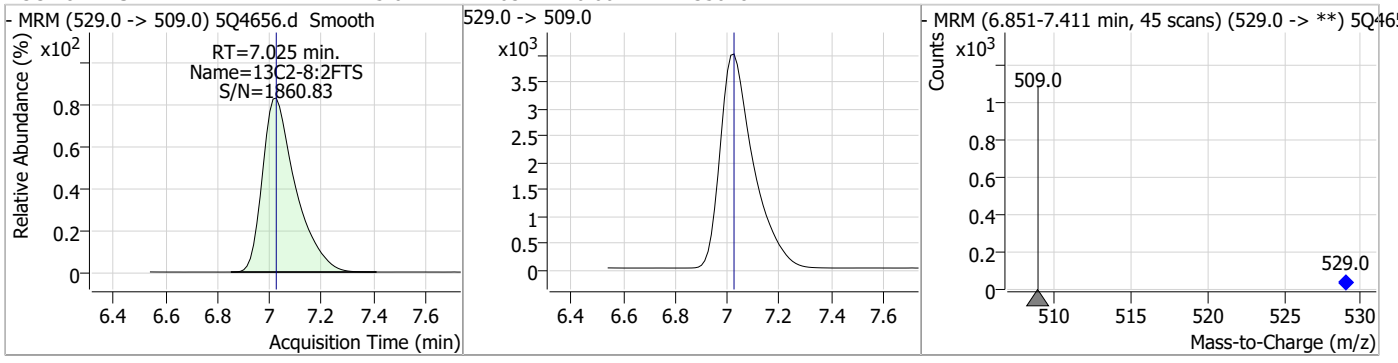
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.77	6.99	0.00	84914				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.26	7.01	0.00	15801				

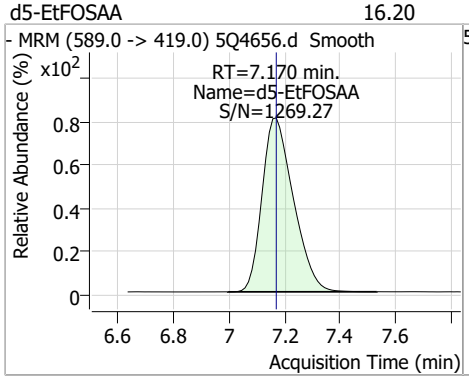


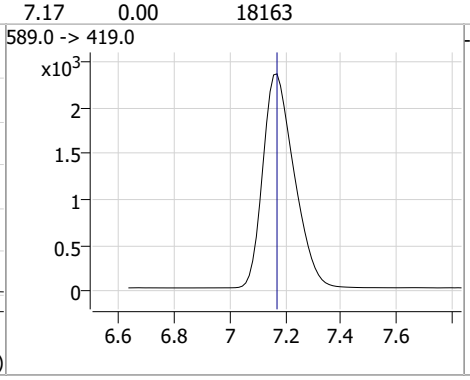
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.62	7.03	0.00	35078				

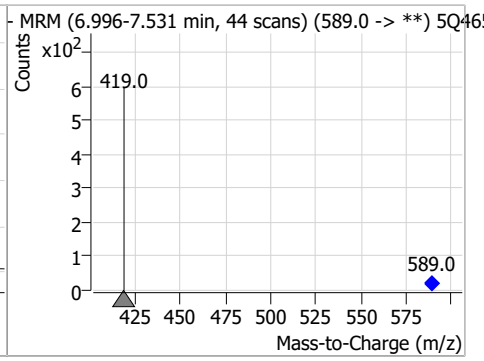


Perfluorinated Compounds by LC/MS/MS

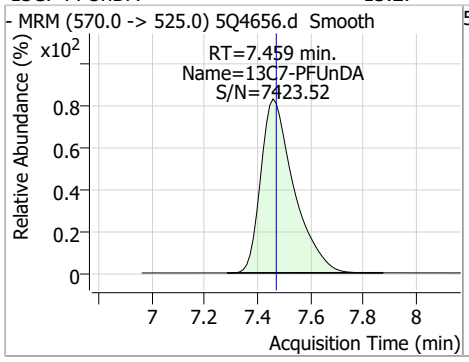
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.20	7.17	0.00	18163				

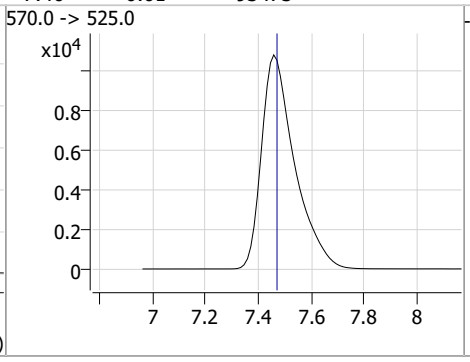


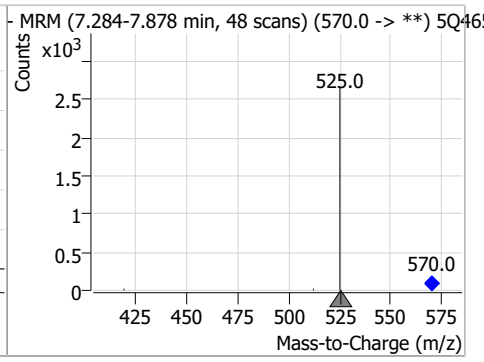




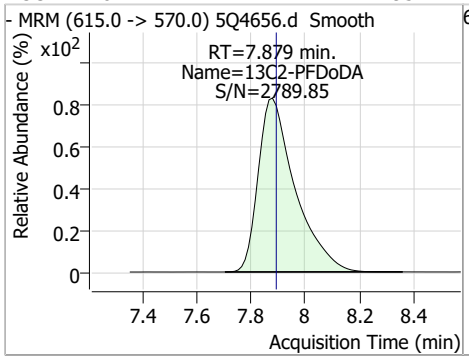
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.27	7.46	-0.01	93473				

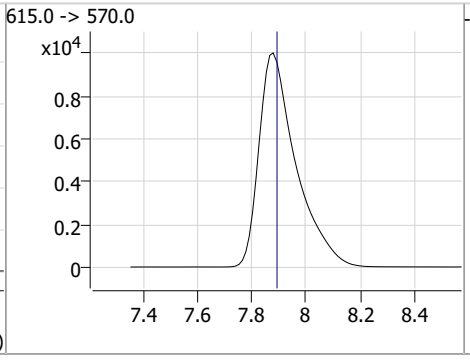


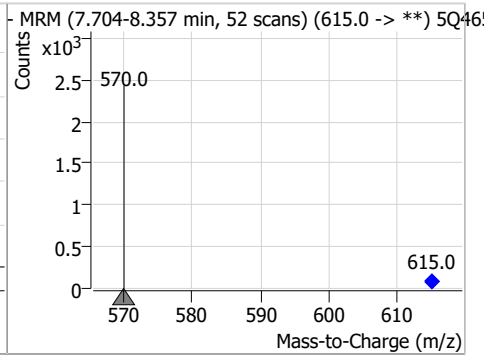




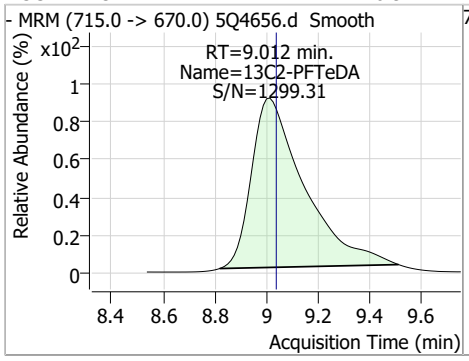
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.95	7.88	-0.01	93857				

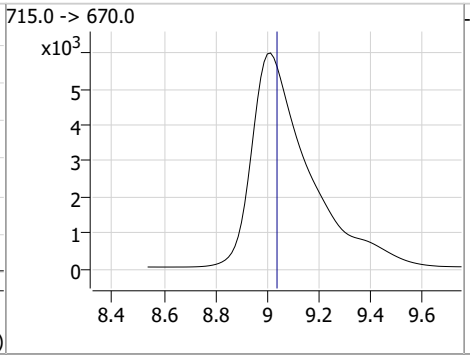


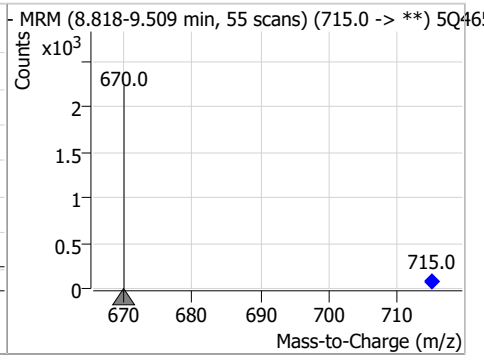




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.92	9.01	-0.02	82365				







Manual Integration Approval Summary

Sample Number: FA98286-19
Lab FileID: 5Q4656.D
Injection Time: 09/15/22 12:00
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.40	Split peak
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4657.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:15:27 PM
Sample Name : fa98286-20
Vial : P2-A4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

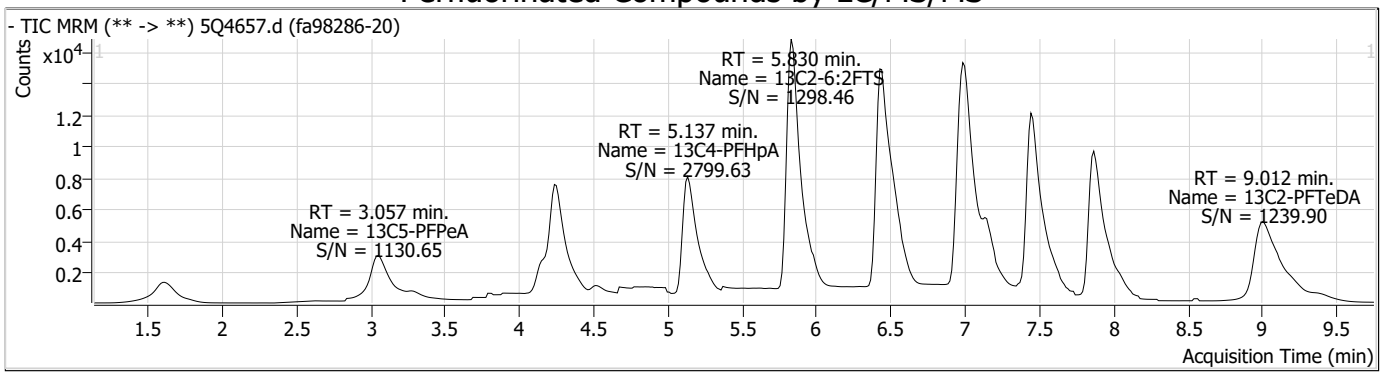
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.612	217.0 -> 172.0	14821	20.00 µg/L	-0.087
M5-PFPeA	3.057	268.0 -> 223.0	25610	20.00 µg/L	-0.075
M5-PFHxA	4.253	318.0 -> 273.0	45934	20.00 µg/L	-0.050
M4-PFHpA	5.137	367.0 -> 322.0	48625	20.00 µg/L	-0.026
M8-PFOA	5.845	421.0 -> 376.0	78081	20.00 µg/L	-0.012
M9-PFNA	6.443	472.0 -> 427.0	85731	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	68557	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	77087	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	72300	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	63916	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	11944	20.00 µg/L	-0.012
M3-PFBS	3.299	302.0 -> 99.0	3519	20.00 µg/L	-0.062
M3-PFHxS	5.181	402.0 -> 99.0	4633	20.00 µg/L	-0.025
M8-PFOS	6.428	507.0 -> 99.0	8939	20.00 µg/L	-0.012
M2-4:2FTS	4.162	329.0 -> 309.0	15022	20.00 µg/L	-0.050
M2-6:2FTS	5.830	429.0 -> 409.0	29076	20.00 µg/L	-0.012
M2-8:2FTS	7.013	529.0 -> 509.0	27101	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	11783	20.00 µg/L	0.000
M3-HFPO-DA	4.532	287.0 -> 169.0	3613	20.00 µg/L	-0.037
M3-MeFOSA	6.952	515.0 -> 169.0	1240	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	13361	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.162	329.0 -> 309.0	15022	10.23 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.1%	
13C2-6:2FTS	5.830	429.0 -> 409.0	29076	13.00 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.0%	
13C2-8:2FTS	7.013	529.0 -> 509.0	27101	12.07 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.3%	
13C2-PFDoDA	7.879	615.0 -> 570.0	72300	9.98 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.9%	
13C2-PFTeDA	9.012	715.0 -> 670.0	63916	8.47 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.4%	
13C3-PFBS	3.299	302.0 -> 99.0	3519	10.80 µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.0%	
13C3-PFHxS	5.181	402.0 -> 99.0	4633	13.58 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%	
13C4-PFBA	1.612	217.0 -> 172.0	14821	8.29 µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 41.5%	
13C4-PFHpA	5.137	367.0 -> 322.0	48625	11.91 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.6%	
13C5-PFHxA	4.253	318.0 -> 273.0	45934	10.51 µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.5%	
13C5-PFPeA	3.057	268.0 -> 223.0	25610	8.81 µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 44.1%	
13C6-PFDA	6.989	519.0 -> 474.0	68557	12.74 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

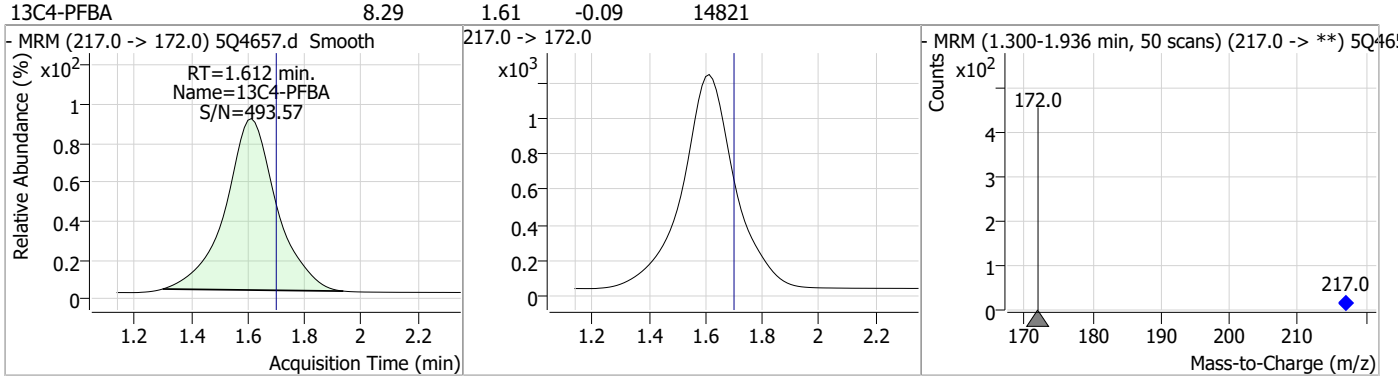
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	77087	10.95	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.7%			
13C8-FOSA	6.517	506.0 -> 78.0	11944	10.53	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.6%			
13C8-PFOA	5.845	421.0 -> 376.0	78081	12.91	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%			
13C8-PFOS	6.428	507.0 -> 99.0	8939	13.69	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C9-PFNA	6.443	472.0 -> 427.0	85731	13.05	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	11783	12.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.6%			
13C3-HFPO-DA	4.532	287.0 -> 169.0	3613	10.76	µg/L		-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.8%			
d3-MeFOSA	6.952	515.0 -> 169.0	1240	4.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 20.4%			
d5-EtFOSAA	7.157	589.0 -> 419.0	13361	11.92	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.6%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.447	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	3.920	299.0 -> 80.0	0		µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	4.784	399.0 -> 80.0	0		µg/L	m	1
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

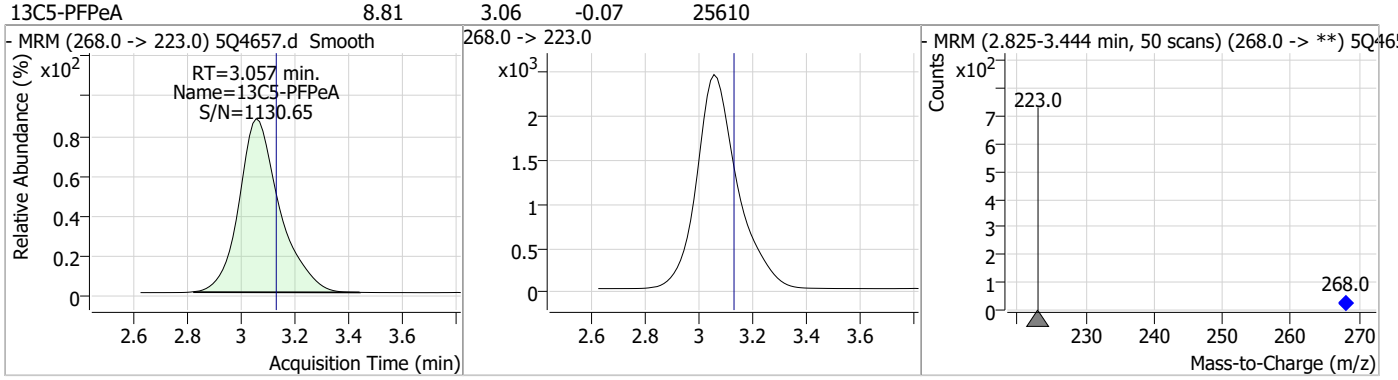
Perfluorinated Compounds by LC/MS/MS



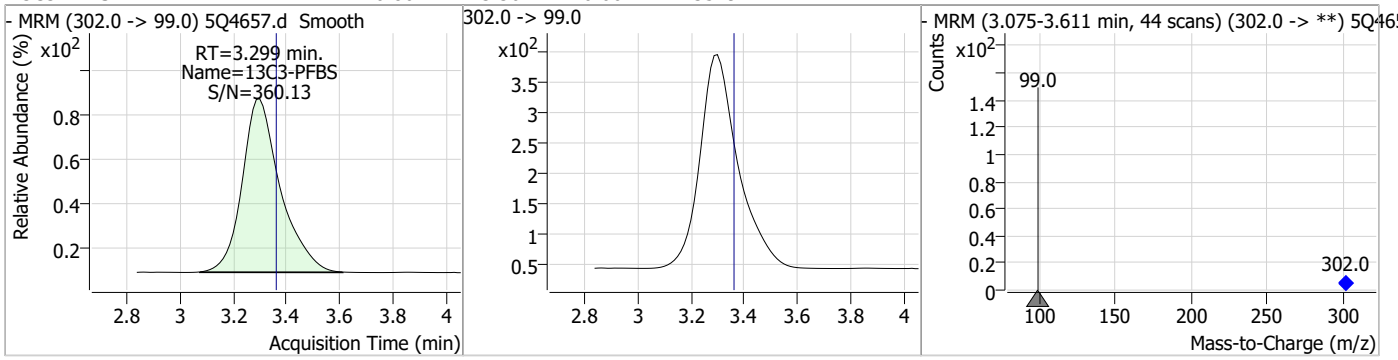
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.29	1.61	-0.09	14821				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	8.81	3.06	-0.07	25610				

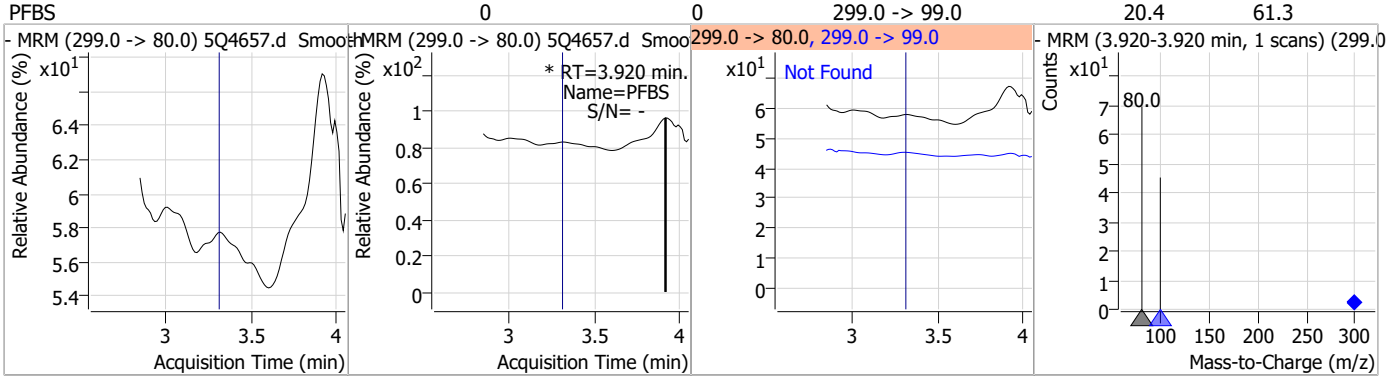


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.80	3.30	-0.06	3519				

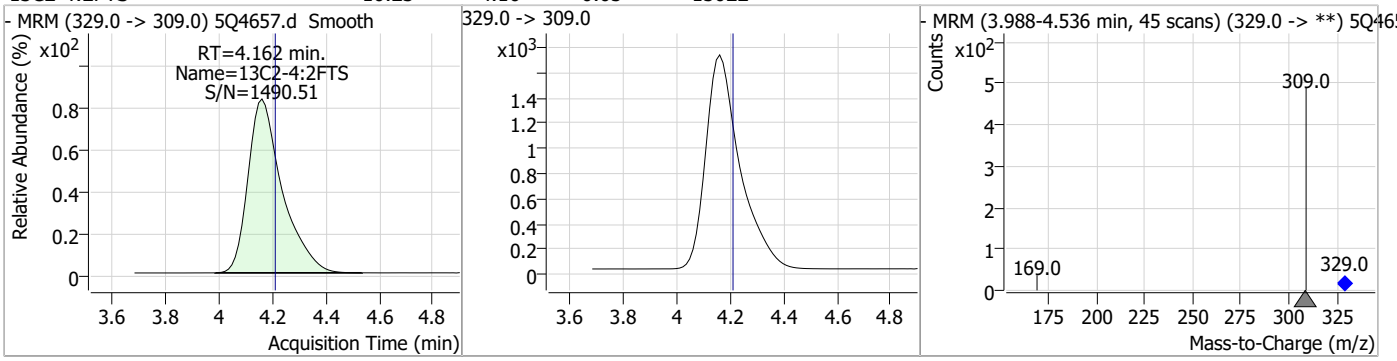


Perfluorinated Compounds by LC/MS/MS

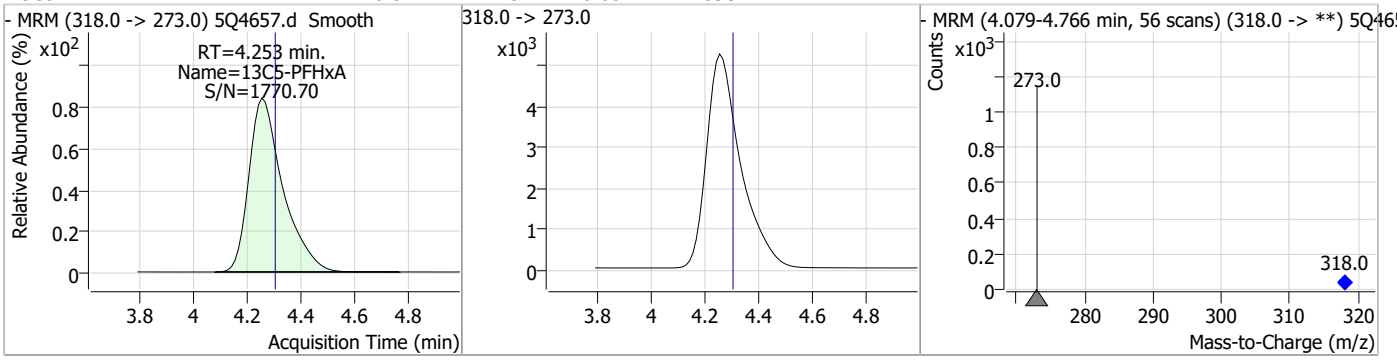
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	299.0 -> 99.0		20.4	61.3



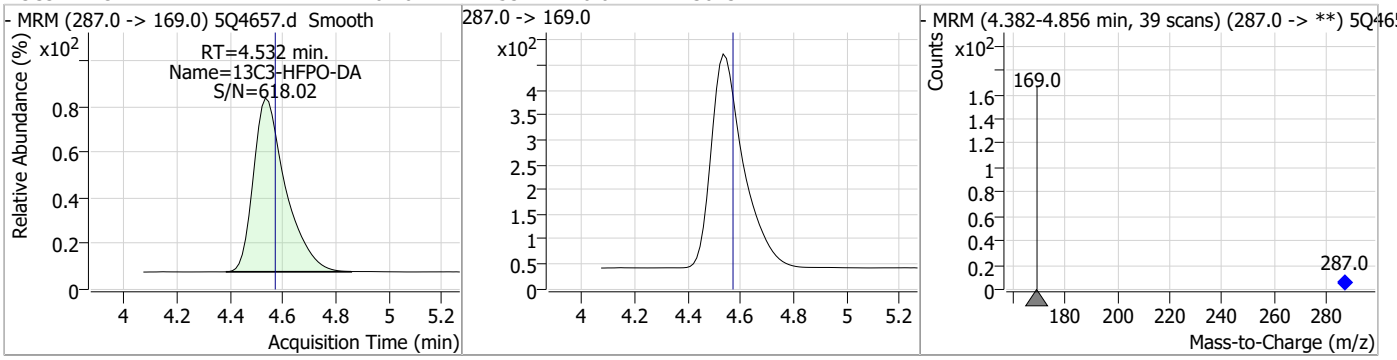
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.23	4.16	-0.05	15022				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.51	4.25	-0.05	45934				

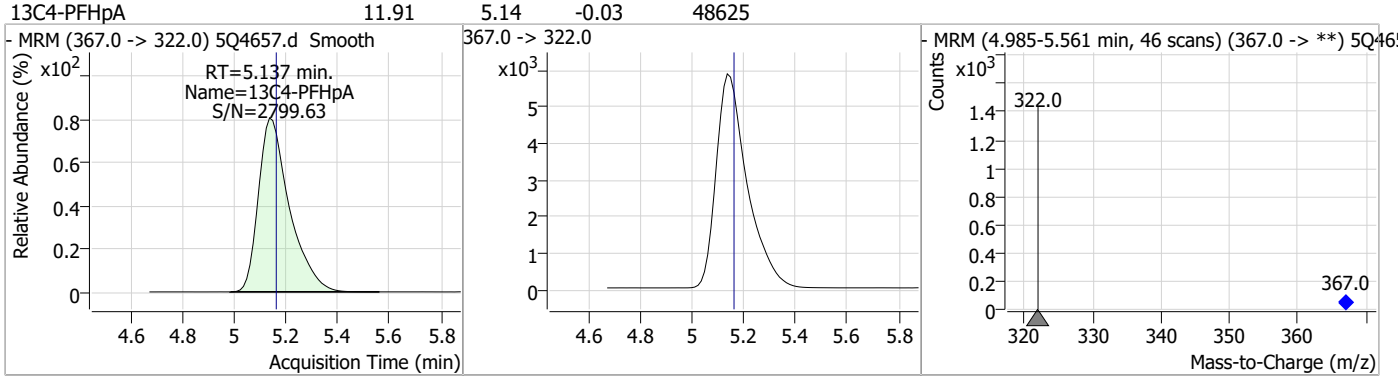


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.76	4.53	-0.04	3613				

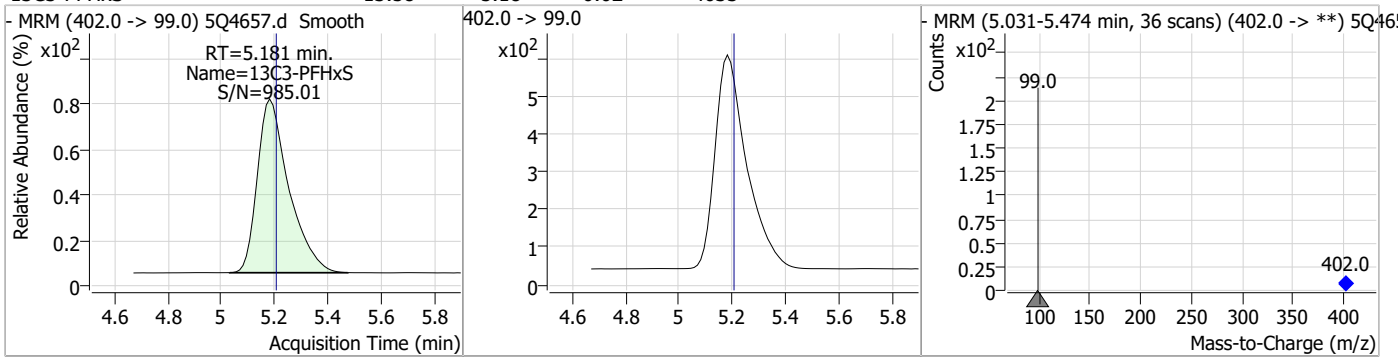


Perfluorinated Compounds by LC/MS/MS

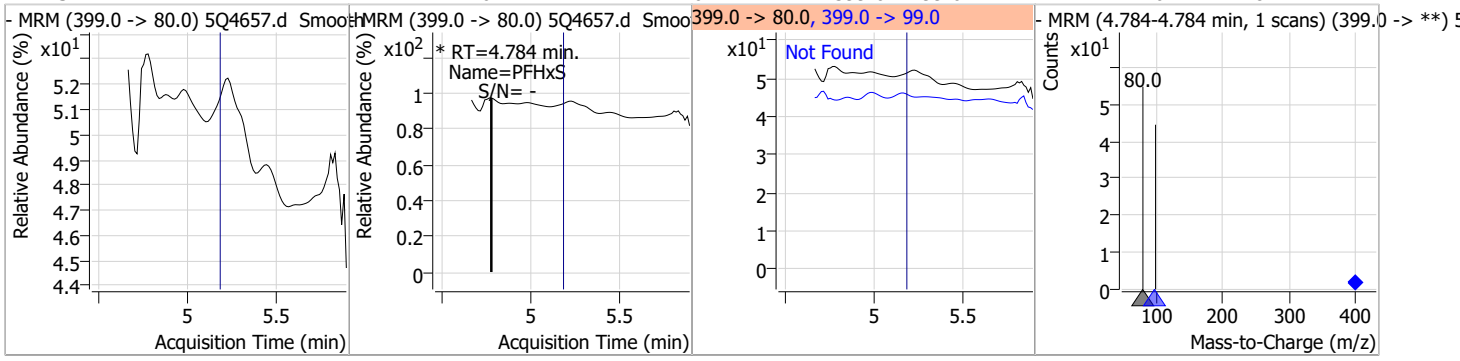
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.91	5.14	-0.03	48625				



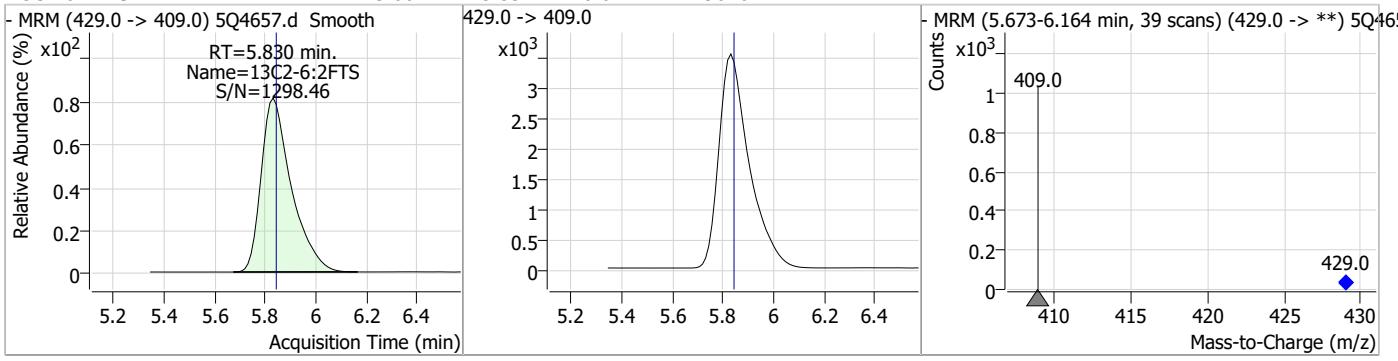
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.58	5.18	-0.02	4633				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS		0		0	399.0 -> 99.0		27.0	81.1

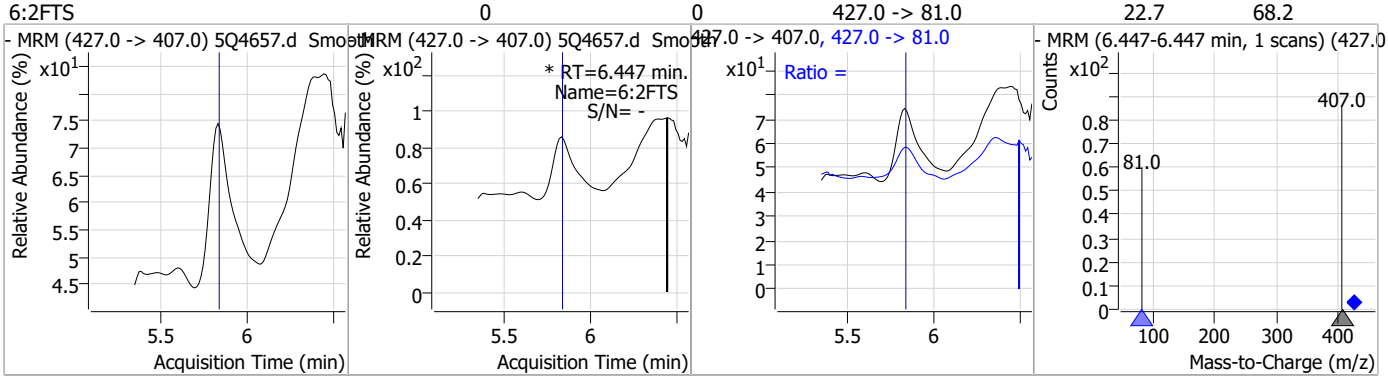


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.00	5.83	-0.01	29076				

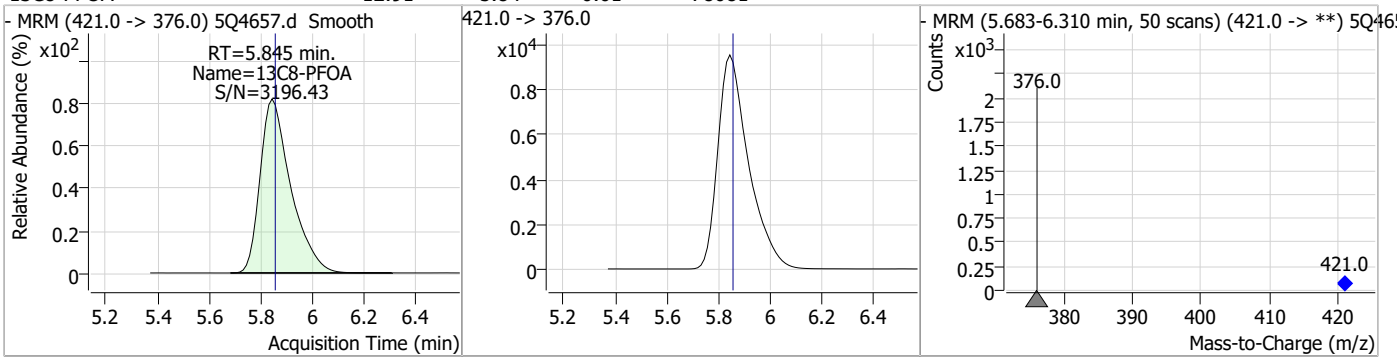


Perfluorinated Compounds by LC/MS/MS

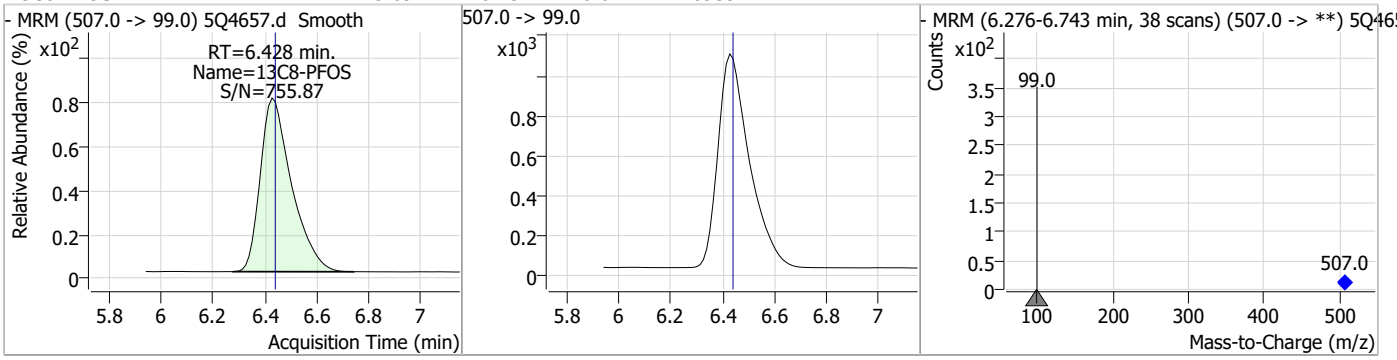
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



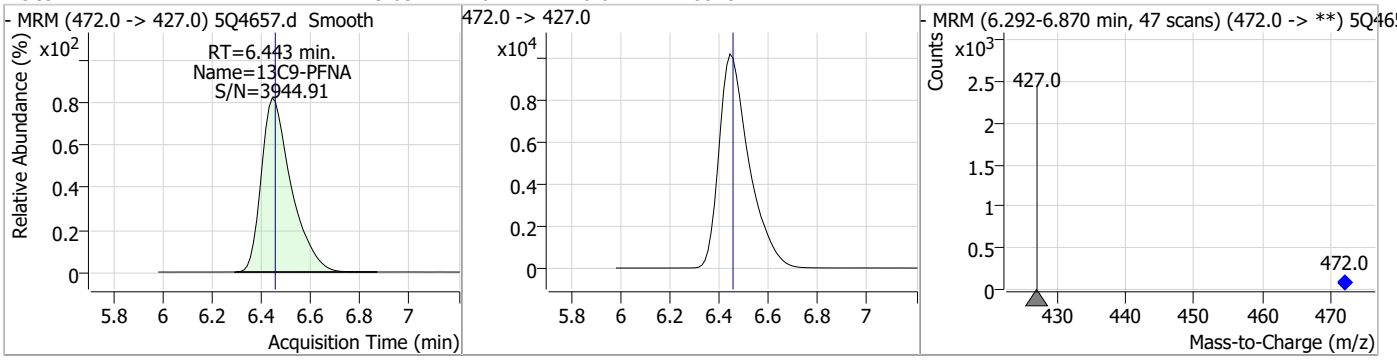
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	12.91	5.84	-0.01	78081				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.69	6.43	-0.01	8939				

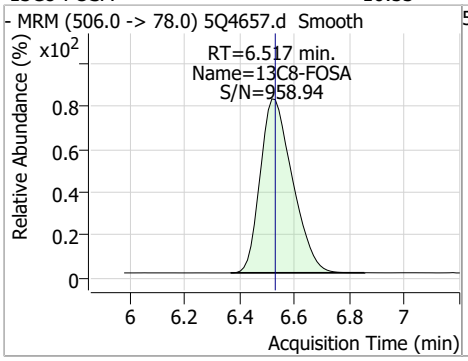


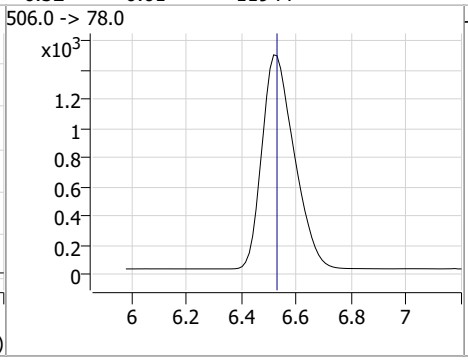
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.05	6.44	-0.01	85731				

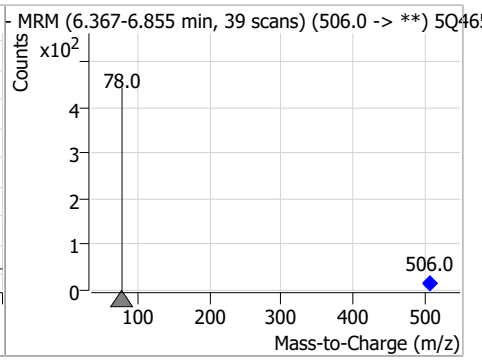


Perfluorinated Compounds by LC/MS/MS

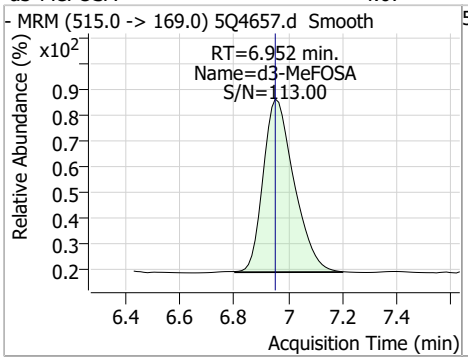
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.53	6.52	-0.01	11944				

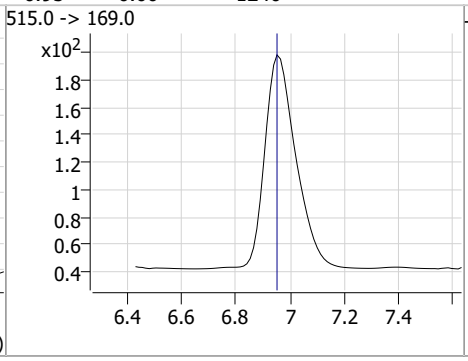


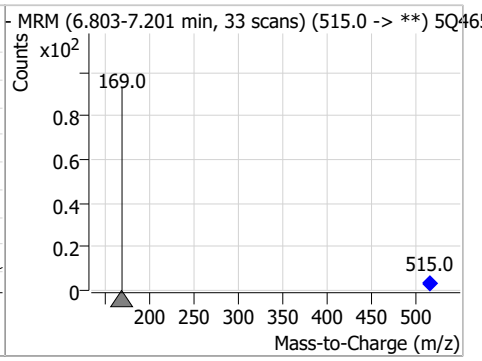




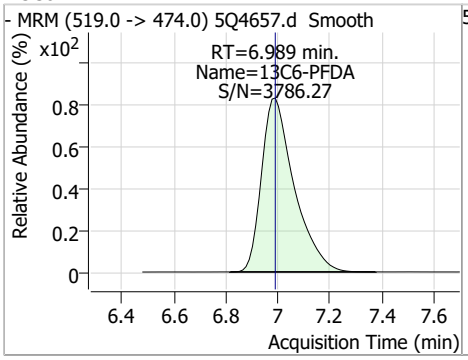
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	4.07	6.95	0.00	1240				

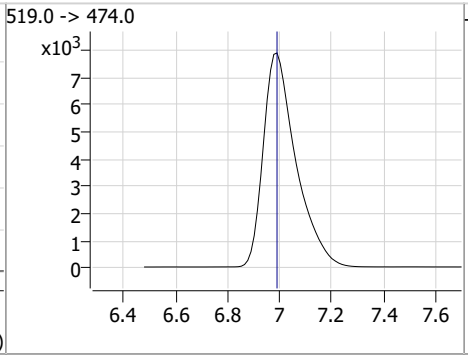


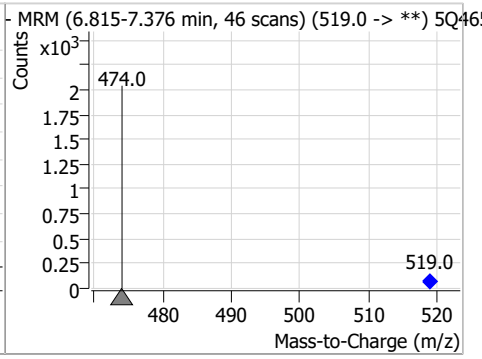




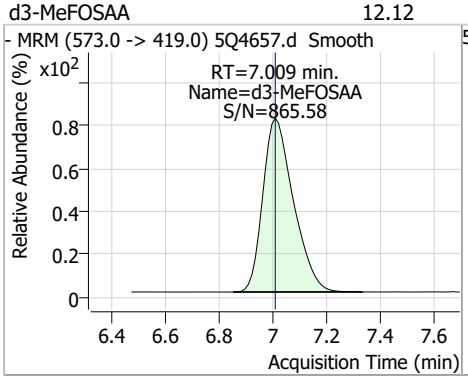
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.74	6.99	0.00	68557				

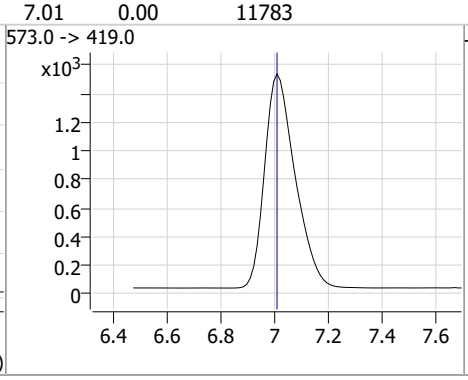


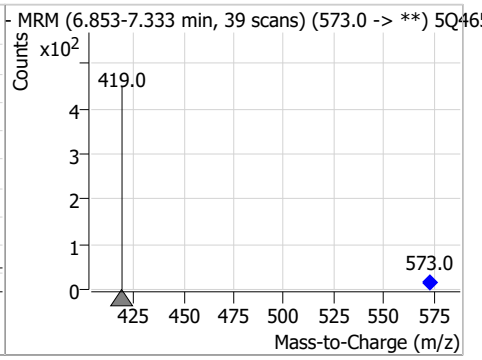




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.12	7.01	0.00	11783				

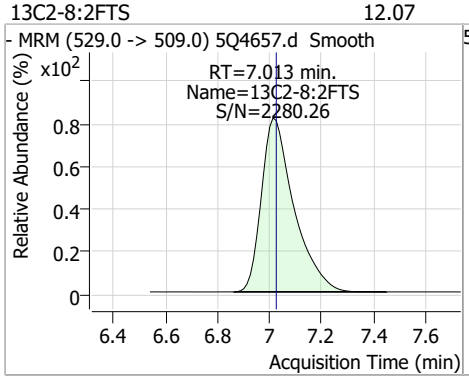


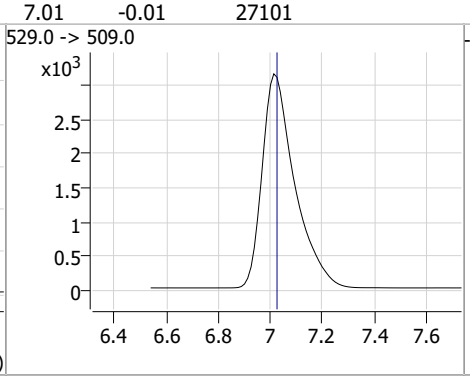


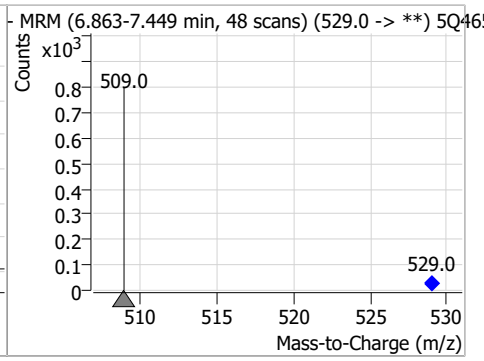


Perfluorinated Compounds by LC/MS/MS

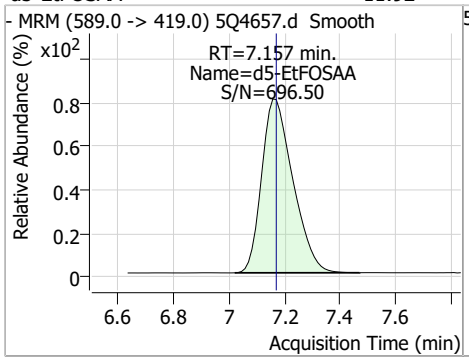
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.07	7.01	-0.01	27101				

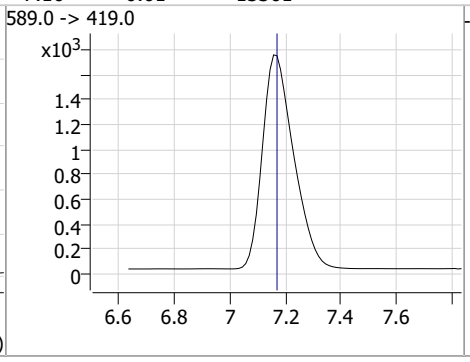


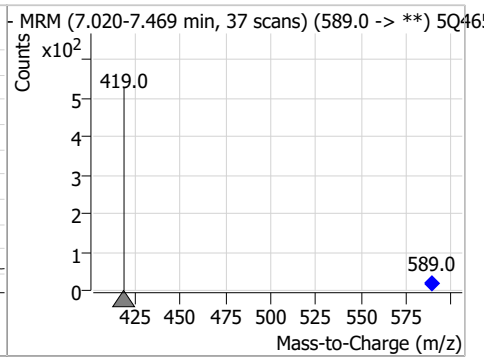




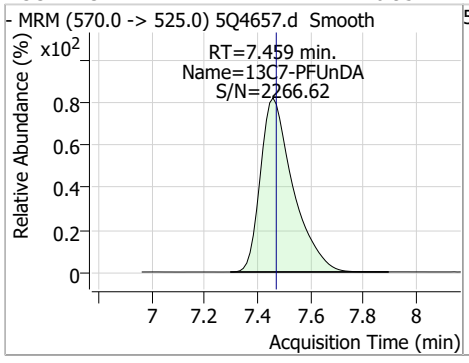
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.92	7.16	-0.01	13361				

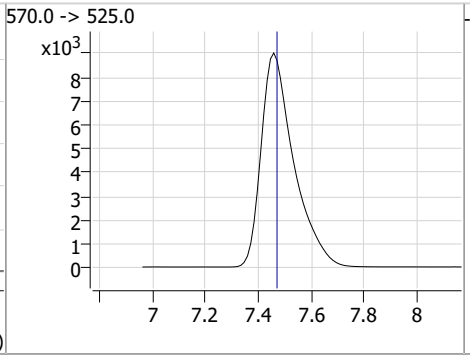


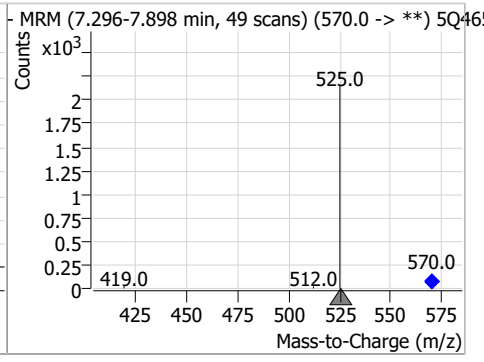




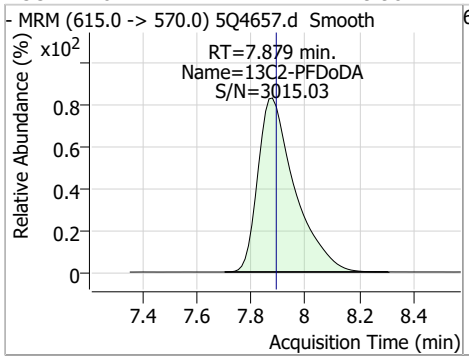
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.95	7.46	-0.01	77087				

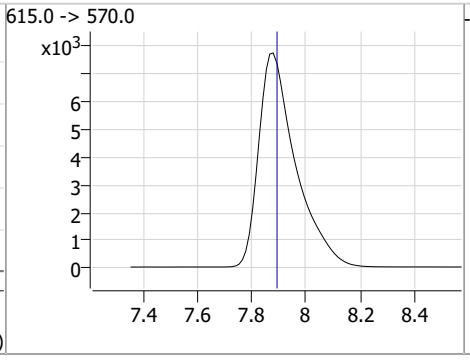


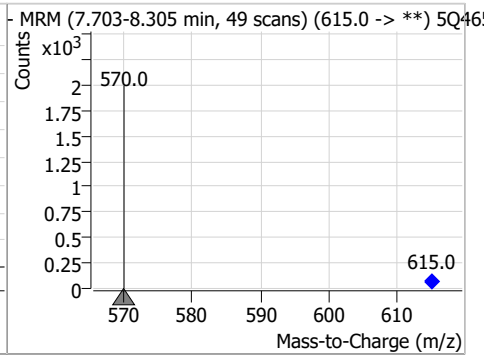




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	9.98	7.88	-0.01	72300				

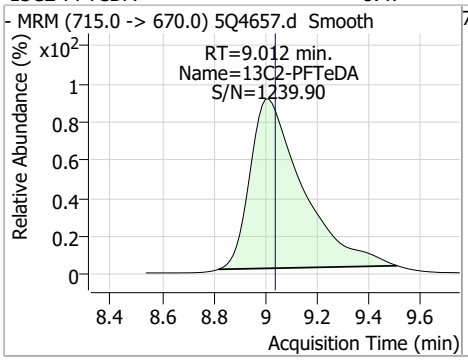


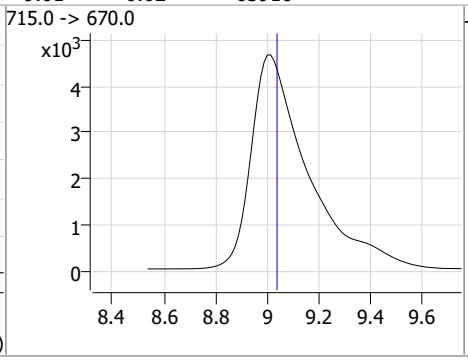


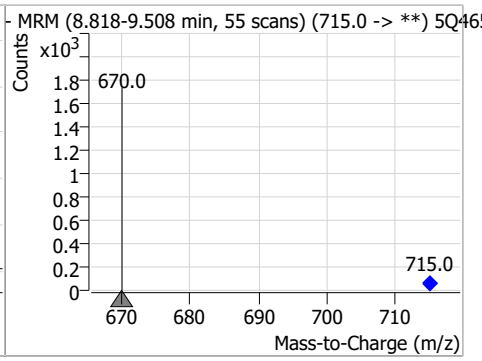


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.47	9.01	-0.02	63916				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4728.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/16/2022 8:27:35 AM
Sample Name	:	fa98286-20
Vial	:	P3-F2
DA Method File	:	ID_091422_S5Q71.quantmethod.xml
Batch Name	:	s5q72.batch.bin
Sample Information	:	OP92763,S5Q72,125,,,1.0,5,water

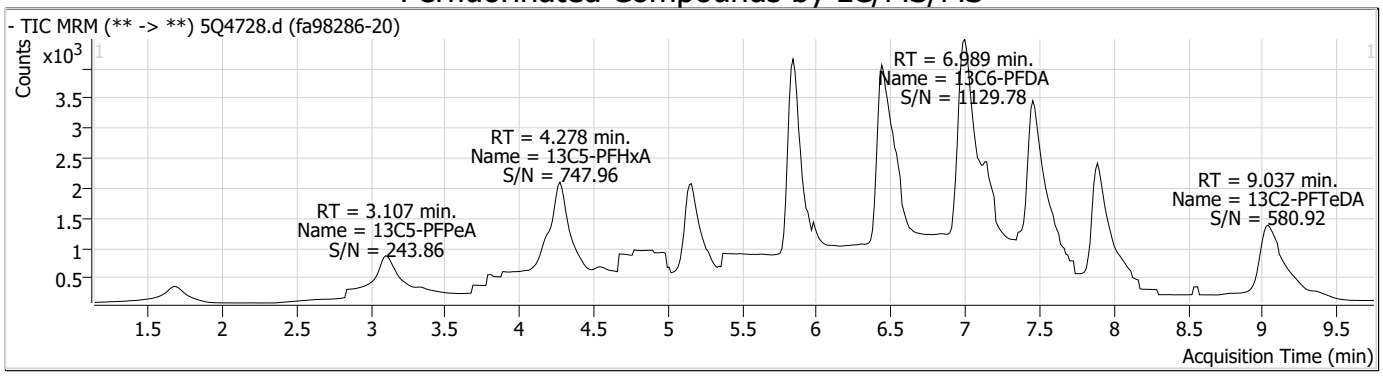
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.675	217.0 -> 172.0	3046	20.00 µg/L	-0.025
M5-PFPeA	3.107	268.0 -> 223.0	5843	20.00 µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	10618	20.00 µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	10366	20.00 µg/L	-0.014
M8-PFOA	5.857	421.0 -> 376.0	16056	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	17168	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	13553	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	15869	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	14593	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	14342	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	2468	20.00 µg/L	-0.012
M3-PFBS	3.337	302.0 -> 99.0	741	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	946	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	1608	20.00 µg/L	0.000
M2-4:2FTS	4.187	329.0 -> 309.0	3523	20.00 µg/L	-0.025
M2-6:2FTS	5.843	429.0 -> 409.0	5898	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	5664	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	2790	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	747	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	341	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	2961	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	3523	2.40 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.0%	
13C2-6:2FTS	5.843	429.0 -> 409.0	5898	2.64 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%	
13C2-8:2FTS	7.025	529.0 -> 509.0	5664	2.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%	
13C2-PFDoDA	7.893	615.0 -> 570.0	14593	2.01 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%	
13C2-PFTeDA	9.037	715.0 -> 670.0	14342	1.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%	
13C3-PFBS	3.337	302.0 -> 99.0	741	2.27 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.4%	
13C3-PFHxS	5.194	402.0 -> 99.0	946	2.77 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%	
13C4-PFBA	1.675	217.0 -> 172.0	3046	1.70 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.5%	
13C4-PFHpA	5.149	367.0 -> 322.0	10366	2.54 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%	
13C5-PFHxA	4.278	318.0 -> 273.0	10618	2.43 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.1%	
13C5-PFPeA	3.107	268.0 -> 223.0	5843	2.01 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%	
13C6-PFDA	6.989	519.0 -> 474.0	13553	2.52 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

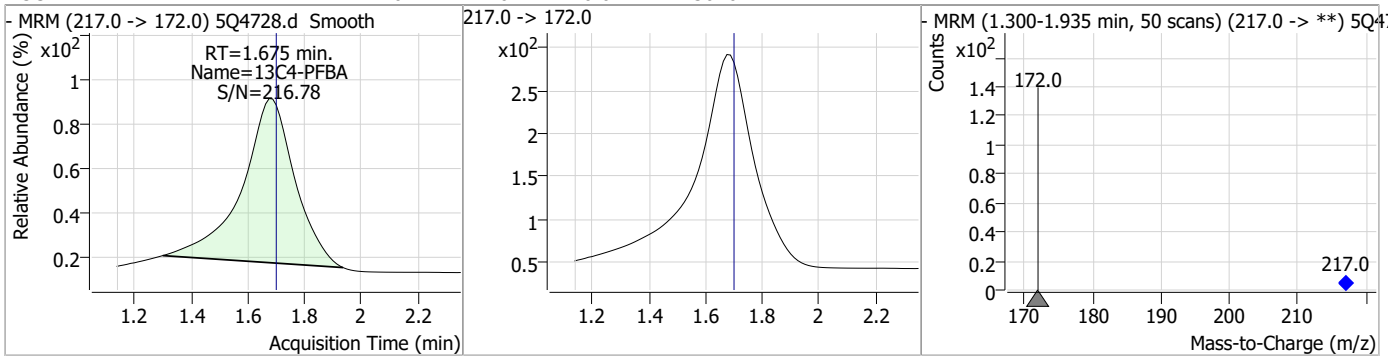
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%			
13C7-PFUnDA	7.471	570.0 -> 525.0	15869	2.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.3%			
13C8-FOSA	6.517	506.0 -> 78.0	2468	2.18	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.9%			
13C8-PFOA	5.857	421.0 -> 376.0	16056	2.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%			
13C8-PFOS	6.440	507.0 -> 99.0	1608	2.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.3%			
13C9-PFNA	6.455	472.0 -> 427.0	17168	2.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	2790	2.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	747	2.22	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%			
d3-MeFOSA	6.952	515.0 -> 169.0	341	1.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.6%			
d5-EtFOSAA	7.157	589.0 -> 419.0	2961	2.64	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.547	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	2.681	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

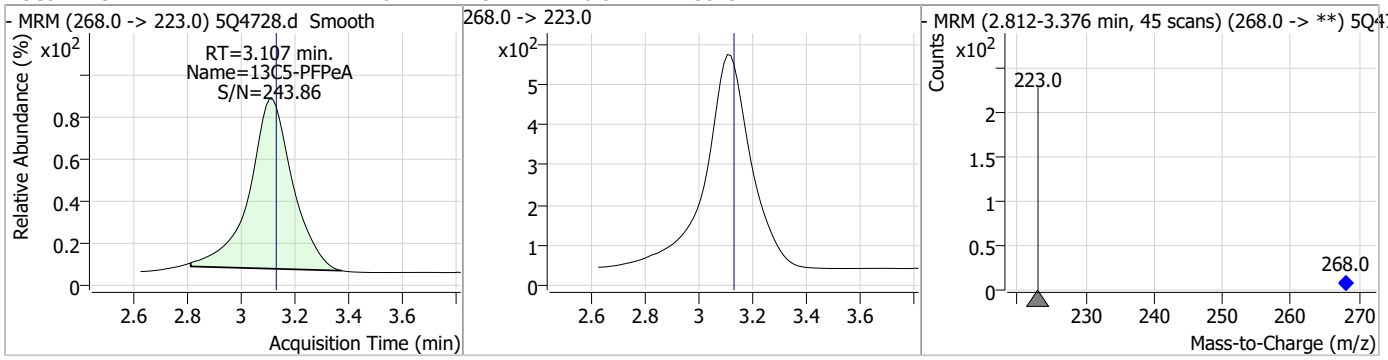
Perfluorinated Compounds by LC/MS/MS



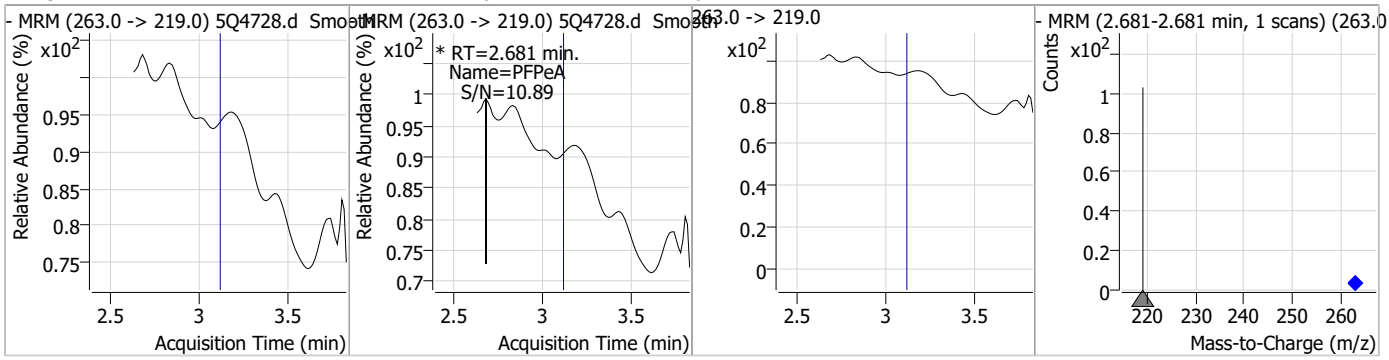
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.70	1.67	-0.02	3046				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.01	3.11	-0.02	5843				

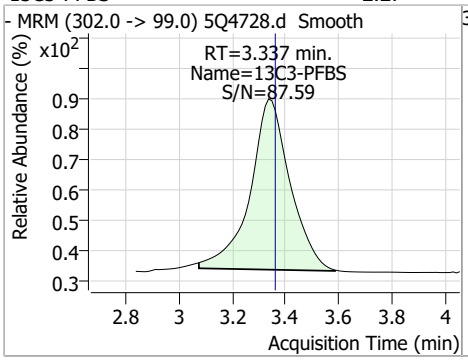


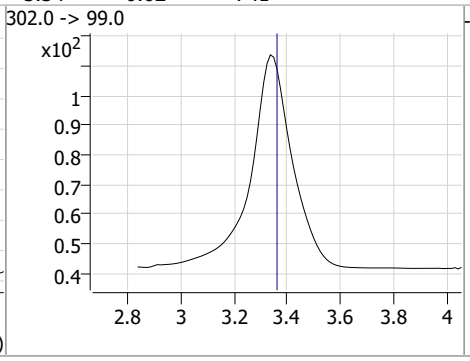
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				

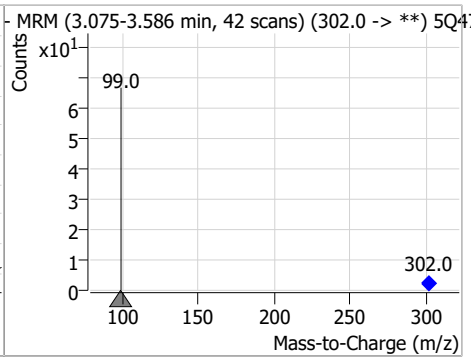


Perfluorinated Compounds by LC/MS/MS

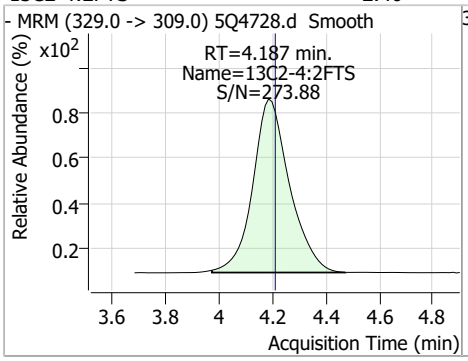
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.27	3.34	-0.02	741				

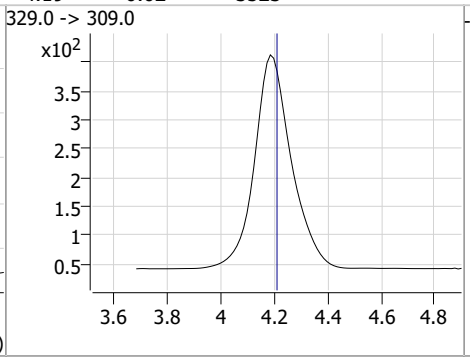


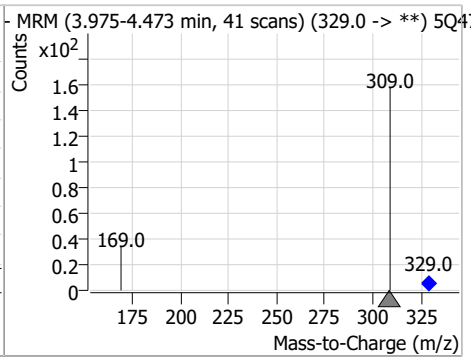




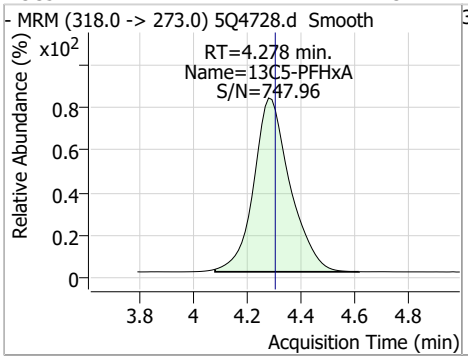
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.40	4.19	-0.02	3523				

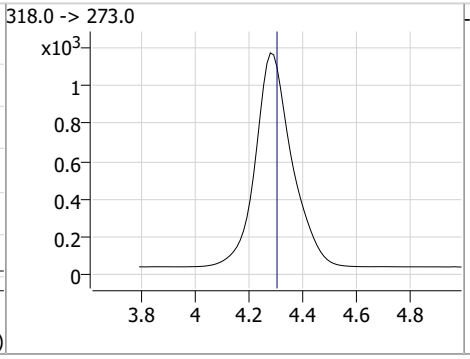


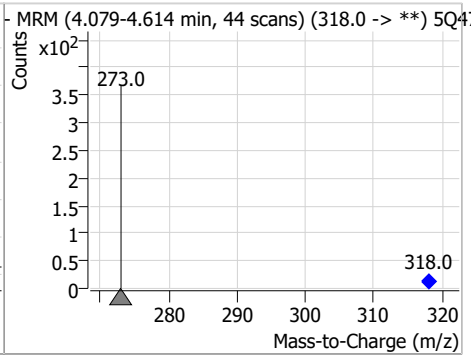




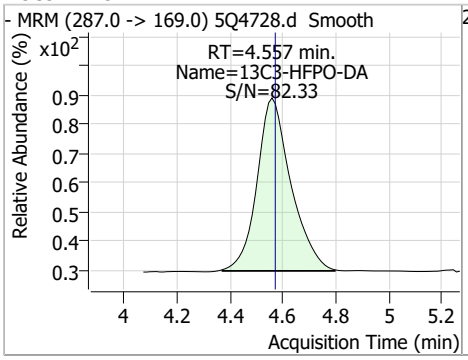
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.43	4.28	-0.02	10618				

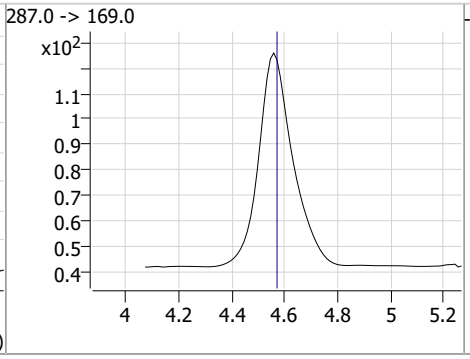


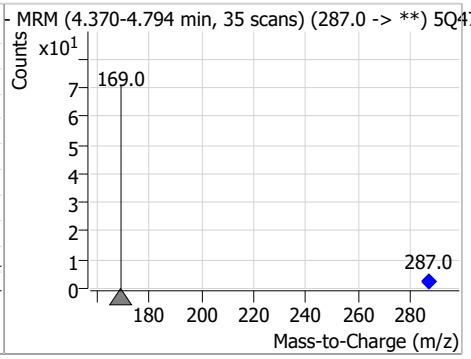




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.22	4.56	-0.01	747				

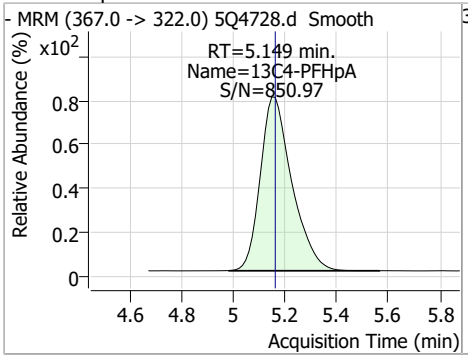


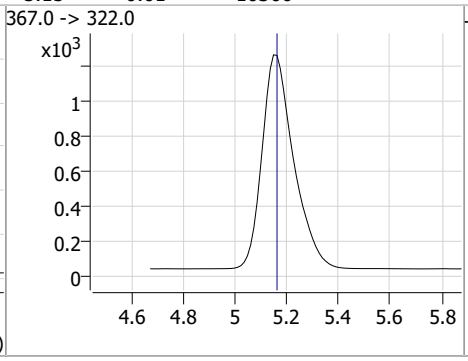


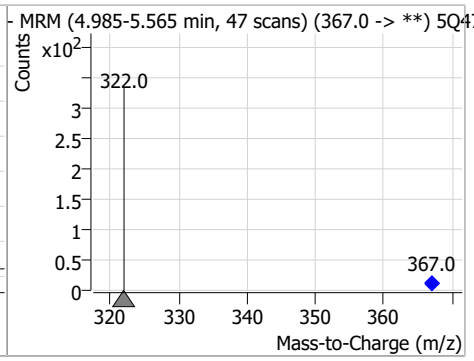


Perfluorinated Compounds by LC/MS/MS

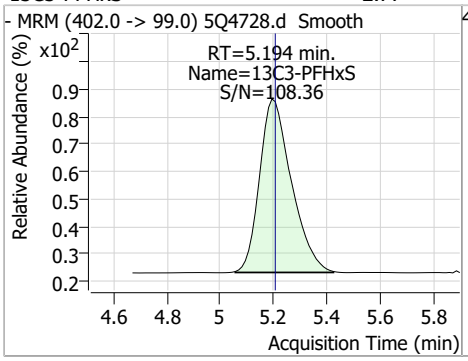
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.54	5.15	-0.01	10366				

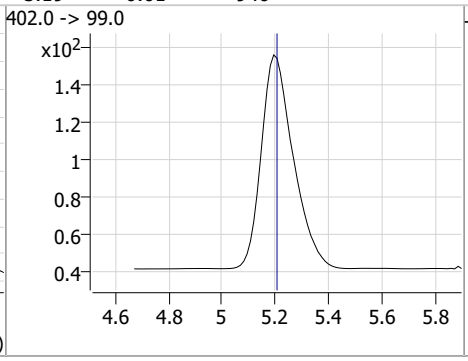


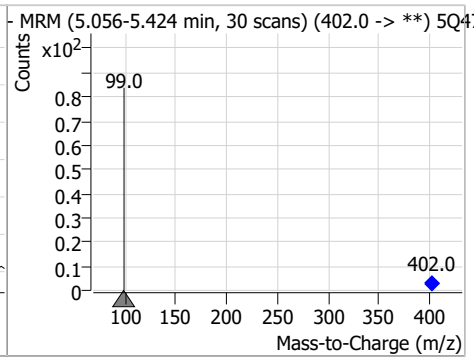




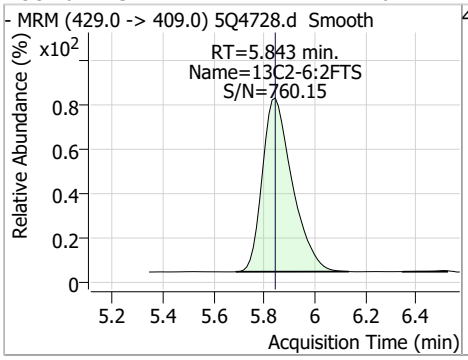
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.77	5.19	-0.01	946				

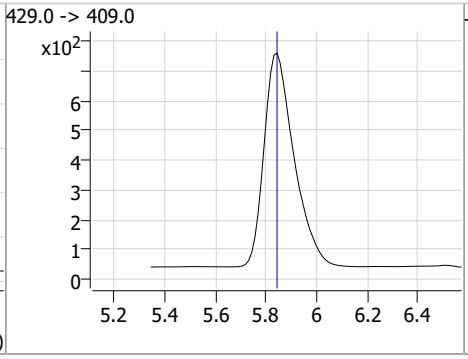


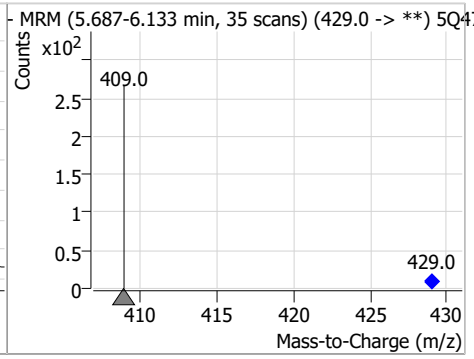




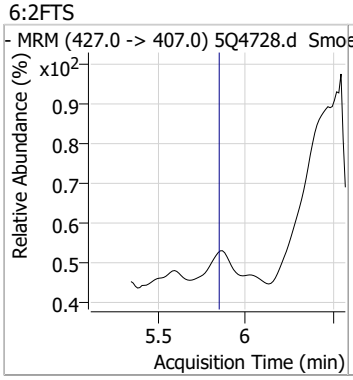
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.64	5.84	0.00	5898				

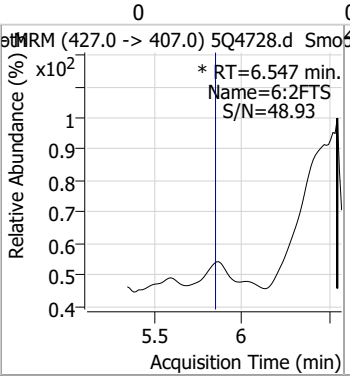


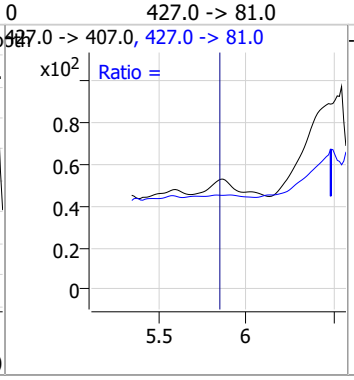


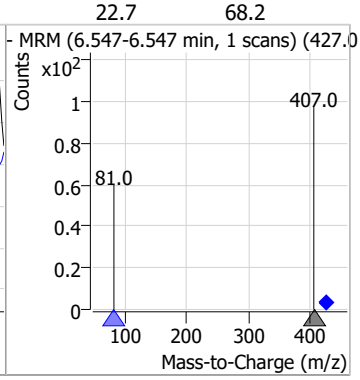


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



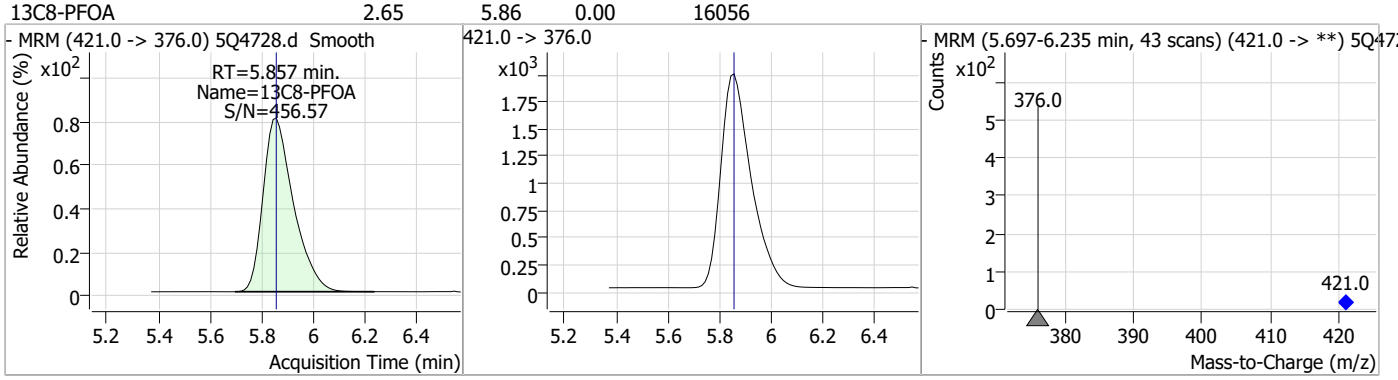




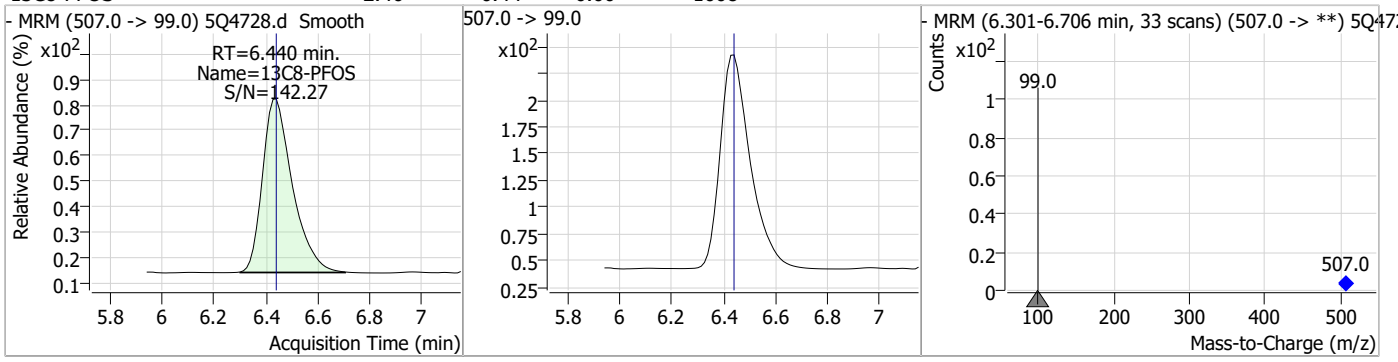


Perfluorinated Compounds by LC/MS/MS

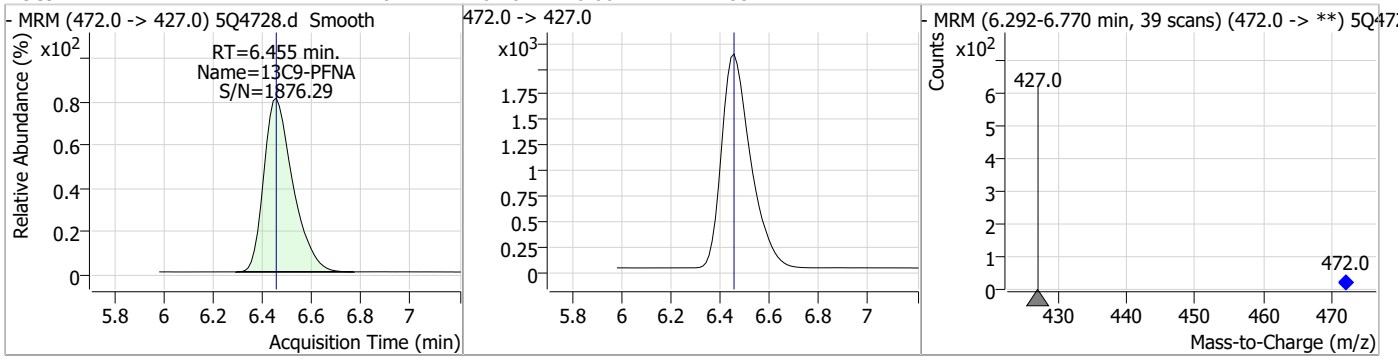
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.65	5.86	0.00	16056				



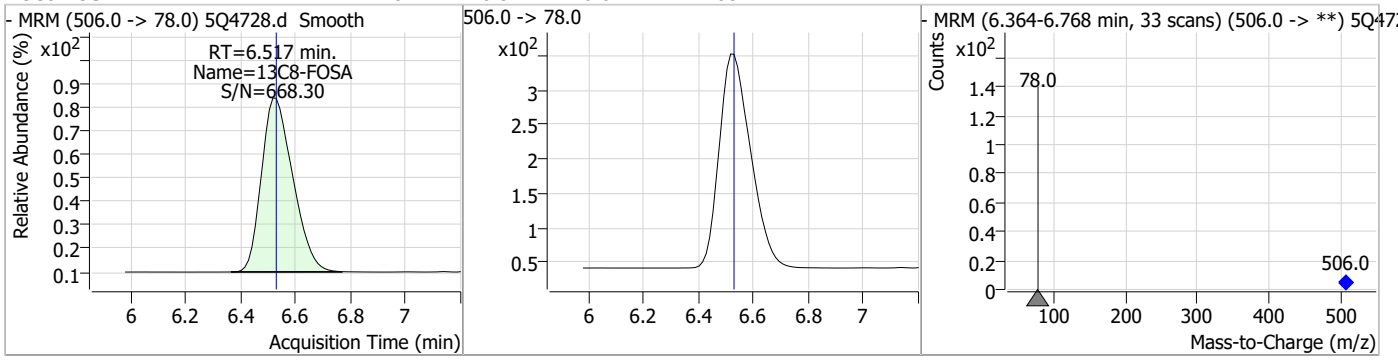
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.46	6.44	0.00	1608				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.61	6.46	0.00	17168				

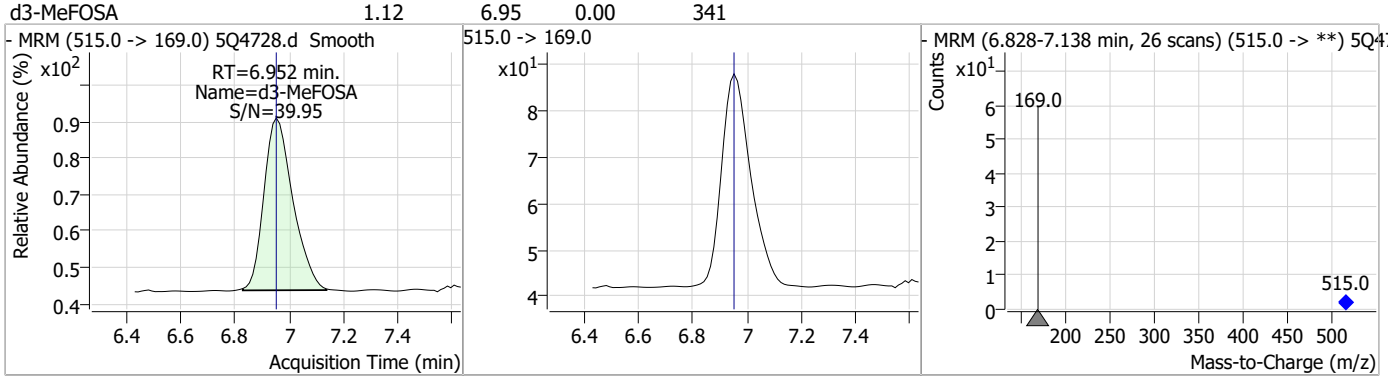


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.18	6.52	-0.01	2468				

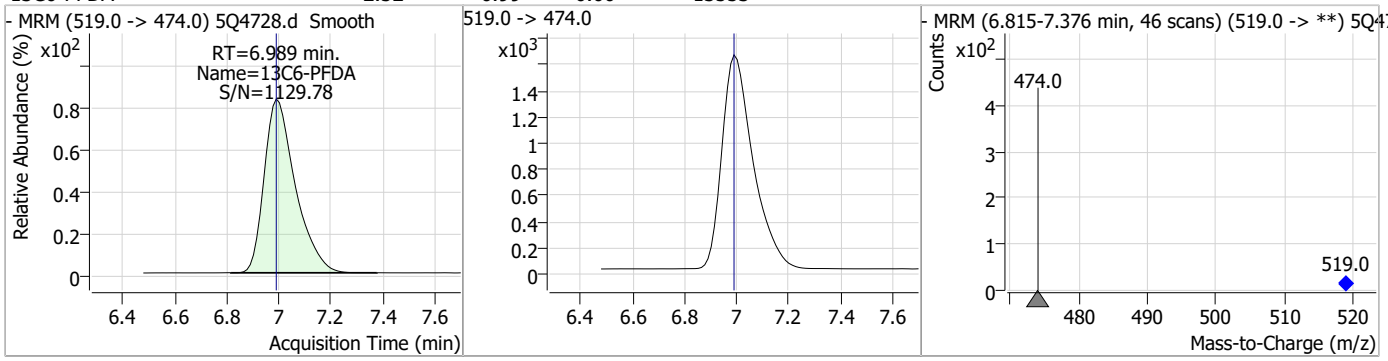


Perfluorinated Compounds by LC/MS/MS

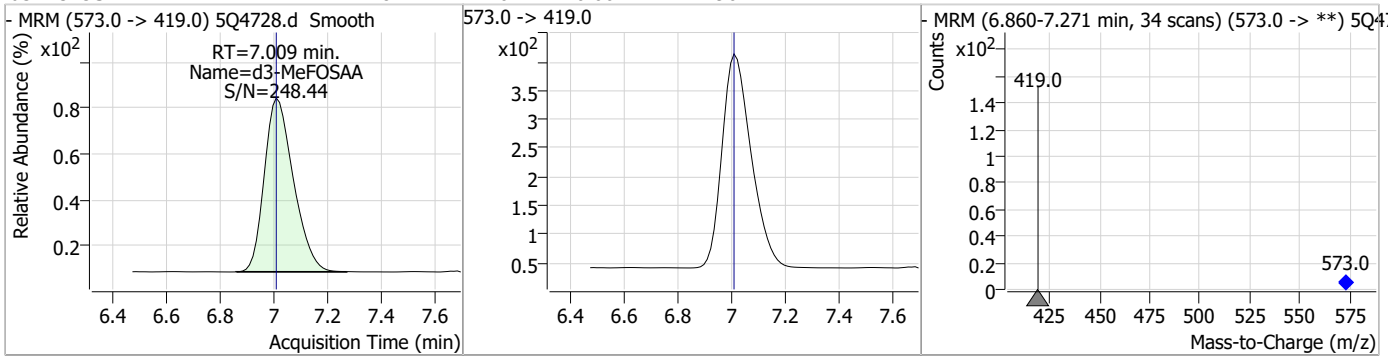
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.12	6.95	0.00	341				



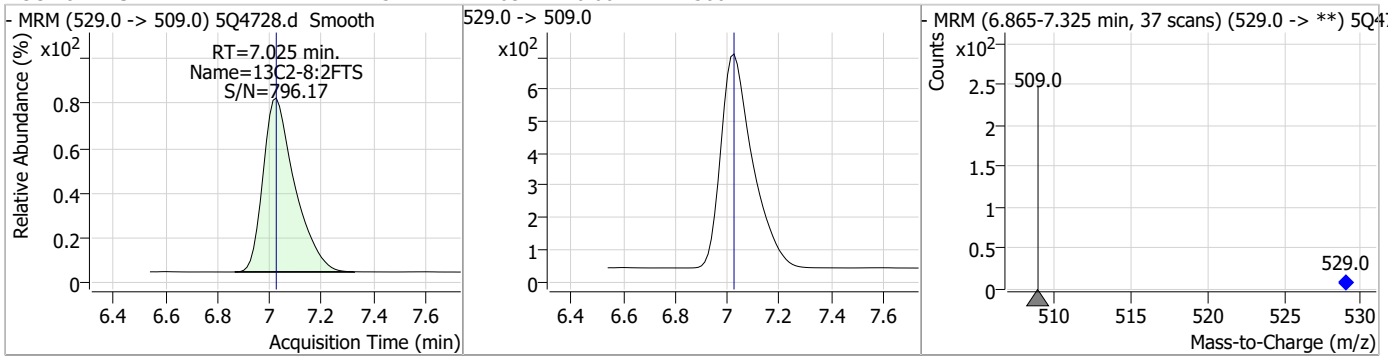
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.52	6.99	0.00	13553				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.87	7.01	0.00	2790				

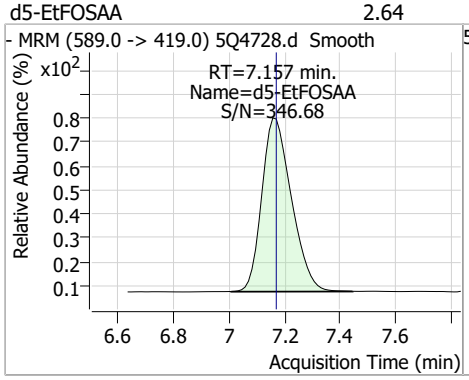


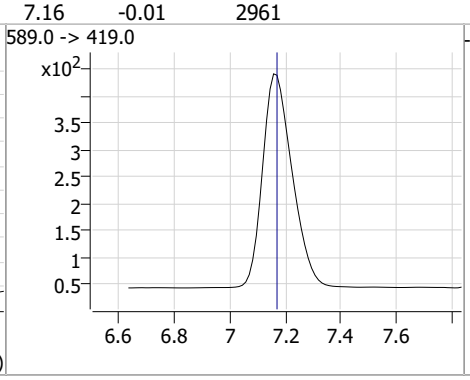
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.52	7.03	0.00	5664				

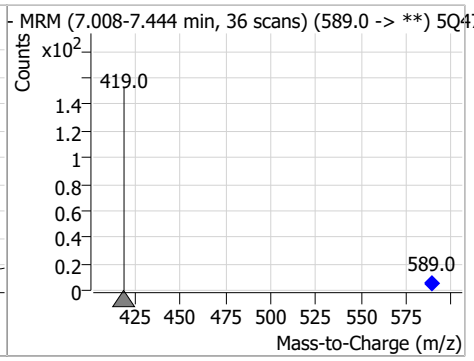


Perfluorinated Compounds by LC/MS/MS

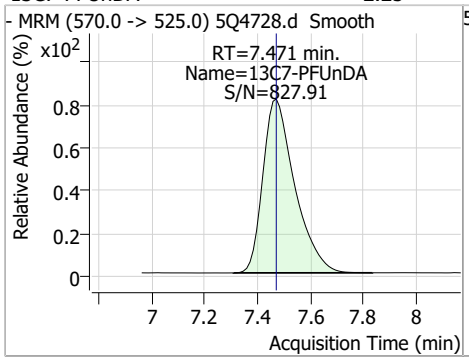
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.64	7.16	-0.01	2961				

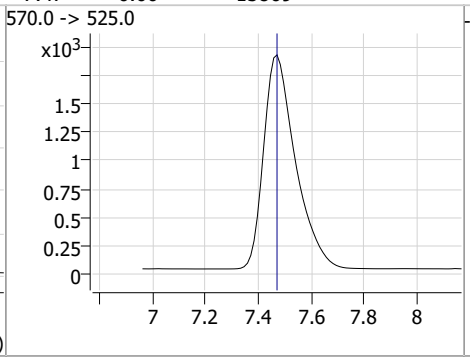


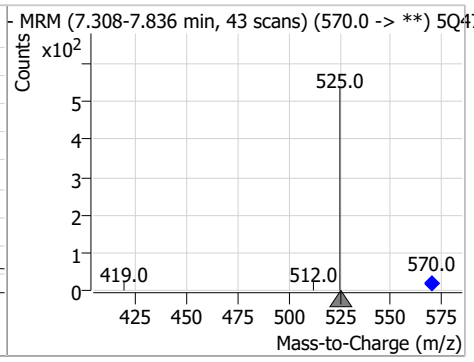




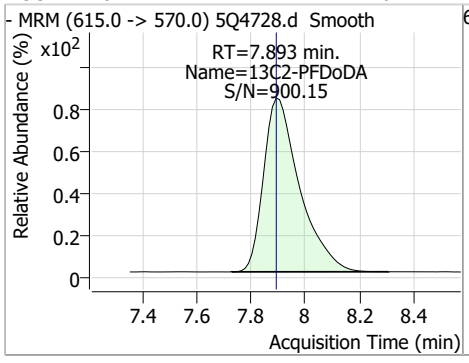
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.25	7.47	0.00	15869				

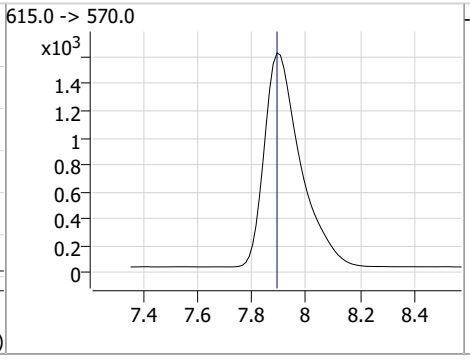


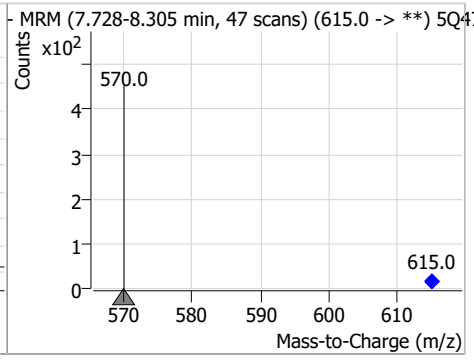




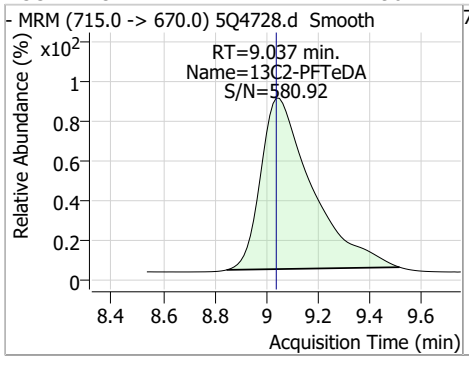
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.01	7.89	0.00	14593				

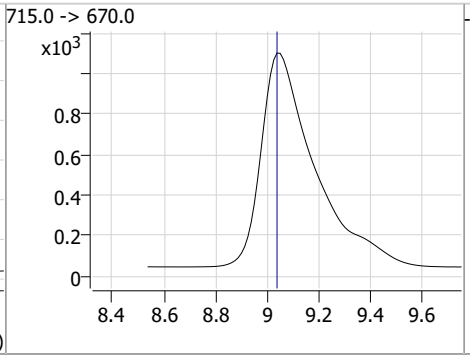


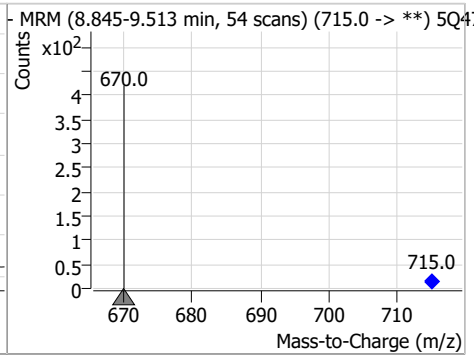




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.90	9.04	0.00	14342				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4673.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 1:09:22 AM
Sample Name : fa98286-21
Vial : P5-D9
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.874	217.0 -> 172.0	51189	20.00	µg/L	-0.075
M5-PFPeA	3.380	268.0 -> 223.0	99183	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	165594	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	199580	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	372725	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	428961	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	295391	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	320890	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	395012	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	316469	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	96287	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	23980	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	23820	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	31936	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	204859	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	285417	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	181954	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	115611	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3818	20.00	µg/L	-0.026
M3-MeFOSA	7.098	515.0 -> 169.0	592	20.00	µg/L	0.013
M5-EtFOSAA	7.302	589.0 -> 419.0	86935	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	204859	15.17	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	285417	16.72	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	181954	13.96	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%		
13C2-PFDoDA	8.307	615.0 -> 570.0	395012	10.74	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.7%		
13C2-PFTeDA	9.976	715.0 -> 670.0	316469	10.55	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.7%		
13C3-PFBS	3.610	302.0 -> 99.0	23980	15.66	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.3%		
13C3-PFHxS	5.463	402.0 -> 99.0	23820	17.23	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%		
13C4-PFBA	1.874	217.0 -> 172.0	51189	12.86	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.3%		
13C4-PFHpA	5.433	367.0 -> 322.0	199580	16.13	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C5-PFHxA	4.561	318.0 -> 273.0	165594	15.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%		
13C5-PFPeA	3.380	268.0 -> 223.0	99183	14.15	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.7%		
13C6-PFDA	7.283	519.0 -> 474.0	295391	14.52	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

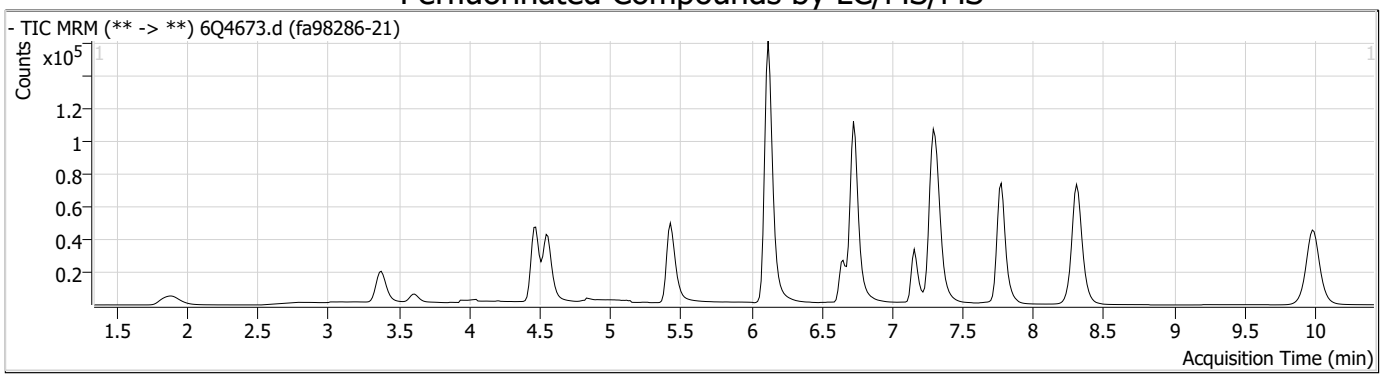
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	320890	12.09	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.4%			
13C8-FOSA	6.654	506.0 -> 78.0	96287	9.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.2%			
13C8-PFOA	6.126	421.0 -> 376.0	372725	17.57	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%			
13C8-PFOS	6.717	507.0 -> 99.0	31936	15.06	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C9-PFNA	6.732	472.0 -> 427.0	428961	16.65	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%			
d3-MeFOSAA	7.155	573.0 -> 419.0	115611	13.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3842	14.46	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	86951	12.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	3.552	299.0 -> 80.0	0		µg/L	m	1
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.421	363.0 -> 319.0	393	0.03	µg/L	m	86
		363.0 -> 169.0	35				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.050	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 119.0					
PFHxS	4.867	399.0 -> 80.0	0		µg/L	m	1
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

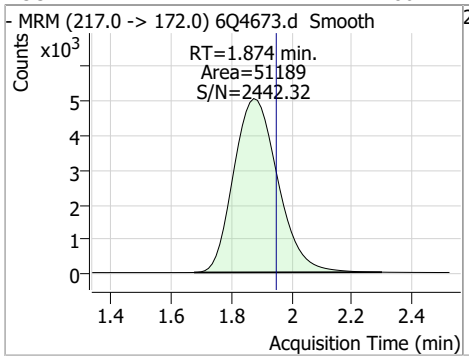
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.196	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

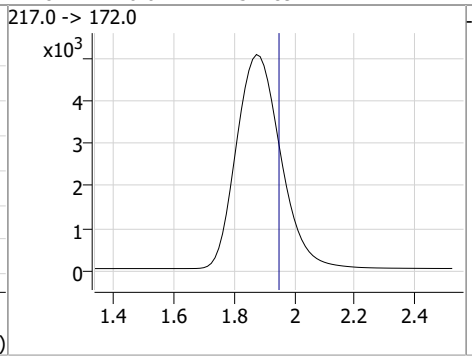
 # = Qualifier out of range, m = manually integrated, + = Area summed

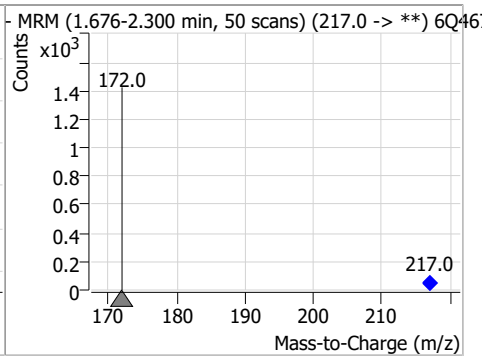
Perfluorinated Compounds by LC/MS/MS



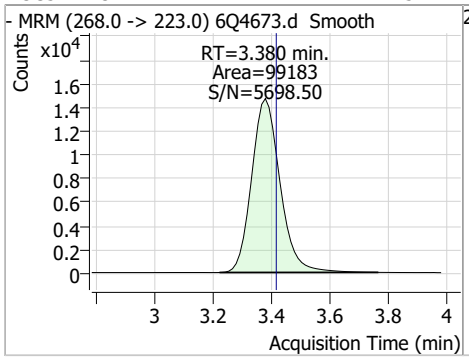
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.86	1.87	-0.07	51189				

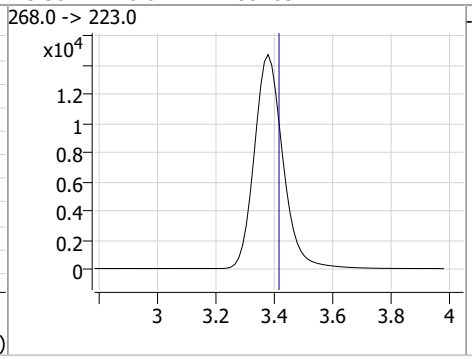


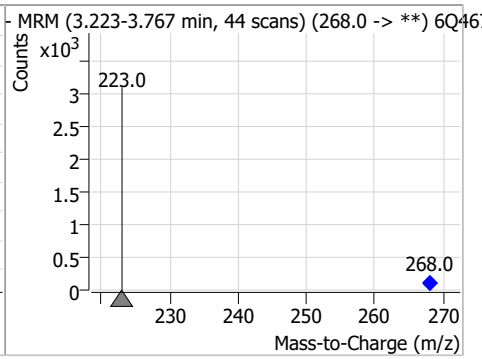




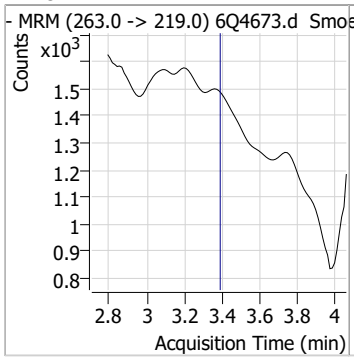
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.15	3.38	-0.04	99183				

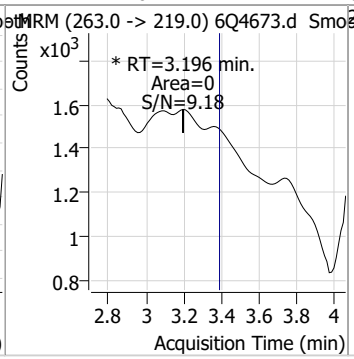


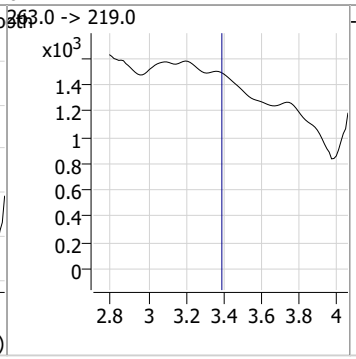


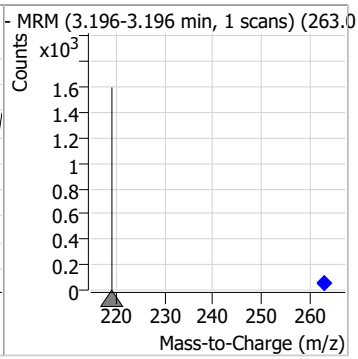


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



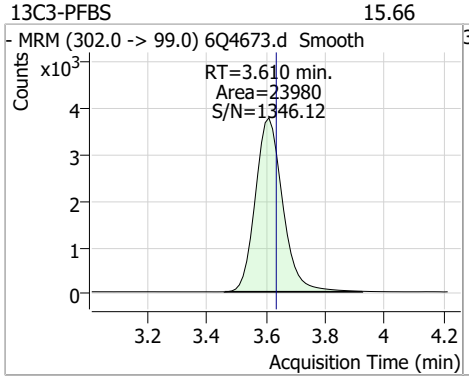


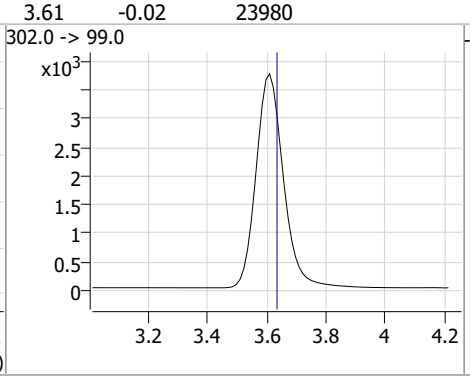


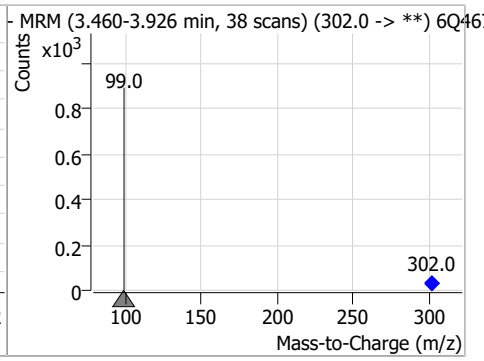


Perfluorinated Compounds by LC/MS/MS

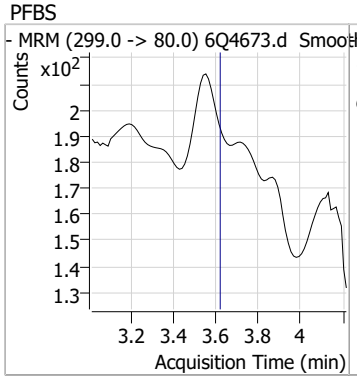
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.66	3.61	-0.02	23980				

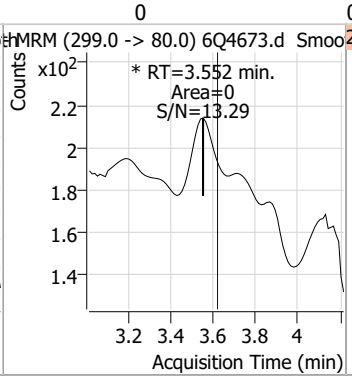


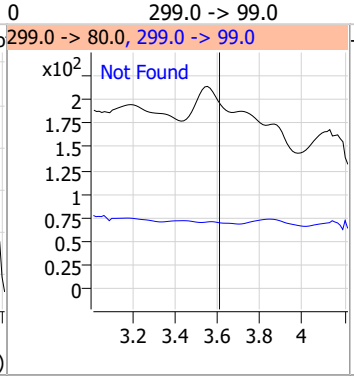


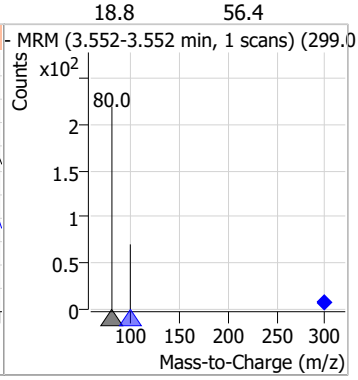


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	299.0 -> 99.0		18.8	56.4

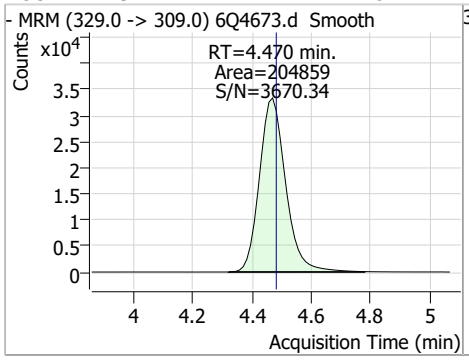


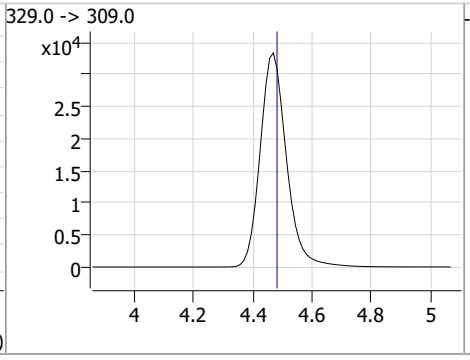


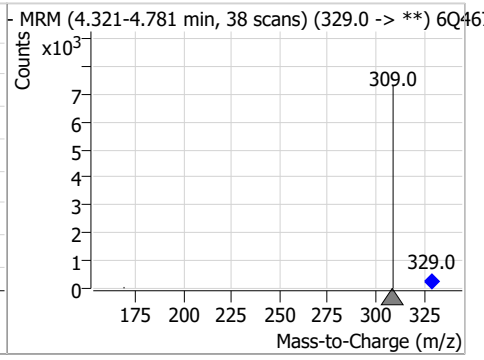




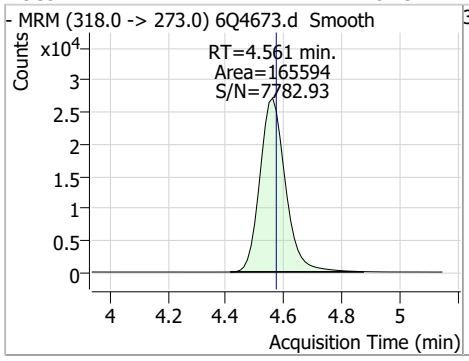
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.17	4.47	-0.01	204859				

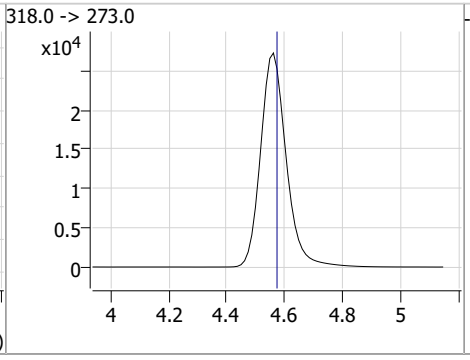


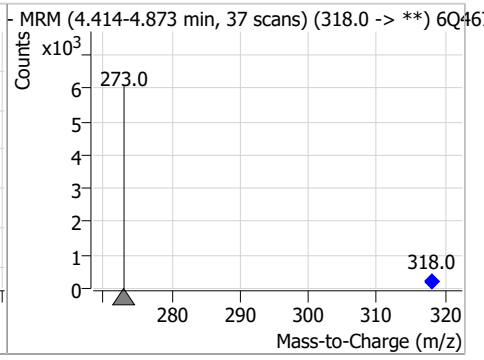




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.49	4.56	-0.01	165594				

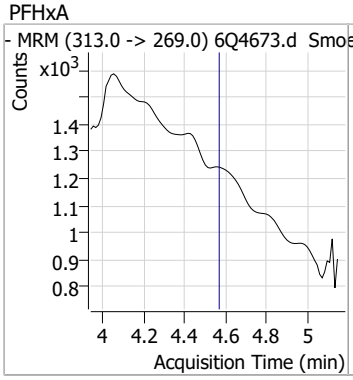


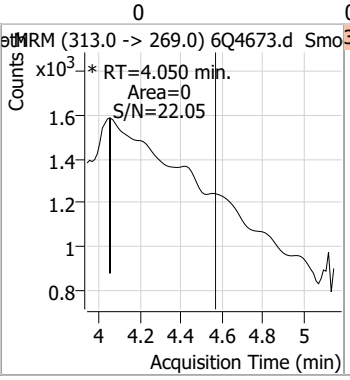


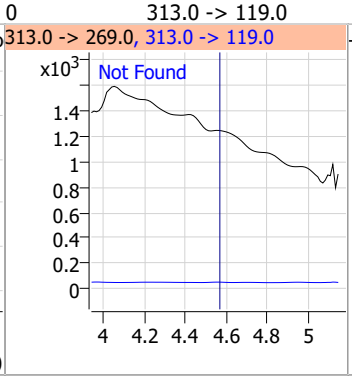


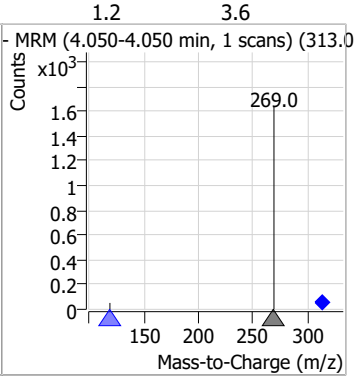
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		1.2	3.6

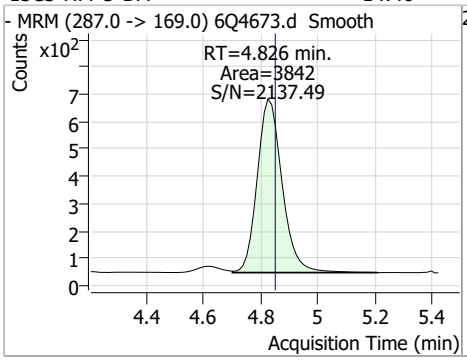


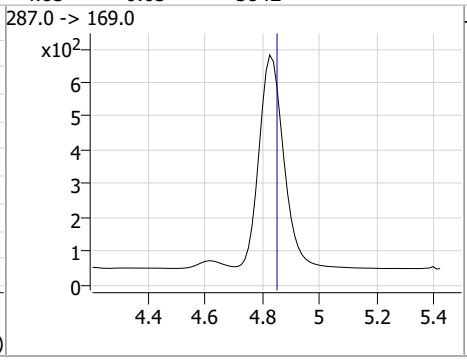


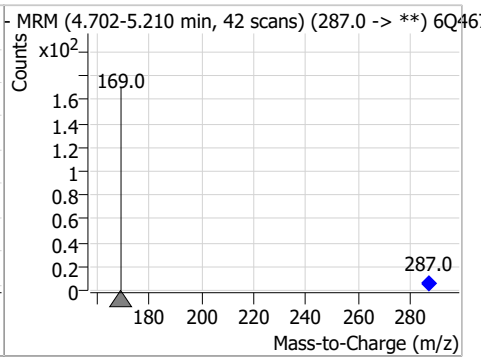




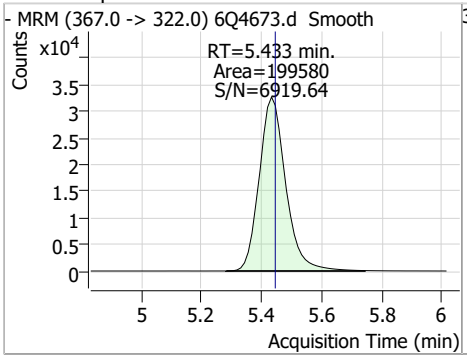
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.46	4.83	-0.03	3842				

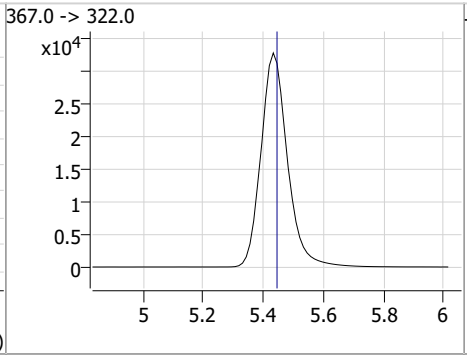


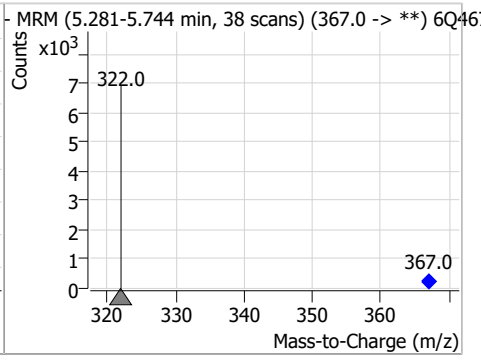




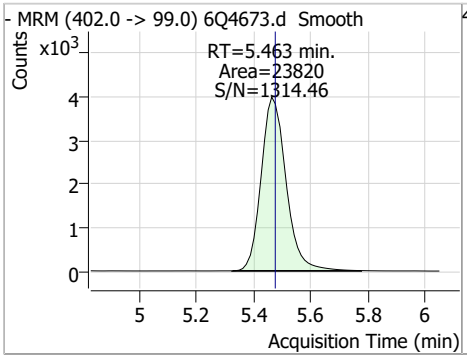
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.13	5.43	-0.01	199580				

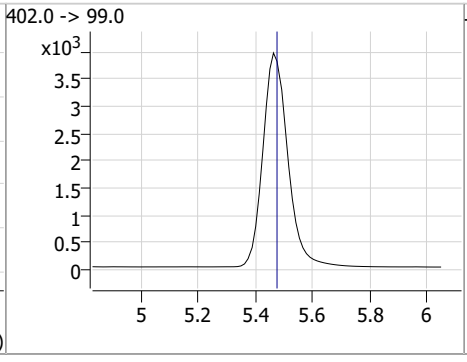


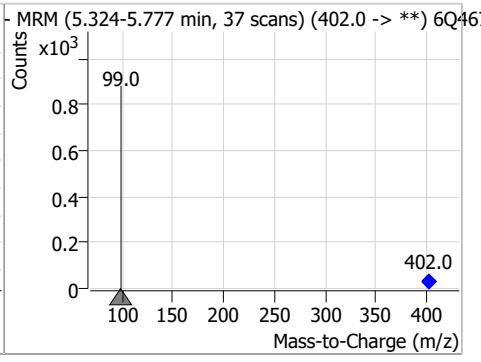




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.23	5.46	-0.01	23820				

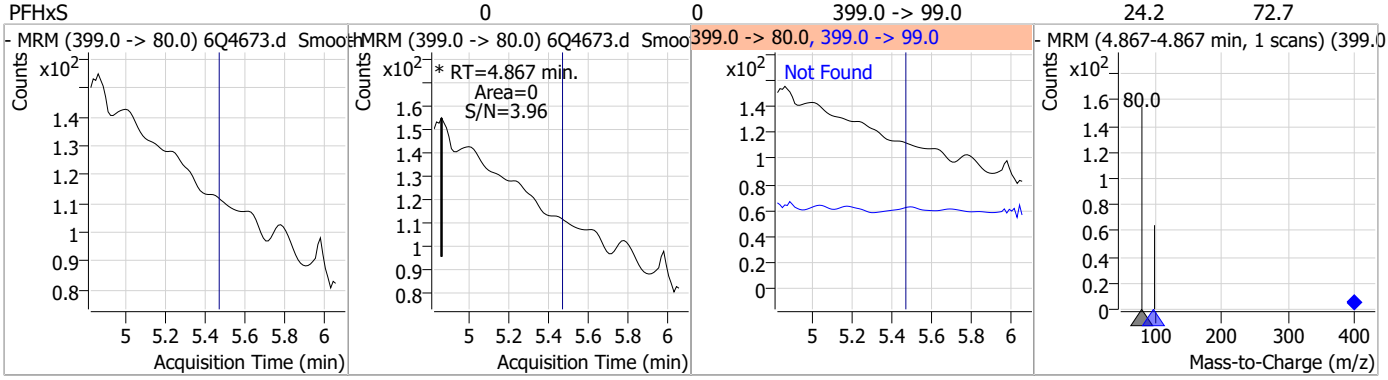




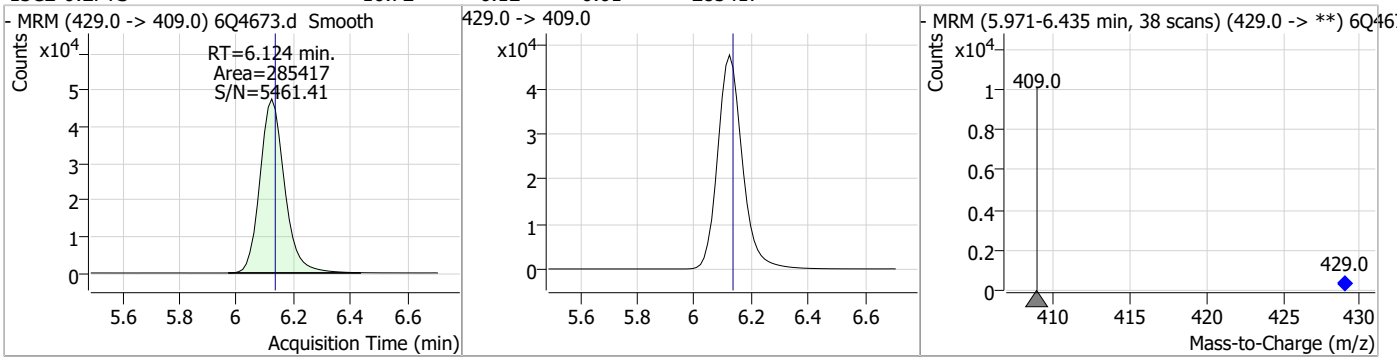


Perfluorinated Compounds by LC/MS/MS

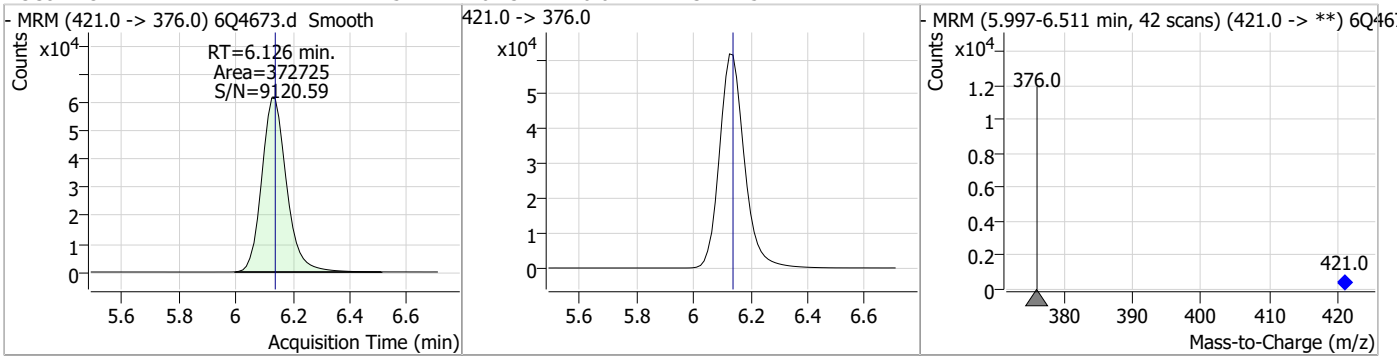
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS		0		0	399.0 -> 99.0		24.2	72.7



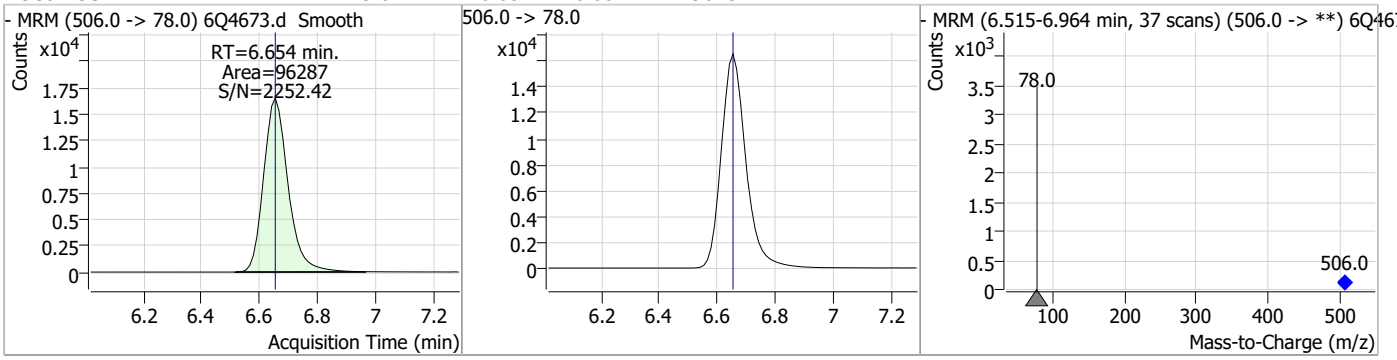
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.72	6.12	-0.01	285417				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.57	6.13	-0.01	372725				

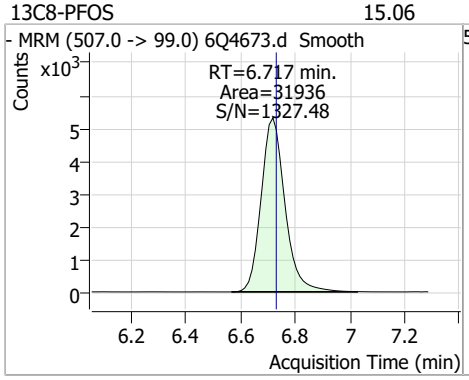


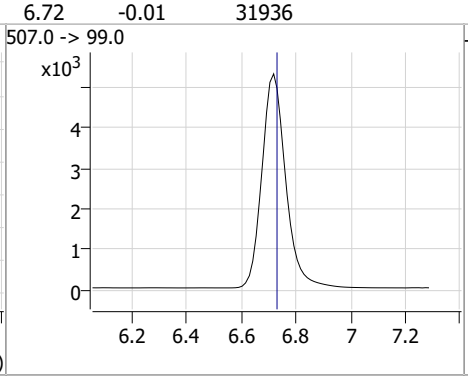
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.84	6.65	0.00	96287				

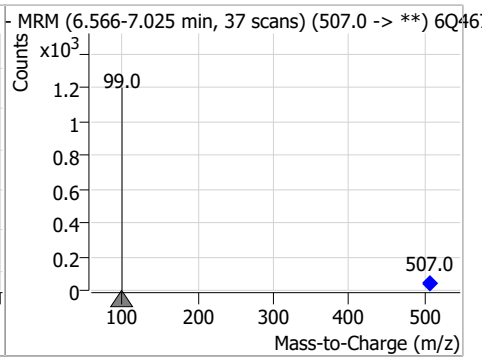


Perfluorinated Compounds by LC/MS/MS

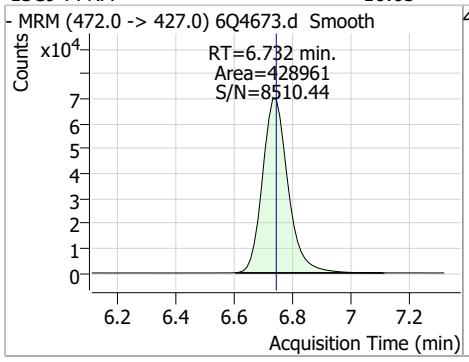
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.06	6.72	-0.01	31936				

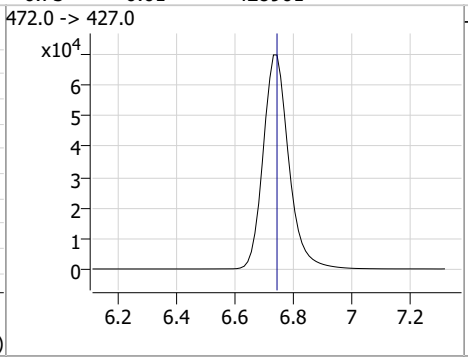


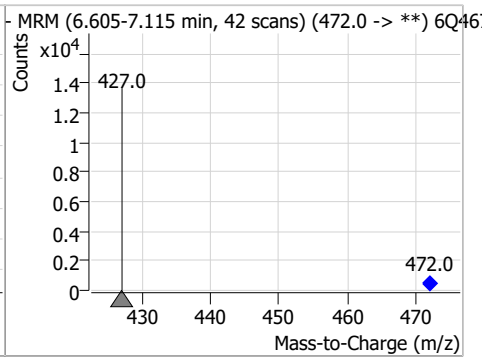




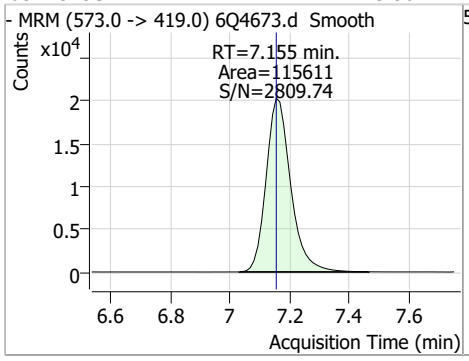
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.65	6.73	-0.01	428961				

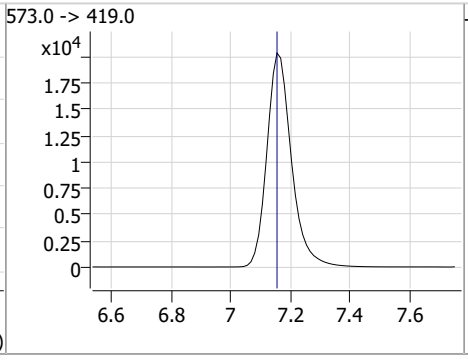


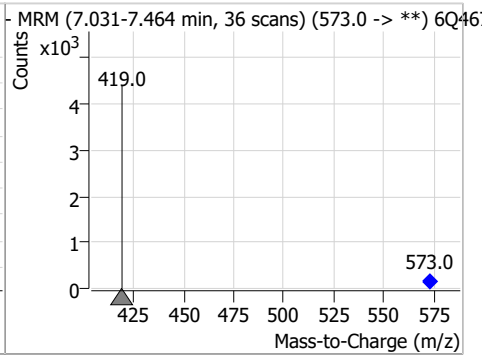




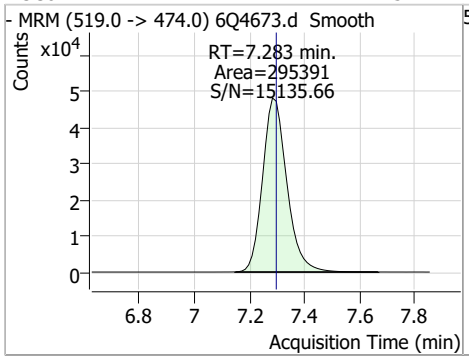
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.36	7.15	0.00	115611				

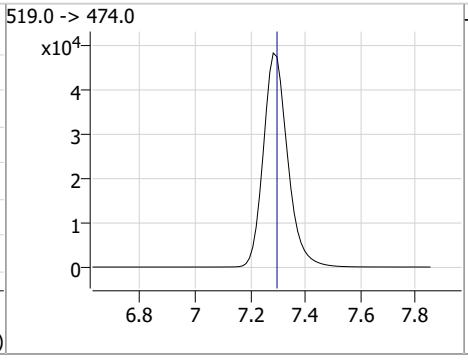


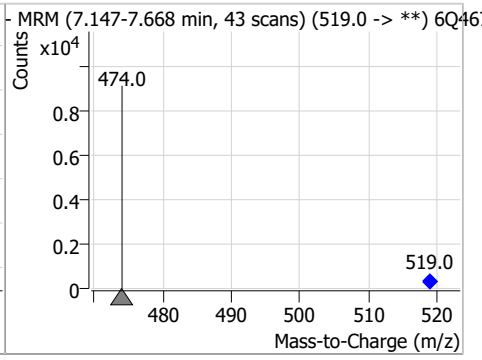




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.52	7.28	-0.01	295391				

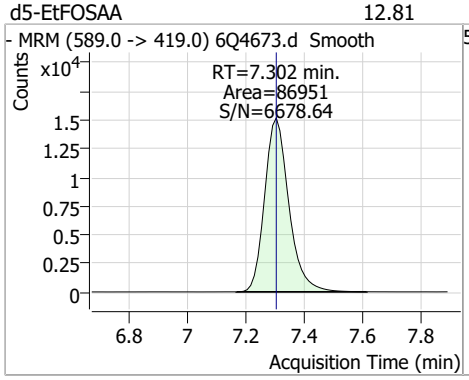


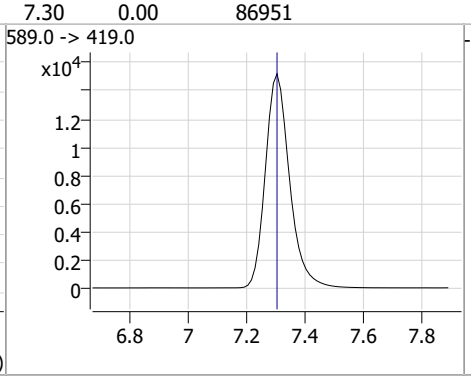


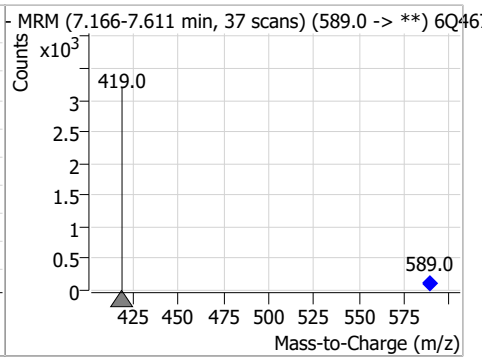


Perfluorinated Compounds by LC/MS/MS

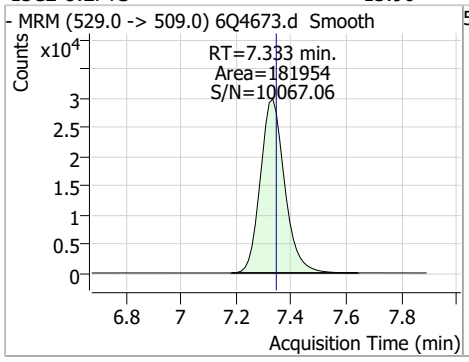
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.81	7.30	0.00	86951				

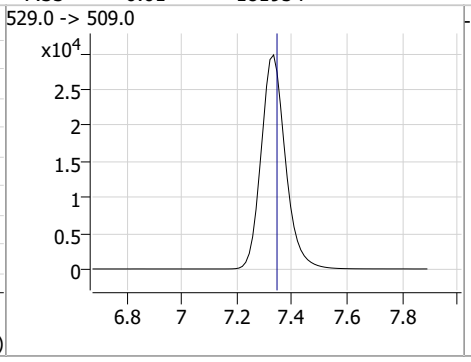


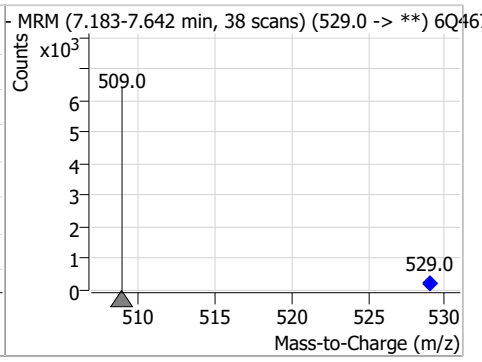




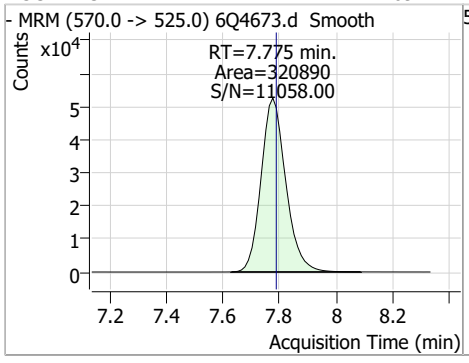
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.96	7.33	-0.01	181954				

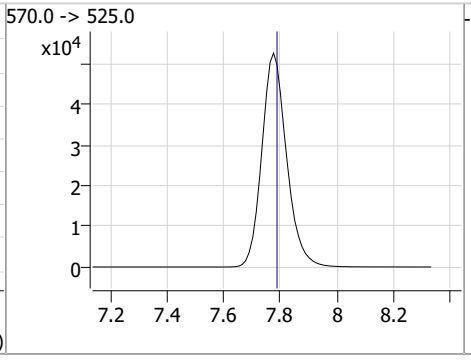


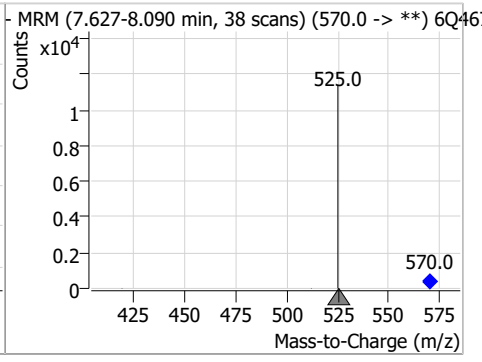




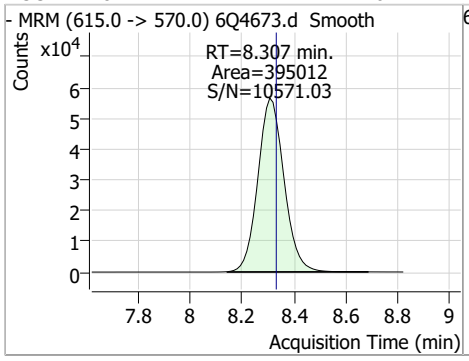
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.09	7.78	-0.01	320890				

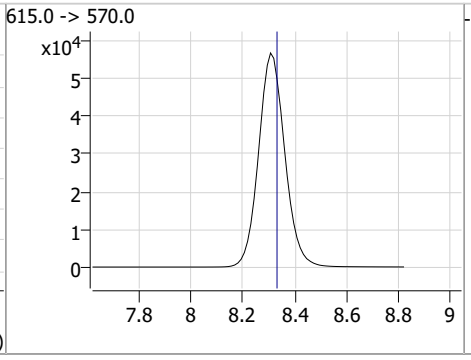


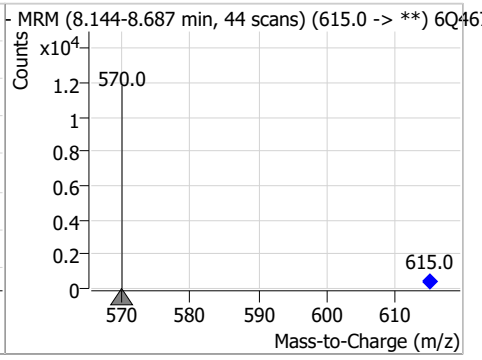




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.74	8.31	-0.02	395012				

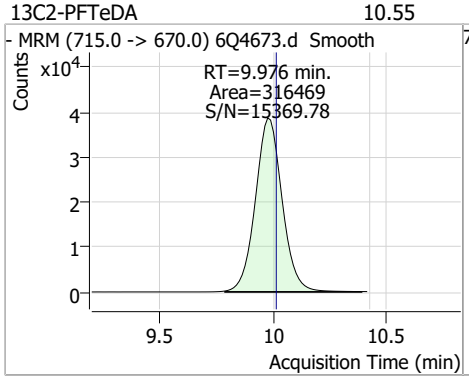


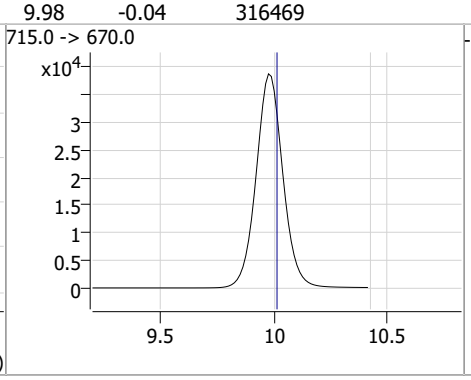


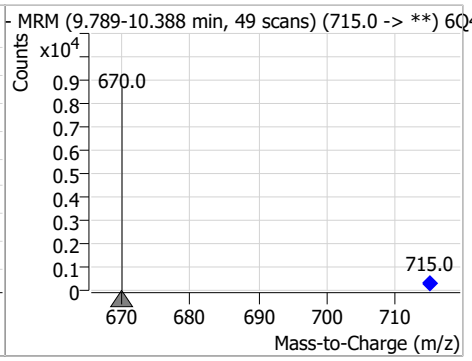


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.55	9.98	-0.04	316469				







Manual Integration Approval Summary

Sample Number: FA98286-21
Lab FileID: 6Q4673.D
Injection Time: 09/15/22 01:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:02 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4748.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 3:38:55 AM
Sample Name : fa98286-21
Vial : P2-B1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Internal Standards							
M4-PFBA	1.911	217.0 -> 172.0	12715	4.00	µg/L		-0.037
M5-PFPeA	3.393	268.0 -> 223.0	22565	4.00	µg/L		-0.025
M5-PFHxA	4.561	318.0 -> 273.0	36987	4.00	µg/L		-0.012
M4-PFHpA	5.433	367.0 -> 322.0	41137	4.00	µg/L		-0.012
M8-PFOA	6.138	421.0 -> 376.0	74428	4.00	µg/L		0.000
M9-PFNA	6.732	472.0 -> 427.0	86569	4.00	µg/L		-0.012
M6-PFDA	7.283	519.0 -> 474.0	59447	4.00	µg/L		-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	64703	4.00	µg/L		-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	81084	4.00	µg/L		-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	66739	4.00	µg/L		-0.037
M8-FOSA	6.654	506.0 -> 78.0	20411	4.00	µg/L		0.000
M3-PFBS	3.610	302.0 -> 99.0	5081	4.00	µg/L		-0.025
M3-PFHxS	5.463	402.0 -> 99.0	5003	4.00	µg/L		-0.012
M8-PFOS	6.717	507.0 -> 99.0	7071	4.00	µg/L		-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	43534	4.00	µg/L		-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	55653	4.00	µg/L		-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	36775	4.00	µg/L		-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	23429	4.00	µg/L		0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	781	4.00	µg/L		-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	458	4.00	µg/L		0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	18147	4.00	µg/L		0.000
System Monitoring Compounds							
13C2-4:2FTS	4.470	329.0 -> 309.0	41701	3.09	µg/L	m	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%			
13C2-6:2FTS	6.124	429.0 -> 409.0	52138	3.05	µg/L	m	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%			
13C2-8:2FTS	7.333	529.0 -> 509.0	35722	2.74	µg/L	m	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.7%			
13C2-PFDoDA	8.307	615.0 -> 570.0	76892	2.09	µg/L	m	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.5%			
13C2-PFTeDA	9.976	715.0 -> 670.0	66739	2.22	µg/L		-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%			
13C3-PFBS	3.610	302.0 -> 99.0	5081	3.32	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%			
13C3-PFHxS	5.463	402.0 -> 99.0	5003	3.62	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.1%			
13C4-PFBA	1.911	217.0 -> 172.0	12715	3.19	µg/L		-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
13C4-PFHpA	5.433	367.0 -> 322.0	41137	3.32	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%			
13C5-PFHxA	4.561	318.0 -> 273.0	36987	3.46	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.3%			
13C5-PFPeA	3.393	268.0 -> 223.0	22565	3.22	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
13C6-PFDA	7.283	519.0 -> 474.0	59447	2.92	µg/L		-0.014

Perfluorinated Compounds by LC/MS/MS

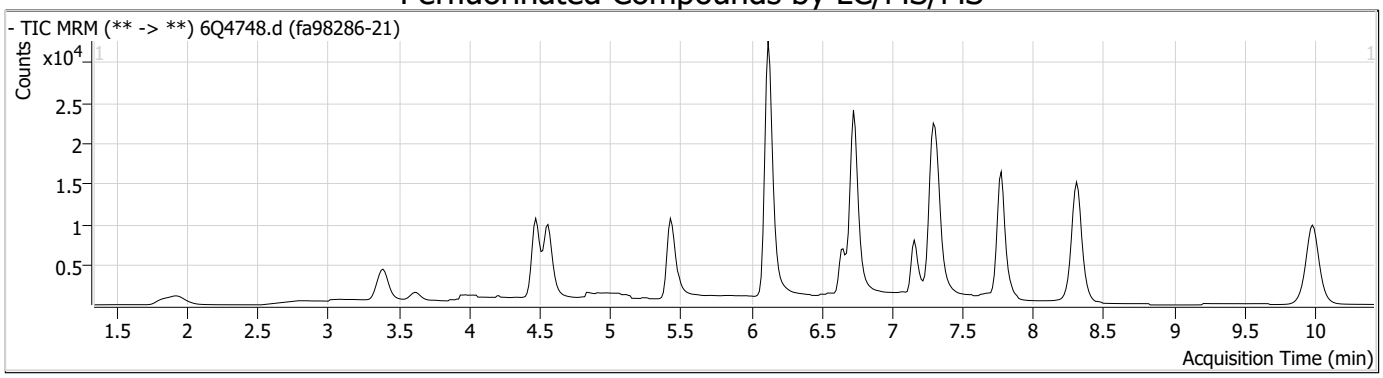
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	64703	2.44	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%			
13C8-FOSA	6.654	506.0 -> 78.0	20411	2.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.4%			
13C8-PFOA	6.138	421.0 -> 376.0	74428	3.51	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.5%			
13C8-PFOS	6.717	507.0 -> 99.0	7071	3.33	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%			
13C9-PFNA	6.732	472.0 -> 427.0	86569	3.36	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
d3-MeFOSAA	7.155	573.0 -> 419.0	23429	2.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.5%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	794	2.99	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%			
d3-MeFOSA	7.085	515.0 -> 169.0	458	0.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.0%			
d5-EtFOSAA	7.302	589.0 -> 419.0	18166	2.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0 327.0 -> 81.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0 427.0 -> 81.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0 527.0 -> 81.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0 584.0 -> 483.0	-	N.D.			
FOSA	-	498.0 -> 78.0 498.0 -> 478.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0 570.0 -> 512.0	-	N.D.			
PFBA	1.893	213.0 -> 169.0	29	0.02	µg/L	m	100
PFBS	-	299.0 -> 80.0 299.0 -> 99.0	-	N.D.			
PFDA	-	513.0 -> 469.0 513.0 -> 219.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0 613.0 -> 319.0	-	N.D.			
PFDS	-	599.0 -> 80.0 599.0 -> 99.0	-	N.D.			
PFHpA	-	363.0 -> 319.0 363.0 -> 169.0	-	N.D.			
PFHpS	-	449.0 -> 80.0 449.0 -> 99.0	-	N.D.			
PFHxA	-	313.0 -> 269.0 313.0 -> 119.0	-	N.D.			
PFHxS	-	399.0 -> 80.0 399.0 -> 99.0	-	N.D.			
PFNA	-	463.0 -> 419.0 463.0 -> 219.0	-	N.D.			
PFNS	-	549.0 -> 80.0 549.0 -> 99.0	-	N.D.			
PFOA	-	413.0 -> 369.0 413.0 -> 169.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

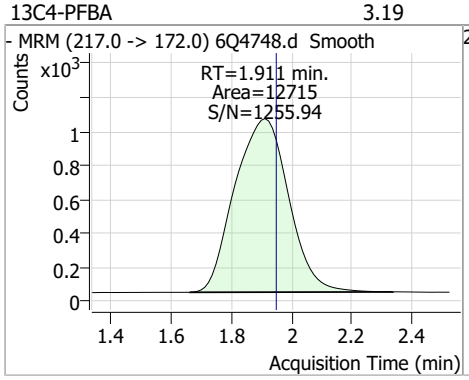
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

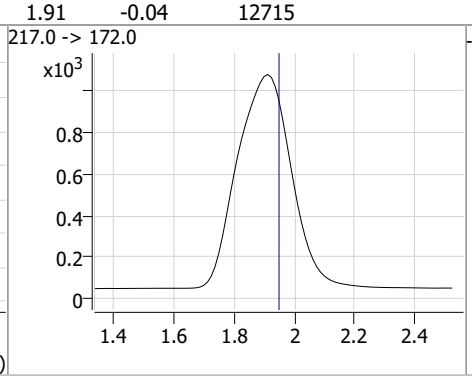
 # = Qualifier out of range, m = manually integrated, + = Area summed

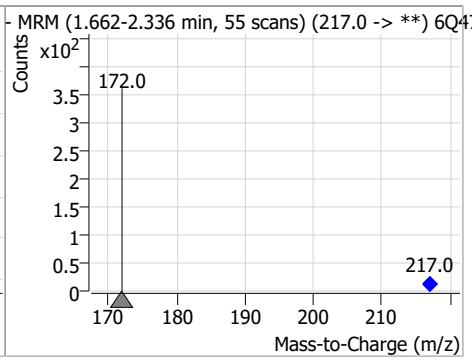
Perfluorinated Compounds by LC/MS/MS



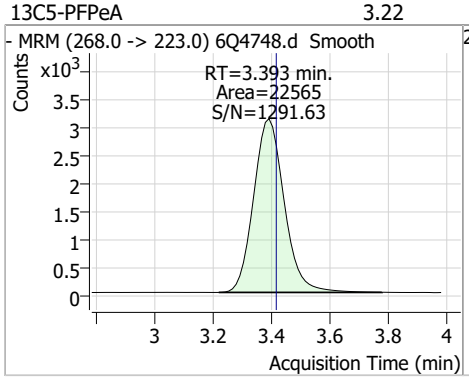
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.19	1.91	-0.04	12715				

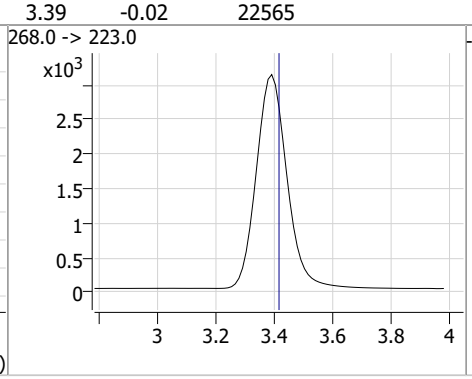


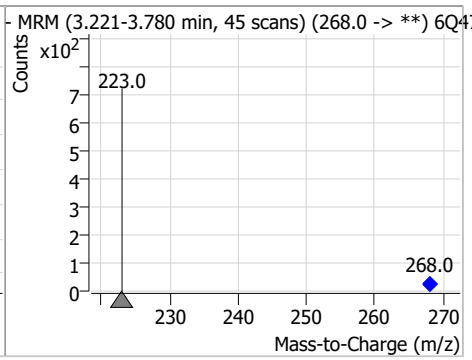




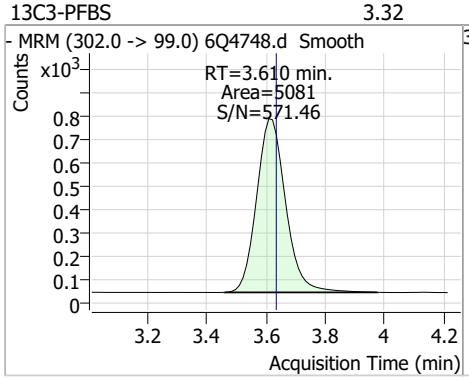
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.22	3.39	-0.02	22565				

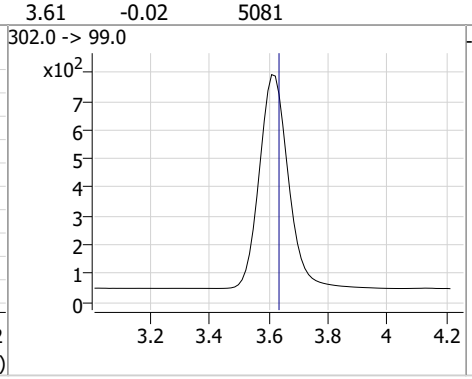


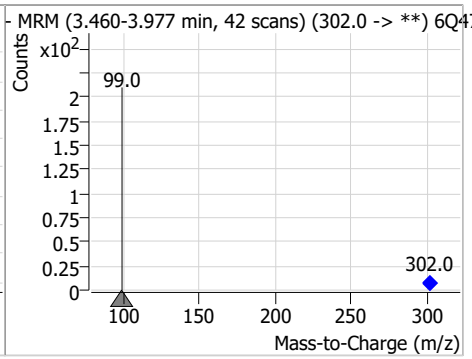




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.32	3.61	-0.02	5081				

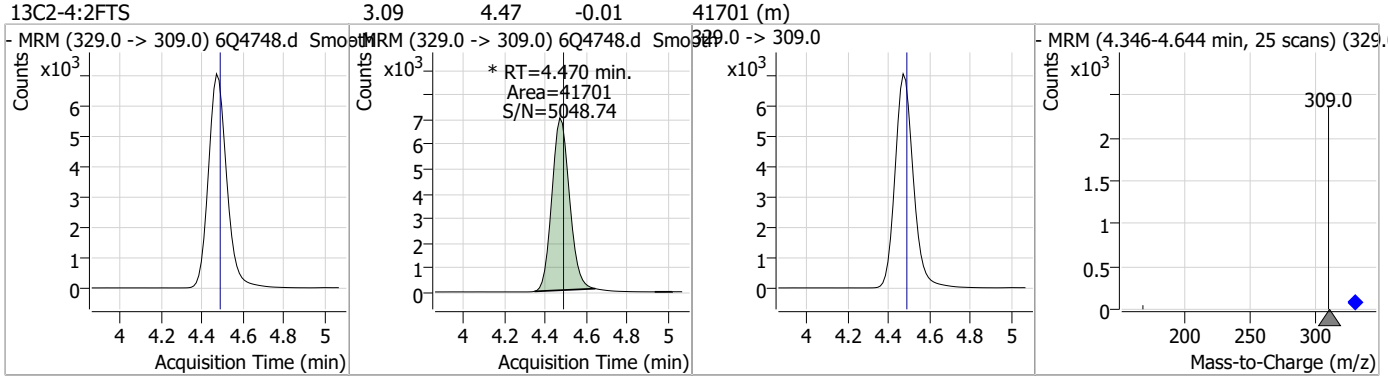




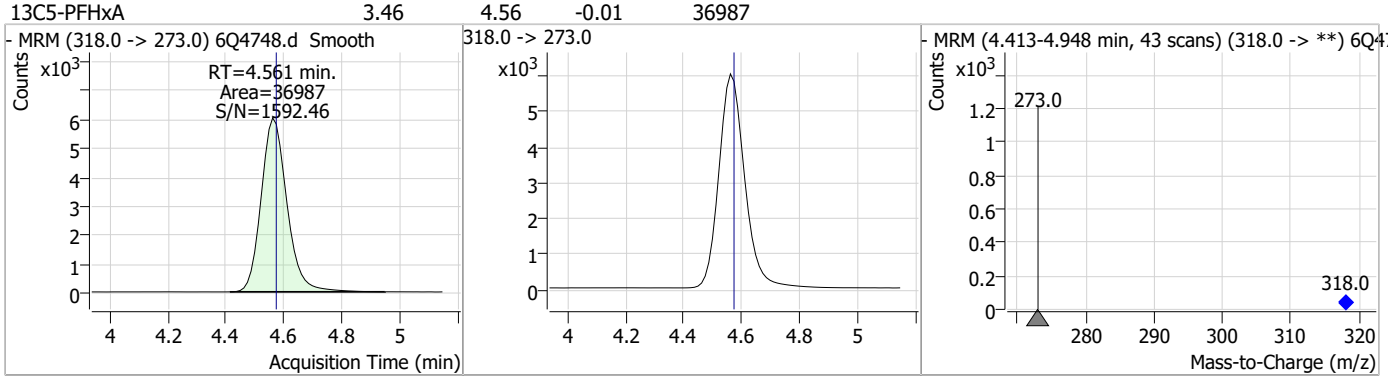


Perfluorinated Compounds by LC/MS/MS

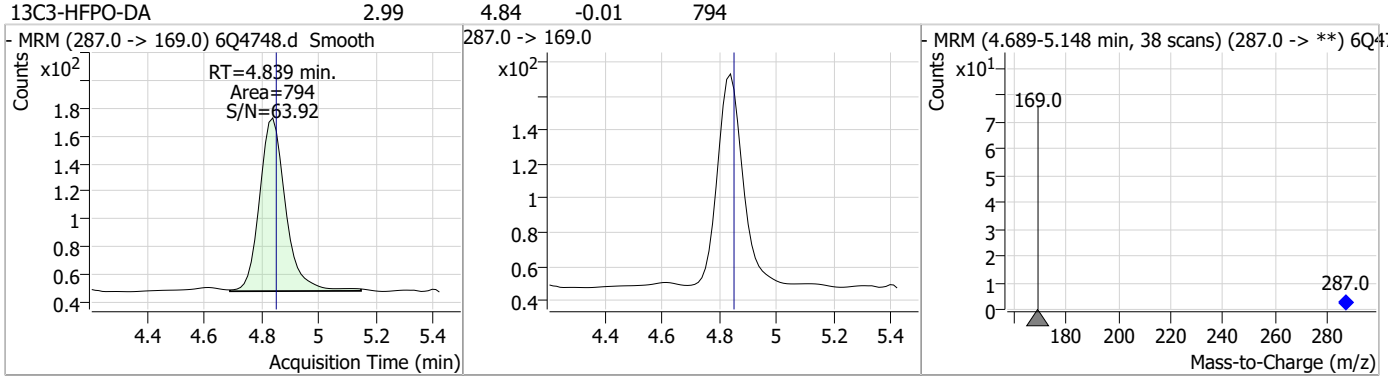
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.09	4.47	-0.01	41701 (m)				



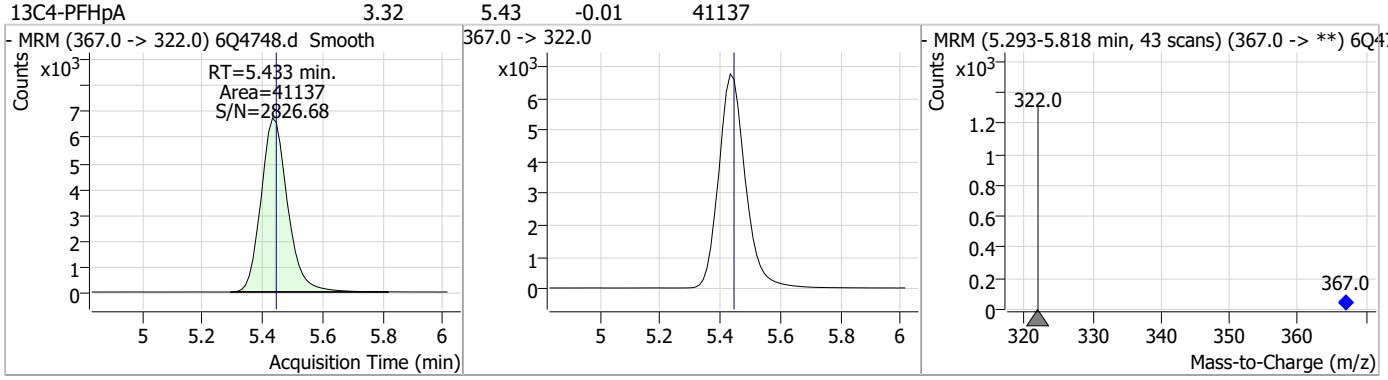
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.46	4.56	-0.01	36987				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.99	4.84	-0.01	794				

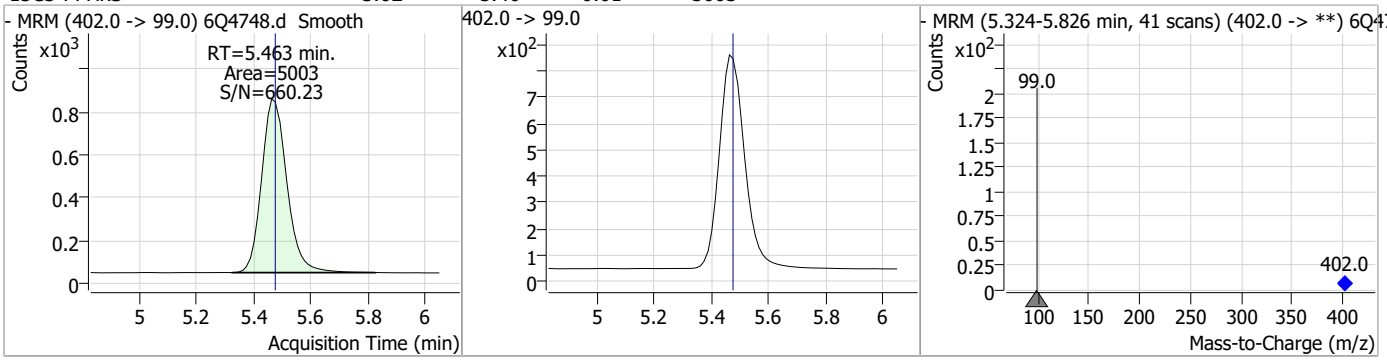


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.32	5.43	-0.01	41137				

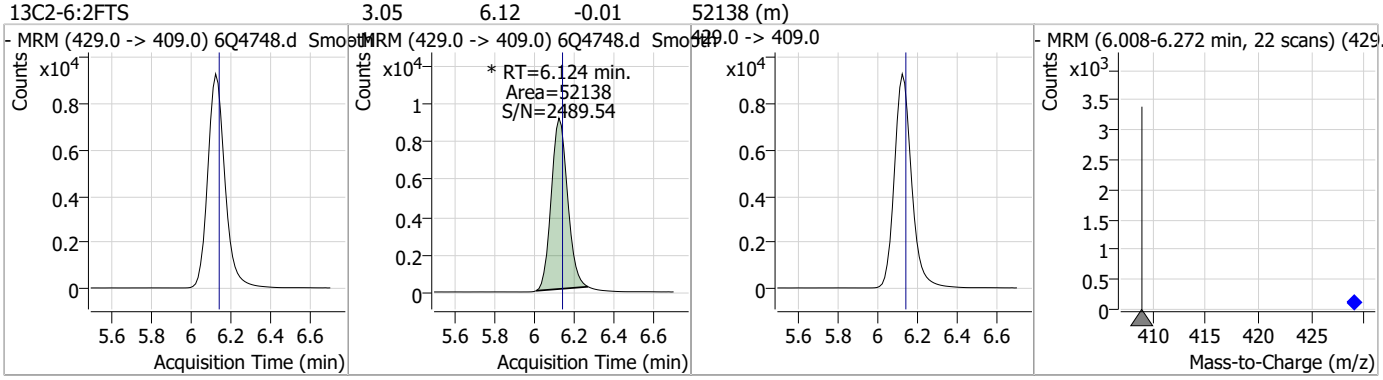


Perfluorinated Compounds by LC/MS/MS

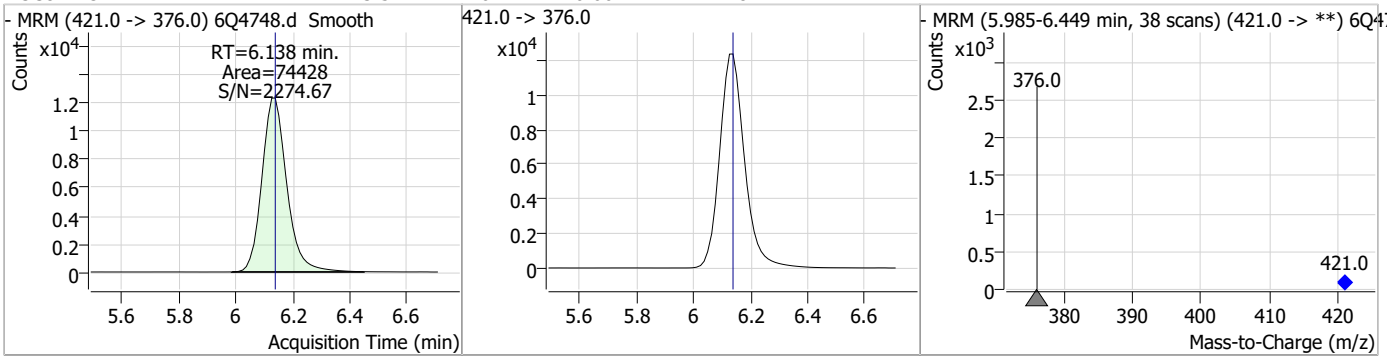
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.62	5.46	-0.01	5003				



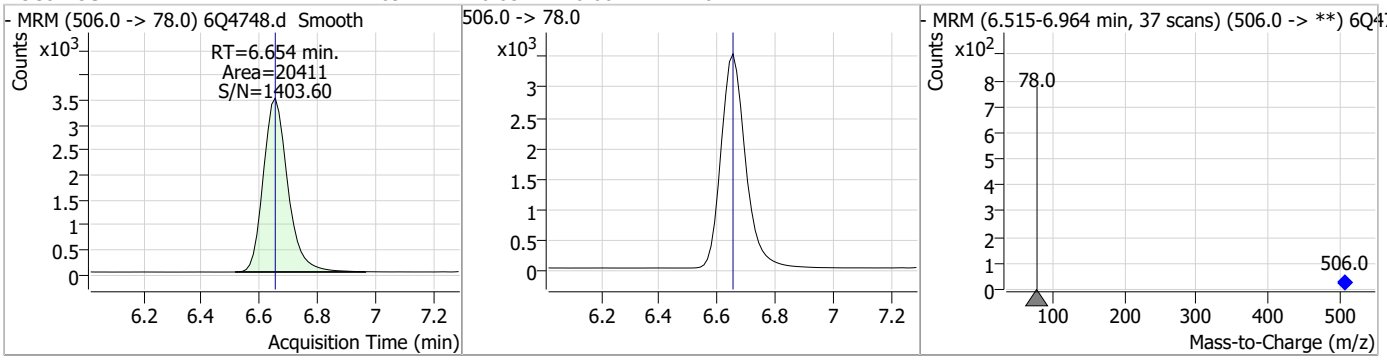
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.05	6.12	-0.01	52138 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.51	6.14	0.00	74428				

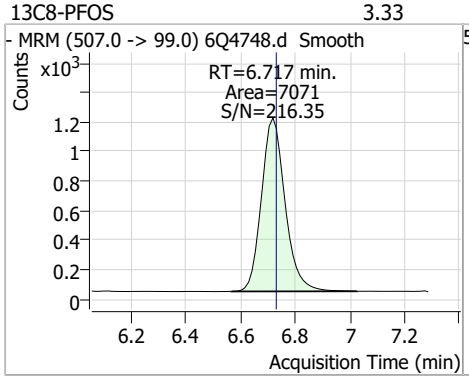


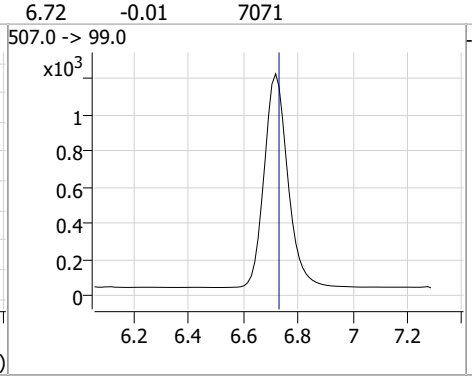
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.09	6.65	0.00	20411				

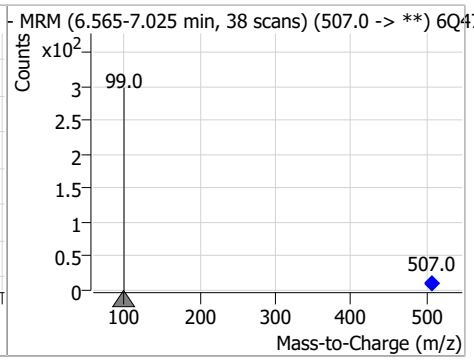


Perfluorinated Compounds by LC/MS/MS

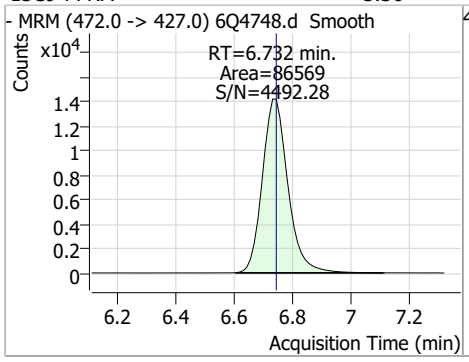
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.33	6.72	-0.01	7071				

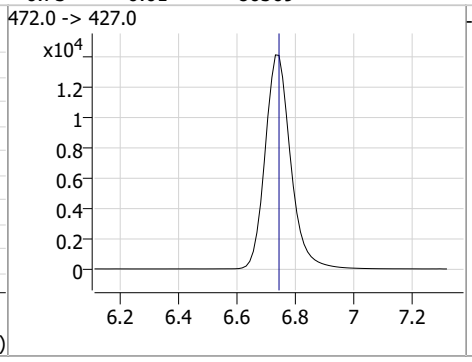


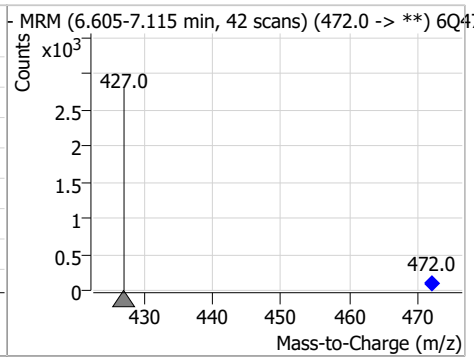




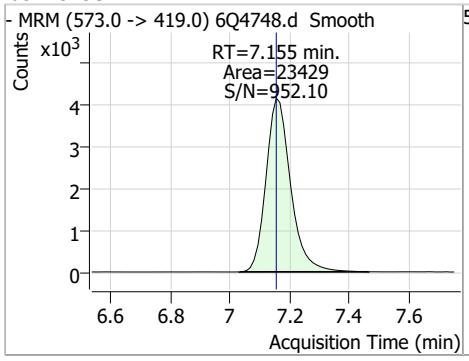
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.36	6.73	-0.01	86569				

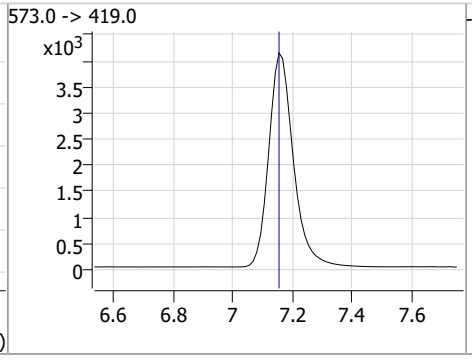


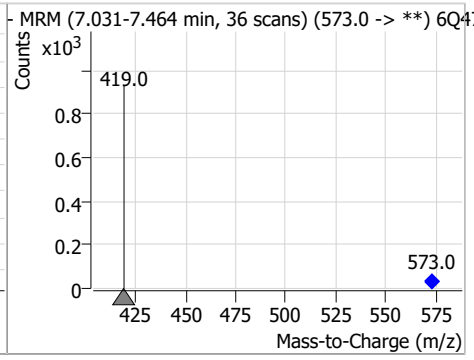




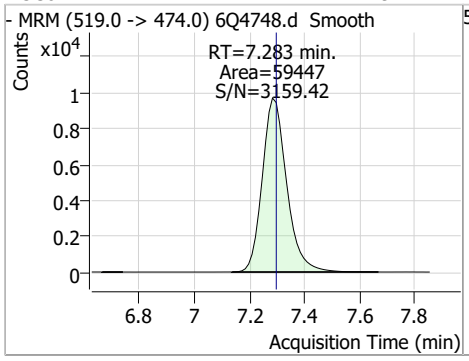
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.71	7.15	0.00	23429				

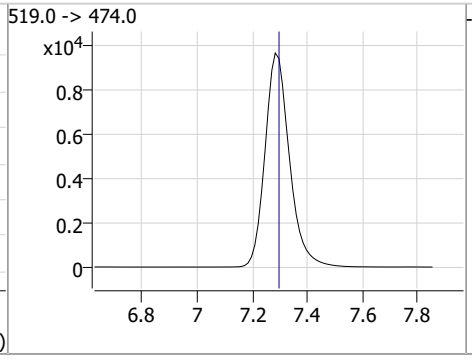


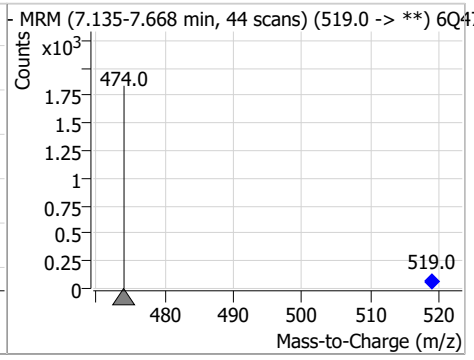




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.92	7.28	-0.01	59447				

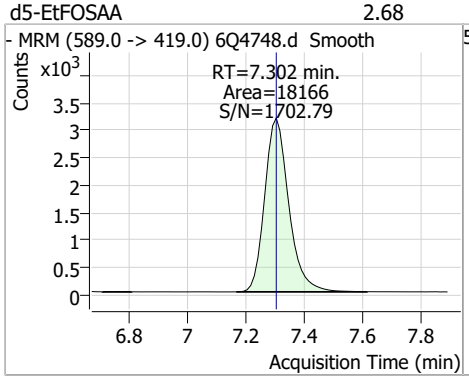


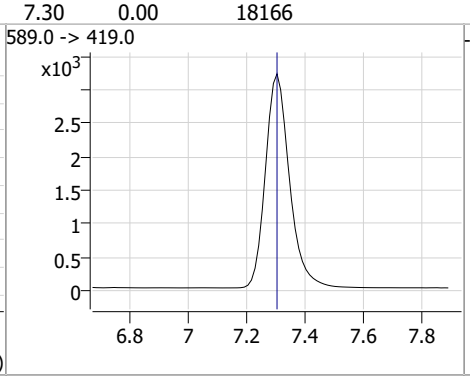


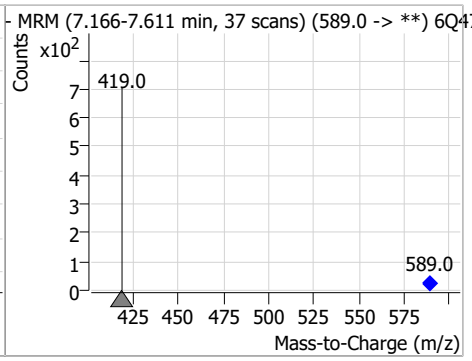


Perfluorinated Compounds by LC/MS/MS

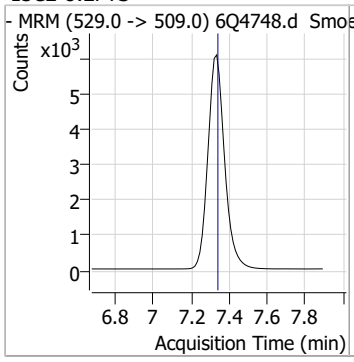
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.68	7.30	0.00	18166				

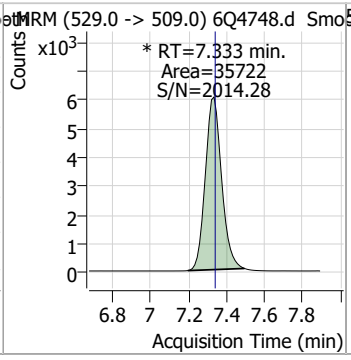


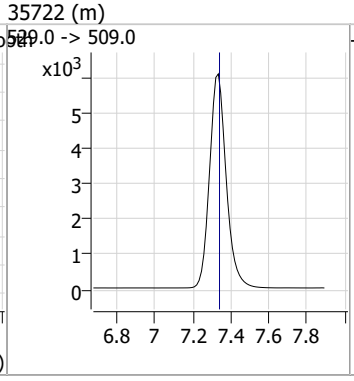


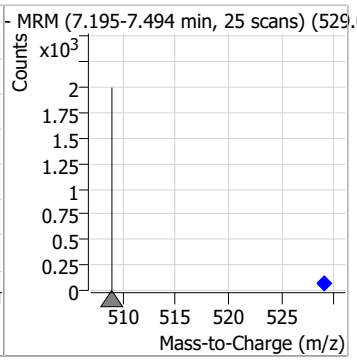


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.74	7.33	-0.01	35722 (m)				

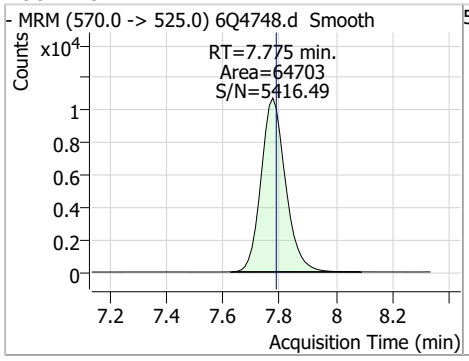


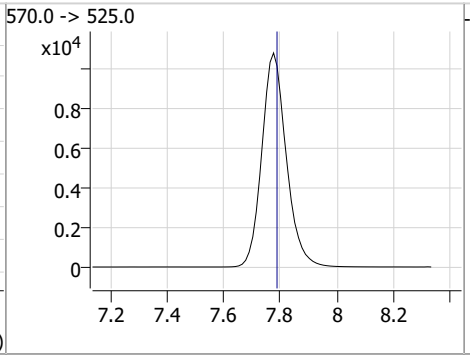


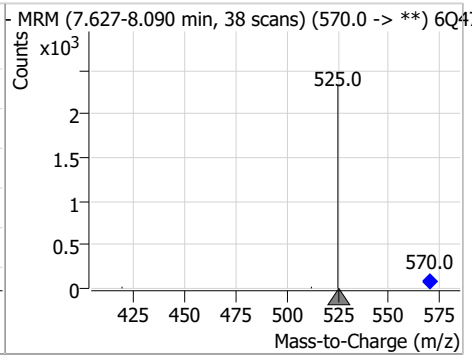




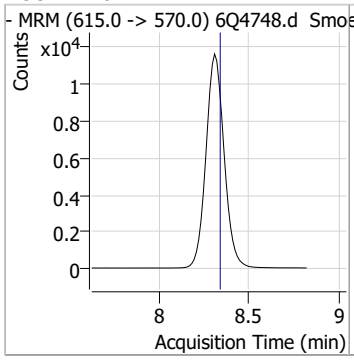
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.44	7.78	-0.01	64703				

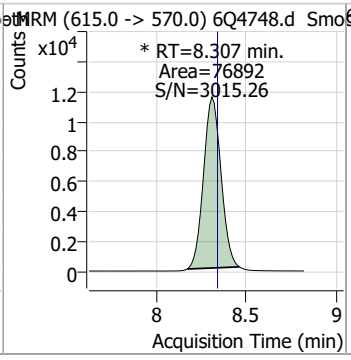


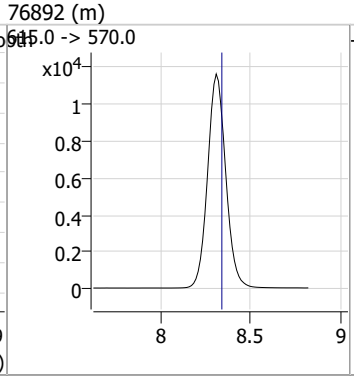


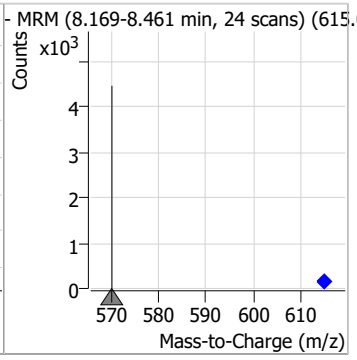


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.09	8.31	-0.02	76892 (m)				



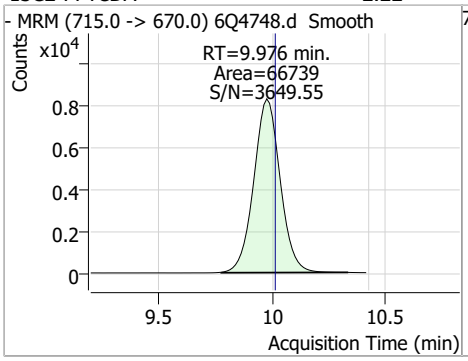


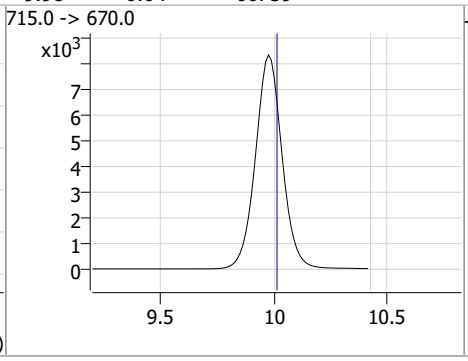


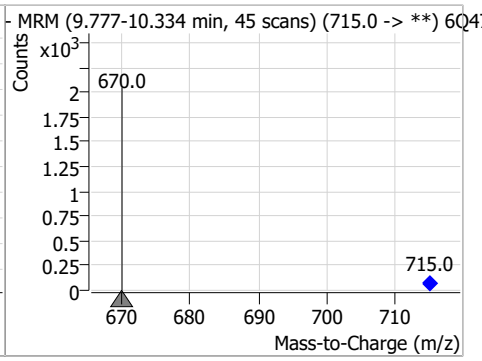


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.22	9.98	-0.04	66739				







Manual Integration Approval Summary

Sample Number: FA98286-21
Lab FileID: 6Q4748.D
Injection Time: 09/16/22 03:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:02 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanoic acid	375-22-4		1.89	Split peak
13C2-4:2FTS			4.47	Split peak
13C2-6:2FTS			6.12	Split peak
13C2-8:2FTS			7.33	Split peak
13C2-PFDoDA			8.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4675.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 1:41:25 AM
Sample Name : fa98286-22
Vial : P5-E2
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	53181	20.00	µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	100235	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	156799	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	185494	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	331704	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	387600	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	276782	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	322185	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	399287	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	354881	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	135592	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	23286	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	20692	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	26946	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	189739	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	245227	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	162077	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	103737	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4103	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	11051	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	86718	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	189739	14.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%		
13C2-6:2FTS	6.124	429.0 -> 409.0	245227	14.37	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%		
13C2-8:2FTS	7.333	529.0 -> 509.0	162077	12.43	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.2%		
13C2-PFDoDA	8.307	615.0 -> 570.0	399287	10.86	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.3%		
13C2-PFTeDA	9.976	715.0 -> 670.0	354881	11.83	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.1%		
13C3-PFBS	3.635	302.0 -> 99.0	23286	15.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C3-PFHxS	5.475	402.0 -> 99.0	20692	14.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.8%		
13C4-PFBA	1.936	217.0 -> 172.0	53181	13.36	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%		
13C4-PFHpA	5.445	367.0 -> 322.0	185494	14.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C5-PFHxA	4.573	318.0 -> 273.0	156799	14.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%		
13C5-PFPeA	3.405	268.0 -> 223.0	100235	14.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%		
13C6-PFDA	7.297	519.0 -> 474.0	276782	13.60	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

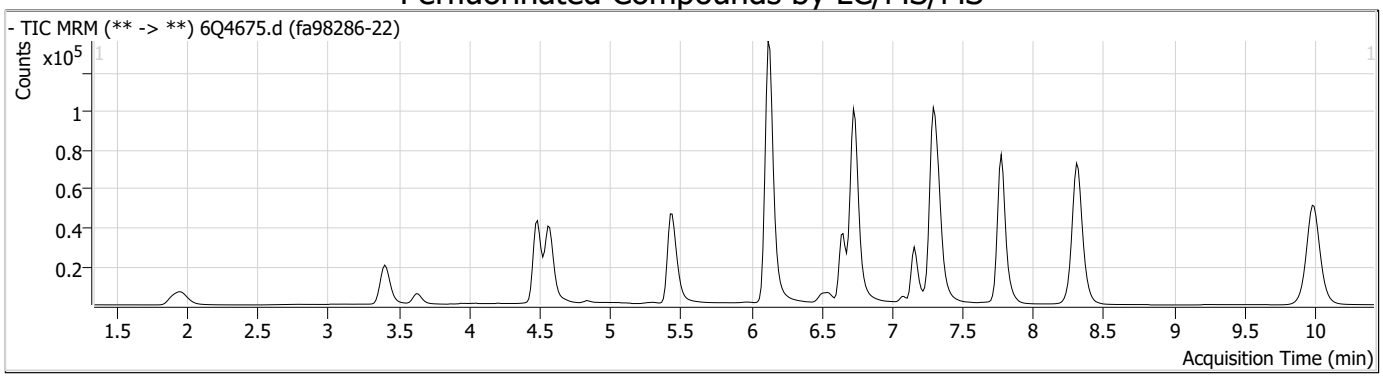
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%			
13C7-PFUnDA	7.775	570.0 -> 525.0	322185	12.13	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.7%			
13C8-FOSA	6.654	506.0 -> 78.0	135592	13.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.3%			
13C8-PFOA	6.138	421.0 -> 376.0	331704	15.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.2%			
13C8-PFOS	6.717	507.0 -> 99.0	26946	12.70	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.5%			
13C9-PFNA	6.745	472.0 -> 427.0	387600	15.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%			
d3-MeFOSAA	7.155	573.0 -> 419.0	103737	11.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	4115	15.48	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	86735	12.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.943	213.0 -> 169.0	4045	3.48	µg/L		100
PFBS	3.627	299.0 -> 80.0	1500	0.39	µg/L		100
		299.0 -> 99.0	562				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	5338	0.44	µg/L		96
		363.0 -> 169.0	880				
PFHpS	6.136	449.0 -> 80.0	1103	0.47	µg/L	m	87
		449.0 -> 99.0	477				
PFHxA	4.574	313.0 -> 269.0	8242	1.00	µg/L		99
		313.0 -> 119.0	220				
PFHxS	5.465	399.0 -> 80.0	13125	4.43	µg/L	m	98
		399.0 -> 99.0	6228				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	6.529	499.0 -> 80.0	36489	14.61	µg/L	m	83

Perfluorinated Compounds by LC/MS/MS

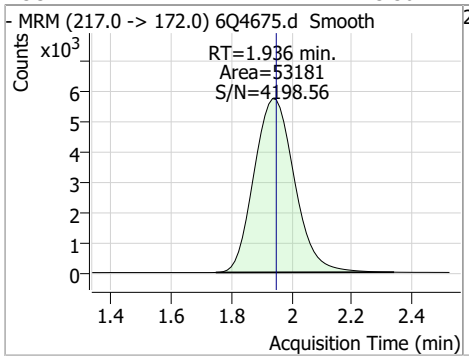
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	13014				
PFPeA	3.408	263.0 -> 219.0	5102	1.21	µg/L	m	100
PFPeS	4.681	349.0 -> 80.0	1965	0.61	µg/L	m	96
		349.0 -> 99.0	945				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

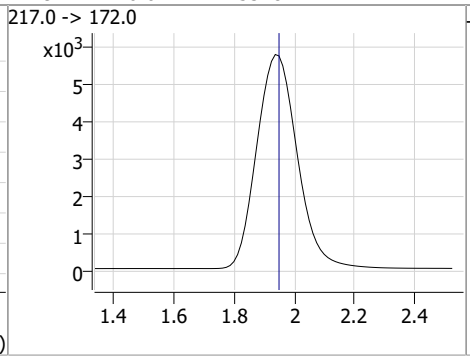
 # = Qualifier out of range, m = manually integrated, + = Area summed

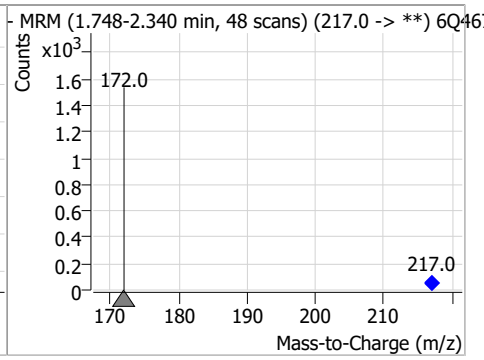
Perfluorinated Compounds by LC/MS/MS



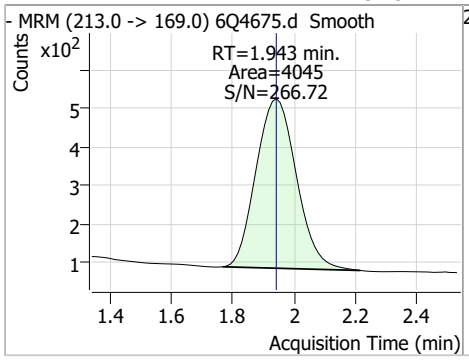
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.36	1.94	-0.01	53181				

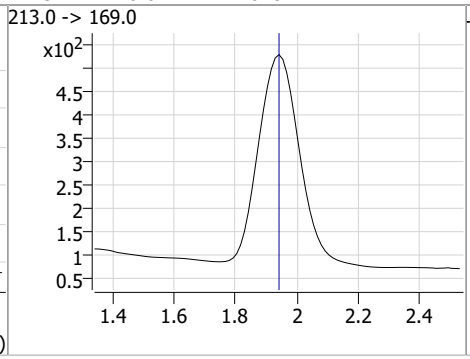


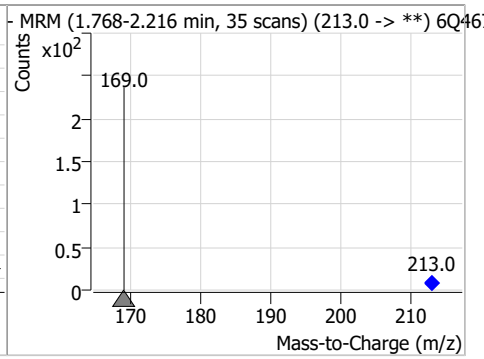




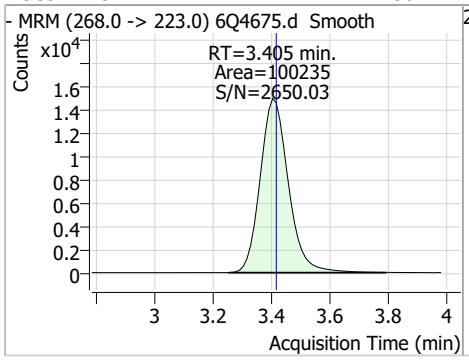
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.48	1.94	-0.01	4045				

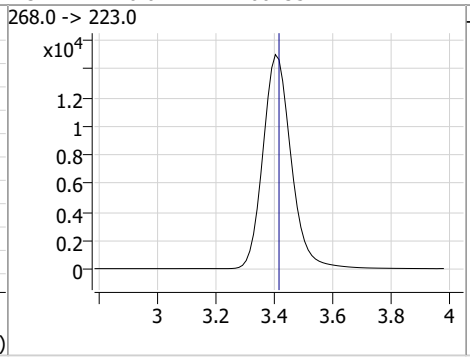


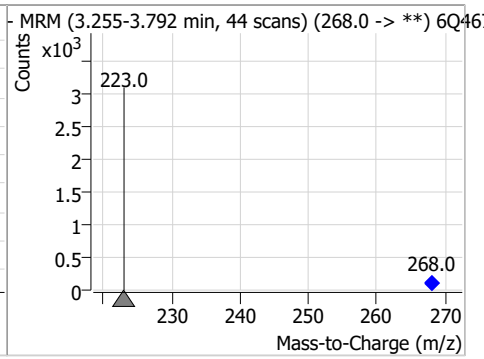




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.30	3.41	-0.01	100235				

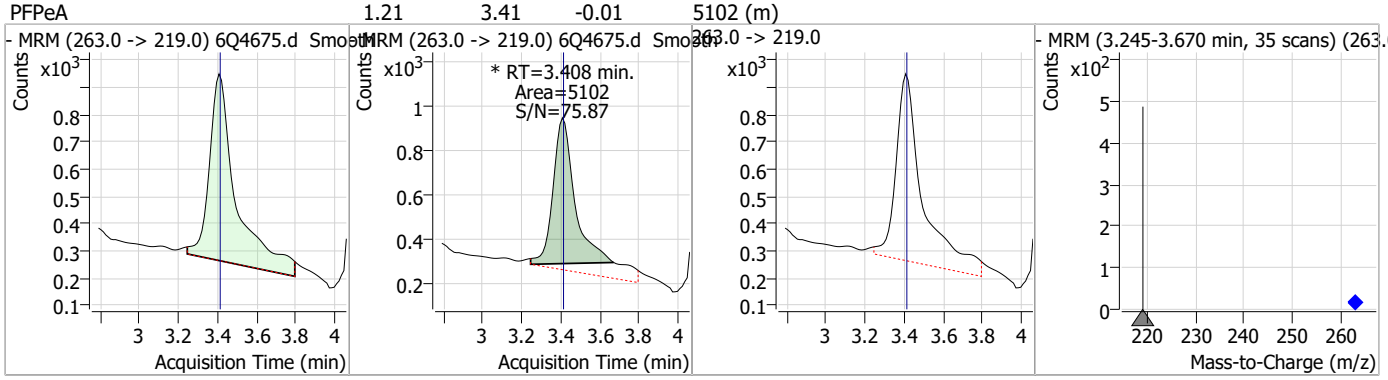




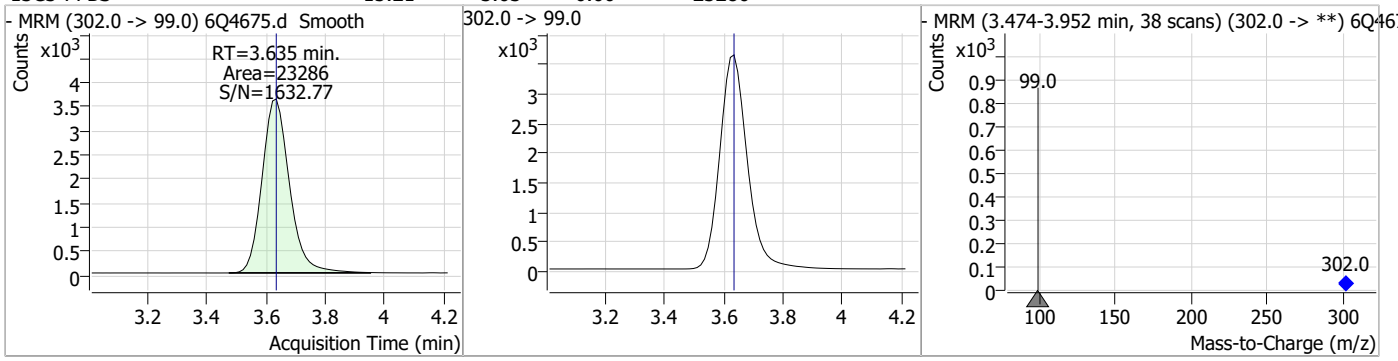


Perfluorinated Compounds by LC/MS/MS

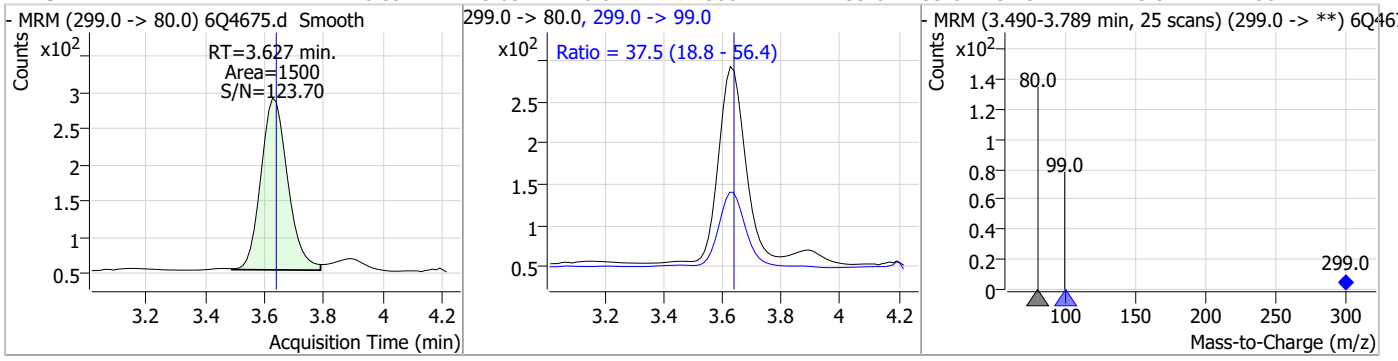
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.21	3.41	-0.01	5102 (m)				



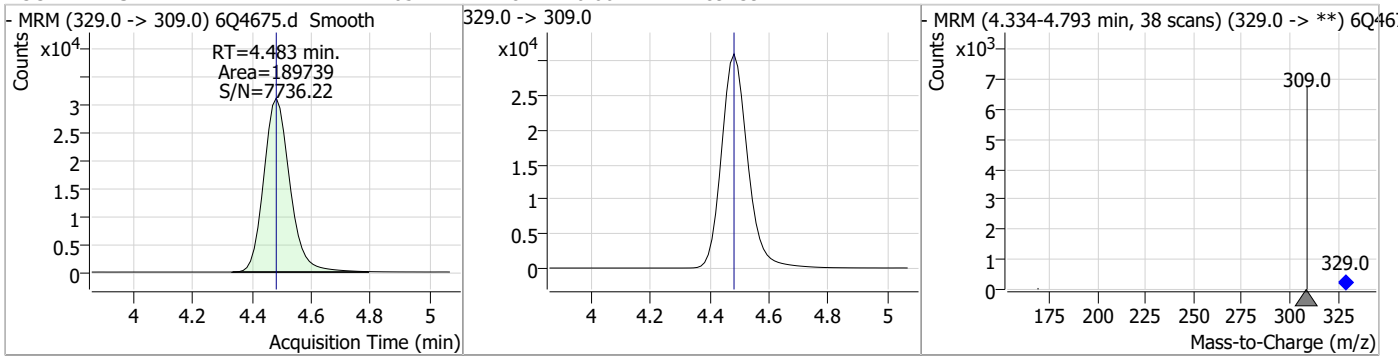
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.21	3.63	0.00	23286				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.39	3.63	-0.01	1500	299.0 -> 99.0	37.5	18.8	56.4

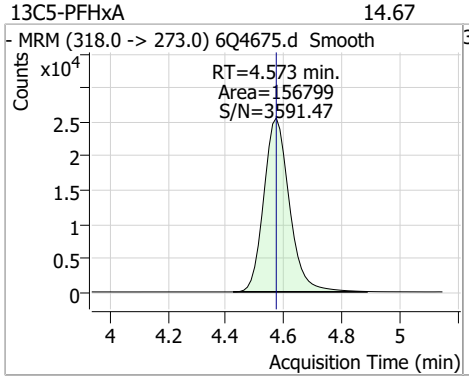


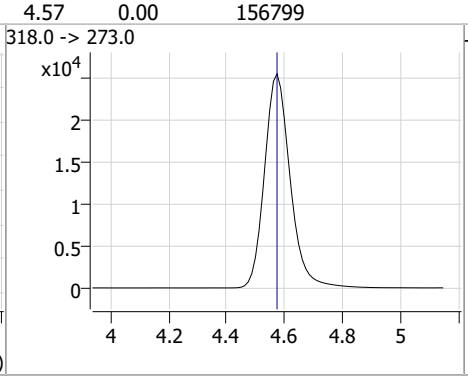
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.05	4.48	0.00	189739				

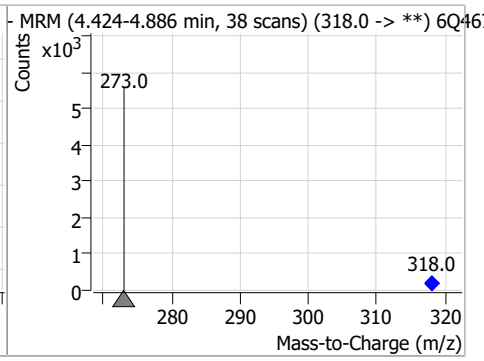


Perfluorinated Compounds by LC/MS/MS

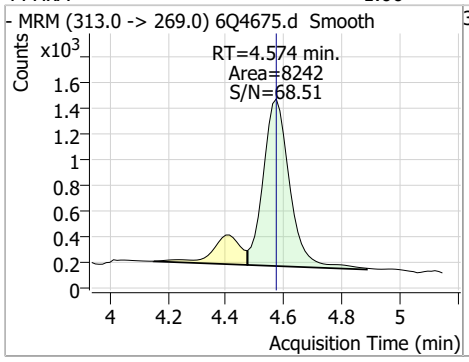
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.67	4.57	0.00	156799				

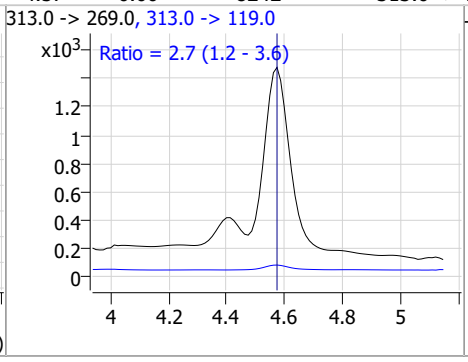


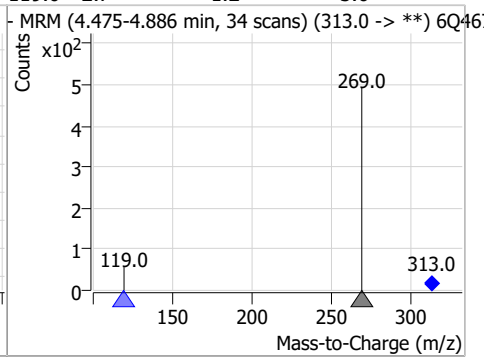




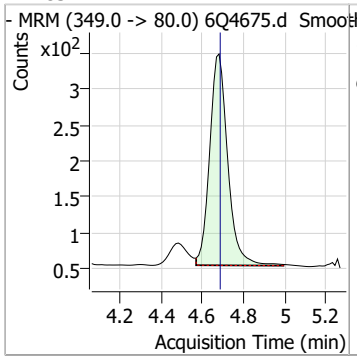
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.00	4.57	0.00	8242	313.0 -> 119.0	2.7	1.2	3.6

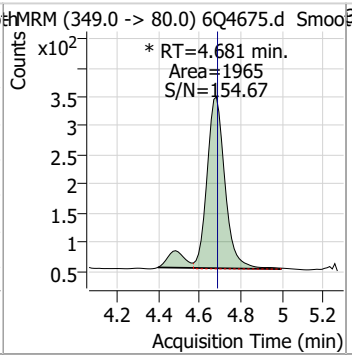


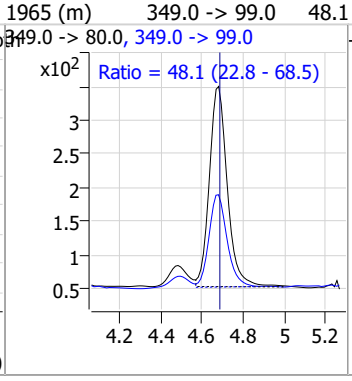


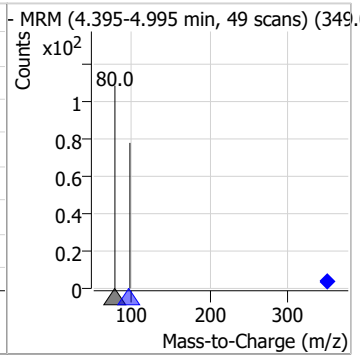


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.61	4.68	0.00	1965 (m)	349.0 -> 99.0	48.1	22.8	68.5

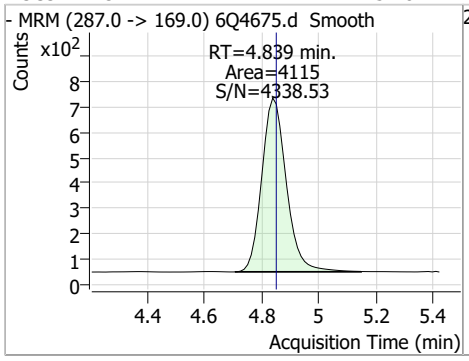


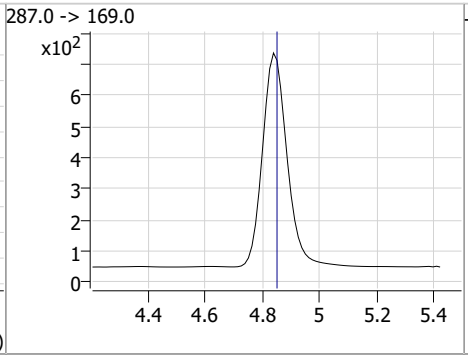


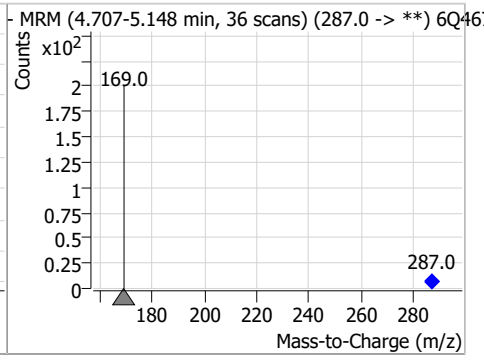




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.48	4.84	-0.01	4115				

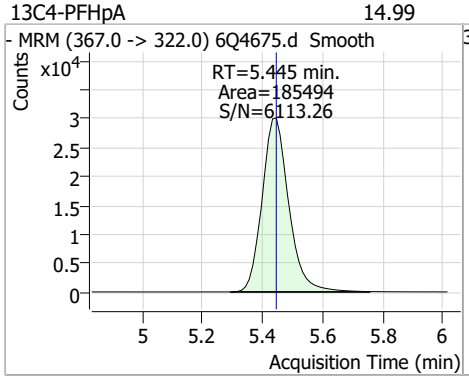


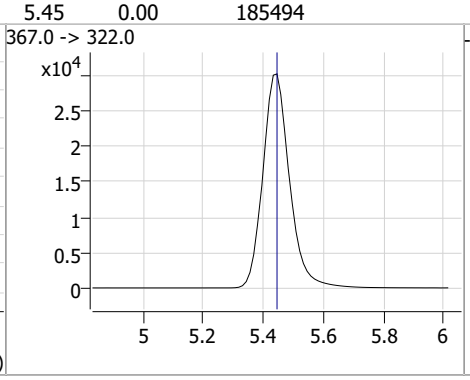


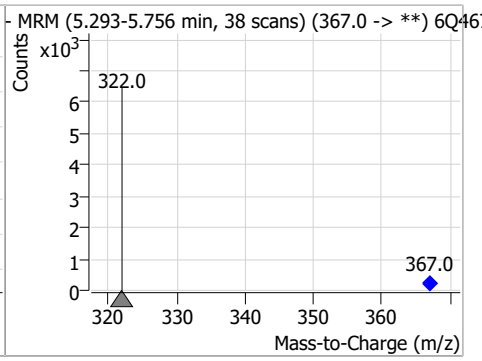


Perfluorinated Compounds by LC/MS/MS

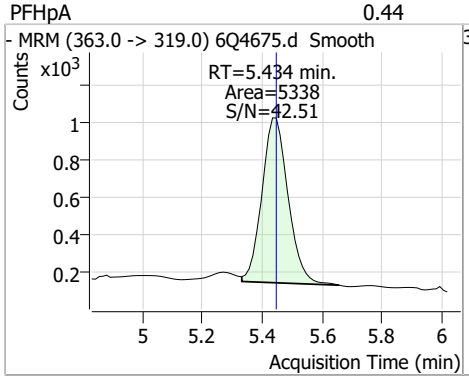
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.99	5.45	0.00	185494				

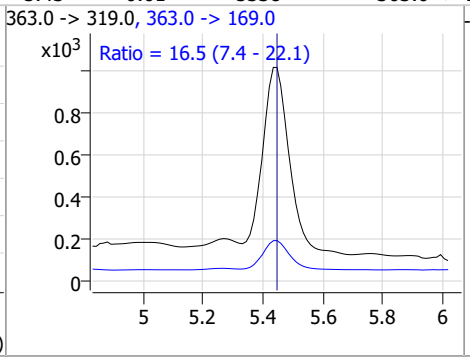


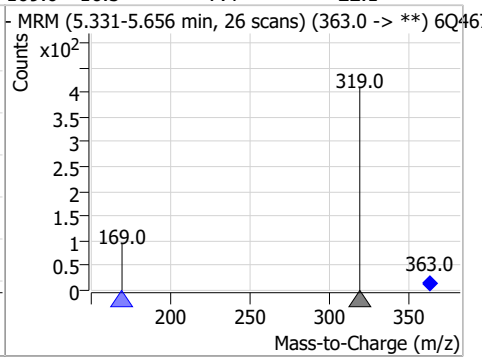




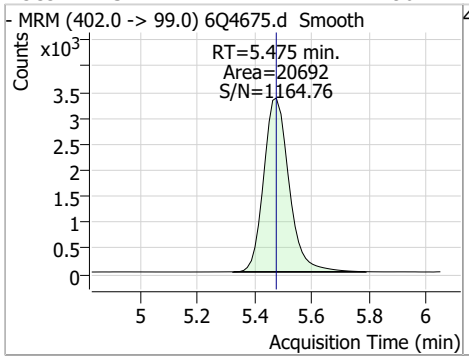
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.44	5.43	-0.01	5338	363.0 -> 169.0	16.5	7.4	22.1

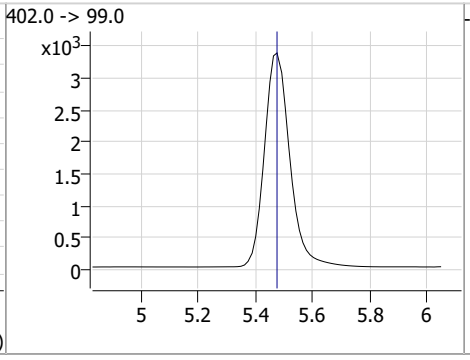


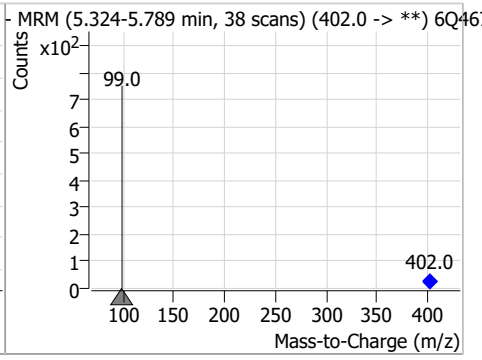




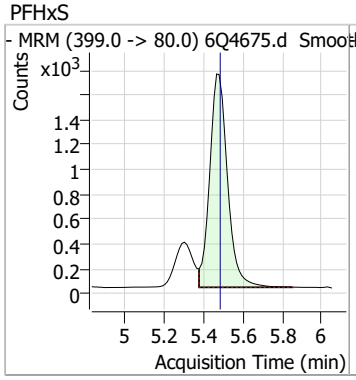
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.96	5.48	0.00	20692				

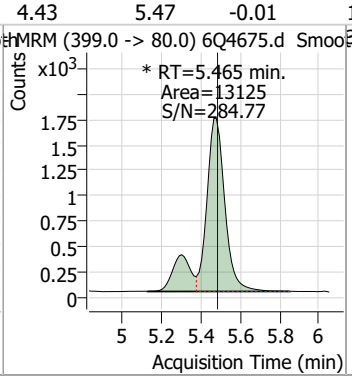


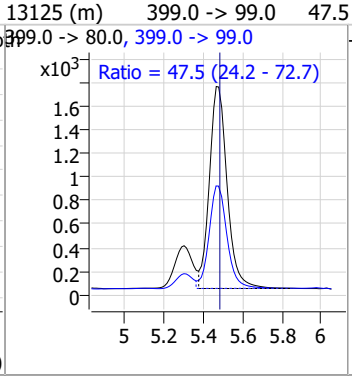


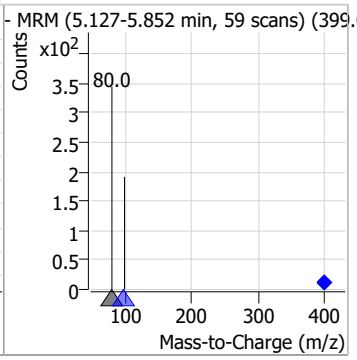


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.43	5.47	-0.01	13125 (m)	399.0 -> 99.0	47.5	24.2	72.7



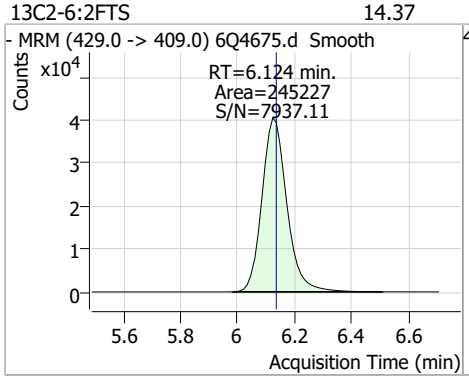


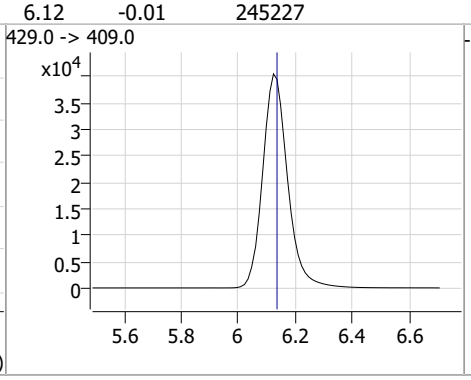


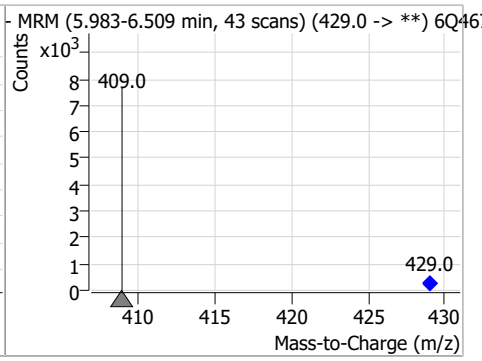


Perfluorinated Compounds by LC/MS/MS

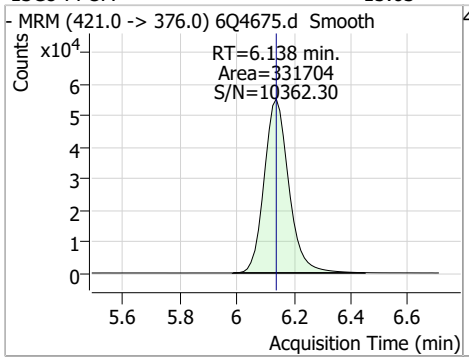
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.37	6.12	-0.01	245227				

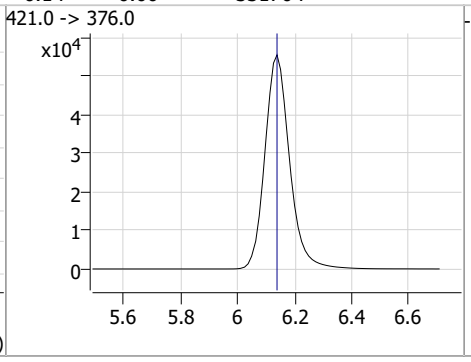


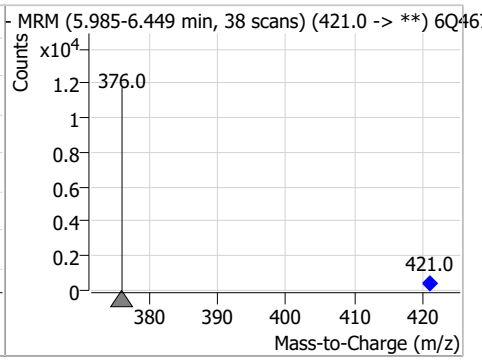




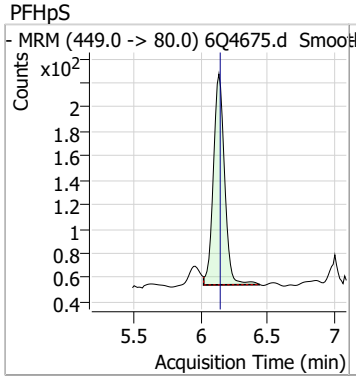
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.63	6.14	0.00	331704				

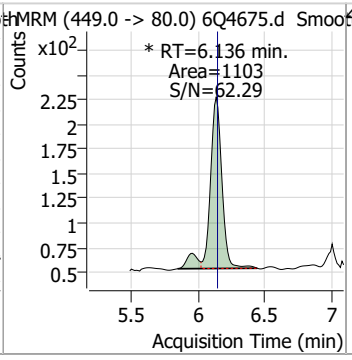


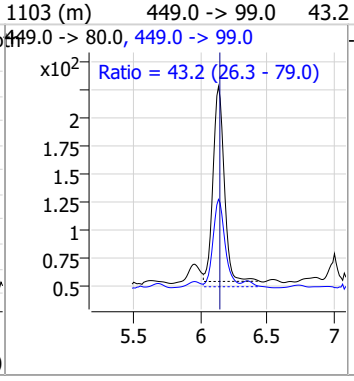


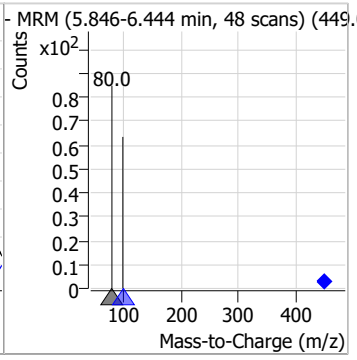


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.47	6.14	-0.01	1103 (m)	449.0 -> 99.0	43.2	26.3	79.0

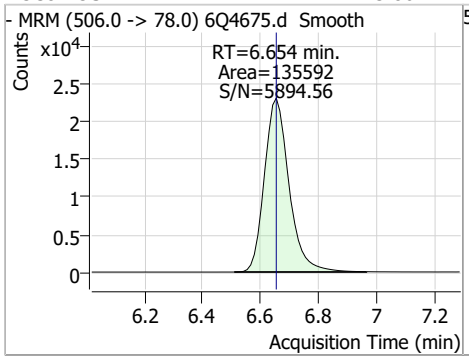


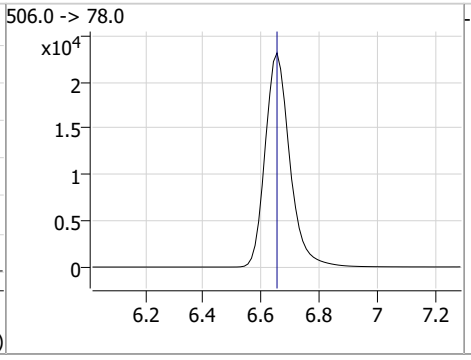


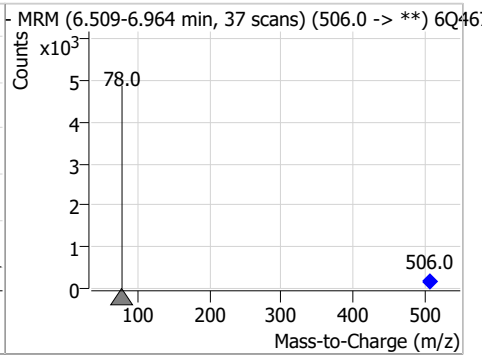




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.86	6.65	0.00	135592				

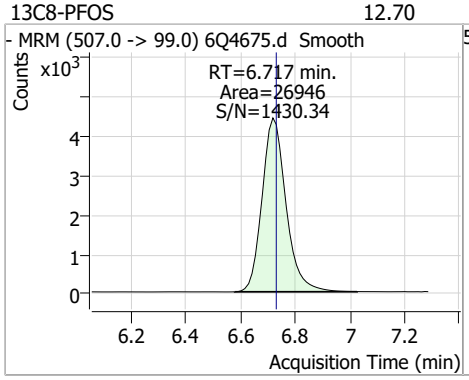


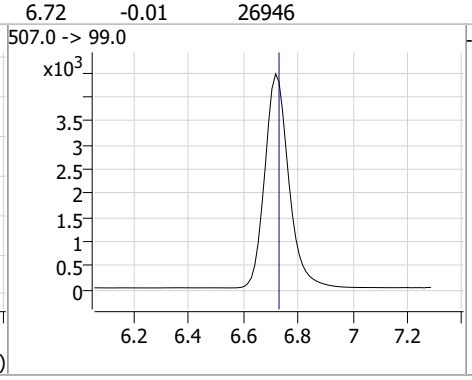


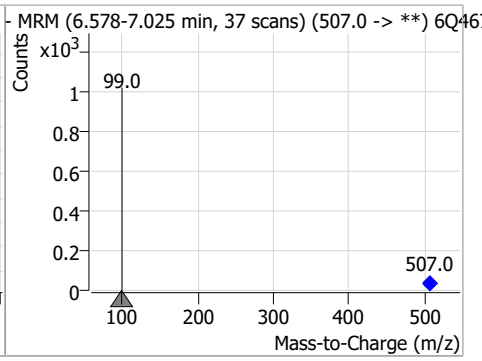


Perfluorinated Compounds by LC/MS/MS

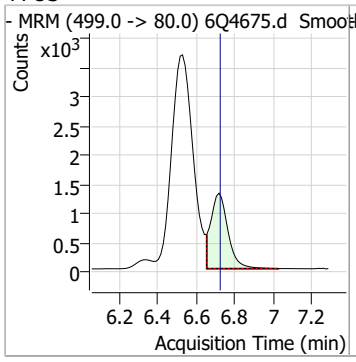
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.70	6.72	-0.01	26946				

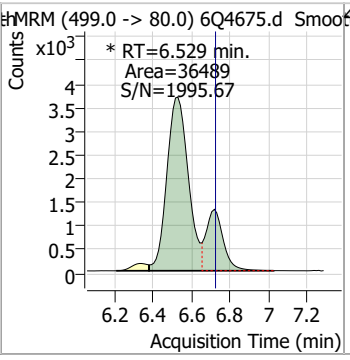


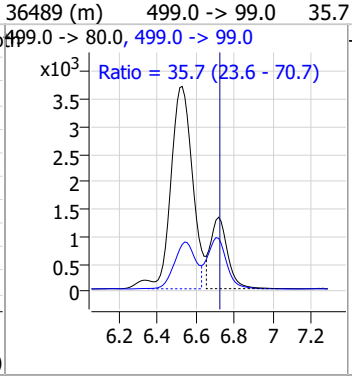


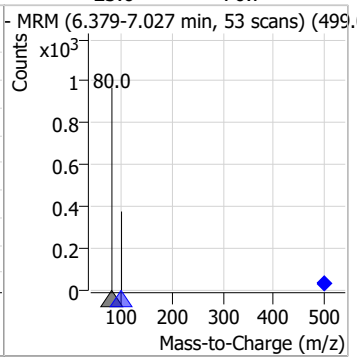


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	14.61	6.53	-0.20	36489 (m)	499.0 -> 99.0	35.7	23.6	70.7

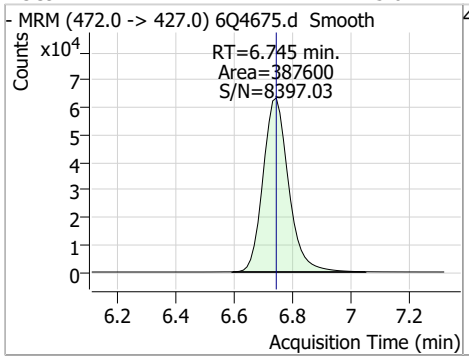


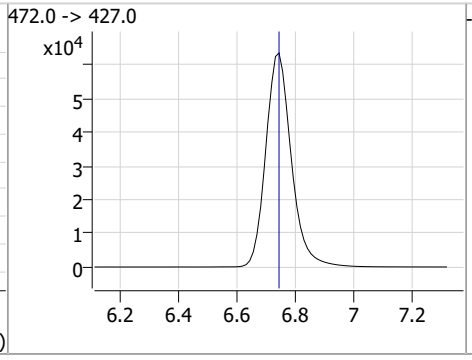


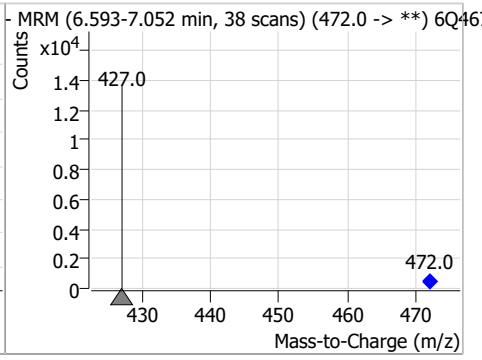




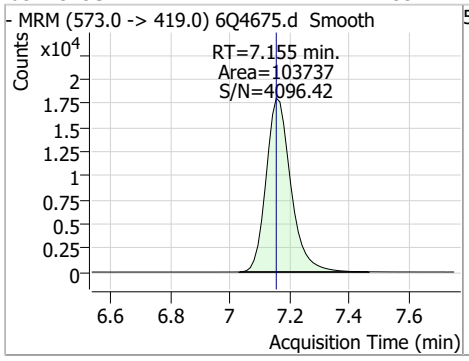
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.04	6.74	0.00	387600				

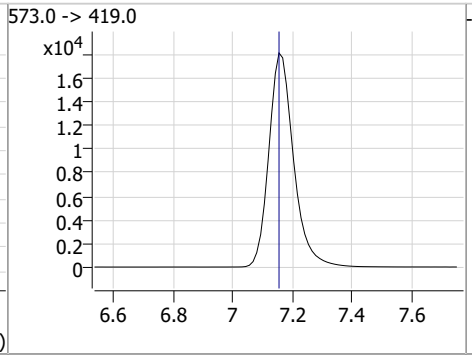


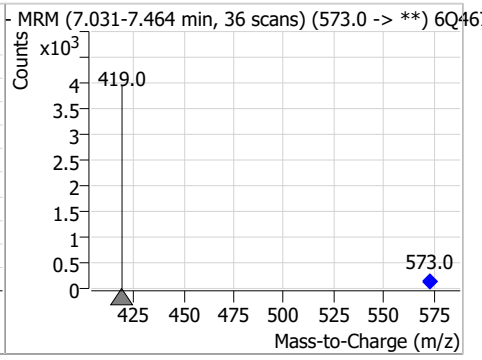




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.99	7.15	0.00	103737				

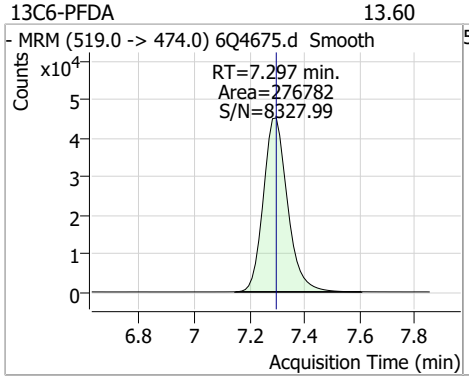


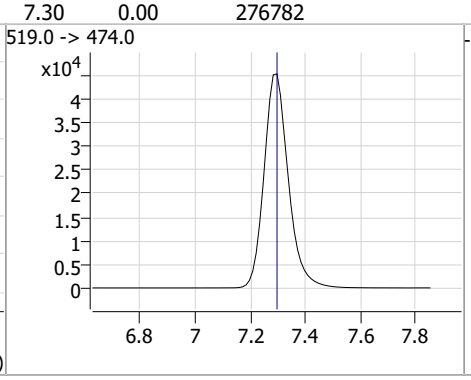


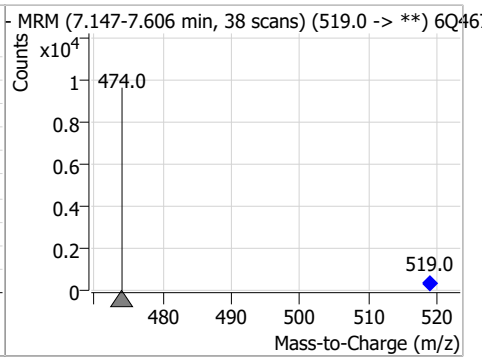


Perfluorinated Compounds by LC/MS/MS

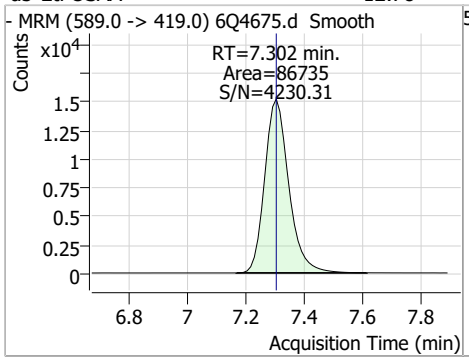
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.60	7.30	0.00	276782				

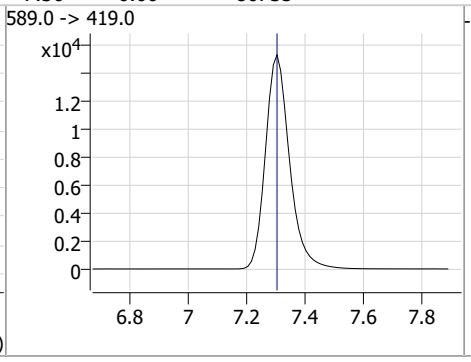


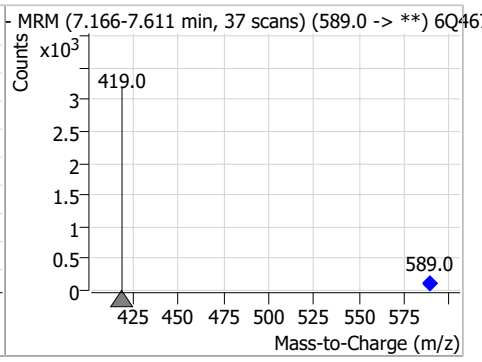




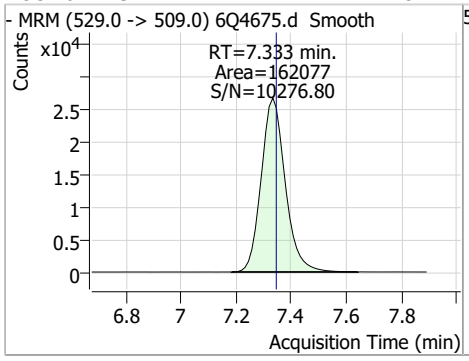
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.78	7.30	0.00	86735				

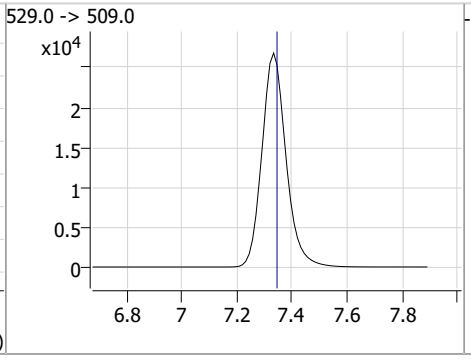


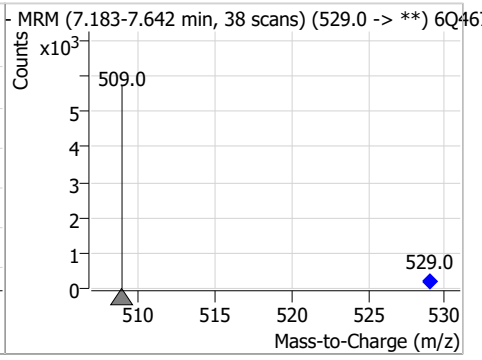




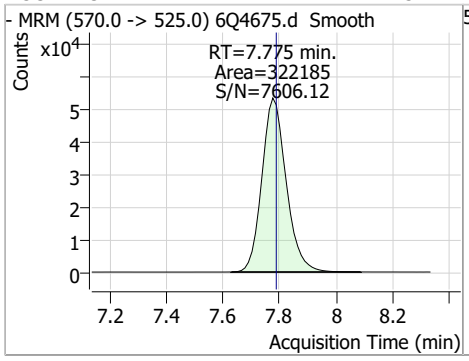
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.43	7.33	-0.01	162077				

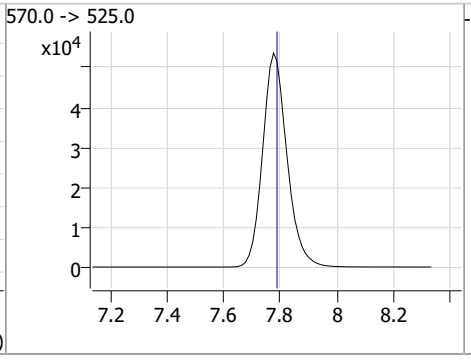


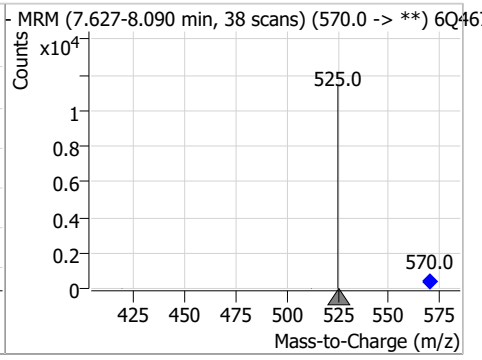




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.13	7.78	-0.01	322185				

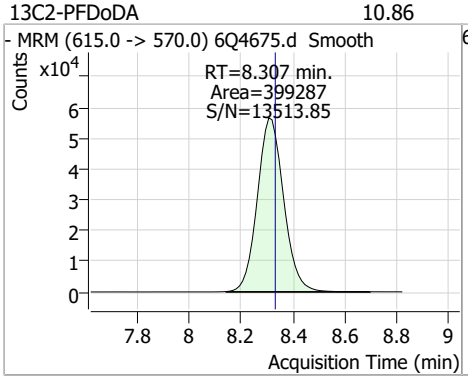


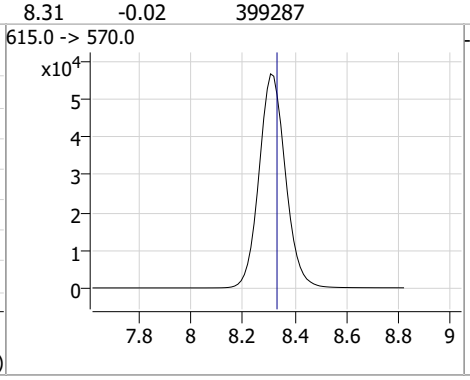


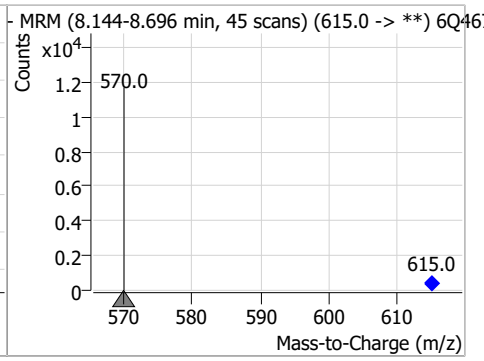


Perfluorinated Compounds by LC/MS/MS

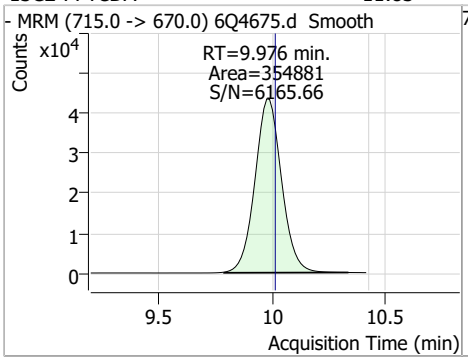
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.86	8.31	-0.02	399287				

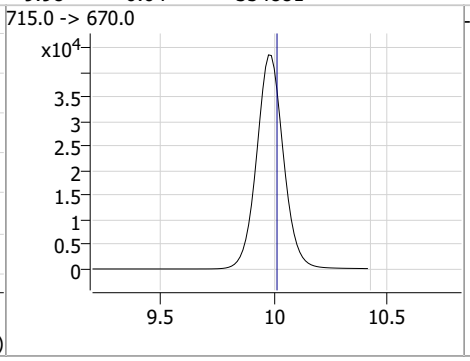


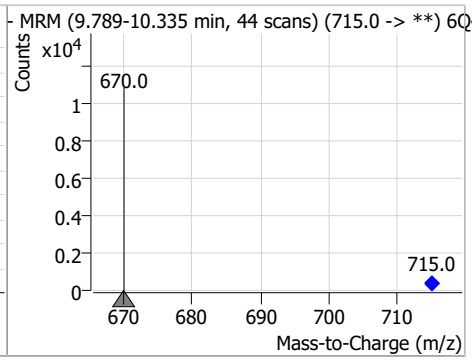




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.83	9.98	-0.04	354881				







Manual Integration Approval Summary

Sample Number: FA98286-22
Lab FileID: 6Q4675.D
Injection Time: 09/15/22 01:41
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.41	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.68	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.53	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4677.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 2:13:30 AM
Sample Name : fa98286-23
Vial : P5-E4
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.936	217.0 -> 172.0	54082	20.00 µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	98274	20.00 µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	154094	20.00 µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	175173	20.00 µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	320507	20.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	367975	20.00 µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	250758	20.00 µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	310811	20.00 µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	426969	20.00 µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	393399	20.00 µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	129891	20.00 µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	23568	20.00 µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	21935	20.00 µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	29144	20.00 µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	195227	20.00 µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	250870	20.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	166274	20.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	108749	20.00 µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	3652	20.00 µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	8175	20.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	86680	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.483	329.0 -> 309.0	195227	14.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%	
13C2-6:2FTS	6.124	429.0 -> 409.0	250870	14.70 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%	
13C2-8:2FTS	7.333	529.0 -> 509.0	166274	12.76 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%	
13C2-PFDoDA	8.320	615.0 -> 570.0	426969	11.61 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.0%	
13C2-PFTeDA	9.989	715.0 -> 670.0	393399	13.11 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.6%	
13C3-PFBS	3.622	302.0 -> 99.0	23568	15.39 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%	
13C3-PFHxS	5.475	402.0 -> 99.0	21935	15.86 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%	
13C4-PFBA	1.936	217.0 -> 172.0	54082	13.59 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%	
13C4-PFHpA	5.445	367.0 -> 322.0	175173	14.16 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%	
13C5-PFHxA	4.573	318.0 -> 273.0	154094	14.42 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%	
13C5-PFPeA	3.405	268.0 -> 223.0	98274	14.02 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.1%	
13C6-PFDA	7.297	519.0 -> 474.0	250758	12.32 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

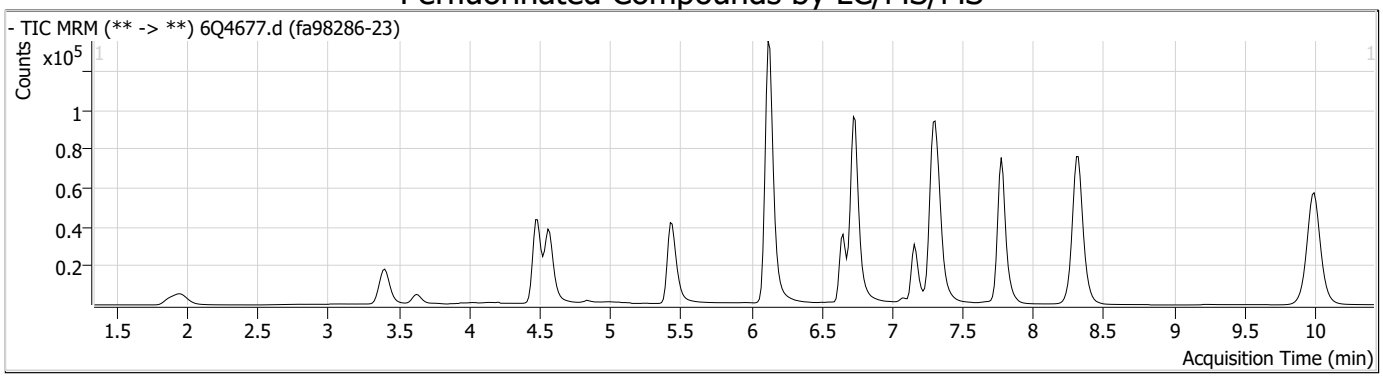
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	310811	11.71	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.5%			
13C8-FOSA	6.654	506.0 -> 78.0	129891	13.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.4%			
13C8-PFOA	6.138	421.0 -> 376.0	320507	15.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%			
13C8-PFOS	6.717	507.0 -> 99.0	29144	13.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%			
13C9-PFNA	6.745	472.0 -> 427.0	367975	14.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.4%			
d3-MeFOSAA	7.155	573.0 -> 419.0	108749	12.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.8%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	3678	13.84	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	86732	12.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	3.677	299.0 -> 80.0	0		µg/L	m	1
		299.0 -> 99.0	0				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.649	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

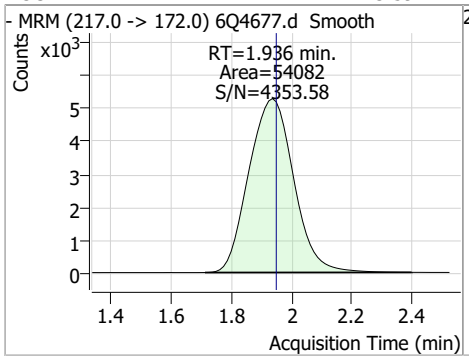
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.383	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

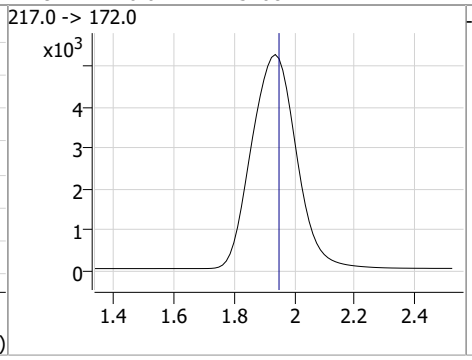
 # = Qualifier out of range, m = manually integrated, + = Area summed

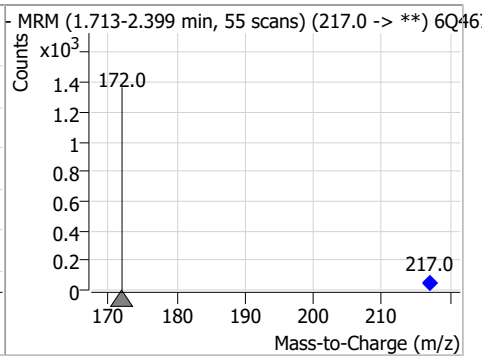
Perfluorinated Compounds by LC/MS/MS



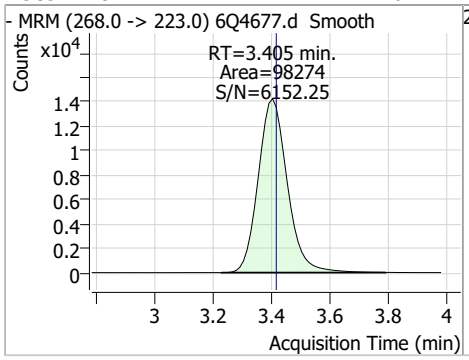
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.59	1.94	-0.01	54082				

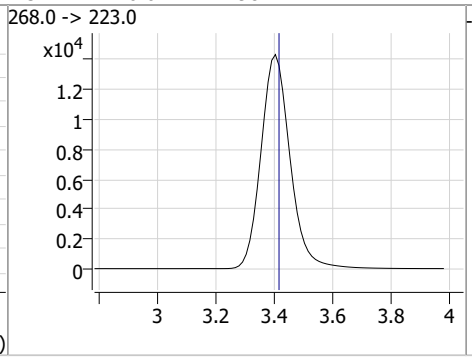


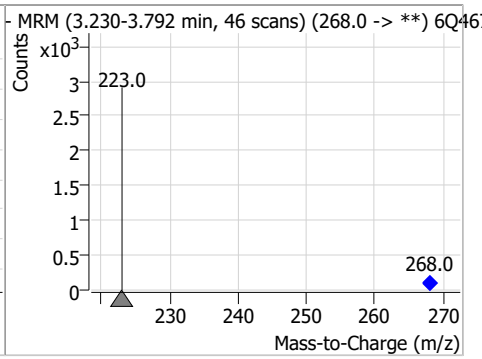




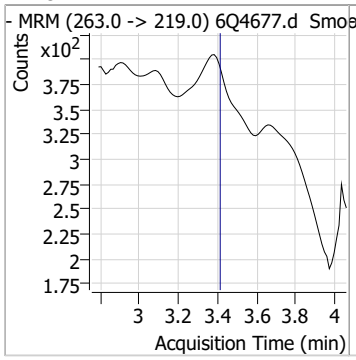
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.02	3.41	-0.01	98274				

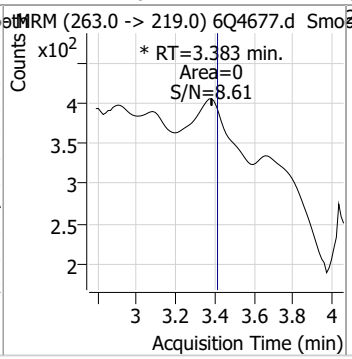


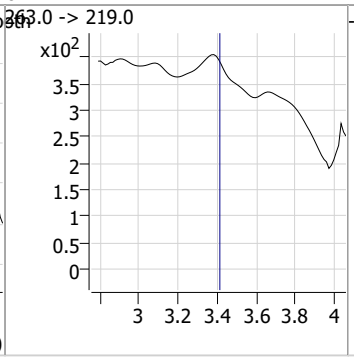


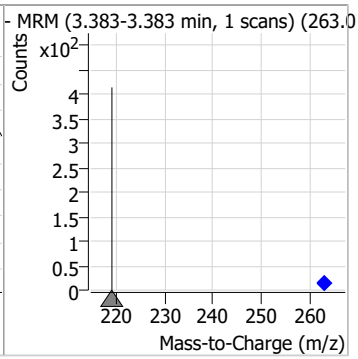


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



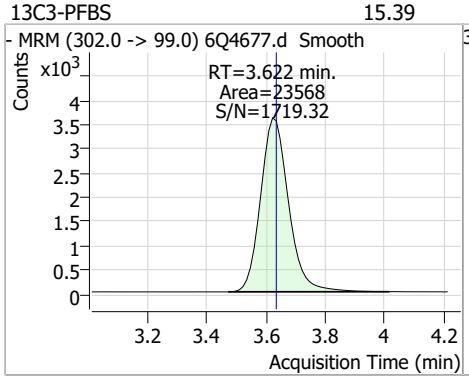


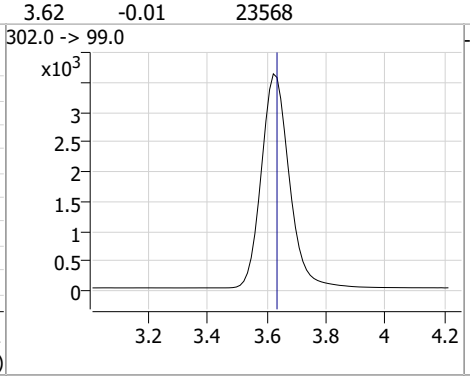


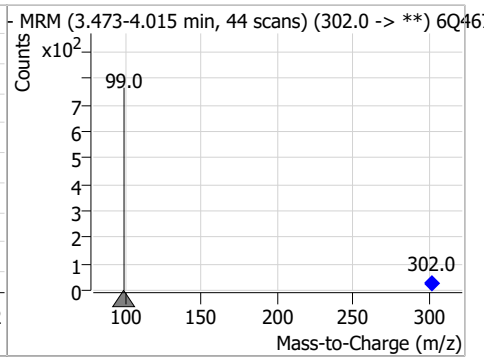


Perfluorinated Compounds by LC/MS/MS

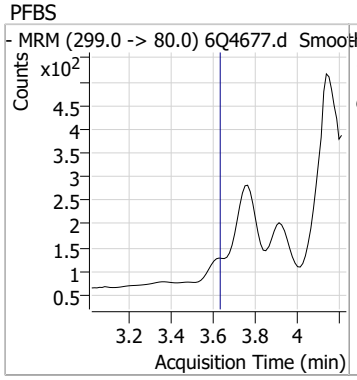
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.39	3.62	-0.01	23568				

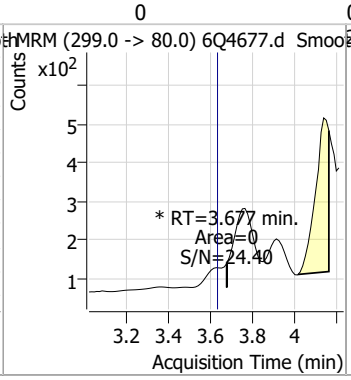


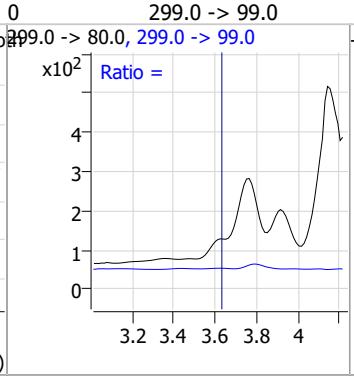


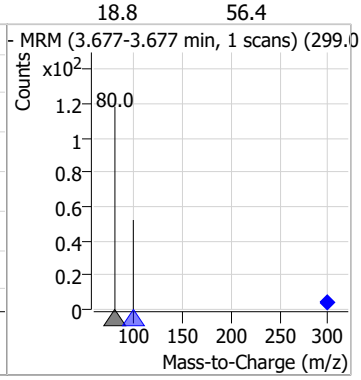


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	299.0 -> 99.0		18.8	56.4

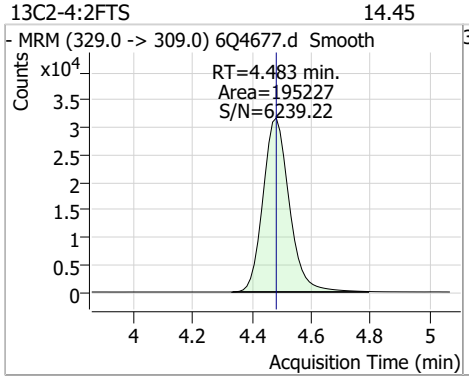


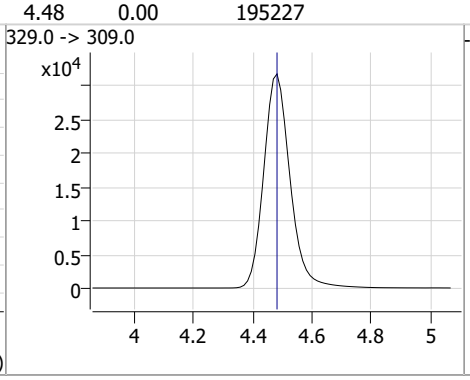


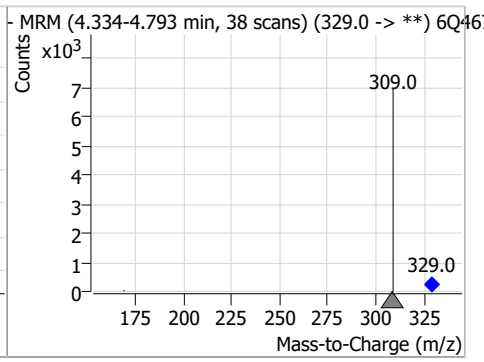




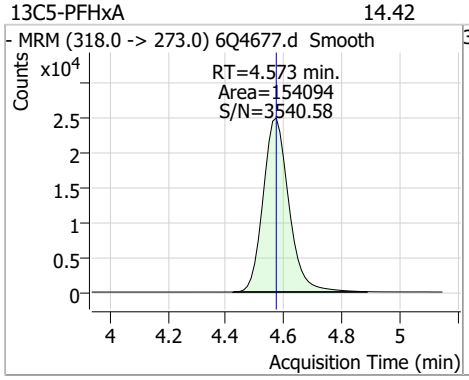
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.45	4.48	0.00	195227				

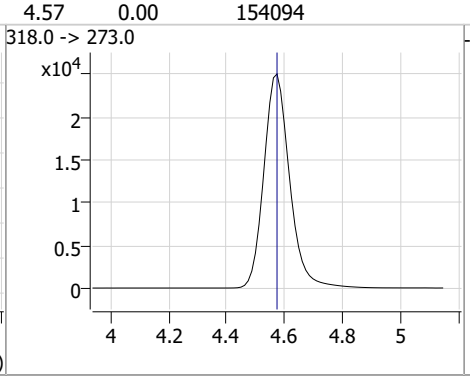


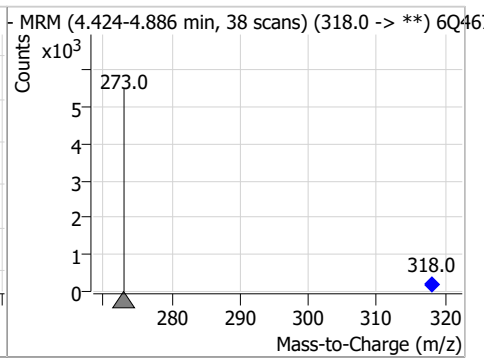




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.42	4.57	0.00	154094				

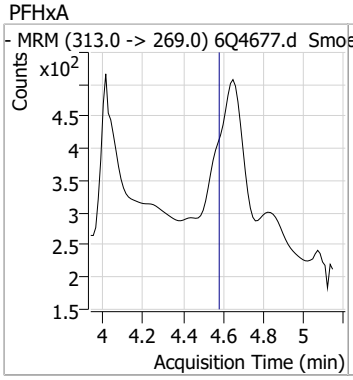


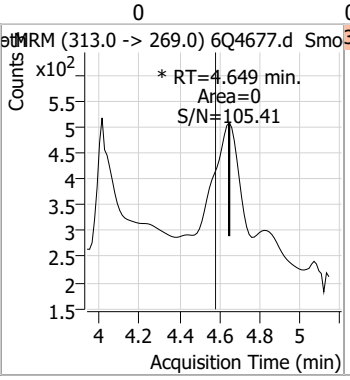


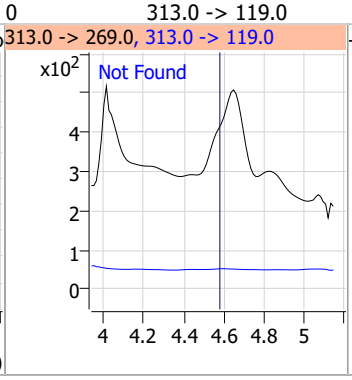


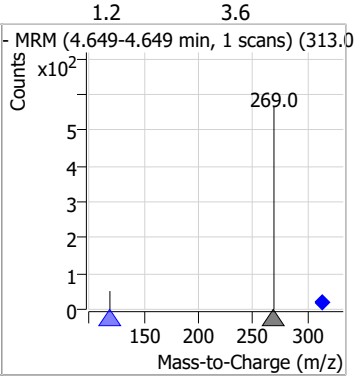
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		1.2	3.6

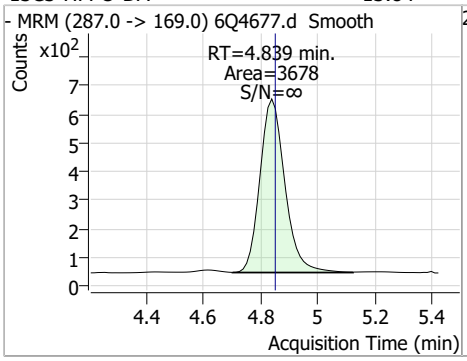


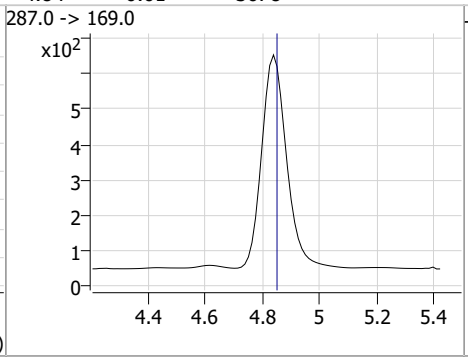


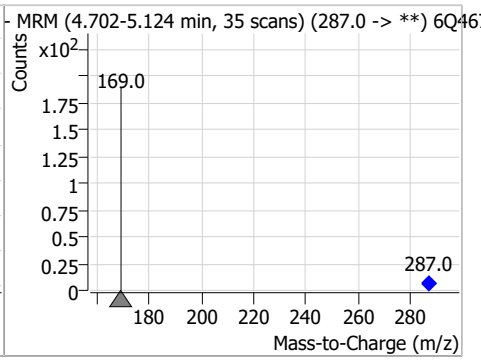




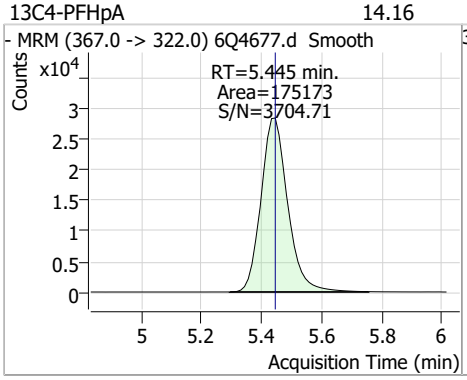
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.84	4.84	-0.01	3678				

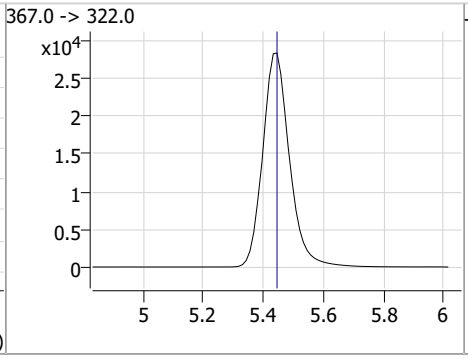


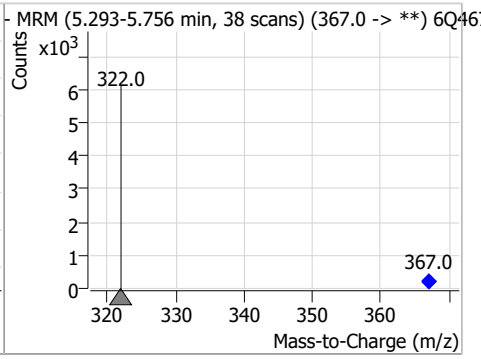




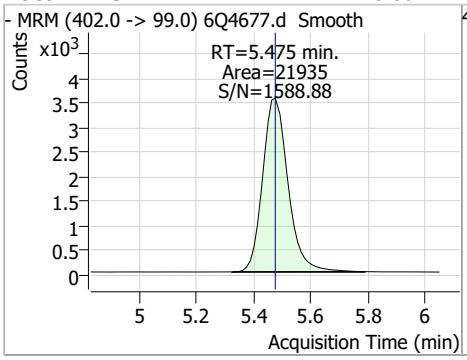
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.16	5.45	0.00	175173				

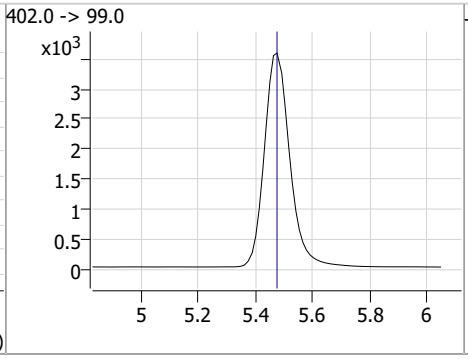


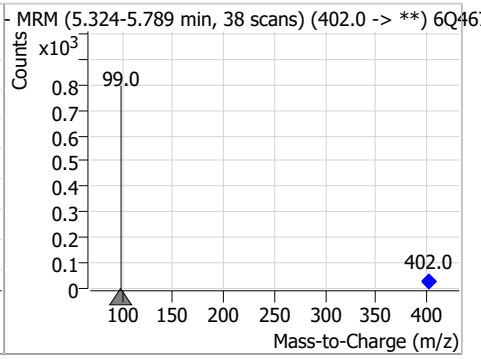




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.86	5.48	0.00	21935				

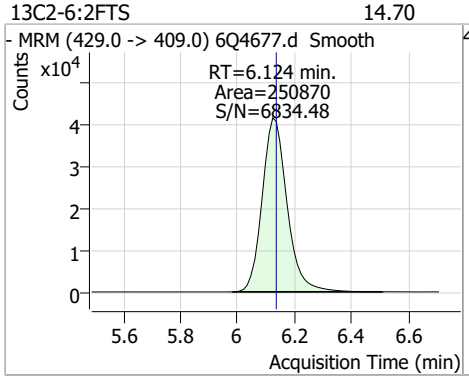


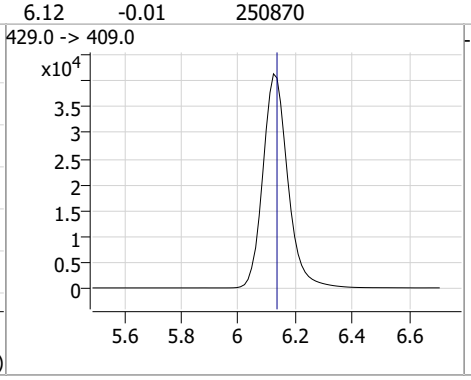


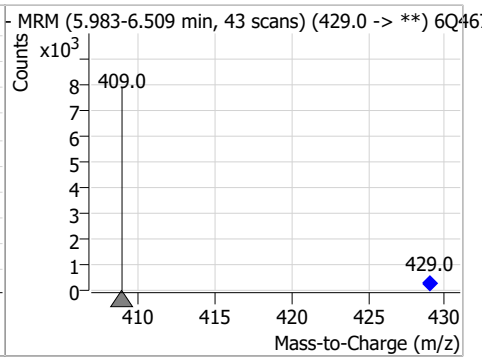


Perfluorinated Compounds by LC/MS/MS

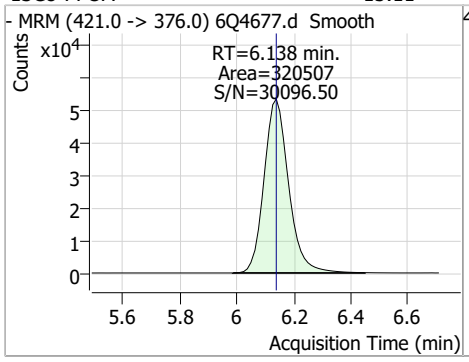
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.70	6.12	-0.01	250870				

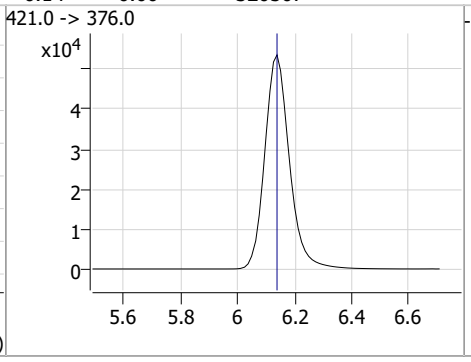


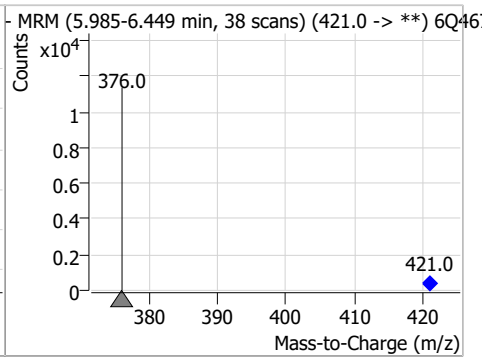




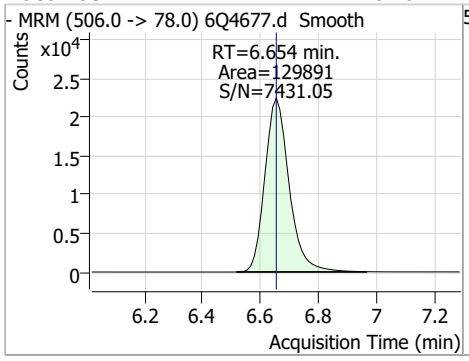
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.11	6.14	0.00	320507				

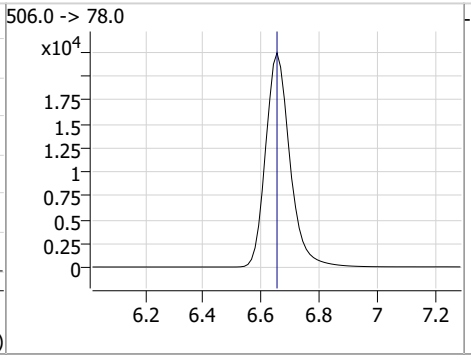


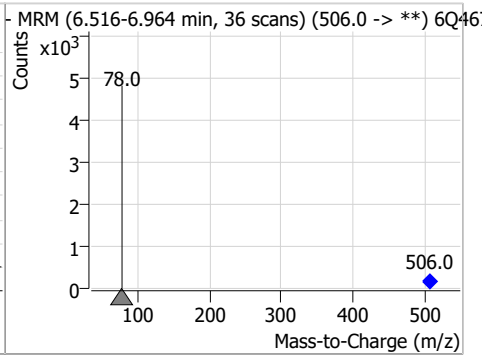




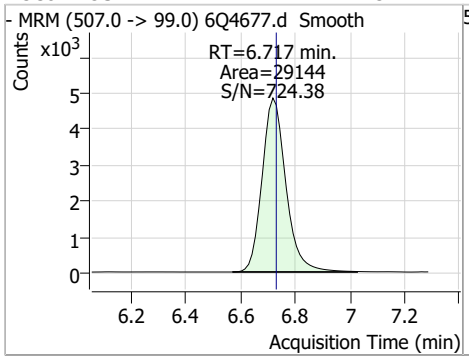
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.28	6.65	0.00	129891				

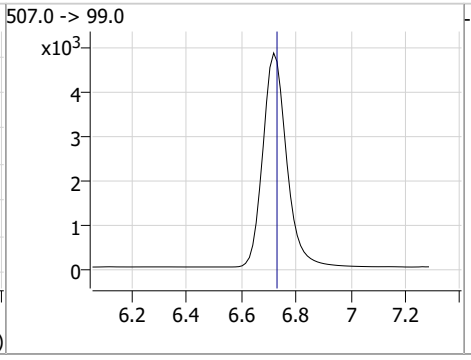


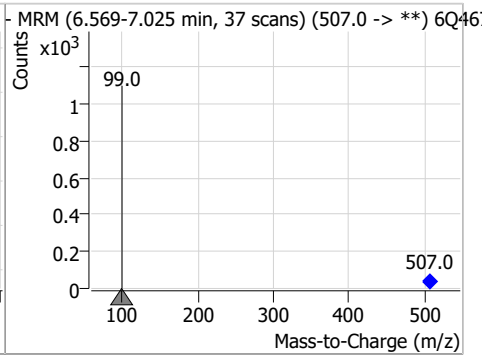




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.74	6.72	-0.01	29144				

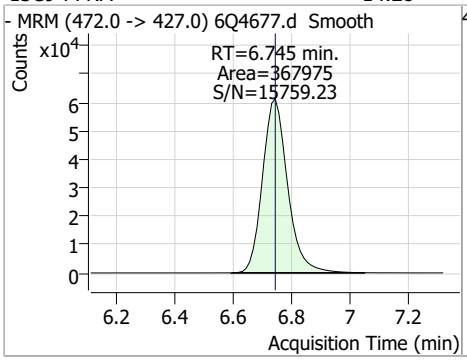


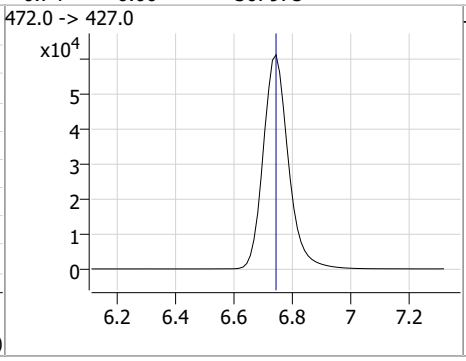


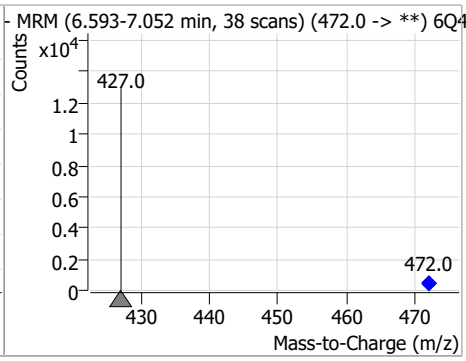


Perfluorinated Compounds by LC/MS/MS

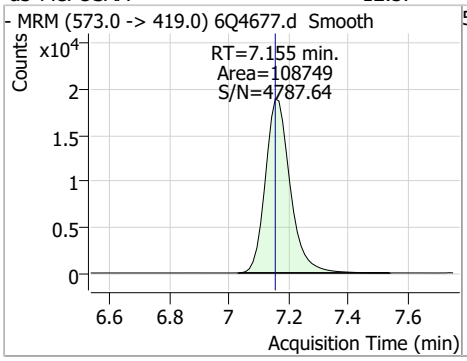
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.28	6.74	0.00	367975				

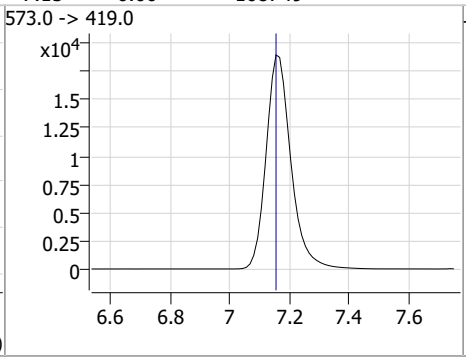


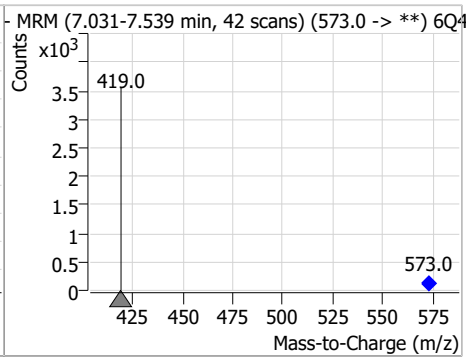




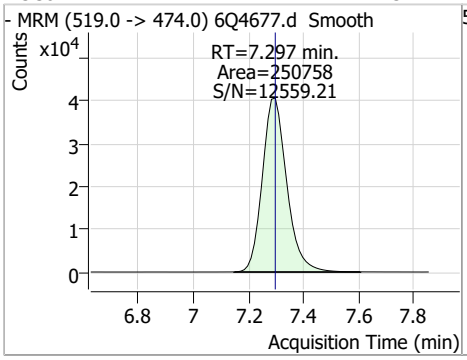
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.57	7.15	0.00	108749				

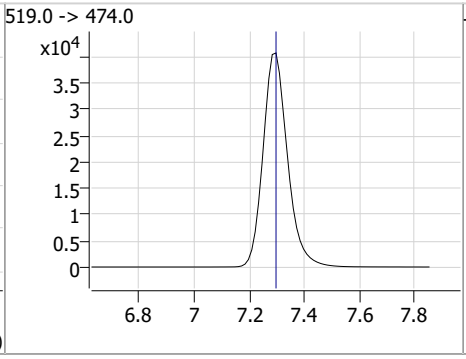


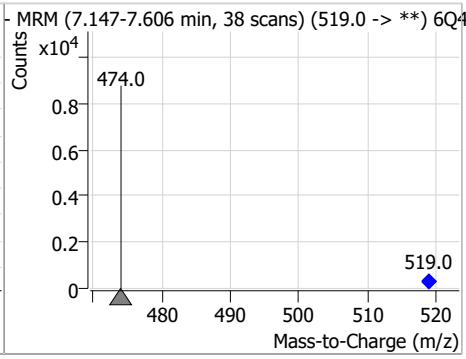




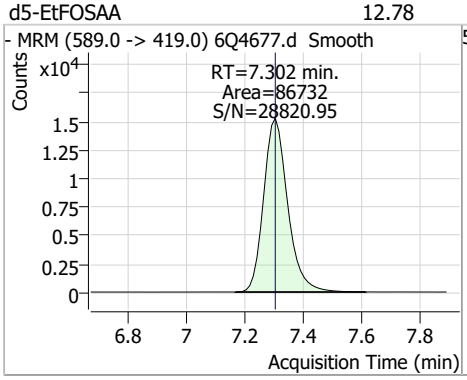
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.32	7.30	0.00	250758				

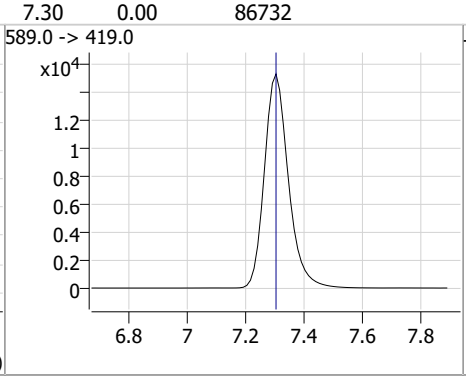


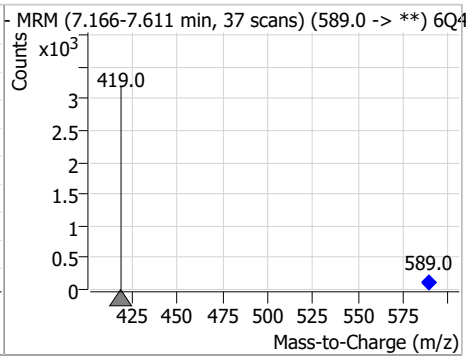




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.78	7.30	0.00	86732				

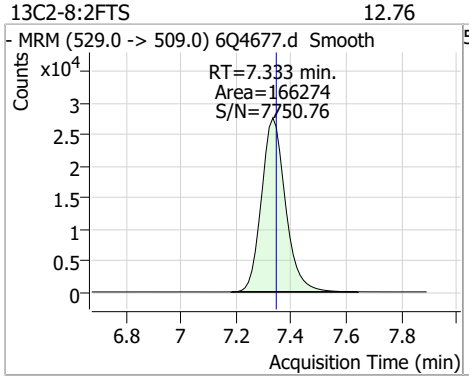


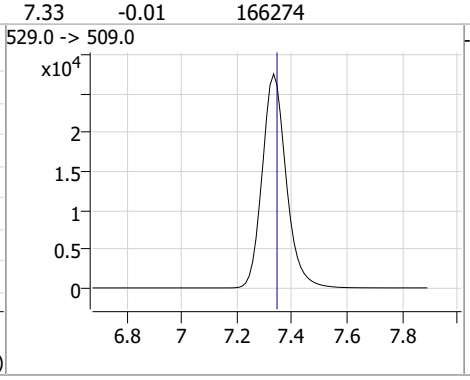


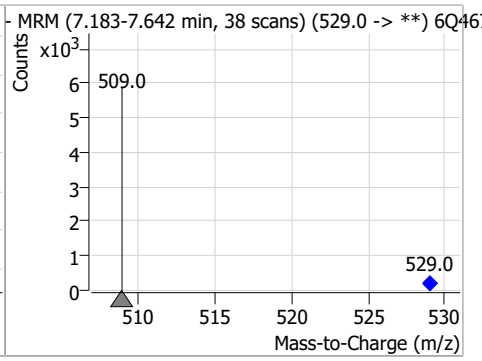


Perfluorinated Compounds by LC/MS/MS

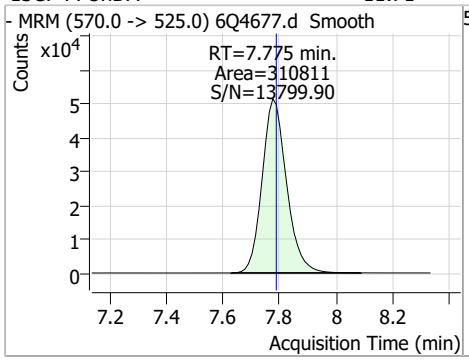
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.76	7.33	-0.01	166274				

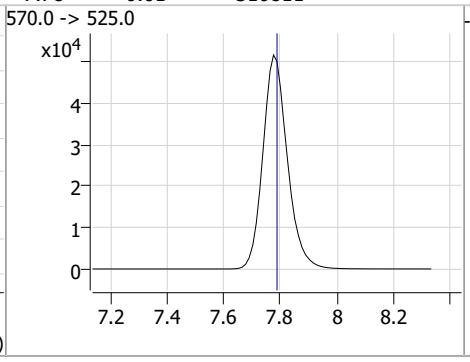


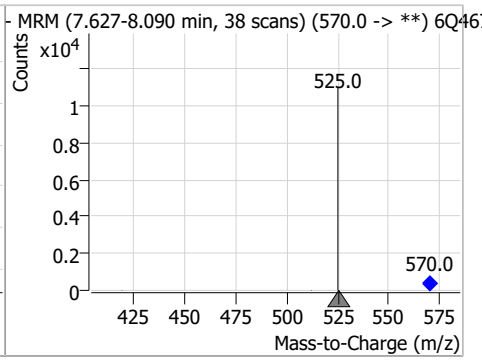




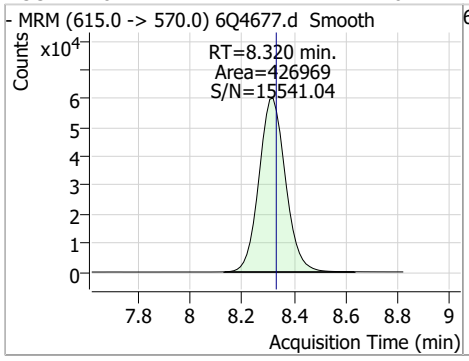
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.71	7.78	-0.01	310811				

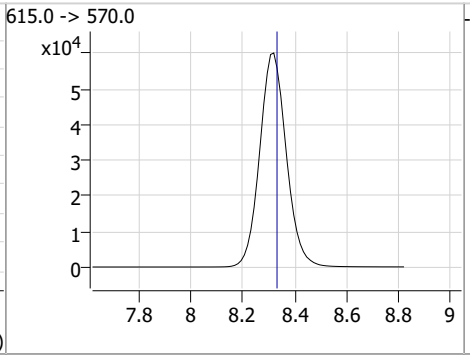


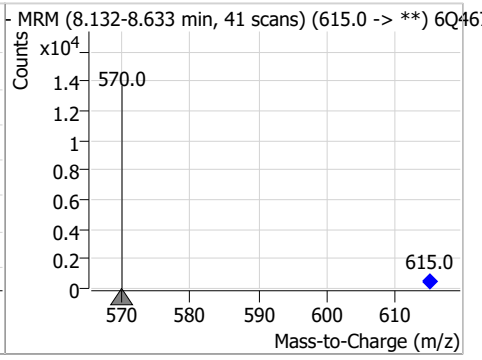




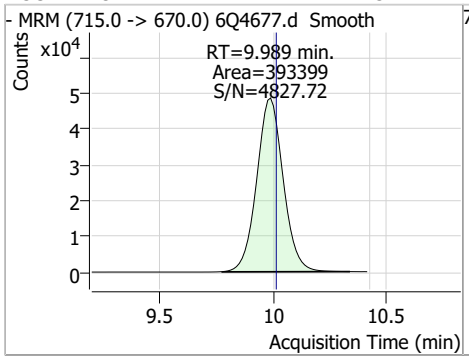
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.61	8.32	-0.01	426969				

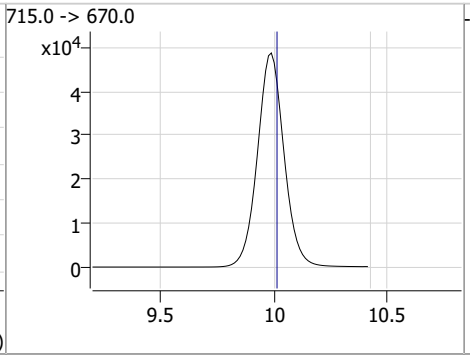


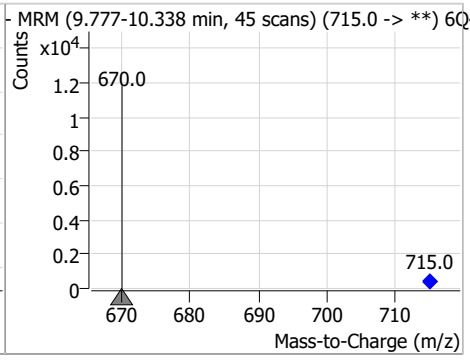




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.11	9.99	-0.02	393399				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4678.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 2:29:32 AM
Sample Name : fa98286-24
Vial : P5-E5
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	52323	20.00	µg/L	-0.050
M5-PFPeA	3.380	268.0 -> 223.0	101115	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	167492	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	196648	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	357382	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	446919	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	305986	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	319603	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	373727	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	310259	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	149881	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	23933	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	23670	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	32503	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	209591	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	282118	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	191073	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	116676	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	3997	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	3050	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	89973	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	209591	15.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C2-6:2FTS	6.124	429.0 -> 409.0	282118	16.53	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	191073	14.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%		
13C2-PFDoDA	8.307	615.0 -> 570.0	373727	10.16	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.8%		
13C2-PFTeDA	9.976	715.0 -> 670.0	310259	10.34	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.7%		
13C3-PFBS	3.610	302.0 -> 99.0	23933	15.63	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%		
13C3-PFHxS	5.463	402.0 -> 99.0	23670	17.12	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%		
13C4-PFBA	1.899	217.0 -> 172.0	52323	13.15	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%		
13C4-PFHpA	5.433	367.0 -> 322.0	196648	15.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%		
13C5-PFHxA	4.561	318.0 -> 273.0	167492	15.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%		
13C5-PFPeA	3.380	268.0 -> 223.0	101115	14.42	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%		
13C6-PFDA	7.283	519.0 -> 474.0	305986	15.04	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

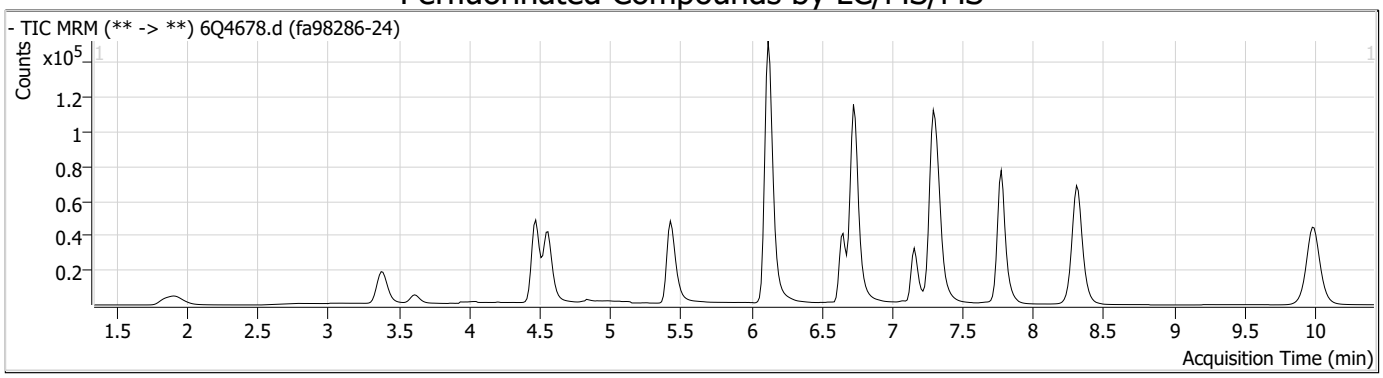
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	319603	12.04	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%			
13C8-FOSA	6.654	506.0 -> 78.0	149881	15.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
13C8-PFOA	6.138	421.0 -> 376.0	357382	16.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.2%			
13C8-PFOS	6.717	507.0 -> 99.0	32503	15.32	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
13C9-PFNA	6.745	472.0 -> 427.0	446919	17.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%			
d3-MeFOSAA	7.155	573.0 -> 419.0	116676	13.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.4%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	4008	15.08	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	90008	13.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	4.981	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

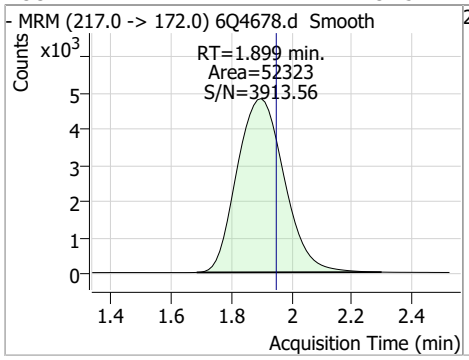
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.370	263.0 -> 219.0	450	0.11	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

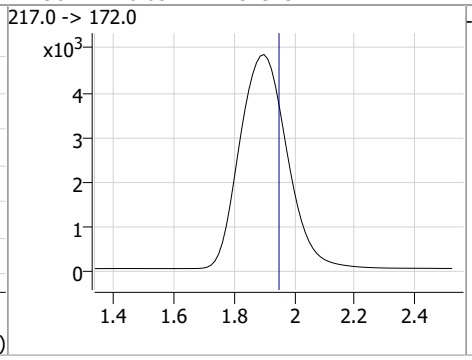
 # = Qualifier out of range, m = manually integrated, + = Area summed

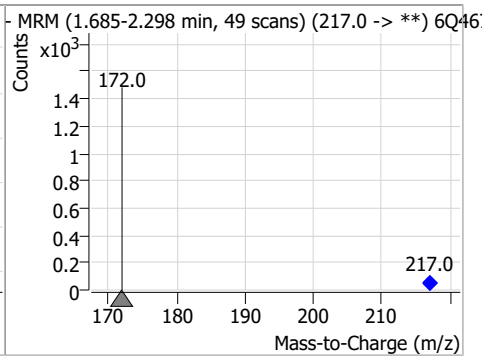
Perfluorinated Compounds by LC/MS/MS



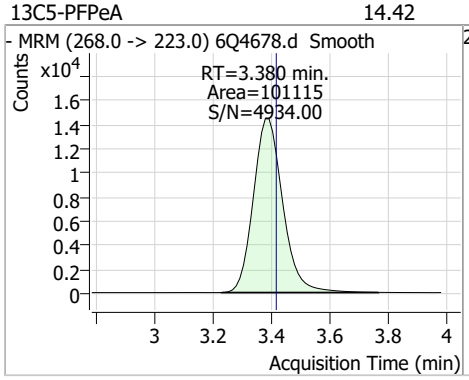
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.15	1.90	-0.05	52323				

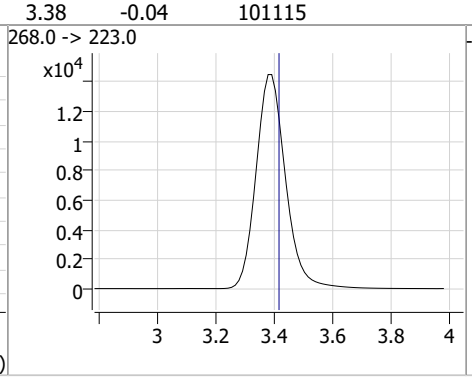


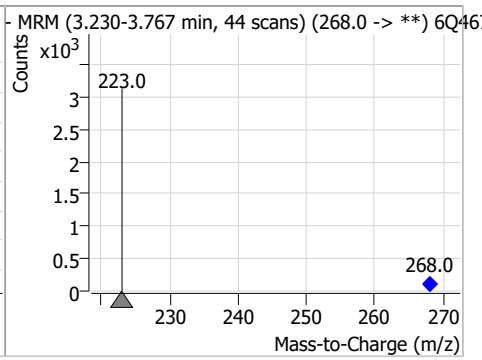




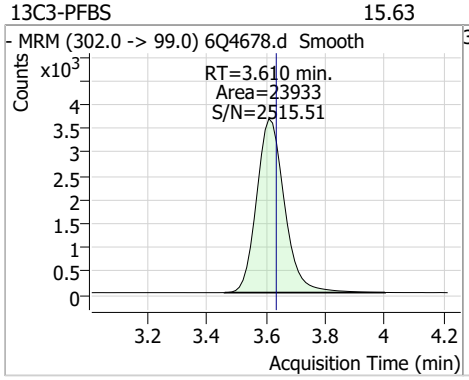
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.42	3.38	-0.04	101115				

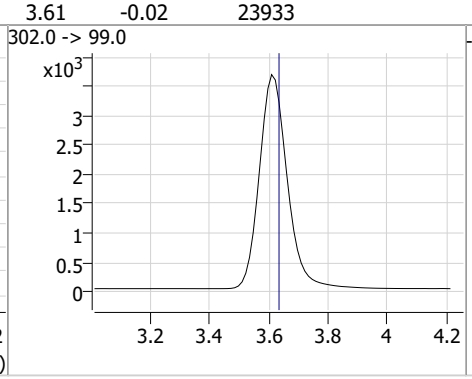


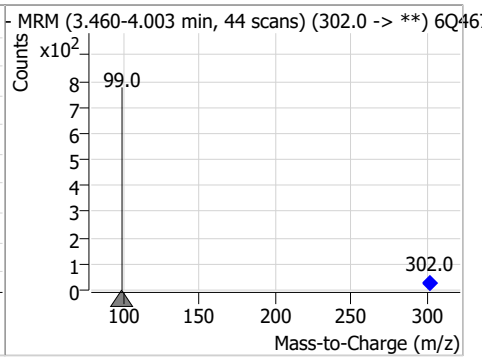




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.63	3.61	-0.02	23933				

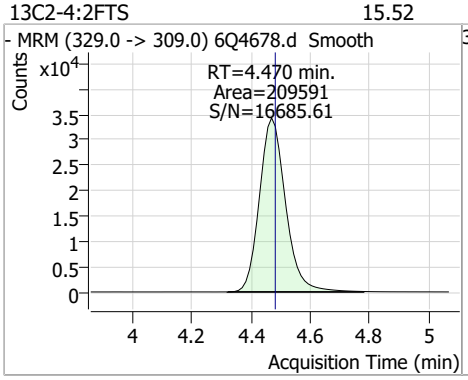


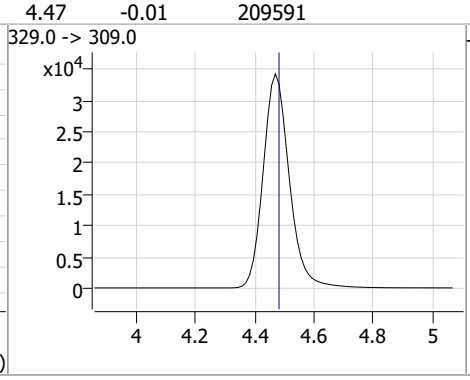


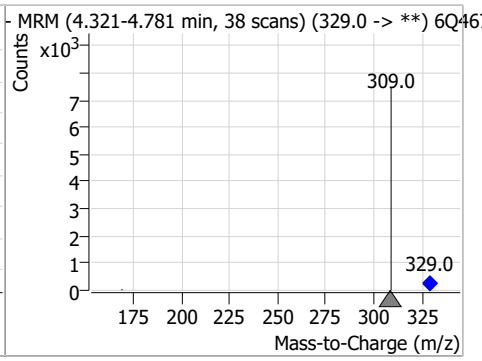


Perfluorinated Compounds by LC/MS/MS

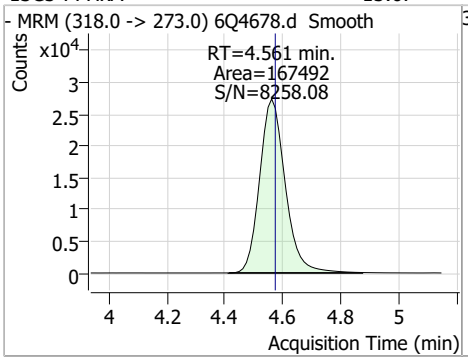
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.52	4.47	-0.01	209591				

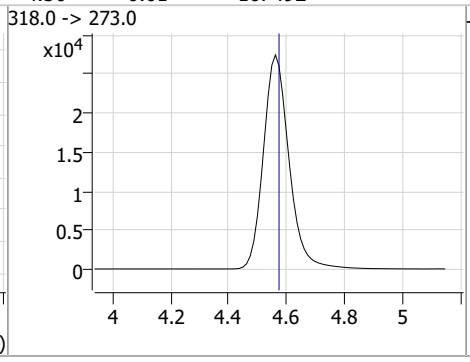


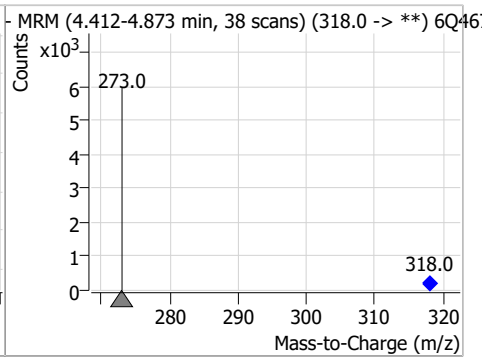




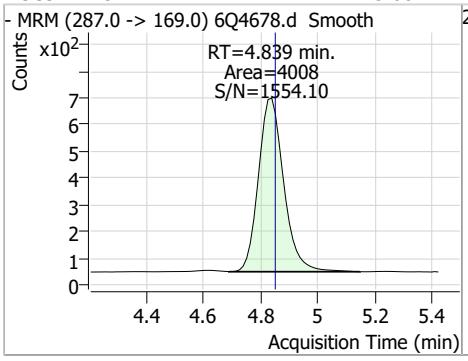
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.67	4.56	-0.01	167492				

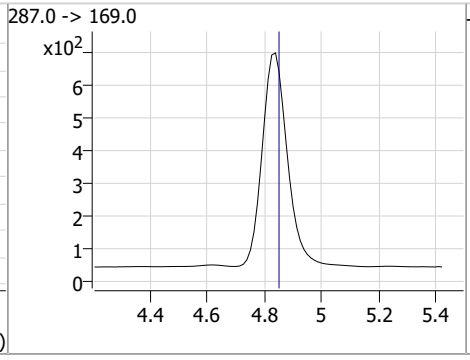


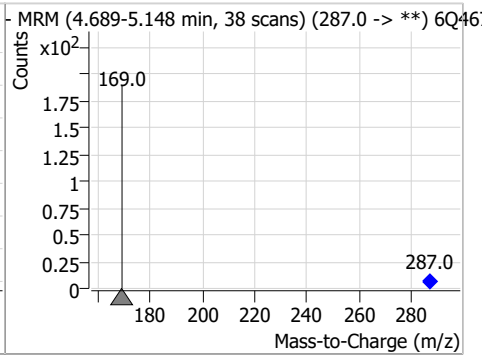




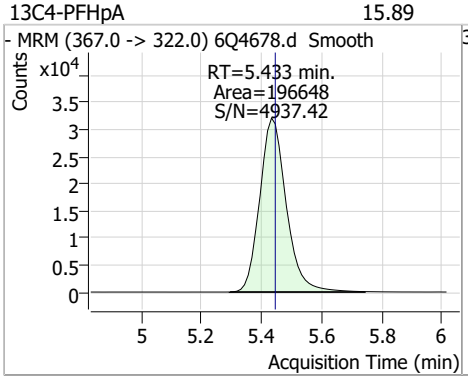
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.08	4.84	-0.01	4008				

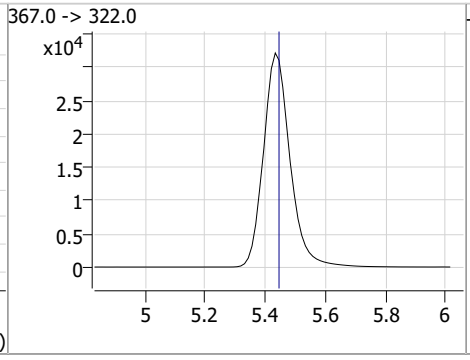


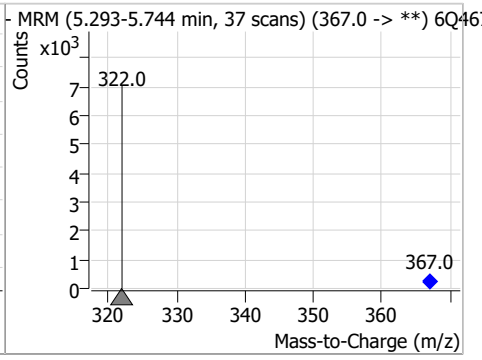




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.89	5.43	-0.01	196648				

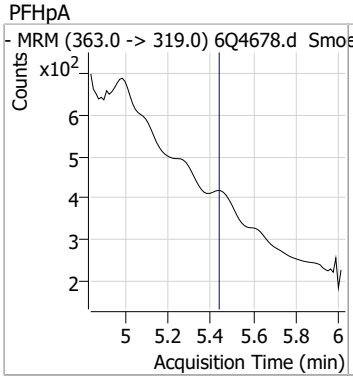


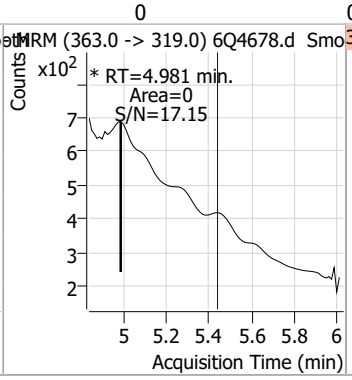


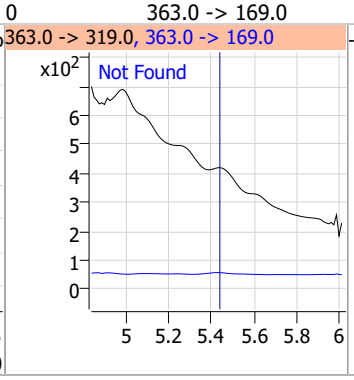


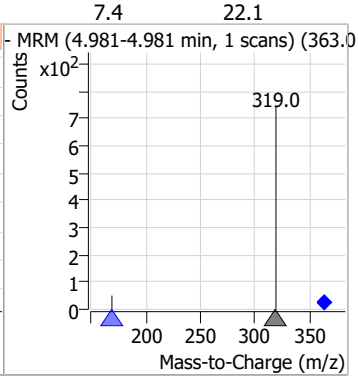
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		7.4	22.1

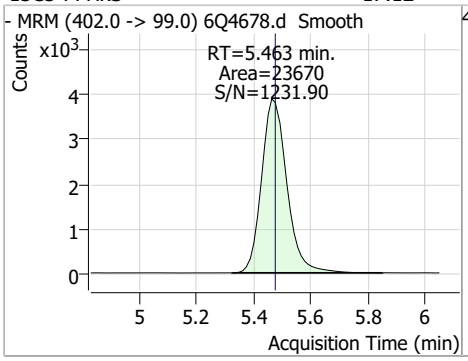


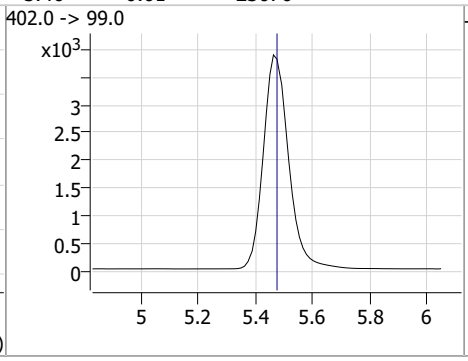


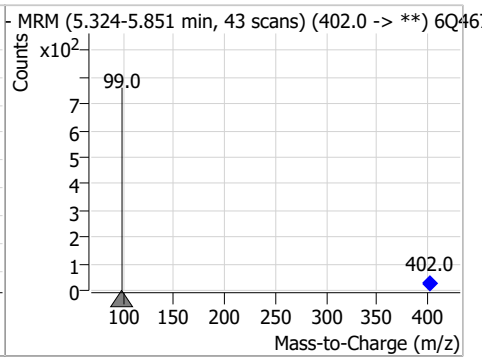




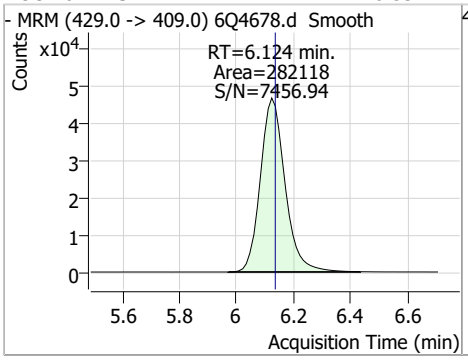
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.12	5.46	-0.01	23670				

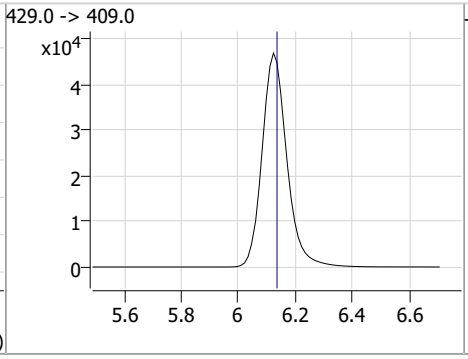


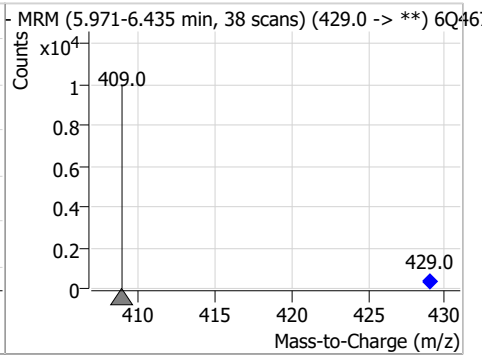




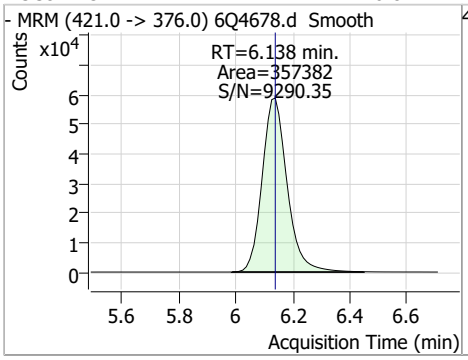
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.53	6.12	-0.01	282118				

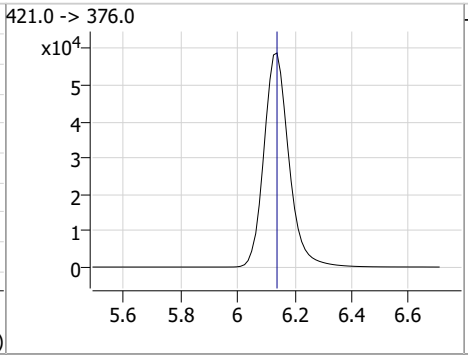


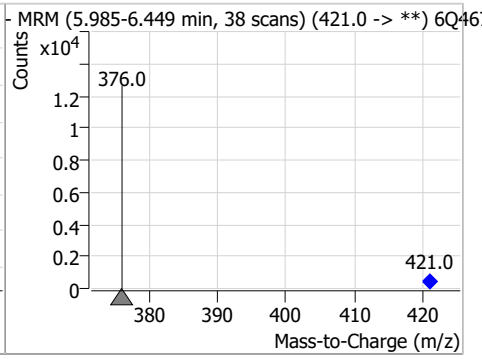




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.84	6.14	0.00	357382				

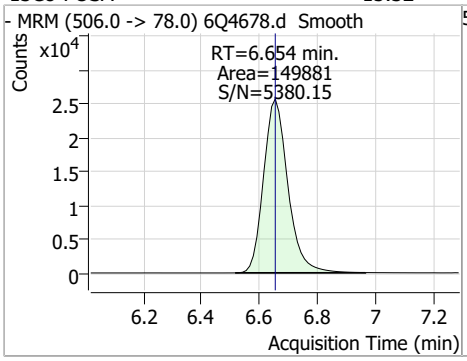


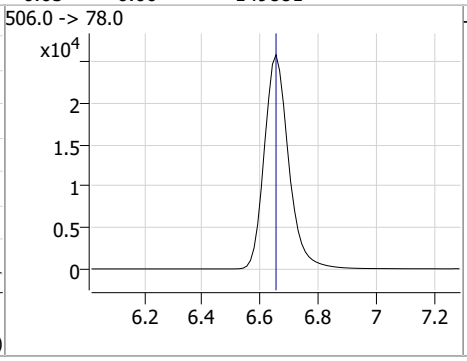


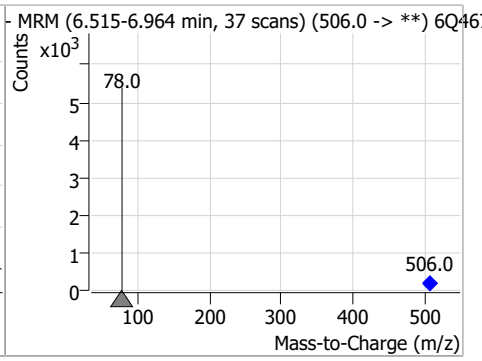


Perfluorinated Compounds by LC/MS/MS

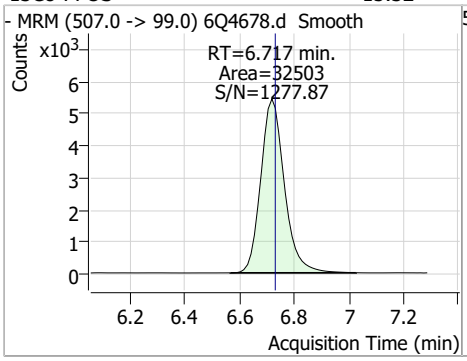
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.32	6.65	0.00	149881				

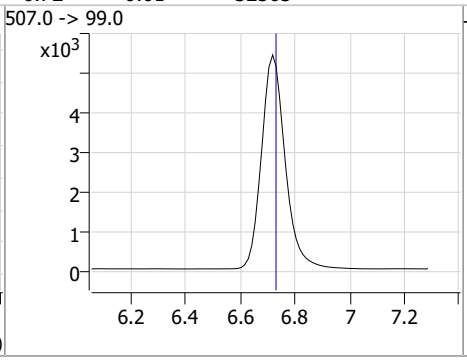


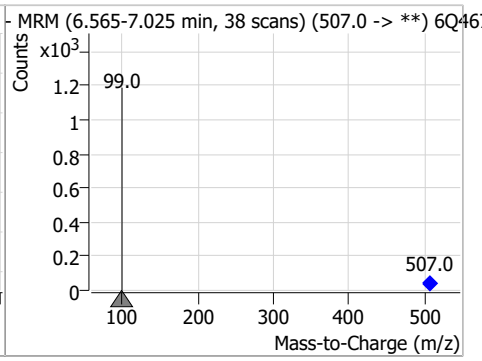




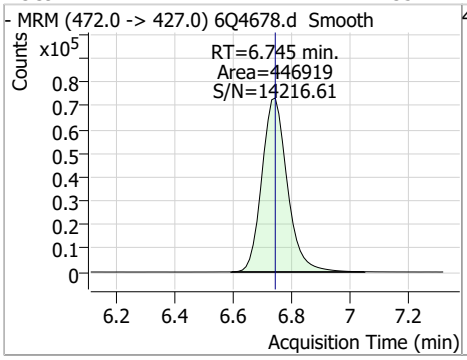
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.32	6.72	-0.01	32503				

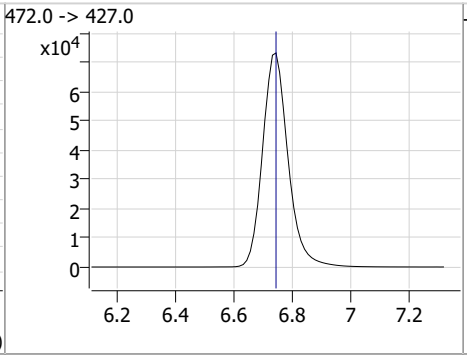


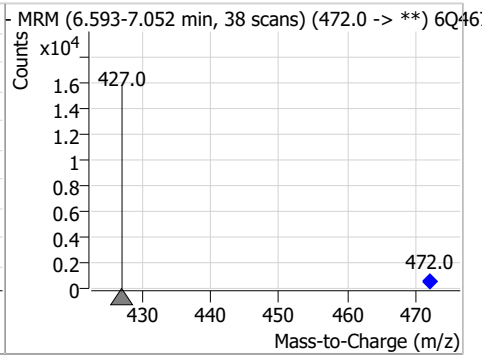




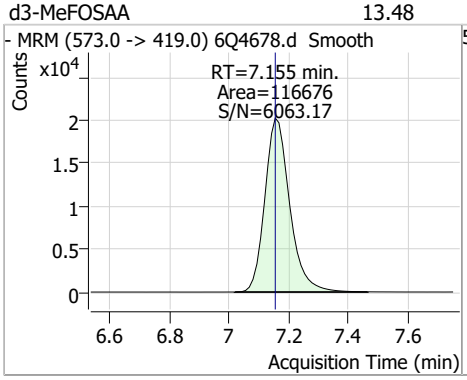
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.35	6.74	0.00	446919				

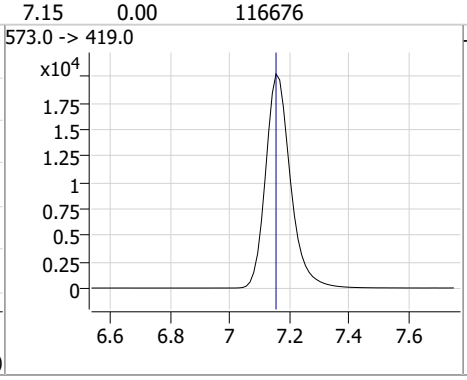


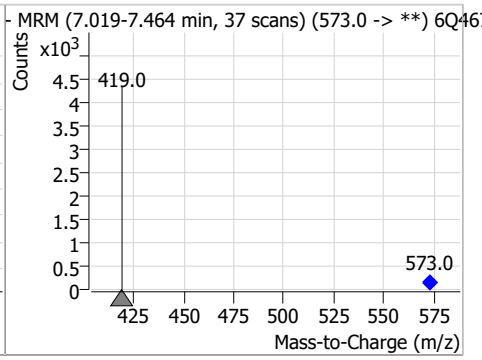




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.48	7.15	0.00	116676				

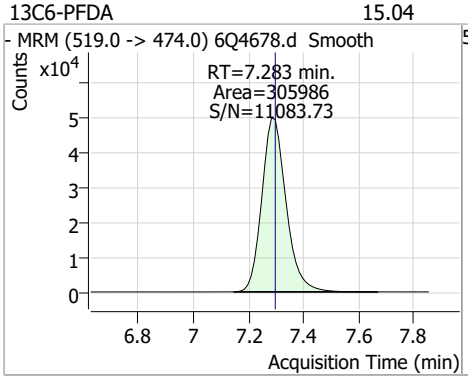


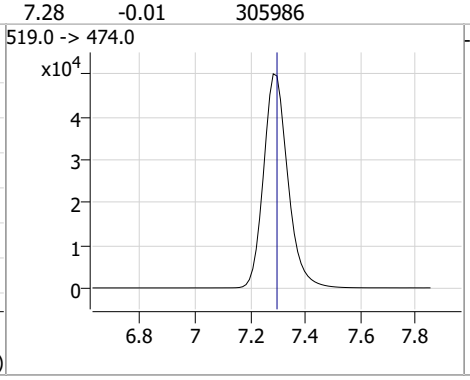


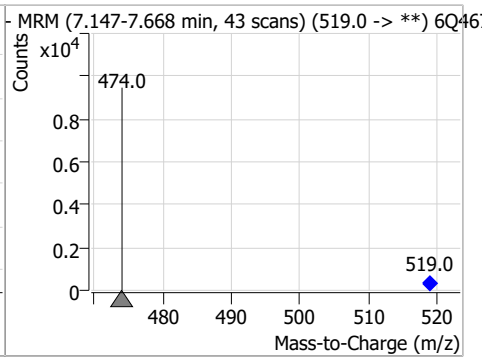


Perfluorinated Compounds by LC/MS/MS

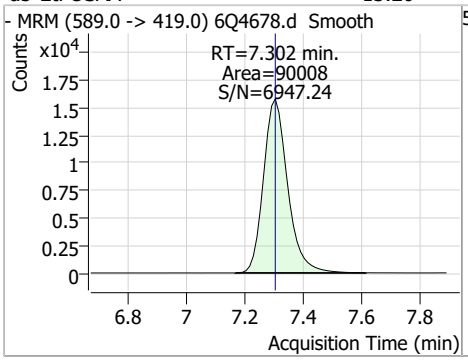
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.04	7.28	-0.01	305986				

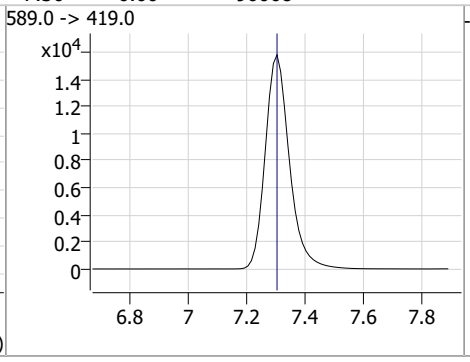


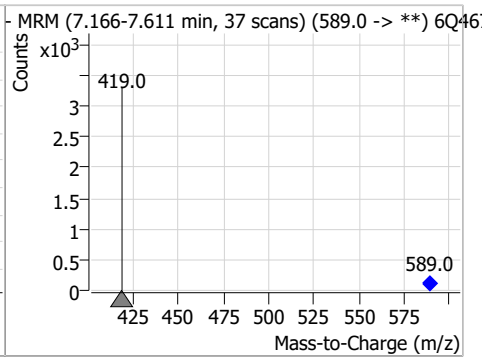




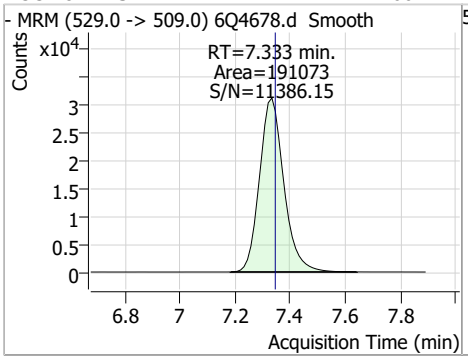
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.26	7.30	0.00	90008				

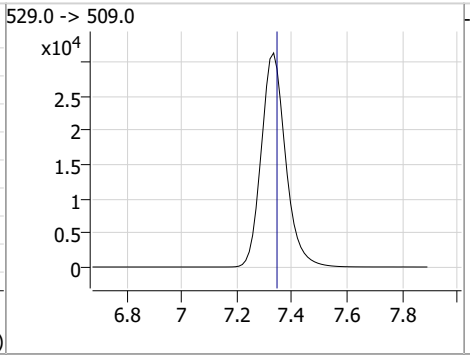


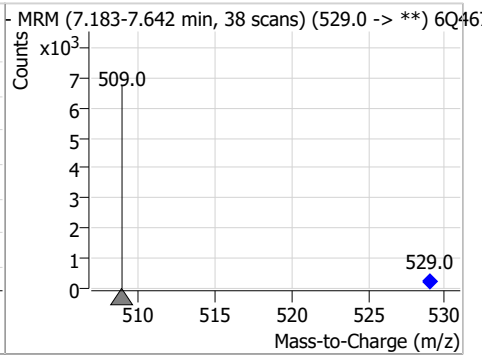




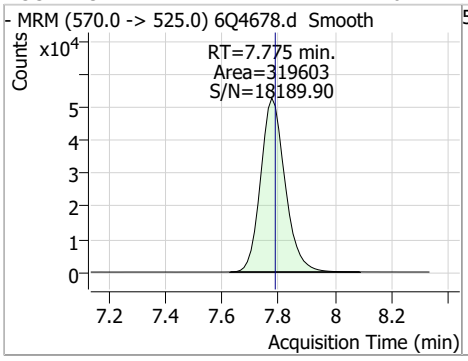
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.66	7.33	-0.01	191073				

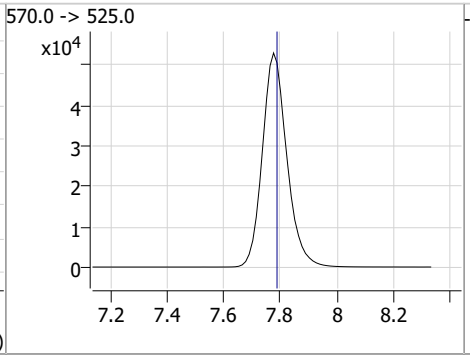


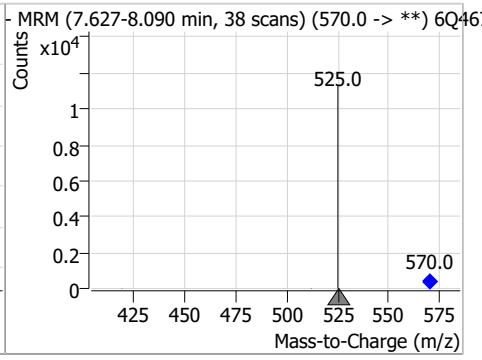




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.04	7.78	-0.01	319603				

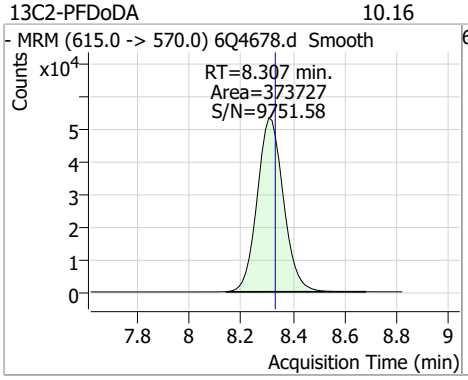


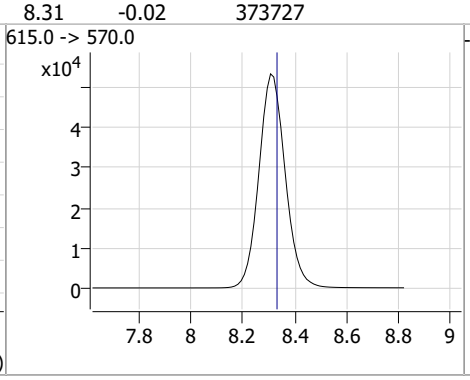


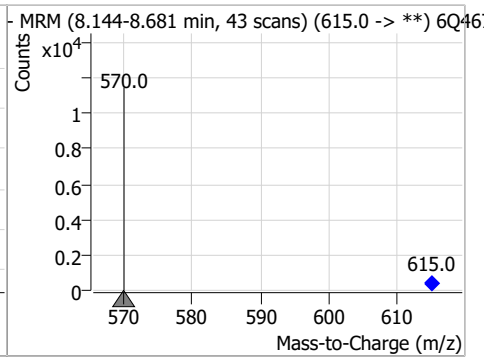


Perfluorinated Compounds by LC/MS/MS

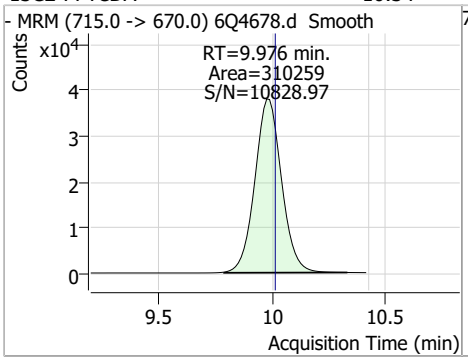
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.16	8.31	-0.02	373727				

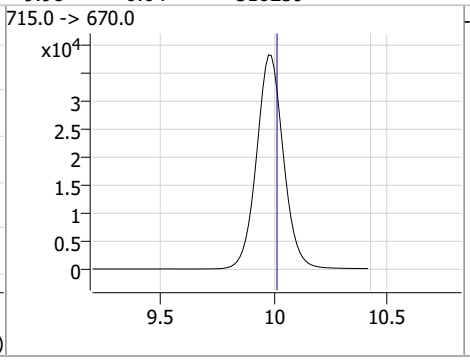


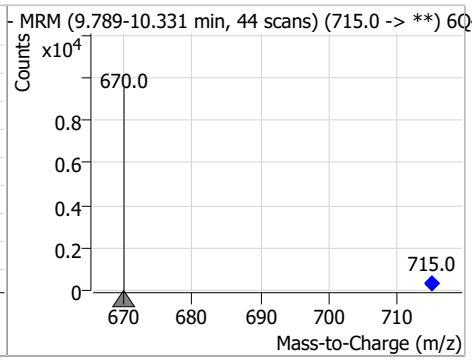




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.34	9.98	-0.04	310259				







Manual Integration Approval Summary

Sample Number: FA98286-24
Lab FileID: 6Q4678.D
Injection Time: 09/15/22 02:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.37	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:11

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4679.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 2:45:33 AM
Sample Name : fa98286-25
Vial : P5-E6
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	33600	20.00	µg/L	-0.087
M5-PFPeA	3.368	268.0 -> 223.0	78029	20.00	µg/L	-0.050
M5-PFHxA	4.548	318.0 -> 273.0	143173	20.00	µg/L	-0.025
M4-PFHpA	5.433	367.0 -> 322.0	178142	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	329638	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	407524	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	301844	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	318046	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	312305	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	197652	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	116802	20.00	µg/L	0.000
M3-PFBS	3.597	302.0 -> 99.0	20809	20.00	µg/L	-0.037
M3-PFHxS	5.463	402.0 -> 99.0	21191	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	30594	20.00	µg/L	-0.012
M2-4:2FTS	4.458	329.0 -> 309.0	181995	20.00	µg/L	-0.025
M2-6:2FTS	6.124	429.0 -> 409.0	260565	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	181703	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	121758	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3099	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	1368	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	86937	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.458	329.0 -> 309.0	181995	13.48	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.4%		
13C2-6:2FTS	6.124	429.0 -> 409.0	260565	15.27	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.3%		
13C2-8:2FTS	7.333	529.0 -> 509.0	181703	13.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.7%		
13C2-PFDoDA	8.307	615.0 -> 570.0	312305	8.49	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.5%		
13C2-PFTeDA	9.976	715.0 -> 670.0	197652	6.59	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 32.9%		
13C3-PFBS	3.597	302.0 -> 99.0	20809	13.59	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.9%		
13C3-PFHxS	5.463	402.0 -> 99.0	21191	15.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%		
13C4-PFBA	1.862	217.0 -> 172.0	33600	8.44	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 42.2%		
13C4-PFHpA	5.433	367.0 -> 322.0	178142	14.40	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.0%		
13C5-PFHxA	4.548	318.0 -> 273.0	143173	13.40	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%		
13C5-PFPeA	3.368	268.0 -> 223.0	78029	11.13	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.6%		
13C6-PFDA	7.283	519.0 -> 474.0	301844	14.84	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

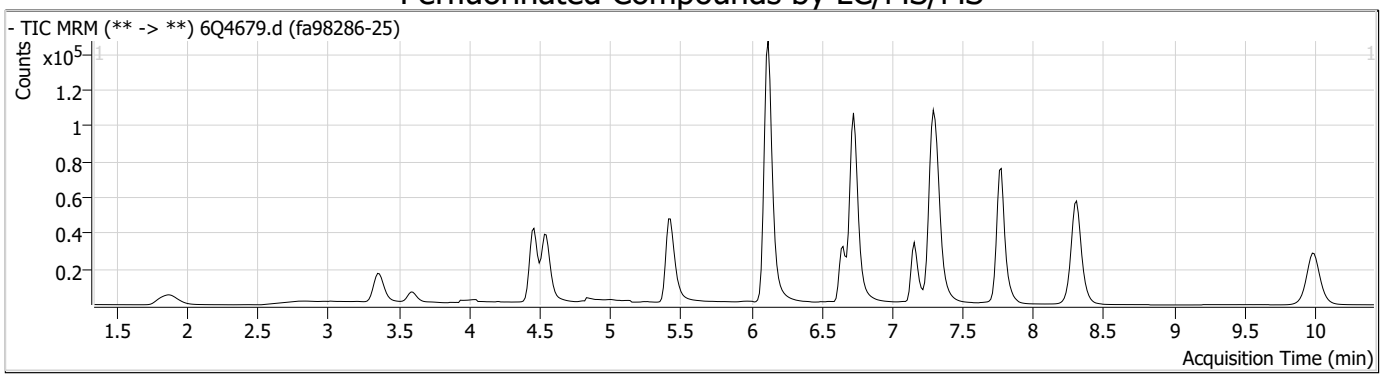
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	318046	11.98	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%			
13C8-FOSA	6.654	506.0 -> 78.0	116802	11.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.7%			
13C8-PFOA	6.126	421.0 -> 376.0	329638	15.54	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%			
13C8-PFOS	6.717	507.0 -> 99.0	30594	14.42	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%			
13C9-PFNA	6.732	472.0 -> 427.0	407524	15.82	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%			
d3-MeFOSAA	7.155	573.0 -> 419.0	121758	14.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.3%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3121	11.74	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.7%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	86880	12.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.868	213.0 -> 169.0	19640	26.78	µg/L		100
PFBS	3.590	299.0 -> 80.0	3285	0.95	µg/L		98
		299.0 -> 99.0	1197				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.421	363.0 -> 319.0	17260	1.49	µg/L		99
		363.0 -> 169.0	2447				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.549	313.0 -> 269.0	12741	1.69	µg/L		98
		313.0 -> 119.0	390				
PFHxS	5.465	399.0 -> 80.0	3942	1.30	µg/L	m	98
		399.0 -> 99.0	1848				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.126	413.0 -> 369.0	26693	1.50	µg/L	m	99
		413.0 -> 169.0	4231				
PFOS	6.516	499.0 -> 80.0	1847	0.65	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

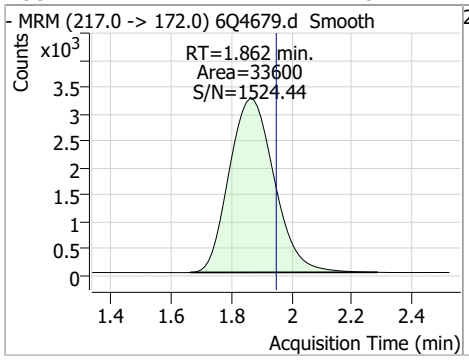
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	858				
PFPeA	3.358	263.0 -> 219.0	7372	2.24	µg/L		100
PFPeS	4.656	349.0 -> 80.0	1093	0.38	µg/L	m	97
		349.0 -> 99.0	522				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	4.232	285.0 -> 169.0	0		µg/L	m	1
		285.0 -> 185.0	0				
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

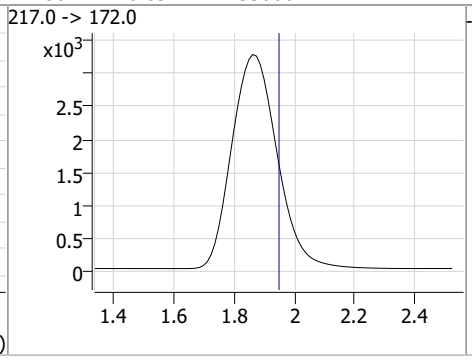
 # = Qualifier out of range, m = manually integrated, + = Area summed

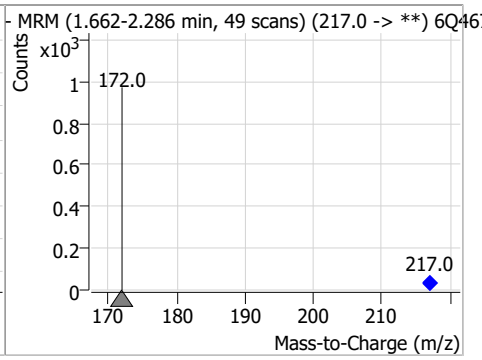
Perfluorinated Compounds by LC/MS/MS



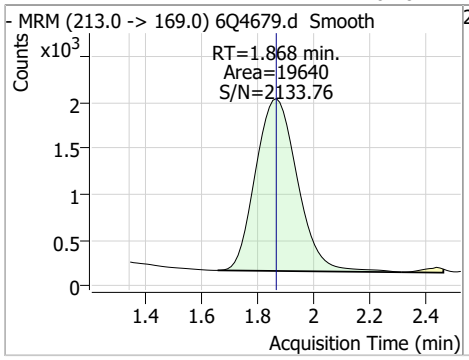
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.44	1.86	-0.09	33600				

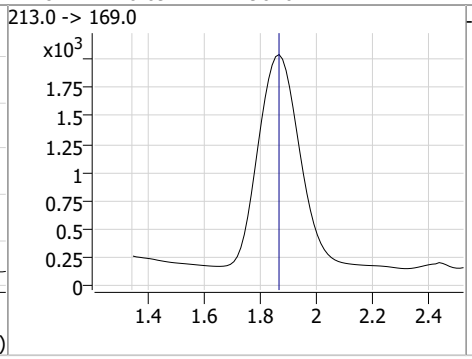


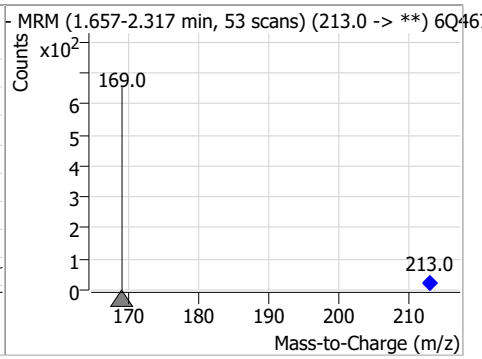




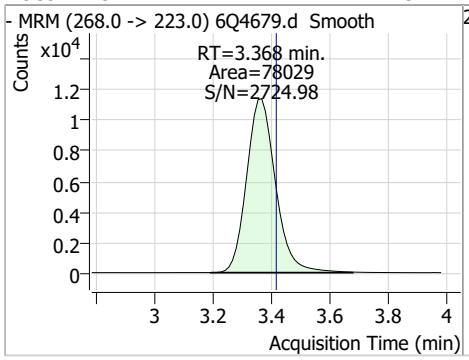
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	26.78	1.87	-0.09	19640				

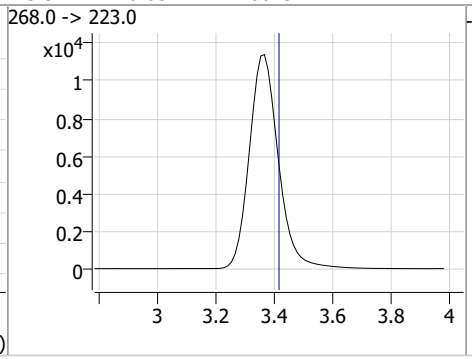


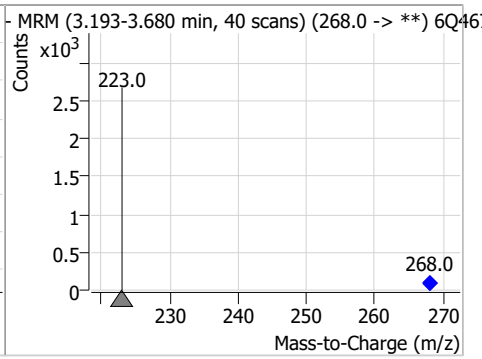




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.13	3.37	-0.05	78029				

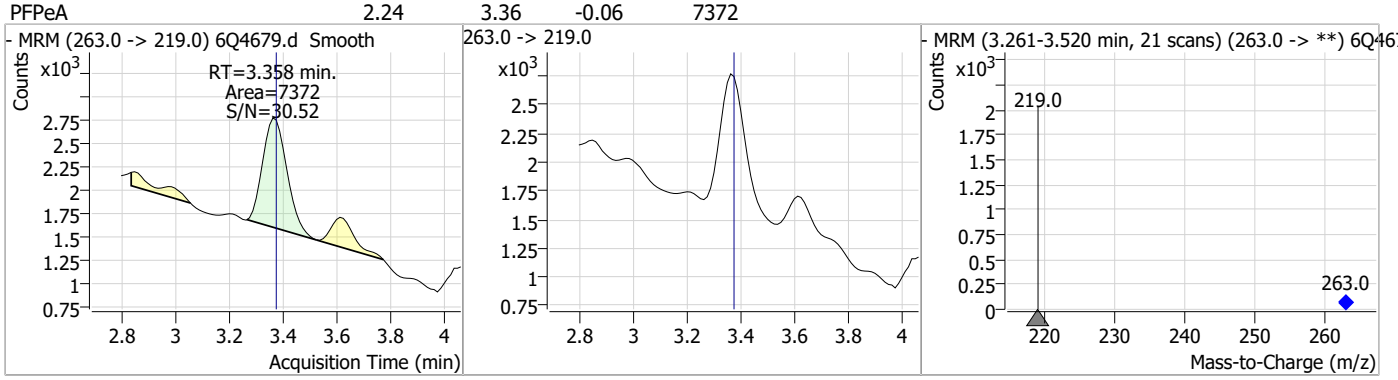




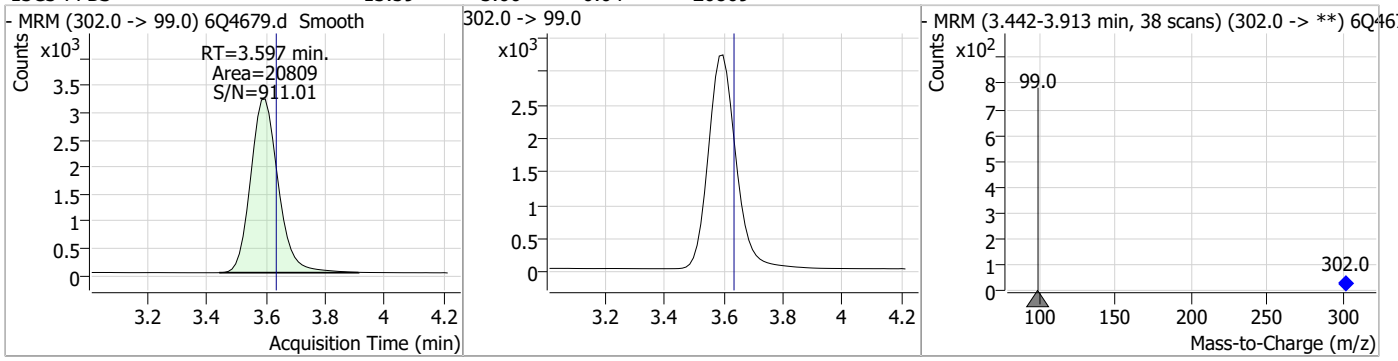


Perfluorinated Compounds by LC/MS/MS

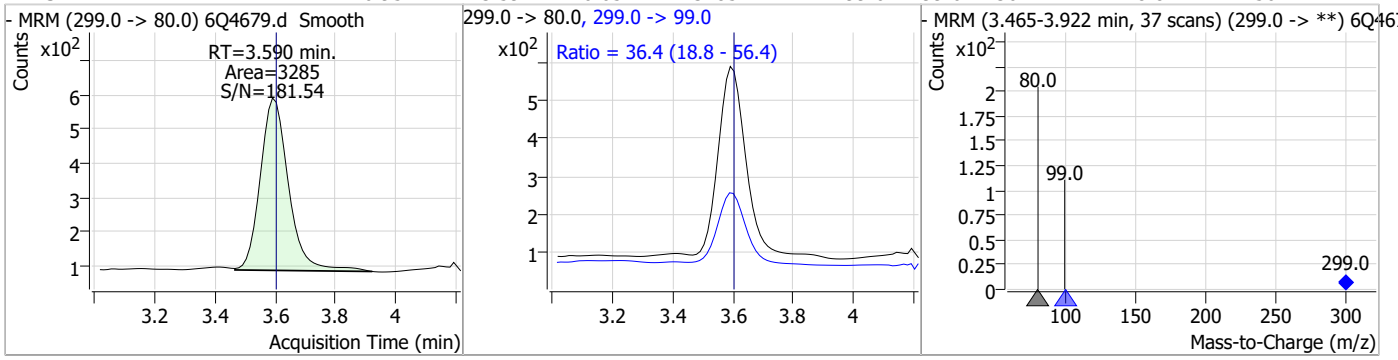
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.24	3.36	-0.06	7372				



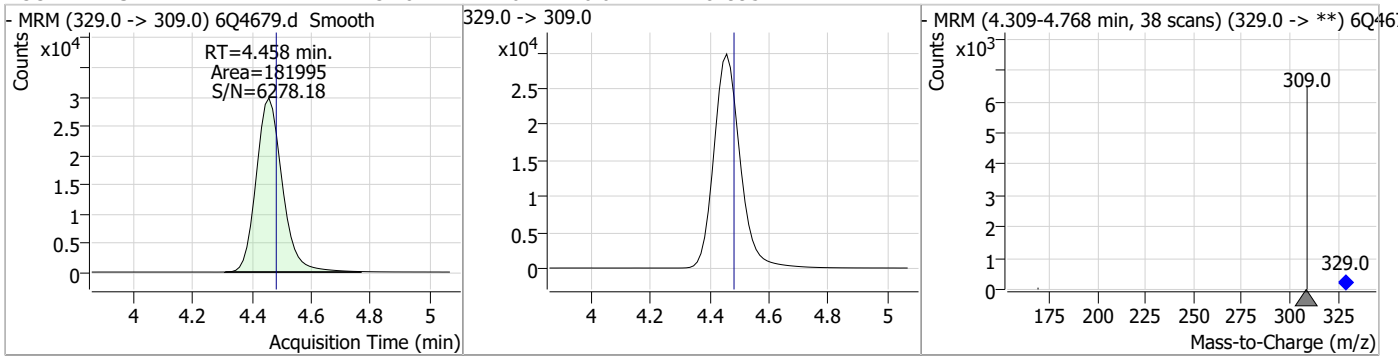
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.59	3.60	-0.04	20809				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.95	3.59	-0.05	3285	299.0 -> 99.0	36.4	18.8	56.4

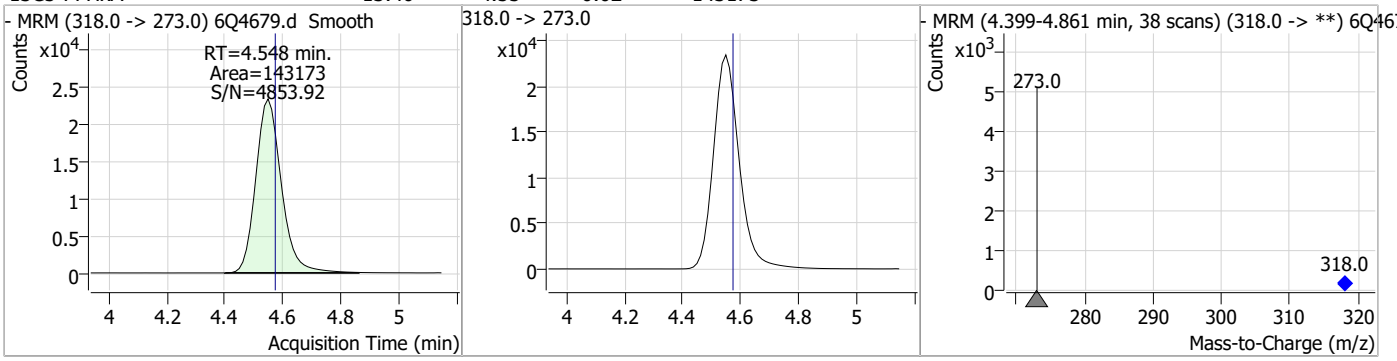


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.48	4.46	-0.02	181995				

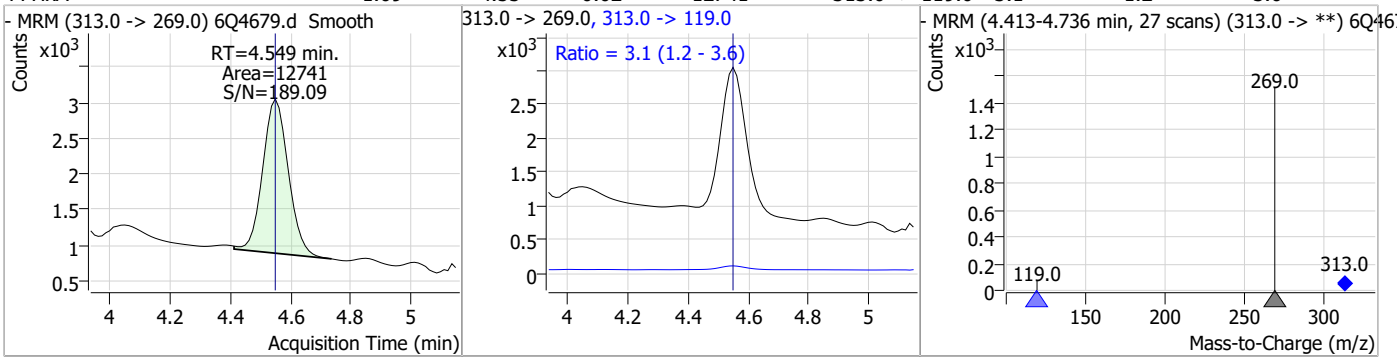


Perfluorinated Compounds by LC/MS/MS

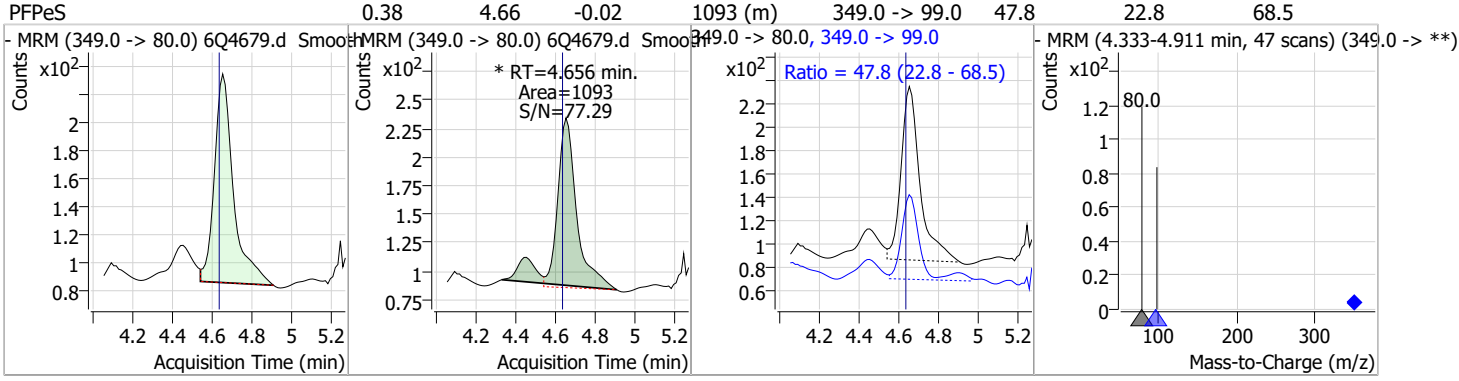
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.40	4.55	-0.02	143173				



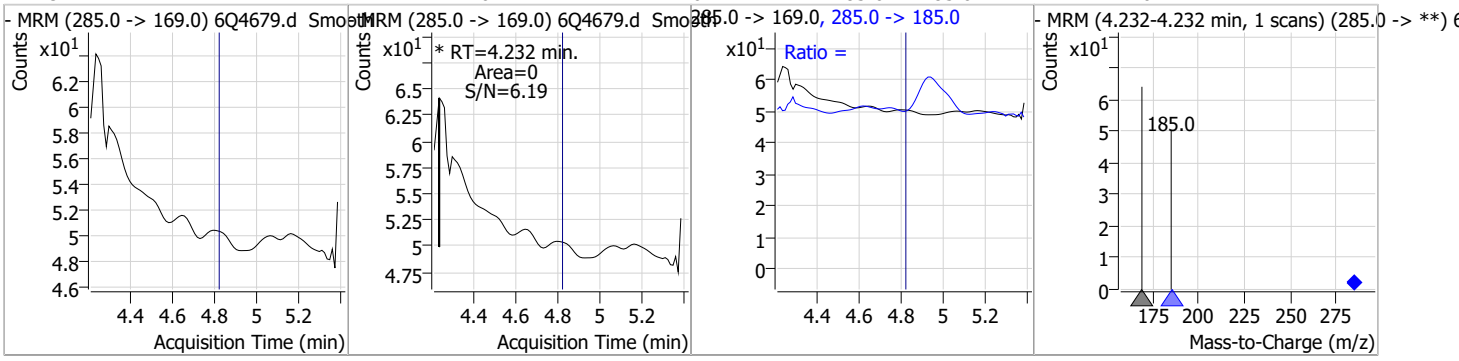
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.69	4.55	-0.02	12741	313.0 -> 119.0	3.1	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.38	4.66	-0.02	1093 (m)	349.0 -> 99.0	47.8	22.8	68.5

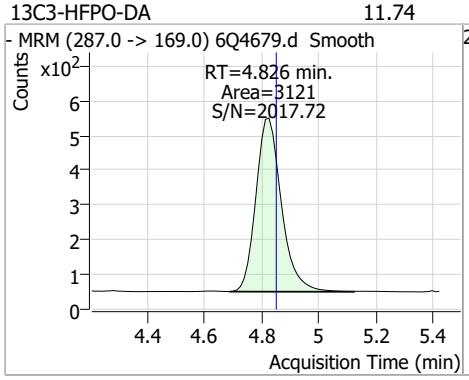


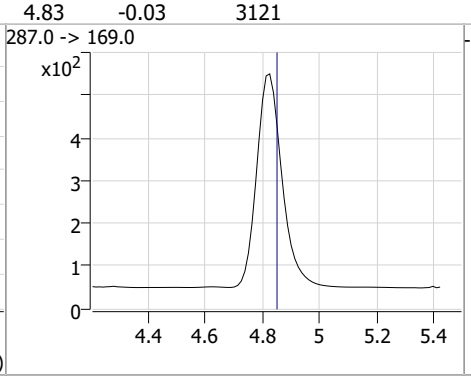
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA		0		0	285.0 -> 185.0		7.0	21.1

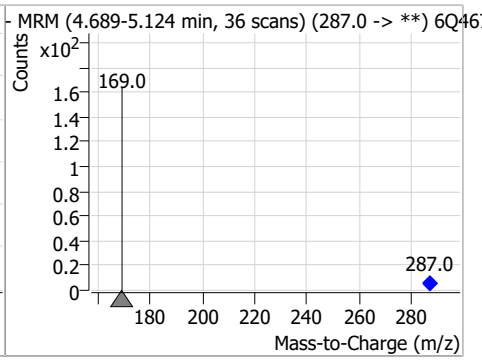


Perfluorinated Compounds by LC/MS/MS

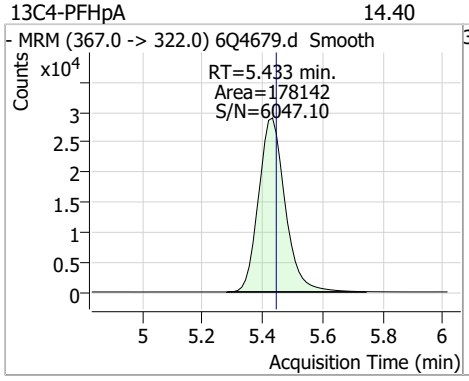
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.74	4.83	-0.03	3121				

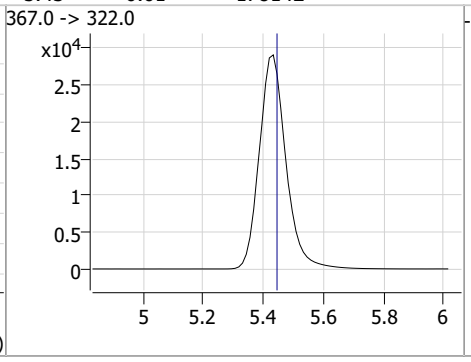


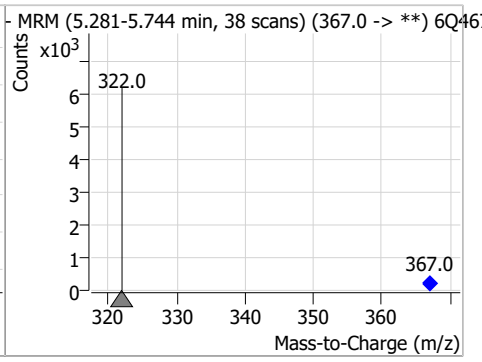




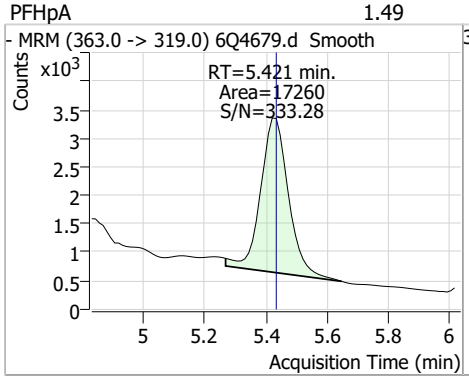
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.40	5.43	-0.01	178142				

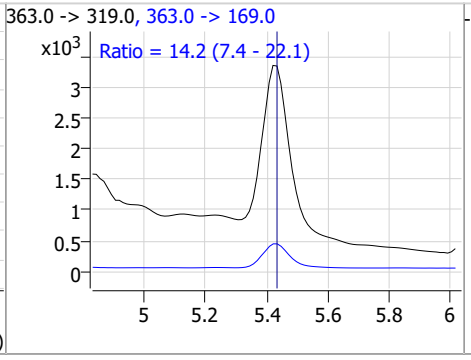


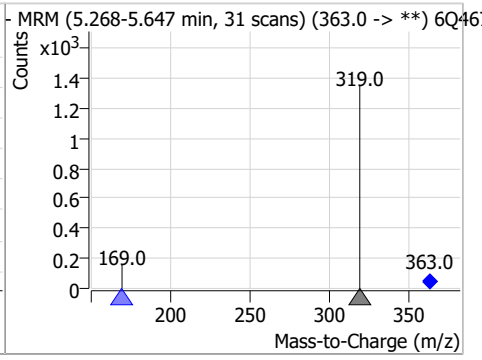




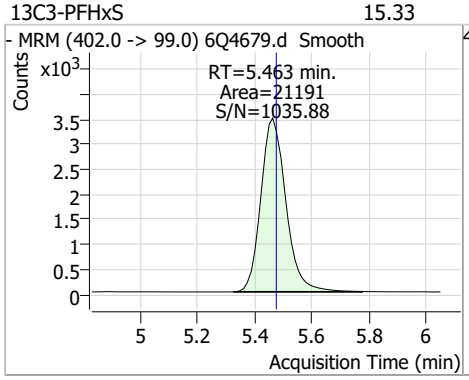
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.49	5.42	-0.03	17260	363.0 -> 169.0	14.2	7.4	22.1

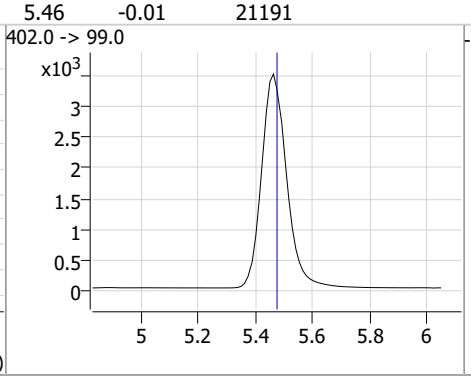


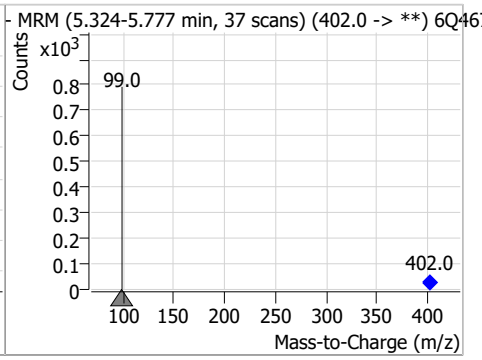




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.33	5.46	-0.01	21191				

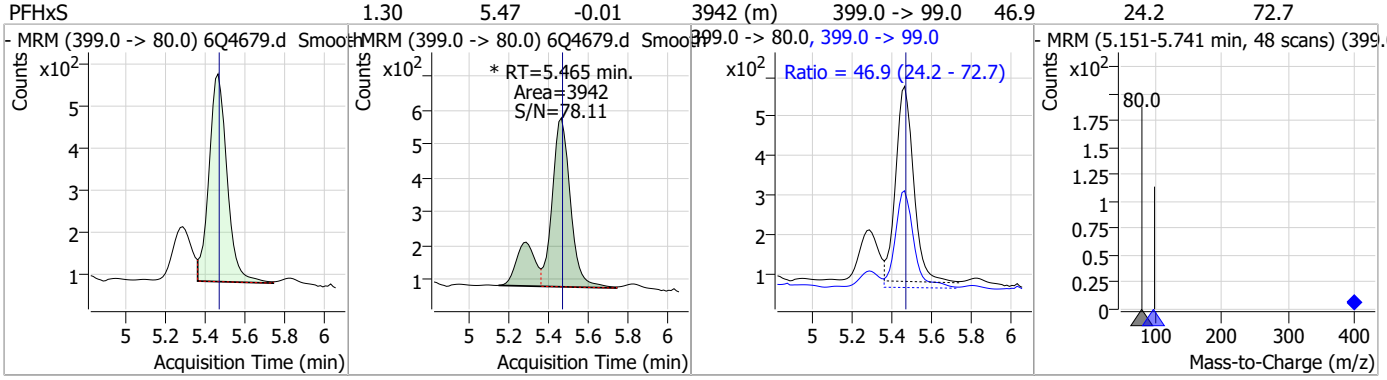




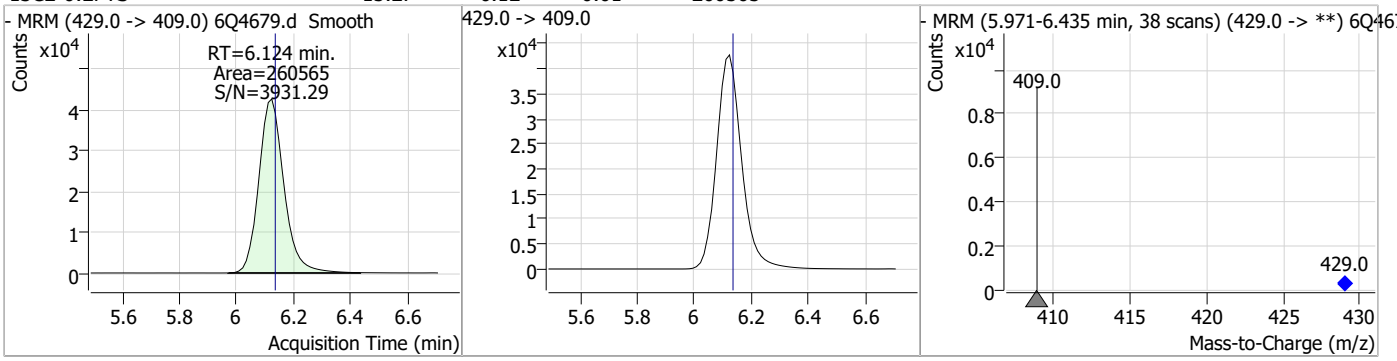


Perfluorinated Compounds by LC/MS/MS

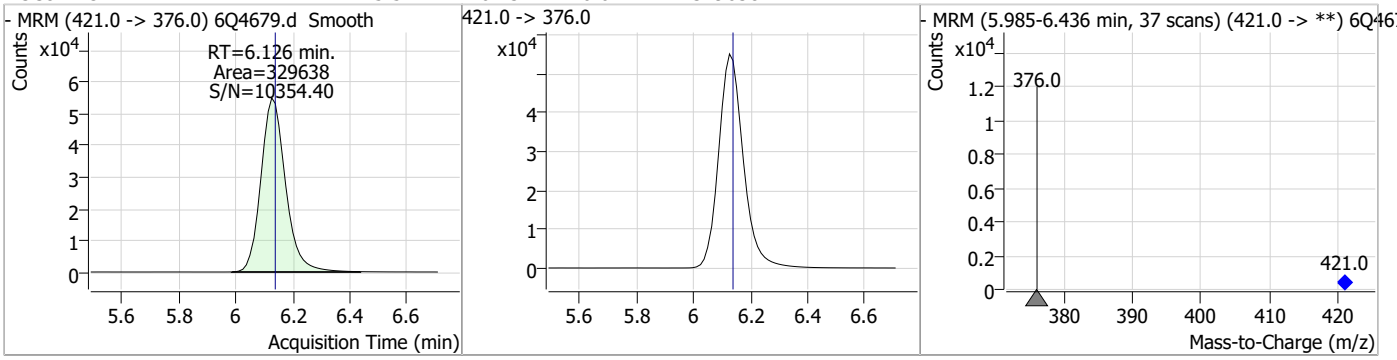
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.30	5.47	-0.01	3942 (m)	399.0 -> 99.0	46.9	24.2	72.7



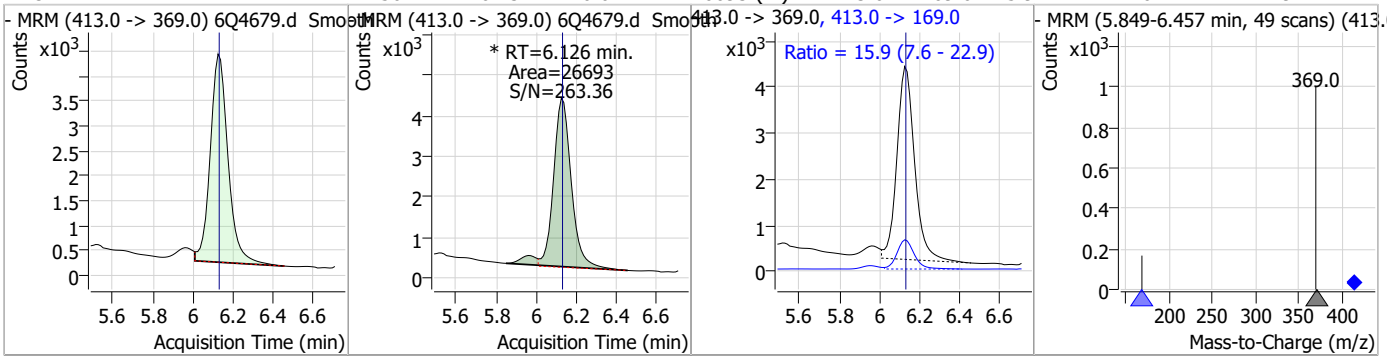
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.27	6.12	-0.01	260565				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.54	6.13	-0.01	329638				

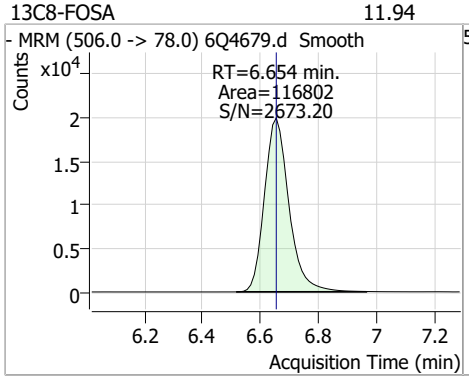


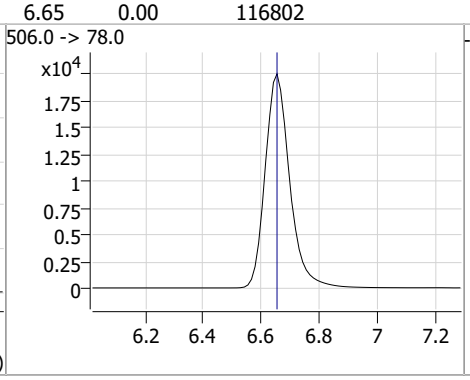
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.50	6.13	-0.01	26693 (m)	413.0 -> 169.0	15.9	7.6	22.9

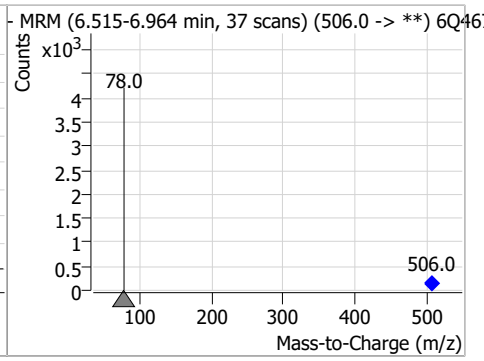


Perfluorinated Compounds by LC/MS/MS

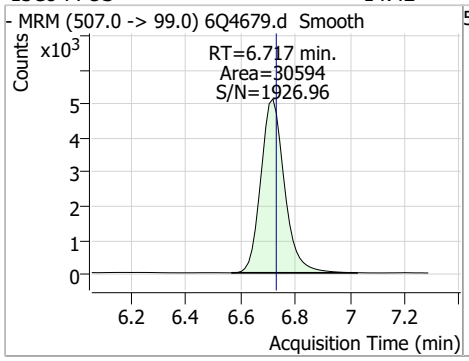
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.94	6.65	0.00	116802				

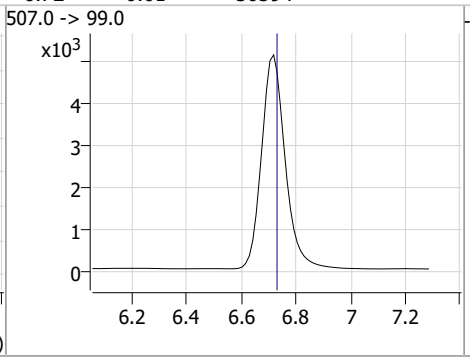


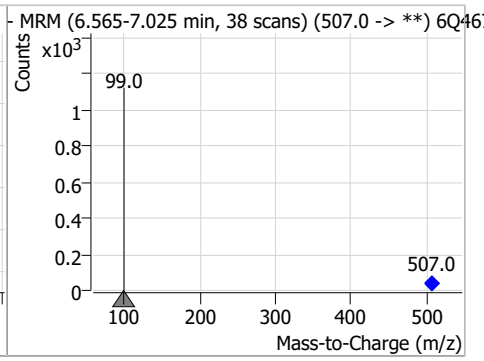




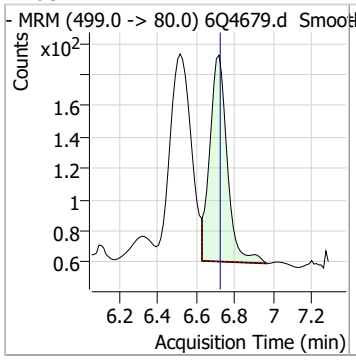
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.42	6.72	-0.01	30594				

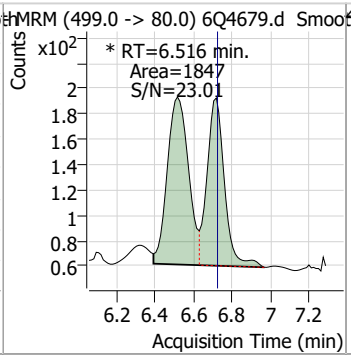


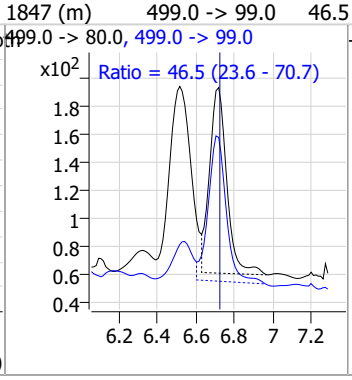


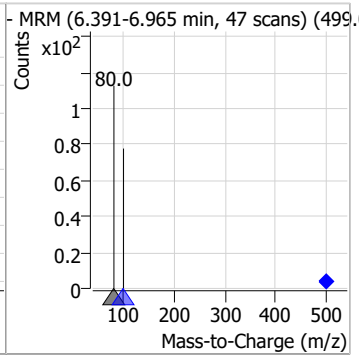


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.65	6.52	-0.21	1847 (m)	499.0 -> 99.0	46.5	23.6	70.7

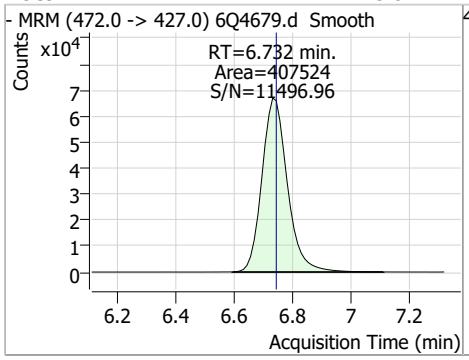


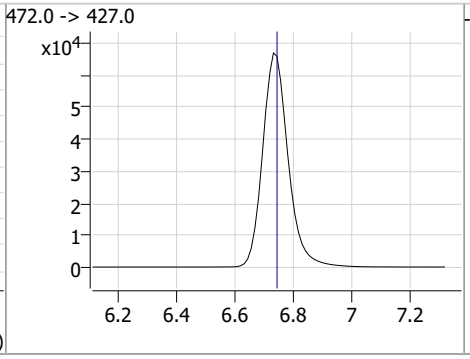


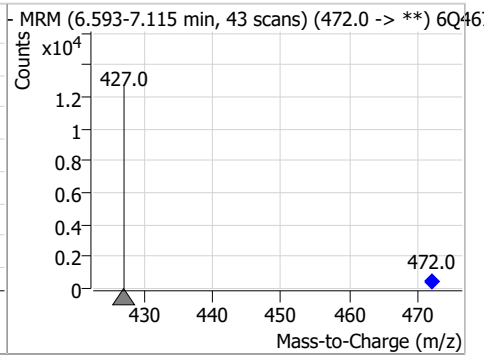




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.82	6.73	-0.01	407524				

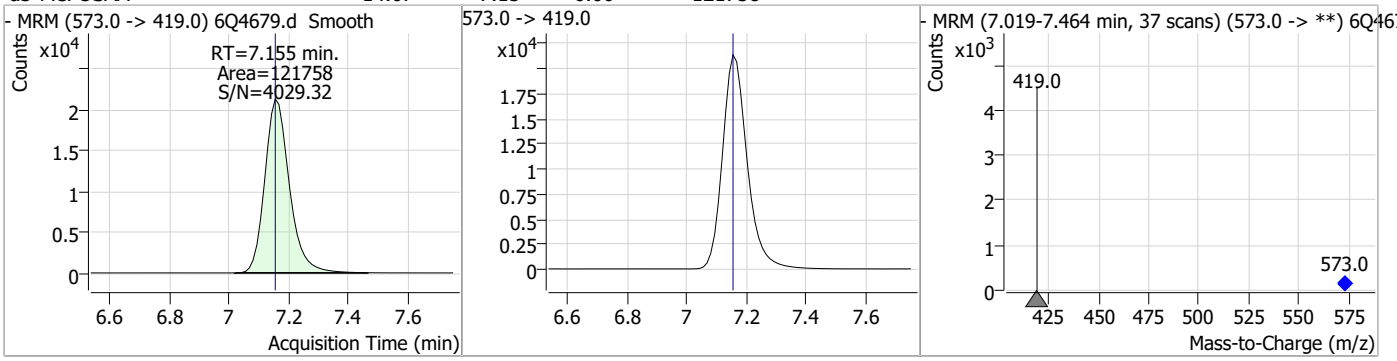




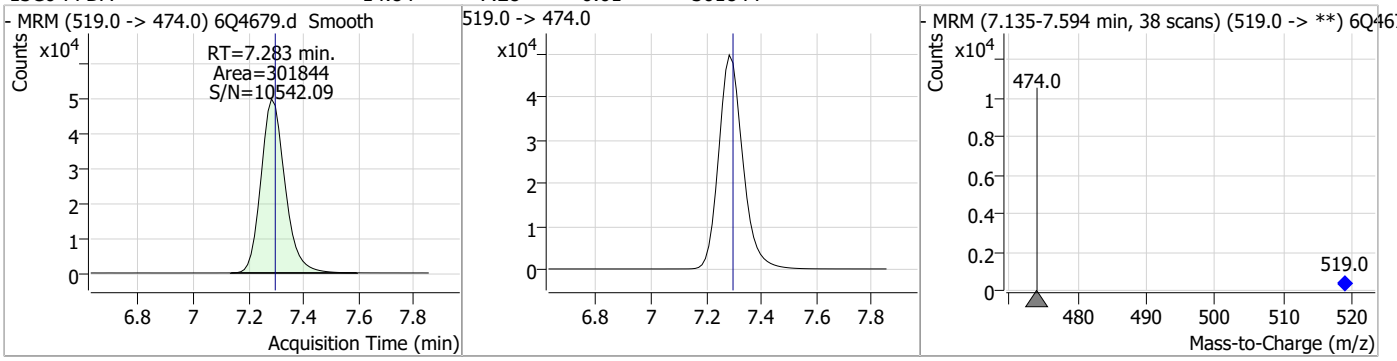


Perfluorinated Compounds by LC/MS/MS

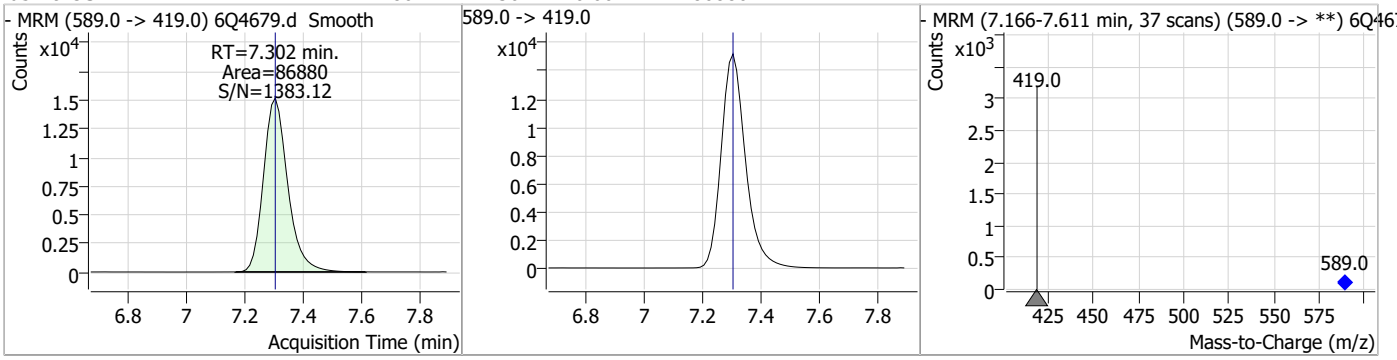
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.07	7.15	0.00	121758				



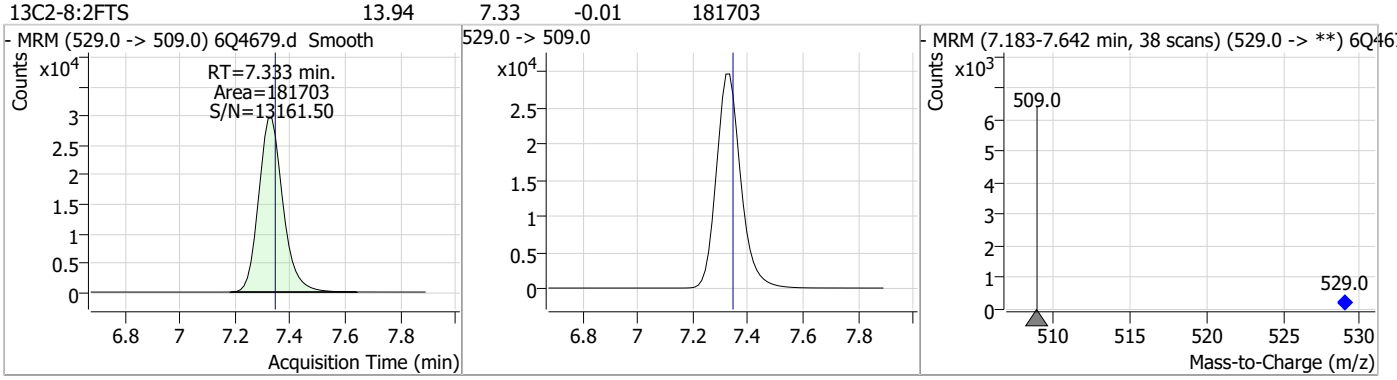
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.84	7.28	-0.01	301844				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.80	7.30	0.00	86880				

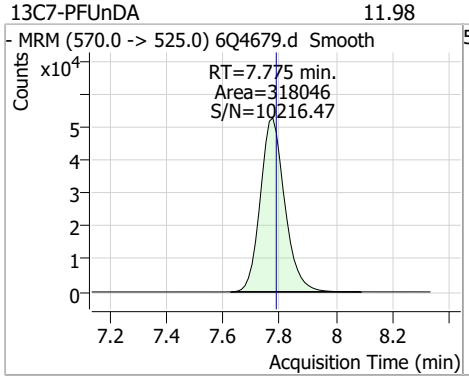


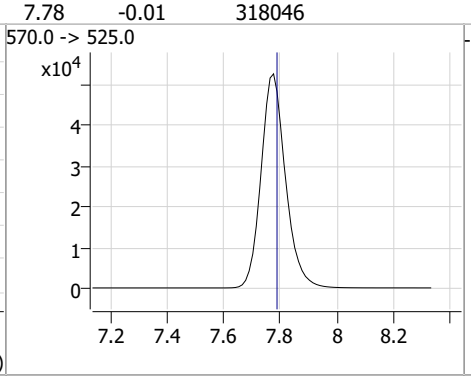
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.94	7.33	-0.01	181703				

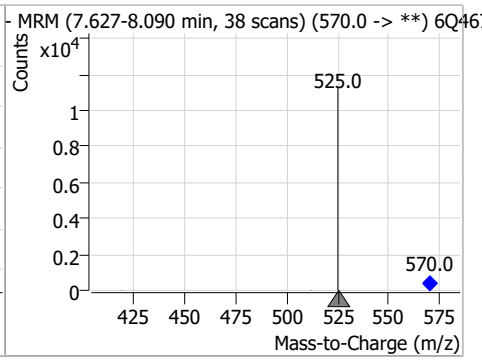


Perfluorinated Compounds by LC/MS/MS

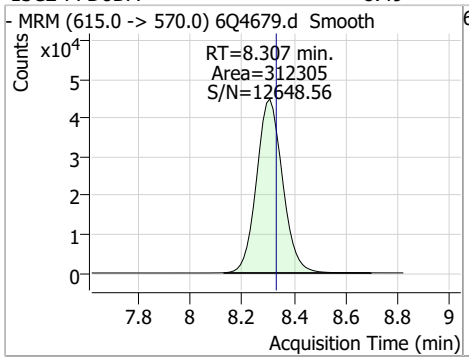
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.98	7.78	-0.01	318046				

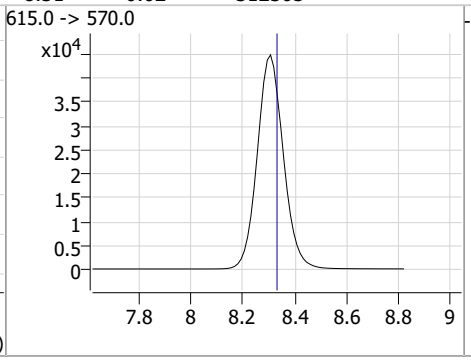


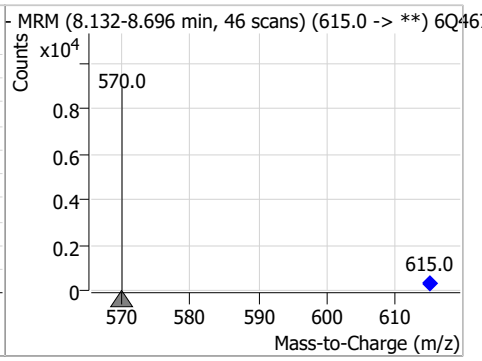




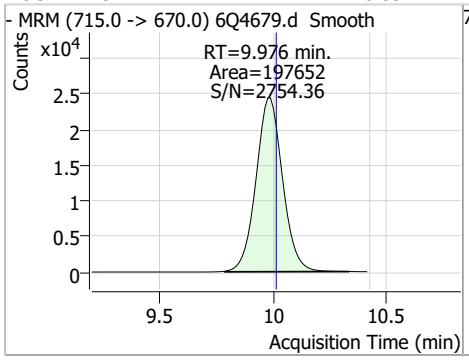
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.49	8.31	-0.02	312305				

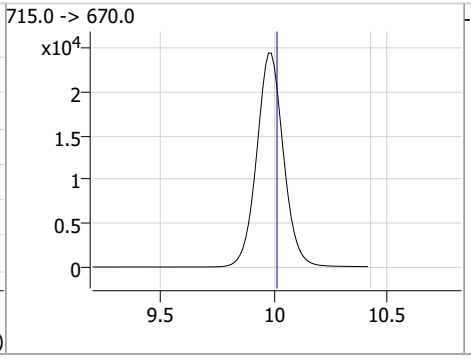


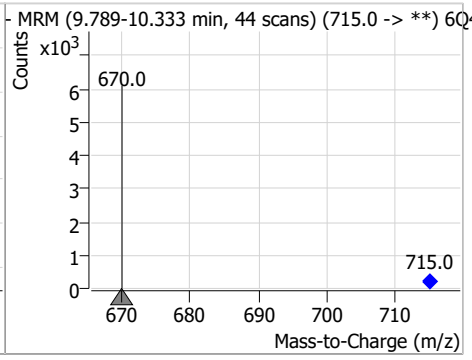




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	6.59	9.98	-0.04	197652				







Manual Integration Approval Summary

Sample Number: FA98286-25
Lab FileID: 6Q4679.D
Injection Time: 09/15/22 02:45
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:05 Norman Farmer
Supervisor approved: 09/19/22 16:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.66	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.52	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:11

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4749.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 3:54:55 AM
Sample Name : fa98286-25
Vial : P2-B2
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.924	217.0 -> 172.0	10563	4.00	µg/L	-0.025
M5-PFPeA	3.393	268.0 -> 223.0	20973	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	34745	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	40813	4.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	74041	4.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	91569	4.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	62734	4.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	68116	4.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	66234	4.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	43091	4.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	25073	4.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	4919	4.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	4638	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6517	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	41110	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	55737	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	40443	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	25046	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	821	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	821	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	18616	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	41110	3.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.2%		
13C2-6:2FTS	6.124	429.0 -> 409.0	55737	3.27	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%		
13C2-8:2FTS	7.333	529.0 -> 509.0	40443	3.10	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.5%		
13C2-PFDoDA	8.307	615.0 -> 570.0	66234	1.80	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.0%		
13C2-PFTeDA	9.976	715.0 -> 670.0	43091	1.44	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.2%		
13C3-PFBS	3.610	302.0 -> 99.0	4919	3.21	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%		
13C3-PFHxS	5.463	402.0 -> 99.0	4638	3.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%		
13C4-PFBA	1.924	217.0 -> 172.0	10563	2.65	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%		
13C4-PFHpA	5.433	367.0 -> 322.0	40813	3.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.5%		
13C5-PFHxA	4.561	318.0 -> 273.0	34745	3.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%		
13C5-PFPeA	3.393	268.0 -> 223.0	20973	2.99	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.0%		
13C6-PFDA	7.283	519.0 -> 474.0	62734	3.08	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

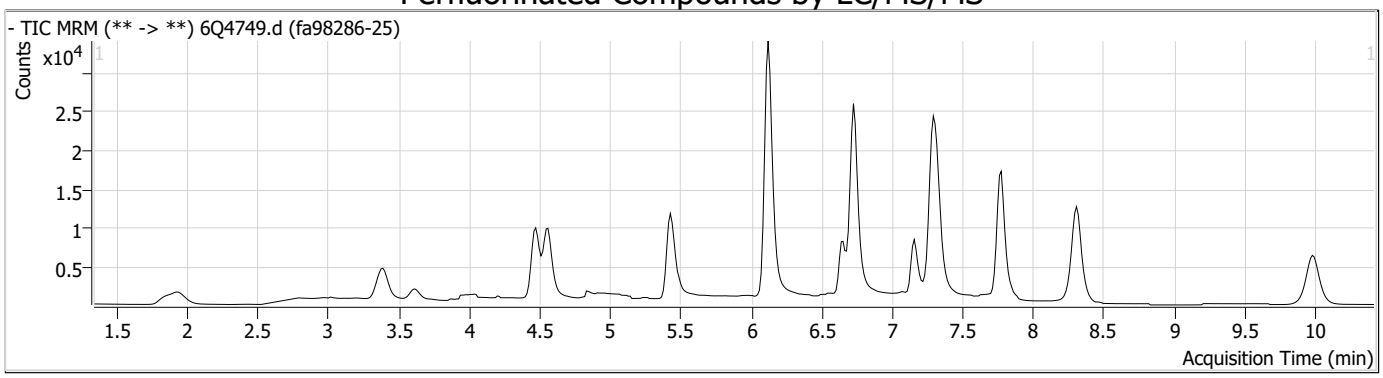
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%			
13C7-PFUnDA	7.775	570.0 -> 525.0	68116	2.57	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%			
13C8-FOSA	6.654	506.0 -> 78.0	25073	2.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%			
13C8-PFOA	6.126	421.0 -> 376.0	74041	3.49	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.4%			
13C8-PFOS	6.717	507.0 -> 99.0	6517	3.07	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%			
13C9-PFNA	6.732	472.0 -> 427.0	91569	3.55	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.8%			
d3-MeFOSAA	7.155	573.0 -> 419.0	25046	2.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.5%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	821	3.09	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.4%			
d3-MeFOSA	7.085	515.0 -> 169.0	821	0.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%			
d5-EtFOSAA	7.302	589.0 -> 419.0	18633	2.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.918	213.0 -> 169.0	6069	5.26	µg/L		100
PFBS	3.615	299.0 -> 80.0	772	0.19	µg/L		97
		299.0 -> 99.0	277				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	3677	0.28	µg/L		97
		363.0 -> 169.0	590				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.562	313.0 -> 269.0	3069	0.34	µg/L		99
		313.0 -> 119.0	80				
PFHxS	5.465	399.0 -> 80.0	930	0.28	µg/L	m	96
		399.0 -> 99.0	426				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.138	413.0 -> 369.0	5397	0.27	µg/L		97
		413.0 -> 169.0	900				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

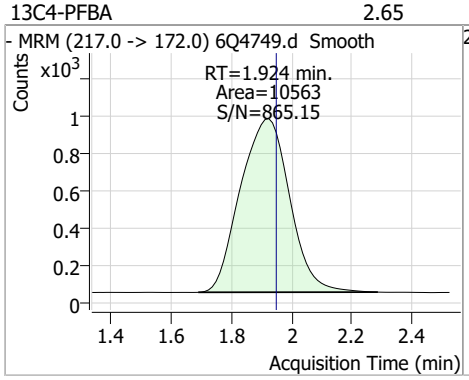
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.383	263.0 -> 219.0	2008	0.45	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

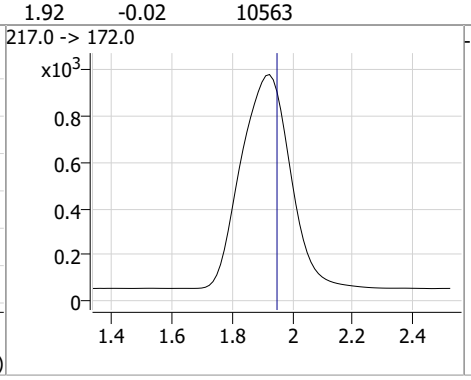
 # = Qualifier out of range, m = manually integrated, + = Area summed

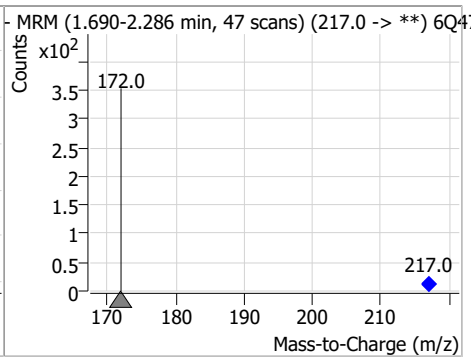
Perfluorinated Compounds by LC/MS/MS



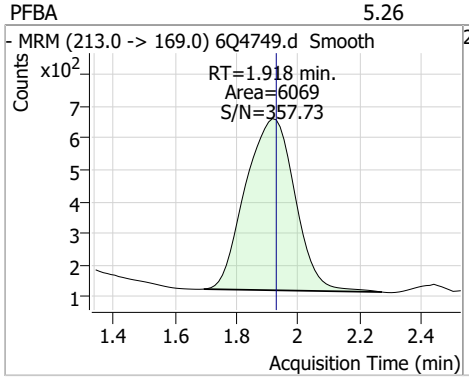
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.65	1.92	-0.02	10563				

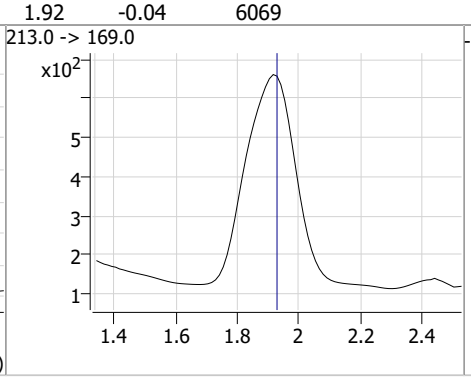


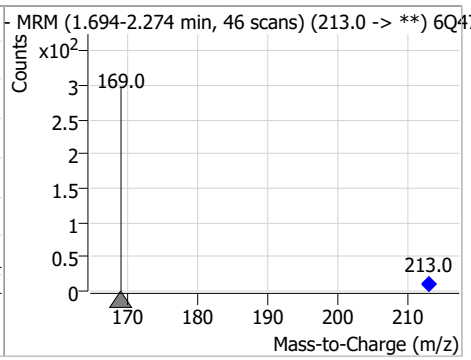




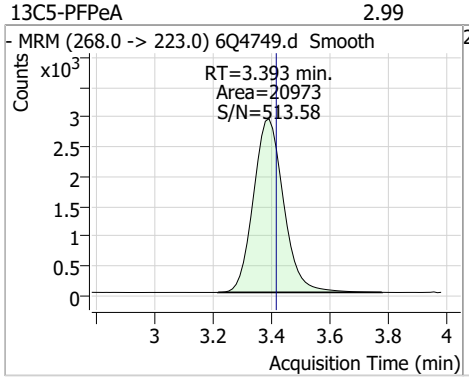
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.26	1.92	-0.04	6069				

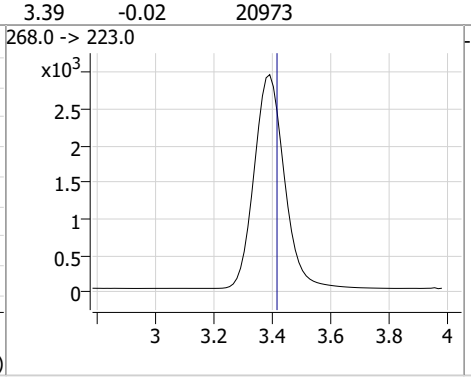


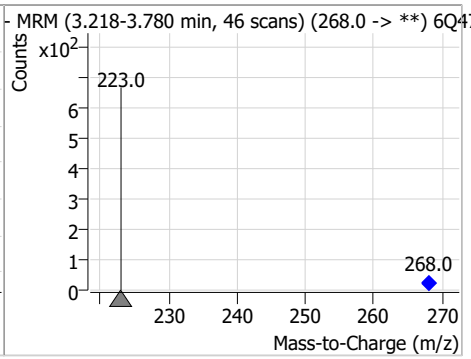




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.99	3.39	-0.02	20973				

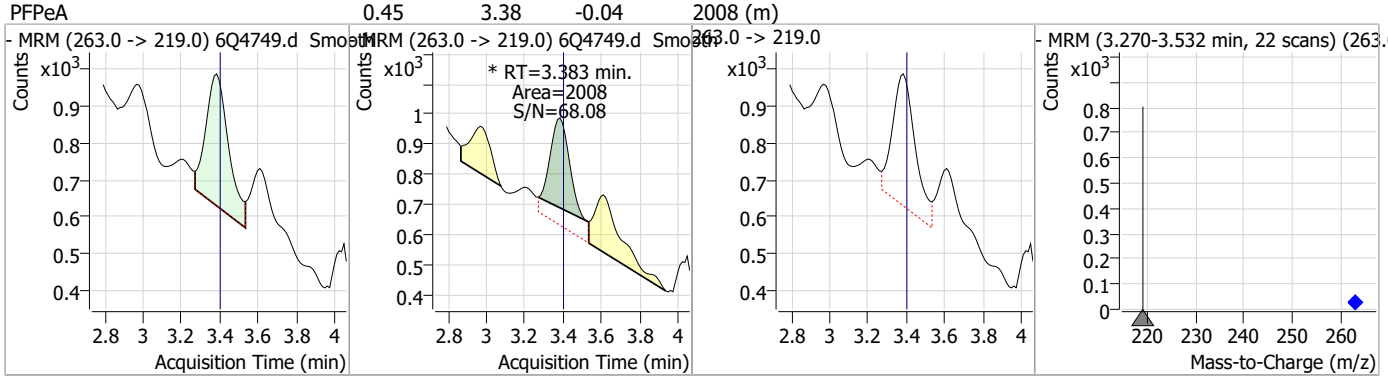




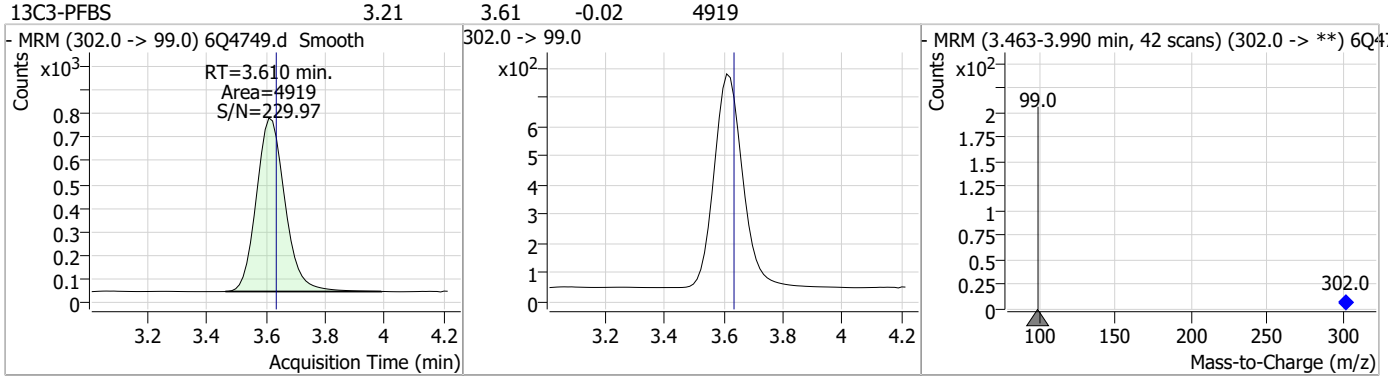


Perfluorinated Compounds by LC/MS/MS

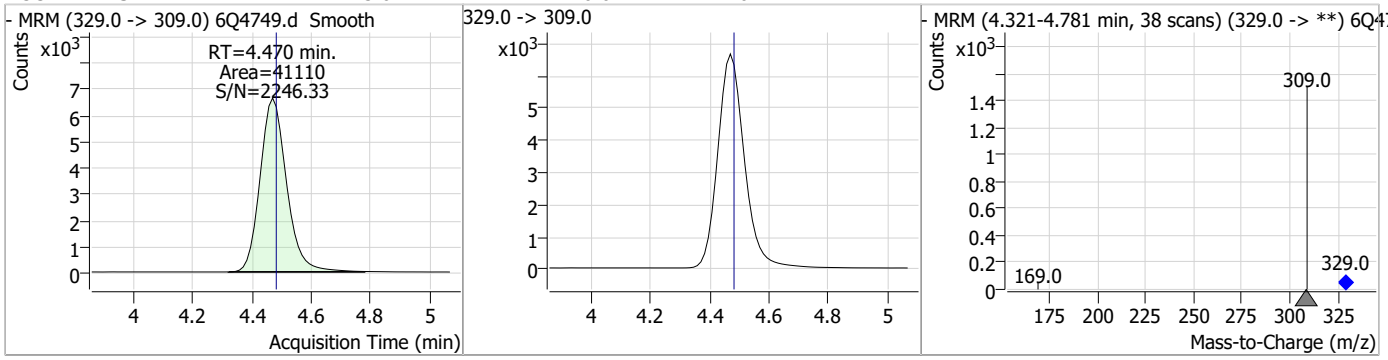
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.45	3.38	-0.04	2008 (m)				



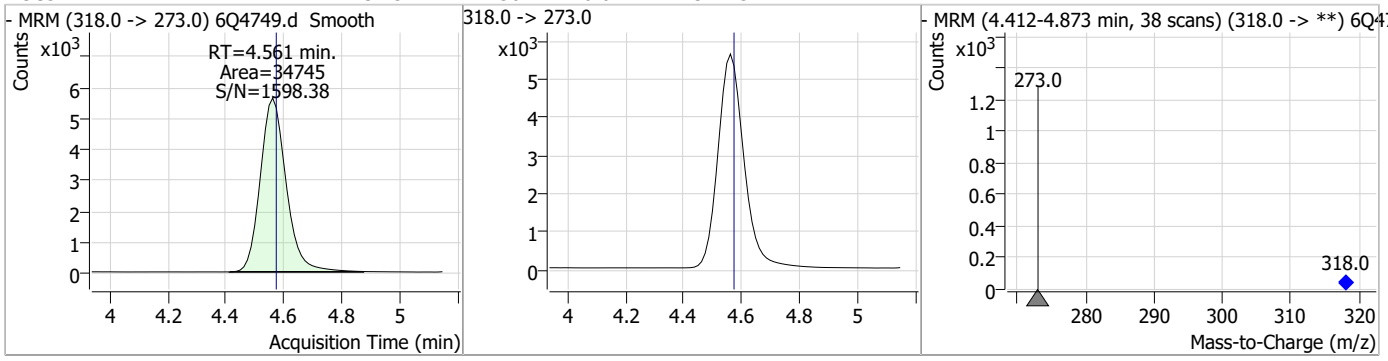
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.21	3.61	-0.02	4919				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.04	4.47	-0.01	41110				

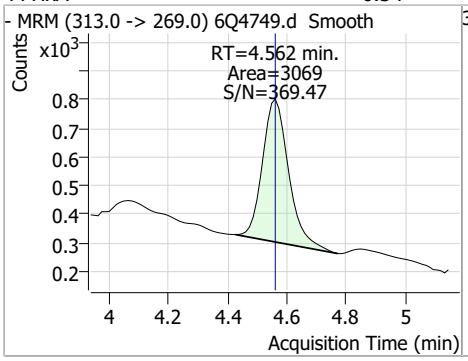


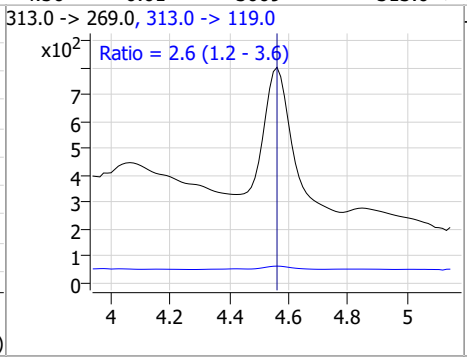
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.25	4.56	-0.01	34745				

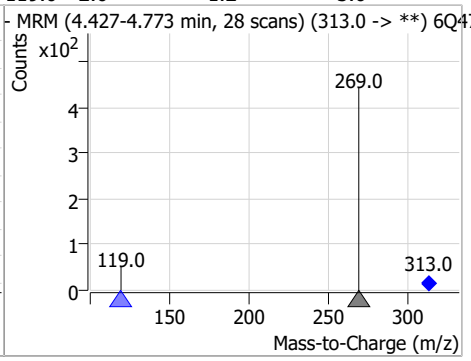


Perfluorinated Compounds by LC/MS/MS

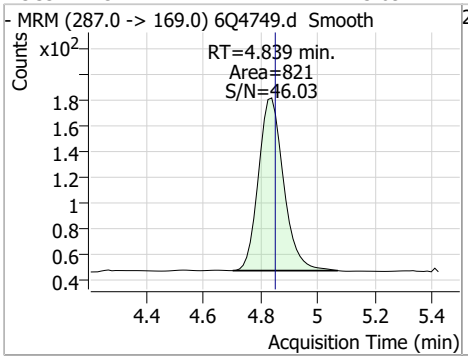
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.34	4.56	-0.01	3069	313.0 -> 119.0	2.6	1.2	3.6

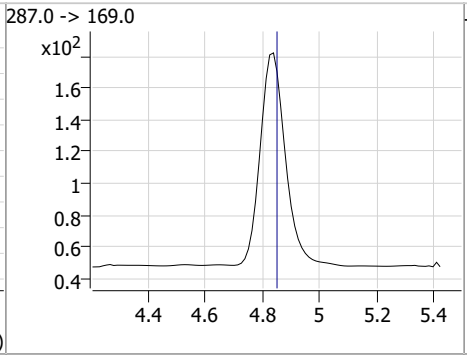


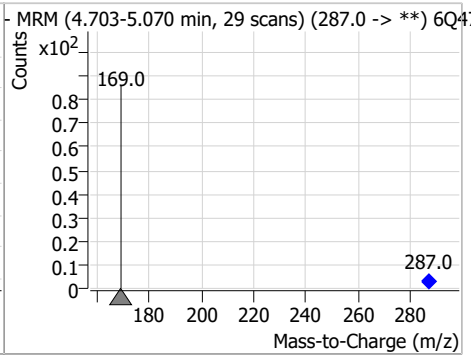




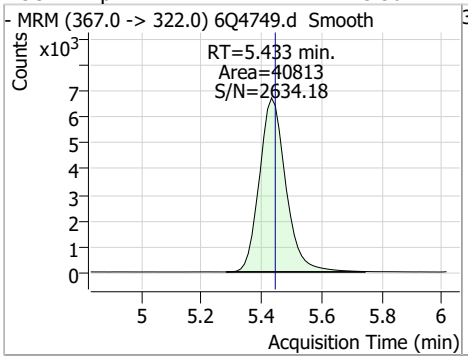
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.09	4.84	-0.01	821				

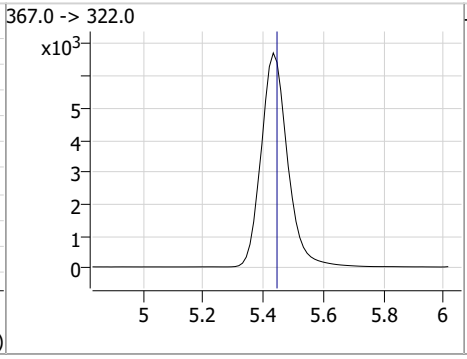


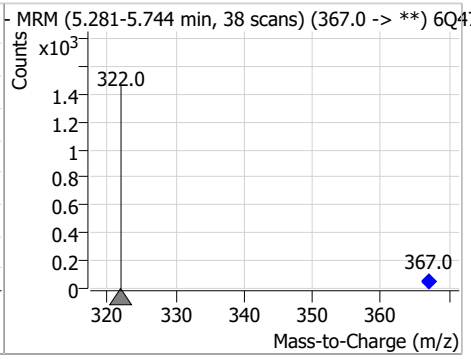




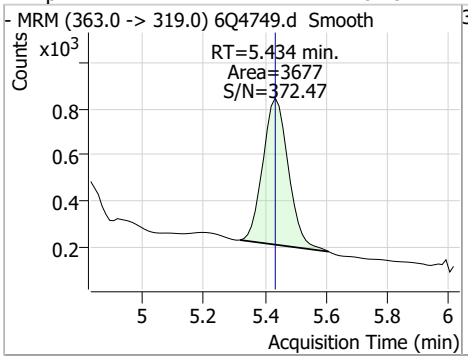
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.30	5.43	-0.01	40813				

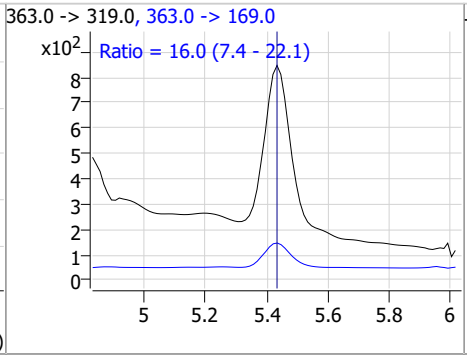


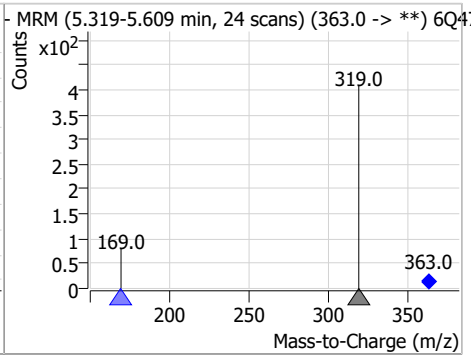




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.28	5.43	-0.01	3677	363.0 -> 169.0	16.0	7.4	22.1

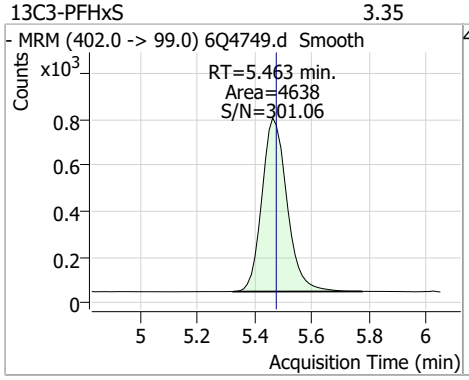


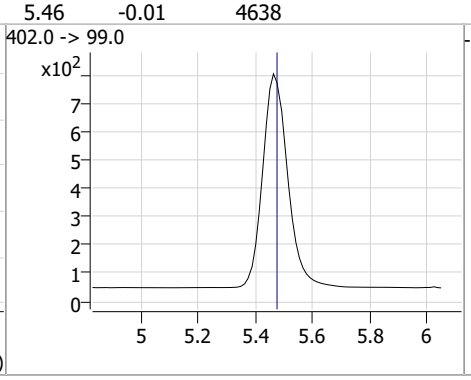


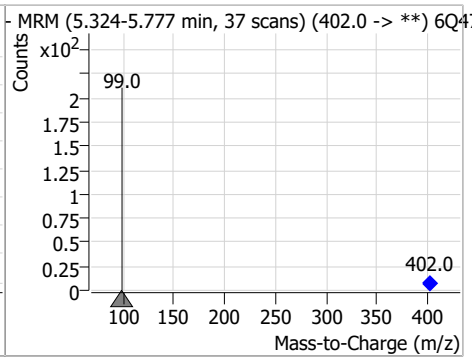


Perfluorinated Compounds by LC/MS/MS

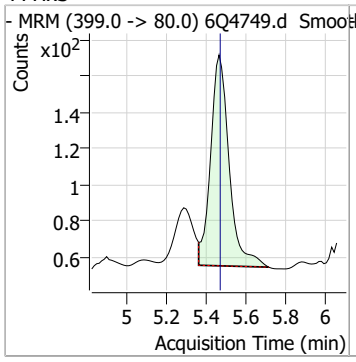
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.35	5.46	-0.01	4638				

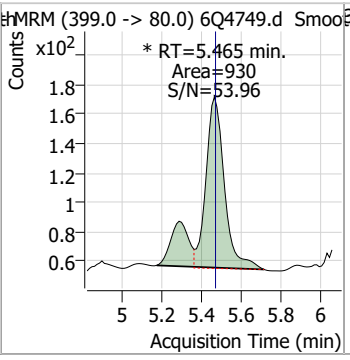


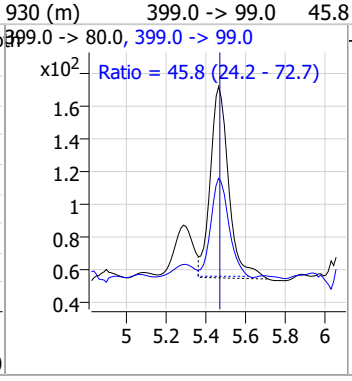


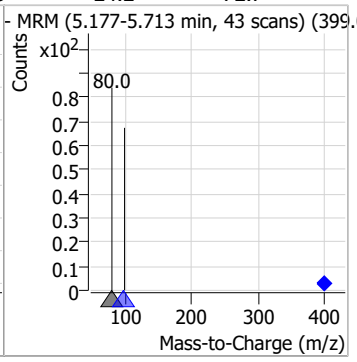


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.28	5.47	-0.01	930 (m)	399.0 -> 99.0	45.8	24.2	72.7

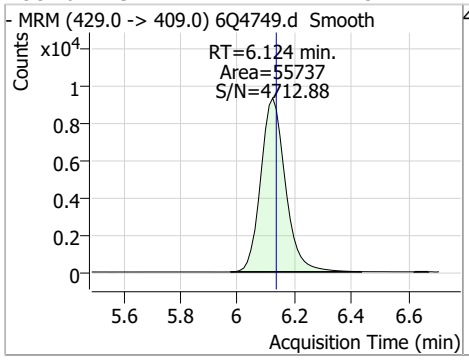


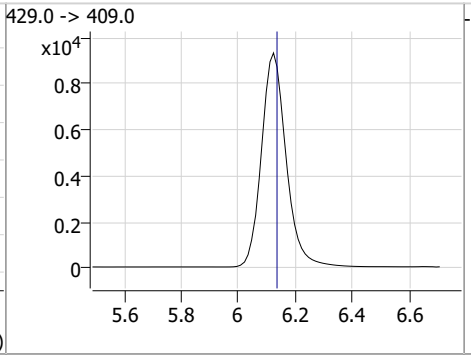


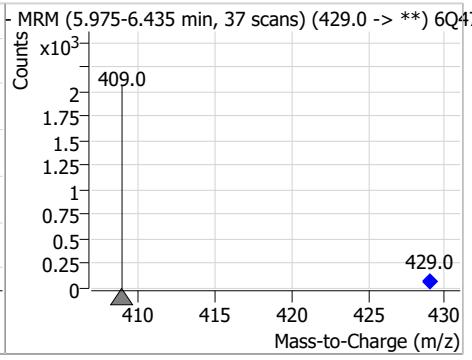




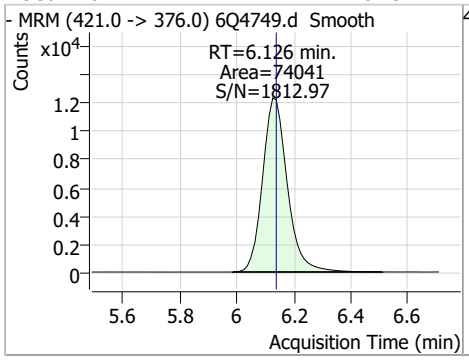
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.27	6.12	-0.01	55737				

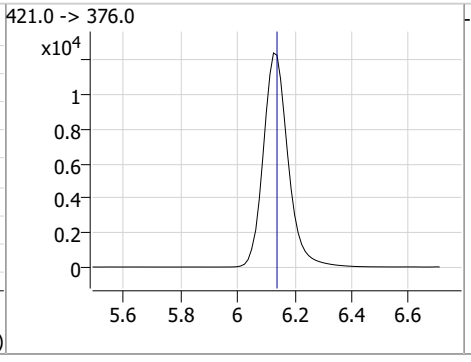


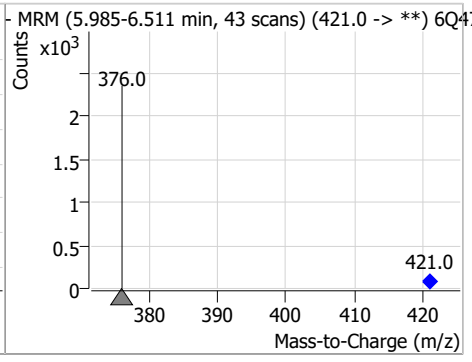




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.49	6.13	-0.01	74041				

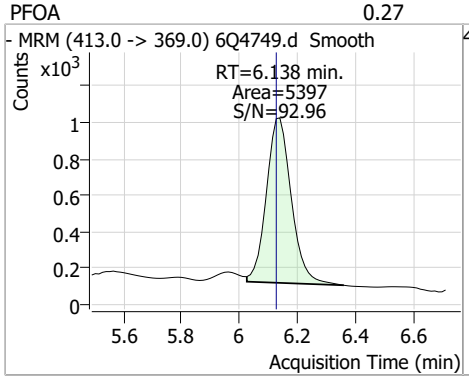


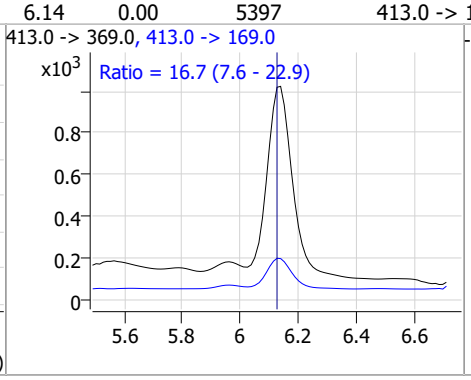


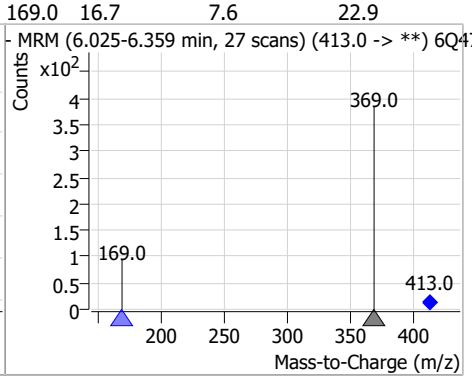


Perfluorinated Compounds by LC/MS/MS

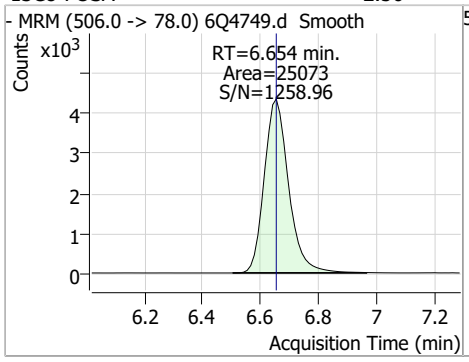
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.27	6.14	0.00	5397	413.0 -> 169.0	16.7	7.6	22.9

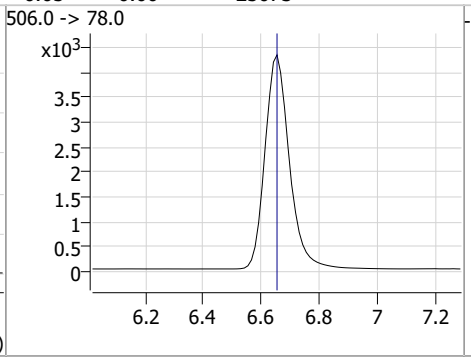


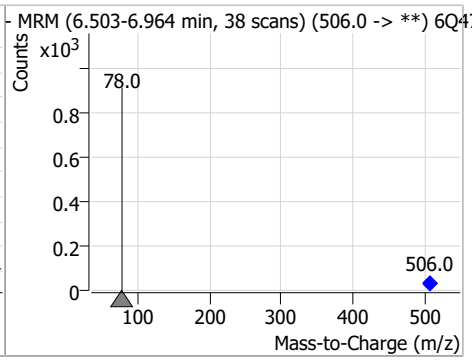




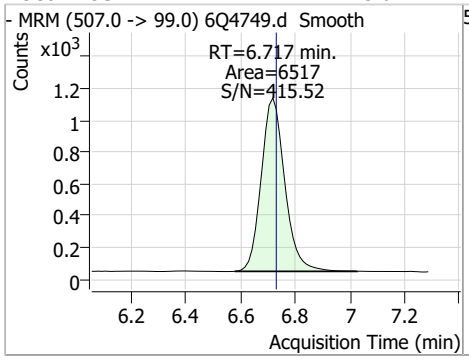
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.56	6.65	0.00	25073				

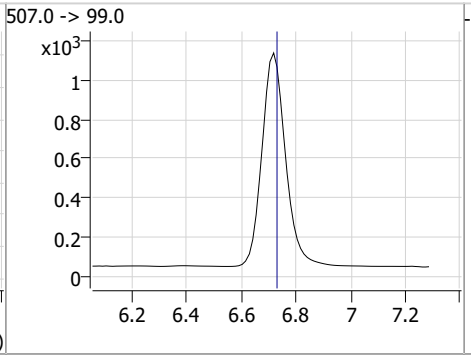


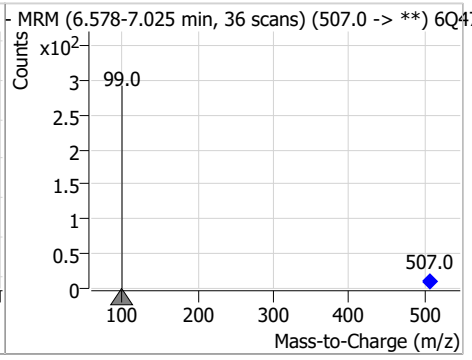




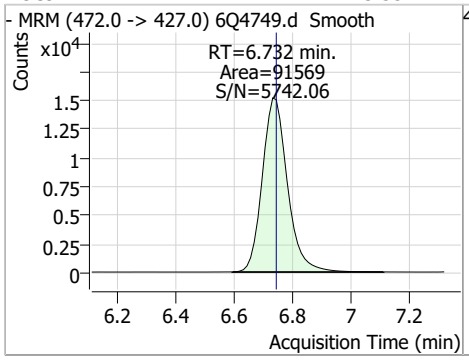
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.07	6.72	-0.01	6517				

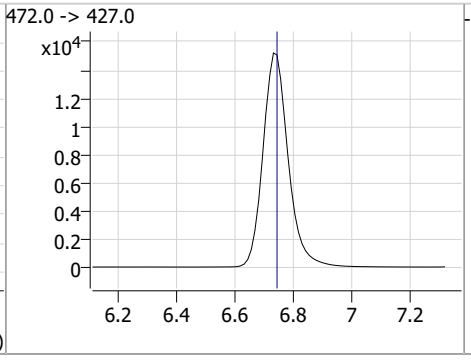


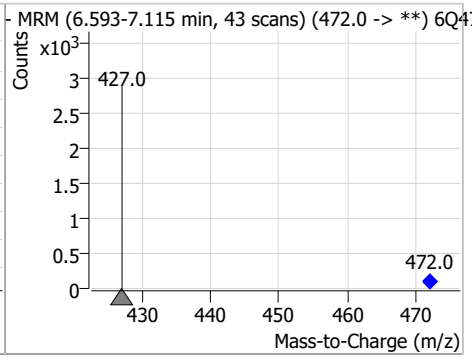




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.55	6.73	-0.01	91569				

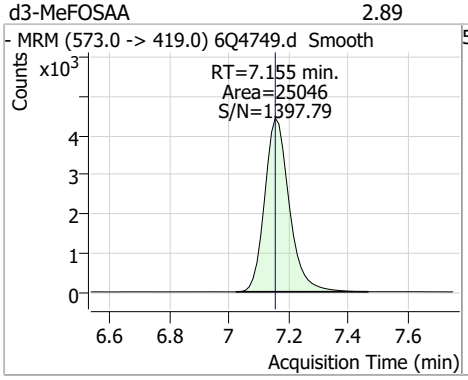


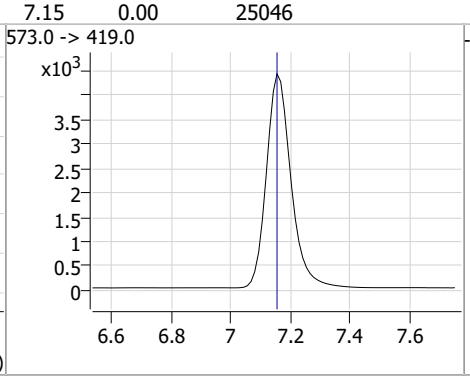


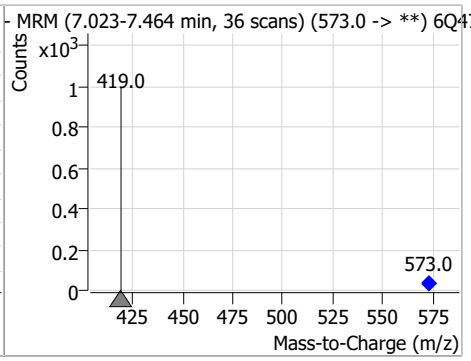


Perfluorinated Compounds by LC/MS/MS

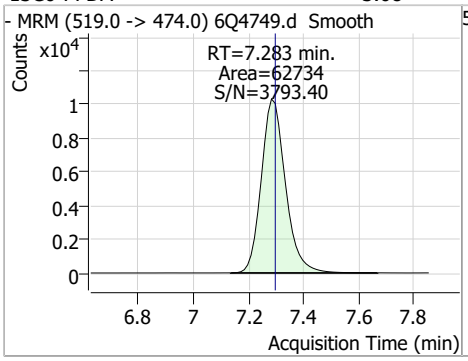
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.89	7.15	0.00	25046				

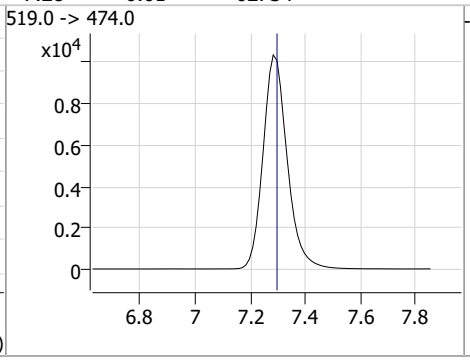


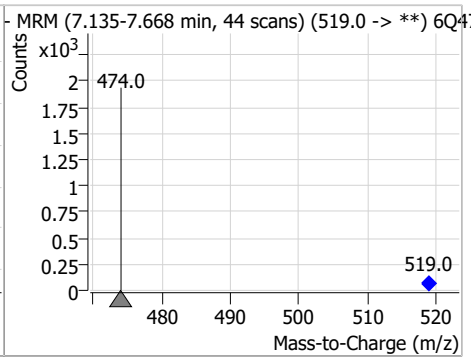




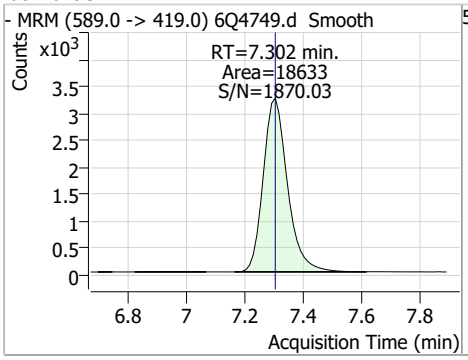
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.08	7.28	-0.01	62734				

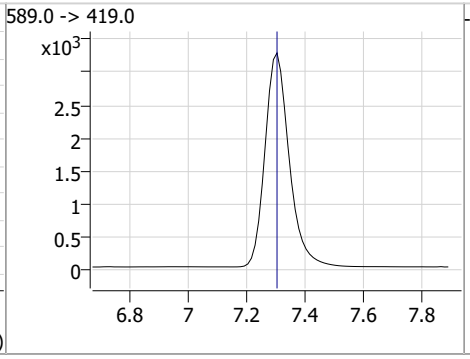


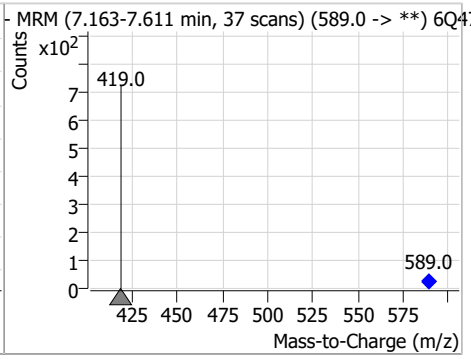




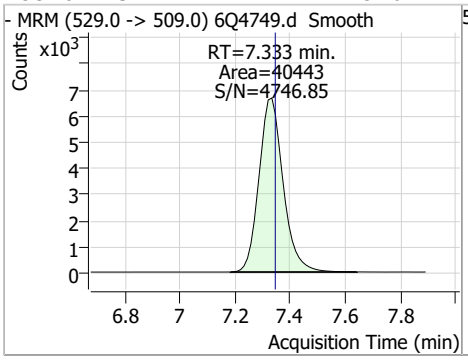
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.74	7.30	0.00	18633				

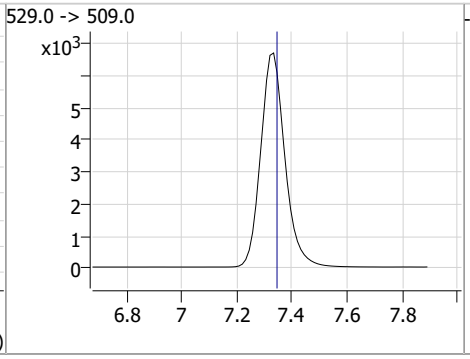


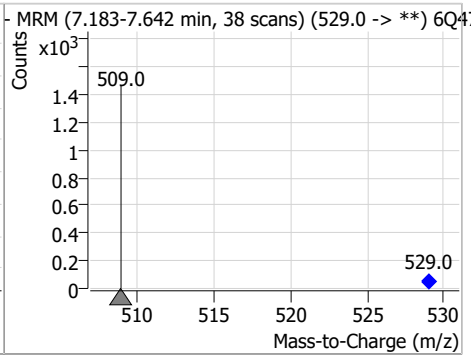




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.10	7.33	-0.01	40443				

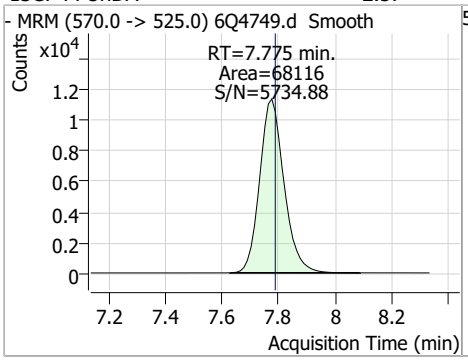


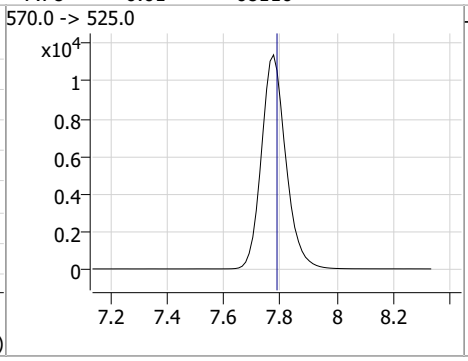


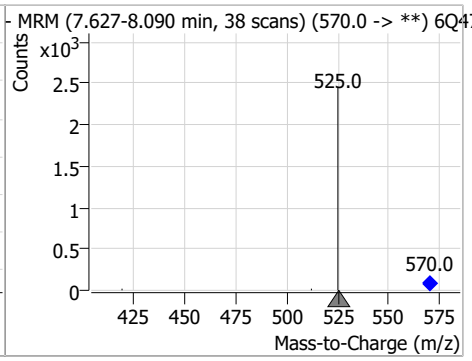


Perfluorinated Compounds by LC/MS/MS

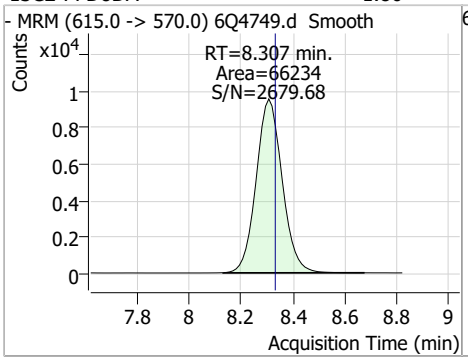
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.57	7.78	-0.01	68116				

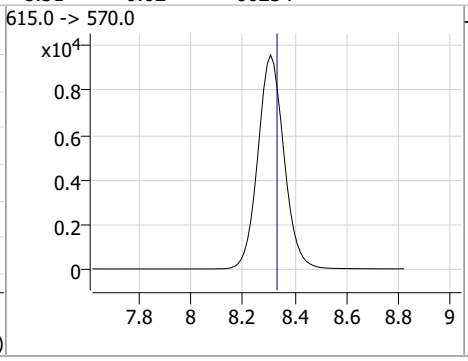


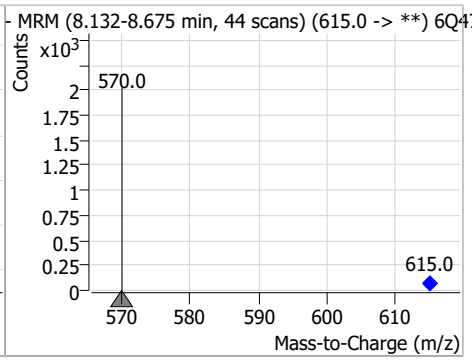




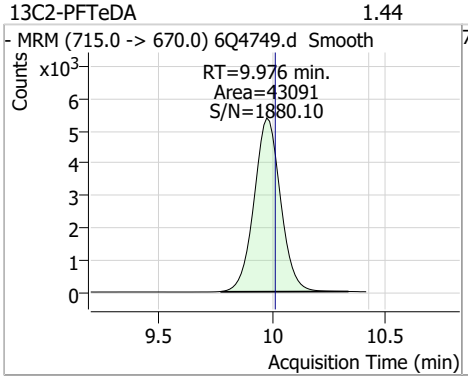
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	1.80	8.31	-0.02	66234				

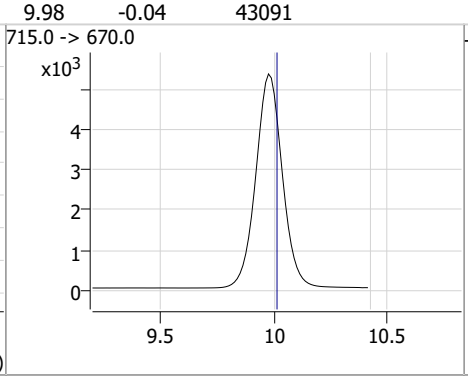


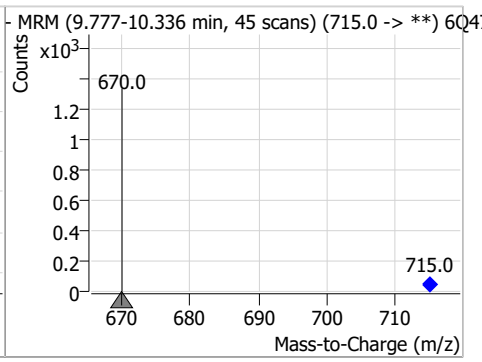




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.44	9.98	-0.04	43091				







Manual Integration Approval Summary

Sample Number: FA98286-25
Lab FileID: 6Q4749.D
Injection Time: 09/16/22 03:54
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:05 Norman Farmer
Supervisor approved: 09/19/22 16:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.38	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4680.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 3:01:37 AM
Sample Name : fa98286-26
Vial : P5-E7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.911	217.0 -> 172.0	51714	20.00 µg/L	-0.037
M5-PFPeA	3.393	268.0 -> 223.0	99943	20.00 µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	164691	20.00 µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	198677	20.00 µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	362125	20.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	429687	20.00 µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	312745	20.00 µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	351151	20.00 µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	380447	20.00 µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	314606	20.00 µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	104355	20.00 µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	23655	20.00 µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	22897	20.00 µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	33477	20.00 µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	202504	20.00 µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	286192	20.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	197273	20.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	100031	20.00 µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3791	20.00 µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	3225	20.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	71488	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.470	329.0 -> 309.0	202504	14.99 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%	
13C2-6:2FTS	6.124	429.0 -> 409.0	286192	16.77 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%	
13C2-8:2FTS	7.333	529.0 -> 509.0	197273	15.13 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%	
13C2-PFDoDA	8.307	615.0 -> 570.0	380447	10.34 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.7%	
13C2-PFTeDA	9.989	715.0 -> 670.0	314606	10.49 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.4%	
13C3-PFBS	3.610	302.0 -> 99.0	23655	15.45 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%	
13C3-PFHxS	5.463	402.0 -> 99.0	22897	16.56 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
13C4-PFBA	1.911	217.0 -> 172.0	51714	12.99 µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.0%	
13C4-PFHpA	5.433	367.0 -> 322.0	198677	16.06 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%	
13C5-PFHxA	4.561	318.0 -> 273.0	164691	15.41 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%	
13C5-PFPeA	3.393	268.0 -> 223.0	99943	14.25 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%	
13C6-PFDA	7.283	519.0 -> 474.0	312745	15.37 µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

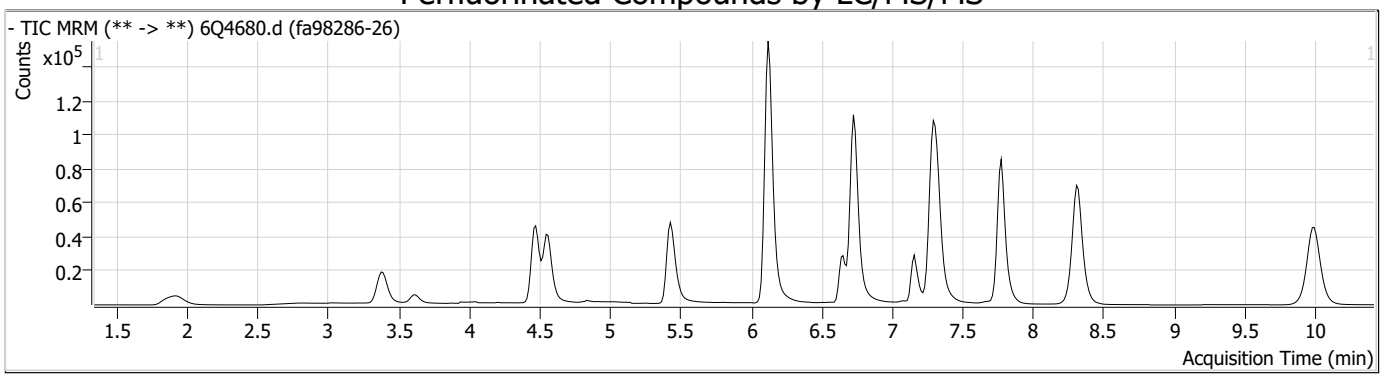
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%			
13C7-PFUnDA	7.775	570.0 -> 525.0	351151	13.23	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.1%			
13C8-FOSA	6.654	506.0 -> 78.0	104355	10.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.3%			
13C8-PFOA	6.138	421.0 -> 376.0	362125	17.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%			
13C8-PFOS	6.717	507.0 -> 99.0	33477	15.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
13C9-PFNA	6.745	472.0 -> 427.0	429687	16.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.4%			
d3-MeFOSAA	7.155	573.0 -> 419.0	100031	11.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.8%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3813	14.35	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.7%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	71486	10.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.7%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.406	213.0 -> 169.0	0		µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.549	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 119.0	0				
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

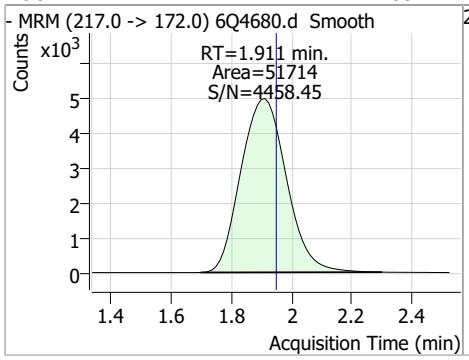
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.333	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

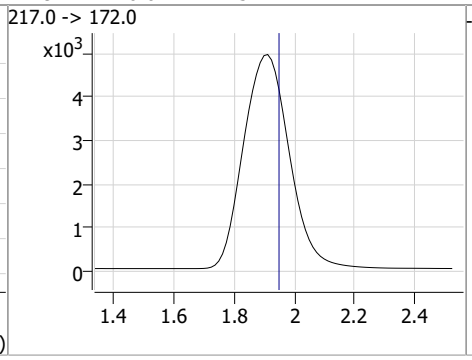
 # = Qualifier out of range, m = manually integrated, + = Area summed

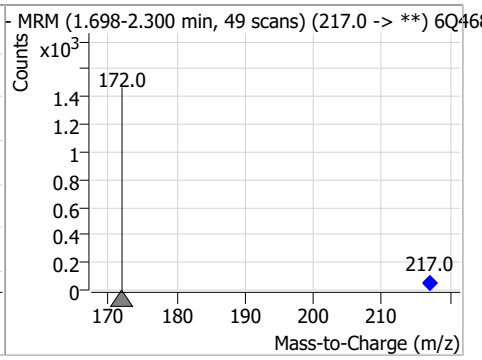
Perfluorinated Compounds by LC/MS/MS



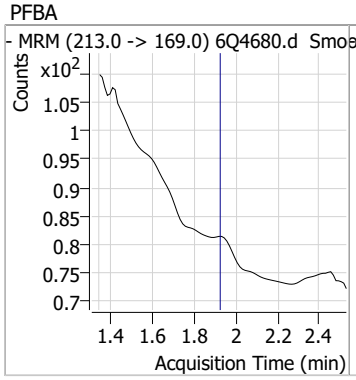
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.99	1.91	-0.04	51714				

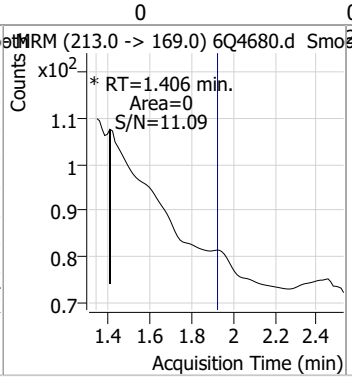


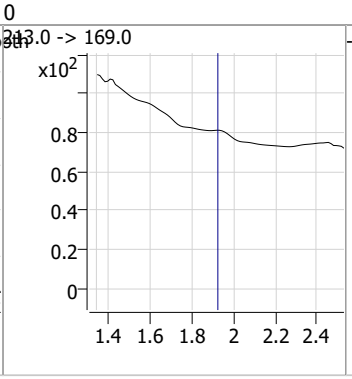


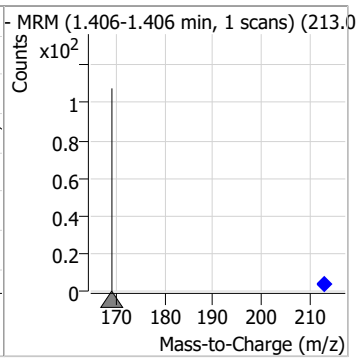


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA		0		0				

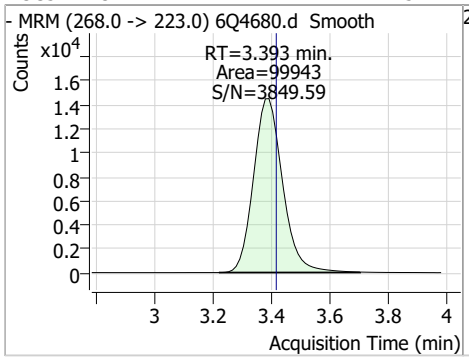


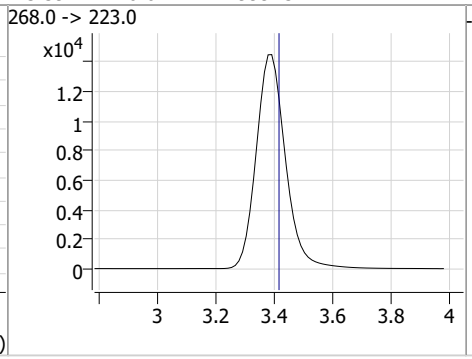


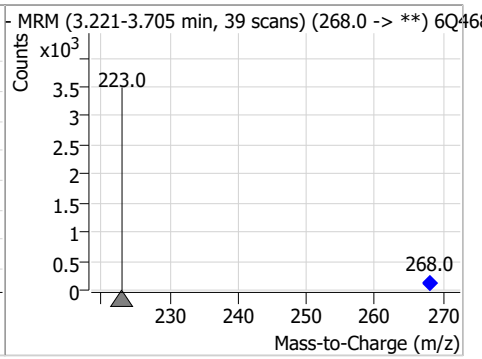




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.25	3.39	-0.02	99943				

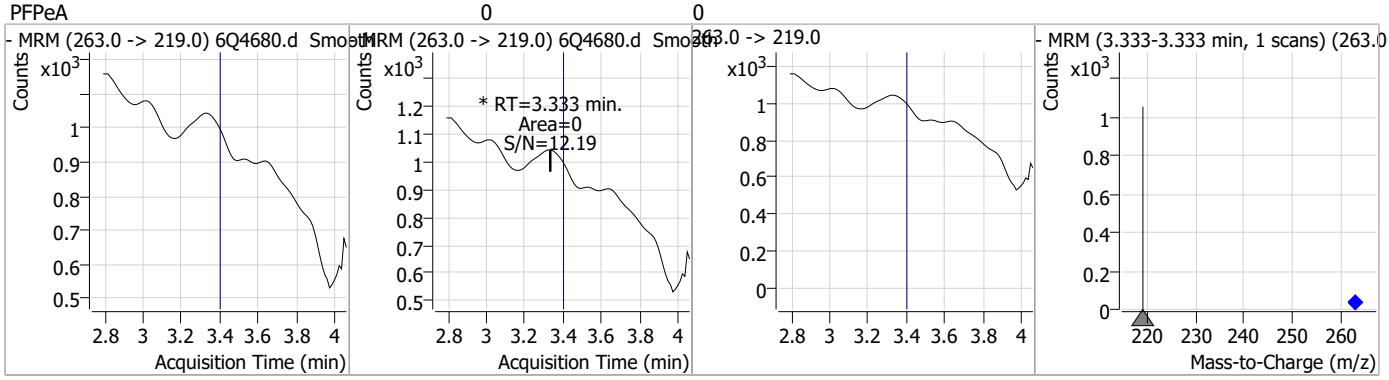




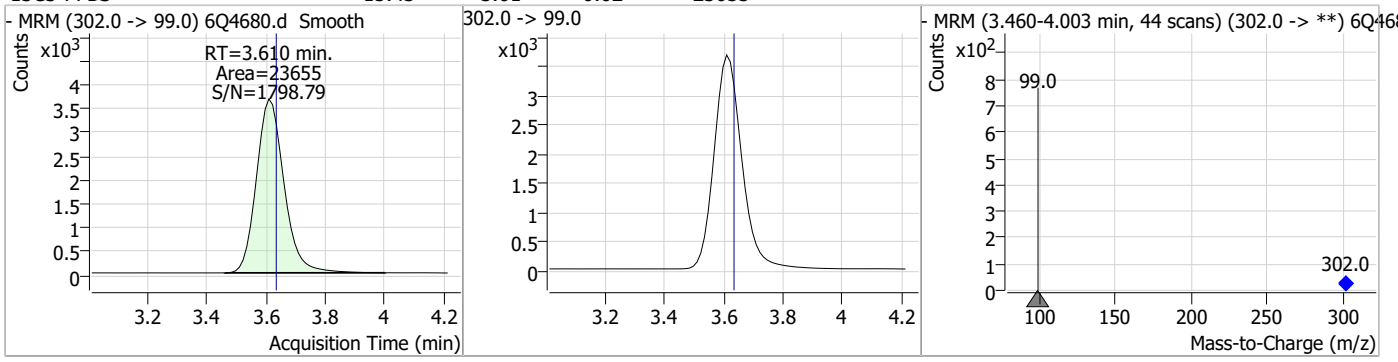


Perfluorinated Compounds by LC/MS/MS

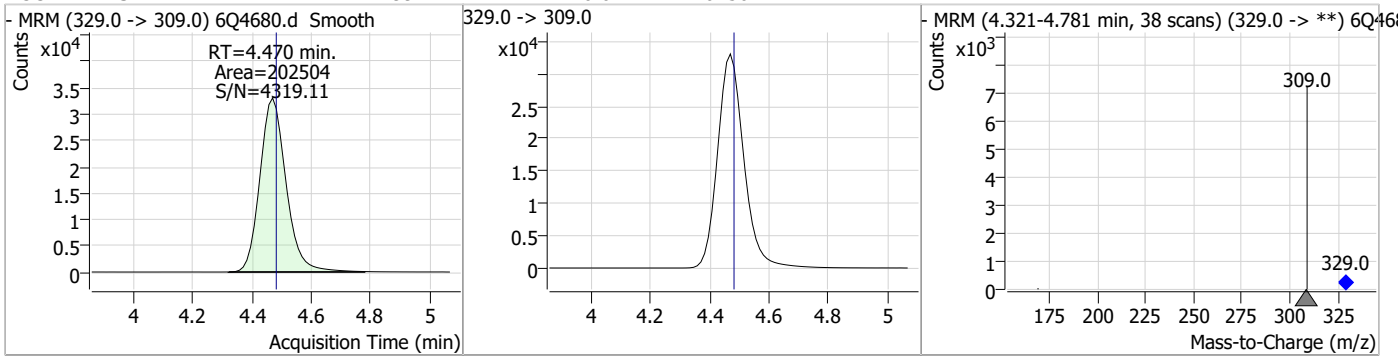
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



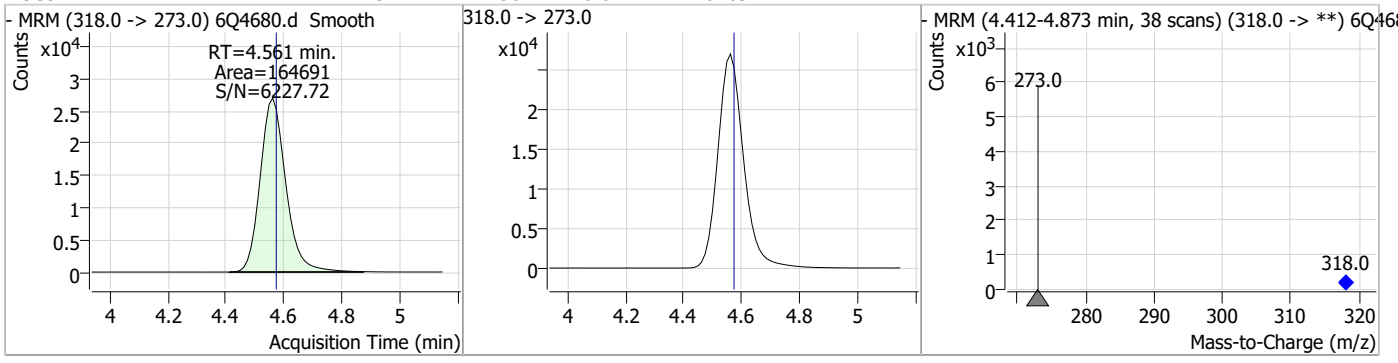
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.45	3.61	-0.02	23655				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.99	4.47	-0.01	202504				

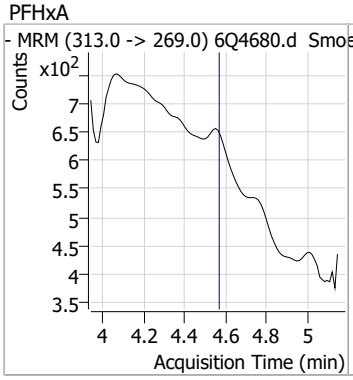


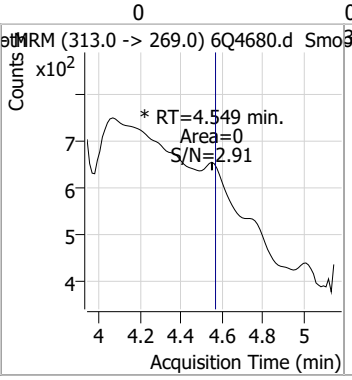
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.41	4.56	-0.01	164691				

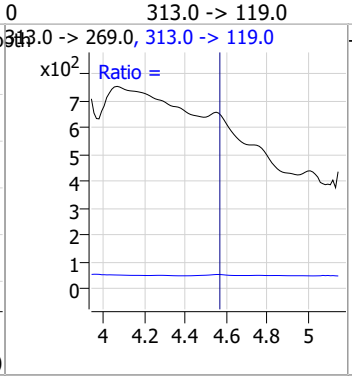


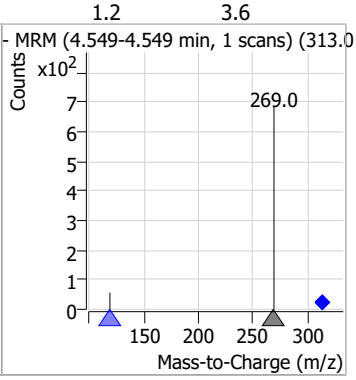
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		1.2	3.6

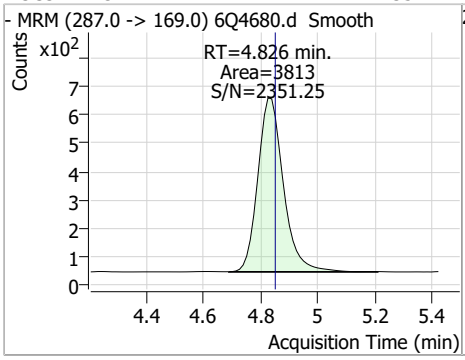


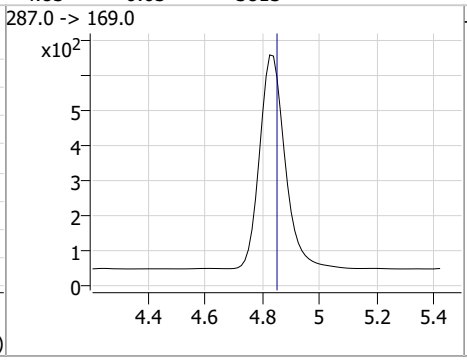


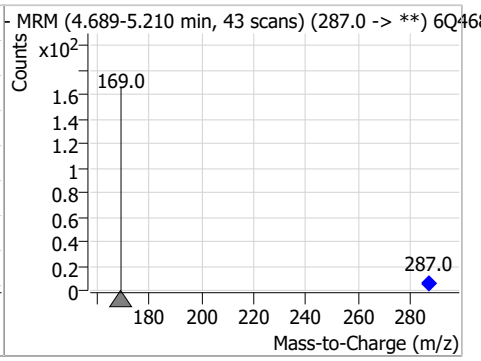




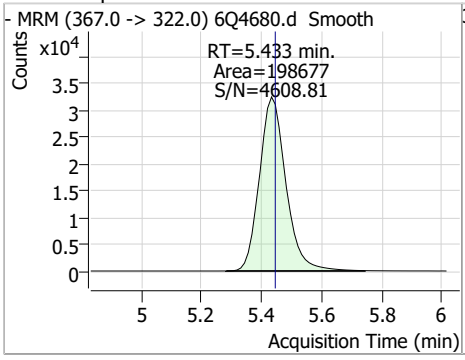
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.35	4.83	-0.03	3813				

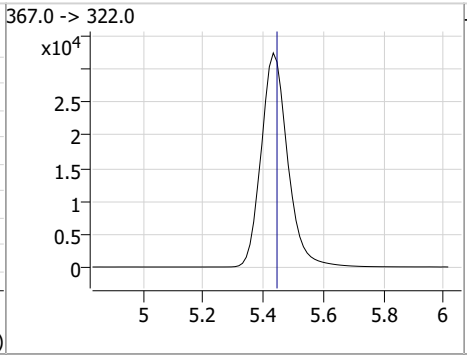


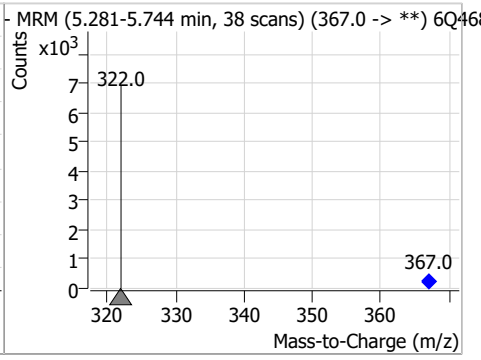




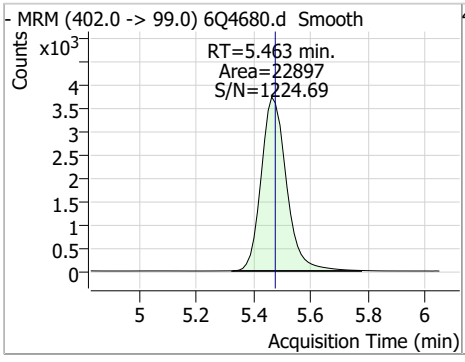
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.06	5.43	-0.01	198677				

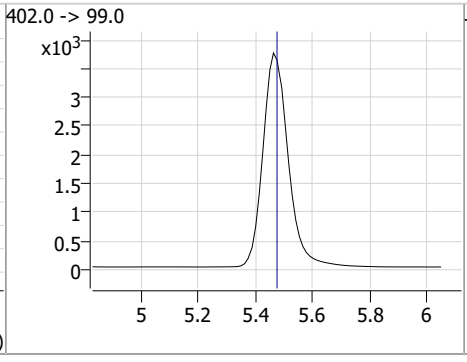


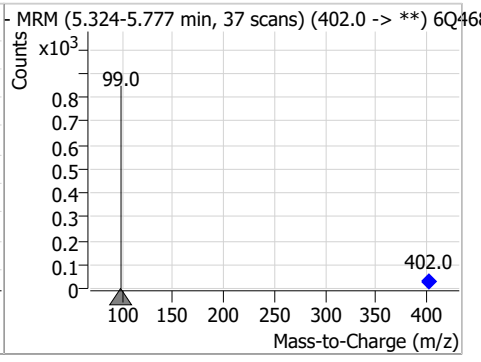




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.56	5.46	-0.01	22897				

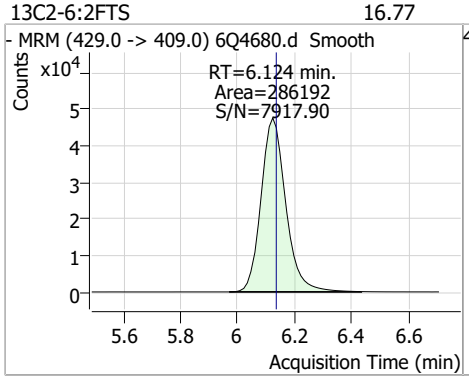


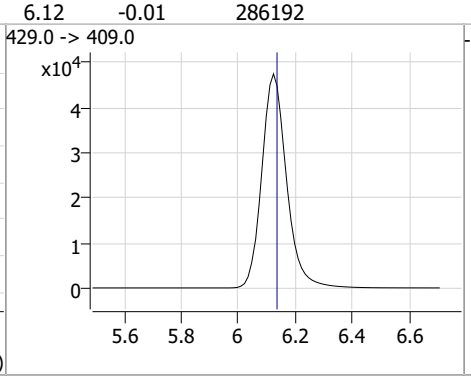


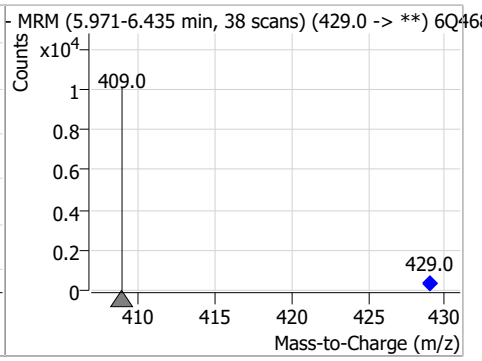


Perfluorinated Compounds by LC/MS/MS

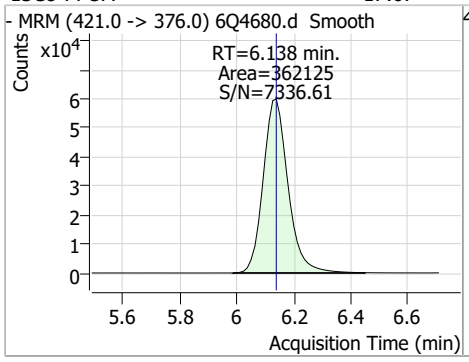
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.77	6.12	-0.01	286192				

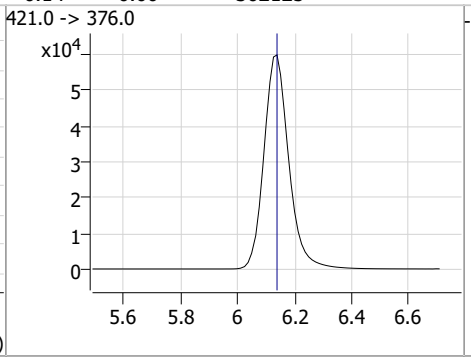


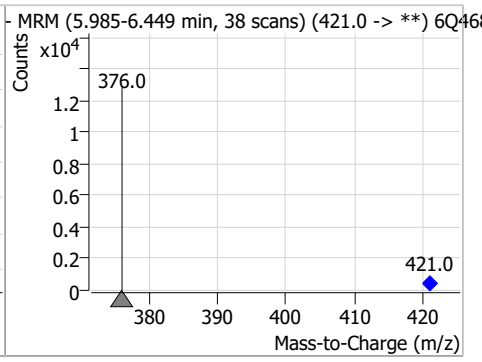




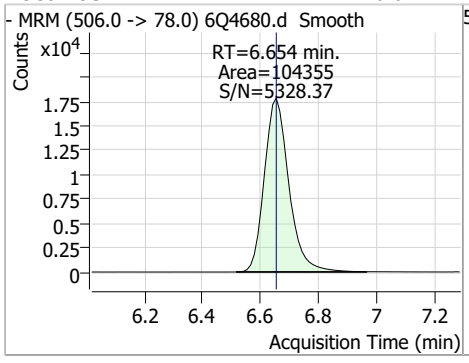
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.07	6.14	0.00	362125				

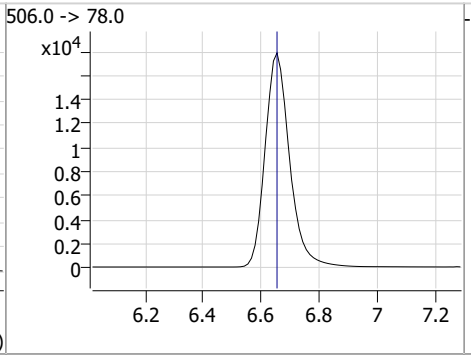


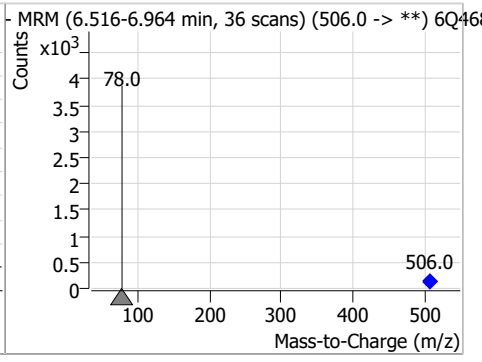




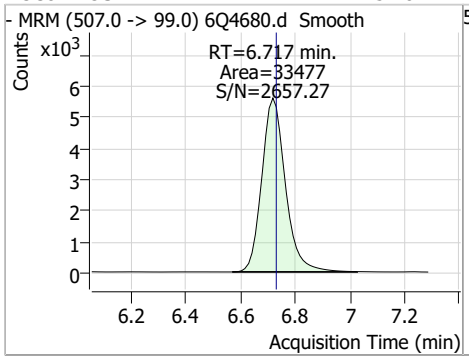
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.67	6.65	0.00	104355				

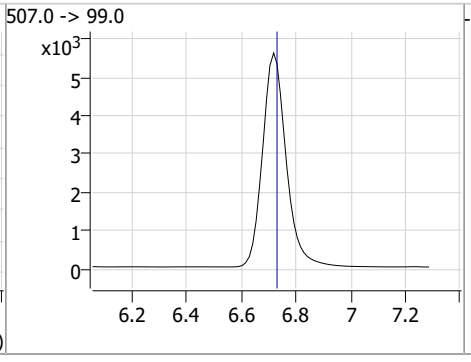


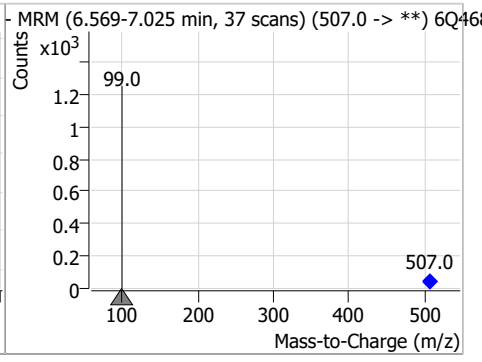




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.78	6.72	-0.01	33477				

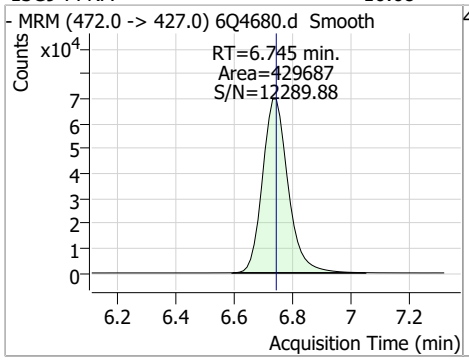


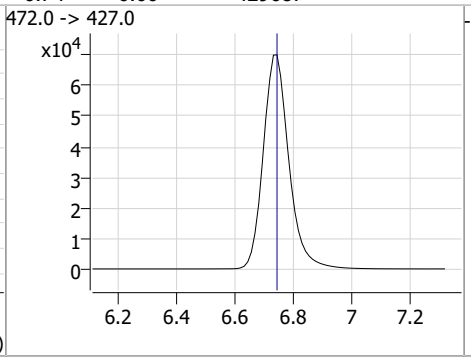


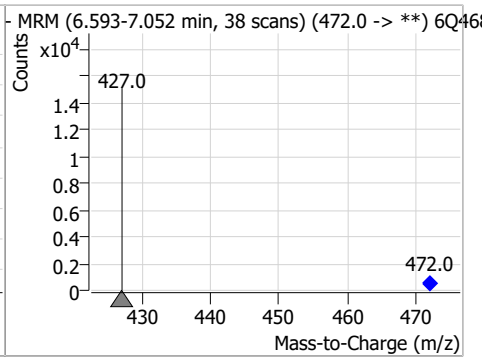


Perfluorinated Compounds by LC/MS/MS

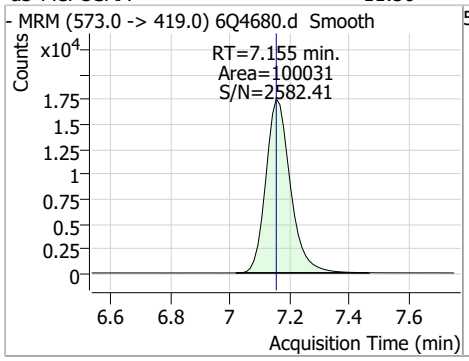
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.68	6.74	0.00	429687				

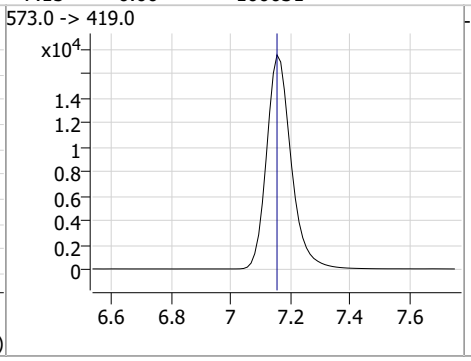


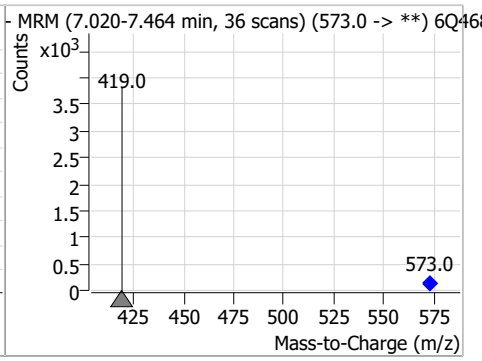




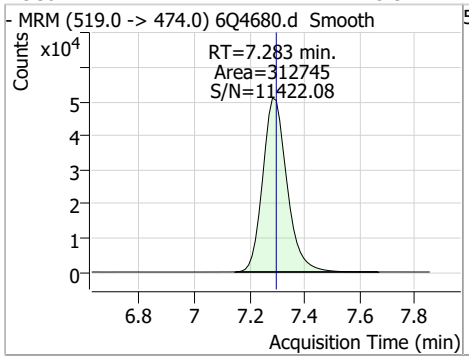
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.56	7.15	0.00	100031				

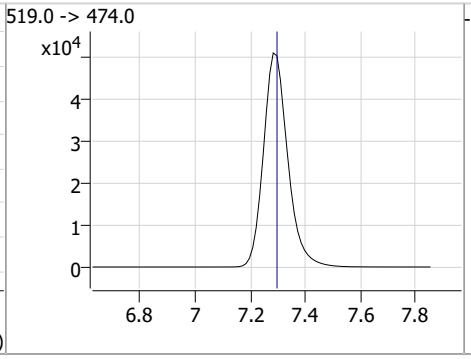


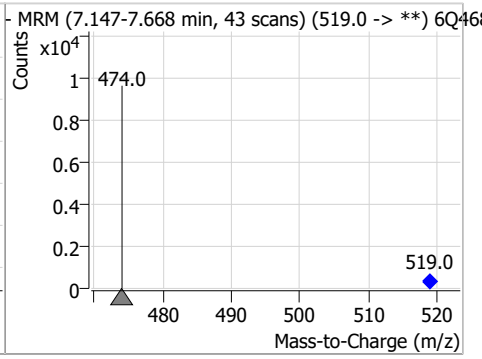




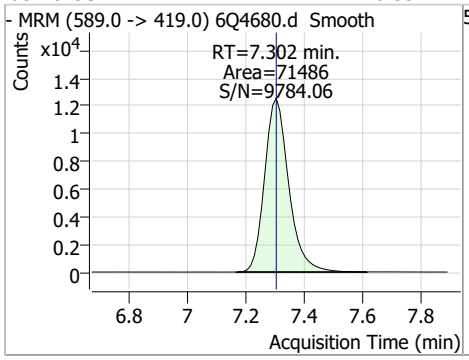
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.37	7.28	-0.01	312745				

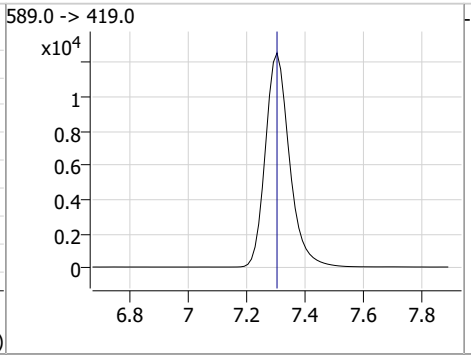


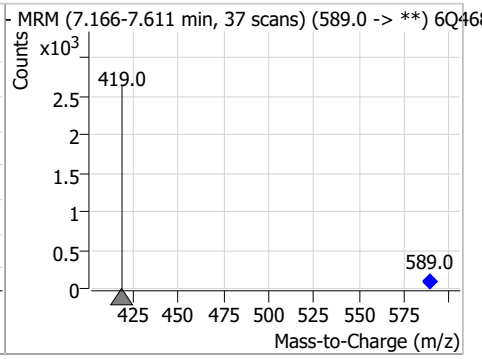




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.53	7.30	0.00	71486				

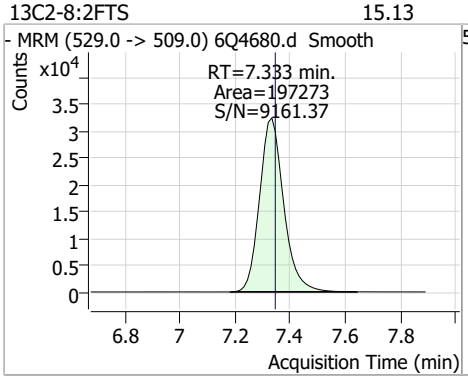


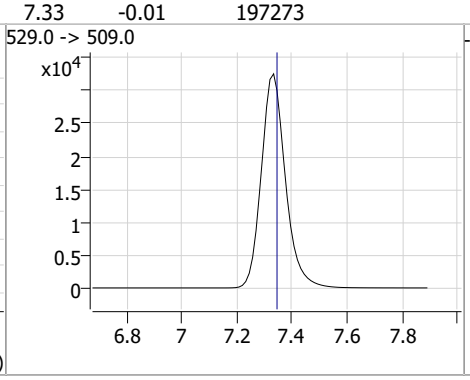


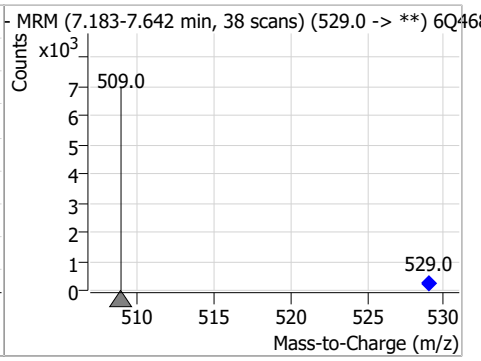


Perfluorinated Compounds by LC/MS/MS

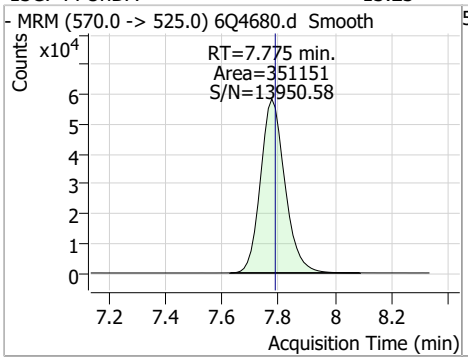
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.13	7.33	-0.01	197273				

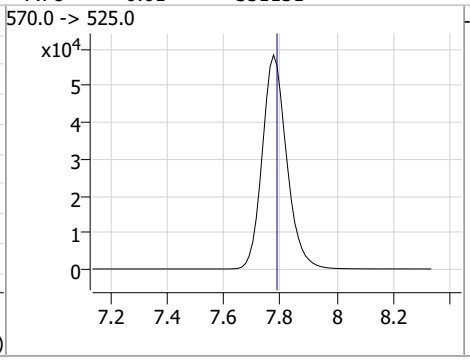


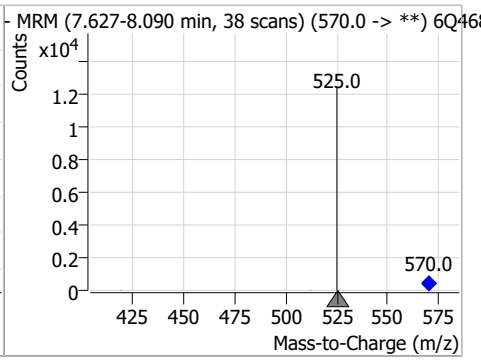




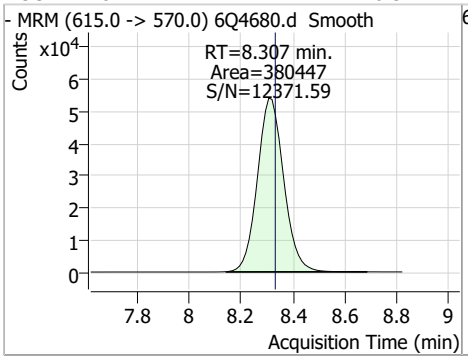
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.23	7.78	-0.01	351151				

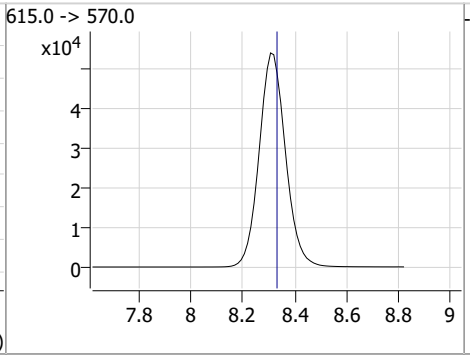


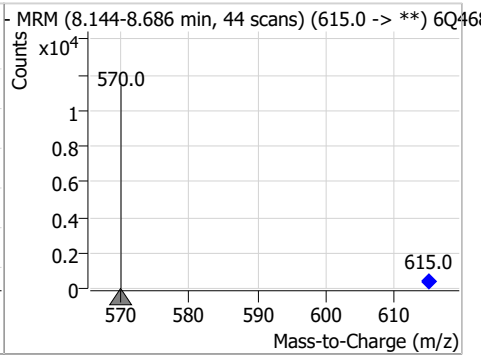




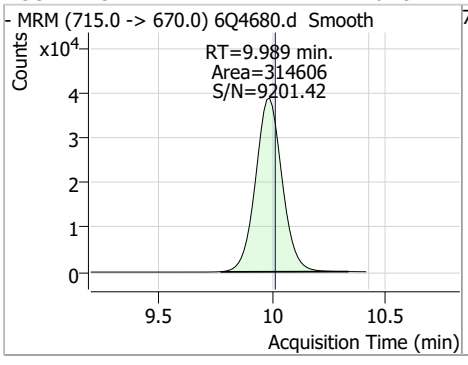
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.34	8.31	-0.02	380447				

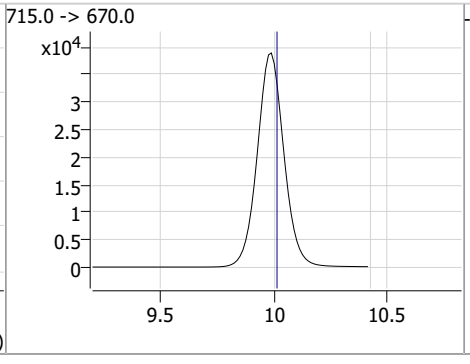


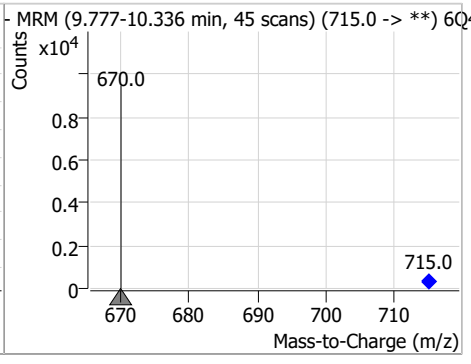




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.49	9.99	-0.02	314606				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4683.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 3:49:43 AM
Sample Name : fa98286-27
Vial : P5-E8
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	55043	20.00	µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	102860	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	163939	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	196605	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	341075	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	391469	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	250217	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	302432	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	410619	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	386596	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	133901	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	23975	20.00	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	21708	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	26813	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	196896	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	257643	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	151151	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	105772	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4024	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	23738	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	89138	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	196896	14.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C2-6:2FTS	6.124	429.0 -> 409.0	257643	15.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%		
13C2-8:2FTS	7.333	529.0 -> 509.0	151151	11.60	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.0%		
13C2-PFDoDA	8.320	615.0 -> 570.0	410619	11.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	386596	12.89	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.4%		
13C3-PFBS	3.622	302.0 -> 99.0	23975	15.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.3%		
13C3-PFHxS	5.475	402.0 -> 99.0	21708	15.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C4-PFBA	1.936	217.0 -> 172.0	55043	13.83	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%		
13C4-PFHpA	5.445	367.0 -> 322.0	196605	15.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.4%		
13C5-PFHxA	4.573	318.0 -> 273.0	163939	15.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C5-PFPeA	3.405	268.0 -> 223.0	102860	14.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%		
13C6-PFDA	7.297	519.0 -> 474.0	250217	12.30	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

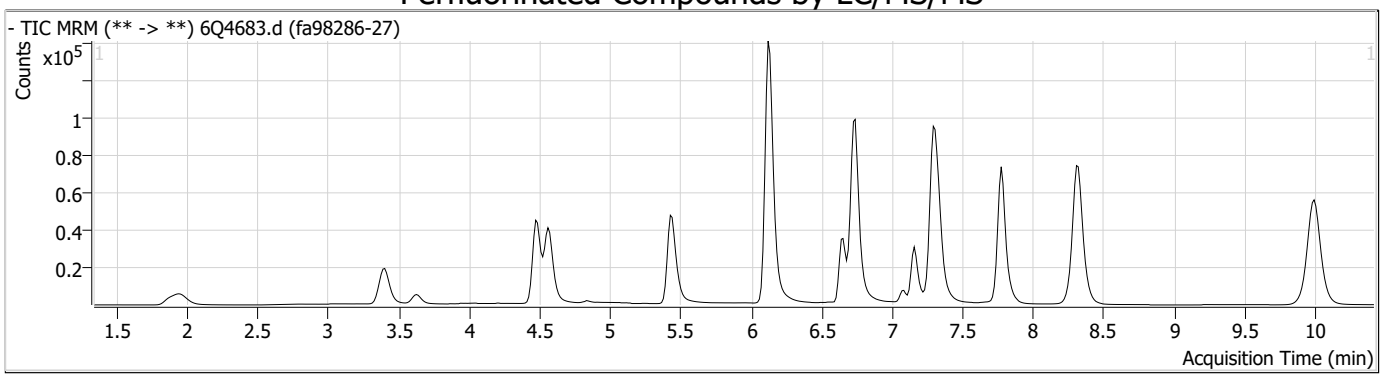
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.5%	
13C7-PFUnDA	7.775	570.0 -> 525.0	302432	11.39 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%	
13C8-FOSA	6.654	506.0 -> 78.0	133901	13.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%	
13C8-PFOA	6.138	421.0 -> 376.0	341075	16.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%	
13C8-PFOS	6.717	507.0 -> 99.0	26813	12.64 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.2%	
13C9-PFNA	6.745	472.0 -> 427.0	391469	15.19 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%	
d3-MeFOSAA	7.155	573.0 -> 419.0	105772	12.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.1%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	4017	15.11 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%	
d3-MeFOSA	7.085	515.0 -> 169.0	23738	10.49 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.5%	
d5-EtFOSAA	7.302	589.0 -> 419.0	89163	13.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

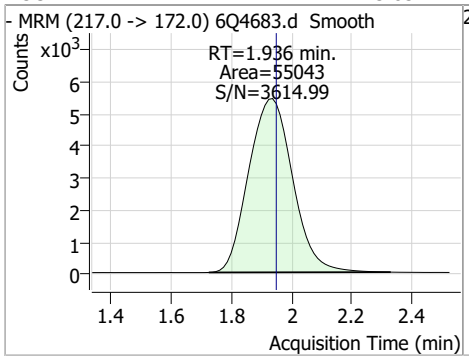
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.370	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

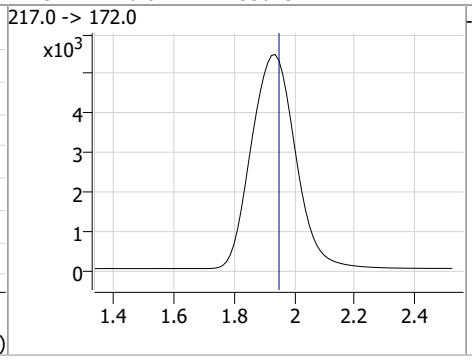
 # = Qualifier out of range, m = manually integrated, + = Area summed

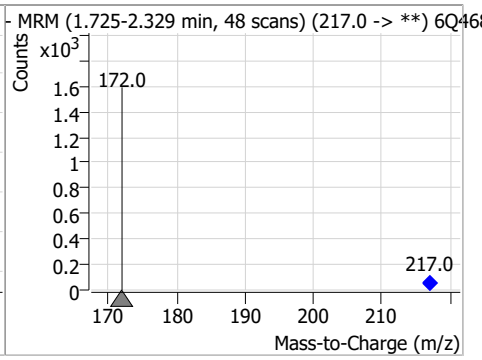
Perfluorinated Compounds by LC/MS/MS



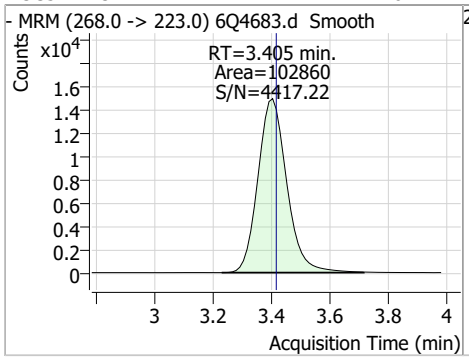
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.83	1.94	-0.01	55043				

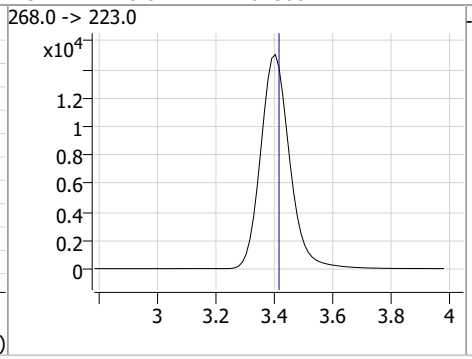


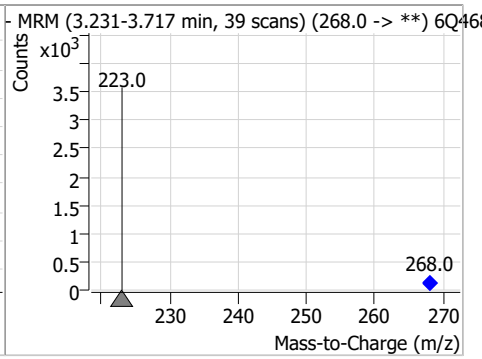




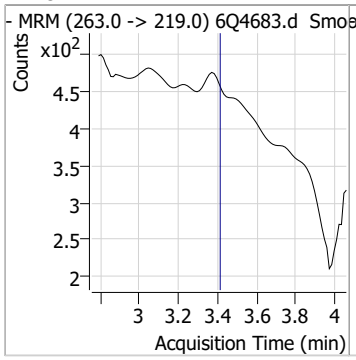
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.67	3.41	-0.01	102860				

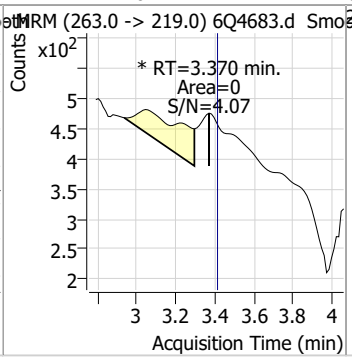


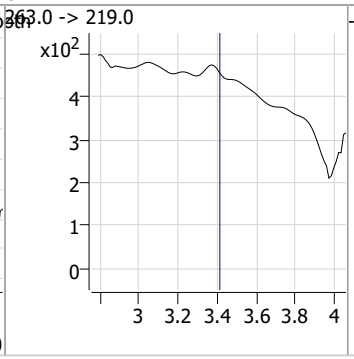


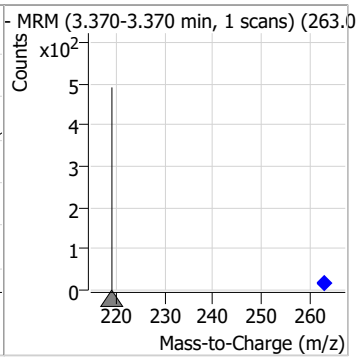


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



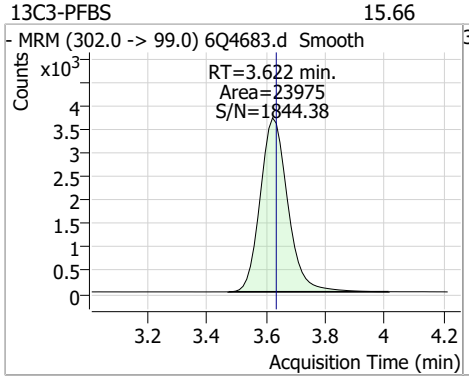


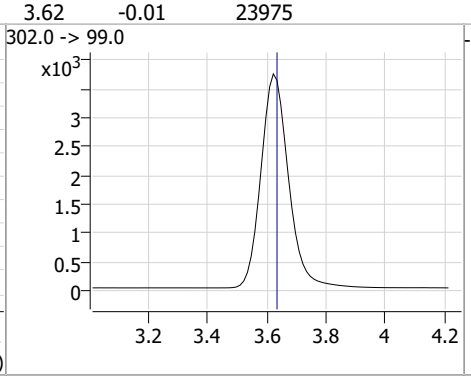


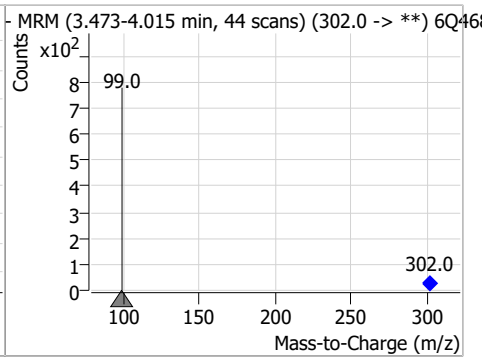


Perfluorinated Compounds by LC/MS/MS

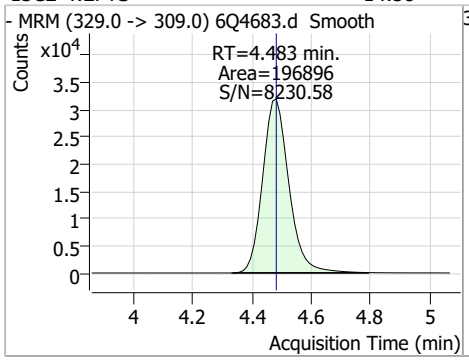
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.66	3.62	-0.01	23975				

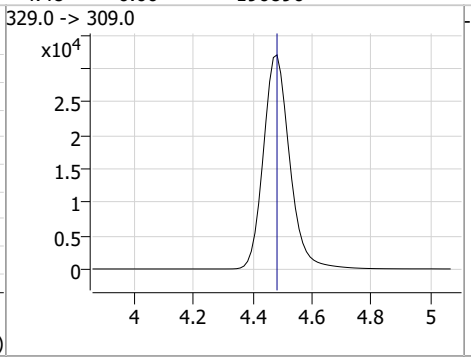


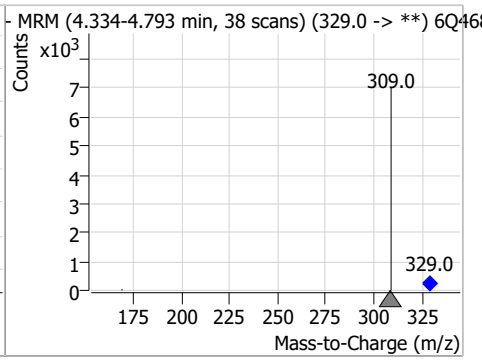




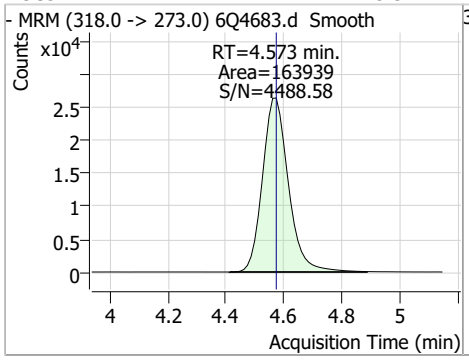
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.58	4.48	0.00	196896				

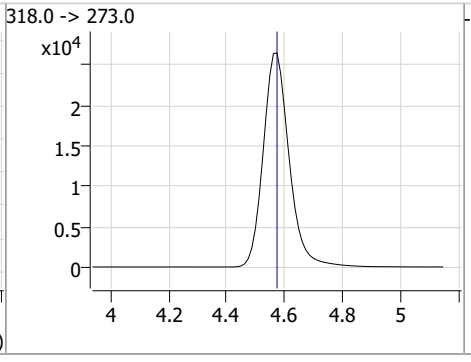


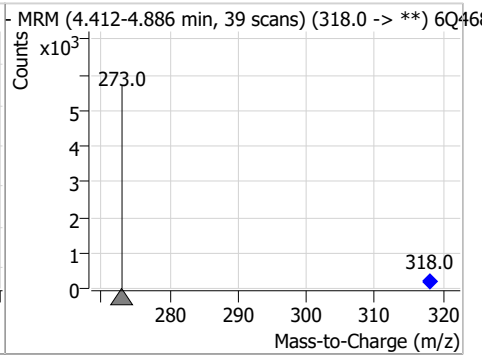




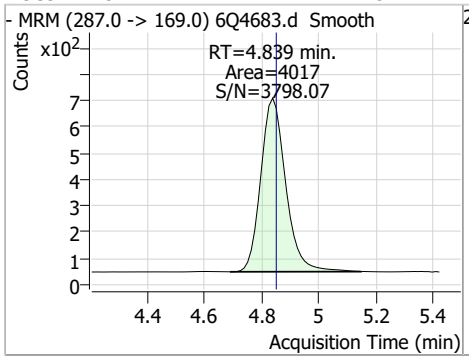
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.34	4.57	0.00	163939				

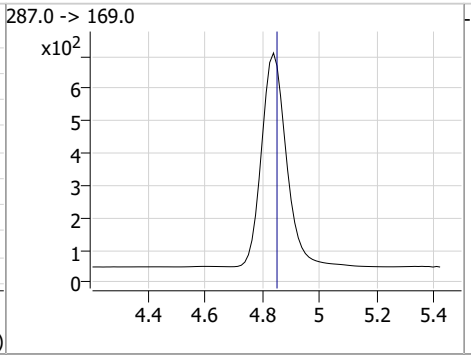


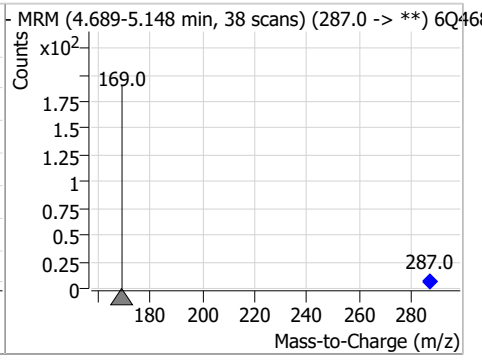




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.11	4.84	-0.01	4017				

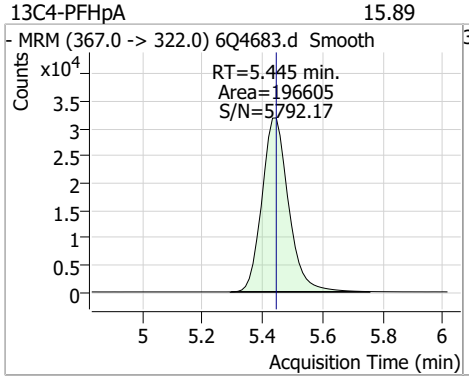


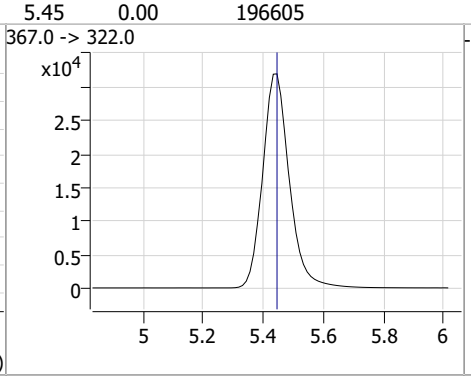


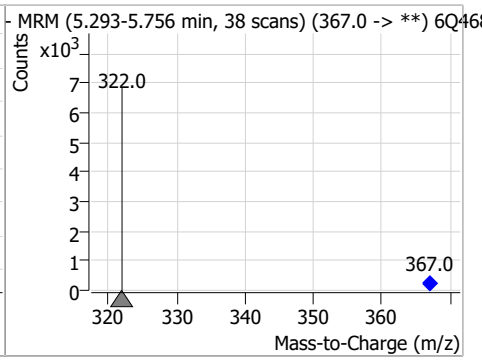


Perfluorinated Compounds by LC/MS/MS

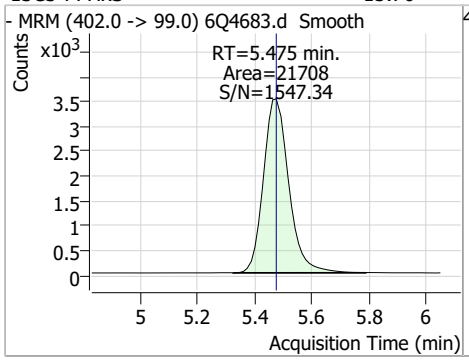
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.89	5.45	0.00	196605				

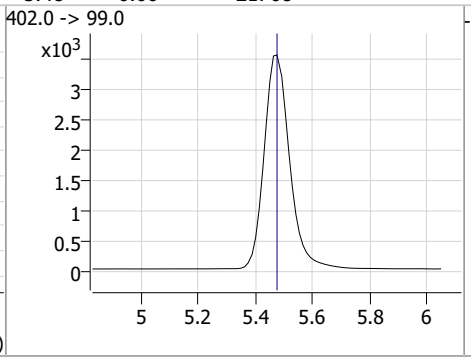


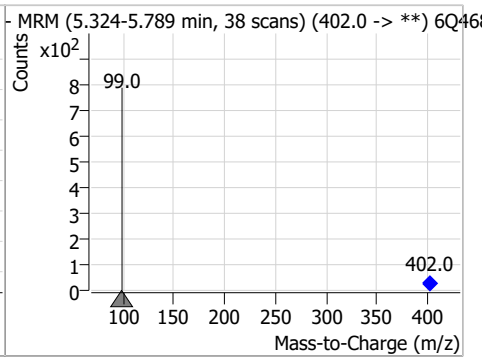




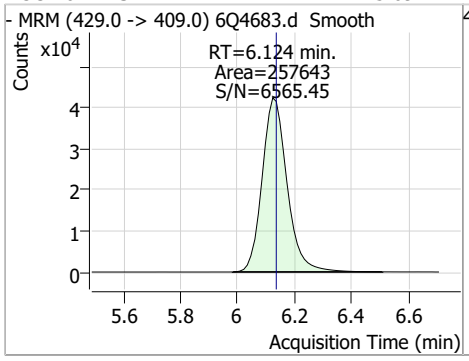
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.70	5.48	0.00	21708				

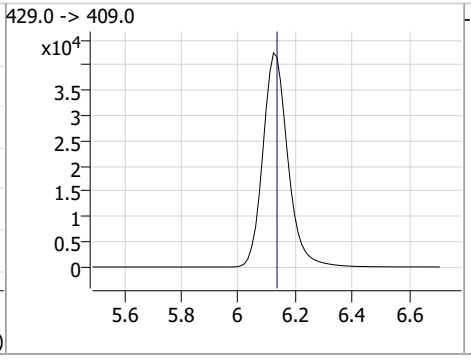


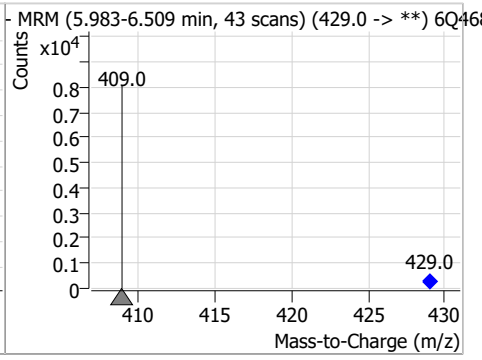




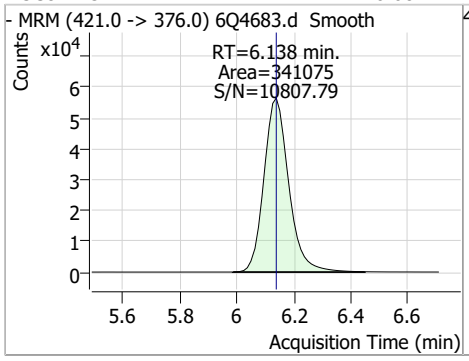
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.09	6.12	-0.01	257643				

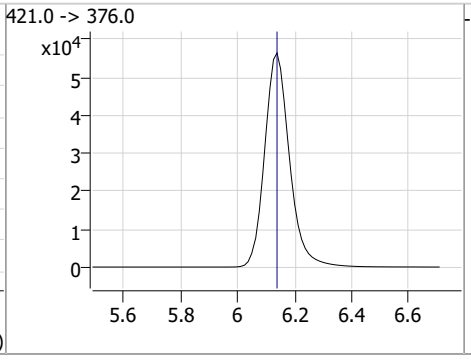


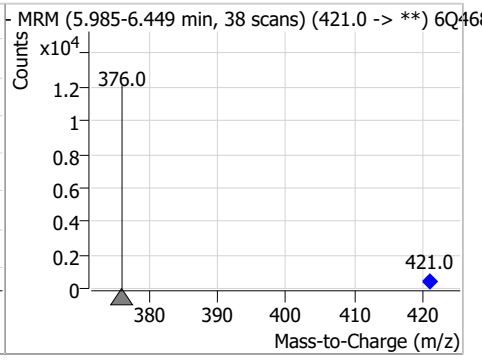




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.08	6.14	0.00	341075				

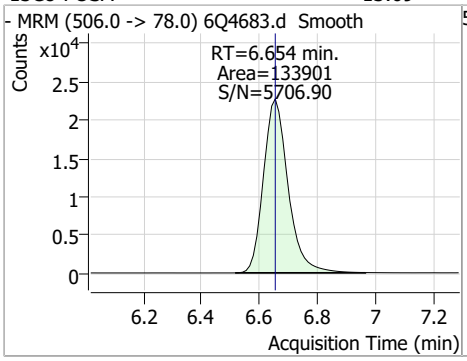


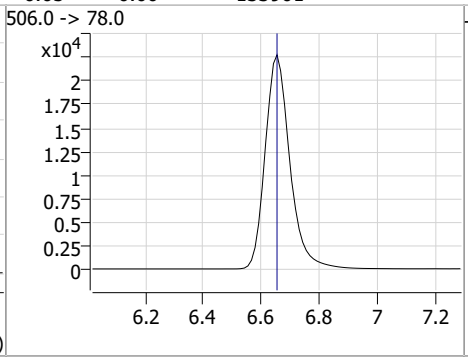


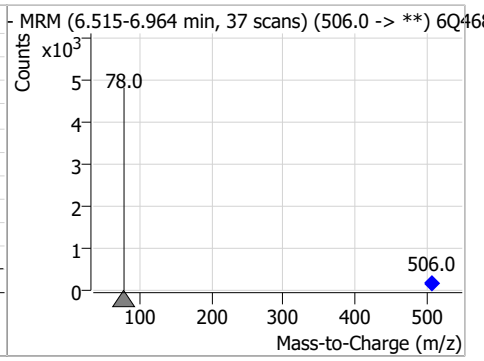


Perfluorinated Compounds by LC/MS/MS

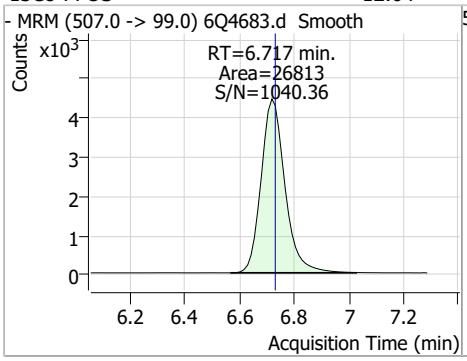
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.69	6.65	0.00	133901				

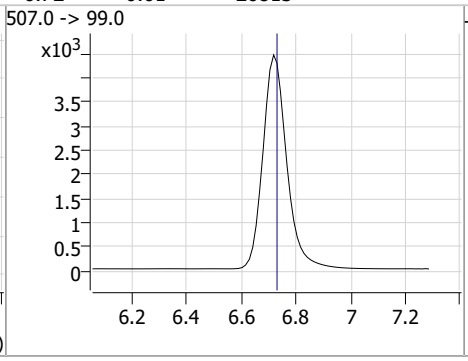


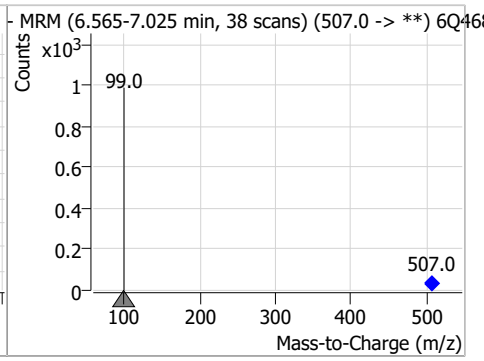




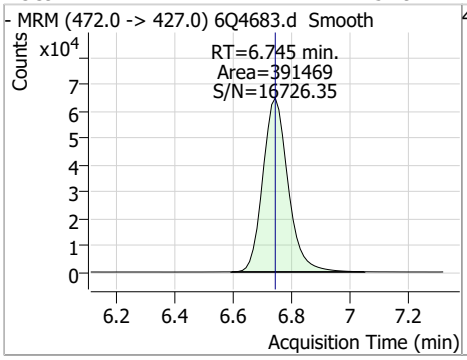
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.64	6.72	-0.01	26813				

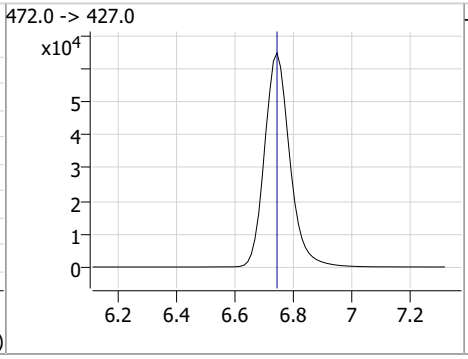


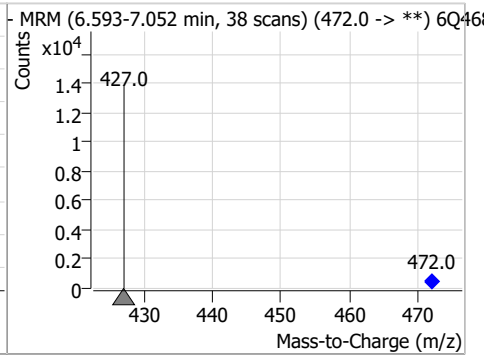




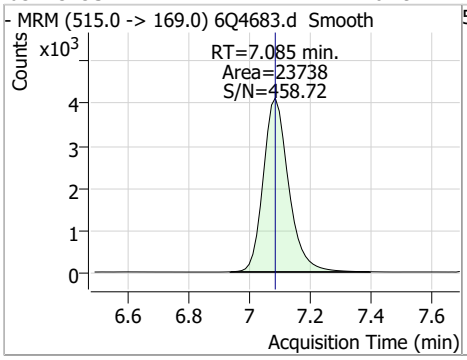
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.19	6.74	0.00	391469				

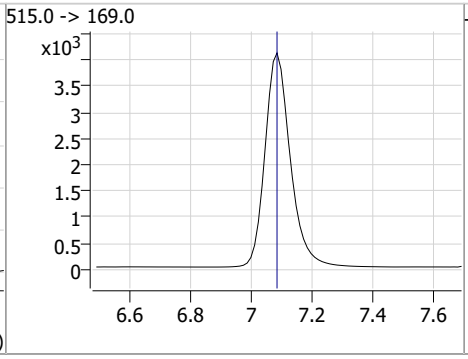


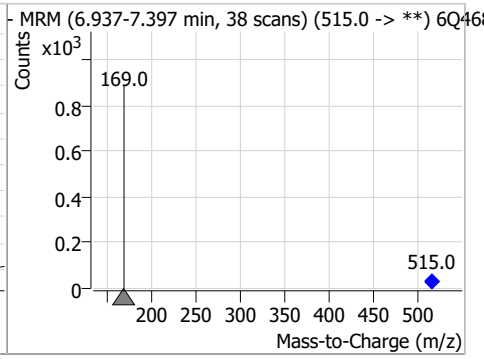




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.49	7.08	0.00	23738				

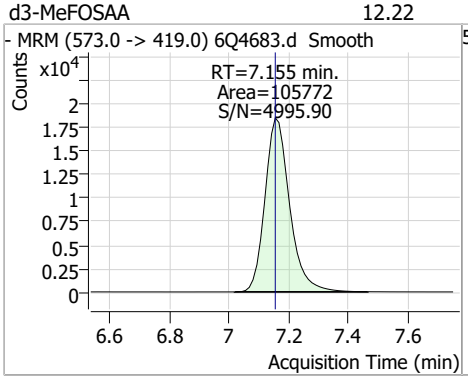


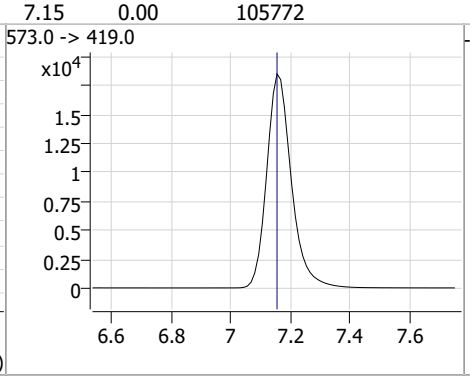


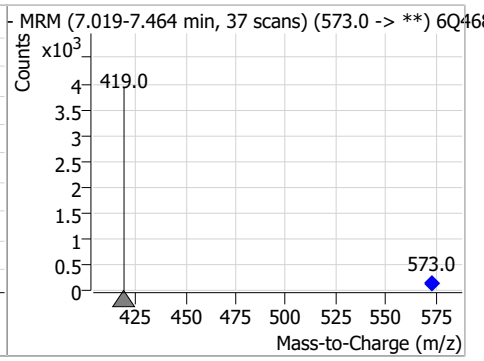


Perfluorinated Compounds by LC/MS/MS

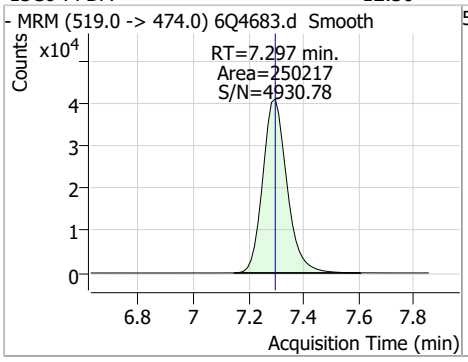
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.22	7.15	0.00	105772				

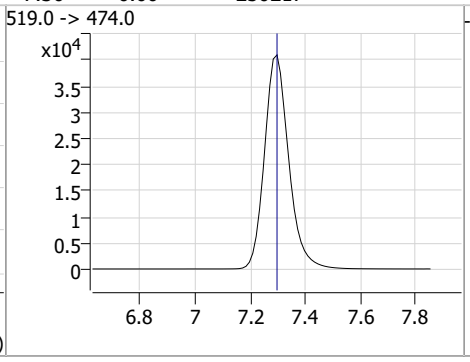


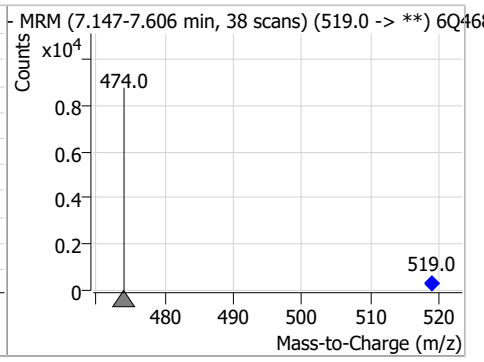




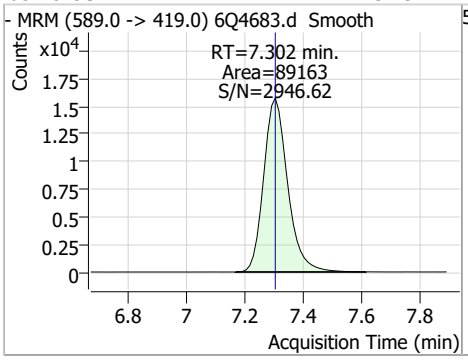
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.30	7.30	0.00	250217				

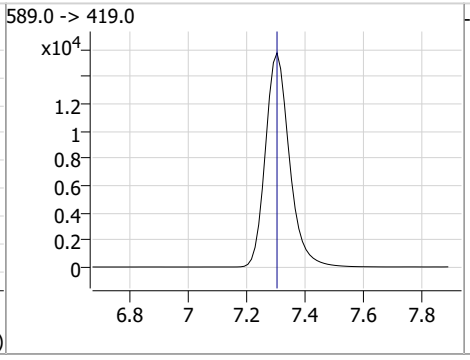


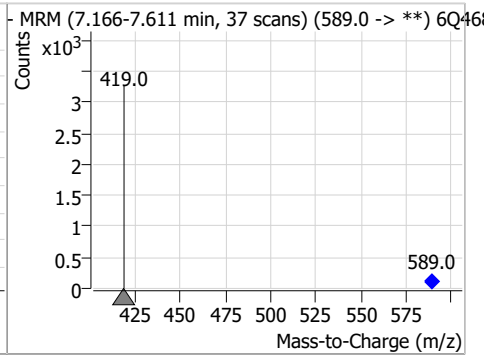




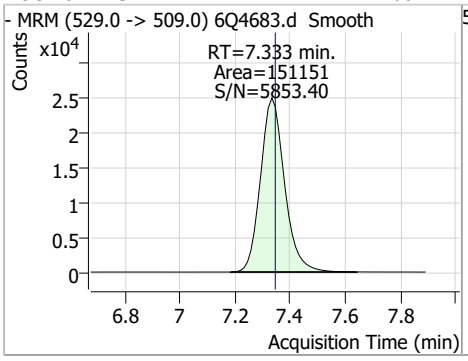
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.13	7.30	0.00	89163				

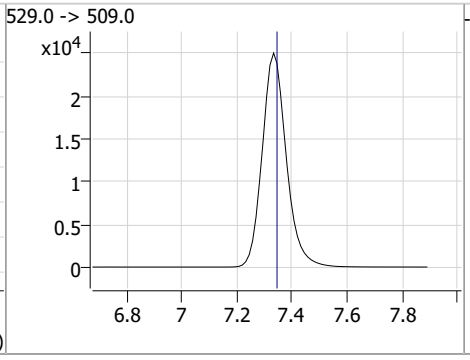


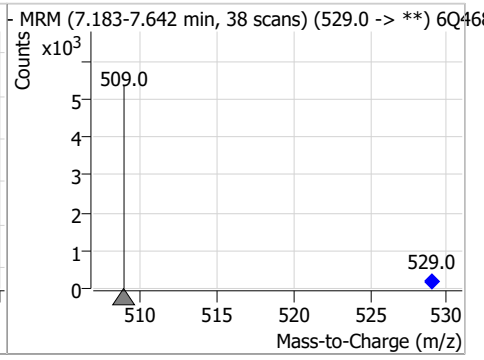




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	11.60	7.33	-0.01	151151				

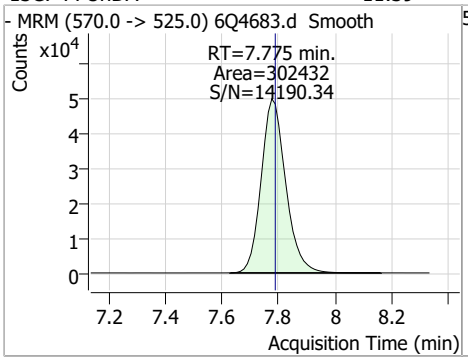


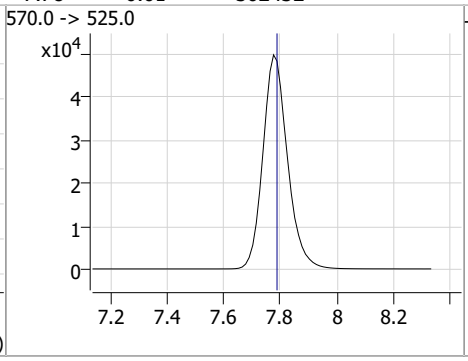


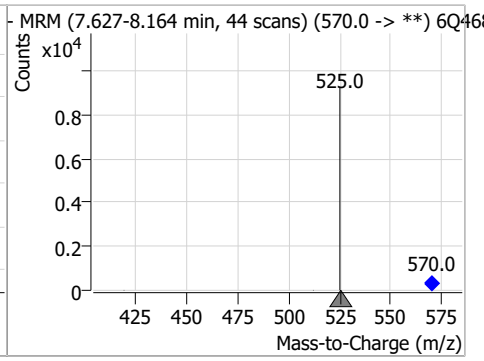


Perfluorinated Compounds by LC/MS/MS

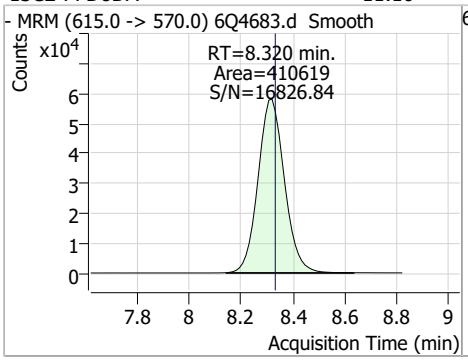
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.39	7.78	-0.01	302432				

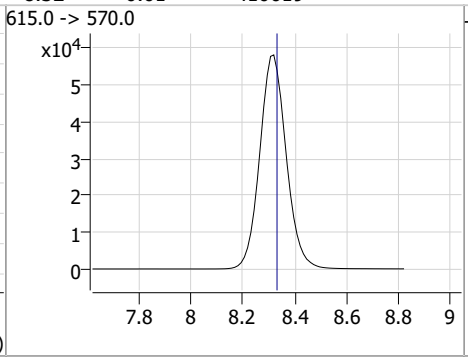


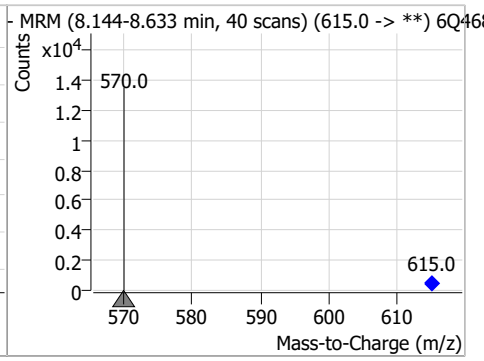




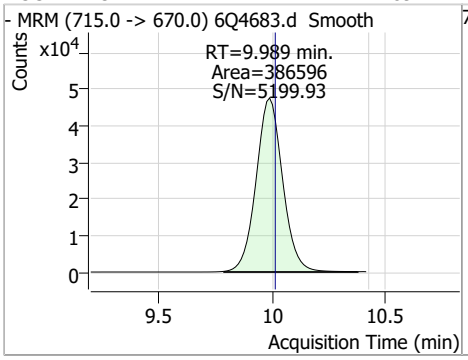
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.16	8.32	-0.01	410619				

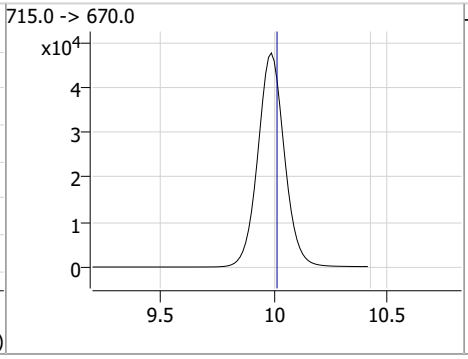


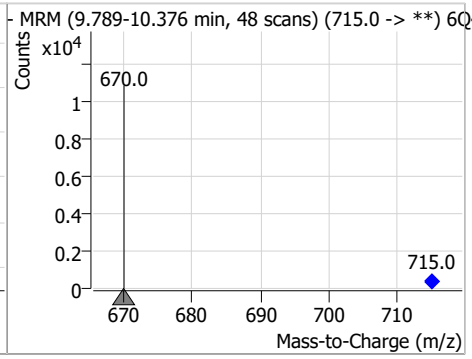




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.89	9.99	-0.02	386596				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4684.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:05:45 AM
Sample Name : fa98286-28
Vial : P5-E9
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.886	217.0 -> 172.0	45164	20.00	µg/L	-0.062
M5-PFPeA	3.380	268.0 -> 223.0	86745	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	144900	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	183309	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	338157	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	421903	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	321683	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	410470	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	506063	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	425273	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	117810	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	21899	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	22387	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	32678	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	183138	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	257912	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	191885	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	135466	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3435	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	2600	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	112012	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	183138	13.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	257912	15.11	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	191885	14.72	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%		
13C2-PFDoDA	8.307	615.0 -> 570.0	506063	13.76	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	425273	14.18	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.9%		
13C3-PFBS	3.610	302.0 -> 99.0	21899	14.30	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%		
13C3-PFHxS	5.463	402.0 -> 99.0	22387	16.19	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.0%		
13C4-PFBA	1.886	217.0 -> 172.0	45164	11.35	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.7%		
13C4-PFHpA	5.433	367.0 -> 322.0	183309	14.81	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C5-PFHxA	4.561	318.0 -> 273.0	144900	13.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%		
13C5-PFPeA	3.380	268.0 -> 223.0	86745	12.37	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.9%		
13C6-PFDA	7.283	519.0 -> 474.0	321683	15.81	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

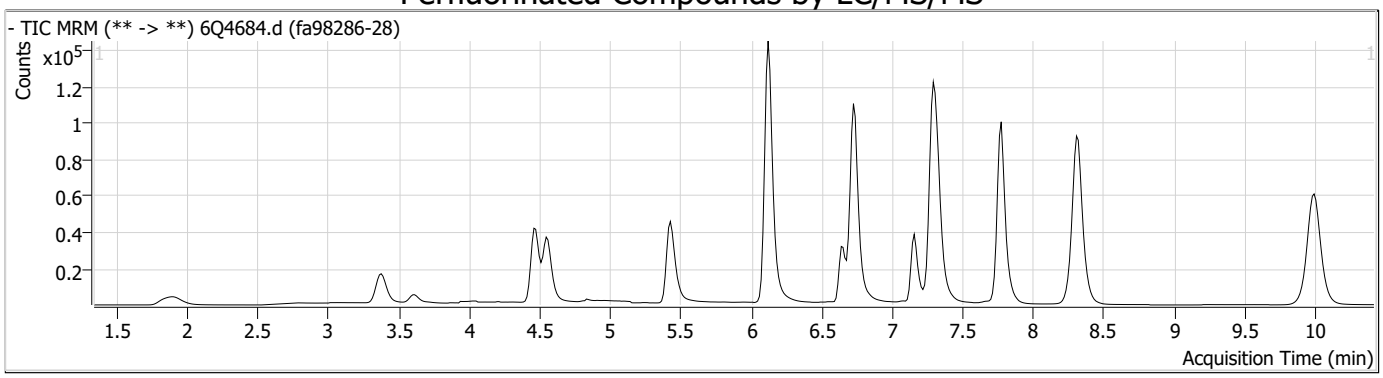
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C7-PFUnDA	7.775	570.0 -> 525.0	410470	15.46 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%		
13C8-FOSA	6.654	506.0 -> 78.0	117810	12.04 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%		
13C8-PFOA	6.126	421.0 -> 376.0	338157	15.94 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C8-PFOS	6.717	507.0 -> 99.0	32678	15.41 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.0%		
13C9-PFNA	6.732	472.0 -> 427.0	421903	16.37 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.9%		
d3-MeFOSAA	7.155	573.0 -> 419.0	135466	15.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.3%		
13C3-HFPO-DA	4.826	287.0 -> 169.0	3448	12.97 µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.9%		
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.		
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%		
d5-EtFOSAA	7.302	589.0 -> 419.0	112010	16.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	-	363.0 -> 319.0	-	N.D.		
		363.0 -> 169.0				
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	4.549	313.0 -> 269.0	674	0.09 µg/L	m	99
		313.0 -> 119.0	17			
PFHxS	5.465	399.0 -> 80.0	531	0.17 µg/L	m	94
		399.0 -> 99.0	279			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	499.0 -> 80.0	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

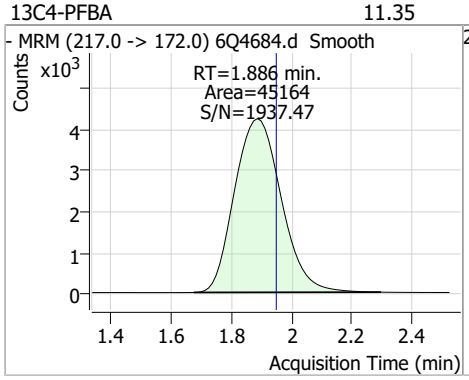
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.358	263.0 -> 219.0	339	0.09	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

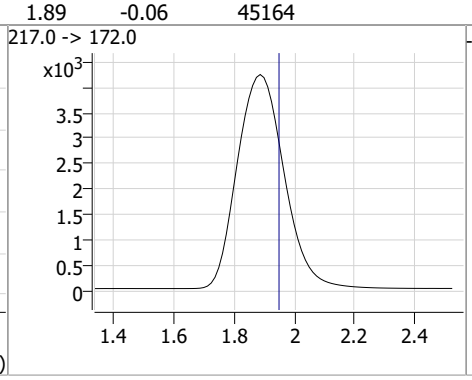
 # = Qualifier out of range, m = manually integrated, + = Area summed

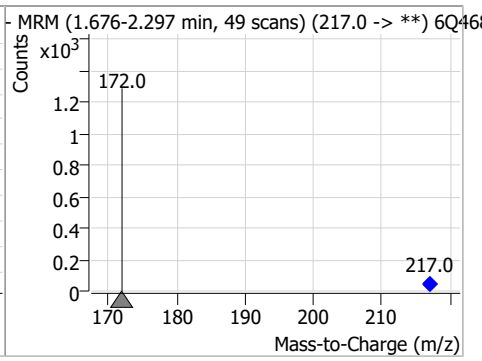
Perfluorinated Compounds by LC/MS/MS



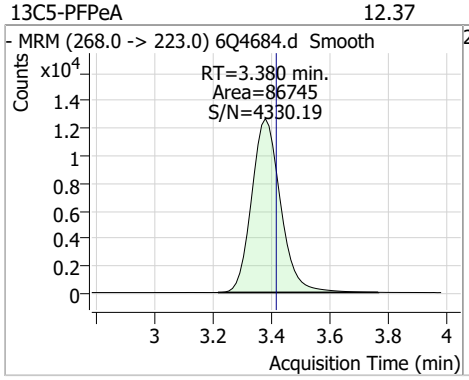
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.35	1.89	-0.06	45164				

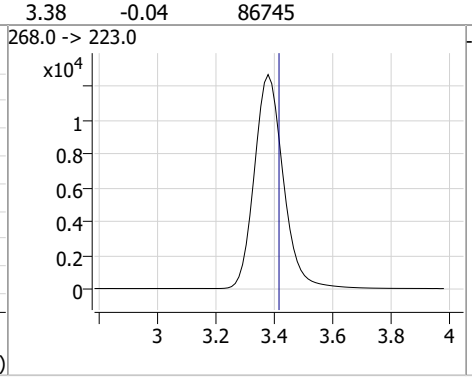


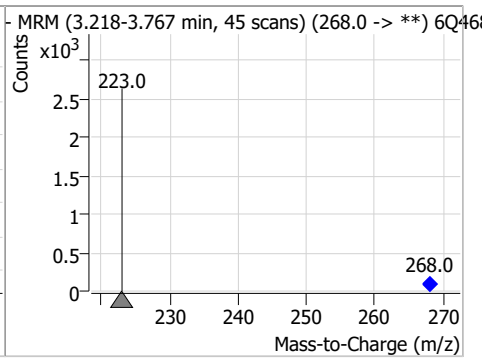




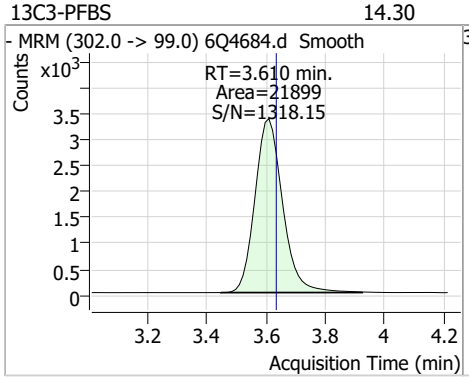
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.37	3.38	-0.04	86745				

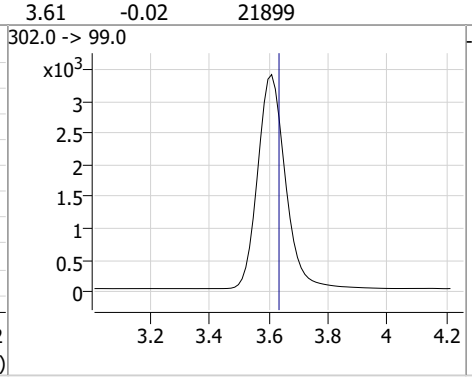


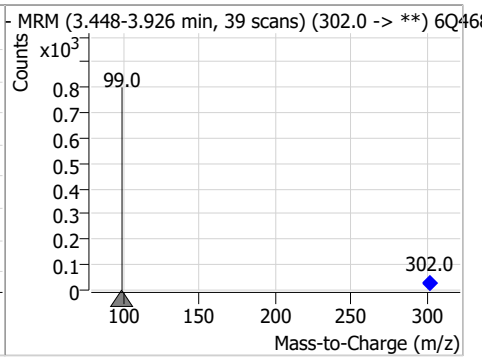




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.30	3.61	-0.02	21899				

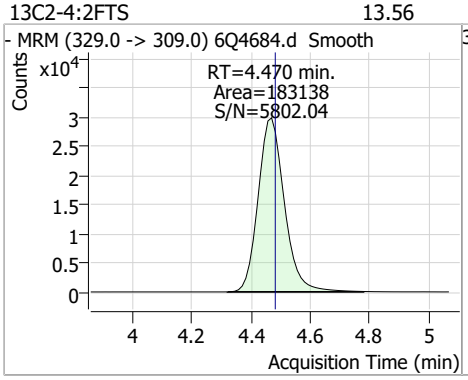


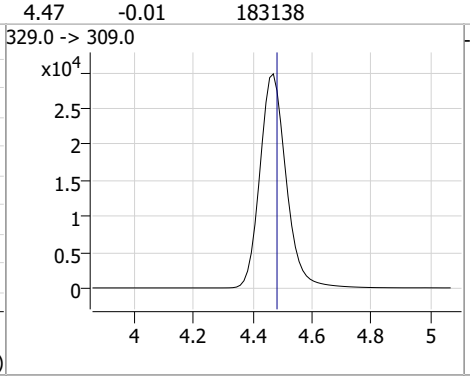


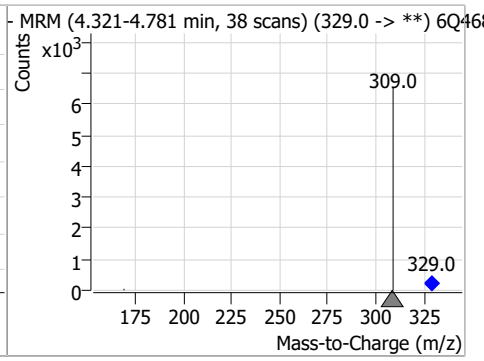


Perfluorinated Compounds by LC/MS/MS

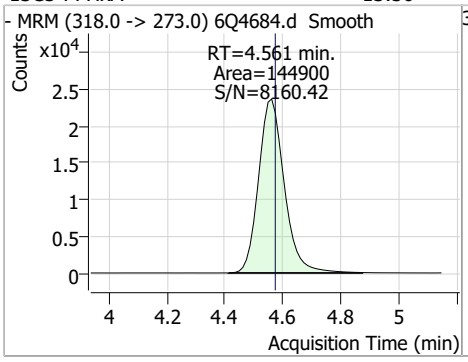
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.56	4.47	-0.01	183138				

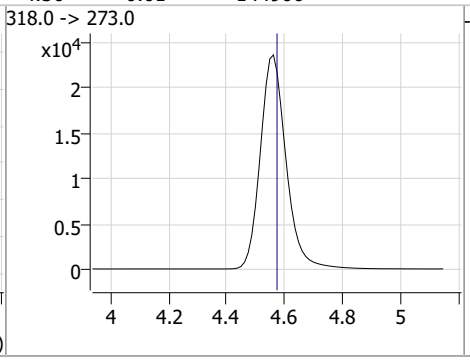


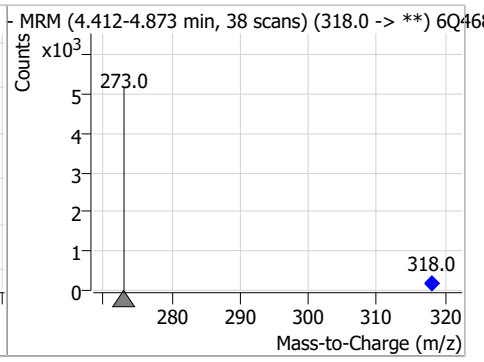




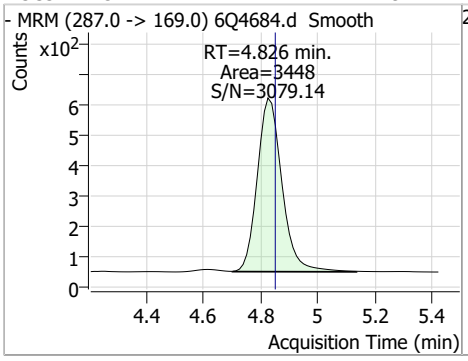
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.56	4.56	-0.01	144900				

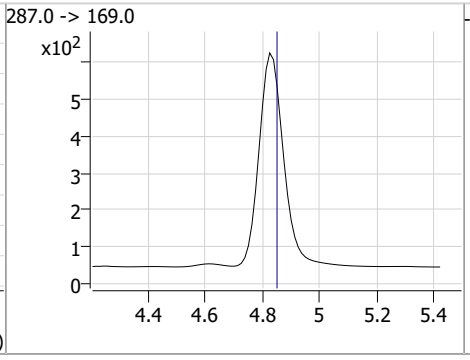


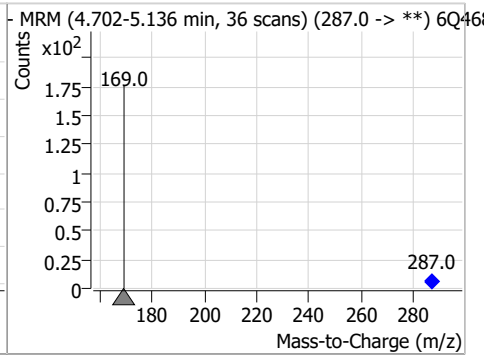




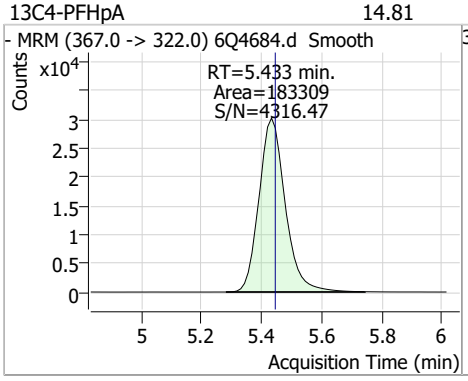
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.97	4.83	-0.03	3448				

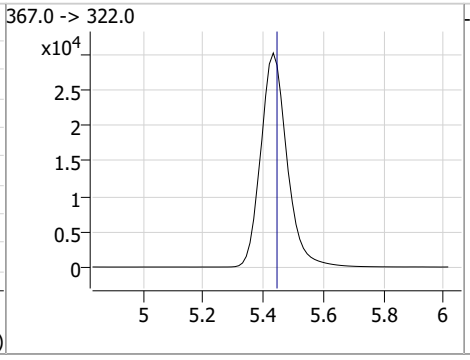


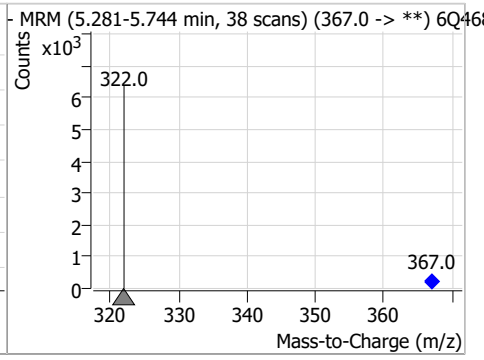




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.81	5.43	-0.01	183309				

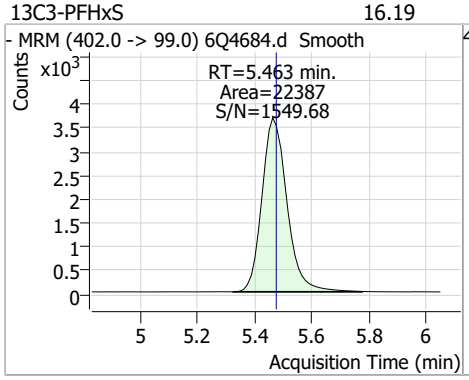


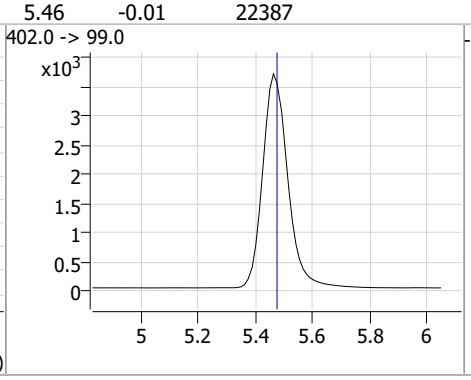


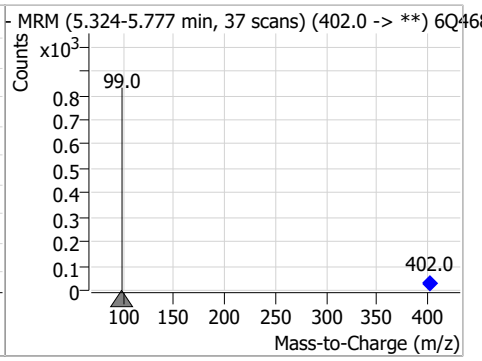


Perfluorinated Compounds by LC/MS/MS

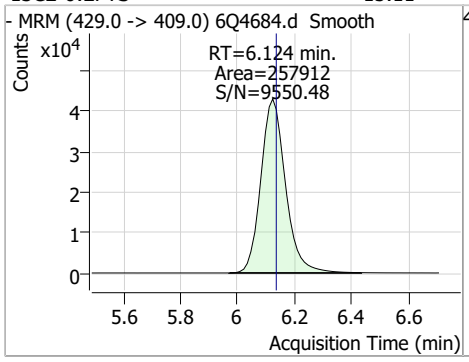
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.19	5.46	-0.01	22387				

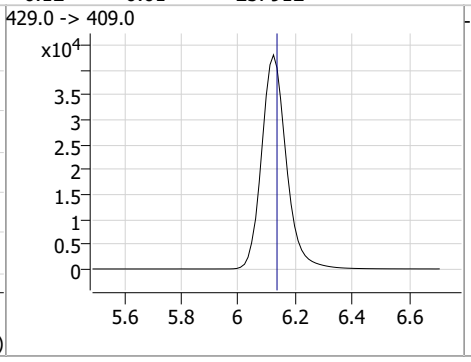


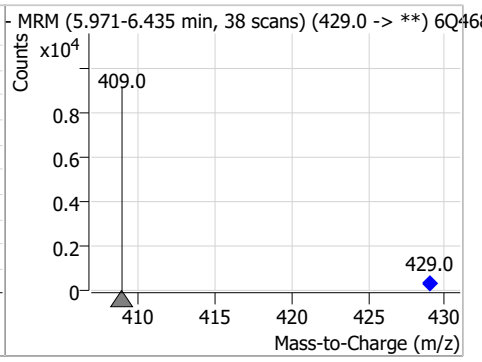




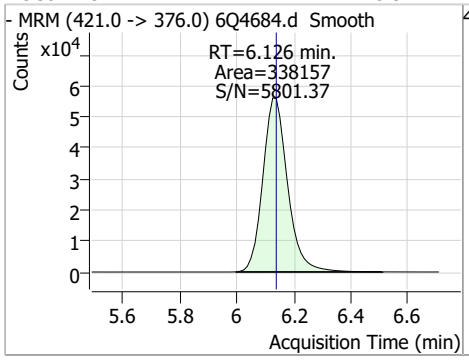
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.11	6.12	-0.01	257912				

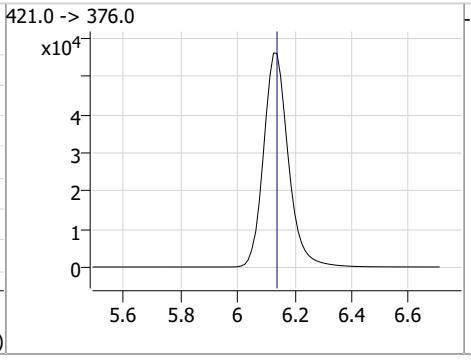


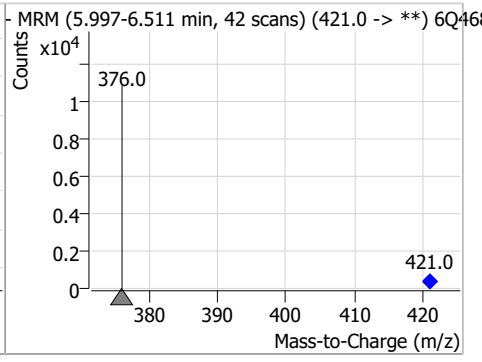




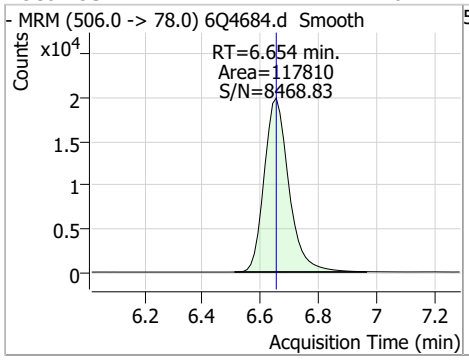
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.94	6.13	-0.01	338157				

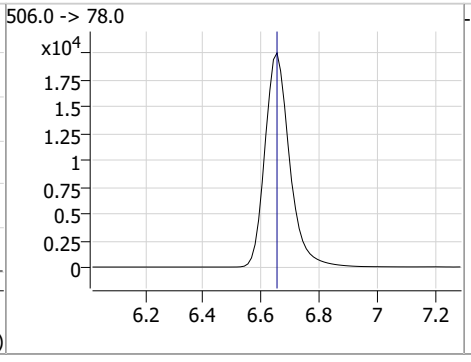


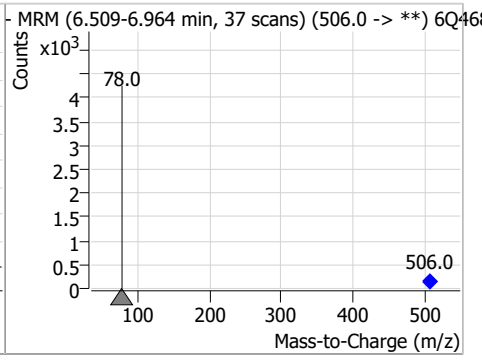




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.04	6.65	0.00	117810				

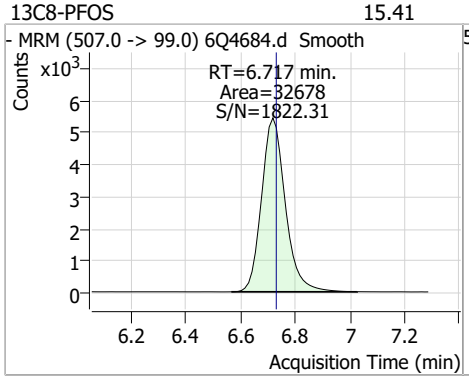


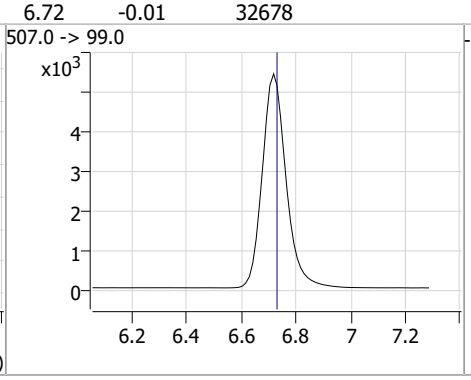


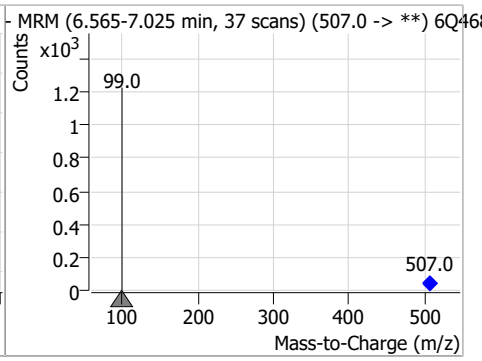


Perfluorinated Compounds by LC/MS/MS

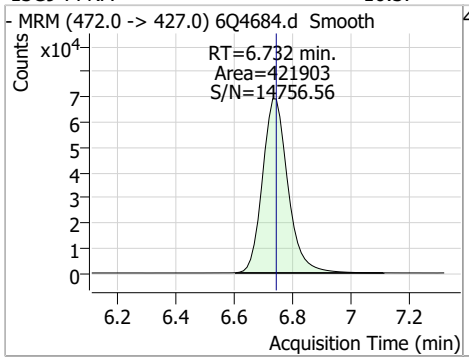
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.41	6.72	-0.01	32678				

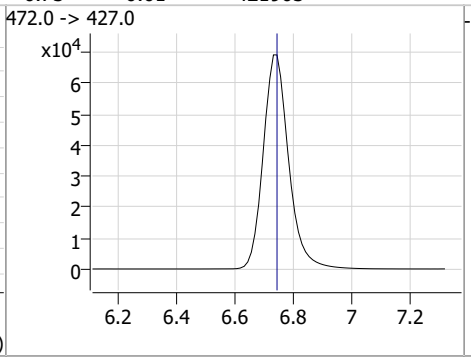


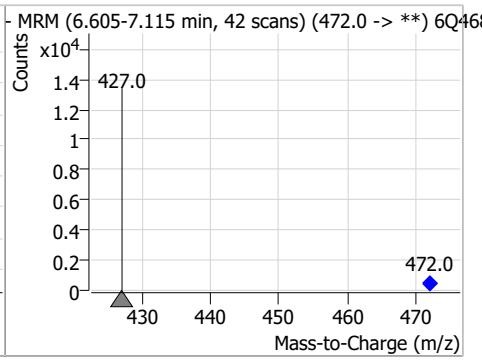




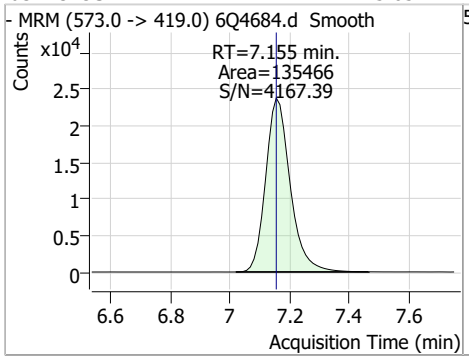
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.37	6.73	-0.01	421903				

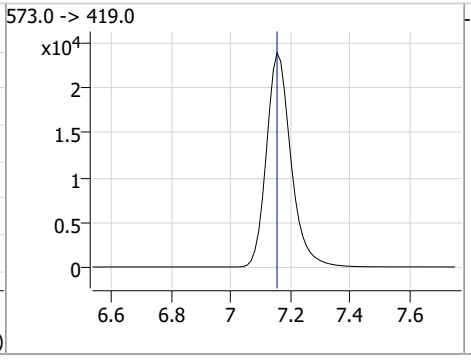


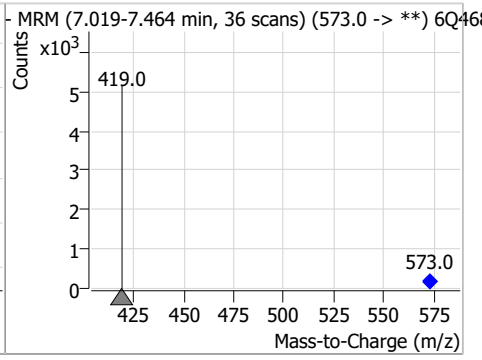




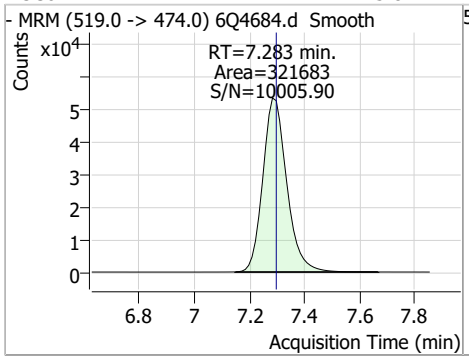
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.65	7.15	0.00	135466				

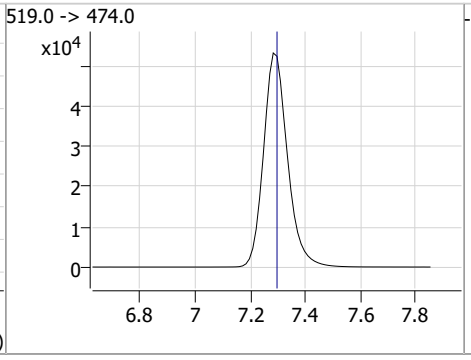


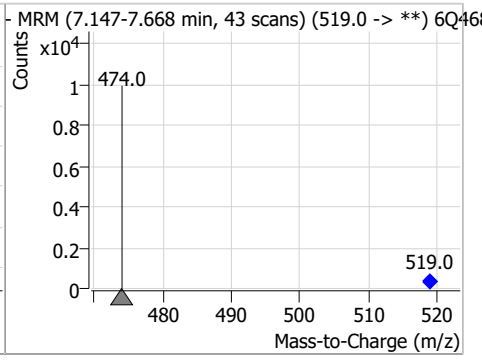




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.81	7.28	-0.01	321683				

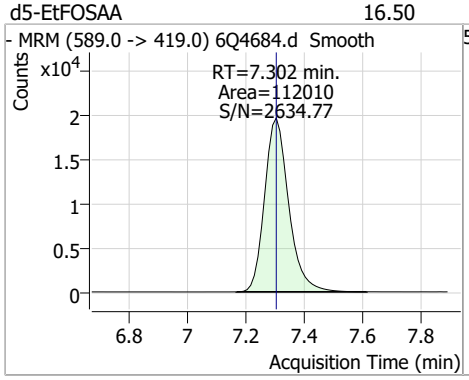


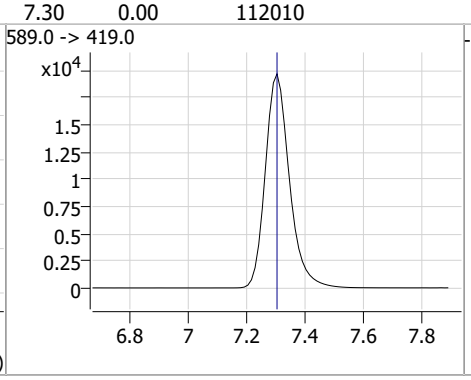


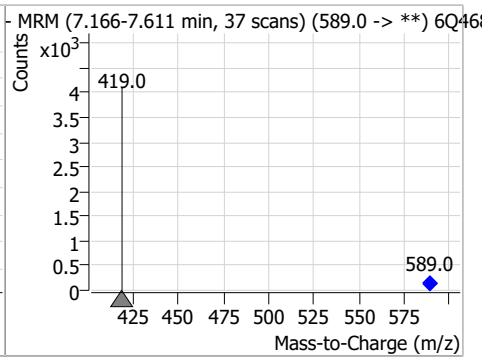


Perfluorinated Compounds by LC/MS/MS

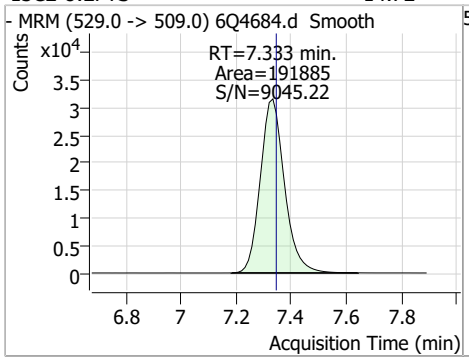
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.50	7.30	0.00	112010				

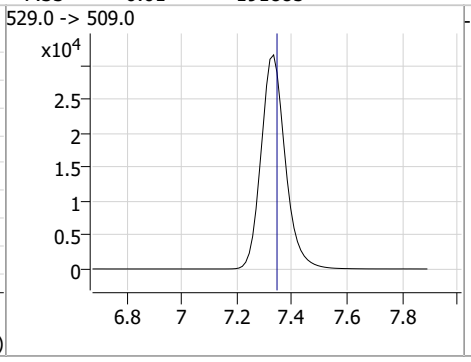


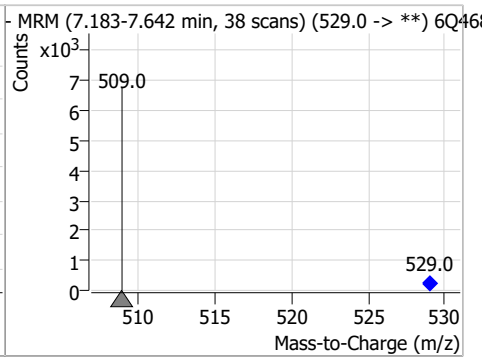




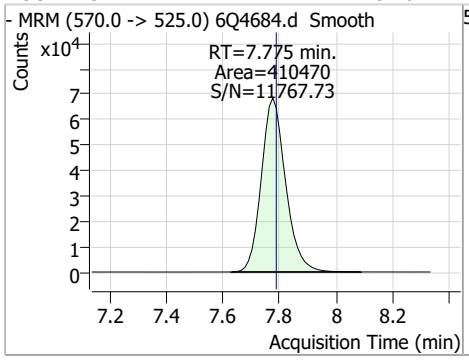
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.72	7.33	-0.01	191885				

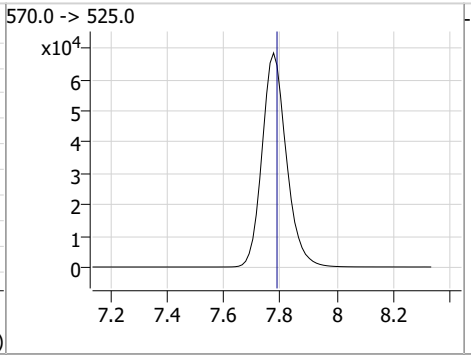


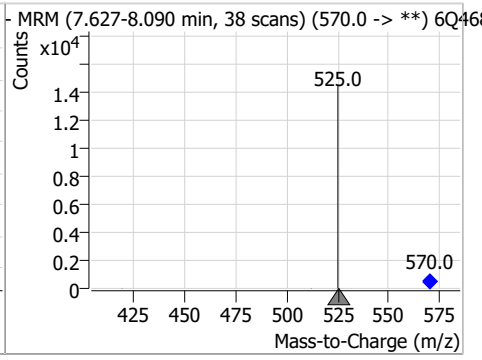




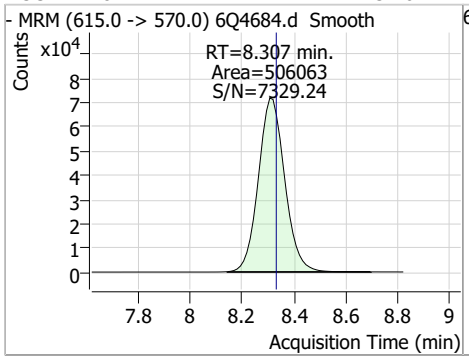
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.46	7.78	-0.01	410470				

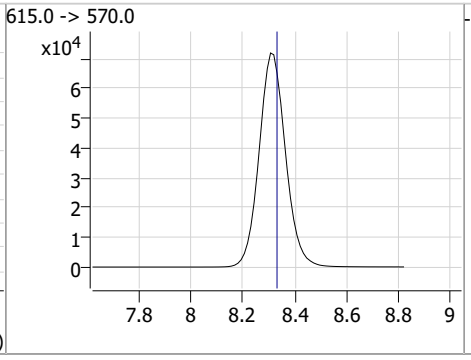


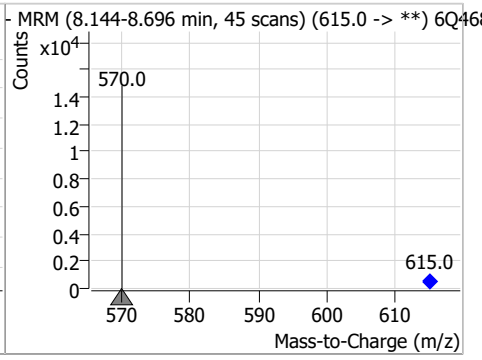




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.76	8.31	-0.02	506063				

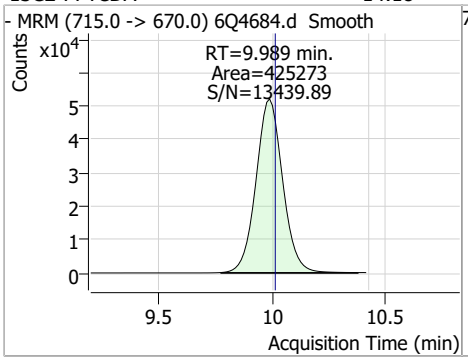


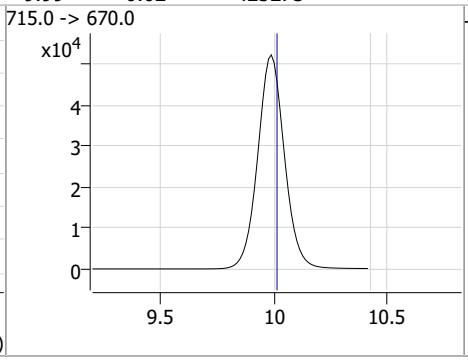


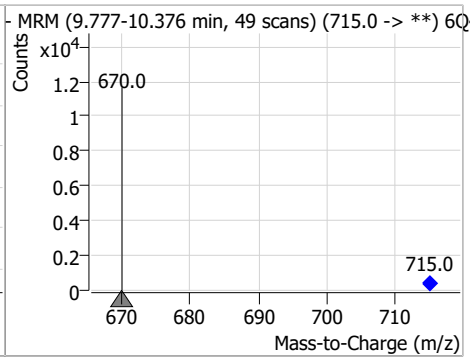


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.18	9.99	-0.02	425273				







Manual Integration Approval Summary

Sample Number: FA98286-28
Lab FileID: 6Q4684.D
Injection Time: 09/15/22 04:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.36	Split peak
Perfluorohexanoic acid	307-24-4		4.55	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4685.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:21:46 AM
Sample Name : fa98286-29
Vial : P5-F1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	63580	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	112290	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	172330	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	197120	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	330136	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	380981	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	300596	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	387000	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	519217	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	450323	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	137242	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	25005	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	21019	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	29181	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	198870	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	242216	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	172245	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	127913	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4414	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	6424	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	106957	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	198870	14.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%		
13C2-6:2FTS	6.124	429.0 -> 409.0	242216	14.19	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.0%		
13C2-8:2FTS	7.333	529.0 -> 509.0	172245	13.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.1%		
13C2-PFDoDA	8.320	615.0 -> 570.0	519217	14.12	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.6%		
13C2-PFTeDA	9.989	715.0 -> 670.0	450323	15.01	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C3-PFBS	3.635	302.0 -> 99.0	25005	16.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%		
13C3-PFHxS	5.475	402.0 -> 99.0	21019	15.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C4-PFBA	1.949	217.0 -> 172.0	63580	15.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C4-PFHpA	5.445	367.0 -> 322.0	197120	15.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C5-PFHxA	4.573	318.0 -> 273.0	172330	16.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C5-PFPeA	3.405	268.0 -> 223.0	112290	16.02	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C6-PFDA	7.297	519.0 -> 474.0	300596	14.77	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

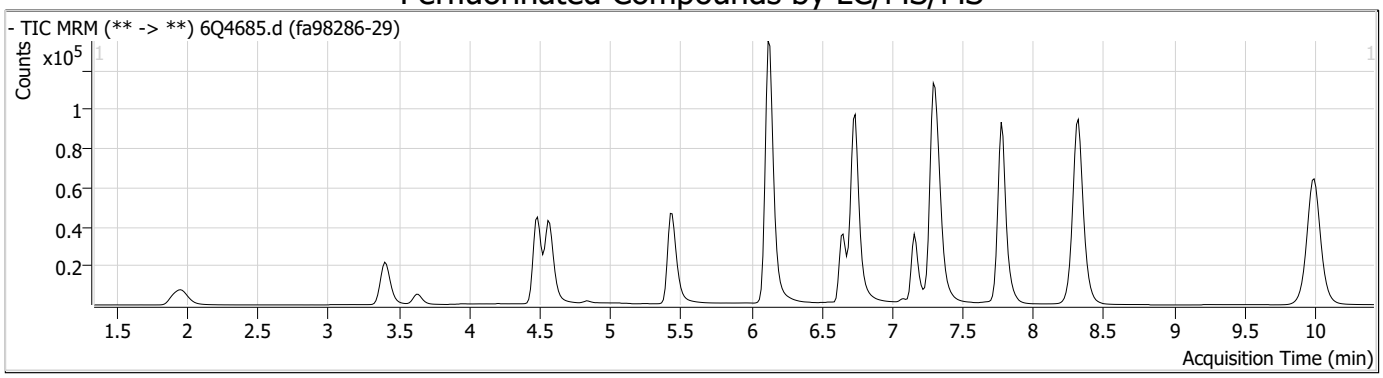
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%	
13C7-PFUnDA	7.775	570.0 -> 525.0	387000	14.58 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%	
13C8-FOSA	6.654	506.0 -> 78.0	137242	14.03 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%	
13C8-PFOA	6.138	421.0 -> 376.0	330136	15.56 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%	
13C8-PFOS	6.717	507.0 -> 99.0	29181	13.76 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%	
13C9-PFNA	6.745	472.0 -> 427.0	380981	14.79 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%	
d3-MeFOSAA	7.155	573.0 -> 419.0	127913	14.78 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	4424	16.65 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%	
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.	
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	
d5-EtFOSAA	7.302	589.0 -> 419.0	106968	15.76 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.8%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

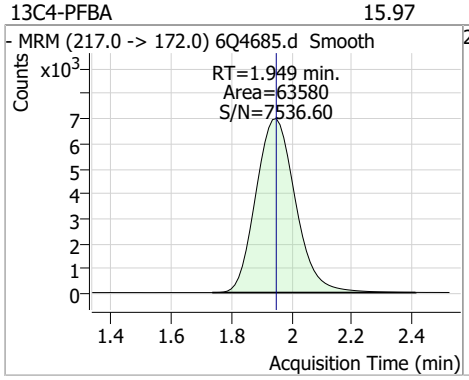
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

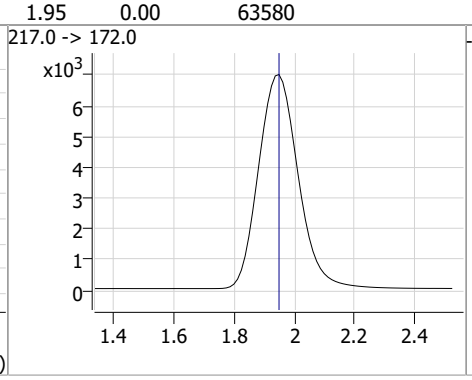
 # = Qualifier out of range, m = manually integrated, + = Area summed

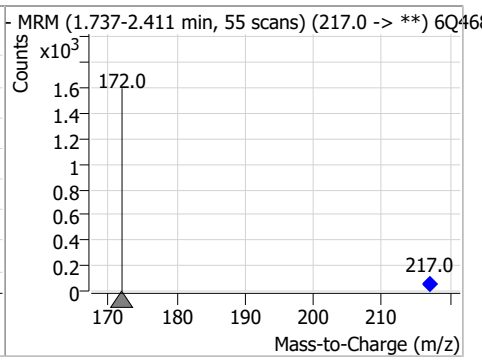
Perfluorinated Compounds by LC/MS/MS



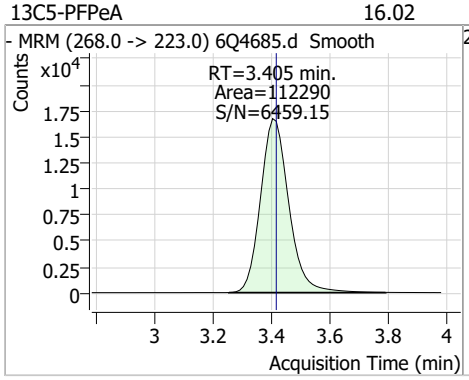
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.97	1.95	0.00	63580				

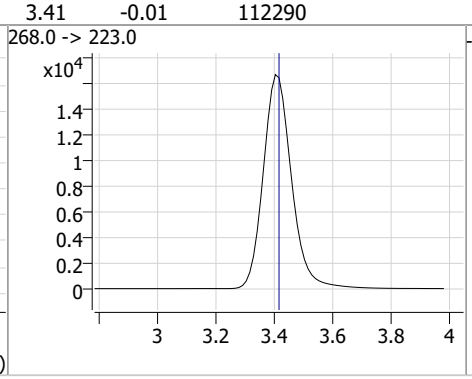


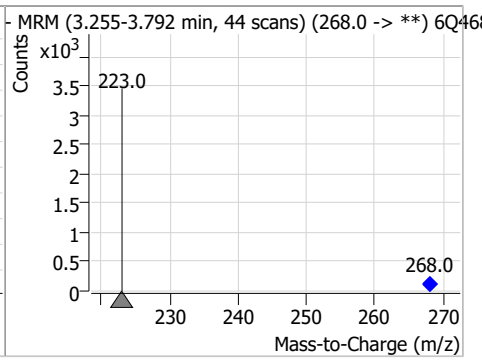




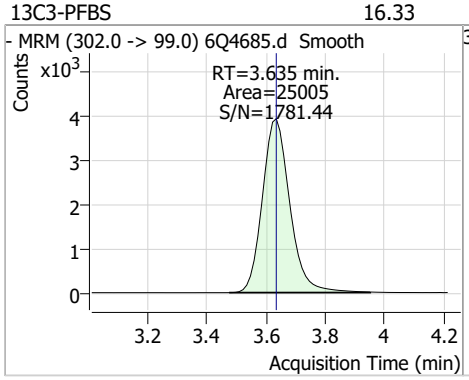
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.02	3.41	-0.01	112290				

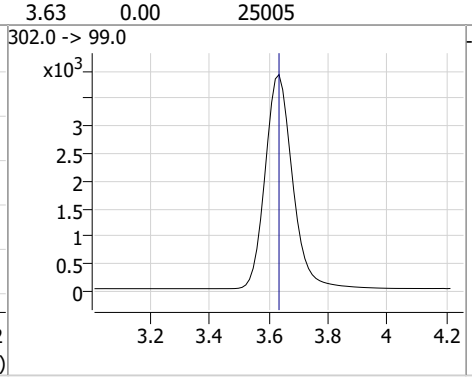


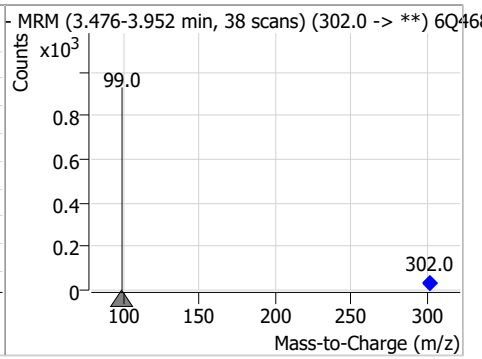




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.33	3.63	0.00	25005				

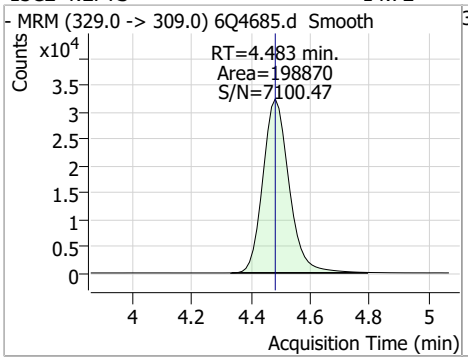


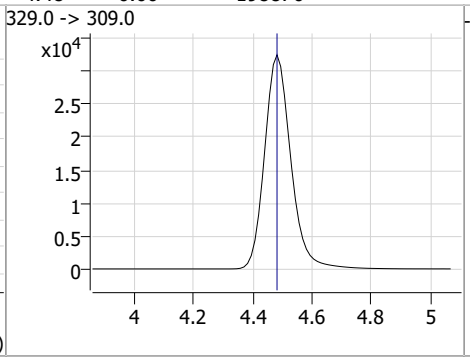


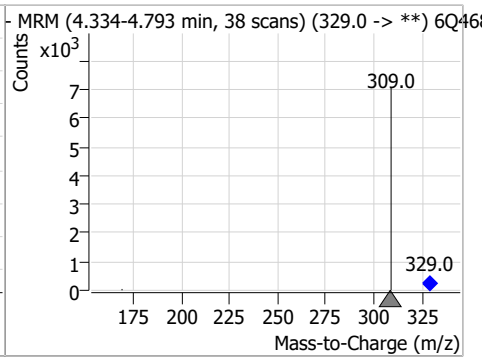


Perfluorinated Compounds by LC/MS/MS

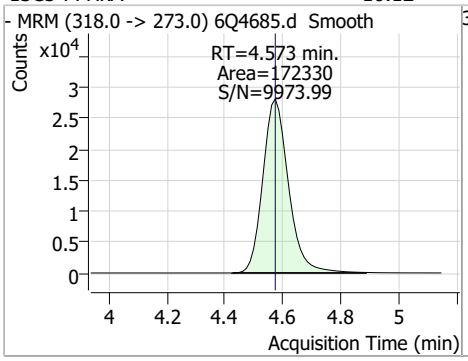
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.72	4.48	0.00	198870				

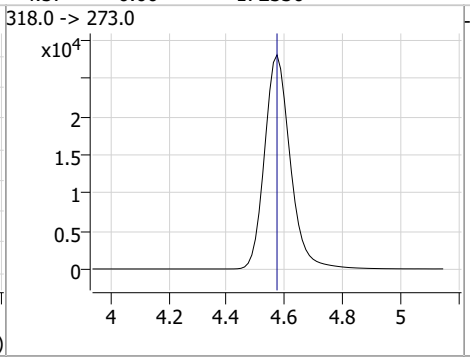


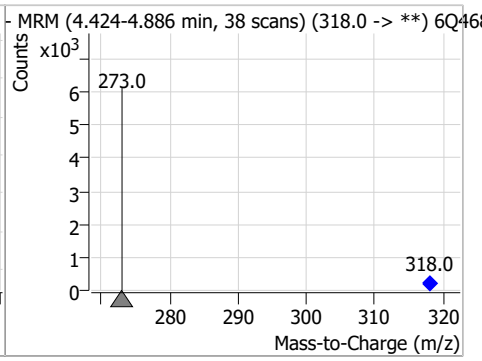




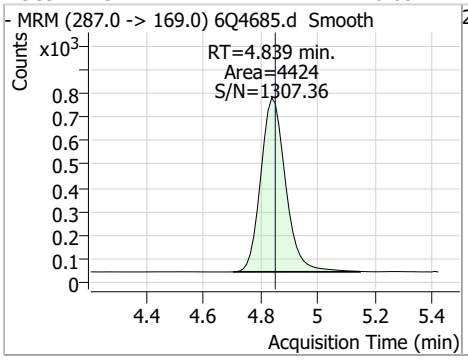
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.12	4.57	0.00	172330				

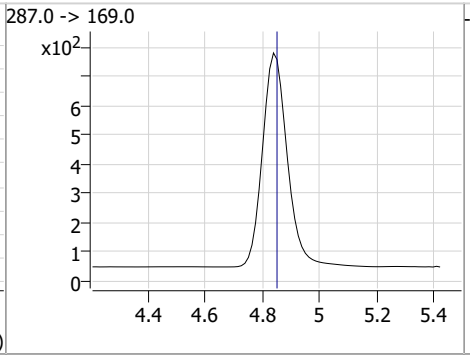


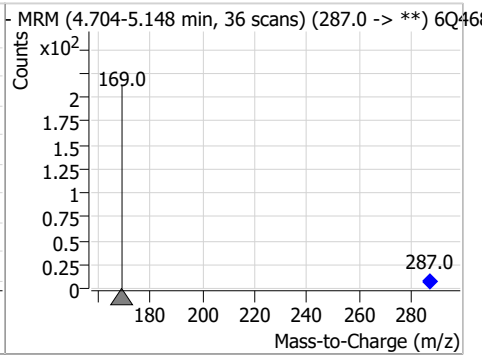




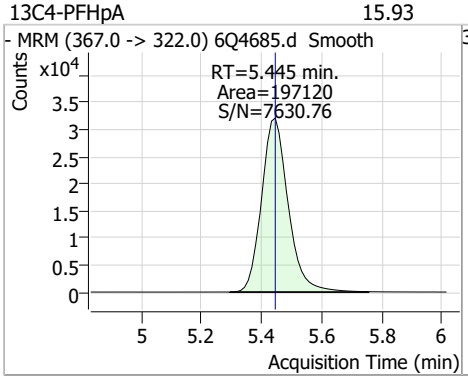
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.65	4.84	-0.01	4424				

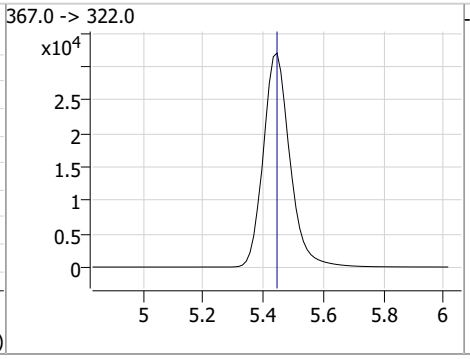


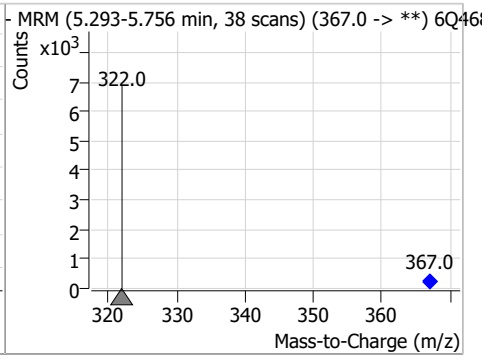




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.93	5.45	0.00	197120				

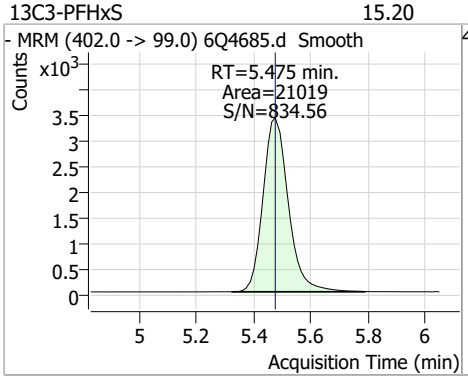


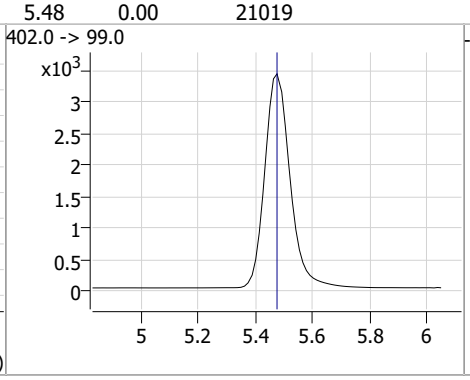


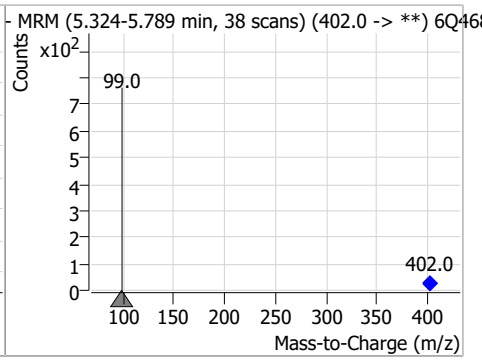


Perfluorinated Compounds by LC/MS/MS

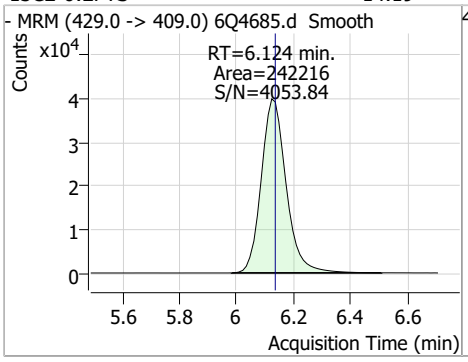
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.20	5.48	0.00	21019				

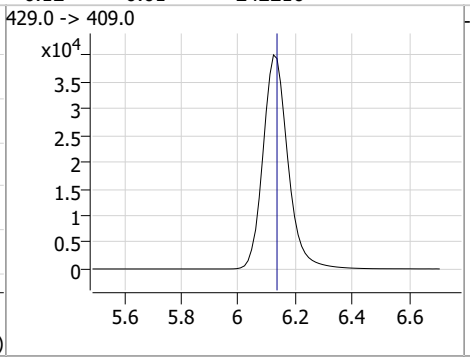


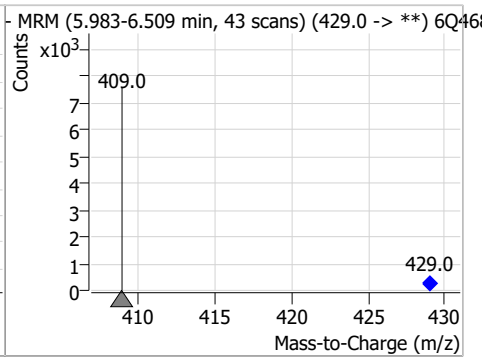




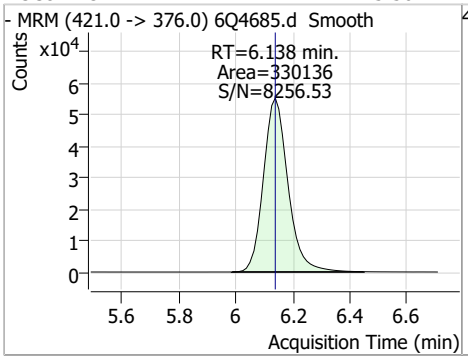
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.19	6.12	-0.01	242216				

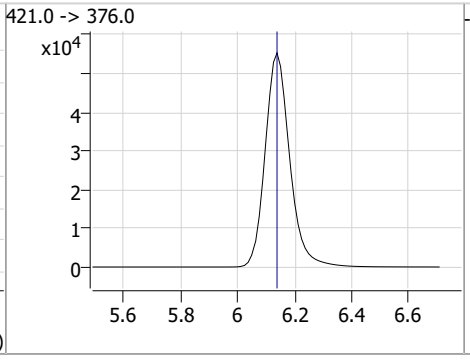


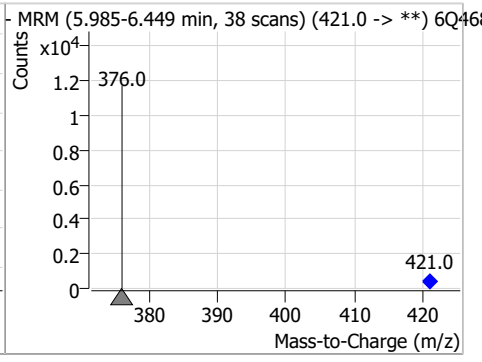




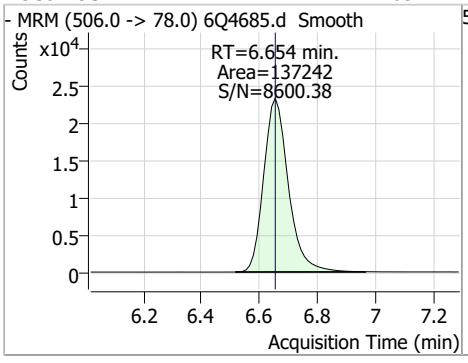
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.56	6.14	0.00	330136				

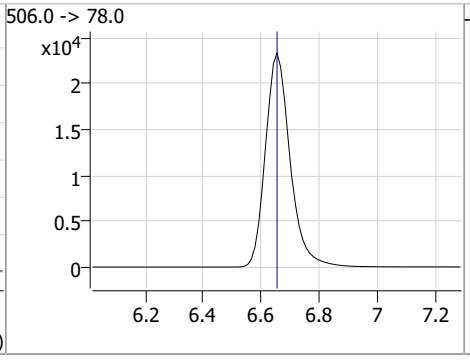


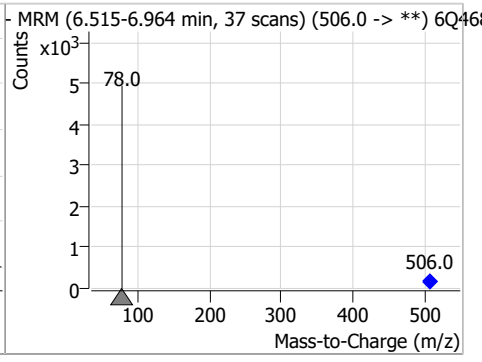




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.03	6.65	0.00	137242				

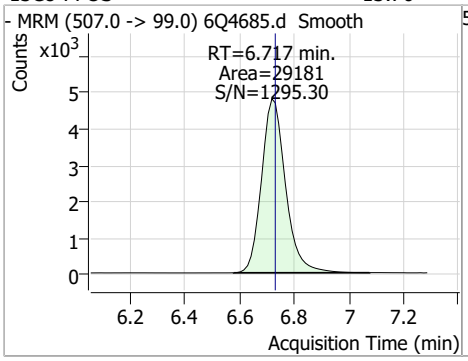


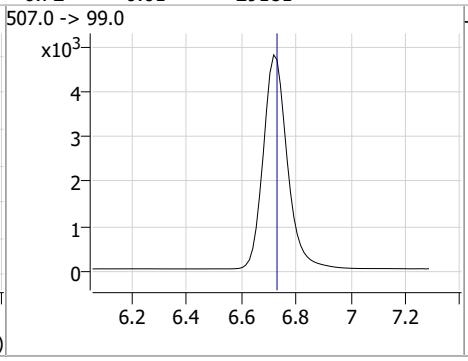


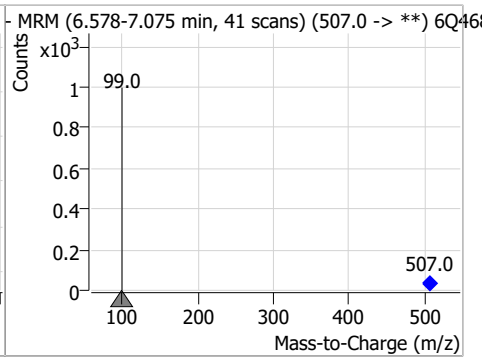


Perfluorinated Compounds by LC/MS/MS

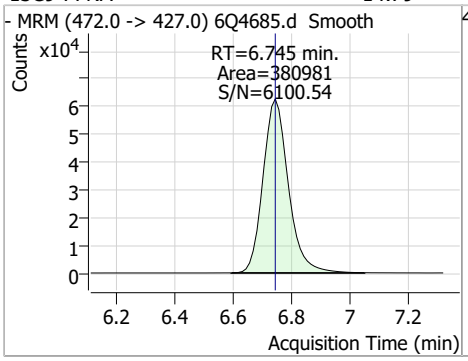
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.76	6.72	-0.01	29181				

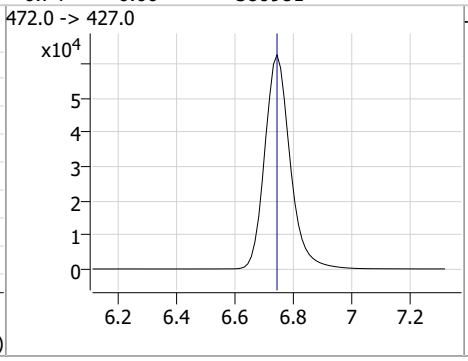


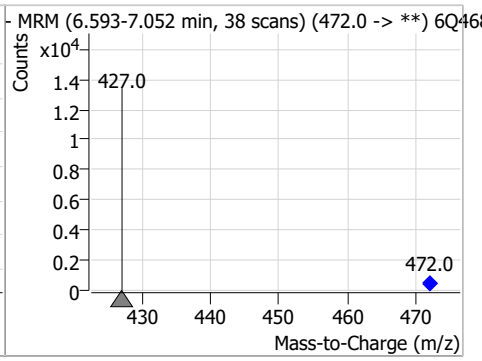




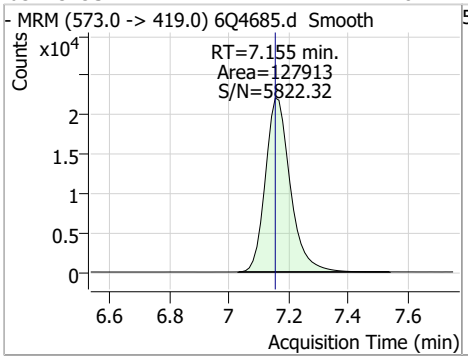
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.79	6.74	0.00	380981				

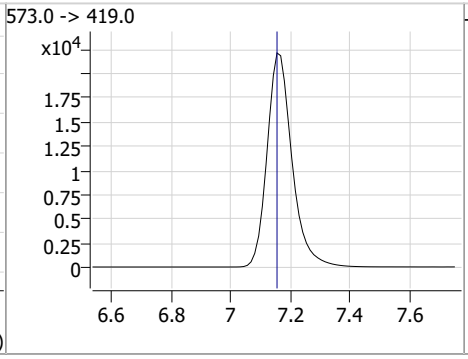


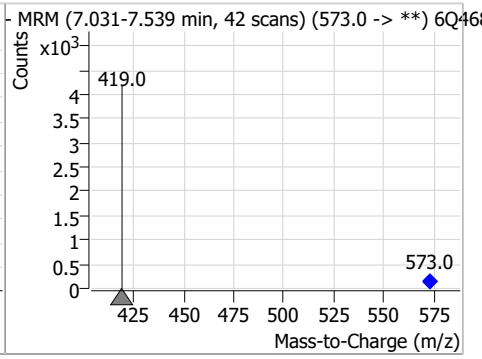




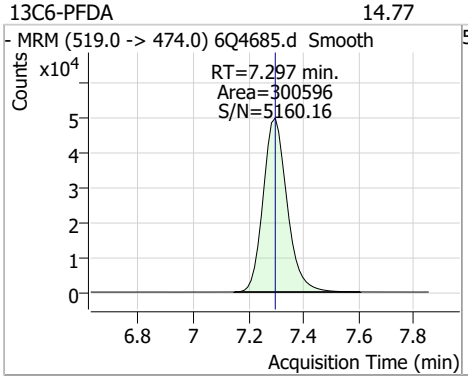
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.78	7.15	0.00	127913				

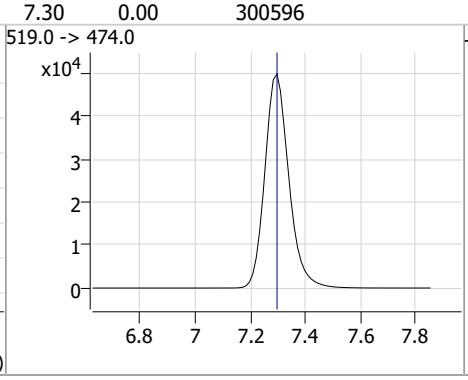


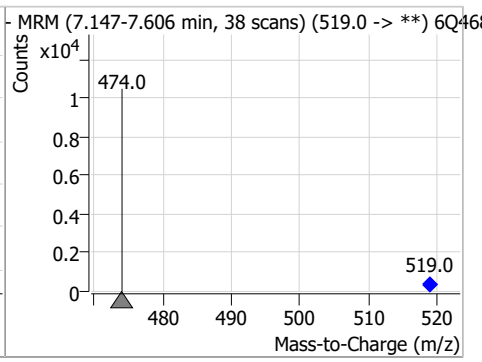




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.77	7.30	0.00	300596				

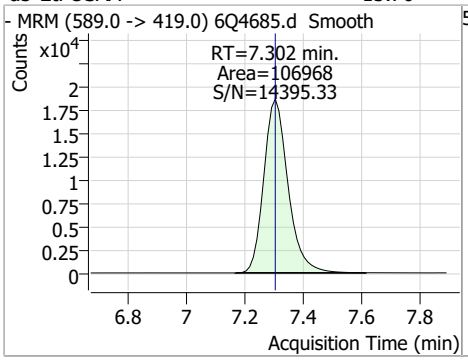


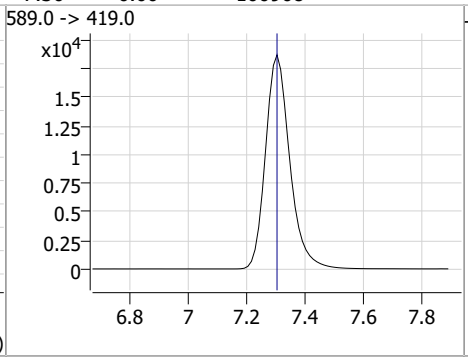


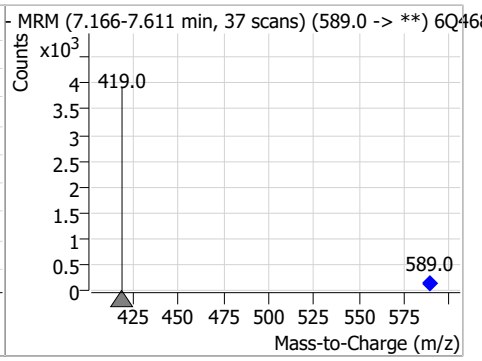


Perfluorinated Compounds by LC/MS/MS

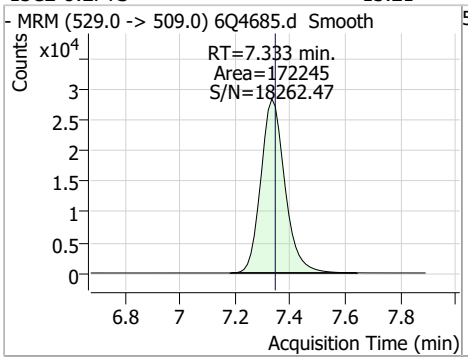
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.76	7.30	0.00	106968				

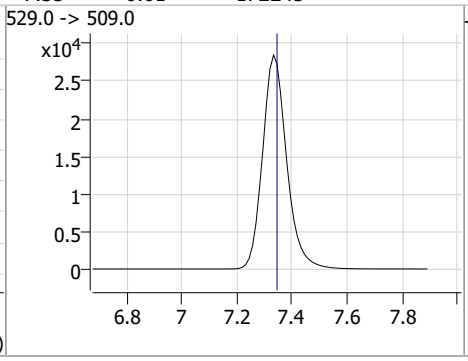


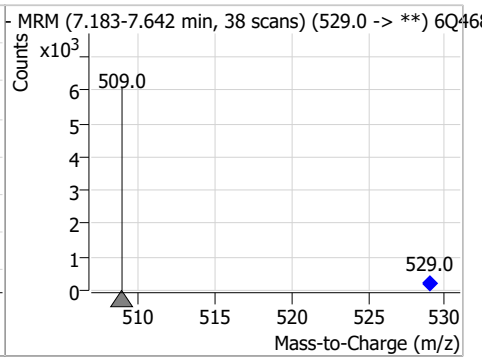




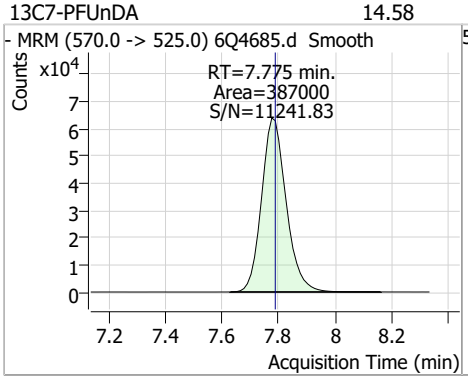
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.21	7.33	-0.01	172245				

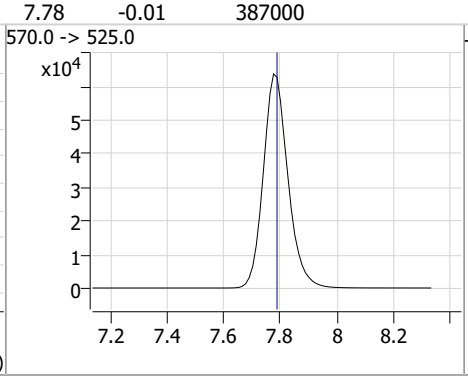


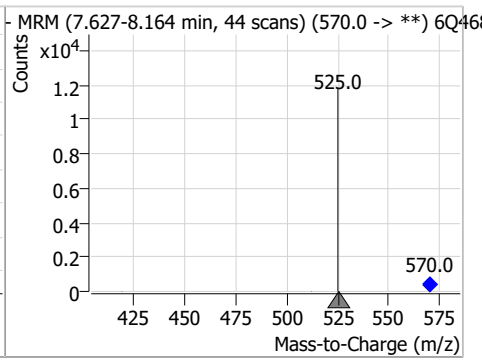




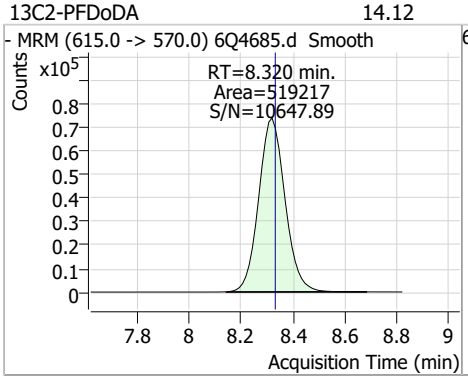
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.58	7.78	-0.01	387000				

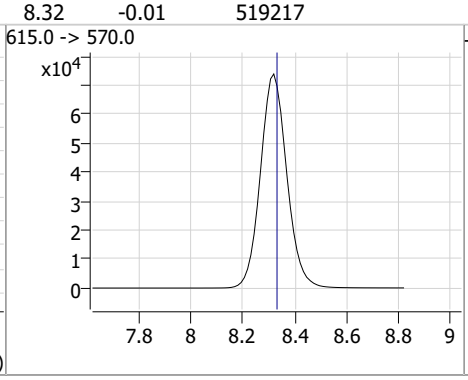


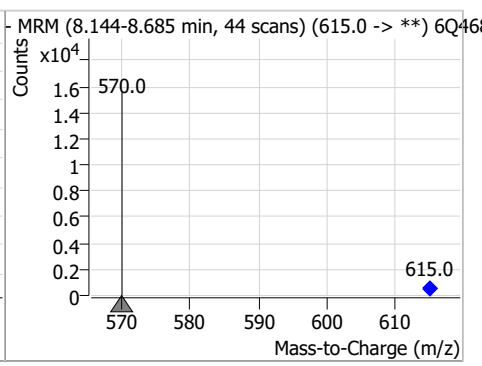




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.12	8.32	-0.01	519217				

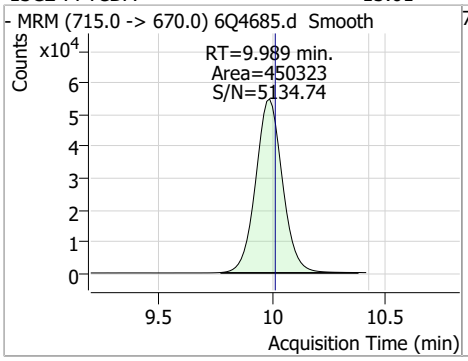


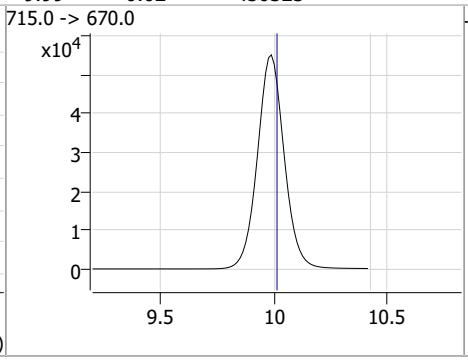


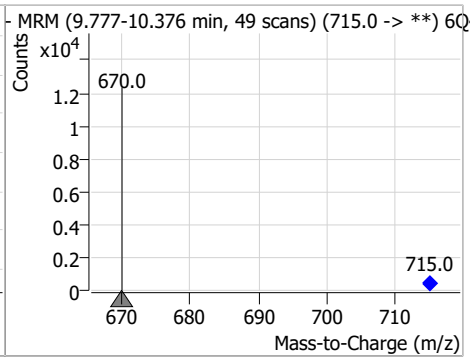


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.01	9.99	-0.02	450323				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4686.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:37:50 AM
Sample Name : fa98286-30
Vial : P5-F2
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.936	217.0 -> 172.0	60445	20.00 µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	107867	20.00 µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	165788	20.00 µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	193338	20.00 µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	328108	20.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	355348	20.00 µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	251741	20.00 µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	335687	20.00 µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	471283	20.00 µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	423277	20.00 µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	127628	20.00 µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	24085	20.00 µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	21518	20.00 µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	26346	20.00 µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	193201	20.00 µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	247231	20.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	158817	20.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	110358	20.00 µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4060	20.00 µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	19720	20.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	90675	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.483	329.0 -> 309.0	193201	14.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.5%	
13C2-6:2FTS	6.124	429.0 -> 409.0	247231	14.48 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%	
13C2-8:2FTS	7.333	529.0 -> 509.0	158817	12.18 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.9%	
13C2-PFDoDA	8.320	615.0 -> 570.0	471283	12.81 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%	
13C2-PFTeDA	9.989	715.0 -> 670.0	423277	14.11 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%	
13C3-PFBS	3.622	302.0 -> 99.0	24085	15.73 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.6%	
13C3-PFHxS	5.463	402.0 -> 99.0	21518	15.56 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%	
13C4-PFBA	1.936	217.0 -> 172.0	60445	15.19 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%	
13C4-PFHpA	5.433	367.0 -> 322.0	193338	15.63 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%	
13C5-PFHxA	4.561	318.0 -> 273.0	165788	15.51 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%	
13C5-PFPeA	3.405	268.0 -> 223.0	107867	15.39 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%	
13C6-PFDA	7.297	519.0 -> 474.0	251741	12.37 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

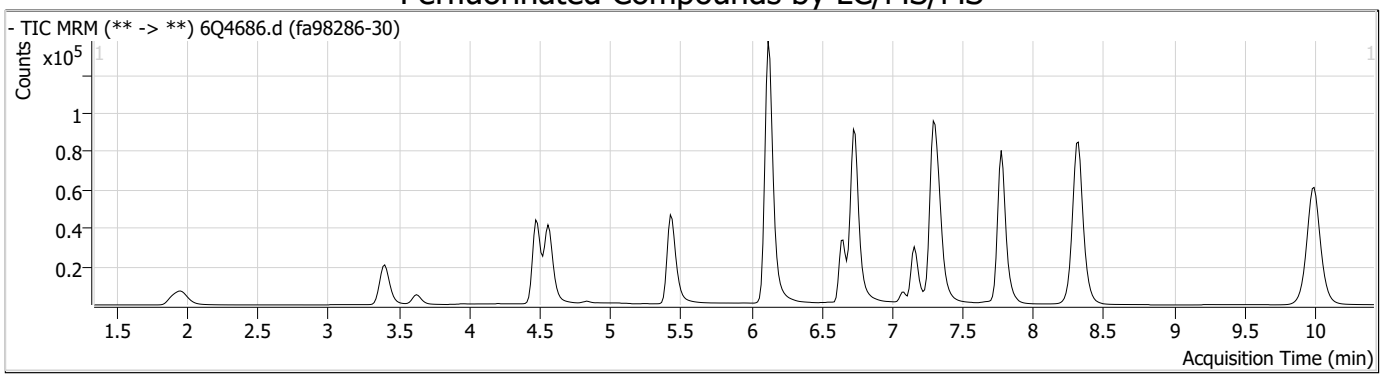
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.9%	
13C7-PFUnDA	7.775	570.0 -> 525.0	335687	12.64 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.2%	
13C8-FOSA	6.654	506.0 -> 78.0	127628	13.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%	
13C8-PFOA	6.138	421.0 -> 376.0	328108	15.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%	
13C8-PFOS	6.717	507.0 -> 99.0	26346	12.42 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.1%	
13C9-PFNA	6.745	472.0 -> 427.0	355348	13.79 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%	
d3-MeFOSAA	7.155	573.0 -> 419.0	110358	12.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	4064	15.29 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%	
d3-MeFOSA	7.085	515.0 -> 169.0	19720	8.72 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.6%	
d5-EtFOSAA	7.302	589.0 -> 419.0	90713	13.36 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

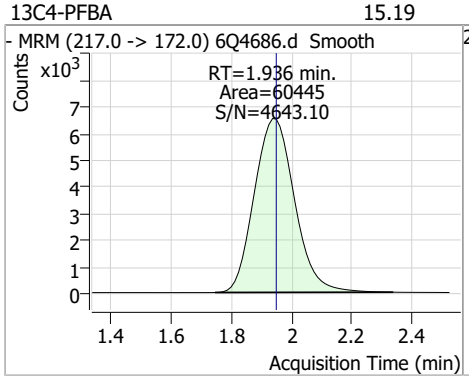
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

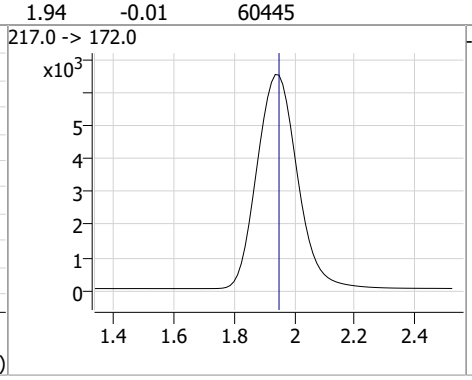
 # = Qualifier out of range, m = manually integrated, + = Area summed

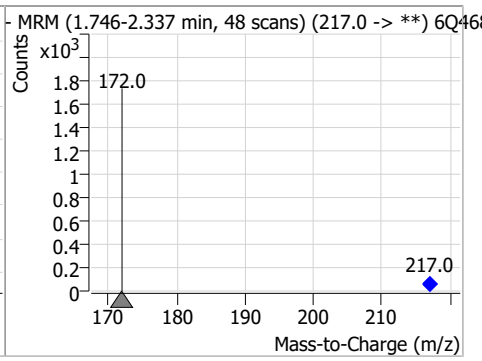
Perfluorinated Compounds by LC/MS/MS



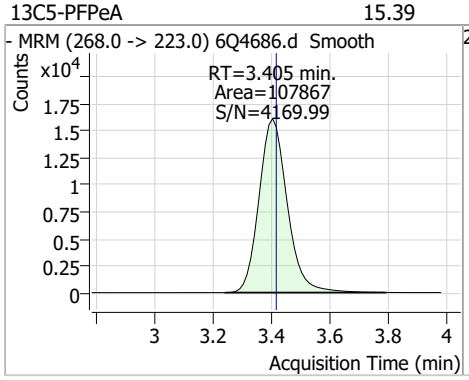
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.19	1.94	-0.01	60445				

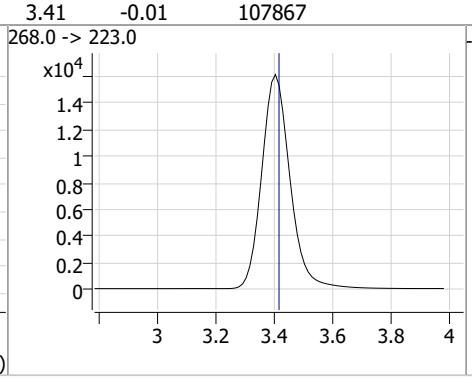


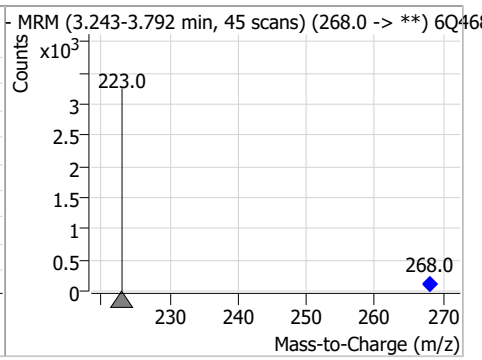




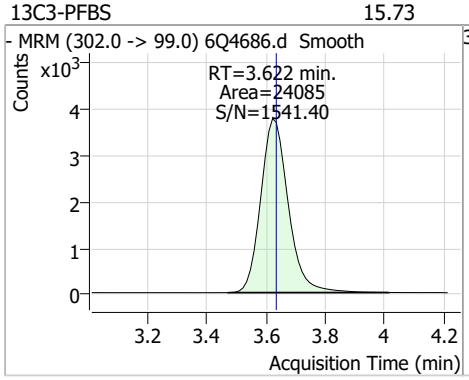
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.39	3.41	-0.01	107867				

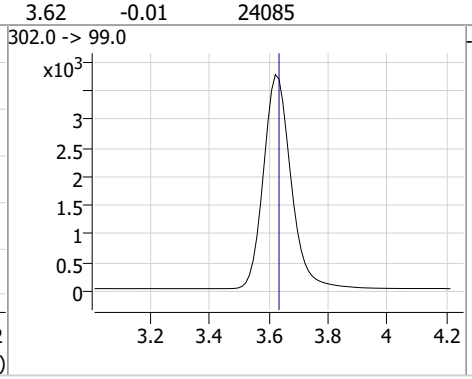


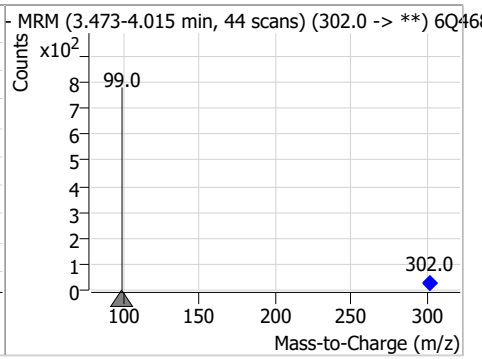




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.73	3.62	-0.01	24085				

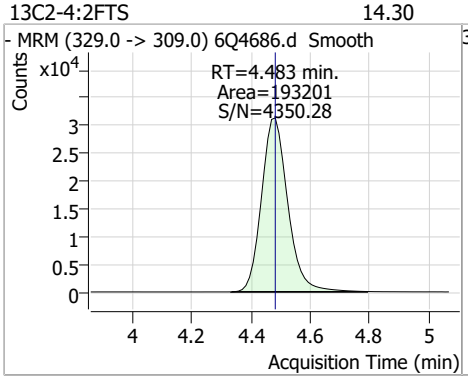


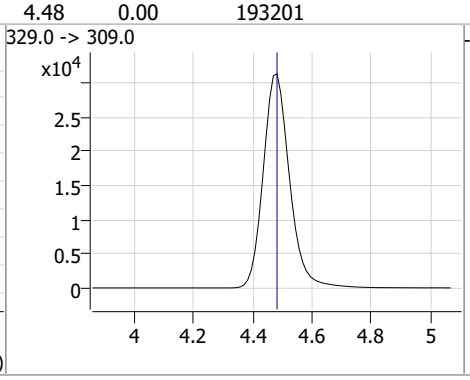


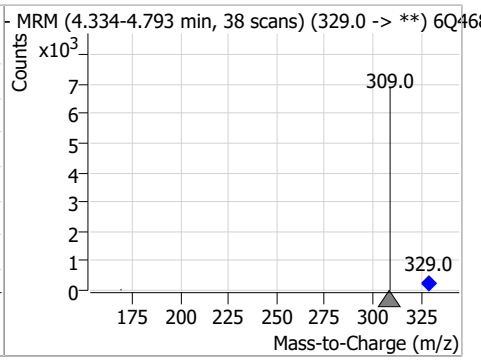


Perfluorinated Compounds by LC/MS/MS

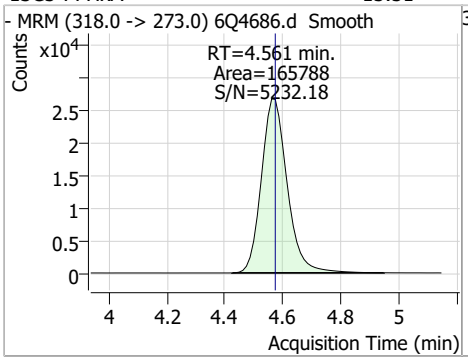
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.30	4.48	0.00	193201				

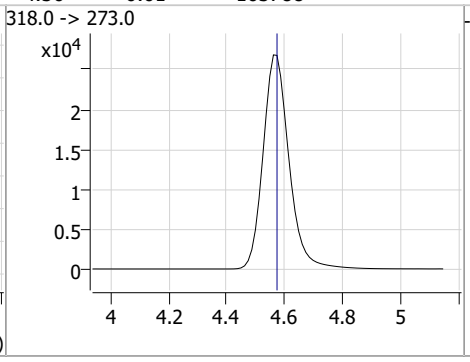


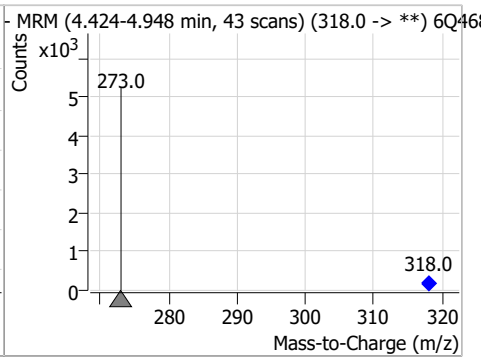




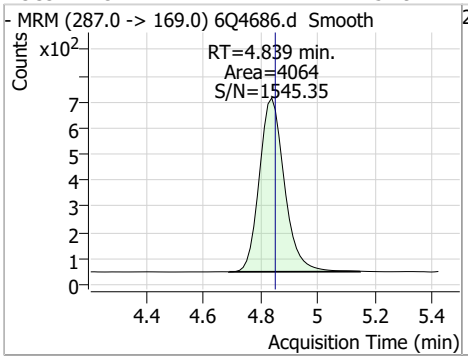
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.51	4.56	-0.01	165788				

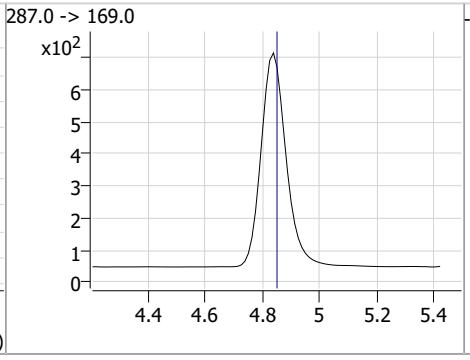


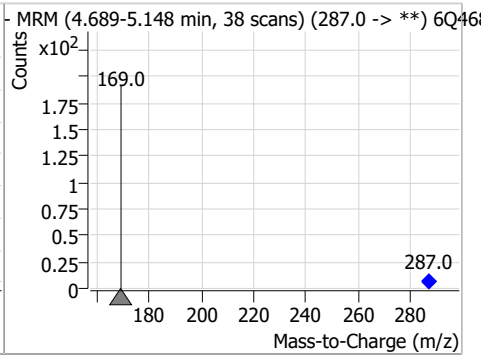




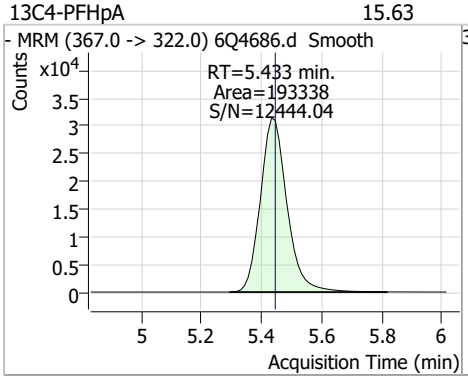
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.29	4.84	-0.01	4064				

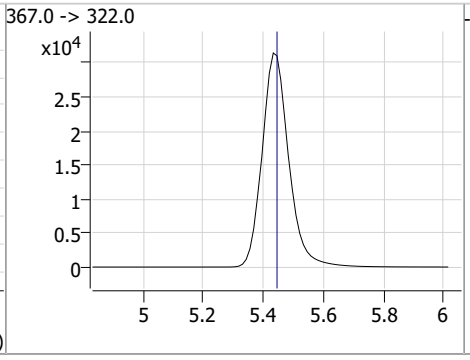


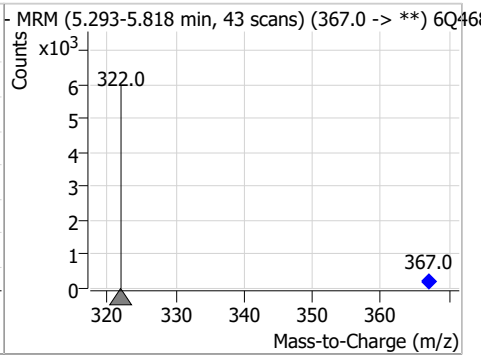




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.63	5.43	-0.01	193338				

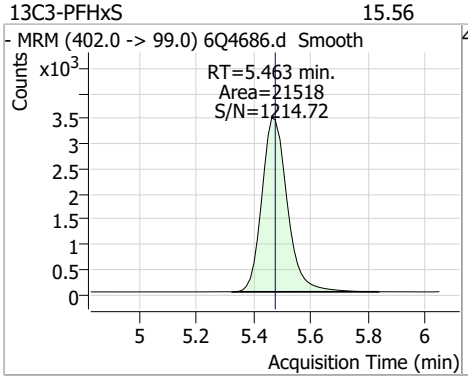


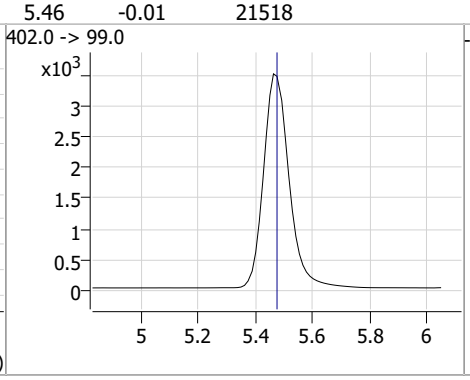


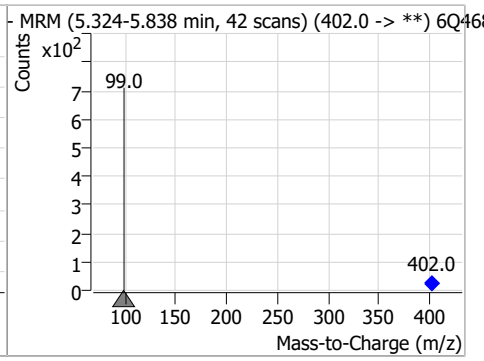


Perfluorinated Compounds by LC/MS/MS

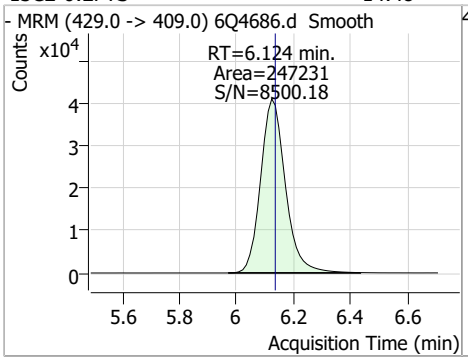
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.56	5.46	-0.01	21518				

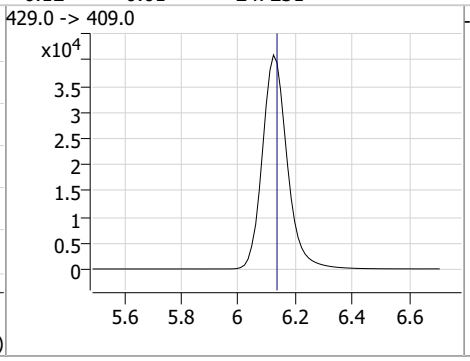


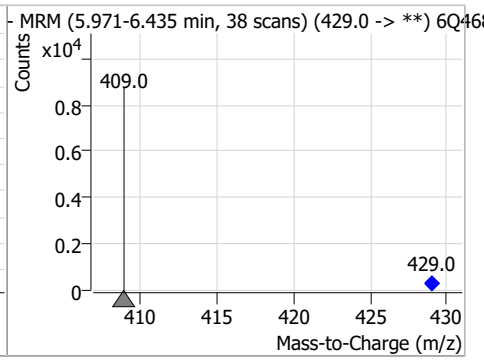




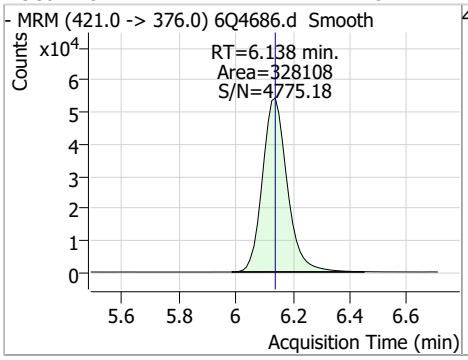
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.48	6.12	-0.01	247231				

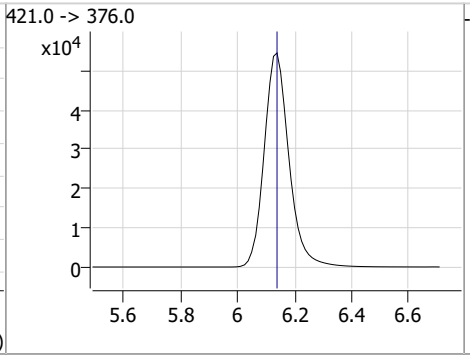


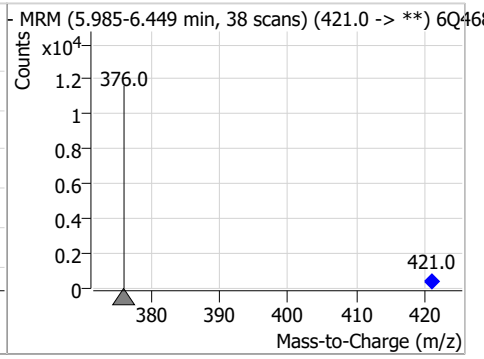




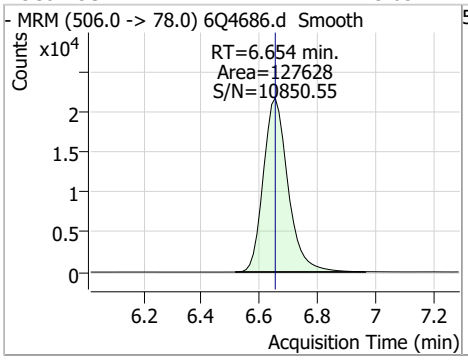
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.47	6.14	0.00	328108				

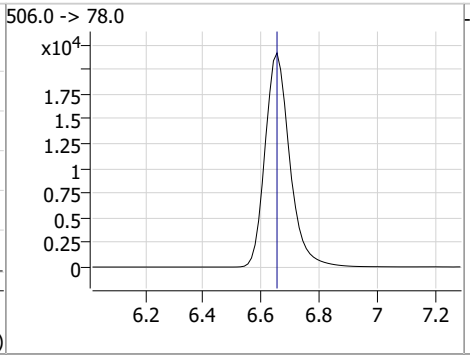


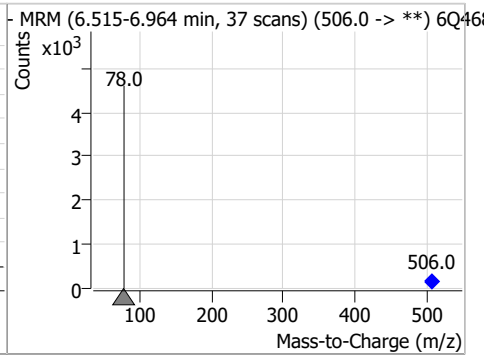




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.05	6.65	0.00	127628				

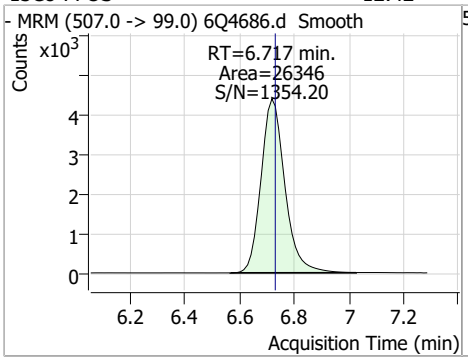


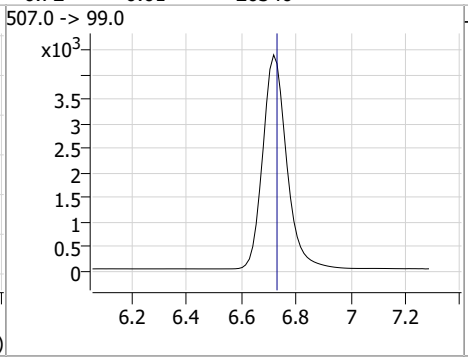


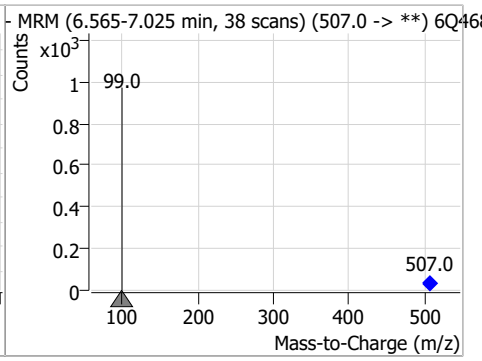


Perfluorinated Compounds by LC/MS/MS

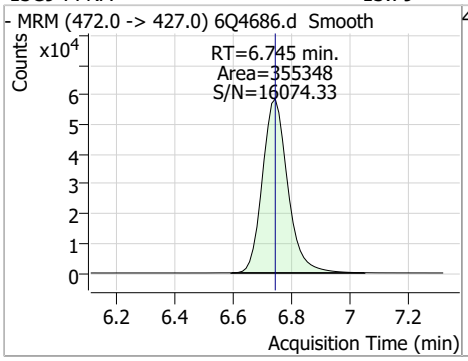
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.42	6.72	-0.01	26346				

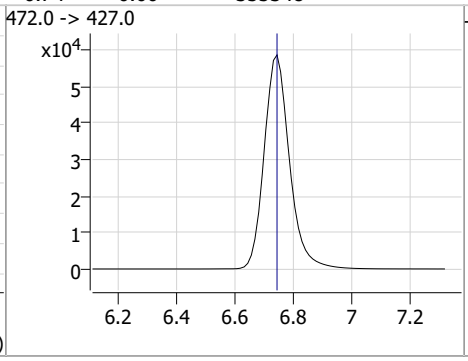


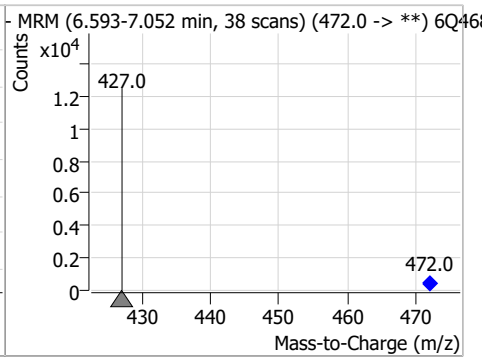




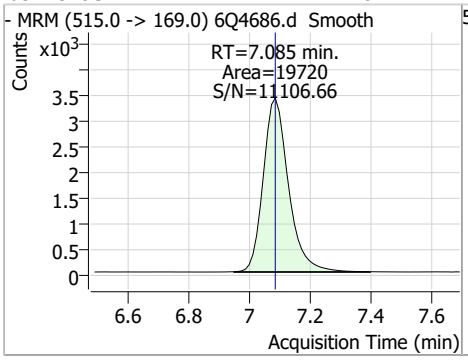
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.79	6.74	0.00	355348				

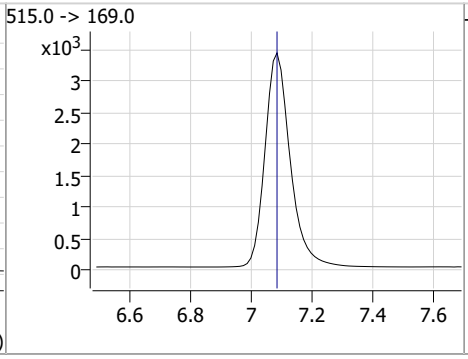


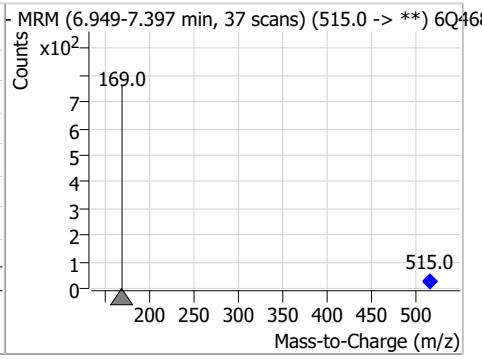




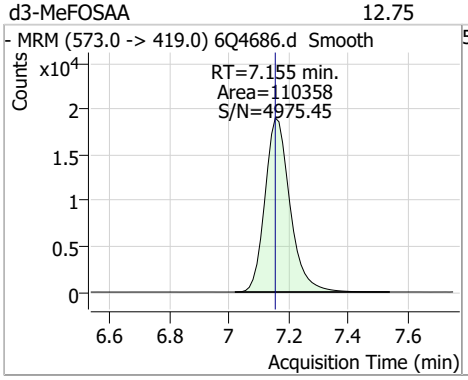
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	8.72	7.08	0.00	19720				

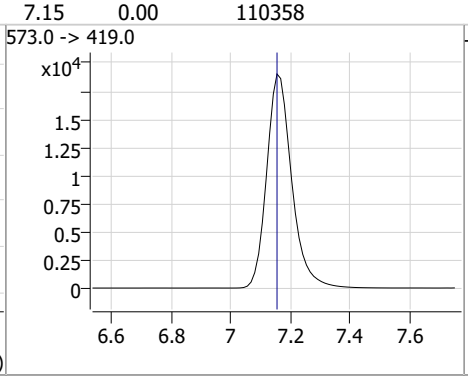


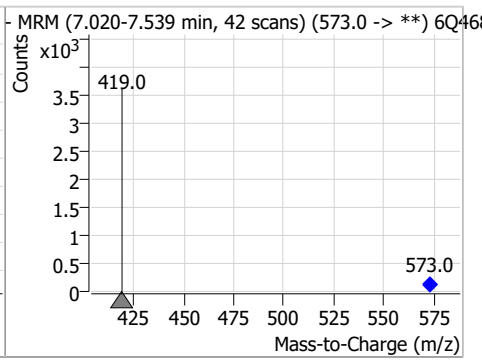




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.75	7.15	0.00	110358				

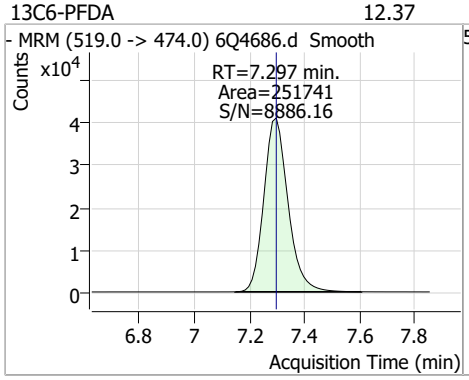


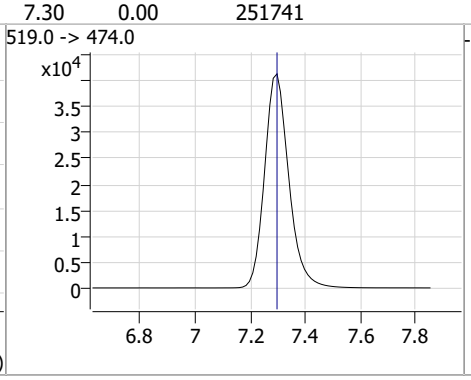


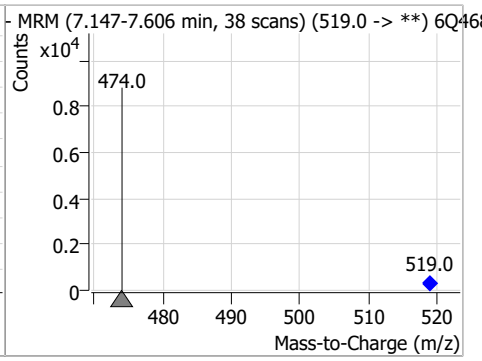


Perfluorinated Compounds by LC/MS/MS

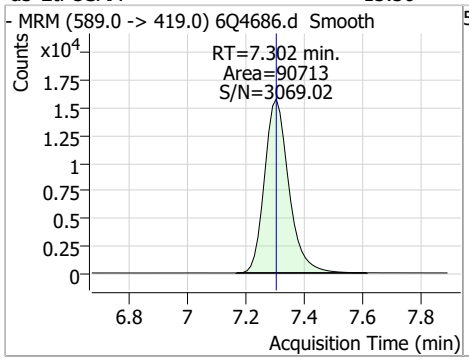
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	12.37	7.30	0.00	251741				

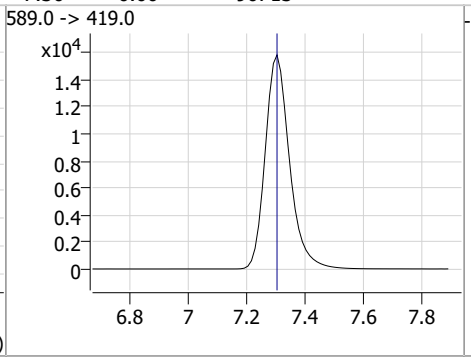


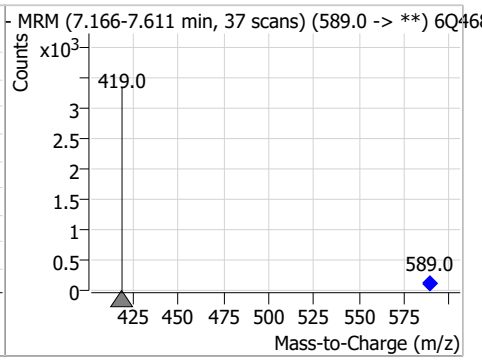




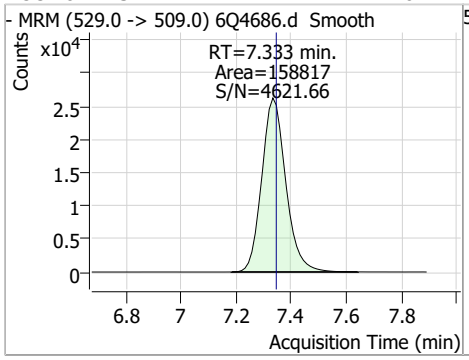
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.36	7.30	0.00	90713				

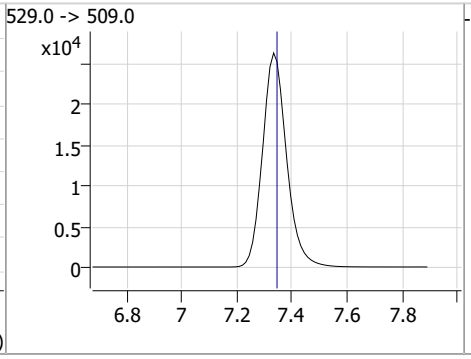


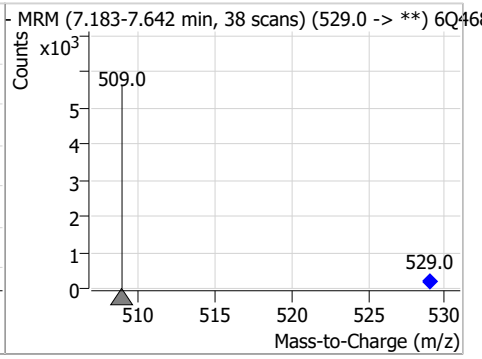




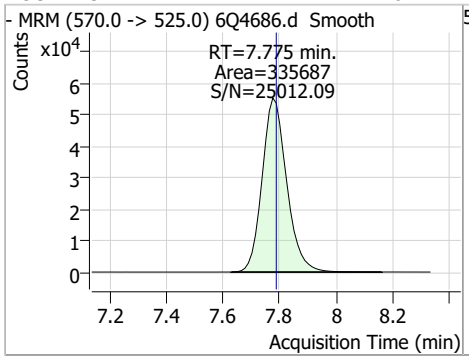
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.18	7.33	-0.01	158817				

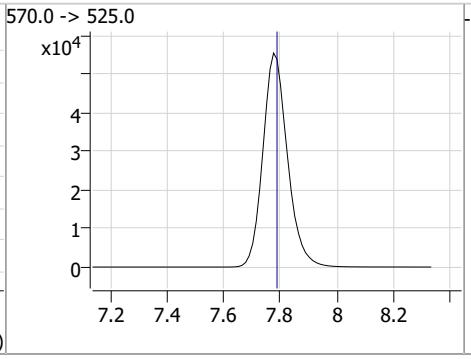


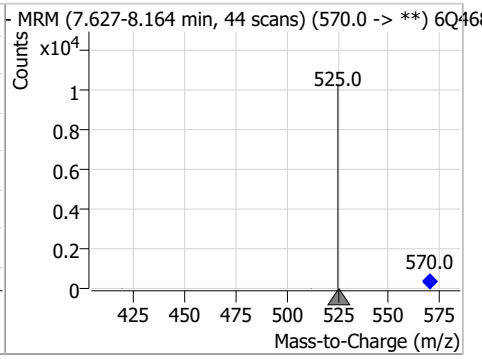




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.64	7.78	-0.01	335687				

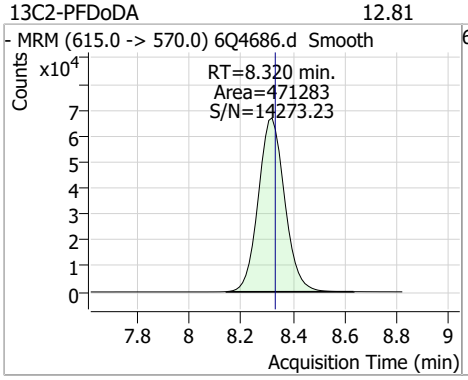


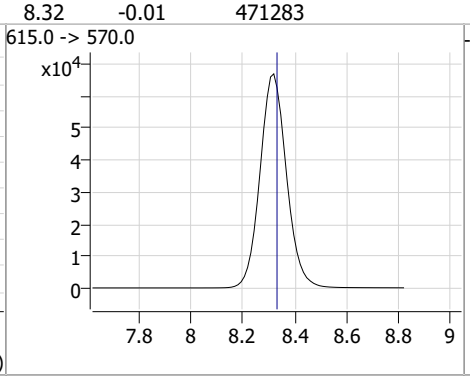


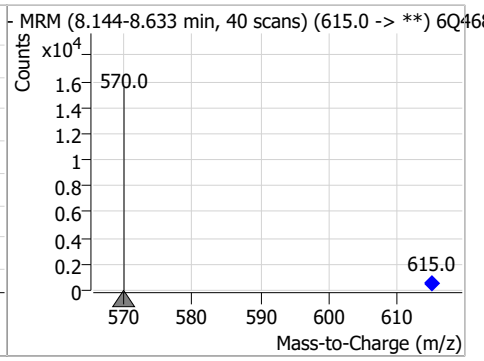


Perfluorinated Compounds by LC/MS/MS

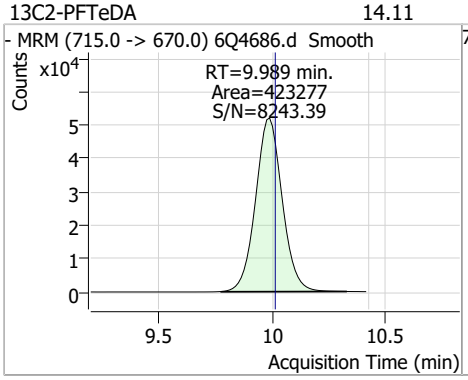
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.81	8.32	-0.01	471283				

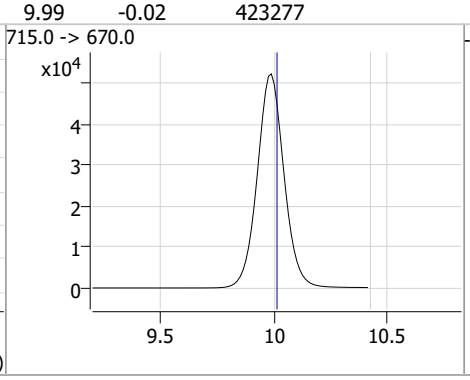


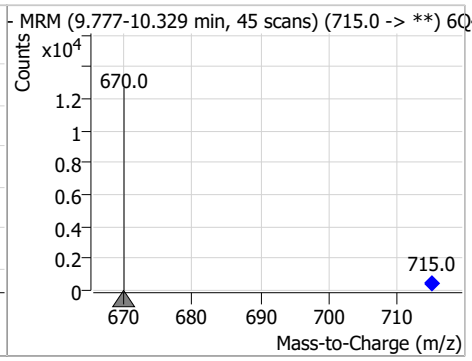




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.11	9.99	-0.02	423277				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4687.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:53:51 AM
Sample Name : fa98286-31
Vial : P5-F3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	41523	20.00	µg/L	-0.050
M5-PFPeA	3.380	268.0 -> 223.0	83066	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	136831	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	172768	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	310547	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	392192	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	290205	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	374245	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	470141	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	313992	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	87075	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	20644	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	21459	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	32939	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	173164	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	256382	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	188631	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	139082	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	2936	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	1196	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	105789	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	173164	12.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	256382	15.02	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C2-8:2FTS	7.333	529.0 -> 509.0	188631	14.47	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C2-PFDoDA	8.307	615.0 -> 570.0	470141	12.78	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.9%		
13C2-PFTeDA	9.989	715.0 -> 670.0	313992	10.47	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.3%		
13C3-PFBS	3.610	302.0 -> 99.0	20644	13.48	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.4%		
13C3-PFHxS	5.463	402.0 -> 99.0	21459	15.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C4-PFBA	1.899	217.0 -> 172.0	41523	10.43	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.2%		
13C4-PFHpA	5.433	367.0 -> 322.0	172768	13.96	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%		
13C5-PFHxA	4.561	318.0 -> 273.0	136831	12.80	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.0%		
13C5-PFPeA	3.380	268.0 -> 223.0	83066	11.85	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.2%		
13C6-PFDA	7.283	519.0 -> 474.0	290205	14.26	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

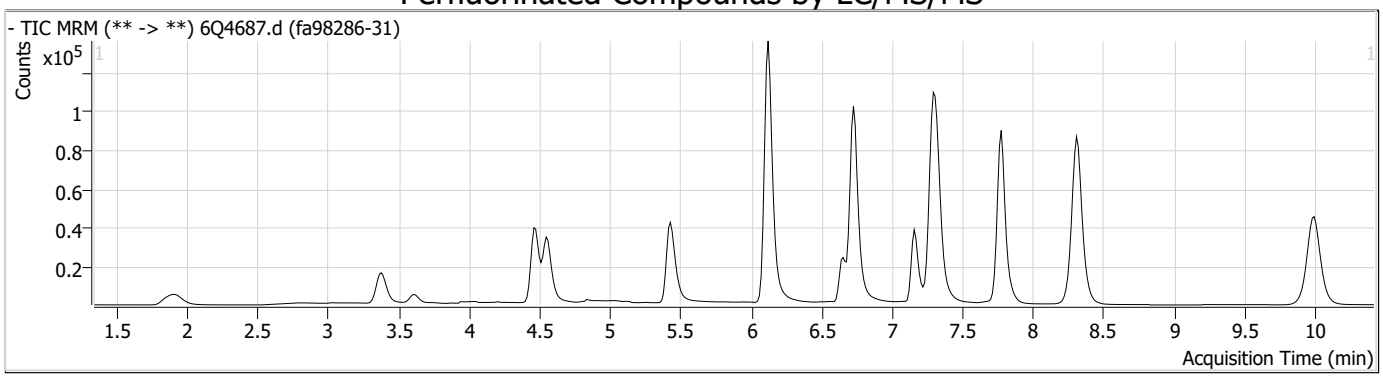
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%			
13C7-PFUnDA	7.775	570.0 -> 525.0	374245	14.10	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%			
13C8-FOSA	6.654	506.0 -> 78.0	87075	8.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 44.5%			
13C8-PFOA	6.126	421.0 -> 376.0	310547	14.64	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%			
13C8-PFOS	6.717	507.0 -> 99.0	32939	15.53	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%			
13C9-PFNA	6.732	472.0 -> 427.0	392192	15.22	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
d3-MeFOSAA	7.155	573.0 -> 419.0	139082	16.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	2941	11.07	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.3%			
d3-MeFOSA	7.085	515.0 -> 169.0	1128	0.50	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.5%			
d5-EtFOSAA	7.302	589.0 -> 419.0	105840	15.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.905	213.0 -> 169.0	7569	8.35	µg/L		100
PFBS	3.602	299.0 -> 80.0	730	0.21	µg/L		100
		299.0 -> 99.0	273				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.018	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	5.465	399.0 -> 80.0	1902	0.62	µg/L	m	98
		399.0 -> 99.0	900				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	6.504	499.0 -> 80.0	0		µg/L	m	1

Perfluorinated Compounds by LC/MS/MS

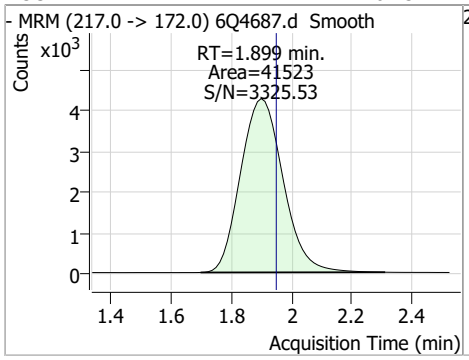
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	0				
PFPeA	3.532	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

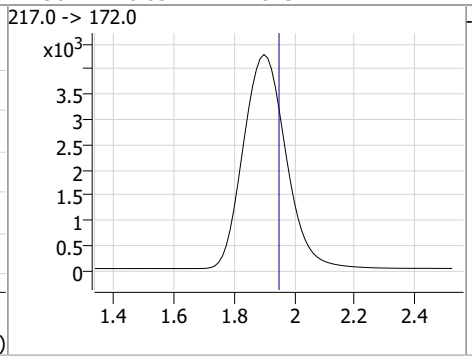
 # = Qualifier out of range, m = manually integrated, + = Area summed

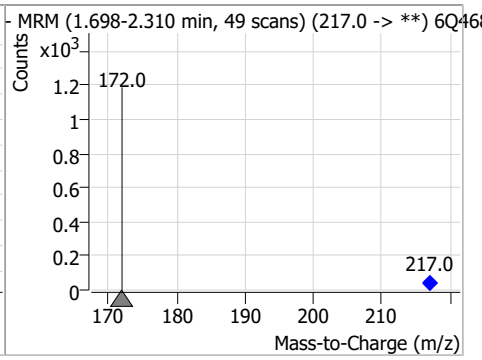
Perfluorinated Compounds by LC/MS/MS



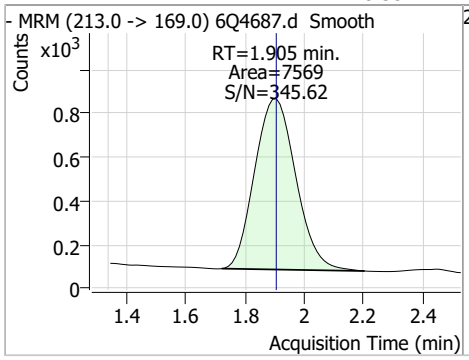
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.43	1.90	-0.05	41523				

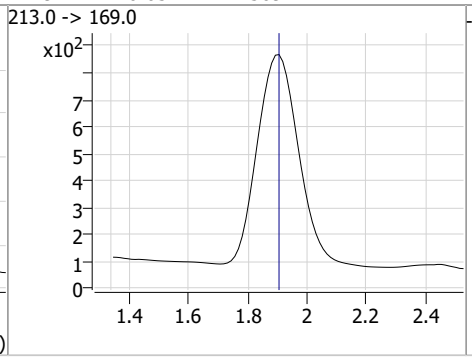


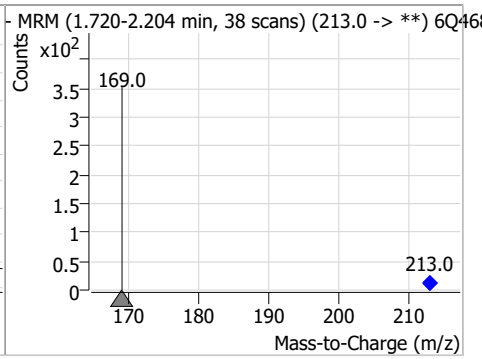




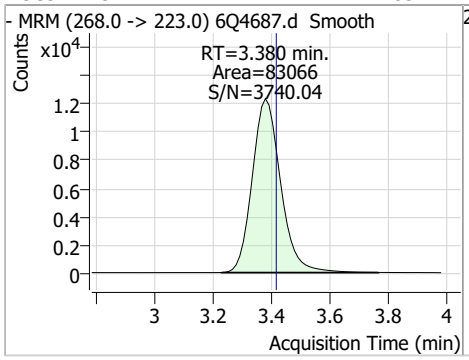
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.35	1.91	-0.05	7569				

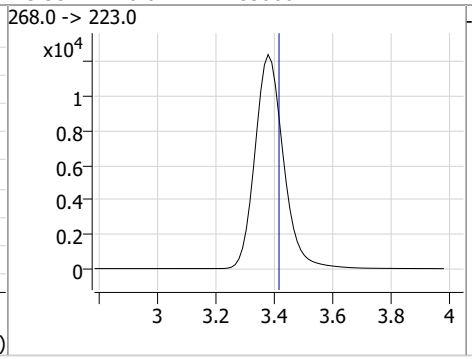


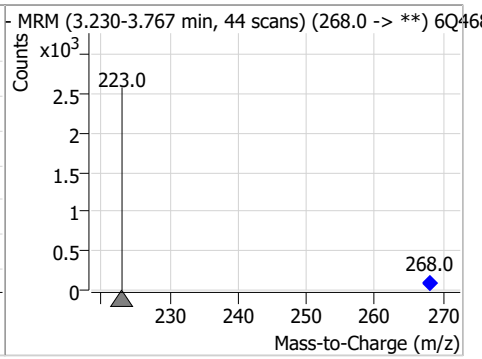




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.85	3.38	-0.04	83066				

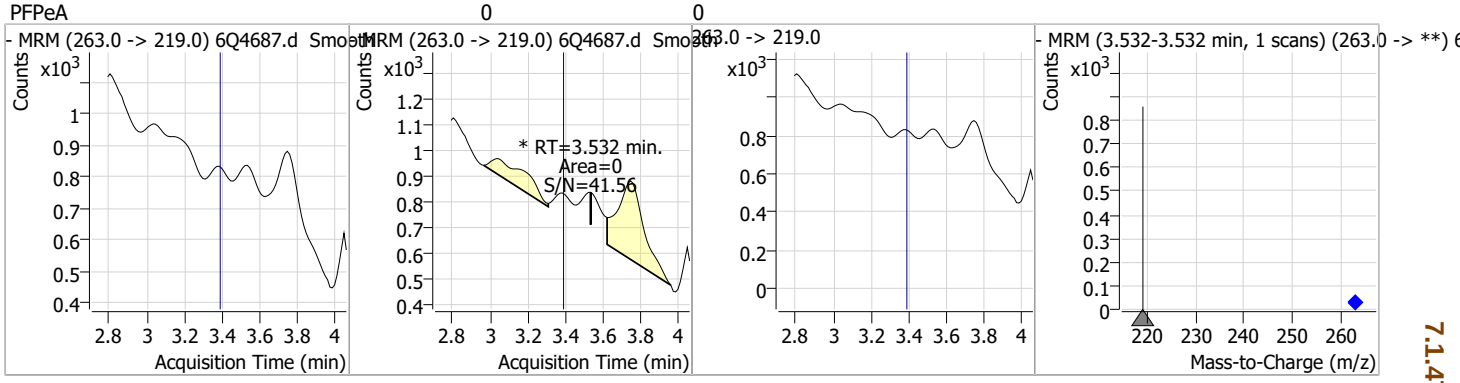




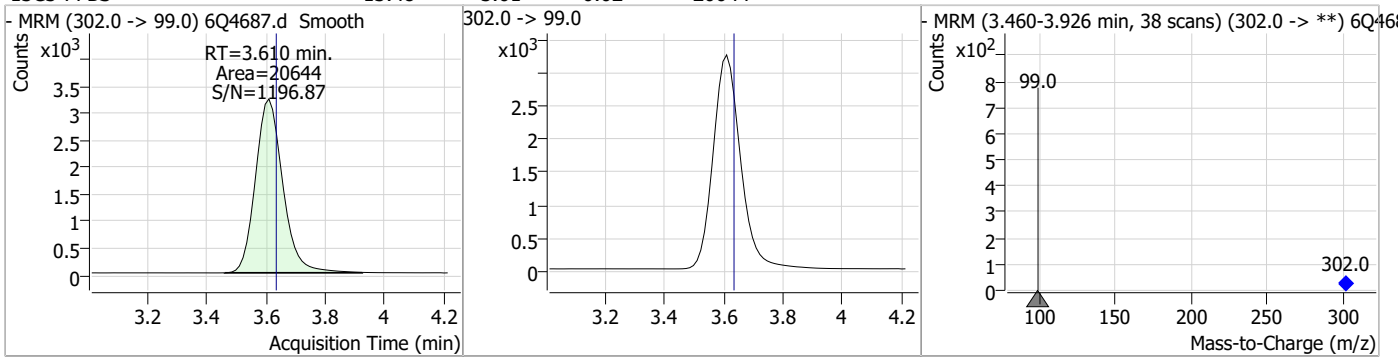


Perfluorinated Compounds by LC/MS/MS

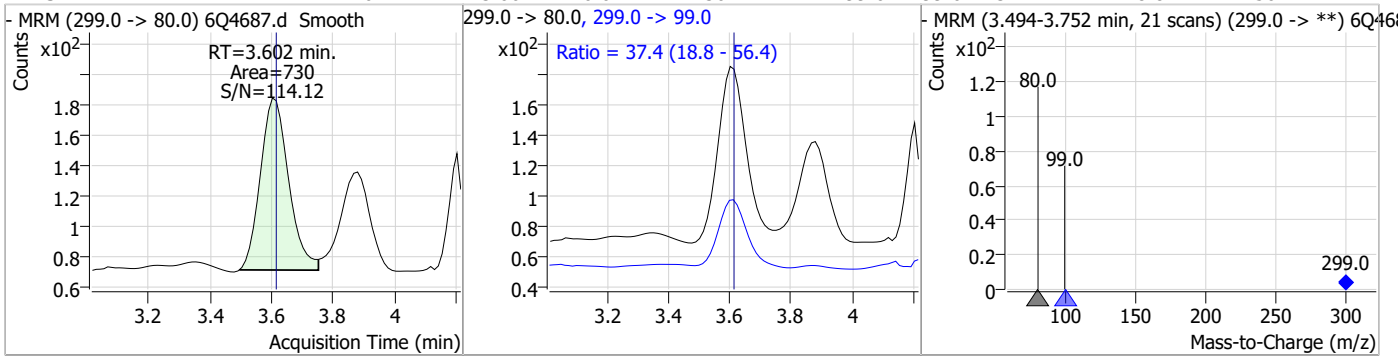
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



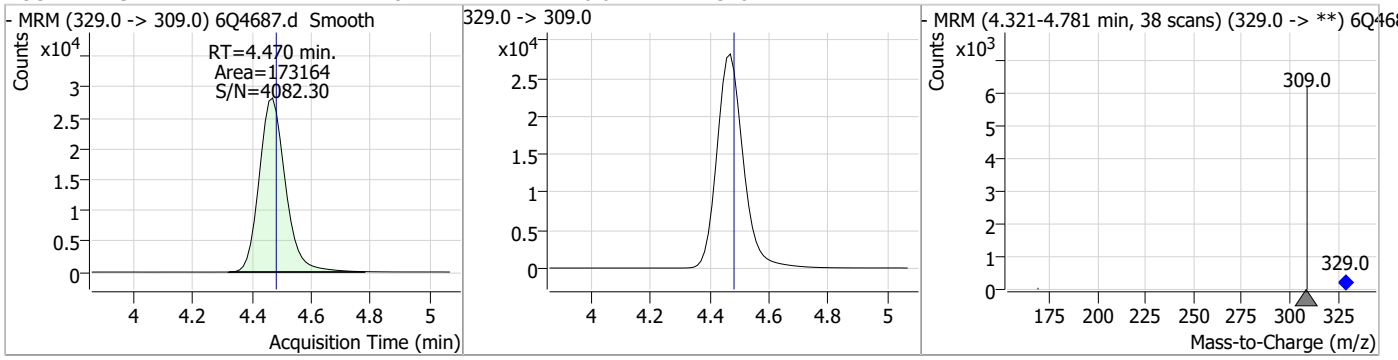
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.48	3.61	-0.02	20644				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.21	3.60	-0.04	730	299.0 -> 99.0	37.4	18.8	56.4

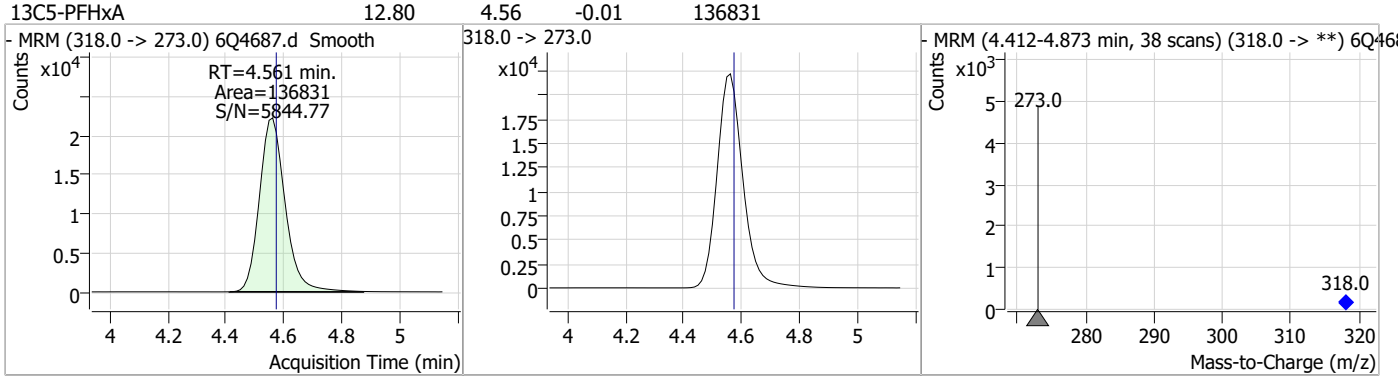


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.82	4.47	-0.01	173164				

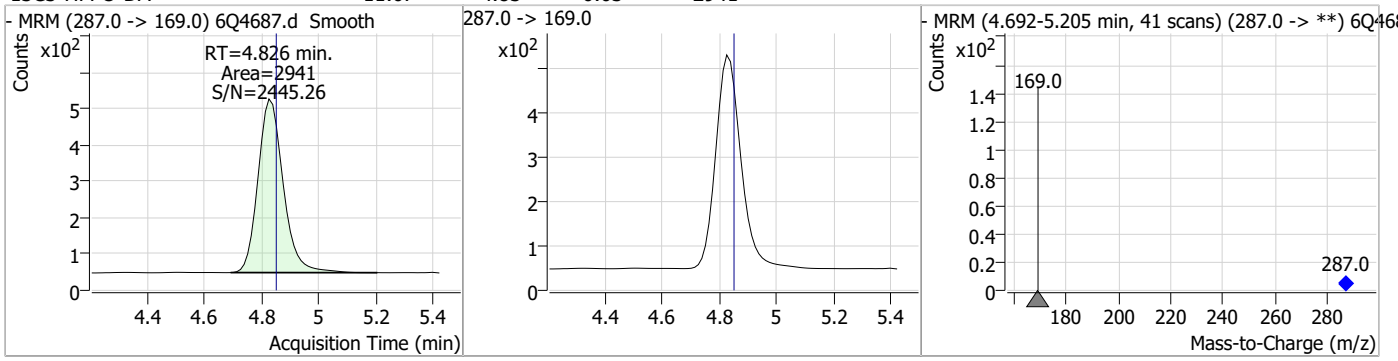


Perfluorinated Compounds by LC/MS/MS

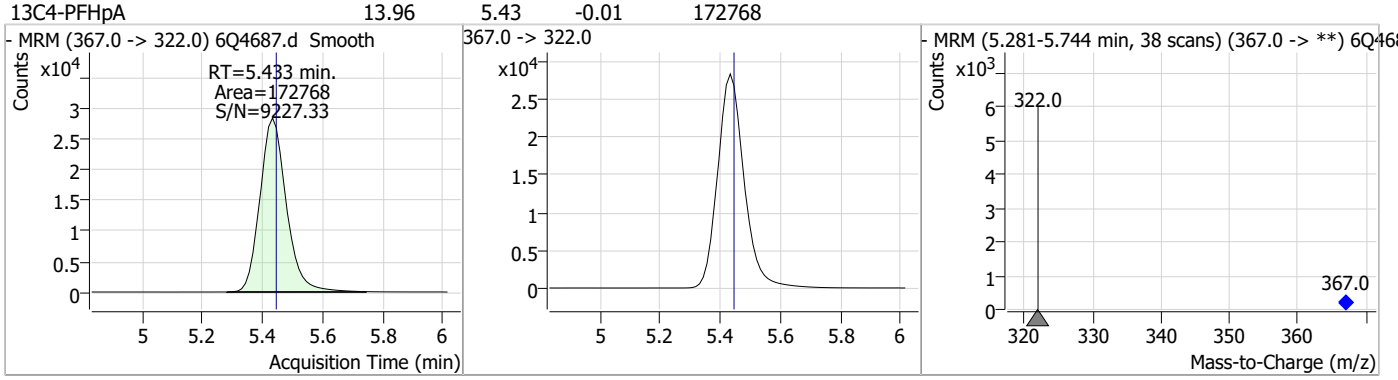
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.80	4.56	-0.01	136831				



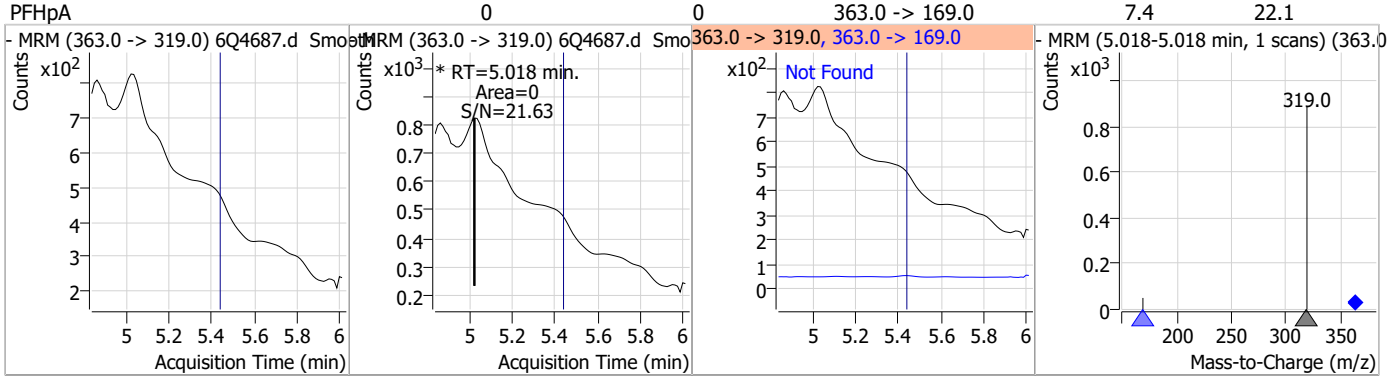
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.07	4.83	-0.03	2941				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.96	5.43	-0.01	172768				

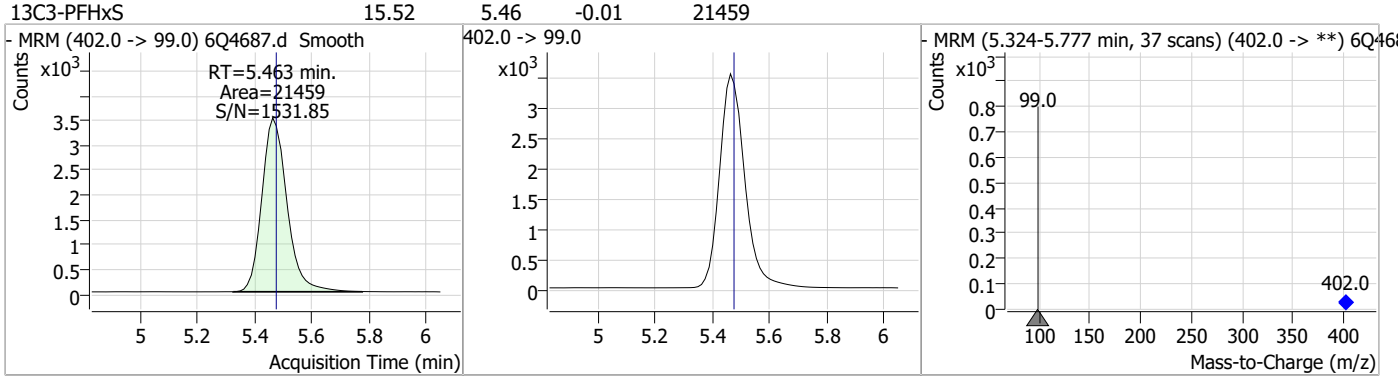


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		7.4	22.1

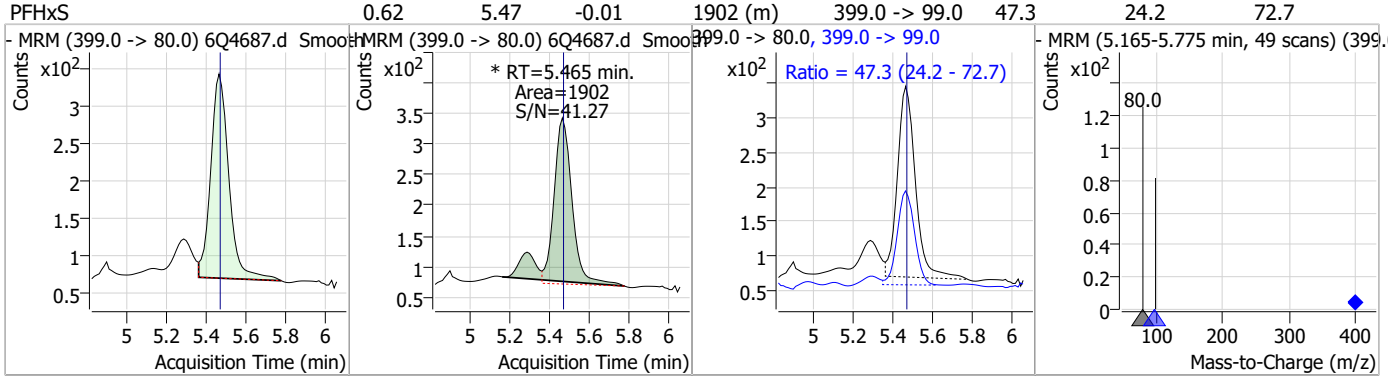


Perfluorinated Compounds by LC/MS/MS

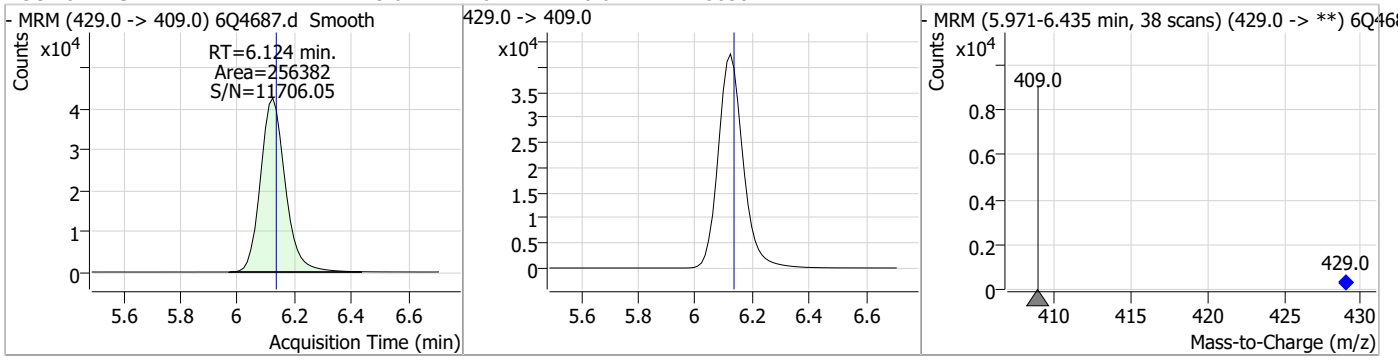
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.52	5.46	-0.01	21459				



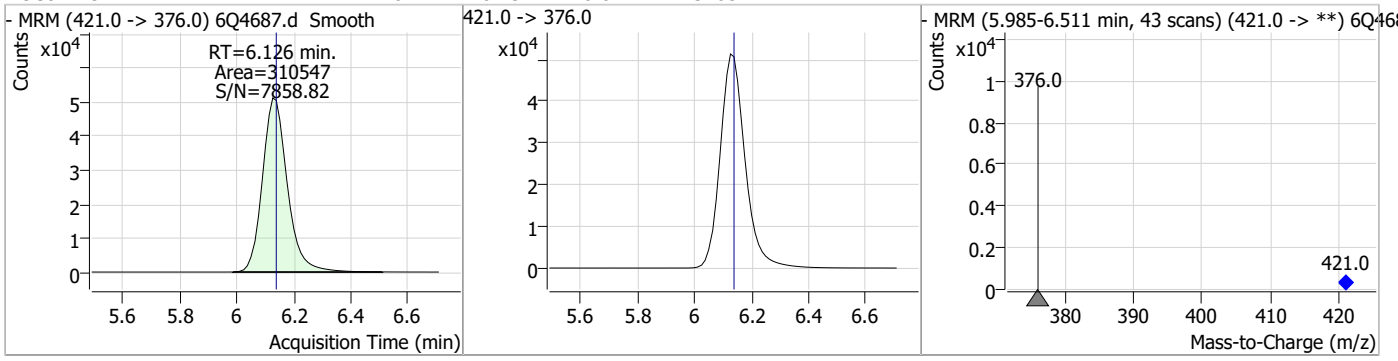
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.62	5.47	-0.01	1902 (m)	399.0 -> 99.0	47.3	24.2	72.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.02	6.12	-0.01	256382				

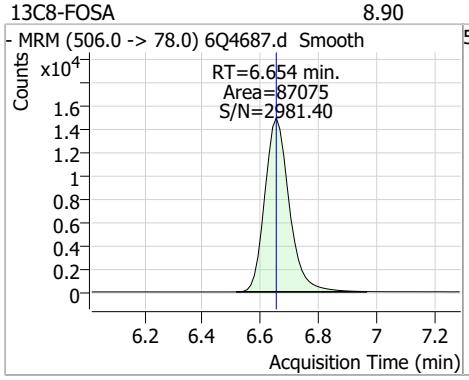


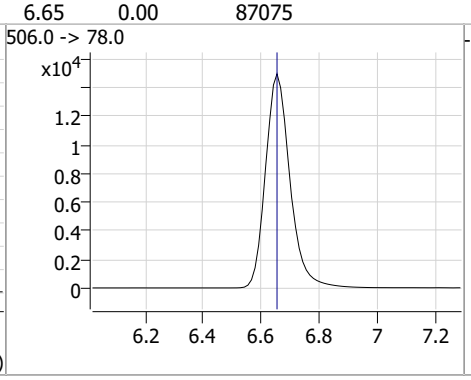
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.64	6.13	-0.01	310547				

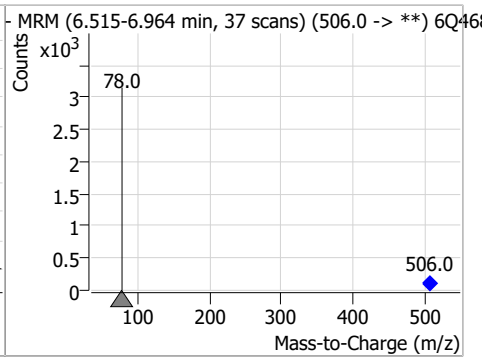


Perfluorinated Compounds by LC/MS/MS

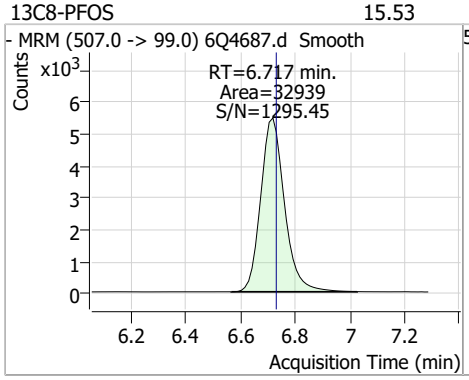
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.90	6.65	0.00	87075				

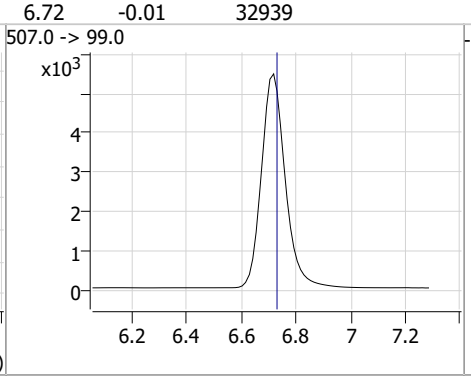


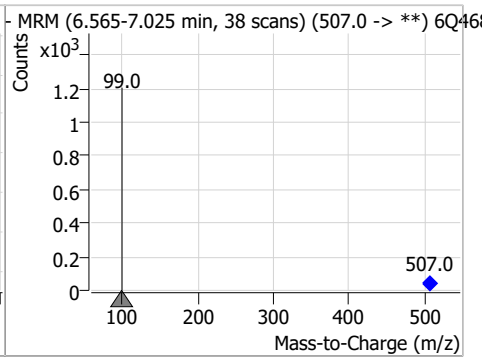




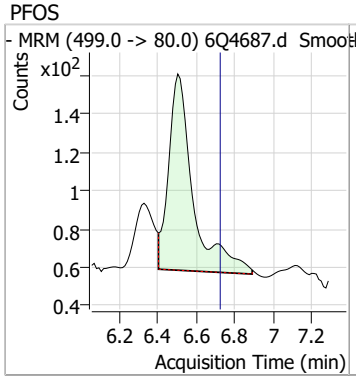
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.53	6.72	-0.01	32939				

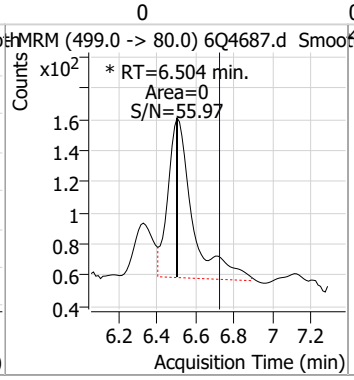


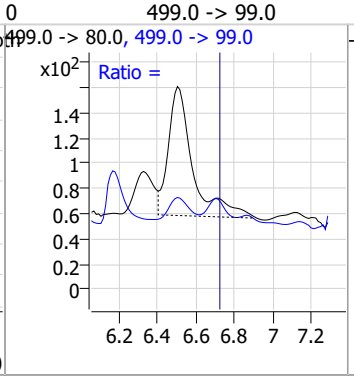


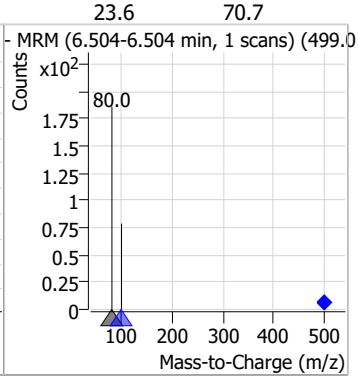


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0		0	0	499.0 -> 99.0		23.6	70.7

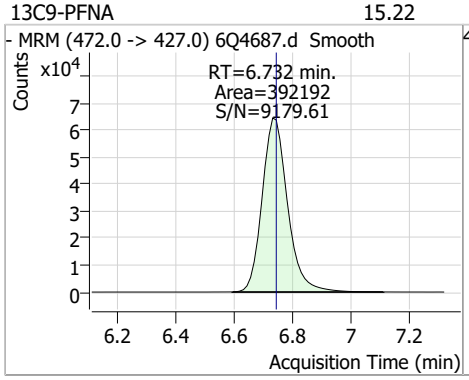


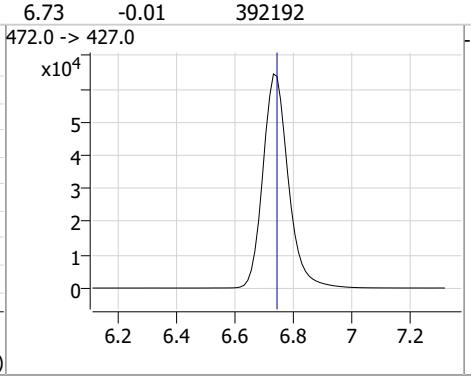


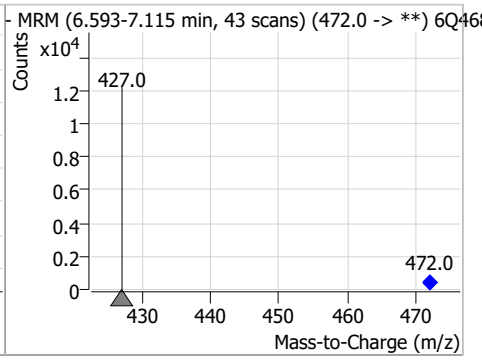




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.22	6.73	-0.01	392192				

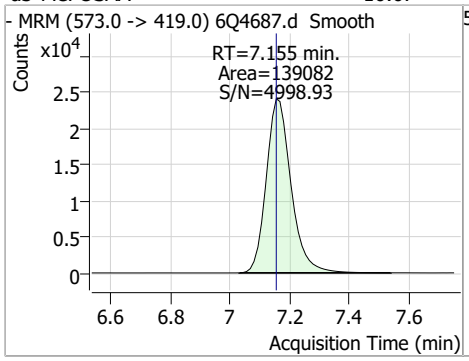


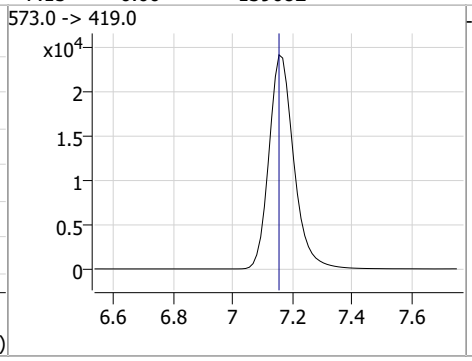


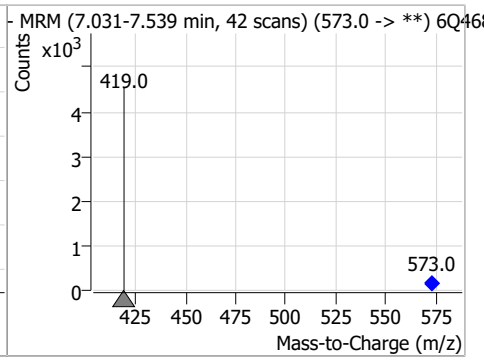


Perfluorinated Compounds by LC/MS/MS

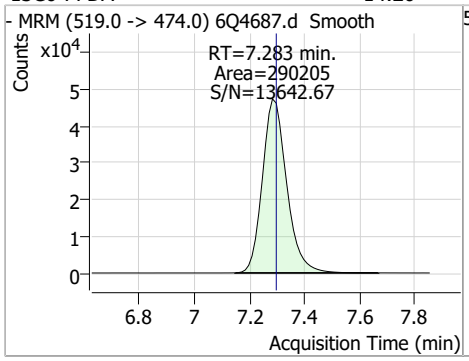
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.07	7.15	0.00	139082				

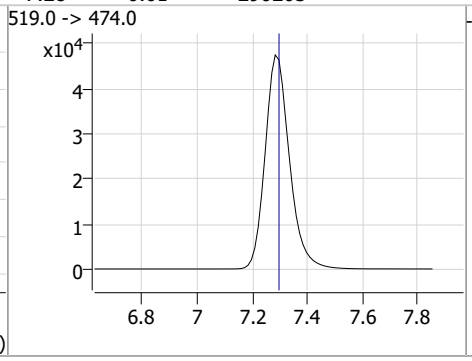


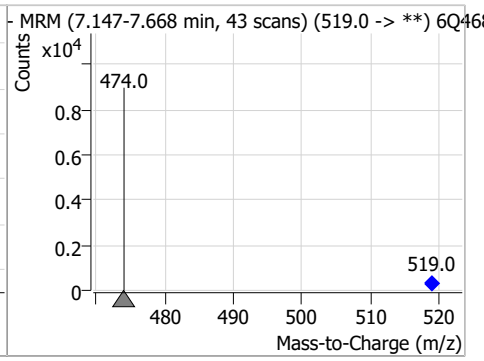




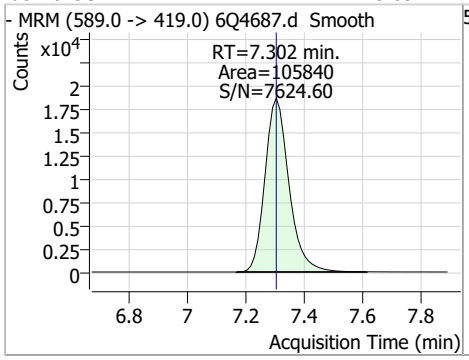
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.26	7.28	-0.01	290205				

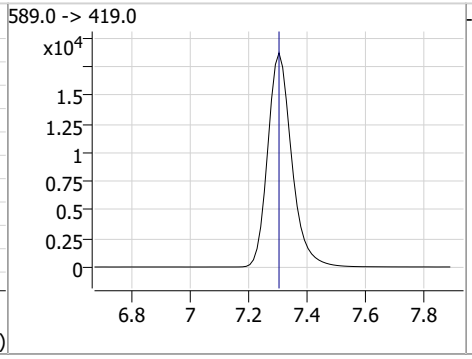


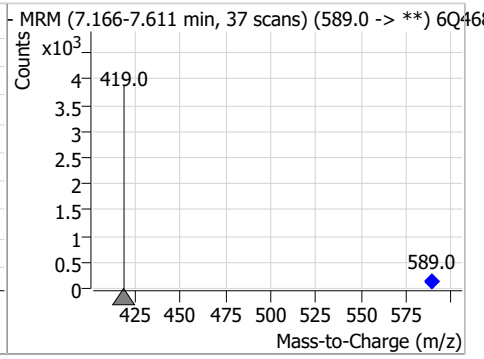




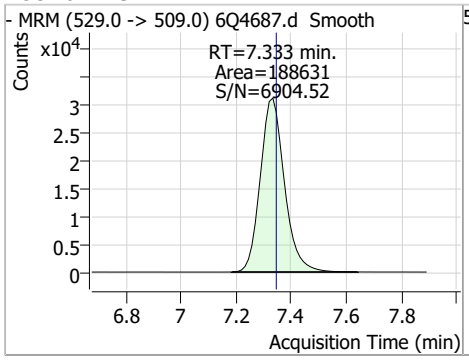
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.59	7.30	0.00	105840				

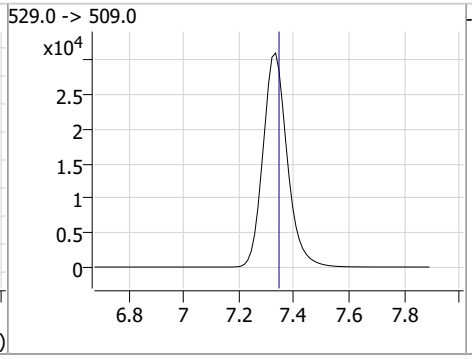


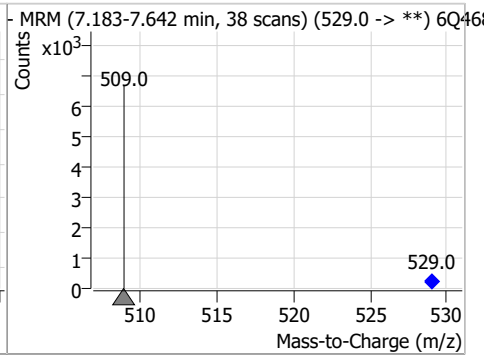




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.47	7.33	-0.01	188631				

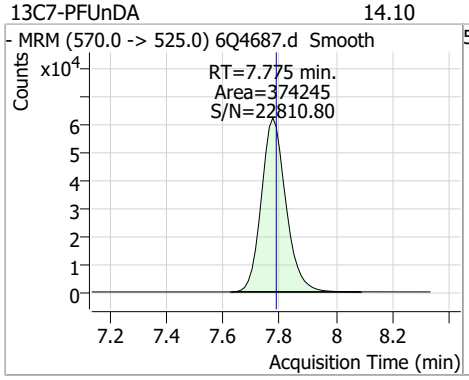


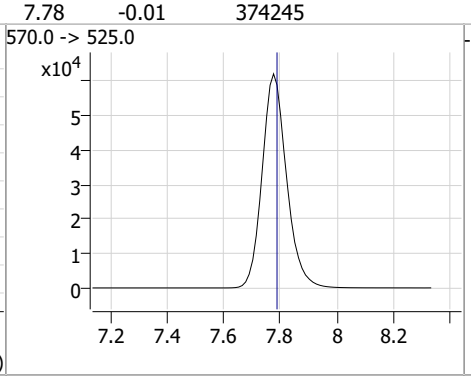


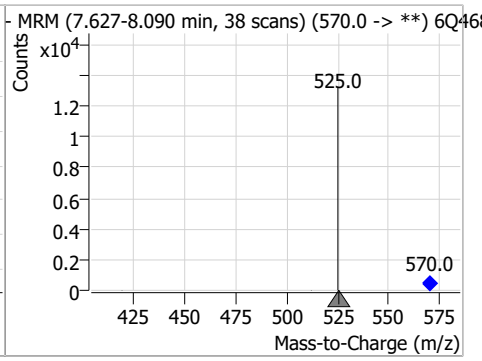


Perfluorinated Compounds by LC/MS/MS

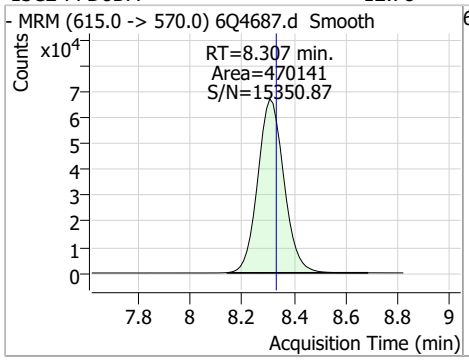
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.10	7.78	-0.01	374245				

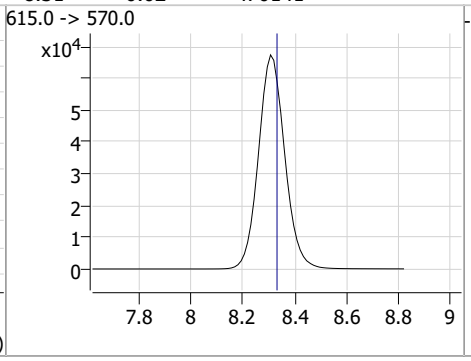


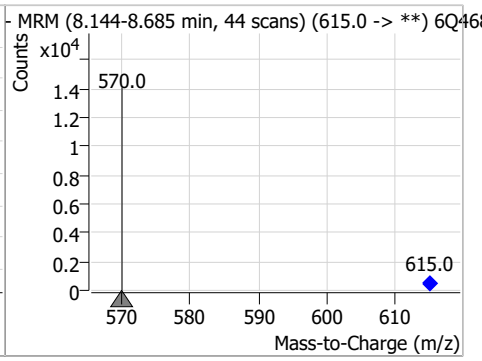




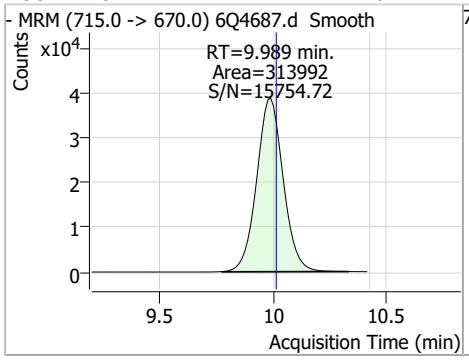
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.78	8.31	-0.02	470141				

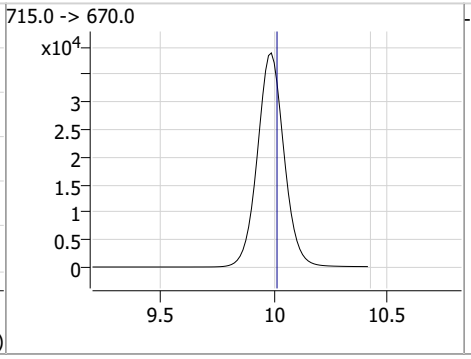


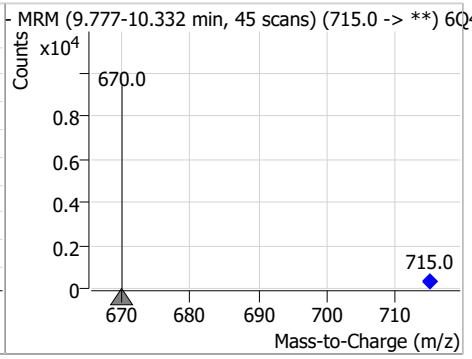




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.47	9.99	-0.02	313992				







Manual Integration Approval Summary

Sample Number: FA98286-31
Lab FileID: 6Q4687.D
Injection Time: 09/15/22 04:53
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:03 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
d3-MeFOSA			7.08	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4750.d
Operator	:	jamesb
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/16/2022 4:10:59 AM
Sample Name	:	fa98286-31
Vial	:	P2-B3
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	S6Q86.batch.bin
Sample Information	:	OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.936	217.0 -> 172.0	10425	4.00 µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	19124	4.00 µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	30990	4.00 µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	36600	4.00 µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	66982	4.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	84445	4.00 µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	59242	4.00 µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	77867	4.00 µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	96074	4.00 µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	65776	4.00 µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	20299	4.00 µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	4538	4.00 µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	4492	4.00 µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6908	4.00 µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	35709	4.00 µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	51688	4.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	37068	4.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	27853	4.00 µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	738	4.00 µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	863	4.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	20692	4.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.470	329.0 -> 309.0	35709	2.64 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%	
13C2-6:2FTS	6.124	429.0 -> 409.0	51688	3.03 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.1%	
13C2-8:2FTS	7.333	529.0 -> 509.0	37068	2.84 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%	
13C2-PFDoDA	8.307	615.0 -> 570.0	96074	2.61 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%	
13C2-PFTeDA	9.989	715.0 -> 670.0	65776	2.19 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%	
13C3-PFBS	3.622	302.0 -> 99.0	4538	2.96 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.8%	
13C3-PFHxS	5.463	402.0 -> 99.0	4492	3.25 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.2%	
13C4-PFBA	1.936	217.0 -> 172.0	10425	2.62 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%	
13C4-PFHpA	5.433	367.0 -> 322.0	36600	2.96 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.8%	
13C5-PFHxA	4.561	318.0 -> 273.0	30990	2.90 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.5%	
13C5-PFPeA	3.405	268.0 -> 223.0	19124	2.73 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%	
13C6-PFDA	7.283	519.0 -> 474.0	59242	2.91 µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

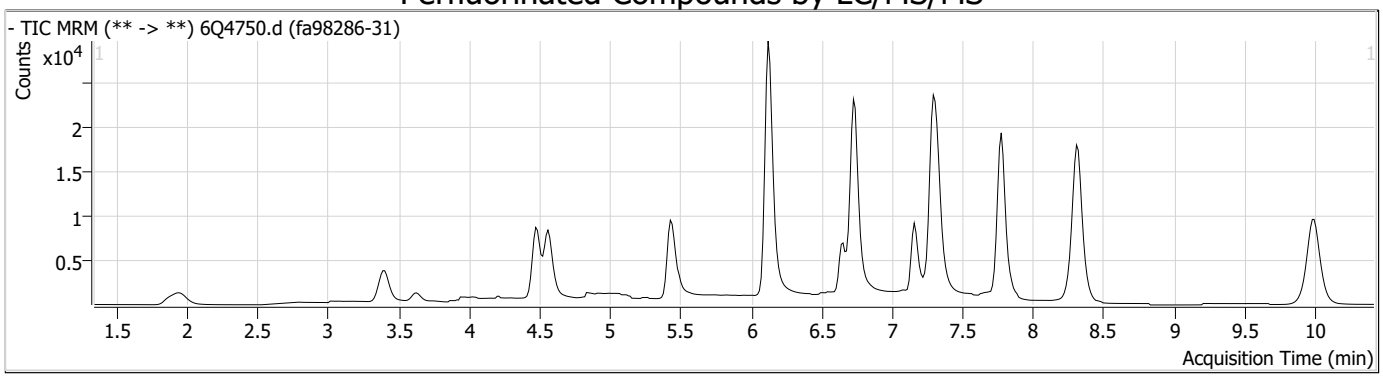
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.6%	
13C7-PFUnDA	7.775	570.0 -> 525.0	77867	2.93 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.7%	
13C8-FOSA	6.654	506.0 -> 78.0	20299	2.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.4%	
13C8-PFOA	6.138	421.0 -> 376.0	66982	3.16 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%	
13C8-PFOS	6.717	507.0 -> 99.0	6908	3.26 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%	
13C9-PFNA	6.745	472.0 -> 427.0	84445	3.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%	
d3-MeFOSAA	7.155	573.0 -> 419.0	27853	3.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	738	2.78 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%	
d3-MeFOSA	7.085	515.0 -> 169.0	863	0.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%	
d5-EtFOSAA	7.302	589.0 -> 419.0	20729	3.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	1.930	213.0 -> 169.0	1858	1.63 µg/L	100
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

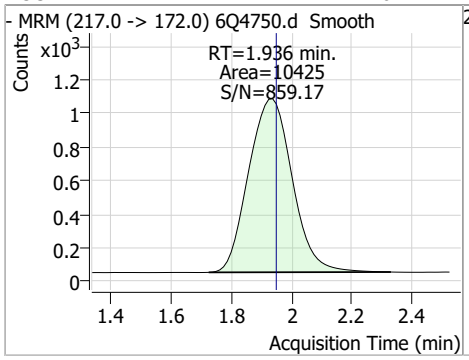
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

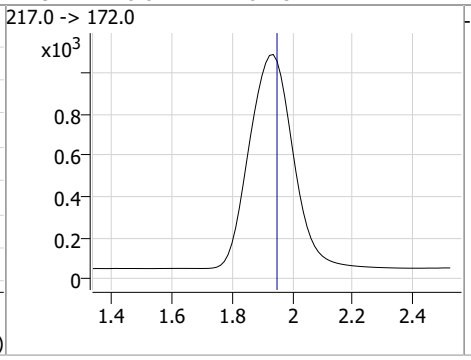
 # = Qualifier out of range, m = manually integrated, + = Area summed

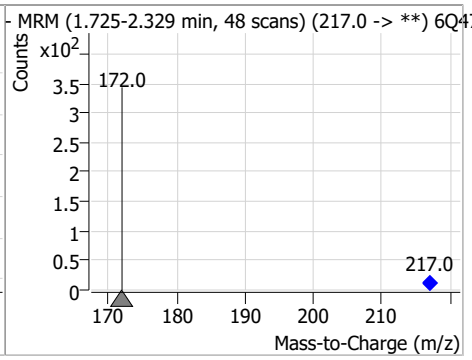
Perfluorinated Compounds by LC/MS/MS



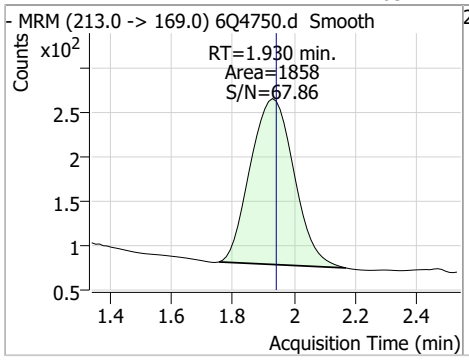
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.62	1.94	-0.01	10425				

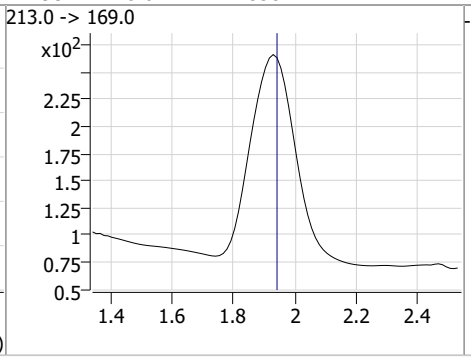


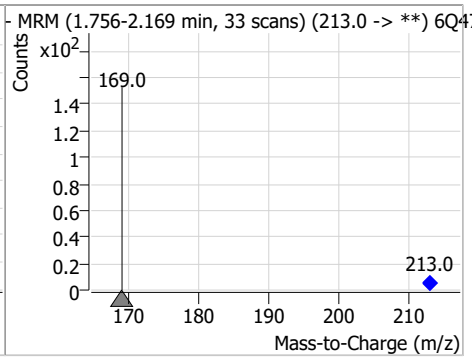




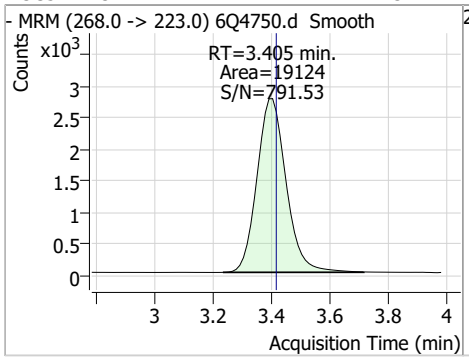
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.63	1.93	-0.02	1858				

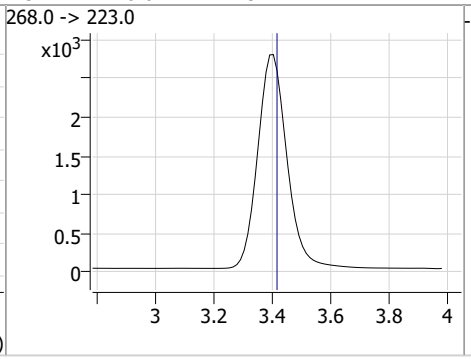


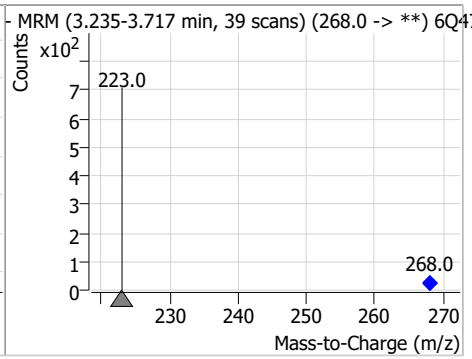




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.73	3.41	-0.01	19124				

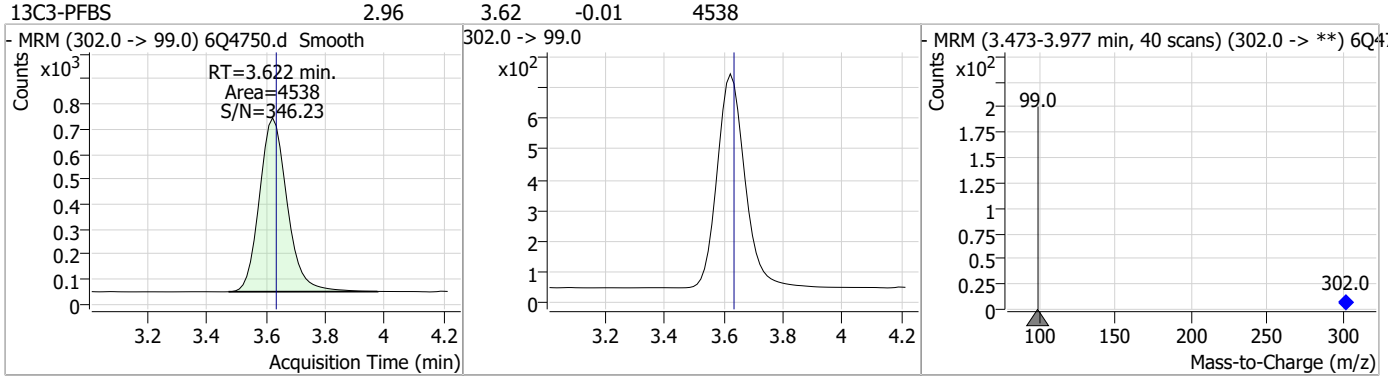




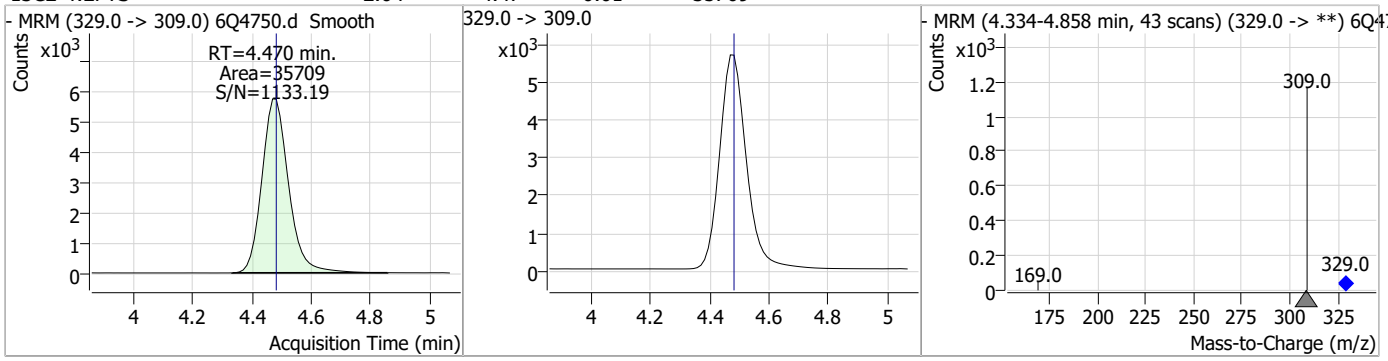


Perfluorinated Compounds by LC/MS/MS

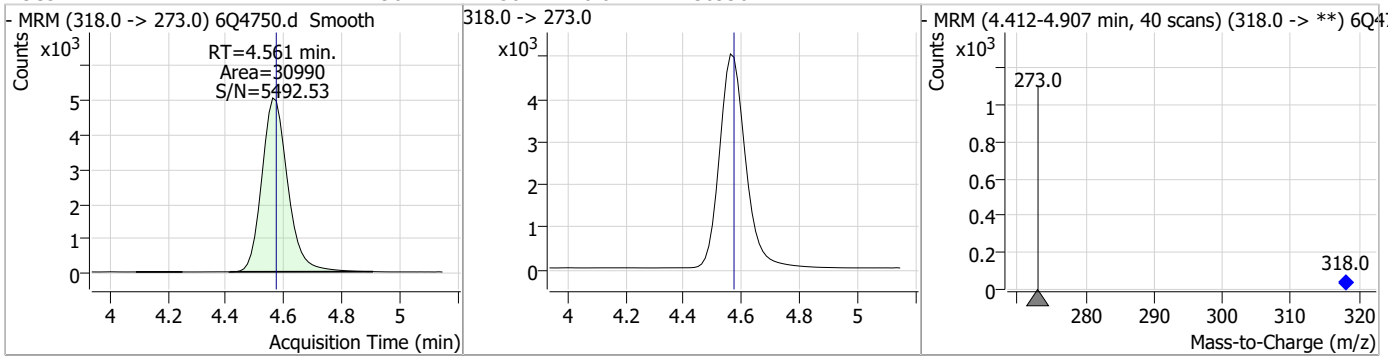
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.96	3.62	-0.01	4538				



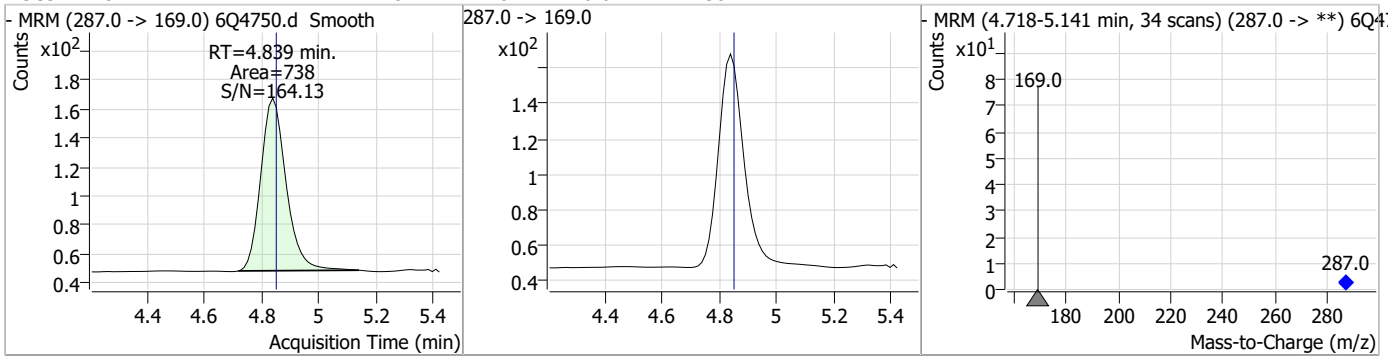
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.64	4.47	-0.01	35709				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.90	4.56	-0.01	30990				

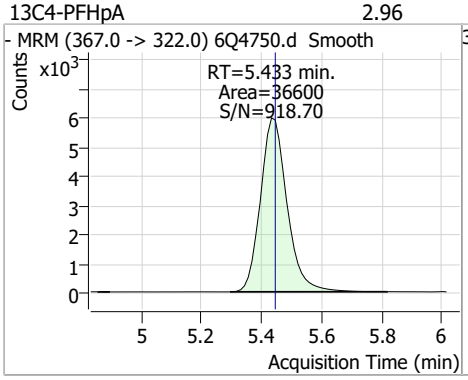


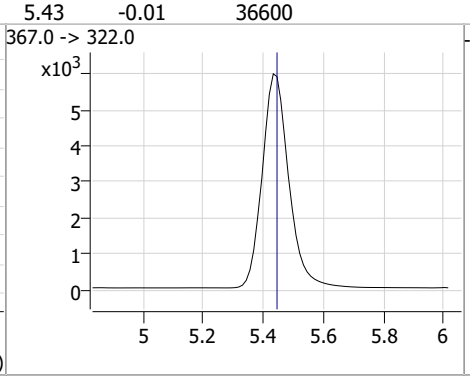
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.78	4.84	-0.01	738				

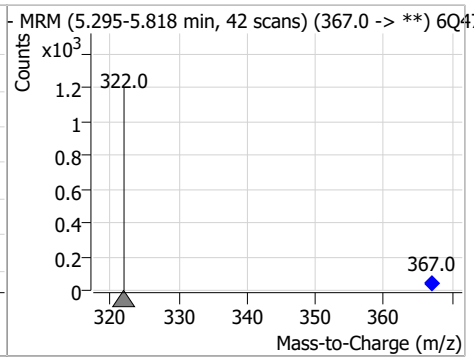


Perfluorinated Compounds by LC/MS/MS

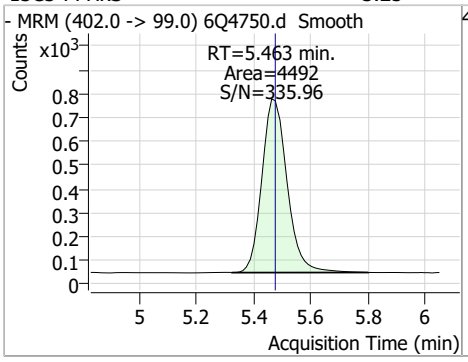
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.96	5.43	-0.01	36600				

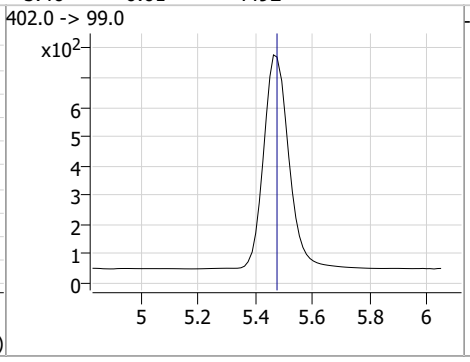


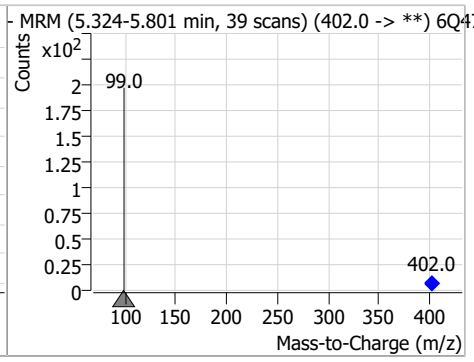




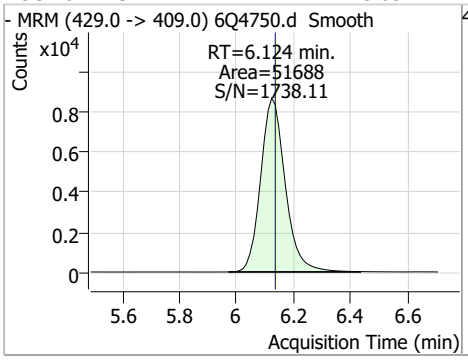
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.25	5.46	-0.01	4492				

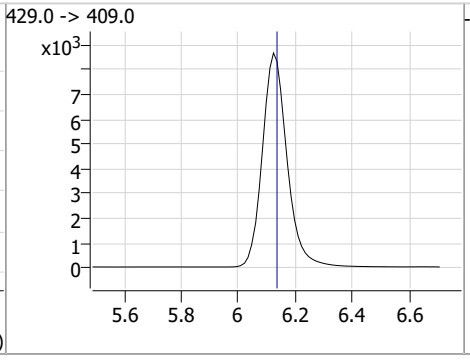


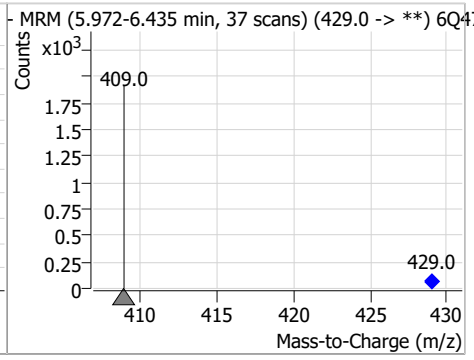




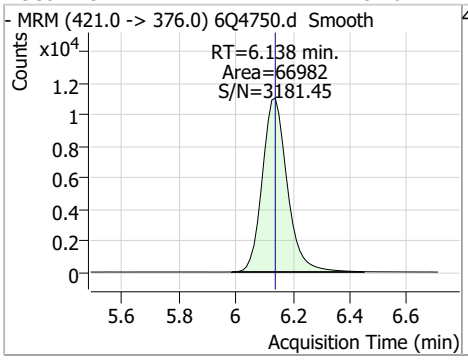
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.03	6.12	-0.01	51688				

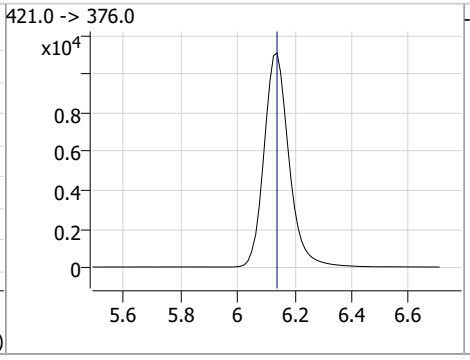


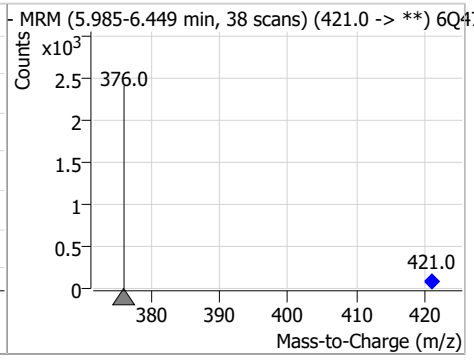




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.16	6.14	0.00	66982				

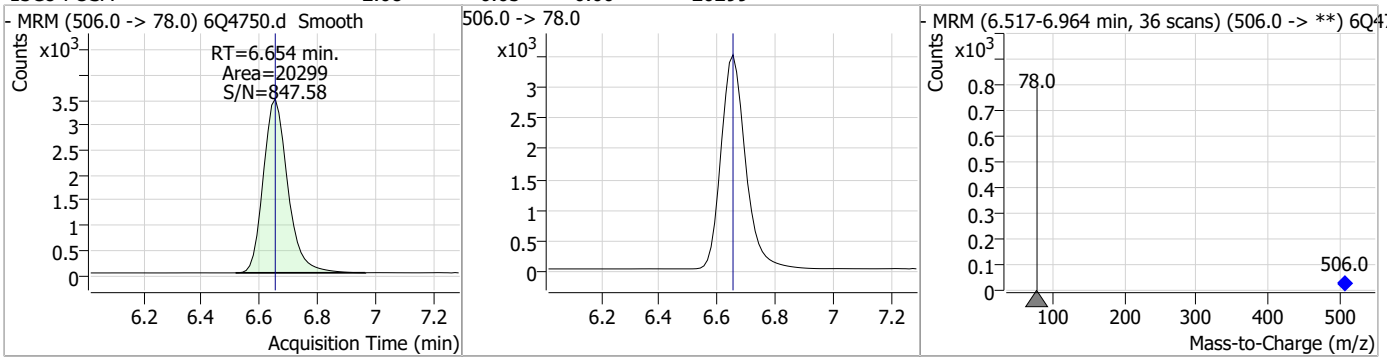




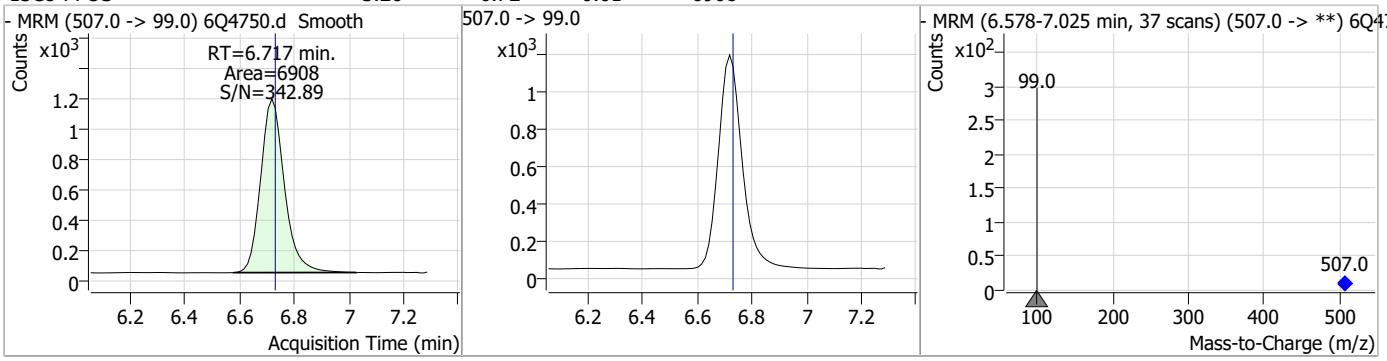


Perfluorinated Compounds by LC/MS/MS

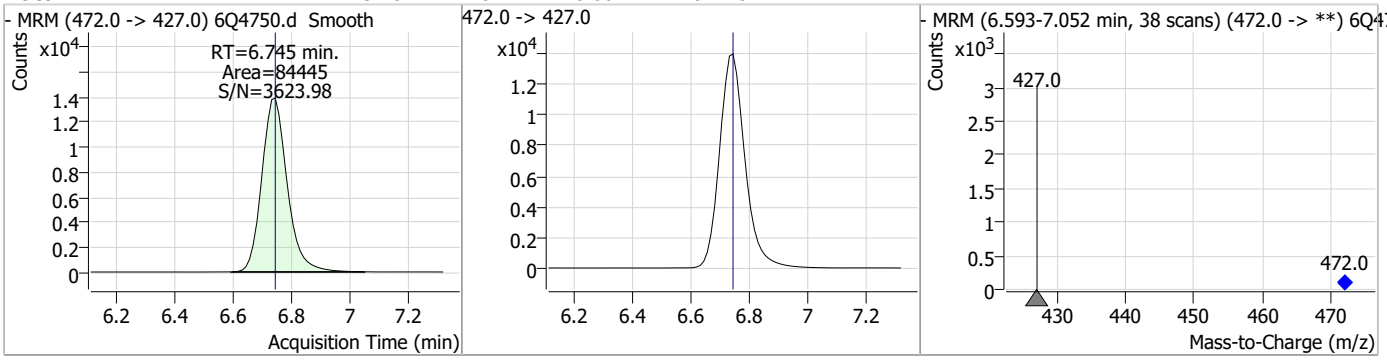
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.08	6.65	0.00	20299				



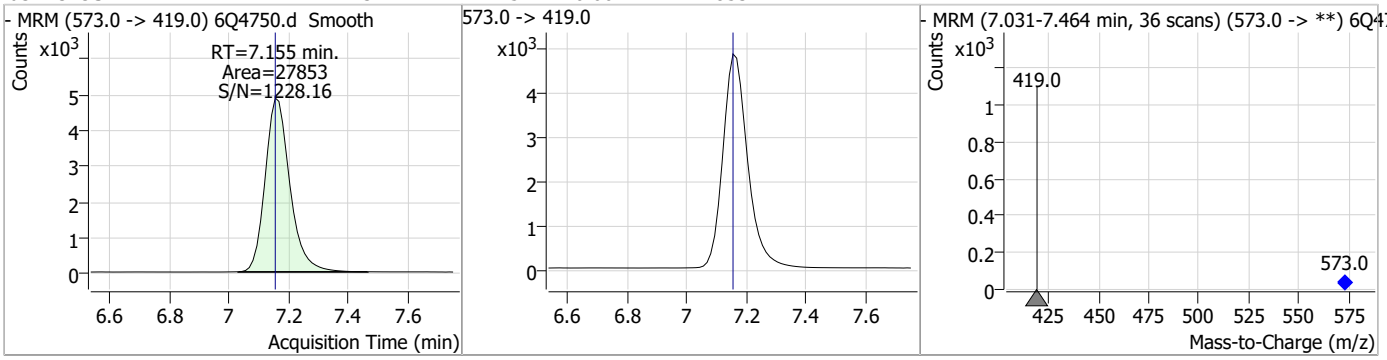
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.26	6.72	-0.01	6908				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.28	6.74	0.00	84445				

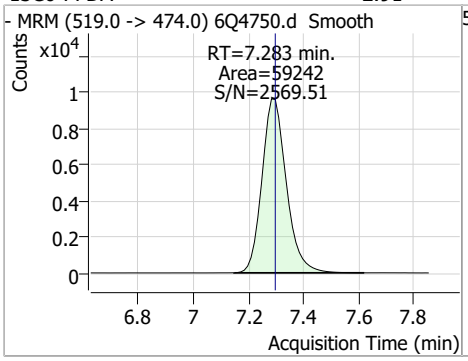


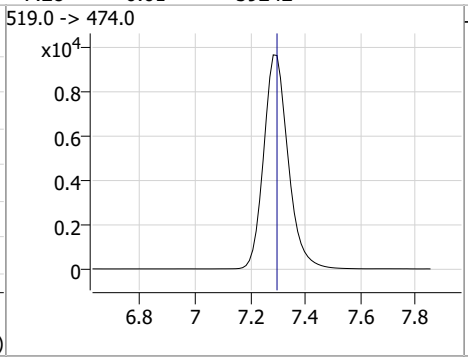
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.22	7.15	0.00	27853				

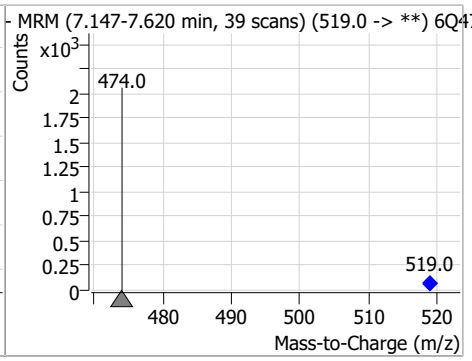


Perfluorinated Compounds by LC/MS/MS

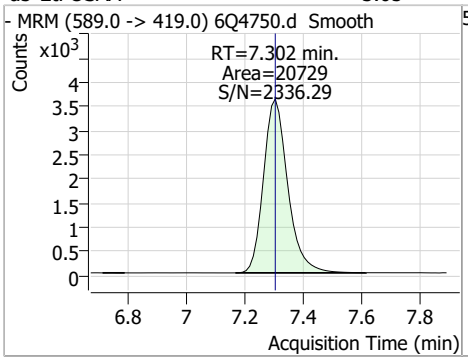
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.91	7.28	-0.01	59242				

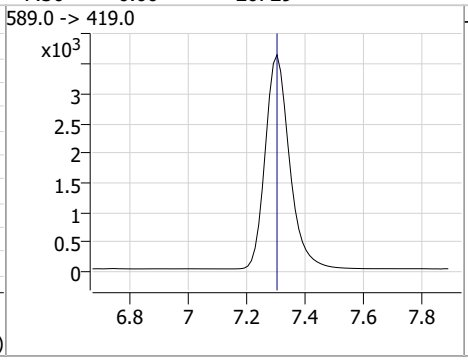


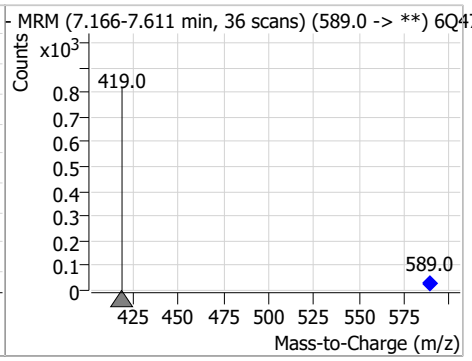




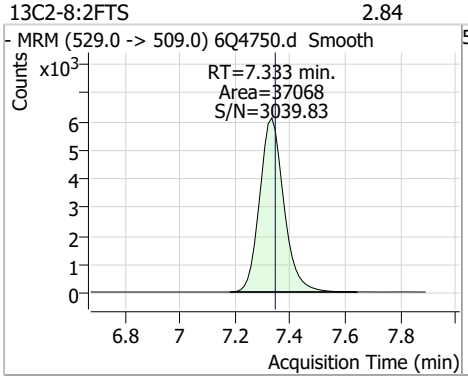
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.05	7.30	0.00	20729				

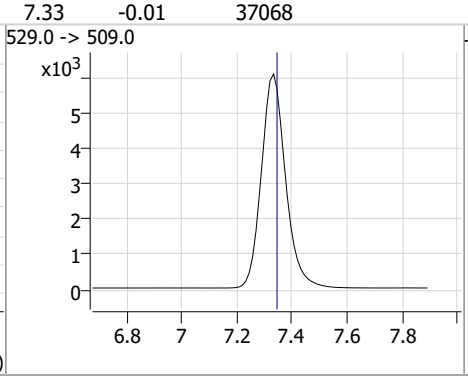


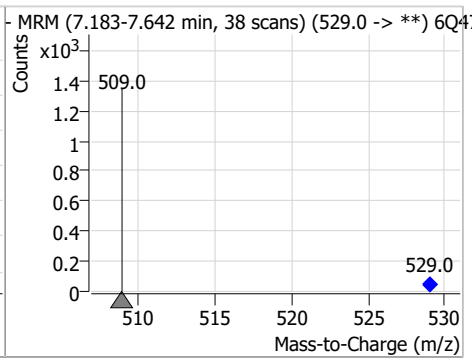




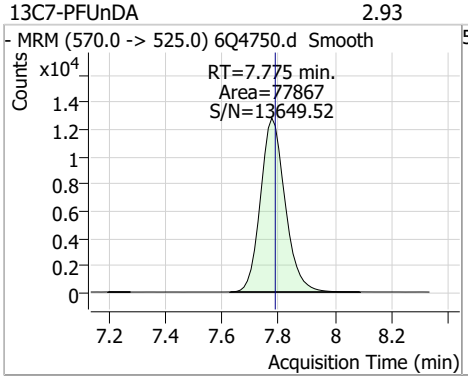
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.84	7.33	-0.01	37068				

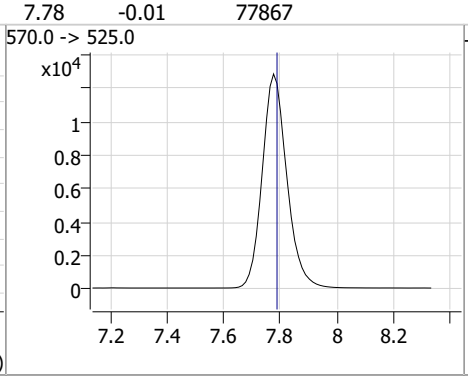


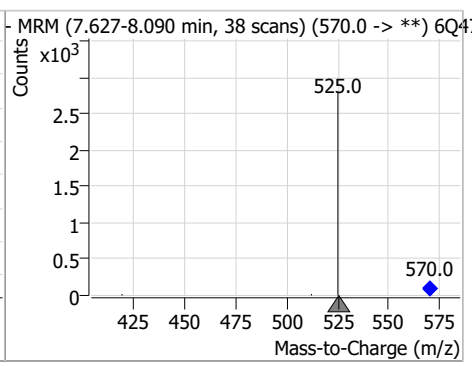




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.93	7.78	-0.01	77867				





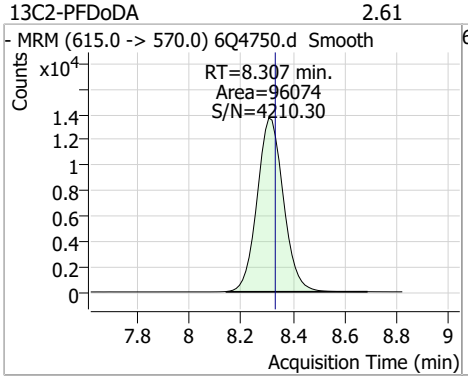


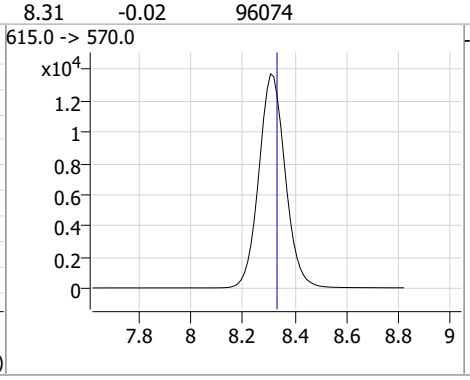
7.1.48

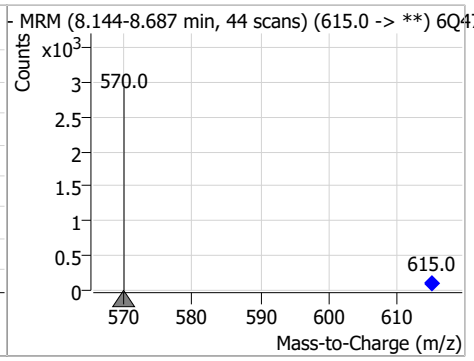
7

Perfluorinated Compounds by LC/MS/MS

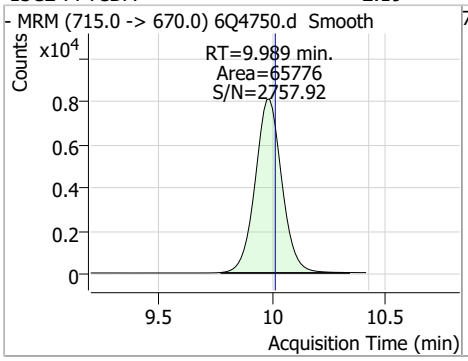
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.61	8.31	-0.02	96074				

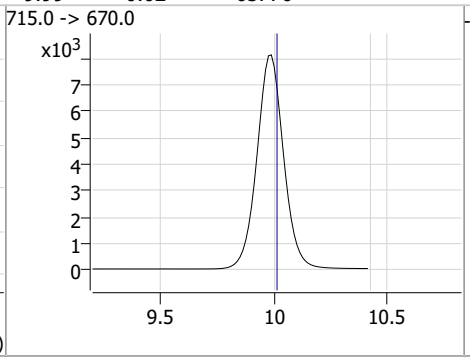


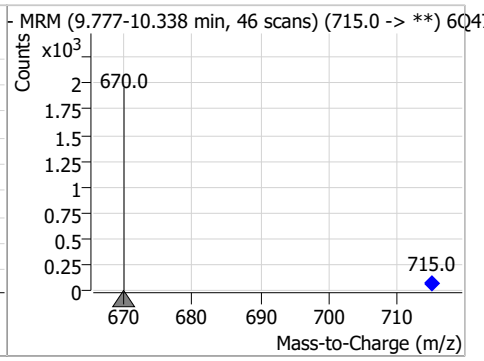




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.19	9.99	-0.02	65776				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4688.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:09:52 AM
Sample Name : fa98286-32
Vial : P5-F4
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	42697	20.00	µg/L	-0.087
M5-PFPeA	3.355	268.0 -> 223.0	81129	20.00	µg/L	-0.062
M5-PFHxA	4.548	318.0 -> 273.0	143937	20.00	µg/L	-0.025
M4-PFHpA	5.433	367.0 -> 322.0	178420	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	330760	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	399104	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	291283	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	336322	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	437404	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	367446	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	107919	20.00	µg/L	0.000
M3-PFBS	3.585	302.0 -> 99.0	20963	20.00	µg/L	-0.050
M3-PFHxS	5.463	402.0 -> 99.0	21814	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	31941	20.00	µg/L	-0.012
M2-4:2FTS	4.458	329.0 -> 309.0	181055	20.00	µg/L	-0.025
M2-6:2FTS	6.124	429.0 -> 409.0	279019	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	177704	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	118811	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3256	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	2123	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	98772	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.458	329.0 -> 309.0	181055	13.41	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%		
13C2-6:2FTS	6.124	429.0 -> 409.0	279019	16.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%		
13C2-8:2FTS	7.333	529.0 -> 509.0	177704	13.63	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.2%		
13C2-PFDoDA	8.307	615.0 -> 570.0	437404	11.89	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.5%		
13C2-PFTeDA	9.989	715.0 -> 670.0	367446	12.25	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.2%		
13C3-PFBS	3.585	302.0 -> 99.0	20963	13.69	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%		
13C3-PFHxS	5.463	402.0 -> 99.0	21814	15.78	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C4-PFBA	1.862	217.0 -> 172.0	42697	10.73	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.6%		
13C4-PFHpA	5.433	367.0 -> 322.0	178420	14.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%		
13C5-PFHxA	4.548	318.0 -> 273.0	143937	13.47	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%		
13C5-PFPeA	3.355	268.0 -> 223.0	81129	11.57	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.9%		
13C6-PFDA	7.283	519.0 -> 474.0	291283	14.32	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

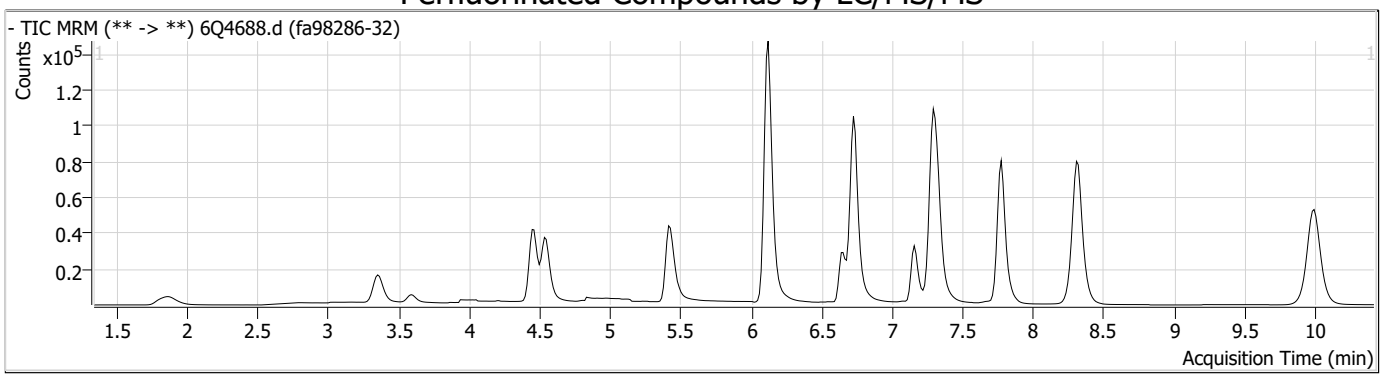
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	336322	12.67	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.3%			
13C8-FOSA	6.654	506.0 -> 78.0	107919	11.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.2%			
13C8-PFOA	6.126	421.0 -> 376.0	330760	15.59	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C8-PFOS	6.717	507.0 -> 99.0	31941	15.06	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C9-PFNA	6.732	472.0 -> 427.0	399104	15.49	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%			
d3-MeFOSAA	7.155	573.0 -> 419.0	118811	13.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.6%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3268	12.29	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.5%			
d3-MeFOSA	7.085	515.0 -> 169.0	2092	0.92	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.6%			
d5-EtFOSAA	7.302	589.0 -> 419.0	98868	14.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0 327.0 -> 81.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0 427.0 -> 81.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0 527.0 -> 81.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0 584.0 -> 483.0	-	N.D.			
FOSA	-	498.0 -> 78.0 498.0 -> 478.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0 570.0 -> 512.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	3.141	299.0 -> 80.0 299.0 -> 99.0	0		µg/L	m	1
PFDA	-	513.0 -> 469.0 513.0 -> 219.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0 613.0 -> 319.0	-	N.D.			
PFDS	-	599.0 -> 80.0 599.0 -> 99.0	-	N.D.			
PFHpA	-	363.0 -> 319.0 363.0 -> 169.0	-	N.D.			
PFHpS	-	449.0 -> 80.0 449.0 -> 99.0	-	N.D.			
PFHxA	-	313.0 -> 269.0 313.0 -> 119.0	-	N.D.			
PFHxS	-	399.0 -> 80.0 399.0 -> 99.0	-	N.D.			
PFNA	6.133	463.0 -> 419.0 463.0 -> 219.0	0		µg/L	m	1
PFNS	-	549.0 -> 80.0 549.0 -> 99.0	-	N.D.			
PFOA	-	413.0 -> 369.0 413.0 -> 169.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

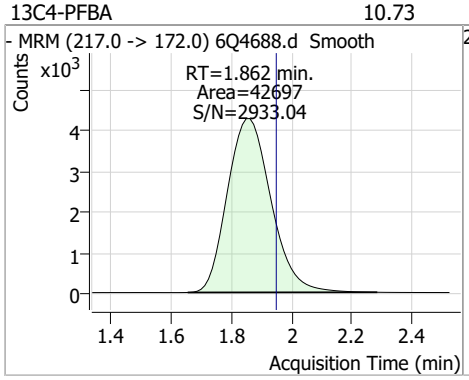
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.183	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

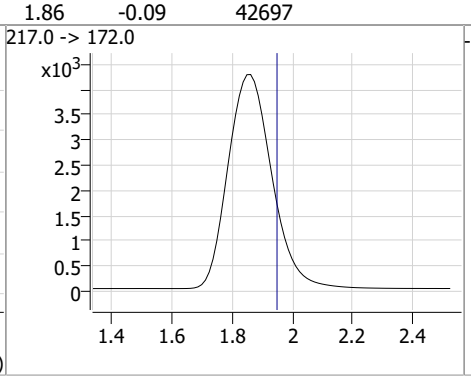
 # = Qualifier out of range, m = manually integrated, + = Area summed

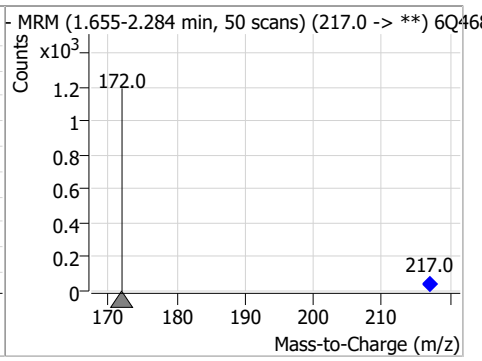
Perfluorinated Compounds by LC/MS/MS



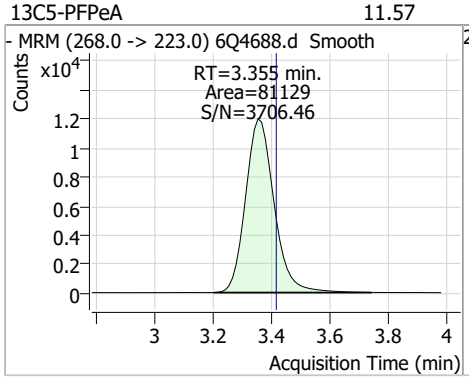
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.73	1.86	-0.09	42697				

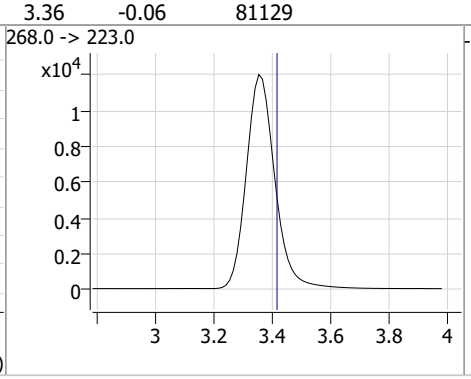


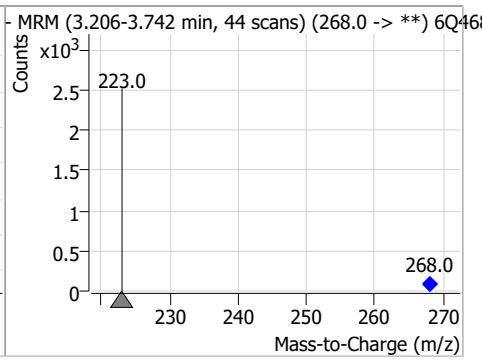




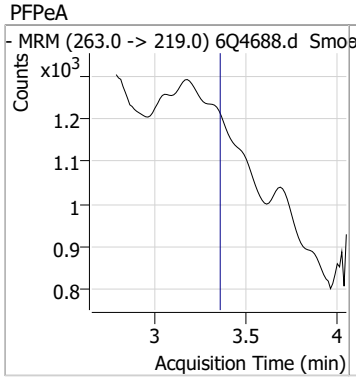
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.57	3.36	-0.06	81129				

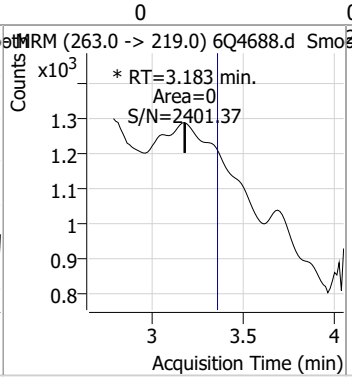


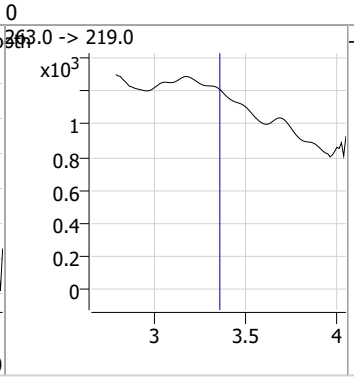


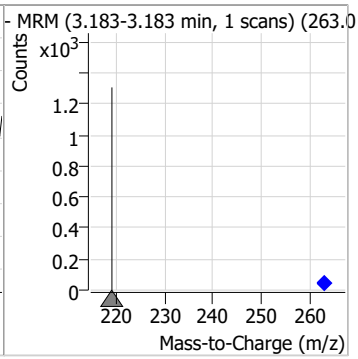


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



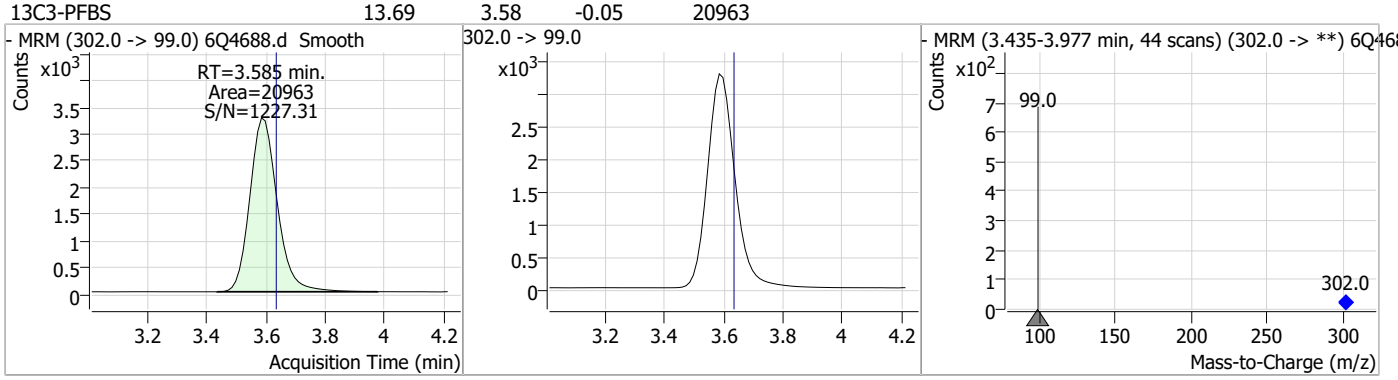




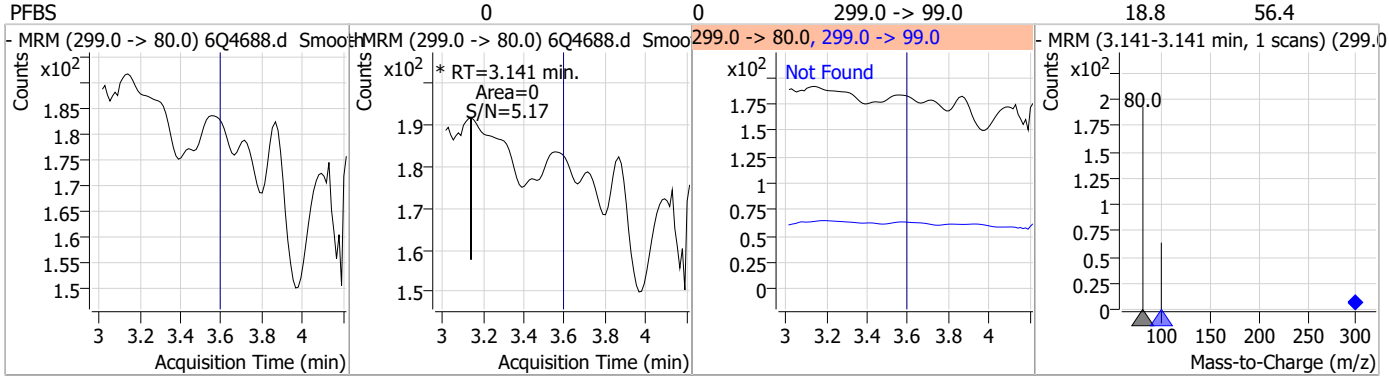


Perfluorinated Compounds by LC/MS/MS

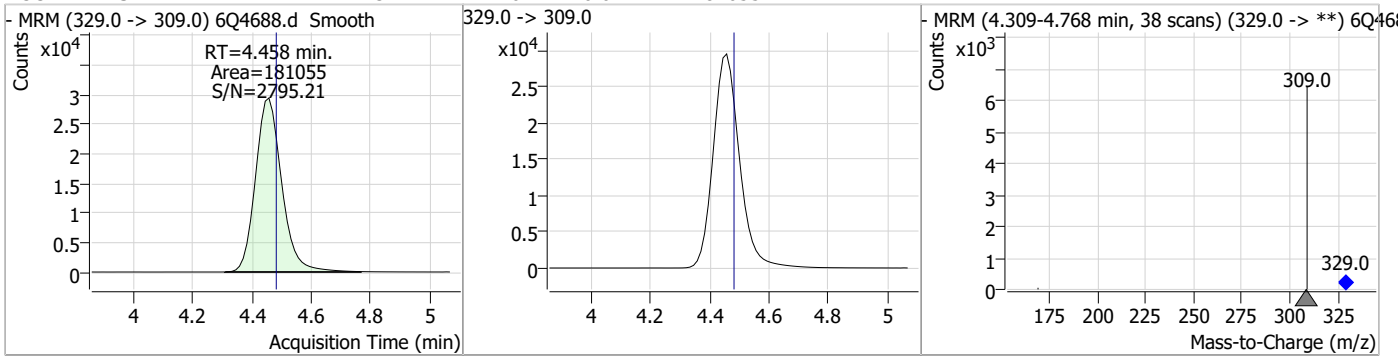
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.69	3.58	-0.05	20963				



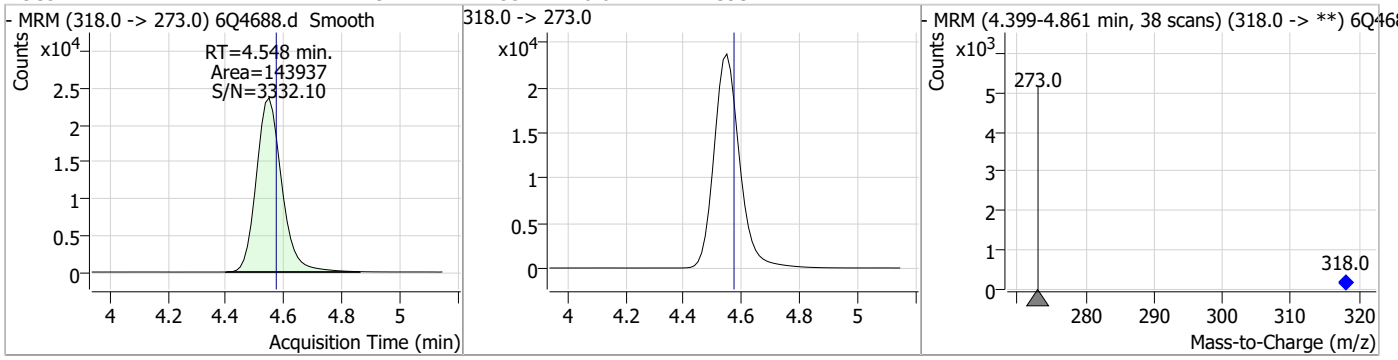
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	299.0 -> 99.0		18.8	56.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.41	4.46	-0.02	181055				

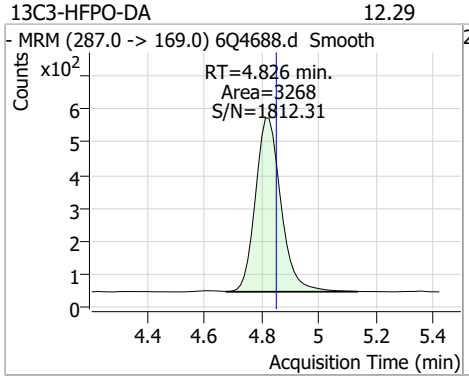


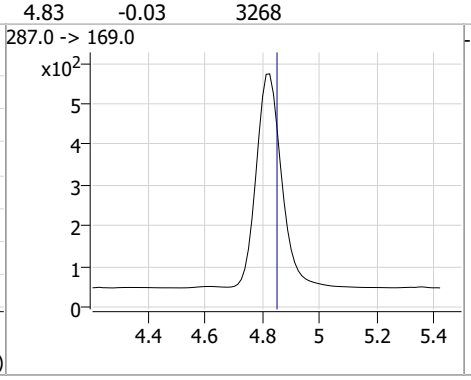
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.47	4.55	-0.02	143937				

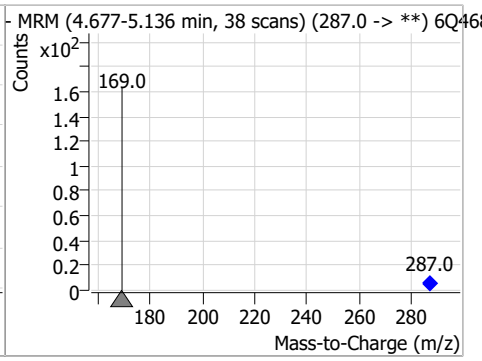


Perfluorinated Compounds by LC/MS/MS

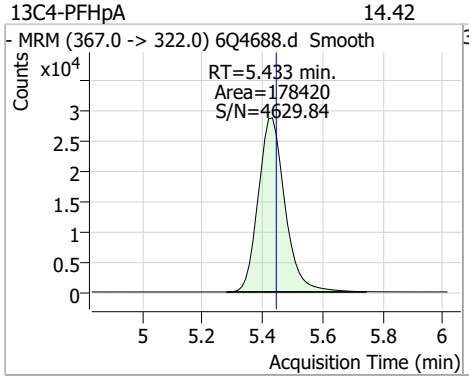
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.29	4.83	-0.03	3268				

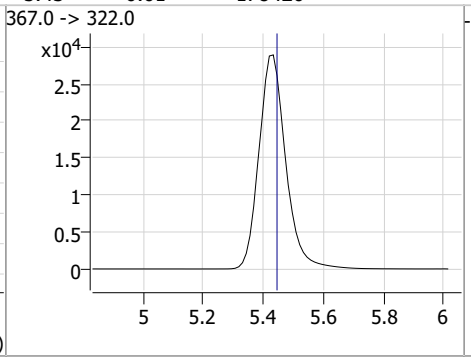


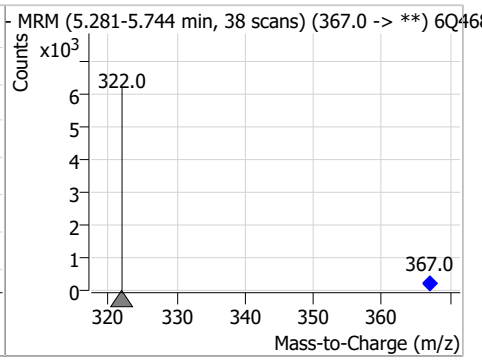




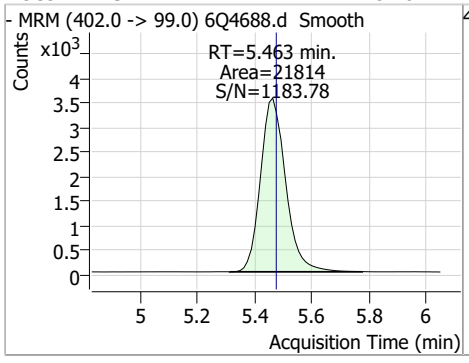
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.42	5.43	-0.01	178420				

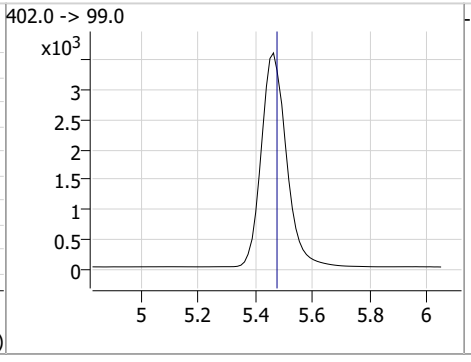


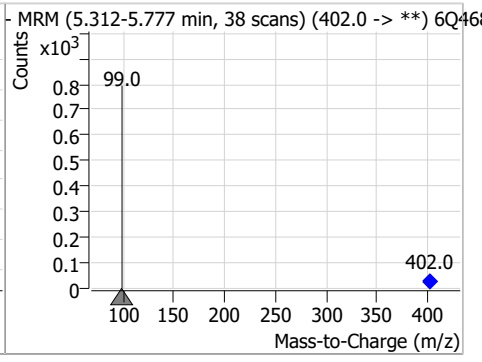




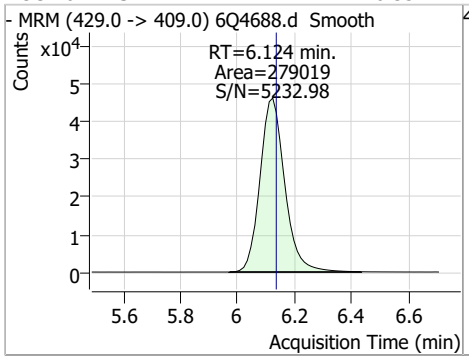
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.78	5.46	-0.01	21814				

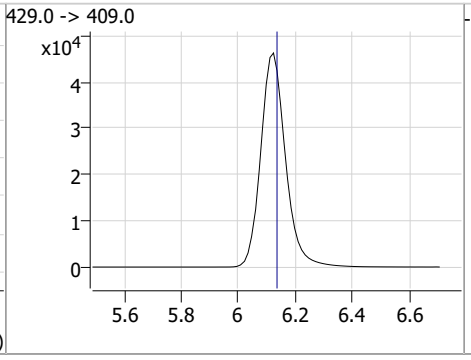


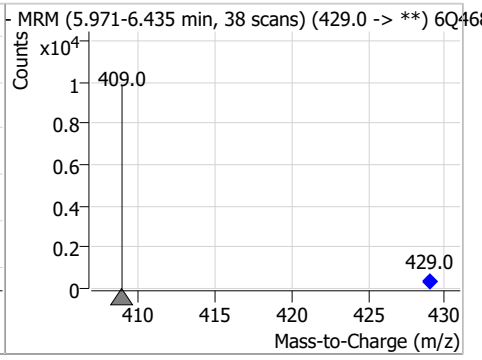




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.35	6.12	-0.01	279019				

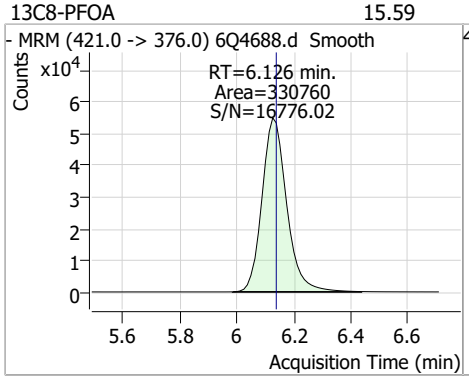


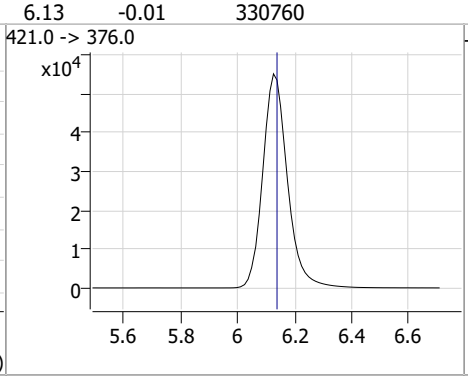


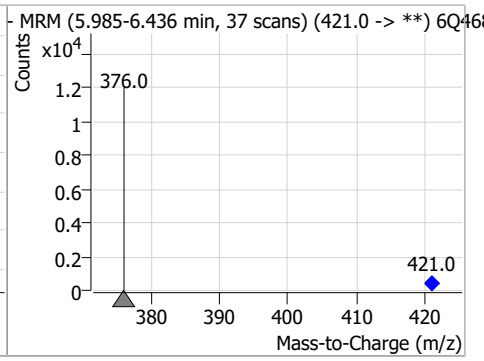


Perfluorinated Compounds by LC/MS/MS

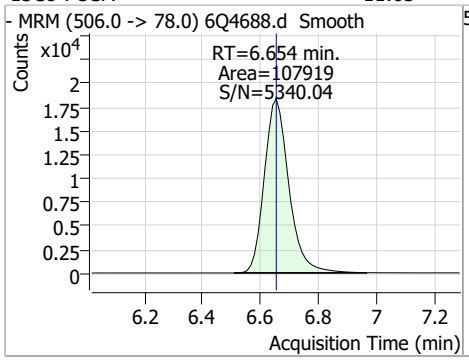
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.59	6.13	-0.01	330760				

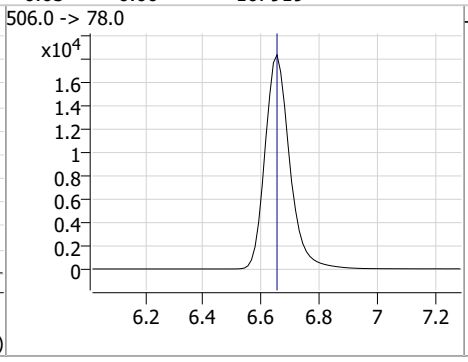


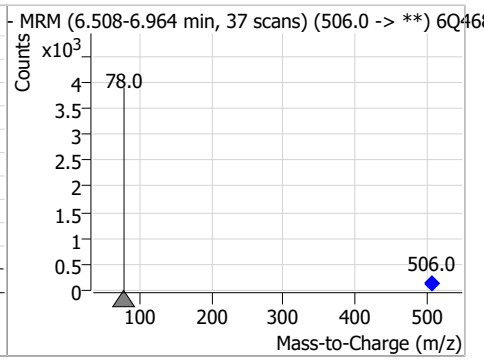




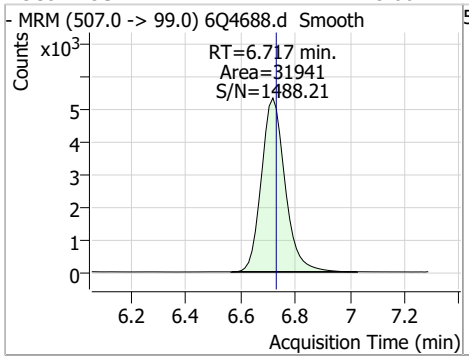
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.03	6.65	0.00	107919				

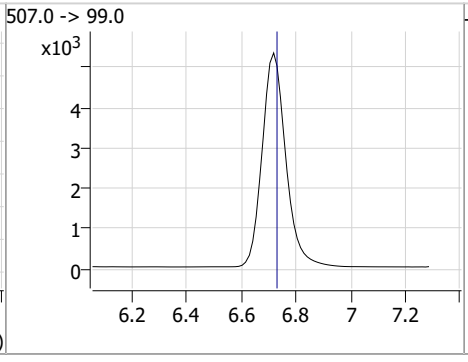


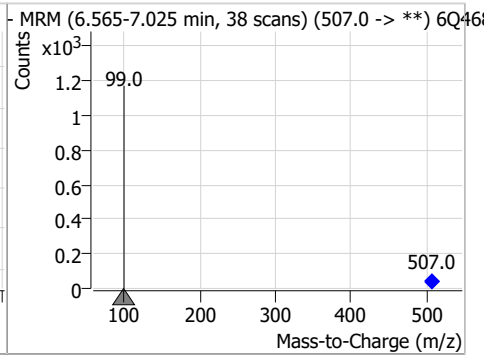




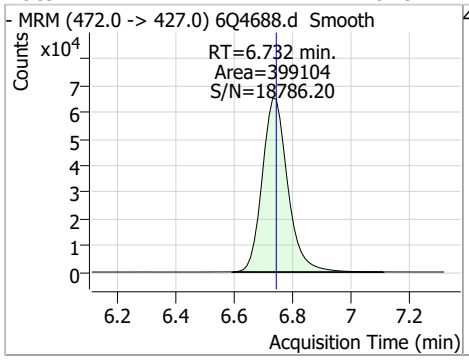
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.06	6.72	-0.01	31941				

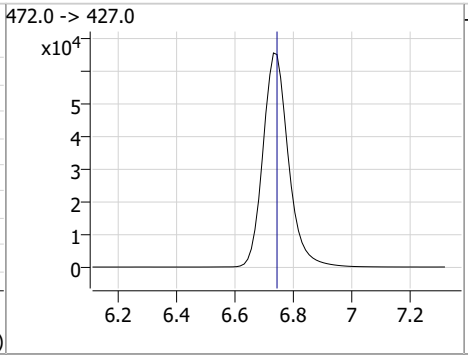


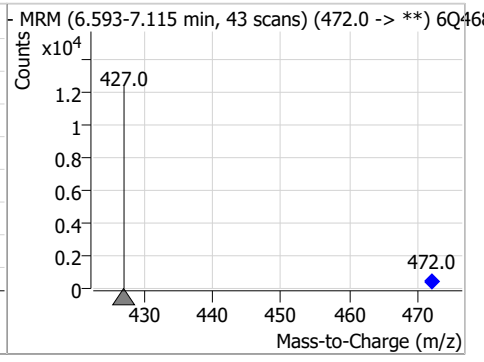




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.49	6.73	-0.01	399104				

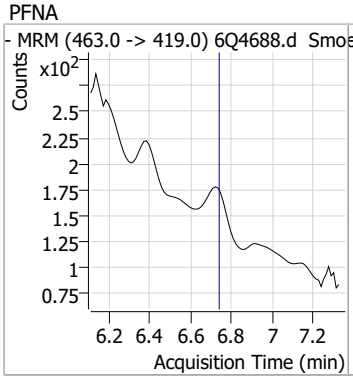


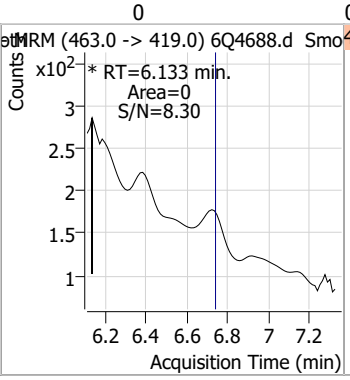


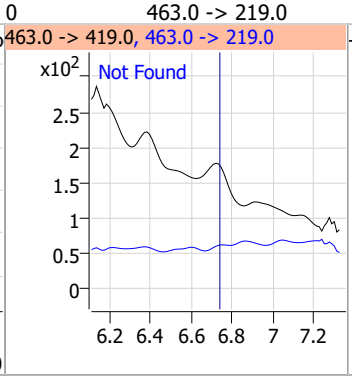


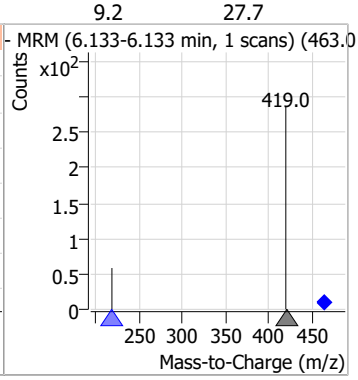
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		9.2	27.7

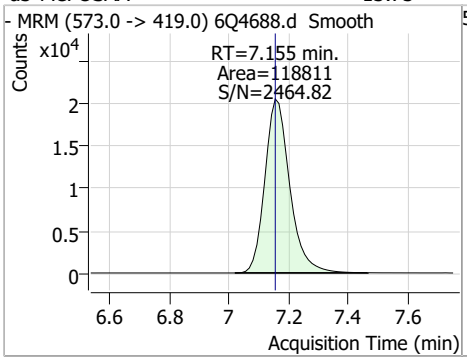


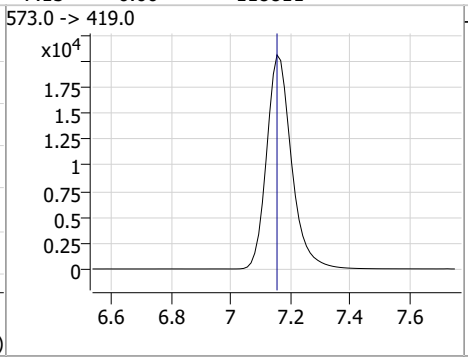


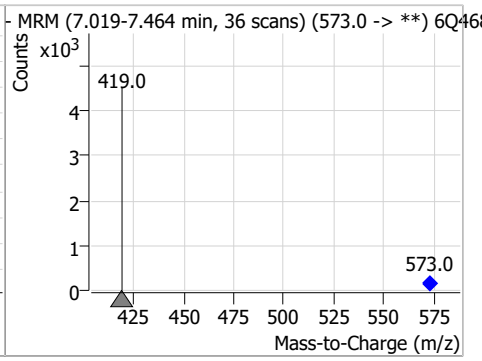




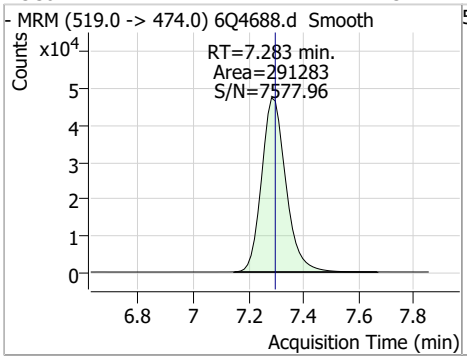
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.73	7.15	0.00	118811				

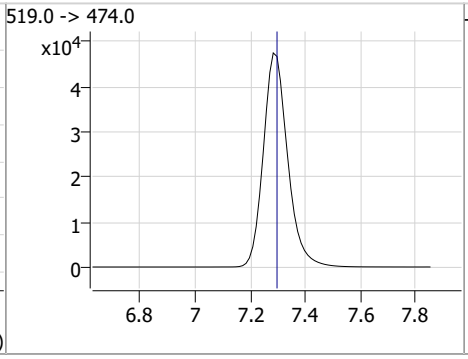


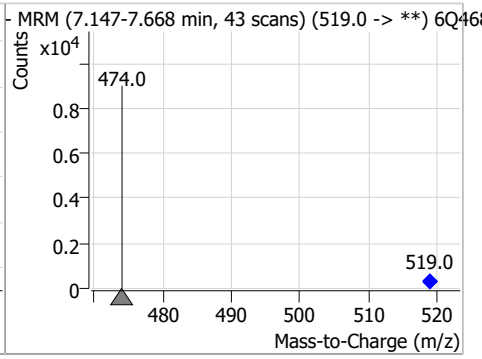




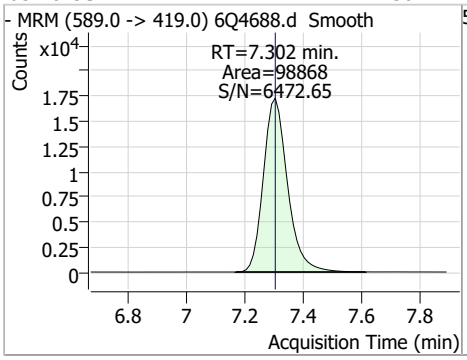
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.32	7.28	-0.01	291283				

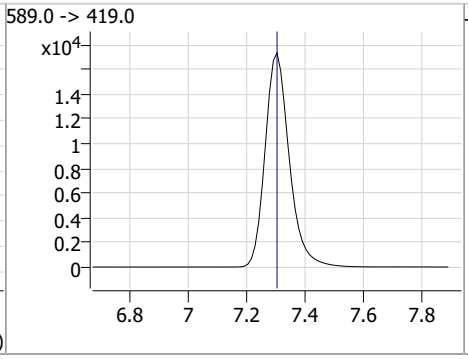


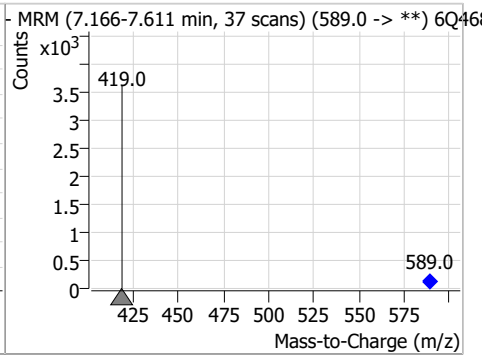




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.56	7.30	0.00	98868				

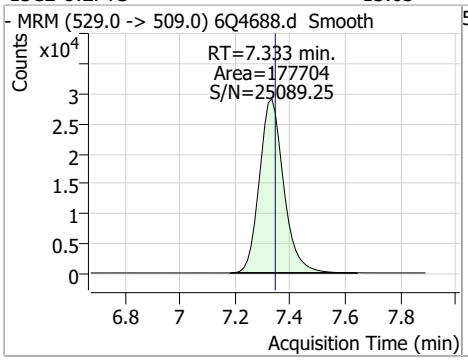


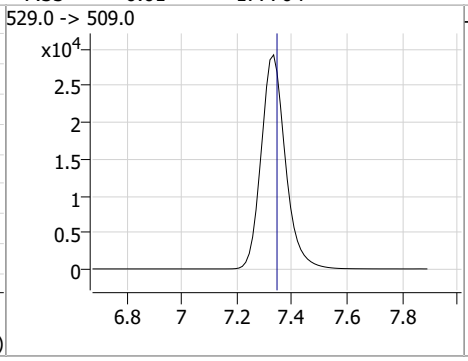


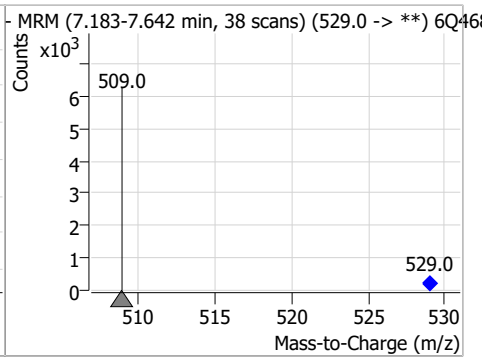


Perfluorinated Compounds by LC/MS/MS

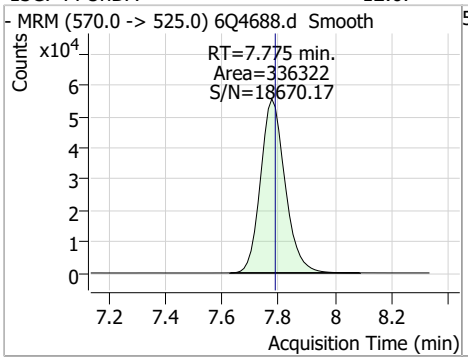
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.63	7.33	-0.01	177704				

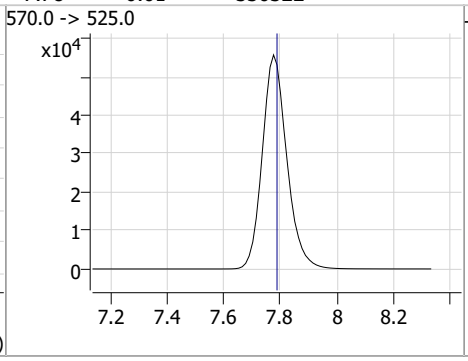


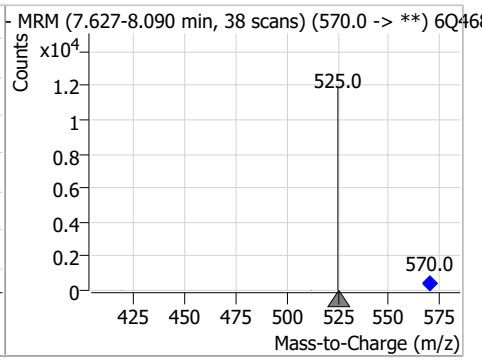




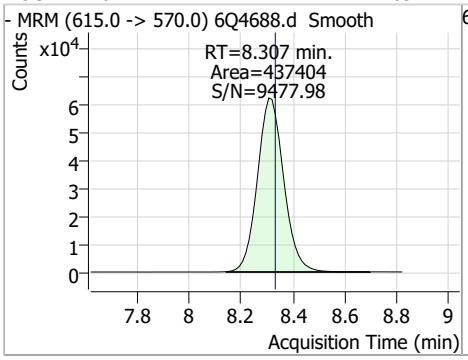
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.67	7.78	-0.01	336322				

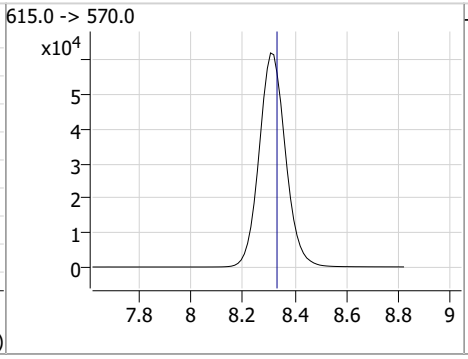


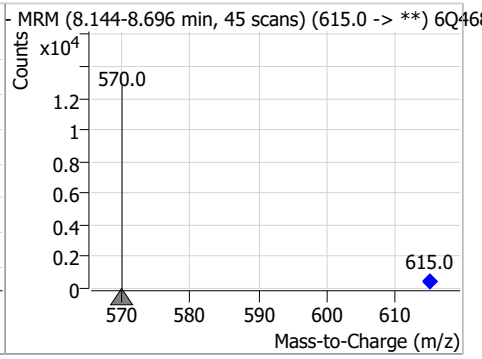




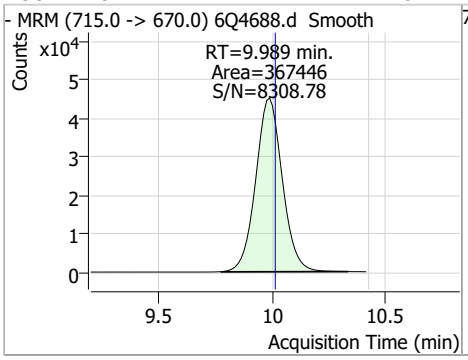
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.89	8.31	-0.02	437404				

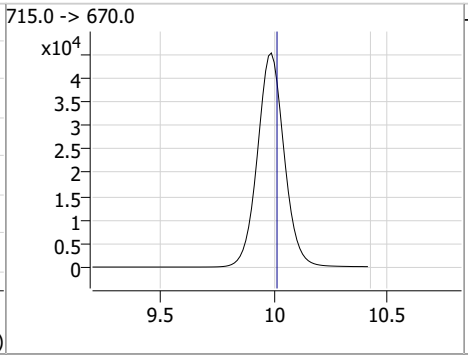


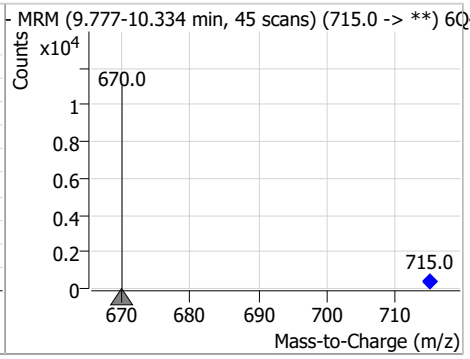




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.25	9.99	-0.02	367446				







Manual Integration Approval Summary

Sample Number: FA98286-32
Lab FileID: 6Q4688.D
Injection Time: 09/15/22 05:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
d3-MeFOSA			7.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4689.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:25:54 AM
Sample Name : fa98286-33
Vial : P5-F5
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	37370	20.00	µg/L	-0.050
M5-PFPeA	3.380	268.0 -> 223.0	76668	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	130714	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	160990	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	293387	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	349446	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	277465	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	363755	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	440166	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	381431	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	105026	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	19761	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	19654	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	30088	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	160441	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	224575	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	173296	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	118092	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	2845	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	1119	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	100290	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	160441	11.88	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.4%		
13C2-6:2FTS	6.124	429.0 -> 409.0	224575	13.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.8%		
13C2-8:2FTS	7.333	529.0 -> 509.0	173296	13.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.5%		
13C2-PFDoDA	8.307	615.0 -> 570.0	440166	11.97	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	381431	12.71	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.6%		
13C3-PFBS	3.610	302.0 -> 99.0	19761	12.90	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%		
13C3-PFHxS	5.463	402.0 -> 99.0	19654	14.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.1%		
13C4-PFBA	1.899	217.0 -> 172.0	37370	9.39	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 46.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	160990	13.01	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.1%		
13C5-PFHxA	4.561	318.0 -> 273.0	130714	12.23	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.1%		
13C5-PFPeA	3.380	268.0 -> 223.0	76668	10.94	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.7%		
13C6-PFDA	7.283	519.0 -> 474.0	277465	13.64	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

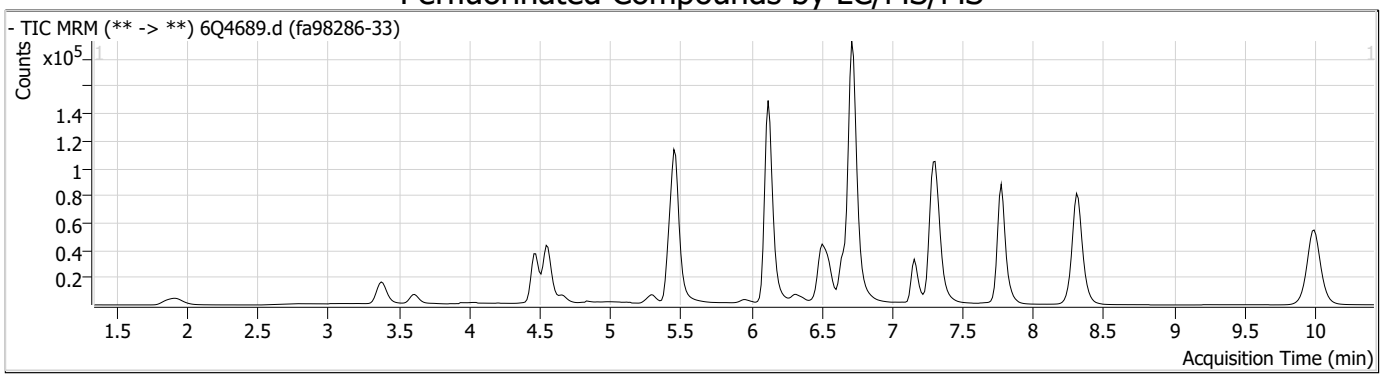
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	363755	13.70	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C8-FOSA	6.654	506.0 -> 78.0	105026	10.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.7%			
13C8-PFOA	6.126	421.0 -> 376.0	293387	13.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%			
13C8-PFOS	6.717	507.0 -> 99.0	30088	14.19	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.9%			
13C9-PFNA	6.732	472.0 -> 427.0	349446	13.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%			
d3-MeFOSAA	7.155	573.0 -> 419.0	118092	13.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.2%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	2847	10.71	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.6%			
d3-MeFOSA	7.085	515.0 -> 169.0	1088	0.48	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%			
d5-EtFOSAA	7.302	589.0 -> 419.0	100323	14.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.905	213.0 -> 169.0	7165	8.78	µg/L		100
PFBS	3.615	299.0 -> 80.0	9613	2.93	µg/L		98
		299.0 -> 99.0	3523				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	30777	2.94	µg/L		97
		363.0 -> 169.0	4960				
PFHpS	6.136	449.0 -> 80.0	26257	9.99	µg/L	m	91
		449.0 -> 99.0	12199				
PFHxA	4.562	313.0 -> 269.0	44312	6.45	µg/L		100
		313.0 -> 119.0	1087				
PFHxS	5.465	399.0 -> 80.0	269272	95.62	µg/L	m	97
		399.0 -> 99.0	125373				
PFNA	6.733	463.0 -> 419.0	3307	0.20	µg/L	m	82
		463.0 -> 219.0	883				
PFNS	7.033	549.0 -> 80.0	0		µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.126	413.0 -> 369.0	69369	4.38	µg/L	m	98
		413.0 -> 169.0	11287				
PFOS	6.719	499.0 -> 80.0	528641	189.52	µg/L	m	95

Perfluorinated Compounds by LC/MS/MS

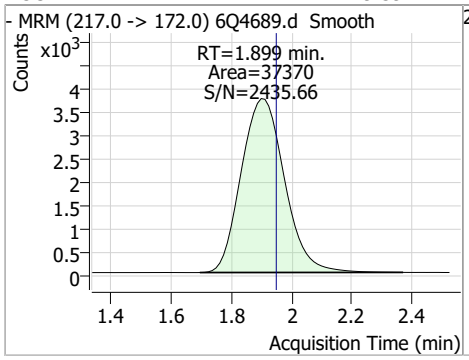
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	231979				
PFPeA	3.383	263.0 -> 219.0	7400	2.29	µg/L	m	100
PFPeS	4.668	349.0 -> 80.0	13649	4.99	µg/L	m	97
		349.0 -> 99.0	6532				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

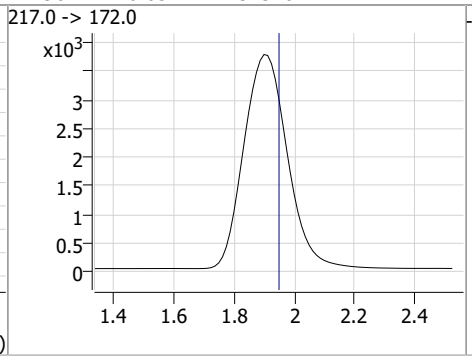
 # = Qualifier out of range, m = manually integrated, + = Area summed

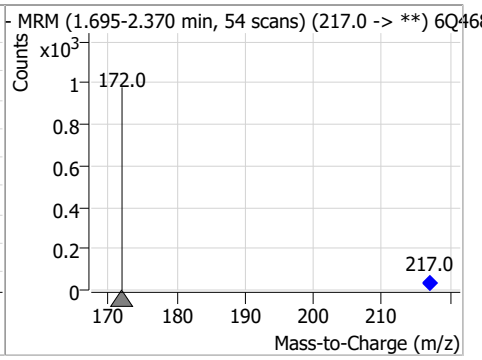
Perfluorinated Compounds by LC/MS/MS



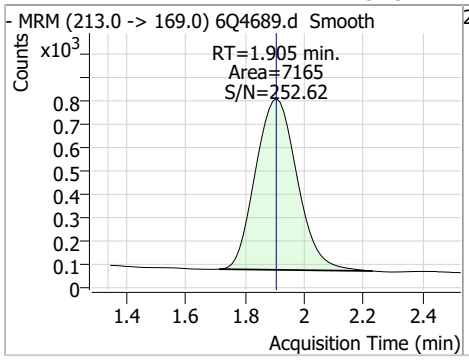
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.39	1.90	-0.05	37370				

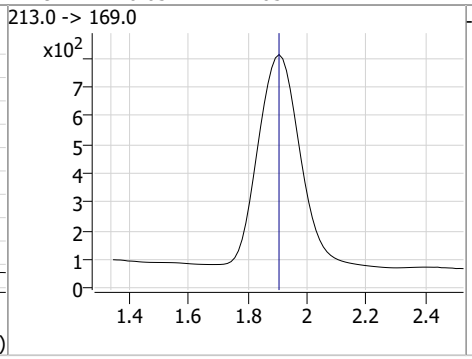


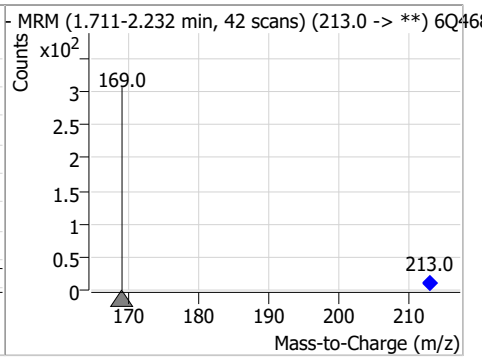




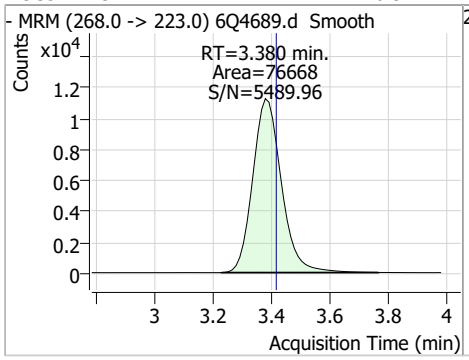
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.78	1.91	-0.05	7165				

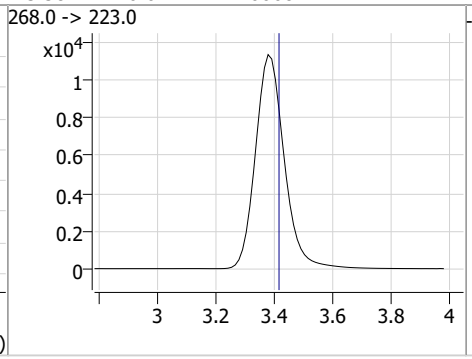


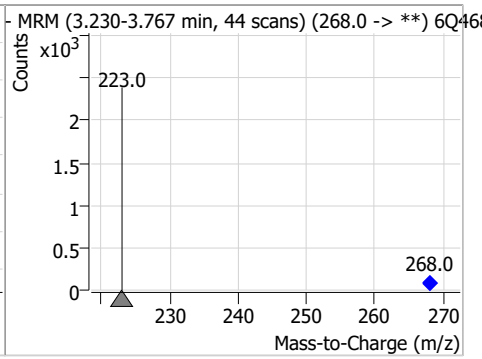




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.94	3.38	-0.04	76668				

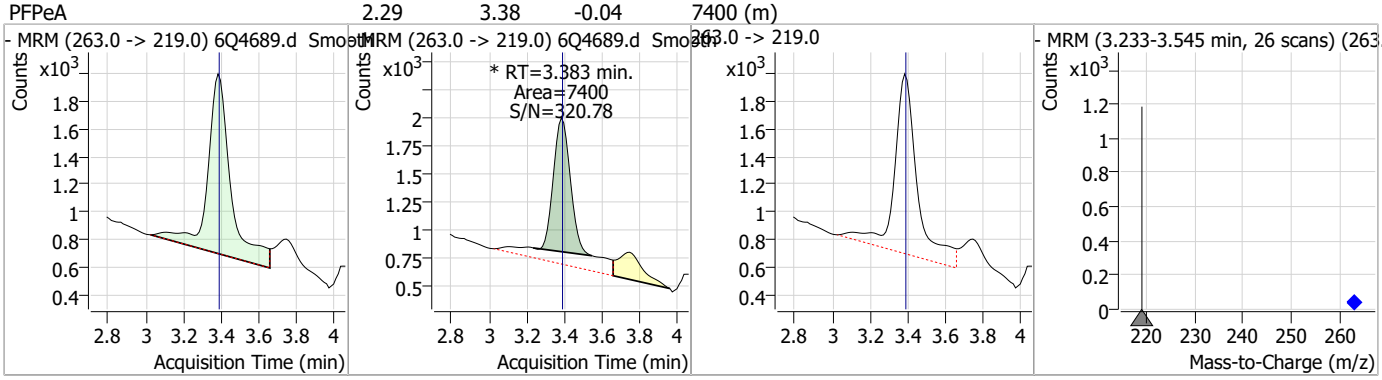




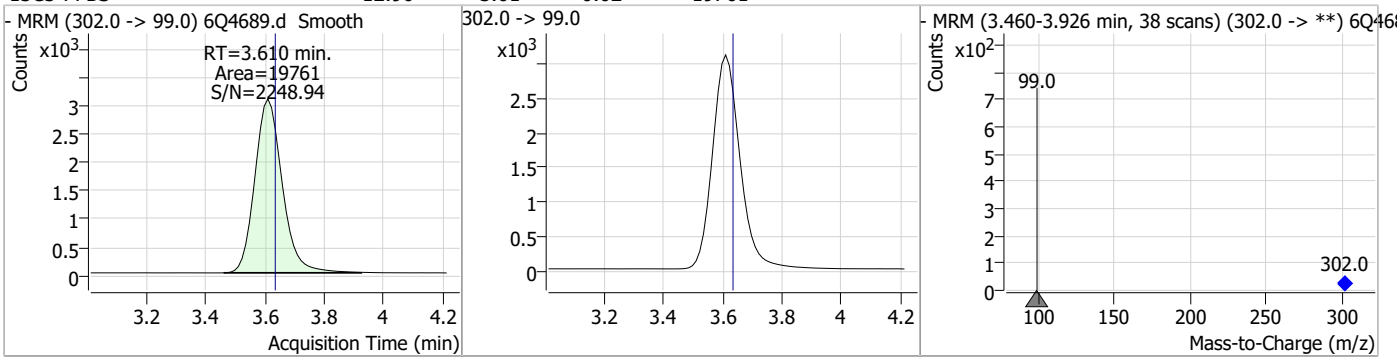


Perfluorinated Compounds by LC/MS/MS

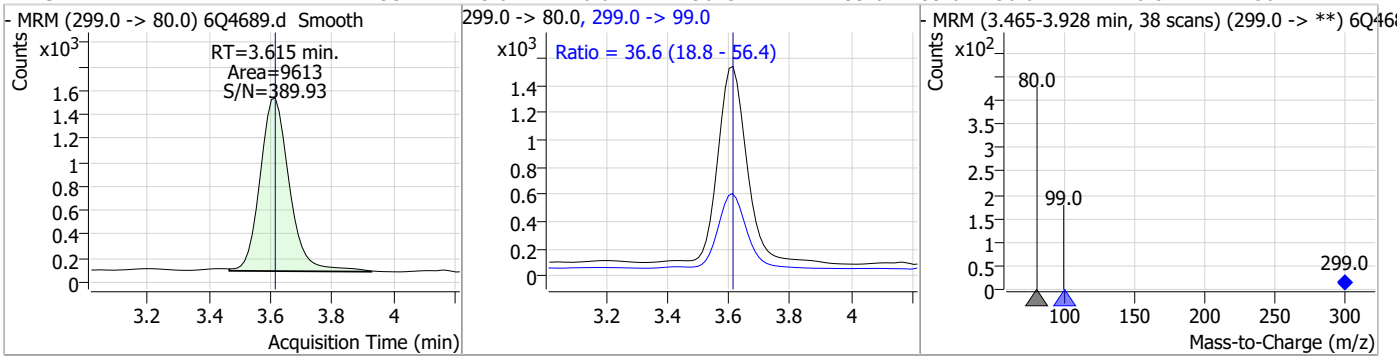
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.29	3.38	-0.04	7400 (m)				



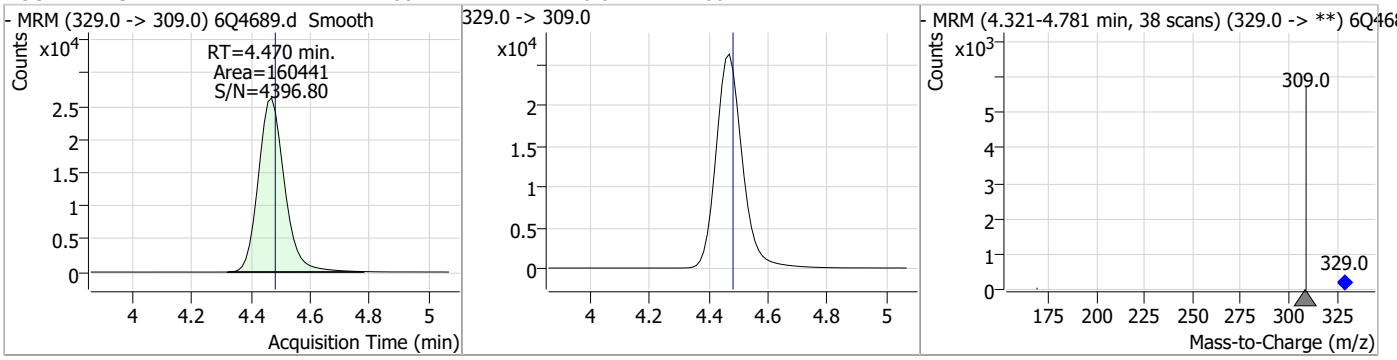
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.90	3.61	-0.02	19761				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.93	3.61	-0.02	9613	299.0 -> 99.0	36.6	18.8	56.4

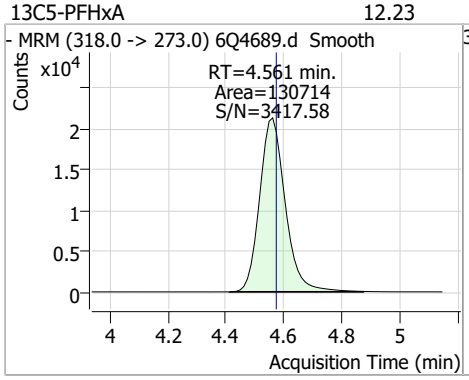


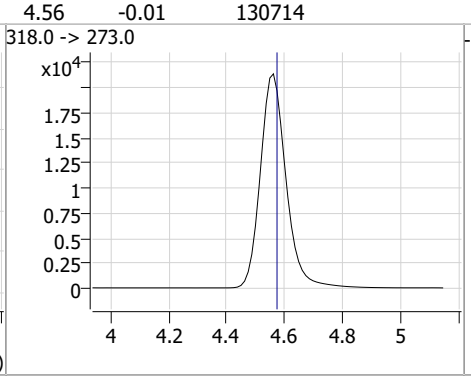
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.88	4.47	-0.01	160441				

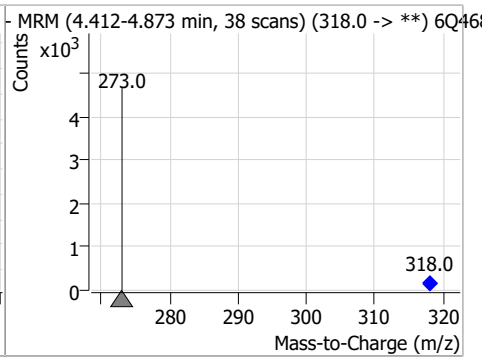


Perfluorinated Compounds by LC/MS/MS

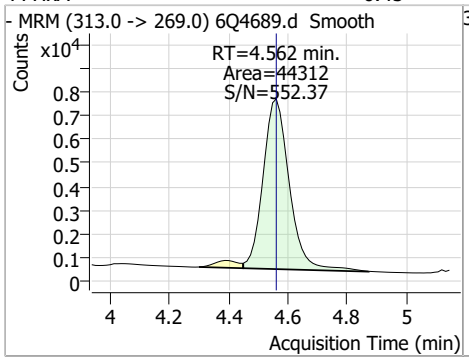
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.23	4.56	-0.01	130714				

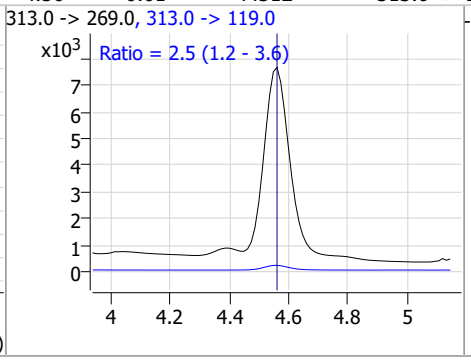


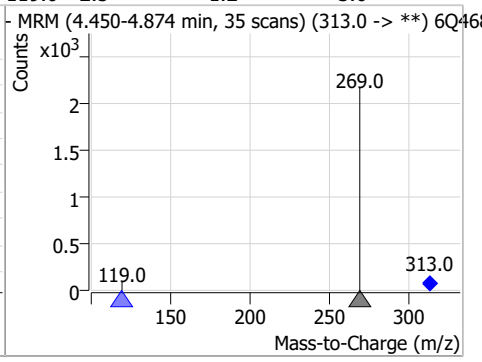




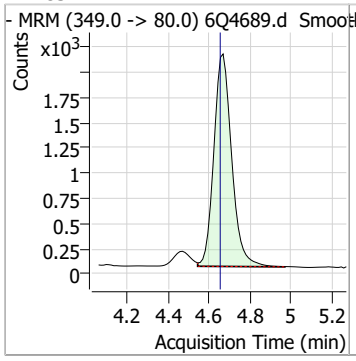
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.45	4.56	-0.01	44312	313.0 -> 119.0	2.5	1.2	3.6

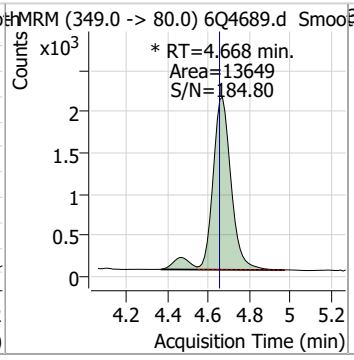


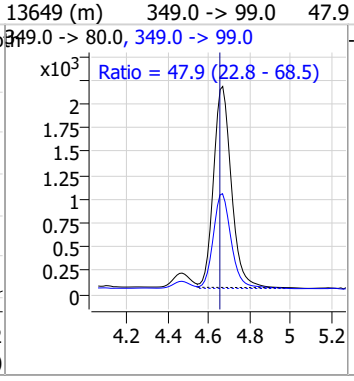


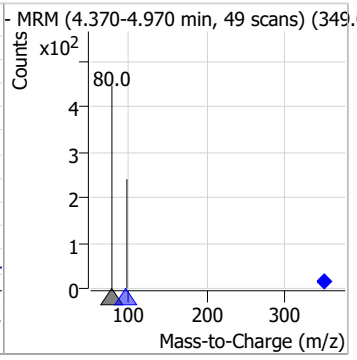


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.99	4.67	-0.01	13649 (m)	349.0 -> 99.0	47.9	22.8	68.5

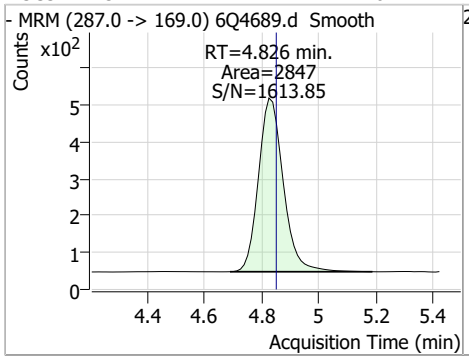


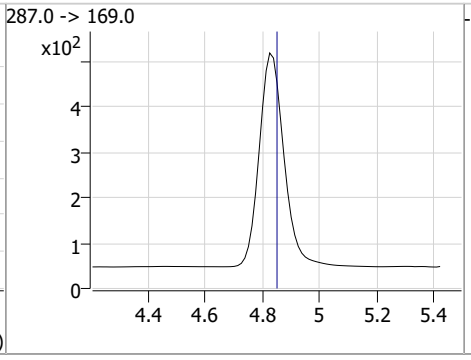


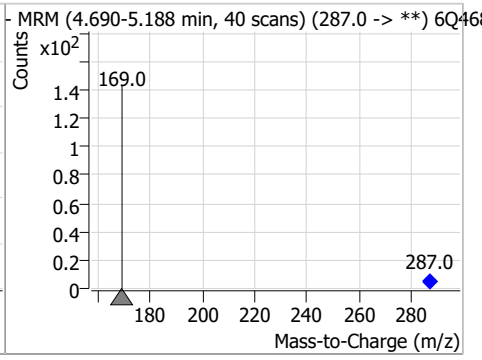




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.71	4.83	-0.03	2847				

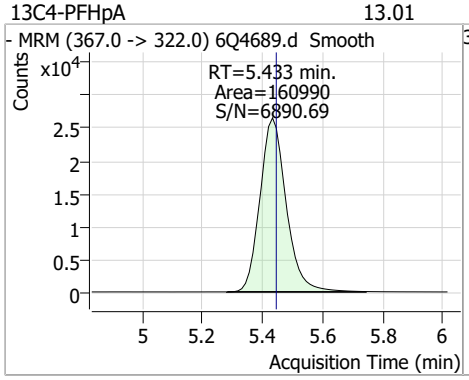


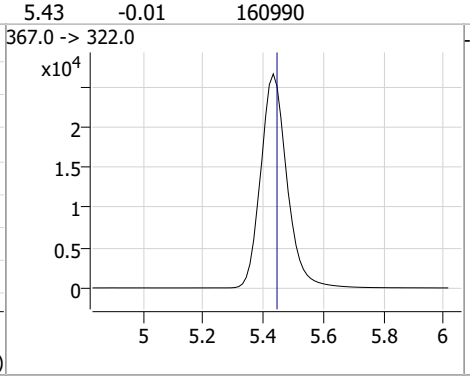


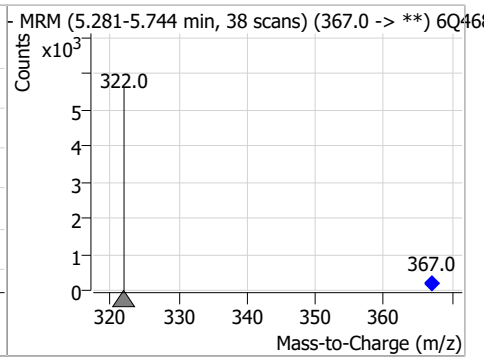


Perfluorinated Compounds by LC/MS/MS

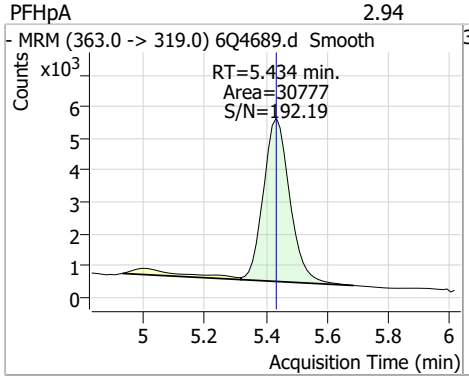
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.01	5.43	-0.01	160990				

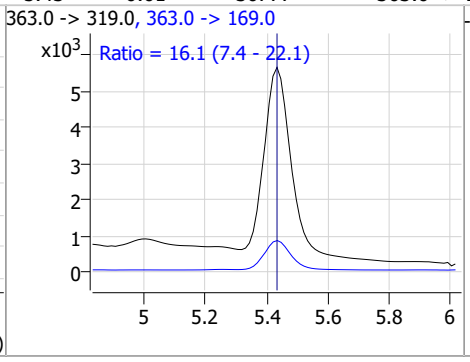


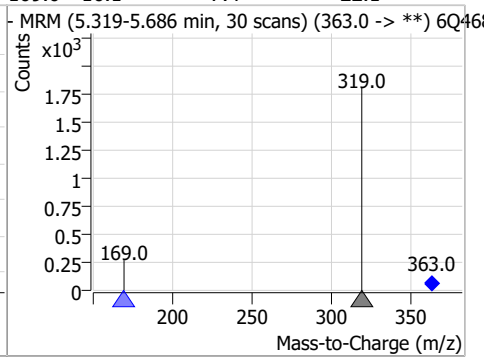




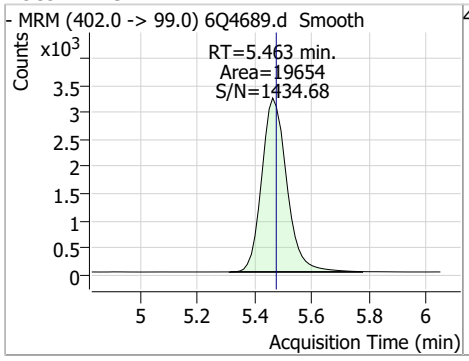
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	2.94	5.43	-0.01	30777	363.0 -> 169.0	16.1	7.4	22.1

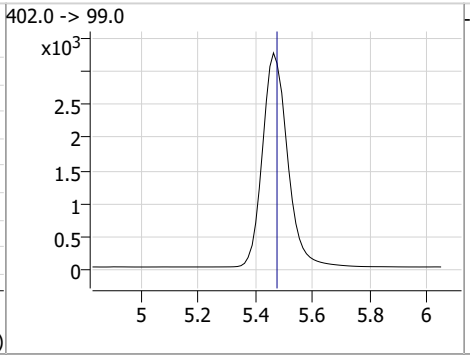


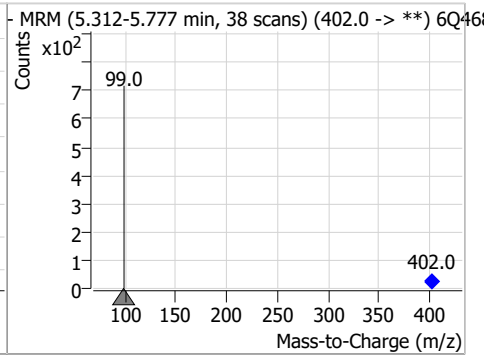




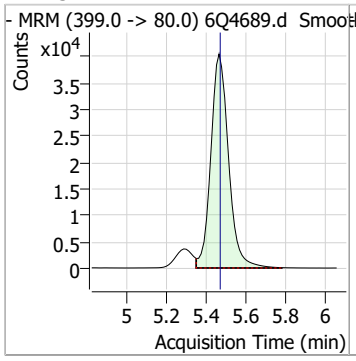
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.21	5.46	-0.01	19654				

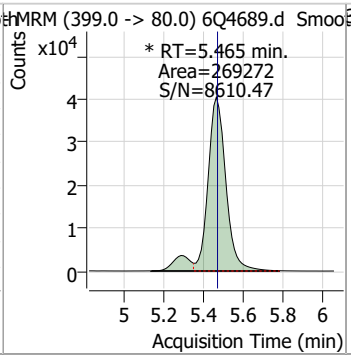


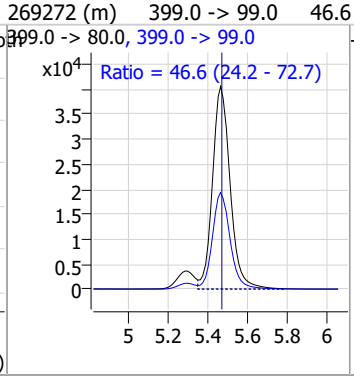


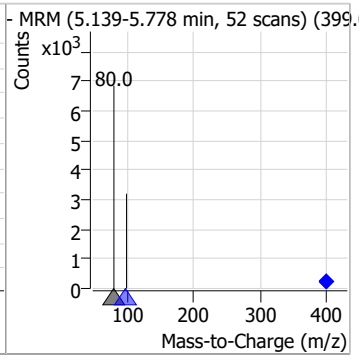


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	95.62	5.47	-0.01	269272 (m)	399.0 -> 99.0	46.6	24.2	72.7



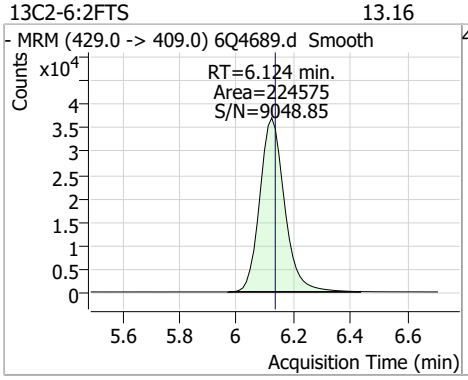


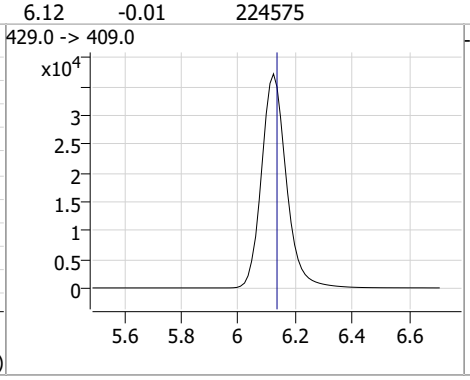


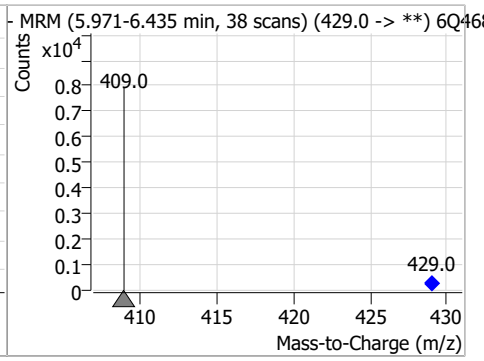


Perfluorinated Compounds by LC/MS/MS

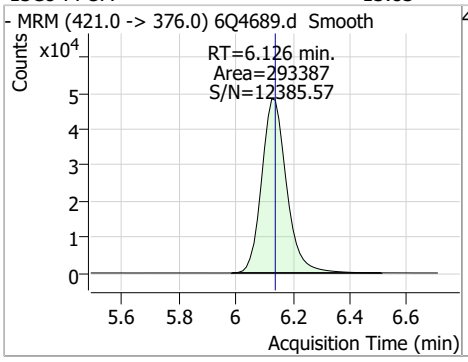
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.16	6.12	-0.01	224575				

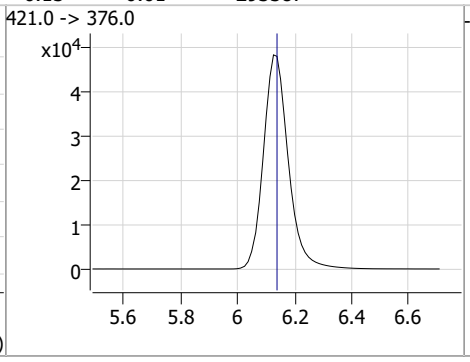


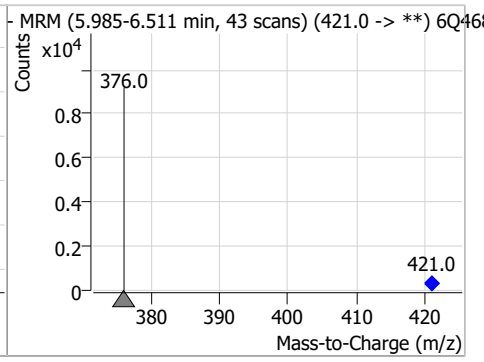




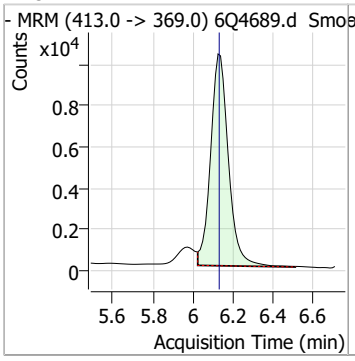
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.83	6.13	-0.01	293387				

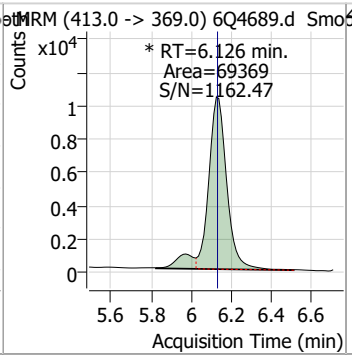


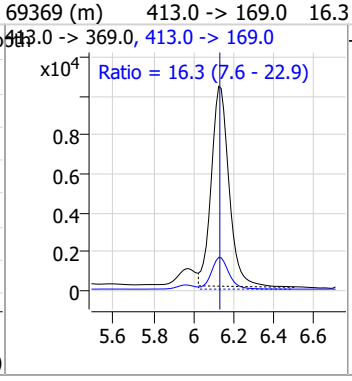


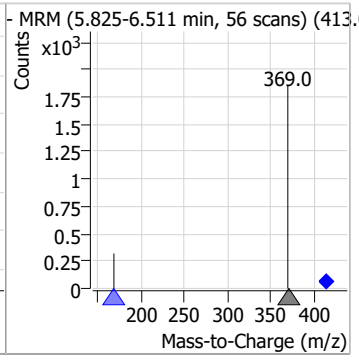


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.38	6.13	-0.01	69369 (m)	413.0 -> 169.0	16.3	7.6	22.9

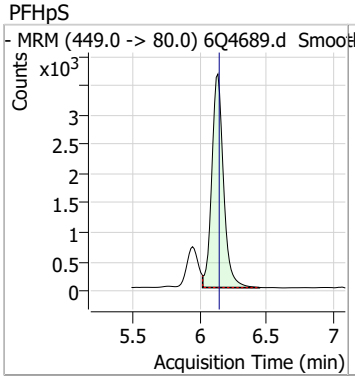


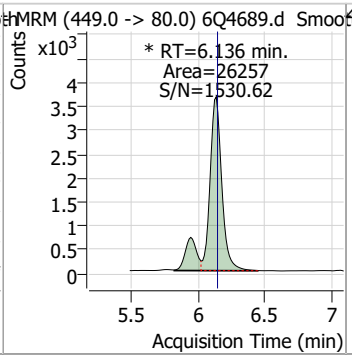


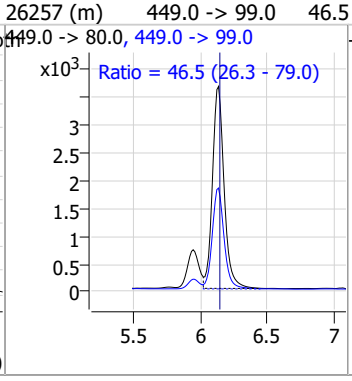


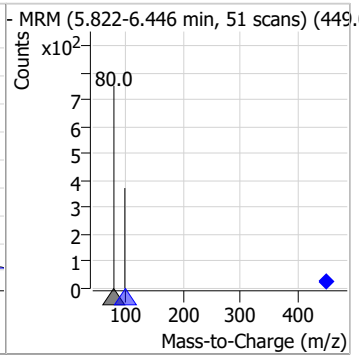


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	9.99	6.14	-0.01	26257 (m)	449.0 -> 99.0	46.5	26.3	79.0



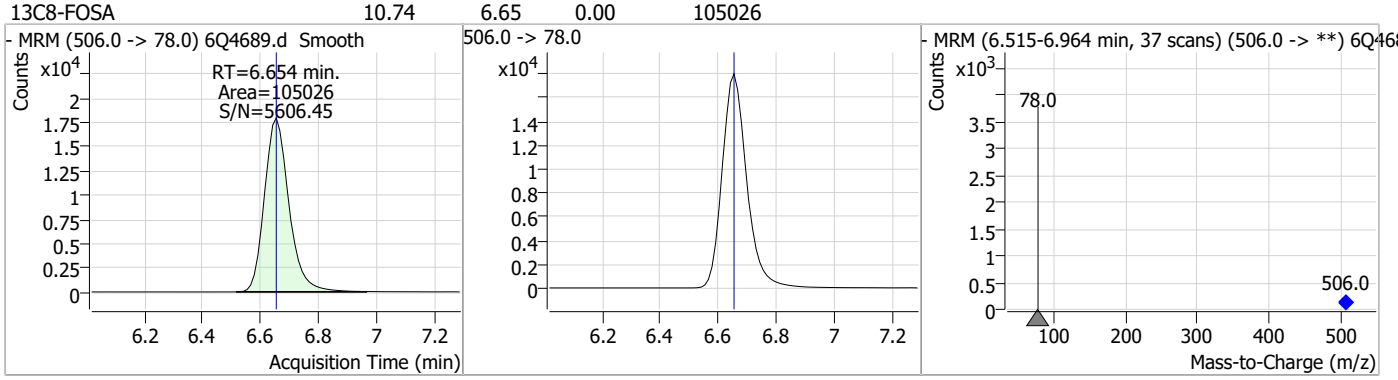




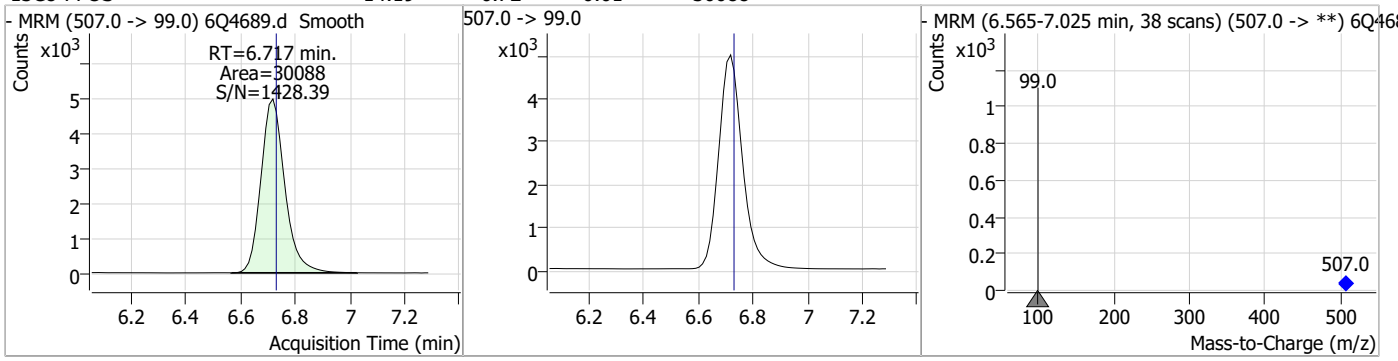


Perfluorinated Compounds by LC/MS/MS

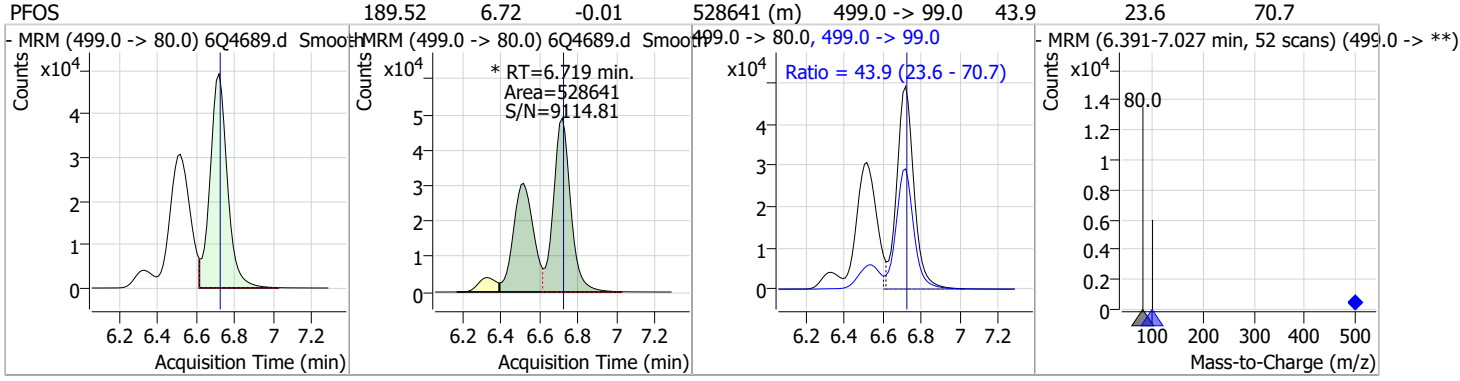
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.74	6.65	0.00	105026				



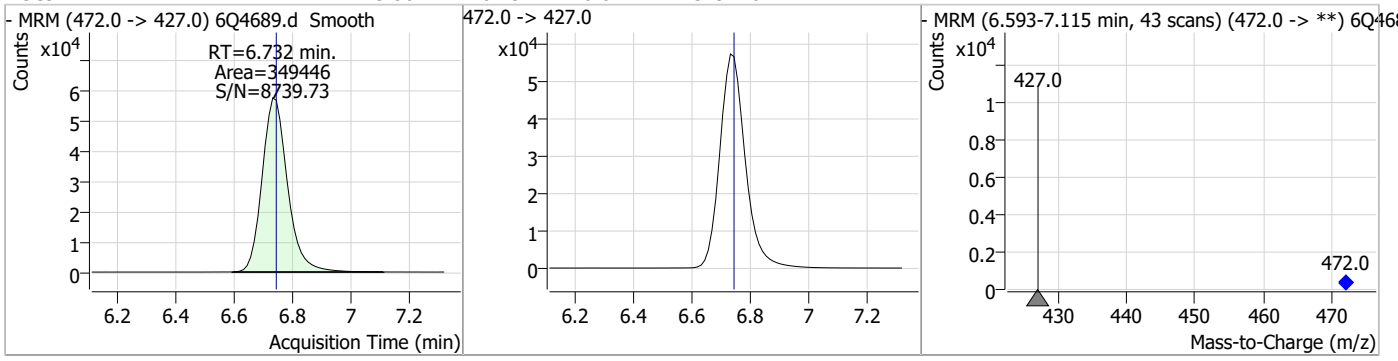
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.19	6.72	-0.01	30088				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	189.52	6.72	-0.01	528641 (m)	499.0 -> 99.0	43.9	23.6	70.7

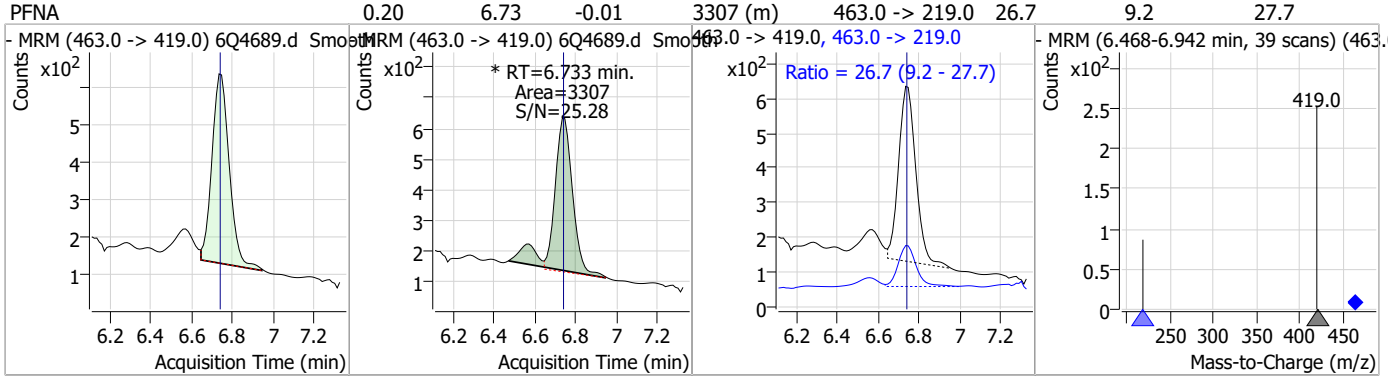


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.56	6.73	-0.01	349446				

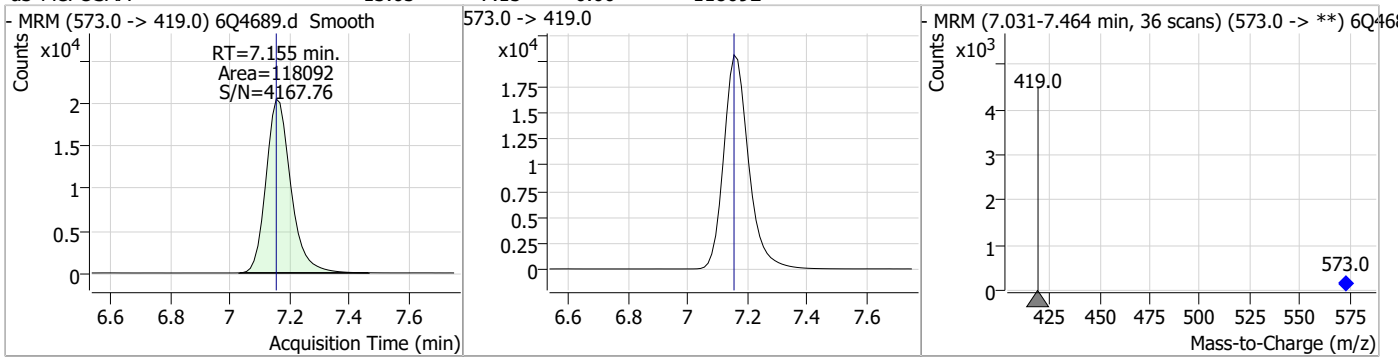


Perfluorinated Compounds by LC/MS/MS

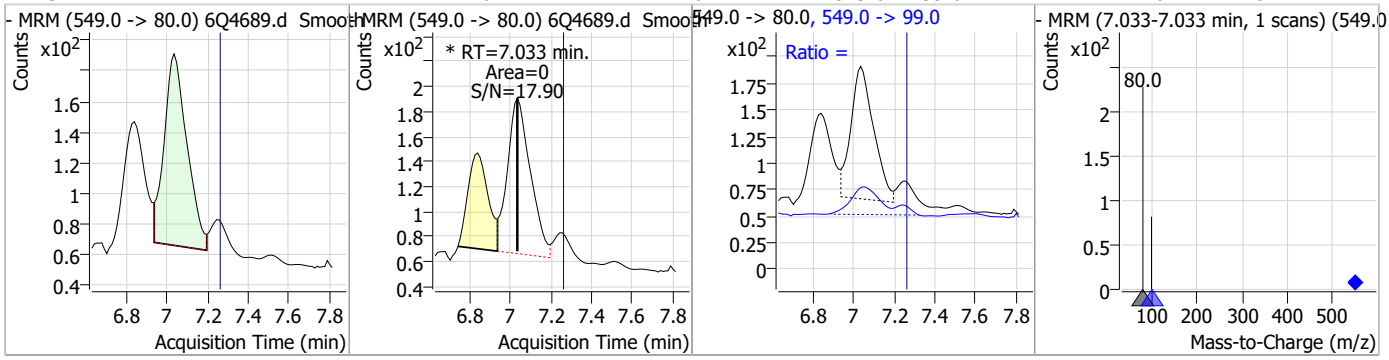
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.20	6.73	-0.01	3307 (m)	463.0 -> 219.0	26.7	9.2	27.7



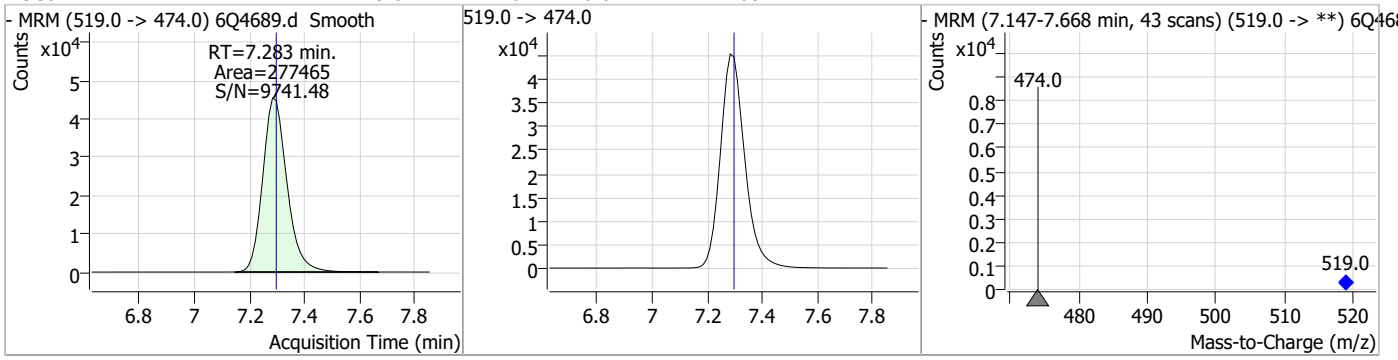
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.65	7.15	0.00	118092				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0			0	549.0 -> 99.0		27.6	82.7

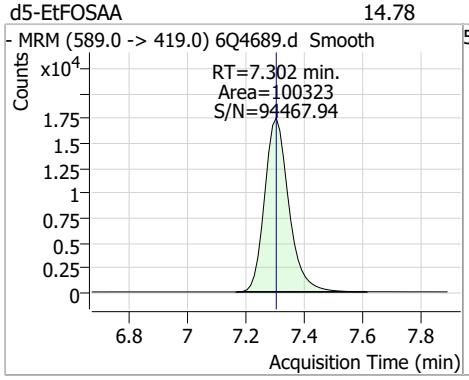


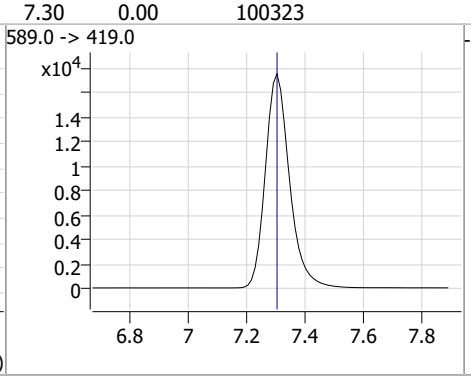
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.64	7.28	-0.01	277465				

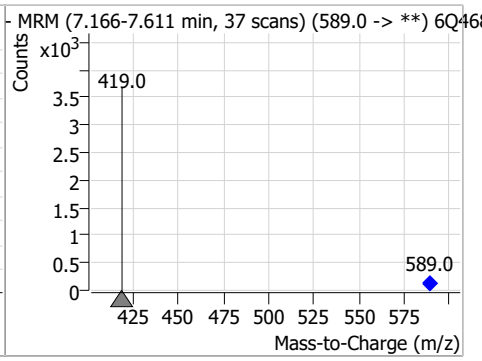


Perfluorinated Compounds by LC/MS/MS

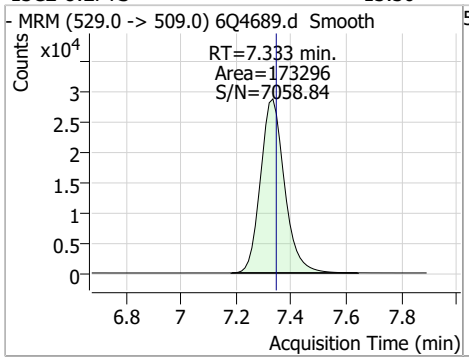
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.78	7.30	0.00	100323				

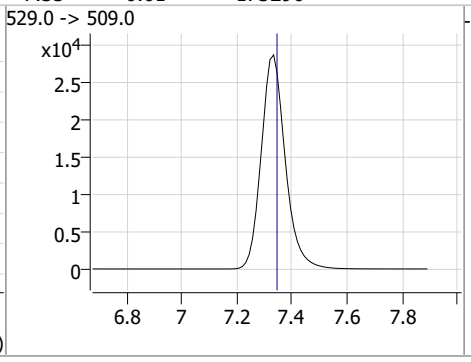


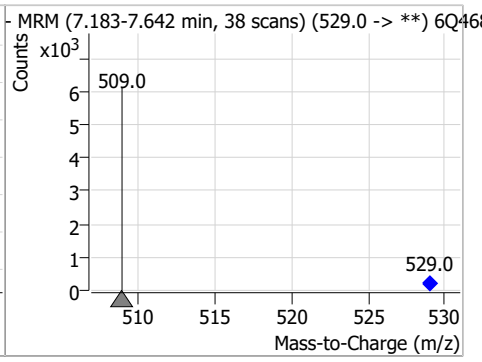




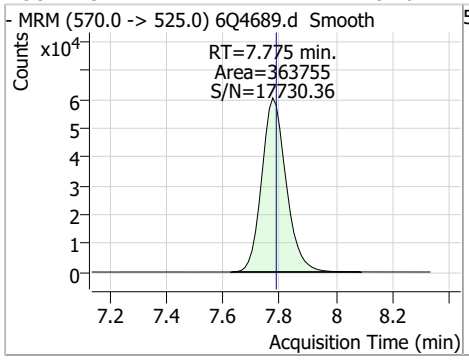
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.30	7.33	-0.01	173296				

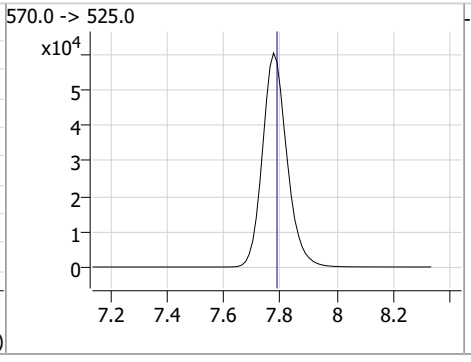


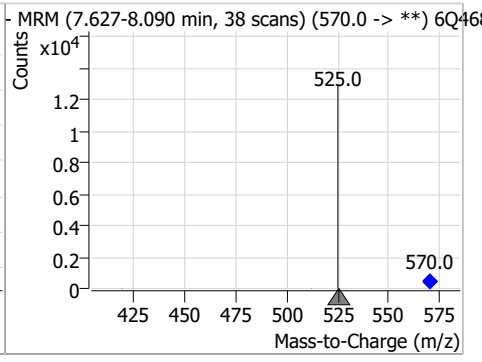




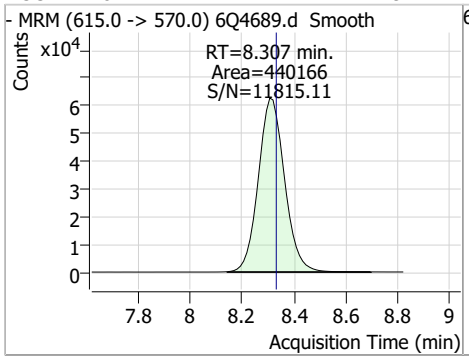
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.70	7.78	-0.01	363755				

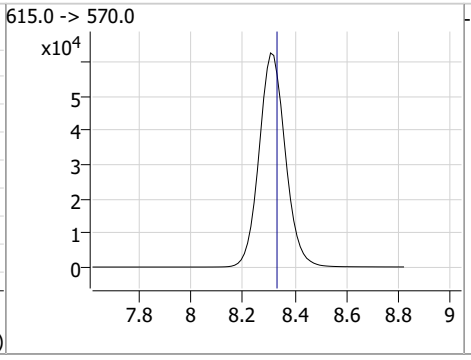


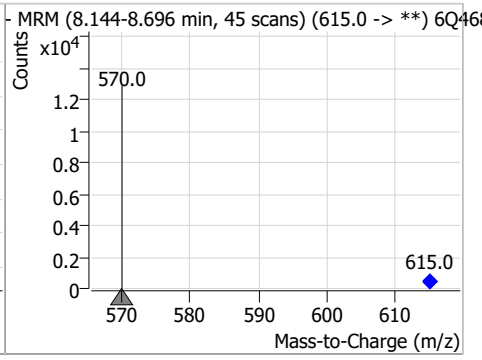




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.97	8.31	-0.02	440166				

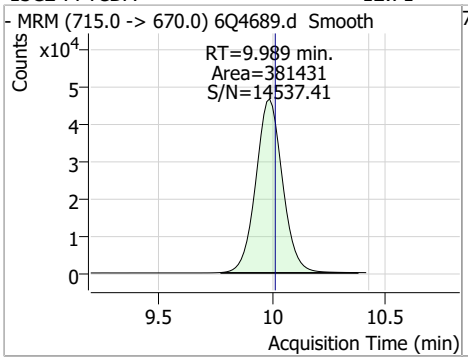


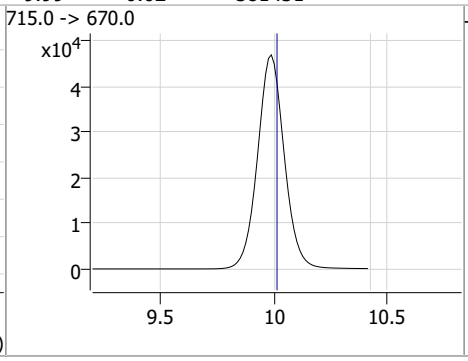


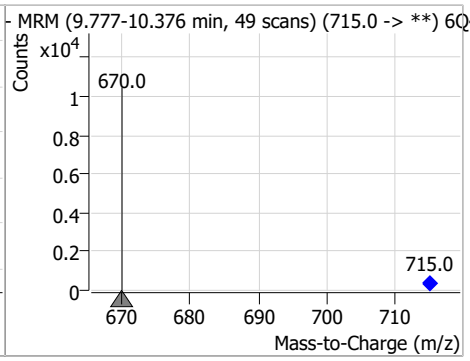


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.71	9.99	-0.02	381431				







Manual Integration Approval Summary

Sample Number: FA98286-33
Lab FileID: 6Q4689.D
Injection Time: 09/15/22 05:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:05 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.38	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak
Perfluorononanoic acid	375-95-1		6.73	Split peak
d3-MeFOSA			7.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4751.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 4:27:00 AM
Sample Name : fa98286-33
Vial : P2-B4
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	8811	4.00	µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	16726	4.00	µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	27723	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	32045	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	58379	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	68561	4.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	55699	4.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	67961	4.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	86659	4.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	77338	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	21456	4.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	4051	4.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	4036	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6000	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	33023	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	44481	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	33235	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	24936	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	555	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	1087	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	20234	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	33023	2.45	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C2-6:2FTS	6.124	429.0 -> 409.0	44481	2.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C2-8:2FTS	7.333	529.0 -> 509.0	33235	2.55	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-PFDoDA	8.307	615.0 -> 570.0	86659	2.36	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	77338	2.58	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C3-PFBS	3.622	302.0 -> 99.0	4051	2.64	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%		
13C3-PFHxS	5.463	402.0 -> 99.0	4036	2.92	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.6%		
13C4-PFBA	1.936	217.0 -> 172.0	8811	2.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%		
13C4-PFHpA	5.433	367.0 -> 322.0	32045	2.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C5-PFHxA	4.561	318.0 -> 273.0	27723	2.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C5-PFPeA	3.405	268.0 -> 223.0	16726	2.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C6-PFDA	7.283	519.0 -> 474.0	55699	2.74	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

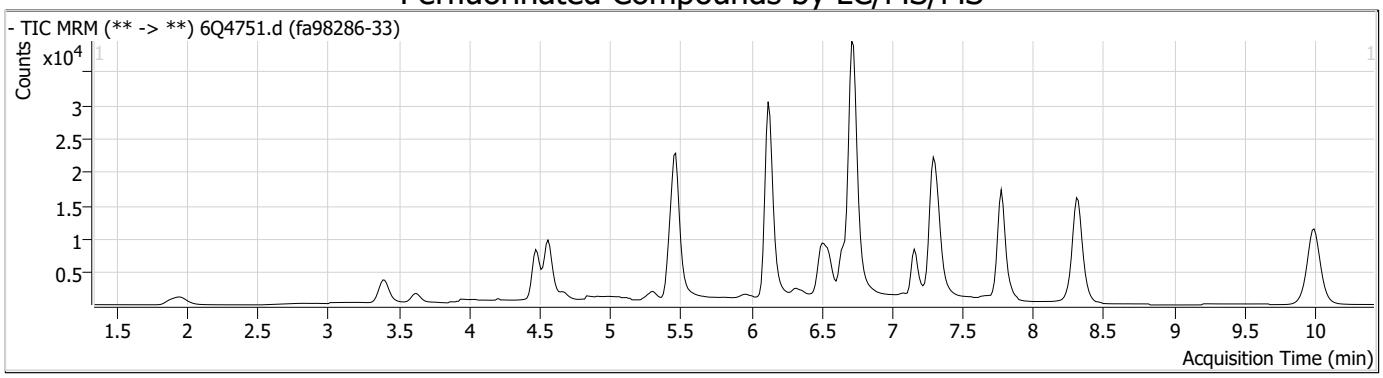
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.7%			
13C7-PFUnDA	7.775	570.0 -> 525.0	67961	2.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%			
13C8-FOSA	6.654	506.0 -> 78.0	21456	2.19	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%			
13C8-PFOA	6.138	421.0 -> 376.0	58379	2.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.8%			
13C8-PFOS	6.717	507.0 -> 99.0	6000	2.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%			
13C9-PFNA	6.745	472.0 -> 427.0	68561	2.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%			
d3-MeFOSAA	7.155	573.0 -> 419.0	24936	2.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	568	2.14	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.7%			
d3-MeFOSA	7.085	515.0 -> 169.0	1087	0.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%			
d5-EtFOSAA	7.302	589.0 -> 419.0	20287	2.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.943	213.0 -> 169.0	1638	1.70	µg/L		100
PFBS	3.627	299.0 -> 80.0	2016	0.60	µg/L		97
		299.0 -> 99.0	717				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	6427	0.62	µg/L		96
		363.0 -> 169.0	1040				
PFHpS	6.136	449.0 -> 80.0	5352	2.04	µg/L	m	93
		449.0 -> 99.0	2550				
PFHxA	4.562	313.0 -> 269.0	9640	1.32	µg/L		100
		313.0 -> 119.0	232				
PFHxS	5.465	399.0 -> 80.0	53070	18.35	µg/L	m	98
		399.0 -> 99.0	25103				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.138	413.0 -> 369.0	13659	0.87	µg/L	m	95
		413.0 -> 169.0	2366				
PFOS	6.719	499.0 -> 80.0	107557	38.67	µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

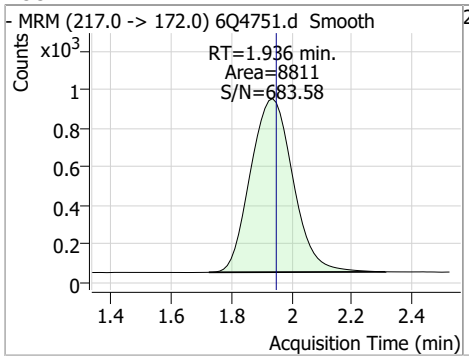
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	49923				
PFPeA	3.395	263.0 -> 219.0	1736	0.49	µg/L	m	100
PFPeS	4.668	349.0 -> 80.0	2714	0.97	µg/L	m	92
		349.0 -> 99.0	1381				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

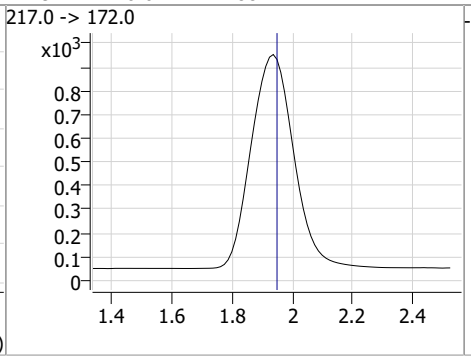
 # = Qualifier out of range, m = manually integrated, + = Area summed

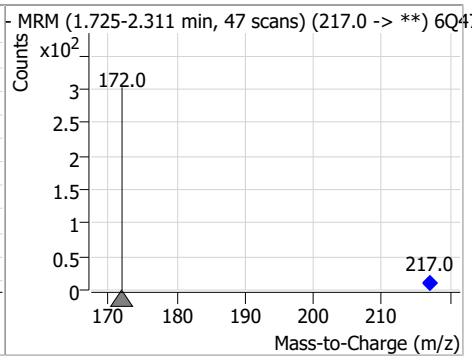
Perfluorinated Compounds by LC/MS/MS



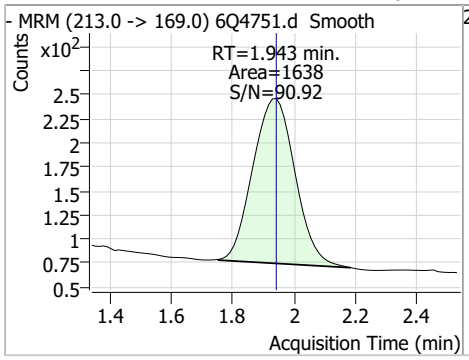
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.21	1.94	-0.01	8811				

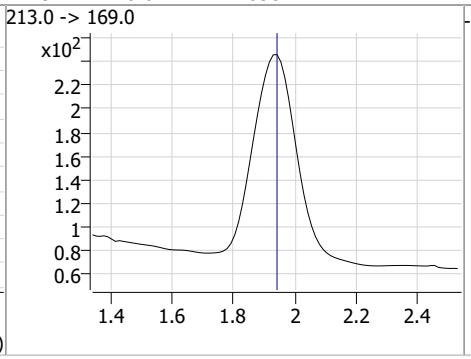


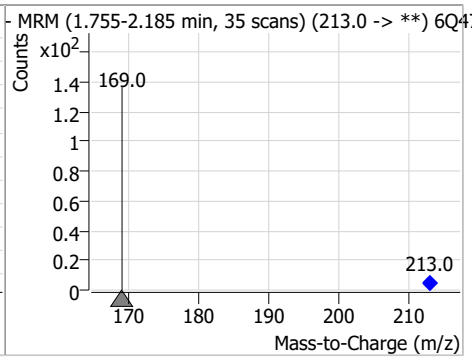




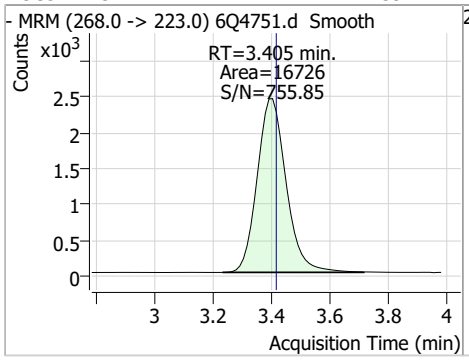
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.70	1.94	-0.01	1638				

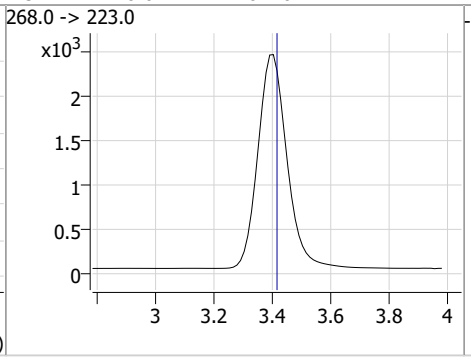


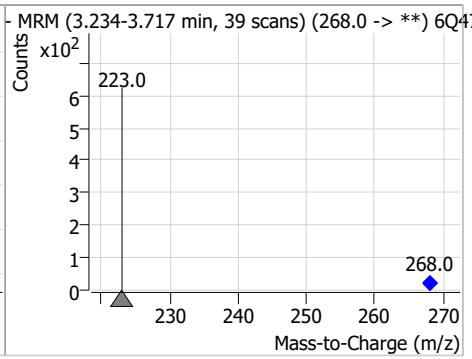




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.39	3.41	-0.01	16726				

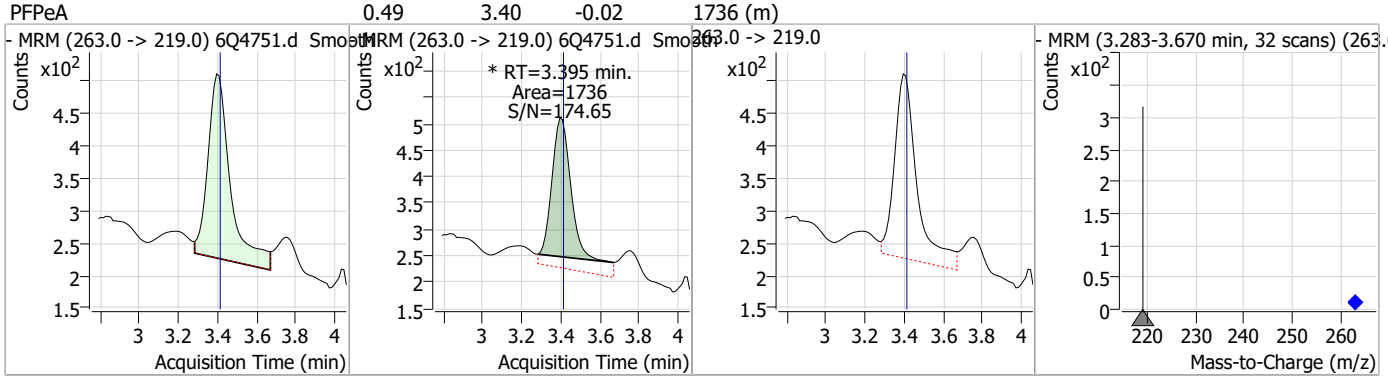




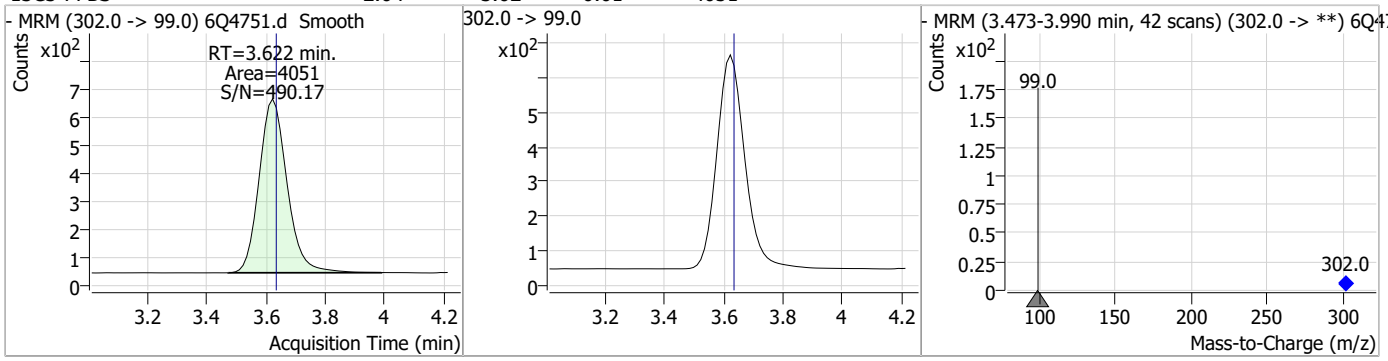


Perfluorinated Compounds by LC/MS/MS

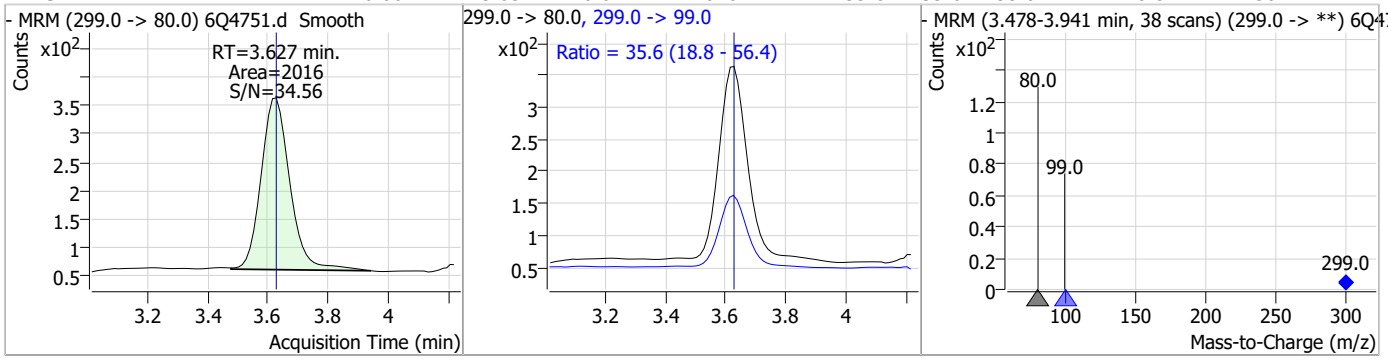
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.49	3.40	-0.02	1736 (m)				



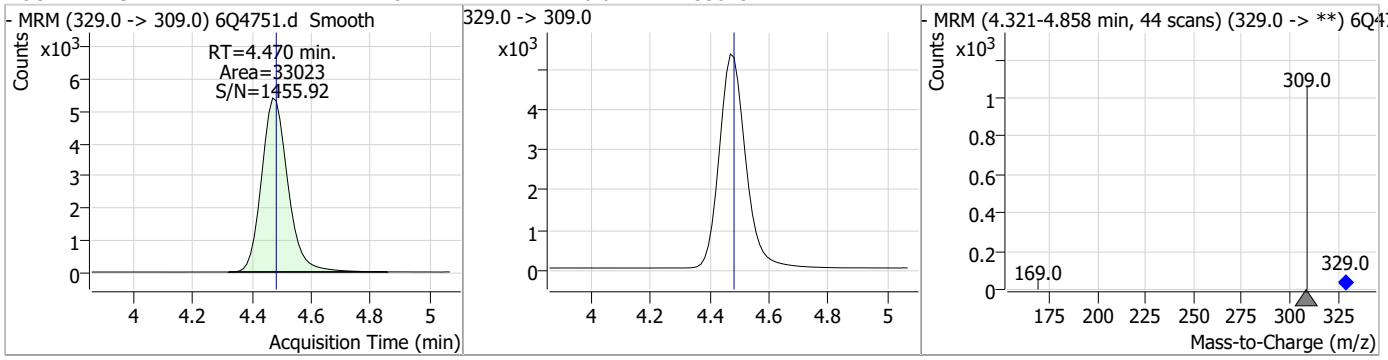
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.64	3.62	-0.01	4051				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.60	3.63	-0.01	2016	299.0 -> 99.0	35.6	18.8	56.4

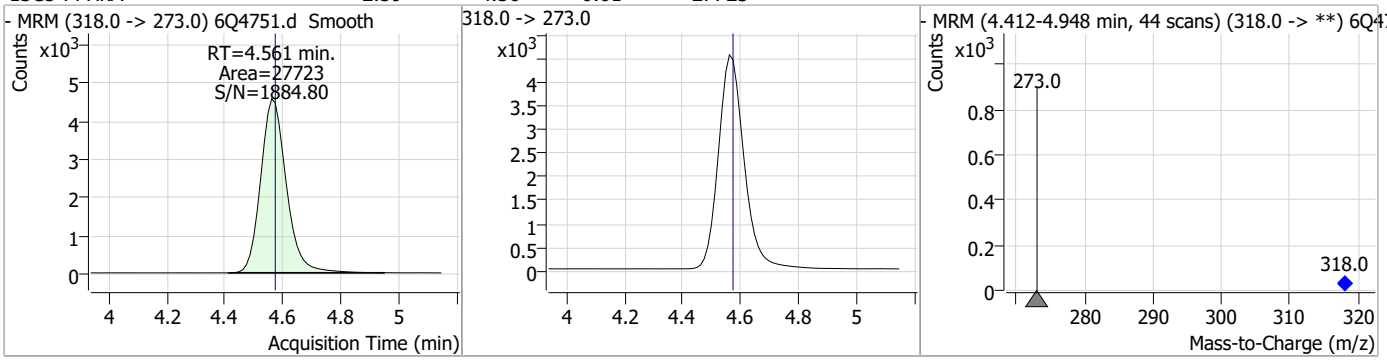


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.45	4.47	-0.01	33023				

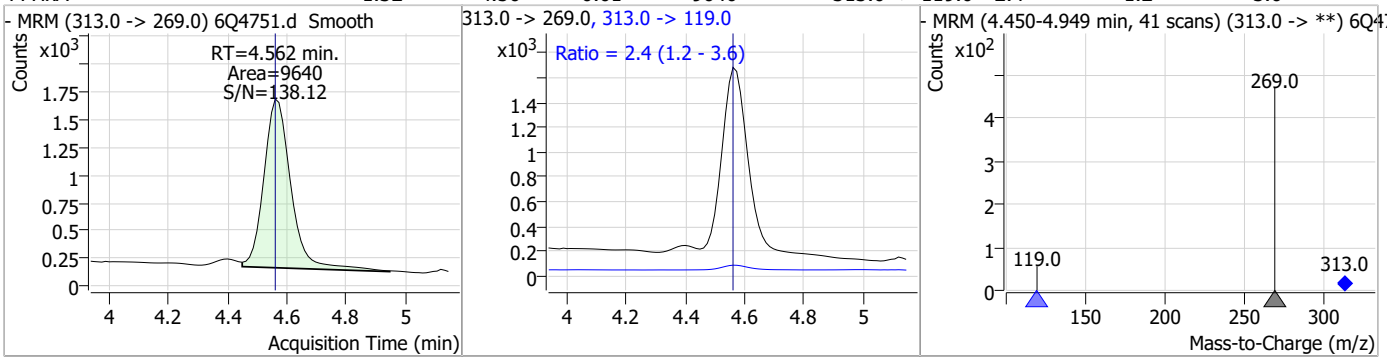


Perfluorinated Compounds by LC/MS/MS

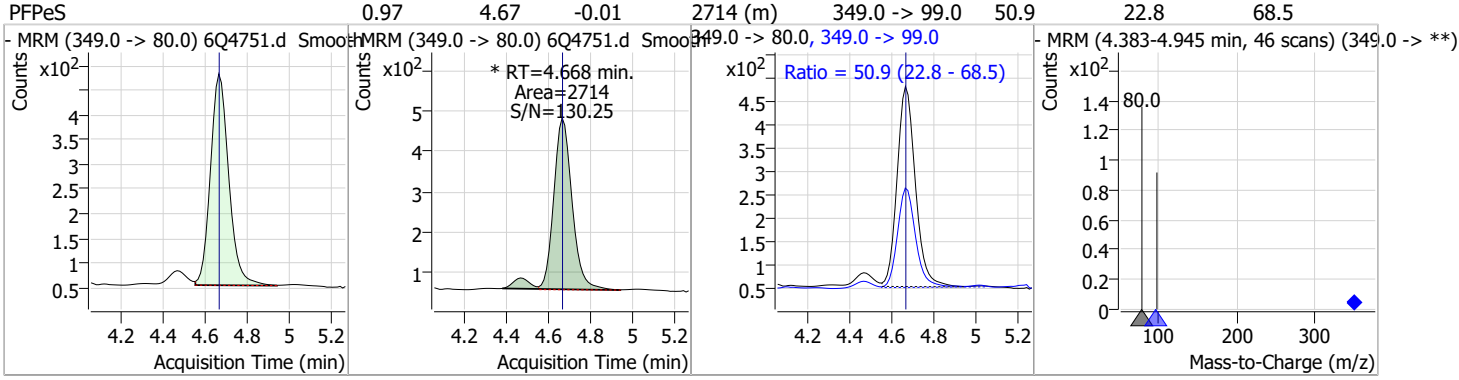
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.59	4.56	-0.01	27723				



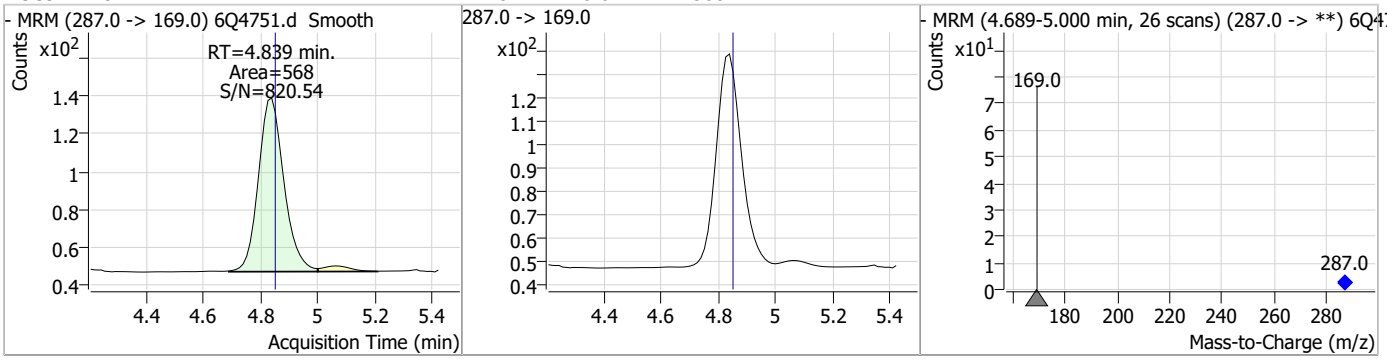
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.32	4.56	-0.01	9640	313.0 -> 119.0	2.4	1.2	3.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.97	4.67	-0.01	2714 (m)	349.0 -> 99.0	50.9	22.8	68.5

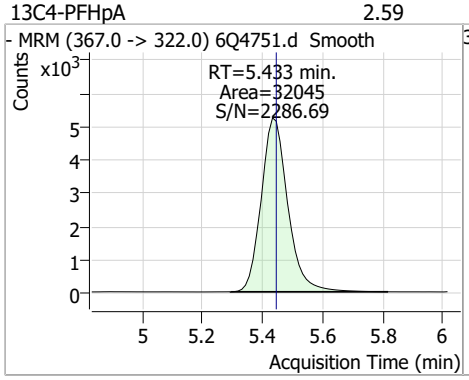


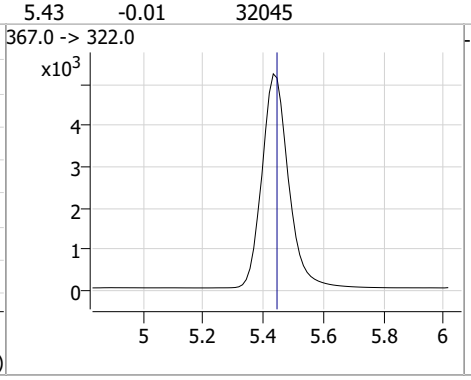
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.14	4.84	-0.01	568				

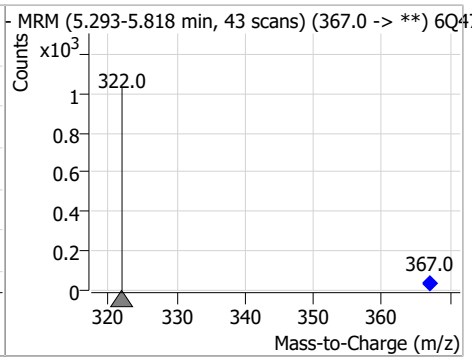


Perfluorinated Compounds by LC/MS/MS

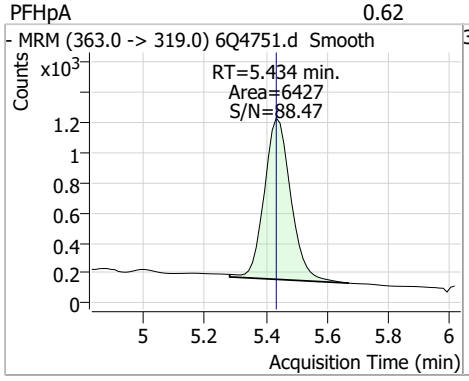
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.59	5.43	-0.01	32045				

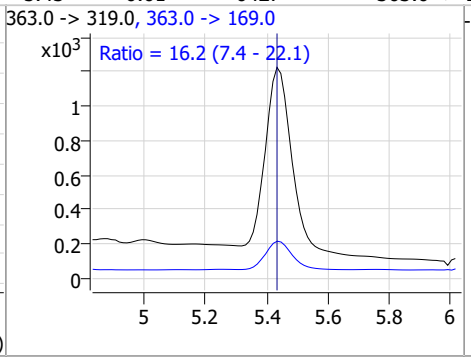


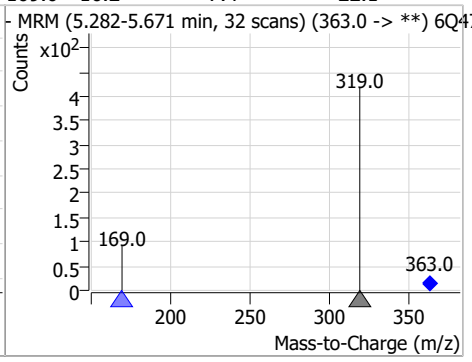




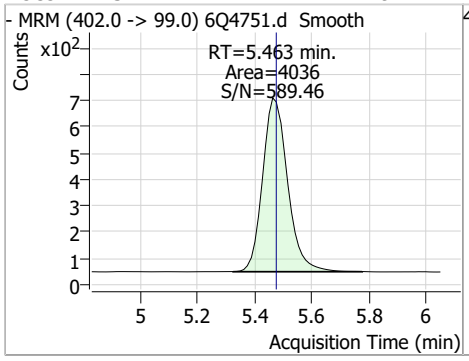
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.62	5.43	-0.01	6427	363.0 -> 169.0	16.2	7.4	22.1

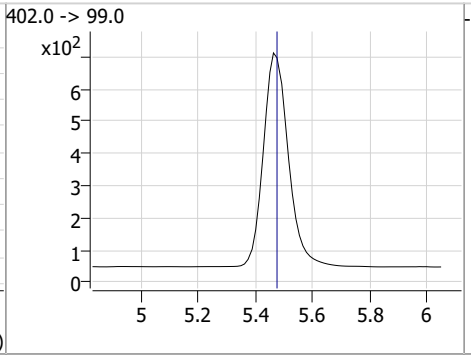


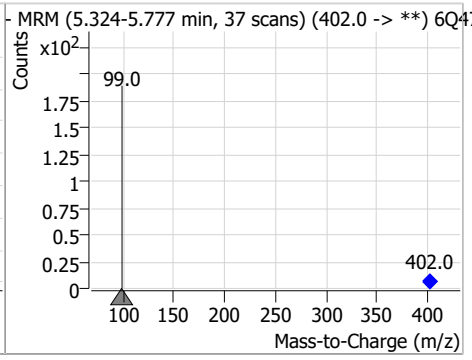




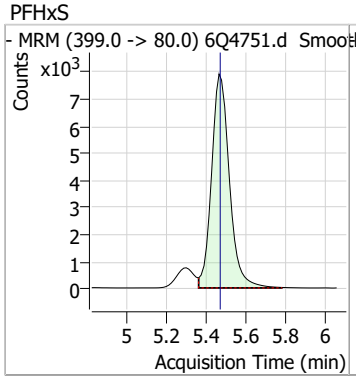
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.92	5.46	-0.01	4036				

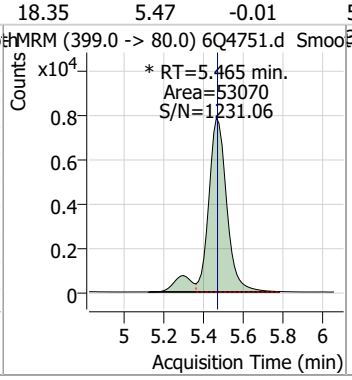


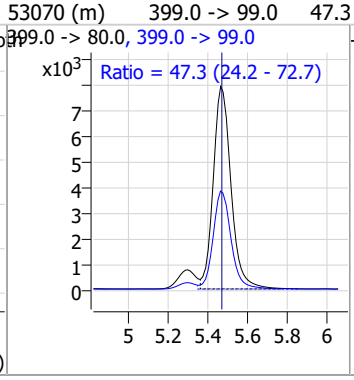


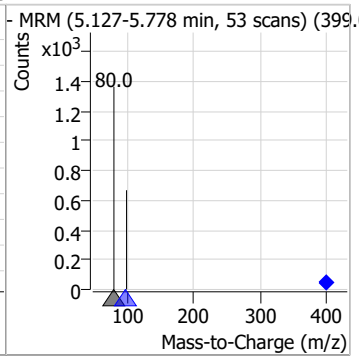


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	18.35	5.47	-0.01	53070 (m)	399.0 -> 99.0	47.3	24.2	72.7



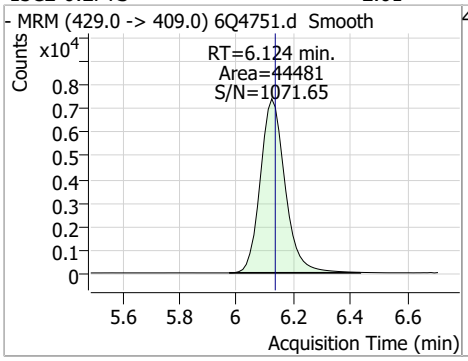


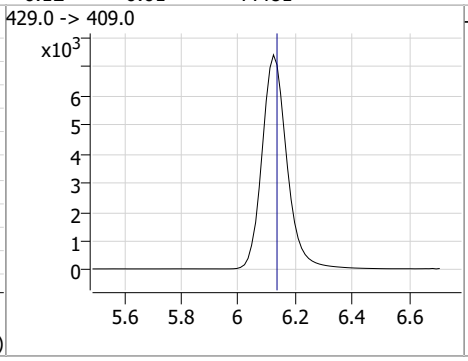


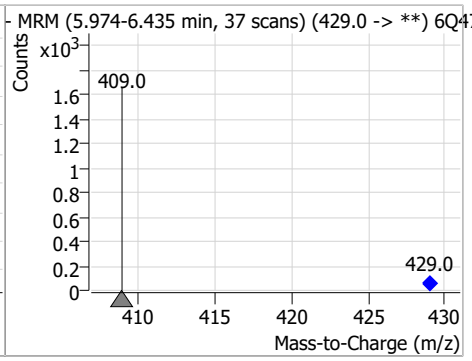


Perfluorinated Compounds by LC/MS/MS

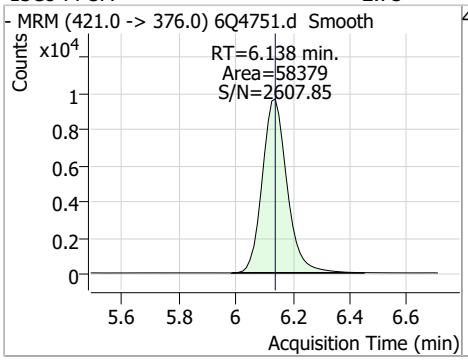
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.61	6.12	-0.01	44481				

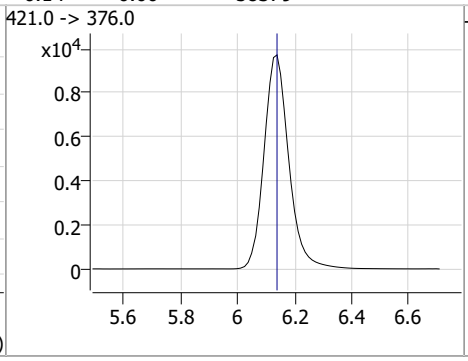


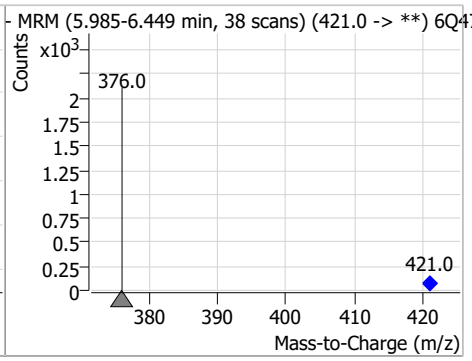




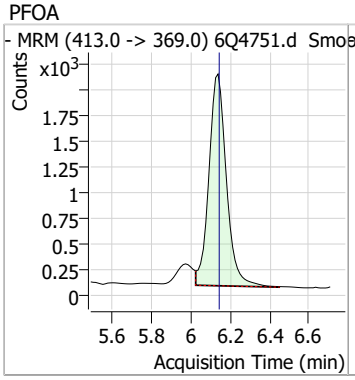
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.75	6.14	0.00	58379				

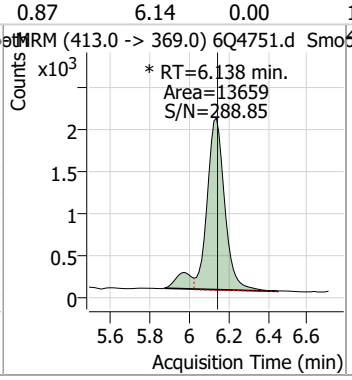


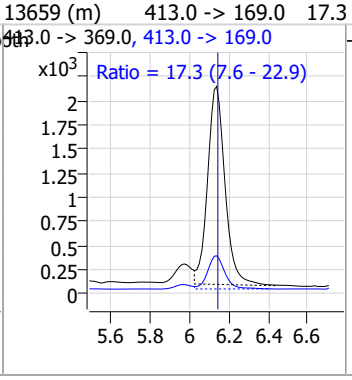


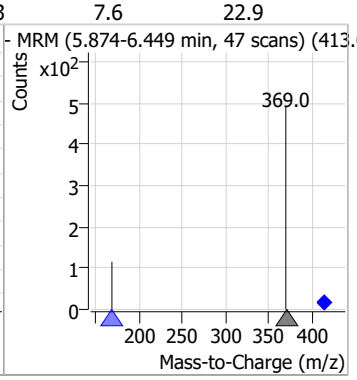


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.87	6.14	0.00	13659 (m)	413.0 -> 169.0	17.3	7.6	22.9

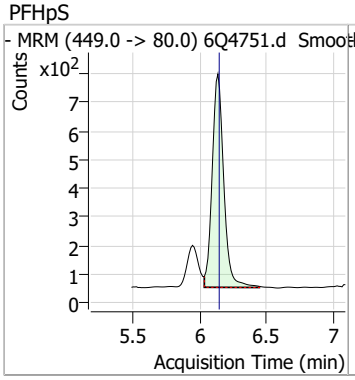


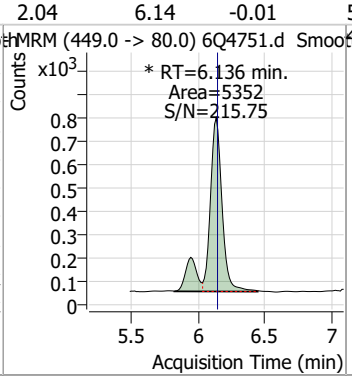


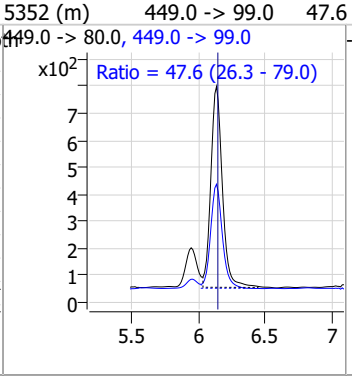


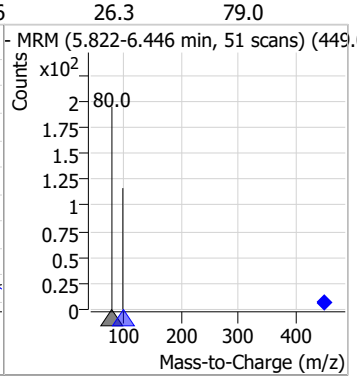


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.04	6.14	-0.01	5352 (m)	449.0 -> 99.0	47.6	26.3	79.0



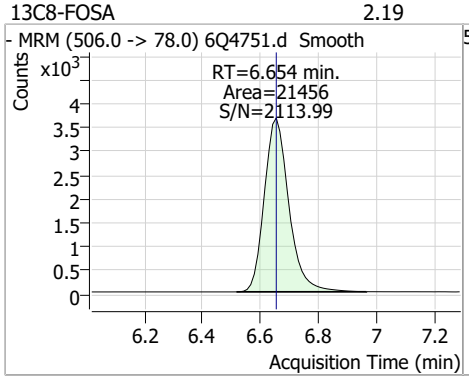


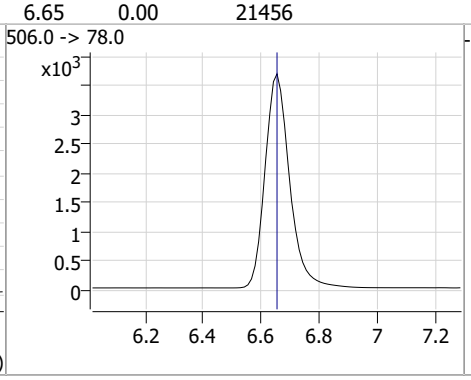


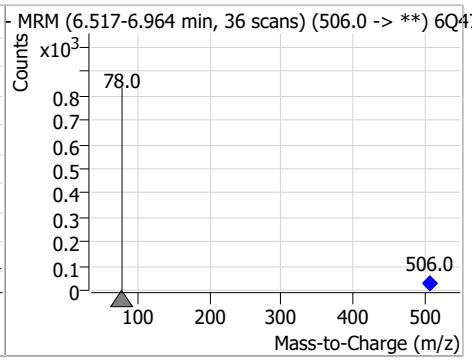


Perfluorinated Compounds by LC/MS/MS

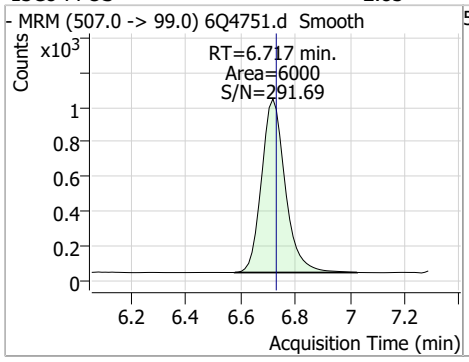
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.19	6.65	0.00	21456				

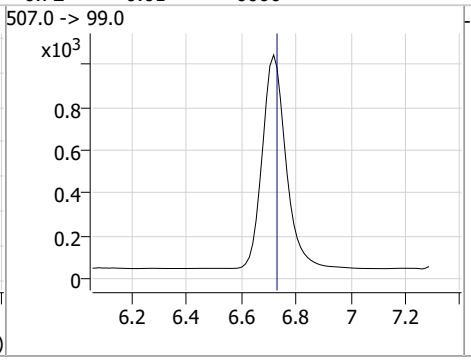


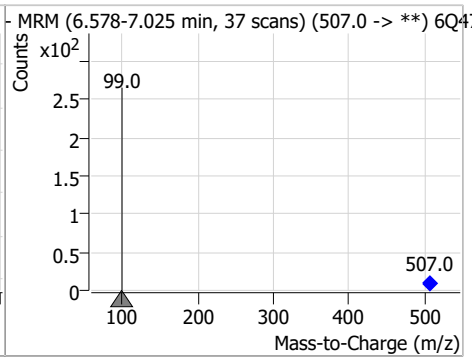




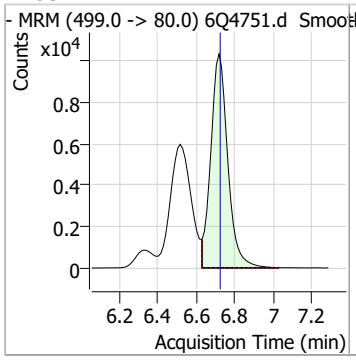
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.83	6.72	-0.01	6000				

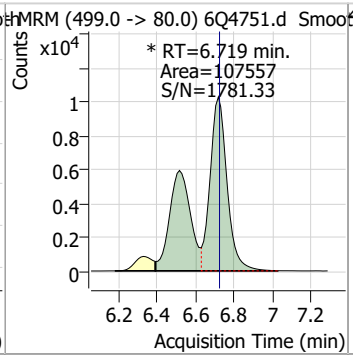


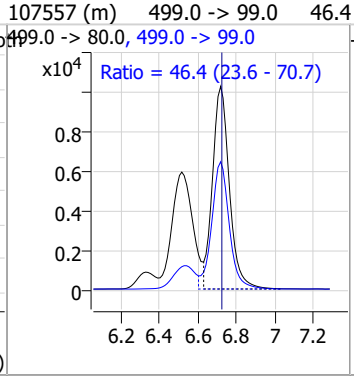


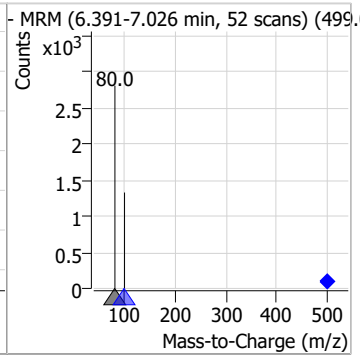


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	38.67	6.72	-0.01	107557 (m)	499.0 -> 99.0	46.4	23.6	70.7

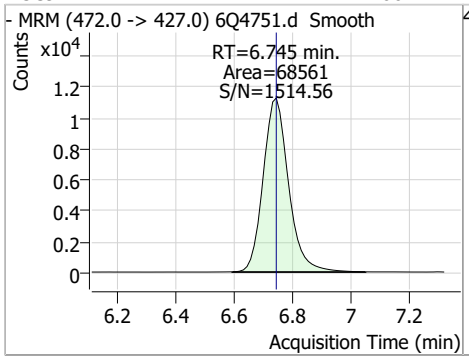


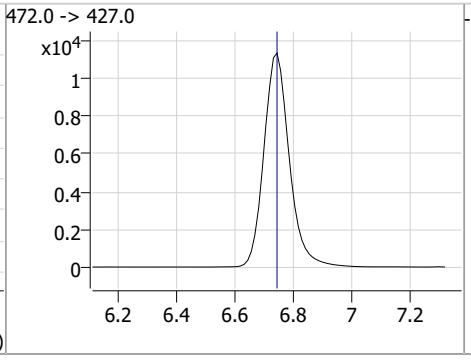


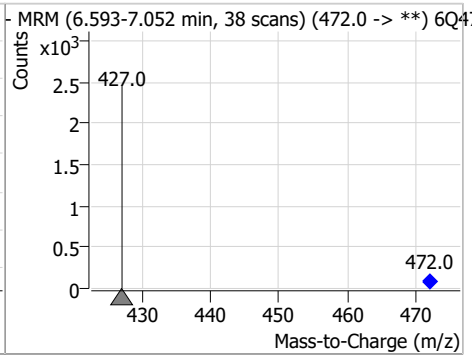




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.66	6.74	0.00	68561				

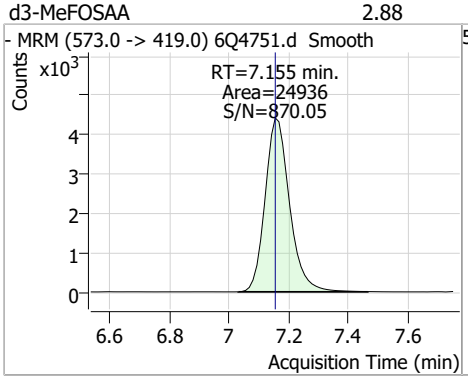


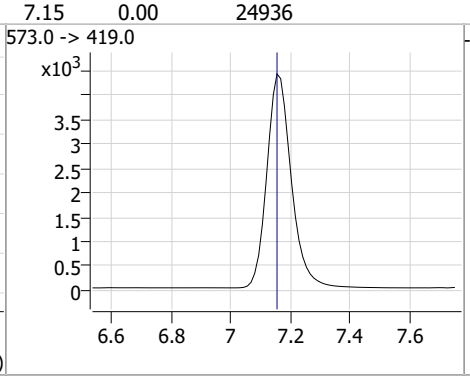


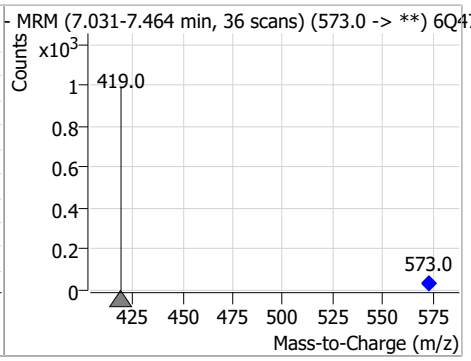


Perfluorinated Compounds by LC/MS/MS

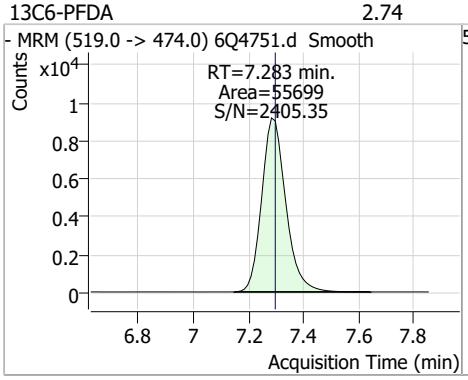
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.88	7.15	0.00	24936				

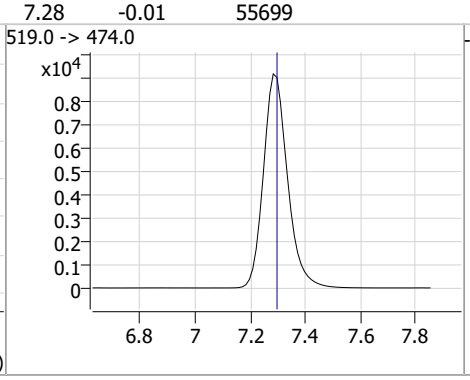


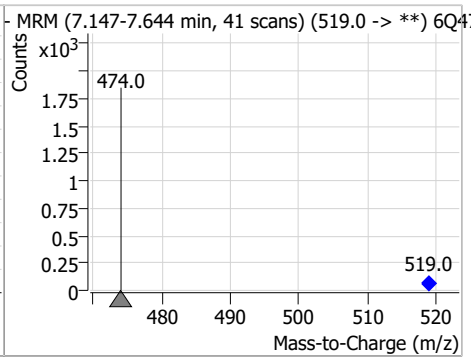




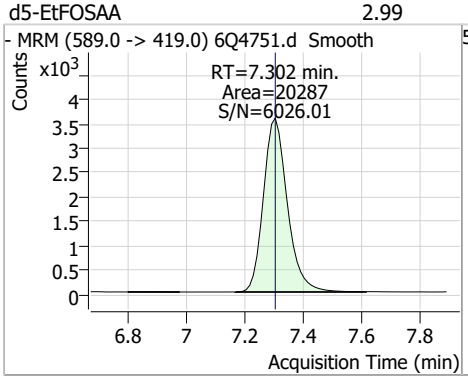
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.74	7.28	-0.01	55699				

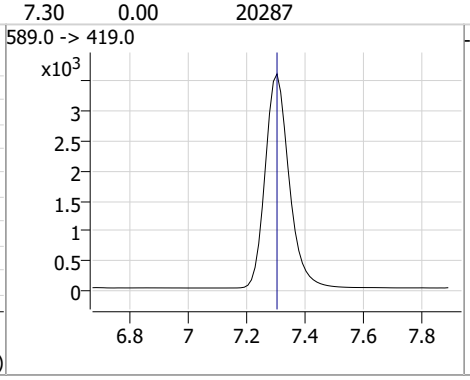


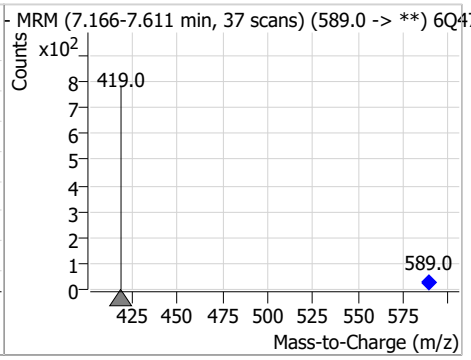




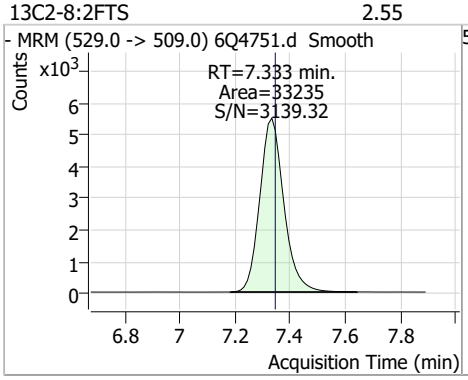
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.99	7.30	0.00	20287				

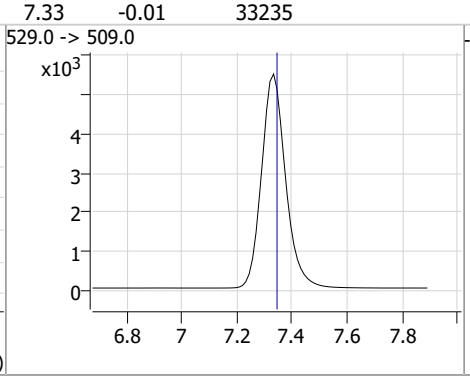


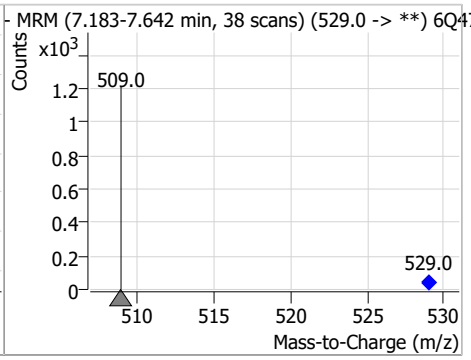




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.55	7.33	-0.01	33235				

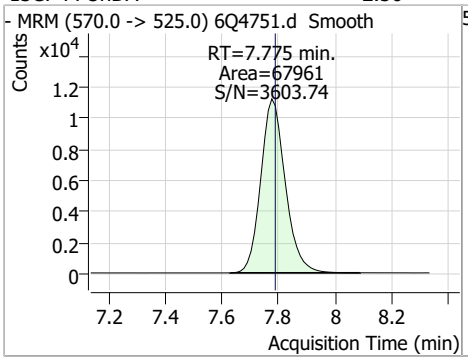


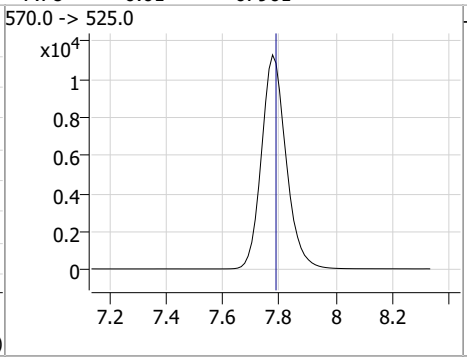


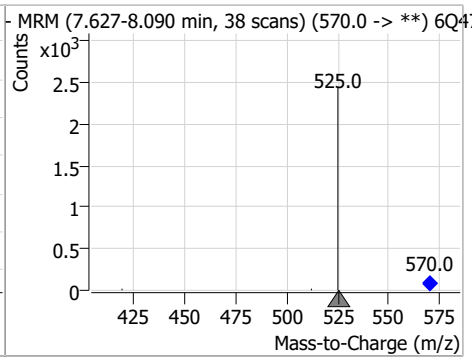


Perfluorinated Compounds by LC/MS/MS

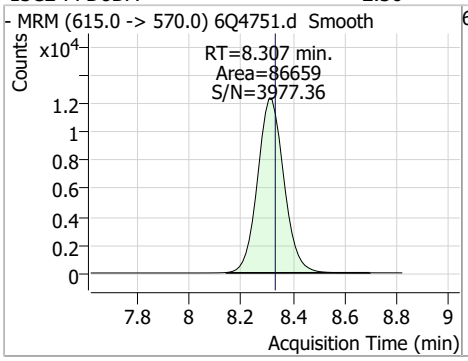
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.56	7.78	-0.01	67961				

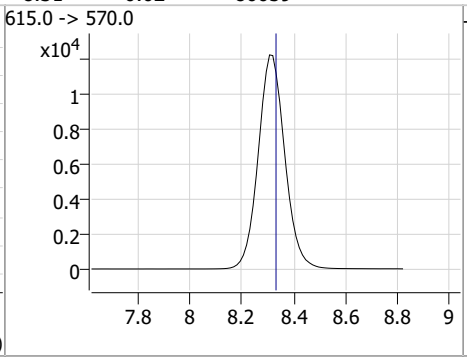


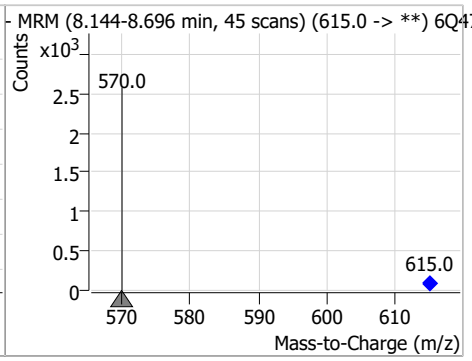




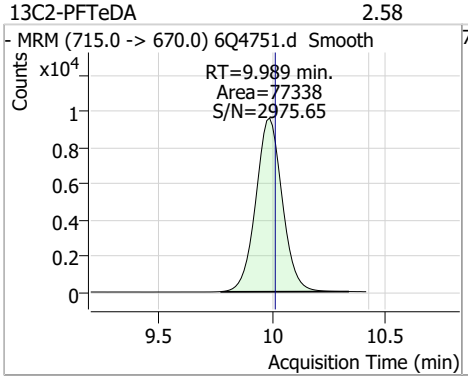
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.36	8.31	-0.02	86659				

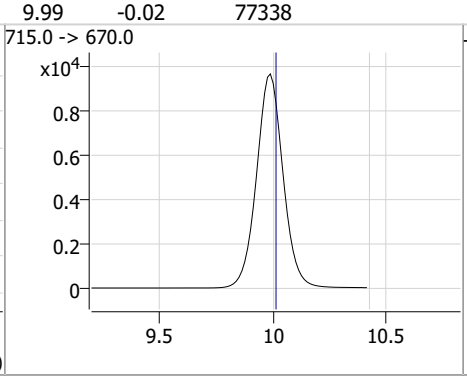


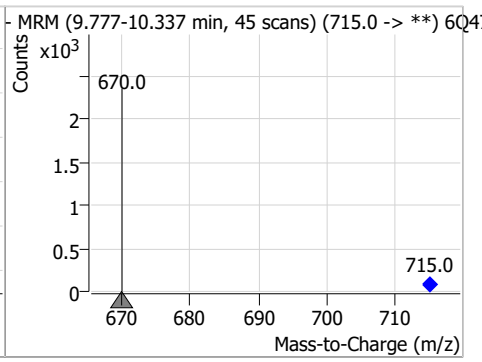




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.58	9.99	-0.02	77338				







Manual Integration Approval Summary

Sample Number: FA98286-33
Lab FileID: 6Q4751.D
Injection Time: 09/16/22 04:27
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:05 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.40	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4752.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 4:43:01 AM
Sample Name : fa98286-34
Vial : P5-F6
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	44667	20.00	µg/L	-0.050
M5-PFPeA	3.380	268.0 -> 223.0	91477	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	154929	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	185460	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	341055	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	419985	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	318296	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	337149	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	440837	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	385556	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	84082	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	22939	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	22035	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	30747	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	194496	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	275097	20.00	µg/L	-0.012
M2-8:2FTS	7.320	529.0 -> 509.0	191248	20.00	µg/L	-0.026
M3-MeFOSAA	7.155	573.0 -> 419.0	131691	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3158	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	888	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	100488	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	194496	14.40	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.0%		
13C2-6:2FTS	6.124	429.0 -> 409.0	275097	16.12	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.6%		
13C2-8:2FTS	7.320	529.0 -> 509.0	191248	14.67	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%		
13C2-PFDoDA	8.307	615.0 -> 570.0	440837	11.99	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%		
13C2-PFTeDA	9.976	715.0 -> 670.0	385556	12.85	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.3%		
13C3-PFBS	3.610	302.0 -> 99.0	22939	14.98	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%		
13C3-PFHxS	5.463	402.0 -> 99.0	22035	15.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%		
13C4-PFBA	1.899	217.0 -> 172.0	44667	11.22	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.1%		
13C4-PFHpA	5.433	367.0 -> 322.0	185460	14.99	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.9%		
13C5-PFHxA	4.561	318.0 -> 273.0	154929	14.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C5-PFPeA	3.380	268.0 -> 223.0	91477	13.05	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%		
13C6-PFDA	7.283	519.0 -> 474.0	318296	15.64	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

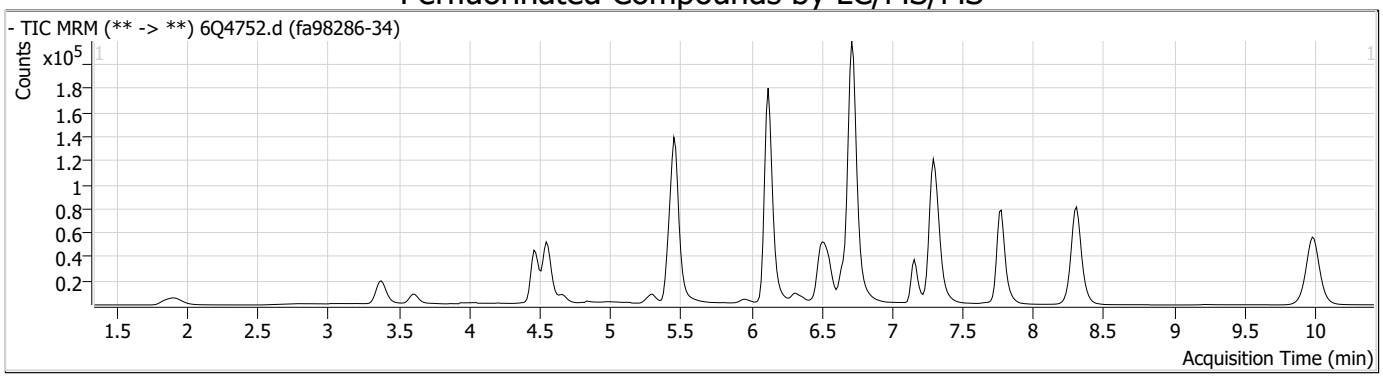
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	337149	12.70	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.5%			
13C8-FOSA	6.654	506.0 -> 78.0	84082	8.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.0%			
13C8-PFOA	6.126	421.0 -> 376.0	341055	16.08	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C8-PFOS	6.717	507.0 -> 99.0	30747	14.50	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%			
13C9-PFNA	6.732	472.0 -> 427.0	419985	16.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.5%			
d3-MeFOSAA	7.155	573.0 -> 419.0	131691	15.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.1%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3169	11.92	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.6%			
d3-MeFOSA	7.085	515.0 -> 169.0	888	0.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%			
d5-EtFOSAA	7.302	589.0 -> 419.0	100502	14.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.893	213.0 -> 169.0	9196	9.43	µg/L		100
PFBS	3.602	299.0 -> 80.0	11475	3.01	µg/L		99
		299.0 -> 99.0	4258				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	39197	3.25	µg/L		97
		363.0 -> 169.0	6306				
PFHpS	6.136	449.0 -> 80.0	31232	11.63	µg/L	m	97
		449.0 -> 99.0	15723				
PFHxA	4.562	313.0 -> 269.0	56917	6.98	µg/L		100
		313.0 -> 119.0	1461				
PFHxS	5.465	399.0 -> 80.0	330602	104.71	µg/L	m	96
		399.0 -> 99.0	151634				
PFNA	6.733	463.0 -> 419.0	4471	0.23	µg/L	m	98
		463.0 -> 219.0	868				
PFNS	7.033	549.0 -> 80.0	0		µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.126	413.0 -> 369.0	87417	4.75	µg/L	m	98
		413.0 -> 169.0	14285				
PFOS	6.719	499.0 -> 80.0	628300	220.43	µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

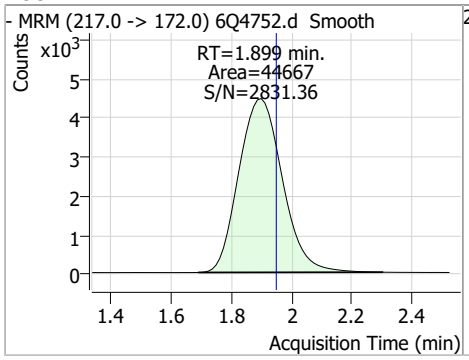
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	272336				
PFPeA	3.383	263.0 -> 219.0	9729	2.52	µg/L	m	100
PFPeS	4.668	349.0 -> 80.0	16740	5.27	µg/L	m	97
		349.0 -> 99.0	7950				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

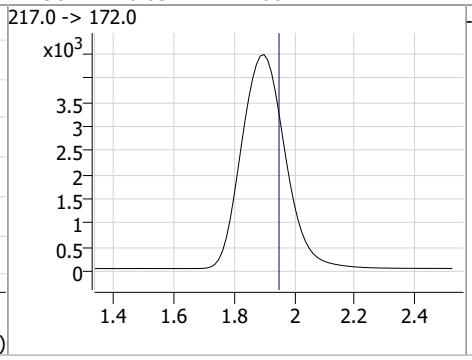
 # = Qualifier out of range, m = manually integrated, + = Area summed

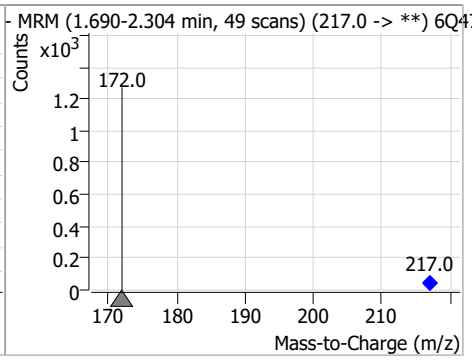
Perfluorinated Compounds by LC/MS/MS



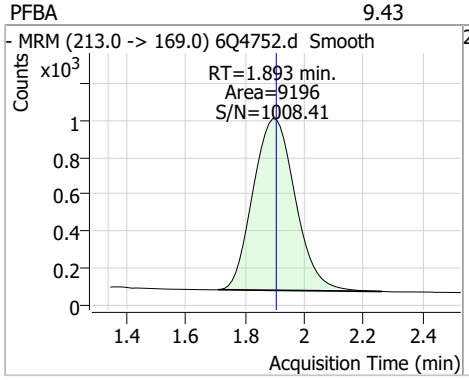
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.22	1.90	-0.05	44667				

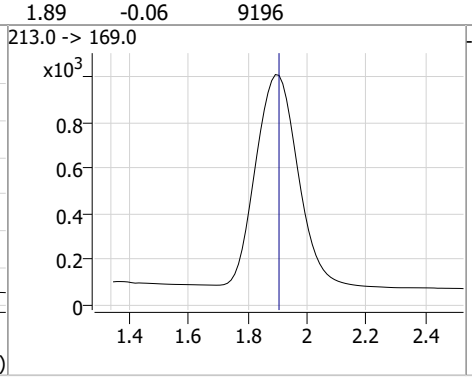


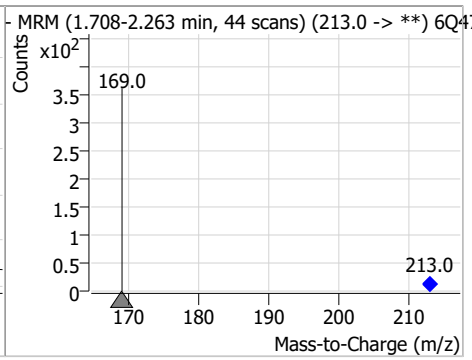




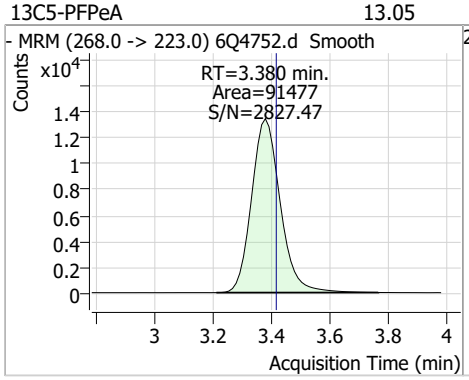
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.43	1.89	-0.06	9196				

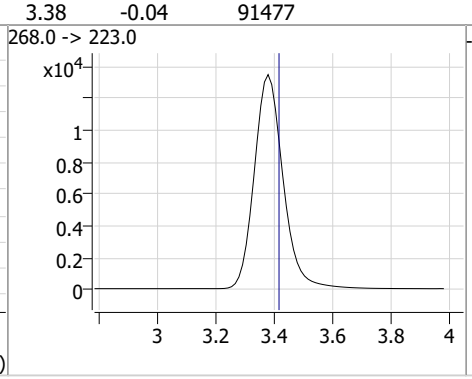


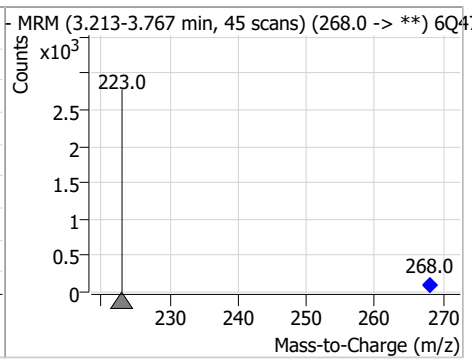




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.05	3.38	-0.04	91477				

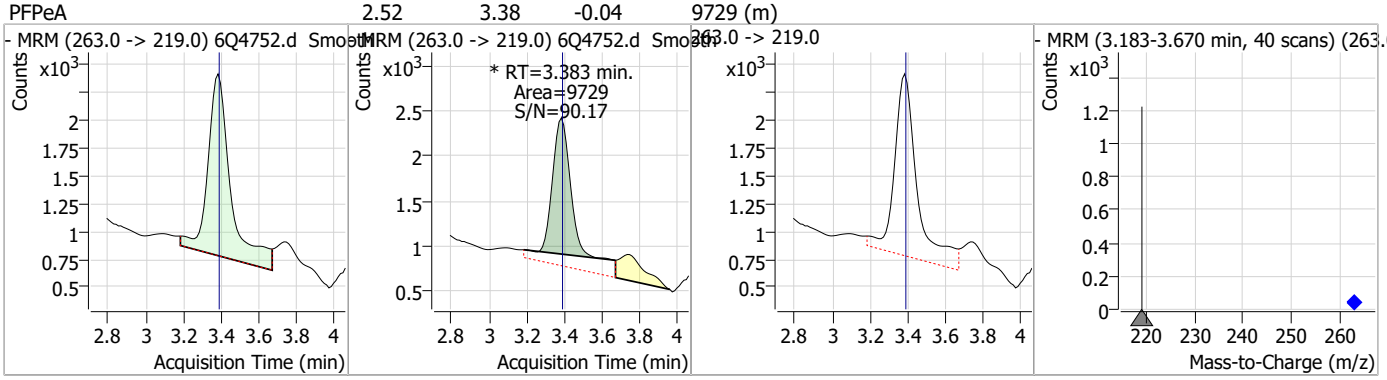




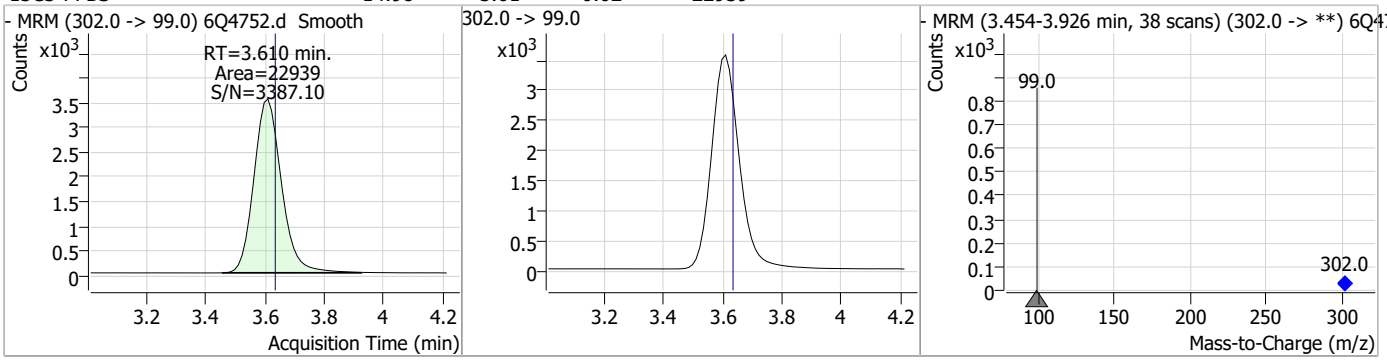


Perfluorinated Compounds by LC/MS/MS

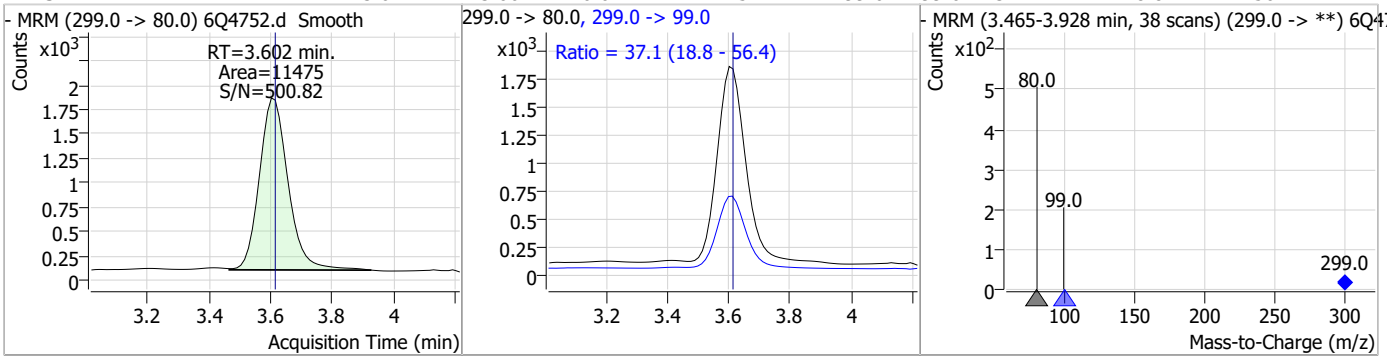
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.52	3.38	-0.04	9729 (m)				



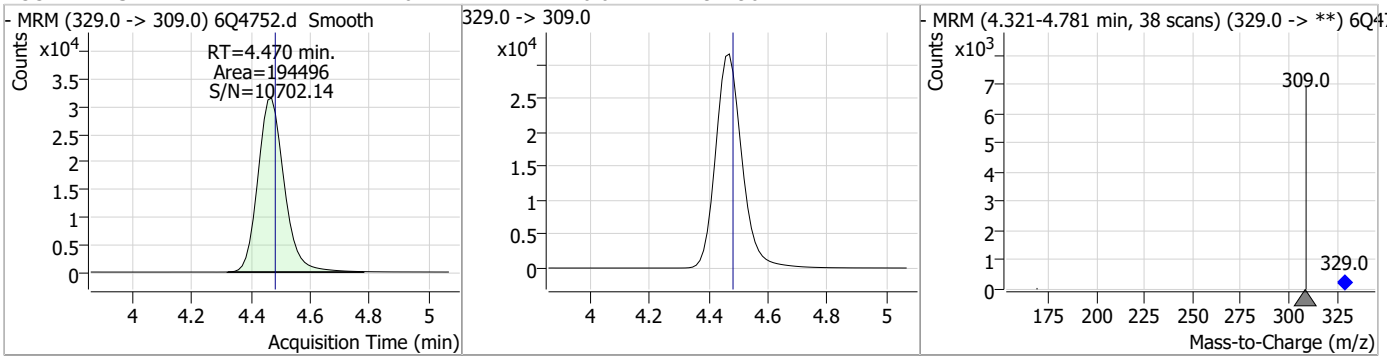
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.98	3.61	-0.02	22939				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	3.01	3.60	-0.04	11475	299.0 -> 99.0	37.1	18.8	56.4

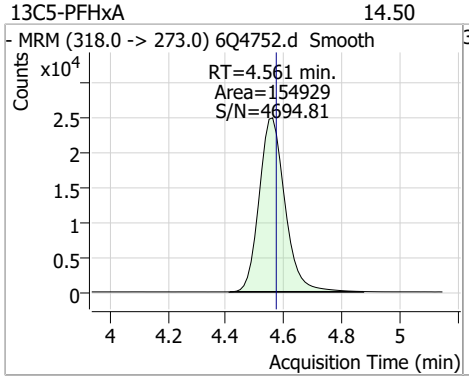


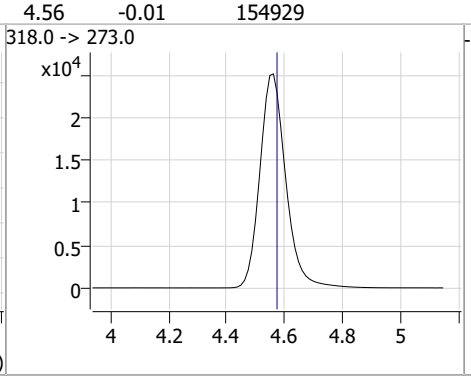
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.40	4.47	-0.01	194496				

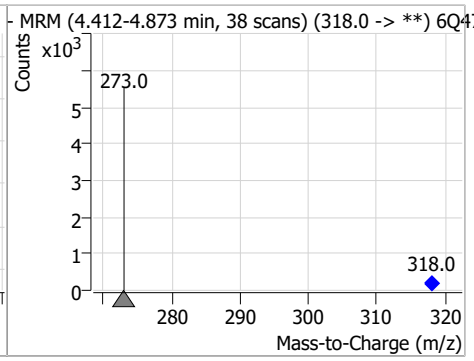


Perfluorinated Compounds by LC/MS/MS

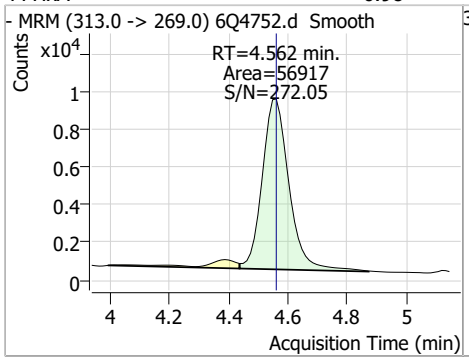
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.50	4.56	-0.01	154929				

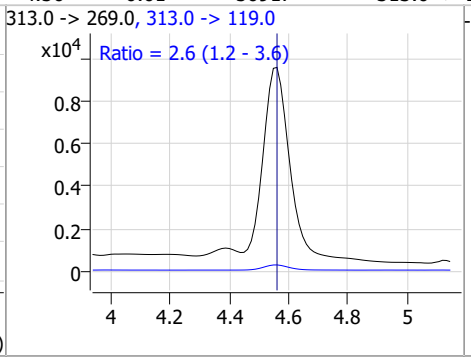


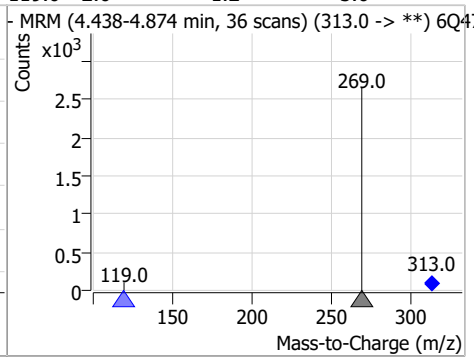




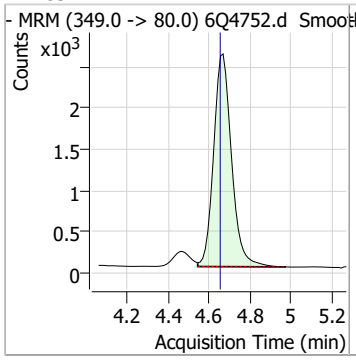
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	6.98	4.56	-0.01	56917	313.0 -> 119.0	2.6	1.2	3.6

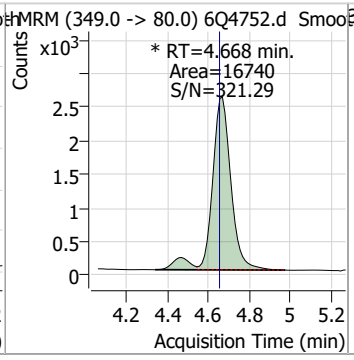


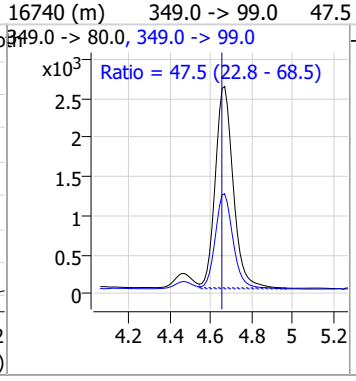


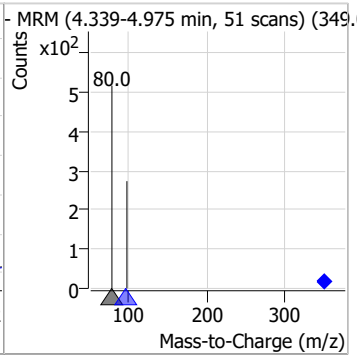


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.27	4.67	-0.01	16740 (m)	349.0 -> 99.0	47.5	22.8	68.5

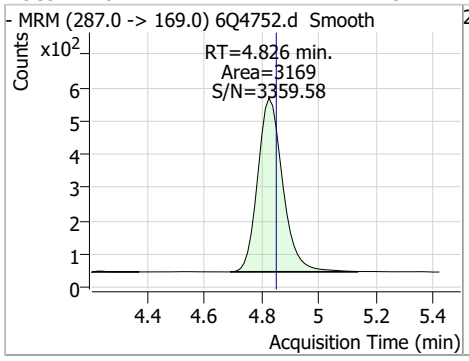


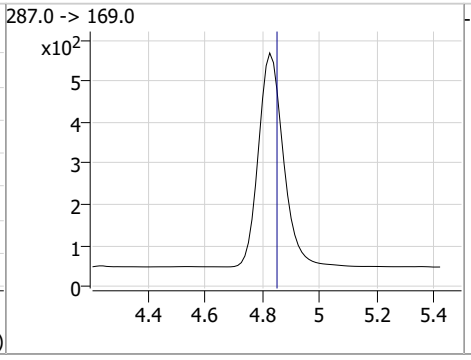


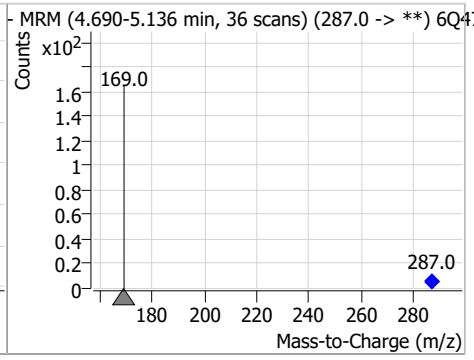




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.92	4.83	-0.03	3169				

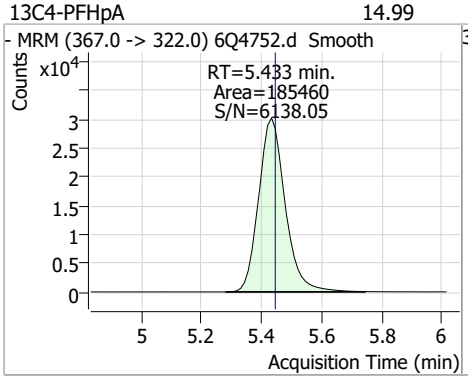


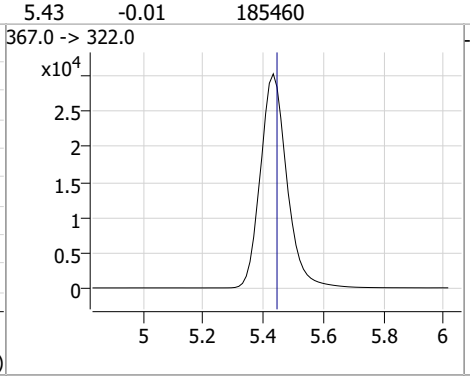


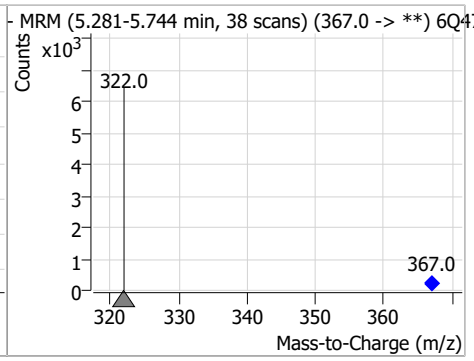


Perfluorinated Compounds by LC/MS/MS

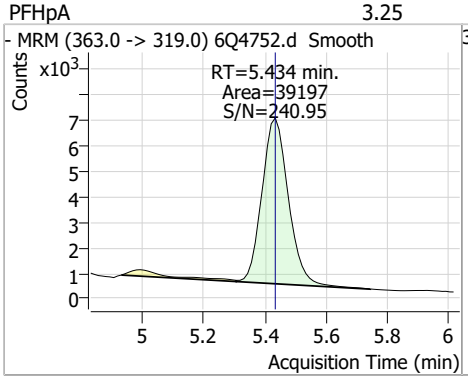
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.99	5.43	-0.01	185460				

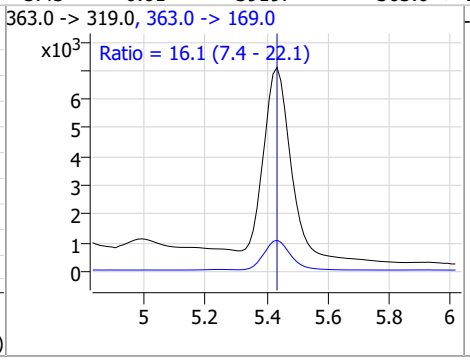


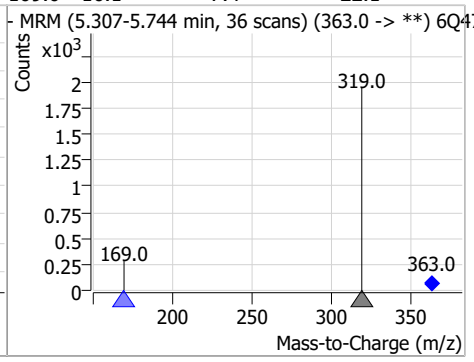




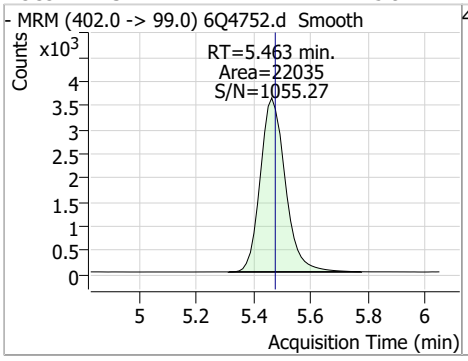
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.25	5.43	-0.01	39197	363.0 -> 169.0	16.1	7.4	22.1

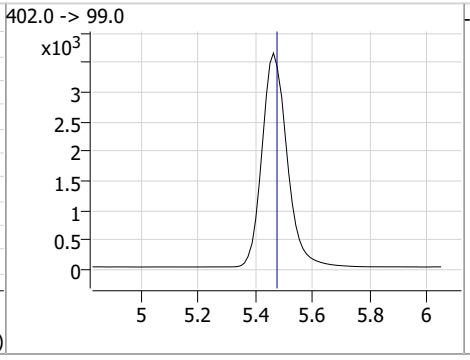


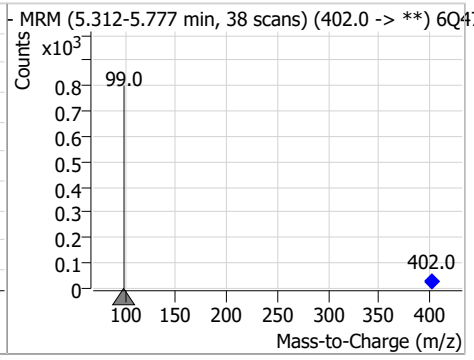




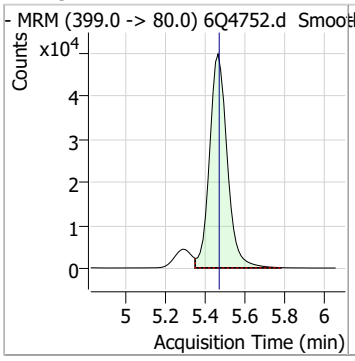
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.94	5.46	-0.01	22035				

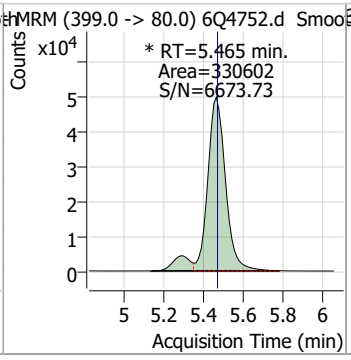


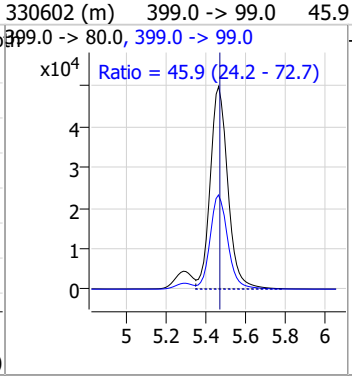


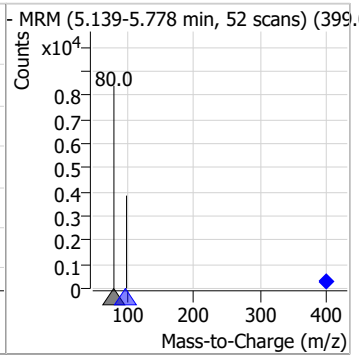


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	104.71	5.47	-0.01	330602 (m)	399.0 -> 99.0	45.9	24.2	72.7



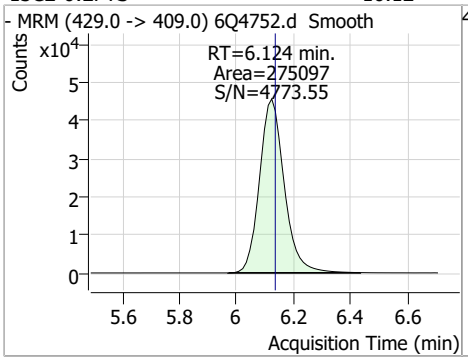


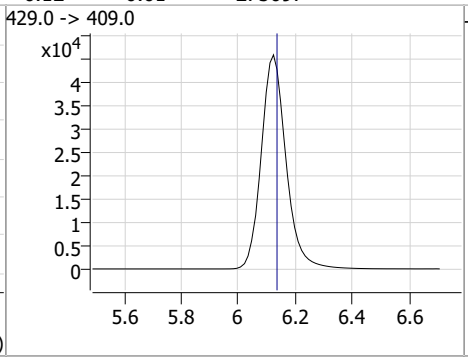


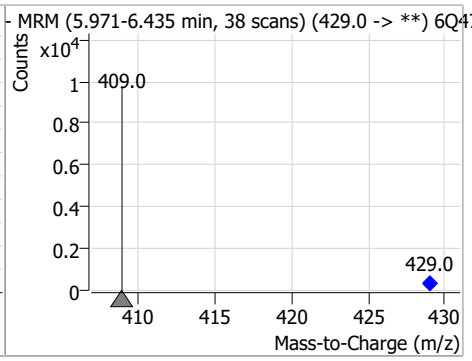


Perfluorinated Compounds by LC/MS/MS

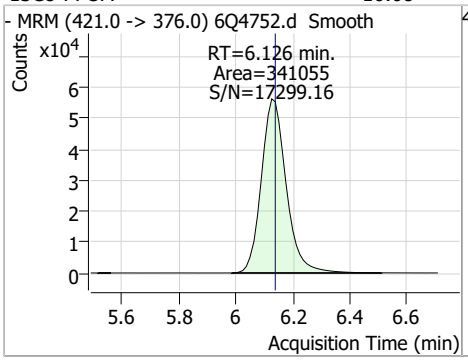
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.12	6.12	-0.01	275097				

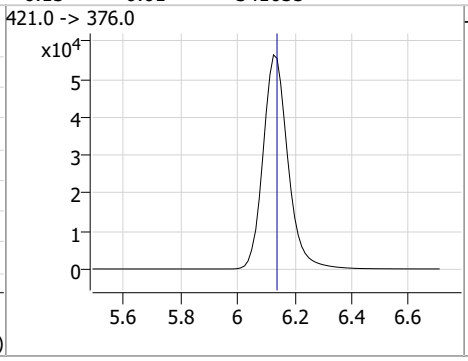


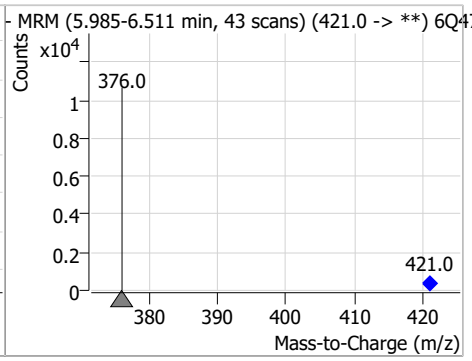




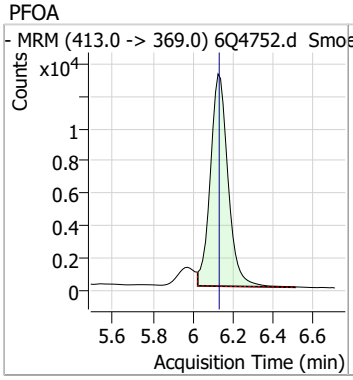
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.08	6.13	-0.01	341055				

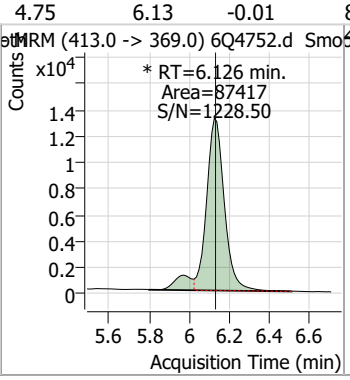


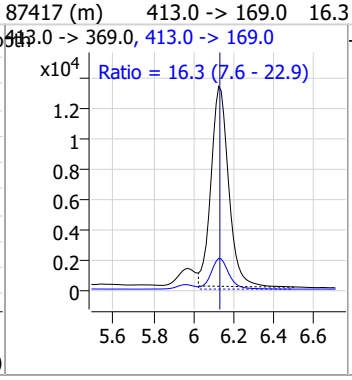


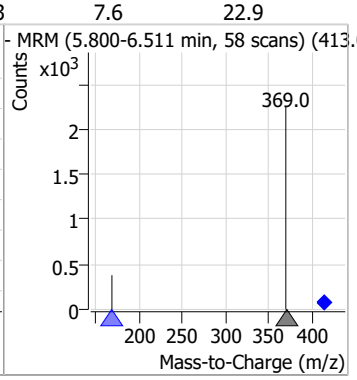


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.75	6.13	-0.01	87417 (m)	413.0 -> 169.0	16.3	7.6	22.9

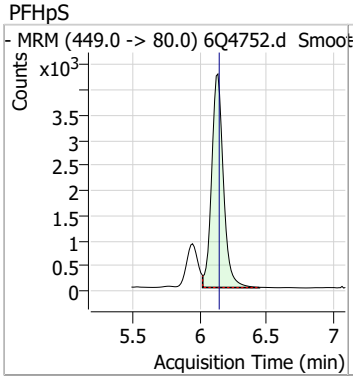


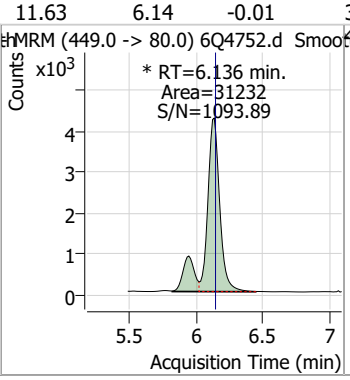


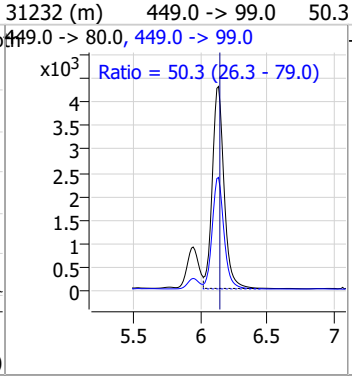


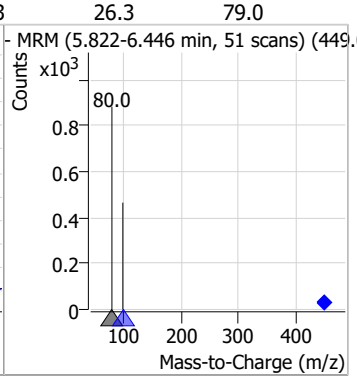


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	11.63	6.14	-0.01	31232 (m)	449.0 -> 99.0	50.3	26.3	79.0



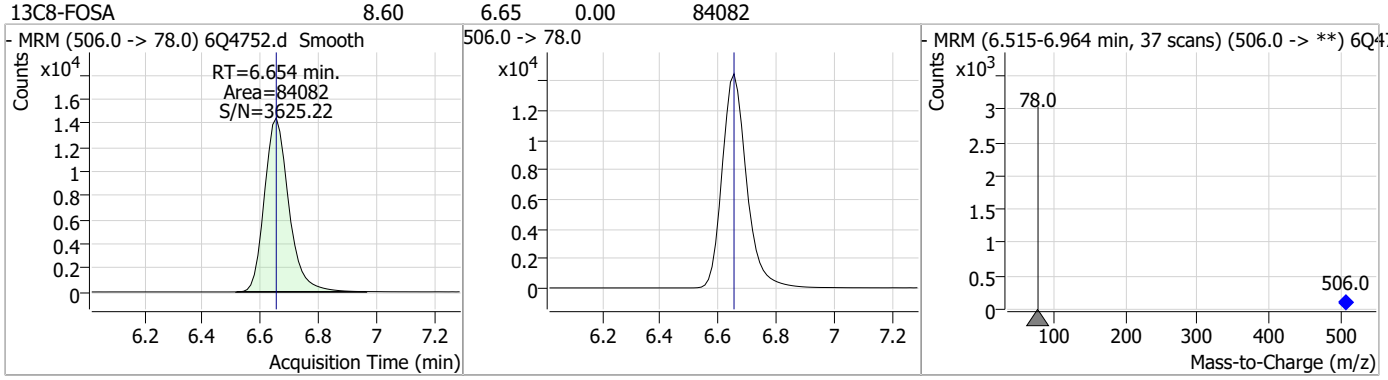




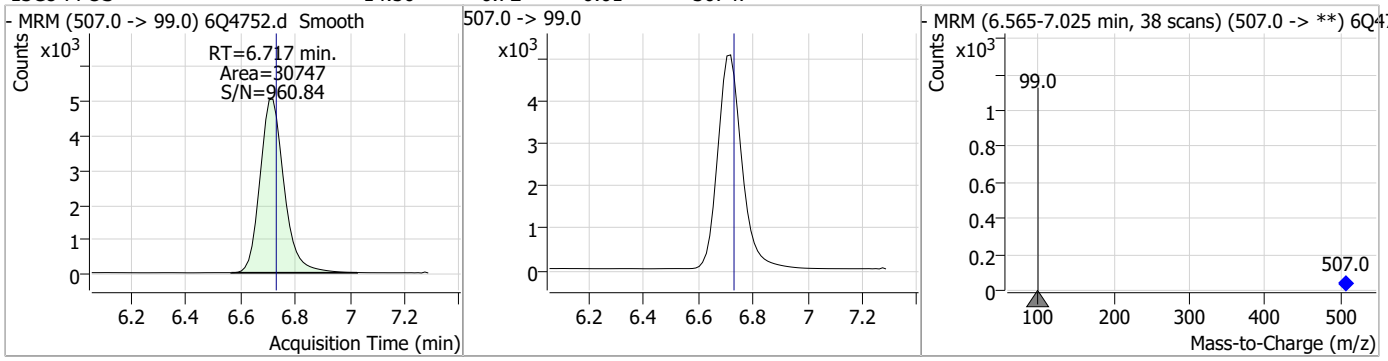


Perfluorinated Compounds by LC/MS/MS

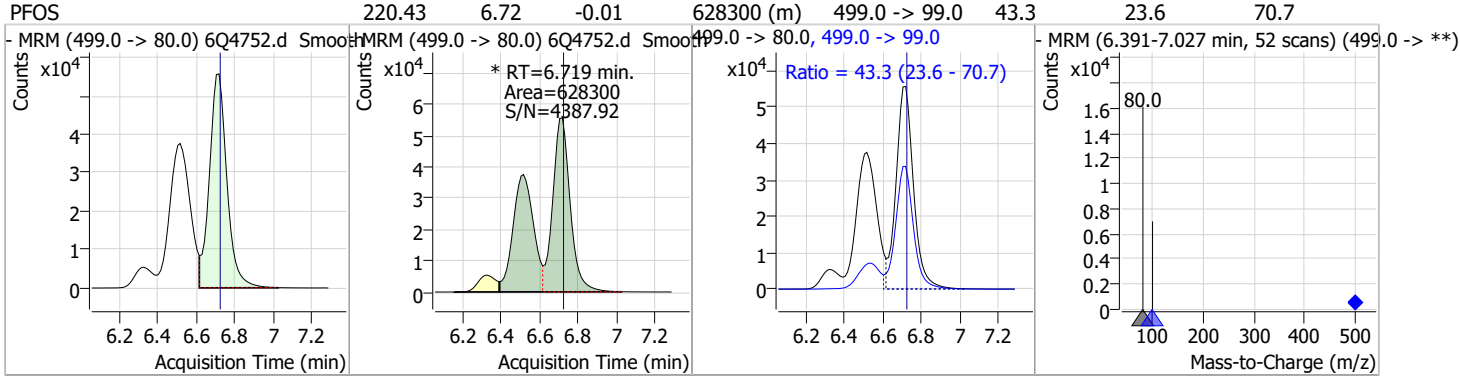
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.60	6.65	0.00	84082				



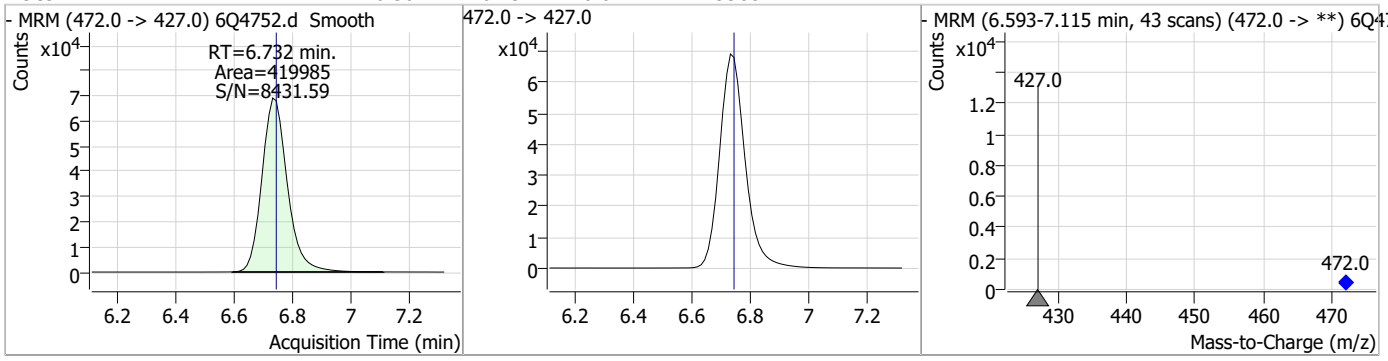
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.50	6.72	-0.01	30747				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	220.43	6.72	-0.01	628300 (m)	499.0 -> 99.0	43.3	23.6	70.7

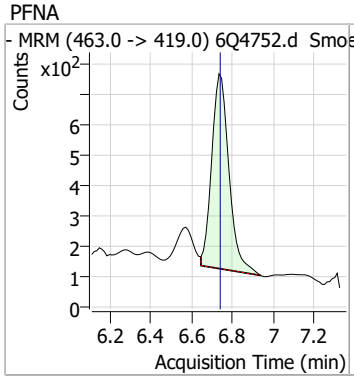


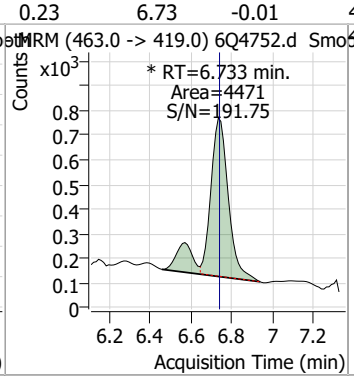
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.30	6.73	-0.01	419985				

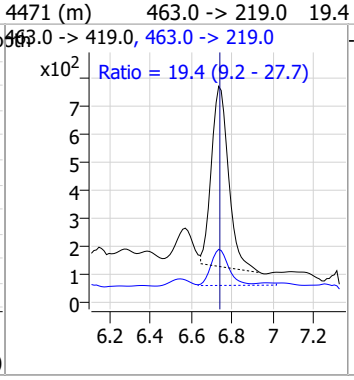


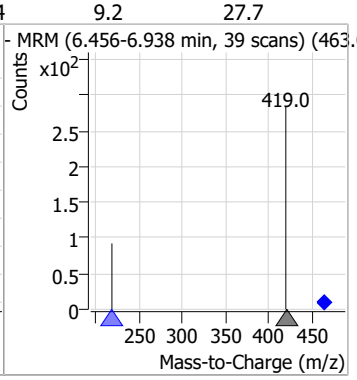
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.23	6.73	-0.01	4471 (m)	463.0 -> 219.0	19.4	9.2	27.7

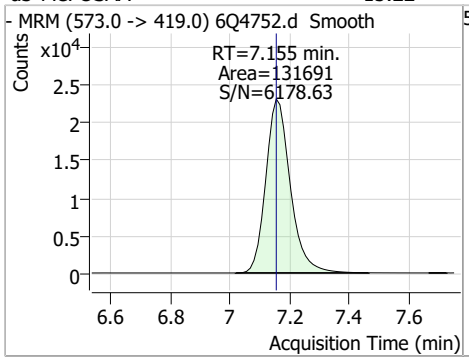


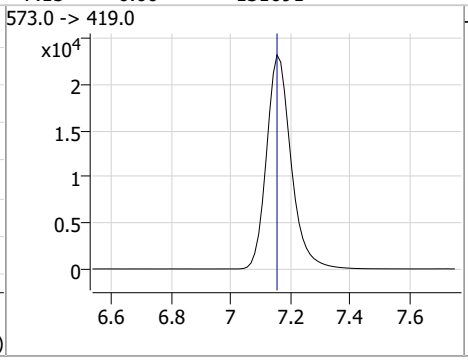


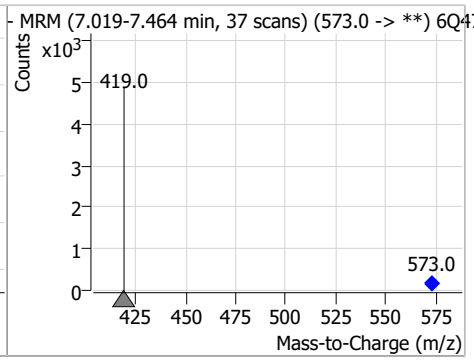




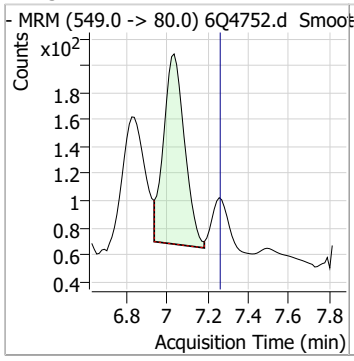
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.22	7.15	0.00	131691				

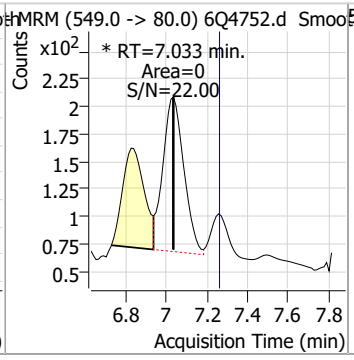


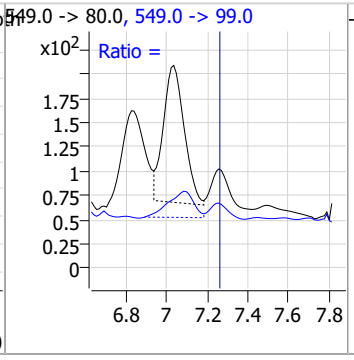


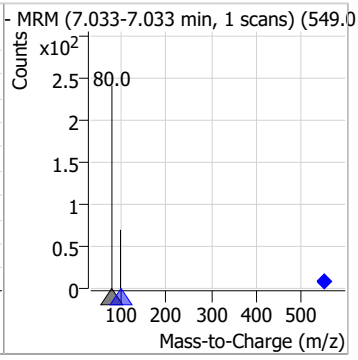


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0		0	0	549.0 -> 99.0		27.6	82.7

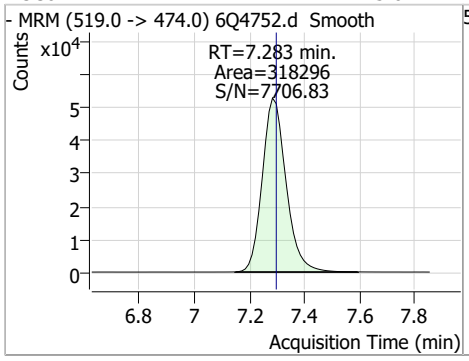


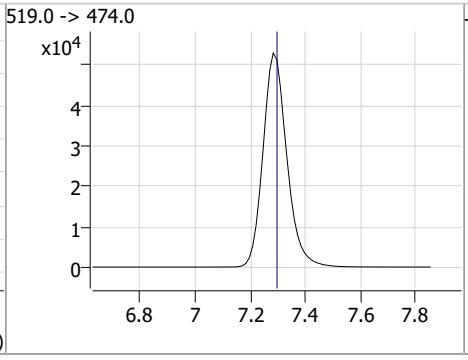


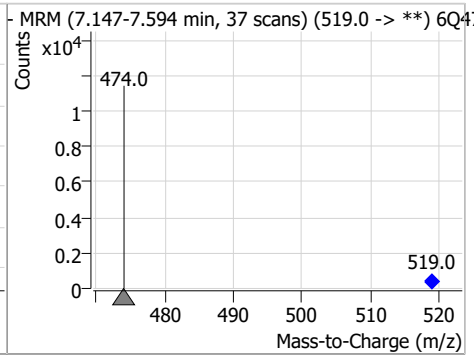




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.64	7.28	-0.01	318296				

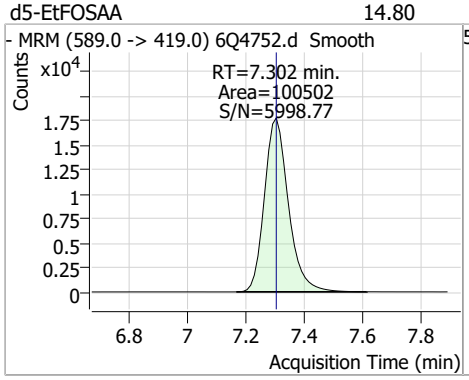


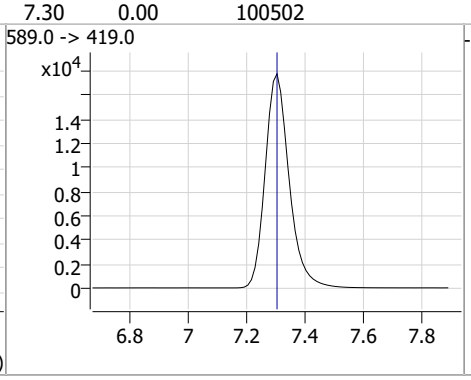


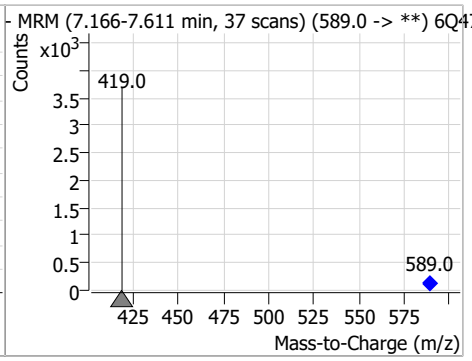


Perfluorinated Compounds by LC/MS/MS

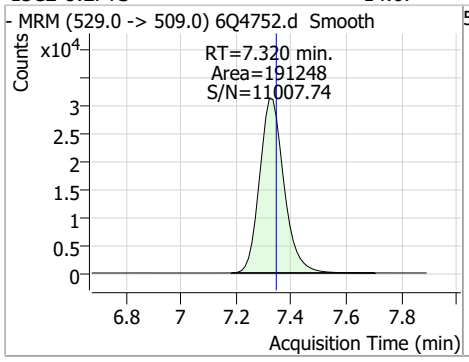
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.80	7.30	0.00	100502				

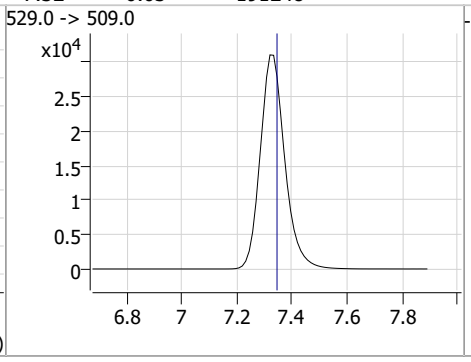


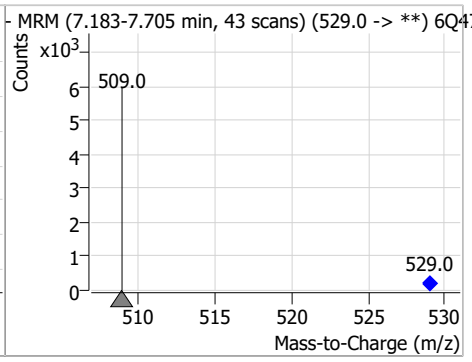




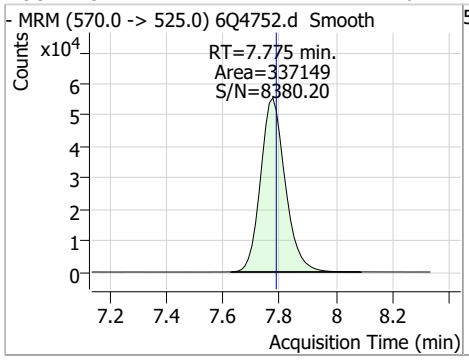
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.67	7.32	-0.03	191248				

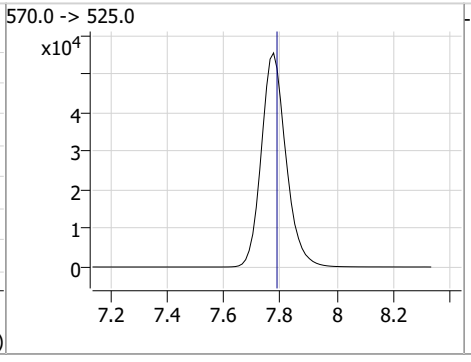


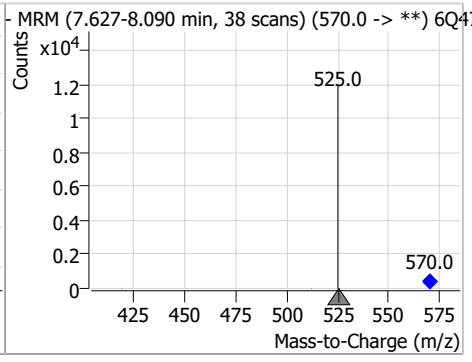




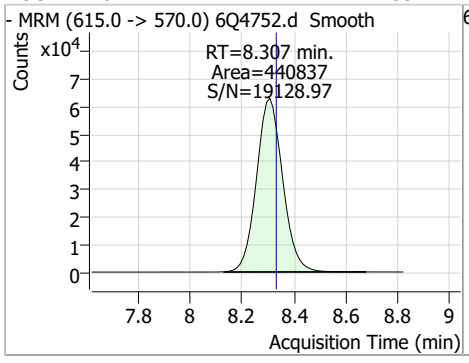
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.70	7.78	-0.01	337149				

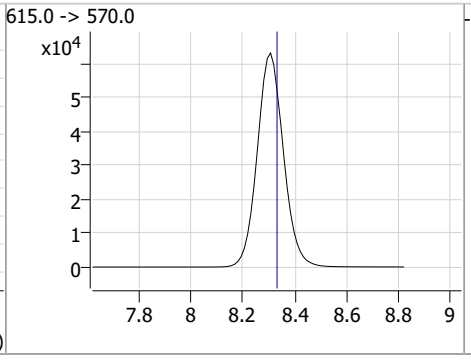


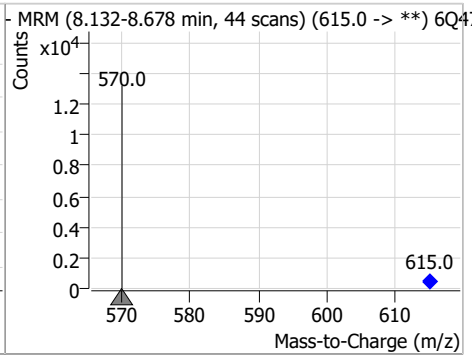




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.99	8.31	-0.02	440837				

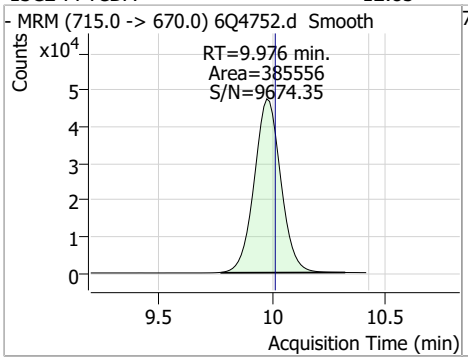


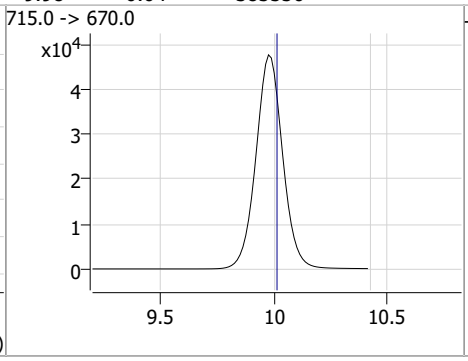


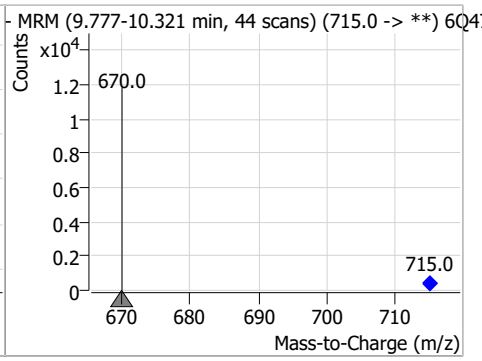


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.85	9.98	-0.04	385556				







Manual Integration Approval Summary

Sample Number: FA98286-34
Lab FileID: 6Q4752.D
Injection Time: 09/16/22 04:43
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:06 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.38	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak
Perfluorononanoic acid	375-95-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4753.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 4:59:02 AM
Sample Name : fa98286-34
Vial : P2-B5
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.924	217.0 -> 172.0	11434	4.00	µg/L	-0.025
M5-PFPeA	3.393	268.0 -> 223.0	21314	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	33542	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	40590	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	73587	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	87686	4.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	64704	4.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	75088	4.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	93418	4.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	83178	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	19700	4.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	5098	4.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	4763	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6851	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	41188	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	54988	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	40742	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	25706	4.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	781	4.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	864	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	20677	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	41188	3.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.2%		
13C2-6:2FTS	6.124	429.0 -> 409.0	54988	3.22	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%		
13C2-8:2FTS	7.333	529.0 -> 509.0	40742	3.13	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.6%		
13C2-PFDoDA	8.307	615.0 -> 570.0	93418	2.54	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-PFTeDA	9.989	715.0 -> 670.0	83178	2.77	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C3-PFBS	3.622	302.0 -> 99.0	5098	3.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%		
13C3-PFHxS	5.463	402.0 -> 99.0	4763	3.44	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.2%		
13C4-PFBA	1.924	217.0 -> 172.0	11434	2.87	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C4-PFHpA	5.433	367.0 -> 322.0	40590	3.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C5-PFHxA	4.561	318.0 -> 273.0	33542	3.14	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C5-PFPeA	3.393	268.0 -> 223.0	21314	3.04	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.2%		
13C6-PFDA	7.283	519.0 -> 474.0	64704	3.18	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

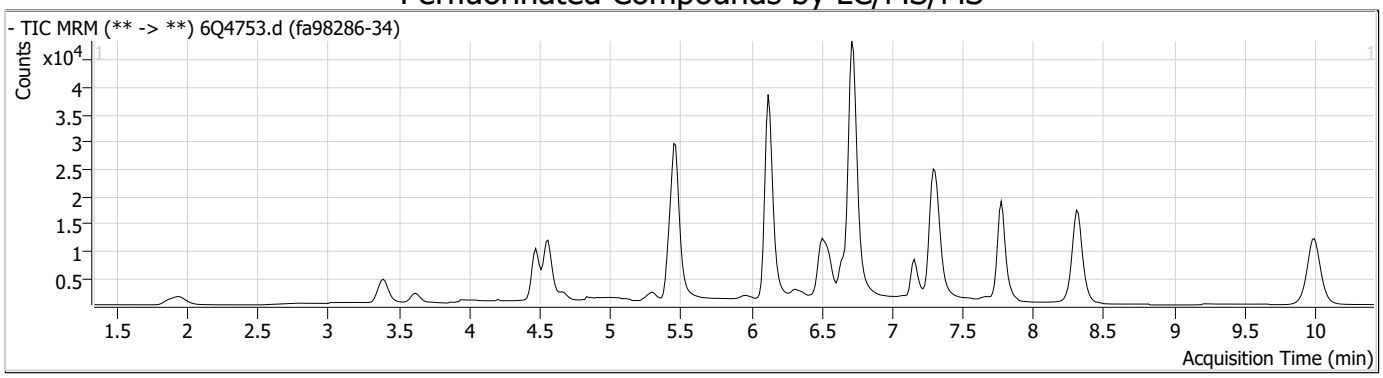
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%			
13C7-PFUnDA	7.775	570.0 -> 525.0	75088	2.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%			
13C8-FOSA	6.654	506.0 -> 78.0	19700	2.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%			
13C8-PFOA	6.138	421.0 -> 376.0	73587	3.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.3%			
13C8-PFOS	6.717	507.0 -> 99.0	6851	3.23	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.1%			
13C9-PFNA	6.745	472.0 -> 427.0	87686	3.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%			
d3-MeFOSAA	7.155	573.0 -> 419.0	25706	2.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	779	2.93	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.7%			
d3-MeFOSA	7.085	515.0 -> 169.0	864	0.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%			
d5-EtFOSAA	7.302	589.0 -> 419.0	20683	3.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.2%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.930	213.0 -> 169.0	2293	1.84	µg/L		100
PFBS	3.615	299.0 -> 80.0	2576	0.61	µg/L		99
		299.0 -> 99.0	948				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	8647	0.66	µg/L		96
		363.0 -> 169.0	1398				
PFHpS	6.136	449.0 -> 80.0	6736	2.25	µg/L	m	93
		449.0 -> 99.0	3230				
PFHxA	4.562	313.0 -> 269.0	12882	1.46	µg/L		99
		313.0 -> 119.0	341				
PFHxS	5.465	399.0 -> 80.0	69015	20.23	µg/L	m	100
		399.0 -> 99.0	33394				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.138	413.0 -> 369.0	18672	0.94	µg/L	m	97
		413.0 -> 169.0	3076				
PFOS	6.719	499.0 -> 80.0	134788	42.45	µg/L	m	95

Perfluorinated Compounds by LC/MS/MS

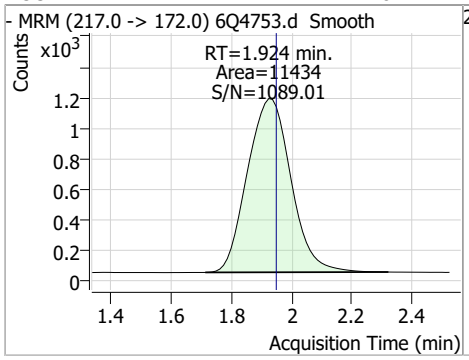
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	58981				
PFPeA	3.395	263.0 -> 219.0	2572	0.57	µg/L	m	100
PFPeS	4.668	349.0 -> 80.0	3445	0.98	µg/L	m	94
		349.0 -> 99.0	1713				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

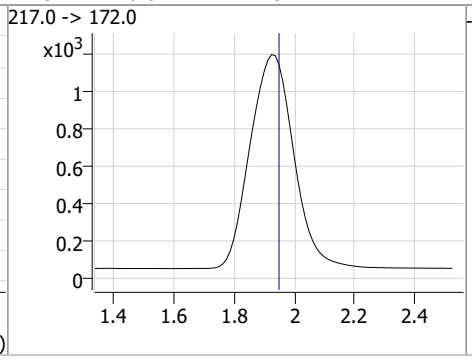
 # = Qualifier out of range, m = manually integrated, + = Area summed

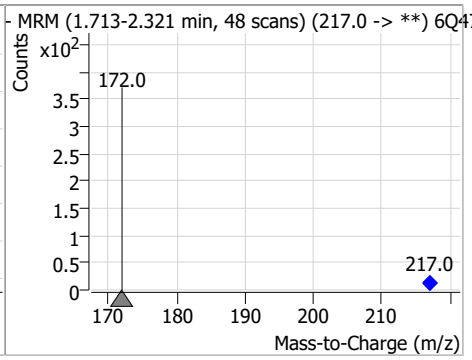
Perfluorinated Compounds by LC/MS/MS



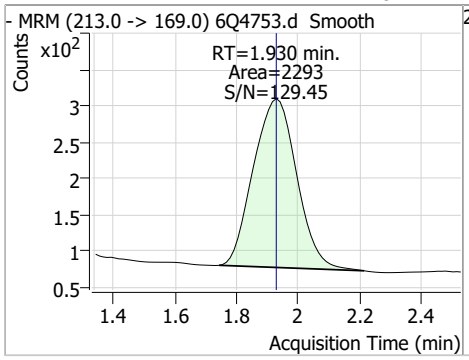
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.87	1.92	-0.02	11434				

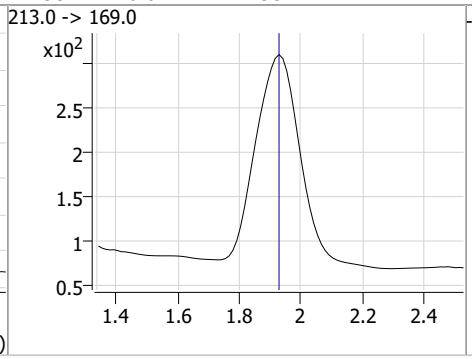


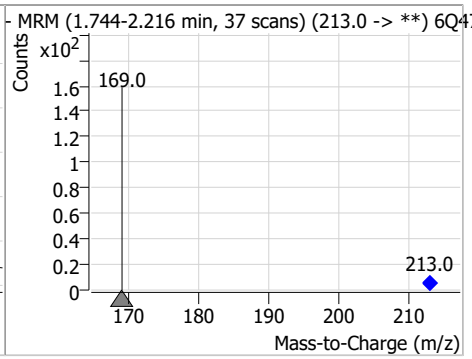




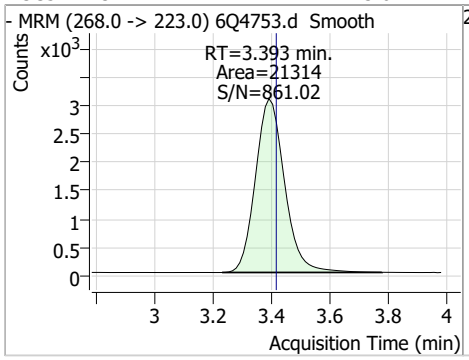
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.84	1.93	-0.02	2293				

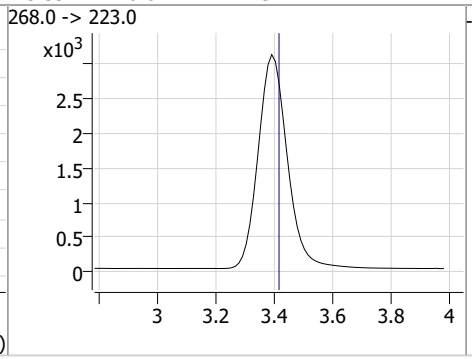


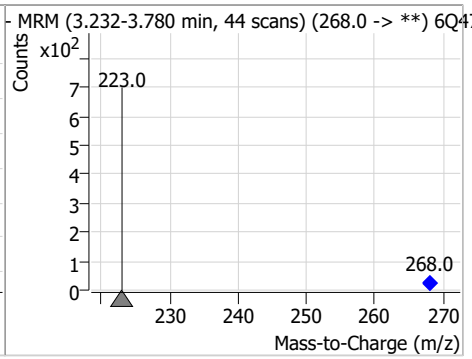




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.04	3.39	-0.02	21314				

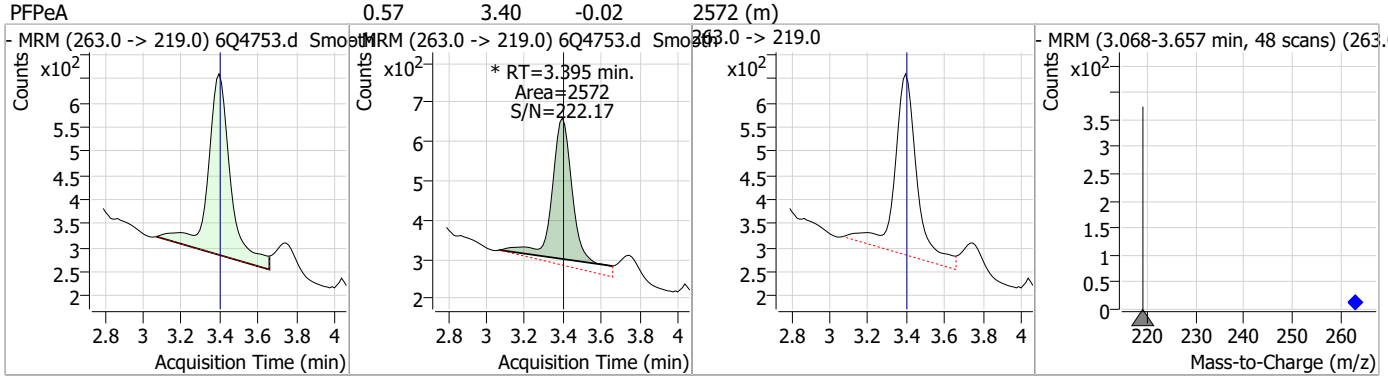




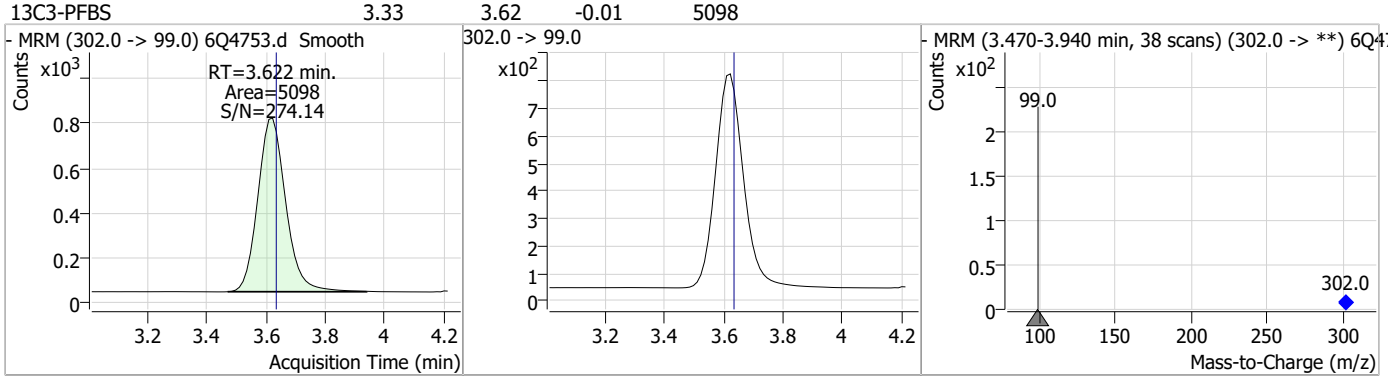


Perfluorinated Compounds by LC/MS/MS

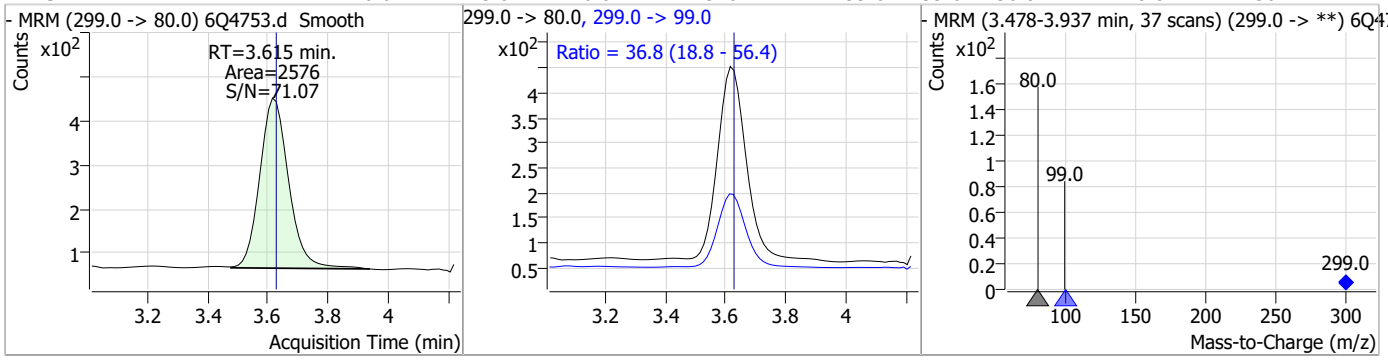
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.57	3.40	-0.02	2572 (m)				



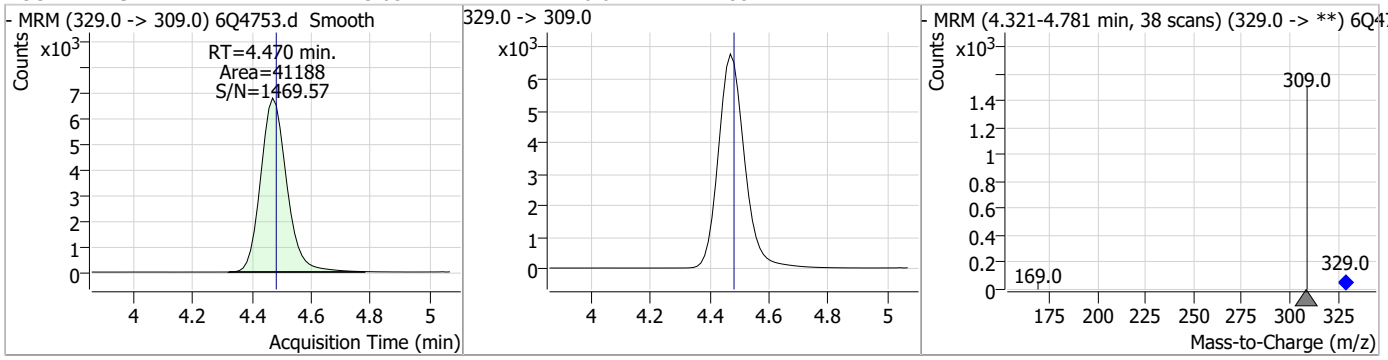
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.33	3.62	-0.01	5098				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.61	3.61	-0.02	2576	299.0 -> 99.0	36.8	18.8	56.4

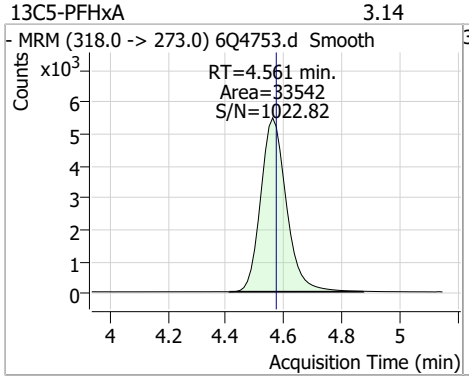


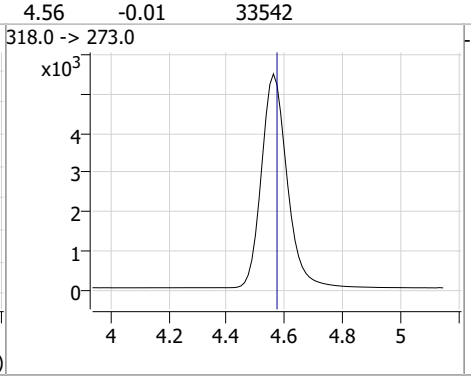
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.05	4.47	-0.01	41188				

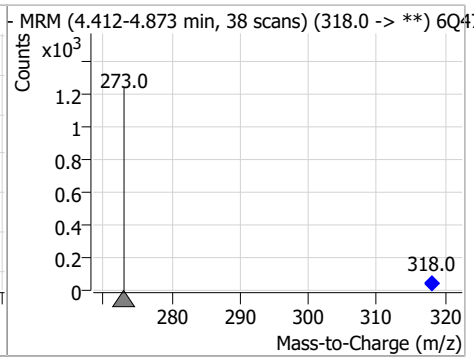


Perfluorinated Compounds by LC/MS/MS

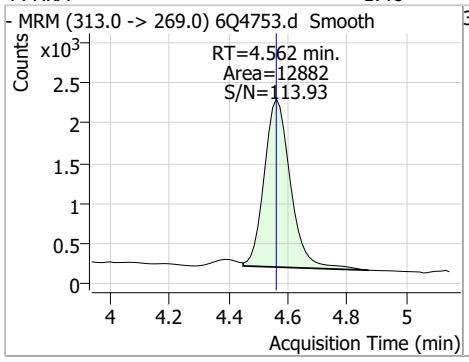
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.14	4.56	-0.01	33542				

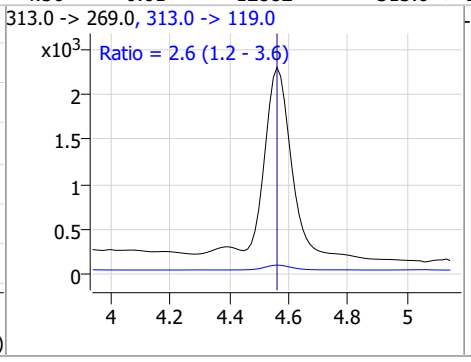


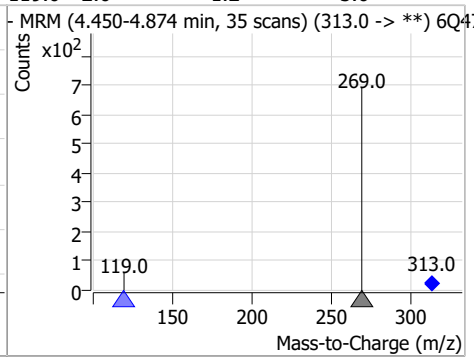




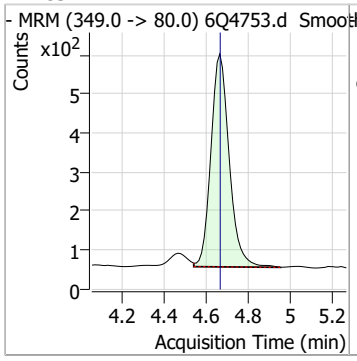
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.46	4.56	-0.01	12882	313.0 -> 119.0	2.6	1.2	3.6

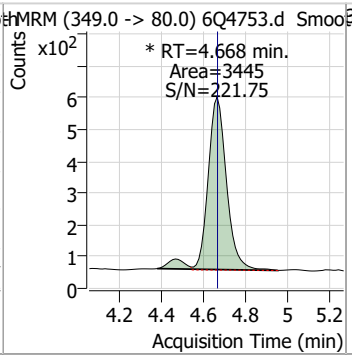


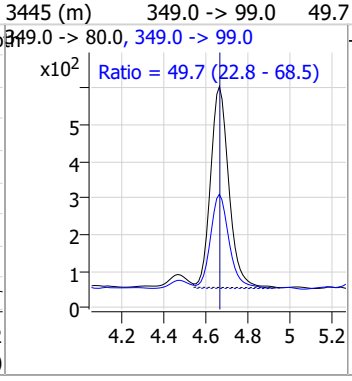


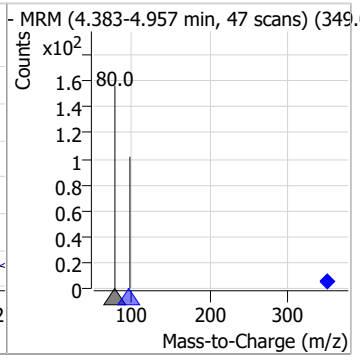


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.98	4.67	-0.01	3445 (m)	349.0 -> 99.0	49.7	22.8	68.5

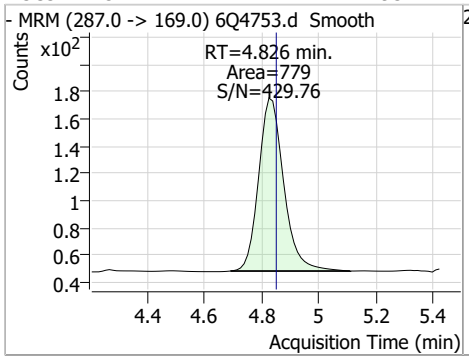


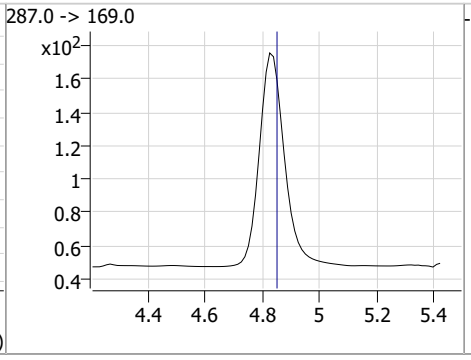


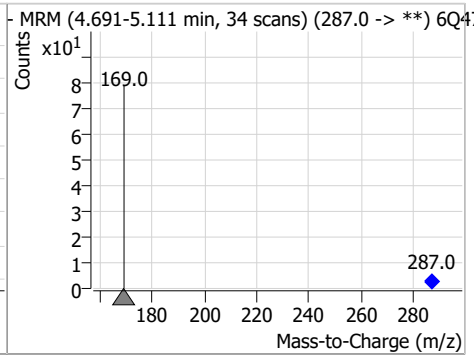




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.93	4.83	-0.03	779				

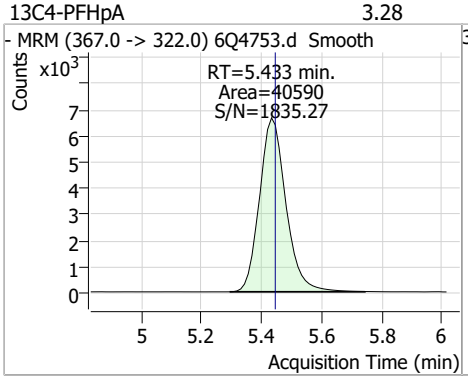


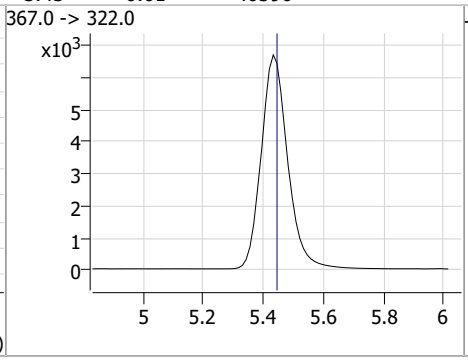


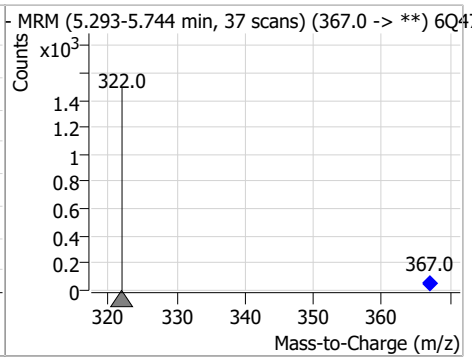


Perfluorinated Compounds by LC/MS/MS

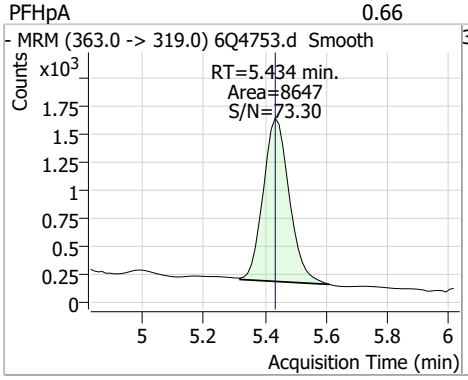
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.28	5.43	-0.01	40590				

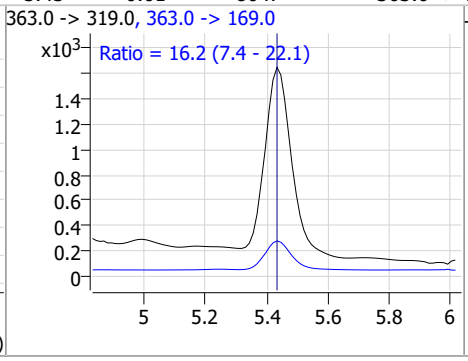


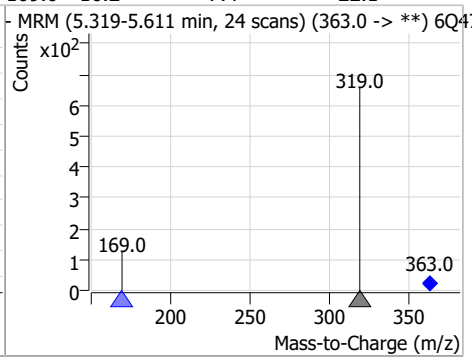




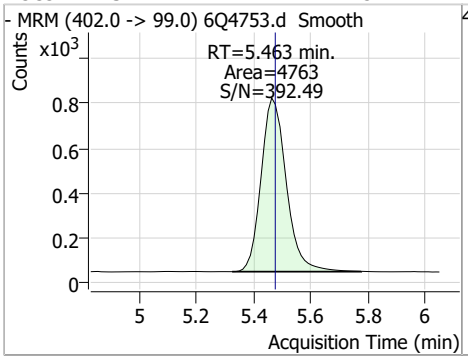
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.66	5.43	-0.01	8647	363.0 -> 169.0	16.2	7.4	22.1

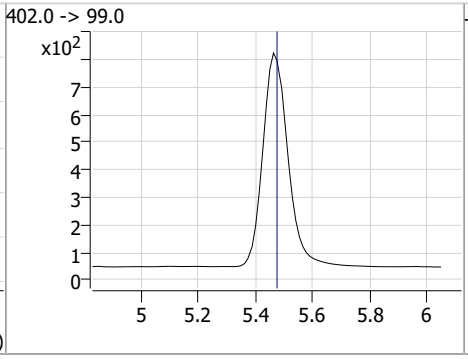


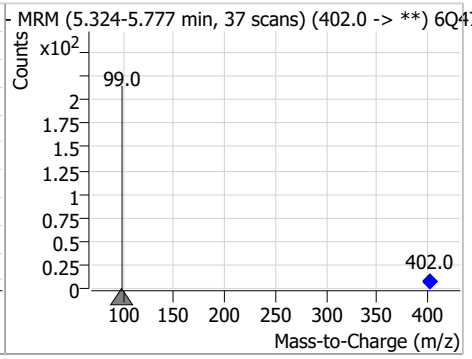




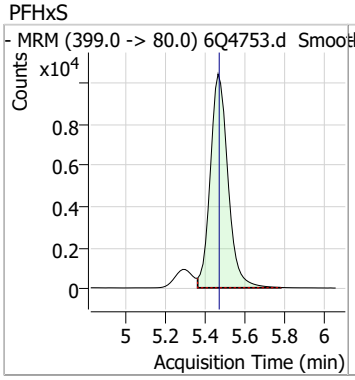
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.44	5.46	-0.01	4763				

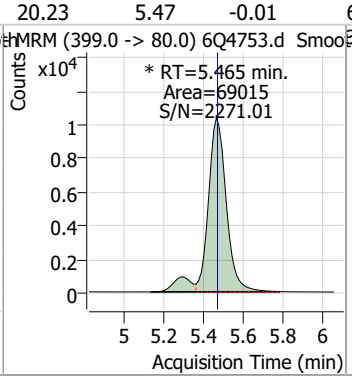


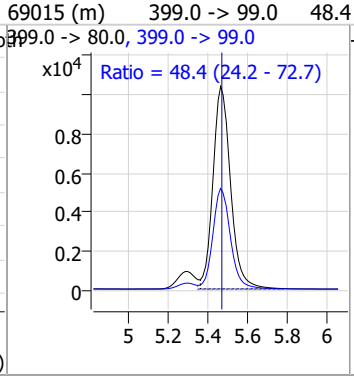


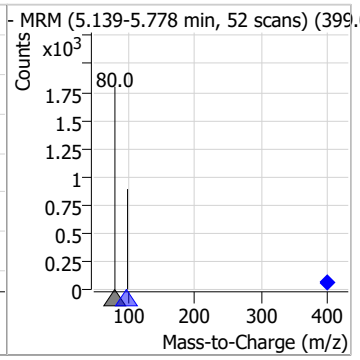


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.23	5.47	-0.01	69015 (m)	399.0 -> 99.0	48.4	24.2	72.7



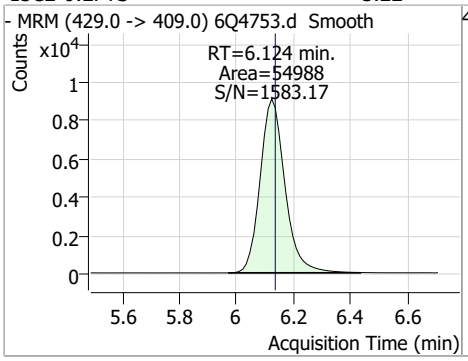


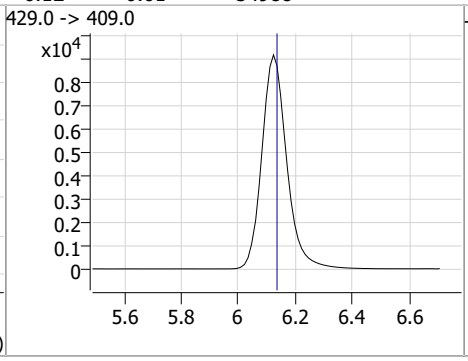


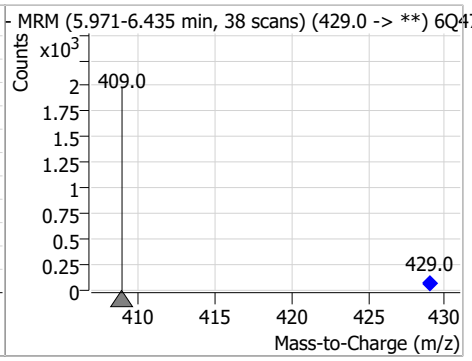


Perfluorinated Compounds by LC/MS/MS

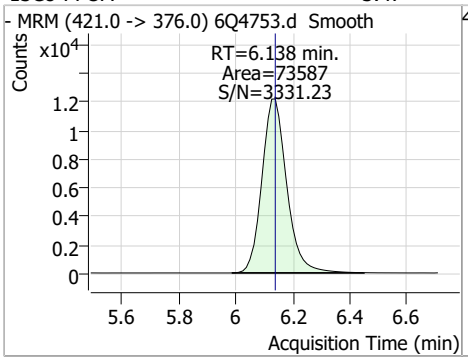
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.22	6.12	-0.01	54988				

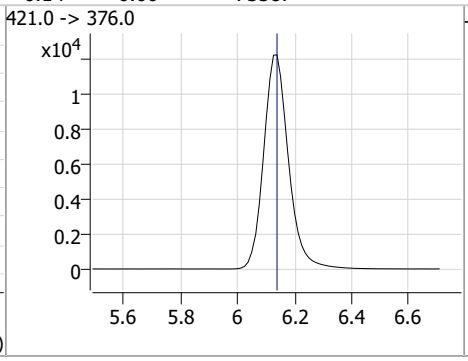


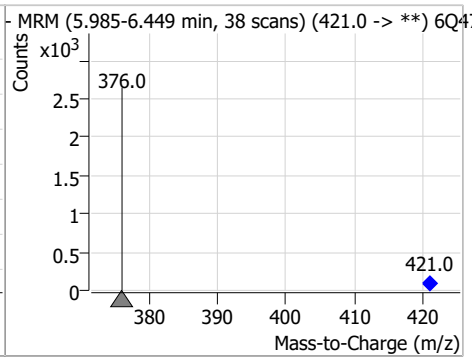




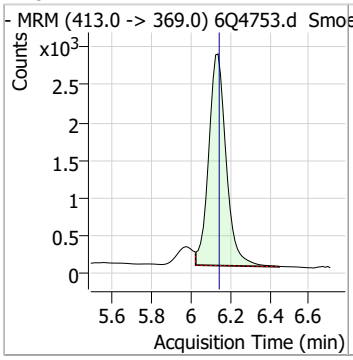
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.47	6.14	0.00	73587				

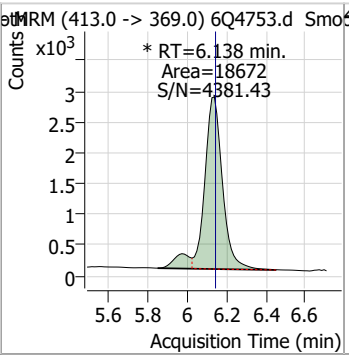


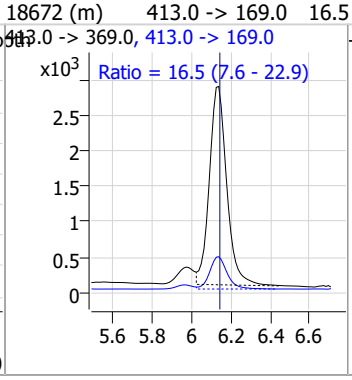


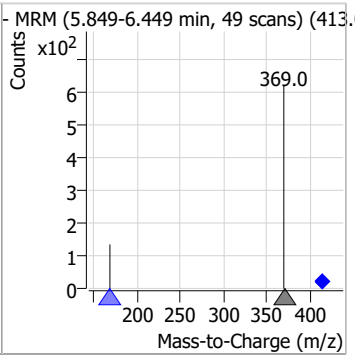


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.94	6.14	0.00	18672 (m)	413.0 -> 169.0	16.5	7.6	22.9

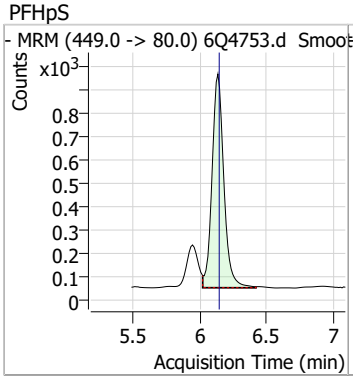


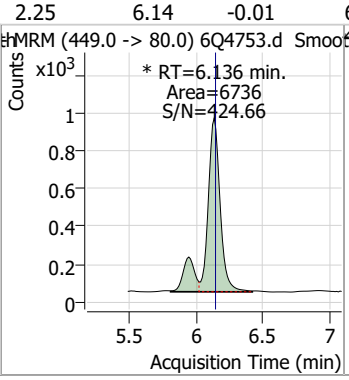


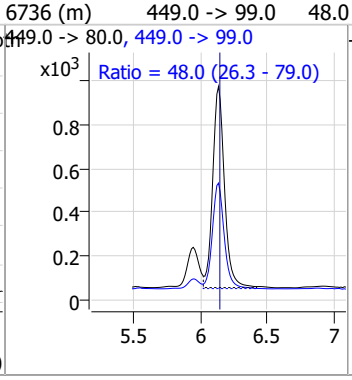


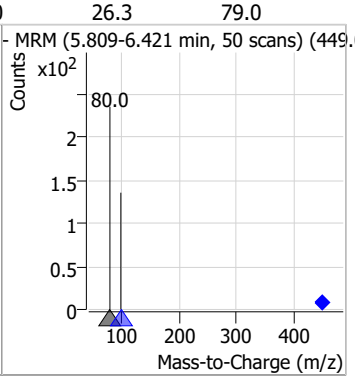


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.25	6.14	-0.01	6736 (m)	449.0 -> 99.0	48.0	26.3	79.0



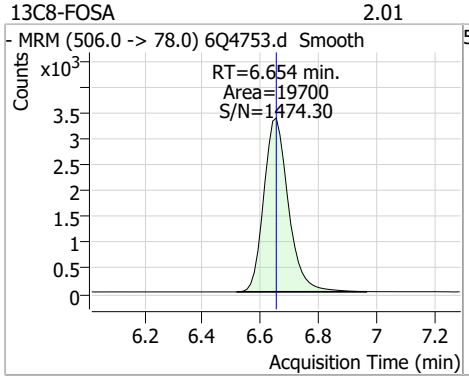


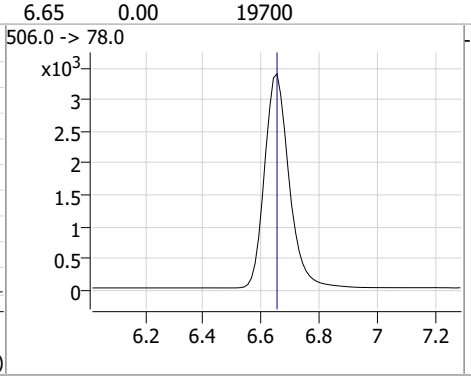


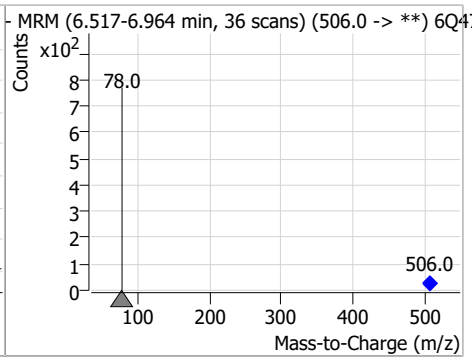


Perfluorinated Compounds by LC/MS/MS

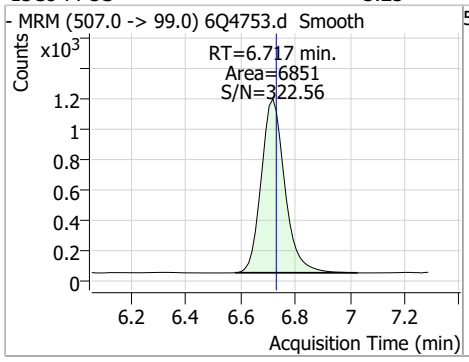
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.01	6.65	0.00	19700				

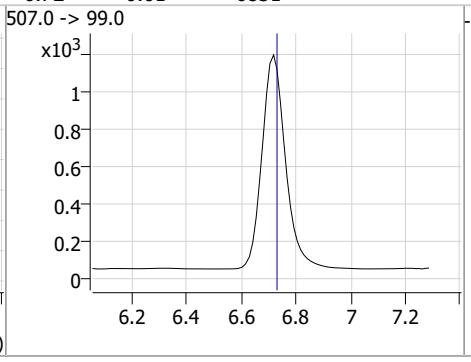


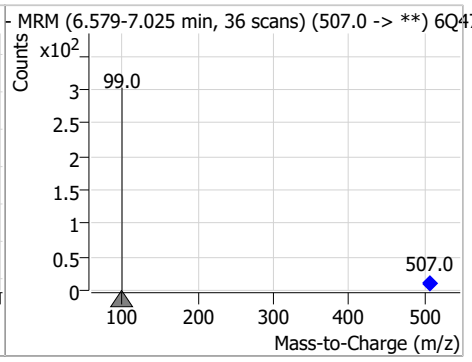




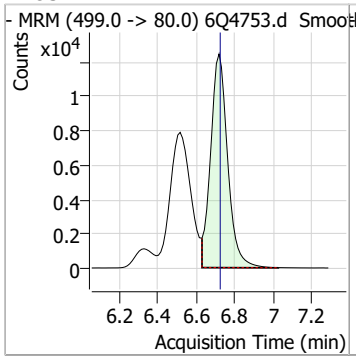
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.23	6.72	-0.01	6851				

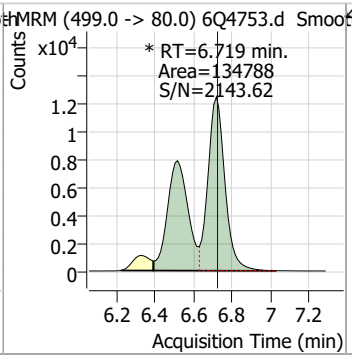


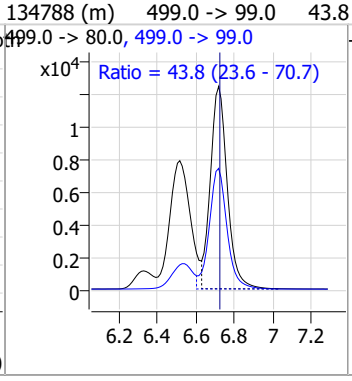


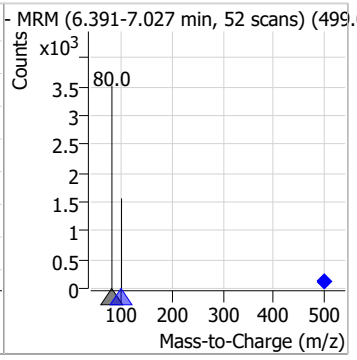


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	42.45	6.72	-0.01	134788 (m)	499.0 -> 99.0	43.8	23.6	70.7

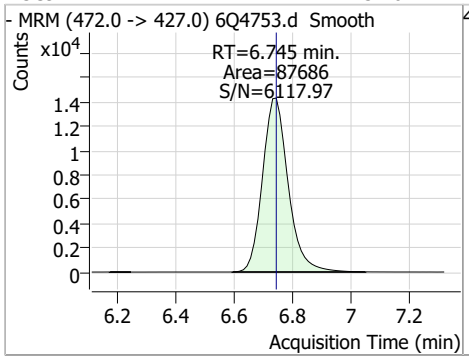


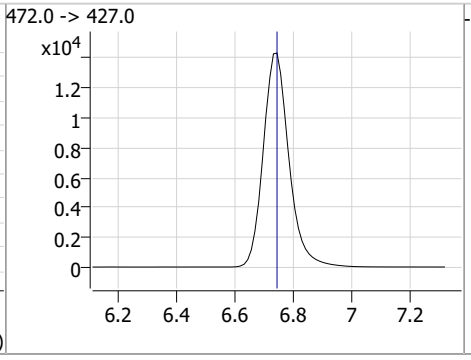


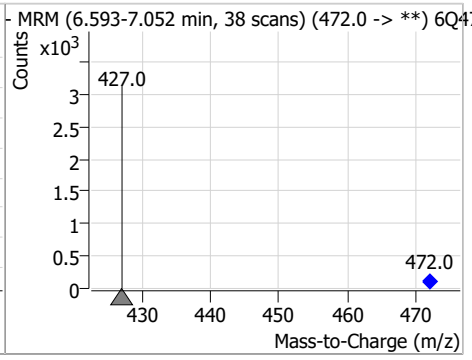




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.40	6.74	0.00	87686				

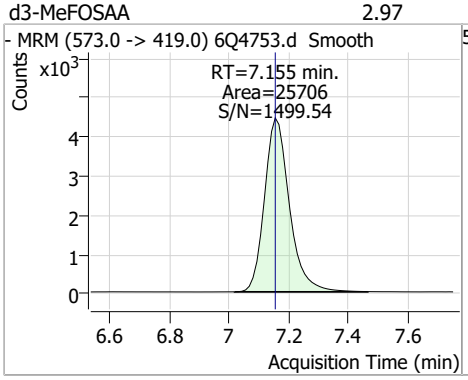


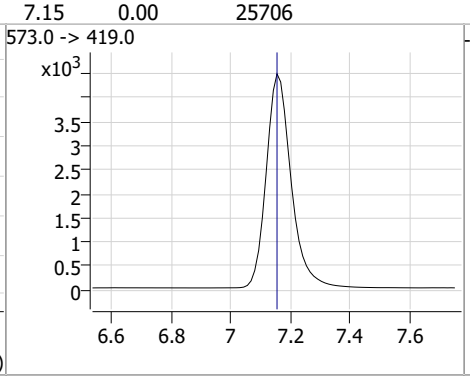


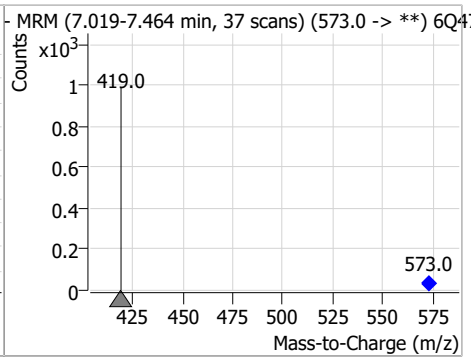


Perfluorinated Compounds by LC/MS/MS

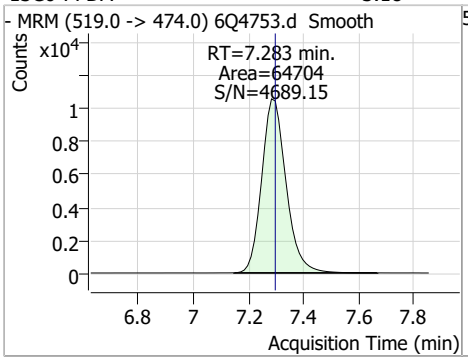
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.97	7.15	0.00	25706				

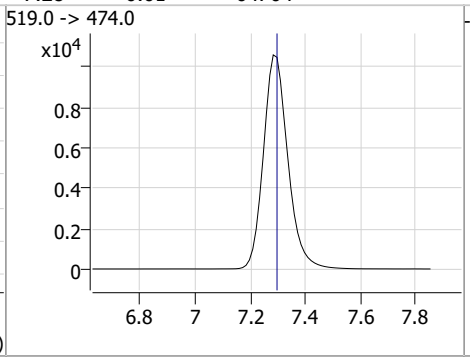


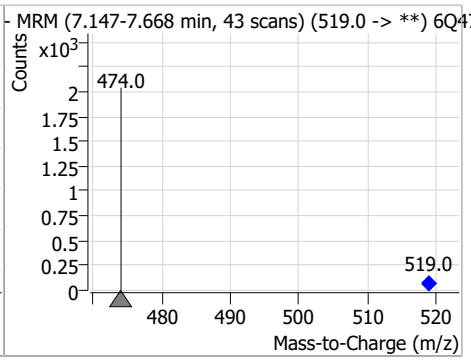




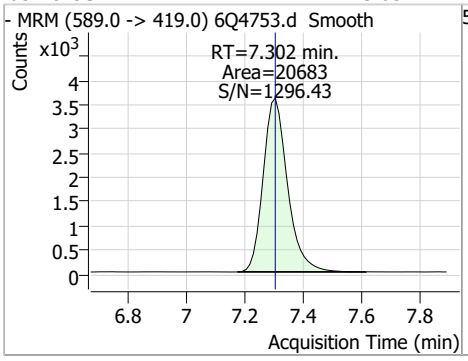
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.18	7.28	-0.01	64704				

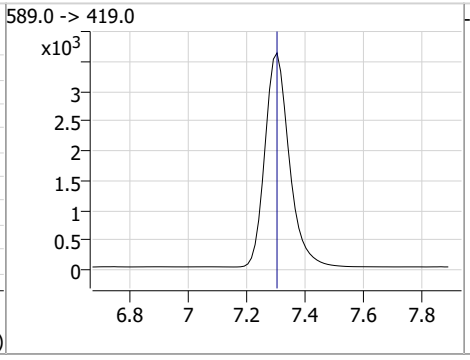


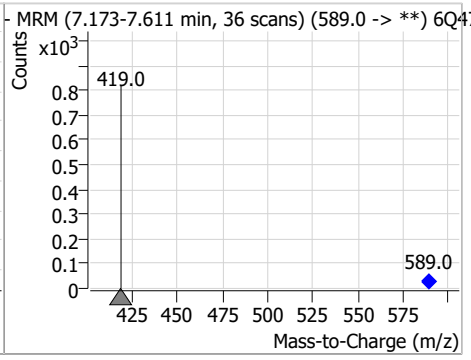




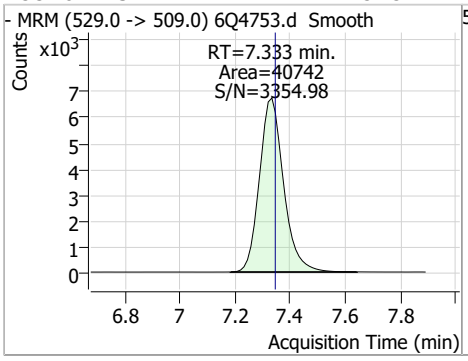
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.05	7.30	0.00	20683				

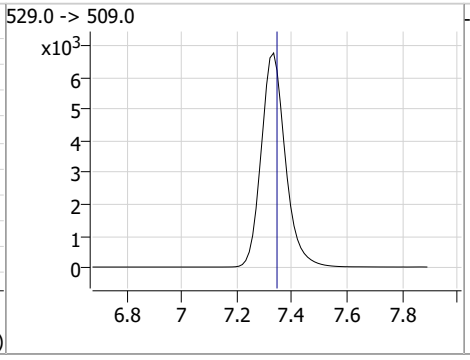


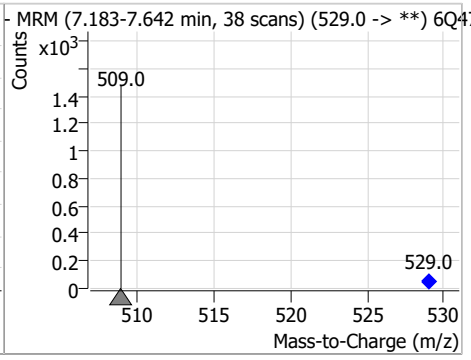




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.13	7.33	-0.01	40742				

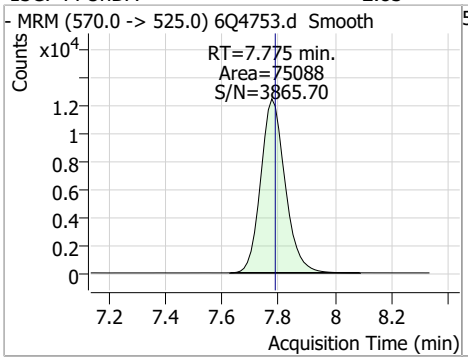


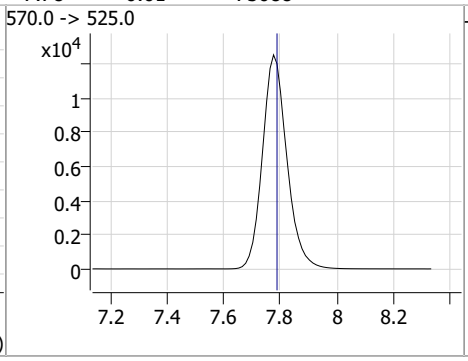


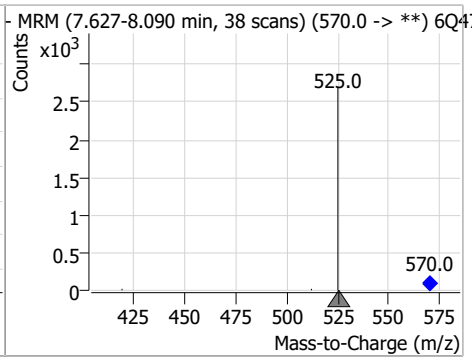


Perfluorinated Compounds by LC/MS/MS

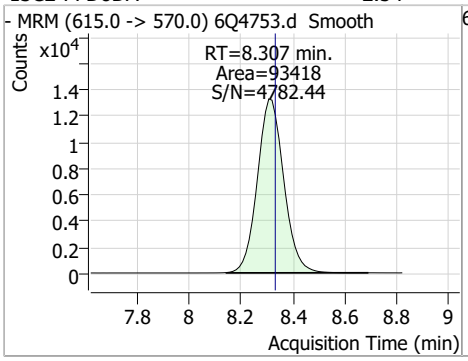
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.83	7.78	-0.01	75088				

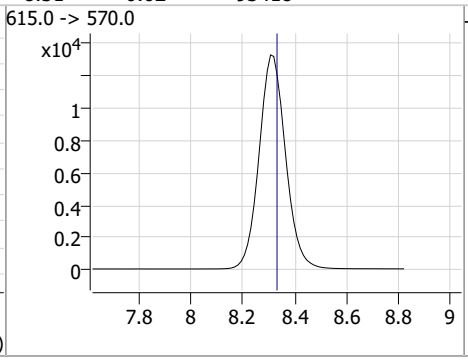


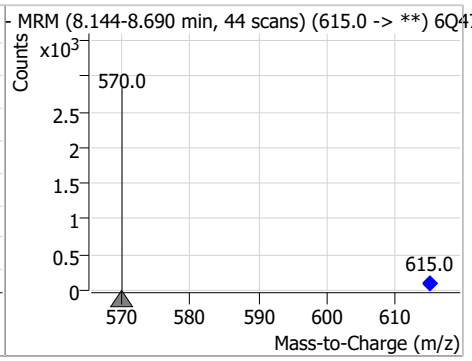




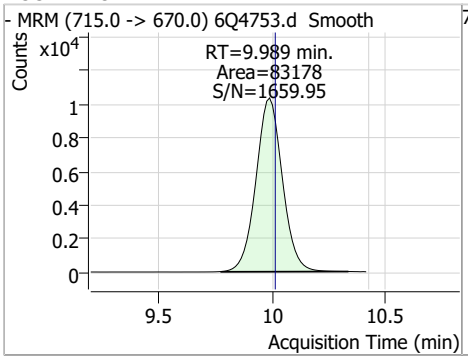
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.54	8.31	-0.02	93418				

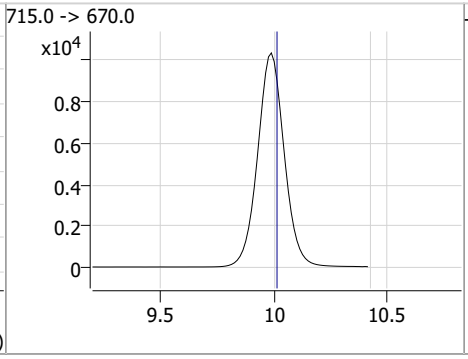


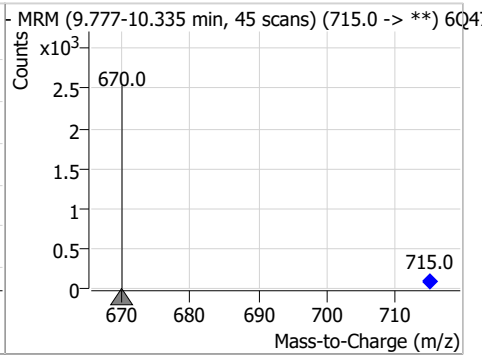




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.77	9.99	-0.02	83178				







Manual Integration Approval Summary

Sample Number: FA98286-34
Lab FileID: 6Q4753.D
Injection Time: 09/16/22 04:59
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:06 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.40	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:05

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4691.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:57:57 AM
Sample Name : fa98286-35
Vial : P5-F7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	47658	20.00	µg/L	-0.087
M5-PFPeA	3.368	268.0 -> 223.0	90585	20.00	µg/L	-0.050
M5-PFHxA	4.548	318.0 -> 273.0	163997	20.00	µg/L	-0.025
M4-PFHpA	5.433	367.0 -> 322.0	200960	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	379315	20.00	µg/L	-0.012
M9-PFNA	6.745	472.0 -> 427.0	430756	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	286902	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	364202	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	450485	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	372100	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	72812	20.00	µg/L	0.000
M3-PFBS	3.597	302.0 -> 99.0	23882	20.00	µg/L	-0.037
M3-PFHxS	5.463	402.0 -> 99.0	23654	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	31807	20.00	µg/L	-0.012
M2-4:2FTS	4.458	329.0 -> 309.0	202931	20.00	µg/L	-0.025
M2-6:2FTS	6.124	429.0 -> 409.0	296661	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	183416	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	120900	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3818	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	1060	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	104069	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.458	329.0 -> 309.0	202931	15.03	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	296661	17.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	183416	14.07	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.4%		
13C2-PFDoDA	8.320	615.0 -> 570.0	450485	12.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.2%		
13C2-PFTeDA	9.989	715.0 -> 670.0	372100	12.40	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.0%		
13C3-PFBS	3.597	302.0 -> 99.0	23882	15.59	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%		
13C3-PFHxS	5.463	402.0 -> 99.0	23654	17.11	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%		
13C4-PFBA	1.862	217.0 -> 172.0	47658	11.97	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	200960	16.24	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%		
13C5-PFHxA	4.548	318.0 -> 273.0	163997	15.34	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C5-PFPeA	3.368	268.0 -> 223.0	90585	12.92	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.6%		
13C6-PFDA	7.283	519.0 -> 474.0	286902	14.10	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

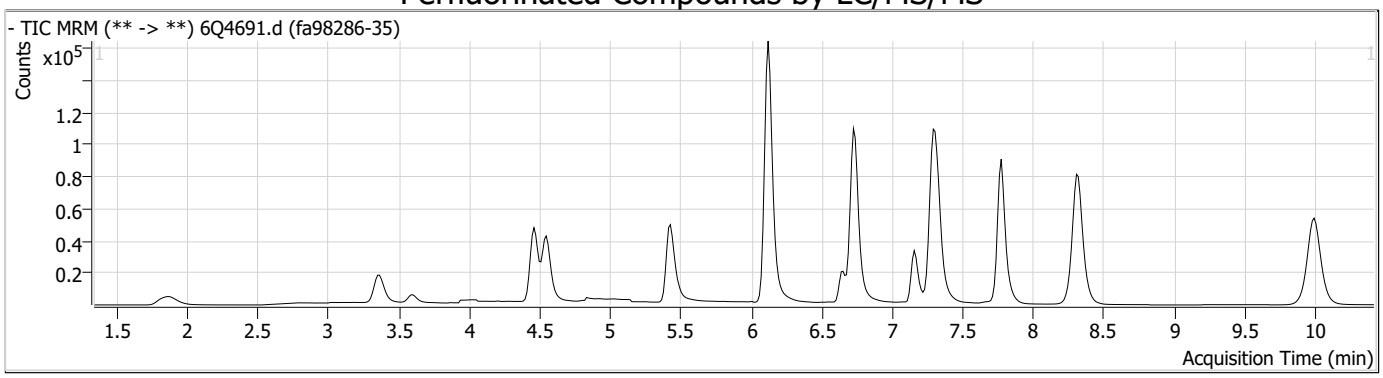
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%			
13C7-PFUnDA	7.775	570.0 -> 525.0	364202	13.72	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.6%			
13C8-FOSA	6.654	506.0 -> 78.0	72812	7.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 37.2%			
13C8-PFOA	6.126	421.0 -> 376.0	379315	17.88	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C8-PFOS	6.717	507.0 -> 99.0	31807	15.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%			
13C9-PFNA	6.745	472.0 -> 427.0	430756	16.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%			
d3-MeFOSAA	7.155	573.0 -> 419.0	120900	13.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.9%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3841	14.45	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%			
d3-MeFOSA	7.085	515.0 -> 169.0	1061	0.47	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%			
d5-EtFOSAA	7.302	589.0 -> 419.0	104006	15.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	6.733	463.0 -> 419.0	0		µg/L	m	1
		463.0 -> 219.0	0				
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

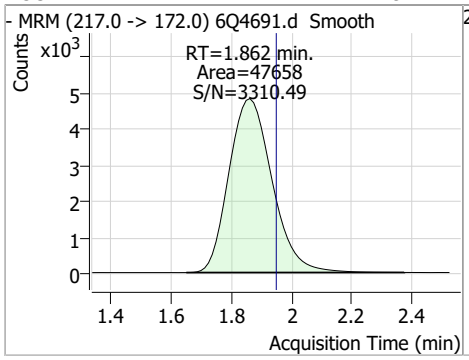
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.208	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

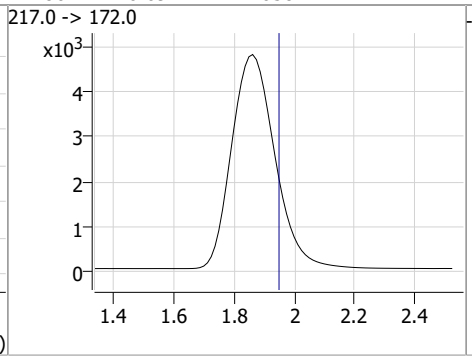
 # = Qualifier out of range, m = manually integrated, + = Area summed

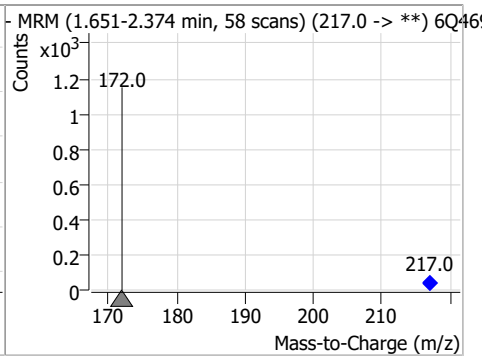
Perfluorinated Compounds by LC/MS/MS



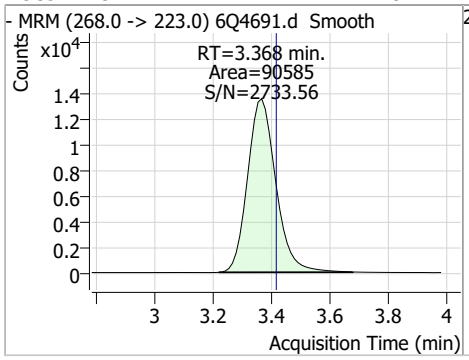
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.97	1.86	-0.09	47658				

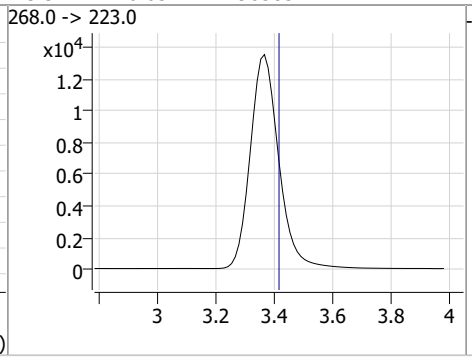


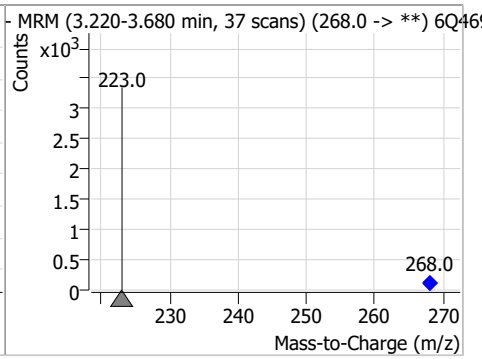




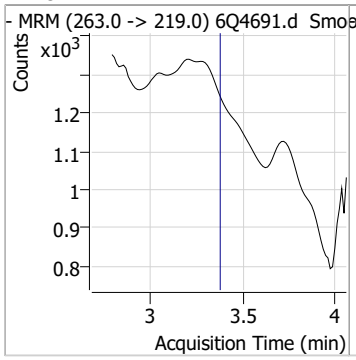
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.92	3.37	-0.05	90585				

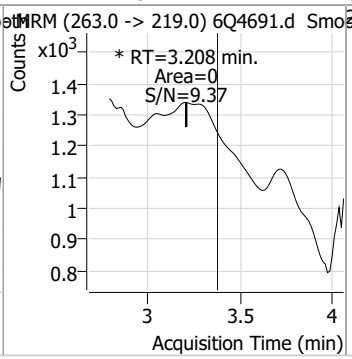


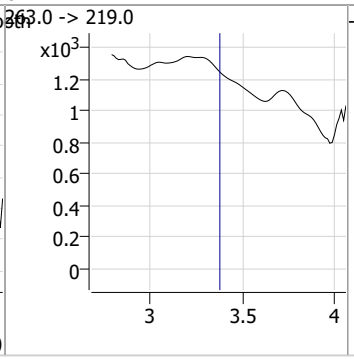


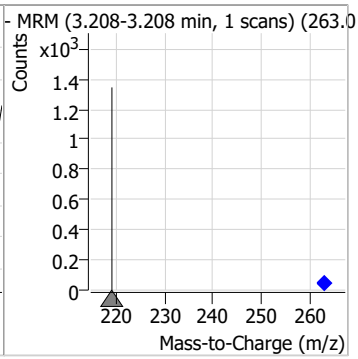


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



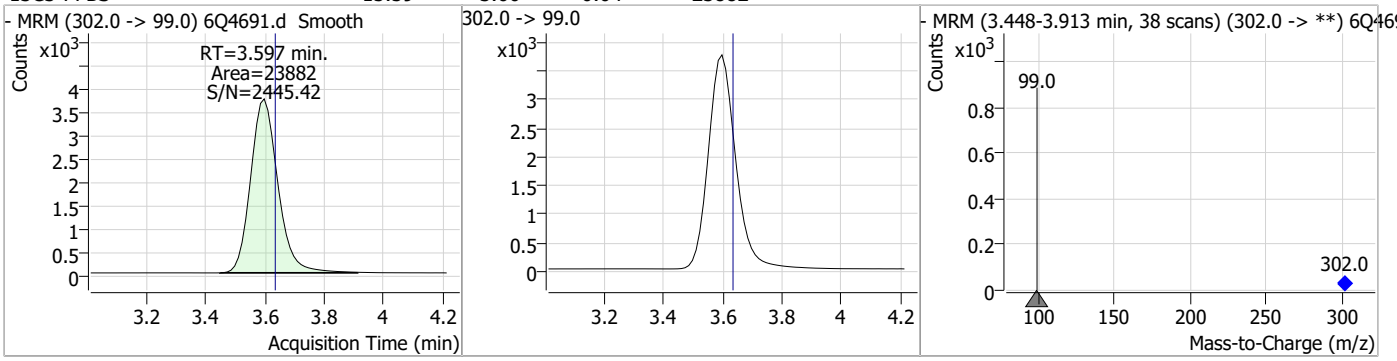




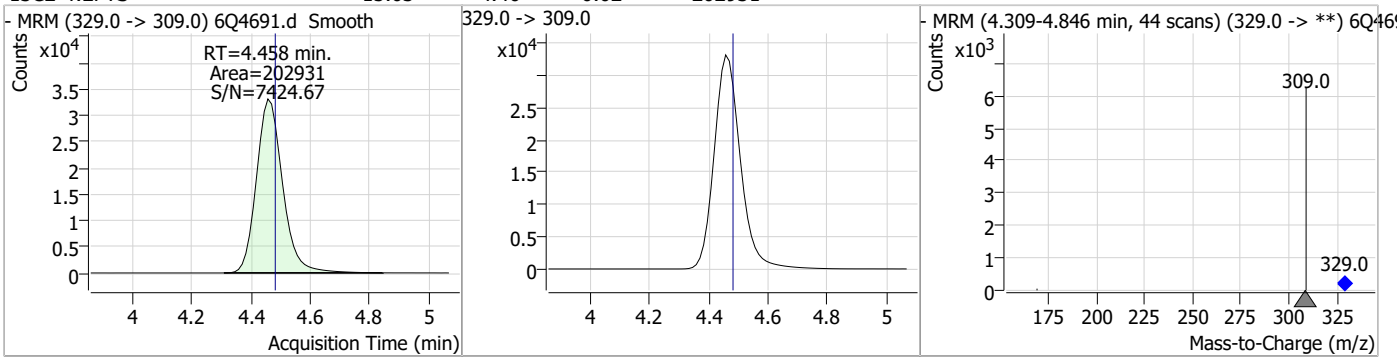


Perfluorinated Compounds by LC/MS/MS

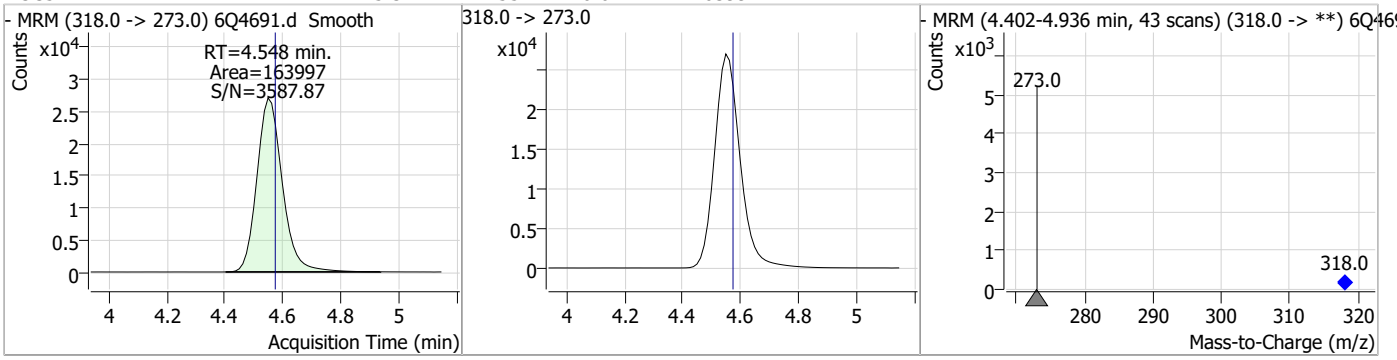
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.59	3.60	-0.04	23882				



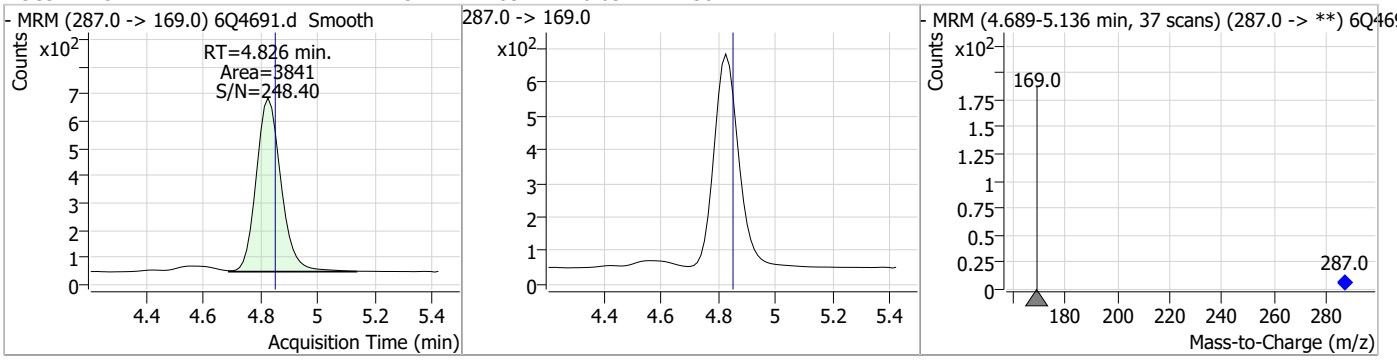
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.03	4.46	-0.02	202931				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.34	4.55	-0.02	163997				

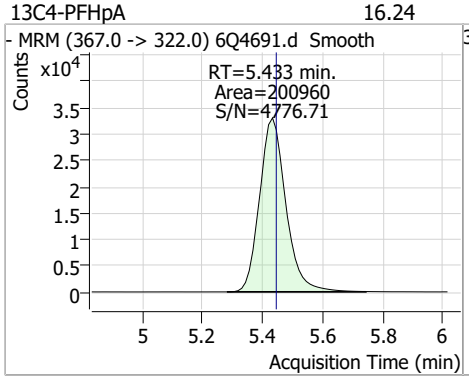


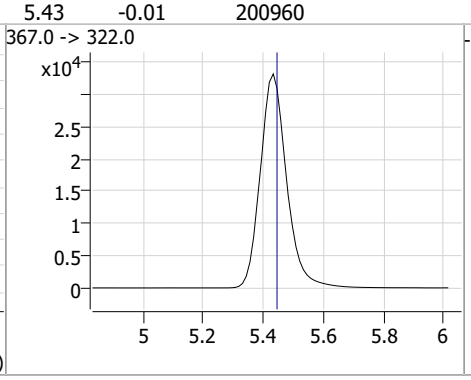
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.45	4.83	-0.03	3841				

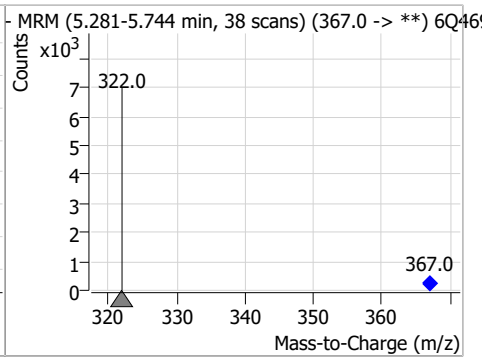


Perfluorinated Compounds by LC/MS/MS

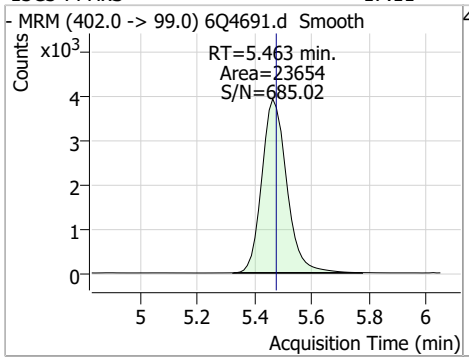
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.24	5.43	-0.01	200960				

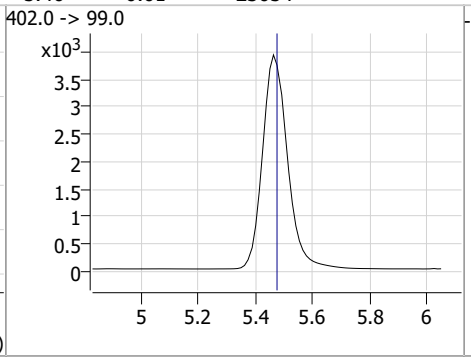


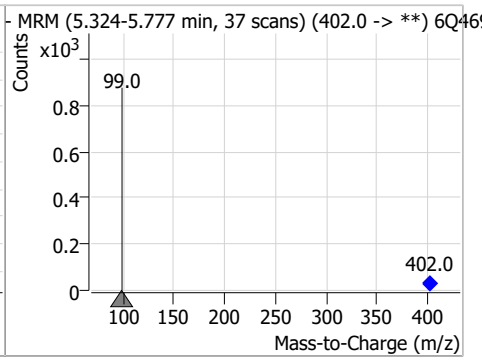




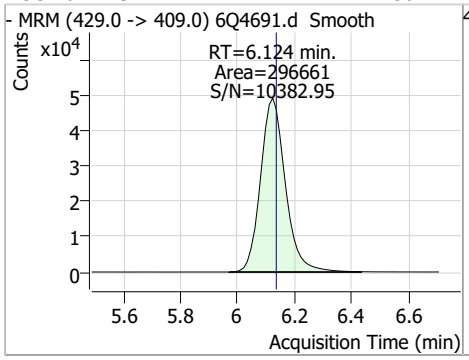
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.11	5.46	-0.01	23654				

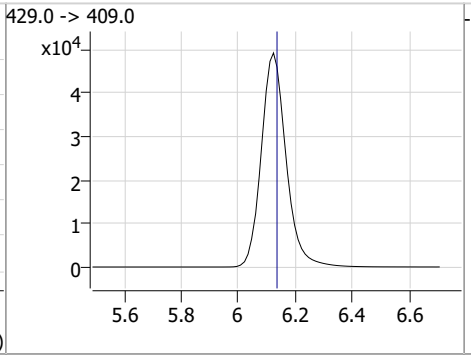


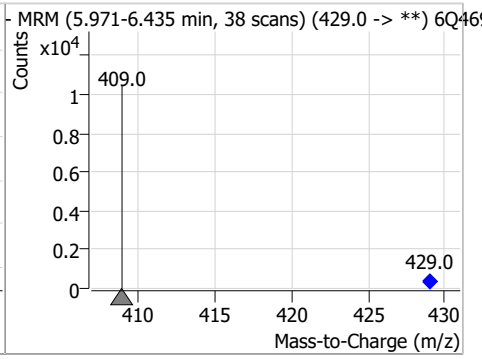




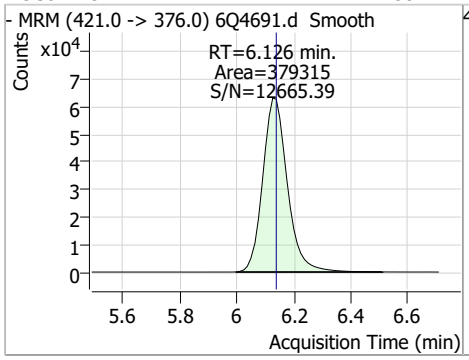
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.38	6.12	-0.01	296661				

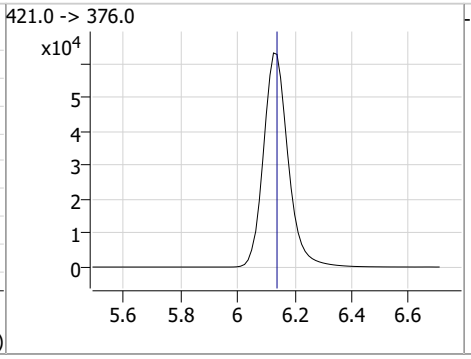


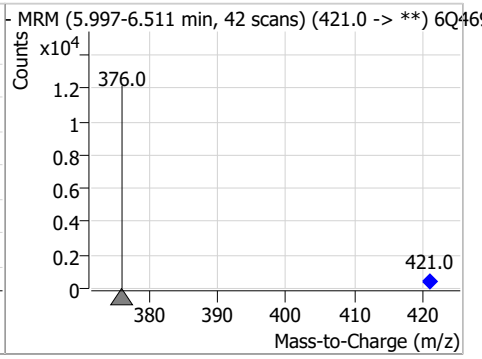




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.88	6.13	-0.01	379315				

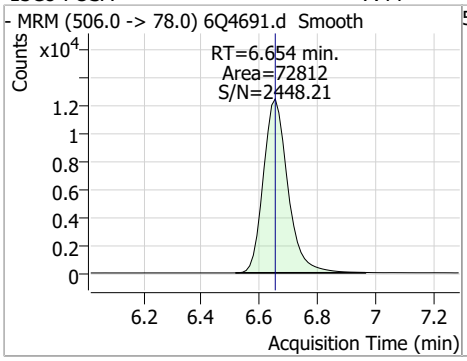


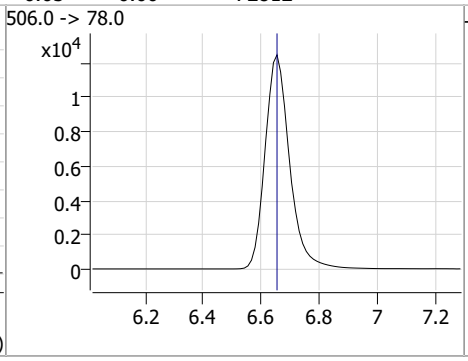


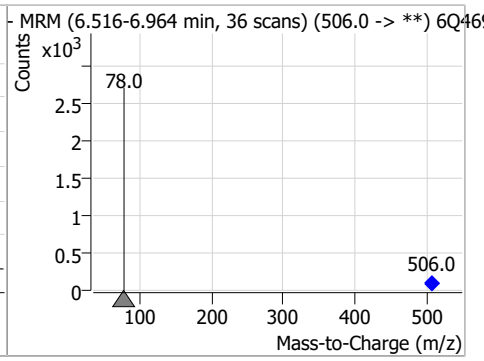


Perfluorinated Compounds by LC/MS/MS

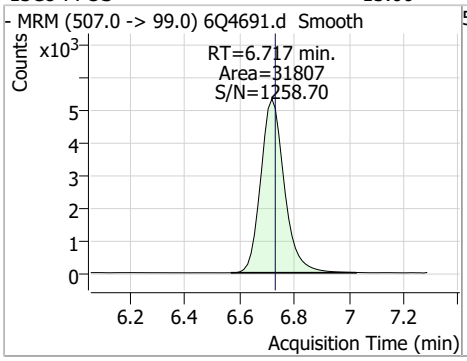
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.44	6.65	0.00	72812				

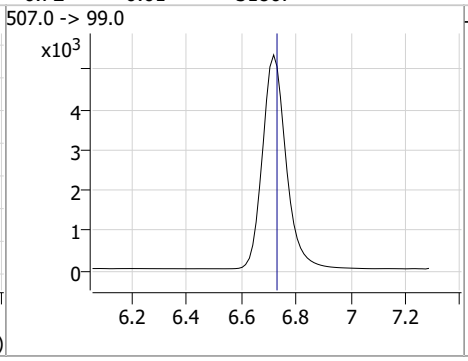


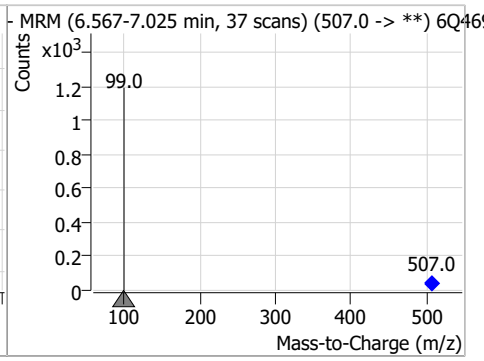




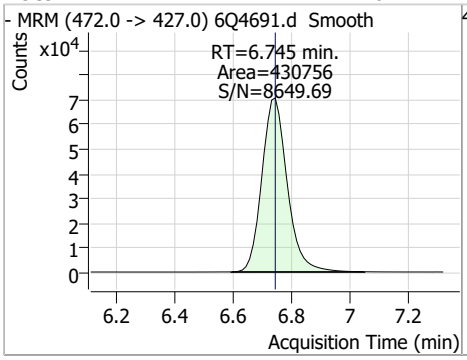
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.00	6.72	-0.01	31807				

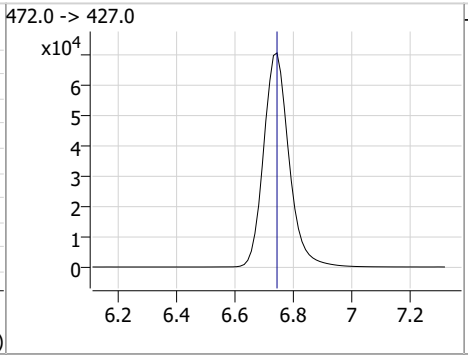


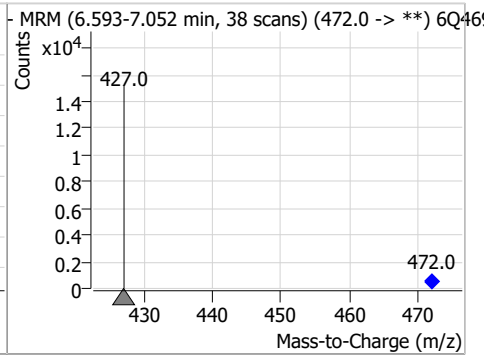




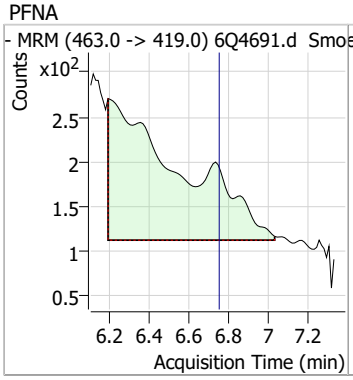
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.72	6.74	0.00	430756				

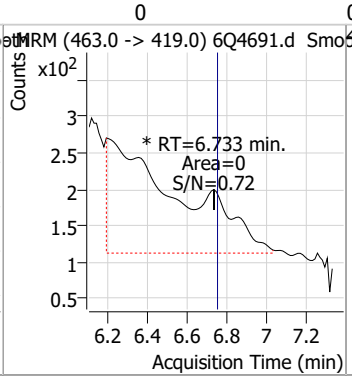


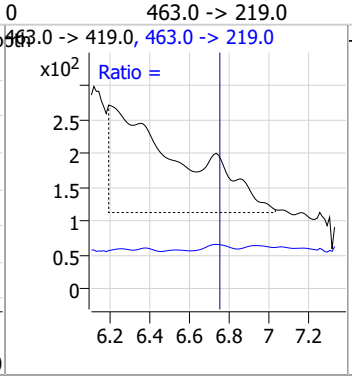


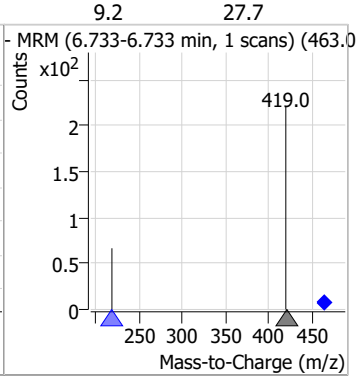


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		9.2	27.7



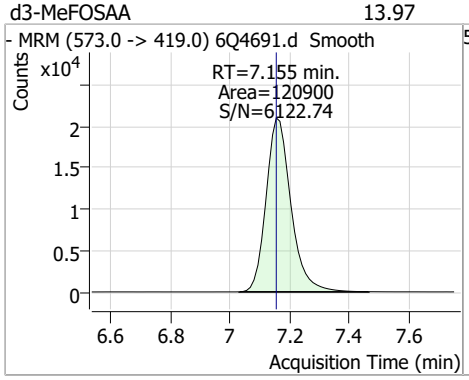


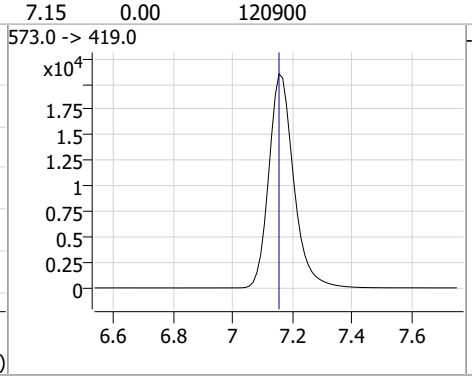


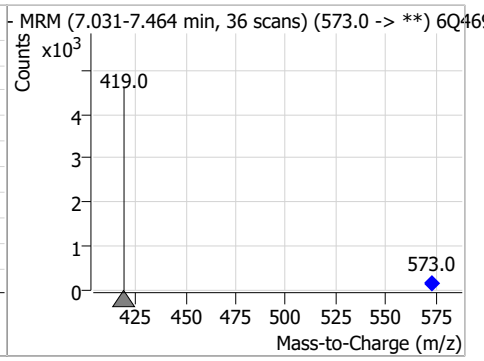


Perfluorinated Compounds by LC/MS/MS

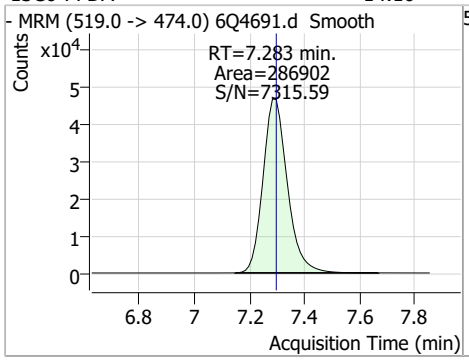
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.97	7.15	0.00	120900				

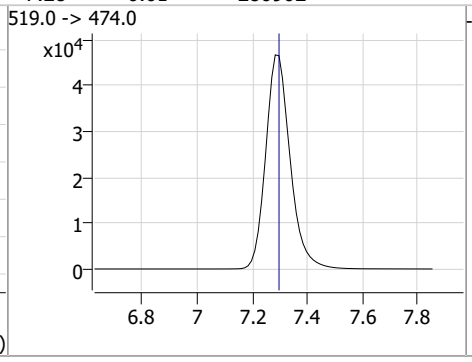


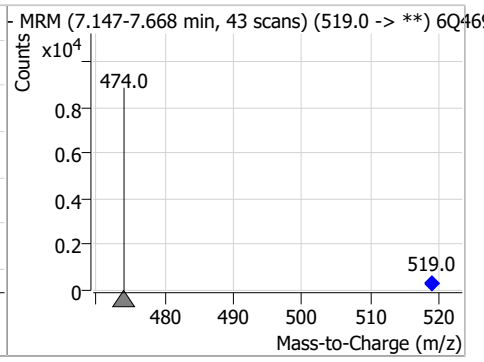




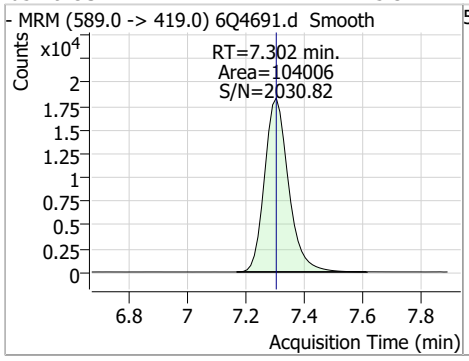
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.10	7.28	-0.01	286902				

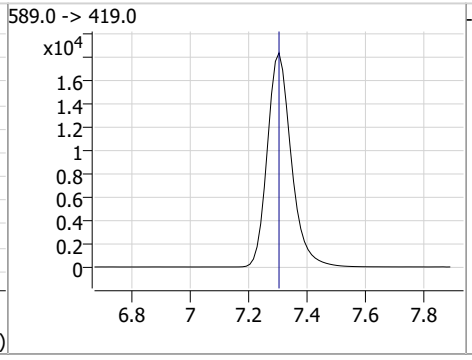


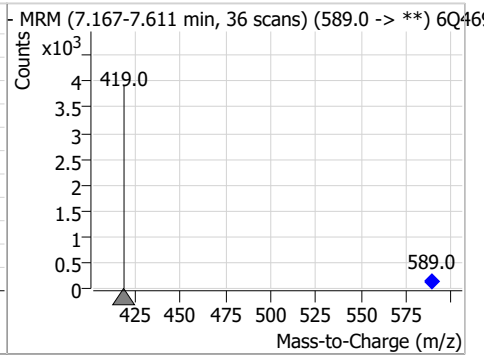




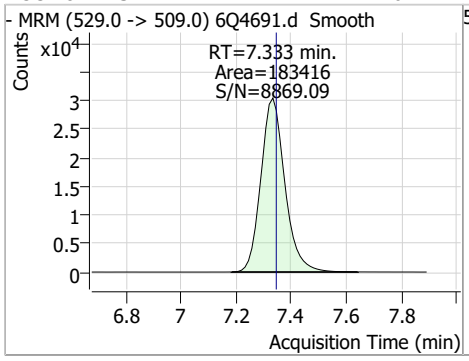
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.32	7.30	0.00	104006				

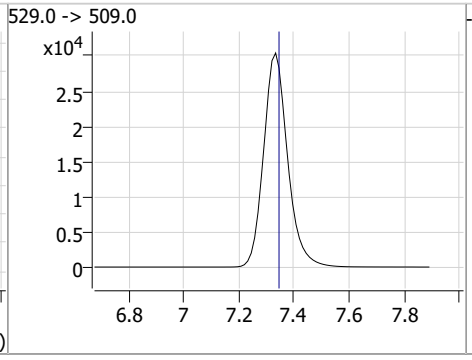


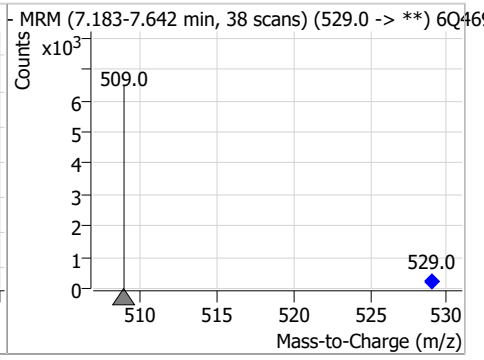




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.07	7.33	-0.01	183416				

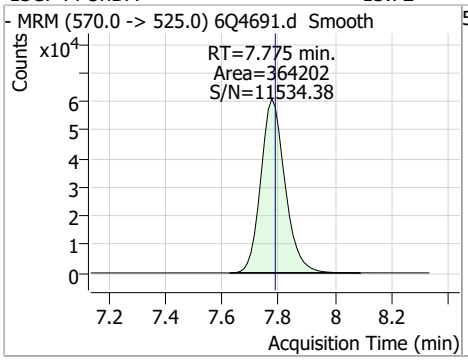


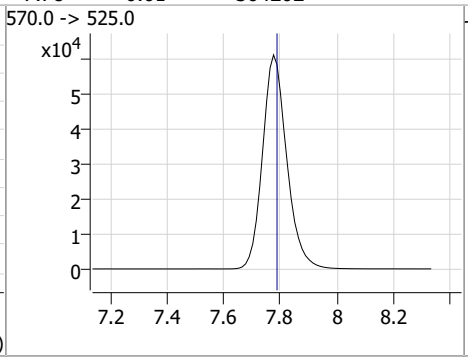


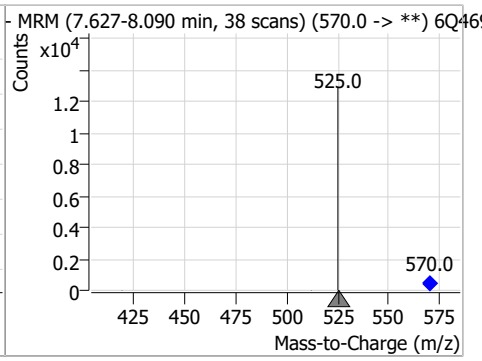


Perfluorinated Compounds by LC/MS/MS

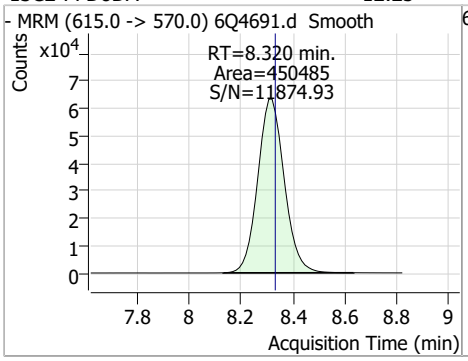
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.72	7.78	-0.01	364202				

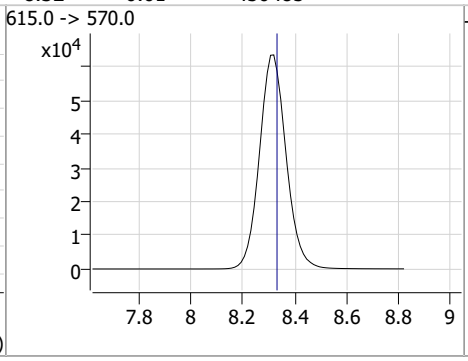


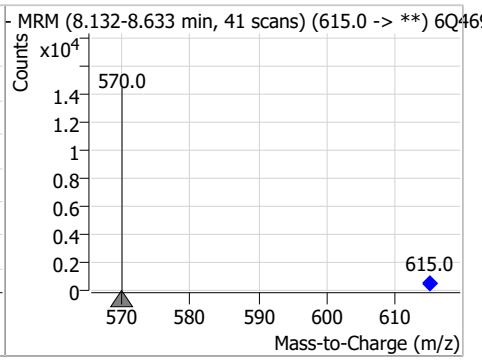




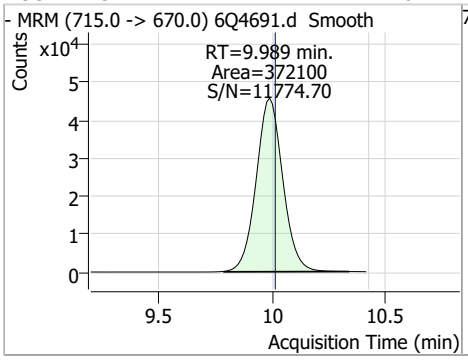
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.25	8.32	-0.01	450485				

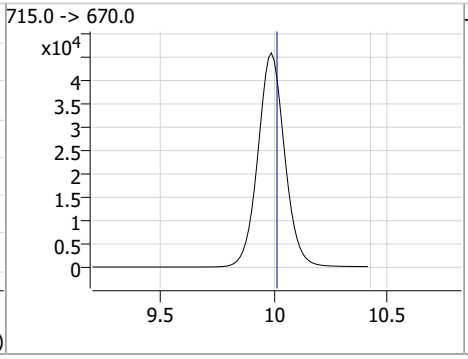


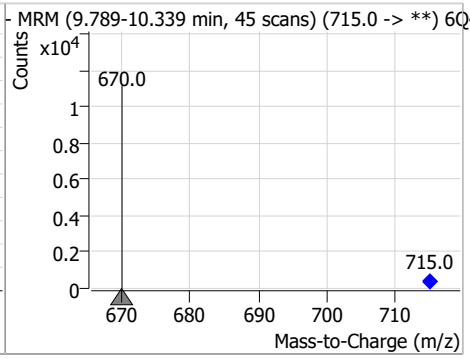




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.40	9.99	-0.02	372100				







Manual Integration Approval Summary

Sample Number: FA98286-35
Lab FileID: 6Q4691.D
Injection Time: 09/15/22 05:57
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:05 Norman Farmer
Supervisor approved: 09/19/22 16:05 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
d3-MeFOSA			7.08	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4756.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 5:47:11 AM
Sample Name : fa98286-35
Vial : P2-B6
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	12863	4.00	µg/L	-0.050
M5-PFPeA	3.393	268.0 -> 223.0	23041	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	37730	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	44710	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	81557	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	93032	4.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	63782	4.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	75226	4.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	95974	4.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	82039	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	17826	4.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	5475	4.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	5403	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6908	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	45213	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	63237	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	37374	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	27186	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	845	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	984	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	22365	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	45213	3.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
13C2-6:2FTS	6.124	429.0 -> 409.0	63237	3.70	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.5%		
13C2-8:2FTS	7.333	529.0 -> 509.0	37374	2.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%		
13C2-PFDoDA	8.320	615.0 -> 570.0	95974	2.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C2-PFTeDA	9.989	715.0 -> 670.0	82039	2.73	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.7%		
13C3-PFBS	3.610	302.0 -> 99.0	5475	3.57	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.9%		
13C3-PFHxS	5.463	402.0 -> 99.0	5403	3.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.5%		
13C4-PFBA	1.899	217.0 -> 172.0	12863	3.23	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.2%		
13C4-PFHpA	5.433	367.0 -> 322.0	44710	3.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.1%		
13C5-PFHxA	4.561	318.0 -> 273.0	37730	3.53	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.6%		
13C5-PFPeA	3.393	268.0 -> 223.0	23041	3.29	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C6-PFDA	7.297	519.0 -> 474.0	63782	3.13	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

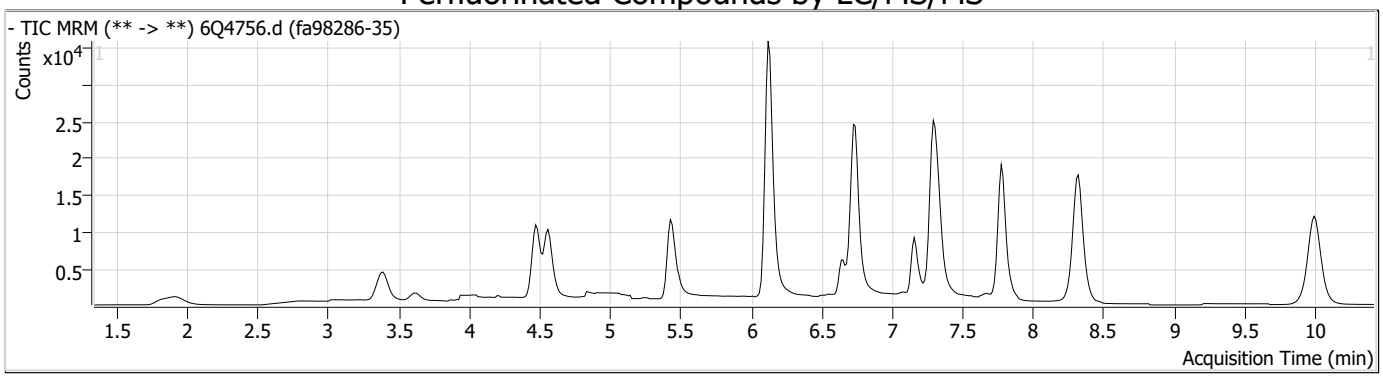
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%			
13C7-PFUnDA	7.775	570.0 -> 525.0	75226	2.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%			
13C8-FOSA	6.654	506.0 -> 78.0	17826	1.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.1%			
13C8-PFOA	6.138	421.0 -> 376.0	81557	3.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.2%			
13C8-PFOS	6.717	507.0 -> 99.0	6908	3.26	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%			
13C9-PFNA	6.745	472.0 -> 427.0	93032	3.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.1%			
d3-MeFOSAA	7.155	573.0 -> 419.0	27186	3.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	845	3.18	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%			
d3-MeFOSA	7.085	515.0 -> 169.0	984	0.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	22375	3.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.050	313.0 -> 269.0	0		µg/L	m	1
		313.0 -> 119.0	0				
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

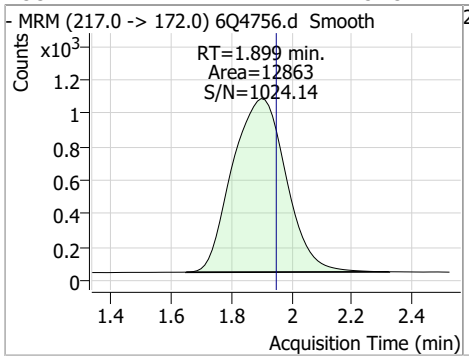
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

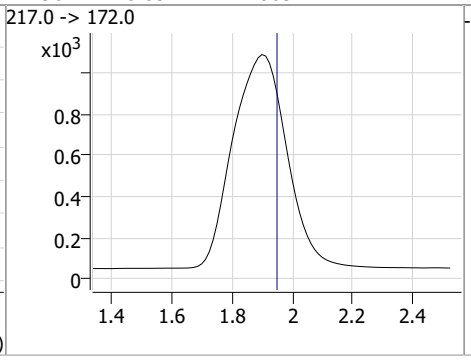
 # = Qualifier out of range, m = manually integrated, + = Area summed

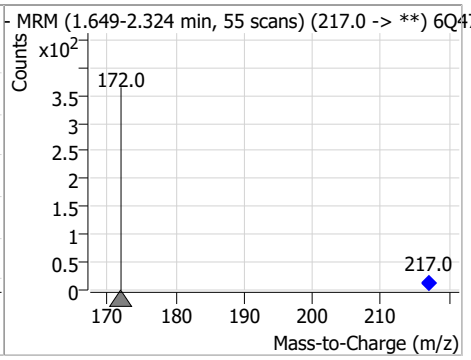
Perfluorinated Compounds by LC/MS/MS



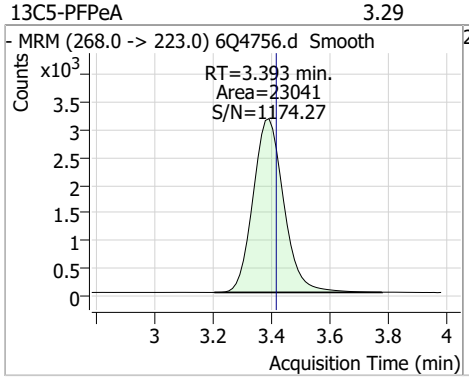
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.23	1.90	-0.05	12863				

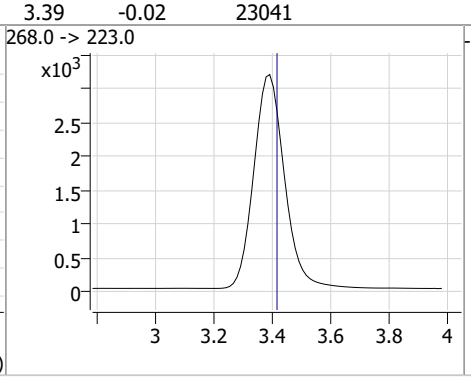


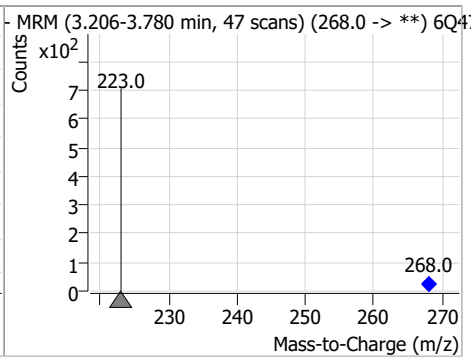




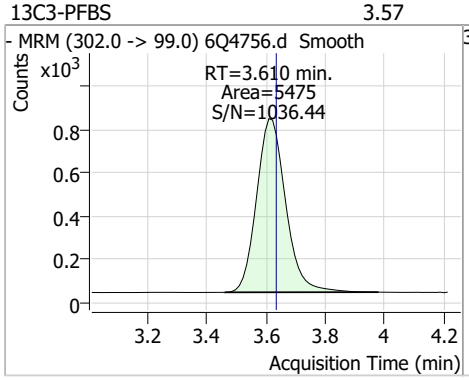
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.29	3.39	-0.02	23041				

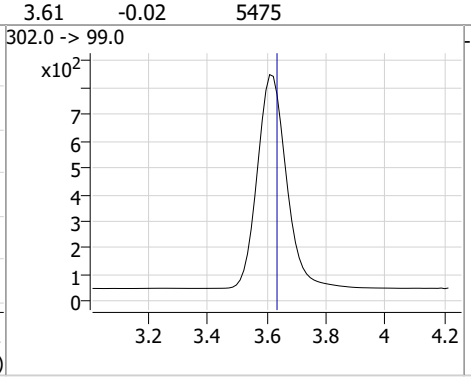


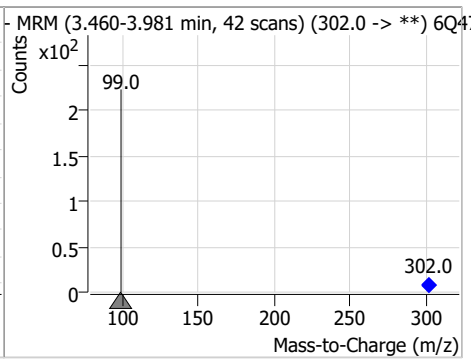




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.57	3.61	-0.02	5475				

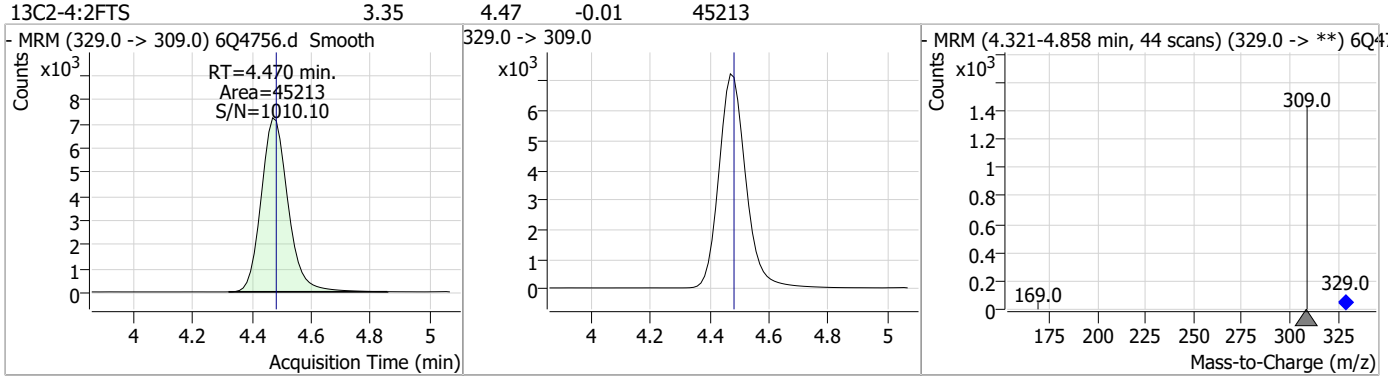




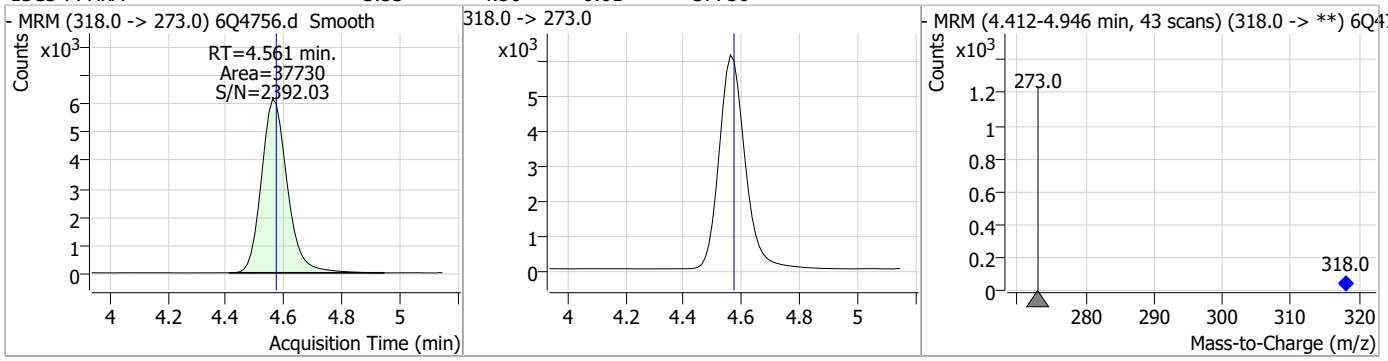


Perfluorinated Compounds by LC/MS/MS

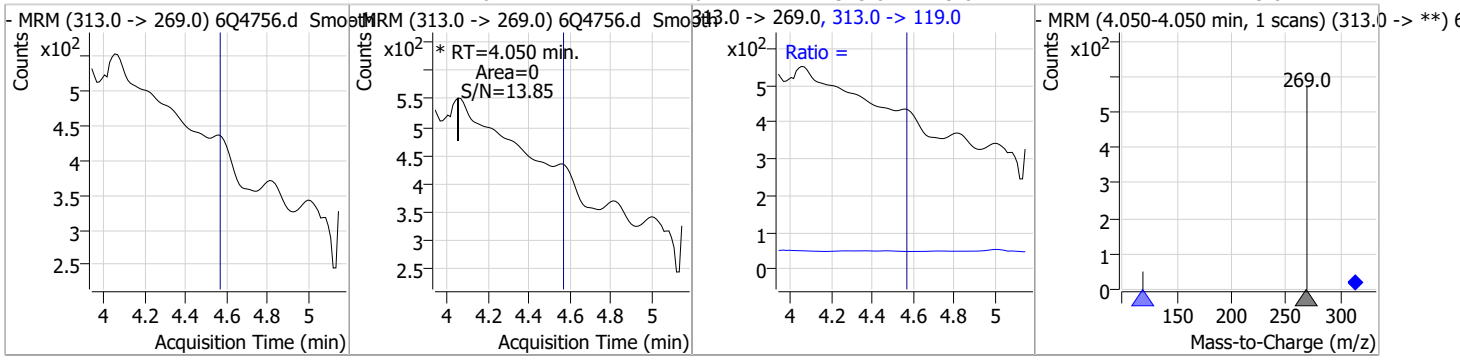
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.35	4.47	-0.01	45213				



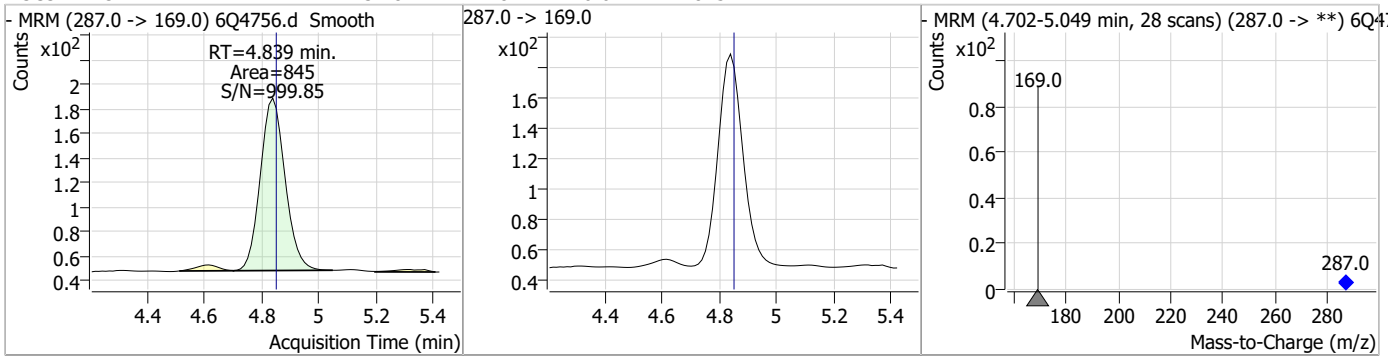
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.53	4.56	-0.01	37730				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		1.2	3.6

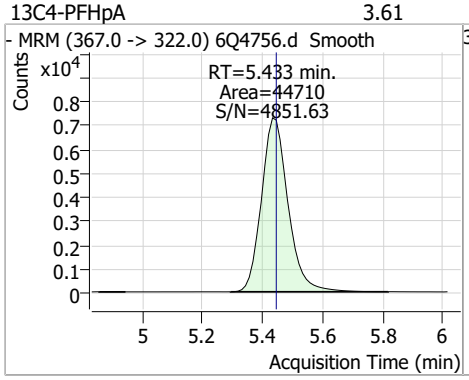


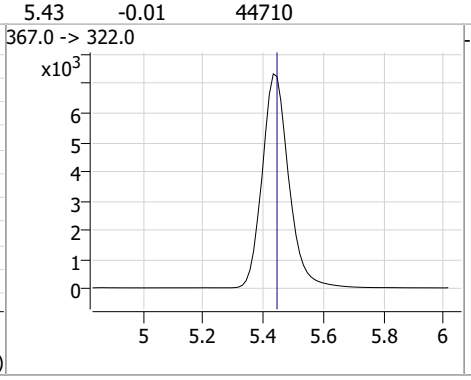
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.18	4.84	-0.01	845				

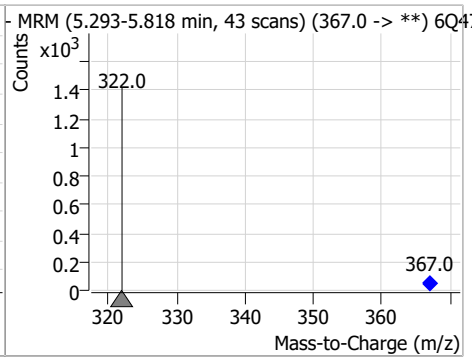


Perfluorinated Compounds by LC/MS/MS

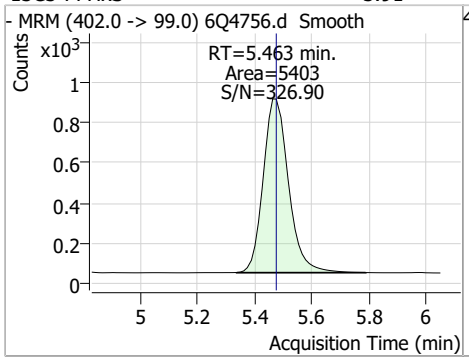
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.61	5.43	-0.01	44710				

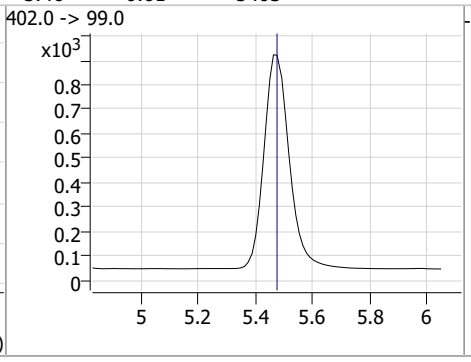


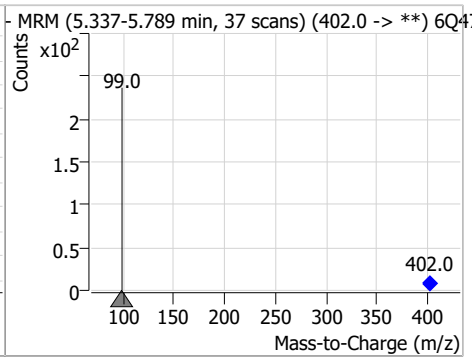




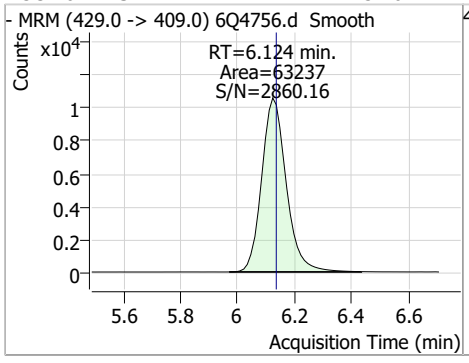
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.91	5.46	-0.01	5403				

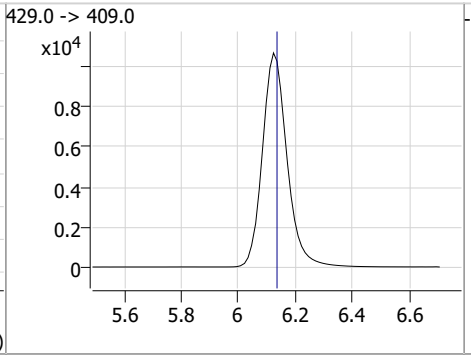


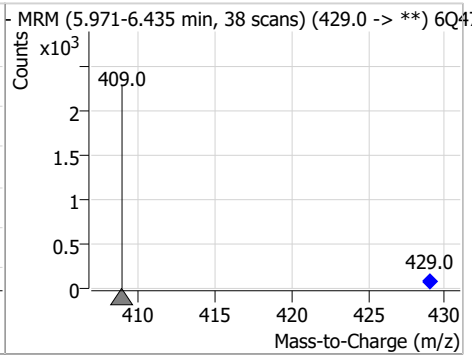




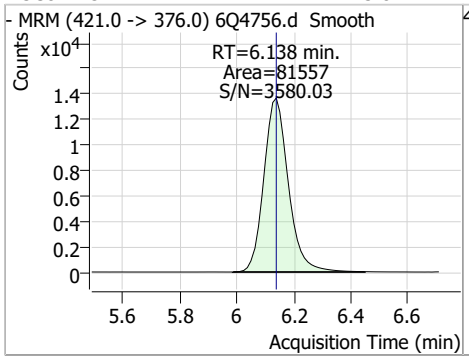
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.70	6.12	-0.01	63237				

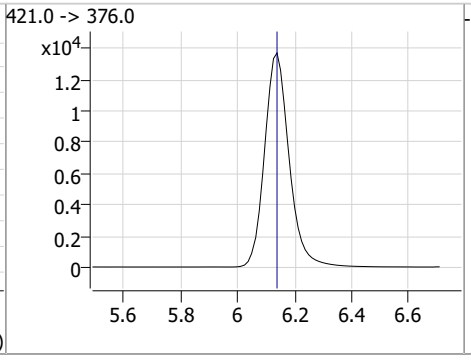


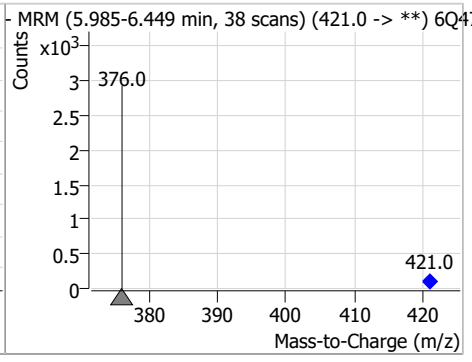




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.84	6.14	0.00	81557				

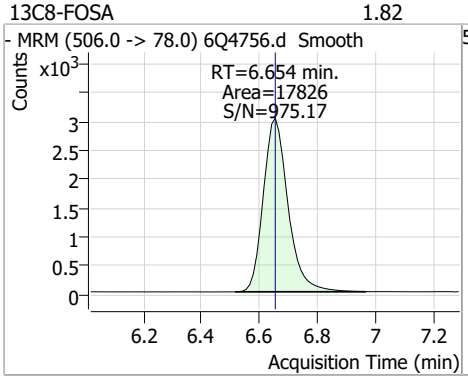


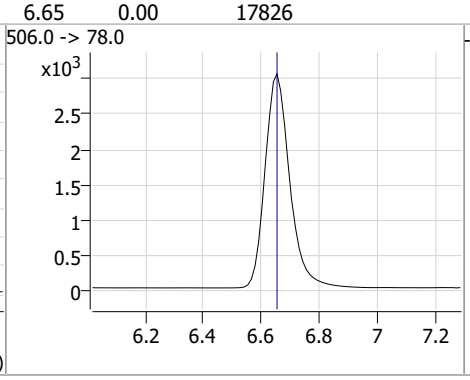


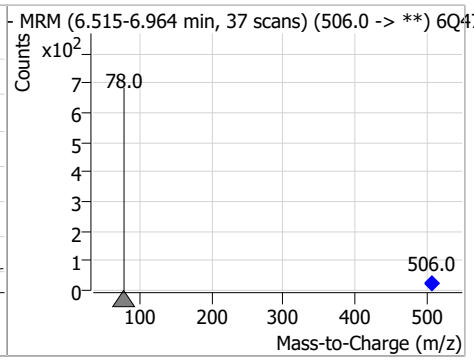


Perfluorinated Compounds by LC/MS/MS

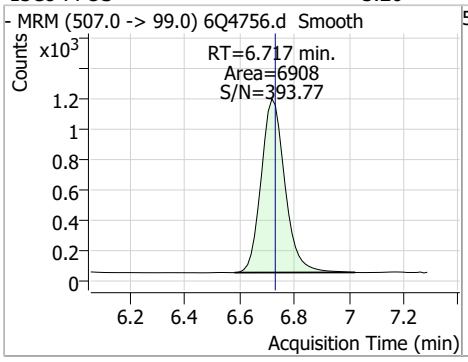
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.82	6.65	0.00	17826				

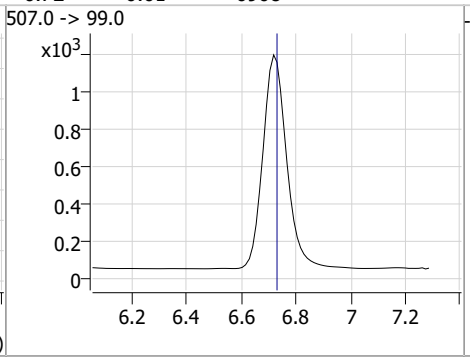


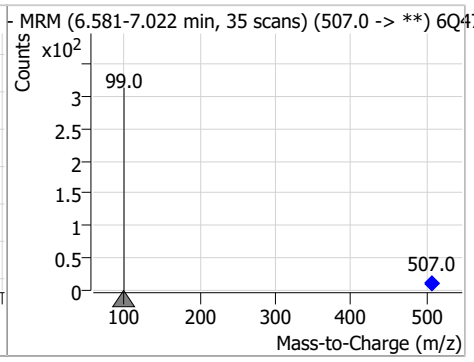




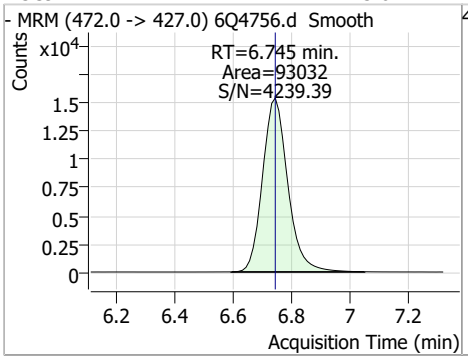
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.26	6.72	-0.01	6908				

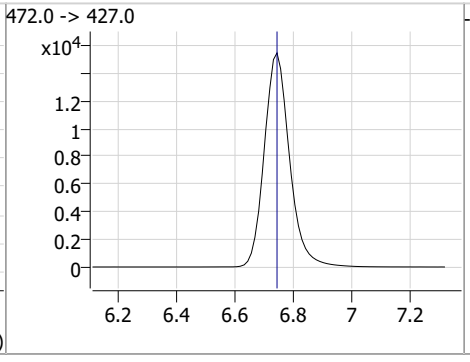


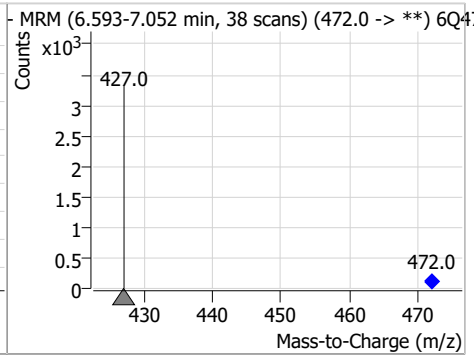




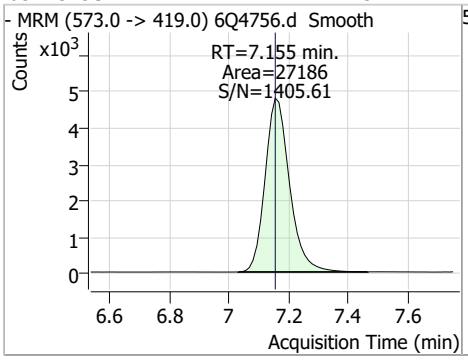
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.61	6.74	0.00	93032				

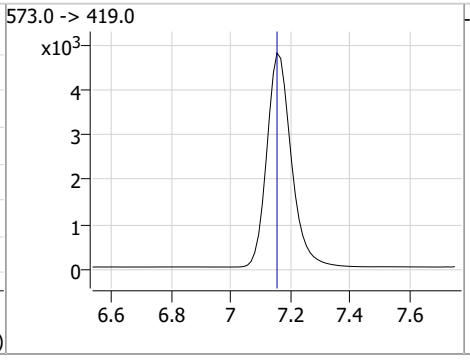


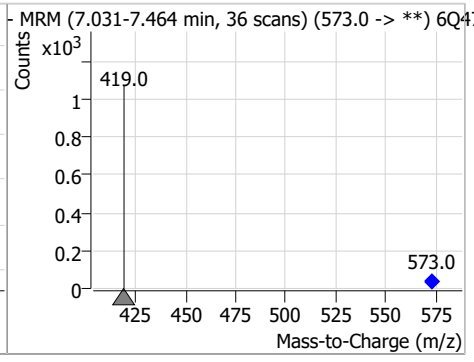




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.14	7.15	0.00	27186				

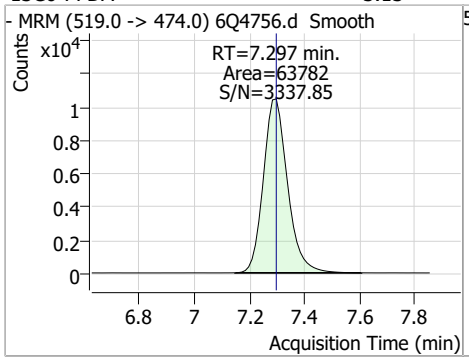


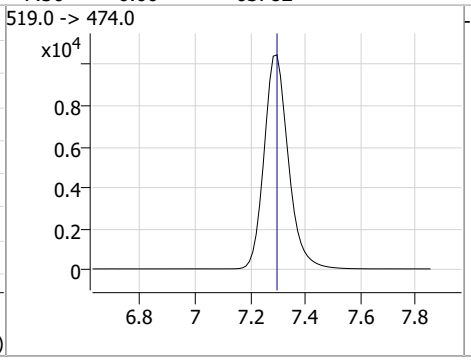


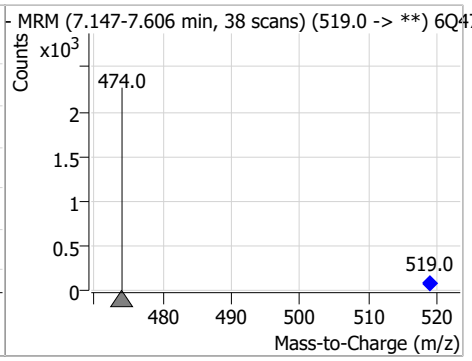


Perfluorinated Compounds by LC/MS/MS

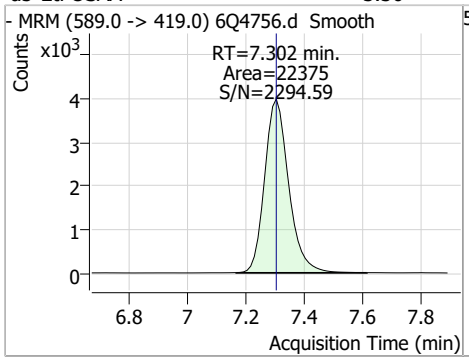
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.13	7.30	0.00	63782				

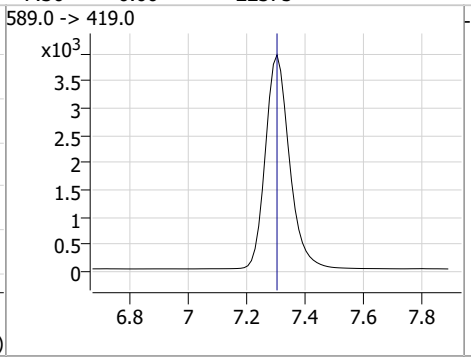


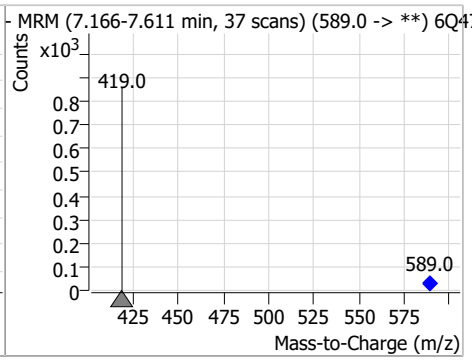




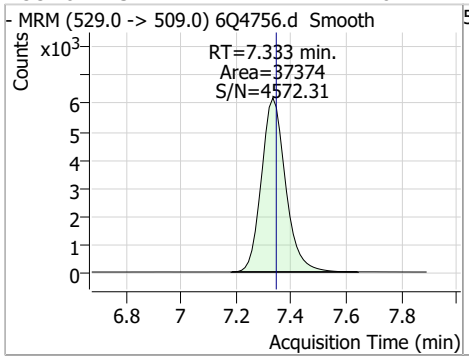
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.30	7.30	0.00	22375				

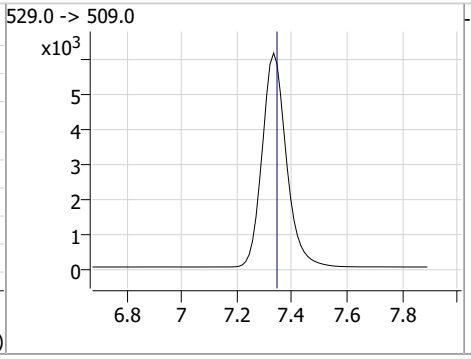


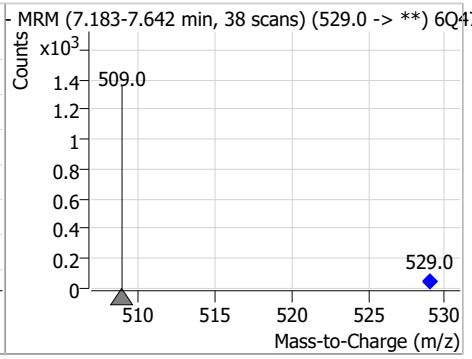




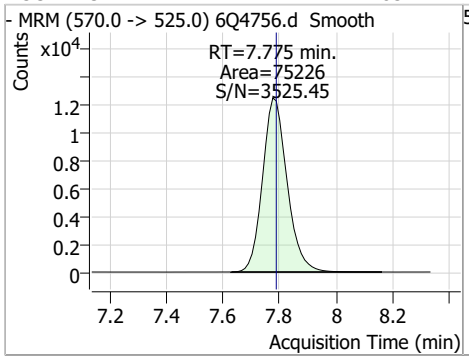
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.87	7.33	-0.01	37374				

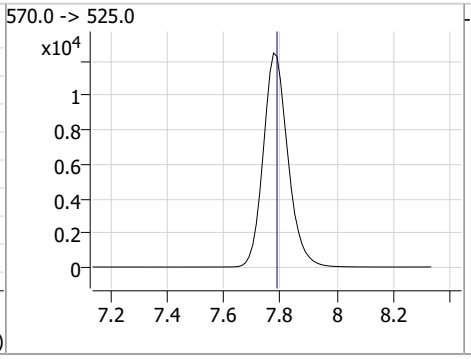


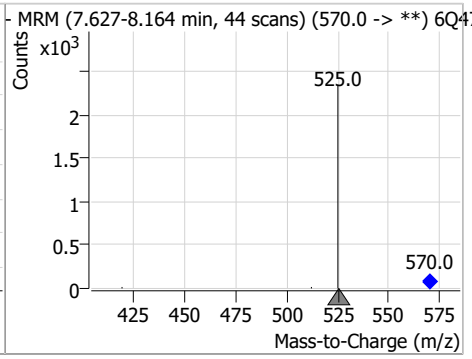




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.83	7.78	-0.01	75226				

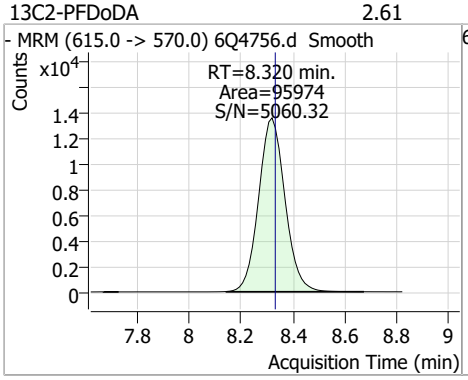


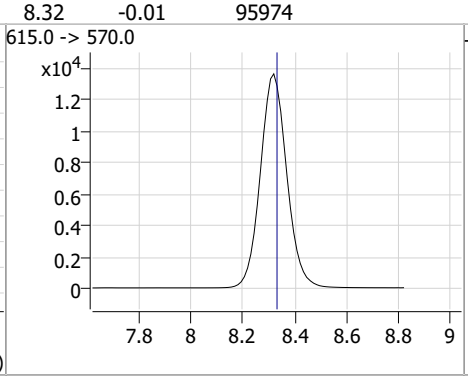


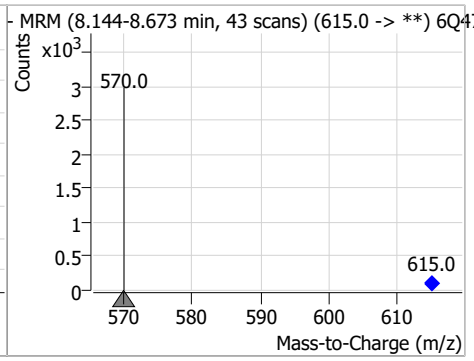


Perfluorinated Compounds by LC/MS/MS

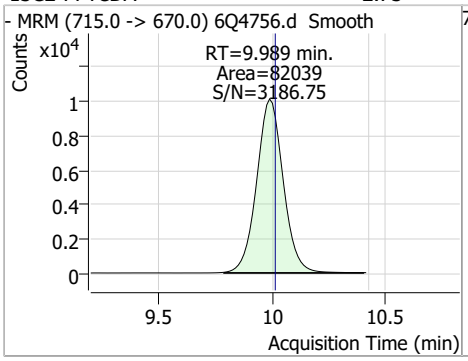
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.61	8.32	-0.01	95974				

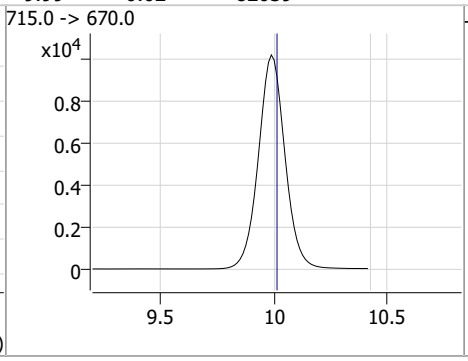


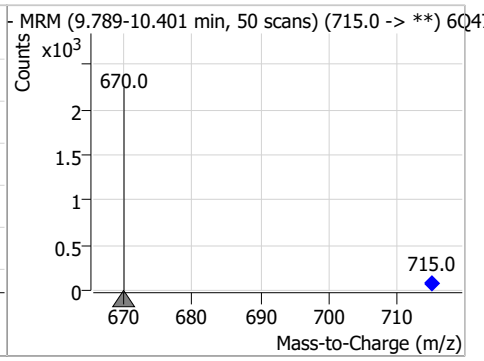




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.73	9.99	-0.02	82039				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4692.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:13:58 AM
Sample Name : fa98286-36
Vial : P5-F8
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	56104	20.00	µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	103585	20.00	µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	168733	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	189975	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	338590	20.00	µg/L	0.000
M9-PFNA	6.732	472.0 -> 427.0	315491	20.00	µg/L	-0.012
M6-PFDA	7.297	519.0 -> 474.0	311100	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	386975	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	511498	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	442558	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	98277	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	24588	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	23038	20.00	µg/L	-0.012
M8-PFOS	6.692	507.0 -> 99.0	26351	20.00	µg/L	-0.038
M2-4:2FTS	4.470	329.0 -> 309.0	200787	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	293083	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	196748	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	138667	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	3814	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	1063	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	113878	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	200787	14.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%		
13C2-6:2FTS	6.124	429.0 -> 409.0	293083	17.17	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	196748	15.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%		
13C2-PFDoDA	8.320	615.0 -> 570.0	511498	13.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%		
13C2-PFTeDA	9.989	715.0 -> 670.0	442558	14.75	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.8%		
13C3-PFBS	3.622	302.0 -> 99.0	24588	16.06	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%		
13C3-PFHxS	5.463	402.0 -> 99.0	23038	16.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C4-PFBA	1.936	217.0 -> 172.0	56104	14.10	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%		
13C4-PFHpA	5.433	367.0 -> 322.0	189975	15.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.8%		
13C5-PFHxA	4.561	318.0 -> 273.0	168733	15.79	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C5-PFPeA	3.405	268.0 -> 223.0	103585	14.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%		
13C6-PFDA	7.297	519.0 -> 474.0	311100	15.29	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

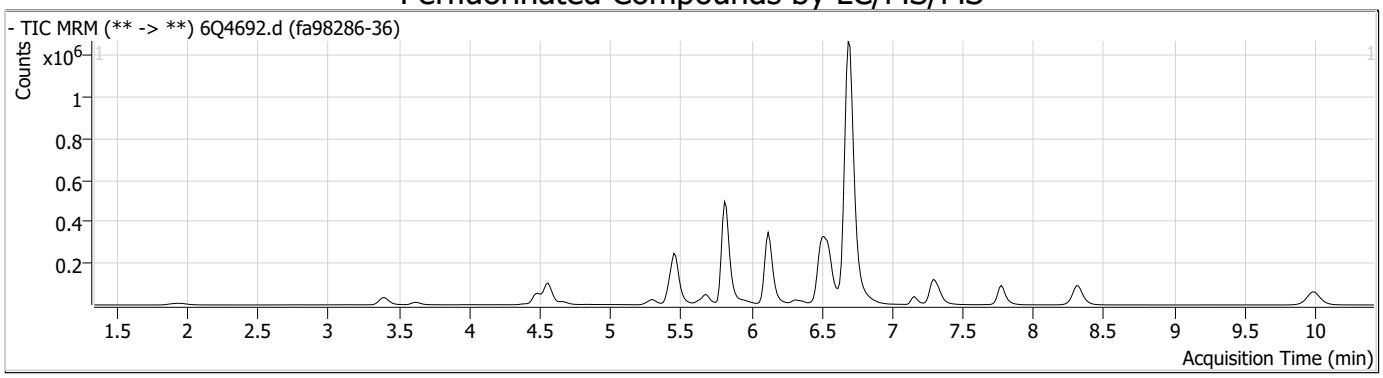
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%			
13C7-PFUnDA	7.775	570.0 -> 525.0	386975	14.58	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%			
13C8-FOSA	6.654	506.0 -> 78.0	98277	10.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.2%			
13C8-PFOA	6.138	421.0 -> 376.0	338590	15.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%			
13C8-PFOS	6.692	507.0 -> 99.0	26351	12.42	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.1%			
13C9-PFNA	6.732	472.0 -> 427.0	315491	12.24	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.2%			
d3-MeFOSAA	7.155	573.0 -> 419.0	138667	16.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	3818	14.37	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%			
d3-MeFOSA	7.085	515.0 -> 169.0	996	0.44	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	113877	16.77	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	6.124	427.0 -> 407.0	362858	24.45	µg/L		97
		427.0 -> 81.0	94404				
8:2FTS	7.334	527.0 -> 507.0	3599	0.36	µg/L		96
		527.0 -> 81.0	1327				
EtFOSAA	8.200	584.0 -> 419.0	0		µg/L	m	1
		584.0 -> 483.0					
FOSA	6.505	498.0 -> 78.0	3123	0.63	µg/L	m	94
		498.0 -> 478.0	179				
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.930	213.0 -> 169.0	10705	8.74	µg/L		100
PFBS	3.627	299.0 -> 80.0	23380	5.72	µg/L	m	98
		299.0 -> 99.0	9118				
PFDA	7.284	513.0 -> 469.0	13221	0.58	µg/L		97
		513.0 -> 219.0	1982				
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	188944	15.29	µg/L		100
		363.0 -> 169.0	27462				
PFHpS	6.136	449.0 -> 80.0	64197	27.90	µg/L	m	91
		449.0 -> 99.0	29716				
PFHxA	4.562	313.0 -> 269.0	249894	28.16	µg/L		100
		313.0 -> 119.0	6391				
PFHxS	5.465	399.0 -> 80.0	637502	193.11	µg/L	m	99
		399.0 -> 99.0	306016				
PFNA	6.733	463.0 -> 419.0	50191	3.38	µg/L		99
		463.0 -> 219.0	9418				
PFNS	6.836	549.0 -> 80.0	0		µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.126	413.0 -> 369.0	277312	15.16	µg/L	m	99
		413.0 -> 169.0	44138				
PFOS	6.693	499.0 -> 80.0	5425472	2220.93	µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

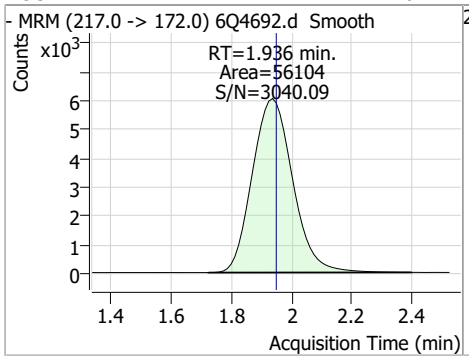
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	2767753				
PFPeA	3.395	263.0 -> 219.0	81215	18.61	µg/L		100
PFPeS	4.668	349.0 -> 80.0	33763	9.92	µg/L	m	96
		349.0 -> 99.0	16178				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	6.096	461.0 -> 381.0	0		µg/L	m	1
		461.0 -> 99.0	0				
FBSA	4.514	298.0 -> 78.0	70032	8.52	µg/L		99
		298.0 -> 64.0	4991				
FHxSA	5.828	398.0 -> 78.0	2223131	297.46	µg/L	m	100
		398.0 -> 64.0	78708				

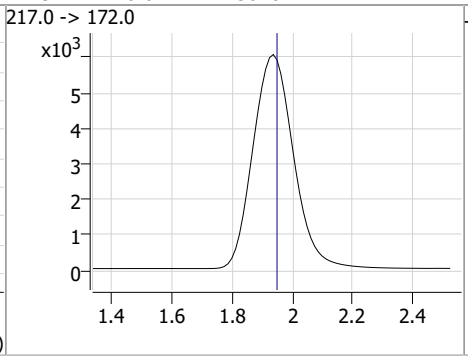
 # = Qualifier out of range, m = manually integrated, + = Area summed

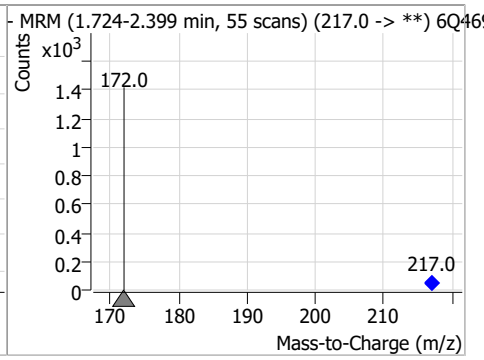
Perfluorinated Compounds by LC/MS/MS



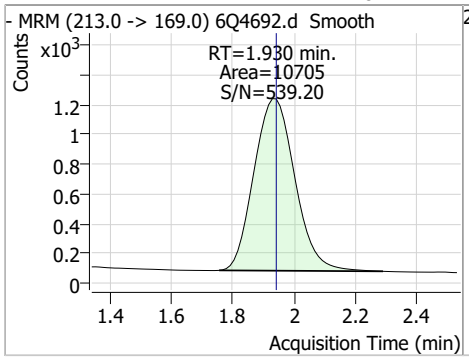
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.10	1.94	-0.01	56104				

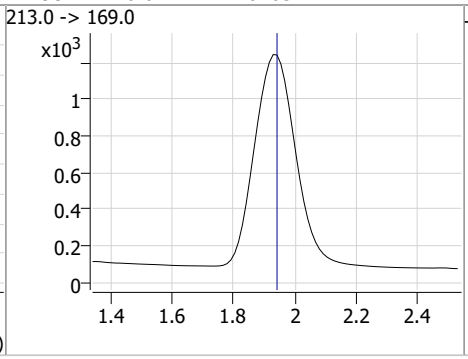


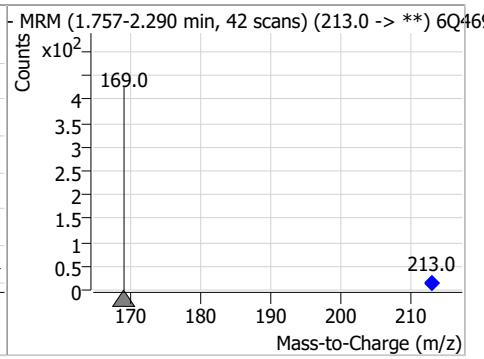




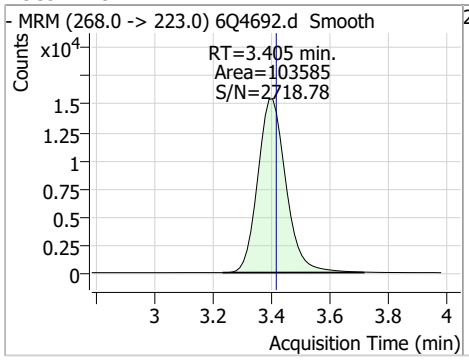
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	8.74	1.93	-0.02	10705				

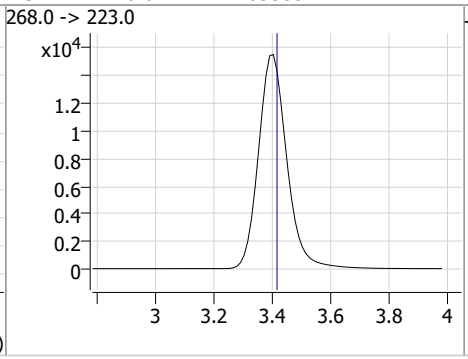


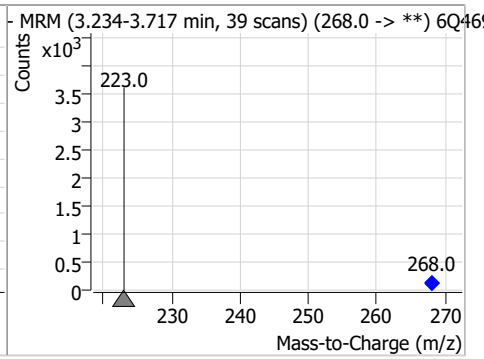




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.77	3.41	-0.01	103585				

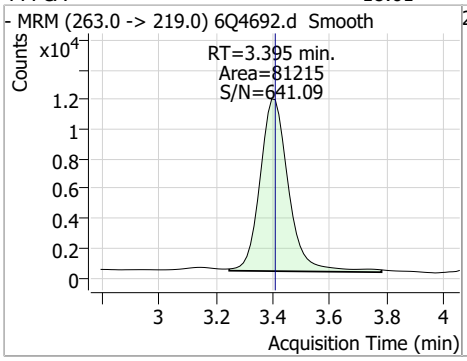


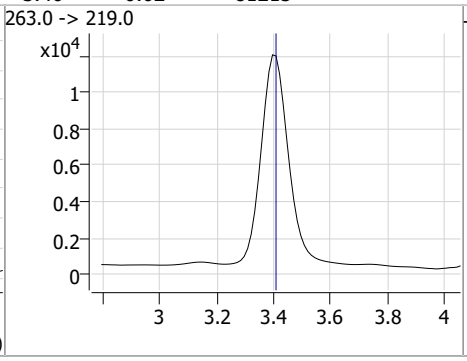


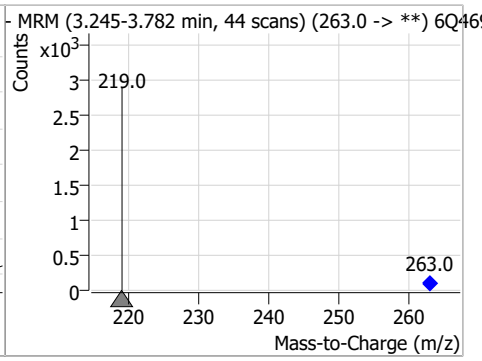


Perfluorinated Compounds by LC/MS/MS

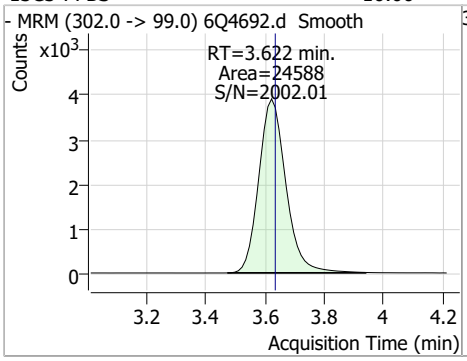
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.61	3.40	-0.02	81215				

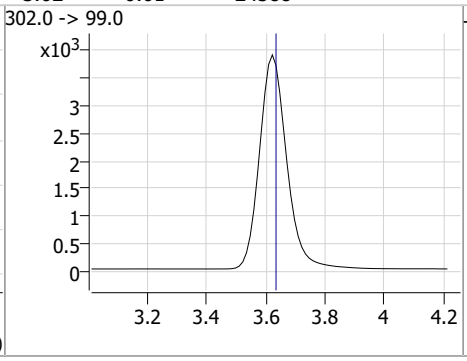


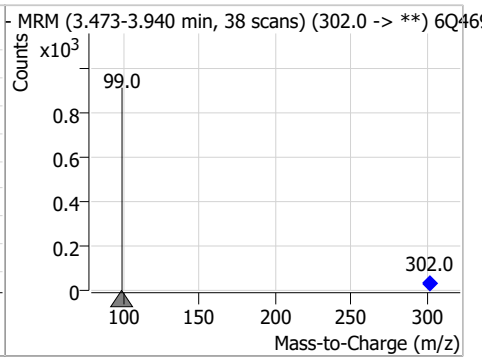




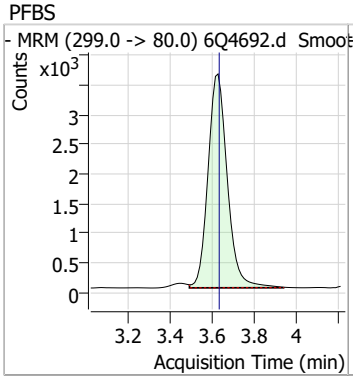
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.06	3.62	-0.01	24588				

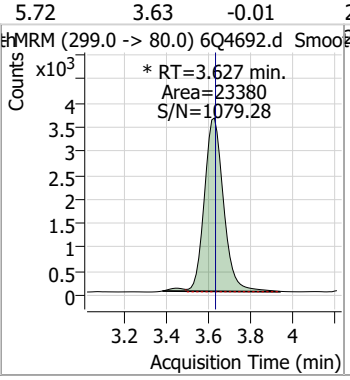


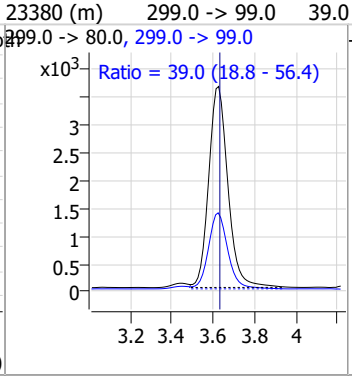


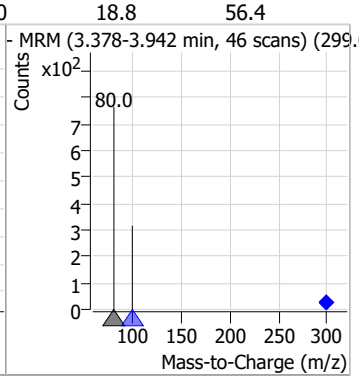


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.72	3.63	-0.01	23380 (m)	299.0 -> 99.0	39.0	18.8	56.4

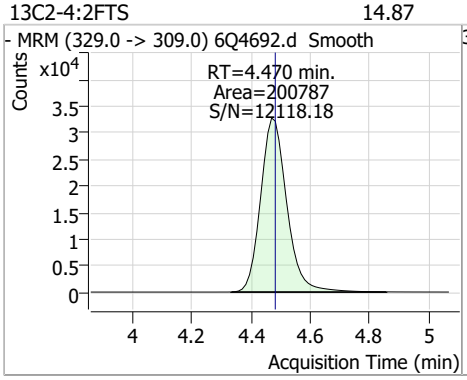


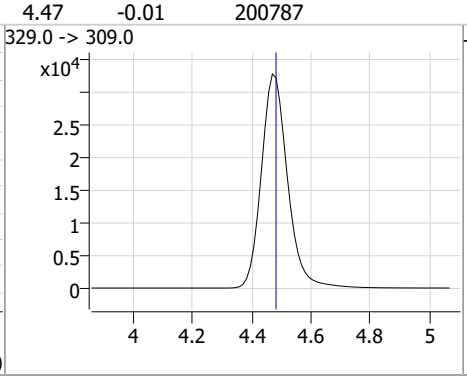


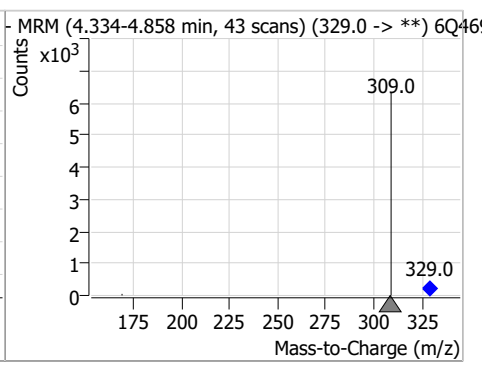




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.87	4.47	-0.01	200787				

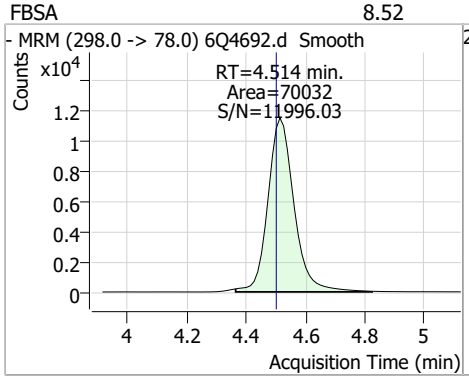


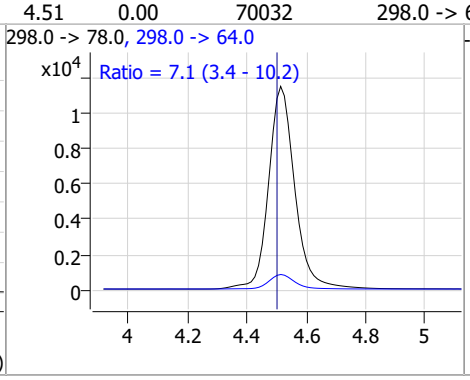


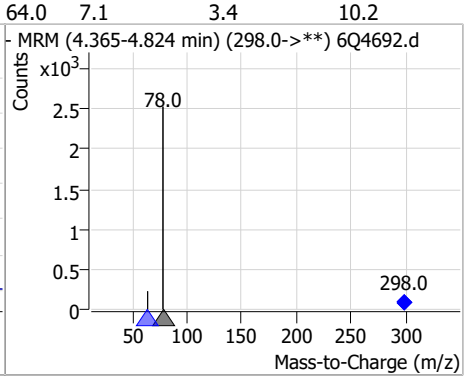


Perfluorinated Compounds by LC/MS/MS

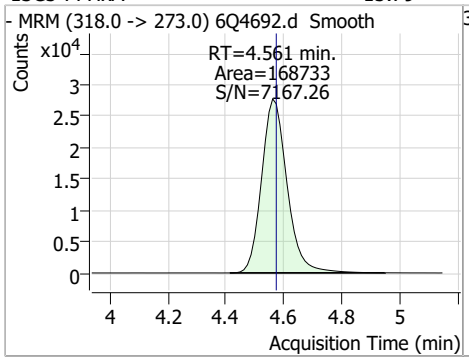
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	8.52	4.51	0.00	70032	298.0 -> 64.0	7.1	3.4	10.2

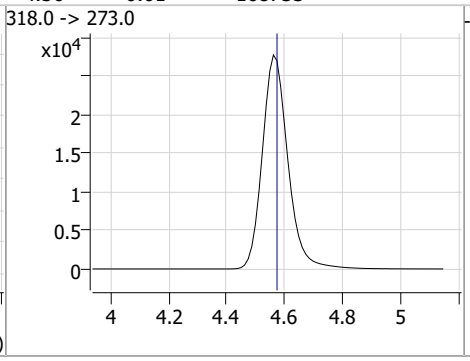


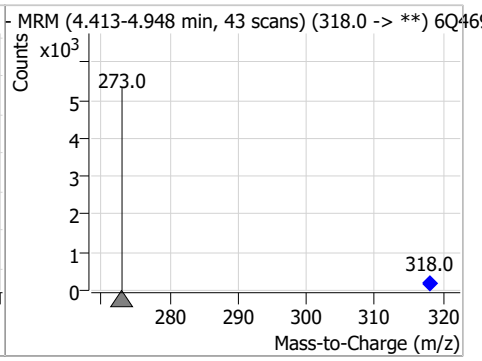




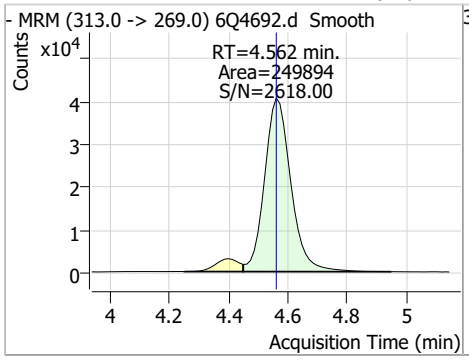
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.79	4.56	-0.01	168733				

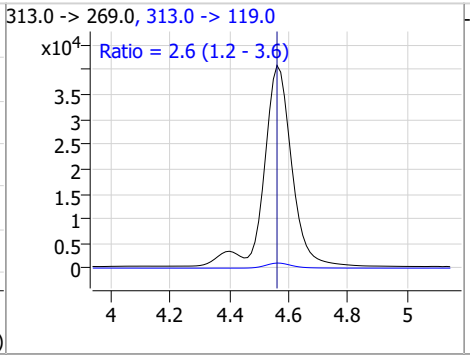


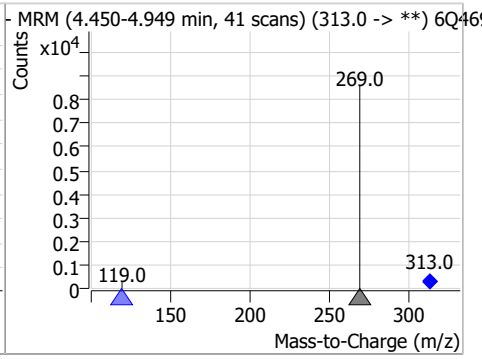




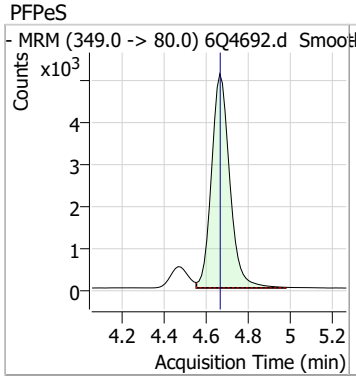
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	28.16	4.56	-0.01	249894	313.0 -> 119.0	2.6	1.2	3.6

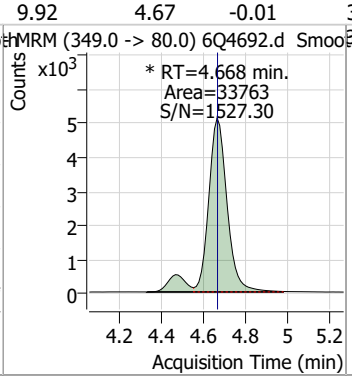


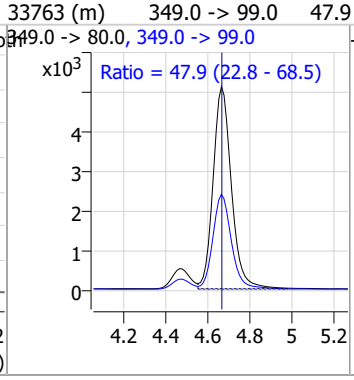


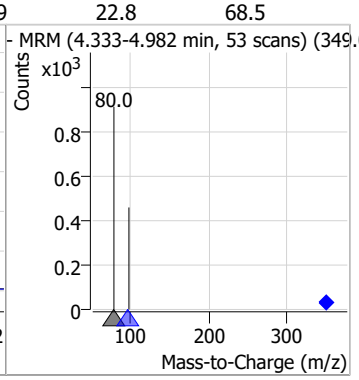


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.92	4.67	-0.01	33763 (m)	349.0 -> 99.0	47.9	22.8	68.5



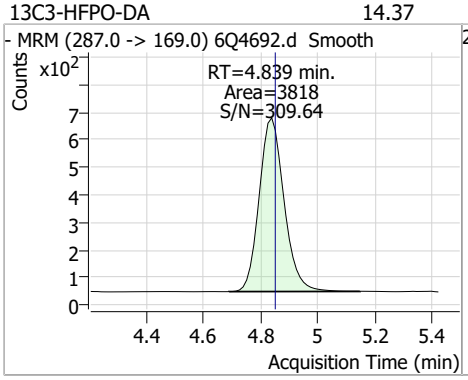


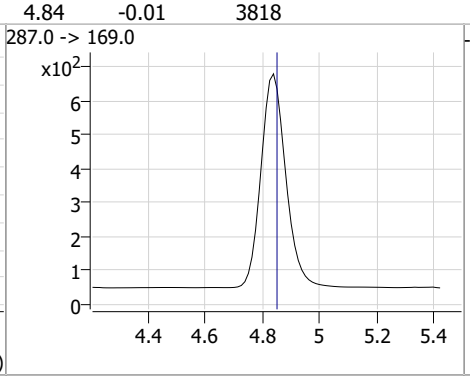


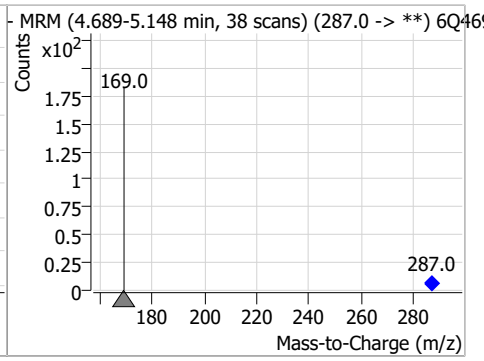


Perfluorinated Compounds by LC/MS/MS

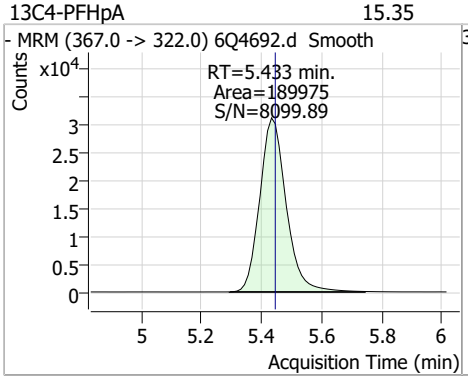
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.37	4.84	-0.01	3818				

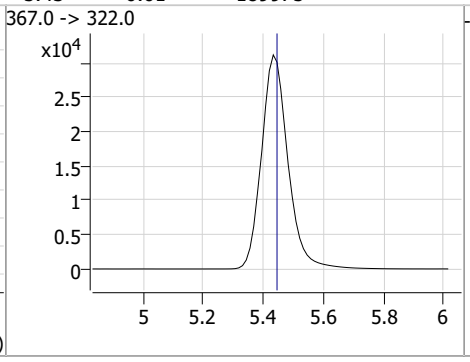


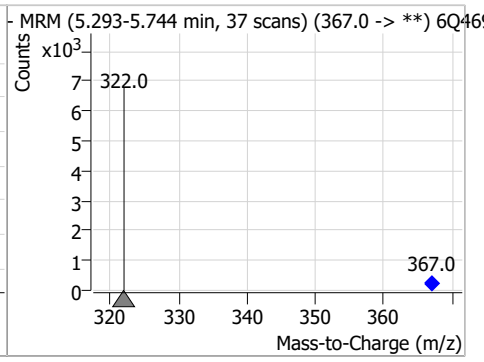




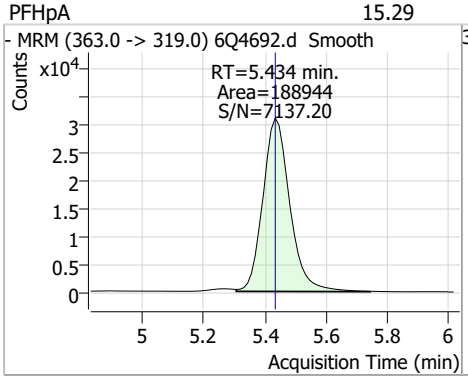
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.35	5.43	-0.01	189975				

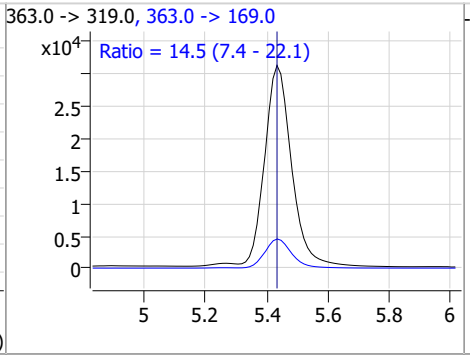


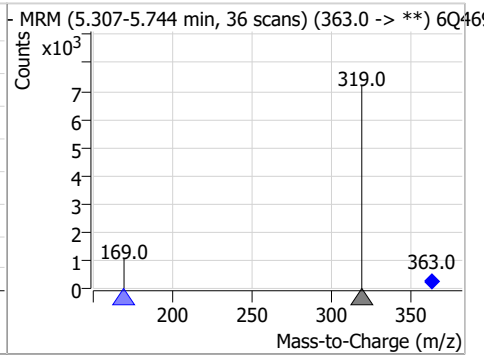




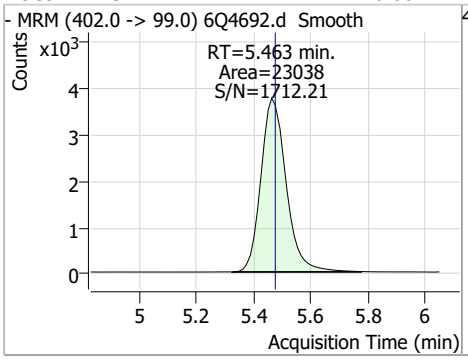
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	15.29	5.43	-0.01	188944	363.0 -> 169.0	14.5	7.4	22.1

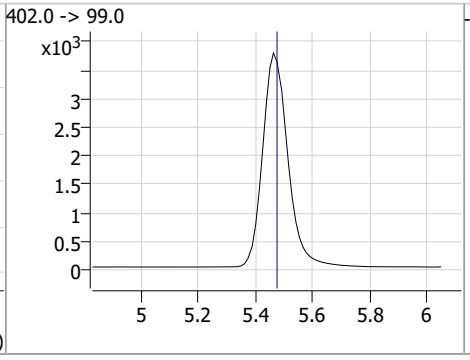


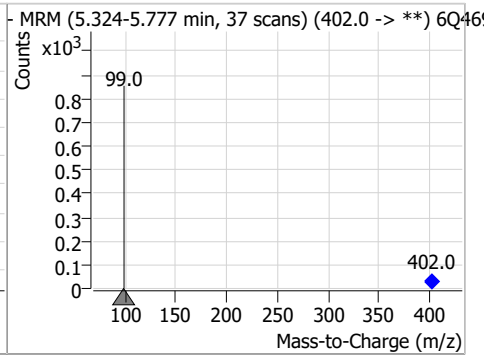




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.66	5.46	-0.01	23038				

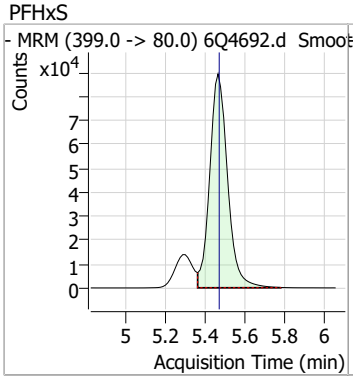


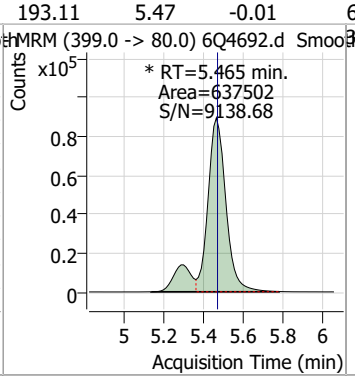


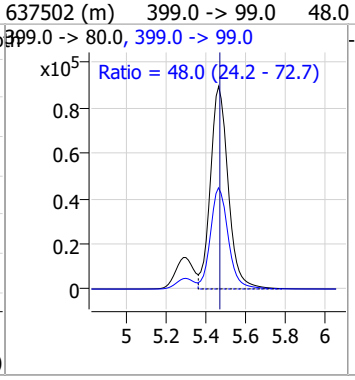


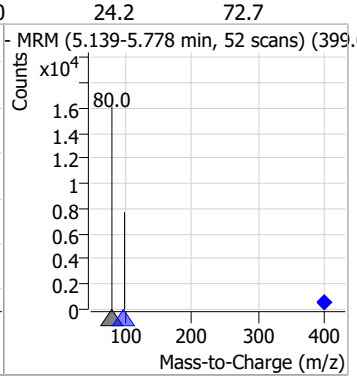
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	193.11	5.47	-0.01	637502 (m)	399.0 -> 99.0	48.0	24.2	72.7

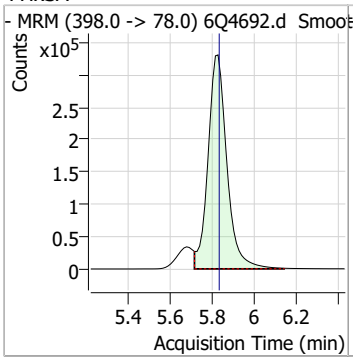


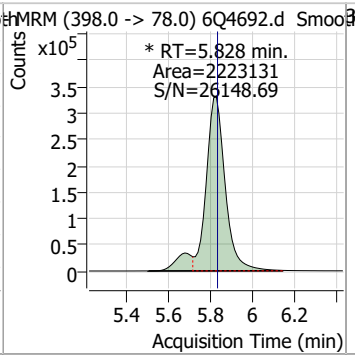


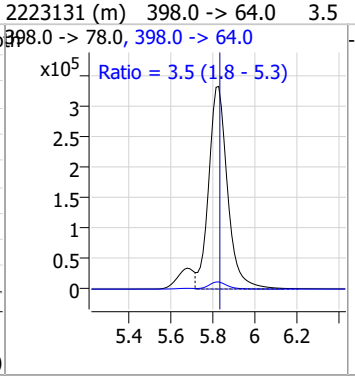


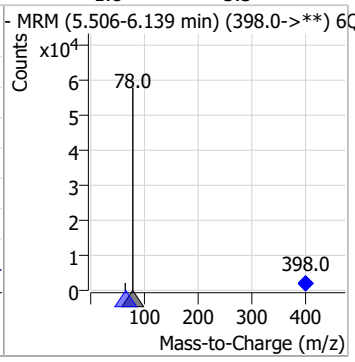


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	297.46	5.83	0.00	2223131 (m)	398.0 -> 64.0	3.5	1.8	5.3

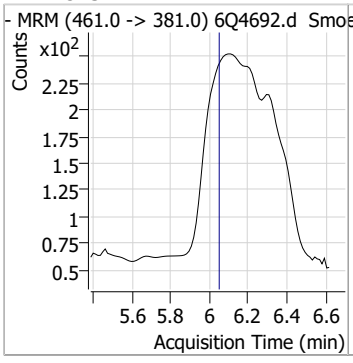


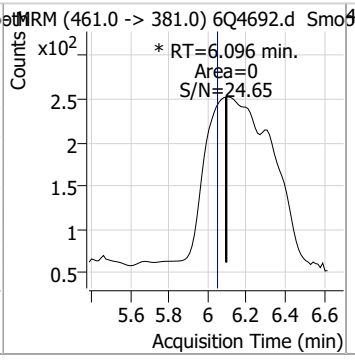


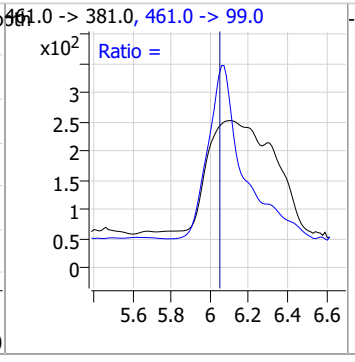


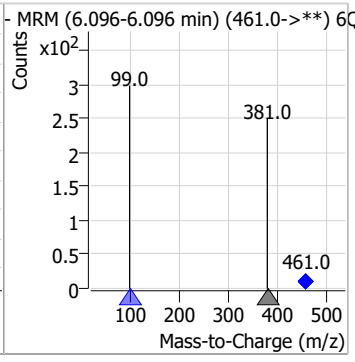


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS		0		0	461.0 -> 99.0		16.7	50.1

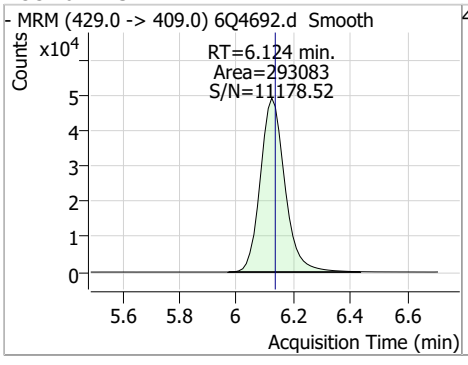


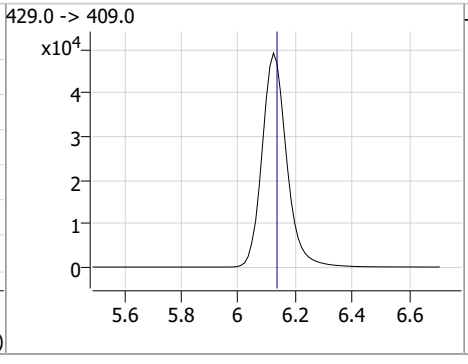


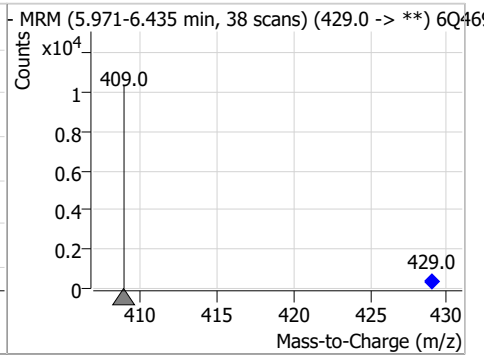




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.17	6.12	-0.01	293083				

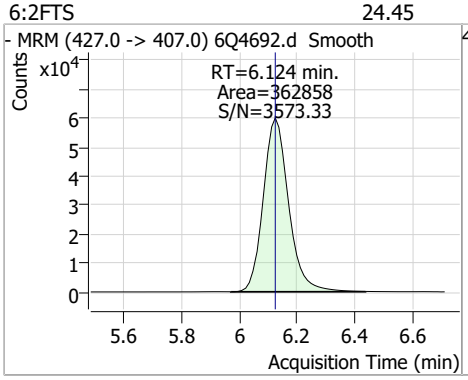


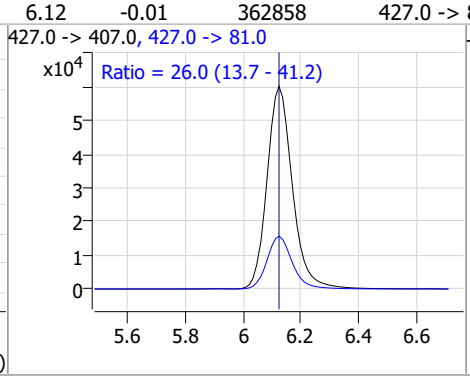


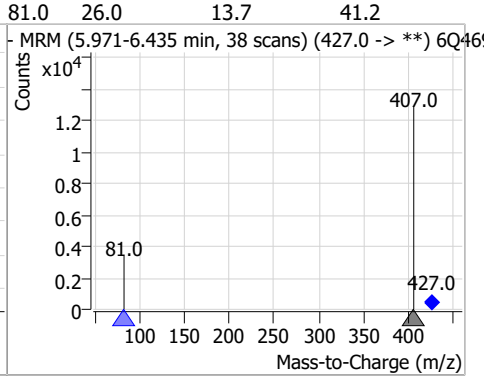


Perfluorinated Compounds by LC/MS/MS

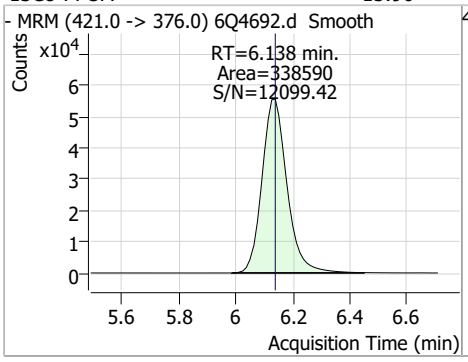
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	24.45	6.12	-0.01	362858	427.0 -> 81.0	26.0	13.7	41.2

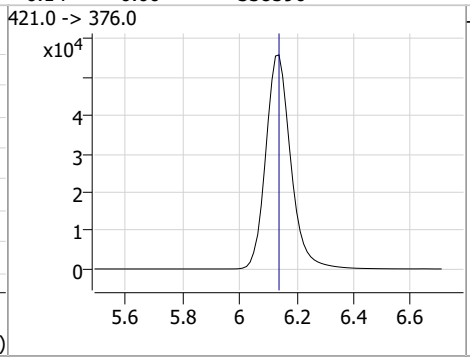


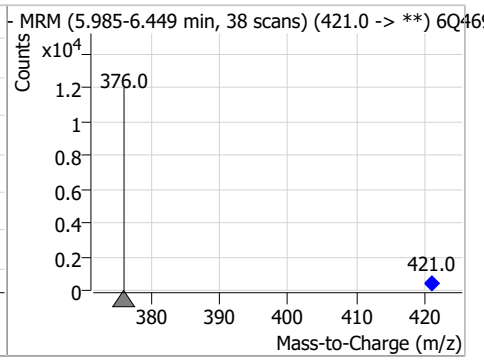




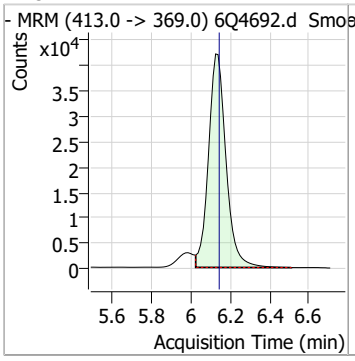
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.96	6.14	0.00	338590				

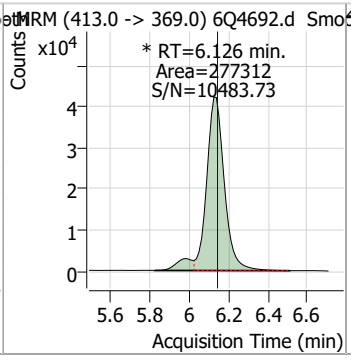


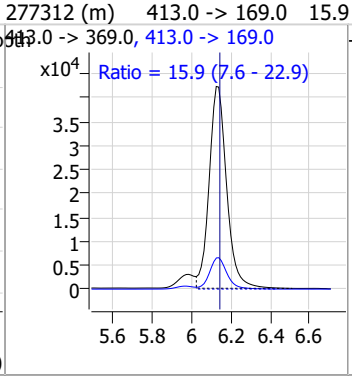


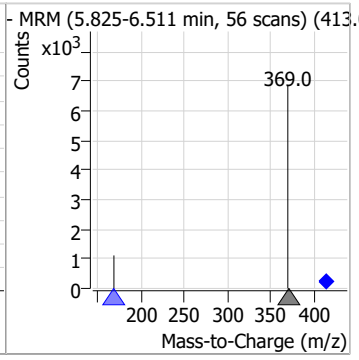


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	15.16	6.13	-0.01	277312 (m)	413.0 -> 169.0	15.9	7.6	22.9

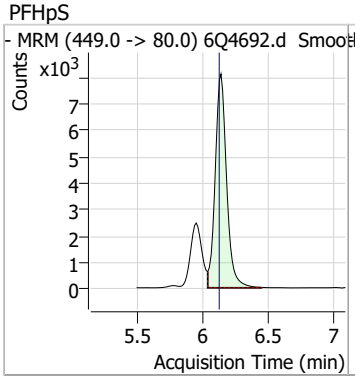


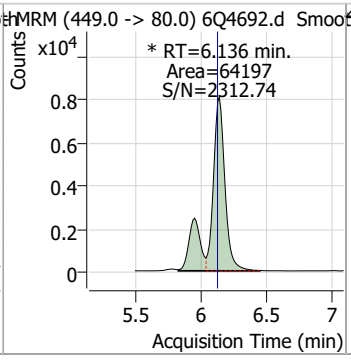


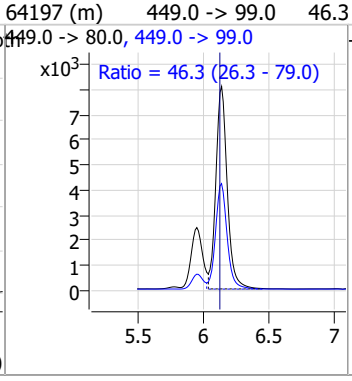


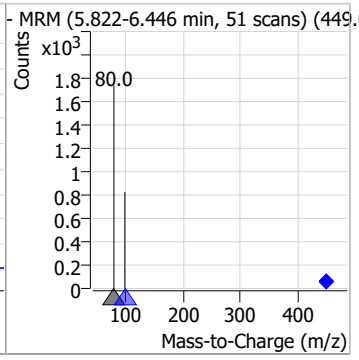


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	27.90	6.14	-0.01	64197 (m)	449.0 -> 99.0	46.3	26.3	79.0



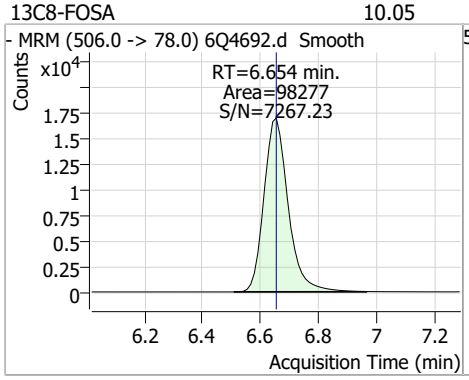


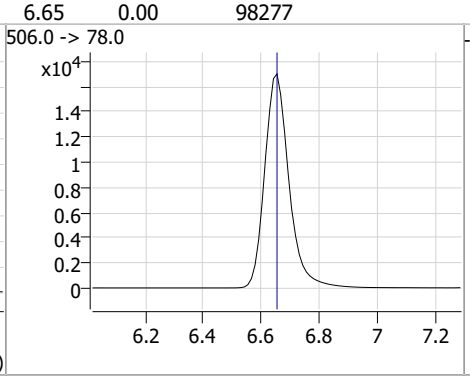


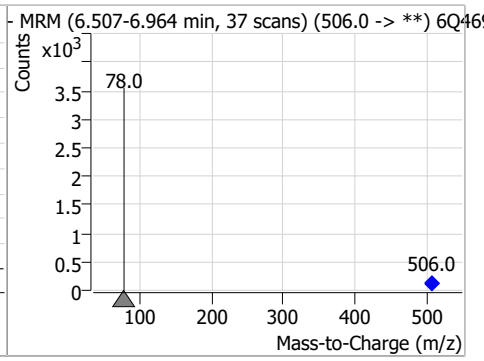


Perfluorinated Compounds by LC/MS/MS

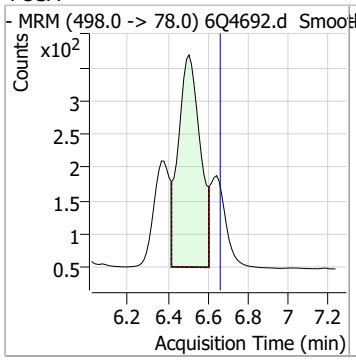
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.05	6.65	0.00	98277				

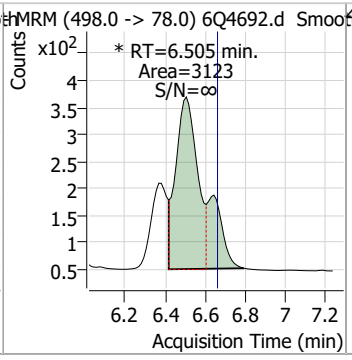


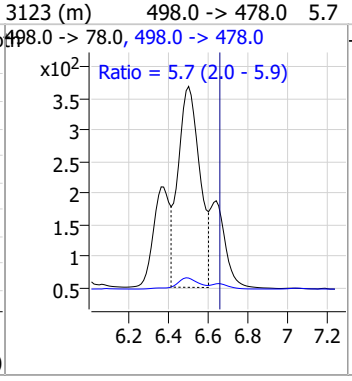


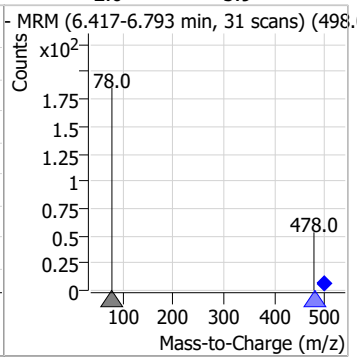


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.63	6.51	-0.15	3123 (m)	498.0 -> 478.0	5.7	2.0	5.9

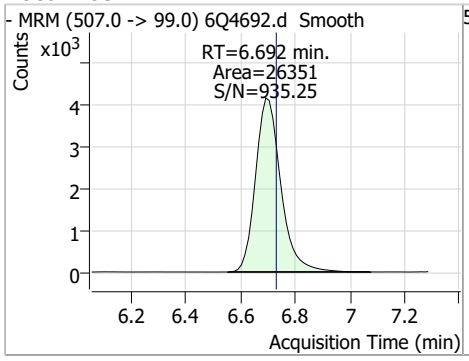


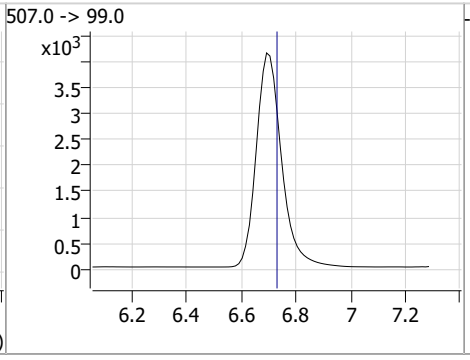


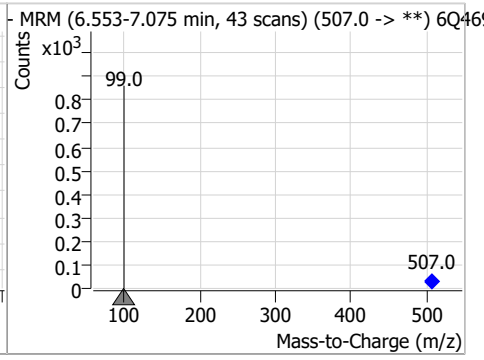




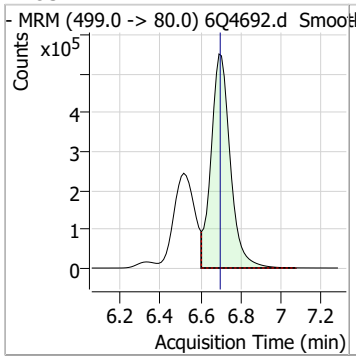
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.42	6.69	-0.04	26351				

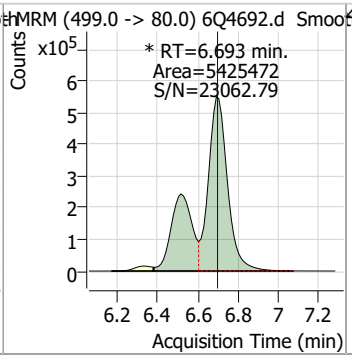


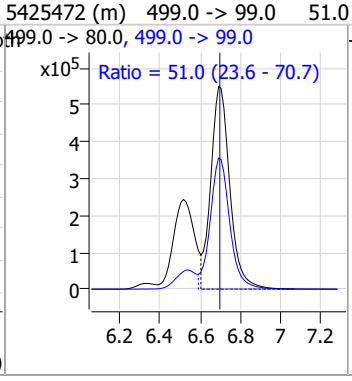


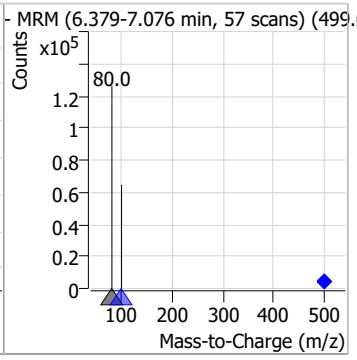


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2220.93	6.69	-0.04	5425472 (m)	499.0 -> 99.0	51.0	23.6	70.7



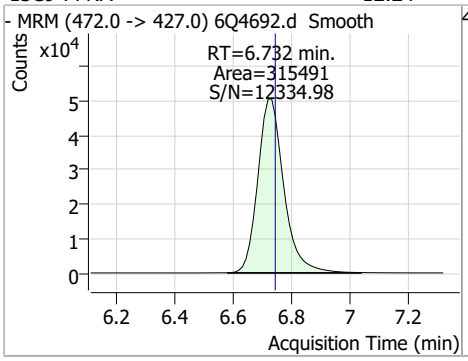


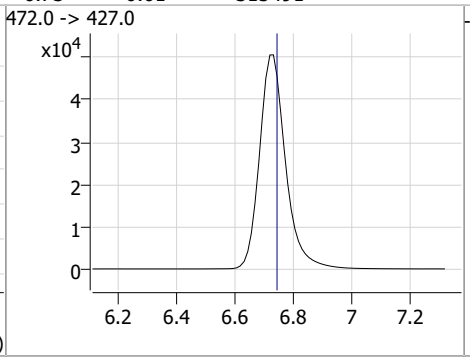


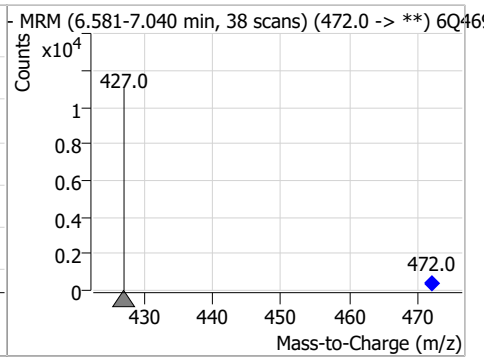


Perfluorinated Compounds by LC/MS/MS

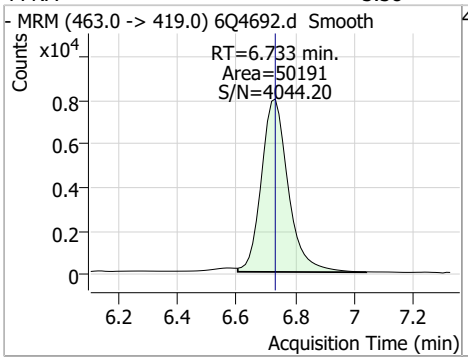
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	12.24	6.73	-0.01	315491				

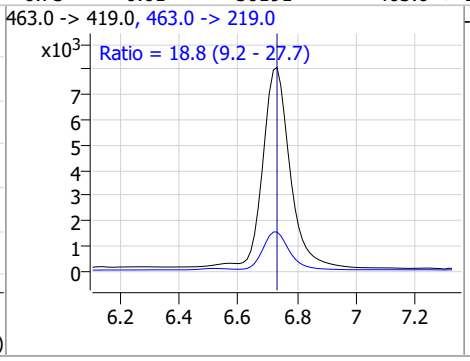


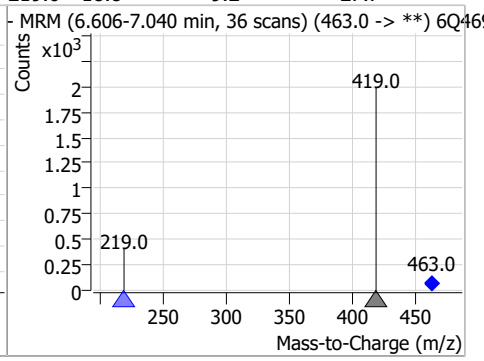




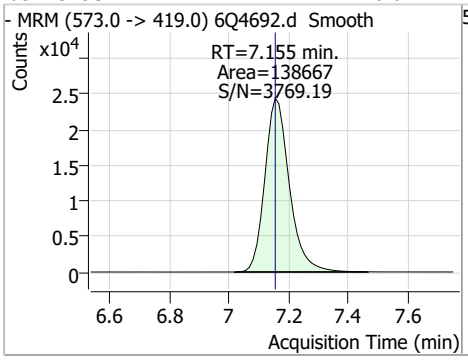
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	3.38	6.73	-0.01	50191	463.0 -> 219.0	18.8	9.2	27.7

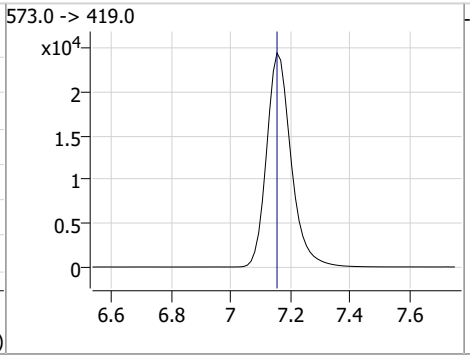


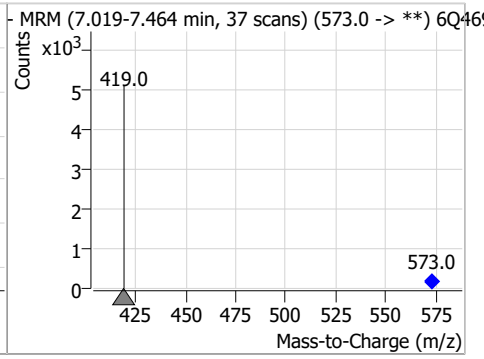




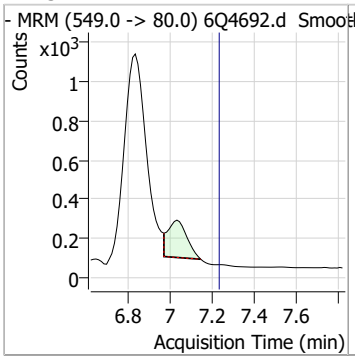
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.02	7.15	0.00	138667				

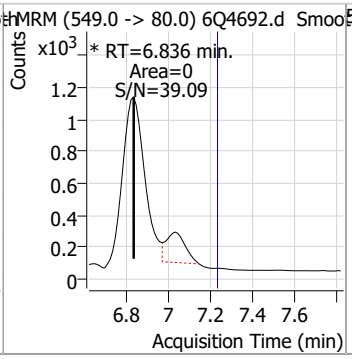


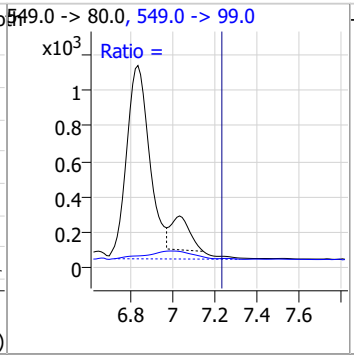


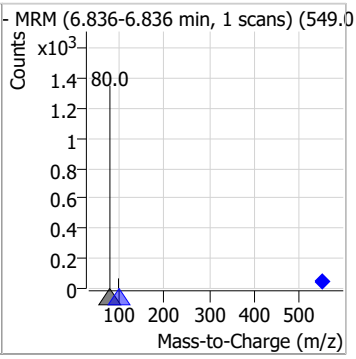


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS		0		0	549.0 -> 99.0		27.6	82.7



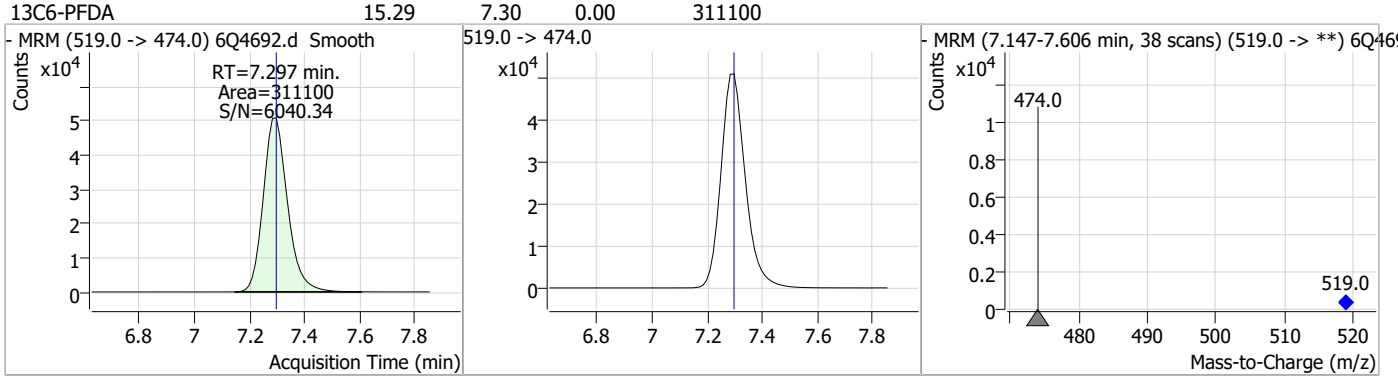




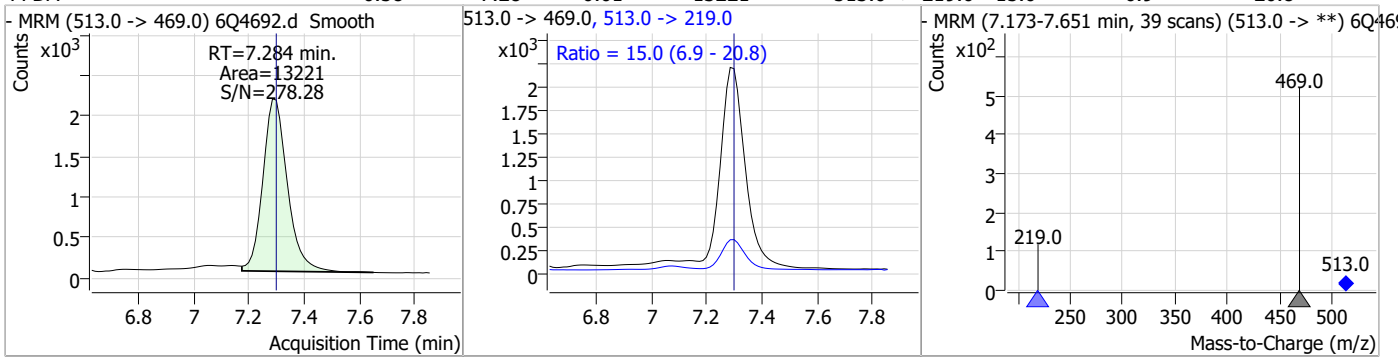


Perfluorinated Compounds by LC/MS/MS

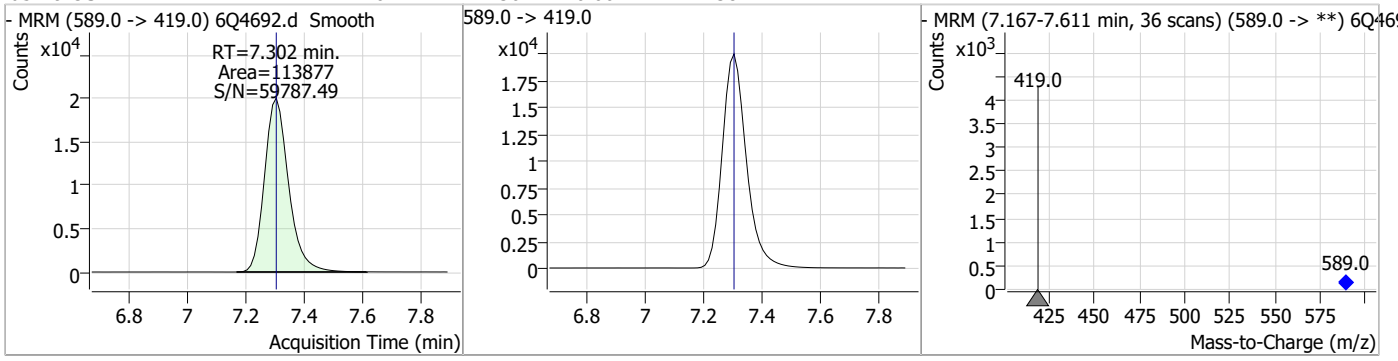
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.29	7.30	0.00	311100				



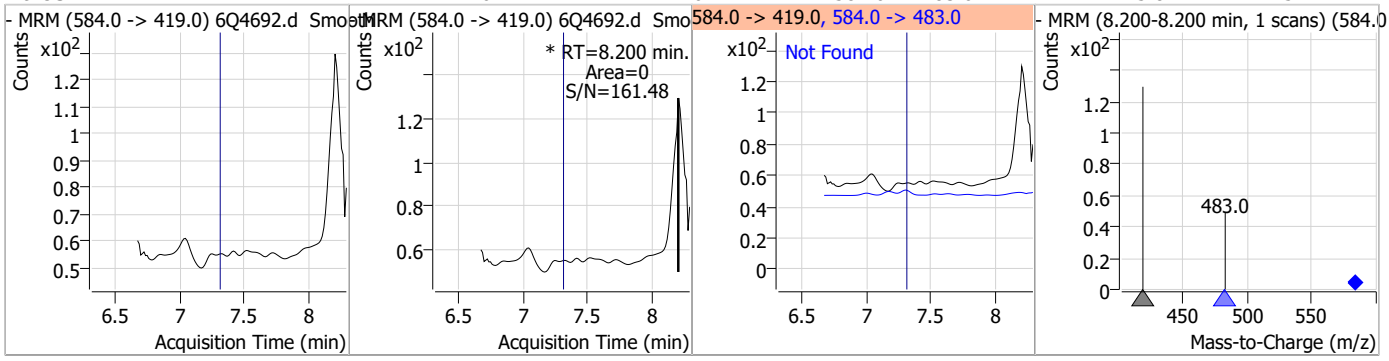
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.58	7.28	-0.01	13221	513.0 -> 219.0	15.0	6.9	20.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.77	7.30	0.00	113877				

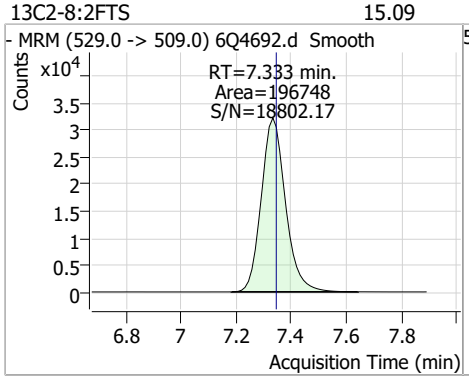


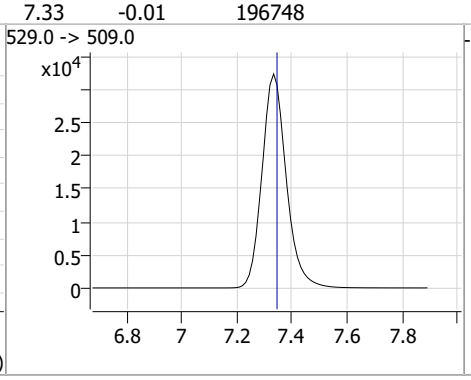
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		25.8	77.5

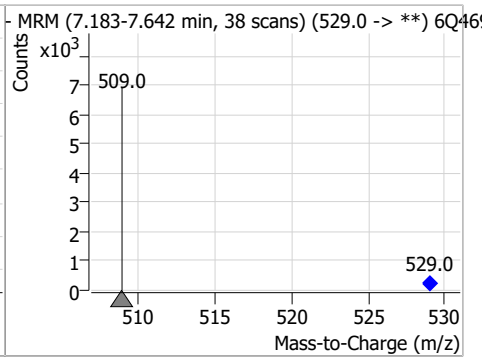


Perfluorinated Compounds by LC/MS/MS

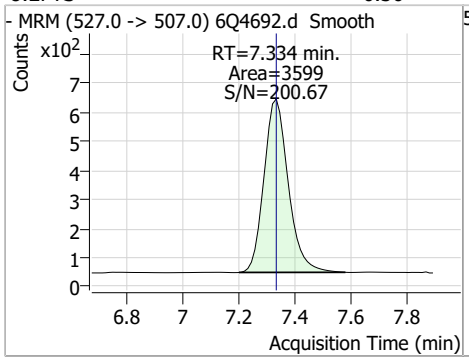
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.09	7.33	-0.01	196748				

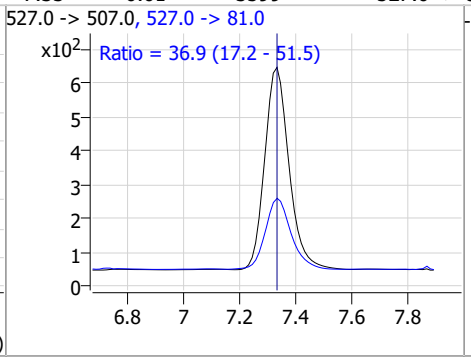


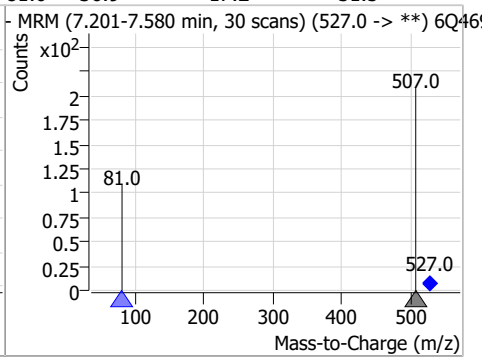




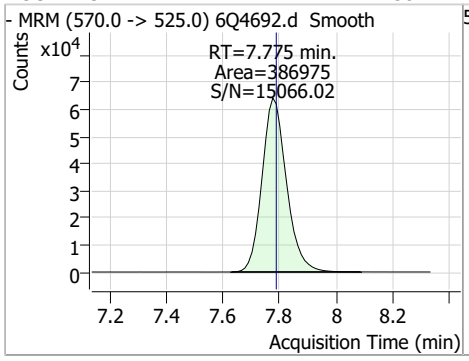
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.36	7.33	-0.01	3599	527.0 -> 81.0	36.9	17.2	51.5

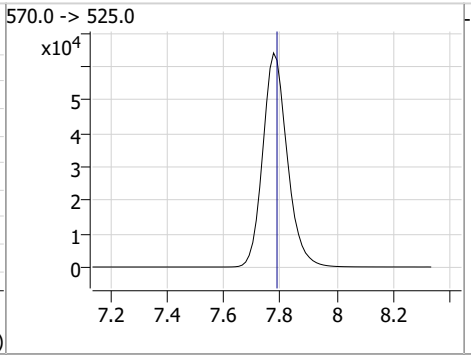


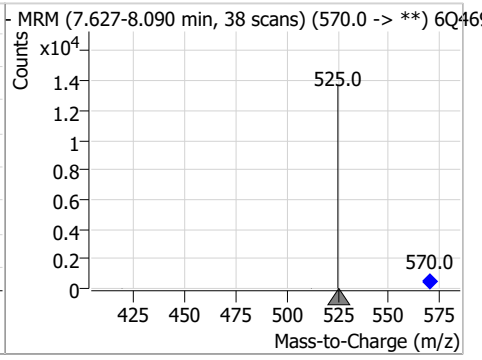




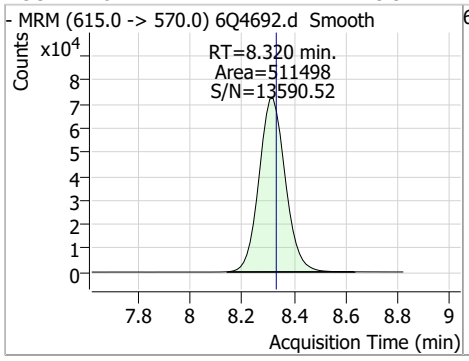
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.58	7.78	-0.01	386975				

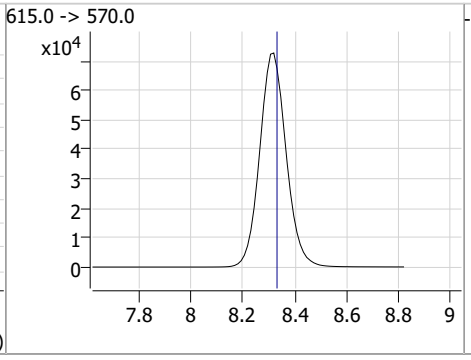


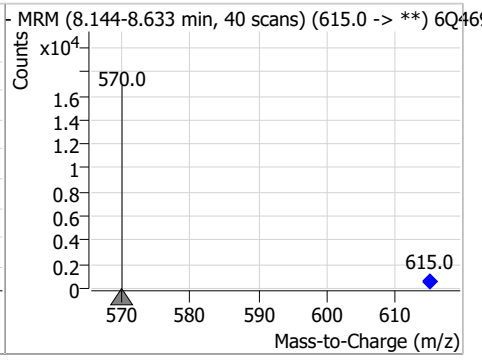




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.91	8.32	-0.01	511498				

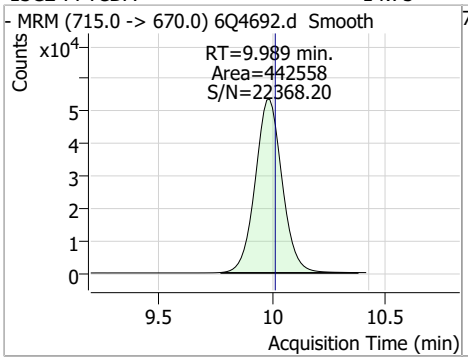


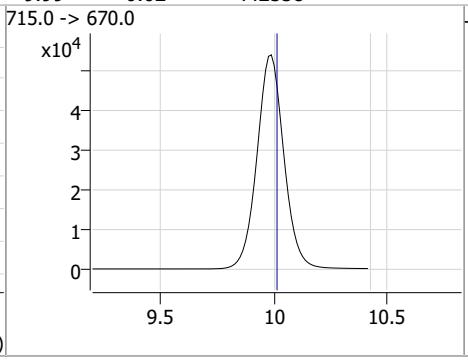


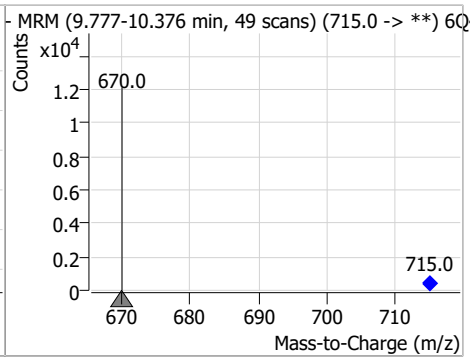


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.75	9.99	-0.02	442558				







Manual Integration Approval Summary

Sample Number: FA98286-36
Lab FileID: 6Q4692.D
Injection Time: 09/15/22 06:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:07 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		3.63	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
PFHxSA	41997-13-1		5.83	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
PFOSA	754-91-6		6.50	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.69	Split peak
d3-MeFOSA			7.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4757.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:03:12 AM
Sample Name : fa98286-36
Vial : P2-B7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,120,,,1.0,40,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	1650	0.50	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	2913	0.50	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	4680	0.50	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	5323	0.50	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	9818	0.50	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	11975	0.50	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	9053	0.50	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	10312	0.50	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	14414	0.50	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	13045	0.50	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	3365	0.50	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	709	0.50	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	615	0.50	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	986	0.50	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	5496	0.50	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	8218	0.50	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	5147	0.50	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	4042	0.50	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	112	0.50	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	168	0.50	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	3226	0.50	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	5496	0.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%		
13C2-6:2FTS	6.124	429.0 -> 409.0	8218	0.48	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%		
13C2-8:2FTS	7.333	529.0 -> 509.0	5147	0.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%		
13C2-PFDoDA	8.320	615.0 -> 570.0	14414	0.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.0%		
13C2-PFTeDA	9.989	715.0 -> 670.0	13045	0.43	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%		
13C3-PFBS	3.622	302.0 -> 99.0	709	0.46	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%		
13C3-PFHxS	5.475	402.0 -> 99.0	615	0.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%		
13C4-PFBA	1.949	217.0 -> 172.0	1650	0.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.1%		
13C4-PFHpA	5.445	367.0 -> 322.0	5323	0.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%		
13C5-PFHxA	4.573	318.0 -> 273.0	4680	0.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%		
13C5-PFPeA	3.405	268.0 -> 223.0	2913	0.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.1%		
13C6-PFDA	7.297	519.0 -> 474.0	9053	0.44	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

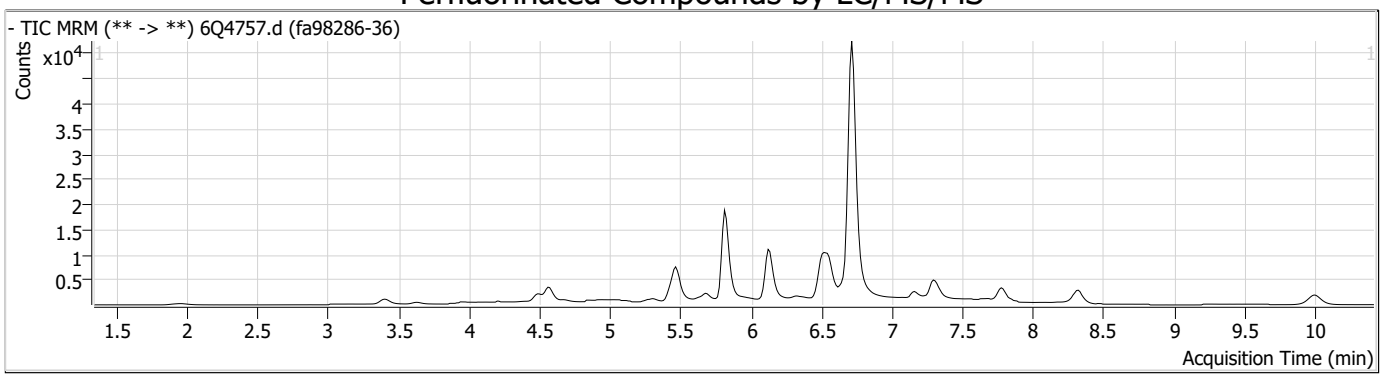
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.2%		
13C7-PFUnDA	7.775	570.0 -> 525.0	10312	0.39 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%		
13C8-FOSA	6.654	506.0 -> 78.0	3365	0.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
13C8-PFOA	6.138	421.0 -> 376.0	9818	0.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%		
13C8-PFOS	6.717	507.0 -> 99.0	986	0.47 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%		
13C9-PFNA	6.745	472.0 -> 427.0	11975	0.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%		
d3-MeFOSAA	7.155	573.0 -> 419.0	4042	0.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	98	0.37 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.8%		
d3-MeFOSA	7.085	515.0 -> 169.0	168	0.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.4%		
d5-EtFOSAA	7.302	589.0 -> 419.0	3202	0.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.4%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	6.124	427.0 -> 407.0	10052	0.60 µg/L		98
		427.0 -> 81.0	2652			
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	1.943	213.0 -> 169.0	285	0.20 µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	5.446	363.0 -> 319.0	5490	0.40 µg/L		98
		363.0 -> 169.0	856			
PFHpS	6.136	449.0 -> 80.0	1933	0.56 µg/L	m	95
		449.0 -> 99.0	950			
PFHxA	4.574	313.0 -> 269.0	7129	0.72 µg/L		99
		313.0 -> 119.0	197			
PFHxS	5.477	399.0 -> 80.0	18115	5.14 µg/L	m	100
		399.0 -> 99.0	8823			
PFNA	-	463.0 -> 419.0	-	N.D.		
		463.0 -> 219.0				
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.138	413.0 -> 369.0	8137	0.38 µg/L	m	97
		413.0 -> 169.0	1352			
PFOS	6.719	499.0 -> 80.0	179055	48.95 µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

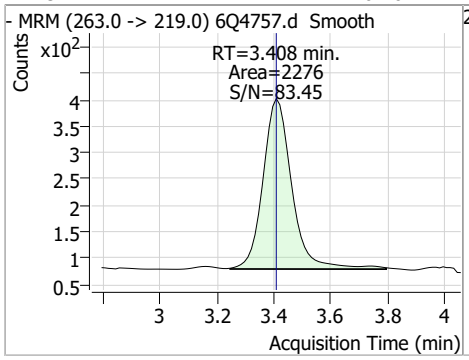
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	92887				
PFPeA	3.408	263.0 -> 219.0	2276	0.46	µg/L		100
PFPeS	4.668	349.0 -> 80.0	947	0.24	µg/L	m	99
		349.0 -> 99.0	438				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.514	298.0 -> 78.0	2150	0.24	µg/L		98
		298.0 -> 64.0	160				
FHxSA	5.828	398.0 -> 78.0	72947	8.42	µg/L	m	100
		398.0 -> 64.0	2646				

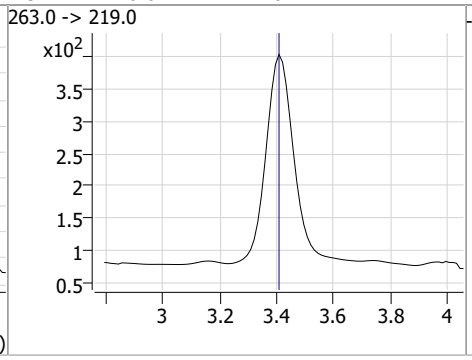
 # = Qualifier out of range, m = manually integrated, + = Area summed

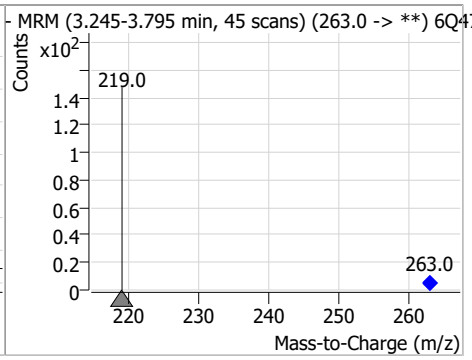
Perfluorinated Compounds by LC/MS/MS



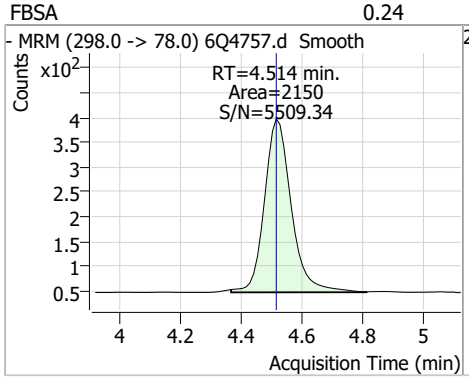
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.46	3.41	-0.01	2276				

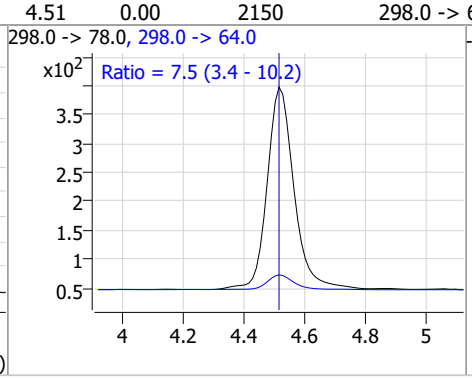


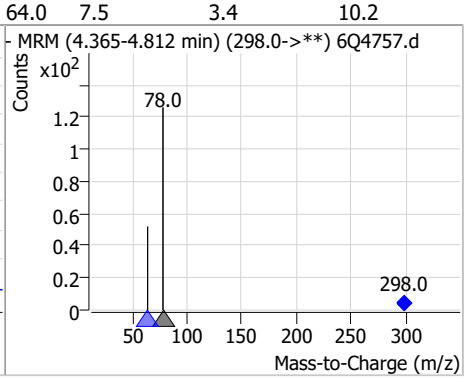




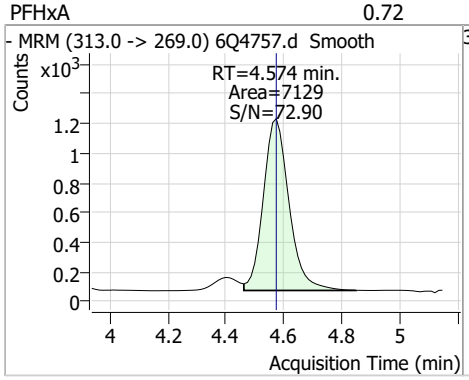
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.24	4.51	0.00	2150	298.0 -> 64.0	7.5	3.4	10.2

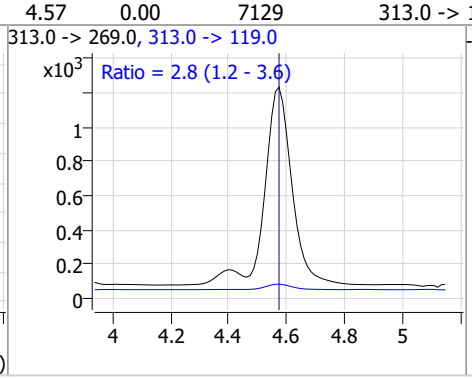


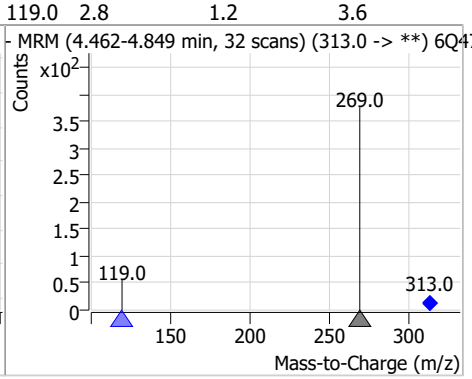




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.72	4.57	0.00	7129	313.0 -> 119.0	2.8	1.2	3.6

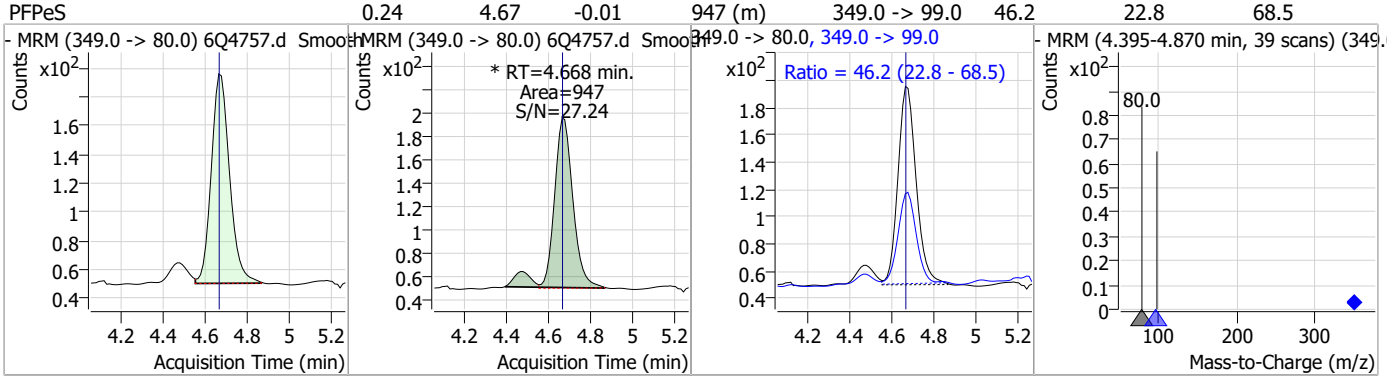




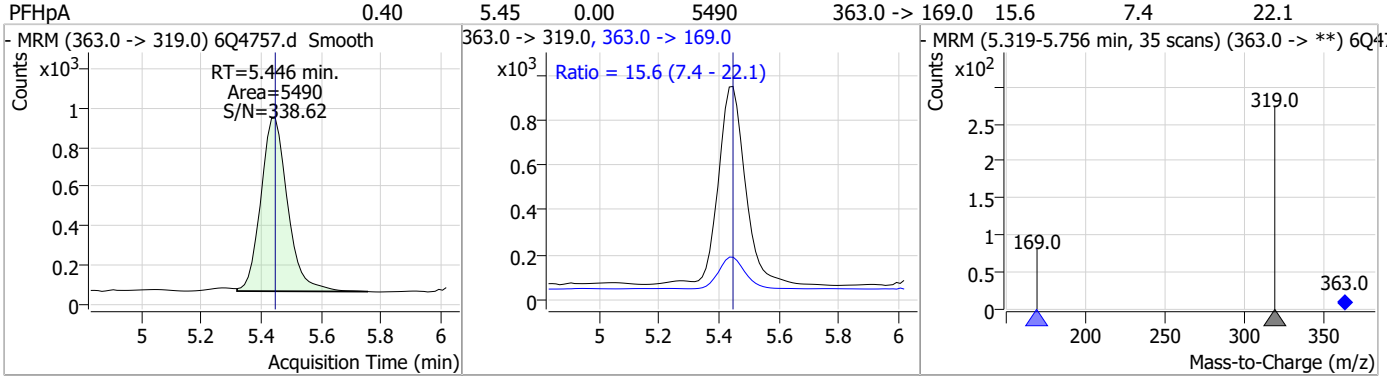


Perfluorinated Compounds by LC/MS/MS

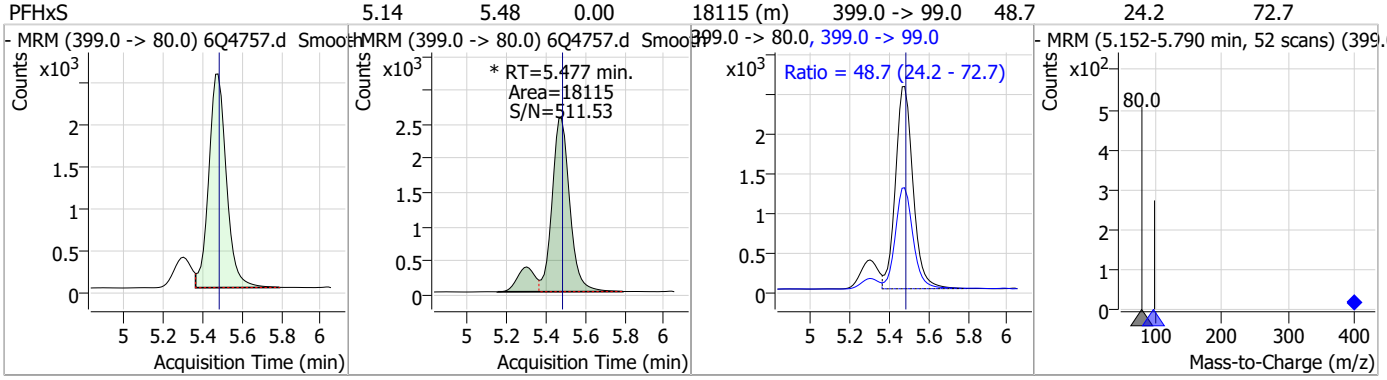
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.24	4.67	-0.01	947 (m)	349.0 -> 99.0	46.2	22.8	68.5



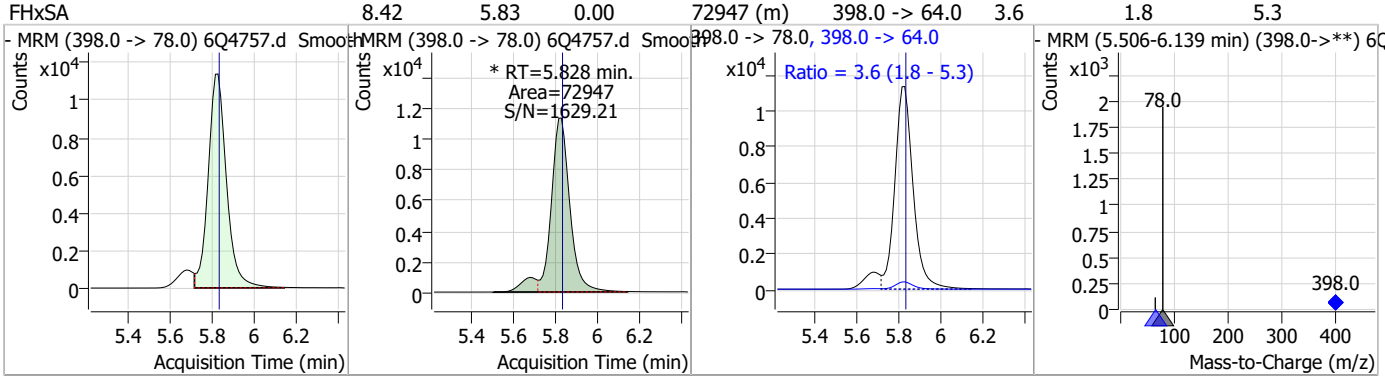
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.40	5.45	0.00	5490	363.0 -> 169.0	15.6	7.4	22.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	5.14	5.48	0.00	18115 (m)	399.0 -> 99.0	48.7	24.2	72.7

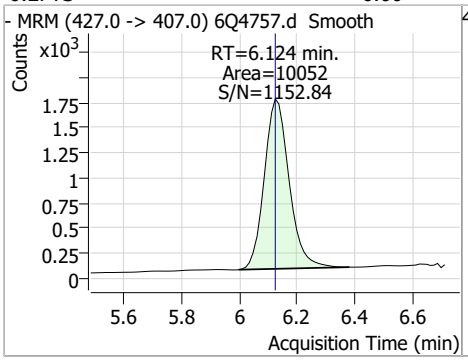


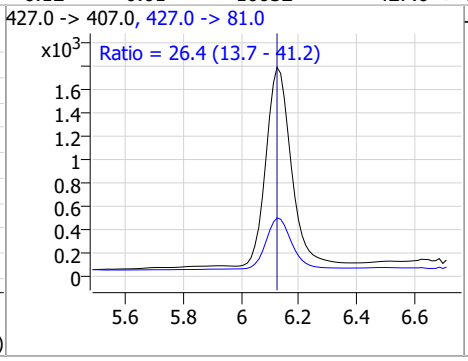
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	8.42	5.83	0.00	72947 (m)	398.0 -> 64.0	3.6	1.8	5.3

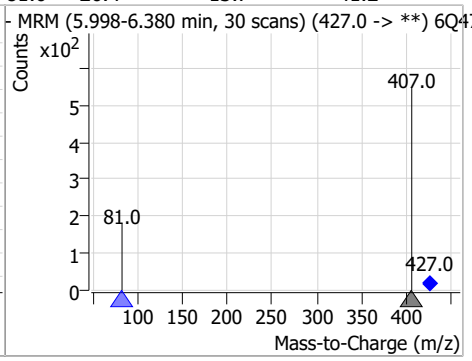


Perfluorinated Compounds by LC/MS/MS

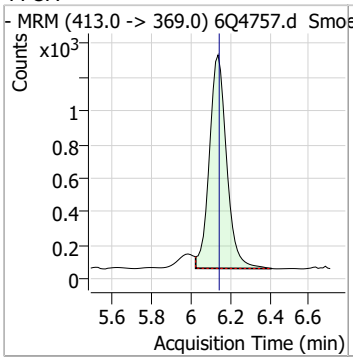
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.60	6.12	-0.01	10052	427.0 -> 81.0	26.4	13.7	41.2

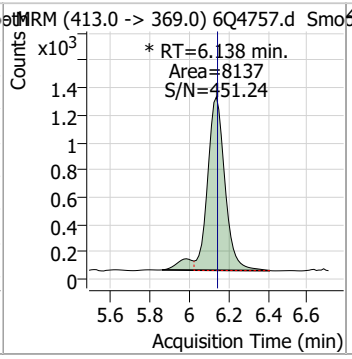


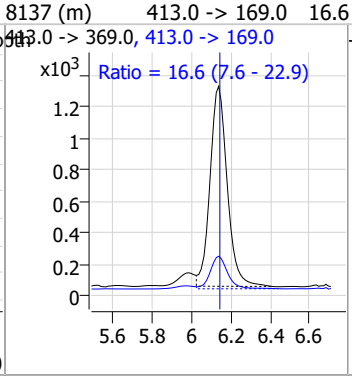


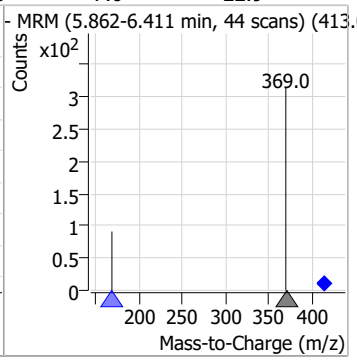


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.38	6.14	0.00	8137 (m)	413.0 -> 169.0	16.6	7.6	22.9

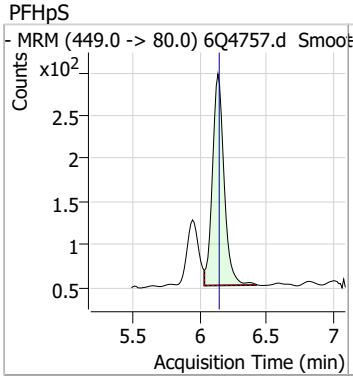


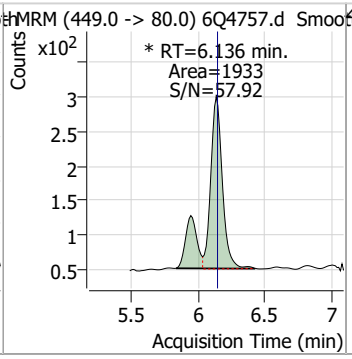


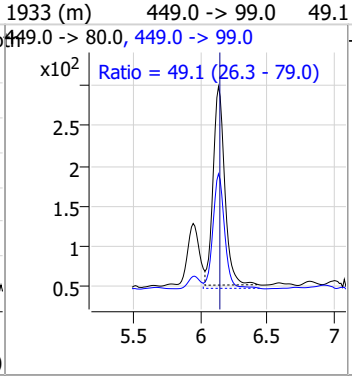


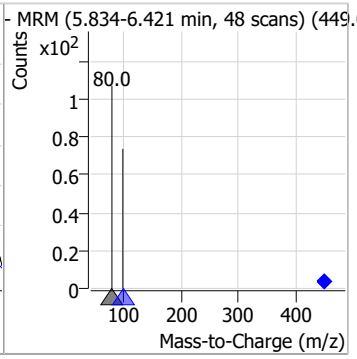


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.56	6.14	-0.01	1933 (m)	449.0 -> 99.0	49.1	26.3	79.0

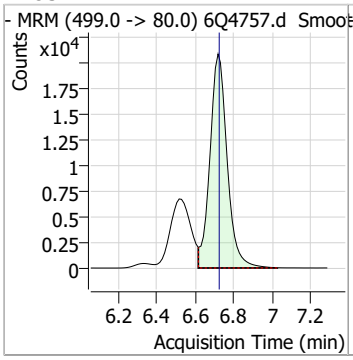


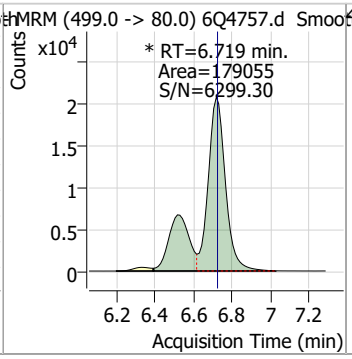


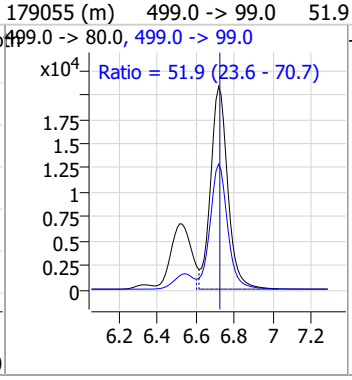


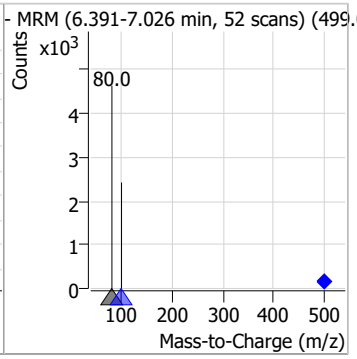


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.95	6.72	-0.01	179055 (m)	499.0 -> 99.0	51.9	23.6	70.7









Manual Integration Approval Summary

Sample Number: FA98286-36
Lab FileID: 6Q4757.D
Injection Time: 09/16/22 06:03
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:07 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
PFHxSA	41997-13-1		5.83	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4695.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:02:03 AM
Sample Name : fa98286-37
Vial : P5-F9
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	34917	20.00	µg/L	-0.087
M5-PFPeA	3.355	268.0 -> 223.0	69916	20.00	µg/L	-0.062
M5-PFHxA	4.548	318.0 -> 273.0	126515	20.00	µg/L	-0.025
M4-PFHpA	5.433	367.0 -> 322.0	164863	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	299386	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	398569	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	295147	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	374386	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	505697	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	416007	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	102130	20.00	µg/L	0.000
M3-PFBS	3.585	302.0 -> 99.0	19526	20.00	µg/L	-0.050
M3-PFHxS	5.463	402.0 -> 99.0	19992	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	30697	20.00	µg/L	-0.012
M2-4:2FTS	4.458	329.0 -> 309.0	166699	20.00	µg/L	-0.025
M2-6:2FTS	6.124	429.0 -> 409.0	238502	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	177834	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	142153	20.00	µg/L	0.000
M3-HFPO-DA	4.814	287.0 -> 169.0	3028	20.00	µg/L	-0.038
M3-MeFOSA	7.085	515.0 -> 169.0	2467	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	108571	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.458	329.0 -> 309.0	166699	12.34	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.7%		
13C2-6:2FTS	6.124	429.0 -> 409.0	238502	13.97	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	177834	13.64	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.2%		
13C2-PFDoDA	8.320	615.0 -> 570.0	505697	13.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%		
13C2-PFTeDA	9.989	715.0 -> 670.0	416007	13.87	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.3%		
13C3-PFBS	3.585	302.0 -> 99.0	19526	12.75	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%		
13C3-PFHxS	5.463	402.0 -> 99.0	19992	14.46	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%		
13C4-PFBA	1.862	217.0 -> 172.0	34917	8.77	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	164863	13.32	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.6%		
13C5-PFHxA	4.548	318.0 -> 273.0	126515	11.84	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.2%		
13C5-PFPeA	3.355	268.0 -> 223.0	69916	9.97	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.9%		
13C6-PFDA	7.283	519.0 -> 474.0	295147	14.51	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

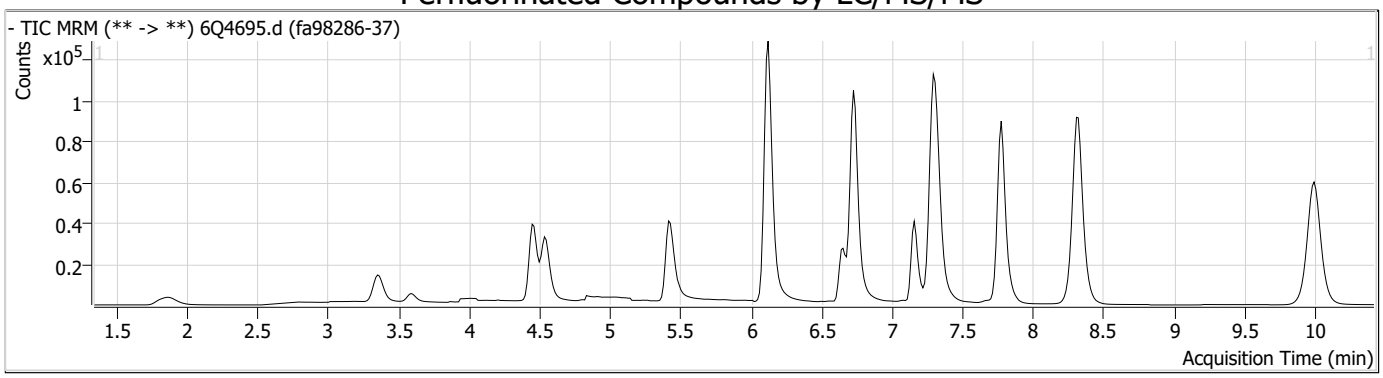
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%			
13C7-PFUnDA	7.775	570.0 -> 525.0	374386	14.10	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%			
13C8-FOSA	6.654	506.0 -> 78.0	102130	10.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.2%			
13C8-PFOA	6.126	421.0 -> 376.0	299386	14.11	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.6%			
13C8-PFOS	6.717	507.0 -> 99.0	30697	14.47	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%			
13C9-PFNA	6.732	472.0 -> 427.0	398569	15.47	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.3%			
d3-MeFOSAA	7.155	573.0 -> 419.0	142153	16.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C3-HFPO-DA	4.814	287.0 -> 169.0	3034	11.41	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.1%			
d3-MeFOSA	7.085	515.0 -> 169.0	2369	1.05	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 5.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	108598	16.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0 327.0 -> 81.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0 427.0 -> 81.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0 527.0 -> 81.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0 584.0 -> 483.0	-	N.D.			
FOSA	-	498.0 -> 78.0 498.0 -> 478.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0 570.0 -> 512.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0 299.0 -> 99.0	-	N.D.			
PFDA	-	513.0 -> 469.0 513.0 -> 219.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0 613.0 -> 319.0	-	N.D.			
PFDS	-	599.0 -> 80.0 599.0 -> 99.0	-	N.D.			
PFHpA	-	363.0 -> 319.0 363.0 -> 169.0	-	N.D.			
PFHpS	-	449.0 -> 80.0 449.0 -> 99.0	-	N.D.			
PFHxA	4.251	313.0 -> 269.0 313.0 -> 119.0	0		µg/L	m	1
PFHxS	-	399.0 -> 80.0 399.0 -> 99.0	-	N.D.			
PFNA	6.145	463.0 -> 419.0 463.0 -> 219.0	0		µg/L	m	1
PFNS	-	549.0 -> 80.0 549.0 -> 99.0	-	N.D.			
PFOA	-	413.0 -> 369.0 413.0 -> 169.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

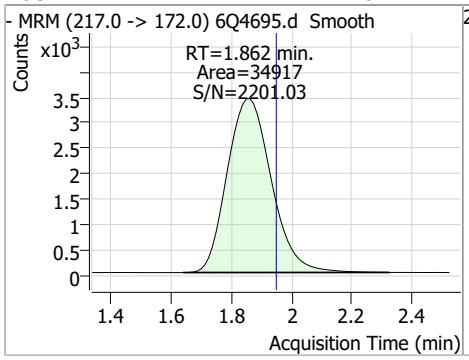
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.196	263.0 -> 219.0	0		µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

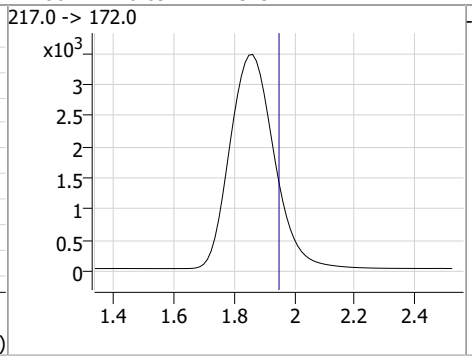
 # = Qualifier out of range, m = manually integrated, + = Area summed

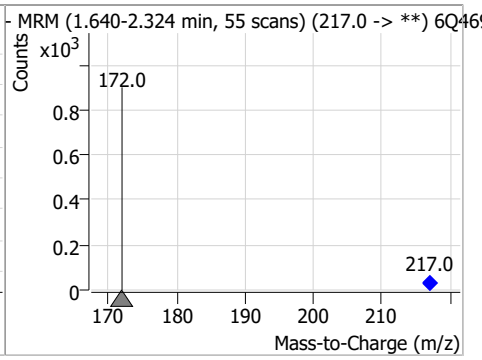
Perfluorinated Compounds by LC/MS/MS



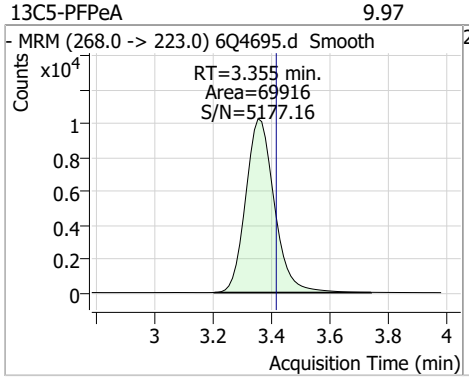
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.77	1.86	-0.09	34917				

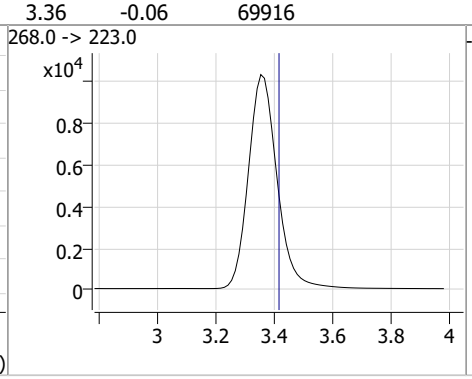


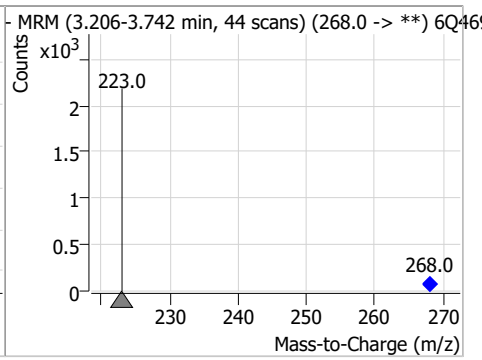




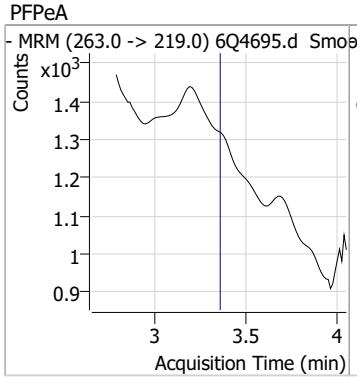
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.97	3.36	-0.06	69916				

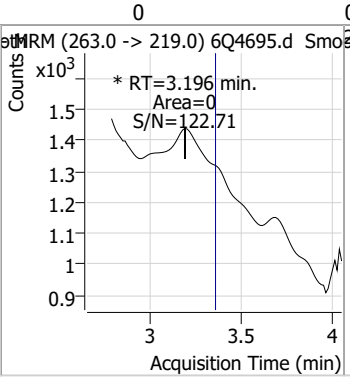


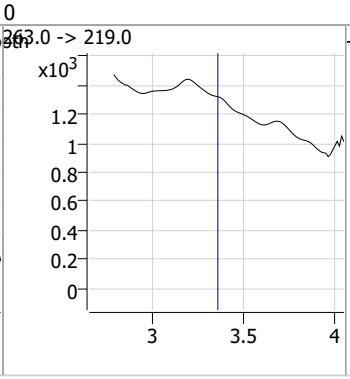


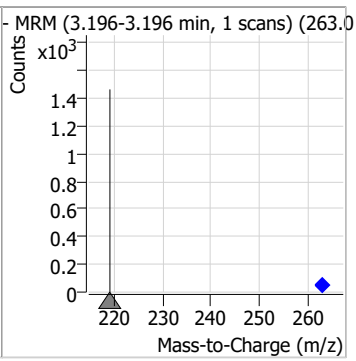


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA		0		0				



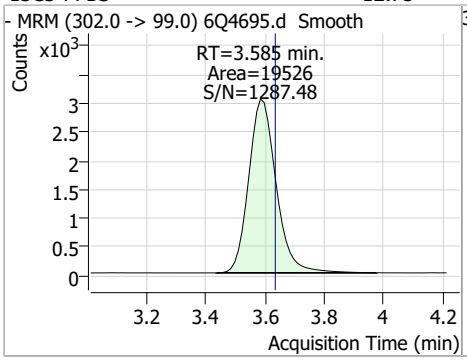


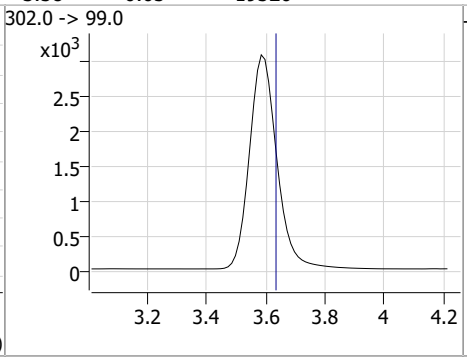


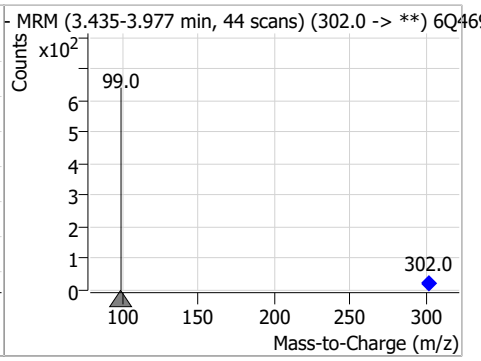


Perfluorinated Compounds by LC/MS/MS

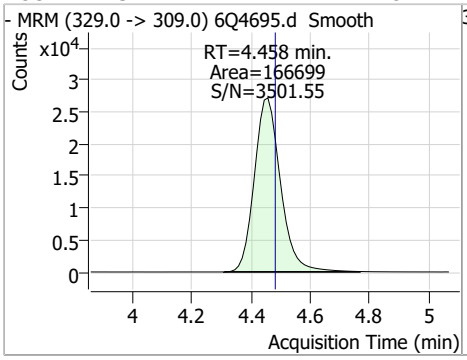
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.75	3.58	-0.05	19526				

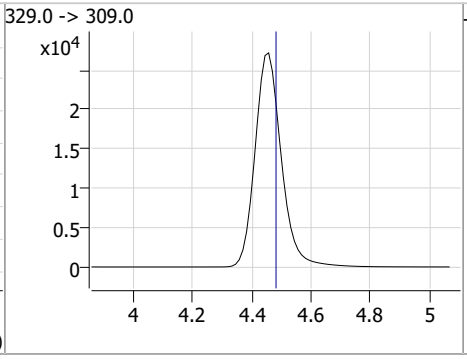


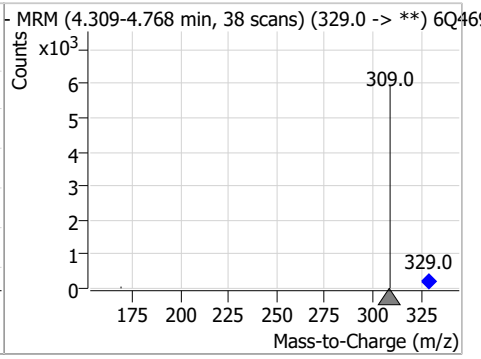




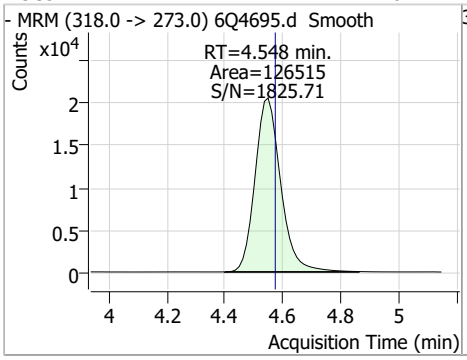
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.34	4.46	-0.02	166699				

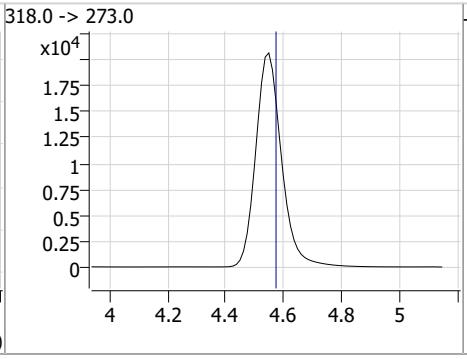


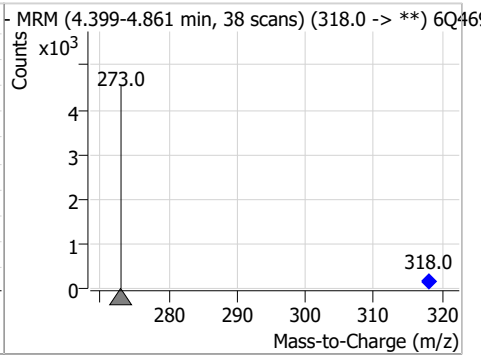




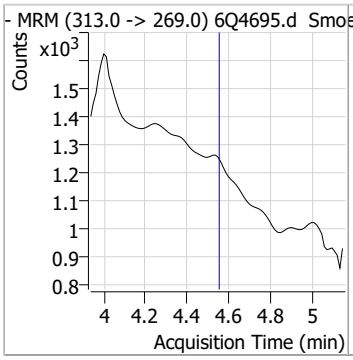
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.84	4.55	-0.02	126515				

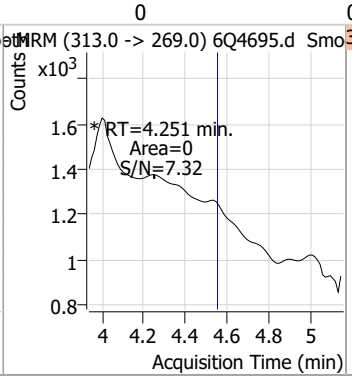


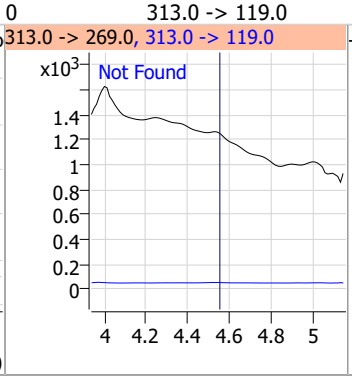


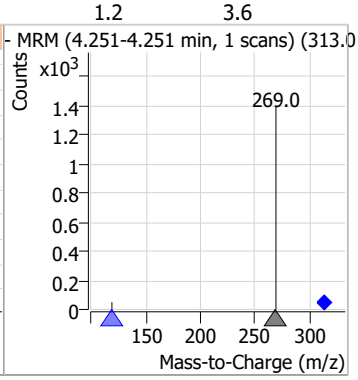


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA		0		0	313.0 -> 119.0		1.2	3.6



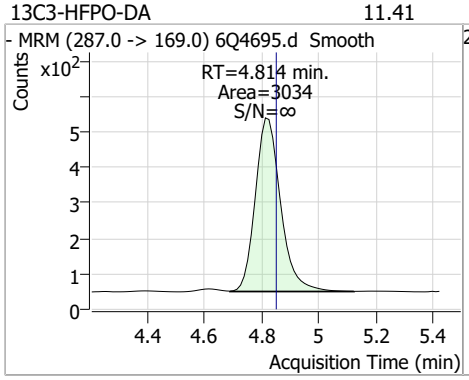


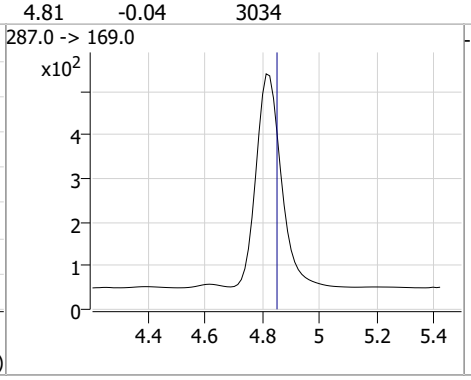


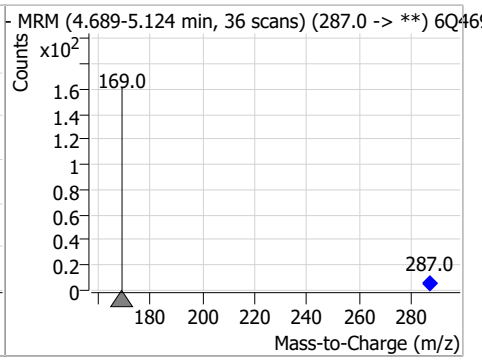


Perfluorinated Compounds by LC/MS/MS

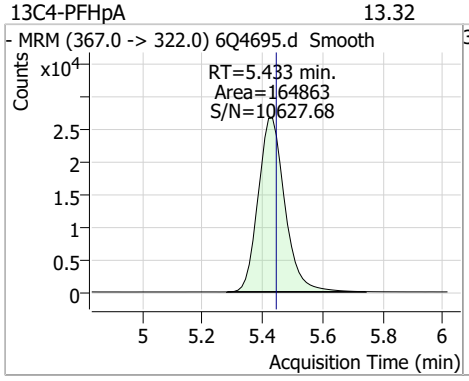
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.41	4.81	-0.04	3034				

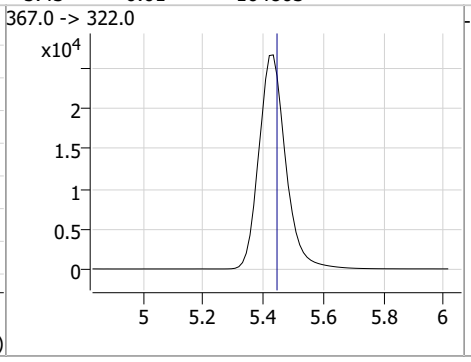


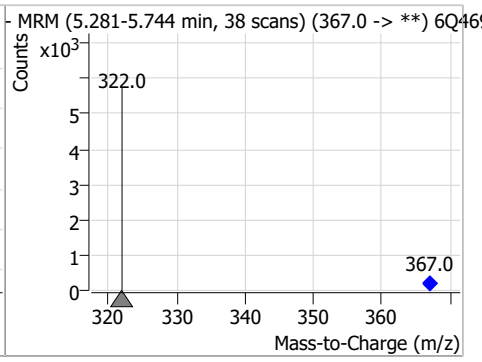




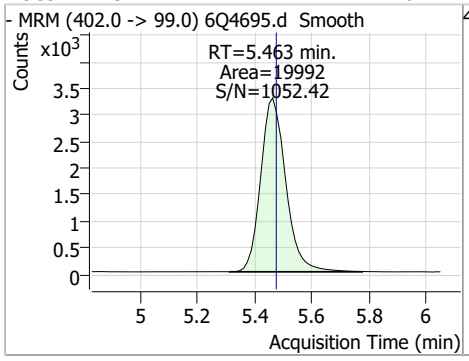
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.32	5.43	-0.01	164863				

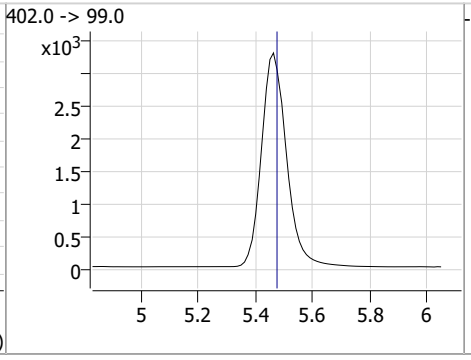


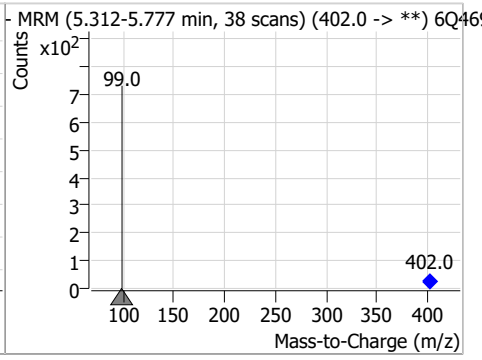




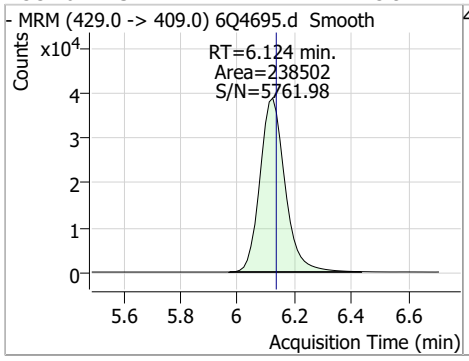
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.46	5.46	-0.01	19992				

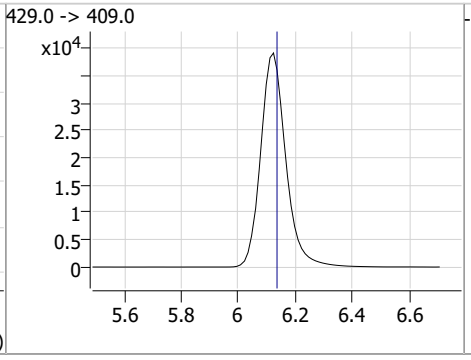


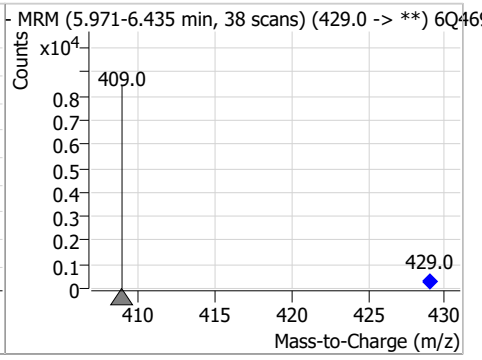




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.97	6.12	-0.01	238502				

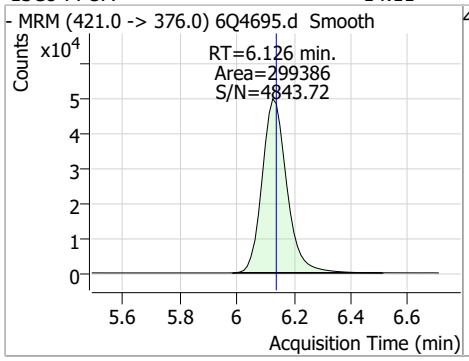


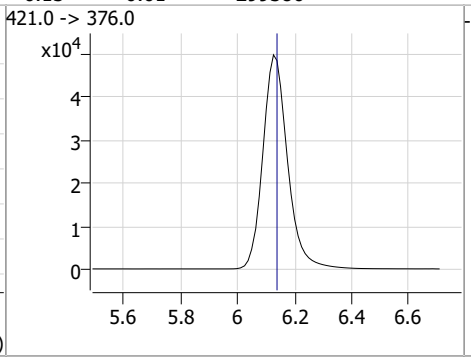


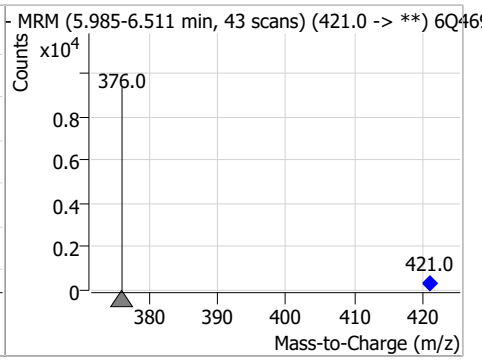


Perfluorinated Compounds by LC/MS/MS

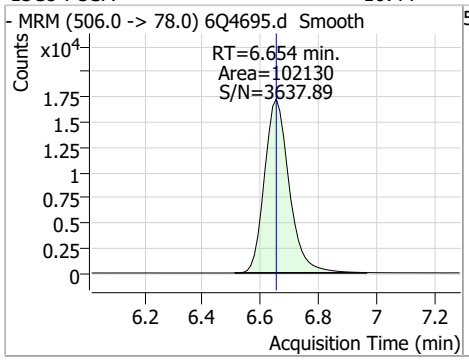
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.11	6.13	-0.01	299386				

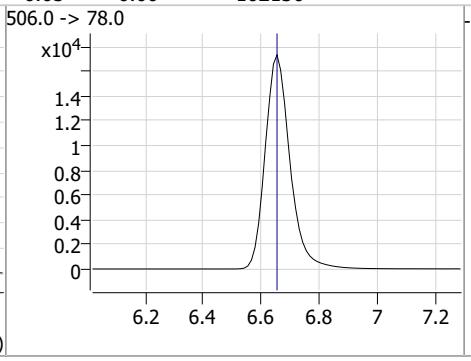


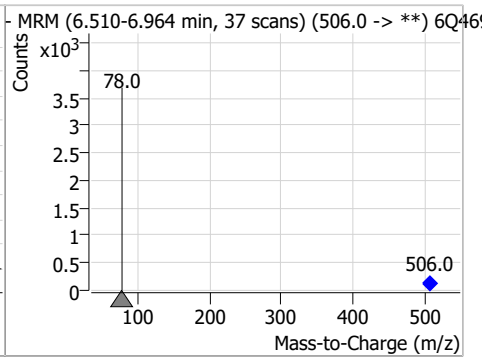




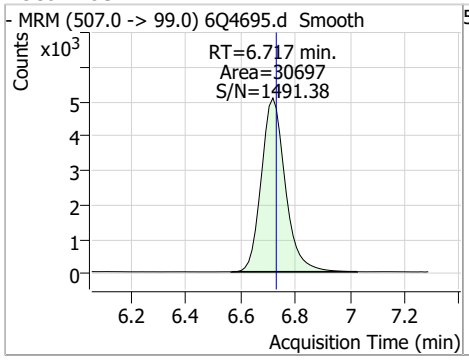
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.44	6.65	0.00	102130				

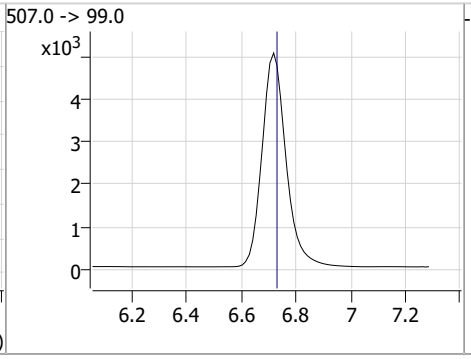


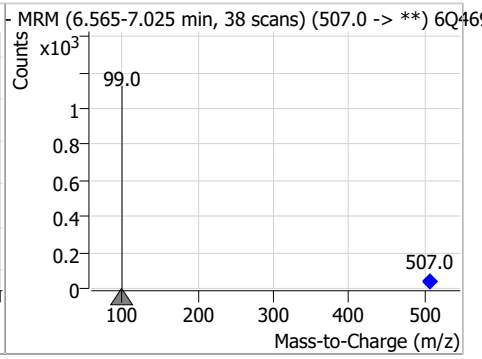




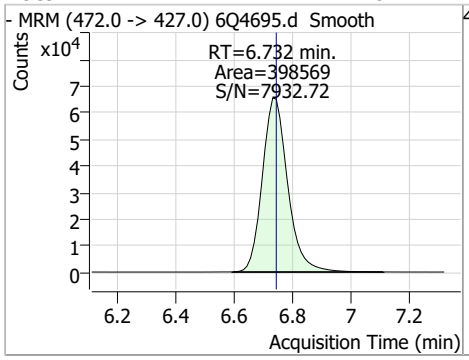
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.47	6.72	-0.01	30697				

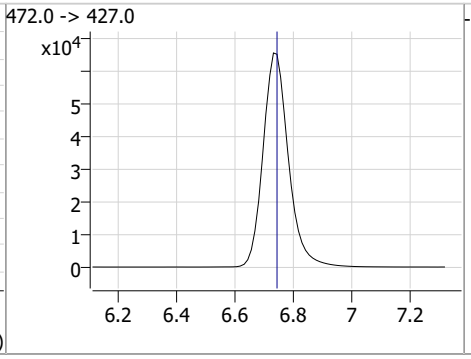


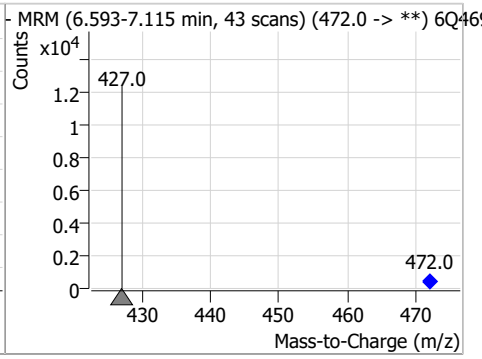




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.47	6.73	-0.01	398569				

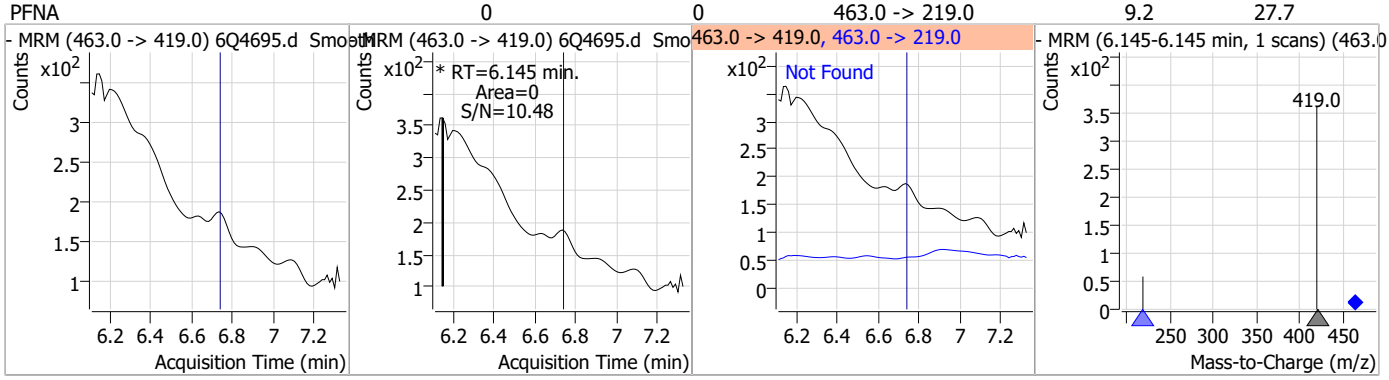




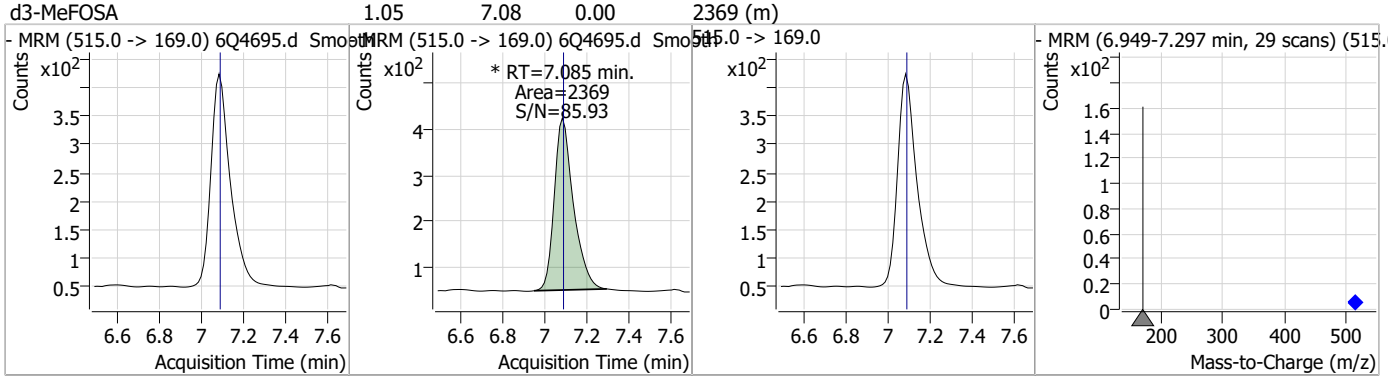


Perfluorinated Compounds by LC/MS/MS

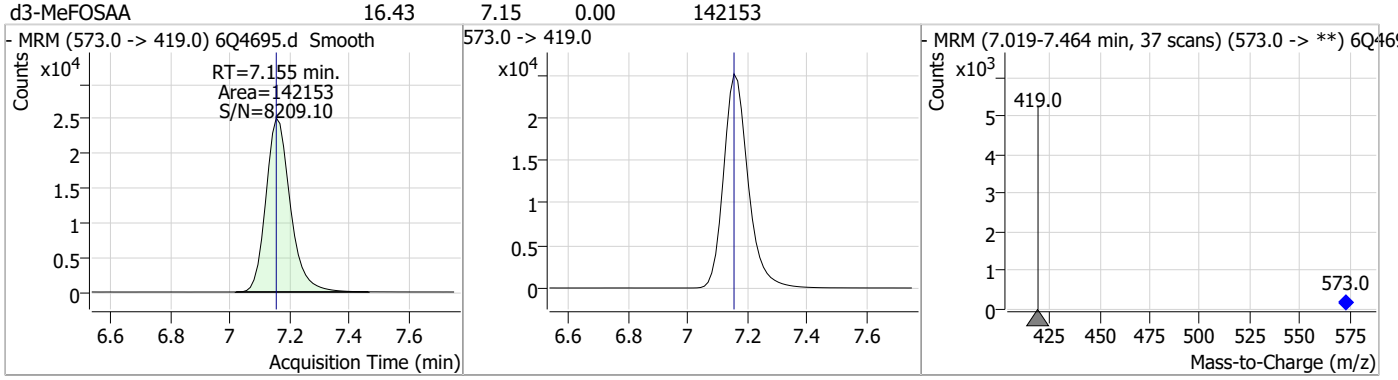
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		9.2	27.7



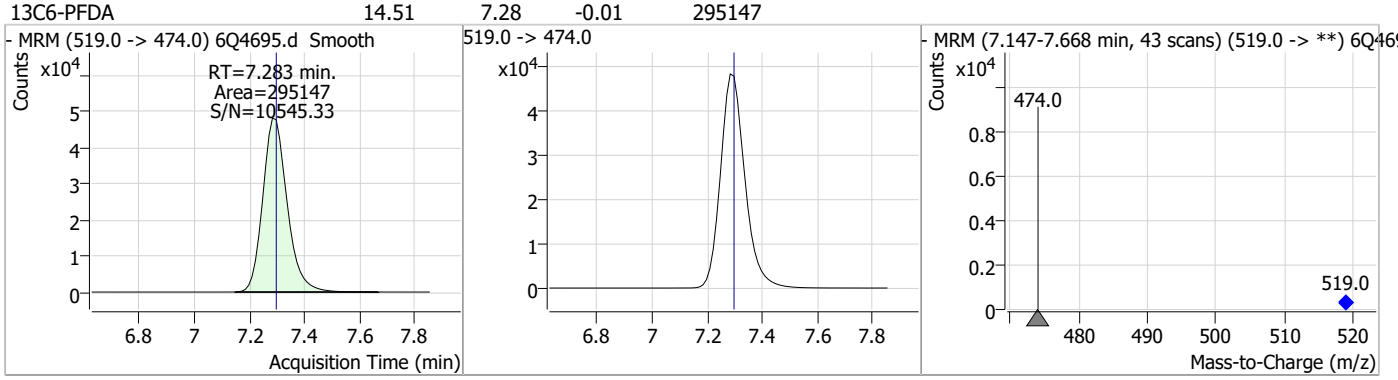
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.05	7.08	0.00	2369 (m)				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.43	7.15	0.00	142153				

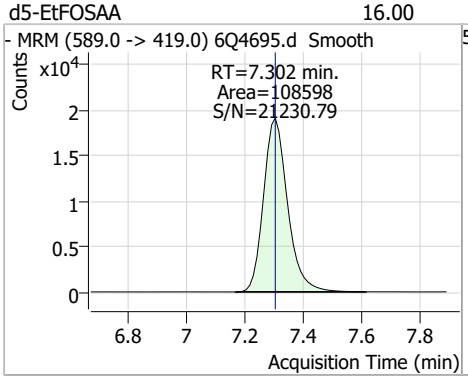


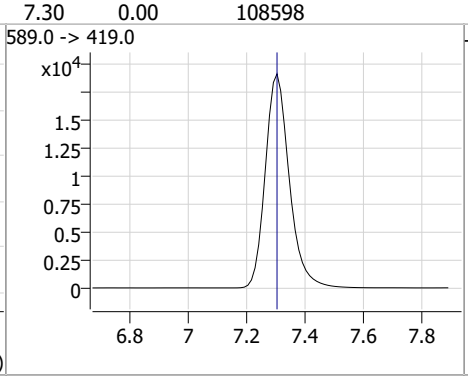
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.51	7.28	-0.01	295147				

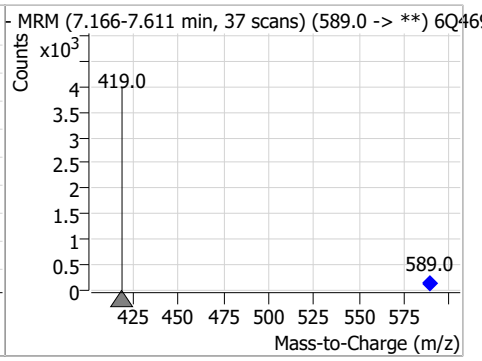


Perfluorinated Compounds by LC/MS/MS

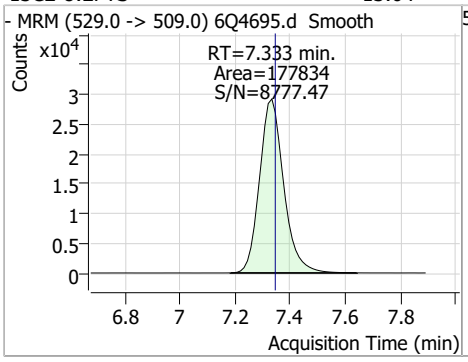
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.00	7.30	0.00	108598				

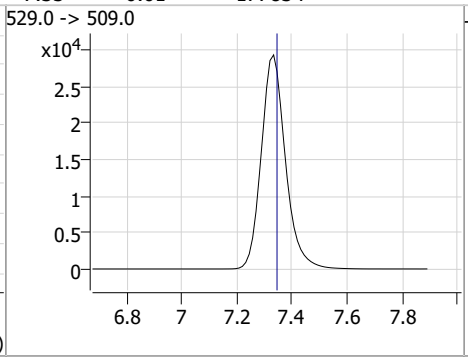


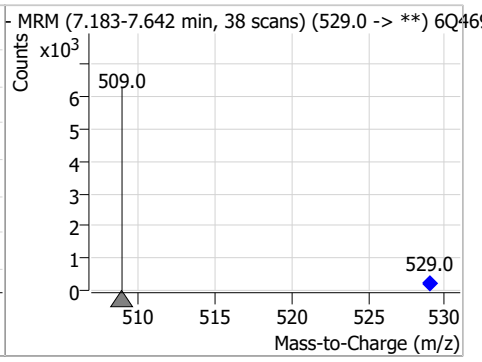




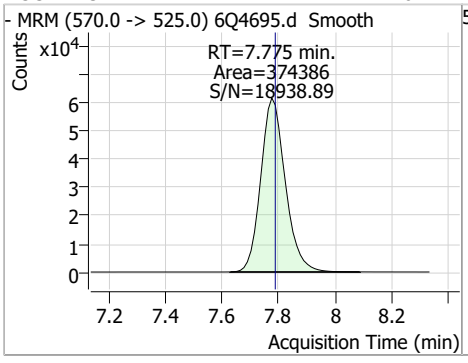
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.64	7.33	-0.01	177834				

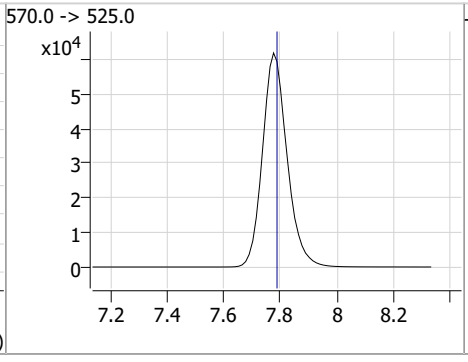


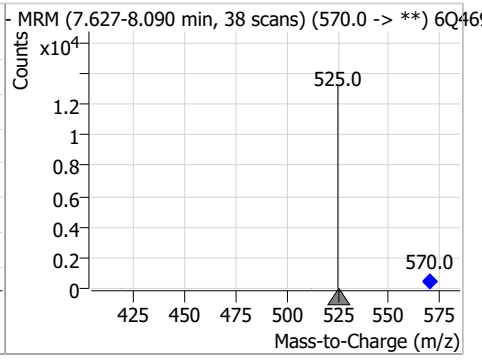




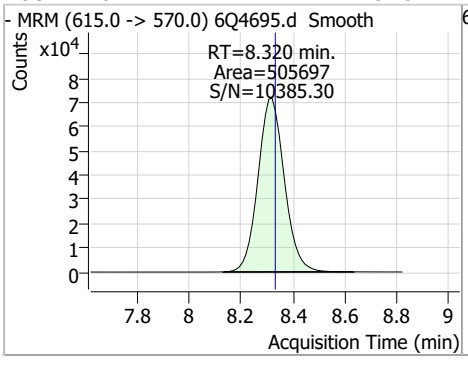
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.10	7.78	-0.01	374386				

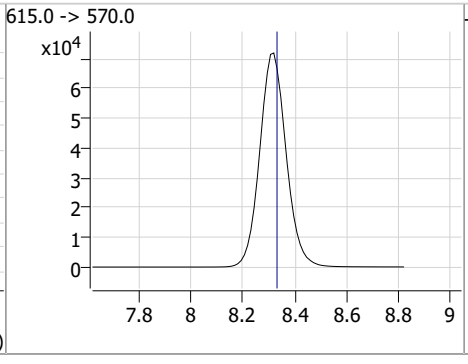


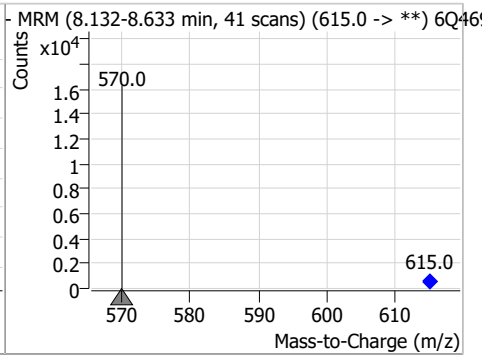




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.75	8.32	-0.01	505697				

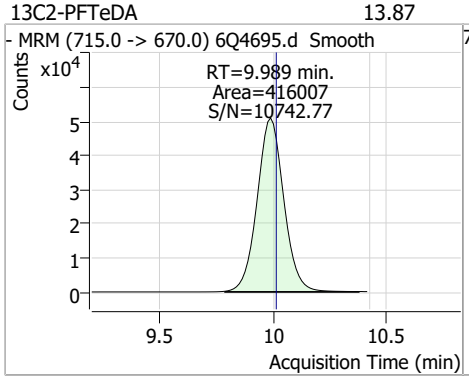


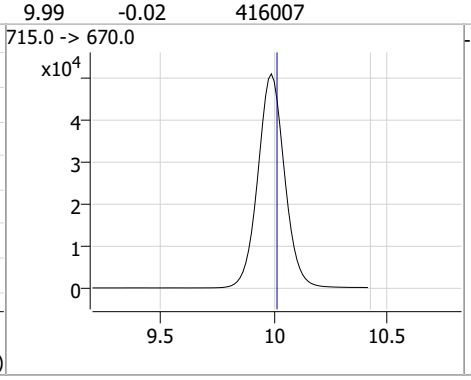


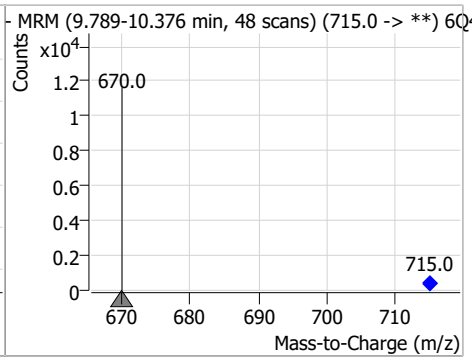


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.87	9.99	-0.02	416007				







Manual Integration Approval Summary

Sample Number: FA98286-37
Lab FileID: 6Q4695.D
Injection Time: 09/15/22 07:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
d3-MeFOSA			7.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4758.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:19:13 AM
Sample Name : fa98286-37
Vial : P2-B8
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.911	217.0 -> 172.0	9506	4.00	µg/L	-0.037
M5-PFPeA	3.393	268.0 -> 223.0	18428	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	30425	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	36991	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	66959	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	87404	4.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	65985	4.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	79288	4.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	106361	4.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	89959	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	23426	4.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	4484	4.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	4378	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	6705	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	36344	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	51437	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	36162	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	27530	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	683	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	1413	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	22092	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	36344	2.69	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.5%		
13C2-6:2FTS	6.124	429.0 -> 409.0	51437	3.01	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.1%		
13C2-8:2FTS	7.333	529.0 -> 509.0	36162	2.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C2-PFDoDA	8.320	615.0 -> 570.0	106361	2.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.5%		
13C2-PFTeDA	9.989	715.0 -> 670.0	89959	3.00	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.0%		
13C3-PFBS	3.610	302.0 -> 99.0	4484	2.93	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.6%		
13C3-PFHxS	5.463	402.0 -> 99.0	4378	3.17	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C4-PFBA	1.911	217.0 -> 172.0	9506	2.39	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	36991	2.99	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%		
13C5-PFHxA	4.561	318.0 -> 273.0	30425	2.85	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%		
13C5-PFPeA	3.393	268.0 -> 223.0	18428	2.63	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.1%		
13C6-PFDA	7.297	519.0 -> 474.0	65985	3.24	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

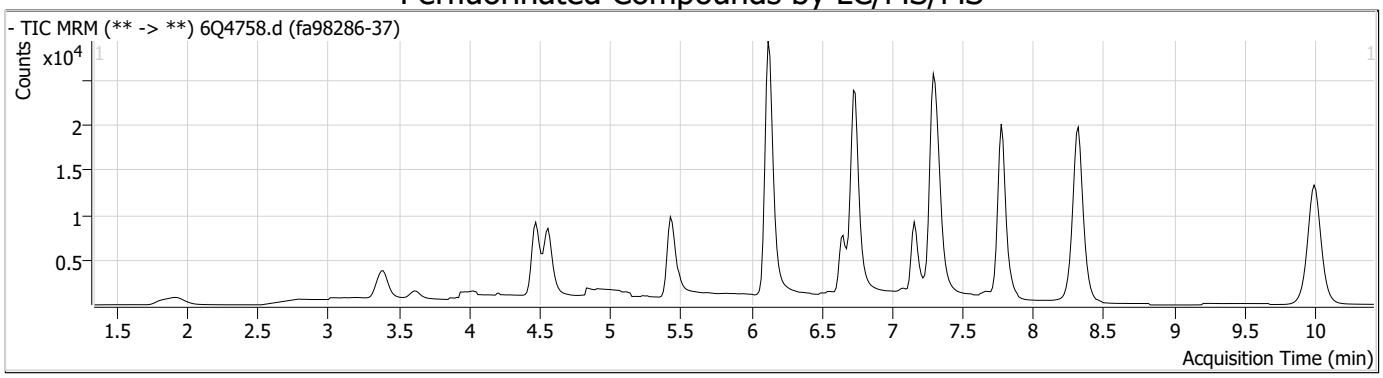
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.2%	
13C7-PFUnDA	7.775	570.0 -> 525.0	79288	2.99 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%	
13C8-FOSA	6.654	506.0 -> 78.0	23426	2.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.0%	
13C8-PFOA	6.138	421.0 -> 376.0	66959	3.16 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%	
13C8-PFOS	6.717	507.0 -> 99.0	6705	3.16 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%	
13C9-PFNA	6.745	472.0 -> 427.0	87404	3.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%	
d3-MeFOSAA	7.155	573.0 -> 419.0	27530	3.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	693	2.61 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%	
d3-MeFOSA	7.085	515.0 -> 169.0	1413	0.62 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.1%	
d5-EtFOSAA	7.302	589.0 -> 419.0	22063	3.25 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.3%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

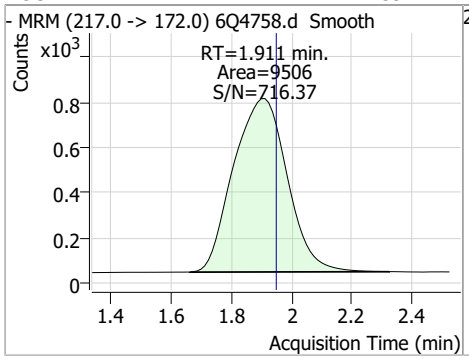
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.308	263.0 -> 219.0	32	0.01	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

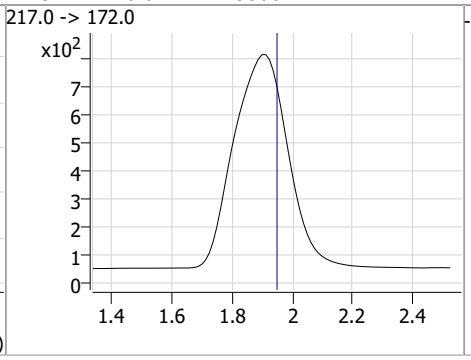
 # = Qualifier out of range, m = manually integrated, + = Area summed

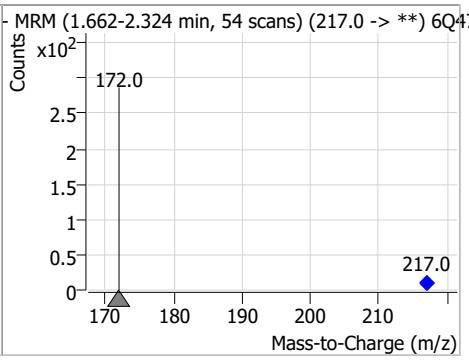
Perfluorinated Compounds by LC/MS/MS



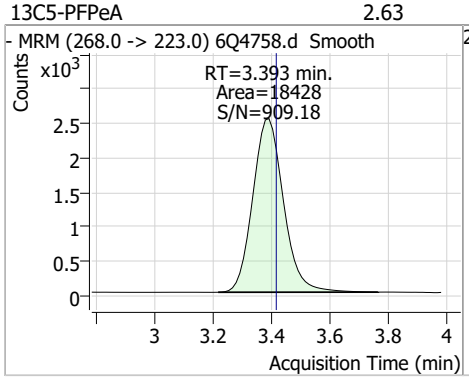
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.39	1.91	-0.04	9506				

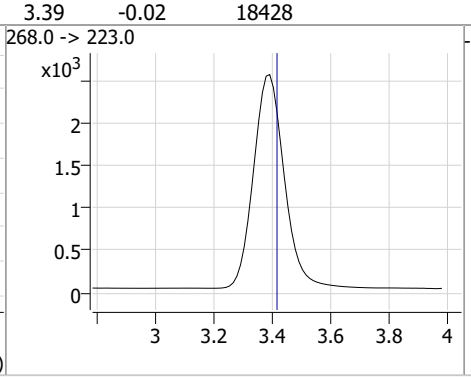


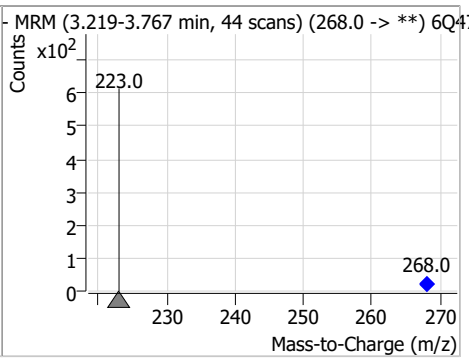




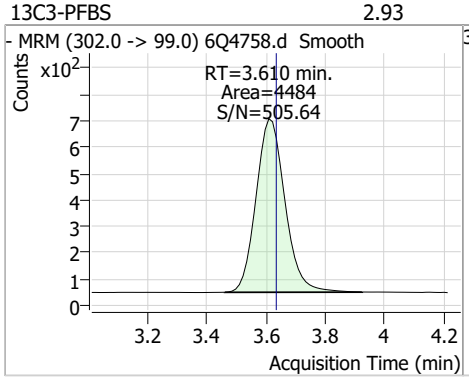
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.63	3.39	-0.02	18428				

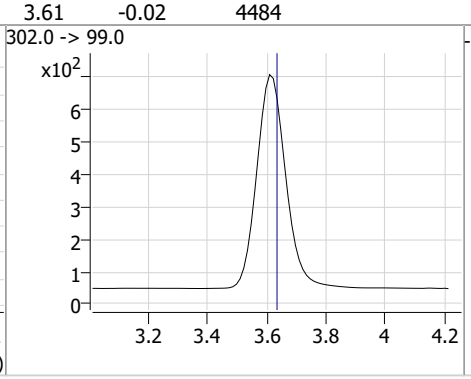


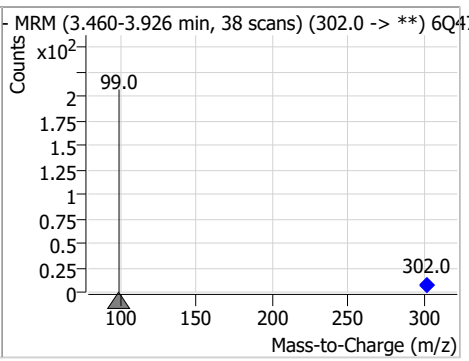




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.93	3.61	-0.02	4484				

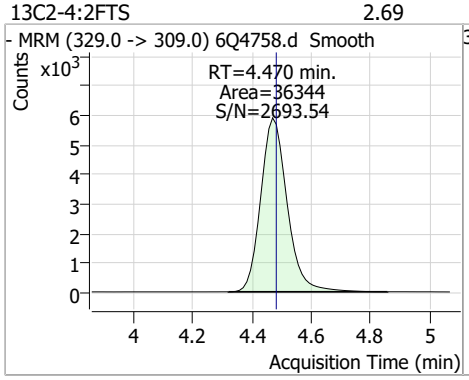


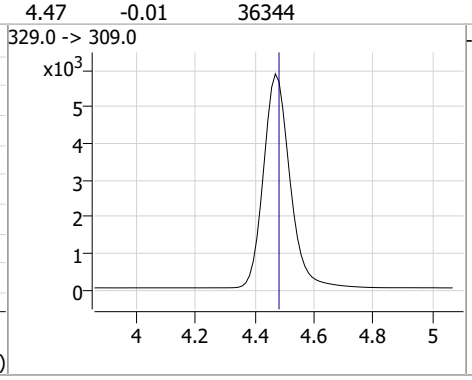


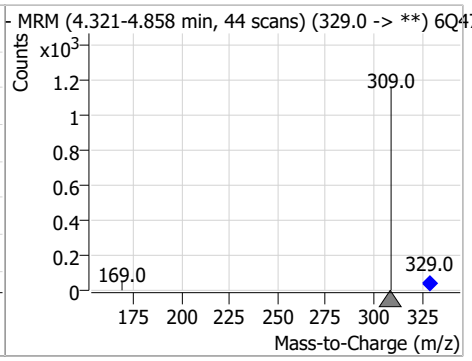


Perfluorinated Compounds by LC/MS/MS

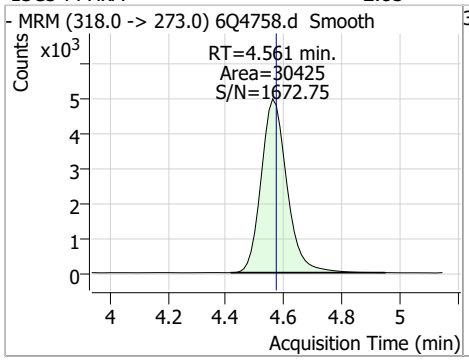
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.69	4.47	-0.01	36344				

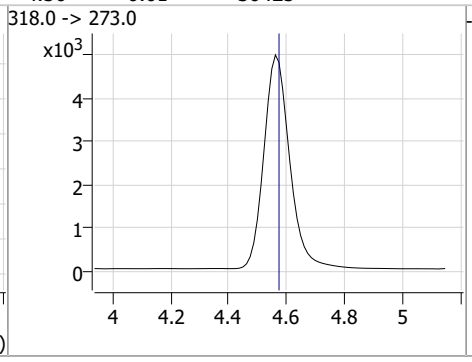


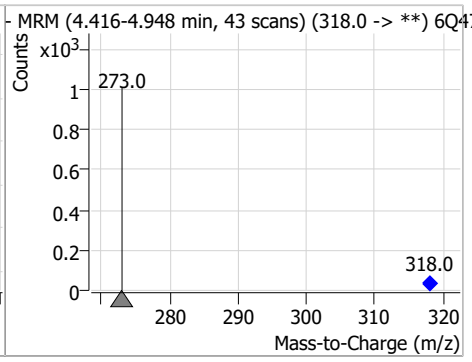




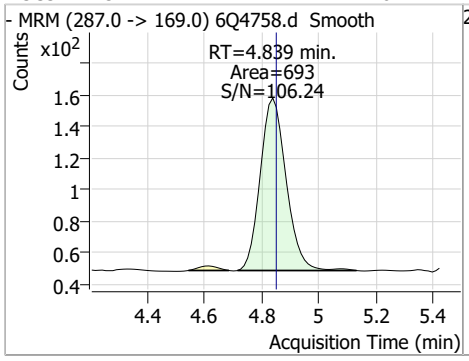
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.85	4.56	-0.01	30425				

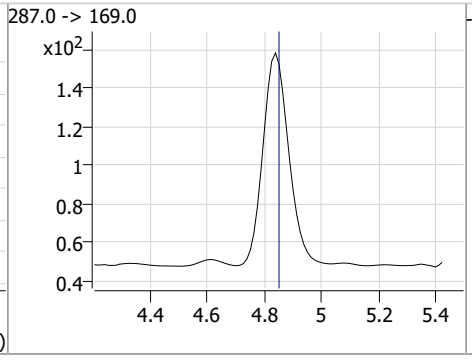


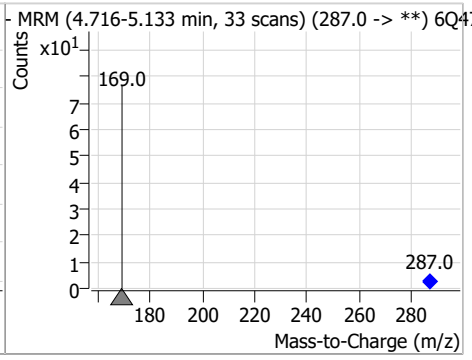




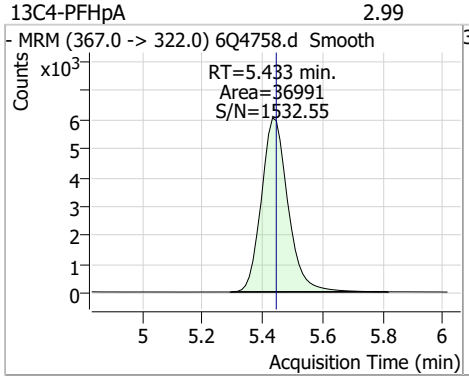
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.61	4.84	-0.01	693				

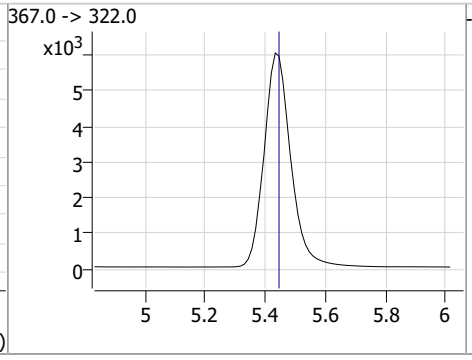


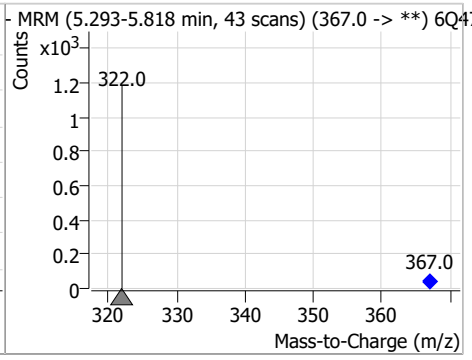




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.99	5.43	-0.01	36991				

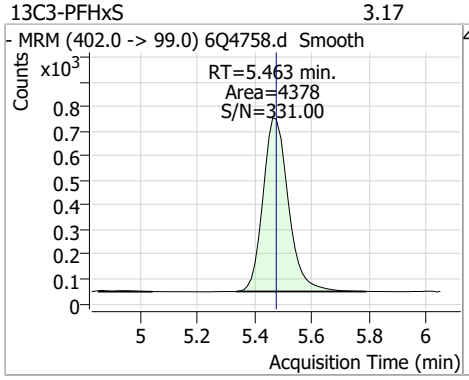


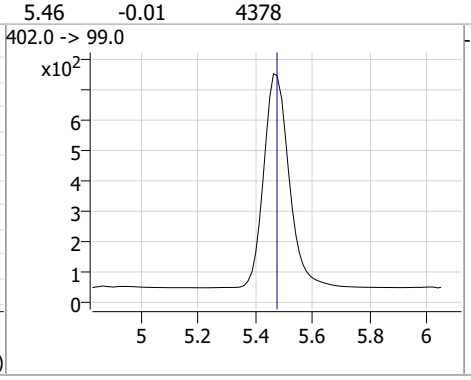


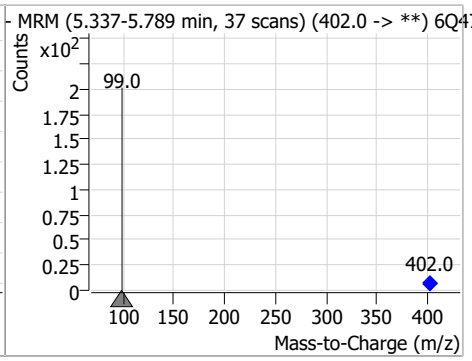


Perfluorinated Compounds by LC/MS/MS

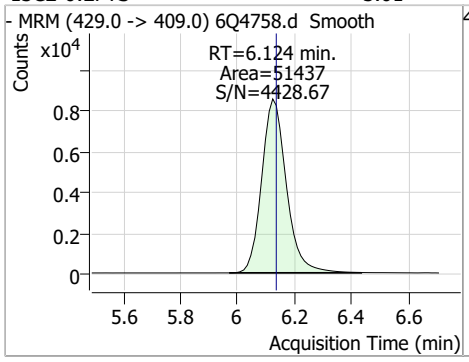
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.17	5.46	-0.01	4378				

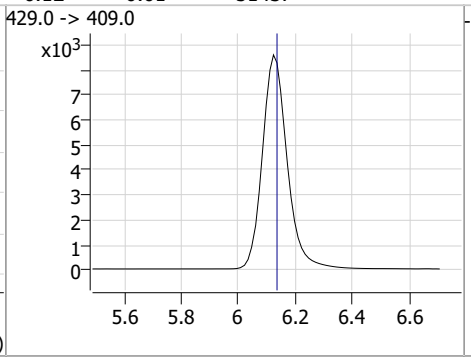


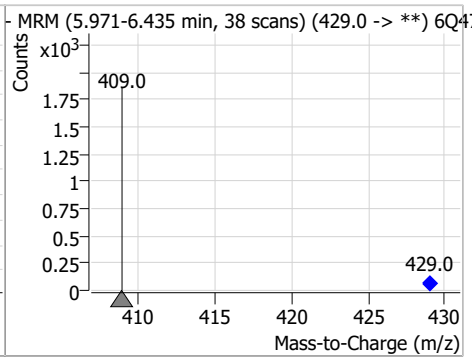




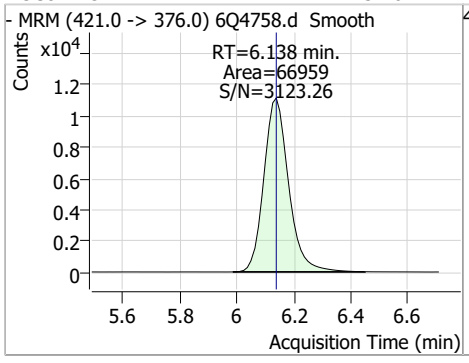
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.01	6.12	-0.01	51437				

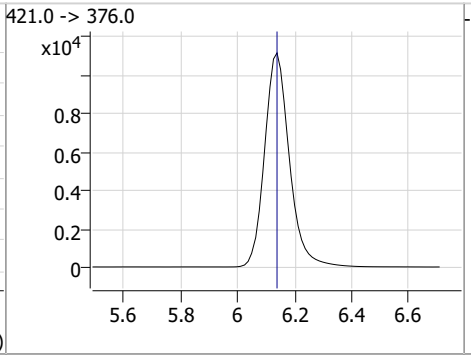


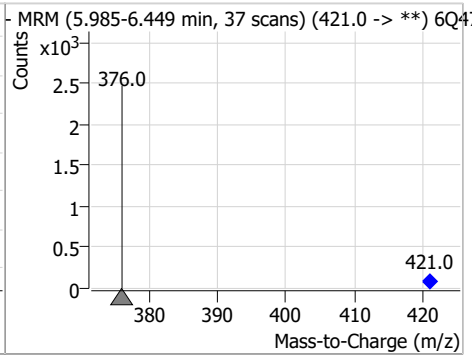




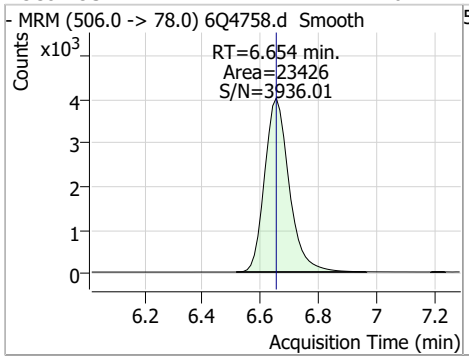
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.16	6.14	0.00	66959				

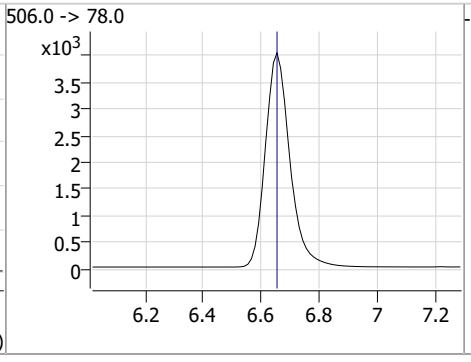


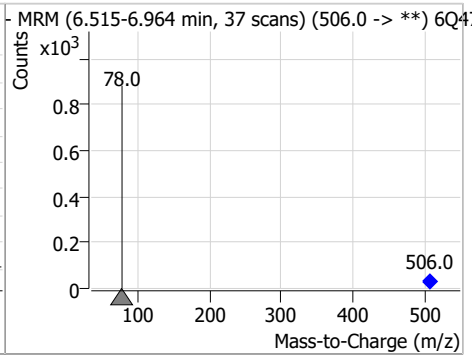




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.40	6.65	0.00	23426				

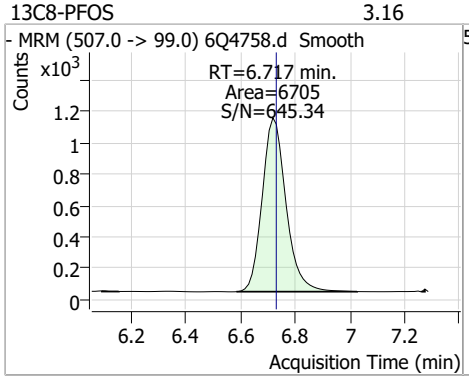


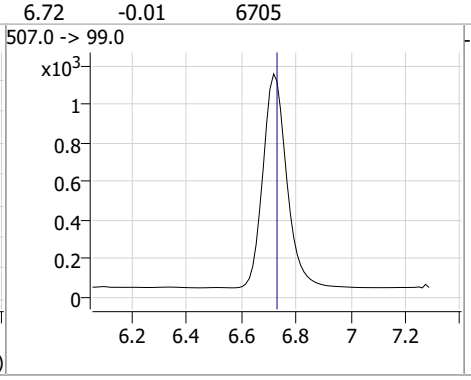


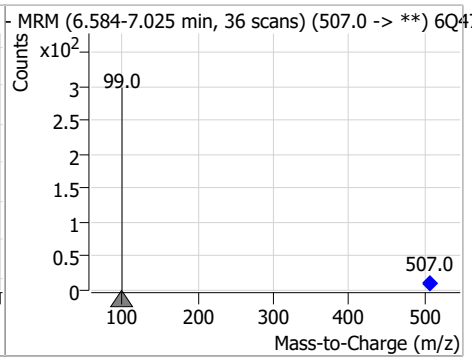


Perfluorinated Compounds by LC/MS/MS

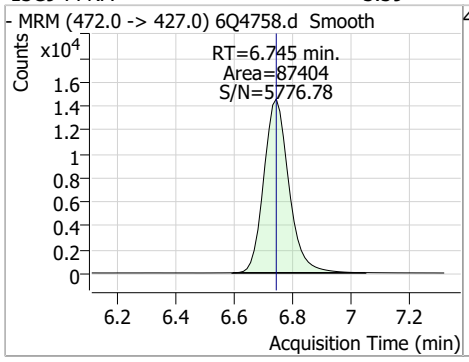
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.16	6.72	-0.01	6705				

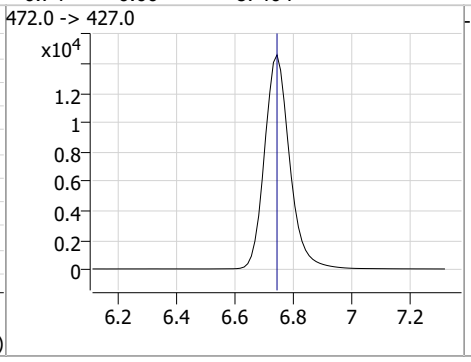


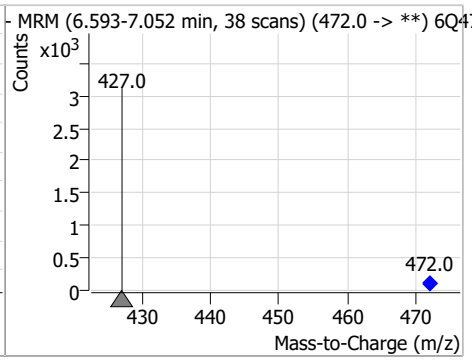




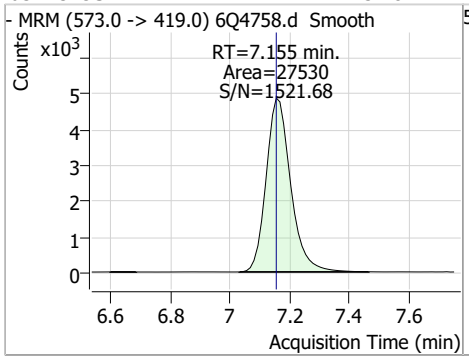
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.39	6.74	0.00	87404				

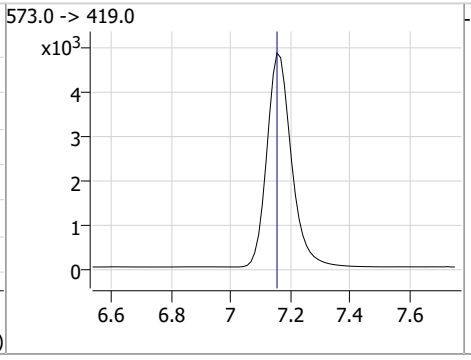


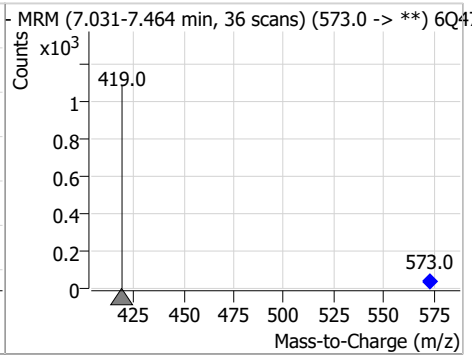




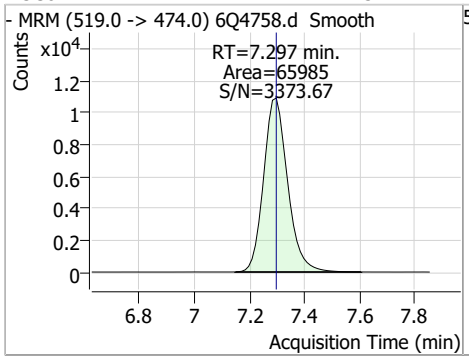
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.18	7.15	0.00	27530				

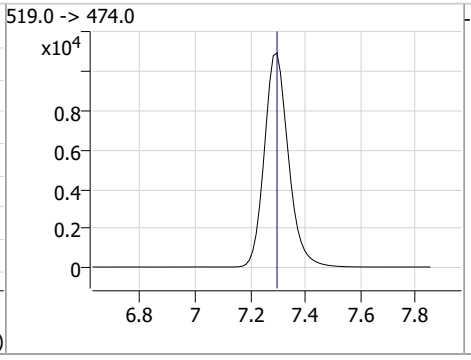


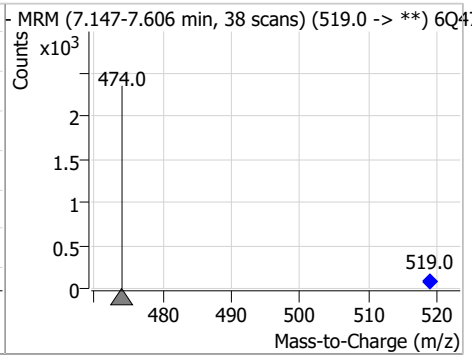




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.24	7.30	0.00	65985				

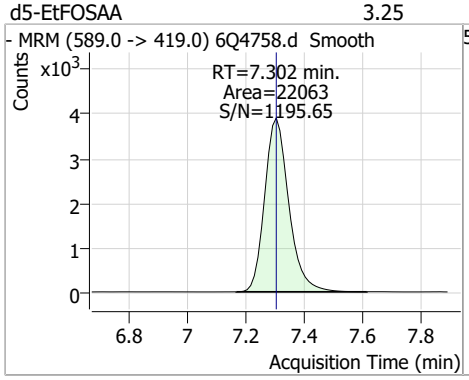


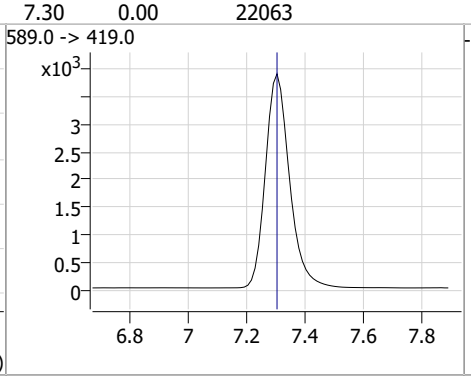


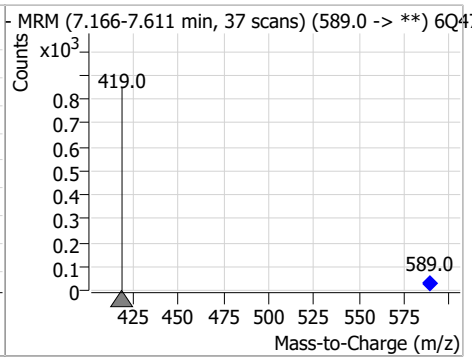


Perfluorinated Compounds by LC/MS/MS

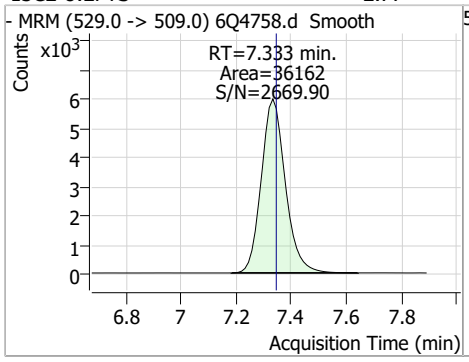
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.25	7.30	0.00	22063				

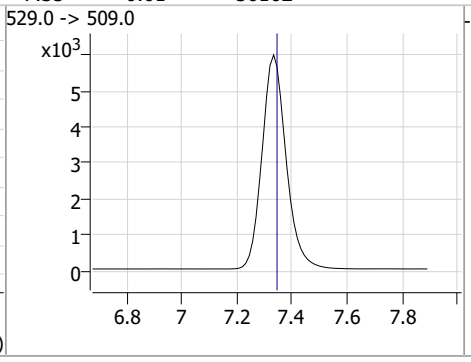


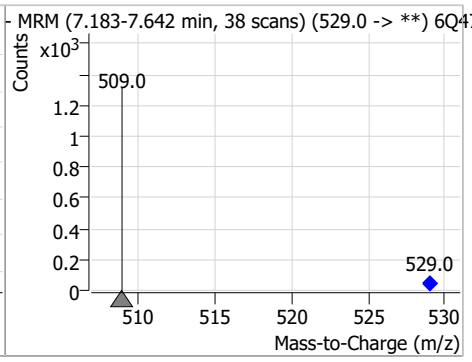




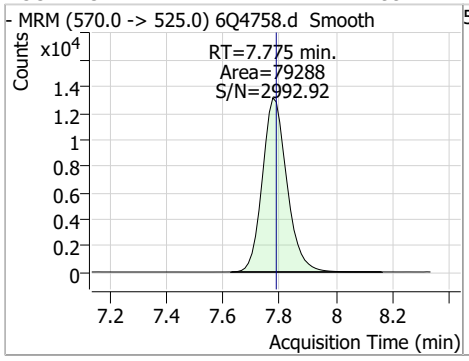
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.77	7.33	-0.01	36162				

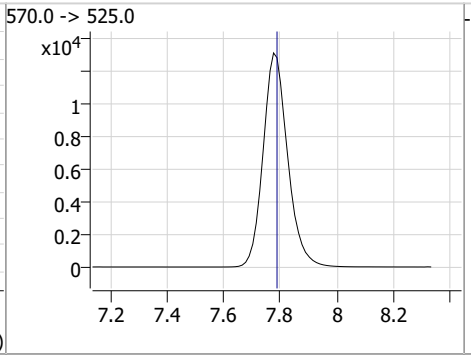


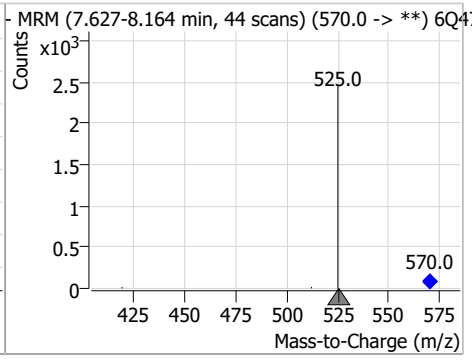




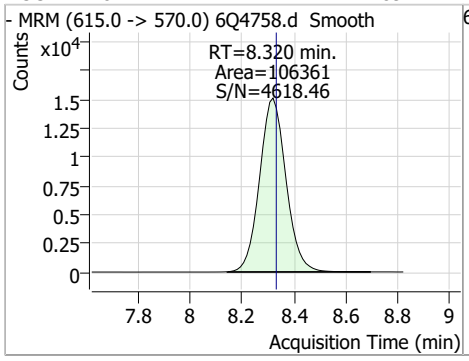
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.99	7.78	-0.01	79288				

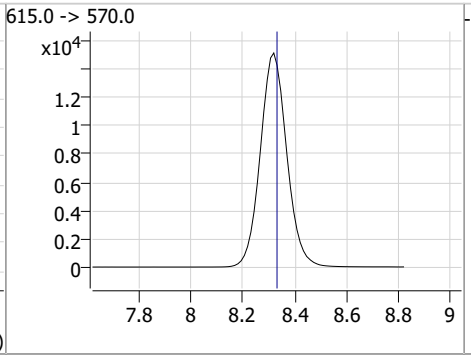


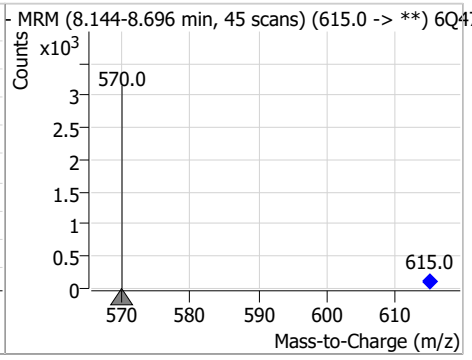




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.89	8.32	-0.01	106361				

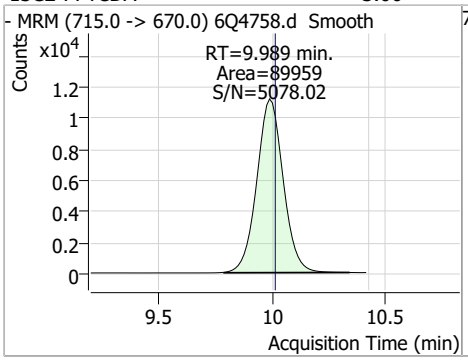


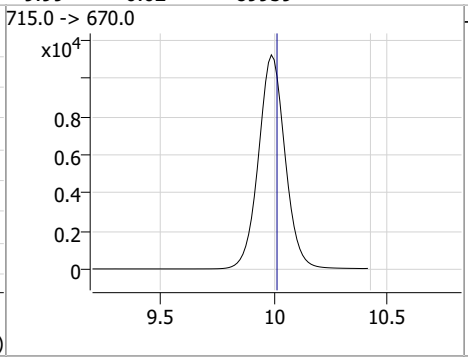


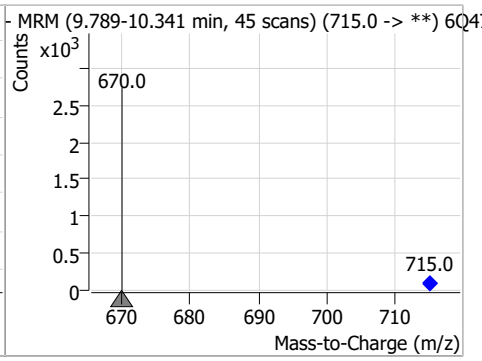


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	3.00	9.99	-0.02	89959				







Manual Integration Approval Summary

Sample Number: FA98286-37
Lab FileID: 6Q4758.D
Injection Time: 09/16/22 06:19
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.31	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4696.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:18:08 AM
Sample Name : fa98286-38
Vial : P6-C3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.899	217.0 -> 172.0	45864	20.00	µg/L	-0.050
M5-PFPeA	3.380	268.0 -> 223.0	94030	20.00	µg/L	-0.037
M5-PFHxA	4.548	318.0 -> 273.0	153496	20.00	µg/L	-0.025
M4-PFHpA	5.433	367.0 -> 322.0	187999	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	341019	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	433593	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	352458	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	423911	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	536352	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	391424	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	118153	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	23137	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	22851	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	34232	20.00	µg/L	-0.012
M2-4:2FTS	4.458	329.0 -> 309.0	213212	20.00	µg/L	-0.025
M2-6:2FTS	6.124	429.0 -> 409.0	290118	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	208390	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	154650	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3395	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	1813	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	126735	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.458	329.0 -> 309.0	213212	15.79	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%		
13C2-6:2FTS	6.124	429.0 -> 409.0	290118	17.00	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%		
13C2-8:2FTS	7.333	529.0 -> 509.0	208390	15.99	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C2-PFDoDA	8.307	615.0 -> 570.0	536352	14.58	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.9%		
13C2-PFTeDA	9.989	715.0 -> 670.0	391424	13.05	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%		
13C3-PFBS	3.610	302.0 -> 99.0	23137	15.11	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.5%		
13C3-PFHxS	5.463	402.0 -> 99.0	22851	16.53	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C4-PFBA	1.899	217.0 -> 172.0	45864	11.52	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.6%		
13C4-PFHpA	5.433	367.0 -> 322.0	187999	15.19	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%		
13C5-PFHxA	4.548	318.0 -> 273.0	153496	14.36	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%		
13C5-PFPeA	3.380	268.0 -> 223.0	94030	13.41	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.1%		
13C6-PFDA	7.283	519.0 -> 474.0	352458	17.32	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

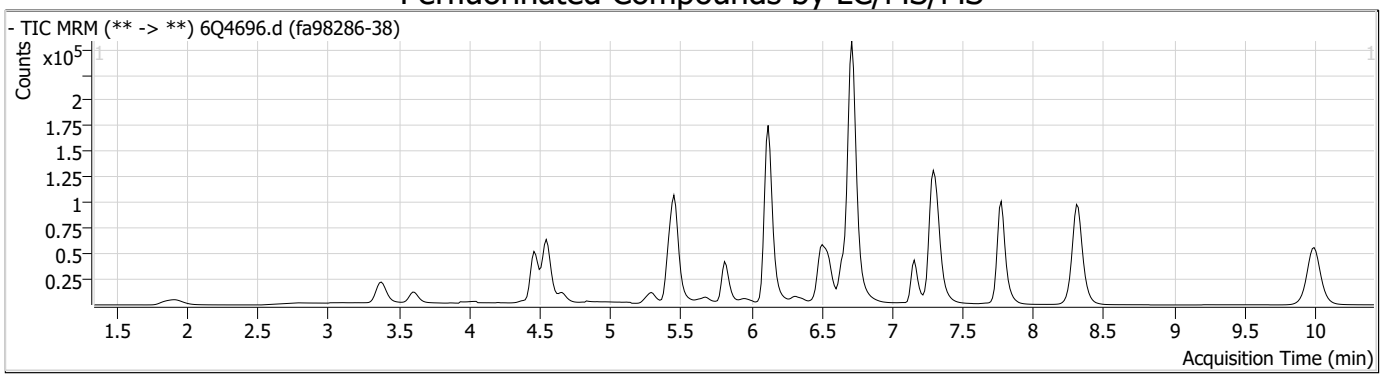
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	423911	15.97	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%			
13C8-FOSA	6.654	506.0 -> 78.0	118153	12.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.4%			
13C8-PFOA	6.126	421.0 -> 376.0	341019	16.07	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%			
13C8-PFOS	6.717	507.0 -> 99.0	34232	16.14	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%			
13C9-PFNA	6.732	472.0 -> 427.0	433593	16.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.1%			
d3-MeFOSAA	7.155	573.0 -> 419.0	154650	17.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3429	12.90	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%			
d3-MeFOSA	7.085	515.0 -> 169.0	1723	0.76	µg/L	m	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 3.8%			
d5-EtFOSAA	7.302	589.0 -> 419.0	126792	18.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	6.124	427.0 -> 407.0	7659	0.52	µg/L		97
		427.0 -> 81.0	1978				
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.905	213.0 -> 169.0	3913	3.91	µg/L		100
PFBS	3.602	299.0 -> 80.0	21515	5.59	µg/L	m	100
		299.0 -> 99.0	8144				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	37767	3.09	µg/L	m	100
		363.0 -> 169.0	5509				
PFHpS	6.123	449.0 -> 80.0	17792	5.95	µg/L	m	90
		449.0 -> 99.0	8099				
PFHxA	4.549	313.0 -> 269.0	96607	11.97	µg/L		100
		313.0 -> 119.0	2421				
PFHxS	5.465	399.0 -> 80.0	250266	76.43	µg/L	m	99
		399.0 -> 99.0	119421				
PFNA	6.733	463.0 -> 419.0	4425	0.22	µg/L	m	88
		463.0 -> 219.0	1055				
PFNS	7.033	549.0 -> 80.0	0		µg/L	m	1
		549.0 -> 99.0	0				
PFOA	6.126	413.0 -> 369.0	75710	4.11	µg/L	m	96
		413.0 -> 169.0	12713				
PFOS	6.719	499.0 -> 80.0	757044	238.56	µg/L	m	95

Perfluorinated Compounds by LC/MS/MS

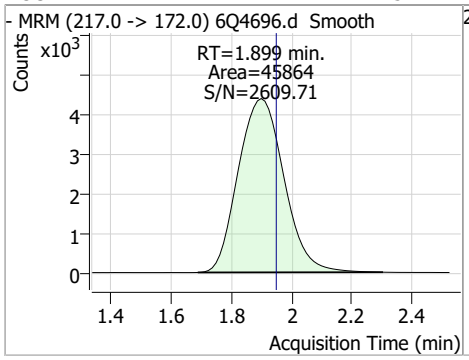
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	331786				
PFPeA	3.383	263.0 -> 219.0	16940	4.28	µg/L	m	100
PFPeS	4.656	349.0 -> 80.0	25330	7.91	µg/L	m	96
		349.0 -> 99.0	12138				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.514	298.0 -> 78.0	16513	2.21	µg/L		99
		298.0 -> 64.0	1196				
FHxSA	5.815	398.0 -> 78.0	157019	20.86	µg/L		99
		398.0 -> 64.0	6098				

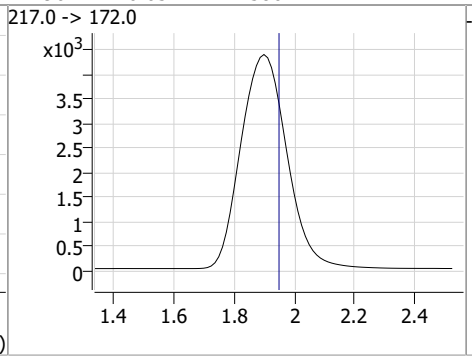
 # = Qualifier out of range, m = manually integrated, + = Area summed

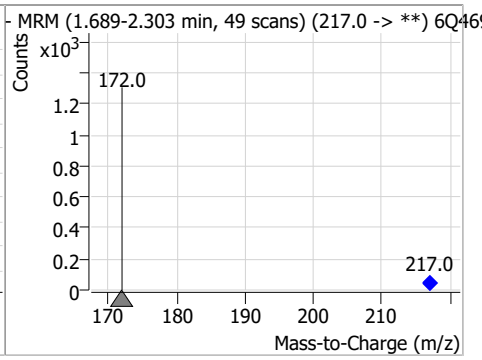
Perfluorinated Compounds by LC/MS/MS



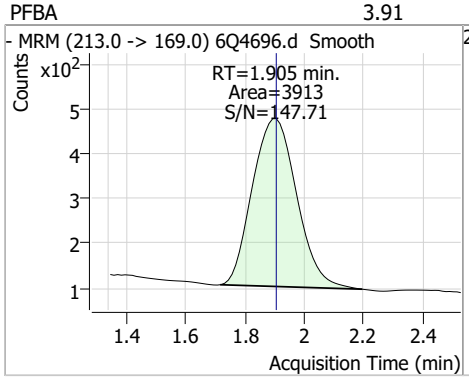
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.52	1.90	-0.05	45864				

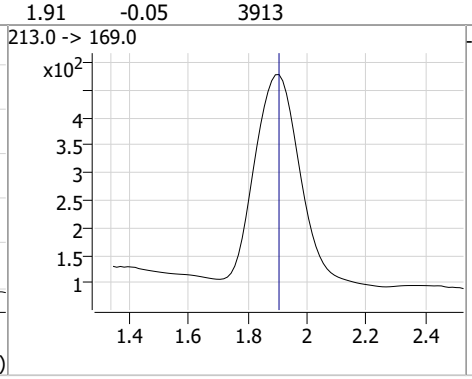


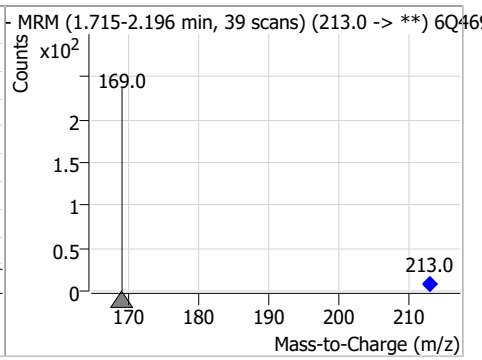




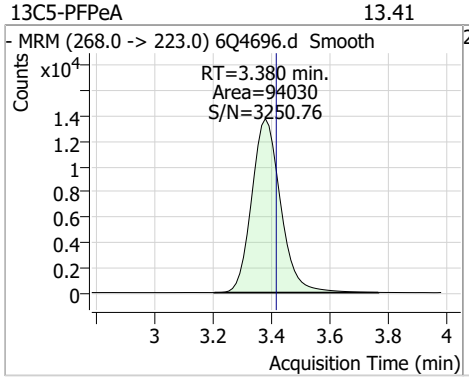
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.91	1.91	-0.05	3913				

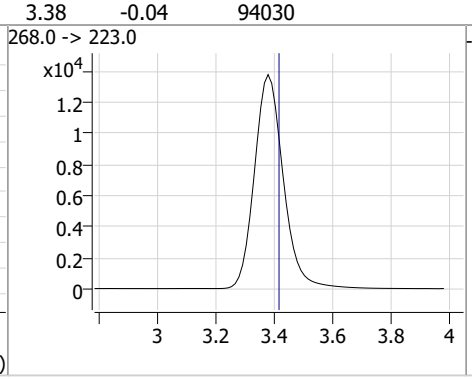


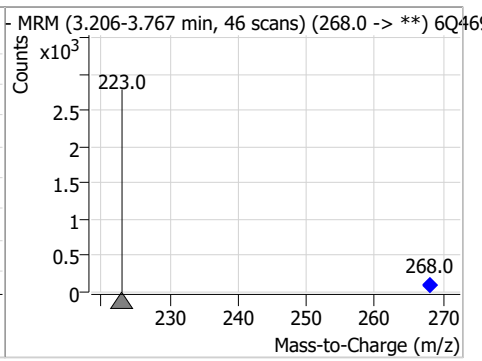




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.41	3.38	-0.04	94030				

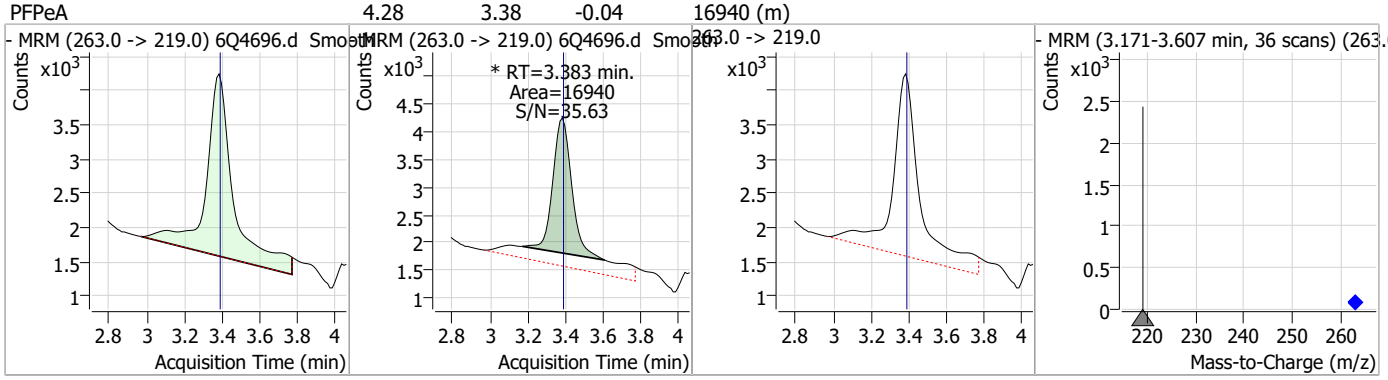




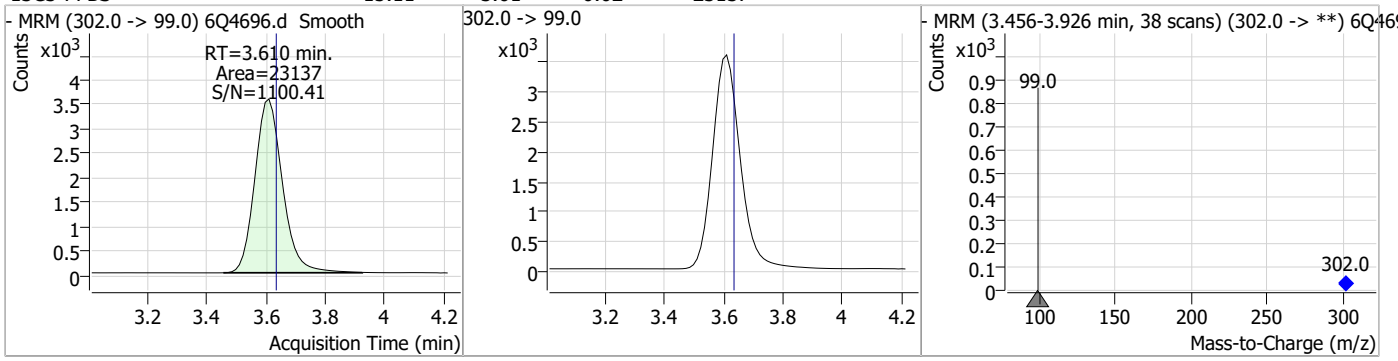


Perfluorinated Compounds by LC/MS/MS

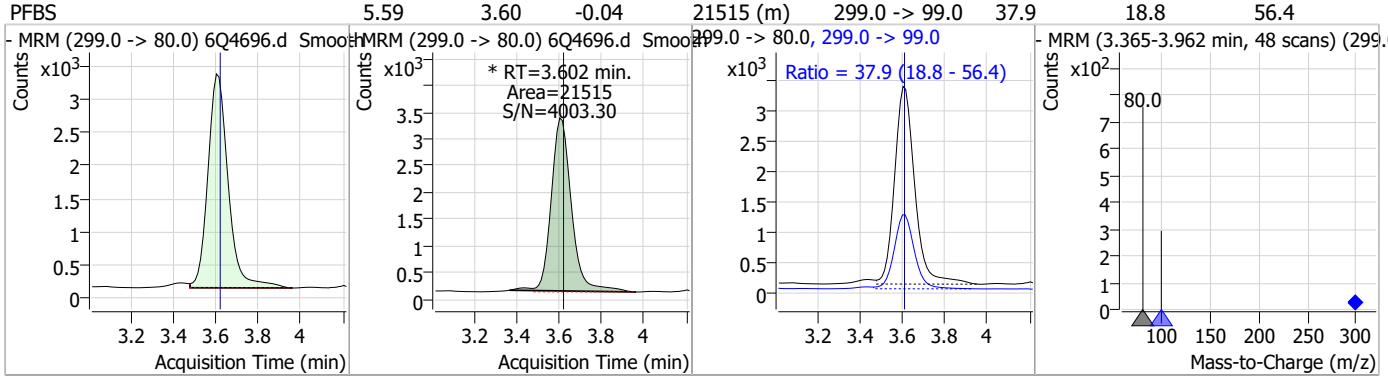
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.28	3.38	-0.04	16940 (m)				



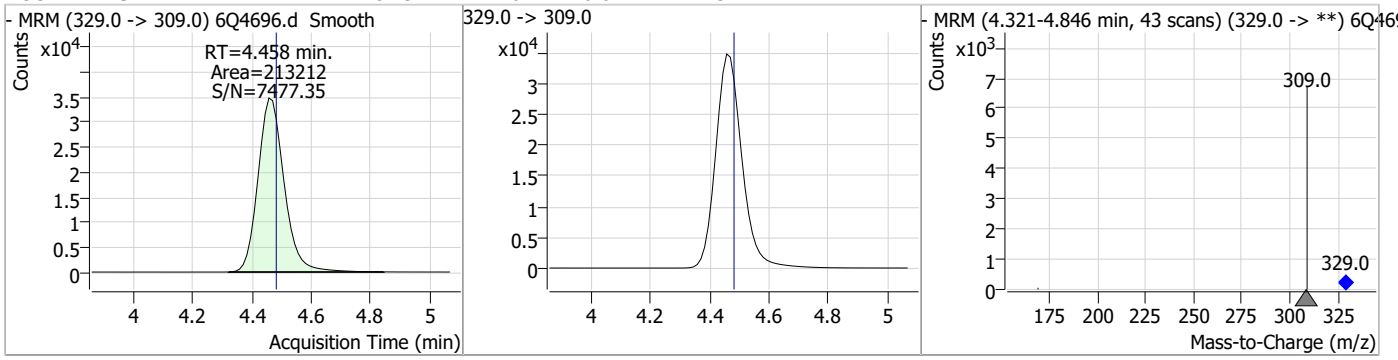
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.11	3.61	-0.02	23137				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.59	3.60	-0.04	21515 (m)	299.0 -> 99.0	37.9	18.8	56.4

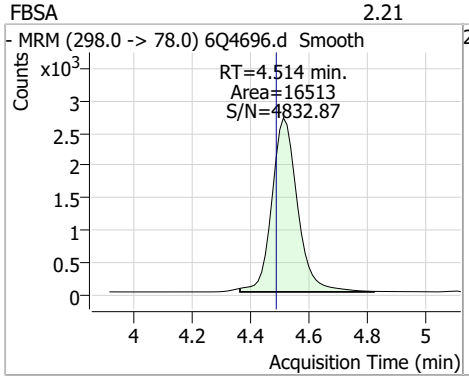


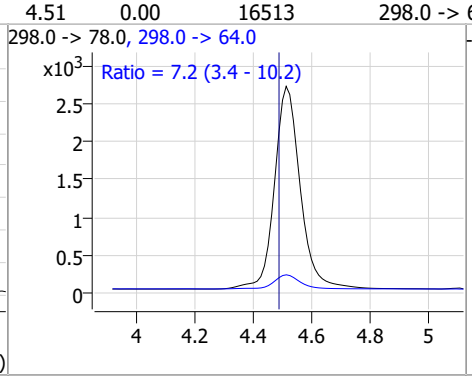
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.79	4.46	-0.02	213212				

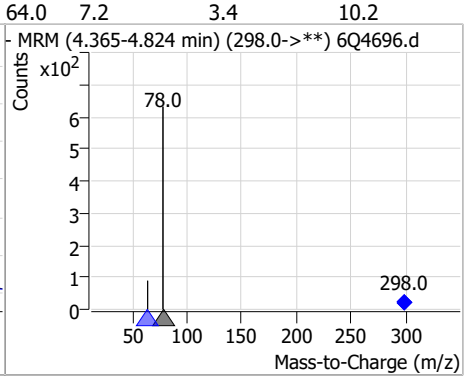


Perfluorinated Compounds by LC/MS/MS

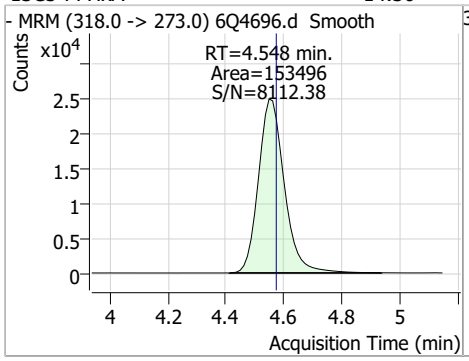
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	2.21	4.51	0.00	16513	298.0 -> 64.0	7.2	3.4	10.2

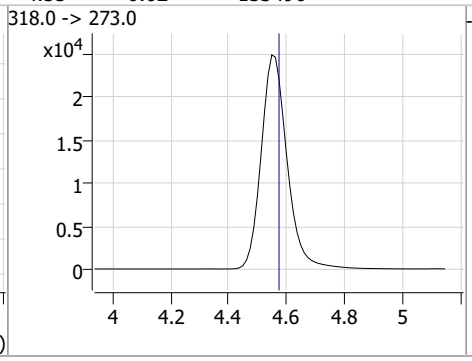


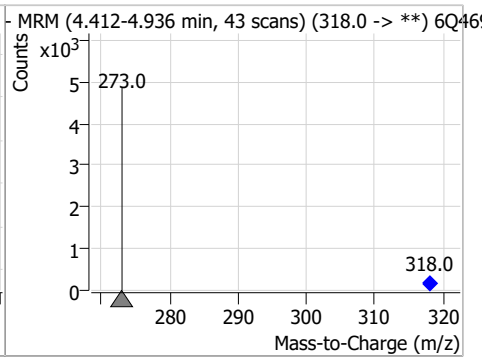




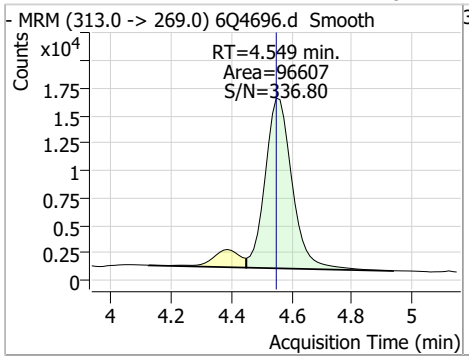
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.36	4.55	-0.02	153496				

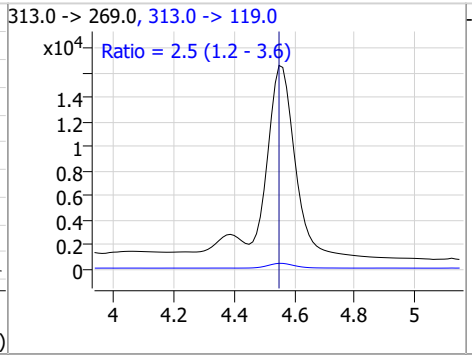


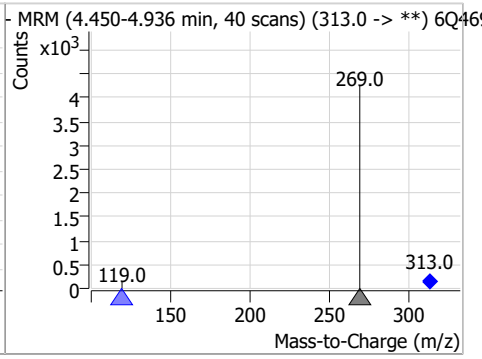




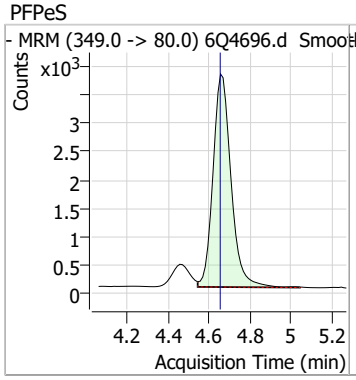
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	11.97	4.55	-0.02	96607	313.0 -> 119.0	2.5	1.2	3.6

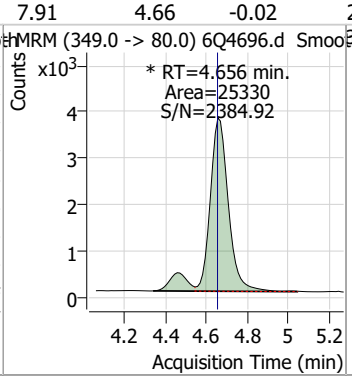


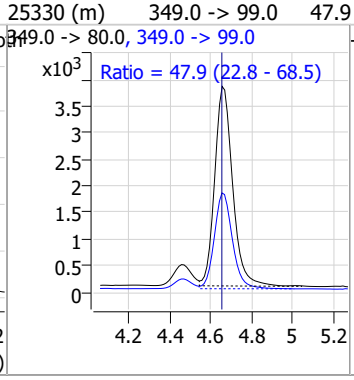


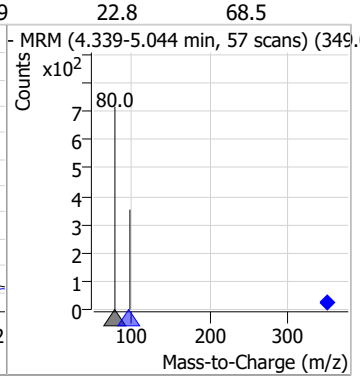


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	7.91	4.66	-0.02	25330 (m)	349.0 -> 99.0	47.9	22.8	68.5



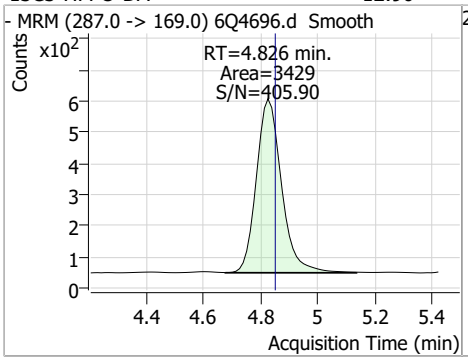


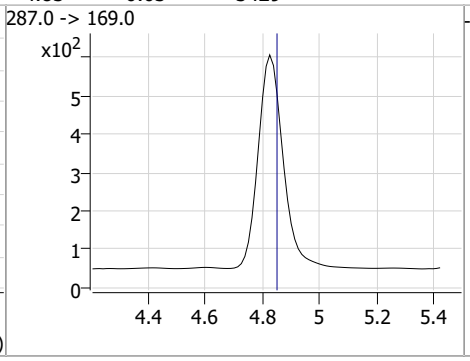


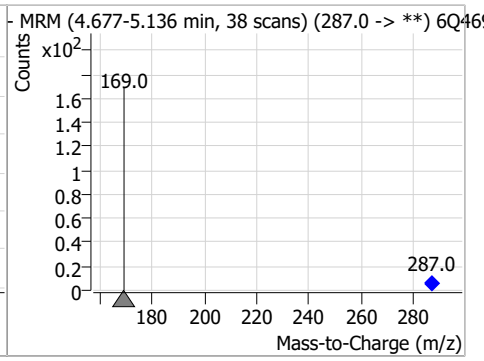


Perfluorinated Compounds by LC/MS/MS

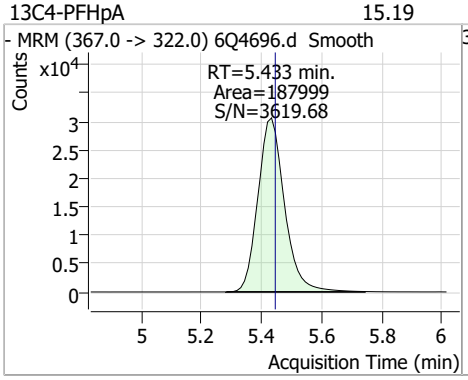
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.90	4.83	-0.03	3429				

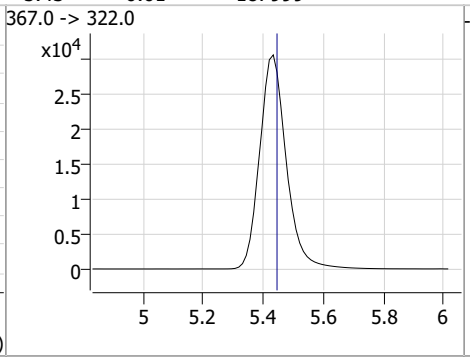


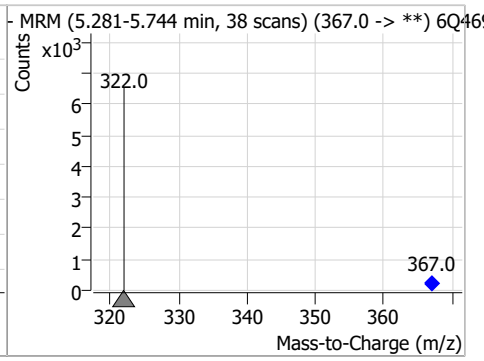




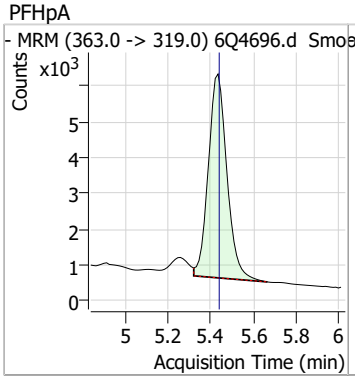
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.19	5.43	-0.01	187999				

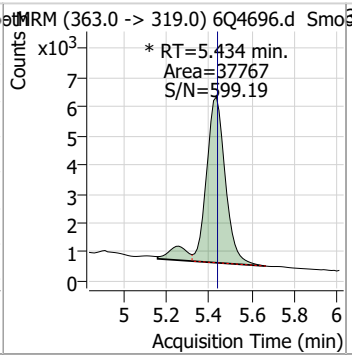


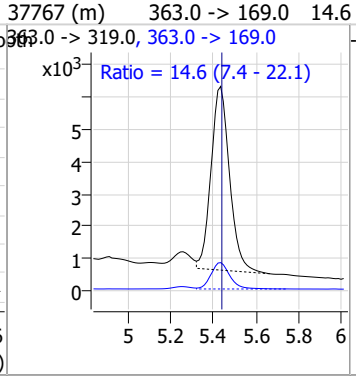


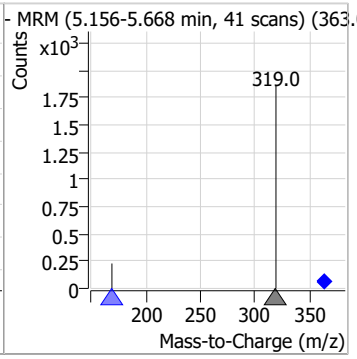


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	3.09	5.43	-0.01	37767 (m)	363.0 -> 169.0	14.6	7.4	22.1

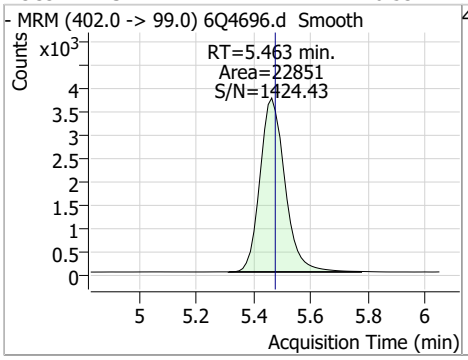


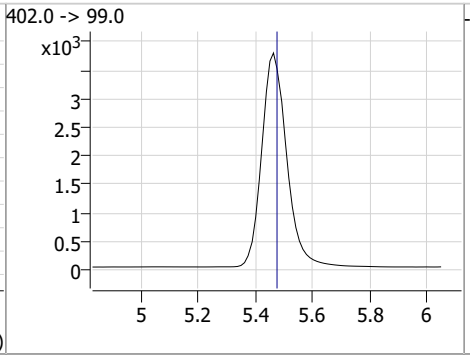


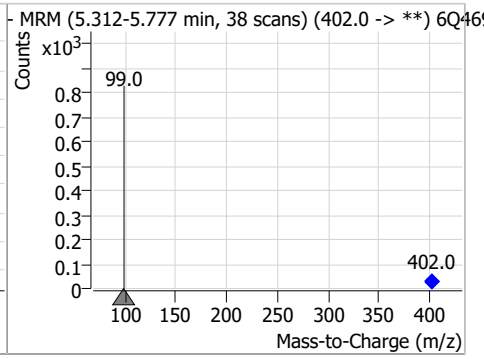




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.53	5.46	-0.01	22851				

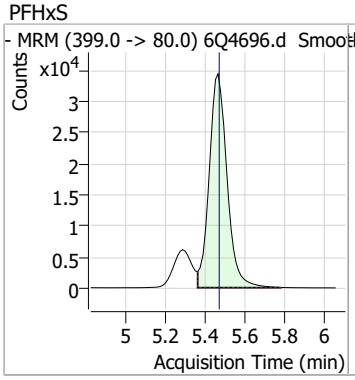


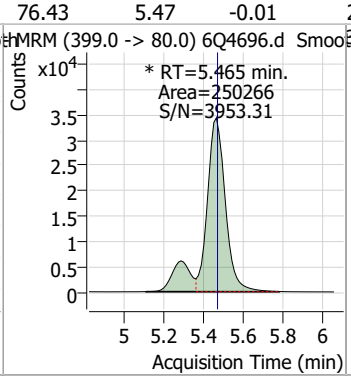


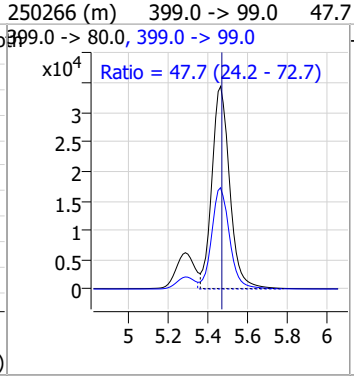


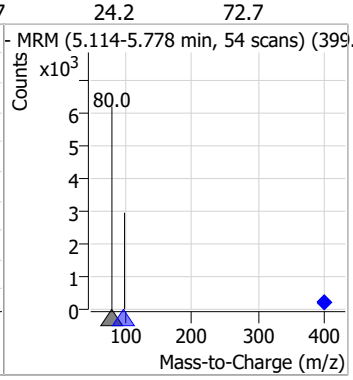
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	76.43	5.47	-0.01	250266 (m)	399.0 -> 99.0	47.7	24.2	72.7

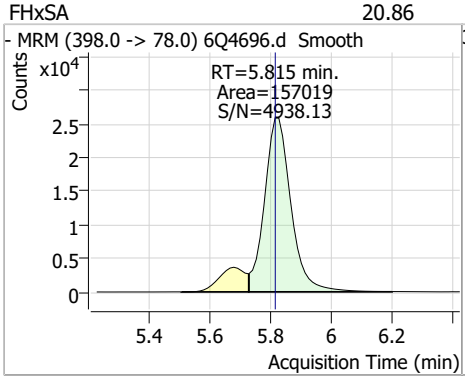


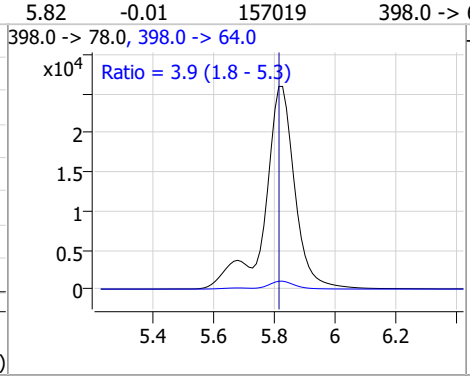


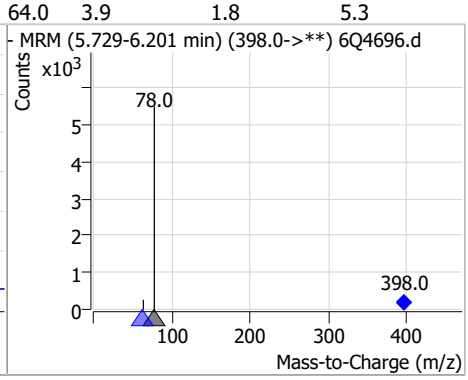




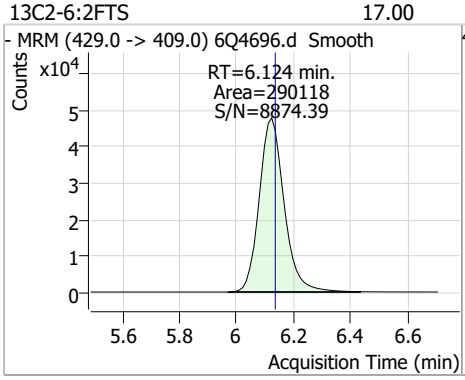
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.86	5.82	-0.01	157019	398.0 -> 64.0	3.9	1.8	5.3

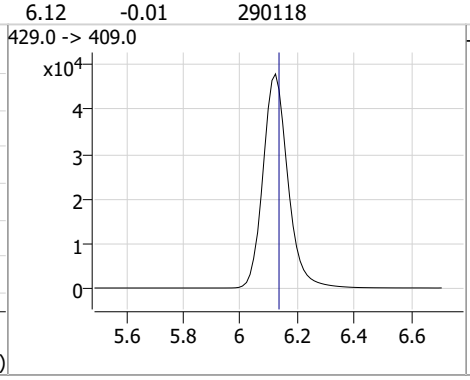


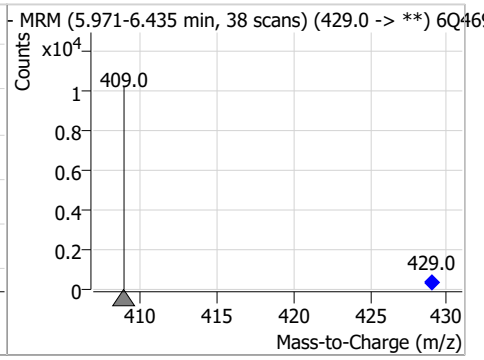




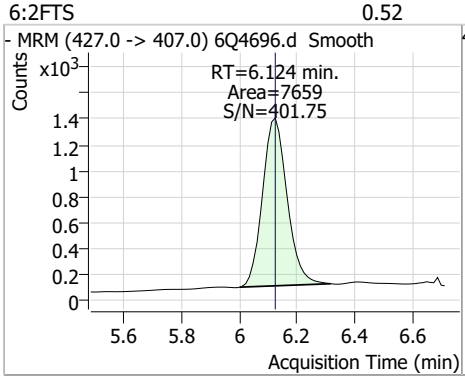
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.00	6.12	-0.01	290118				

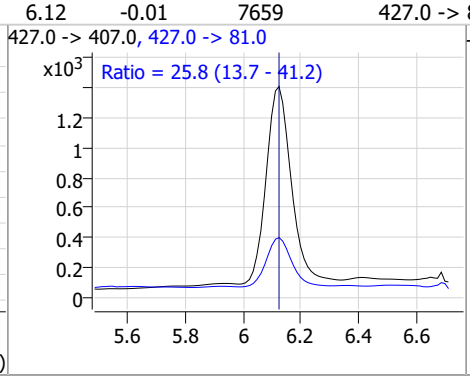


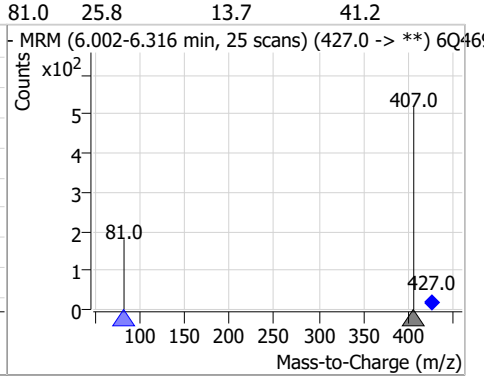




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.52	6.12	-0.01	7659	427.0 -> 81.0	25.8	13.7	41.2

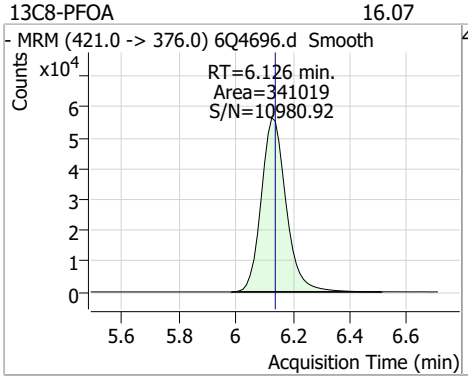


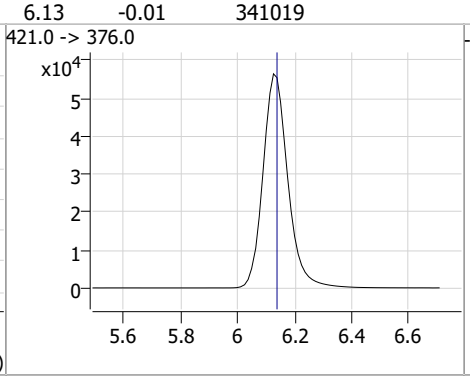


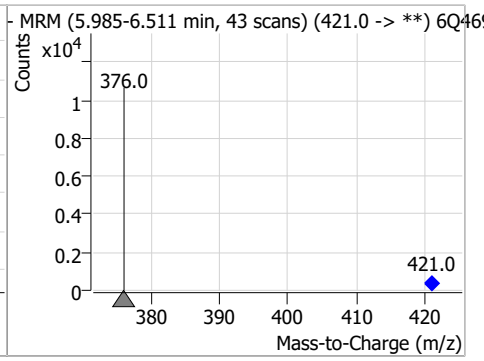


Perfluorinated Compounds by LC/MS/MS

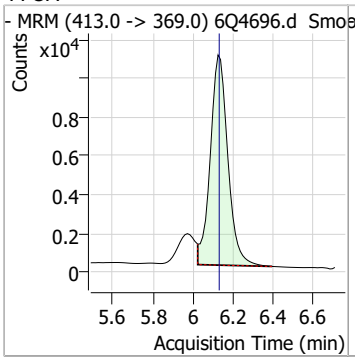
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.07	6.13	-0.01	341019				

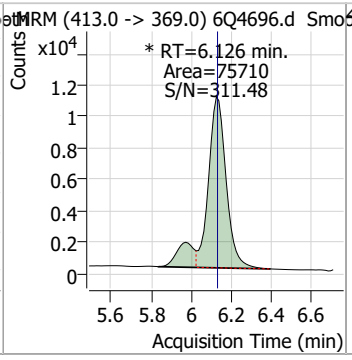


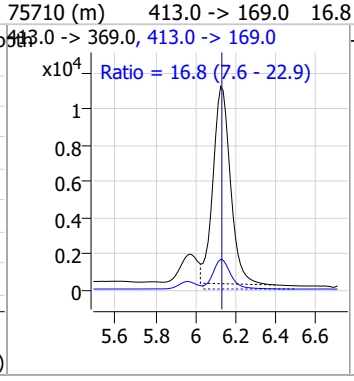


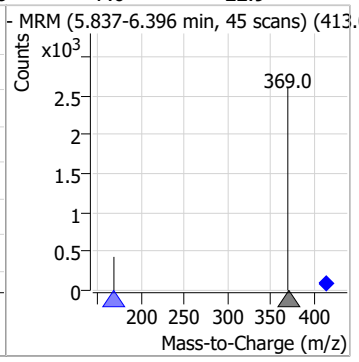


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.11	6.13	-0.01	75710 (m)	413.0 -> 169.0	16.8	7.6	22.9

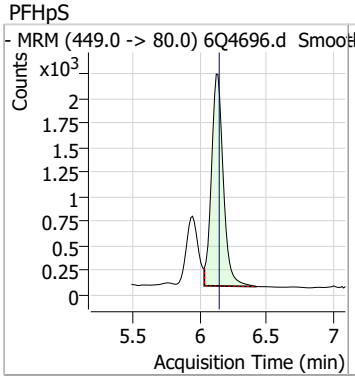


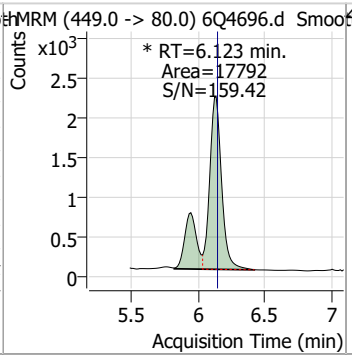


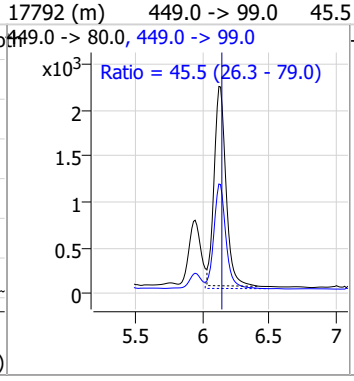


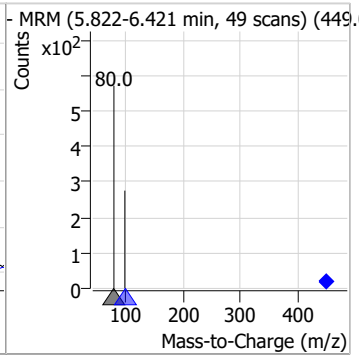


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.95	6.12	-0.02	17792 (m)	449.0 -> 99.0	45.5	26.3	79.0

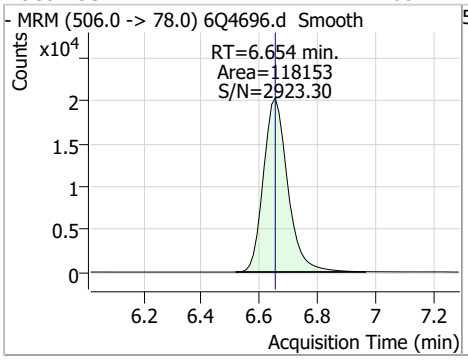


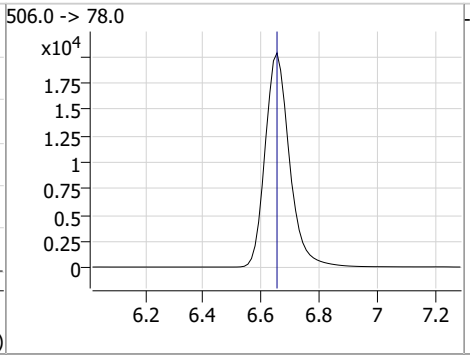


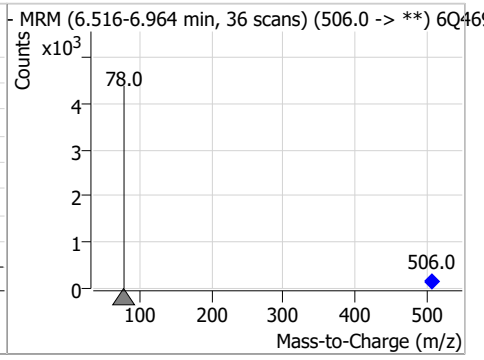




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.08	6.65	0.00	118153				

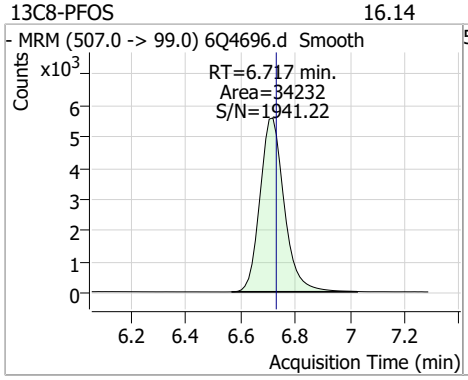


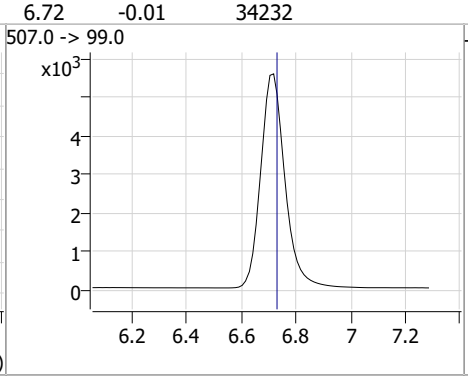


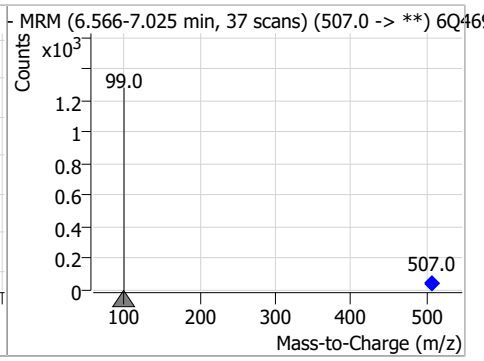


Perfluorinated Compounds by LC/MS/MS

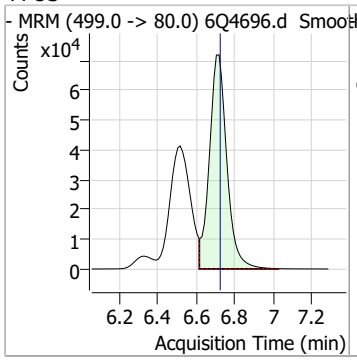
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.14	6.72	-0.01	34232				

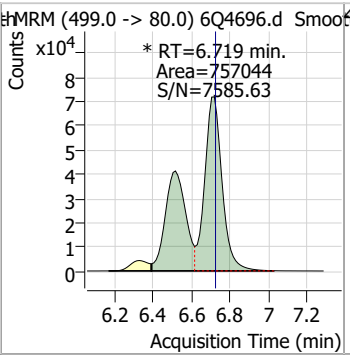


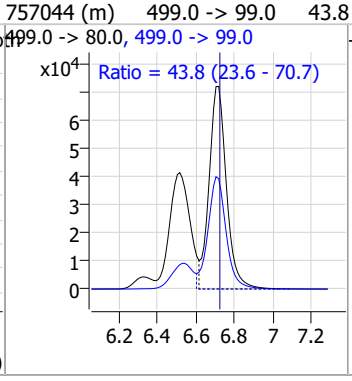


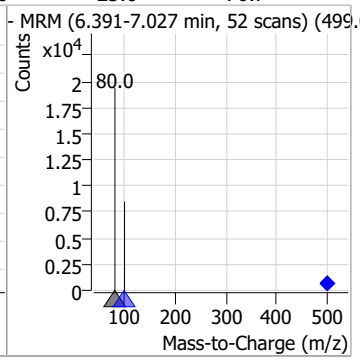


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	238.56	6.72	-0.01	757044 (m)	499.0 -> 99.0	43.8	23.6	70.7

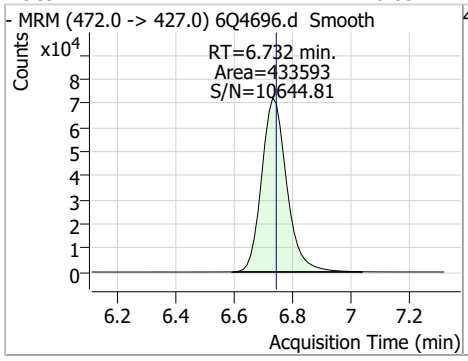


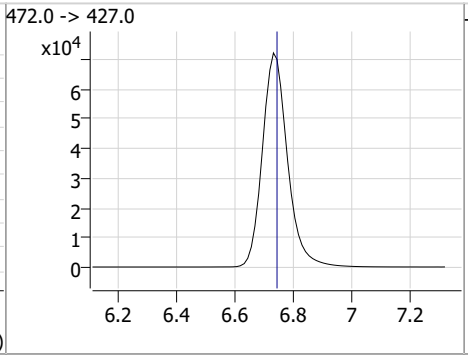


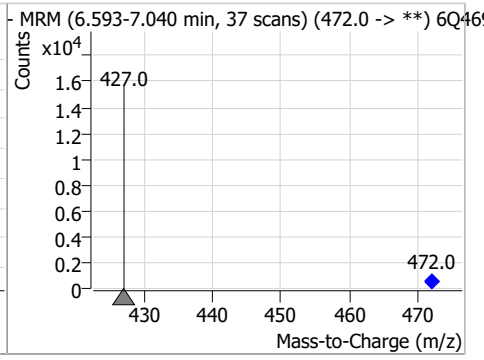




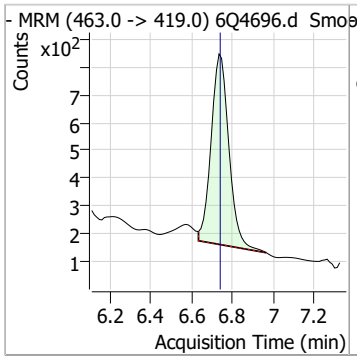
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.83	6.73	-0.01	433593				

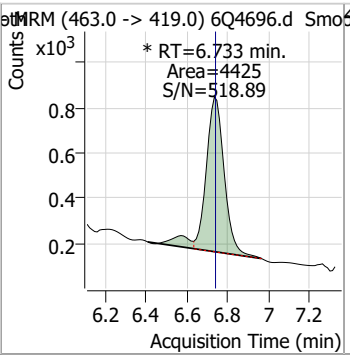


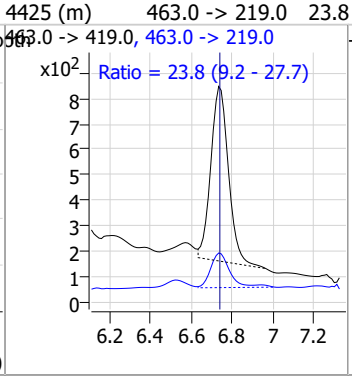


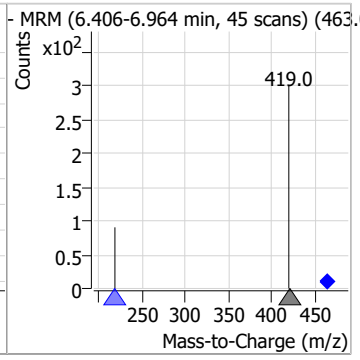


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.22	6.73	-0.01	4425 (m)	463.0 -> 219.0	23.8	9.2	27.7



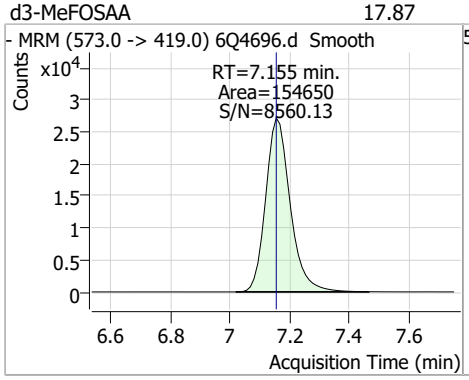


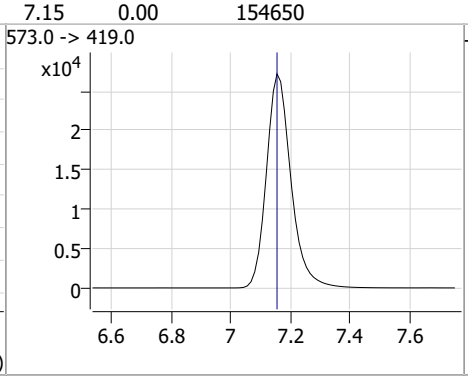


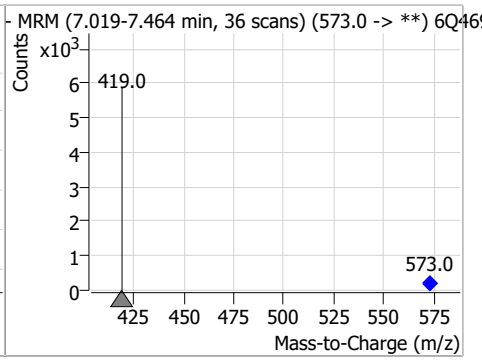


Perfluorinated Compounds by LC/MS/MS

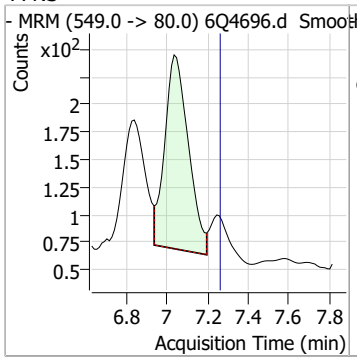
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.87	7.15	0.00	154650				

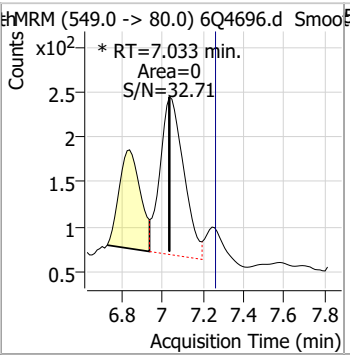


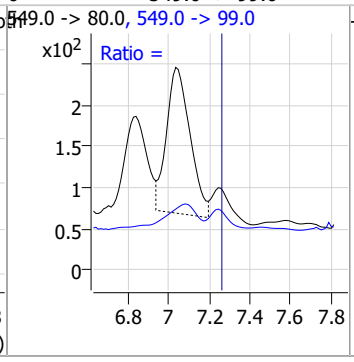


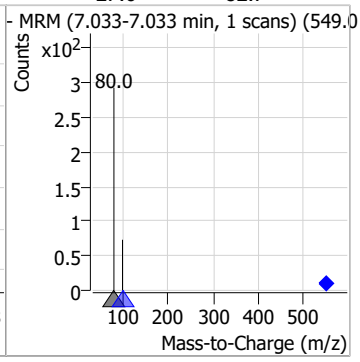


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS		0		0	549.0 -> 99.0		27.6	82.7

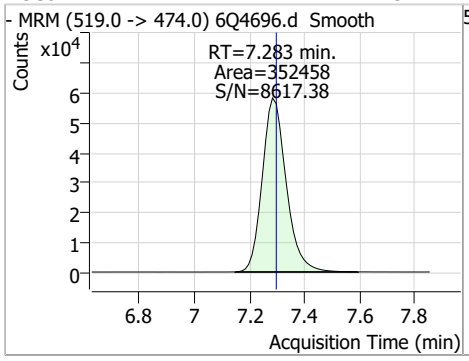


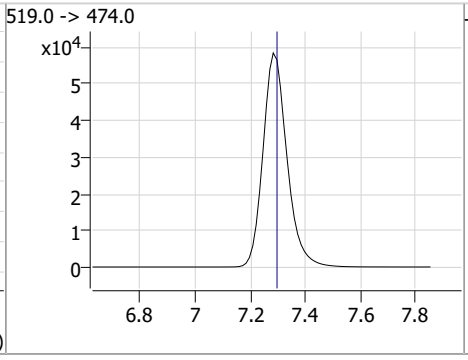


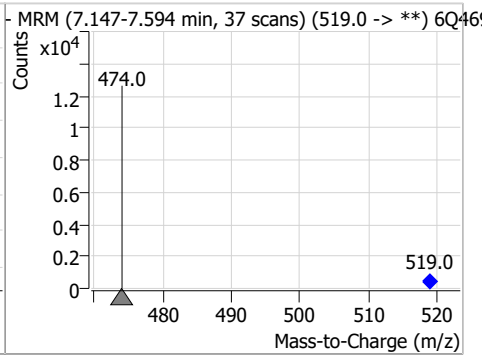




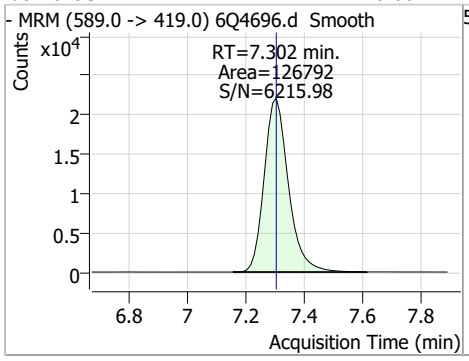
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.32	7.28	-0.01	352458				

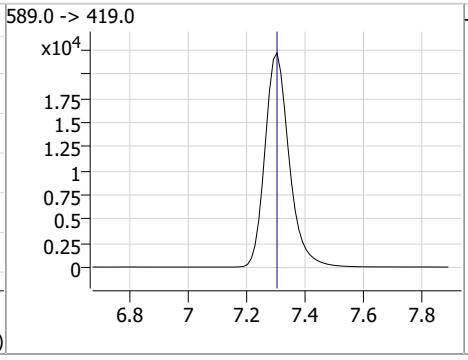


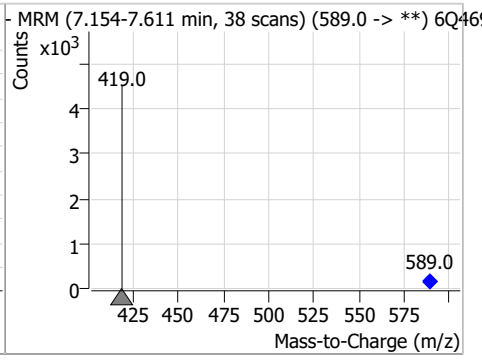




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.68	7.30	0.00	126792				

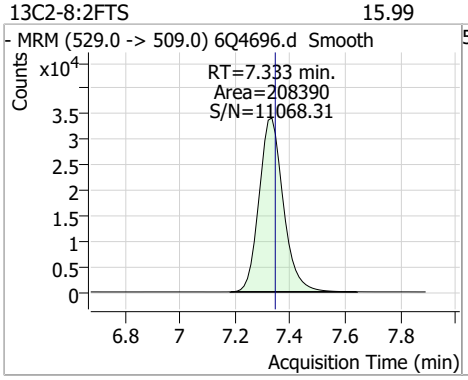


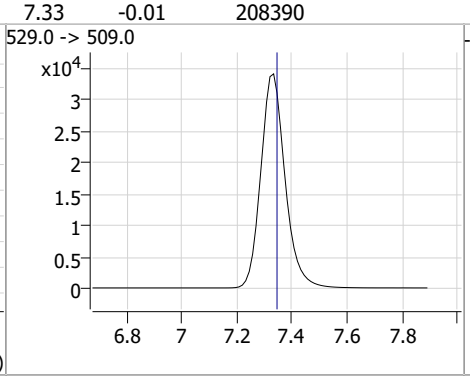


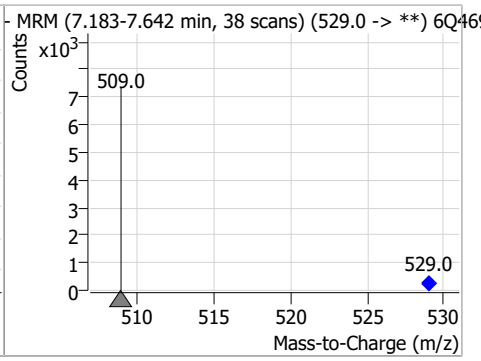


Perfluorinated Compounds by LC/MS/MS

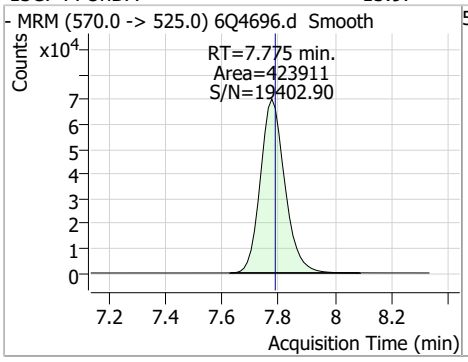
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.99	7.33	-0.01	208390				

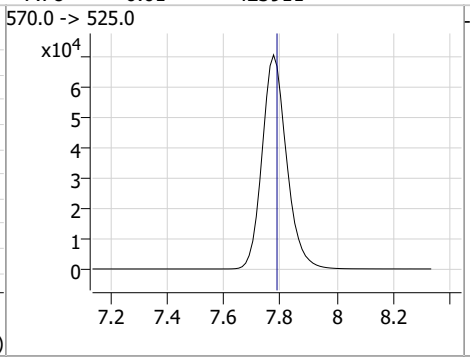


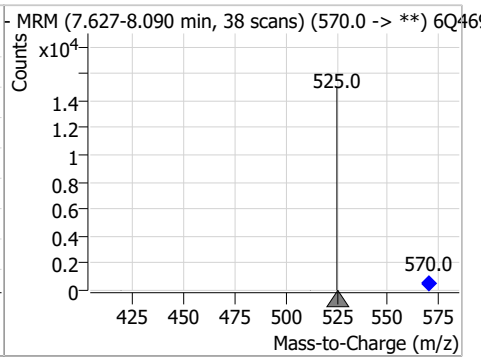




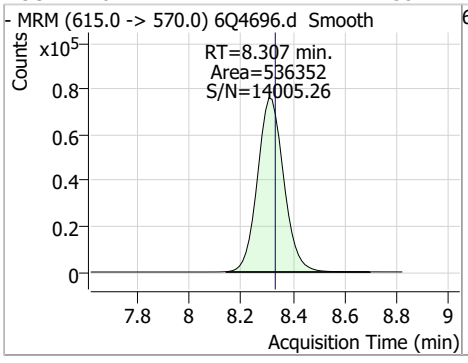
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.97	7.78	-0.01	423911				

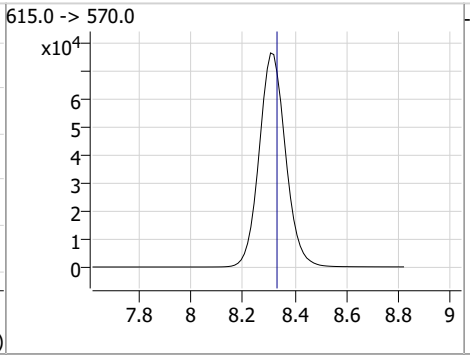


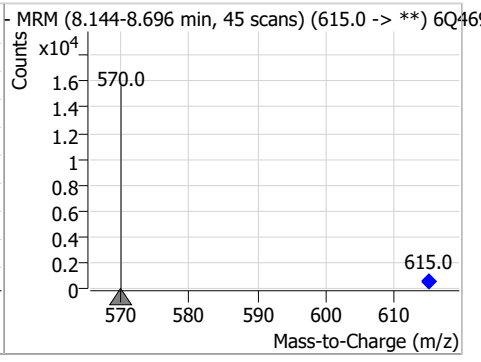




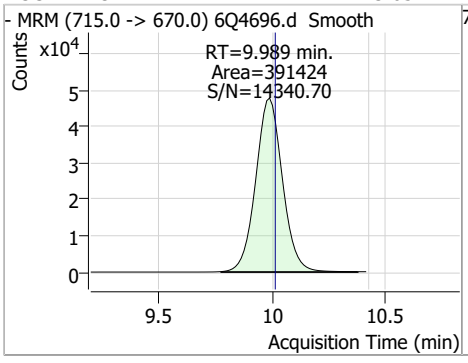
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.58	8.31	-0.02	536352				

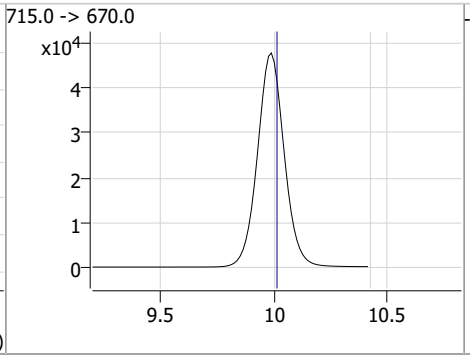


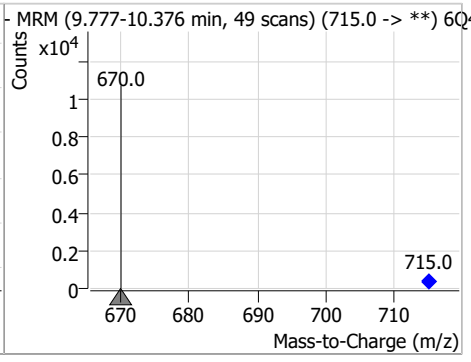




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.05	9.99	-0.02	391424				







Manual Integration Approval Summary

Sample Number: FA98286-38
Lab FileID: 6Q4696.D
Injection Time: 09/15/22 07:18
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.38	Split peak
Perfluorobutanesulfonic acid	375-73-5		3.60	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.66	Split peak
Perfluoroheptanoic acid	375-85-9		5.43	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.12	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak
Perfluorononanoic acid	375-95-1		6.73	Split peak
d3-MeFOSA			7.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:20

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4759.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:35:16 AM
Sample Name : fa98286-38
Vial : P2-B9
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	11502	4.00	µg/L	-0.012
M5-PFPeA	3.393	268.0 -> 223.0	21434	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	35365	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	40187	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	73967	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	88251	4.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	69121	4.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	84813	4.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	105856	4.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	66321	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	25288	4.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	5016	4.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	4798	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	7380	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	42365	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	56075	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	41564	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	32526	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	878	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	1243	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	24516	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	42365	3.14	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C2-6:2FTS	6.124	429.0 -> 409.0	56075	3.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C2-8:2FTS	7.333	529.0 -> 509.0	41564	3.19	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.9%		
13C2-PFDoDA	8.320	615.0 -> 570.0	105856	2.88	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C2-PFTeDA	9.989	715.0 -> 670.0	66321	2.21	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.1%		
13C3-PFBS	3.622	302.0 -> 99.0	5016	3.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.4%		
13C3-PFHxS	5.463	402.0 -> 99.0	4798	3.47	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.4%		
13C4-PFBA	1.936	217.0 -> 172.0	11502	2.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C4-PFHpA	5.433	367.0 -> 322.0	40187	3.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.2%		
13C5-PFHxA	4.561	318.0 -> 273.0	35365	3.31	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.5%		
13C5-PFPeA	3.393	268.0 -> 223.0	21434	3.06	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.3%		
13C6-PFDA	7.283	519.0 -> 474.0	69121	3.40	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

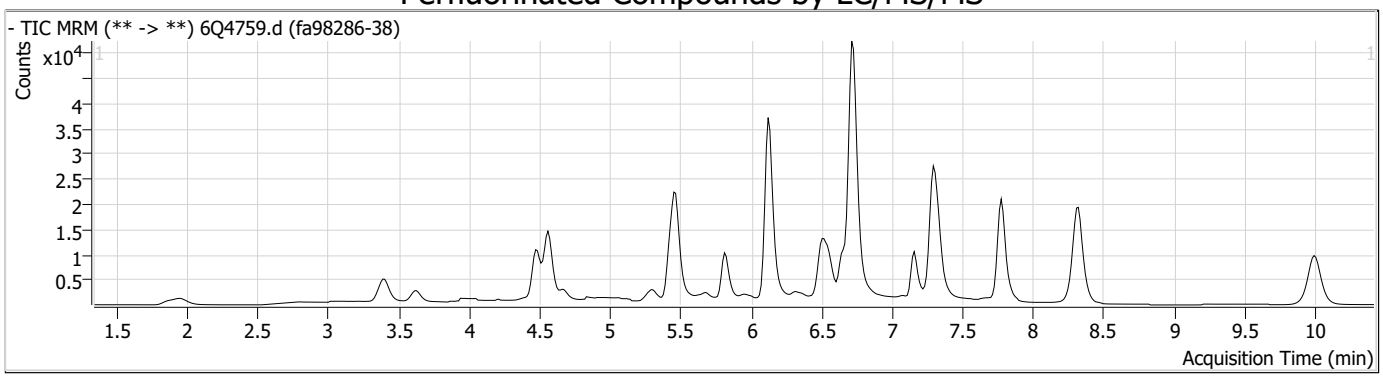
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%			
13C7-PFUnDA	7.775	570.0 -> 525.0	84813	3.19	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
13C8-FOSA	6.654	506.0 -> 78.0	25288	2.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%			
13C8-PFOA	6.138	421.0 -> 376.0	73967	3.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.4%			
13C8-PFOS	6.717	507.0 -> 99.0	7380	3.48	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.4%			
13C9-PFNA	6.745	472.0 -> 427.0	88251	3.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.1%			
d3-MeFOSAA	7.155	573.0 -> 419.0	32526	3.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.8%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	899	3.38	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%			
d3-MeFOSA	7.085	515.0 -> 169.0	1243	0.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.7%			
d5-EtFOSAA	7.302	589.0 -> 419.0	24516	3.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.930	213.0 -> 169.0	924	0.74	µg/L		100
PFBS	3.627	299.0 -> 80.0	4629	1.11	µg/L		99
		299.0 -> 99.0	1709				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	7755	0.59	µg/L	m	97
		363.0 -> 169.0	1233				
PFHpS	6.136	449.0 -> 80.0	3600	1.12	µg/L	m	92
		449.0 -> 99.0	1685				
PFHxA	4.562	313.0 -> 269.0	20555	2.21	µg/L		100
		313.0 -> 119.0	516				
PFHxS	5.465	399.0 -> 80.0	51973	15.12	µg/L	m	98
		399.0 -> 99.0	24429				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.138	413.0 -> 369.0	16093	0.81	µg/L	m	96
		413.0 -> 169.0	2711				
PFOS	6.719	499.0 -> 80.0	148664	43.46	µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

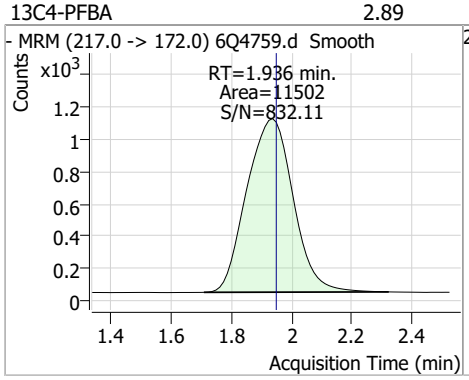
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	70204				
PFPeA	3.395	263.0 -> 219.0	3535	0.78	µg/L		100
PFPeS	4.668	349.0 -> 80.0	5163	1.49	µg/L	m	98
		349.0 -> 99.0	2431				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.514	298.0 -> 78.0	4813	0.56	µg/L	m	98
		298.0 -> 64.0	365				
FHxSA	5.815	398.0 -> 78.0	40511	4.96	µg/L	m	99
		398.0 -> 64.0	1581				

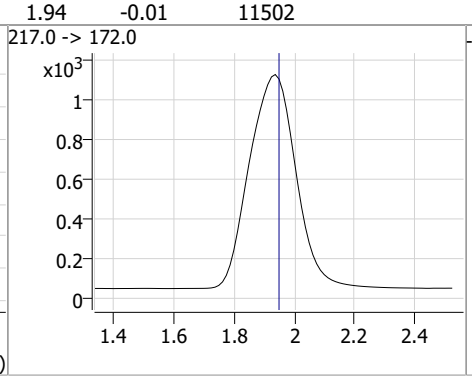
 # = Qualifier out of range, m = manually integrated, + = Area summed

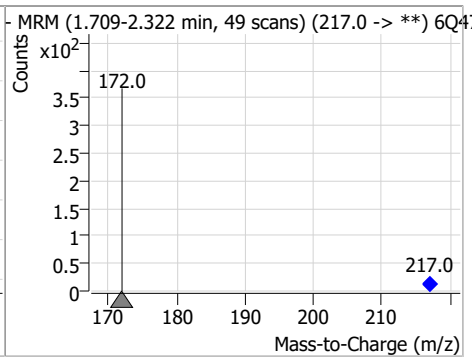
Perfluorinated Compounds by LC/MS/MS



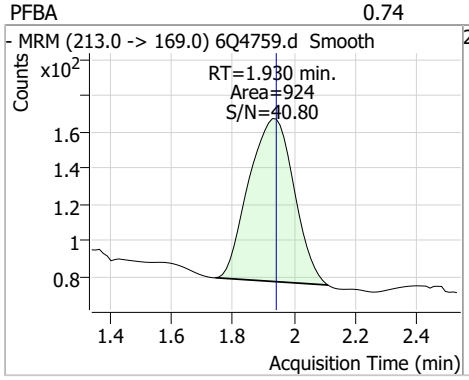
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.89	1.94	-0.01	11502				

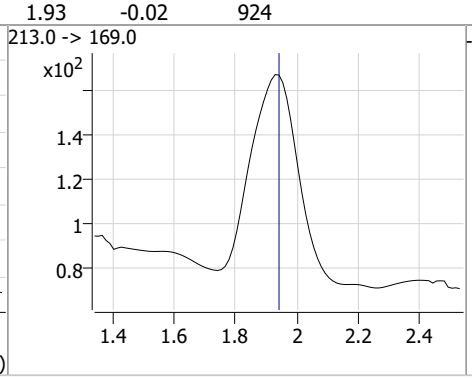


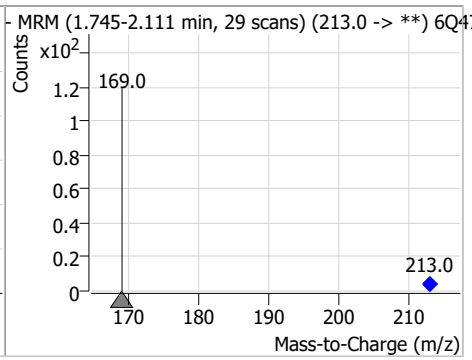




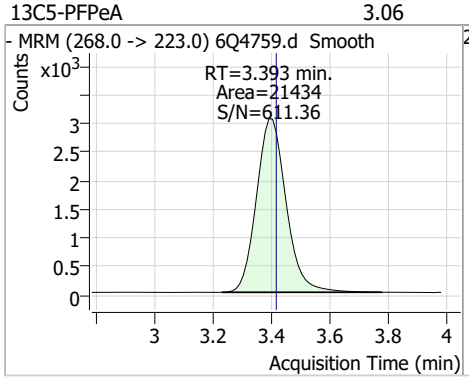
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.74	1.93	-0.02	924				

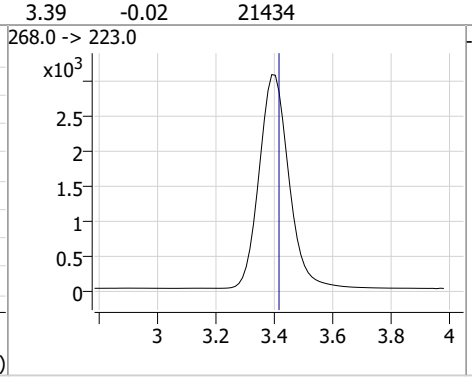


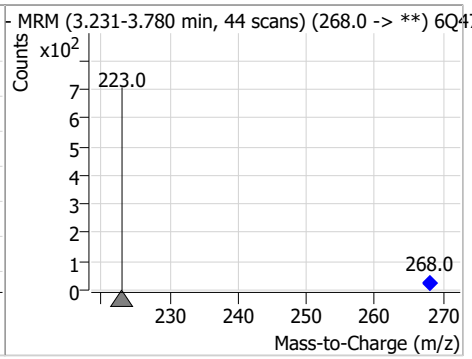




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.06	3.39	-0.02	21434				

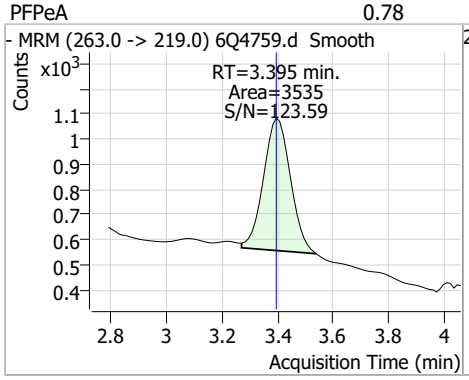


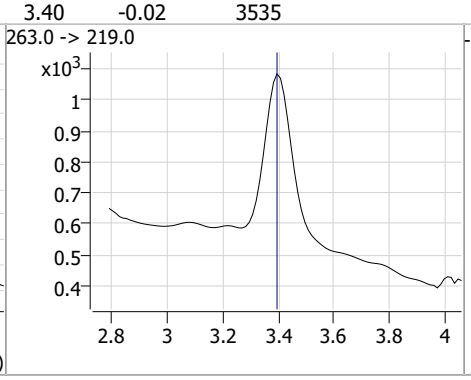


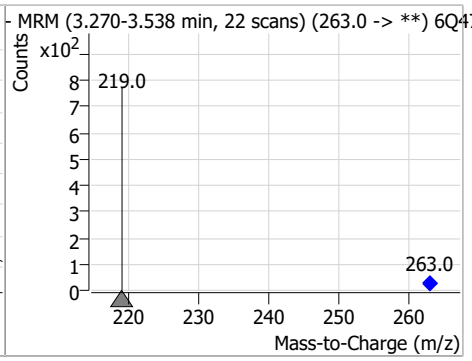


Perfluorinated Compounds by LC/MS/MS

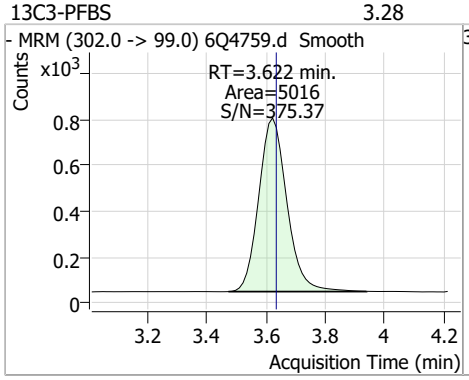
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.78	3.40	-0.02	3535				

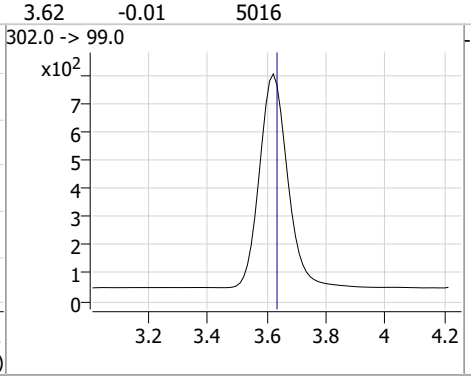


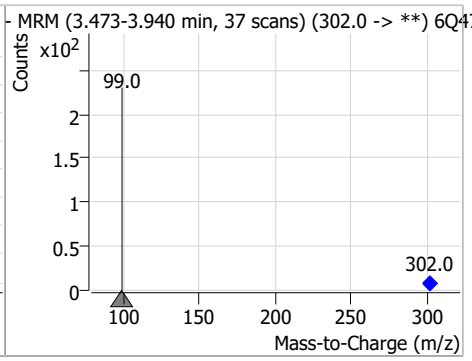




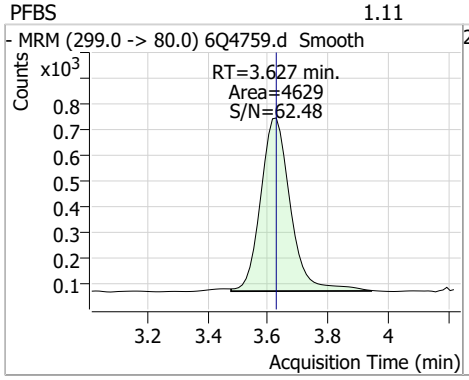
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.28	3.62	-0.01	5016				

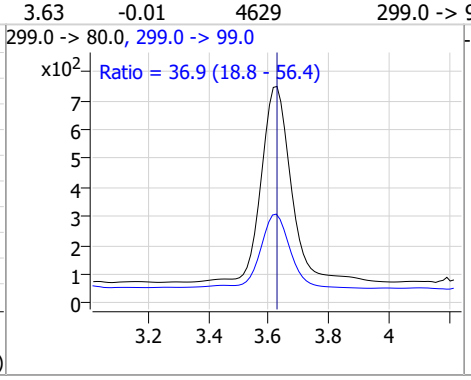


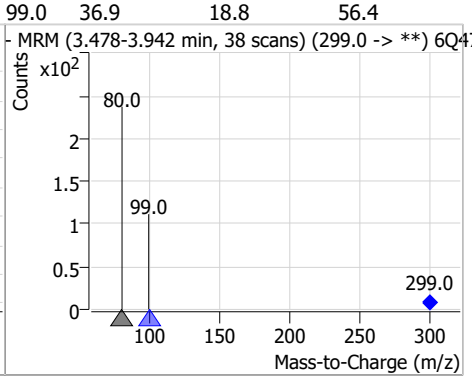




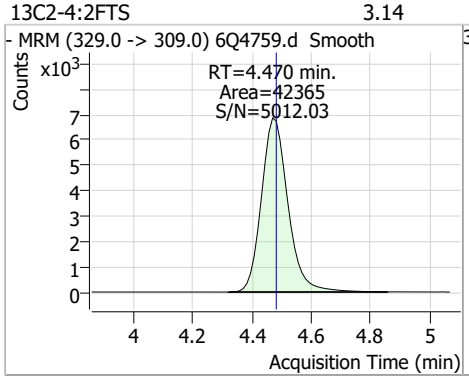
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.11	3.63	-0.01	4629	299.0 -> 99.0	36.9	18.8	56.4

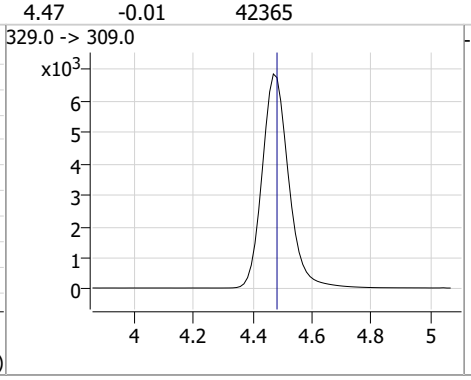


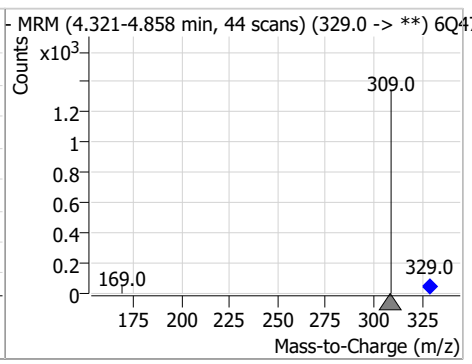




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.14	4.47	-0.01	42365				

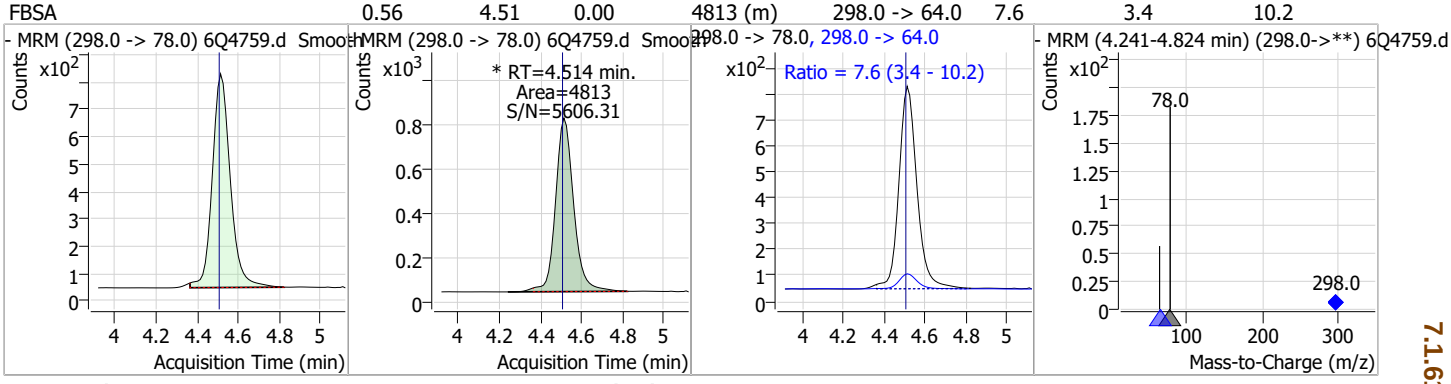




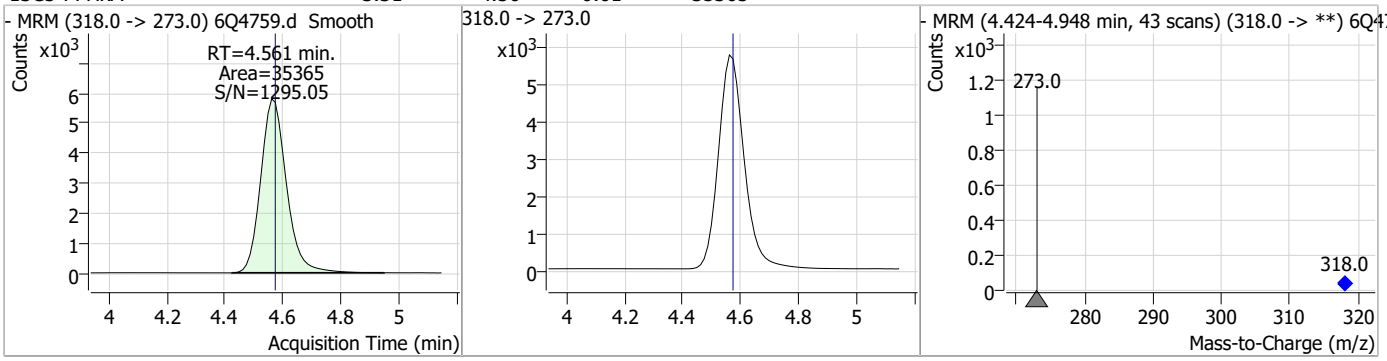


Perfluorinated Compounds by LC/MS/MS

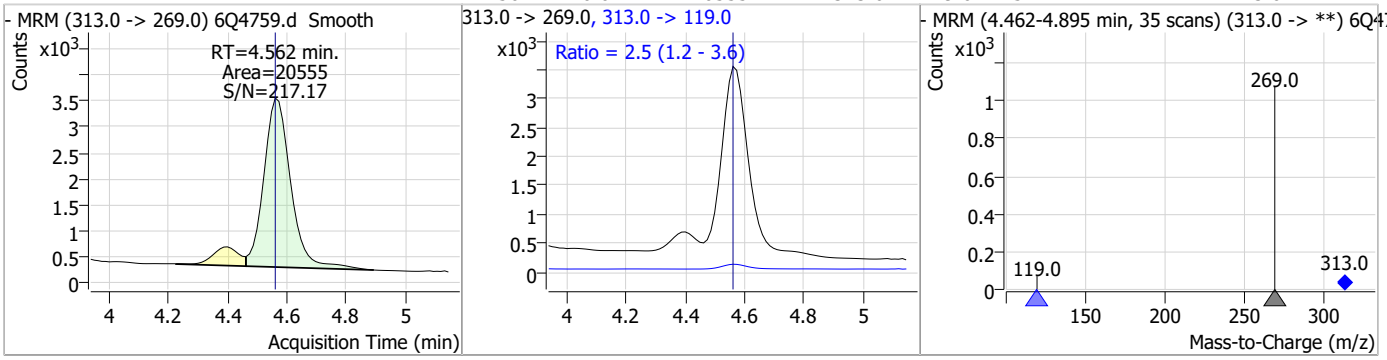
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.56	4.51	0.00	4813 (m)	298.0 -> 64.0	7.6	3.4	10.2



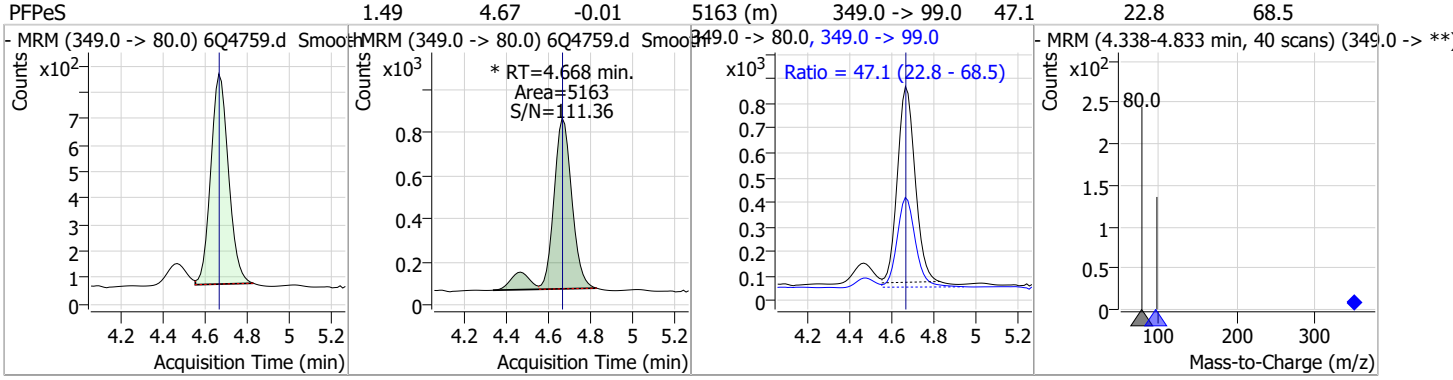
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.31	4.56	-0.01	35365				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.21	4.56	-0.01	20555	313.0 -> 119.0	2.5	1.2	3.6

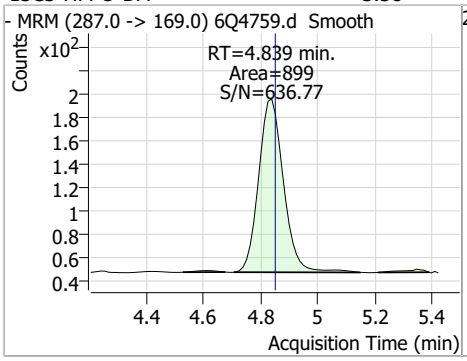


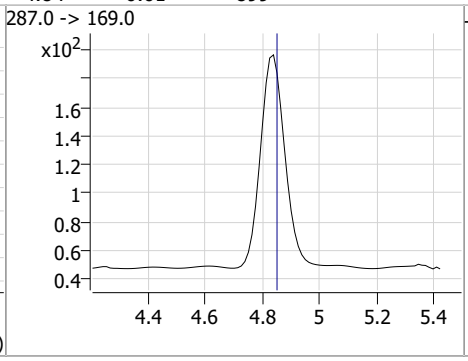
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.49	4.67	-0.01	5163 (m)	349.0 -> 99.0	47.1	22.8	68.5

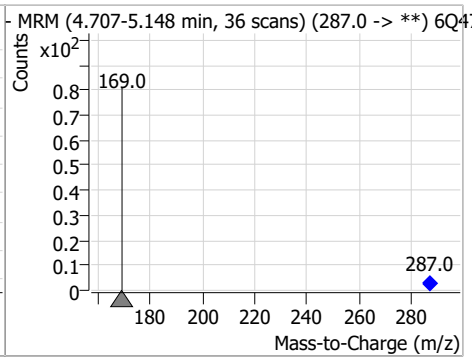


Perfluorinated Compounds by LC/MS/MS

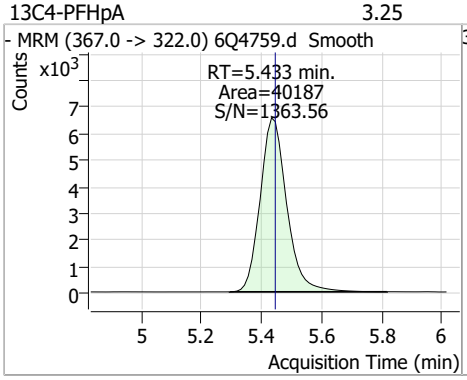
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.38	4.84	-0.01	899				

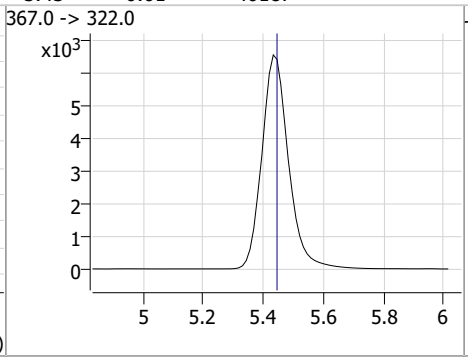


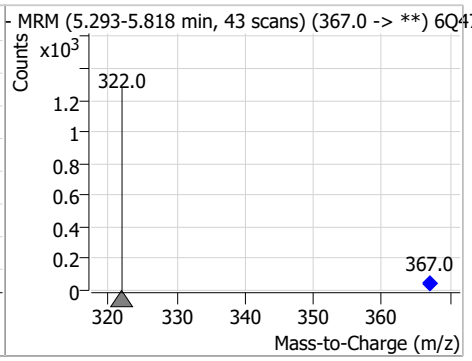




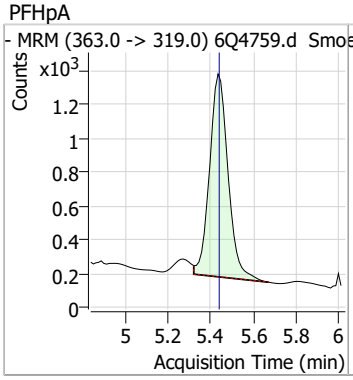
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.25	5.43	-0.01	40187				

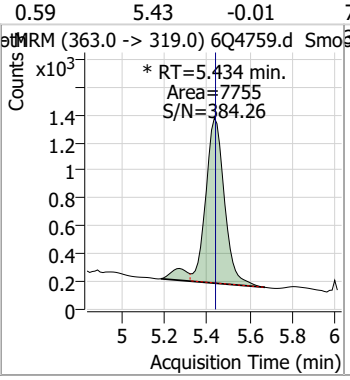


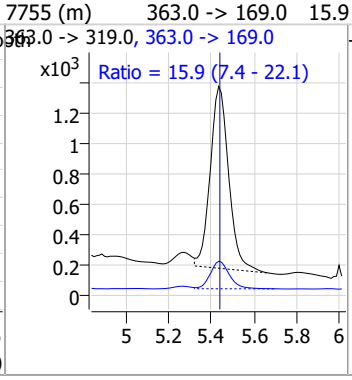


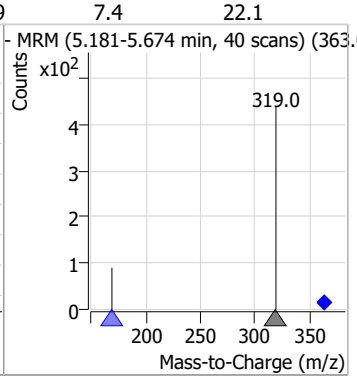


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.59	5.43	-0.01	7755 (m)	363.0 -> 169.0	15.9	7.4	22.1

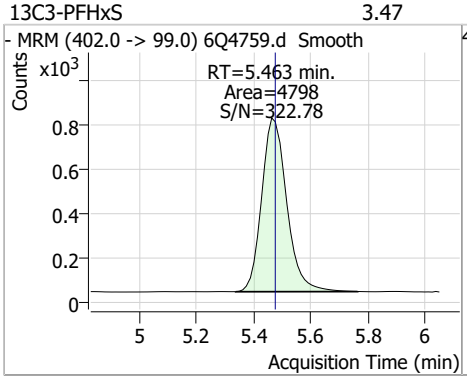


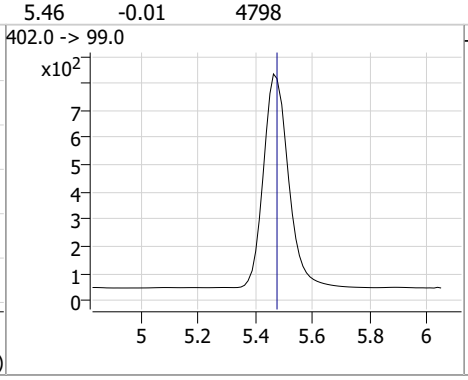


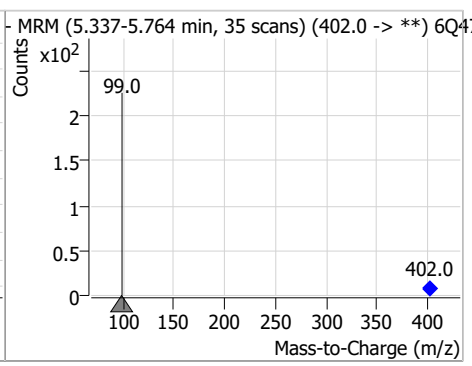




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.47	5.46	-0.01	4798				

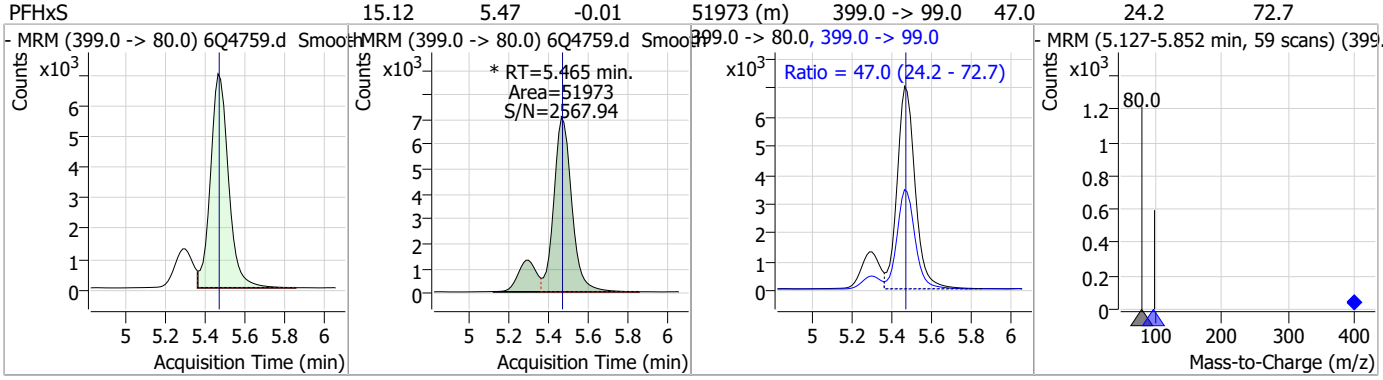




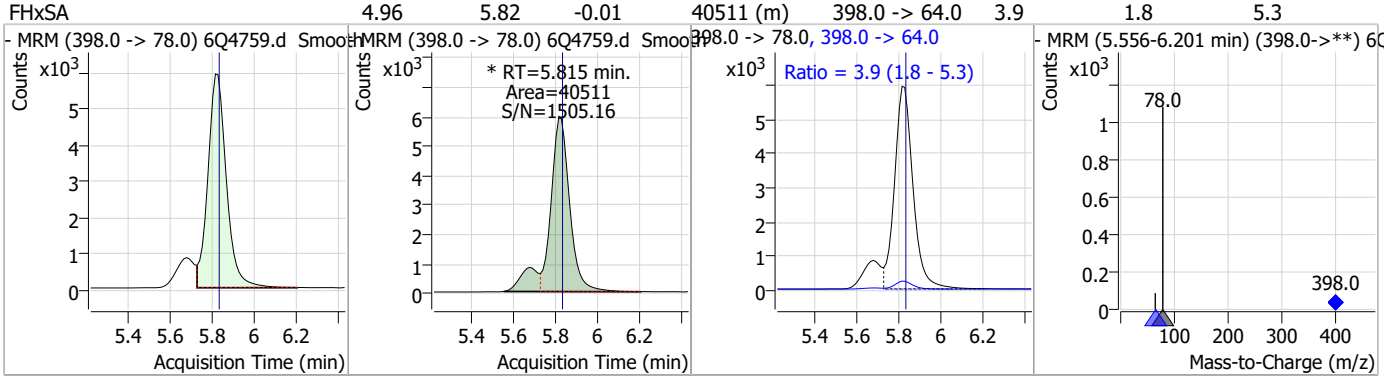


Perfluorinated Compounds by LC/MS/MS

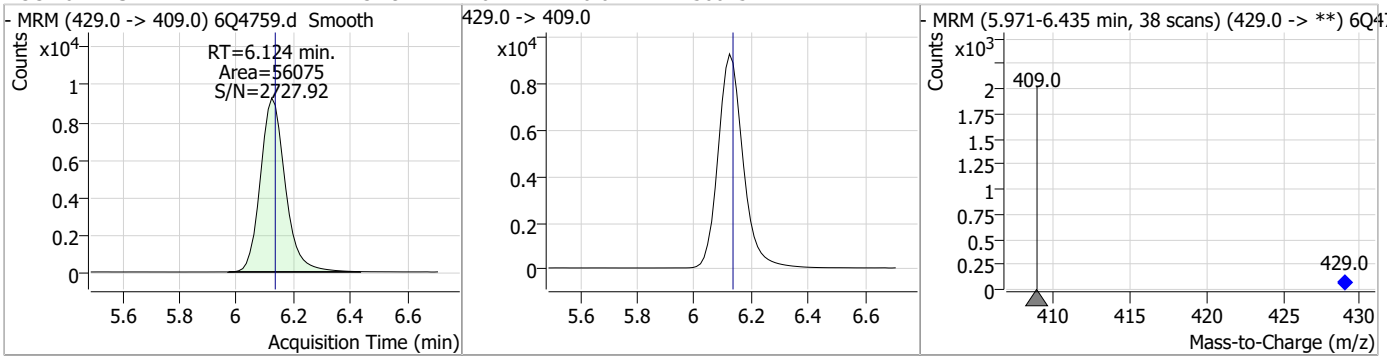
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.12	5.47	-0.01	51973 (m)	399.0 -> 99.0	47.0	24.2	72.7



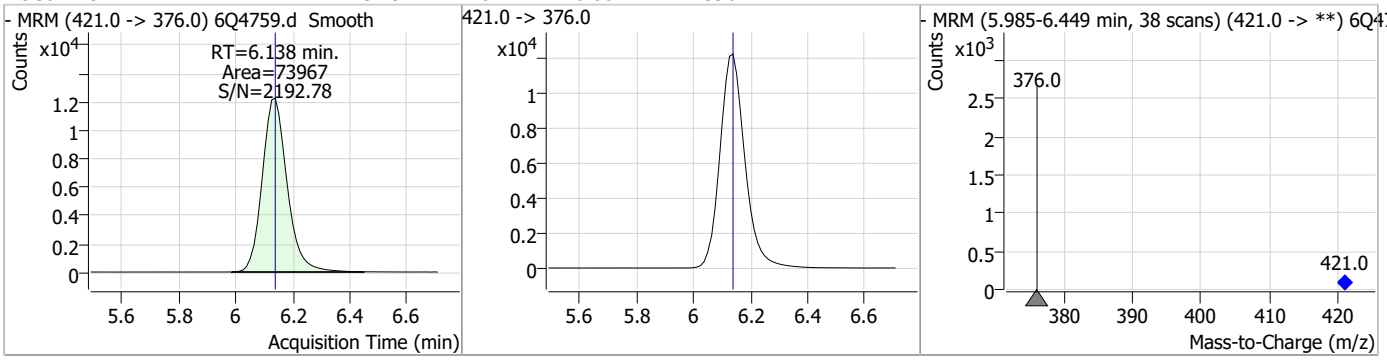
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.96	5.82	-0.01	40511 (m)	398.0 -> 64.0	3.9	1.8	5.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.29	6.12	-0.01	56075				

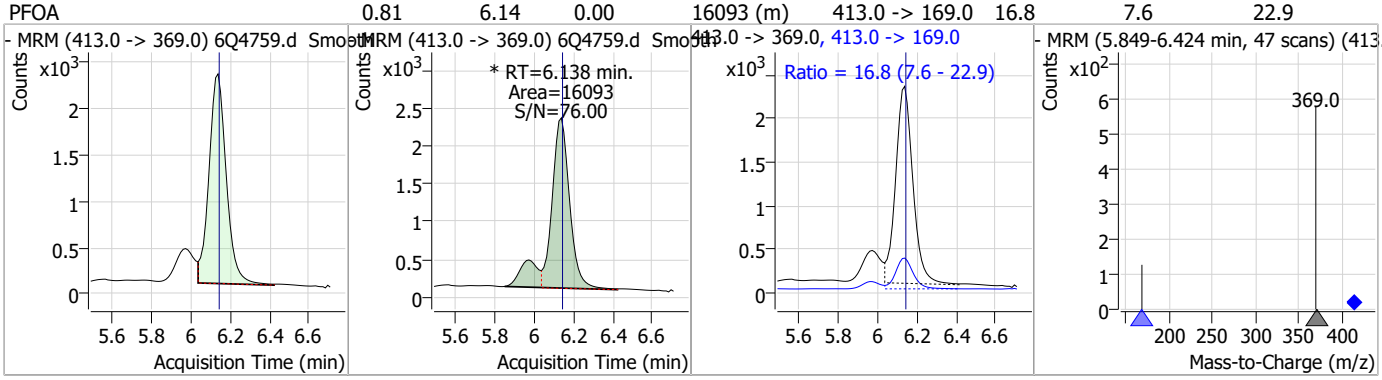


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.49	6.14	0.00	73967				

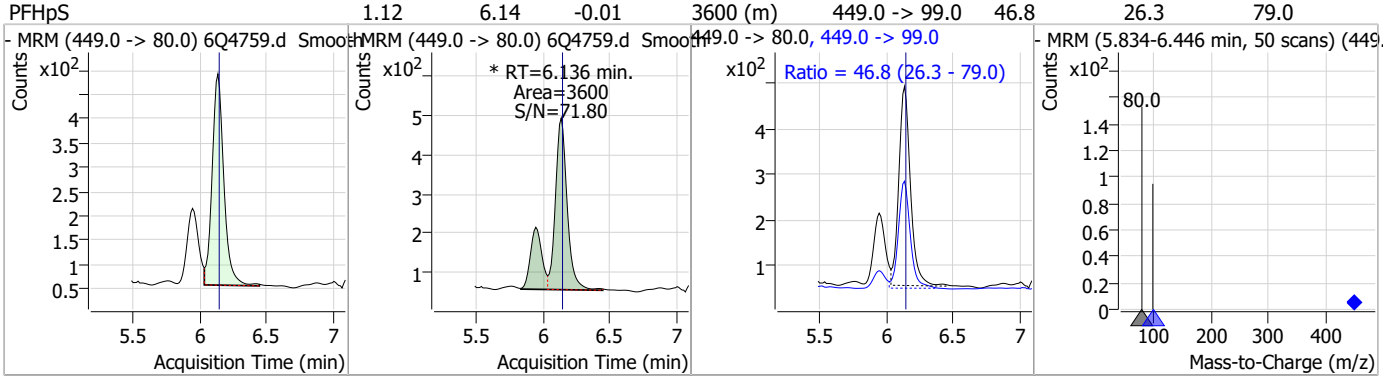


Perfluorinated Compounds by LC/MS/MS

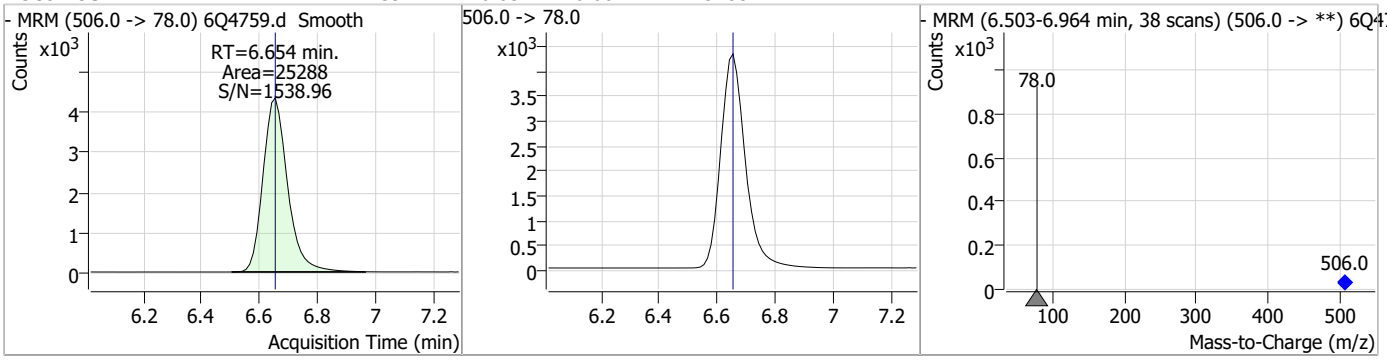
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.81	6.14	0.00	16093 (m)	413.0 -> 169.0	16.8	7.6	22.9



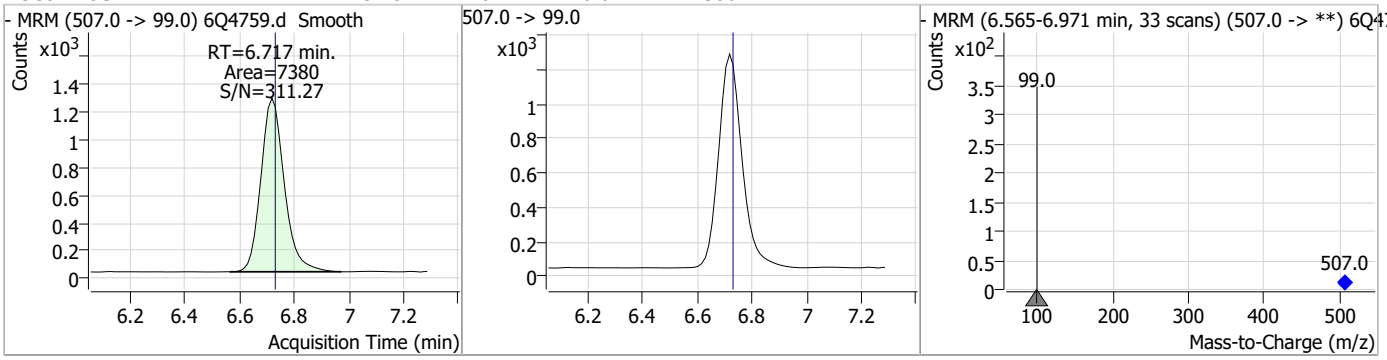
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.12	6.14	-0.01	3600 (m)	449.0 -> 99.0	46.8	26.3	79.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.59	6.65	0.00	25288				

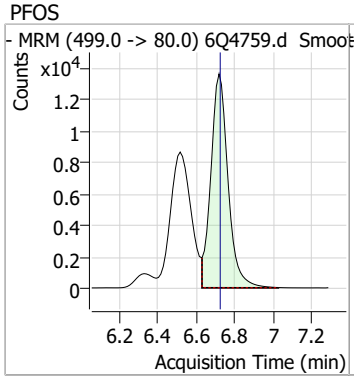


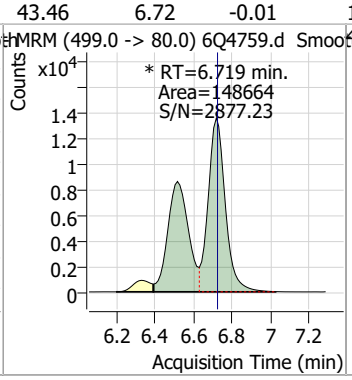
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.48	6.72	-0.01	7380				

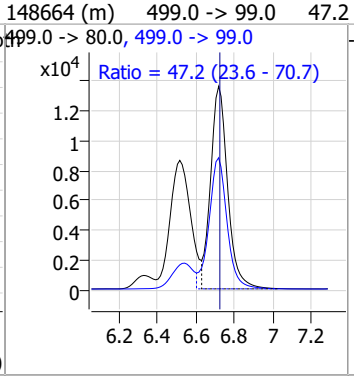


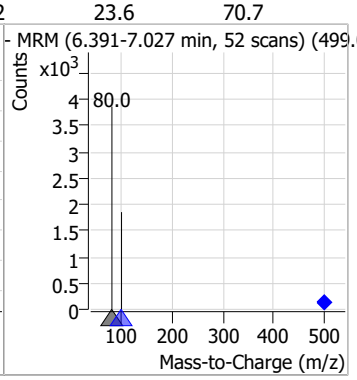
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	43.46	6.72	-0.01	148664 (m)	499.0 -> 99.0	47.2	23.6	70.7

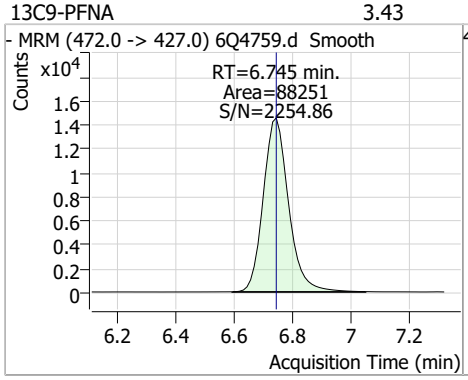


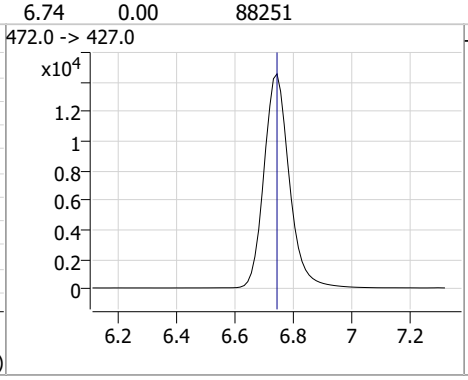


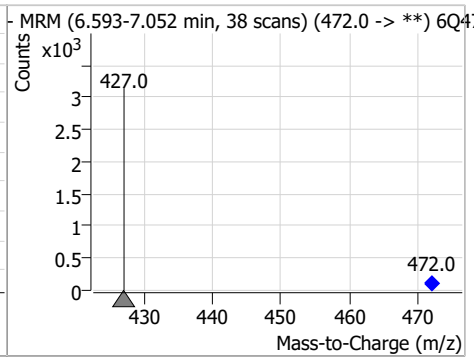




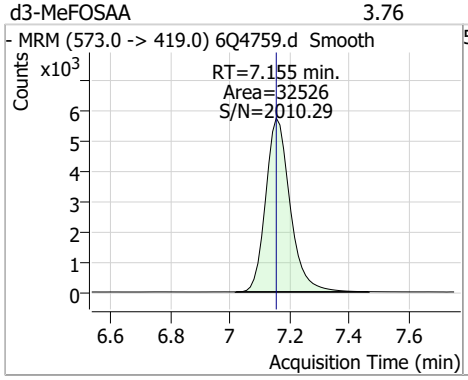
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.43	6.74	0.00	88251				

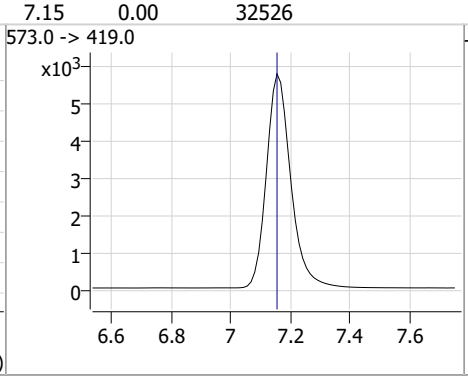


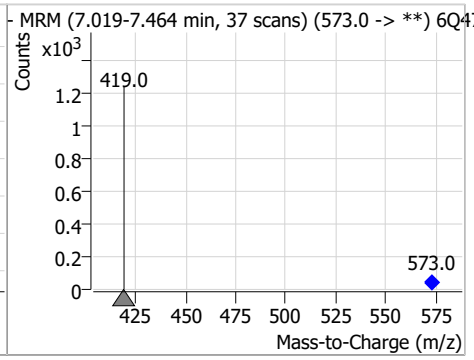




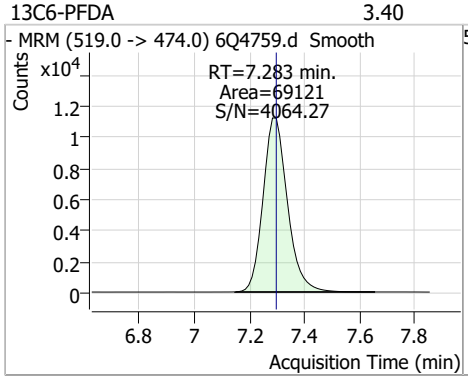
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.76	7.15	0.00	32526				

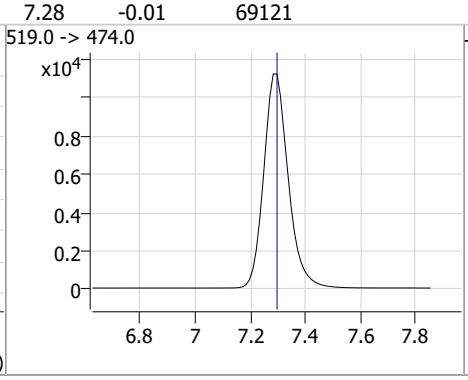


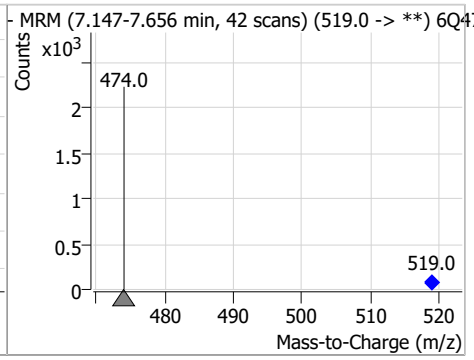




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.40	7.28	-0.01	69121				

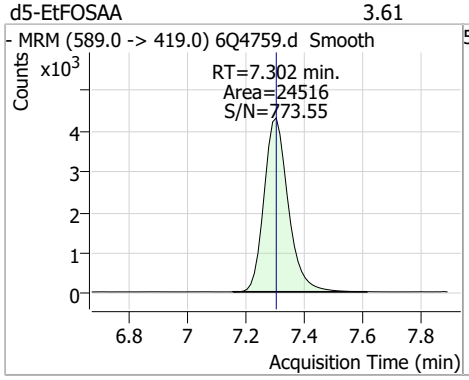


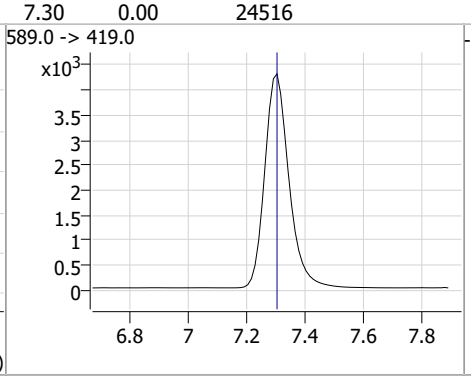


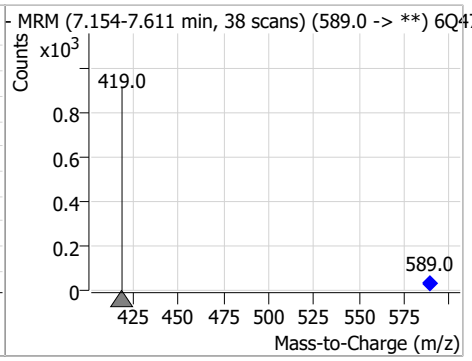


Perfluorinated Compounds by LC/MS/MS

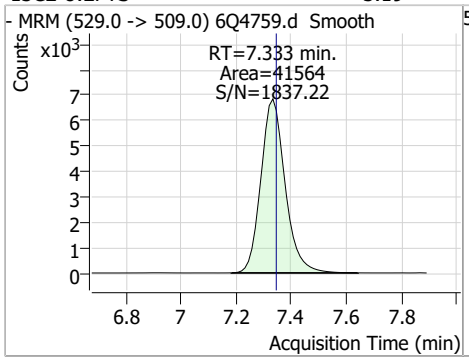
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.61	7.30	0.00	24516				

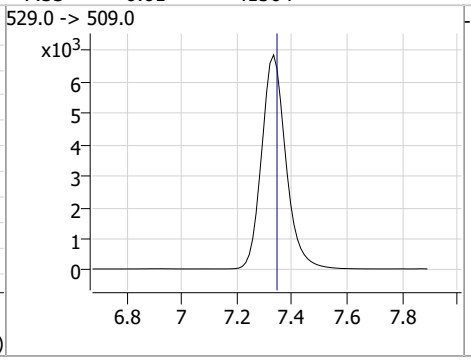


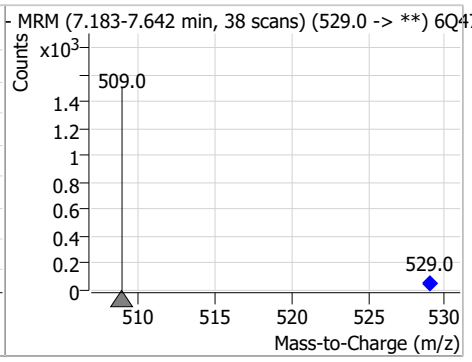




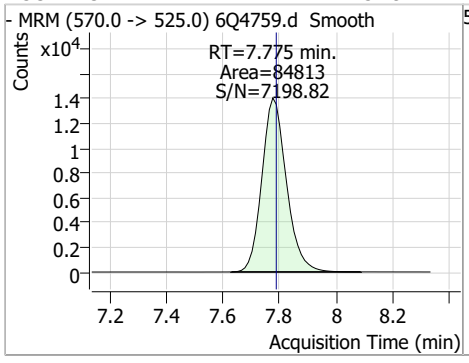
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.19	7.33	-0.01	41564				

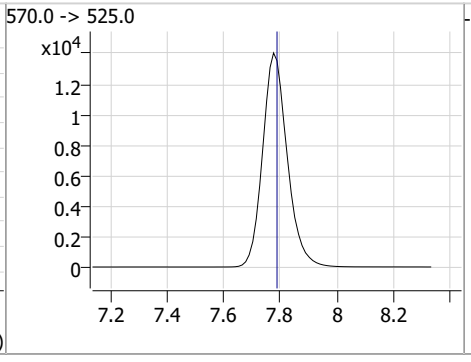


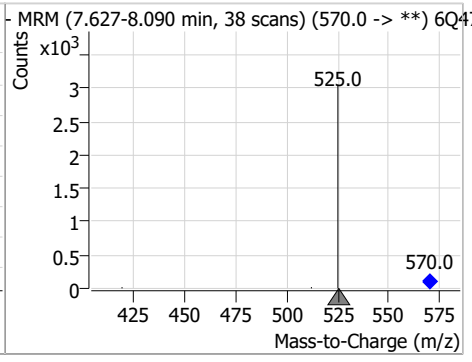




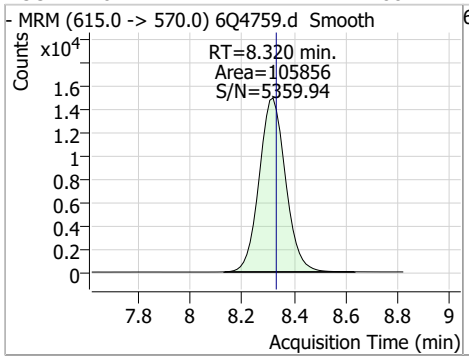
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	3.19	7.78	-0.01	84813				

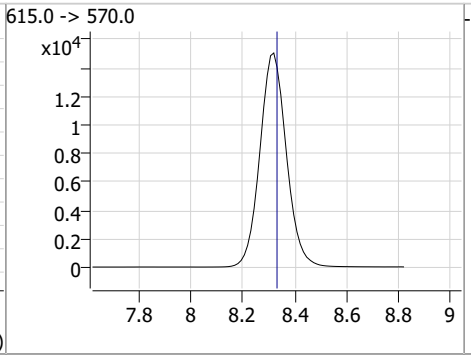


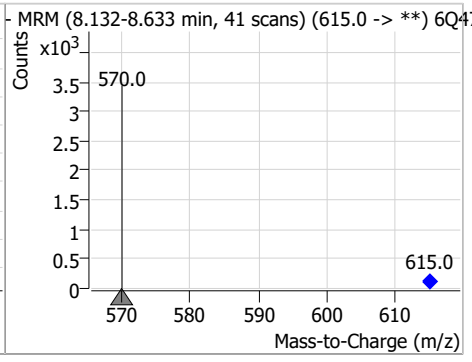




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.88	8.32	-0.01	105856				

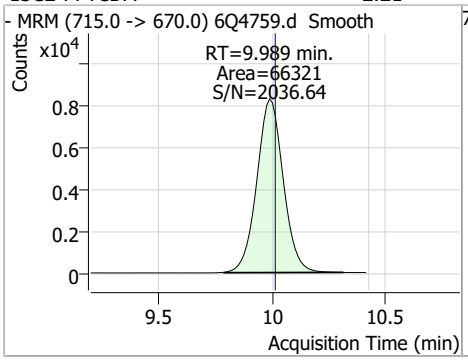


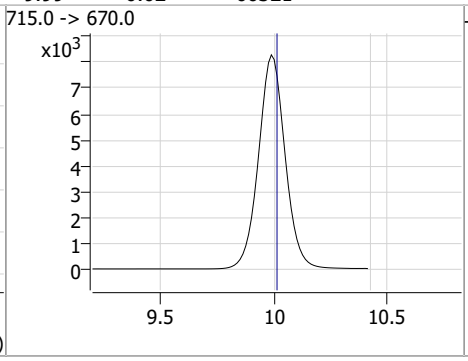


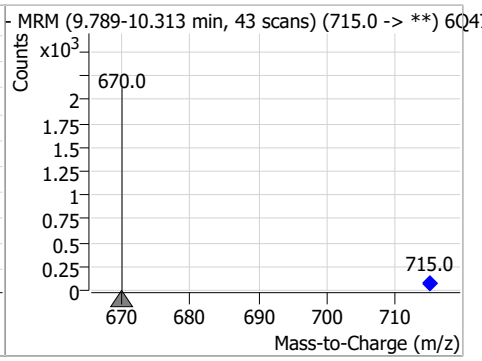


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.21	9.99	-0.02	66321				







7.1.61

7

Manual Integration Approval Summary

Sample Number: FA98286-38
Lab FileID: 6Q4759.D
Injection Time: 09/16/22 06:35
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 16:08 James Boone
Supervisor approved: 09/16/22 17:20 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFBSA	30334-69-1		4.51	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluoroheptanoic acid	375-85-9		5.43	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
PFHxSA	41997-13-1		5.82	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanoic acid	335-67-1		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:06

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4697.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:34:10 AM
Sample Name : fa98286-39
Vial : P6-C4
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.862	217.0 -> 172.0	41362	20.00	µg/L	-0.087
M5-PFPeA	3.355	268.0 -> 223.0	89325	20.00	µg/L	-0.062
M5-PFHxA	4.536	318.0 -> 273.0	156608	20.00	µg/L	-0.037
M4-PFHpA	5.420	367.0 -> 322.0	194849	20.00	µg/L	-0.026
M8-PFOA	6.126	421.0 -> 376.0	365247	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	452116	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	339631	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	432709	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	512202	20.00	µg/L	-0.025
M2-PFTeDA	9.989	715.0 -> 670.0	268703	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	62763	20.00	µg/L	0.000
M3-PFBS	3.585	302.0 -> 99.0	23364	20.00	µg/L	-0.050
M3-PFHxS	5.451	402.0 -> 99.0	24466	20.00	µg/L	-0.025
M8-PFOS	6.717	507.0 -> 99.0	33876	20.00	µg/L	-0.012
M2-4:2FTS	4.445	329.0 -> 309.0	204953	20.00	µg/L	-0.037
M2-6:2FTS	6.112	429.0 -> 409.0	297349	20.00	µg/L	-0.025
M2-8:2FTS	7.320	529.0 -> 509.0	208808	20.00	µg/L	-0.026
M3-MeFOSAA	7.155	573.0 -> 419.0	154379	20.00	µg/L	0.000
M3-HFPO-DA	4.814	287.0 -> 169.0	3380	20.00	µg/L	-0.038
M3-MeFOSA	7.085	515.0 -> 169.0	881	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	122401	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.445	329.0 -> 309.0	204953	15.17	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.9%		
13C2-6:2FTS	6.112	429.0 -> 409.0	297349	17.42	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-8:2FTS	7.320	529.0 -> 509.0	208808	16.02	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C2-PFDoDA	8.307	615.0 -> 570.0	512202	13.93	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.6%		
13C2-PFTeDA	9.989	715.0 -> 670.0	268703	8.96	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 44.8%		
13C3-PFBS	3.585	302.0 -> 99.0	23364	15.26	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.3%		
13C3-PFHxS	5.451	402.0 -> 99.0	24466	17.69	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C4-PFBA	1.862	217.0 -> 172.0	41362	10.39	µg/L	-0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.0%		
13C4-PFHpA	5.420	367.0 -> 322.0	194849	15.75	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C5-PFHxA	4.536	318.0 -> 273.0	156608	14.65	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%		
13C5-PFPeA	3.355	268.0 -> 223.0	89325	12.74	µg/L	-0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.7%		
13C6-PFDA	7.283	519.0 -> 474.0	339631	16.69	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

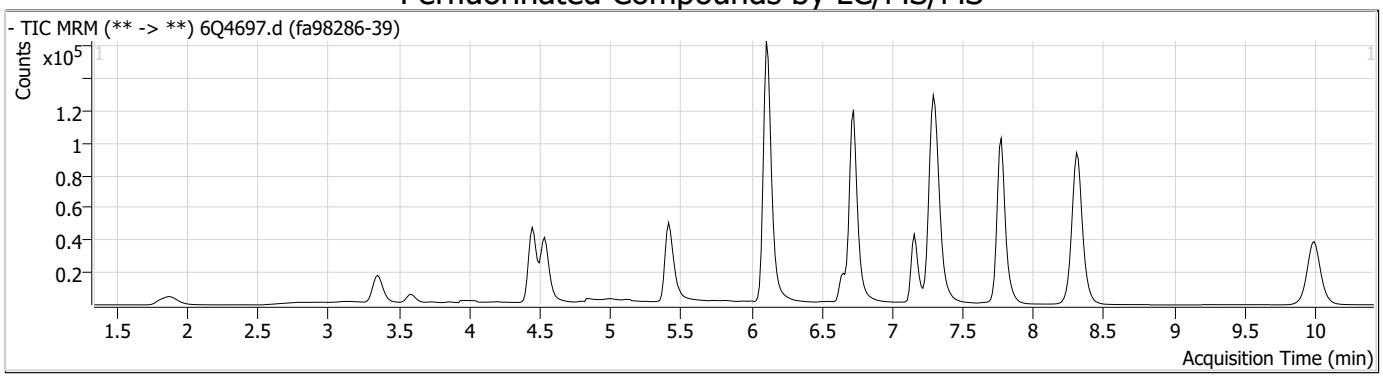
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.5%			
13C7-PFUnDA	7.775	570.0 -> 525.0	432709	16.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.5%			
13C8-FOSA	6.654	506.0 -> 78.0	62763	6.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 32.1%			
13C8-PFOA	6.126	421.0 -> 376.0	365247	17.22	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C8-PFOS	6.717	507.0 -> 99.0	33876	15.97	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%			
13C9-PFNA	6.732	472.0 -> 427.0	452116	17.55	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%			
d3-MeFOSAA	7.155	573.0 -> 419.0	154379	17.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
13C3-HFPO-DA	4.814	287.0 -> 169.0	3386	12.74	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.7%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	122472	18.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.868	213.0 -> 169.0	4823	5.34	µg/L		100
PFBS	3.577	299.0 -> 80.0	1475	0.38	µg/L		93
		299.0 -> 99.0	494				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.408	363.0 -> 319.0	4692	0.37	µg/L	m	94
		363.0 -> 169.0	580				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.537	313.0 -> 269.0	4699	0.57	µg/L	m	97
		313.0 -> 119.0	159				
PFHxS	5.453	399.0 -> 80.0	1890	0.54	µg/L	m	70
		399.0 -> 99.0	1305				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.126	413.0 -> 369.0	8501	0.43	µg/L	m	95
		413.0 -> 169.0	1472				
PFOS	6.504	499.0 -> 80.0	2088	0.66	µg/L	m	82

Perfluorinated Compounds by LC/MS/MS

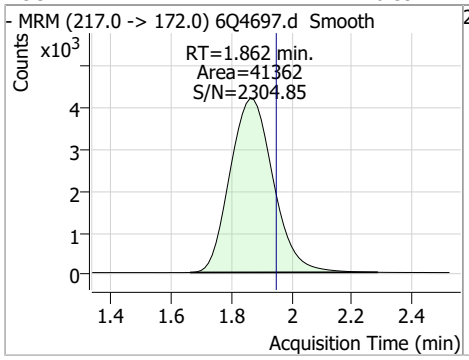
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	738				
PFPeA	3.146	263.0 -> 219.0	5822	1.55	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	4.257	285.0 -> 169.0	0		µg/L	m	1
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

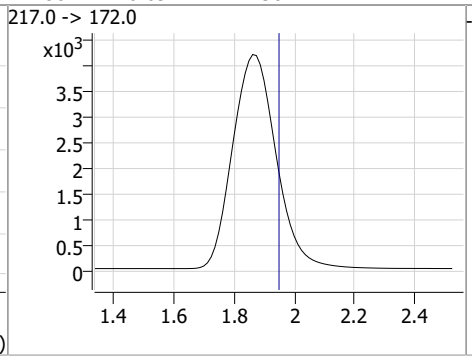
 # = Qualifier out of range, m = manually integrated, + = Area summed

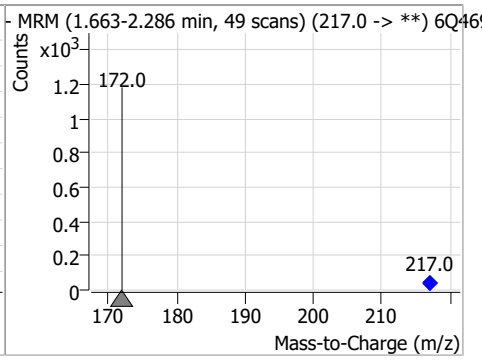
Perfluorinated Compounds by LC/MS/MS



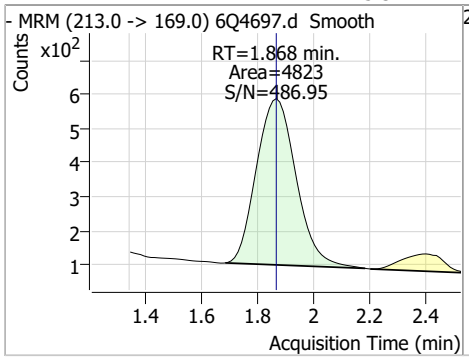
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.39	1.86	-0.09	41362				

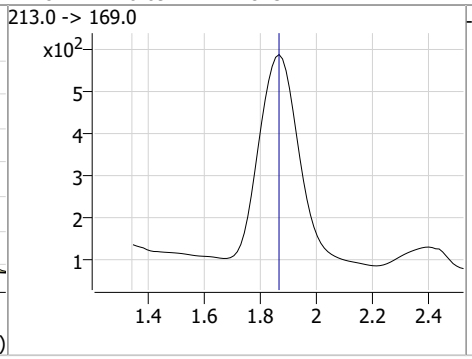


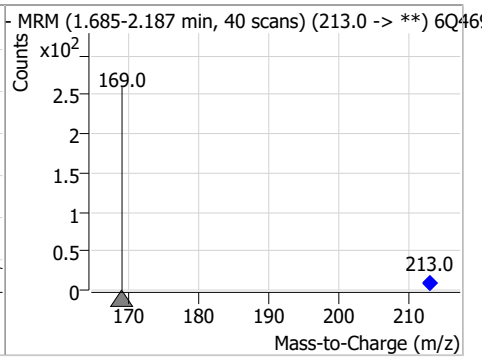




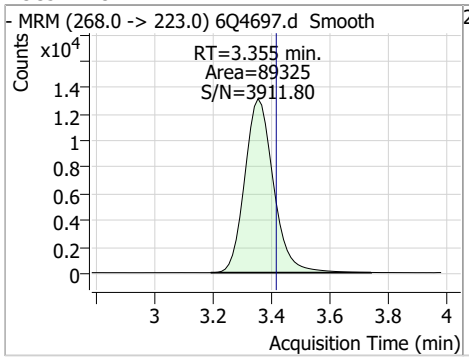
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.34	1.87	-0.09	4823				

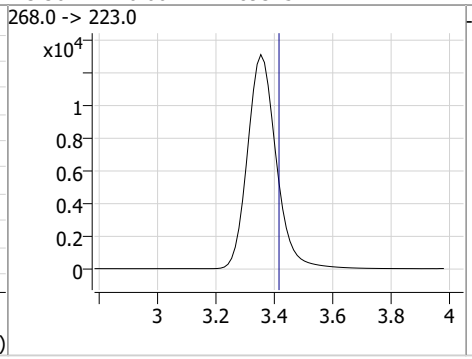


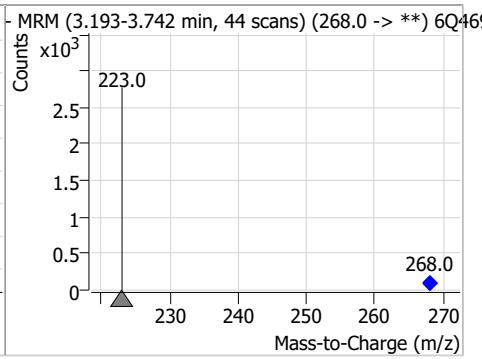




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.74	3.36	-0.06	89325				

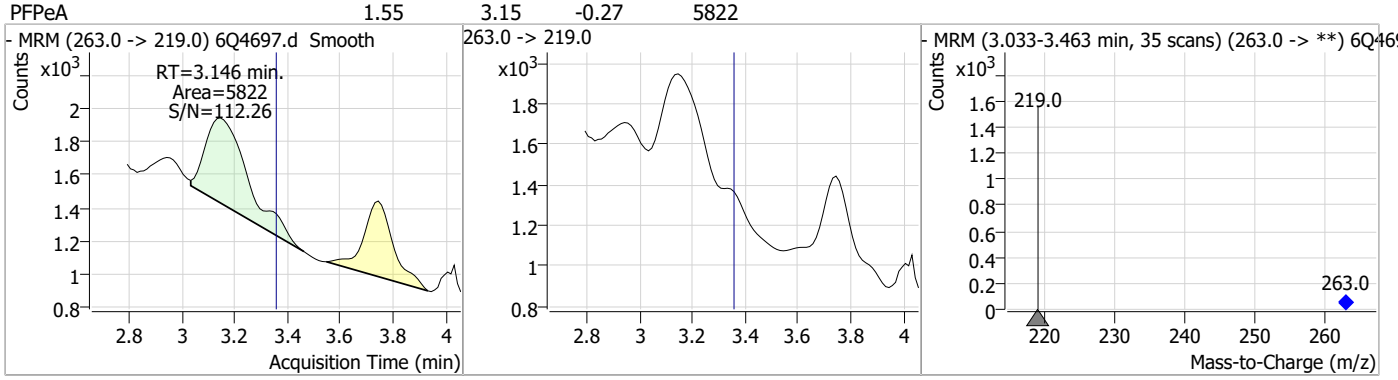




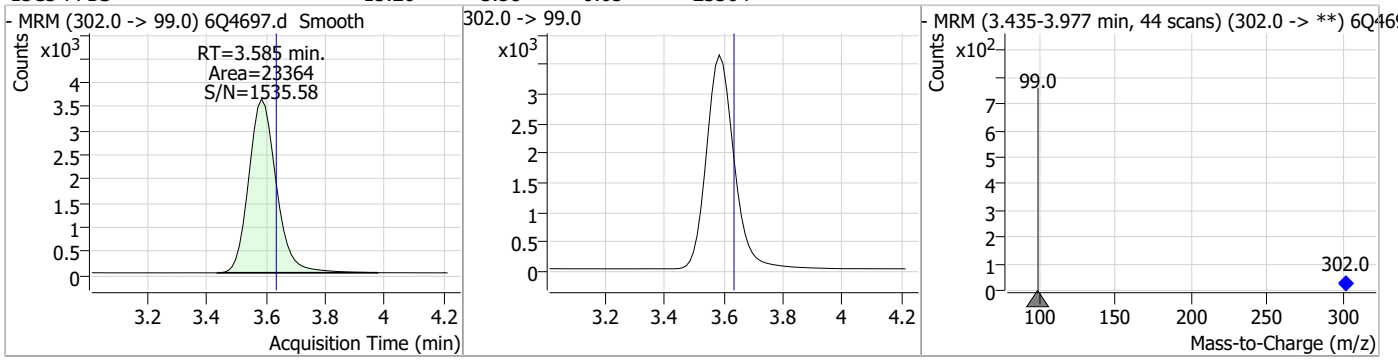


Perfluorinated Compounds by LC/MS/MS

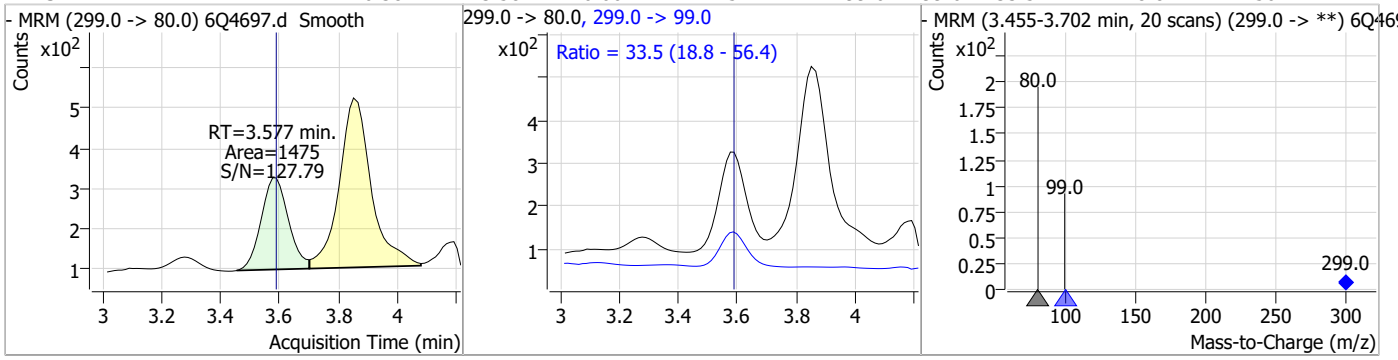
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.55	3.15	-0.27	5822				



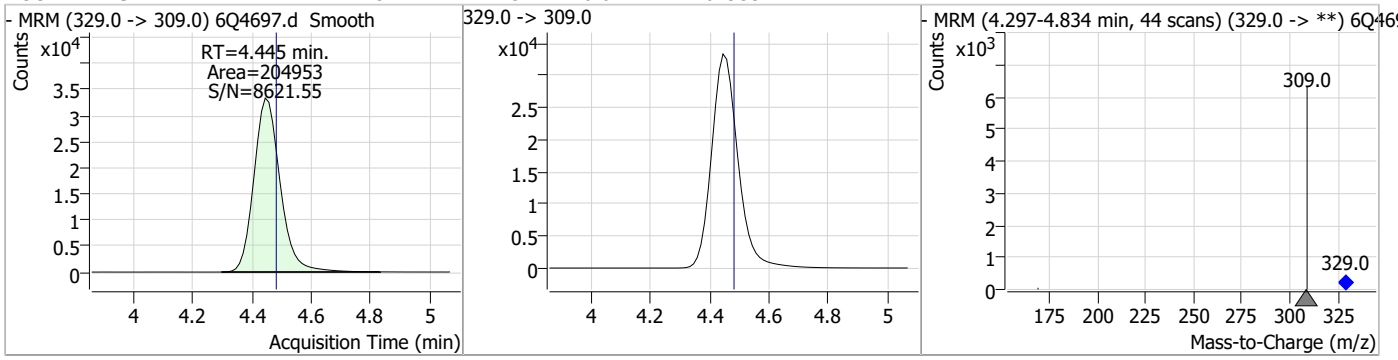
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.26	3.58	-0.05	23364				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.38	3.58	-0.06	1475	299.0 -> 99.0	33.5	18.8	56.4

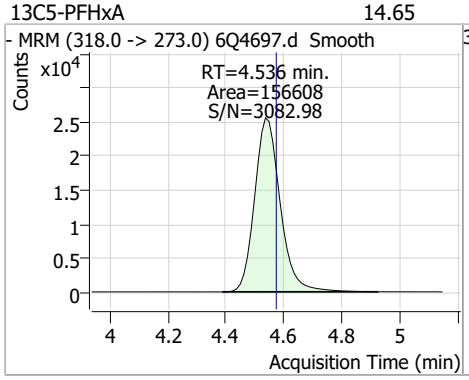


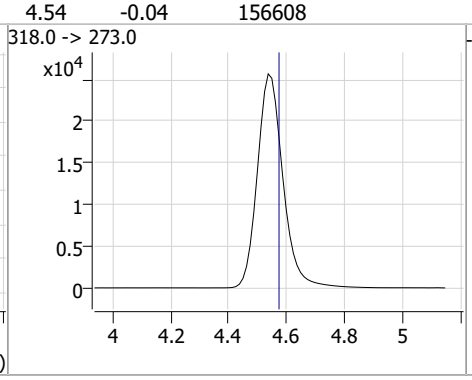
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.17	4.45	-0.04	204953				

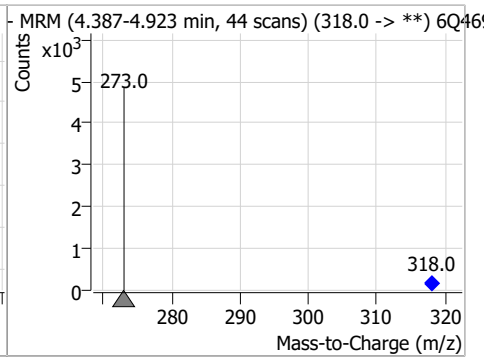


Perfluorinated Compounds by LC/MS/MS

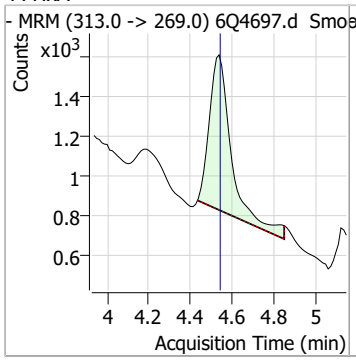
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.65	4.54	-0.04	156608				

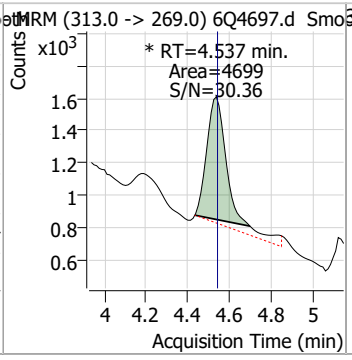


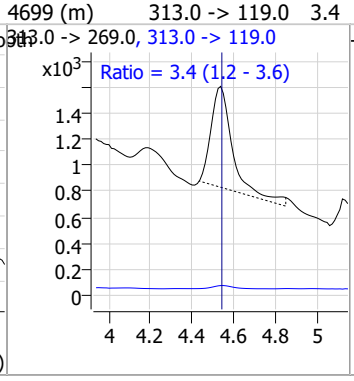


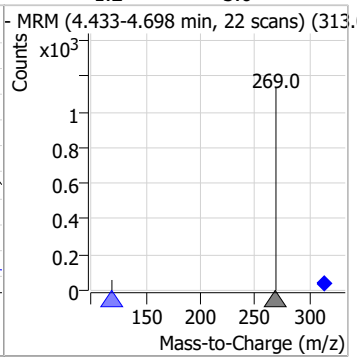


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.57	4.54	-0.04	4699 (m)	313.0 -> 119.0	3.4	1.2	3.6

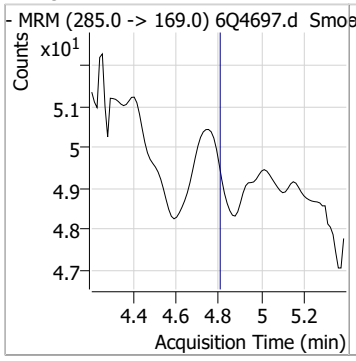


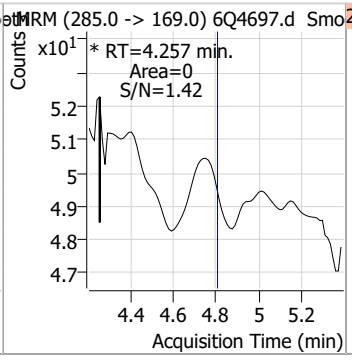


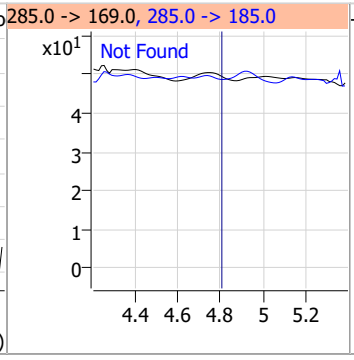


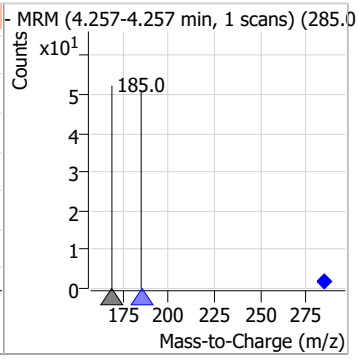


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA		0		0	285.0 -> 185.0		7.0	21.1

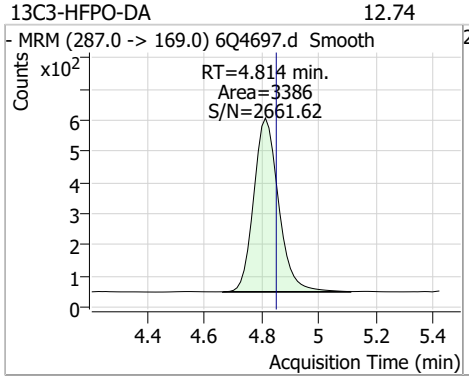


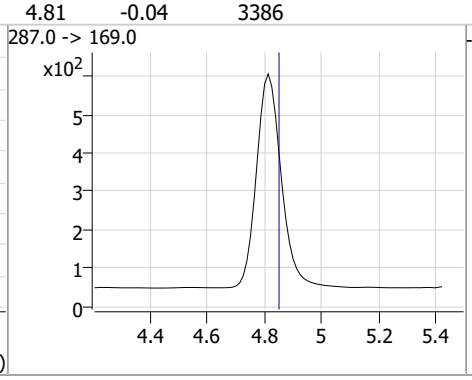


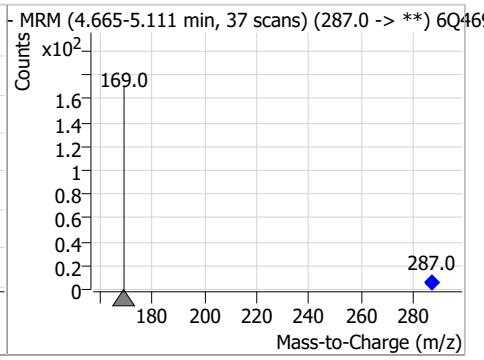




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.74	4.81	-0.04	3386				

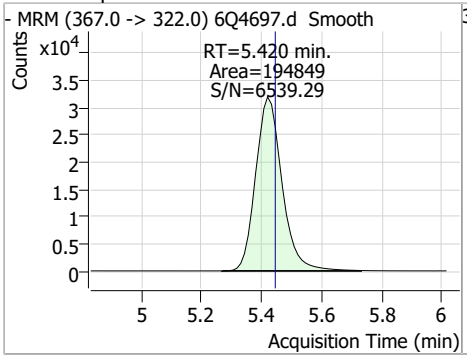


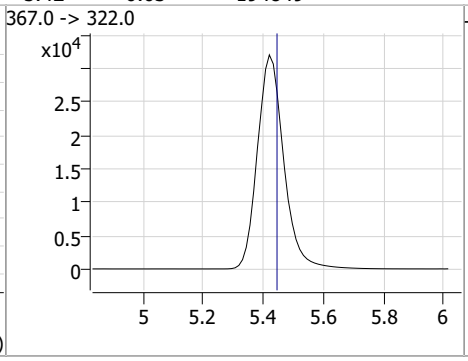


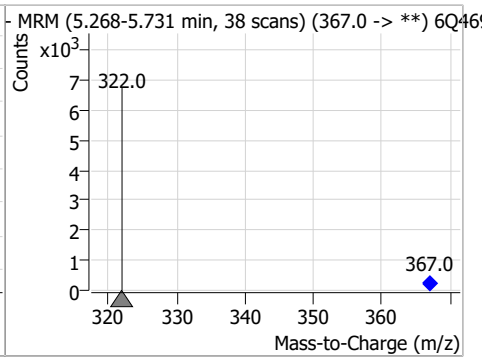


Perfluorinated Compounds by LC/MS/MS

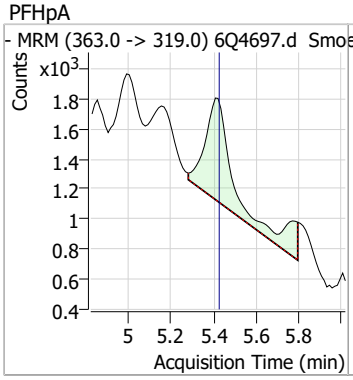
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.75	5.42	-0.03	194849				

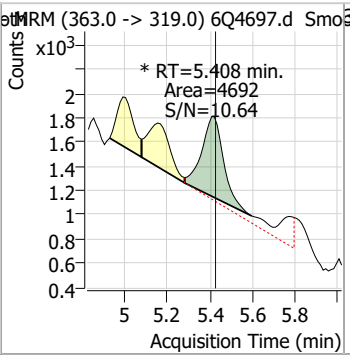


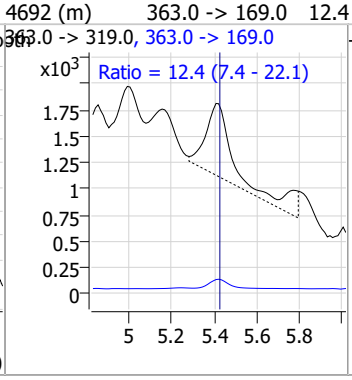


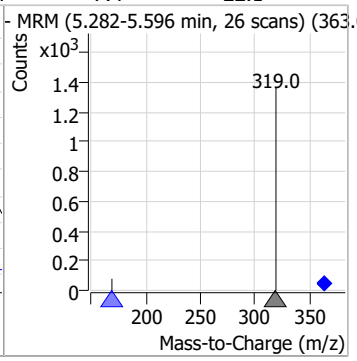


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.37	5.41	-0.04	4692 (m)	363.0 -> 169.0	12.4	7.4	22.1

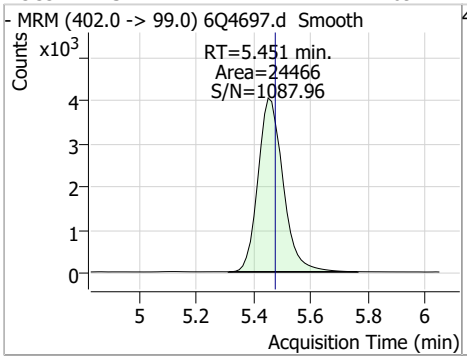


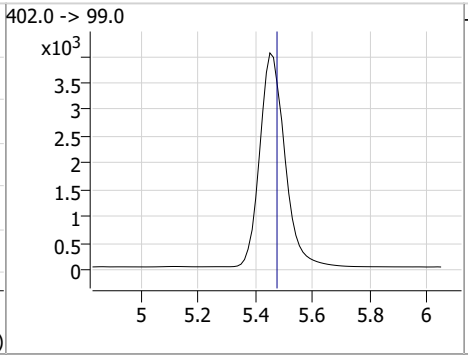


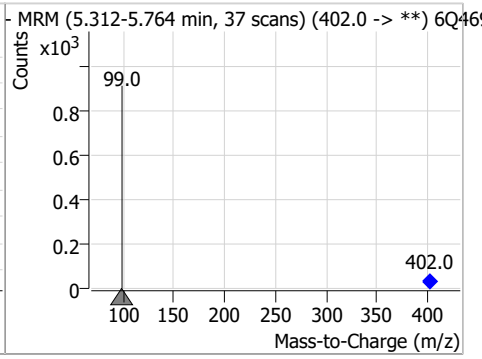




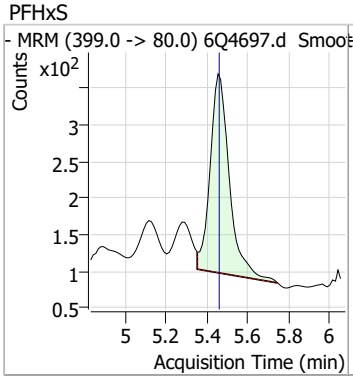
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.69	5.45	-0.02	24466				

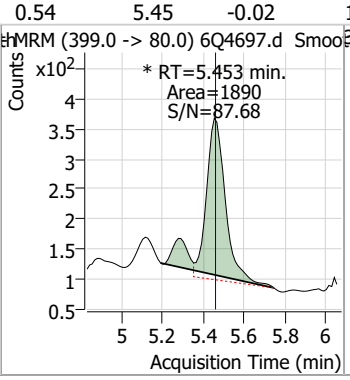


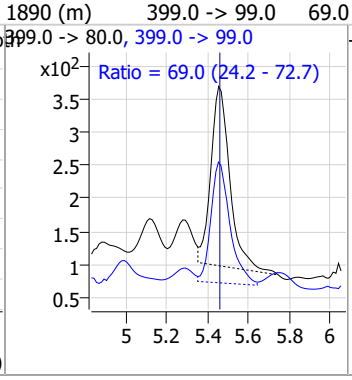


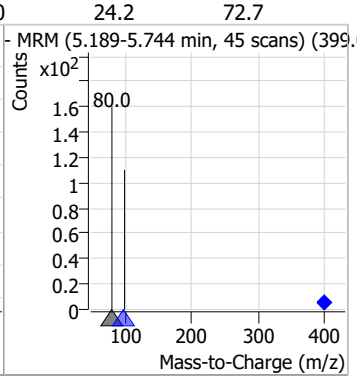


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.54	5.45	-0.02	1890 (m)	399.0 -> 99.0	69.0	24.2	72.7



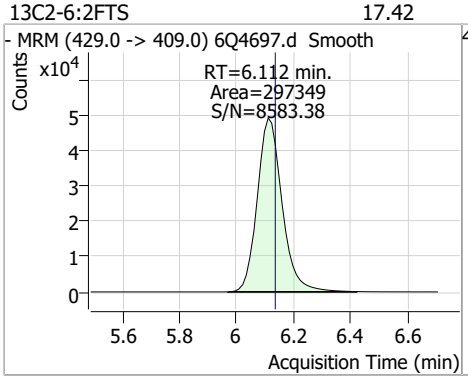


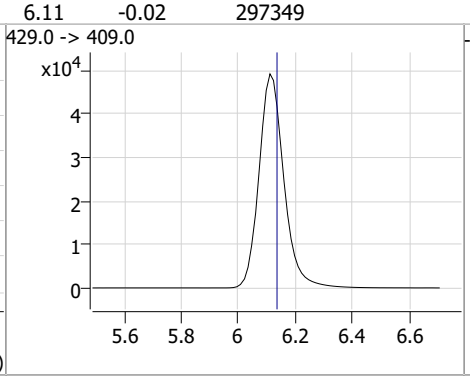


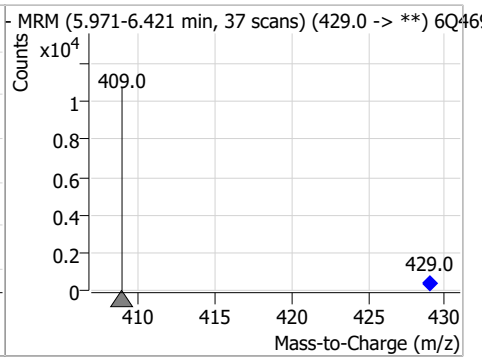


Perfluorinated Compounds by LC/MS/MS

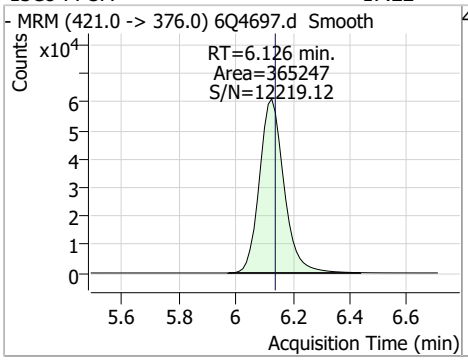
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.42	6.11	-0.02	297349				

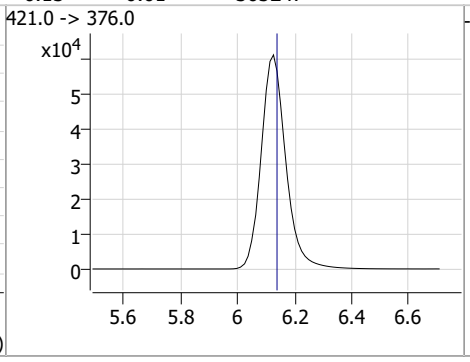


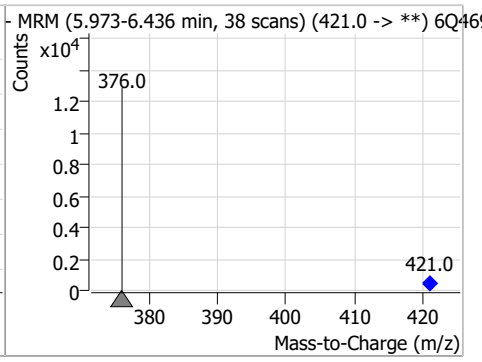




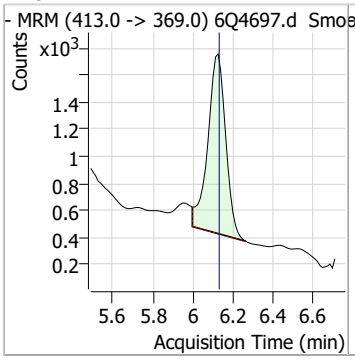
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.22	6.13	-0.01	365247				

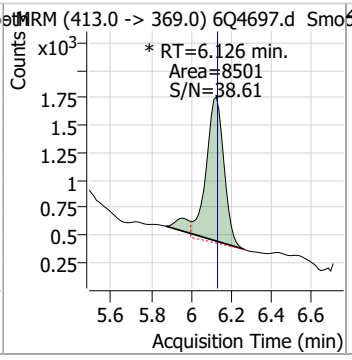


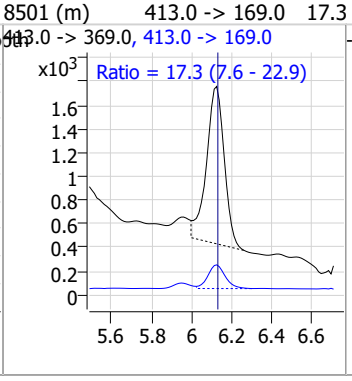


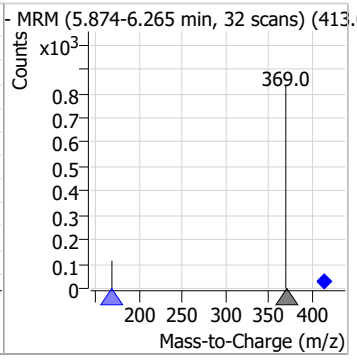


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.43	6.13	-0.01	8501 (m)	413.0 -> 169.0	17.3	7.6	22.9

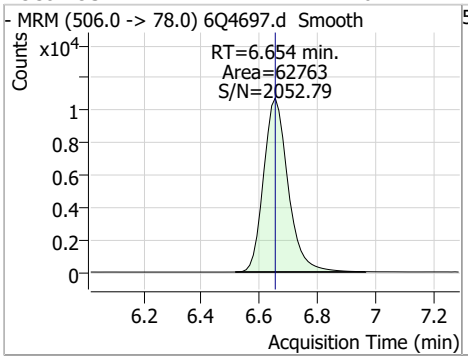


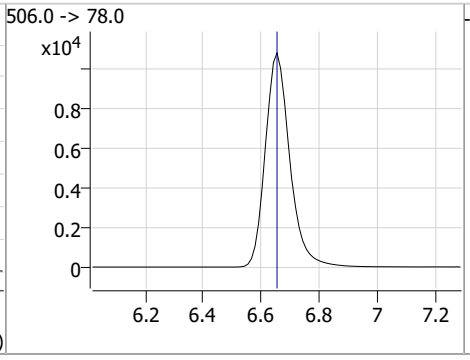


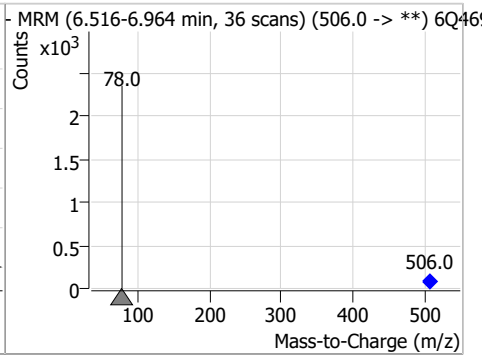




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	6.42	6.65	0.00	62763				

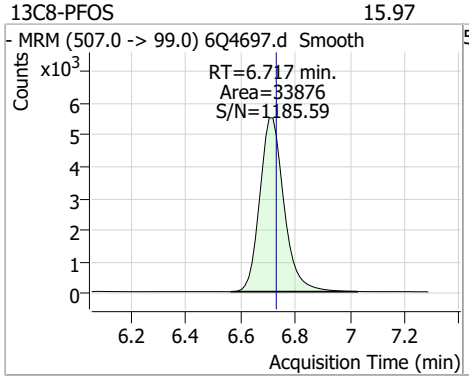


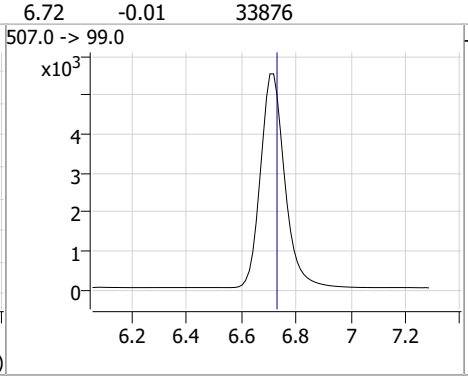


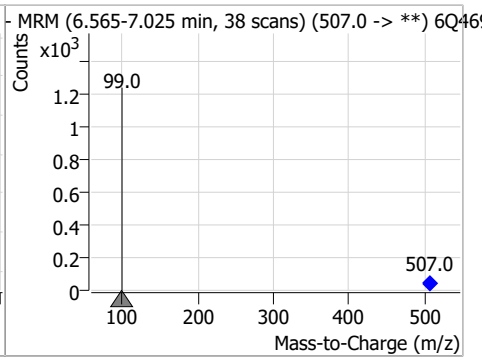


Perfluorinated Compounds by LC/MS/MS

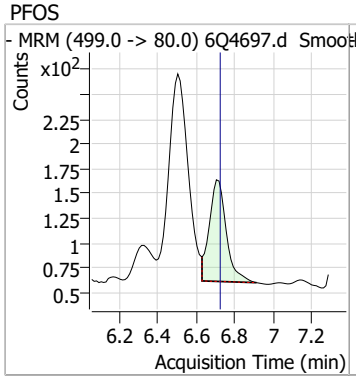
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.97	6.72	-0.01	33876				

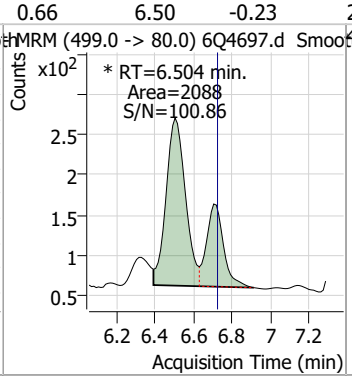


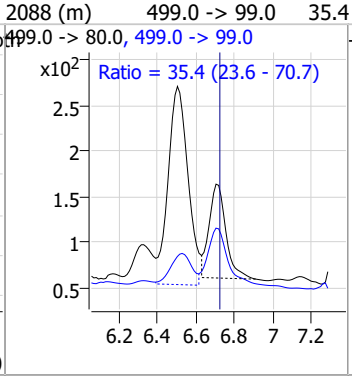


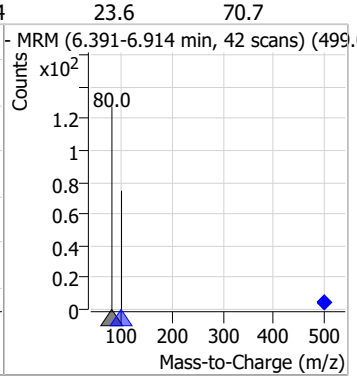


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.66	6.50	-0.23	2088 (m)	499.0 -> 99.0	35.4	23.6	70.7

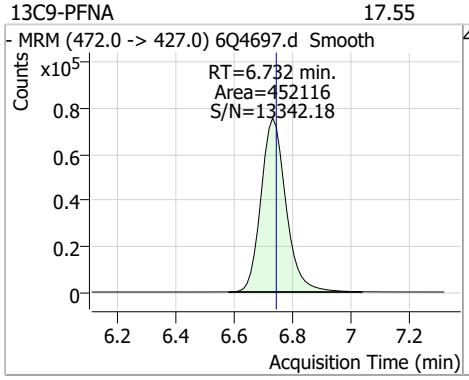


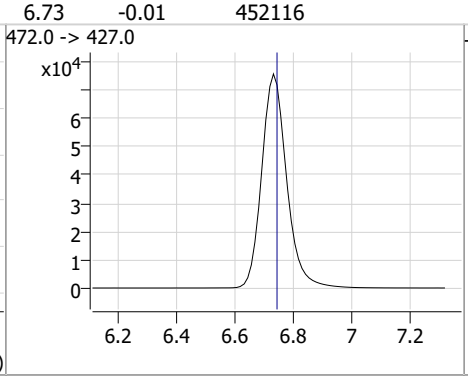


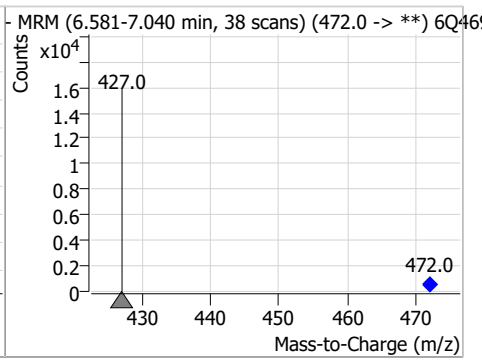




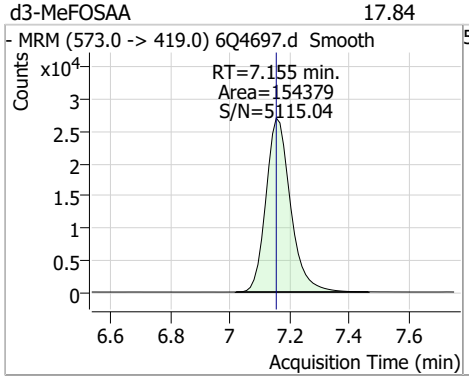
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.55	6.73	-0.01	452116				

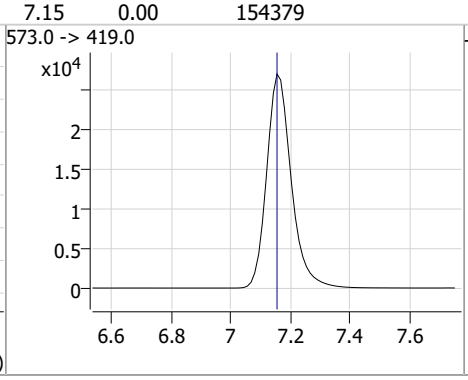


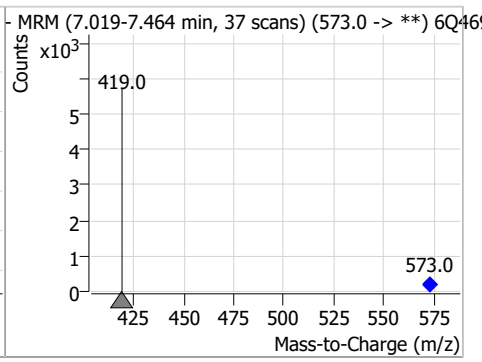




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.84	7.15	0.00	154379				

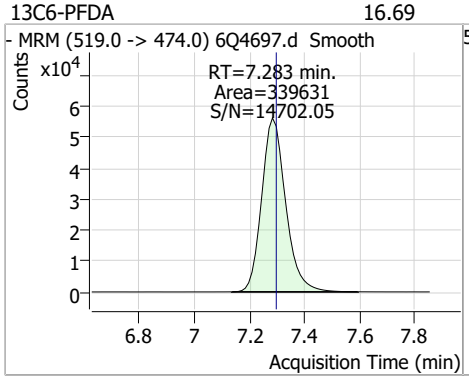


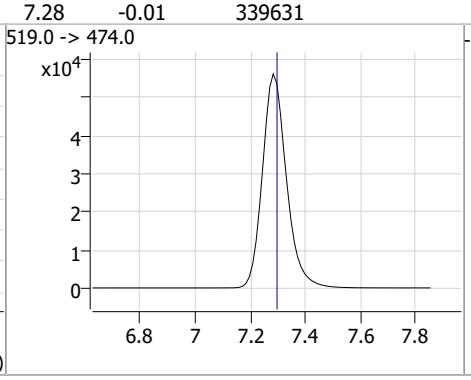


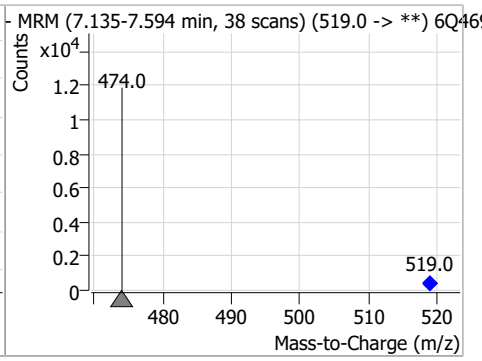


Perfluorinated Compounds by LC/MS/MS

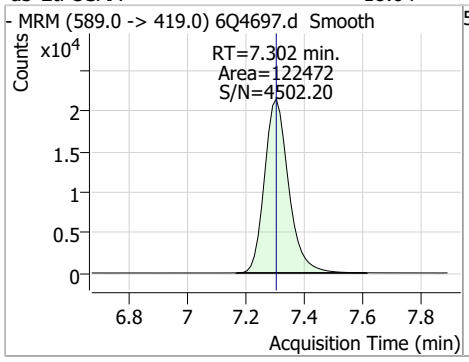
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.69	7.28	-0.01	339631				

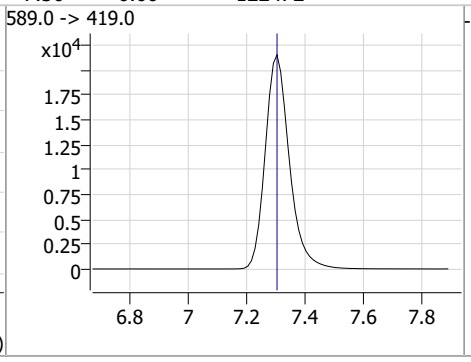


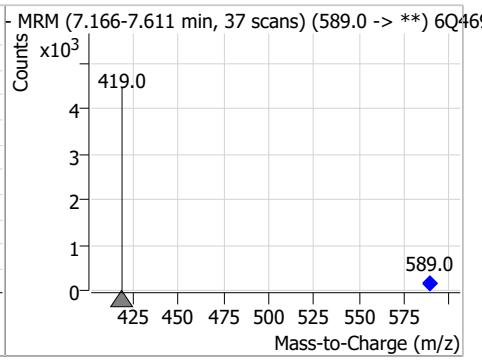




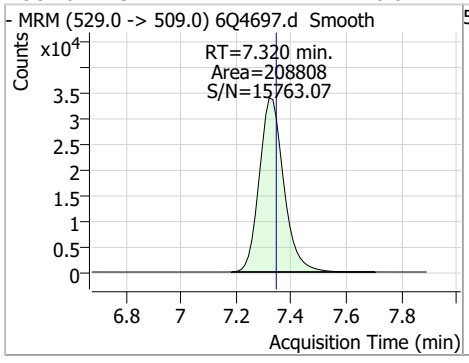
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.04	7.30	0.00	122472				

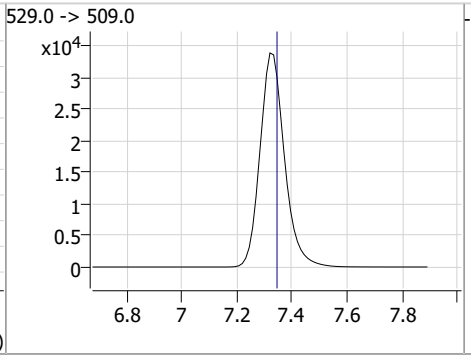


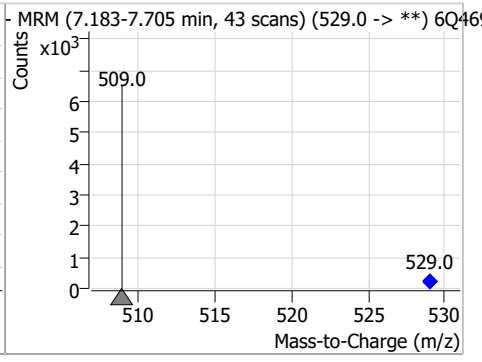




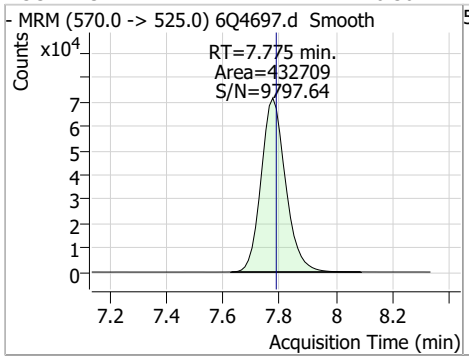
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.02	7.32	-0.03	208808				

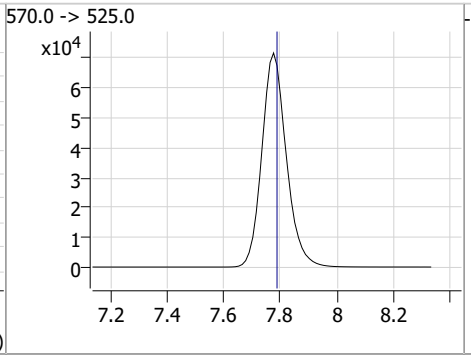


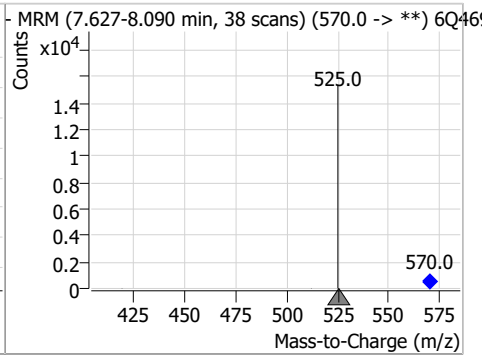




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.30	7.78	-0.01	432709				

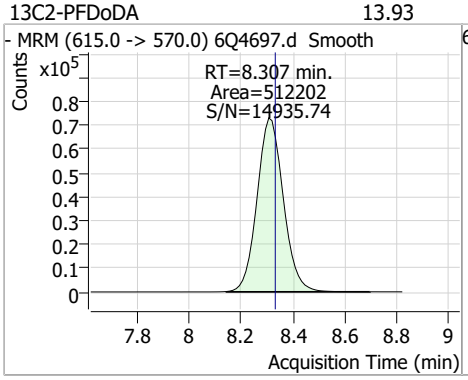


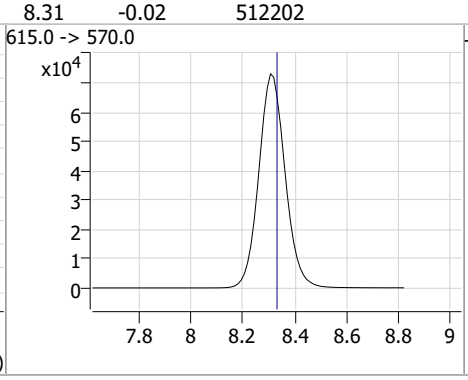


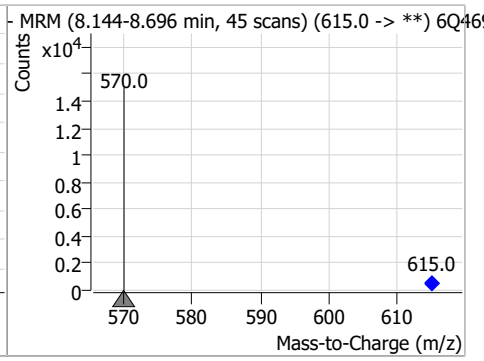


Perfluorinated Compounds by LC/MS/MS

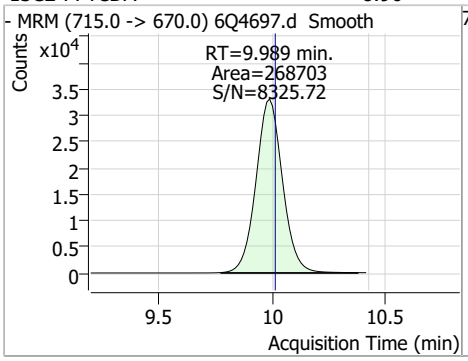
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.93	8.31	-0.02	512202				

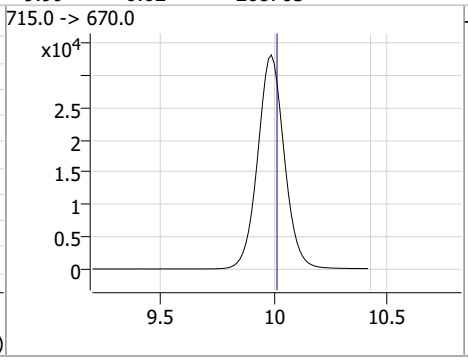


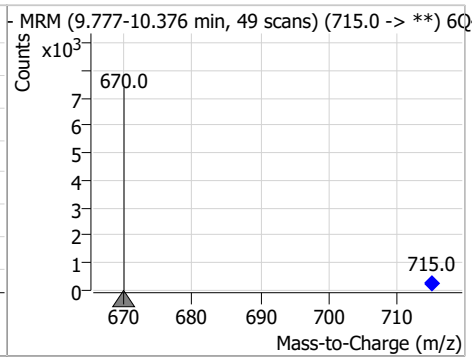




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.96	9.99	-0.02	268703				







Manual Integration Approval Summary

Sample Number: FA98286-39
Lab FileID: 6Q4697.D
Injection Time: 09/15/22 07:34
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:06 Norman Farmer
Supervisor approved: 09/19/22 16:06 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		4.54	Split peak
Perfluoroheptanoic acid	375-85-9		5.41	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.45	Split peak
Perfluorooctanoic acid	335-67-1		6.13	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.50	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:06

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4760.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:51:18 AM
Sample Name : fa98286-39
Vial : P2-C1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92764,S6Q86,125,,,1.0,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.924	217.0 -> 172.0	12591	4.00	µg/L	-0.025
M5-PFPeA	3.393	268.0 -> 223.0	23849	4.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	38692	4.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	45565	4.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	81897	4.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	97891	4.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	73867	4.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	89097	4.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	111195	4.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	53376	4.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	17020	4.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	5645	4.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	5442	4.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	7556	4.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	45372	4.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	63378	4.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	45645	4.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	28878	4.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	723	4.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	1040	4.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	24429	4.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	45372	3.36	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	63378	3.71	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	45645	3.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.5%		
13C2-PFDoDA	8.320	615.0 -> 570.0	111195	3.02	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.1%		
13C2-PFTeDA	9.989	715.0 -> 670.0	53376	1.78	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.9%		
13C3-PFBS	3.622	302.0 -> 99.0	5645	3.69	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.4%		
13C3-PFHxS	5.463	402.0 -> 99.0	5442	3.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.7%		
13C4-PFBA	1.924	217.0 -> 172.0	12591	3.16	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C4-PFHpA	5.433	367.0 -> 322.0	45565	3.68	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.4%		
13C5-PFHxA	4.561	318.0 -> 273.0	38692	3.62	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.1%		
13C5-PFPeA	3.393	268.0 -> 223.0	23849	3.40	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%		
13C6-PFDA	7.297	519.0 -> 474.0	73867	3.63	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

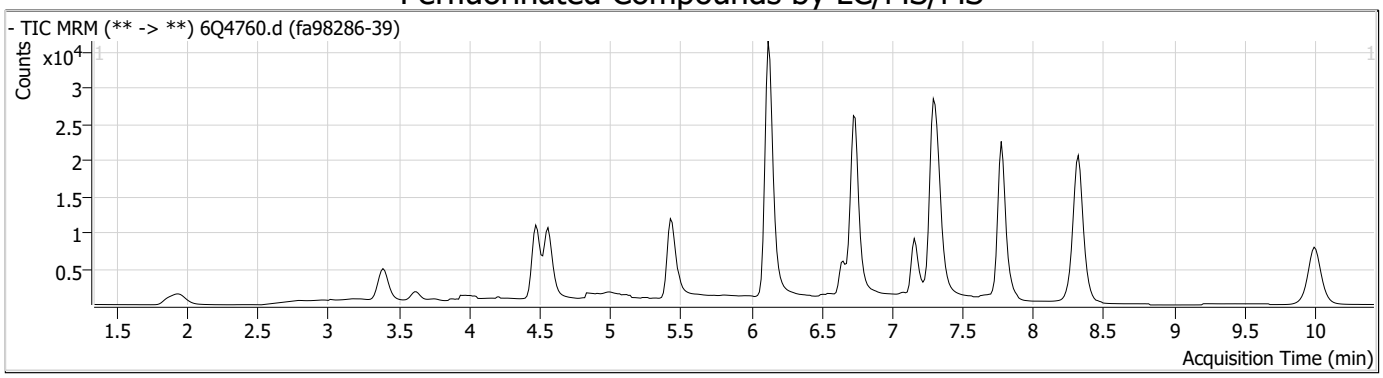
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	89097	3.36	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.8%			
13C8-FOSA	6.654	506.0 -> 78.0	17020	1.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.7%			
13C8-PFOA	6.138	421.0 -> 376.0	81897	3.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.3%			
13C8-PFOS	6.717	507.0 -> 99.0	7556	3.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.8%			
13C9-PFNA	6.745	472.0 -> 427.0	97891	3.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 19.0%			
d3-MeFOSAA	7.155	573.0 -> 419.0	28878	3.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	739	2.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%			
d3-MeFOSA	7.085	515.0 -> 169.0	1040	0.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%			
d5-EtFOSAA	7.302	589.0 -> 419.0	24444	3.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 18.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.918	213.0 -> 169.0	1403	1.02	µg/L		100
PFBS	3.615	299.0 -> 80.0	326	0.07	µg/L	m	96
		299.0 -> 99.0	131				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	-	363.0 -> 319.0	-	N.D.			
		363.0 -> 169.0					
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	4.562	313.0 -> 269.0	1532	0.15	µg/L	m	98
		313.0 -> 119.0	47				
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	6.516	499.0 -> 80.0	634	0.18	µg/L	m	83

Perfluorinated Compounds by LC/MS/MS

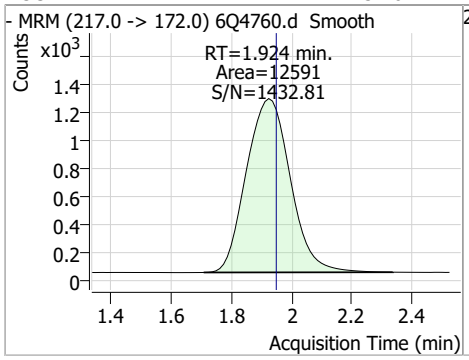
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	224				
PFPeA	3.345	263.0 -> 219.0	229	0.05	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

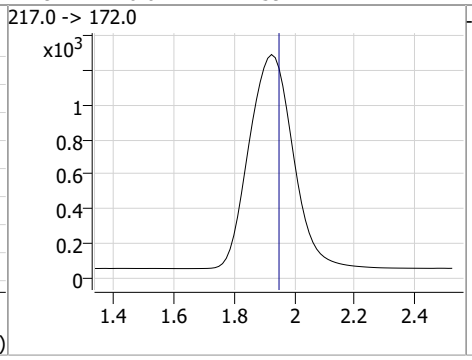
 # = Qualifier out of range, m = manually integrated, + = Area summed

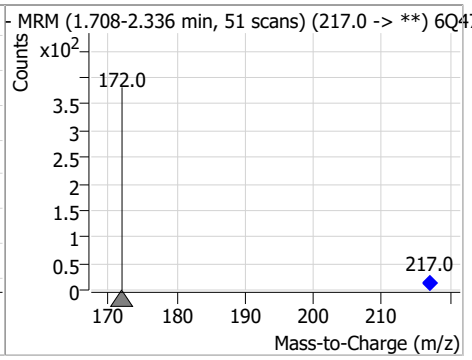
Perfluorinated Compounds by LC/MS/MS



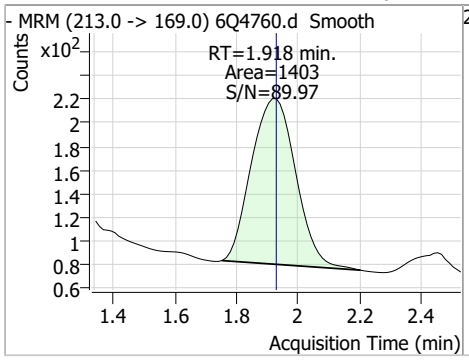
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	3.16	1.92	-0.02	12591				

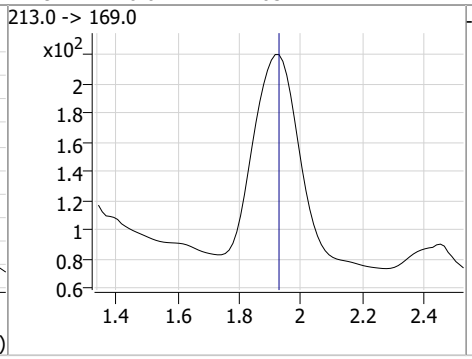


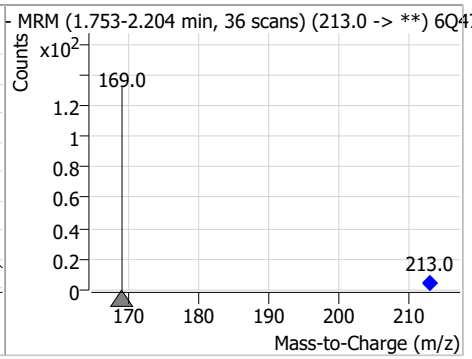




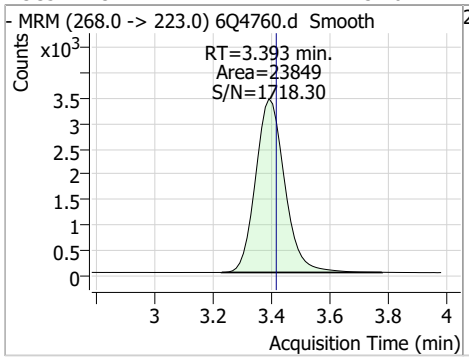
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.02	1.92	-0.04	1403				

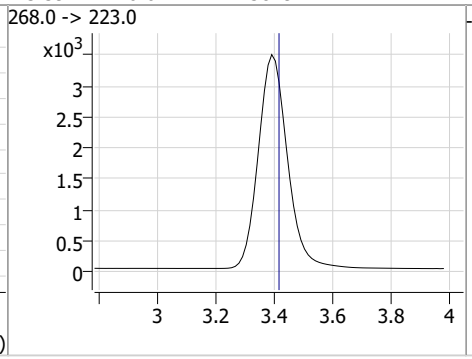


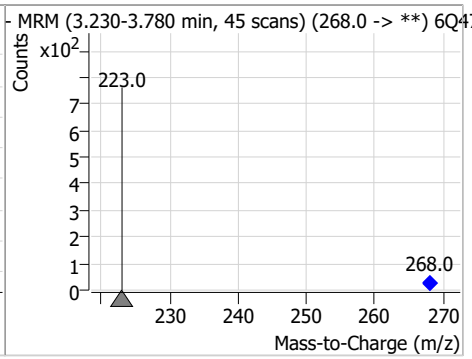




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	3.40	3.39	-0.02	23849				

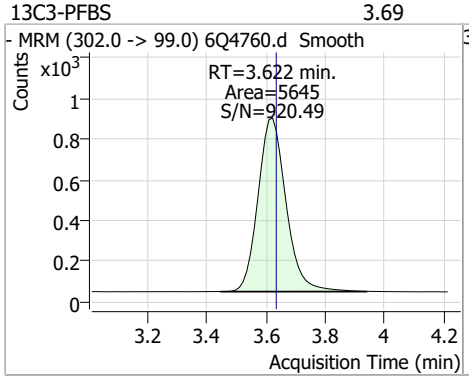


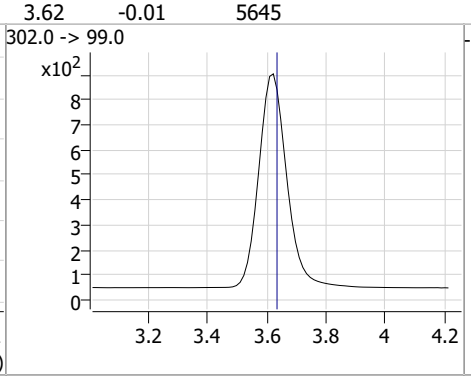


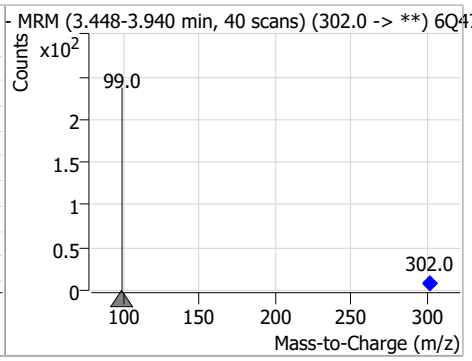


Perfluorinated Compounds by LC/MS/MS

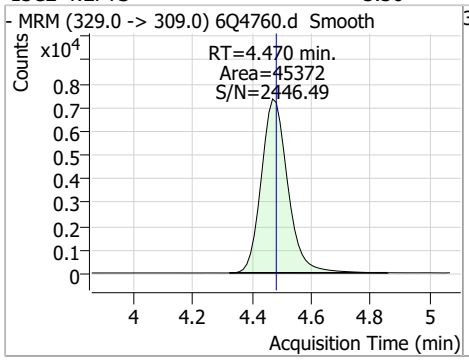
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.69	3.62	-0.01	5645				

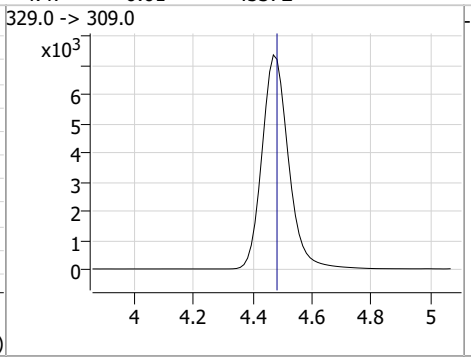


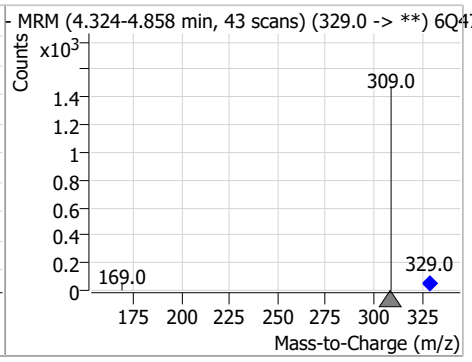




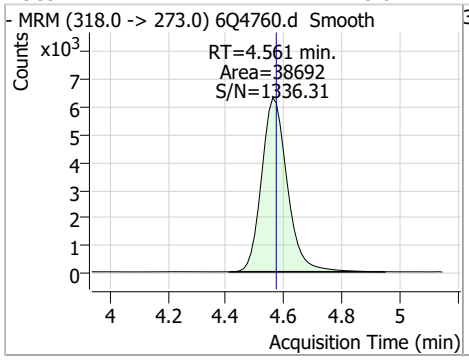
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.36	4.47	-0.01	45372				

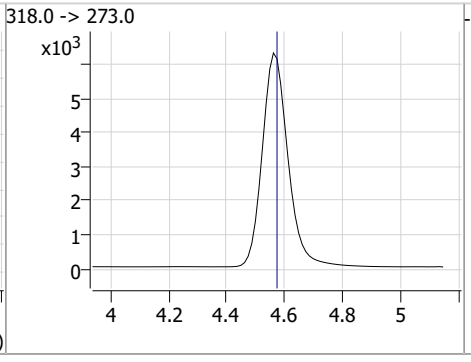


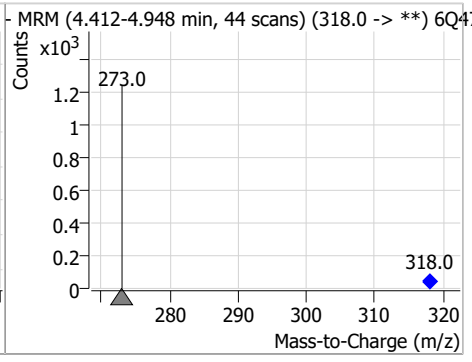




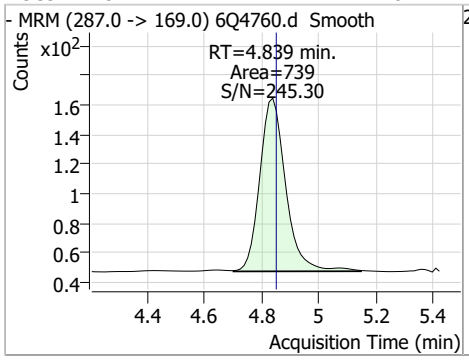
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.62	4.56	-0.01	38692				

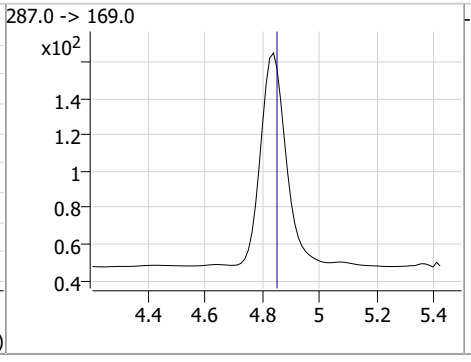


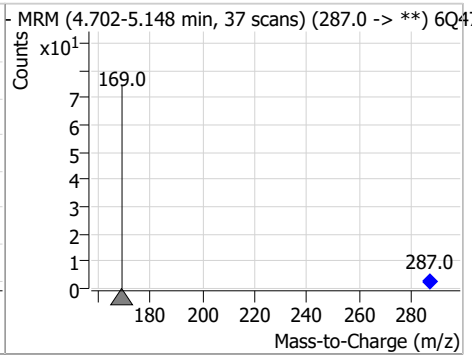




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.78	4.84	-0.01	739				

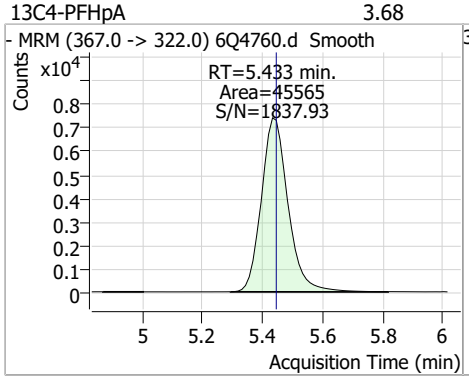


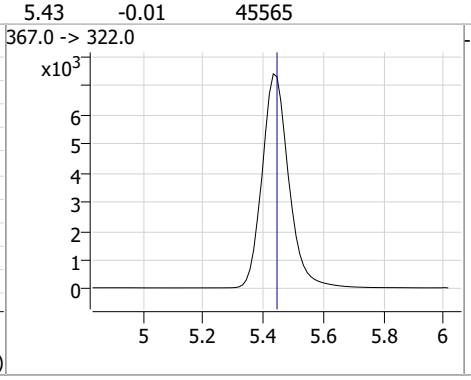


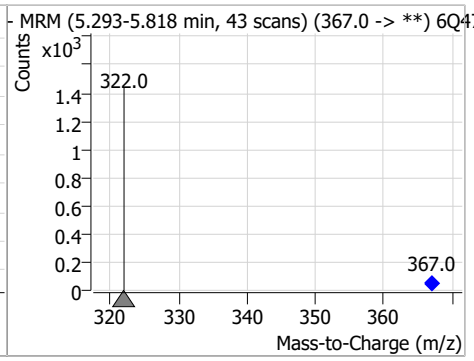


Perfluorinated Compounds by LC/MS/MS

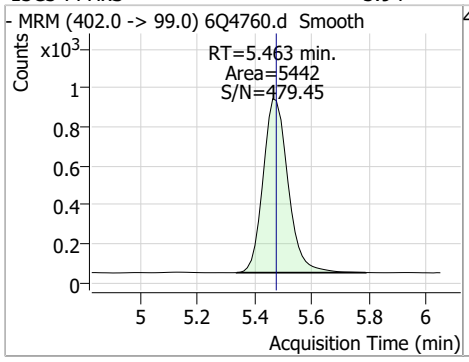
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.68	5.43	-0.01	45565				

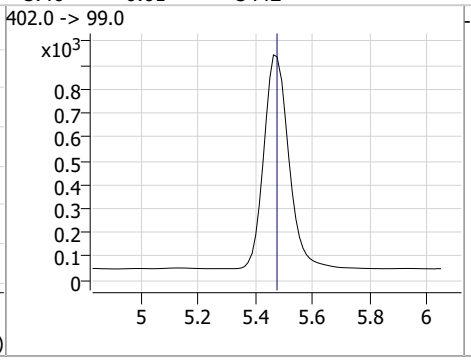


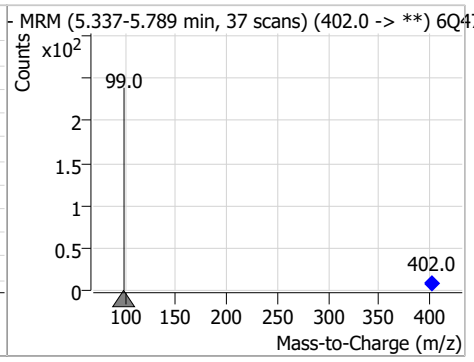




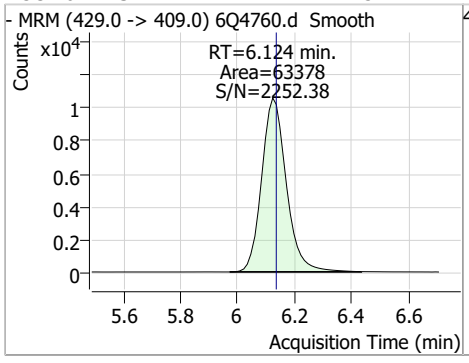
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.94	5.46	-0.01	5442				

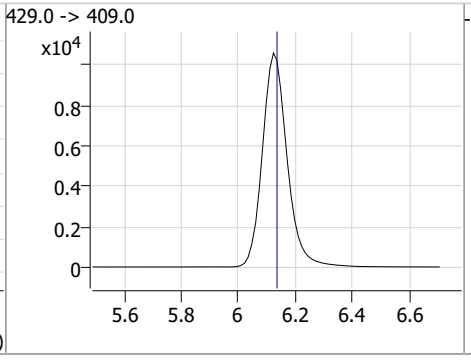


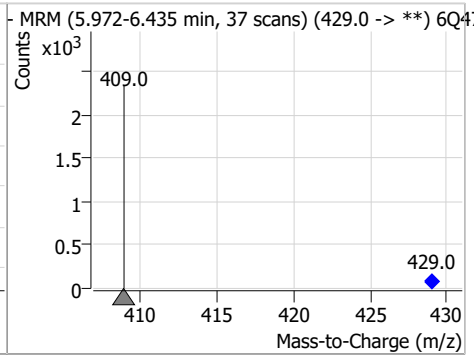




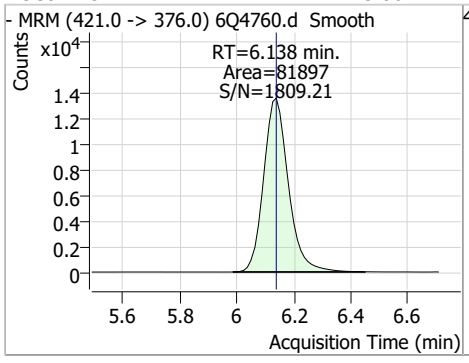
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.71	6.12	-0.01	63378				

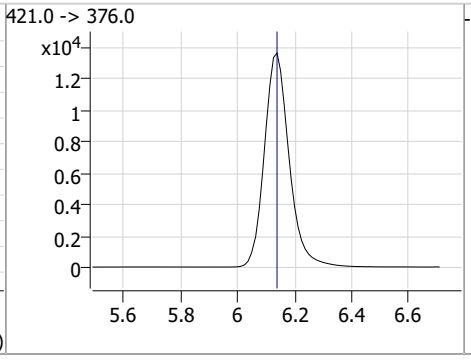


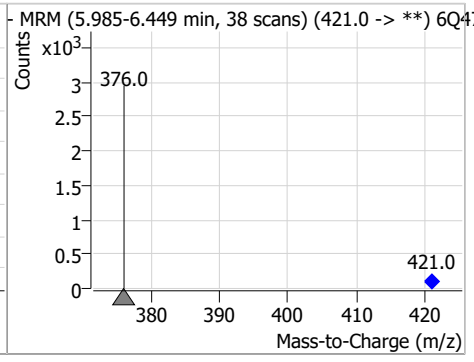




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.86	6.14	0.00	81897				

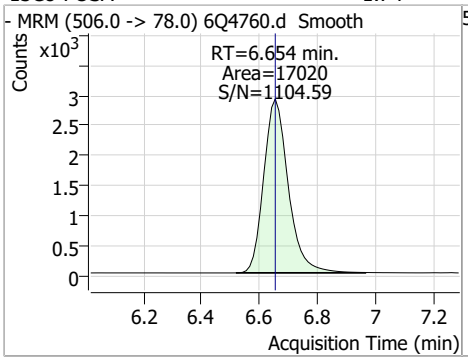


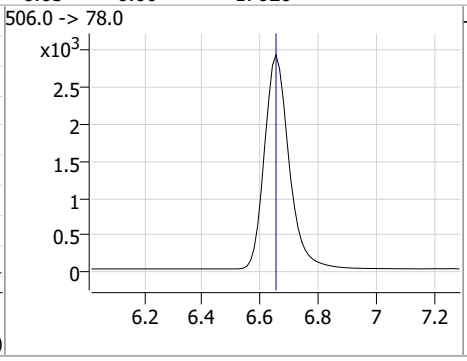


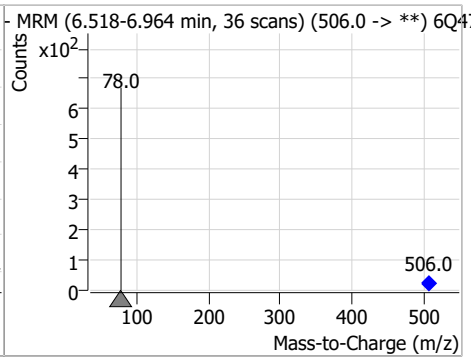


Perfluorinated Compounds by LC/MS/MS

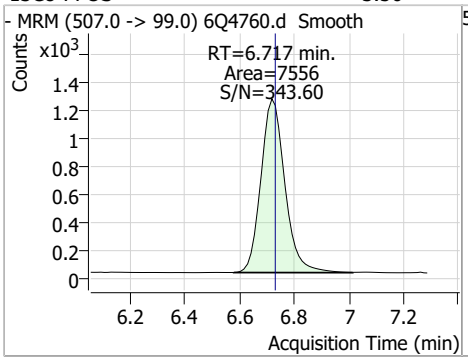
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.74	6.65	0.00	17020				

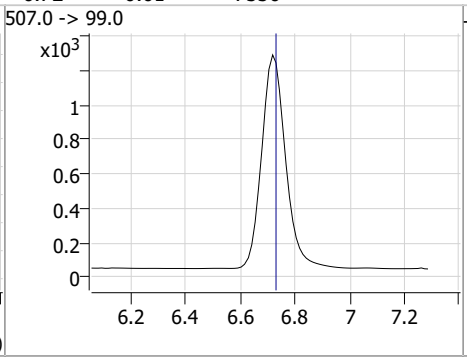


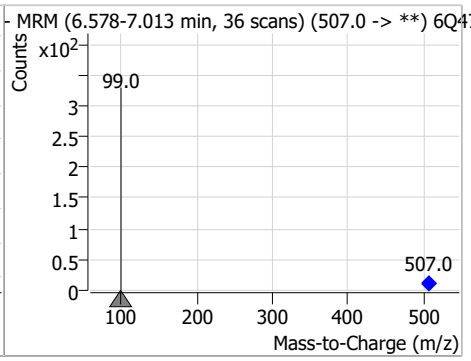




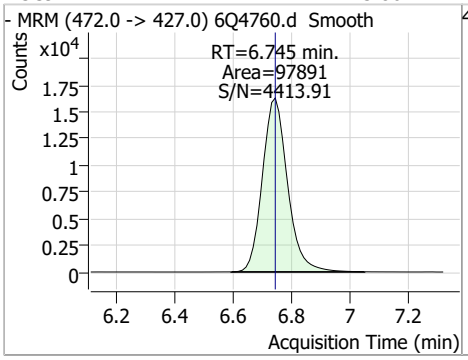
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	3.56	6.72	-0.01	7556				

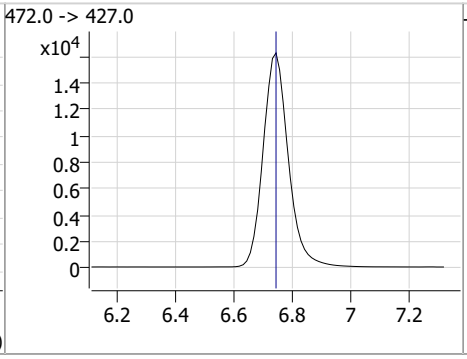


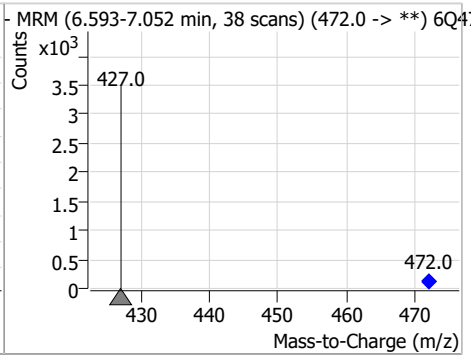




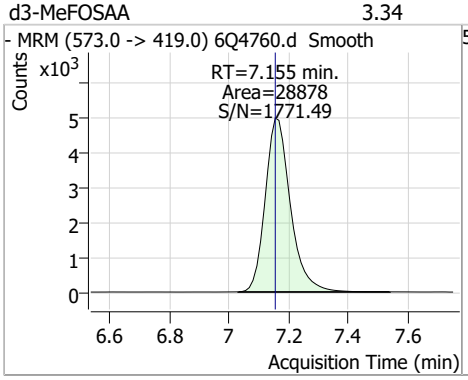
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.80	6.74	0.00	97891				

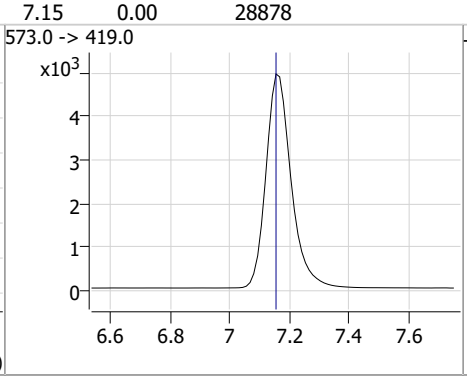


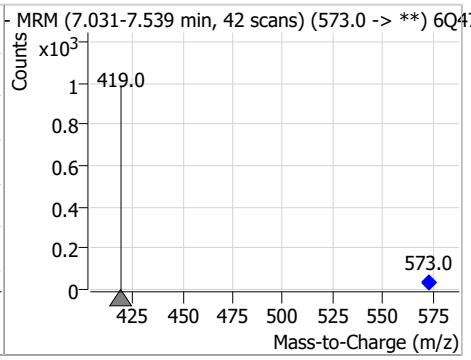




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	3.34	7.15	0.00	28878				

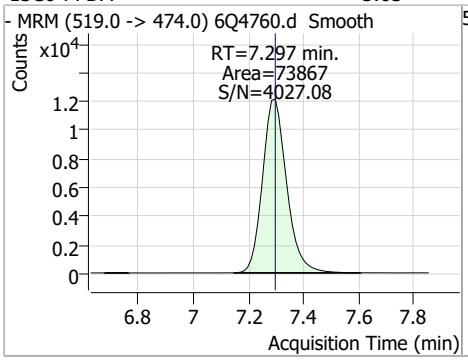


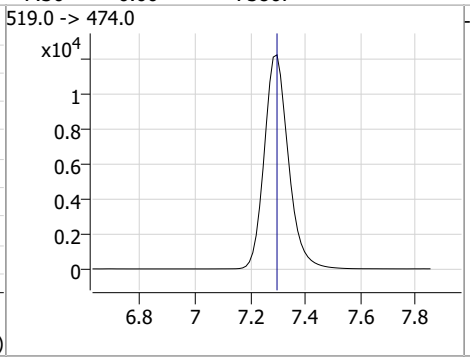


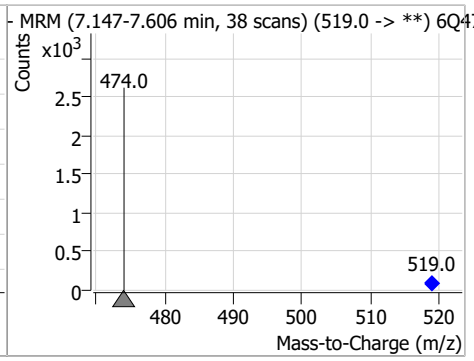


Perfluorinated Compounds by LC/MS/MS

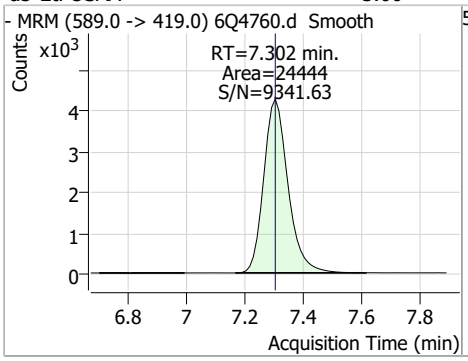
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	3.63	7.30	0.00	73867				

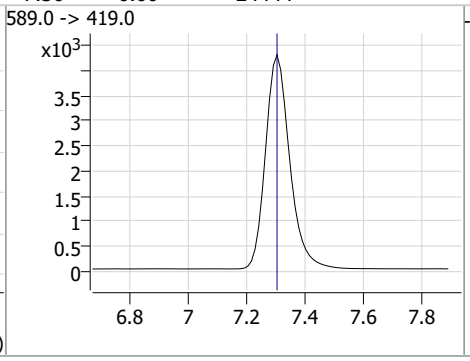


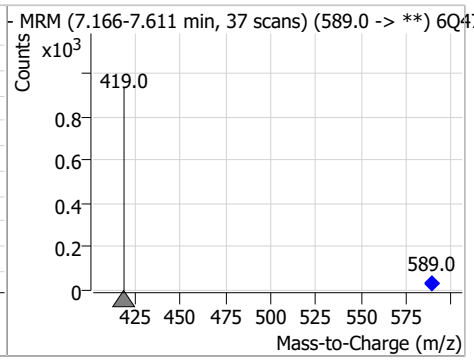




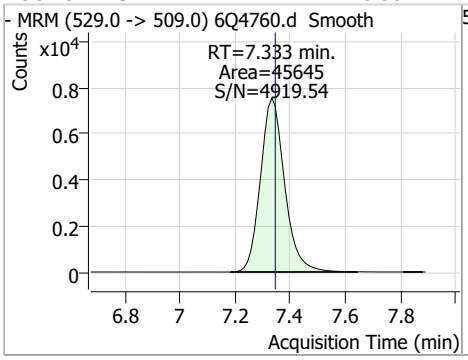
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	3.60	7.30	0.00	24444				

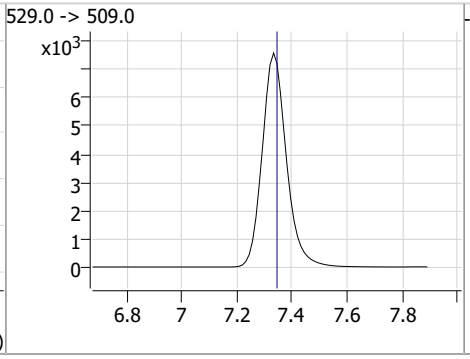


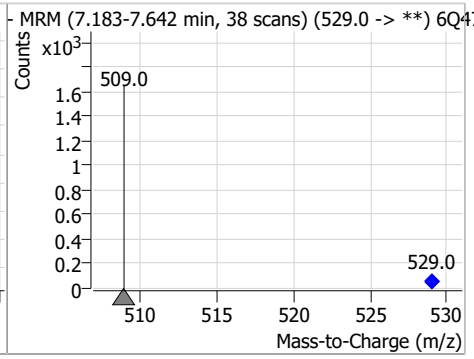




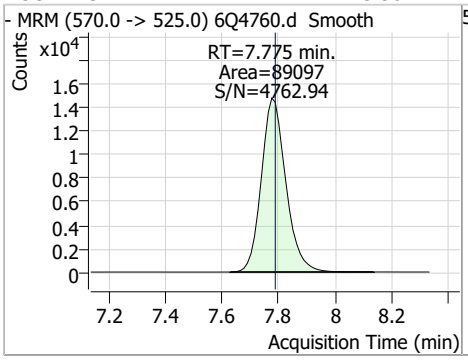
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	3.50	7.33	-0.01	45645				

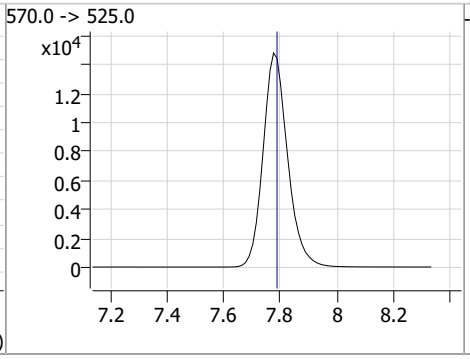


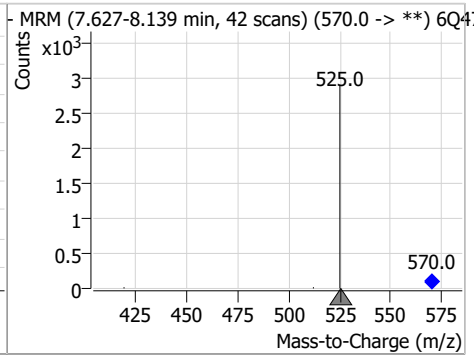




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	3.36	7.78	-0.01	89097				

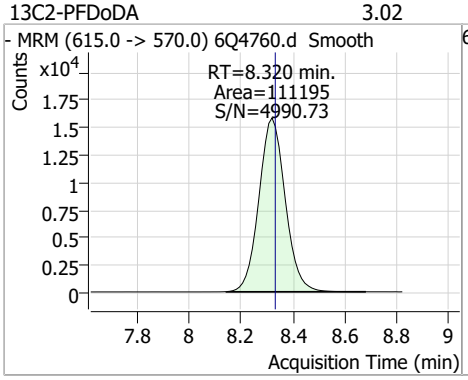


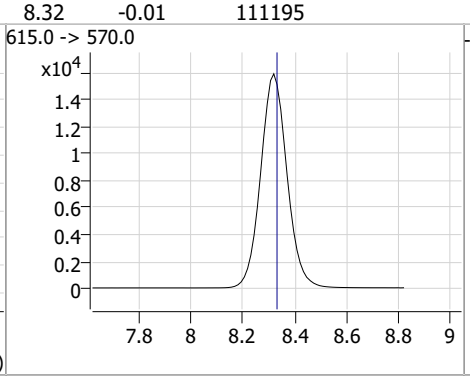


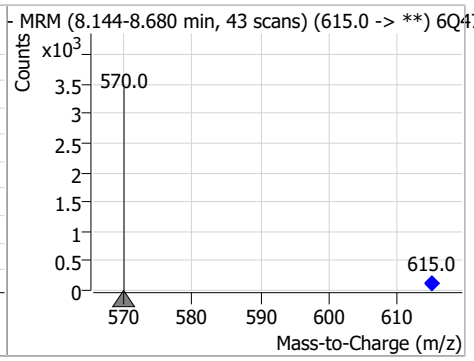


Perfluorinated Compounds by LC/MS/MS

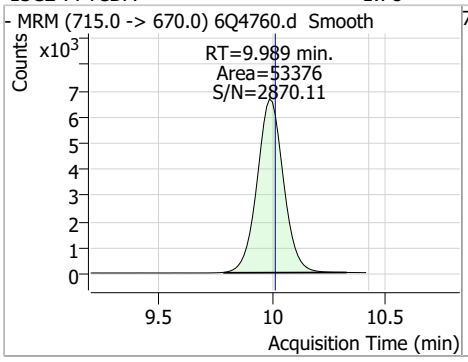
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	3.02	8.32	-0.01	111195				

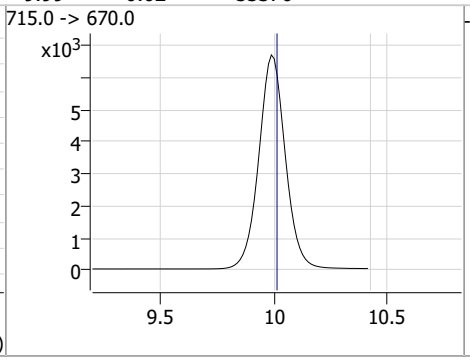


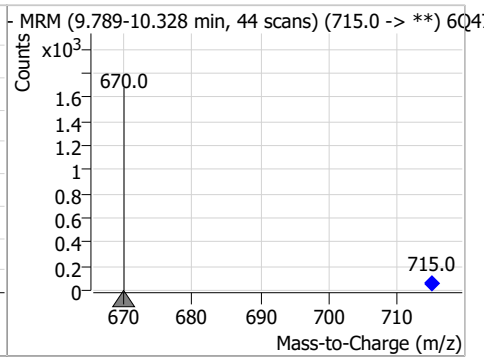




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.78	9.99	-0.02	53376				







Manual Integration Approval Summary

Sample Number: FA98286-39
Lab FileID: 6Q4760.D
Injection Time: 09/16/22 06:51

Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:06 Norman Farmer
Supervisor approved: 09/19/22 16:06 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.35	Split peak
Perfluorobutanesulfonic acid	375-73-5		3.62	Split peak
Perfluorohexanoic acid	307-24-4		4.56	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.52	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4698.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:50:11 AM
Sample Name : fa98286-40
Vial : P6-C5
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.924	217.0 -> 172.0	57511	20.00	µg/L	-0.025
M5-PFPeA	3.393	268.0 -> 223.0	106851	20.00	µg/L	-0.025
M5-PFHxA	4.561	318.0 -> 273.0	169348	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	199085	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	346590	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	426899	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	326442	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	423340	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	531866	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	431031	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	148198	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	24545	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	22933	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	34053	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	201092	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	277301	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	202809	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	149796	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4293	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	6481	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	117328	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	201092	14.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.4%		
13C2-6:2FTS	6.124	429.0 -> 409.0	277301	16.25	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%		
13C2-8:2FTS	7.333	529.0 -> 509.0	202809	15.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%		
13C2-PFDoDA	8.320	615.0 -> 570.0	531866	14.46	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%		
13C2-PFTeDA	9.989	715.0 -> 670.0	431031	14.37	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.8%		
13C3-PFBS	3.622	302.0 -> 99.0	24545	16.03	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%		
13C3-PFHxS	5.463	402.0 -> 99.0	22933	16.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
13C4-PFBA	1.924	217.0 -> 172.0	57511	14.45	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.2%		
13C4-PFHpA	5.433	367.0 -> 322.0	199085	16.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C5-PFHxA	4.561	318.0 -> 273.0	169348	15.84	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%		
13C5-PFPeA	3.393	268.0 -> 223.0	106851	15.24	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.2%		
13C6-PFDA	7.283	519.0 -> 474.0	326442	16.04	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

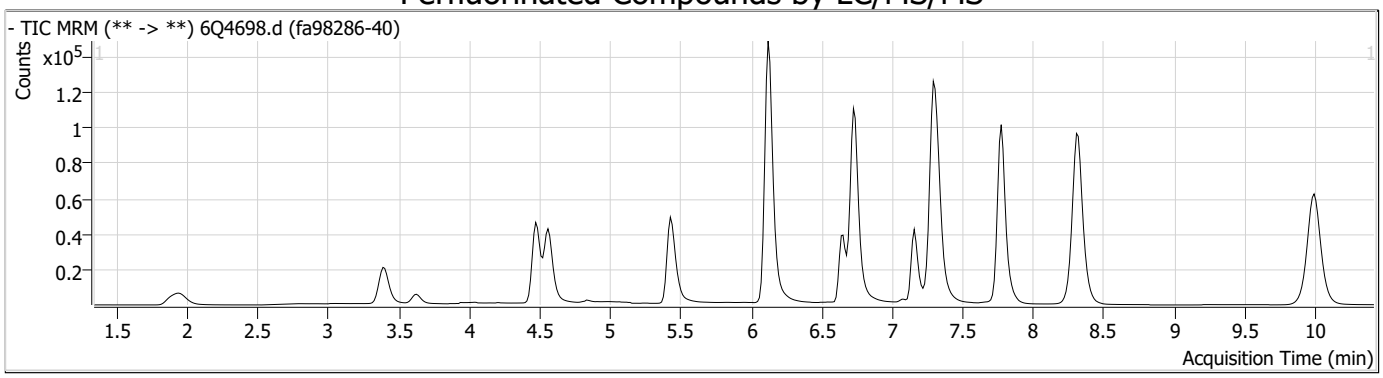
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%	
13C7-PFUnDA	7.775	570.0 -> 525.0	423340	15.94 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%	
13C8-FOSA	6.654	506.0 -> 78.0	148198	15.15 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.8%	
13C8-PFOA	6.138	421.0 -> 376.0	346590	16.34 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%	
13C8-PFOS	6.717	507.0 -> 99.0	34053	16.06 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.3%	
13C9-PFNA	6.745	472.0 -> 427.0	426899	16.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
d3-MeFOSAA	7.155	573.0 -> 419.0	149796	17.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	4322	16.26 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.3%	
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.	
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%	
d5-EtFOSAA	7.302	589.0 -> 419.0	117402	17.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.5%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	1.930	213.0 -> 169.0	1042	0.83 µg/L	100
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	4.562	313.0 -> 269.0	1444	0.16 µg/L	98
		313.0 -> 119.0	45		
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

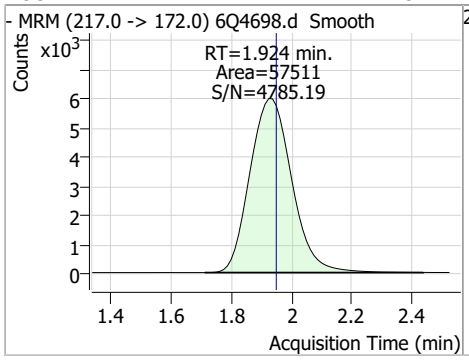
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0					
PFPeA	3.383	263.0 -> 219.0	1555	0.35	µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.			
		349.0 -> 99.0					
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

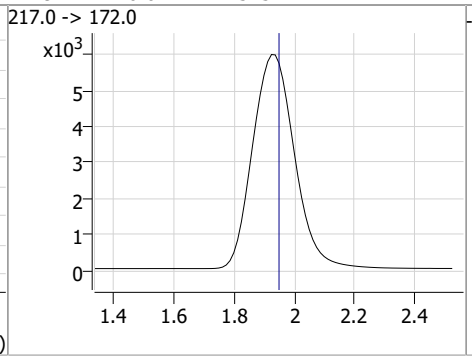
 # = Qualifier out of range, m = manually integrated, + = Area summed

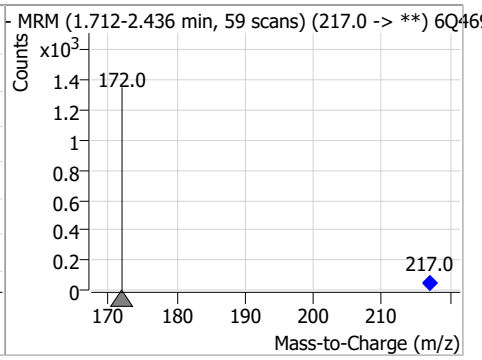
Perfluorinated Compounds by LC/MS/MS



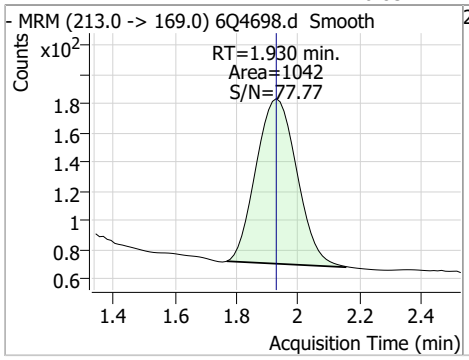
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.45	1.92	-0.02	57511				

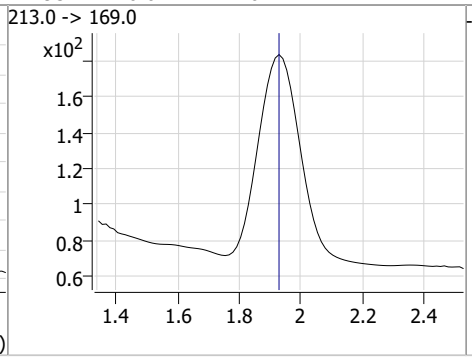


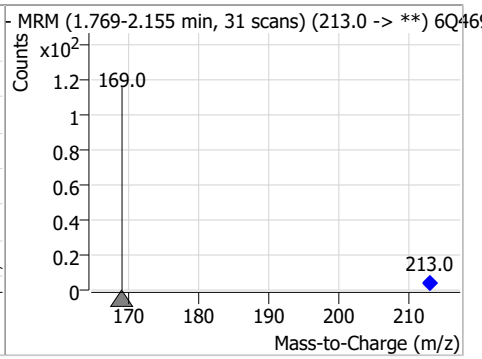




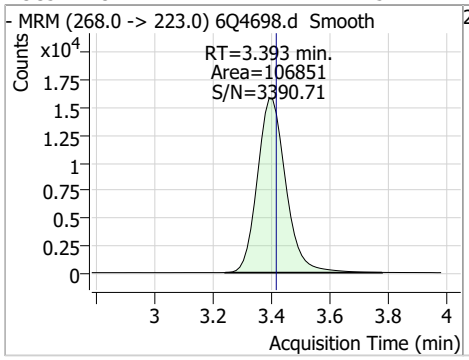
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.83	1.93	-0.02	1042				

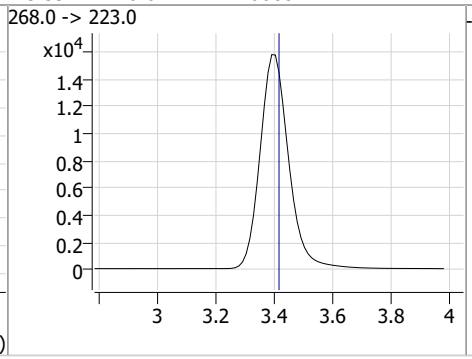


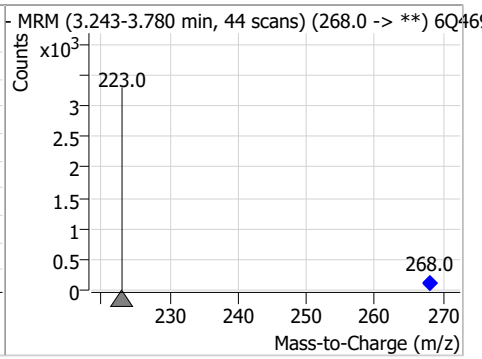




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	15.24	3.39	-0.02	106851				

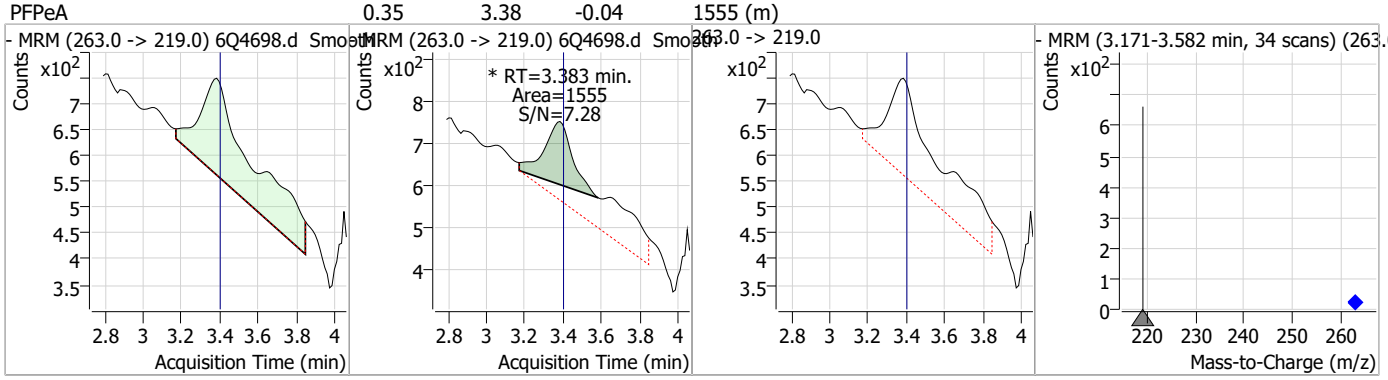




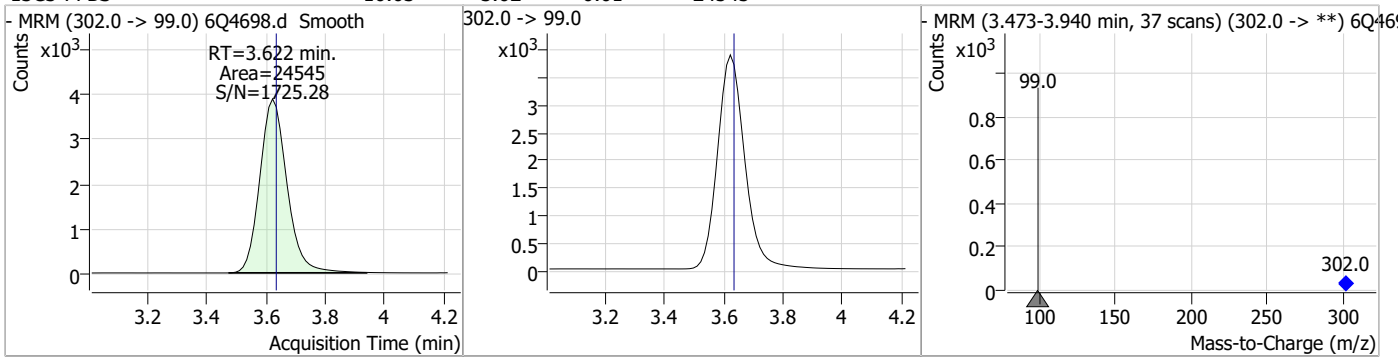


Perfluorinated Compounds by LC/MS/MS

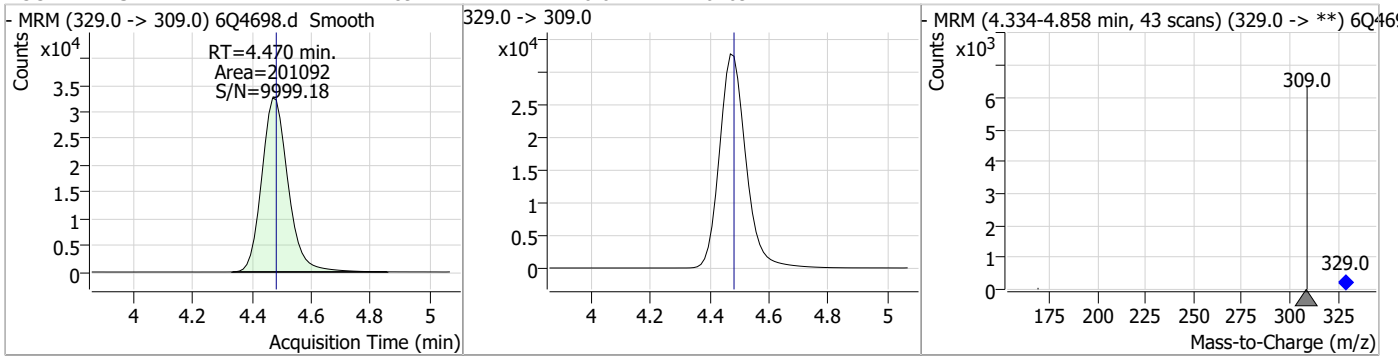
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.35	3.38	-0.04	1555 (m)				



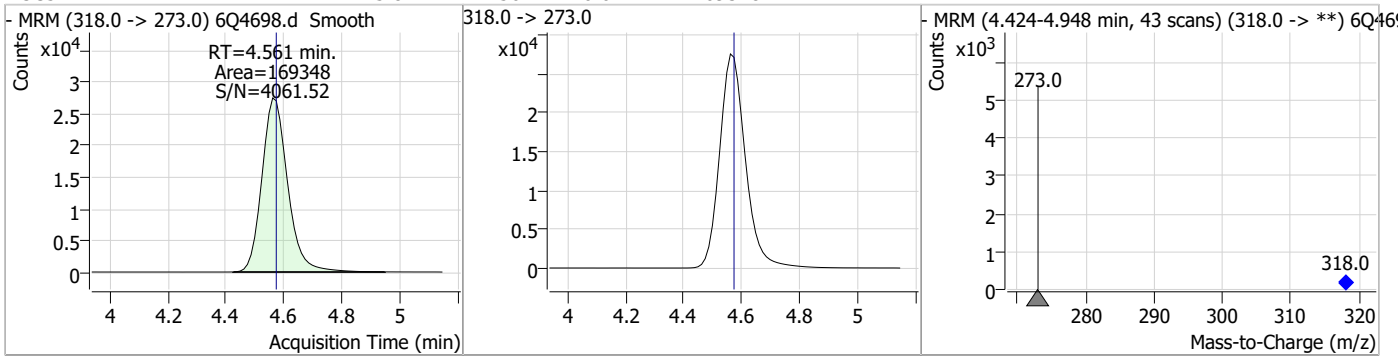
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.03	3.62	-0.01	24545				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.89	4.47	-0.01	201092				

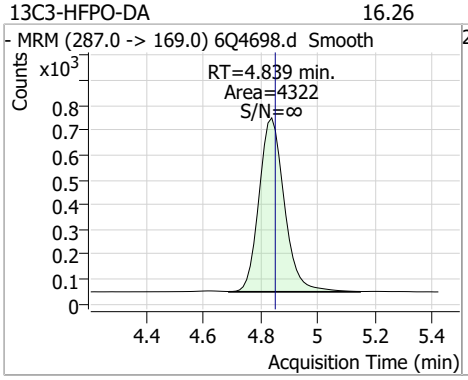


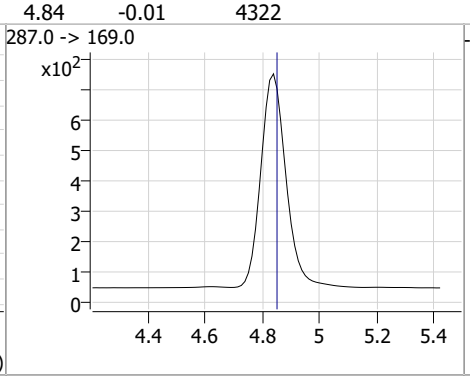
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	15.84	4.56	-0.01	169348				

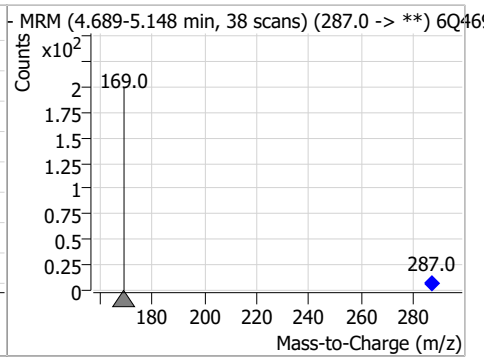


Perfluorinated Compounds by LC/MS/MS

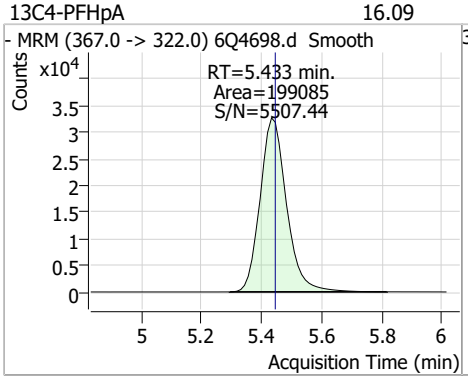
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.26	4.84	-0.01	4322				

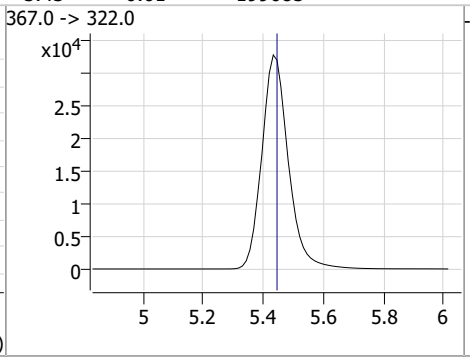


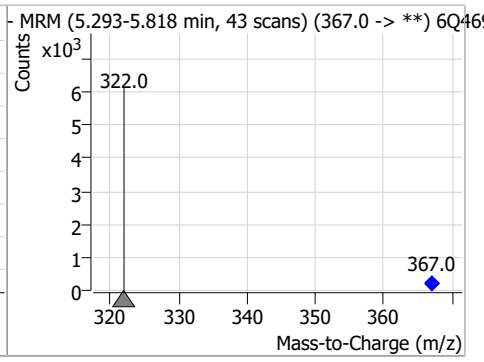




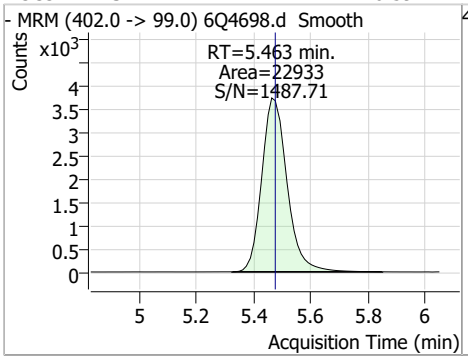
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.09	5.43	-0.01	199085				

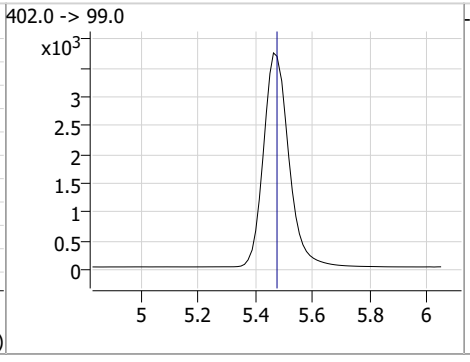


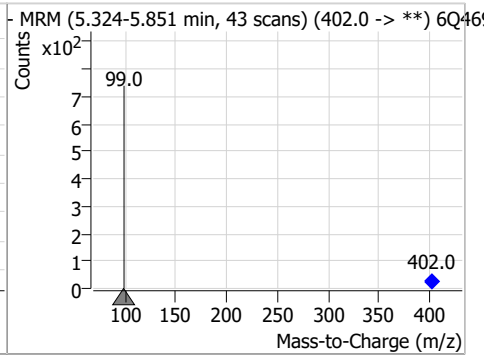




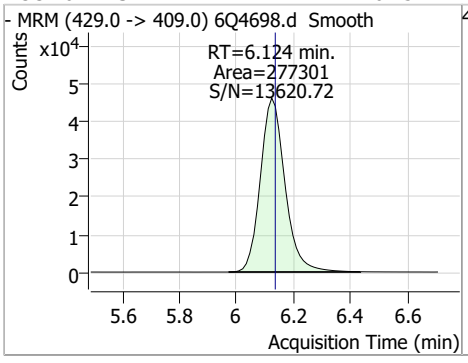
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.59	5.46	-0.01	22933				

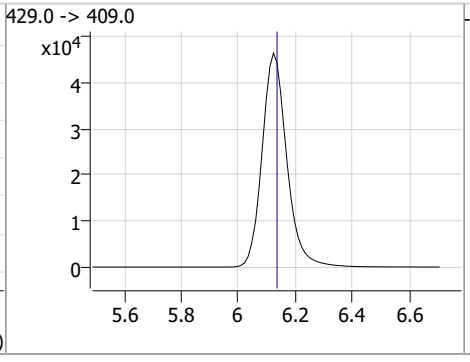


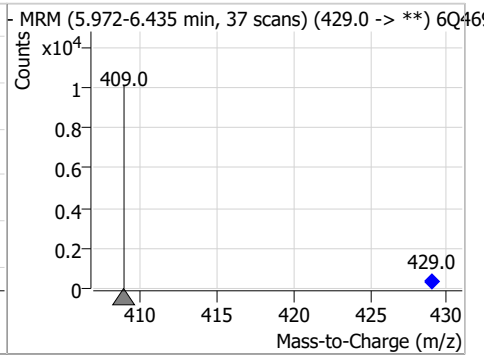




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.25	6.12	-0.01	277301				

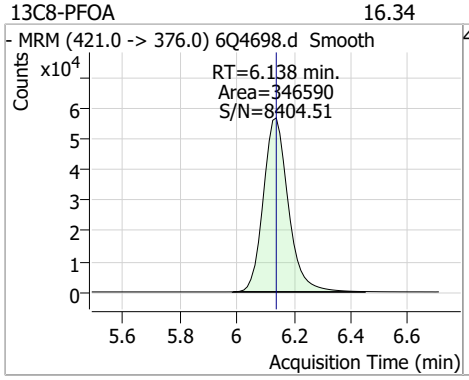


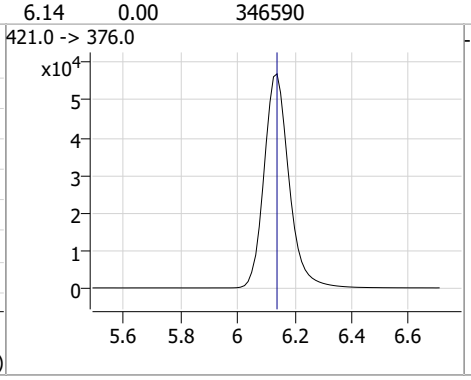


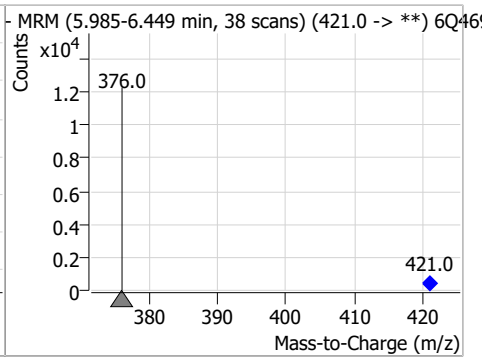


Perfluorinated Compounds by LC/MS/MS

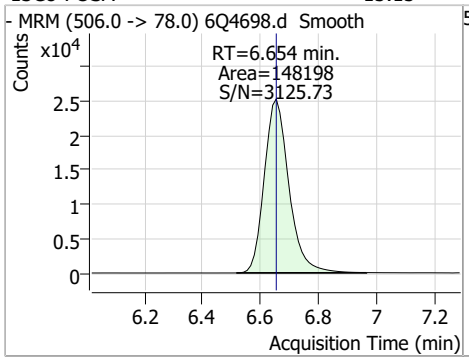
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.34	6.14	0.00	346590				

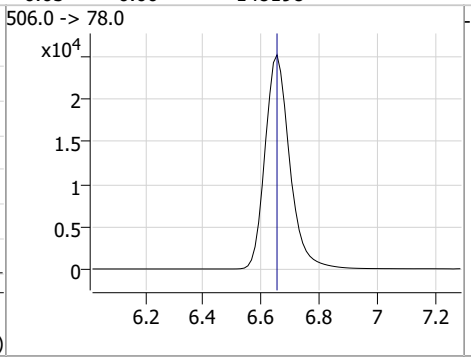


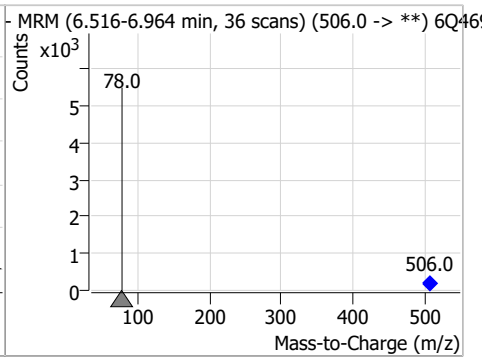




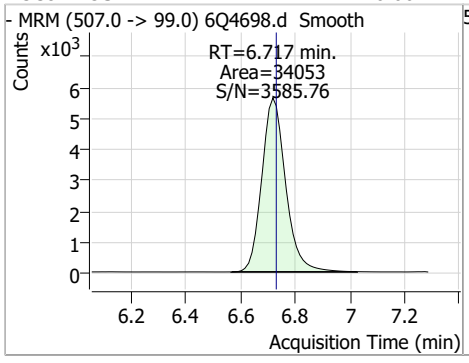
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.15	6.65	0.00	148198				

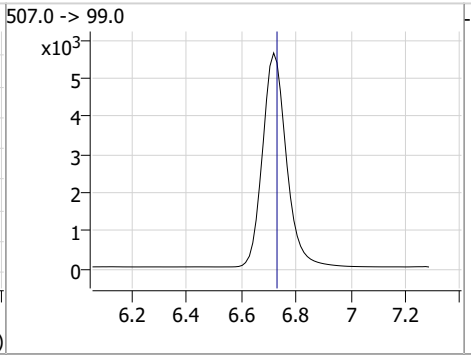


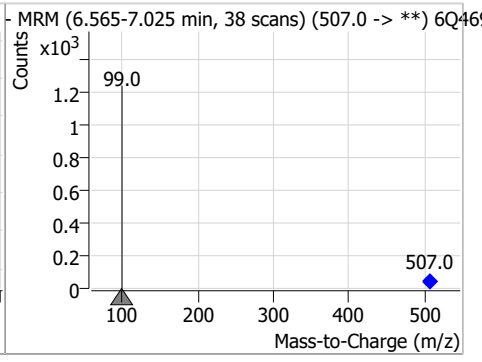




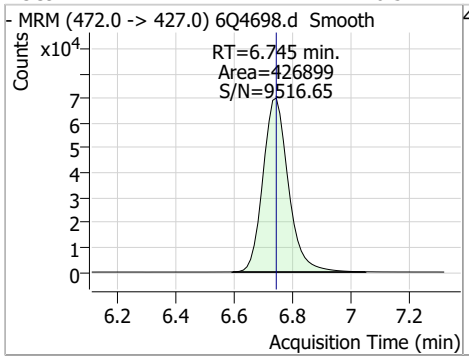
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.06	6.72	-0.01	34053				

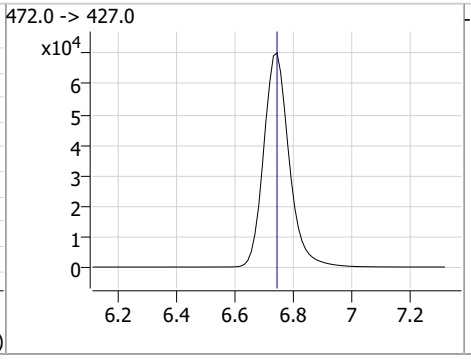


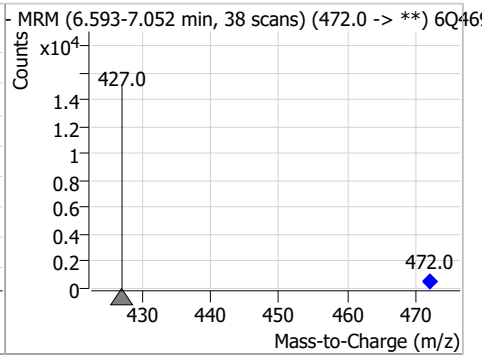




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.57	6.74	0.00	426899				

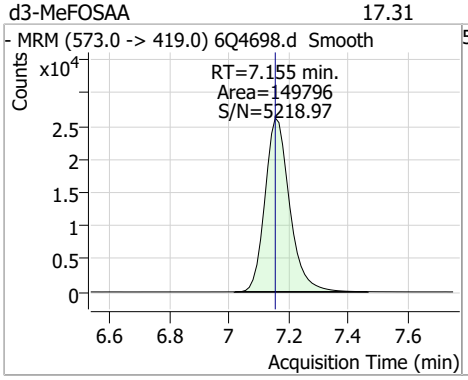


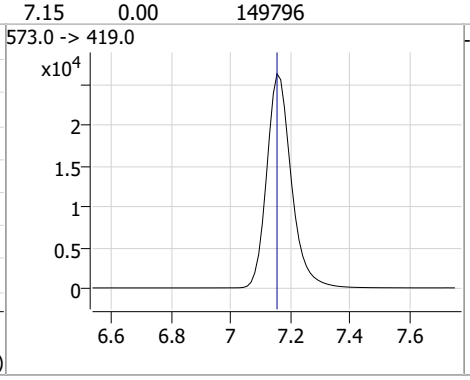


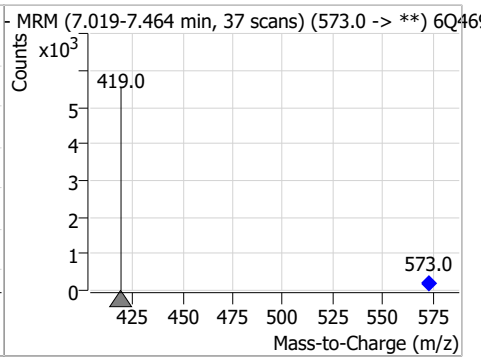


Perfluorinated Compounds by LC/MS/MS

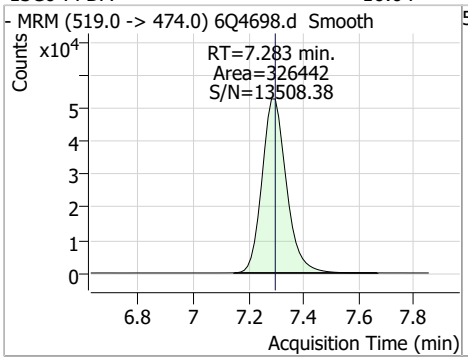
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.31	7.15	0.00	149796				

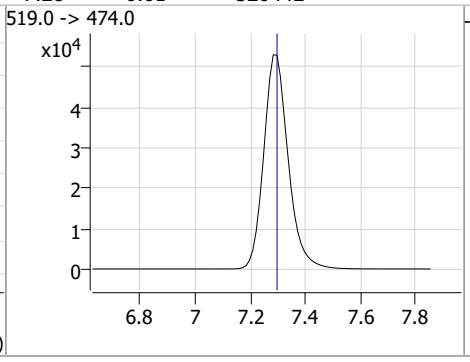


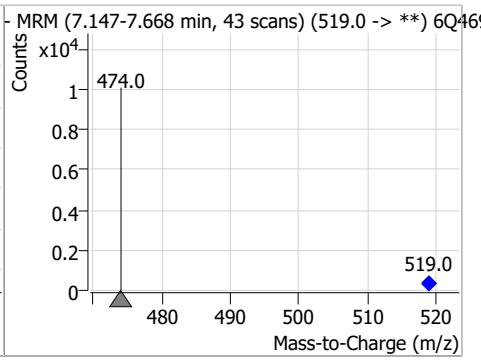




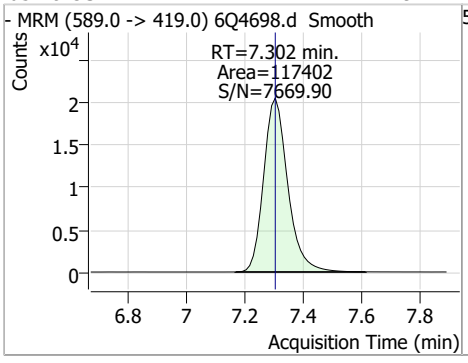
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.04	7.28	-0.01	326442				

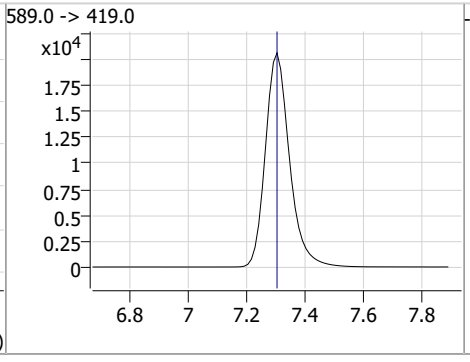


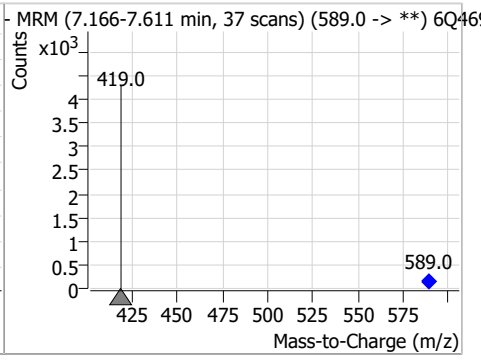




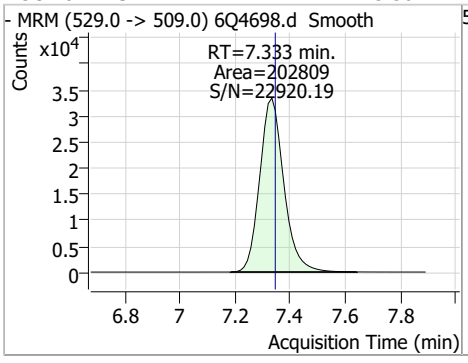
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.29	7.30	0.00	117402				

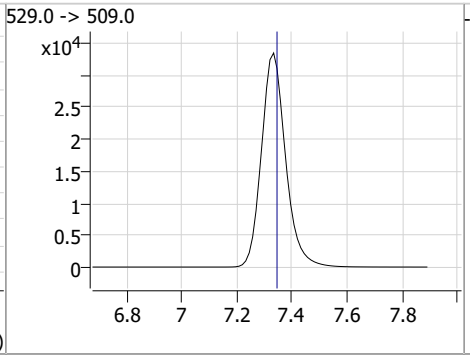


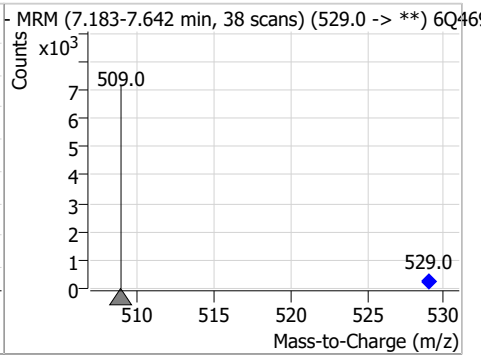




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.56	7.33	-0.01	202809				

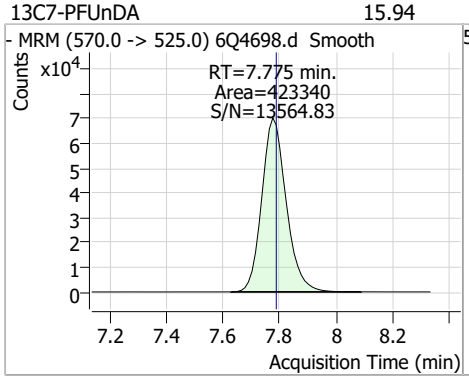


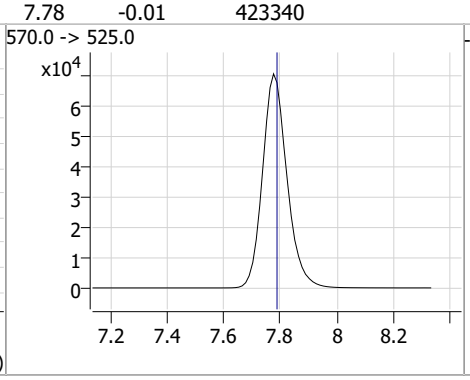


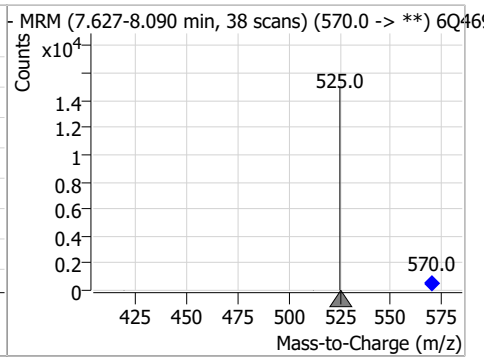


Perfluorinated Compounds by LC/MS/MS

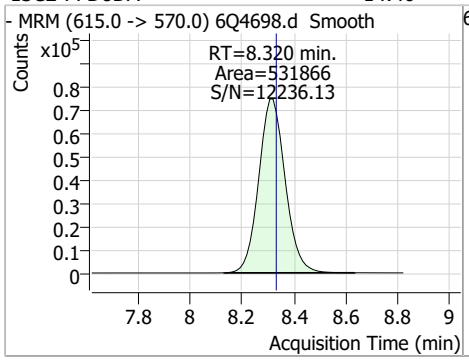
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.94	7.78	-0.01	423340				

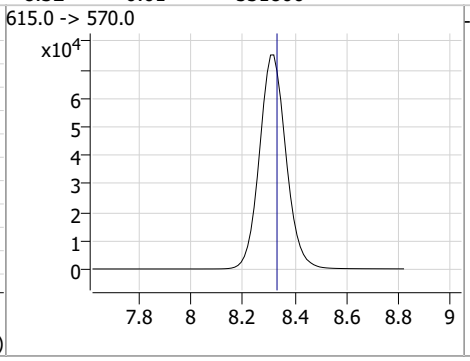


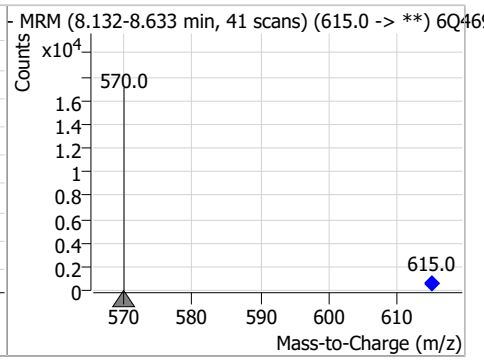




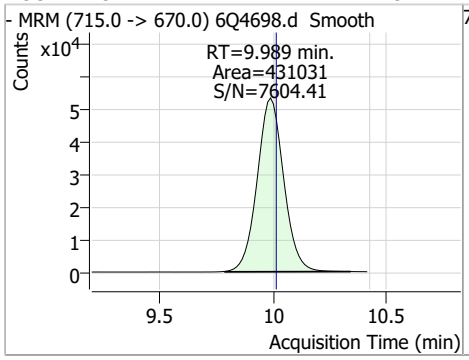
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.46	8.32	-0.01	531866				

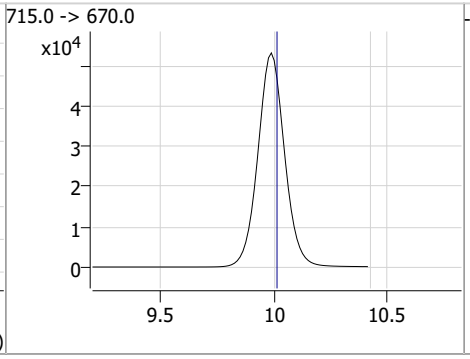


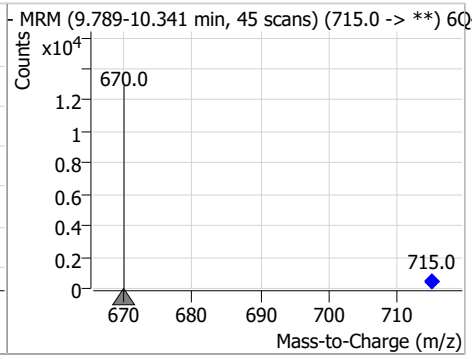




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.37	9.99	-0.02	431031				







Manual Integration Approval Summary

Sample Number: FA98286-40
Lab FileID: 6Q4698.D
Injection Time: 09/15/22 07:50
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.38	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:06

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65711.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 2:36:00 AM
Sample Name : fa98286-41
Vial : P6-B9
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,125,,,1,1,water

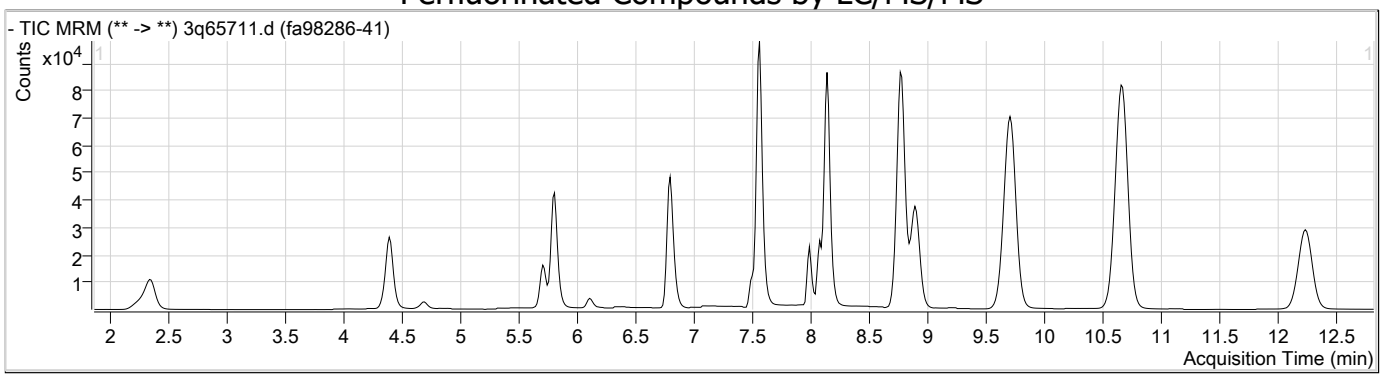
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	87414	20.00	µg/L	-0.038
M5-PFPeA	4.386	268.0 -> 223.0	125864	20.00	µg/L	-0.025
M5-PFHxA	5.800	318.0 -> 273.0	166847	20.00	µg/L	-0.014
M4-PFHpA	6.793	367.0 -> 322.0	177065	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	250436	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	288328	20.00	µg/L	0.000
M6-PFDA	8.764	519.0 -> 474.0	435614	20.00	µg/L	0.025
M7-PFUnDA	9.702	570.0 -> 525.0	515521	20.00	µg/L	0.025
M2-PFDoDA	10.646	615.0 -> 570.0	631113	20.00	µg/L	0.013
M2-PFTeDA	12.223	715.0 -> 670.0	247196	20.00	µg/L	-0.013
M8-FOSA	7.491	506.0 -> 78.0	32481	20.00	µg/L	0.000
M3-PFBS	4.679	302.0 -> 99.0	11648	20.00	µg/L	-0.013
M3-PFHxS	6.822	402.0 -> 99.0	15327	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	24204	20.00	µg/L	0.000
M2-4:2FTS	5.696	329.0 -> 309.0	61767	20.00	µg/L	-0.013
M2-6:2FTS	7.558	429.0 -> 409.0	98117	20.00	µg/L	0.000
M2-8:2FTS	8.885	529.0 -> 509.0	197023	20.00	µg/L	0.038
M3-MeFOSAA	7.978	573.0 -> 419.0	61515	20.00	µg/L	-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	13216	20.00	µg/L	-0.013
M3-MeFOSA	7.829	515.0 -> 169.0	99	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	59352	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.696	329.0 -> 309.0	61767	10.70	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.5%		
13C2-6:2FTS	7.558	429.0 -> 409.0	98117	12.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%		
13C2-8:2FTS	8.885	529.0 -> 509.0	197023	13.56	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%		
13C2-PFDoDA	10.646	615.0 -> 570.0	631113	11.67	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.3%		
13C2-PFTeDA	12.223	715.0 -> 670.0	247196	10.91	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.6%		
13C3-PFBS	4.679	302.0 -> 99.0	11648	11.01	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.0%		
13C3-PFHxS	6.822	402.0 -> 99.0	15327	11.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.3%		
13C4-PFBA	2.327	217.0 -> 172.0	87414	10.99	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.9%		
13C4-PFHpA	6.793	367.0 -> 322.0	177065	11.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.7%		
13C5-PFHxA	5.800	318.0 -> 273.0	166847	10.99	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.9%		
13C5-PFPeA	4.386	268.0 -> 223.0	125864	10.86	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.3%		
13C6-PFDA	8.764	519.0 -> 474.0	435614	13.71	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

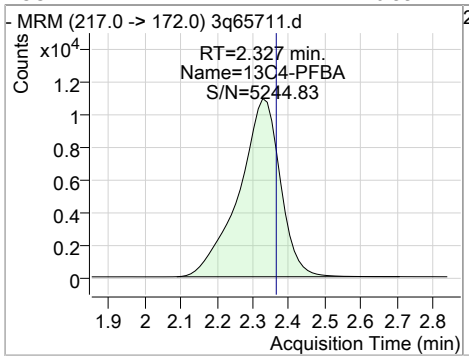
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.6%		
13C7-PFUnDA	9.702	570.0 -> 525.0	515521	12.49 µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.4%		
13C8-FOSA	7.491	506.0 -> 78.0	32481	8.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 43.0%		
13C8-PFOA	7.560	421.0 -> 376.0	250436	12.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.2%		
13C8-PFOS	8.111	507.0 -> 99.0	24204	12.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.7%		
13C9-PFNA	8.138	472.0 -> 427.0	288328	13.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%		
d3-MeFOSAA	7.978	573.0 -> 419.0	61515	13.68 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%		
13C3-HFPO-DA	6.105	287.0 -> 169.0	13214	10.30 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.5%		
d3-MeFOSA	7.980	515.0 -> 169.0	307	0.35 µg/L	m	0.139
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.7%		
d5-EtFOSAA	8.065	589.0 -> 419.0	59347	12.68 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

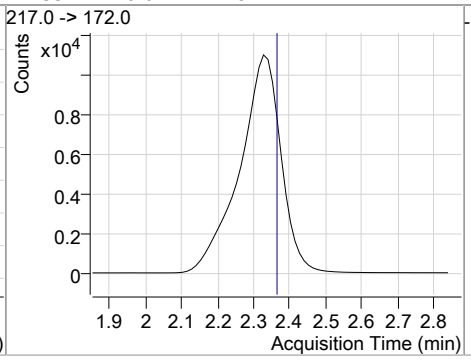
 # = Qualifier out of range, m = manually integrated, + = Area summed

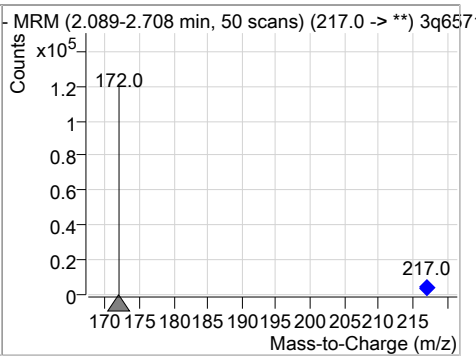
Perfluorinated Compounds by LC/MS/MS



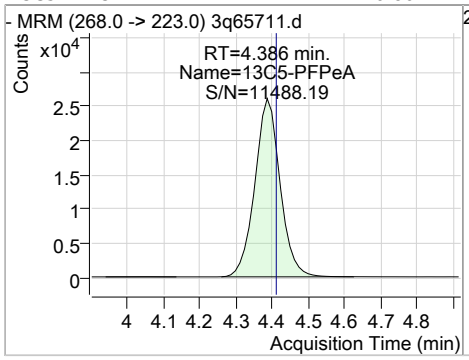
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.99	2.33	-0.04	87414				

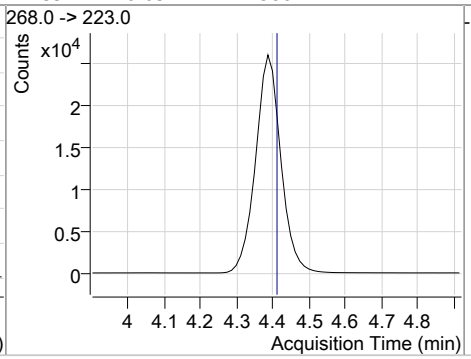


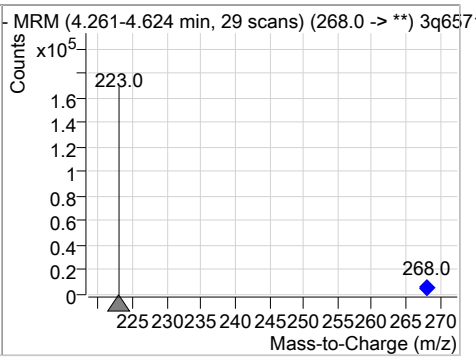




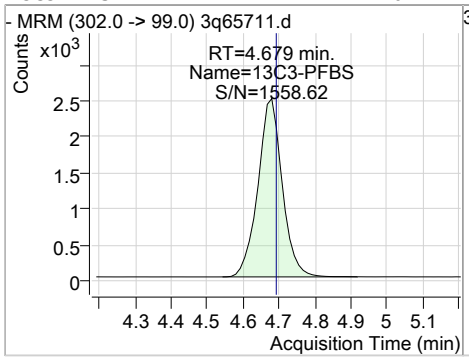
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.86	4.39	-0.03	125864				

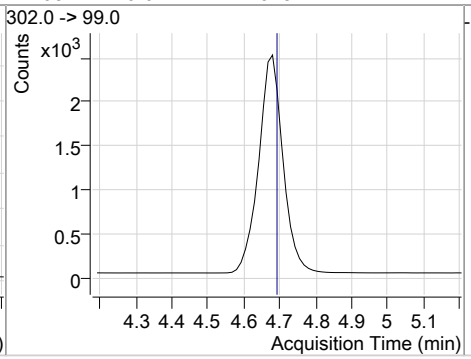


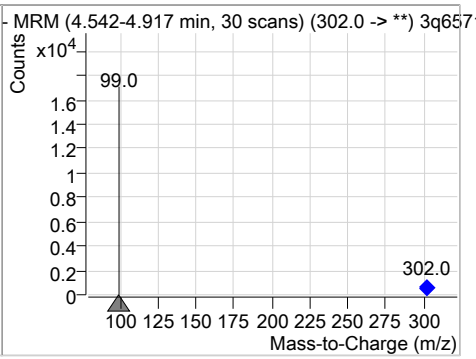




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.01	4.68	-0.01	11648				

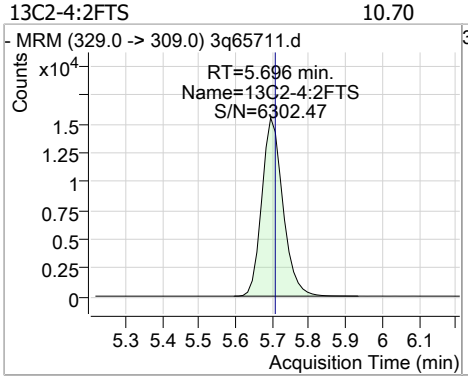


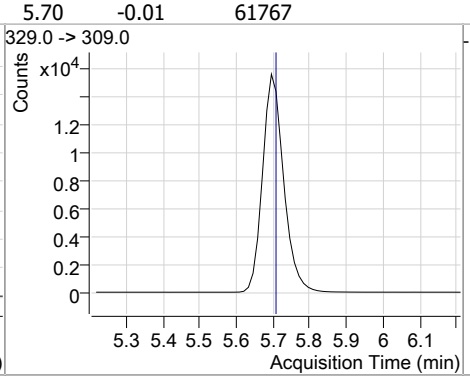


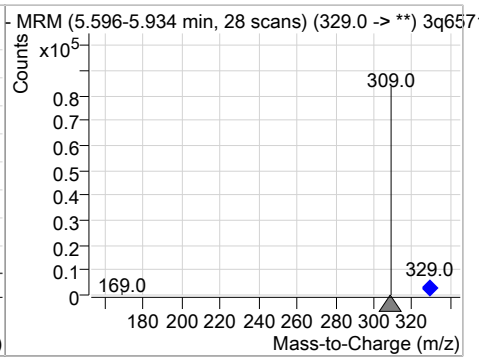


Perfluorinated Compounds by LC/MS/MS

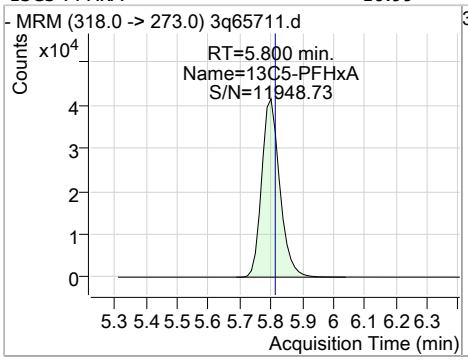
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	10.70	5.70	-0.01	61767				

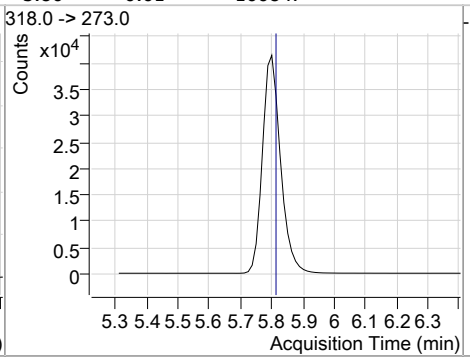


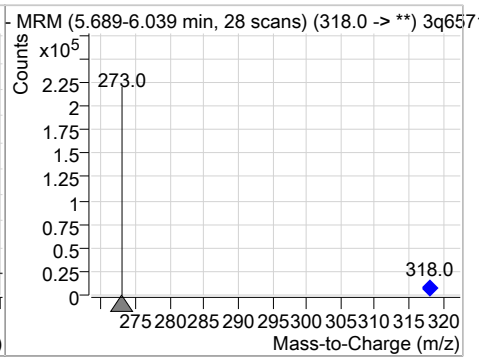




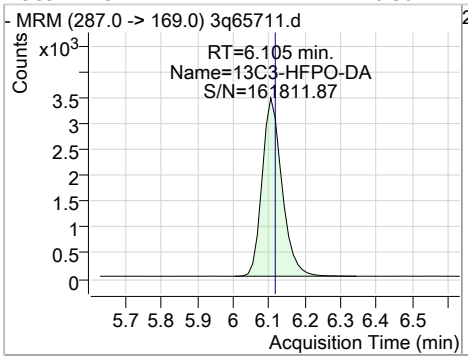
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.99	5.80	-0.01	166847				

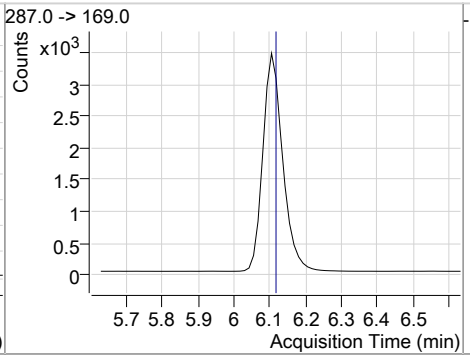


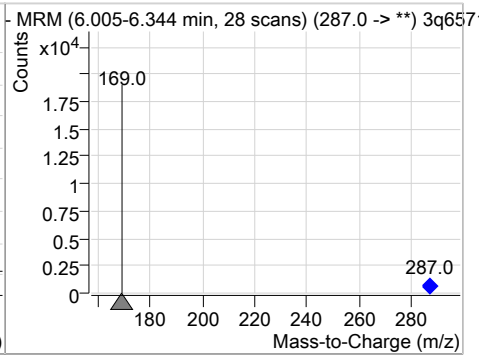




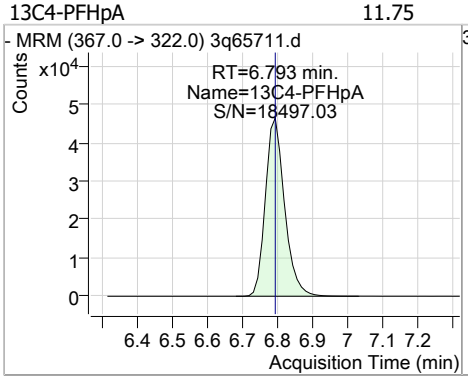
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.30	6.10	-0.01	13214				

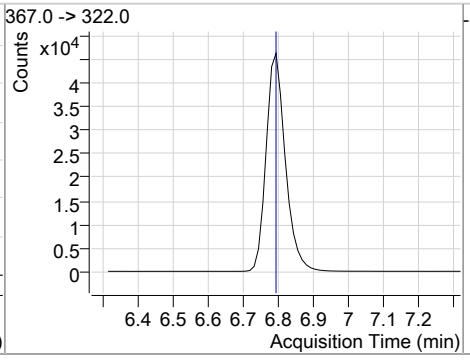


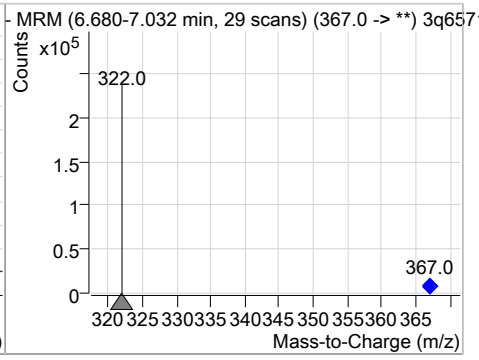




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.75	6.79	0.00	177065				

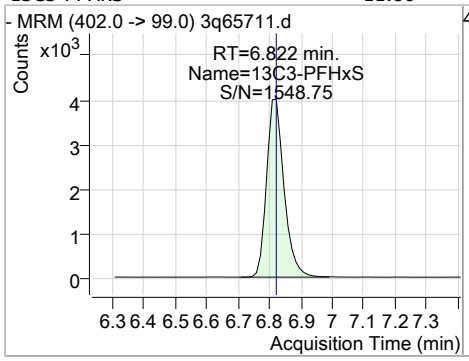


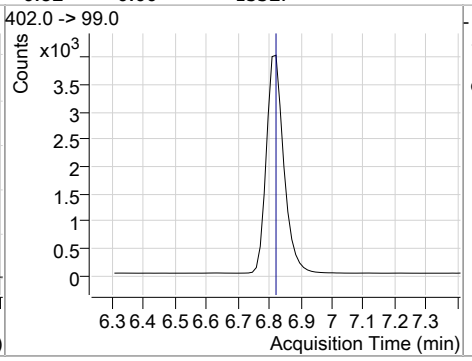


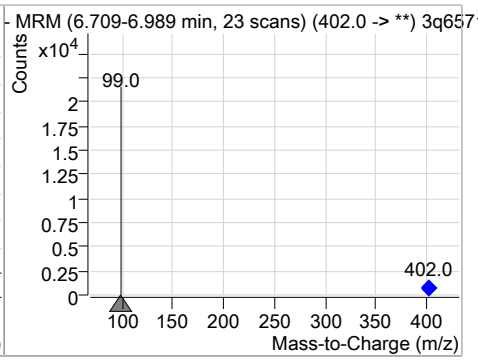


Perfluorinated Compounds by LC/MS/MS

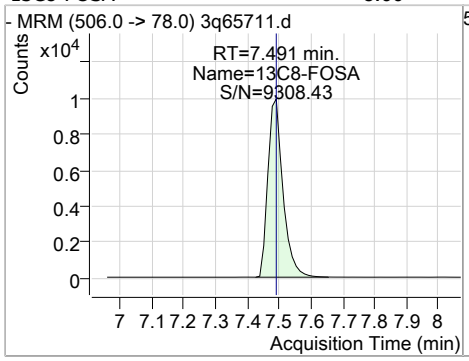
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.86	6.82	0.00	15327				

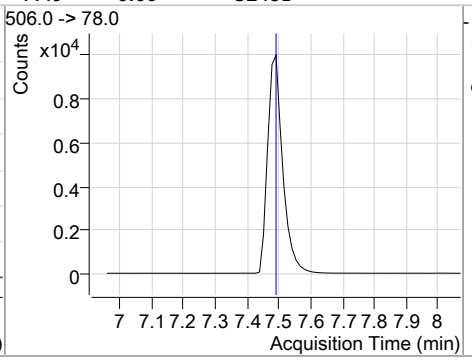


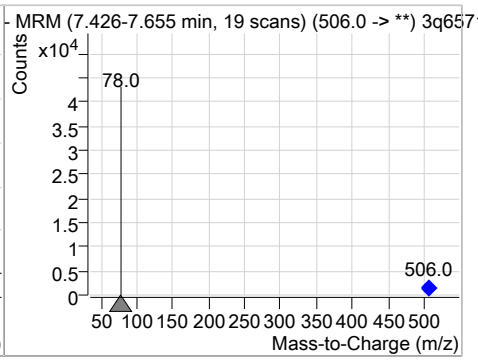




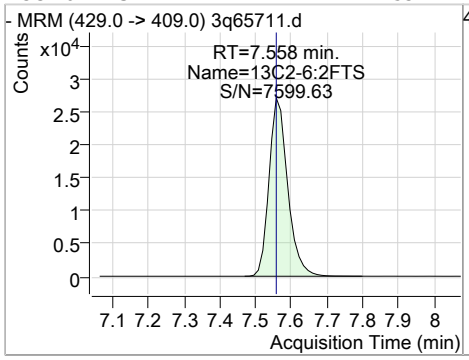
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	8.60	7.49	0.00	32481				

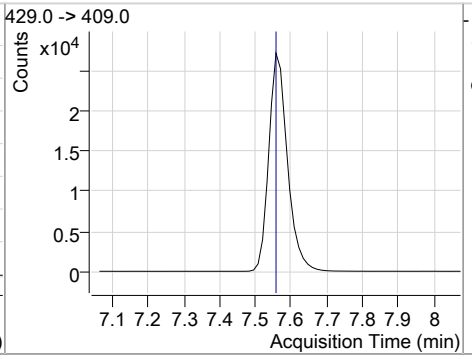


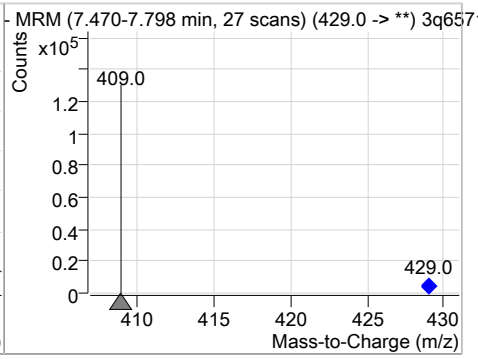




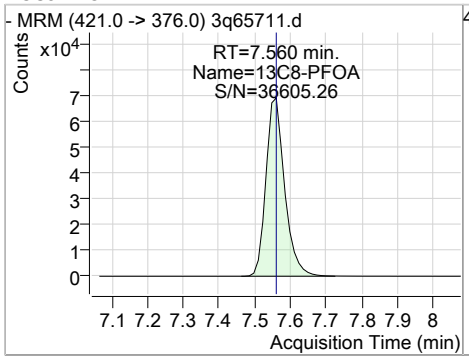
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.53	7.56	0.00	98117				

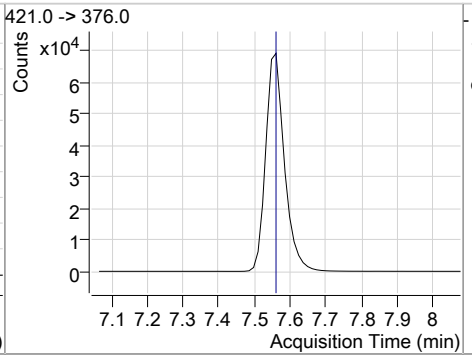


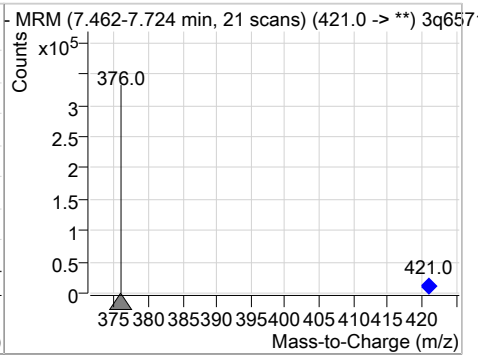




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	12.44	7.56	0.00	250436				

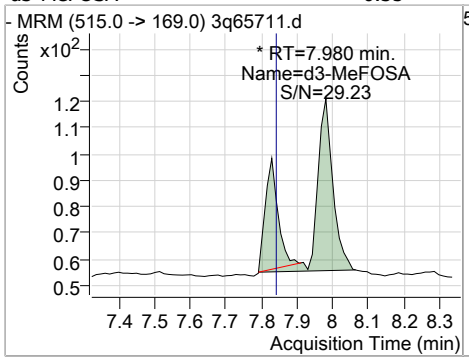


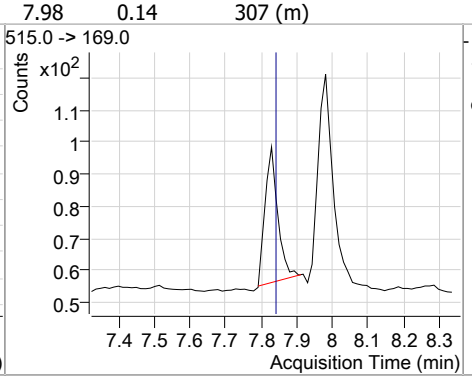


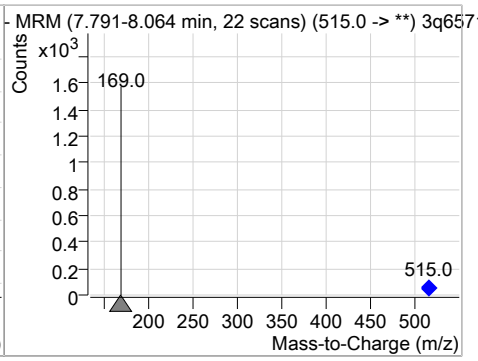


Perfluorinated Compounds by LC/MS/MS

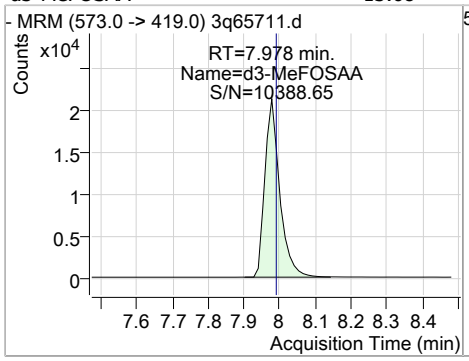
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.35	7.98	0.14	307 (m)				

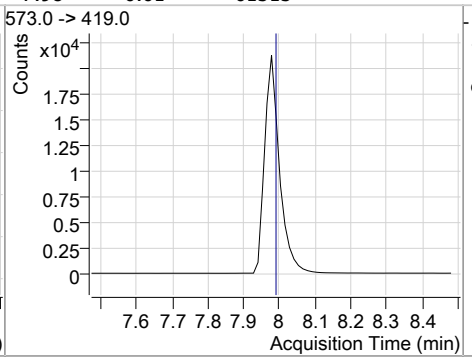


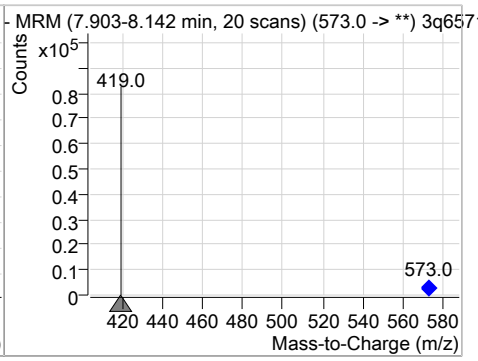




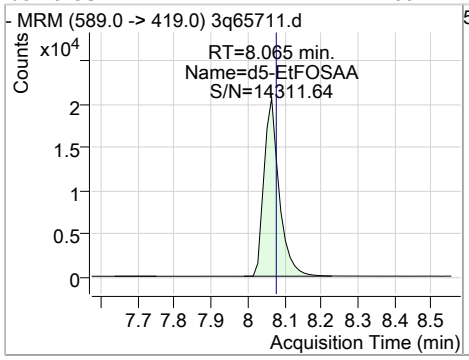
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.68	7.98	-0.01	61515				

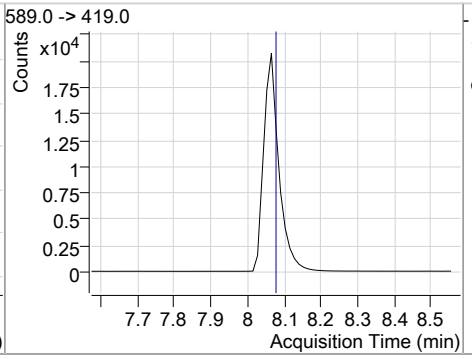


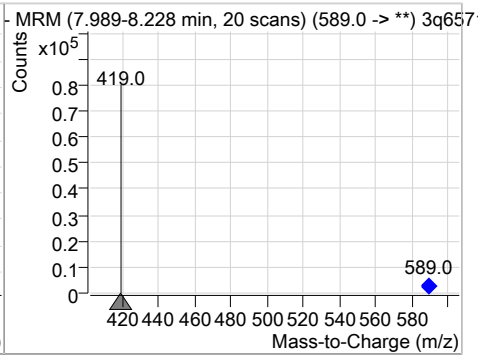




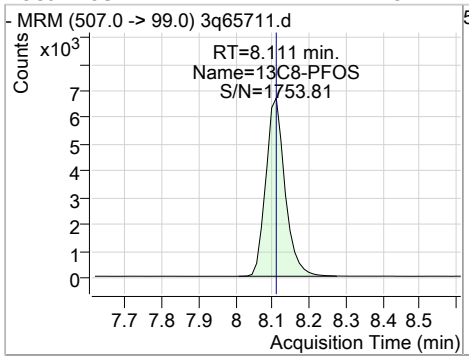
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.68	8.06	-0.01	59347				

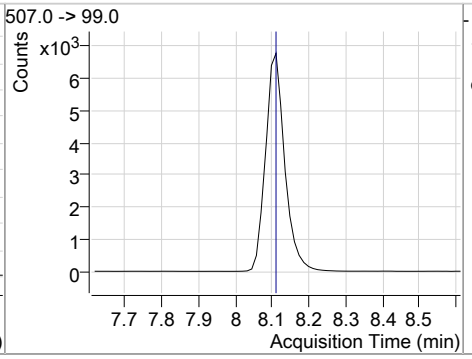


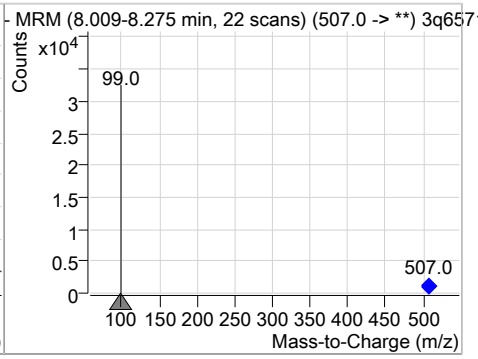




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.34	8.11	0.00	24204				

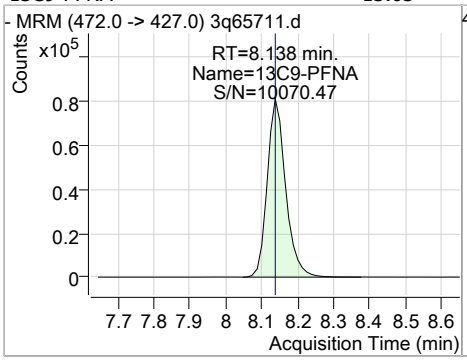


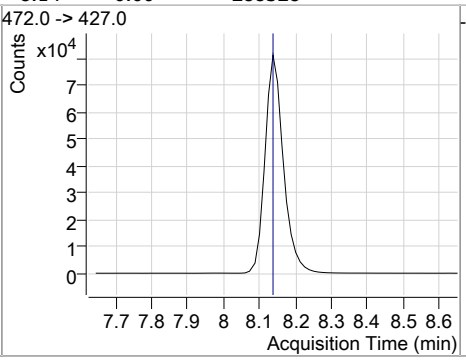


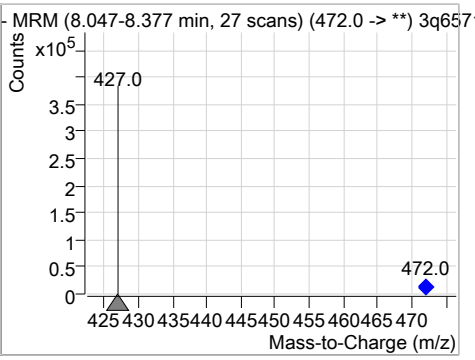


Perfluorinated Compounds by LC/MS/MS

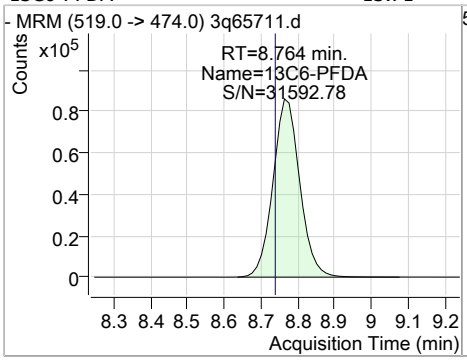
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.05	8.14	0.00	288328				

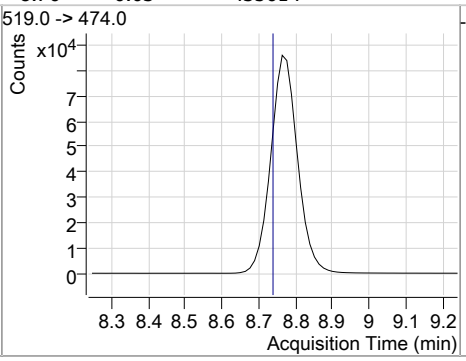


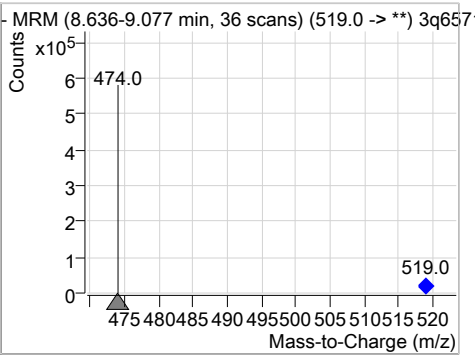




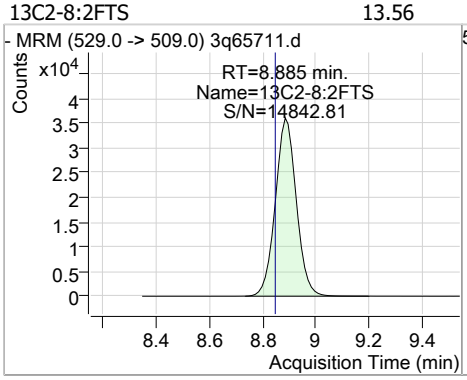
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.71	8.76	0.03	435614				

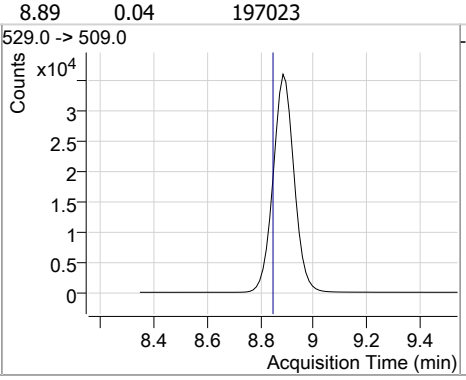


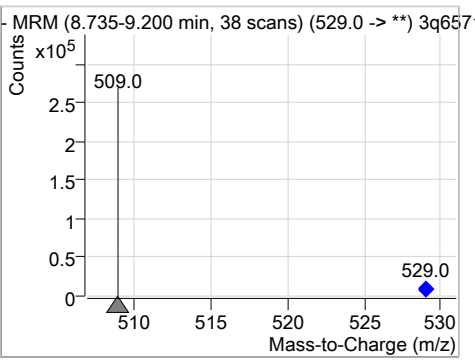




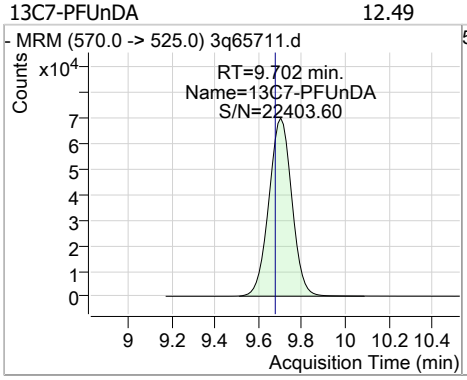
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.56	8.89	0.04	197023				

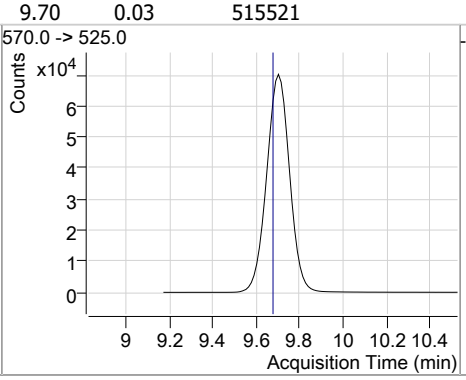


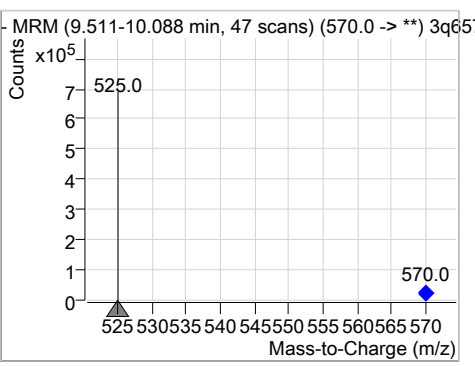




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.49	9.70	0.03	515521				

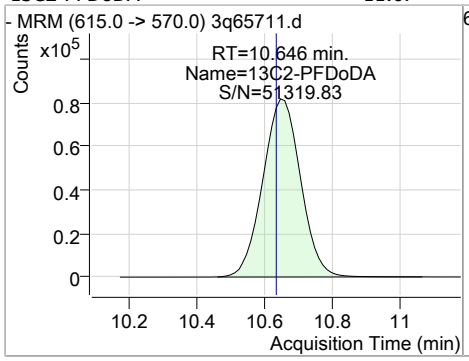


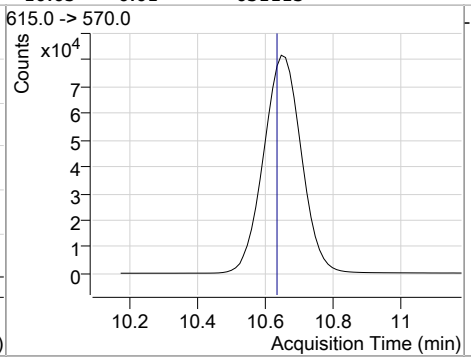


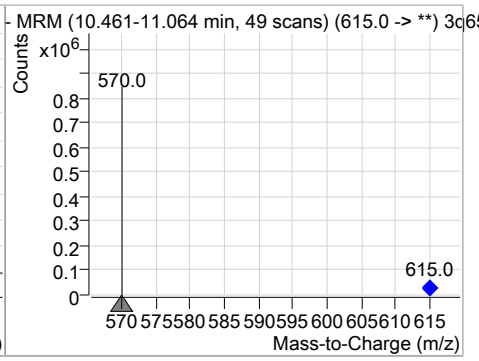


Perfluorinated Compounds by LC/MS/MS

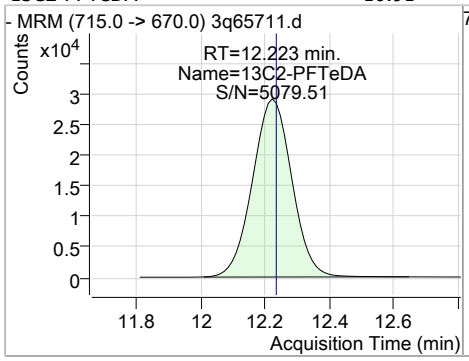
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.67	10.65	0.01	631113				

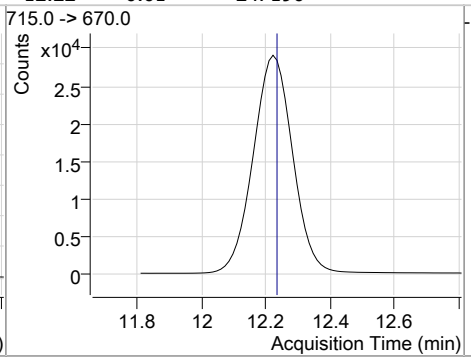


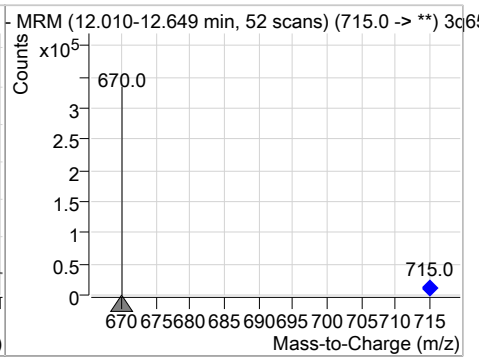




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.91	12.22	-0.01	247196				







7.1.65

7

Manual Integration Approval Summary

Sample Number: FA98286-41
Lab FileID: 3Q65711.D
Injection Time: 09/14/22 02:36
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:06 Norman Farmer
Supervisor approved: 09/19/22 16:06 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
d3-MeFOSA			7.98	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q65839.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 10:43:11 PM
Sample Name	:	fa98286-41
Vial	:	P2-C1
DA Method File	:	ID_091522_S3Q900.quantmethod.xml
Batch Name	:	S3Q900.batch.bin
Sample Information	:	op92762,S3Q900,125,,,1,5,water

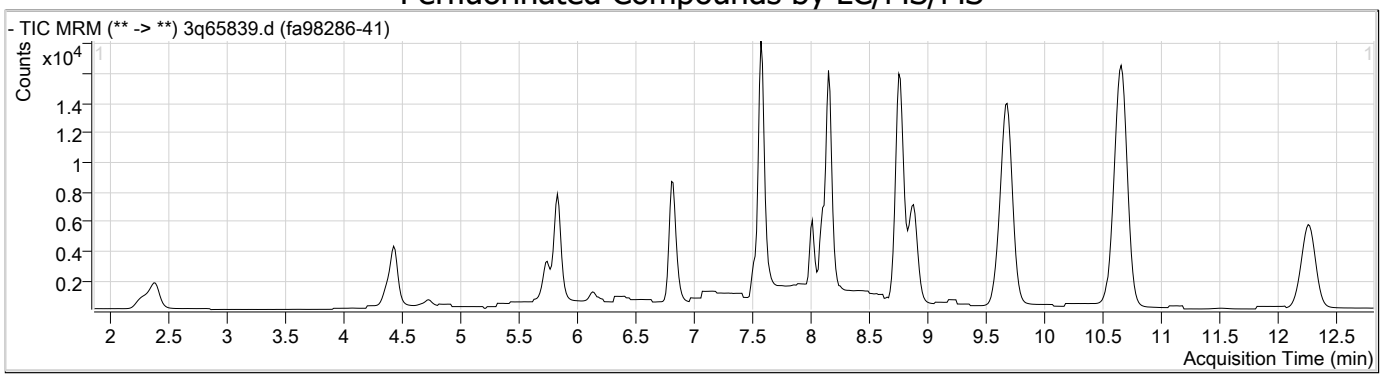
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	15738	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	23267	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	31318	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	31922	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	44209	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	50408	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	76556	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	101597	20.00	µg/L	0.000
M2-PFDoDA	10.646	615.0 -> 570.0	129835	20.00	µg/L	0.013
M2-PFTeDA	12.248	715.0 -> 670.0	48596	20.00	µg/L	0.013
M8-FOSA	7.503	506.0 -> 78.0	6343	20.00	µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	2244	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	2877	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	4754	20.00	µg/L	0.013
M2-4:2FTS	5.733	329.0 -> 309.0	11304	20.00	µg/L	0.025
M2-6:2FTS	7.584	429.0 -> 409.0	18115	20.00	µg/L	0.026
M2-8:2FTS	8.873	529.0 -> 509.0	34814	20.00	µg/L	0.025
M3-MeFOSAA	8.003	573.0 -> 419.0	12984	20.00	µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	2580	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	169	20.00	µg/L	0.013
M5-EtFOSAA	8.090	589.0 -> 419.0	13337	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.733	329.0 -> 309.0	11304	1.84	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.2%		
13C2-6:2FTS	7.584	429.0 -> 409.0	18115	2.10	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.5%		
13C2-8:2FTS	8.873	529.0 -> 509.0	34814	2.03	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%		
13C2-PFDoDA	10.646	615.0 -> 570.0	129835	2.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.7%		
13C2-PFTeDA	12.248	715.0 -> 670.0	48596	1.90	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%		
13C3-PFBS	4.717	302.0 -> 99.0	2244	2.03	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%		
13C3-PFHxS	6.834	402.0 -> 99.0	2877	2.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.7%		
13C4-PFBA	2.365	217.0 -> 172.0	15738	1.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.5%		
13C4-PFHpA	6.805	367.0 -> 322.0	31922	2.02	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.1%		
13C5-PFHxA	5.826	318.0 -> 273.0	31318	1.95	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.8%		
13C5-PFPeA	4.424	268.0 -> 223.0	23267	1.92	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 9.6%		
13C6-PFDA	8.751	519.0 -> 474.0	76556	2.11	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

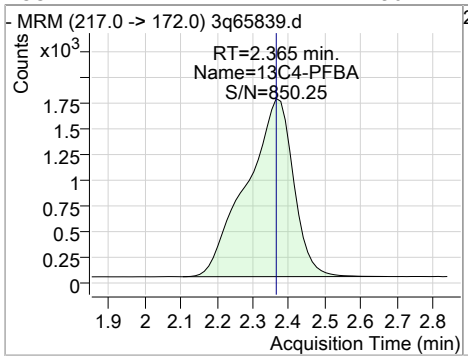
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.5%	
13C7-PFUnDA	9.677	570.0 -> 525.0	101597	2.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.7%	
13C8-FOSA	7.503	506.0 -> 78.0	6343	1.78 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.9%	
13C8-PFOA	7.573	421.0 -> 376.0	44209	2.08 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.4%	
13C8-PFOS	8.123	507.0 -> 99.0	4754	2.30 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%	
13C9-PFNA	8.150	472.0 -> 427.0	50408	2.11 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.6%	
d3-MeFOSAA	8.003	573.0 -> 419.0	12984	2.29 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%	
13C3-HFPO-DA	6.130	287.0 -> 169.0	2584	2.00 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%	
d3-MeFOSA	7.854	515.0 -> 169.0	169	0.21 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.0%	
d5-EtFOSAA	8.090	589.0 -> 419.0	13362	2.35 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.7%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	329.0 -> 169.0	-	N.D.	
MeFOSA	-	512.0 -> 169.0	-	N.D.	
4-PFECHS	-	461.0 -> 381.0	-	N.D.	
FBSA	-	298.0 -> 78.0	-	N.D.	
FHxSA	-	398.0 -> 78.0	-	N.D.	

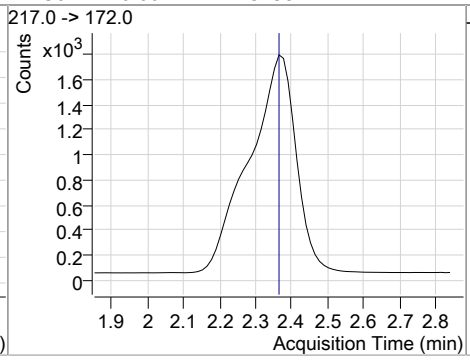
 # = Qualifier out of range, m = manually integrated, + = Area summed

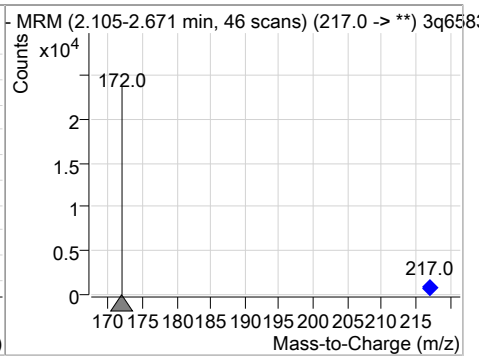
Perfluorinated Compounds by LC/MS/MS



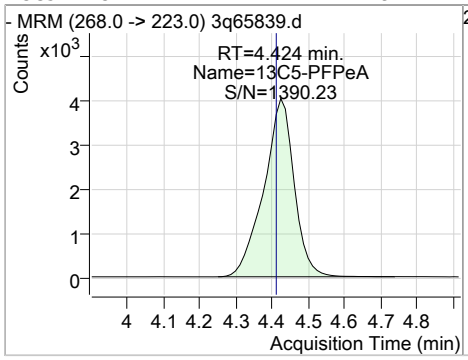
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.90	2.36	0.00	15738				

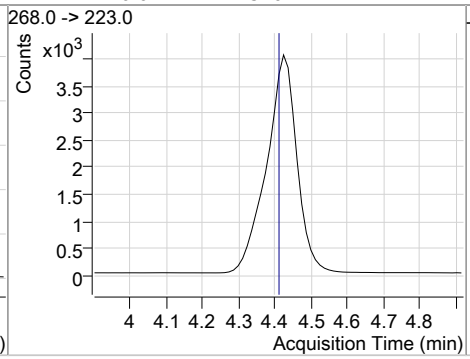


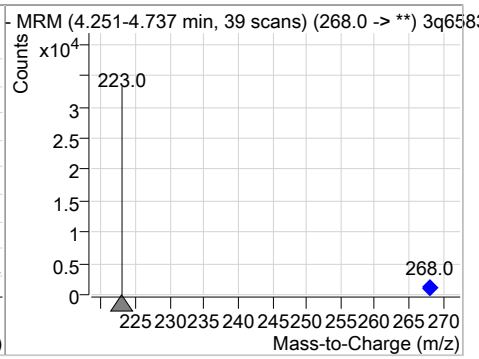




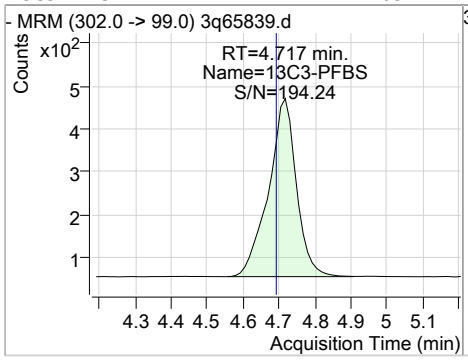
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	1.92	4.42	0.01	23267				

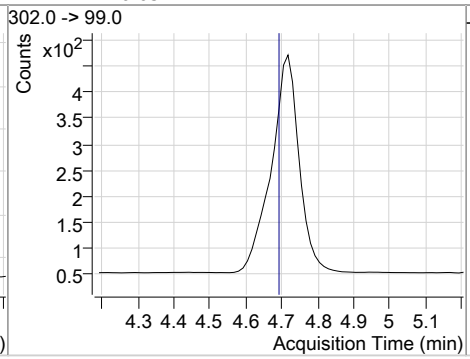


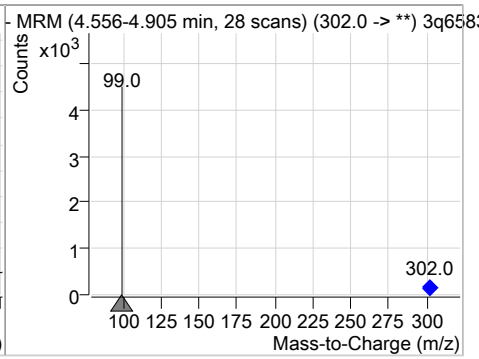




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.03	4.72	0.03	2244				

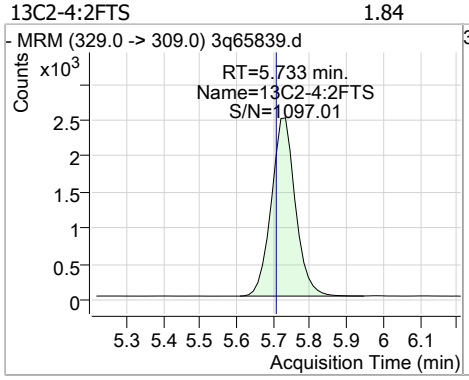


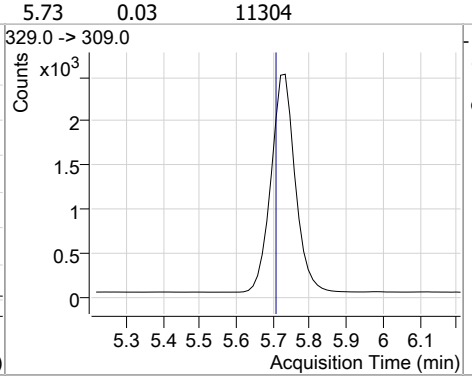


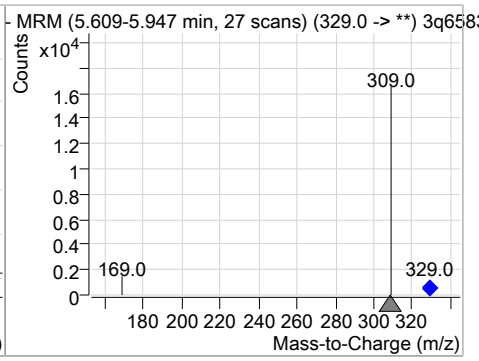


Perfluorinated Compounds by LC/MS/MS

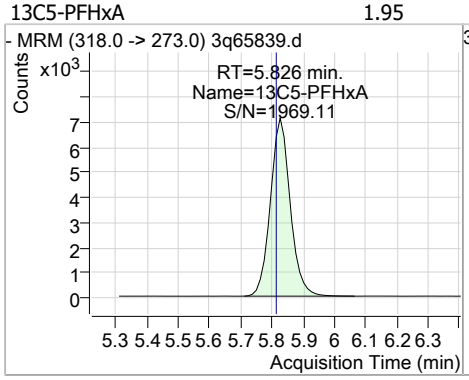
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	1.84	5.73	0.03	11304				

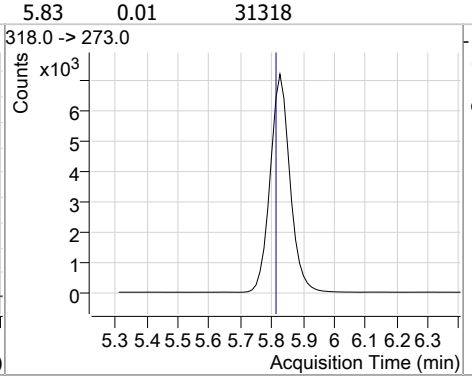


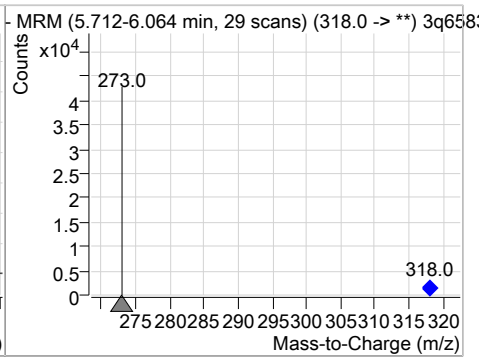




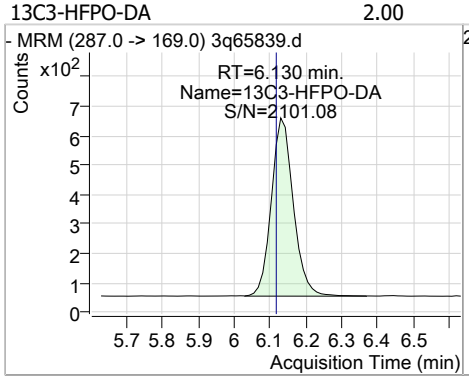
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	1.95	5.83	0.01	31318				

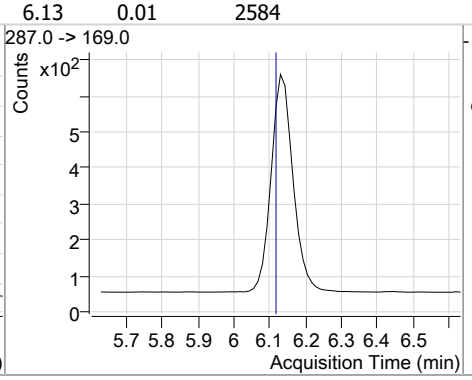


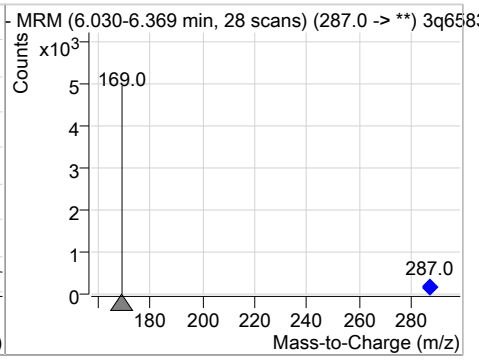




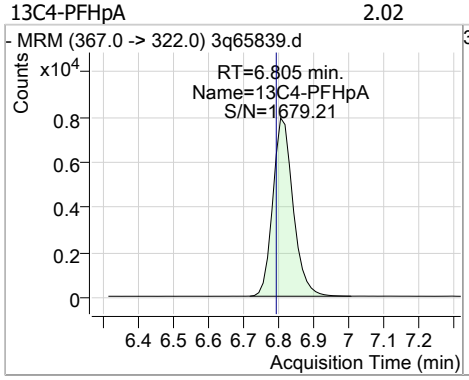
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.00	6.13	0.01	2584				

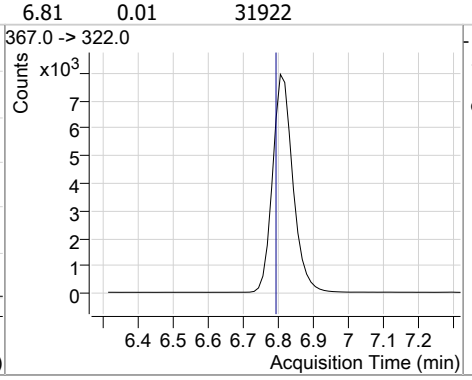


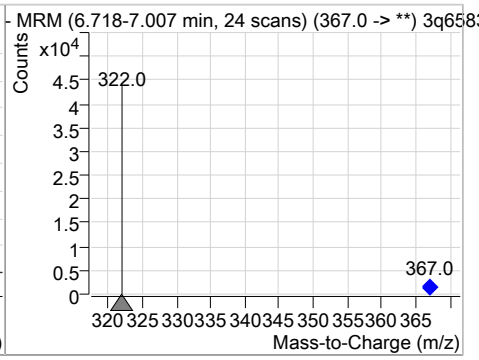




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.02	6.81	0.01	31922				

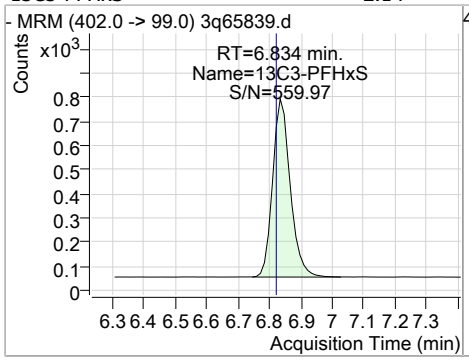


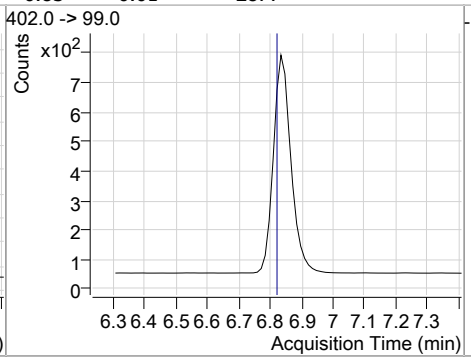


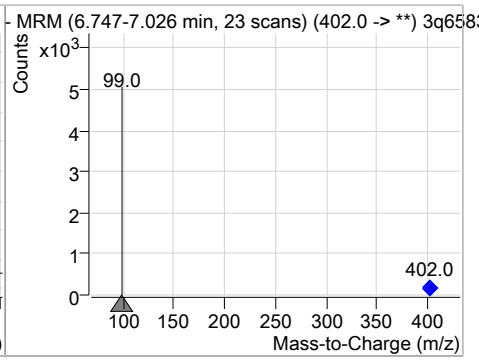


Perfluorinated Compounds by LC/MS/MS

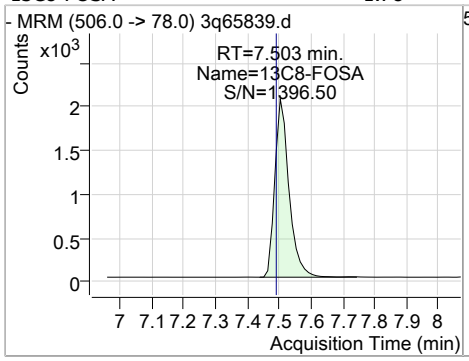
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.14	6.83	0.01	2877				

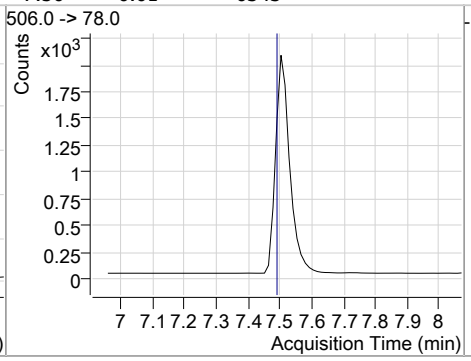


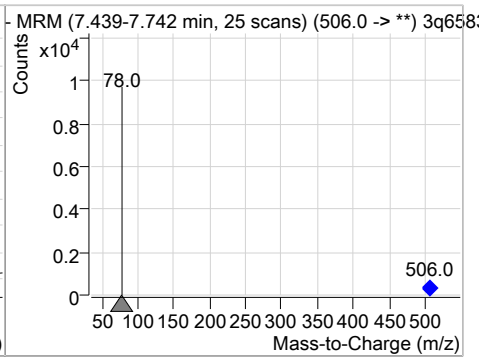




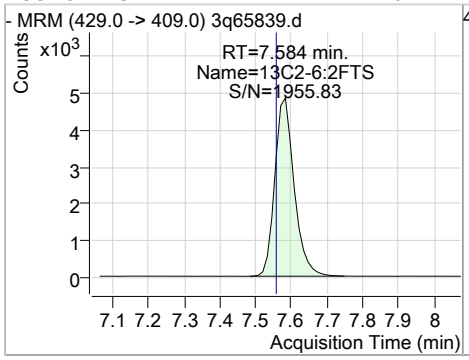
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.78	7.50	0.01	6343				

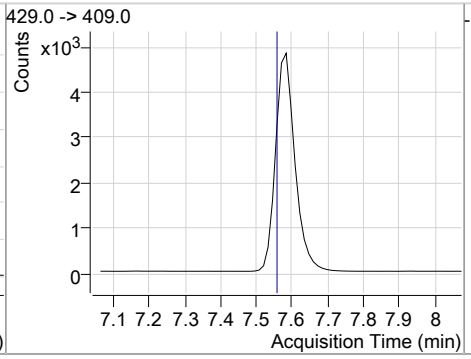


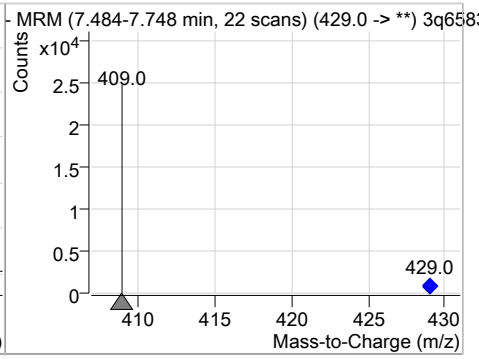




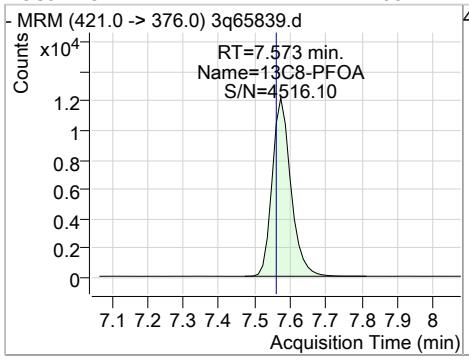
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.10	7.58	0.03	18115				

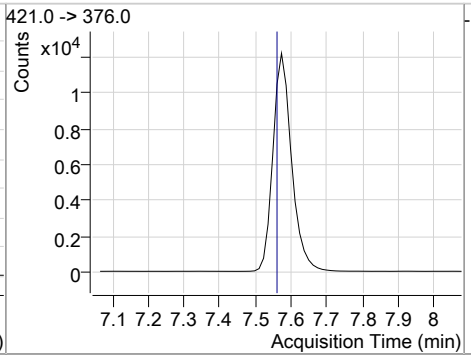


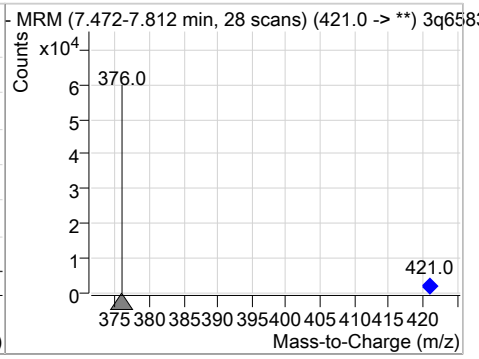




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.08	7.57	0.01	44209				

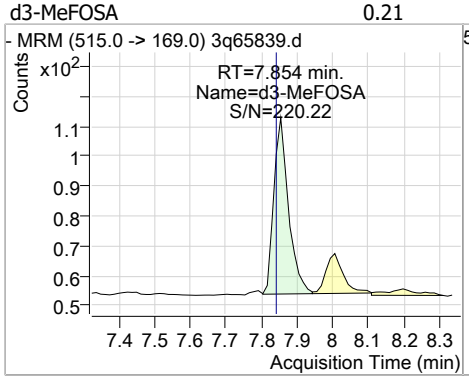


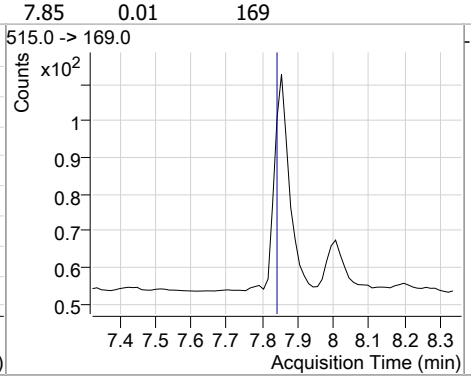


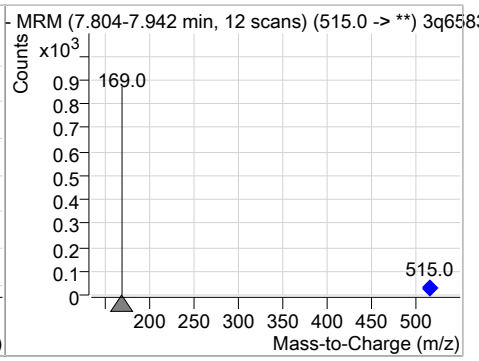


Perfluorinated Compounds by LC/MS/MS

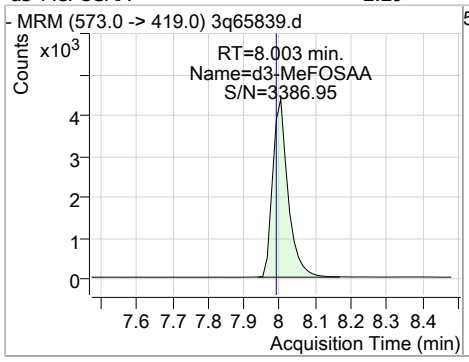
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.21	7.85	0.01	169				

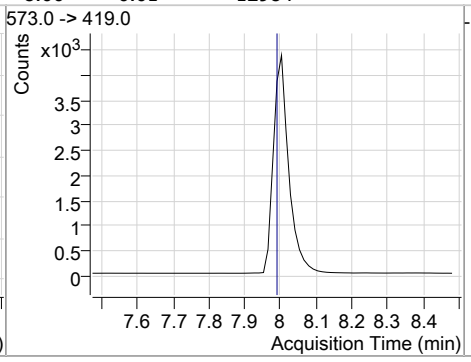


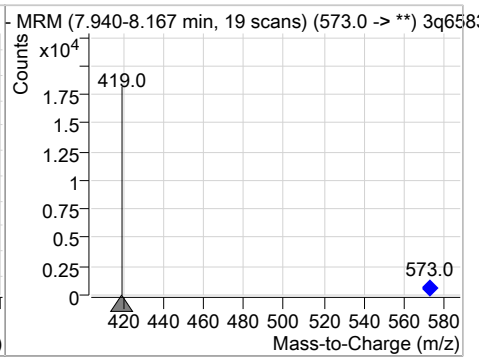




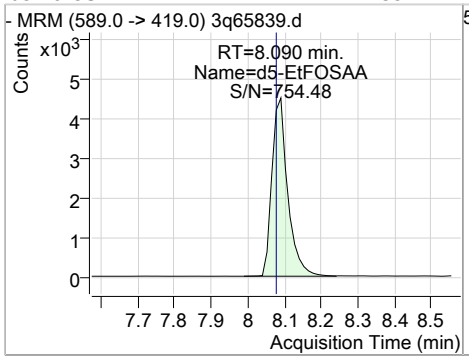
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.29	8.00	0.01	12984				

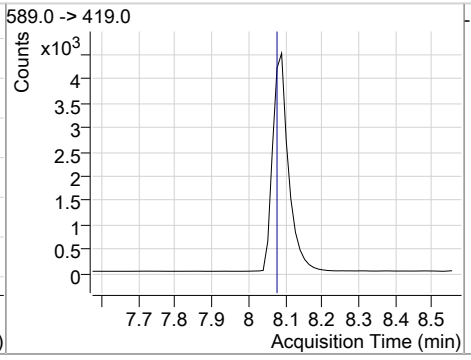


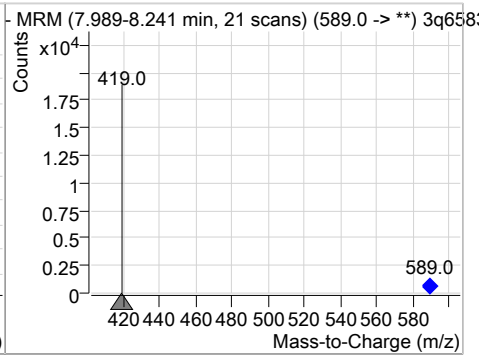




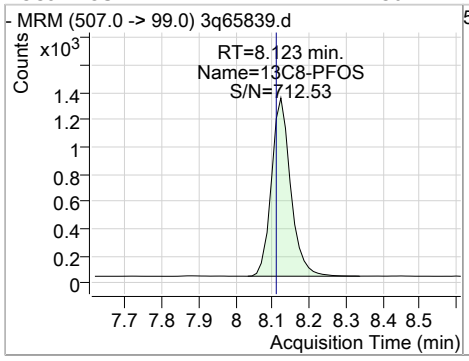
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.35	8.09	0.01	13362				

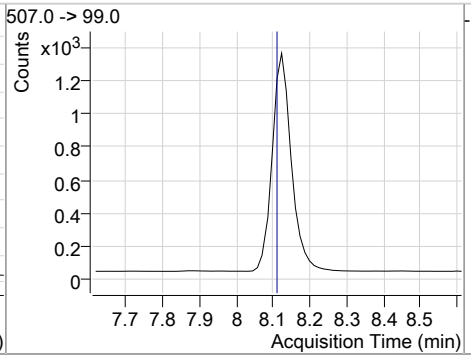


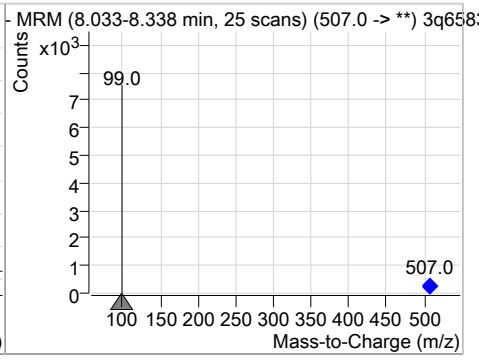




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.30	8.12	0.01	4754				

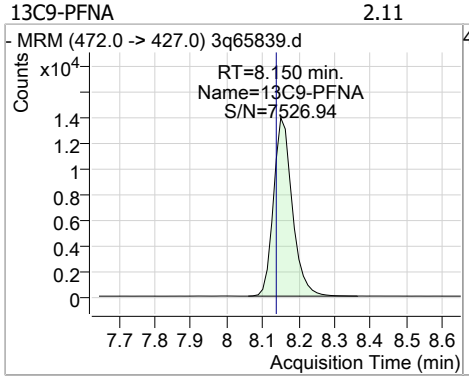


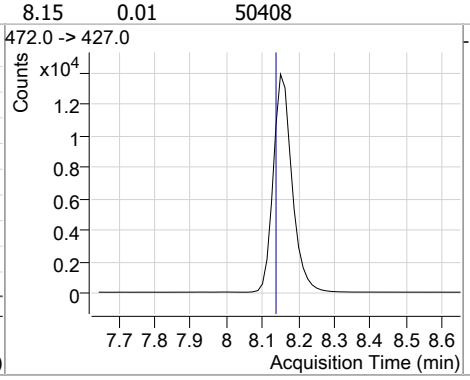


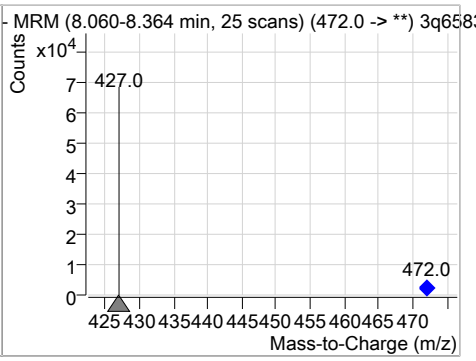


Perfluorinated Compounds by LC/MS/MS

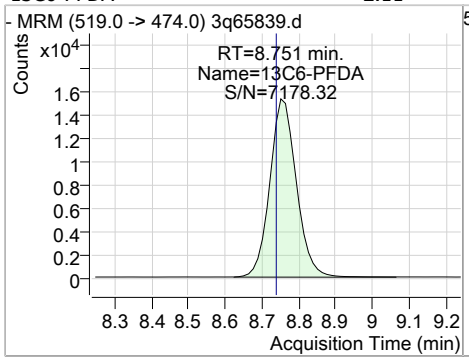
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.11	8.15	0.01	50408				

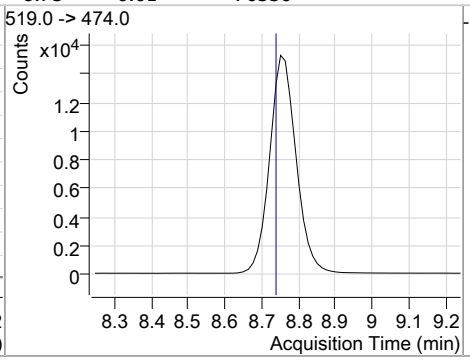


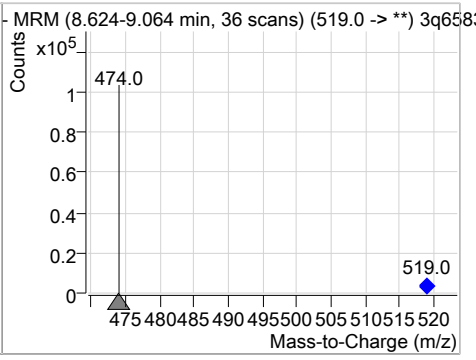




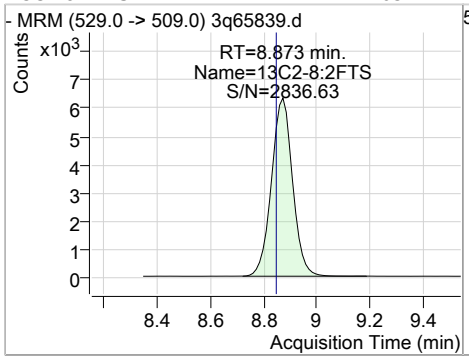
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.11	8.75	0.01	76556				

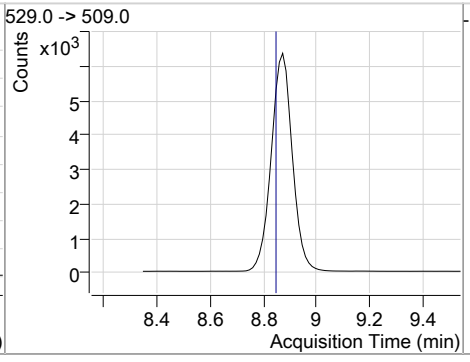


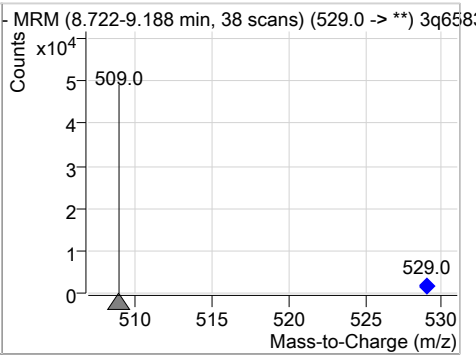




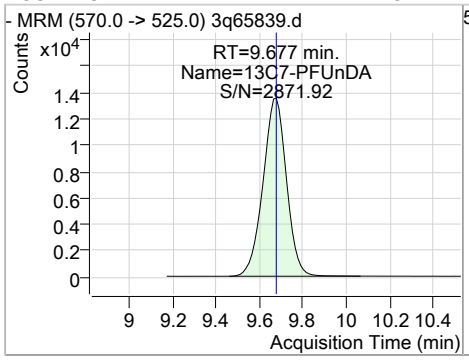
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.03	8.87	0.03	34814				

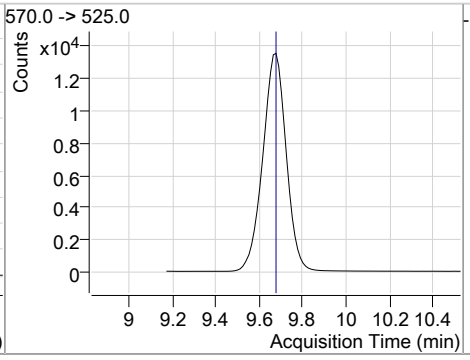


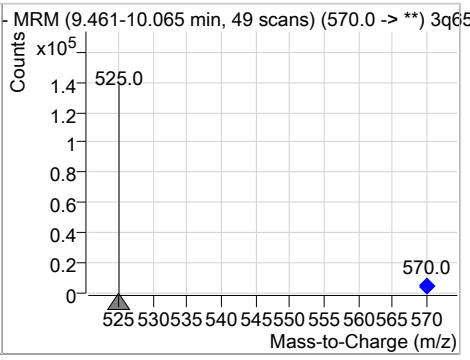




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.13	9.68	0.00	101597				

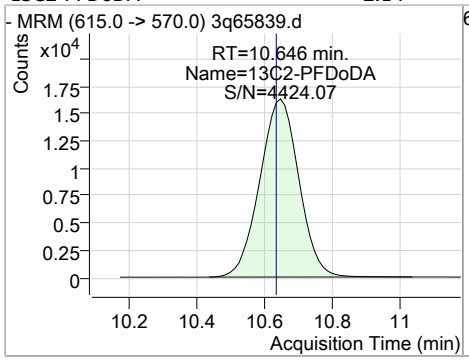


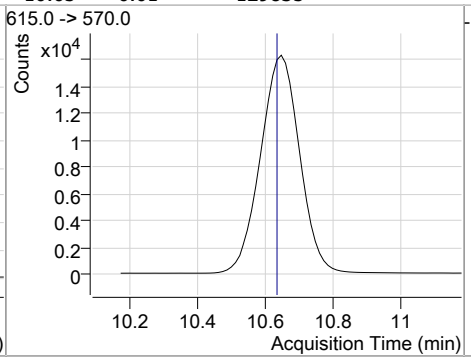


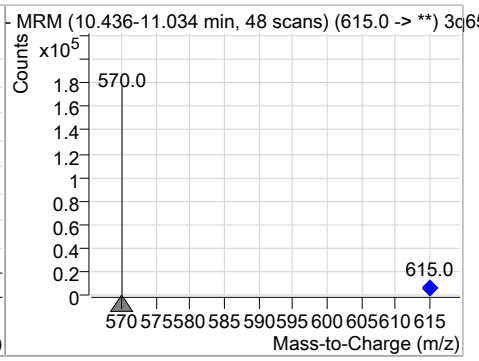


Perfluorinated Compounds by LC/MS/MS

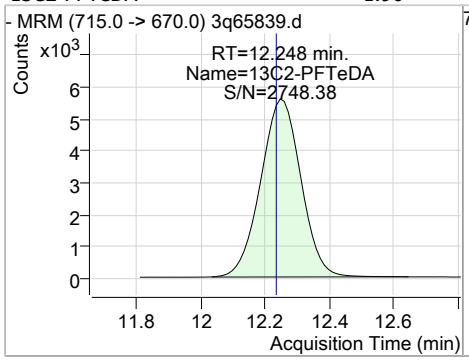
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.14	10.65	0.01	129835				

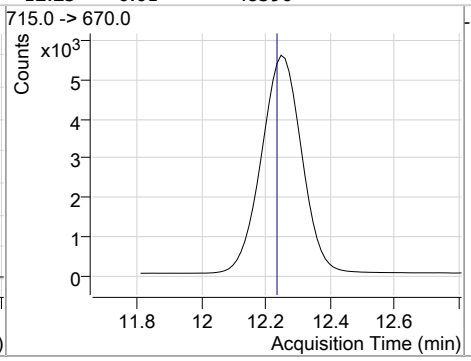


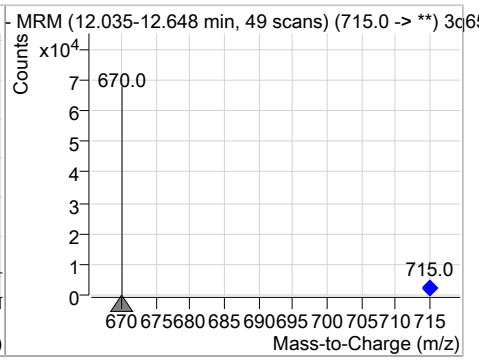




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.90	12.25	0.01	48596				







7.1.66

7

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65712.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 2:55:33 AM
Sample Name : fa98286-42
Vial : P6-C1
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,120,,,1,1,water

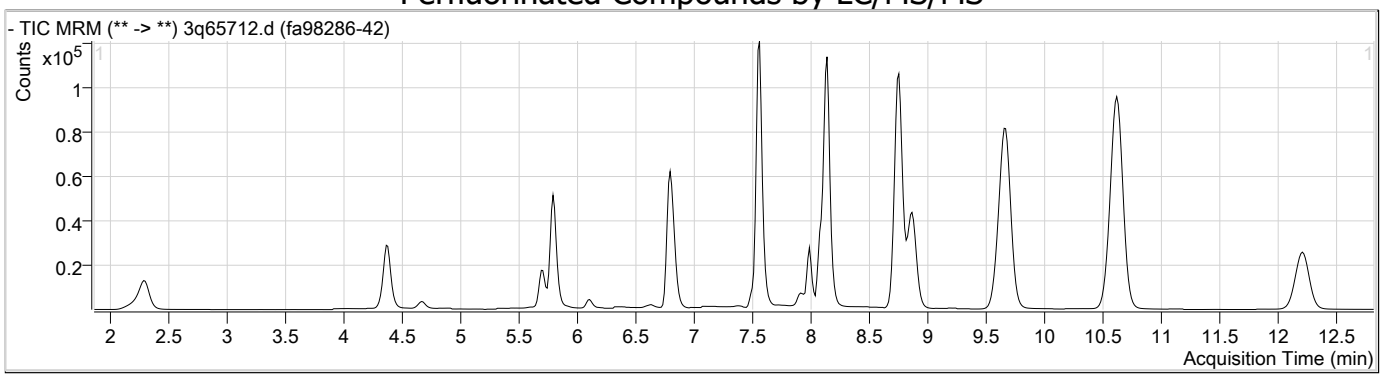
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M4-PFBA	2.277	217.0 -> 172.0	93481	20.00	µg/L		-0.088
M5-PFPeA	4.361	268.0 -> 223.0	131615	20.00	µg/L		-0.050
M5-PFHxA	5.787	318.0 -> 273.0	180644	20.00	µg/L		-0.026
M4-PFHpA	6.793	367.0 -> 322.0	202217	20.00	µg/L		0.000
M8-PFOA	7.547	421.0 -> 376.0	303144	20.00	µg/L		-0.013
M9-PFNA	8.138	472.0 -> 427.0	351626	20.00	µg/L		0.000
M6-PFDA	8.751	519.0 -> 474.0	515983	20.00	µg/L		0.013
M7-PFUnDA	9.652	570.0 -> 525.0	600787	20.00	µg/L		-0.025
M2-PFDoDA	10.609	615.0 -> 570.0	730975	20.00	µg/L		-0.025
M2-PFTeDA	12.198	715.0 -> 670.0	218390	20.00	µg/L		-0.038
M8-FOSA	7.491	506.0 -> 78.0	20400	20.00	µg/L		0.000
M3-PFBS	4.654	302.0 -> 99.0	12564	20.00	µg/L		-0.038
M3-PFHxS	6.809	402.0 -> 99.0	18712	20.00	µg/L		-0.013
M8-PFOS	8.111	507.0 -> 99.0	30799	20.00	µg/L		0.000
M2-4:2FTS	5.683	329.0 -> 309.0	67899	20.00	µg/L		-0.025
M2-6:2FTS	7.558	429.0 -> 409.0	119920	20.00	µg/L		0.000
M2-8:2FTS	8.860	529.0 -> 509.0	225270	20.00	µg/L		0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	70115	20.00	µg/L		-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	14697	20.00	µg/L		-0.013
M3-MeFOSA	7.980	515.0 -> 169.0	362	20.00	µg/L	m	0.139
M5-EtFOSAA	8.065	589.0 -> 419.0	67733	20.00	µg/L		-0.013
System Monitoring Compounds							
13C2-4:2FTS	5.683	329.0 -> 309.0	67899	11.76	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.8%			
13C2-6:2FTS	7.558	429.0 -> 409.0	119920	15.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
13C2-8:2FTS	8.860	529.0 -> 509.0	225270	15.50	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%			
13C2-PFDoDA	10.609	615.0 -> 570.0	730975	13.51	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.6%			
13C2-PFTeDA	12.198	715.0 -> 670.0	218390	9.64	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.2%			
13C3-PFBS	4.654	302.0 -> 99.0	12564	11.87	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.4%			
13C3-PFHxS	6.809	402.0 -> 99.0	18712	14.48	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%			
13C4-PFBA	2.277	217.0 -> 172.0	93481	11.75	µg/L		-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.7%			
13C4-PFHpA	6.793	367.0 -> 322.0	202217	13.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.1%			
13C5-PFHxA	5.787	318.0 -> 273.0	180644	11.90	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.5%			
13C5-PFPeA	4.361	268.0 -> 223.0	131615	11.35	µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.8%			
13C6-PFDA	8.751	519.0 -> 474.0	515983	16.24	µg/L		0.013

Perfluorinated Compounds by LC/MS/MS

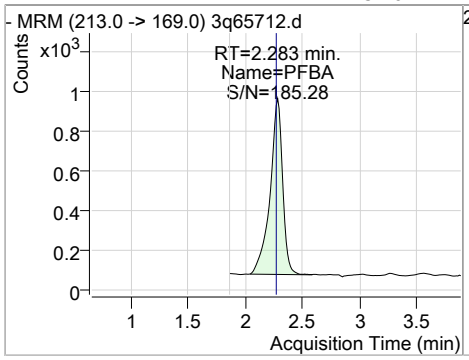
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%			
13C7-PFUnDA	9.652	570.0 -> 525.0	600787	14.55	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%			
13C8-FOSA	7.491	506.0 -> 78.0	20400	5.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 27.0%			
13C8-PFOA	7.547	421.0 -> 376.0	303144	15.06	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C8-PFOS	8.111	507.0 -> 99.0	30799	15.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%			
13C9-PFNA	8.138	472.0 -> 427.0	351626	15.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%			
d3-MeFOSAA	7.978	573.0 -> 419.0	70115	15.59	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%			
13C3-HFPO-DA	6.105	287.0 -> 169.0	14673	11.43	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.2%			
d3-MeFOSA	7.829	515.0 -> 169.0	122	0.14	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.7%			
d5-EtFOSAA	8.065	589.0 -> 419.0	67700	14.46	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.283	213.0 -> 169.0	6752	3.16	µg/L		100
PFBS	4.657	299.0 -> 80.0	1486	0.83	µg/L		100
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.782	363.0 -> 319.0	5880	0.41	µg/L	m	98
PFHpS	7.544	449.0 -> 80.0	1189	0.59	µg/L	m	98
PFHxA	5.788	313.0 -> 269.0	15296	1.59	µg/L		99
PFHxS	6.810	399.0 -> 80.0	35388	16.22	µg/L	m	100
PFNA	8.139	463.0 -> 419.0	2394	0.16	µg/L		90
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.548	413.0 -> 369.0	14003	0.76	µg/L	m	99
PFOS	8.111	499.0 -> 80.0	67322	26.54	µg/L	m	94
PFPeA	4.364	263.0 -> 219.0	4318	0.75	µg/L		100
PFPeS	5.907	349.0 -> 80.0	1644	1.19	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

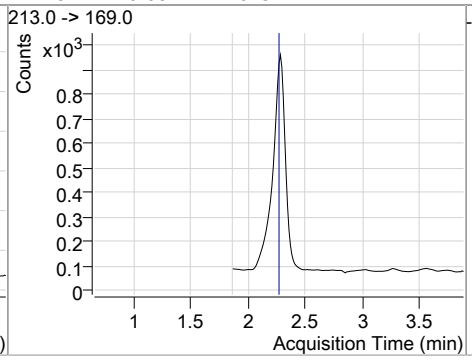
 # = Qualifier out of range, m = manually integrated, + = Area summed

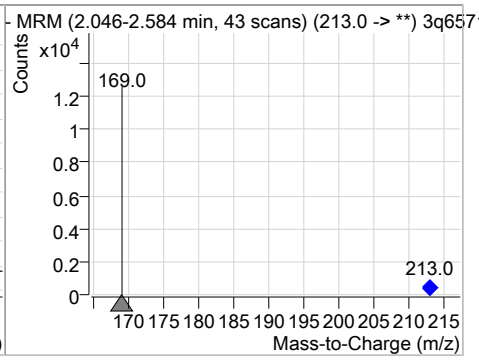
Perfluorinated Compounds by LC/MS/MS



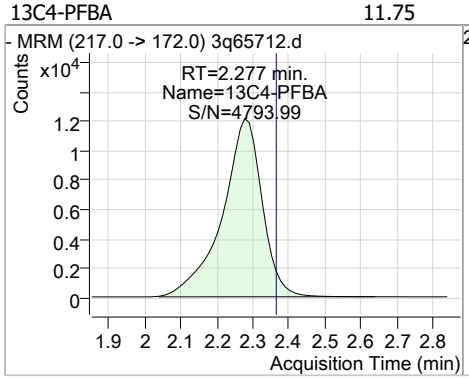
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.16	2.28	-0.08	6752				

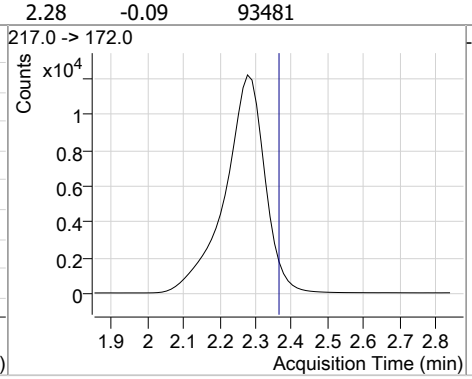


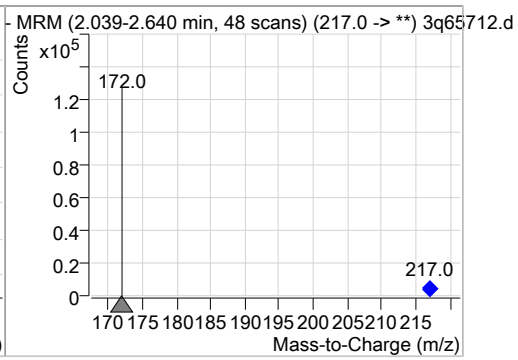




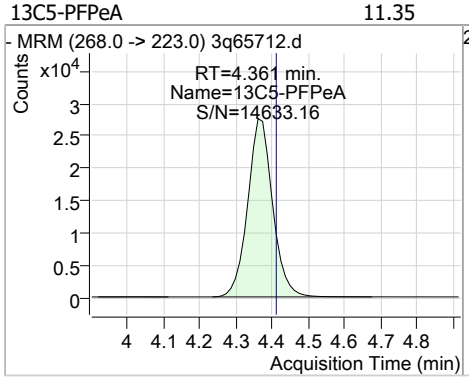
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.75	2.28	-0.09	93481				

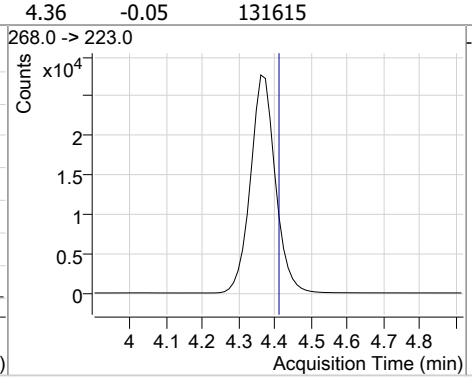


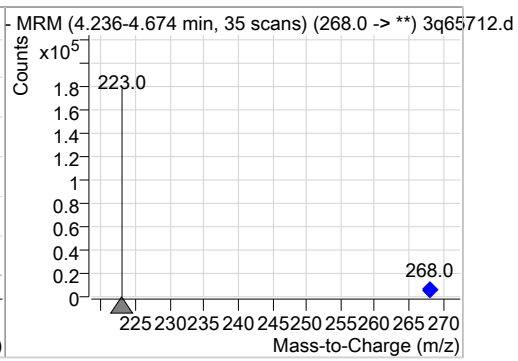




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.35	4.36	-0.05	131615				

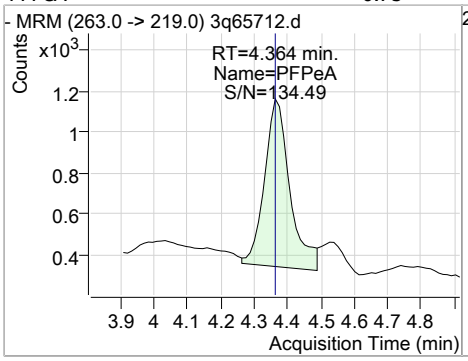


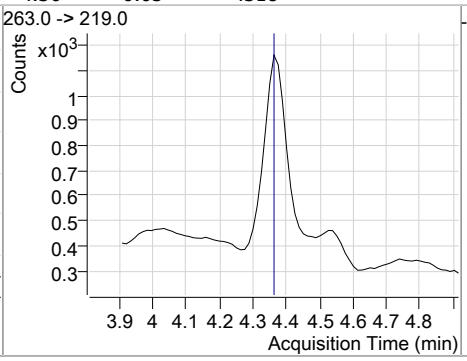


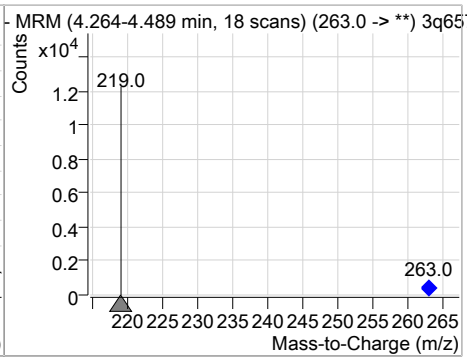


Perfluorinated Compounds by LC/MS/MS

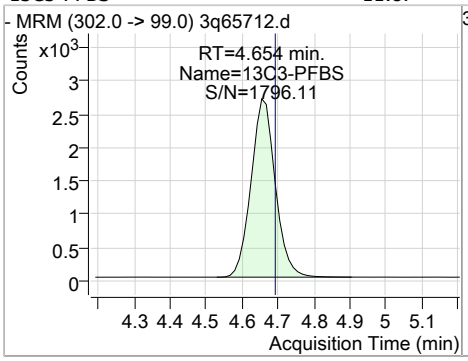
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.75	4.36	-0.05	4318				

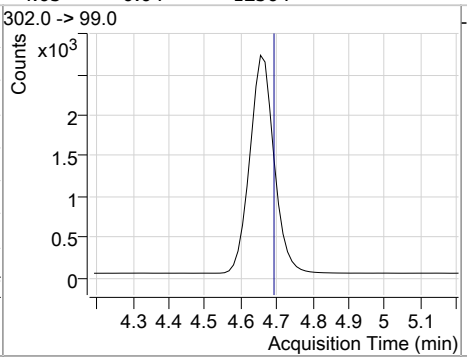


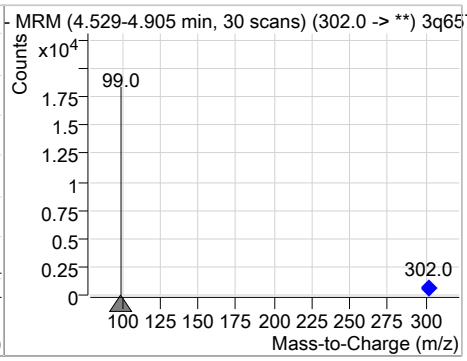




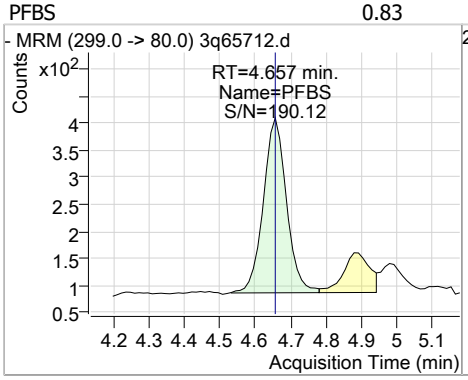
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.87	4.65	-0.04	12564				

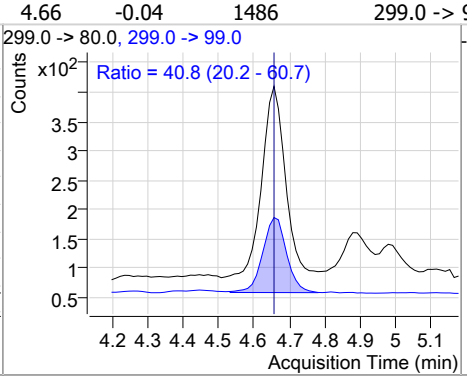


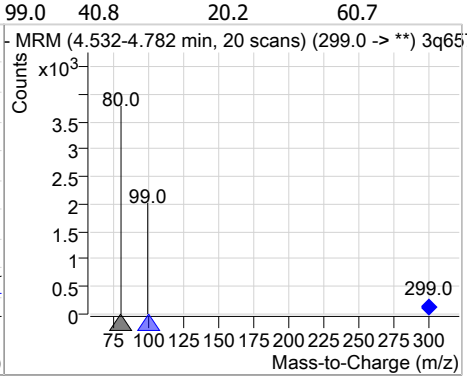




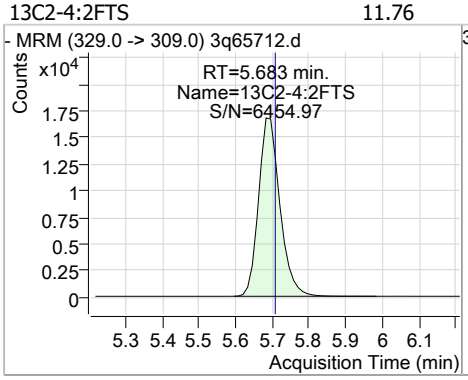
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.83	4.66	-0.04	1486	299.0 -> 99.0	40.8	20.2	60.7

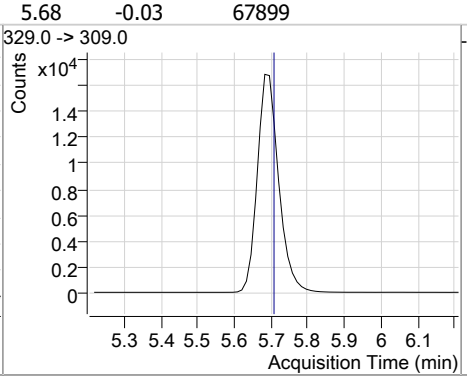


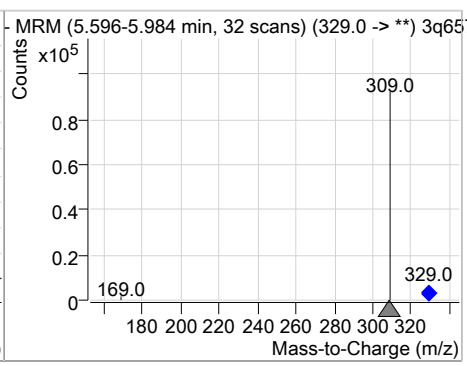




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.76	5.68	-0.03	67899				

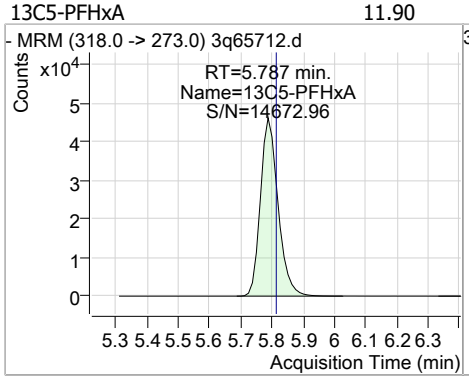


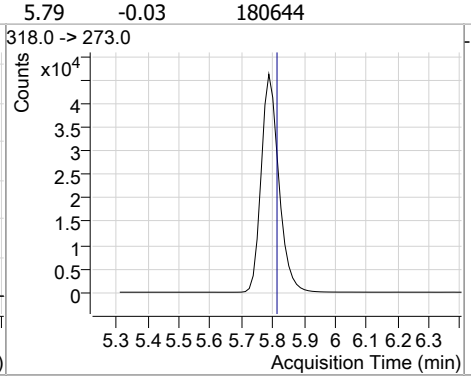


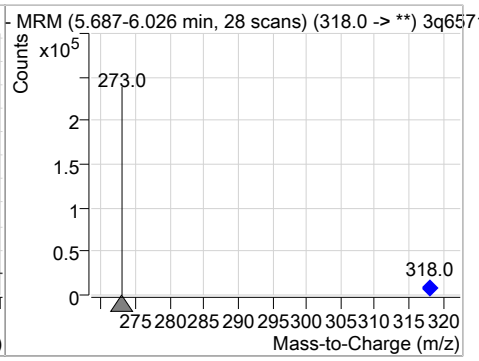


Perfluorinated Compounds by LC/MS/MS

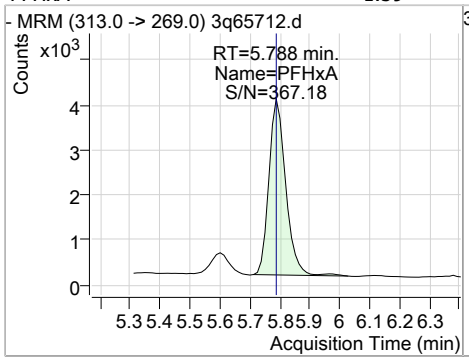
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.90	5.79	-0.03	180644				

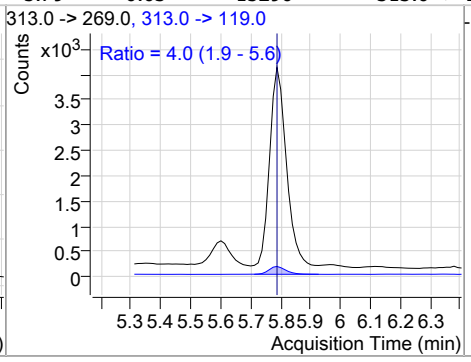


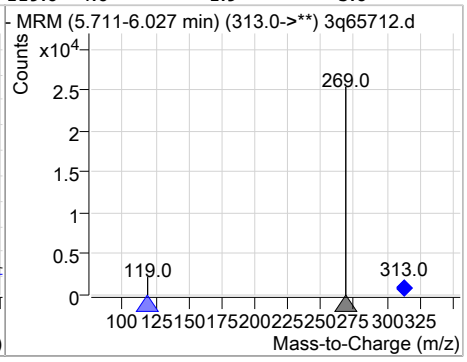




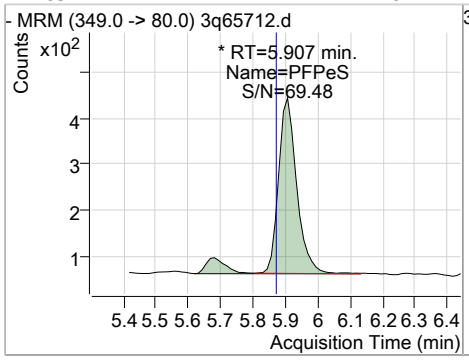
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.59	5.79	-0.03	15296	313.0 -> 119.0	4.0	1.9	5.6

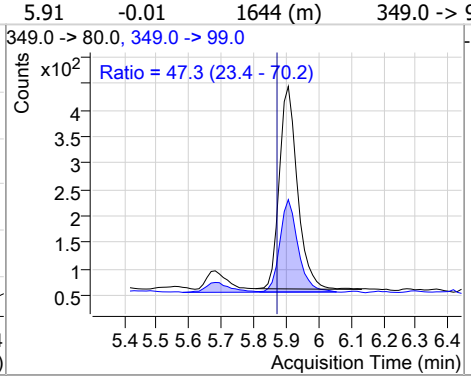


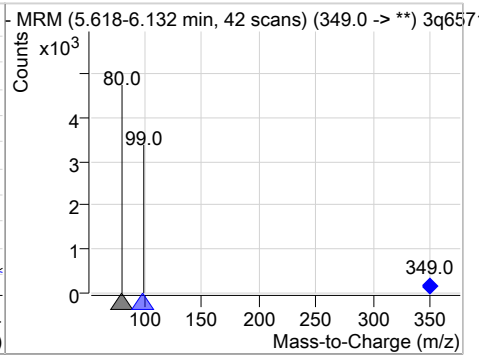




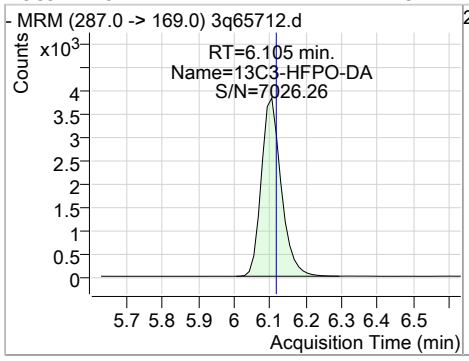
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.19	5.91	-0.01	1644 (m)	349.0 -> 99.0	47.3	23.4	70.2

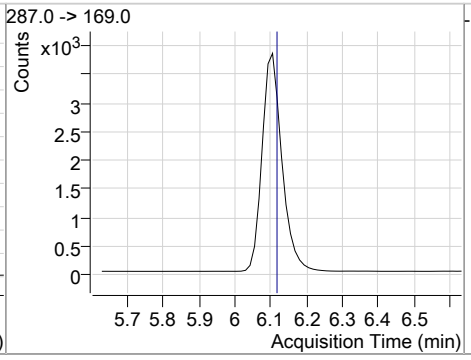


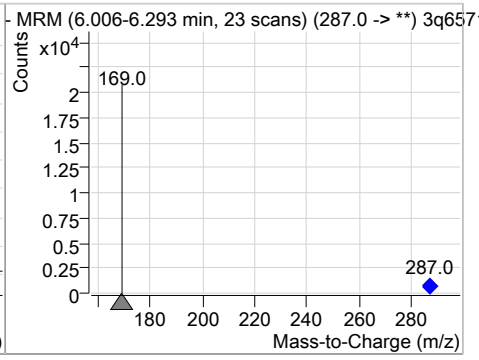




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.43	6.10	-0.01	14673				

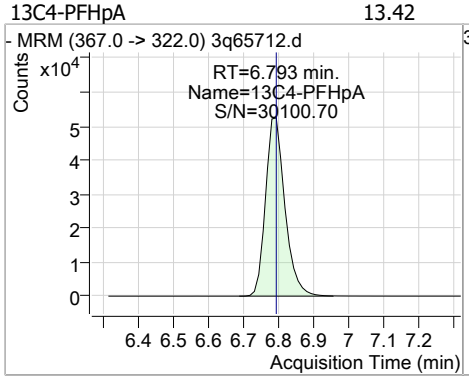


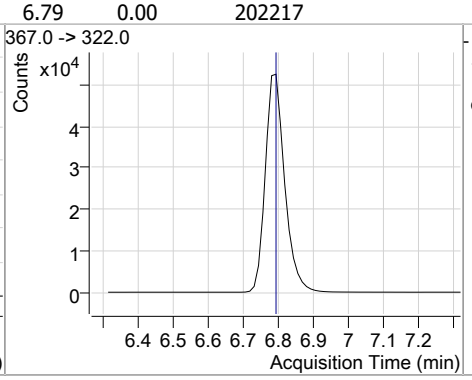


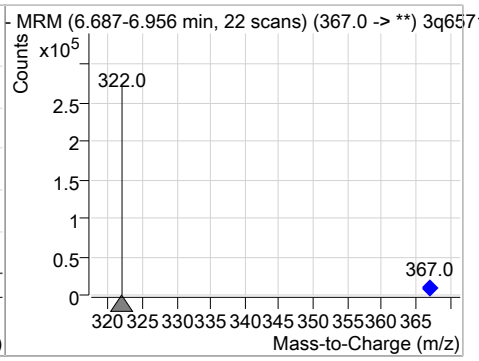


Perfluorinated Compounds by LC/MS/MS

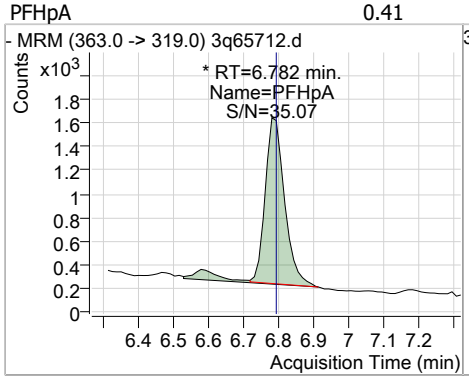
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.42	6.79	0.00	202217				

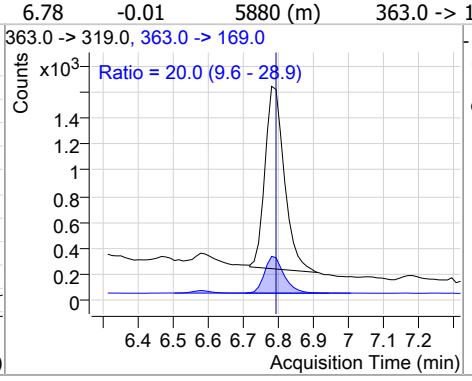


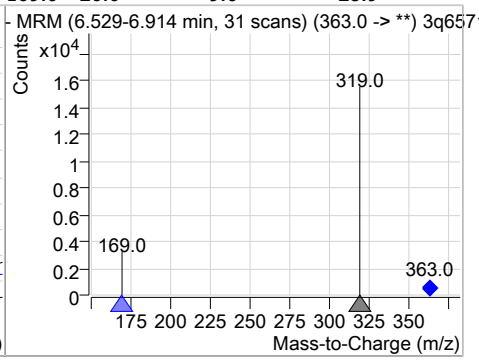




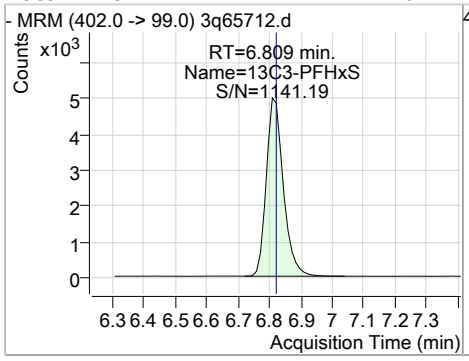
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.41	6.78	-0.01	5880 (m)	363.0 -> 169.0	20.0	9.6	28.9

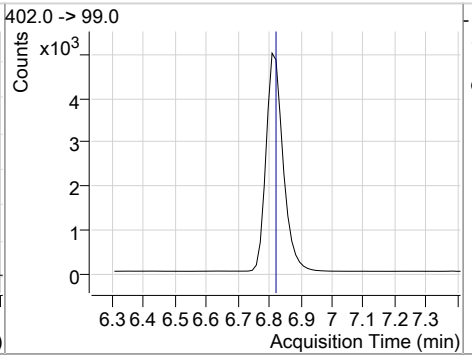


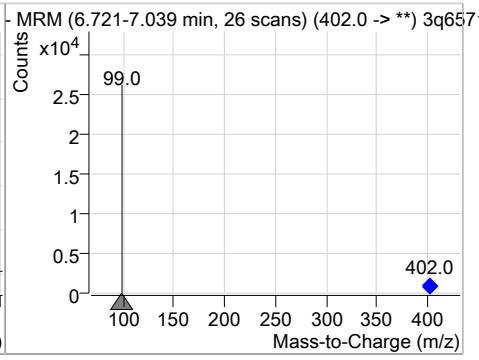




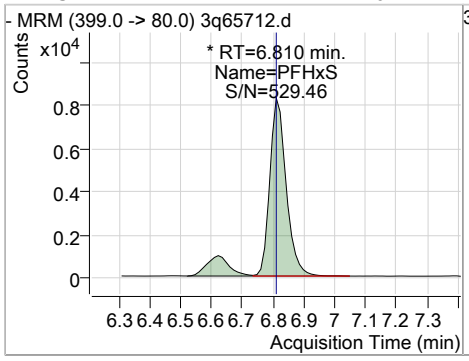
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.48	6.81	-0.01	18712				

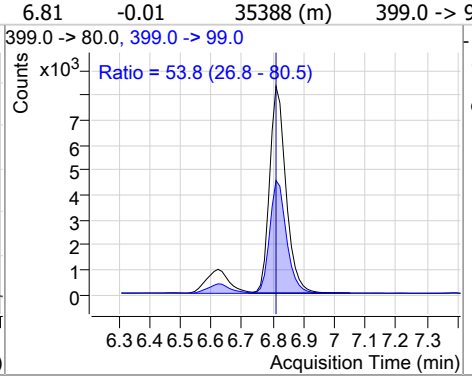


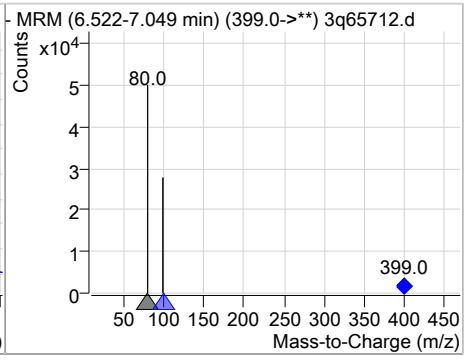




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.22	6.81	-0.01	35388 (m)	399.0 -> 99.0	53.8	26.8	80.5

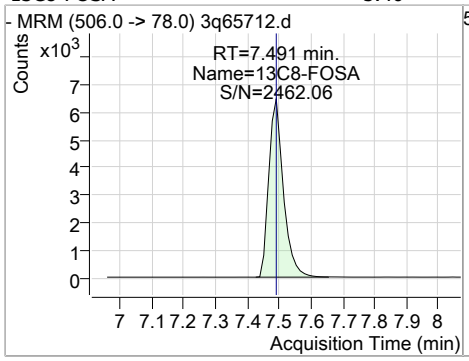


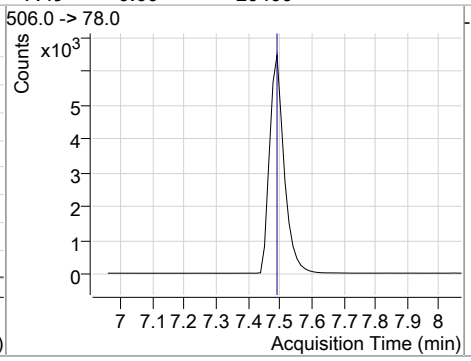


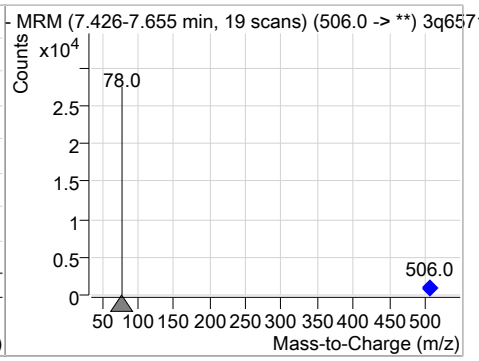


Perfluorinated Compounds by LC/MS/MS

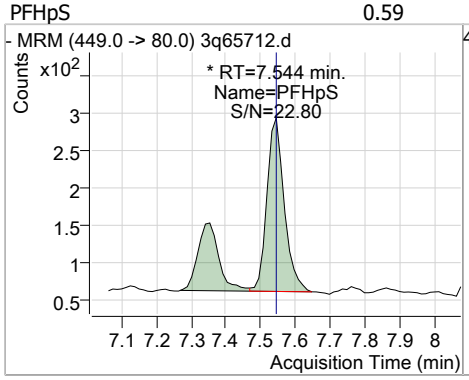
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.40	7.49	0.00	20400				

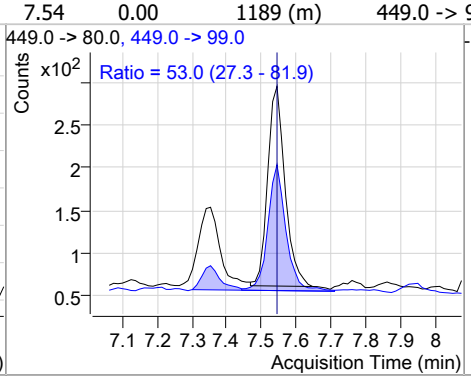


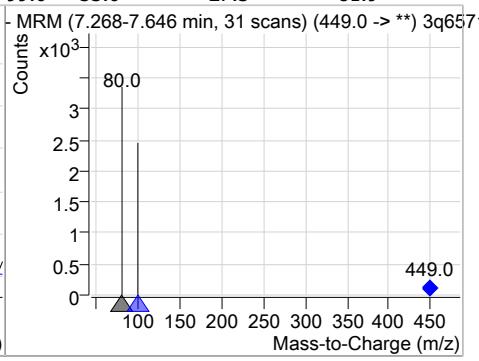




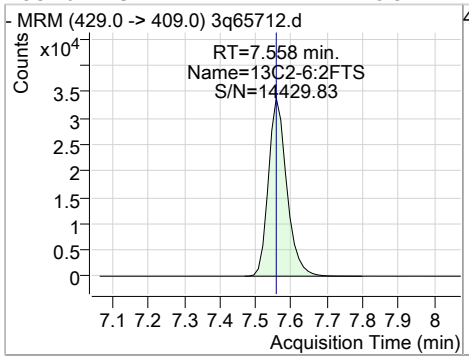
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.59	7.54	0.00	1189 (m)	449.0 -> 99.0	53.0	27.3	81.9

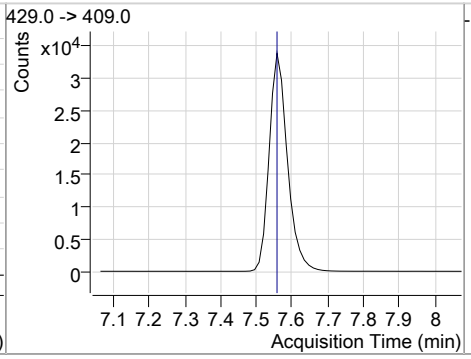


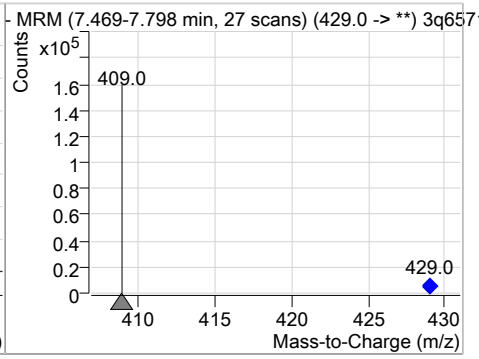




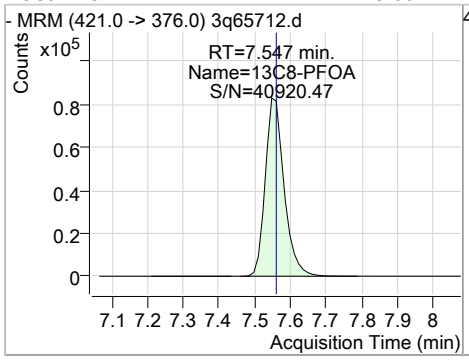
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.32	7.56	0.00	119920				

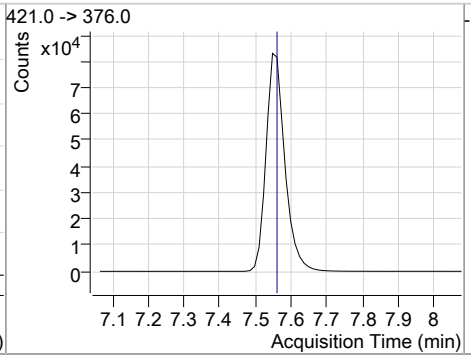


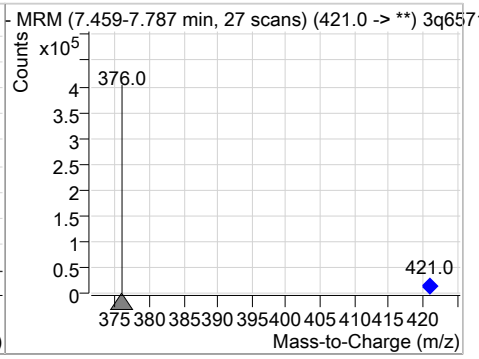




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.06	7.55	-0.01	303144				

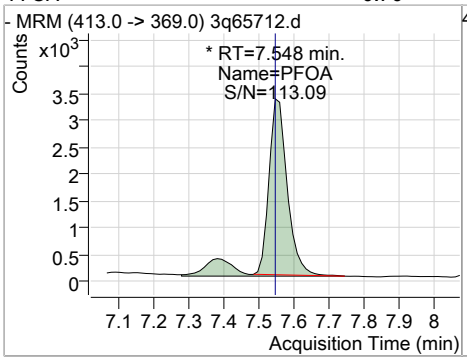


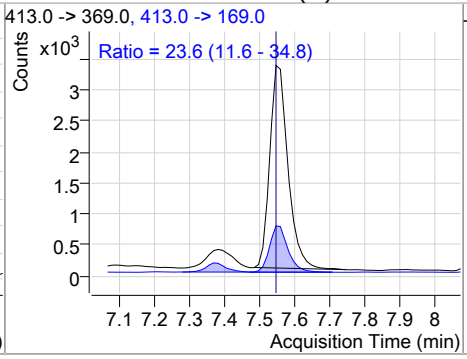


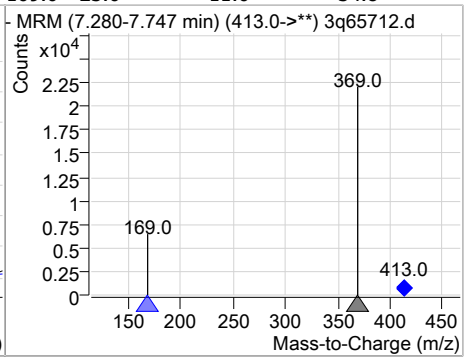


Perfluorinated Compounds by LC/MS/MS

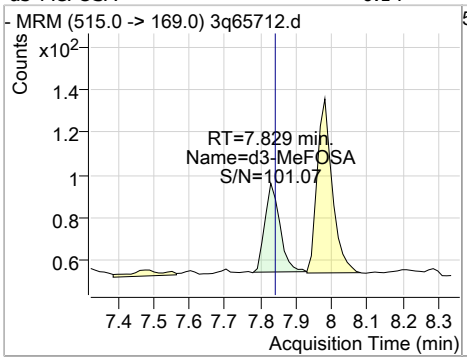
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.76	7.55	-0.01	14003 (m)	413.0 -> 169.0	23.6	11.6	34.8

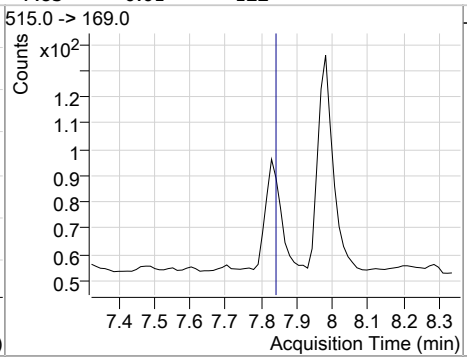


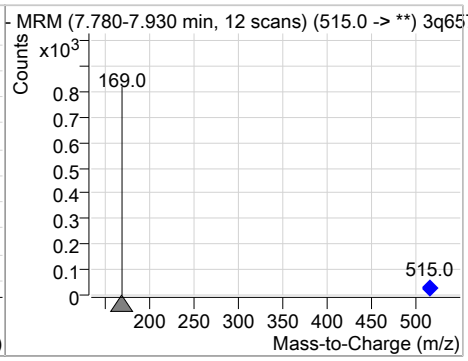




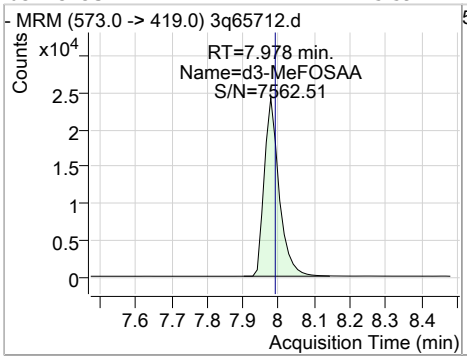
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.14	7.83	-0.01	122				

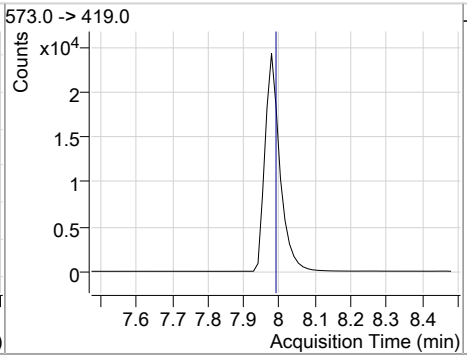


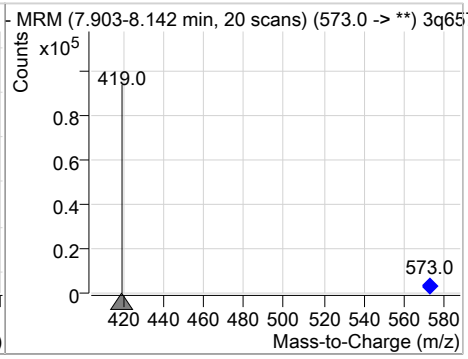




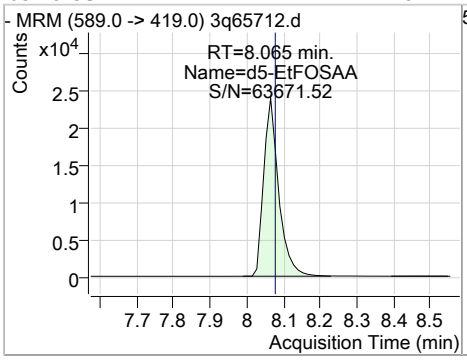
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.59	7.98	-0.01	70115				

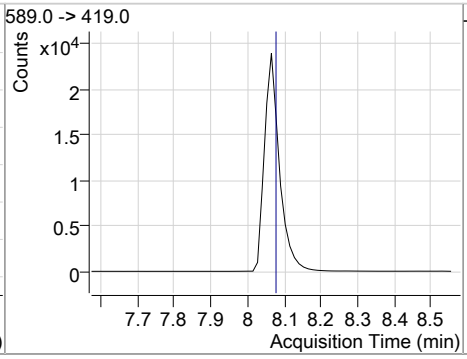


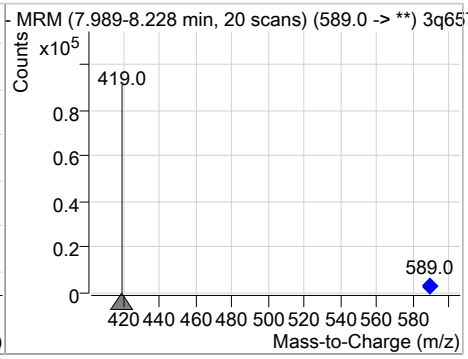




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.46	8.06	-0.01	67700				

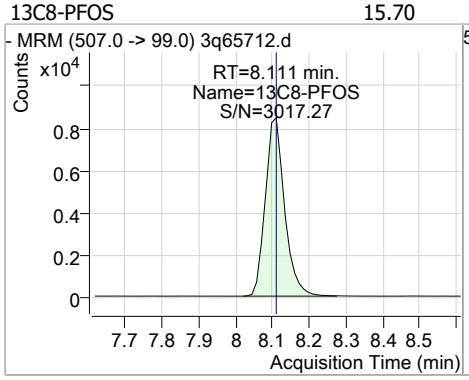


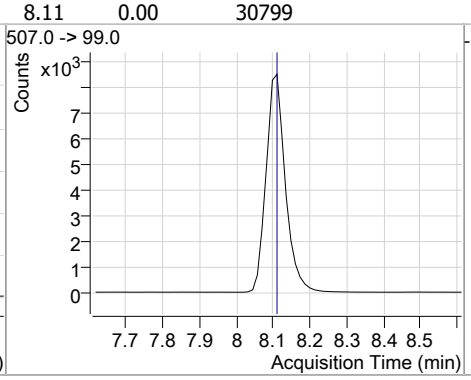


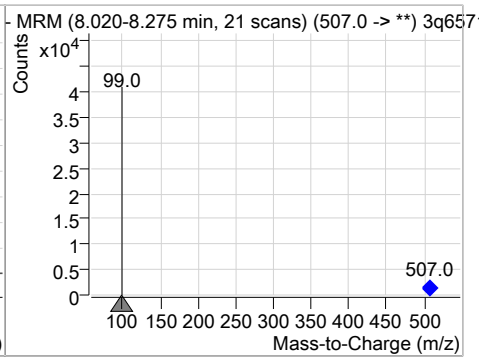


Perfluorinated Compounds by LC/MS/MS

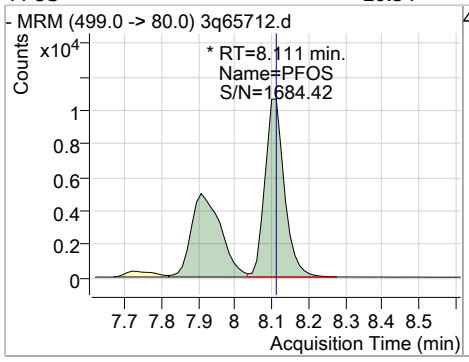
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.70	8.11	0.00	30799				

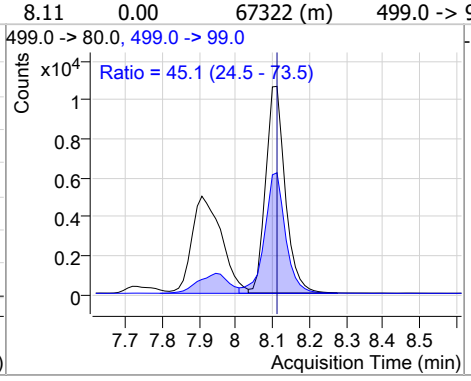


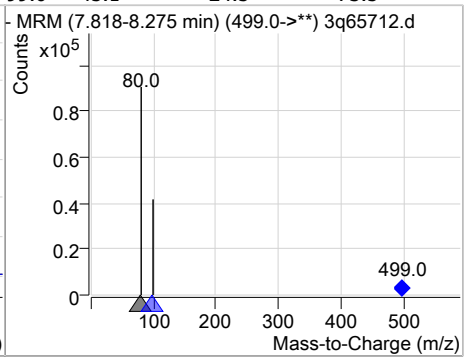




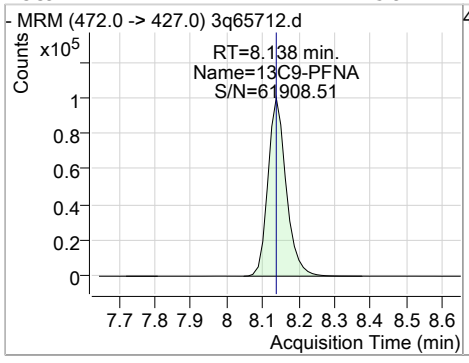
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	26.54	8.11	0.00	67322 (m)	499.0 -> 99.0	45.1	24.5	73.5

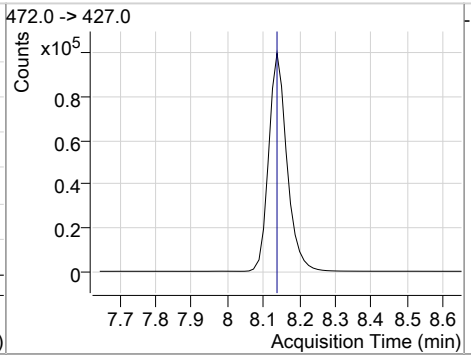


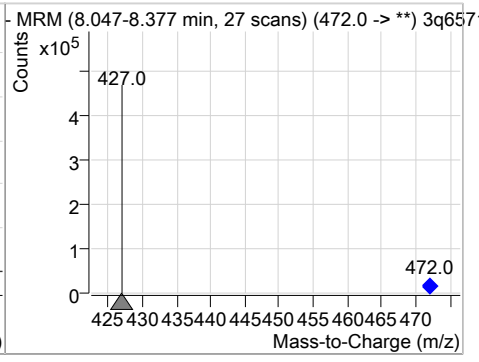




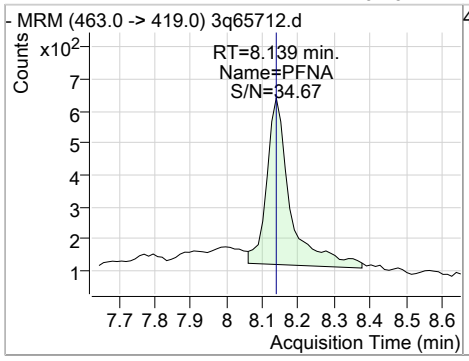
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.92	8.14	0.00	351626				

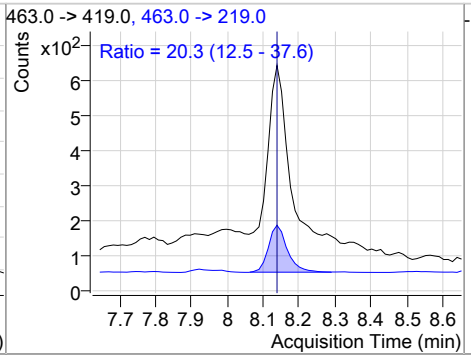


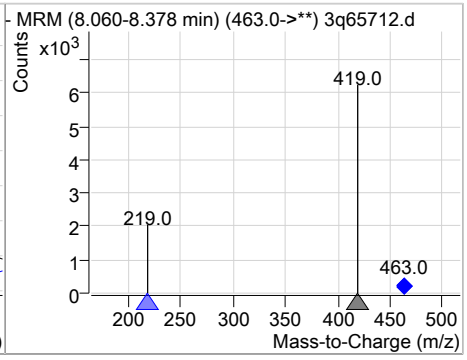




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.16	8.14	0.00	2394	463.0 -> 219.0	20.3	12.5	37.6

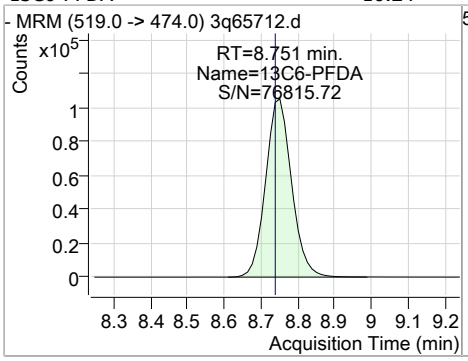


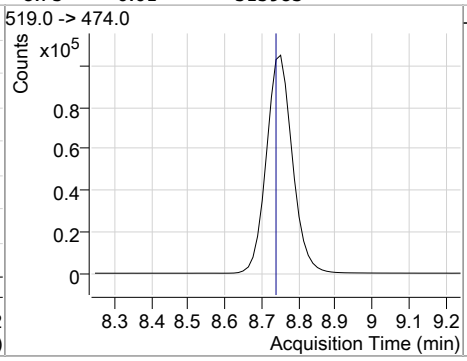


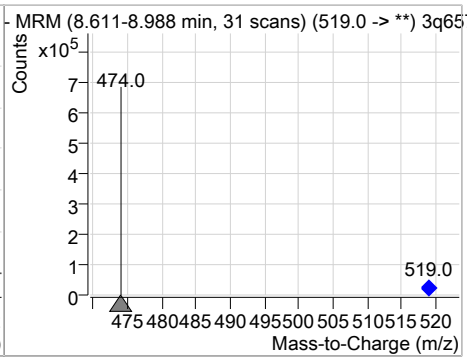


Perfluorinated Compounds by LC/MS/MS

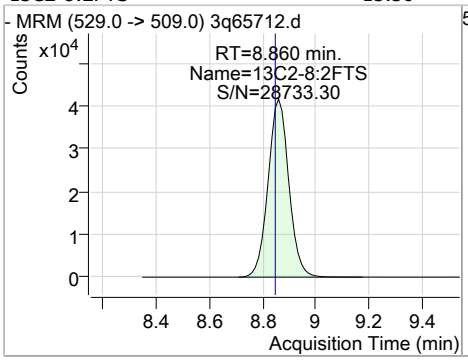
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.24	8.75	0.01	515983				

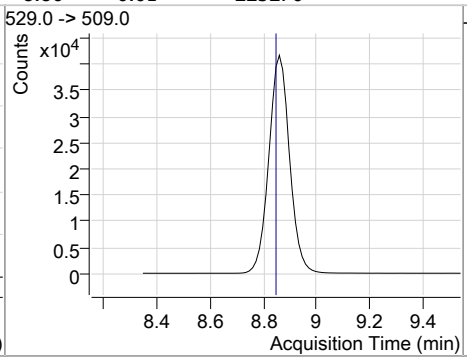


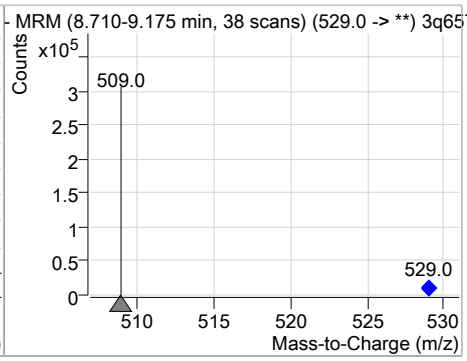




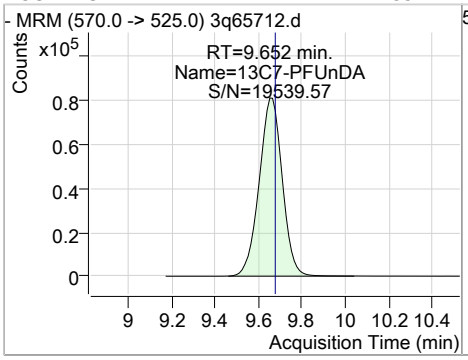
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.50	8.86	0.01	225270				

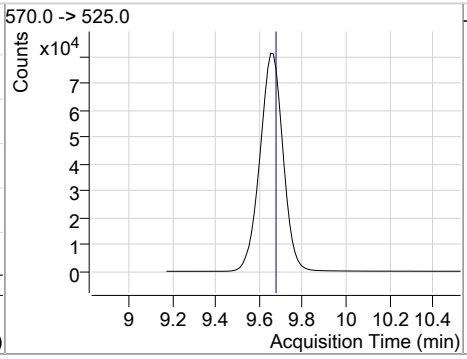


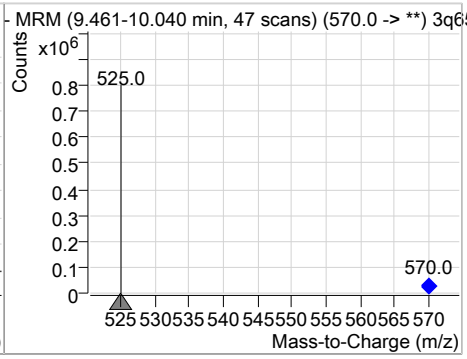




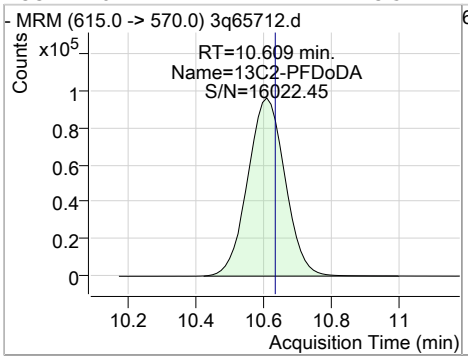
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.55	9.65	-0.03	600787				

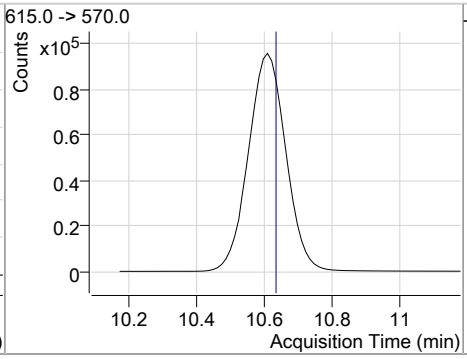


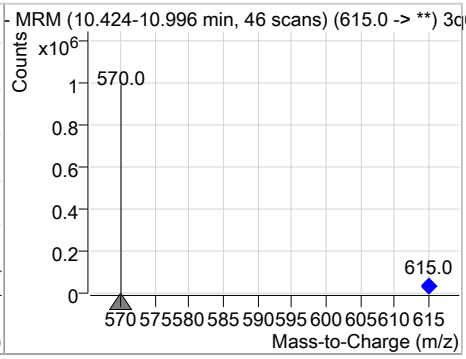




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.51	10.61	-0.03	730975				

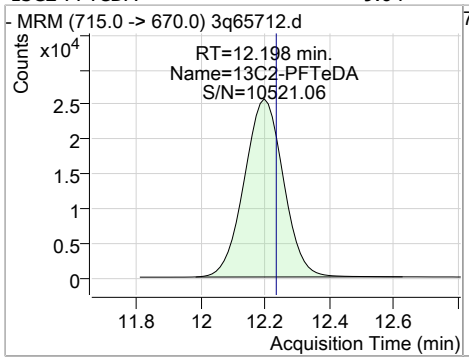


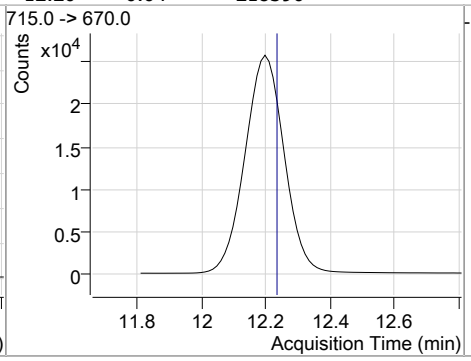


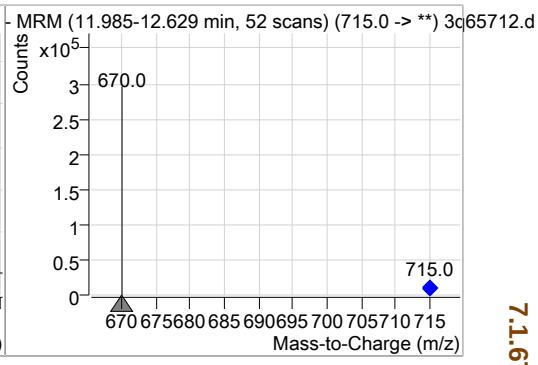


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.64	12.20	-0.04	218390				







Manual Integration Approval Summary

Sample Number: FA98286-42
Lab FileID: 3Q65712.D
Injection Time: 09/14/22 02:55
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:07 Norman Farmer
Supervisor approved: 09/19/22 16:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.91	Split peak
Perfluoroheptanoic acid	375-85-9		6.78	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.54	Split peak
Perfluorooctanoic acid	335-67-1		7.55	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:07

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65840.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 11:02:44 PM
Sample Name : fa98286-42
Vial : P2-C2
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92762,S3Q900,120,,,1,5,water

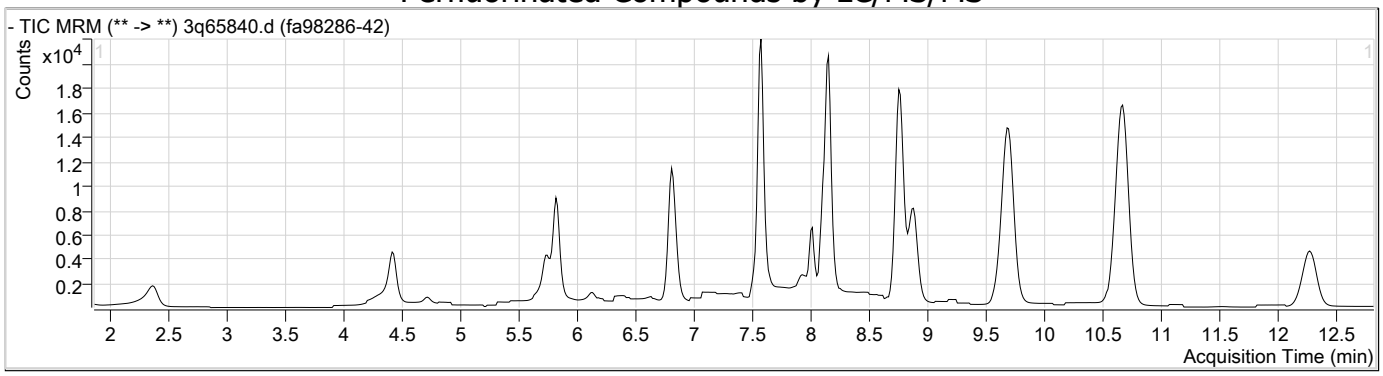
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.352	217.0 -> 172.0	13924	20.00	µg/L	-0.013
M5-PFPeA	4.411	268.0 -> 223.0	26519	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	36667	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	38185	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	53669	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	61325	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	87534	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	108634	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	131158	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	39457	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	4731	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	2615	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	3494	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	5300	20.00	µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	13886	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	21912	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	41090	20.00	µg/L	0.025
M3-MeFOSAA	8.003	573.0 -> 419.0	14126	20.00	µg/L	0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	2995	20.00	µg/L	0.000
M3-MeFOSA	7.854	515.0 -> 169.0	162	20.00	µg/L	0.013
M5-EtFOSAA	8.090	589.0 -> 419.0	14180	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	13886	2.26	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.3%		
13C2-6:2FTS	7.571	429.0 -> 409.0	21912	2.54	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-8:2FTS	8.873	529.0 -> 509.0	41090	2.40	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.0%		
13C2-PFDoDA	10.659	615.0 -> 570.0	131158	2.16	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.8%		
13C2-PFTeDA	12.260	715.0 -> 670.0	39457	1.55	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.7%		
13C3-PFBS	4.704	302.0 -> 99.0	2615	2.36	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.8%		
13C3-PFHxS	6.834	402.0 -> 99.0	3494	2.59	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C4-PFBA	2.352	217.0 -> 172.0	13924	1.68	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.4%		
13C4-PFHpA	6.805	367.0 -> 322.0	38185	2.42	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.1%		
13C5-PFHxA	5.813	318.0 -> 273.0	36667	2.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.4%		
13C5-PFPeA	4.411	268.0 -> 223.0	26519	2.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%		
13C6-PFDA	8.751	519.0 -> 474.0	87534	2.41	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

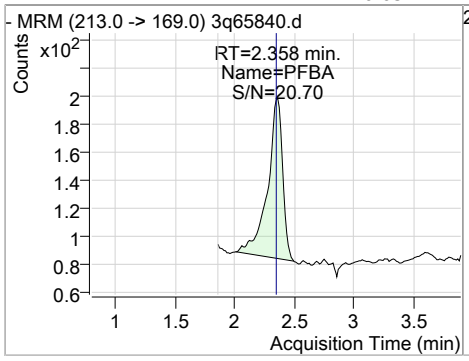
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.0%			
13C7-PFUnDA	9.677	570.0 -> 525.0	108634	2.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.4%			
13C8-FOSA	7.503	506.0 -> 78.0	4731	1.33	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 6.6%			
13C8-PFOA	7.573	421.0 -> 376.0	53669	2.52	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%			
13C8-PFOS	8.123	507.0 -> 99.0	5300	2.56	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%			
13C9-PFNA	8.150	472.0 -> 427.0	61325	2.57	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%			
d3-MeFOSAA	8.003	573.0 -> 419.0	14126	2.50	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.5%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	2995	2.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%			
d3-MeFOSA	7.854	515.0 -> 169.0	162	0.20	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.0%			
d5-EtFOSAA	8.090	589.0 -> 419.0	14192	2.49	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.358	213.0 -> 169.0	993	0.63	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.814	313.0 -> 269.0	3688	0.36	µg/L	m	98
PFHxS	6.823	399.0 -> 80.0	6590	3.06	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	8.124	499.0 -> 80.0	11694	4.93	µg/L	m	78
PFPeA	4.414	263.0 -> 219.0	501	0.08	µg/L	m	100
PFPeS	5.932	349.0 -> 80.0	298	0.20	µg/L		88
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

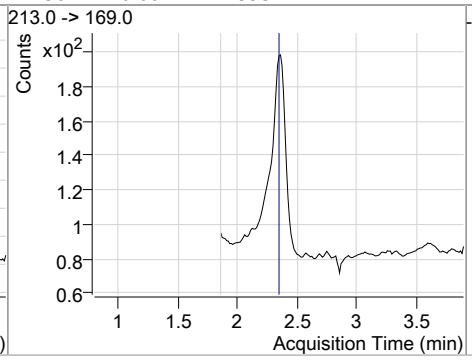
 # = Qualifier out of range, m = manually integrated, + = Area summed

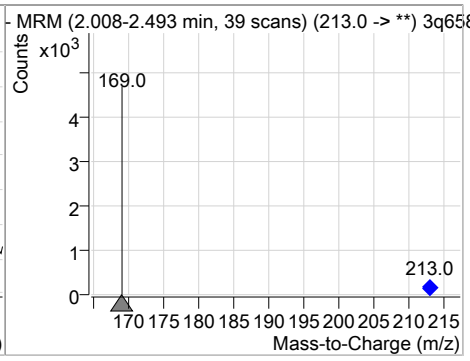
Perfluorinated Compounds by LC/MS/MS



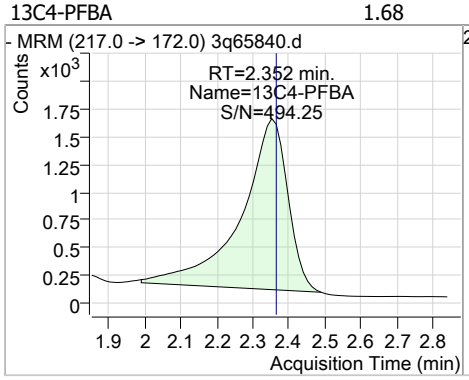
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.63	2.36	0.00	993				

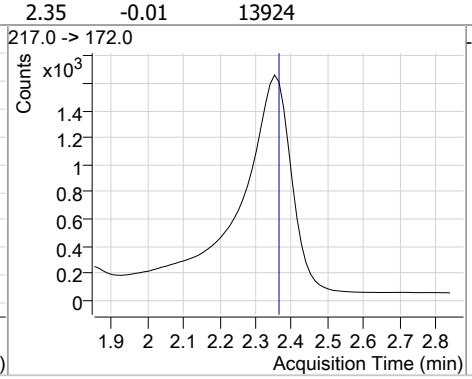


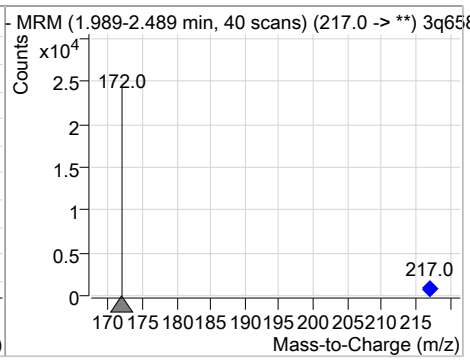




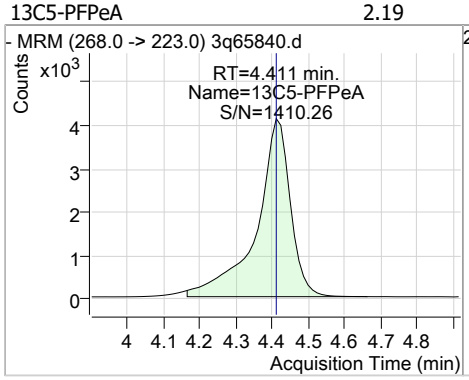
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.68	2.35	-0.01	13924				

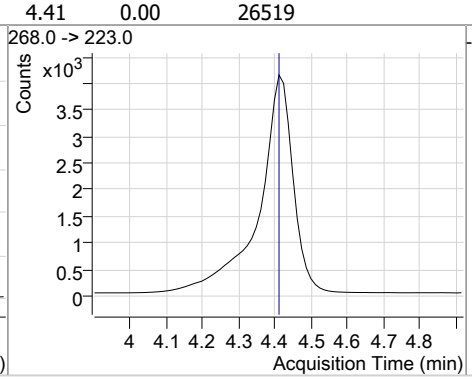


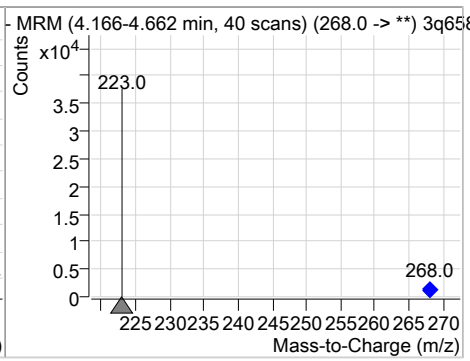




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.19	4.41	0.00	26519				

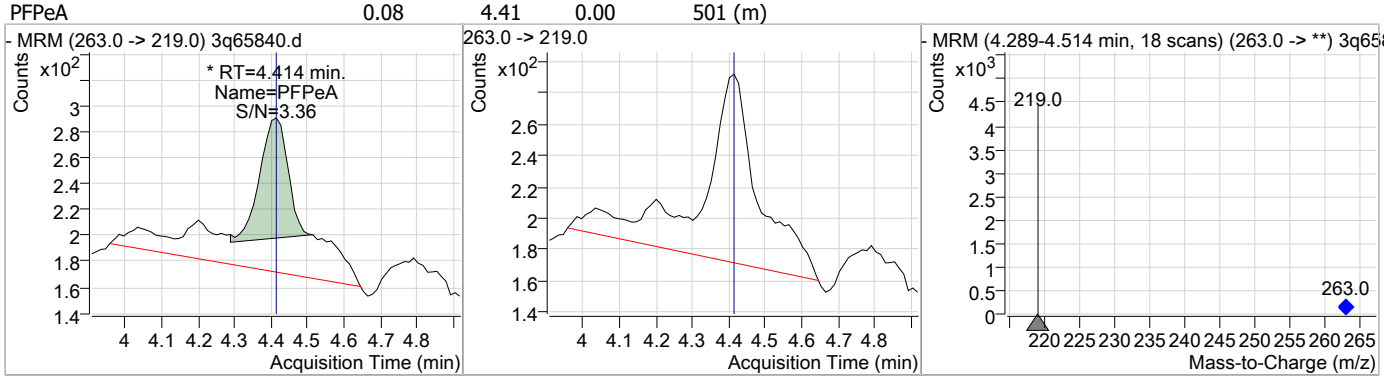




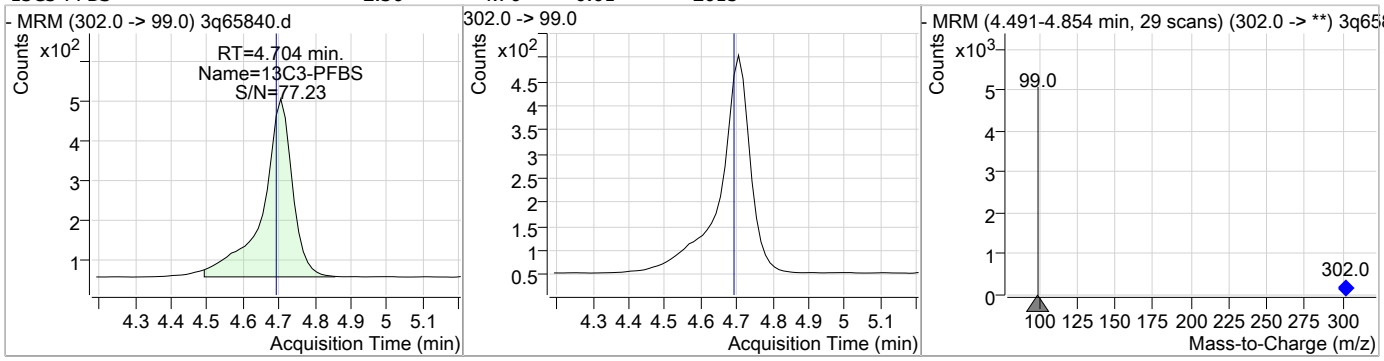


Perfluorinated Compounds by LC/MS/MS

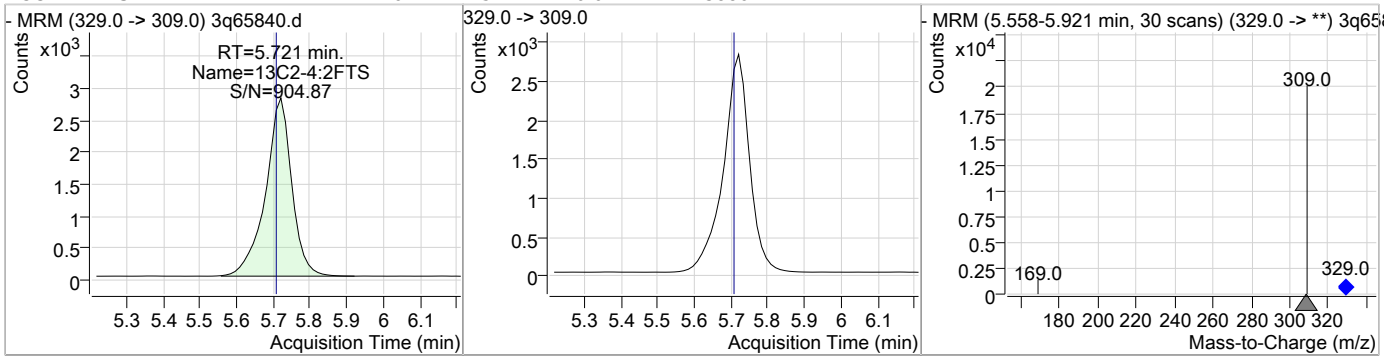
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.08	4.41	0.00	501 (m)				



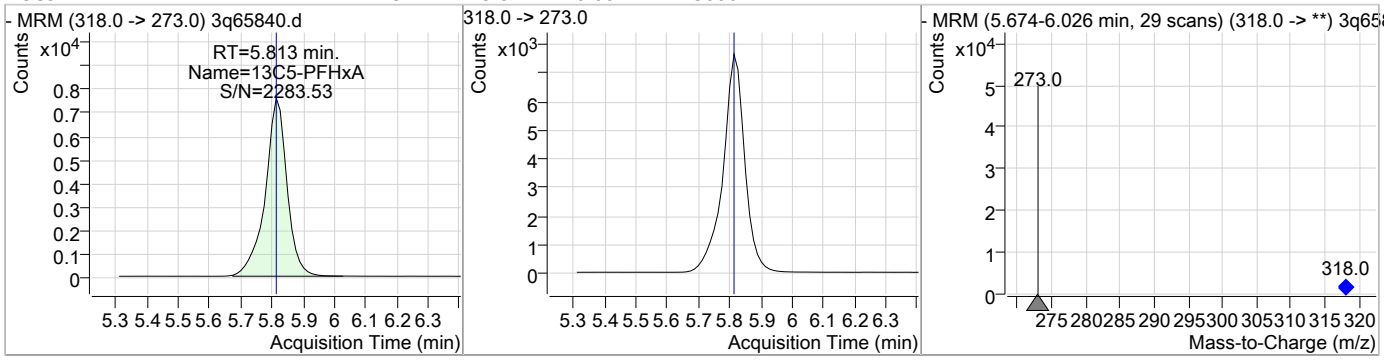
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.36	4.70	0.01	2615				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.26	5.72	0.01	13886				

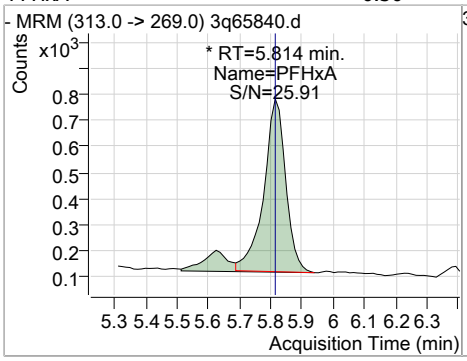


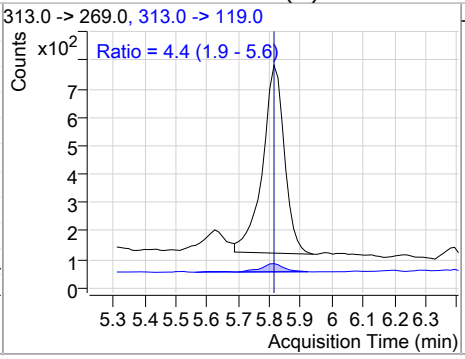
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.29	5.81	0.00	36667				

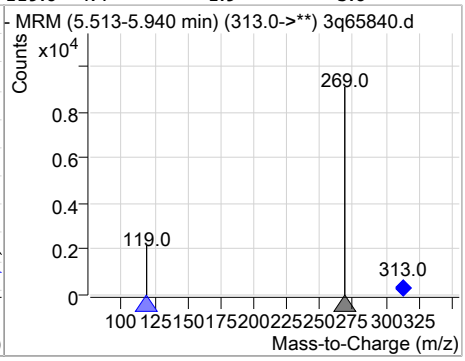


Perfluorinated Compounds by LC/MS/MS

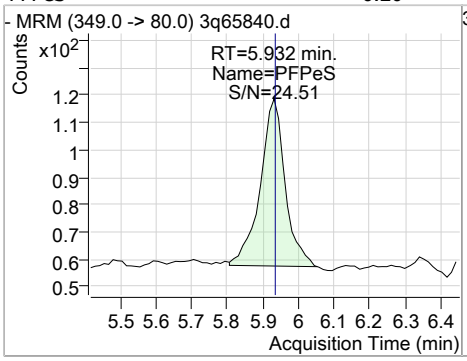
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.36	5.81	0.00	3688 (m)	313.0 -> 119.0	4.4	1.9	5.6

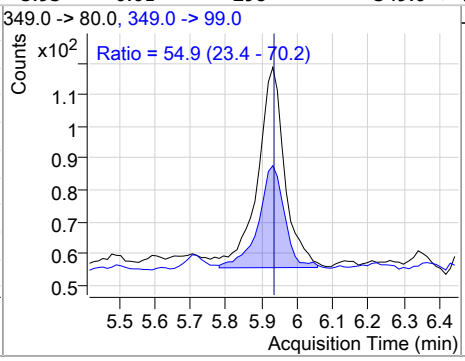


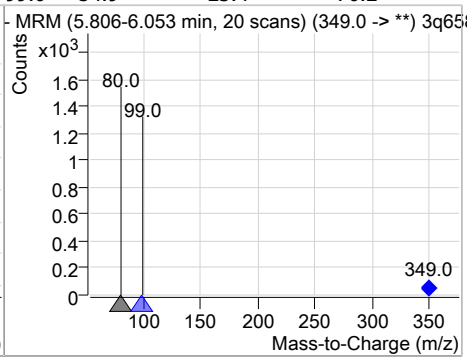




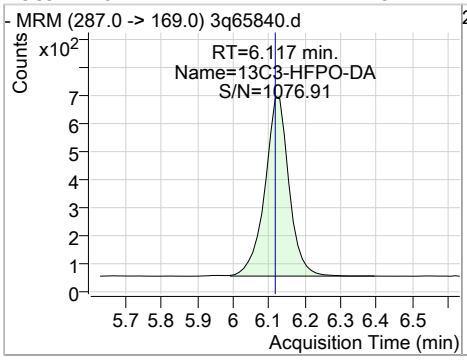
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.20	5.93	0.01	298	349.0 -> 99.0	54.9	23.4	70.2

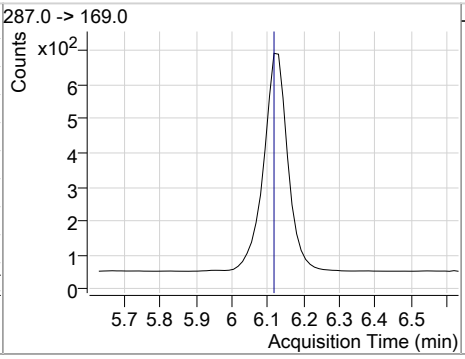


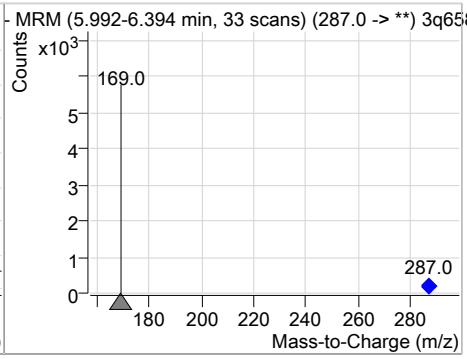




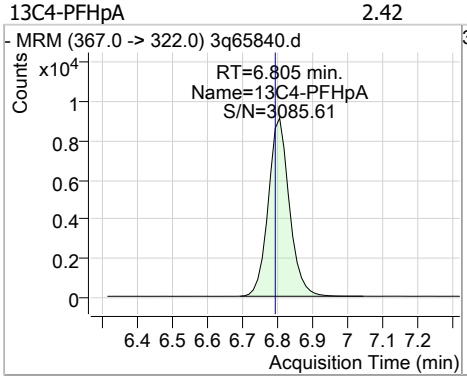
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.32	6.12	0.00	2995				

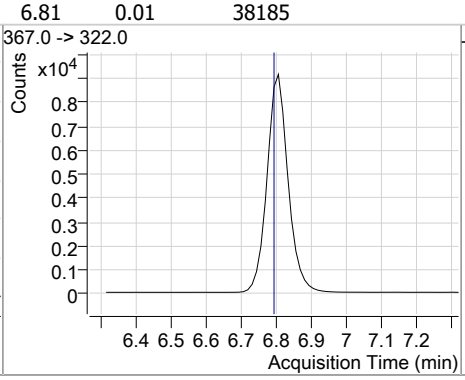


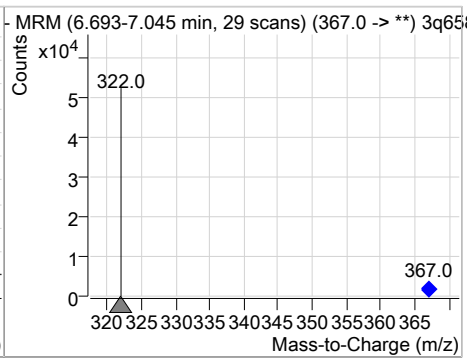




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.42	6.81	0.01	38185				

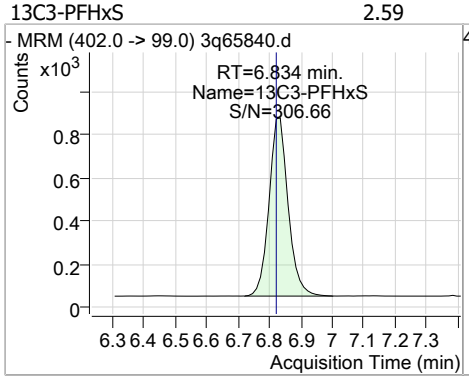


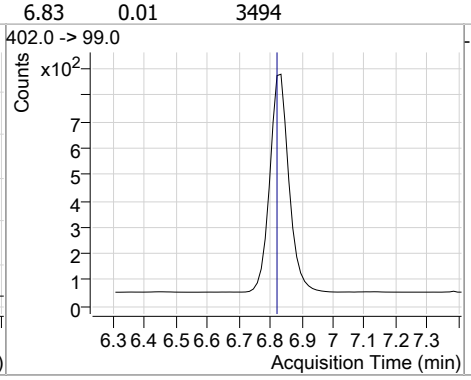


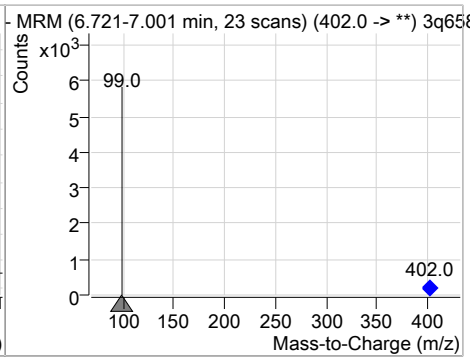


Perfluorinated Compounds by LC/MS/MS

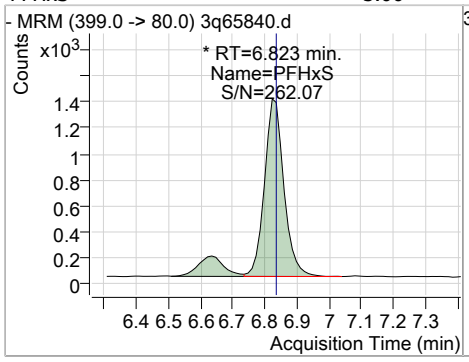
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.59	6.83	0.01	3494				

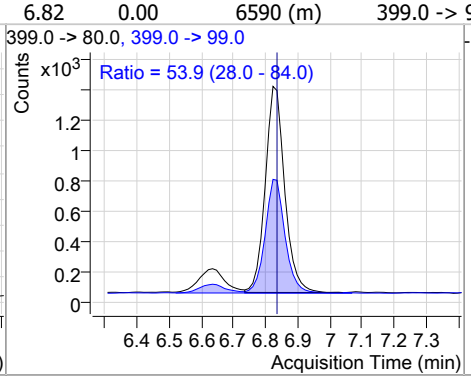


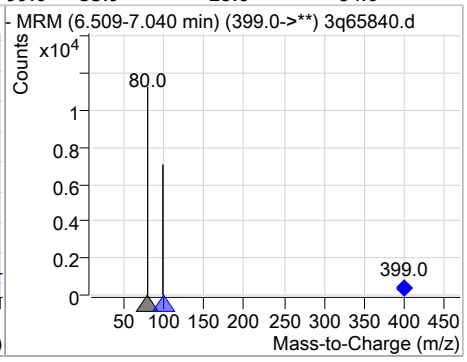




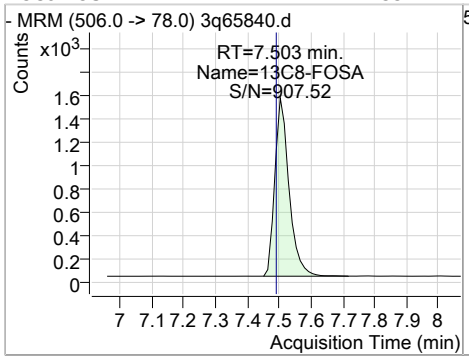
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	3.06	6.82	0.00	6590 (m)	399.0 -> 99.0	53.9	28.0	84.0

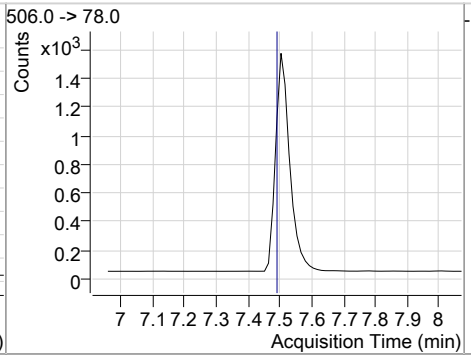


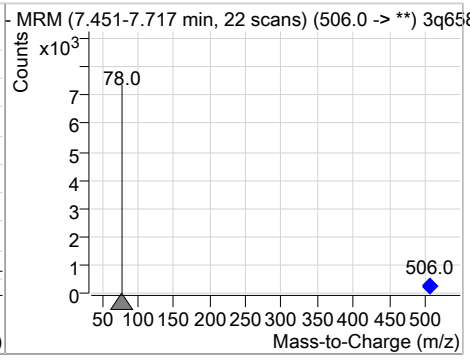




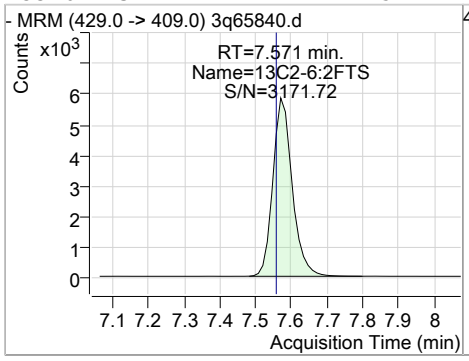
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.33	7.50	0.01	4731				

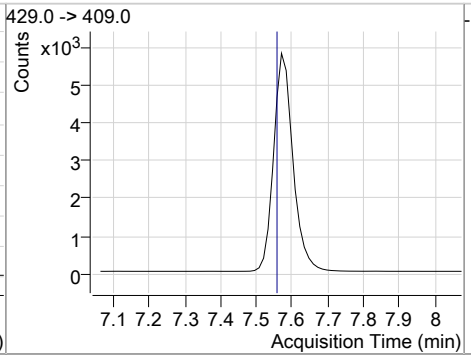


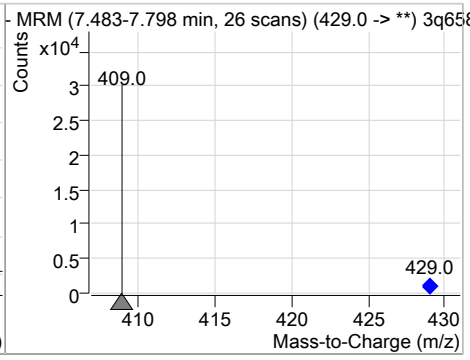




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.54	7.57	0.01	21912				

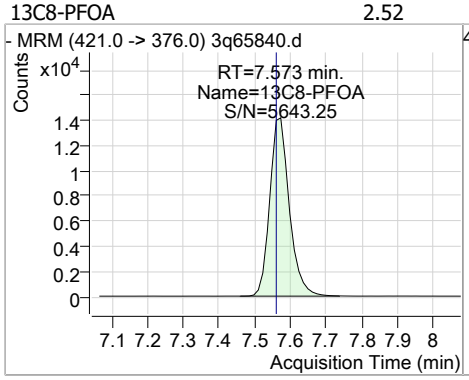


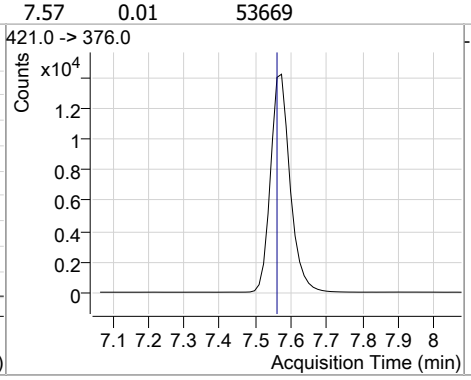


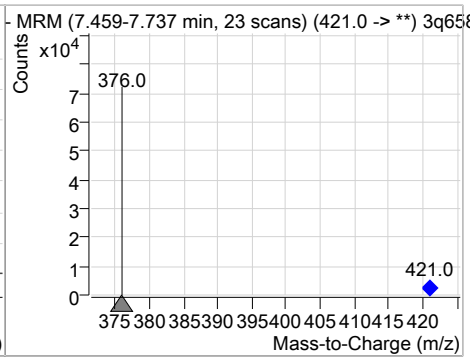


Perfluorinated Compounds by LC/MS/MS

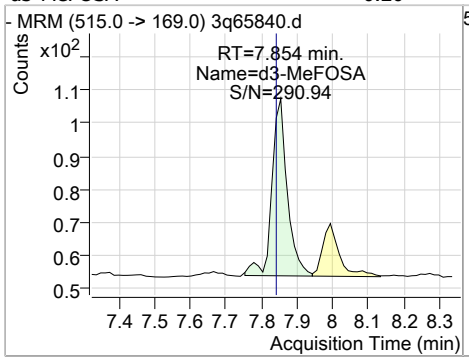
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.52	7.57	0.01	53669				

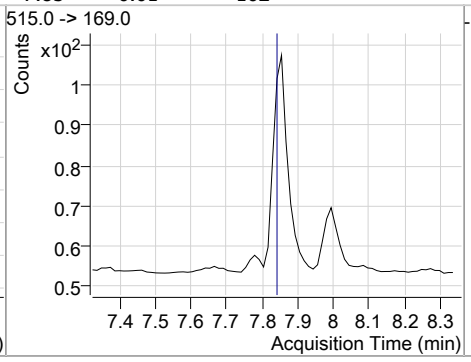


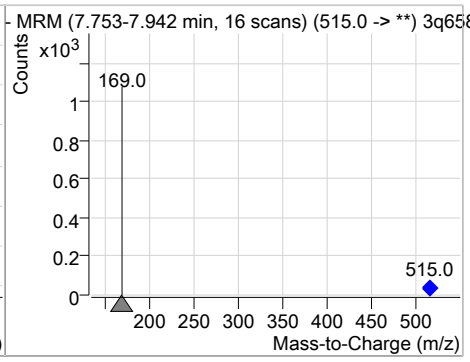




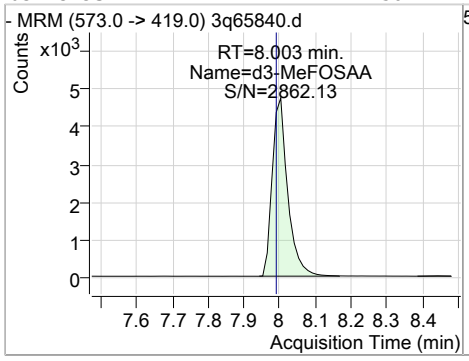
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.20	7.85	0.01	162				

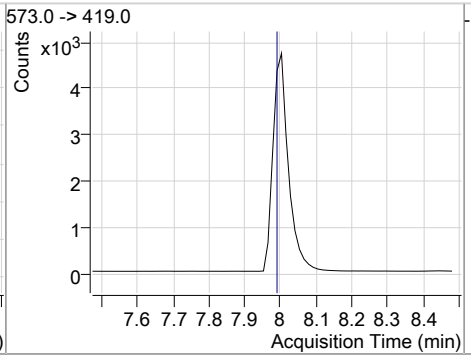


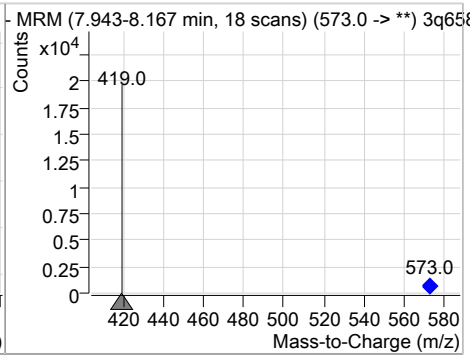




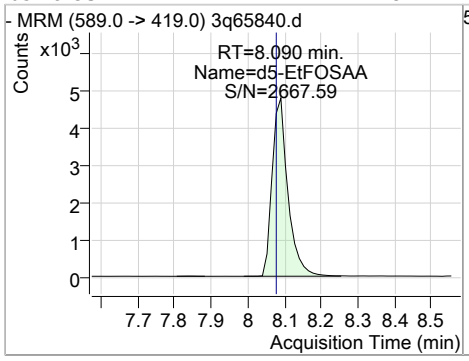
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.50	8.00	0.01	14126				

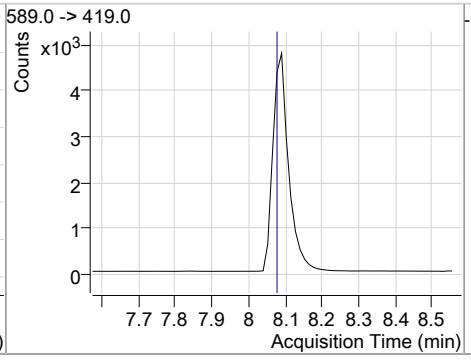


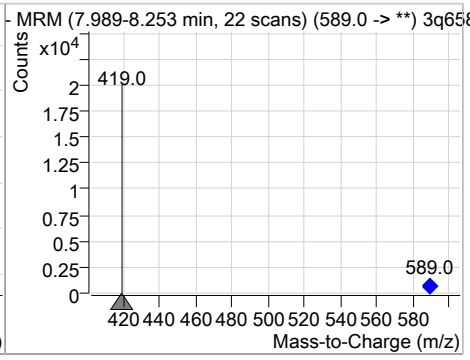




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.49	8.09	0.01	14192				

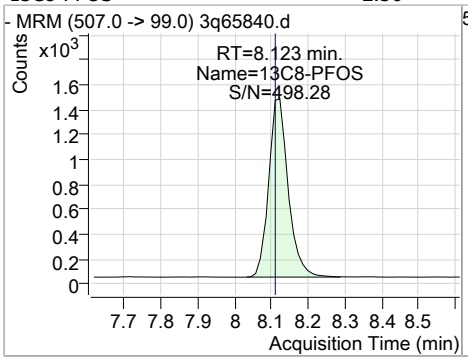


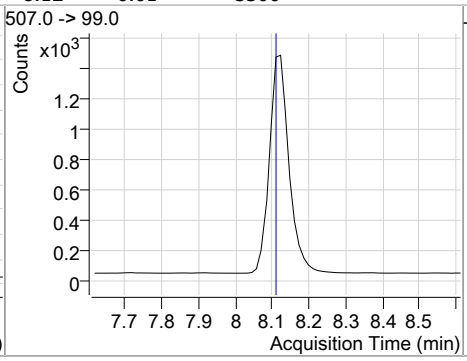


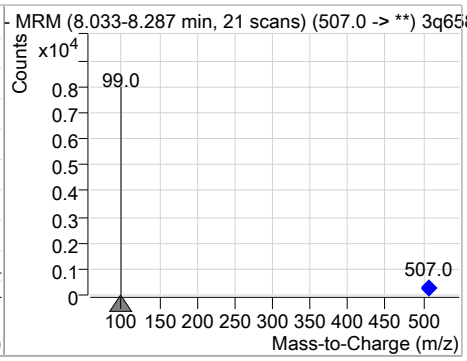


Perfluorinated Compounds by LC/MS/MS

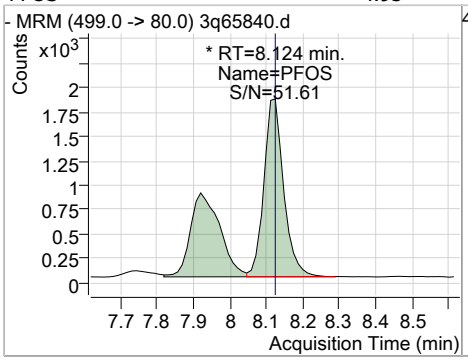
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.56	8.12	0.01	5300				

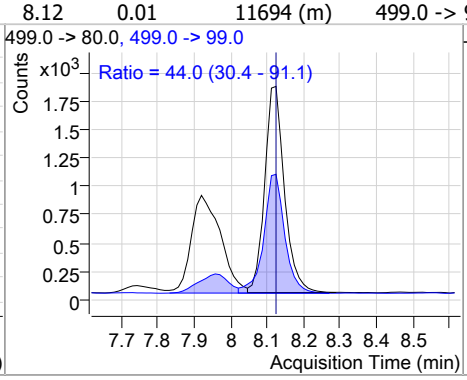


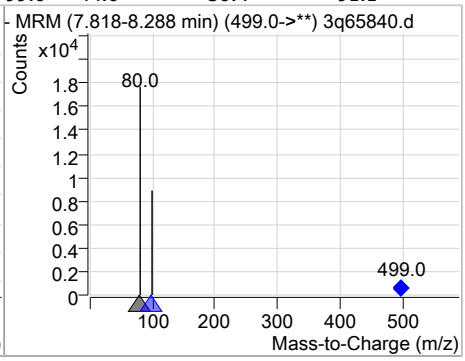




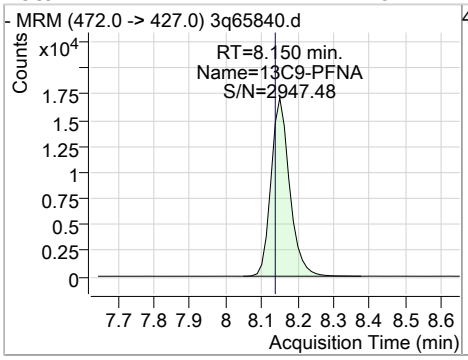
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.93	8.12	0.01	11694 (m)	499.0 -> 99.0	44.0	30.4	91.1

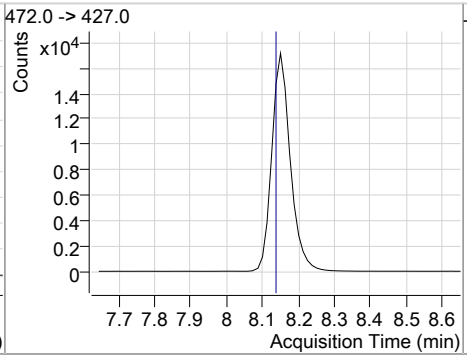


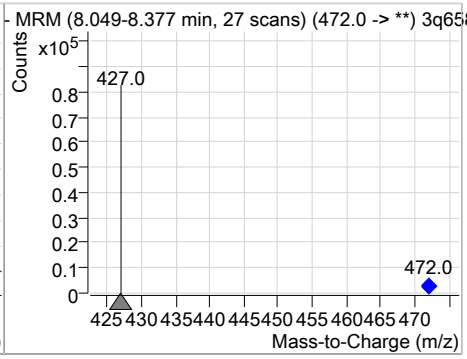




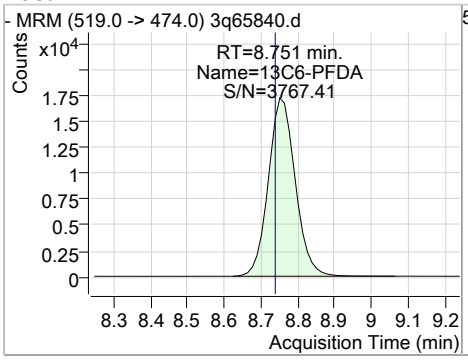
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.57	8.15	0.01	61325				

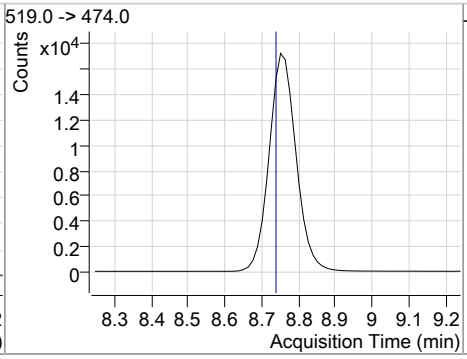


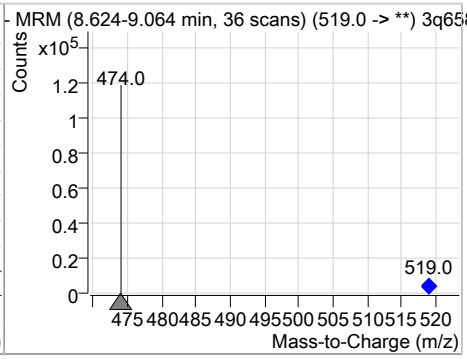




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.41	8.75	0.01	87534				

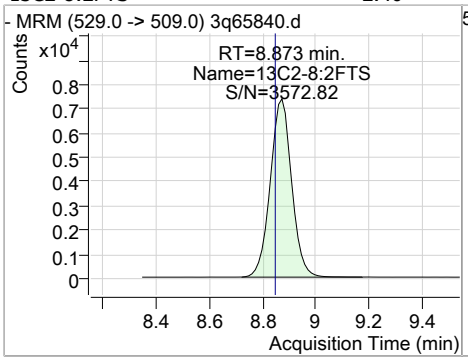


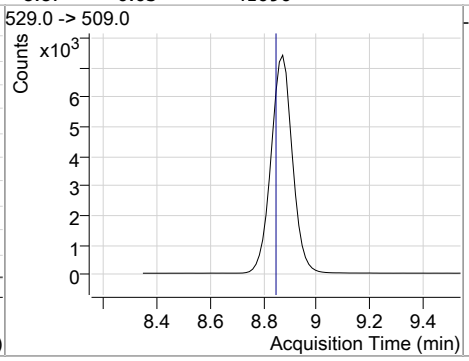


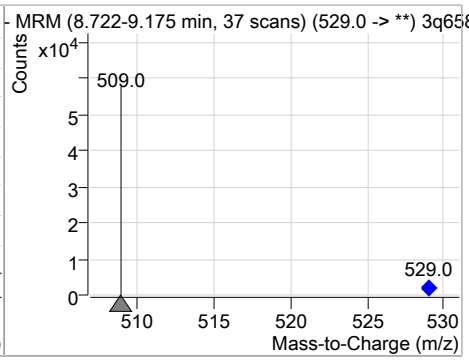


Perfluorinated Compounds by LC/MS/MS

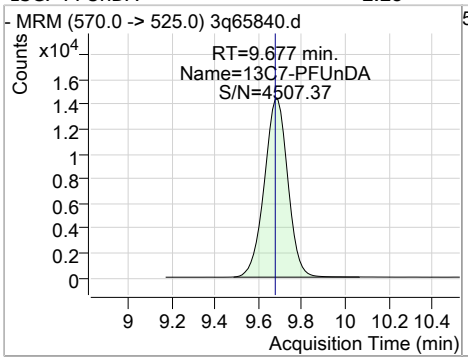
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.40	8.87	0.03	41090				

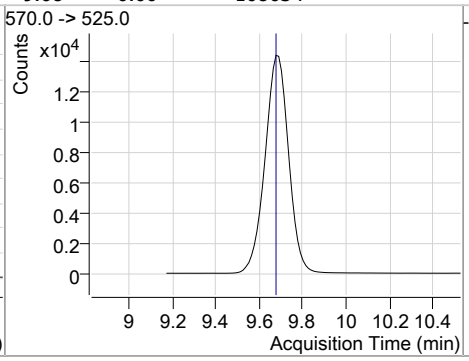


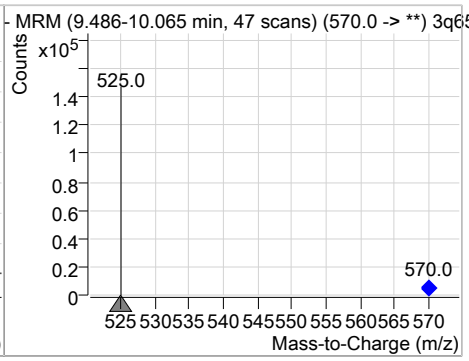




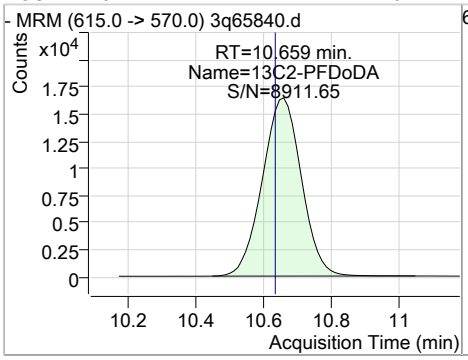
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.28	9.68	0.00	108634				

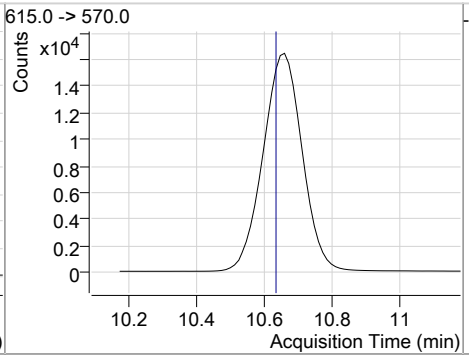


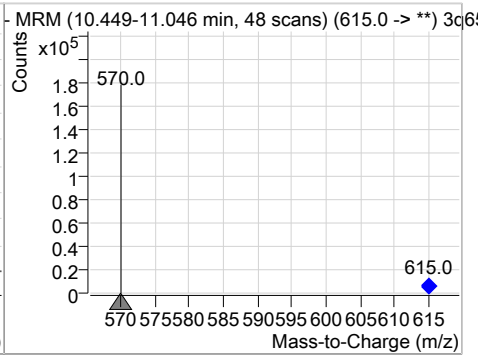




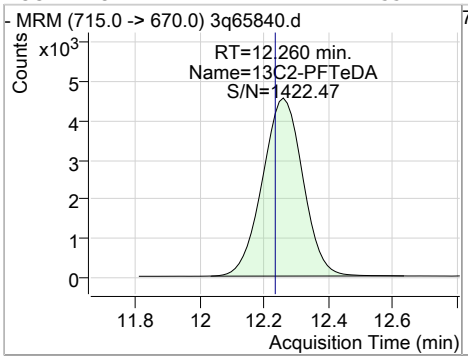
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.16	10.66	0.03	131158				

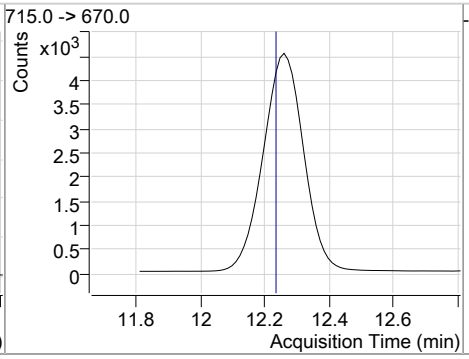


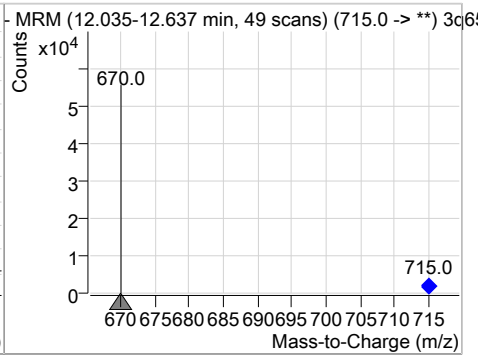




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	1.55	12.26	0.03	39457				







Manual Integration Approval Summary

Sample Number: FA98286-42
Lab FileID: 3Q65840.D
Injection Time: 09/15/22 23:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:07 Norman Farmer
Supervisor approved: 09/19/22 16:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.41	Split peak
Perfluorohexanoic acid	307-24-4		5.81	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:11

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65713.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 3:15:13 AM
Sample Name : fa98286-43
Vial : P6-C2
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,110,,,1,1,water

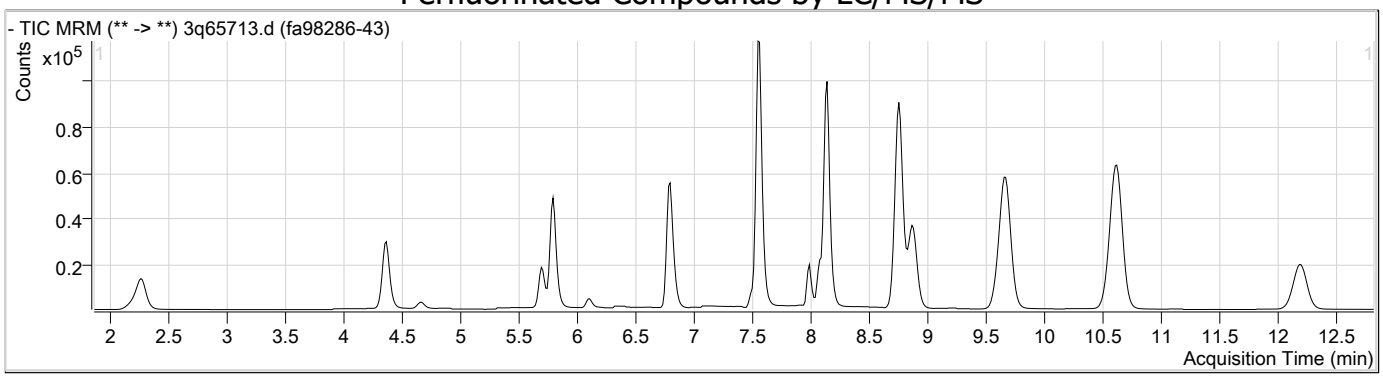
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.252	217.0 -> 172.0	95641	20.00	µg/L	-0.113
M5-PFPeA	4.361	268.0 -> 223.0	130945	20.00	µg/L	-0.050
M5-PFHxA	5.787	318.0 -> 273.0	181299	20.00	µg/L	-0.026
M4-PFHpA	6.780	367.0 -> 322.0	201697	20.00	µg/L	-0.013
M8-PFOA	7.547	421.0 -> 376.0	309007	20.00	µg/L	-0.013
M9-PFNA	8.138	472.0 -> 427.0	338234	20.00	µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	440586	20.00	µg/L	0.013
M7-PFUnDA	9.652	570.0 -> 525.0	422737	20.00	µg/L	-0.025
M2-PFDoDA	10.609	615.0 -> 570.0	484265	20.00	µg/L	-0.025
M2-PFTeDA	12.173	715.0 -> 670.0	167224	20.00	µg/L	-0.063
M8-FOSA	7.478	506.0 -> 78.0	18757	20.00	µg/L	-0.013
M3-PFBS	4.654	302.0 -> 99.0	12272	20.00	µg/L	-0.038
M3-PFHxS	6.809	402.0 -> 99.0	18076	20.00	µg/L	-0.013
M8-PFOS	8.098	507.0 -> 99.0	25326	20.00	µg/L	-0.013
M2-4:2FTS	5.683	329.0 -> 309.0	68008	20.00	µg/L	-0.025
M2-6:2FTS	7.558	429.0 -> 409.0	118579	20.00	µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	189839	20.00	µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	52294	20.00	µg/L	-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	14849	20.00	µg/L	-0.013
M3-MeFOSA	7.829	515.0 -> 169.0	111	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	46734	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.683	329.0 -> 309.0	68008	11.78	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.9%		
13C2-6:2FTS	7.558	429.0 -> 409.0	118579	15.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%		
13C2-8:2FTS	8.860	529.0 -> 509.0	189839	13.06	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.3%		
13C2-PFDoDA	10.609	615.0 -> 570.0	484265	8.95	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 44.8%		
13C2-PFTeDA	12.173	715.0 -> 670.0	167224	7.38	µg/L	-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 36.9%		
13C3-PFBS	4.654	302.0 -> 99.0	12272	11.60	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.0%		
13C3-PFHxS	6.809	402.0 -> 99.0	18076	13.99	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
13C4-PFBA	2.252	217.0 -> 172.0	95641	12.02	µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.1%		
13C4-PFHpA	6.780	367.0 -> 322.0	201697	13.38	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%		
13C5-PFHxA	5.787	318.0 -> 273.0	181299	11.94	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.7%		
13C5-PFPeA	4.361	268.0 -> 223.0	130945	11.30	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.5%		
13C6-PFDA	8.751	519.0 -> 474.0	440586	13.87	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

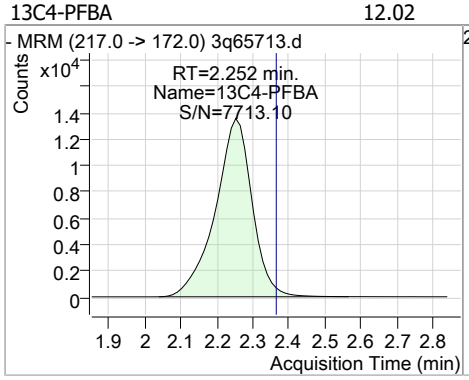
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.3%		
13C7-PFUnDA	9.652	570.0 -> 525.0	422737	10.24 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.2%		
13C8-FOSA	7.478	506.0 -> 78.0	18757	4.97 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 24.8%		
13C8-PFOA	7.547	421.0 -> 376.0	309007	15.35 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C8-PFOS	8.098	507.0 -> 99.0	25326	12.91 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%		
13C9-PFNA	8.138	472.0 -> 427.0	338234	15.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%		
d3-MeFOSAA	7.978	573.0 -> 419.0	52294	11.63 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.1%		
13C3-HFPO-DA	6.105	287.0 -> 169.0	14845	11.57 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.8%		
d3-MeFOSA	7.829	515.0 -> 169.0	111	0.12 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.6%		
d5-EtFOSAA	8.065	589.0 -> 419.0	46695	9.97 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.9%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.788	313.0 -> 269.0	2127	0.22 µg/L		99
PFHxS	6.810	399.0 -> 80.0	1419	0.67 µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	7.548	413.0 -> 369.0	5552	0.29 µg/L	m	99
PFOS	7.907	499.0 -> 80.0	1266	0.61 µg/L	m	80
PFPeA	4.351	263.0 -> 219.0	1033	0.18 µg/L	m	100
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

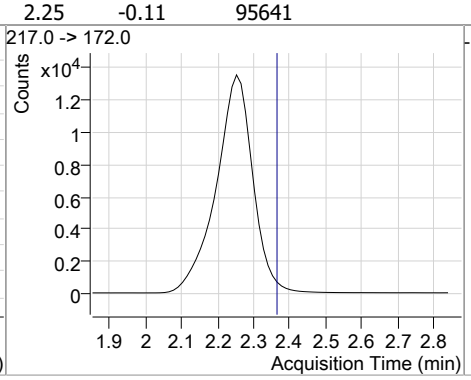
 # = Qualifier out of range, m = manually integrated, + = Area summed

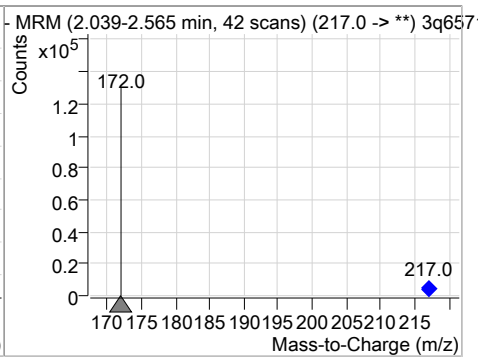
Perfluorinated Compounds by LC/MS/MS



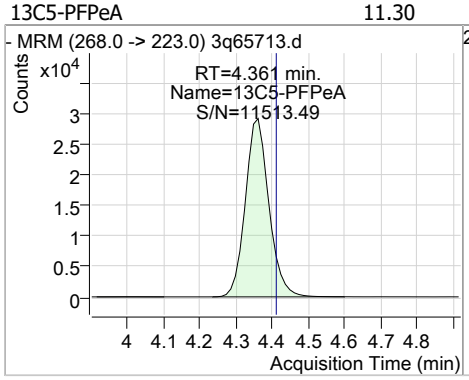
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.02	2.25	-0.11	95641				

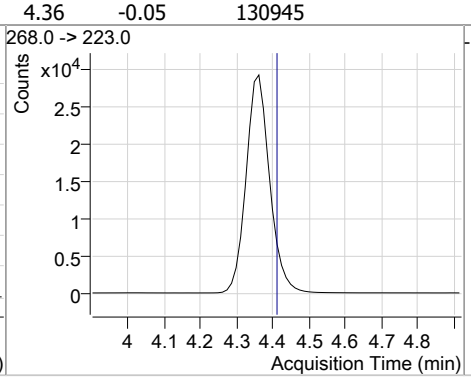


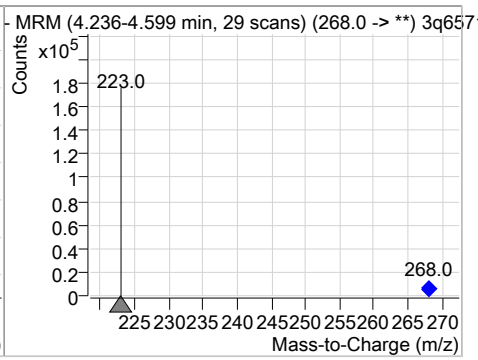




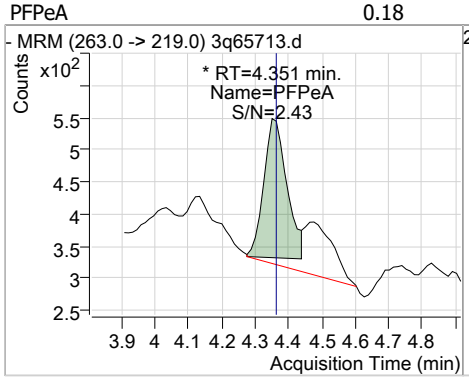
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.30	4.36	-0.05	130945				

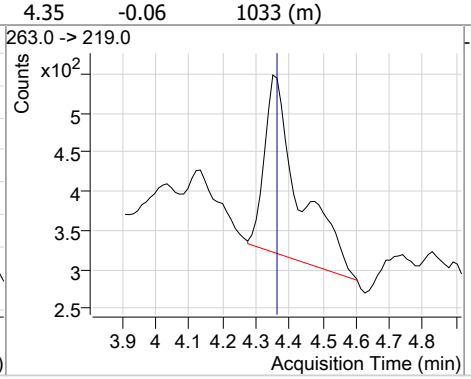


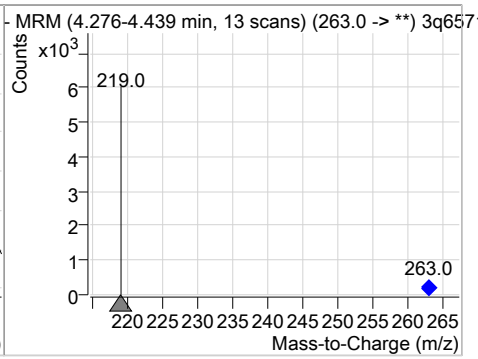




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.18	4.35	-0.06	1033 (m)				

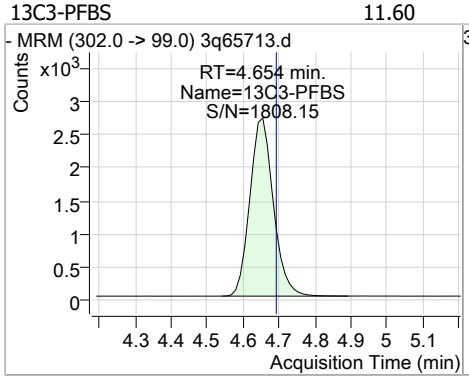


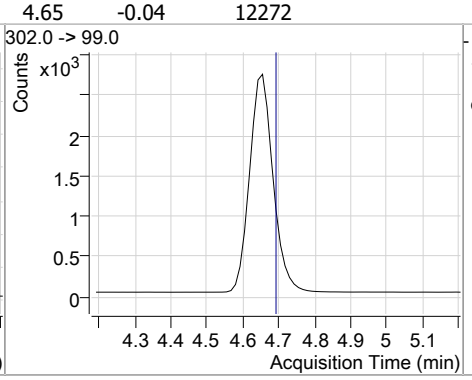


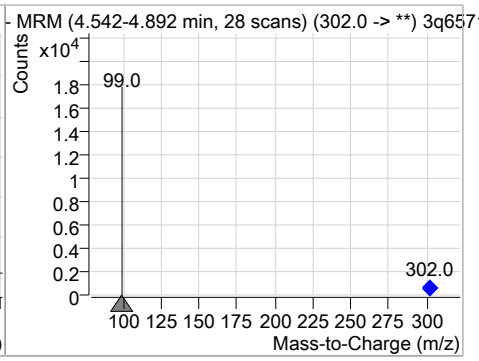


Perfluorinated Compounds by LC/MS/MS

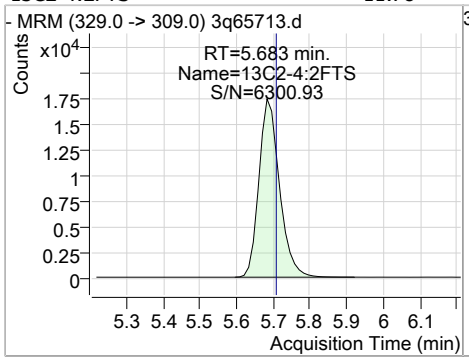
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.60	4.65	-0.04	12272				

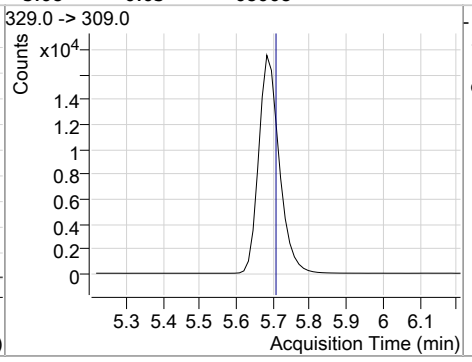


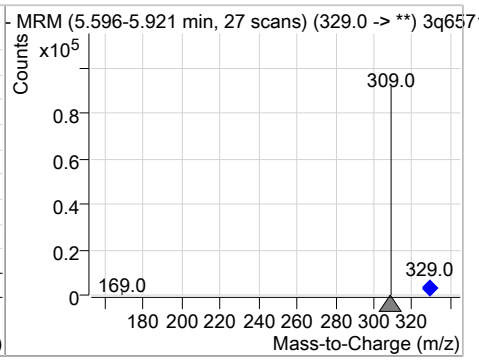




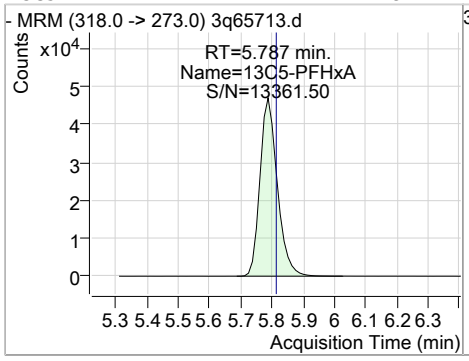
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.78	5.68	-0.03	68008				

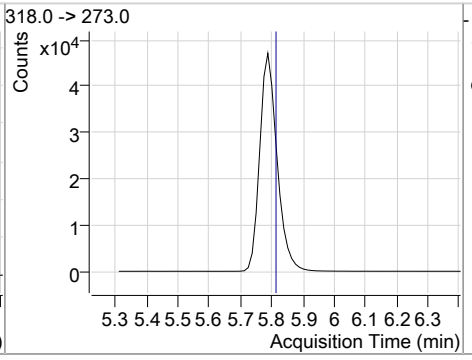


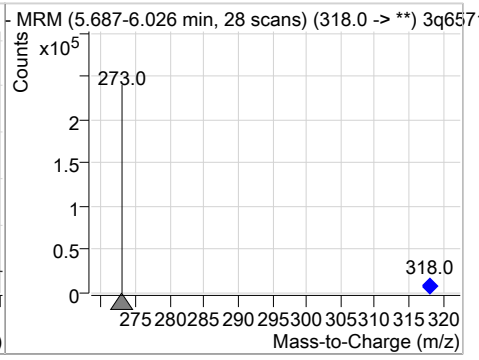




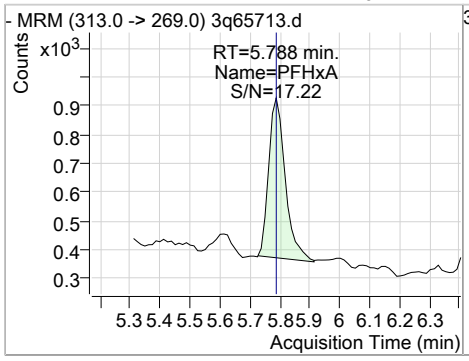
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.94	5.79	-0.03	181299				

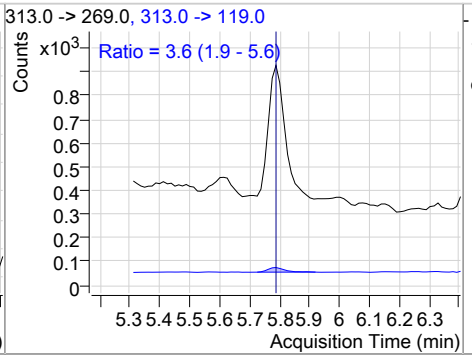


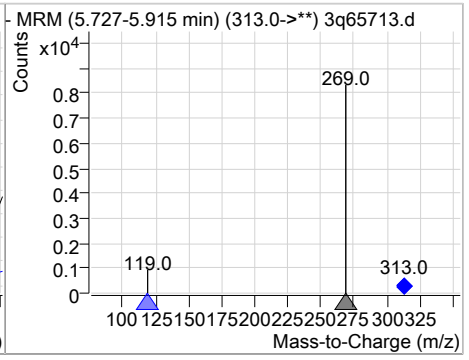




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.22	5.79	-0.03	2127	313.0 -> 119.0	3.6	1.9	5.6

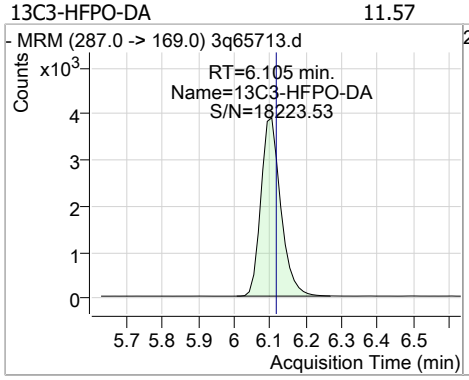


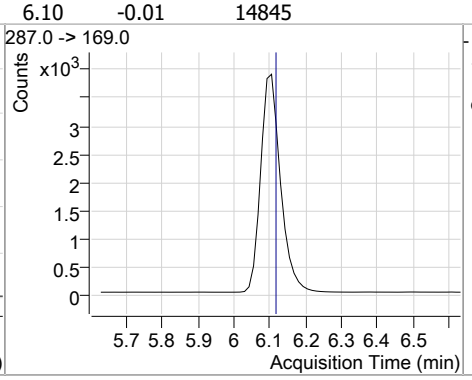


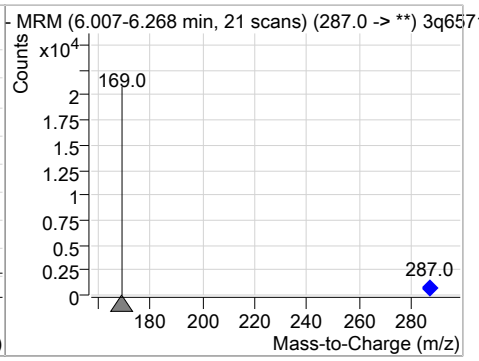


Perfluorinated Compounds by LC/MS/MS

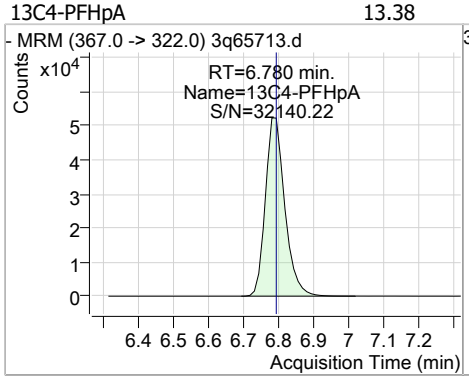
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.57	6.10	-0.01	14845				

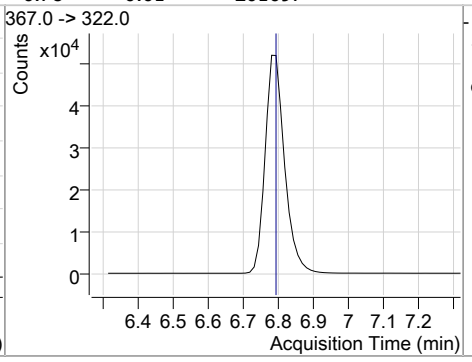


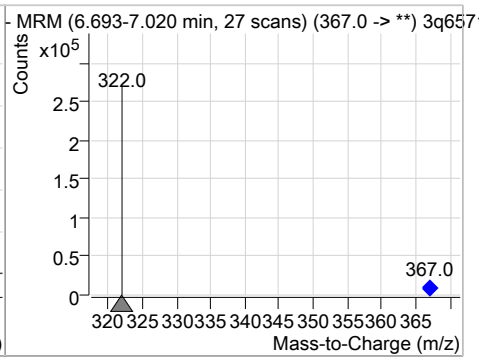




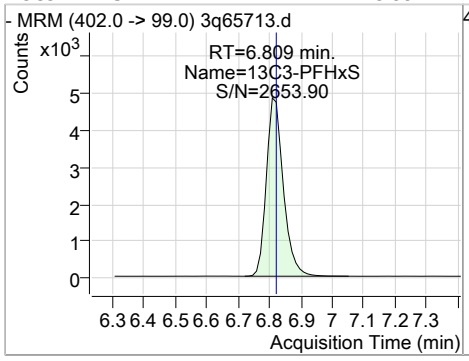
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.38	6.78	-0.01	201697				

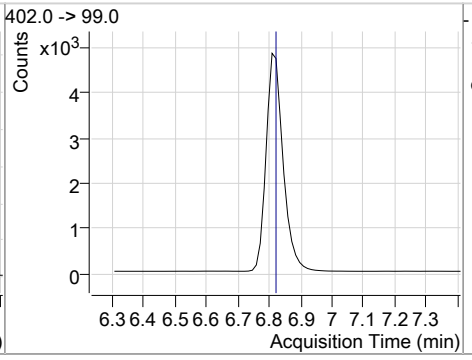


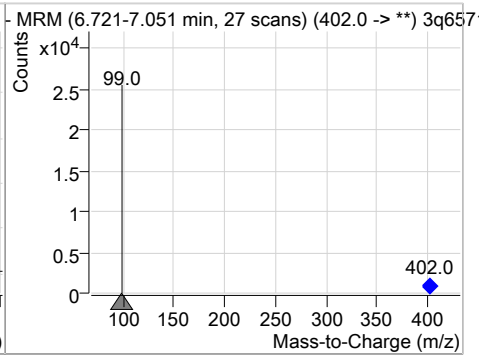




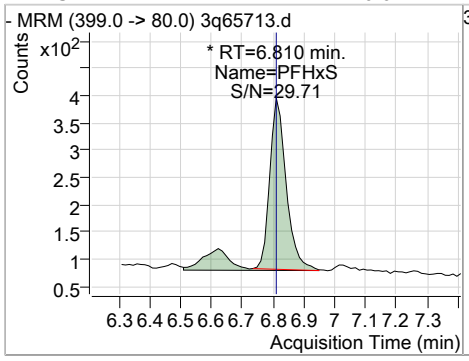
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.99	6.81	-0.01	18076				

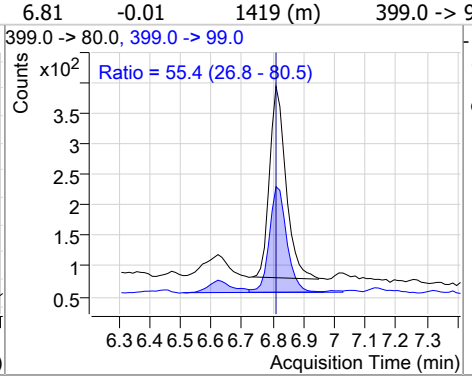


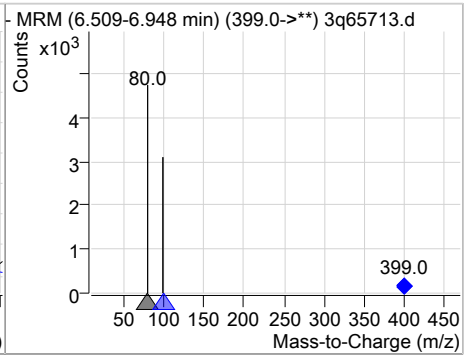




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.67	6.81	-0.01	1419 (m)	399.0 -> 99.0	55.4	26.8	80.5

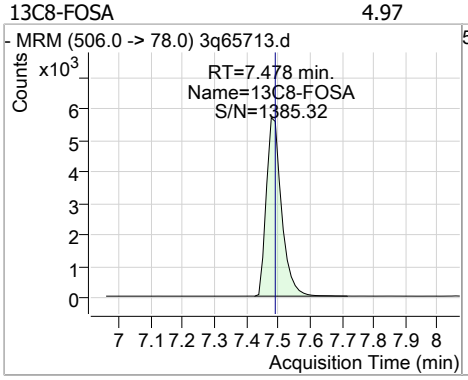


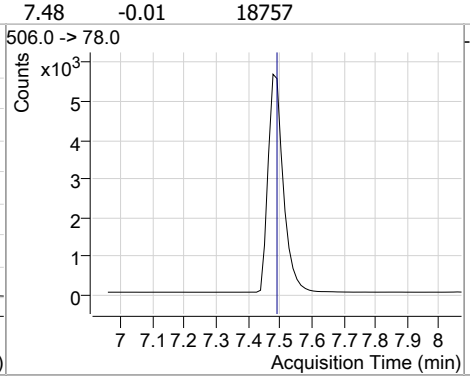


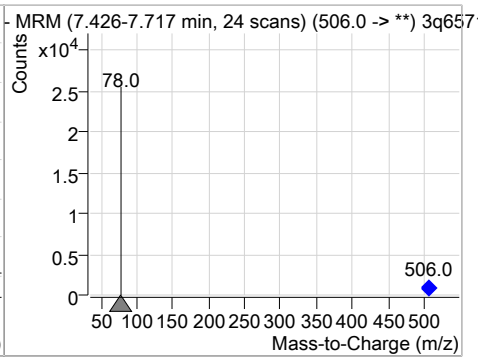


Perfluorinated Compounds by LC/MS/MS

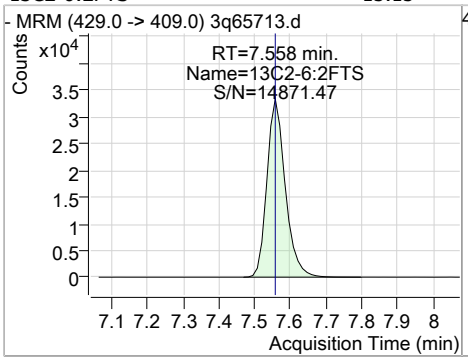
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.97	7.48	-0.01	18757				

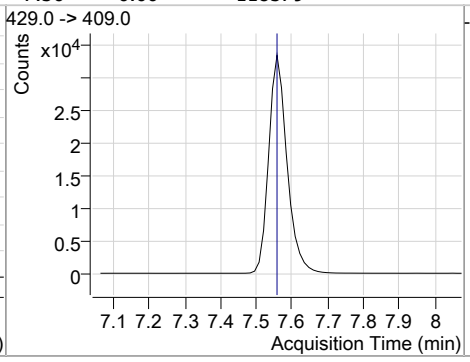


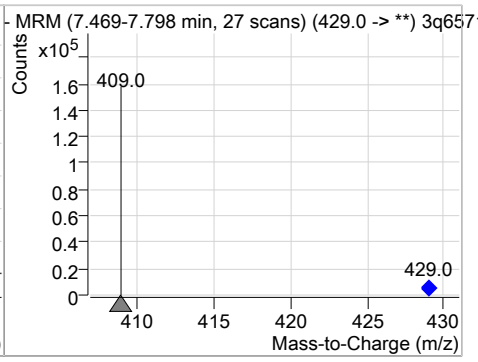




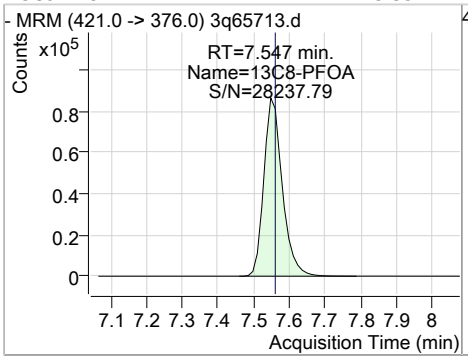
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.15	7.56	0.00	118579				

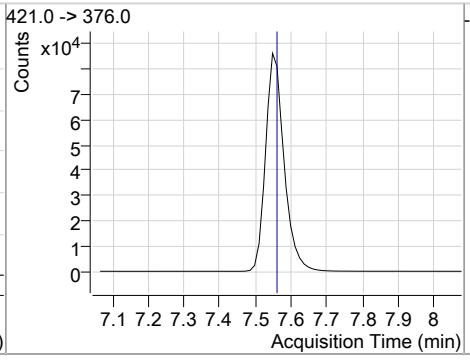


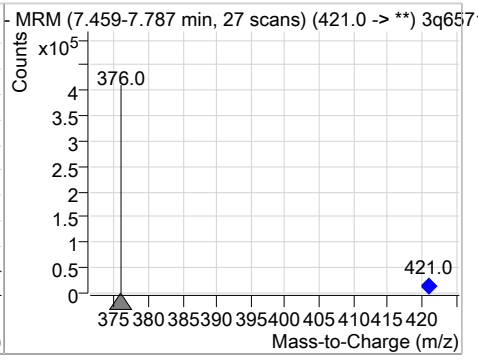




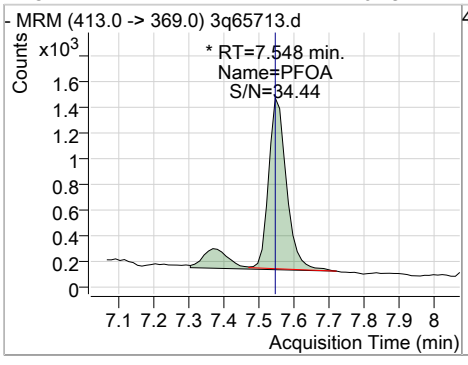
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.35	7.55	-0.01	309007				

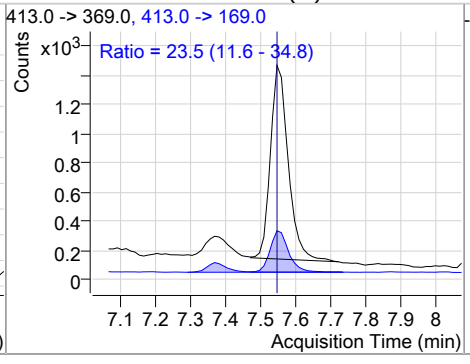


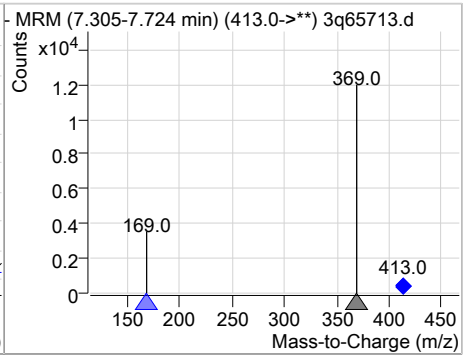




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.29	7.55	-0.01	5552 (m)	413.0 -> 169.0	23.5	11.6	34.8

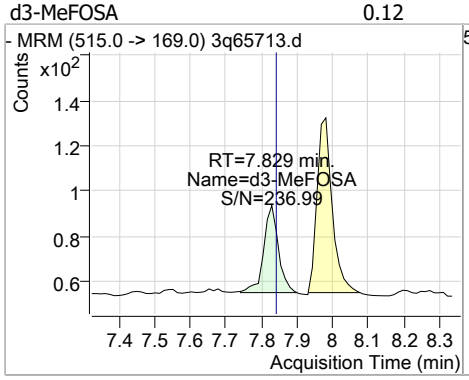


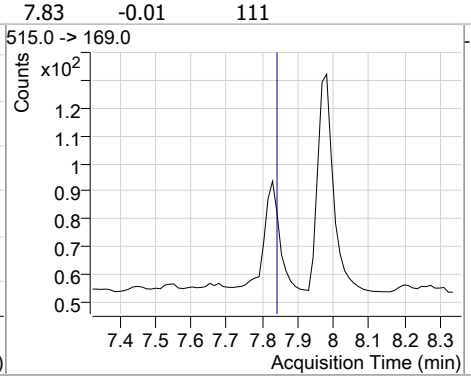


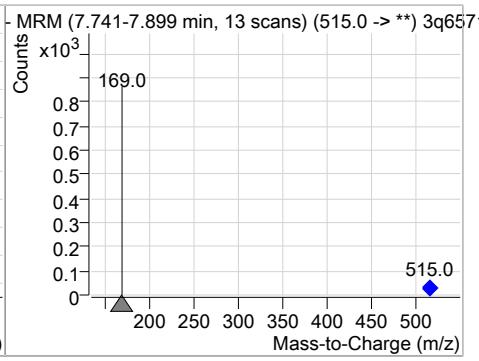


Perfluorinated Compounds by LC/MS/MS

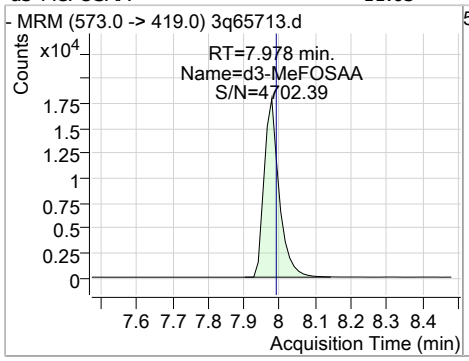
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.12	7.83	-0.01	111				

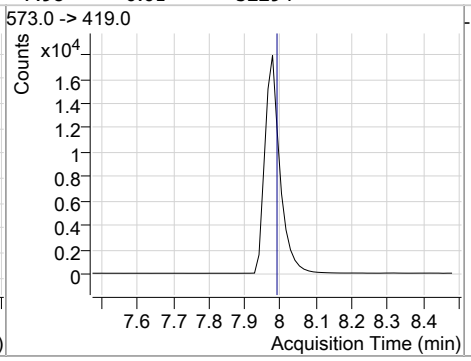


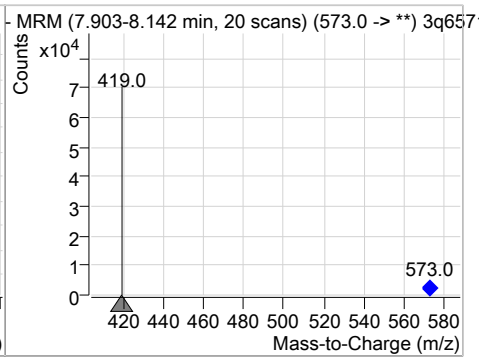




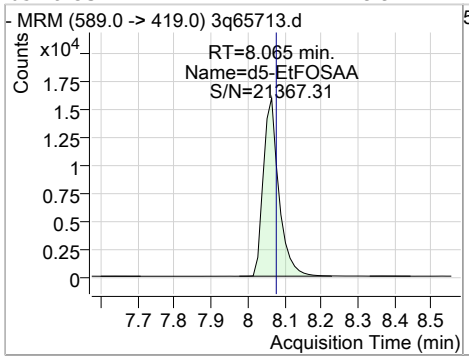
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.63	7.98	-0.01	52294				

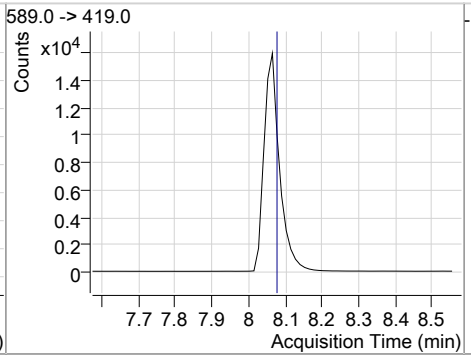


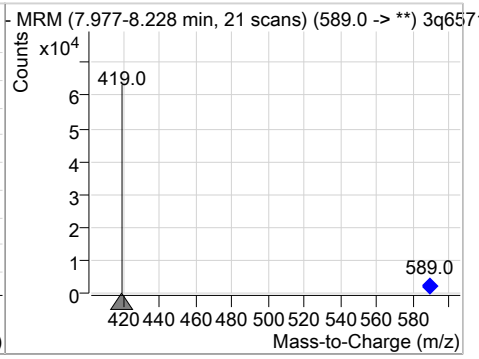




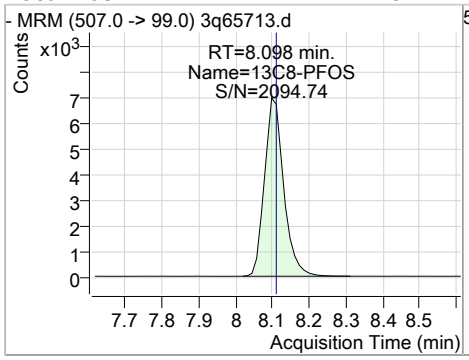
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	9.97	8.06	-0.01	46695				

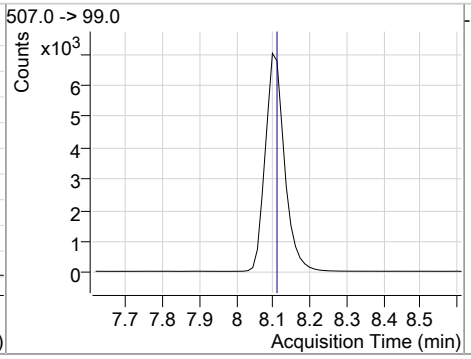


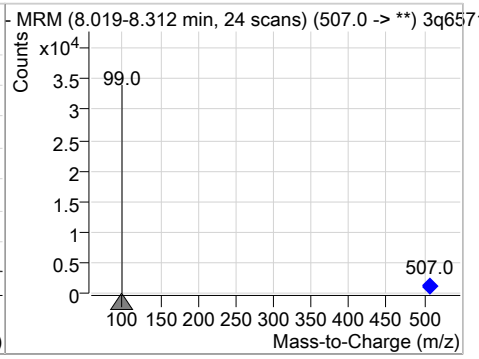




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.91	8.10	-0.01	25326				

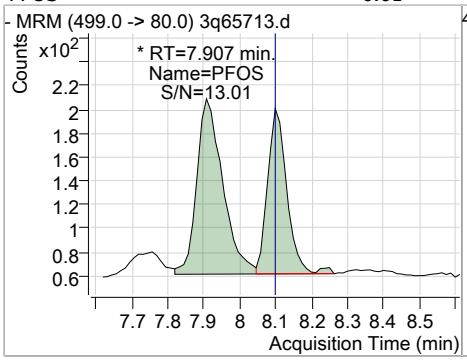


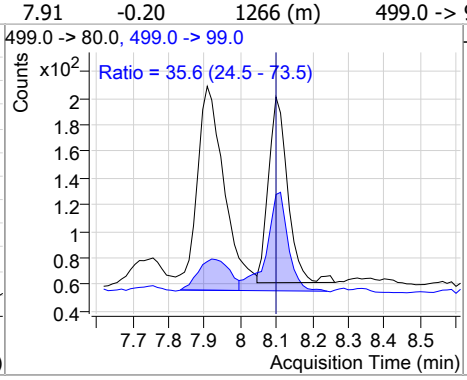


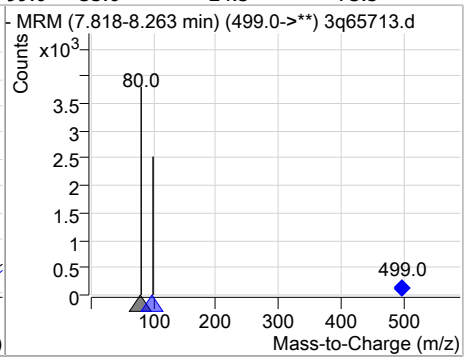


Perfluorinated Compounds by LC/MS/MS

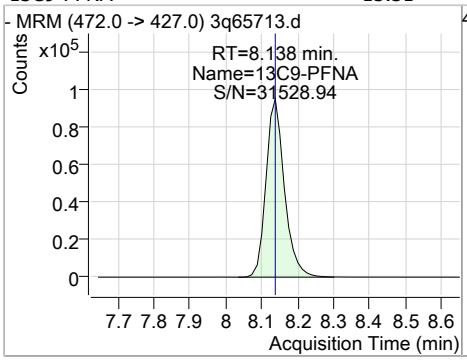
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.61	7.91	-0.20	1266 (m)	499.0 -> 99.0	35.6	24.5	73.5

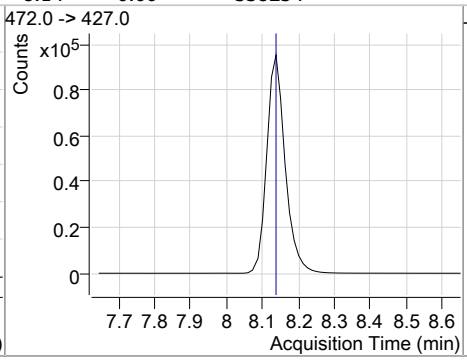


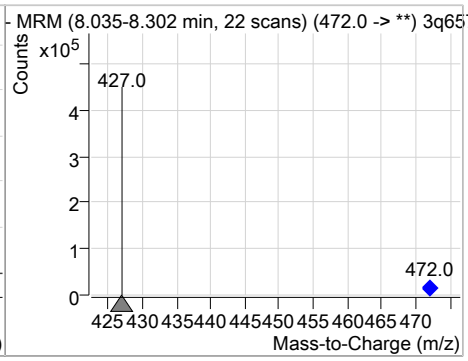




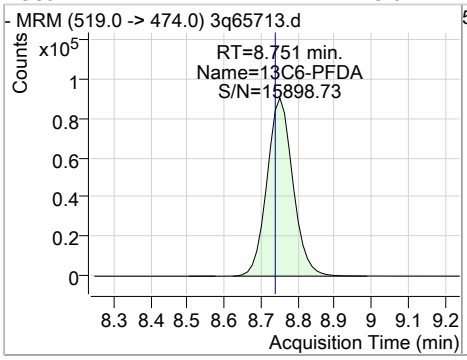
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.31	8.14	0.00	338234				

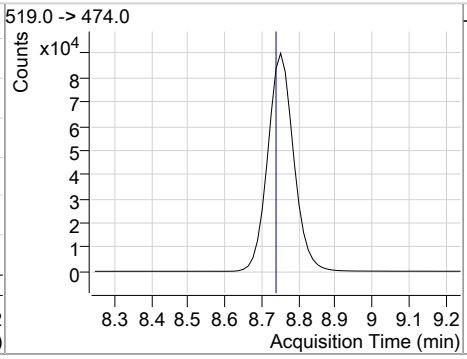


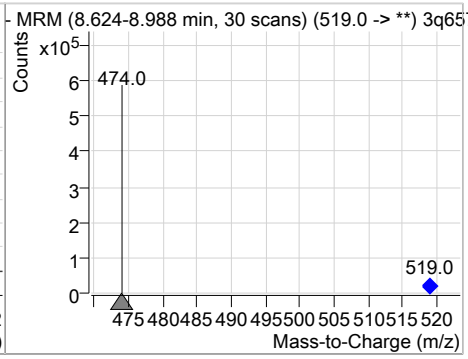




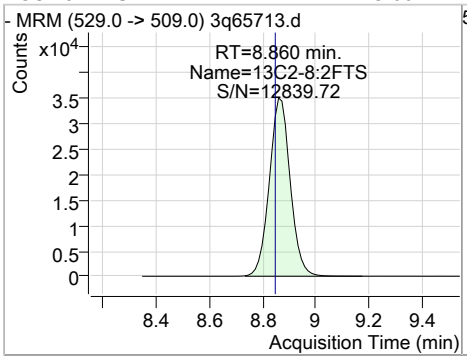
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.87	8.75	0.01	440586				

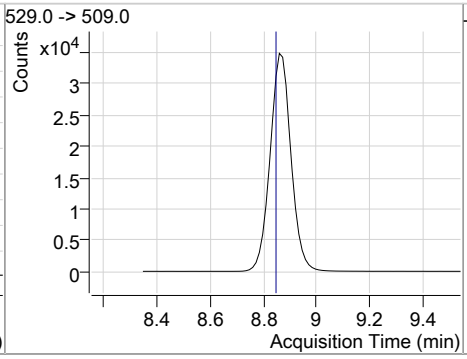


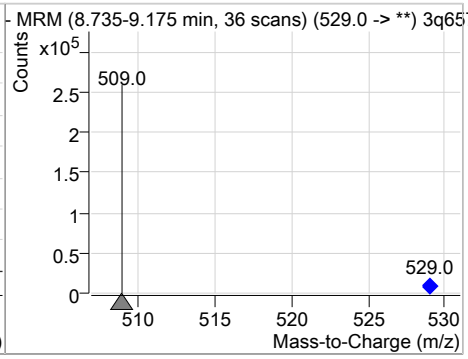




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.06	8.86	0.01	189839				

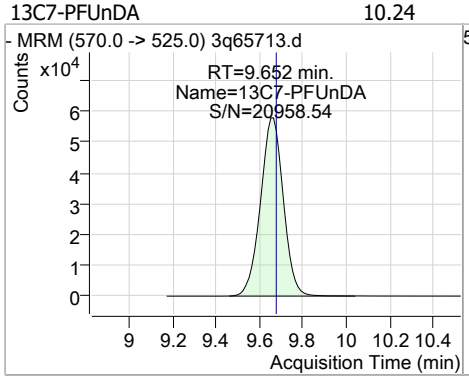


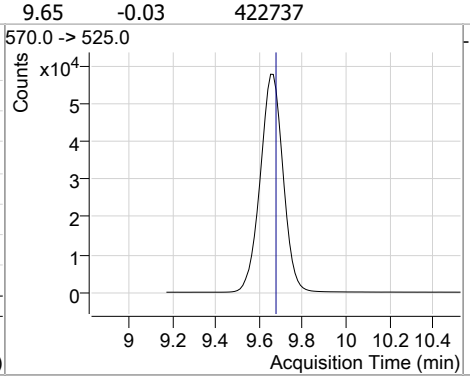


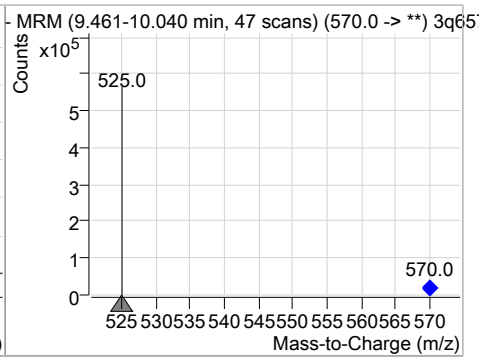


Perfluorinated Compounds by LC/MS/MS

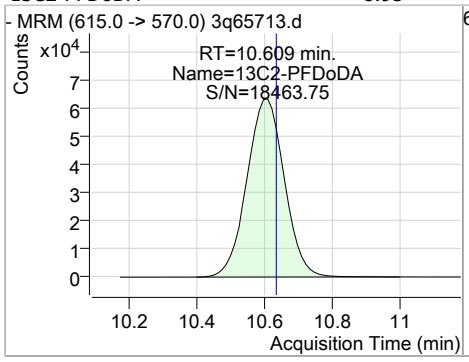
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.24	9.65	-0.03	422737				

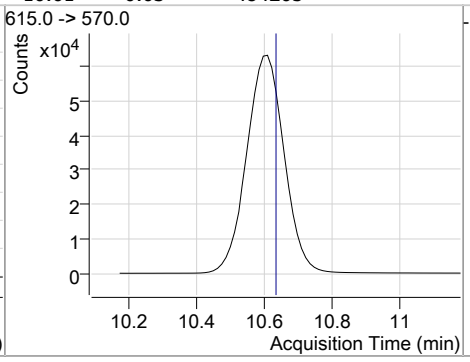


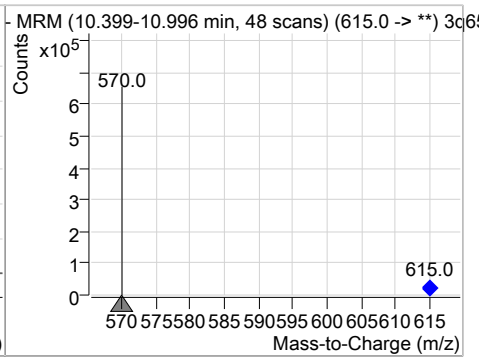




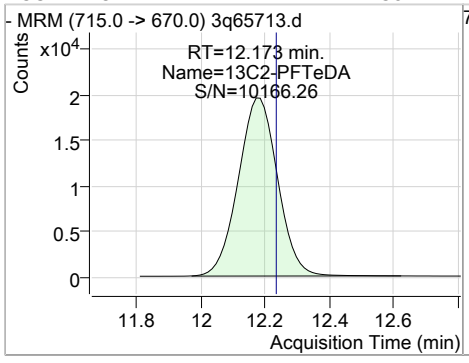
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	8.95	10.61	-0.03	484265				

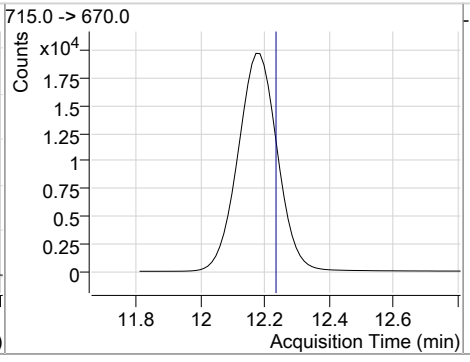


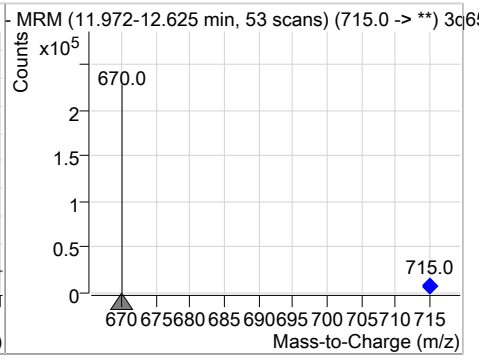




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	7.38	12.17	-0.06	167224				







Manual Integration Approval Summary

Sample Number: FA98286-43
Lab FileID: 3Q65713.D
Injection Time: 09/14/22 03:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:07 Norman Farmer
Supervisor approved: 09/19/22 16:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		4.35	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
Perfluorooctanoic acid	335-67-1		7.55	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.91	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q65841.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 11:22:17 PM
Sample Name	:	fa98286-43
Vial	:	P2-C3
DA Method File	:	ID_091522_S3Q900.quantmethod.xml
Batch Name	:	S3Q900.batch.bin
Sample Information	:	op92762,S3Q900,110,,,1,5,water

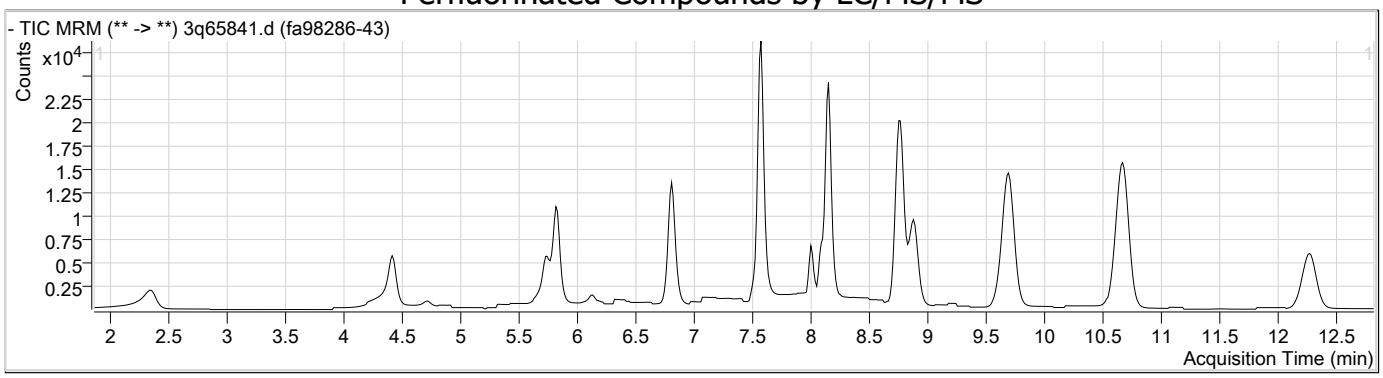
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.340	217.0 -> 172.0	19488	20.00	µg/L	-0.025
M5-PFPeA	4.411	268.0 -> 223.0	36212	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	50393	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	52446	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	73328	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	79661	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	102798	20.00	µg/L	0.013
M7-PFUnDA	9.689	570.0 -> 525.0	106644	20.00	µg/L	0.013
M2-PFDoDA	10.659	615.0 -> 570.0	123669	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	51006	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	5068	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	3488	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	4547	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	5986	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	19027	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	29337	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	49062	20.00	µg/L	0.025
M3-MeFOSAA	7.991	573.0 -> 419.0	15029	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	4130	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	118	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	14004	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	19027	3.10	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.5%		
13C2-6:2FTS	7.571	429.0 -> 409.0	29337	3.40	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%		
13C2-8:2FTS	8.873	529.0 -> 509.0	49062	2.87	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%		
13C2-PFDoDA	10.659	615.0 -> 570.0	123669	2.04	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.2%		
13C2-PFTeDA	12.260	715.0 -> 670.0	51006	2.00	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%		
13C3-PFBS	4.704	302.0 -> 99.0	3488	3.15	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.8%		
13C3-PFHxS	6.834	402.0 -> 99.0	4547	3.38	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.9%		
13C4-PFBA	2.340	217.0 -> 172.0	19488	2.35	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.8%		
13C4-PFHpA	6.805	367.0 -> 322.0	52446	3.33	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.6%		
13C5-PFHxA	5.813	318.0 -> 273.0	50393	3.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.7%		
13C5-PFPeA	4.411	268.0 -> 223.0	36212	2.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 15.0%		
13C6-PFDA	8.751	519.0 -> 474.0	102798	2.83	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

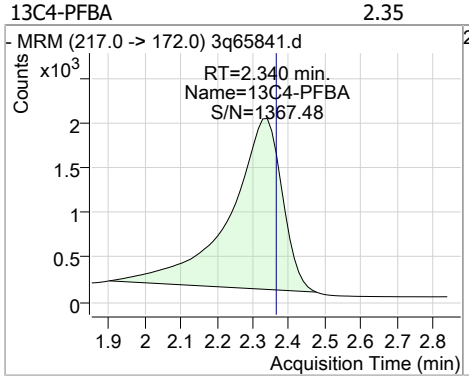
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C7-PFUnDA	9.689	570.0 -> 525.0	106644	2.24 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.2%		
13C8-FOSA	7.503	506.0 -> 78.0	5068	1.42 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.1%		
13C8-PFOA	7.573	421.0 -> 376.0	73328	3.45 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.2%		
13C8-PFOS	8.111	507.0 -> 99.0	5986	2.89 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.5%		
13C9-PFNA	8.150	472.0 -> 427.0	79661	3.34 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.7%		
d3-MeFOSAA	7.991	573.0 -> 419.0	15029	2.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	4123	3.19 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%		
d3-MeFOSA	7.841	515.0 -> 169.0	118	0.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 0.7%		
d5-EtFOSAA	8.077	589.0 -> 419.0	14005	2.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.3%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	8.151	463.0 -> 419.0	0	0.00 µg/L	m	1
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

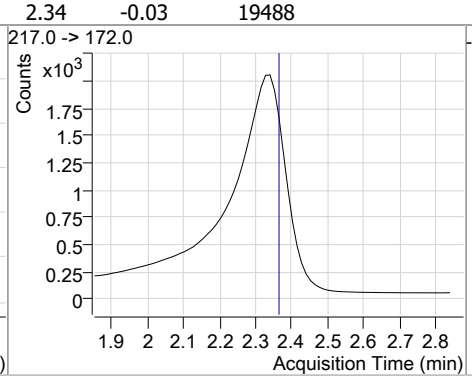
 # = Qualifier out of range, m = manually integrated, + = Area summed

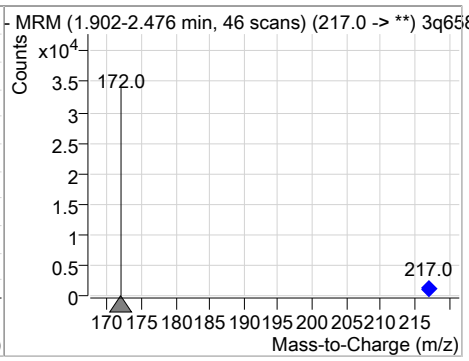
Perfluorinated Compounds by LC/MS/MS



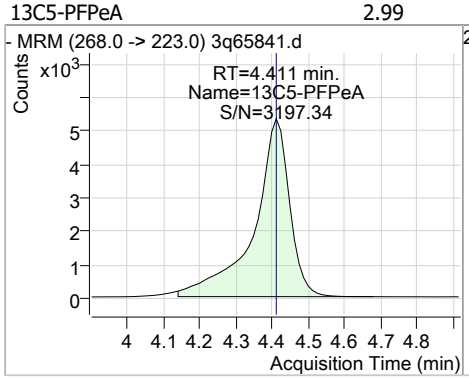
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.35	2.34	-0.03	19488				

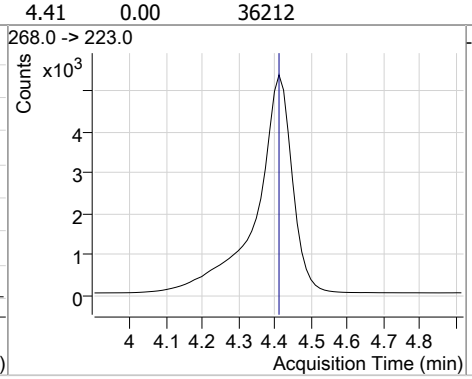


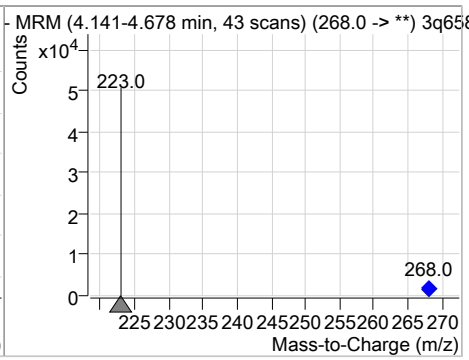




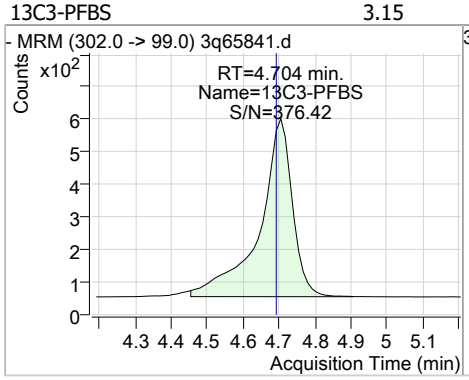
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.99	4.41	0.00	36212				

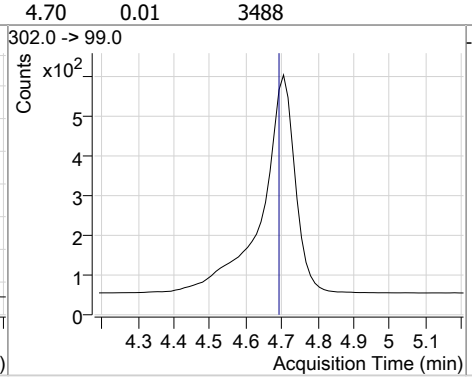


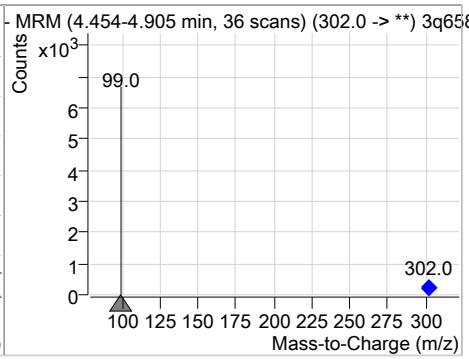




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	3.15	4.70	0.01	3488				

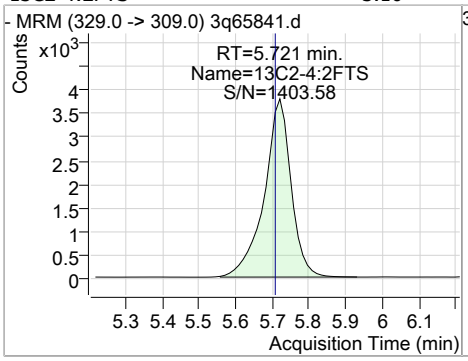


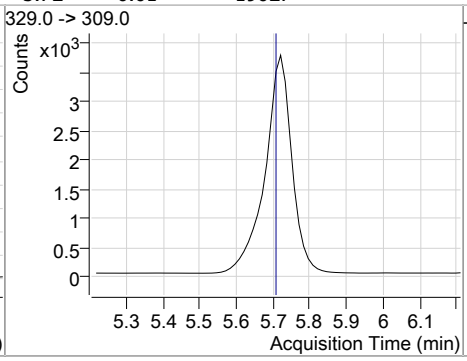


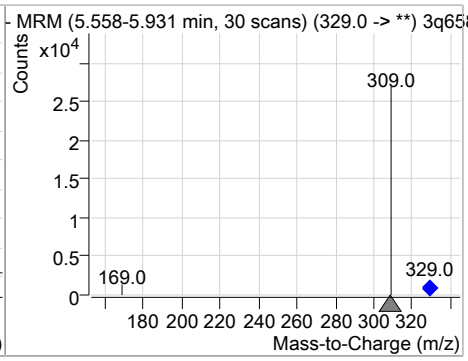


Perfluorinated Compounds by LC/MS/MS

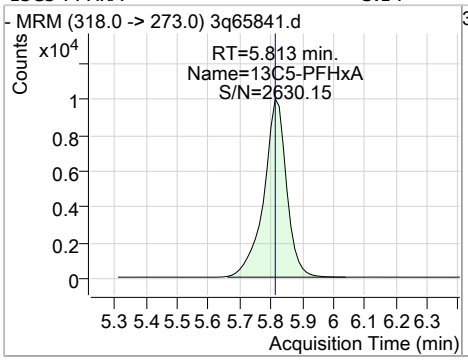
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	3.10	5.72	0.01	19027				

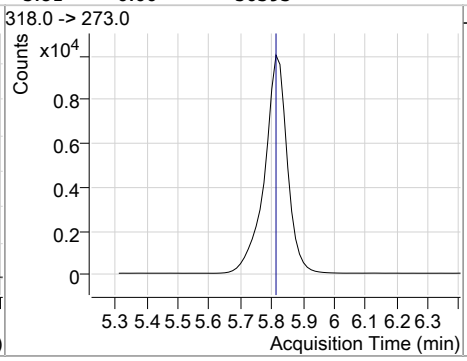


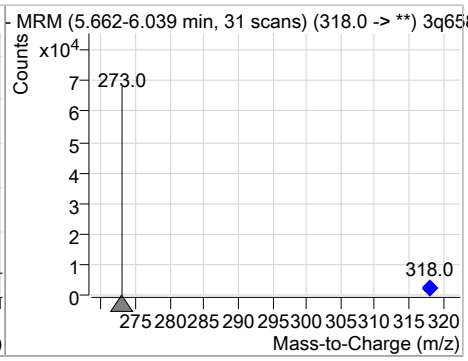




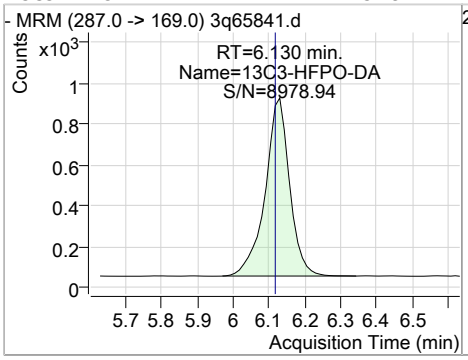
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	3.14	5.81	0.00	50393				

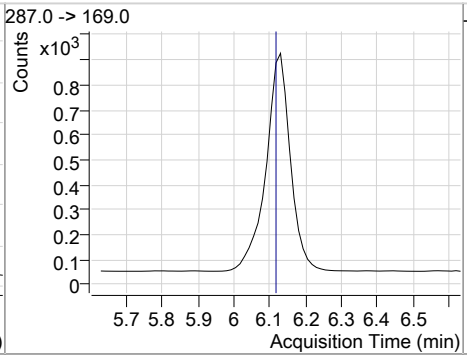


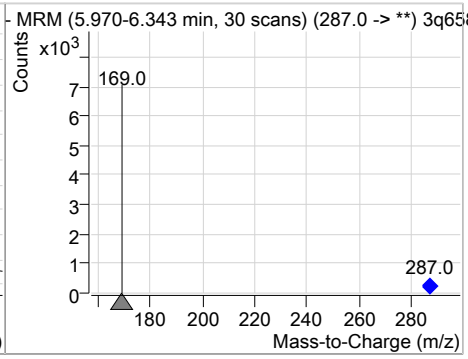




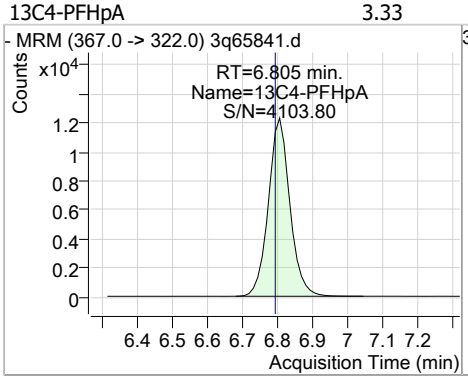
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	3.19	6.13	0.01	4123				

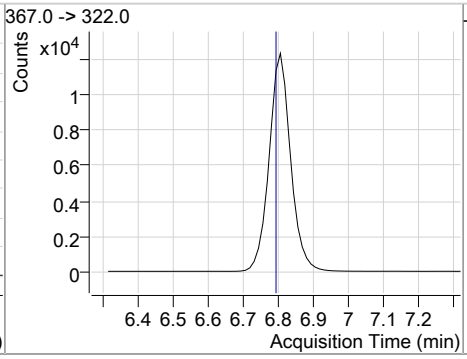


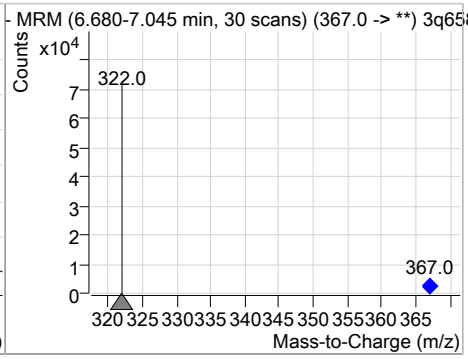




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	3.33	6.81	0.01	52446				

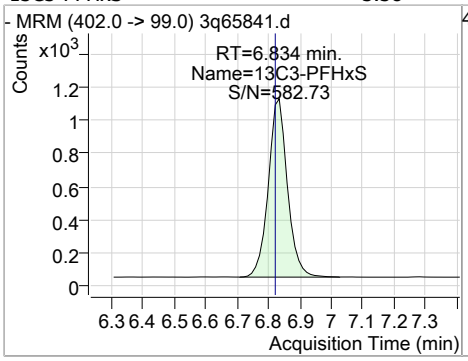


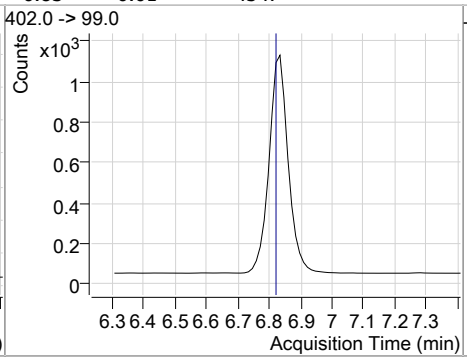


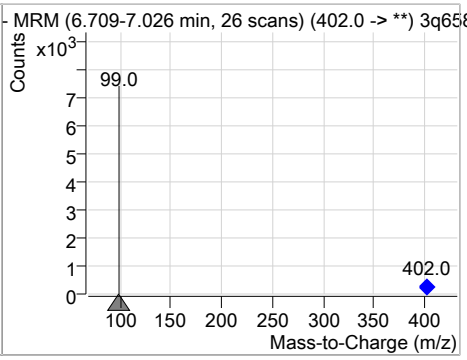


Perfluorinated Compounds by LC/MS/MS

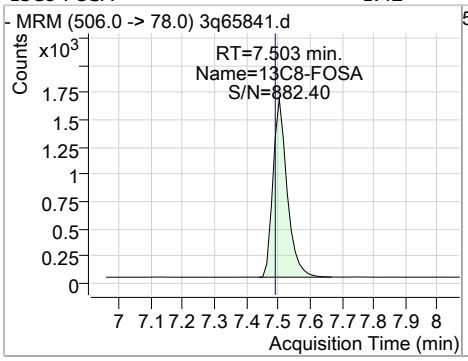
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	3.38	6.83	0.01	4547				

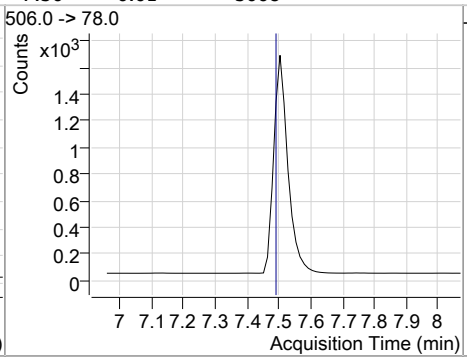


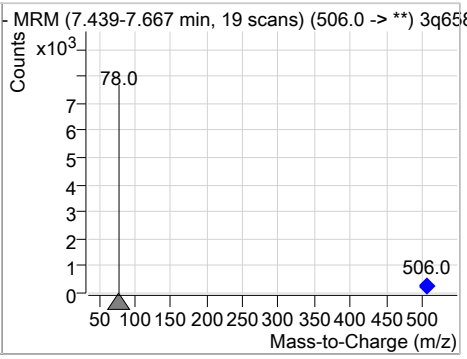




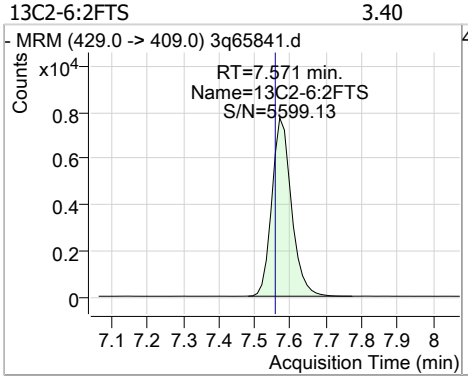
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.42	7.50	0.01	5068				

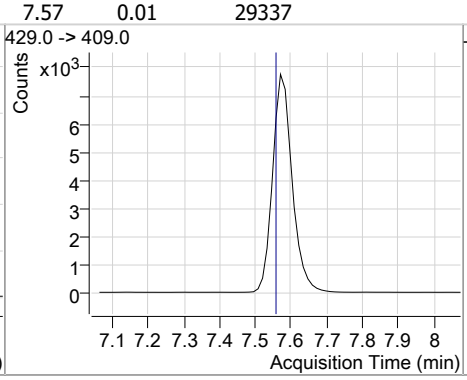


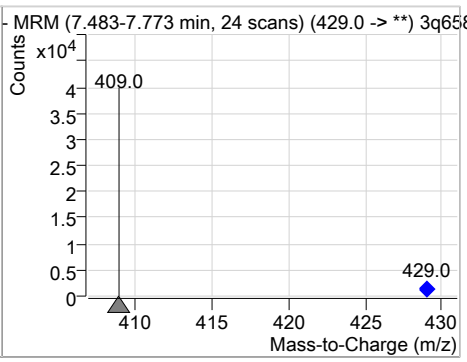




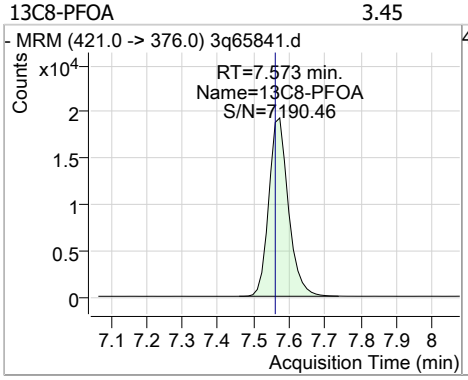
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	3.40	7.57	0.01	29337				

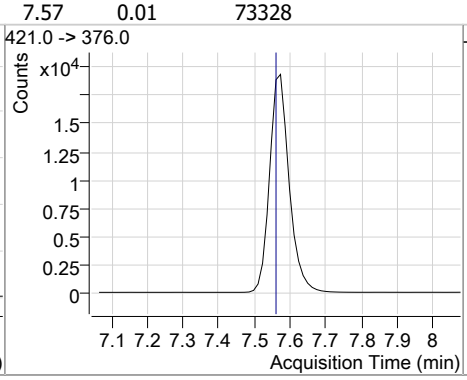


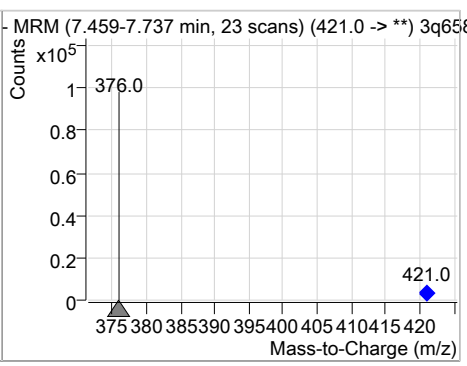




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	3.45	7.57	0.01	73328				

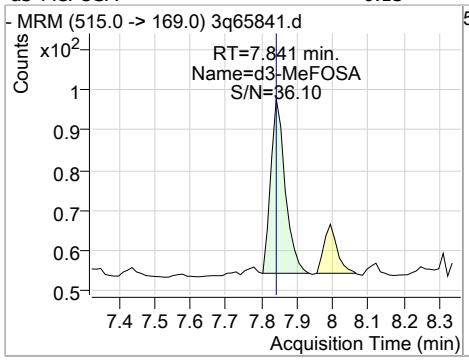


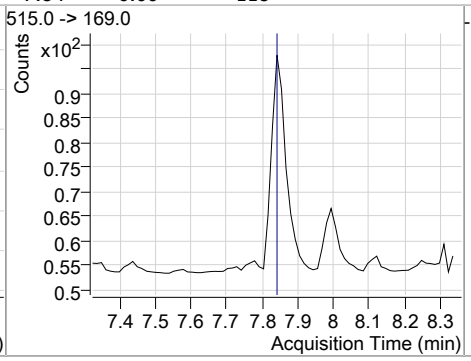


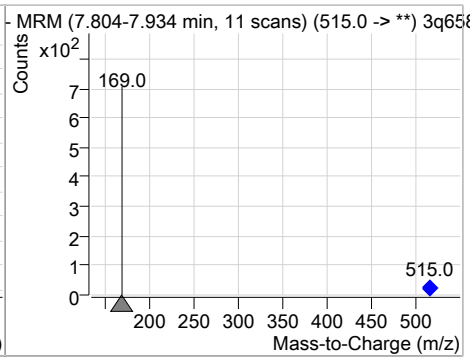


Perfluorinated Compounds by LC/MS/MS

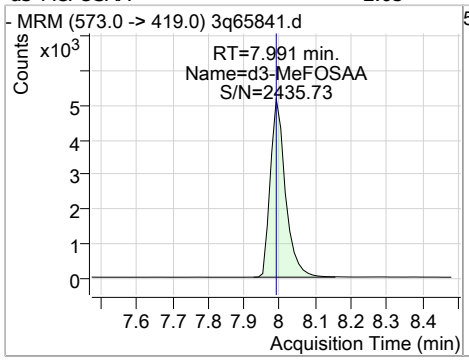
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.15	7.84	0.00	118				

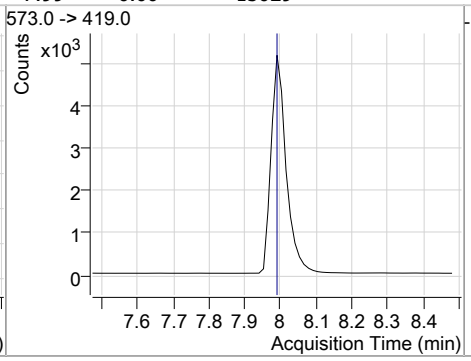


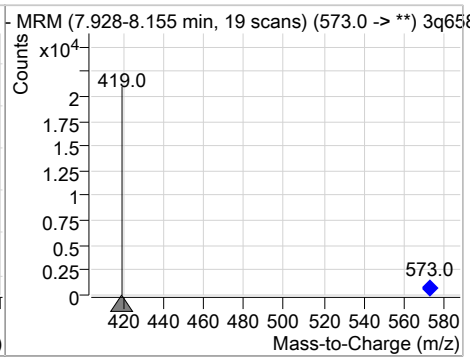




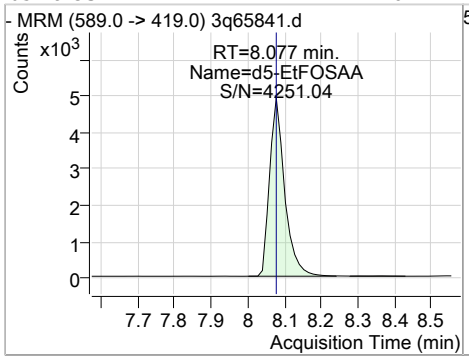
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.65	7.99	0.00	15029				

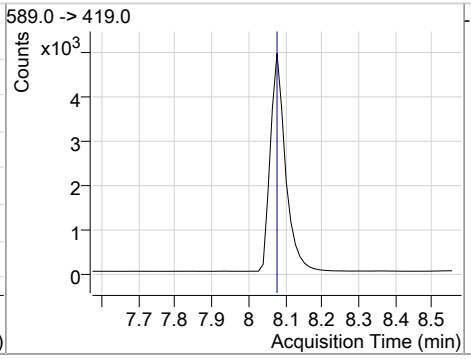


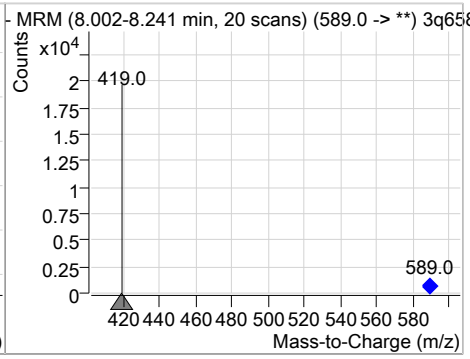




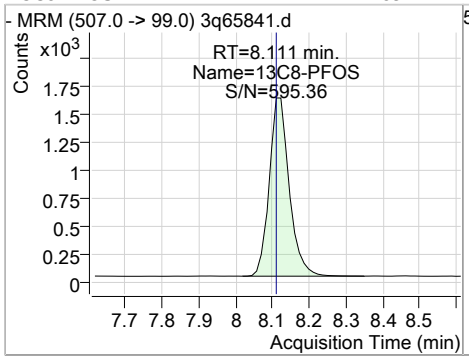
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.46	8.08	0.00	14005				

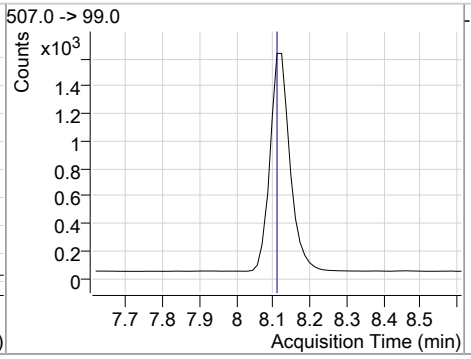


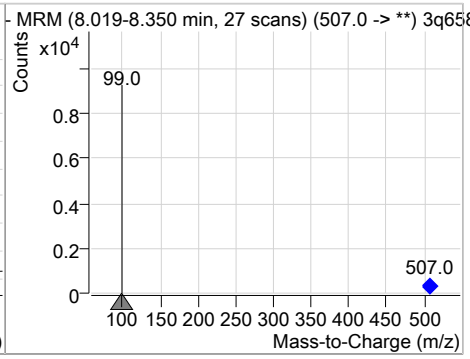




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.89	8.11	0.00	5986				

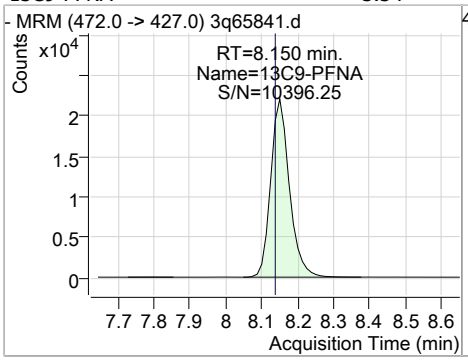


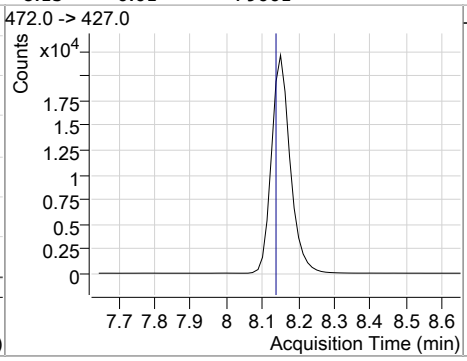


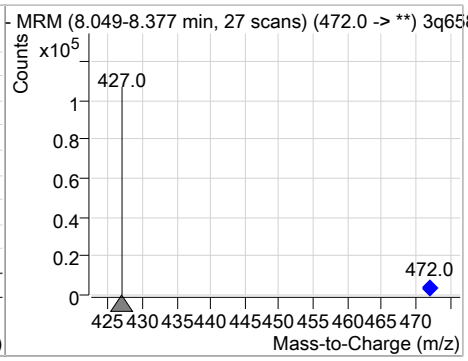


Perfluorinated Compounds by LC/MS/MS

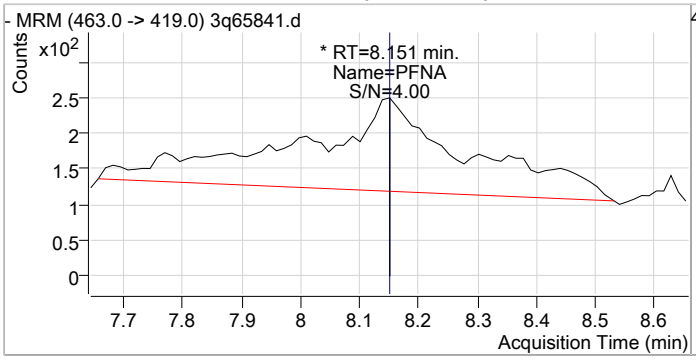
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	3.34	8.15	0.01	79661				

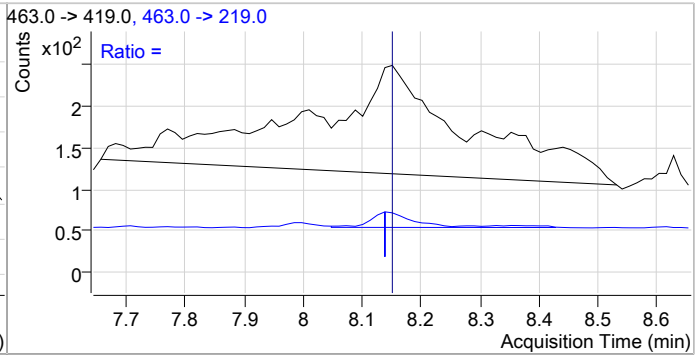




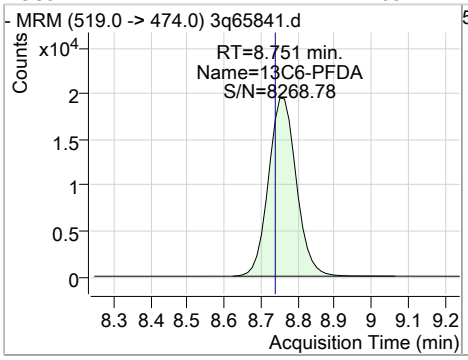


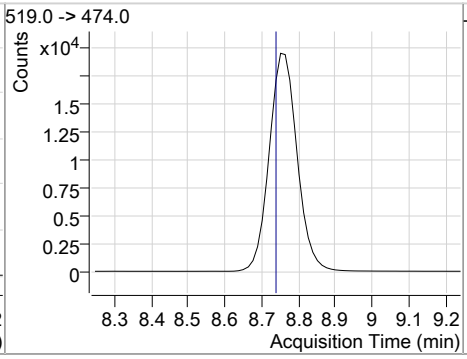
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	d	0		0	463.0 -> 219.0		12.5	37.6

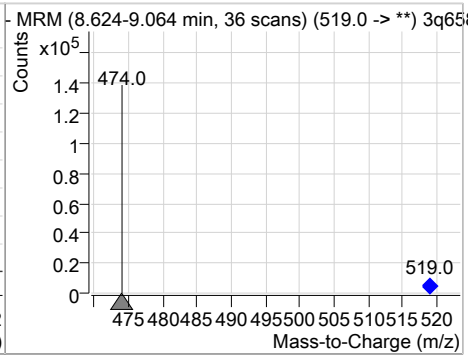




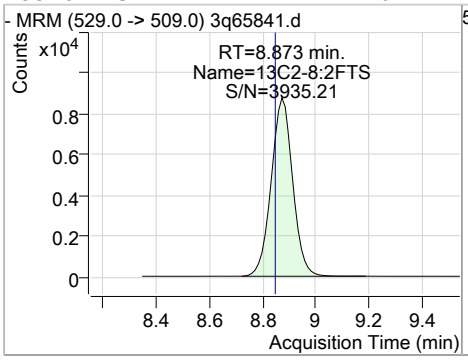
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.83	8.75	0.01	102798				

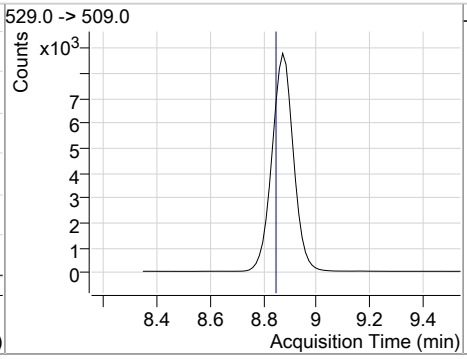


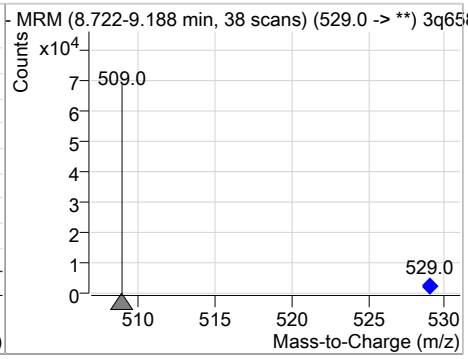




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.87	8.87	0.03	49062				

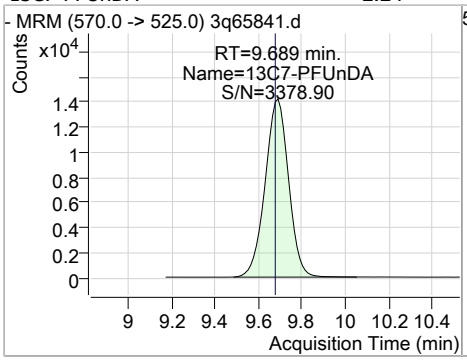


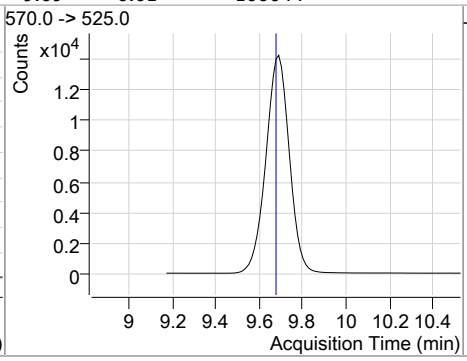


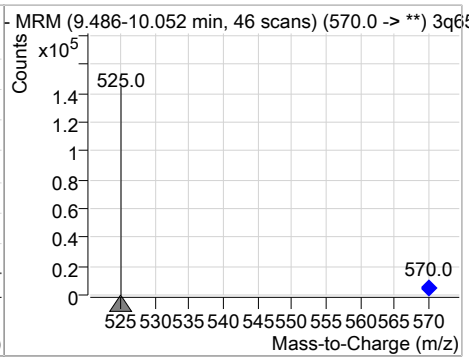


Perfluorinated Compounds by LC/MS/MS

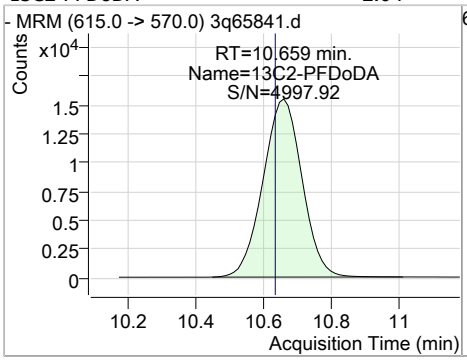
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.24	9.69	0.01	106644				

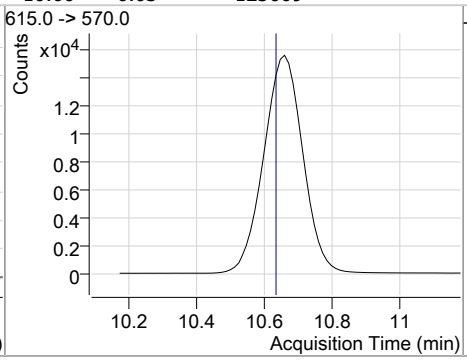


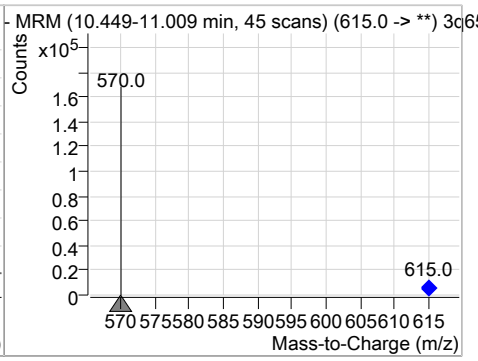




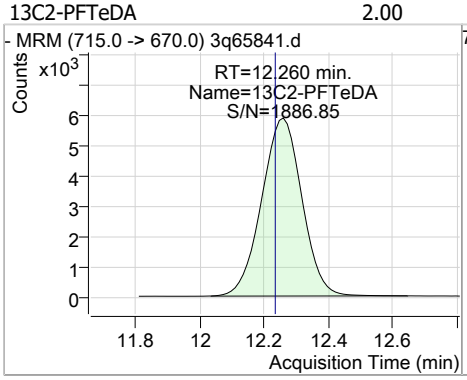
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.04	10.66	0.03	123669				

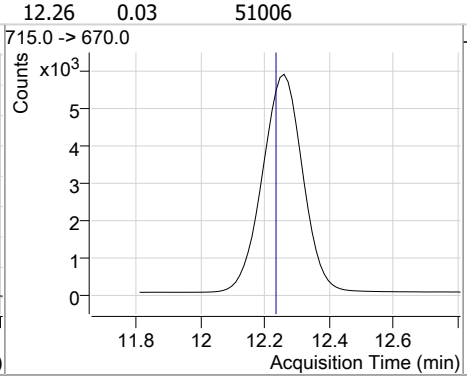


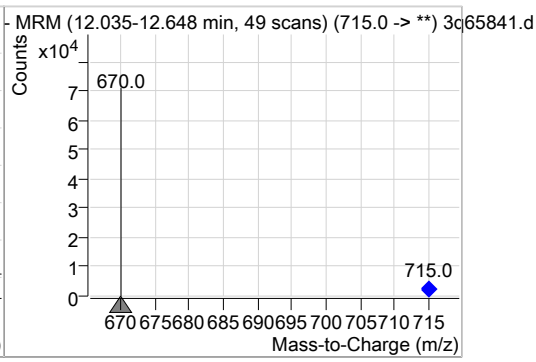




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.00	12.26	0.03	51006				







Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/19/22 15:31

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65716.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 4:13:53 AM
Sample Name : fa98286-44
Vial : P6-C3
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,110,,,1,1,water

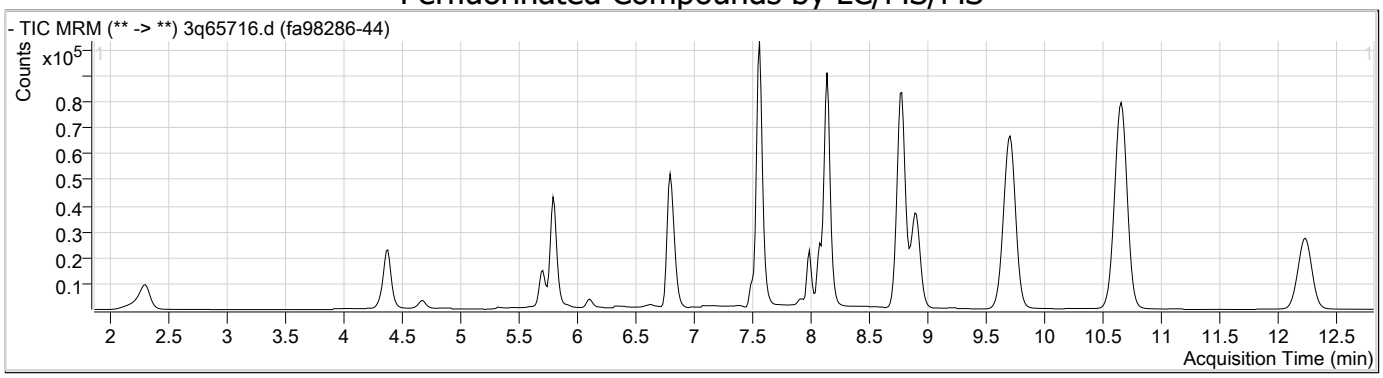
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.290	217.0 -> 172.0	77317	20.00	µg/L	-0.075
M5-PFPeA	4.374	268.0 -> 223.0	110086	20.00	µg/L	-0.038
M5-PFHxA	5.787	318.0 -> 273.0	153868	20.00	µg/L	-0.026
M4-PFHpA	6.793	367.0 -> 322.0	174986	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	256968	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	294170	20.00	µg/L	0.000
M6-PFDA	8.776	519.0 -> 474.0	425899	20.00	µg/L	0.038
M7-PFUnDA	9.702	570.0 -> 525.0	487954	20.00	µg/L	0.025
M2-PFDoDA	10.646	615.0 -> 570.0	606399	20.00	µg/L	0.013
M2-PFTeDA	12.223	715.0 -> 670.0	232170	20.00	µg/L	-0.013
M8-FOSA	7.491	506.0 -> 78.0	28979	20.00	µg/L	0.000
M3-PFBS	4.667	302.0 -> 99.0	10857	20.00	µg/L	-0.025
M3-PFHxS	6.822	402.0 -> 99.0	15653	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	24015	20.00	µg/L	0.000
M2-4:2FTS	5.696	329.0 -> 309.0	57204	20.00	µg/L	-0.013
M2-6:2FTS	7.558	429.0 -> 409.0	101278	20.00	µg/L	0.000
M2-8:2FTS	8.896	529.0 -> 509.0	197112	20.00	µg/L	0.048
M3-MeFOSAA	7.978	573.0 -> 419.0	59155	20.00	µg/L	-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	12788	20.00	µg/L	-0.013
M3-MeFOSA	7.829	515.0 -> 169.0	411	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	57119	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.696	329.0 -> 309.0	57204	9.90	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.5%		
13C2-6:2FTS	7.558	429.0 -> 409.0	101278	12.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.7%		
13C2-8:2FTS	8.896	529.0 -> 509.0	197112	13.56	µg/L	0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%		
13C2-PFDoDA	10.646	615.0 -> 570.0	606399	11.21	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.0%		
13C2-PFTeDA	12.223	715.0 -> 670.0	232170	10.25	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.2%		
13C3-PFBS	4.667	302.0 -> 99.0	10857	10.26	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.3%		
13C3-PFHxS	6.822	402.0 -> 99.0	15653	12.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.6%		
13C4-PFBA	2.290	217.0 -> 172.0	77317	9.72	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.6%		
13C4-PFHpA	6.793	367.0 -> 322.0	174986	11.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.1%		
13C5-PFHxA	5.787	318.0 -> 273.0	153868	10.13	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.7%		
13C5-PFPeA	4.374	268.0 -> 223.0	110086	9.50	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 47.5%		
13C6-PFDA	8.776	519.0 -> 474.0	425899	13.41	µg/L	0.038

Perfluorinated Compounds by LC/MS/MS

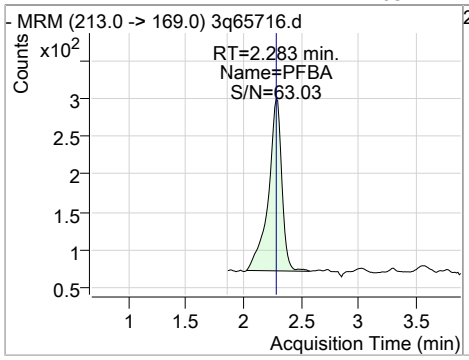
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%			
13C7-PFUnDA	9.702	570.0 -> 525.0	487954	11.82	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.1%			
13C8-FOSA	7.491	506.0 -> 78.0	28979	7.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 38.4%			
13C8-PFOA	7.560	421.0 -> 376.0	256968	12.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.8%			
13C8-PFOS	8.111	507.0 -> 99.0	24015	12.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.2%			
13C9-PFNA	8.138	472.0 -> 427.0	294170	13.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.6%			
d3-MeFOSAA	7.978	573.0 -> 419.0	59155	13.16	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.8%			
13C3-HFPO-DA	6.105	287.0 -> 169.0	12788	9.96	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 49.8%			
d3-MeFOSA	7.829	515.0 -> 169.0	411	0.46	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 2.3%			
d5-EtFOSAA	8.065	589.0 -> 419.0	57134	12.20	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.0%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.283	213.0 -> 169.0	1851	1.05	µg/L		100
PFBS	4.657	299.0 -> 80.0	2419	1.57	µg/L		93
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.794	363.0 -> 319.0	4814	0.38	µg/L	m	99
PFHpS	7.544	449.0 -> 80.0	761	0.49	µg/L	m	88
PFHxA	5.788	313.0 -> 269.0	13928	1.70	µg/L		99
PFHxS	6.810	399.0 -> 80.0	23369	12.80	µg/L	m	98
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.561	413.0 -> 369.0	9180	0.59	µg/L	m	96
PFOS	8.111	499.0 -> 80.0	24980	12.63	µg/L	m	94
PFPeA	4.376	263.0 -> 219.0	3868	0.80	µg/L		100
PFPeS	5.907	349.0 -> 80.0	2288	1.91	µg/L	m	98
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	5.315	298.0 -> 78.0	1017	0.39	µg/L	m	94
FHxSA	6.688	398.0 -> 78.0	1294	0.34	µg/L	m	100

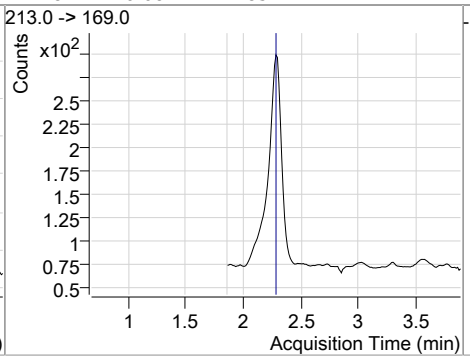
 # = Qualifier out of range, m = manually integrated, + = Area summed

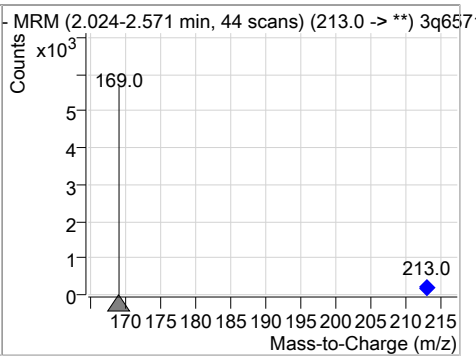
Perfluorinated Compounds by LC/MS/MS



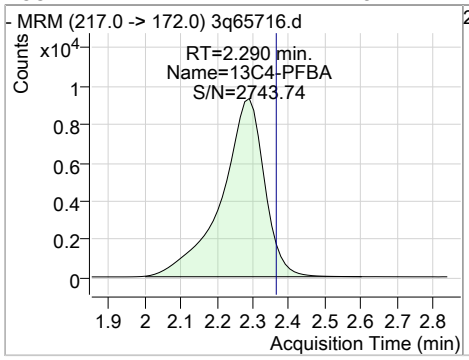
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.05	2.28	-0.08	1851				

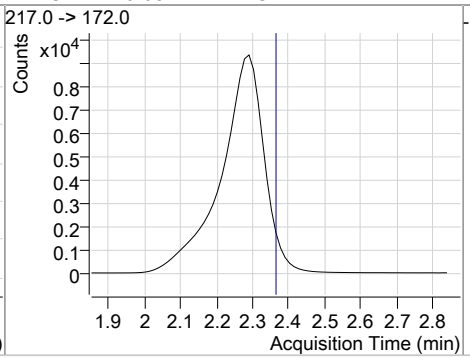


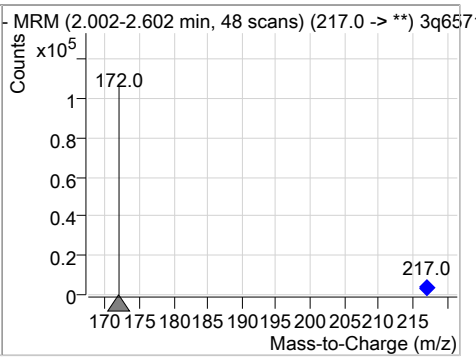




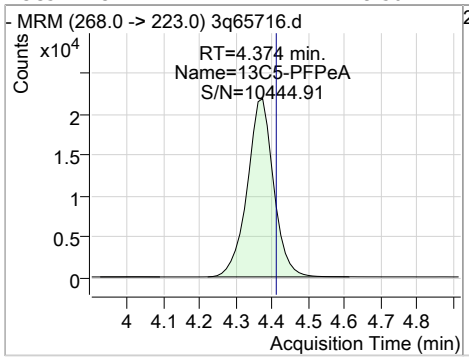
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	9.72	2.29	-0.08	77317				

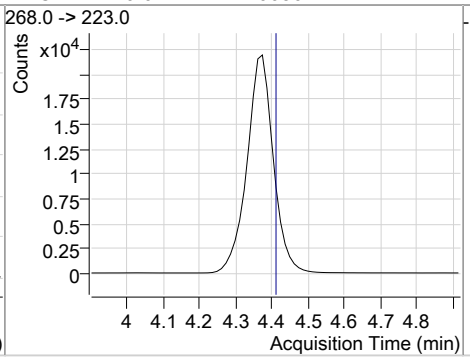


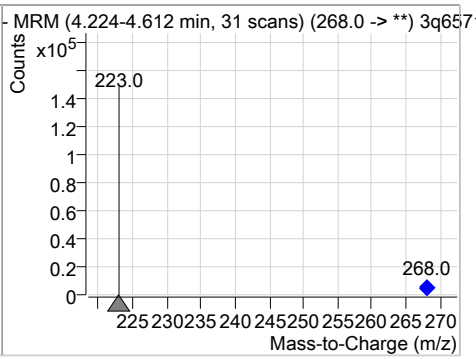




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	9.50	4.37	-0.04	110086				

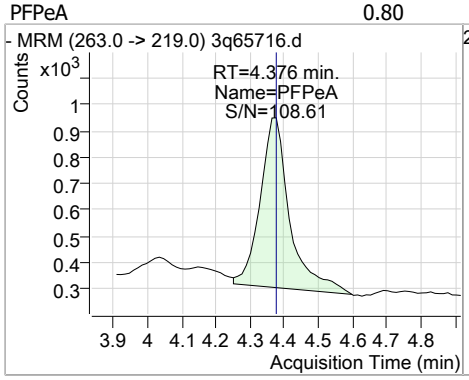


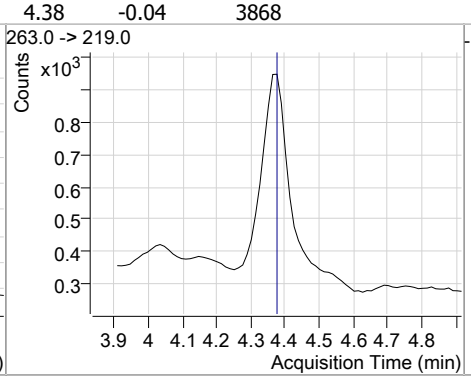


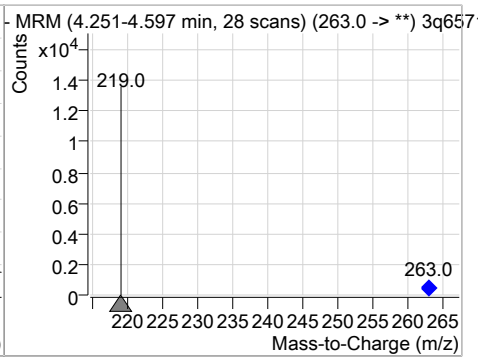


Perfluorinated Compounds by LC/MS/MS

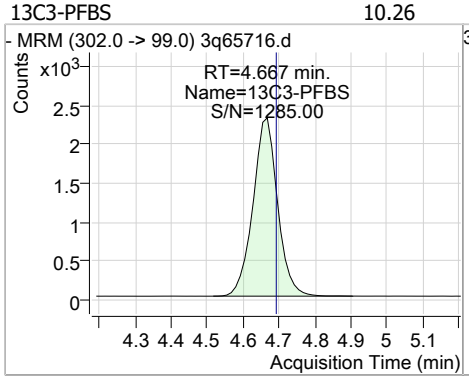
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.80	4.38	-0.04	3868				

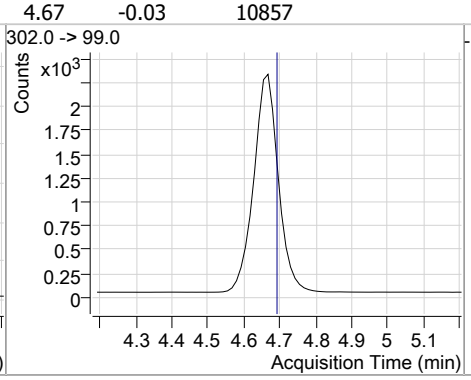


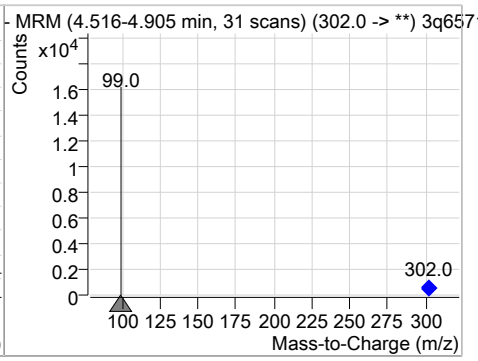




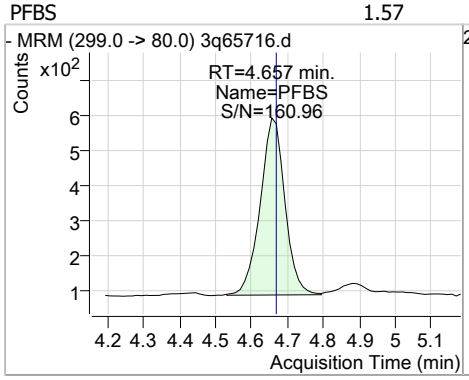
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	10.26	4.67	-0.03	10857				

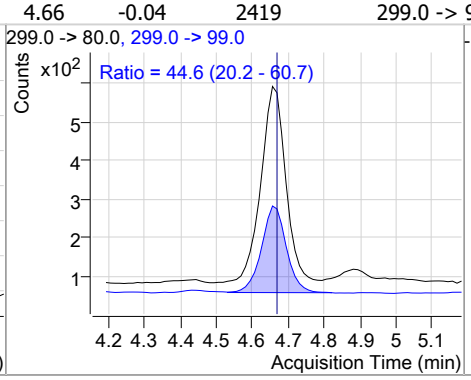


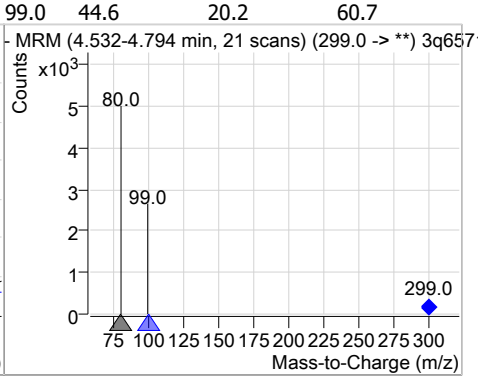




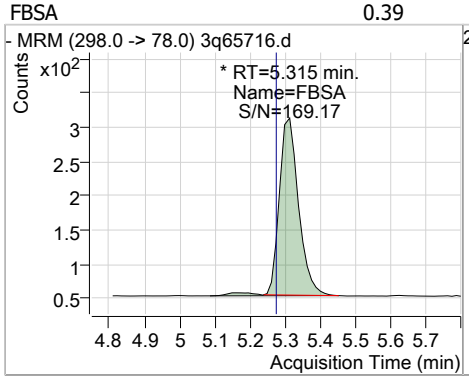
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.57	4.66	-0.04	2419	299.0 -> 99.0	44.6	20.2	60.7

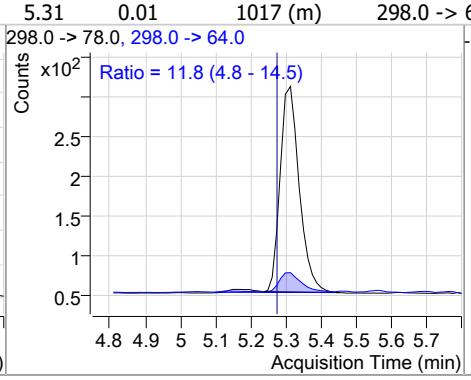


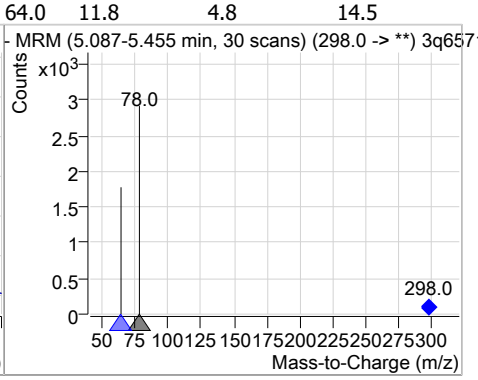




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.39	5.31	0.01	1017 (m)	298.0 -> 64.0	11.8	4.8	14.5

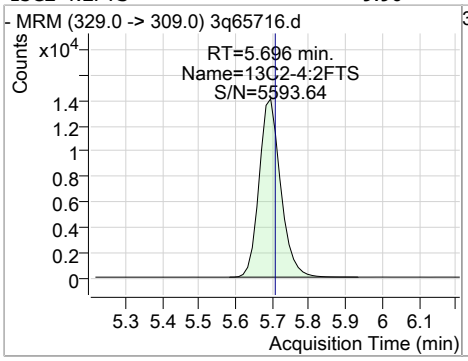


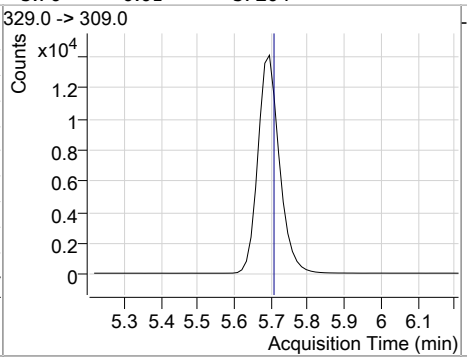


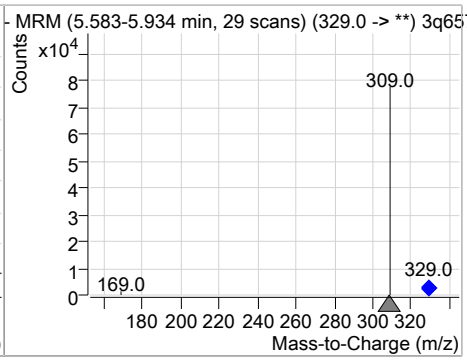


Perfluorinated Compounds by LC/MS/MS

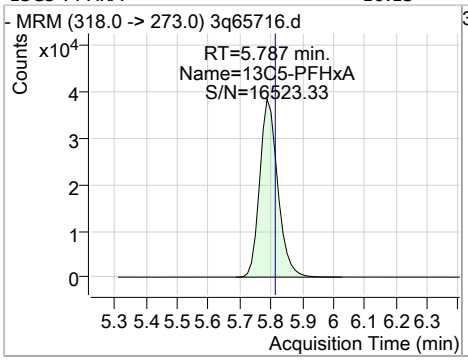
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	9.90	5.70	-0.01	57204				

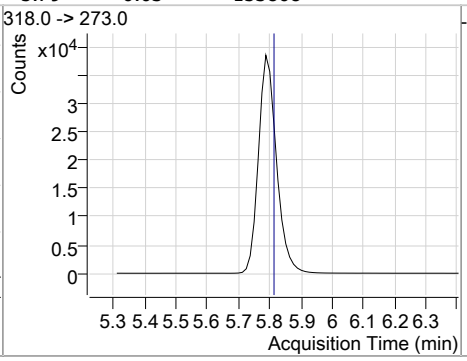


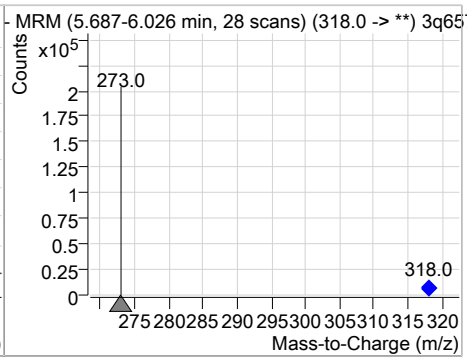




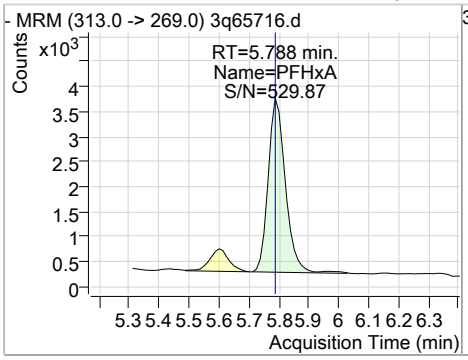
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	10.13	5.79	-0.03	153868				

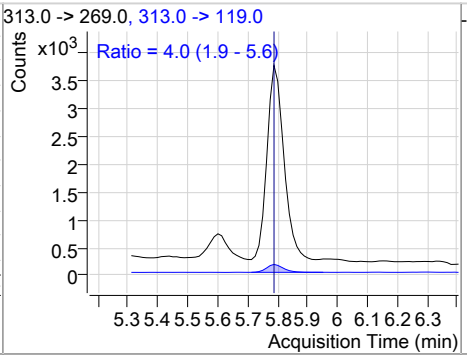


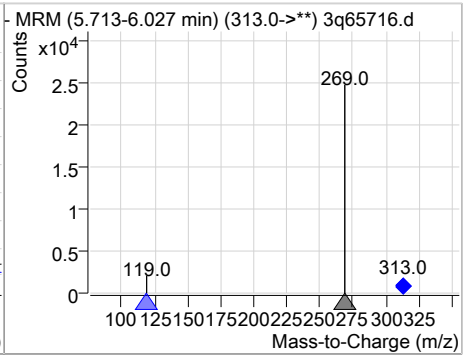




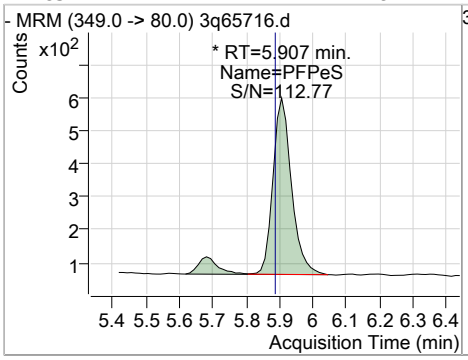
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.70	5.79	-0.03	13928	313.0 -> 119.0	4.0	1.9	5.6

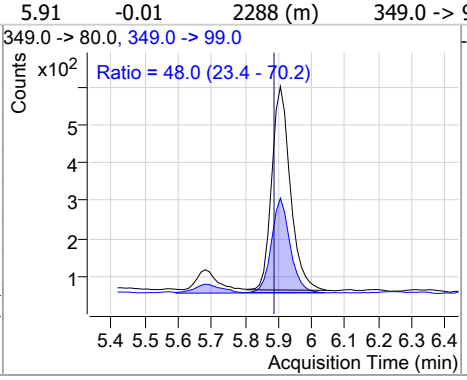


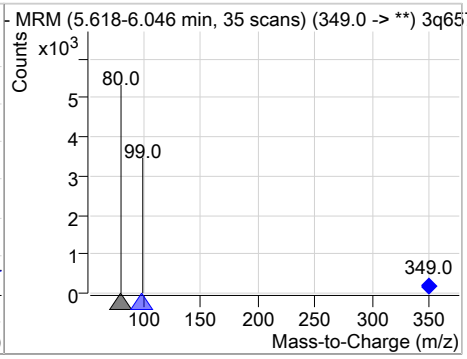




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.91	5.91	-0.01	2288 (m)	349.0 -> 99.0	48.0	23.4	70.2

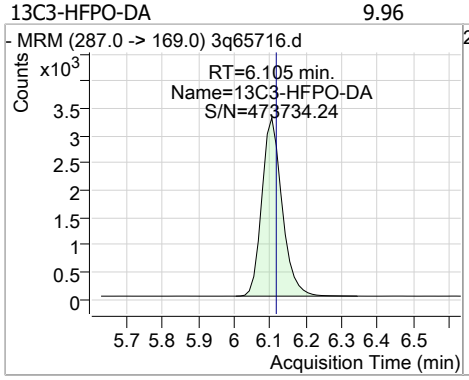


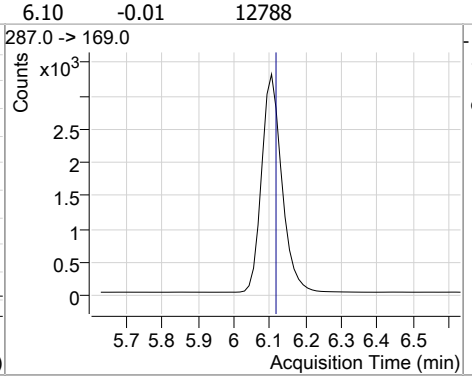


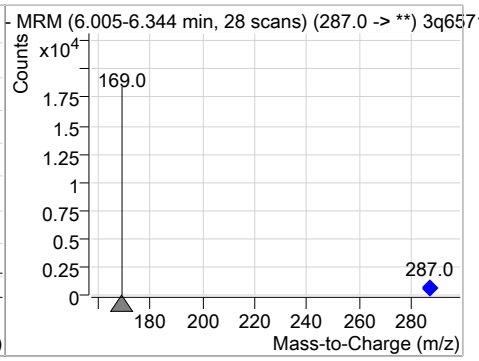


Perfluorinated Compounds by LC/MS/MS

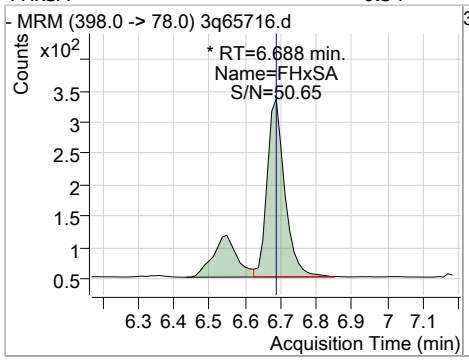
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.96	6.10	-0.01	12788				

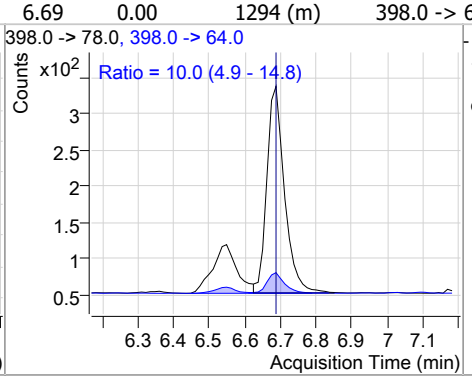


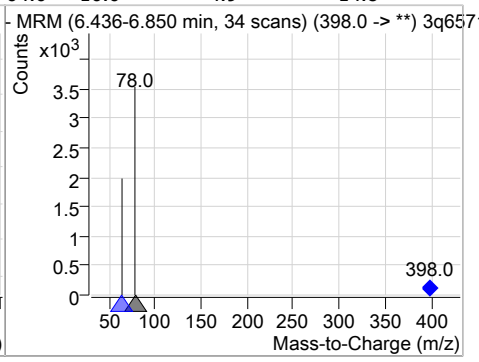




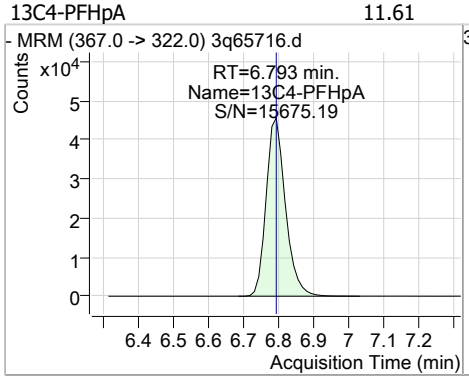
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.34	6.69	0.00	1294 (m)	398.0 -> 64.0	10.0	4.9	14.8

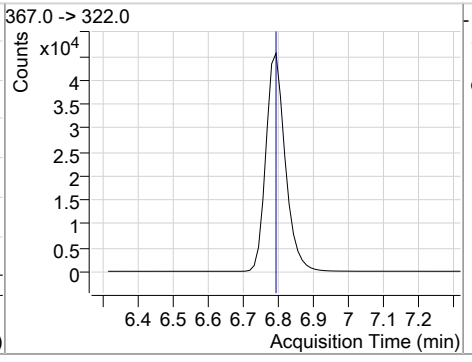


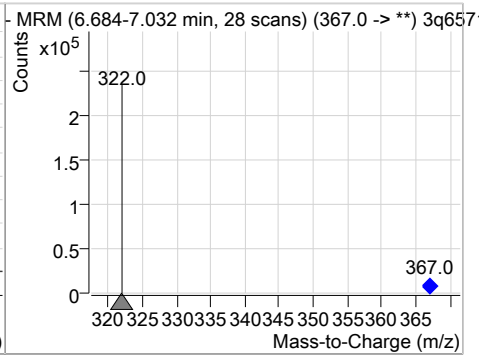




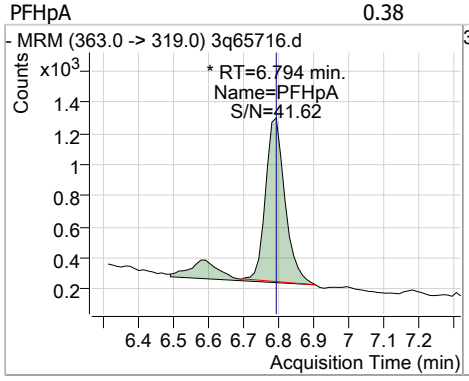
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.61	6.79	0.00	174986				

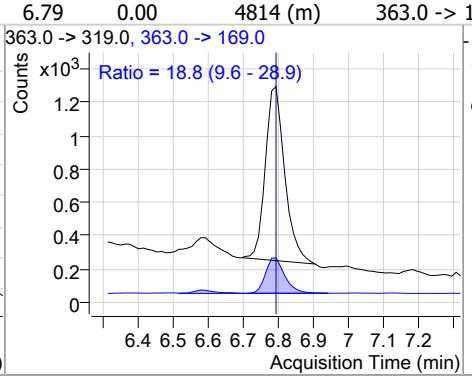


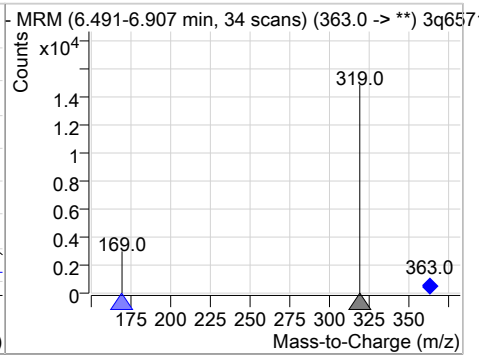




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.38	6.79	0.00	4814 (m)	363.0 -> 169.0	18.8	9.6	28.9

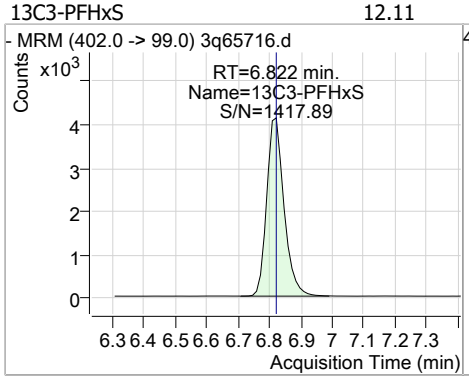


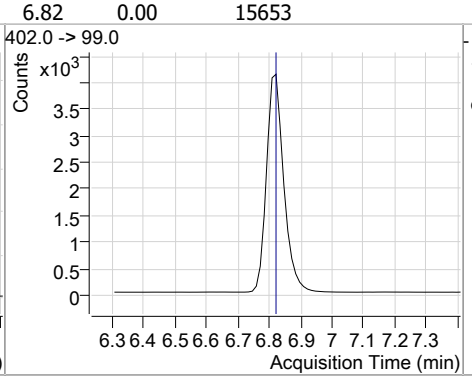


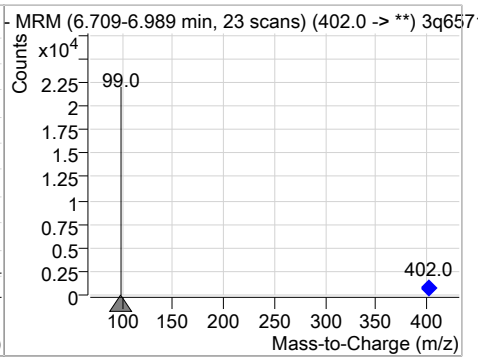


Perfluorinated Compounds by LC/MS/MS

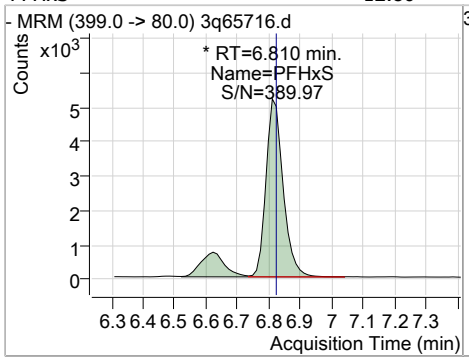
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	12.11	6.82	0.00	15653				

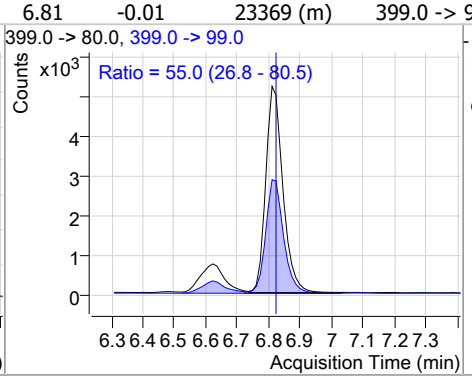


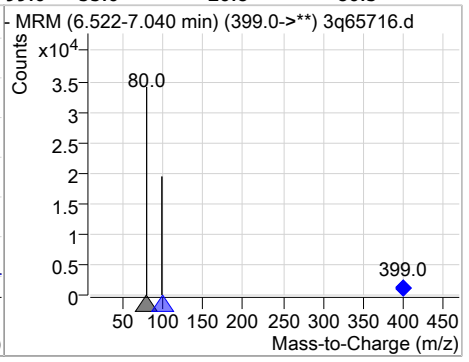




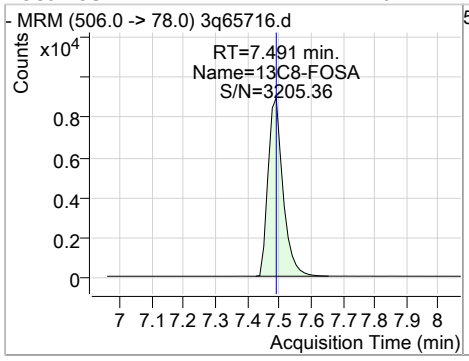
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	12.80	6.81	-0.01	23369 (m)	399.0 -> 99.0	55.0	26.8	80.5

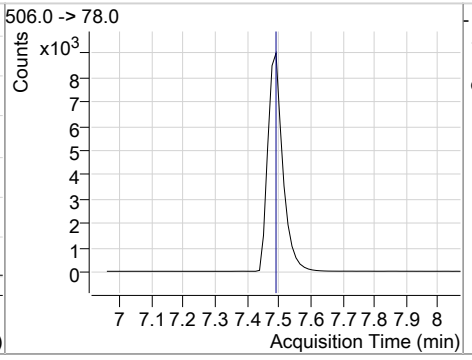


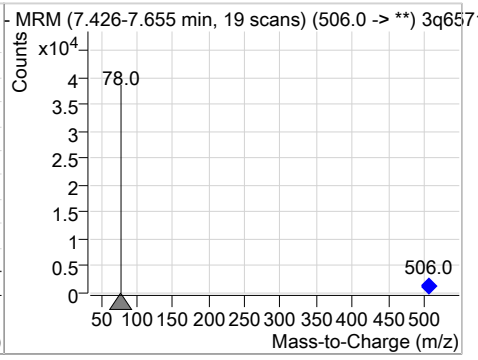




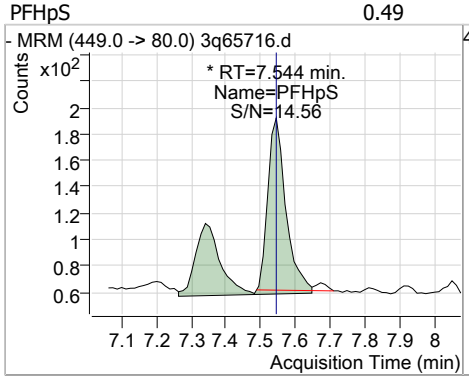
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	7.67	7.49	0.00	28979				

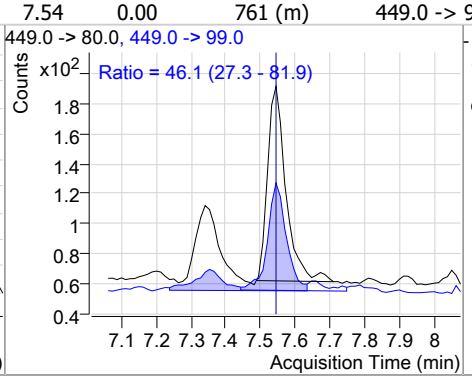


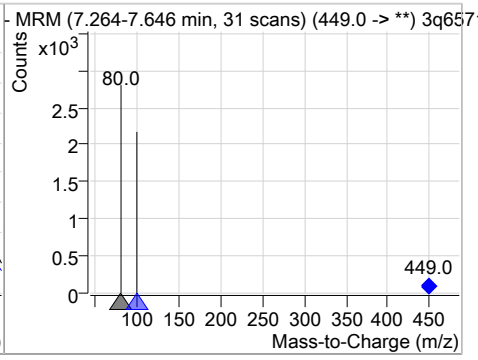




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.49	7.54	0.00	761 (m)	449.0 -> 99.0	46.1	27.3	81.9

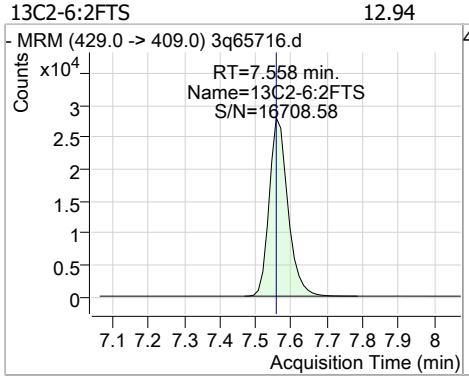


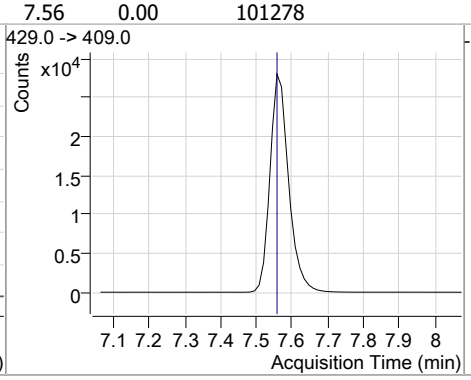


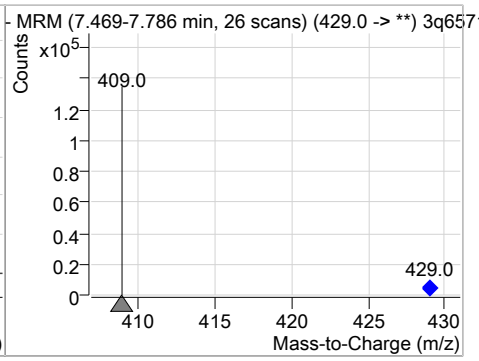


Perfluorinated Compounds by LC/MS/MS

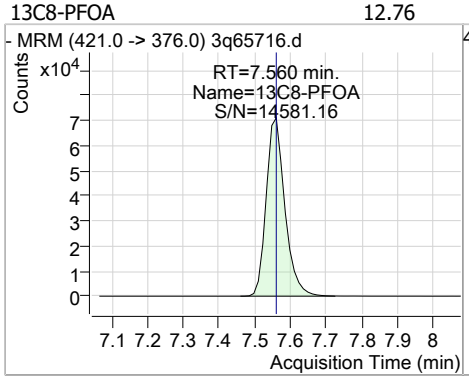
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.94	7.56	0.00	101278				

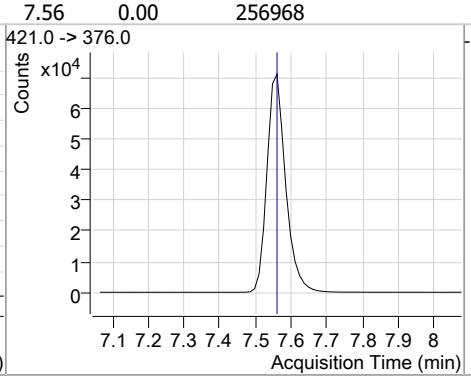


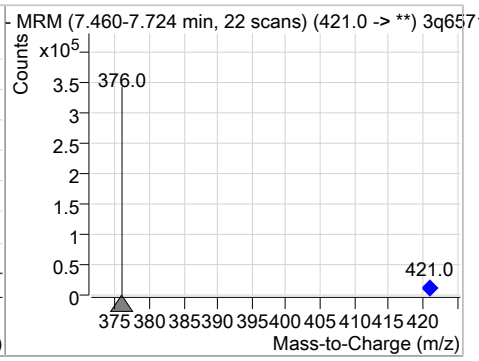




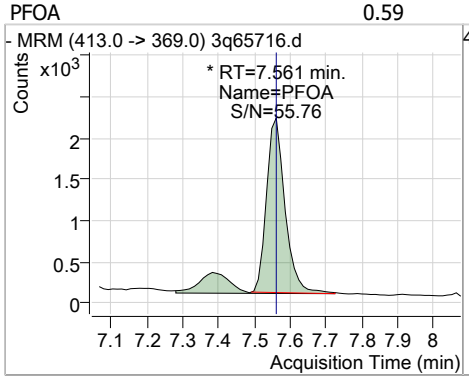
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	12.76	7.56	0.00	256968				

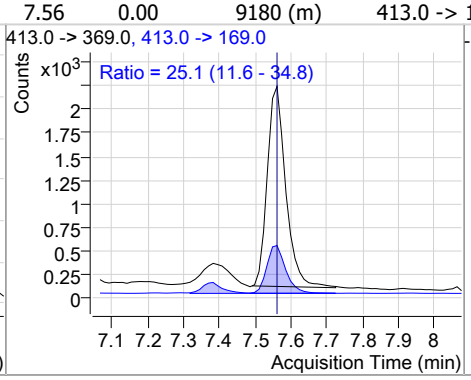


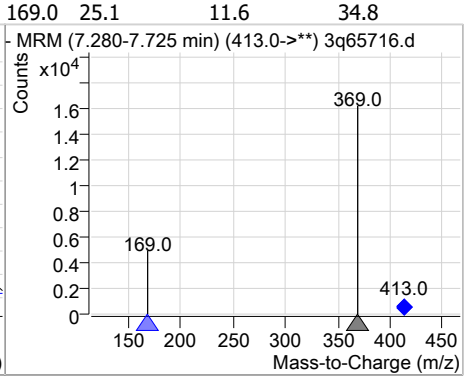




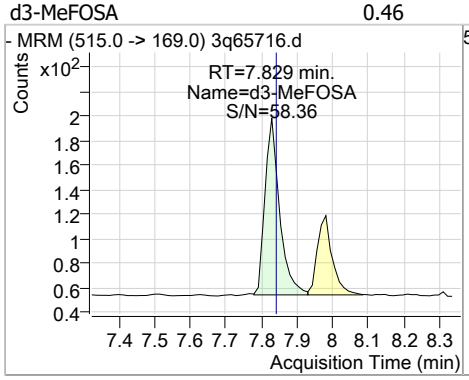
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.59	7.56	0.00	9180 (m)	413.0 -> 169.0	25.1	11.6	34.8

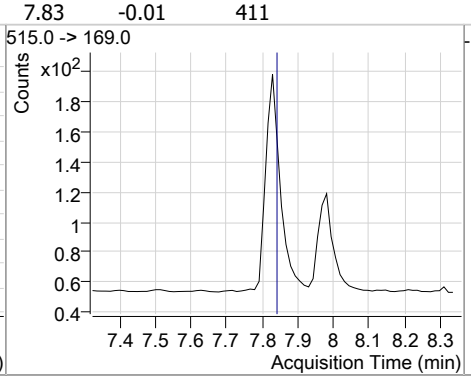


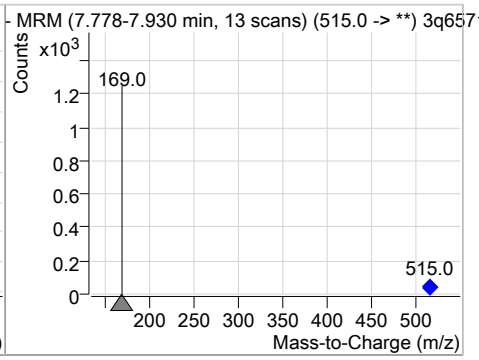




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.46	7.83	-0.01	411				

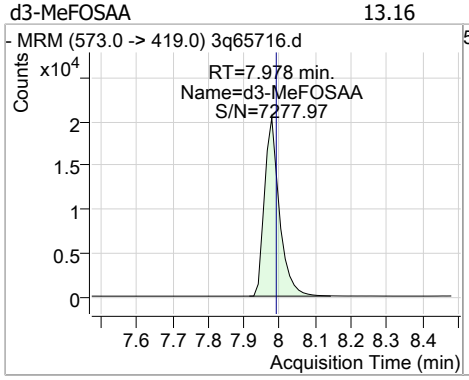


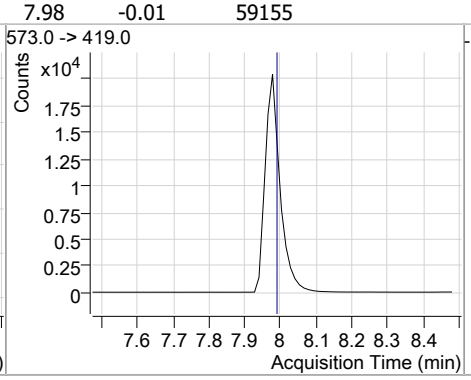


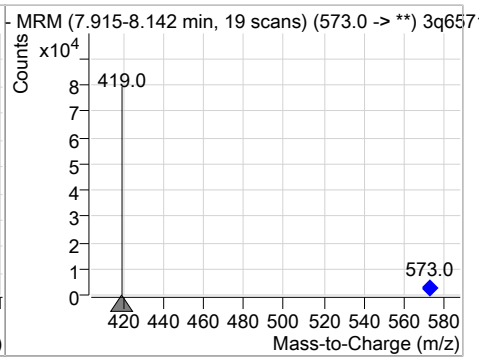


Perfluorinated Compounds by LC/MS/MS

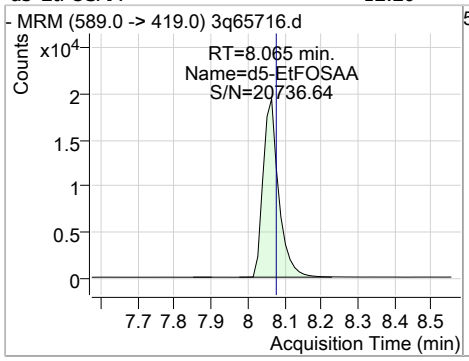
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.16	7.98	-0.01	59155				

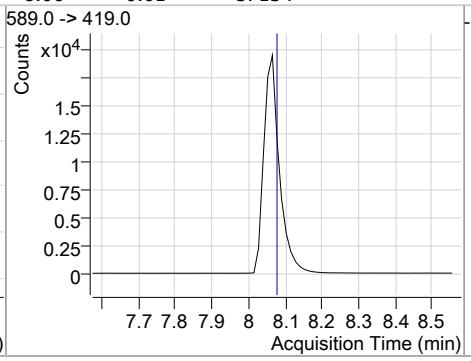


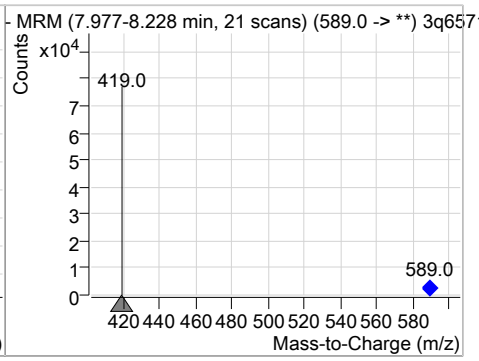




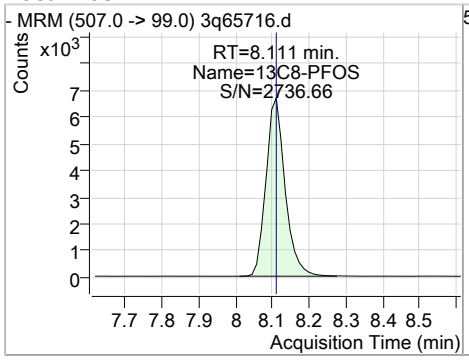
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	12.20	8.06	-0.01	57134				

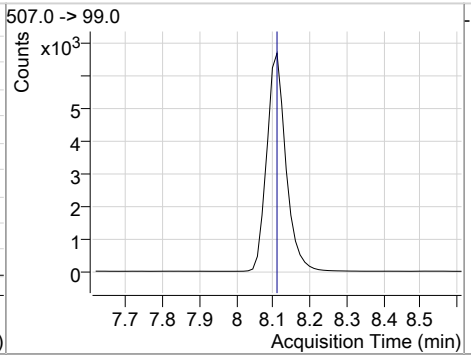


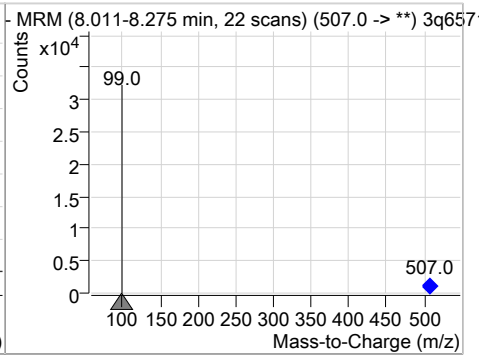




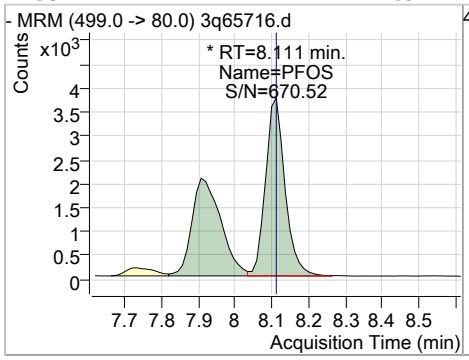
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.24	8.11	0.00	24015				

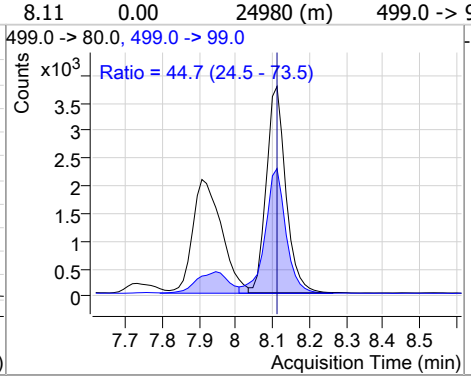


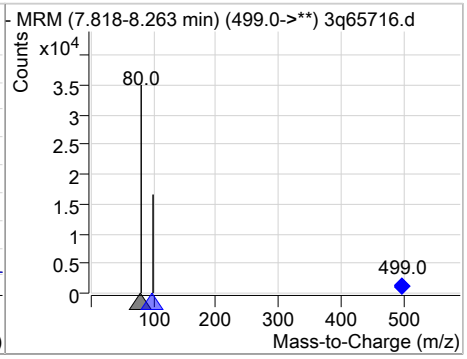




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.63	8.11	0.00	24980 (m)	499.0 -> 99.0	44.7	24.5	73.5

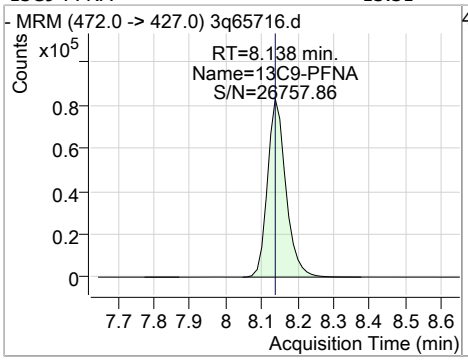


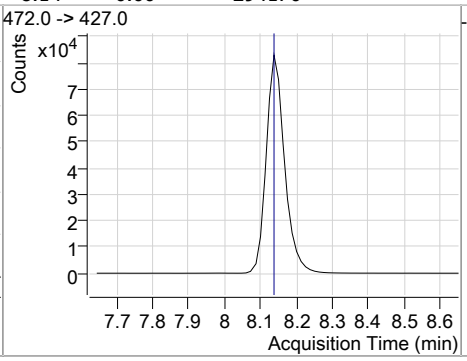


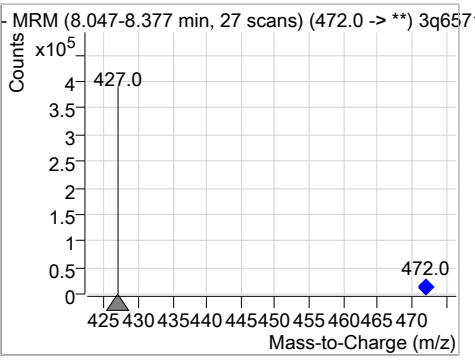


Perfluorinated Compounds by LC/MS/MS

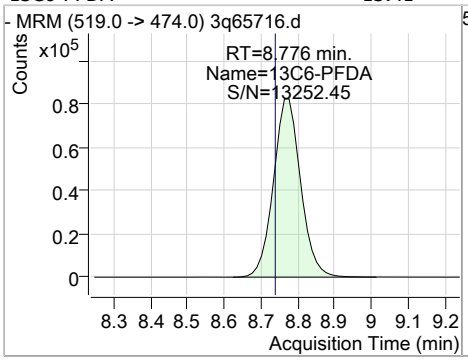
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.31	8.14	0.00	294170				

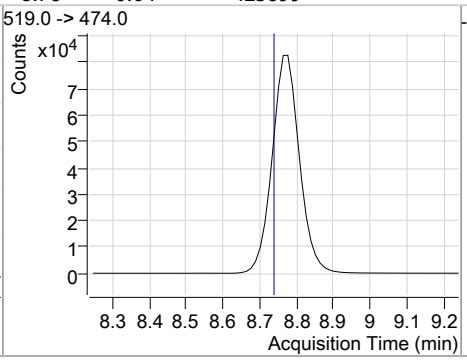


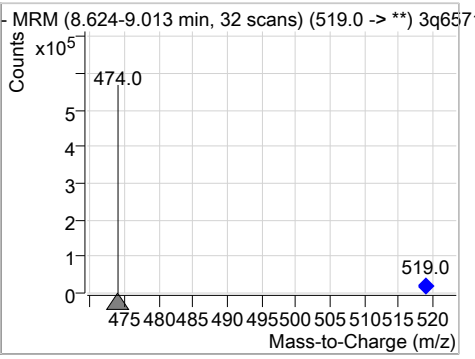




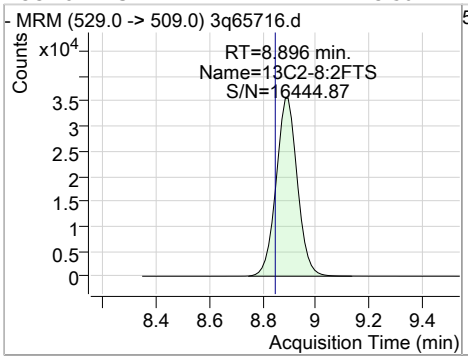
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.41	8.78	0.04	425899				

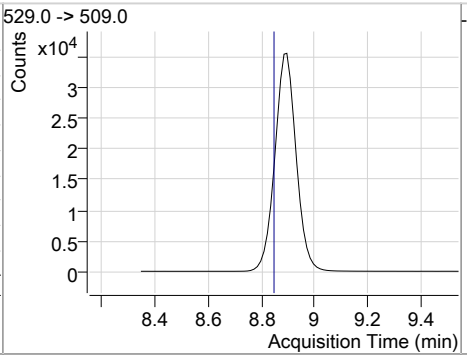


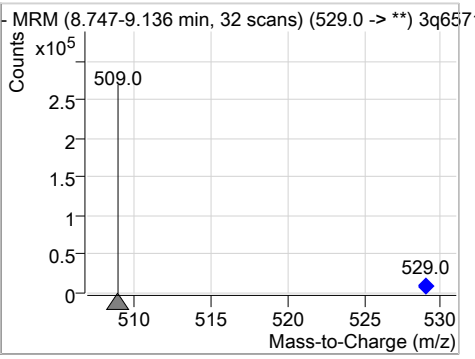




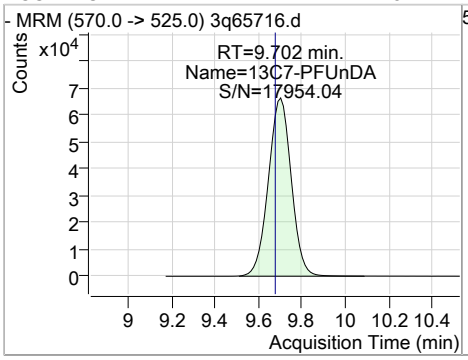
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.56	8.90	0.05	197112				

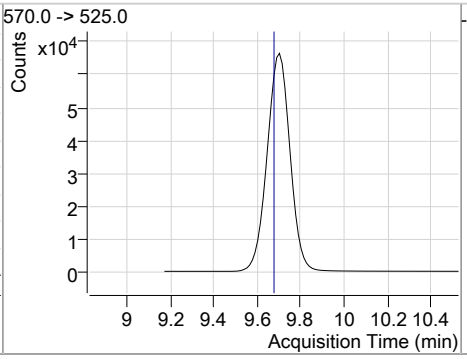


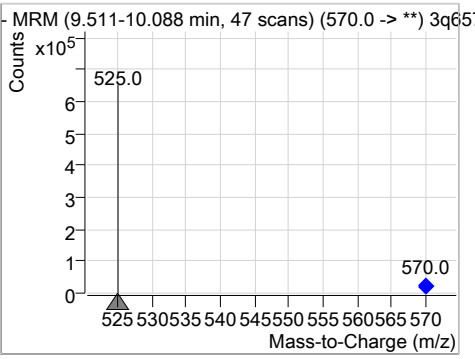




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.82	9.70	0.03	487954				

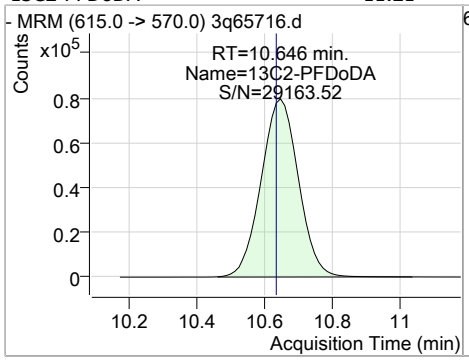


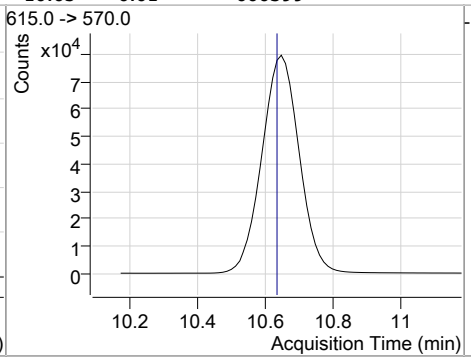


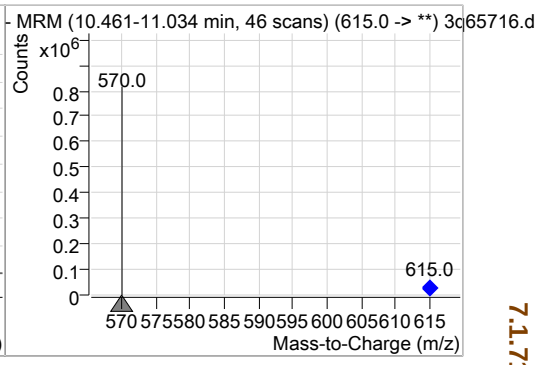


Perfluorinated Compounds by LC/MS/MS

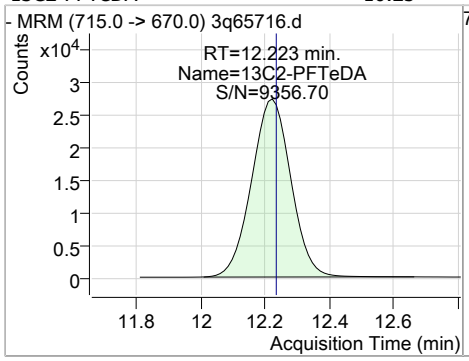
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.21	10.65	0.01	606399				

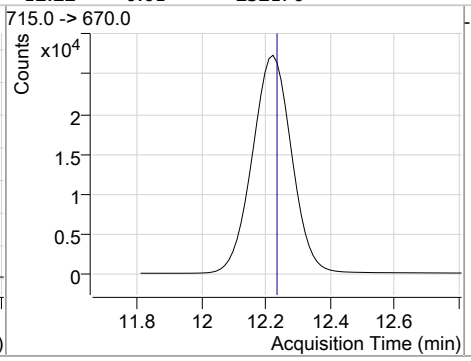


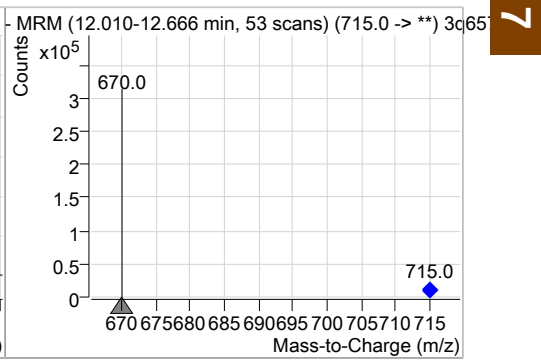




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.25	12.22	-0.01	232170				







7.1.71

Manual Integration Approval Summary

Sample Number: FA98286-44
Lab FileID: 3Q65716.D
Injection Time: 09/14/22 04:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/18/22 14:55 Martha Valls
Supervisor approved: 09/19/22 15:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
PFBSA	30334-69-1		5.32	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.91	Split peak
PFHxSA	41997-13-1		6.69	Split peak
Perfluoroheptanoic acid	375-85-9		6.79	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.54	Split peak
Perfluorooctanoic acid	335-67-1		7.56	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 15:31

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65842.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 11:41:51 PM
Sample Name : fa98286-44
Vial : P2-C4
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92762,S3Q900,110,,,1,5,water

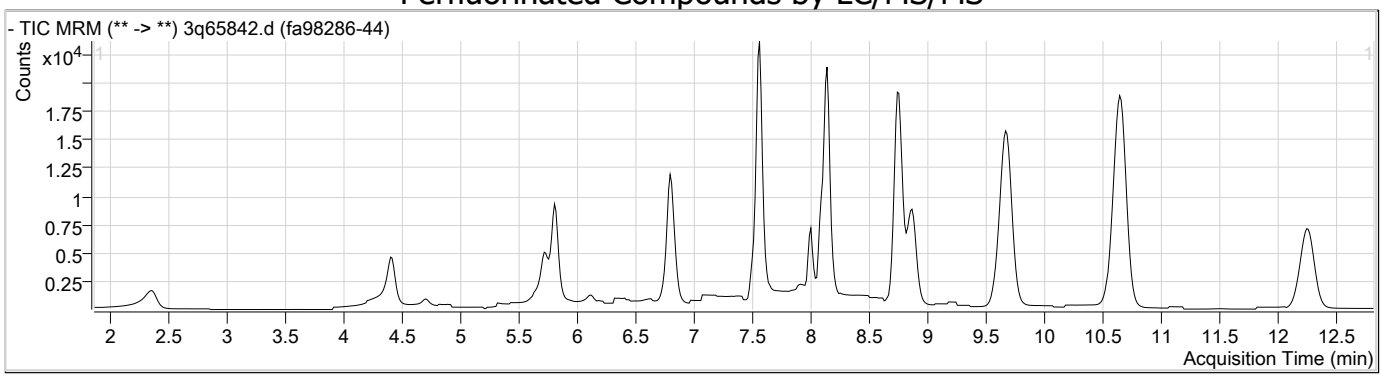
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.340	217.0 -> 172.0	14658	20.00	µg/L	-0.025
M5-PFPeA	4.399	268.0 -> 223.0	27946	20.00	µg/L	-0.013
M5-PFHxA	5.800	318.0 -> 273.0	40581	20.00	µg/L	-0.014
M4-PFHpA	6.793	367.0 -> 322.0	42797	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	60082	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	66878	20.00	µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	93679	20.00	µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	116077	20.00	µg/L	-0.013
M2-PFDoDA	10.634	615.0 -> 570.0	147880	20.00	µg/L	0.000
M2-PFTeDA	12.235	715.0 -> 670.0	61192	20.00	µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	7336	20.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	2752	20.00	µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	3873	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	5791	20.00	µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	15542	20.00	µg/L	0.000
M2-6:2FTS	7.558	429.0 -> 409.0	24570	20.00	µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	45240	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	15883	20.00	µg/L	0.000
M3-HFPO-DA	6.117	287.0 -> 169.0	3294	20.00	µg/L	0.000
M3-MeFOSA	7.841	515.0 -> 169.0	302	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	15714	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.708	329.0 -> 309.0	15542	2.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-6:2FTS	7.558	429.0 -> 409.0	24570	2.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%		
13C2-8:2FTS	8.860	529.0 -> 509.0	45240	2.64	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%		
13C2-PFDoDA	10.634	615.0 -> 570.0	147880	2.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C2-PFTeDA	12.235	715.0 -> 670.0	61192	2.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.0%		
13C3-PFBS	4.692	302.0 -> 99.0	2752	2.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.4%		
13C3-PFHxS	6.822	402.0 -> 99.0	3873	2.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%		
13C4-PFBA	2.340	217.0 -> 172.0	14658	1.77	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 8.8%		
13C4-PFHpA	6.793	367.0 -> 322.0	42797	2.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%		
13C5-PFHxA	5.800	318.0 -> 273.0	40581	2.53	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C5-PFPeA	4.399	268.0 -> 223.0	27946	2.31	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.6%		
13C6-PFDA	8.739	519.0 -> 474.0	93679	2.58	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

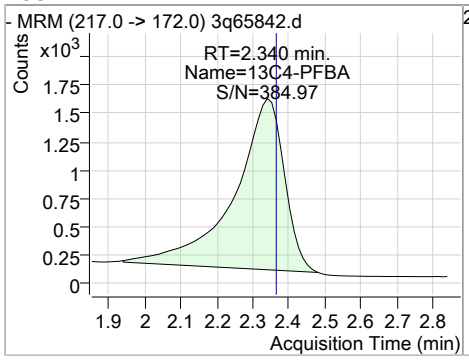
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C7-PFUnDA	9.664	570.0 -> 525.0	116077	2.44 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C8-FOSA	7.491	506.0 -> 78.0	7336	2.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.3%		
13C8-PFOA	7.560	421.0 -> 376.0	60082	2.82 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.1%		
13C8-PFOS	8.111	507.0 -> 99.0	5791	2.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C9-PFNA	8.138	472.0 -> 427.0	66878	2.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
d3-MeFOSAA	7.991	573.0 -> 419.0	15883	2.81 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%		
13C3-HFPO-DA	6.117	287.0 -> 169.0	3291	2.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
d3-MeFOSA	7.841	515.0 -> 169.0	302	0.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.9%		
d5-EtFOSAA	8.077	589.0 -> 419.0	15724	2.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.8%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	4.694	299.0 -> 80.0	650	0.32 µg/L		96
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	5.801	313.0 -> 269.0	3934	0.35 µg/L	m	99
PFHxS	6.823	399.0 -> 80.0	5787	2.42 µg/L	m	99
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	8.111	499.0 -> 80.0	5941	2.29 µg/L	m	78
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	5.919	349.0 -> 80.0	573	0.37 µg/L	m	96
PFTeDA	-	713.0 -> 669.0	-	N.D.		
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

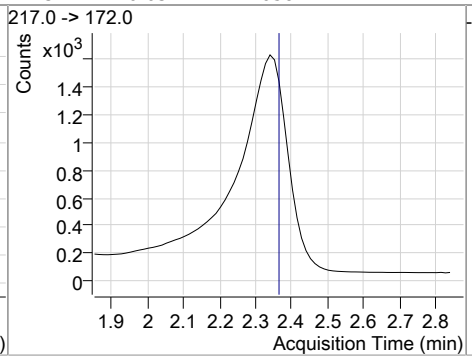
 # = Qualifier out of range, m = manually integrated, + = Area summed

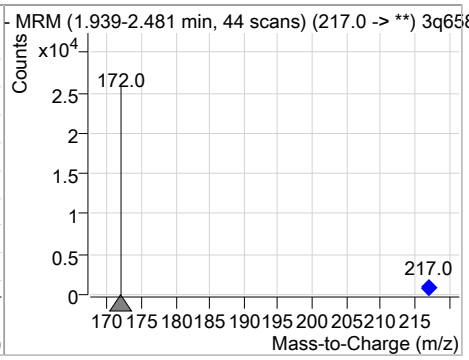
Perfluorinated Compounds by LC/MS/MS



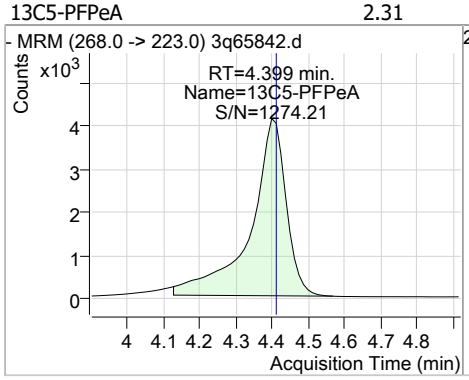
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.77	2.34	-0.03	14658				

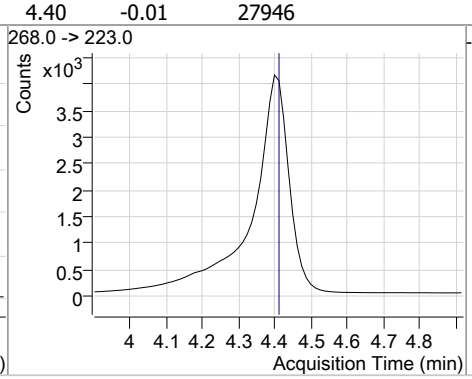


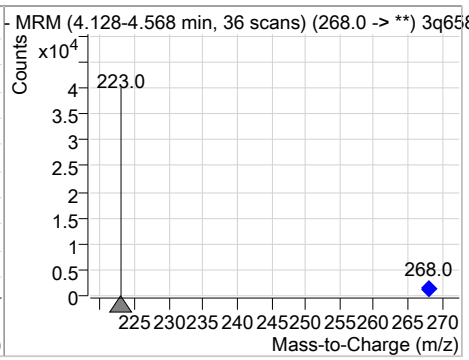




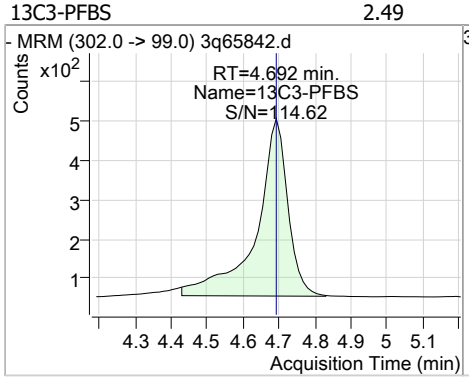
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.31	4.40	-0.01	27946				

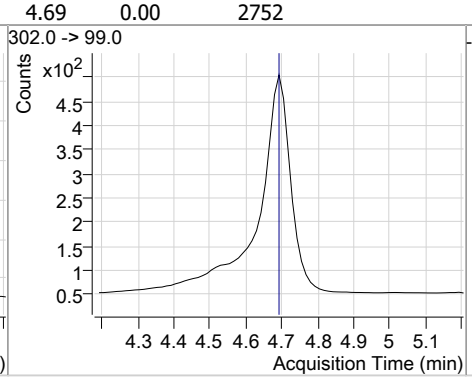


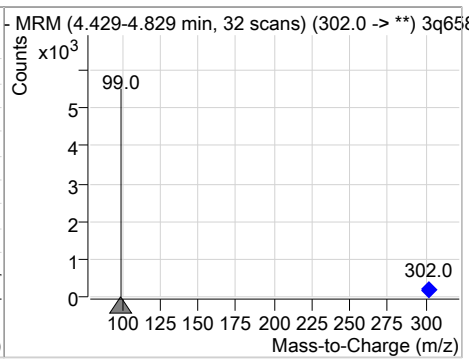




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.49	4.69	0.00	2752				

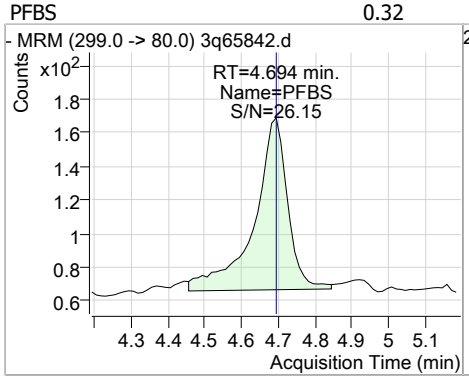


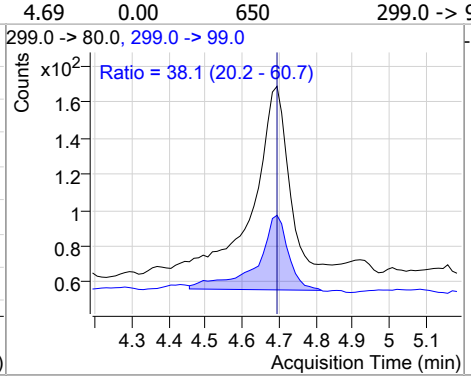


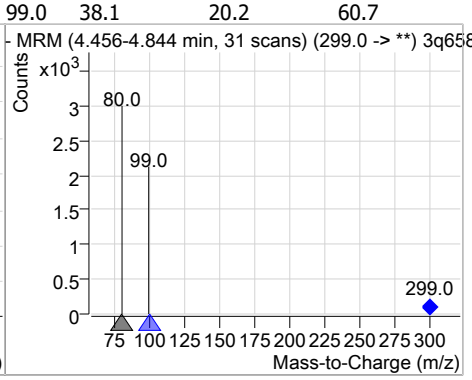


Perfluorinated Compounds by LC/MS/MS

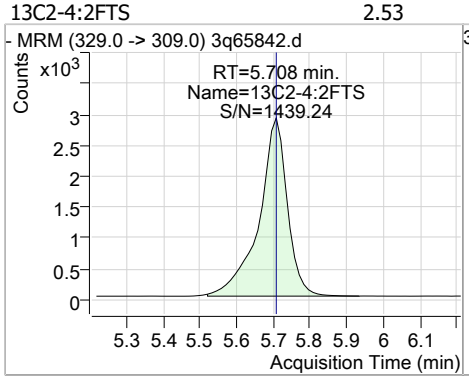
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.32	4.69	0.00	650	299.0 -> 99.0	38.1	20.2	60.7

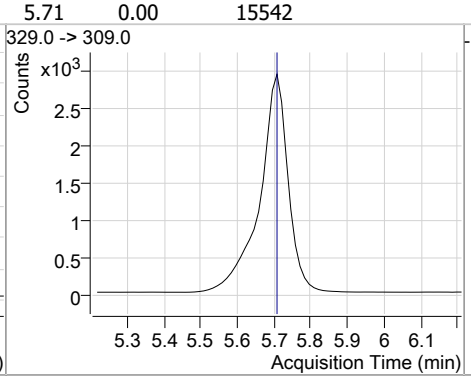


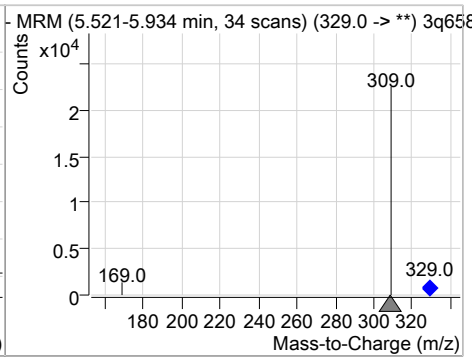




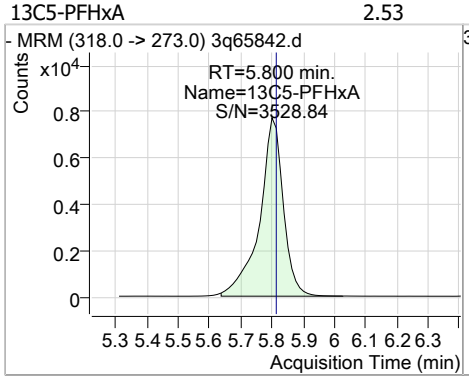
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.53	5.71	0.00	15542				

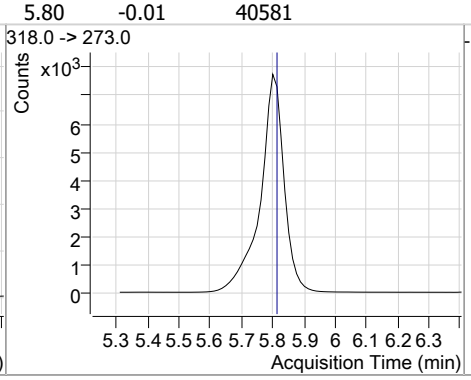


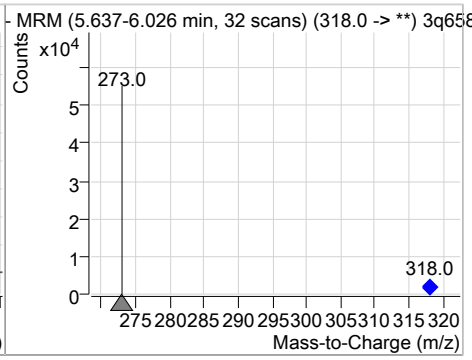




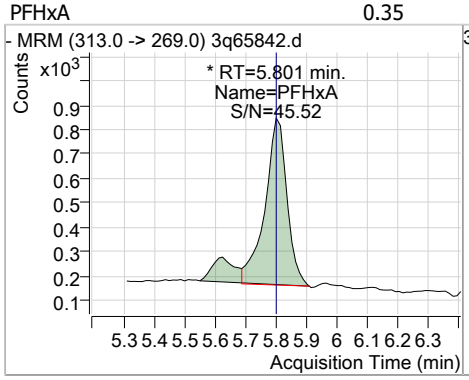
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.53	5.80	-0.01	40581				

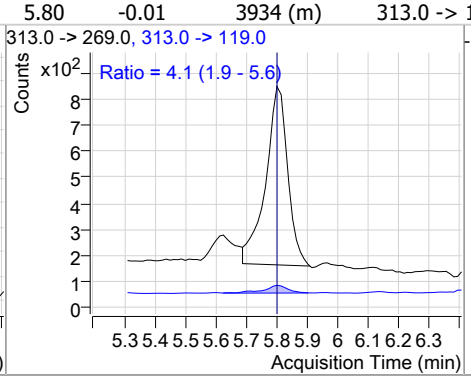


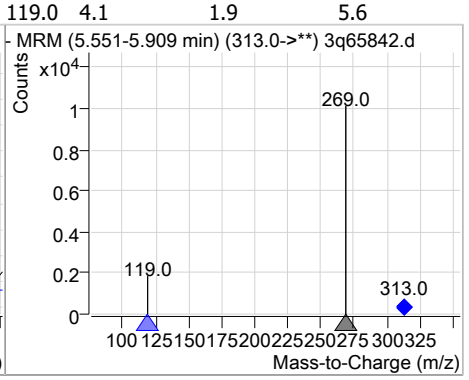




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.35	5.80	-0.01	3934 (m)	313.0 -> 119.0	4.1	1.9	5.6

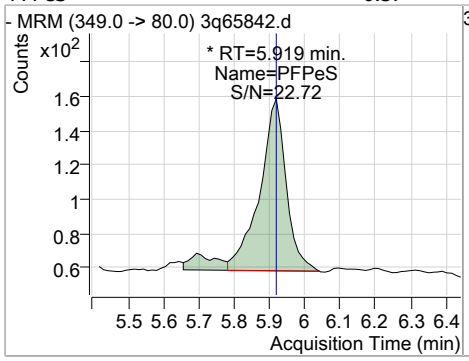


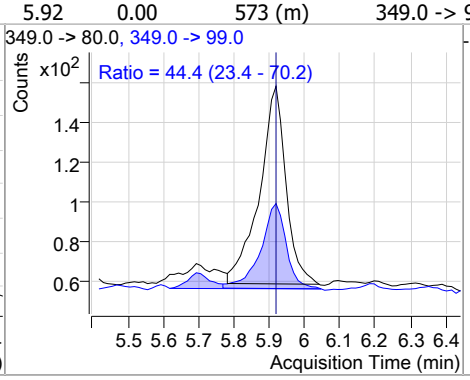


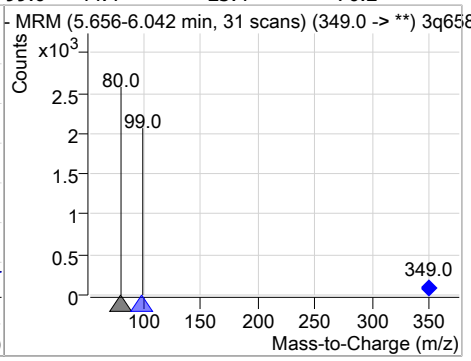


Perfluorinated Compounds by LC/MS/MS

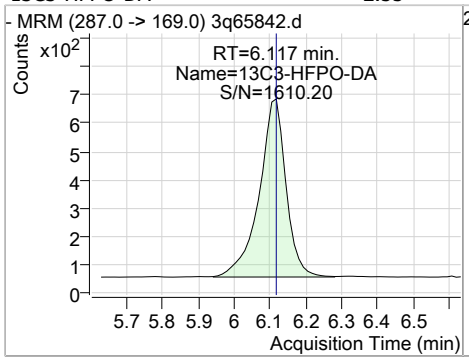
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.37	5.92	0.00	573 (m)	349.0 -> 99.0	44.4	23.4	70.2

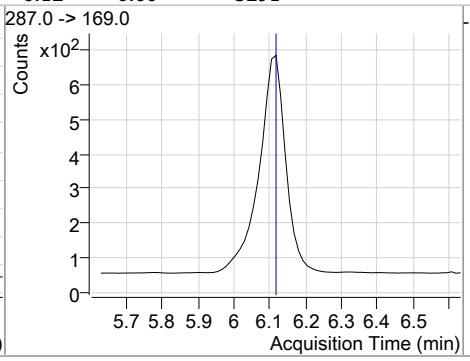


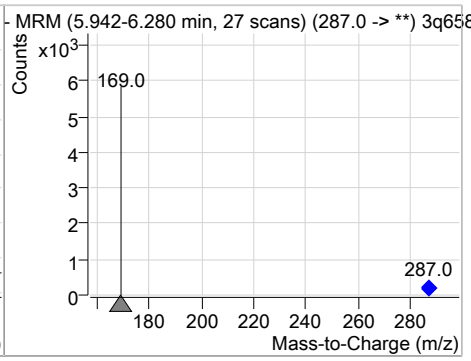




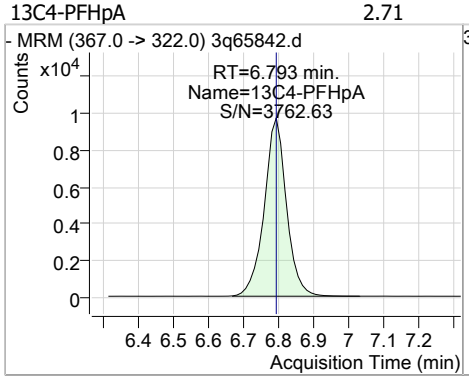
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.55	6.12	0.00	3291				

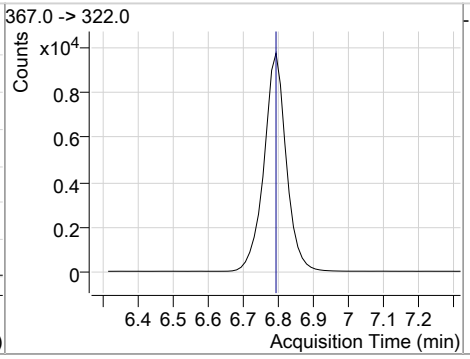


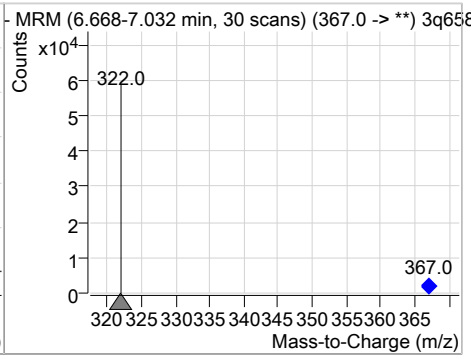




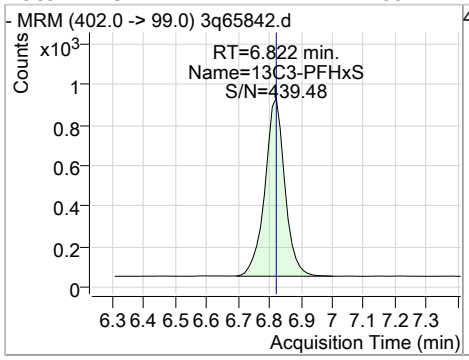
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.71	6.79	0.00	42797				

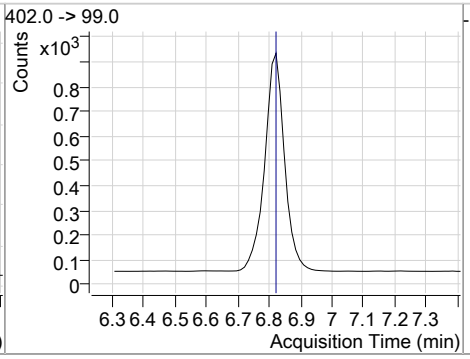


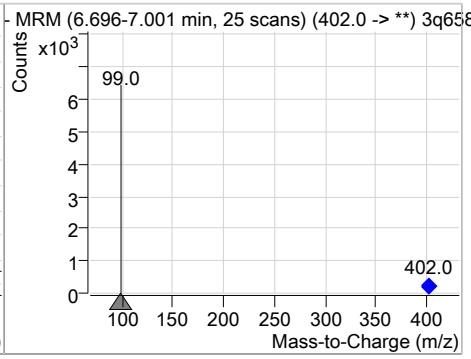




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.88	6.82	0.00	3873				

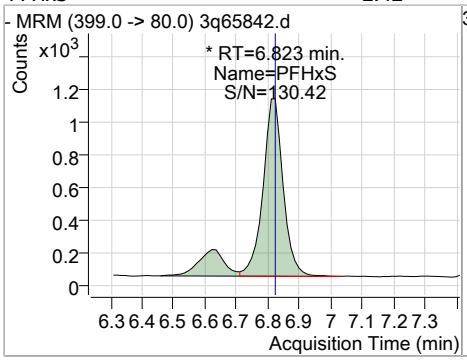


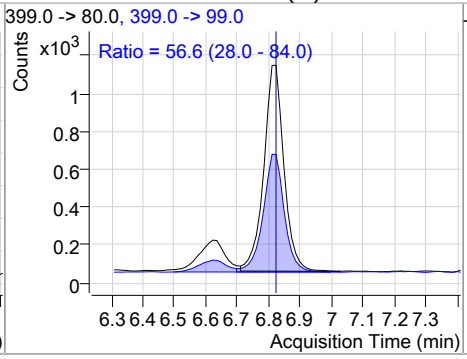


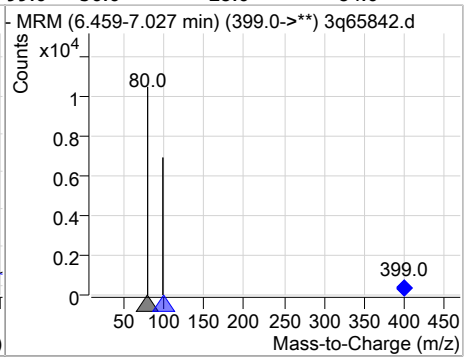


Perfluorinated Compounds by LC/MS/MS

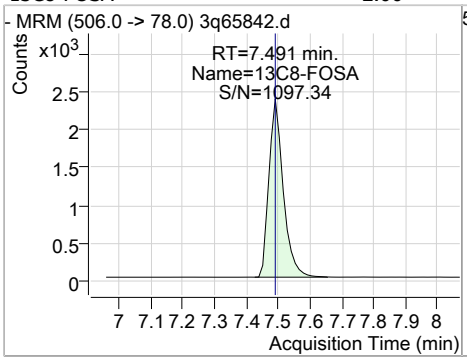
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.42	6.82	0.00	5787 (m)	399.0 -> 99.0	56.6	28.0	84.0

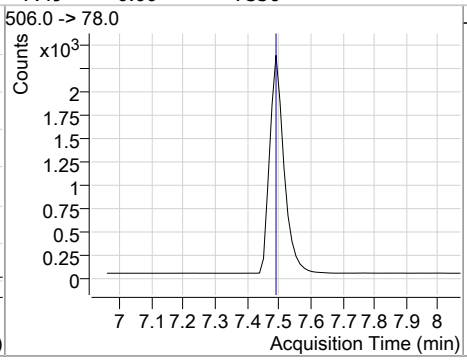


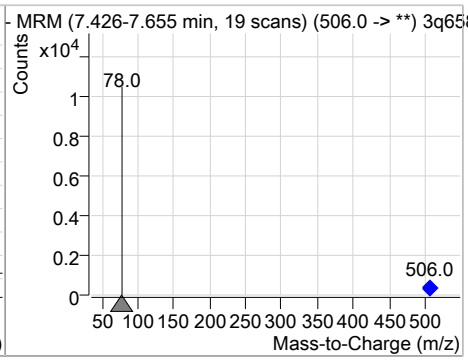




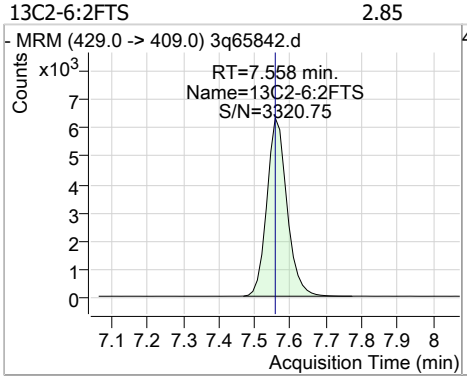
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.06	7.49	0.00	7336				

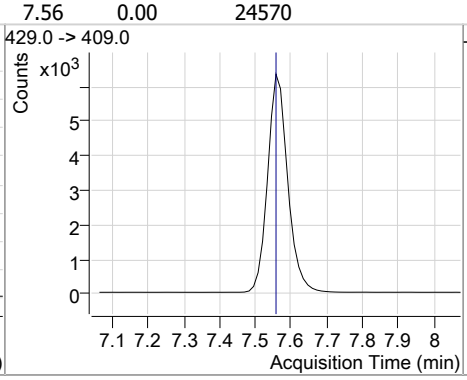


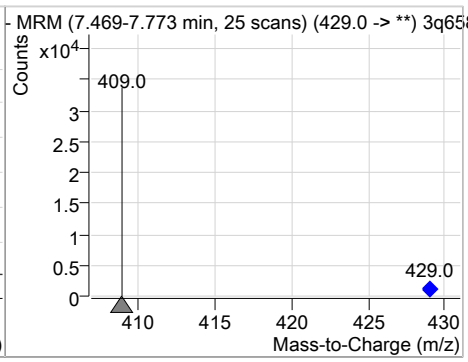




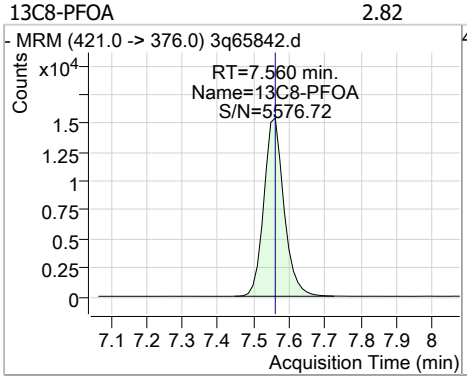
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.85	7.56	0.00	24570				

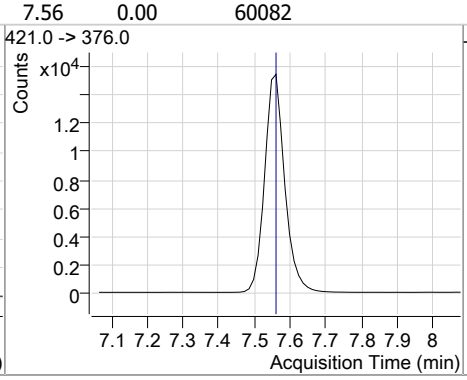


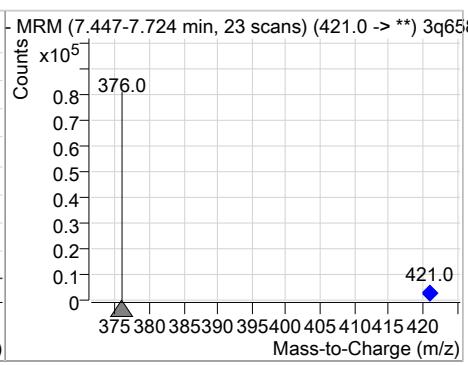




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.82	7.56	0.00	60082				

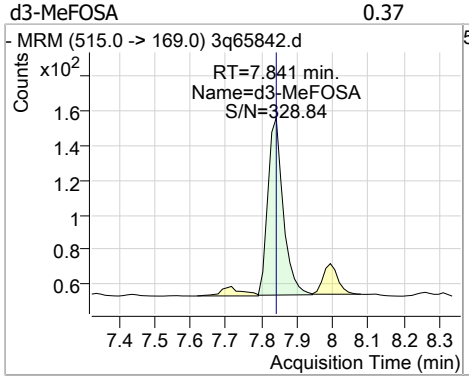


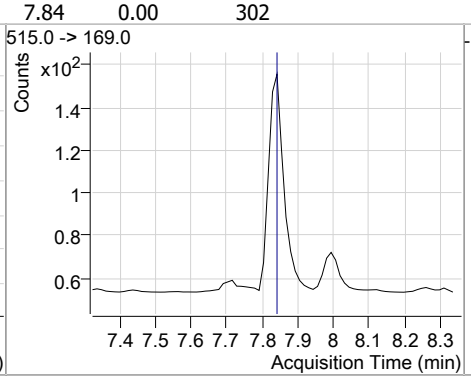


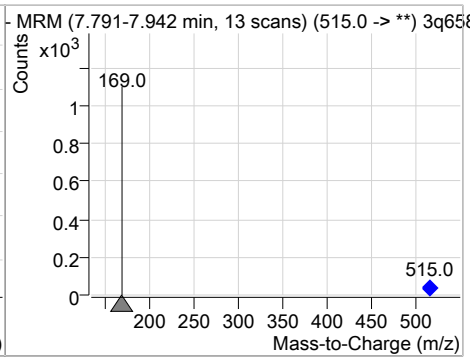


Perfluorinated Compounds by LC/MS/MS

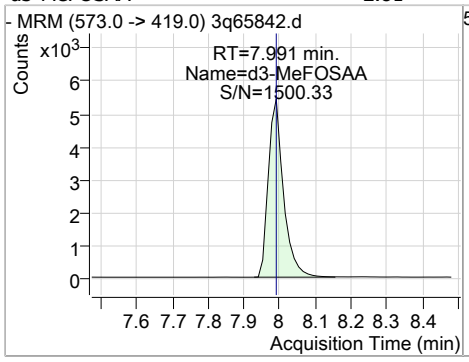
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.37	7.84	0.00	302				

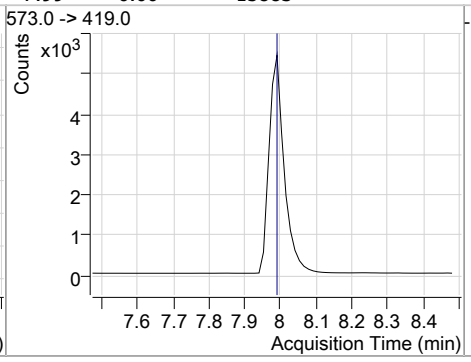


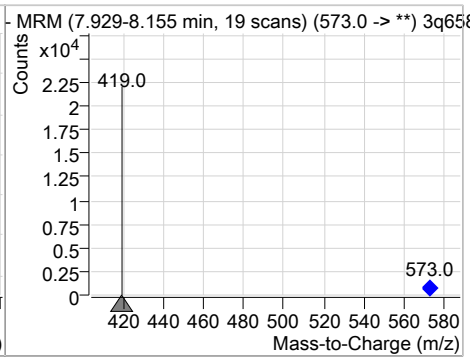




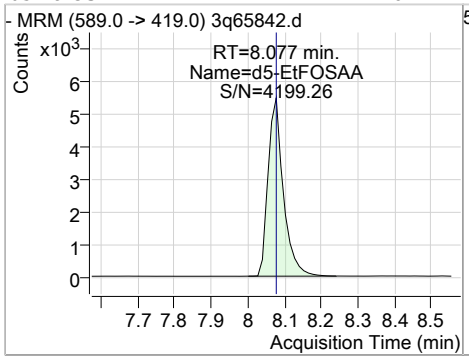
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.81	7.99	0.00	15883				

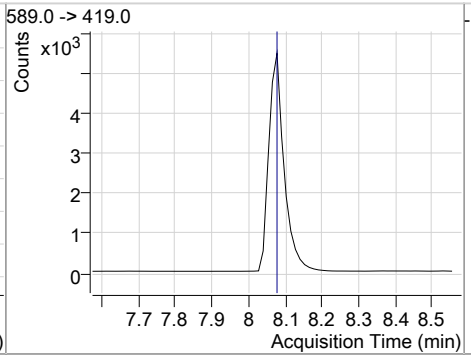


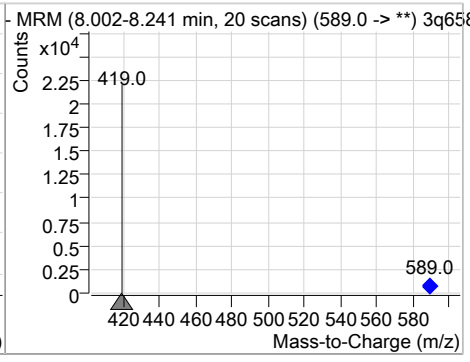




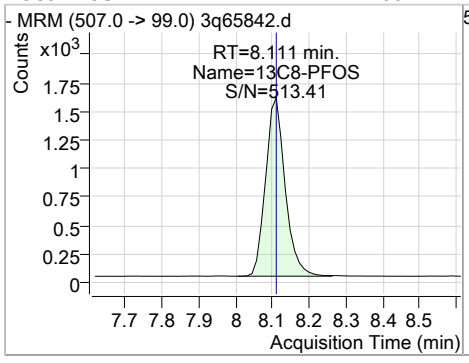
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.76	8.08	0.00	15724				

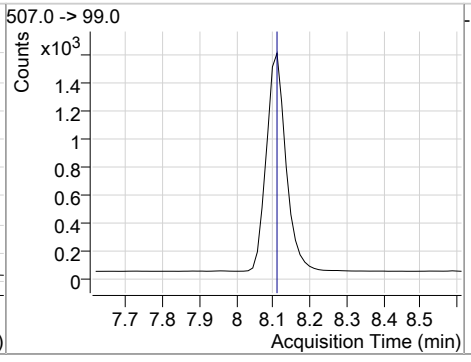


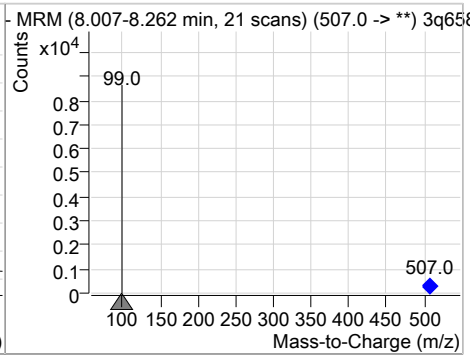




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.80	8.11	0.00	5791				

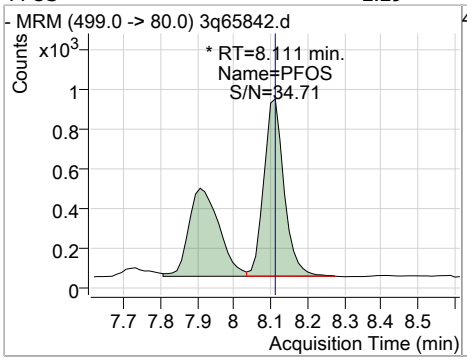


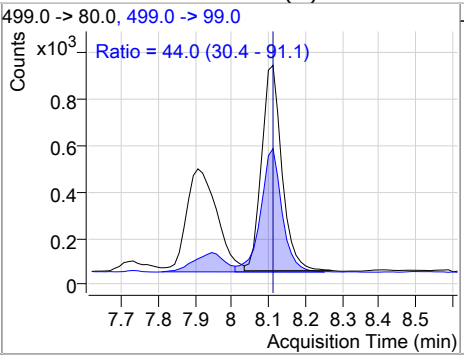


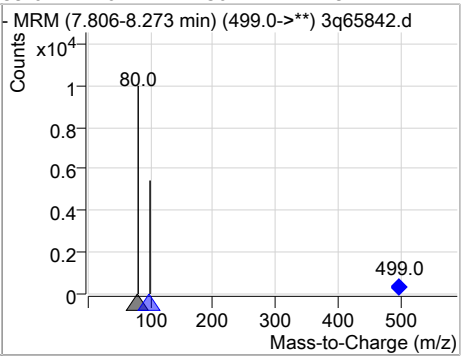


Perfluorinated Compounds by LC/MS/MS

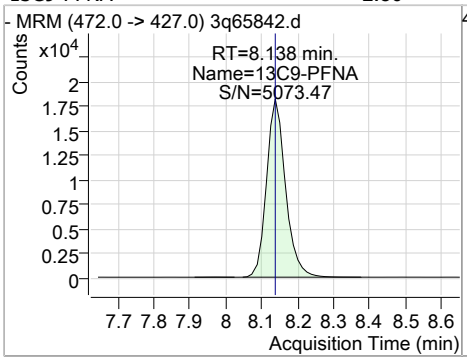
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.29	8.11	0.00	5941 (m)	499.0 -> 99.0	44.0	30.4	91.1

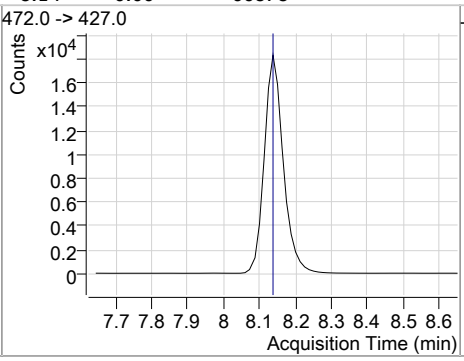


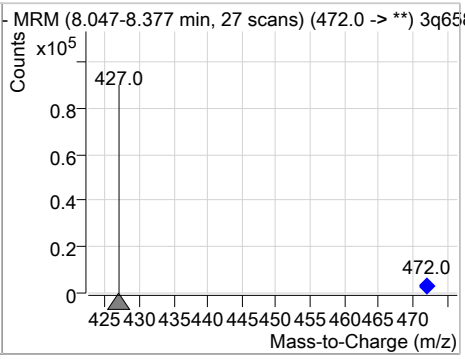




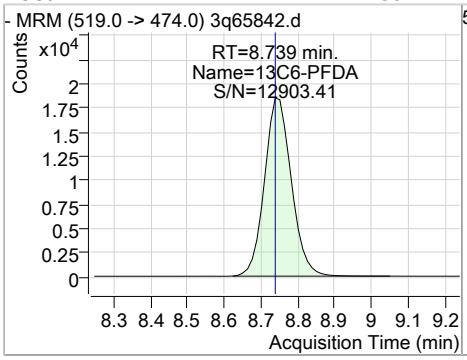
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.80	8.14	0.00	66878				

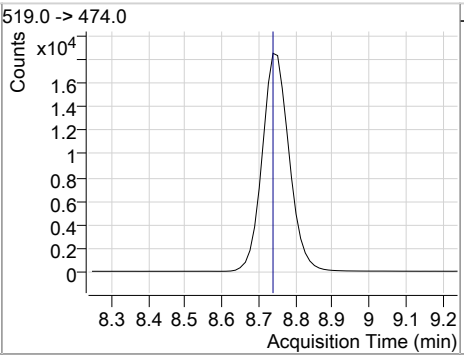


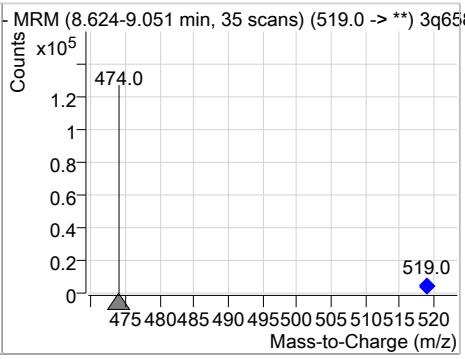




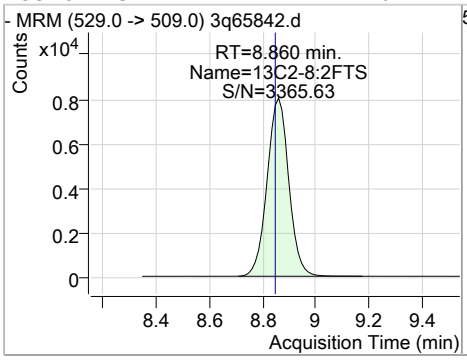
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.58	8.74	0.00	93679				

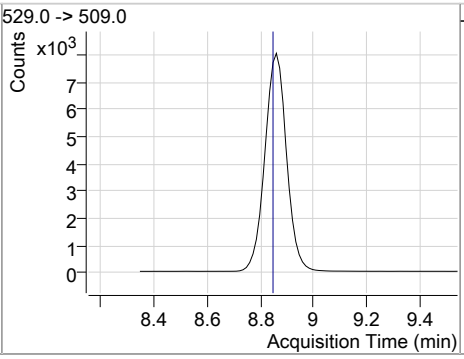


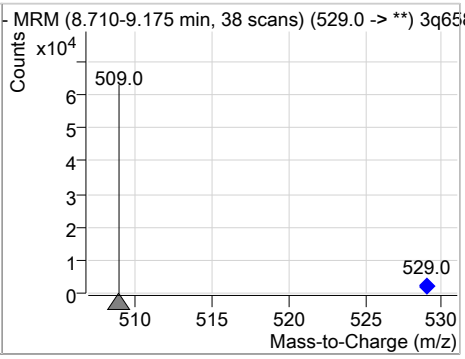




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.64	8.86	0.01	45240				

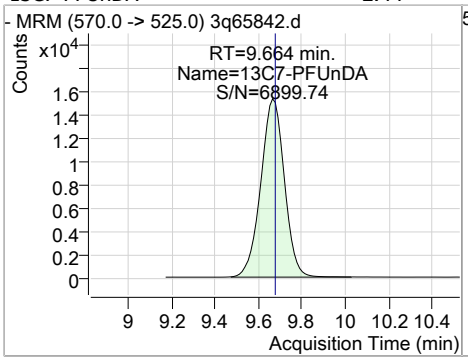


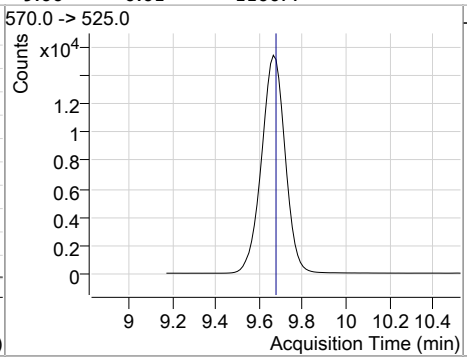


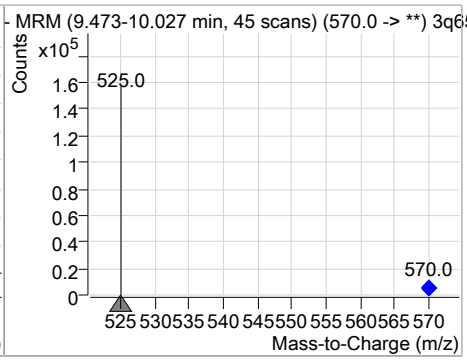


Perfluorinated Compounds by LC/MS/MS

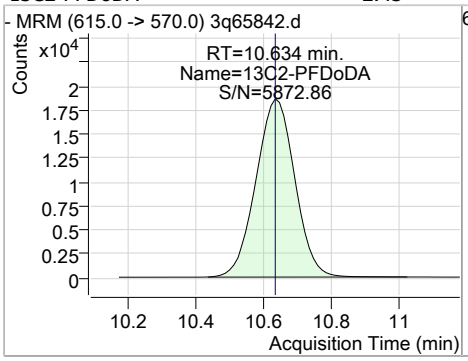
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.44	9.66	-0.01	116077				

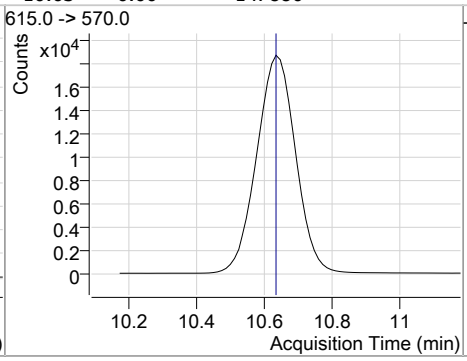


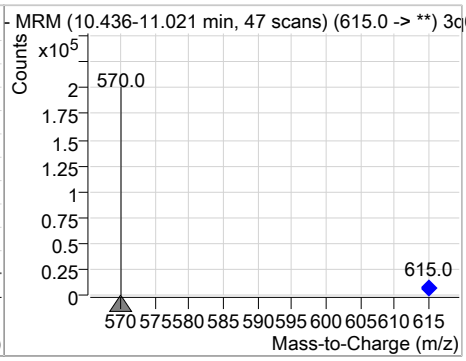




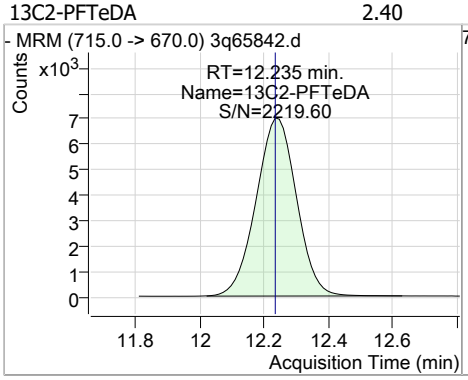
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.43	10.63	0.00	147880				

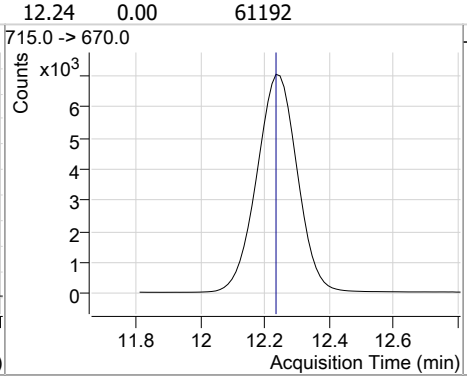


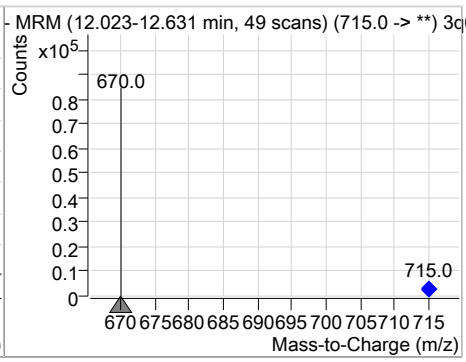




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.40	12.24	0.00	61192				







Manual Integration Approval Summary

Sample Number: FA98286-44
Lab FileID: 3Q65842.D
Injection Time: 09/15/22 23:41
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/18/22 14:55 Martha Valls
Supervisor approved: 09/19/22 15:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanoic acid	307-24-4		5.80	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.92	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65717.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 4:33:25 AM
Sample Name : fa98286-45
Vial : P6-C4
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,110,,,1,1,water

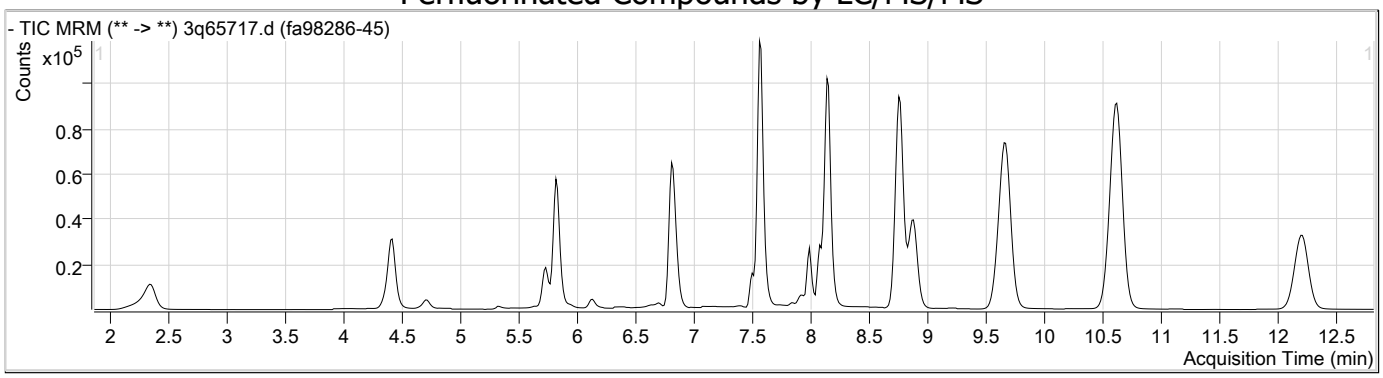
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	94954	20.00	µg/L	-0.038
M5-PFPeA	4.411	268.0 -> 223.0	139140	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	189724	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	201132	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	293046	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	328293	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	460490	20.00	µg/L	0.013
M7-PFUnDA	9.652	570.0 -> 525.0	546455	20.00	µg/L	-0.025
M2-PFDoDA	10.609	615.0 -> 570.0	693445	20.00	µg/L	-0.025
M2-PFTeDA	12.185	715.0 -> 670.0	279192	20.00	µg/L	-0.050
M8-FOSA	7.491	506.0 -> 78.0	45450	20.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	13677	20.00	µg/L	0.000
M3-PFHxS	6.834	402.0 -> 99.0	17588	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	27390	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	71188	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	113956	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	204799	20.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	67690	20.00	µg/L	-0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	15208	20.00	µg/L	0.013
M3-MeFOSA	7.829	515.0 -> 169.0	3988	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	64653	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	71188	12.33	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.6%		
13C2-6:2FTS	7.571	429.0 -> 409.0	113956	14.56	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%		
13C2-8:2FTS	8.873	529.0 -> 509.0	204799	14.09	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%		
13C2-PFDoDA	10.609	615.0 -> 570.0	693445	12.82	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%		
13C2-PFTeDA	12.185	715.0 -> 670.0	279192	12.32	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.6%		
13C3-PFBS	4.692	302.0 -> 99.0	13677	12.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.6%		
13C3-PFHxS	6.834	402.0 -> 99.0	17588	13.61	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.1%		
13C4-PFBA	2.327	217.0 -> 172.0	94954	11.93	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.7%		
13C4-PFHpA	6.805	367.0 -> 322.0	201132	13.35	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.7%		
13C5-PFHxA	5.813	318.0 -> 273.0	189724	12.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.5%		
13C5-PFPeA	4.411	268.0 -> 223.0	139140	12.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.0%		
13C6-PFDA	8.751	519.0 -> 474.0	460490	14.50	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

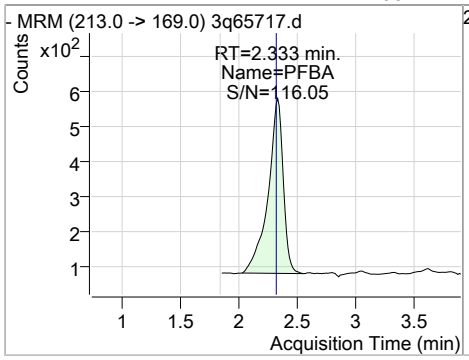
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%			
13C7-PFUnDA	9.652	570.0 -> 525.0	546455	13.24	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.2%			
13C8-FOSA	7.491	506.0 -> 78.0	45450	12.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%			
13C8-PFOA	7.560	421.0 -> 376.0	293046	14.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.8%			
13C8-PFOS	8.111	507.0 -> 99.0	27390	13.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%			
13C9-PFNA	8.150	472.0 -> 427.0	328293	14.86	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%			
d3-MeFOSAA	7.978	573.0 -> 419.0	67690	15.05	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	15038	11.72	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.6%			
d3-MeFOSA	7.829	515.0 -> 169.0	3988	4.50	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 22.5%			
d5-EtFOSAA	8.065	589.0 -> 419.0	64672	13.81	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.333	213.0 -> 169.0	4471	2.06	µg/L		100
PFBS	4.694	299.0 -> 80.0	3365	1.73	µg/L	m	97
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.807	363.0 -> 319.0	18416	1.28	µg/L	m	99
PFHpS	7.557	449.0 -> 80.0	1340	0.75	µg/L	m	91
PFHxA	5.814	313.0 -> 269.0	36412	3.60	µg/L		100
PFHxS	6.835	399.0 -> 80.0	31499	15.36	µg/L	m	99
PFNA	8.151	463.0 -> 419.0	3342	0.24	µg/L		89
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.561	413.0 -> 369.0	19334	1.08	µg/L	m	99
PFOS	8.111	499.0 -> 80.0	48600	21.54	µg/L	m	91
PFPeA	4.401	263.0 -> 219.0	19553	3.22	µg/L		100
PFPeS	5.932	349.0 -> 80.0	3162	2.09	µg/L	m	99
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	5.315	298.0 -> 78.0	3080	0.95	µg/L	m	98
FHxSA	6.688	398.0 -> 78.0	6933	1.60	µg/L	m	98

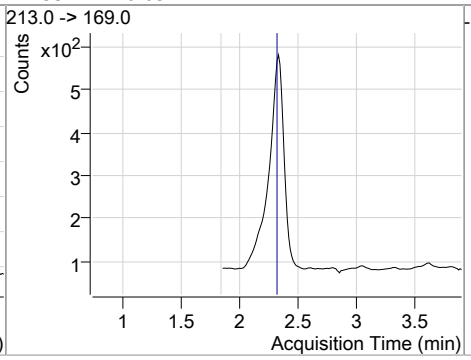
 # = Qualifier out of range, m = manually integrated, + = Area summed

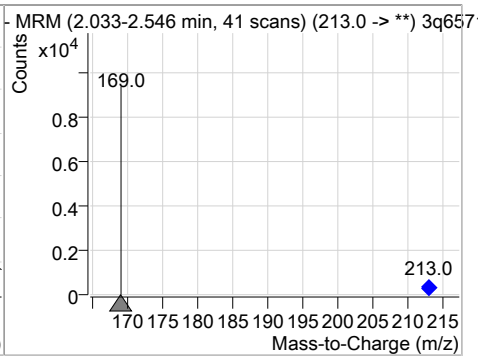
Perfluorinated Compounds by LC/MS/MS



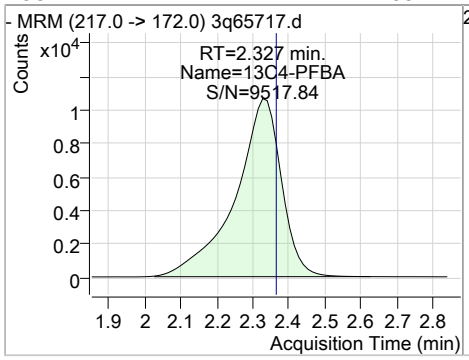
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.06	2.33	-0.03	4471				

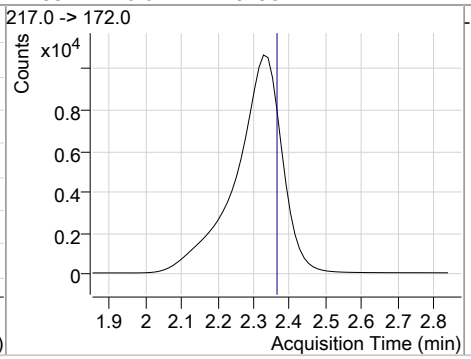


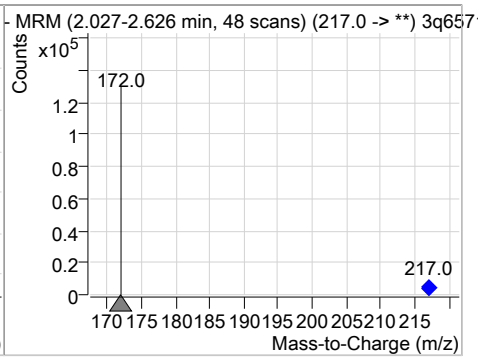




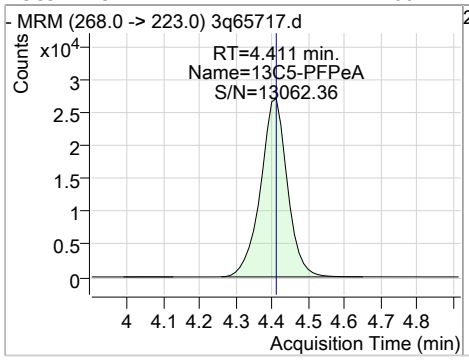
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.93	2.33	-0.04	94954				

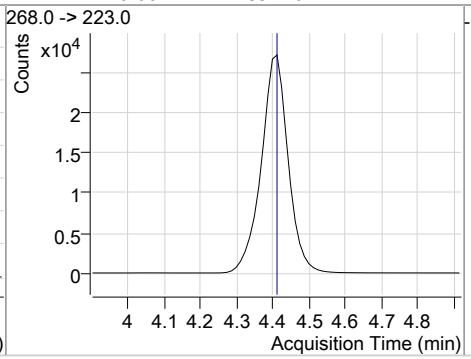


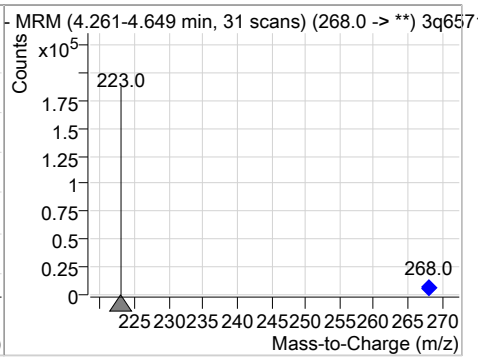




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.00	4.41	0.00	139140				

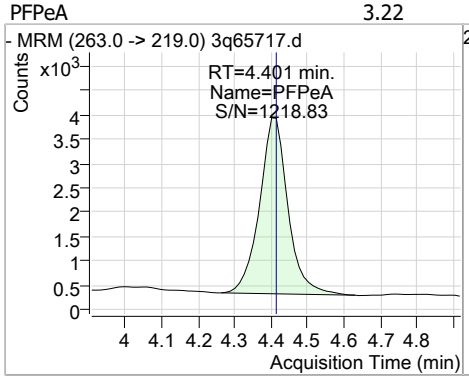


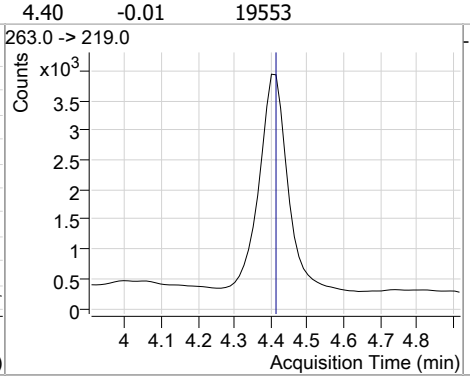


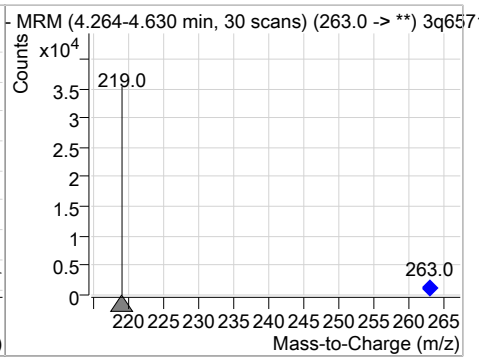


Perfluorinated Compounds by LC/MS/MS

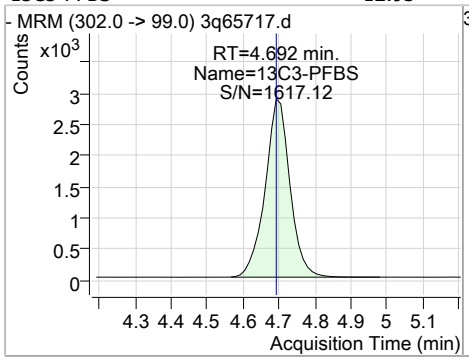
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	3.22	4.40	-0.01	19553				

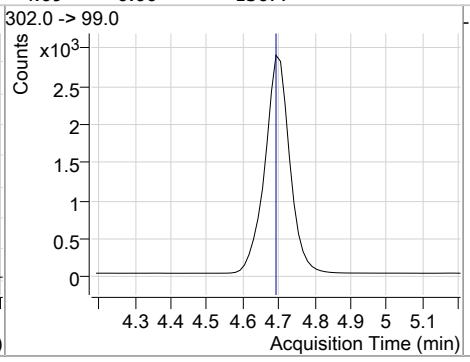


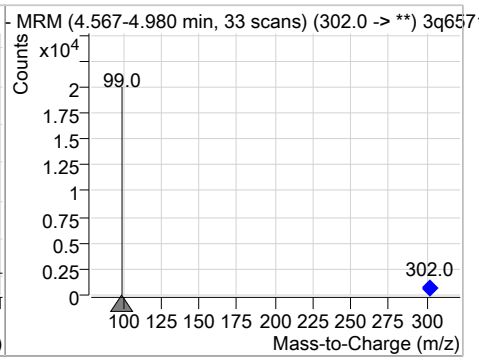




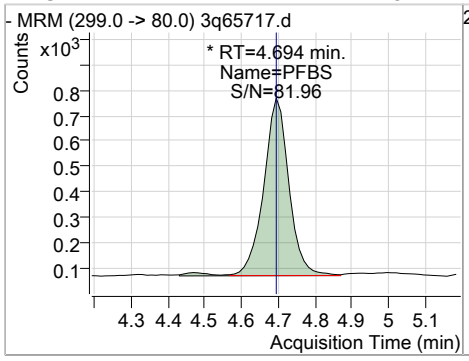
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.93	4.69	0.00	13677				

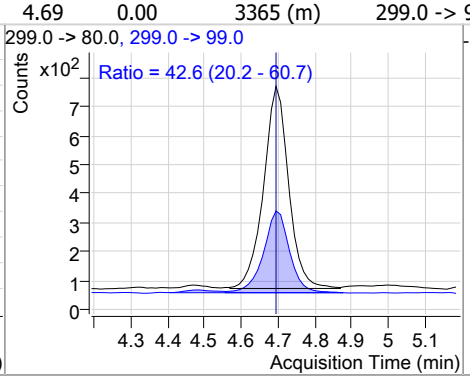


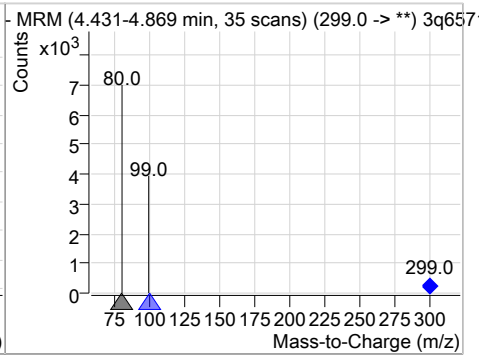




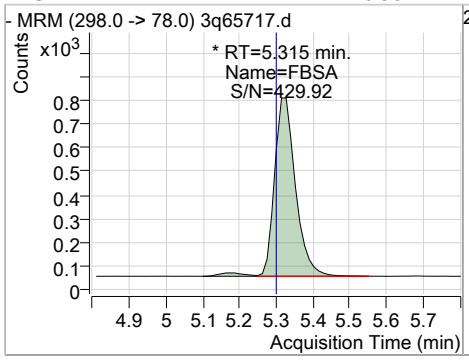
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.73	4.69	0.00	3365 (m)	299.0 -> 99.0	42.6	20.2	60.7

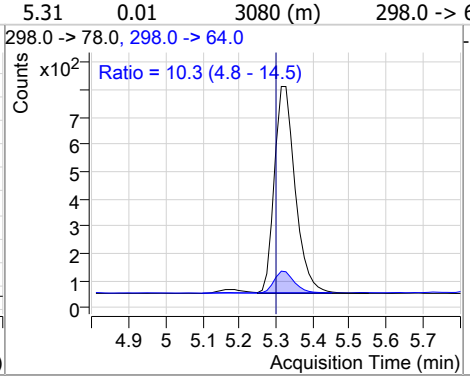


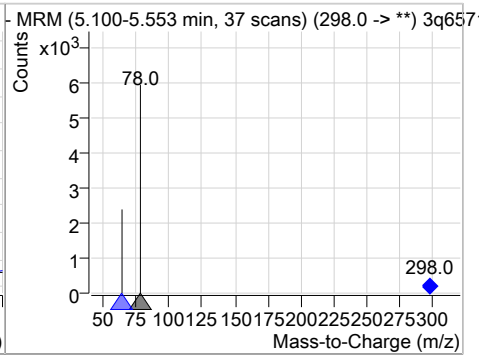




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.95	5.31	0.01	3080 (m)	298.0 -> 64.0	10.3	4.8	14.5

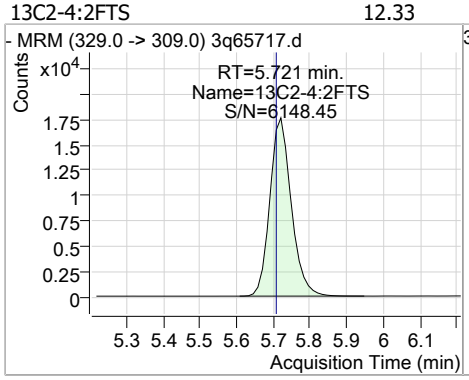


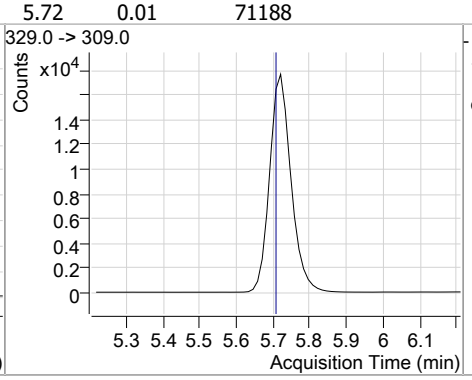


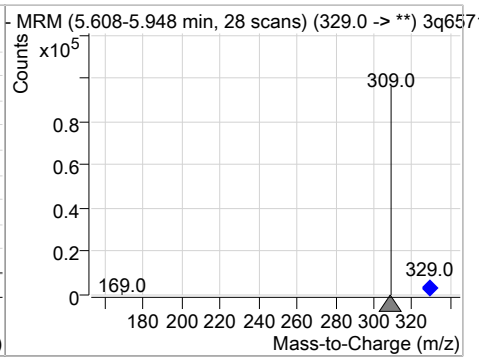


Perfluorinated Compounds by LC/MS/MS

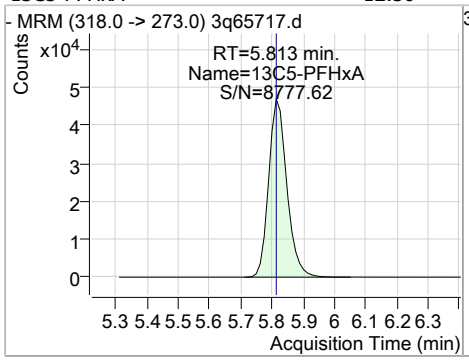
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	12.33	5.72	0.01	71188				

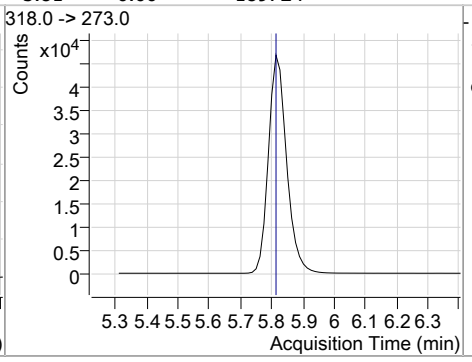


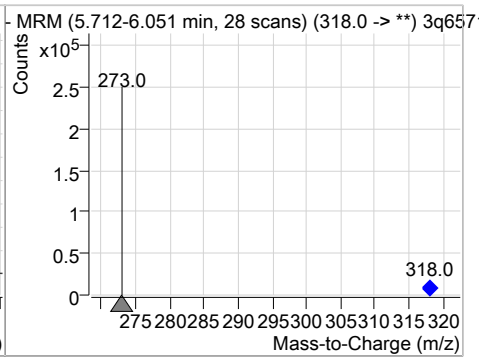




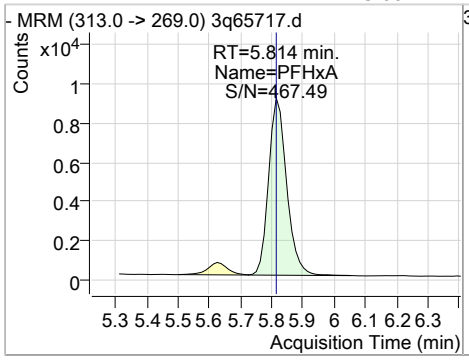
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.50	5.81	0.00	189724				

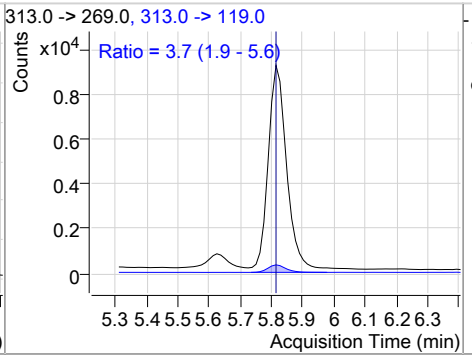


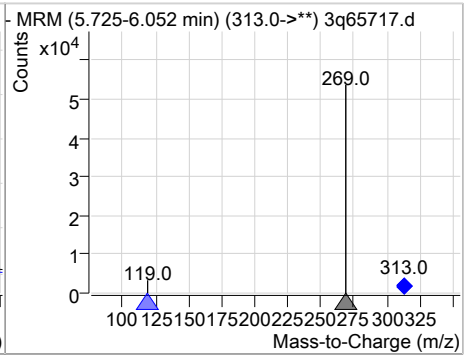




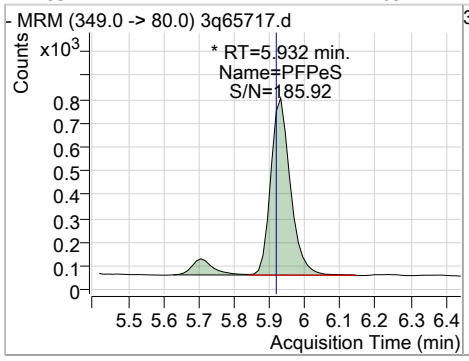
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	3.60	5.81	0.00	36412	313.0 -> 119.0	3.7	1.9	5.6

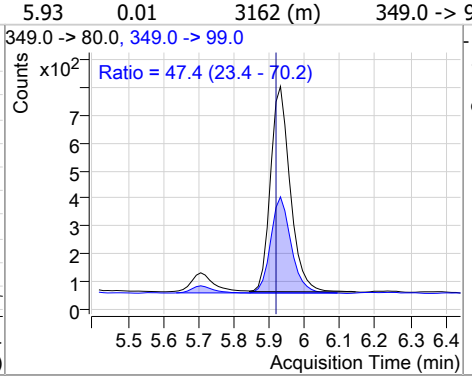


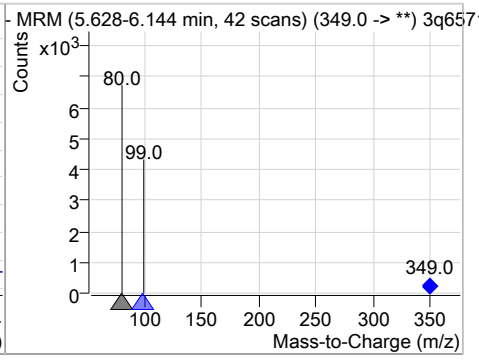




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.09	5.93	0.01	3162 (m)	349.0 -> 99.0	47.4	23.4	70.2

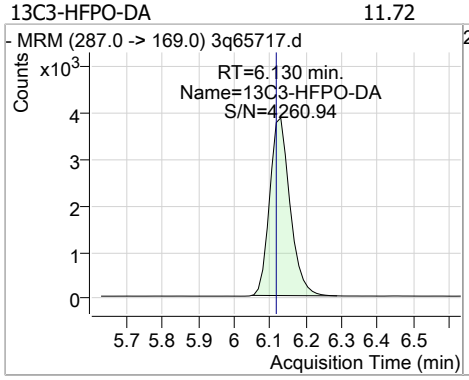


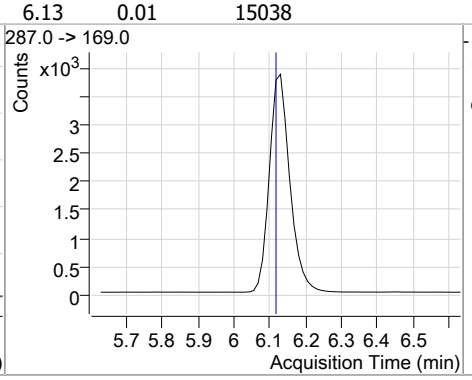


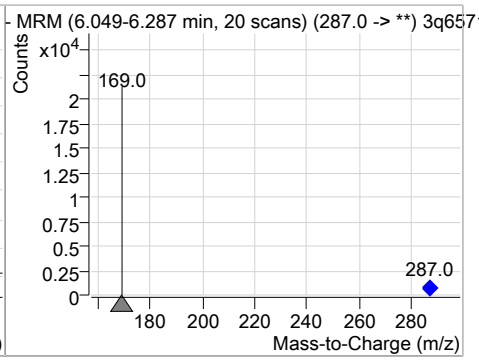


Perfluorinated Compounds by LC/MS/MS

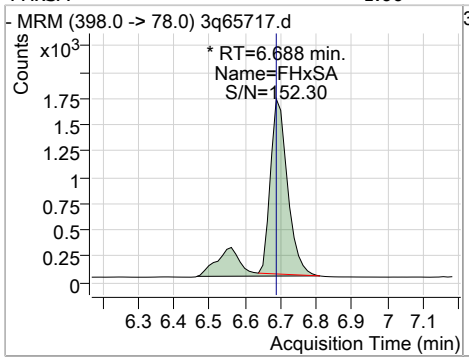
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	11.72	6.13	0.01	15038				

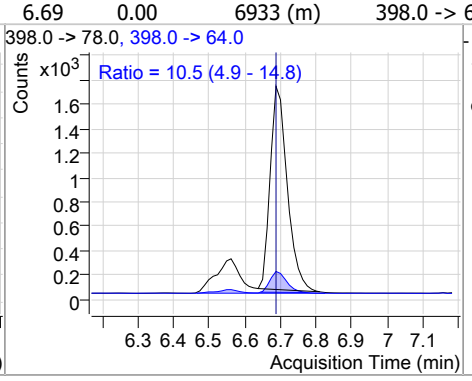


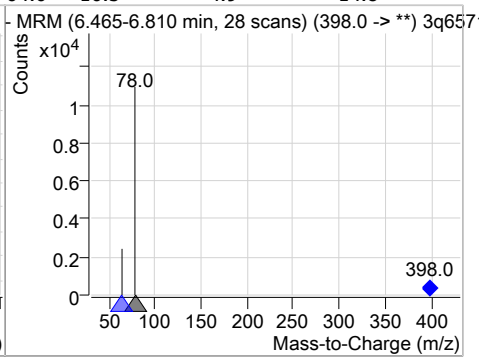




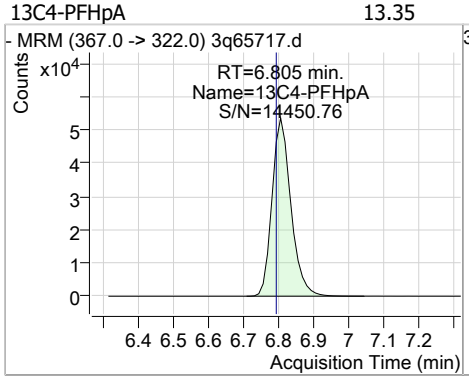
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.60	6.69	0.00	6933 (m)	398.0 -> 64.0	10.5	4.9	14.8

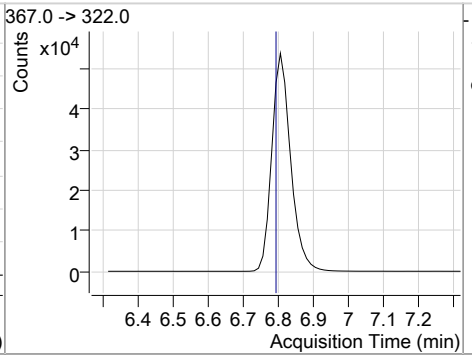


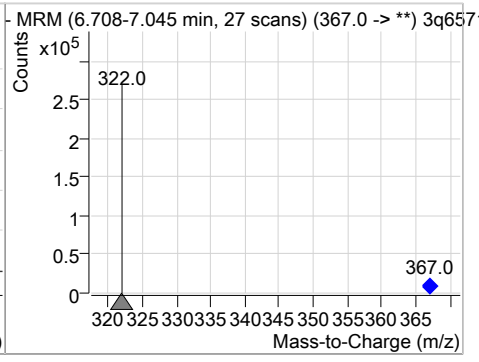




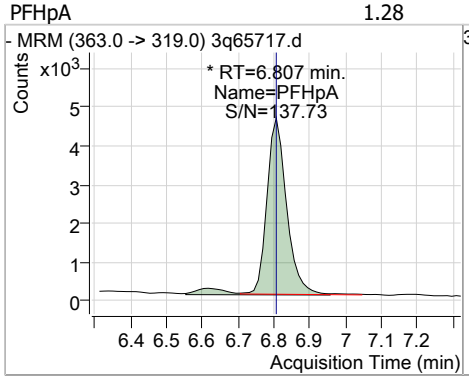
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.35	6.81	0.01	201132				

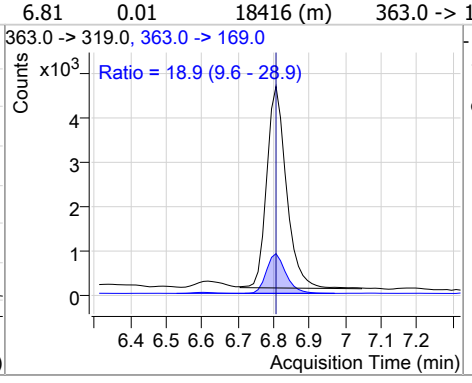


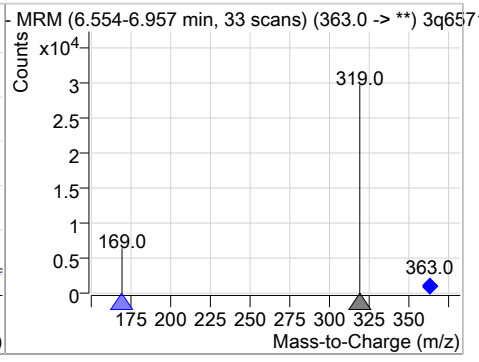




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.28	6.81	0.01	18416 (m)	363.0 -> 169.0	18.9	9.6	28.9

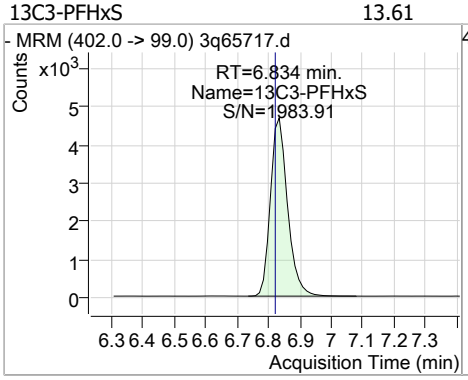


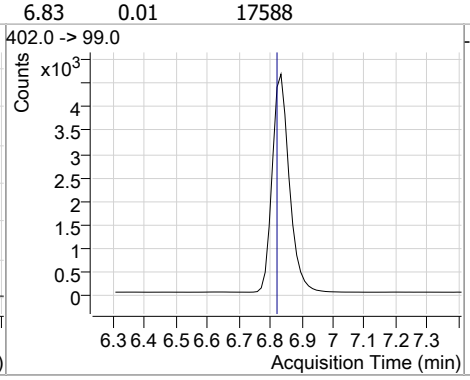


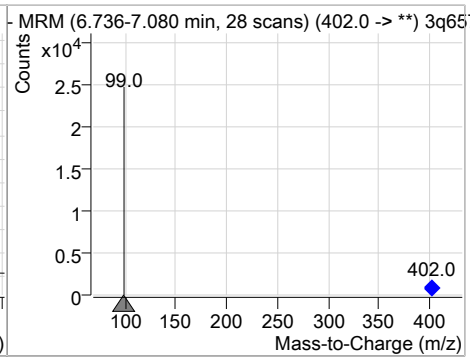


Perfluorinated Compounds by LC/MS/MS

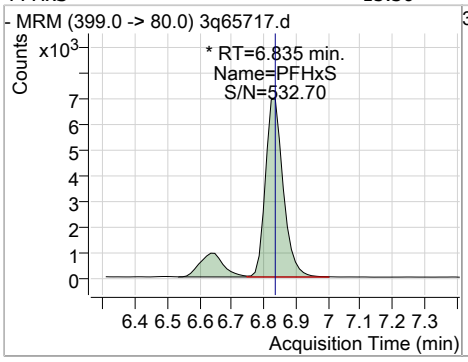
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.61	6.83	0.01	17588				

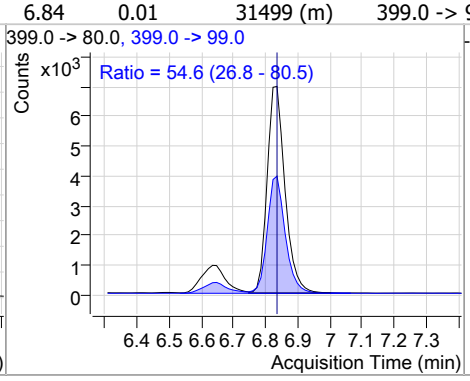


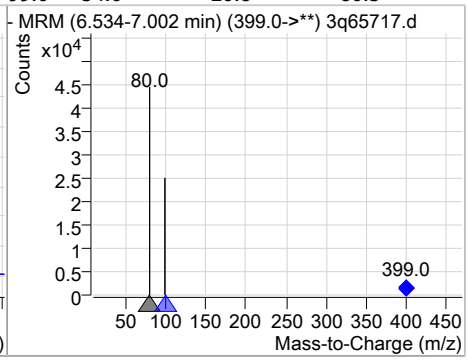




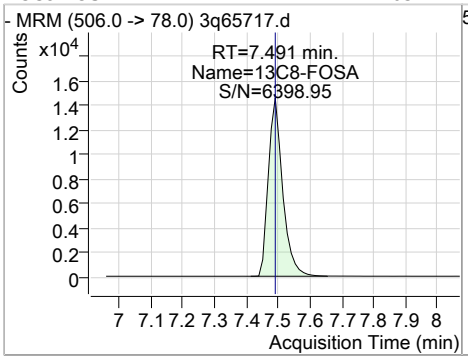
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.36	6.84	0.01	31499 (m)	399.0 -> 99.0	54.6	26.8	80.5

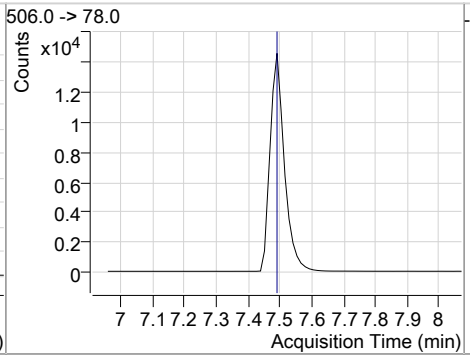


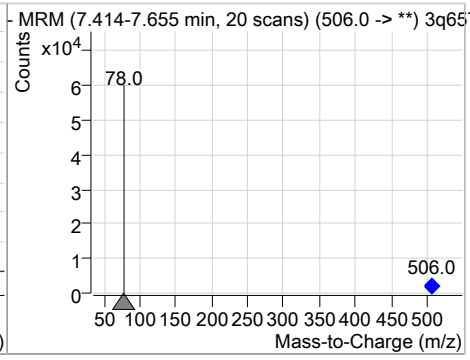




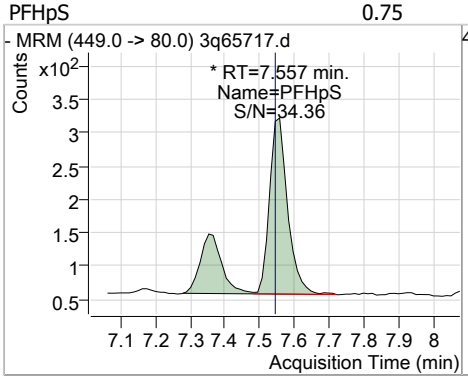
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.03	7.49	0.00	45450				

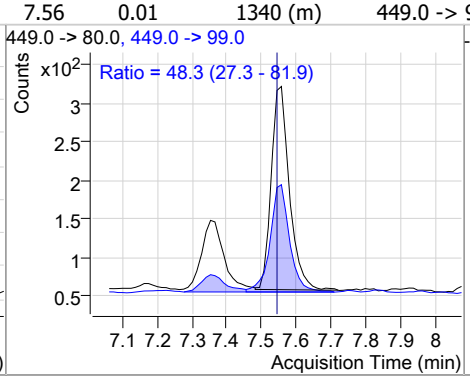


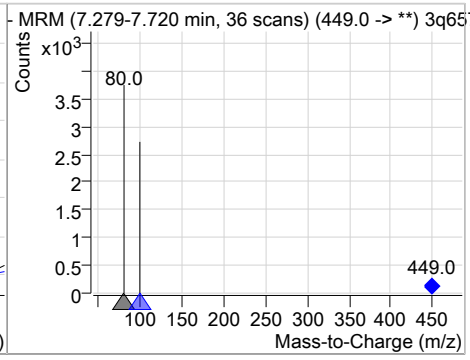




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.75	7.56	0.01	1340 (m)	449.0 -> 99.0	48.3	27.3	81.9

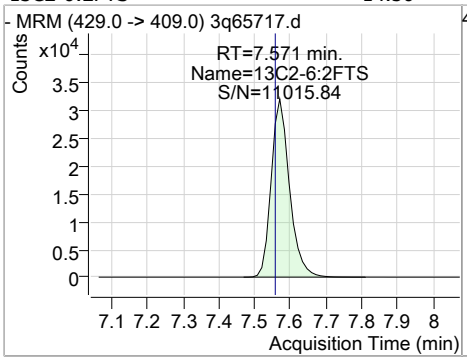


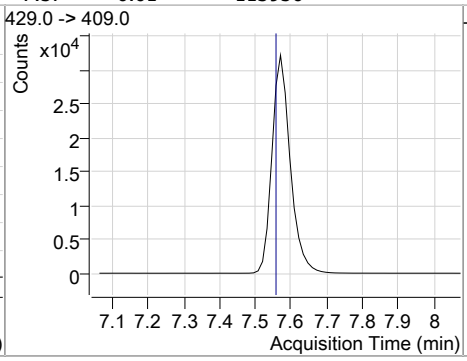


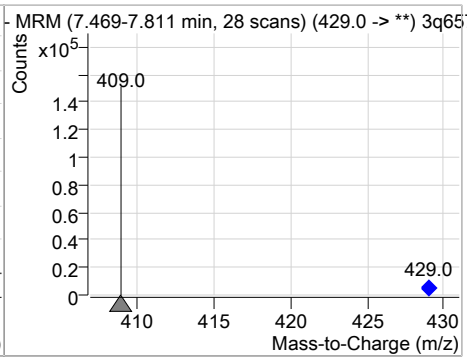


Perfluorinated Compounds by LC/MS/MS

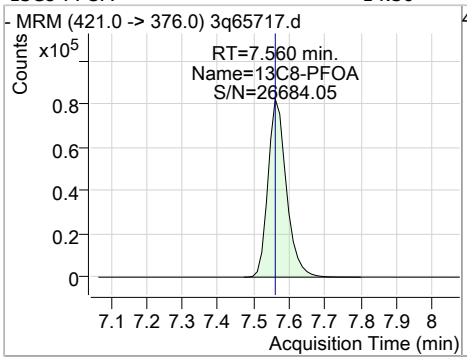
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	14.56	7.57	0.01	113956				

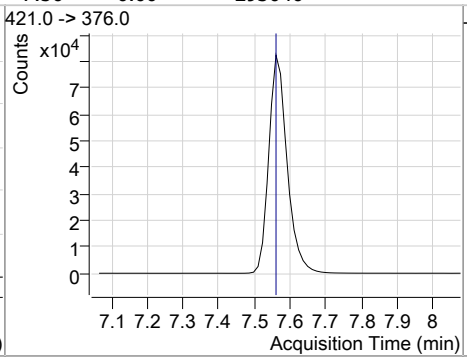


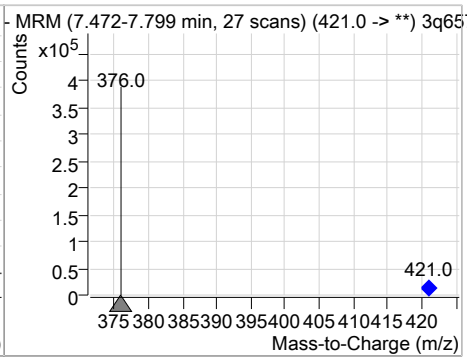




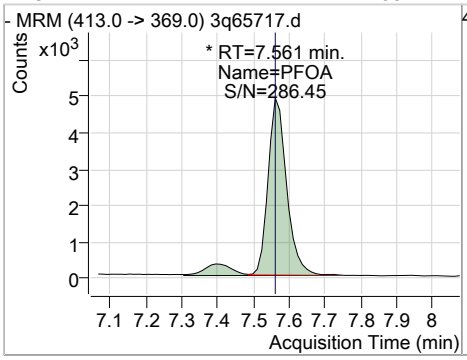
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.56	7.56	0.00	293046				

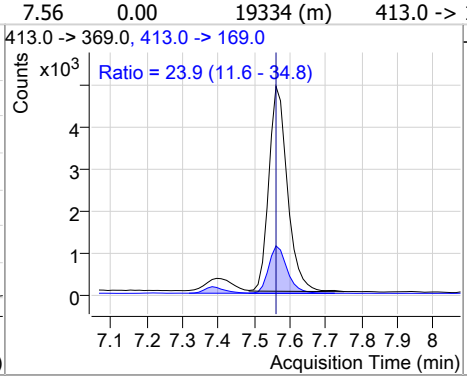


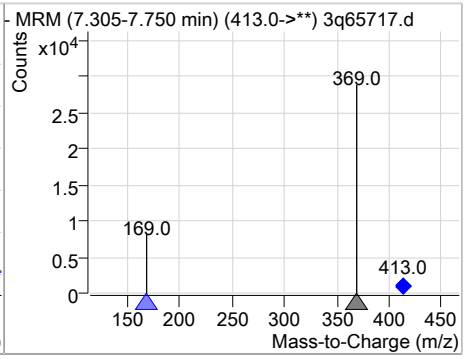




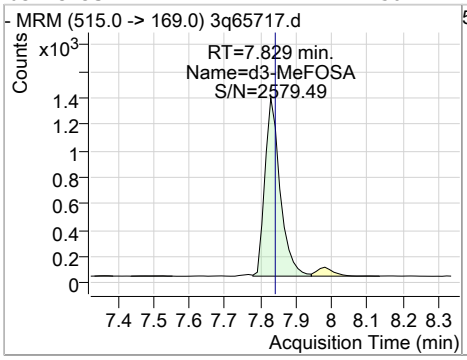
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.08	7.56	0.00	19334 (m)	413.0 -> 169.0	23.9	11.6	34.8

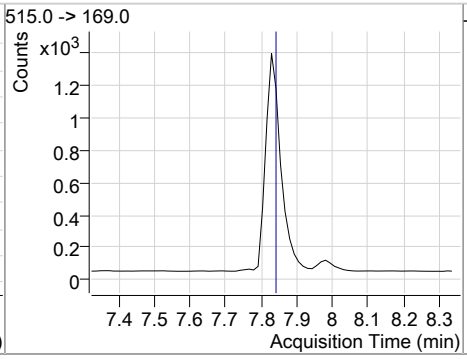


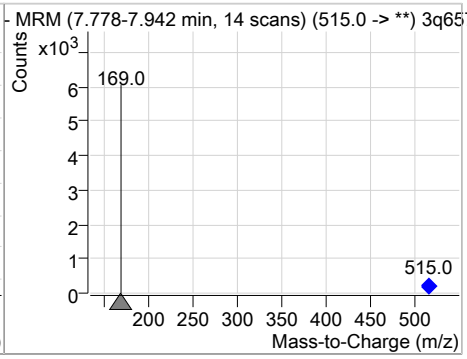




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	4.50	7.83	-0.01	3988				

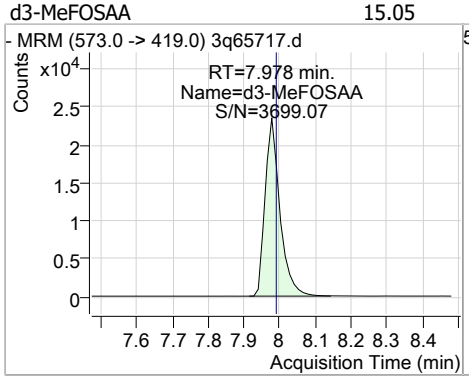


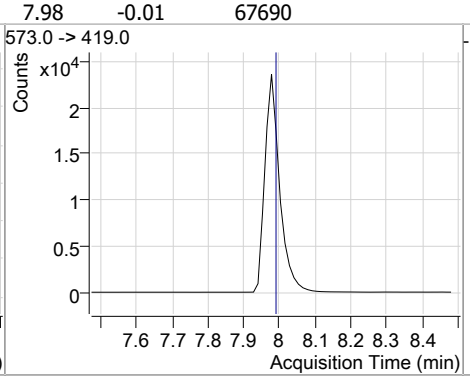


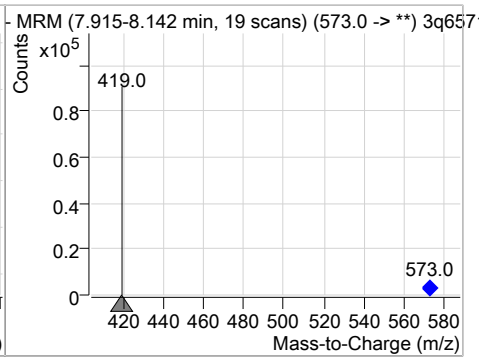


Perfluorinated Compounds by LC/MS/MS

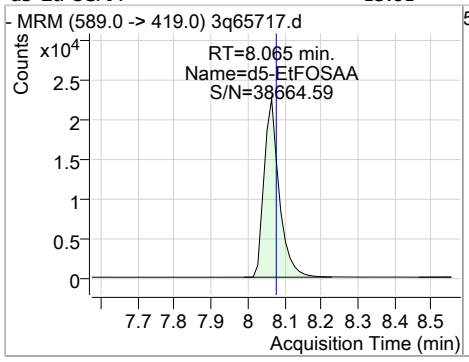
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.05	7.98	-0.01	67690				

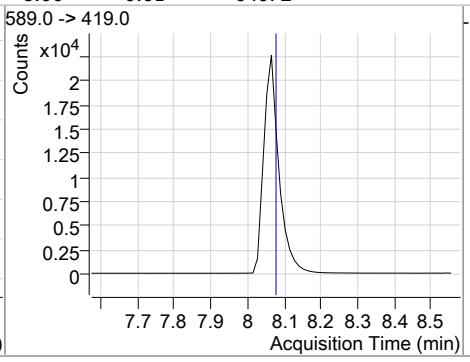


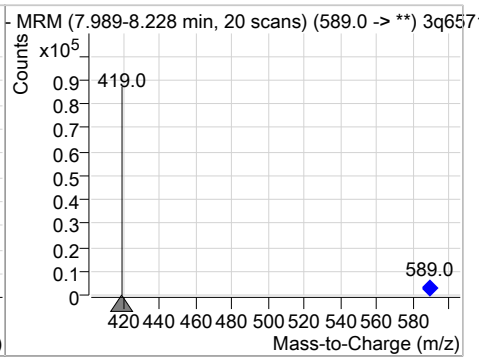




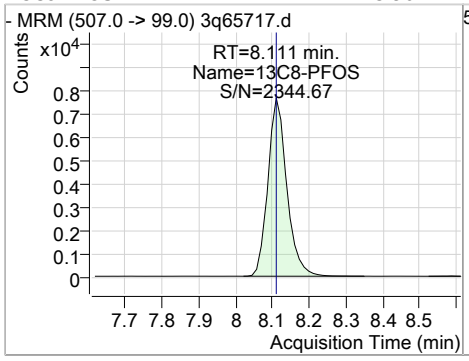
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.81	8.06	-0.01	64672				

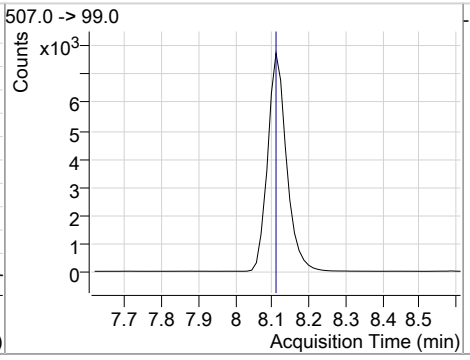


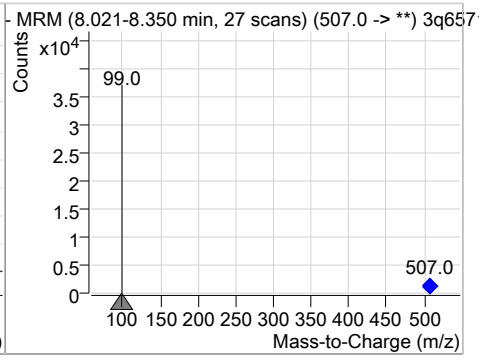




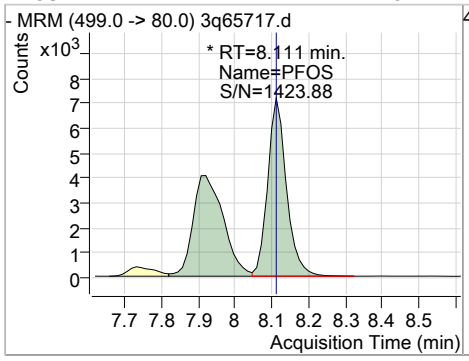
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.96	8.11	0.00	27390				

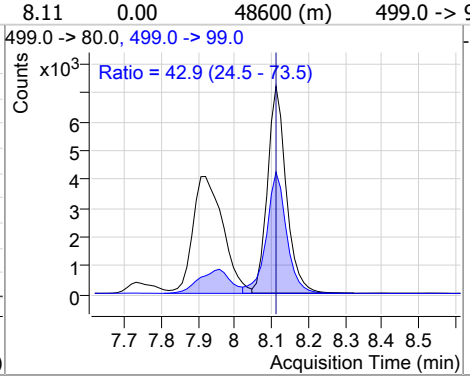


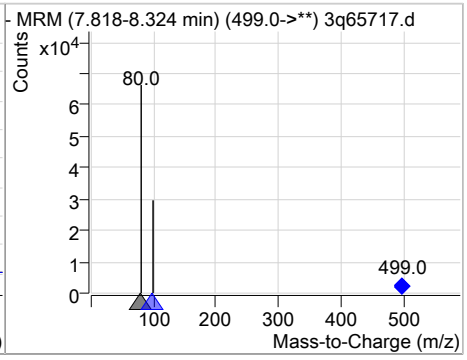




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.54	8.11	0.00	48600 (m)	499.0 -> 99.0	42.9	24.5	73.5

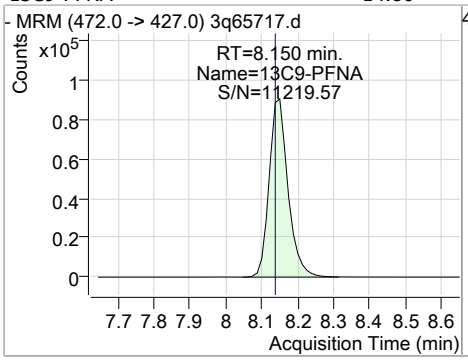


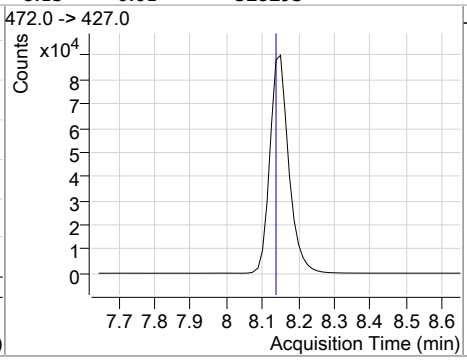


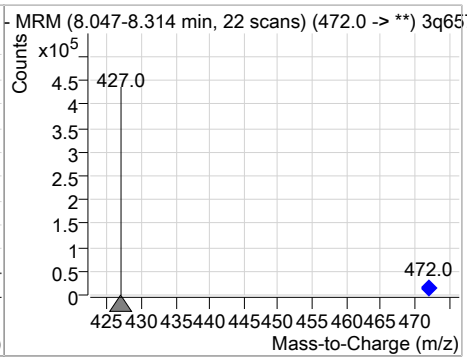


Perfluorinated Compounds by LC/MS/MS

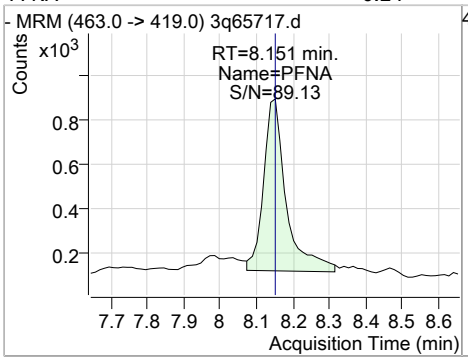
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	14.86	8.15	0.01	328293				

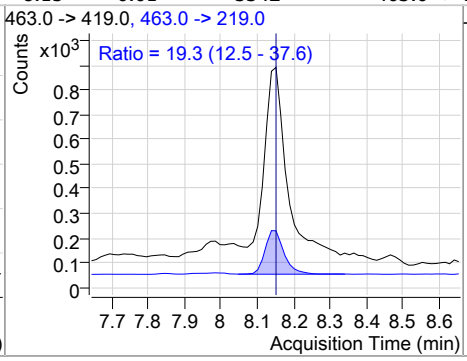


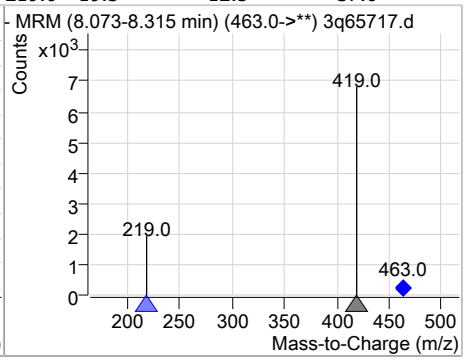




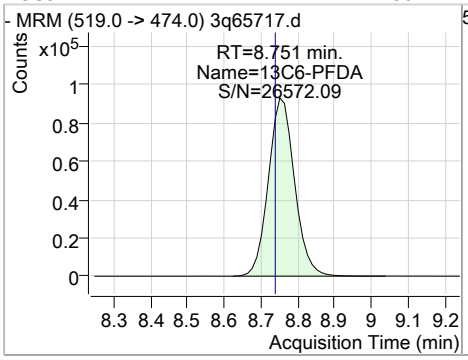
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.24	8.15	0.01	3342	463.0 -> 219.0	19.3	12.5	37.6

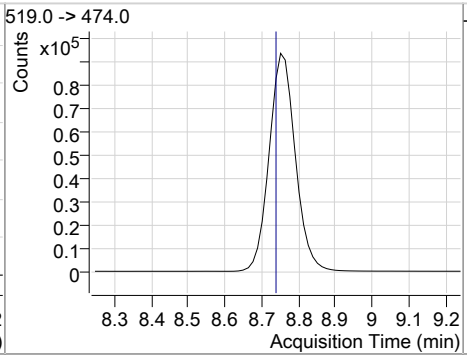


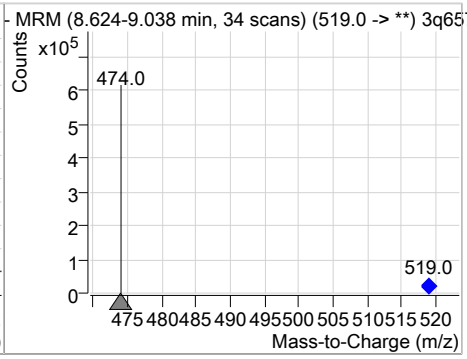




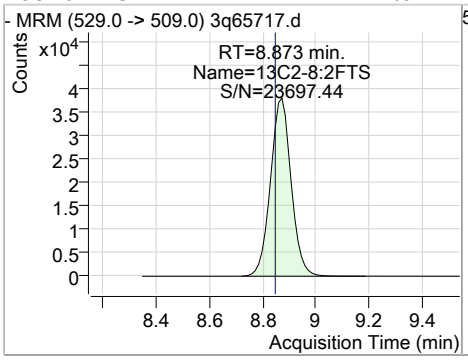
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.50	8.75	0.01	460490				

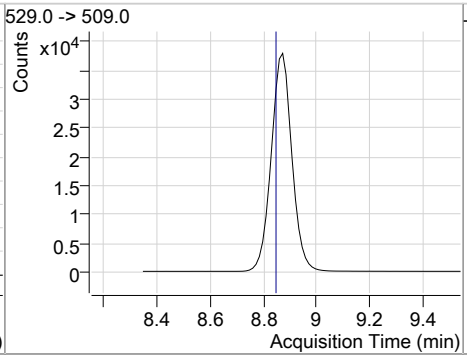


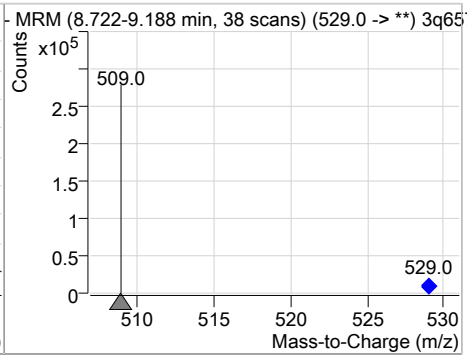




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.09	8.87	0.03	204799				

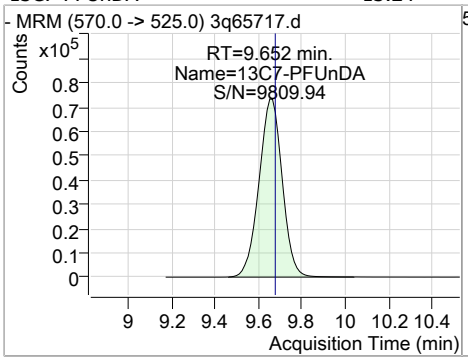


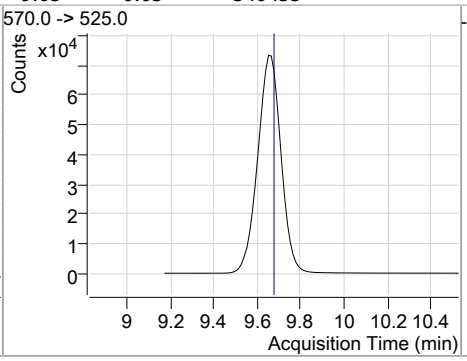


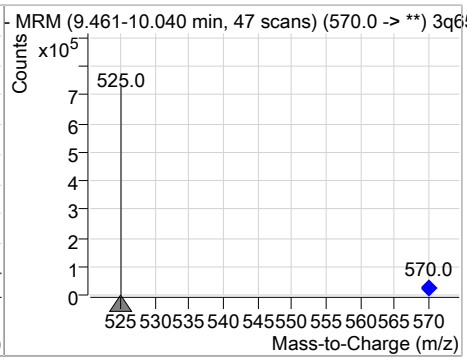


Perfluorinated Compounds by LC/MS/MS

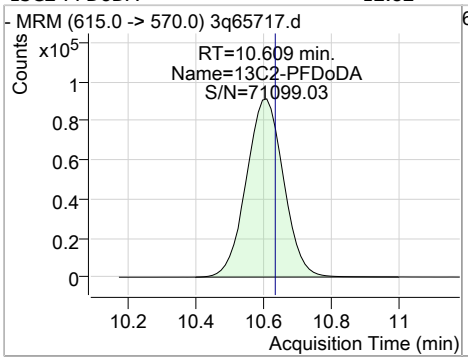
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.24	9.65	-0.03	546455				

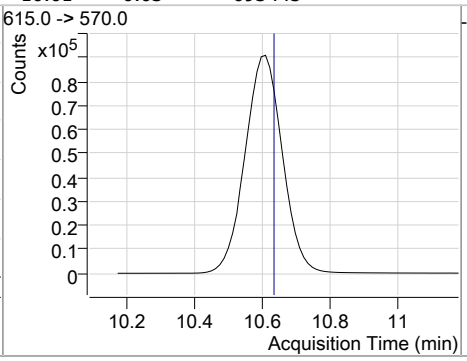


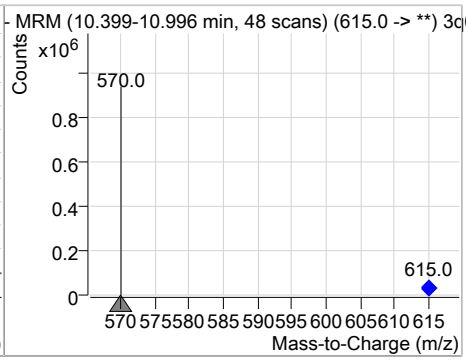




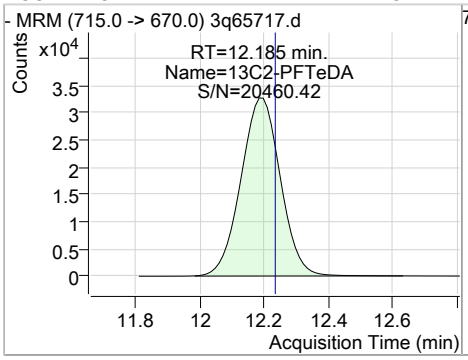
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.82	10.61	-0.03	693445				

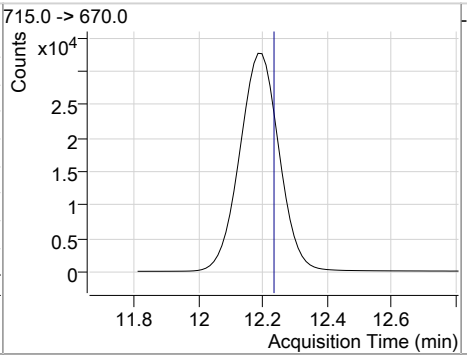


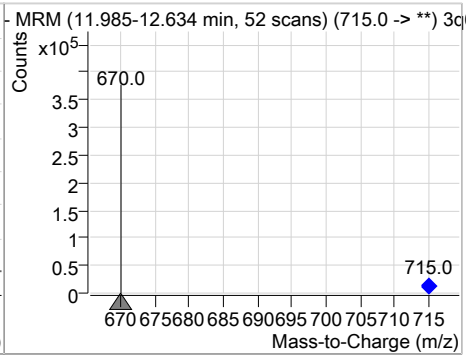




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.32	12.19	-0.05	279192				







Manual Integration Approval Summary

Sample Number: FA98286-45
Lab FileID: 3Q65717.D
Injection Time: 09/14/22 04:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 11:58 Martha Valls
Supervisor approved: 09/16/22 16:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanesulfonic acid	375-73-5		4.69	Split peak
PFBSA	30334-69-1		5.32	Split peak
Perfluoropentanesulfonic acid	2706-91-4		5.93	Split peak
PFHxSA	41997-13-1		6.69	Split peak
Perfluoroheptanoic acid	375-85-9		6.81	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
Perfluoroheptanesulfonic acid	375-92-8		7.56	Split peak
Perfluorooctanoic acid	335-67-1		7.56	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/19/22 15:31

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65718.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 4:52:59 AM
Sample Name : fa98286-46
Vial : P6-C5
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,120,,,1,1,water

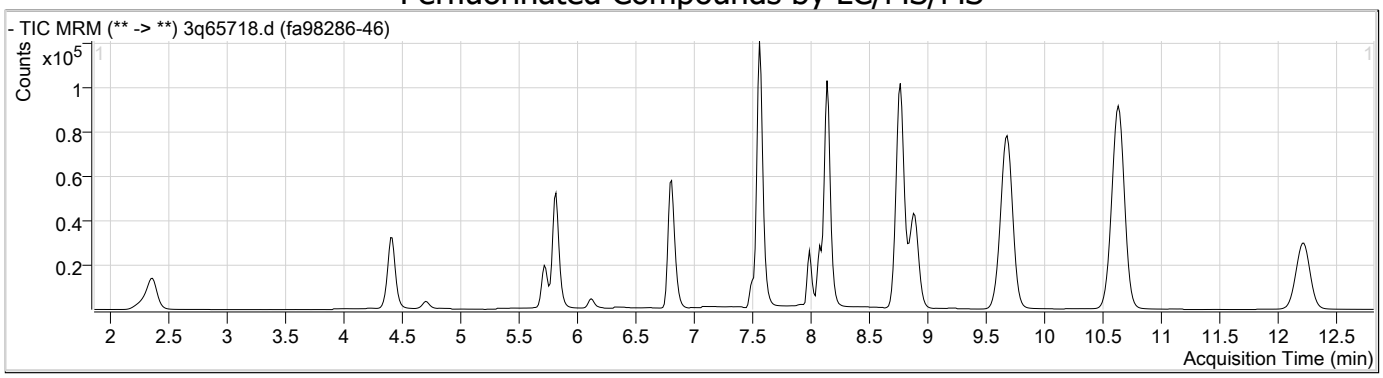
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.352	217.0 -> 172.0	103452	20.00	µg/L	-0.013
M5-PFPeA	4.399	268.0 -> 223.0	149835	20.00	µg/L	-0.013
M5-PFHxA	5.813	318.0 -> 273.0	198606	20.00	µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	210499	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	303586	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	343240	20.00	µg/L	0.000
M6-PFDA	8.764	519.0 -> 474.0	498642	20.00	µg/L	0.025
M7-PFUnDA	9.677	570.0 -> 525.0	573434	20.00	µg/L	0.000
M2-PFDoDA	10.621	615.0 -> 570.0	697781	20.00	µg/L	-0.013
M2-PFTeDA	12.210	715.0 -> 670.0	255687	20.00	µg/L	-0.025
M8-FOSA	7.491	506.0 -> 78.0	35131	20.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	14161	20.00	µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	18666	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	29170	20.00	µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	75150	20.00	µg/L	0.000
M2-6:2FTS	7.571	429.0 -> 409.0	119717	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	226387	20.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	71032	20.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	15881	20.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	226	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	68352	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.708	329.0 -> 309.0	75150	13.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.1%		
13C2-6:2FTS	7.571	429.0 -> 409.0	119717	15.29	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%		
13C2-8:2FTS	8.873	529.0 -> 509.0	226387	15.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.9%		
13C2-PFDoDA	10.621	615.0 -> 570.0	697781	12.90	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%		
13C2-PFTeDA	12.210	715.0 -> 670.0	255687	11.29	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.4%		
13C3-PFBS	4.692	302.0 -> 99.0	14161	13.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%		
13C3-PFHxS	6.822	402.0 -> 99.0	18666	14.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.2%		
13C4-PFBA	2.352	217.0 -> 172.0	103452	13.00	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.0%		
13C4-PFHpA	6.793	367.0 -> 322.0	210499	13.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%		
13C5-PFHxA	5.813	318.0 -> 273.0	198606	13.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.4%		
13C5-PFPeA	4.399	268.0 -> 223.0	149835	12.93	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.6%		
13C6-PFDA	8.764	519.0 -> 474.0	498642	15.70	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

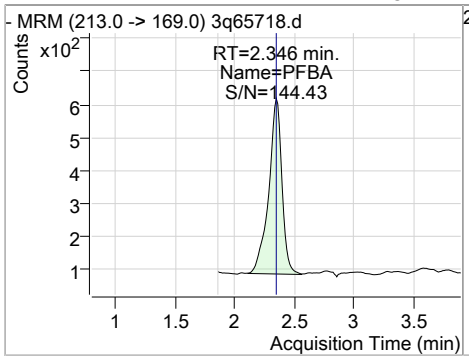
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%			
13C7-PFUnDA	9.677	570.0 -> 525.0	573434	13.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.5%			
13C8-FOSA	7.491	506.0 -> 78.0	35131	9.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 46.5%			
13C8-PFOA	7.560	421.0 -> 376.0	303586	15.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%			
13C8-PFOS	8.111	507.0 -> 99.0	29170	14.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.3%			
13C9-PFNA	8.138	472.0 -> 427.0	343240	15.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.7%			
d3-MeFOSAA	7.978	573.0 -> 419.0	71032	15.80	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	15887	12.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.9%			
d3-MeFOSA	7.829	515.0 -> 169.0	226	0.26	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.3%			
d5-EtFOSAA	8.065	589.0 -> 419.0	68373	14.60	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.346	213.0 -> 169.0	4087	1.73	µg/L		100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.794	363.0 -> 319.0	3483	0.23	µg/L		97
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	5.814	313.0 -> 269.0	5150	0.49	µg/L		100
PFHxS	6.823	399.0 -> 80.0	3389	1.56	µg/L	m	94
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.561	413.0 -> 369.0	5220	0.28	µg/L	m	99
PFOS	7.907	499.0 -> 80.0	4753	1.98	µg/L	m	78
PFPeA	4.401	263.0 -> 219.0	4089	0.62	µg/L		100
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

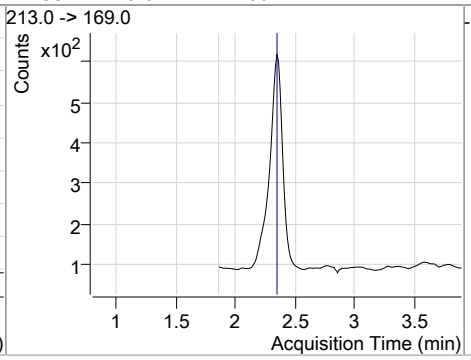
 # = Qualifier out of range, m = manually integrated, + = Area summed

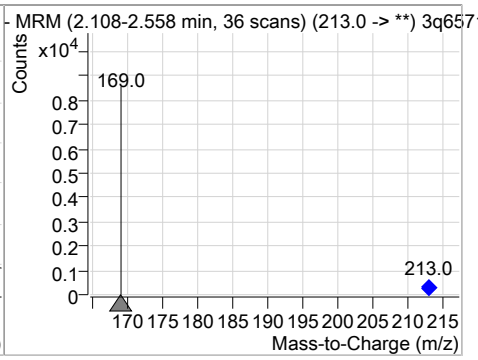
Perfluorinated Compounds by LC/MS/MS



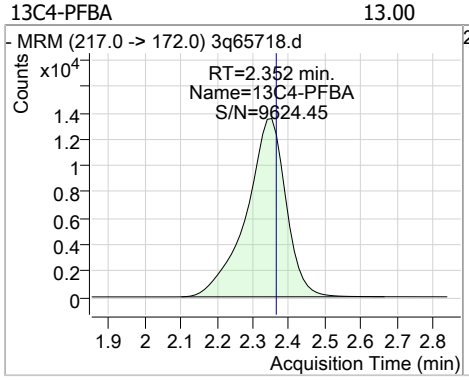
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.73	2.35	-0.01	4087				

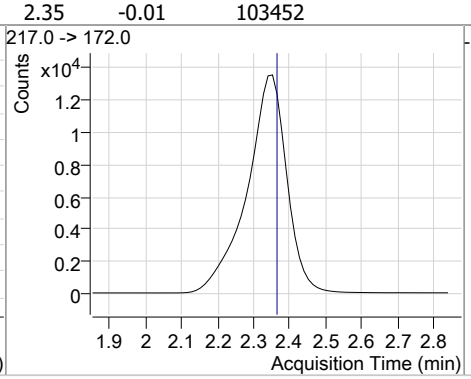


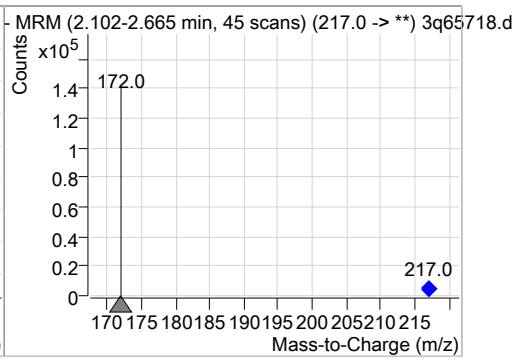




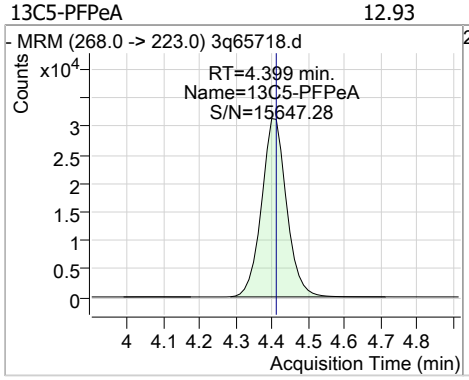
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.00	2.35	-0.01	103452				

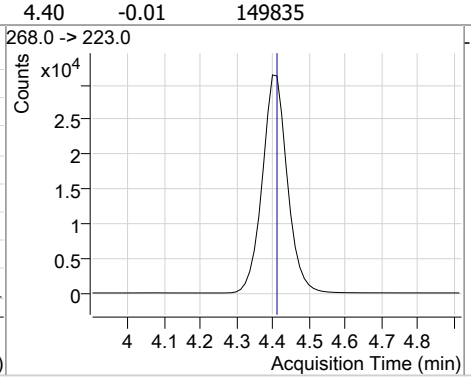


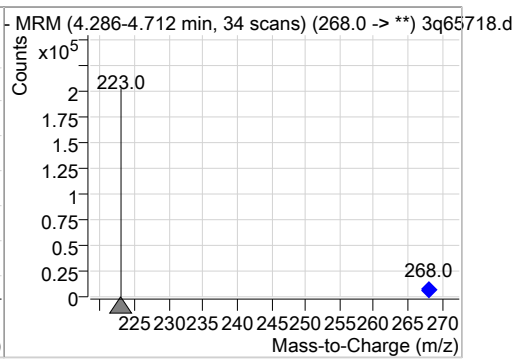




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.93	4.40	-0.01	149835				

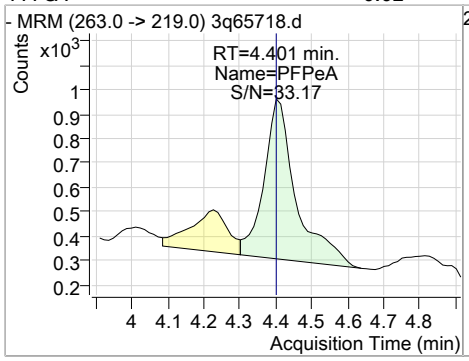


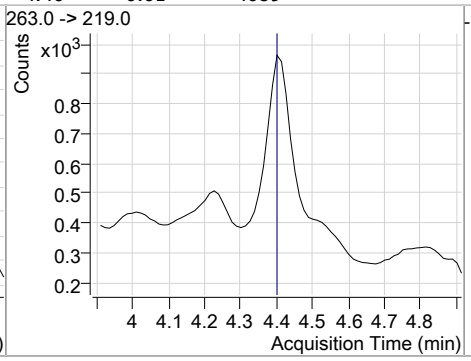


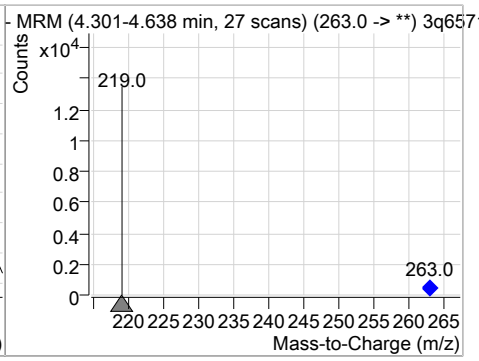


Perfluorinated Compounds by LC/MS/MS

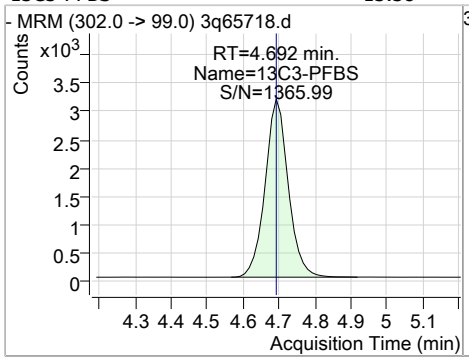
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.62	4.40	-0.01	4089				

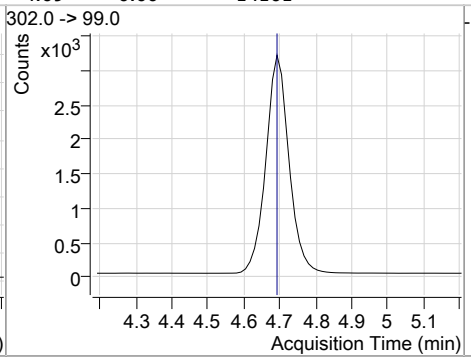


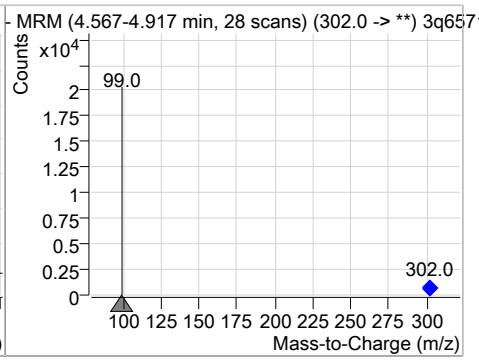




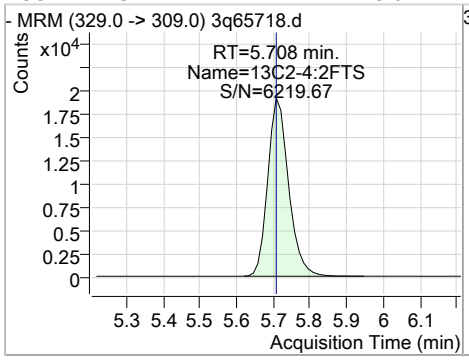
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	13.38	4.69	0.00	14161				

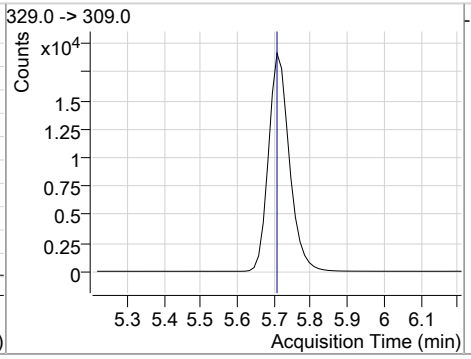


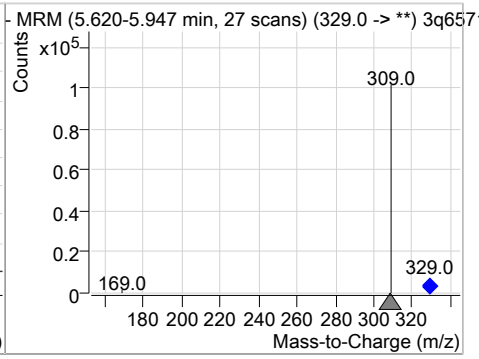




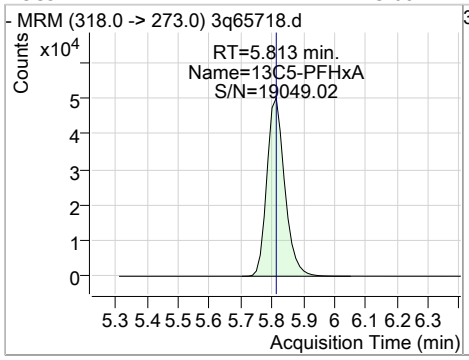
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.01	5.71	0.00	75150				

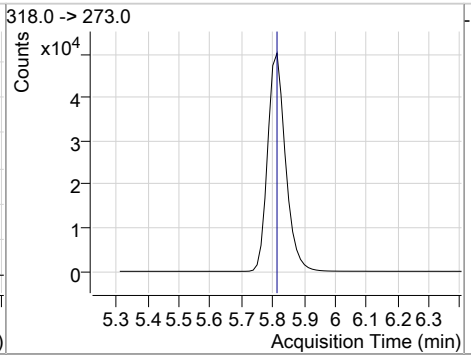


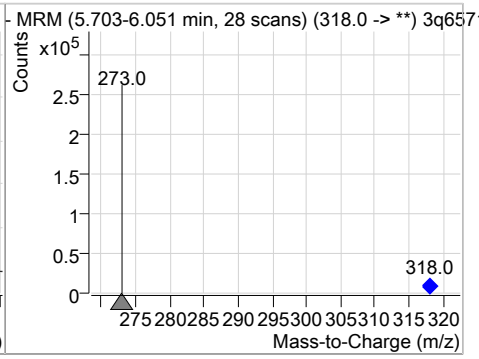




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.08	5.81	0.00	198606				

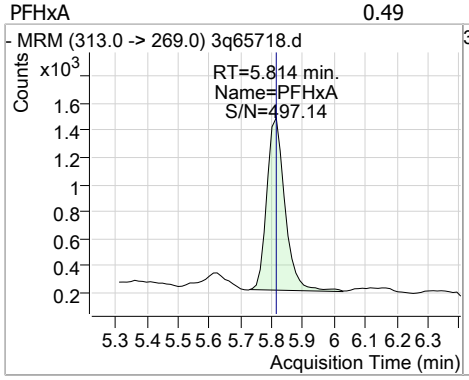


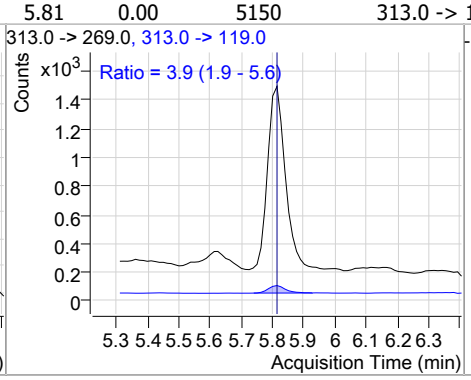


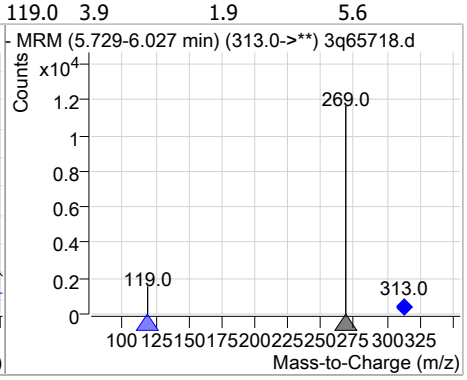


Perfluorinated Compounds by LC/MS/MS

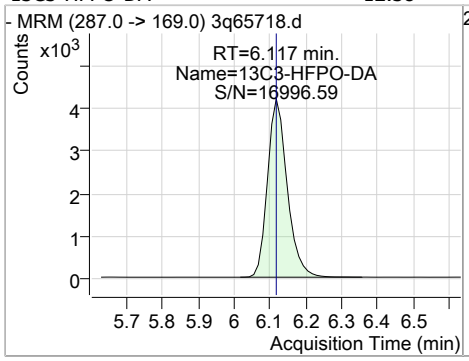
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.49	5.81	0.00	5150	313.0 -> 119.0	3.9	1.9	5.6

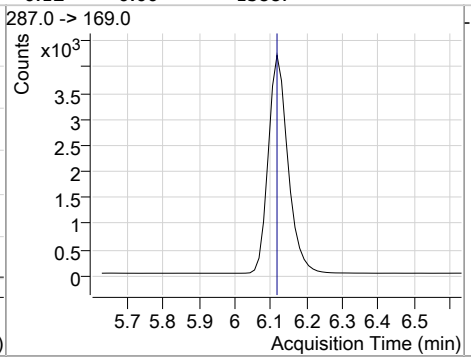


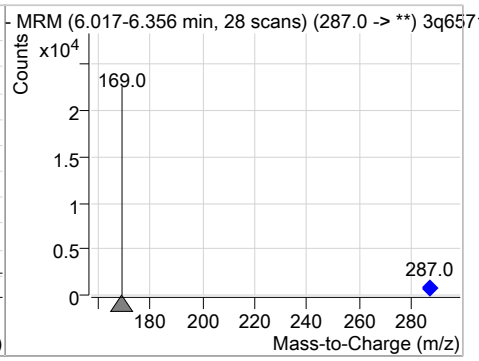




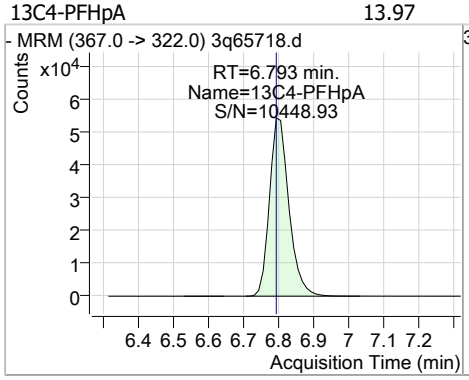
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.38	6.12	0.00	15887				

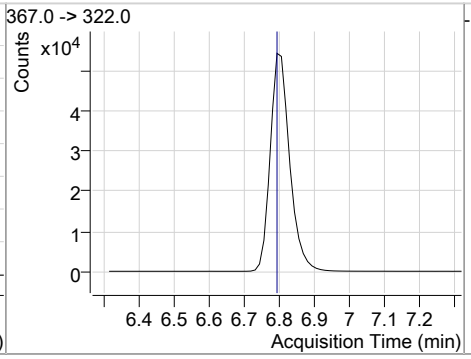


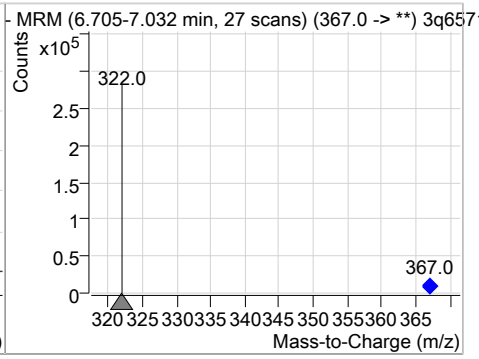




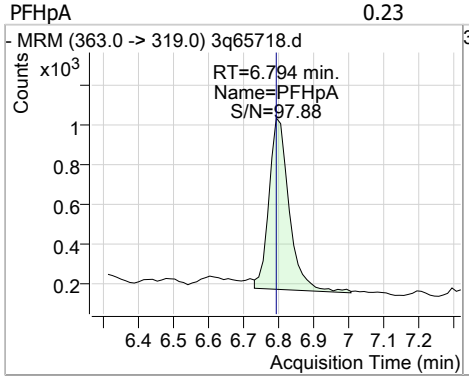
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	13.97	6.79	0.00	210499				

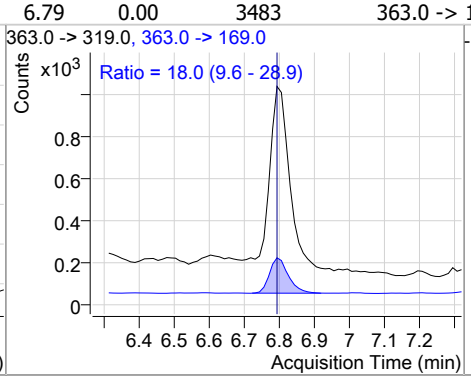


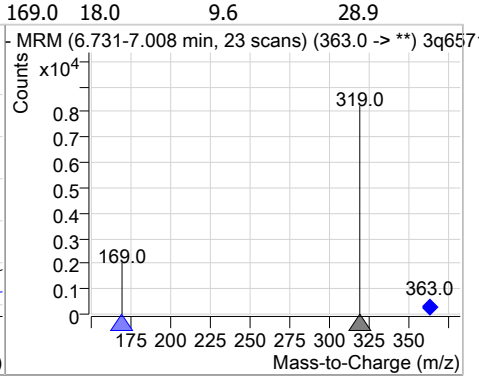




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.23	6.79	0.00	3483	363.0 -> 169.0	18.0	9.6	28.9

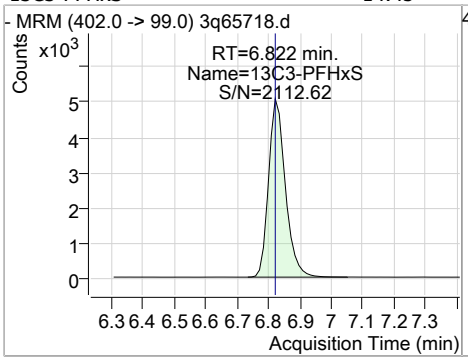


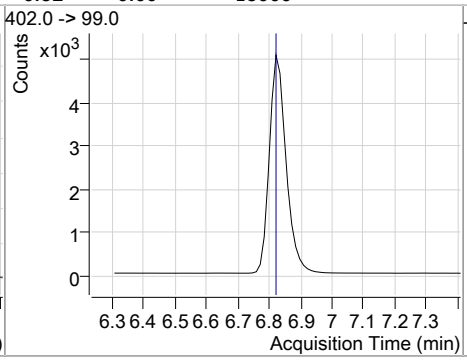


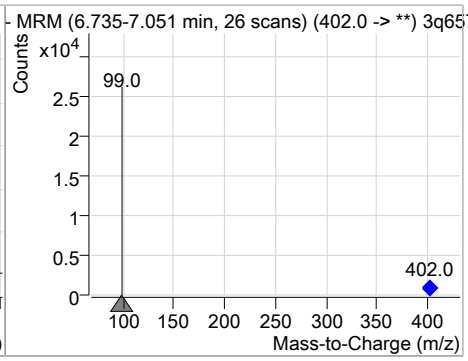


Perfluorinated Compounds by LC/MS/MS

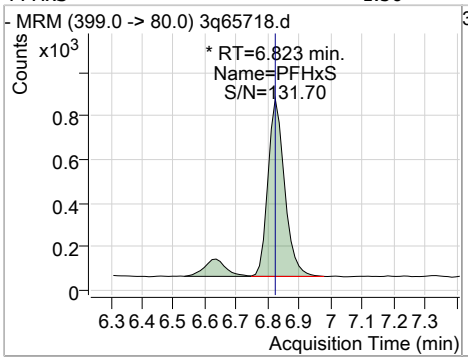
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.45	6.82	0.00	18666				

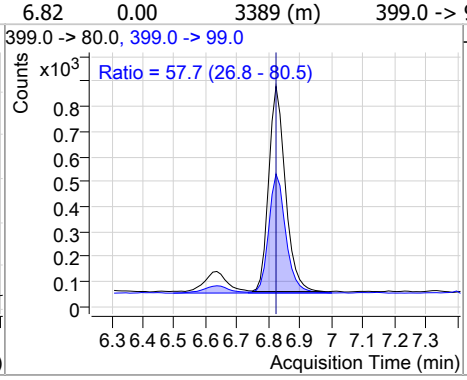


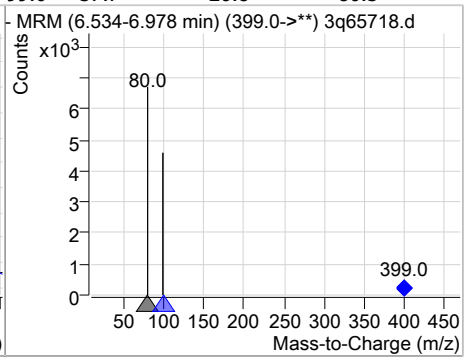




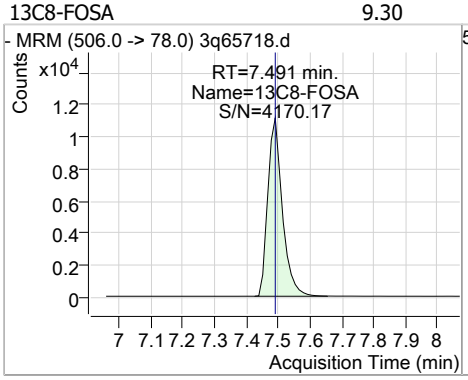
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.56	6.82	0.00	3389 (m)	399.0 -> 99.0	57.7	26.8	80.5

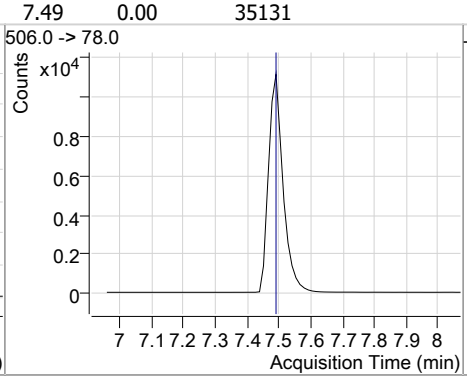


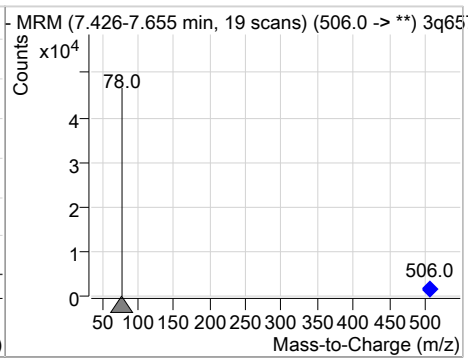




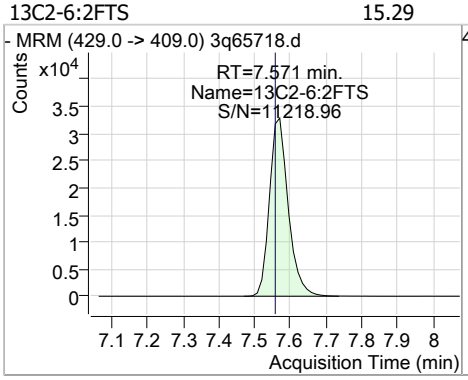
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.30	7.49	0.00	35131				

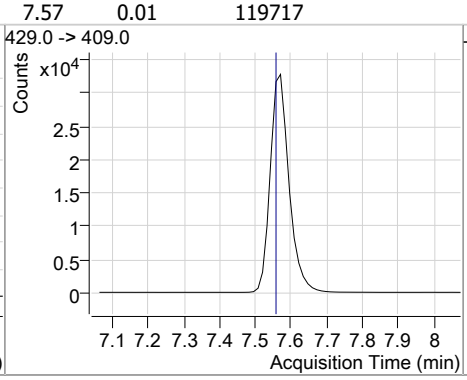


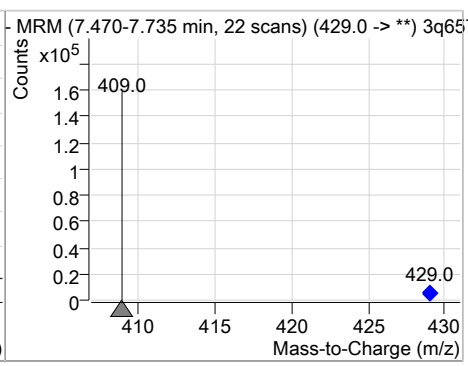




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.29	7.57	0.01	119717				

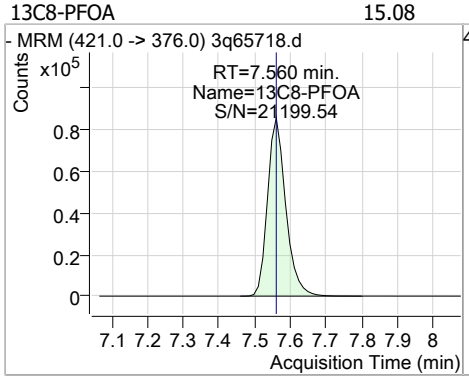


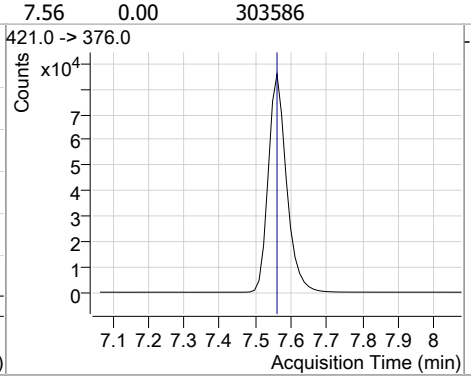


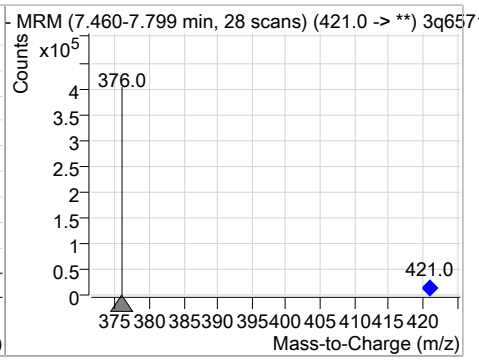


Perfluorinated Compounds by LC/MS/MS

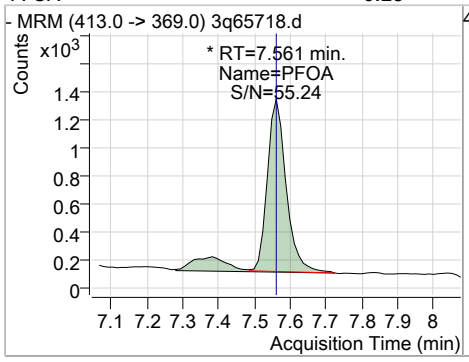
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.08	7.56	0.00	303586				

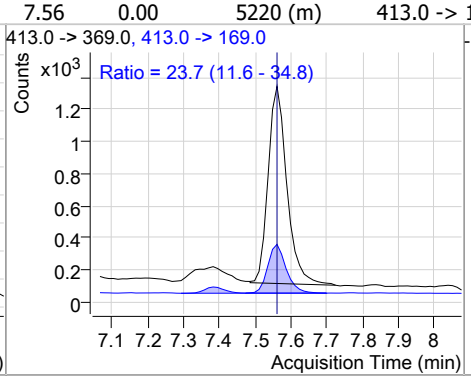


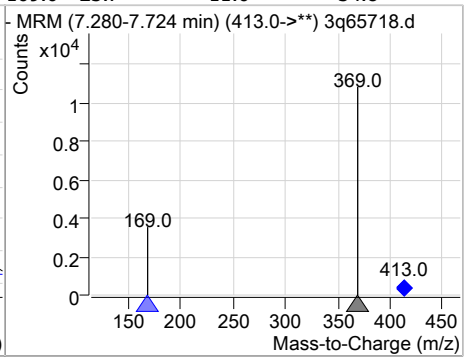




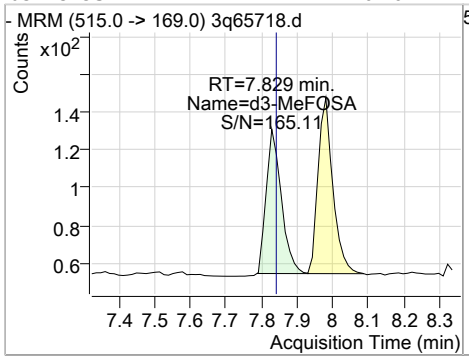
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.28	7.56	0.00	5220 (m)	413.0 -> 169.0	23.7	11.6	34.8

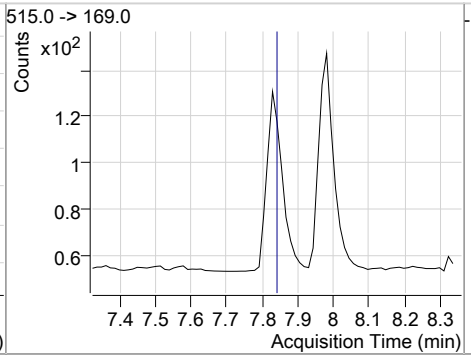


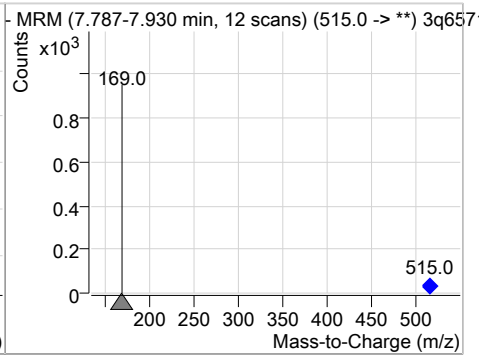




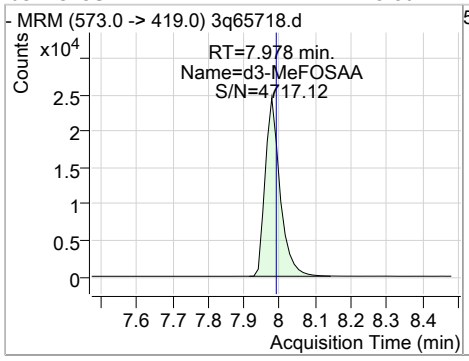
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.26	7.83	-0.01	226				

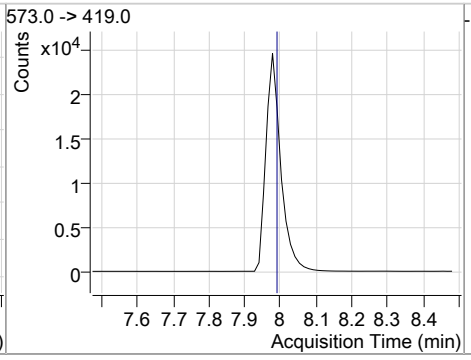


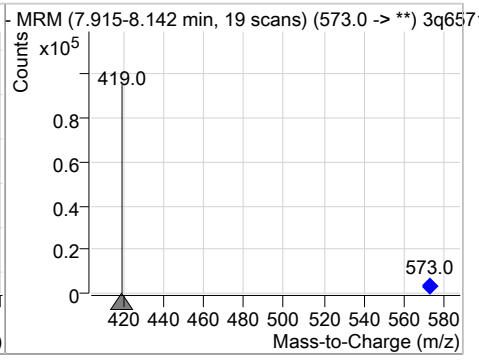




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.80	7.98	-0.01	71032				

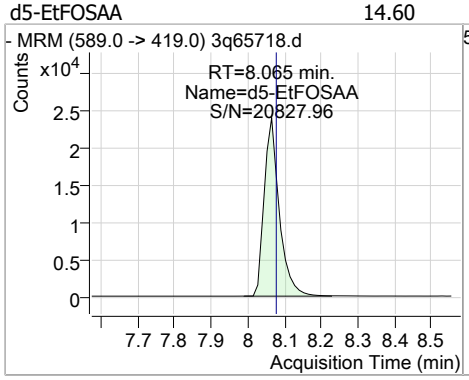


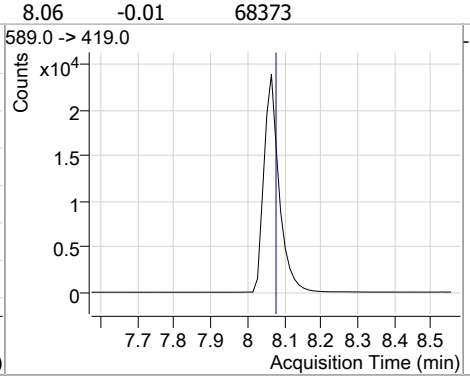


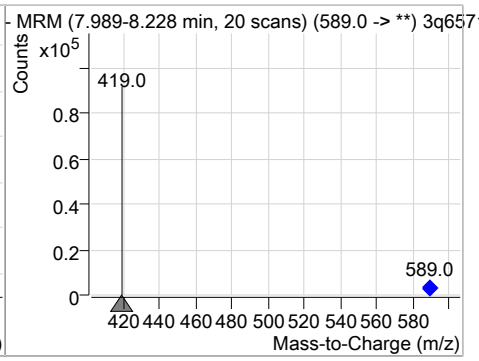


Perfluorinated Compounds by LC/MS/MS

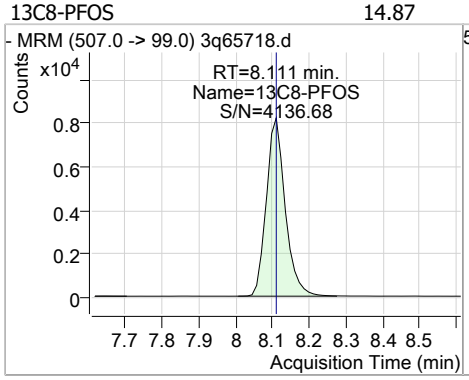
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.60	8.06	-0.01	68373				

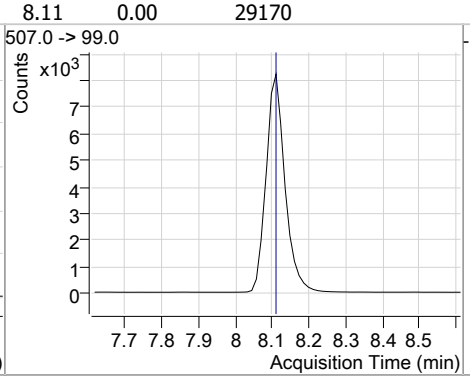


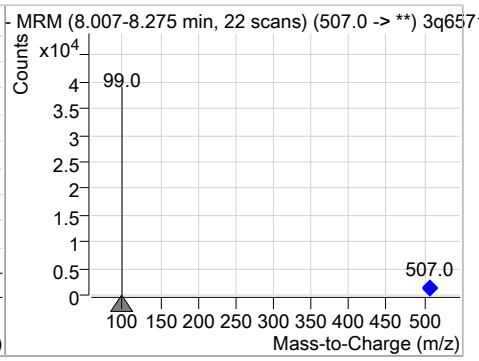




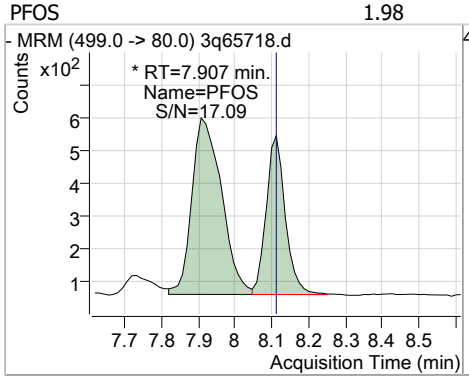
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.87	8.11	0.00	29170				

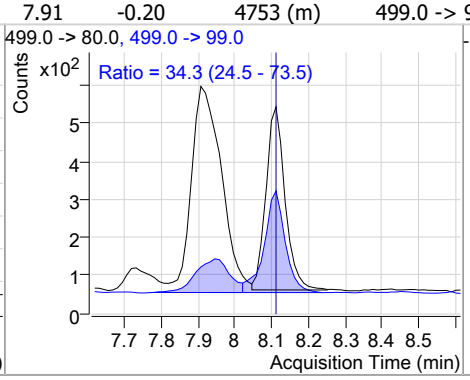


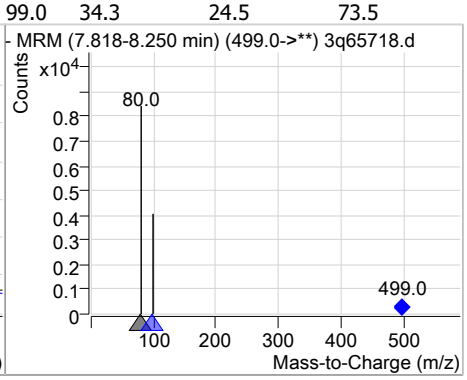




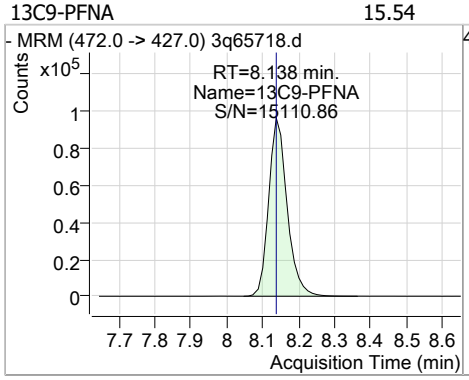
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.98	7.91	-0.20	4753 (m)	499.0 -> 99.0	34.3	24.5	73.5

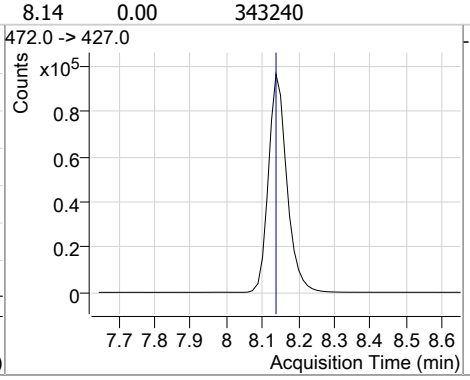


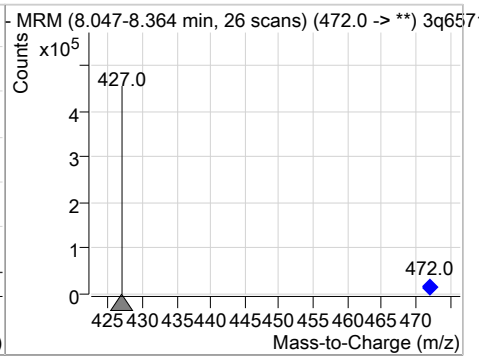




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.54	8.14	0.00	343240				

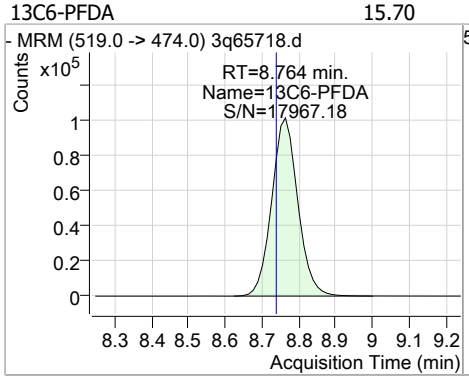


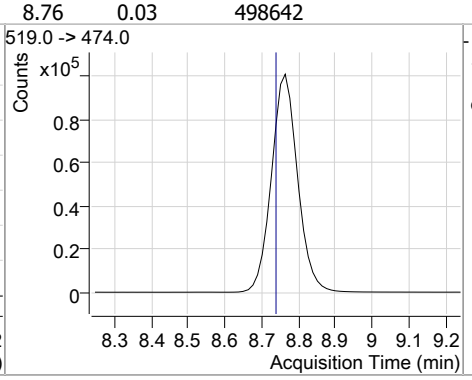


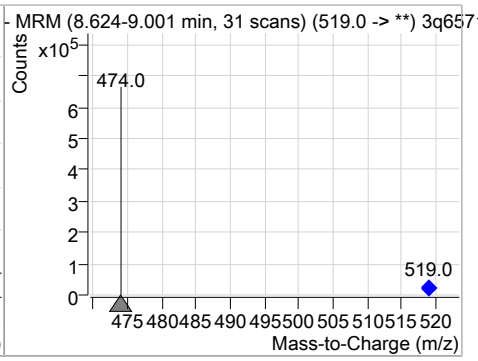


Perfluorinated Compounds by LC/MS/MS

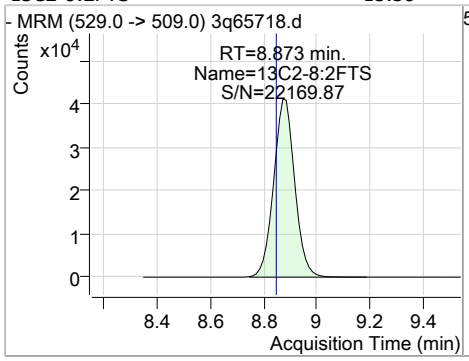
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.70	8.76	0.03	498642				

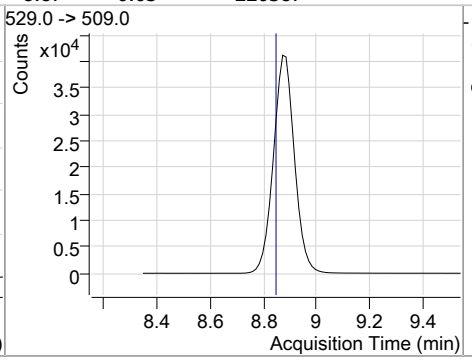


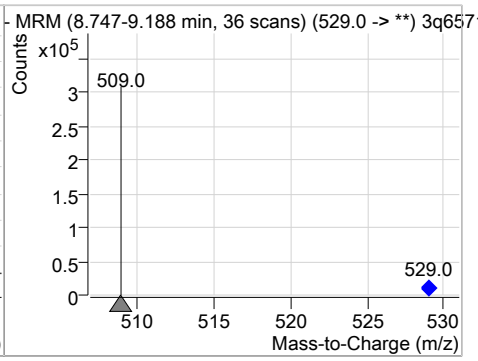




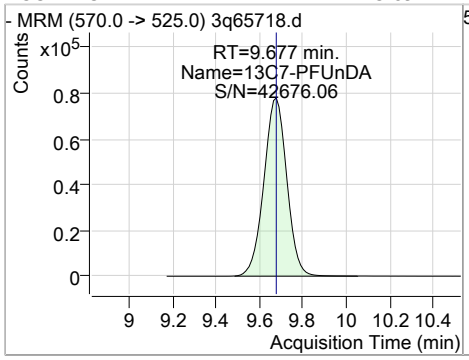
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.58	8.87	0.03	226387				

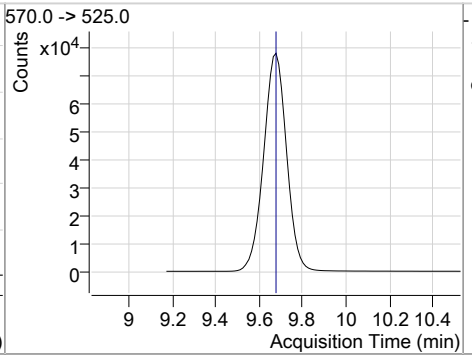


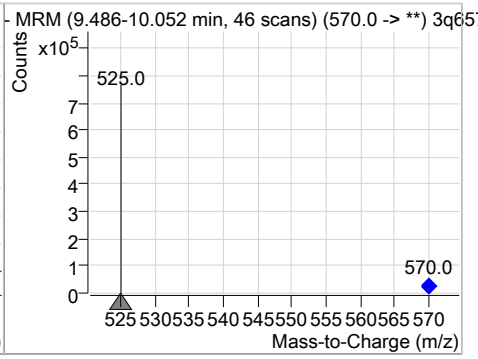




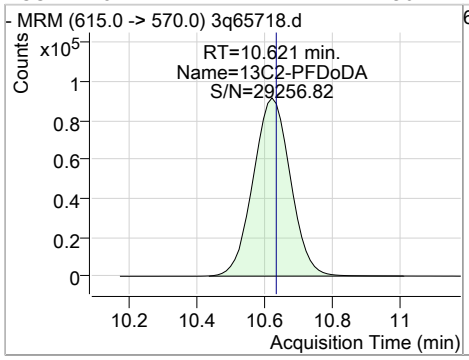
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.89	9.68	0.00	573434				

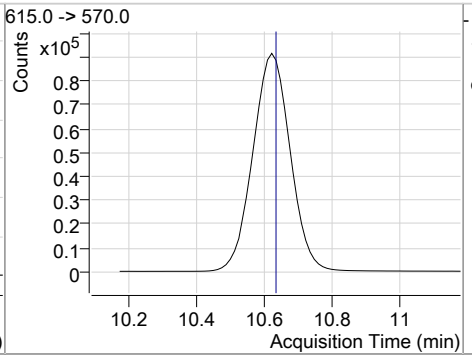


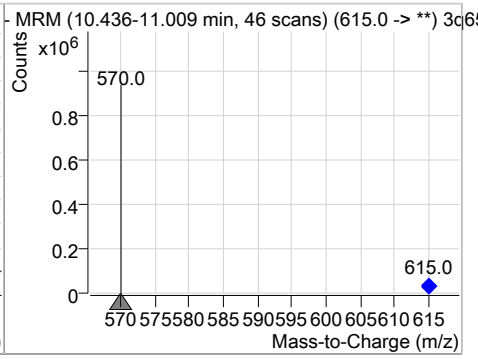




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.90	10.62	-0.01	697781				

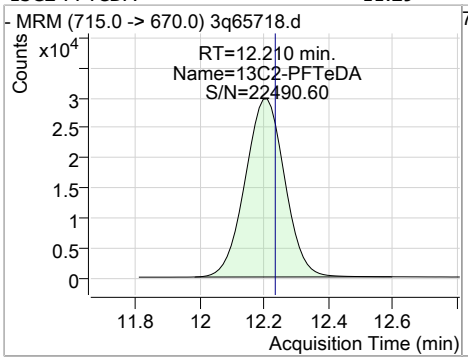


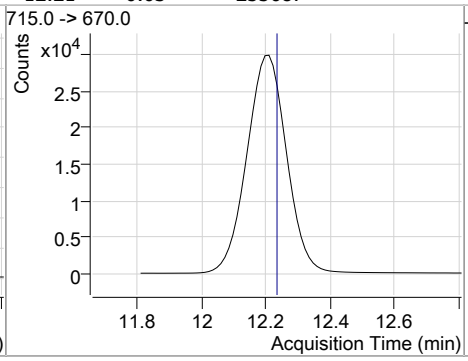


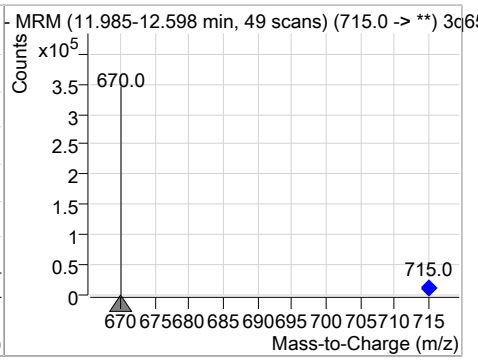


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.29	12.21	-0.03	255687				







Manual Integration Approval Summary

Sample Number: FA98286-46
Lab FileID: 3Q65718.D
Injection Time: 09/14/22 04:52
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/18/22 14:57 Martha Valls
Supervisor approved: 09/19/22 15:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
Perfluorooctanoic acid	335-67-1		7.56	Split peak
Perfluorooctanesulfonic acid	1763-23-1		7.91	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 15:31

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65843.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 12:01:25 AM
Sample Name : fa98286-46
Vial : P2-C5
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92762,S3Q900,120,,,1,5,water

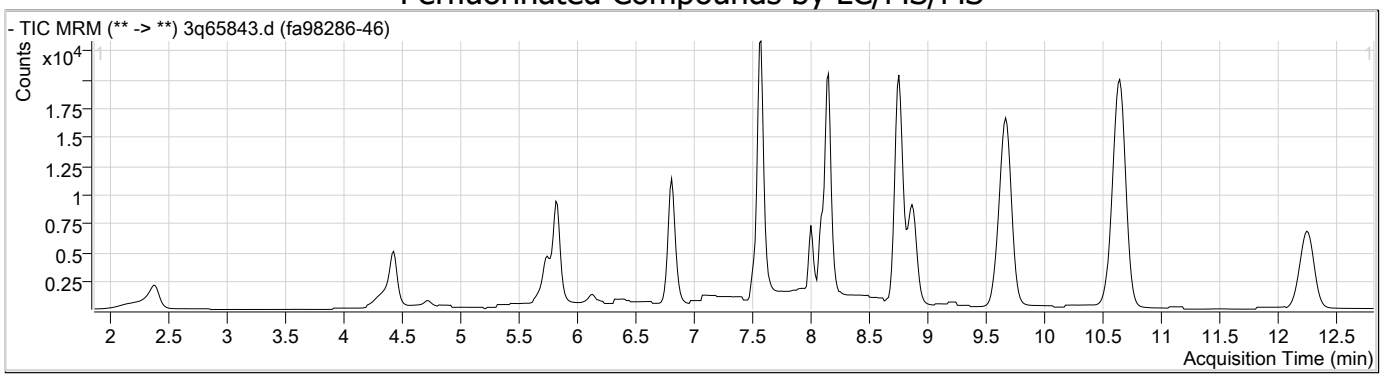
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	20220	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	30588	20.00	µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	41802	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	42836	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	60457	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	66801	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	97476	20.00	µg/L	0.013
M7-PFUnDA	9.664	570.0 -> 525.0	122822	20.00	µg/L	-0.013
M2-PFDoDA	10.634	615.0 -> 570.0	157790	20.00	µg/L	0.000
M2-PFTeDA	12.235	715.0 -> 670.0	58536	20.00	µg/L	0.000
M8-FOSA	7.503	506.0 -> 78.0	7158	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	2999	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	3673	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	5941	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	15586	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	23917	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	45572	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	16337	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	3411	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	256	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	16344	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	15586	2.54	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C2-6:2FTS	7.571	429.0 -> 409.0	23917	2.77	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.9%		
13C2-8:2FTS	8.860	529.0 -> 509.0	45572	2.66	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.3%		
13C2-PFDoDA	10.634	615.0 -> 570.0	157790	2.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C2-PFTeDA	12.235	715.0 -> 670.0	58536	2.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%		
13C3-PFBS	4.704	302.0 -> 99.0	2999	2.71	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.5%		
13C3-PFHxS	6.834	402.0 -> 99.0	3673	2.73	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%		
13C4-PFBA	2.365	217.0 -> 172.0	20220	2.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C4-PFHpA	6.805	367.0 -> 322.0	42836	2.72	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.6%		
13C5-PFHxA	5.813	318.0 -> 273.0	41802	2.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.0%		
13C5-PFPeA	4.424	268.0 -> 223.0	30588	2.53	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
13C6-PFDA	8.751	519.0 -> 474.0	97476	2.68	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

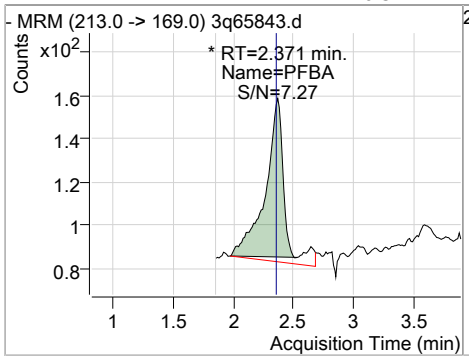
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.4%			
13C7-PFUnDA	9.664	570.0 -> 525.0	122822	2.58	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%			
13C8-FOSA	7.503	506.0 -> 78.0	7158	2.01	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.0%			
13C8-PFOA	7.560	421.0 -> 376.0	60457	2.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.2%			
13C8-PFOS	8.111	507.0 -> 99.0	5941	2.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%			
13C9-PFNA	8.150	472.0 -> 427.0	66801	2.80	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.0%			
d3-MeFOSAA	7.991	573.0 -> 419.0	16337	2.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.4%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	3408	2.64	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 13.2%			
d3-MeFOSA	7.841	515.0 -> 169.0	256	0.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%			
d5-EtFOSAA	8.077	589.0 -> 419.0	16318	2.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	2.371	213.0 -> 169.0	734	0.32	µg/L	m	100
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	6.823	399.0 -> 80.0	785	0.35	µg/L	m	97
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	8.111	499.0 -> 80.0	1116	0.42	µg/L	m	74
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

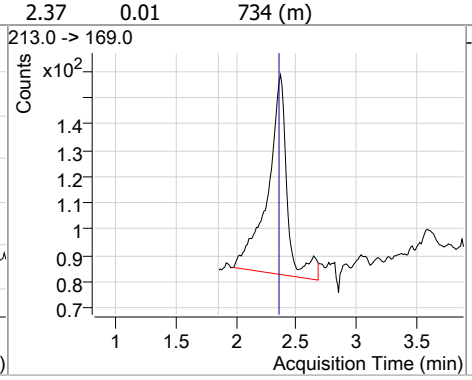
 # = Qualifier out of range, m = manually integrated, + = Area summed

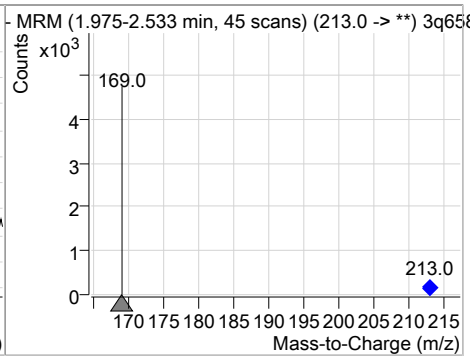
Perfluorinated Compounds by LC/MS/MS



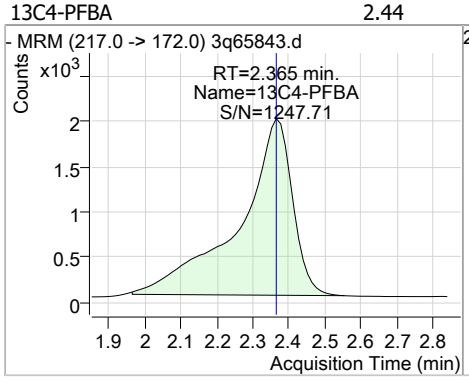
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.32	2.37	0.01	734 (m)				

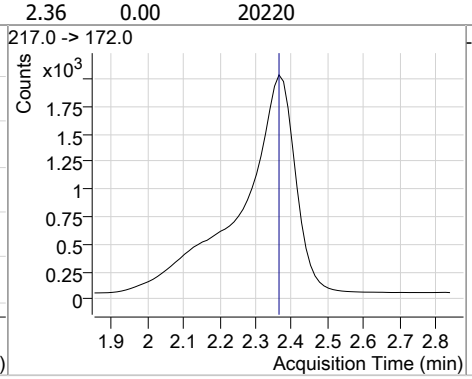


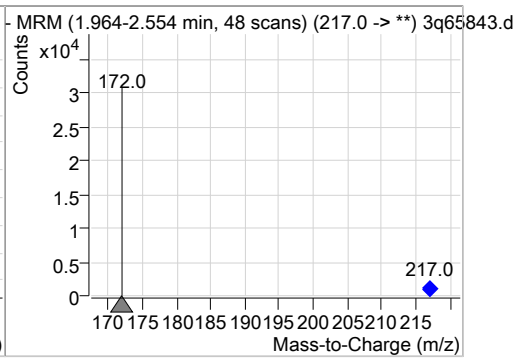




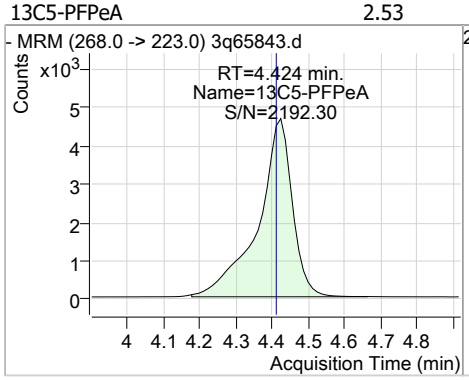
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	2.44	2.36	0.00	20220				

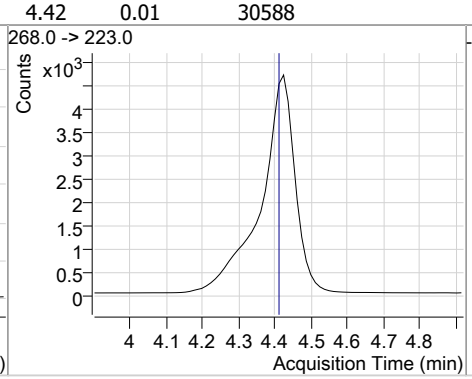


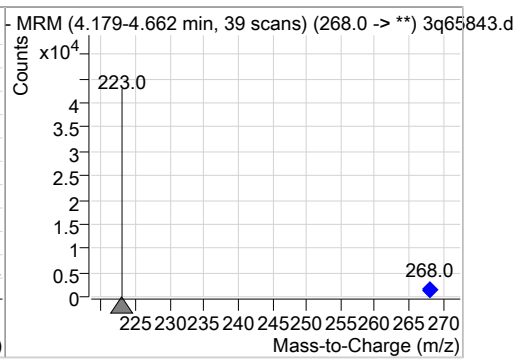




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.53	4.42	0.01	30588				

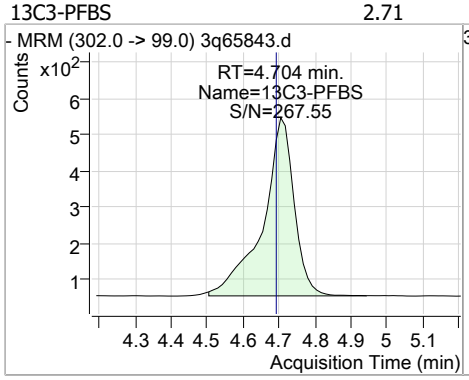


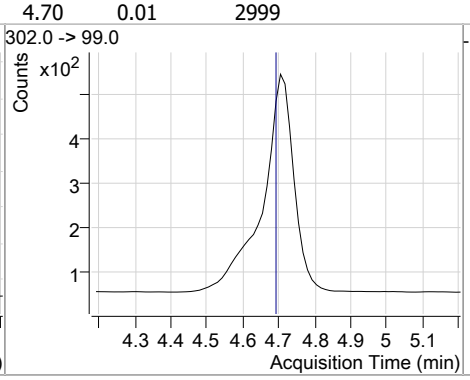


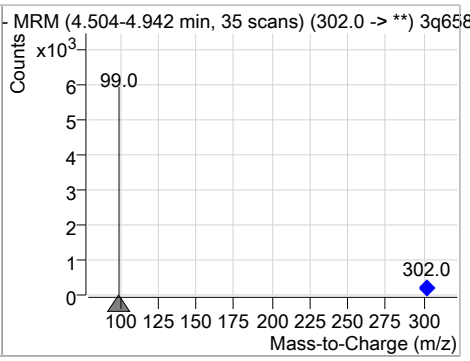


Perfluorinated Compounds by LC/MS/MS

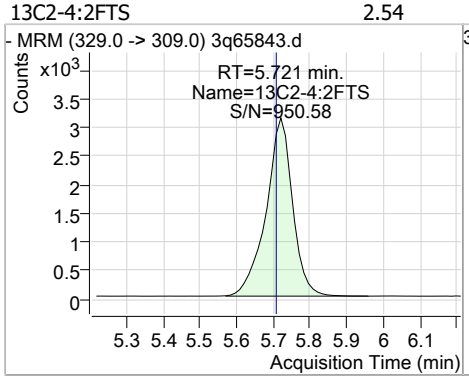
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.71	4.70	0.01	2999				

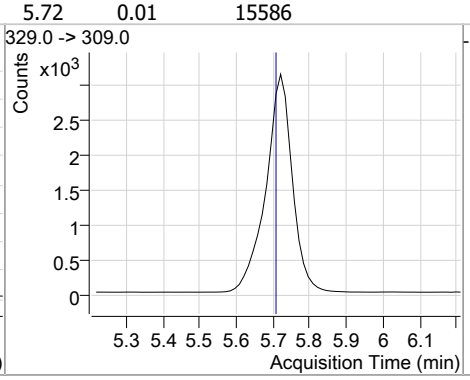


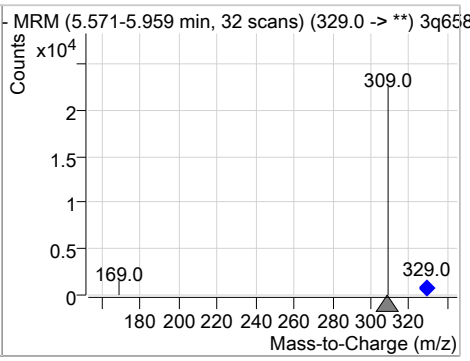




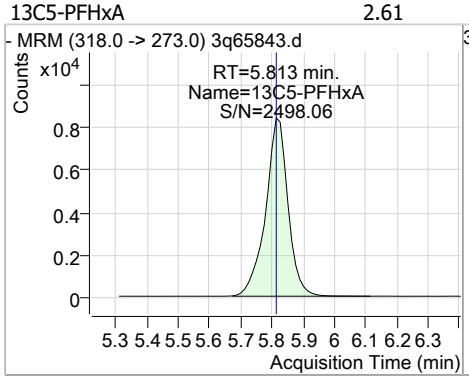
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.54	5.72	0.01	15586				

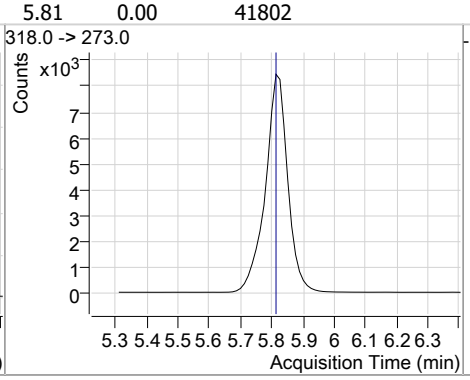


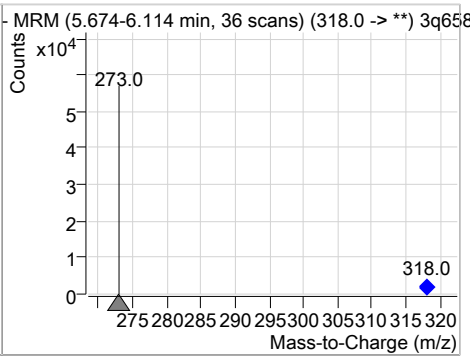




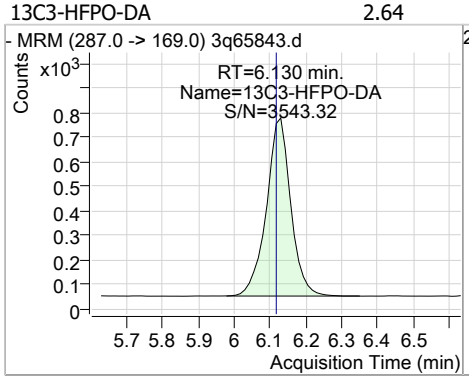
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.61	5.81	0.00	41802				

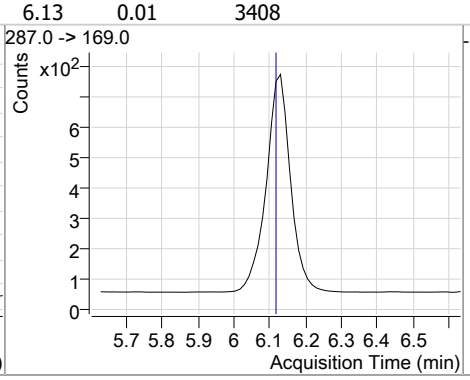


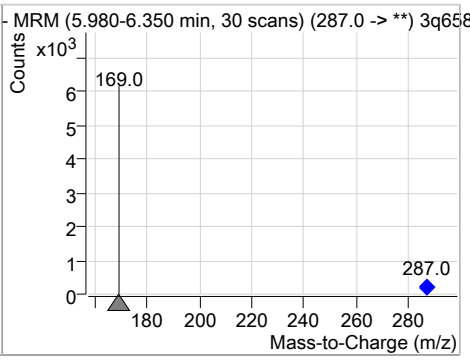




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.64	6.13	0.01	3408				

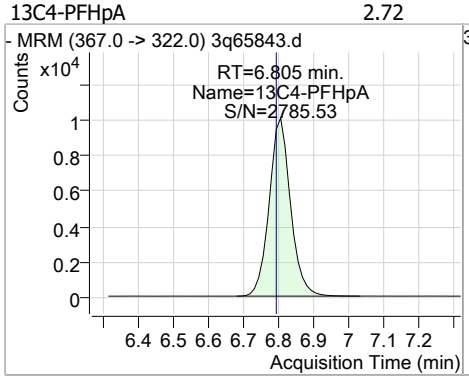


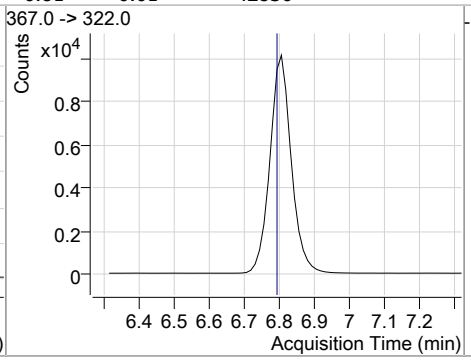


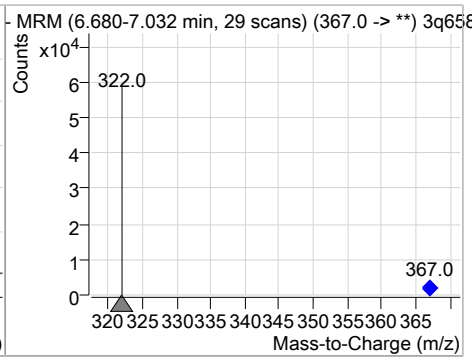


Perfluorinated Compounds by LC/MS/MS

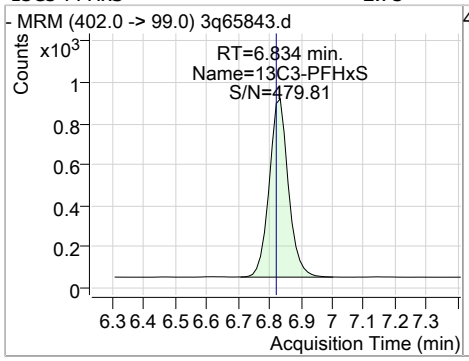
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.72	6.81	0.01	42836				

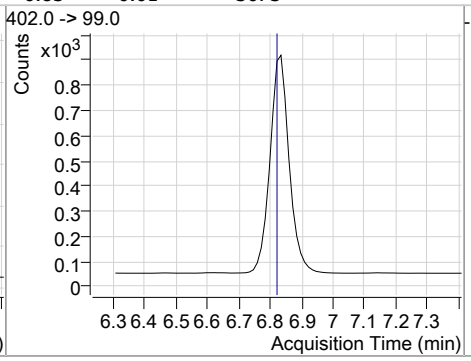


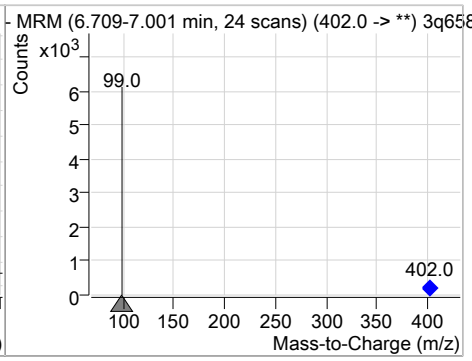




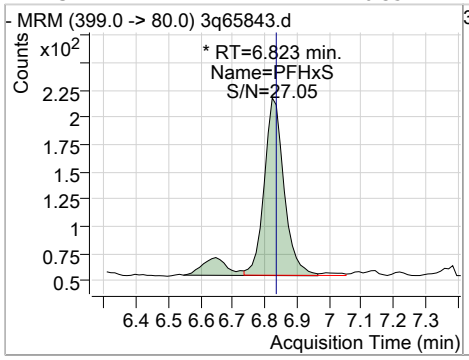
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.73	6.83	0.01	3673				

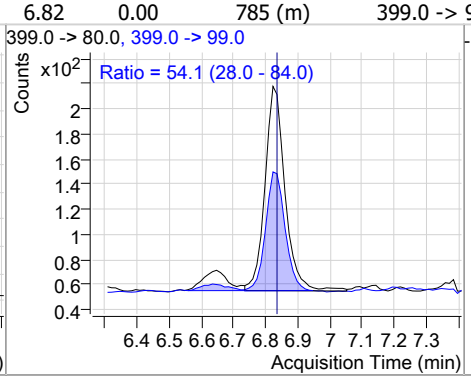


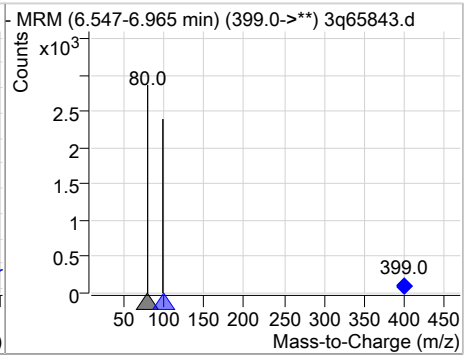




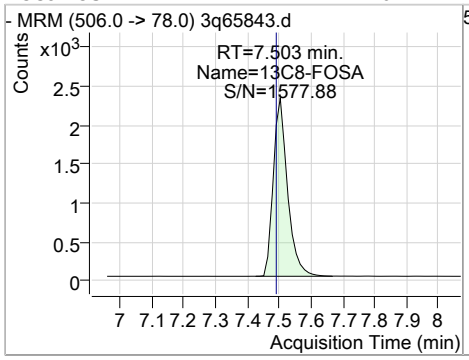
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.35	6.82	0.00	785 (m)	399.0 -> 99.0	54.1	28.0	84.0

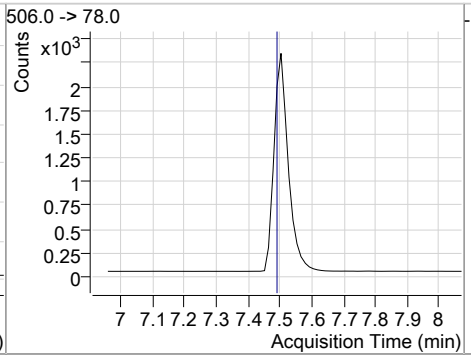


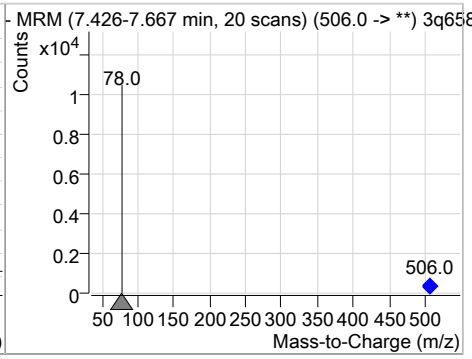




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	2.01	7.50	0.01	7158				

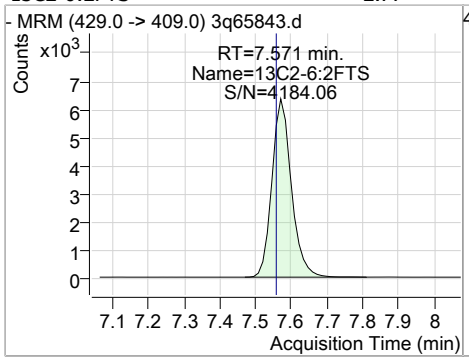


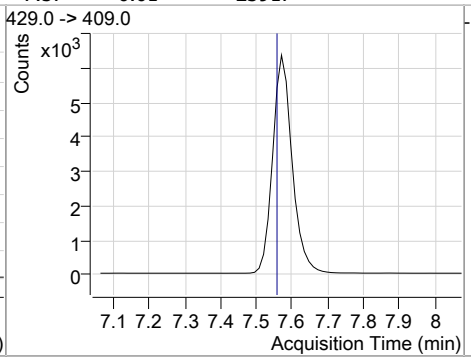


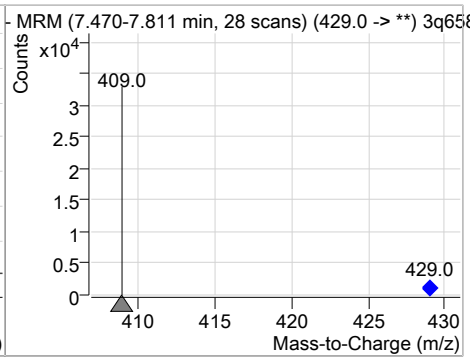


Perfluorinated Compounds by LC/MS/MS

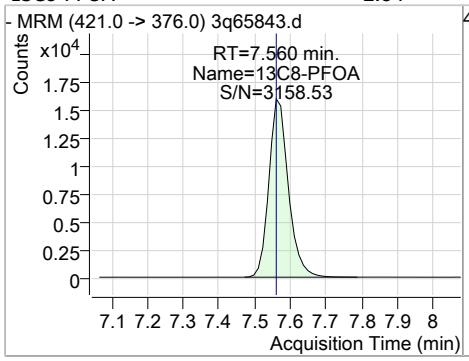
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.77	7.57	0.01	23917				

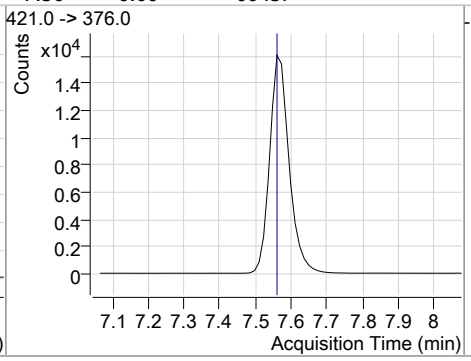


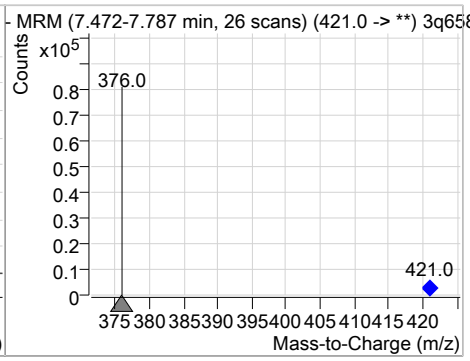




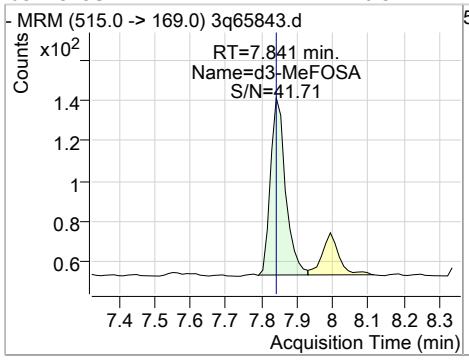
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.84	7.56	0.00	60457				

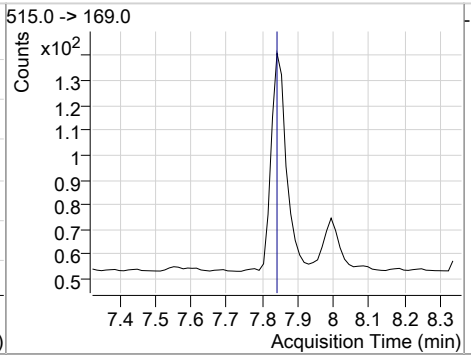


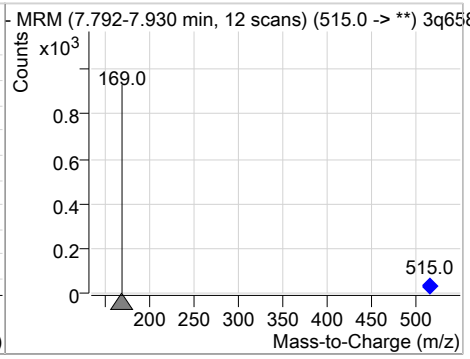




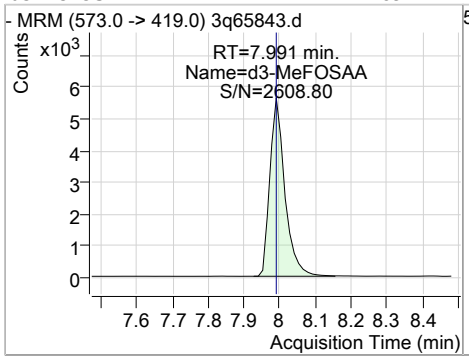
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.32	7.84	0.00	256				

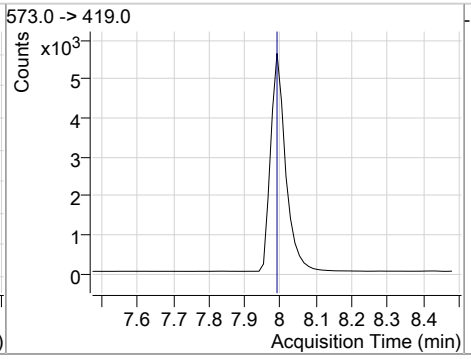


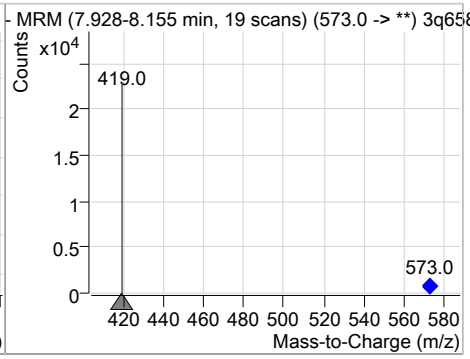




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.89	7.99	0.00	16337				

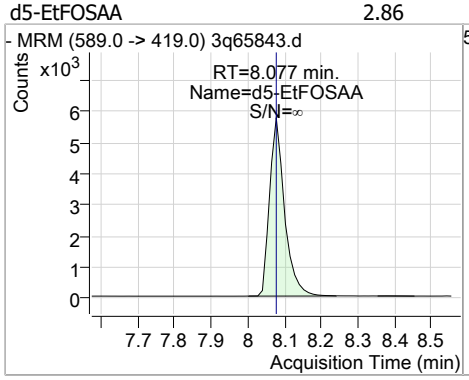


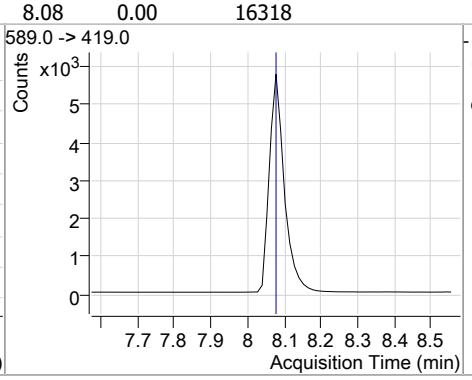


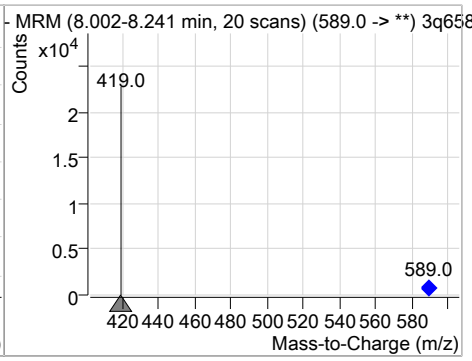


Perfluorinated Compounds by LC/MS/MS

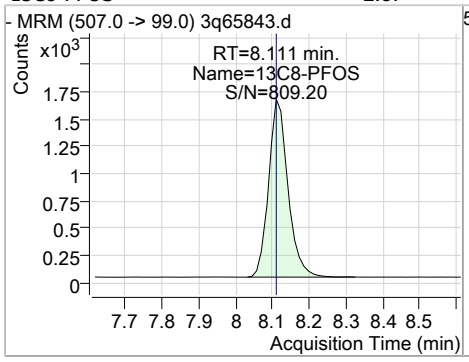
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.86	8.08	0.00	16318				

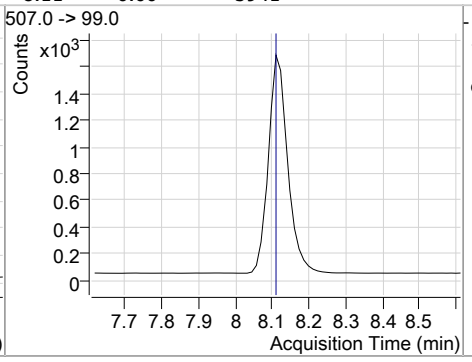


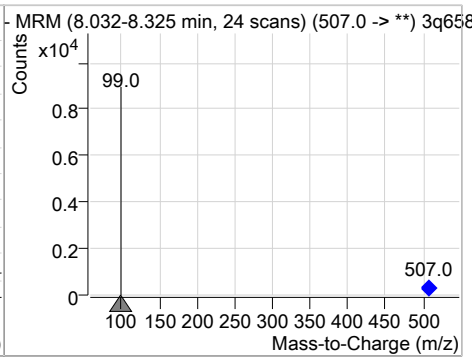




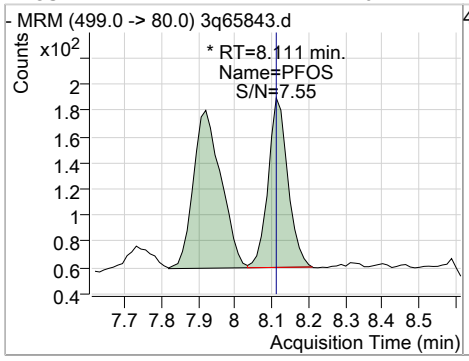
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.87	8.11	0.00	5941				

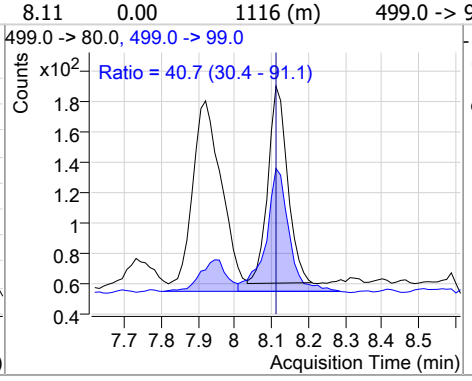


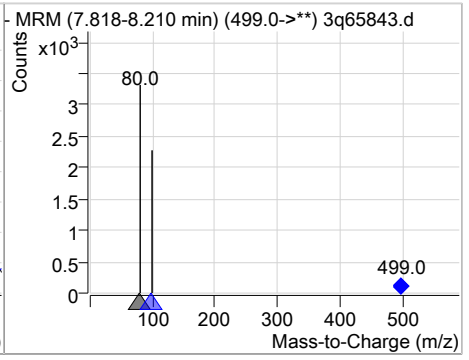




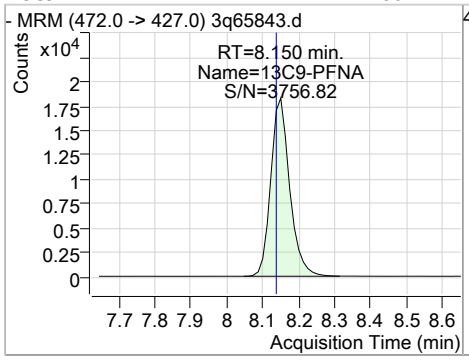
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.42	8.11	0.00	1116 (m)	499.0 -> 99.0	40.7	30.4	91.1

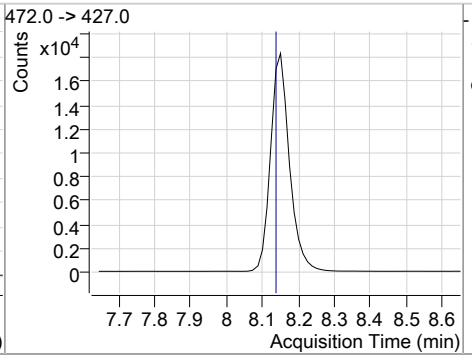


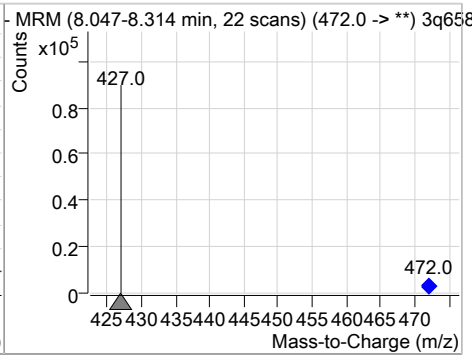




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.80	8.15	0.01	66801				

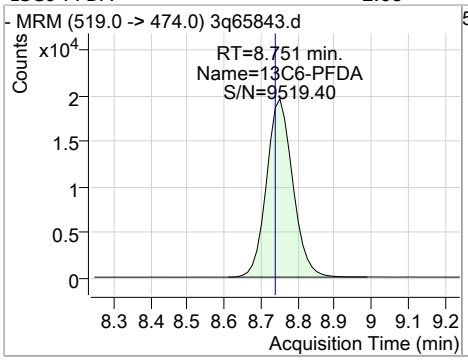


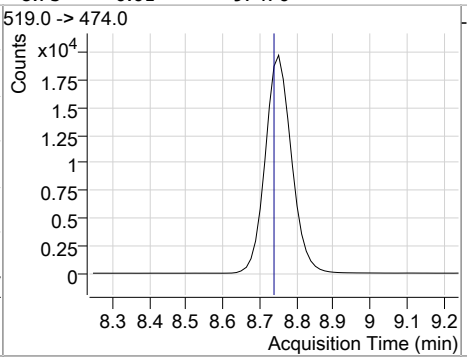


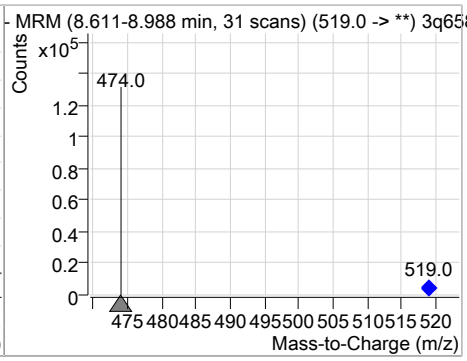


Perfluorinated Compounds by LC/MS/MS

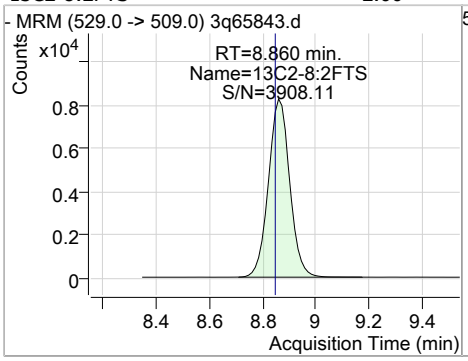
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.68	8.75	0.01	97476				

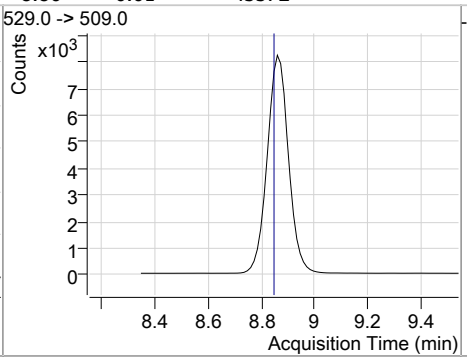


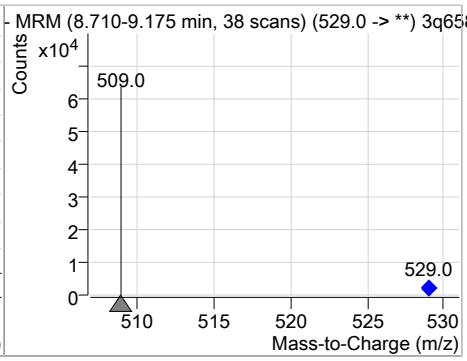




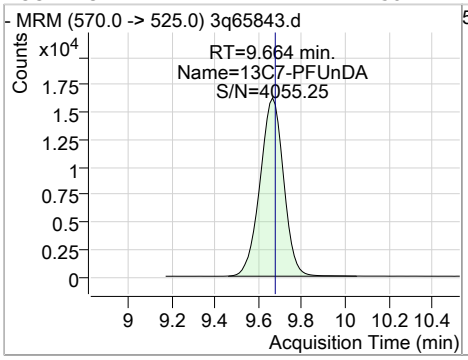
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.66	8.86	0.01	45572				

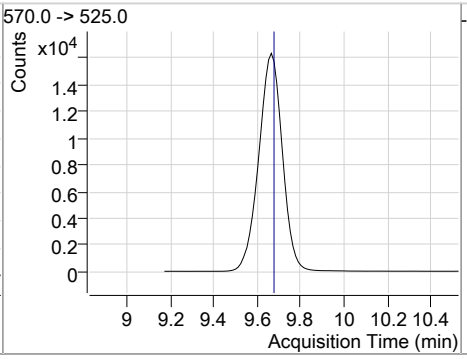


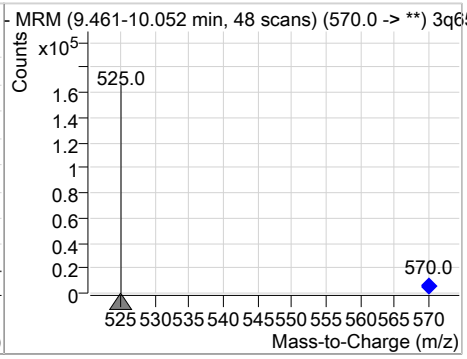




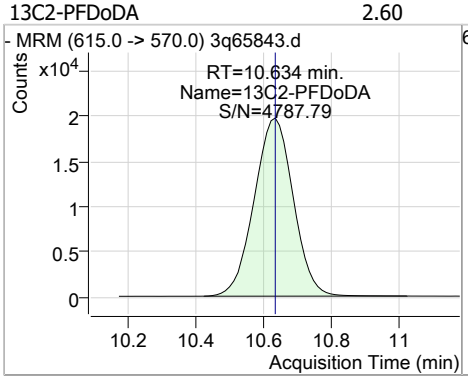
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.58	9.66	-0.01	122822				

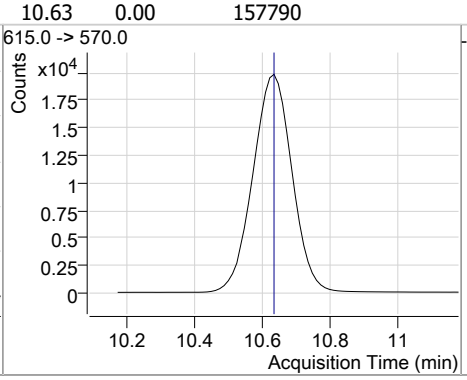


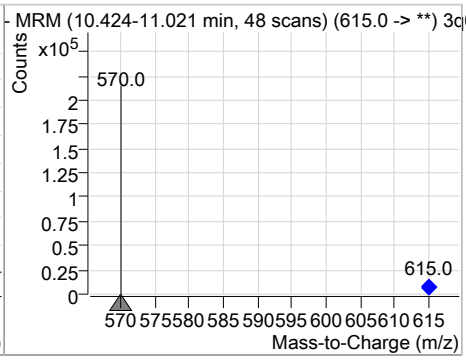




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.60	10.63	0.00	157790				

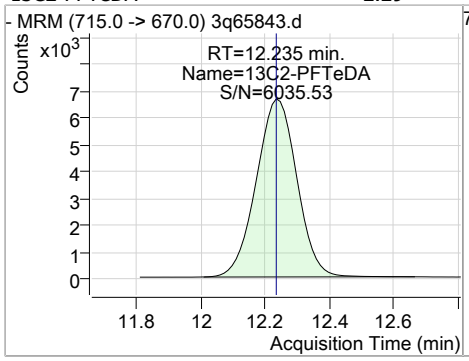


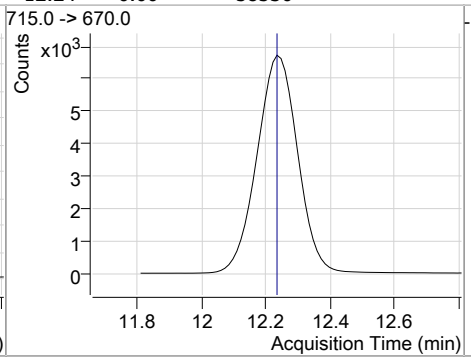


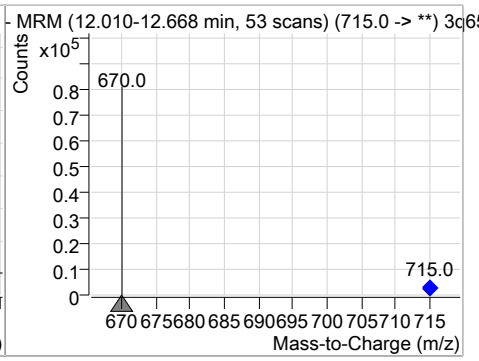


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.29	12.24	0.00	58536				







Manual Integration Approval Summary

Sample Number: FA98286-46
Lab FileID: 3Q65843.D
Injection Time: 09/16/22 00:01
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/18/22 14:57 Martha Valls
Supervisor approved: 09/19/22 15:31 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorobutanoic acid	375-22-4		2.37	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 16:11

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65719.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 5:12:32 AM
Sample Name : fa98286-47
Vial : P6-C6
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,110,,,1,1,water

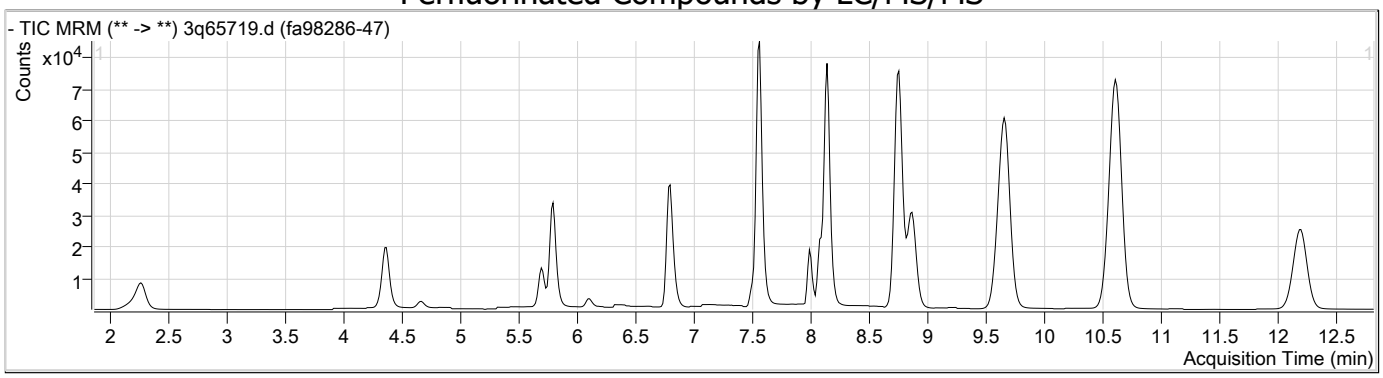
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.252	217.0 -> 172.0	63721	20.00	µg/L	-0.113
M5-PFPeA	4.361	268.0 -> 223.0	90554	20.00	µg/L	-0.050
M5-PFHxA	5.787	318.0 -> 273.0	126618	20.00	µg/L	-0.026
M4-PFHpA	6.780	367.0 -> 322.0	144612	20.00	µg/L	-0.013
M8-PFOA	7.547	421.0 -> 376.0	220579	20.00	µg/L	-0.013
M9-PFNA	8.138	472.0 -> 427.0	258841	20.00	µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	369555	20.00	µg/L	0.013
M7-PFUnDA	9.652	570.0 -> 525.0	444657	20.00	µg/L	-0.025
M2-PFDoDA	10.596	615.0 -> 570.0	553533	20.00	µg/L	-0.038
M2-PFTeDA	12.185	715.0 -> 670.0	214295	20.00	µg/L	-0.050
M8-FOSA	7.491	506.0 -> 78.0	18613	20.00	µg/L	0.000
M3-PFBS	4.654	302.0 -> 99.0	8862	20.00	µg/L	-0.038
M3-PFHxS	6.809	402.0 -> 99.0	13045	20.00	µg/L	-0.013
M8-PFOS	8.111	507.0 -> 99.0	22247	20.00	µg/L	0.000
M2-4:2FTS	5.683	329.0 -> 309.0	47488	20.00	µg/L	-0.025
M2-6:2FTS	7.558	429.0 -> 409.0	85901	20.00	µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	158265	20.00	µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	51247	20.00	µg/L	-0.013
M3-HFPO-DA	6.092	287.0 -> 169.0	10265	20.00	µg/L	-0.025
M3-MeFOSA	7.829	515.0 -> 169.0	290	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	50777	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.683	329.0 -> 309.0	47488	8.22	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 41.1%		
13C2-6:2FTS	7.558	429.0 -> 409.0	85901	10.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.9%		
13C2-8:2FTS	8.860	529.0 -> 509.0	158265	10.89	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.4%		
13C2-PFDoDA	10.596	615.0 -> 570.0	553533	10.23	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 51.2%		
13C2-PFTeDA	12.185	715.0 -> 670.0	214295	9.46	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 47.3%		
13C3-PFBS	4.654	302.0 -> 99.0	8862	8.38	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 41.9%		
13C3-PFHxS	6.809	402.0 -> 99.0	13045	10.10	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 50.5%		
13C4-PFBA	2.252	217.0 -> 172.0	63721	8.01	µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 40.0%		
13C4-PFHpA	6.780	367.0 -> 322.0	144612	9.60	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.0%		
13C5-PFHxA	5.787	318.0 -> 273.0	126618	8.34	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 41.7%		
13C5-PFPeA	4.361	268.0 -> 223.0	90554	7.81	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 39.1%		
13C6-PFDA	8.751	519.0 -> 474.0	369555	11.63	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

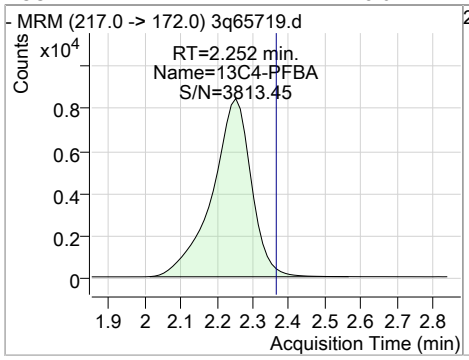
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.2%			
13C7-PFUnDA	9.652	570.0 -> 525.0	444657	10.77	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.9%			
13C8-FOSA	7.491	506.0 -> 78.0	18613	4.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 24.6%			
13C8-PFOA	7.547	421.0 -> 376.0	220579	10.96	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.8%			
13C8-PFOS	8.111	507.0 -> 99.0	22247	11.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.7%			
13C9-PFNA	8.138	472.0 -> 427.0	258841	11.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.6%			
d3-MeFOSAA	7.978	573.0 -> 419.0	51247	11.40	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%			
13C3-HFPO-DA	6.092	287.0 -> 169.0	10268	8.00	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 40.0%			
d3-MeFOSA	7.829	515.0 -> 169.0	290	0.33	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%			
d5-EtFOSAA	8.065	589.0 -> 419.0	50773	10.84	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.2%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	4.644	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	6.810	399.0 -> 80.0	625	0.41	µg/L	m	88
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

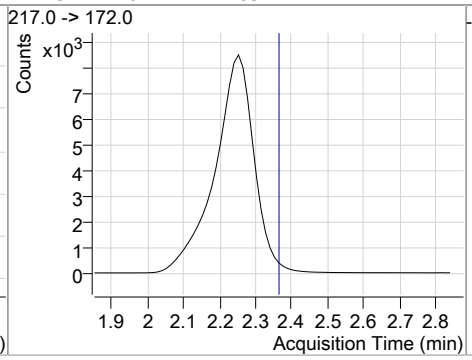
 # = Qualifier out of range, m = manually integrated, + = Area summed

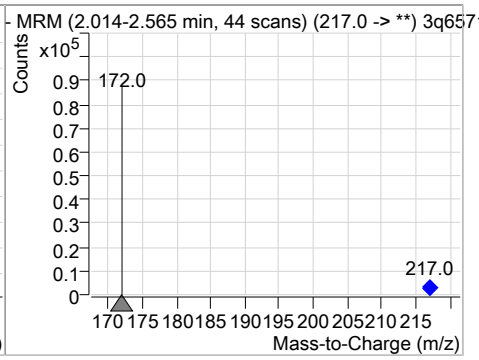
Perfluorinated Compounds by LC/MS/MS



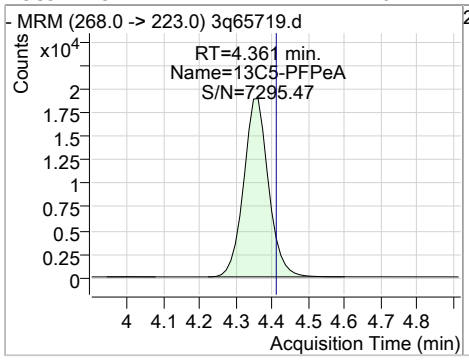
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	8.01	2.25	-0.11	63721				

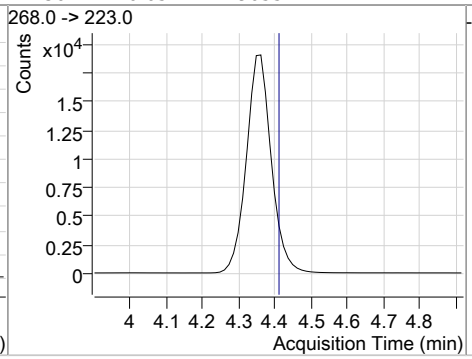


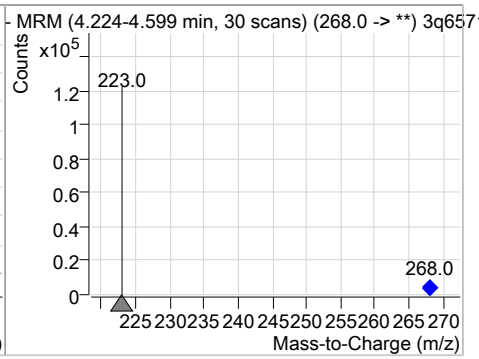




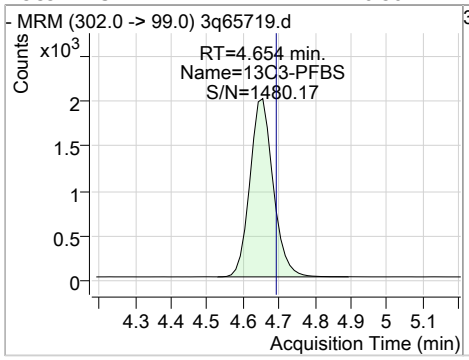
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	7.81	4.36	-0.05	90554				

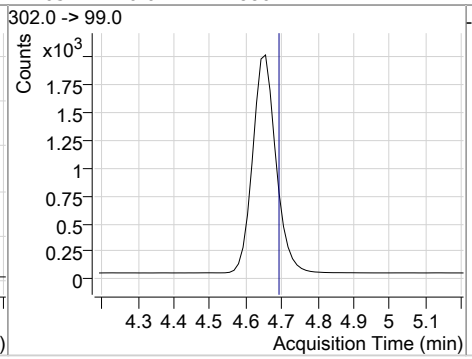


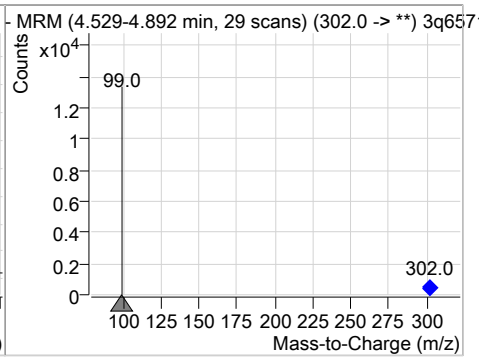




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	8.38	4.65	-0.04	8862				

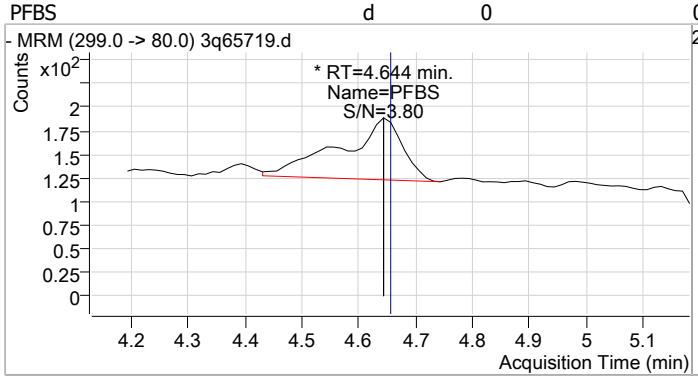


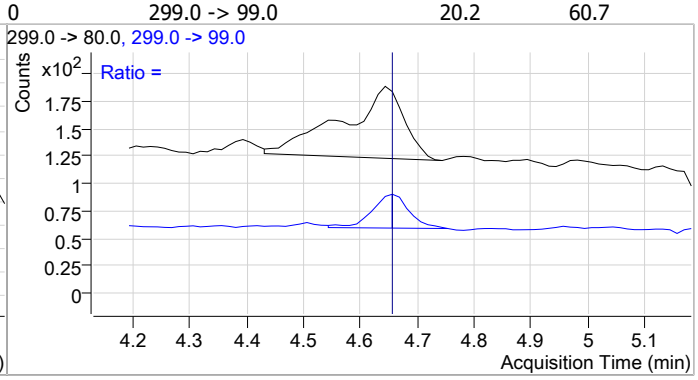




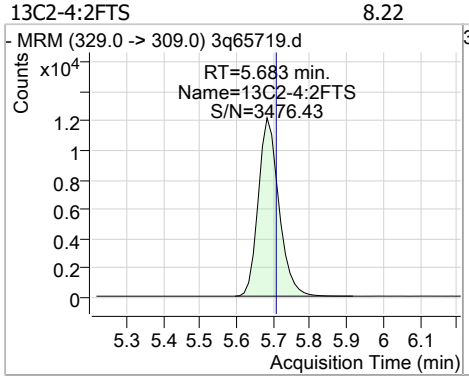
Perfluorinated Compounds by LC/MS/MS

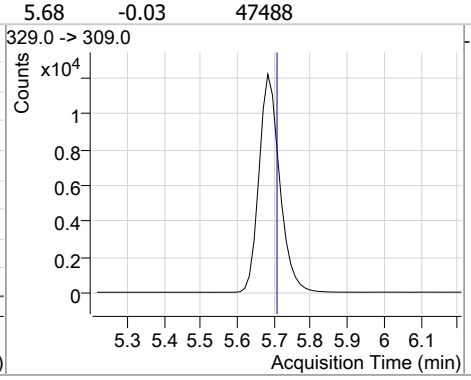
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	d	0		0	299.0 -> 99.0		20.2	60.7

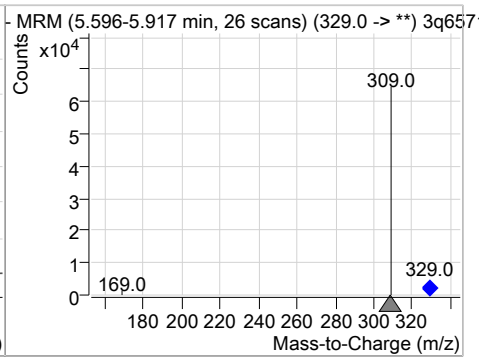




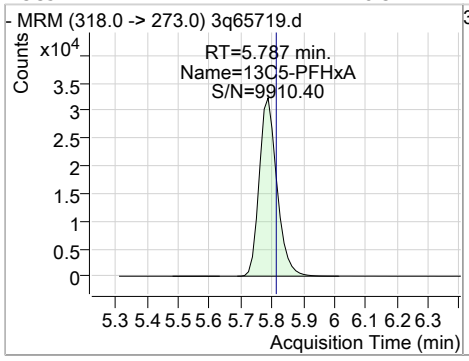
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	8.22	5.68	-0.03	47488				

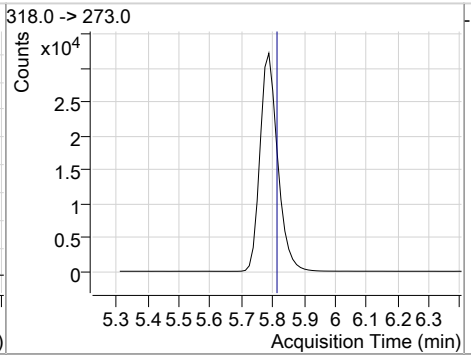


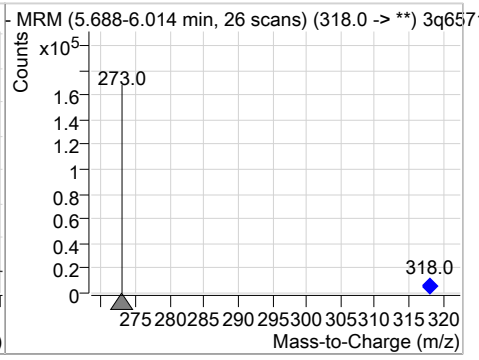




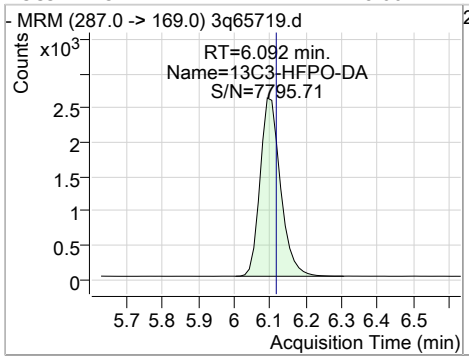
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	8.34	5.79	-0.03	126618				

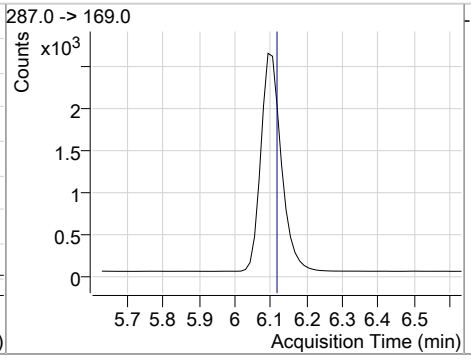


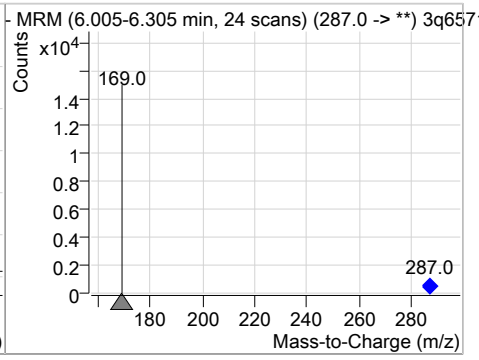




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	8.00	6.09	-0.03	10268				

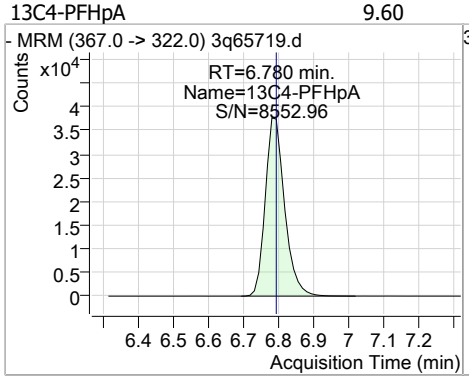


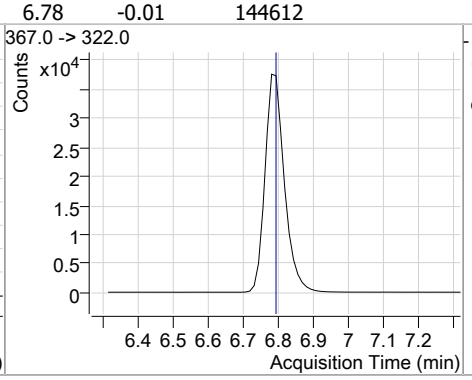


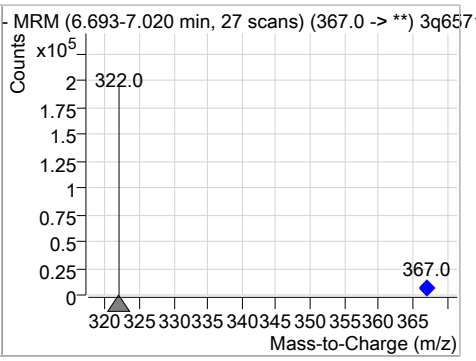


Perfluorinated Compounds by LC/MS/MS

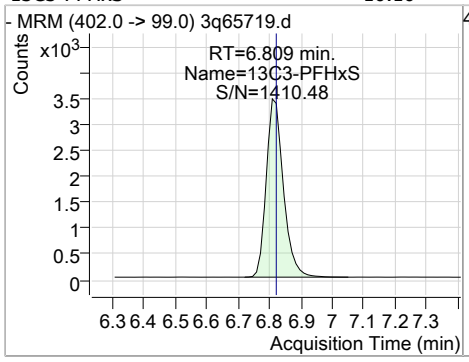
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	9.60	6.78	-0.01	144612				

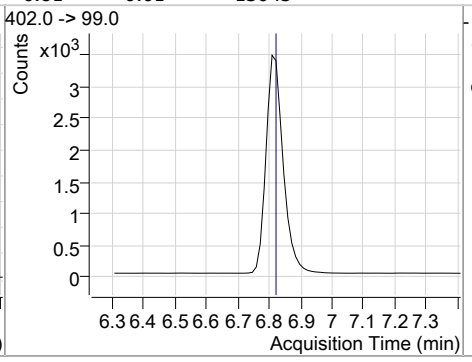


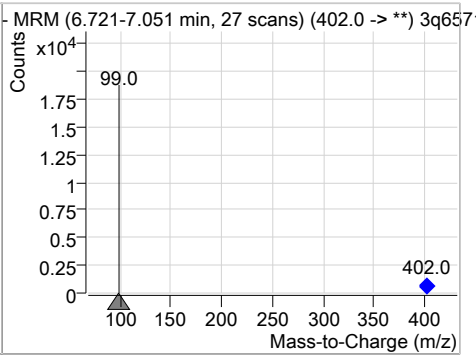




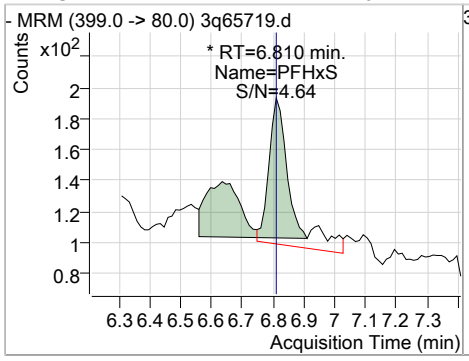
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	10.10	6.81	-0.01	13045				

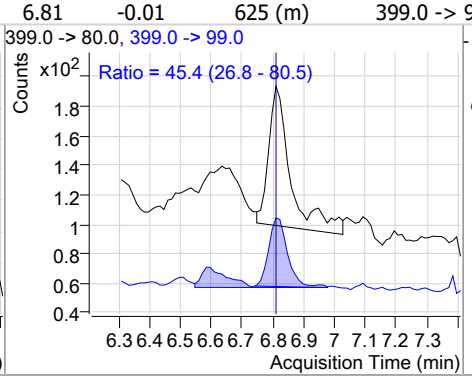


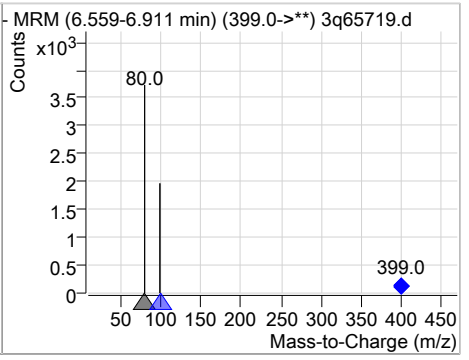




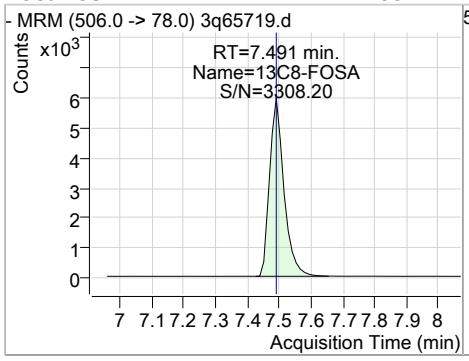
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.41	6.81	-0.01	625 (m)	399.0 -> 99.0	45.4	26.8	80.5

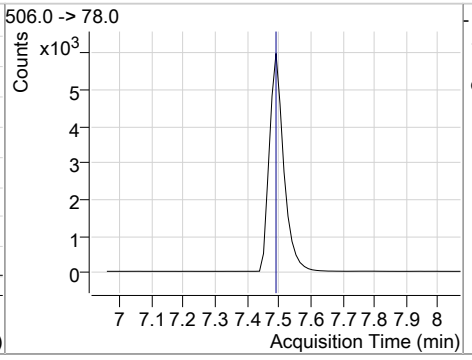


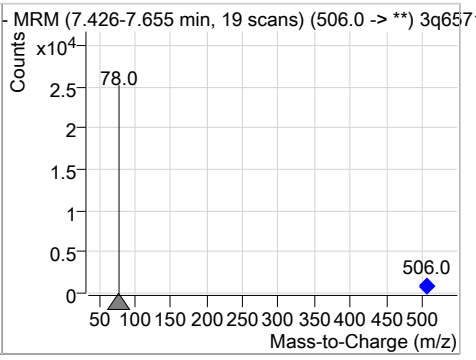




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	4.93	7.49	0.00	18613				

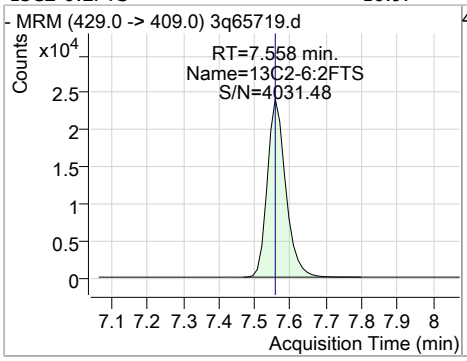


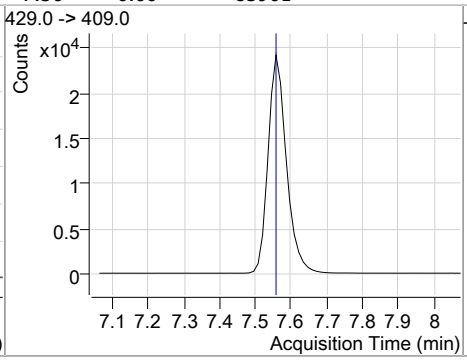


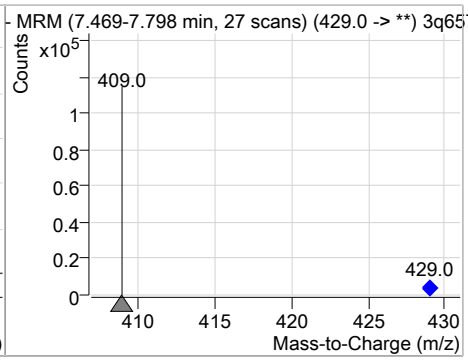


Perfluorinated Compounds by LC/MS/MS

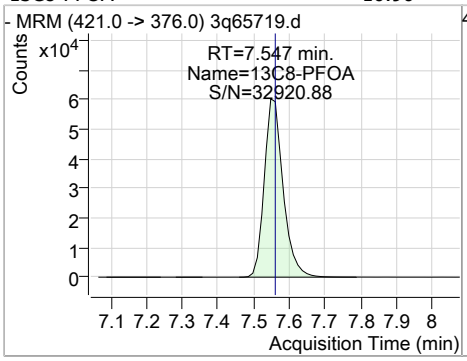
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	10.97	7.56	0.00	85901				

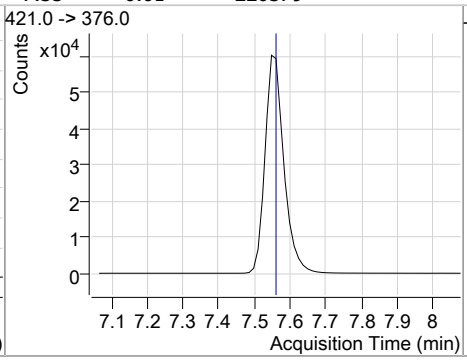


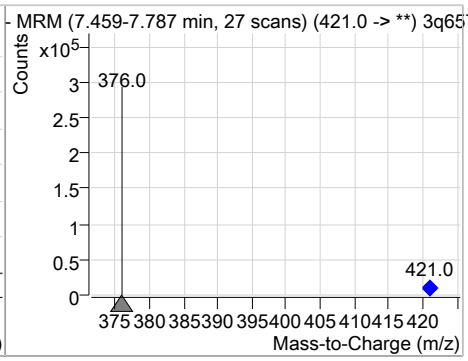




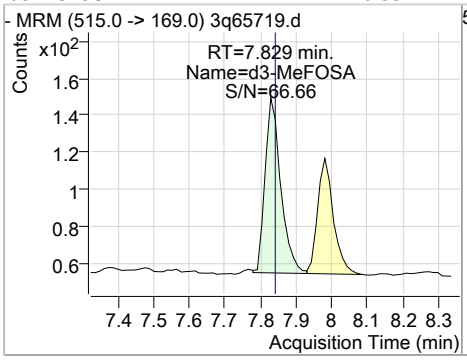
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	10.96	7.55	-0.01	220579				

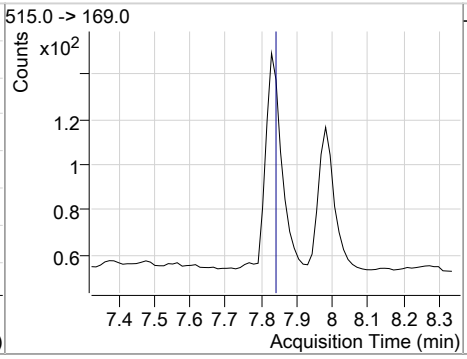


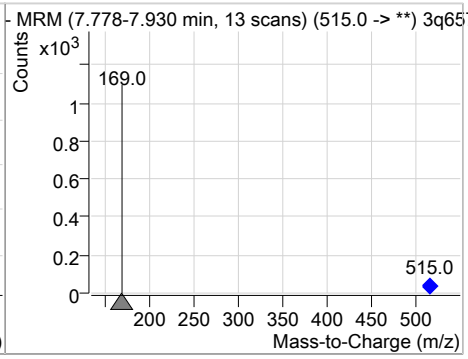




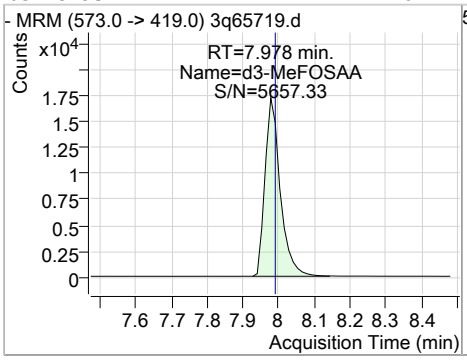
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.33	7.83	-0.01	290				

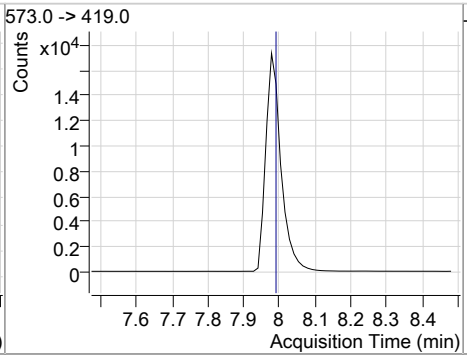


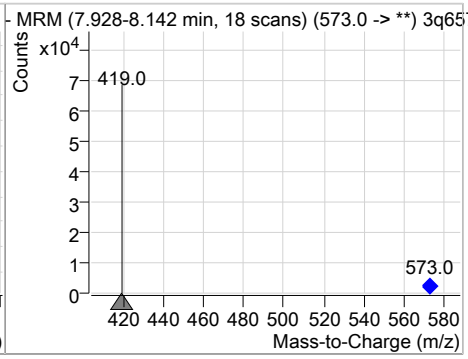




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	11.40	7.98	-0.01	51247				

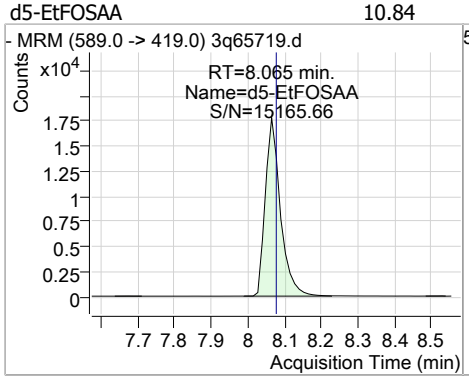


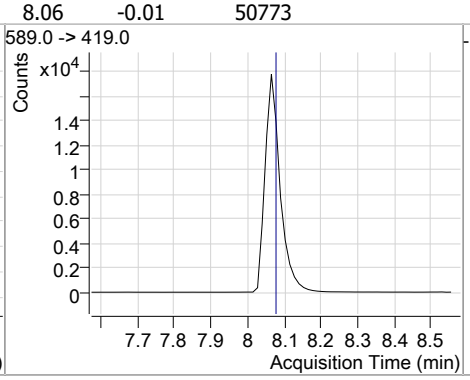


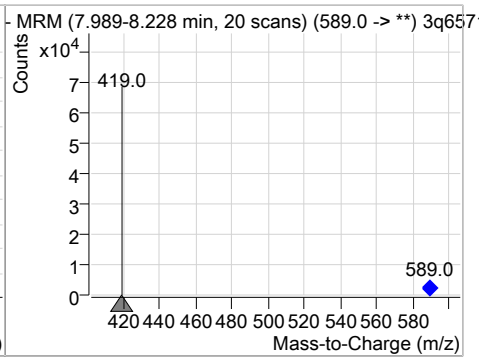


Perfluorinated Compounds by LC/MS/MS

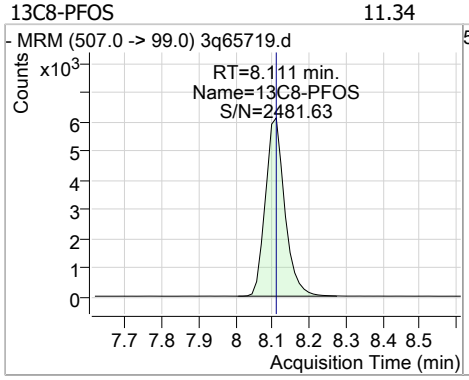
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	10.84	8.06	-0.01	50773				

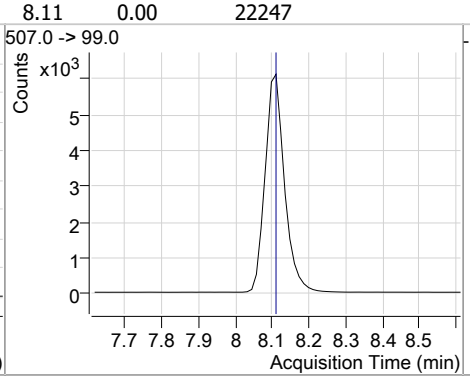


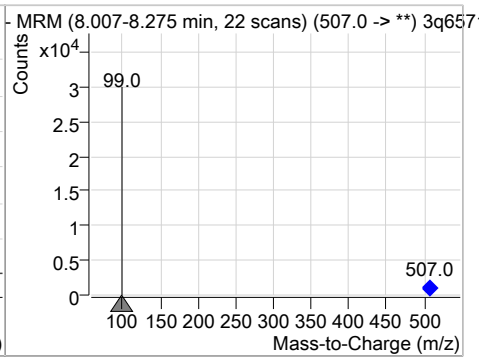




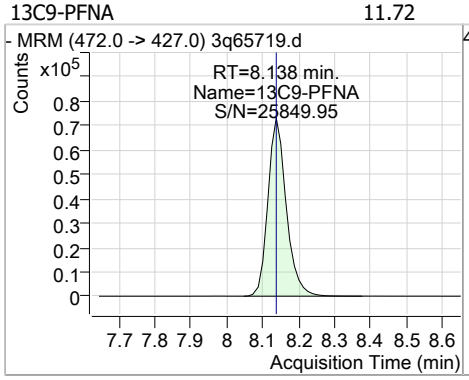
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.34	8.11	0.00	22247				

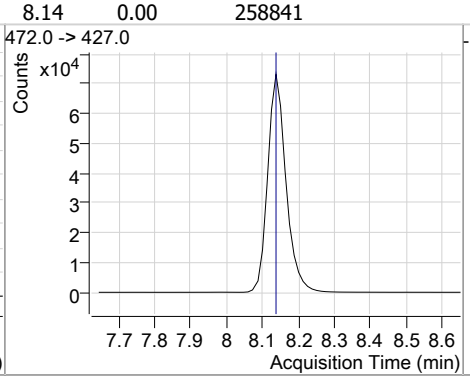


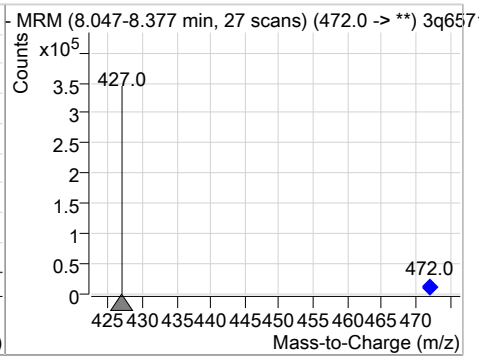




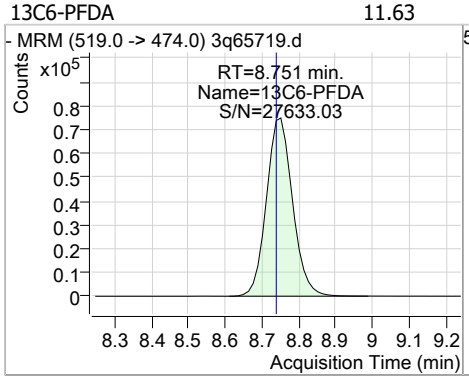
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.72	8.14	0.00	258841				

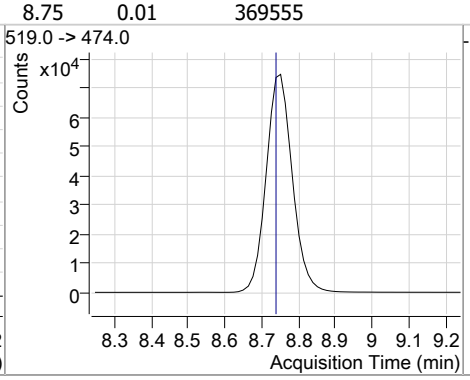


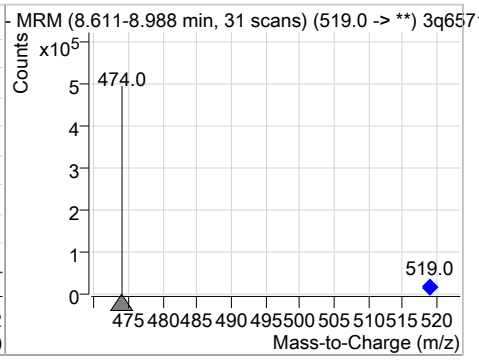




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.63	8.75	0.01	369555				

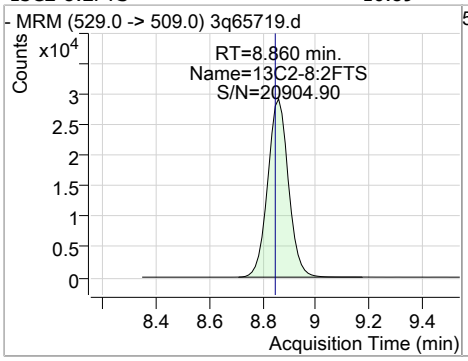


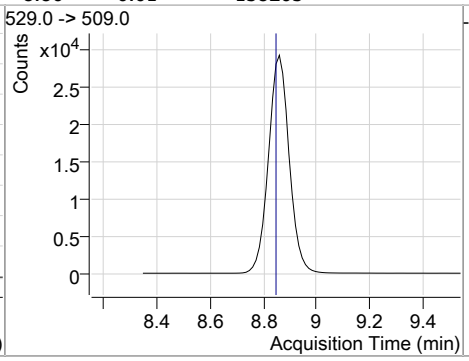


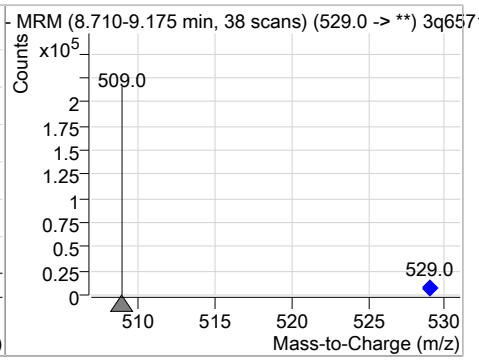


Perfluorinated Compounds by LC/MS/MS

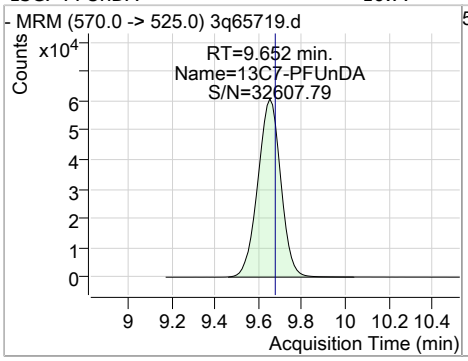
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	10.89	8.86	0.01	158265				

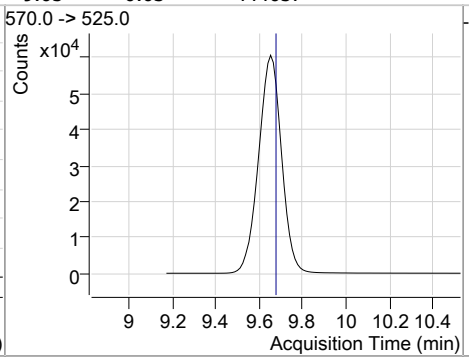


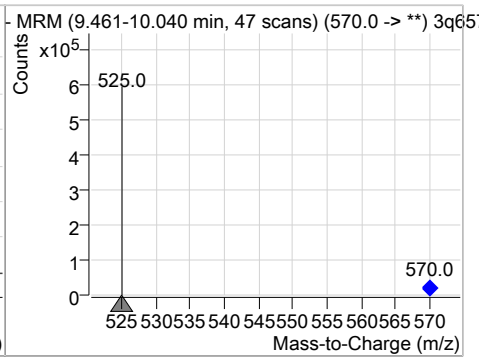




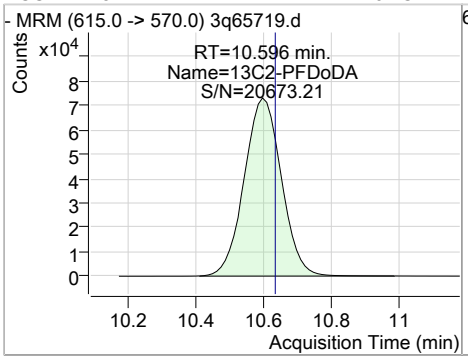
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	10.77	9.65	-0.03	444657				

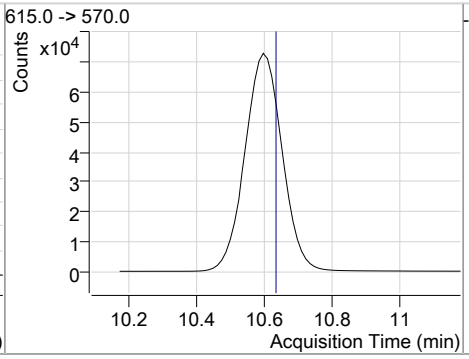


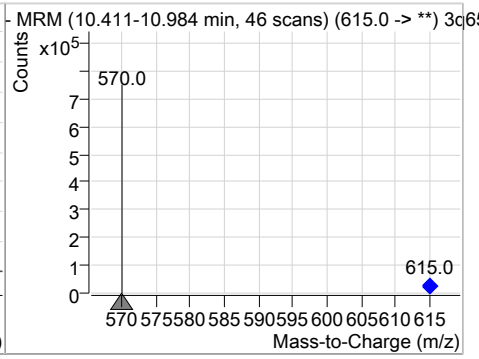




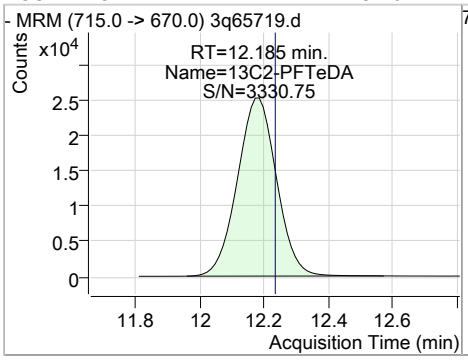
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.23	10.60	-0.04	553533				

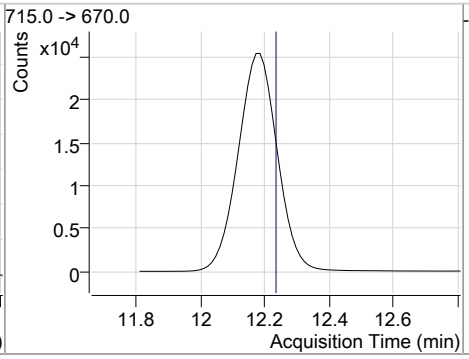


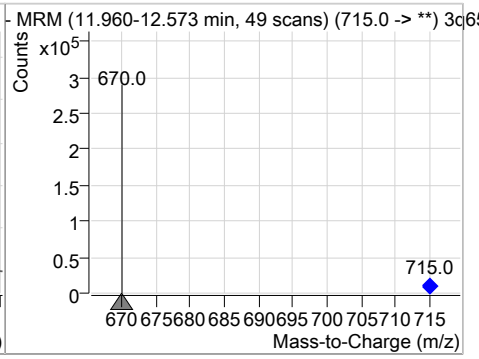




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.46	12.19	-0.05	214295				







Manual Integration Approval Summary

Sample Number: FA98286-47
Lab FileID: 3Q65719.D
Injection Time: 09/14/22 05:12
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 16:08 Norman Farmer
Supervisor approved: 09/19/22 16:11 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q65844.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/16/2022 12:20:58 AM
Sample Name	:	fa98286-47
Vial	:	P2-C6
DA Method File	:	ID_091522_S3Q900.quantmethod.xml
Batch Name	:	S3Q900.batch.bin
Sample Information	:	op92762,S3Q900,110,,,1,5,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.327	217.0 -> 172.0	12905	4.00	µg/L	-0.038
M5-PFPeA	4.399	268.0 -> 223.0	25407	4.00	µg/L	-0.013
M5-PFHxA	5.800	318.0 -> 273.0	36127	4.00	µg/L	-0.014
M4-PFHpA	6.793	367.0 -> 322.0	37623	4.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	54132	4.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	60809	4.00	µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	88473	4.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	111356	4.00	µg/L	0.000
M2-PFDoDA	10.646	615.0 -> 570.0	139486	4.00	µg/L	0.013
M2-PFTeDA	12.248	715.0 -> 670.0	54275	4.00	µg/L	0.013
M8-FOSA	7.491	506.0 -> 78.0	5026	4.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	2445	4.00	µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	3405	4.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	5343	4.00	µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	13492	4.00	µg/L	0.000
M2-6:2FTS	7.571	429.0 -> 409.0	21799	4.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	41441	4.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	14531	4.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	2795	4.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	255	4.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	14600	4.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.708	329.0 -> 309.0	13492	2.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%		
13C2-6:2FTS	7.571	429.0 -> 409.0	21799	2.53	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
13C2-8:2FTS	8.873	529.0 -> 509.0	41441	2.42	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.1%		
13C2-PFDoDA	10.646	615.0 -> 570.0	139486	2.30	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.5%		
13C2-PFTeDA	12.248	715.0 -> 670.0	54275	2.13	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.6%		
13C3-PFBS	4.692	302.0 -> 99.0	2445	2.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.0%		
13C3-PFHxS	6.822	402.0 -> 99.0	3405	2.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.6%		
13C4-PFBA	2.327	217.0 -> 172.0	12905	1.56	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.8%		
13C4-PFHpA	6.793	367.0 -> 322.0	37623	2.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.9%		
13C5-PFHxA	5.800	318.0 -> 273.0	36127	2.25	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.3%		
13C5-PFPeA	4.399	268.0 -> 223.0	25407	2.10	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.5%		
13C6-PFDA	8.751	519.0 -> 474.0	88473	2.43	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

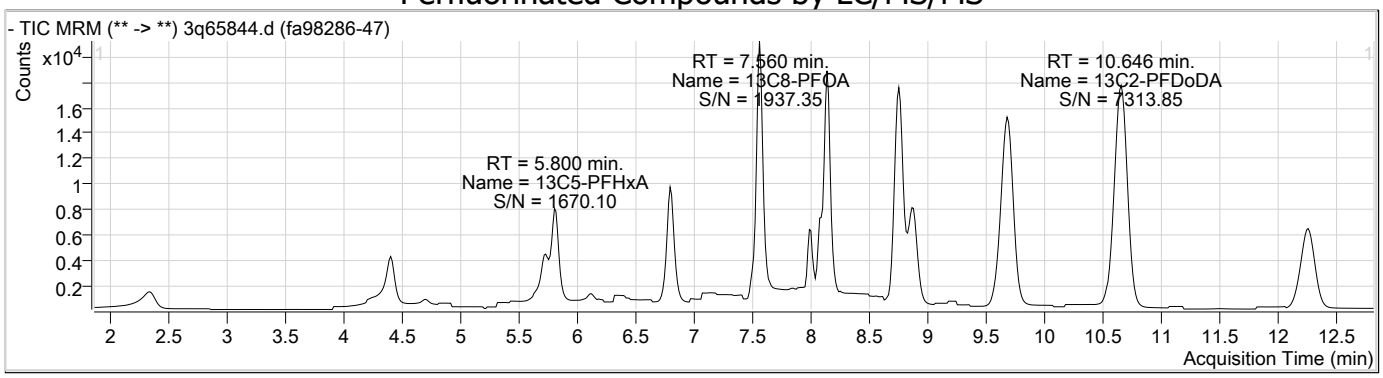
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.2%		
13C7-PFUnDA	9.677	570.0 -> 525.0	111356	2.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 11.7%		
13C8-FOSA	7.491	506.0 -> 78.0	5026	1.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.1%		
13C8-PFOA	7.560	421.0 -> 376.0	54132	2.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
13C8-PFOS	8.111	507.0 -> 99.0	5343	2.58 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.9%		
13C9-PFNA	8.138	472.0 -> 427.0	60809	2.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.7%		
d3-MeFOSAA	7.978	573.0 -> 419.0	14531	2.57 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%		
13C3-HFPO-DA	6.117	287.0 -> 169.0	2790	2.16 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.8%		
d3-MeFOSA	7.829	515.0 -> 169.0	255	0.32 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 1.6%		
d5-EtFOSAA	8.065	589.0 -> 419.0	14590	2.56 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 12.8%		
Target Compounds						QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.		
		327.0 -> 81.0				
6:2FTS	-	427.0 -> 407.0	-	N.D.		
		427.0 -> 81.0				
8:2FTS	-	527.0 -> 507.0	-	N.D.		
		527.0 -> 81.0				
EtFOSAA	-	584.0 -> 419.0	-	N.D.		
		584.0 -> 483.0				
FOSA	-	498.0 -> 78.0	-	N.D.		
		498.0 -> 478.0				
MeFOSAA	-	570.0 -> 419.0	-	N.D.		
		570.0 -> 512.0				
PFBA	-	213.0 -> 169.0	-	N.D.		
PFBS	-	299.0 -> 80.0	-	N.D.		
		299.0 -> 99.0				
PFDA	-	513.0 -> 469.0	-	N.D.		
		513.0 -> 219.0				
PFDoDA	-	613.0 -> 569.0	-	N.D.		
		613.0 -> 319.0				
PFDS	-	599.0 -> 80.0	-	N.D.		
		599.0 -> 99.0				
PFHpA	-	363.0 -> 319.0	-	N.D.		
		363.0 -> 169.0				
PFHpS	-	449.0 -> 80.0	-	N.D.		
		449.0 -> 99.0				
PFHxA	-	313.0 -> 269.0	-	N.D.		
		313.0 -> 119.0				
PFHxS	-	399.0 -> 80.0	-	N.D.		
		399.0 -> 99.0				
PFNA	8.139	463.0 -> 419.0	0	0.00 µg/L	m	1
		463.0 -> 219.0	0			
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	-	413.0 -> 369.0	-	N.D.		
		413.0 -> 169.0				
PFOS	-	499.0 -> 80.0	-	N.D.		

Perfluorinated Compounds by LC/MS/MS

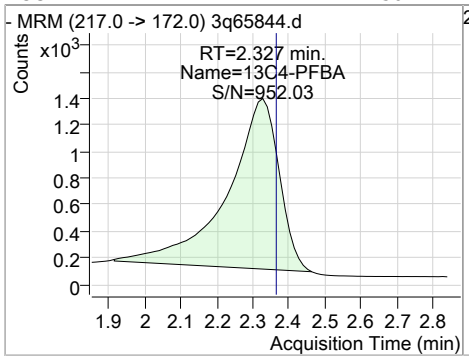
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
		285.0 -> 169.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

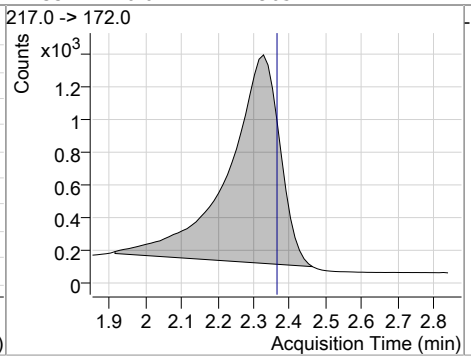
 # = Qualifier out of range, m = manually integrated, + = Area summed

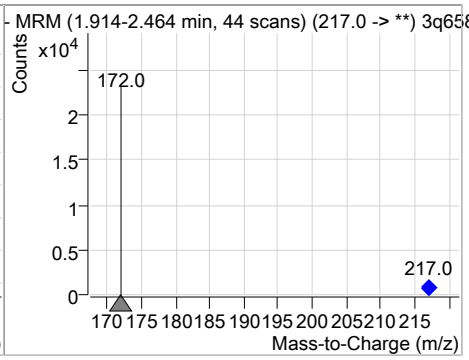
Perfluorinated Compounds by LC/MS/MS



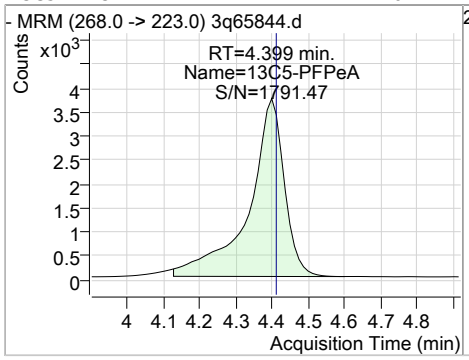
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	1.56	2.33	-0.04	12905				

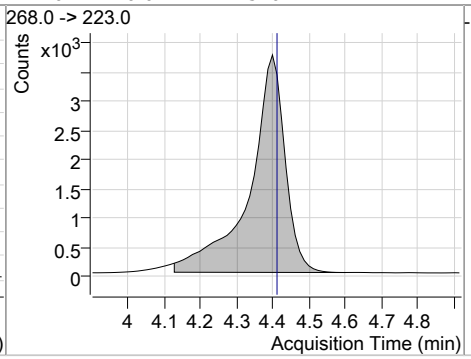


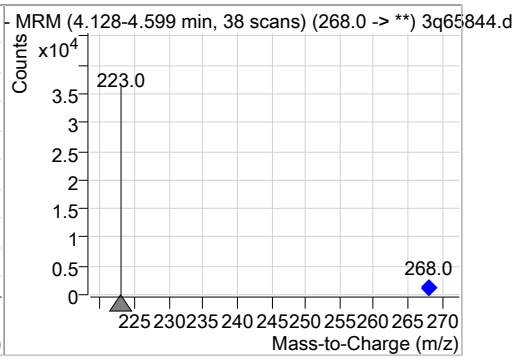




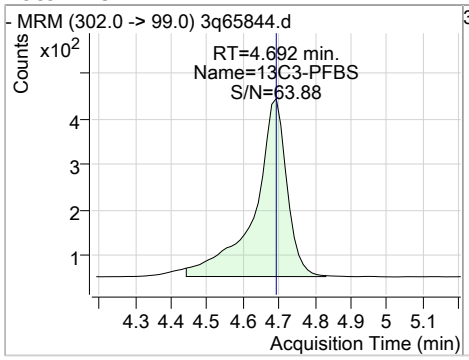
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	2.10	4.40	-0.01	25407				

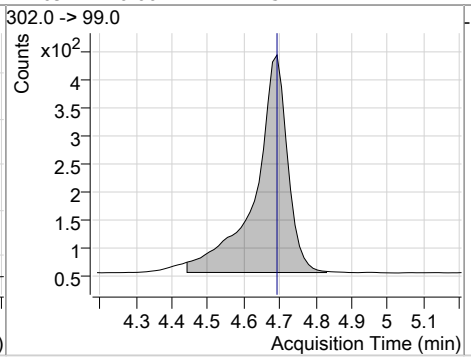


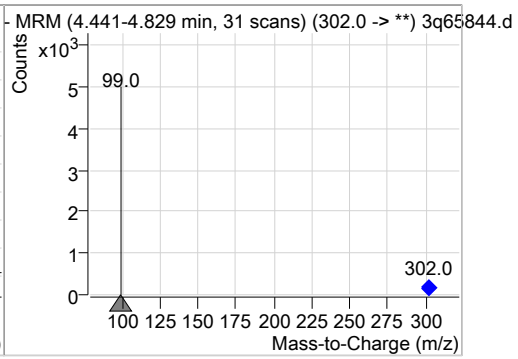




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	2.21	4.69	0.00	2445				

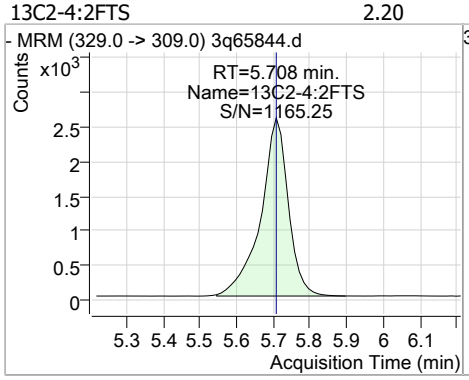


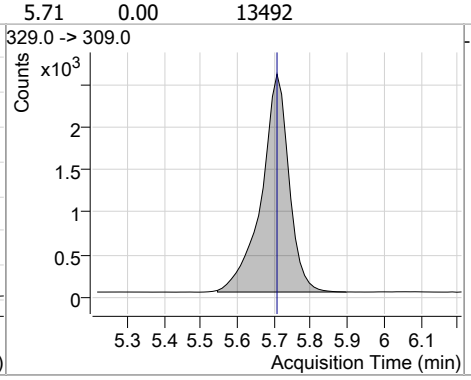


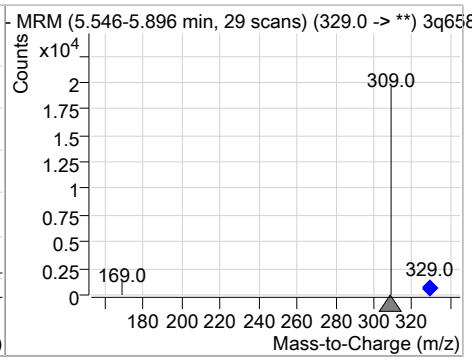


Perfluorinated Compounds by LC/MS/MS

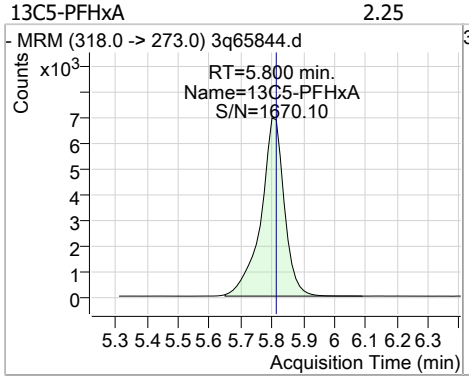
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	2.20	5.71	0.00	13492				

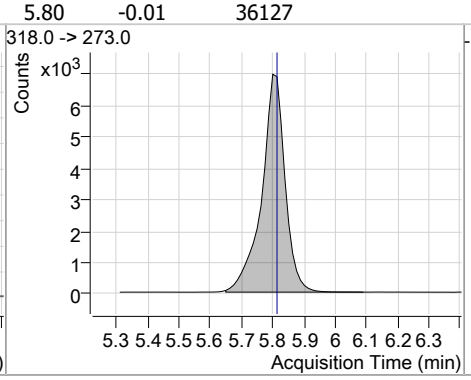


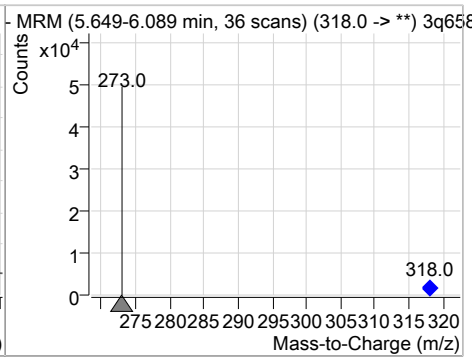




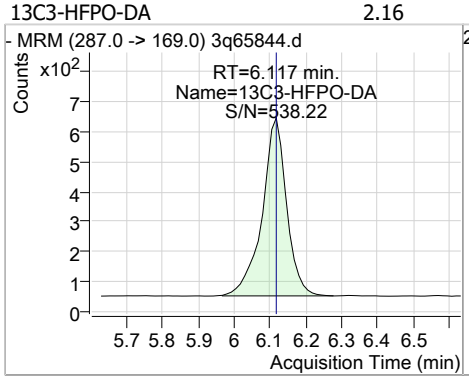
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	2.25	5.80	-0.01	36127				

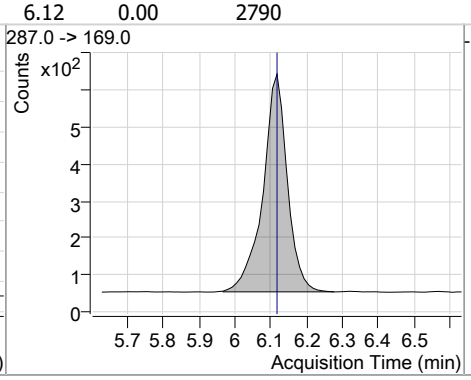


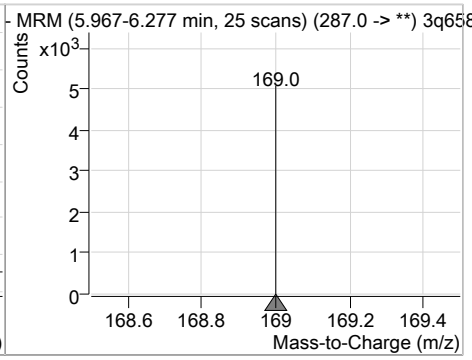




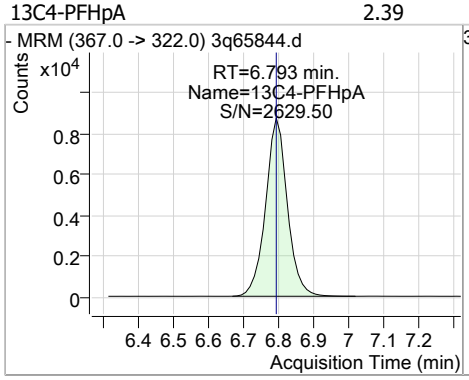
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	2.16	6.12	0.00	2790				

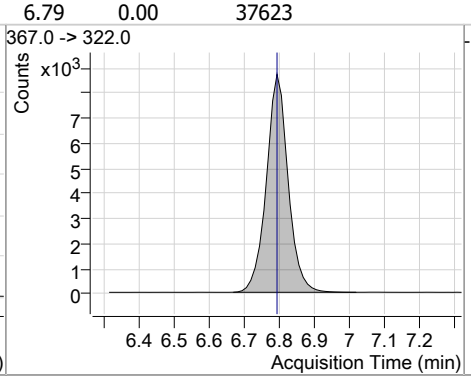


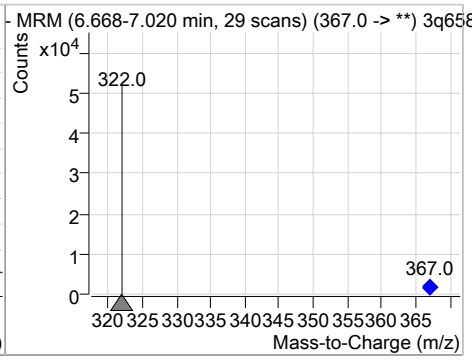




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	2.39	6.79	0.00	37623				

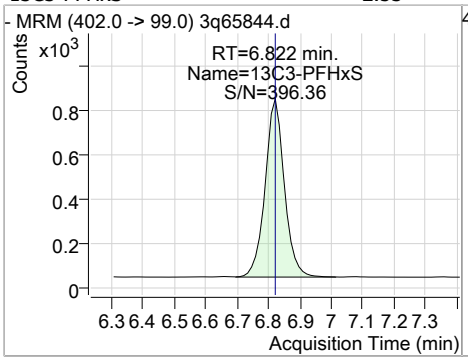


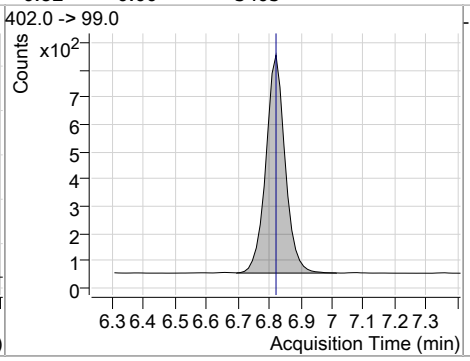


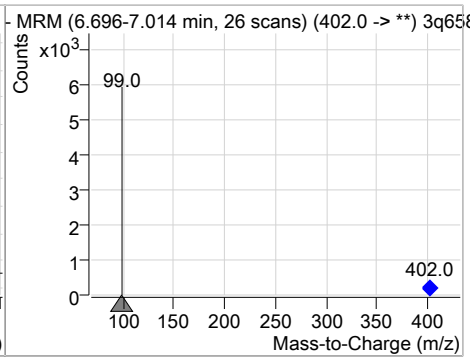


Perfluorinated Compounds by LC/MS/MS

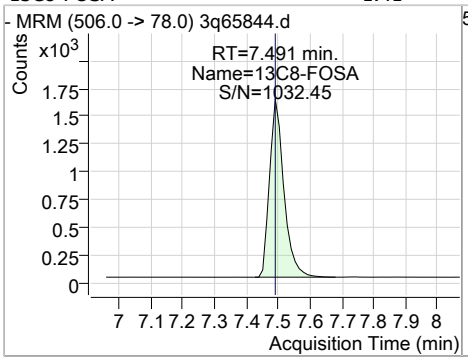
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	2.53	6.82	0.00	3405				

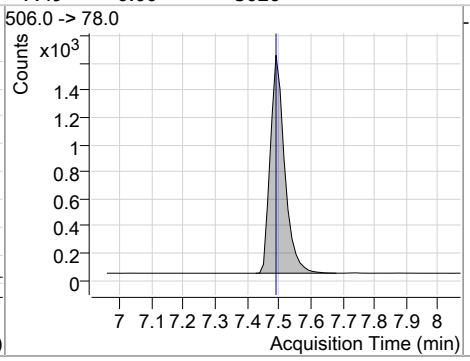


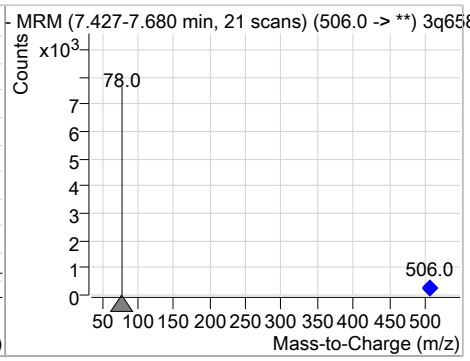




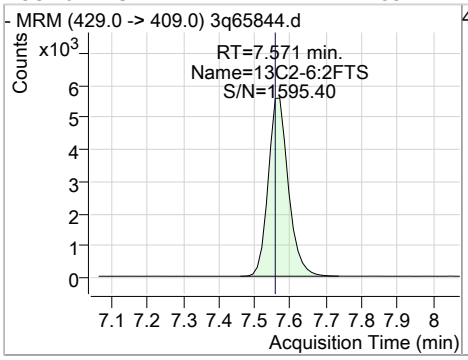
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	1.41	7.49	0.00	5026				

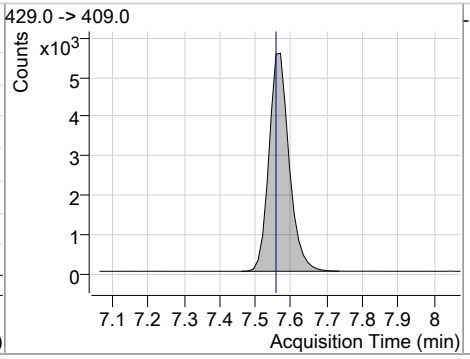


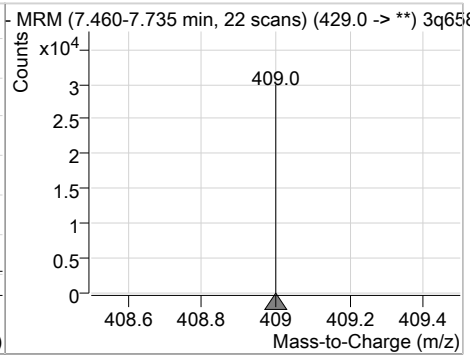




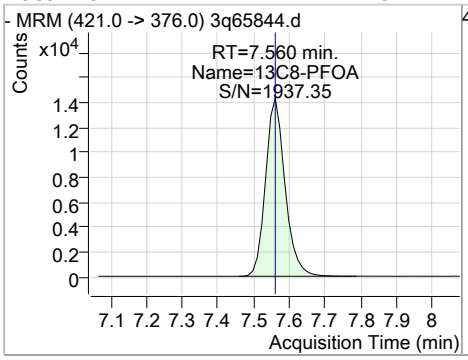
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	2.53	7.57	0.01	21799				

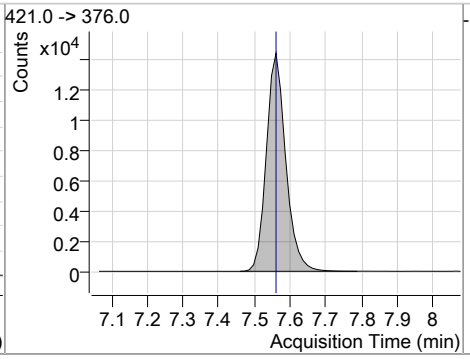


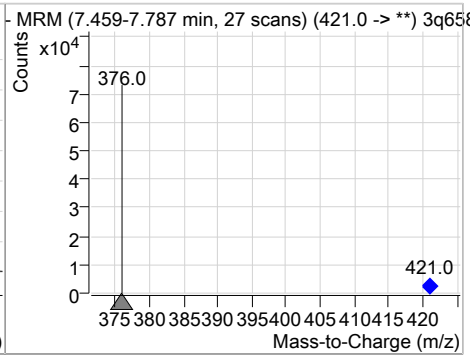




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	2.54	7.56	0.00	54132				

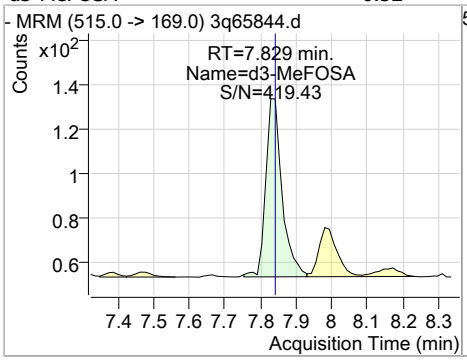


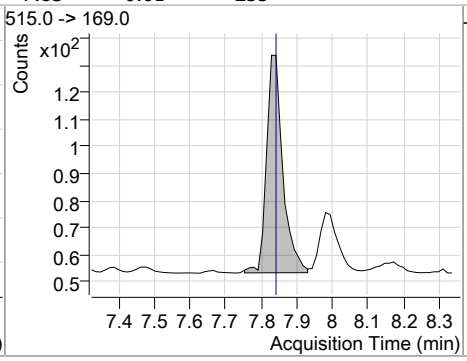


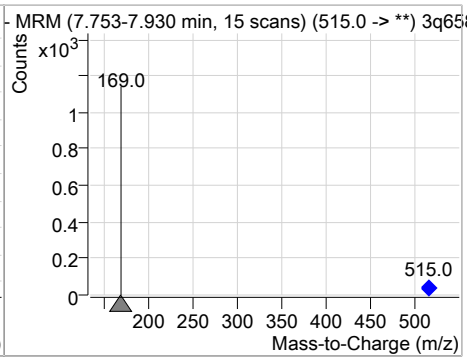


Perfluorinated Compounds by LC/MS/MS

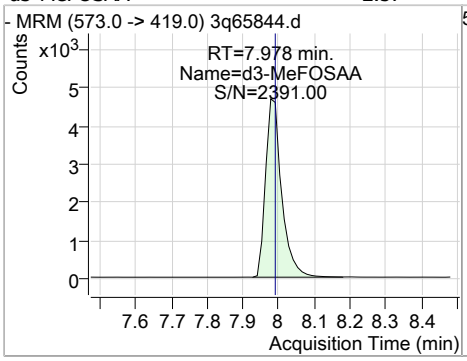
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	0.32	7.83	-0.01	255				

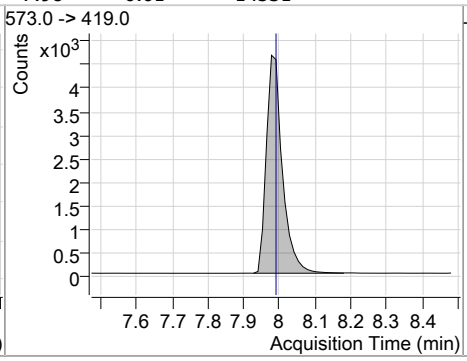


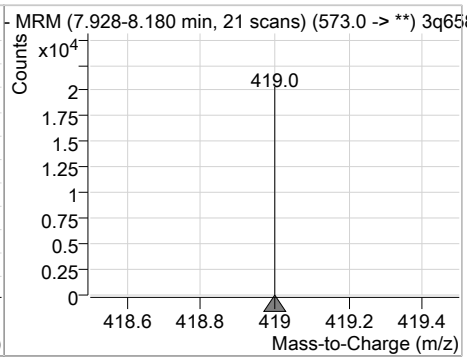




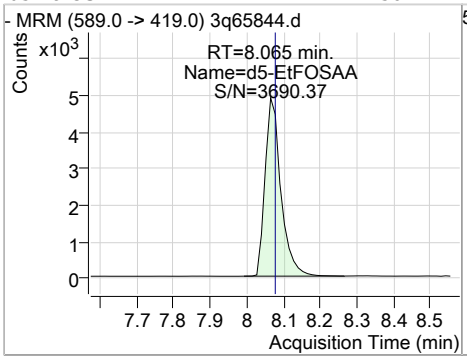
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	2.57	7.98	-0.01	14531				

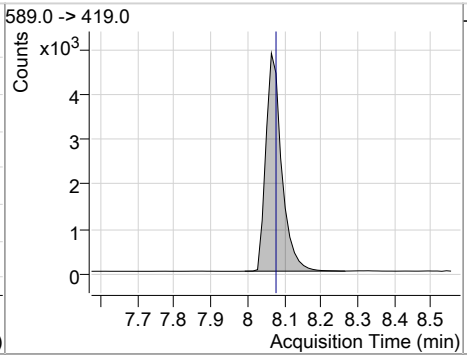


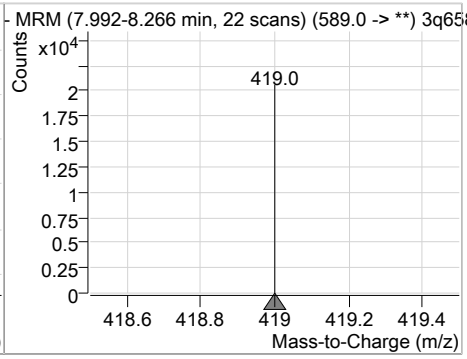




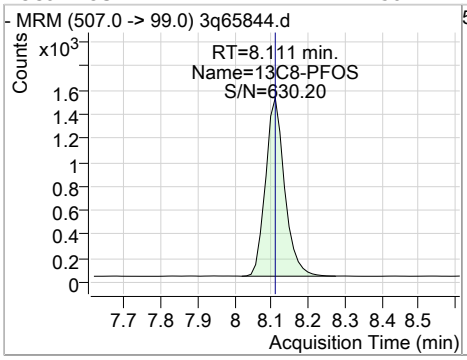
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	2.56	8.06	-0.01	14590				

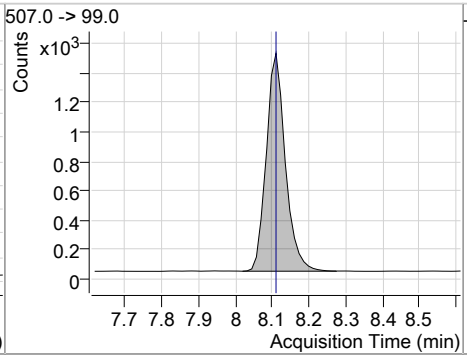


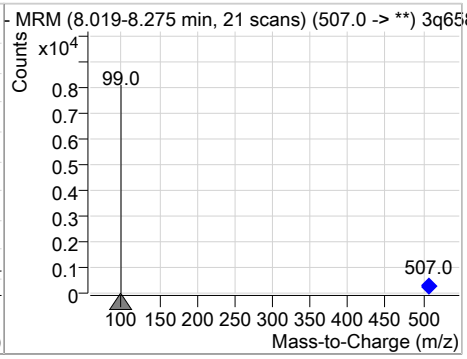




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	2.58	8.11	0.00	5343				

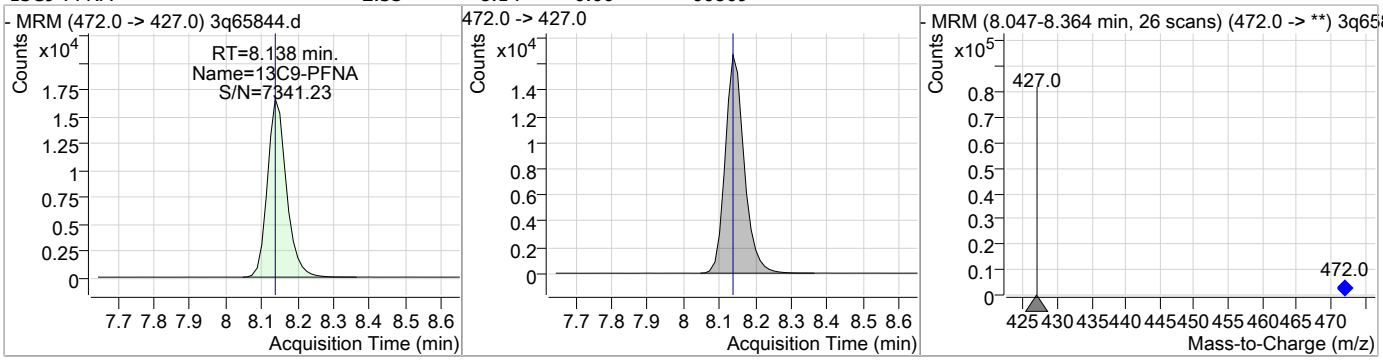




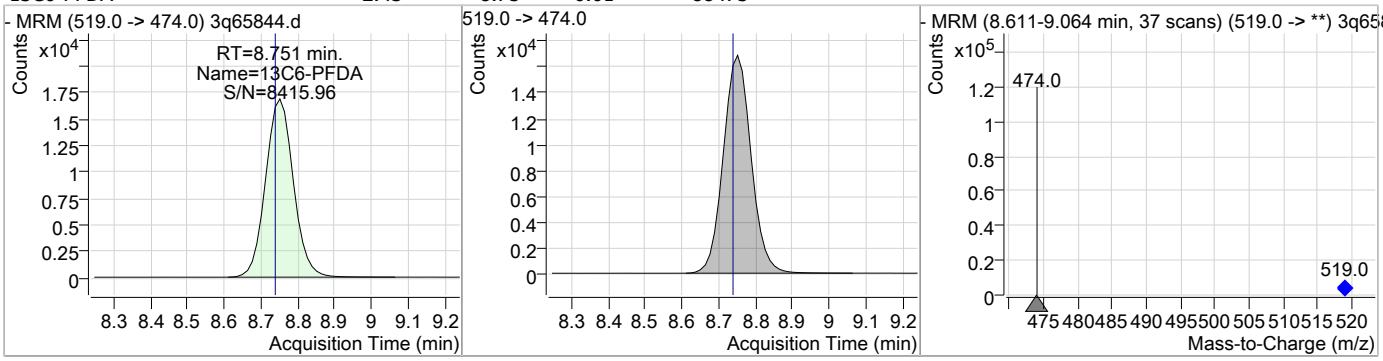


Perfluorinated Compounds by LC/MS/MS

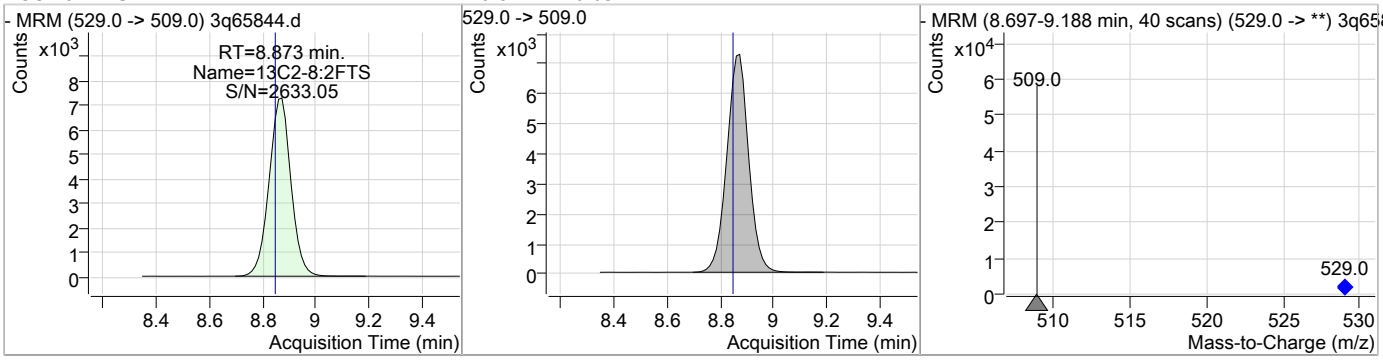
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	2.55	8.14	0.00	60809				



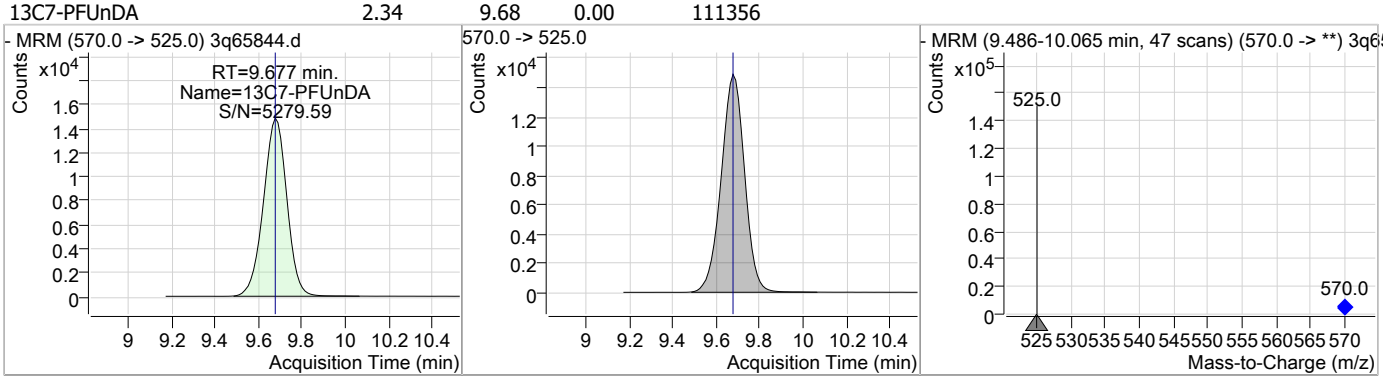
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	2.43	8.75	0.01	88473				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	2.42	8.87	0.03	41441				

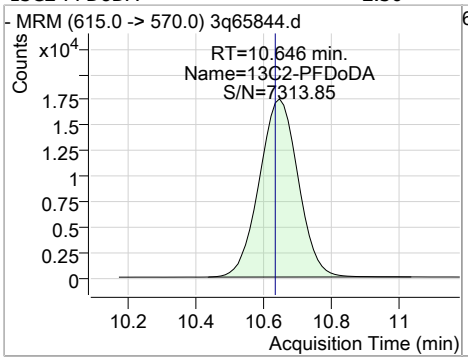


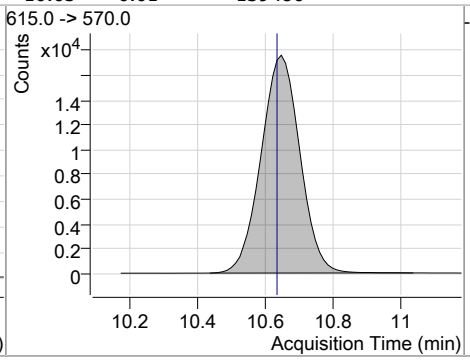
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	2.34	9.68	0.00	111356				

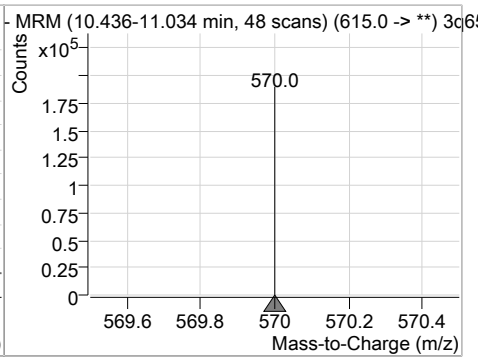


Perfluorinated Compounds by LC/MS/MS

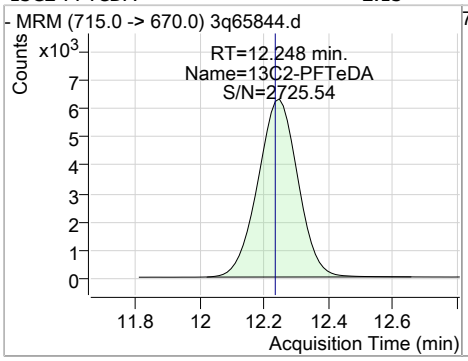
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	2.30	10.65	0.01	139486				

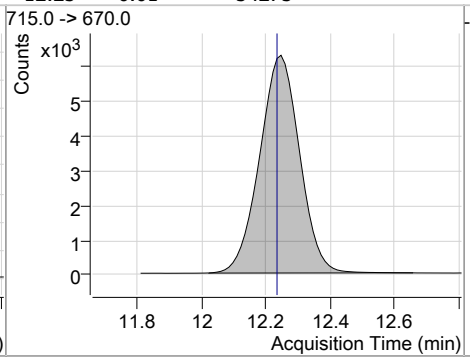


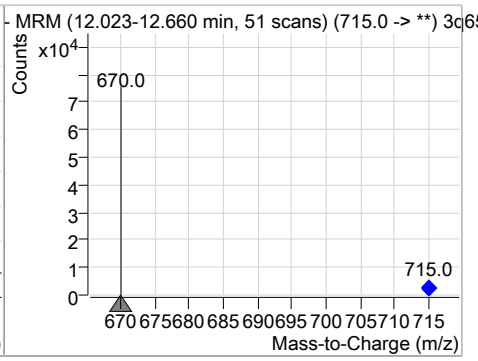




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	2.13	12.25	0.01	54275				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4603.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:26:41 PM
Sample Name : fa98286-48
Vial : P1-B6
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,125,,,1.0,1,water

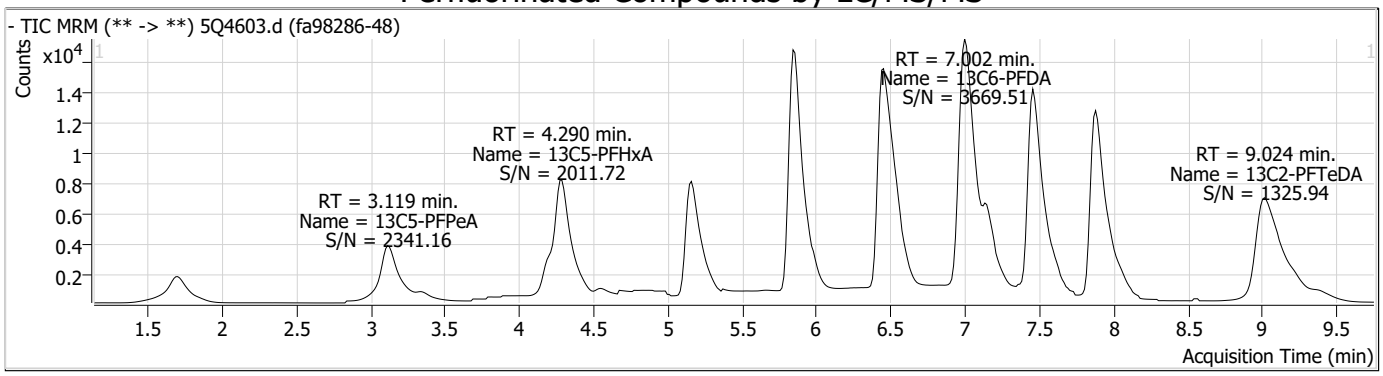
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	19064	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	32793	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	51248	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	50324	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	81016	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	91190	20.00 µg/L	0.000
M6-PFDA	7.002	519.0 -> 474.0	75571	20.00 µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	93476	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	96447	20.00 µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	87293	20.00 µg/L	-0.012
M8-FOSA	6.530	506.0 -> 78.0	15736	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	4218	20.00 µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	4667	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	8938	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	16459	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	28702	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	29270	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16776	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	3204	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	1858	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	18142	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	16459	11.21 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.0%	
13C2-6:2FTS	5.843	429.0 -> 409.0	28702	12.84 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.2%	
13C2-8:2FTS	7.025	529.0 -> 509.0	29270	13.03 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.2%	
13C2-PFDoDA	7.893	615.0 -> 570.0	96447	13.31 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.5%	
13C2-PFTeDA	9.024	715.0 -> 670.0	87293	11.57 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.8%	
13C3-PFBS	3.349	302.0 -> 99.0	4218	12.95 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.7%	
13C3-PFHxS	5.206	402.0 -> 99.0	4667	13.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%	
13C4-PFBA	1.700	217.0 -> 172.0	19064	10.66 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.3%	
13C4-PFHpA	5.163	367.0 -> 322.0	50324	12.33 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.6%	
13C5-PFHxA	4.290	318.0 -> 273.0	51248	11.72 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.6%	
13C5-PFPeA	3.119	268.0 -> 223.0	32793	11.28 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.4%	
13C6-PFDA	7.002	519.0 -> 474.0	75571	14.04 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

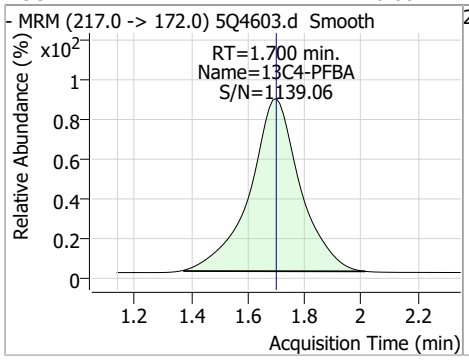
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.2%			
13C7-PFUnDA	7.471	570.0 -> 525.0	93476	13.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.4%			
13C8-FOSA	6.530	506.0 -> 78.0	15736	13.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.3%			
13C8-PFOA	5.857	421.0 -> 376.0	81016	13.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.0%			
13C8-PFOS	6.440	507.0 -> 99.0	8938	13.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%			
13C9-PFNA	6.455	472.0 -> 427.0	91190	13.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16776	17.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.3%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	3204	9.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 47.7%			
d3-MeFOSA	6.952	515.0 -> 169.0	1858	6.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	18142	16.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.9%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	7.130	463.0 -> 419.0	0		µg/L	m	1
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	7.054	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	0		µg/L	m	1

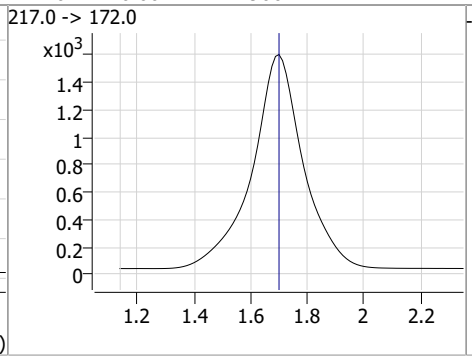
 # = Qualifier out of range, m = manually integrated, + = Area summed

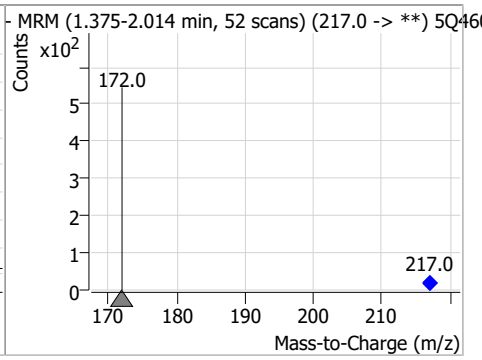
Perfluorinated Compounds by LC/MS/MS



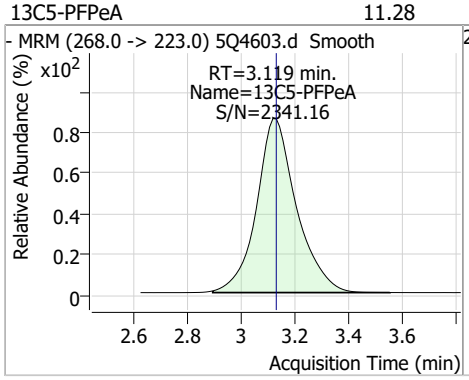
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.66	1.70	0.00	19064				

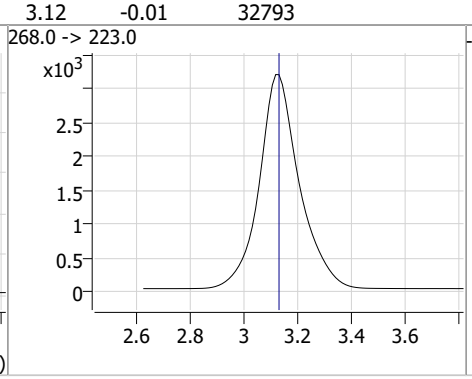


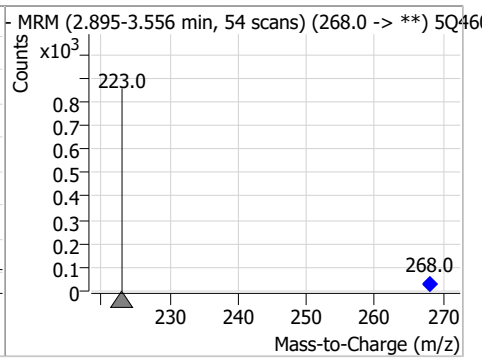




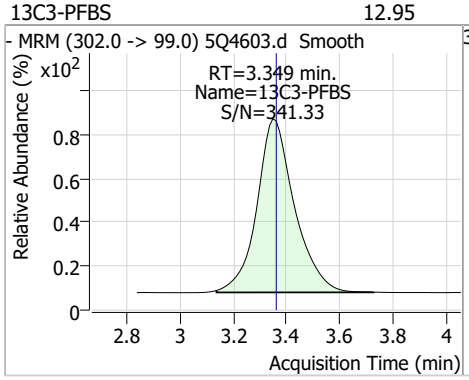
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.28	3.12	-0.01	32793				

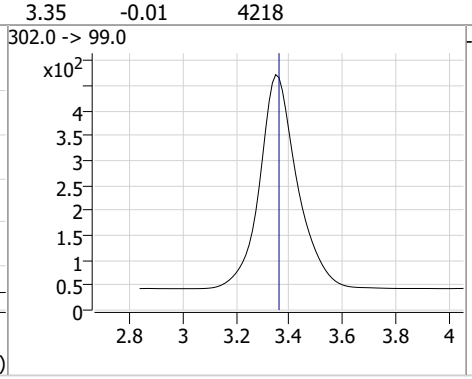


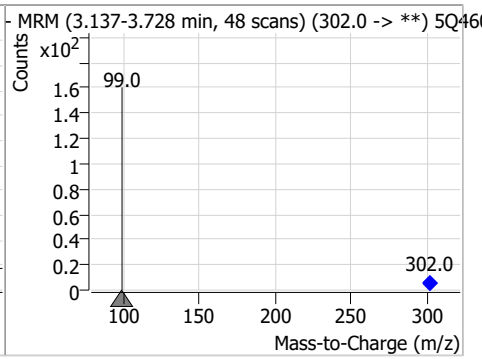




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.95	3.35	-0.01	4218				

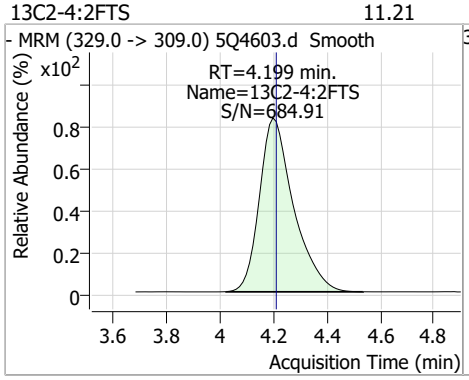


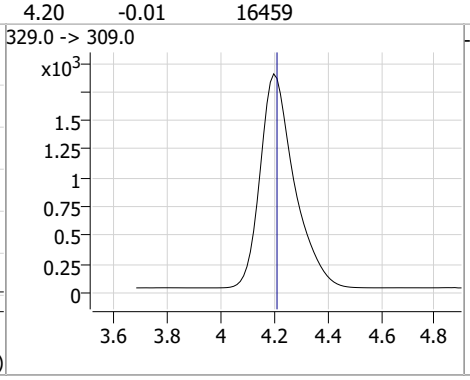


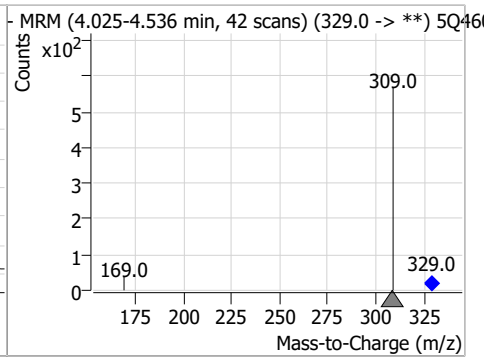


Perfluorinated Compounds by LC/MS/MS

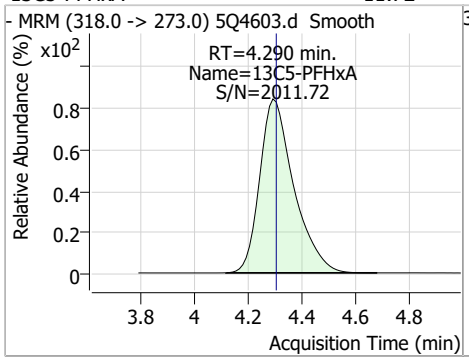
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.21	4.20	-0.01	16459				

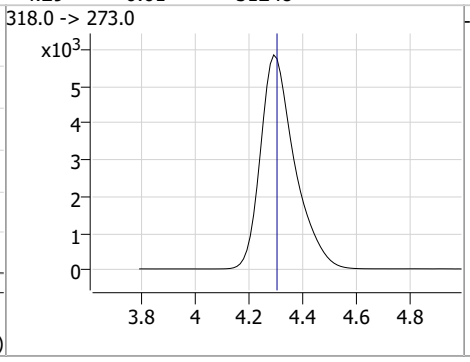


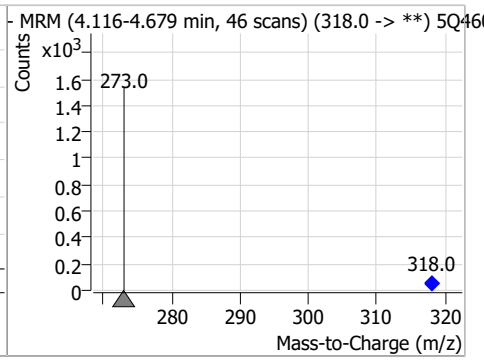




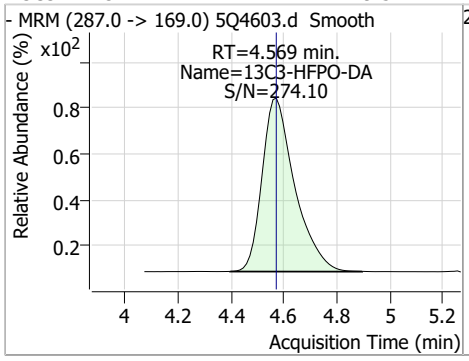
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.72	4.29	-0.01	51248				

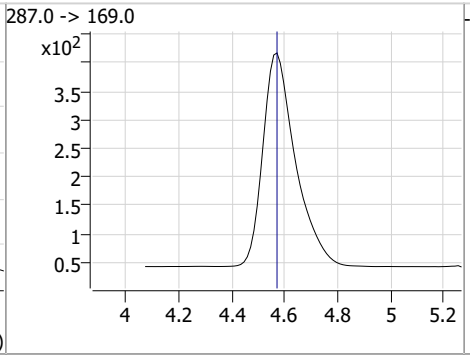


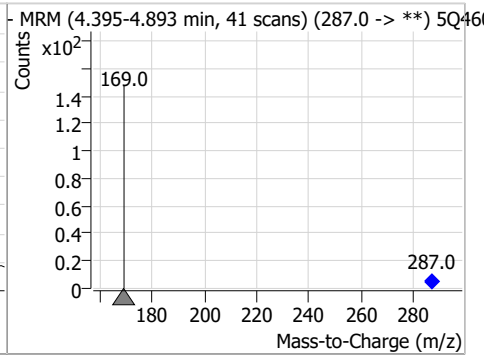




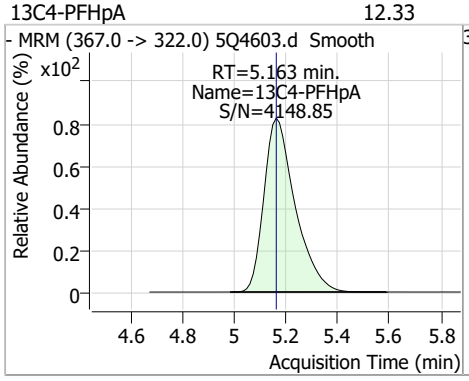
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	9.54	4.57	0.00	3204				

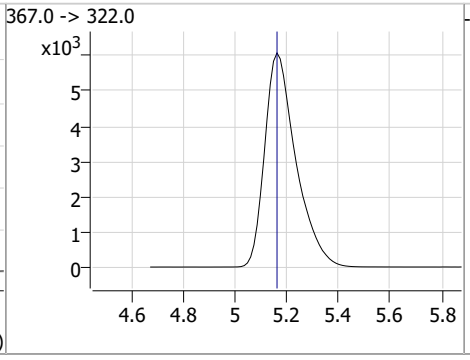


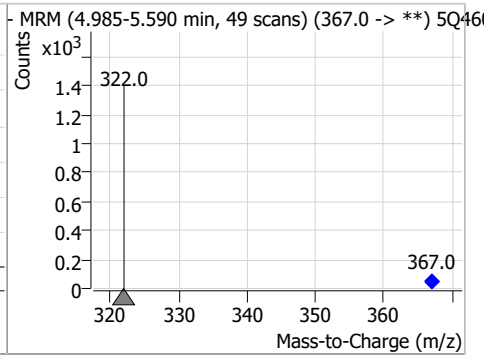




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	12.33	5.16	0.00	50324				

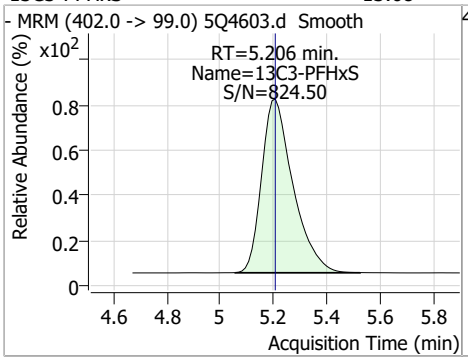


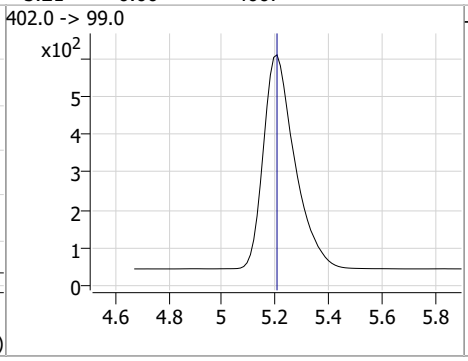


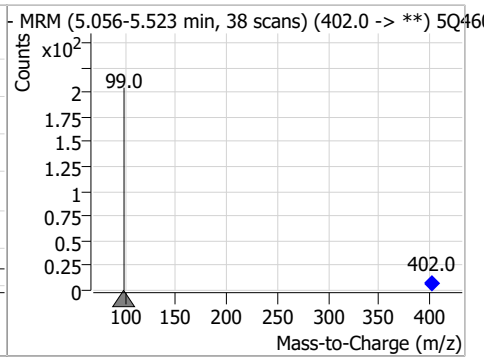


Perfluorinated Compounds by LC/MS/MS

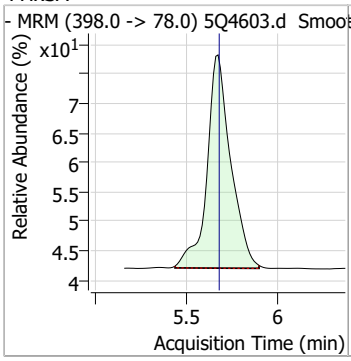
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.68	5.21	0.00	4667				

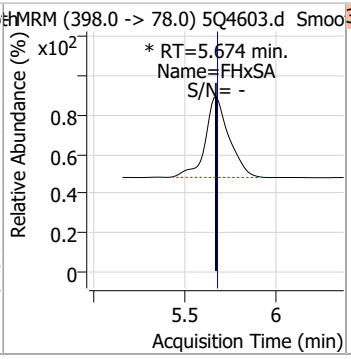


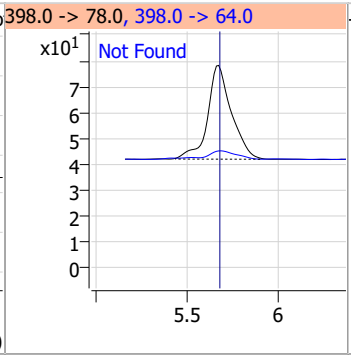


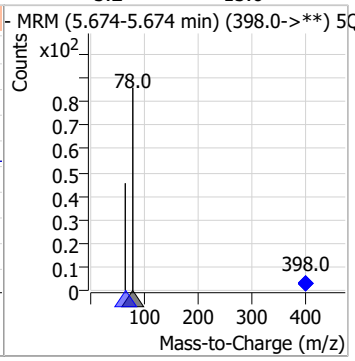


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		5.2	15.6

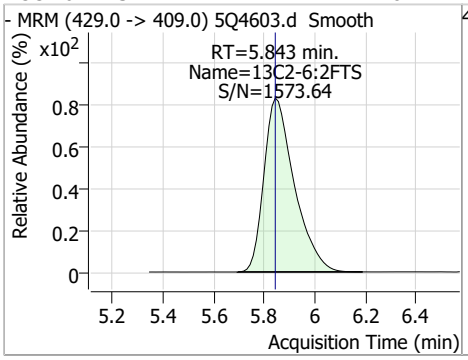


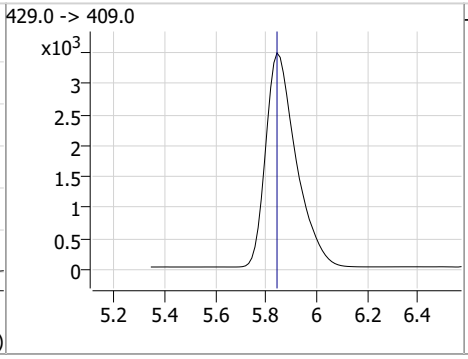


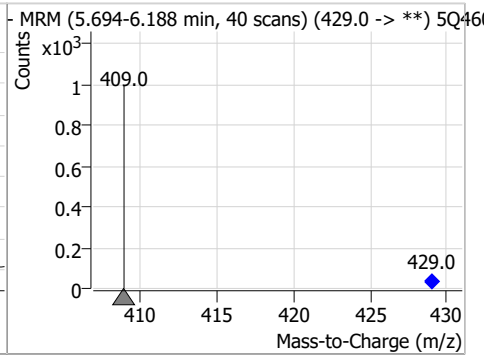




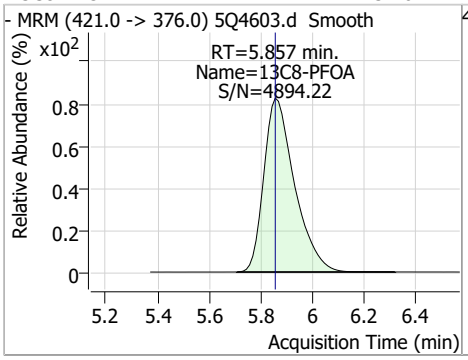
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.84	5.84	0.00	28702				

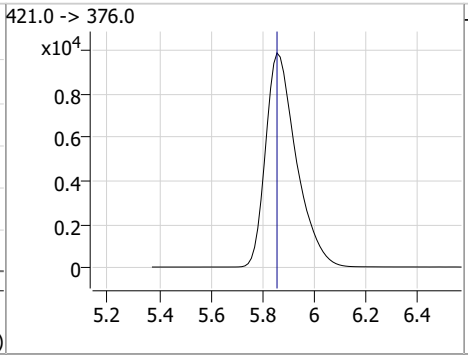


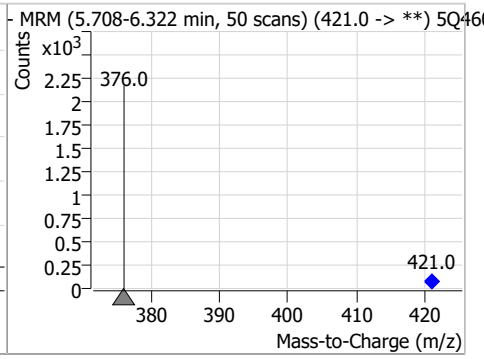




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.40	5.86	0.00	81016				

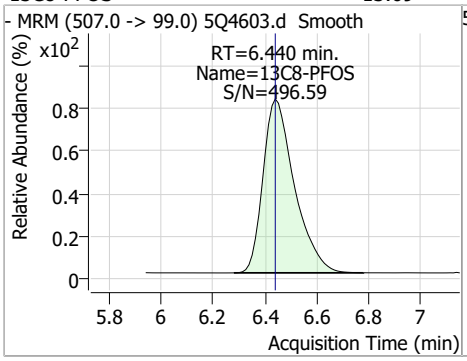


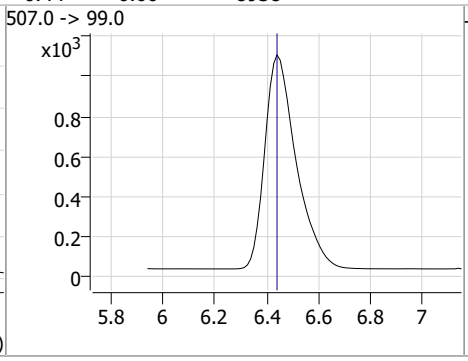


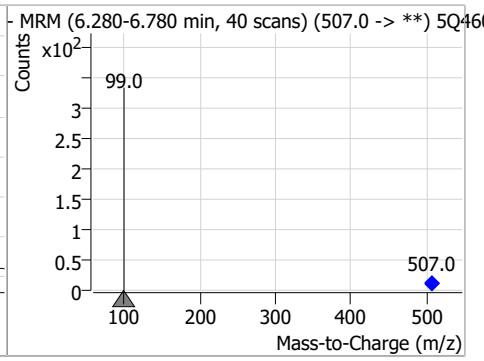


Perfluorinated Compounds by LC/MS/MS

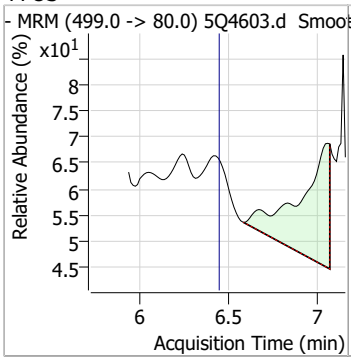
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.69	6.44	0.00	8938				

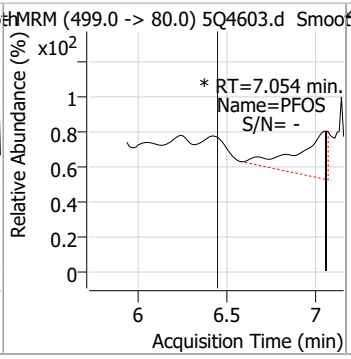


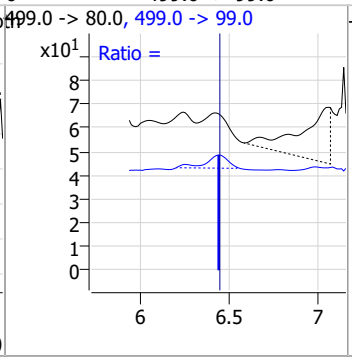


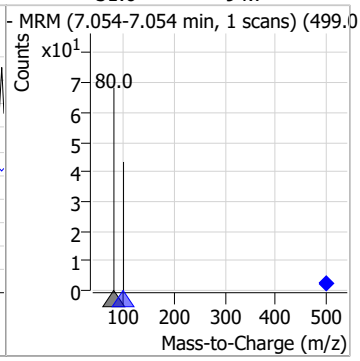


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

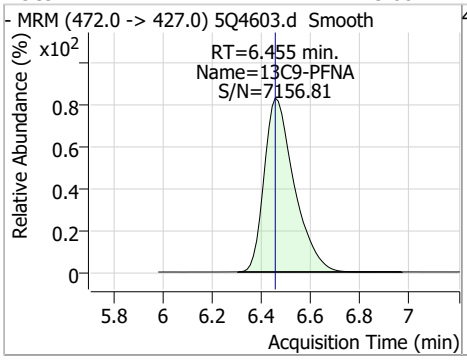


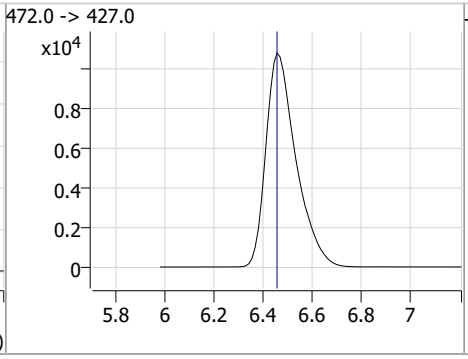


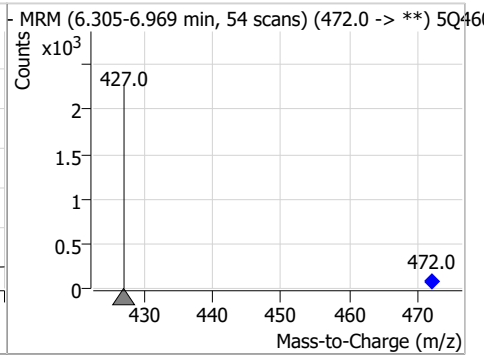




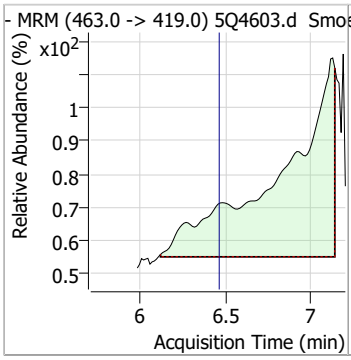
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.88	6.46	0.00	91190				

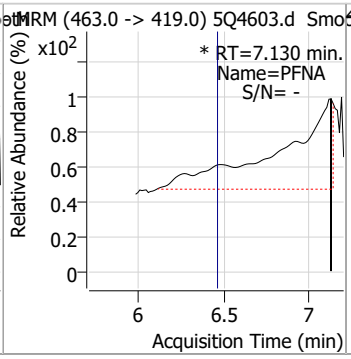


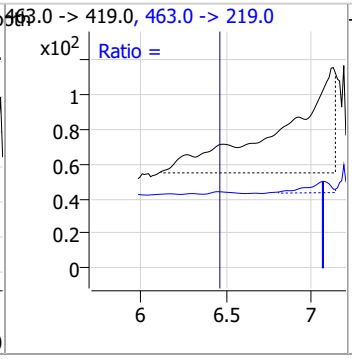


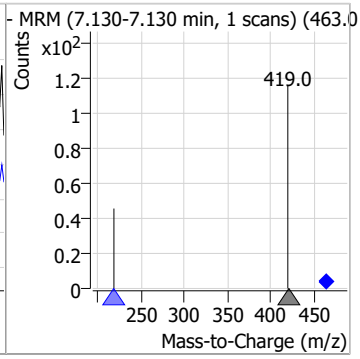


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA		0		0	463.0 -> 219.0		10.7	32.0



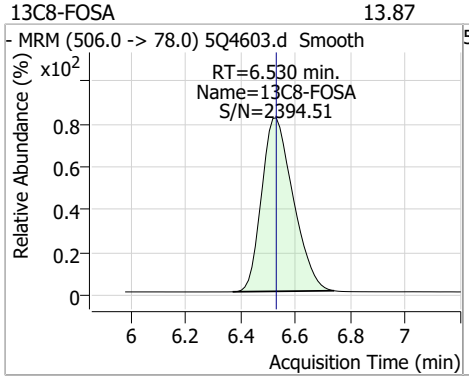


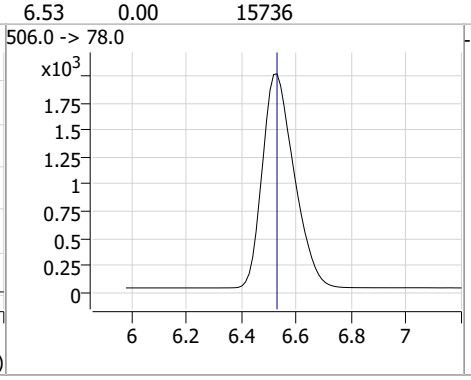


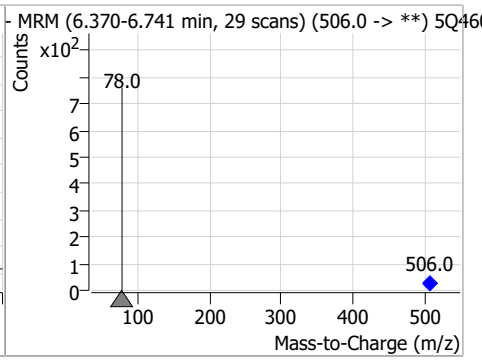


Perfluorinated Compounds by LC/MS/MS

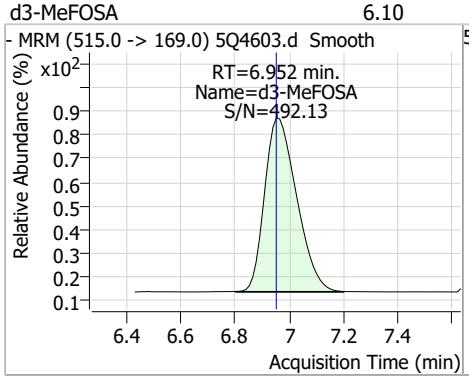
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.87	6.53	0.00	15736				

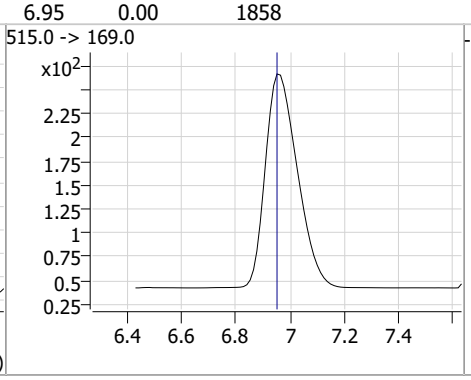


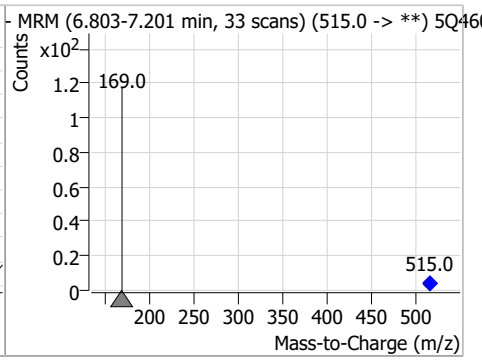




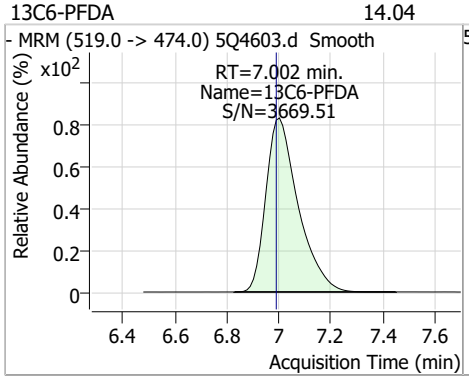
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.10	6.95	0.00	1858				

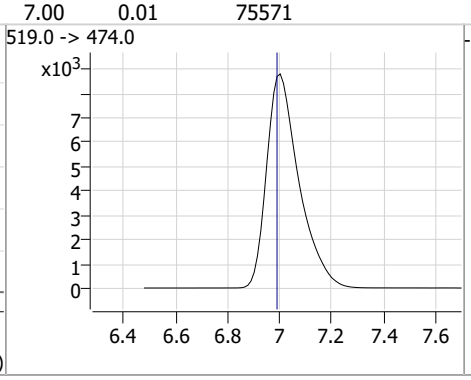


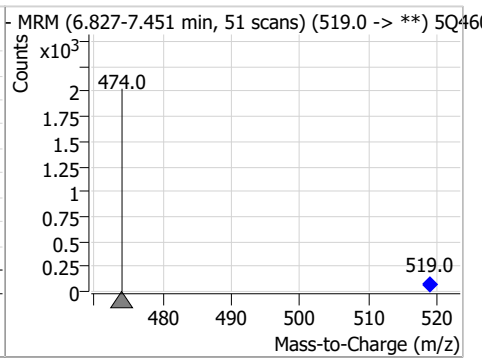




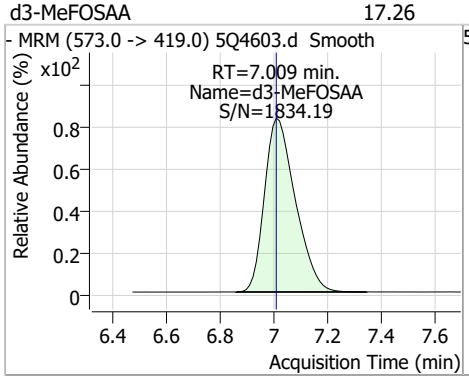
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.04	7.00	0.01	75571				

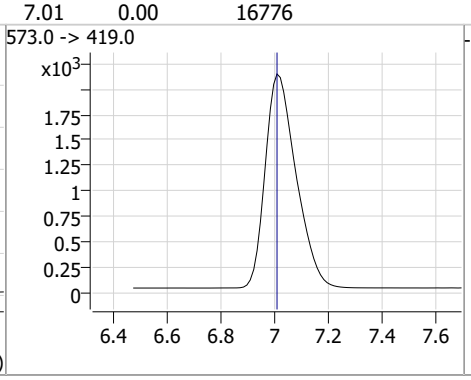


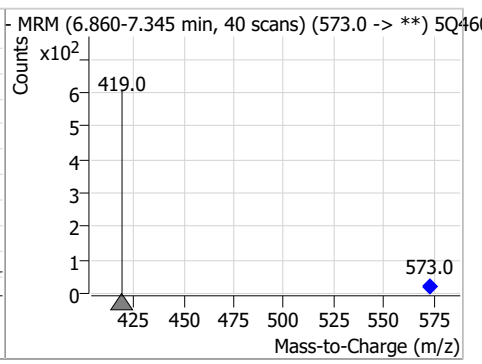




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.26	7.01	0.00	16776				

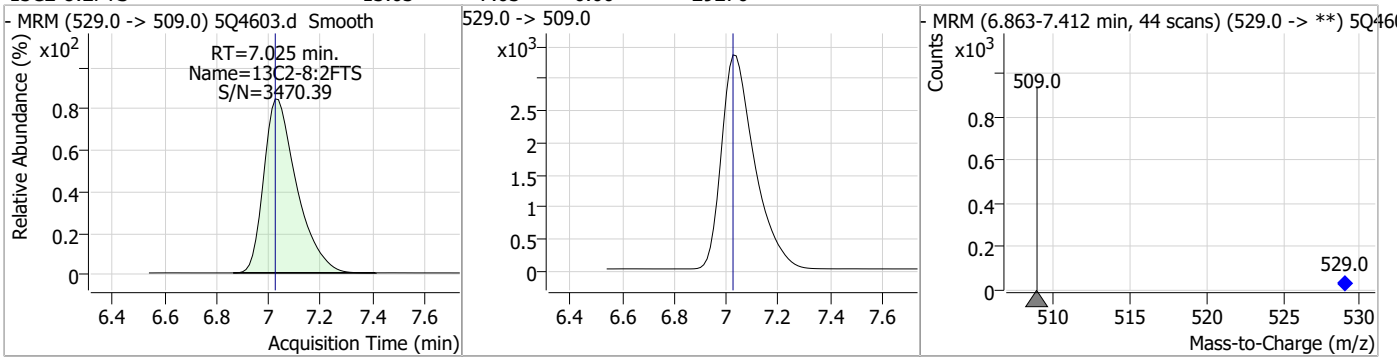




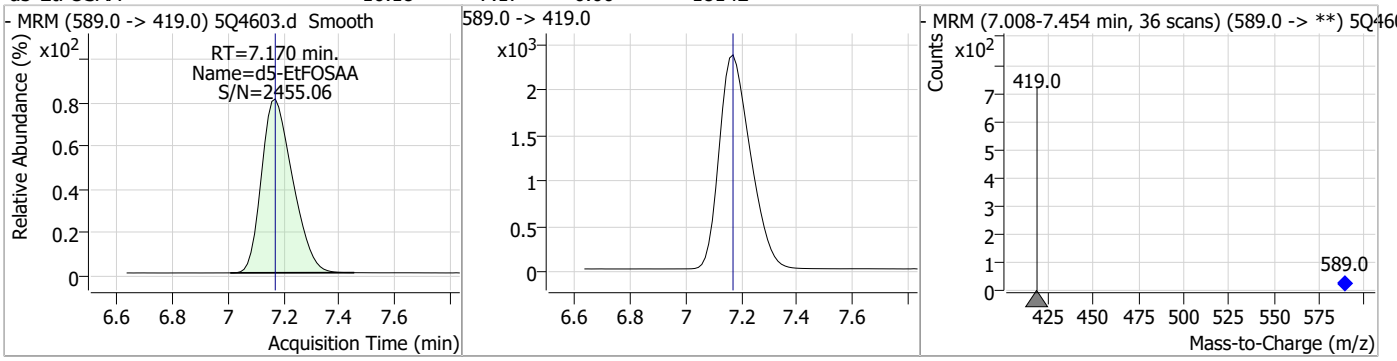


Perfluorinated Compounds by LC/MS/MS

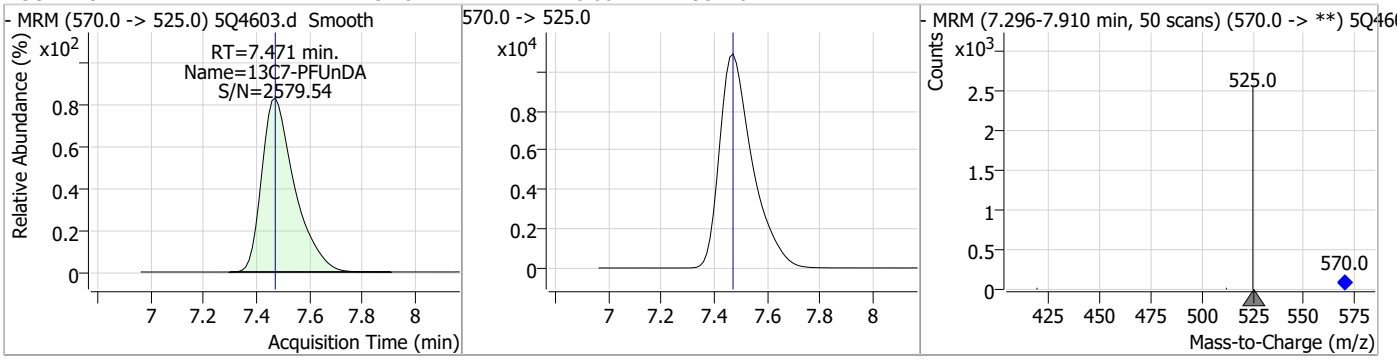
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	13.03	7.03	0.00	29270				



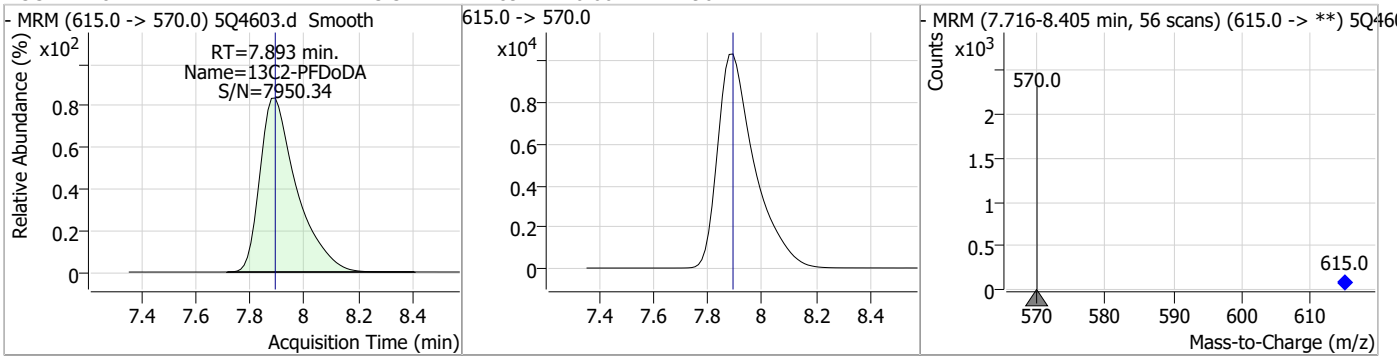
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.18	7.17	0.00	18142				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.28	7.47	0.00	93476				

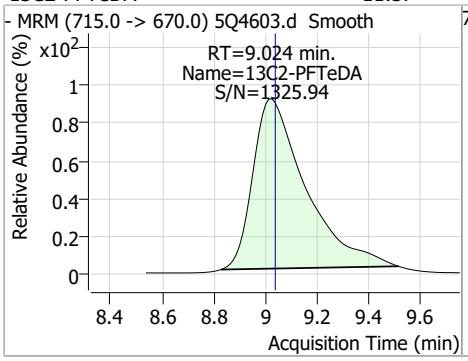


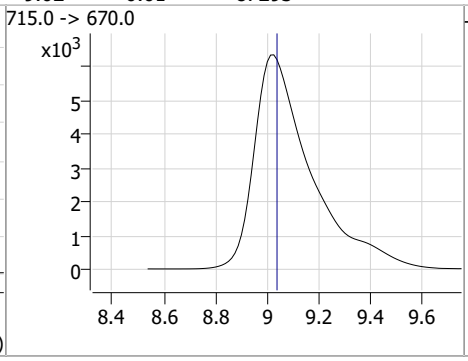
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.31	7.89	0.00	96447				

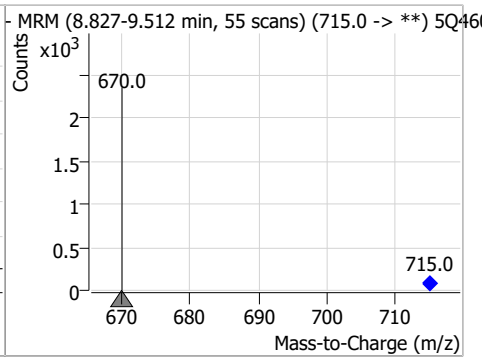


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.57	9.02	-0.01	87293				







7.1.78

7

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4893.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/18/2022 8:14:03 AM
Sample Name : fa98286-48
Vial : P4-F7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92794,S5Q71,125,,,1.0,2,water

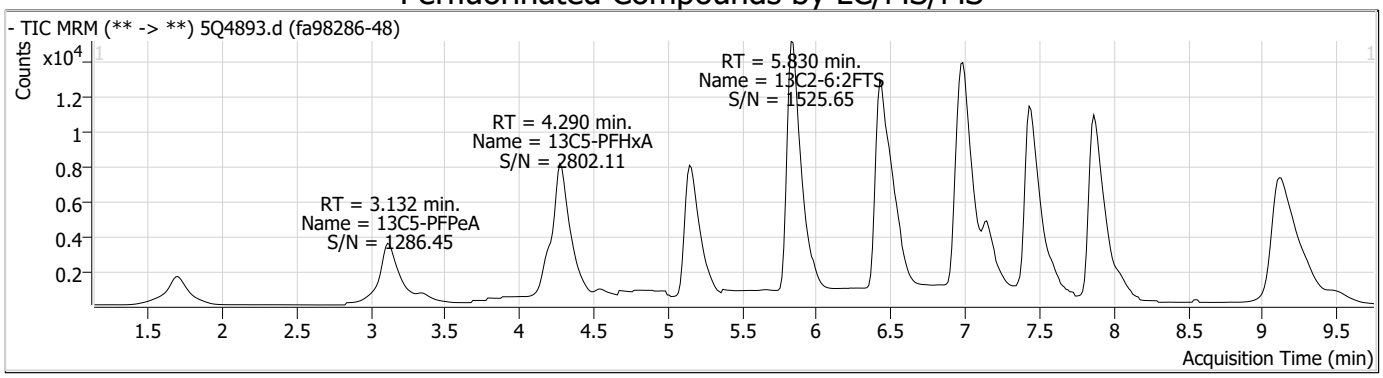
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	17918	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	31086	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	51108	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	50809	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	72332	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	72822	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	58210	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	72080	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	80939	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	100904	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	13991	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	4122	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	4267	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	6893	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	16514	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	25770	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	23544	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	13274	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	2927	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	1674	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	14825	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	16514	5.27	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 26.3%		
13C2-6:2FTS	5.830	429.0 -> 409.0	25770	6.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.1%		
13C2-8:2FTS	7.000	529.0 -> 509.0	23544	6.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.6%		
13C2-PFDoDA	7.879	615.0 -> 570.0	80939	6.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.0%		
13C2-PFTeDA	9.124	715.0 -> 670.0	100904	5.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 29.6%		
13C3-PFBS	3.349	302.0 -> 99.0	4122	6.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.8%		
13C3-PFHxS	5.194	402.0 -> 99.0	4267	6.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 31.1%		
13C4-PFBA	1.700	217.0 -> 172.0	17918	4.86	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 24.3%		
13C4-PFHpA	5.163	367.0 -> 322.0	50809	5.78	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 28.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	51108	5.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 27.0%		
13C5-PFPeA	3.132	268.0 -> 223.0	31086	5.26	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 26.3%		
13C6-PFDA	6.977	519.0 -> 474.0	58210	6.27	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

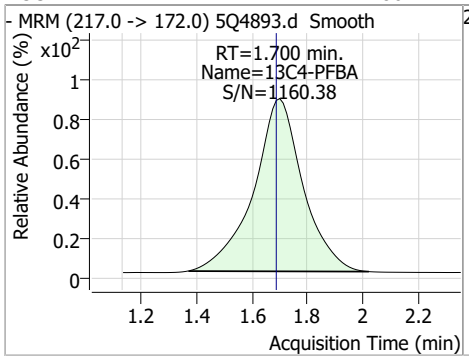
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 31.3%			
13C7-PFUnDA	7.446	570.0 -> 525.0	72080	6.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 31.1%			
13C8-FOSA	6.517	506.0 -> 78.0	13991	5.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 29.8%			
13C8-PFOA	5.845	421.0 -> 376.0	72332	6.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.7%			
13C8-PFOS	6.428	507.0 -> 99.0	6893	5.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 29.9%			
13C9-PFNA	6.443	472.0 -> 427.0	72822	6.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 30.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	13274	7.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 38.7%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	2927	5.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 25.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	1674	2.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 14.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	14825	7.03	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 35.2%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	0		µg/L	m	1

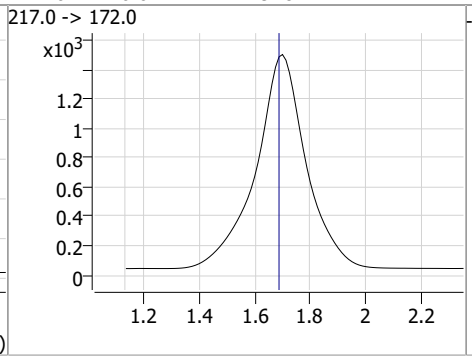
 # = Qualifier out of range, m = manually integrated, + = Area summed

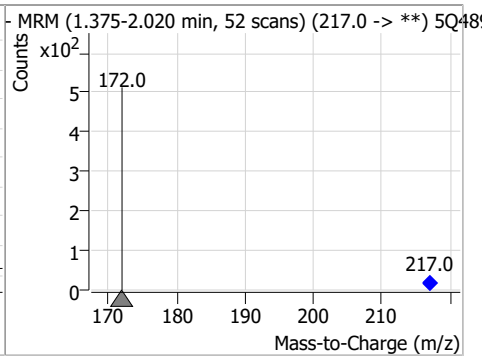
Perfluorinated Compounds by LC/MS/MS



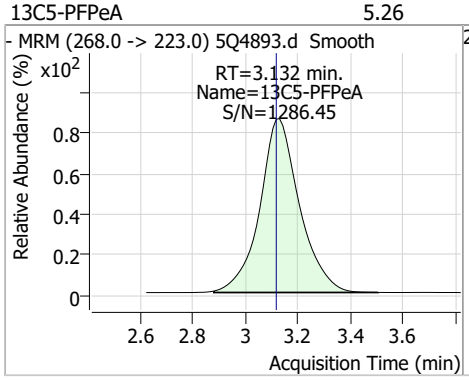
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	4.86	1.70	0.01	17918				

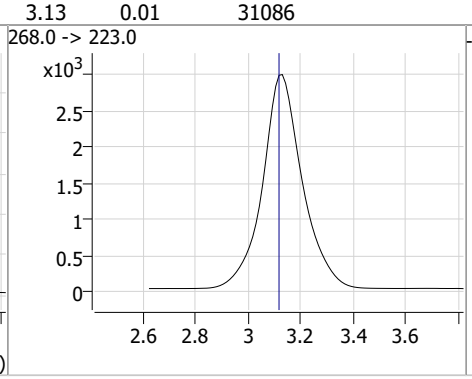


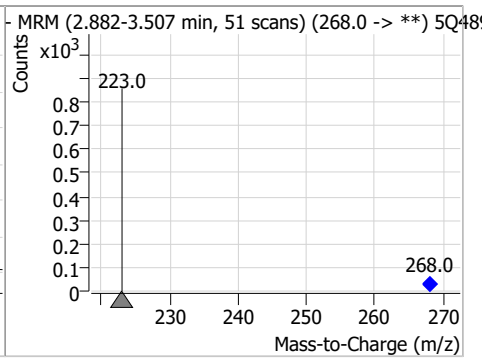




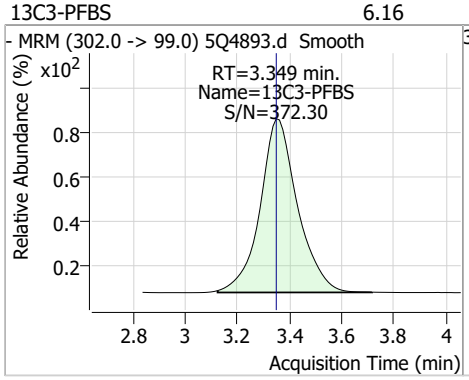
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	5.26	3.13	0.01	31086				

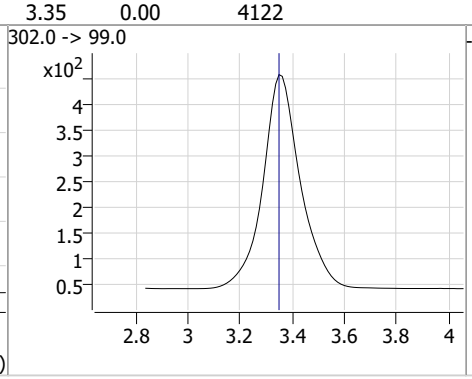


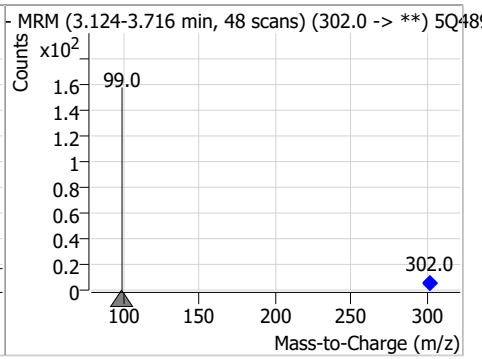




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	6.16	3.35	0.00	4122				

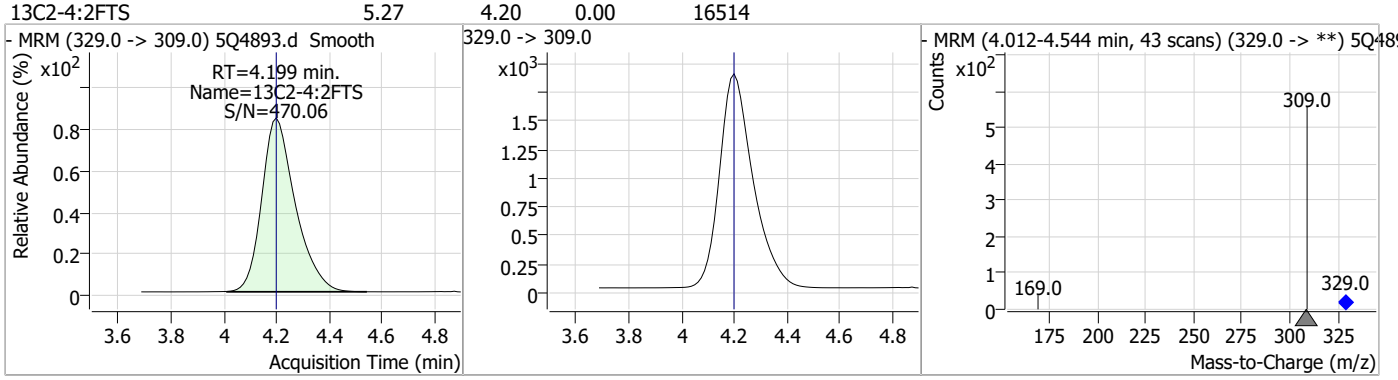




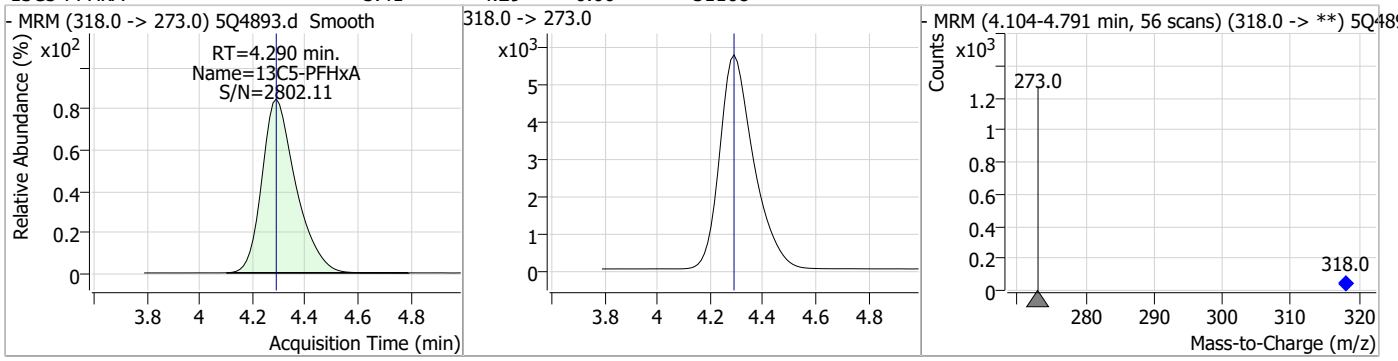


Perfluorinated Compounds by LC/MS/MS

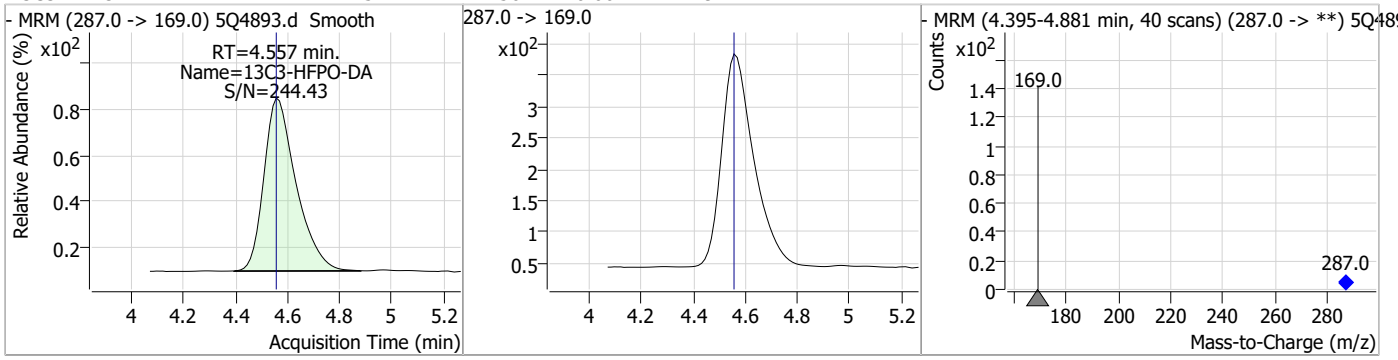
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	5.27	4.20	0.00	16514				



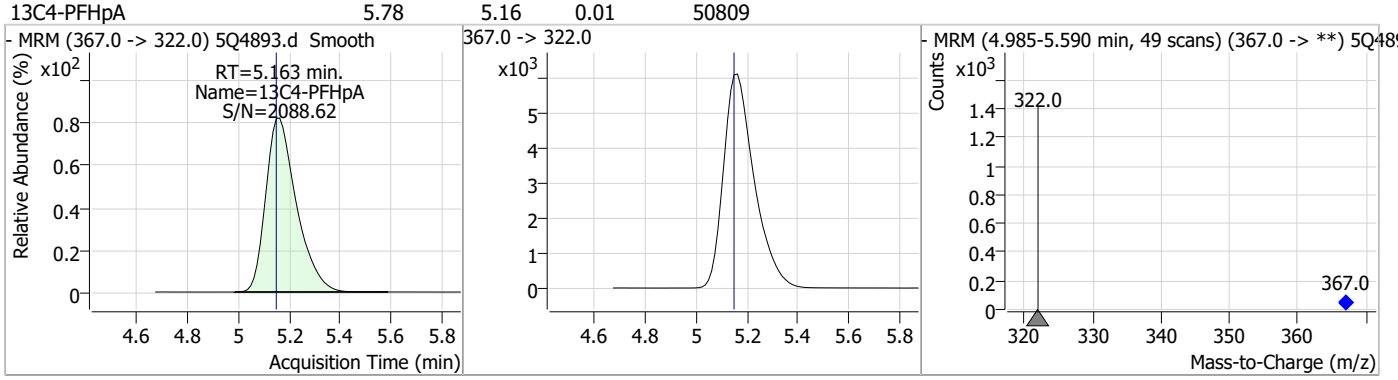
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	5.41	4.29	0.00	51108				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	5.11	4.56	0.00	2927				

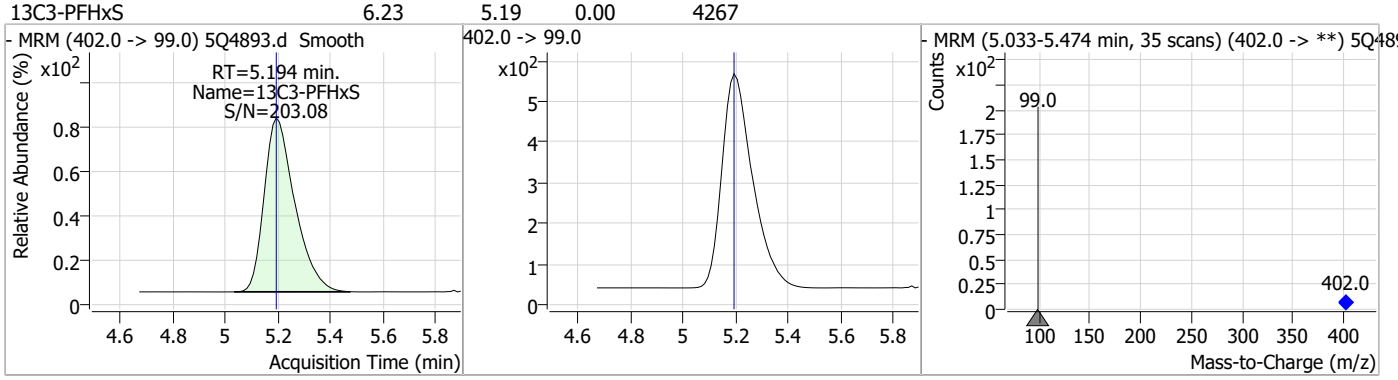


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	5.78	5.16	0.01	50809				

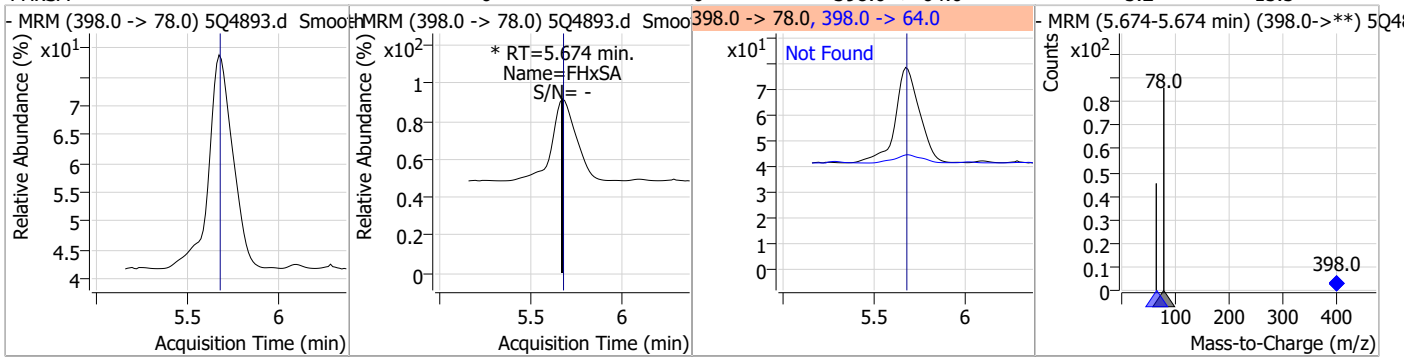


Perfluorinated Compounds by LC/MS/MS

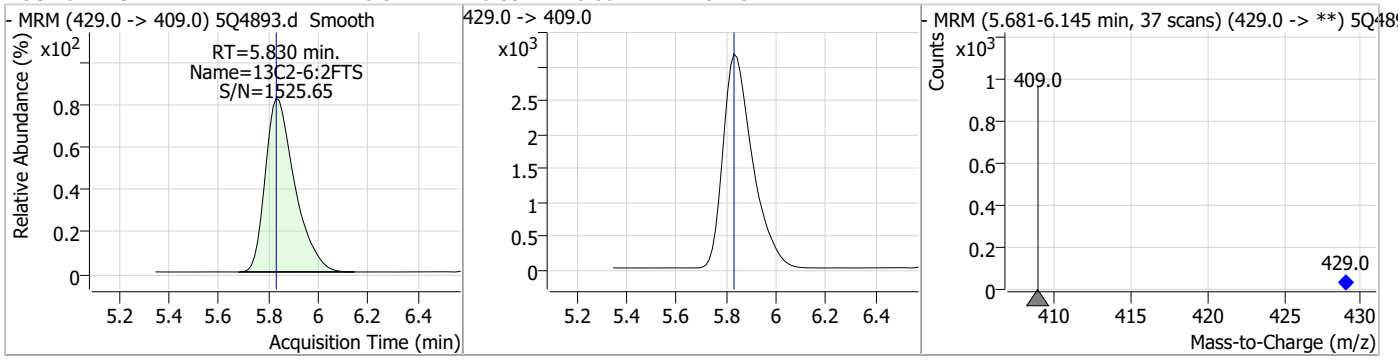
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	6.23	5.19	0.00	4267				



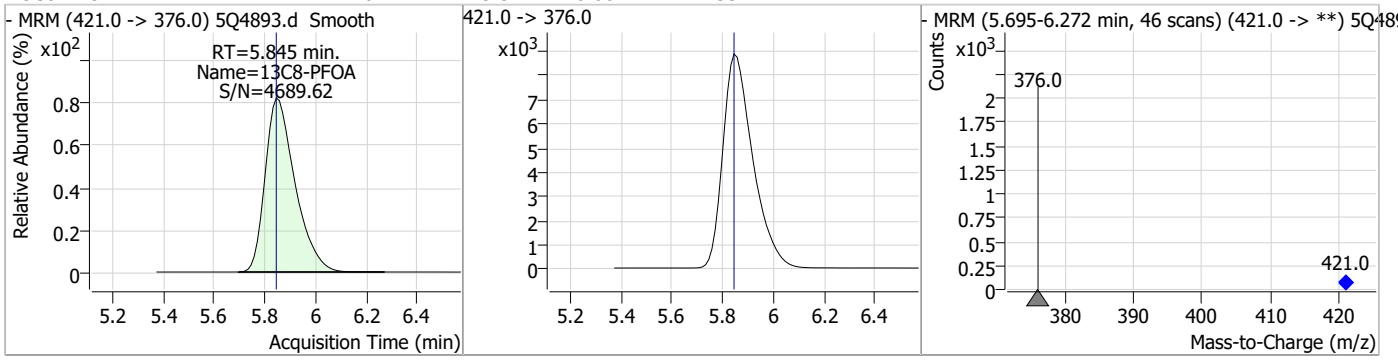
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		5.2	15.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	6.01	5.83	0.00	25770				

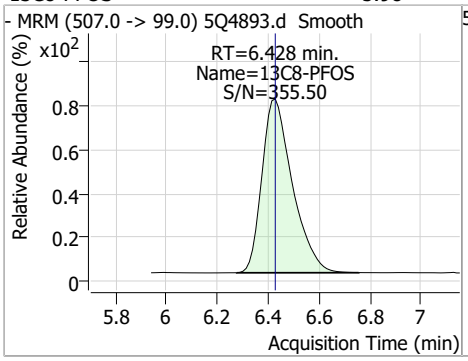


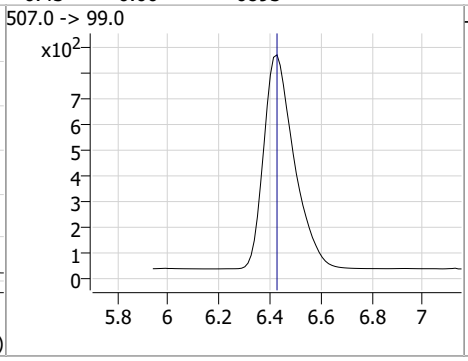
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	6.14	5.84	0.00	72332				

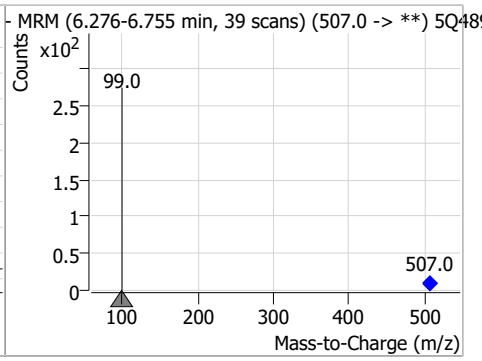


Perfluorinated Compounds by LC/MS/MS

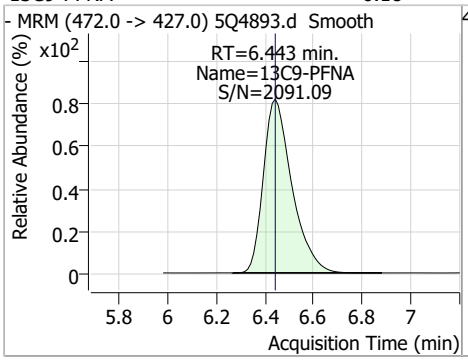
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	5.98	6.43	0.00	6893				

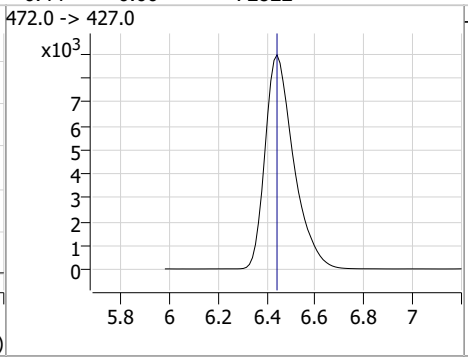


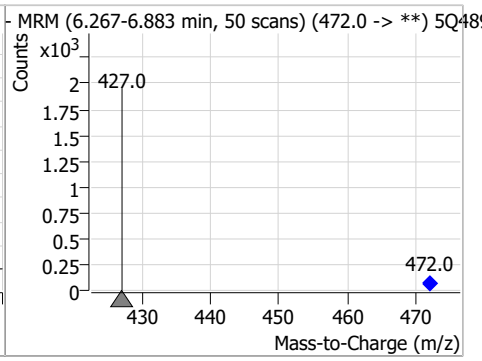




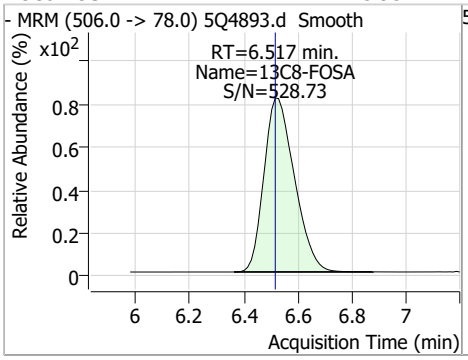
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	6.18	6.44	0.00	72822				

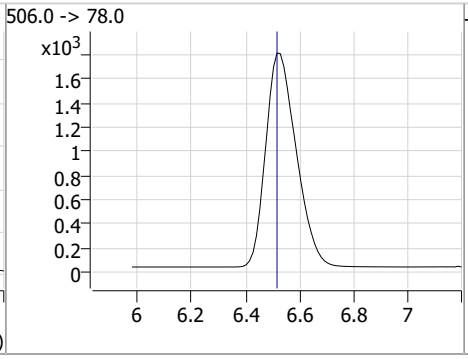


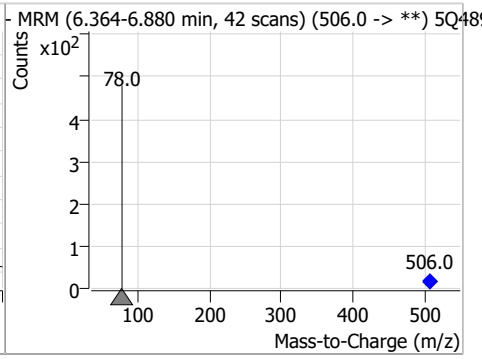




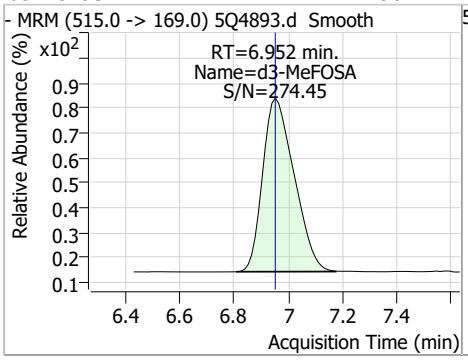
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	5.95	6.52	0.00	13991				

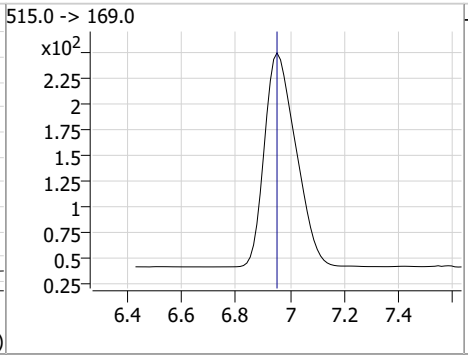


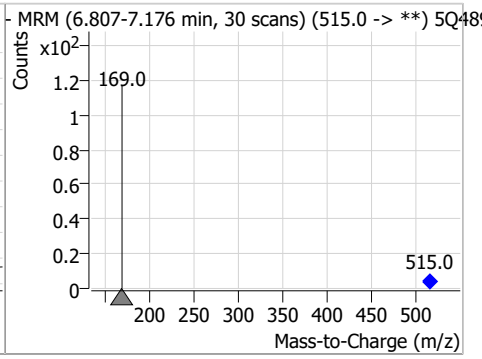




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.98	6.95	0.00	1674				

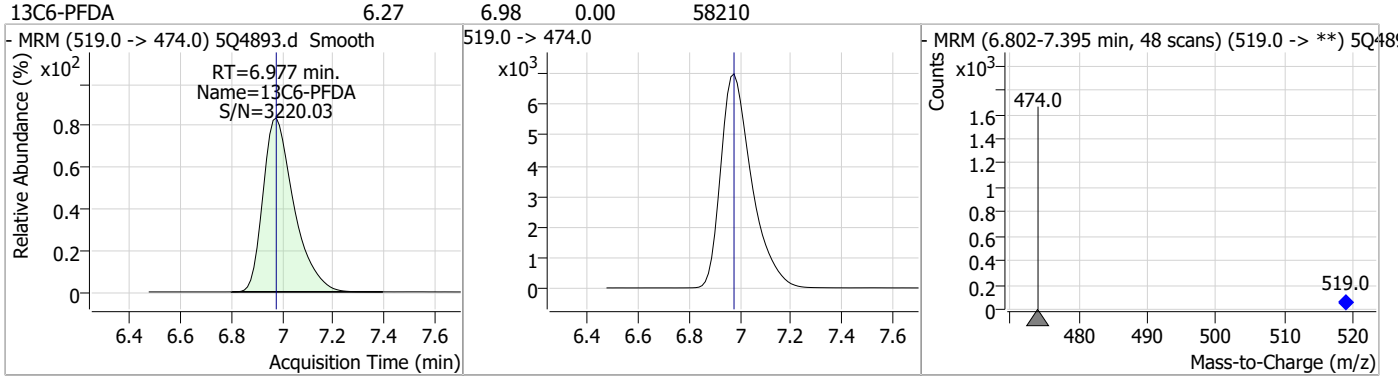




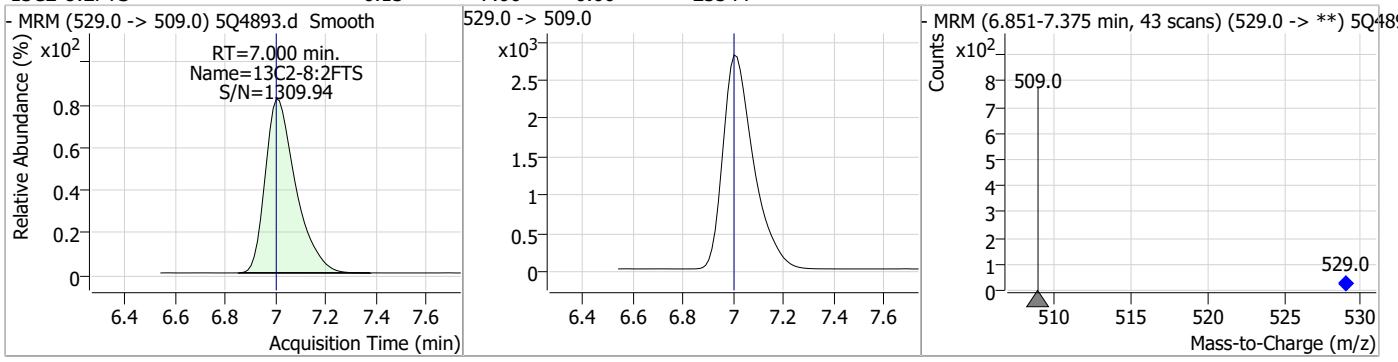


Perfluorinated Compounds by LC/MS/MS

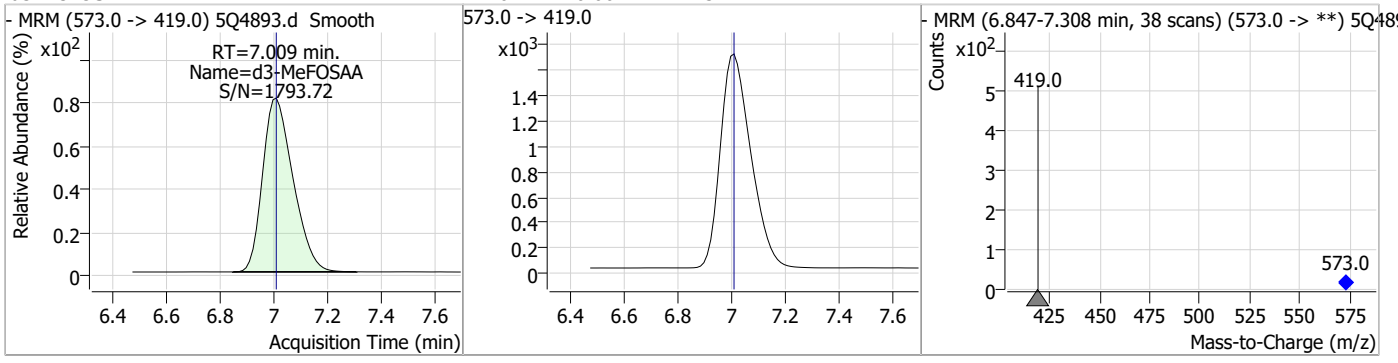
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	6.27	6.98	0.00	58210				



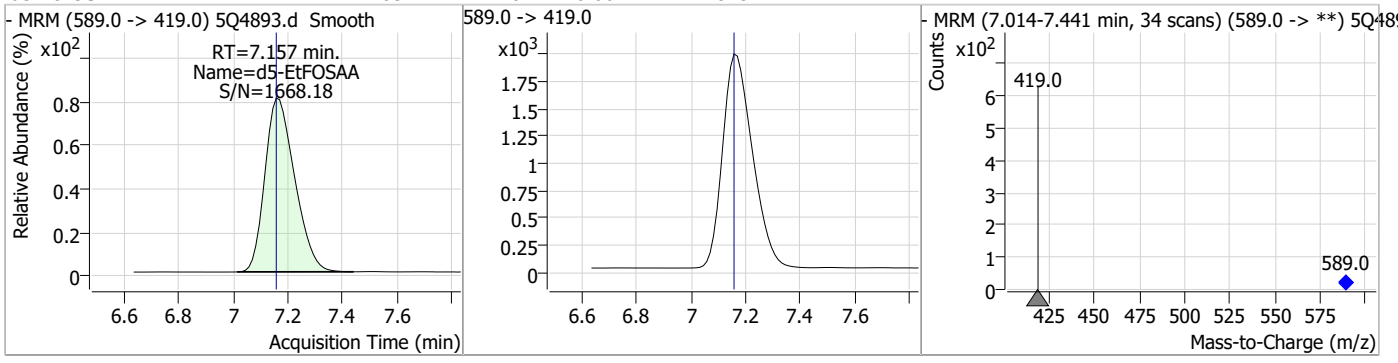
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	6.13	7.00	0.00	23544				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	7.74	7.01	0.00	13274				

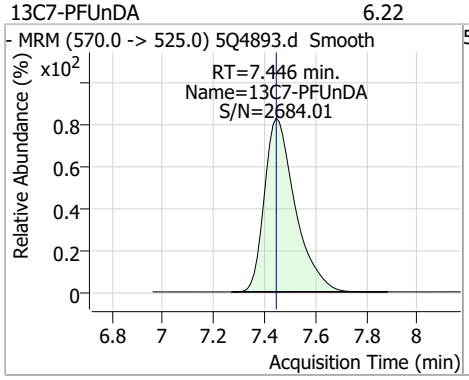


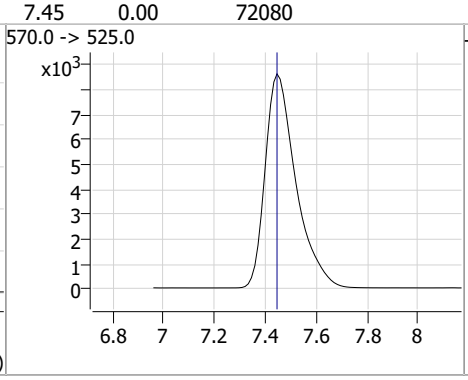
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	7.03	7.16	0.00	14825				

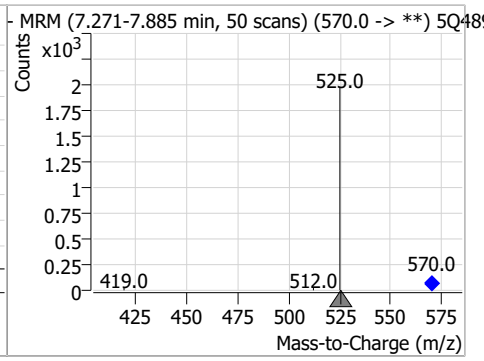


Perfluorinated Compounds by LC/MS/MS

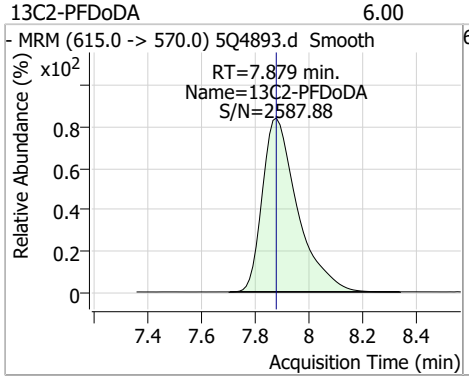
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	6.22	7.45	0.00	72080				

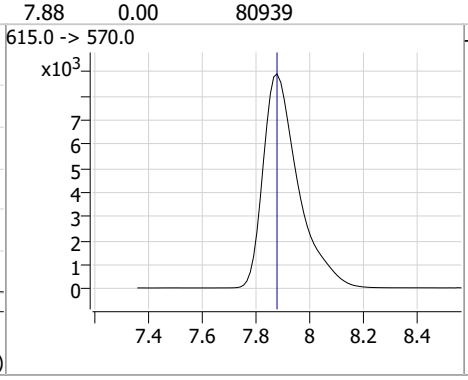


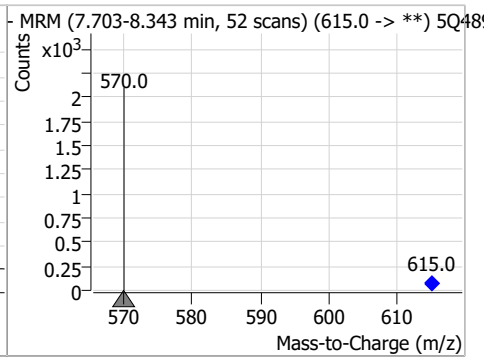




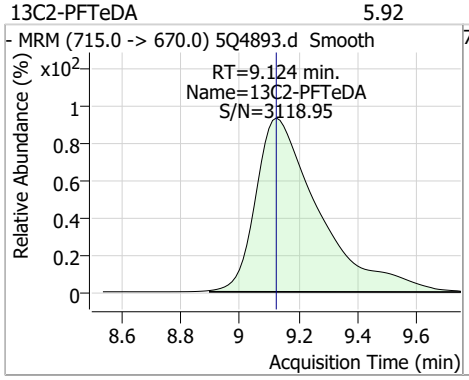
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	6.00	7.88	0.00	80939				

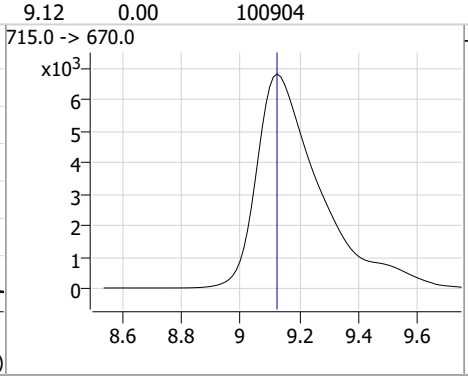


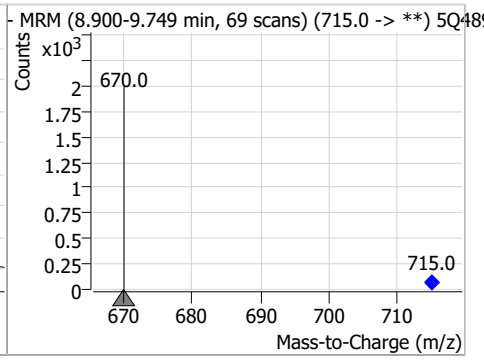




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	5.92	9.12	0.00	100904				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4604.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:42:01 PM
Sample Name : fa98286-49
Vial : P1-B7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,125,,,1.0,1,water

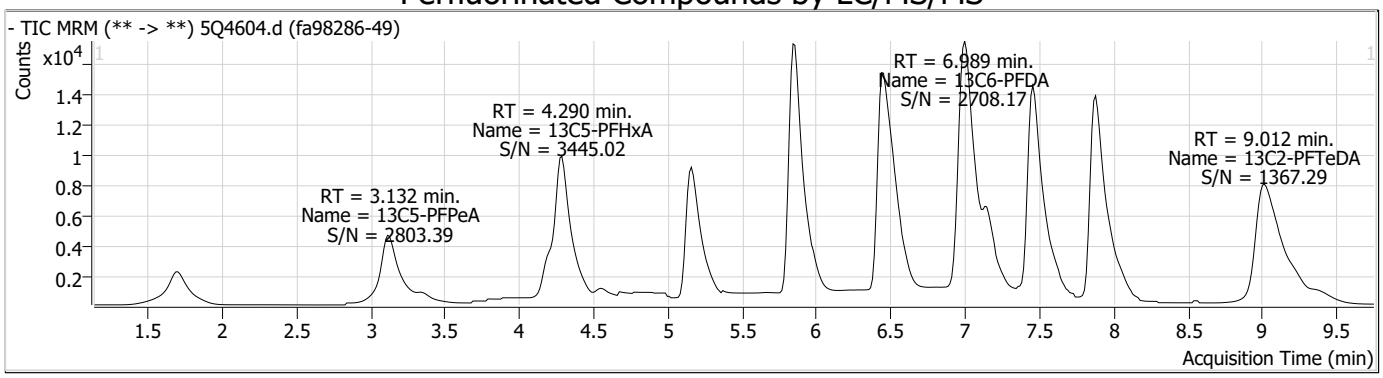
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	24327	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	39708	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	60842	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	57190	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	83984	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	89790	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	75104	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	95468	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	104946	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	100995	20.00	µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	15888	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	4818	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	4721	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	8918	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	19521	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	30232	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	28928	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16697	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	4087	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	3675	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	19000	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	19521	13.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	30232	13.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	28928	12.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.4%		
13C2-PFDoDA	7.879	615.0 -> 570.0	104946	14.48	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C2-PFTeDA	9.012	715.0 -> 670.0	100995	13.38	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.9%		
13C3-PFBS	3.349	302.0 -> 99.0	4818	14.79	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C3-PFHxS	5.206	402.0 -> 99.0	4721	13.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.2%		
13C4-PFBA	1.700	217.0 -> 172.0	24327	13.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%		
13C4-PFHpA	5.163	367.0 -> 322.0	57190	14.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	60842	13.92	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.6%		
13C5-PFPeA	3.132	268.0 -> 223.0	39708	13.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%		
13C6-PFDA	6.989	519.0 -> 474.0	75104	13.95	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

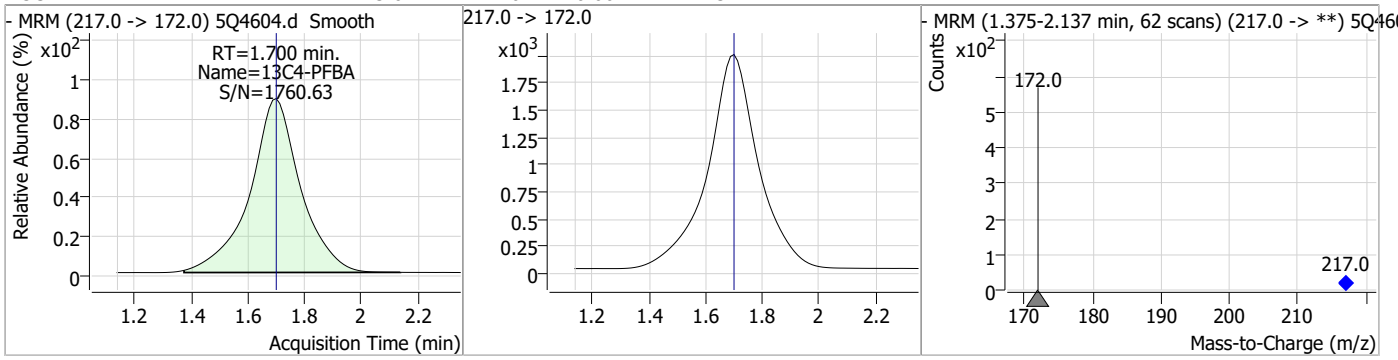
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.8%			
13C7-PFUnDA	7.471	570.0 -> 525.0	95468	13.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.8%			
13C8-FOSA	6.517	506.0 -> 78.0	15888	14.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%			
13C8-PFOA	5.857	421.0 -> 376.0	83984	13.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.4%			
13C8-PFOS	6.440	507.0 -> 99.0	8918	13.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
13C9-PFNA	6.455	472.0 -> 427.0	89790	13.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16697	17.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	4087	12.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	3675	12.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	19000	16.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.7%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.447	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

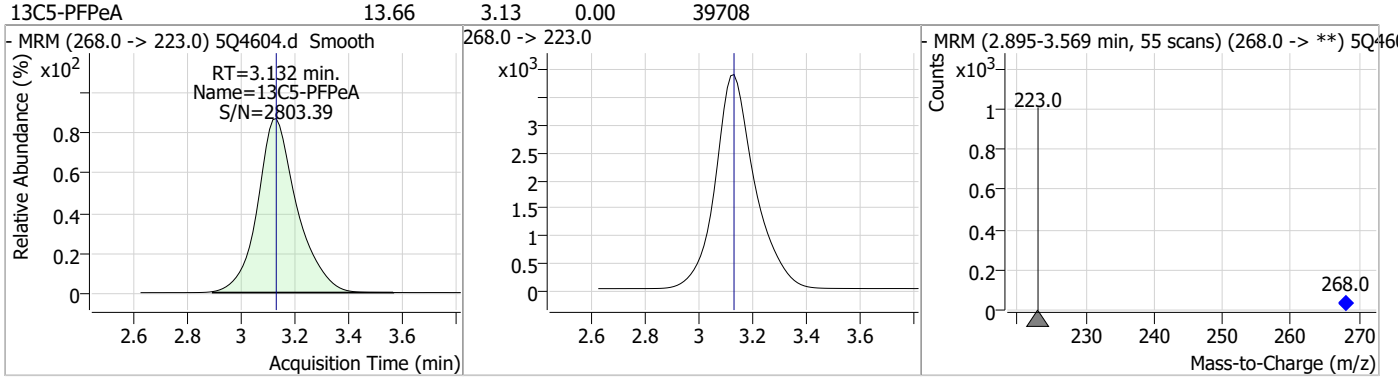
Perfluorinated Compounds by LC/MS/MS



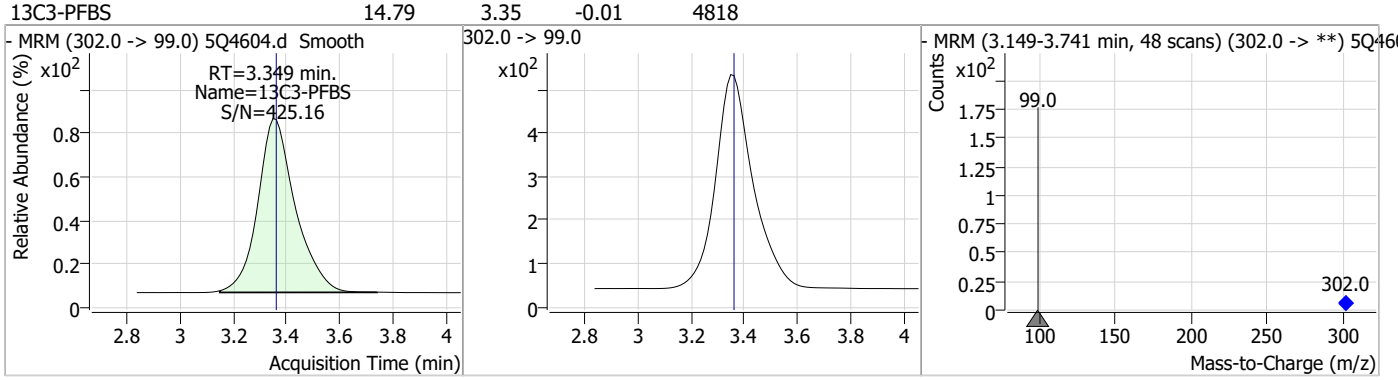
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.61	1.70	0.00	24327				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.66	3.13	0.00	39708				

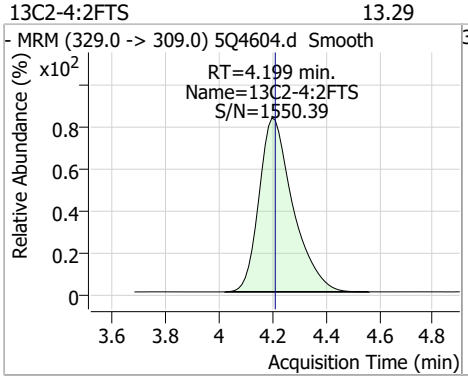


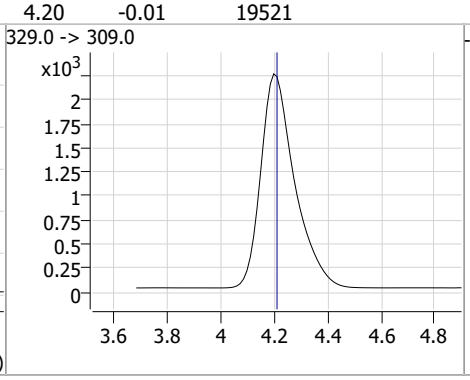
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.79	3.35	-0.01	4818				

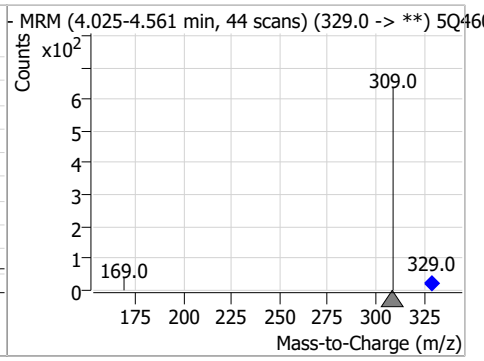


Perfluorinated Compounds by LC/MS/MS

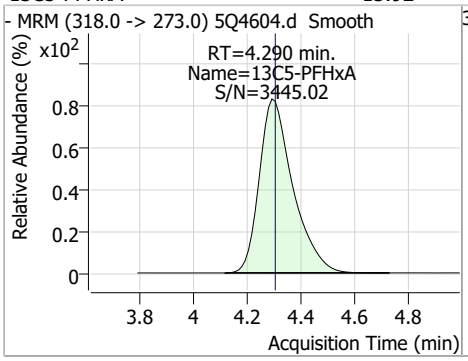
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.29	4.20	-0.01	19521				

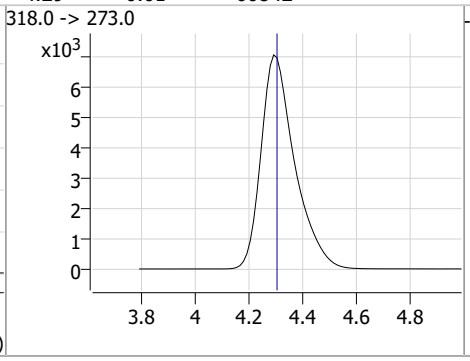


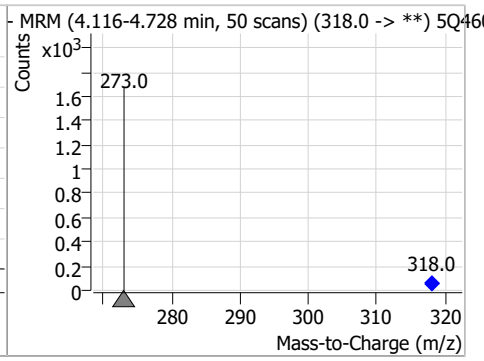




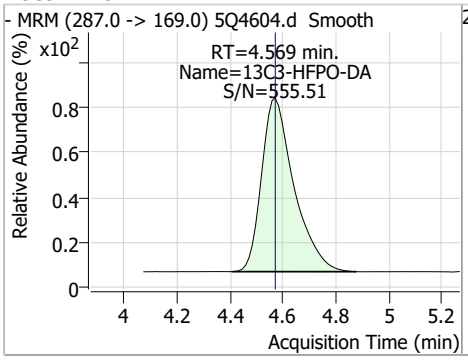
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	13.92	4.29	-0.01	60842				

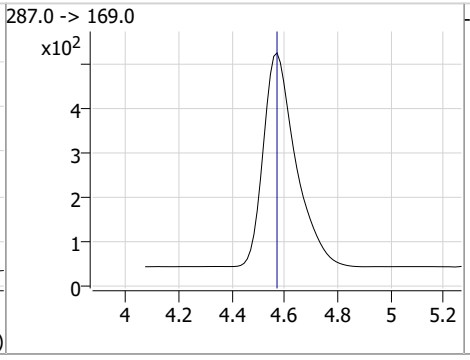


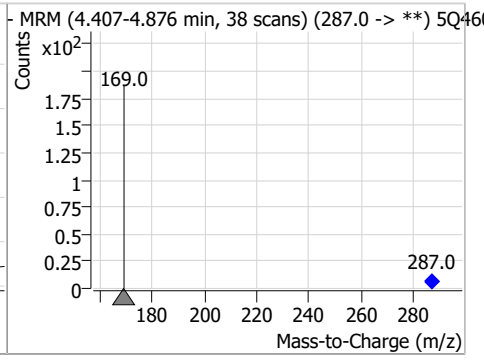




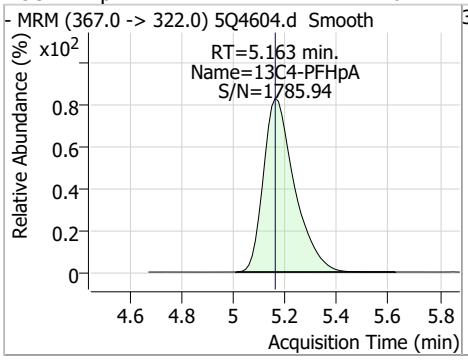
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.17	4.57	0.00	4087				

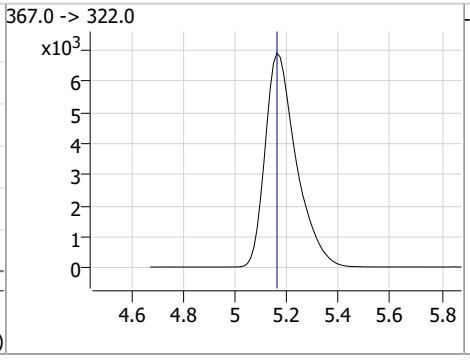


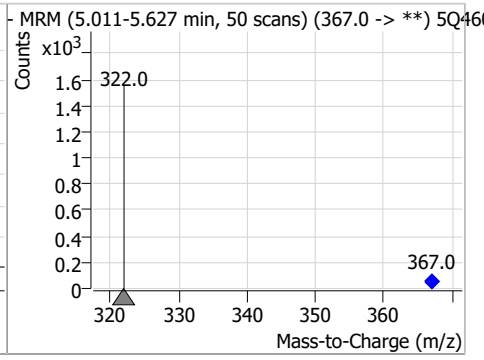




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.01	5.16	0.00	57190				

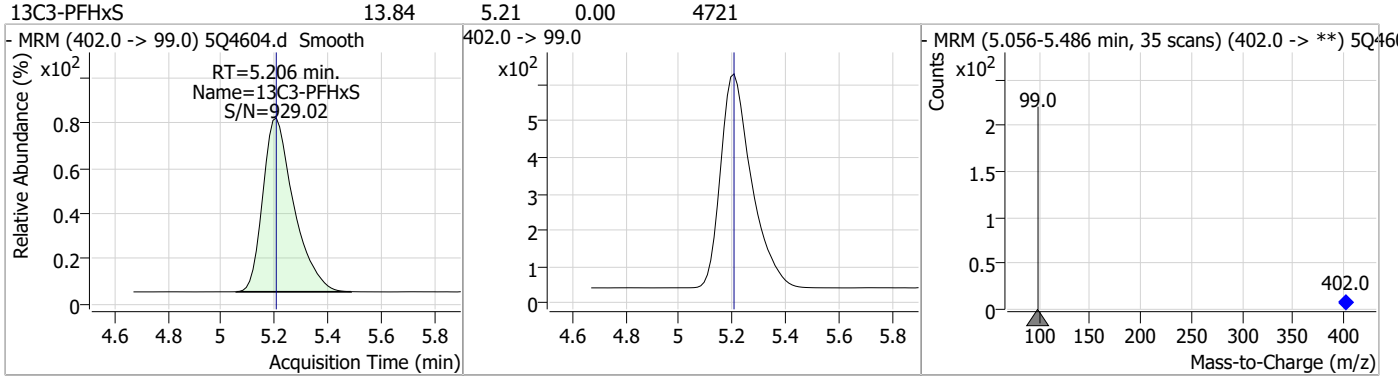




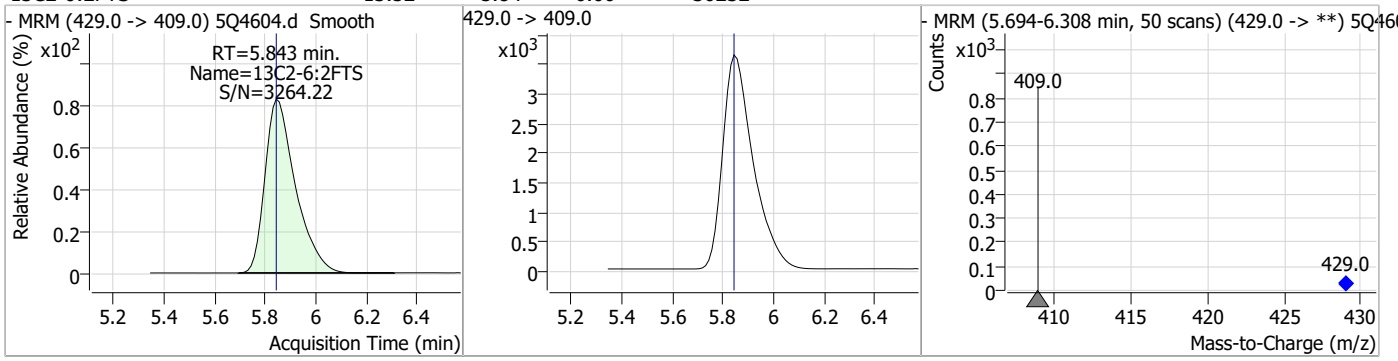


Perfluorinated Compounds by LC/MS/MS

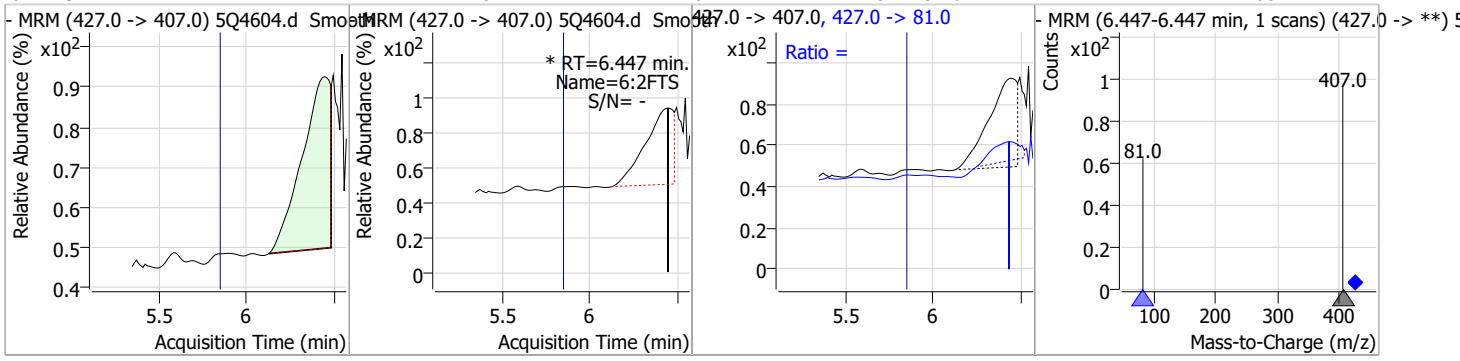
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.84	5.21	0.00	4721				



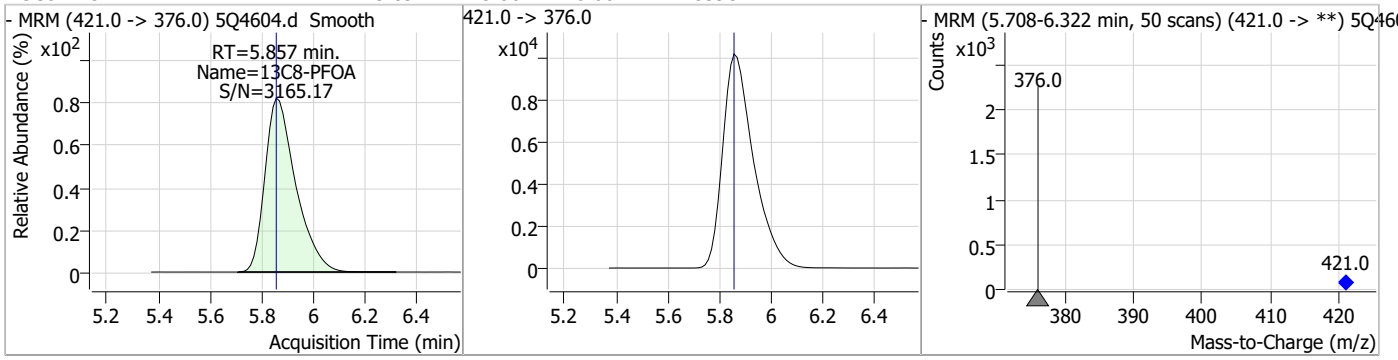
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.52	5.84	0.00	30232				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

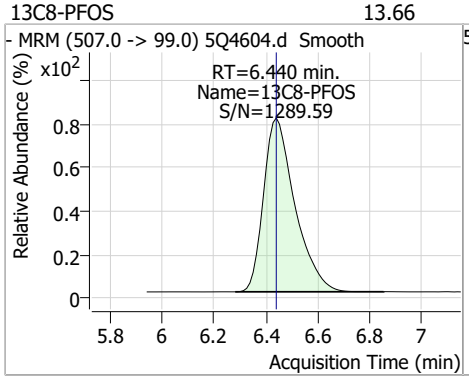


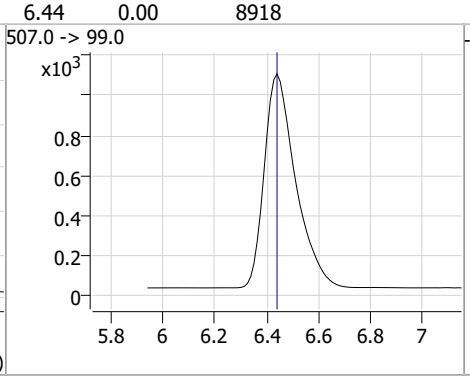
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.89	5.86	0.00	83984				

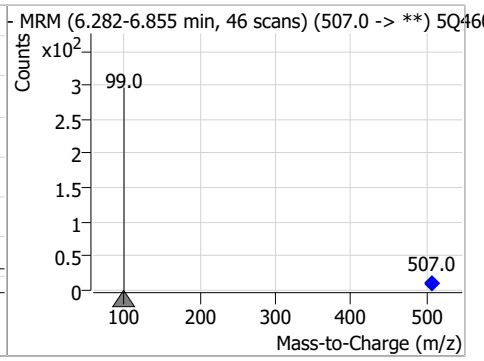


Perfluorinated Compounds by LC/MS/MS

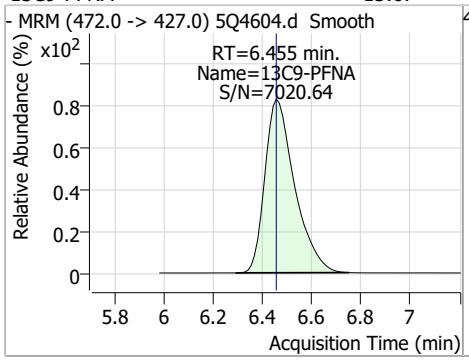
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	13.66	6.44	0.00	8918				

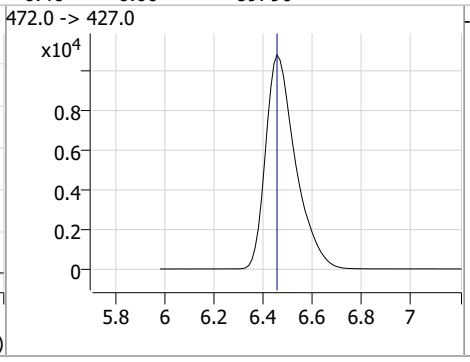


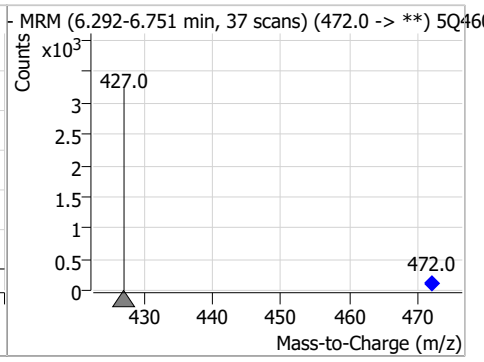




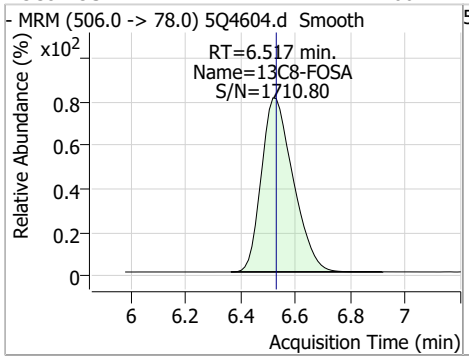
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.67	6.46	0.00	89790				

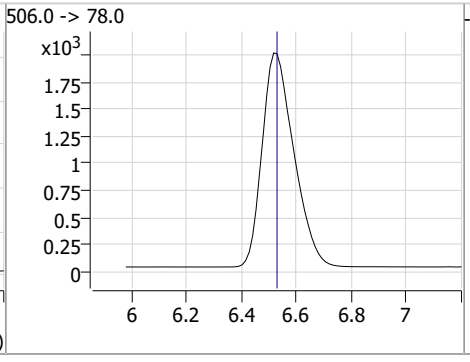


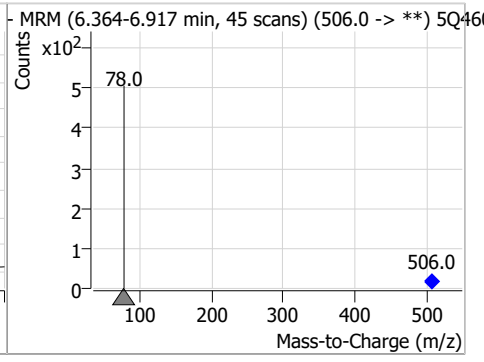




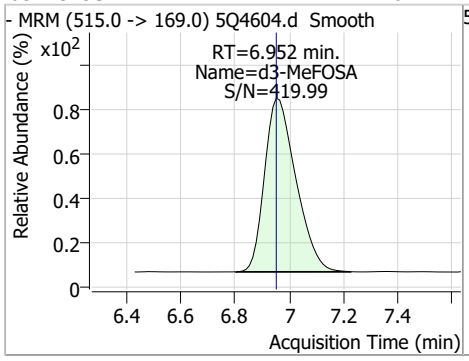
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.00	6.52	-0.01	15888				

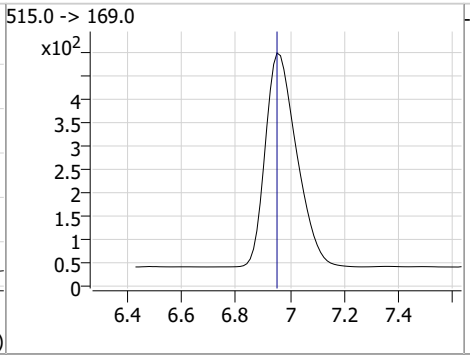


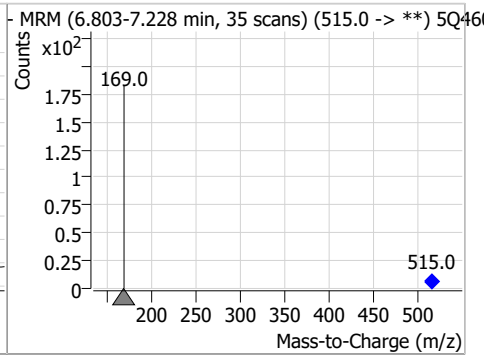




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	12.07	6.95	0.00	3675				

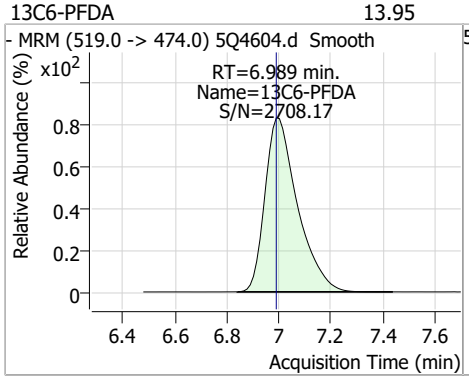


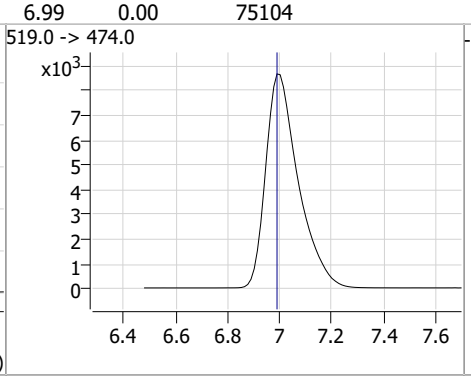


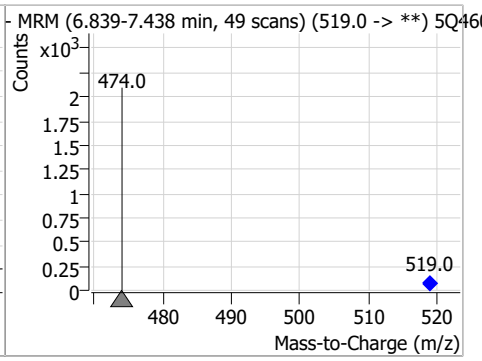


Perfluorinated Compounds by LC/MS/MS

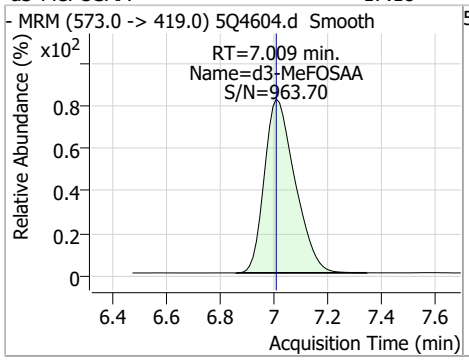
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.95	6.99	0.00	75104				

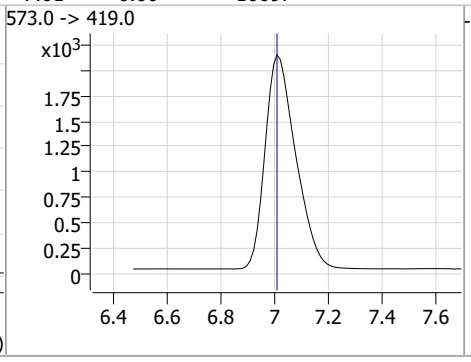


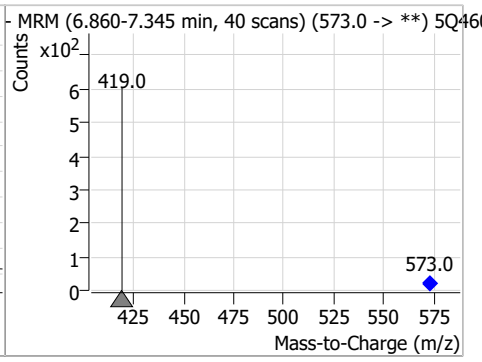




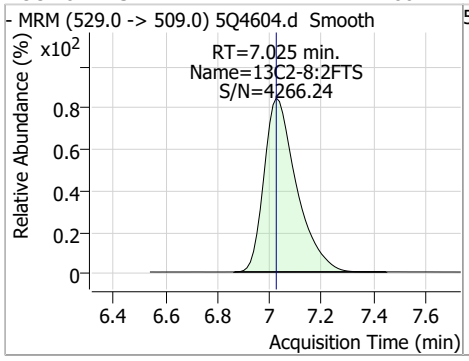
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.18	7.01	0.00	16697				

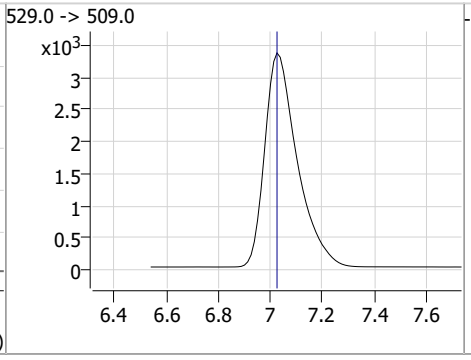


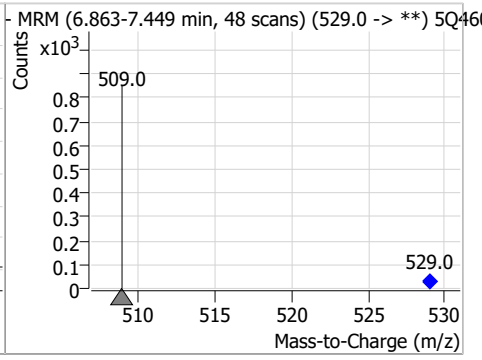




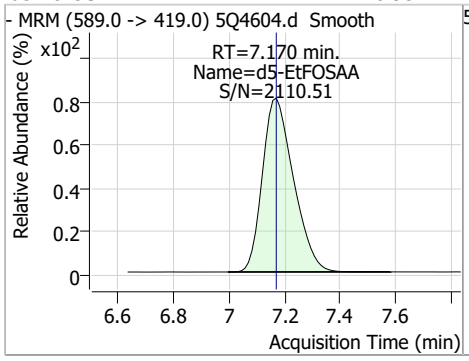
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.88	7.03	0.00	28928				

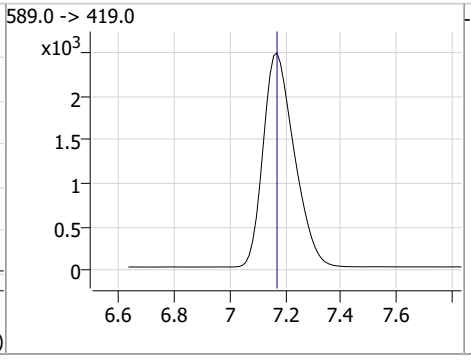


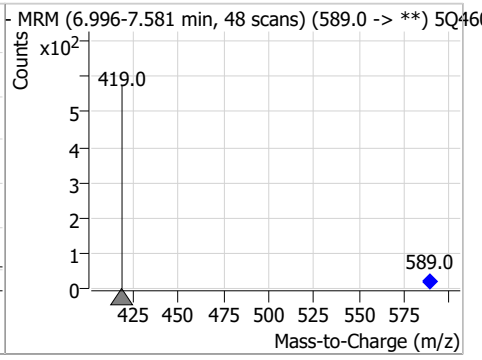




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.95	7.17	0.00	19000				

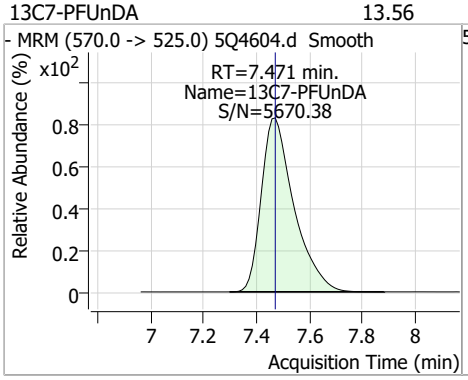


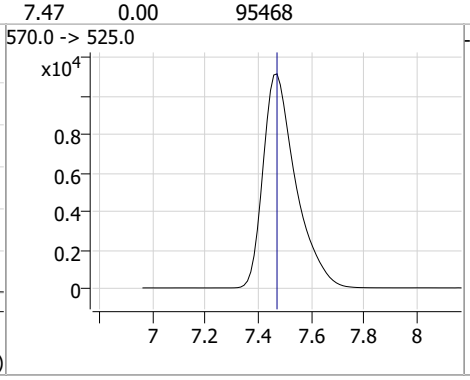


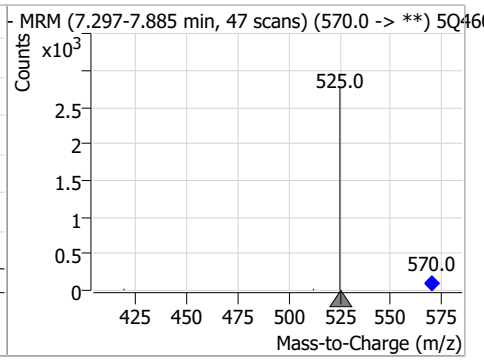


Perfluorinated Compounds by LC/MS/MS

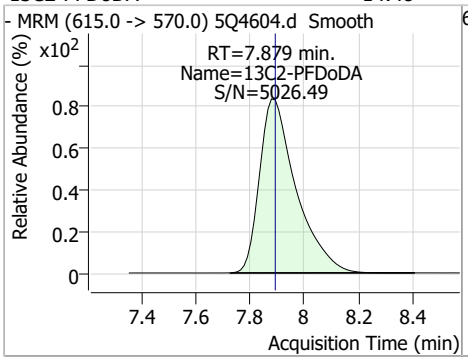
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.56	7.47	0.00	95468				

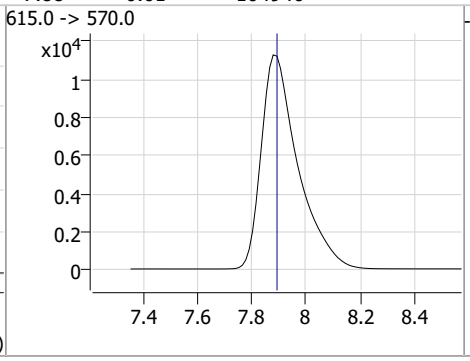


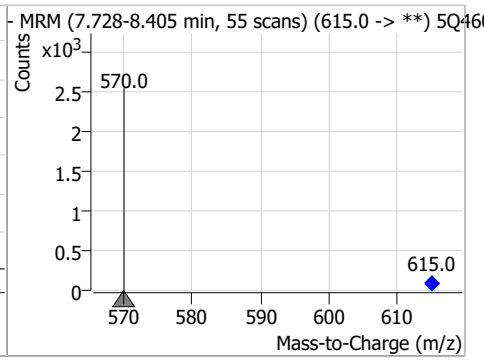




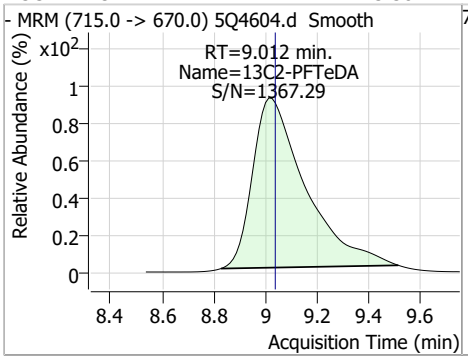
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.48	7.88	-0.01	104946				

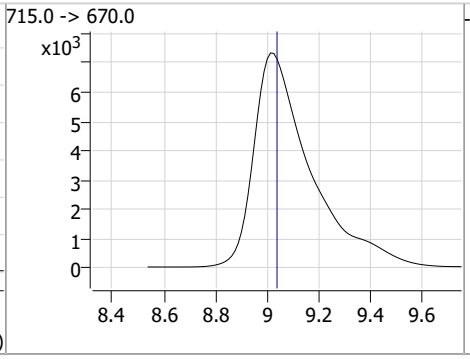


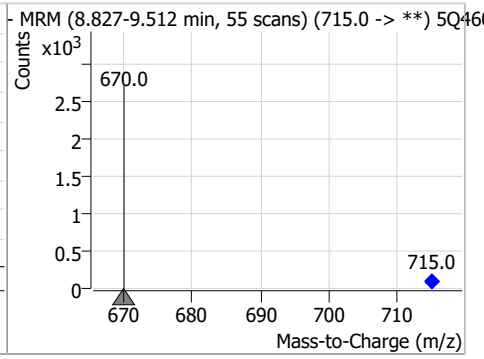




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.38	9.01	-0.02	100995				







Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65686.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 6:26:51 PM
Sample Name : IBLK
Vial : P1-A1
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

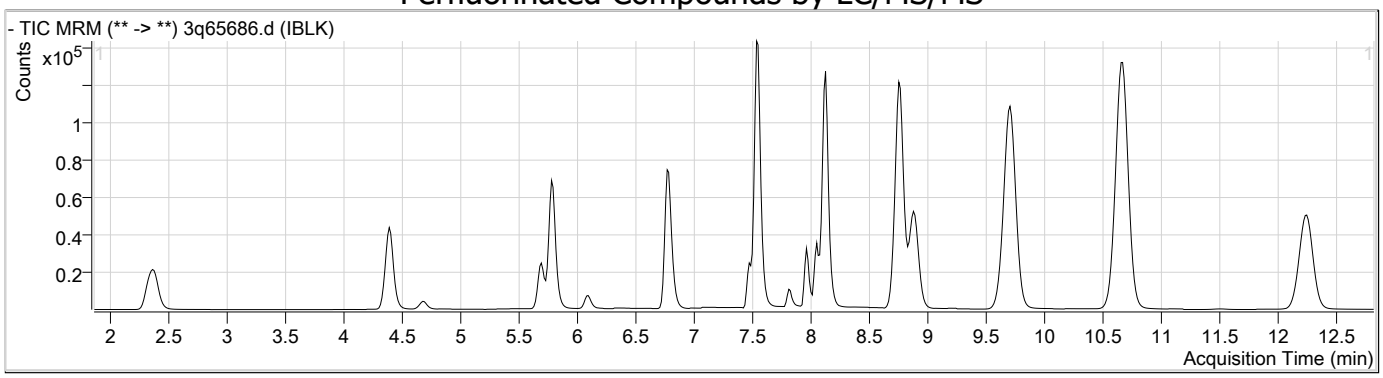
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.352	217.0 -> 172.0	146739	20.00	µg/L	-0.013
M5-PFPeA	4.386	268.0 -> 223.0	214815	20.00	µg/L	-0.025
M5-PFHxA	5.775	318.0 -> 273.0	280545	20.00	µg/L	-0.039
M4-PFHpA	6.768	367.0 -> 322.0	284501	20.00	µg/L	-0.025
M8-PFOA	7.535	421.0 -> 376.0	387676	20.00	µg/L	-0.025
M9-PFNA	8.125	472.0 -> 427.0	435469	20.00	µg/L	-0.013
M6-PFDA	8.751	519.0 -> 474.0	630249	20.00	µg/L	0.013
M7-PFUnDA	9.702	570.0 -> 525.0	793695	20.00	µg/L	0.025
M2-PFDoDA	10.659	615.0 -> 570.0	1010350	20.00	µg/L	0.025
M2-PFTeDA	12.235	715.0 -> 670.0	420813	20.00	µg/L	0.000
M8-FOSA	7.464	506.0 -> 78.0	73451	20.00	µg/L	-0.027
M3-PFBS	4.667	302.0 -> 99.0	19539	20.00	µg/L	-0.025
M3-PFHxS	6.797	402.0 -> 99.0	24352	20.00	µg/L	-0.025
M8-PFOS	8.086	507.0 -> 99.0	37126	20.00	µg/L	-0.025
M2-4:2FTS	5.683	329.0 -> 309.0	100154	20.00	µg/L	-0.025
M2-6:2FTS	7.546	429.0 -> 409.0	146037	20.00	µg/L	-0.013
M2-8:2FTS	8.873	529.0 -> 509.0	280820	20.00	µg/L	0.025
M3-MeFOSAA	7.953	573.0 -> 419.0	89365	20.00	µg/L	-0.038
M3-HFPO-DA	6.092	287.0 -> 169.0	28347	20.00	µg/L	-0.025
M3-MeFOSA	7.804	515.0 -> 169.0	27974	20.00	µg/L	-0.038
M5-EtFOSAA	8.040	589.0 -> 419.0	92153	20.00	µg/L	-0.038
System Monitoring Compounds						
13C2-4:2FTS	5.683	329.0 -> 309.0	100154	17.34	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%		
13C2-6:2FTS	7.546	429.0 -> 409.0	146037	18.66	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-8:2FTS	8.873	529.0 -> 509.0	280820	19.32	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1010350	18.68	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFTeDA	12.235	715.0 -> 670.0	420813	18.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C3-PFBS	4.667	302.0 -> 99.0	19539	18.47	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%		
13C3-PFHxS	6.797	402.0 -> 99.0	24352	18.85	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C4-PFBA	2.352	217.0 -> 172.0	146739	18.44	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C4-PFHpA	6.768	367.0 -> 322.0	284501	18.88	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C5-PFHxA	5.775	318.0 -> 273.0	280545	18.48	µg/L	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C5-PFPeA	4.386	268.0 -> 223.0	214815	18.53	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C6-PFDA	8.751	519.0 -> 474.0	630249	19.84	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

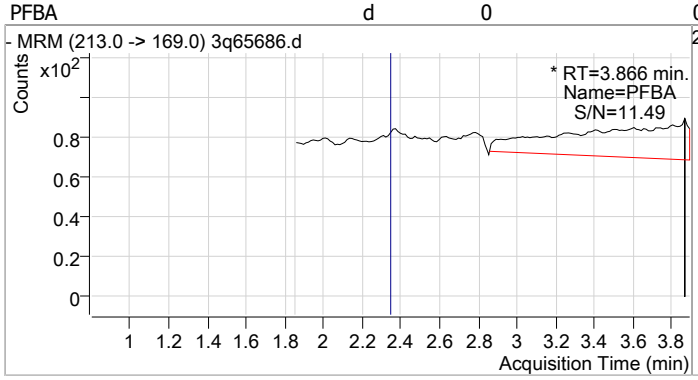
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C7-PFUnDA	9.702	570.0 -> 525.0	793695	19.23	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
13C8-FOSA	7.464	506.0 -> 78.0	73451	19.44	µg/L		-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
13C8-PFOA	7.535	421.0 -> 376.0	387676	19.26	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
13C8-PFOS	8.086	507.0 -> 99.0	37126	18.92	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
13C9-PFNA	8.125	472.0 -> 427.0	435469	19.71	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d3-MeFOSAA	7.953	573.0 -> 419.0	89365	19.87	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C3-HFPO-DA	6.092	287.0 -> 169.0	28358	22.10	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%			
d3-MeFOSA	7.804	515.0 -> 169.0	27974	31.60	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 158.0%			
d5-EtFOSAA	8.040	589.0 -> 419.0	92180	19.69	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	8.040	584.0 -> 419.0	580	0.16	µg/L	m	98
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.953	570.0 -> 419.0	643	0.16	µg/L	m	94
PFBA	3.866	213.0 -> 169.0	0	0.00	µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

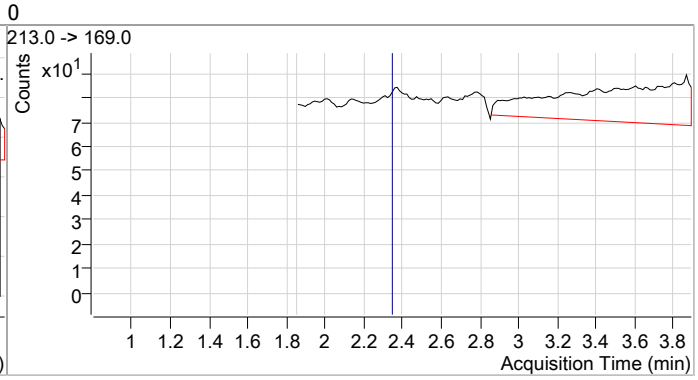
 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

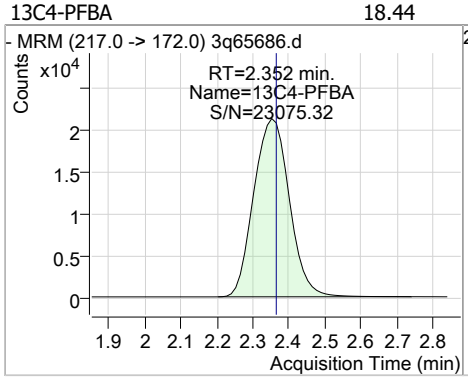


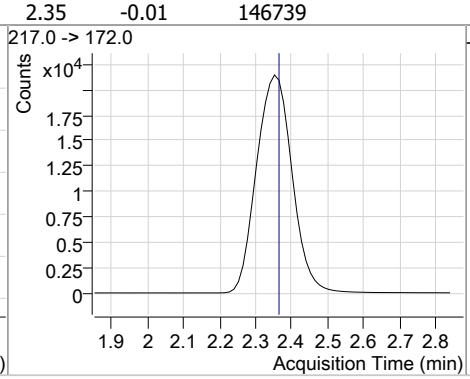
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	d	0		0				

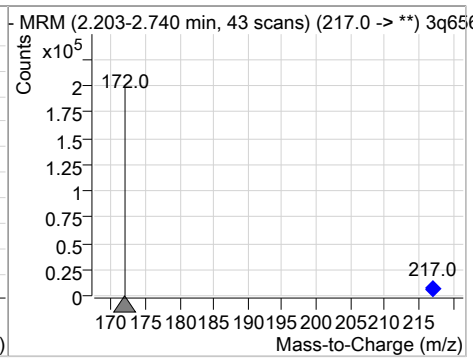




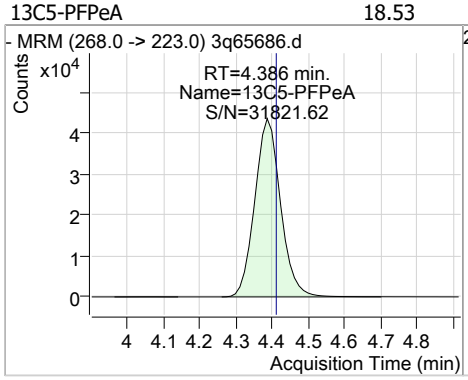
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.44	2.35	-0.01	146739				

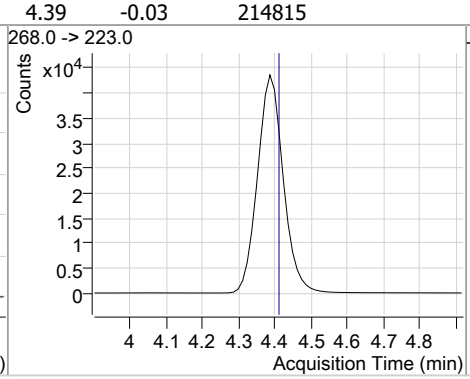


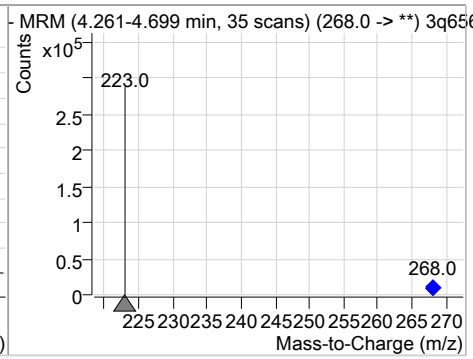




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.53	4.39	-0.03	214815				

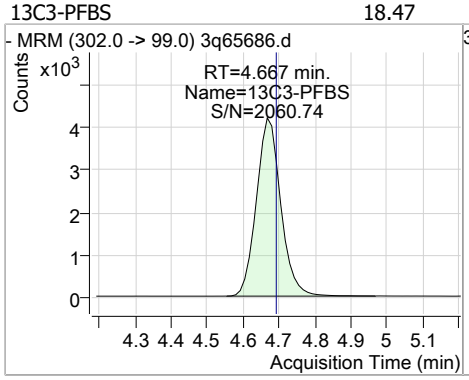


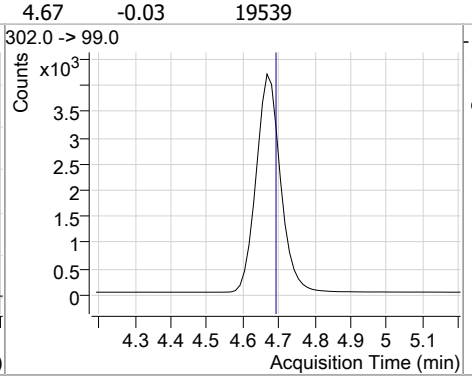


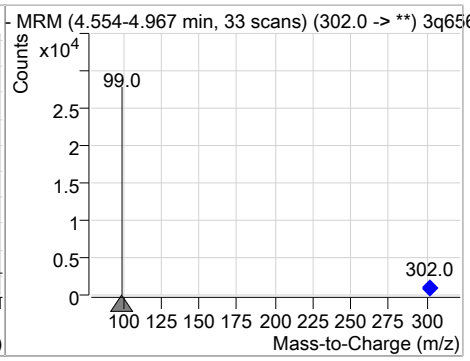


Perfluorinated Compounds by LC/MS/MS

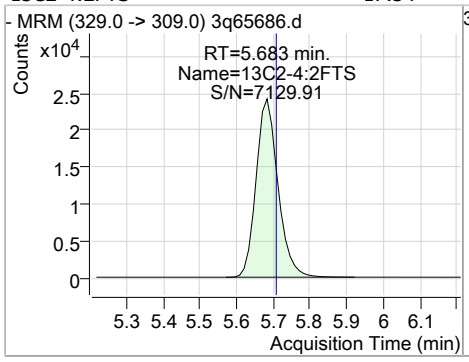
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.47	4.67	-0.03	19539				

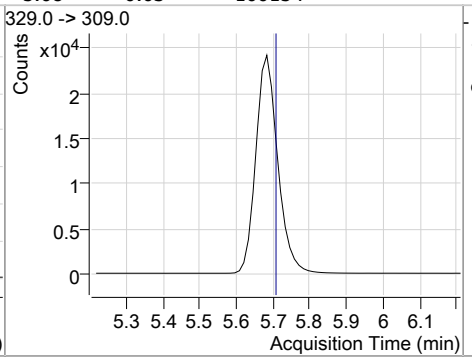


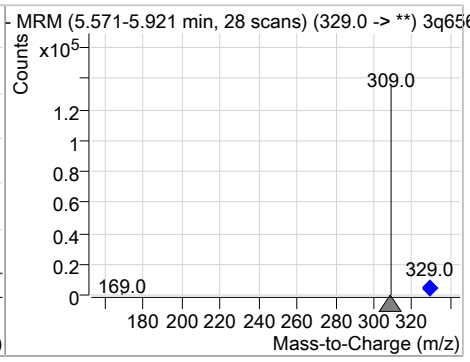




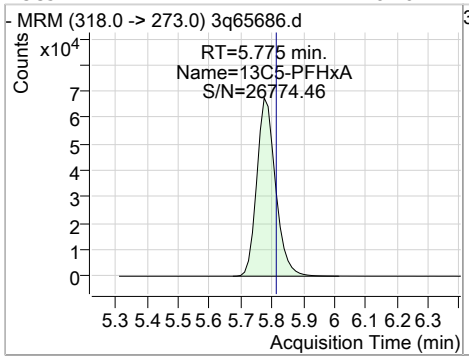
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.34	5.68	-0.03	100154				

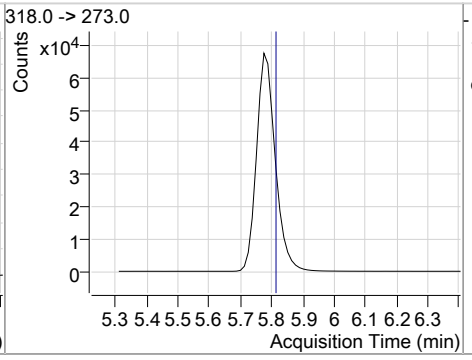


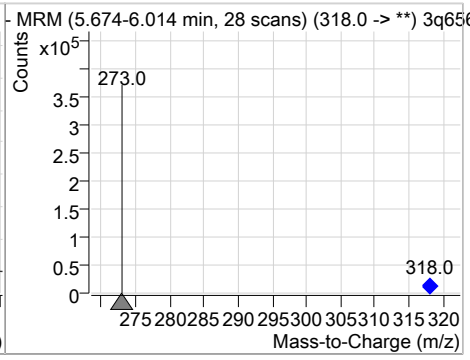




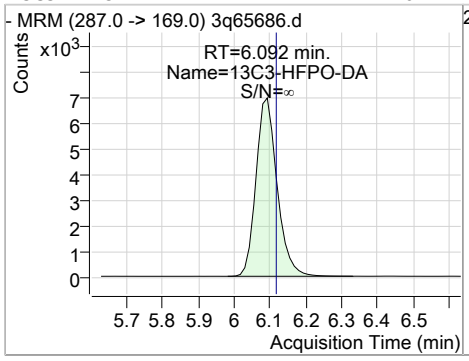
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.48	5.77	-0.04	280545				

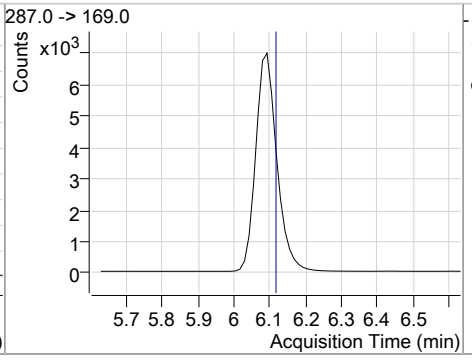


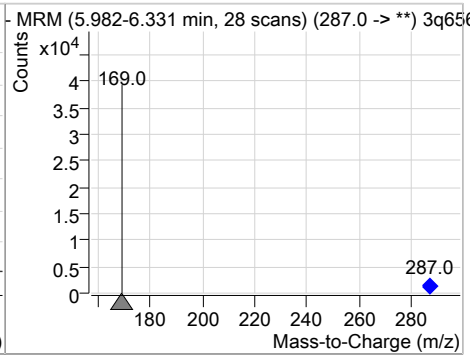




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.10	6.09	-0.03	28358				

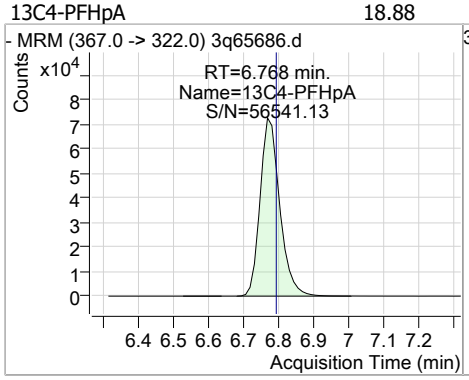


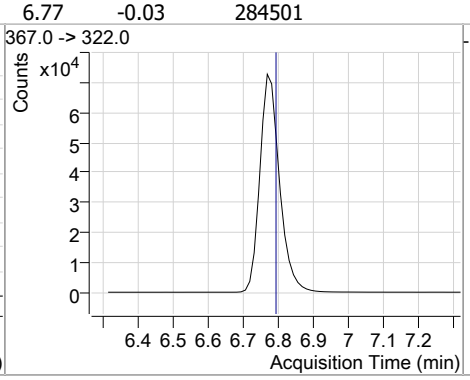


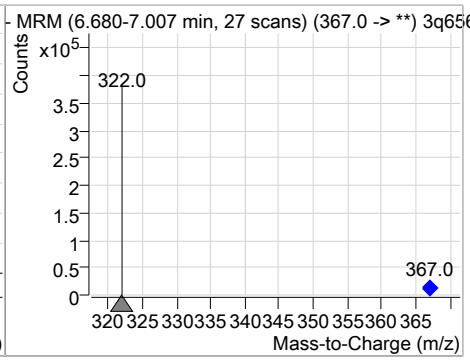


Perfluorinated Compounds by LC/MS/MS

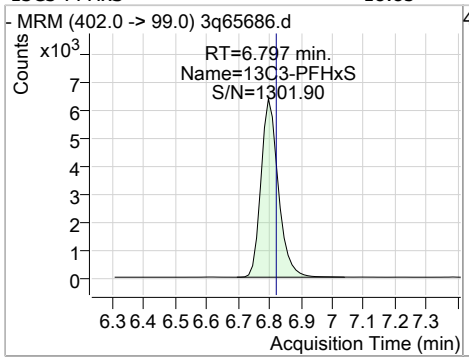
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.88	6.77	-0.03	284501				

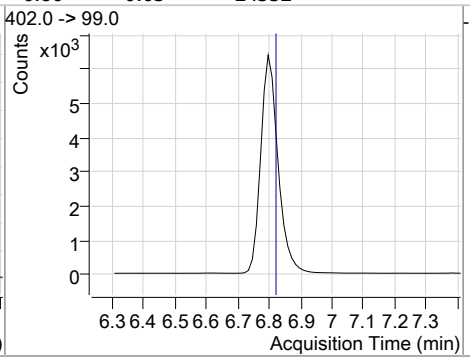


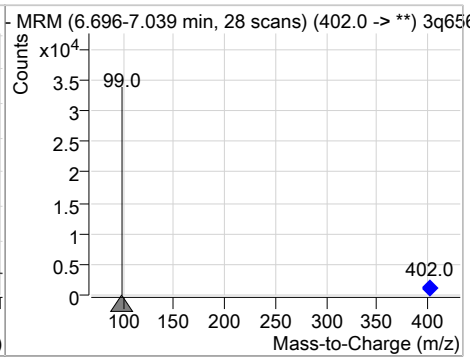




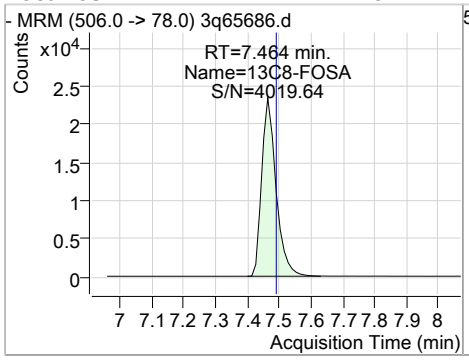
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.85	6.80	-0.03	24352				

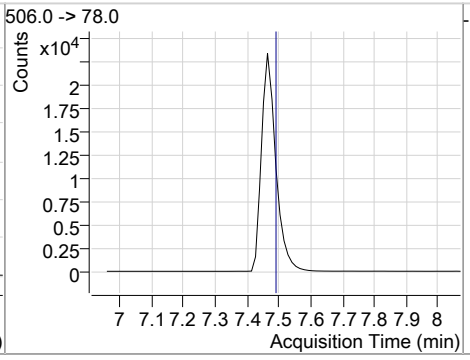


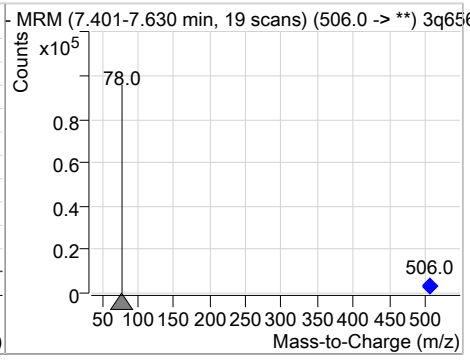




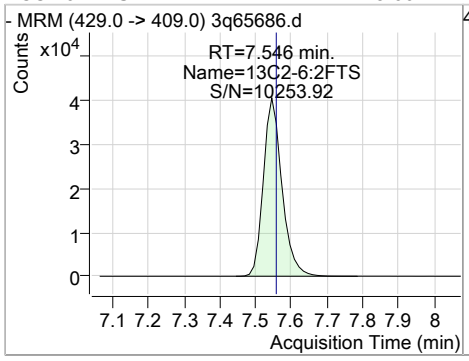
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.44	7.46	-0.03	73451				

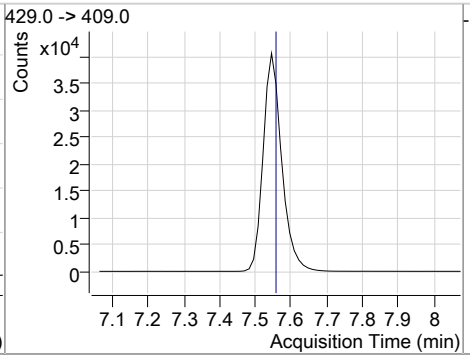


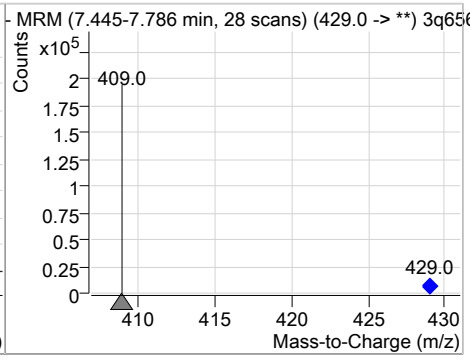




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.66	7.55	-0.01	146037				

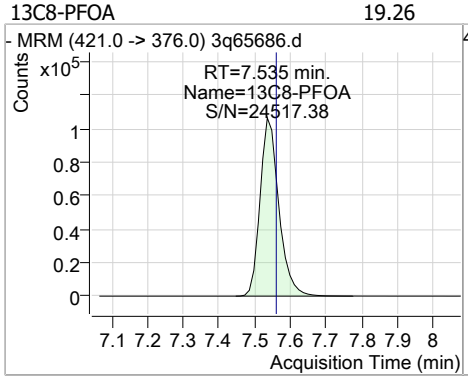


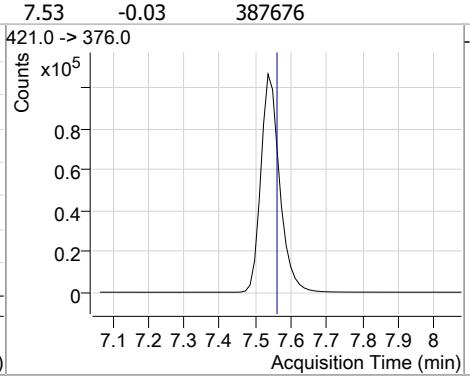


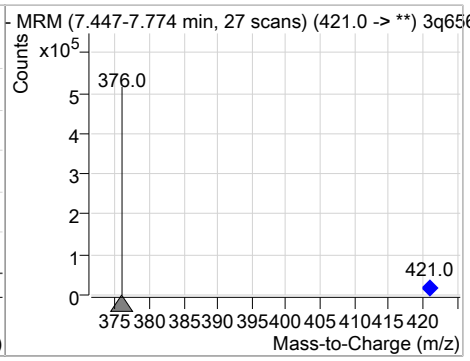


Perfluorinated Compounds by LC/MS/MS

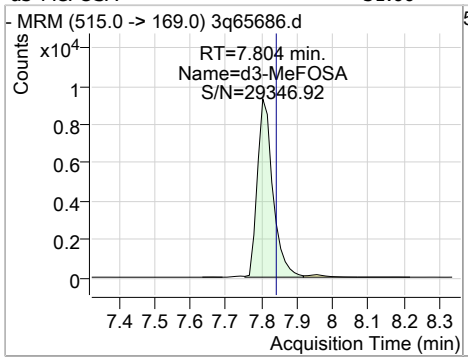
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.26	7.53	-0.03	387676				

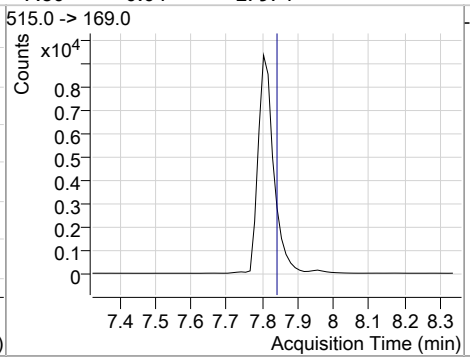


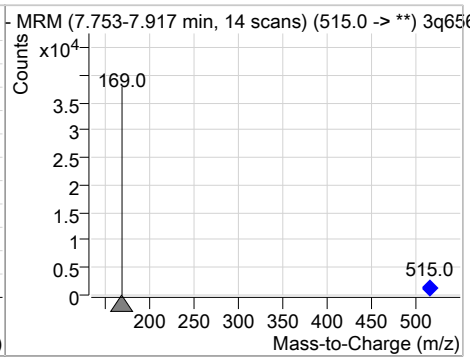




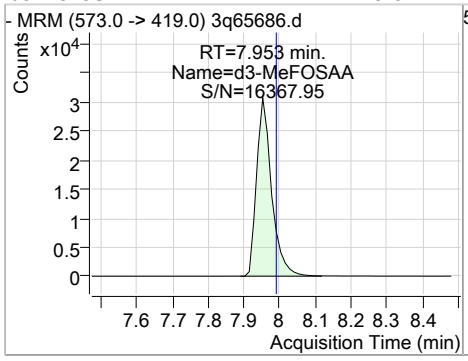
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	31.60	7.80	-0.04	27974				

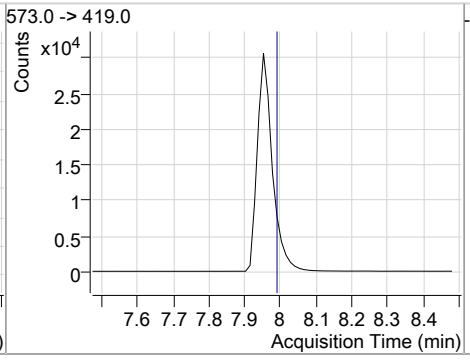


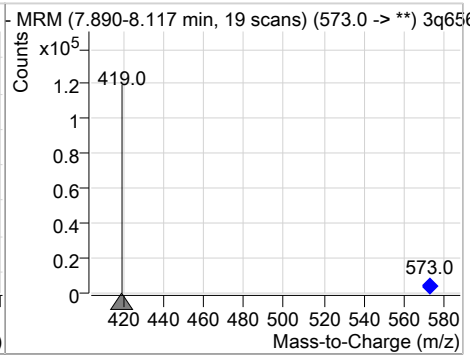




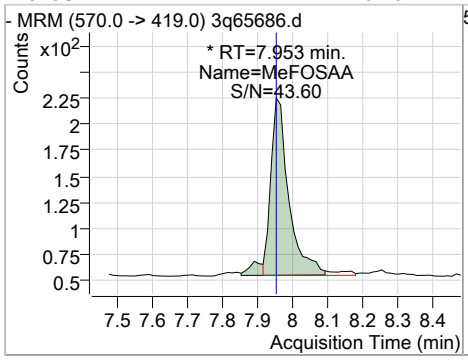
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.87	7.95	-0.04	89365				

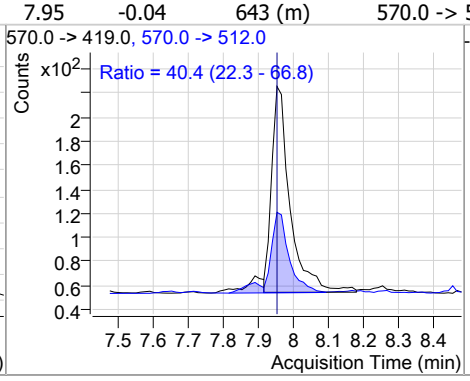


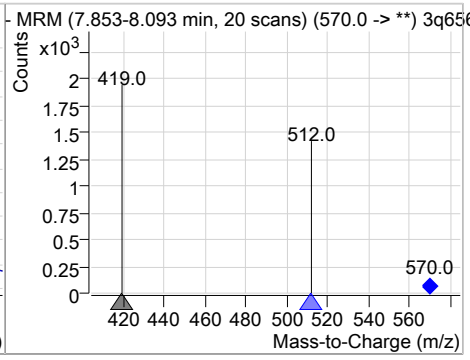




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.16	7.95	-0.04	643 (m)	570.0 -> 512.0	40.4	22.3	66.8

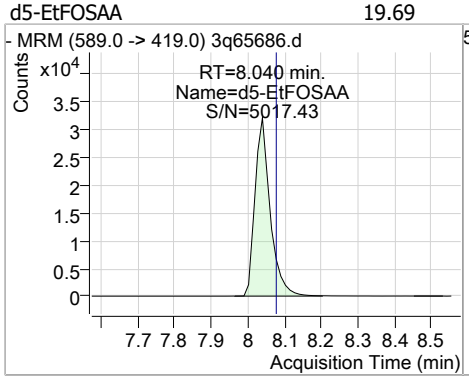


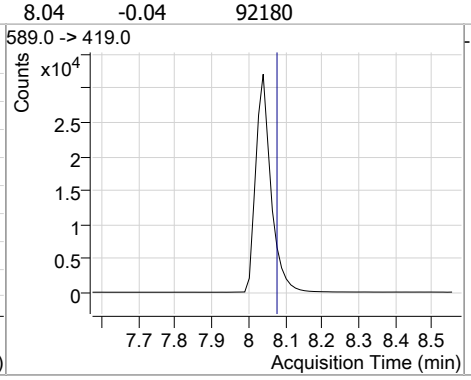


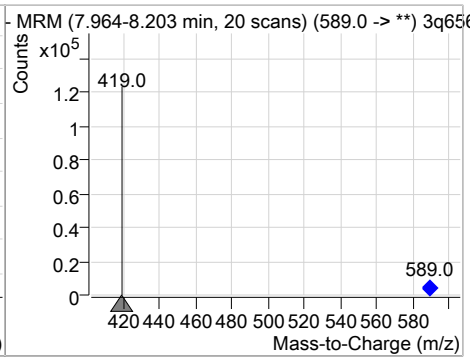


Perfluorinated Compounds by LC/MS/MS

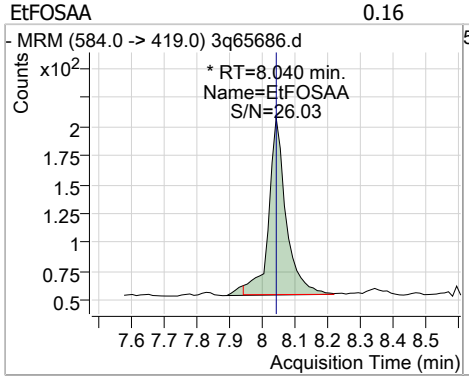
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.69	8.04	-0.04	92180				

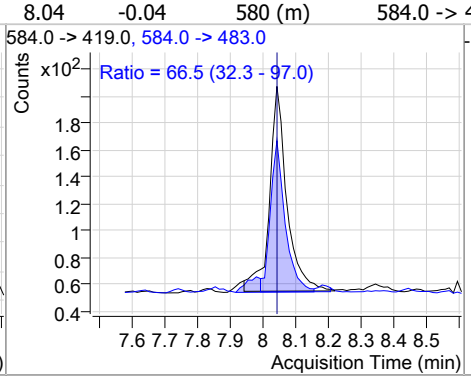


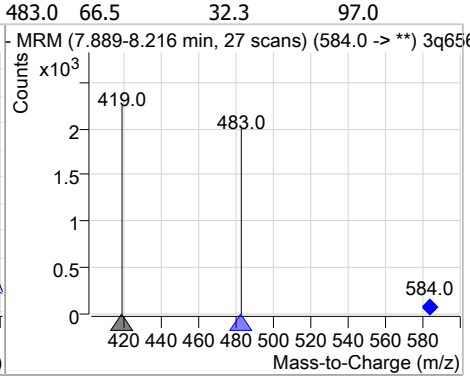




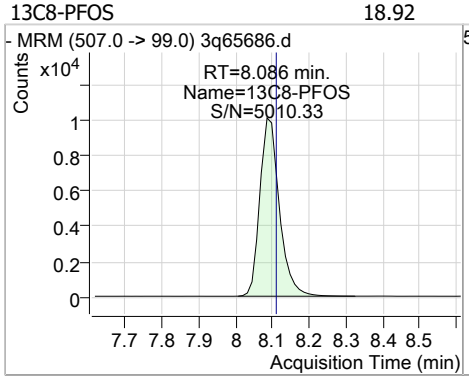
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.16	8.04	-0.04	580 (m)	584.0 -> 483.0	66.5	32.3	97.0

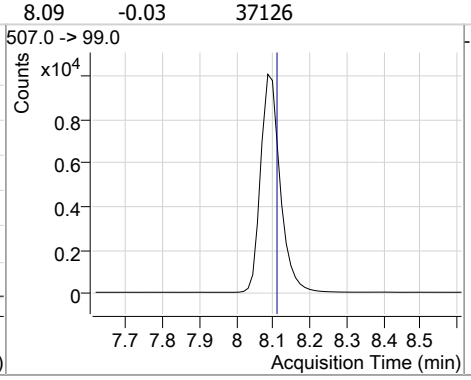


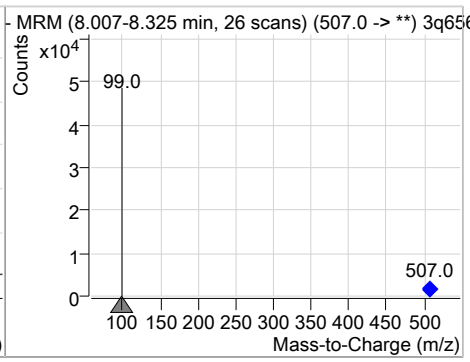




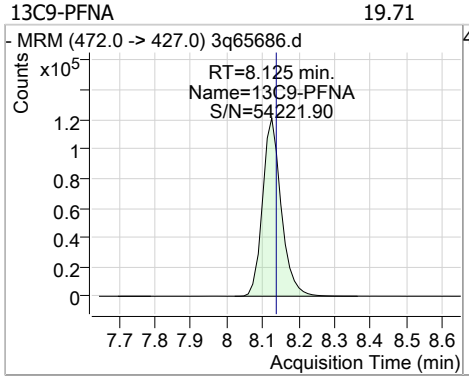
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.92	8.09	-0.03	37126				

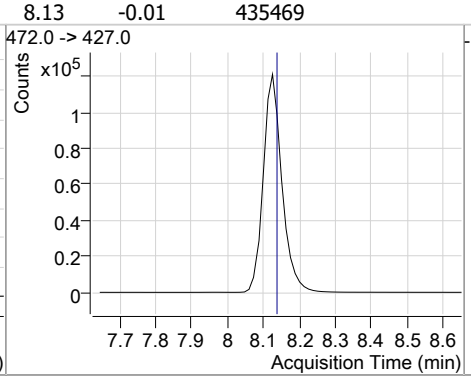


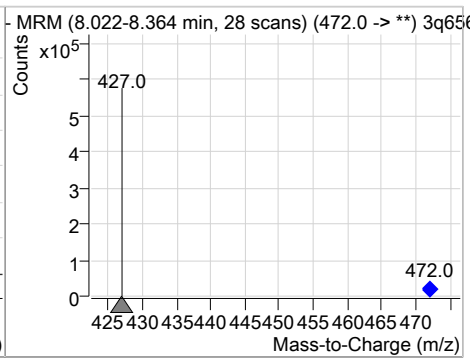




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.71	8.13	-0.01	435469				

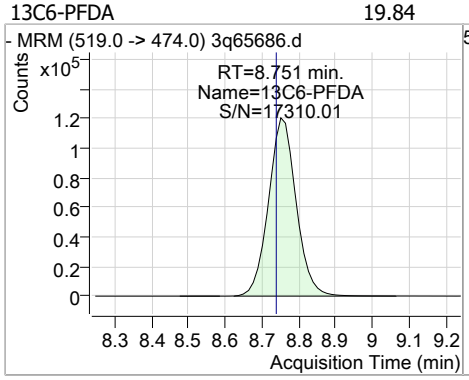


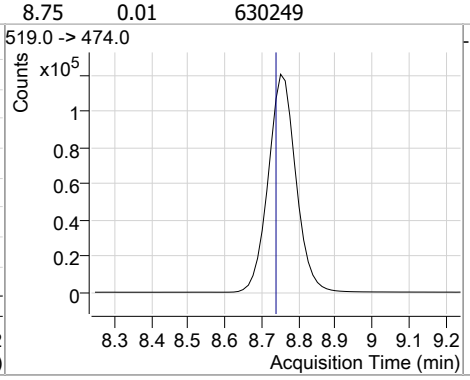


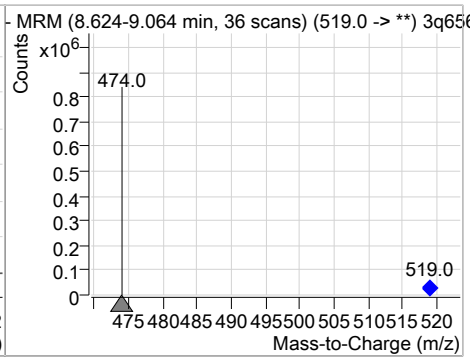


Perfluorinated Compounds by LC/MS/MS

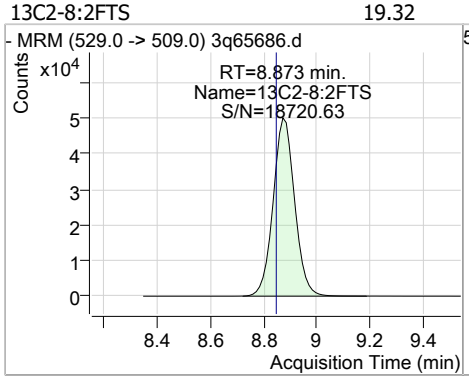
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.84	8.75	0.01	630249				

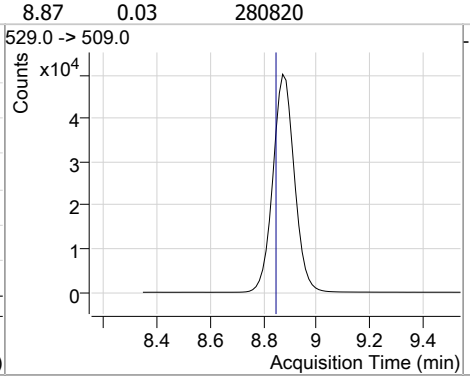


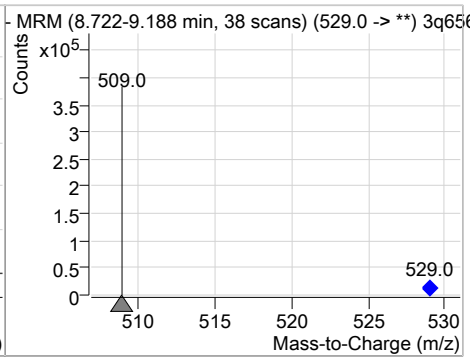




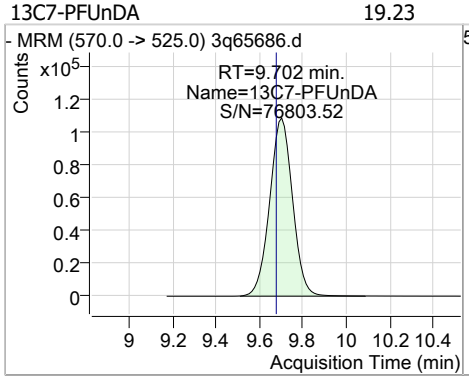
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.32	8.87	0.03	280820				

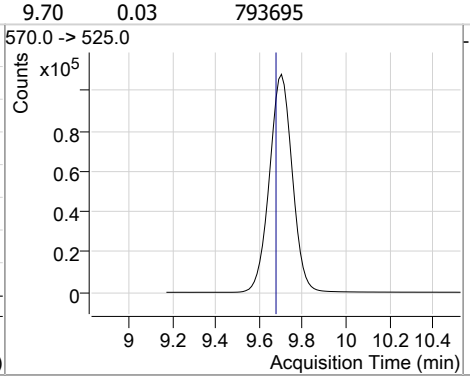


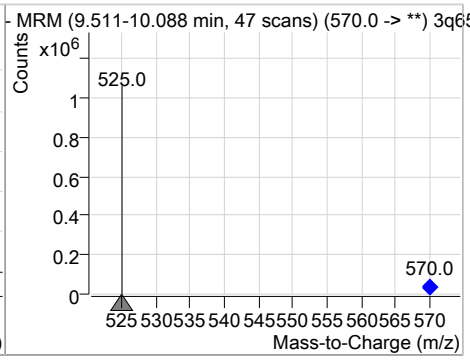




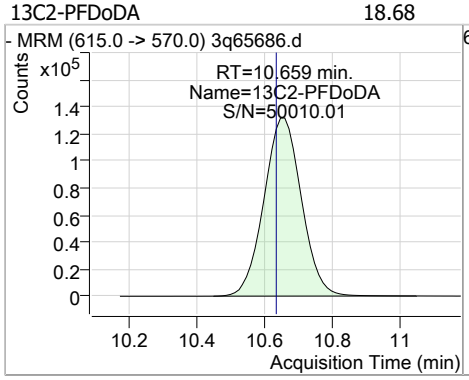
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.23	9.70	0.03	793695				

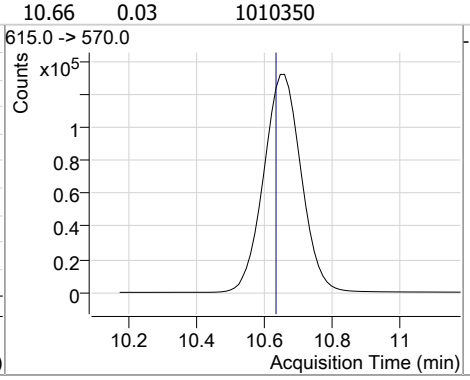


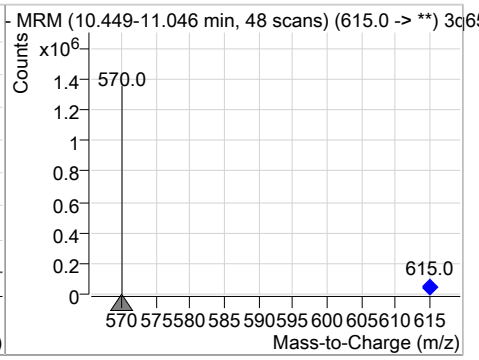




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.68	10.66	0.03	1010350				

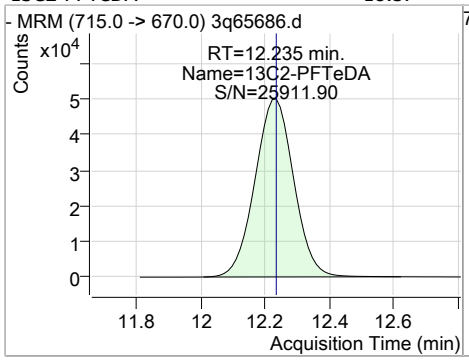


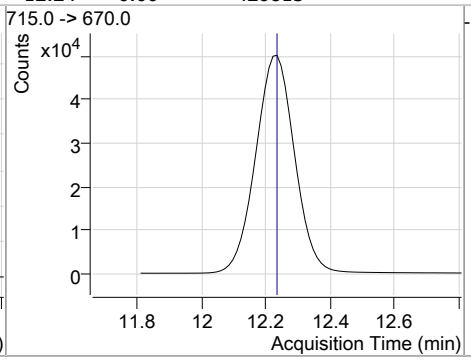


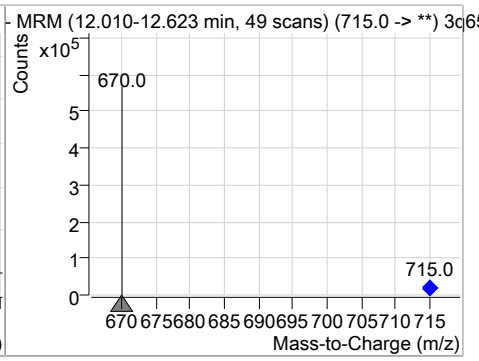


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.57	12.24	0.00	420813				







Manual Integration Approval Summary

Sample Number: S3Q898-IBLK
Lab FileID: 3Q65686.D
Injection Time: 09/13/22 18:26
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSAA	2355-31-9		7.95	Split peak
EtFOSAA	2991-50-6		8.04	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q65693.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/13/2022 8:43:45 PM
Sample Name	:	op92762-mb
Vial	:	P6-A2
DA Method File	:	ID_091322_S3Q898.quantmethod.xml
Batch Name	:	s3q898.batch.bin
Sample Information	:	op92762,S3Q898,250,,,1,1,water

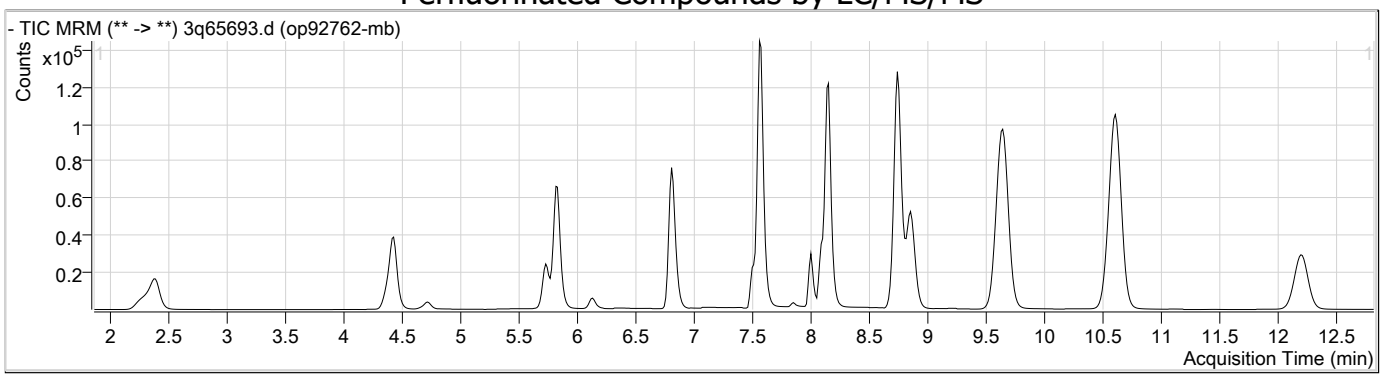
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	144021	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	213374	20.00	µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	279635	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	281933	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	383932	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	414562	20.00	µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	582072	20.00	µg/L	0.000
M7-PFUnDA	9.639	570.0 -> 525.0	718862	20.00	µg/L	-0.038
M2-PFDoDA	10.596	615.0 -> 570.0	783516	20.00	µg/L	-0.038
M2-PFTeDA	12.185	715.0 -> 670.0	247469	20.00	µg/L	-0.050
M8-FOSA	7.491	506.0 -> 78.0	67485	20.00	µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	19188	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	24011	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	34826	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	100219	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	146015	20.00	µg/L	0.013
M2-8:2FTS	8.848	529.0 -> 509.0	263501	20.00	µg/L	0.000
M3-MeFOSAA	7.991	573.0 -> 419.0	82232	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	22676	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	6433	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	78565	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	100219	17.35	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%		
13C2-6:2FTS	7.571	429.0 -> 409.0	146015	18.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-8:2FTS	8.848	529.0 -> 509.0	263501	18.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C2-PFDoDA	10.596	615.0 -> 570.0	783516	14.48	µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%		
13C2-PFTeDA	12.185	715.0 -> 670.0	247469	10.92	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.6%		
13C3-PFBS	4.704	302.0 -> 99.0	19188	18.13	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
13C3-PFHxS	6.834	402.0 -> 99.0	24011	18.58	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C4-PFBA	2.365	217.0 -> 172.0	144021	18.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C4-PFHpA	6.805	367.0 -> 322.0	281933	18.71	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C5-PFHxA	5.813	318.0 -> 273.0	279635	18.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%		
13C5-PFPeA	4.424	268.0 -> 223.0	213374	18.41	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C6-PFDA	8.739	519.0 -> 474.0	582072	18.32	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

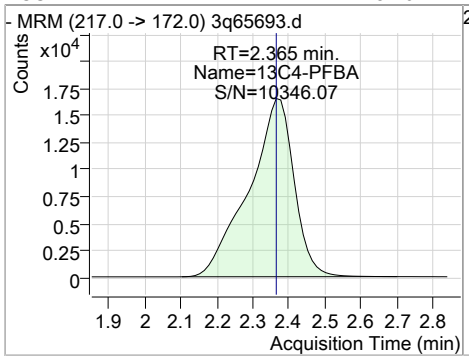
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%	
13C7-PFUnDA	9.639	570.0 -> 525.0	718862	17.41 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%	
13C8-FOSA	7.491	506.0 -> 78.0	67485	17.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%	
13C8-PFOA	7.560	421.0 -> 376.0	383932	19.07 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%	
13C8-PFOS	8.111	507.0 -> 99.0	34826	17.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%	
13C9-PFNA	8.150	472.0 -> 427.0	414562	18.76 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%	
d3-MeFOSAA	7.991	573.0 -> 419.0	82232	18.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C3-HFPO-DA	6.130	287.0 -> 169.0	22672	17.67 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%	
d3-MeFOSA	7.841	515.0 -> 169.0	6433	7.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 36.3%	
d5-EtFOSAA	8.077	589.0 -> 419.0	78543	16.77 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
Target Compounds					**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.	
6:2FTS	-	427.0 -> 407.0	-	N.D.	
8:2FTS	-	527.0 -> 507.0	-	N.D.	
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
FOSA	-	498.0 -> 78.0	-	N.D.	
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
PFDA	-	513.0 -> 469.0	-	N.D.	
PFDoDA	-	613.0 -> 569.0	-	N.D.	
PFDS	-	599.0 -> 80.0	-	N.D.	
PFHpA	-	363.0 -> 319.0	-	N.D.	
PFHpS	-	449.0 -> 80.0	-	N.D.	
PFHxA	-	313.0 -> 269.0	-	N.D.	
PFHxS	-	399.0 -> 80.0	-	N.D.	
PFNA	-	463.0 -> 419.0	-	N.D.	
PFNS	-	549.0 -> 80.0	-	N.D.	
PFOA	-	413.0 -> 369.0	-	N.D.	
PFOS	-	499.0 -> 80.0	-	N.D.	
PFPeA	-	263.0 -> 219.0	-	N.D.	
PFPeS	-	349.0 -> 80.0	-	N.D.	
PFTeDA	-	713.0 -> 669.0	-	N.D.	
PFTrDA	-	663.0 -> 619.0	-	N.D.	
PFUnDA	-	563.0 -> 519.0	-	N.D.	
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.	
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.	
ADONA	-	377.0 -> 251.0	-	N.D.	
HFPO-DA	-	329.0 -> 169.0	-	N.D.	
MeFOSA	-	512.0 -> 169.0	-	N.D.	
4-PFECHS	-	461.0 -> 381.0	-	N.D.	
FBSA	-	298.0 -> 78.0	-	N.D.	
FHxSA	-	398.0 -> 78.0	-	N.D.	

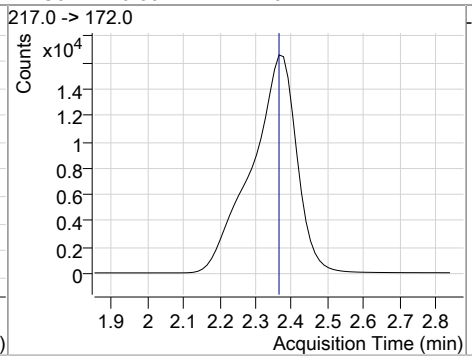
 # = Qualifier out of range, m = manually integrated, + = Area summed

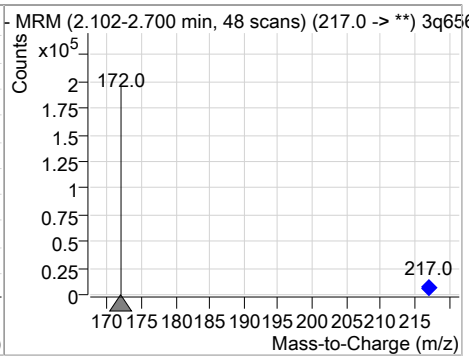
Perfluorinated Compounds by LC/MS/MS



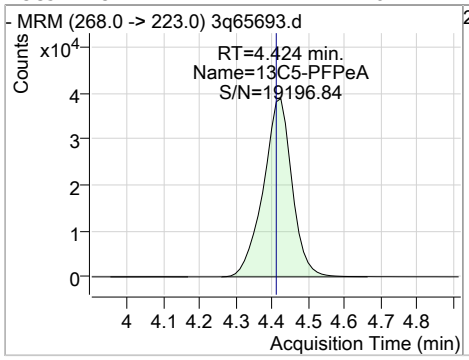
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.10	2.36	0.00	144021				

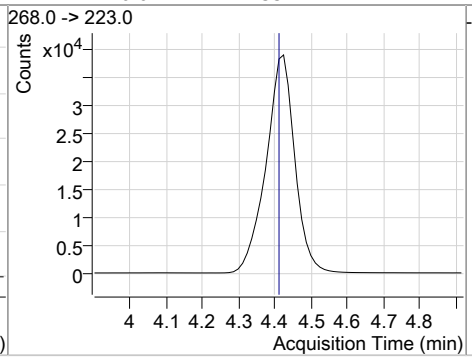


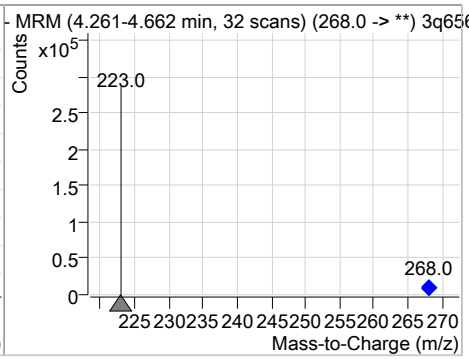




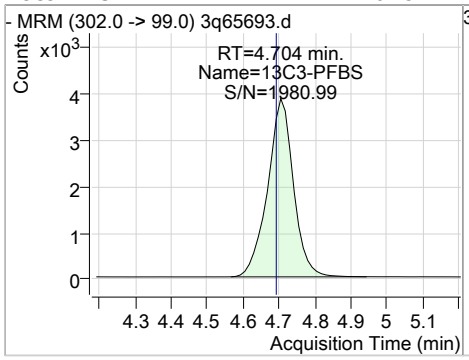
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.41	4.42	0.01	213374				

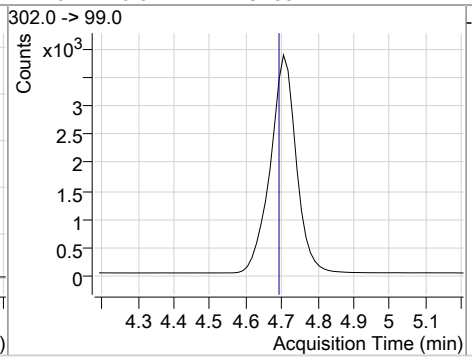


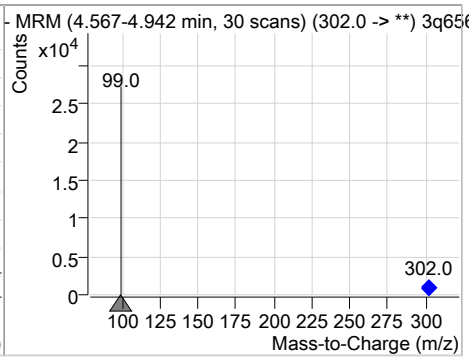




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.13	4.70	0.01	19188				

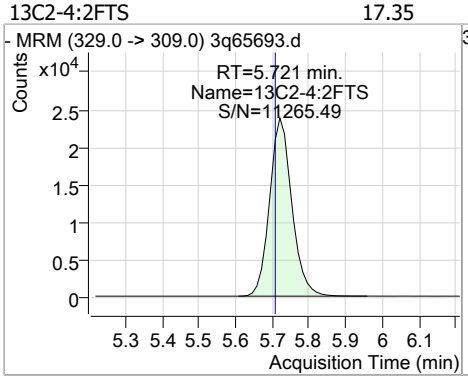


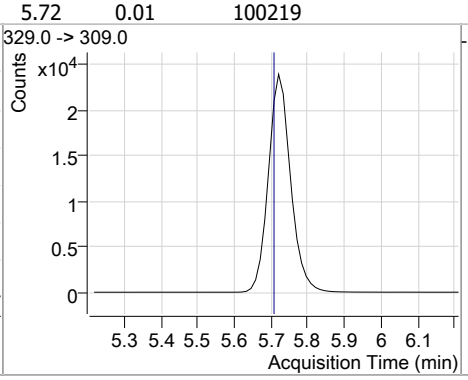


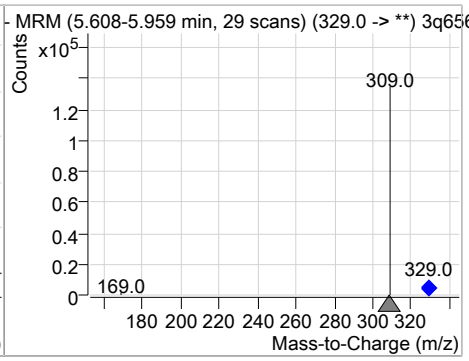


Perfluorinated Compounds by LC/MS/MS

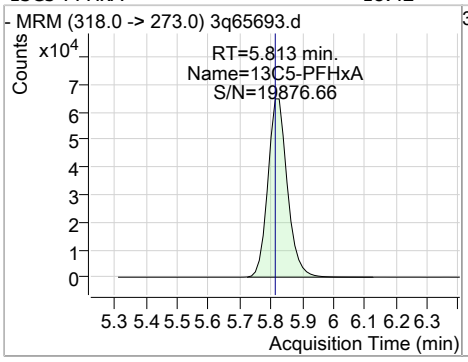
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.35	5.72	0.01	100219				

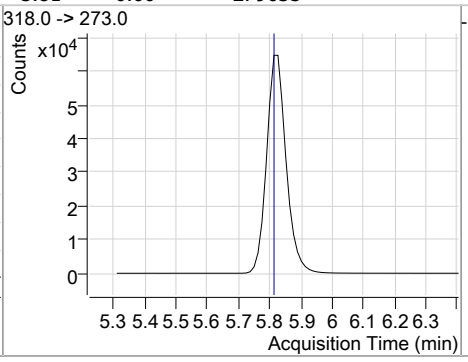


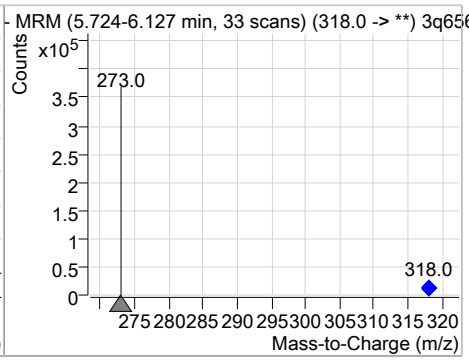




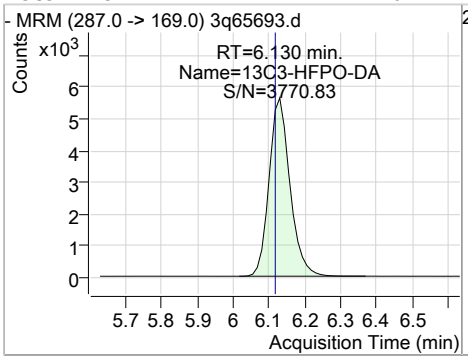
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.42	5.81	0.00	279635				

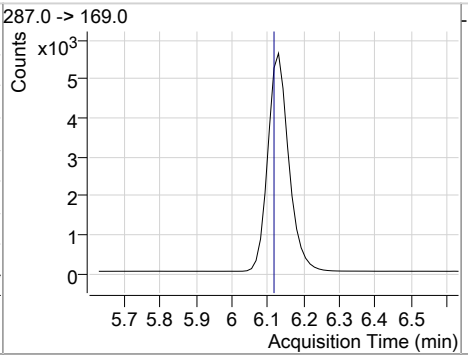


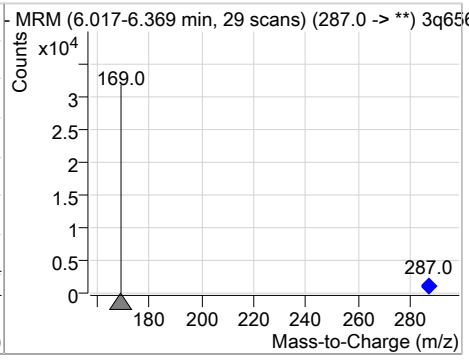




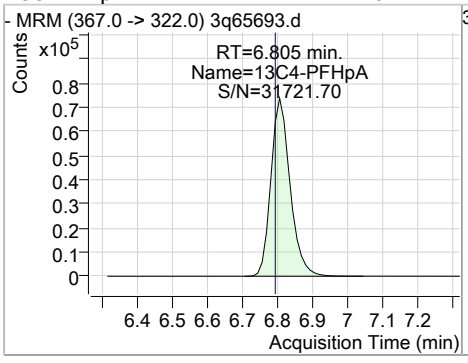
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.67	6.13	0.01	22672				

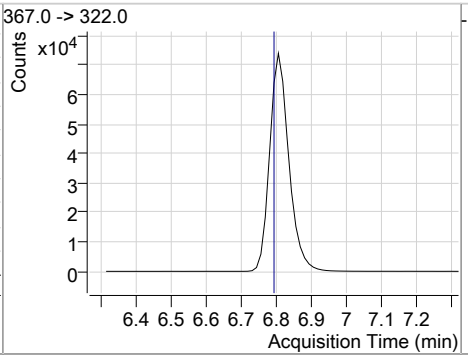


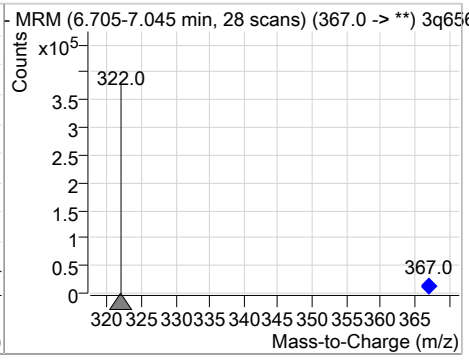




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.71	6.81	0.01	281933				

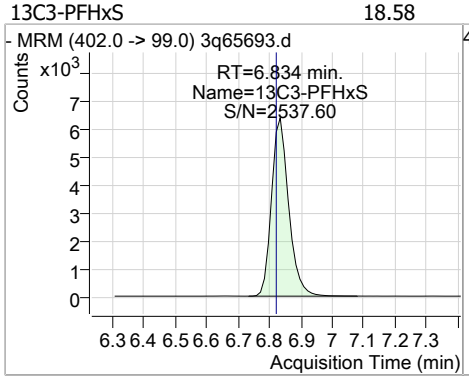


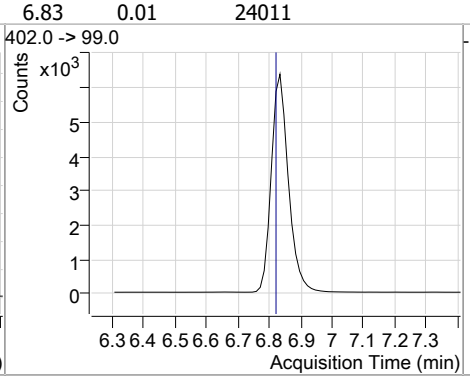


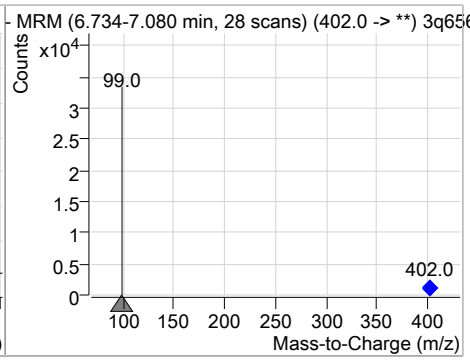


Perfluorinated Compounds by LC/MS/MS

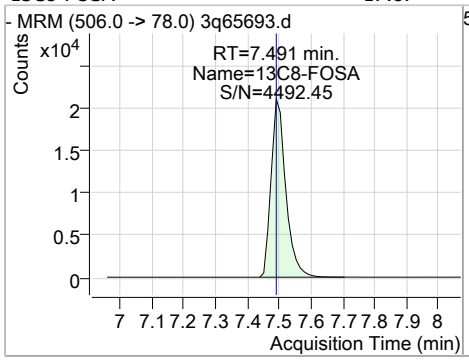
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.58	6.83	0.01	24011				

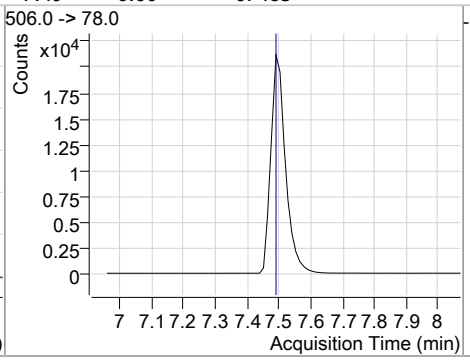


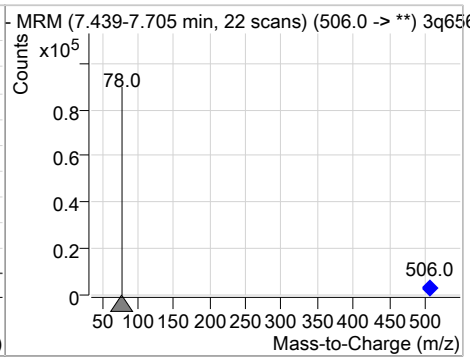




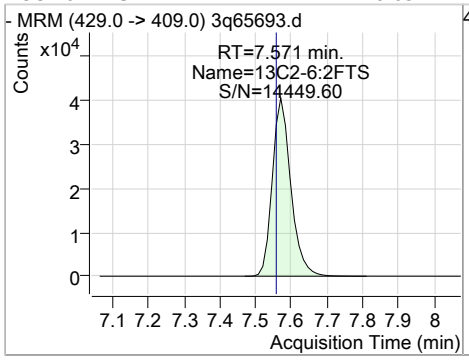
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.87	7.49	0.00	67485				

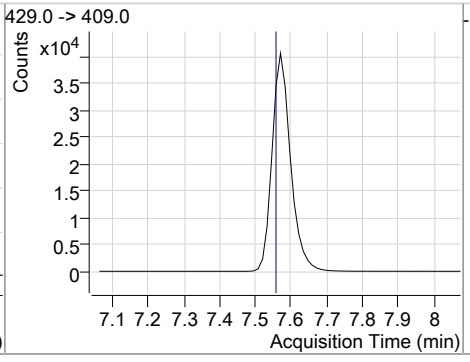


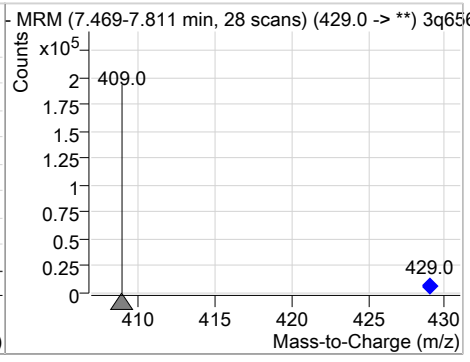




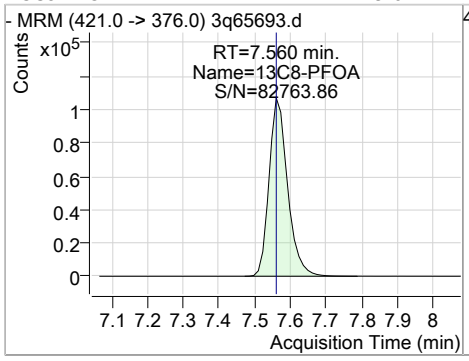
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.65	7.57	0.01	146015				

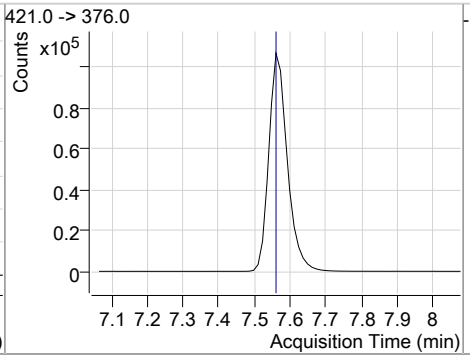


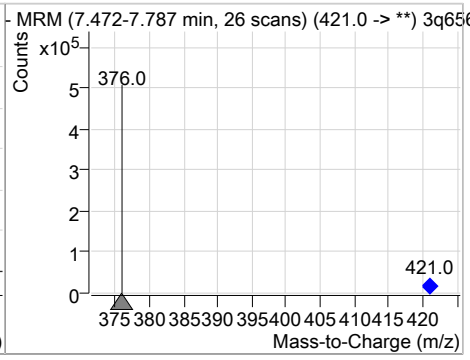




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.07	7.56	0.00	383932				

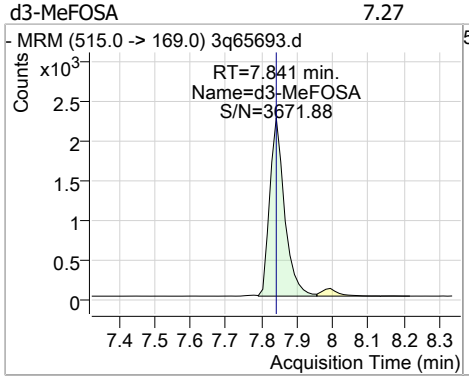


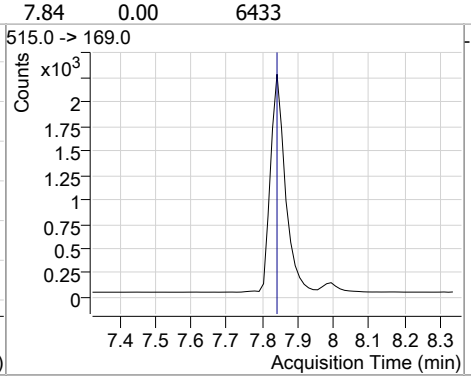


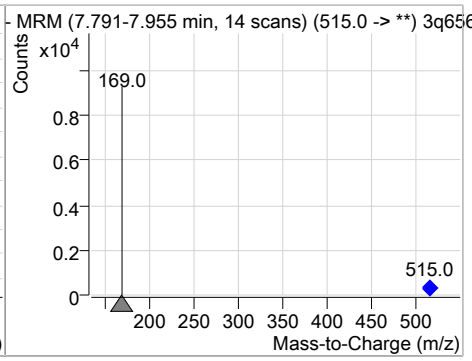


Perfluorinated Compounds by LC/MS/MS

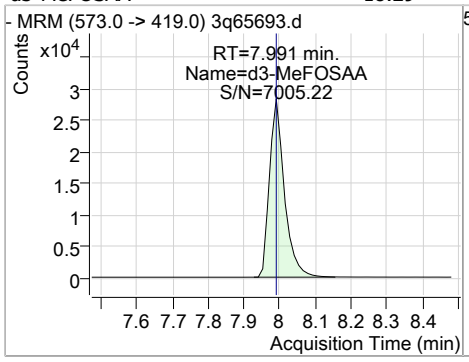
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	7.27	7.84	0.00	6433				

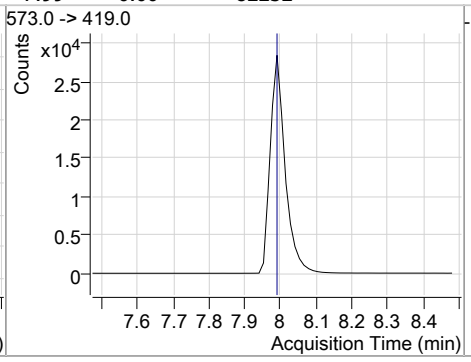


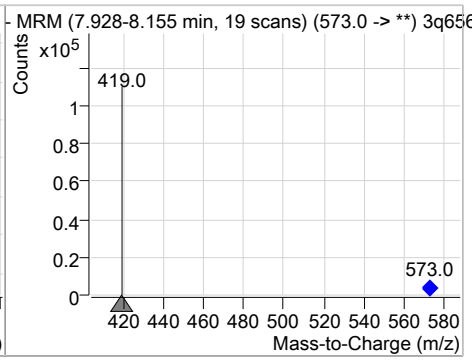




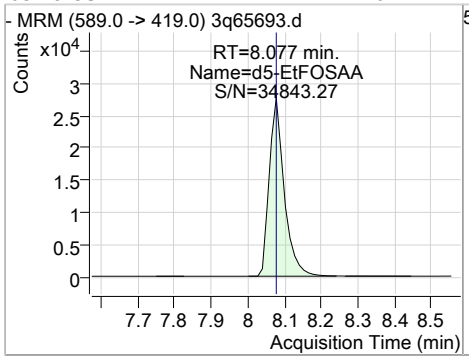
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.29	7.99	0.00	82232				

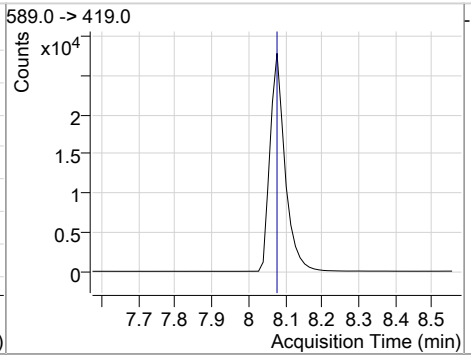


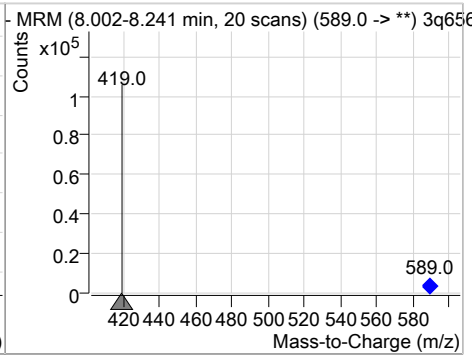




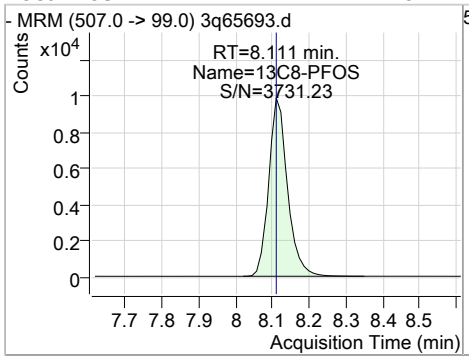
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.77	8.08	0.00	78543				

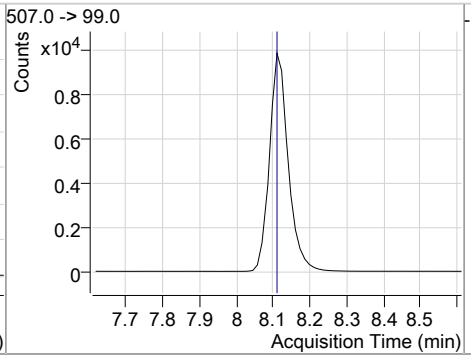


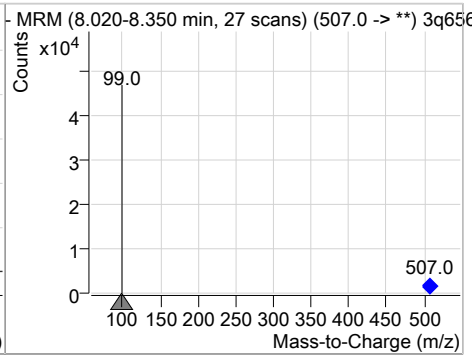




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.75	8.11	0.00	34826				

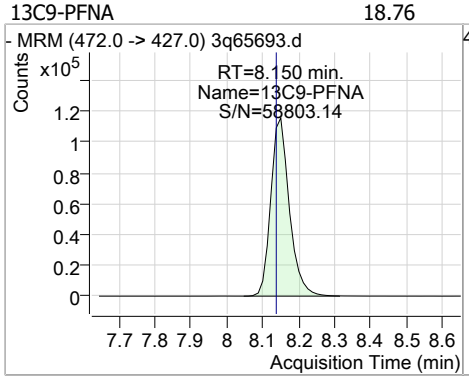


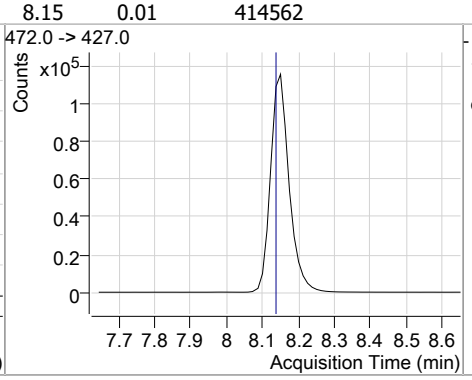


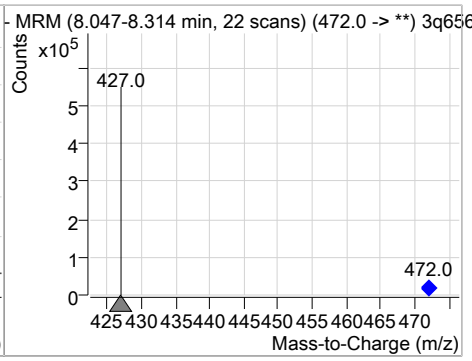


Perfluorinated Compounds by LC/MS/MS

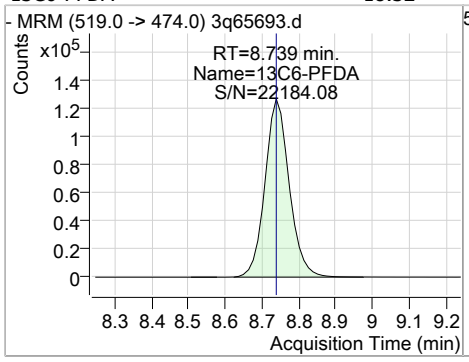
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.76	8.15	0.01	414562				

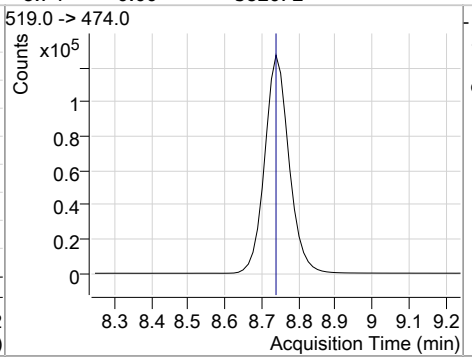


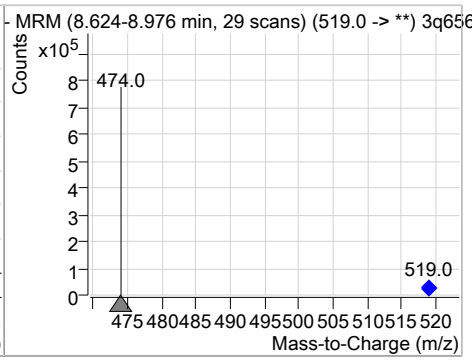




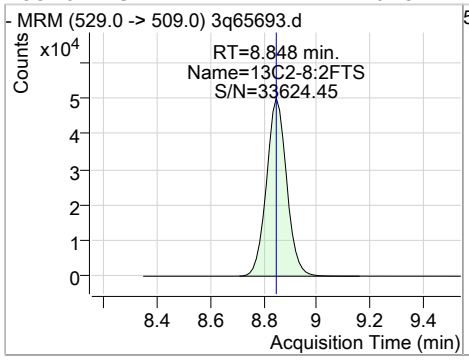
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.32	8.74	0.00	582072				

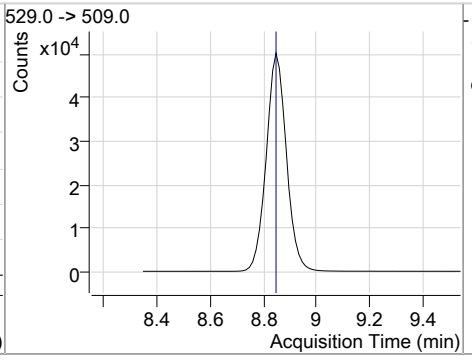


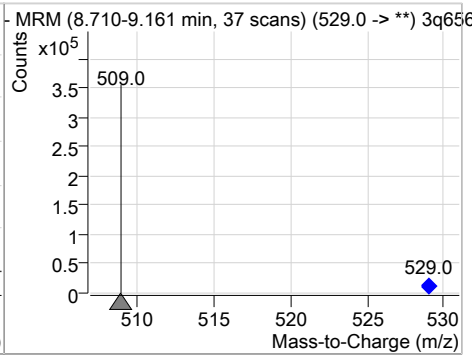




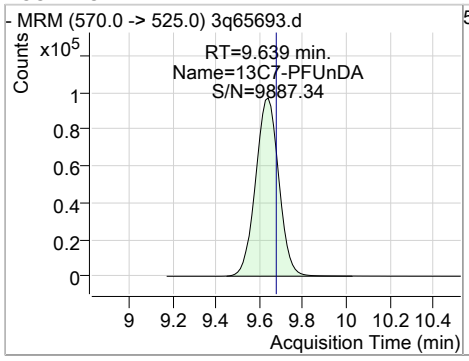
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.13	8.85	0.00	263501				

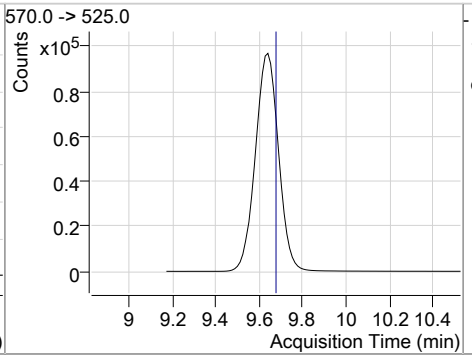


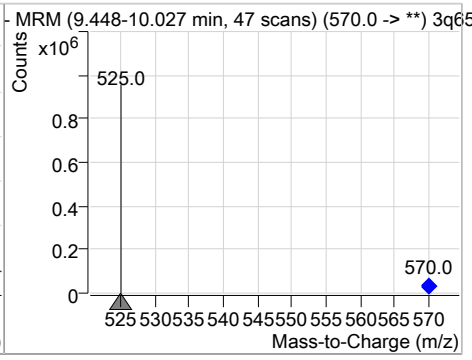




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.41	9.64	-0.04	718862				

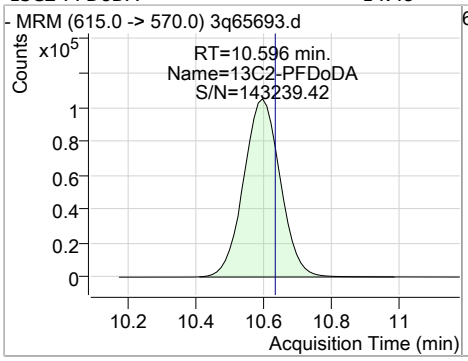


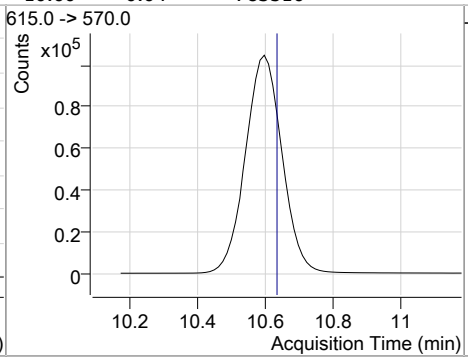


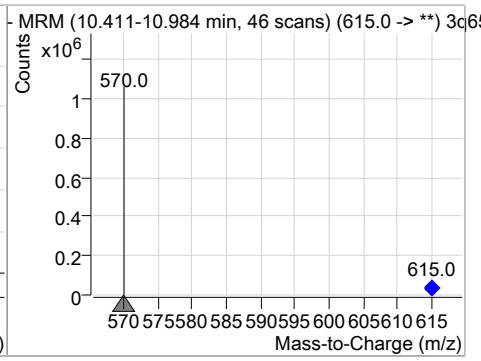


Perfluorinated Compounds by LC/MS/MS

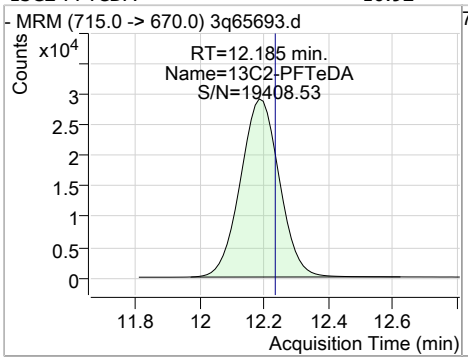
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.48	10.60	-0.04	783516				

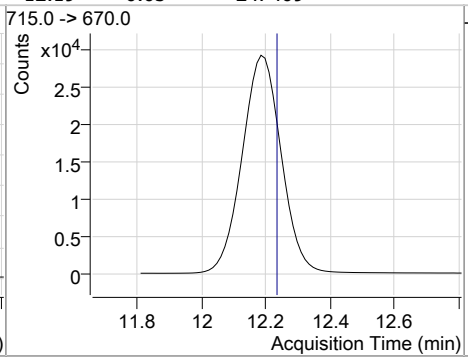


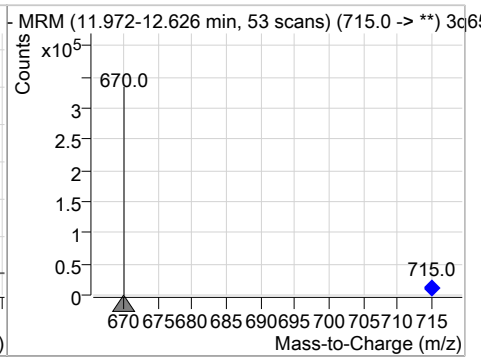




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.92	12.19	-0.05	247469				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4631.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:36:26 AM
Sample Name : op92763-mb
Vial : P1-D9
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

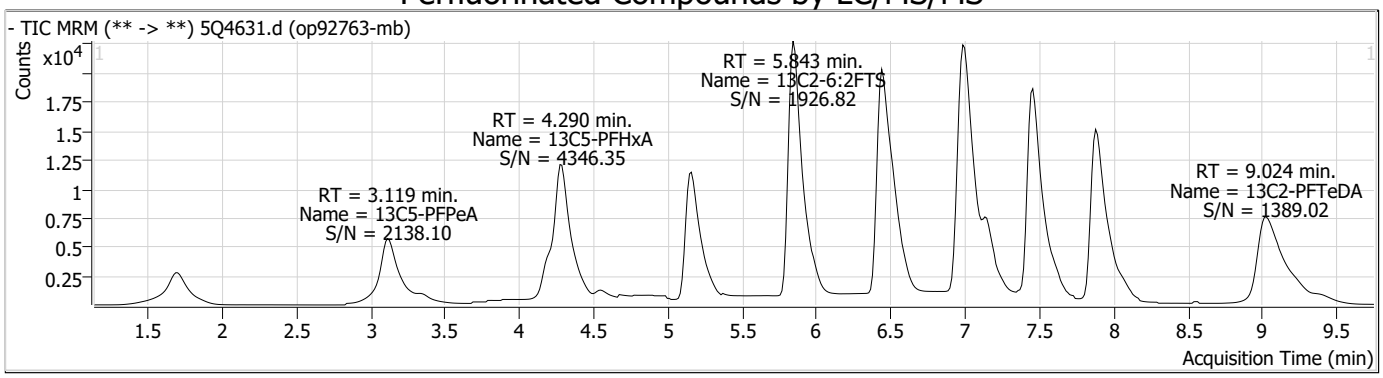
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	32092	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	50633	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	77352	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	72999	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	110045	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	120240	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	100132	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	124912	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	115666	20.00	µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	95057	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	17244	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	5808	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	6045	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	11584	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	24769	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	39566	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	39779	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	21057	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	5266	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	2025	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	21554	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	24769	16.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.3%		
13C2-6:2FTS	5.843	429.0 -> 409.0	39566	17.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C2-8:2FTS	7.025	529.0 -> 509.0	39779	17.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C2-PFDoDA	7.893	615.0 -> 570.0	115666	15.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%		
13C2-PFTeDA	9.024	715.0 -> 670.0	95057	12.60	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.0%		
13C3-PFBS	3.349	302.0 -> 99.0	5808	17.83	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C3-PFHxS	5.206	402.0 -> 99.0	6045	17.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%		
13C4-PFBA	1.700	217.0 -> 172.0	32092	17.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C4-PFHpA	5.163	367.0 -> 322.0	72999	17.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C5-PFHxA	4.290	318.0 -> 273.0	77352	17.69	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C5-PFPeA	3.119	268.0 -> 223.0	50633	17.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C6-PFDA	6.989	519.0 -> 474.0	100132	18.60	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

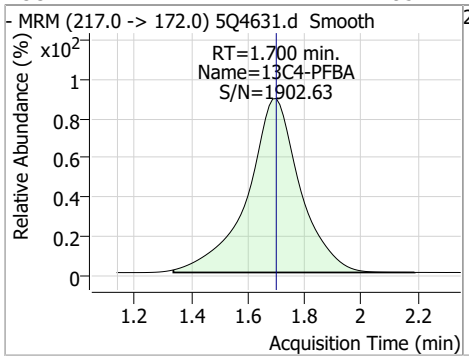
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C7-PFUnDA	7.459	570.0 -> 525.0	124912	17.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%			
13C8-FOSA	6.517	506.0 -> 78.0	17244	15.20	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.0%			
13C8-PFOA	5.857	421.0 -> 376.0	110045	18.19	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%			
13C8-PFOS	6.440	507.0 -> 99.0	11584	17.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%			
13C9-PFNA	6.455	472.0 -> 427.0	120240	18.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	21057	21.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	5266	15.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	2025	6.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 33.3%			
d5-EtFOSAA	7.157	589.0 -> 419.0	21554	19.23	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.547	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.004	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

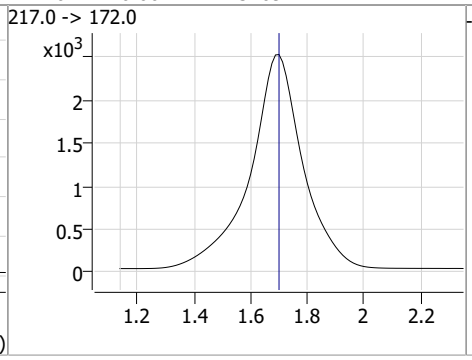
 # = Qualifier out of range, m = manually integrated, + = Area summed

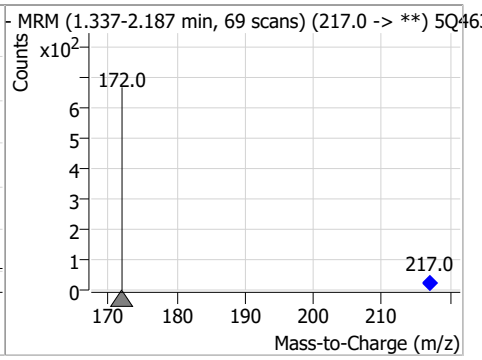
Perfluorinated Compounds by LC/MS/MS



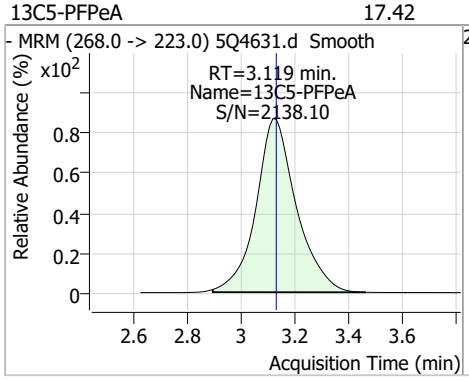
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.95	1.70	0.00	32092				

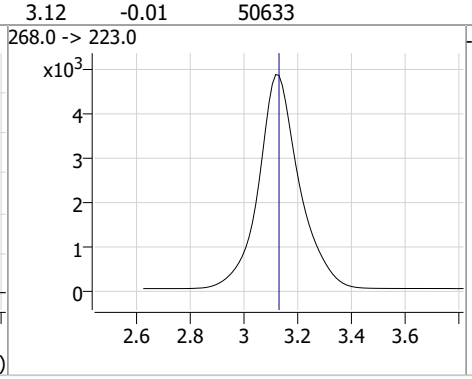


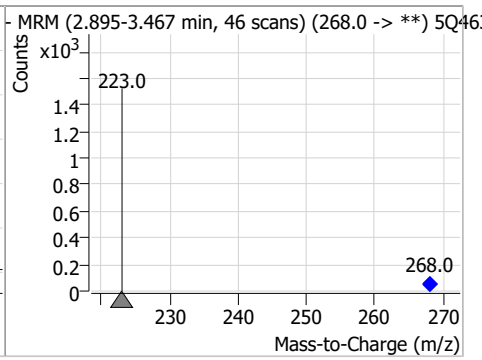




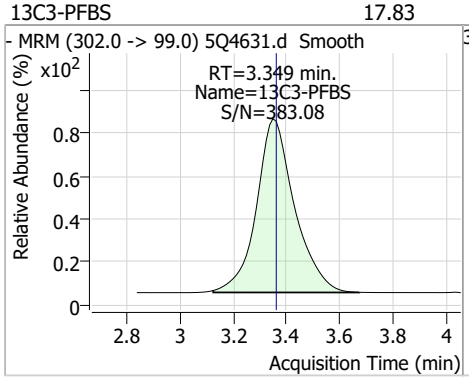
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.42	3.12	-0.01	50633				

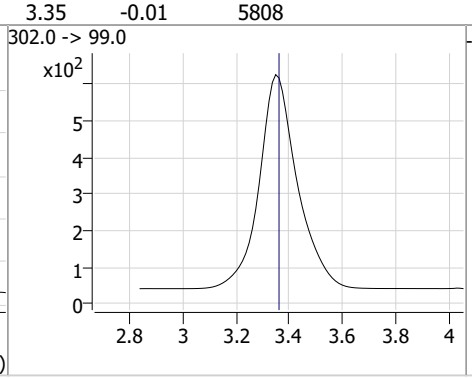


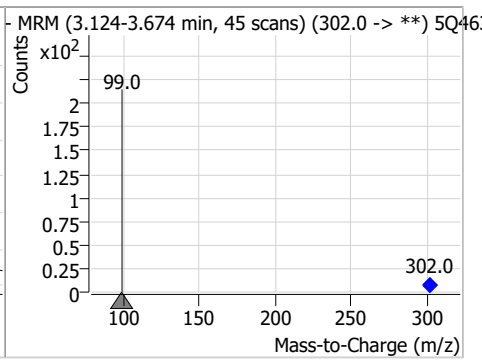




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.83	3.35	-0.01	5808				

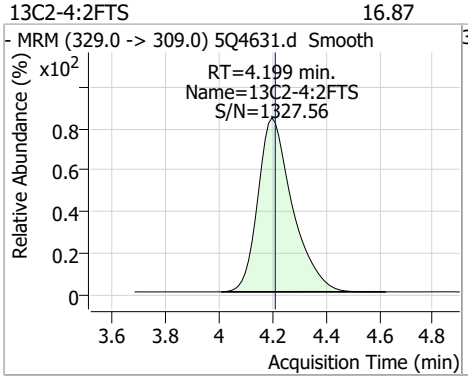


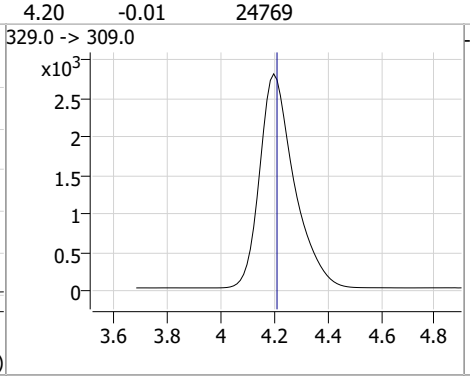


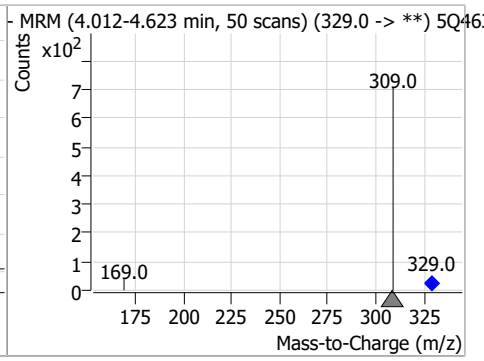


Perfluorinated Compounds by LC/MS/MS

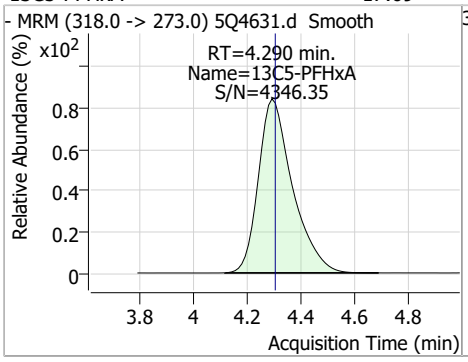
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.87	4.20	-0.01	24769				

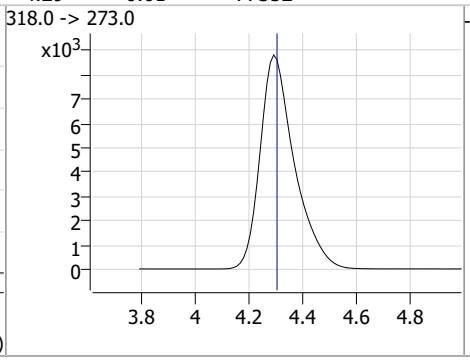


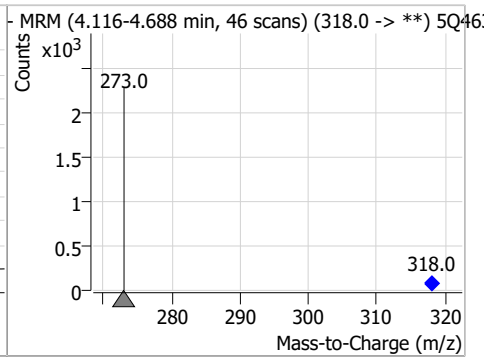




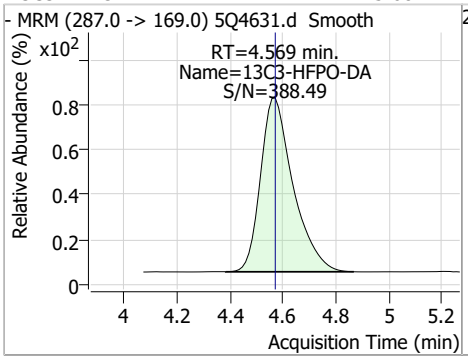
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.69	4.29	-0.01	77352				

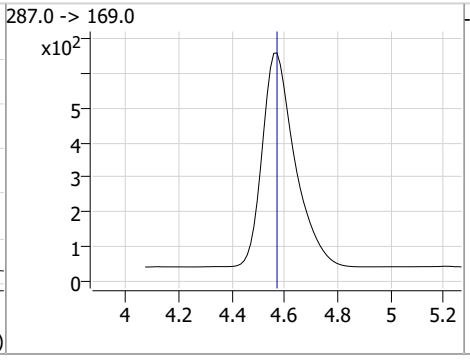


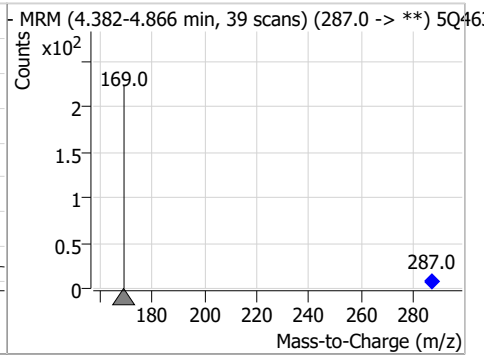




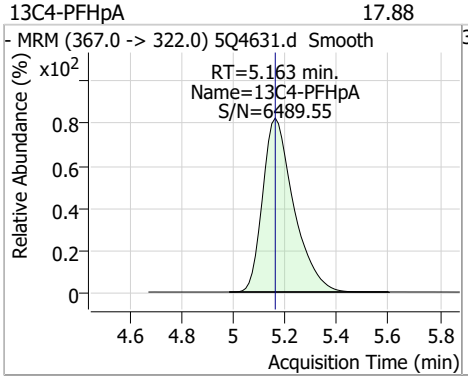
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.68	4.57	0.00	5266				

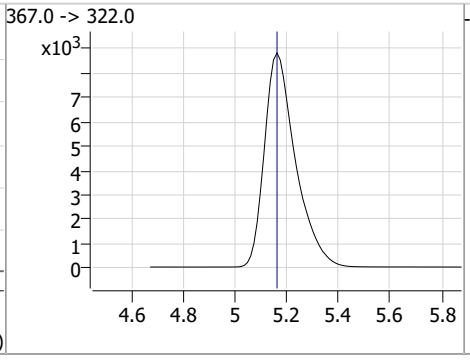


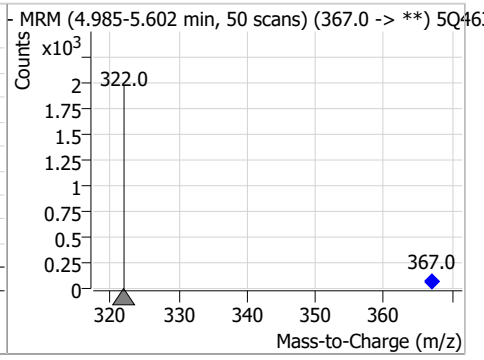




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.88	5.16	0.00	72999				

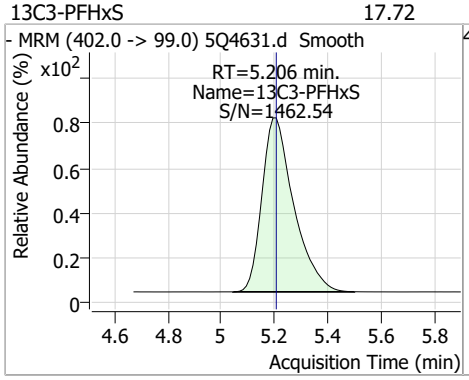


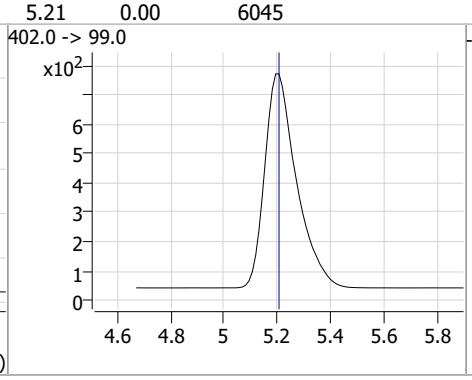


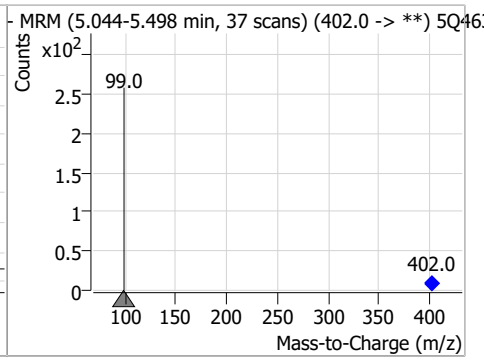


Perfluorinated Compounds by LC/MS/MS

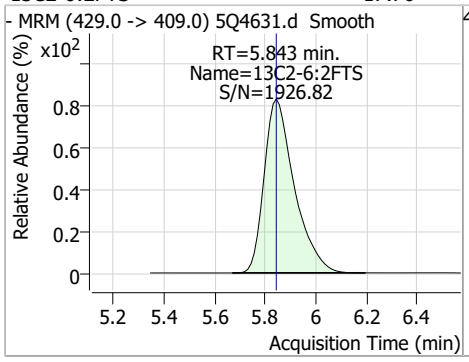
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.72	5.21	0.00	6045				

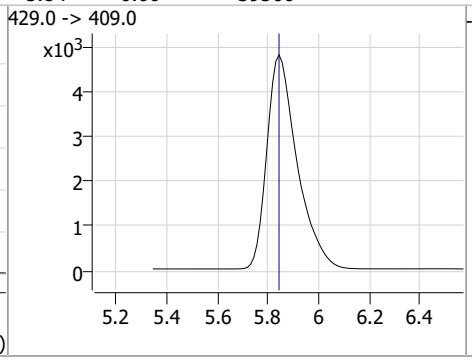


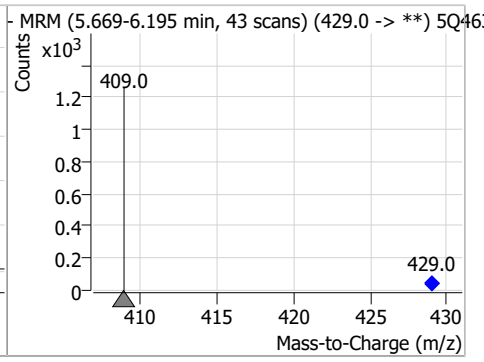




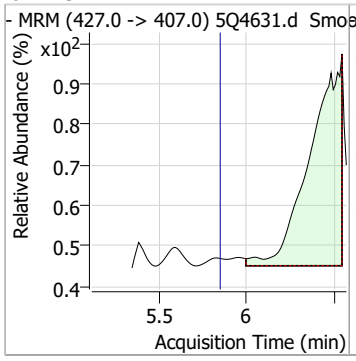
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.70	5.84	0.00	39566				

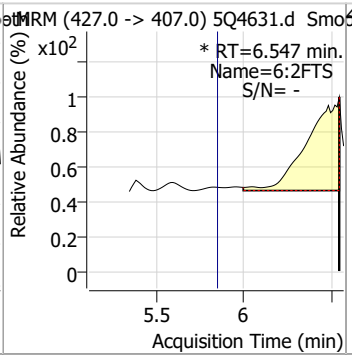


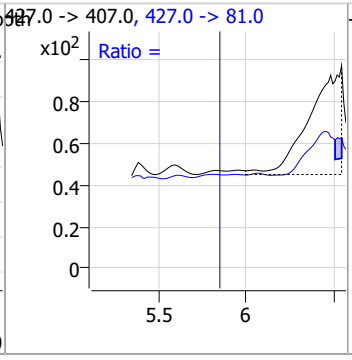


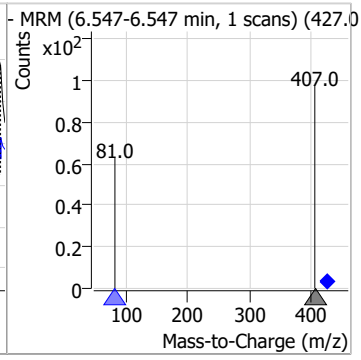


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

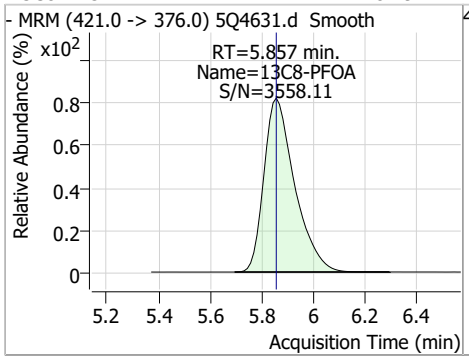


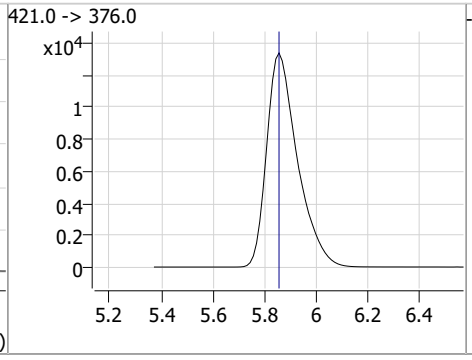


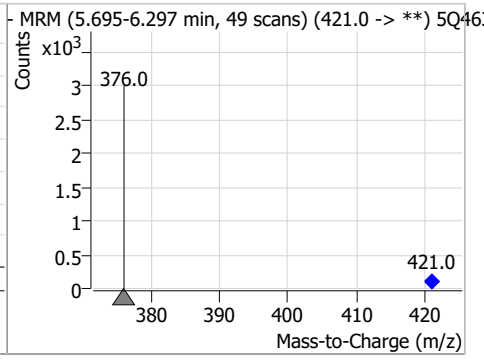




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.19	5.86	0.00	110045				

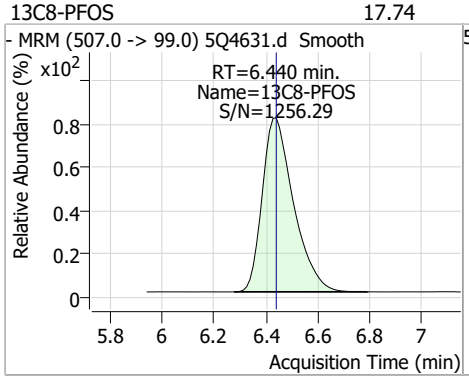


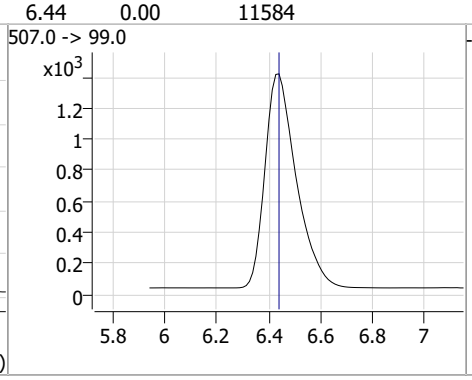


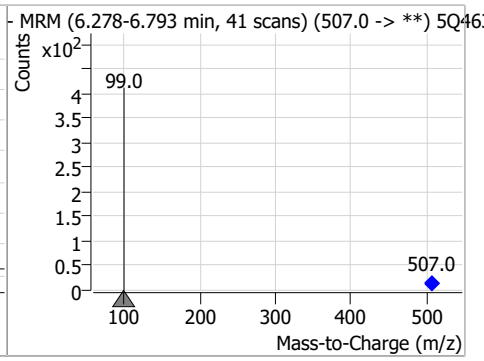


Perfluorinated Compounds by LC/MS/MS

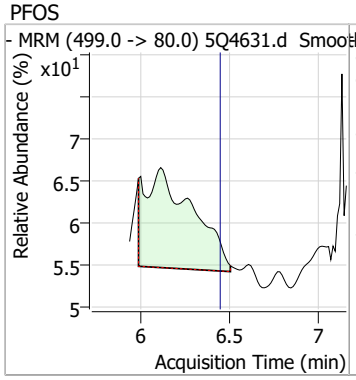
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.74	6.44	0.00	11584				

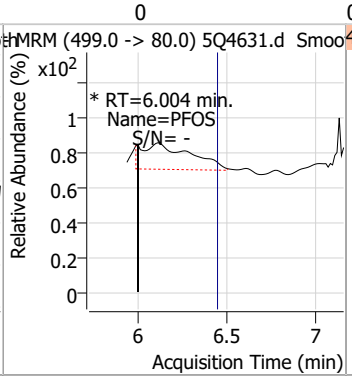


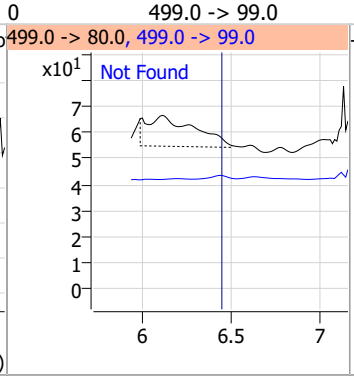


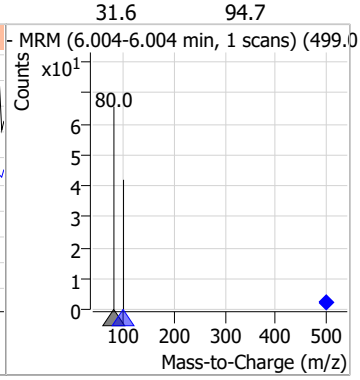


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

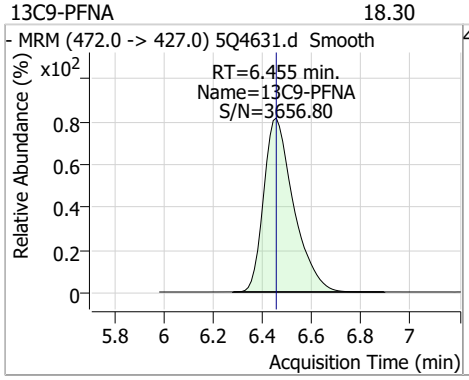


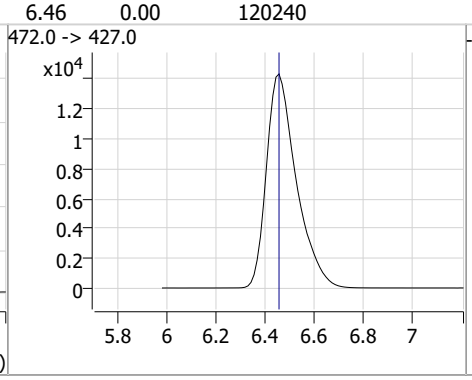


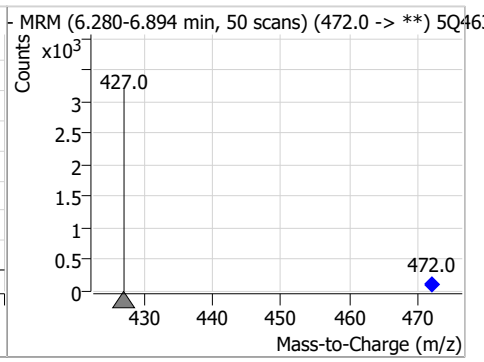




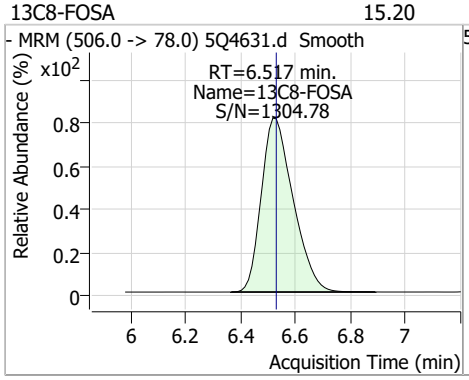
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.30	6.46	0.00	120240				

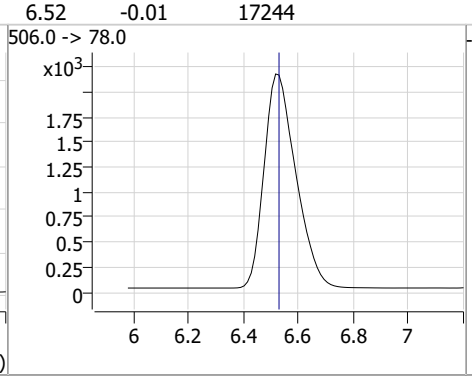


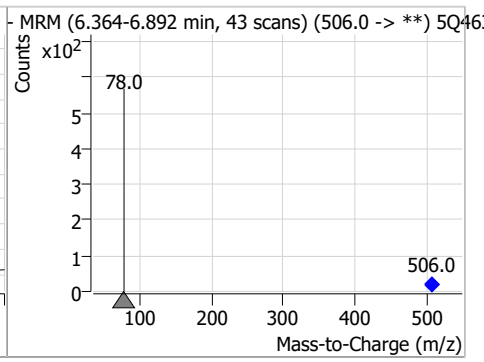




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.20	6.52	-0.01	17244				

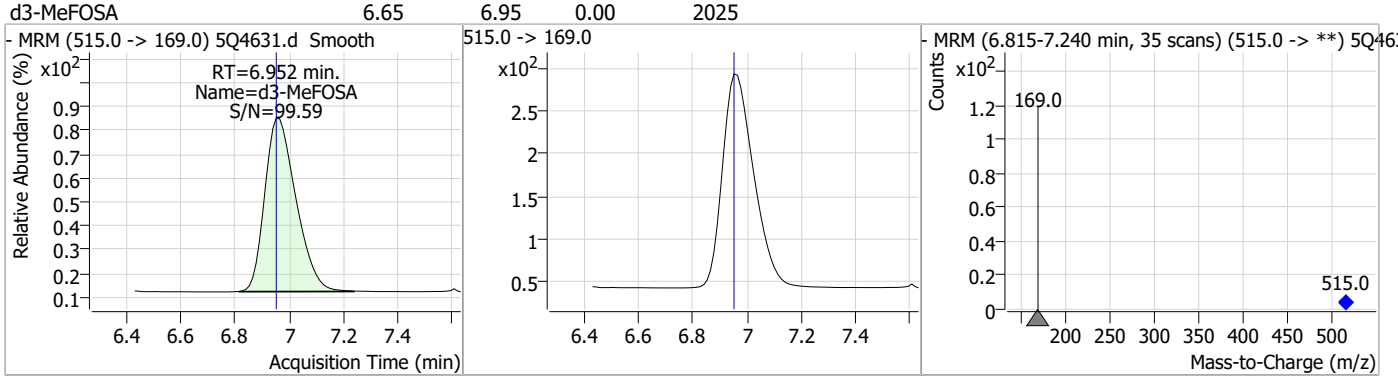




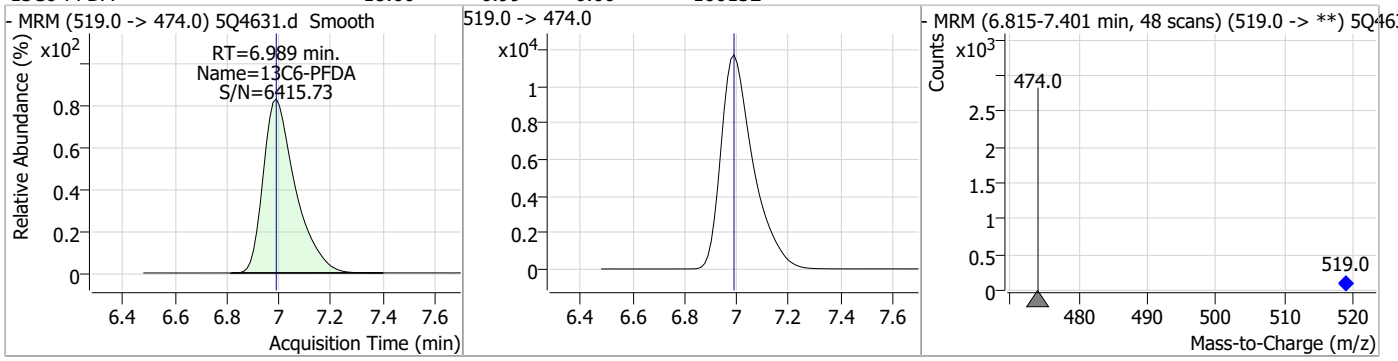


Perfluorinated Compounds by LC/MS/MS

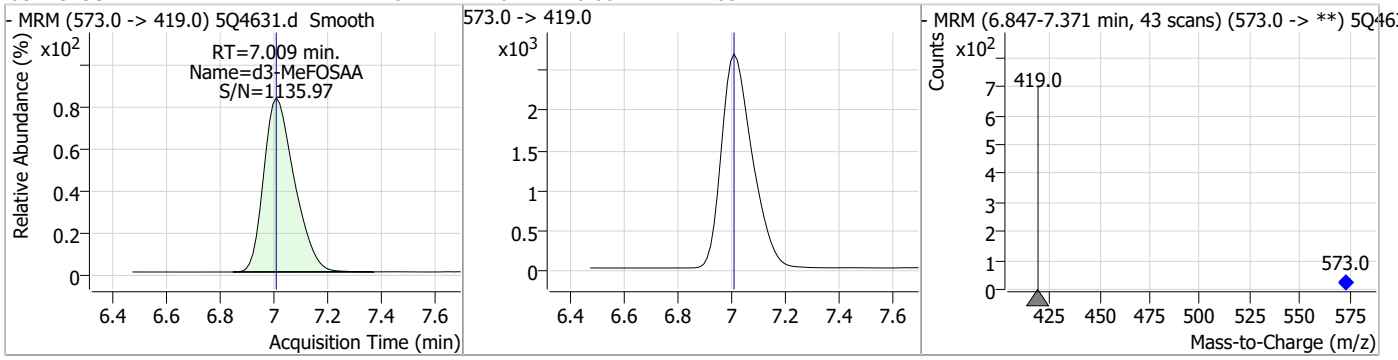
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.65	6.95	0.00	2025				



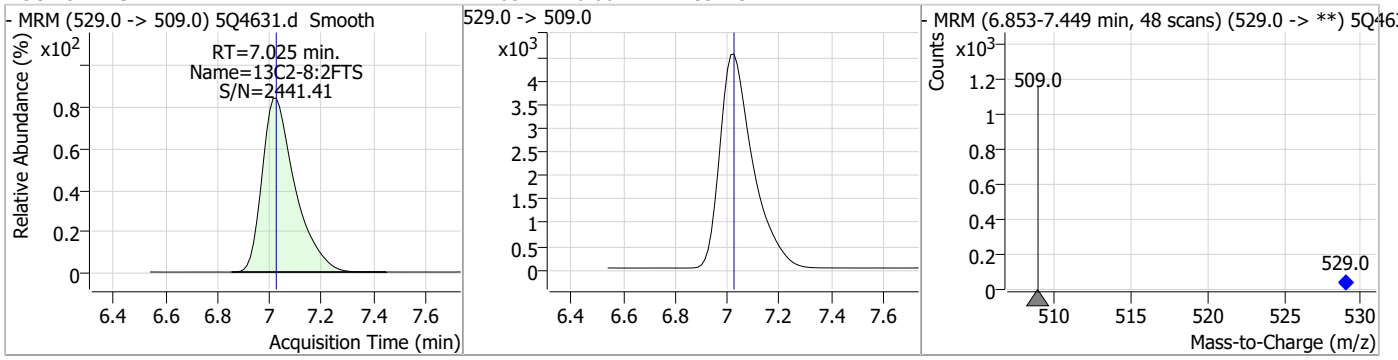
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.60	6.99	0.00	100132				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.67	7.01	0.00	21057				

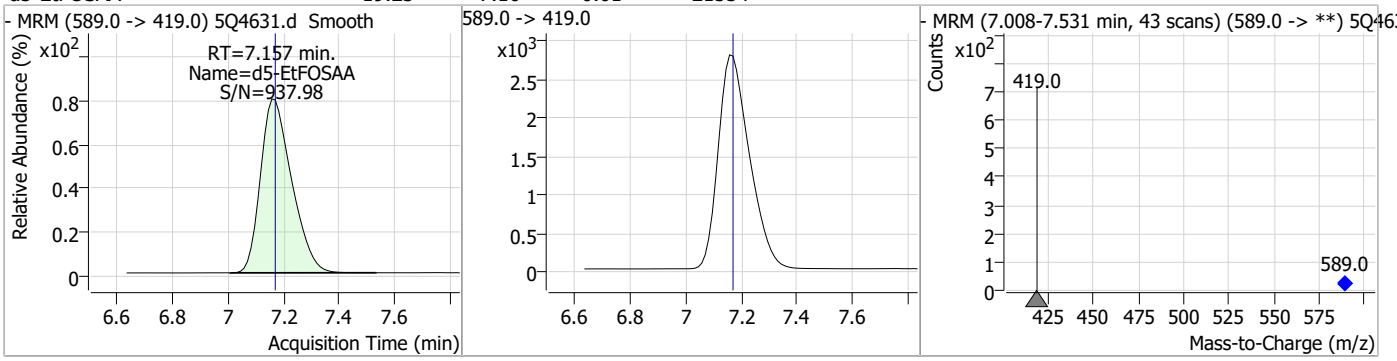


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.71	7.03	0.00	39779				

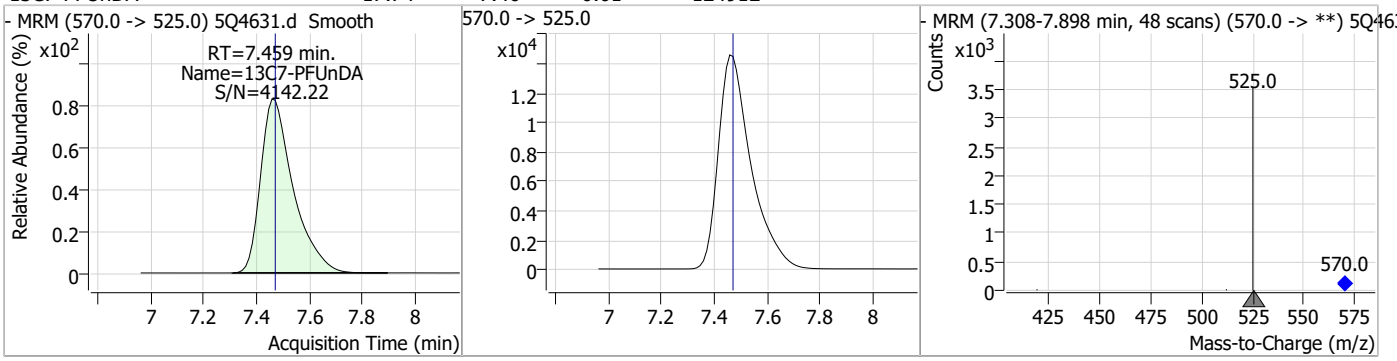


Perfluorinated Compounds by LC/MS/MS

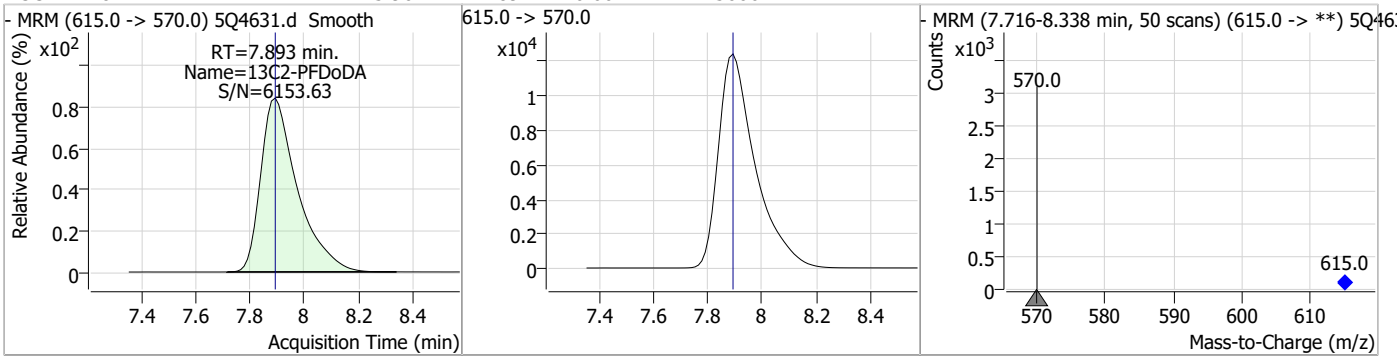
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.23	7.16	-0.01	21554				



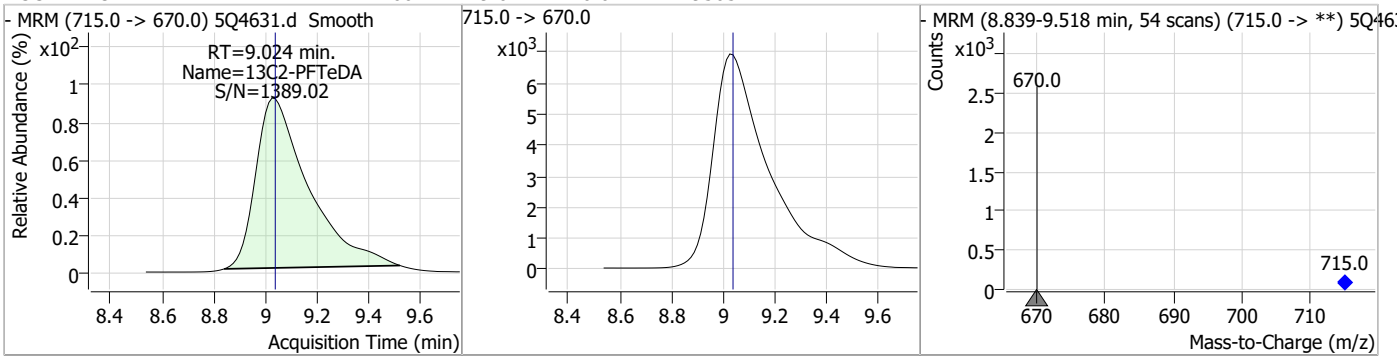
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.74	7.46	-0.01	124912				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.96	7.89	0.00	115666				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.60	9.02	-0.01	95057				



Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4672.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 12:53:20 AM
Sample Name	:	op92764-mb
Vial	:	P5-D8
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	s6q85.batch.bin
Sample Information	:	OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	69620	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	122737	20.00	µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	190683	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	218660	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	383705	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	474169	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	339443	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	456017	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	544381	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	356819	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	155458	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	26698	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	24344	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	36257	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	224520	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	296165	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	206216	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	151710	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	3997	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	24125	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	105996	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	224520	16.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	296165	17.35	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%		
13C2-8:2FTS	7.333	529.0 -> 509.0	206216	15.82	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%		
13C2-PFDoDA	8.307	615.0 -> 570.0	544381	14.80	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%		
13C2-PFTeDA	9.976	715.0 -> 670.0	356819	11.89	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.5%		
13C3-PFBS	3.622	302.0 -> 99.0	26698	17.43	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C3-PFHxS	5.463	402.0 -> 99.0	24344	17.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C4-PFBA	1.949	217.0 -> 172.0	69620	17.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%		
13C4-PFHpA	5.433	367.0 -> 322.0	218660	17.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C5-PFHxA	4.561	318.0 -> 273.0	190683	17.84	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C5-PFPeA	3.405	268.0 -> 223.0	122737	17.51	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%		
13C6-PFDA	7.283	519.0 -> 474.0	339443	16.68	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

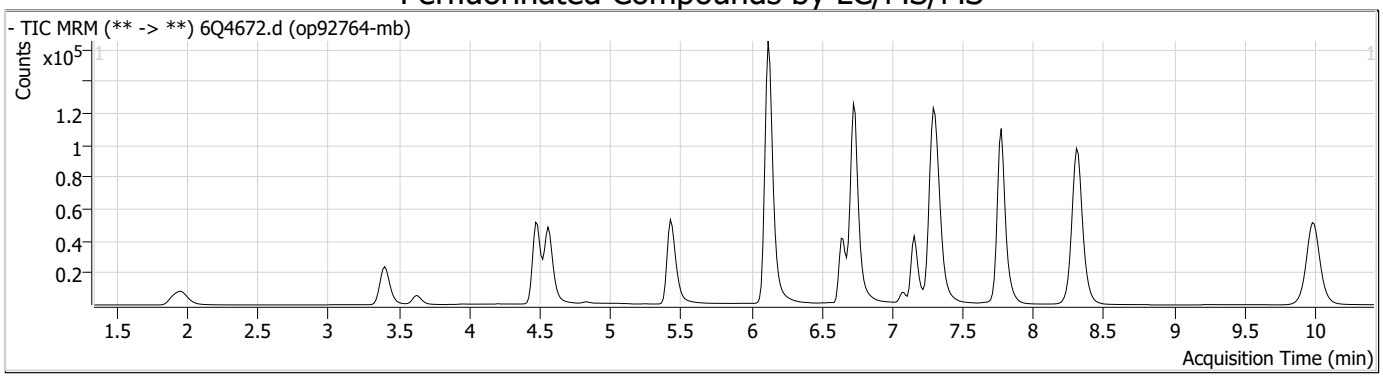
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.4%	
13C7-PFUnDA	7.775	570.0 -> 525.0	456017	17.18 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%	
13C8-FOSA	6.654	506.0 -> 78.0	155458	15.89 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%	
13C8-PFOA	6.138	421.0 -> 376.0	383705	18.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%	
13C8-PFOS	6.717	507.0 -> 99.0	36257	17.09 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%	
13C9-PFNA	6.745	472.0 -> 427.0	474169	18.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%	
d3-MeFOSAA	7.155	573.0 -> 419.0	151710	17.53 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	4002	15.06 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.3%	
d3-MeFOSA	7.085	515.0 -> 169.0	24125	10.66 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.3%	
d5-EtFOSAA	7.302	589.0 -> 419.0	106005	15.62 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

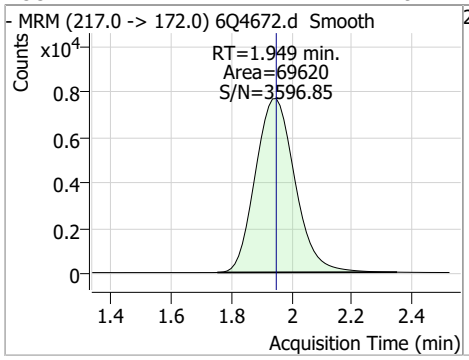
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

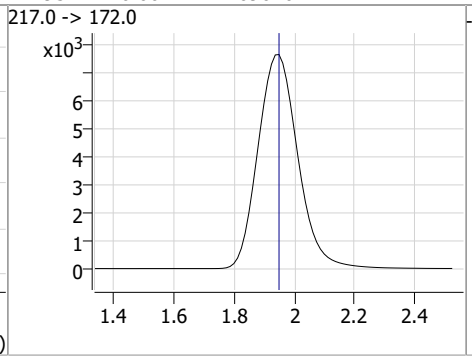
 # = Qualifier out of range, m = manually integrated, + = Area summed

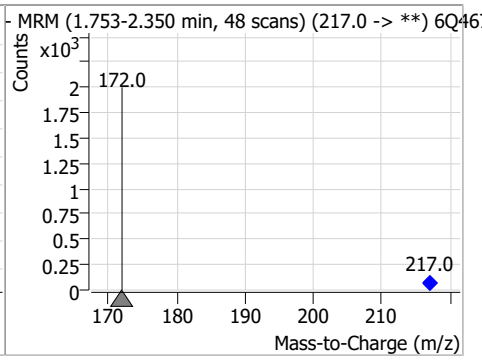
Perfluorinated Compounds by LC/MS/MS



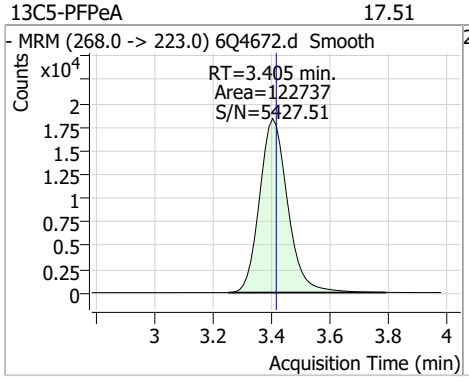
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.49	1.95	0.00	69620				

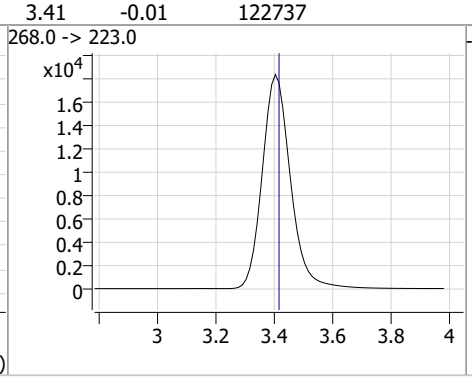


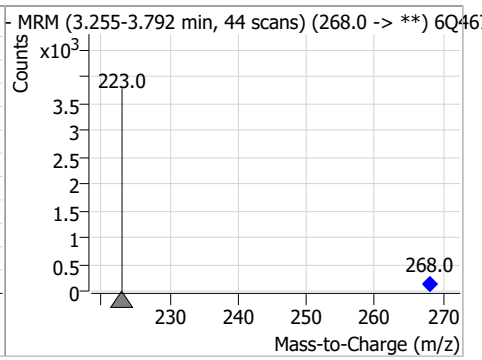




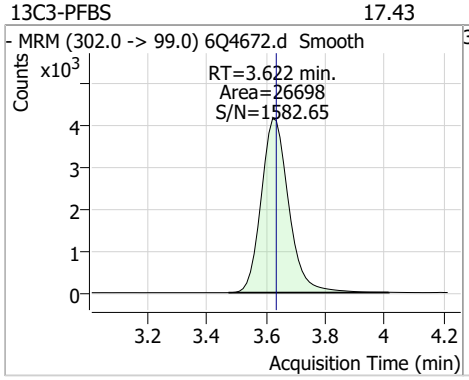
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.51	3.41	-0.01	122737				

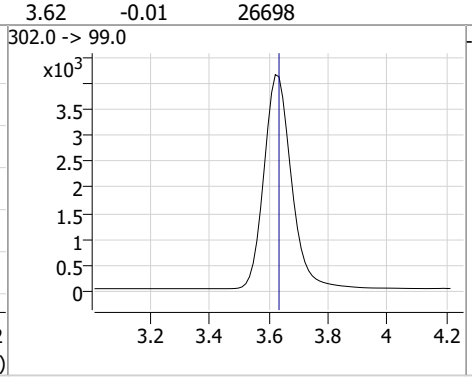


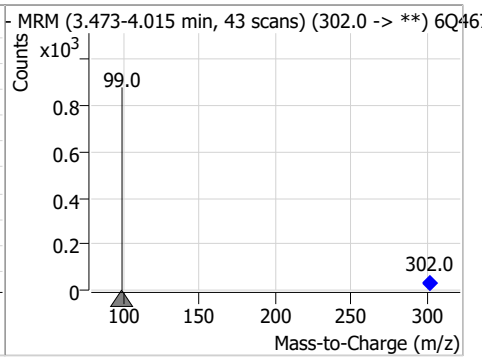




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.43	3.62	-0.01	26698				

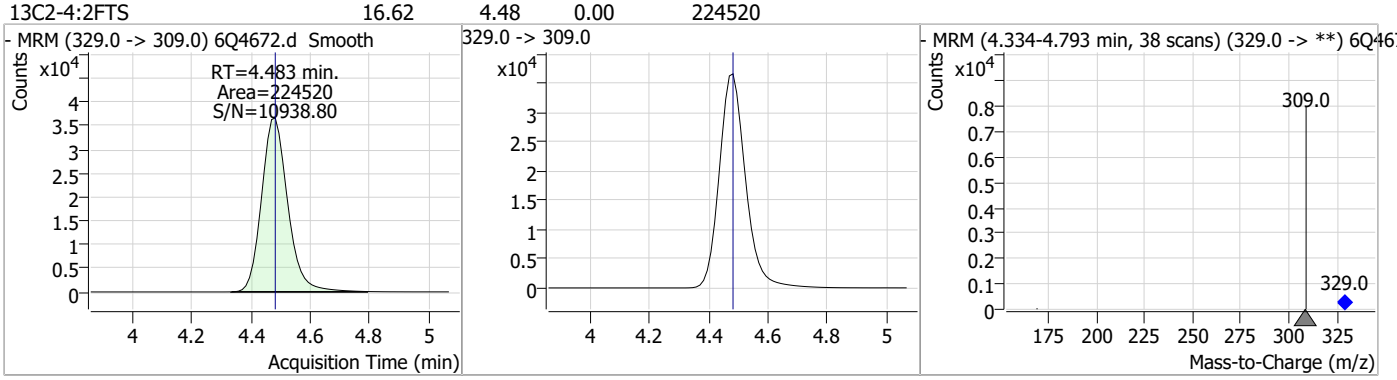




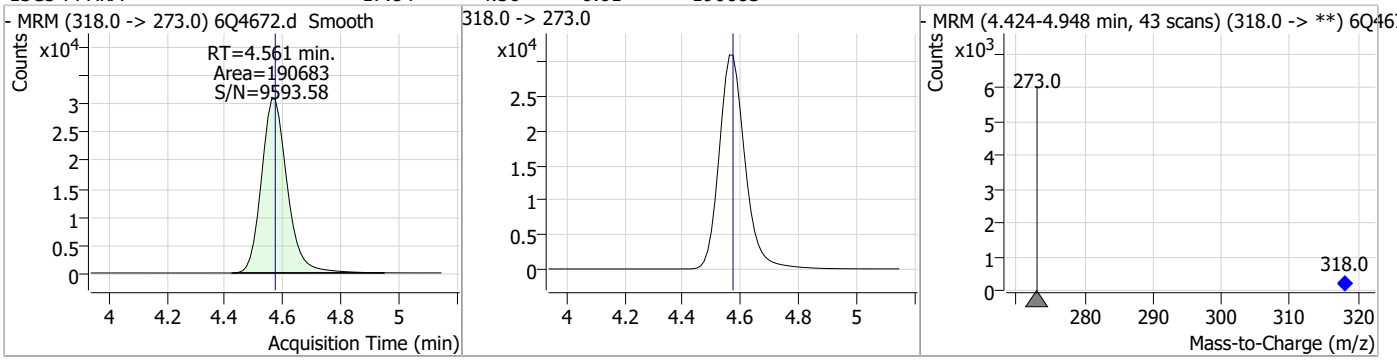


Perfluorinated Compounds by LC/MS/MS

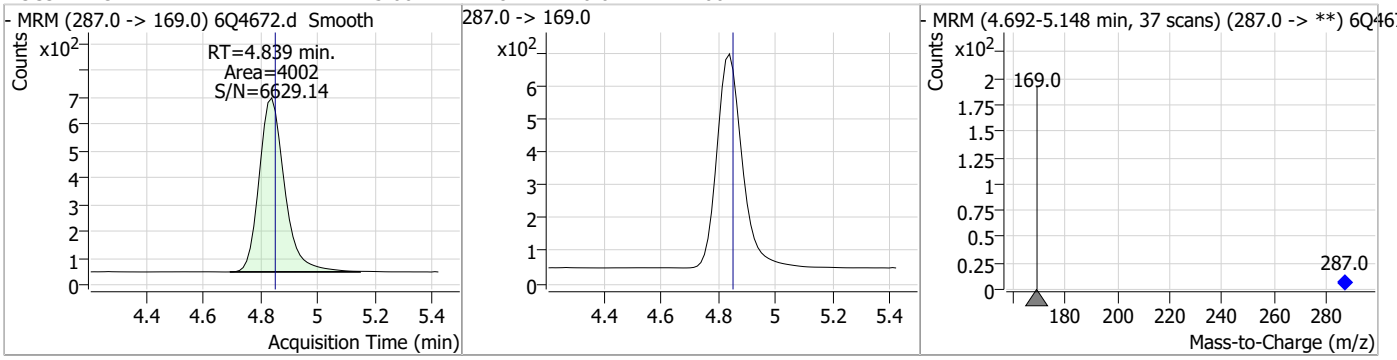
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.62	4.48	0.00	224520				



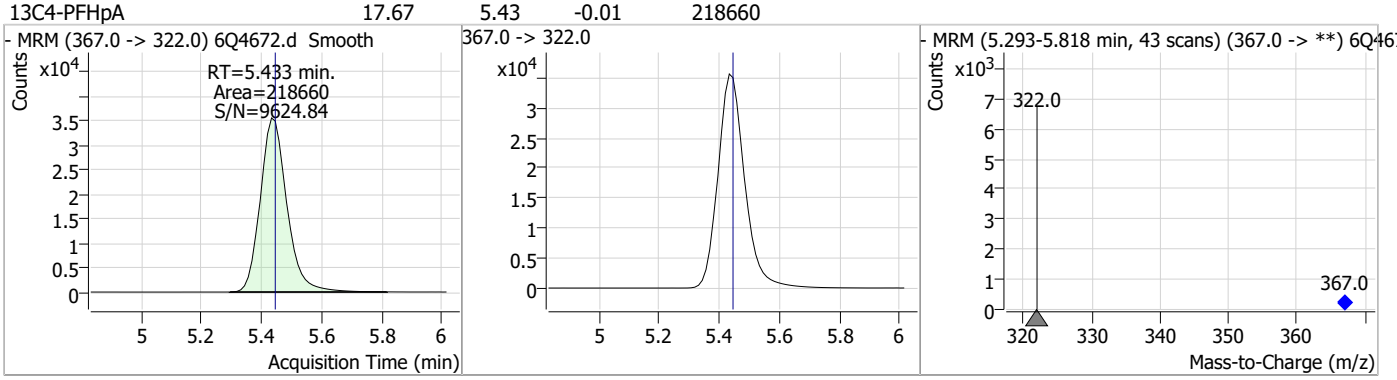
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.84	4.56	-0.01	190683				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.06	4.84	-0.01	4002				

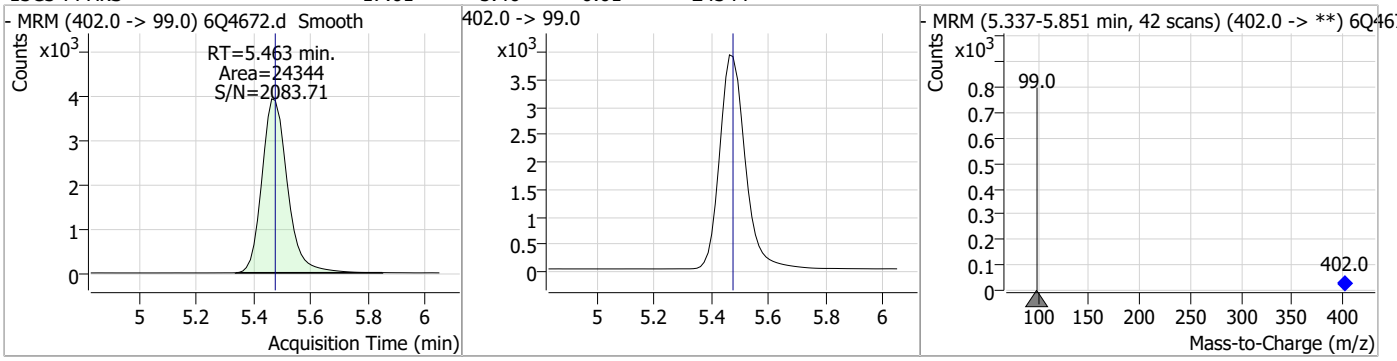


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.67	5.43	-0.01	218660				

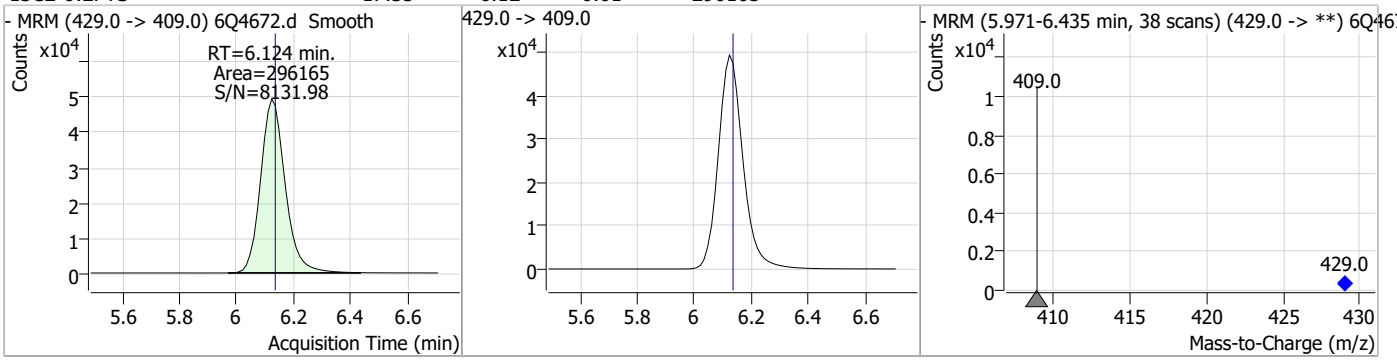


Perfluorinated Compounds by LC/MS/MS

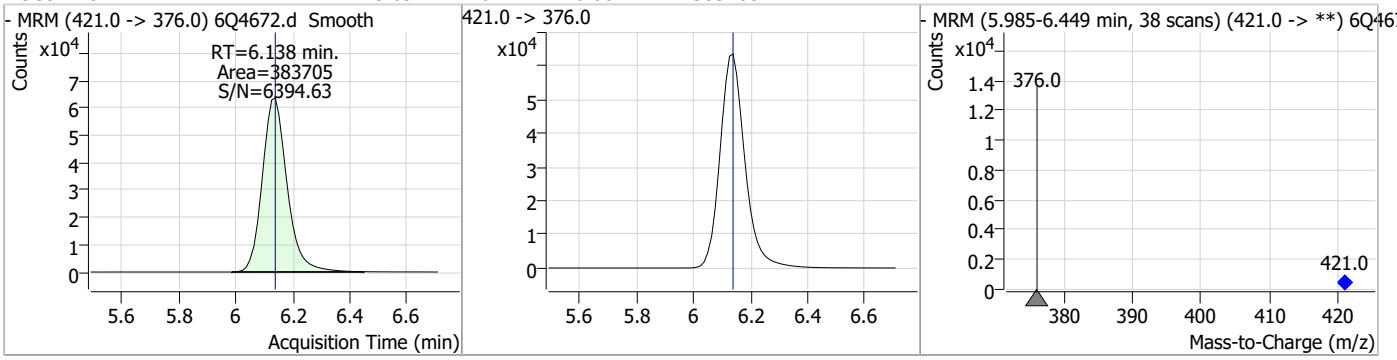
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.61	5.46	-0.01	24344				



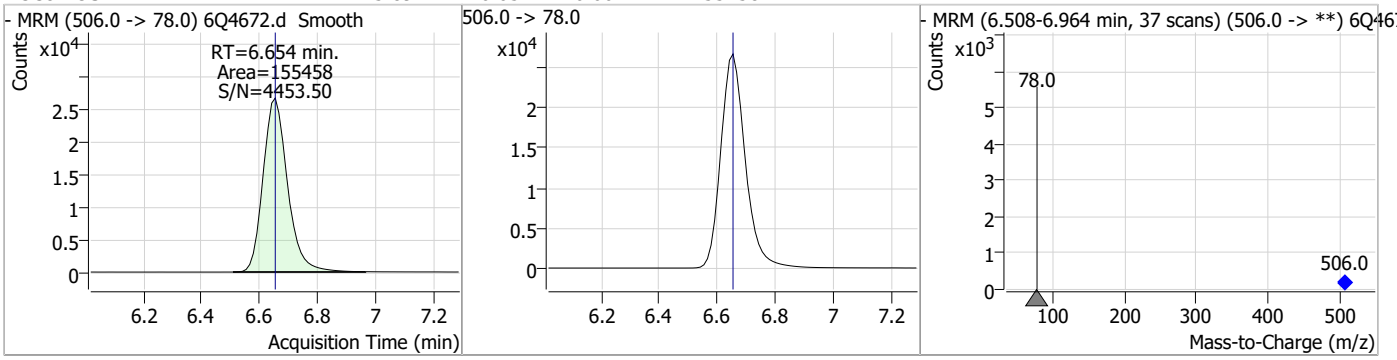
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.35	6.12	-0.01	296165				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.09	6.14	0.00	383705				

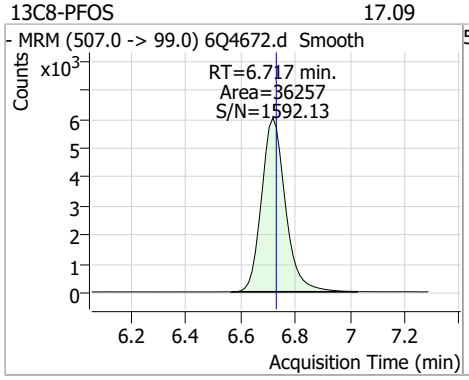


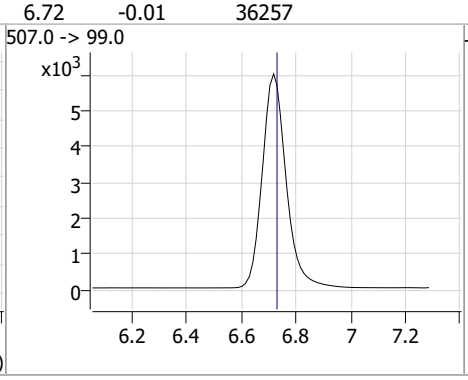
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.89	6.65	0.00	155458				

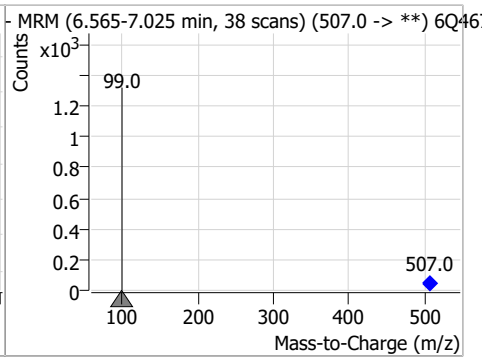


Perfluorinated Compounds by LC/MS/MS

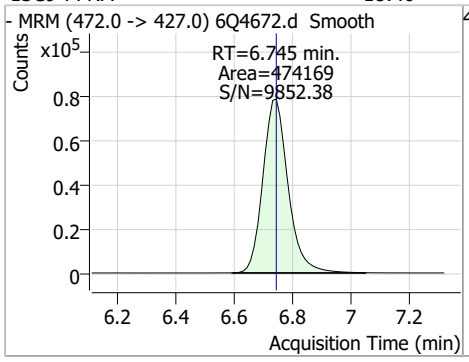
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.09	6.72	-0.01	36257				

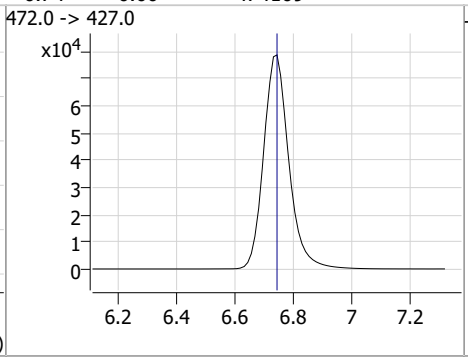


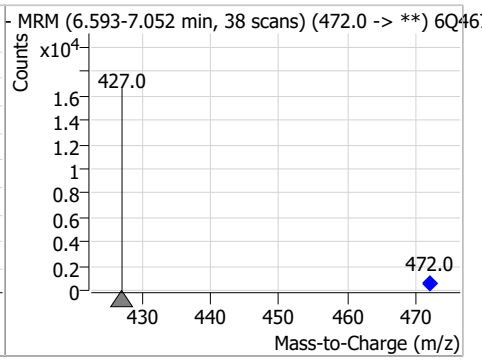




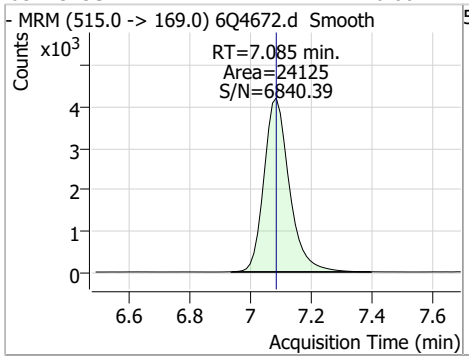
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.40	6.74	0.00	474169				

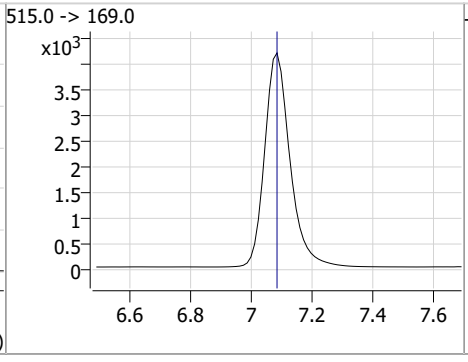


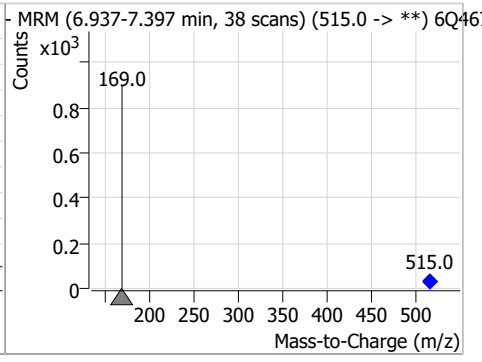




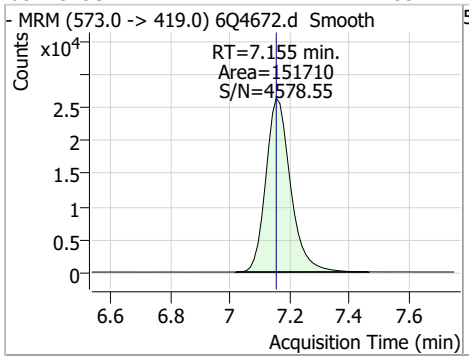
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	10.66	7.08	0.00	24125				

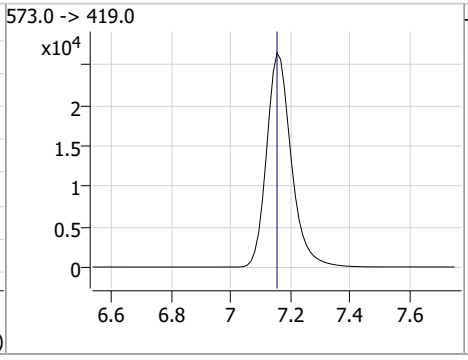


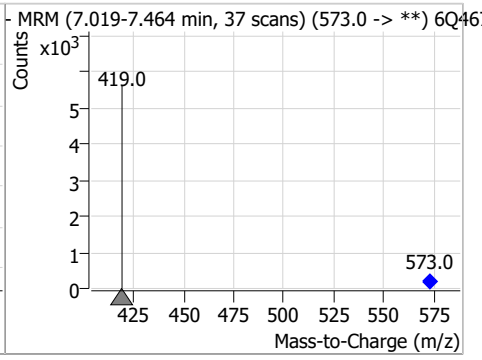




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.53	7.15	0.00	151710				

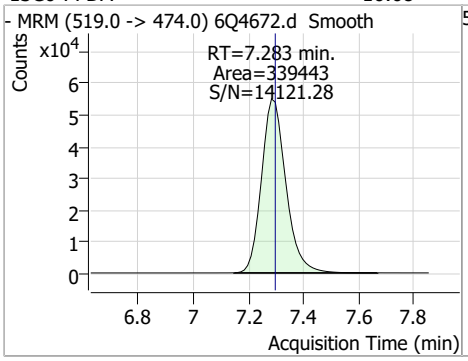


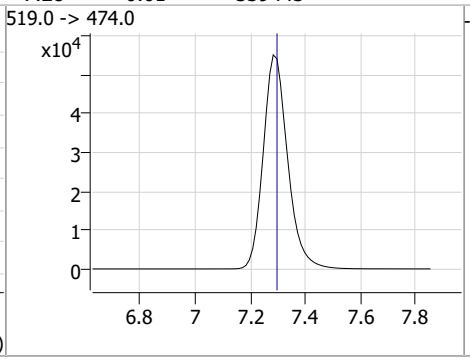


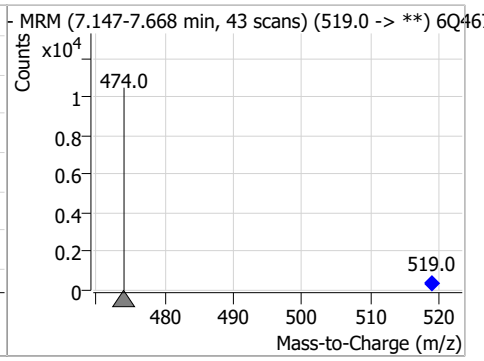


Perfluorinated Compounds by LC/MS/MS

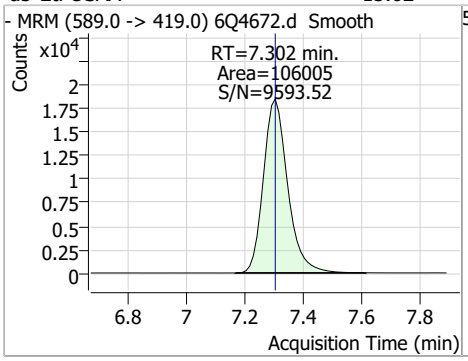
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.68	7.28	-0.01	339443				

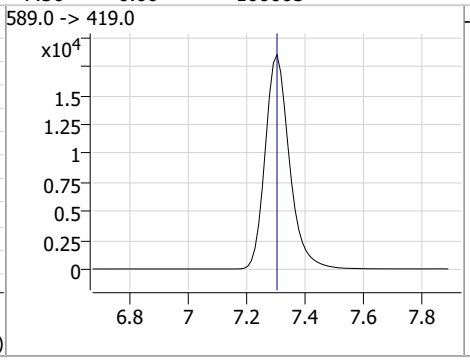


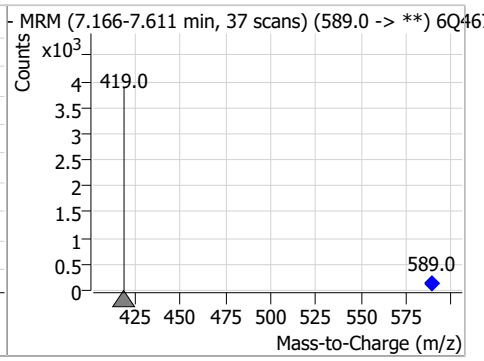




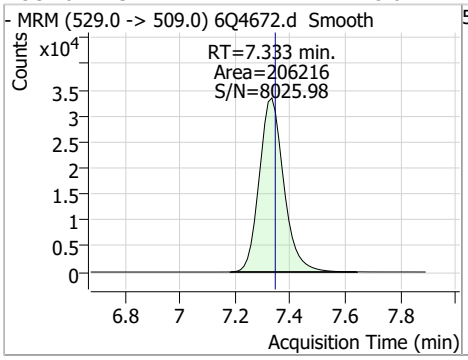
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.62	7.30	0.00	106005				

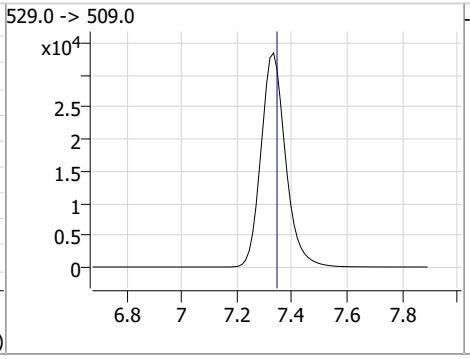


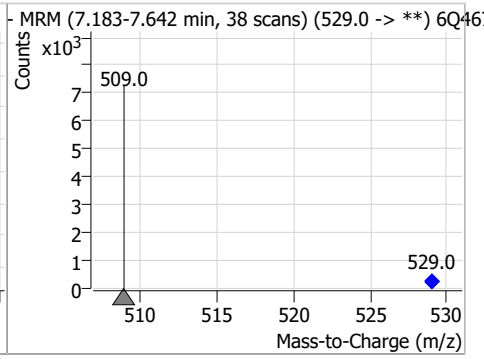




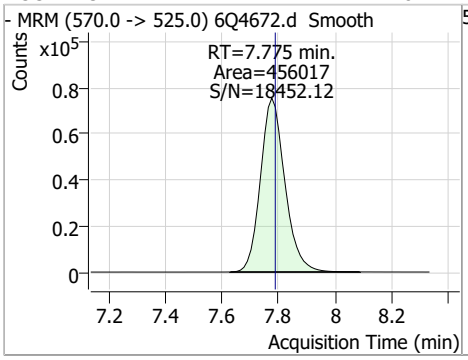
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.82	7.33	-0.01	206216				

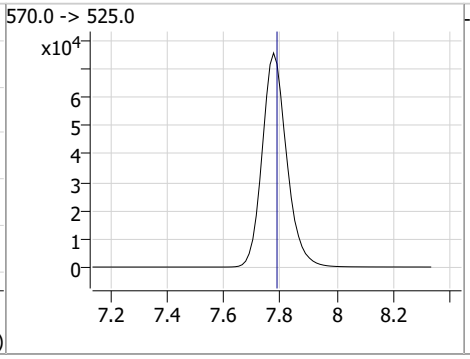


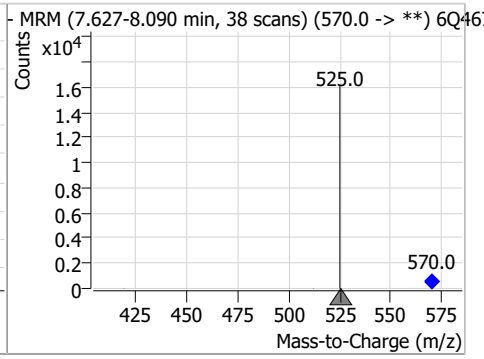




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.18	7.78	-0.01	456017				

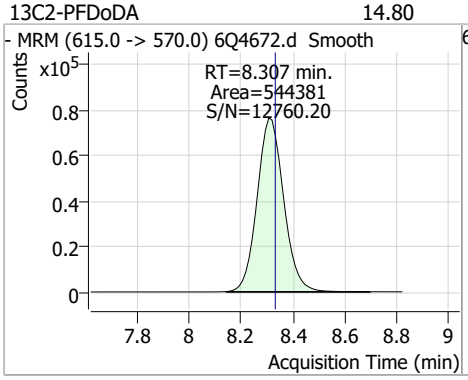


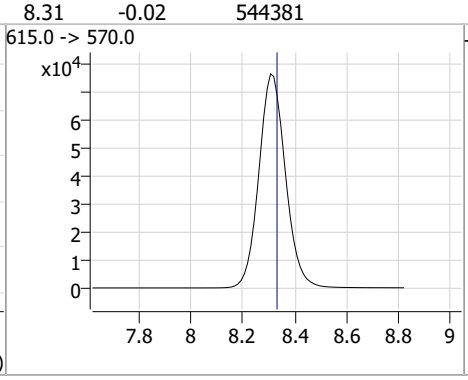


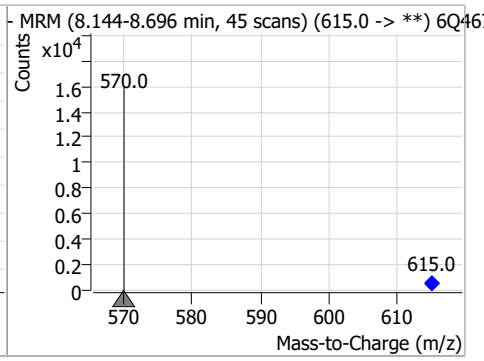


Perfluorinated Compounds by LC/MS/MS

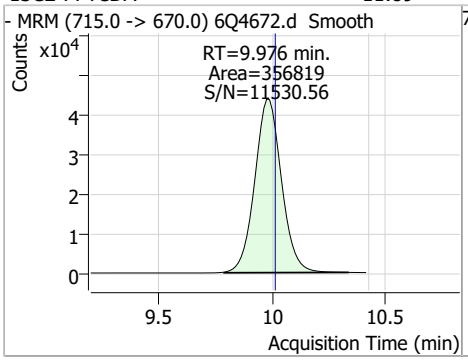
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.80	8.31	-0.02	544381				

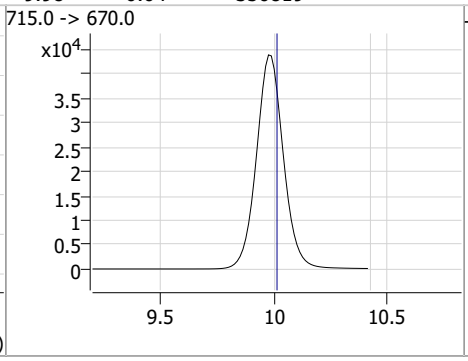


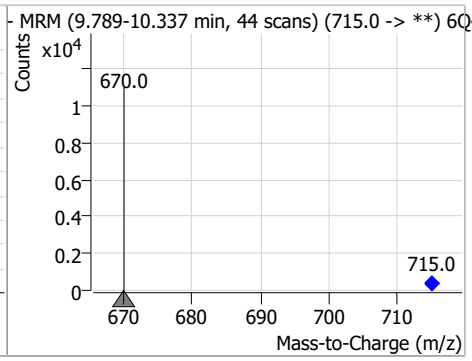




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.89	9.98	-0.04	356819				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4602.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:11:20 PM
Sample Name : op92794-mb
Vial : P1-B5
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,250,,,1.0,1,water

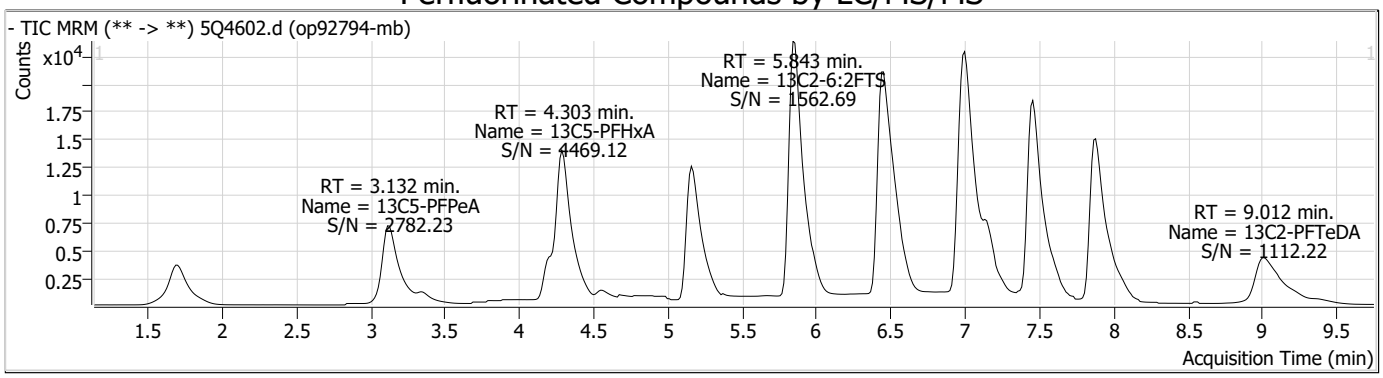
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35202	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	56425	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	84816	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	79679	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	118203	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	128535	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	105445	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	124115	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	114967	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	53163	20.00	µg/L	-0.025
M8-FOSA	6.530	506.0 -> 78.0	18036	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6306	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6491	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	11820	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	26565	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	41941	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	40507	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	20732	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	5577	20.00	µg/L	0.000
M3-MeFOSA	6.977	515.0 -> 169.0	282	20.00	µg/L	0.025
M5-EtFOSAA	7.170	589.0 -> 419.0	20575	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	26565	18.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%		
13C2-6:2FTS	5.843	429.0 -> 409.0	41941	18.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C2-8:2FTS	7.025	529.0 -> 509.0	40507	18.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C2-PFDoDA	7.879	615.0 -> 570.0	114967	15.86	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.3%		
13C2-PFTeDA	9.012	715.0 -> 670.0	53163	7.05	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 35.2%		
13C3-PFBS	3.362	302.0 -> 99.0	6306	19.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-PFHxS	5.206	402.0 -> 99.0	6491	19.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C4-PFBA	1.700	217.0 -> 172.0	35202	19.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	79679	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C5-PFHxA	4.303	318.0 -> 273.0	84816	19.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C5-PFPeA	3.132	268.0 -> 223.0	56425	19.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C6-PFDA	6.989	519.0 -> 474.0	105445	19.59	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

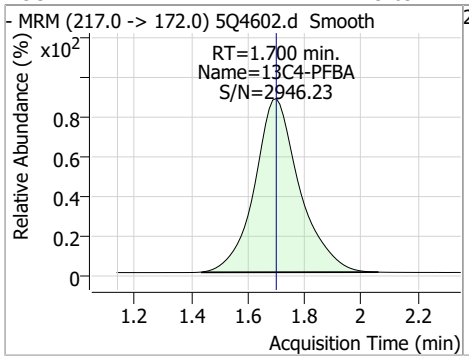
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	124115	17.63	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.1%			
13C8-FOSA	6.530	506.0 -> 78.0	18036	15.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.5%			
13C8-PFOA	5.857	421.0 -> 376.0	118203	19.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-PFOS	6.440	507.0 -> 99.0	11820	18.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
13C9-PFNA	6.455	472.0 -> 427.0	128535	19.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	20732	21.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	5577	16.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.0%			
d3-MeFOSA	6.977	515.0 -> 169.0	282	0.93	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	20575	18.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.497	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	0		µg/L	m	1

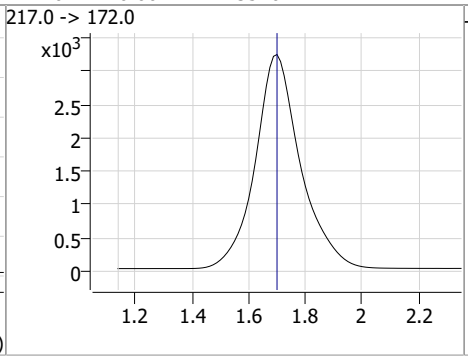
 # = Qualifier out of range, m = manually integrated, + = Area summed

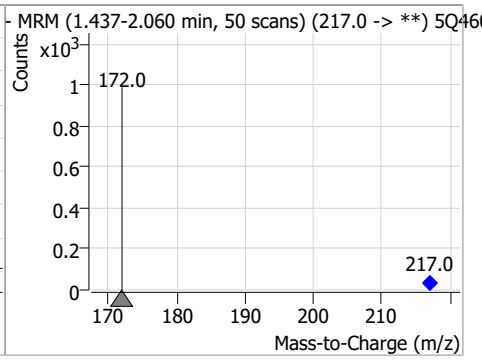
Perfluorinated Compounds by LC/MS/MS



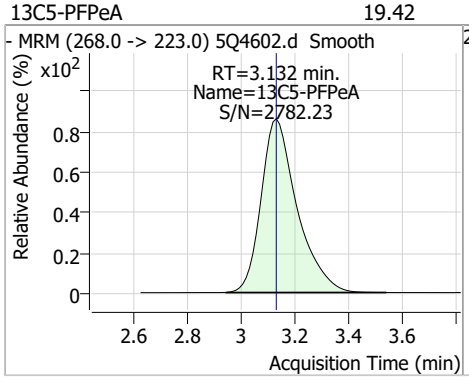
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.69	1.70	0.00	35202				

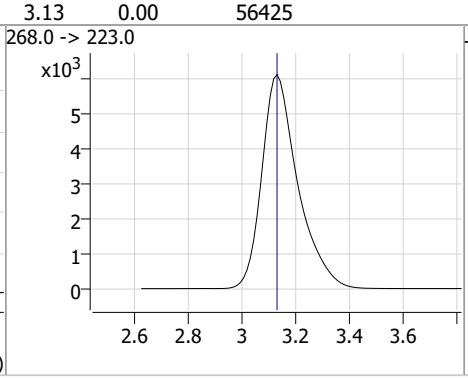


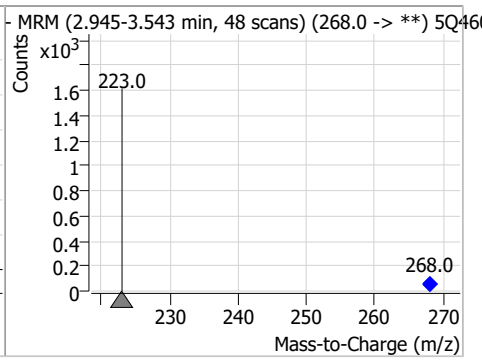




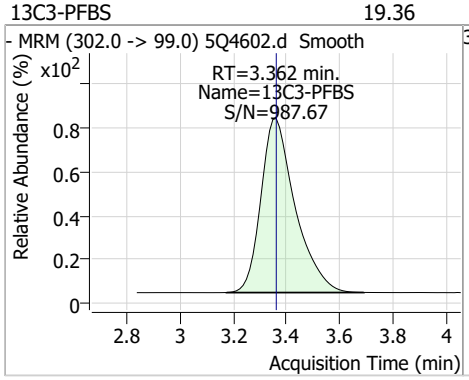
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.42	3.13	0.00	56425				

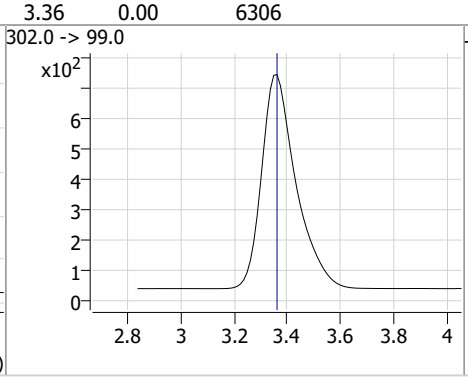


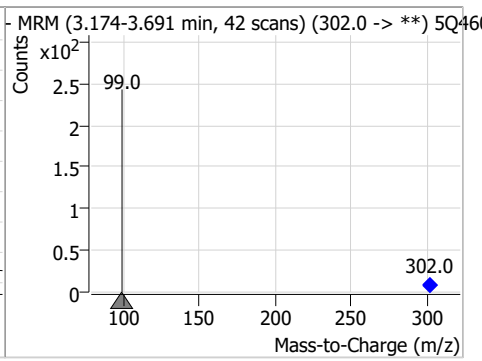




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.36	3.36	0.00	6306				

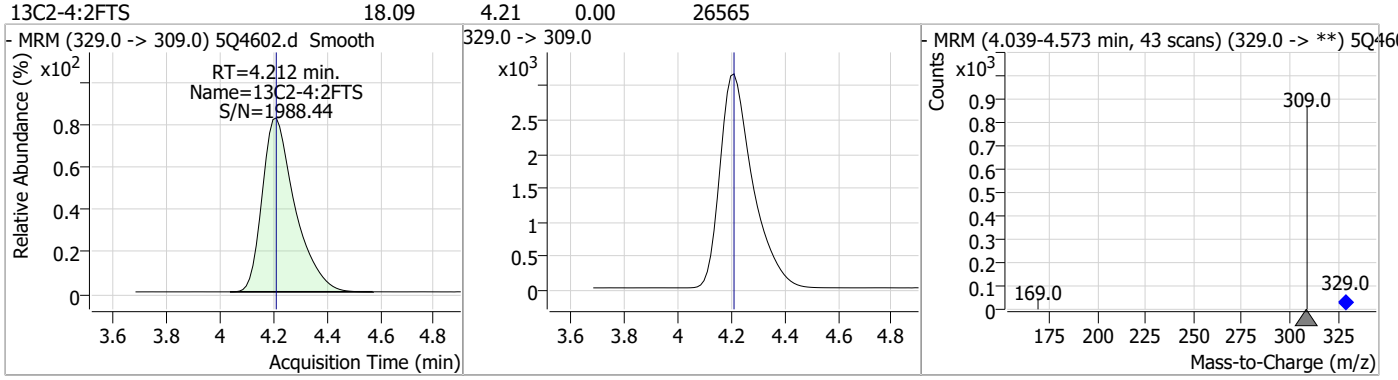




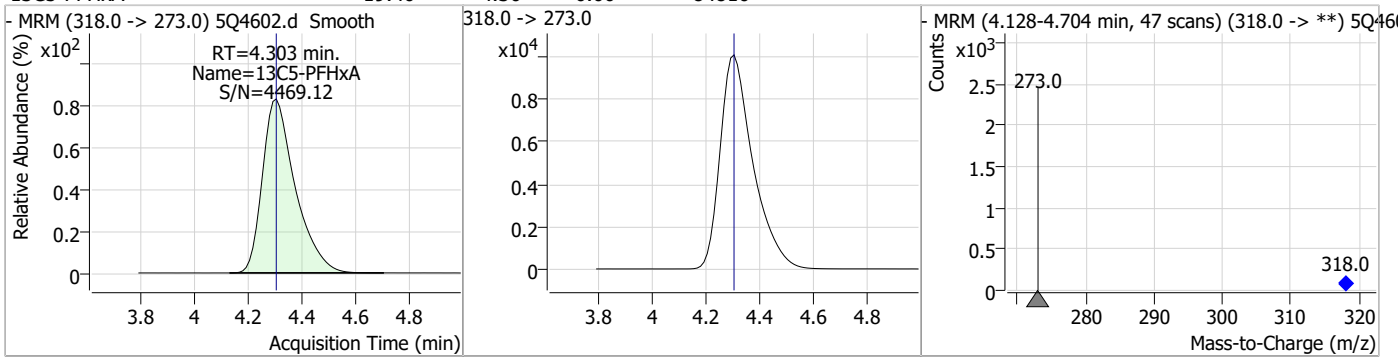


Perfluorinated Compounds by LC/MS/MS

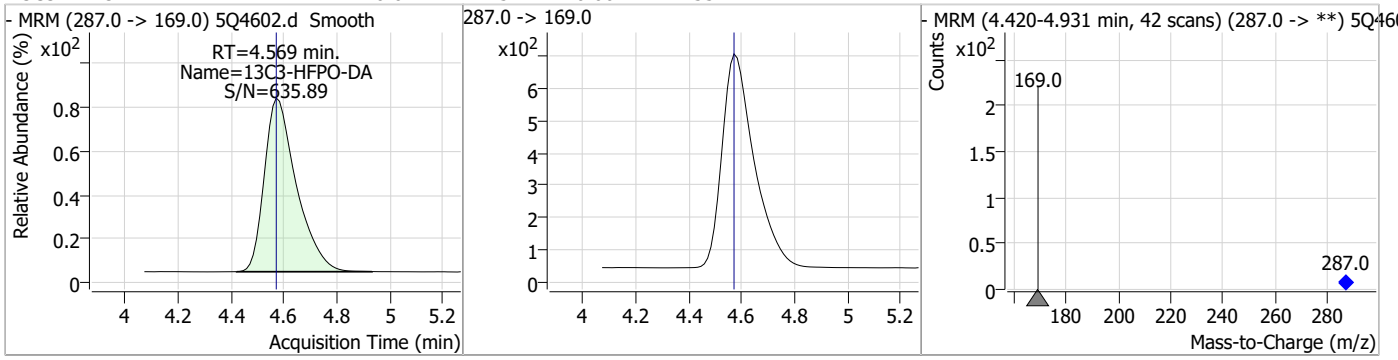
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.09	4.21	0.00	26565				



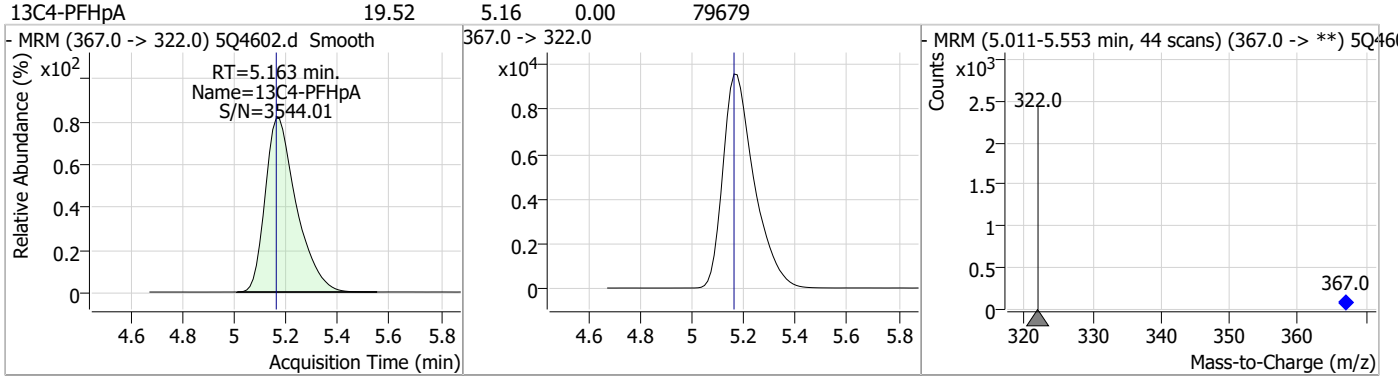
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.40	4.30	0.00	84816				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.61	4.57	0.00	5577				

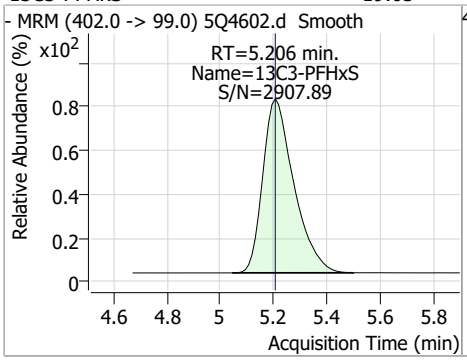


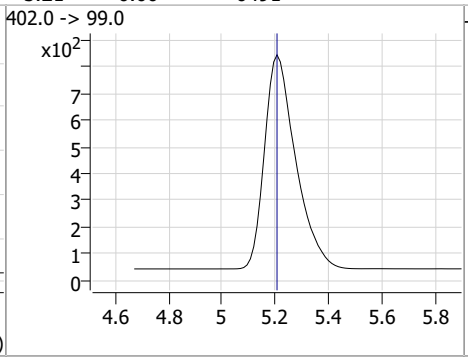
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.52	5.16	0.00	79679				

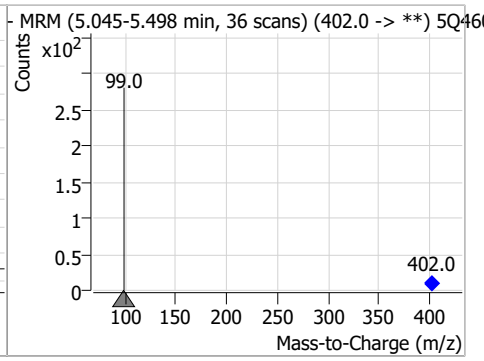


Perfluorinated Compounds by LC/MS/MS

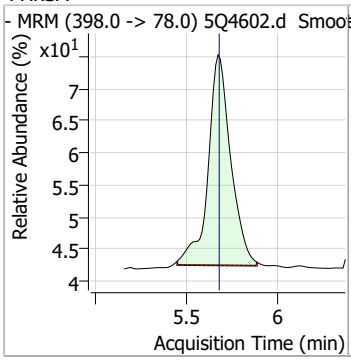
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.03	5.21	0.00	6491				

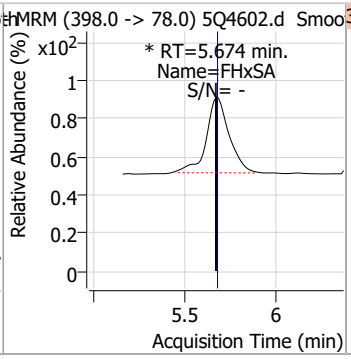


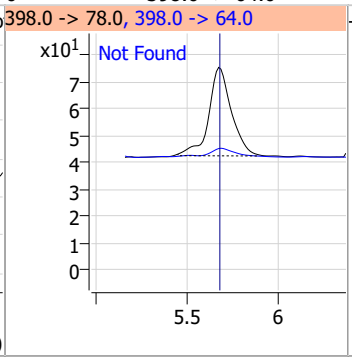


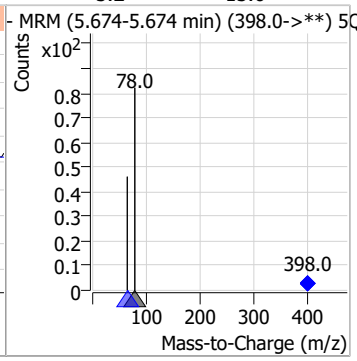


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		5.2	15.6

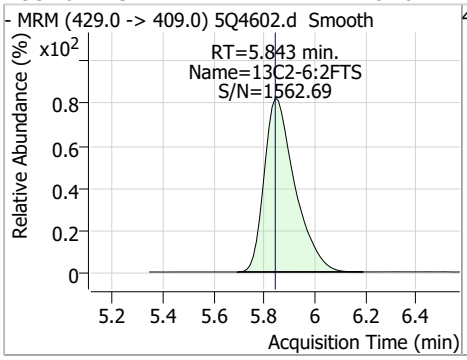


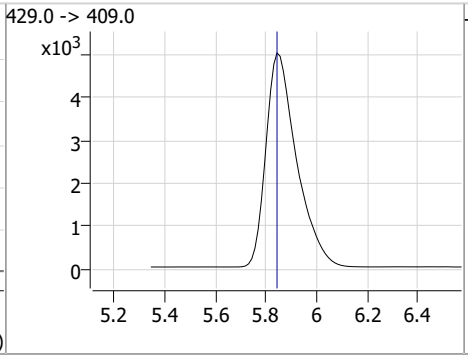


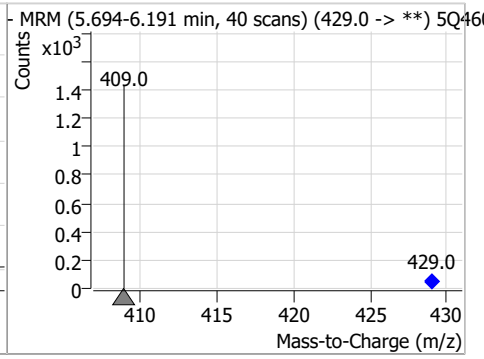




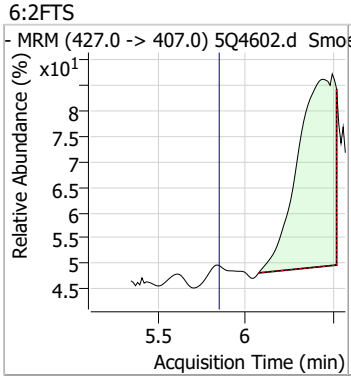
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.76	5.84	0.00	41941				

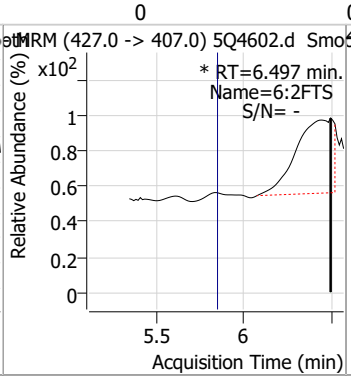


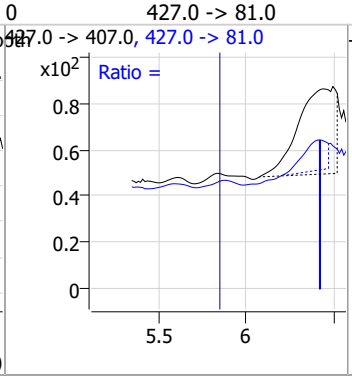


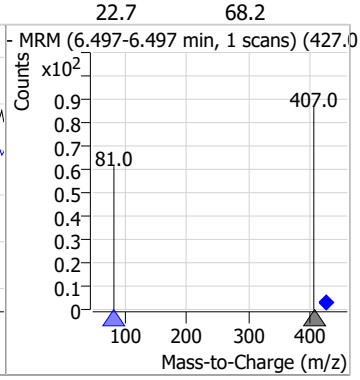


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



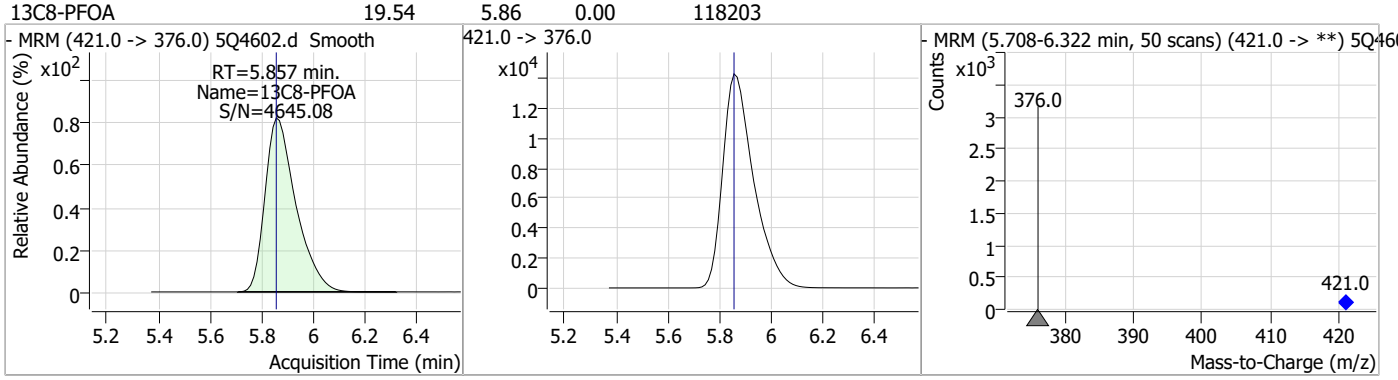




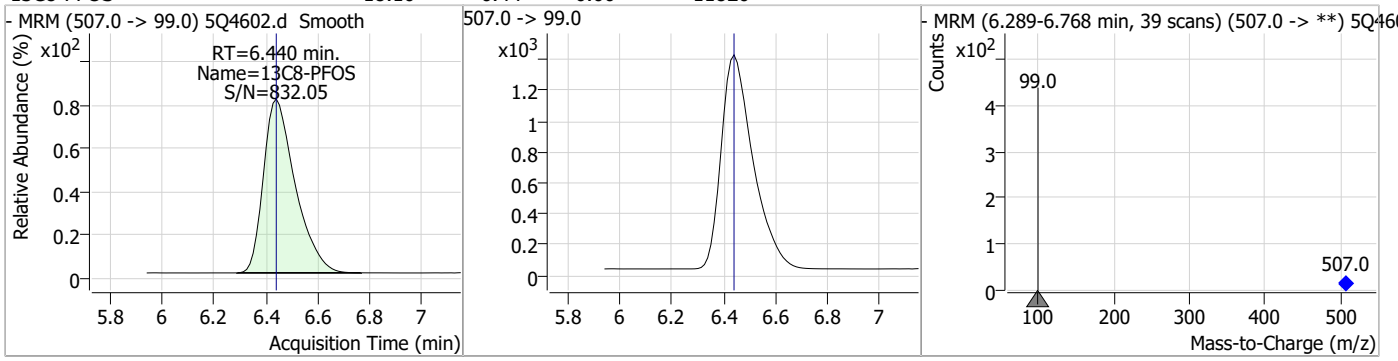


Perfluorinated Compounds by LC/MS/MS

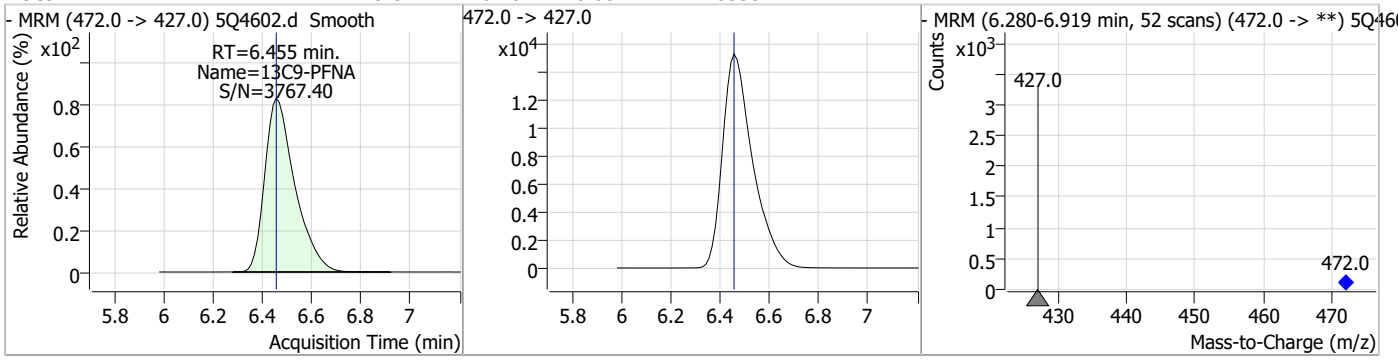
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.54	5.86	0.00	118203				



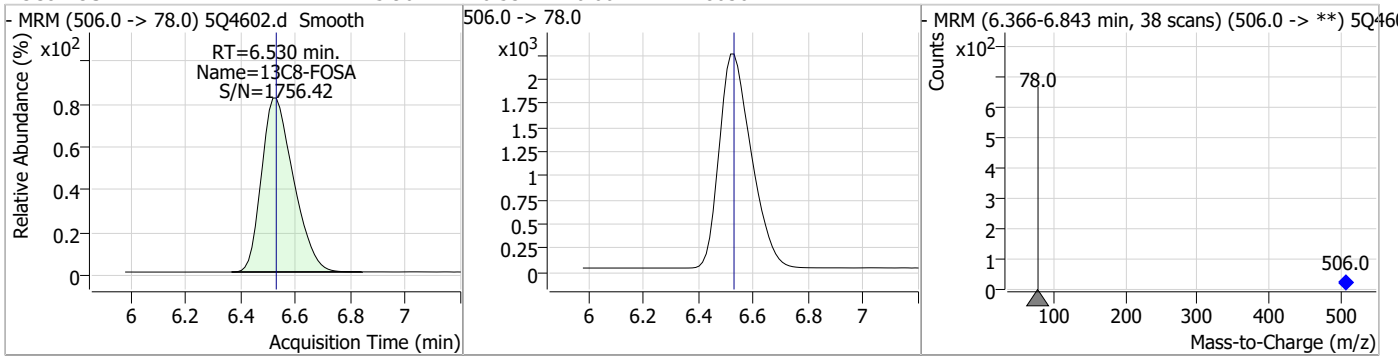
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.10	6.44	0.00	11820				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.57	6.46	0.00	128535				

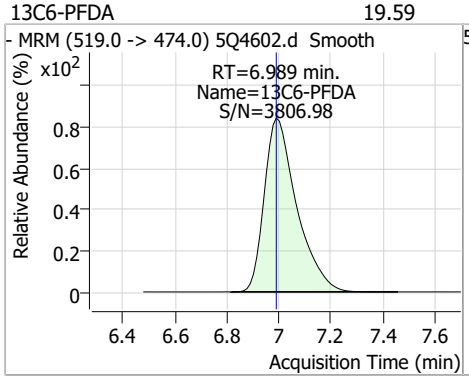


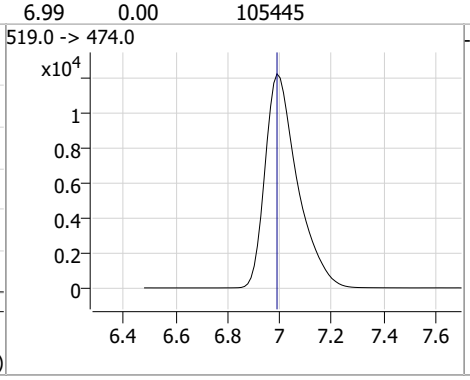
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	15.90	6.53	0.00	18036				

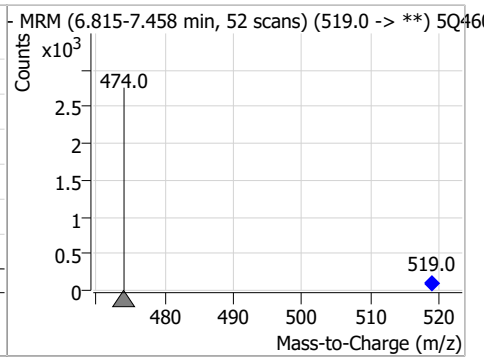


Perfluorinated Compounds by LC/MS/MS

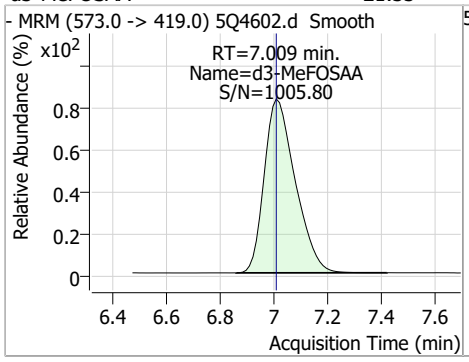
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.59	6.99	0.00	105445				

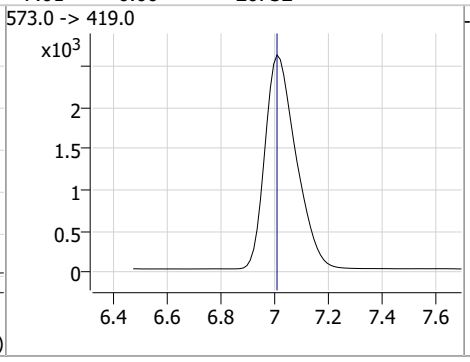


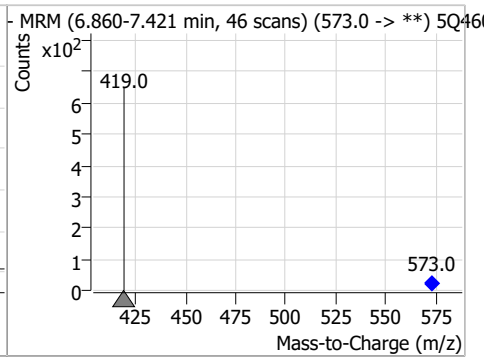




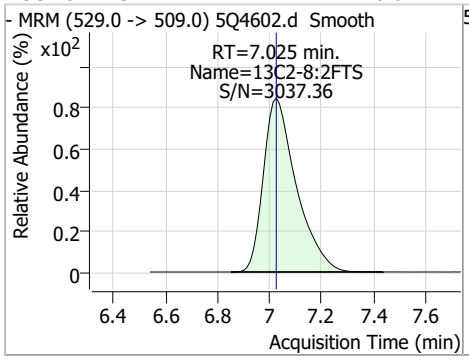
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.33	7.01	0.00	20732				

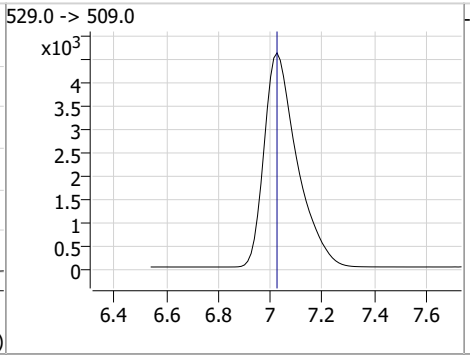


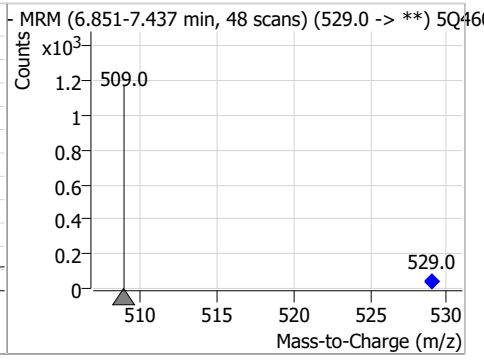




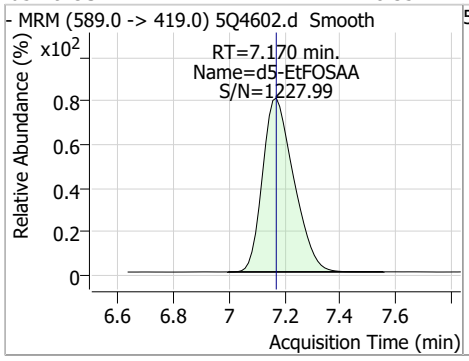
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.04	7.03	0.00	40507				

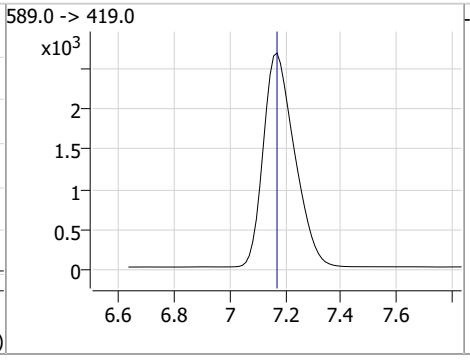


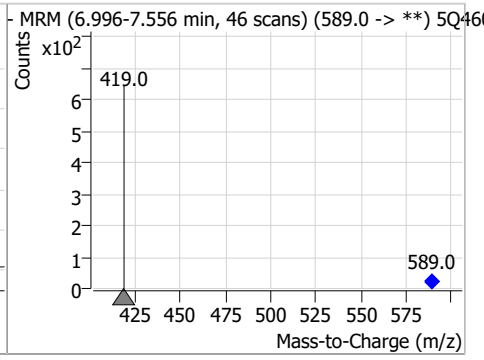




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.35	7.17	0.00	20575				

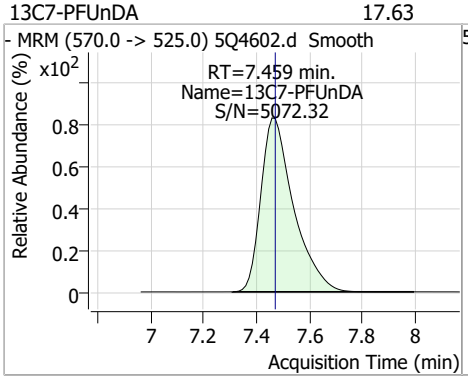


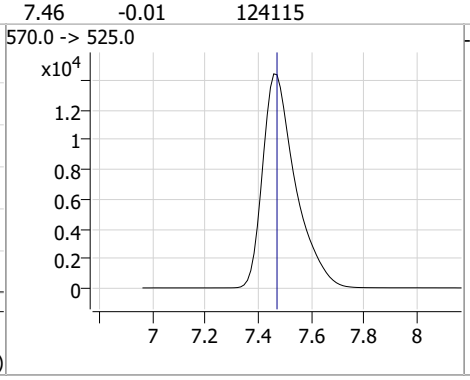


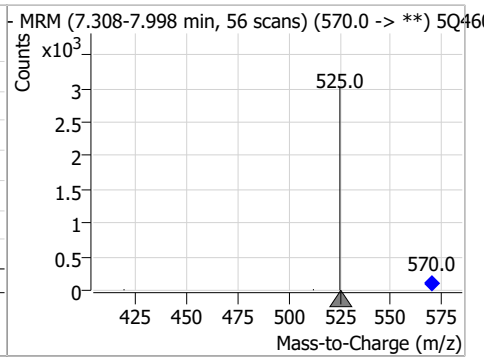


Perfluorinated Compounds by LC/MS/MS

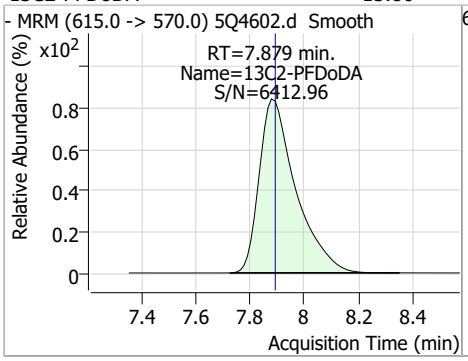
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.63	7.46	-0.01	124115				

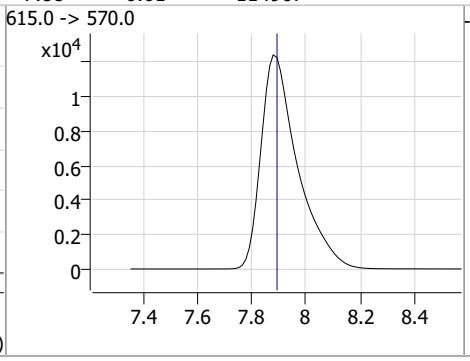


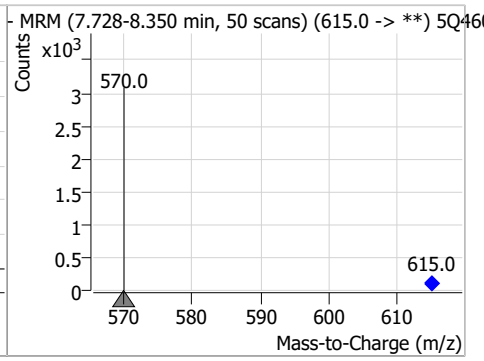




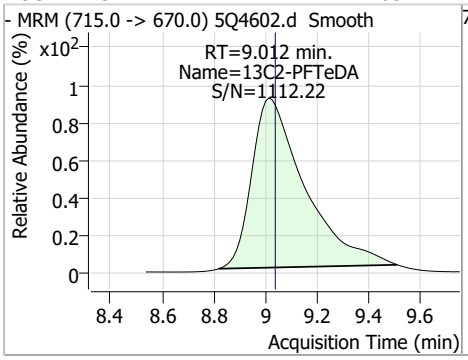
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.86	7.88	-0.01	114967				

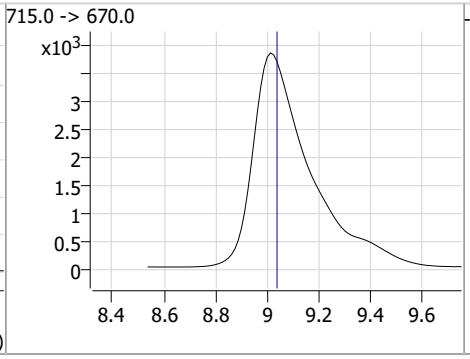


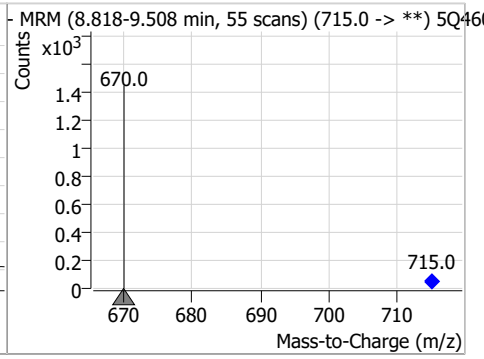




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	7.05	9.01	-0.02	53163				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4565.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:43:44 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

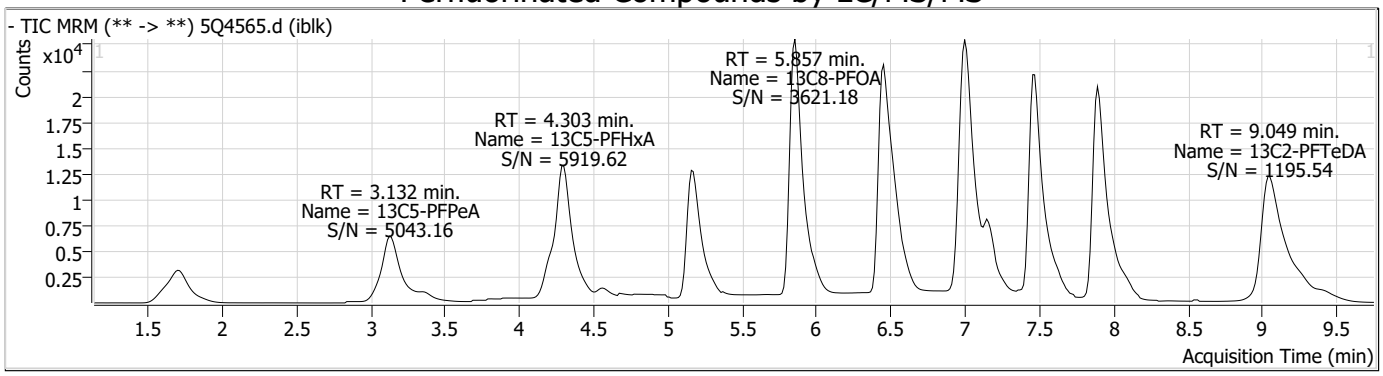
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	34961	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	56343	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	85082	20.00	µg/L	0.000
M4-PFHpA	5.175	367.0 -> 322.0	79210	20.00	µg/L	0.012
M8-PFOA	5.857	421.0 -> 376.0	117787	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	128775	20.00	µg/L	0.000
M6-PFDA	7.002	519.0 -> 474.0	106801	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	139037	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	147637	20.00	µg/L	0.012
M2-PFTeDA	9.049	715.0 -> 670.0	138901	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	22445	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6394	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6754	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12628	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	26403	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	40815	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	41703	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	19890	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6303	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6182	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22870	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	26403	17.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C2-6:2FTS	5.843	429.0 -> 409.0	40815	18.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C2-8:2FTS	7.025	529.0 -> 509.0	41703	18.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-PFDoDA	7.905	615.0 -> 570.0	147637	20.37	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	9.049	715.0 -> 670.0	138901	18.41	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C3-PFBS	3.362	302.0 -> 99.0	6394	19.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFHxS	5.206	402.0 -> 99.0	6754	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFBA	1.700	217.0 -> 172.0	34961	19.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFHpA	5.175	367.0 -> 322.0	79210	19.40	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C5-PFHxA	4.303	318.0 -> 273.0	85082	19.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C5-PFPeA	3.132	268.0 -> 223.0	56343	19.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C6-PFDA	7.002	519.0 -> 474.0	106801	19.84	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

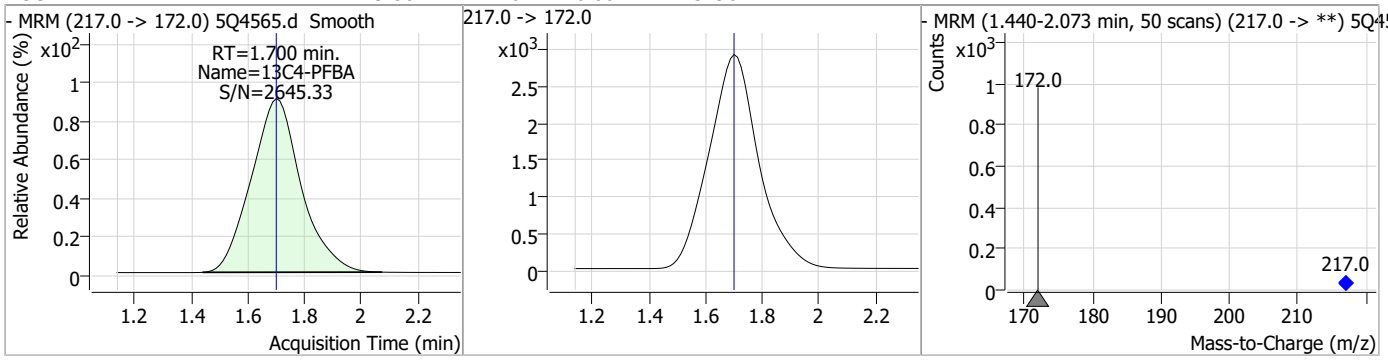
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C7-PFUnDA	7.471	570.0 -> 525.0	139037	19.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-FOSA	6.530	506.0 -> 78.0	22445	19.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C8-PFOA	5.857	421.0 -> 376.0	117787	19.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
13C8-PFOS	6.440	507.0 -> 99.0	12628	19.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C9-PFNA	6.455	472.0 -> 427.0	128775	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19890	20.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6303	18.77	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
d3-MeFOSA	6.952	515.0 -> 169.0	6182	20.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22870	20.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.547	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

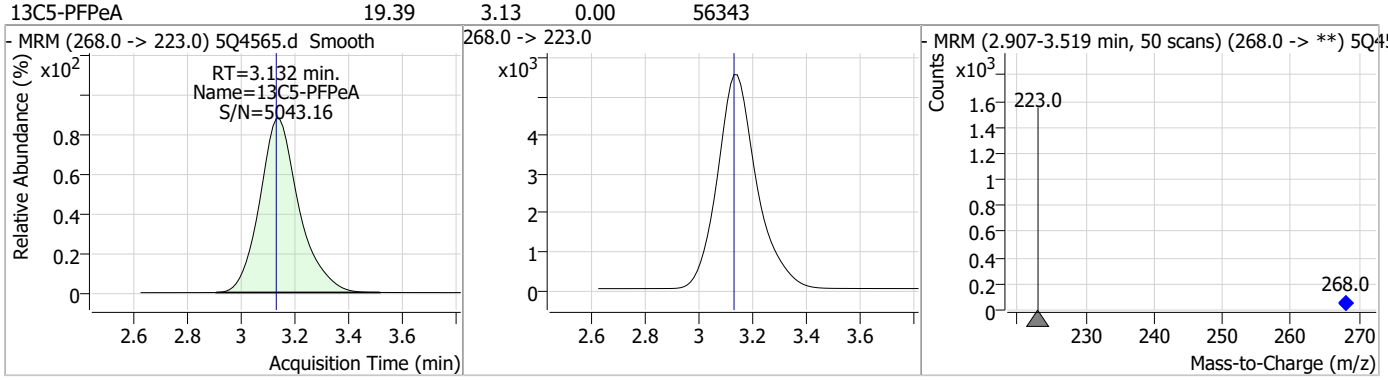
Perfluorinated Compounds by LC/MS/MS



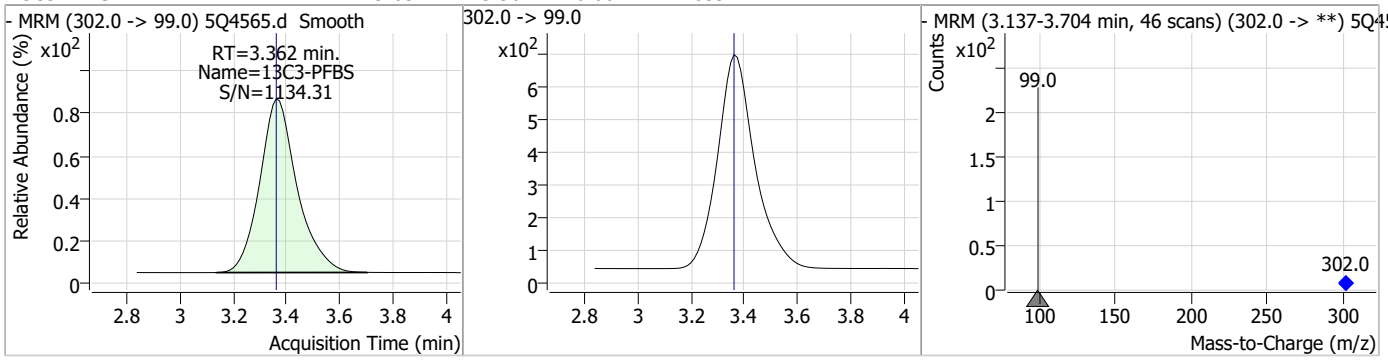
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.56	1.70	0.00	34961				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.39	3.13	0.00	56343				

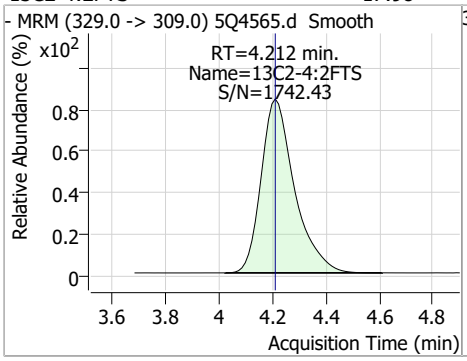


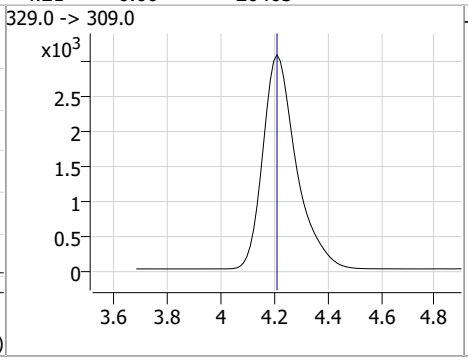
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.63	3.36	0.00	6394				

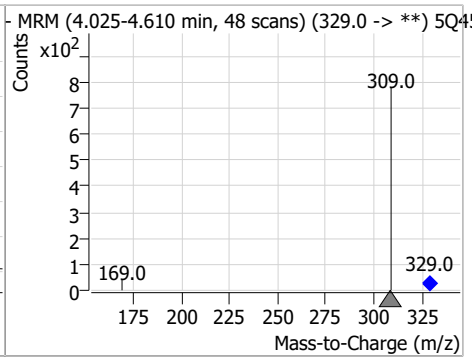


Perfluorinated Compounds by LC/MS/MS

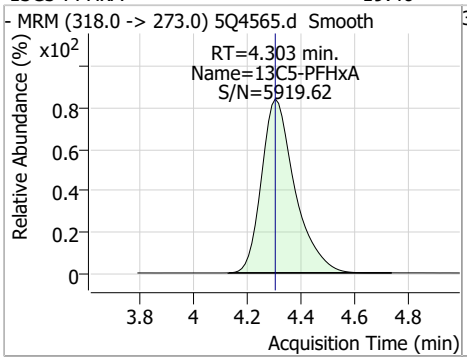
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.98	4.21	0.00	26403				

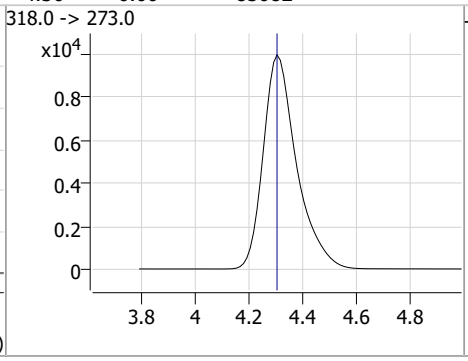


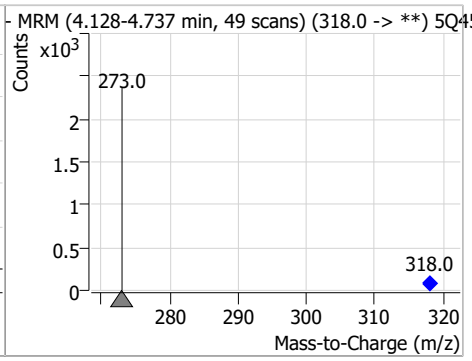




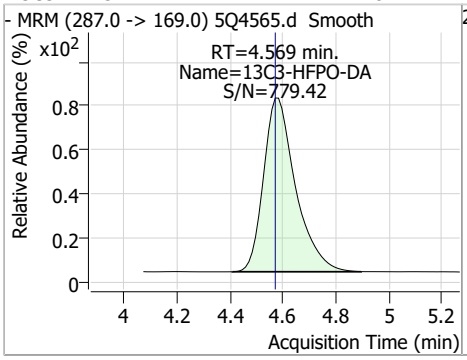
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.46	4.30	0.00	85082				

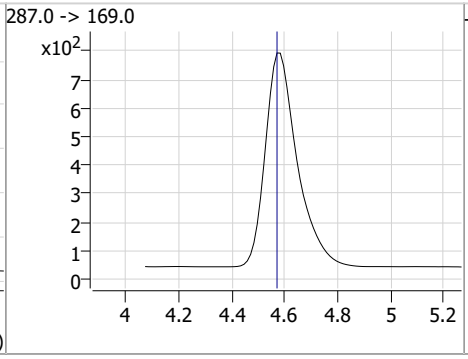


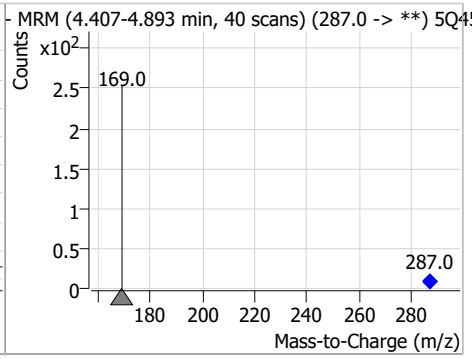




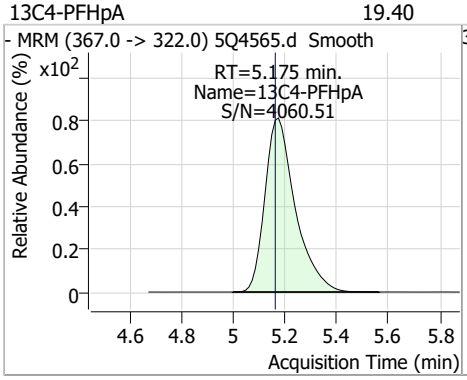
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.77	4.57	0.00	6303				

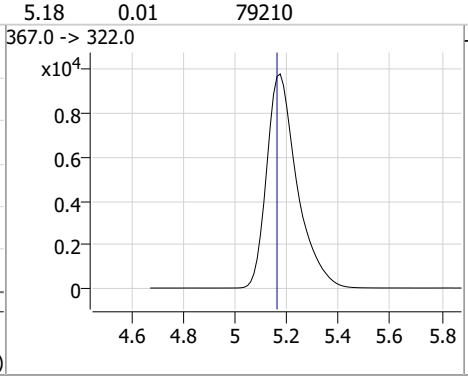


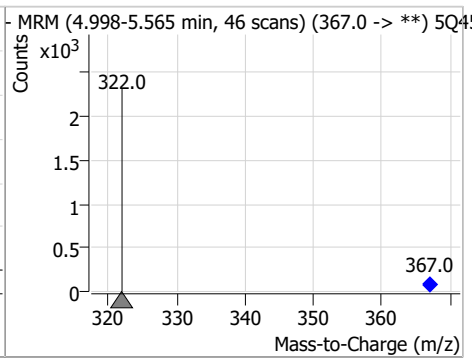




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.40	5.18	0.01	79210				

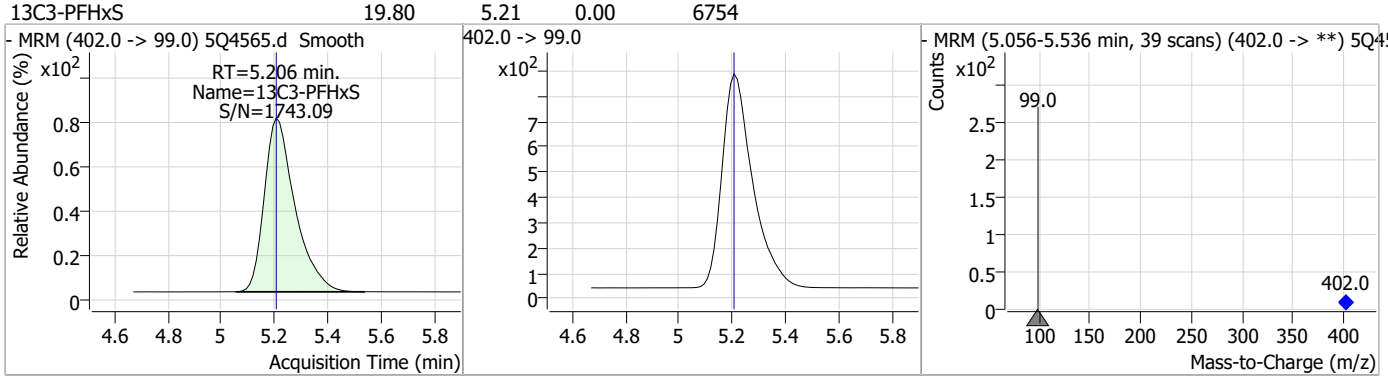




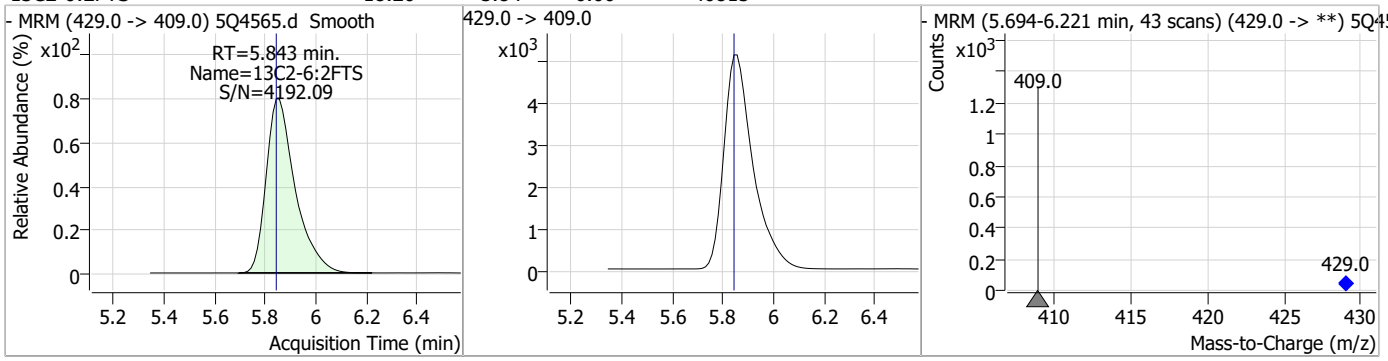


Perfluorinated Compounds by LC/MS/MS

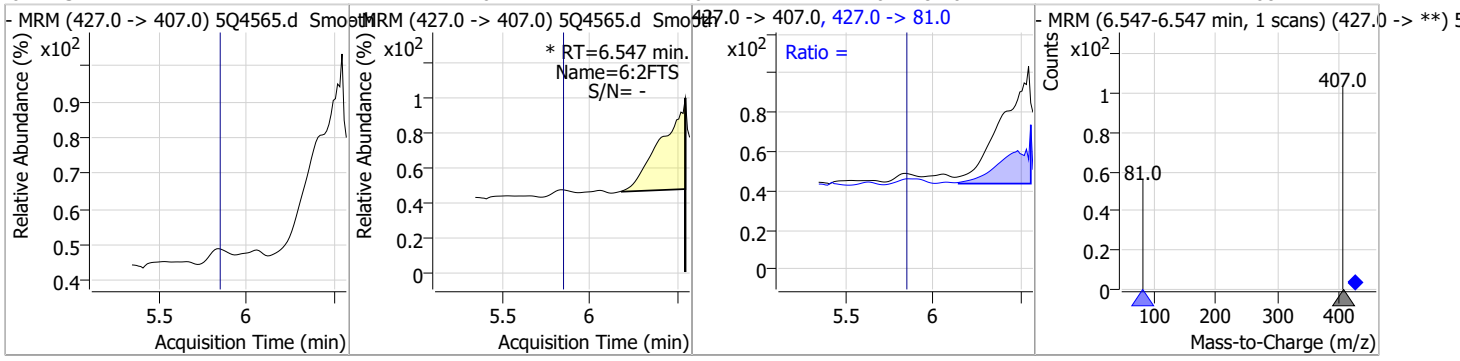
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.80	5.21	0.00	6754				



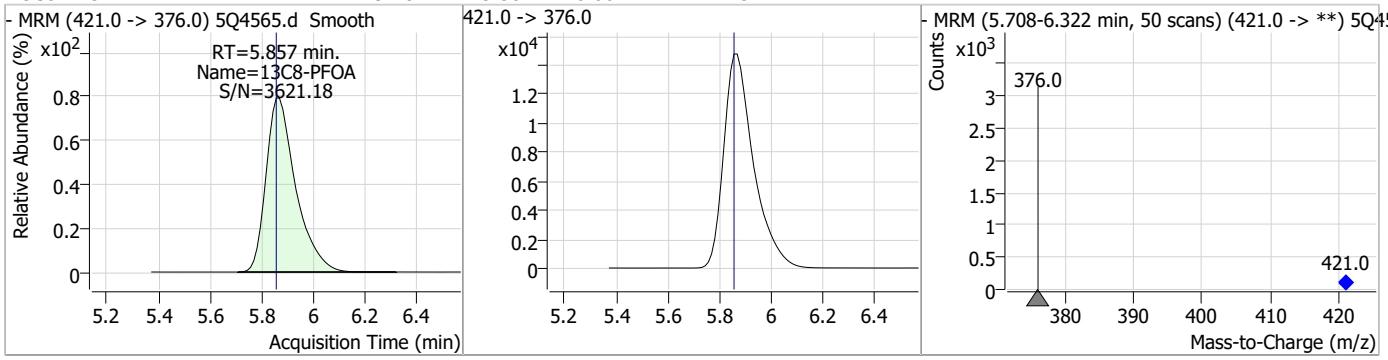
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.26	5.84	0.00	40815				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

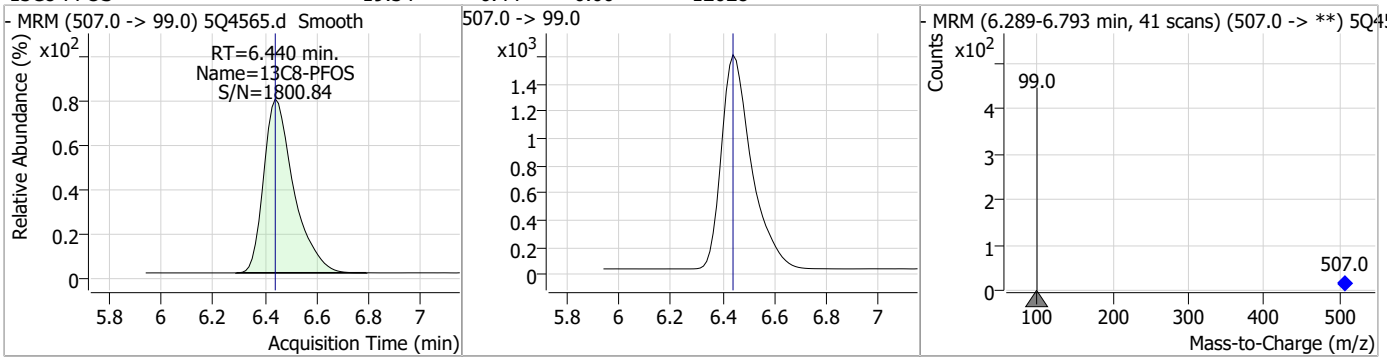


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.48	5.86	0.00	117787				

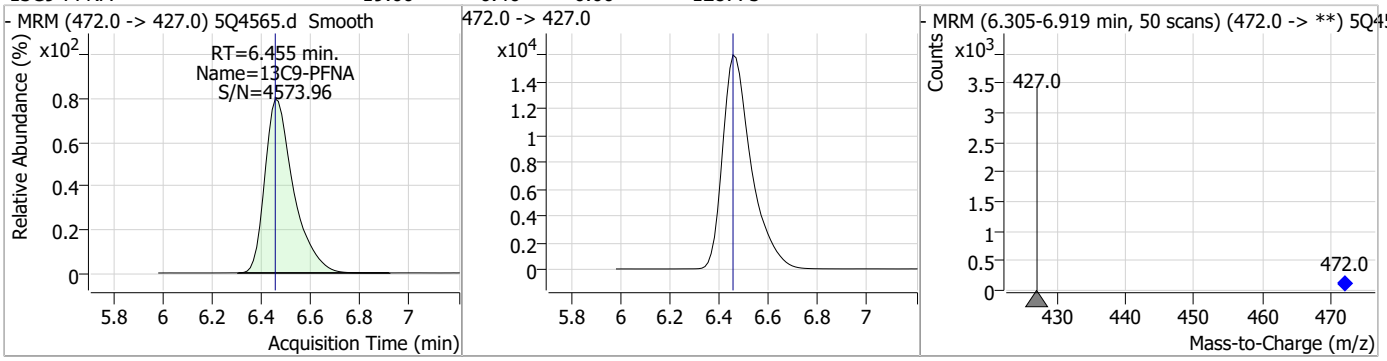


Perfluorinated Compounds by LC/MS/MS

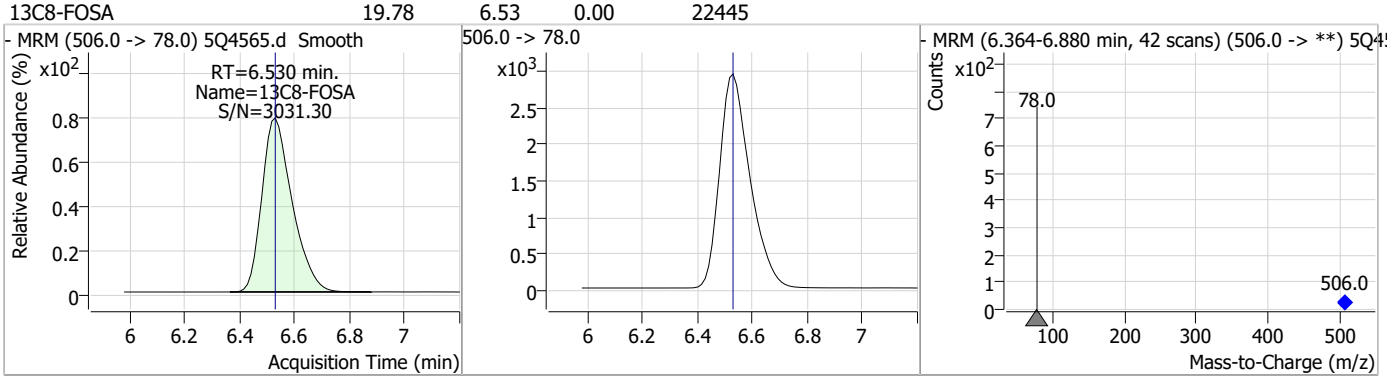
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.34	6.44	0.00	12628				



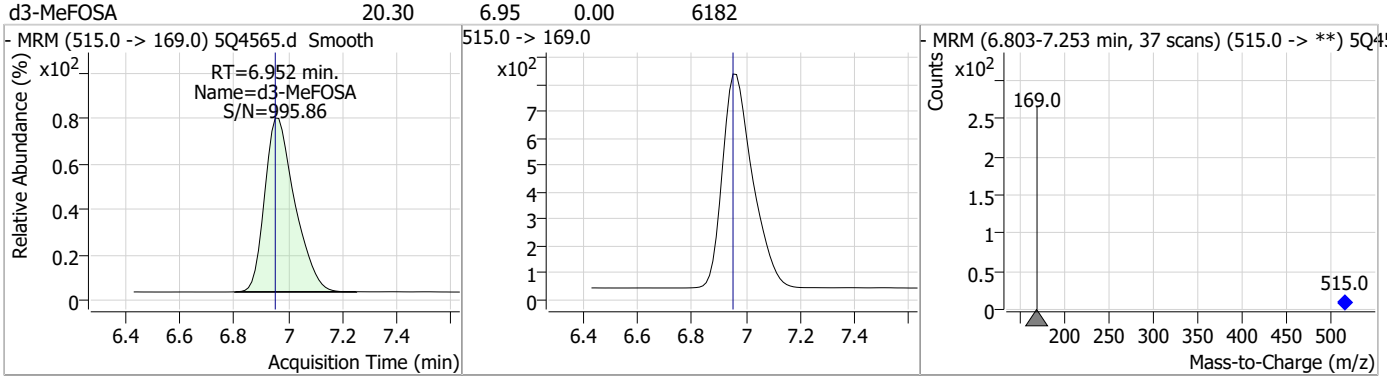
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.60	6.46	0.00	128775				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.78	6.53	0.00	22445				

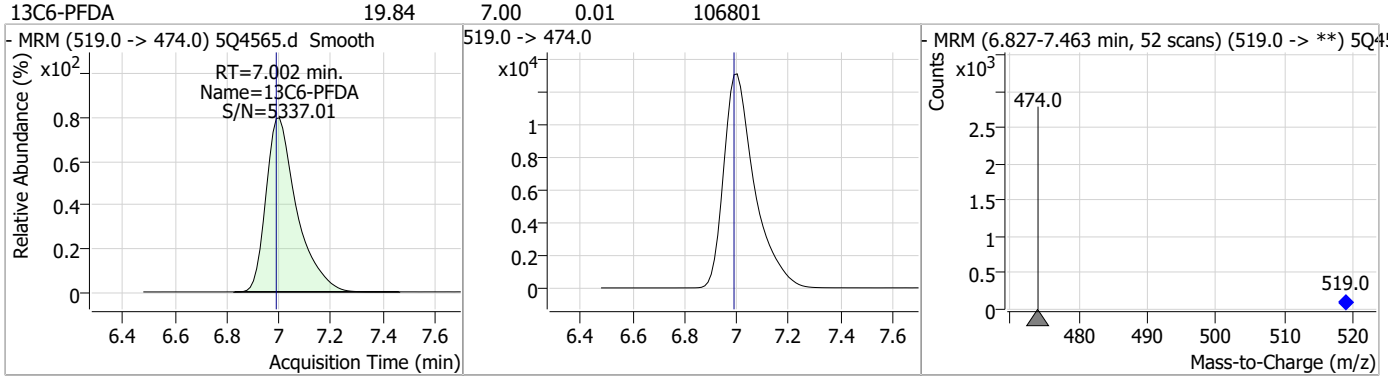


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.30	6.95	0.00	6182				

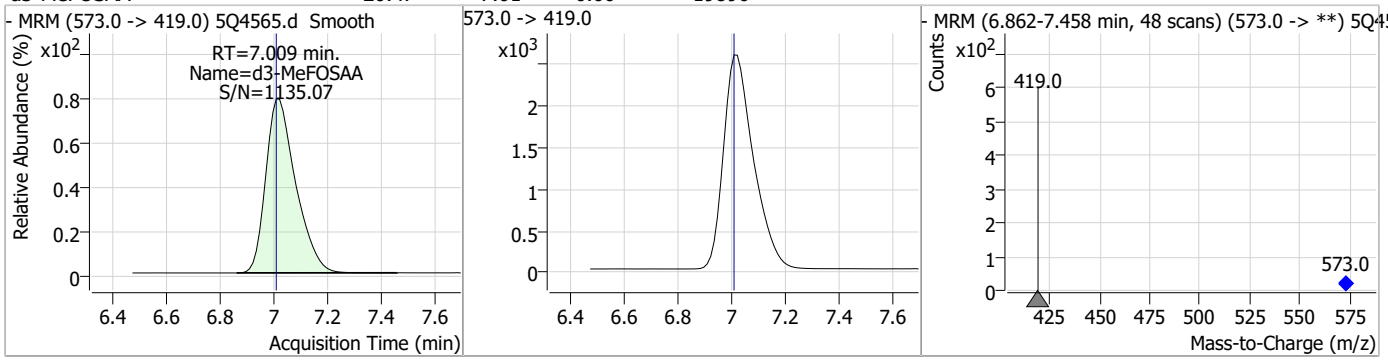


Perfluorinated Compounds by LC/MS/MS

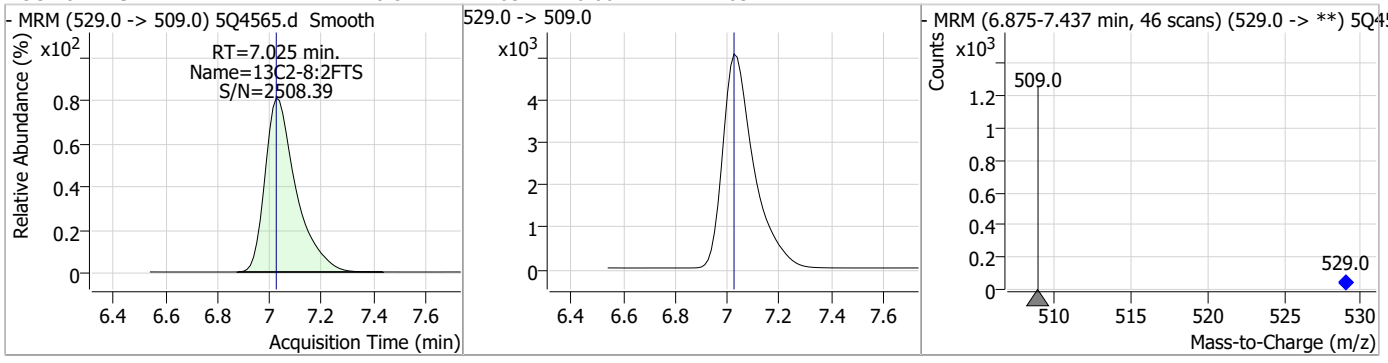
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.84	7.00	0.01	106801				



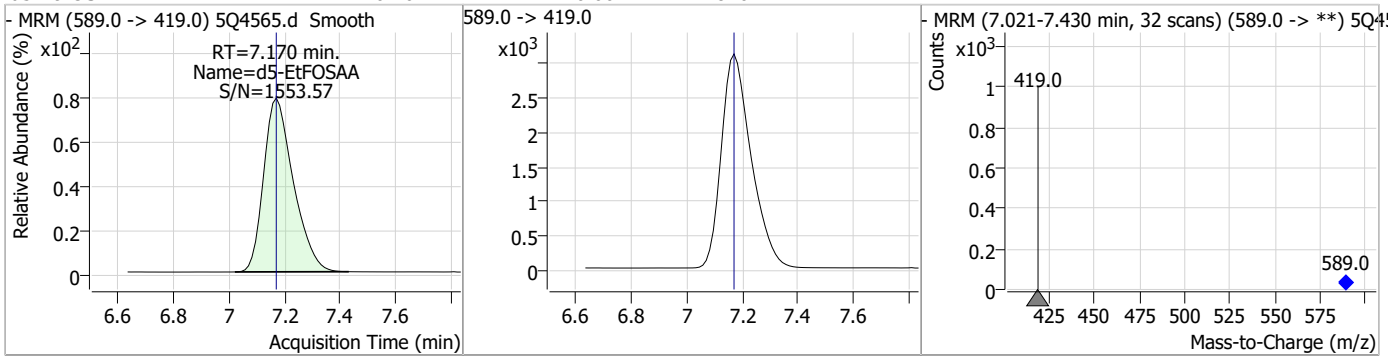
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.47	7.01	0.00	19890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.57	7.03	0.00	41703				

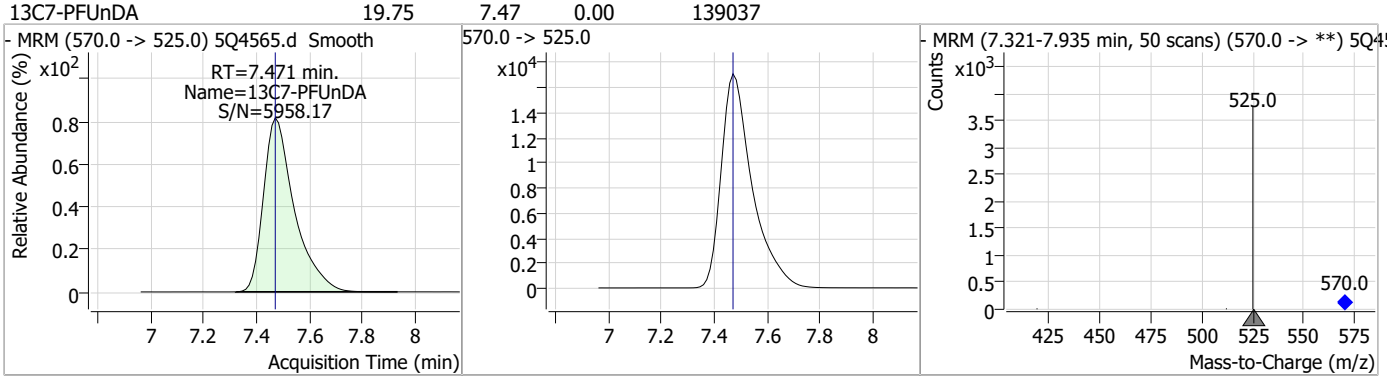


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.40	7.17	0.00	22870				

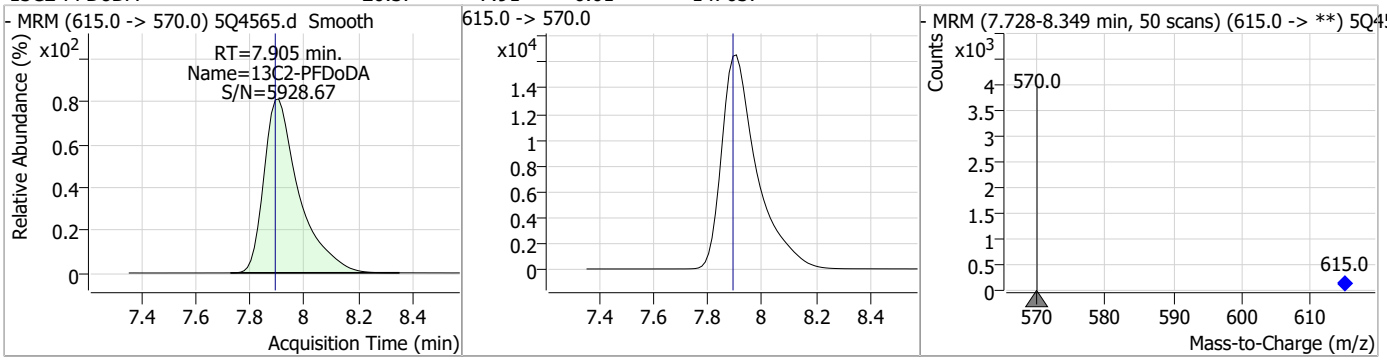


Perfluorinated Compounds by LC/MS/MS

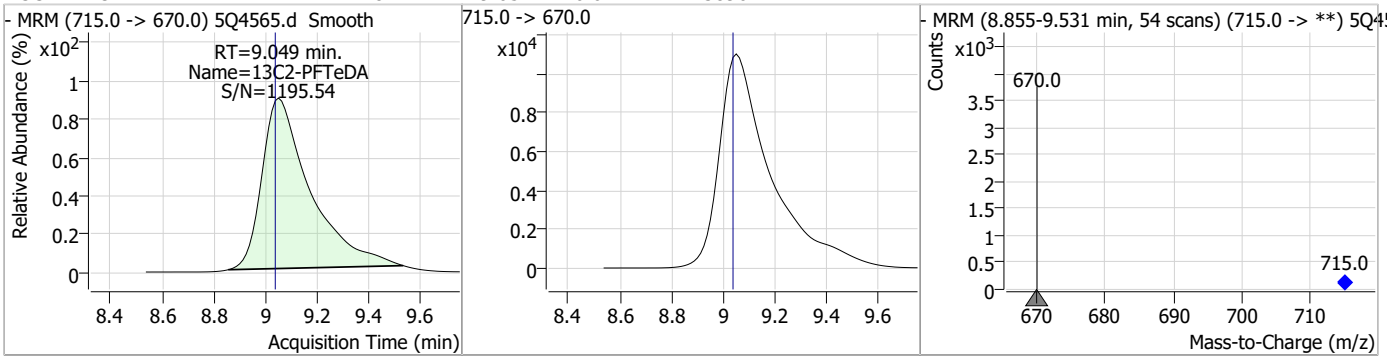
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.75	7.47	0.00	139037				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.37	7.91	0.01	147637				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.41	9.05	0.01	138901				



Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4627.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/14/2022 12:52:10 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	s6q85.batch.bin
Sample Information	:	OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	80536	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	142449	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	218454	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	252017	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	443501	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	546297	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	411471	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	555952	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	753510	20.00	µg/L	0.000
M2-PFTeDA	10.014	715.0 -> 670.0	614429	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	206546	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31290	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29124	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	43271	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	257367	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	335989	20.00	µg/L	0.000
M2-8:2FTS	7.346	529.0 -> 509.0	257446	20.00	µg/L	0.000
M3-MeFOSAA	7.155	573.0 -> 419.0	177079	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	5555	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	49349	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	151833	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	257367	19.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C2-6:2FTS	6.136	429.0 -> 409.0	335989	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-8:2FTS	7.346	529.0 -> 509.0	257446	19.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-PFDoDA	8.332	615.0 -> 570.0	753510	20.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C2-PFTeDA	10.014	715.0 -> 670.0	614429	20.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C3-PFBS	3.635	302.0 -> 99.0	31290	20.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFHxS	5.475	402.0 -> 99.0	29124	21.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C4-PFBA	1.949	217.0 -> 172.0	80536	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFHpA	5.445	367.0 -> 322.0	252017	20.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C5-PFHxA	4.573	318.0 -> 273.0	218454	20.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFPeA	3.418	268.0 -> 223.0	142449	20.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C6-PFDA	7.297	519.0 -> 474.0	411471	20.22	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

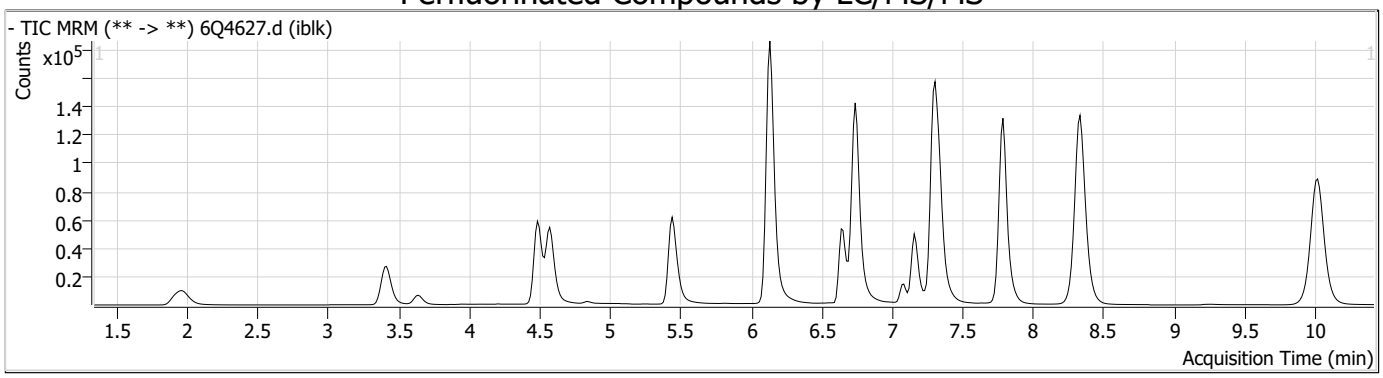
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C7-PFUnDA	7.788	570.0 -> 525.0	555952	20.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%	
13C8-FOSA	6.654	506.0 -> 78.0	206546	21.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%	
13C8-PFOA	6.138	421.0 -> 376.0	443501	20.90 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C8-PFOS	6.730	507.0 -> 99.0	43271	20.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C9-PFNA	6.745	472.0 -> 427.0	546297	21.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
d3-MeFOSAA	7.155	573.0 -> 419.0	177079	20.46 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-HFPO-DA	4.852	287.0 -> 169.0	5571	20.96 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
d3-MeFOSA	7.085	515.0 -> 169.0	49349	21.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
d5-EtFOSAA	7.302	589.0 -> 419.0	151962	22.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	7.303	584.0 -> 419.0	958	0.12 µg/L	100
		584.0 -> 483.0	496		
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	7.168	570.0 -> 419.0	1053	0.13 µg/L	96
		570.0 -> 512.0	362		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

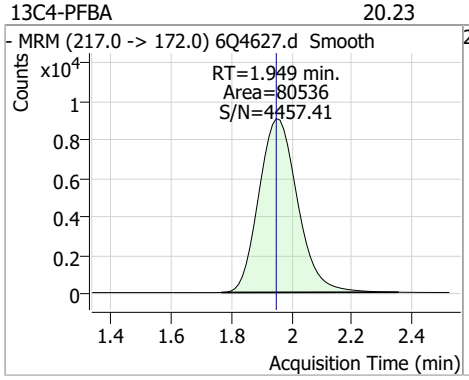
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

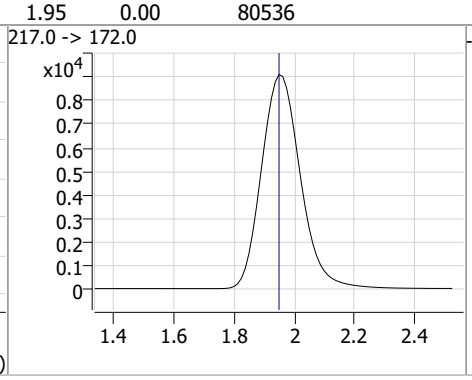
 # = Qualifier out of range, m = manually integrated, + = Area summed

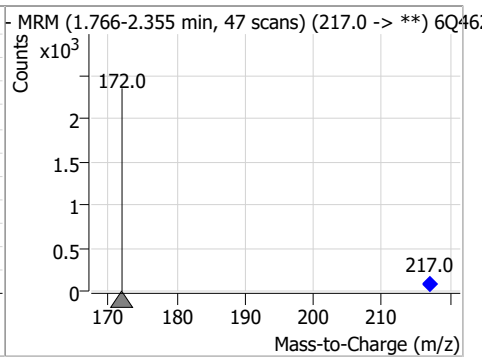
Perfluorinated Compounds by LC/MS/MS



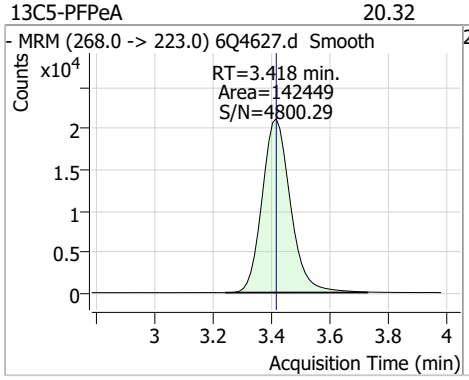
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.23	1.95	0.00	80536				

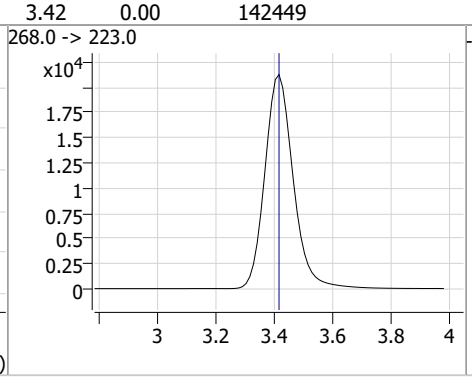


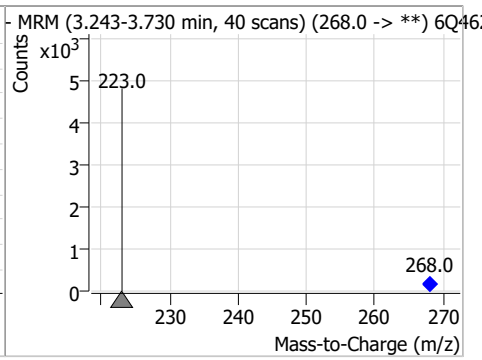




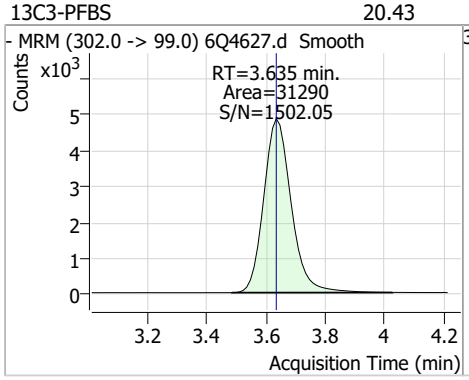
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.32	3.42	0.00	142449				

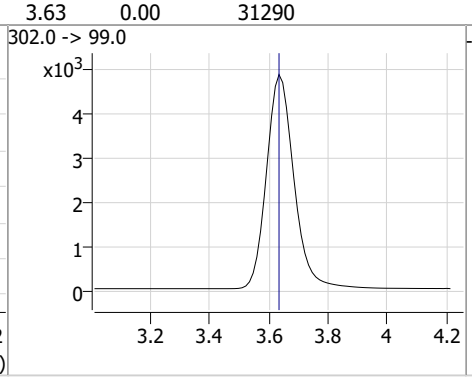


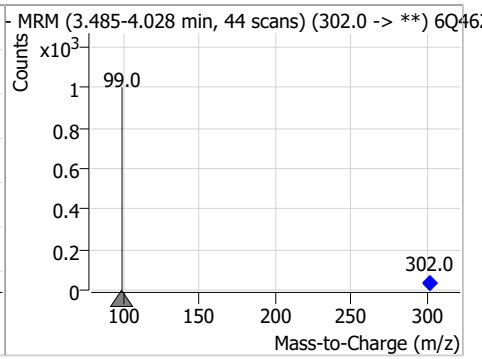




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.43	3.63	0.00	31290				

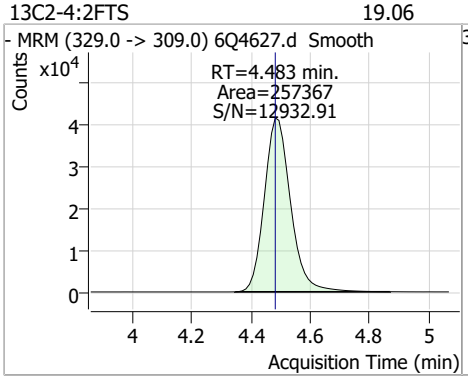


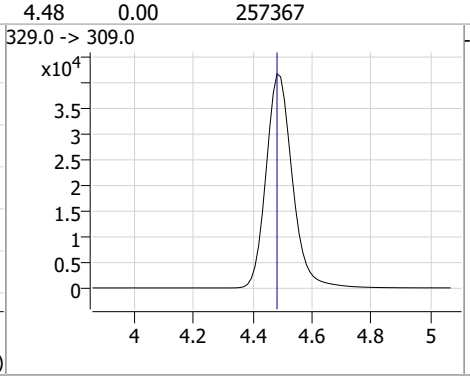


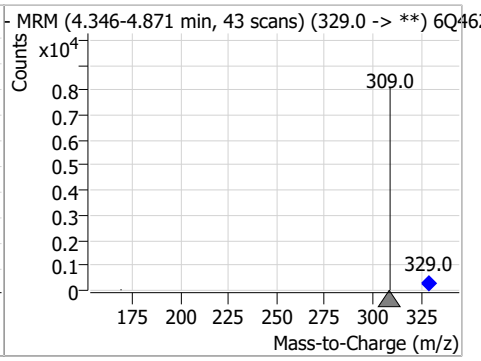


Perfluorinated Compounds by LC/MS/MS

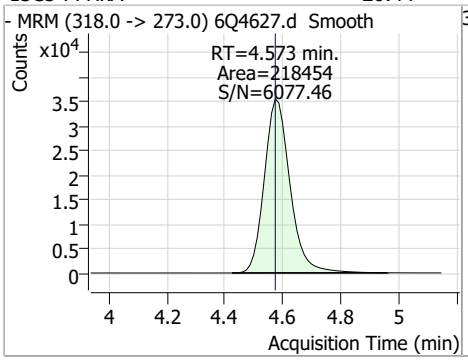
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.06	4.48	0.00	257367				

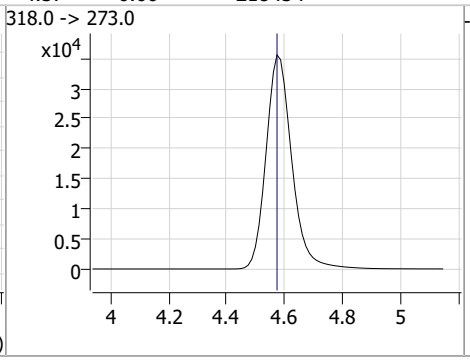


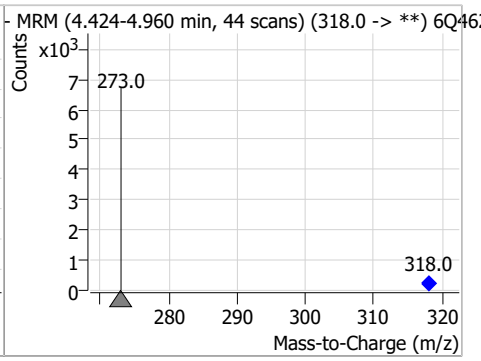




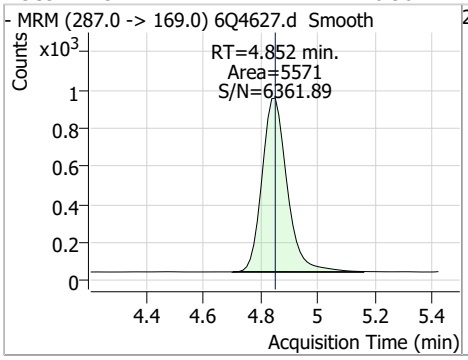
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.44	4.57	0.00	218454				

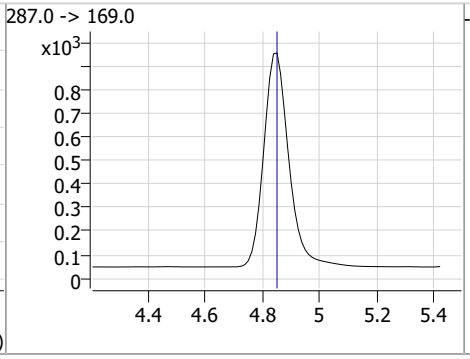


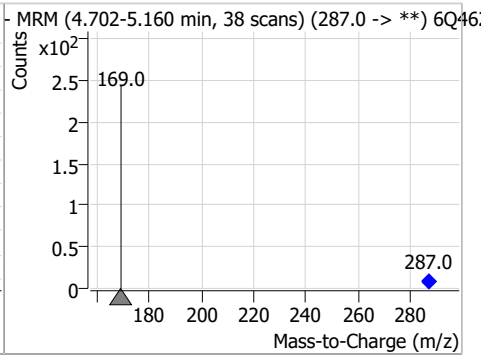




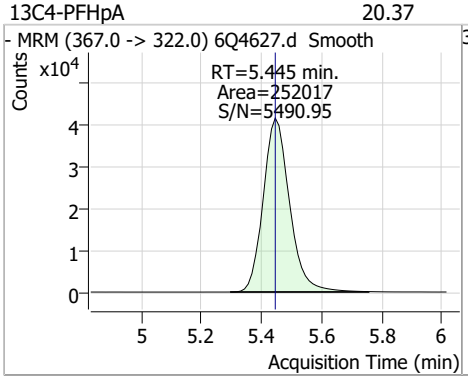
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.96	4.85	0.00	5571				

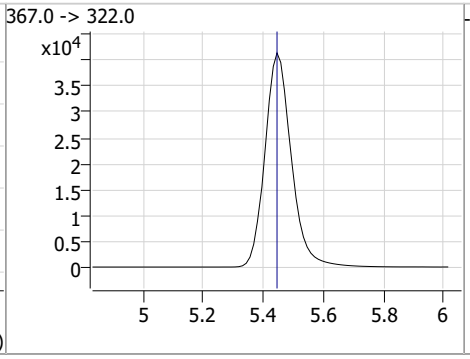


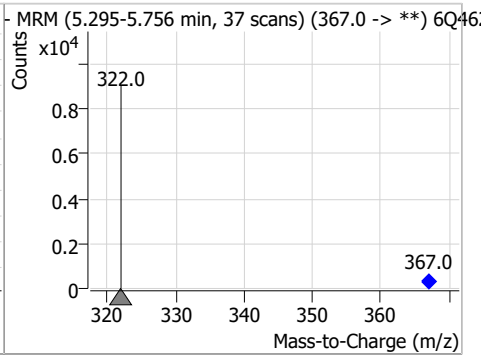




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.37	5.45	0.00	252017				

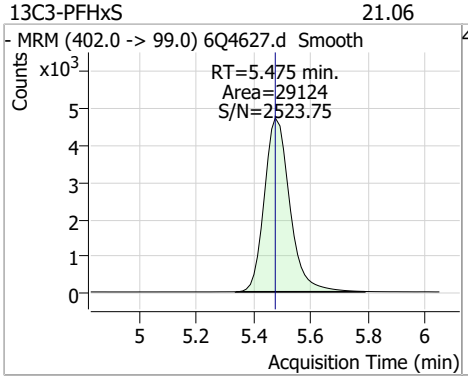


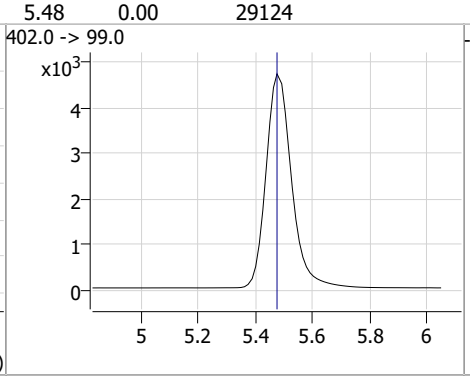


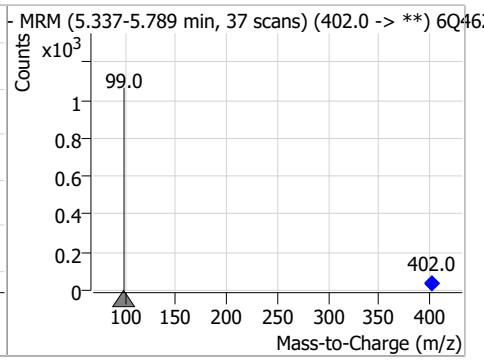


Perfluorinated Compounds by LC/MS/MS

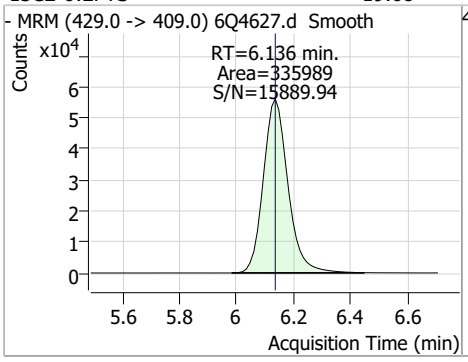
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.06	5.48	0.00	29124				

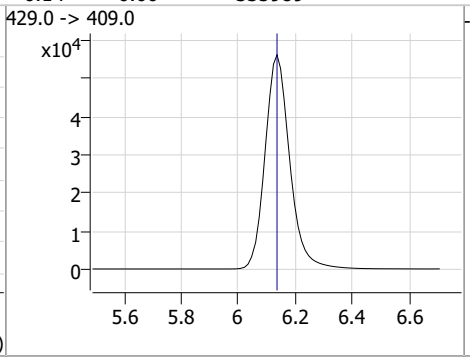


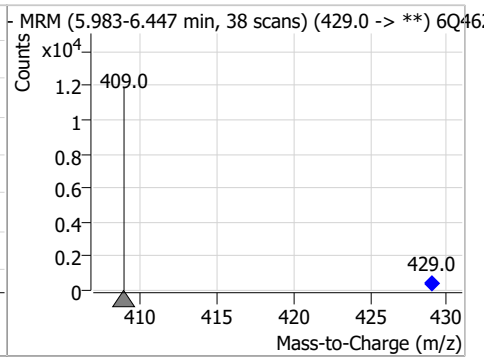




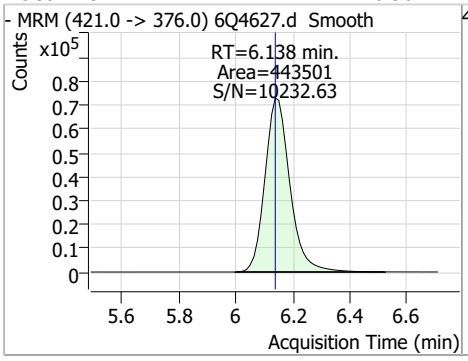
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.68	6.14	0.00	335989				

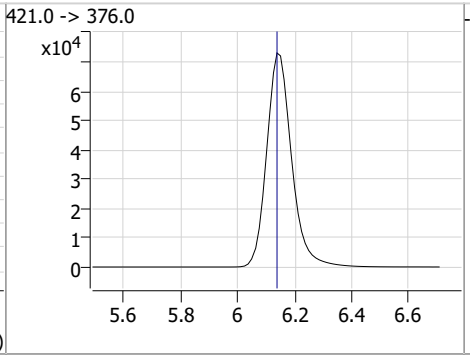


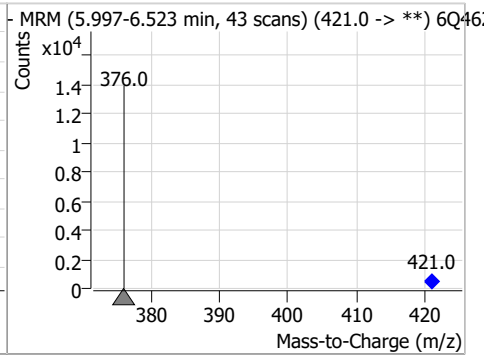




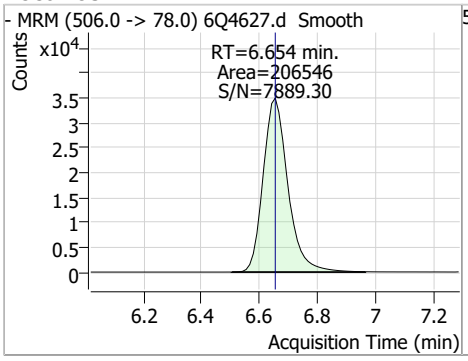
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.90	6.14	0.00	443501				

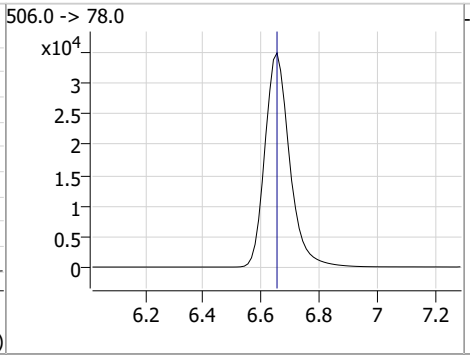


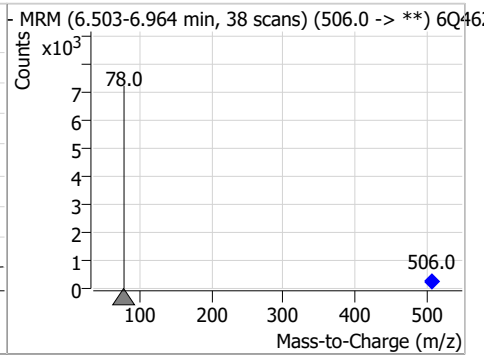




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.12	6.65	0.00	206546				

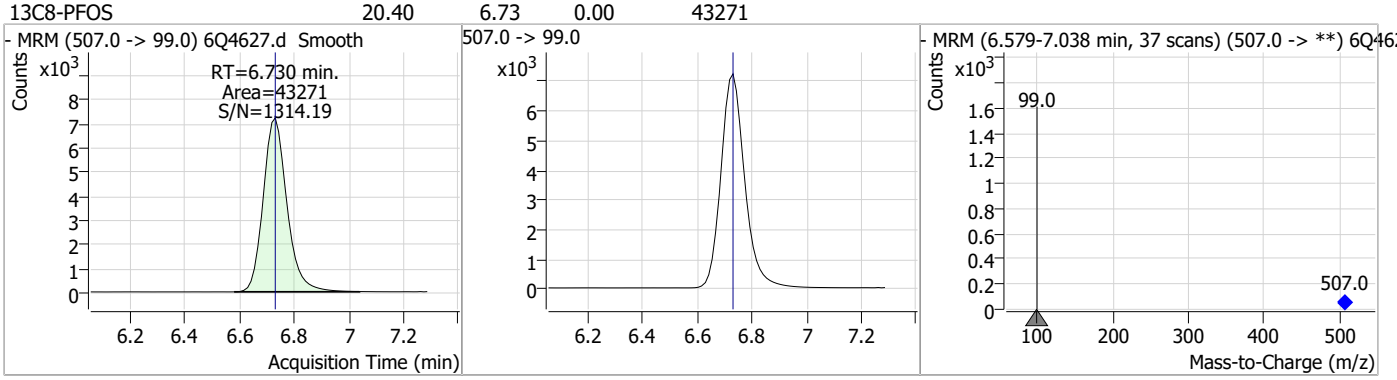




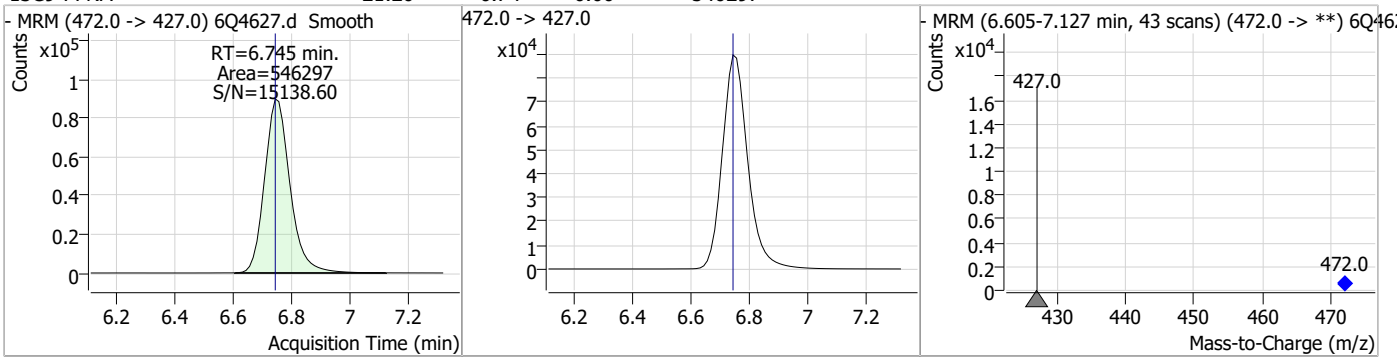


Perfluorinated Compounds by LC/MS/MS

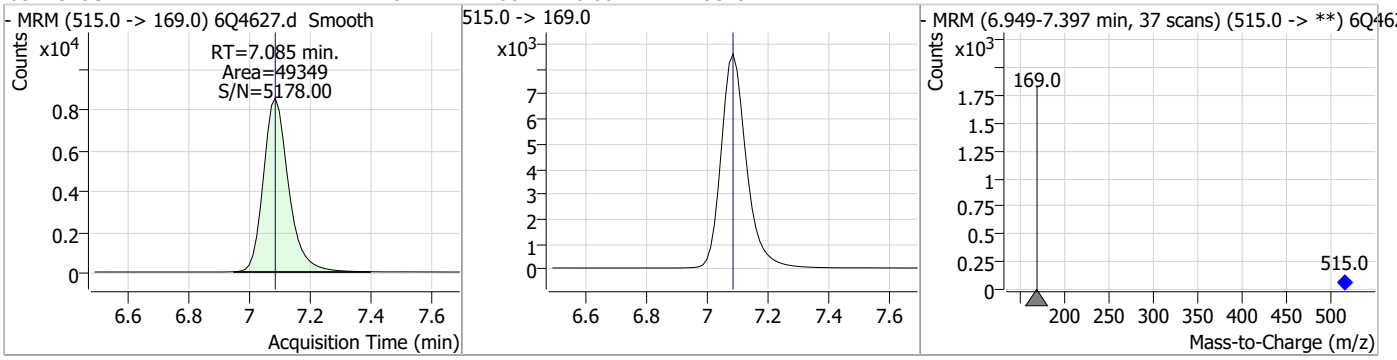
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.40	6.73	0.00	43271				



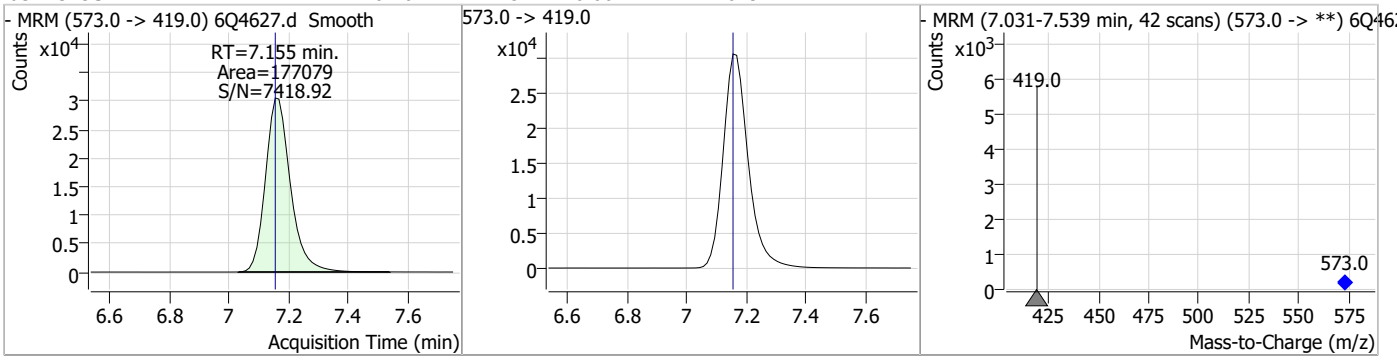
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.20	6.74	0.00	546297				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.81	7.08	0.00	49349				

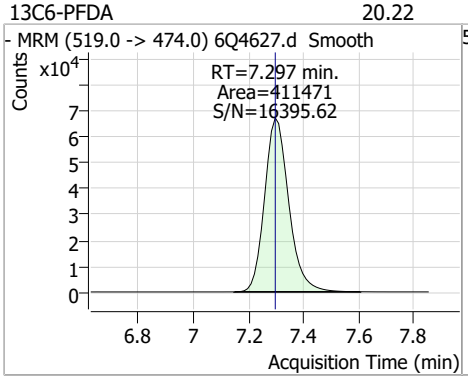


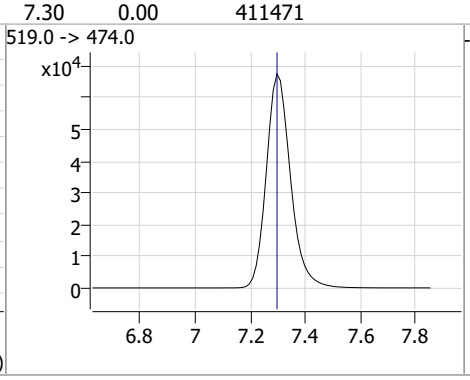
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.46	7.15	0.00	177079				

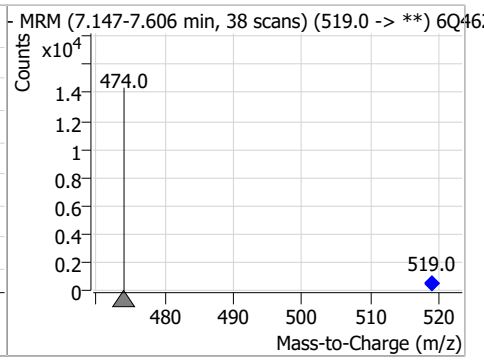


Perfluorinated Compounds by LC/MS/MS

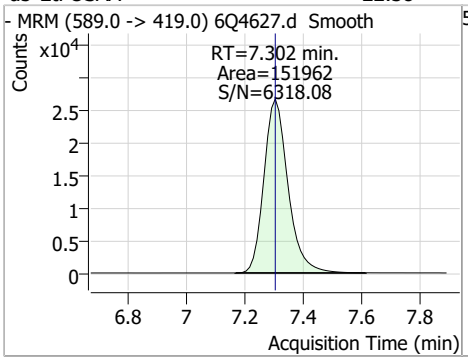
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.22	7.30	0.00	411471				

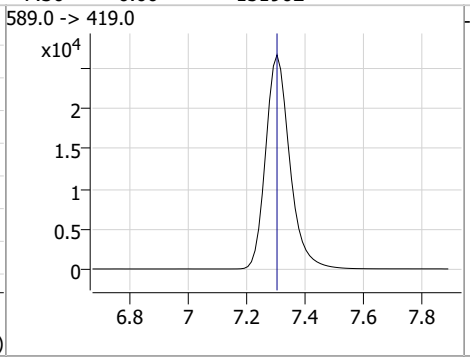


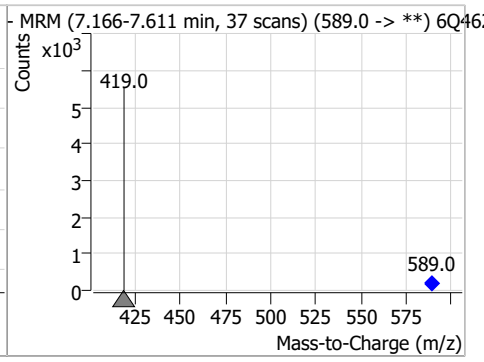




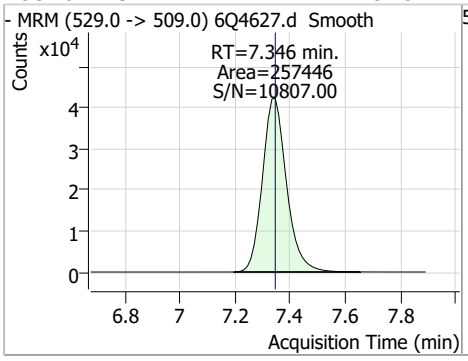
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.38	7.30	0.00	151962				

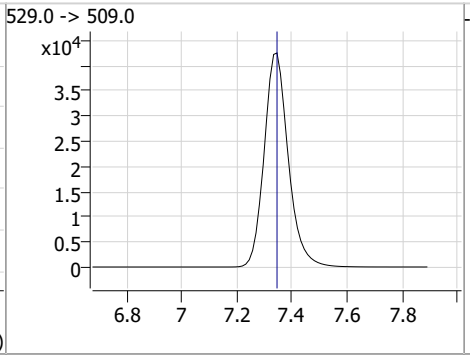


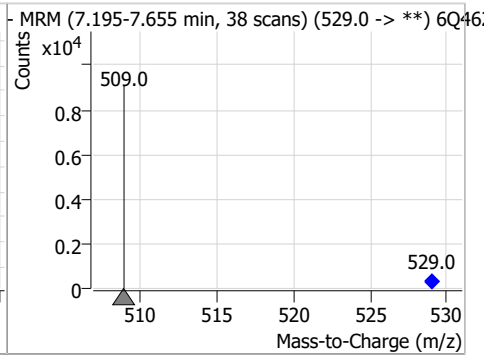




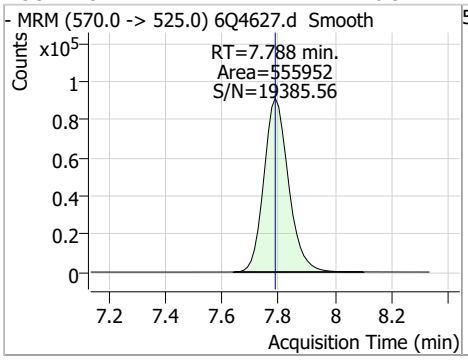
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.75	7.35	0.00	257446				

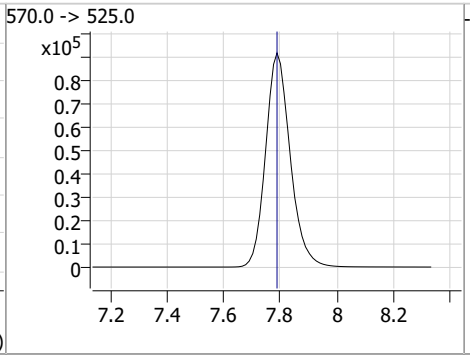


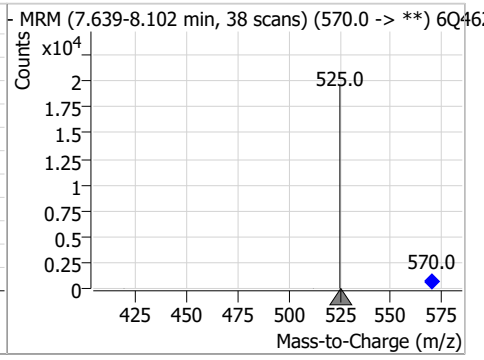




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.94	7.79	0.00	555952				

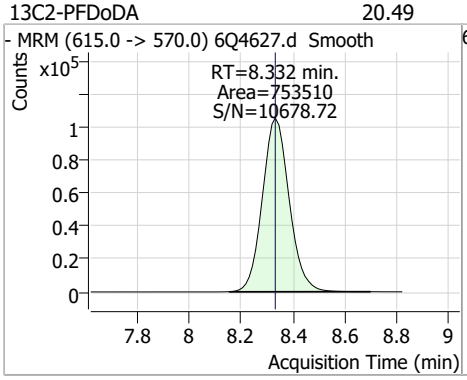


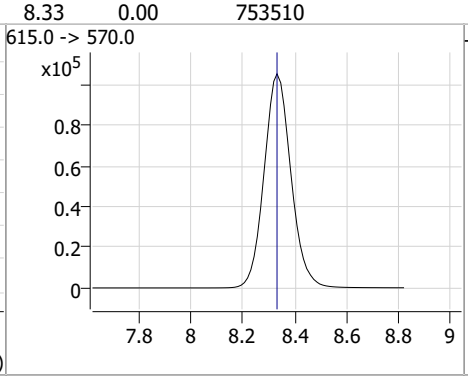


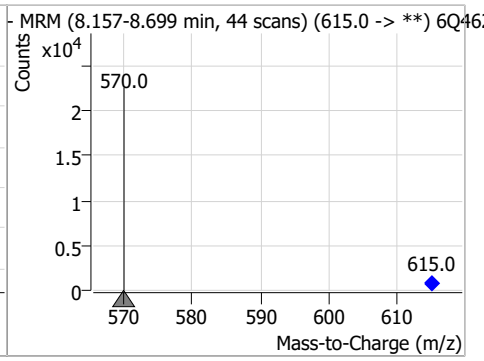


Perfluorinated Compounds by LC/MS/MS

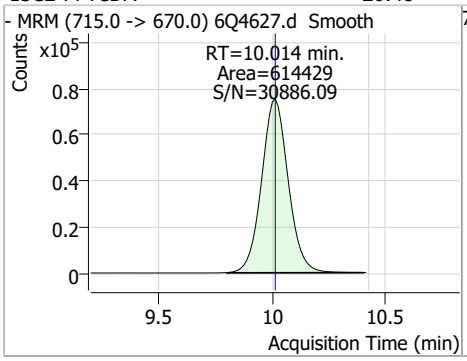
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.49	8.33	0.00	753510				

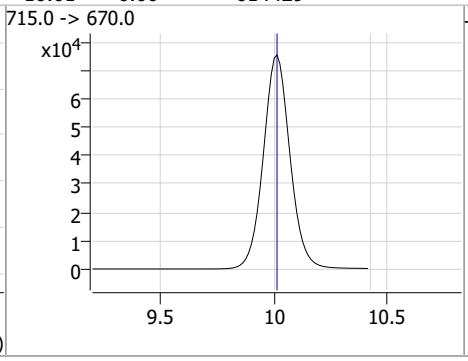


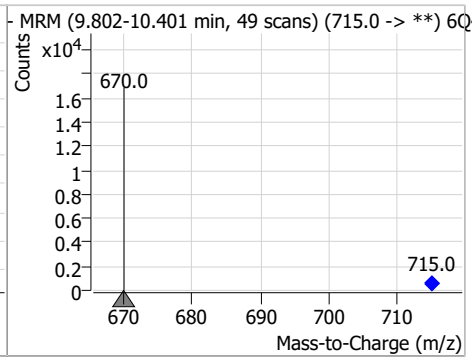




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.48	10.01	0.00	614429				







Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4704.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 3:32:24 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	85682	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	150195	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	232309	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	266714	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	470427	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	589523	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	445608	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	583282	20.00	µg/L	0.000
M2-PFDoDA	8.320	615.0 -> 570.0	772445	20.00	µg/L	-0.012
M2-PFTeDA	10.001	715.0 -> 670.0	656029	20.00	µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	218588	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	33000	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	30070	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	46631	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	264817	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	347429	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	256028	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	178816	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	5880	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	50099	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	138616	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	264817	19.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	347429	20.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-8:2FTS	7.333	529.0 -> 509.0	256028	19.64	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C2-PFDoDA	8.320	615.0 -> 570.0	772445	21.00	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C2-PFTeDA	10.001	715.0 -> 670.0	656029	21.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C3-PFBS	3.635	302.0 -> 99.0	33000	21.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
13C3-PFHxS	5.475	402.0 -> 99.0	30070	21.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C4-PFBA	1.949	217.0 -> 172.0	85682	21.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C4-PFHpA	5.445	367.0 -> 322.0	266714	21.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C5-PFHxA	4.573	318.0 -> 273.0	232309	21.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C5-PFPeA	3.418	268.0 -> 223.0	150195	21.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C6-PFDA	7.297	519.0 -> 474.0	445608	21.90	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

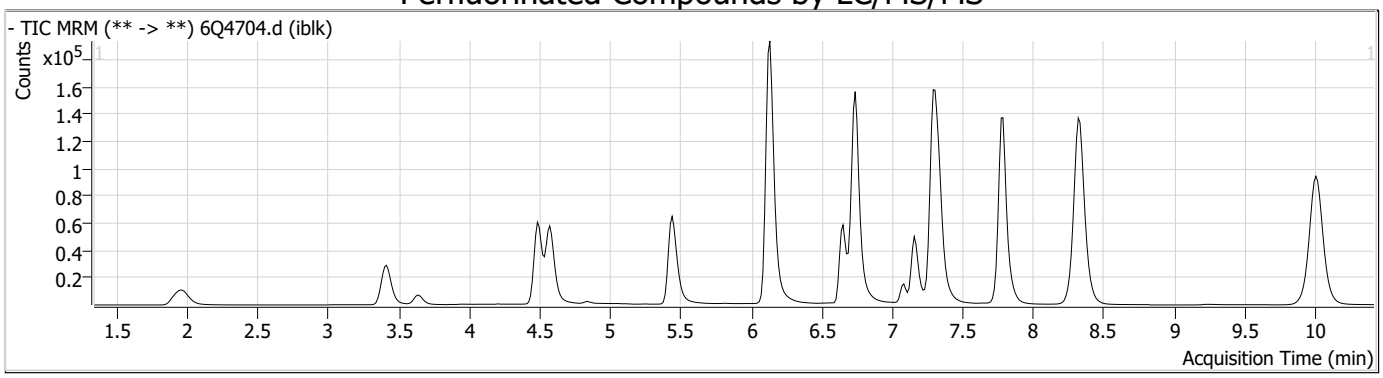
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C7-PFUnDA	7.788	570.0 -> 525.0	583282	21.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%	
13C8-FOSA	6.654	506.0 -> 78.0	218588	22.35 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%	
13C8-PFOA	6.138	421.0 -> 376.0	470427	22.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C8-PFOS	6.730	507.0 -> 99.0	46631	21.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C9-PFNA	6.745	472.0 -> 427.0	589523	22.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%	
d3-MeFOSAA	7.155	573.0 -> 419.0	178816	20.66 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C3-HFPO-DA	4.852	287.0 -> 169.0	5882	22.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
d3-MeFOSA	7.085	515.0 -> 169.0	50099	22.14 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.7%	
d5-EtFOSAA	7.302	589.0 -> 419.0	138665	20.43 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	7.168	570.0 -> 419.0	1090	0.13 µg/L	88
		570.0 -> 512.0	273		
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	-	363.0 -> 319.0	-	N.D.	
		363.0 -> 169.0			
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	-	413.0 -> 369.0	-	N.D.	
		413.0 -> 169.0			
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

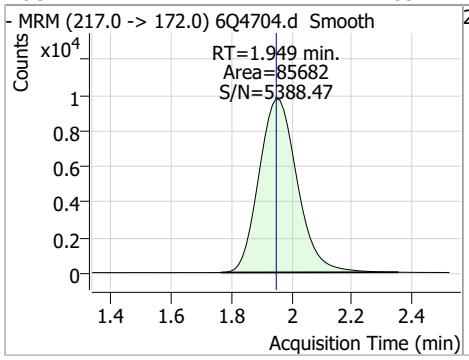
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

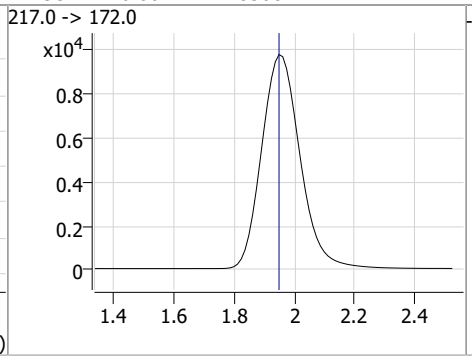
 # = Qualifier out of range, m = manually integrated, + = Area summed

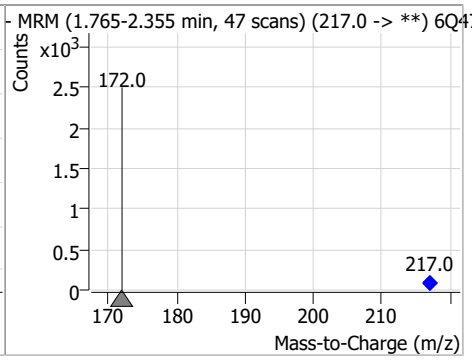
Perfluorinated Compounds by LC/MS/MS



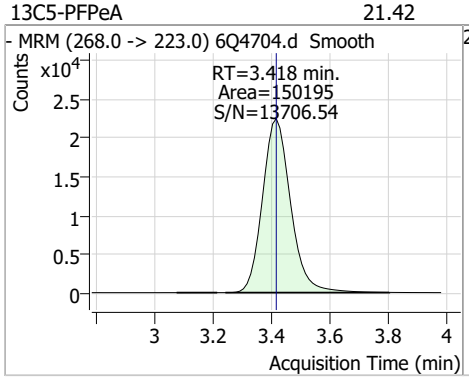
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.53	1.95	0.00	85682				

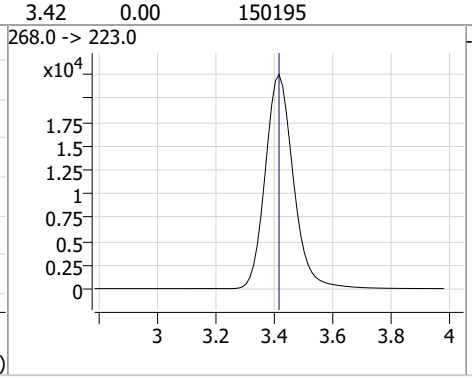


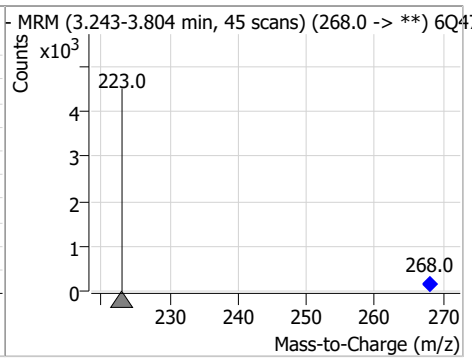




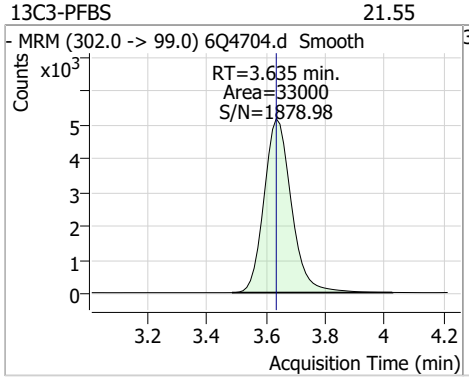
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.42	3.42	0.00	150195				

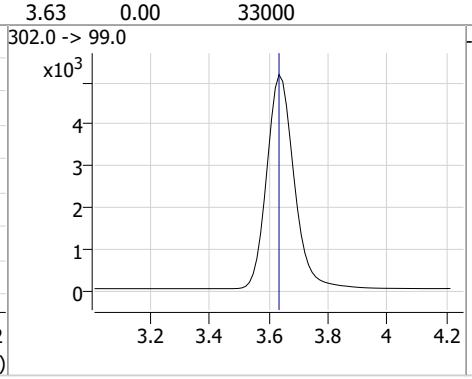


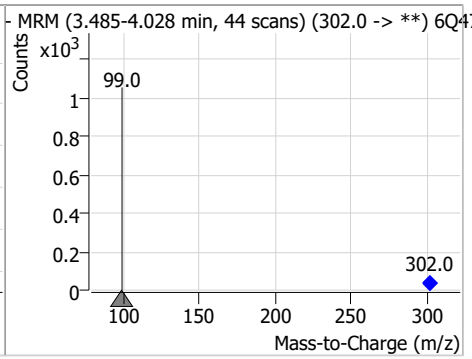




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.55	3.63	0.00	33000				

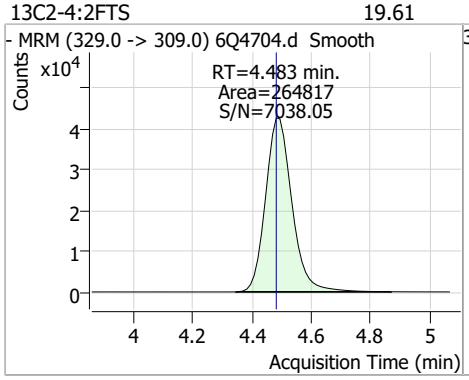


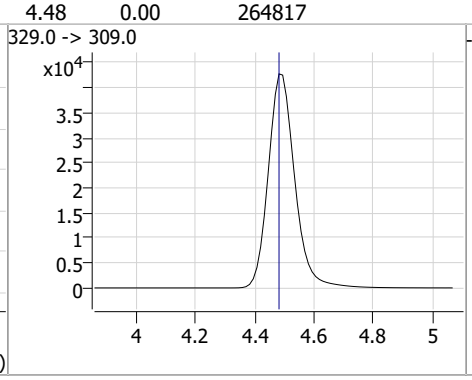


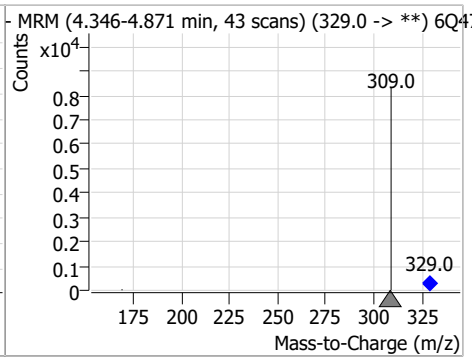


Perfluorinated Compounds by LC/MS/MS

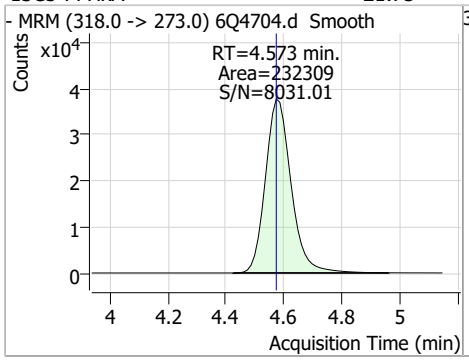
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.61	4.48	0.00	264817				

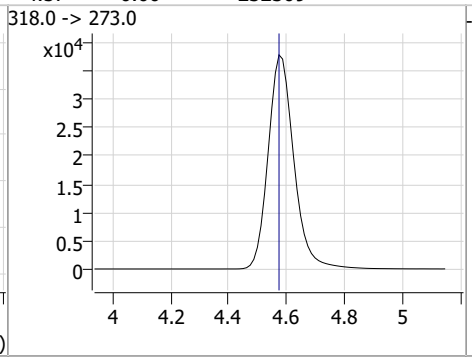


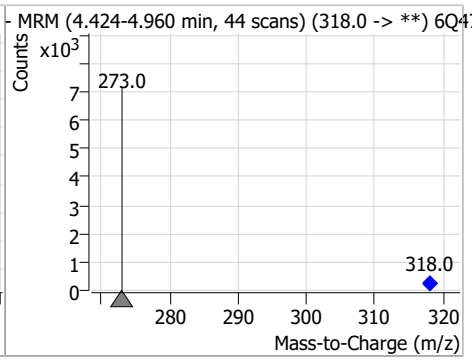




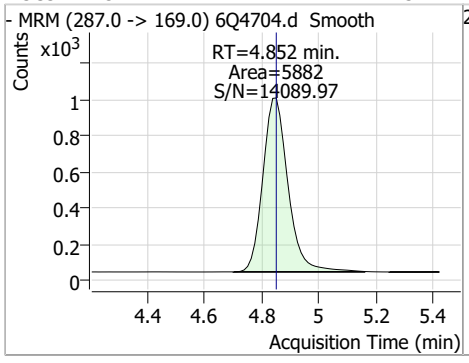
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.73	4.57	0.00	232309				

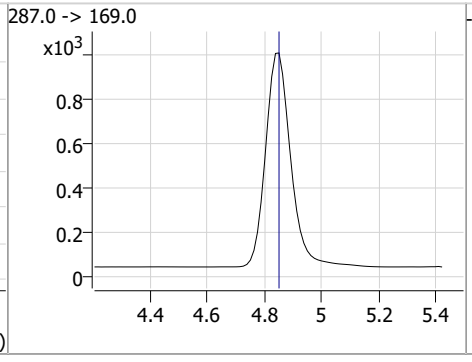


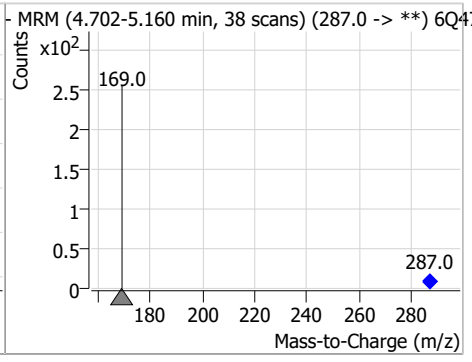




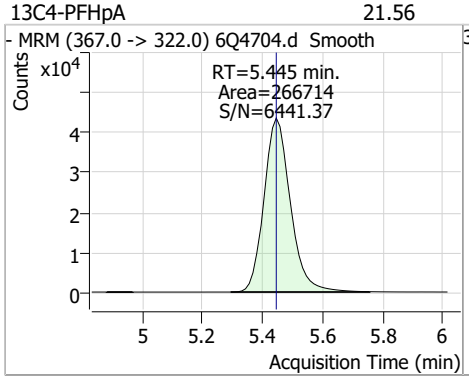
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.13	4.85	0.00	5882				

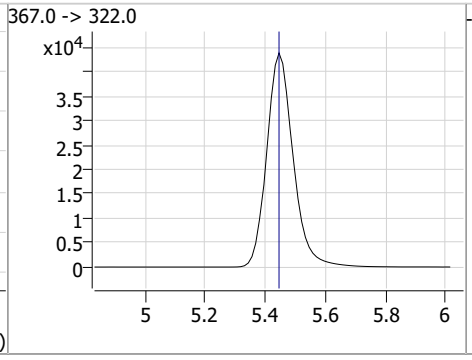


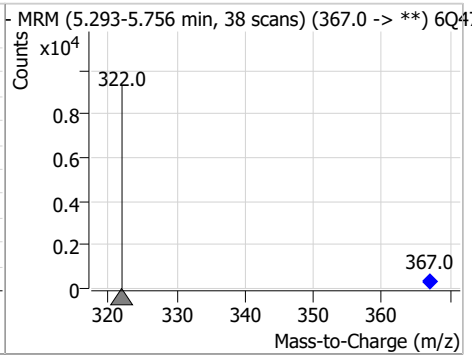




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.56	5.45	0.00	266714				

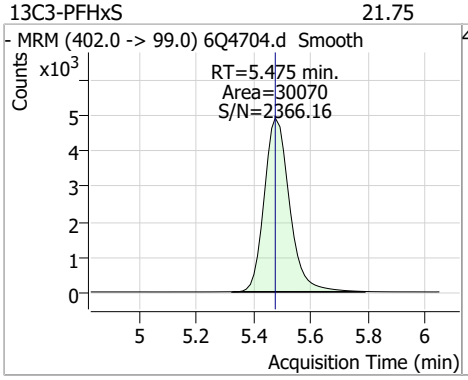


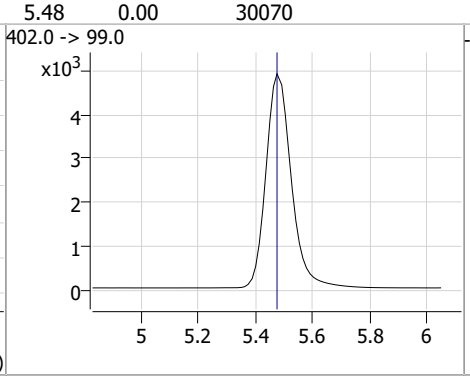


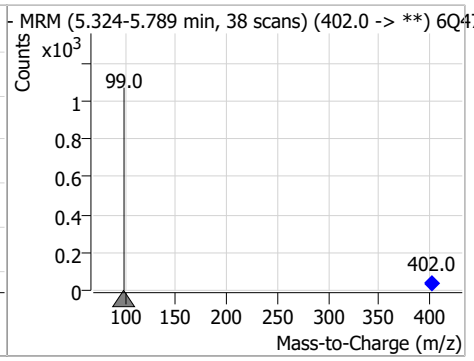


Perfluorinated Compounds by LC/MS/MS

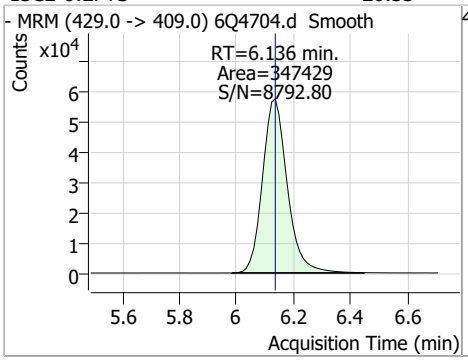
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.75	5.48	0.00	30070				

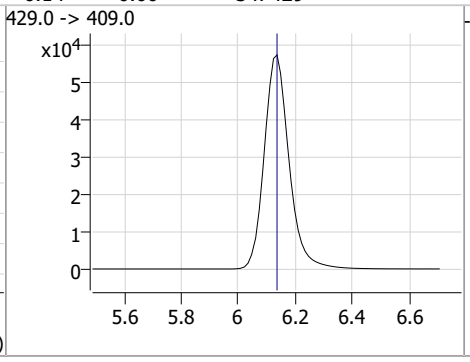


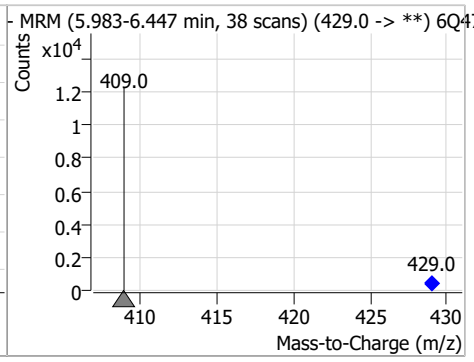




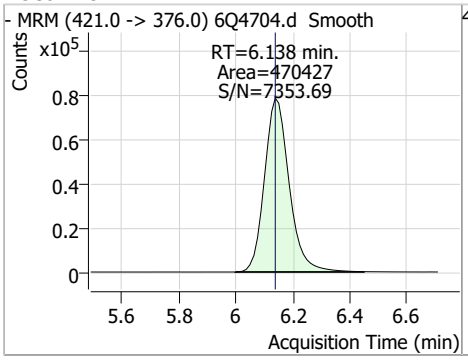
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.35	6.14	0.00	347429				

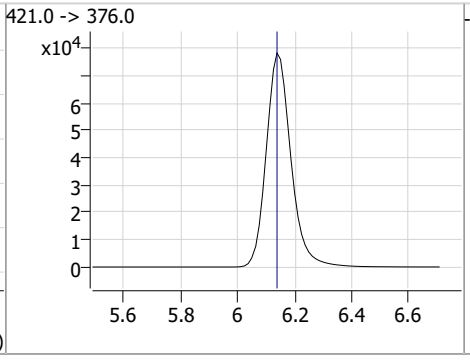


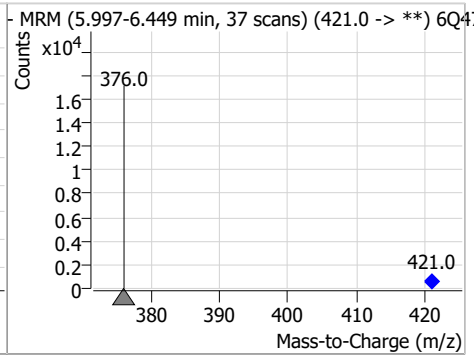




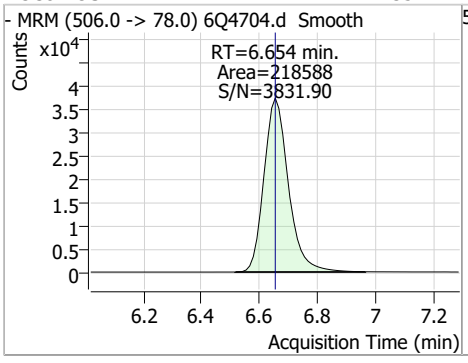
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.17	6.14	0.00	470427				

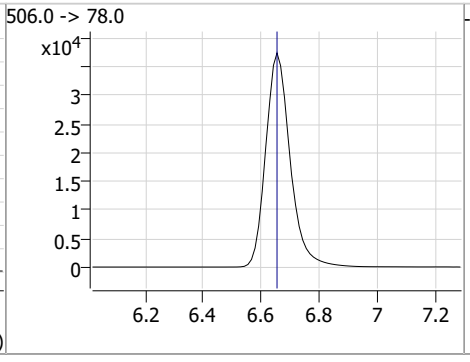


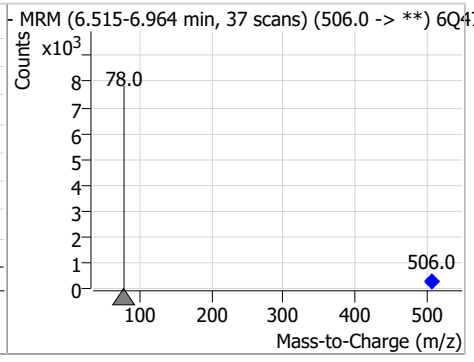




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.35	6.65	0.00	218588				

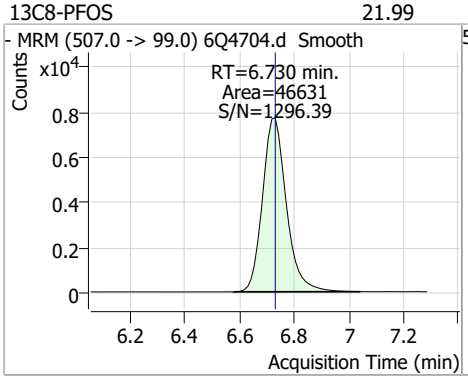


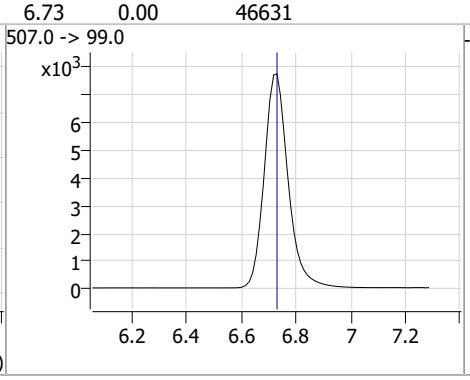


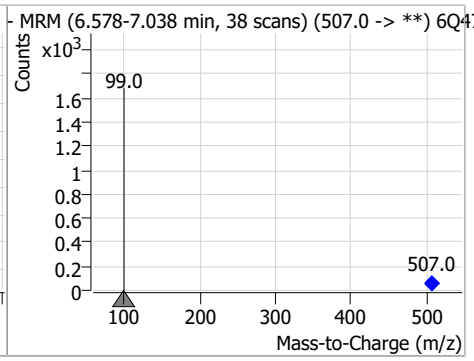


Perfluorinated Compounds by LC/MS/MS

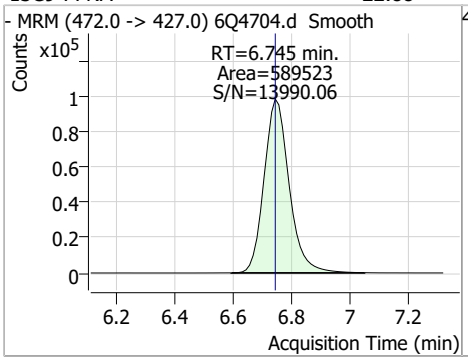
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.99	6.73	0.00	46631				

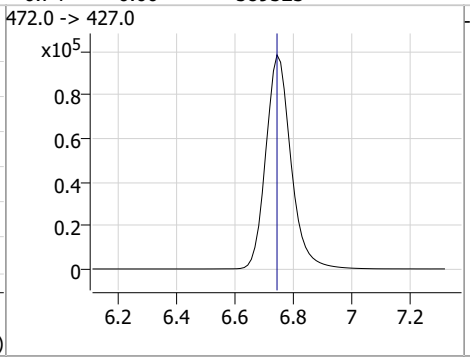


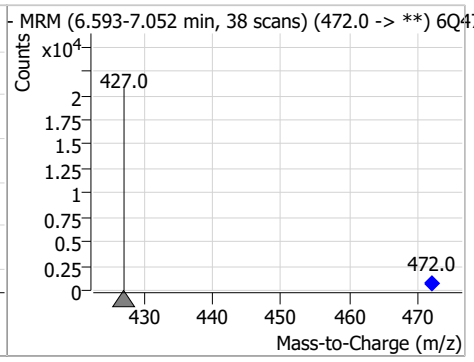




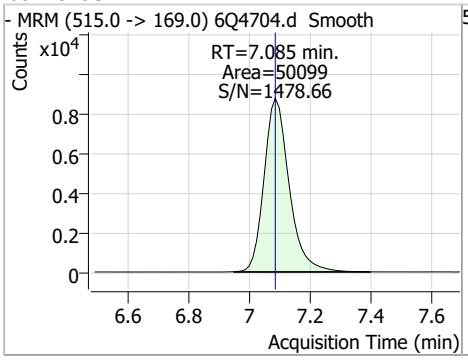
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.88	6.74	0.00	589523				

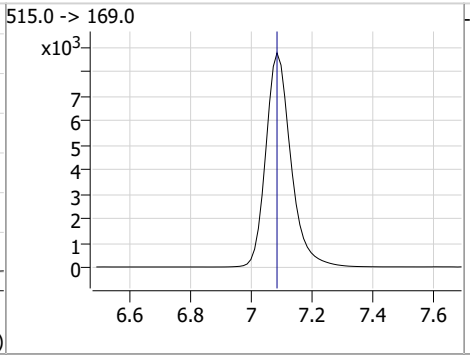


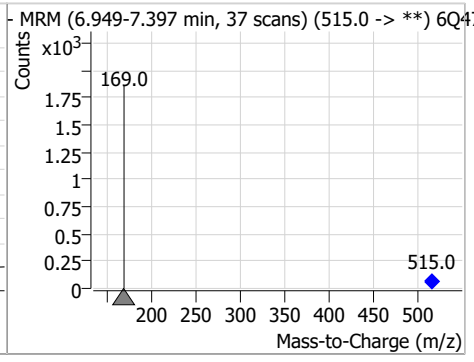




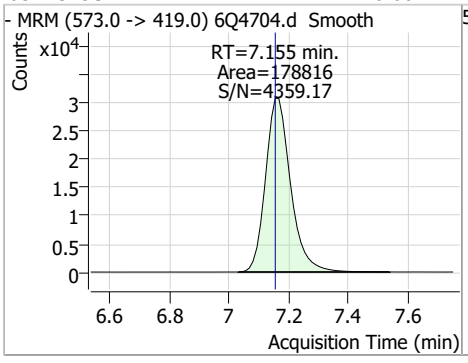
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.14	7.08	0.00	50099				

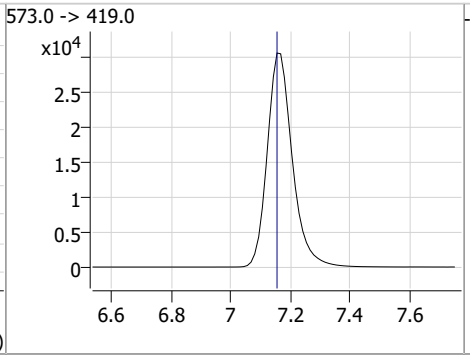


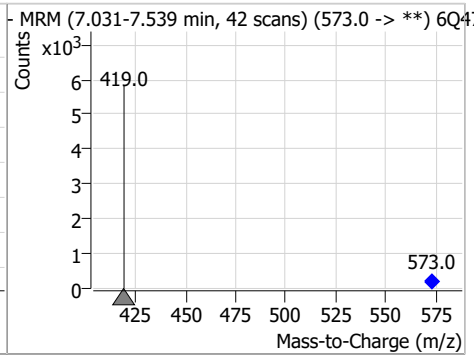




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.66	7.15	0.00	178816				

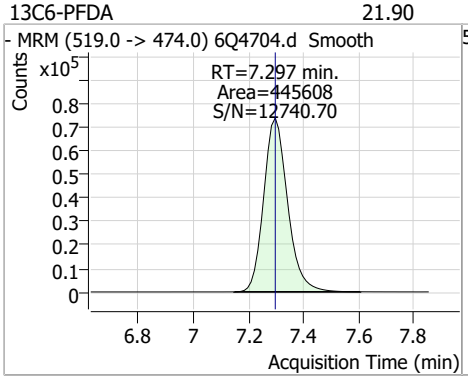


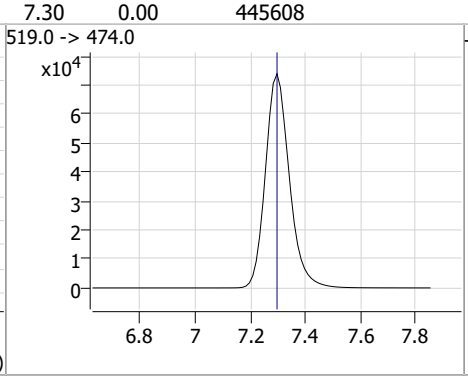


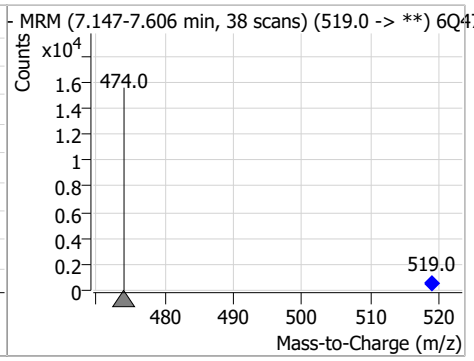


Perfluorinated Compounds by LC/MS/MS

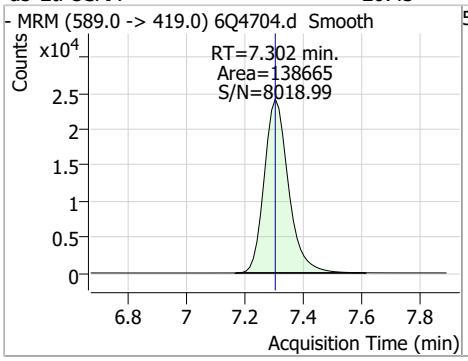
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.90	7.30	0.00	445608				

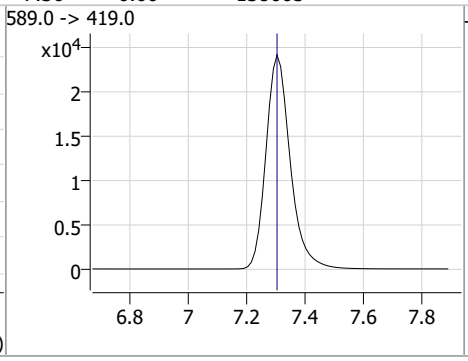


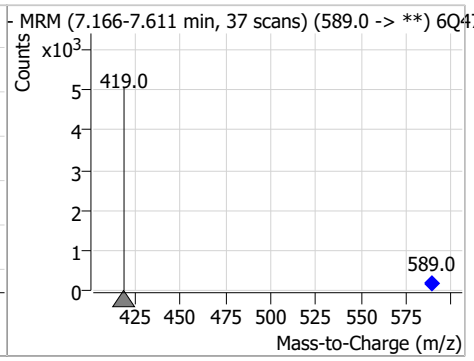




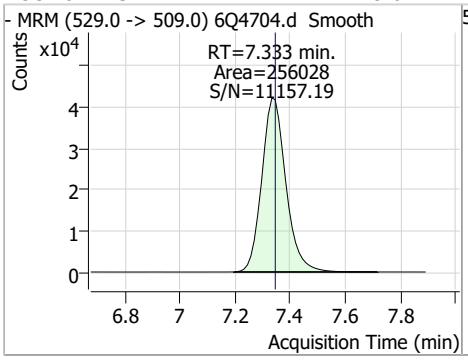
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.43	7.30	0.00	138665				

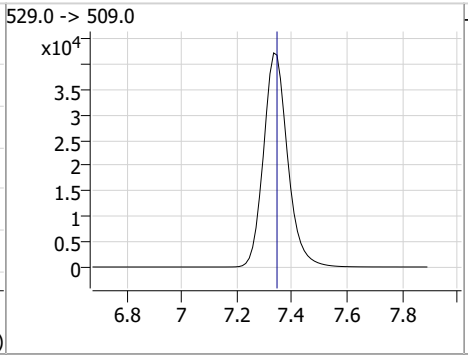


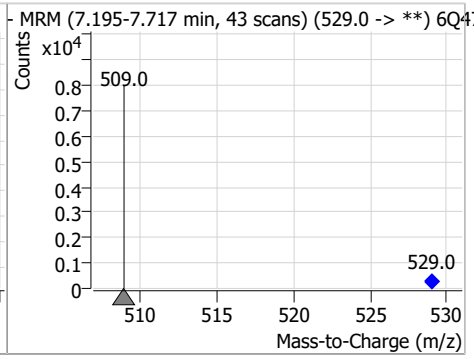




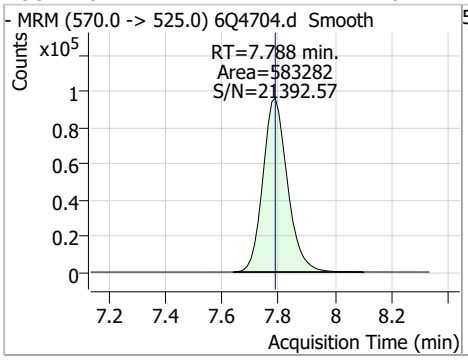
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.64	7.33	-0.01	256028				

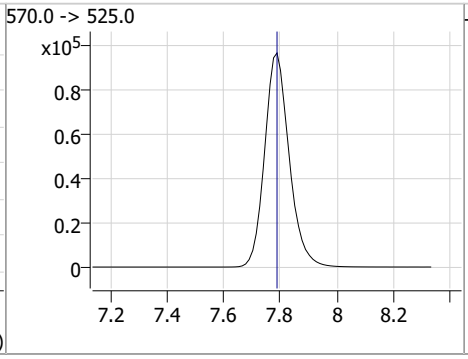


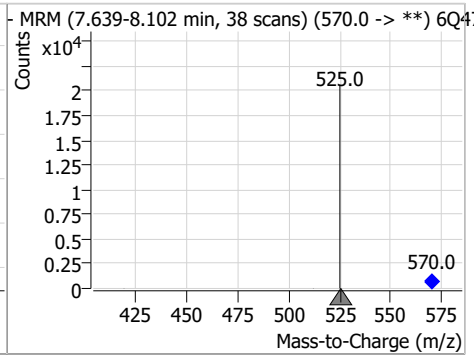




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.97	7.79	0.00	583282				

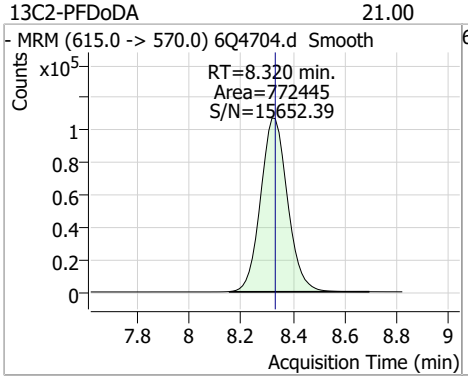


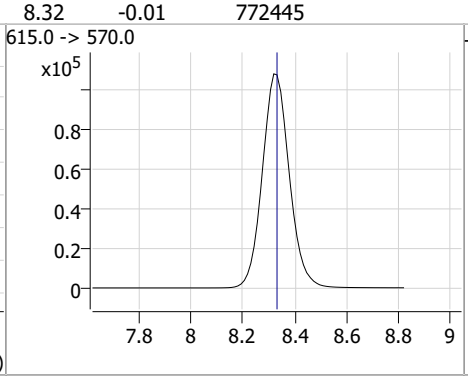


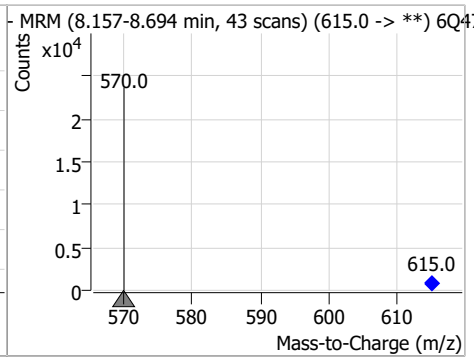


Perfluorinated Compounds by LC/MS/MS

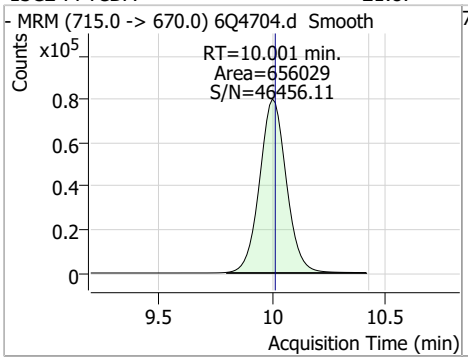
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.00	8.32	-0.01	772445				

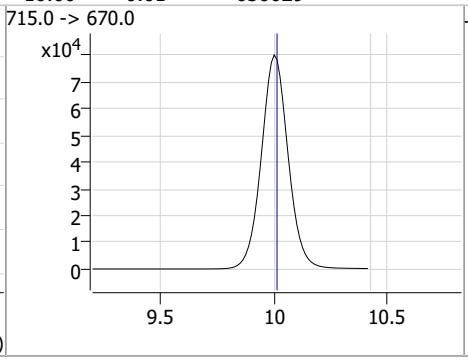


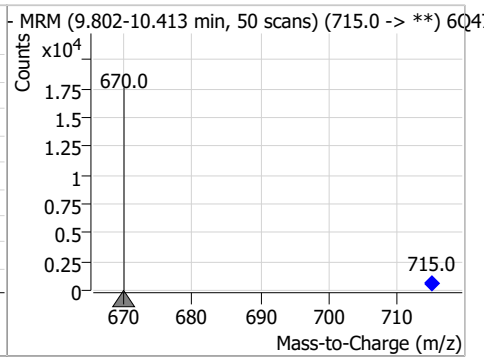




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.87	10.00	-0.01	656029				







Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4665.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:22:57 PM
Sample Name : iblk
Vial : P1-A1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

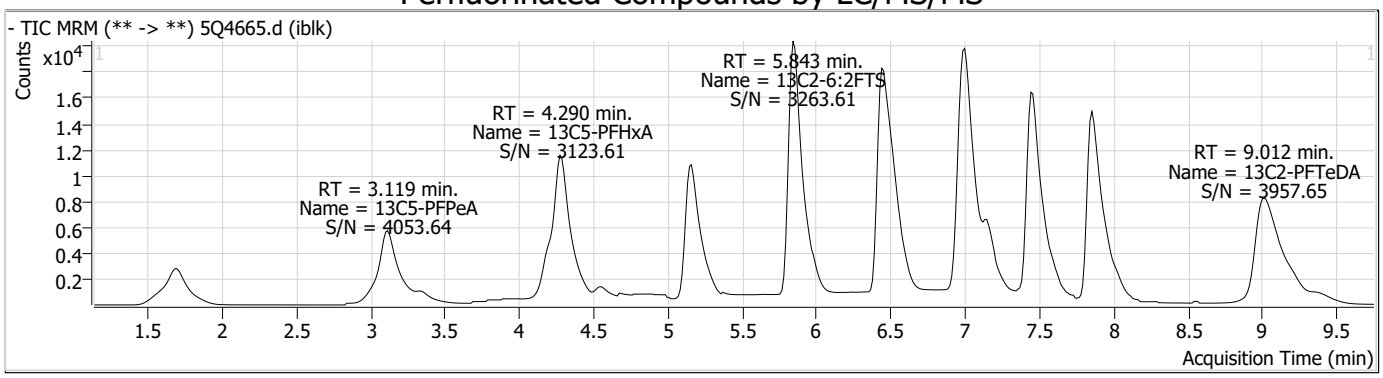
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	31949	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	52611	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	75570	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	68365	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	96887	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	104884	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	87702	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	107948	20.00 µg/L	-0.012
M2-PFDoDA	7.866	615.0 -> 570.0	111017	20.00 µg/L	-0.027
M2-PFTeDA	9.012	715.0 -> 670.0	113527	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	20764	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6806	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6995	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	12950	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	24048	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	35635	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	35511	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	13403	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6360	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6006	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	18765	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	24048	16.37 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.9%	
13C2-6:2FTS	5.843	429.0 -> 409.0	35635	15.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.7%	
13C2-8:2FTS	7.025	529.0 -> 509.0	35511	15.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.1%	
13C2-PFDoDA	7.866	615.0 -> 570.0	111017	15.32 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%	
13C2-PFTeDA	9.012	715.0 -> 670.0	113527	15.04 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.2%	
13C3-PFBS	3.349	302.0 -> 99.0	6806	20.89 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	6995	20.51 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFBA	1.687	217.0 -> 172.0	31949	17.87 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%	
13C4-PFHpA	5.163	367.0 -> 322.0	68365	16.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	75570	17.28 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%	
13C5-PFPeA	3.119	268.0 -> 223.0	52611	18.10 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%	
13C6-PFDA	6.989	519.0 -> 474.0	87702	16.29 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

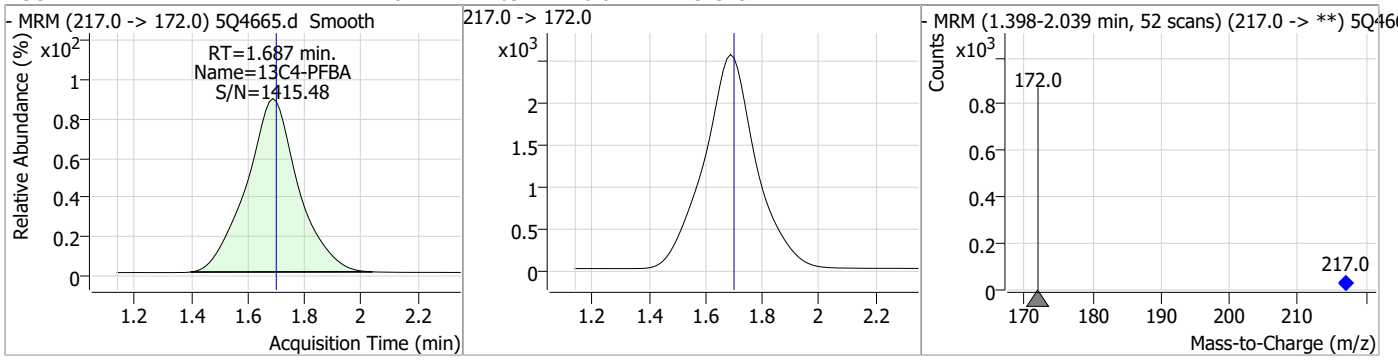
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	107948	15.33	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%			
13C8-FOSA	6.517	506.0 -> 78.0	20764	18.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C8-PFOA	5.857	421.0 -> 376.0	96887	16.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.1%			
13C8-PFOS	6.440	507.0 -> 99.0	12950	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C9-PFNA	6.455	472.0 -> 427.0	104884	15.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	13403	13.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	6360	18.94	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
d3-MeFOSA	6.952	515.0 -> 169.0	6006	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	18765	16.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.334	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

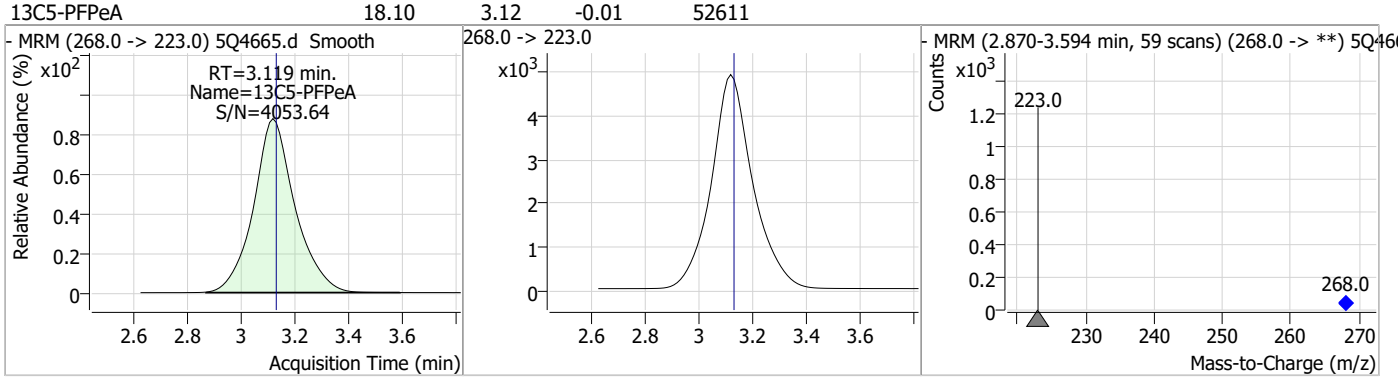
Perfluorinated Compounds by LC/MS/MS



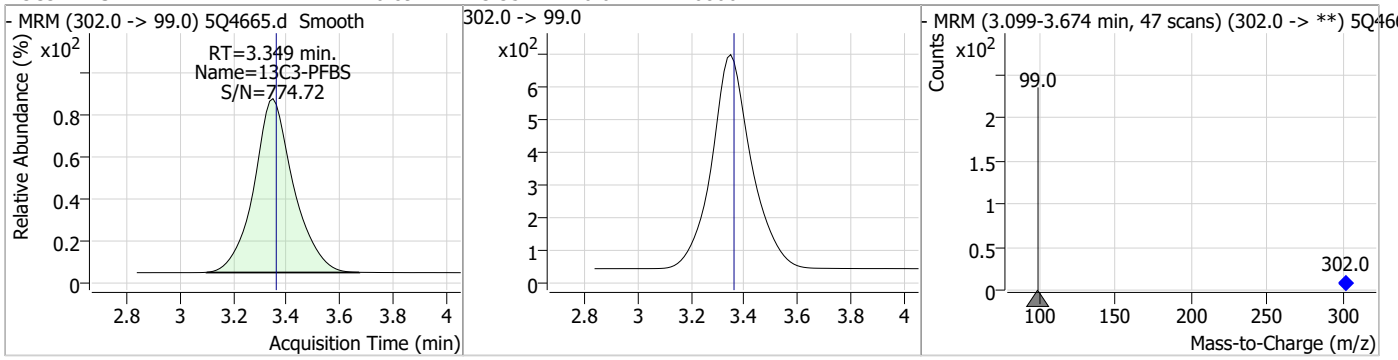
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.87	1.69	-0.01	31949				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.10	3.12	-0.01	52611				

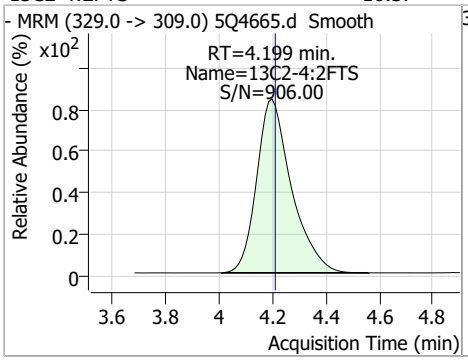


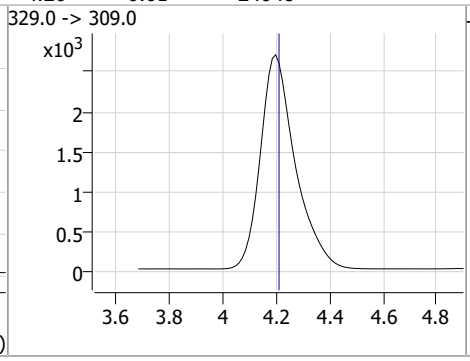
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.89	3.35	-0.01	6806				

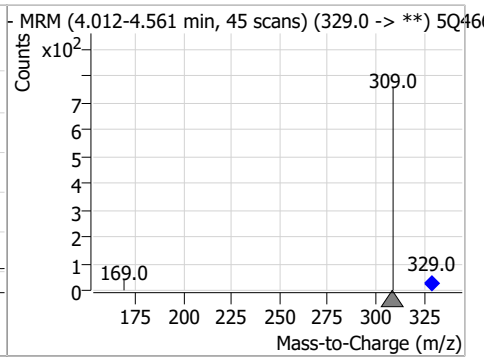


Perfluorinated Compounds by LC/MS/MS

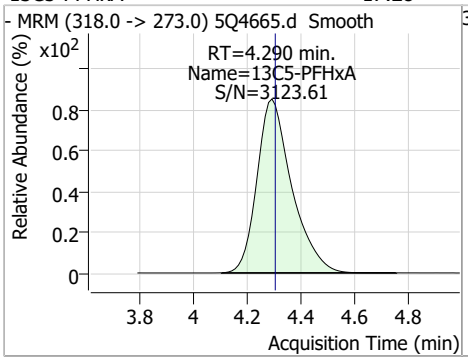
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.37	4.20	-0.01	24048				

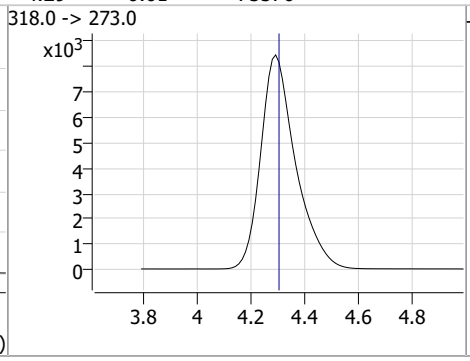


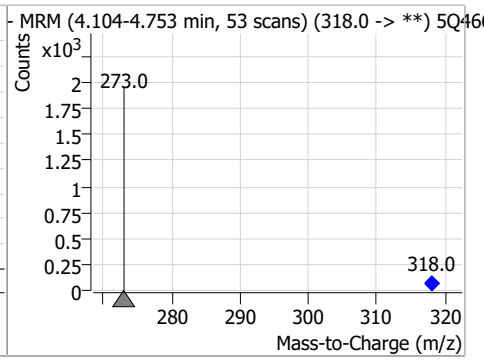




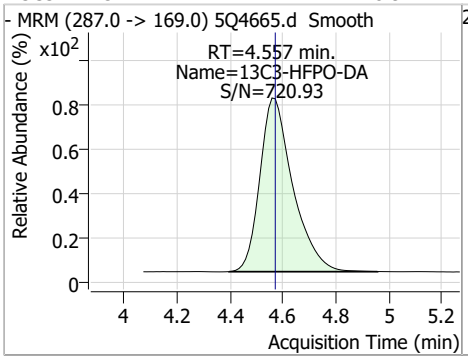
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.28	4.29	-0.01	75570				

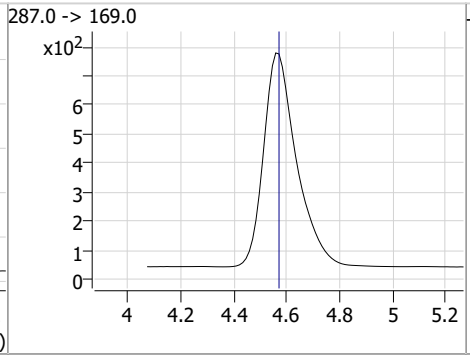


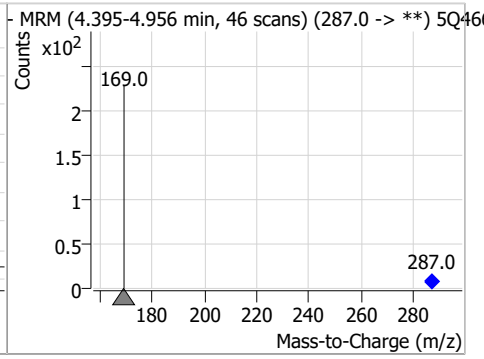




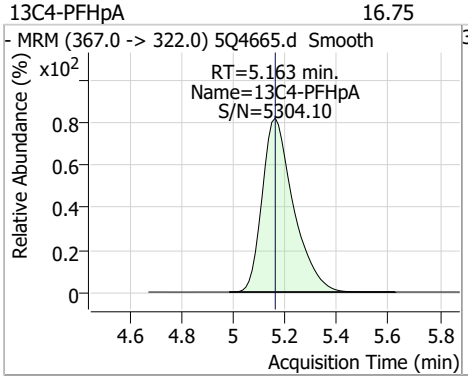
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.94	4.56	-0.01	6360				

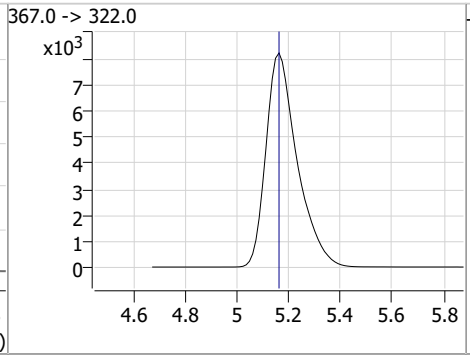


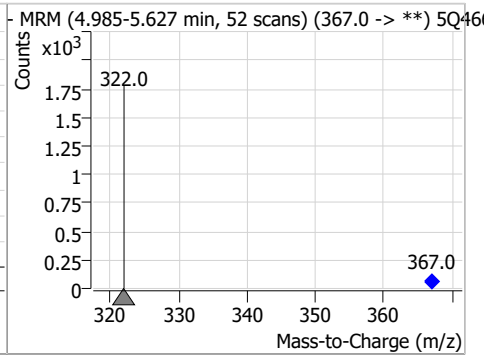




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.75	5.16	0.00	68365				

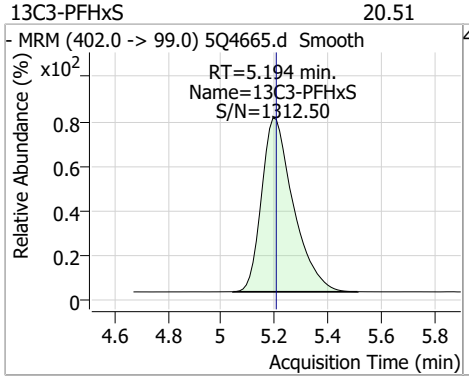


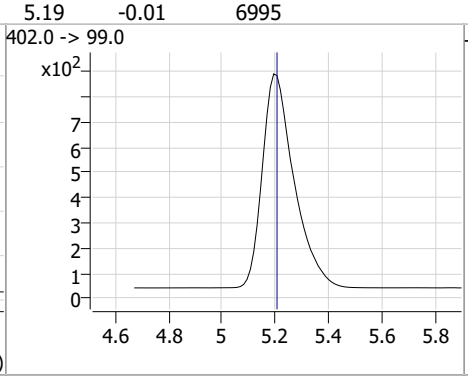


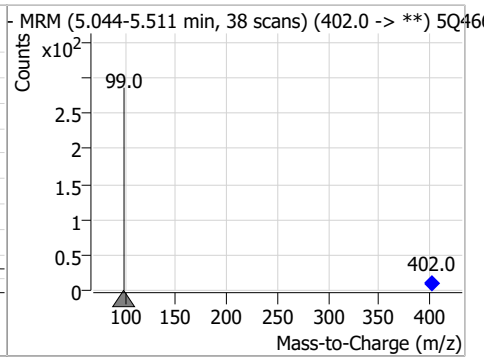


Perfluorinated Compounds by LC/MS/MS

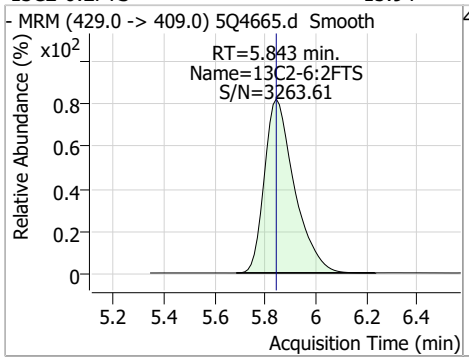
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.51	5.19	-0.01	6995				

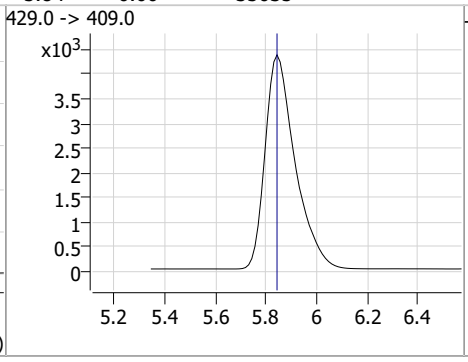


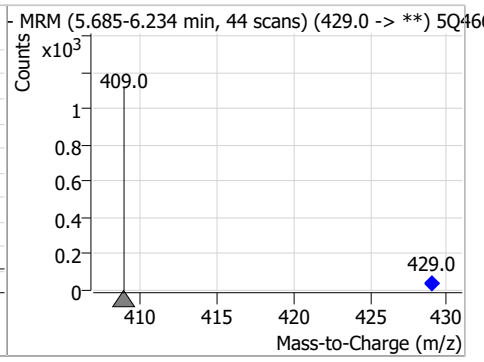




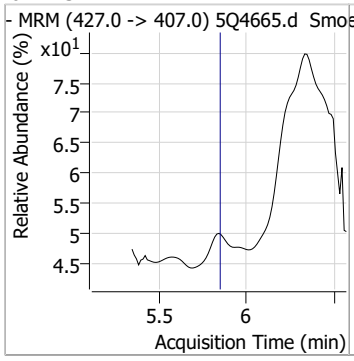
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.94	5.84	0.00	35635				

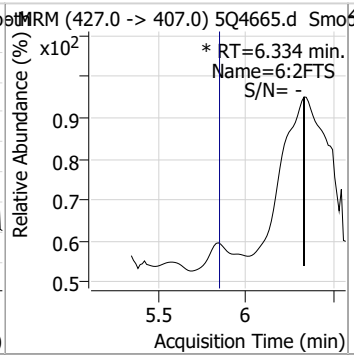


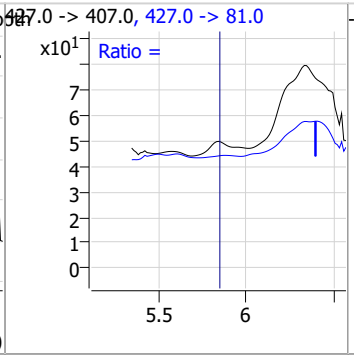


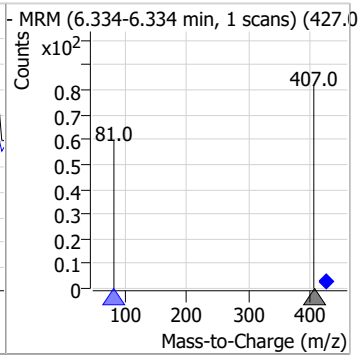


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

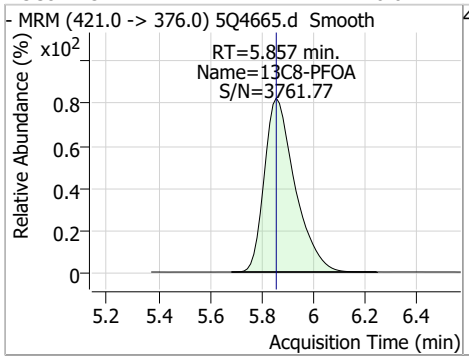


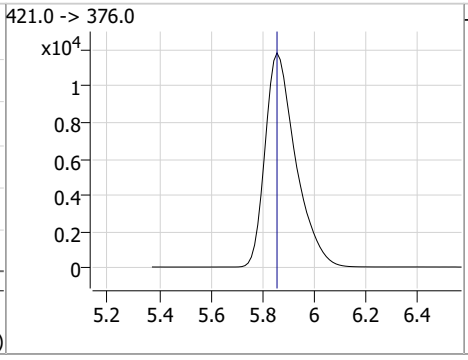


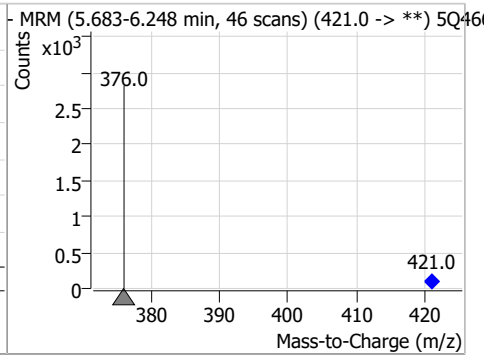




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.02	5.86	0.00	96887				

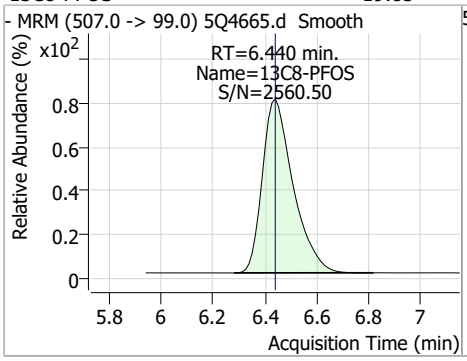


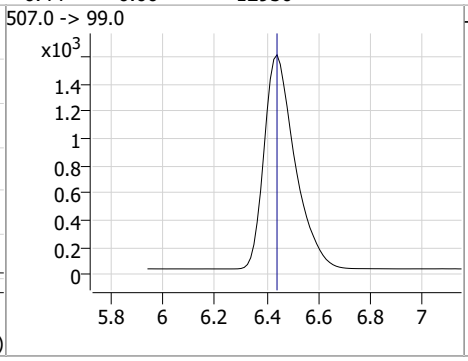


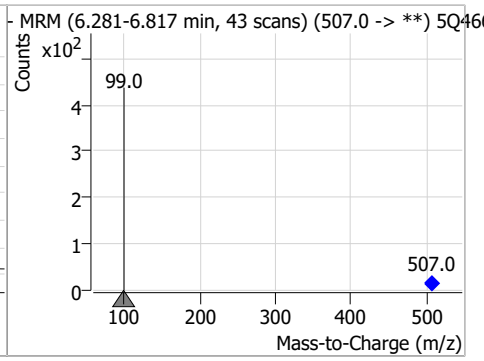


Perfluorinated Compounds by LC/MS/MS

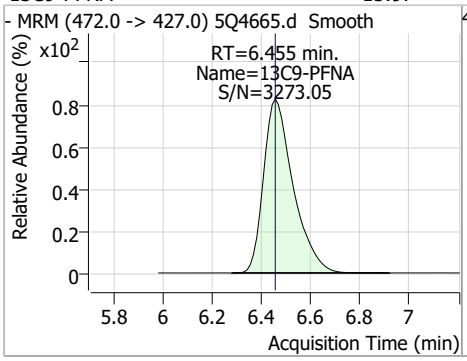
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.83	6.44	0.00	12950				

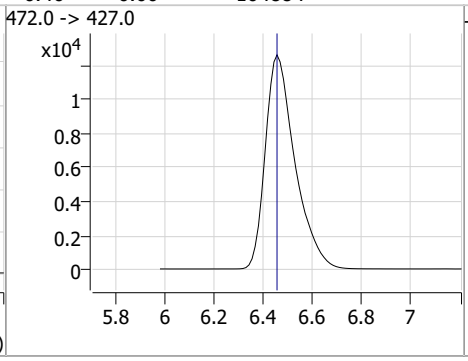


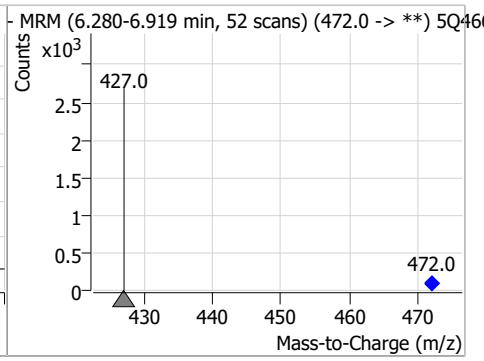




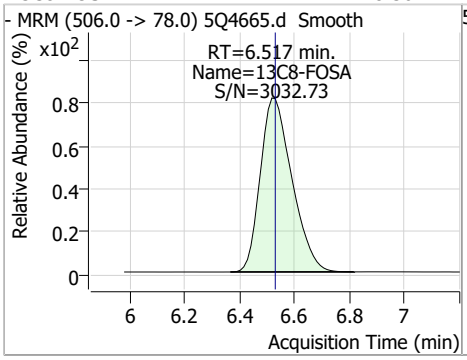
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.97	6.46	0.00	104884				

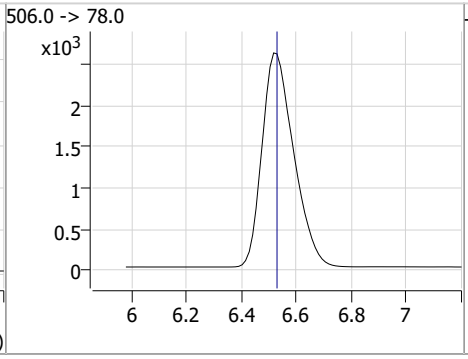


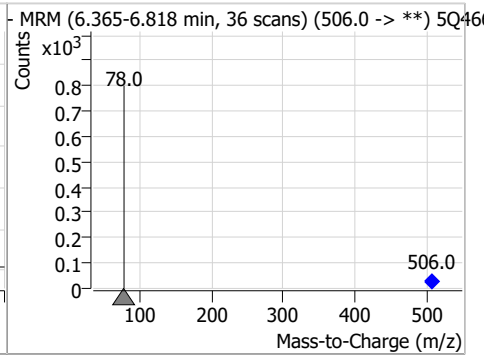




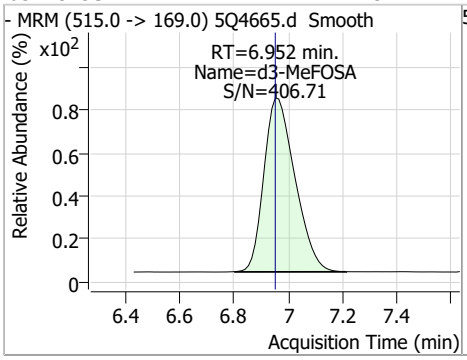
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.30	6.52	-0.01	20764				

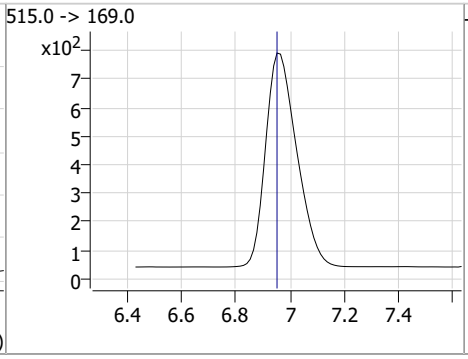


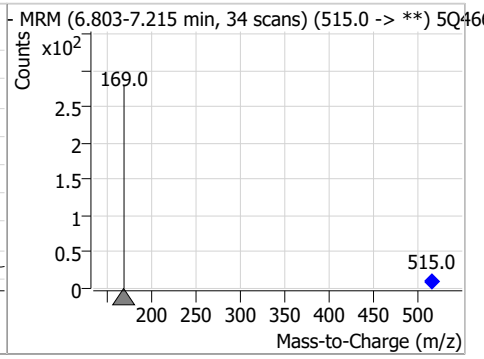




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.72	6.95	0.00	6006				

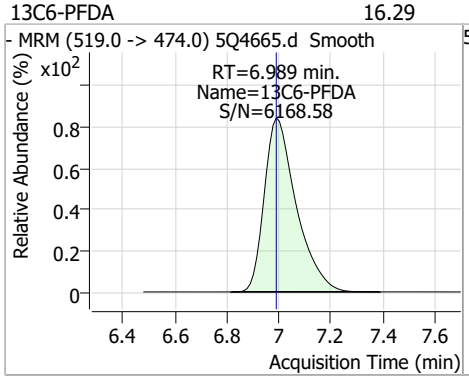


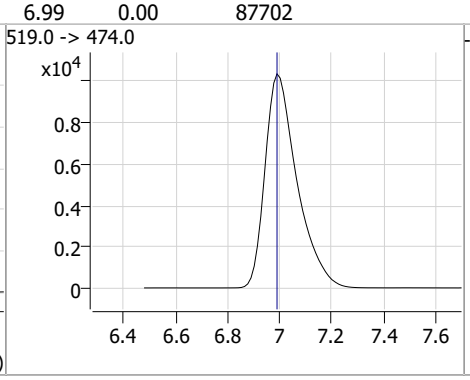


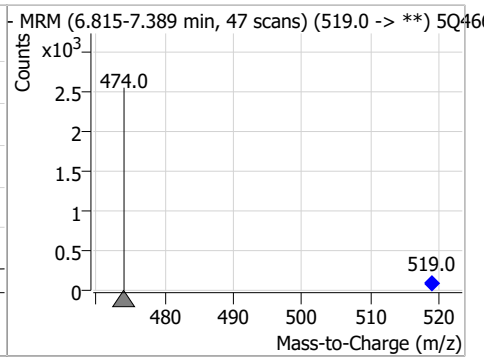


Perfluorinated Compounds by LC/MS/MS

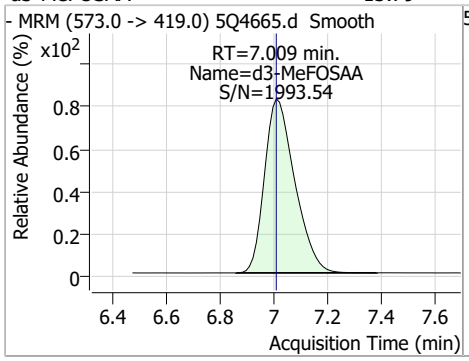
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.29	6.99	0.00	87702				

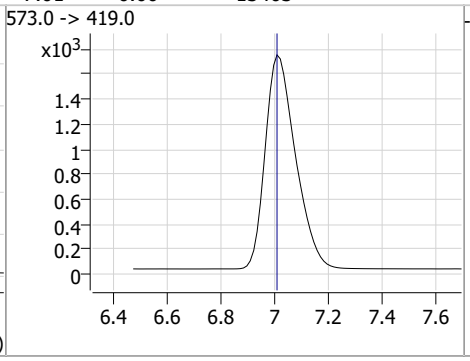


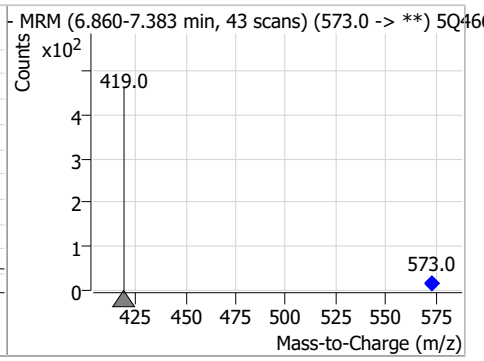




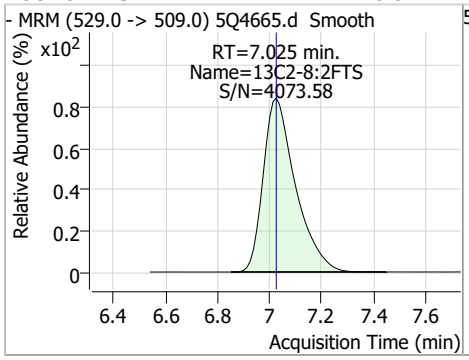
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	13.79	7.01	0.00	13403				

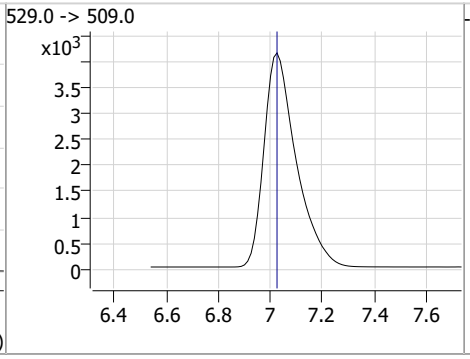


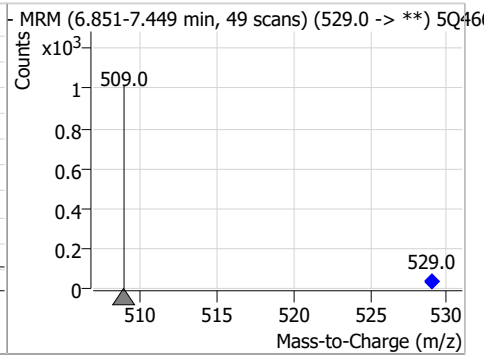




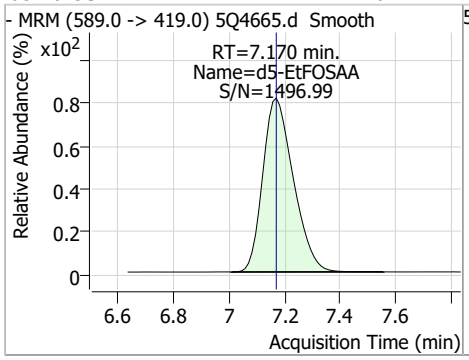
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.81	7.03	0.00	35511				

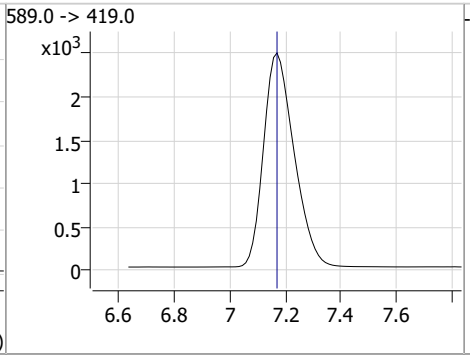


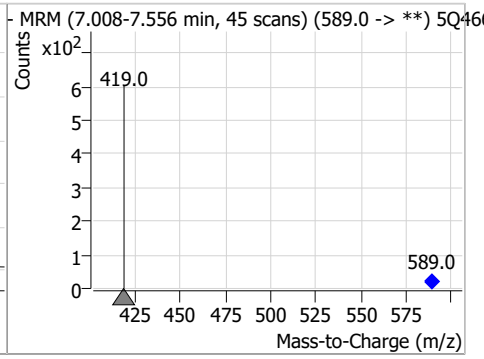




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.74	7.17	0.00	18765				

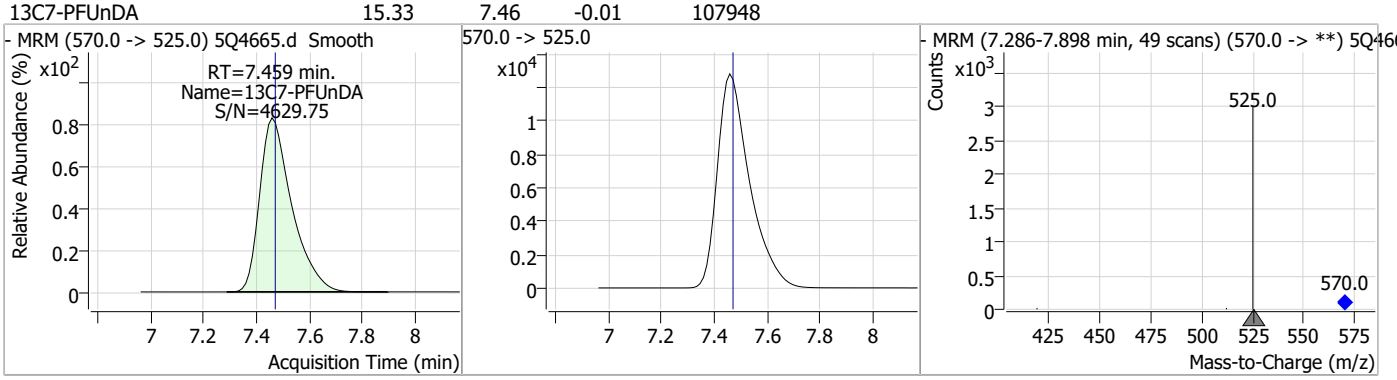




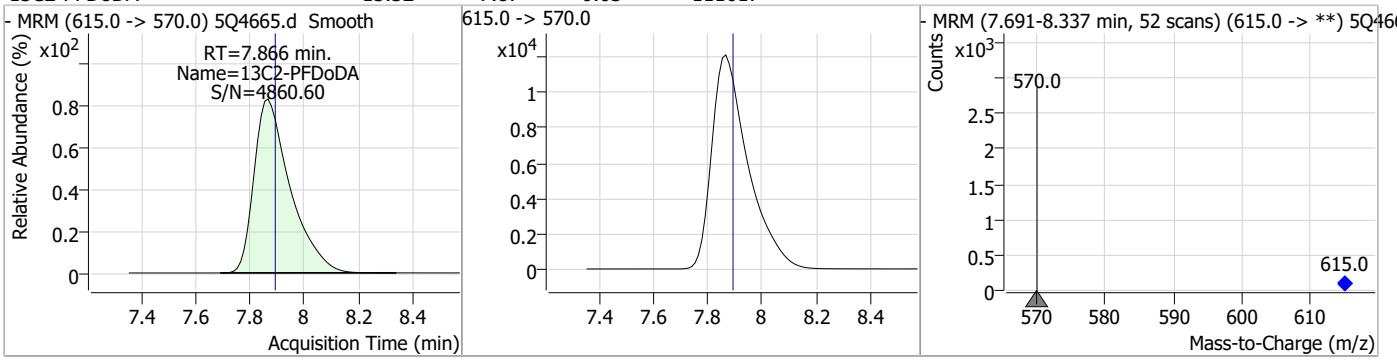


Perfluorinated Compounds by LC/MS/MS

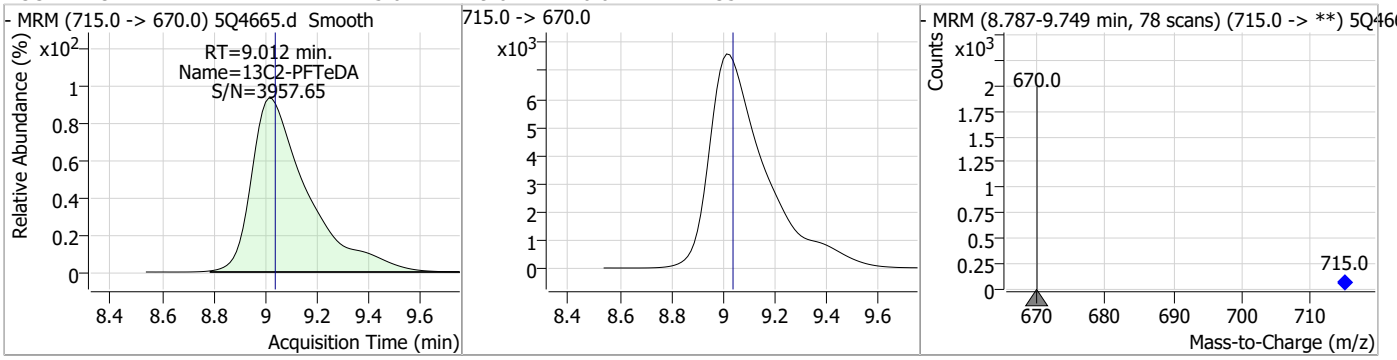
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.33	7.46	-0.01	107948				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.32	7.87	-0.03	111017				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.04	9.01	-0.02	113527				



Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65833.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:45:44 PM
Sample Name : IBLK
Vial : P1-A1
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

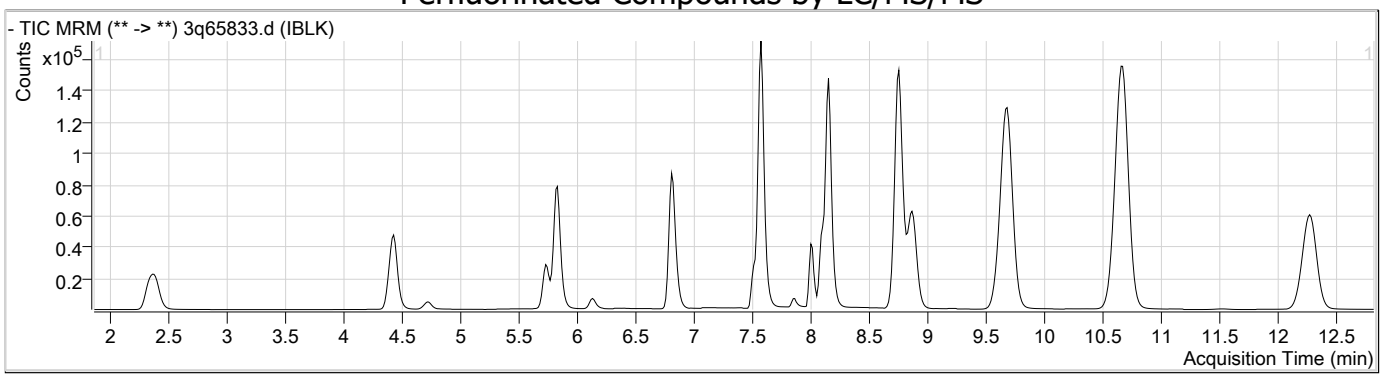
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.352	217.0 -> 172.0	168577	20.00	µg/L	-0.013
M5-PFPeA	4.424	268.0 -> 223.0	244913	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	329726	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	328432	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	450111	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	495321	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	744708	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	976325	20.00	µg/L	0.000
M2-PFDoDA	10.646	615.0 -> 570.0	1257122	20.00	µg/L	0.013
M2-PFTeDA	12.260	715.0 -> 670.0	524215	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	76851	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	22646	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	27794	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	42319	20.00	µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	117674	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	174256	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	334707	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	121628	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	26333	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	17020	20.00	µg/L	0.013
M5-EtFOSAA	8.077	589.0 -> 419.0	119391	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	117674	19.17	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-6:2FTS	7.571	429.0 -> 409.0	174256	20.20	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C2-8:2FTS	8.860	529.0 -> 509.0	334707	19.55	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-PFDoDA	10.646	615.0 -> 570.0	1257122	20.70	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFTeDA	12.260	715.0 -> 670.0	524215	20.53	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C3-PFBS	4.704	302.0 -> 99.0	22646	20.46	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	6.834	402.0 -> 99.0	27794	20.63	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C4-PFBA	2.352	217.0 -> 172.0	168577	20.34	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C4-PFHpA	6.805	367.0 -> 322.0	328432	20.82	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C5-PFHxA	5.826	318.0 -> 273.0	329726	20.56	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C5-PFPeA	4.424	268.0 -> 223.0	244913	20.25	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C6-PFDA	8.751	519.0 -> 474.0	744708	20.49	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

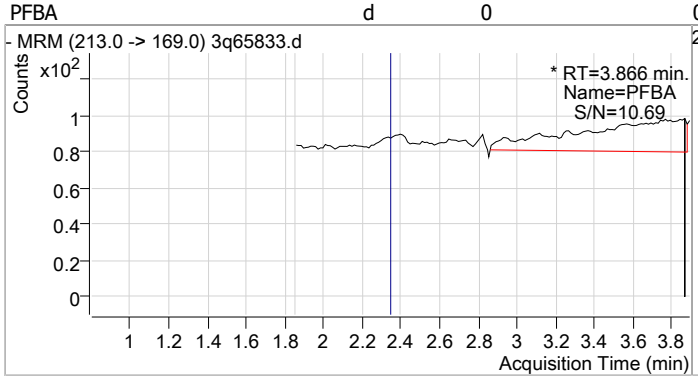
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C7-PFUnDA	9.677	570.0 -> 525.0	976325	20.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	7.503	506.0 -> 78.0	76851	21.57 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C8-PFOA	7.573	421.0 -> 376.0	450111	21.16 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	8.123	507.0 -> 99.0	42319	20.45 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C9-PFNA	8.150	472.0 -> 427.0	495321	20.76 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d3-MeFOSAA	7.991	573.0 -> 419.0	121628	21.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	26323	20.38 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d3-MeFOSA	7.854	515.0 -> 169.0	17020	21.09 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
d5-EtFOSAA	8.077	589.0 -> 419.0	119434	20.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
Target Compounds						**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.		
6:2FTS	-	427.0 -> 407.0	-	N.D.		
8:2FTS	-	527.0 -> 507.0	-	N.D.		
EtFOSAA	8.091	584.0 -> 419.0	694	0.14 µg/L	m	69
FOSA	-	498.0 -> 78.0	-	N.D.		
MeFOSAA	8.004	570.0 -> 419.0	763	0.14 µg/L	m	93
PFBA	3.866	213.0 -> 169.0	0	0.00 µg/L	m	1
PFBS	-	299.0 -> 80.0	-	N.D.		
PFDA	-	513.0 -> 469.0	-	N.D.		
PFDoDA	-	613.0 -> 569.0	-	N.D.		
PFDS	-	599.0 -> 80.0	-	N.D.		
PFHpA	-	363.0 -> 319.0	-	N.D.		
PFHpS	-	449.0 -> 80.0	-	N.D.		
PFHxA	-	313.0 -> 269.0	-	N.D.		
PFHxS	-	399.0 -> 80.0	-	N.D.		
PFNA	-	463.0 -> 419.0	-	N.D.		
PFNS	-	549.0 -> 80.0	-	N.D.		
PFOA	-	413.0 -> 369.0	-	N.D.		
PFOS	-	499.0 -> 80.0	-	N.D.		
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
PFTeDA	12.264	713.0 -> 669.0	3714	0.10 µg/L		100
PFTrDA	-	663.0 -> 619.0	-	N.D.		
PFUnDA	-	563.0 -> 519.0	-	N.D.		
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
ADONA	-	377.0 -> 251.0	-	N.D.		
HFPO-DA	-	329.0 -> 169.0	-	N.D.		
MeFOSA	-	512.0 -> 169.0	-	N.D.		
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
FBSA	-	298.0 -> 78.0	-	N.D.		
FHxSA	-	398.0 -> 78.0	-	N.D.		

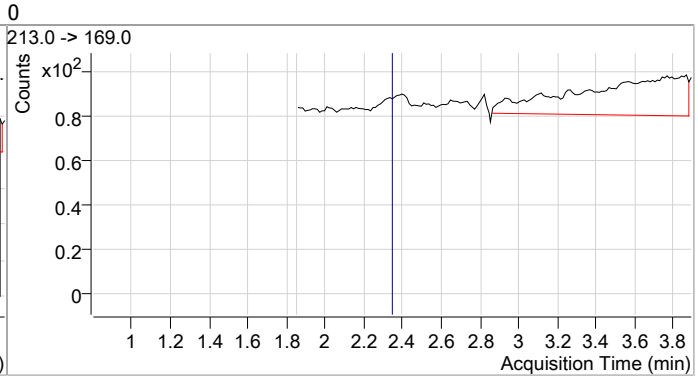
 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

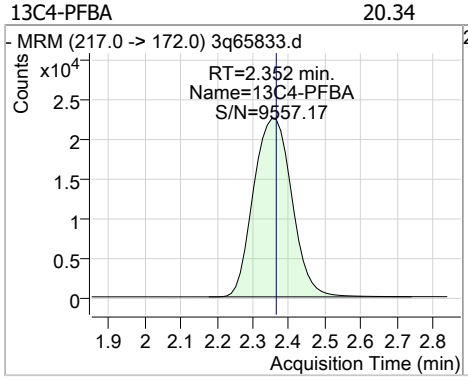


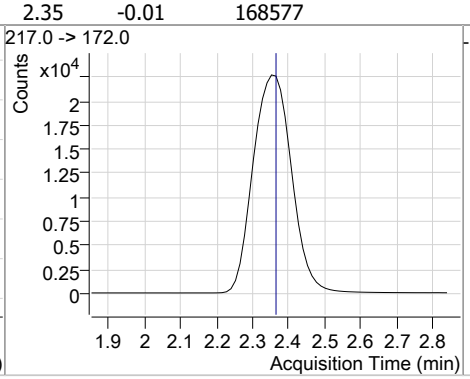
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	d	0		0				

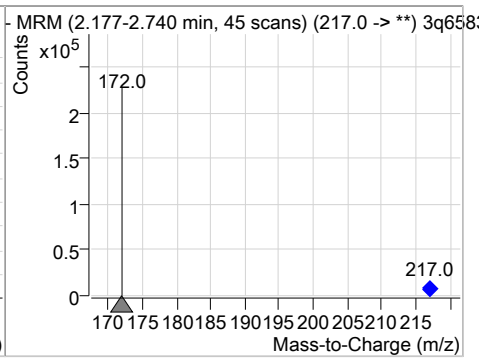




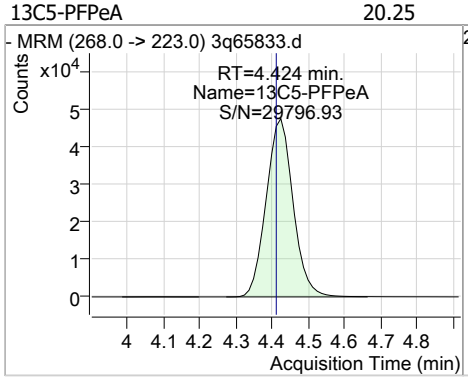
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.34	2.35	-0.01	168577				

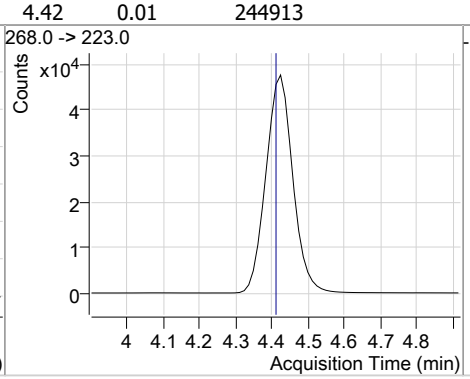


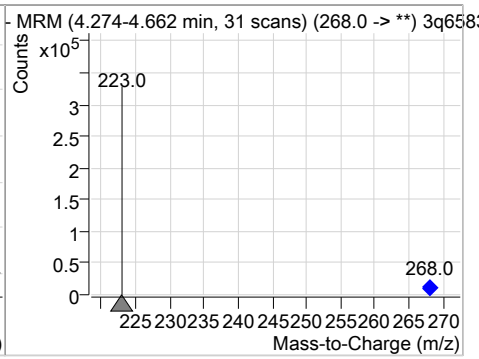




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.25	4.42	0.01	244913				

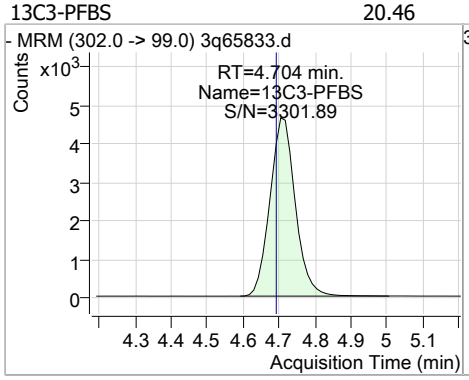


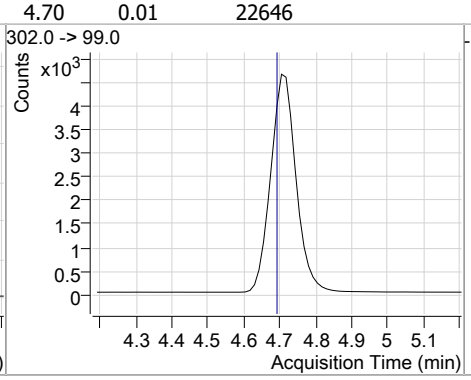


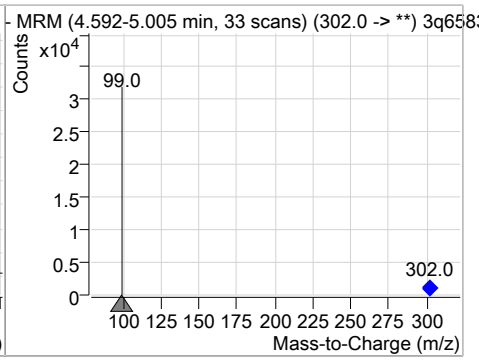


Perfluorinated Compounds by LC/MS/MS

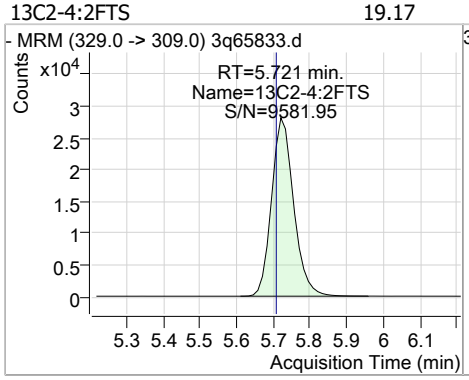
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.46	4.70	0.01	22646				

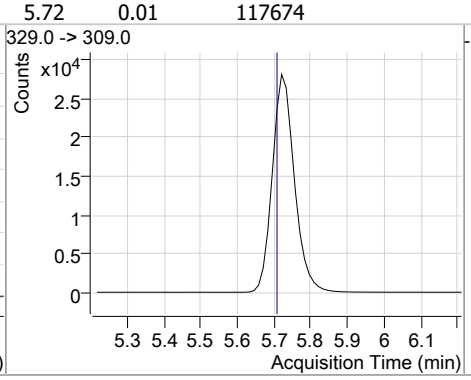


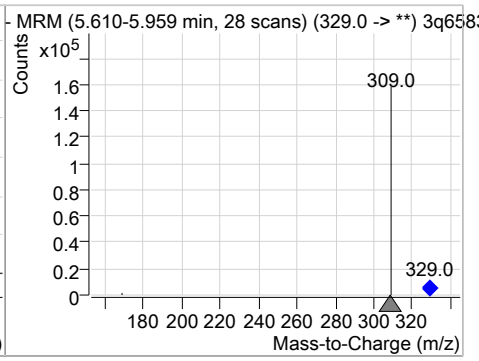




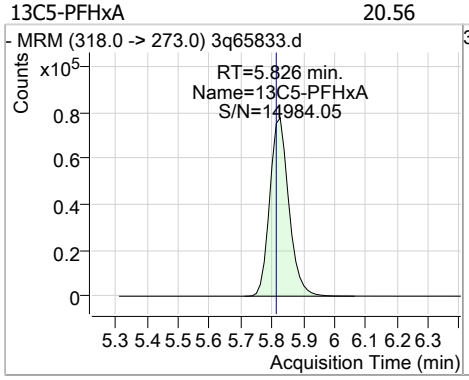
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.17	5.72	0.01	117674				

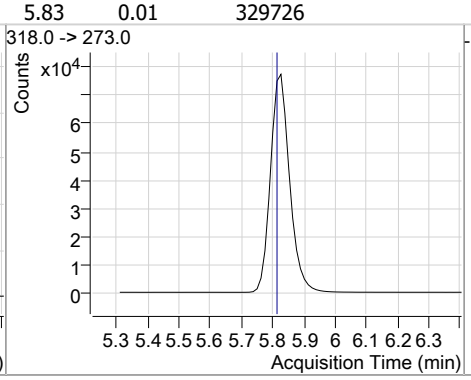


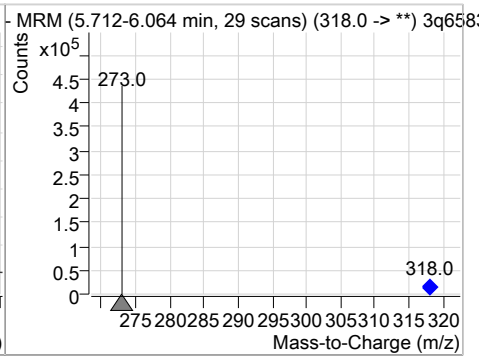




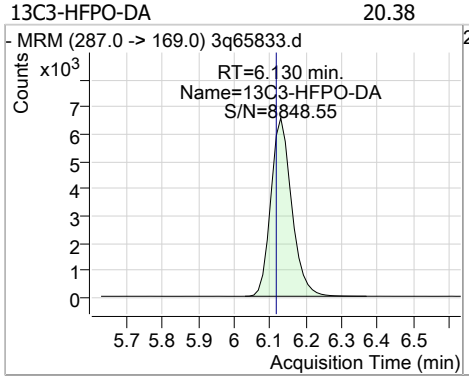
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.56	5.83	0.01	329726				

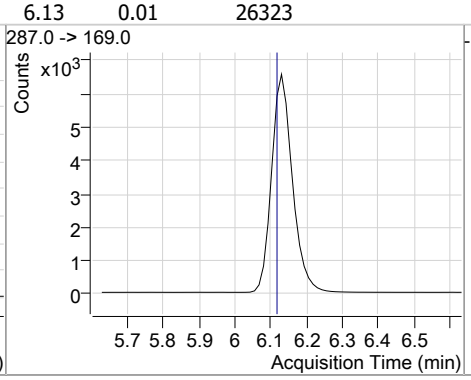


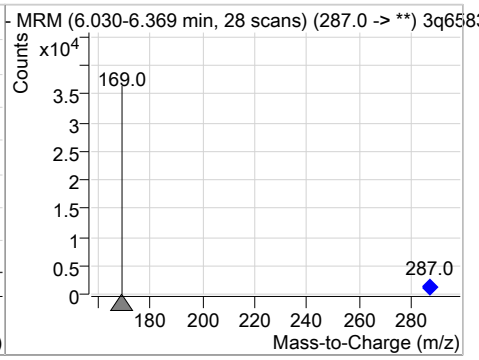




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.38	6.13	0.01	26323				

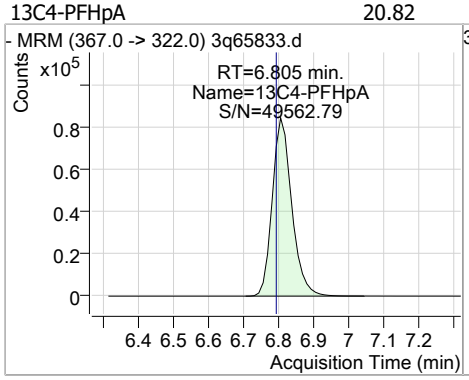


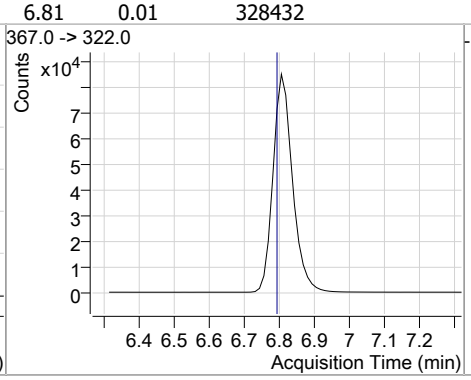


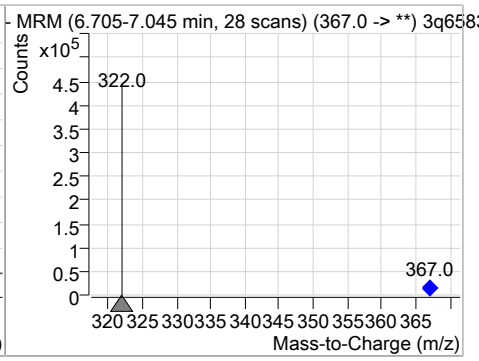


Perfluorinated Compounds by LC/MS/MS

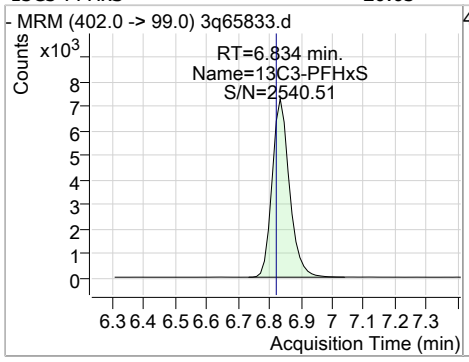
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.82	6.81	0.01	328432				

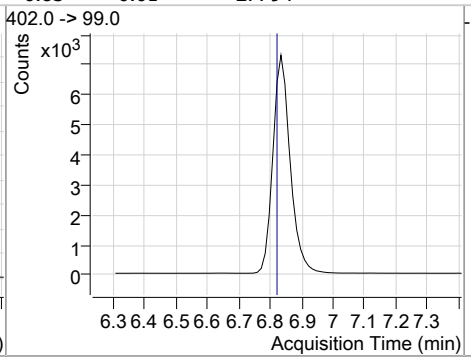


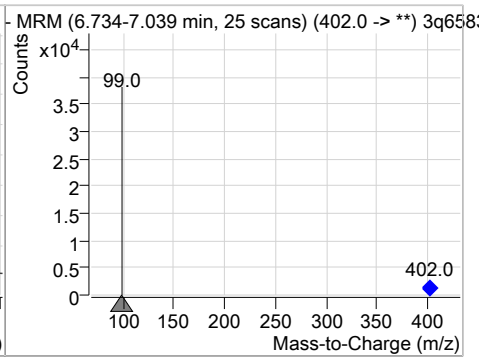




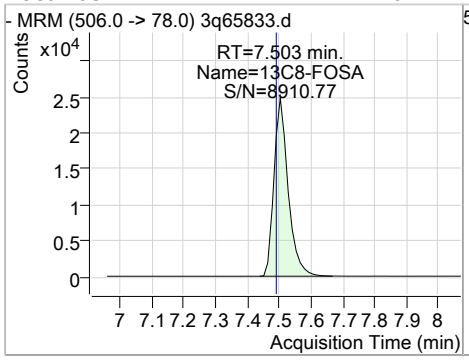
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.63	6.83	0.01	27794				

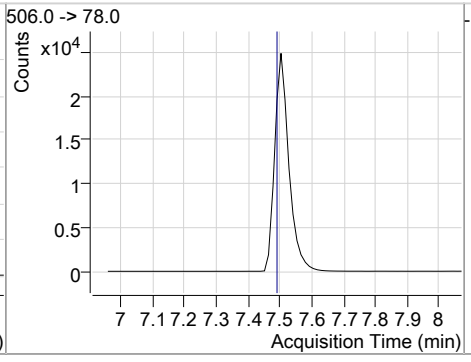


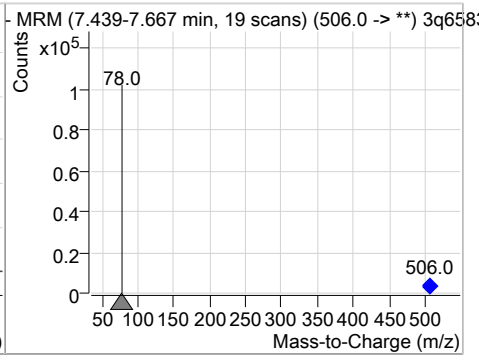




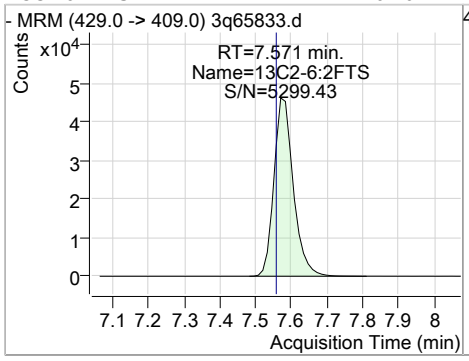
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.57	7.50	0.01	76851				

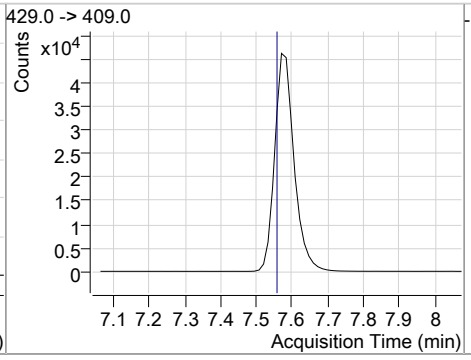


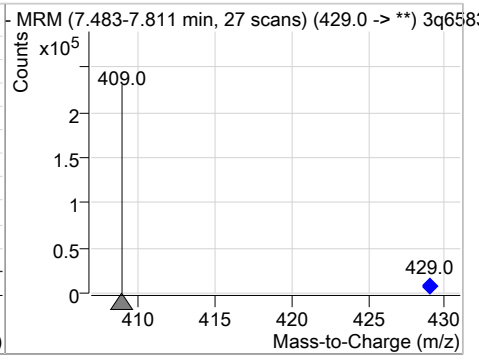




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.20	7.57	0.01	174256				

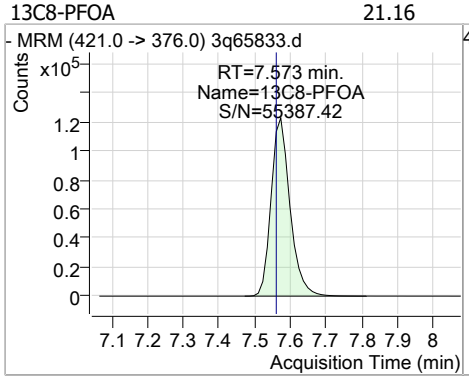


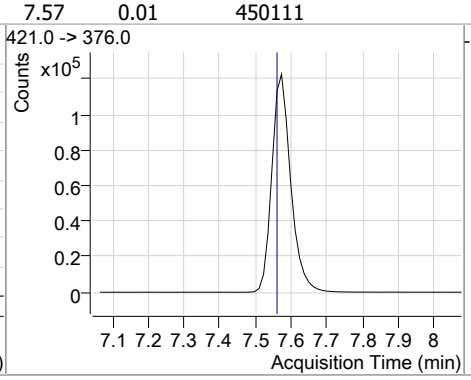


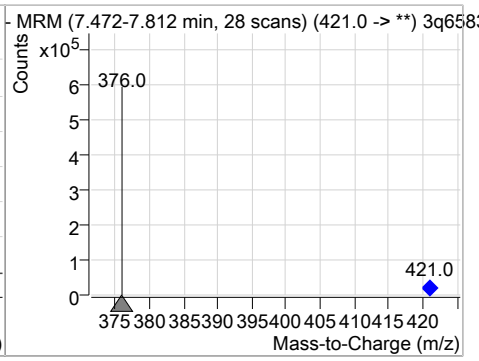


Perfluorinated Compounds by LC/MS/MS

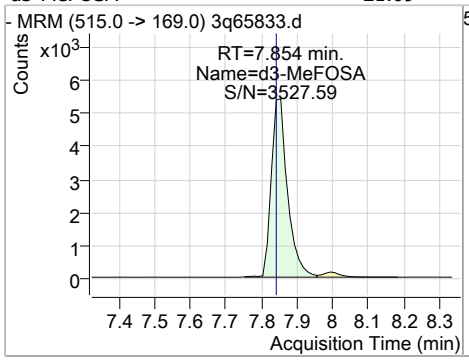
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.16	7.57	0.01	450111				

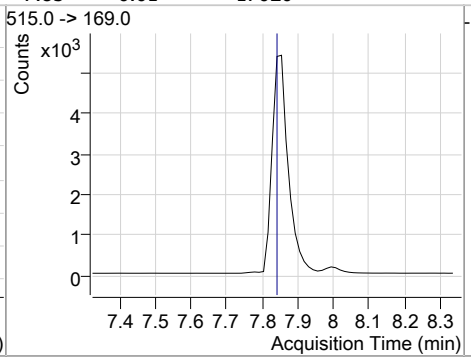


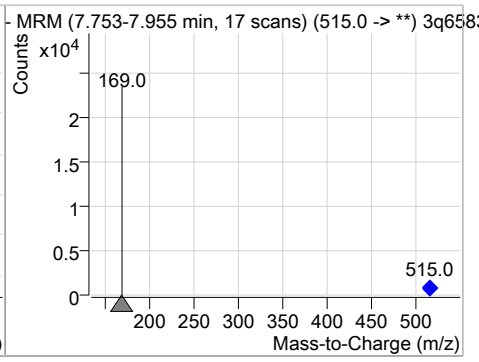




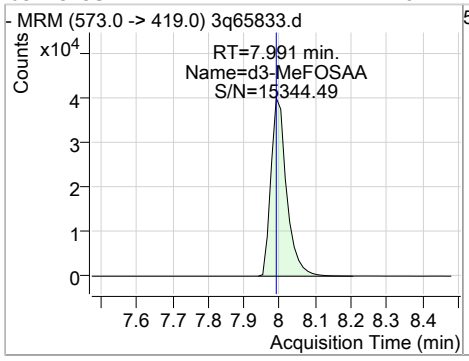
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.09	7.85	0.01	17020				

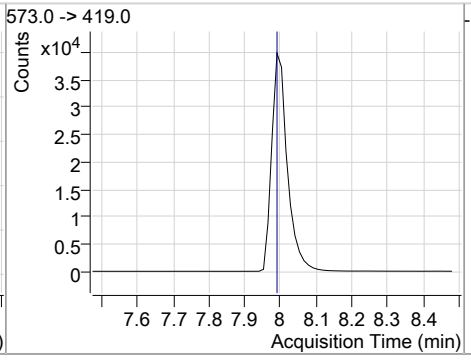


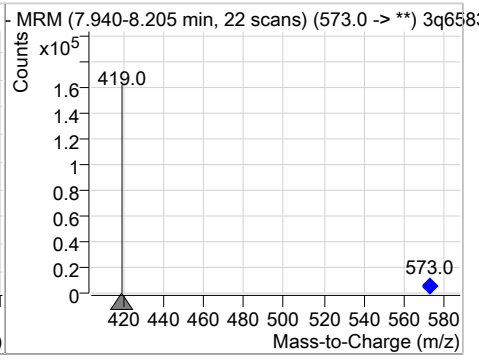




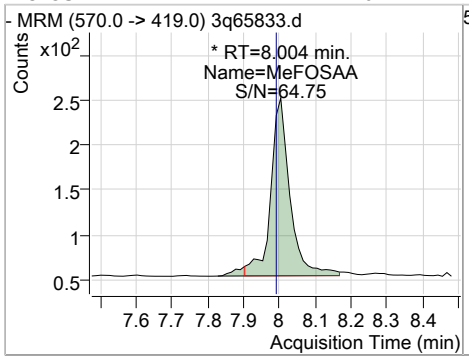
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.48	7.99	0.00	121628				

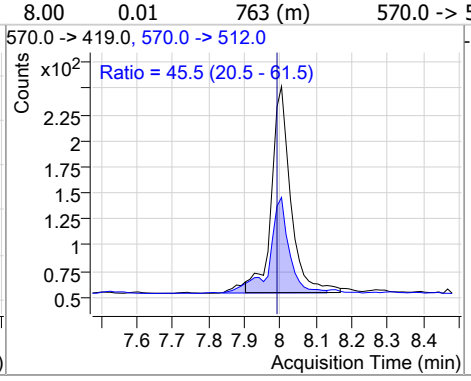


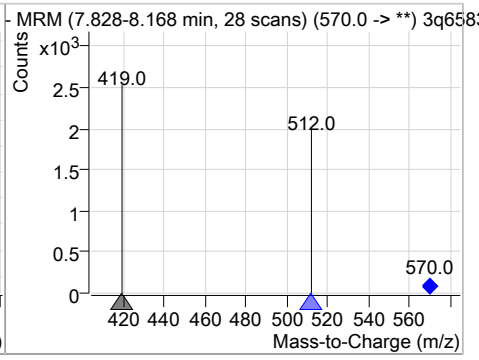




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.14	8.00	0.01	763 (m)	570.0 -> 512.0	45.5	20.5	61.5

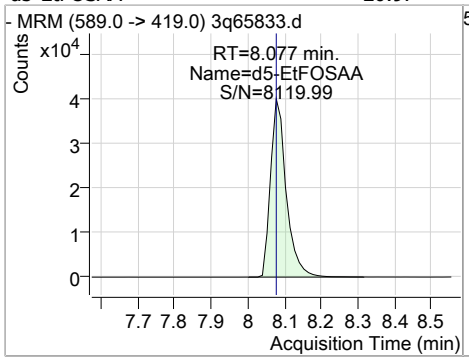


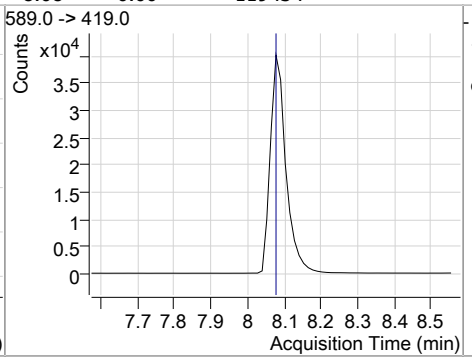


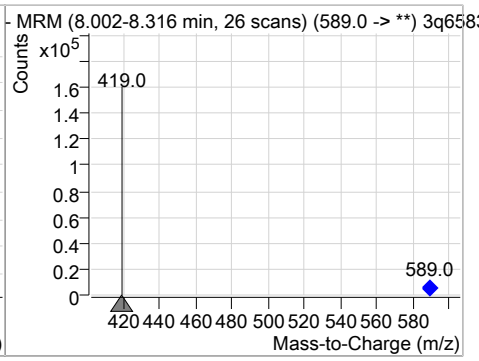


Perfluorinated Compounds by LC/MS/MS

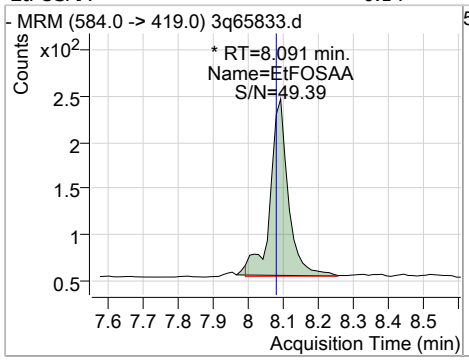
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.97	8.08	0.00	119434				

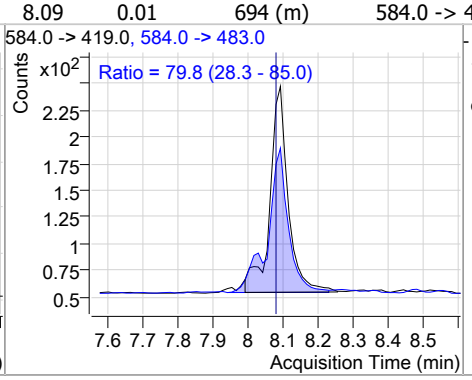


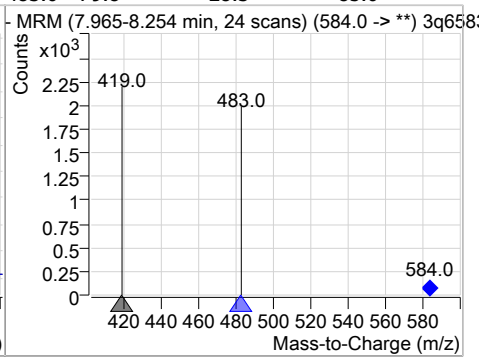




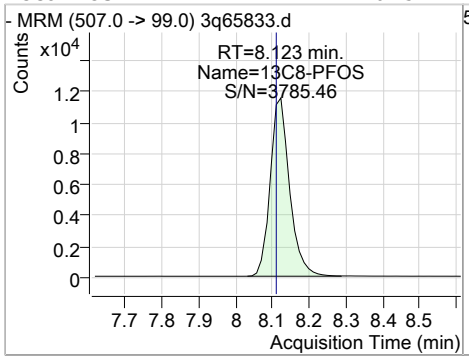
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.14	8.09	0.01	694 (m)	584.0 -> 483.0	79.8	28.3	85.0

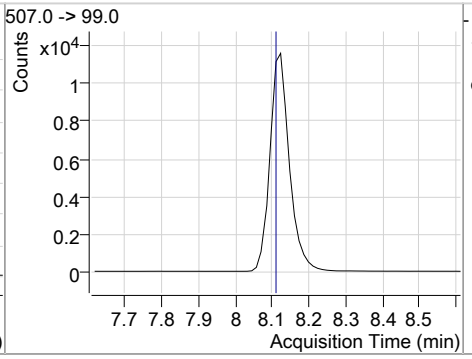


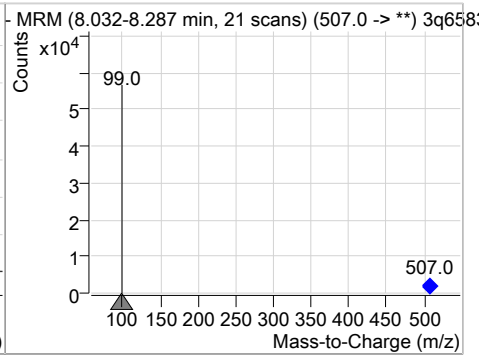




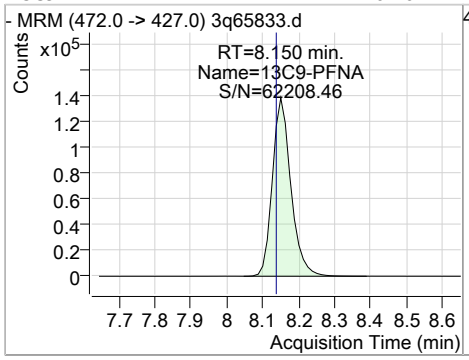
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.45	8.12	0.01	42319				

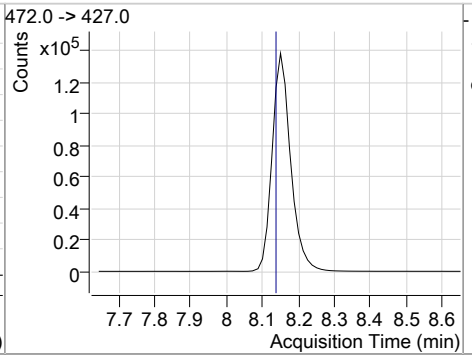


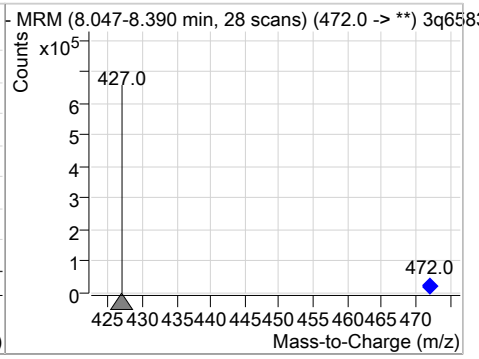




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.76	8.15	0.01	495321				

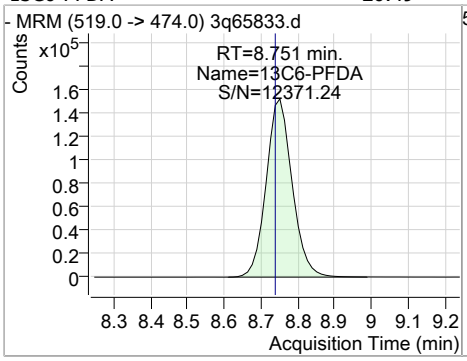


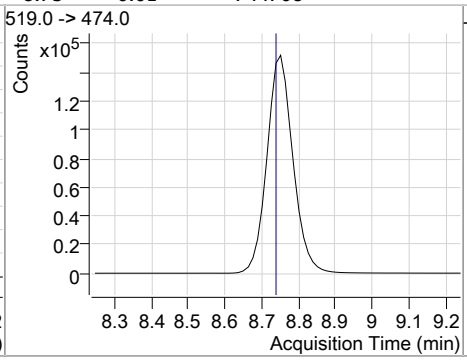


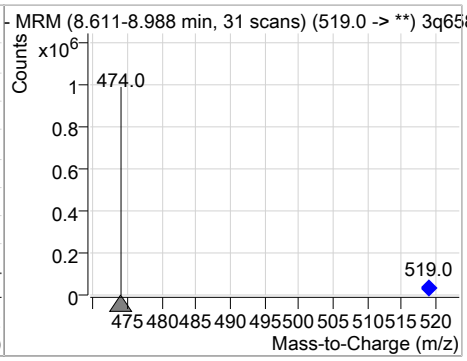


Perfluorinated Compounds by LC/MS/MS

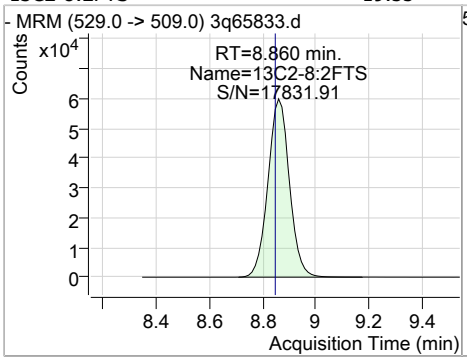
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.49	8.75	0.01	744708				

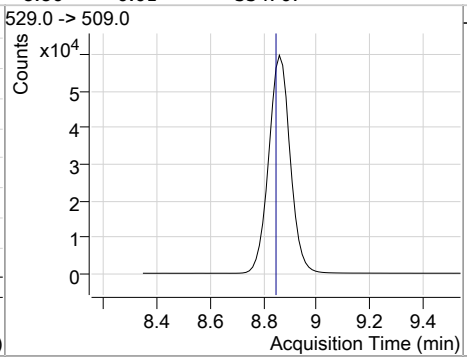


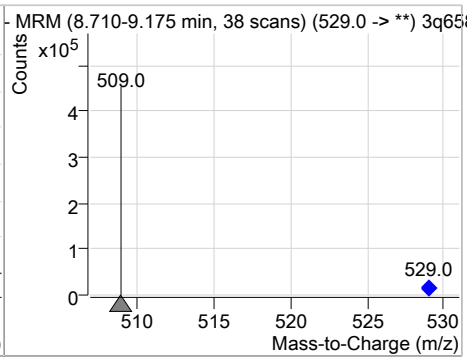




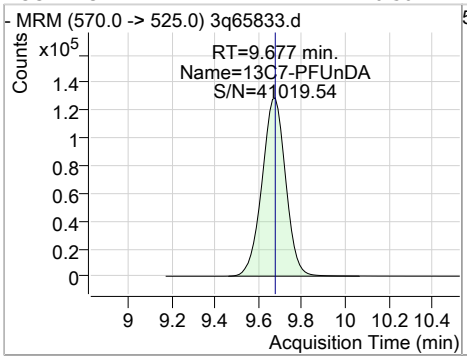
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.55	8.86	0.01	334707				

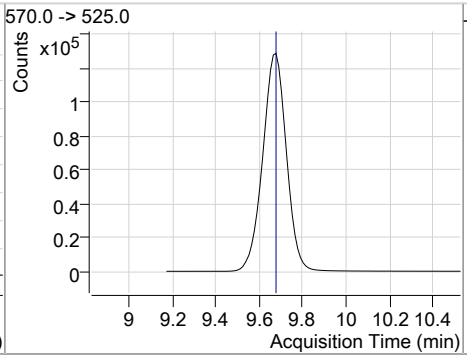


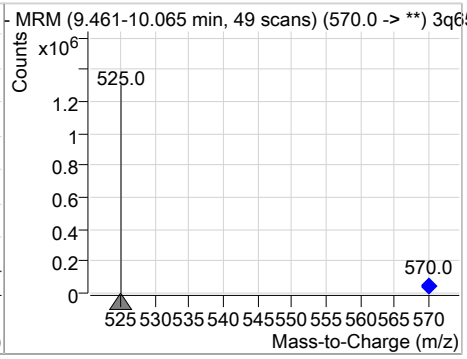




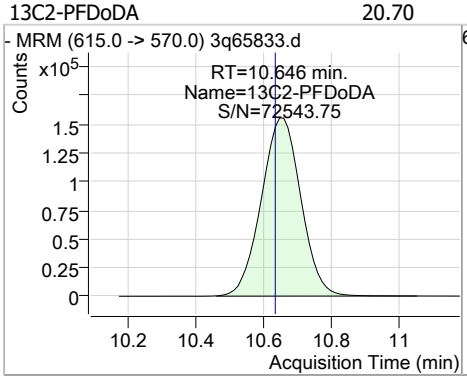
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.50	9.68	0.00	976325				

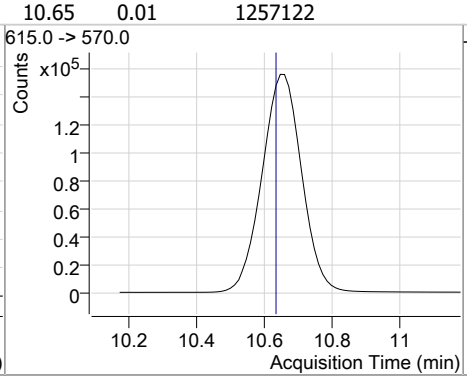


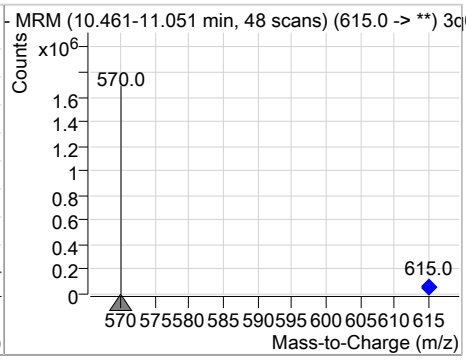




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.70	10.65	0.01	1257122				

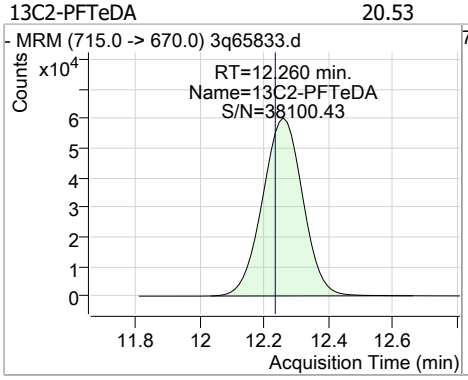


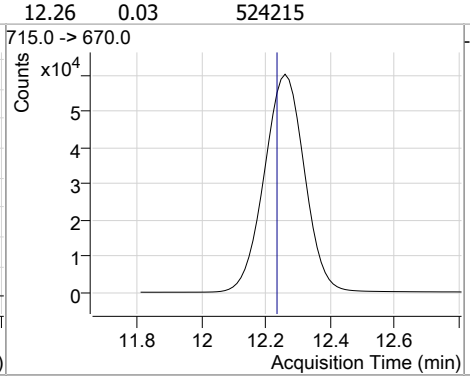


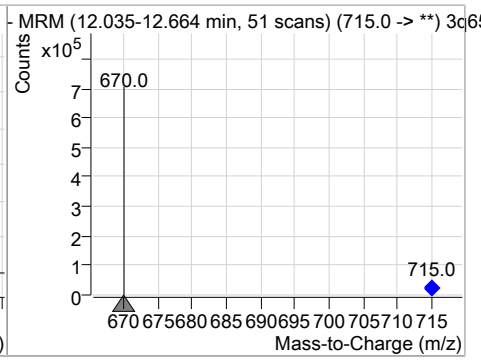


Perfluorinated Compounds by LC/MS/MS

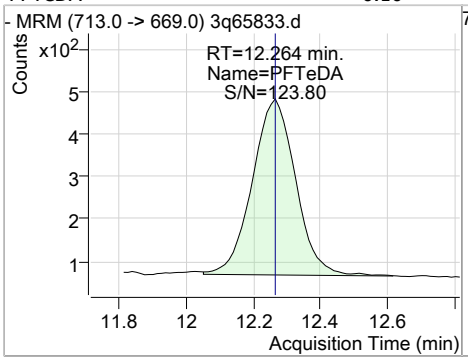
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.53	12.26	0.03	524215				

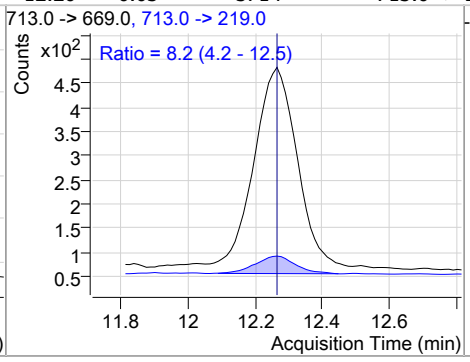


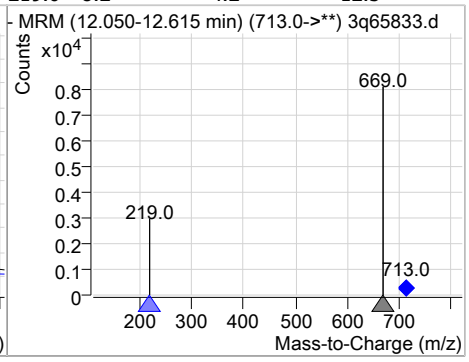




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.10	12.26	0.03	3714	713.0 -> 219.0	8.2	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IBLK
Lab FileID: 3Q65833.D
Injection Time: 09/15/22 20:45
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:53 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4823.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/17/2022 2:20:09 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_091722_S5Q73.quantmethod.xml
Batch Name	:	s5q73.batch.bin
Sample Information	:	OP92656,S5Q73,250,,,1.0,1,water

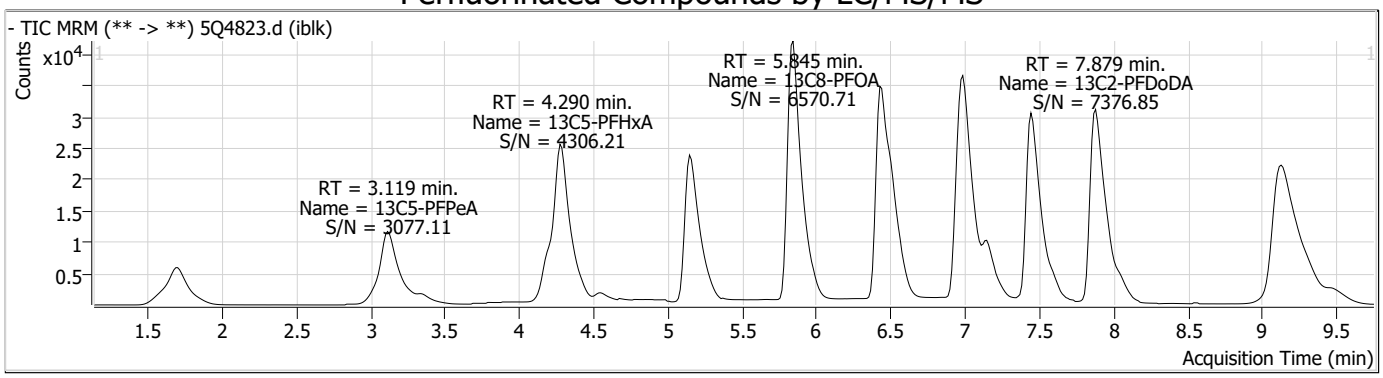
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	65225	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	104973	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	166921	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	154425	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	206288	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	207842	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	165218	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	203937	20.00	µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	240677	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	303603	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	41837	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	11907	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12192	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	21071	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	51638	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	70473	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	63452	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	29245	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	9918	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10338	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	36503	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	51638	16.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%		
13C2-6:2FTS	5.830	429.0 -> 409.0	70473	16.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C2-8:2FTS	7.013	529.0 -> 509.0	63452	16.51	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%		
13C2-PFDoDA	7.879	615.0 -> 570.0	240677	17.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C2-PFTeDA	9.124	715.0 -> 670.0	303603	17.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C3-PFBS	3.349	302.0 -> 99.0	11907	17.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%		
13C3-PFHxS	5.194	402.0 -> 99.0	12192	17.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C4-PFBA	1.700	217.0 -> 172.0	65225	17.69	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C4-PFHpA	5.163	367.0 -> 322.0	154425	17.56	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C5-PFHxA	4.290	318.0 -> 273.0	166921	17.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C5-PFPeA	3.119	268.0 -> 223.0	104973	17.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C6-PFDA	6.977	519.0 -> 474.0	165218	17.79	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

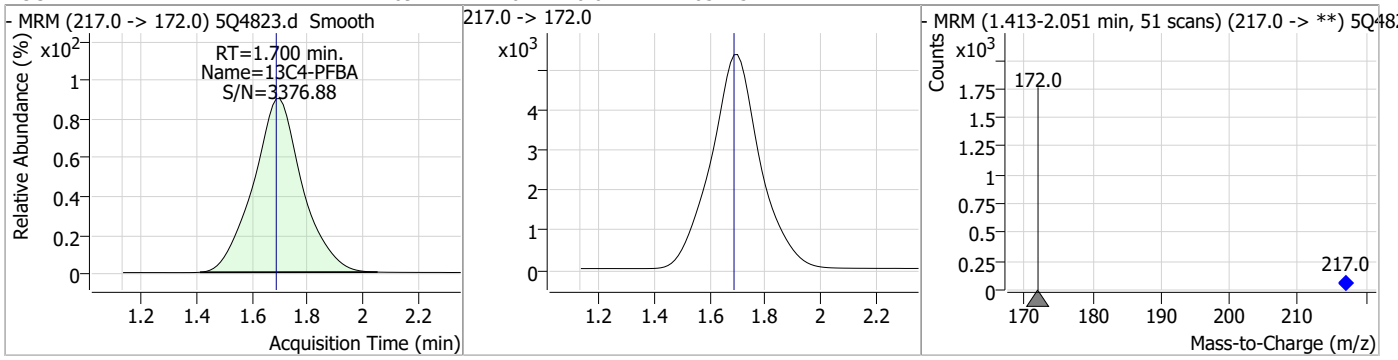
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%			
13C7-PFUnDA	7.459	570.0 -> 525.0	203937	17.60	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%			
13C8-FOSA	6.517	506.0 -> 78.0	41837	17.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
13C8-PFOA	5.845	421.0 -> 376.0	206288	17.51	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
13C8-PFOS	6.428	507.0 -> 99.0	21071	18.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C9-PFNA	6.443	472.0 -> 427.0	207842	17.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.2%			
d3-MeFOSAA	7.009	573.0 -> 419.0	29245	17.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	9918	17.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
d3-MeFOSA	6.952	515.0 -> 169.0	10338	18.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%			
d5-EtFOSAA	7.170	589.0 -> 419.0	36503	17.31	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.183	584.0 -> 419.0	0		µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	6.998	570.0 -> 419.0	162	0.13	µg/L		75
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	7.894	613.0 -> 569.0	568	0.05	µg/L		92
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	7.448	563.0 -> 519.0	0		µg/L	m	1
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

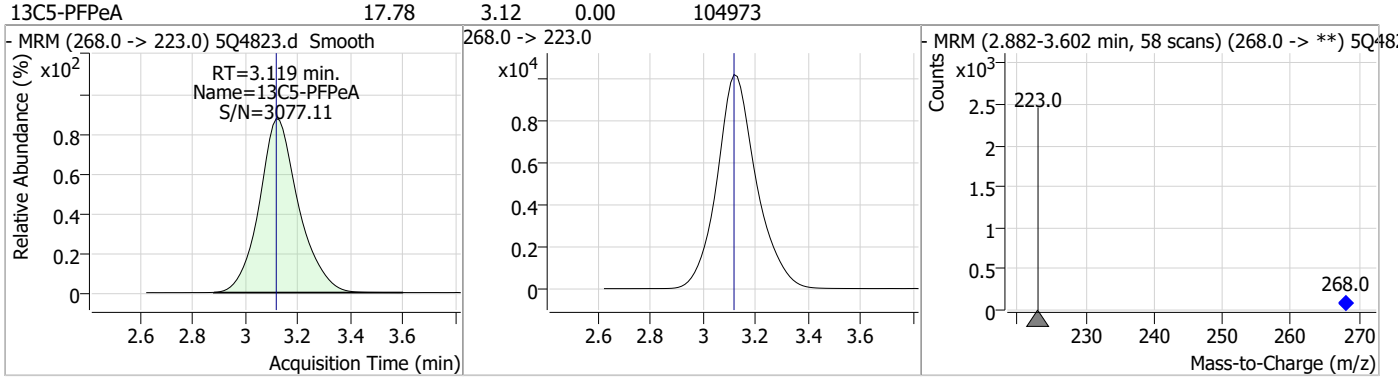
Perfluorinated Compounds by LC/MS/MS



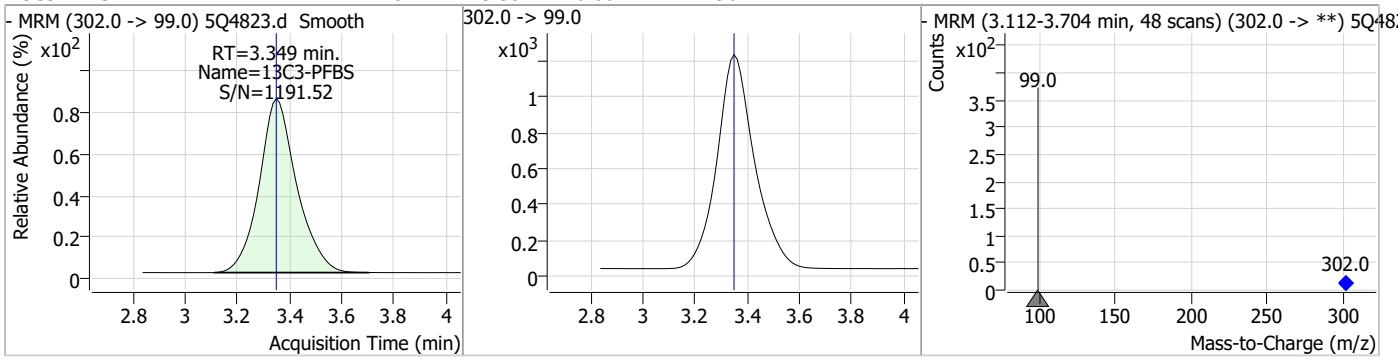
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.69	1.70	0.01	65225				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.78	3.12	0.00	104973				

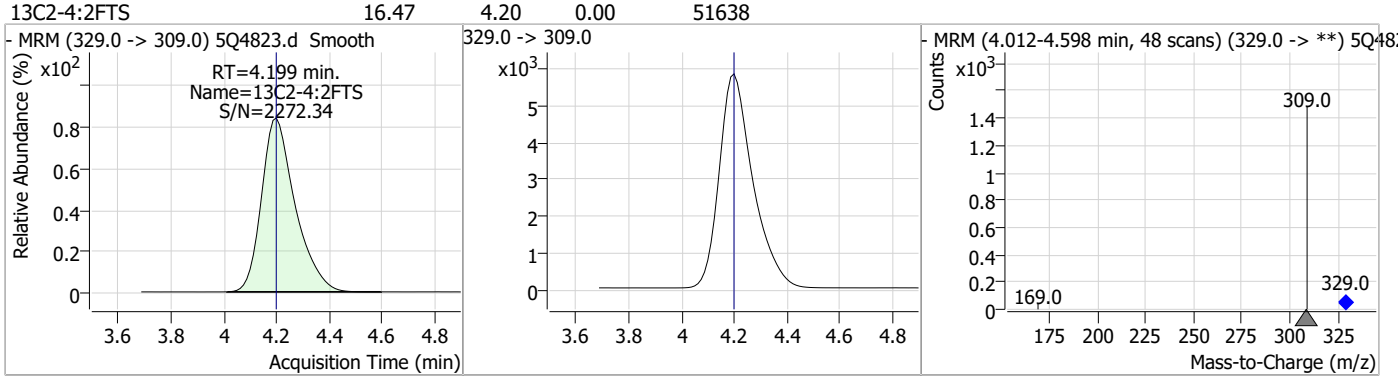


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.81	3.35	0.00	11907				

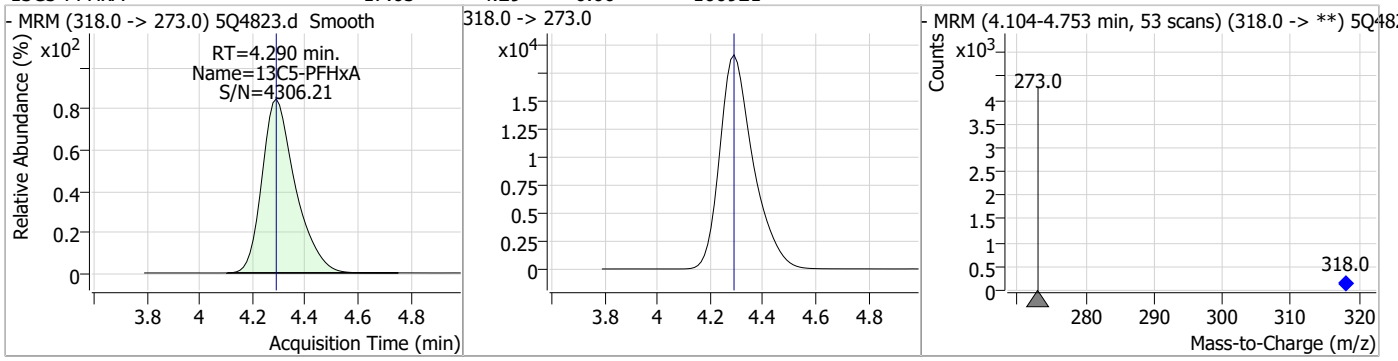


Perfluorinated Compounds by LC/MS/MS

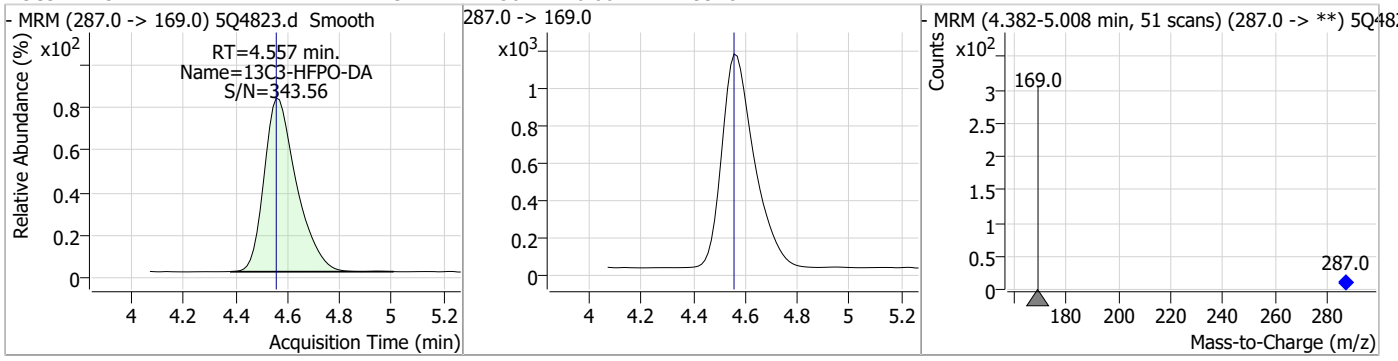
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.47	4.20	0.00	51638				



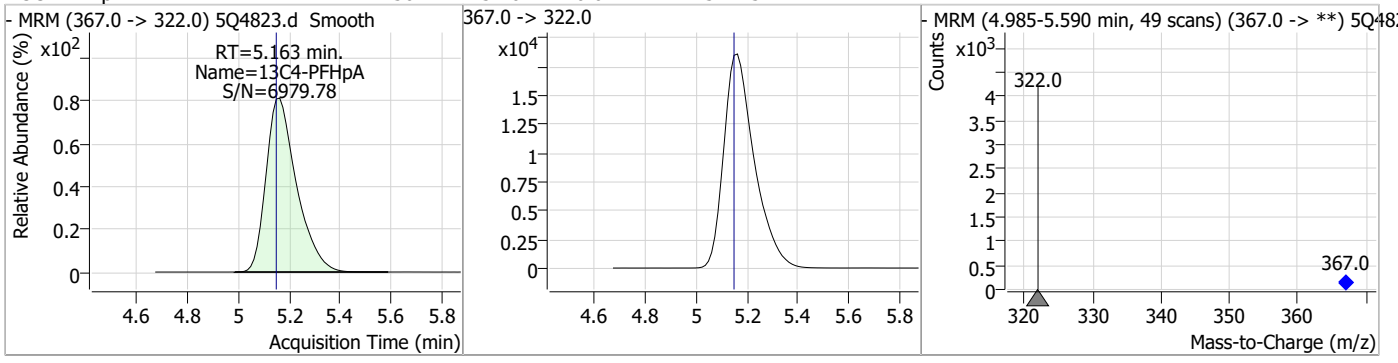
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.65	4.29	0.00	166921				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.31	4.56	0.00	9918				

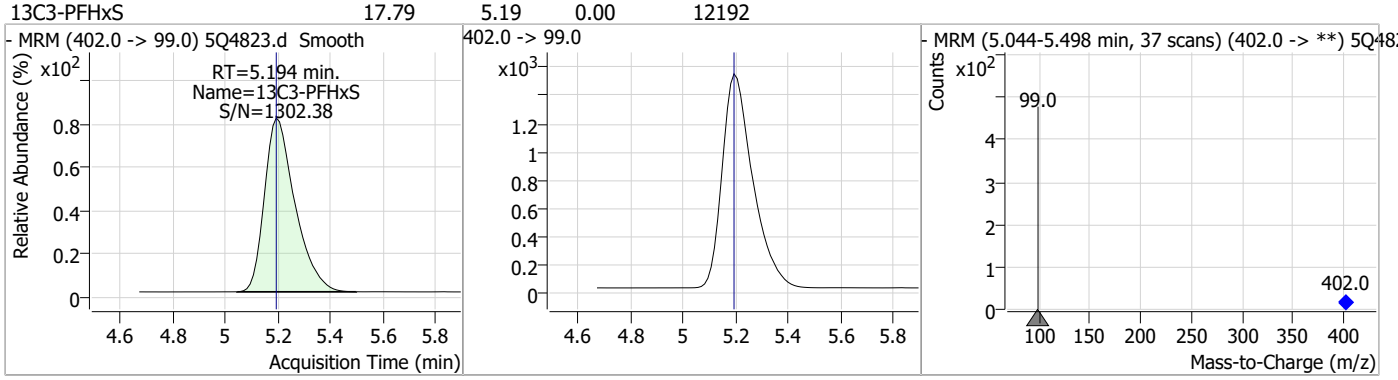


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.56	5.16	0.01	154425				

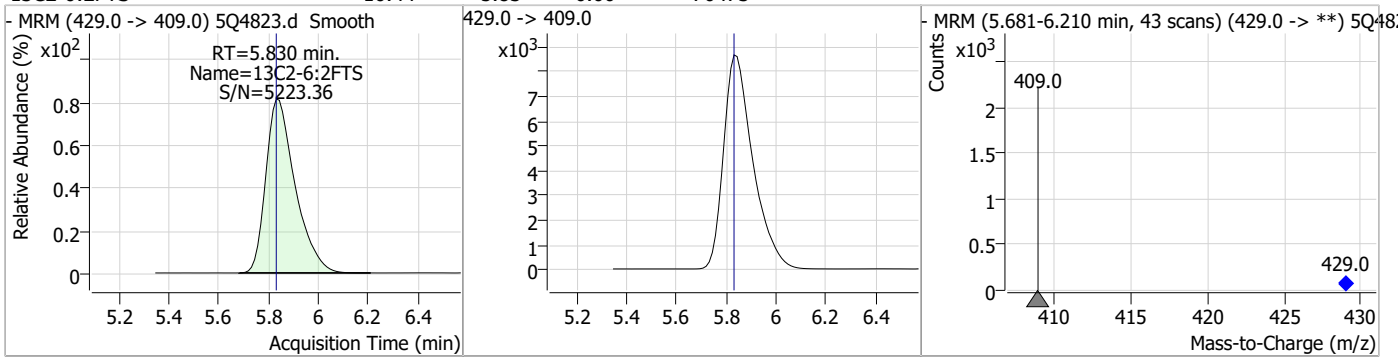


Perfluorinated Compounds by LC/MS/MS

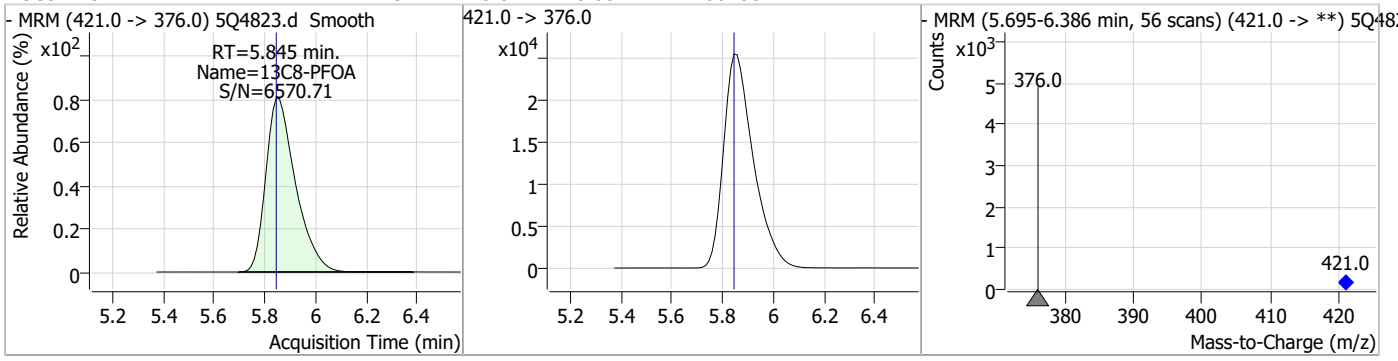
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.79	5.19	0.00	12192				



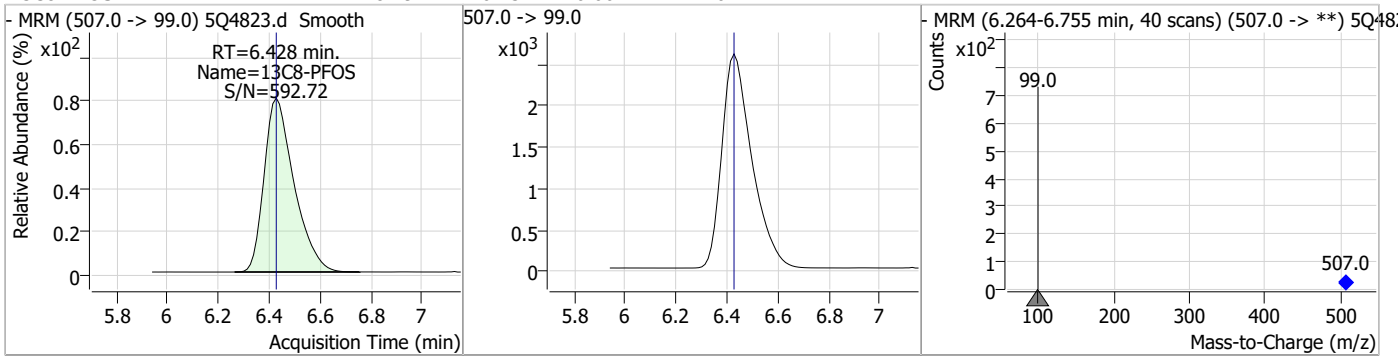
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.44	5.83	0.00	70473				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.51	5.84	0.00	206288				

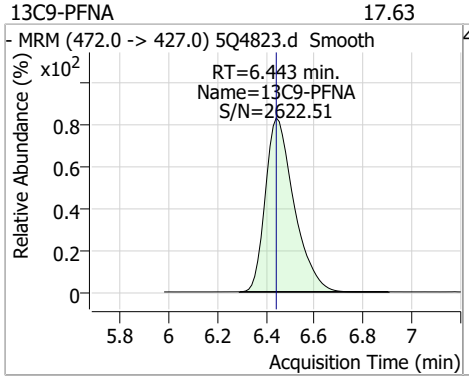


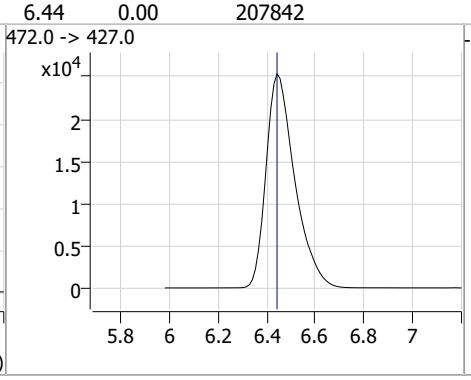
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.29	6.43	0.00	21071				

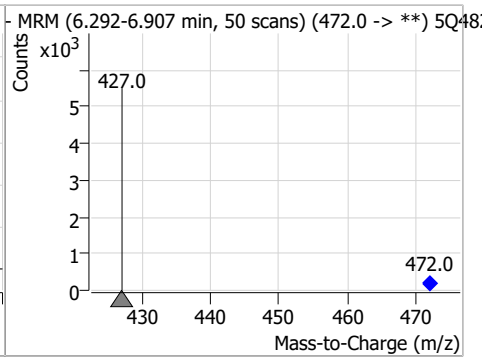


Perfluorinated Compounds by LC/MS/MS

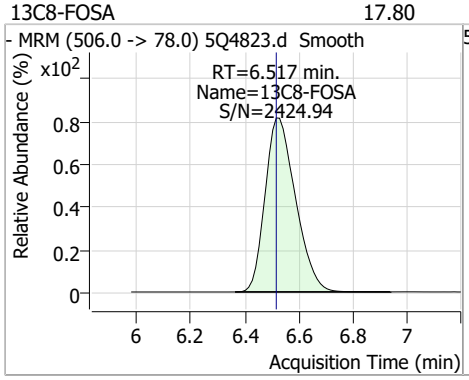
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.63	6.44	0.00	207842				

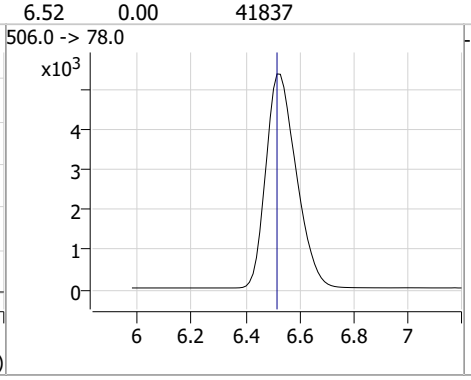


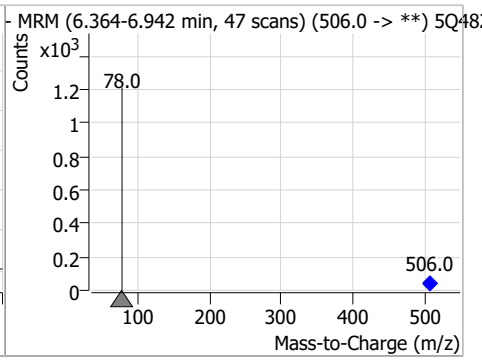




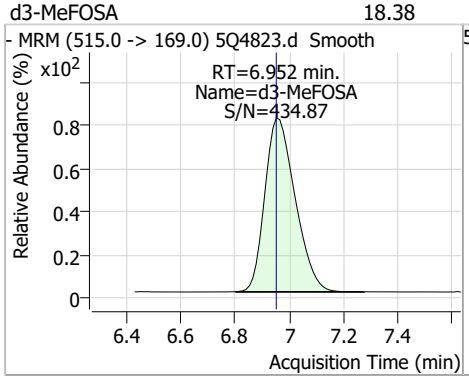
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.80	6.52	0.00	41837				

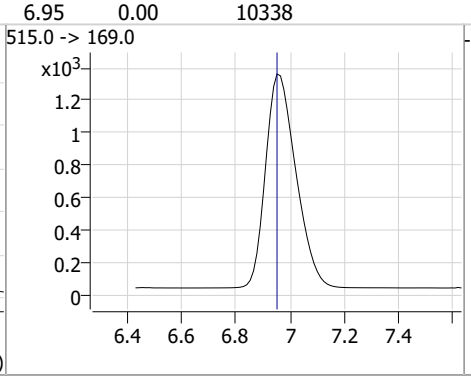


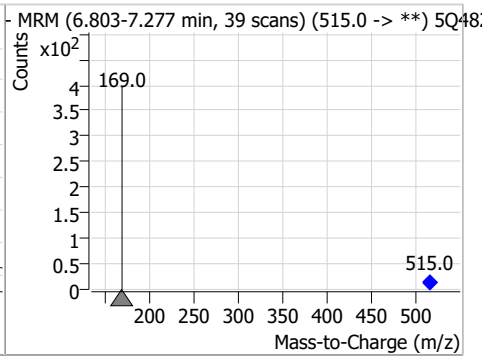




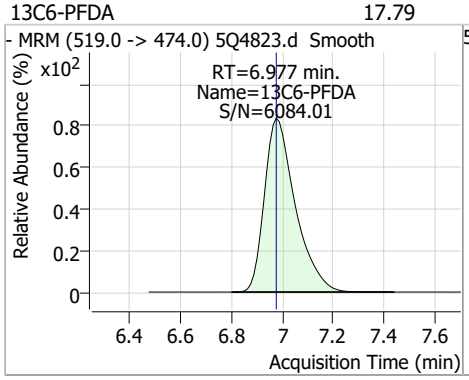
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.38	6.95	0.00	10338				

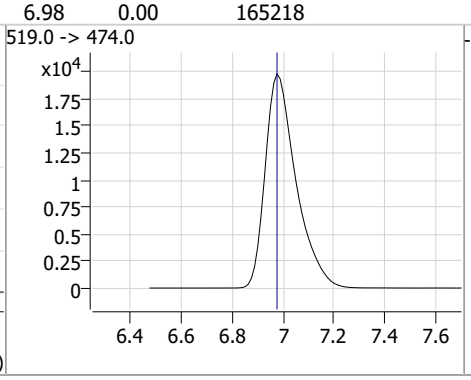


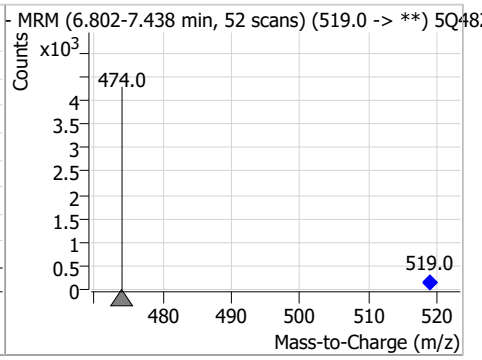




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.79	6.98	0.00	165218				

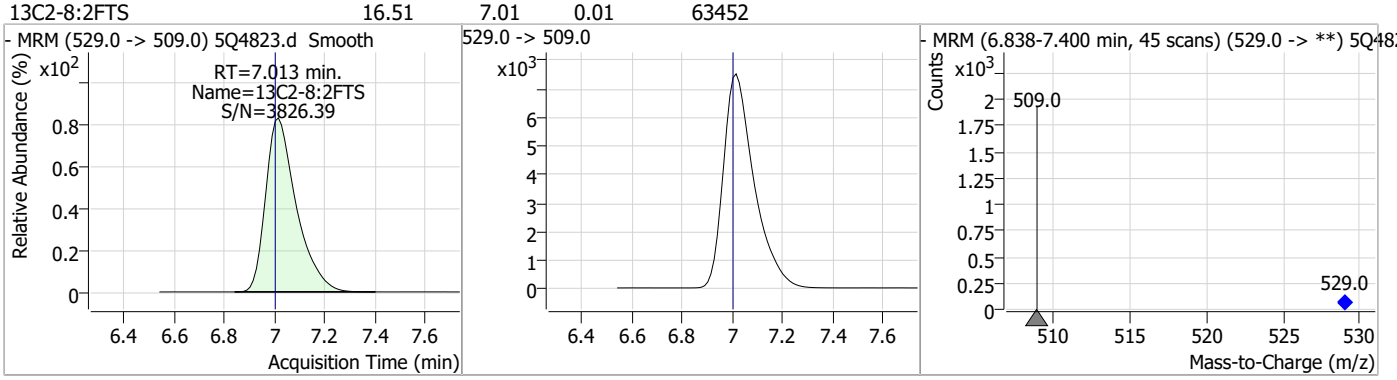




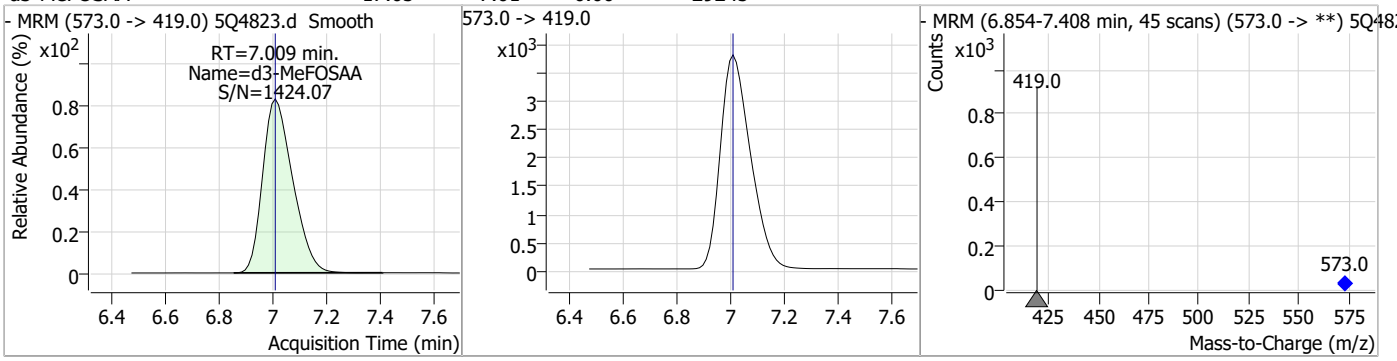


Perfluorinated Compounds by LC/MS/MS

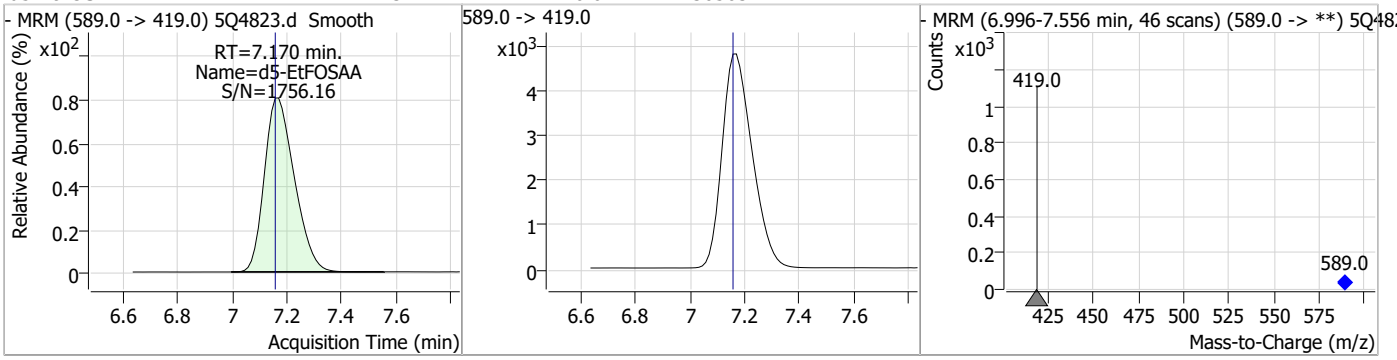
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.51	7.01	0.01	63452				



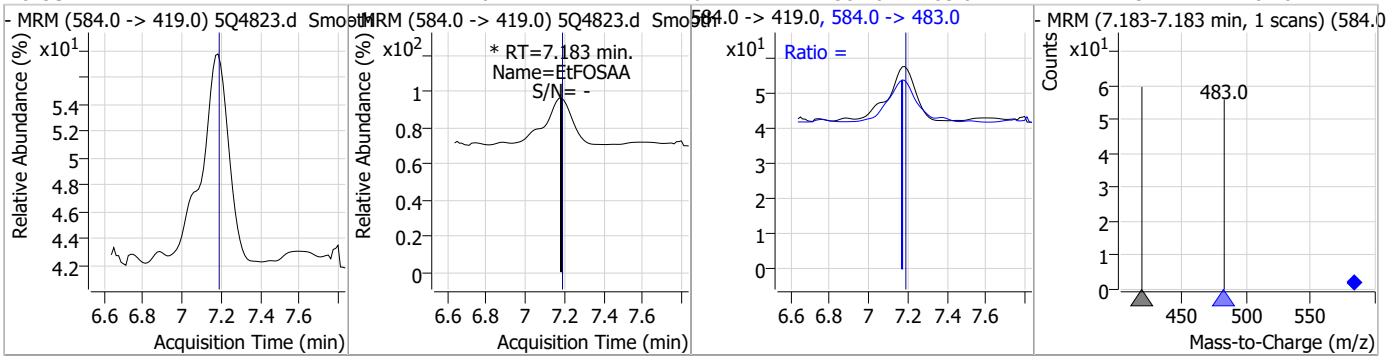
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.05	7.01	0.00	29245				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.31	7.17	0.01	36503				

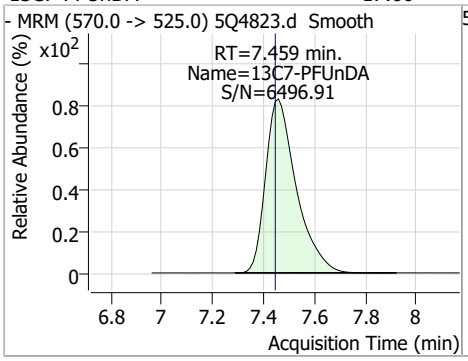


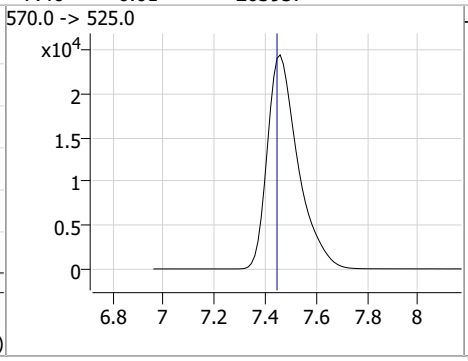
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		29.2	87.6

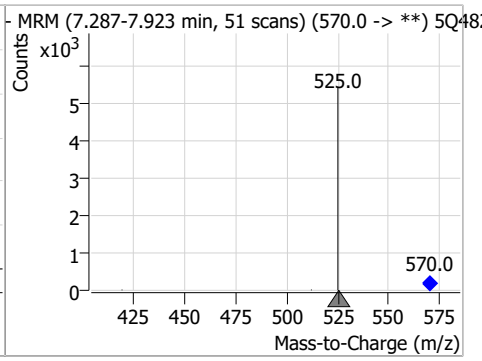


Perfluorinated Compounds by LC/MS/MS

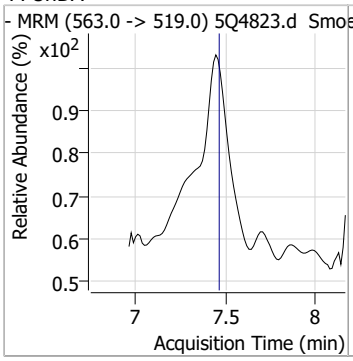
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.60	7.46	0.01	203937				

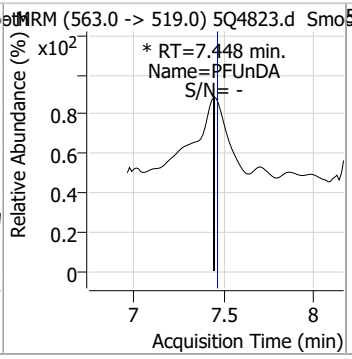


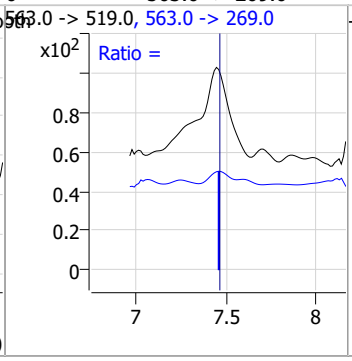


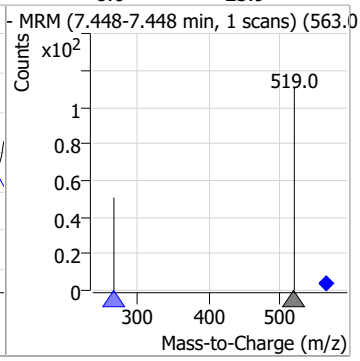


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA		0		0	563.0 -> 269.0		8.6	25.9

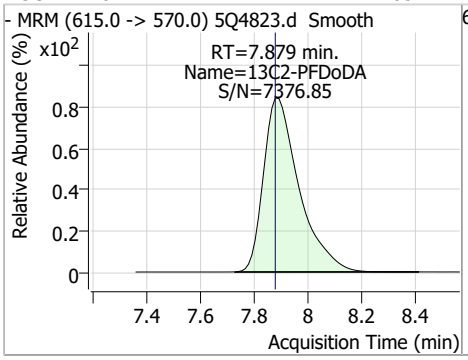


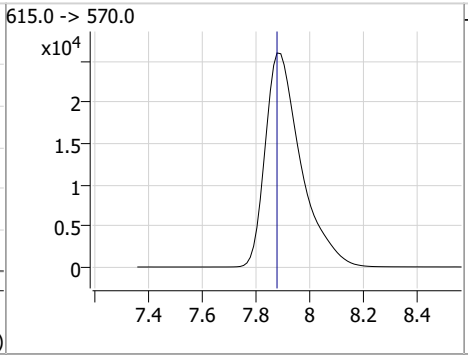


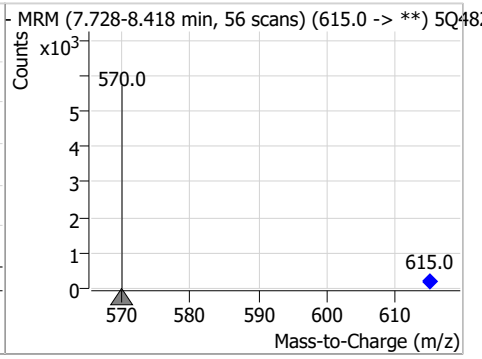




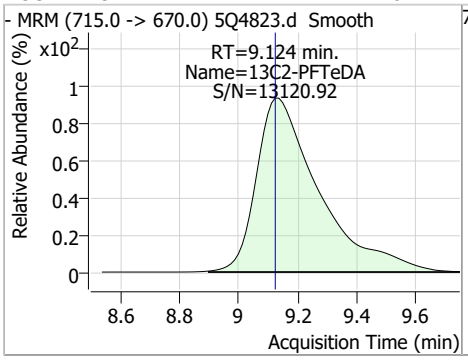
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.85	7.88	0.00	240677				

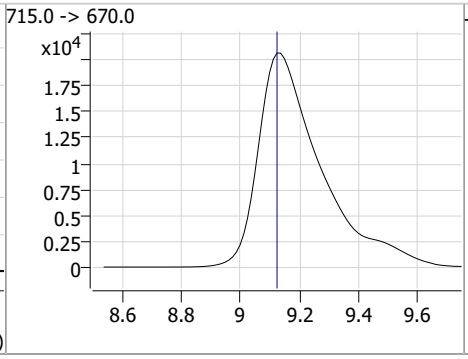


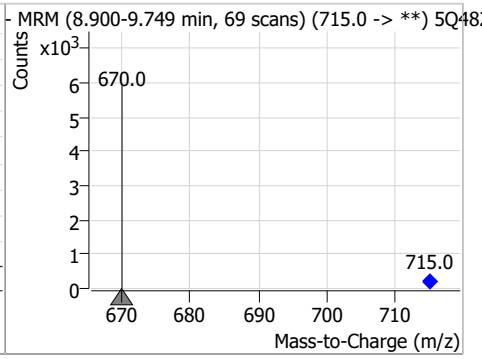




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.82	9.12	0.00	303603				







Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4910.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/19/2022 5:40:18 PM
Sample Name	:	iblk
Vial	:	P1-A1
DA Method File	:	ID_091722_S5Q73.quantmethod.xml
Batch Name	:	s5q74.batch.bin
Sample Information	:	OP92656,S5Q74,250,,,1.0,1,water

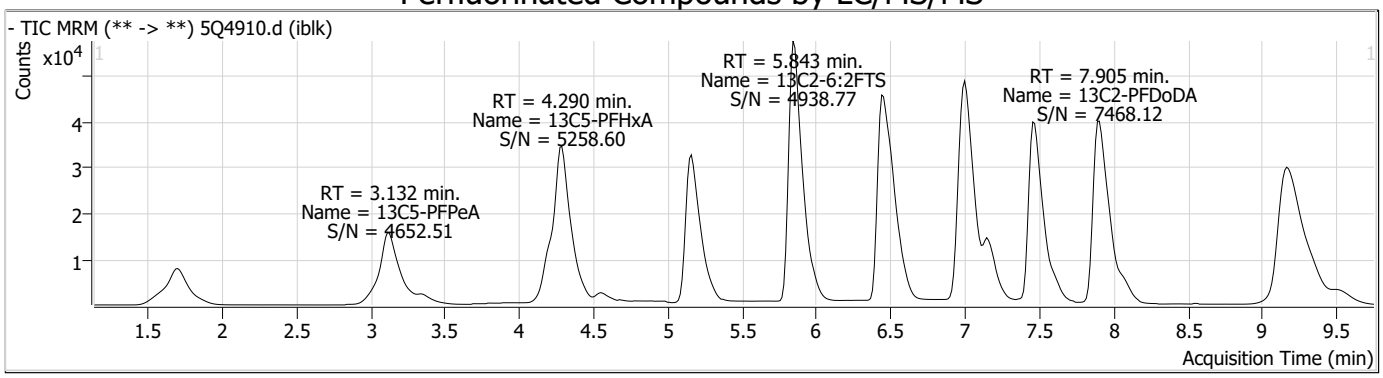
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	89609	20.00 µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	146774	20.00 µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	232077	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	211924	20.00 µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	276239	20.00 µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	272785	20.00 µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	213341	20.00 µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	269243	20.00 µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	316528	20.00 µg/L	0.027
M2-PFTeDA	9.174	715.0 -> 670.0	406734	20.00 µg/L	0.050
M8-FOSA	6.530	506.0 -> 78.0	54553	20.00 µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	16783	20.00 µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	16956	20.00 µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	29195	20.00 µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	72281	20.00 µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	99105	20.00 µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	88513	20.00 µg/L	0.025
M3-MeFOSAA	7.009	573.0 -> 419.0	41508	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	14990	20.00 µg/L	0.012
M3-MeFOSA	6.965	515.0 -> 169.0	12315	20.00 µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	54155	20.00 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	72281	23.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C2-6:2FTS	5.843	429.0 -> 409.0	99105	23.12 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.6%	
13C2-8:2FTS	7.025	529.0 -> 509.0	88513	23.04 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C2-PFDoDA	7.905	615.0 -> 570.0	316528	23.47 µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C2-PFTeDA	9.174	715.0 -> 670.0	406734	23.87 µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.4%	
13C3-PFBS	3.349	302.0 -> 99.0	16783	25.10 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.5%	
13C3-PFHxS	5.206	402.0 -> 99.0	16956	24.74 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.7%	
13C4-PFBA	1.700	217.0 -> 172.0	89609	24.30 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.5%	
13C4-PFHpA	5.163	367.0 -> 322.0	211924	24.10 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%	
13C5-PFHxA	4.290	318.0 -> 273.0	232077	24.55 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.7%	
13C5-PFPeA	3.132	268.0 -> 223.0	146774	24.85 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%	
13C6-PFDA	6.989	519.0 -> 474.0	213341	22.97 µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

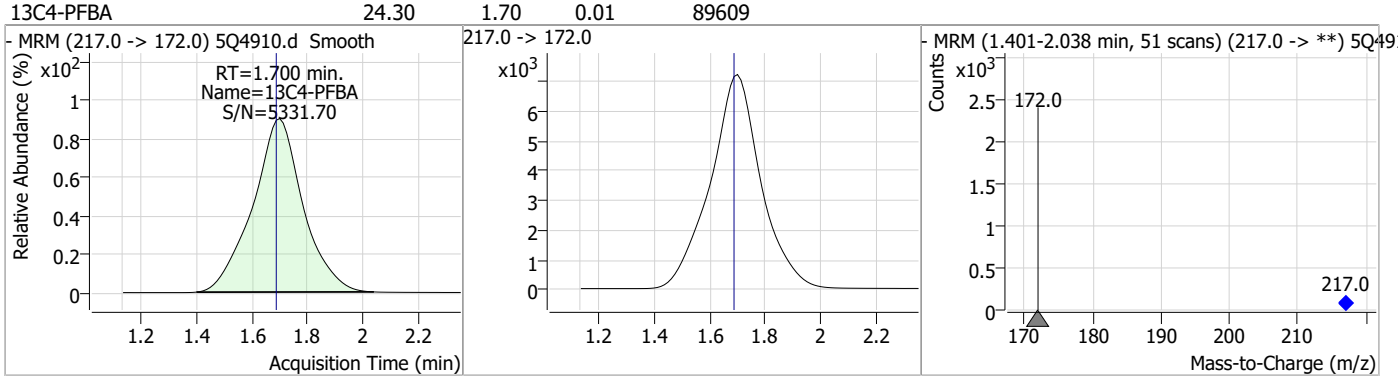
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%			
13C7-PFUnDA	7.471	570.0 -> 525.0	269243	23.23	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.2%			
13C8-FOSA	6.530	506.0 -> 78.0	54553	23.21	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.1%			
13C8-PFOA	5.857	421.0 -> 376.0	276239	23.45	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.3%			
13C8-PFOS	6.440	507.0 -> 99.0	29195	25.34	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.7%			
13C9-PFNA	6.455	472.0 -> 427.0	272785	23.14	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	41508	24.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.0%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	14990	26.17	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 130.8%			
d3-MeFOSA	6.965	515.0 -> 169.0	12315	21.90	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	54155	25.68	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.4%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.171	584.0 -> 419.0	0		µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.023	570.0 -> 419.0	0		µg/L	m	1
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	7.906	613.0 -> 569.0	0		µg/L	m	1
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

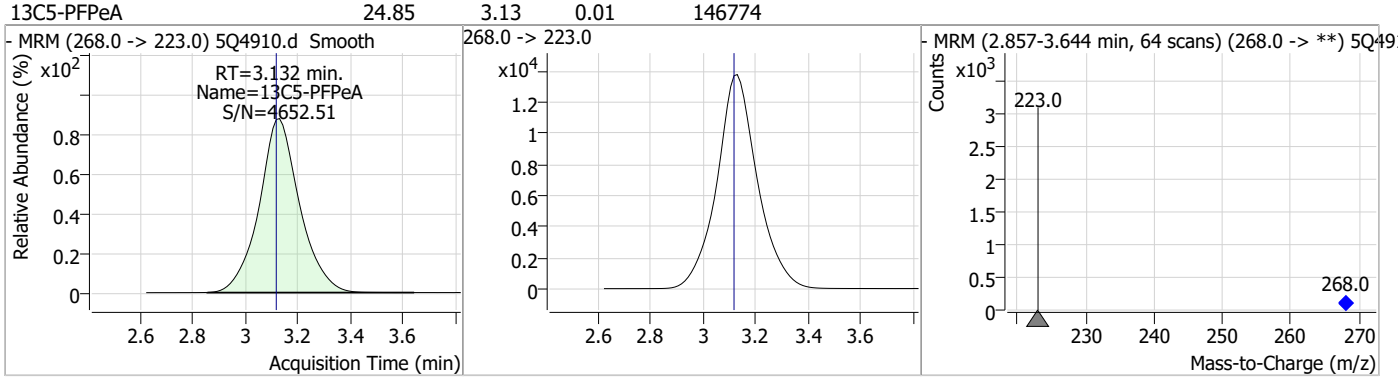
Perfluorinated Compounds by LC/MS/MS



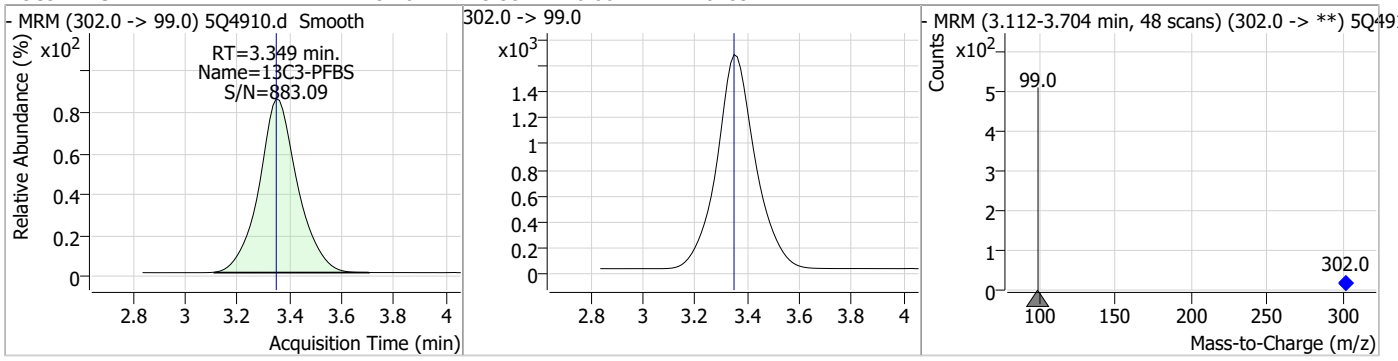
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	24.30	1.70	0.01	89609				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	24.85	3.13	0.01	146774				

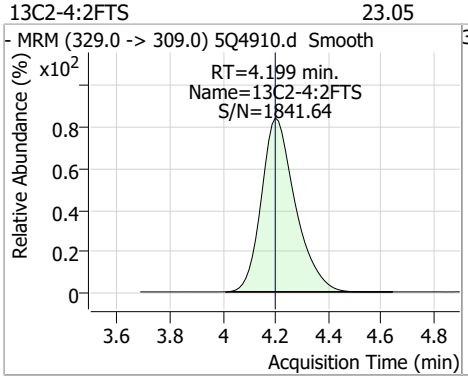


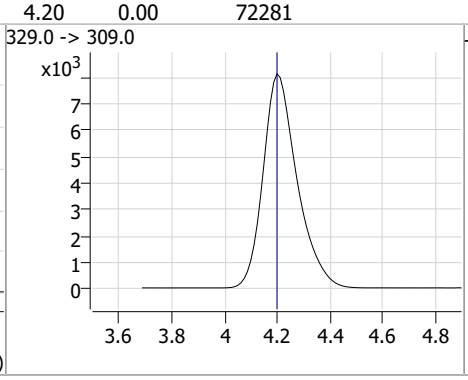
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	25.10	3.35	0.00	16783				

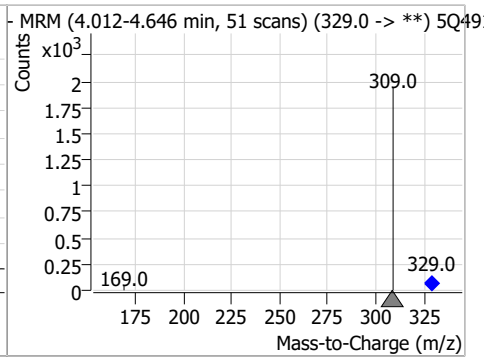


Perfluorinated Compounds by LC/MS/MS

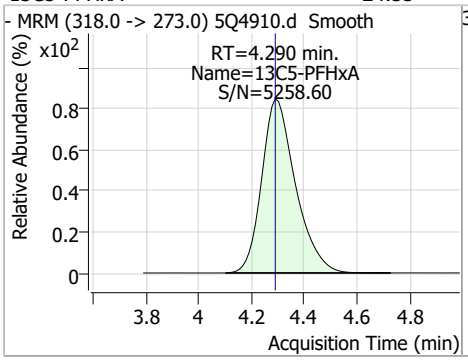
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.05	4.20	0.00	72281				

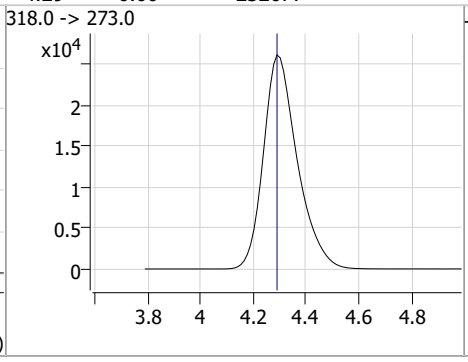


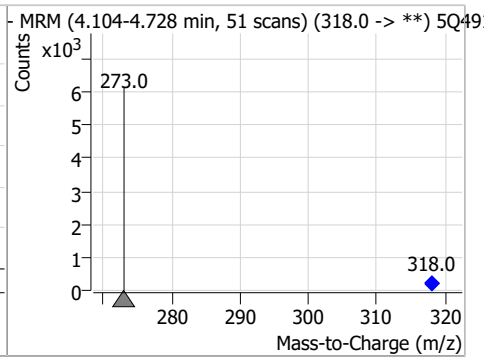




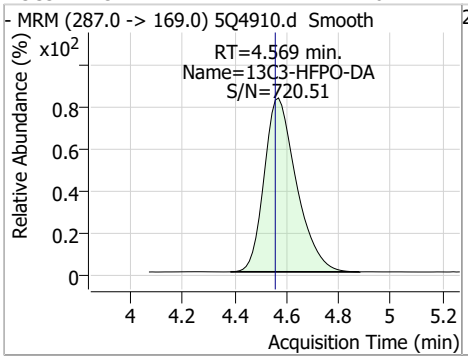
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	24.55	4.29	0.00	232077				

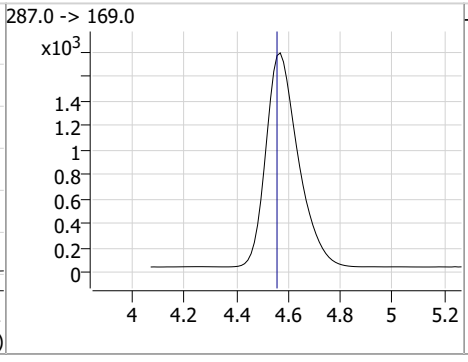


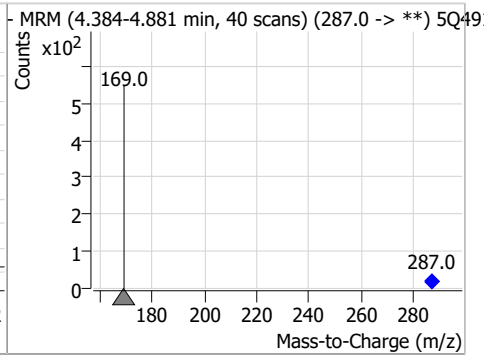




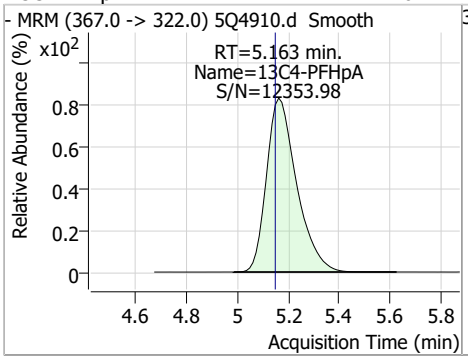
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	26.17	4.57	0.01	14990				

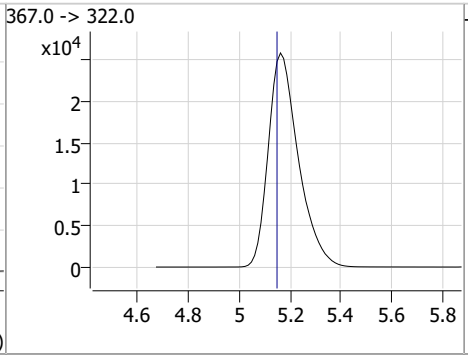


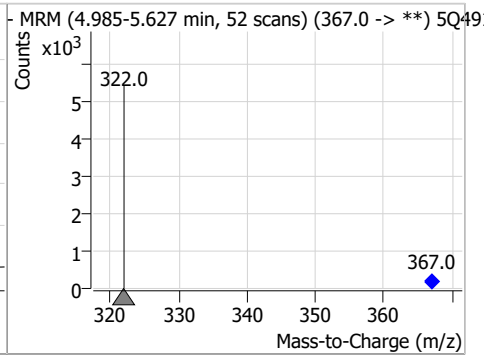




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	24.10	5.16	0.01	211924				

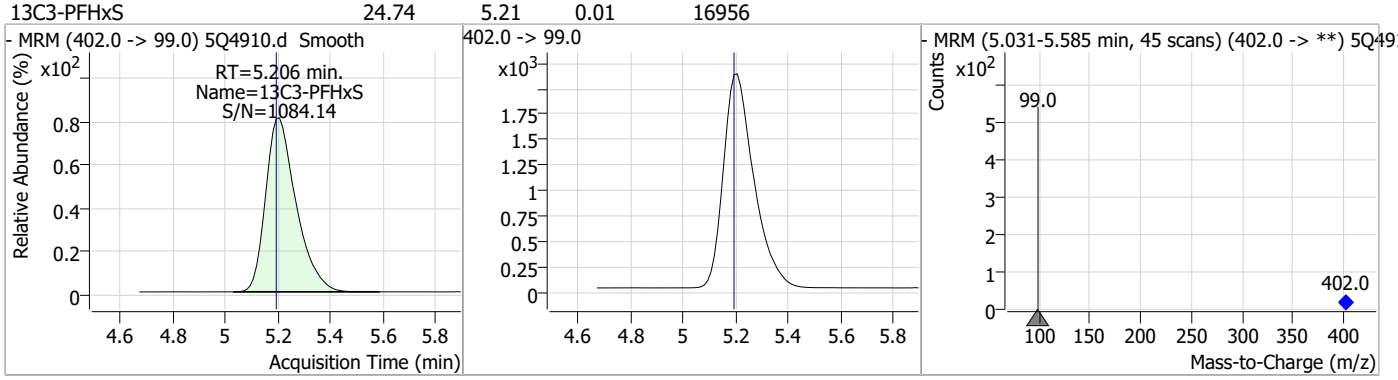




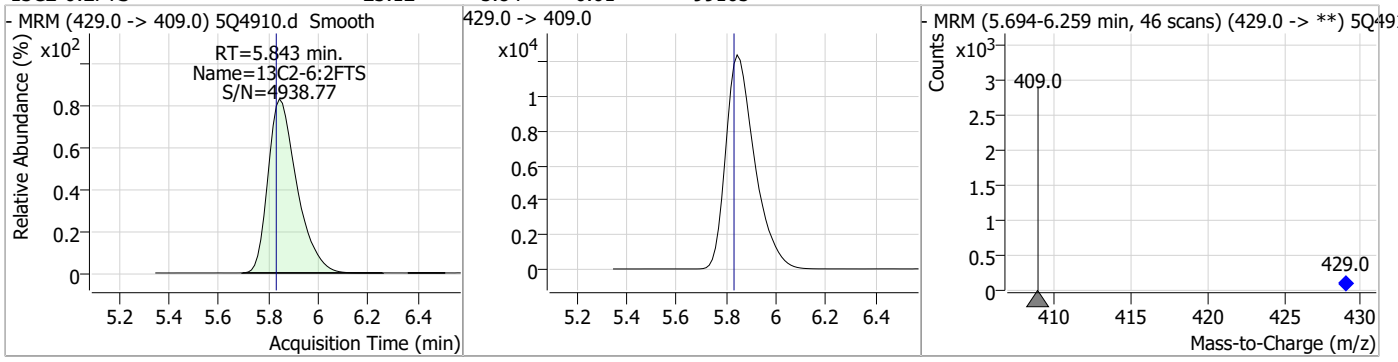


Perfluorinated Compounds by LC/MS/MS

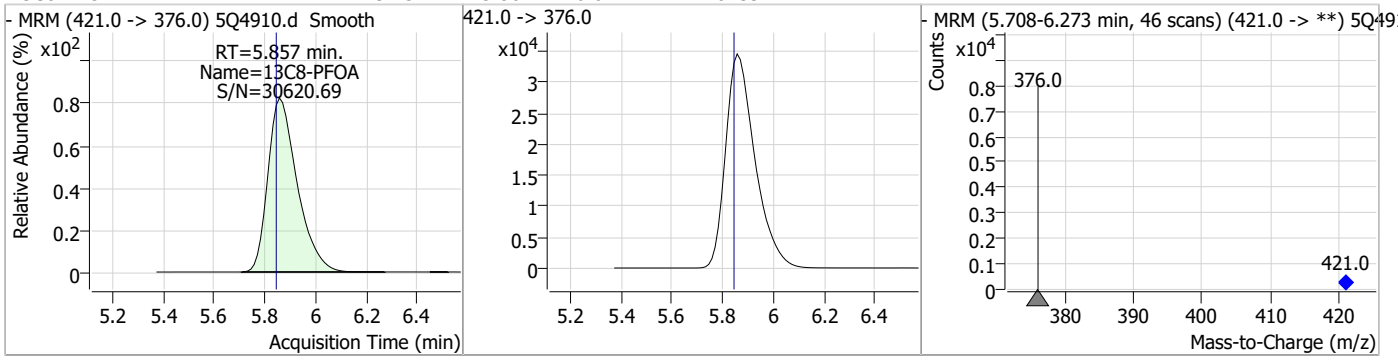
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	24.74	5.21	0.01	16956				



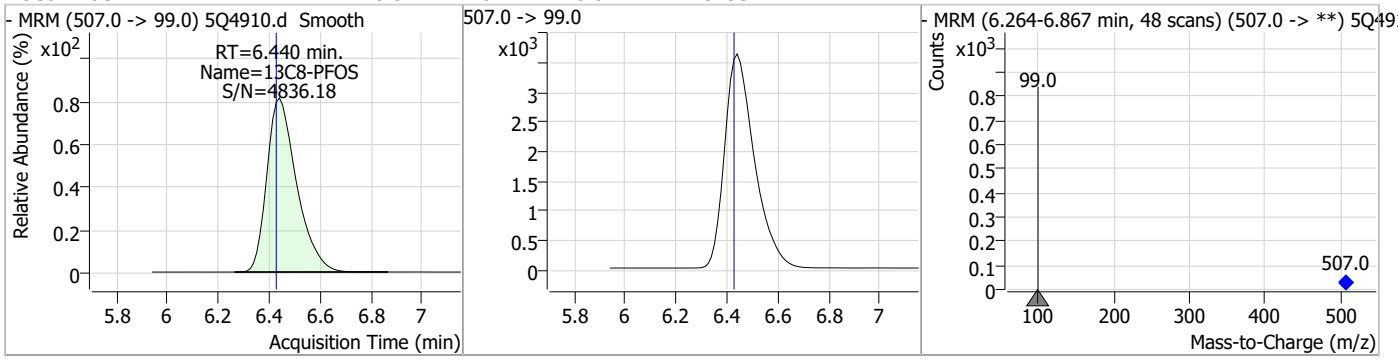
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.12	5.84	0.01	99105				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	23.45	5.86	0.01	276239				

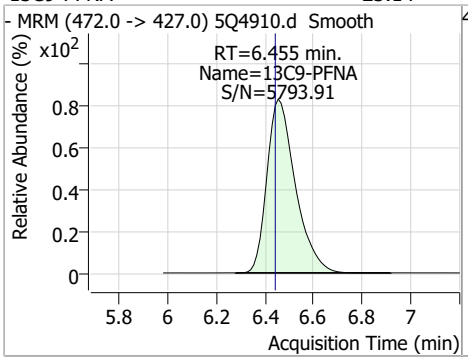


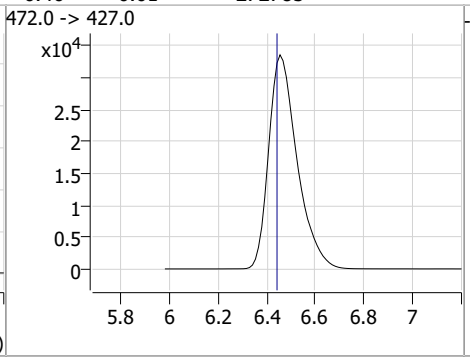
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	25.34	6.44	0.01	29195				

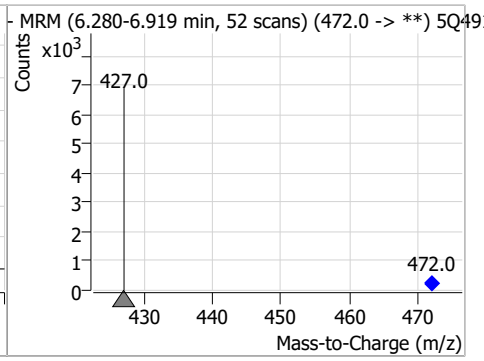


Perfluorinated Compounds by LC/MS/MS

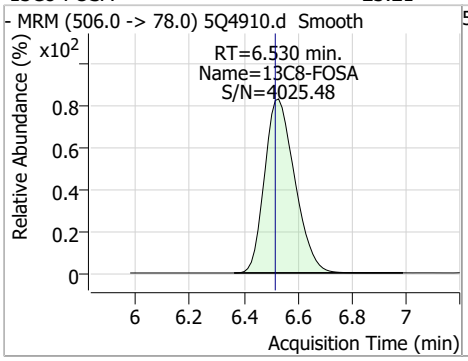
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	23.14	6.46	0.01	272785				

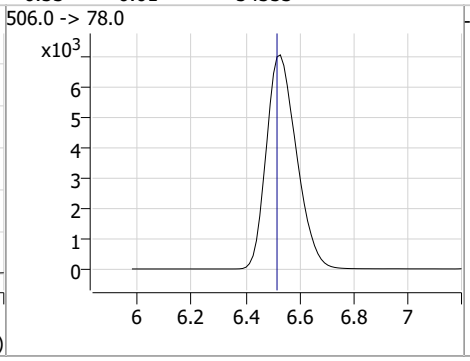


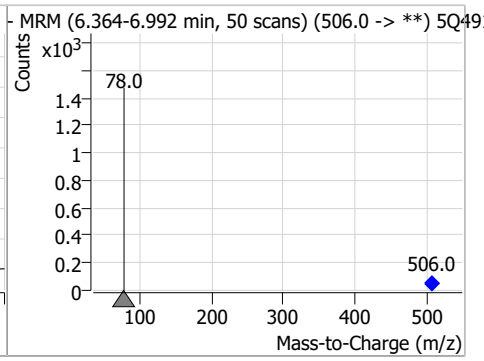




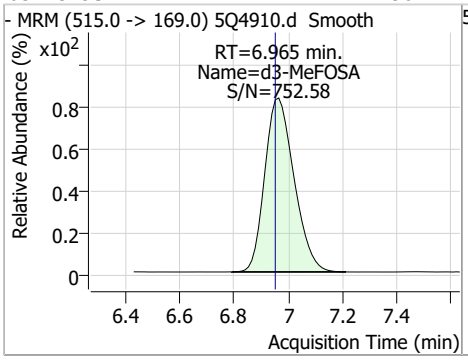
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.21	6.53	0.01	54553				

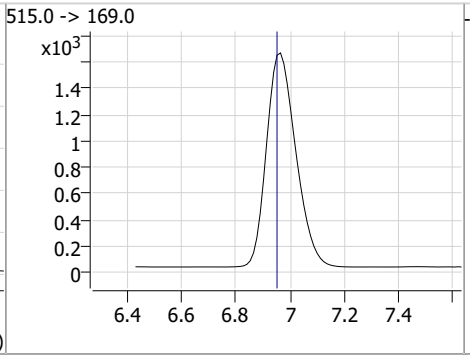


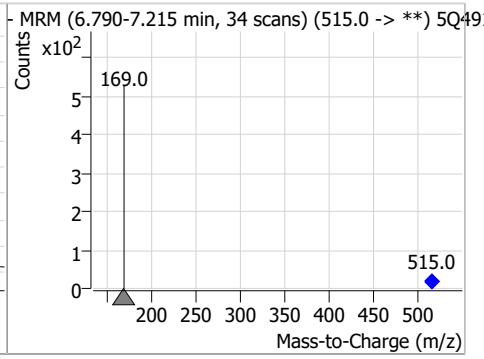




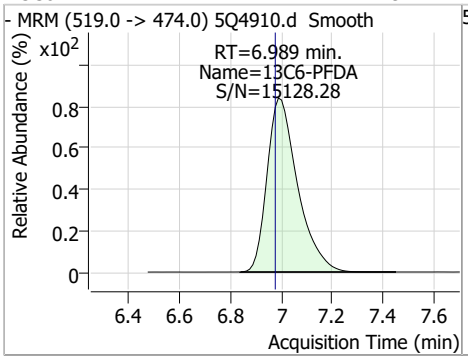
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.90	6.96	0.01	12315				

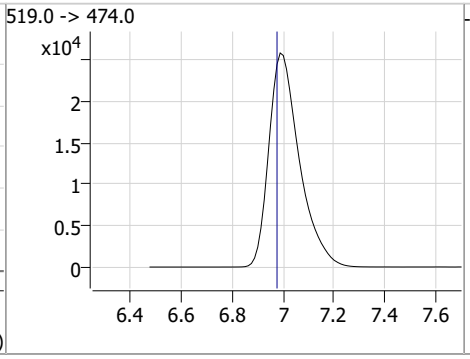


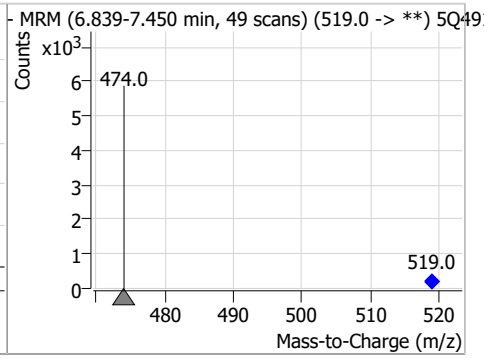




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.97	6.99	0.01	213341				

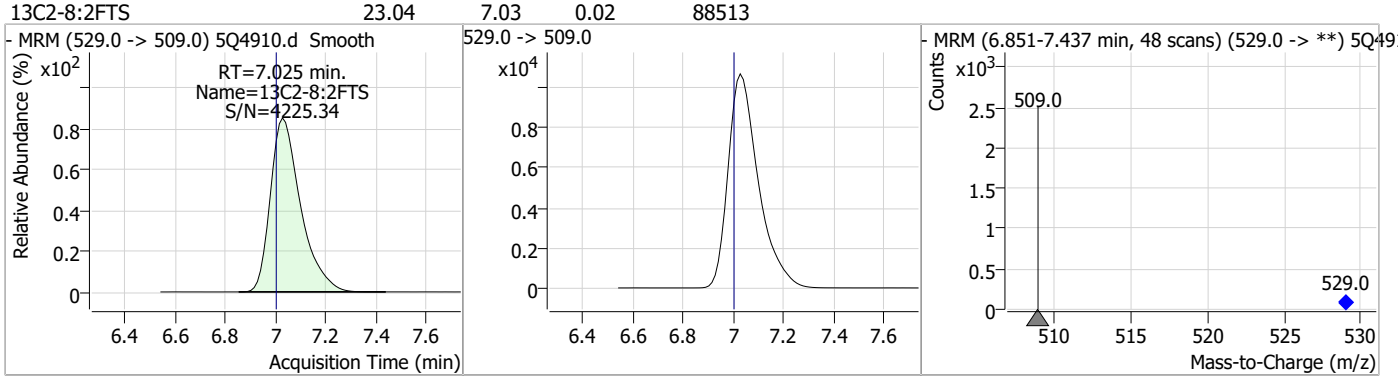




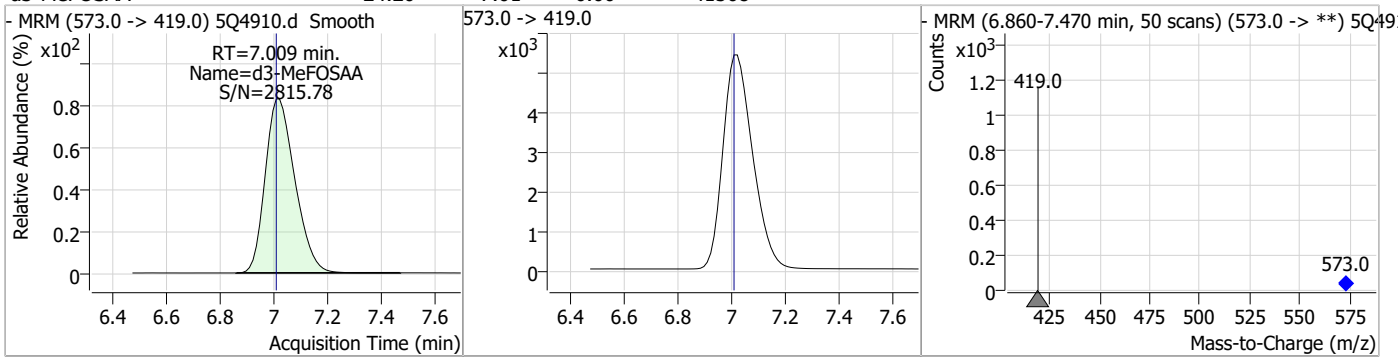


Perfluorinated Compounds by LC/MS/MS

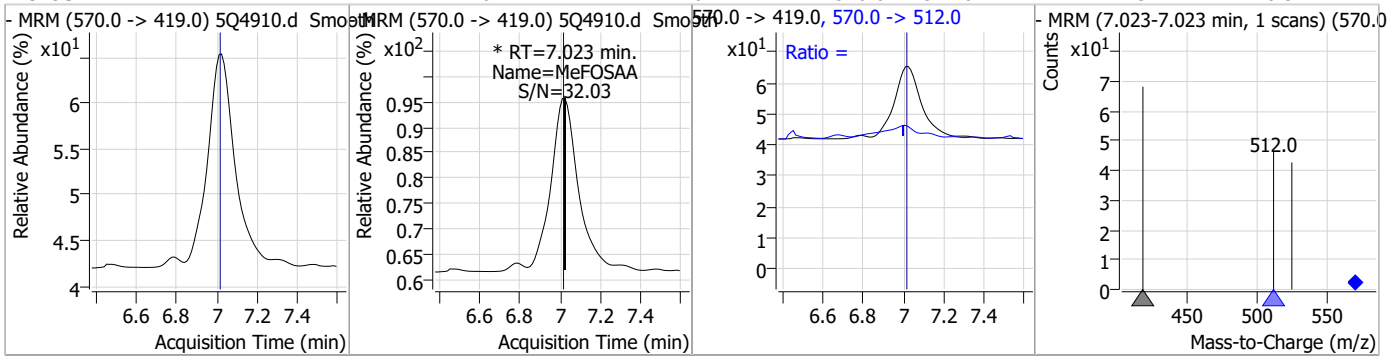
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	23.04	7.03	0.02	88513				



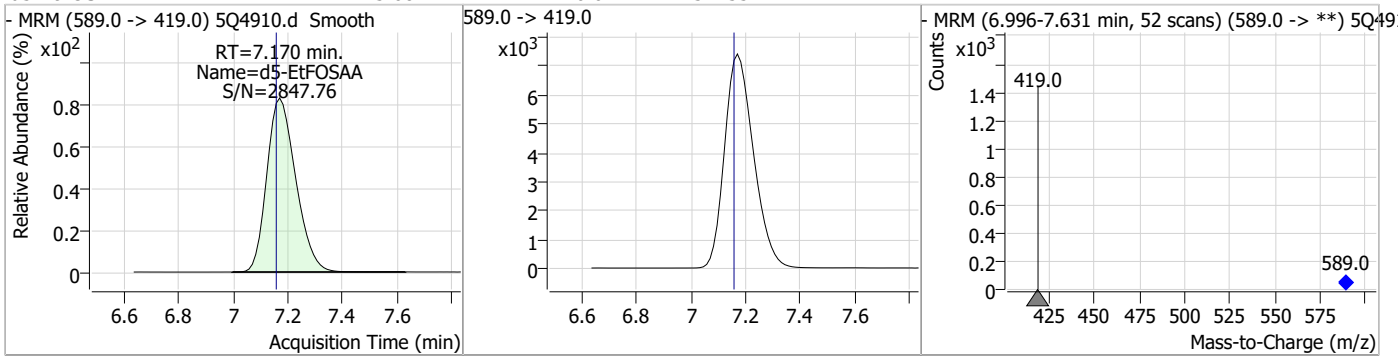
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.20	7.01	0.00	41508				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0		0		570.0 -> 512.0		15.4	46.3

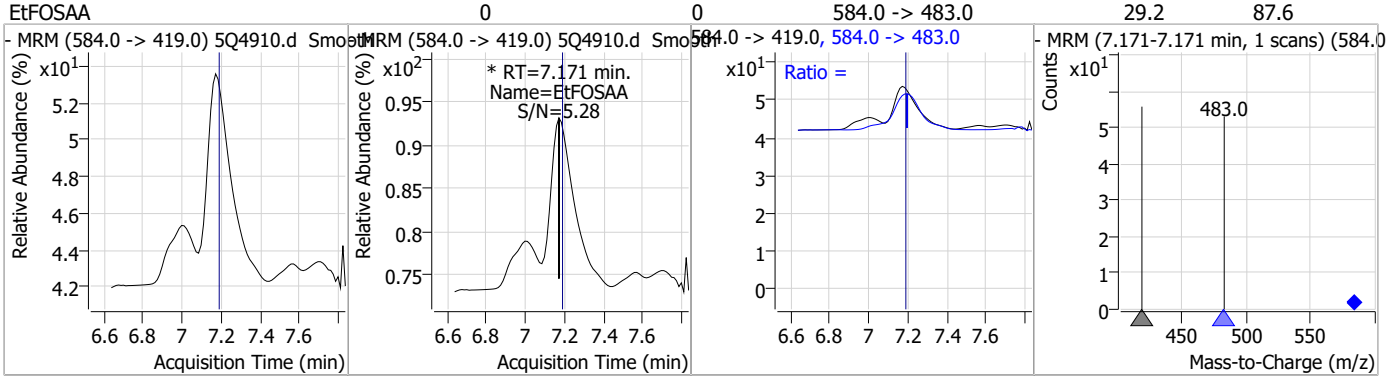


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	25.68	7.17	0.01	54155				

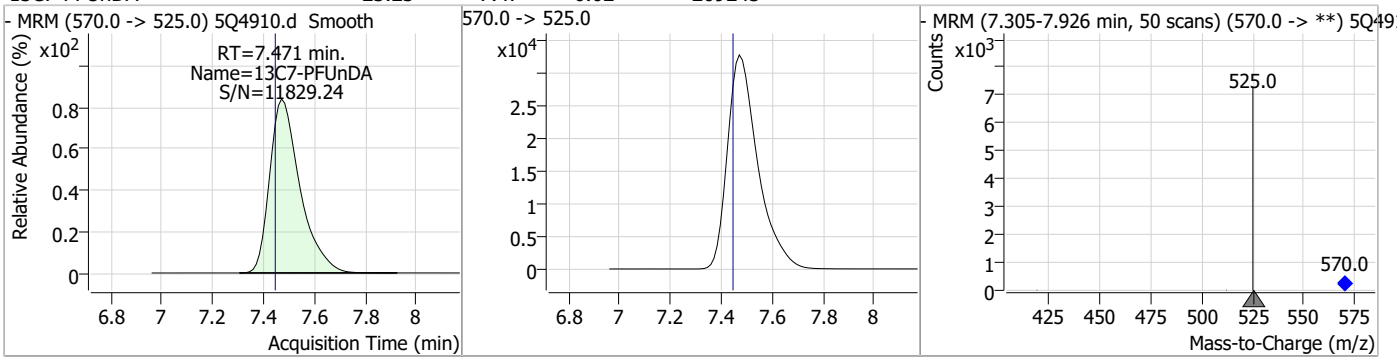


Perfluorinated Compounds by LC/MS/MS

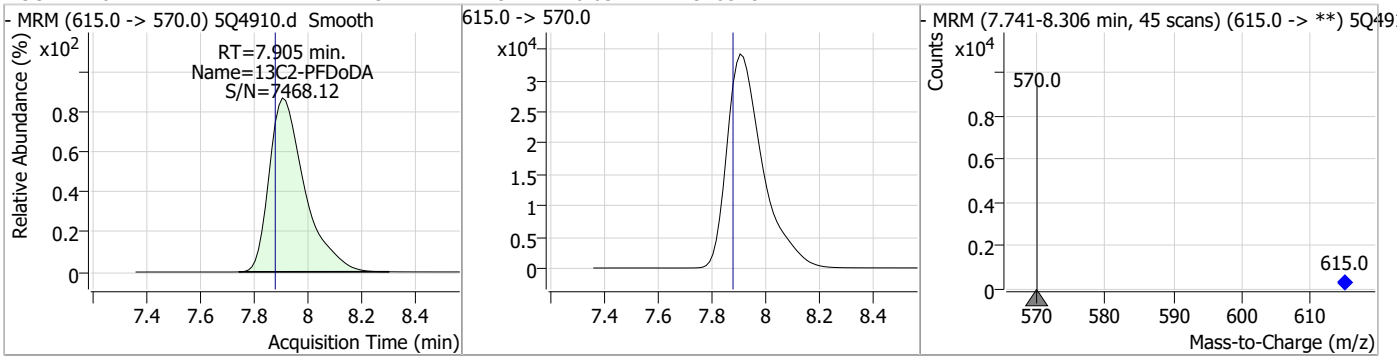
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		29.2	87.6



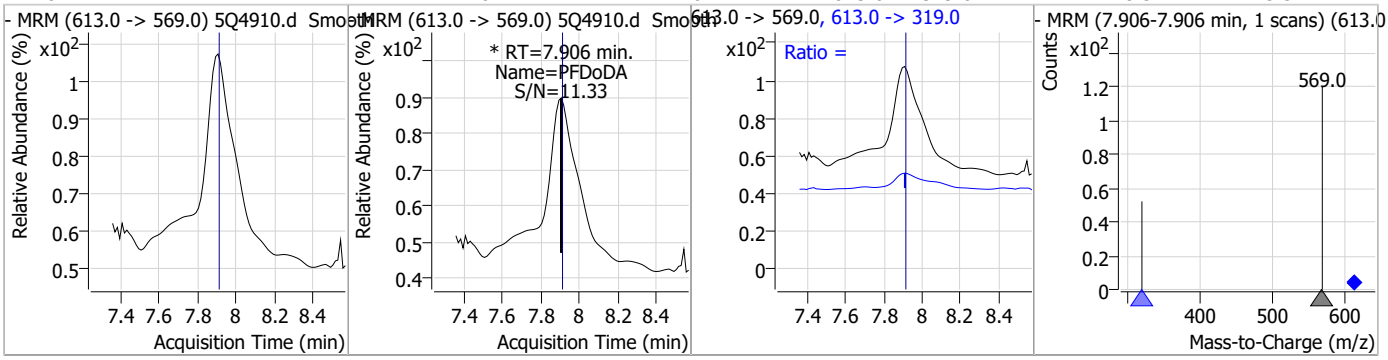
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.23	7.47	0.02	269243				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	23.47	7.91	0.03	316528				

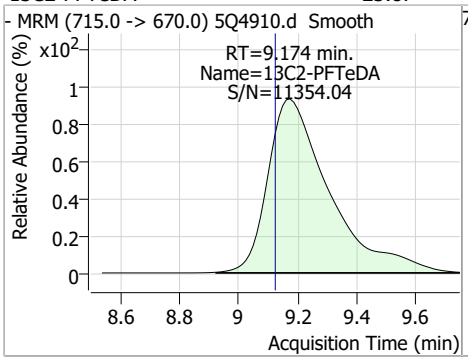


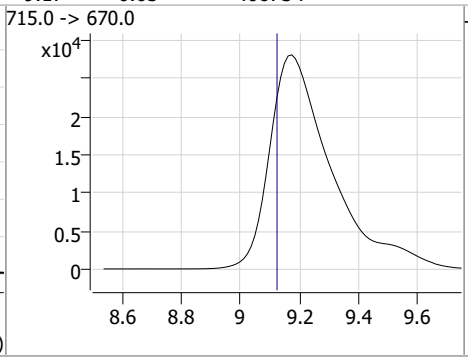
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA		0		0	613.0 -> 319.0		8.5	25.5

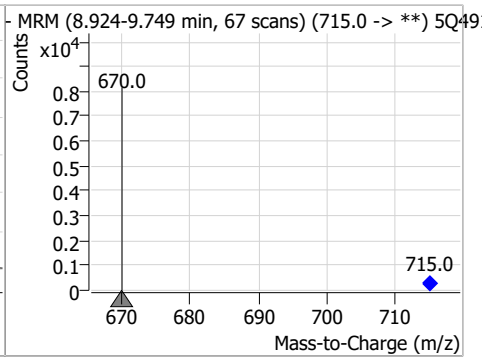


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	23.87	9.17	0.05	406734				







7.2.12

7

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65692.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 8:24:11 PM
Sample Name : op92762-bs
Vial : P6-A1
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,250,,,1,1,water

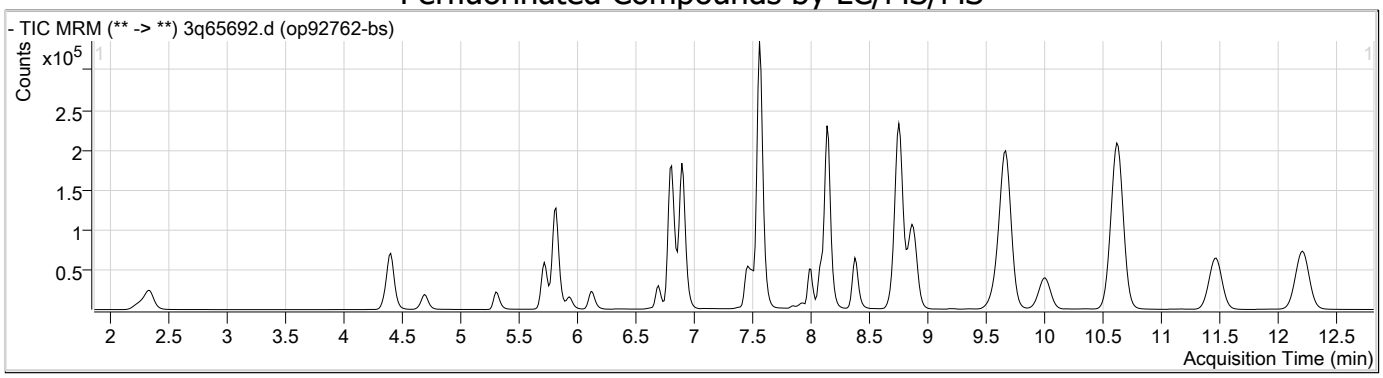
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	128129	20.00 µg/L	-0.038
M5-PFPeA	4.399	268.0 -> 223.0	187550	20.00 µg/L	-0.013
M5-PFHxA	5.813	318.0 -> 273.0	245168	20.00 µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	247538	20.00 µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	330969	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	372844	20.00 µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	536192	20.00 µg/L	0.013
M7-PFUnDA	9.664	570.0 -> 525.0	651401	20.00 µg/L	-0.013
M2-PFDoDA	10.609	615.0 -> 570.0	783172	20.00 µg/L	-0.025
M2-PFTeDA	12.198	715.0 -> 670.0	246509	20.00 µg/L	-0.038
M8-FOSA	7.491	506.0 -> 78.0	52239	20.00 µg/L	0.000
M3-PFBS	4.679	302.0 -> 99.0	17476	20.00 µg/L	-0.013
M3-PFHxS	6.822	402.0 -> 99.0	21248	20.00 µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	32059	20.00 µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	94151	20.00 µg/L	0.000
M2-6:2FTS	7.571	429.0 -> 409.0	130520	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	243966	20.00 µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	69974	20.00 µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	20331	20.00 µg/L	0.000
M3-MeFOSA	7.841	515.0 -> 169.0	2837	20.00 µg/L	0.000
M5-EtFOSAA	8.065	589.0 -> 419.0	64578	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.708	329.0 -> 309.0	94151	16.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.5%	
13C2-6:2FTS	7.571	429.0 -> 409.0	130520	16.67 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.4%	
13C2-8:2FTS	8.860	529.0 -> 509.0	243966	16.79 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%	
13C2-PFDoDA	10.609	615.0 -> 570.0	783172	14.48 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.4%	
13C2-PFTeDA	12.198	715.0 -> 670.0	246509	10.88 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.4%	
13C3-PFBS	4.679	302.0 -> 99.0	17476	16.52 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%	
13C3-PFHxS	6.822	402.0 -> 99.0	21248	16.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%	
13C4-PFBA	2.327	217.0 -> 172.0	128129	16.10 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.5%	
13C4-PFHpA	6.793	367.0 -> 322.0	247538	16.43 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%	
13C5-PFHxA	5.813	318.0 -> 273.0	245168	16.15 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%	
13C5-PFPeA	4.399	268.0 -> 223.0	187550	16.18 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.9%	
13C6-PFDA	8.751	519.0 -> 474.0	536192	16.88 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

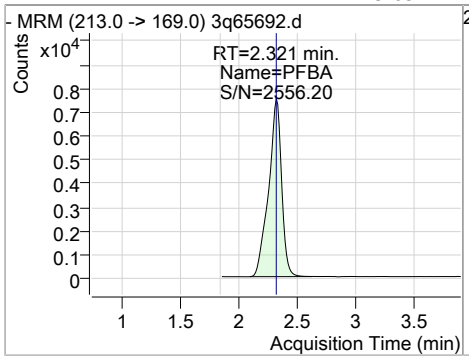
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%			
13C7-PFUnDA	9.664	570.0 -> 525.0	651401	15.78	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
13C8-FOSA	7.491	506.0 -> 78.0	52239	13.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.1%			
13C8-PFOA	7.560	421.0 -> 376.0	330969	16.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%			
13C8-PFOS	8.111	507.0 -> 99.0	32059	16.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%			
13C9-PFNA	8.138	472.0 -> 427.0	372844	16.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.4%			
d3-MeFOSAA	7.978	573.0 -> 419.0	69974	15.56	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	20340	15.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%			
d3-MeFOSA	7.841	515.0 -> 169.0	2837	3.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
d5-EtFOSAA	8.065	589.0 -> 419.0	64579	13.79	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.0%			
Target Compounds							**QValue**
4:2FTS	5.710	327.0 -> 307.0	97350	19.61	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	135309	19.95	µg/L		99
8:2FTS	8.861	527.0 -> 507.0	240137	19.44	µg/L		100
EtFOSAA	8.078	584.0 -> 419.0	49678	19.29	µg/L	m	98
FOSA	7.491	498.0 -> 78.0	49831	20.04	µg/L		99
MeFOSAA	7.991	570.0 -> 419.0	59510	19.04	µg/L	m	99
PFBA	2.321	213.0 -> 169.0	57538	19.65	µg/L		100
PFBS	4.682	299.0 -> 80.0	48193	19.41	µg/L		100
PFDA	8.752	513.0 -> 469.0	506752	19.61	µg/L		100
PFDoDA	10.613	613.0 -> 569.0	716368	19.69	µg/L		100
PFDS	9.548	599.0 -> 80.0	54641	19.25	µg/L		100
PFHpA	6.794	363.0 -> 319.0	351322	19.83	µg/L		100
PFHpS	7.544	449.0 -> 80.0	42997	20.56	µg/L		99
PFHxA	5.814	313.0 -> 269.0	260060	19.90	µg/L		100
PFHxS	6.823	399.0 -> 80.0	48416	19.54	µg/L	m	98
PFNA	8.139	463.0 -> 419.0	316084	19.58	µg/L		100
PFNS	8.680	549.0 -> 80.0	47012	17.98	µg/L		98
PFOA	7.561	413.0 -> 369.0	397680	19.68	µg/L		100
PFOS	8.111	499.0 -> 80.0	52153	19.75	µg/L	m	98
PFPeA	4.401	263.0 -> 219.0	162262	19.81	µg/L		100
PFPeS	5.919	349.0 -> 80.0	37072	19.22	µg/L		100
PFTeDA	12.202	713.0 -> 669.0	340757	20.41	µg/L		100
PFTrDA	11.459	663.0 -> 619.0	485751	22.15	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	697883	19.89	µg/L		100
11Cl-PF3OUdS	9.997	631.0 -> 451.0	219369	19.30	µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	176832	19.15	µg/L		100
ADONA	6.891	377.0 -> 251.0	515093	19.12	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	48834	20.16	µg/L		100
MeFOSA	7.842	512.0 -> 169.0	3498	22.90	µg/L		93
4-PFECHS	7.454	461.0 -> 381.0	123303	16.52	µg/L		99
FBSA	5.300	298.0 -> 78.0	77262	18.49	µg/L		100
FHxSA	6.688	398.0 -> 78.0	90621	18.57	µg/L		100

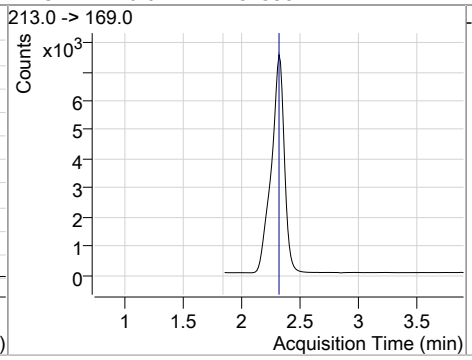
 # = Qualifier out of range, m = manually integrated, + = Area summed

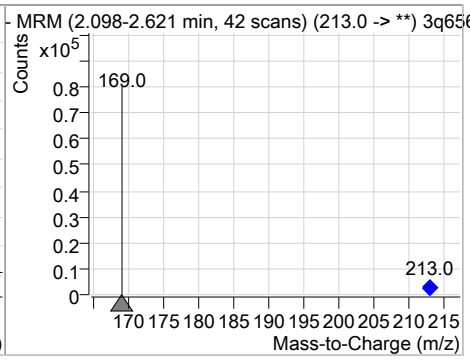
Perfluorinated Compounds by LC/MS/MS



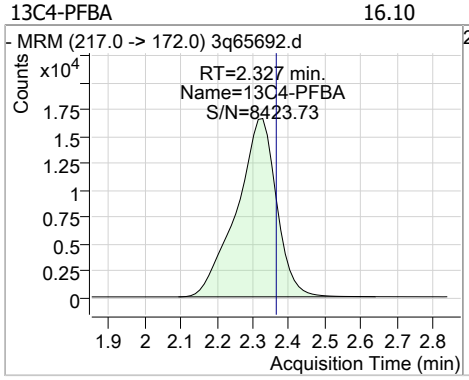
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	2.32	-0.04	57538				

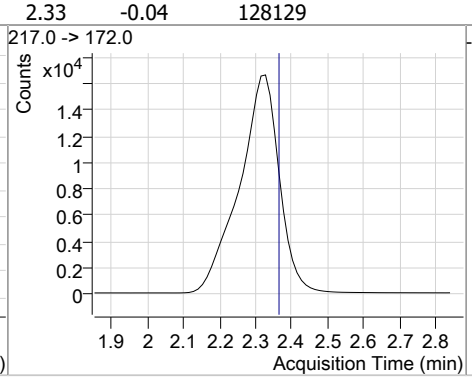


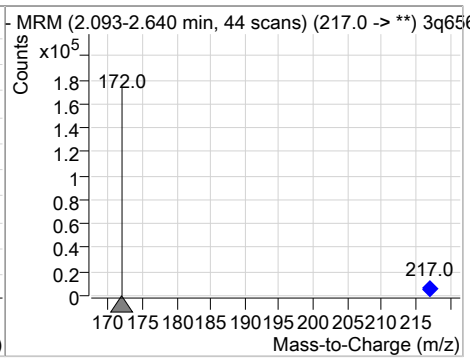




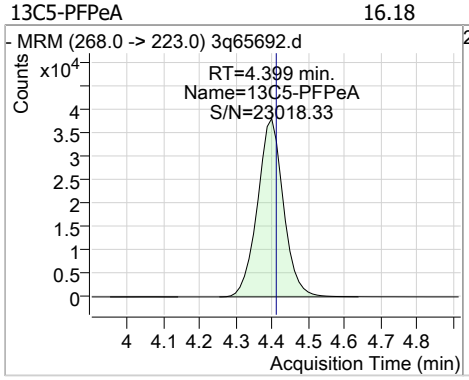
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.10	2.33	-0.04	128129				

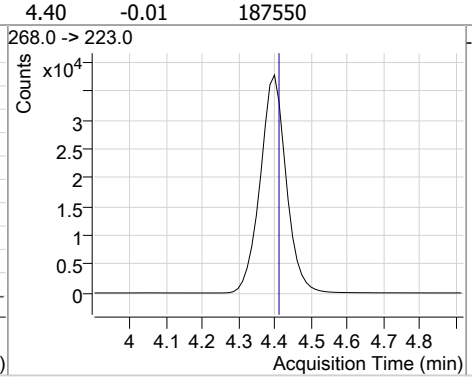


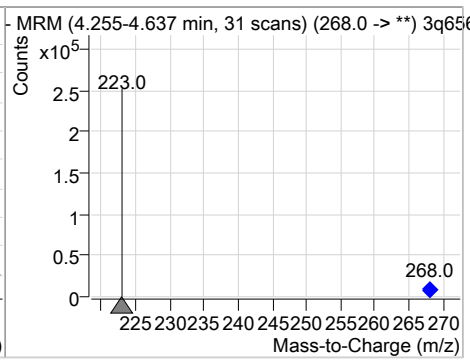




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.18	4.40	-0.01	187550				

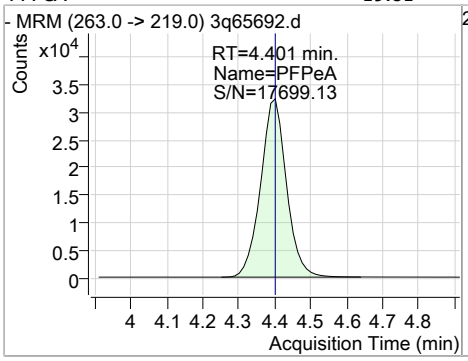


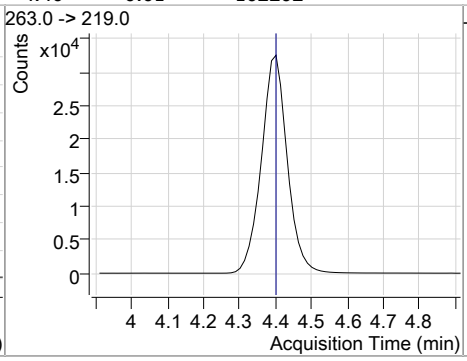


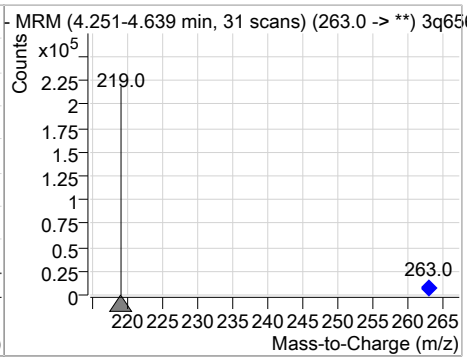


Perfluorinated Compounds by LC/MS/MS

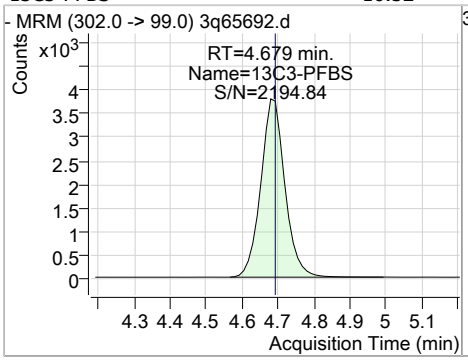
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.81	4.40	-0.01	162262				

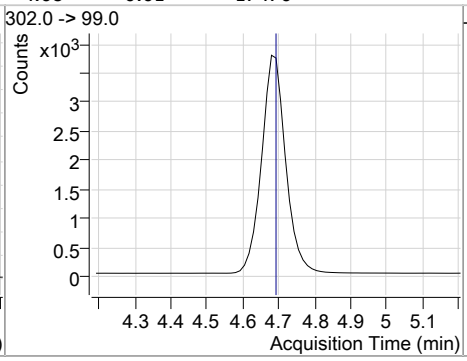


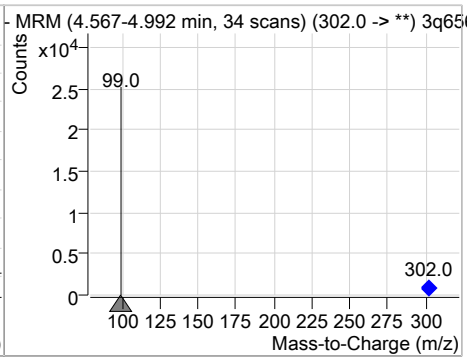




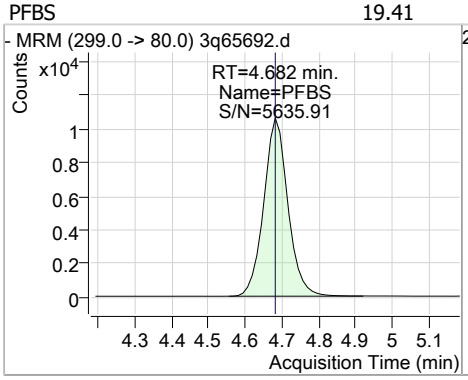
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.52	4.68	-0.01	17476				

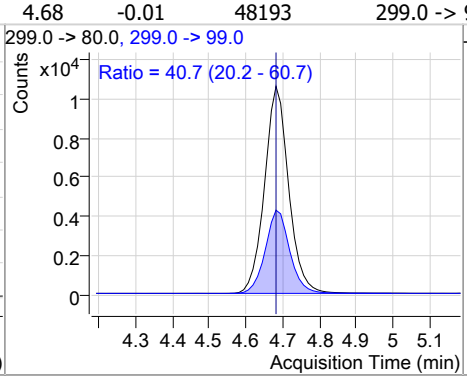


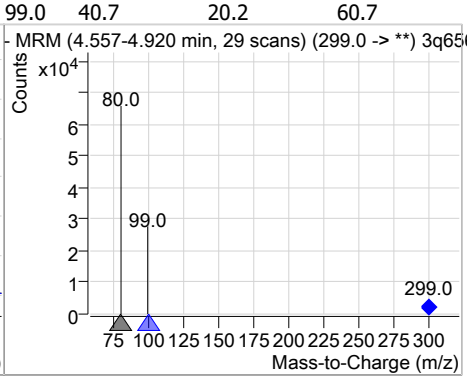




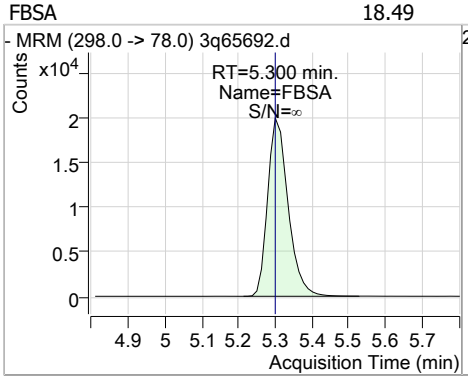
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.41	4.68	-0.01	48193	299.0 -> 99.0	40.7	20.2	60.7

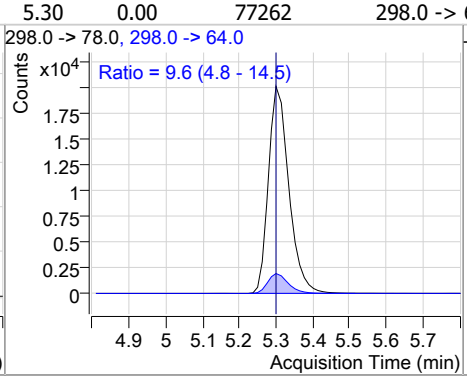


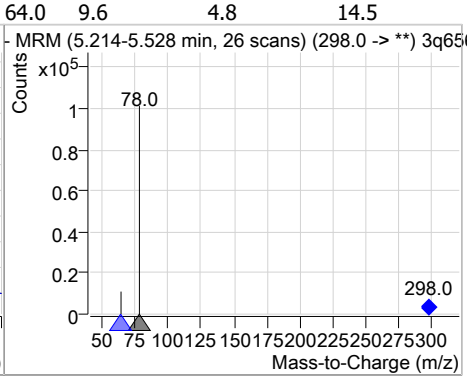




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	18.49	5.30	0.00	77262	298.0 -> 64.0	9.6	4.8	14.5

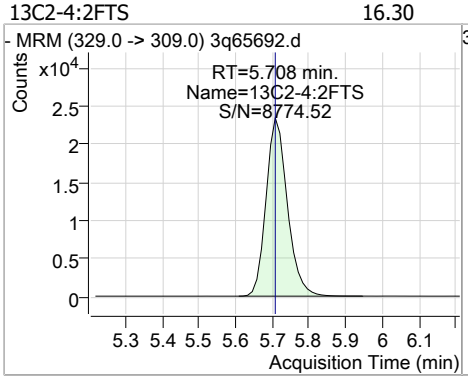


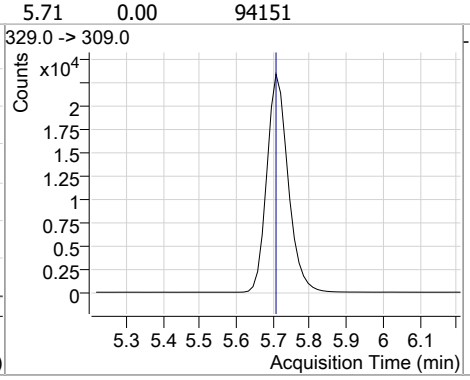


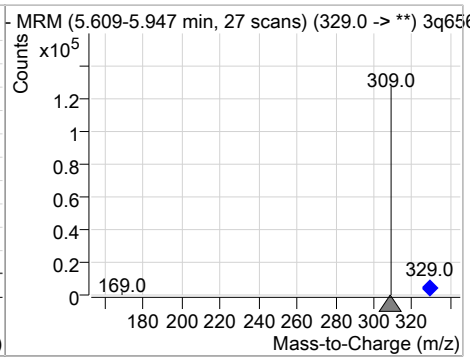


Perfluorinated Compounds by LC/MS/MS

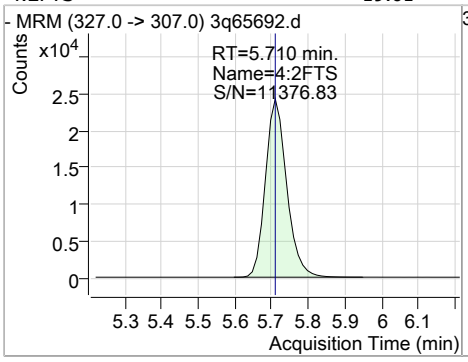
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.30	5.71	0.00	94151				

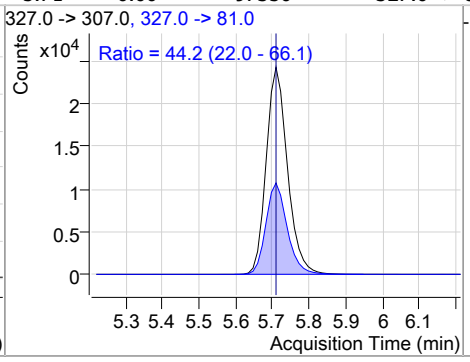


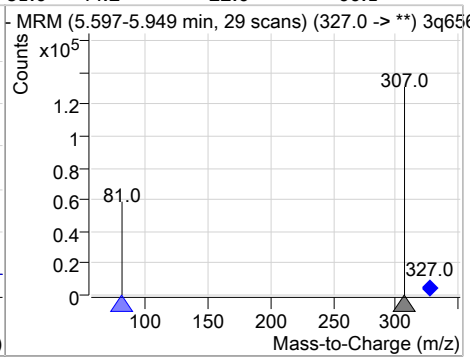




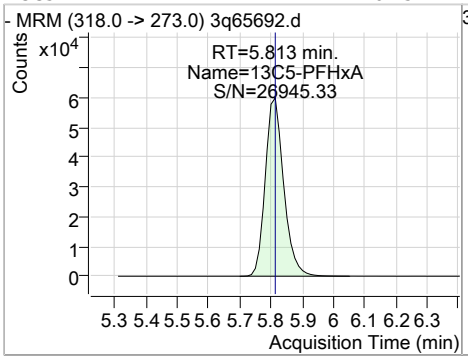
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.61	5.71	0.00	97350	327.0 -> 81.0	44.2	22.0	66.1

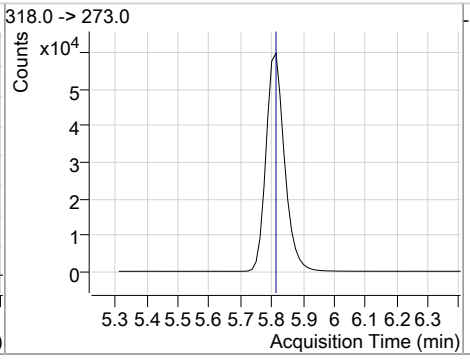


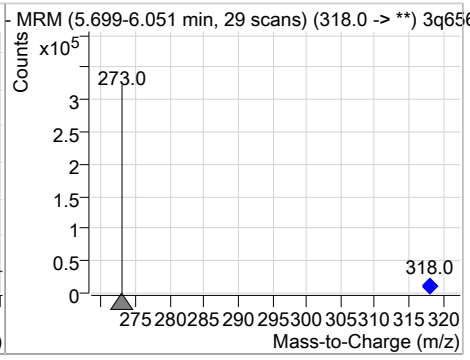




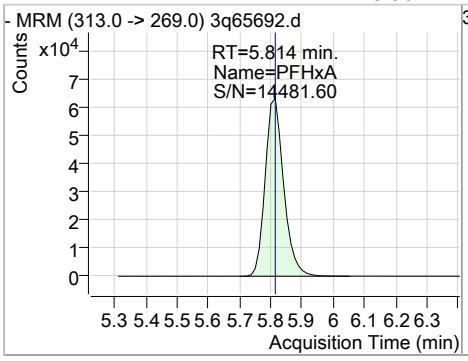
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.15	5.81	0.00	245168				

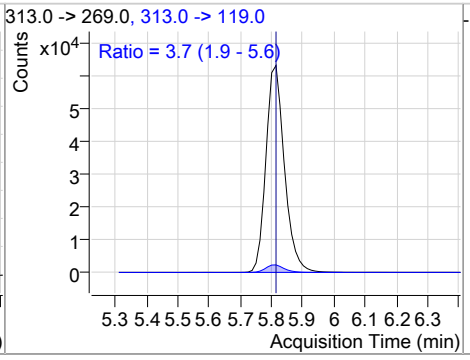


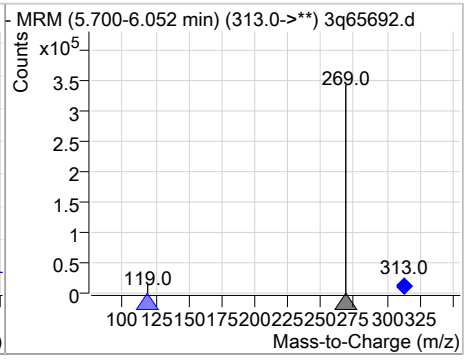




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.90	5.81	0.00	260060	313.0 -> 119.0	3.7	1.9	5.6

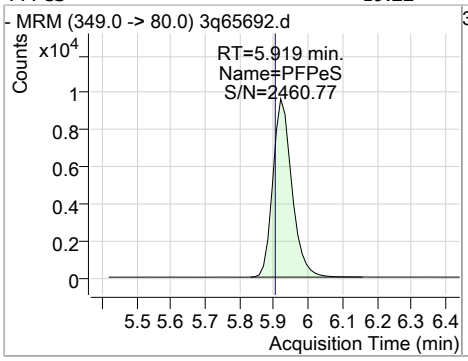


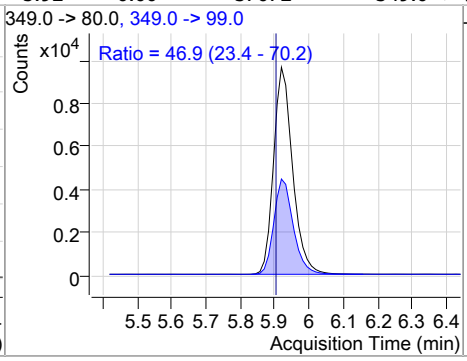


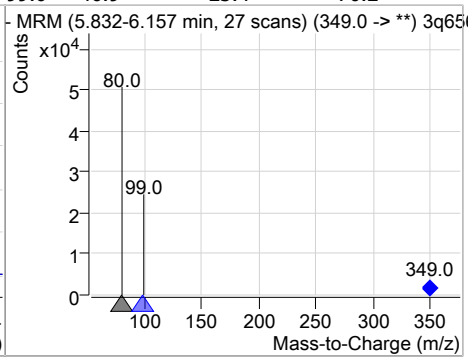


Perfluorinated Compounds by LC/MS/MS

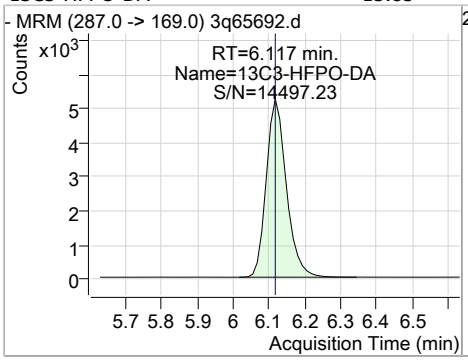
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.22	5.92	0.00	37072	349.0 -> 99.0	46.9	23.4	70.2

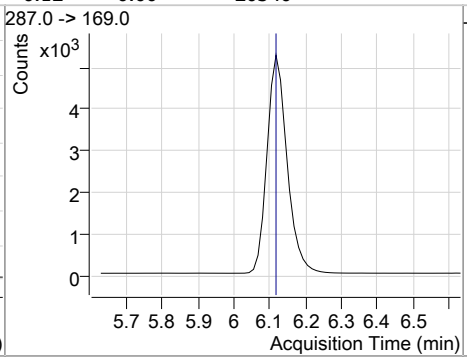


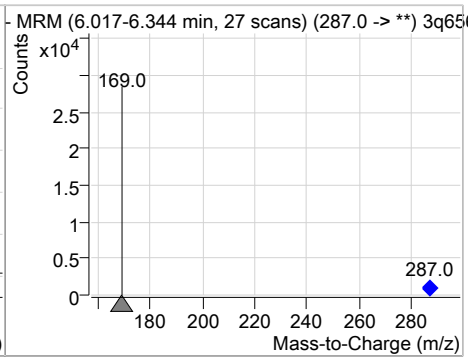




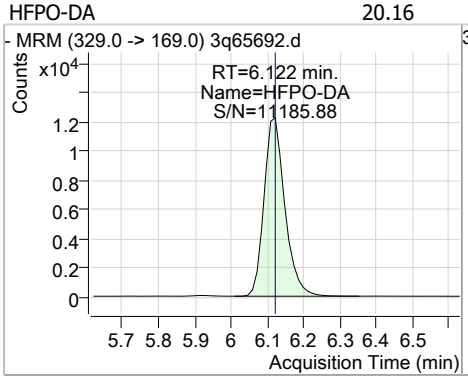
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.85	6.12	0.00	20340				

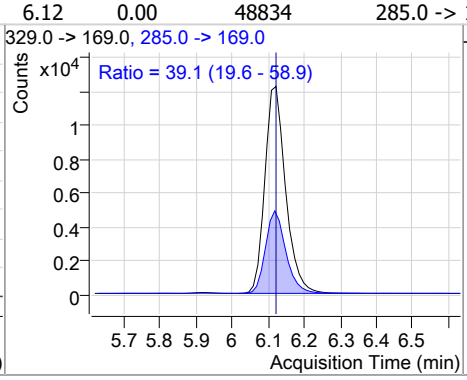


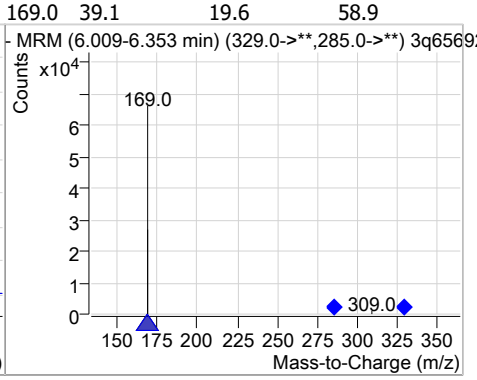




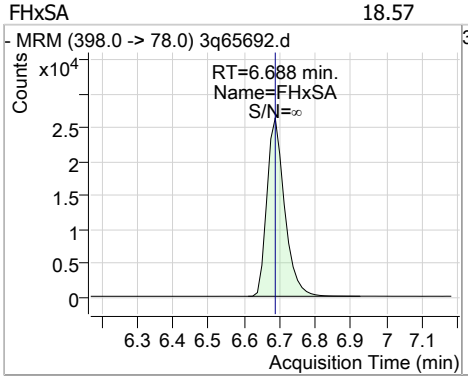
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.16	6.12	0.00	48834	285.0 -> 169.0	39.1	19.6	58.9

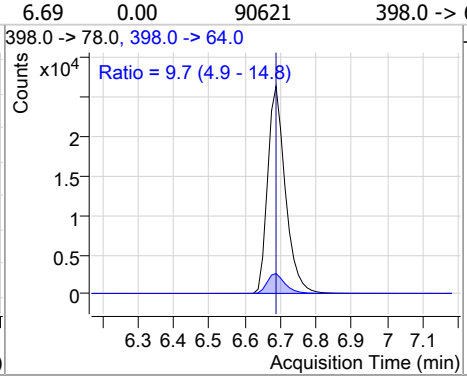


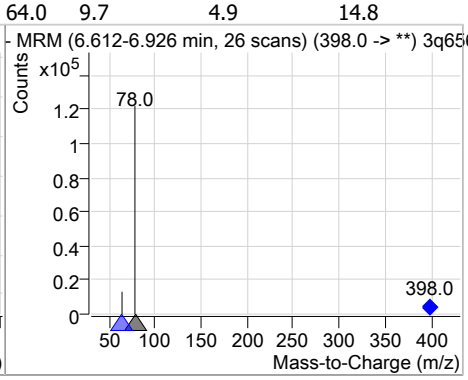




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.57	6.69	0.00	90621	398.0 -> 64.0	9.7	4.9	14.8

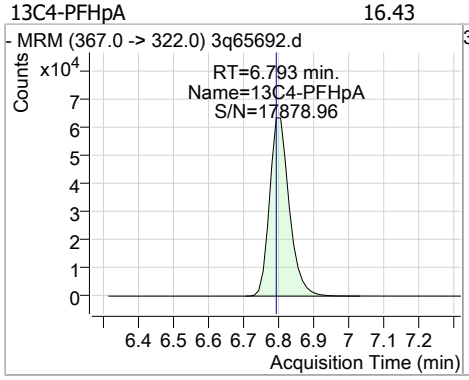


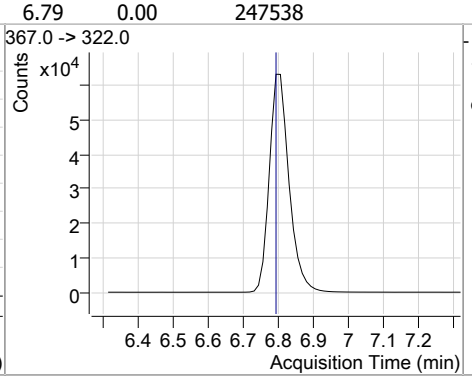


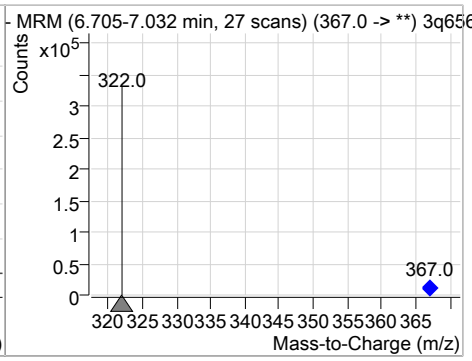


Perfluorinated Compounds by LC/MS/MS

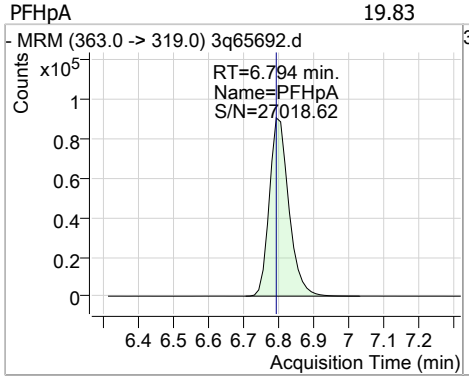
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.43	6.79	0.00	247538				

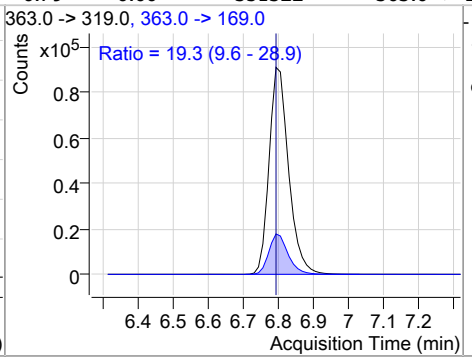


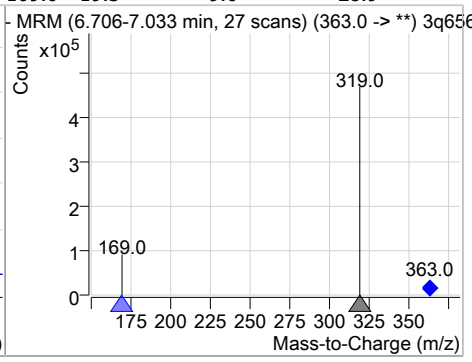




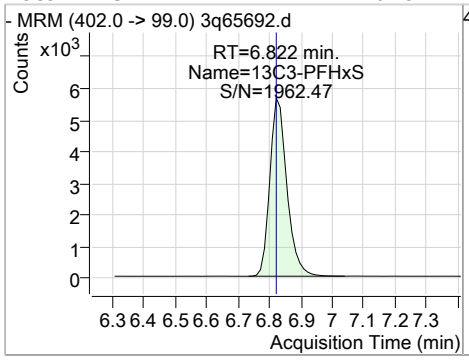
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.83	6.79	0.00	351322	363.0 -> 169.0	19.3	9.6	28.9

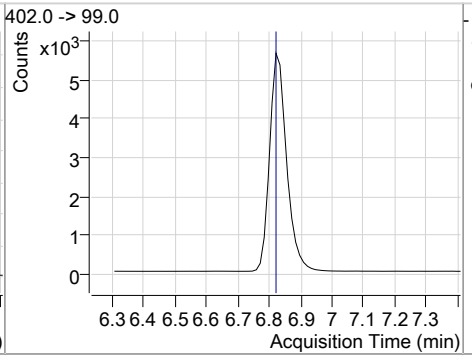


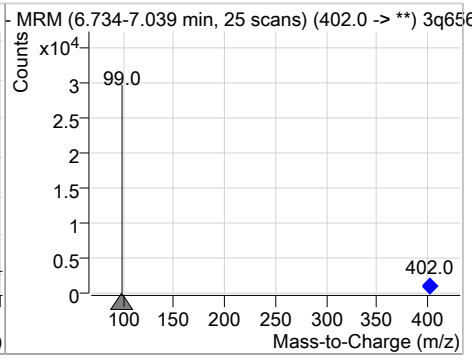




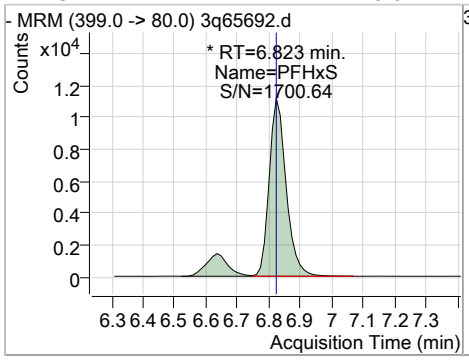
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.45	6.82	0.00	21248				

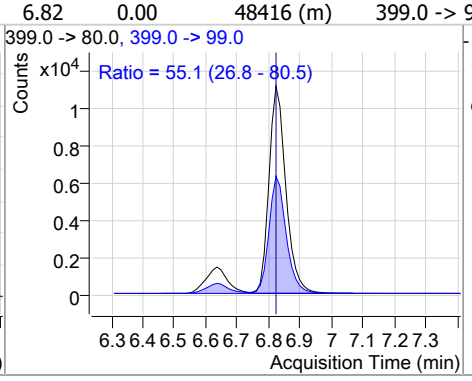


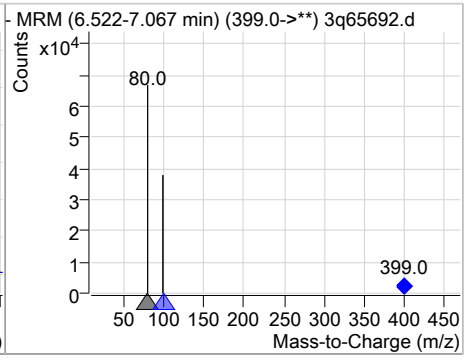




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.54	6.82	0.00	48416 (m)	399.0 -> 99.0	55.1	26.8	80.5

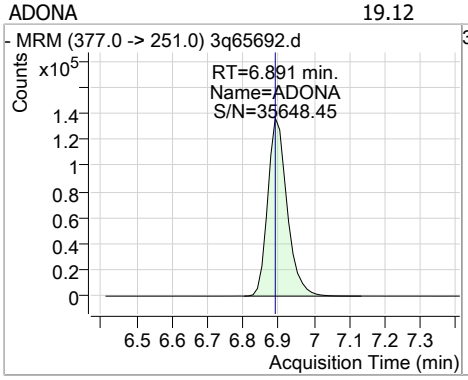


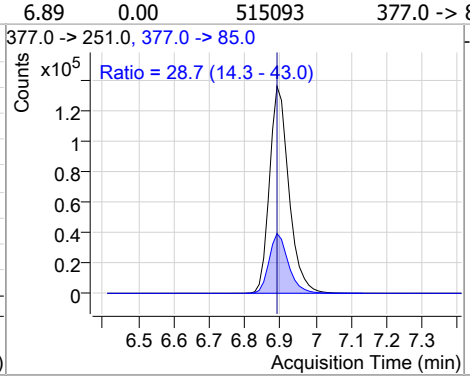


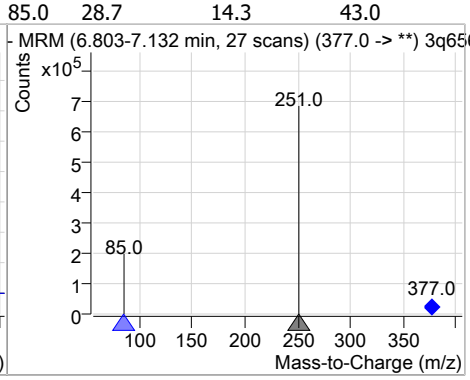


Perfluorinated Compounds by LC/MS/MS

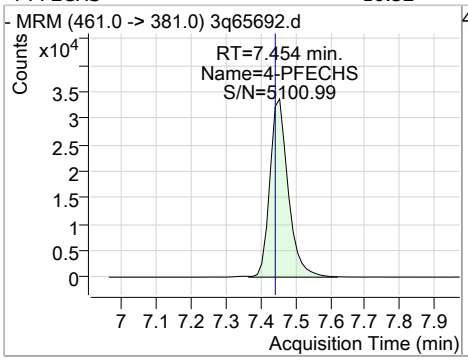
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.12	6.89	0.00	515093	377.0 -> 85.0	28.7	14.3	43.0

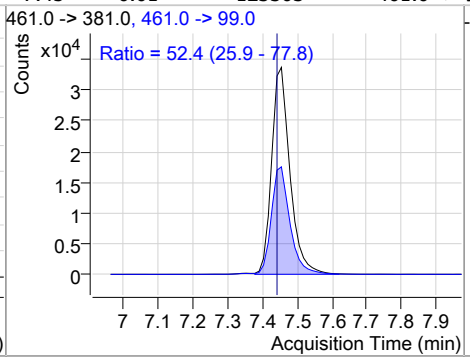


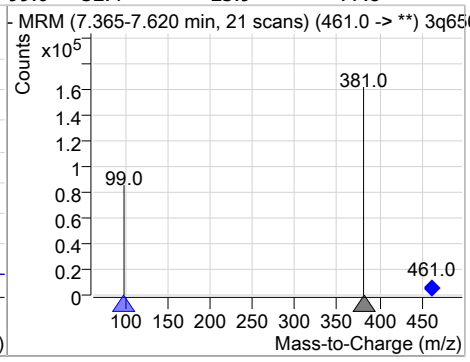




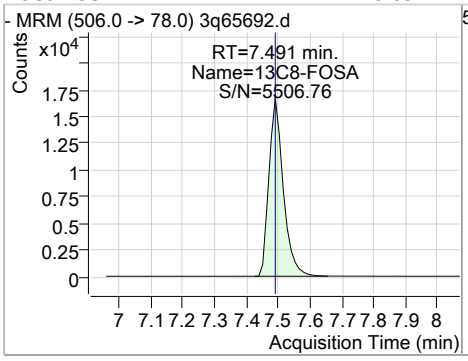
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	16.52	7.45	0.01	123303	461.0 -> 99.0	52.4	25.9	77.8

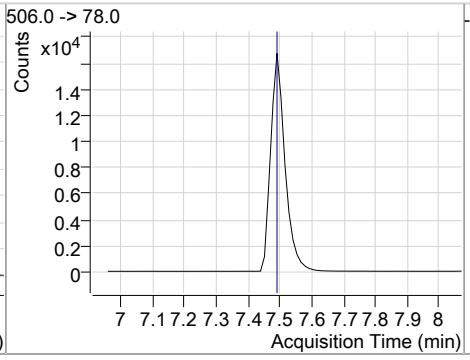


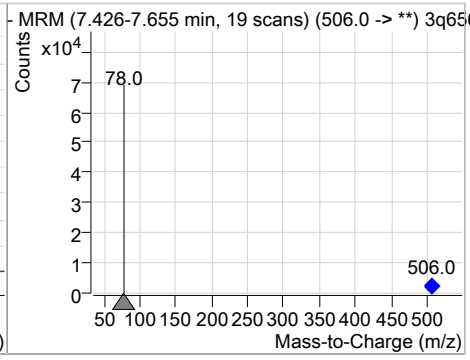




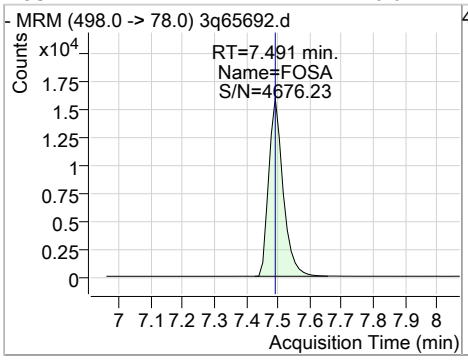
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.83	7.49	0.00	52239				

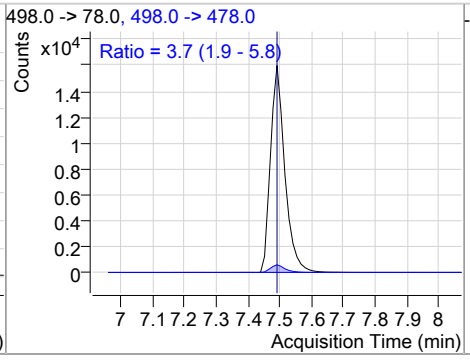


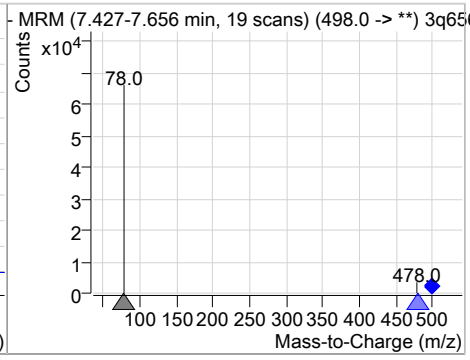




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.04	7.49	0.00	49831	498.0 -> 478.0	3.7	1.9	5.8

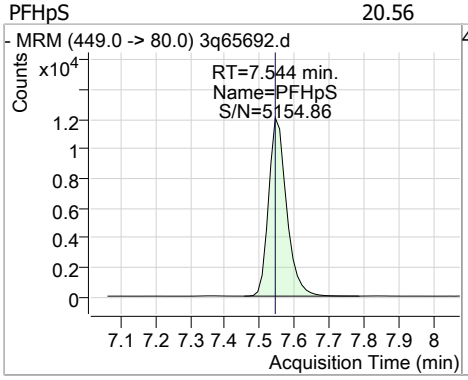


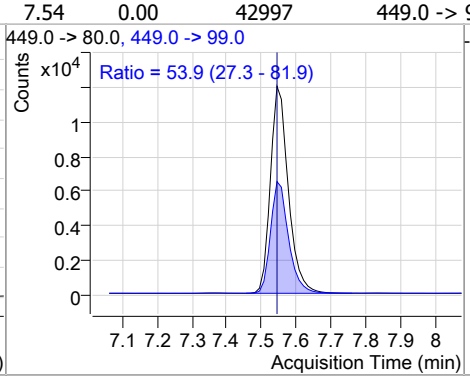


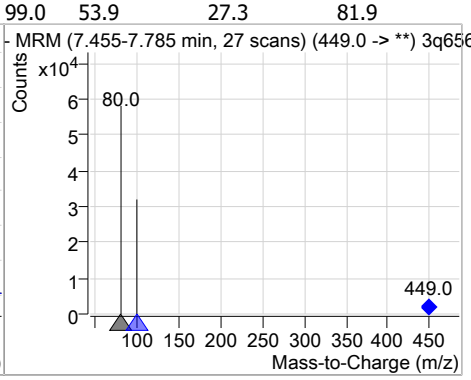


Perfluorinated Compounds by LC/MS/MS

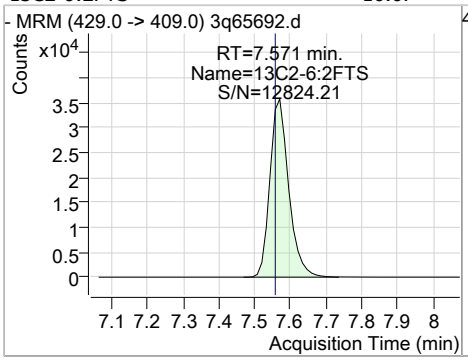
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.56	7.54	0.00	42997	449.0 -> 99.0	53.9	27.3	81.9

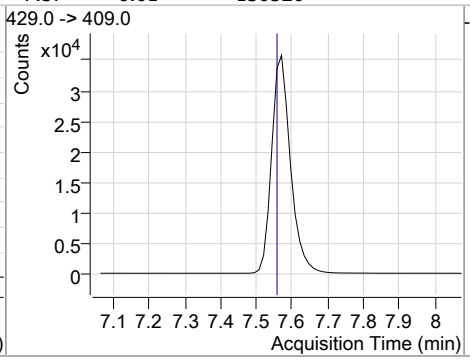


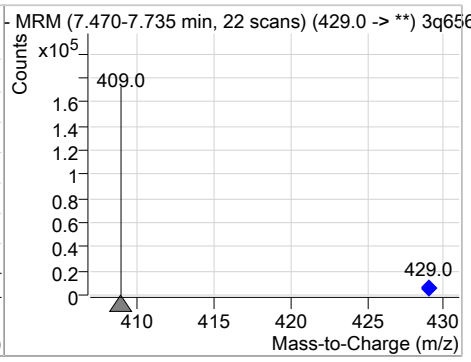




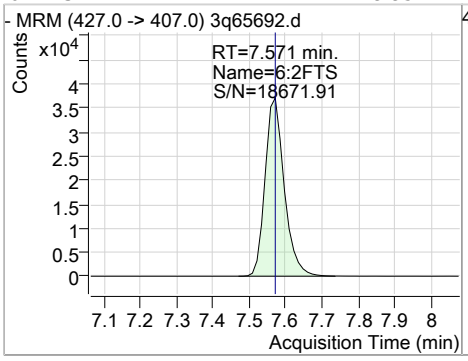
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.67	7.57	0.01	130520				

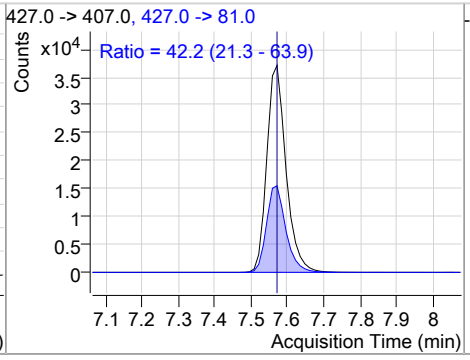


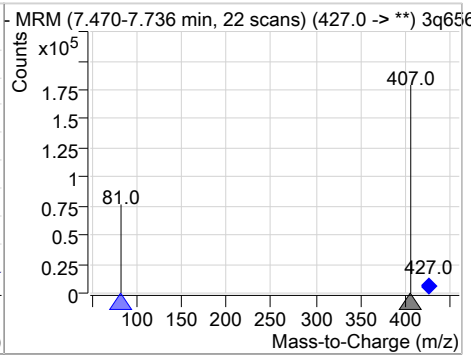




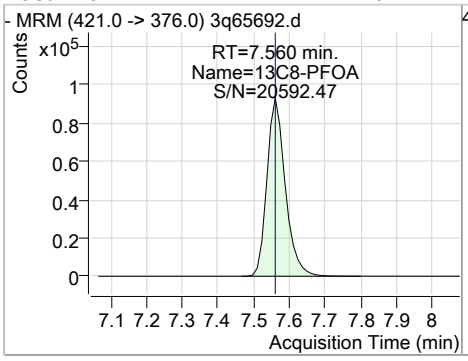
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.95	7.57	0.01	135309	427.0 -> 81.0	42.2	21.3	63.9

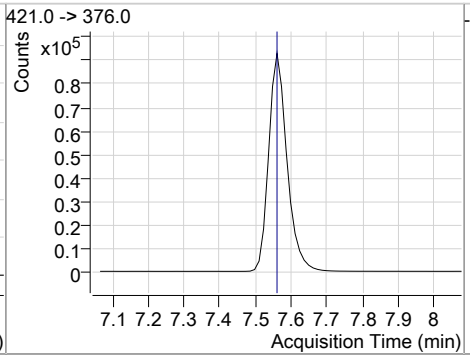


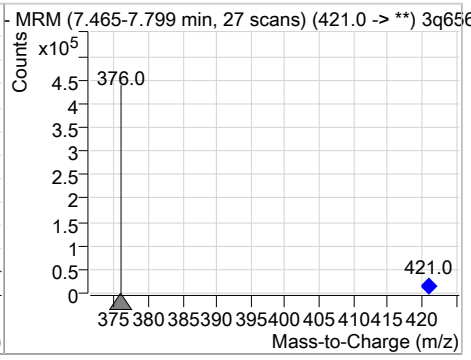




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.44	7.56	0.00	330969				

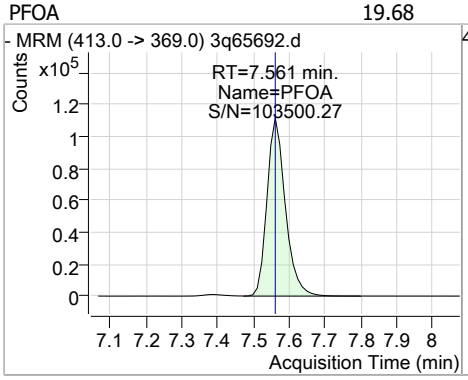


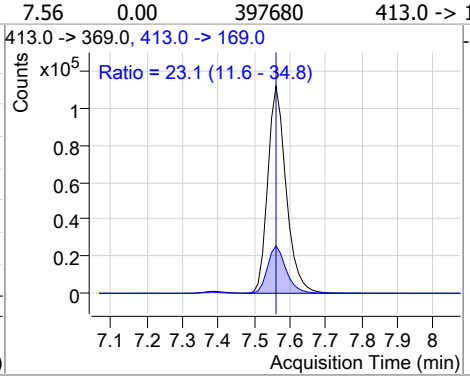


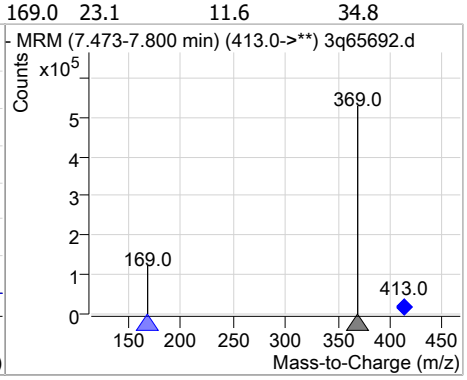


Perfluorinated Compounds by LC/MS/MS

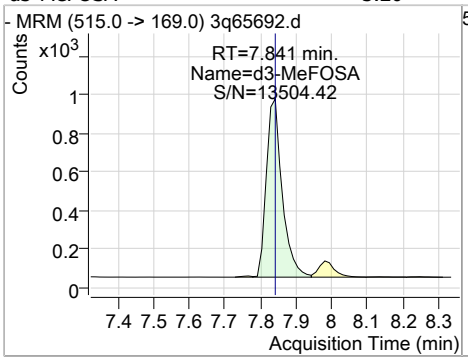
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.68	7.56	0.00	397680	413.0 -> 169.0	23.1	11.6	34.8

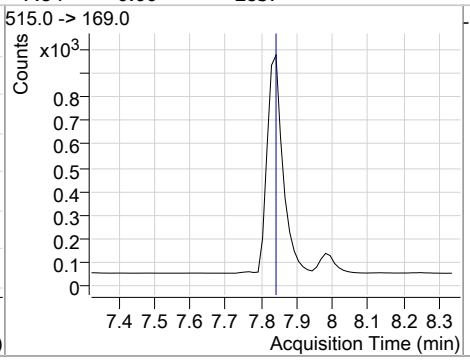


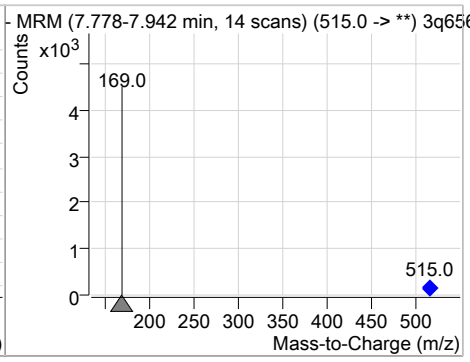




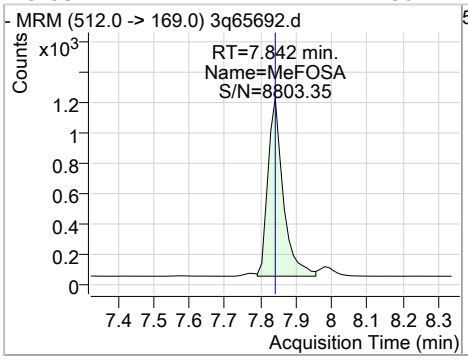
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	3.20	7.84	0.00	2837				

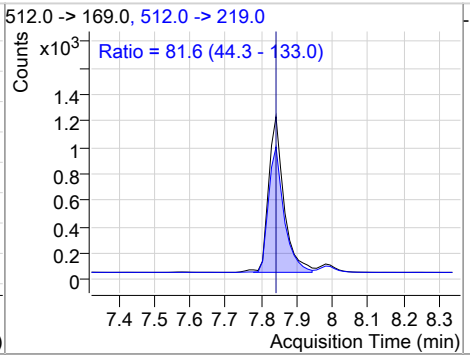


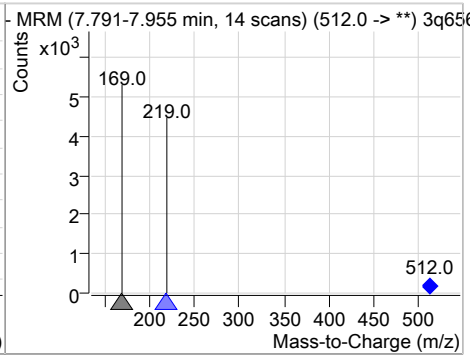




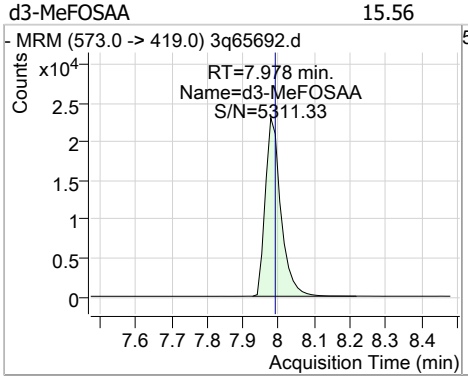
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	22.90	7.84	0.00	3498	512.0 -> 219.0	81.6	44.3	133.0

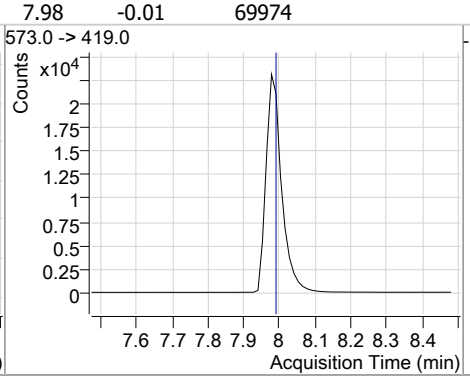


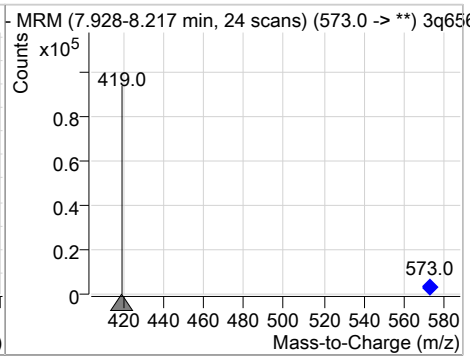




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.56	7.98	-0.01	69974				

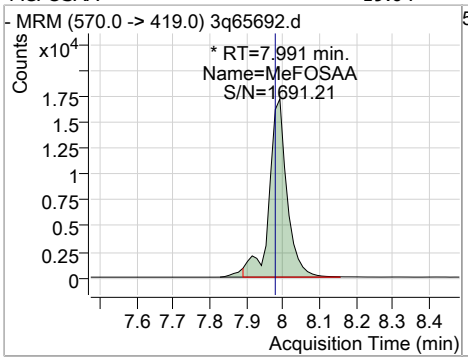


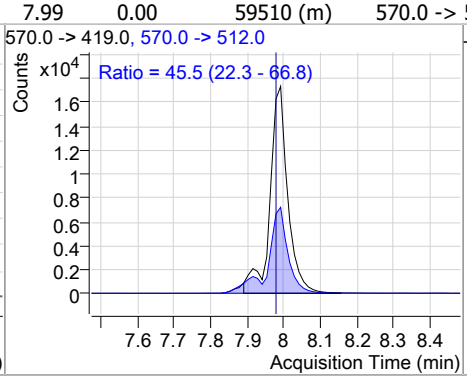


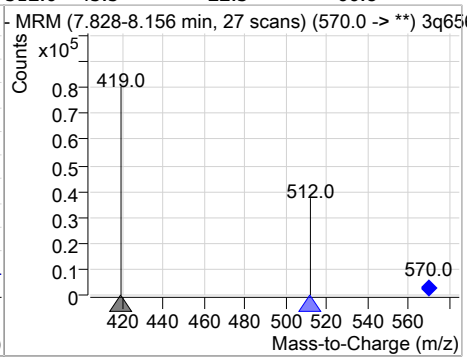


Perfluorinated Compounds by LC/MS/MS

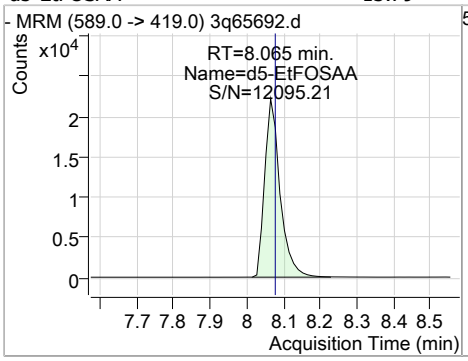
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.04	7.99	0.00	59510 (m)	570.0 -> 512.0	45.5	22.3	66.8

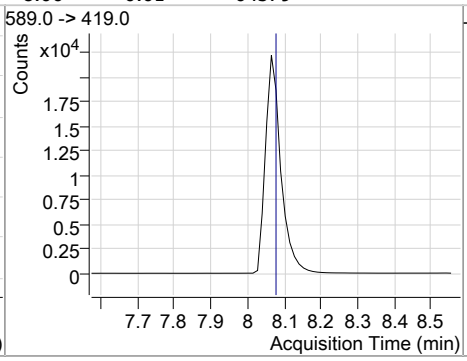


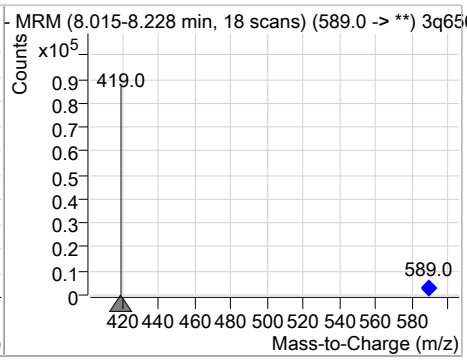




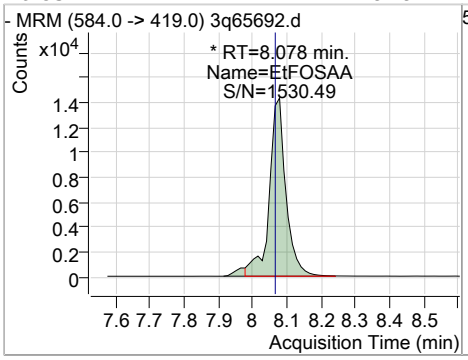
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.79	8.06	-0.01	64579				

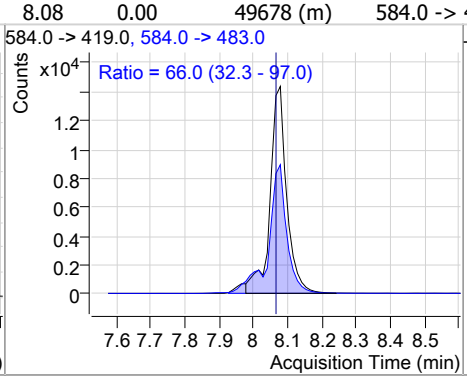


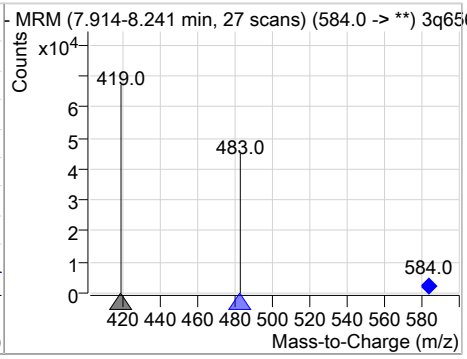




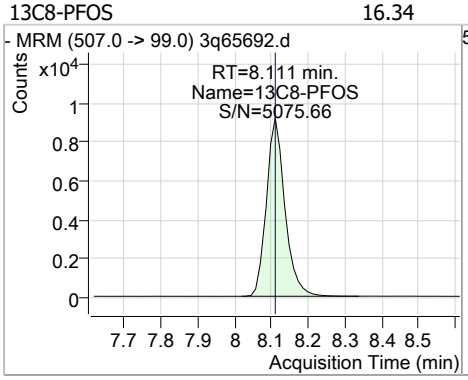
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.29	8.08	0.00	49678 (m)	584.0 -> 483.0	66.0	32.3	97.0

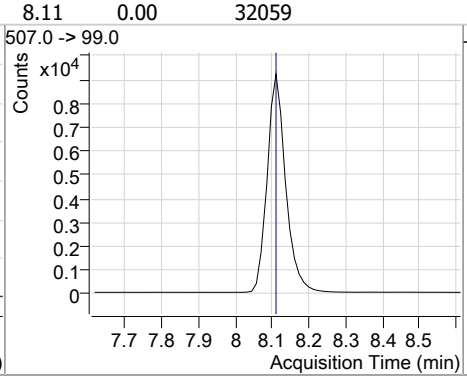


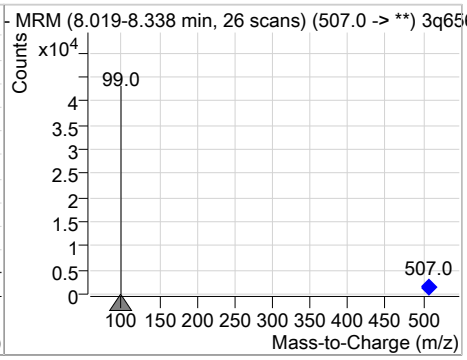




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.34	8.11	0.00	32059				

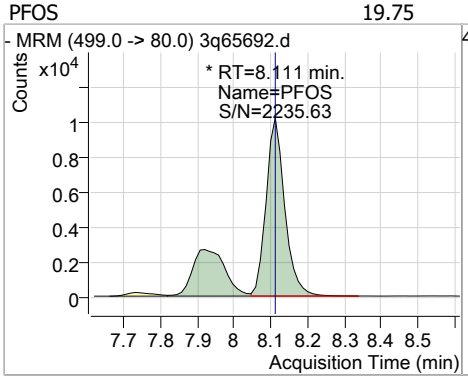


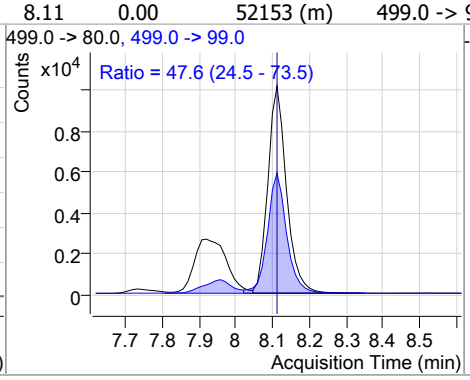


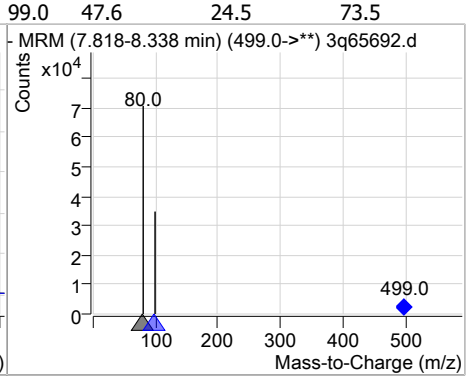


Perfluorinated Compounds by LC/MS/MS

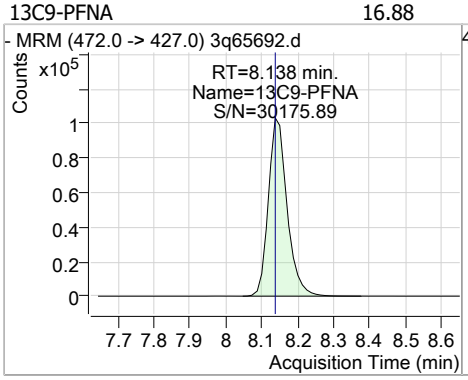
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.75	8.11	0.00	52153 (m)	499.0 -> 99.0	47.6	24.5	73.5

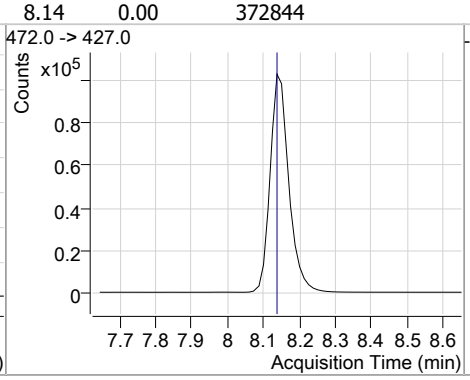


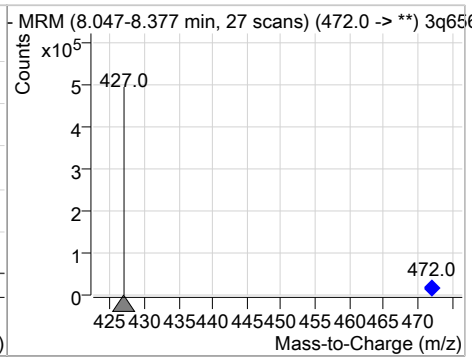




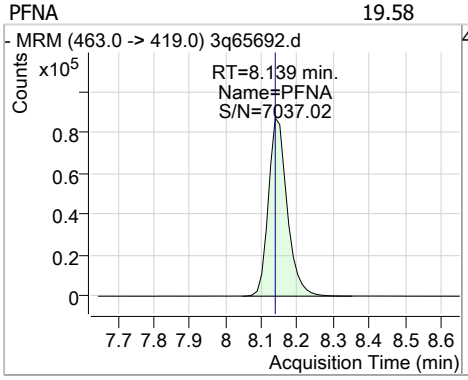
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.88	8.14	0.00	372844				

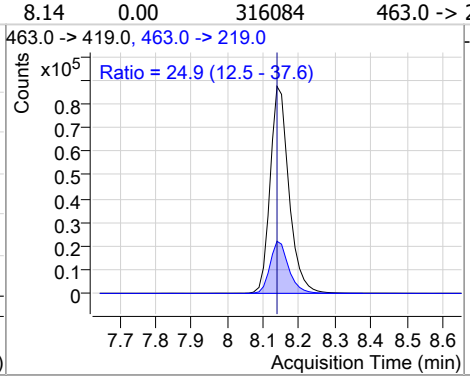


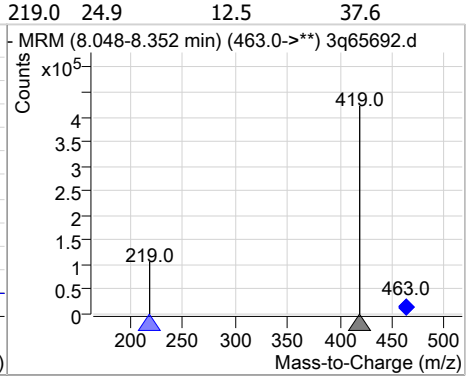




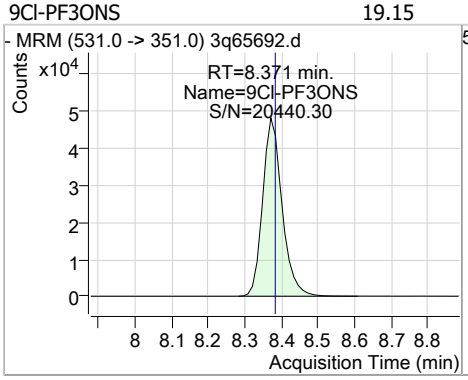
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.58	8.14	0.00	316084	463.0 -> 219.0	24.9	12.5	37.6

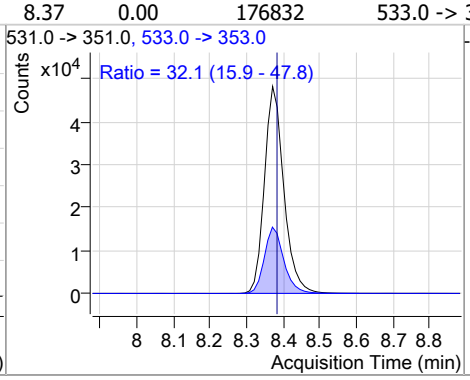


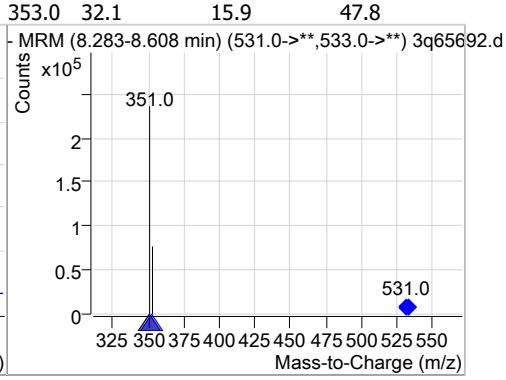




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.15	8.37	0.00	176832	533.0 -> 353.0	32.1	15.9	47.8

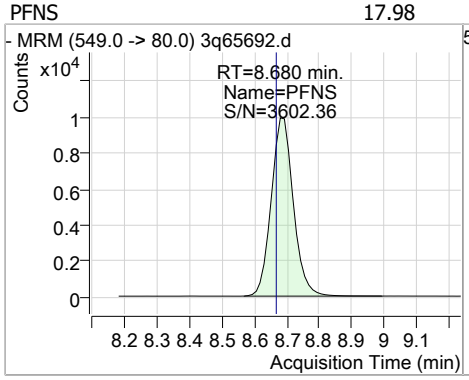


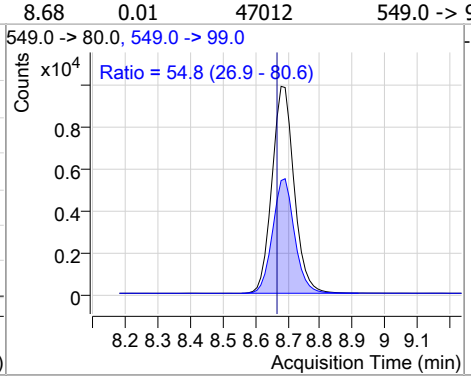


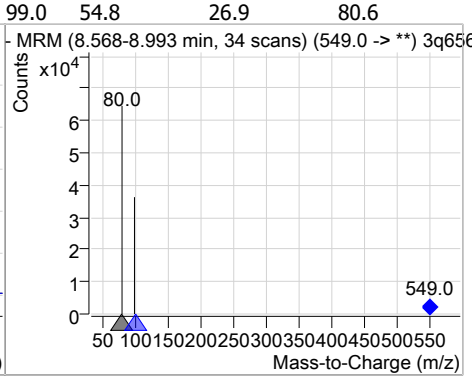


Perfluorinated Compounds by LC/MS/MS

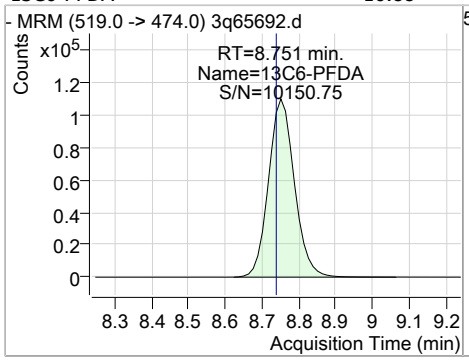
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	17.98	8.68	0.01	47012	549.0 -> 99.0	54.8	26.9	80.6

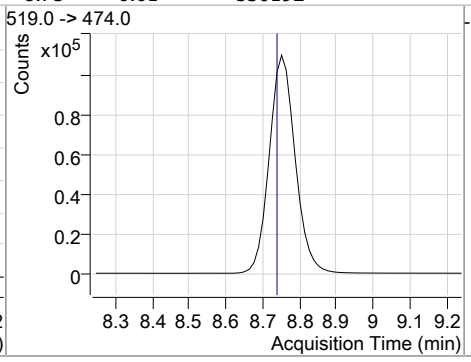


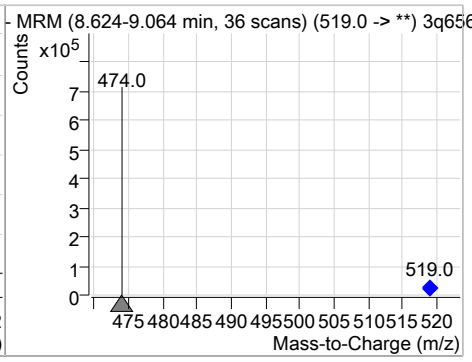




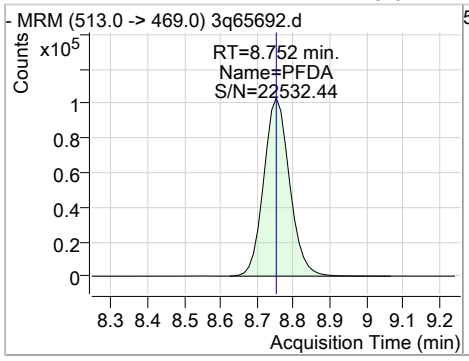
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.88	8.75	0.01	536192				

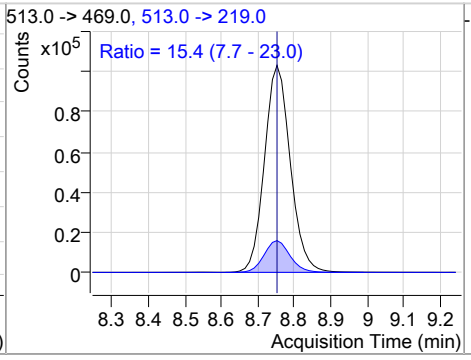


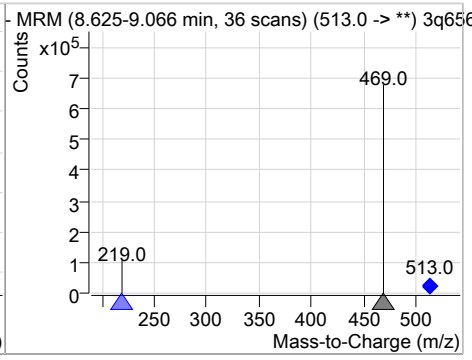




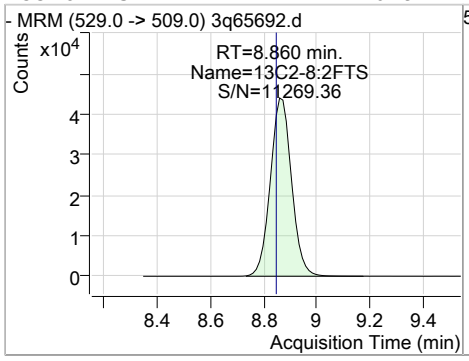
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.61	8.75	0.01	506752	513.0 -> 219.0	15.4	7.7	23.0

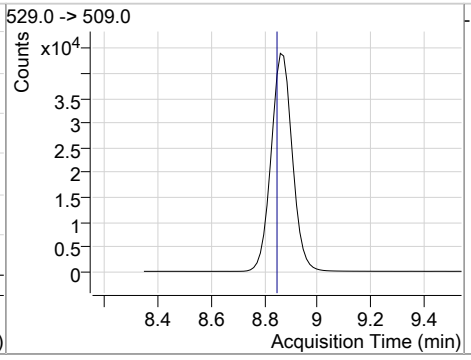


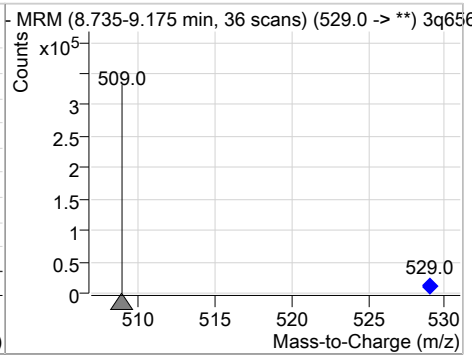




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.79	8.86	0.01	243966				

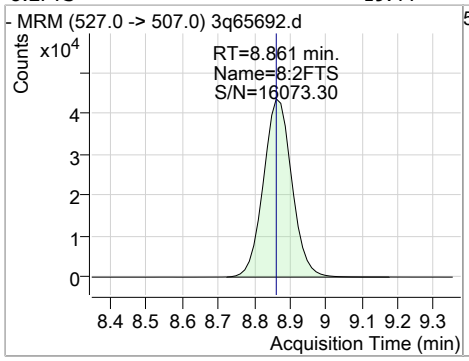


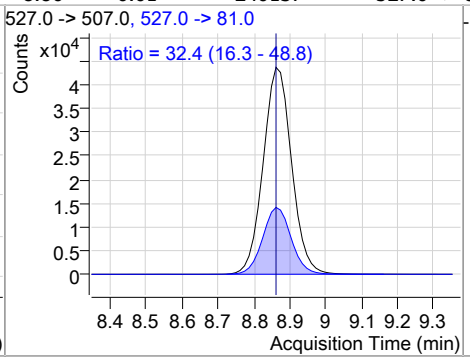


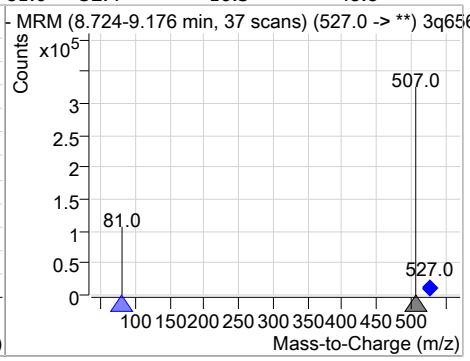


Perfluorinated Compounds by LC/MS/MS

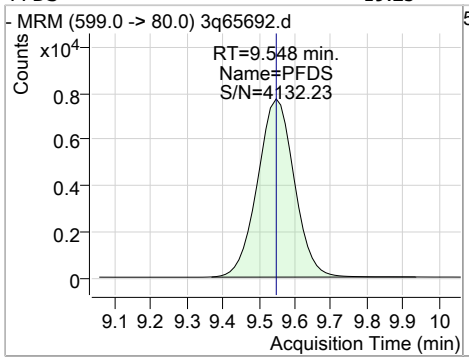
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.44	8.86	0.01	240137	527.0 -> 81.0	32.4	16.3	48.8

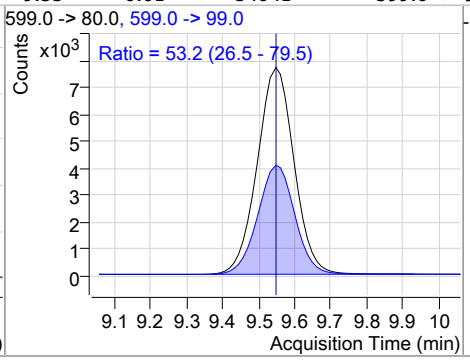


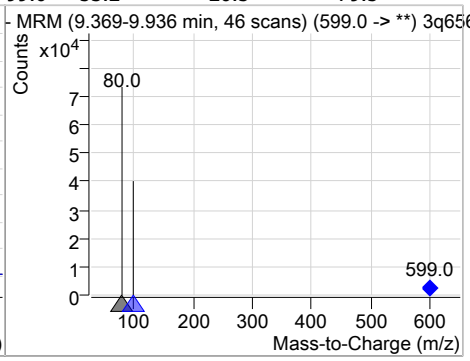




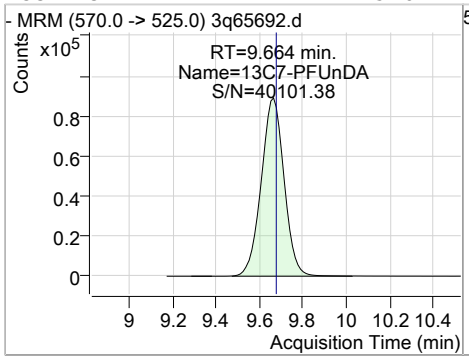
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.25	9.55	-0.01	54641	599.0 -> 99.0	53.2	26.5	79.5

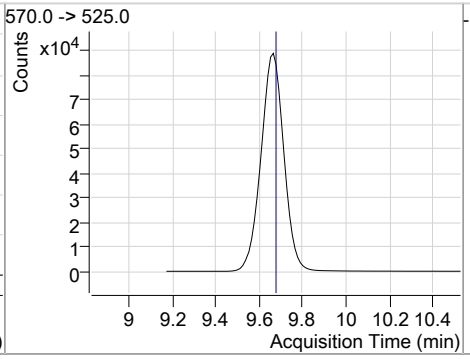


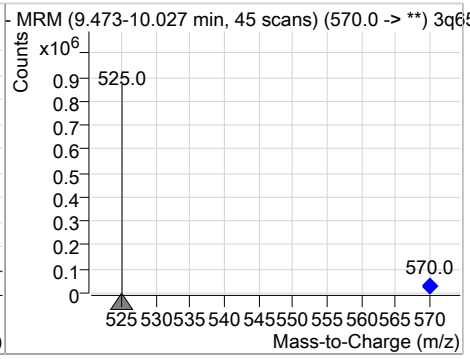




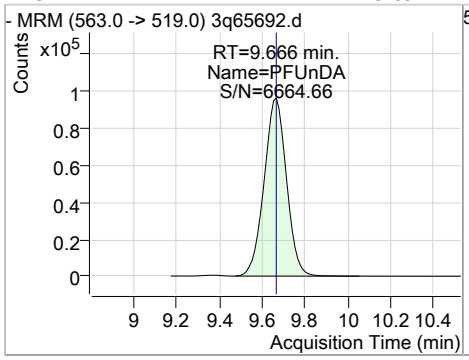
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.78	9.66	-0.01	651401				

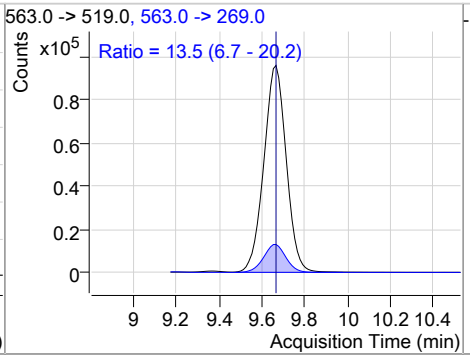


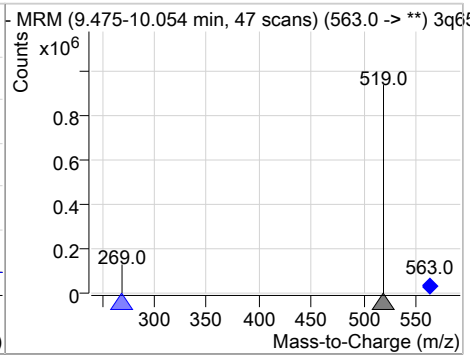




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.89	9.67	-0.01	697883	563.0 -> 269.0	13.5	6.7	20.2

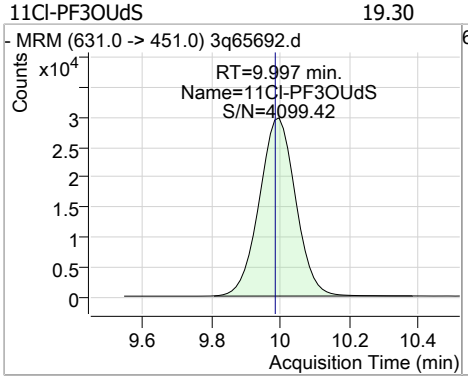


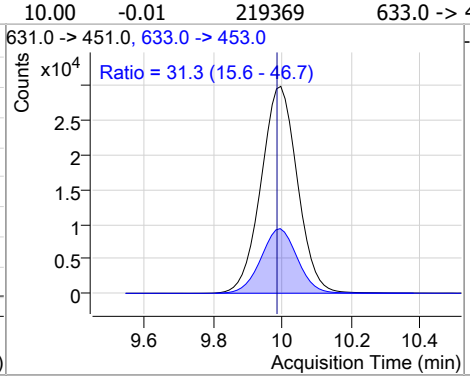


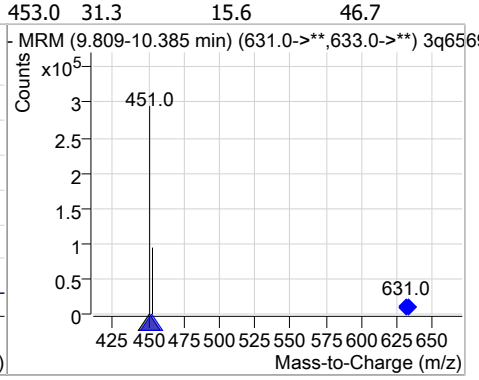


Perfluorinated Compounds by LC/MS/MS

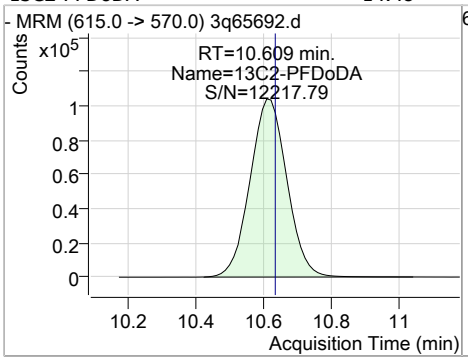
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.30	10.00	-0.01	219369	633.0 -> 453.0	31.3	15.6	46.7

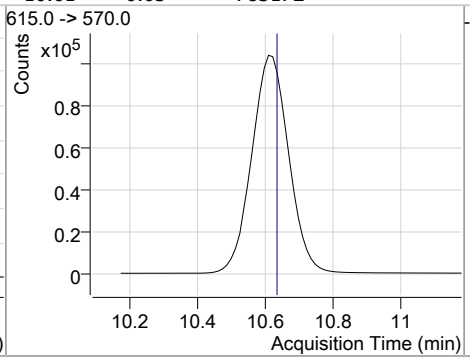


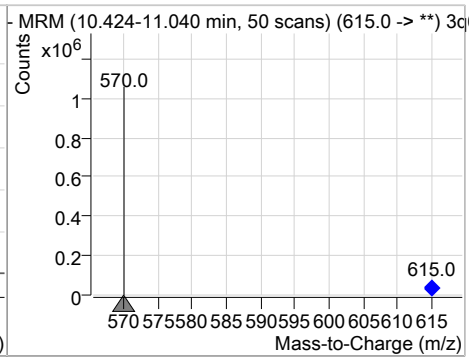




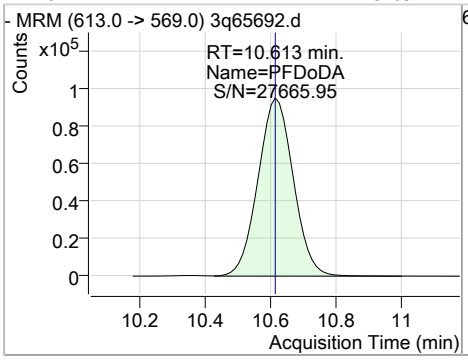
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.48	10.61	-0.03	783172				

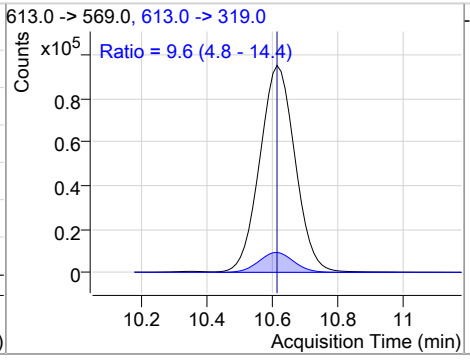


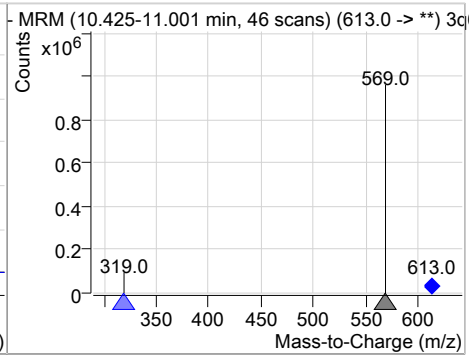




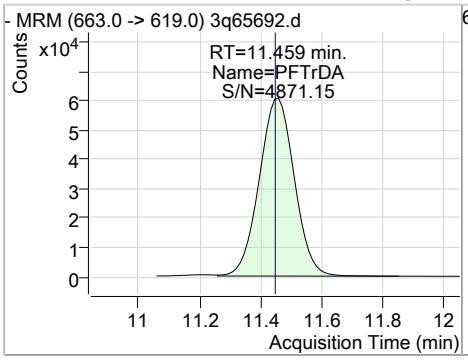
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.69	10.61	-0.03	716368	613.0 -> 319.0	9.6	4.8	14.4

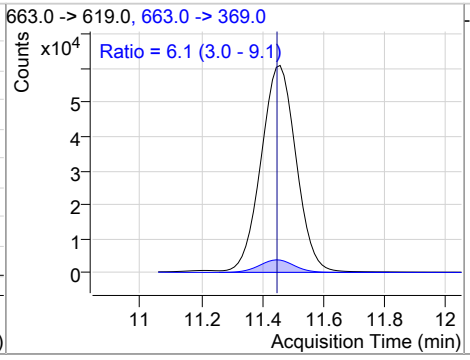


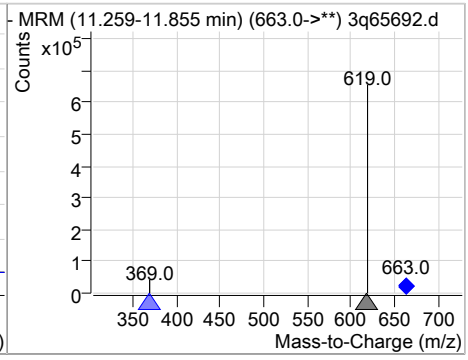




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.15	11.46	-0.03	485751	663.0 -> 369.0	6.1	3.0	9.1

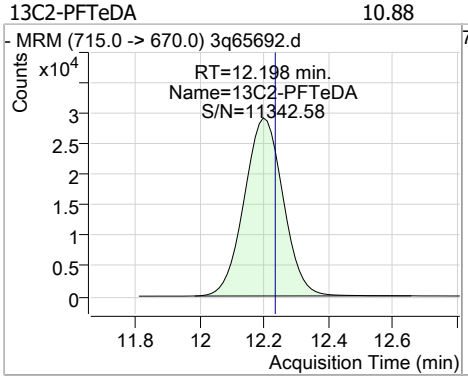


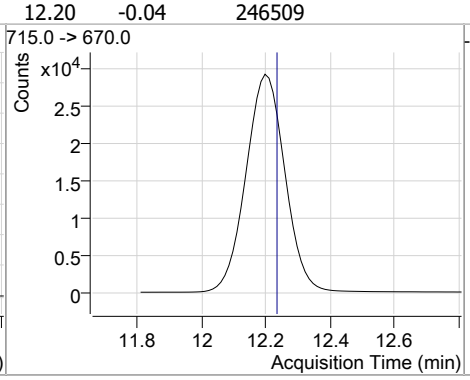


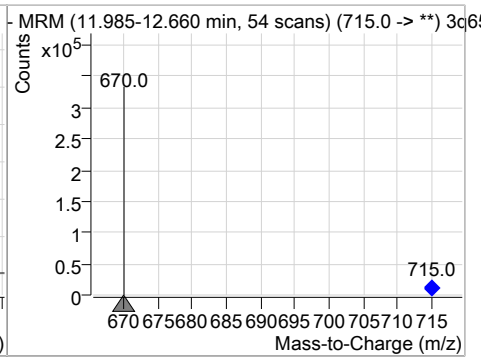


Perfluorinated Compounds by LC/MS/MS

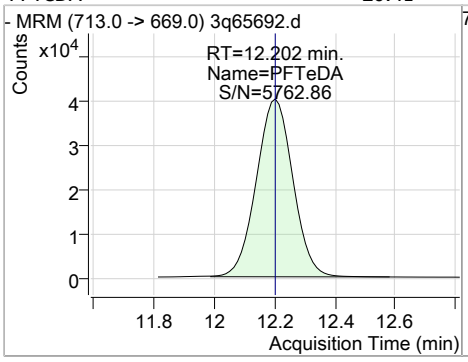
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.88	12.20	-0.04	246509				

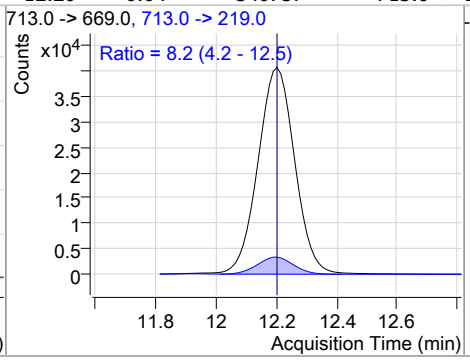


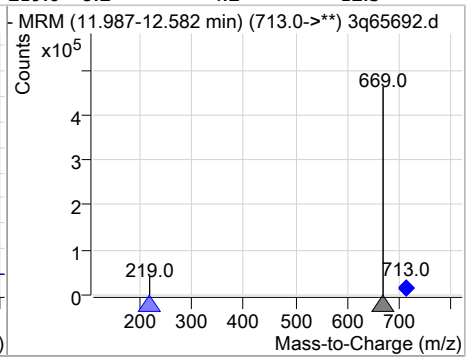




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.41	12.20	-0.04	340757	713.0 -> 219.0	8.2	4.2	12.5







7.3.1

7

Manual Integration Approval Summary

Sample Number: OP92762-BS
Lab FileID: 3Q65692.D
Injection Time: 09/13/22 20:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4630.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:21:05 AM
Sample Name : op92763-bs
Vial : P1-D8
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

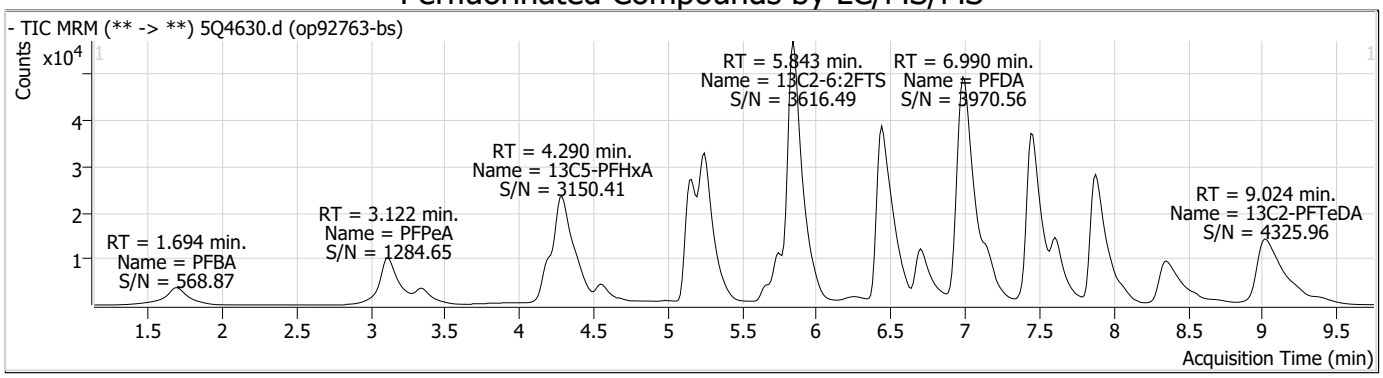
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	29574	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	47460	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	72253	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	67861	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	101360	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	112486	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	92019	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	112963	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	103472	20.00 µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	91286	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	13668	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	5421	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5632	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	10541	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	24403	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	38573	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	39989	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	17597	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4940	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	1669	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	17356	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	24403	16.62 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
13C2-6:2FTS	5.843	429.0 -> 409.0	38573	17.25 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.3%	
13C2-8:2FTS	7.013	529.0 -> 509.0	39989	17.80 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%	
13C2-PFDoDA	7.893	615.0 -> 570.0	103472	14.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.4%	
13C2-PFTeDA	9.024	715.0 -> 670.0	91286	12.10 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.5%	
13C3-PFBS	3.349	302.0 -> 99.0	5421	16.64 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.2%	
13C3-PFHxS	5.194	402.0 -> 99.0	5632	16.51 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%	
13C4-PFBA	1.700	217.0 -> 172.0	29574	16.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.7%	
13C4-PFHpA	5.163	367.0 -> 322.0	67861	16.62 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%	
13C5-PFHxA	4.290	318.0 -> 273.0	72253	16.53 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%	
13C5-PFPeA	3.119	268.0 -> 223.0	47460	16.33 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%	
13C6-PFDA	6.989	519.0 -> 474.0	92019	17.09 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

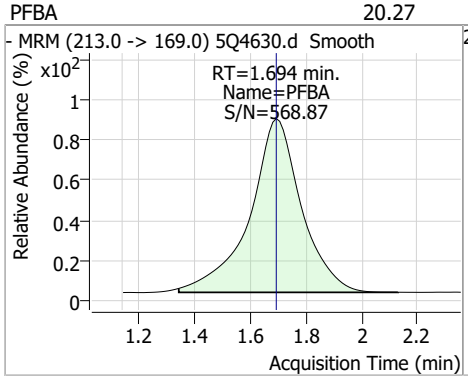
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	112963	16.04	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%			
13C8-FOSA	6.517	506.0 -> 78.0	13668	12.05	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%			
13C8-PFOA	5.857	421.0 -> 376.0	101360	16.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%			
13C8-PFOS	6.440	507.0 -> 99.0	10541	16.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.7%			
13C9-PFNA	6.455	472.0 -> 427.0	112486	17.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	17597	18.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4940	14.71	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%			
d3-MeFOSA	6.952	515.0 -> 169.0	1669	5.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 27.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17356	15.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	25948	18.99	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	41607	20.34	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	41227	19.34	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	12504	20.36	µg/L		99
FOSA	6.519	498.0 -> 78.0	13298	18.91	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	15439	19.16	µg/L		98
PFBA	1.694	213.0 -> 169.0	14122	20.27	µg/L		100
PFBS	3.354	299.0 -> 80.0	15602	19.16	µg/L		99
PFDA	6.990	513.0 -> 469.0	108225	19.15	µg/L		99
PFDoDA	7.894	613.0 -> 569.0	100934	19.89	µg/L		99
PFDS	7.419	599.0 -> 80.0	13693	17.97	µg/L		99
PFHpA	5.164	363.0 -> 319.0	86945	19.50	µg/L		99
PFHpS	5.855	449.0 -> 80.0	16001	20.19	µg/L		100
PFHxA	4.291	313.0 -> 269.0	66566	18.86	µg/L		100
PFHxS	5.195	399.0 -> 80.0	15926	19.04	µg/L	m	95
PFNA	6.456	463.0 -> 419.0	98029	19.45	µg/L		100
PFNS	6.949	549.0 -> 80.0	14778	18.99	µg/L		100
PFOA	5.858	413.0 -> 369.0	118377	19.26	µg/L		100
PFOS	6.429	499.0 -> 80.0	17399	18.74	µg/L	m	84
PFPeA	3.122	263.0 -> 219.0	44455	18.95	µg/L		100
PFPeS	4.398	349.0 -> 80.0	11972	18.90	µg/L		99
PFTeDA	9.027	713.0 -> 669.0	90382	19.02	µg/L		99
PFTrDA	8.363	663.0 -> 619.0	101288	16.70	µg/L		97
PFUnDA	7.460	563.0 -> 519.0	112930	20.01	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	47284	18.39	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	56866	17.88	µg/L		100
ADONA	5.261	377.0 -> 251.0	109855	18.97	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	16296	19.55	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	2046	22.77	µg/L		98
4-PFECHS	5.753	461.0 -> 381.0	39634	21.73	µg/L		97
FBSA	4.343	298.0 -> 78.0	23230	19.39	µg/L		100
FHxSA	5.674	398.0 -> 78.0	19849	19.25	µg/L		99

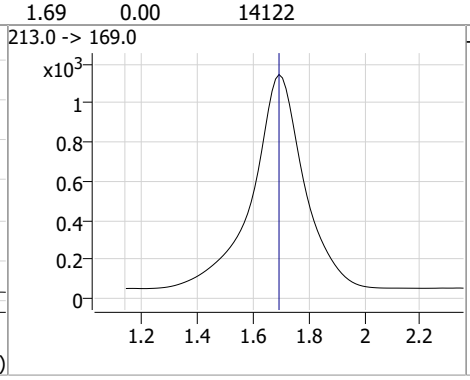
 # = Qualifier out of range, m = manually integrated, + = Area summed

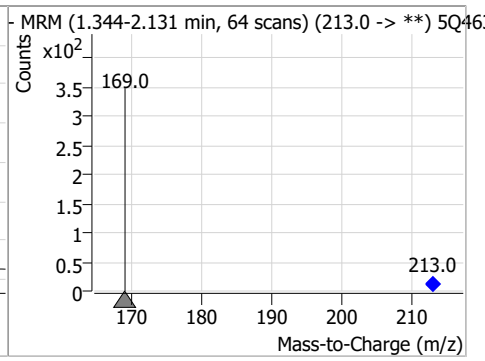
Perfluorinated Compounds by LC/MS/MS



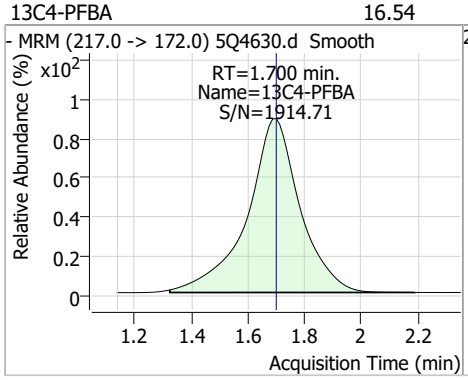
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.27	1.69	0.00	14122				

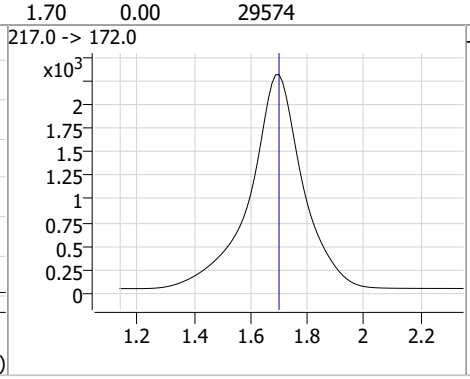


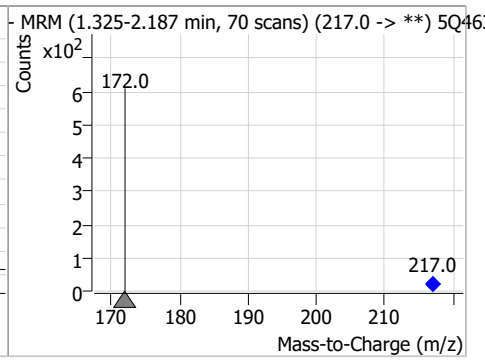




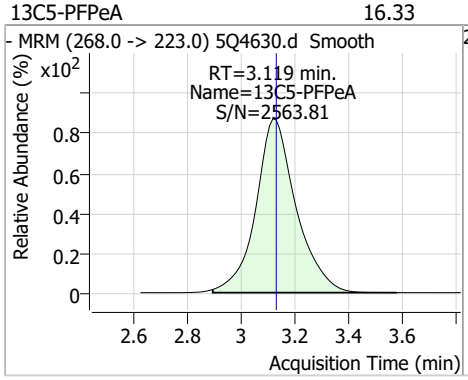
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	16.54	1.70	0.00	29574				

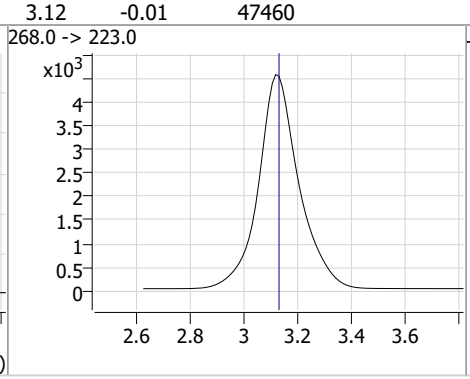


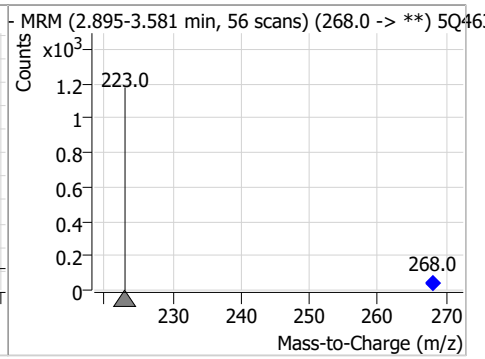




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.33	3.12	-0.01	47460				

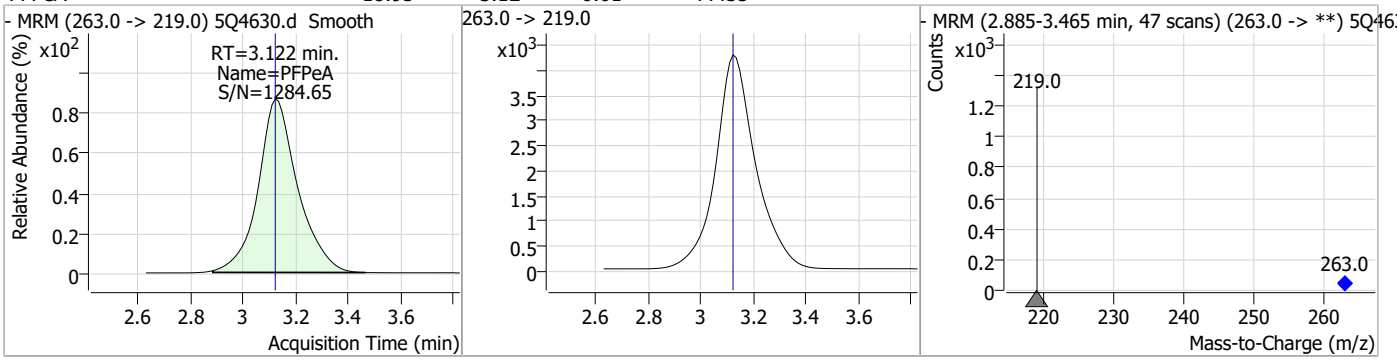




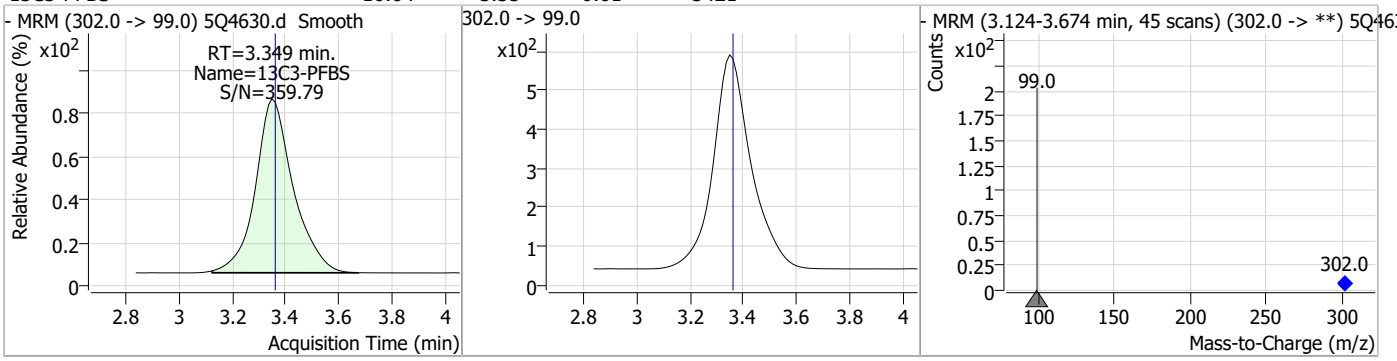


Perfluorinated Compounds by LC/MS/MS

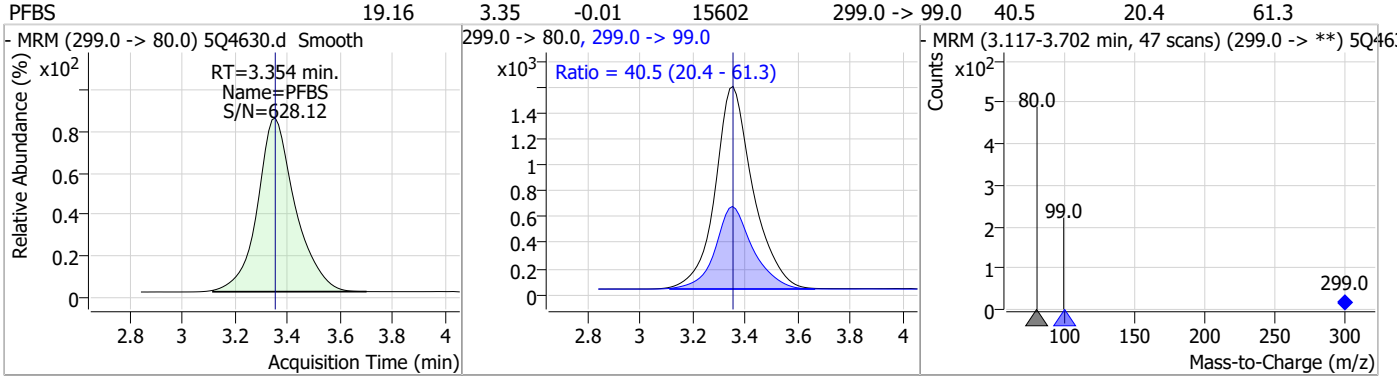
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.95	3.12	-0.01	44455				



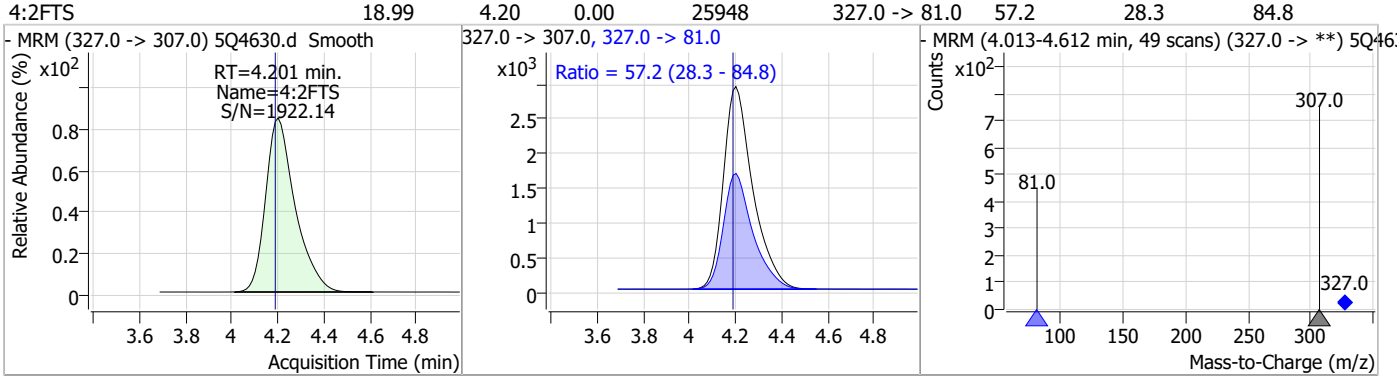
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	16.64	3.35	-0.01	5421				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.16	3.35	-0.01	15602	299.0 -> 99.0	40.5	20.4	61.3

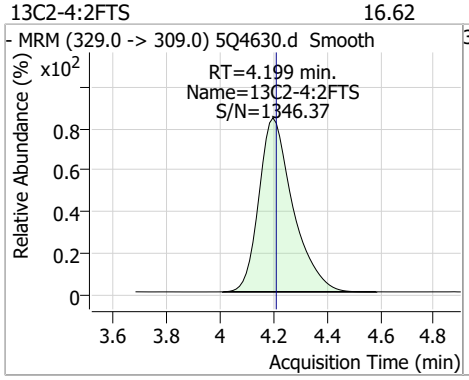


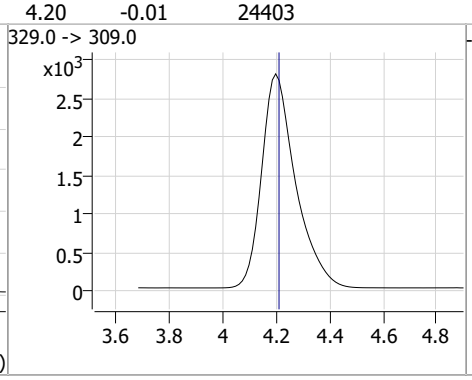
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.99	4.20	0.00	25948	327.0 -> 81.0	57.2	28.3	84.8

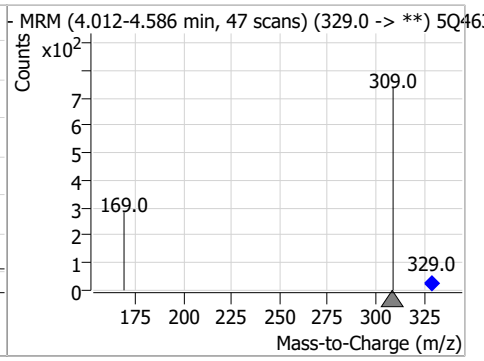


Perfluorinated Compounds by LC/MS/MS

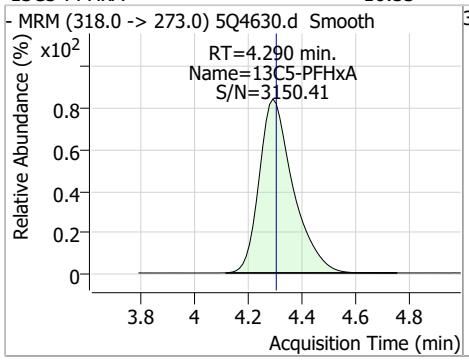
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.62	4.20	-0.01	24403				

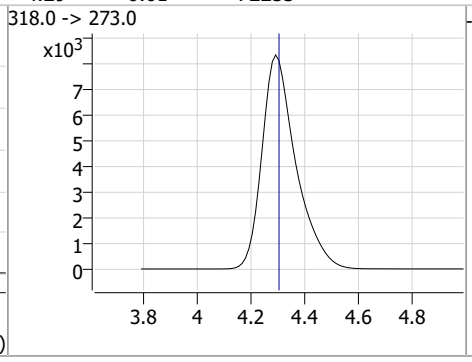


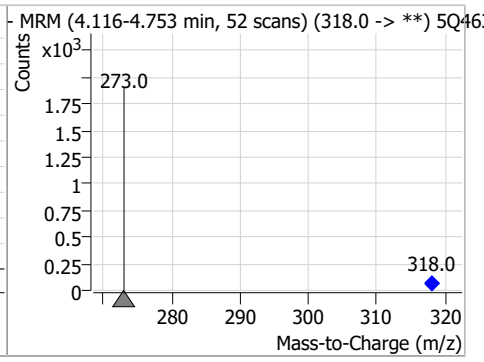




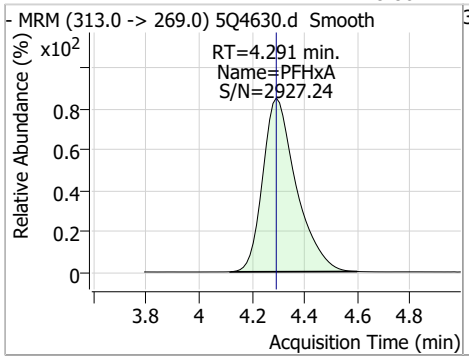
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.53	4.29	-0.01	72253				

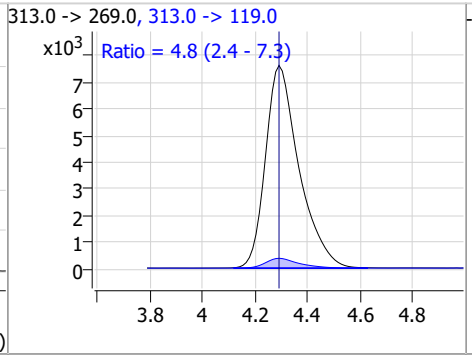


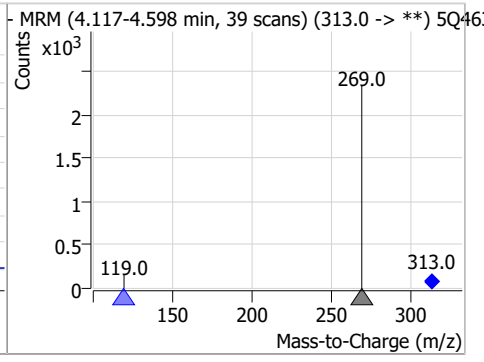




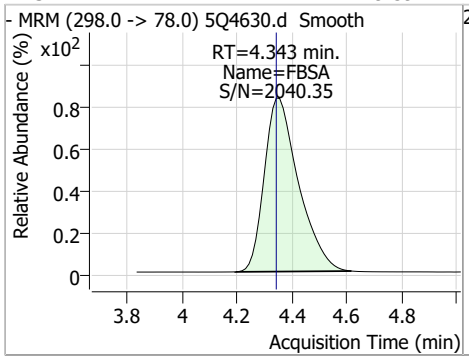
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.86	4.29	-0.01	66566	313.0 -> 119.0	4.8	2.4	7.3

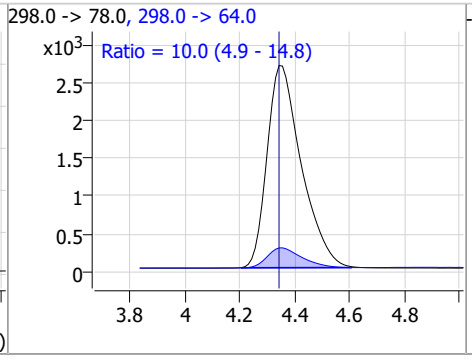


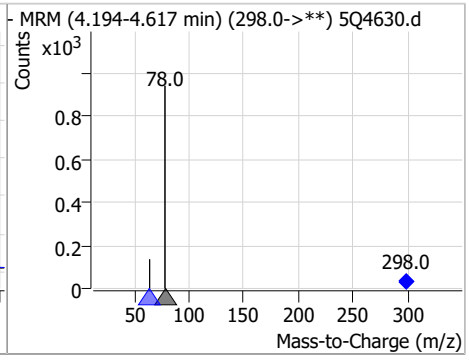




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.39	4.34	-0.01	23230	298.0 -> 64.0	10.0	4.9	14.8

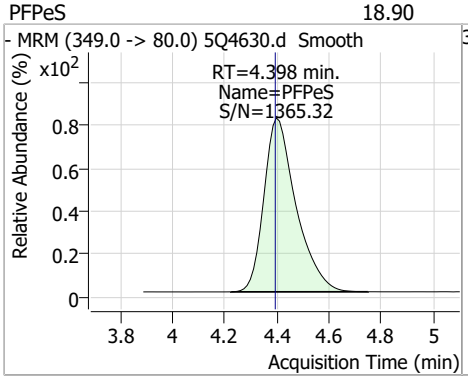


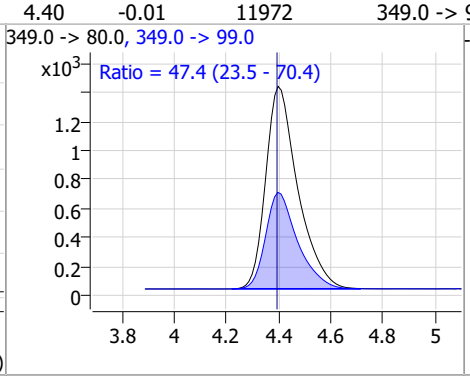


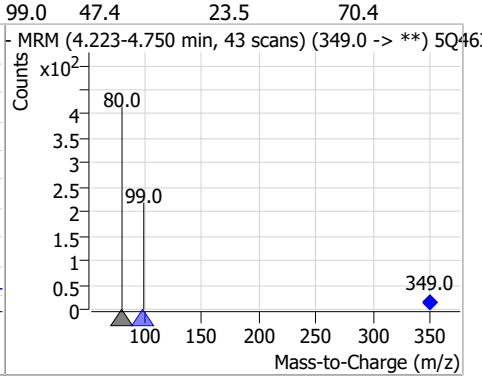


Perfluorinated Compounds by LC/MS/MS

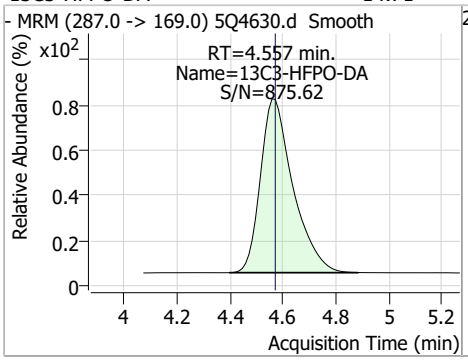
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.90	4.40	-0.01	11972	349.0 -> 99.0	47.4	23.5	70.4

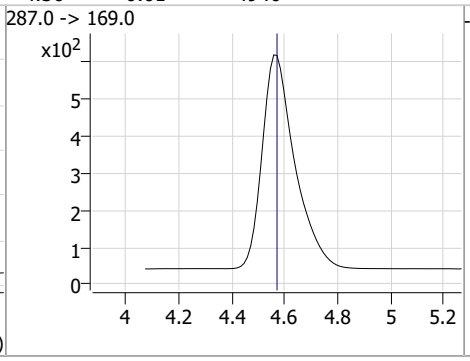


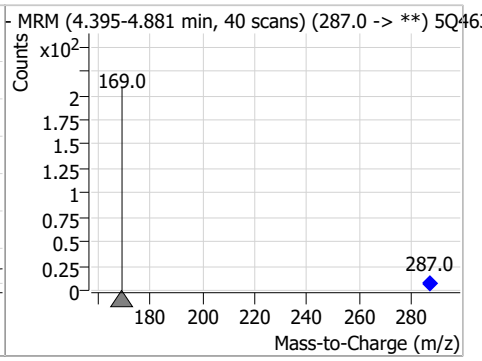




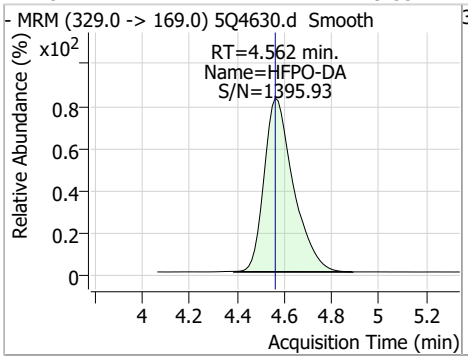
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	14.71	4.56	-0.01	4940				

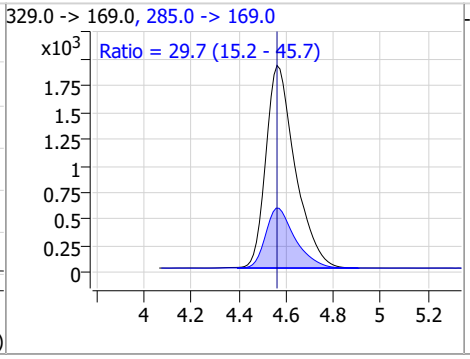


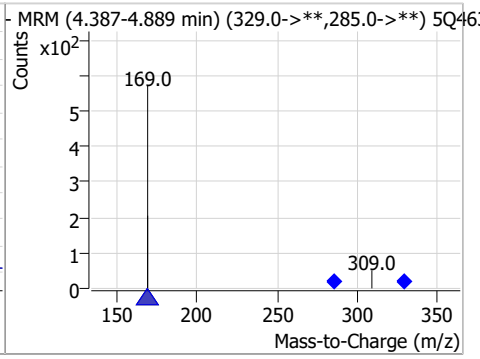




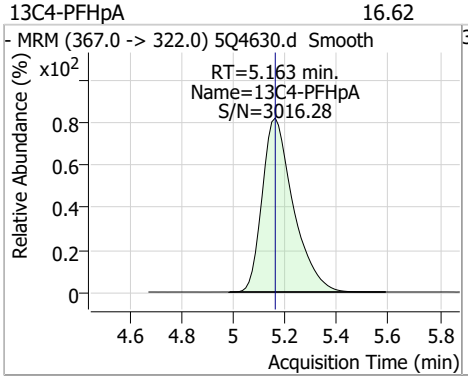
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.55	4.56	-0.01	16296	285.0 -> 169.0	29.7	15.2	45.7

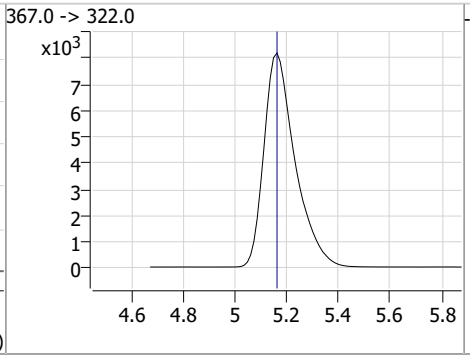


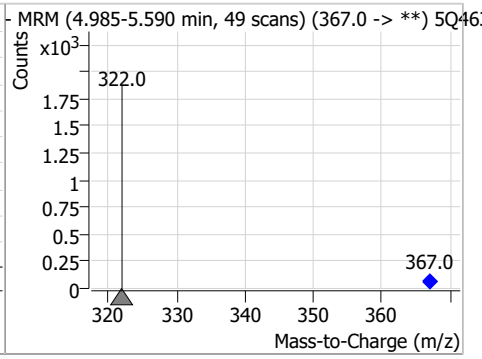




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.62	5.16	0.00	67861				

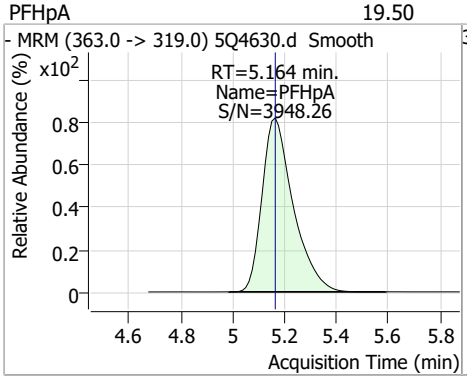


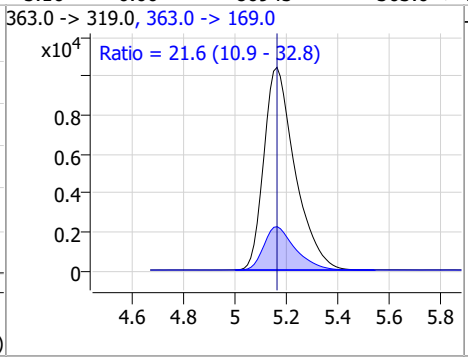


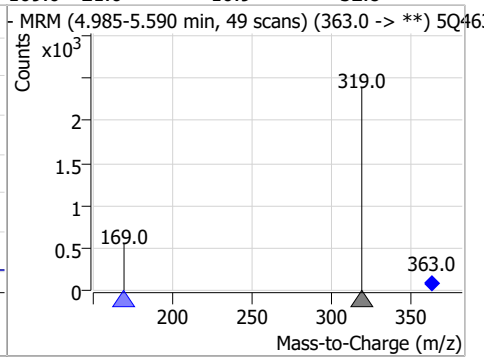


Perfluorinated Compounds by LC/MS/MS

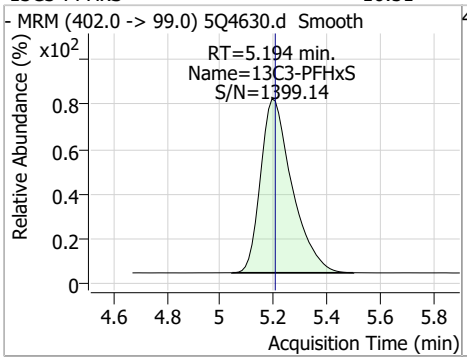
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.50	5.16	0.00	86945	363.0 -> 169.0	21.6	10.9	32.8

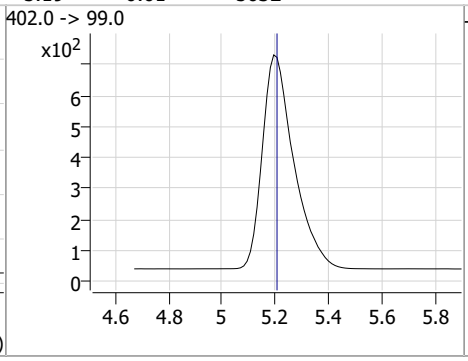


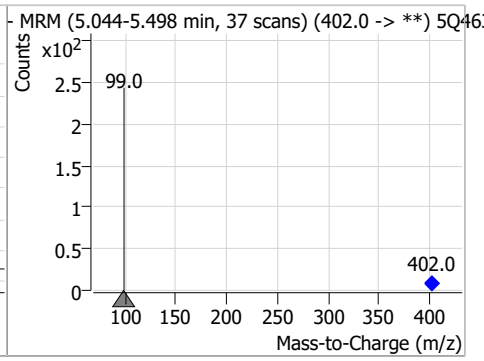




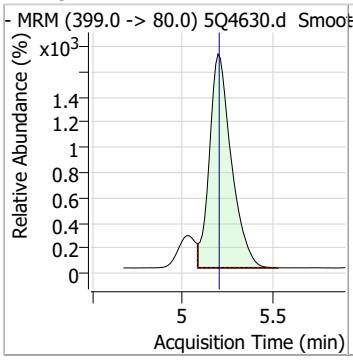
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.51	5.19	-0.01	5632				

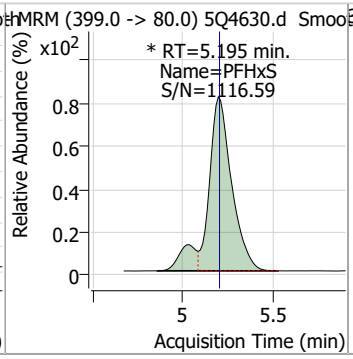


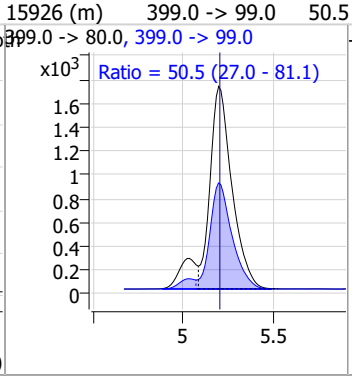


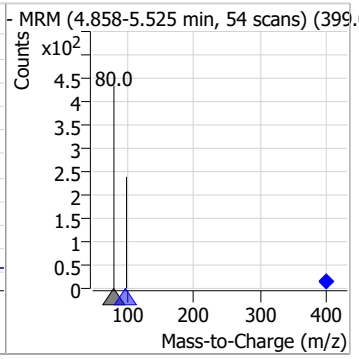


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.04	5.20	-0.01	15926 (m)	399.0 -> 99.0	50.5	27.0	81.1

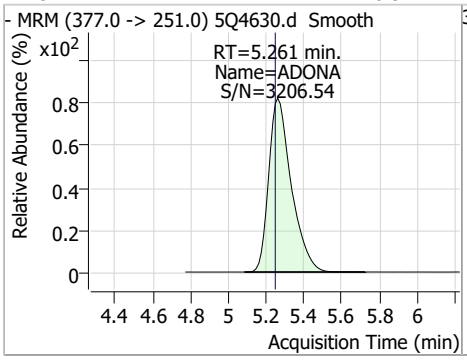


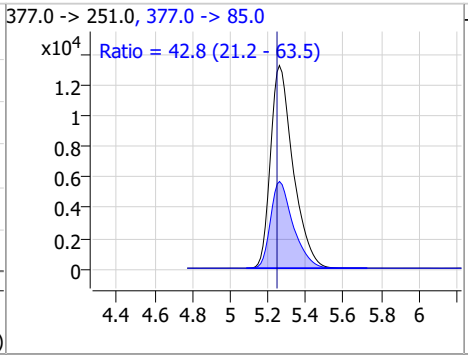


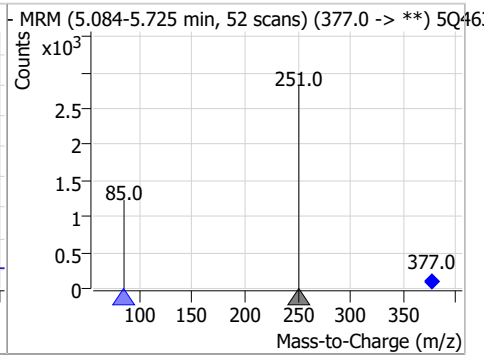




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.97	5.26	0.00	109855	377.0 -> 85.0	42.8	21.2	63.5

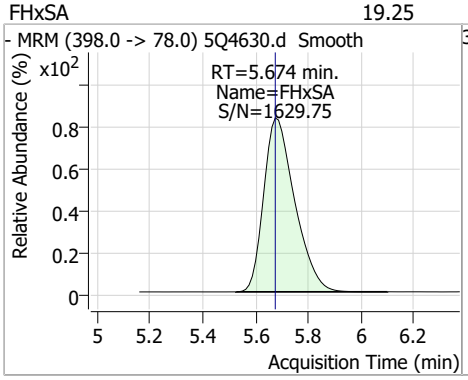


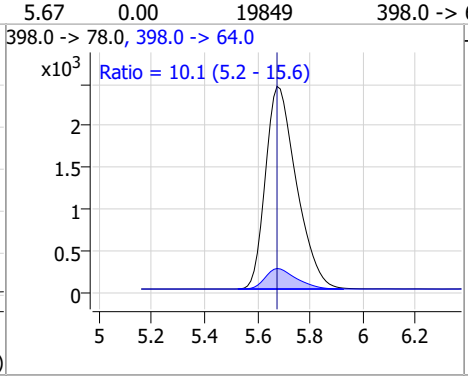


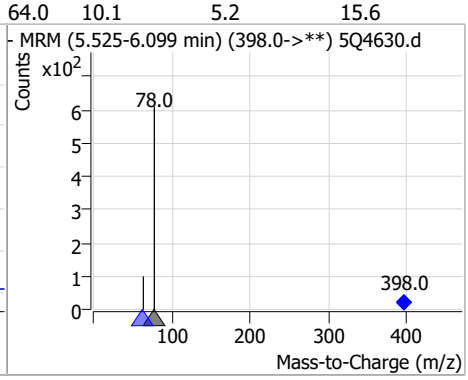


Perfluorinated Compounds by LC/MS/MS

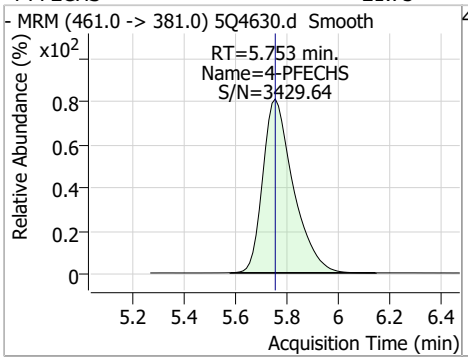
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.25	5.67	0.00	19849	398.0 -> 64.0	10.1	5.2	15.6

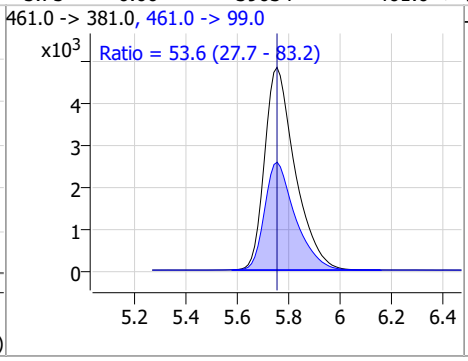


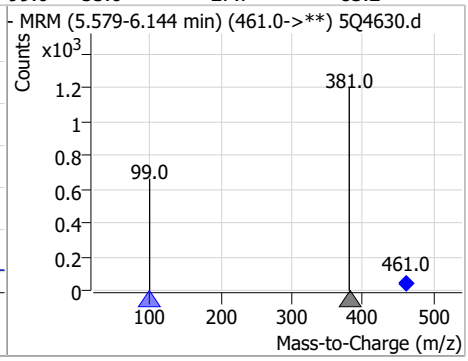




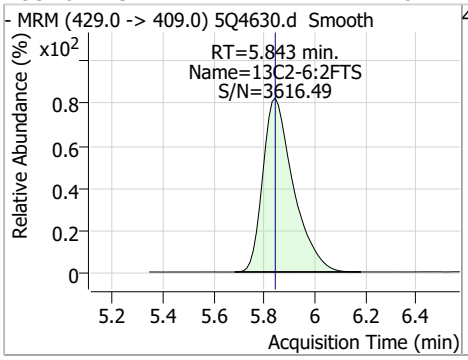
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	21.73	5.75	0.00	39634	461.0 -> 99.0	53.6	27.7	83.2

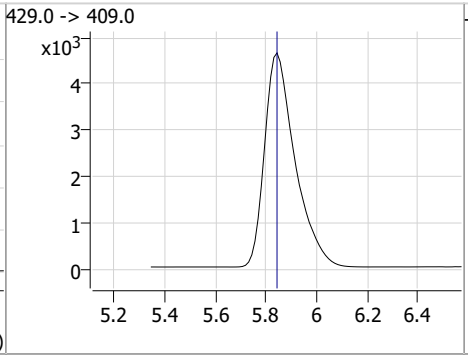


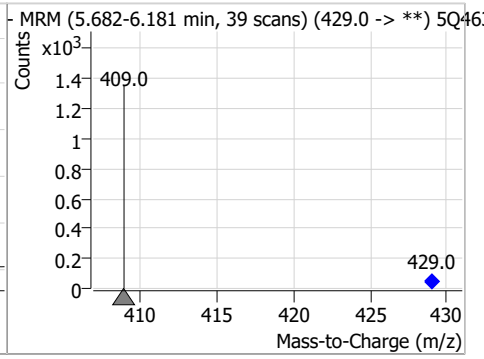




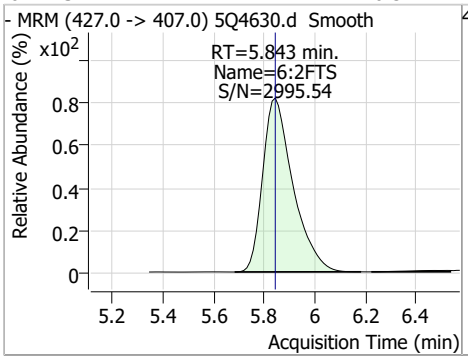
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.25	5.84	0.00	38573				

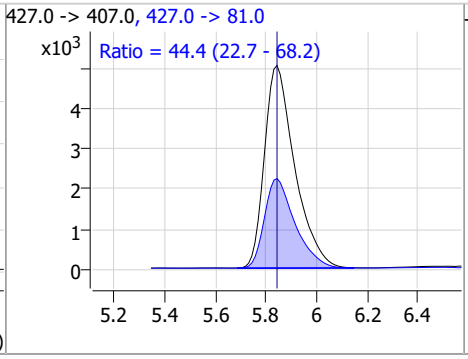


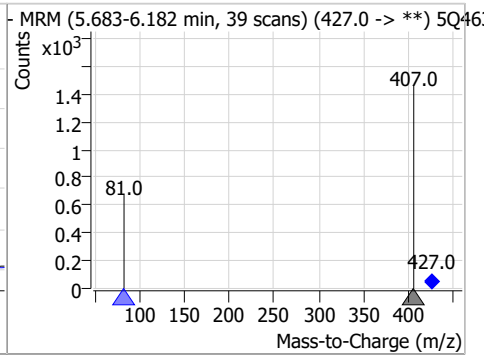




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.34	5.84	0.00	41607	427.0 -> 81.0	44.4	22.7	68.2

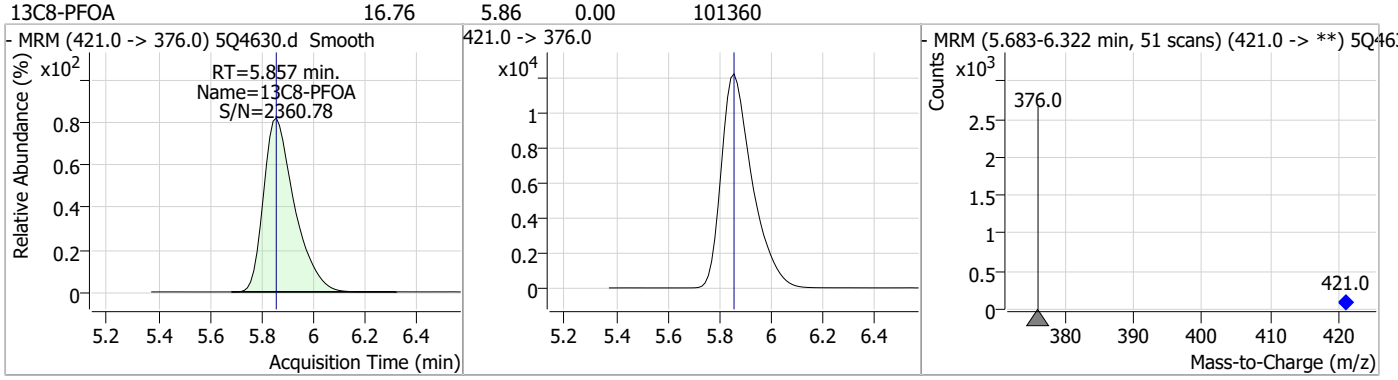




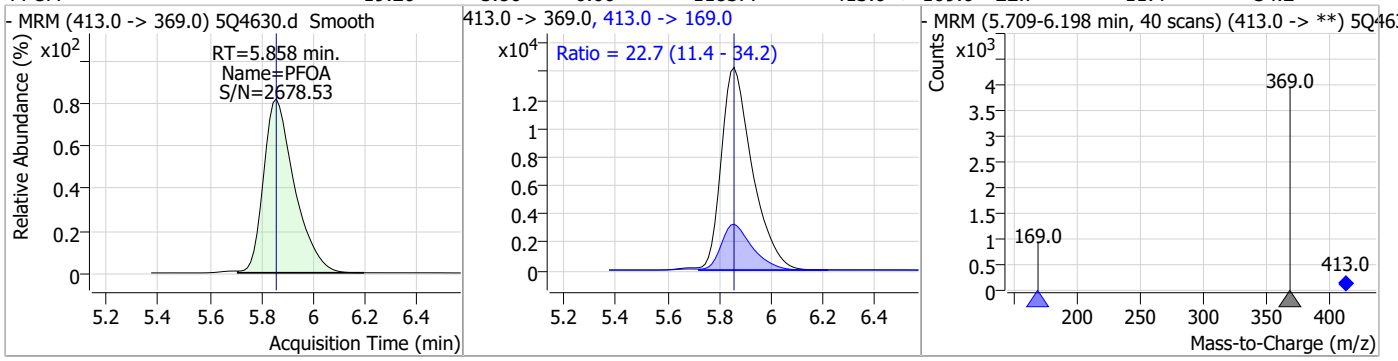


Perfluorinated Compounds by LC/MS/MS

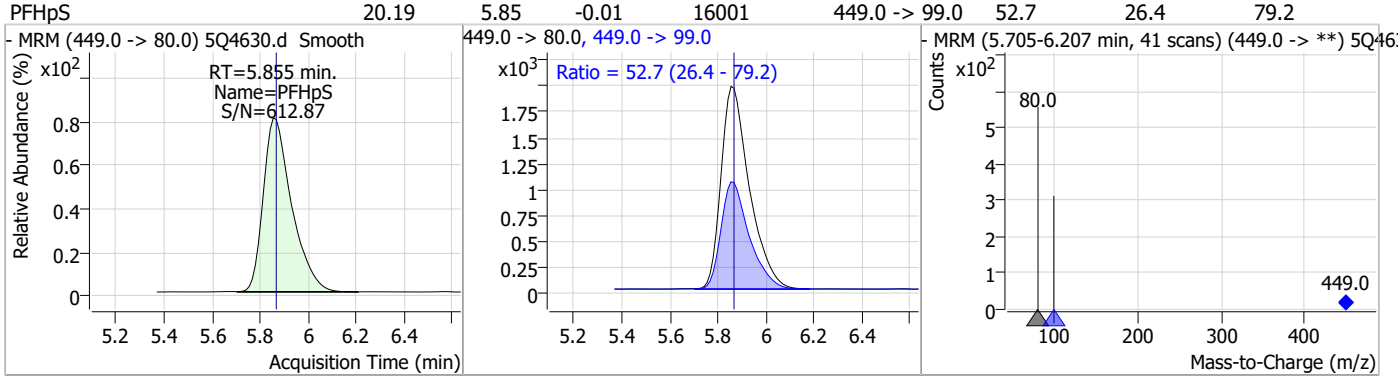
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.76	5.86	0.00	101360				



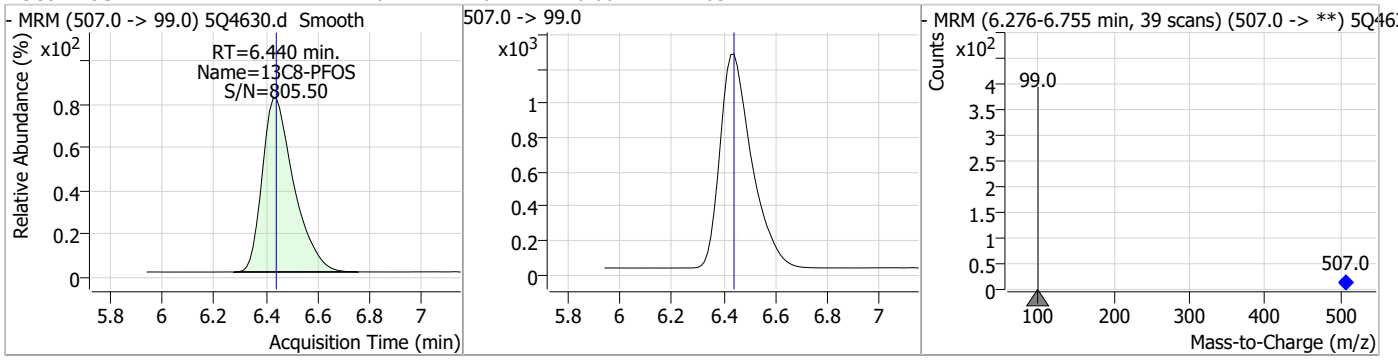
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.26	5.86	0.00	118377	413.0 -> 169.0	22.7	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.19	5.85	-0.01	16001	449.0 -> 99.0	52.7	26.4	79.2

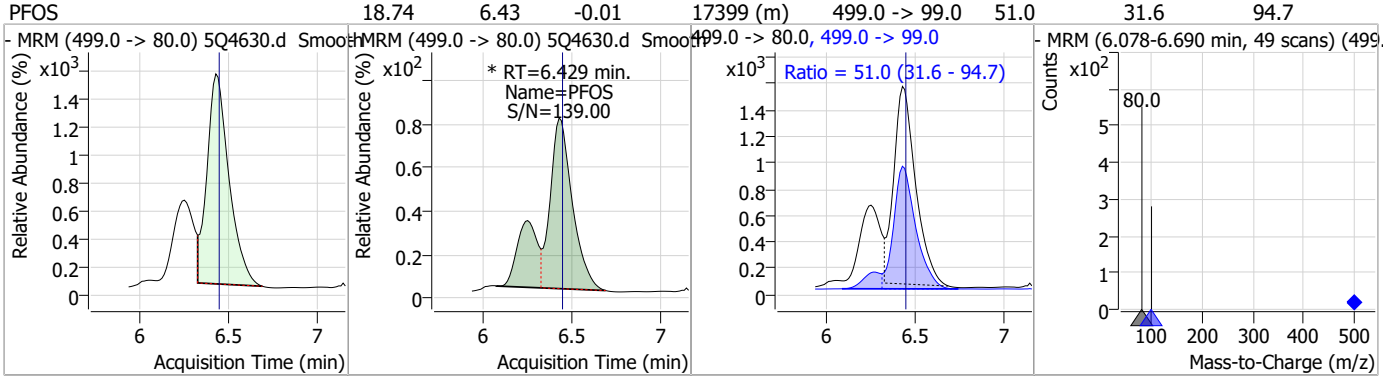


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.14	6.44	0.00	10541				

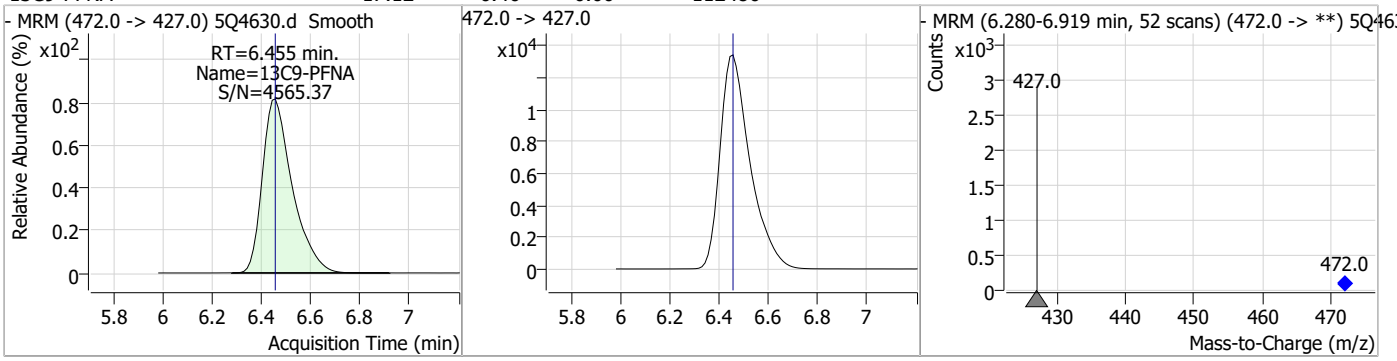


Perfluorinated Compounds by LC/MS/MS

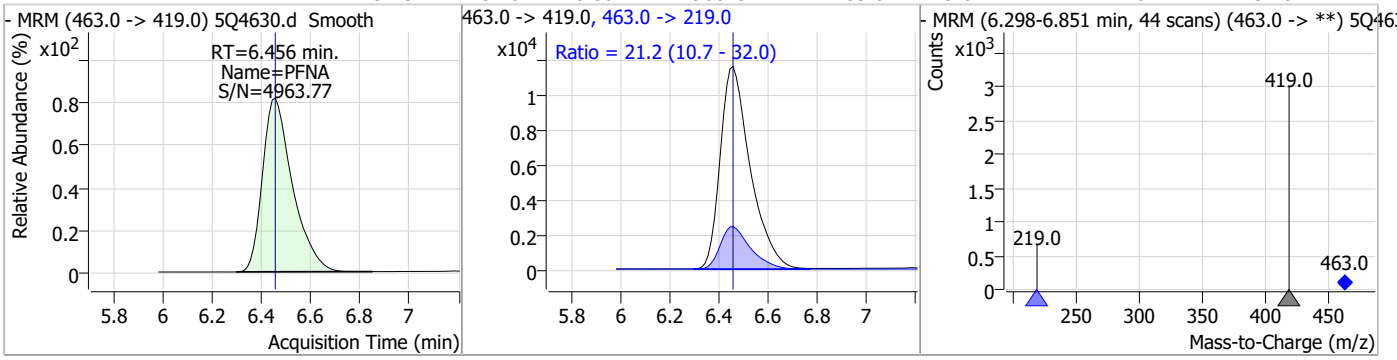
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.74	6.43	-0.01	17399 (m)	499.0 -> 99.0	51.0	31.6	94.7



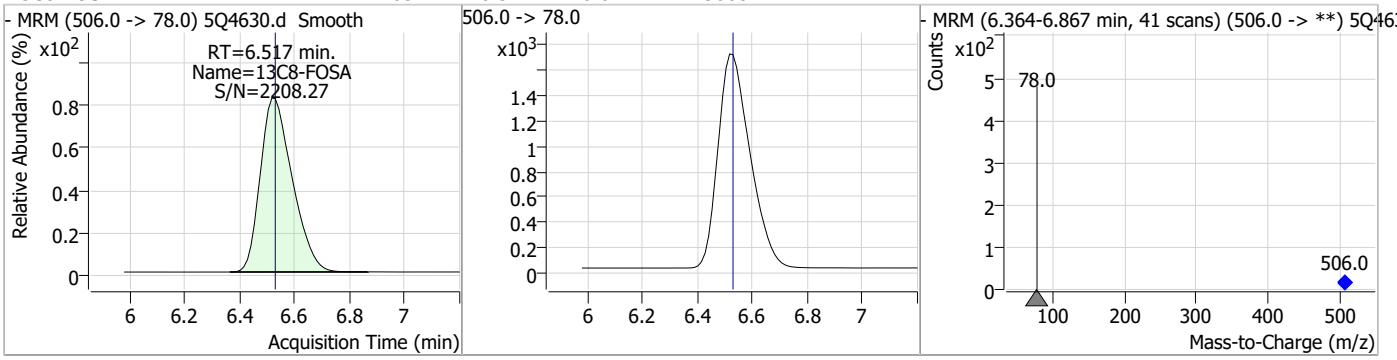
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.12	6.46	0.00	112486				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.45	6.46	0.00	98029	463.0 -> 219.0	21.2	10.7	32.0

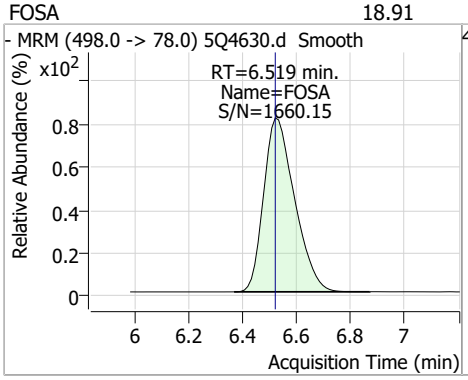


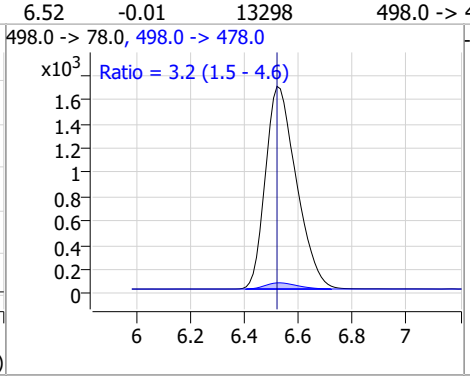
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.05	6.52	-0.01	13668				

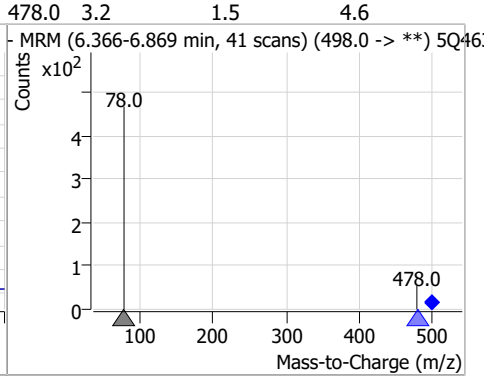


Perfluorinated Compounds by LC/MS/MS

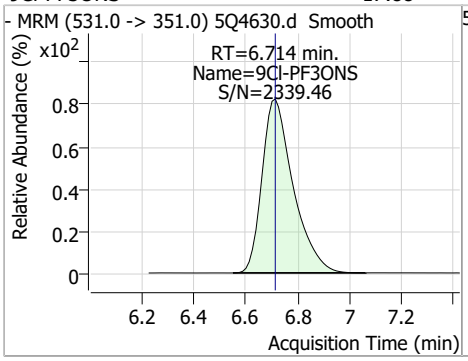
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.91	6.52	-0.01	13298	498.0 -> 478.0	3.2	1.5	4.6

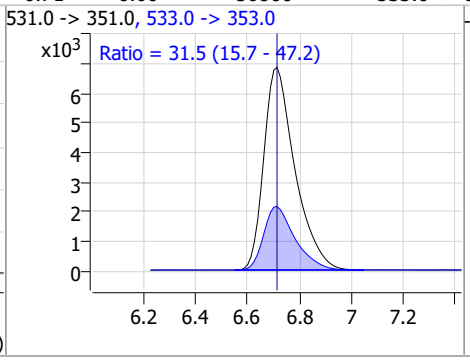


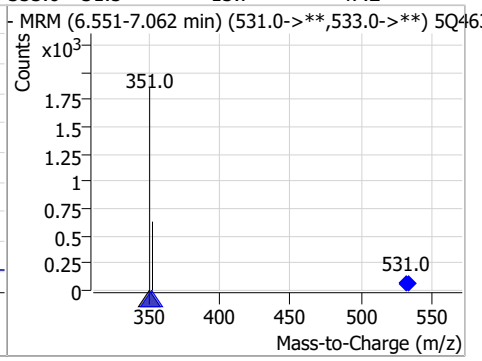




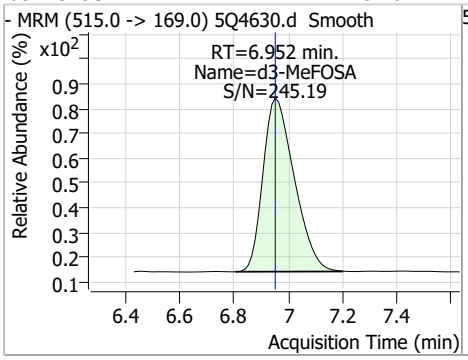
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.88	6.71	0.00	56866	533.0 -> 353.0	31.5	15.7	47.2

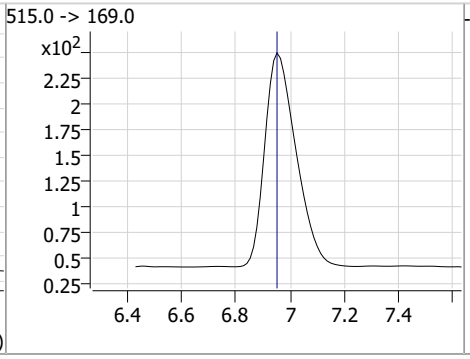


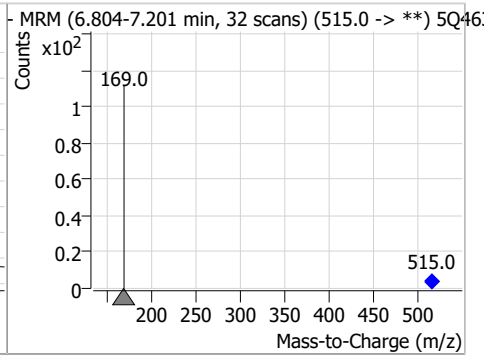




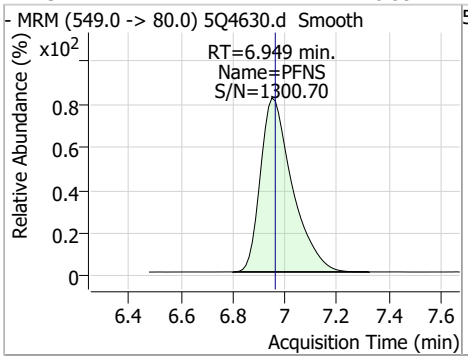
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	5.48	6.95	0.00	1669				

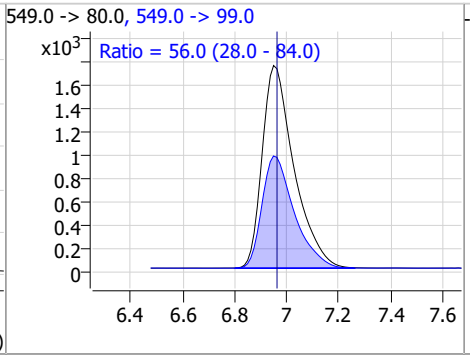


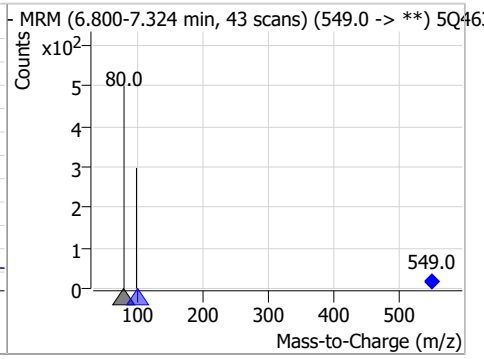




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.99	6.95	-0.01	14778	549.0 -> 99.0	56.0	28.0	84.0

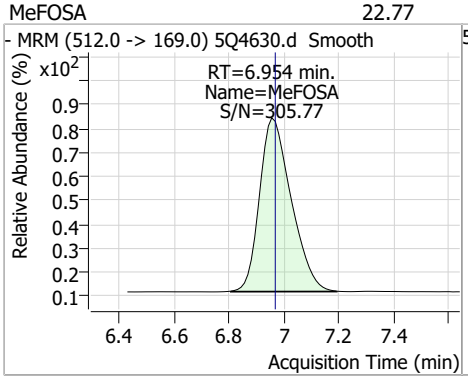


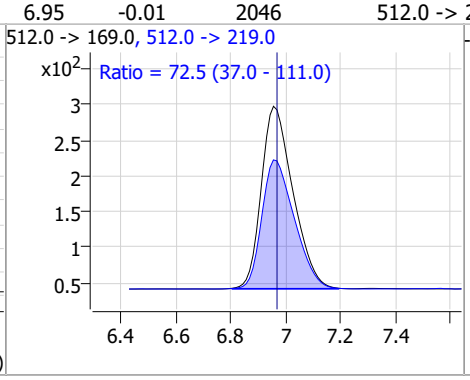


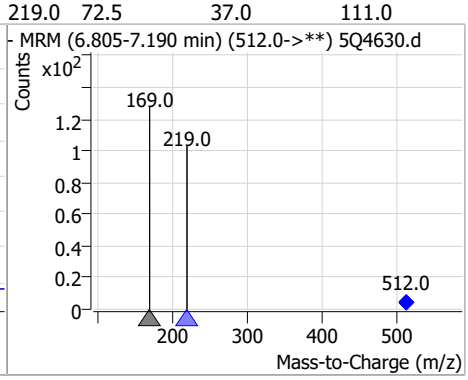


Perfluorinated Compounds by LC/MS/MS

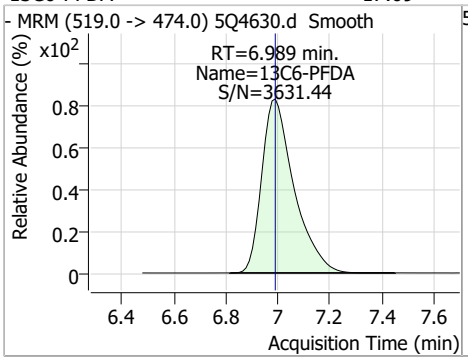
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	22.77	6.95	-0.01	2046	512.0 -> 219.0	72.5	37.0	111.0

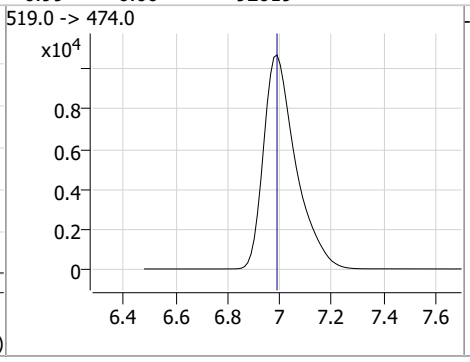


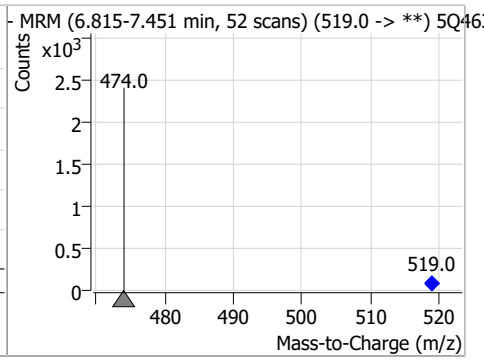




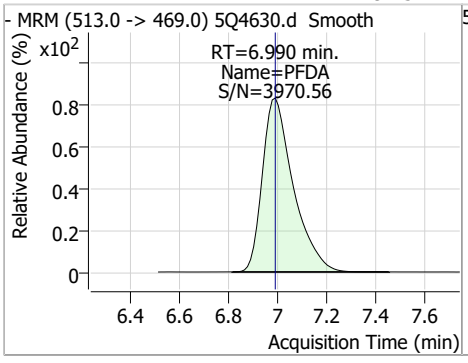
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.09	6.99	0.00	92019				

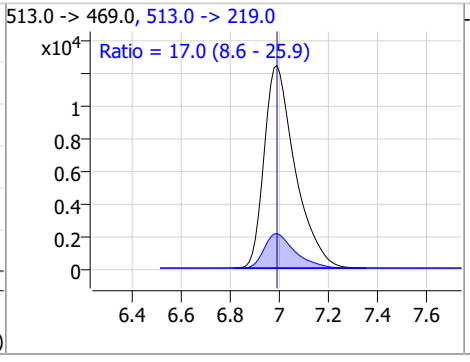


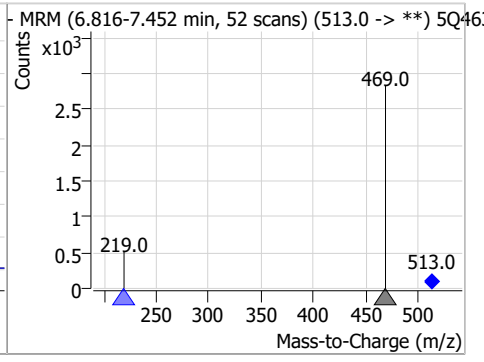




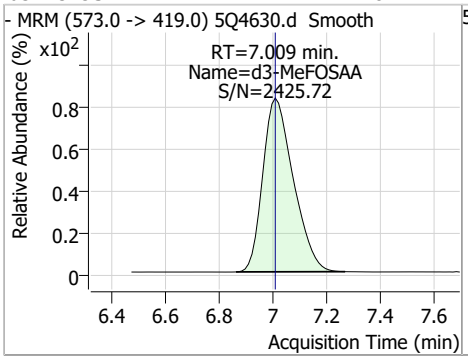
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.15	6.99	0.00	108225	513.0 -> 219.0	17.0	8.6	25.9

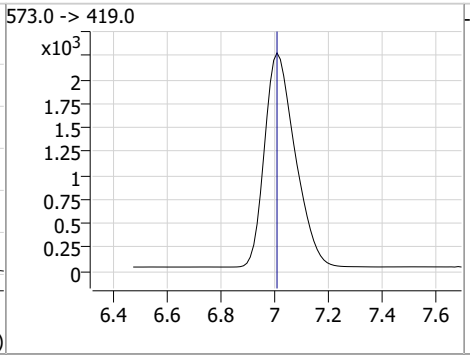


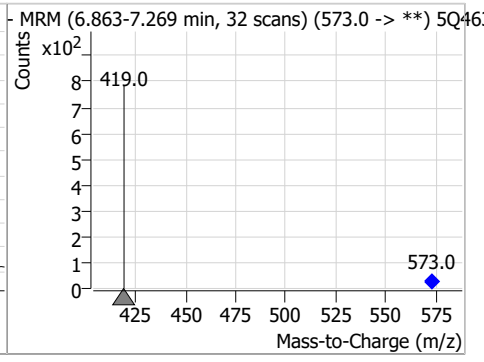




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.11	7.01	0.00	17597				

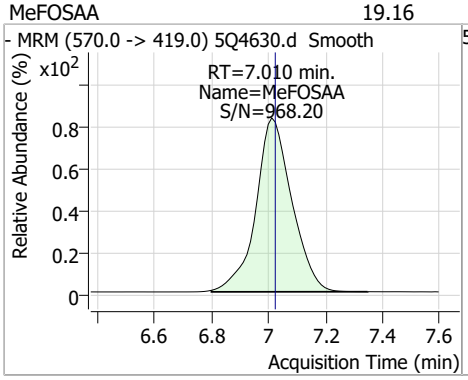


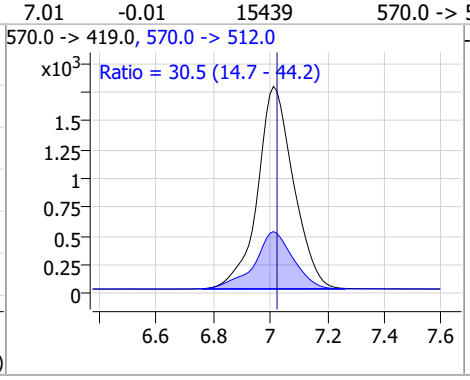


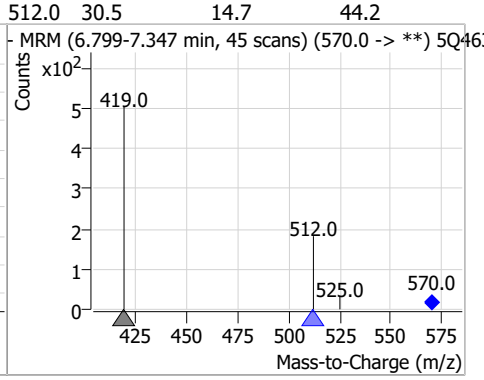


Perfluorinated Compounds by LC/MS/MS

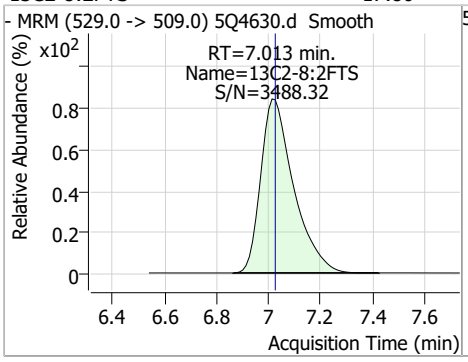
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.16	7.01	-0.01	15439	570.0 -> 512.0	30.5	14.7	44.2

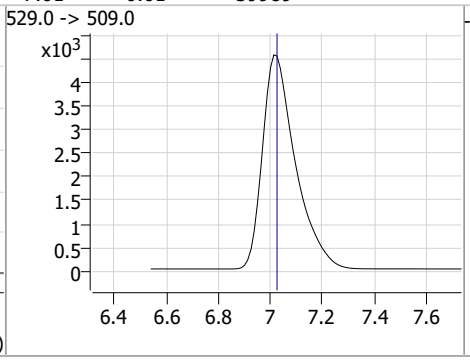


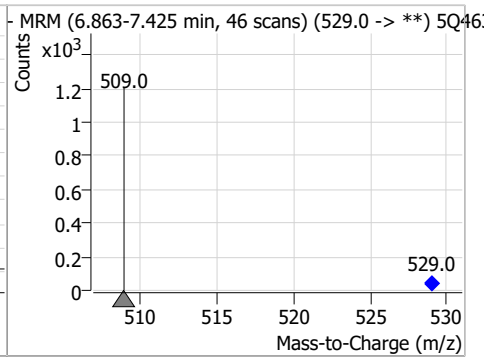




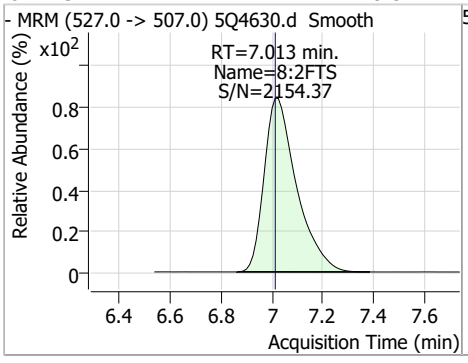
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.80	7.01	-0.01	39989				

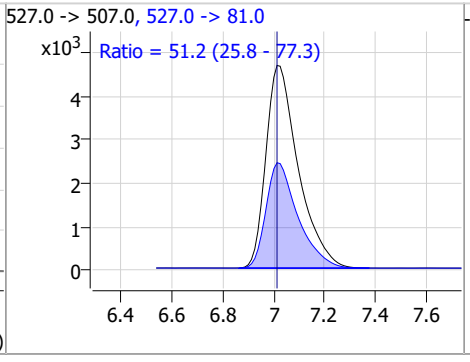


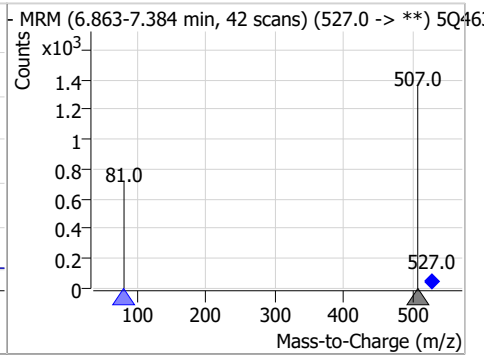




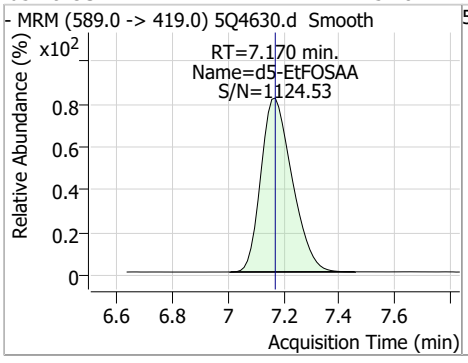
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.34	7.01	-0.01	41227	527.0 -> 81.0	51.2	25.8	77.3

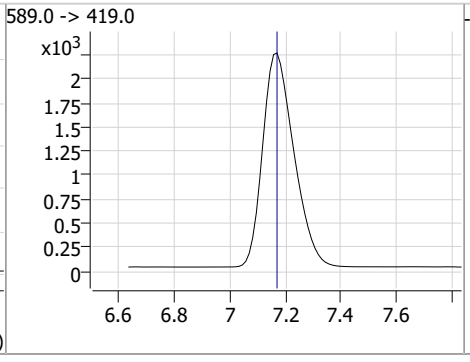


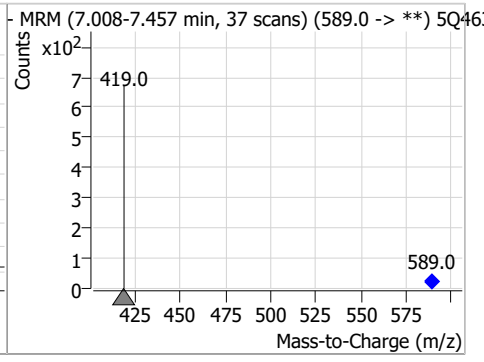




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.48	7.17	0.00	17356				

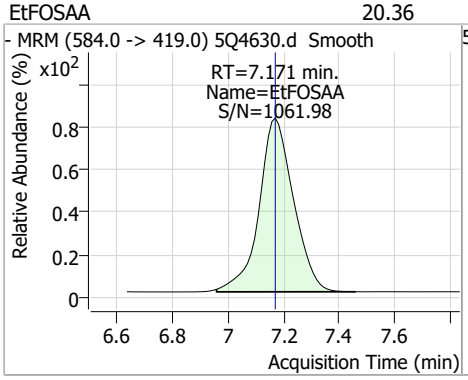


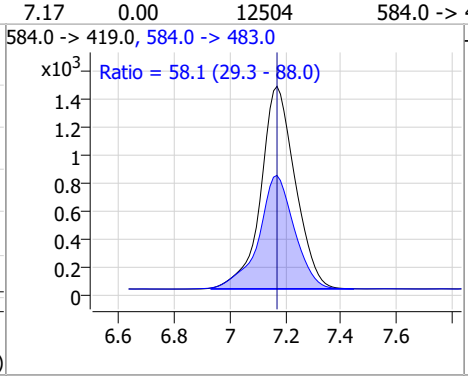


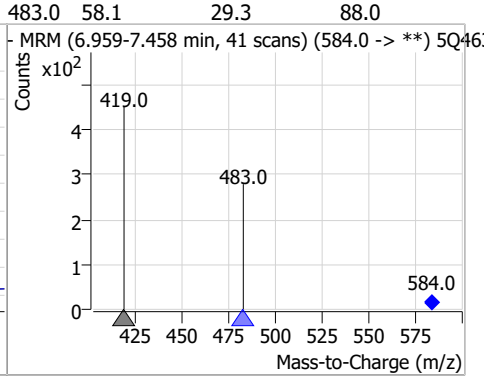


Perfluorinated Compounds by LC/MS/MS

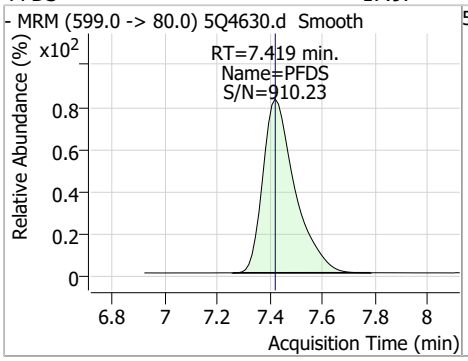
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.36	7.17	0.00	12504	584.0 -> 483.0	58.1	29.3	88.0

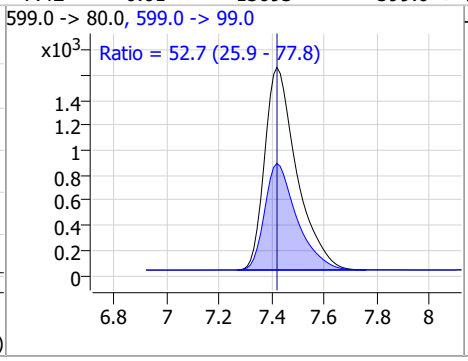


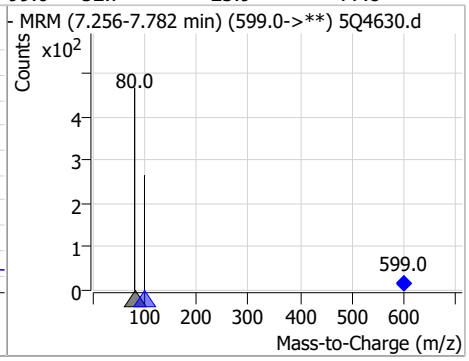




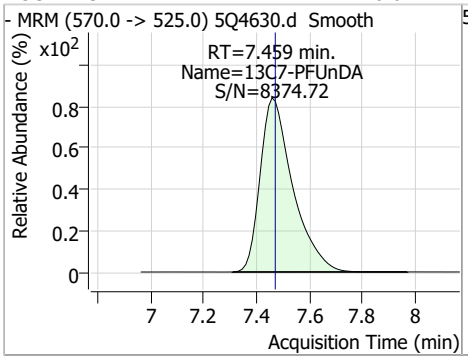
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.97	7.42	-0.01	13693	599.0 -> 99.0	52.7	25.9	77.8

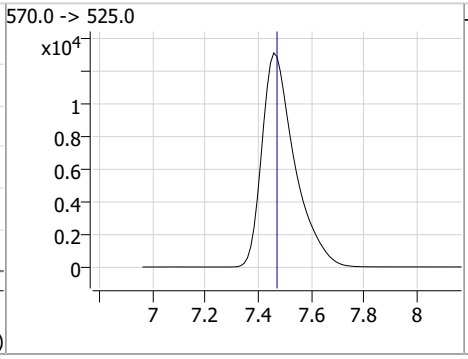


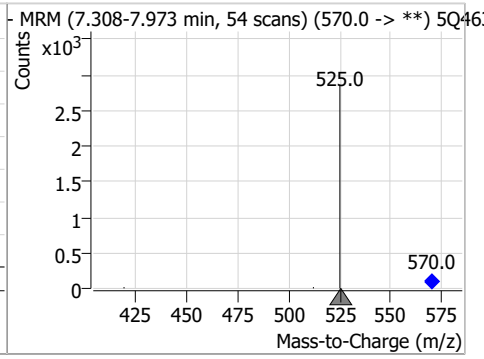




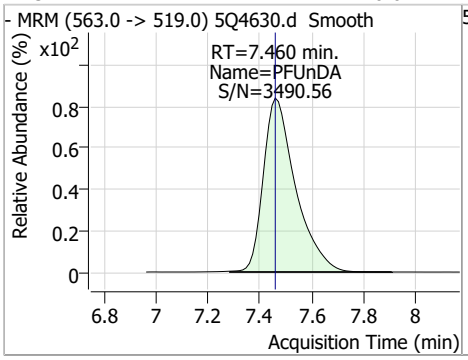
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.04	7.46	-0.01	112963				

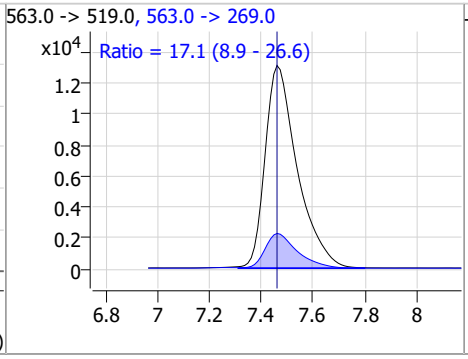


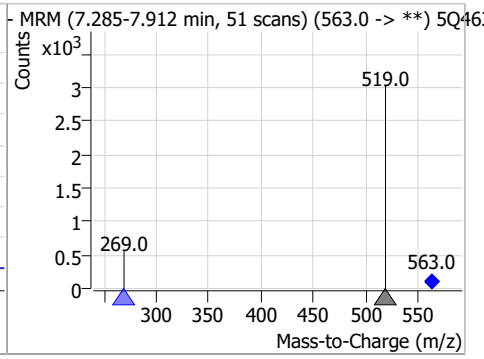




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.01	7.46	-0.01	112930	563.0 -> 269.0	17.1	8.9	26.6

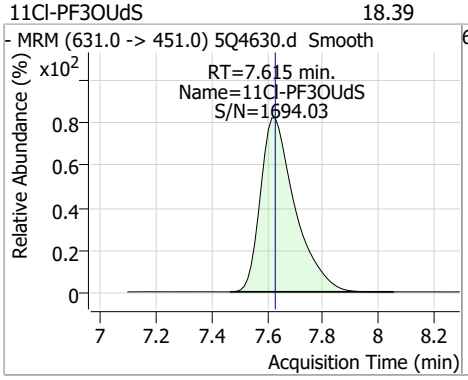


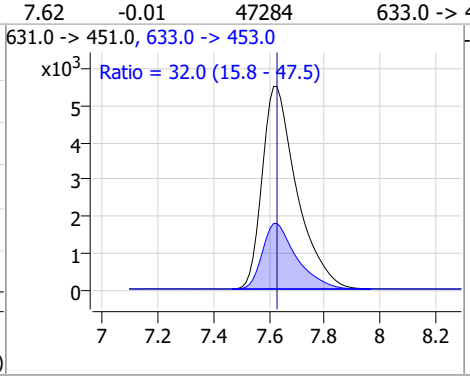


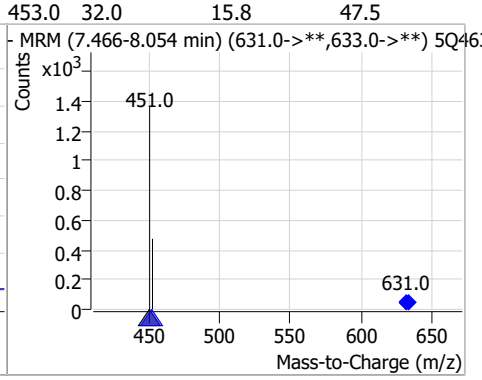


Perfluorinated Compounds by LC/MS/MS

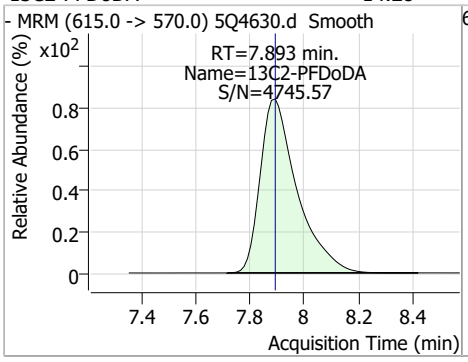
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.39	7.62	-0.01	47284	633.0 -> 453.0	32.0	15.8	47.5

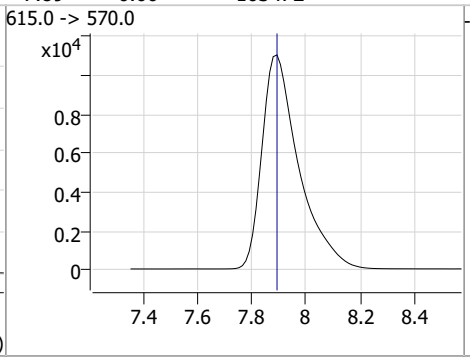


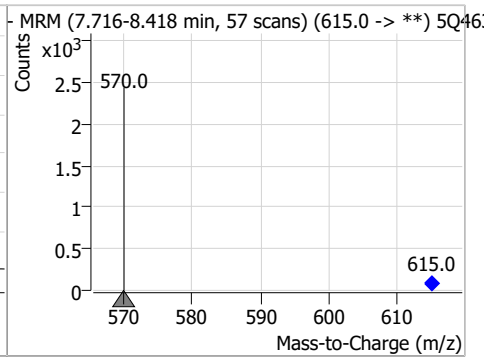




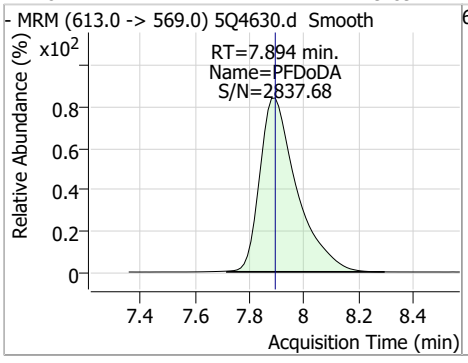
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.28	7.89	0.00	103472				

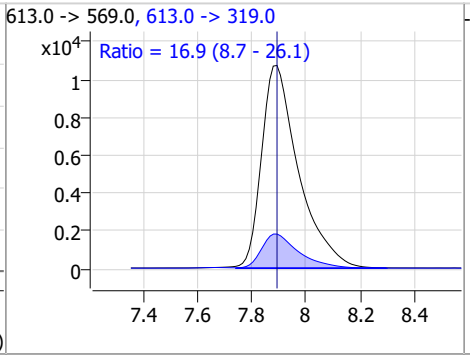


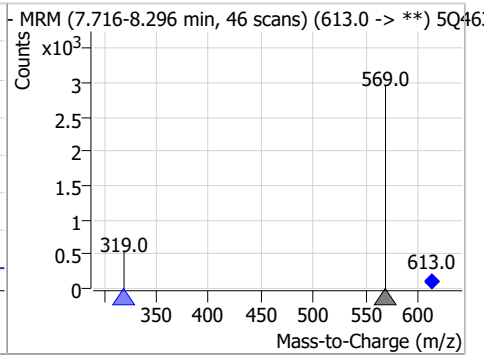




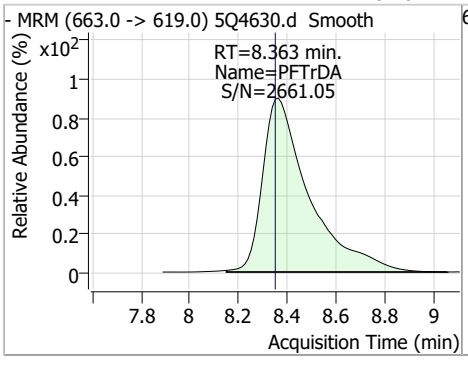
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.89	7.89	0.00	100934	613.0 -> 319.0	16.9	8.7	26.1

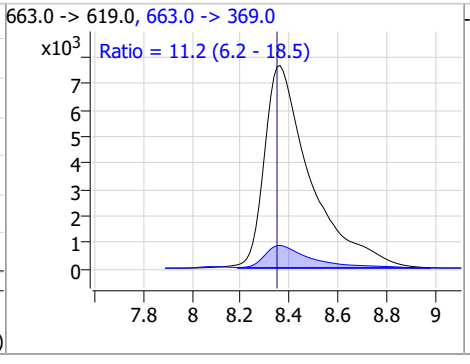


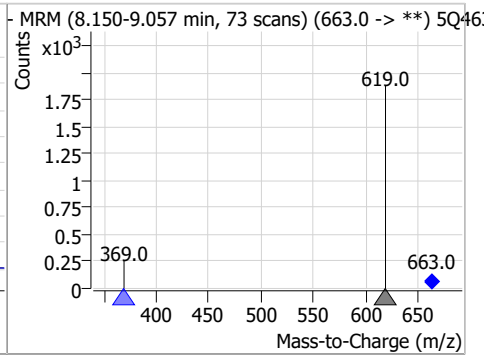




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	16.70	8.36	0.01	101288	663.0 -> 369.0	11.2	6.2	18.5

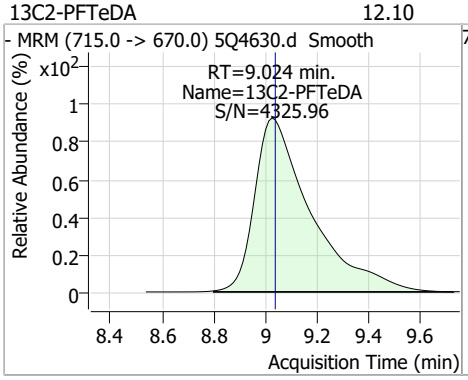


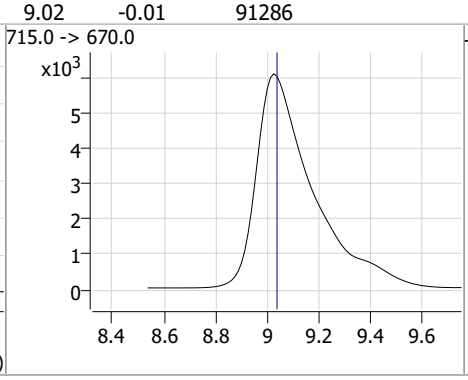


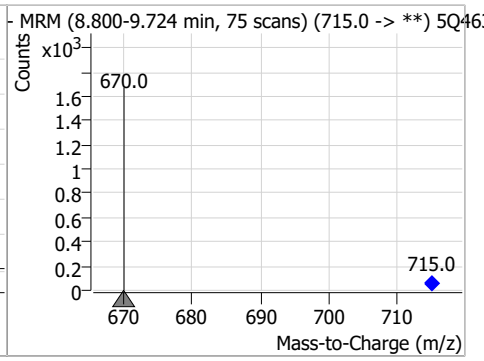


Perfluorinated Compounds by LC/MS/MS

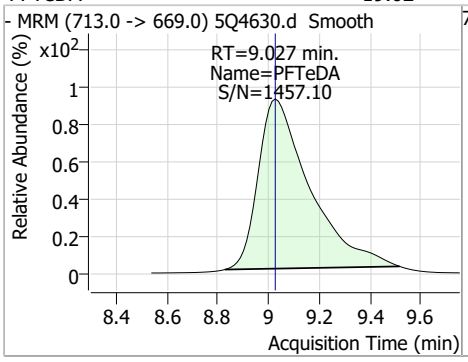
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	12.10	9.02	-0.01	91286				

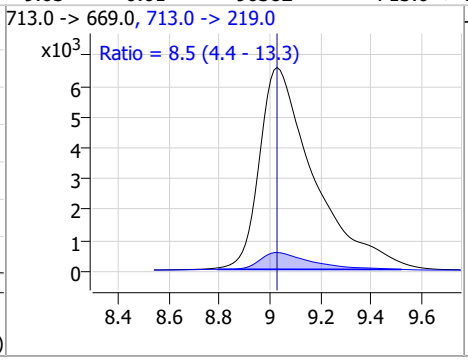


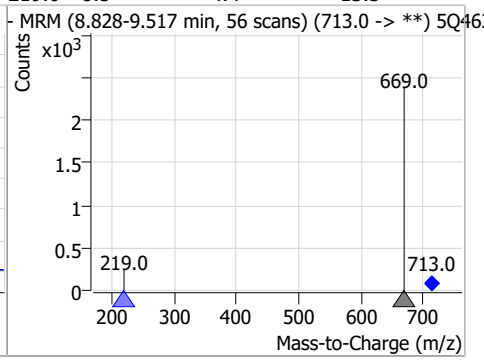




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.02	9.03	-0.01	90382	713.0 -> 219.0	8.5	4.4	13.3







7.3.2

7

Manual Integration Approval Summary

Sample Number: OP92763-BS
Lab FileID: 5Q4630.D
Injection Time: 09/15/22 05:21
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4671.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:37:17 AM
Sample Name : op92764-bs
Vial : P5-D7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	71523	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	123939	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	191138	20.00	µg/L	0.000
M4-PFHpA	5.433	367.0 -> 322.0	216368	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	372982	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	485526	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	339999	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	419405	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	460921	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	342277	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	141130	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	26901	20.00	µg/L	0.000
M3-PFHxS	5.463	402.0 -> 99.0	23762	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	35272	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	237206	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	303536	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	214348	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	137136	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4773	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	15491	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	101878	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	237206	17.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	303536	17.78	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	214348	16.44	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%		
13C2-PFDoDA	8.307	615.0 -> 570.0	460921	12.53	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%		
13C2-PFTeDA	9.976	715.0 -> 670.0	342277	11.41	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%		
13C3-PFBS	3.635	302.0 -> 99.0	26901	17.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C3-PFHxS	5.463	402.0 -> 99.0	23762	17.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%		
13C4-PFBA	1.949	217.0 -> 172.0	71523	17.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C4-PFHpA	5.433	367.0 -> 322.0	216368	17.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%		
13C5-PFHxA	4.573	318.0 -> 273.0	191138	17.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	123939	17.68	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C6-PFDA	7.283	519.0 -> 474.0	339999	16.71	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

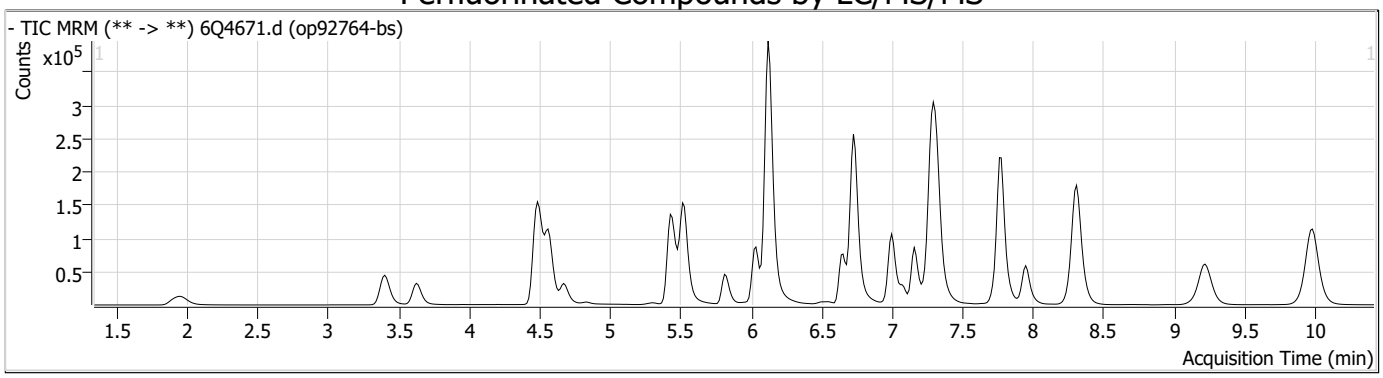
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.6%			
13C7-PFUnDA	7.775	570.0 -> 525.0	419405	15.80	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.0%			
13C8-FOSA	6.654	506.0 -> 78.0	141130	14.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.1%			
13C8-PFOA	6.138	421.0 -> 376.0	372982	17.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%			
13C8-PFOS	6.717	507.0 -> 99.0	35272	16.63	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%			
13C9-PFNA	6.745	472.0 -> 427.0	485526	18.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%			
d3-MeFOSAA	7.155	573.0 -> 419.0	137136	15.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	4793	18.03	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%			
d3-MeFOSA	7.085	515.0 -> 169.0	15491	6.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	101914	15.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%			
Target Compounds							QValue
4:2FTS	4.485	327.0 -> 307.0	261140	20.36	µg/L		99
		327.0 -> 81.0	83887				
6:2FTS	6.124	427.0 -> 407.0	333764	21.71	µg/L		96
		427.0 -> 81.0	85679				
8:2FTS	7.334	527.0 -> 507.0	224758	20.85	µg/L		98
		527.0 -> 81.0	79808				
EtFOSAA	7.303	584.0 -> 419.0	96893	17.84	µg/L		95
		584.0 -> 483.0	53798				
FOSA	6.656	498.0 -> 78.0	147316	20.81	µg/L		99
		498.0 -> 478.0	6039				
MeFOSAA	7.168	570.0 -> 419.0	141956	22.58	µg/L		96
		570.0 -> 512.0	42570				
PFBA	1.943	213.0 -> 169.0	33196	21.26	µg/L		100
PFBS	3.627	299.0 -> 80.0	91320	20.41	µg/L		99
		299.0 -> 99.0	34030				
PFDA	7.284	513.0 -> 469.0	481419	19.18	µg/L		100
		513.0 -> 219.0	66744				
PFDoDA	8.309	613.0 -> 569.0	454618	21.14	µg/L		100
		613.0 -> 319.0	62768				
PFDS	7.724	599.0 -> 80.0	43992	16.92	µg/L		98
		599.0 -> 99.0	22660				
PFHpA	5.434	363.0 -> 319.0	293300	20.84	µg/L		100
		363.0 -> 169.0	43043				
PFHpS	6.136	449.0 -> 80.0	69353	22.52	µg/L		97
		449.0 -> 99.0	34908				
PFHxA	4.574	313.0 -> 269.0	200351	19.93	µg/L		99
		313.0 -> 119.0	5176				
PFHxS	5.465	399.0 -> 80.0	70459	20.69	µg/L	m	100
		399.0 -> 99.0	34345				
PFNA	6.745	463.0 -> 419.0	408444	17.85	µg/L		99
		463.0 -> 219.0	77590				
PFNS	7.256	549.0 -> 80.0	57485	16.04	µg/L		92
		549.0 -> 99.0	34813				
PFOA	6.138	413.0 -> 369.0	397042	19.71	µg/L		97
		413.0 -> 169.0	65395				
PFOS	6.719	499.0 -> 80.0	60576	18.53	µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

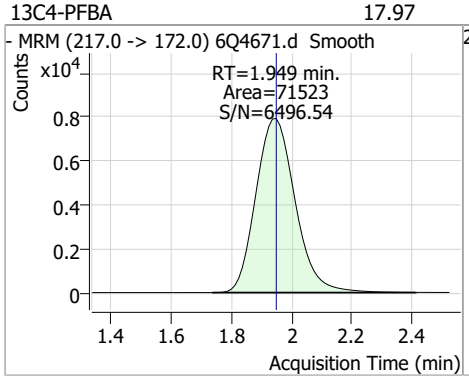
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	31192			
PFPeA	3.408	263.0 -> 219.0	106051	20.31	µg/L	100
PFPeS	4.668	349.0 -> 80.0	75917	20.39	µg/L	99
		349.0 -> 99.0	34212			
PFTeDA	9.980	713.0 -> 669.0	420405	20.03	µg/L	100
		713.0 -> 219.0	29372			
PFTrDA	9.223	663.0 -> 619.0	410195	18.43	µg/L	99
		663.0 -> 369.0	37414			
PFUnDA	7.777	563.0 -> 519.0	436297	20.12	µg/L	98
		563.0 -> 269.0	68263			
11Cl-PF3OUdS	7.945	631.0 -> 451.0	186104	18.83	µg/L	99
		633.0 -> 453.0	60132			
9Cl-PF3ONS	6.996	531.0 -> 351.0	327119	18.91	µg/L	99
		533.0 -> 353.0	99913			
ADONA	5.532	377.0 -> 251.0	477725	21.68	µg/L	100
		377.0 -> 85.0	114695			
HFPO-DA	4.840	285.0 -> 169.0	4986	22.09	µg/L	95
		285.0 -> 185.0	796			
MeFOSA	7.086	512.0 -> 169.0	19765	23.38	µg/L	94
		512.0 -> 219.0	17853			
4-PFECHS	6.032	461.0 -> 381.0	272161	22.67	µg/L	99
		461.0 -> 99.0	88979			
FBSA	4.514	298.0 -> 78.0	192851	20.71	µg/L	99
		298.0 -> 64.0	13540			
FHxSA	5.828	398.0 -> 78.0	171882	20.88	µg/L	100
		398.0 -> 64.0	6036			

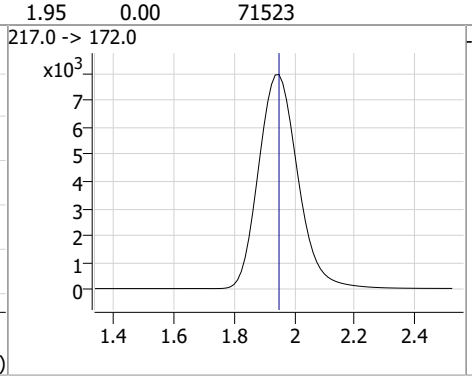
 # = Qualifier out of range, m = manually integrated, + = Area summed

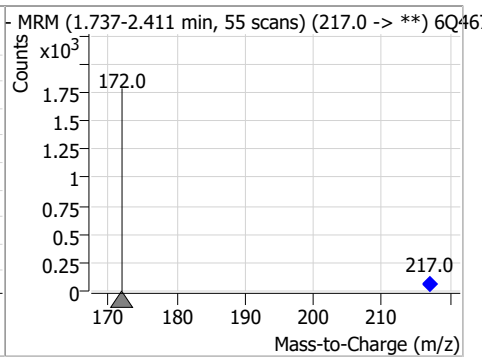
Perfluorinated Compounds by LC/MS/MS



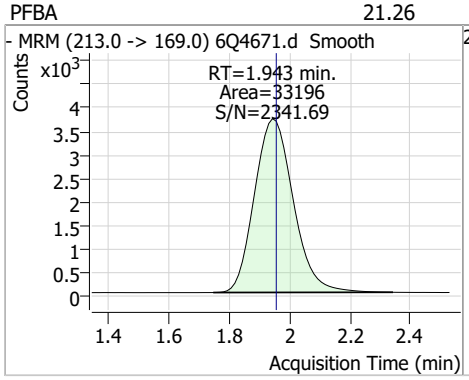
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.97	1.95	0.00	71523				

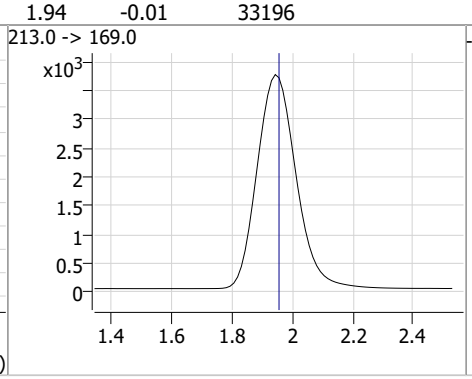


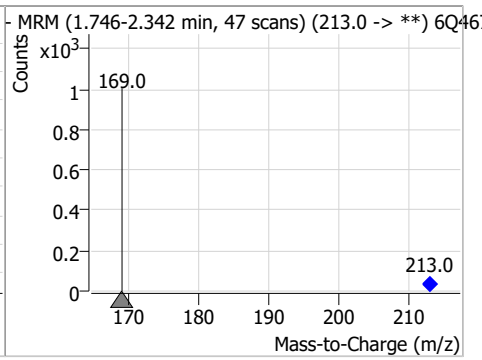




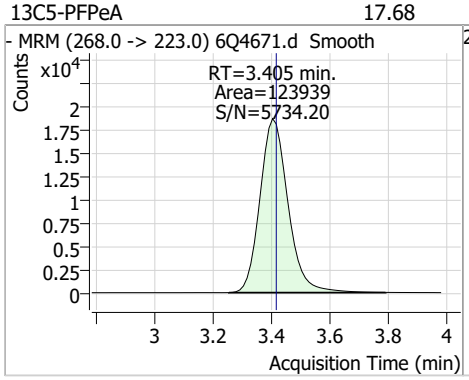
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	21.26	1.94	-0.01	33196				

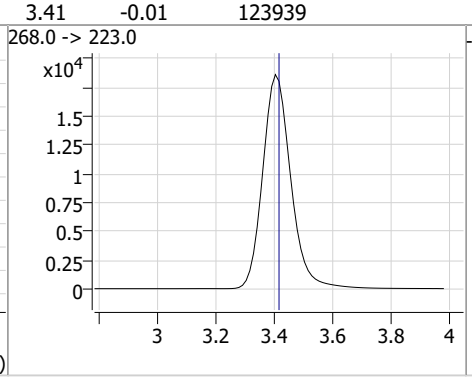


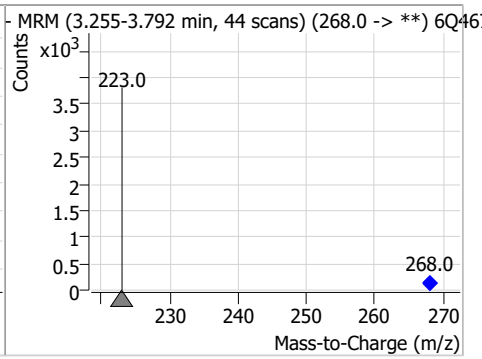




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.68	3.41	-0.01	123939				

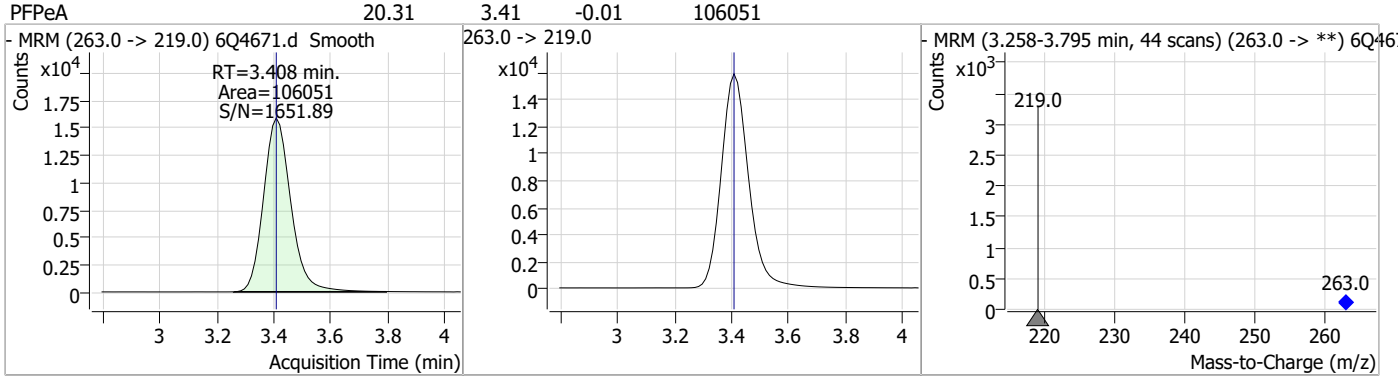




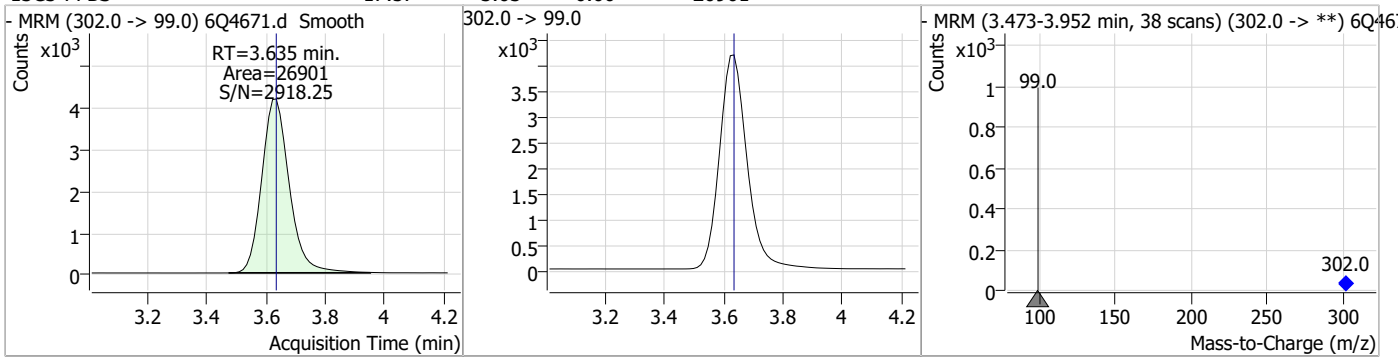


Perfluorinated Compounds by LC/MS/MS

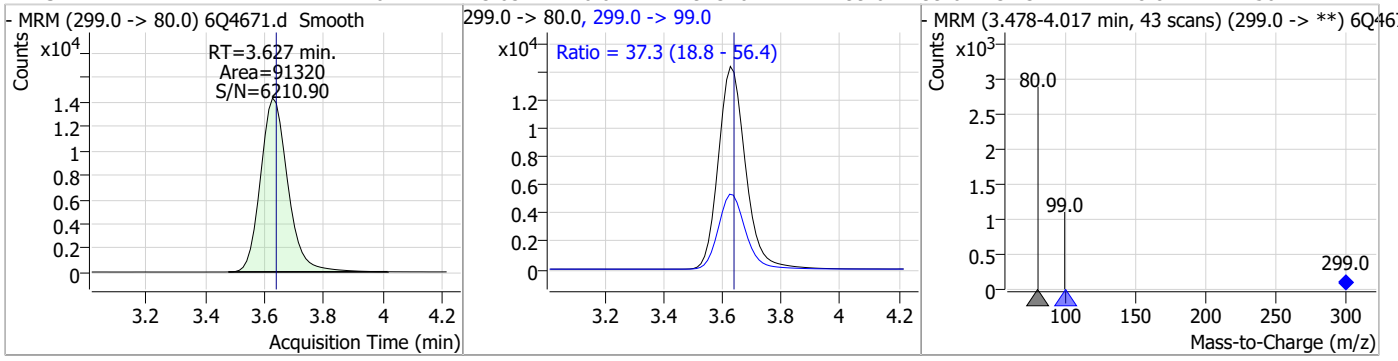
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.31	3.41	-0.01	106051				



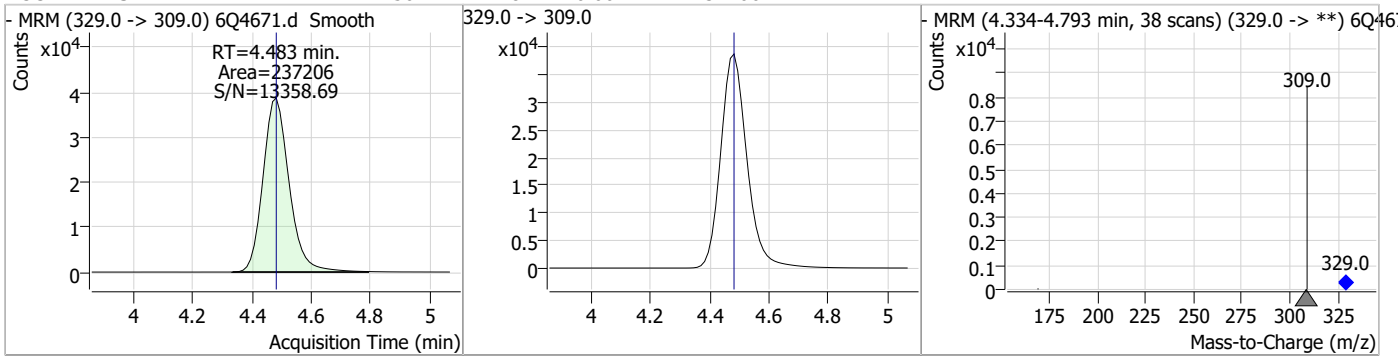
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.57	3.63	0.00	26901				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.41	3.63	-0.01	91320	299.0 -> 99.0	37.3	18.8	56.4

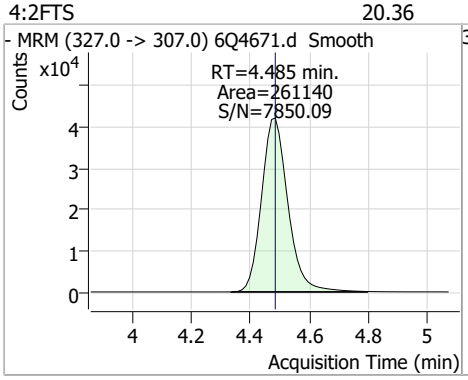


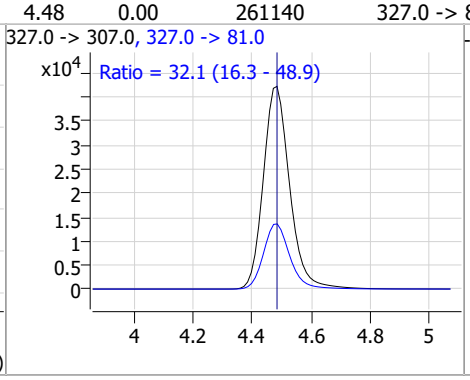
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.56	4.48	0.00	237206				

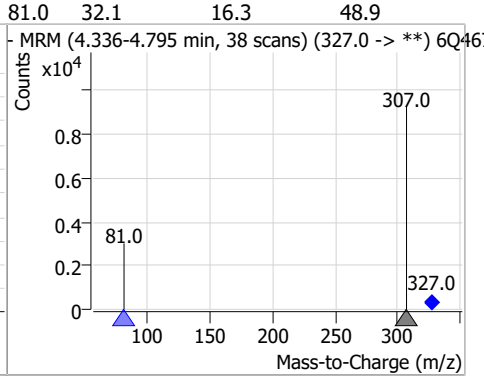


Perfluorinated Compounds by LC/MS/MS

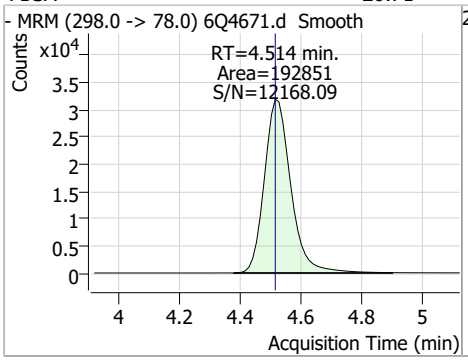
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.36	4.48	0.00	261140	327.0 -> 81.0	32.1	16.3	48.9

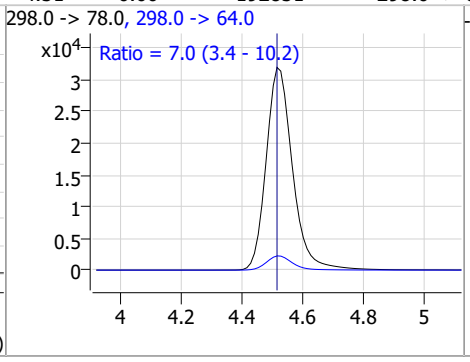


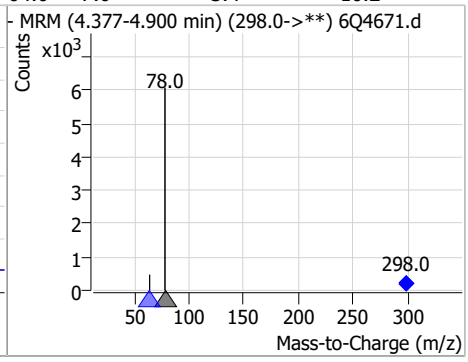




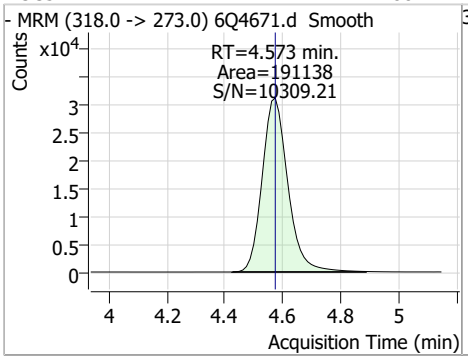
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.71	4.51	0.00	192851	298.0 -> 64.0	7.0	3.4	10.2

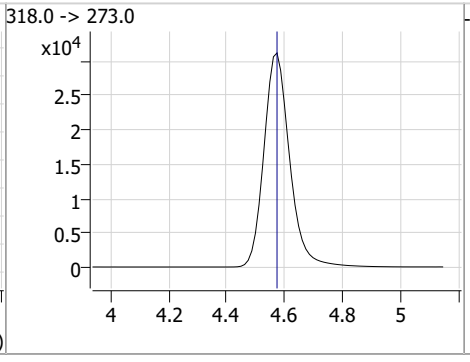


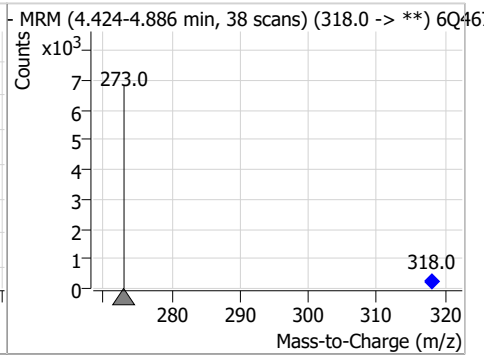




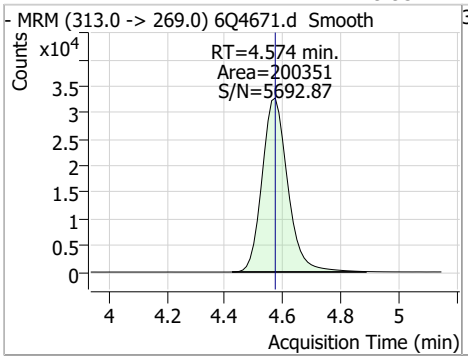
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.88	4.57	0.00	191138				

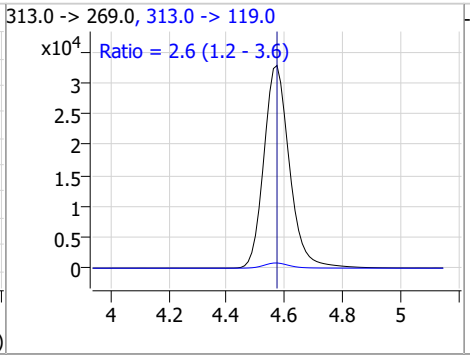


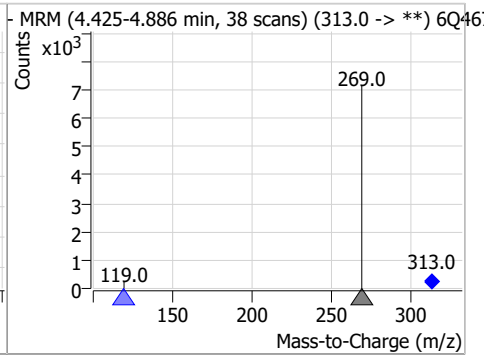




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.93	4.57	0.00	200351	313.0 -> 119.0	2.6	1.2	3.6

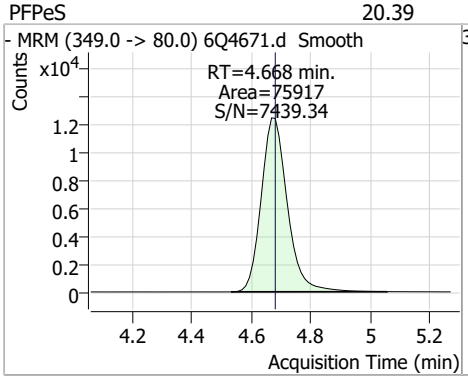


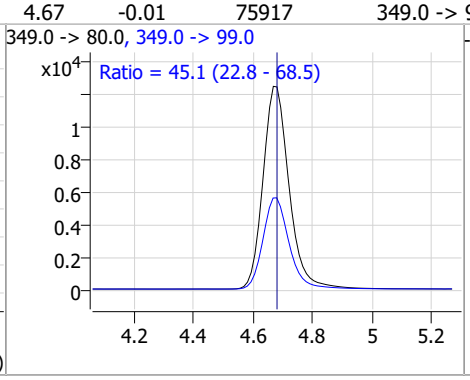


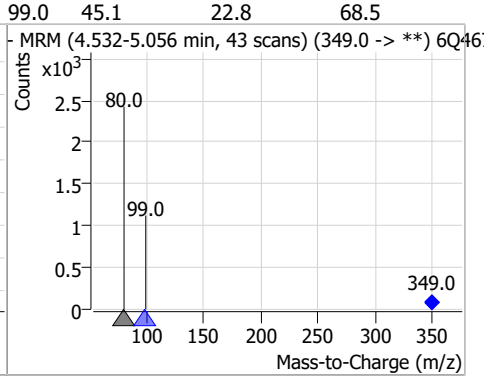


Perfluorinated Compounds by LC/MS/MS

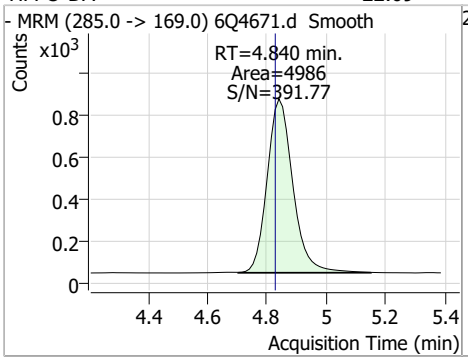
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.39	4.67	-0.01	75917	349.0 -> 99.0	45.1	22.8	68.5

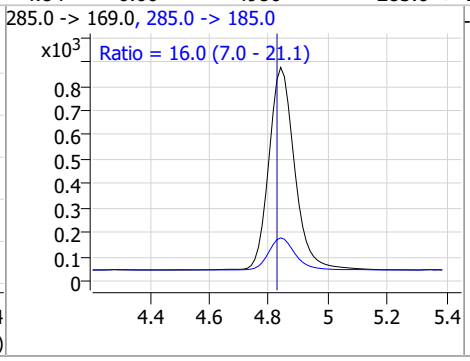


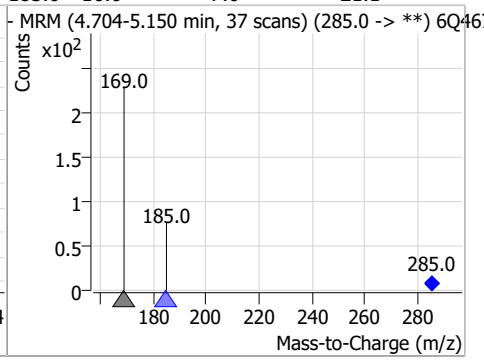




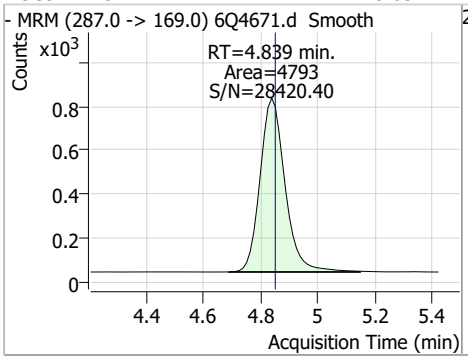
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.09	4.84	0.00	4986	285.0 -> 185.0	16.0	7.0	21.1

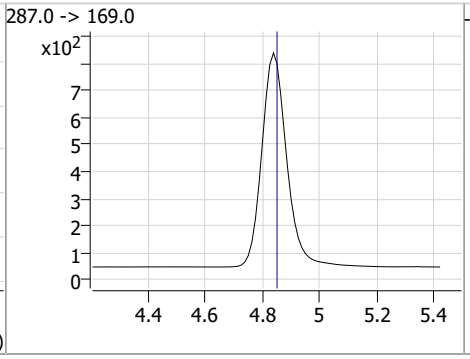


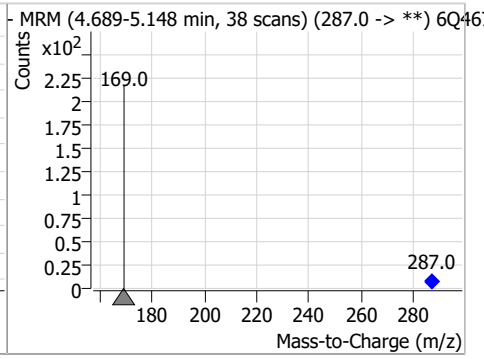




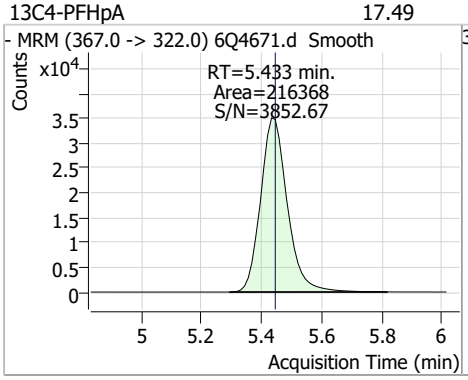
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.03	4.84	-0.01	4793				

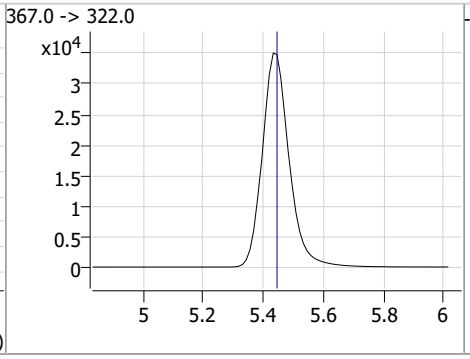


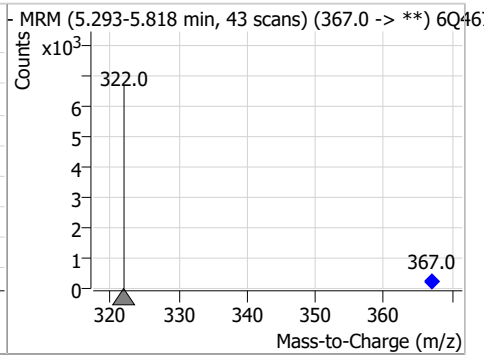




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.49	5.43	-0.01	216368				

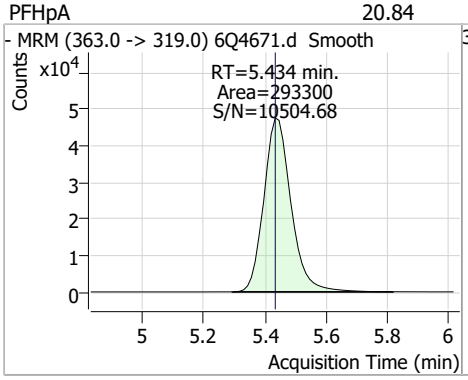


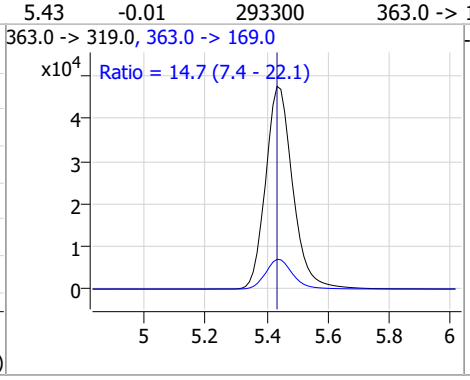


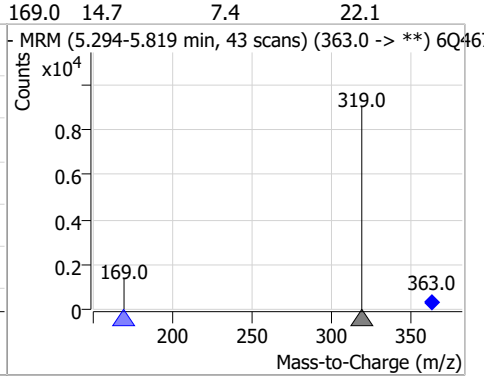


Perfluorinated Compounds by LC/MS/MS

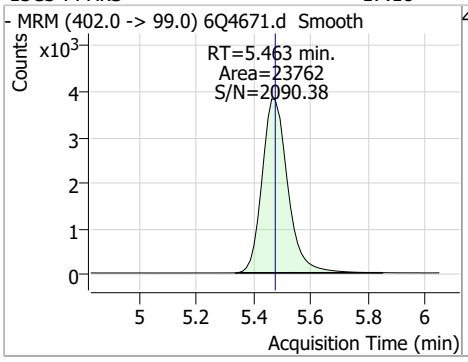
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.84	5.43	-0.01	293300	363.0 -> 169.0	14.7	7.4	22.1

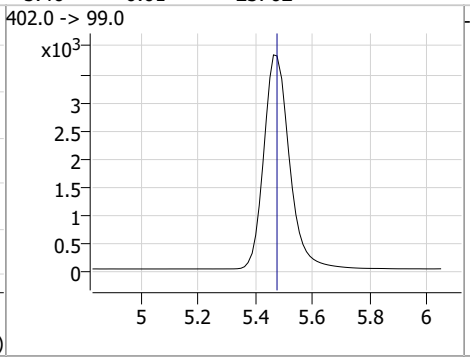


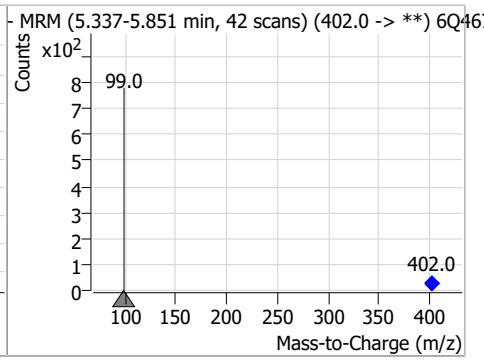




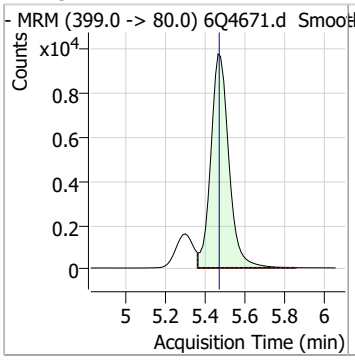
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.18	5.46	-0.01	23762				

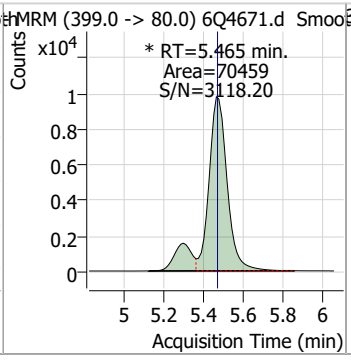


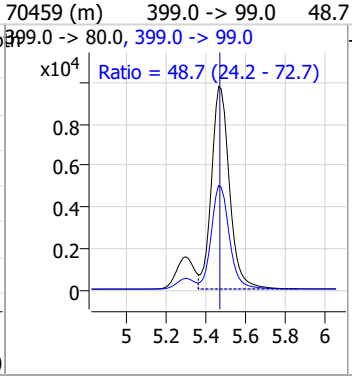


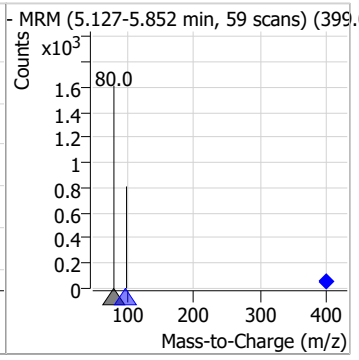


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.69	5.47	-0.01	70459 (m)	399.0 -> 99.0	48.7	24.2	72.7

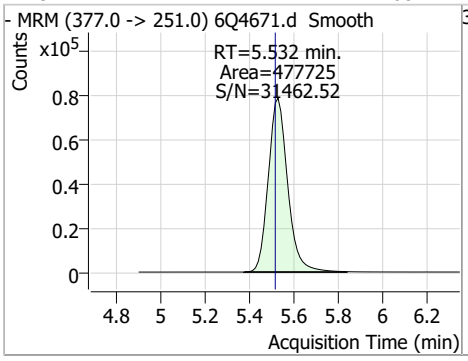


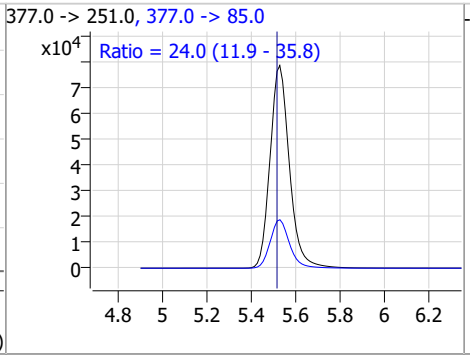


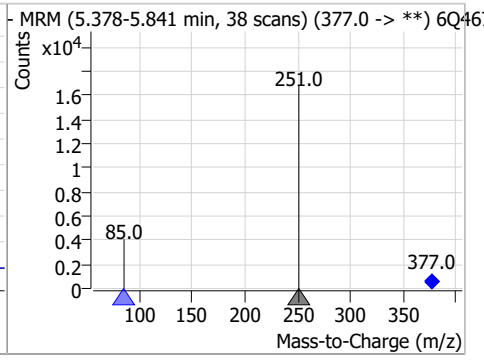




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	21.68	5.53	0.00	477725	377.0 -> 85.0	24.0	11.9	35.8

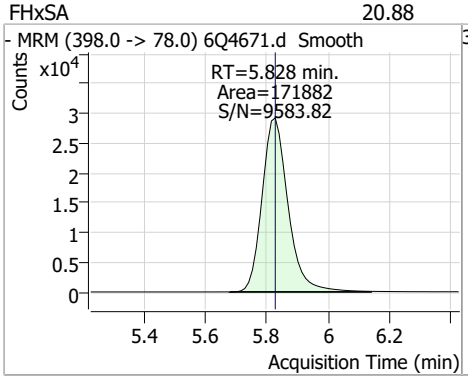


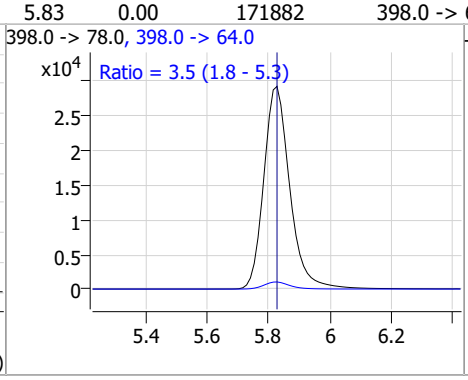


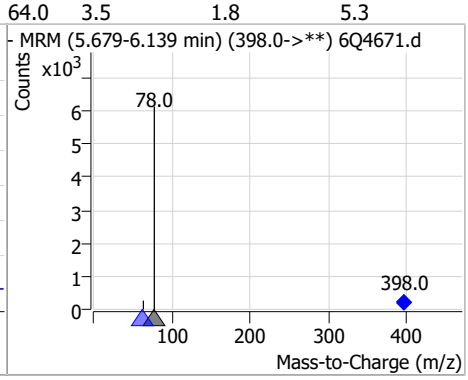


Perfluorinated Compounds by LC/MS/MS

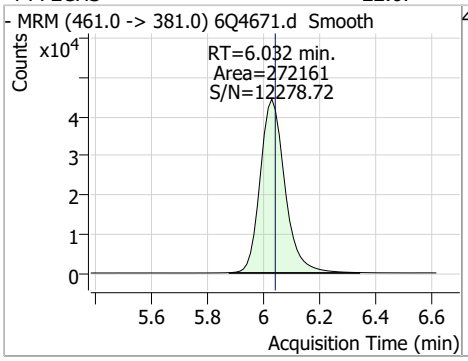
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.88	5.83	0.00	171882	398.0 -> 64.0	3.5	1.8	5.3

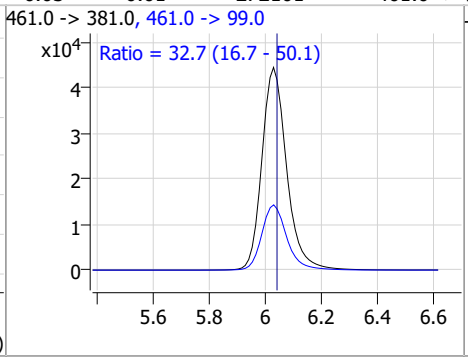


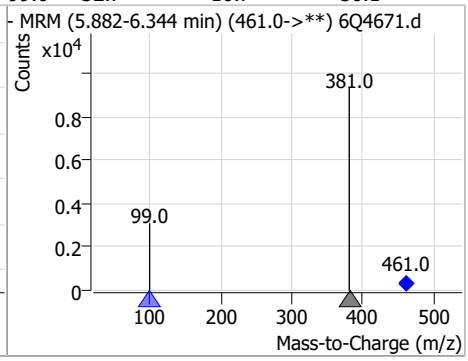




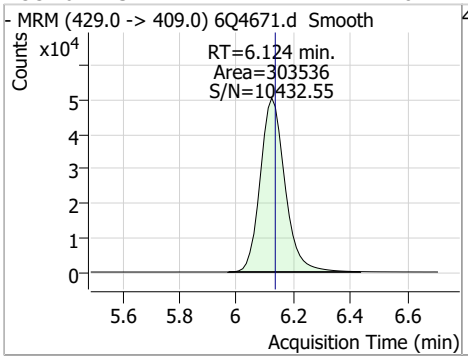
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	22.67	6.03	-0.01	272161	461.0 -> 99.0	32.7	16.7	50.1

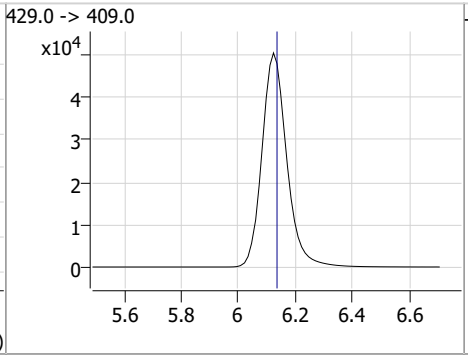


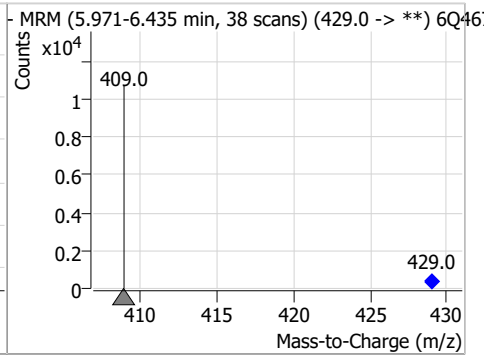




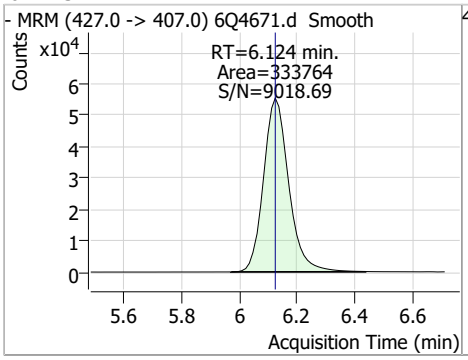
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.78	6.12	-0.01	303536				

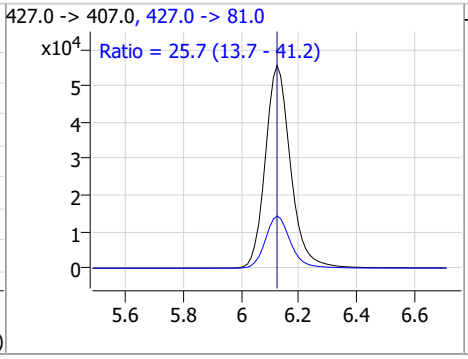


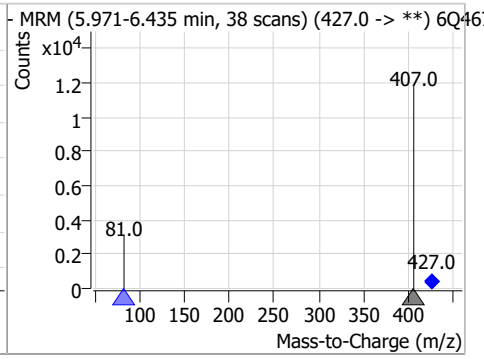




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.71	6.12	-0.01	333764	427.0 -> 81.0	25.7	13.7	41.2

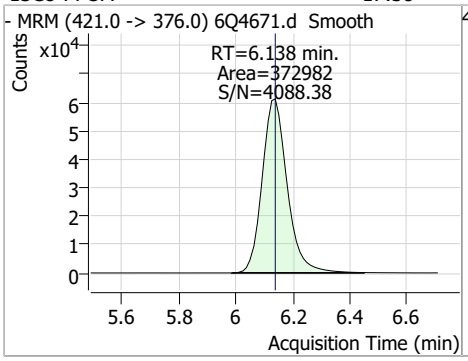


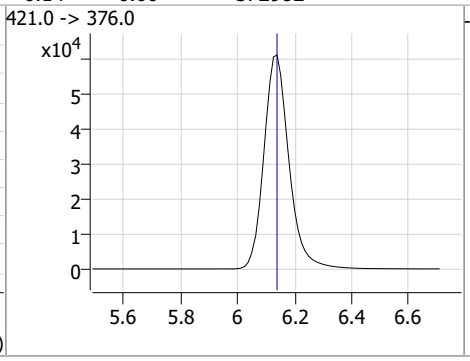


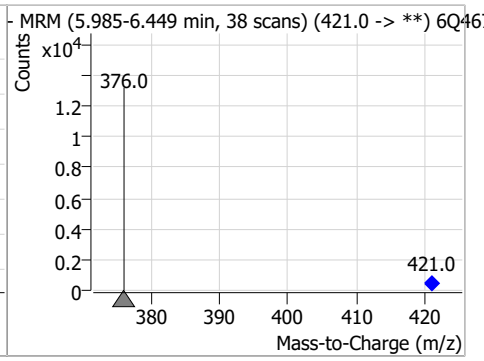


Perfluorinated Compounds by LC/MS/MS

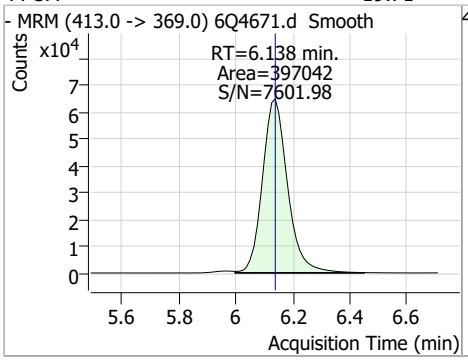
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.58	6.14	0.00	372982				

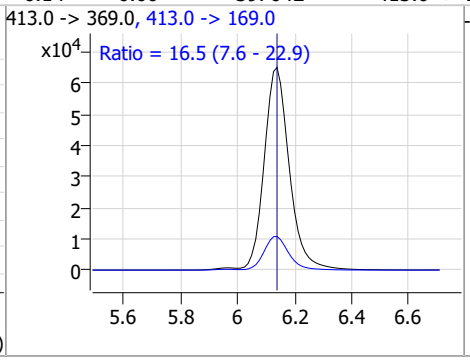


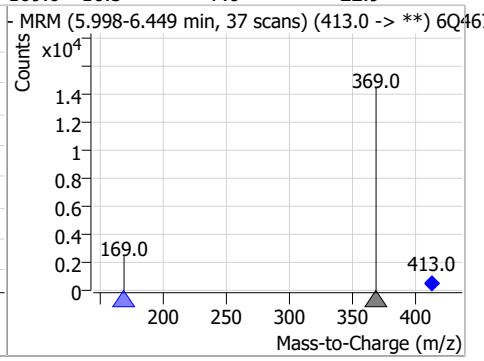




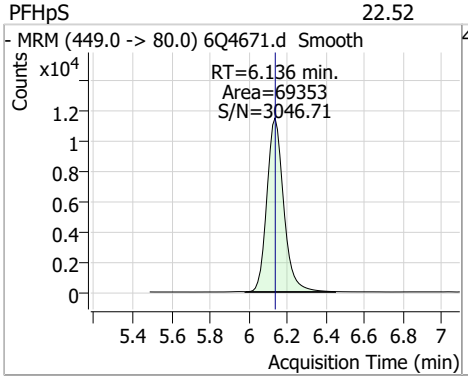
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.71	6.14	0.00	397042	413.0 -> 169.0	16.5	7.6	22.9

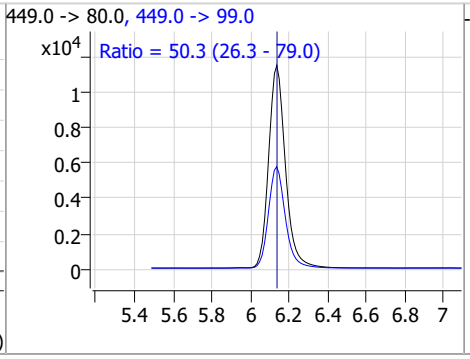


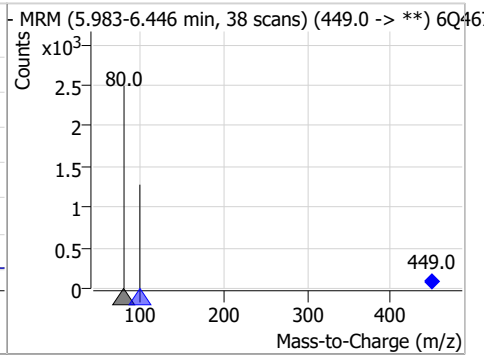




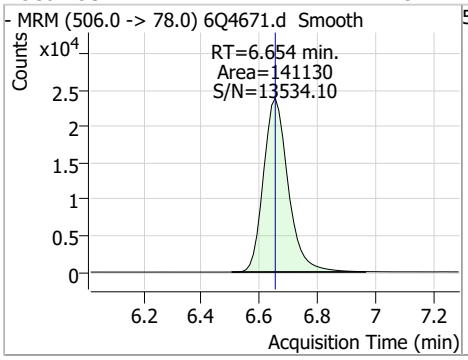
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.52	6.14	-0.01	69353	449.0 -> 99.0	50.3	26.3	79.0

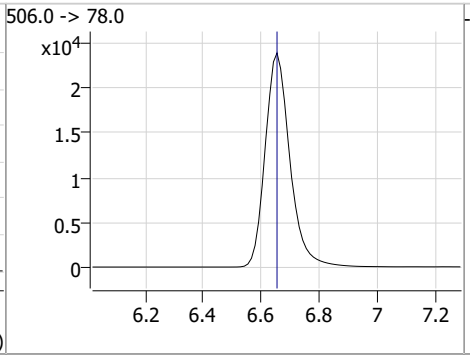


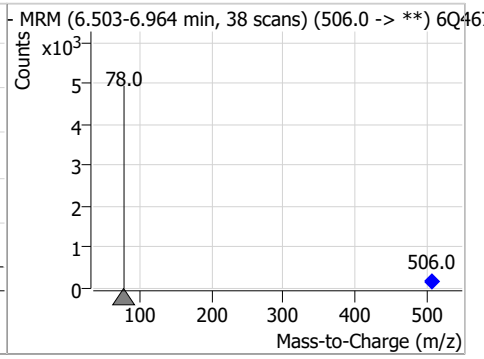




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	14.43	6.65	0.00	141130				

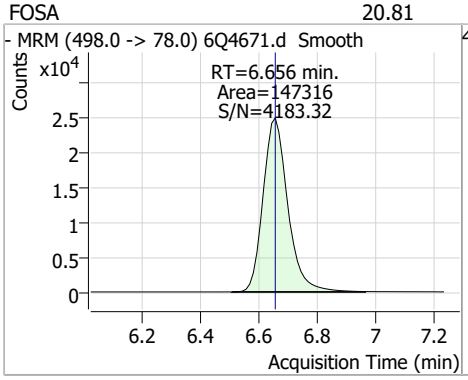


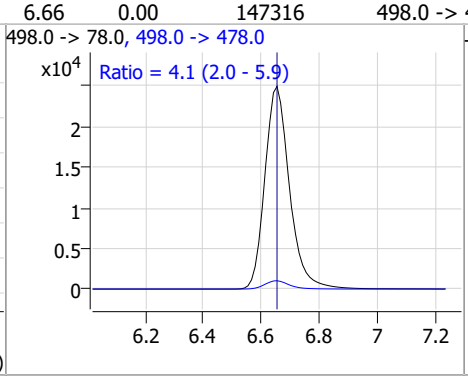


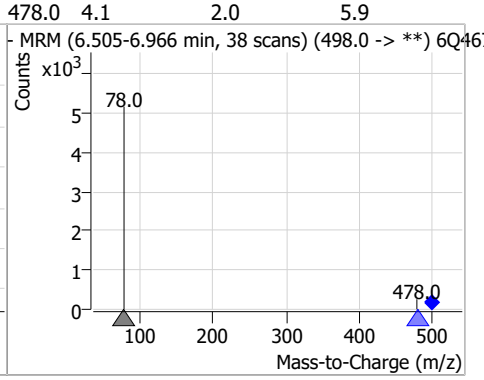


Perfluorinated Compounds by LC/MS/MS

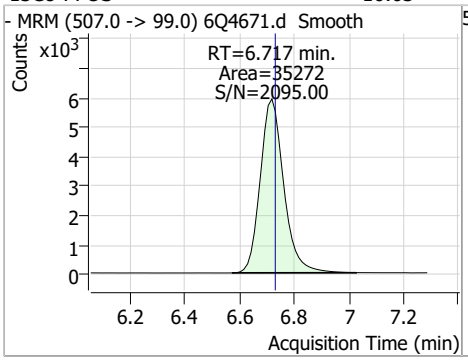
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.81	6.66	0.00	147316	498.0 -> 478.0	4.1	2.0	5.9

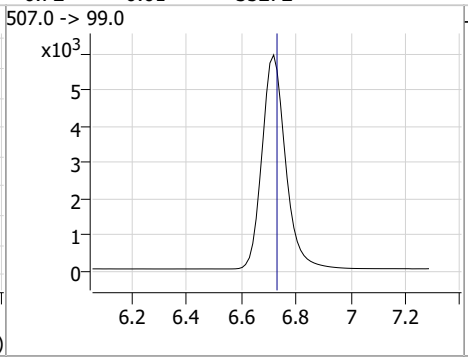


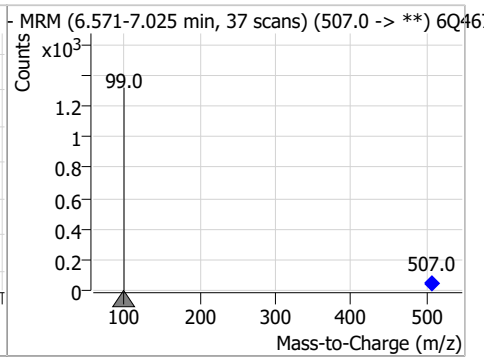




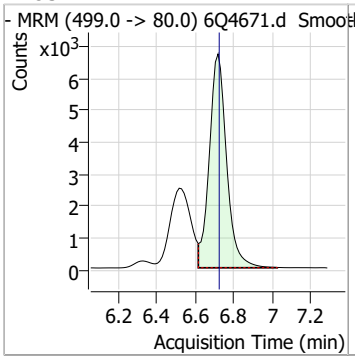
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	16.63	6.72	-0.01	35272				

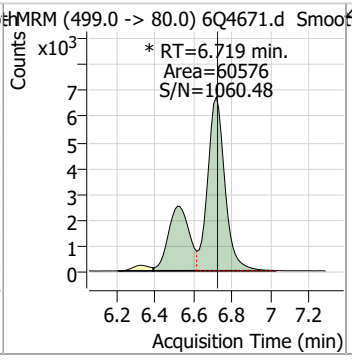


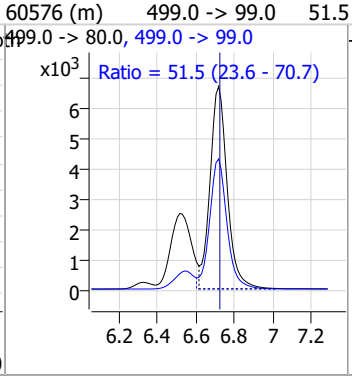


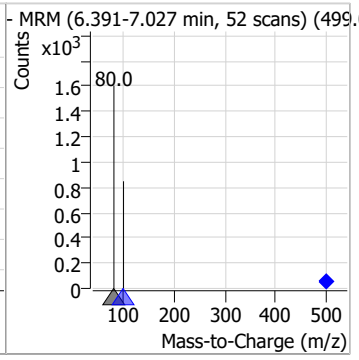


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.53	6.72	-0.01	60576 (m)	499.0 -> 99.0	51.5	23.6	70.7

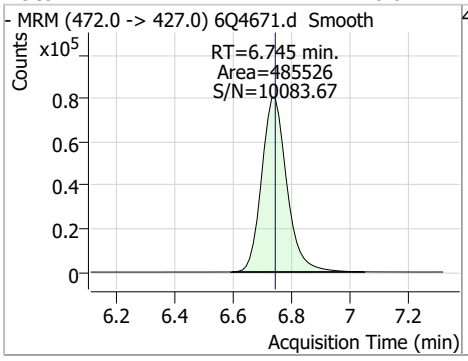


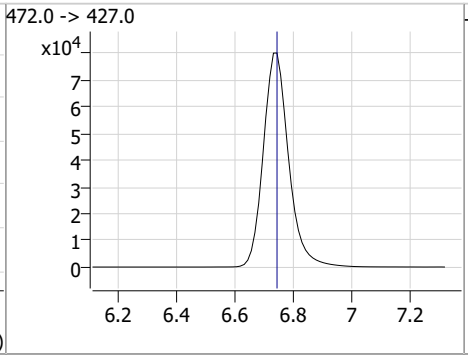


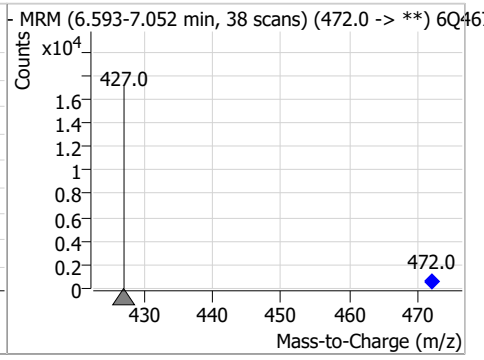




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.84	6.74	0.00	485526				

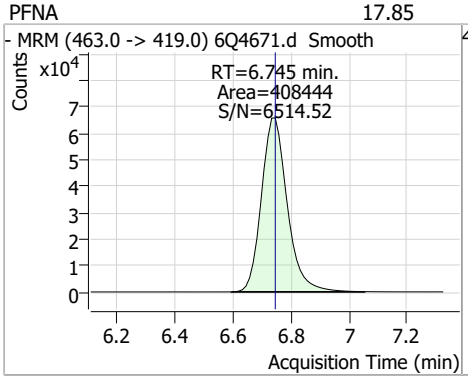


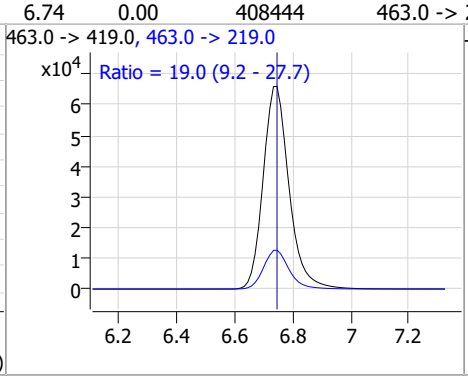


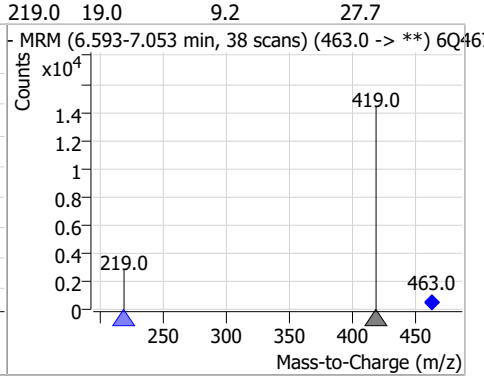


Perfluorinated Compounds by LC/MS/MS

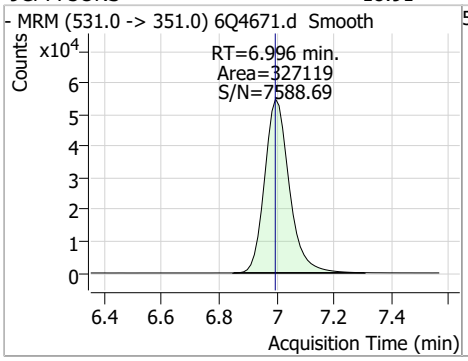
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.85	6.74	0.00	408444	463.0 -> 219.0	19.0	9.2	27.7

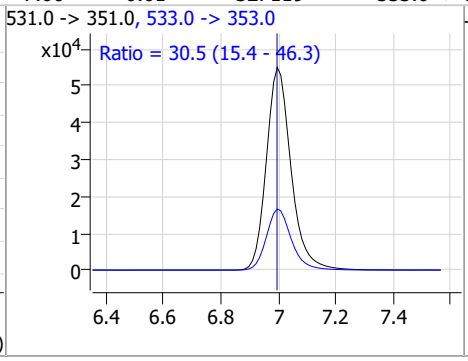


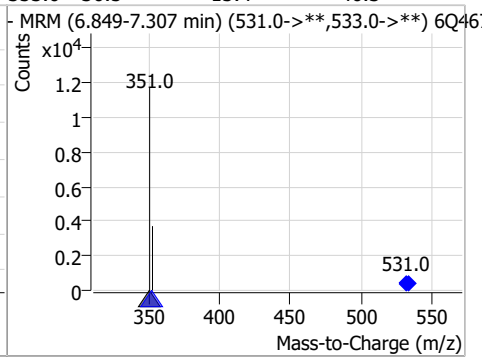




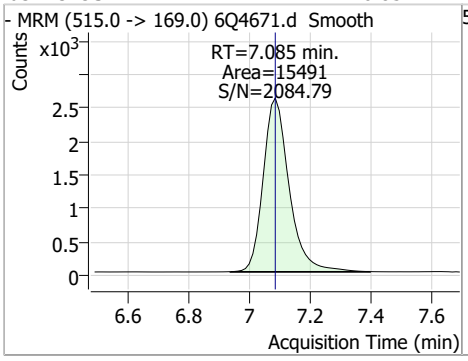
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.91	7.00	-0.01	327119	533.0 -> 353.0	30.5	15.4	46.3

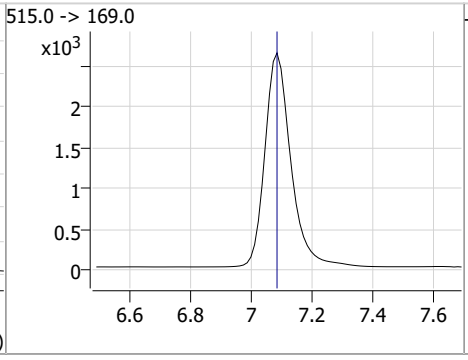


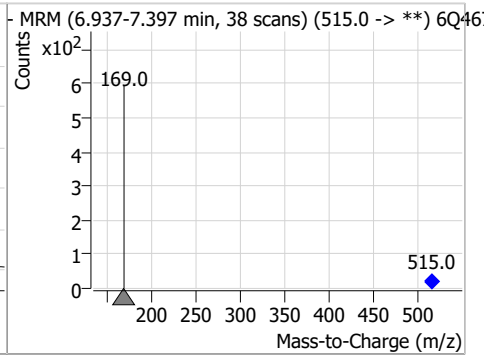




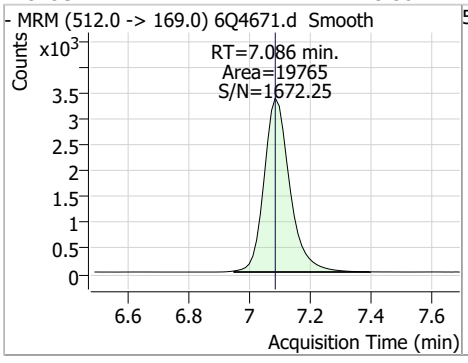
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.85	7.08	0.00	15491				

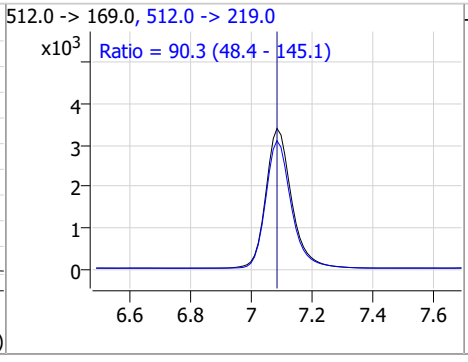


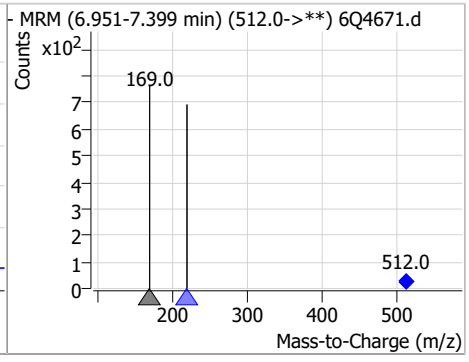




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	23.38	7.09	0.00	19765	512.0 -> 219.0	90.3	48.4	145.1

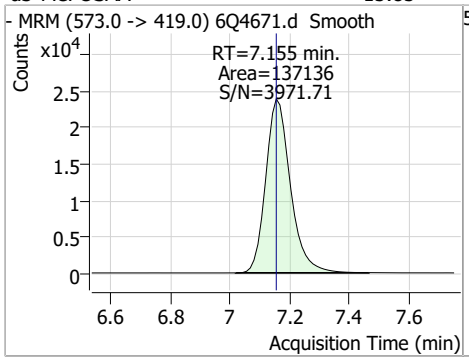


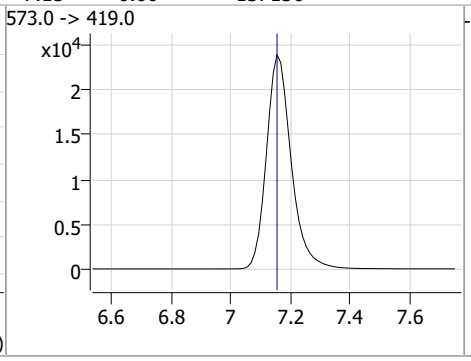


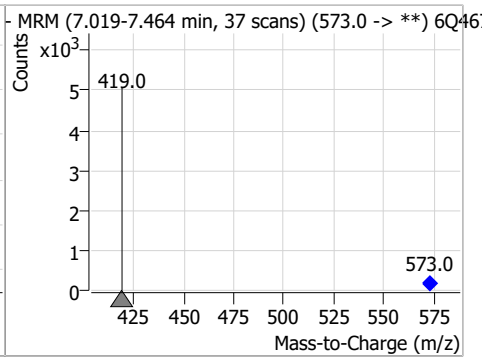


Perfluorinated Compounds by LC/MS/MS

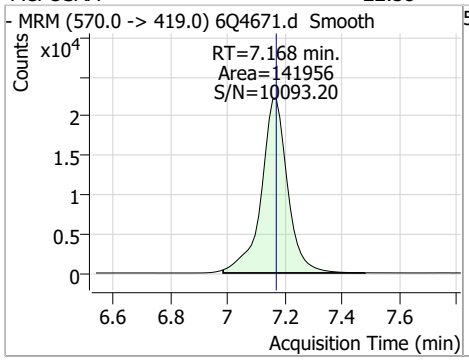
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.85	7.15	0.00	137136				

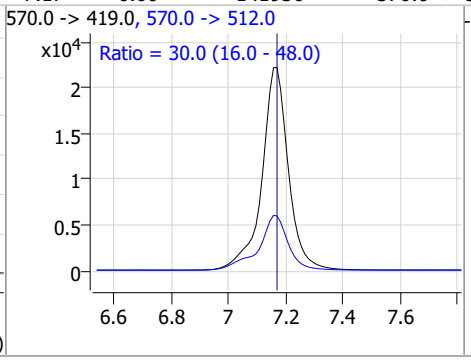


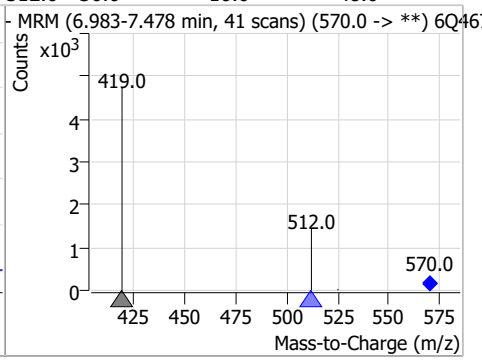




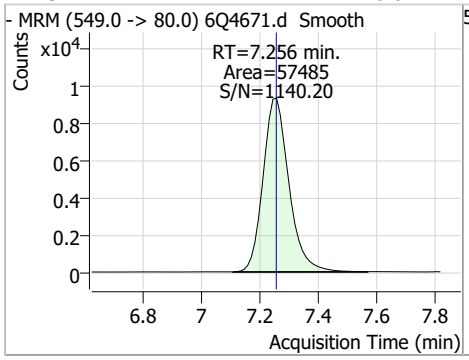
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	22.58	7.17	0.00	141956	570.0 -> 512.0	30.0	16.0	48.0

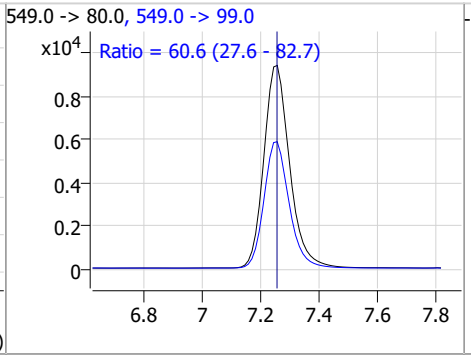


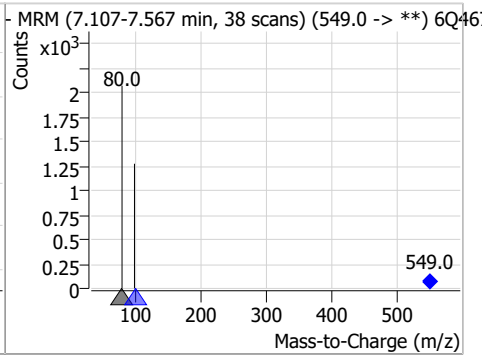




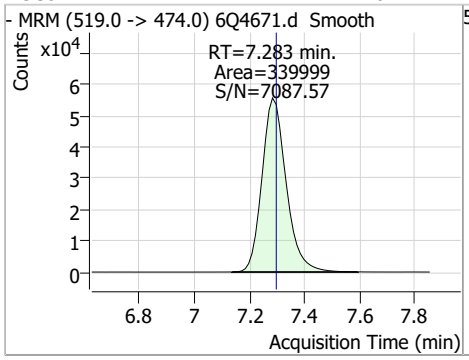
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.04	7.26	-0.01	57485	549.0 -> 99.0	60.6	27.6	82.7

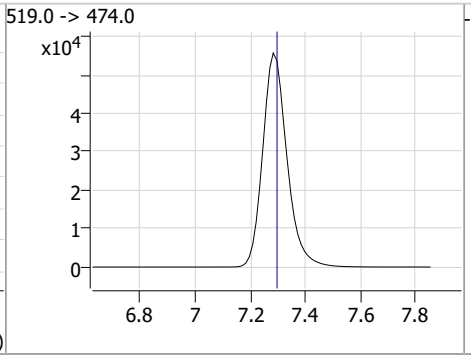


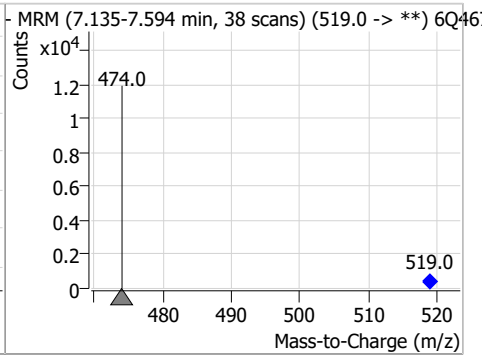




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.71	7.28	-0.01	339999				

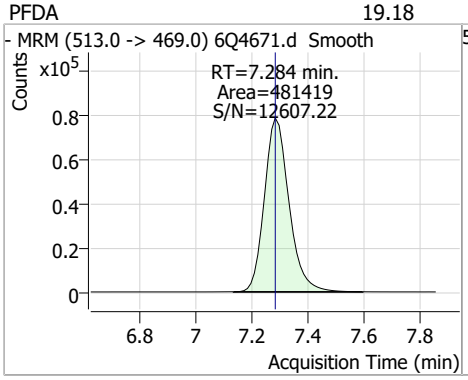


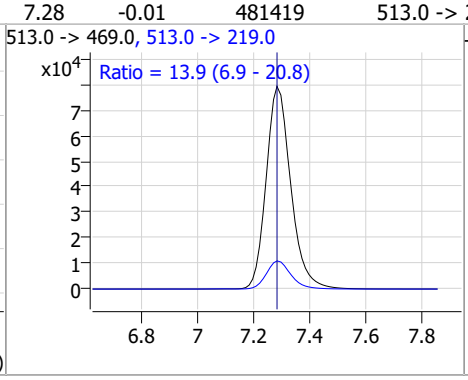


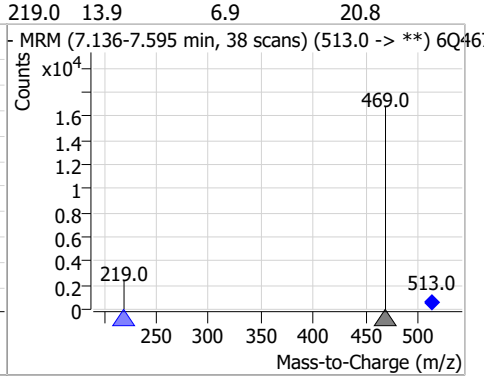


Perfluorinated Compounds by LC/MS/MS

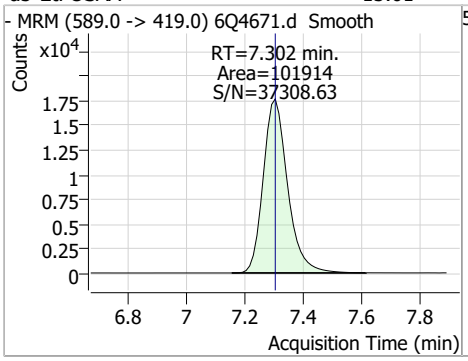
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.18	7.28	-0.01	481419	513.0 -> 219.0	13.9	6.9	20.8

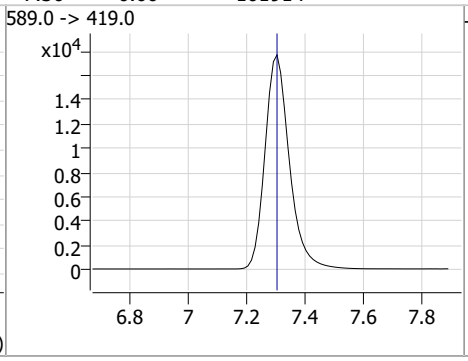


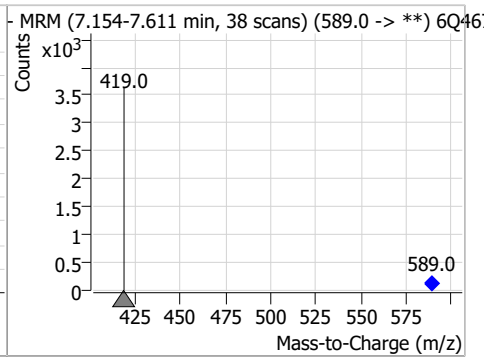




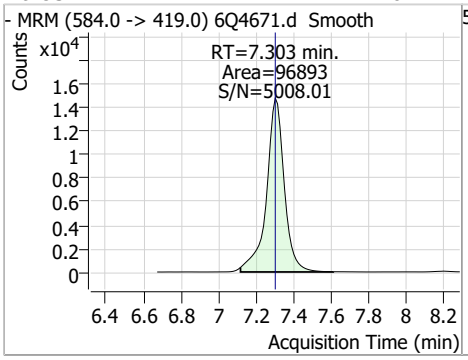
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.01	7.30	0.00	101914				

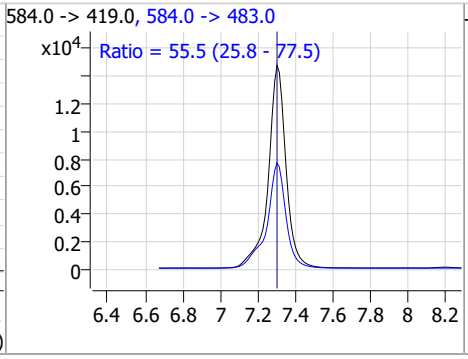


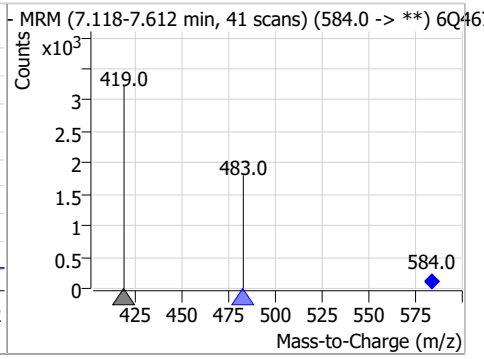




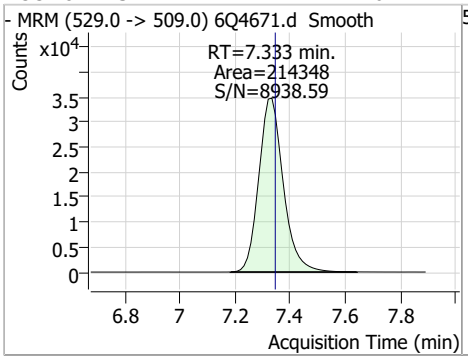
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.84	7.30	0.00	96893	584.0 -> 483.0	55.5	25.8	77.5

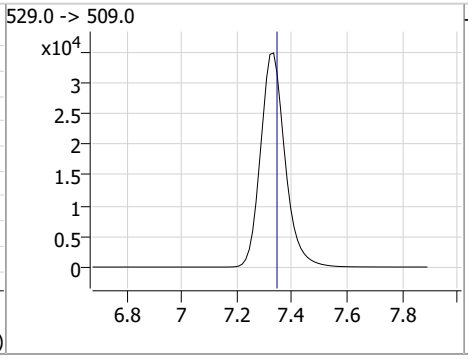


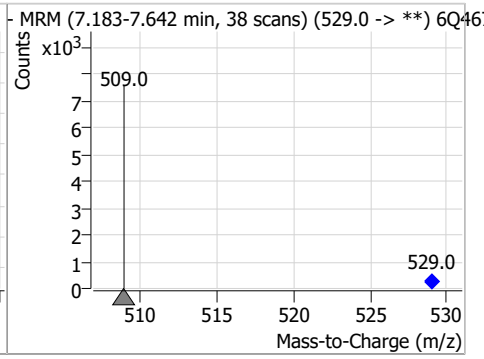




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.44	7.33	-0.01	214348				

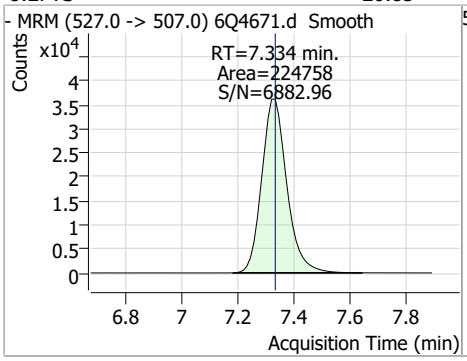


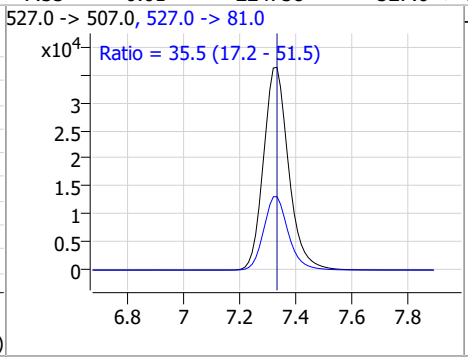


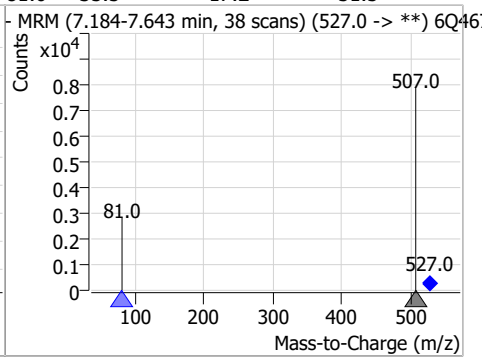


Perfluorinated Compounds by LC/MS/MS

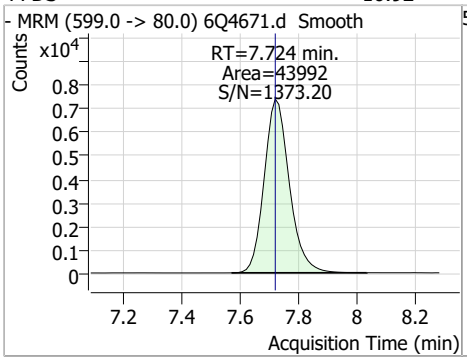
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.85	7.33	-0.01	224758	527.0 -> 81.0	35.5	17.2	51.5

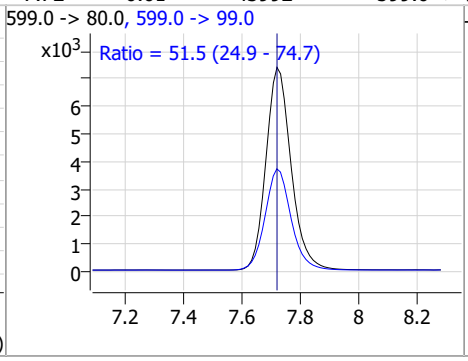


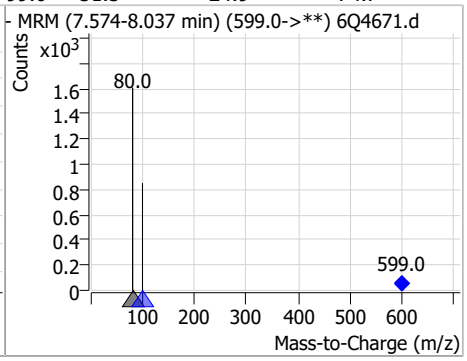




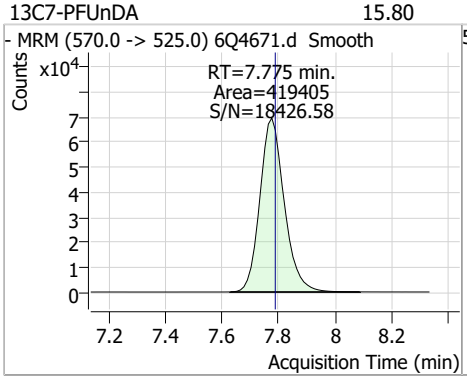
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.92	7.72	-0.01	43992	599.0 -> 99.0	51.5	24.9	74.7

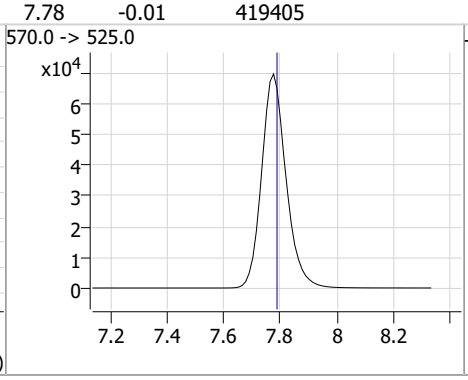


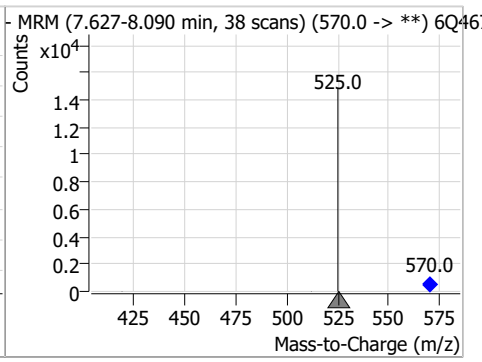




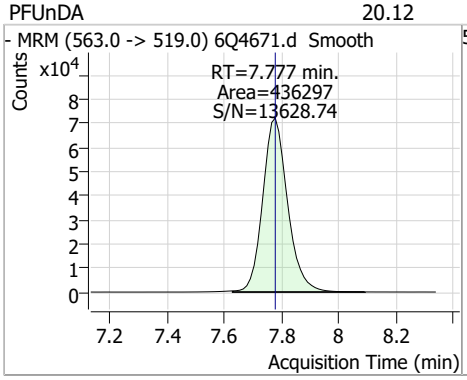
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.80	7.78	-0.01	419405				

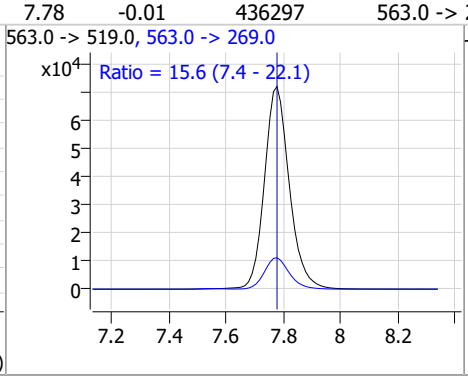


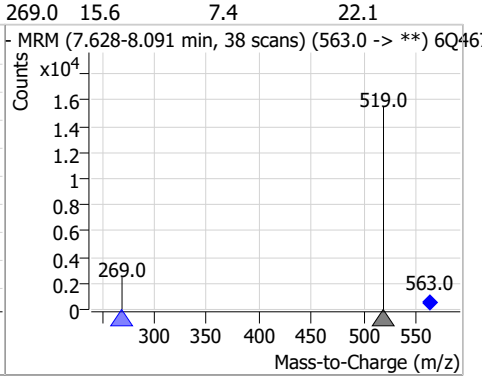




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.12	7.78	-0.01	436297	563.0 -> 269.0	15.6	7.4	22.1

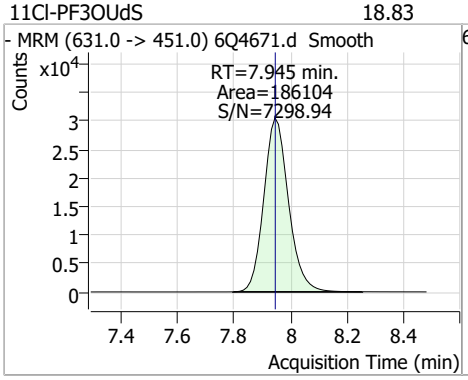


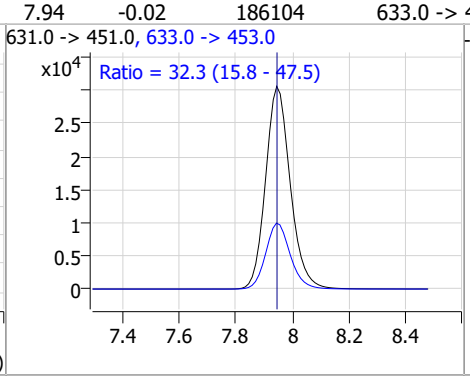


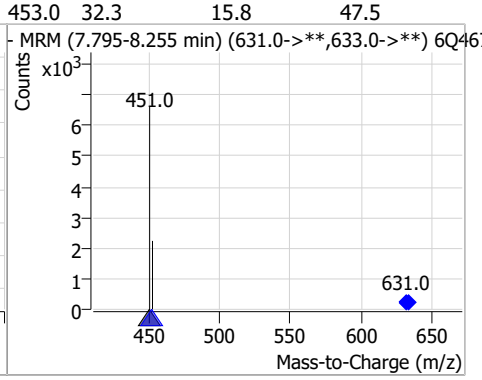


Perfluorinated Compounds by LC/MS/MS

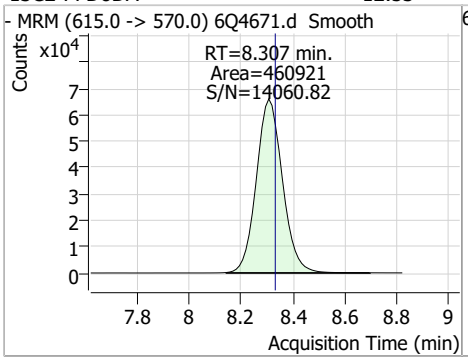
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.83	7.94	-0.02	186104	633.0 -> 453.0	32.3	15.8	47.5

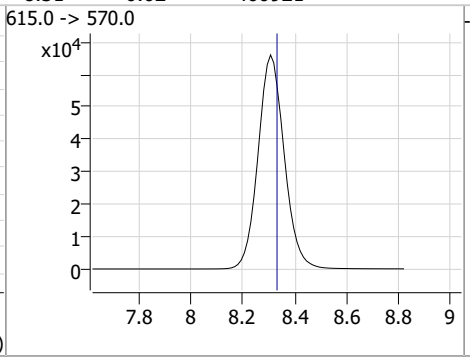


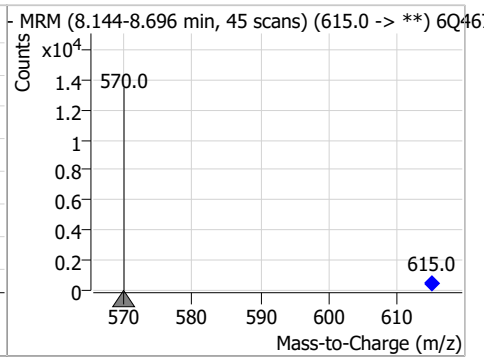




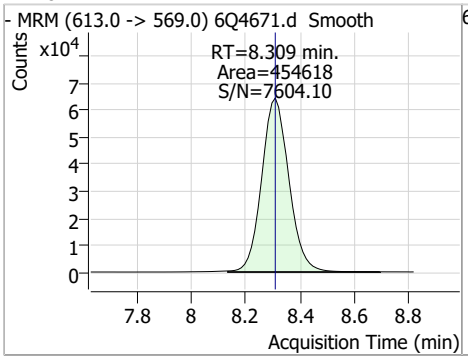
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.53	8.31	-0.02	460921				

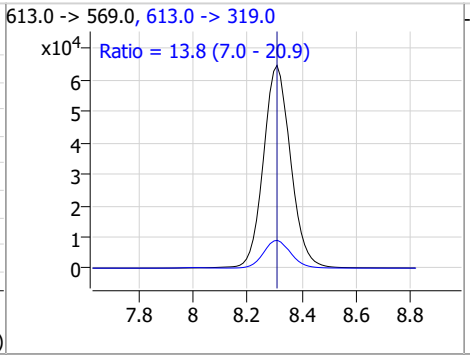


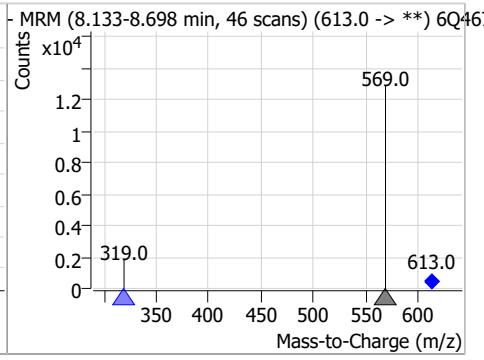




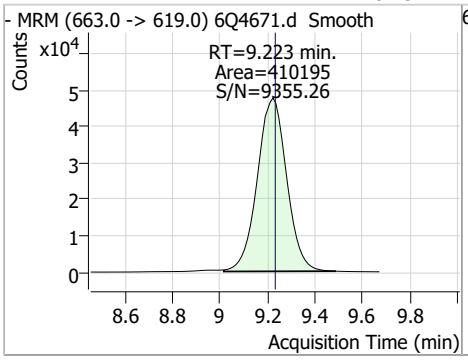
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	21.14	8.31	-0.02	454618	613.0 -> 319.0	13.8	7.0	20.9

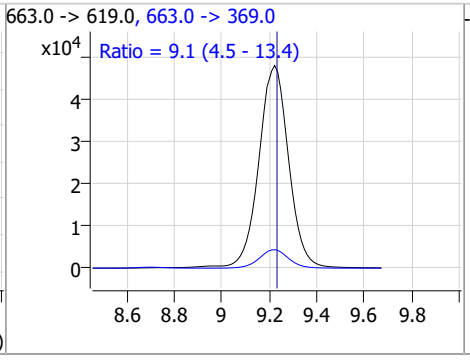


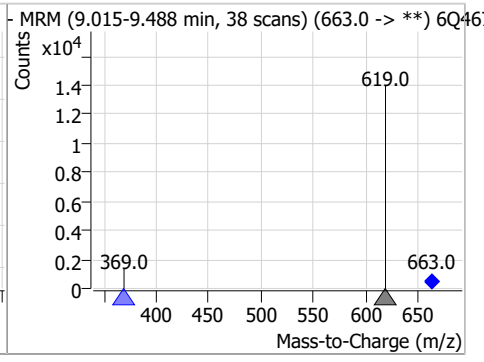




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.43	9.22	-0.04	410195	663.0 -> 369.0	9.1	4.5	13.4

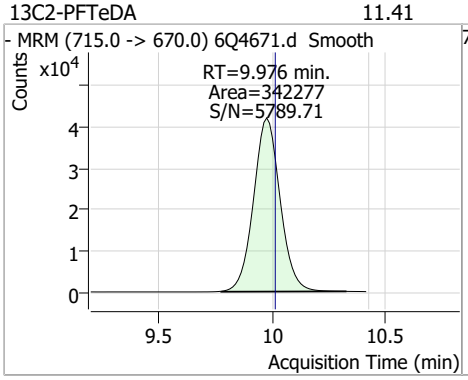


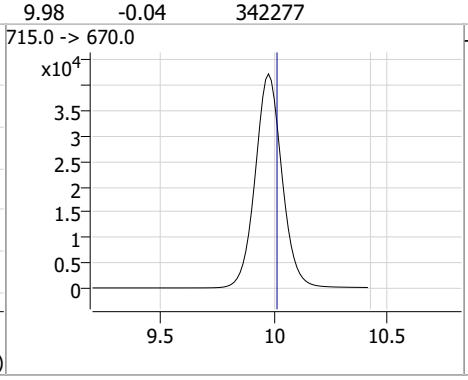


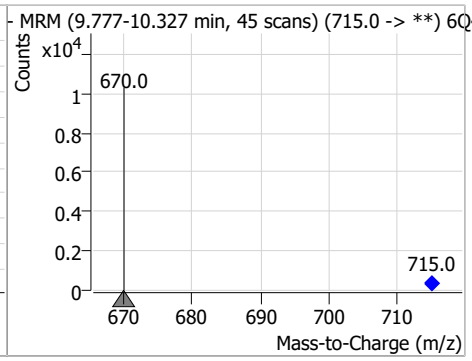


Perfluorinated Compounds by LC/MS/MS

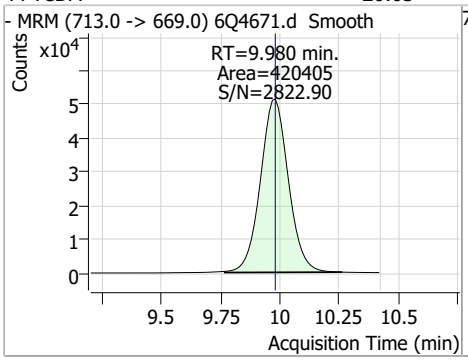
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.41	9.98	-0.04	342277				

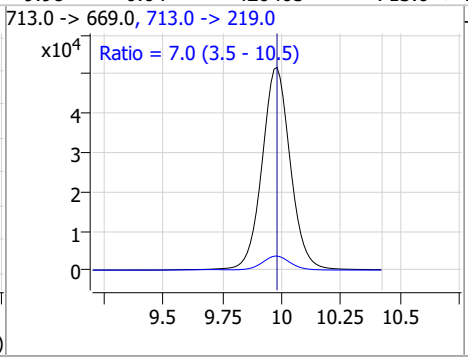


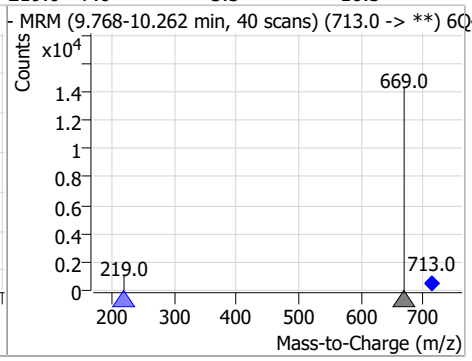




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.03	9.98	-0.04	420405	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: OP92764-BS
Lab FileID: 6Q4671.D
Injection Time: 09/15/22 00:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4601.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 9:56:00 PM
Sample Name : op92794-bs
Vial : P1-B4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,250,,,1.0,1,water

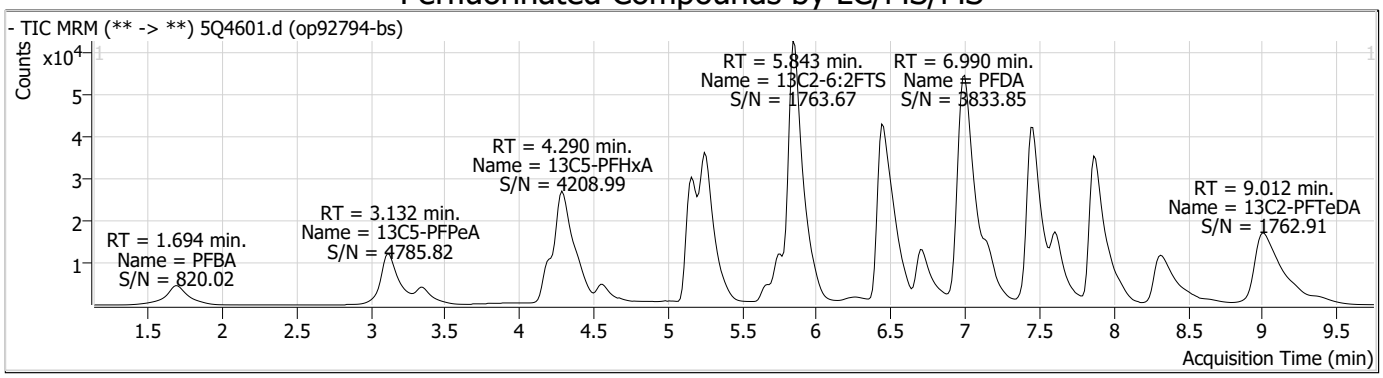
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	33688	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	55242	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	82696	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	77765	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	116124	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	128584	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	107349	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	131187	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	130828	20.00	µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	106305	20.00	µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	18534	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6203	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	6523	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12368	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	27531	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43128	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	43030	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	21067	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	5518	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	2115	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22188	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	27531	18.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43128	19.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-8:2FTS	7.025	529.0 -> 509.0	43030	19.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-PFDoDA	7.879	615.0 -> 570.0	130828	18.05	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C2-PFTeDA	9.012	715.0 -> 670.0	106305	14.09	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.4%		
13C3-PFBS	3.349	302.0 -> 99.0	6203	19.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C3-PFHxS	5.206	402.0 -> 99.0	6523	19.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C4-PFBA	1.700	217.0 -> 172.0	33688	18.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C4-PFHpA	5.163	367.0 -> 322.0	77765	19.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	82696	18.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C5-PFPeA	3.132	268.0 -> 223.0	55242	19.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C6-PFDA	6.989	519.0 -> 474.0	107349	19.94	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

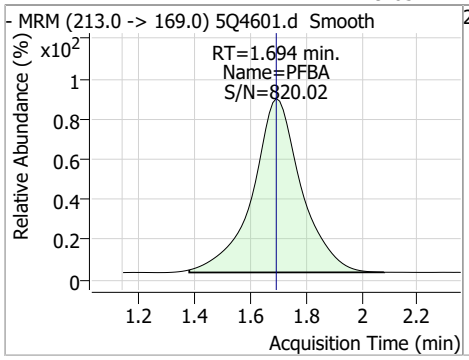
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	131187	18.63	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C8-FOSA	6.517	506.0 -> 78.0	18534	16.33	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.7%			
13C8-PFOA	5.857	421.0 -> 376.0	116124	19.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
13C8-PFOS	6.440	507.0 -> 99.0	12368	18.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
13C9-PFNA	6.455	472.0 -> 427.0	128584	19.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	21067	21.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	5518	16.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	2115	6.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 34.7%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22188	19.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	27255	17.68	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	43815	19.15	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	42591	18.57	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	14896	18.98	µg/L		97
FOSA	6.519	498.0 -> 78.0	17980	18.85	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	17615	18.26	µg/L		97
PFBA	1.694	213.0 -> 169.0	15595	19.65	µg/L		100
PFBS	3.354	299.0 -> 80.0	16794	18.03	µg/L		100
PFDA	6.990	513.0 -> 469.0	116601	17.68	µg/L		100
PFDoDA	7.880	613.0 -> 569.0	120321	18.75	µg/L		99
PFDS	7.419	599.0 -> 80.0	15982	18.06	µg/L		99
PFHpA	5.164	363.0 -> 319.0	92806	18.17	µg/L		100
PFHpS	5.867	449.0 -> 80.0	17439	18.75	µg/L		99
PFHxA	4.291	313.0 -> 269.0	71883	17.79	µg/L		100
PFHxS	5.208	399.0 -> 80.0	16997	17.55	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	105120	18.25	µg/L		99
PFNS	6.962	549.0 -> 80.0	16397	17.96	µg/L		99
PFOA	5.858	413.0 -> 369.0	127552	18.11	µg/L		100
PFOS	6.442	499.0 -> 80.0	18882	17.33	µg/L	m	87
PFPeA	3.134	263.0 -> 219.0	48601	17.80	µg/L		100
PFPeS	4.410	349.0 -> 80.0	13000	17.94	µg/L		100
PFTeDA	9.014	713.0 -> 669.0	102506	18.53	µg/L		99
PFTrDA	8.325	663.0 -> 619.0	114080	14.87	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	123186	18.80	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	57230	17.61	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	61966	16.70	µg/L		100
ADONA	5.261	377.0 -> 251.0	118575	17.68	µg/L		99
HFPO-DA	4.574	329.0 -> 169.0	17261	18.54	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	2143	18.81	µg/L		100
4-PFECHS	5.753	461.0 -> 381.0	42302	20.24	µg/L		100
FBSA	4.356	298.0 -> 78.0	25825	18.83	µg/L		99
FHxSA	5.674	398.0 -> 78.0	22994	19.47	µg/L		100

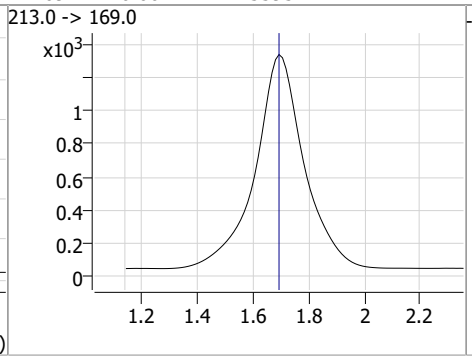
 # = Qualifier out of range, m = manually integrated, + = Area summed

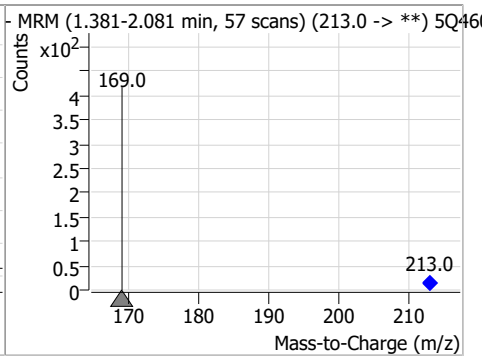
Perfluorinated Compounds by LC/MS/MS



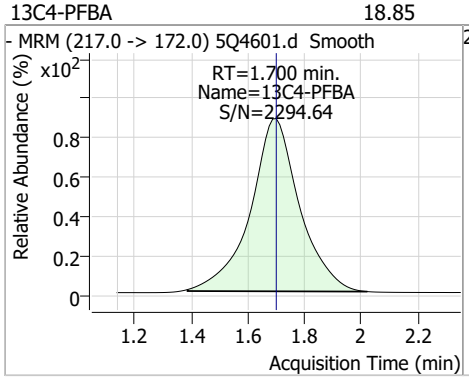
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	1.69	0.00	15595				

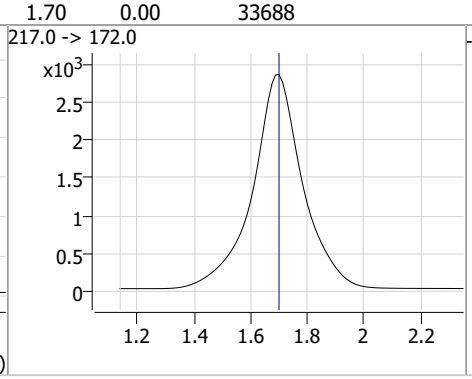


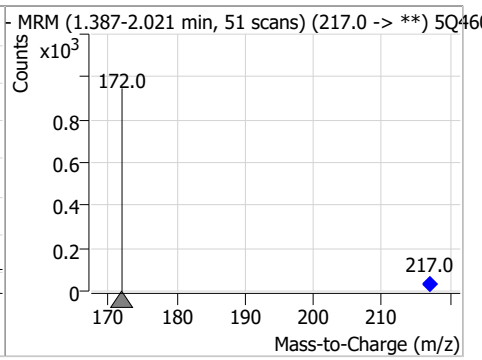




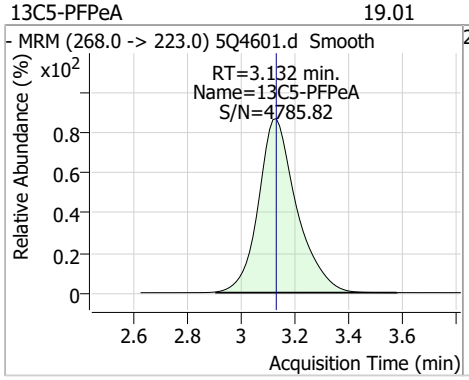
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.85	1.70	0.00	33688				

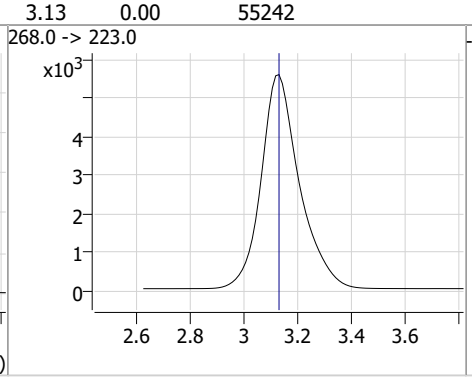


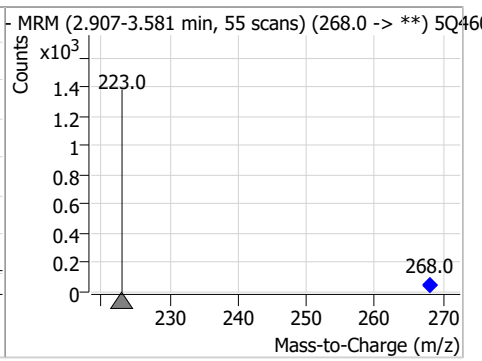




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.01	3.13	0.00	55242				

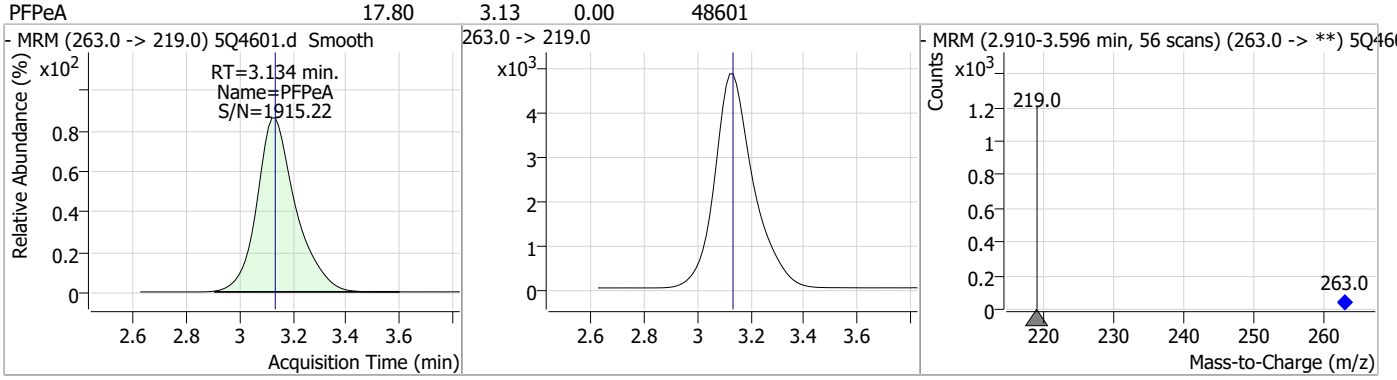




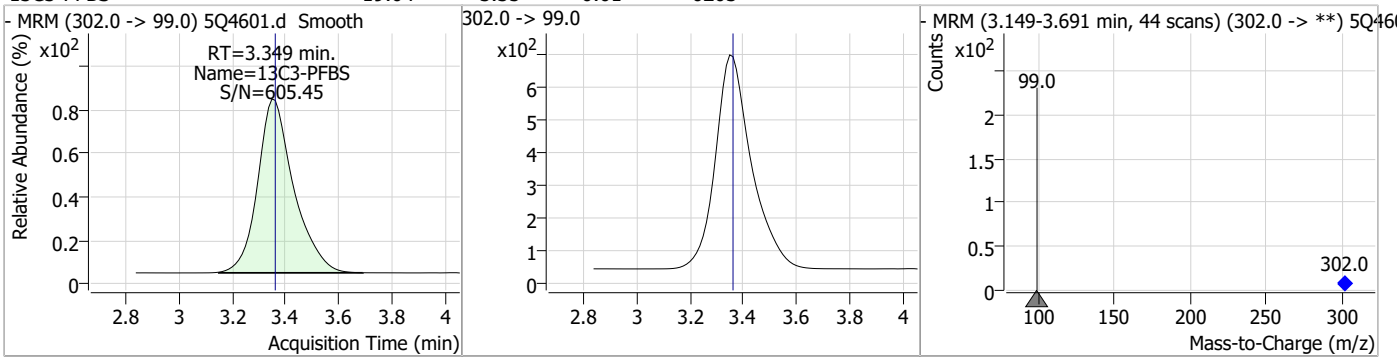


Perfluorinated Compounds by LC/MS/MS

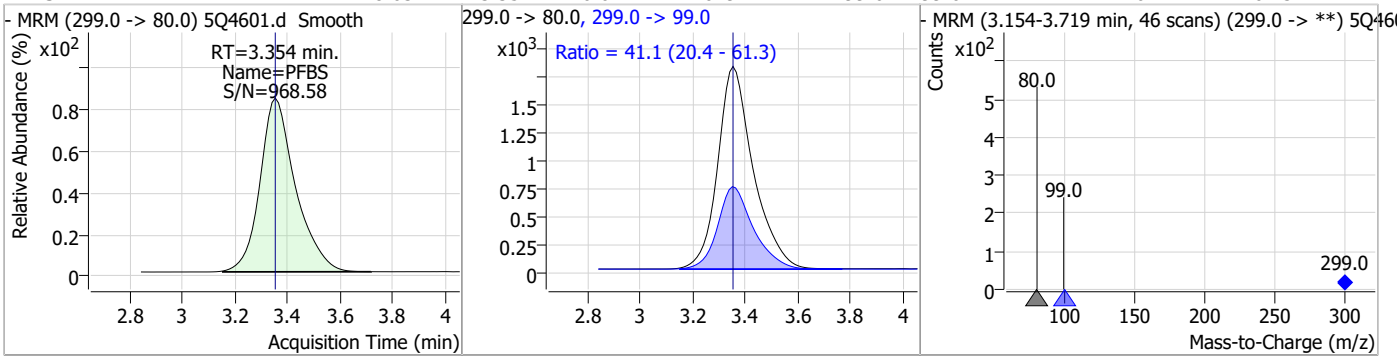
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	17.80	3.13	0.00	48601				



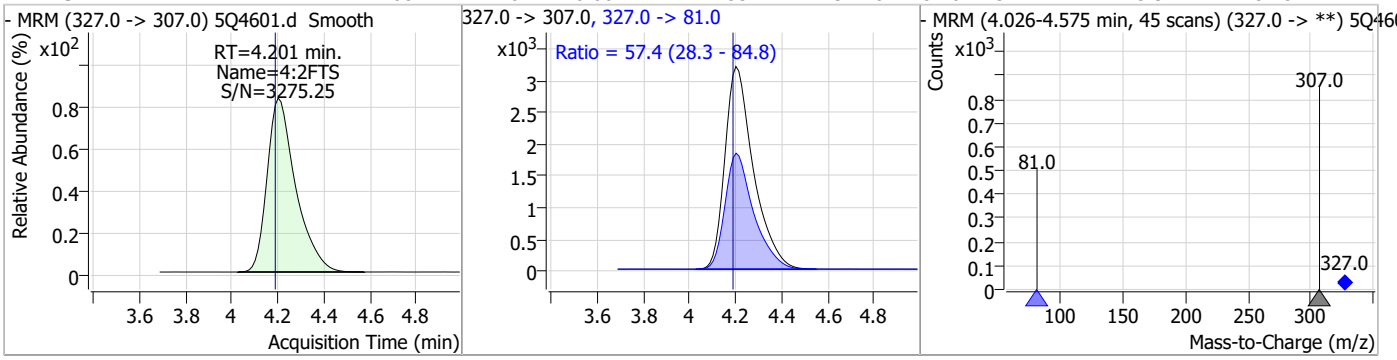
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.04	3.35	-0.01	6203				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.03	3.35	-0.01	16794	299.0 -> 99.0	41.1	20.4	61.3

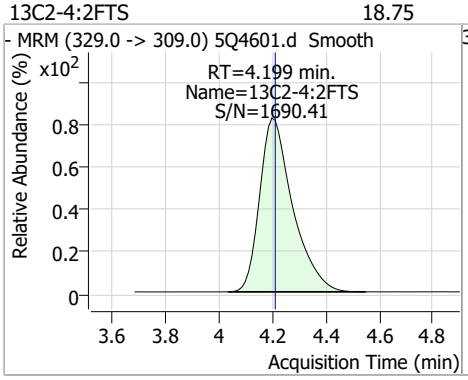


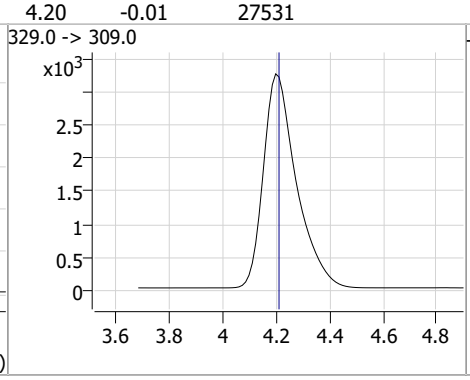
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.68	4.20	0.00	27255	327.0 -> 81.0	57.4	28.3	84.8

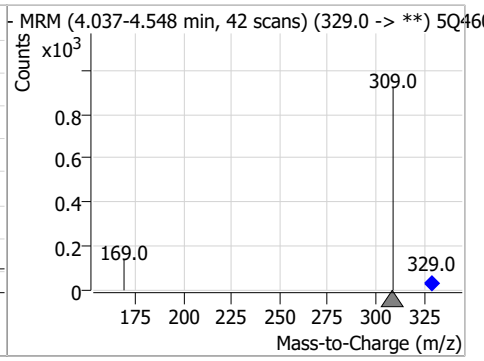


Perfluorinated Compounds by LC/MS/MS

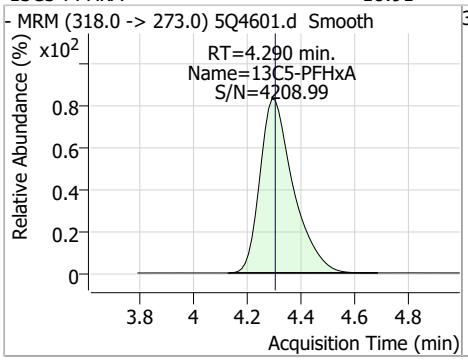
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.75	4.20	-0.01	27531				

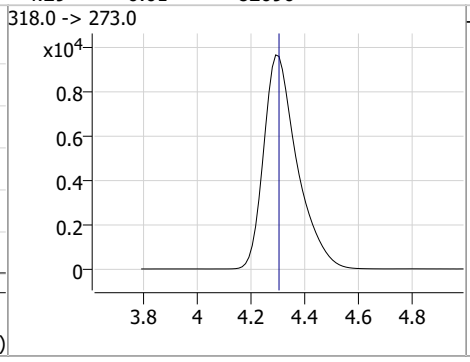


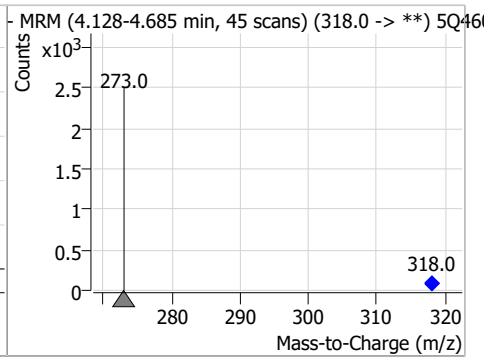




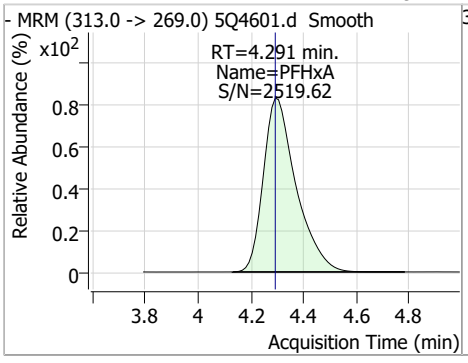
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.91	4.29	-0.01	82696				

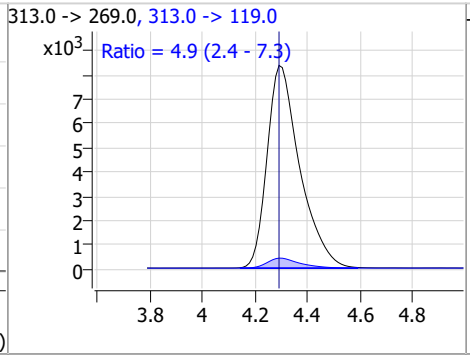


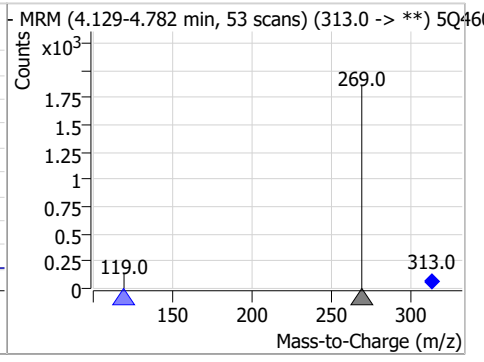




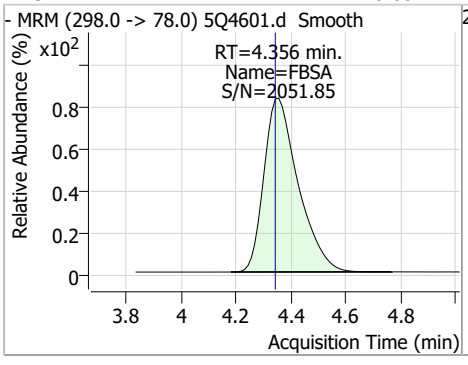
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.79	4.29	-0.01	71883	313.0 -> 119.0	4.9	2.4	7.3

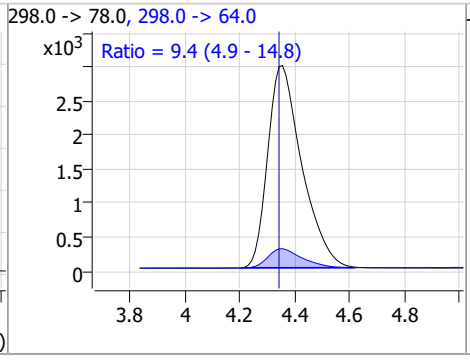


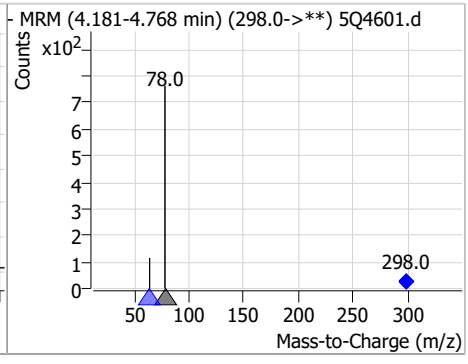




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	18.83	4.36	0.00	25825	298.0 -> 64.0	9.4	4.9	14.8

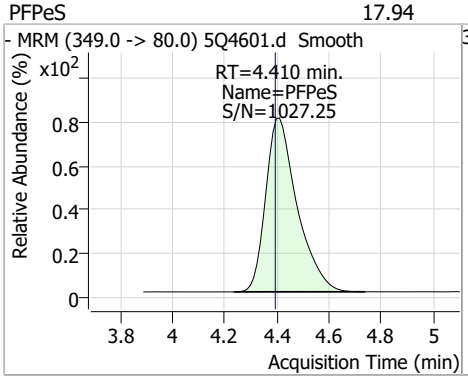


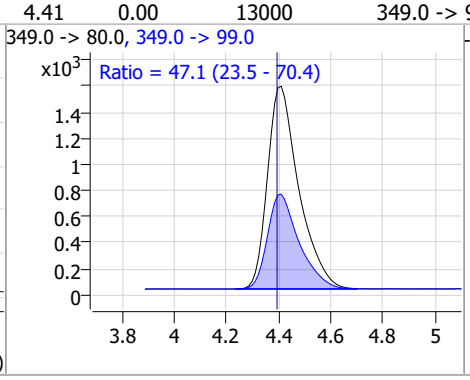


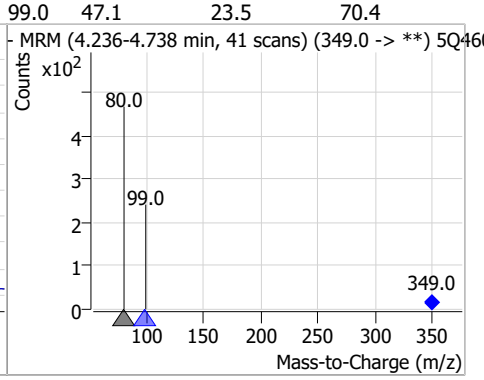


Perfluorinated Compounds by LC/MS/MS

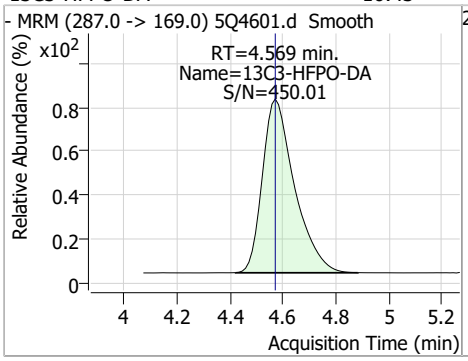
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.94	4.41	0.00	13000	349.0 -> 99.0	47.1	23.5	70.4

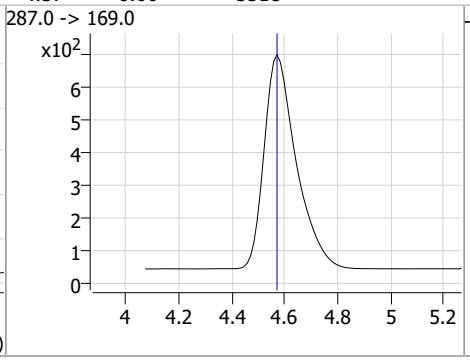


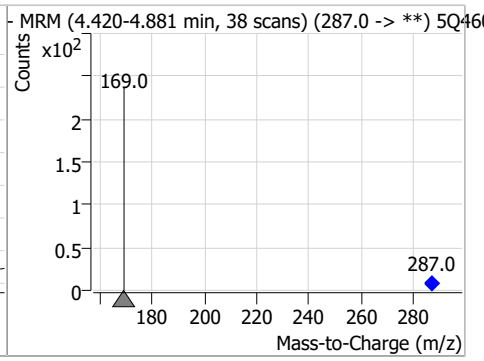




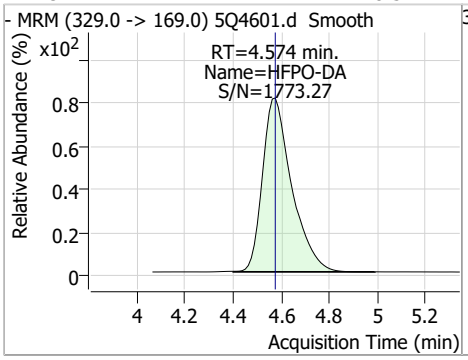
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.43	4.57	0.00	5518				

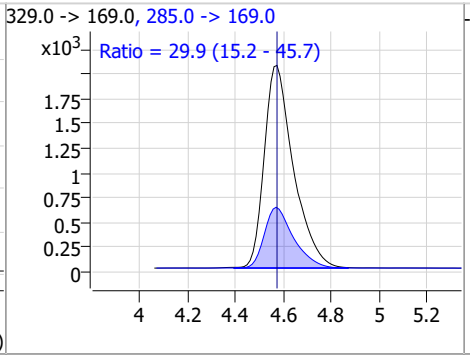


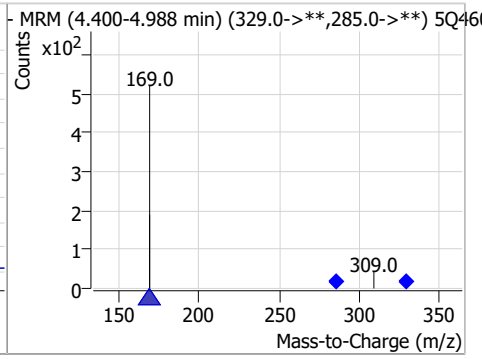




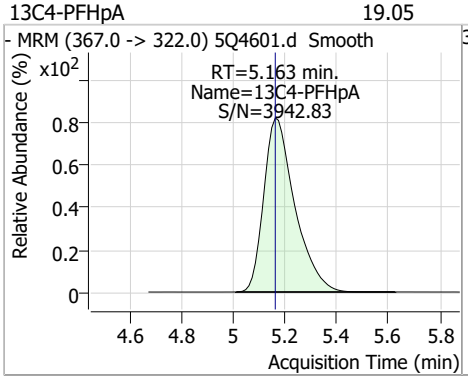
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.54	4.57	0.00	17261	285.0 -> 169.0	29.9	15.2	45.7

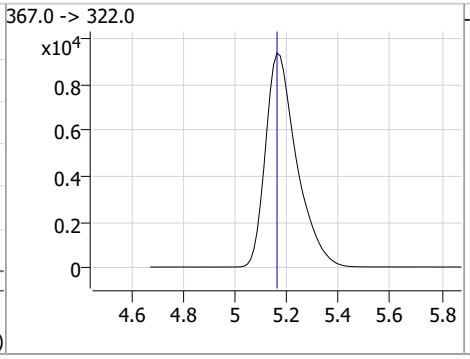


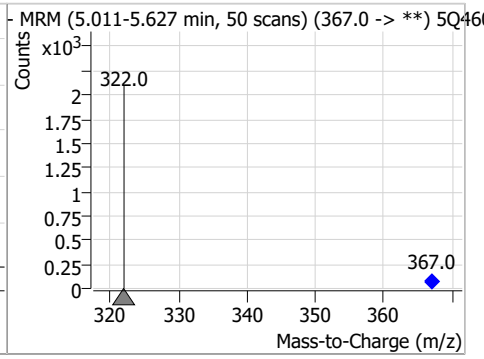




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.05	5.16	0.00	77765				

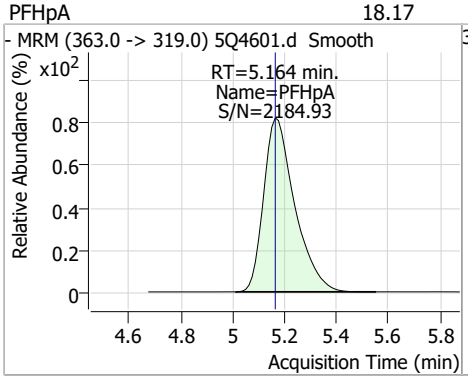


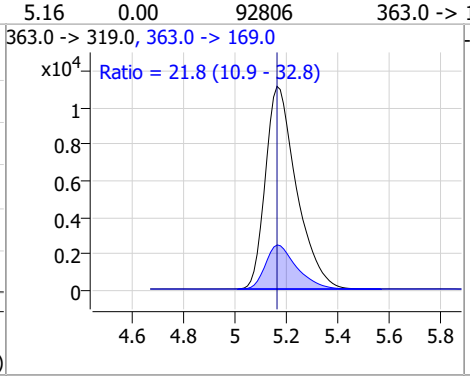


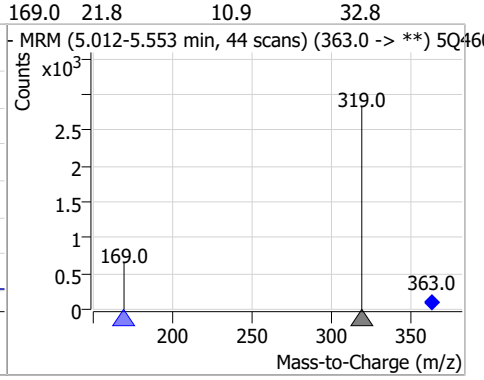


Perfluorinated Compounds by LC/MS/MS

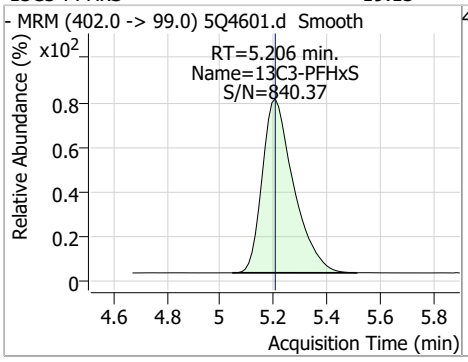
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.17	5.16	0.00	92806	363.0 -> 169.0	21.8	10.9	32.8

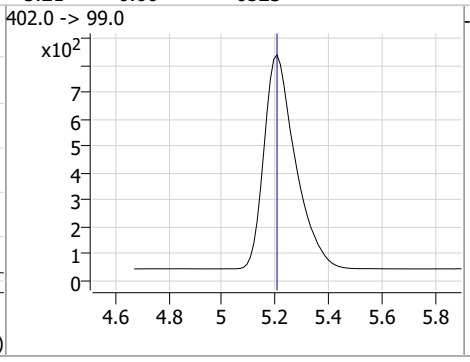


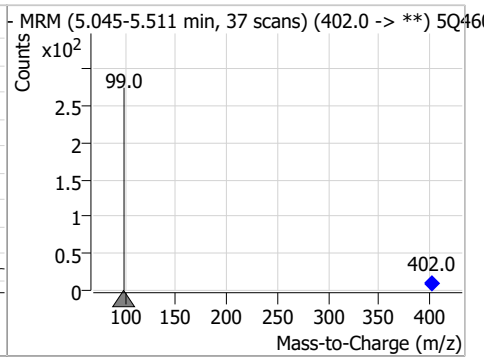




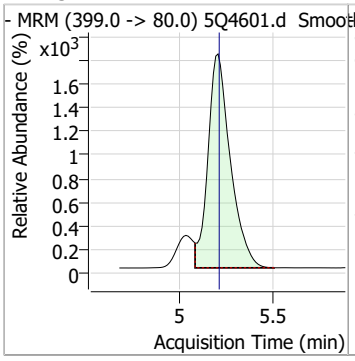
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.13	5.21	0.00	6523				

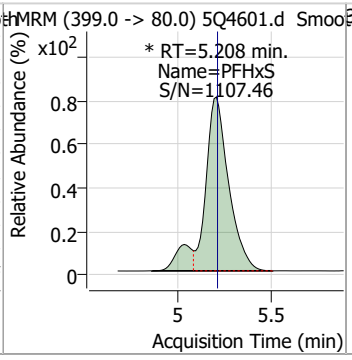


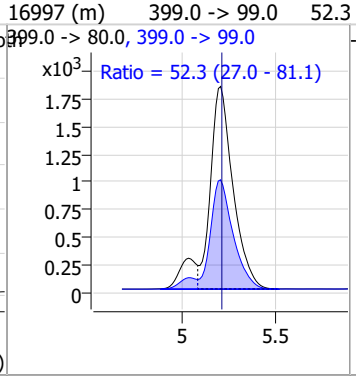


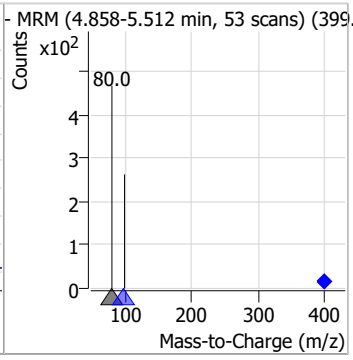


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.55	5.21	0.00	16997 (m)	399.0 -> 99.0	52.3	27.0	81.1

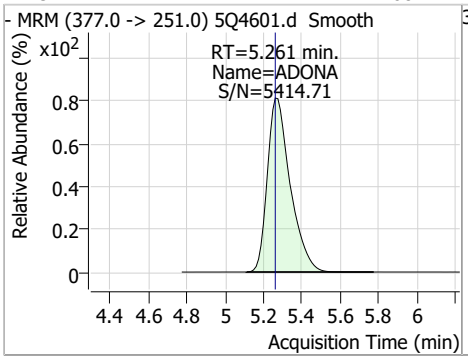


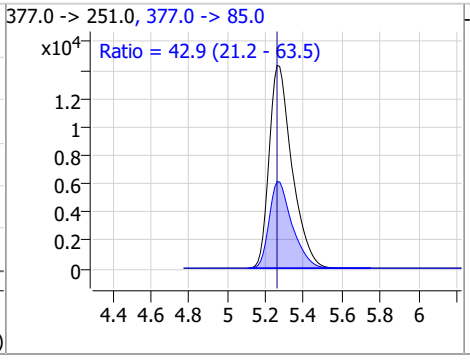


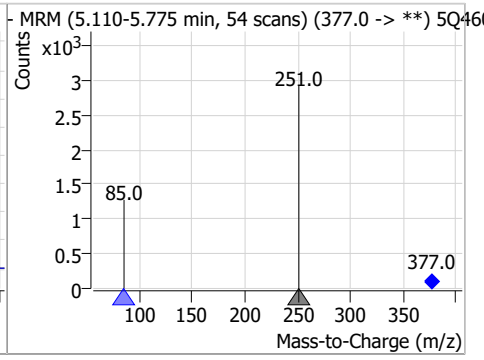




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.68	5.26	0.00	118575	377.0 -> 85.0	42.9	21.2	63.5

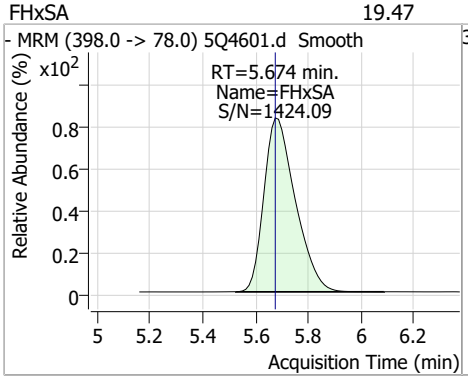


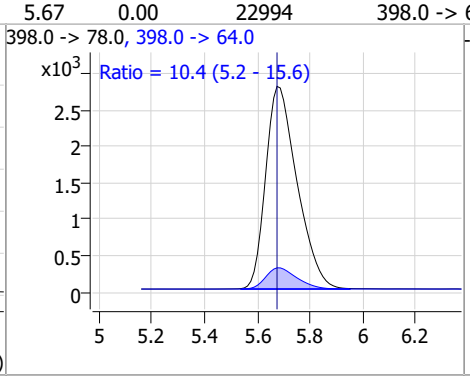


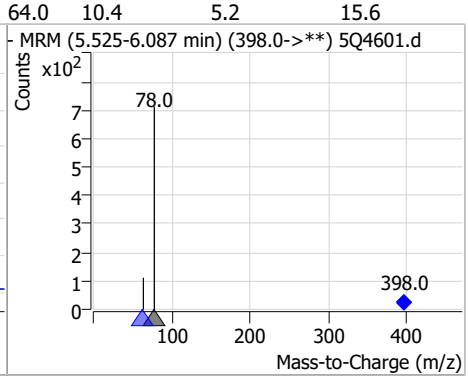


Perfluorinated Compounds by LC/MS/MS

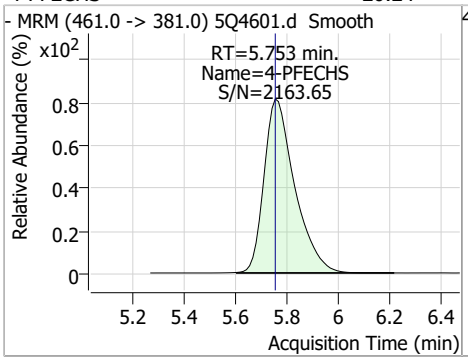
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.47	5.67	0.00	22994	398.0 -> 64.0	10.4	5.2	15.6

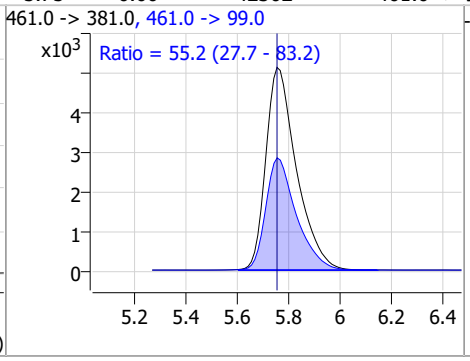


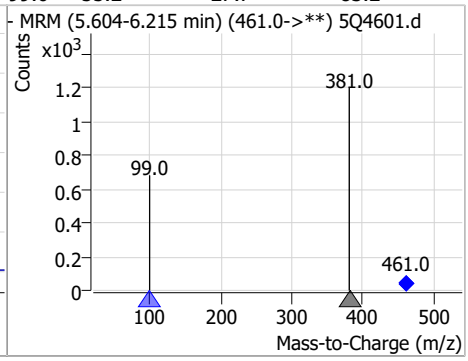




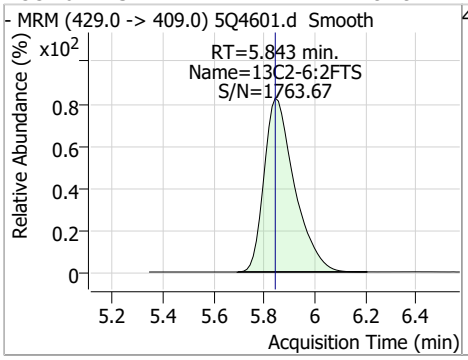
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.24	5.75	0.00	42302	461.0 -> 99.0	55.2	27.7	83.2

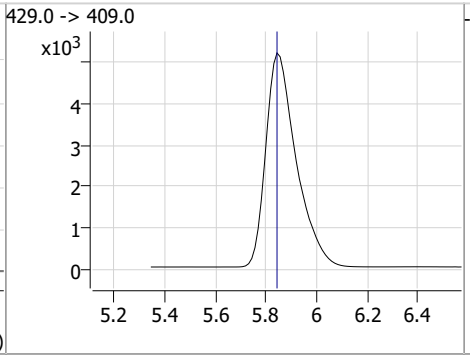


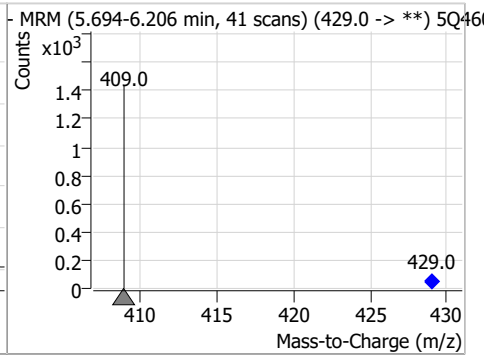




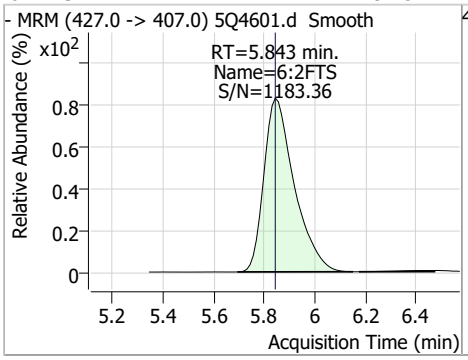
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.29	5.84	0.00	43128				

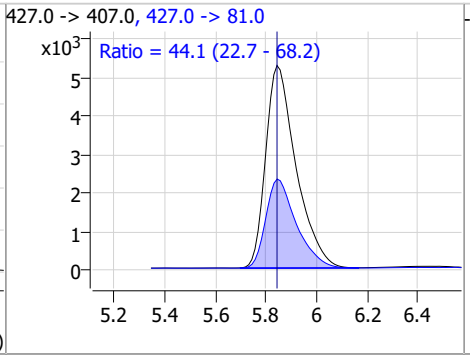


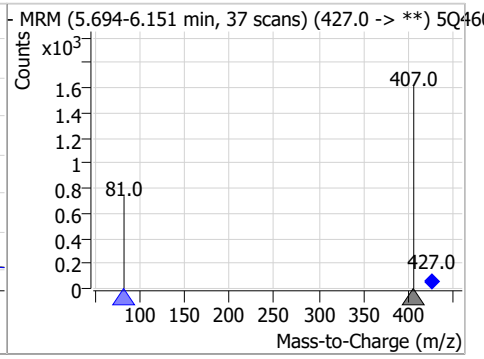




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.15	5.84	0.00	43815	427.0 -> 81.0	44.1	22.7	68.2

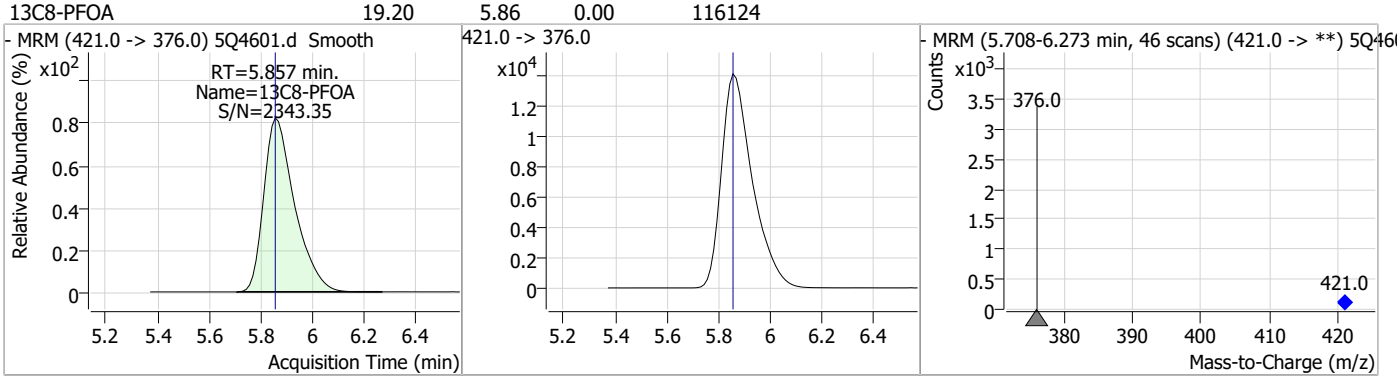




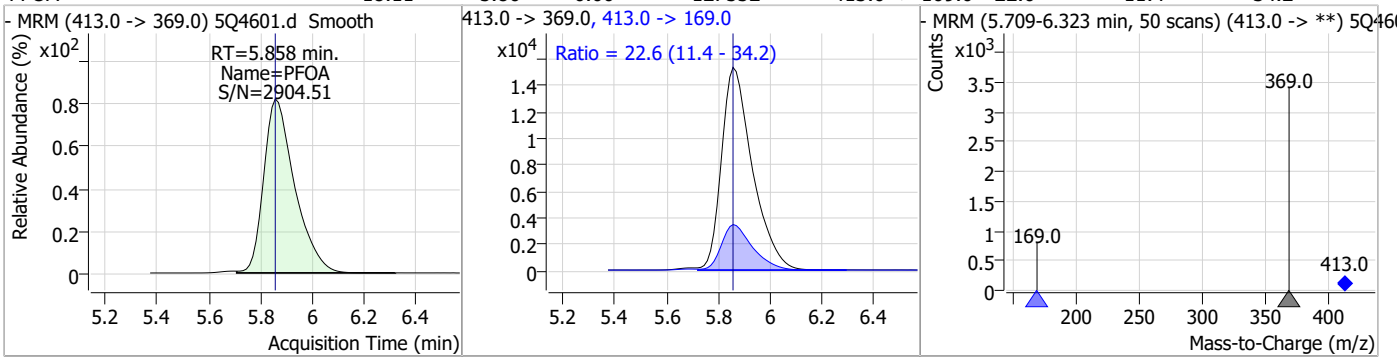


Perfluorinated Compounds by LC/MS/MS

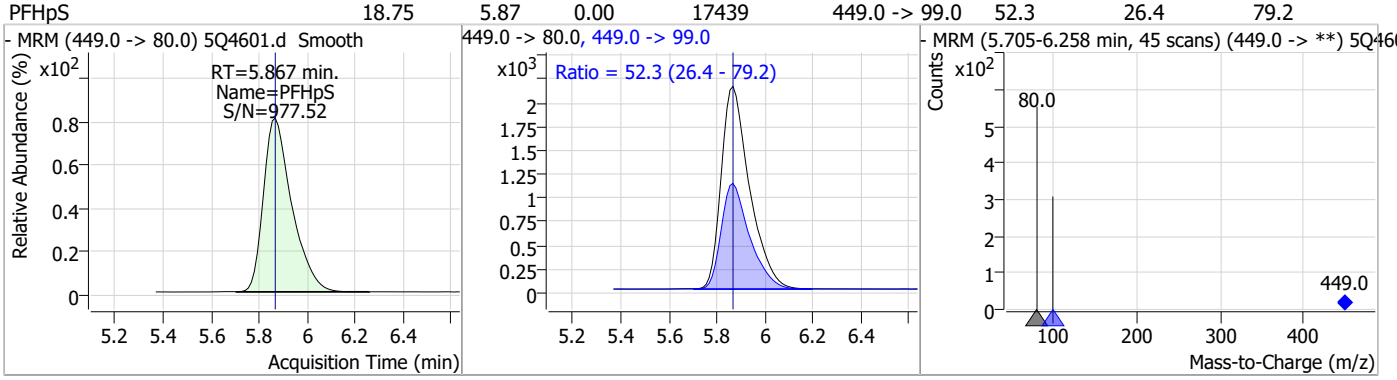
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.20	5.86	0.00	116124				



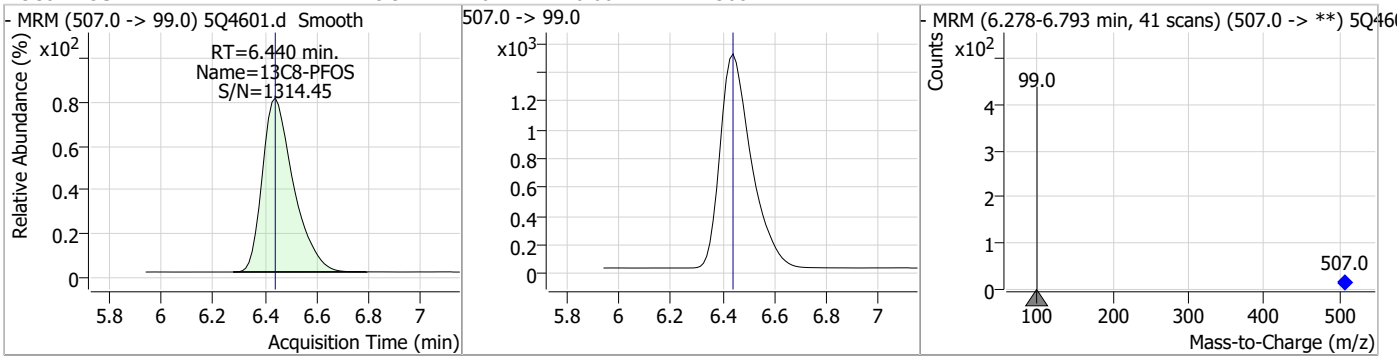
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.11	5.86	0.00	127552	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.75	5.87	0.00	17439	449.0 -> 99.0	52.3	26.4	79.2

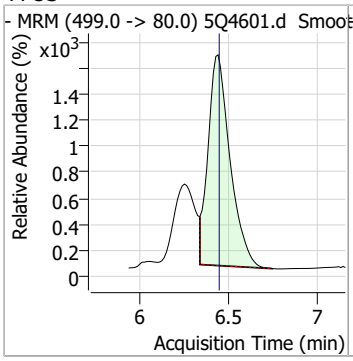


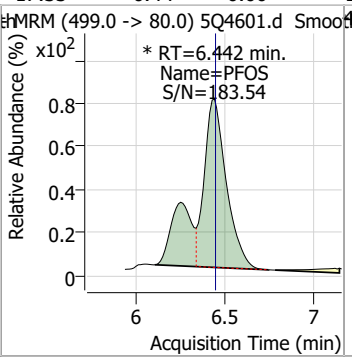
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.94	6.44	0.00	12368				

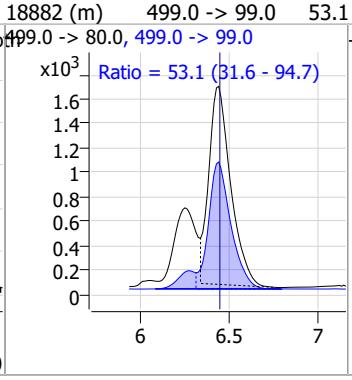


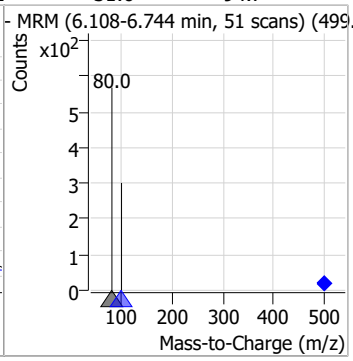
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.33	6.44	0.00	18882 (m)	499.0 -> 99.0	53.1	31.6	94.7

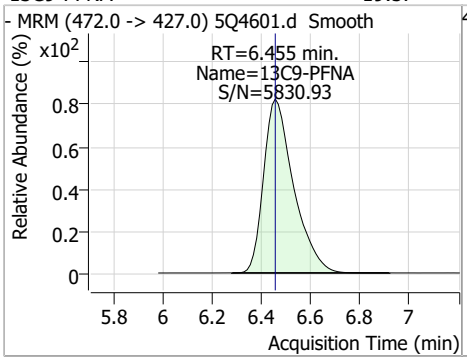


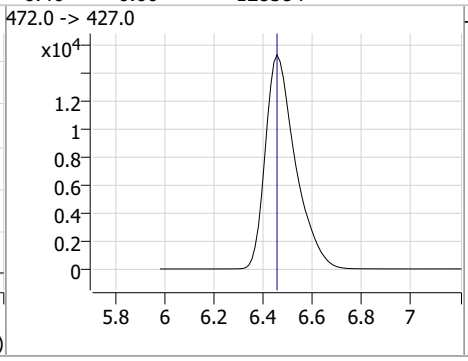


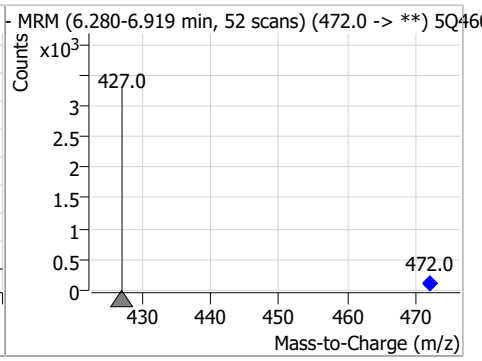




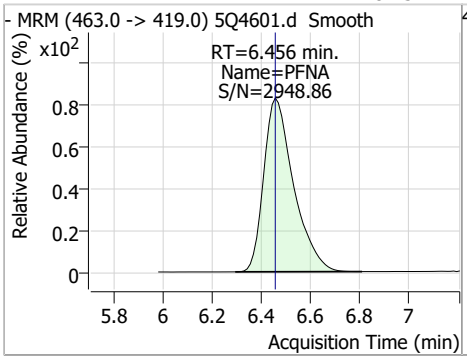
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.57	6.46	0.00	128584				

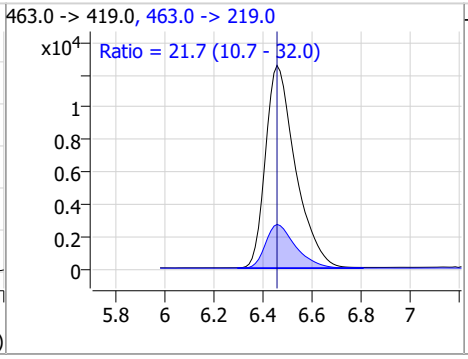


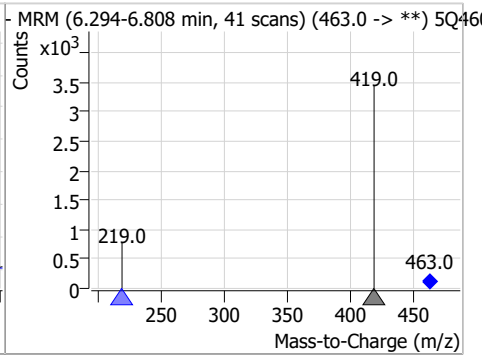




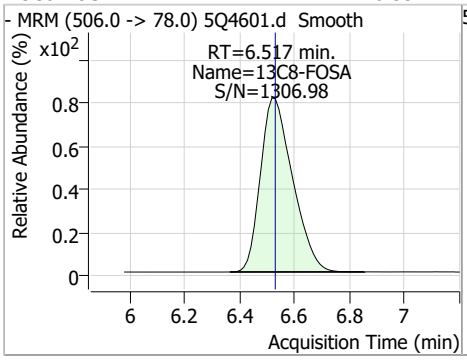
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.25	6.46	0.00	105120	463.0 -> 219.0	21.7	10.7	32.0

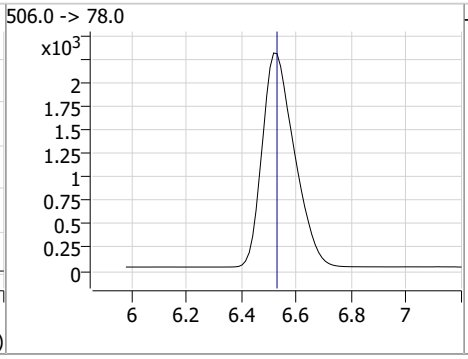


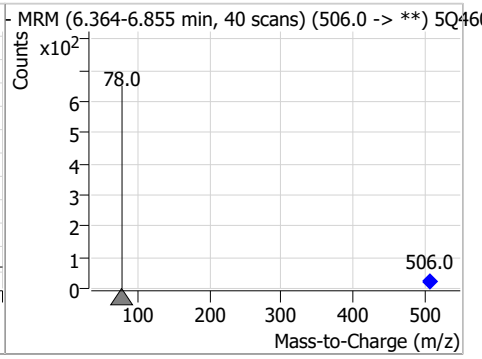




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.33	6.52	-0.01	18534				

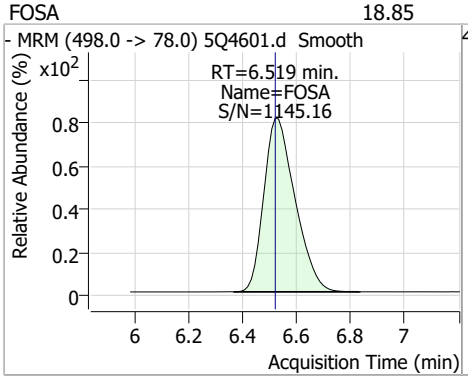


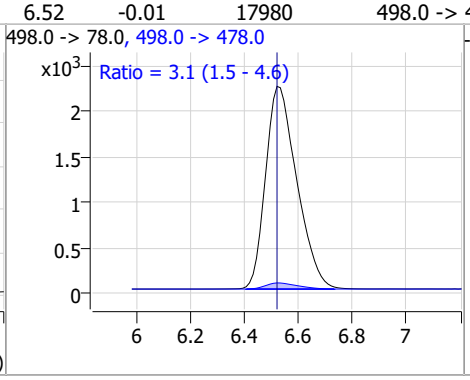


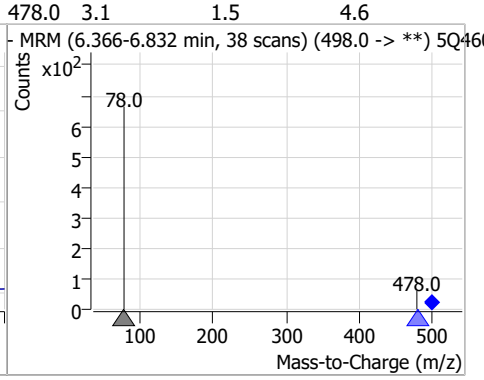


Perfluorinated Compounds by LC/MS/MS

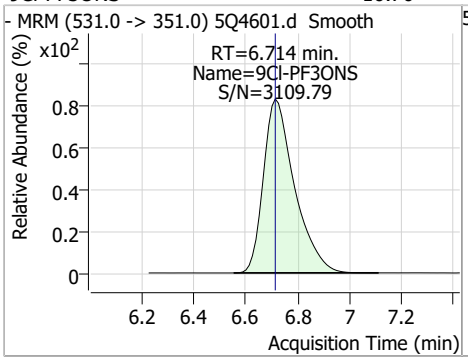
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.85	6.52	-0.01	17980	498.0 -> 478.0	3.1	1.5	4.6

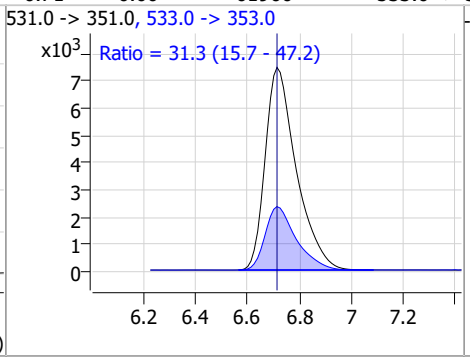


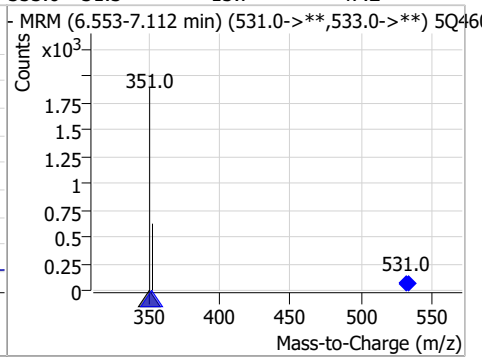




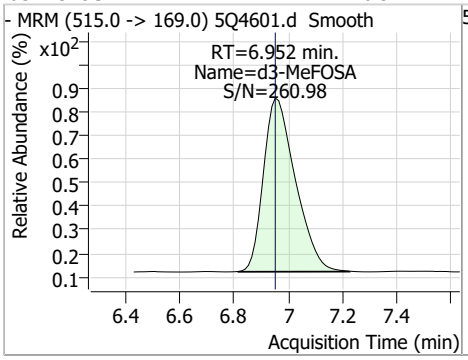
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	16.70	6.71	0.00	61966	533.0 -> 353.0	31.3	15.7	47.2

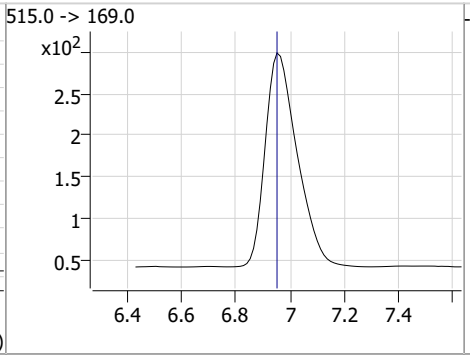


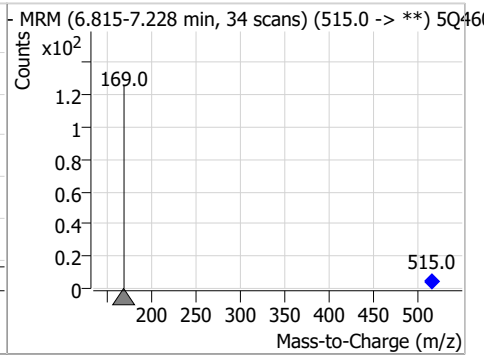




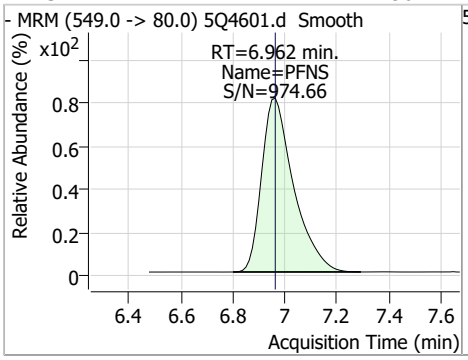
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	6.94	6.95	0.00	2115				

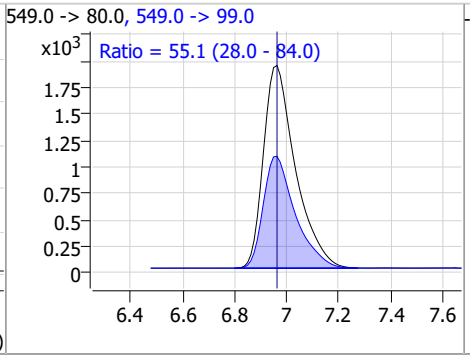


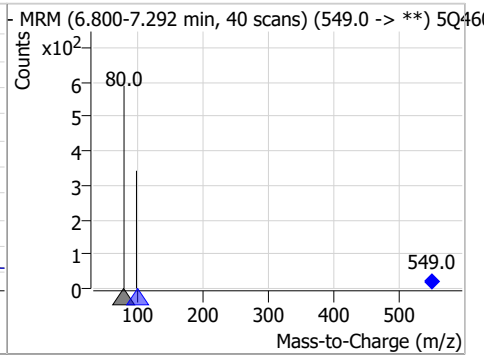




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	17.96	6.96	0.00	16397	549.0 -> 99.0	55.1	28.0	84.0

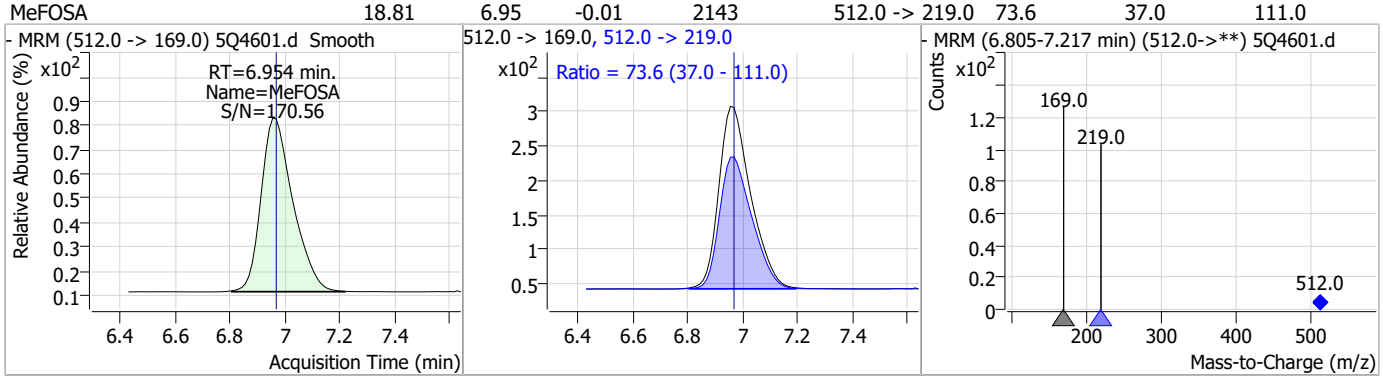




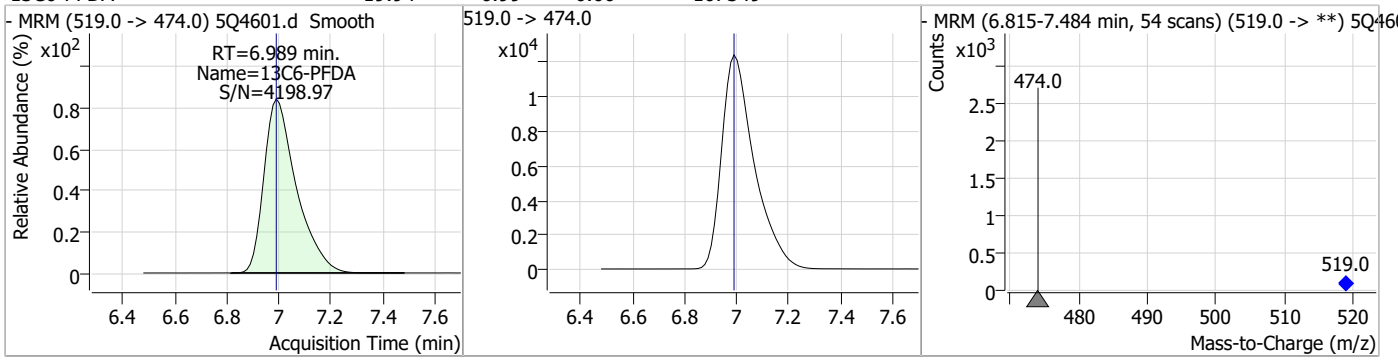


Perfluorinated Compounds by LC/MS/MS

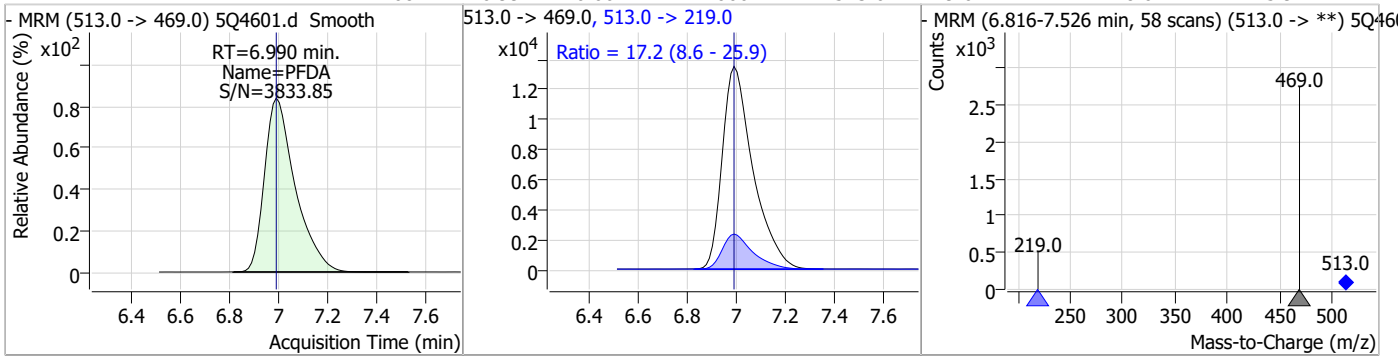
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.81	6.95	-0.01	2143	512.0 -> 219.0	73.6	37.0	111.0



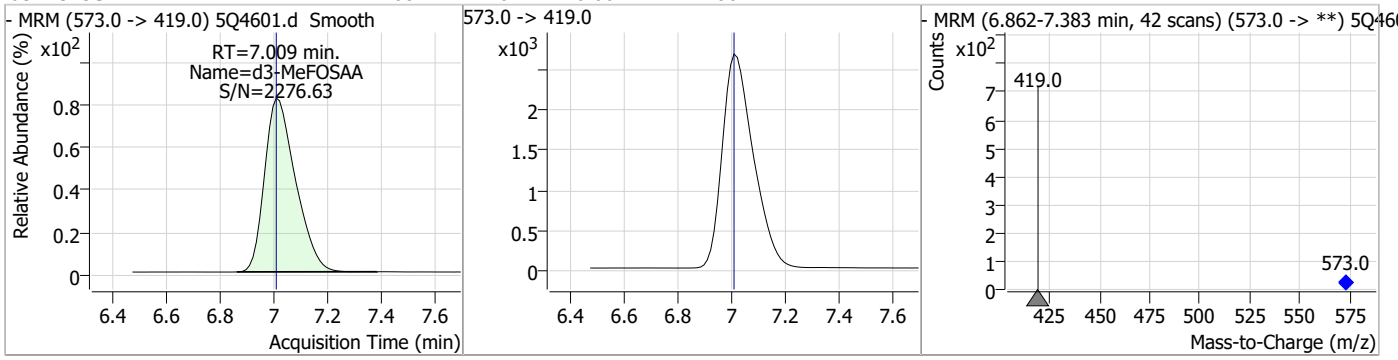
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.94	6.99	0.00	107349				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.68	6.99	0.00	116601	513.0 -> 219.0	17.2	8.6	25.9

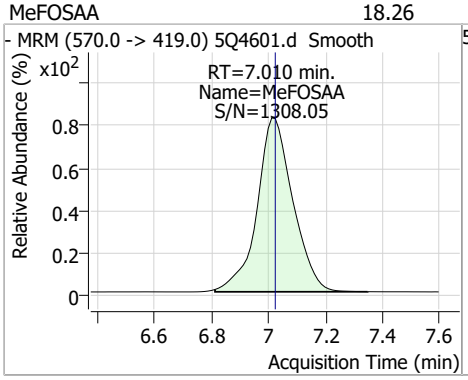


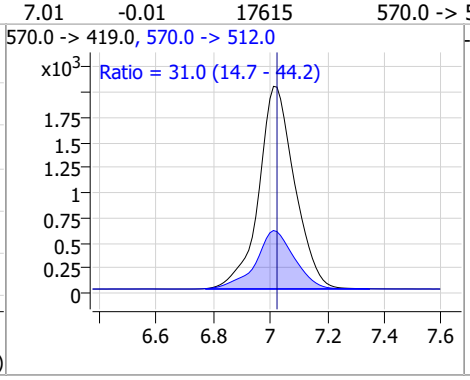
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.68	7.01	0.00	21067				

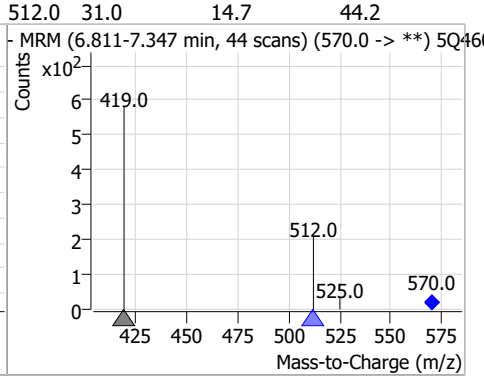


Perfluorinated Compounds by LC/MS/MS

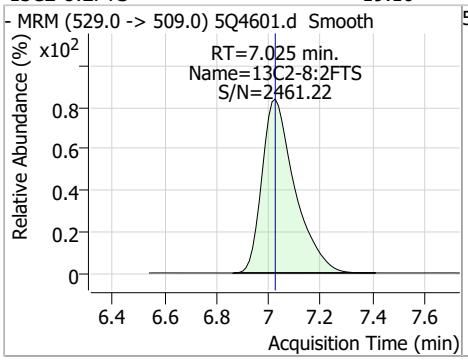
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.26	7.01	-0.01	17615	570.0 -> 512.0	31.0	14.7	44.2

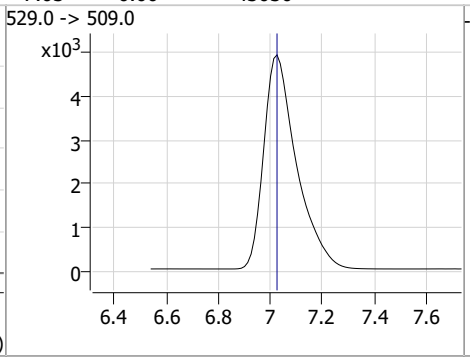


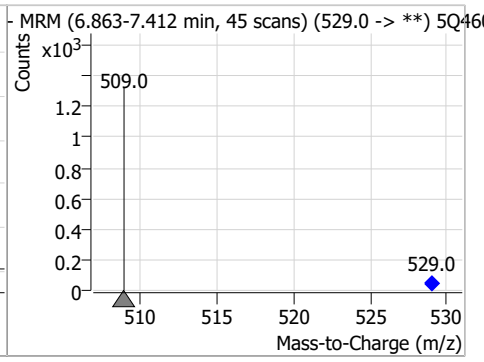




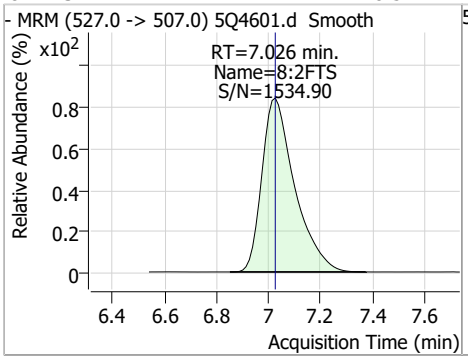
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.16	7.03	0.00	43030				

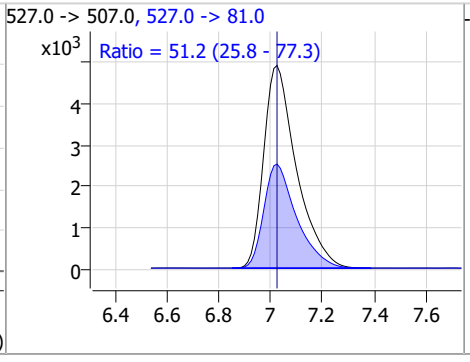


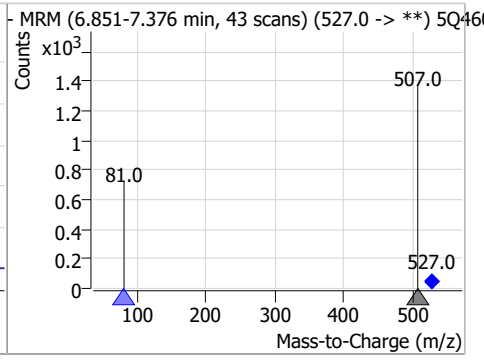




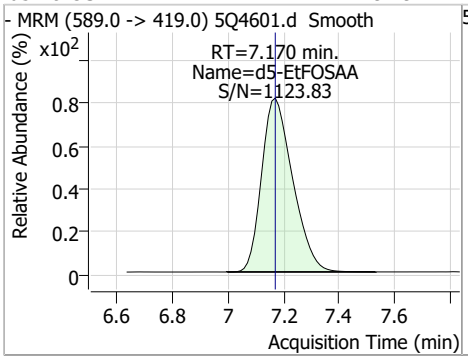
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.57	7.03	0.00	42591	527.0 -> 81.0	51.2	25.8	77.3

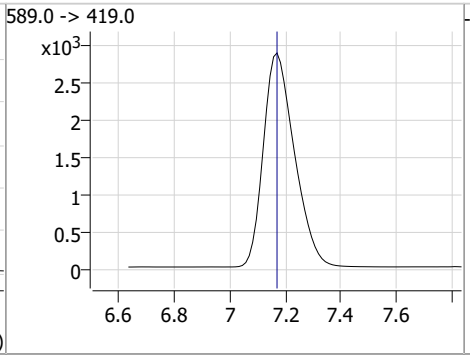


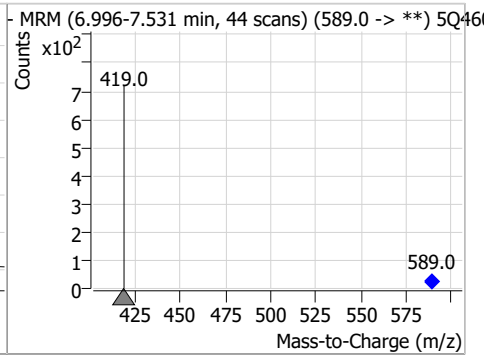




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.79	7.17	0.00	22188				

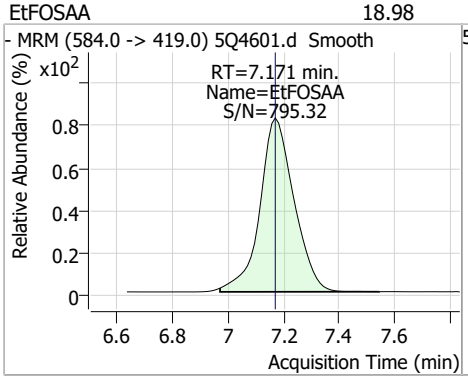


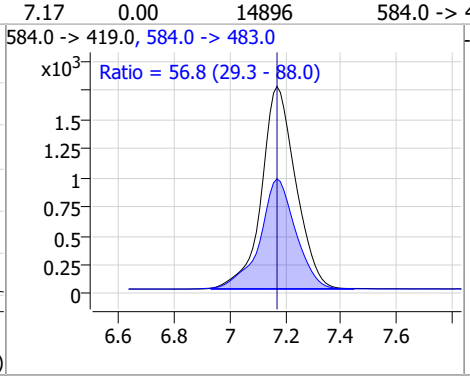


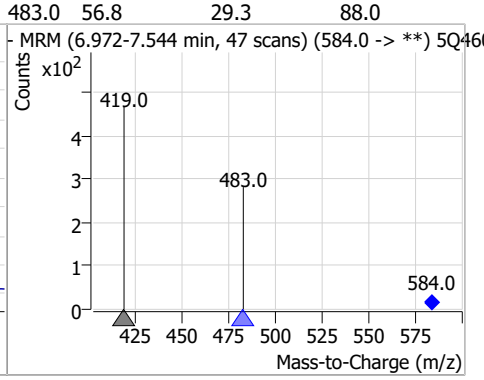


Perfluorinated Compounds by LC/MS/MS

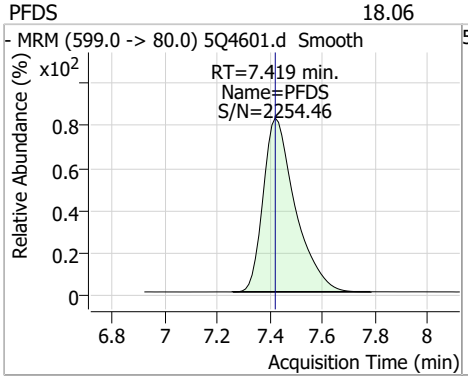
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.98	7.17	0.00	14896	584.0 -> 483.0	56.8	29.3	88.0

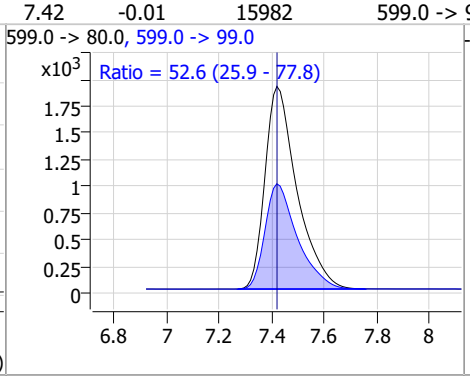


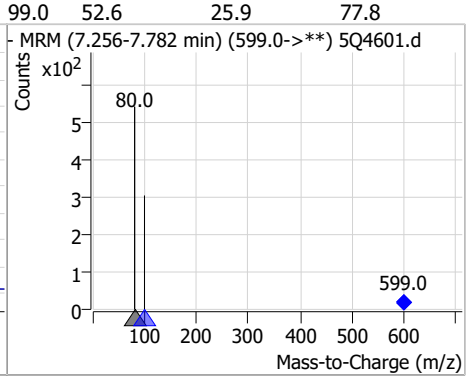




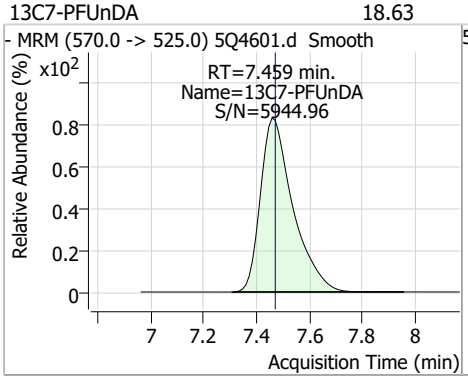
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.06	7.42	-0.01	15982	599.0 -> 99.0	52.6	25.9	77.8

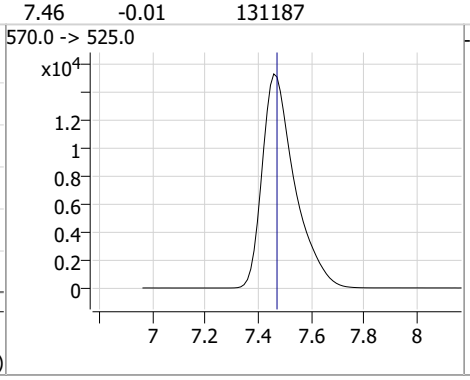


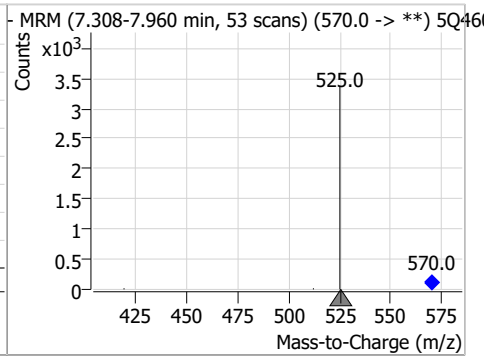




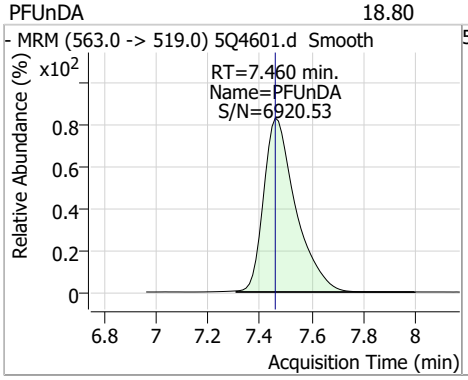
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.63	7.46	-0.01	131187				

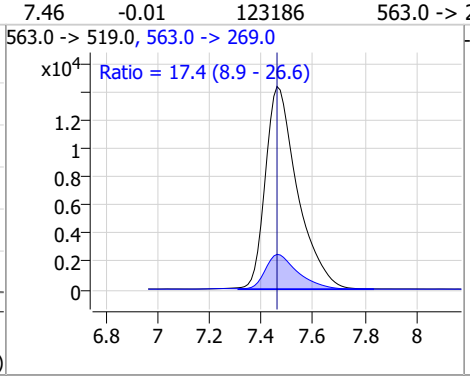


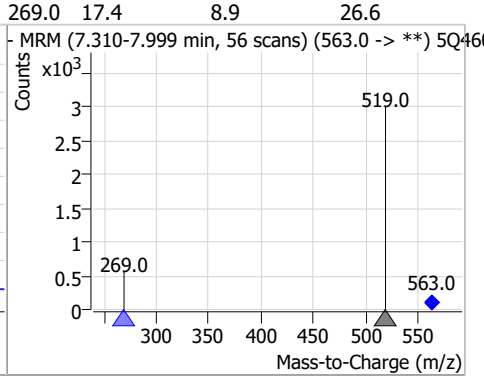




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.80	7.46	-0.01	123186	563.0 -> 269.0	17.4	8.9	26.6

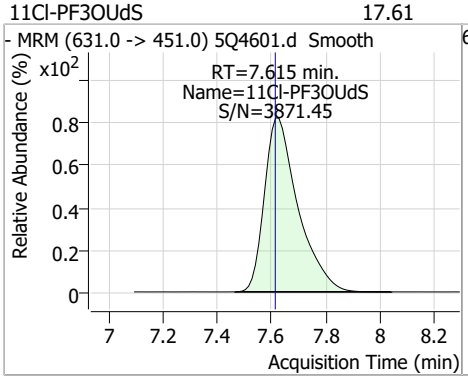


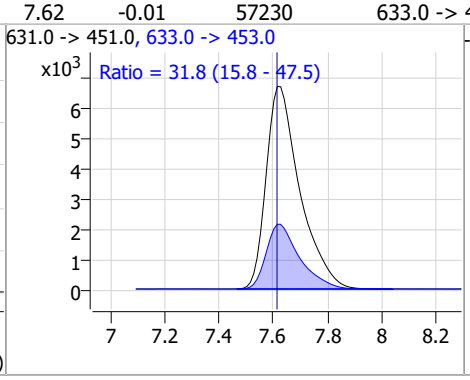


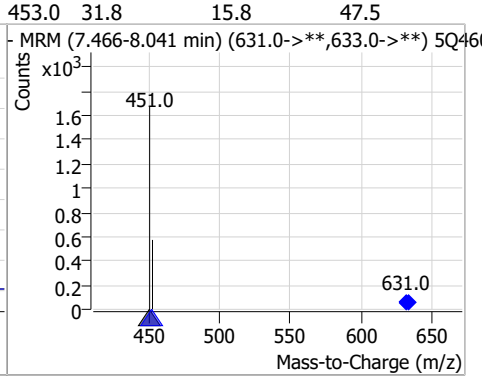


Perfluorinated Compounds by LC/MS/MS

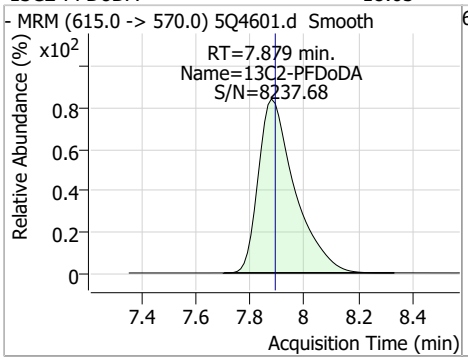
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.61	7.62	-0.01	57230	633.0 -> 453.0	31.8	15.8	47.5

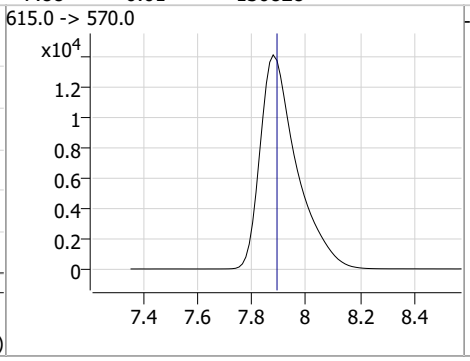


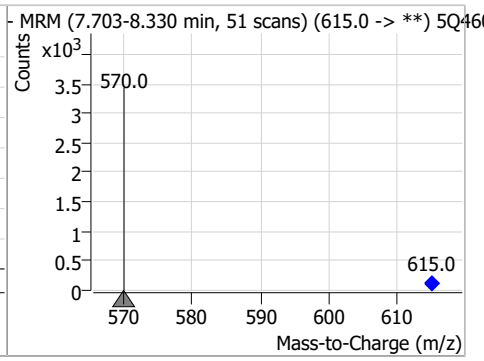




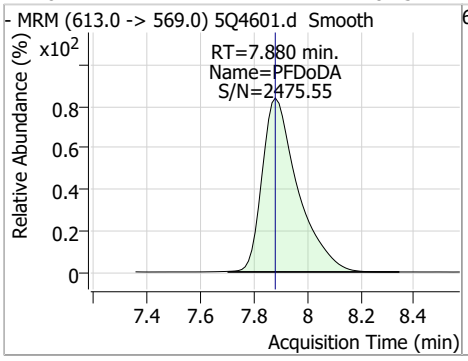
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.05	7.88	-0.01	130828				

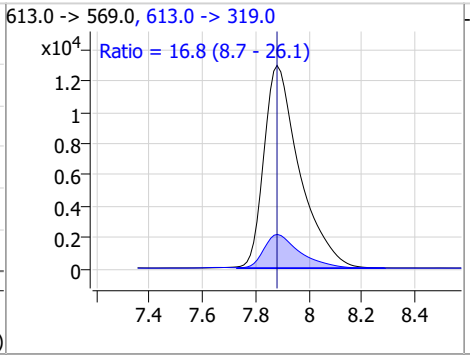


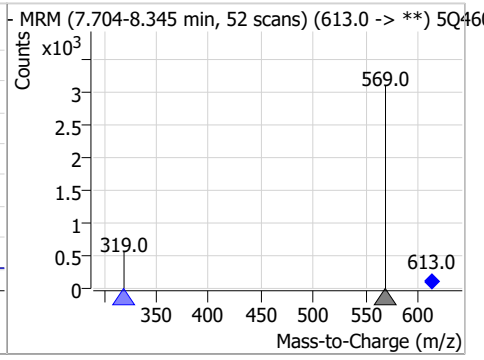




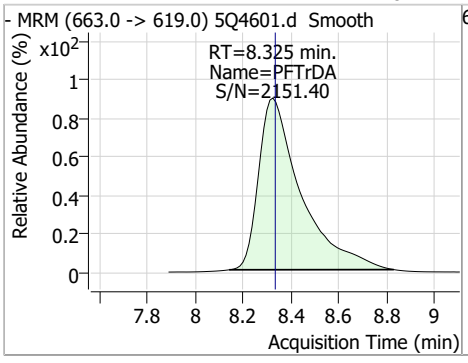
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.75	7.88	-0.01	120321	613.0 -> 319.0	16.8	8.7	26.1

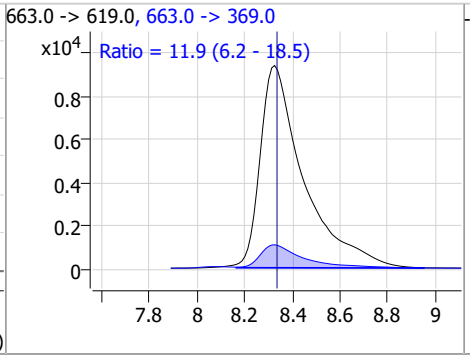


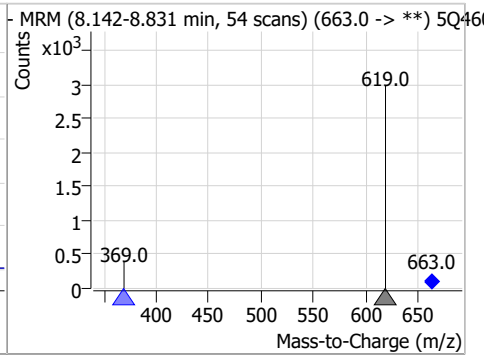




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	14.87	8.33	-0.02	114080	663.0 -> 369.0	11.9	6.2	18.5

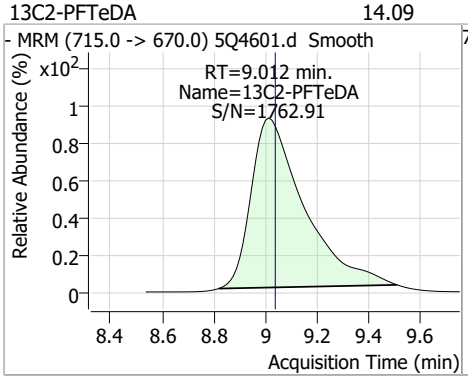


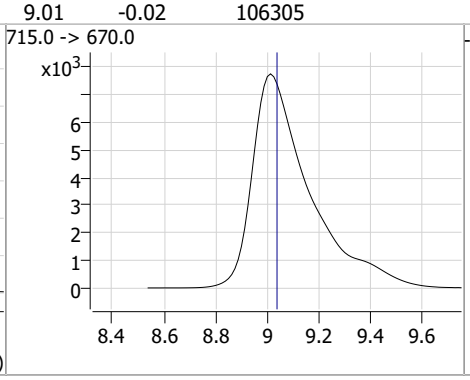


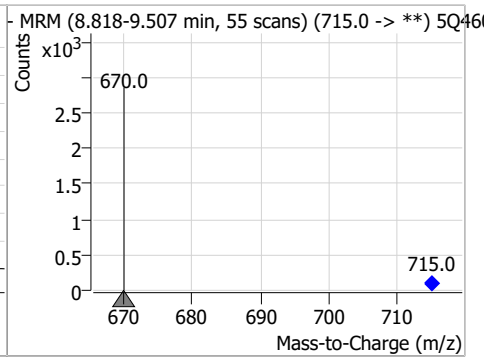


Perfluorinated Compounds by LC/MS/MS

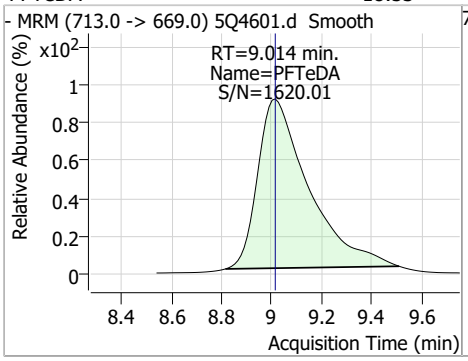
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.09	9.01	-0.02	106305				

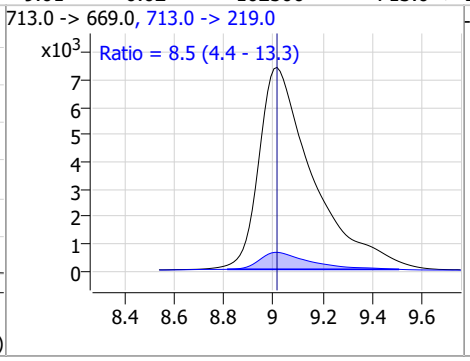


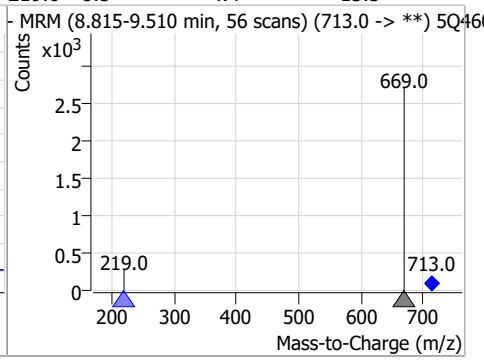




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.53	9.01	-0.02	102506	713.0 -> 219.0	8.5	4.4	13.3







Manual Integration Approval Summary

Sample Number: OP92794-BS
Lab FileID: 5Q4601.D
Injection Time: 09/14/22 21:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/21/22 21:57

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65707.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:17:43 AM
Sample Name : op92762-ms
Vial : P6-B5
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,270,,,1,1,water

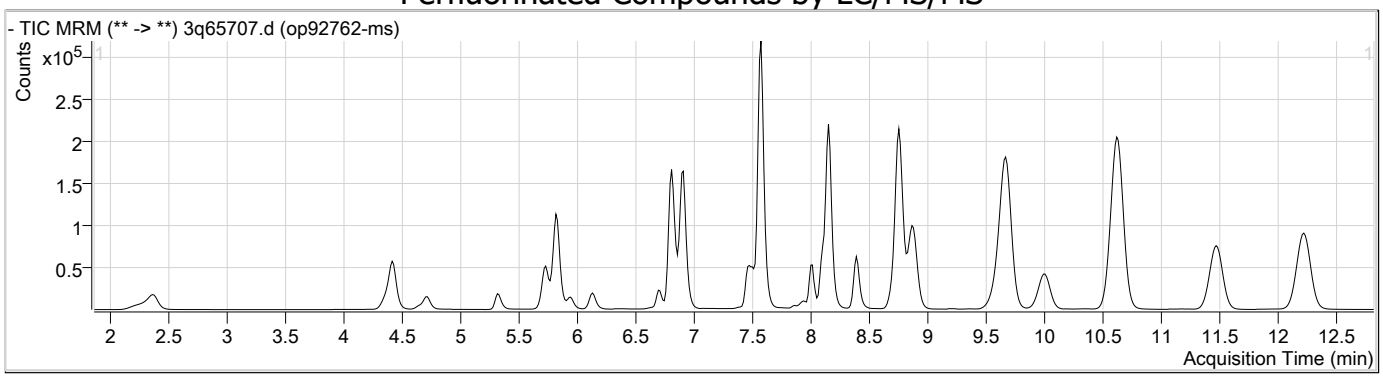
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.352	217.0 -> 172.0	112400	20.00	µg/L	-0.013
M5-PFPeA	4.411	268.0 -> 223.0	166728	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	223920	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	220349	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	310348	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	345045	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	467660	20.00	µg/L	0.013
M7-PFUnDA	9.664	570.0 -> 525.0	588451	20.00	µg/L	-0.013
M2-PFDoDA	10.609	615.0 -> 570.0	767618	20.00	µg/L	-0.025
M2-PFTeDA	12.210	715.0 -> 670.0	306256	20.00	µg/L	-0.025
M8-FOSA	7.503	506.0 -> 78.0	51717	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	16020	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	16800	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	29415	20.00	µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	86589	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	125311	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	223061	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	69929	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	17688	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	3011	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	69473	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	86589	14.99	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%		
13C2-6:2FTS	7.571	429.0 -> 409.0	125311	16.01	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.0%		
13C2-8:2FTS	8.860	529.0 -> 509.0	223061	15.35	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.7%		
13C2-PFDoDA	10.609	615.0 -> 570.0	767618	14.19	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.9%		
13C2-PFTeDA	12.210	715.0 -> 670.0	306256	13.52	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.6%		
13C3-PFBS	4.704	302.0 -> 99.0	16020	15.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.7%		
13C3-PFHxS	6.834	402.0 -> 99.0	16800	13.00	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.0%		
13C4-PFBA	2.352	217.0 -> 172.0	112400	14.13	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.6%		
13C4-PFHpA	6.805	367.0 -> 322.0	220349	14.62	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.1%		
13C5-PFHxA	5.813	318.0 -> 273.0	223920	14.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%		
13C5-PFPeA	4.411	268.0 -> 223.0	166728	14.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.9%		
13C6-PFDA	8.751	519.0 -> 474.0	467660	14.72	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

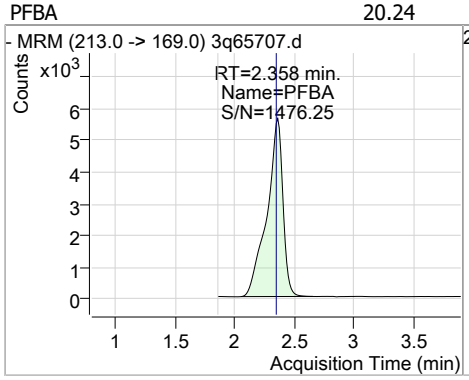
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.6%			
13C7-PFUnDA	9.664	570.0 -> 525.0	588451	14.25	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.3%			
13C8-FOSA	7.503	506.0 -> 78.0	51717	13.69	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.5%			
13C8-PFOA	7.573	421.0 -> 376.0	310348	15.42	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.1%			
13C8-PFOS	8.123	507.0 -> 99.0	29415	14.99	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.0%			
13C9-PFNA	8.150	472.0 -> 427.0	345045	15.62	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.1%			
d3-MeFOSAA	7.991	573.0 -> 419.0	69929	15.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.8%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	17686	13.78	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.9%			
d3-MeFOSA	7.841	515.0 -> 169.0	3011	3.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 17.0%			
d5-EtFOSAA	8.077	589.0 -> 419.0	69474	14.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.2%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	93119	20.40	µg/L		99
6:2FTS	7.571	427.0 -> 407.0	133279	20.47	µg/L		100
8:2FTS	8.861	527.0 -> 507.0	225318	19.95	µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	57825	20.87	µg/L	m	98
FOSA	7.504	498.0 -> 78.0	51019	20.73	µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	62701	20.08	µg/L	m	98
PFBA	2.358	213.0 -> 169.0	51990	20.24	µg/L		100
PFBS	4.694	299.0 -> 80.0	47095	20.69	µg/L		100
PFDA	8.752	513.0 -> 469.0	460397	20.43	µg/L		100
PFDoDA	10.613	613.0 -> 569.0	724486	20.32	µg/L		100
PFDS	9.548	599.0 -> 80.0	53101	20.71	µg/L		100
PFHpA	6.807	363.0 -> 319.0	319020	20.23	µg/L		100
PFHpS	7.557	449.0 -> 80.0	42283	22.04	µg/L		100
PFHxA	5.814	313.0 -> 269.0	242199	20.29	µg/L		100
PFHxS	6.835	399.0 -> 80.0	48693	24.85	µg/L	m	99
PFNA	8.151	463.0 -> 419.0	300324	20.10	µg/L		99
PFNS	8.680	549.0 -> 80.0	44625	18.60	µg/L		100
PFOA	7.573	413.0 -> 369.0	388366	20.49	µg/L	m	99
PFOS	8.124	499.0 -> 80.0	68135	28.12	µg/L	m	98
PFPeA	4.414	263.0 -> 219.0	150326	20.65	µg/L		100
PFPeS	5.932	349.0 -> 80.0	37145	21.01	µg/L	m	99
PFTeDA	12.214	713.0 -> 669.0	427231	20.60	µg/L		100
PFTrDA	11.459	663.0 -> 619.0	570853	20.95	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	645979	20.38	µg/L		100
11Cl-PF3OUdS	9.984	631.0 -> 451.0	233017	20.92	µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	168541	20.93	µg/L		99
ADONA	6.903	377.0 -> 251.0	480976	22.58	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	43753	20.76	µg/L		100
MeFOSA	7.854	512.0 -> 169.0	3298	20.35	µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	120001	17.15	µg/L		100
FBSA	5.315	298.0 -> 78.0	66350	17.39	µg/L		100
FHxSA	6.688	398.0 -> 78.0	72081	15.75	µg/L		99

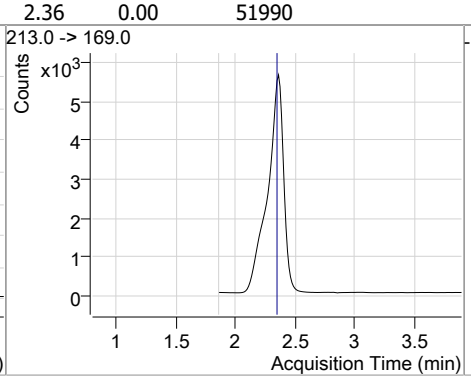
 # = Qualifier out of range, m = manually integrated, + = Area summed

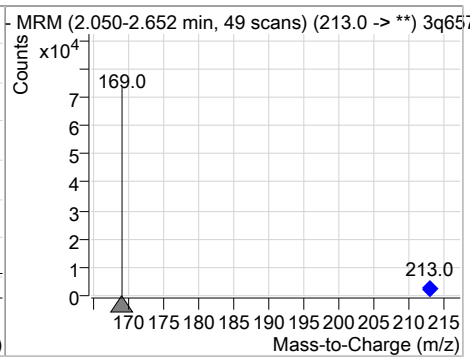
Perfluorinated Compounds by LC/MS/MS



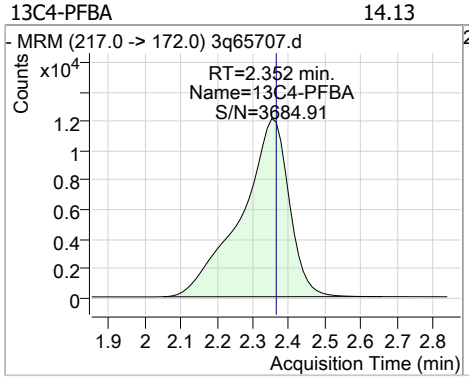
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.24	2.36	0.00	51990				

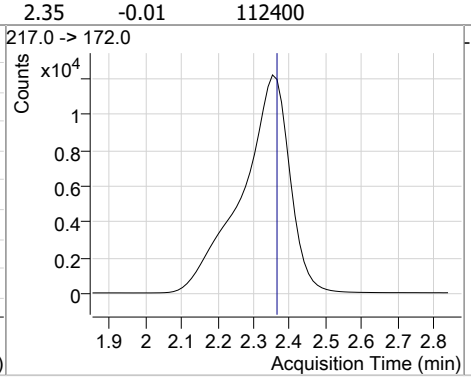


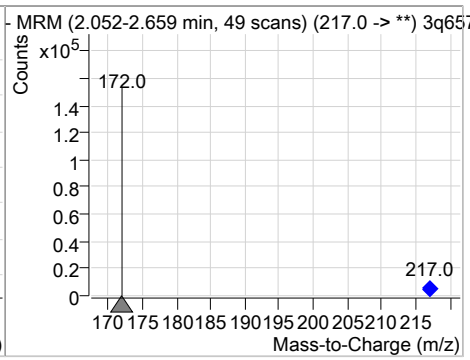




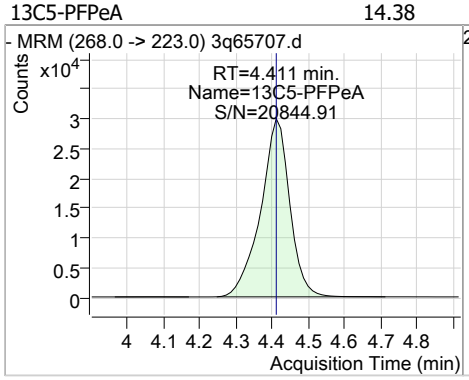
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	14.13	2.35	-0.01	112400				

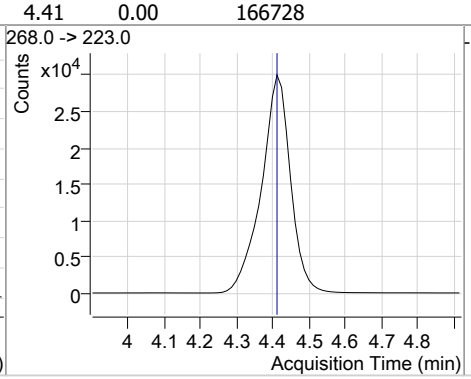


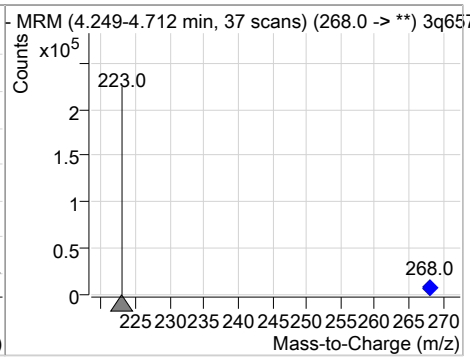




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.38	4.41	0.00	166728				

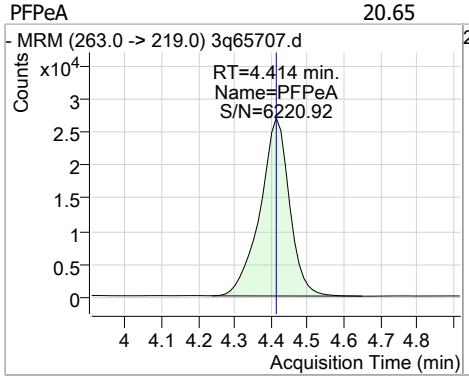


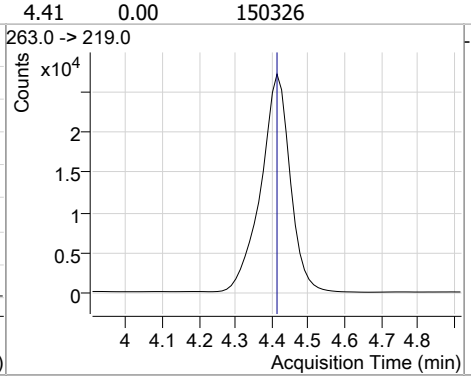


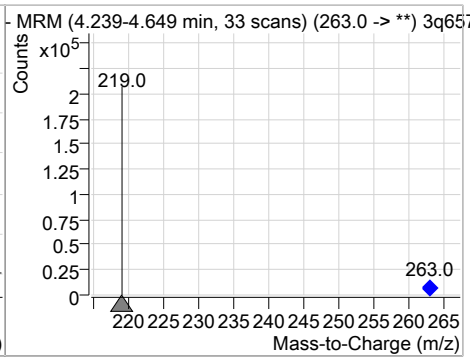


Perfluorinated Compounds by LC/MS/MS

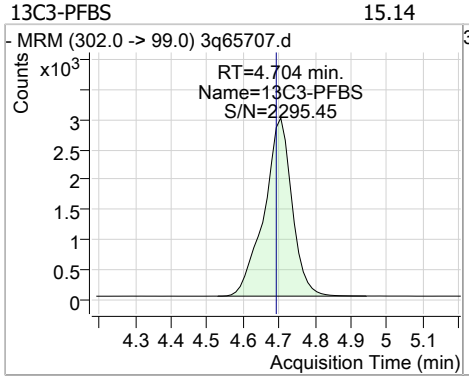
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.65	4.41	0.00	150326				

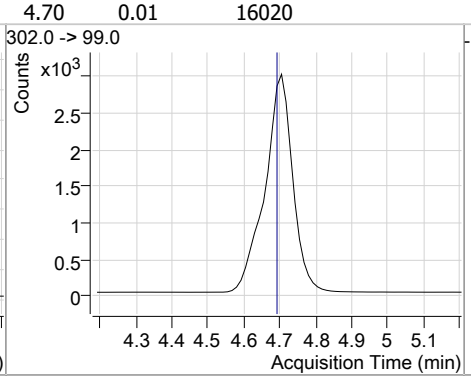


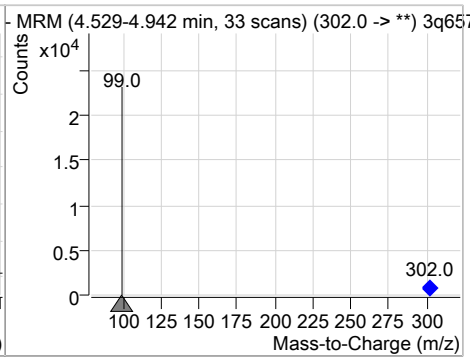




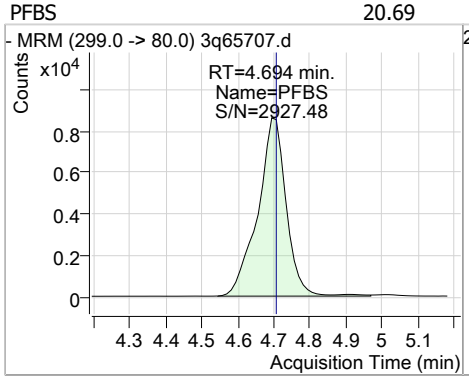
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.14	4.70	0.01	16020				

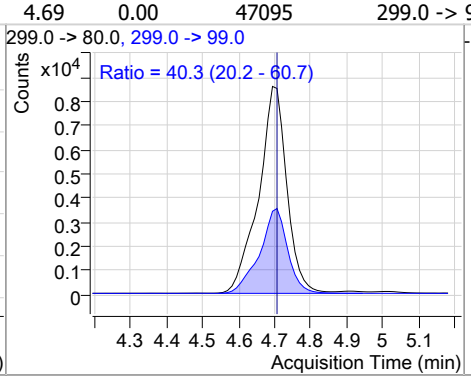


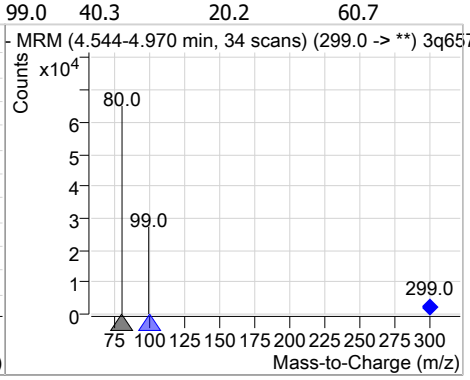




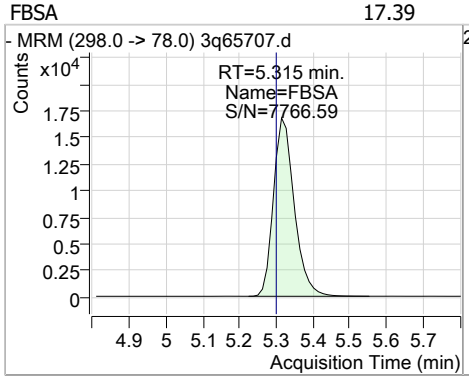
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.69	4.69	0.00	47095	299.0 -> 99.0	40.3	20.2	60.7

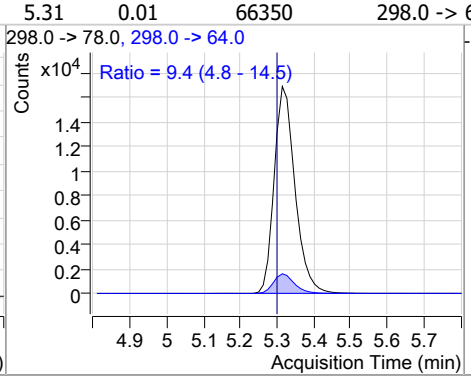


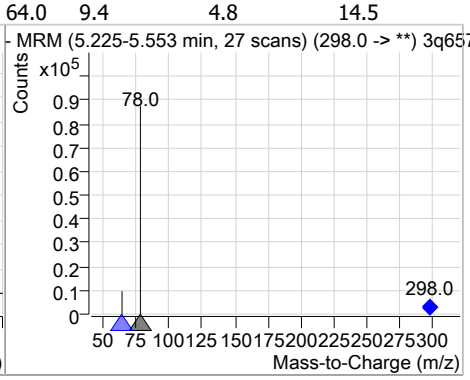




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	17.39	5.31	0.01	66350	298.0 -> 64.0	9.4	4.8	14.5

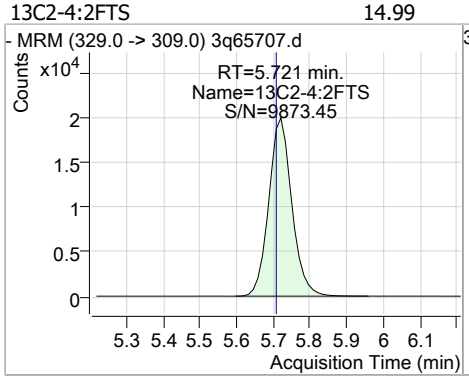


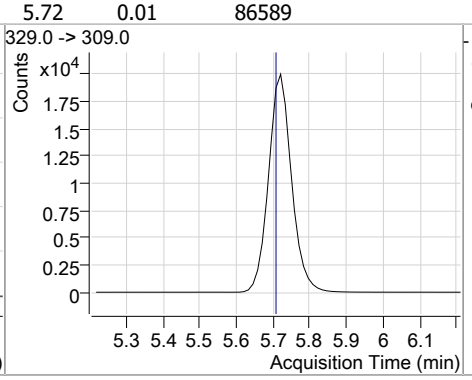


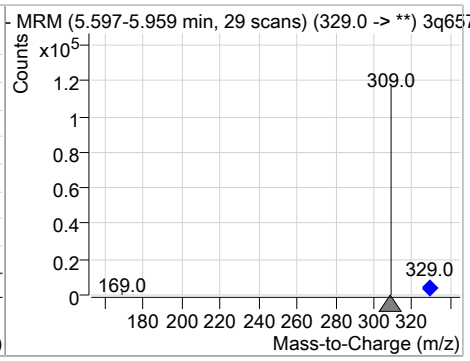


Perfluorinated Compounds by LC/MS/MS

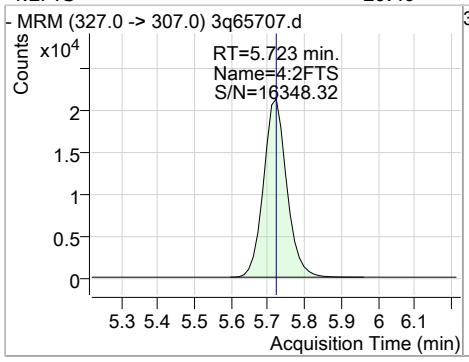
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	14.99	5.72	0.01	86589				

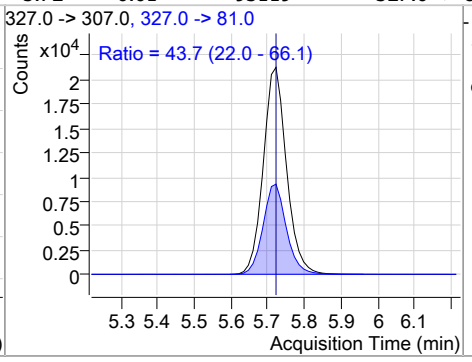


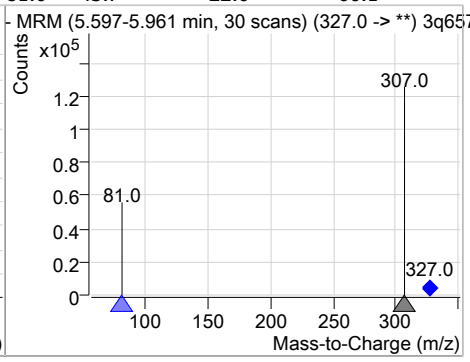




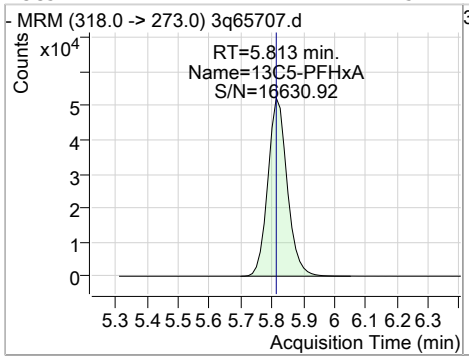
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.40	5.72	0.01	93119	327.0 -> 81.0	43.7	22.0	66.1

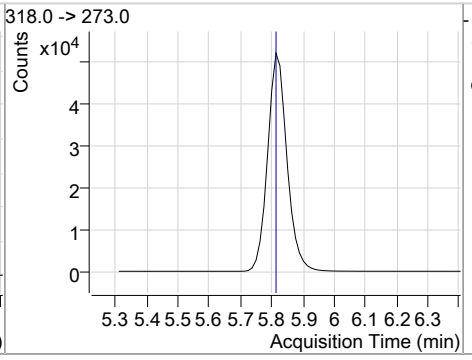


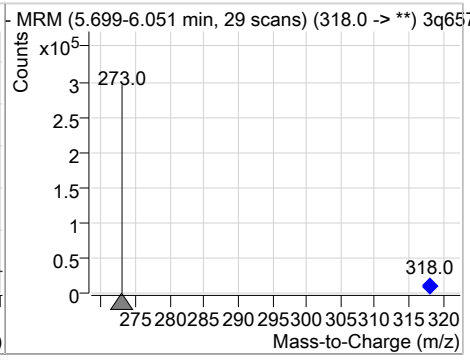




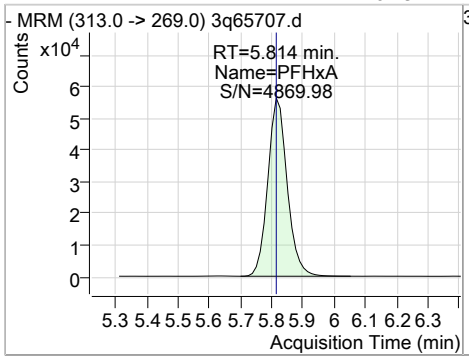
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.75	5.81	0.00	223920				

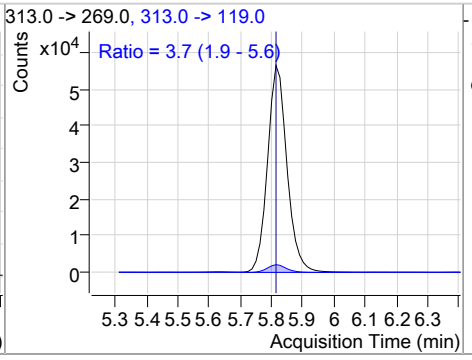


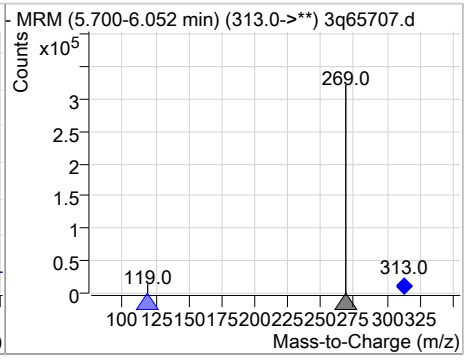




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.29	5.81	0.00	242199	313.0 -> 119.0	3.7	1.9	5.6

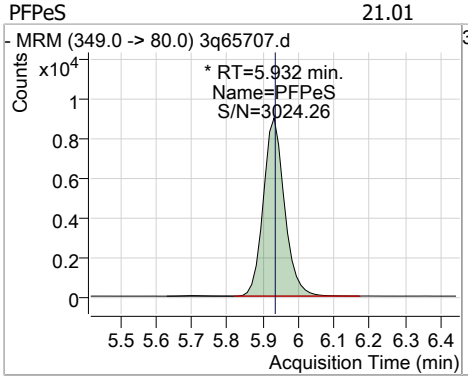


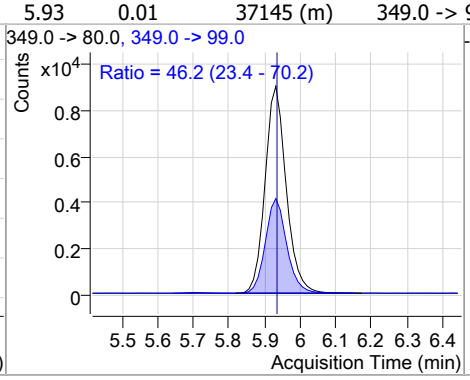


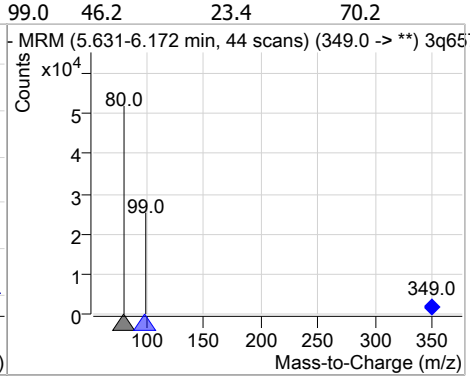


Perfluorinated Compounds by LC/MS/MS

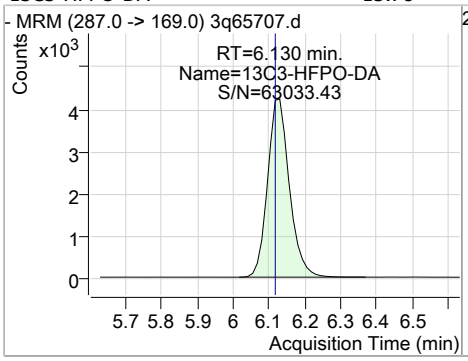
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.01	5.93	0.01	37145 (m)	349.0 -> 99.0	46.2	23.4	70.2

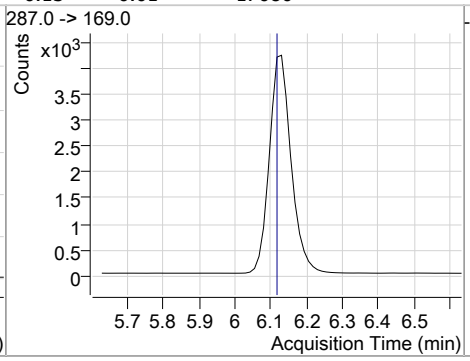


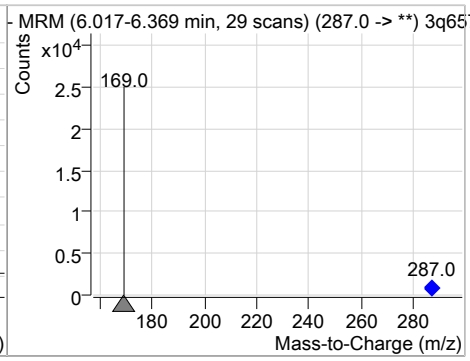




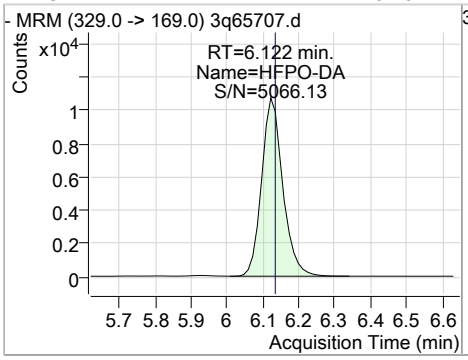
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.78	6.13	0.01	17686				

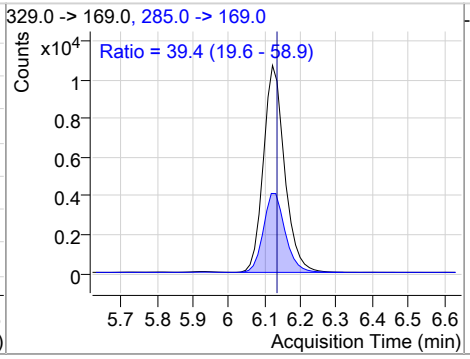


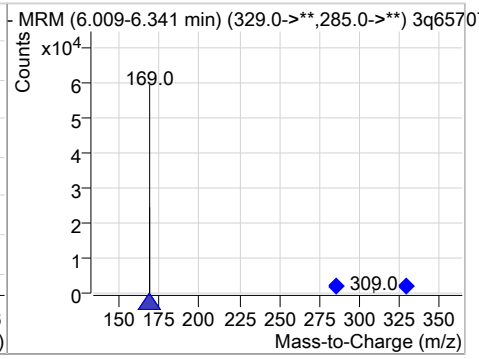




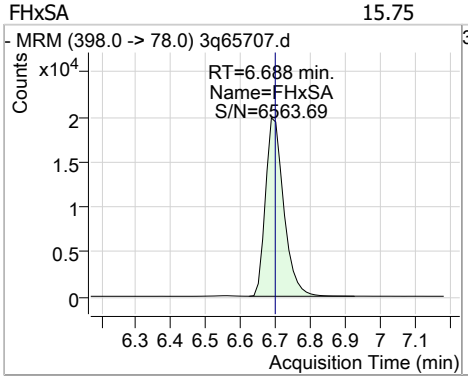
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.76	6.12	0.00	43753	285.0 -> 169.0	39.4	19.6	58.9

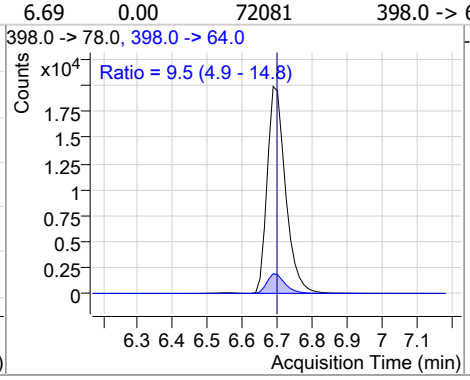


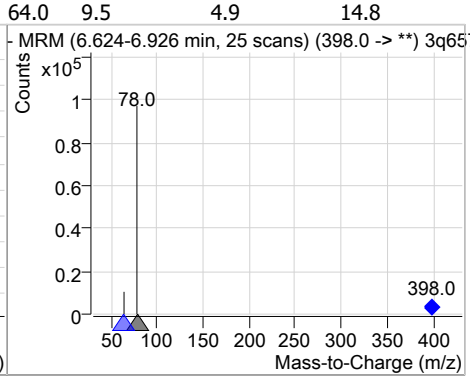




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	15.75	6.69	0.00	72081	398.0 -> 64.0	9.5	4.9	14.8

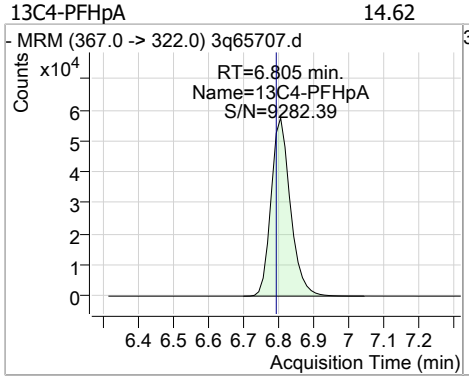


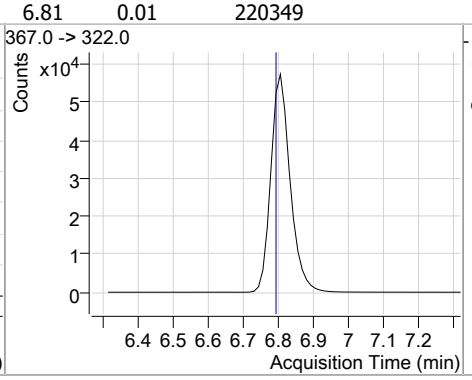


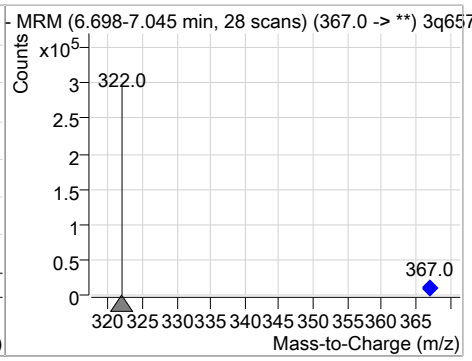


Perfluorinated Compounds by LC/MS/MS

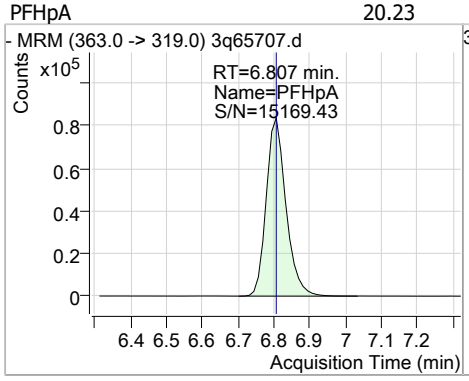
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.62	6.81	0.01	220349				

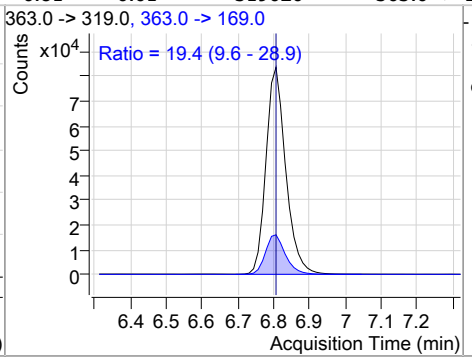


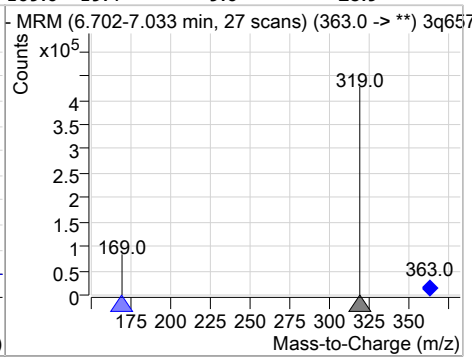




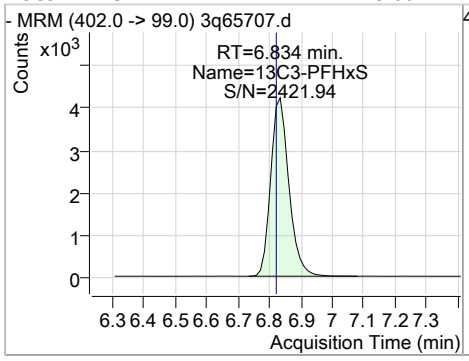
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.23	6.81	0.01	319020	363.0 -> 169.0	19.4	9.6	28.9

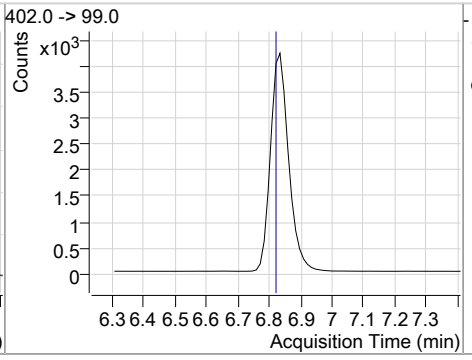


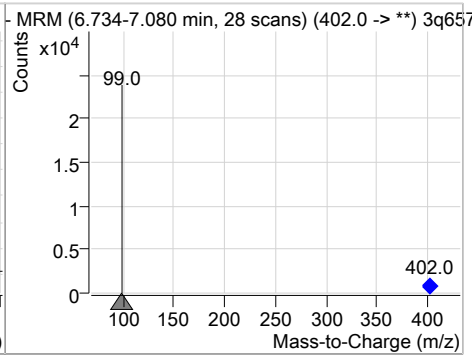




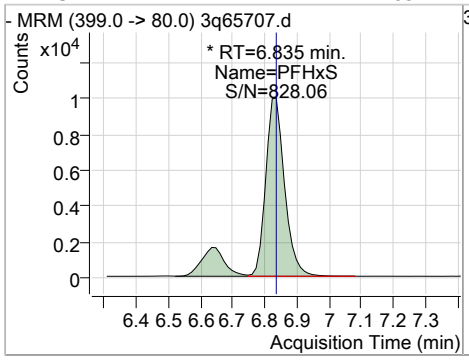
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.00	6.83	0.01	16800				

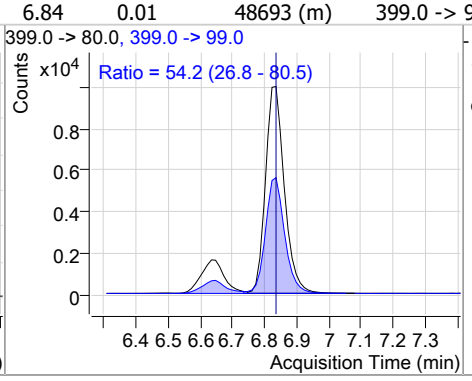


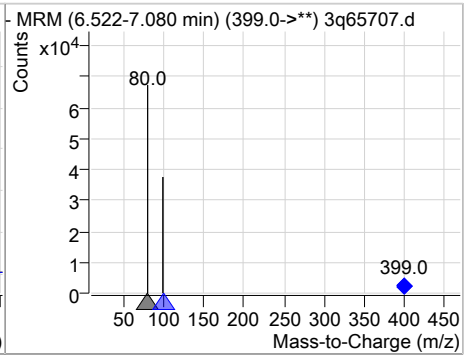




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	24.85	6.84	0.01	48693 (m)	399.0 -> 99.0	54.2	26.8	80.5

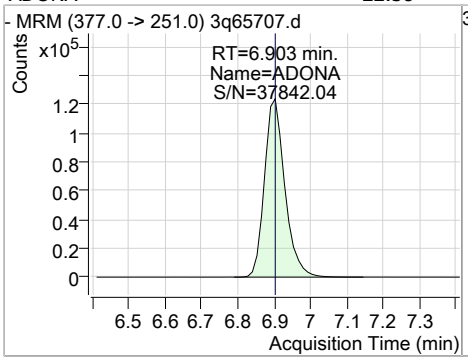


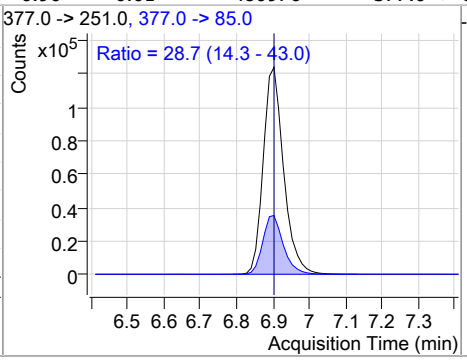


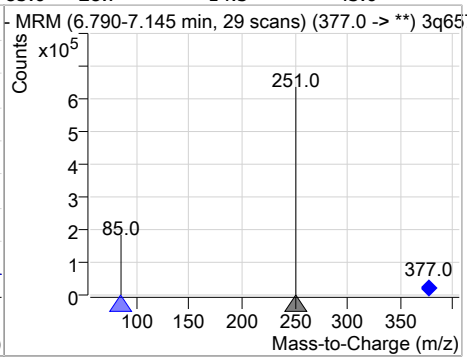


Perfluorinated Compounds by LC/MS/MS

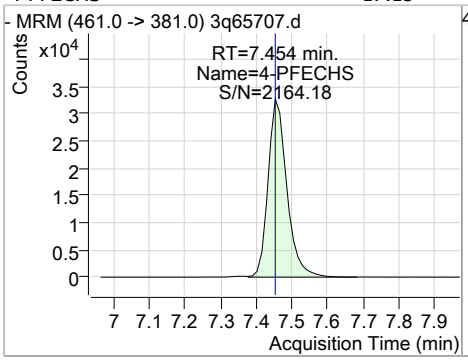
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	22.58	6.90	0.01	480976	377.0 -> 85.0	28.7	14.3	43.0

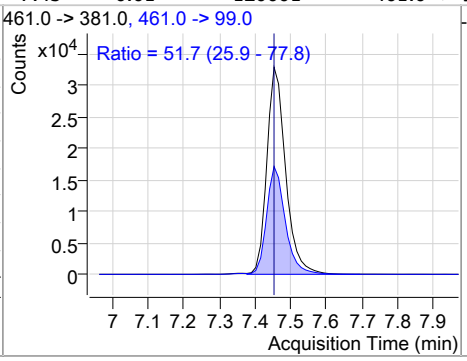


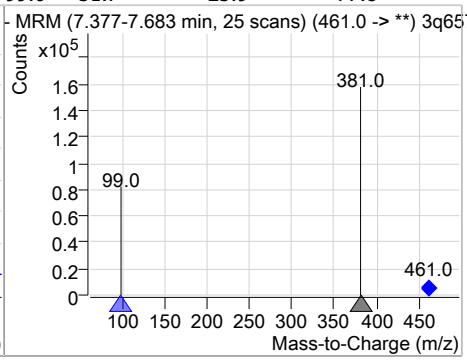




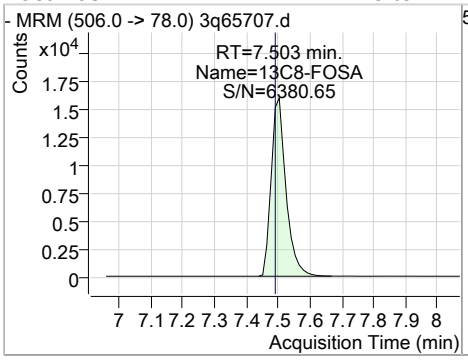
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.15	7.45	0.01	120001	461.0 -> 99.0	51.7	25.9	77.8

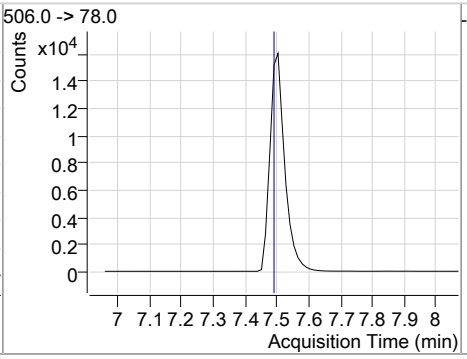


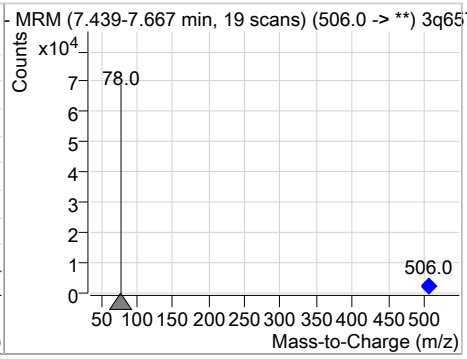




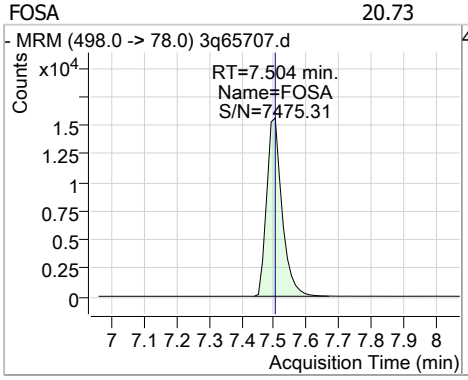
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.69	7.50	0.01	51717				

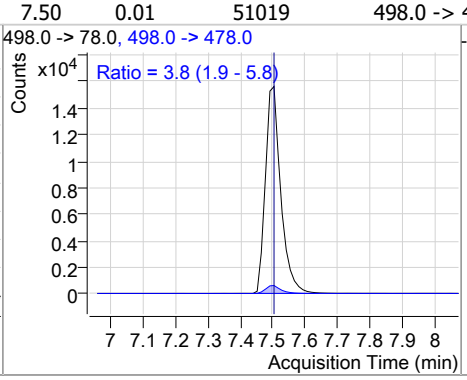


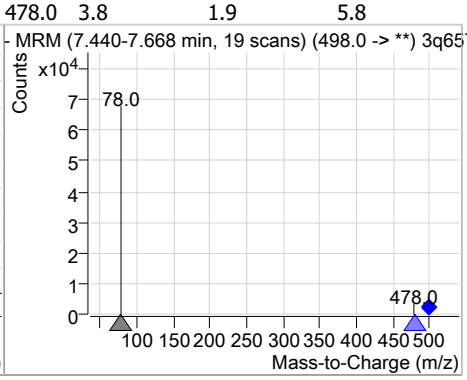




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.73	7.50	0.01	51019	498.0 -> 478.0	3.8	1.9	5.8

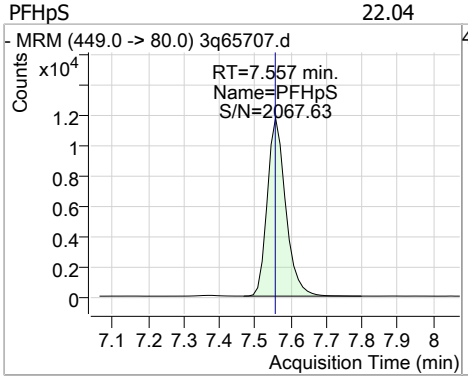


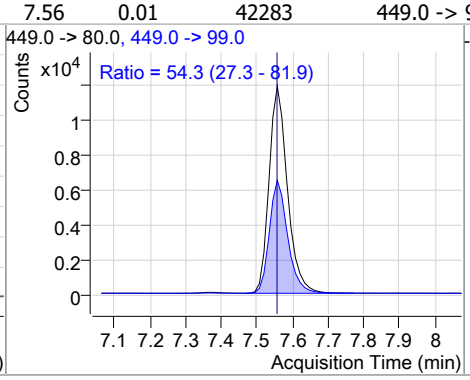


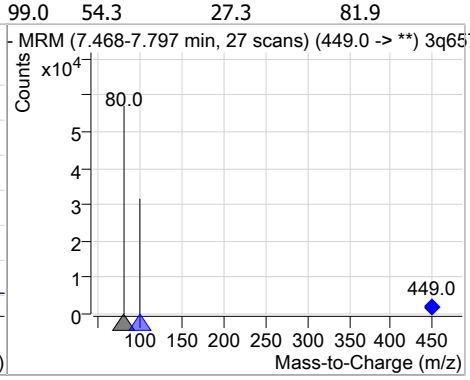


Perfluorinated Compounds by LC/MS/MS

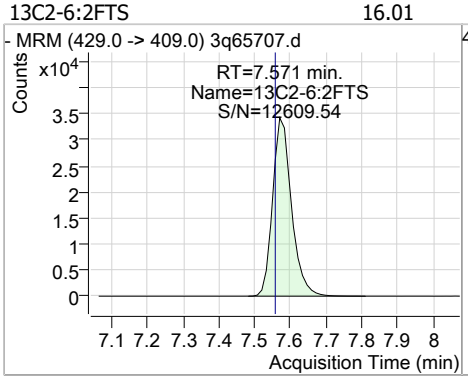
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.04	7.56	0.01	42283	449.0 -> 99.0	54.3	27.3	81.9

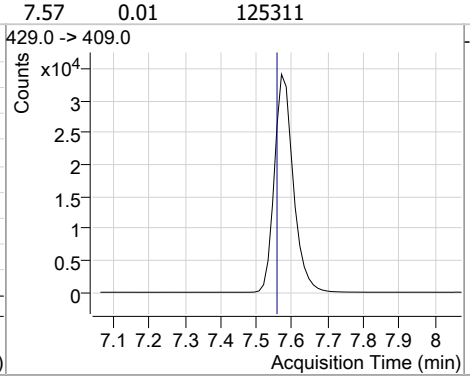


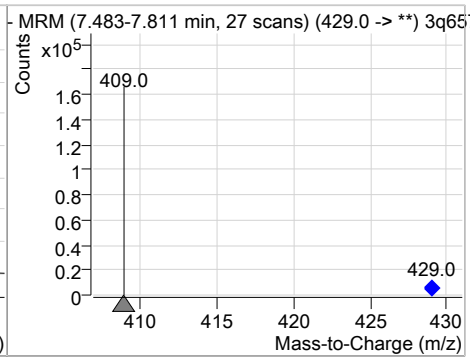




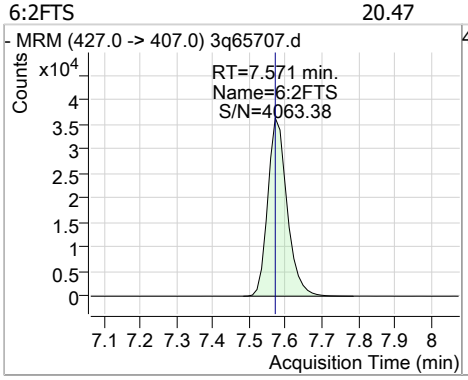
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.01	7.57	0.01	125311				

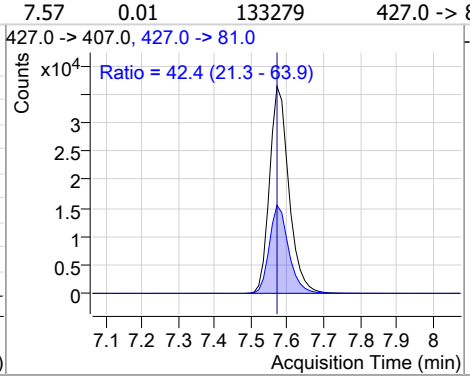


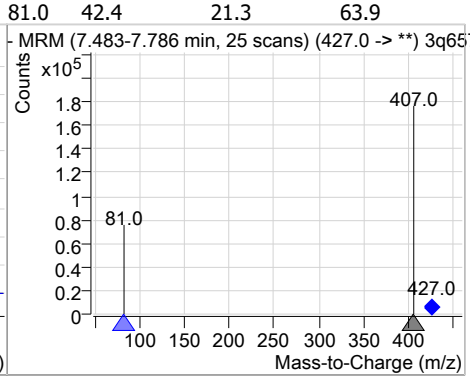




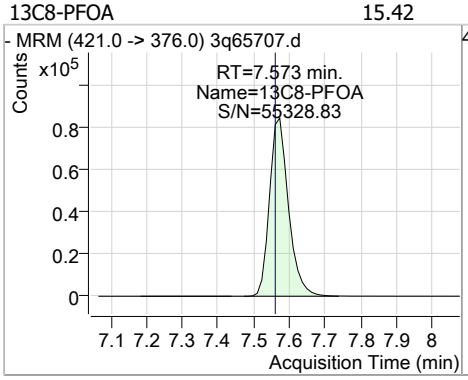
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.47	7.57	0.01	133279	427.0 -> 81.0	42.4	21.3	63.9

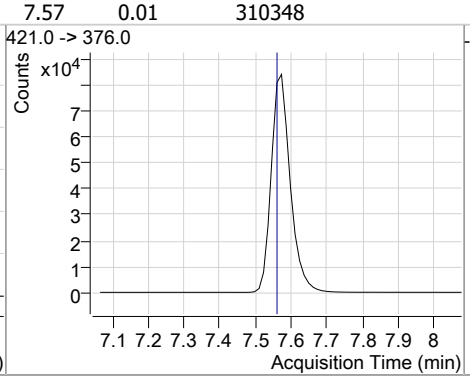


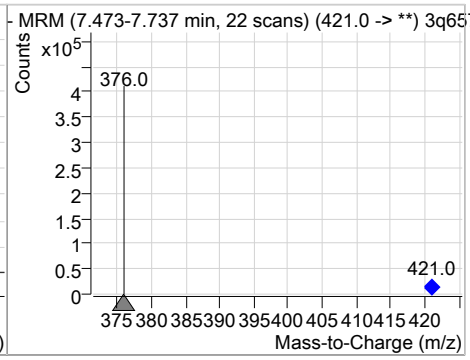




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.42	7.57	0.01	310348				

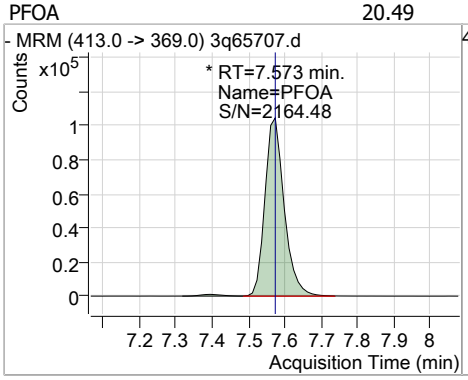


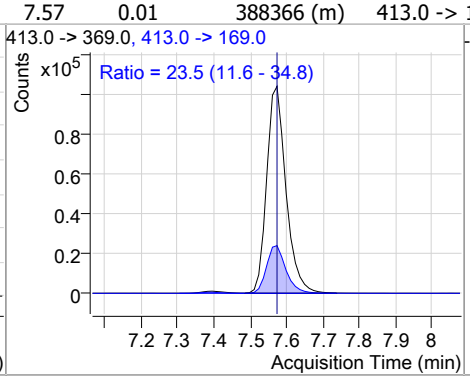


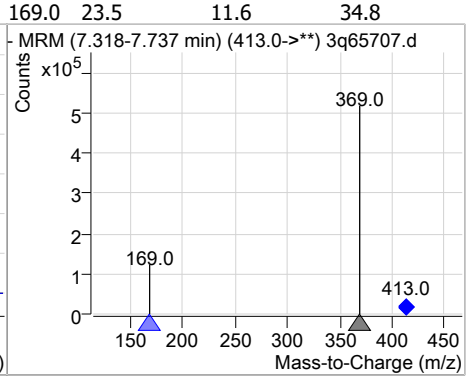


Perfluorinated Compounds by LC/MS/MS

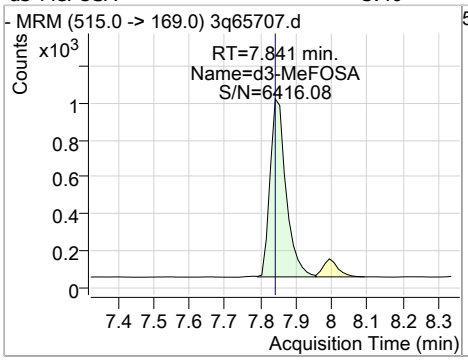
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.49	7.57	0.01	388366 (m)	413.0 -> 169.0	23.5	11.6	34.8

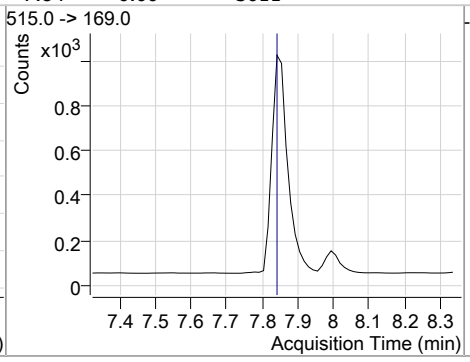


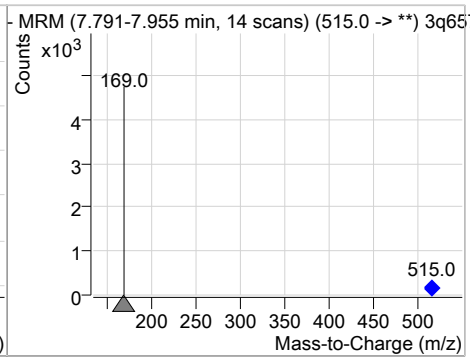




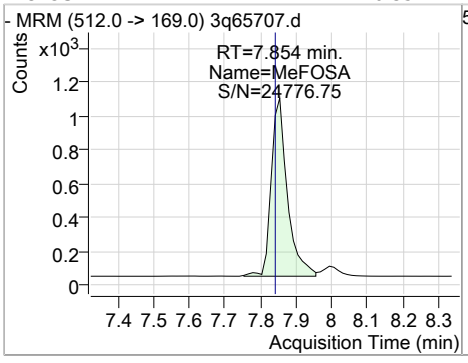
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	3.40	7.84	0.00	3011				

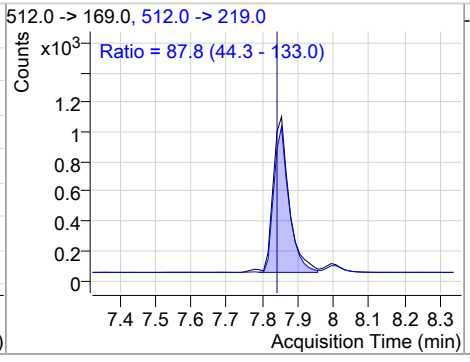


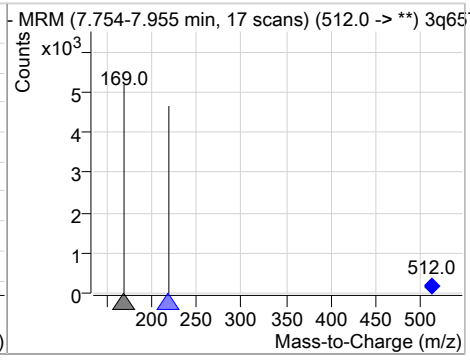




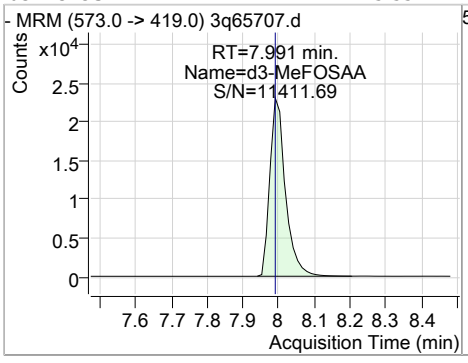
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.35	7.85	0.01	3298	512.0 -> 219.0	87.8	44.3	133.0

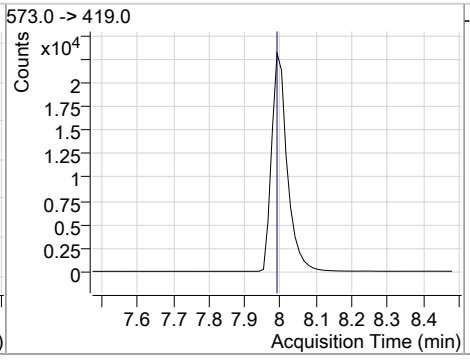


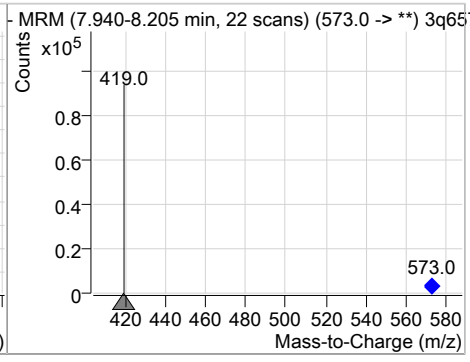




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.55	7.99	0.00	69929				

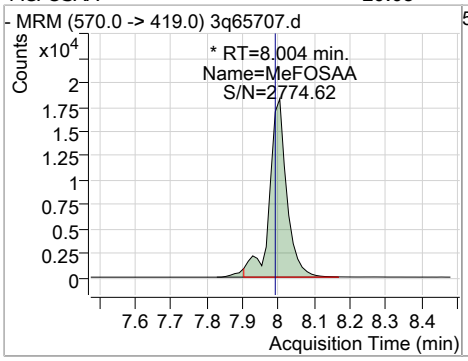


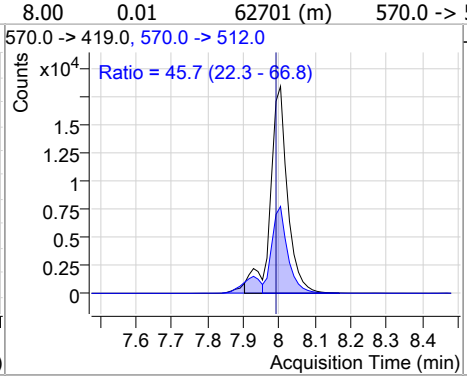


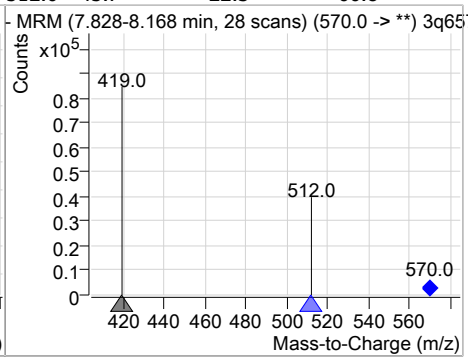


Perfluorinated Compounds by LC/MS/MS

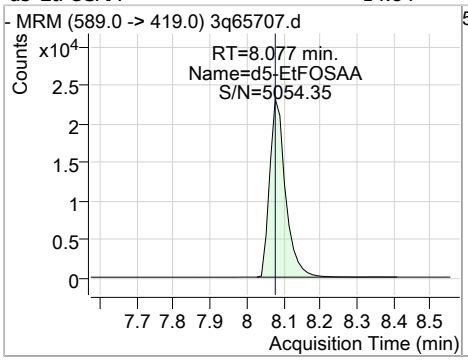
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.08	8.00	0.01	62701 (m)	570.0 -> 512.0	45.7	22.3	66.8

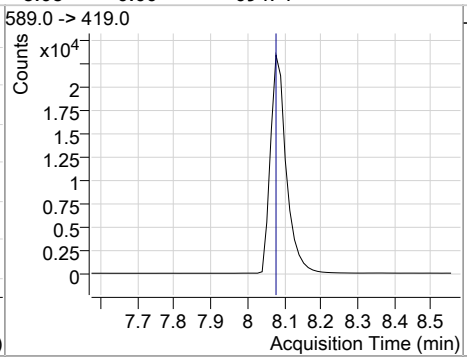


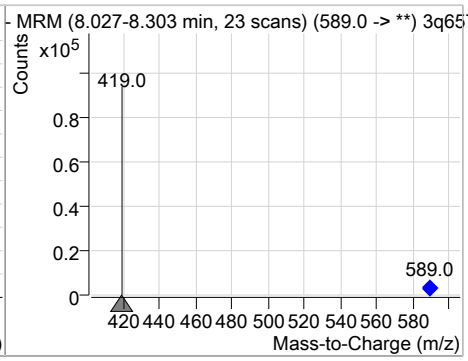




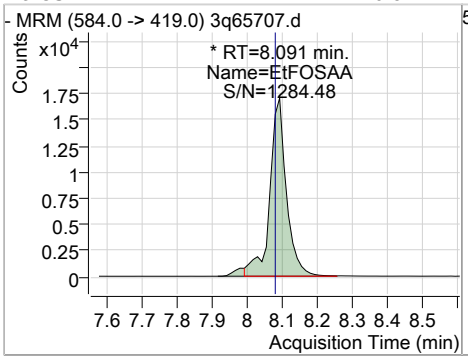
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.84	8.08	0.00	69474				

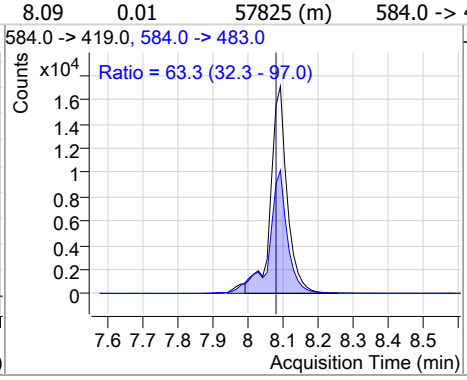


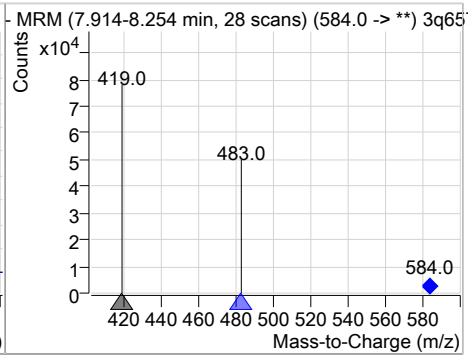




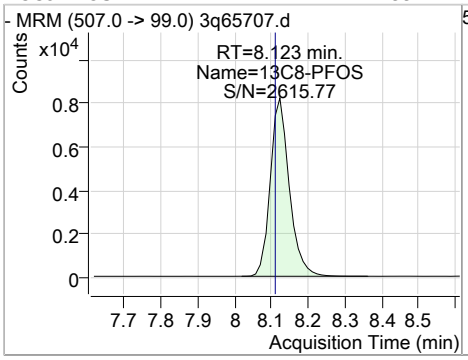
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.87	8.09	0.01	57825 (m)	584.0 -> 483.0	63.3	32.3	97.0

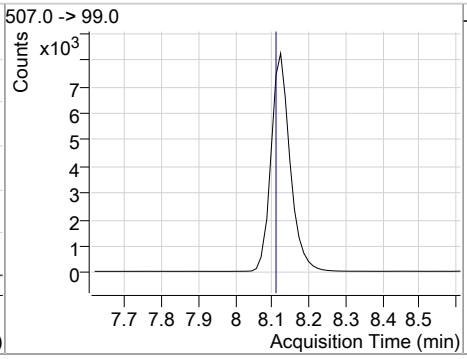


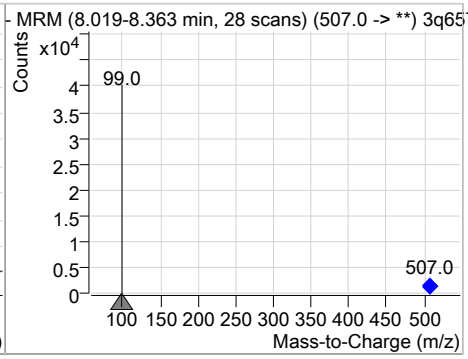




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.99	8.12	0.01	29415				

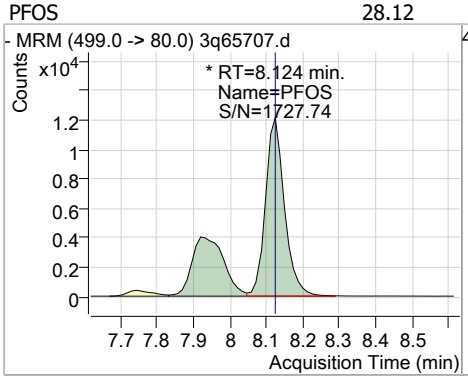


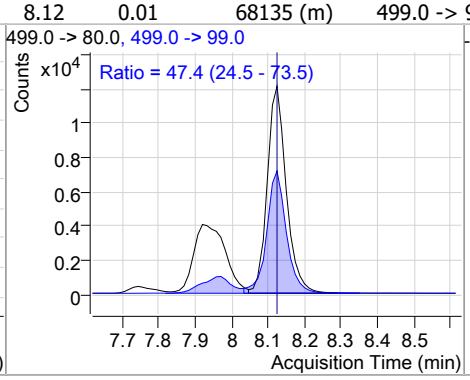


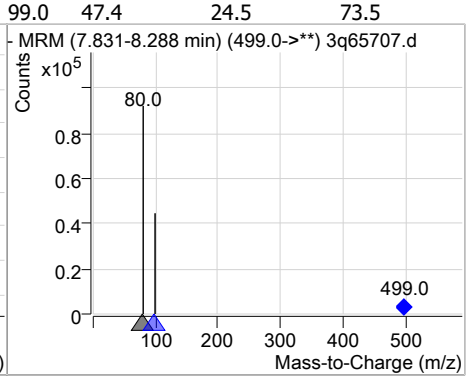


Perfluorinated Compounds by LC/MS/MS

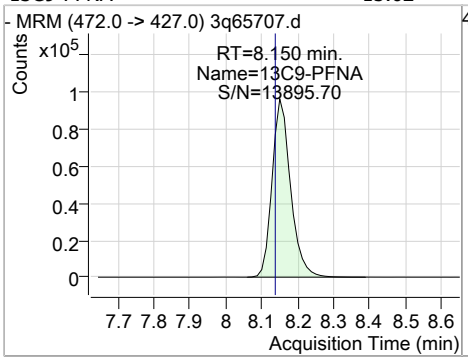
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	28.12	8.12	0.01	68135 (m)	499.0 -> 99.0	47.4	24.5	73.5

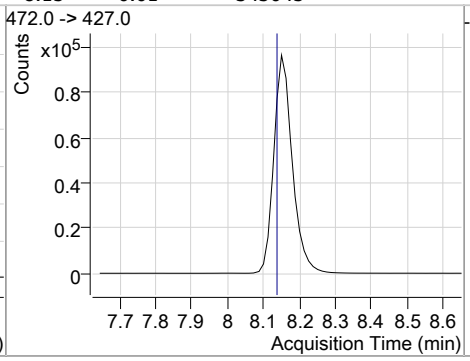


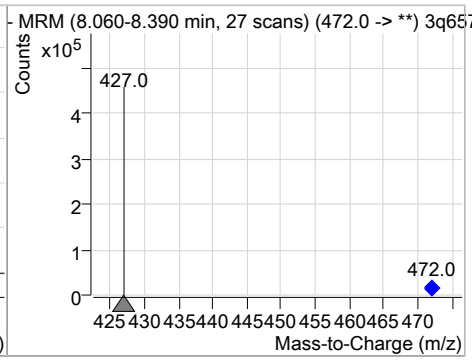




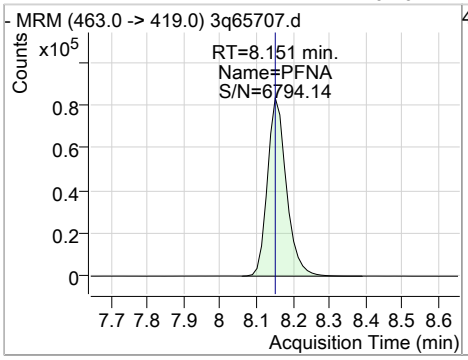
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.62	8.15	0.01	345045				

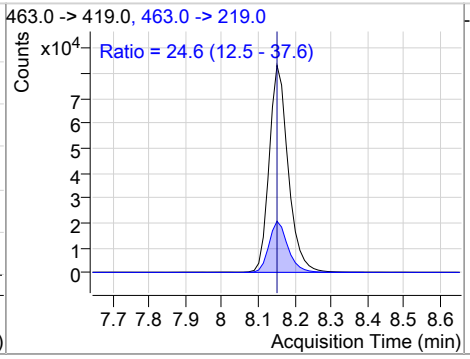


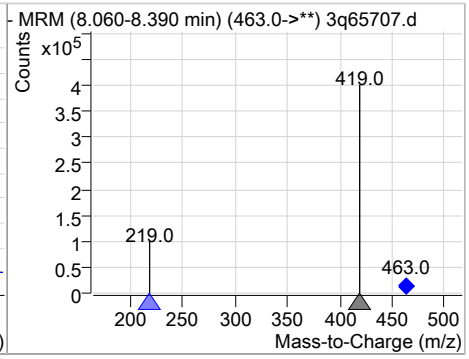




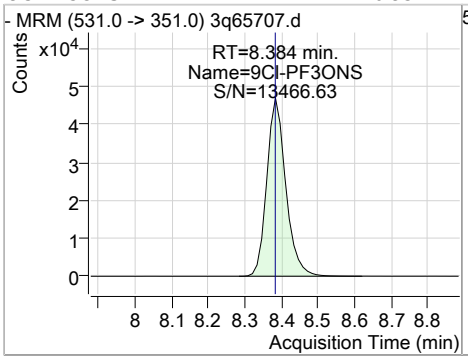
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.10	8.15	0.01	300324	463.0 -> 219.0	24.6	12.5	37.6

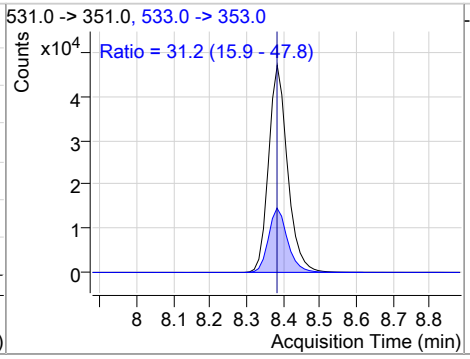


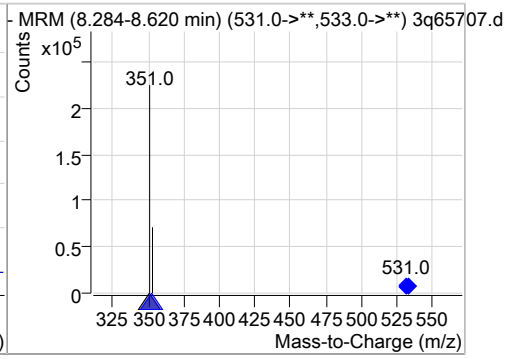




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.93	8.38	0.01	168541	533.0 -> 353.0	31.2	15.9	47.8

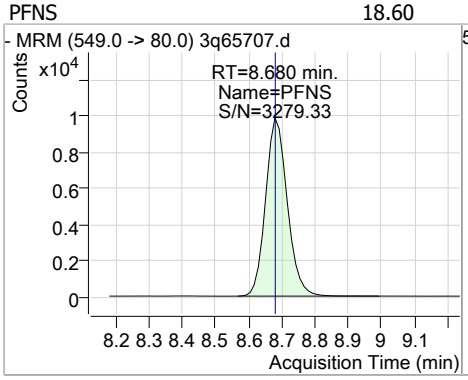


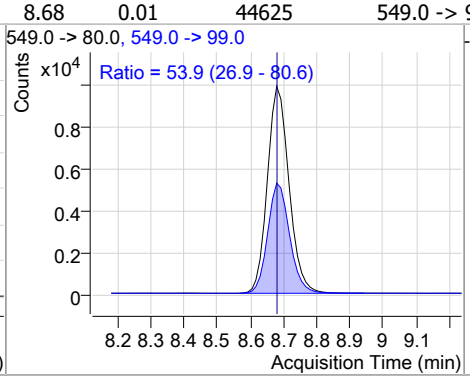


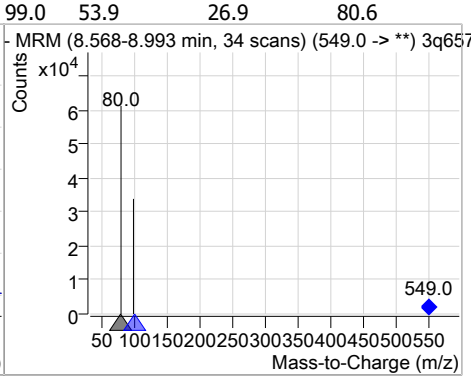


Perfluorinated Compounds by LC/MS/MS

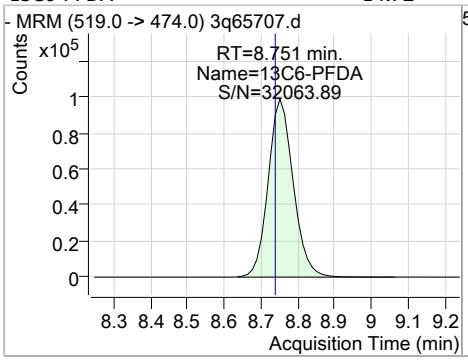
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.60	8.68	0.01	44625	549.0 -> 99.0	53.9	26.9	80.6

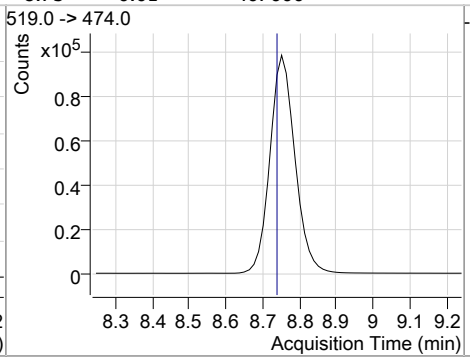


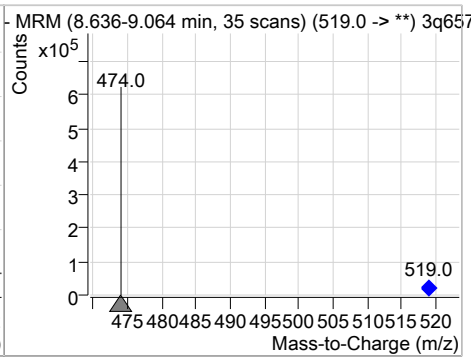




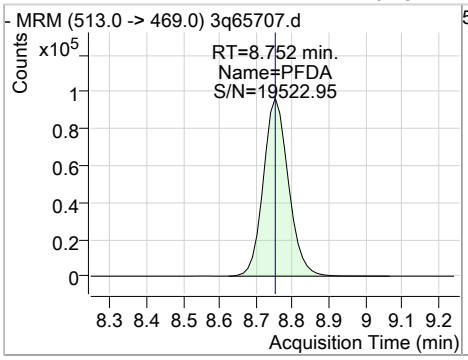
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	14.72	8.75	0.01	467660				

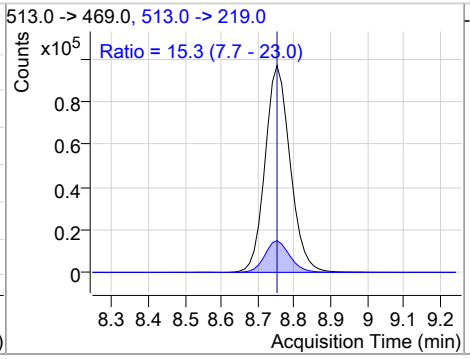


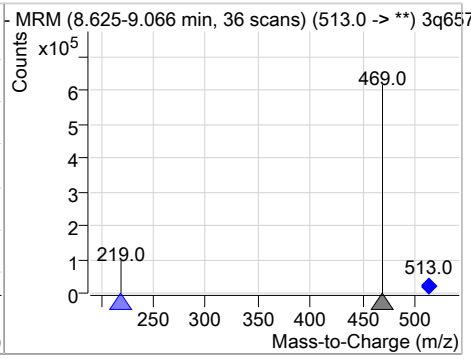




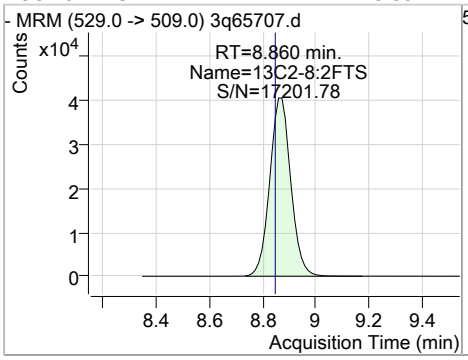
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.43	8.75	0.01	460397	513.0 -> 219.0	15.3	7.7	23.0

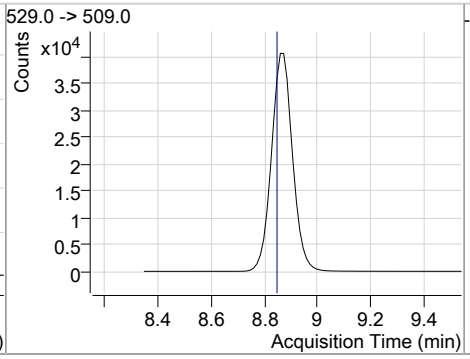


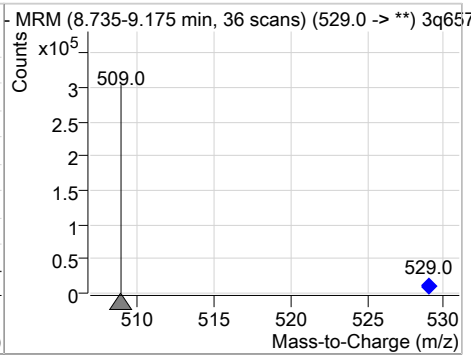




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.35	8.86	0.01	223061				

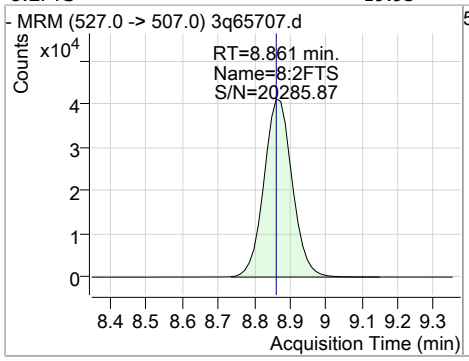


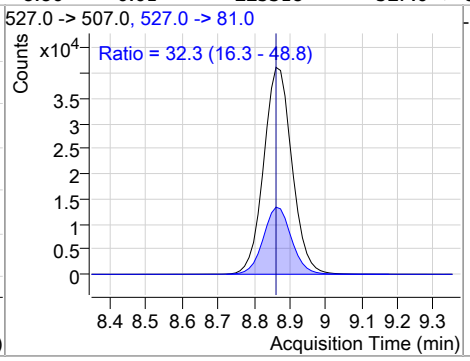


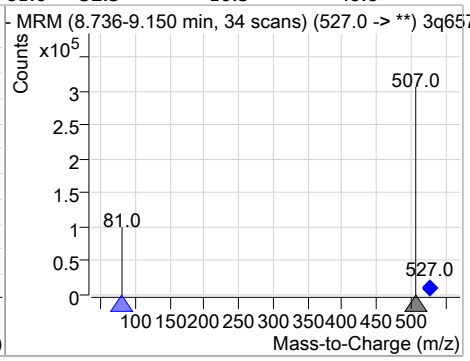


Perfluorinated Compounds by LC/MS/MS

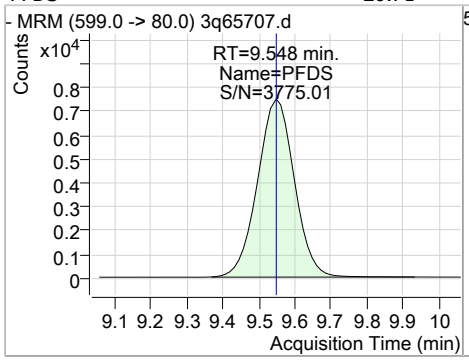
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.95	8.86	0.01	225318	527.0 -> 81.0	32.3	16.3	48.8

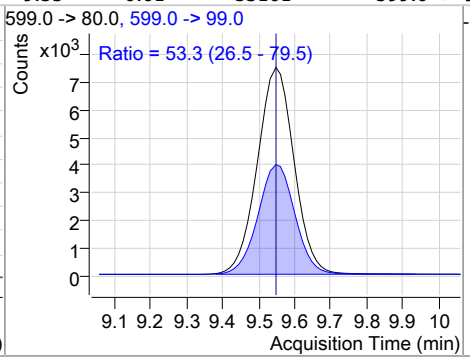


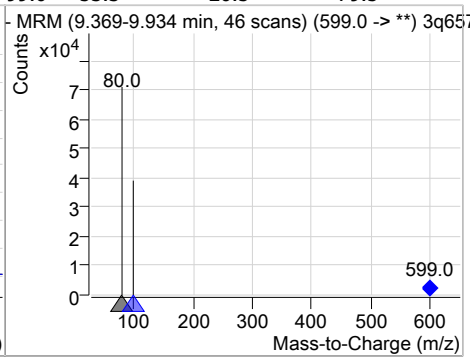




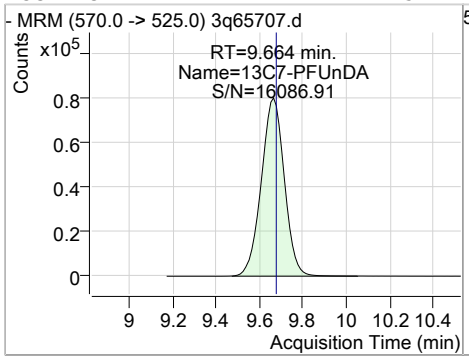
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.71	9.55	-0.01	53101	599.0 -> 99.0	53.3	26.5	79.5

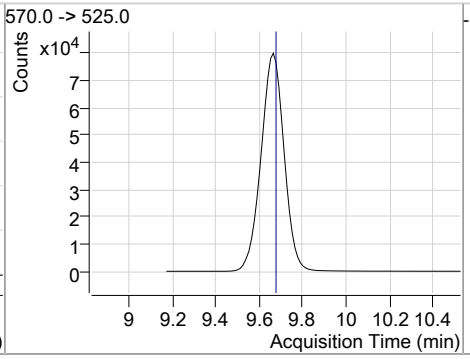


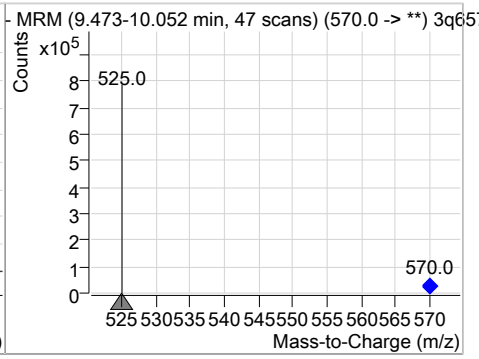




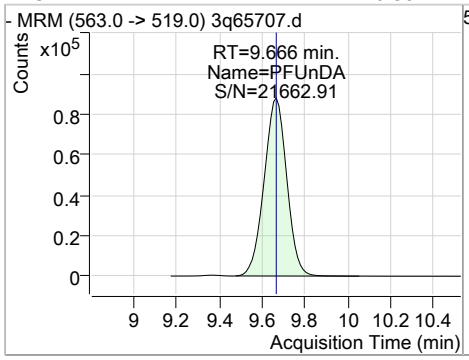
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.25	9.66	-0.01	588451				

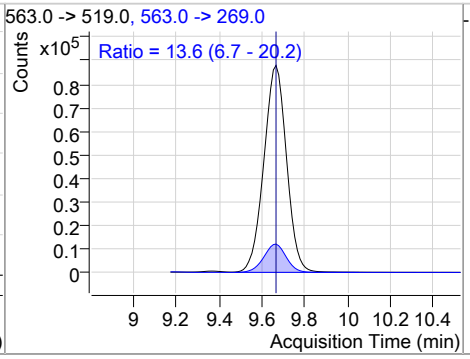


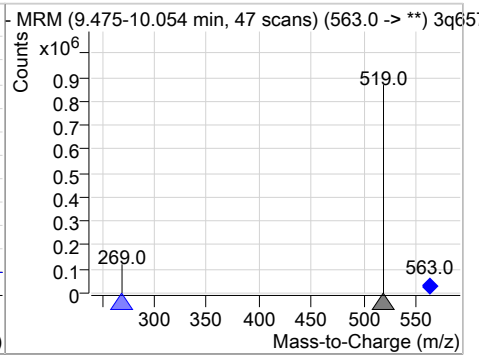




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.38	9.67	-0.01	645979	563.0 -> 269.0	13.6	6.7	20.2

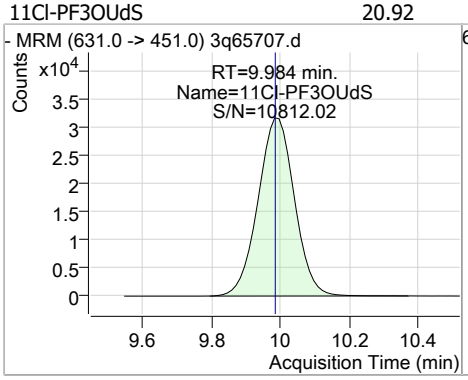


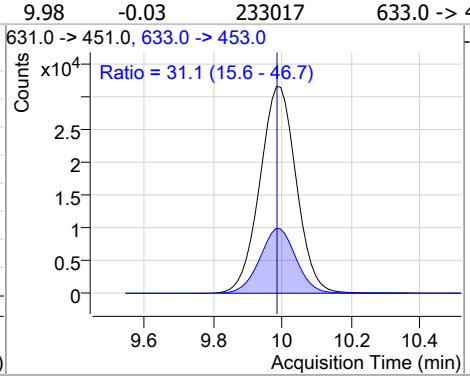


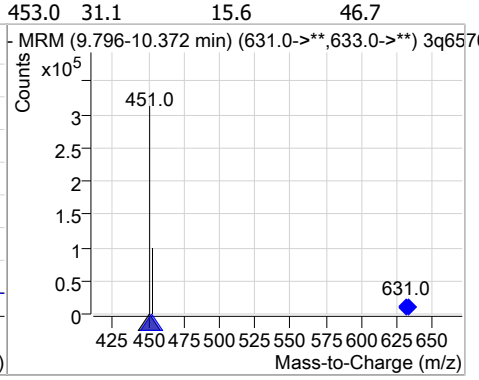


Perfluorinated Compounds by LC/MS/MS

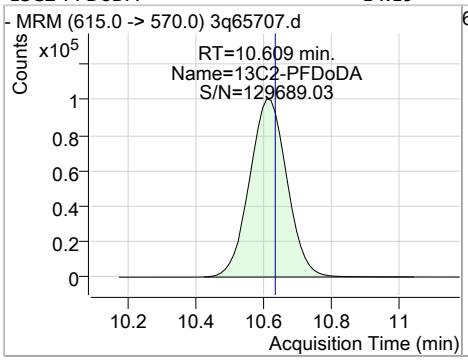
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.92	9.98	-0.03	233017	633.0 -> 453.0	31.1	15.6	46.7

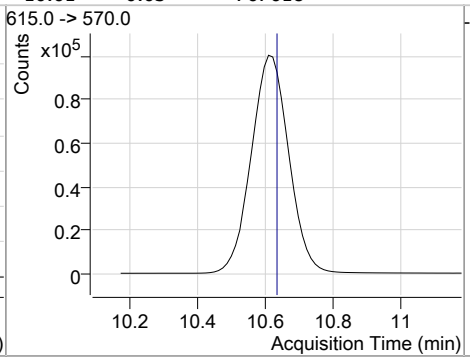


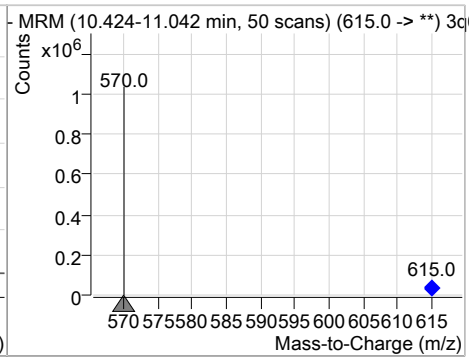




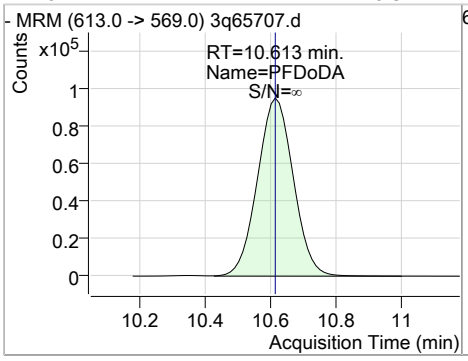
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	14.19	10.61	-0.03	767618				

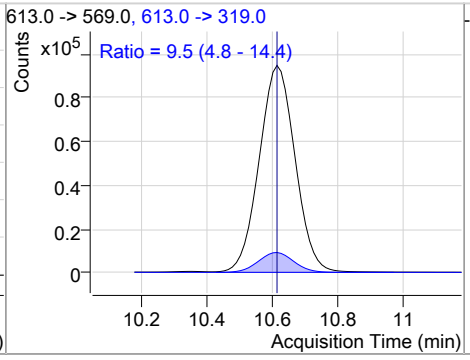


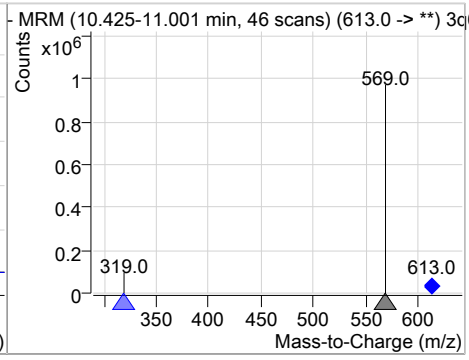




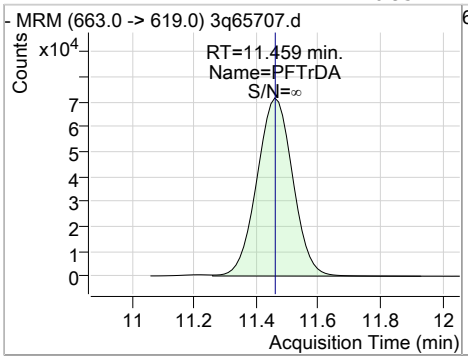
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.32	10.61	-0.03	724486	613.0 -> 319.0	9.5	4.8	14.4

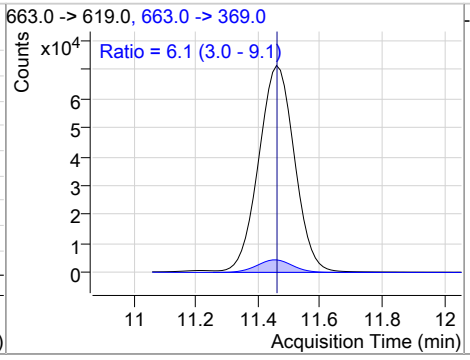


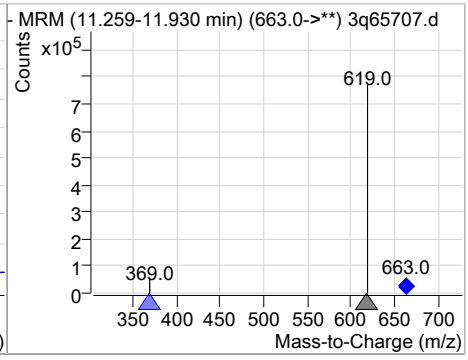




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.95	11.46	-0.03	570853	663.0 -> 369.0	6.1	3.0	9.1

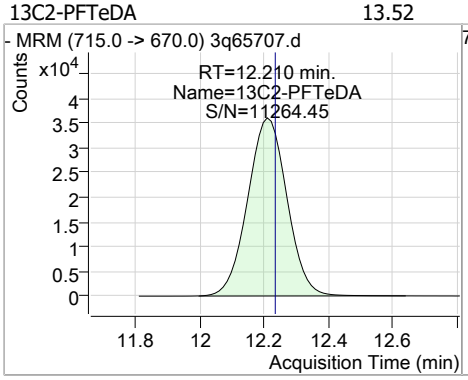


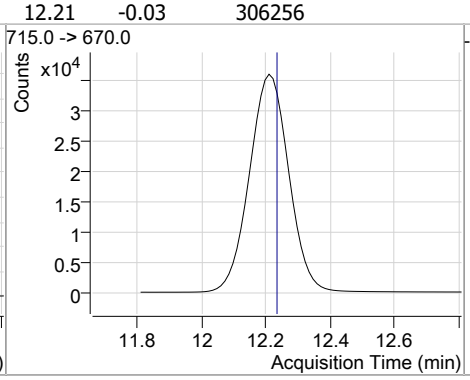


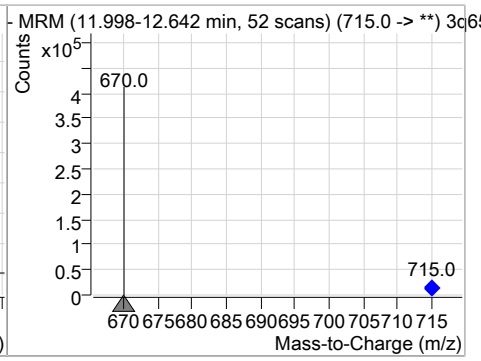


Perfluorinated Compounds by LC/MS/MS

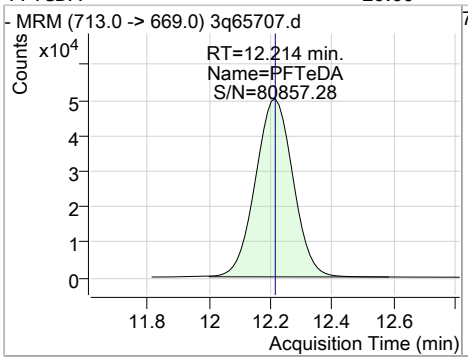
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.52	12.21	-0.03	306256				

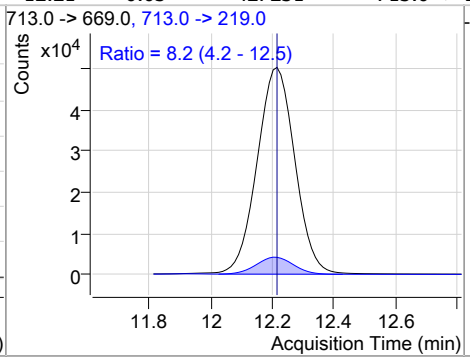


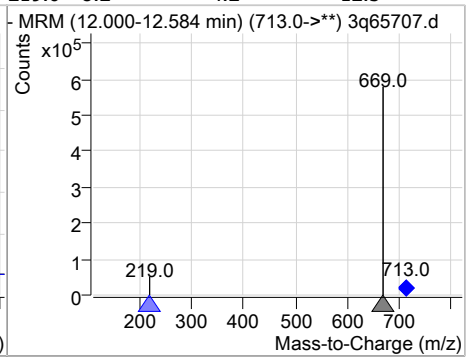




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.60	12.21	-0.03	427231	713.0 -> 219.0	8.2	4.2	12.5







Manual Integration Approval Summary

Sample Number: OP92762-MS
Lab FileID: 3Q65707.D
Injection Time: 09/14/22 01:17
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 11:58 Martha Valls
Supervisor approved: 09/21/22 21:57 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.93	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
Perfluorooctanoic acid	335-67-1		7.57	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/21/22 21:57

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65708.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:37:16 AM
Sample Name : op92762-msd
Vial : P6-B6
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

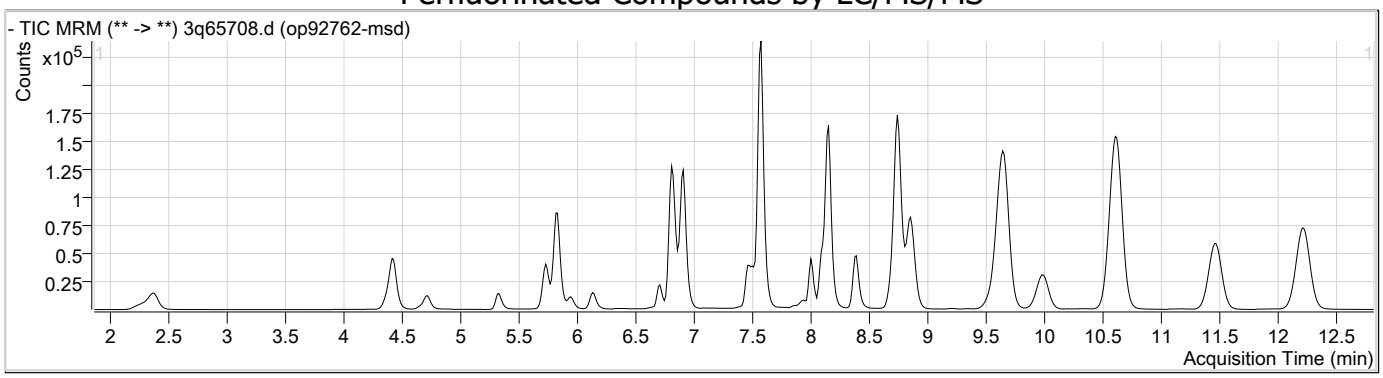
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	85155	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	126406	20.00	µg/L	0.000
M5-PFHxA	5.826	318.0 -> 273.0	169363	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	171372	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	234164	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	259334	20.00	µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	374669	20.00	µg/L	0.000
M7-PFUnDA	9.639	570.0 -> 525.0	470383	20.00	µg/L	-0.038
M2-PFDoDA	10.609	615.0 -> 570.0	589061	20.00	µg/L	-0.025
M2-PFTeDA	12.210	715.0 -> 670.0	247175	20.00	µg/L	-0.025
M8-FOSA	7.503	506.0 -> 78.0	40537	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	12107	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	15047	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	23466	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	65142	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	95260	20.00	µg/L	0.013
M2-8:2FTS	8.848	529.0 -> 509.0	179378	20.00	µg/L	0.000
M3-MeFOSAA	7.991	573.0 -> 419.0	56327	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	13466	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	1858	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	54427	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	65142	11.28	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.4%		
13C2-6:2FTS	7.571	429.0 -> 409.0	95260	12.17	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.8%		
13C2-8:2FTS	8.848	529.0 -> 509.0	179378	12.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.7%		
13C2-PFDoDA	10.609	615.0 -> 570.0	589061	10.89	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.4%		
13C2-PFTeDA	12.210	715.0 -> 670.0	247175	10.91	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.5%		
13C3-PFBS	4.704	302.0 -> 99.0	12107	11.44	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.2%		
13C3-PFHxS	6.834	402.0 -> 99.0	15047	11.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.2%		
13C4-PFBA	2.365	217.0 -> 172.0	85155	10.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.5%		
13C4-PFHpA	6.805	367.0 -> 322.0	171372	11.37	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 56.9%		
13C5-PFHxA	5.826	318.0 -> 273.0	169363	11.15	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.8%		
13C5-PFPeA	4.411	268.0 -> 223.0	126406	10.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.5%		
13C6-PFDA	8.739	519.0 -> 474.0	374669	11.79	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

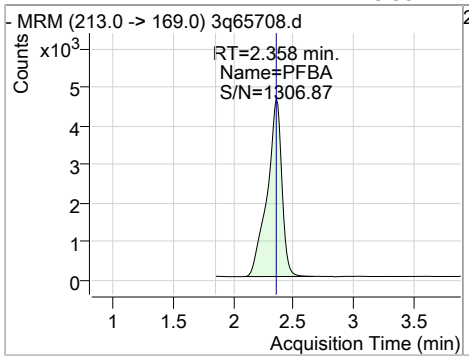
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.0%			
13C7-PFUnDA	9.639	570.0 -> 525.0	470383	11.39	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%			
13C8-FOSA	7.503	506.0 -> 78.0	40537	10.73	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.7%			
13C8-PFOA	7.573	421.0 -> 376.0	234164	11.63	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.2%			
13C8-PFOS	8.111	507.0 -> 99.0	23466	11.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.8%			
13C9-PFNA	8.150	472.0 -> 427.0	259334	11.74	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.7%			
d3-MeFOSAA	7.991	573.0 -> 419.0	56327	12.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.6%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	13464	10.49	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 52.5%			
d3-MeFOSA	7.841	515.0 -> 169.0	1858	2.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 10.5%			
d5-EtFOSAA	8.077	589.0 -> 419.0	54444	11.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.1%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	68374	19.91	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	99296	20.06	µg/L		99
8:2FTS	8.849	527.0 -> 507.0	177099	19.50	µg/L		99
EtFOSAA	8.078	584.0 -> 419.0	43353	19.98	µg/L	m	99
FOSA	7.504	498.0 -> 78.0	39555	20.50	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	49160	19.54	µg/L	m	99
PFBA	2.358	213.0 -> 169.0	38830	19.95	µg/L		100
PFBS	4.707	299.0 -> 80.0	34283	19.93	µg/L		100
PFDA	8.740	513.0 -> 469.0	359060	19.89	µg/L		100
PFDoDA	10.600	613.0 -> 569.0	543791	19.88	µg/L		100
PFDS	9.519	599.0 -> 80.0	39971	19.50	µg/L		99
PFHpA	6.807	363.0 -> 319.0	241736	19.71	µg/L		100
PFHpS	7.557	449.0 -> 80.0	32458	21.21	µg/L		98
PFHxA	5.827	313.0 -> 269.0	180848	20.03	µg/L		100
PFHxS	6.835	399.0 -> 80.0	41913	23.89	µg/L	m	100
PFNA	8.151	463.0 -> 419.0	220642	19.65	µg/L		99
PFNS	8.667	549.0 -> 80.0	34881	18.23	µg/L		99
PFOA	7.573	413.0 -> 369.0	286453	20.03	µg/L	m	99
PFOS	8.111	499.0 -> 80.0	55428	28.68	µg/L	m	97
PFPeA	4.414	263.0 -> 219.0	111595	20.22	µg/L		100
PFPeS	5.932	349.0 -> 80.0	27017	20.22	µg/L	m	99
PFTeDA	12.202	713.0 -> 669.0	338906	20.25	µg/L		100
PFTrDA	11.447	663.0 -> 619.0	443999	20.19	µg/L		100
PFUnDA	9.641	563.0 -> 519.0	505397	19.95	µg/L		100
11Cl-PF3OUdS	9.972	631.0 -> 451.0	171895	20.11	µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	132162	20.49	µg/L		100
ADONA	6.903	377.0 -> 251.0	350412	18.37	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	32189	20.06	µg/L		99
MeFOSA	7.854	512.0 -> 169.0	1957	19.57	µg/L		98
4-PFECHS	7.454	461.0 -> 381.0	90792	17.20	µg/L		100
FBSA	5.327	298.0 -> 78.0	49828	17.27	µg/L		99
FHxSA	6.700	398.0 -> 78.0	64833	18.78	µg/L		100

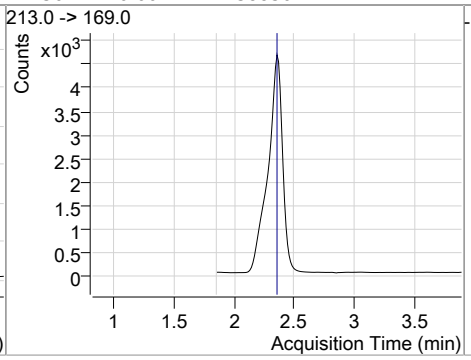
 # = Qualifier out of range, m = manually integrated, + = Area summed

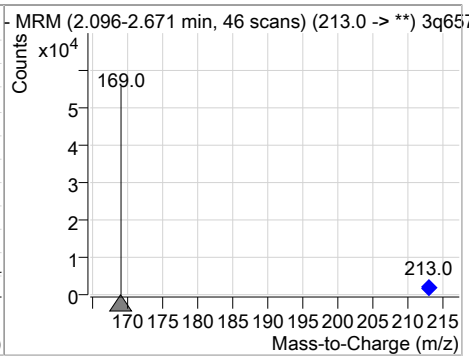
Perfluorinated Compounds by LC/MS/MS



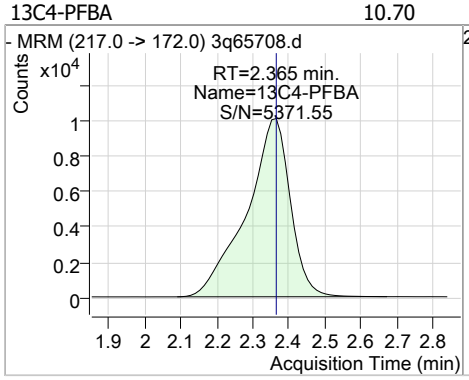
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.95	2.36	0.00	38830				

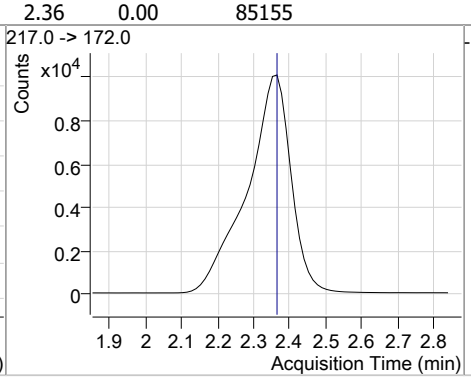


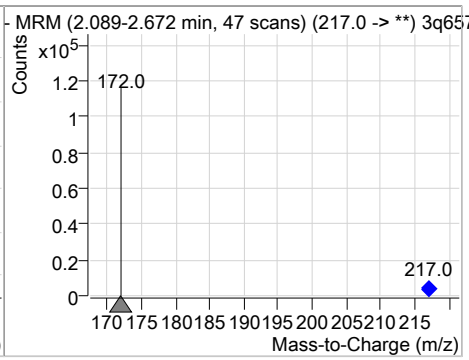




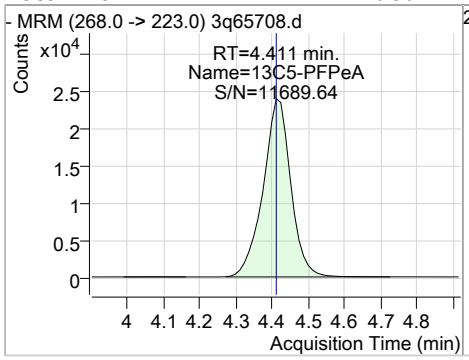
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.70	2.36	0.00	85155				

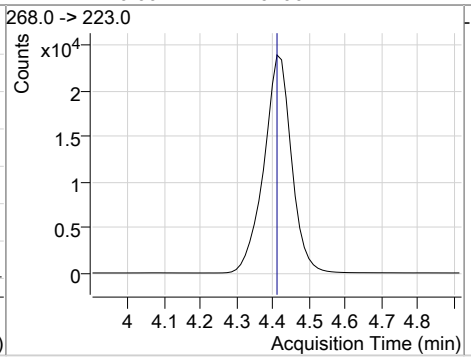


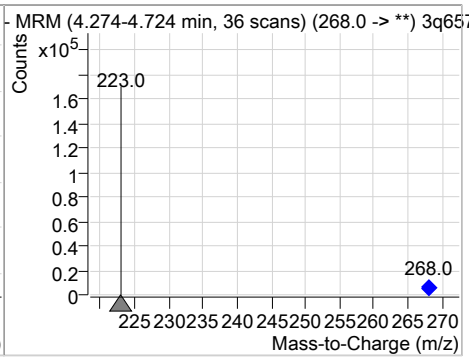




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	10.90	4.41	0.00	126406				

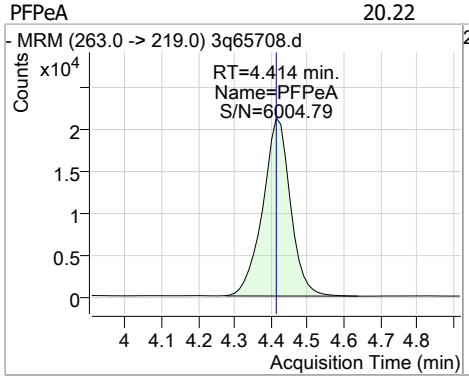


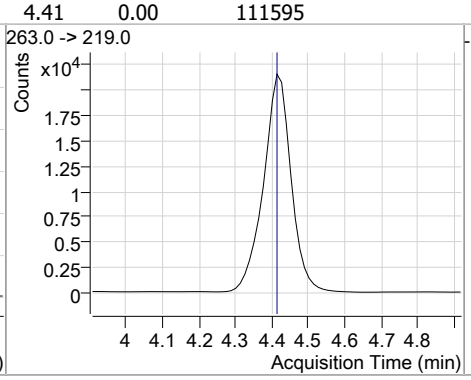


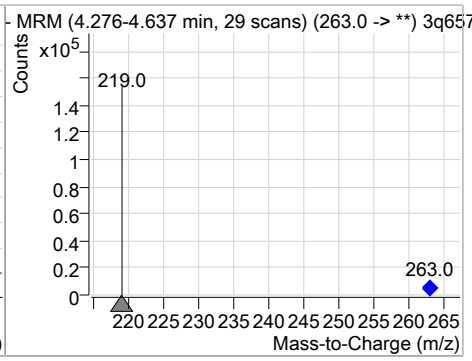


Perfluorinated Compounds by LC/MS/MS

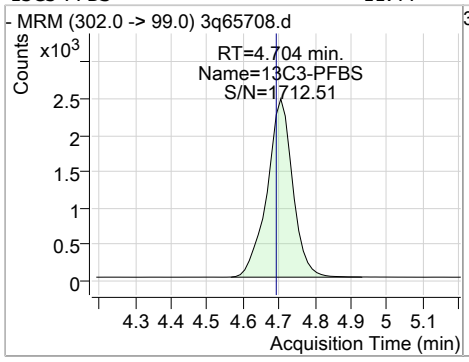
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.22	4.41	0.00	111595				

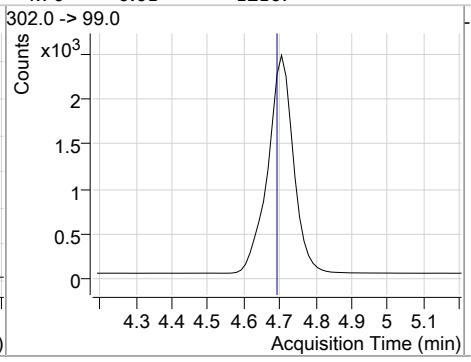


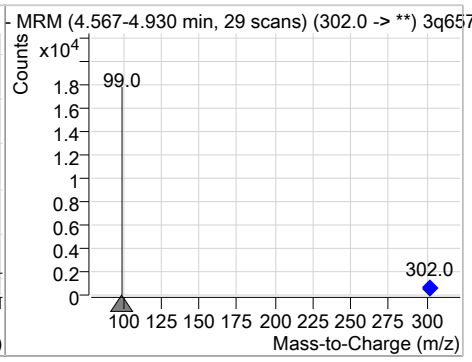




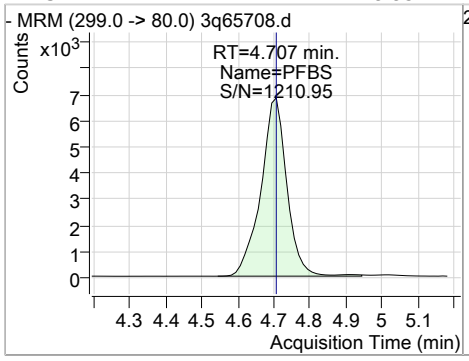
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	11.44	4.70	0.01	12107				

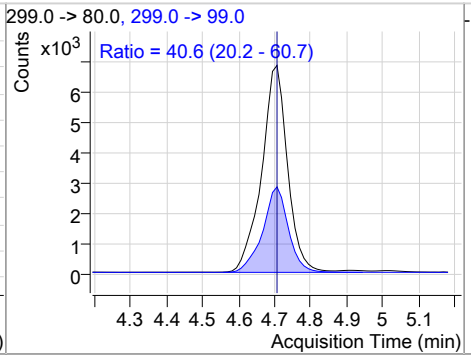


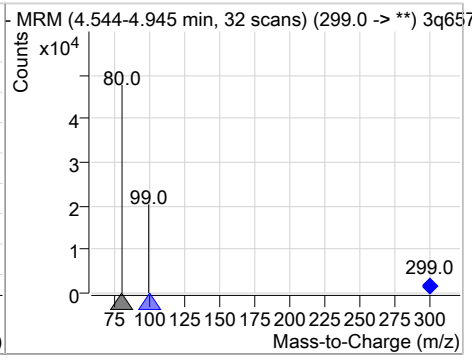




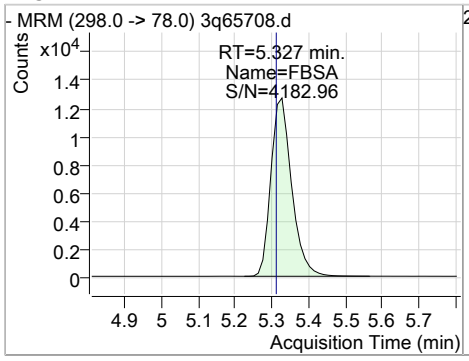
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.93	4.71	0.01	34283	299.0 -> 99.0	40.6	20.2	60.7

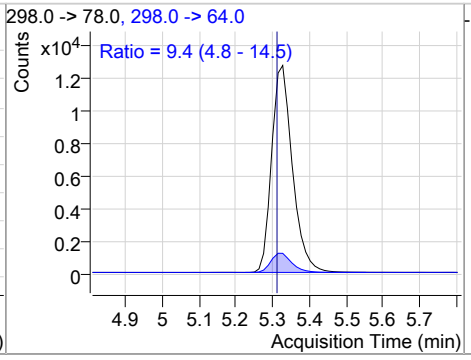


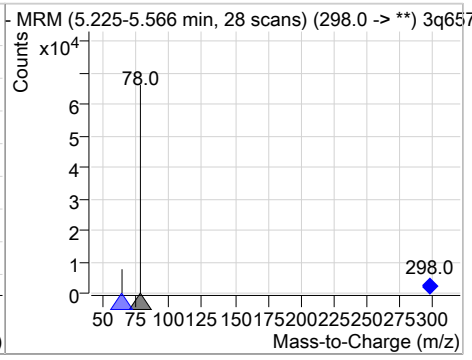




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	17.27	5.33	0.03	49828	298.0 -> 64.0	9.4	4.8	14.5

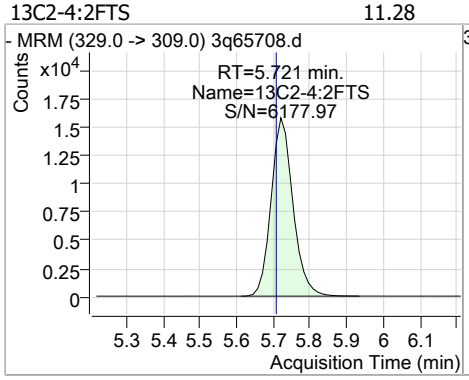


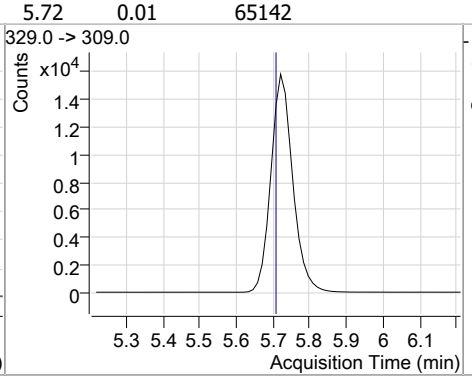


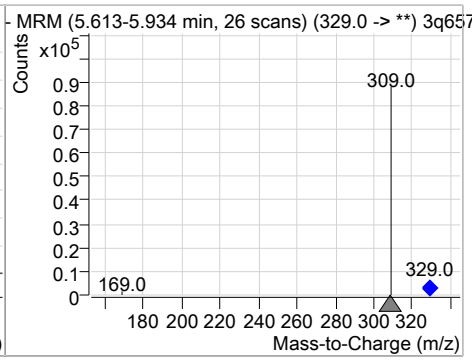


Perfluorinated Compounds by LC/MS/MS

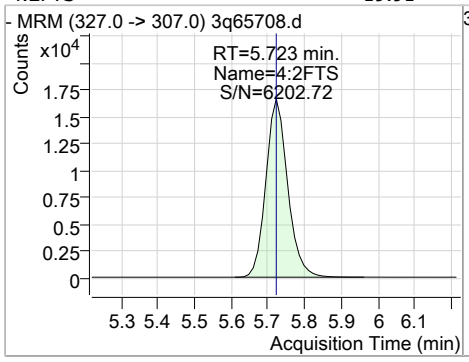
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.28	5.72	0.01	65142				

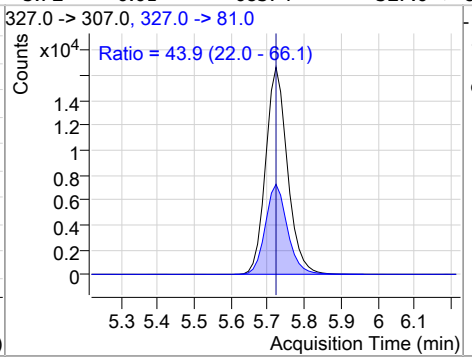


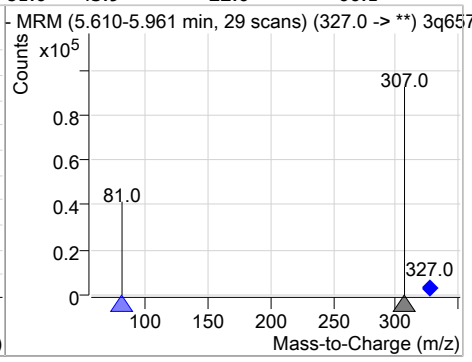




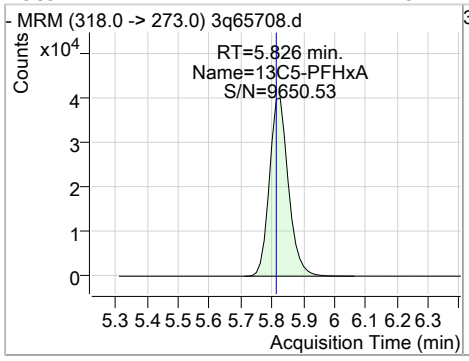
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.91	5.72	0.01	68374	327.0 -> 81.0	43.9	22.0	66.1

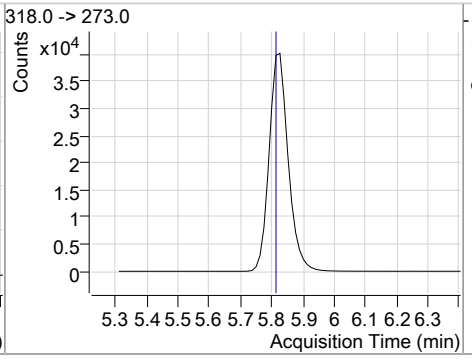


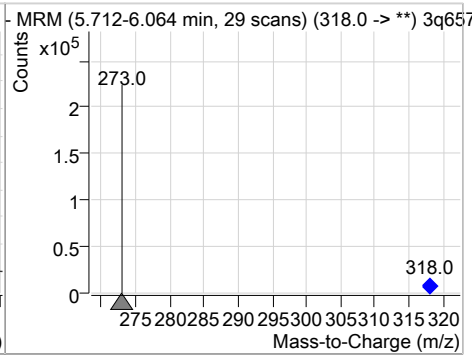




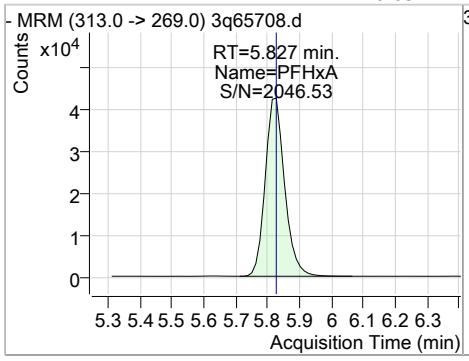
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	11.15	5.83	0.01	169363				

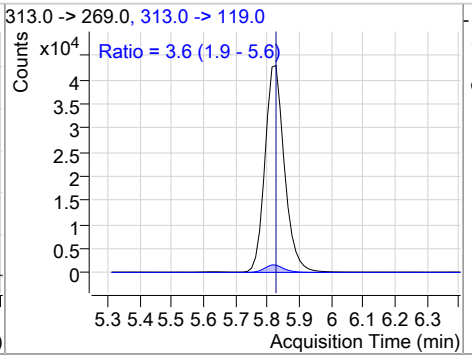


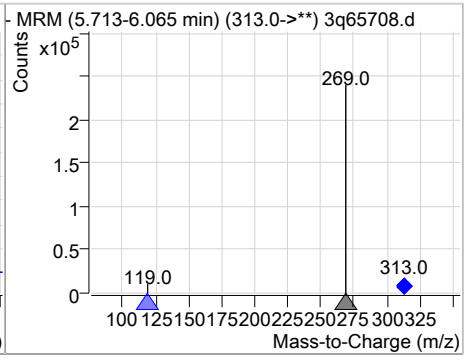




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.03	5.83	0.01	180848	313.0 -> 119.0	3.6	1.9	5.6

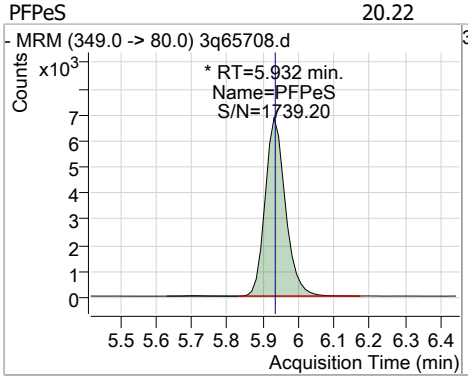


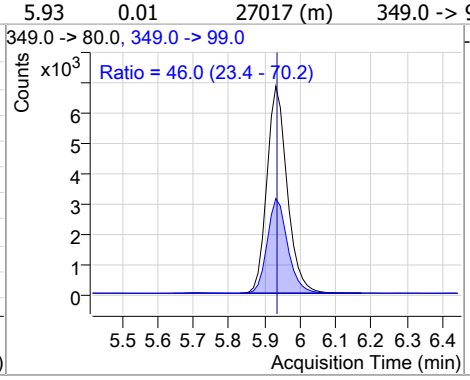


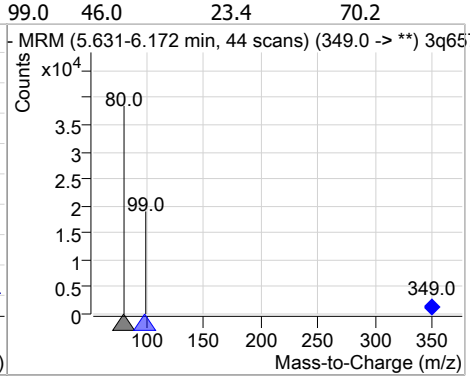


Perfluorinated Compounds by LC/MS/MS

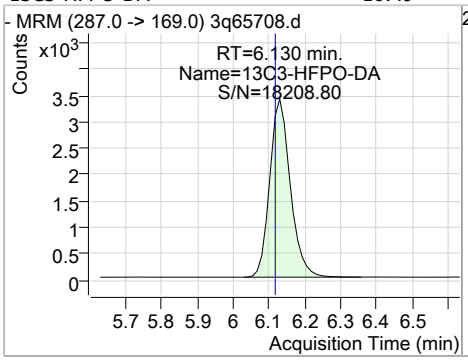
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.22	5.93	0.01	27017 (m)	349.0 -> 99.0	46.0	23.4	70.2

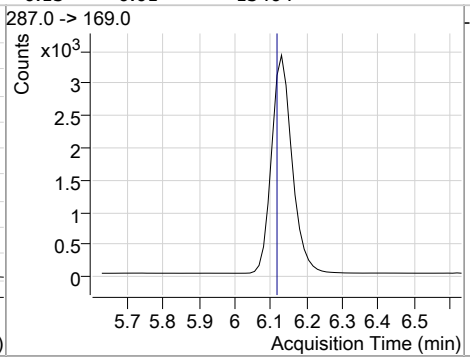


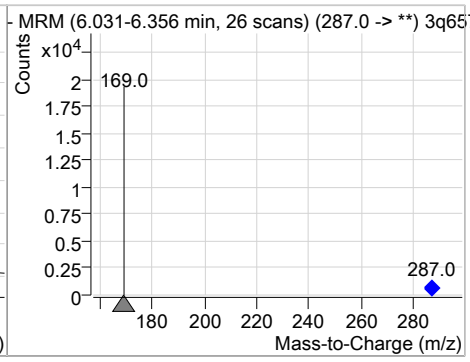




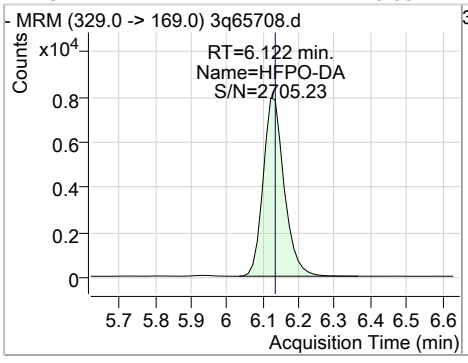
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.49	6.13	0.01	13464				

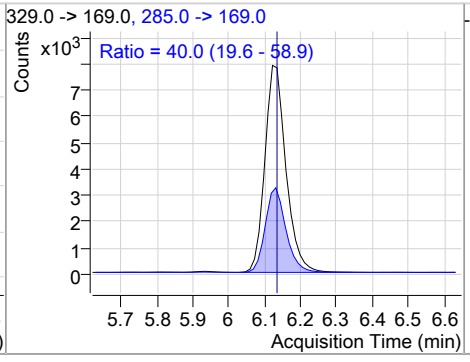


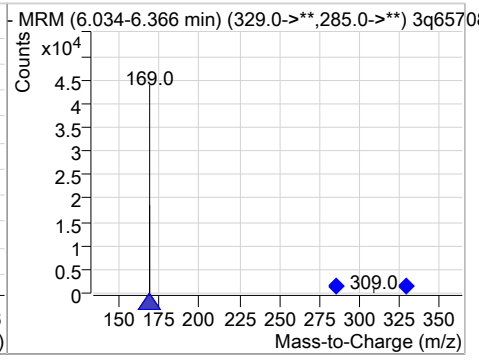




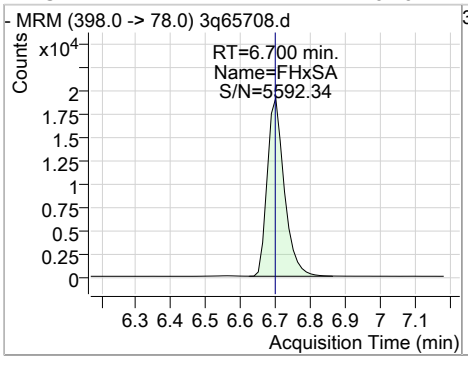
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.06	6.12	0.00	32189	285.0 -> 169.0	40.0	19.6	58.9

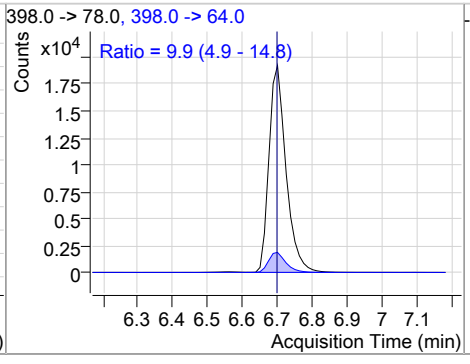


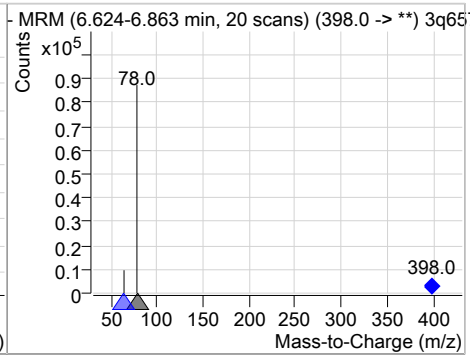




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.78	6.70	0.01	64833	398.0 -> 64.0	9.9	4.9	14.8

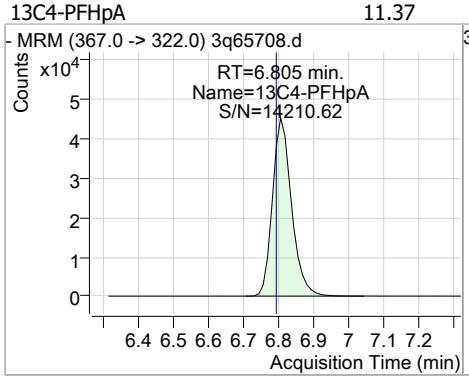


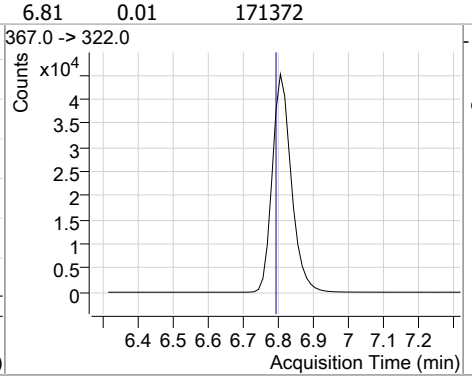


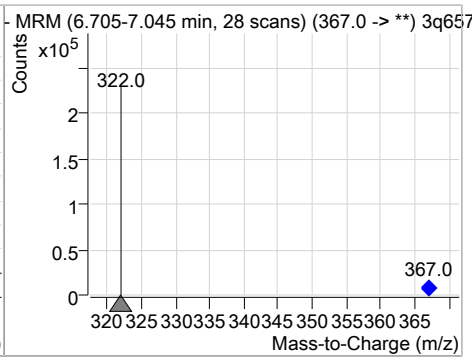


Perfluorinated Compounds by LC/MS/MS

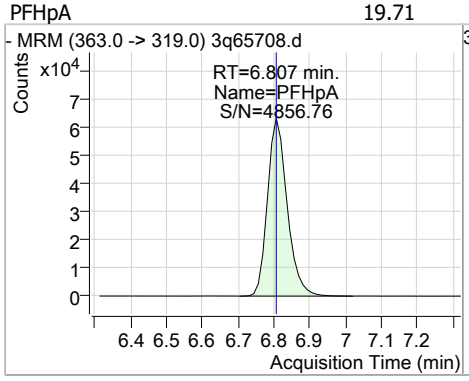
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	11.37	6.81	0.01	171372				

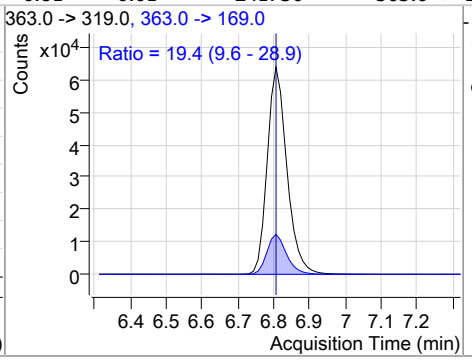


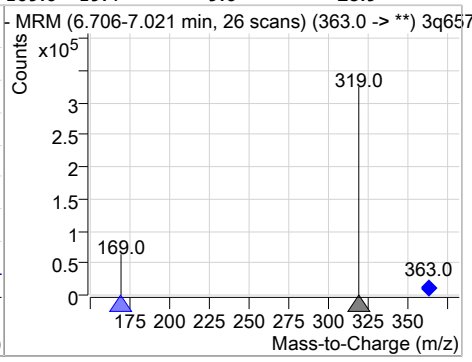




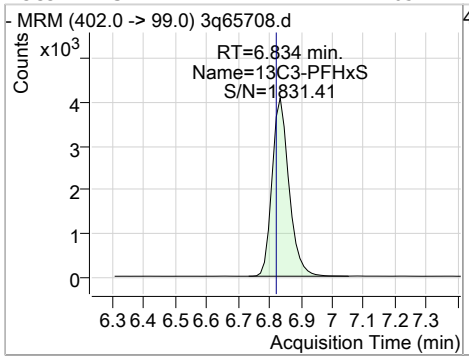
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.71	6.81	0.01	241736	363.0 -> 169.0	19.4	9.6	28.9

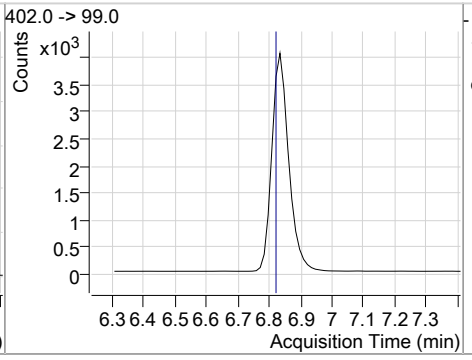


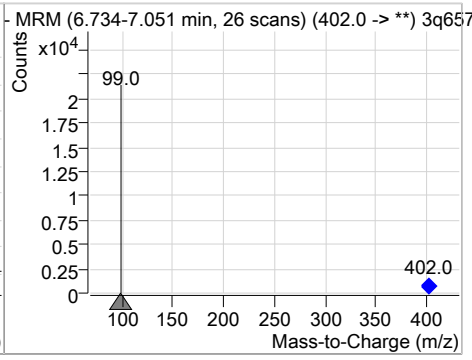




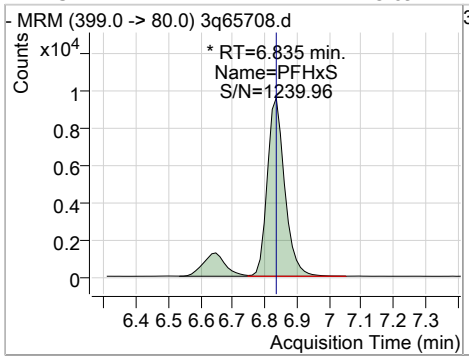
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	11.65	6.83	0.01	15047				

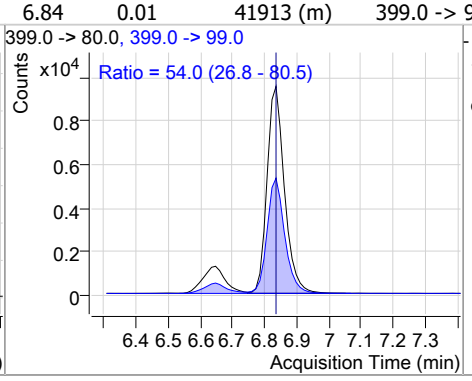


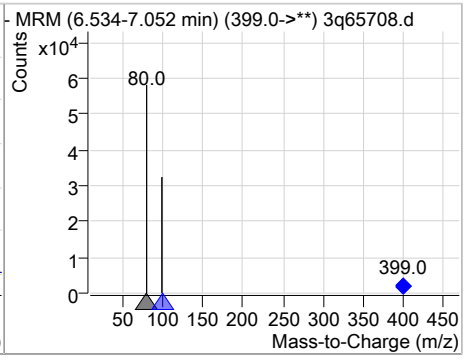




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	23.89	6.84	0.01	41913 (m)	399.0 -> 99.0	54.0	26.8	80.5

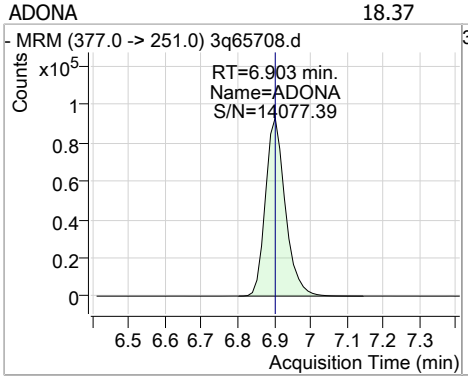


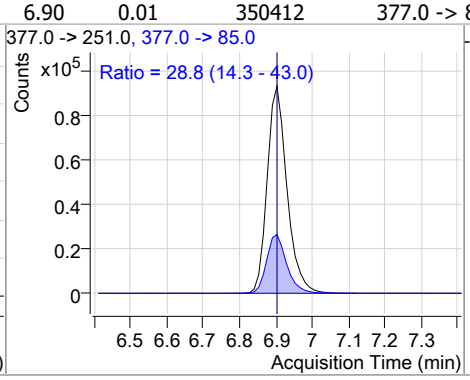


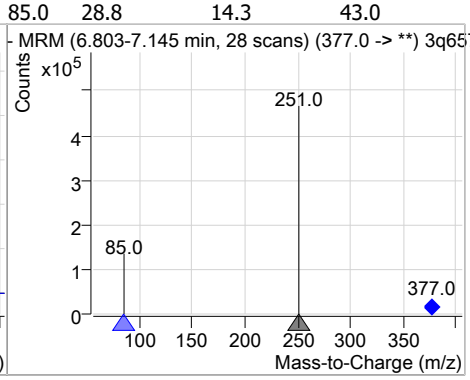


Perfluorinated Compounds by LC/MS/MS

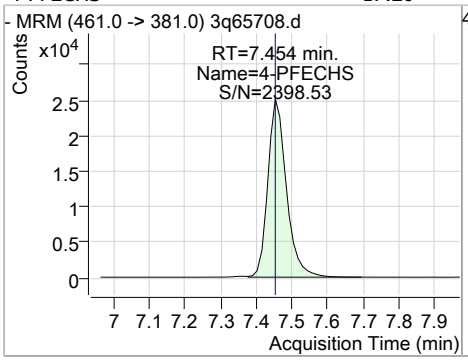
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.37	6.90	0.01	350412	377.0 -> 85.0	28.8	14.3	43.0

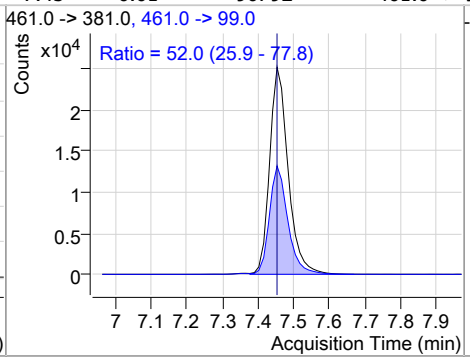


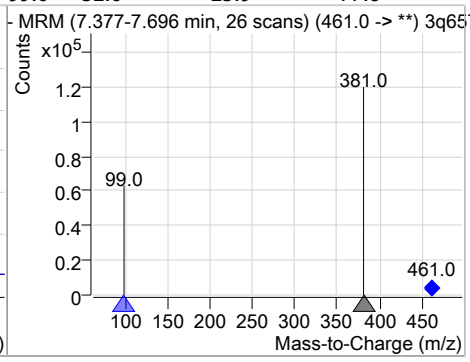




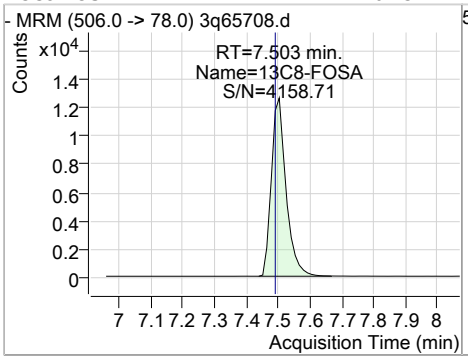
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.20	7.45	0.01	90792	461.0 -> 99.0	52.0	25.9	77.8

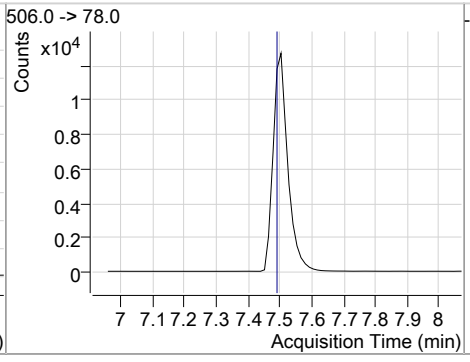


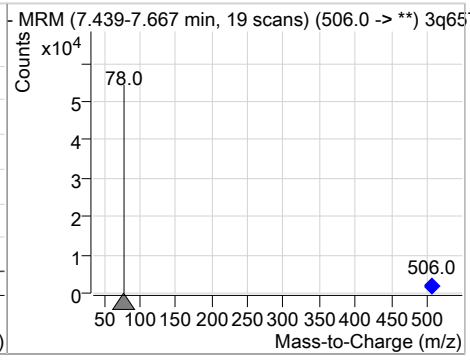




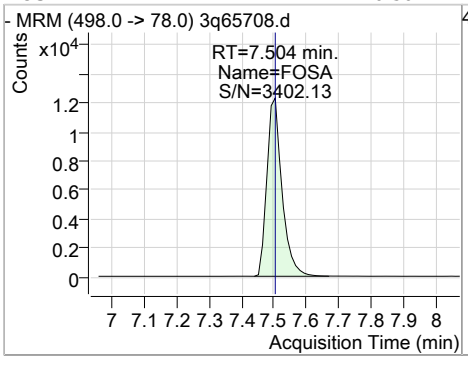
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.73	7.50	0.01	40537				

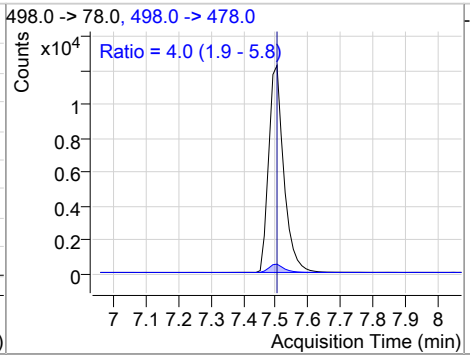


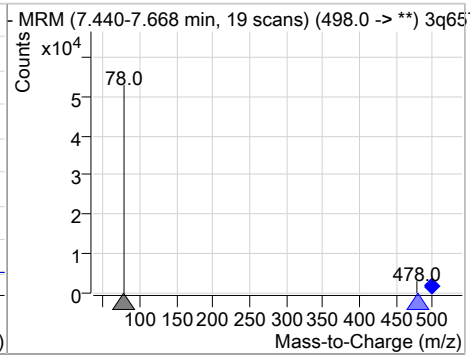




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.50	7.50	0.01	39555	498.0 -> 478.0	4.0	1.9	5.8

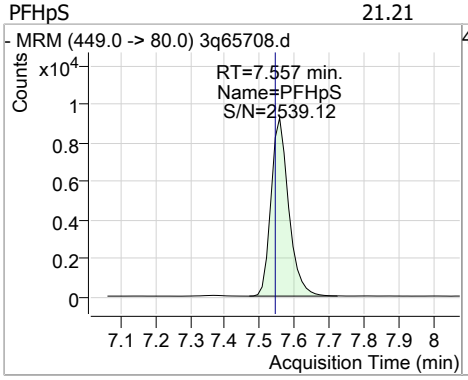


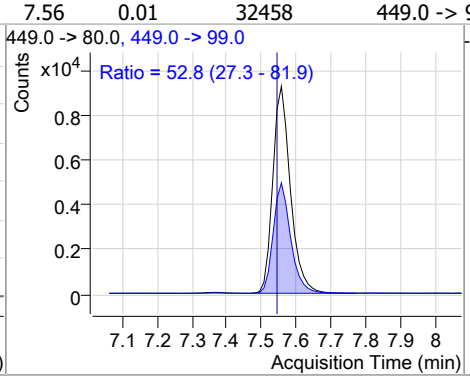


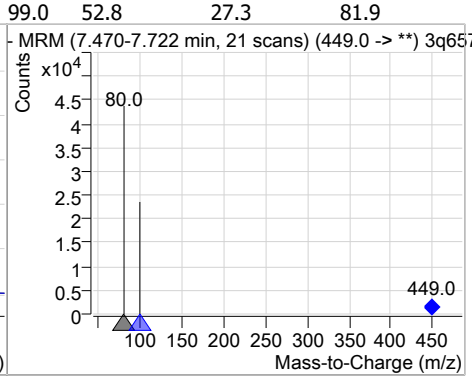


Perfluorinated Compounds by LC/MS/MS

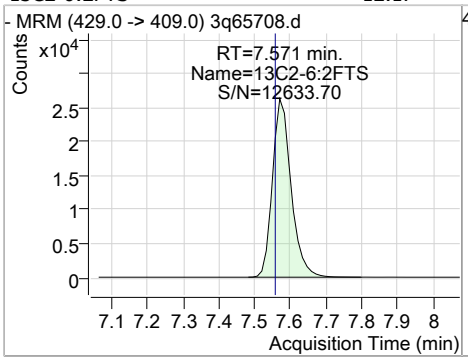
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.21	7.56	0.01	32458	449.0 -> 99.0	52.8	27.3	81.9

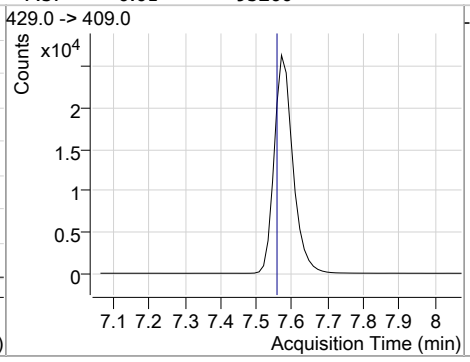


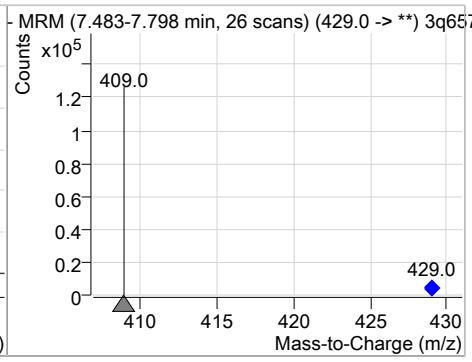




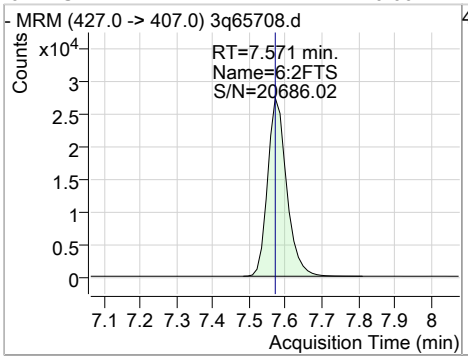
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	12.17	7.57	0.01	95260				

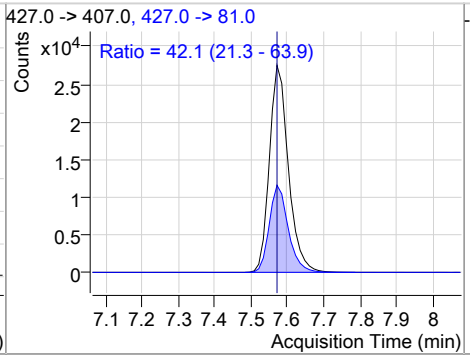


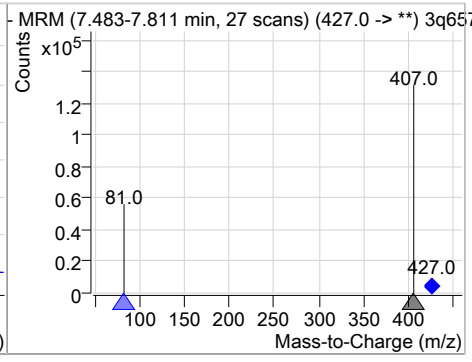




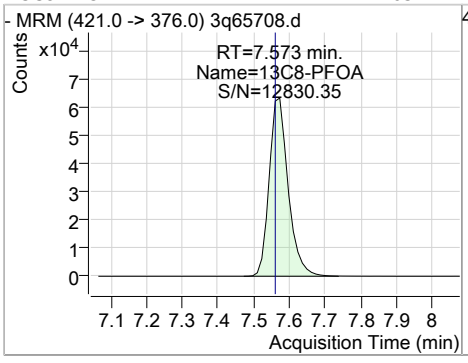
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.06	7.57	0.01	99296	427.0 -> 81.0	42.1	21.3	63.9

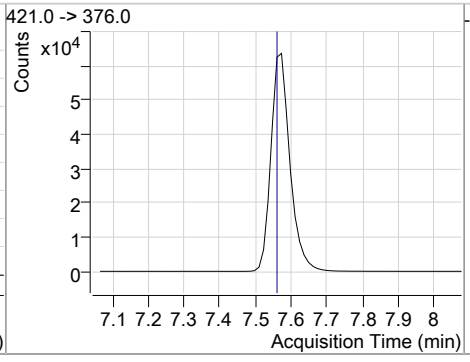


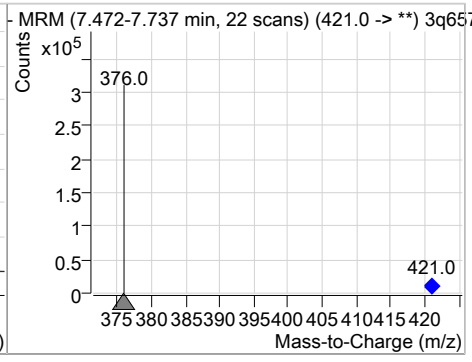




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	11.63	7.57	0.01	234164				

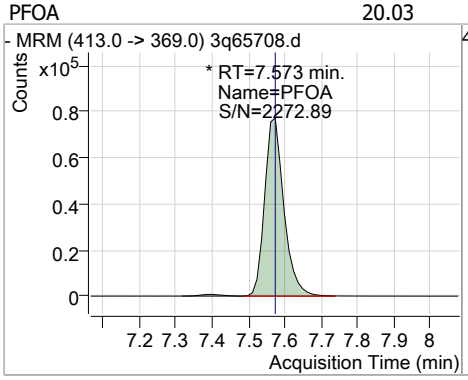


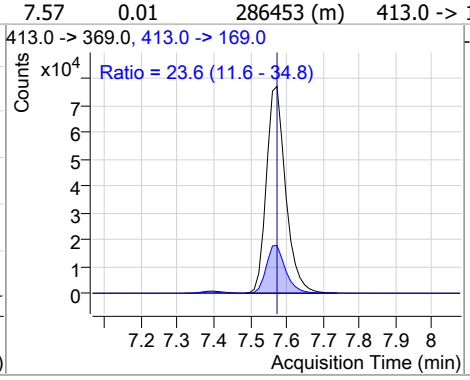


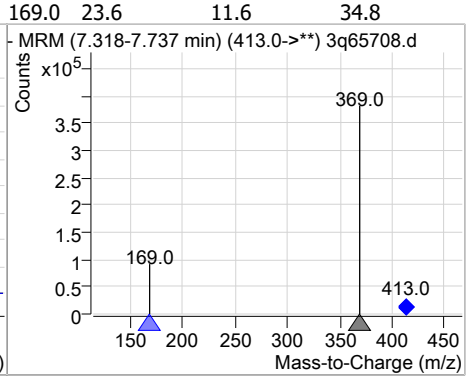


Perfluorinated Compounds by LC/MS/MS

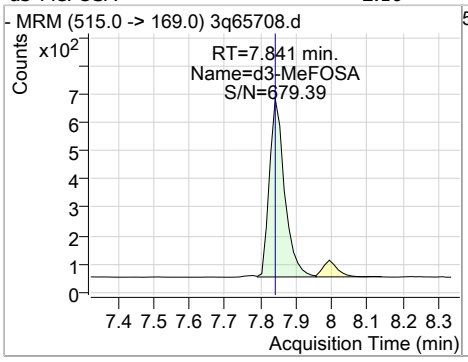
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.03	7.57	0.01	286453 (m)	413.0 -> 169.0	23.6	11.6	34.8

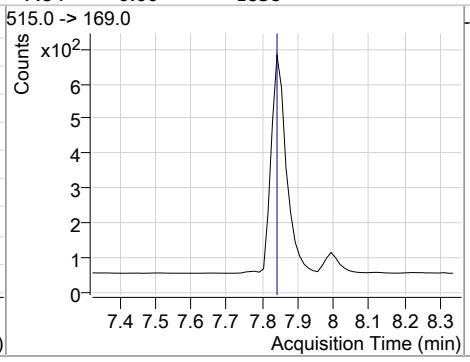


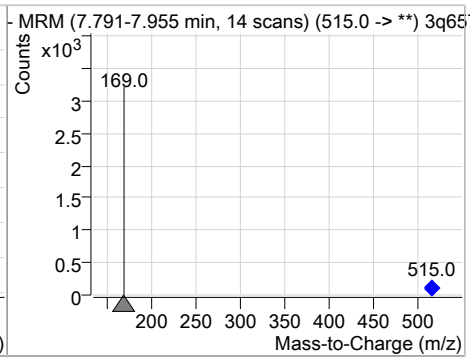




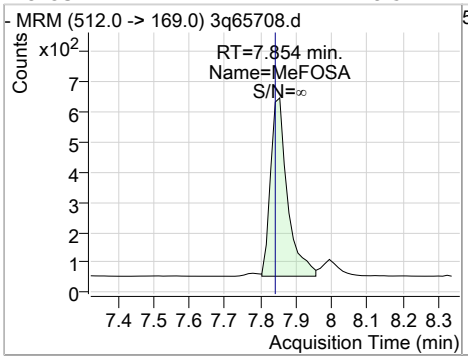
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	2.10	7.84	0.00	1858				

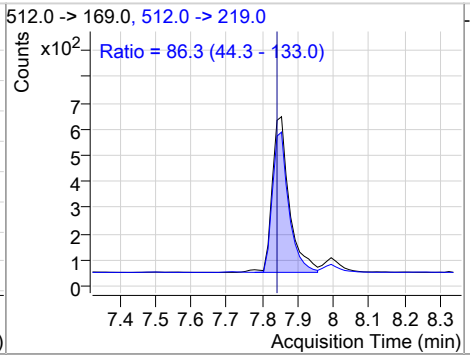


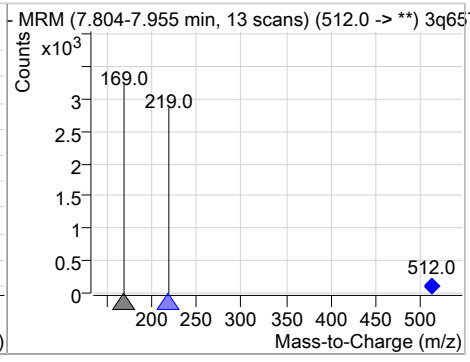




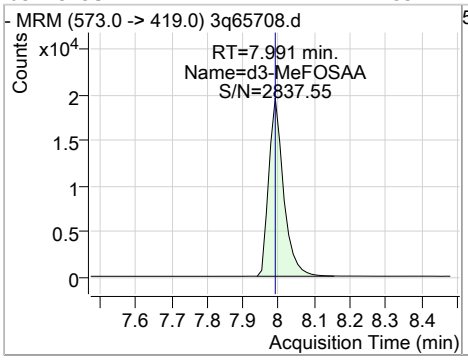
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.57	7.85	0.01	1957	512.0 -> 219.0	86.3	44.3	133.0

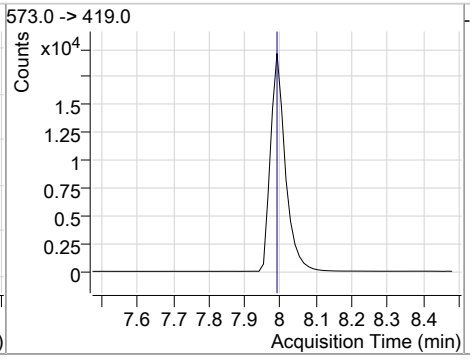


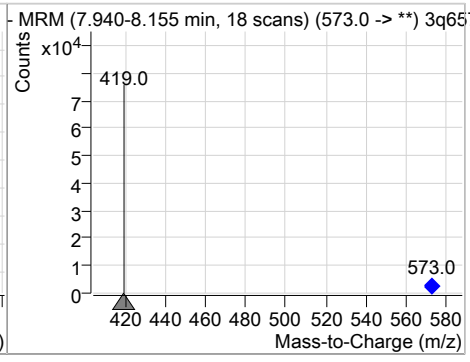




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	12.53	7.99	0.00	56327				

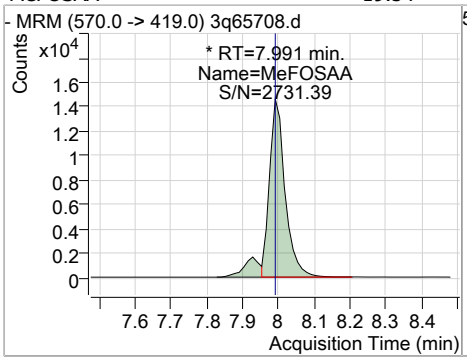


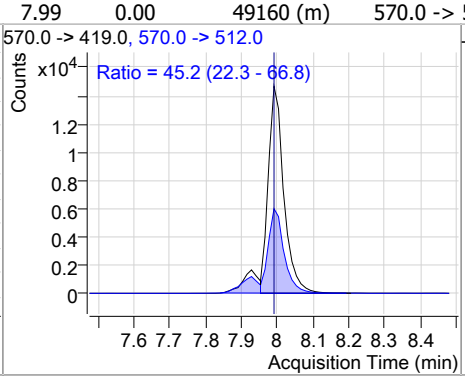


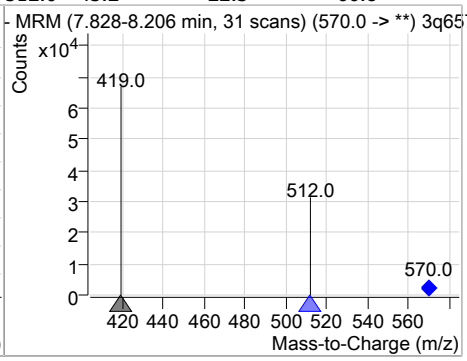


Perfluorinated Compounds by LC/MS/MS

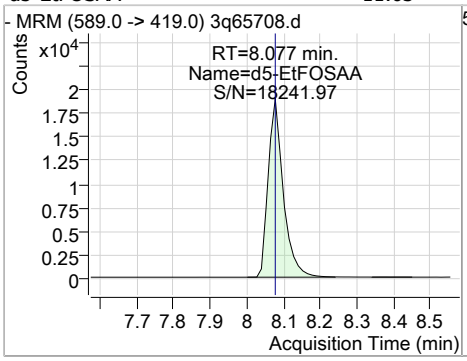
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.54	7.99	0.00	49160 (m)	570.0 -> 512.0	45.2	22.3	66.8

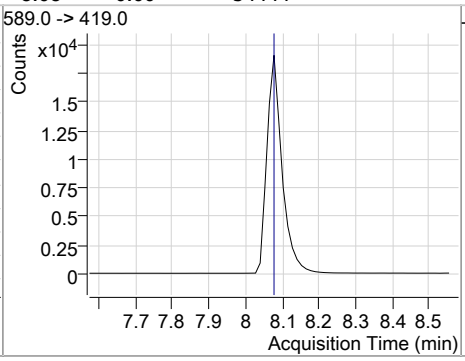


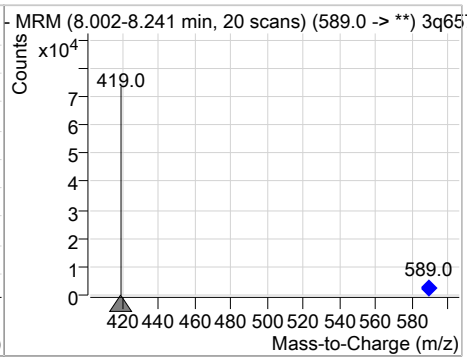




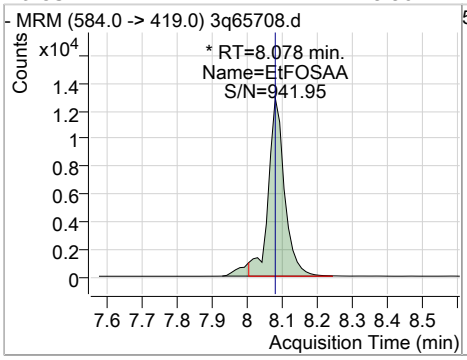
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	11.63	8.08	0.00	54444				

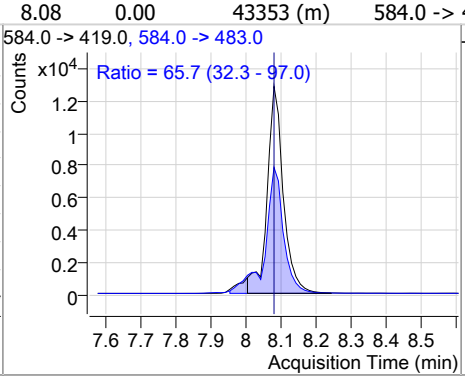


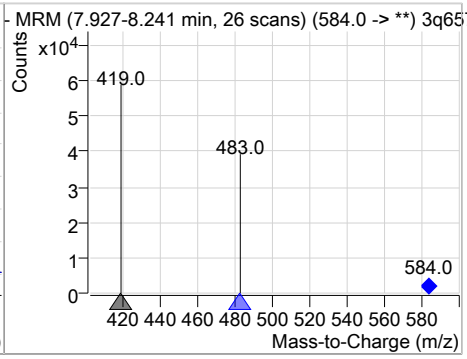




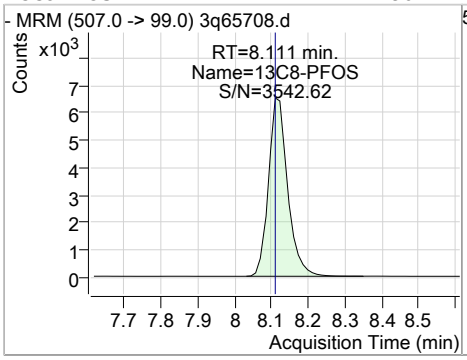
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.98	8.08	0.00	43353 (m)	584.0 -> 483.0	65.7	32.3	97.0

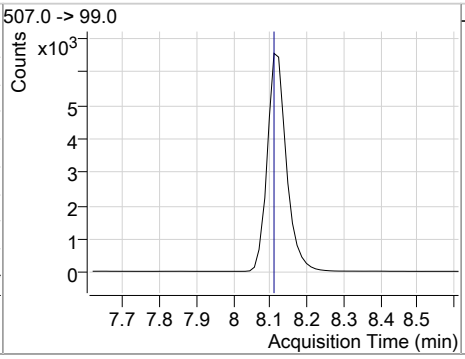


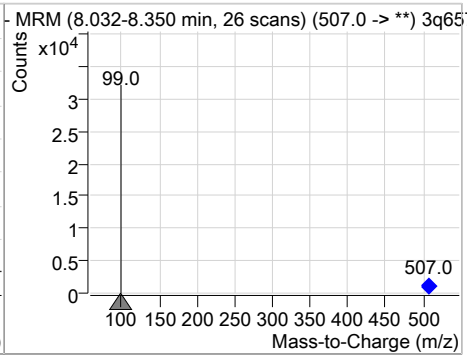




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	11.96	8.11	0.00	23466				

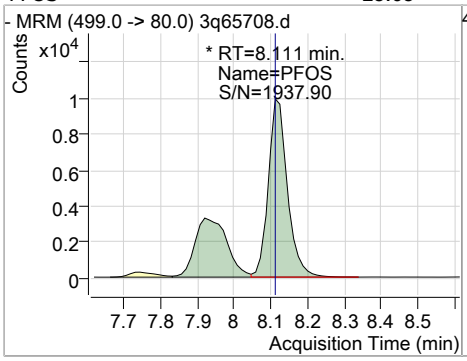


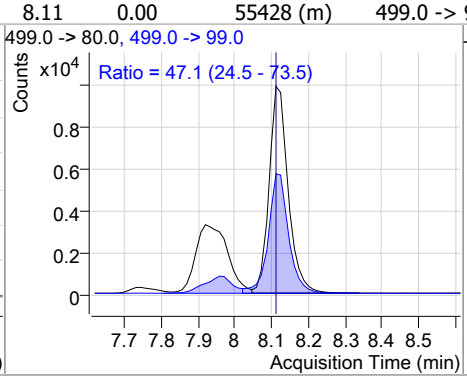


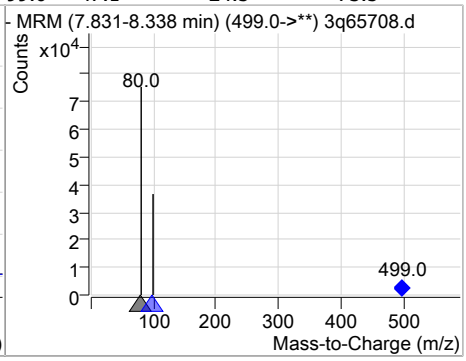


Perfluorinated Compounds by LC/MS/MS

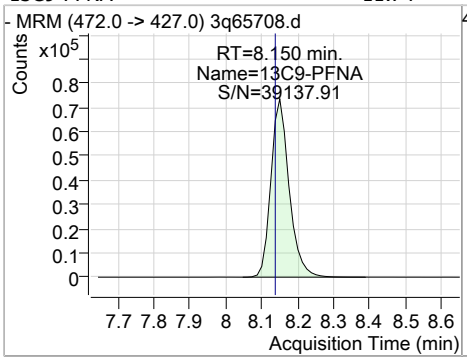
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	28.68	8.11	0.00	55428 (m)	499.0 -> 99.0	47.1	24.5	73.5

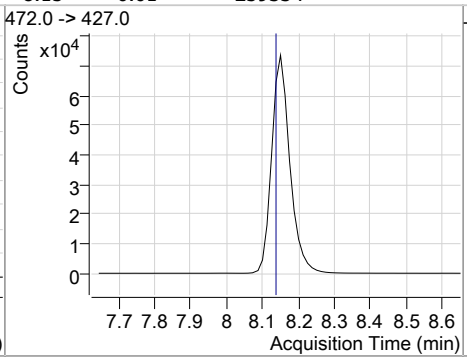


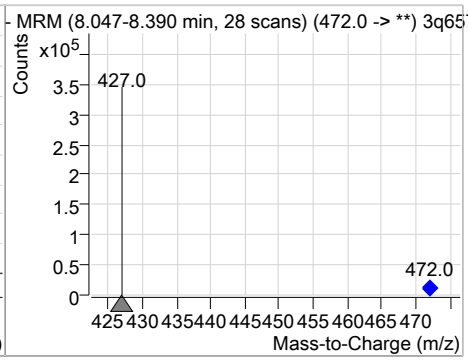




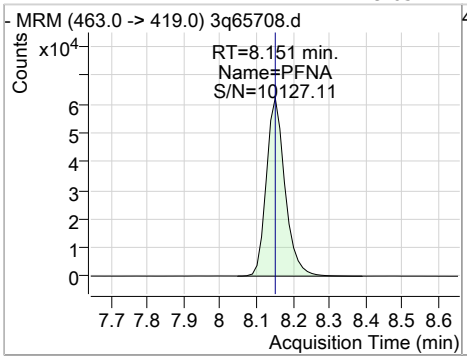
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	11.74	8.15	0.01	259334				

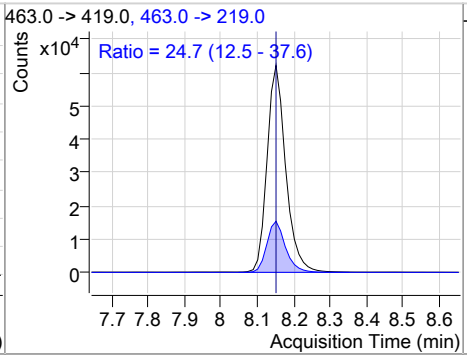


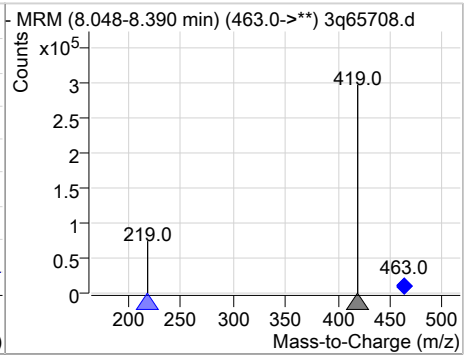




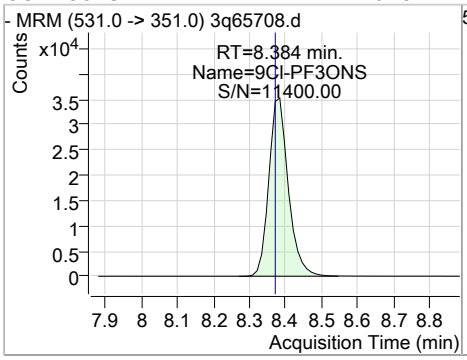
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.65	8.15	0.01	220642	463.0 -> 219.0	24.7	12.5	37.6

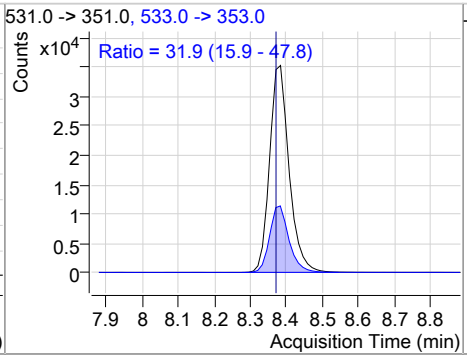


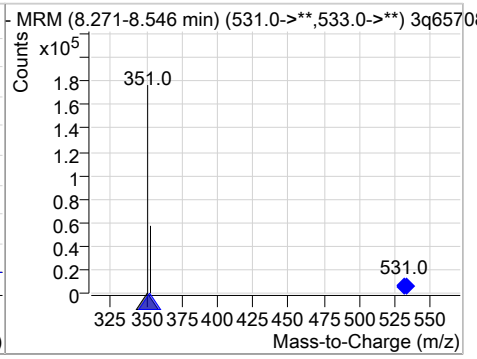




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.49	8.38	0.01	132162	533.0 -> 353.0	31.9	15.9	47.8

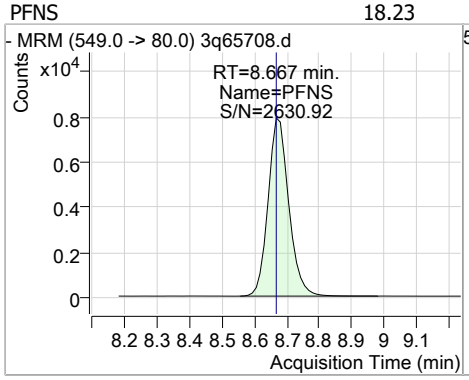


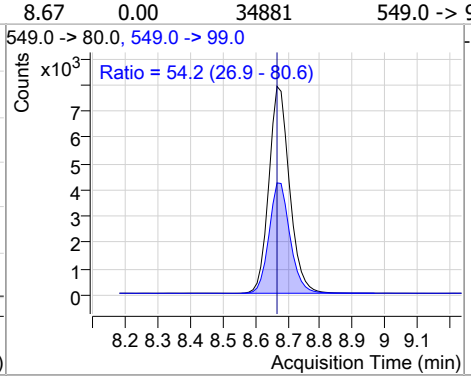


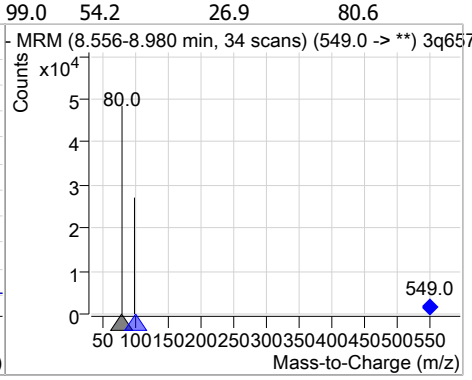


Perfluorinated Compounds by LC/MS/MS

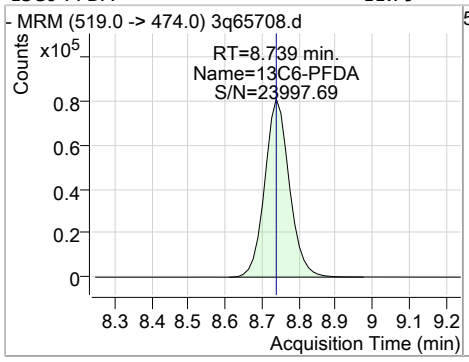
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.23	8.67	0.00	34881	549.0 -> 99.0	54.2	26.9	80.6

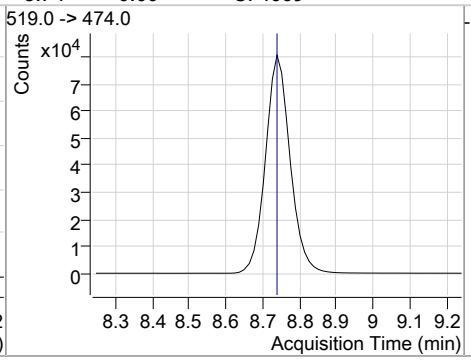


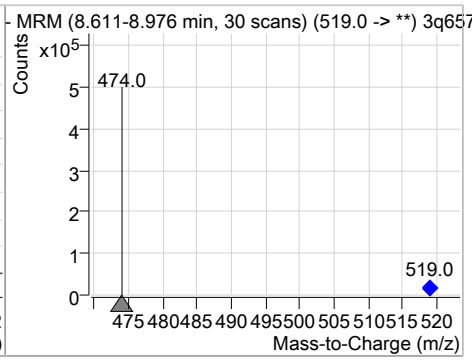




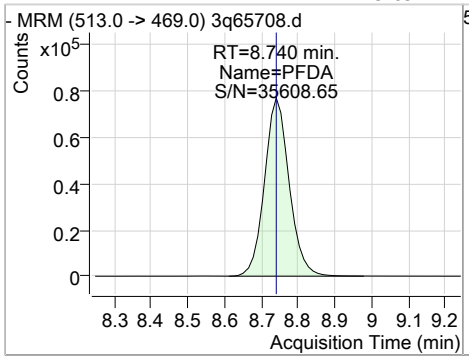
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	11.79	8.74	0.00	374669				

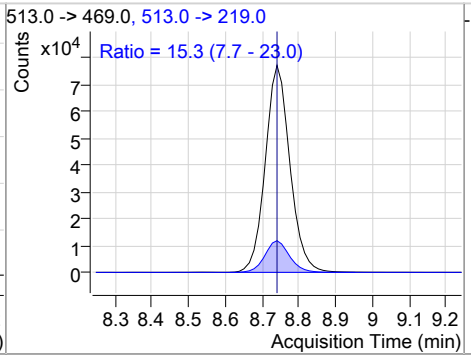


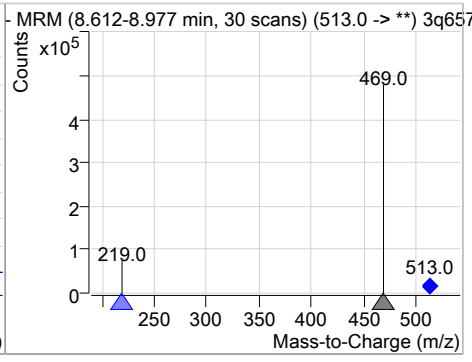




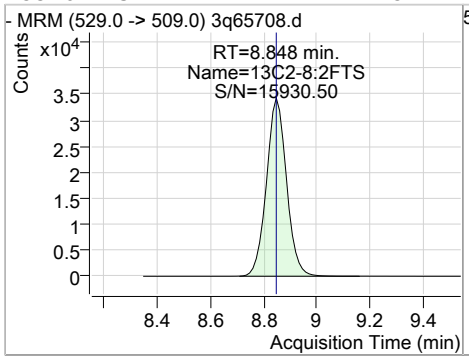
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.89	8.74	0.00	359060	513.0 -> 219.0	15.3	7.7	23.0

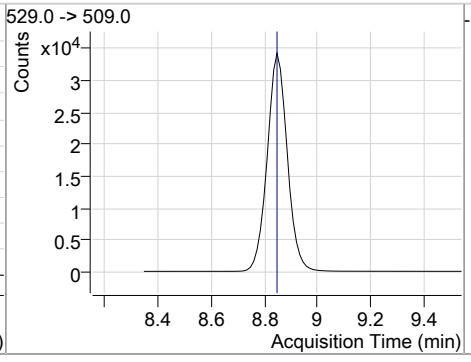


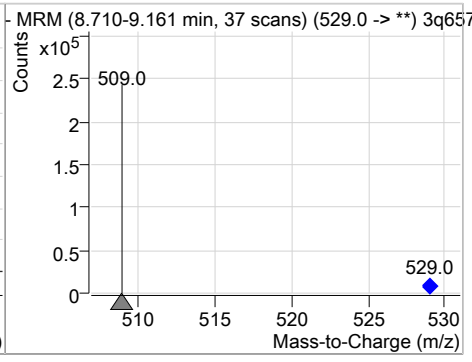




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	12.34	8.85	0.00	179378				

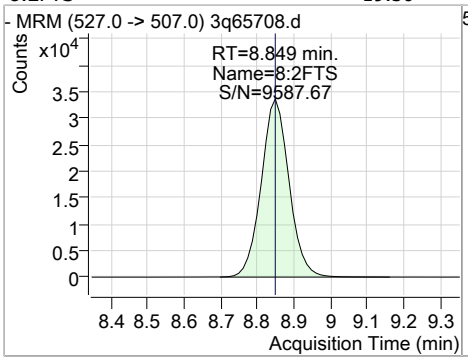


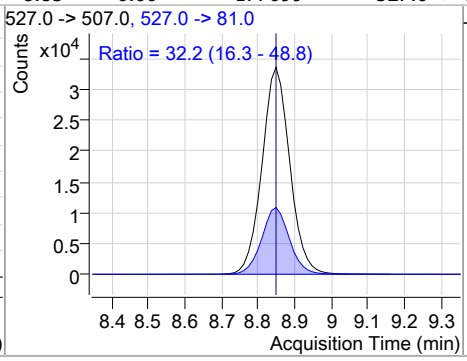


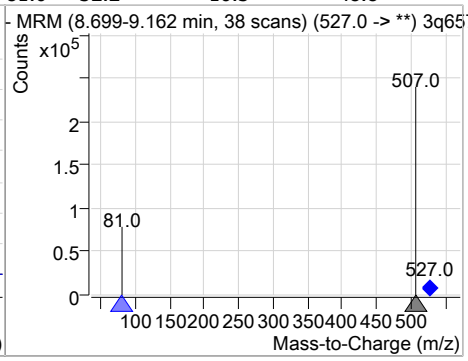


Perfluorinated Compounds by LC/MS/MS

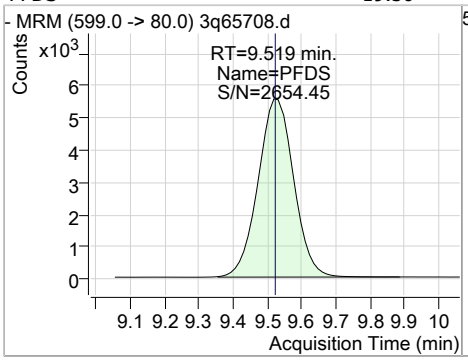
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.50	8.85	0.00	177099	527.0 -> 81.0	32.2	16.3	48.8

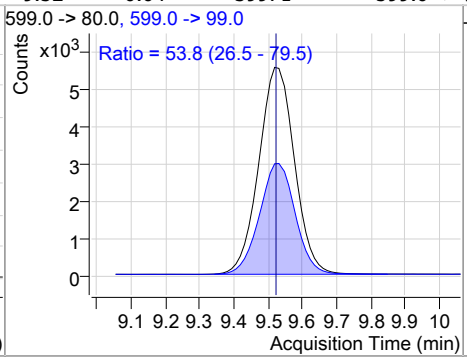


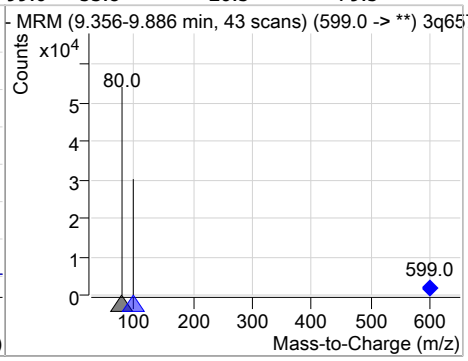




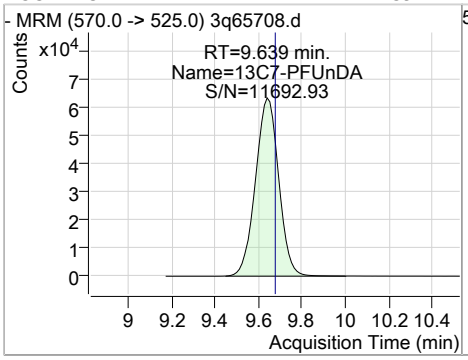
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.50	9.52	-0.04	39971	599.0 -> 99.0	53.8	26.5	79.5

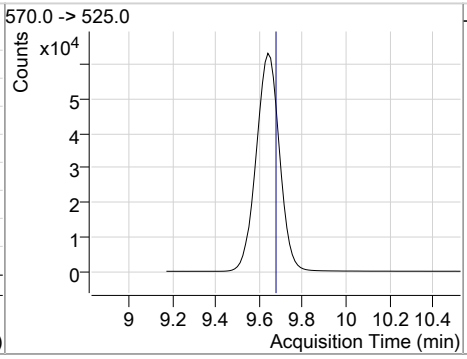


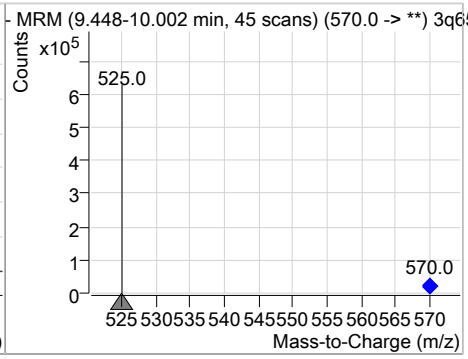




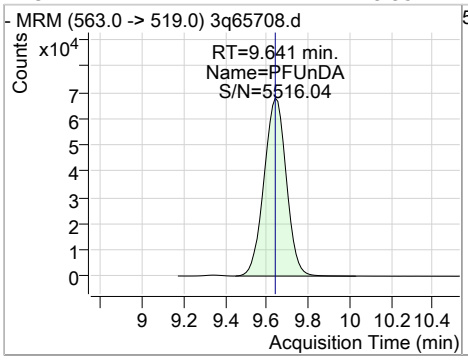
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.39	9.64	-0.04	470383				

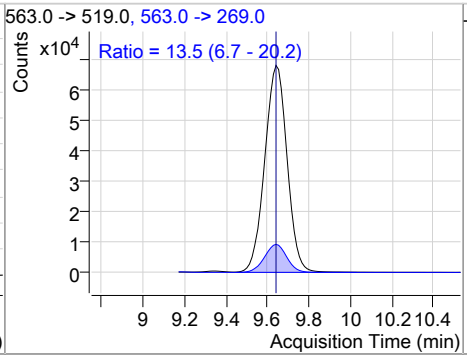


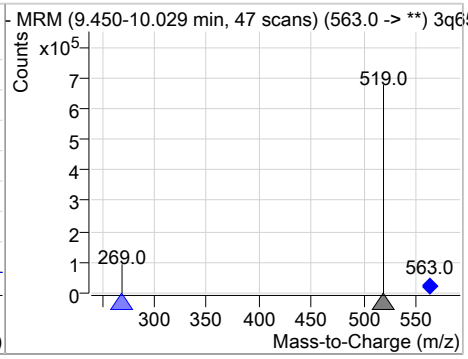




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.95	9.64	-0.04	505397	563.0 -> 269.0	13.5	6.7	20.2

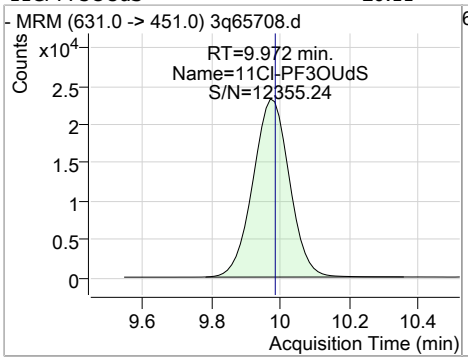


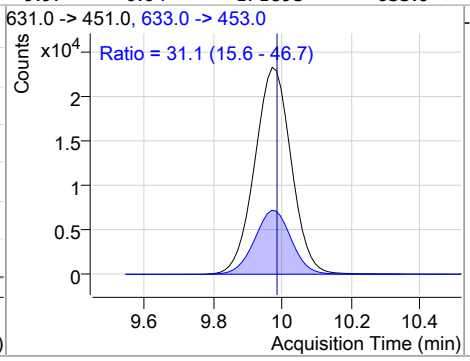


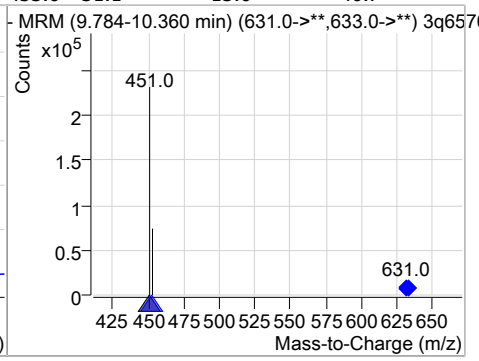


Perfluorinated Compounds by LC/MS/MS

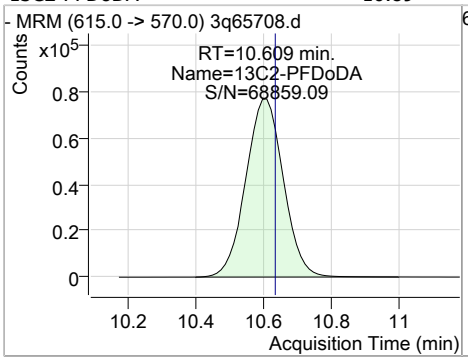
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.11	9.97	-0.04	171895	633.0 -> 453.0	31.1	15.6	46.7

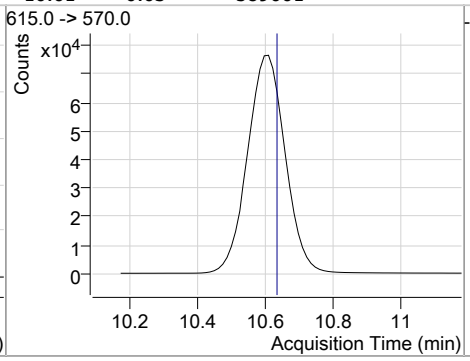


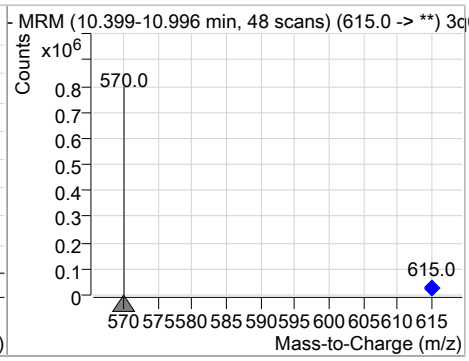




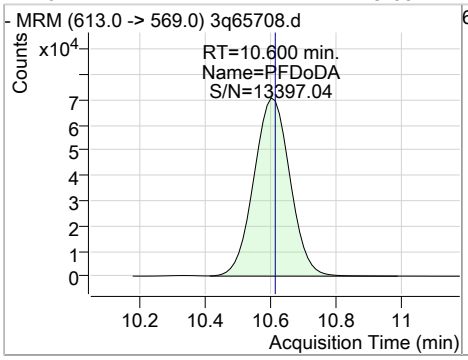
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	10.89	10.61	-0.03	589061				

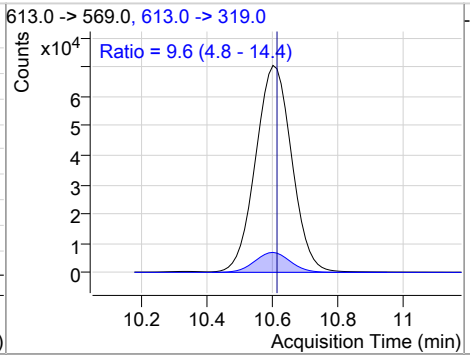


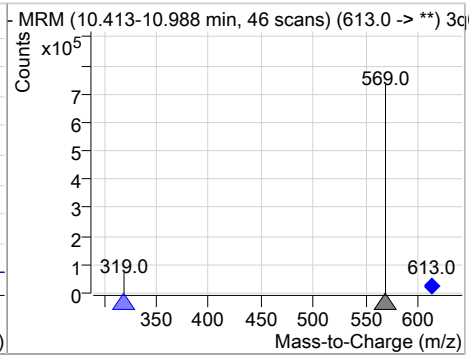




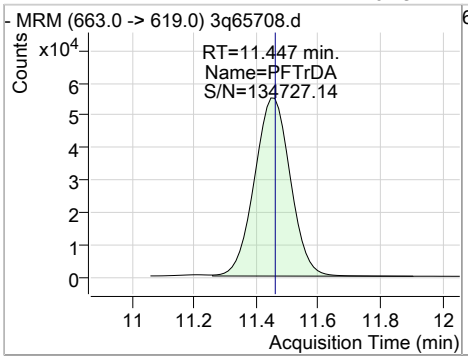
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.88	10.60	-0.04	543791	613.0 -> 319.0	9.6	4.8	14.4

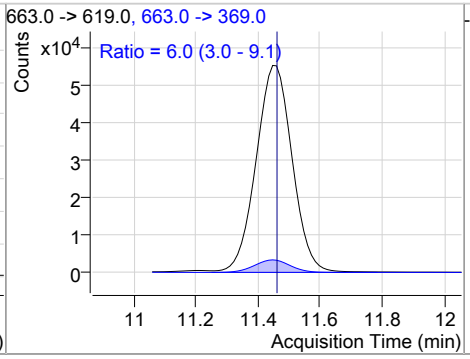


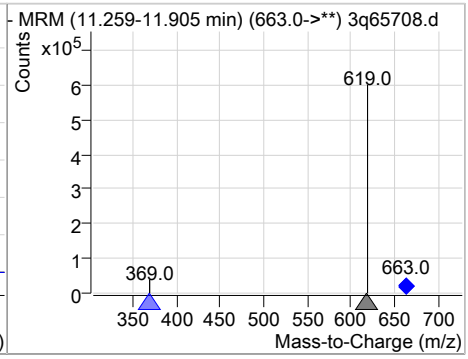




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.19	11.45	-0.04	443999	663.0 -> 369.0	6.0	3.0	9.1

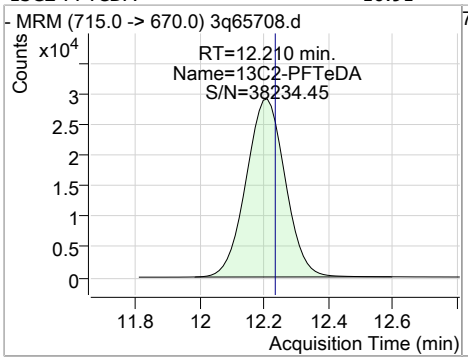


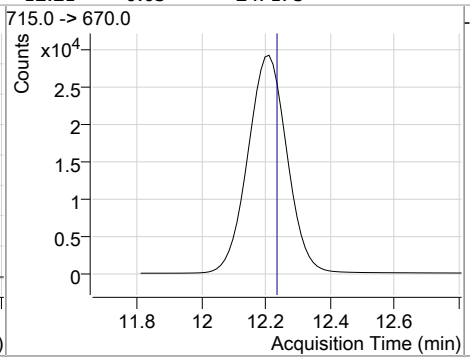


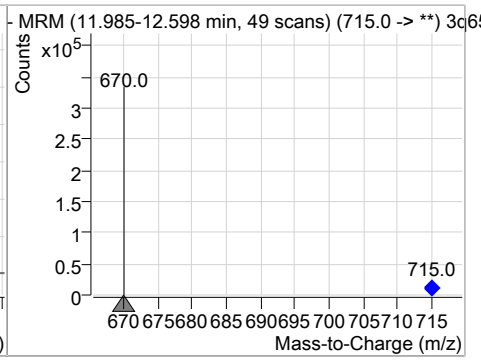


Perfluorinated Compounds by LC/MS/MS

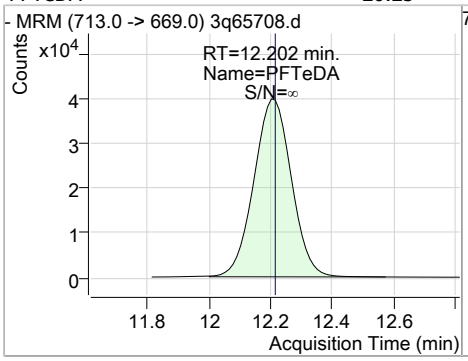
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	10.91	12.21	-0.03	247175				

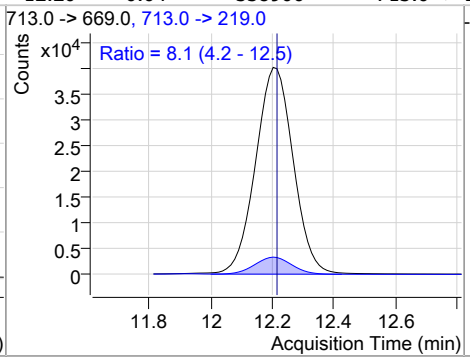


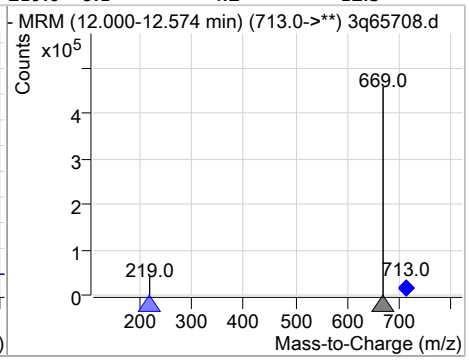




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.25	12.20	-0.04	338906	713.0 -> 219.0	8.1	4.2	12.5







Manual Integration Approval Summary

Sample Number: OP92762-MSD
Lab FileID: 3Q65708.D
Injection Time: 09/14/22 01:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 11:58 Martha Valls
Supervisor approved: 09/21/22 21:57 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanesulfonic acid	2706-91-4		5.93	Split peak
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
Perfluorooctanoic acid	335-67-1		7.57	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4633.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:07:06 AM
Sample Name : op92763-ms
Vial : P1-E2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,120,,,1.0,1,water

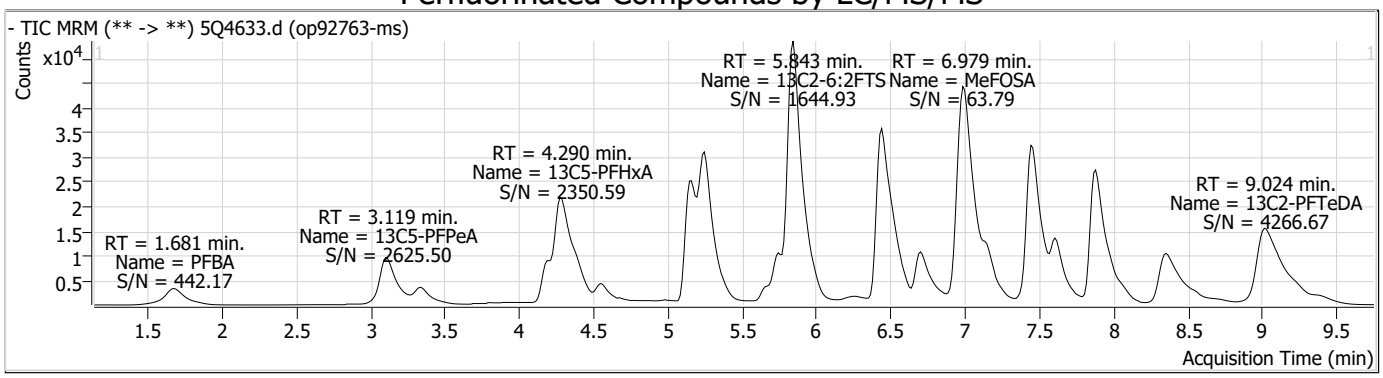
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.675	217.0 -> 172.0	23574	20.00 µg/L	-0.025
M5-PFPeA	3.119	268.0 -> 223.0	39960	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	64721	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	62449	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	94626	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	103438	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	83133	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	97556	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	99121	20.00 µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	101555	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	12276	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	4713	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5246	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9568	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	22212	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	37047	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	35140	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	16569	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4368	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	274	20.00 µg/L	0.013
M5-EtFOSAA	7.157	589.0 -> 419.0	17395	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	22212	15.12 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%	
13C2-6:2FTS	5.843	429.0 -> 409.0	37047	16.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
13C2-8:2FTS	7.013	529.0 -> 509.0	35140	15.65 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.2%	
13C2-PFDoDA	7.879	615.0 -> 570.0	99121	13.68 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.4%	
13C2-PFTeDA	9.024	715.0 -> 670.0	101555	13.46 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 67.3%	
13C3-PFBS	3.349	302.0 -> 99.0	4713	14.47 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.3%	
13C3-PFHxS	5.194	402.0 -> 99.0	5246	15.38 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.9%	
13C4-PFBA	1.675	217.0 -> 172.0	23574	13.19 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.9%	
13C4-PFHpA	5.163	367.0 -> 322.0	62449	15.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%	
13C5-PFHxA	4.290	318.0 -> 273.0	64721	14.80 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.0%	
13C5-PFPeA	3.119	268.0 -> 223.0	39960	13.75 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%	
13C6-PFDA	6.989	519.0 -> 474.0	83133	15.44 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

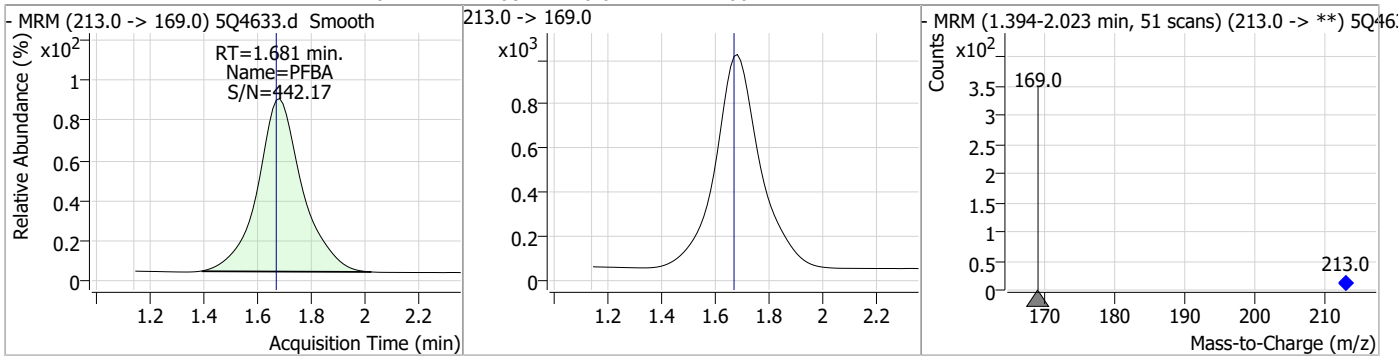
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%			
13C7-PFUnDA	7.459	570.0 -> 525.0	97556	13.85	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 69.3%			
13C8-FOSA	6.517	506.0 -> 78.0	12276	10.82	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.1%			
13C8-PFOA	5.857	421.0 -> 376.0	94626	15.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.2%			
13C8-PFOS	6.428	507.0 -> 99.0	9568	14.65	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.3%			
13C9-PFNA	6.455	472.0 -> 427.0	103438	15.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16569	17.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4368	13.01	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.0%			
d3-MeFOSA	6.965	515.0 -> 169.0	274	0.90	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 4.5%			
d5-EtFOSAA	7.157	589.0 -> 419.0	17395	15.52	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	23956	19.26	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	39967	20.34	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	37047	19.78	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	12750	20.72	µg/L		98
FOSA	6.519	498.0 -> 78.0	12983	20.55	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	15514	20.44	µg/L		97
PFBA	1.681	213.0 -> 169.0	11200	20.17	µg/L		100
PFBS	3.342	299.0 -> 80.0	13804	19.50	µg/L		100
PFDA	6.990	513.0 -> 469.0	96792	18.95	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	97931	20.14	µg/L		98
PFDS	7.419	599.0 -> 80.0	11926	18.12	µg/L		100
PFHpA	5.164	363.0 -> 319.0	80651	19.66	µg/L		100
PFHpS	5.855	449.0 -> 80.0	15042	20.91	µg/L		99
PFHxA	4.291	313.0 -> 269.0	60673	19.19	µg/L		100
PFHxS	5.195	399.0 -> 80.0	15028	19.29	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	90745	19.58	µg/L		99
PFNS	6.949	549.0 -> 80.0	12864	18.22	µg/L		99
PFOA	5.858	413.0 -> 369.0	111282	19.39	µg/L		100
PFOS	6.429	499.0 -> 80.0	16176	19.20	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	38283	19.39	µg/L		100
PFPeS	4.398	349.0 -> 80.0	11224	20.38	µg/L		100
PFTeDA	9.027	713.0 -> 669.0	97258	18.40	µg/L		99
PFTrDA	8.363	663.0 -> 619.0	104197	17.93	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	98171	20.15	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	44147	17.93	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	49968	17.39	µg/L		100
ADONA	5.261	377.0 -> 251.0	103194	19.14	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	14909	20.23	µg/L		100
MeFOSA	6.979	512.0 -> 169.0	278	18.86	µg/L		92
4-PFECHS	5.753	461.0 -> 381.0	37072	21.77	µg/L		99
FBSA	4.356	298.0 -> 78.0	19408	18.08	µg/L		100
FHxSA	5.674	398.0 -> 78.0	16793	17.45	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

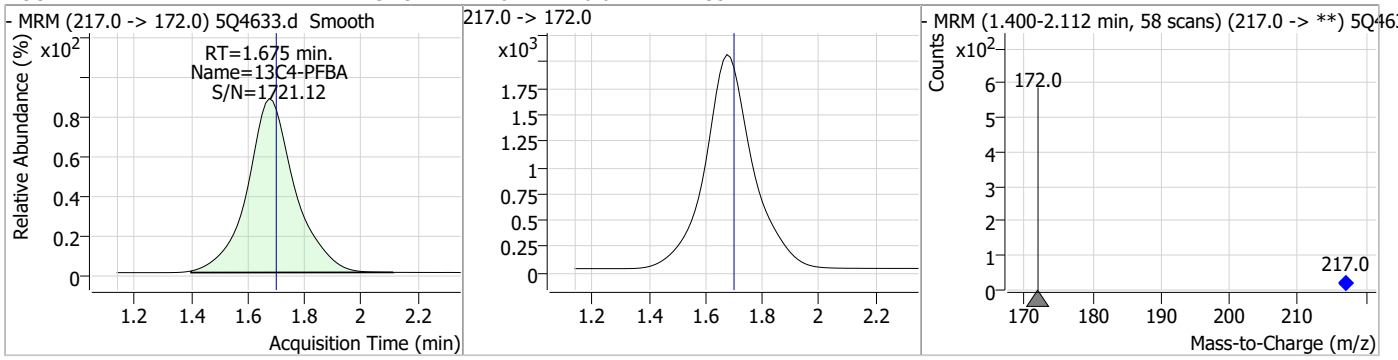
Perfluorinated Compounds by LC/MS/MS



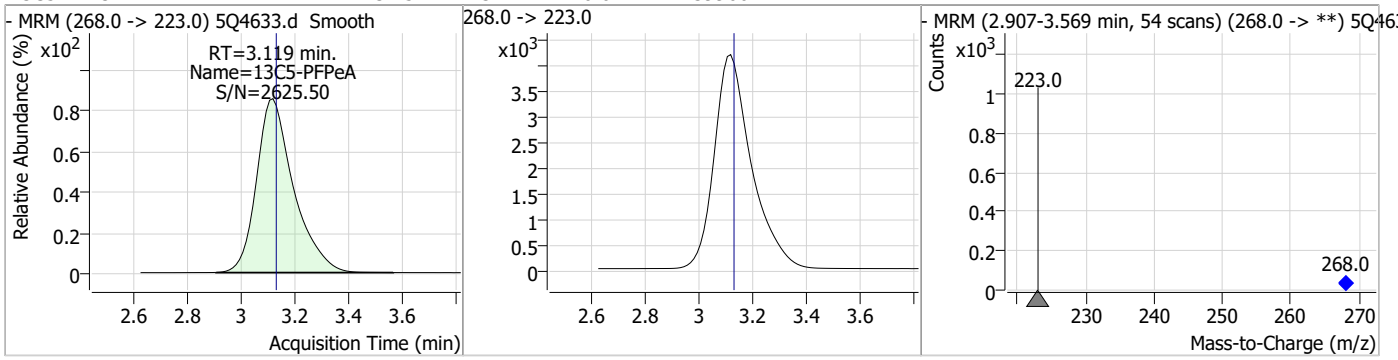
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.17	1.68	-0.01	11200				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.19	1.67	-0.02	23574				

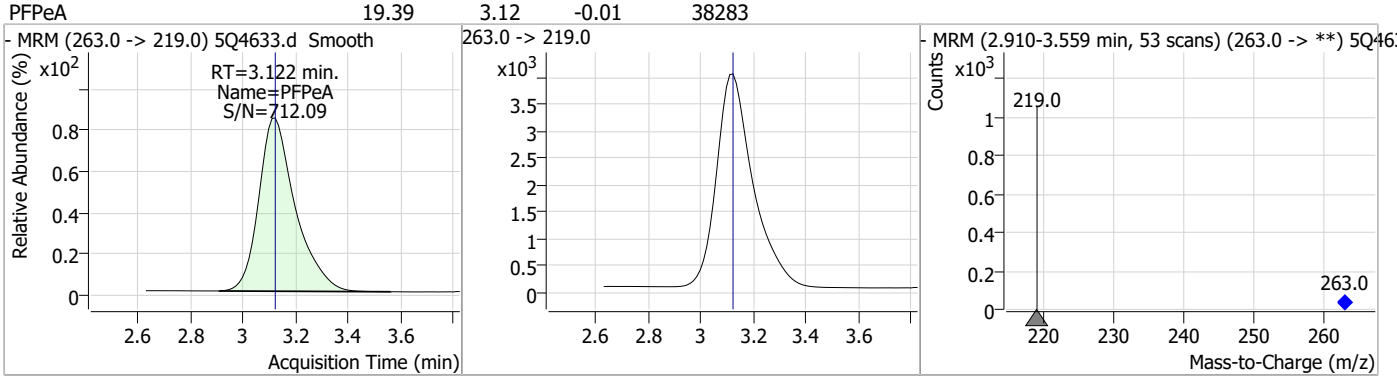


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	13.75	3.12	-0.01	39960				

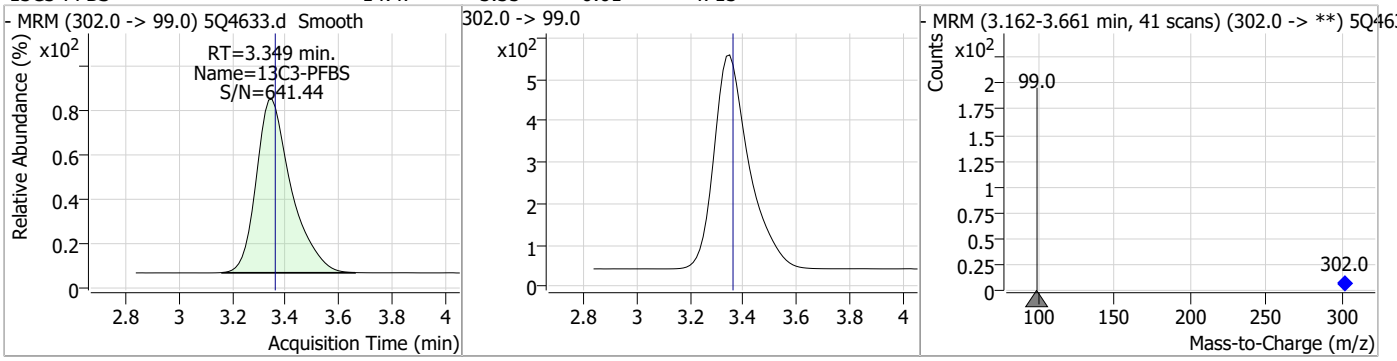


Perfluorinated Compounds by LC/MS/MS

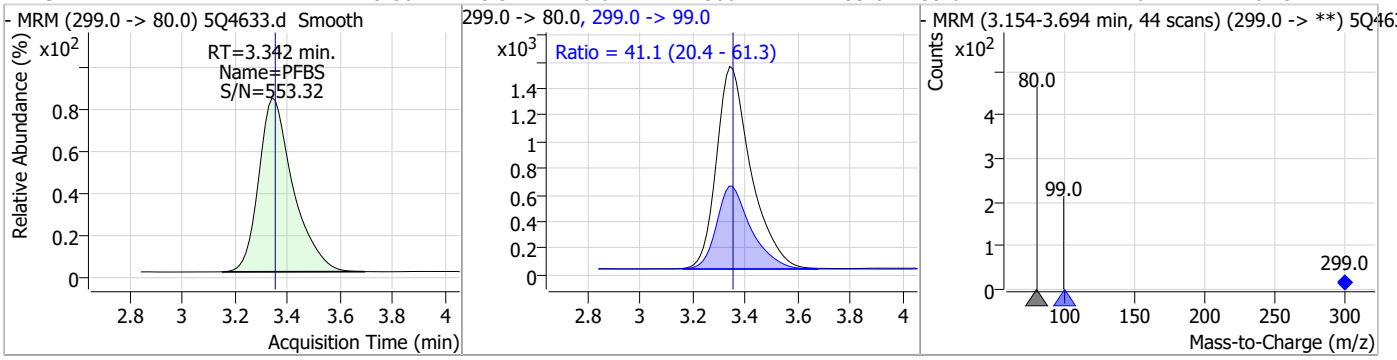
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.39	3.12	-0.01	38283				



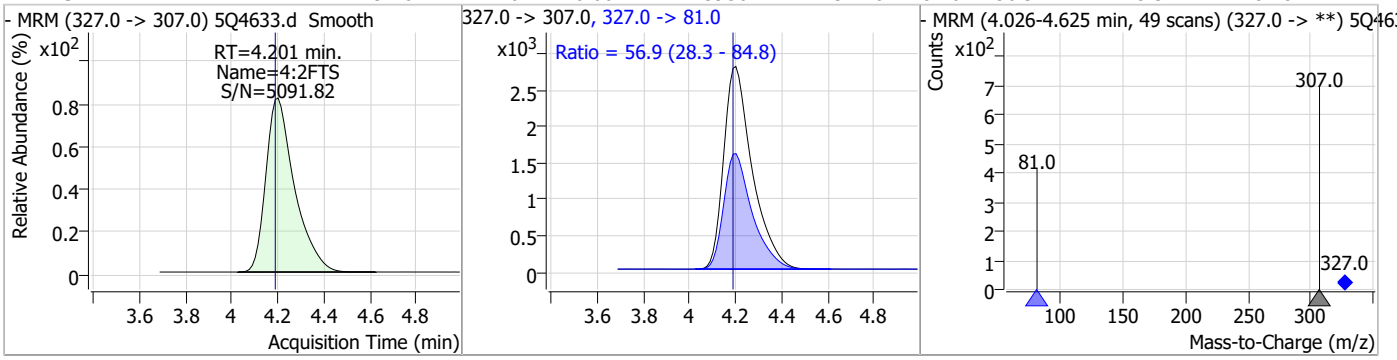
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.47	3.35	-0.01	4713				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.50	3.34	-0.02	13804	299.0 -> 99.0	41.1	20.4	61.3

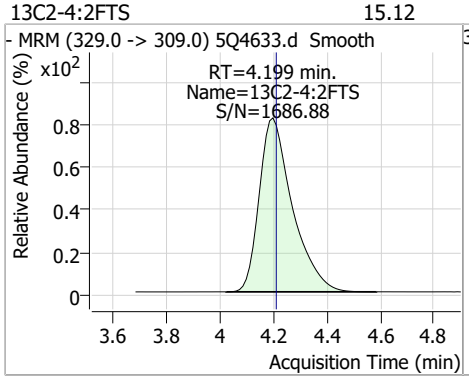


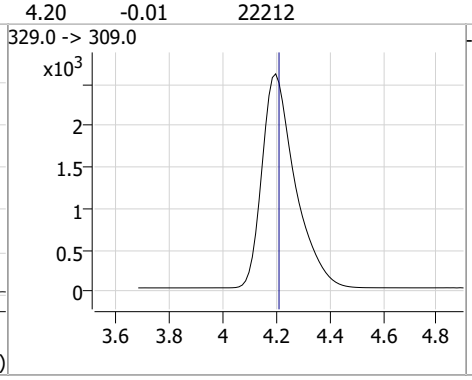
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.26	4.20	0.00	23956	327.0 -> 81.0	56.9	28.3	84.8

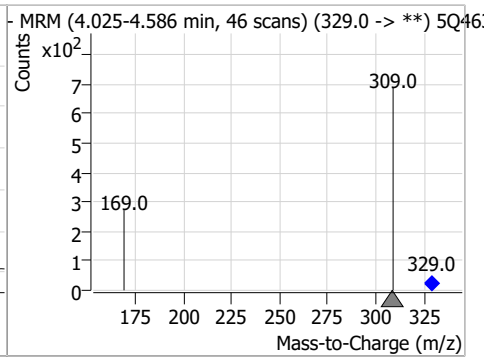


Perfluorinated Compounds by LC/MS/MS

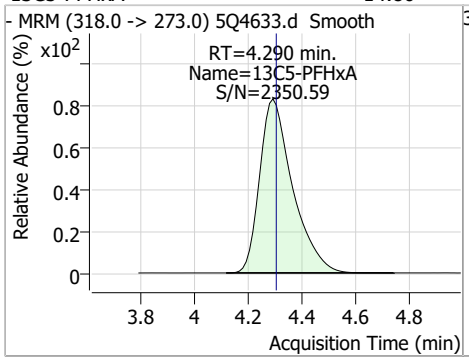
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.12	4.20	-0.01	22212				

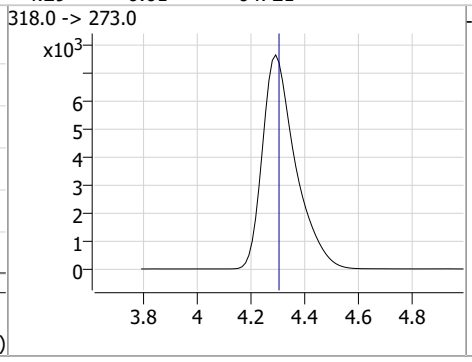


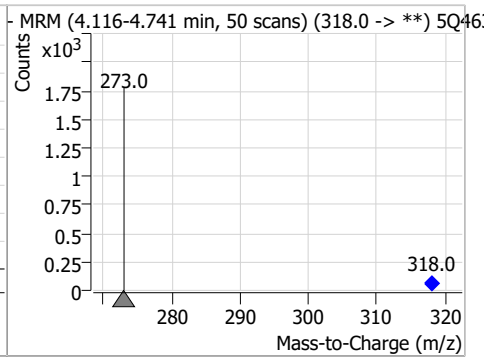




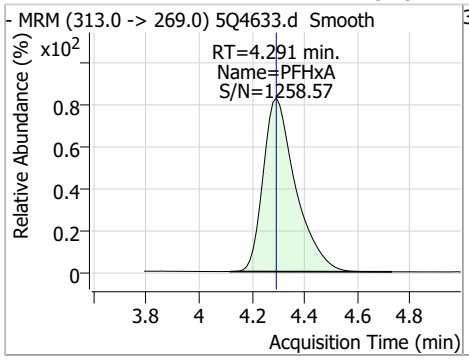
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.80	4.29	-0.01	64721				

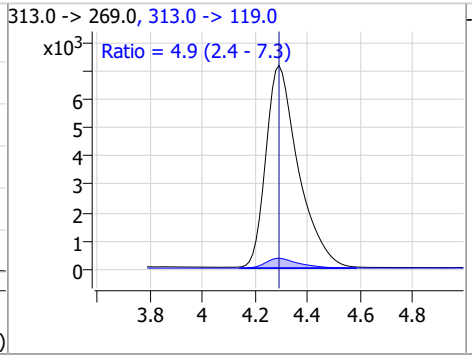


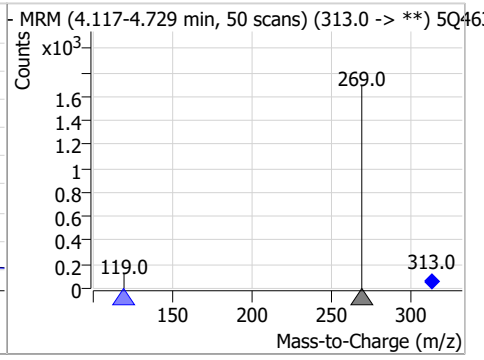




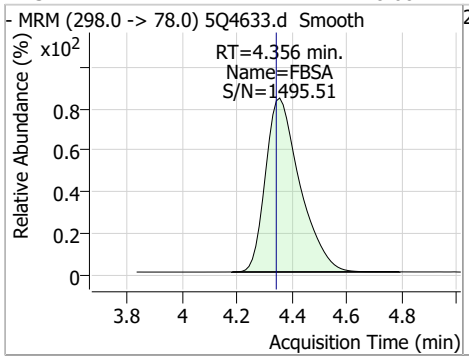
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.19	4.29	-0.01	60673	313.0 -> 119.0	4.9	2.4	7.3

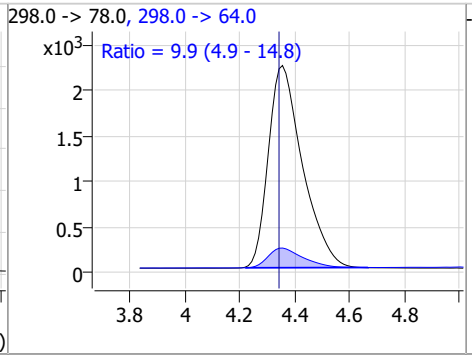


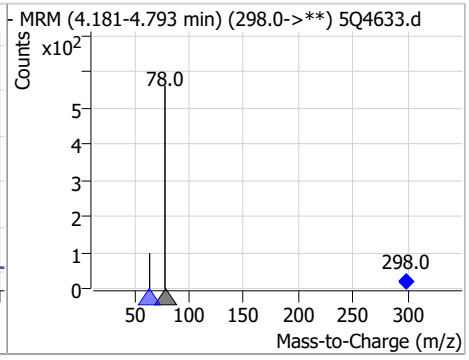




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	18.08	4.36	0.00	19408	298.0 -> 64.0	9.9	4.9	14.8

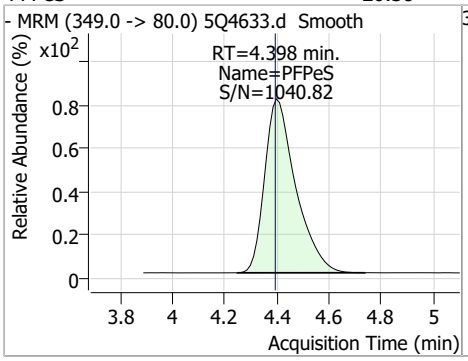


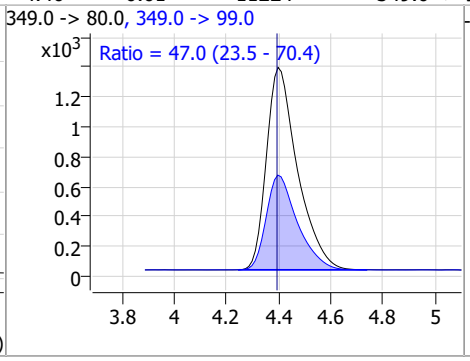


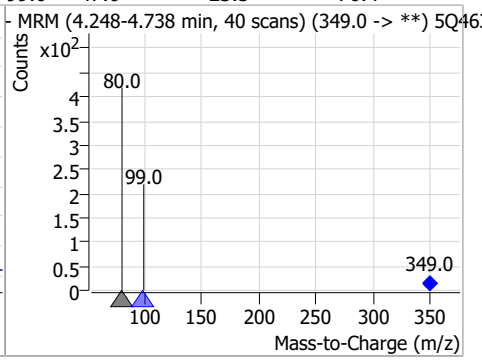


Perfluorinated Compounds by LC/MS/MS

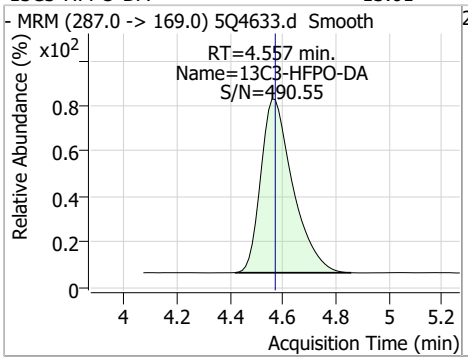
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.38	4.40	-0.01	11224	349.0 -> 99.0	47.0	23.5	70.4

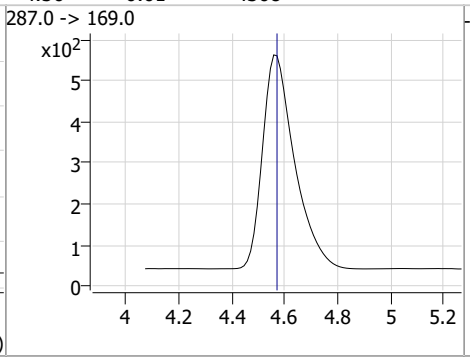


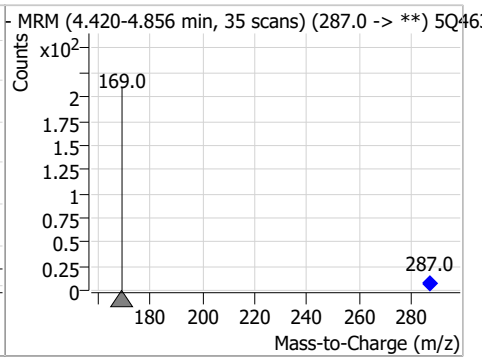




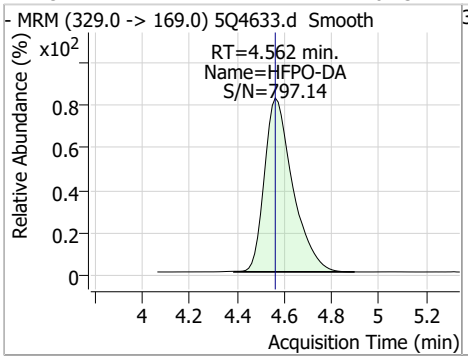
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	13.01	4.56	-0.01	4368				

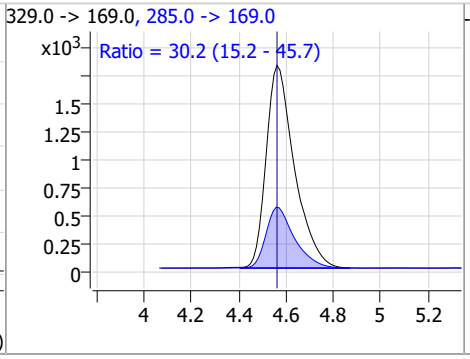


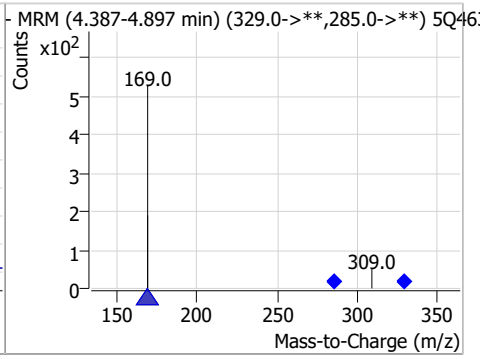




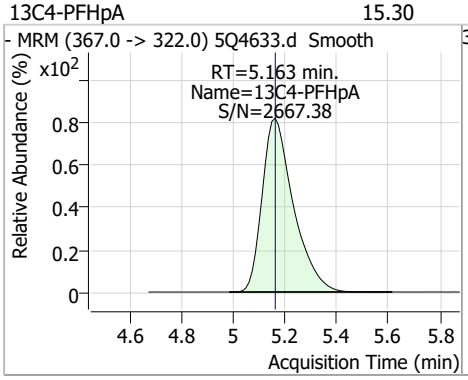
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.23	4.56	-0.01	14909	285.0 -> 169.0	30.2	15.2	45.7

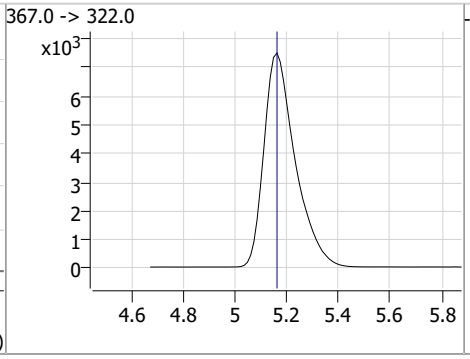


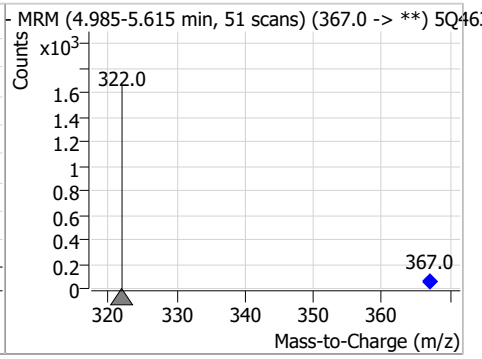




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	15.30	5.16	0.00	62449				

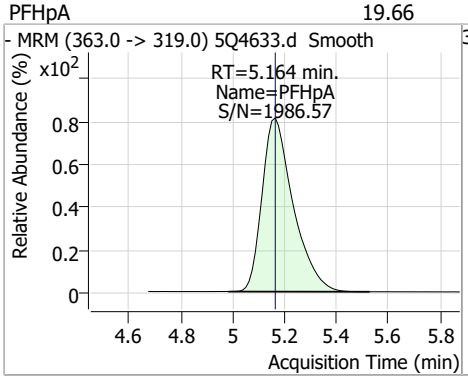


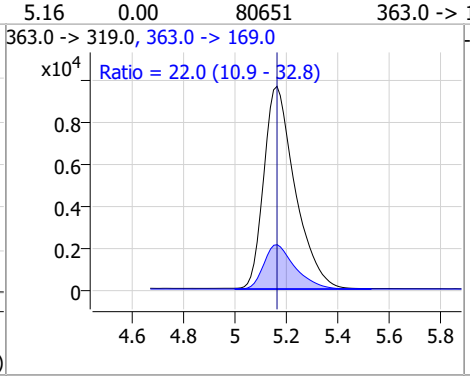


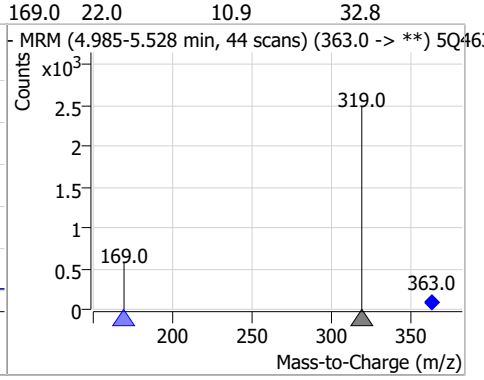


Perfluorinated Compounds by LC/MS/MS

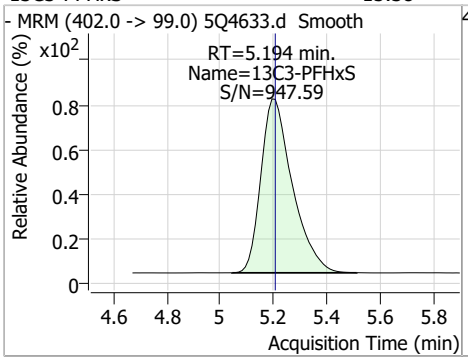
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.66	5.16	0.00	80651	363.0 -> 169.0	22.0	10.9	32.8

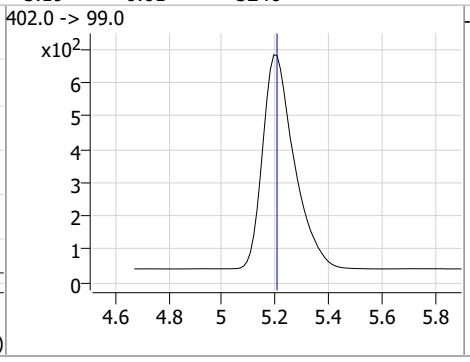


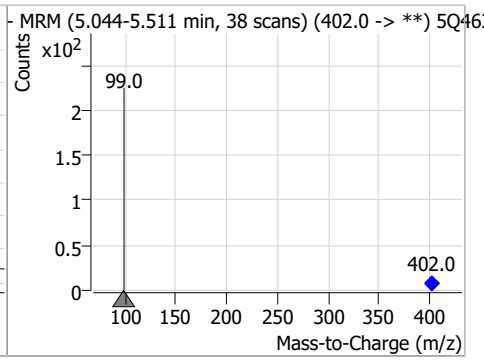




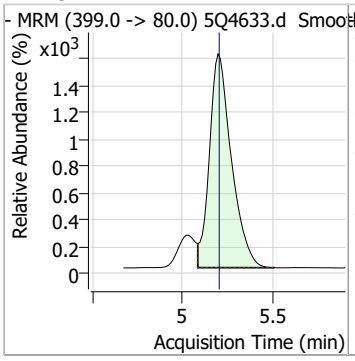
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.38	5.19	-0.01	5246				

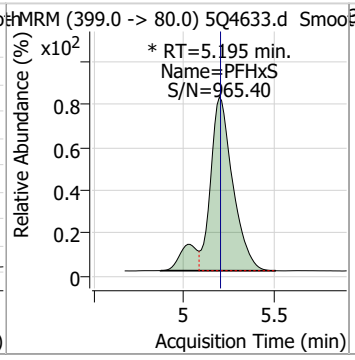


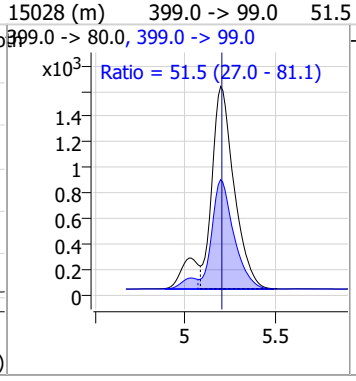


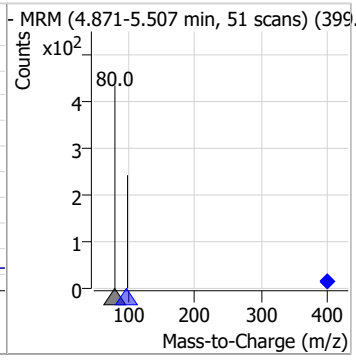


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.29	5.20	-0.01	15028 (m)	399.0 -> 99.0	51.5	27.0	81.1

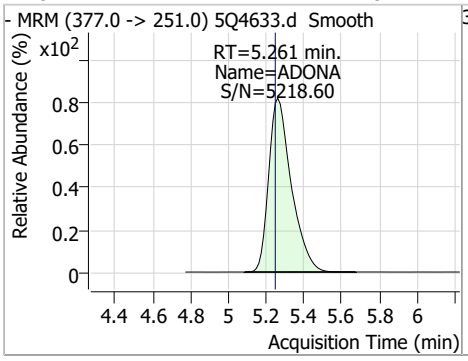


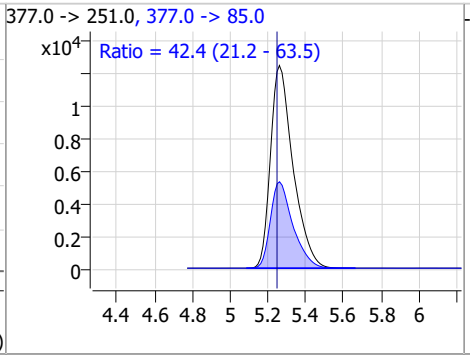


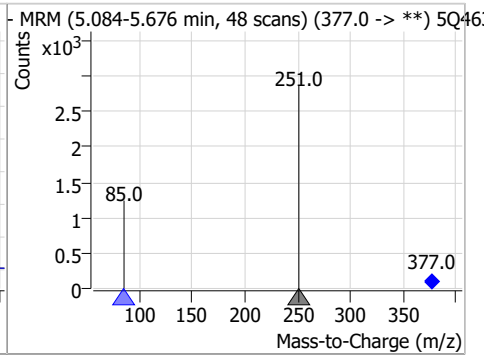




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.14	5.26	0.00	103194	377.0 -> 85.0	42.4	21.2	63.5

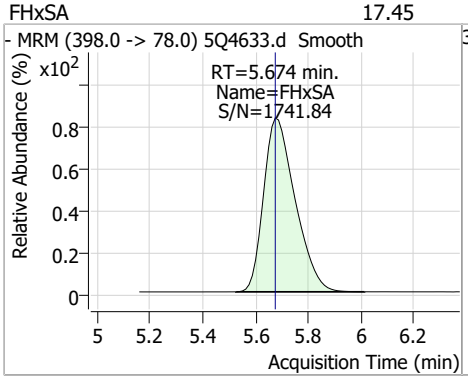


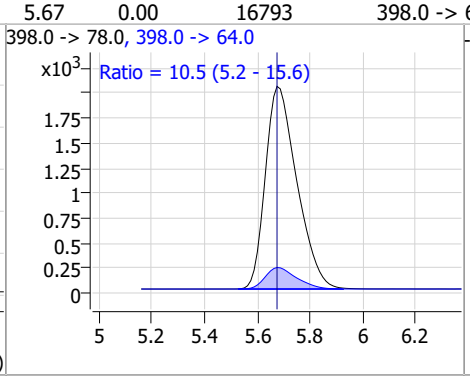


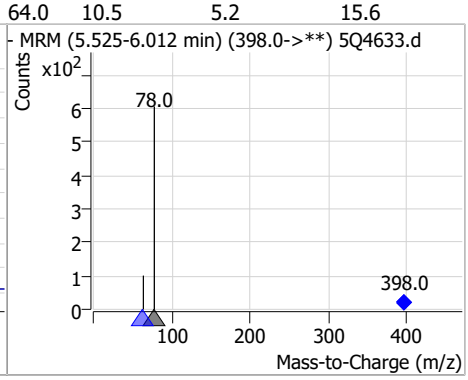


Perfluorinated Compounds by LC/MS/MS

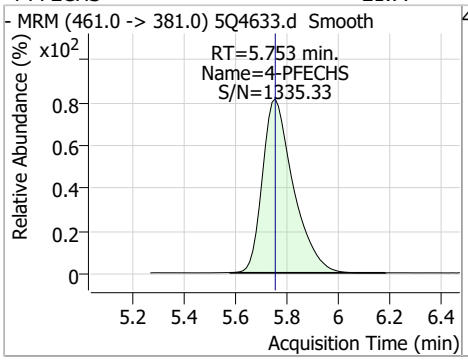
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	17.45	5.67	0.00	16793	398.0 -> 64.0	10.5	5.2	15.6

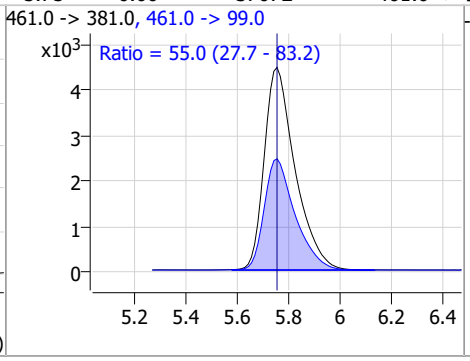


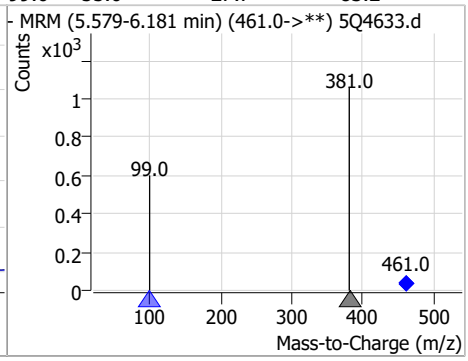




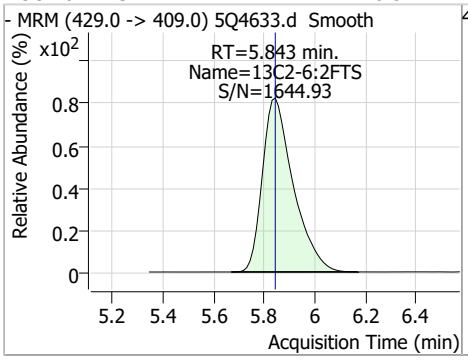
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	21.77	5.75	0.00	37072	461.0 -> 99.0	55.0	27.7	83.2

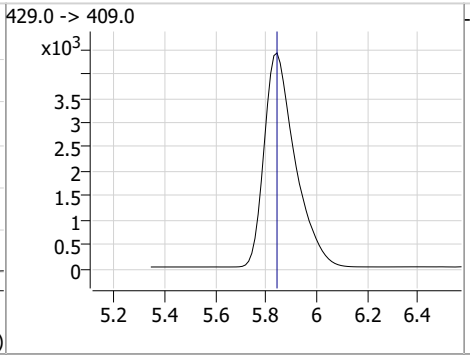


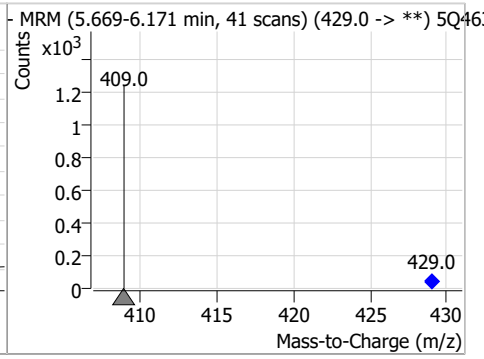




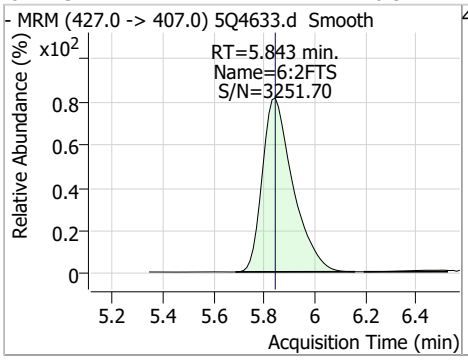
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.57	5.84	0.00	37047				

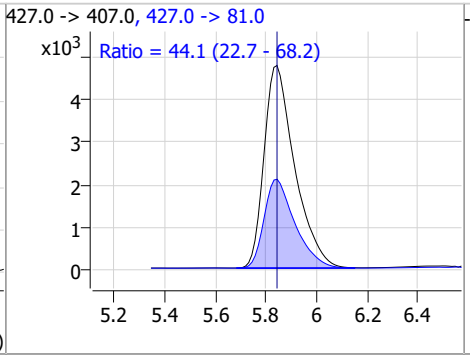


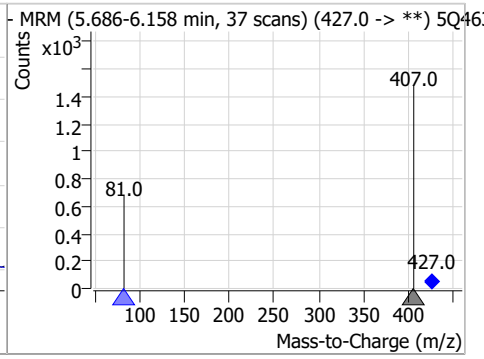




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.34	5.84	0.00	39967	427.0 -> 81.0	44.1	22.7	68.2

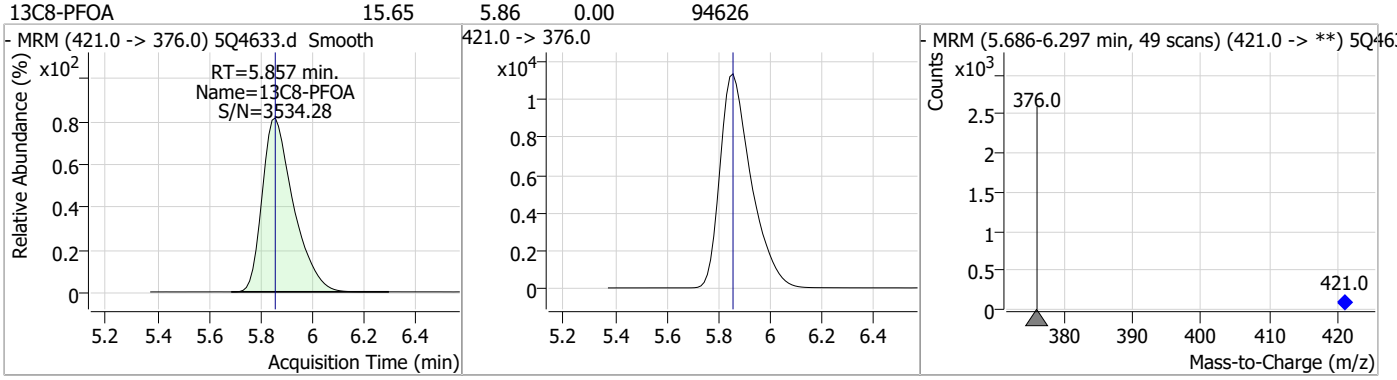




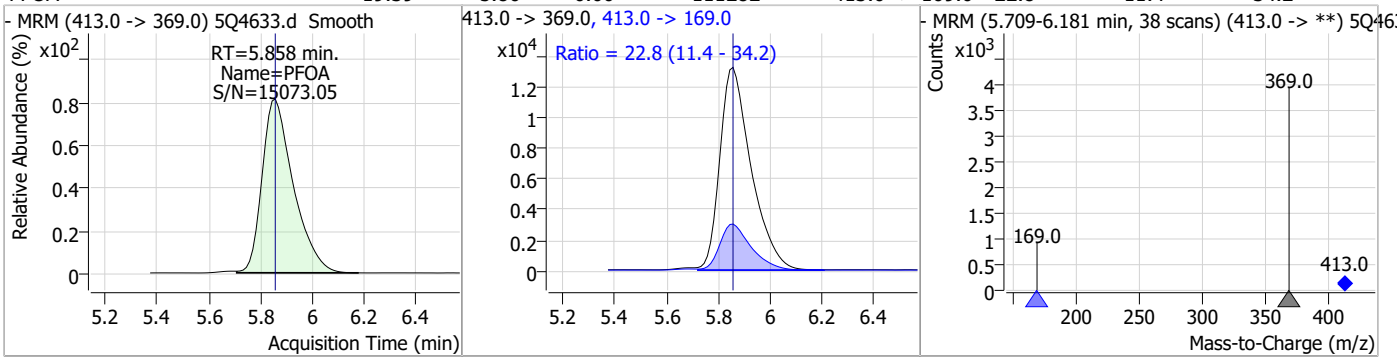


Perfluorinated Compounds by LC/MS/MS

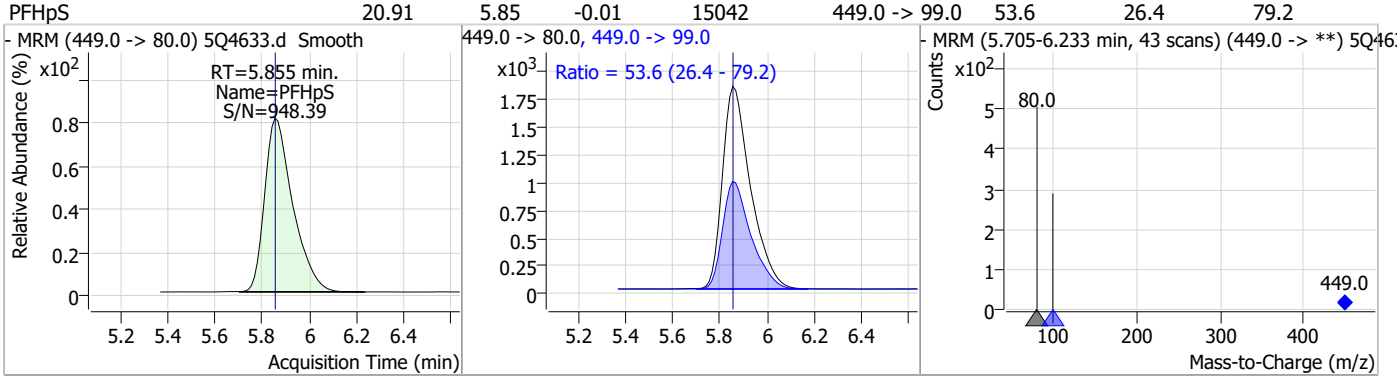
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.65	5.86	0.00	94626				



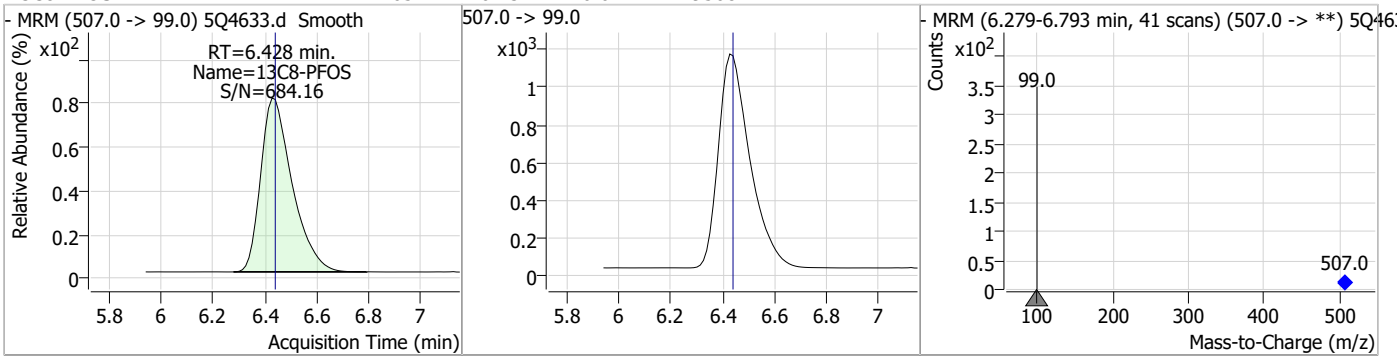
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.39	5.86	0.00	111282	413.0 -> 169.0	22.8	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.91	5.85	-0.01	15042	449.0 -> 99.0	53.6	26.4	79.2

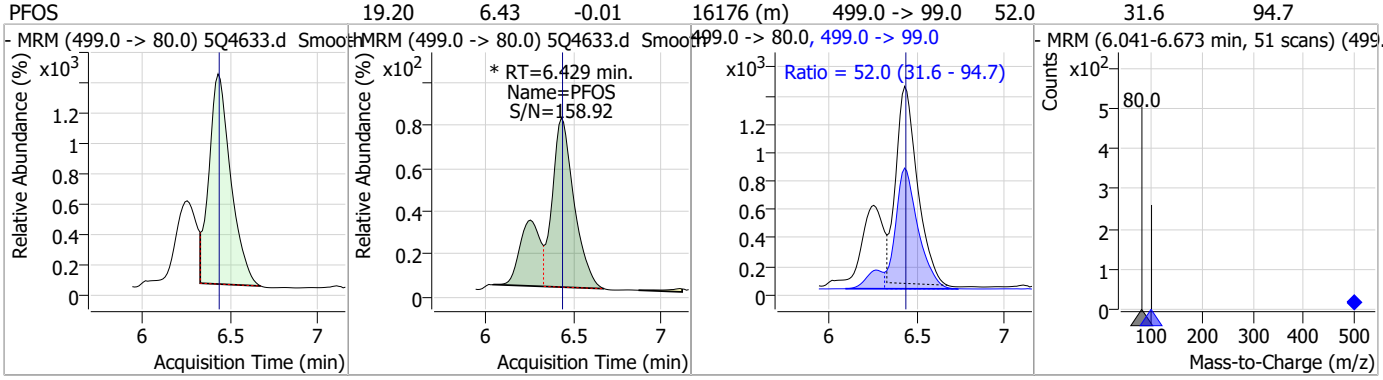


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.65	6.43	-0.01	9568				

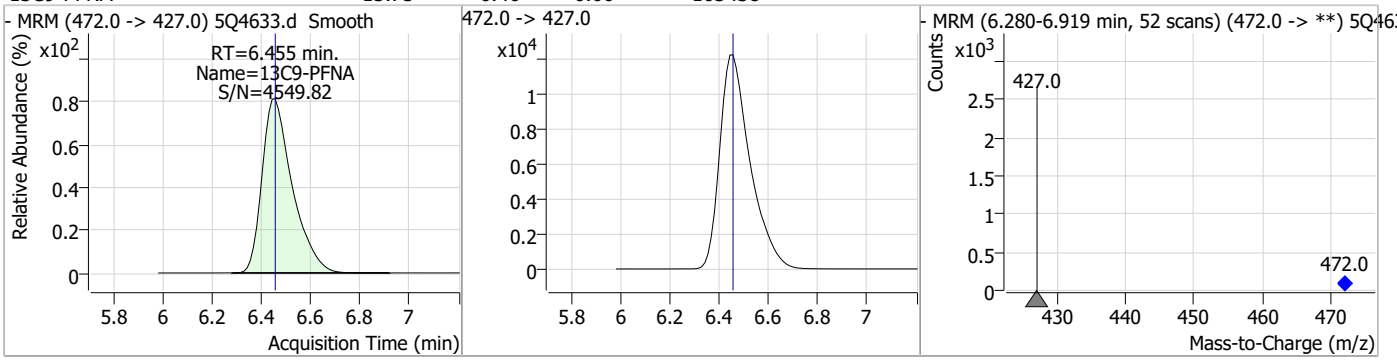


Perfluorinated Compounds by LC/MS/MS

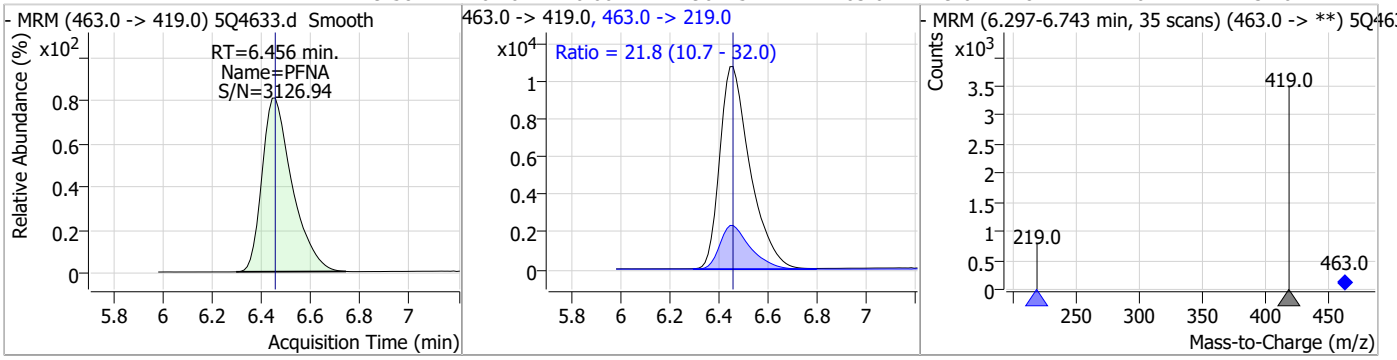
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.20	6.43	-0.01	16176 (m)	499.0 -> 99.0	52.0	31.6	94.7



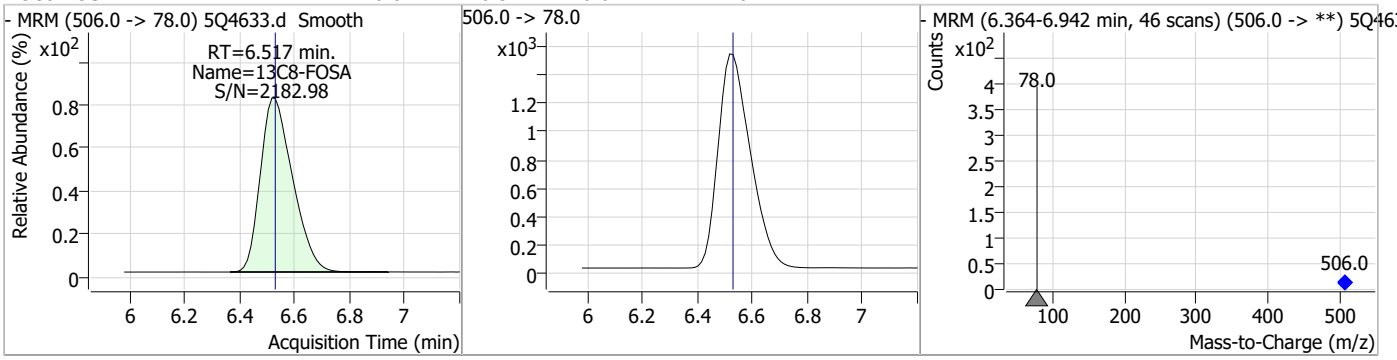
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.75	6.46	0.00	103438				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.58	6.46	0.00	90745	463.0 -> 219.0	21.8	10.7	32.0

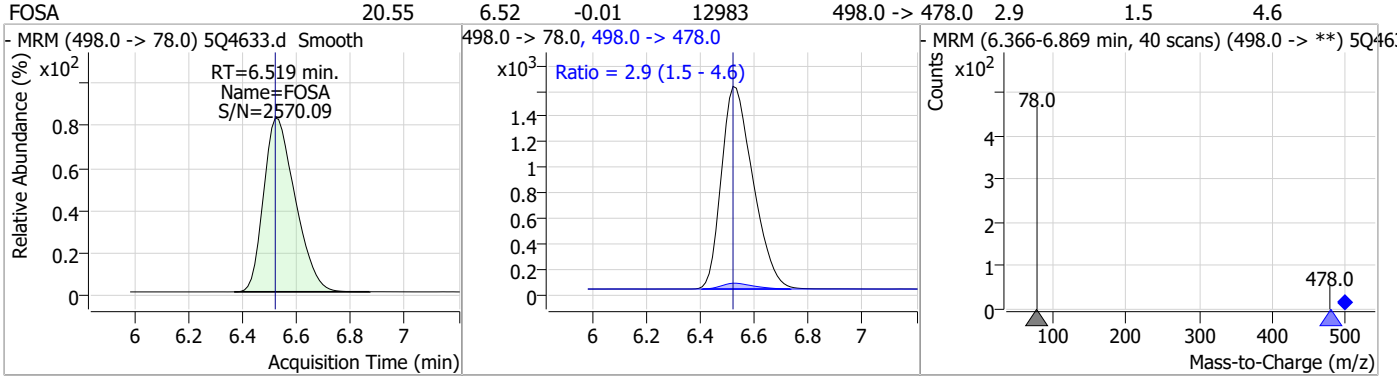


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.82	6.52	-0.01	12276				

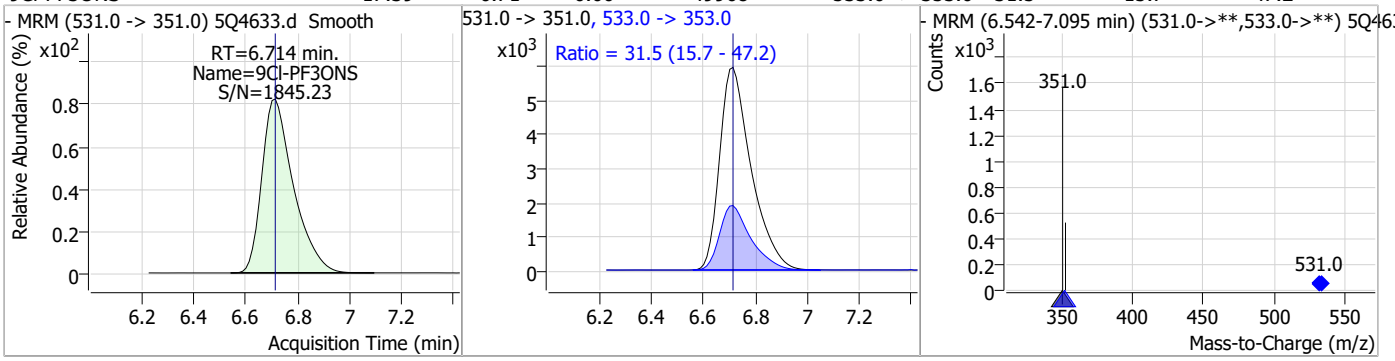


Perfluorinated Compounds by LC/MS/MS

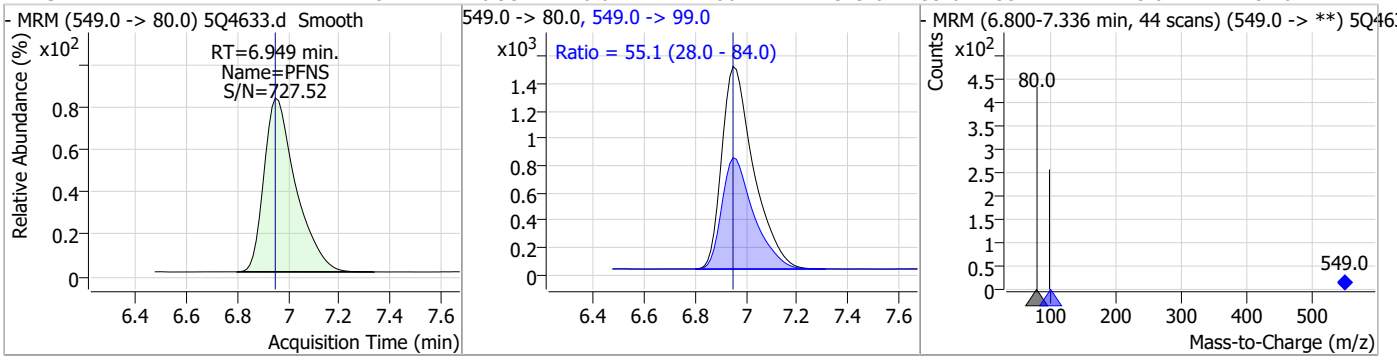
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.55	6.52	-0.01	12983	498.0 -> 478.0	2.9	1.5	4.6



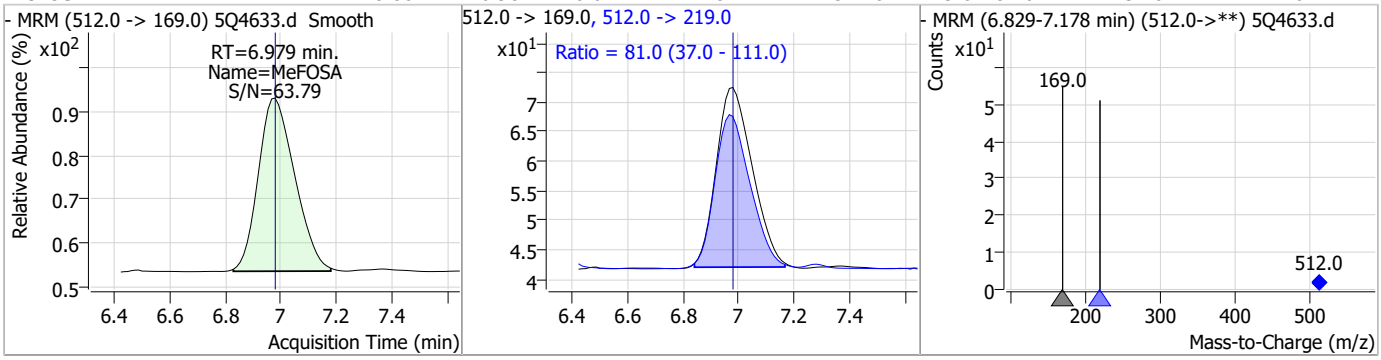
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.39	6.71	0.00	49968	533.0 -> 353.0	31.5	15.7	47.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.22	6.95	-0.01	12864	549.0 -> 99.0	55.1	28.0	84.0

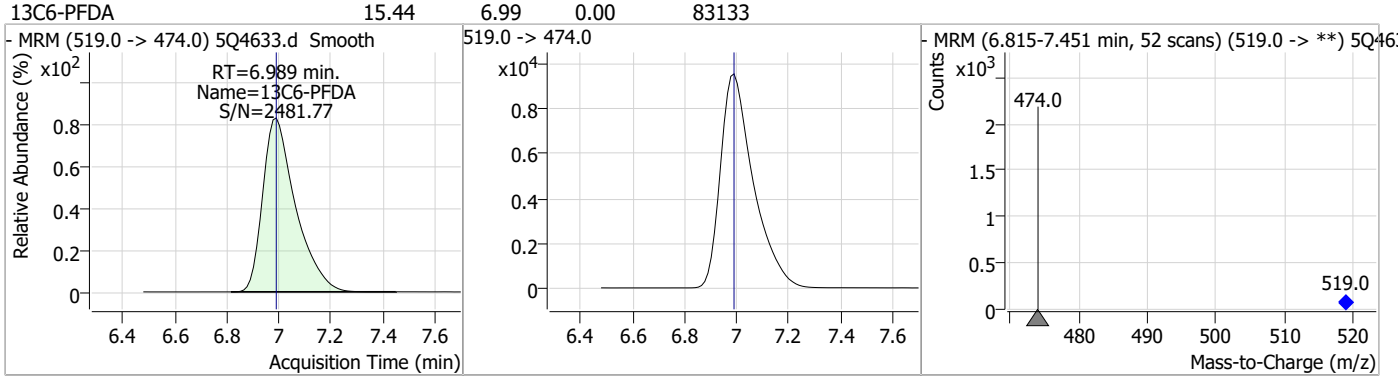


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.86	6.98	0.01	278	512.0 -> 219.0	81.0	37.0	111.0

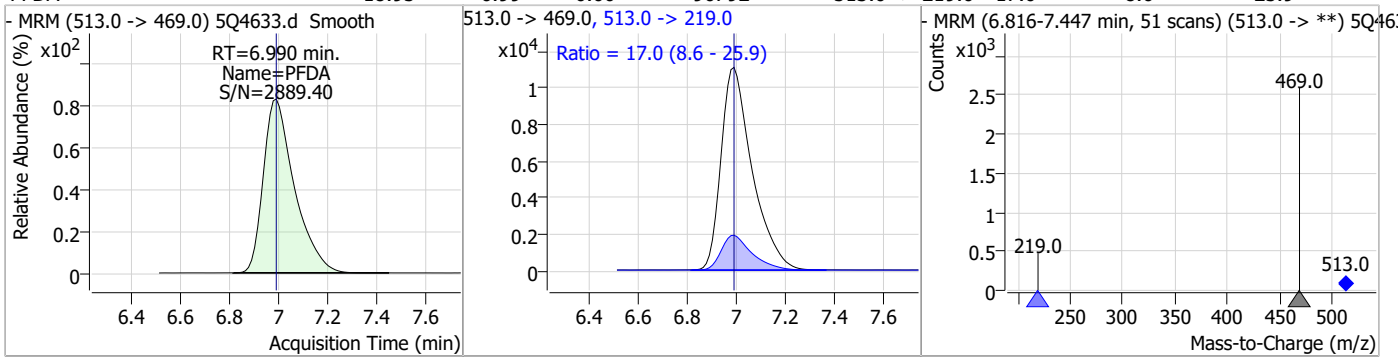


Perfluorinated Compounds by LC/MS/MS

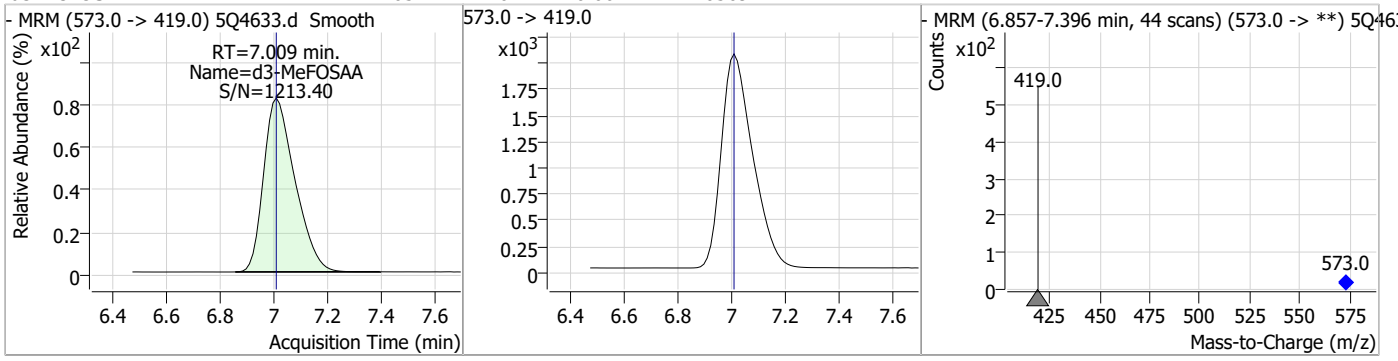
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.44	6.99	0.00	83133				



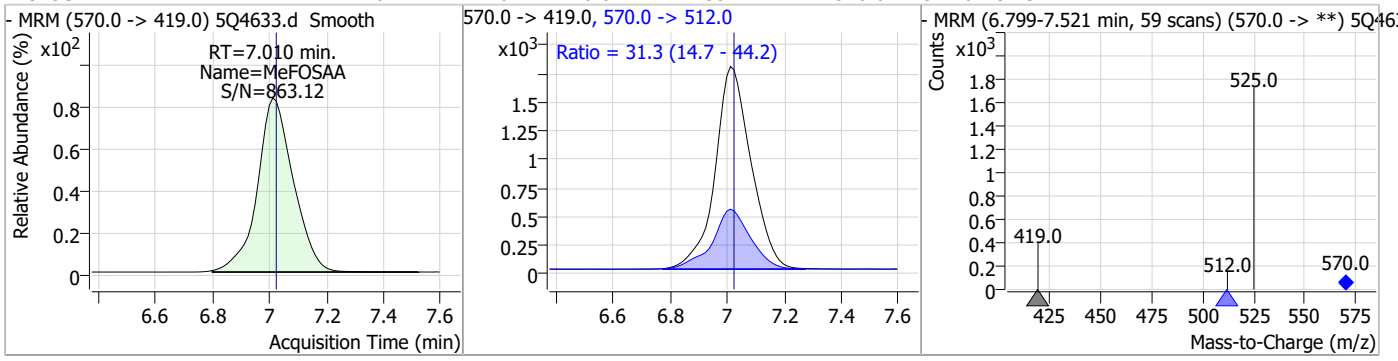
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.95	6.99	0.00	96792	513.0 -> 219.0	17.0	8.6	25.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.05	7.01	0.00	16569				

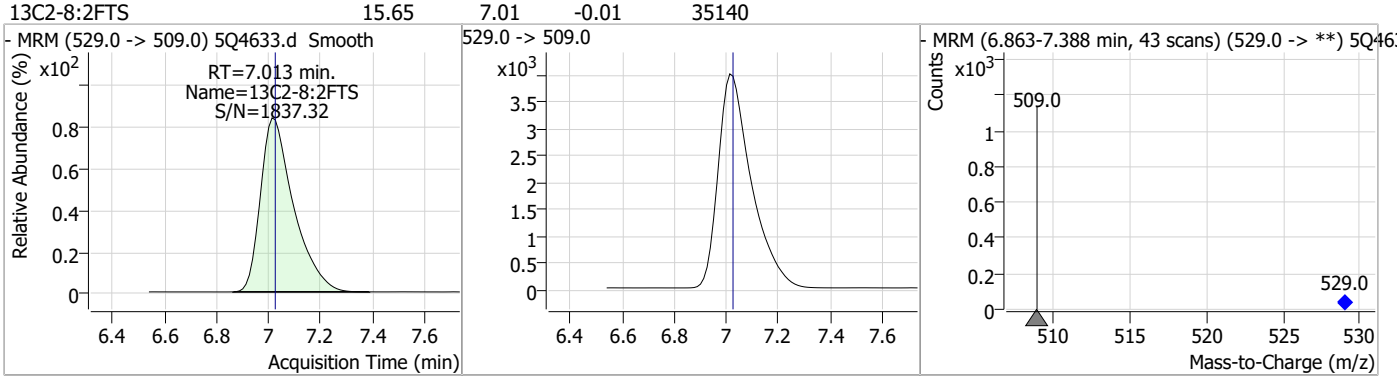


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.44	7.01	-0.01	15514	570.0 -> 512.0	31.3	14.7	44.2

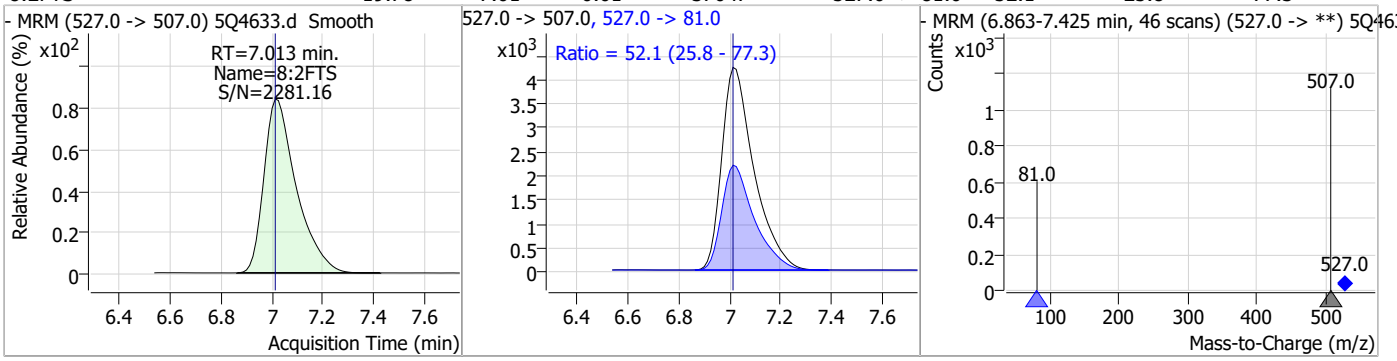


Perfluorinated Compounds by LC/MS/MS

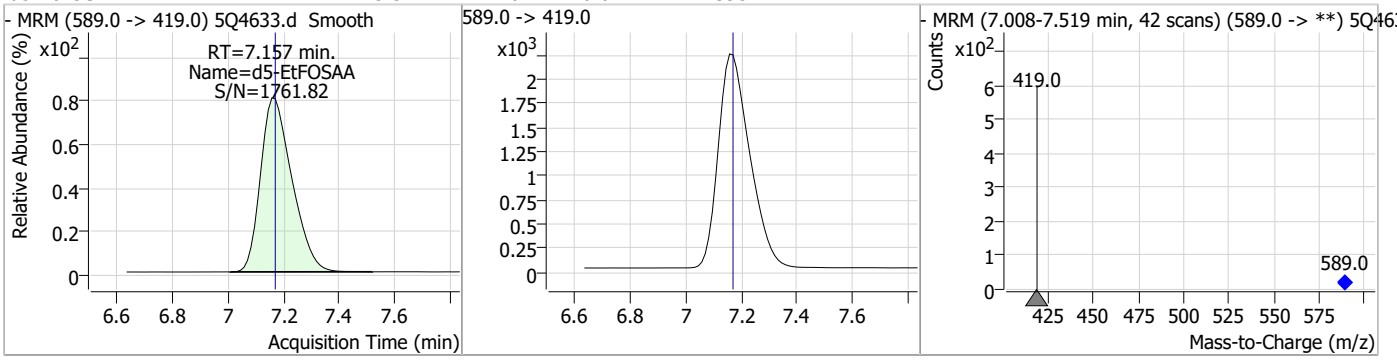
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.65	7.01	-0.01	35140				



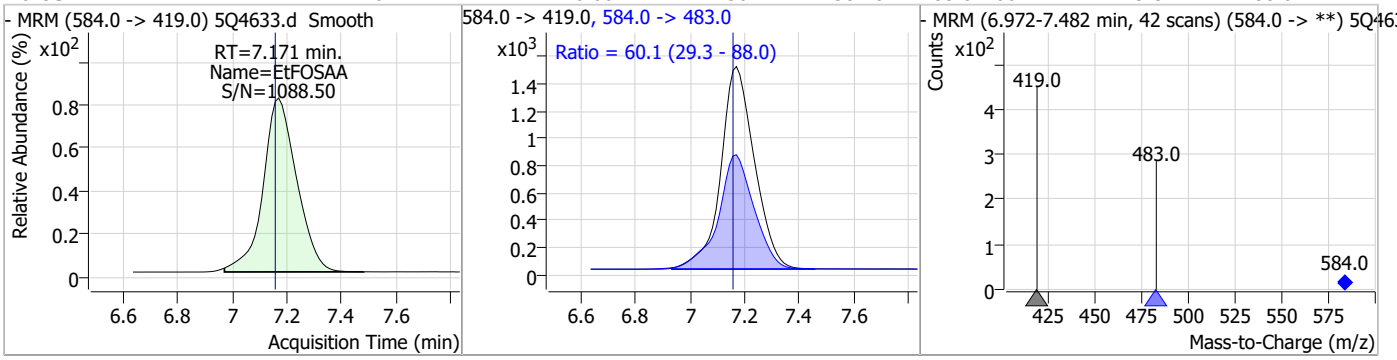
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.78	7.01	-0.01	37047	527.0 -> 81.0	52.1	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.52	7.16	-0.01	17395				

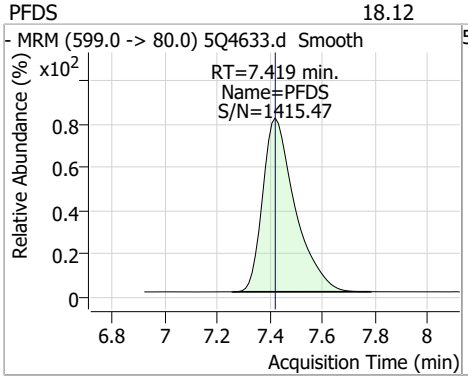


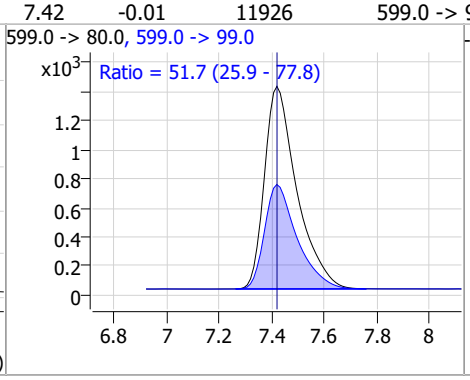
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.72	7.17	0.00	12750	584.0 -> 483.0	60.1	29.3	88.0

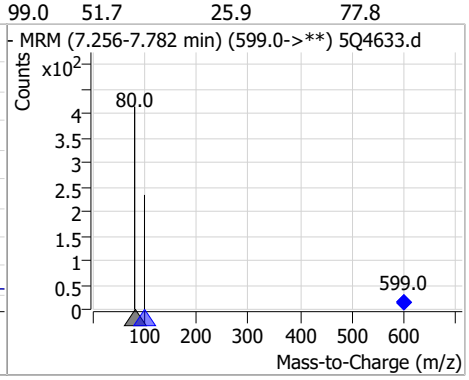


Perfluorinated Compounds by LC/MS/MS

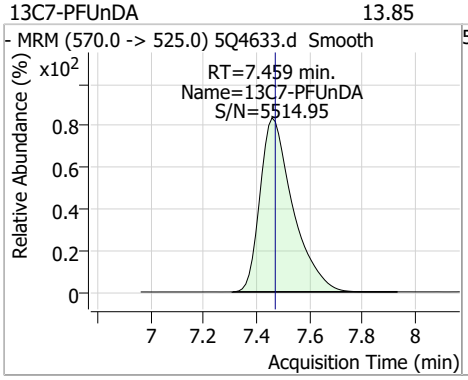
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.12	7.42	-0.01	11926	599.0 -> 99.0	51.7	25.9	77.8

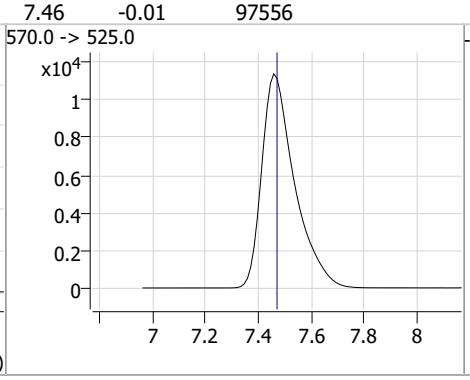


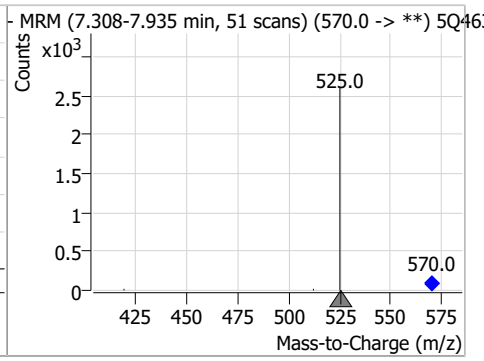




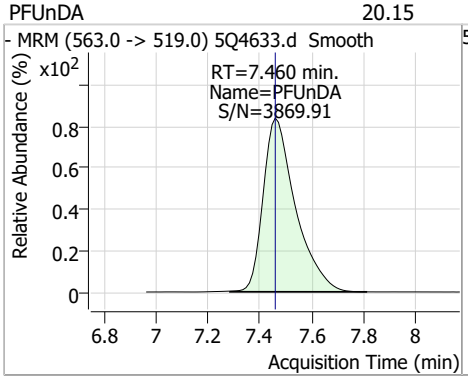
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.85	7.46	-0.01	97556				

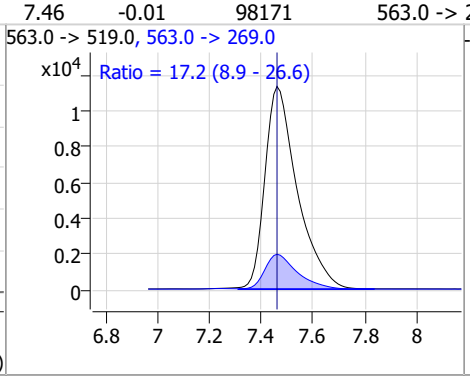


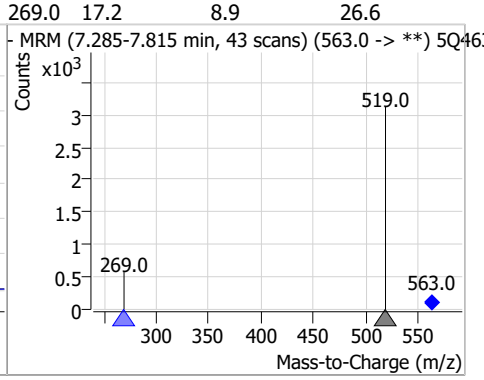




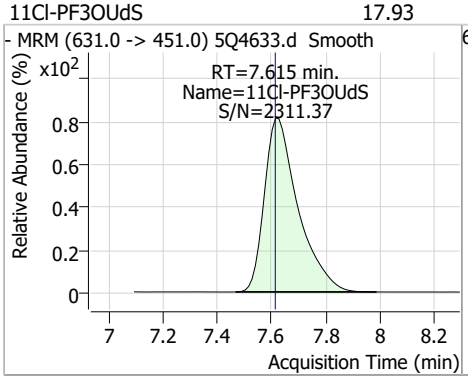
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.15	7.46	-0.01	98171	563.0 -> 269.0	17.2	8.9	26.6

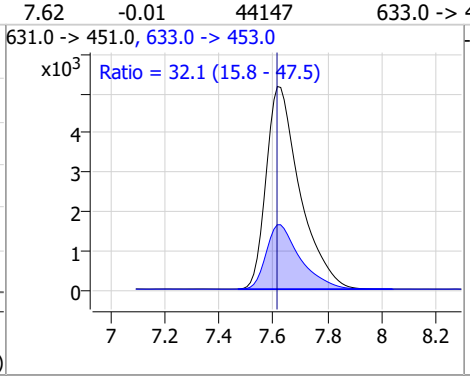


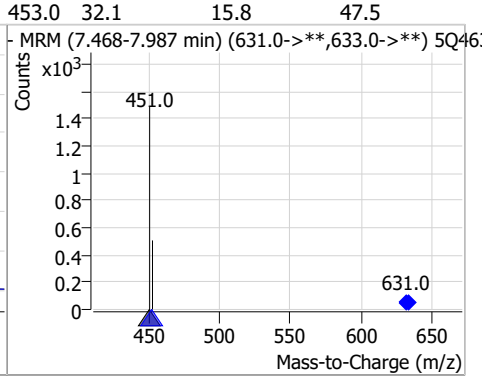




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.93	7.62	-0.01	44147	633.0 -> 453.0	32.1	15.8	47.5

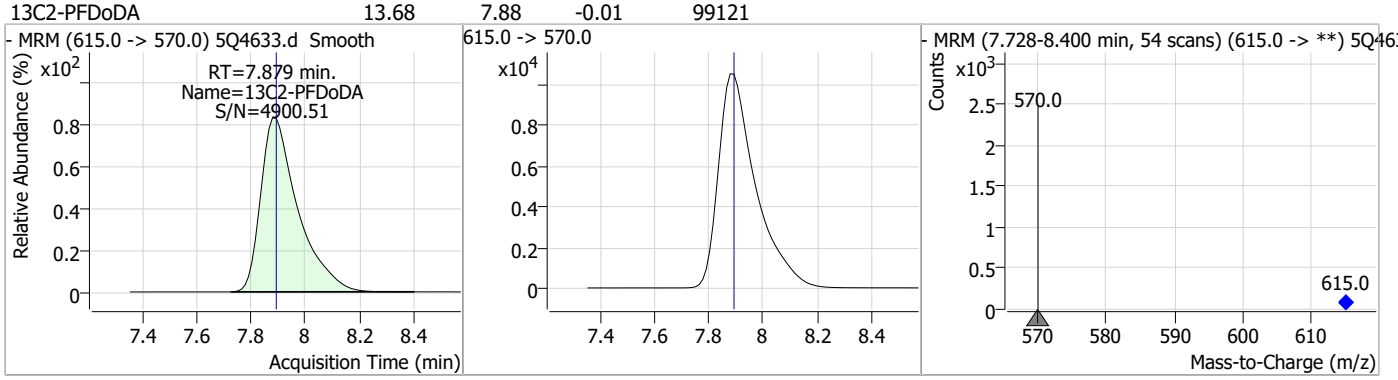




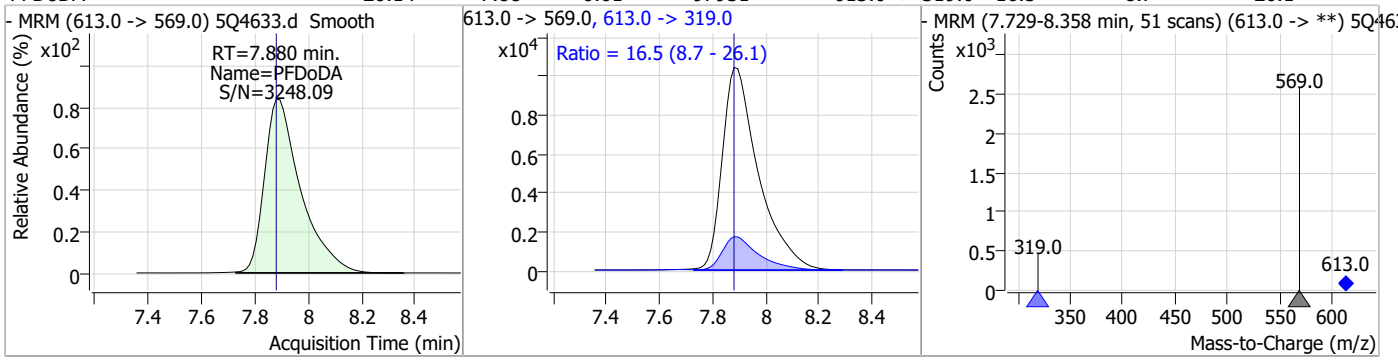


Perfluorinated Compounds by LC/MS/MS

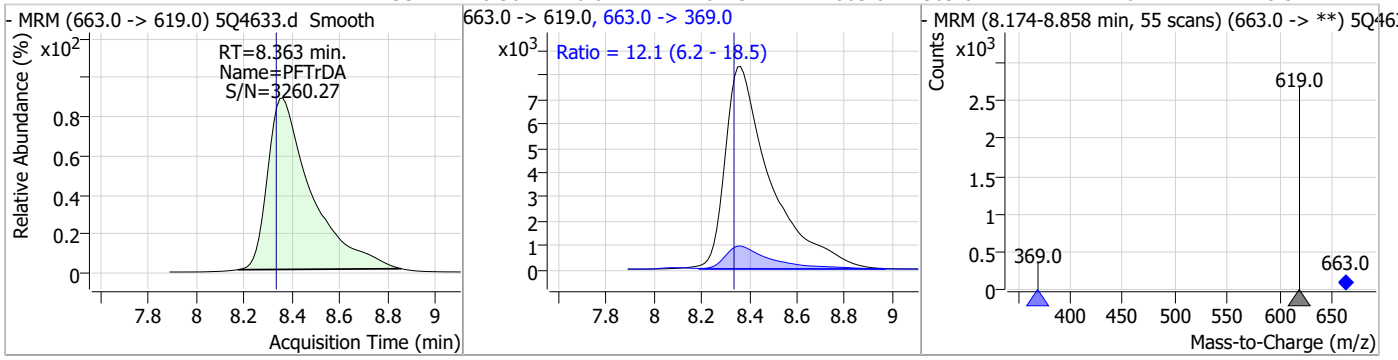
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	13.68	7.88	-0.01	99121				



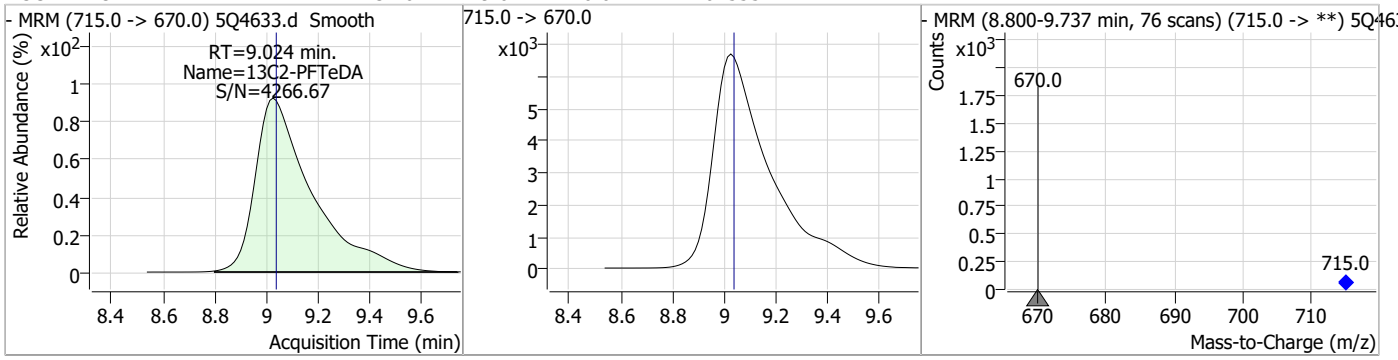
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.14	7.88	-0.01	97931	613.0 -> 319.0	16.5	8.7	26.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	17.93	8.36	0.01	104197	663.0 -> 369.0	12.1	6.2	18.5

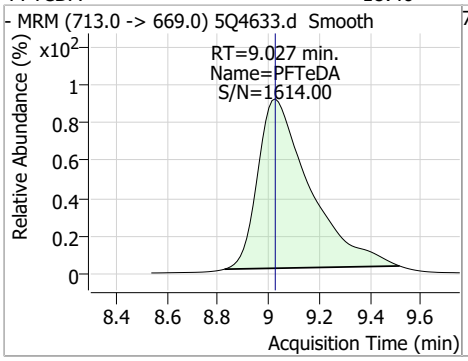


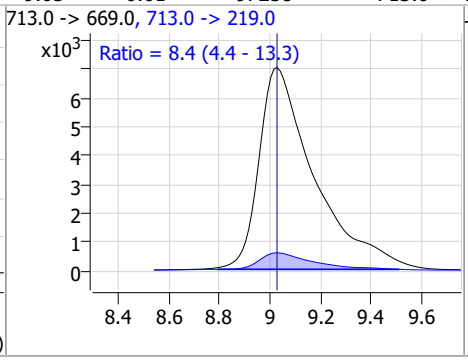
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.46	9.02	-0.01	101555				

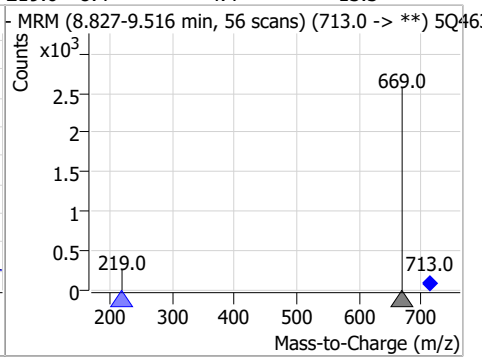


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.40	9.03	-0.01	97258	713.0 -> 219.0	8.4	4.4	13.3







Manual Integration Approval Summary

Sample Number: OP92763-MS
Lab FileID: 5Q4633.D
Injection Time: 09/15/22 06:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 16:57

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4674.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 1:25:24 AM
Sample Name : op92764-ms
Vial : P5-E1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,120,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.874	217.0 -> 172.0	53099	20.00	µg/L	-0.075
M5-PFPeA	3.380	268.0 -> 223.0	101659	20.00	µg/L	-0.037
M5-PFHxA	4.561	318.0 -> 273.0	171510	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	205038	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	362242	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	448112	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	315069	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	333512	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	418995	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	267261	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	104142	20.00	µg/L	0.000
M3-PFBS	3.610	302.0 -> 99.0	24032	20.00	µg/L	-0.025
M3-PFHxS	5.463	402.0 -> 99.0	23494	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	31127	20.00	µg/L	-0.012
M2-4:2FTS	4.470	329.0 -> 309.0	222884	20.00	µg/L	-0.012
M2-6:2FTS	6.124	429.0 -> 409.0	303596	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	209492	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	127117	20.00	µg/L	0.000
M3-HFPO-DA	4.826	287.0 -> 169.0	3975	20.00	µg/L	-0.026
M3-MeFOSA	7.085	515.0 -> 169.0	654	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	92232	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.470	329.0 -> 309.0	222884	16.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.5%		
13C2-6:2FTS	6.124	429.0 -> 409.0	303596	17.79	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	209492	16.07	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.4%		
13C2-PFDoDA	8.307	615.0 -> 570.0	418995	11.39	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 57.0%		
13C2-PFTeDA	9.976	715.0 -> 670.0	267261	8.91	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 44.5%		
13C3-PFBS	3.610	302.0 -> 99.0	24032	15.69	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%		
13C3-PFHxS	5.463	402.0 -> 99.0	23494	16.99	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.0%		
13C4-PFBA	1.874	217.0 -> 172.0	53099	13.34	µg/L	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.7%		
13C4-PFHpA	5.433	367.0 -> 322.0	205038	16.57	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%		
13C5-PFHxA	4.561	318.0 -> 273.0	171510	16.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.2%		
13C5-PFPeA	3.380	268.0 -> 223.0	101659	14.50	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C6-PFDA	7.283	519.0 -> 474.0	315069	15.49	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

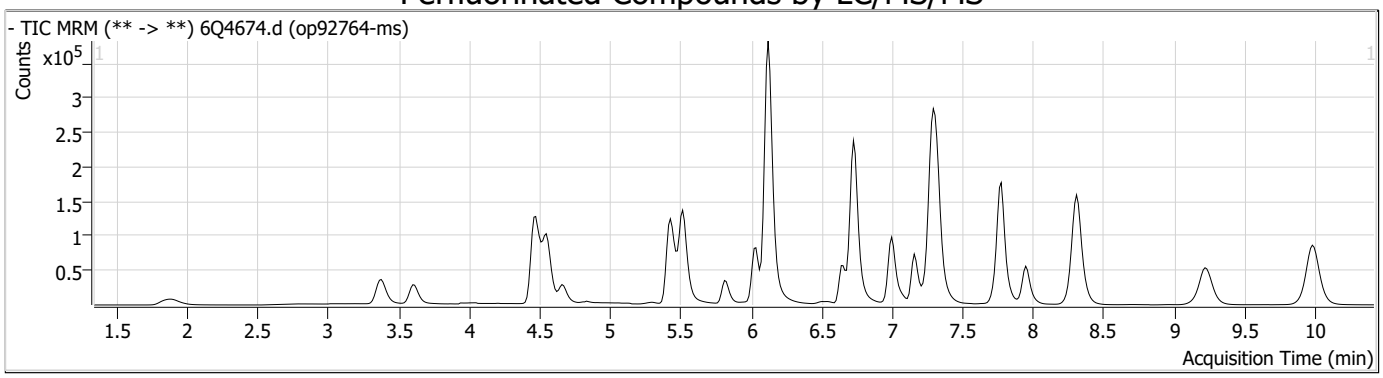
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.4%			
13C7-PFUnDA	7.775	570.0 -> 525.0	333512	12.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.8%			
13C8-FOSA	6.654	506.0 -> 78.0	104142	10.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.2%			
13C8-PFOA	6.126	421.0 -> 376.0	362242	17.07	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
13C8-PFOS	6.717	507.0 -> 99.0	31127	14.68	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%			
13C9-PFNA	6.732	472.0 -> 427.0	448112	17.39	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
d3-MeFOSAA	7.155	573.0 -> 419.0	127117	14.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.4%			
13C3-HFPO-DA	4.826	287.0 -> 169.0	3992	15.02	µg/L		-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.1%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	92275	13.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.0%			
Target Compounds							QValue
4:2FTS	4.460	327.0 -> 307.0	242046	20.09	µg/L		99
		327.0 -> 81.0	76917				
6:2FTS	6.124	427.0 -> 407.0	324404	21.10	µg/L		95
		427.0 -> 81.0	80981				
8:2FTS	7.334	527.0 -> 507.0	213293	20.25	µg/L		97
		527.0 -> 81.0	69391				
EtFOSAA	7.303	584.0 -> 419.0	92296	18.77	µg/L		97
		584.0 -> 483.0	49780				
FOSA	6.656	498.0 -> 78.0	106477	20.38	µg/L		100
		498.0 -> 478.0	4262				
MeFOSAA	7.156	570.0 -> 419.0	113817	19.53	µg/L		97
		570.0 -> 512.0	38110				
PFBA	1.880	213.0 -> 169.0	24089	20.78	µg/L		100
PFBS	3.602	299.0 -> 80.0	79542	19.90	µg/L		100
		299.0 -> 99.0	29839				
PFDA	7.284	513.0 -> 469.0	429255	18.46	µg/L		99
		513.0 -> 219.0	61799				
PFDoDA	8.309	613.0 -> 569.0	389790	19.94	µg/L		99
		613.0 -> 319.0	55751				
PFDS	7.724	599.0 -> 80.0	39764	19.23	µg/L		97
		599.0 -> 99.0	20644				
PFHpA	5.434	363.0 -> 319.0	254284	19.07	µg/L	m	99
		363.0 -> 169.0	38454				
PFHpS	6.136	449.0 -> 80.0	63410	23.33	µg/L		95
		449.0 -> 99.0	31240				
PFHxA	4.562	313.0 -> 269.0	166454	18.45	µg/L		99
		313.0 -> 119.0	4313				
PFHxS	5.465	399.0 -> 80.0	57559	17.10	µg/L		95
		399.0 -> 99.0	29757				
PFNA	6.733	463.0 -> 419.0	389201	18.43	µg/L		99
		463.0 -> 219.0	70442				
PFNS	7.256	549.0 -> 80.0	58078	18.36	µg/L		94
		549.0 -> 99.0	29345				
PFOA	6.126	413.0 -> 369.0	376460	19.24	µg/L		100
		413.0 -> 169.0	58279				
PFOS	6.719	499.0 -> 80.0	58707	20.34	µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

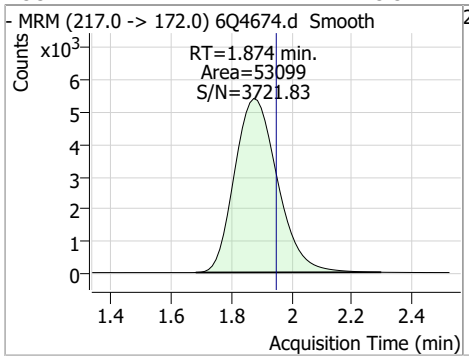
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	29151			
PFPeA	3.383	263.0 -> 219.0	84412	19.71	µg/L	100
PFPeS	4.668	349.0 -> 80.0	67058	20.16	µg/L	99
		349.0 -> 99.0	30969			
PFTeDA	9.980	713.0 -> 669.0	310577	18.95	µg/L	100
		713.0 -> 219.0	22125			
PFTrDA	9.223	663.0 -> 619.0	358478	17.72	µg/L	100
		663.0 -> 369.0	32359			
PFUnDA	7.777	563.0 -> 519.0	347701	20.16	µg/L	96
		563.0 -> 269.0	56335			
11Cl-PF3OUdS	7.945	631.0 -> 451.0	179080	19.93	µg/L	98
		633.0 -> 453.0	54208			
9Cl-PF3ONS	6.996	531.0 -> 351.0	303141	18.91	µg/L	97
		533.0 -> 353.0	88589			
ADONA	5.520	377.0 -> 251.0	415801	19.09	µg/L	97
		377.0 -> 85.0	105242			
HFPO-DA	4.828	285.0 -> 169.0	4080	21.70	µg/L	96
		285.0 -> 185.0	644			
MeFOSA	7.086	512.0 -> 169.0	888	24.90	µg/L	94
		512.0 -> 219.0	805			
4-PFECHS	6.032	461.0 -> 381.0	254692	21.84	µg/L	99
		461.0 -> 99.0	87157			
FBSA	4.514	298.0 -> 78.0	124913	14.95	µg/L	99
		298.0 -> 64.0	9095			
FHxSA	5.828	398.0 -> 78.0	128188	16.03	µg/L	99
		398.0 -> 64.0	5105			

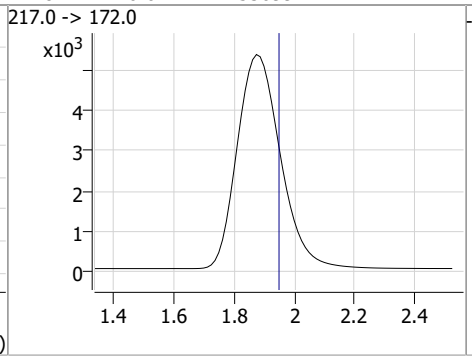
 # = Qualifier out of range, m = manually integrated, + = Area summed

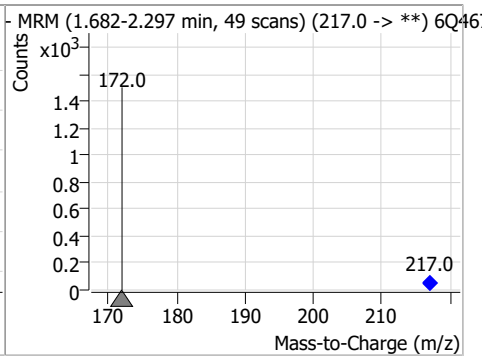
Perfluorinated Compounds by LC/MS/MS



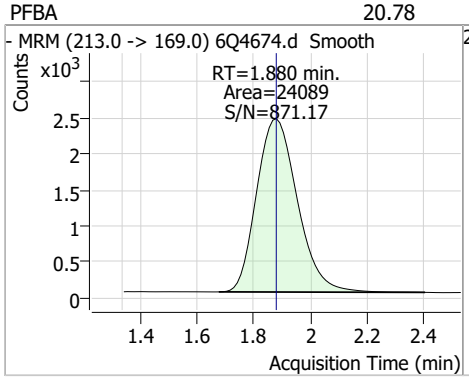
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	13.34	1.87	-0.07	53099				

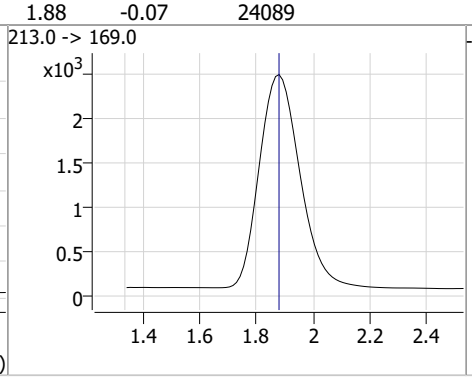


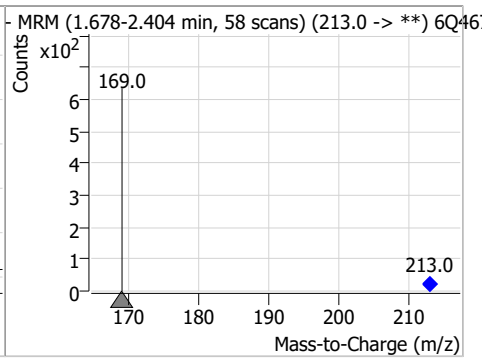




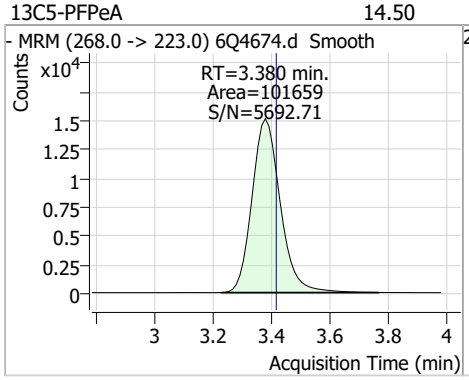
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.78	1.88	-0.07	24089				

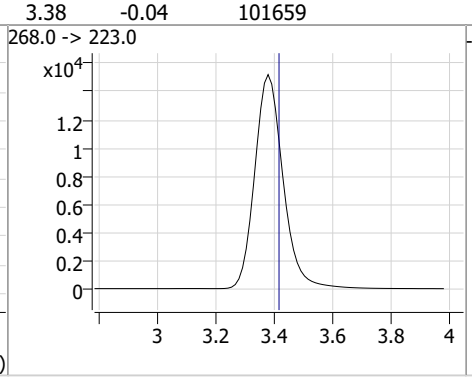


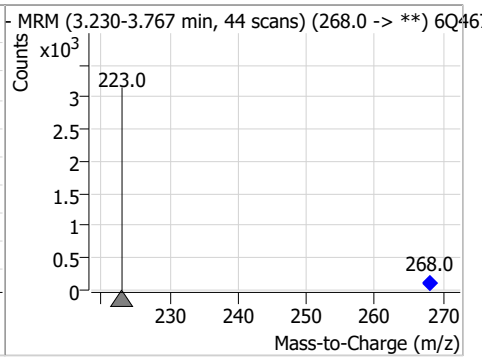




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	14.50	3.38	-0.04	101659				

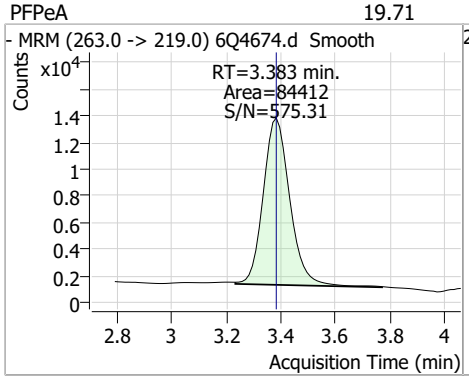


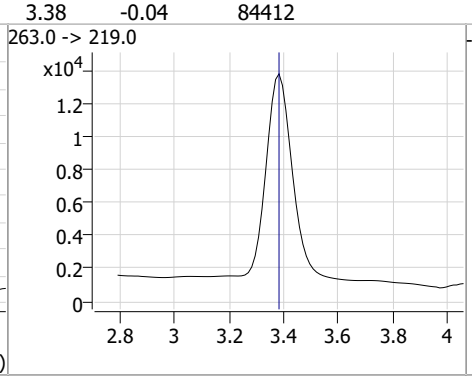


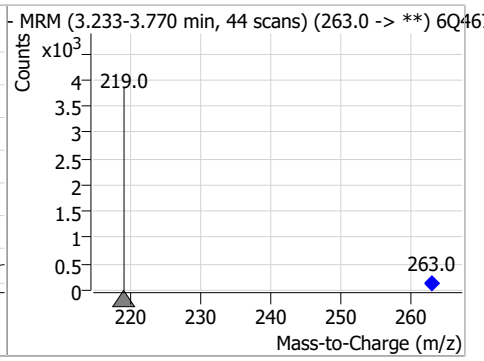


Perfluorinated Compounds by LC/MS/MS

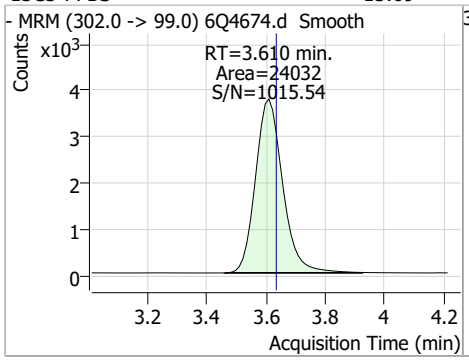
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.71	3.38	-0.04	84412				

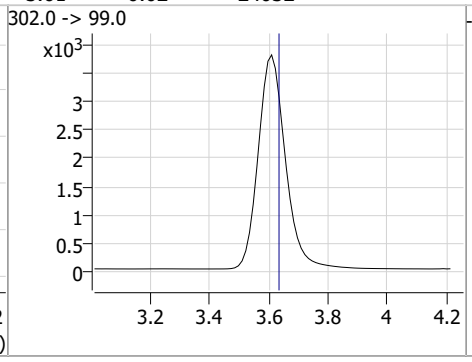


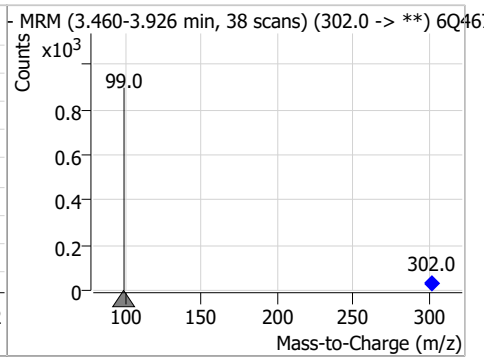




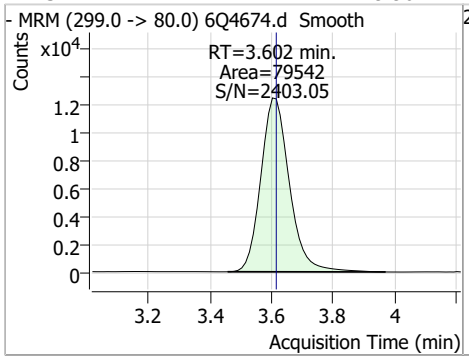
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	15.69	3.61	-0.02	24032				

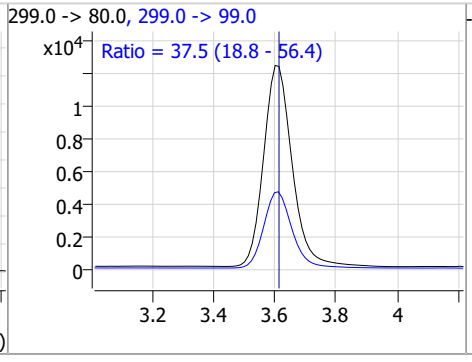


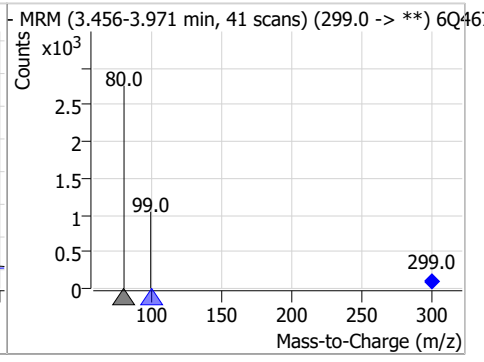




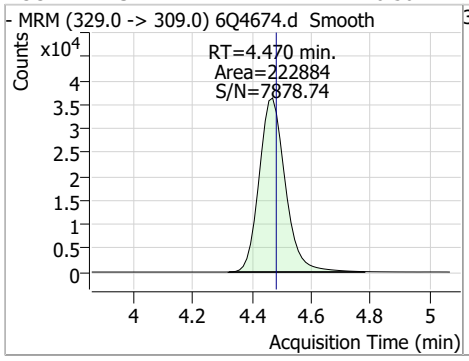
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.90	3.60	-0.04	79542	299.0 -> 99.0	37.5	18.8	56.4

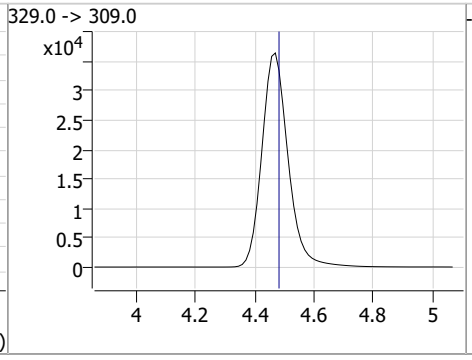


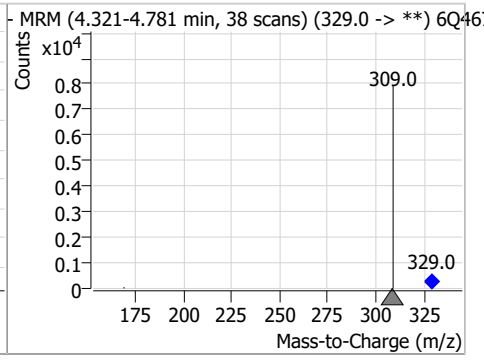




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.50	4.47	-0.01	222884				

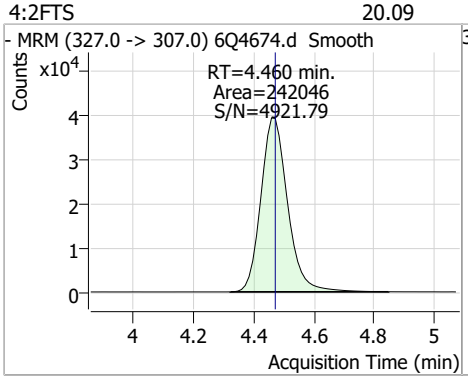


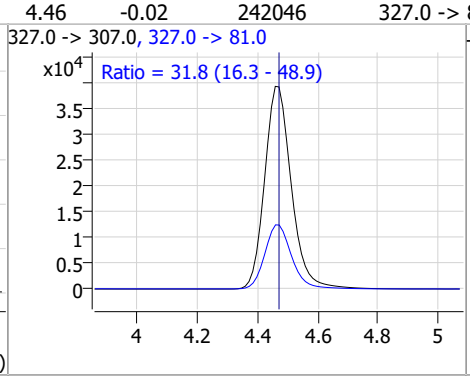


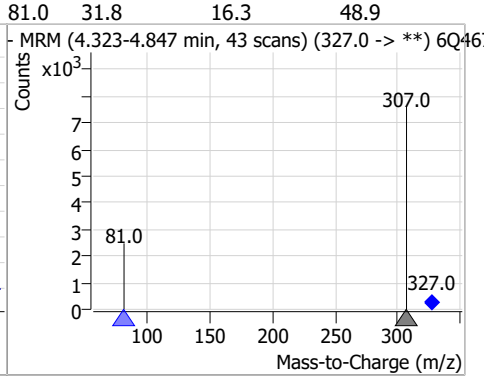


Perfluorinated Compounds by LC/MS/MS

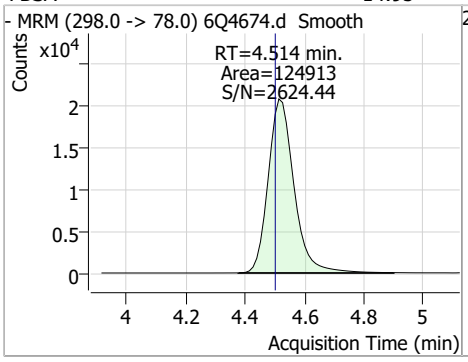
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.09	4.46	-0.02	242046	327.0 -> 81.0	31.8	16.3	48.9

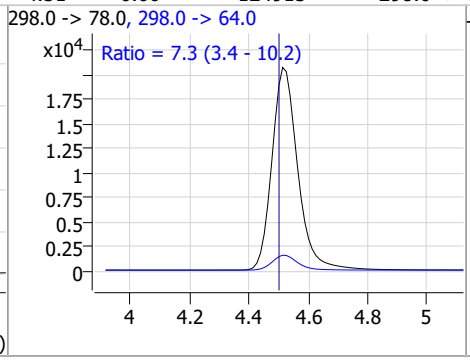


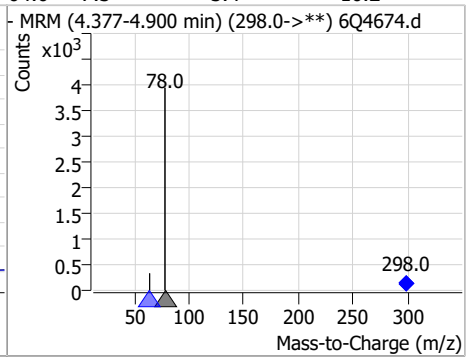




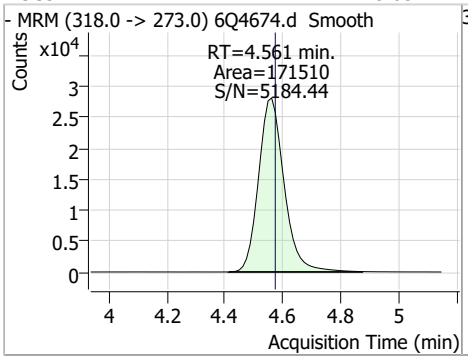
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	14.95	4.51	0.00	124913	298.0 -> 64.0	7.3	3.4	10.2

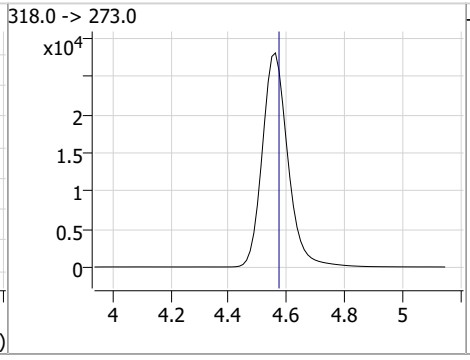


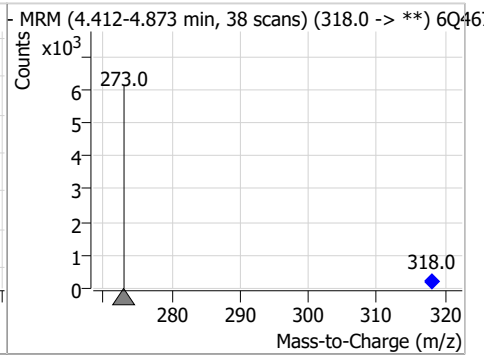




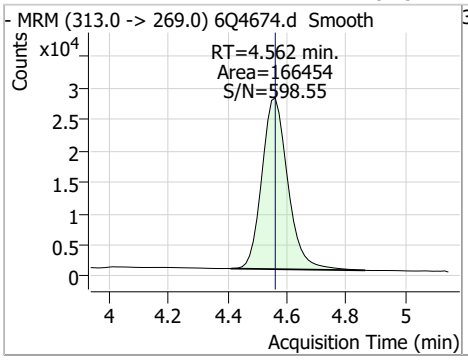
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	16.05	4.56	-0.01	171510				

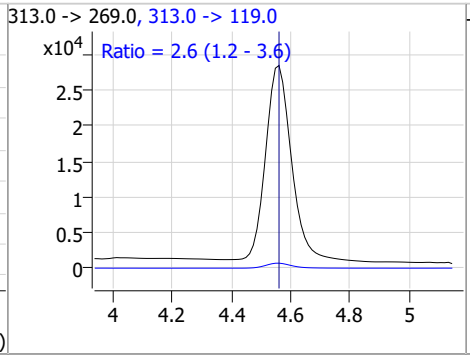


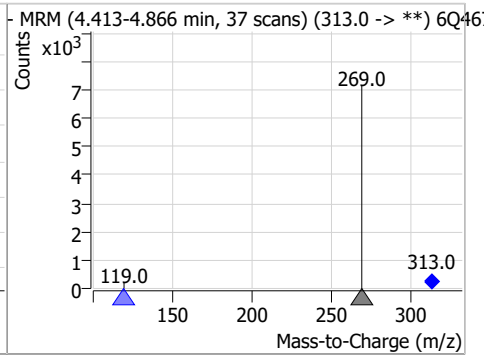




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.45	4.56	-0.01	166454	313.0 -> 119.0	2.6	1.2	3.6

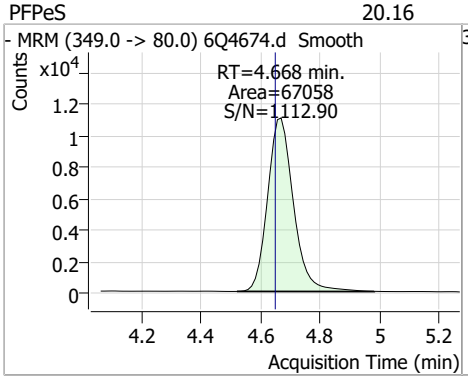


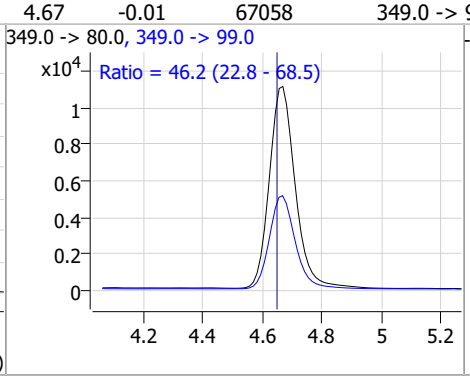


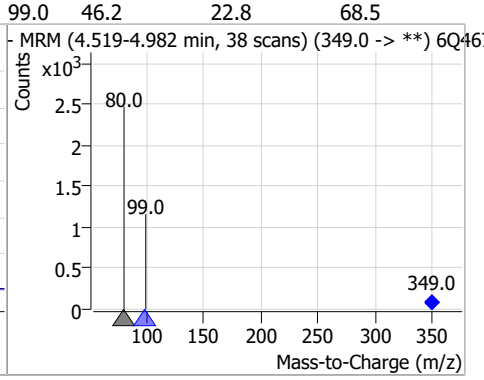


Perfluorinated Compounds by LC/MS/MS

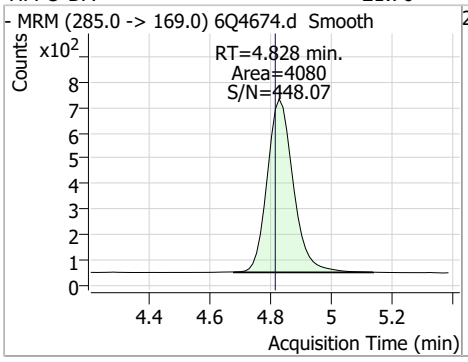
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.16	4.67	-0.01	67058	349.0 -> 99.0	46.2	22.8	68.5

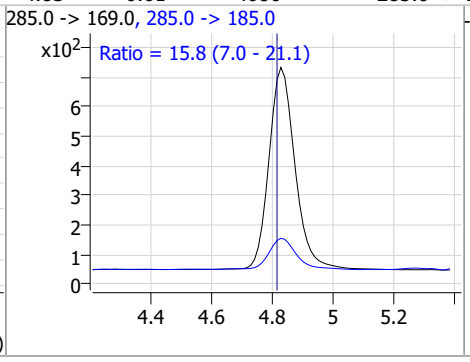


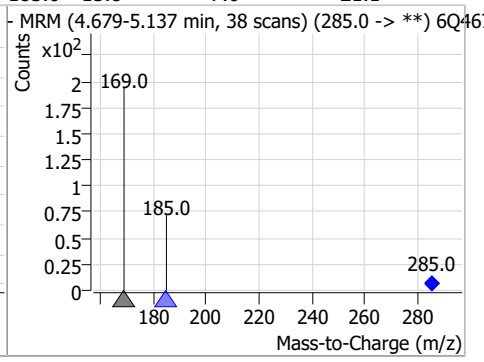




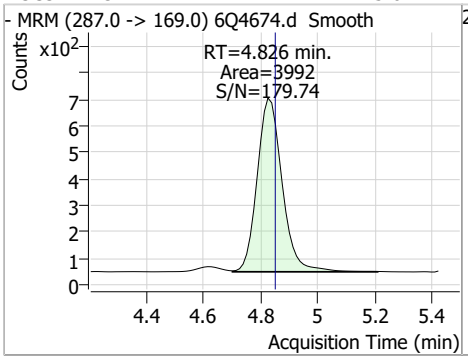
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.70	4.83	-0.01	4080	285.0 -> 185.0	15.8	7.0	21.1

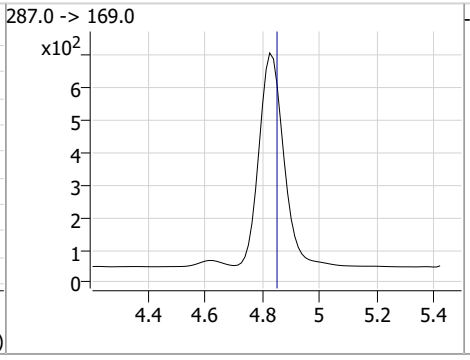


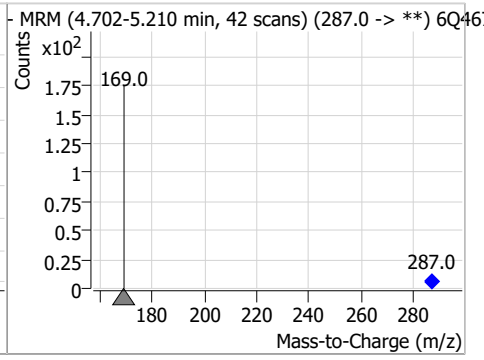




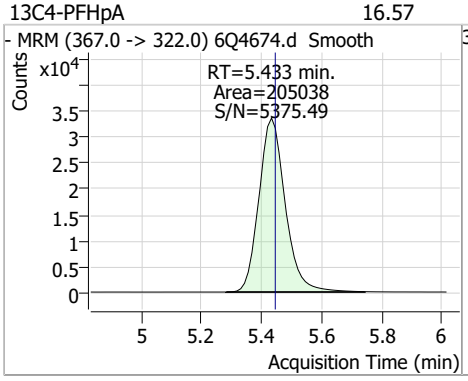
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	15.02	4.83	-0.03	3992				

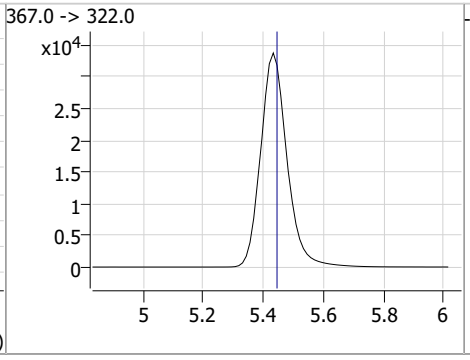


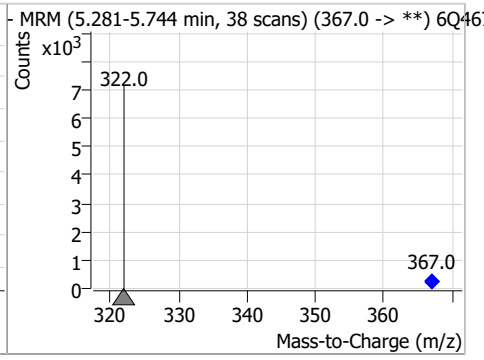




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	16.57	5.43	-0.01	205038				

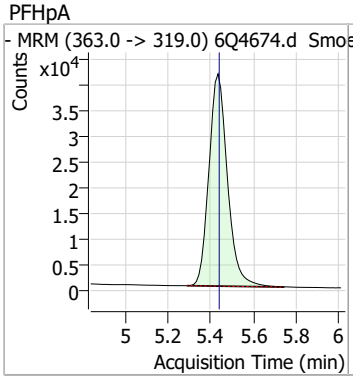


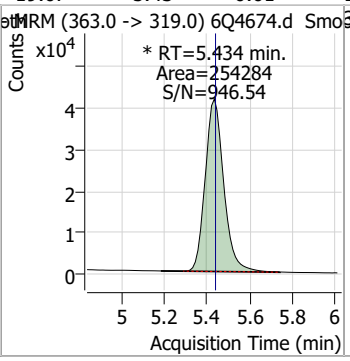


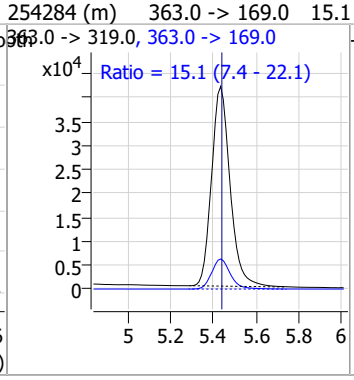


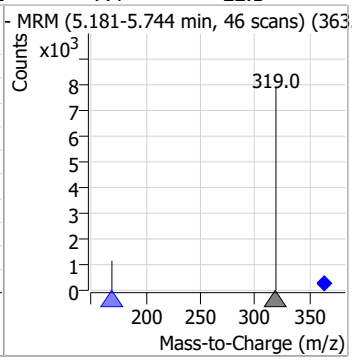
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.07	5.43	-0.01	254284 (m)	363.0 -> 169.0	15.1	7.4	22.1

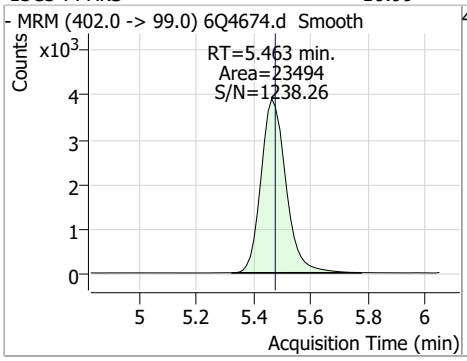


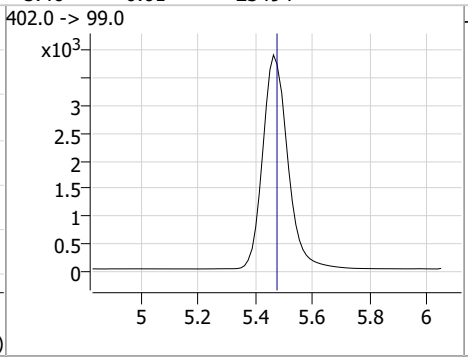


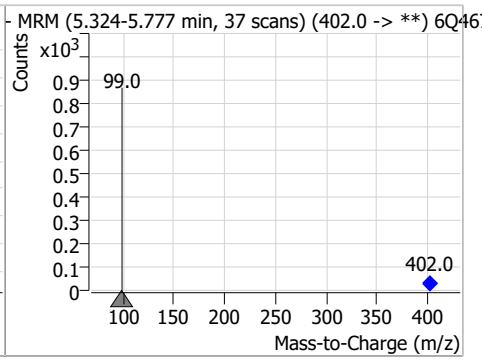




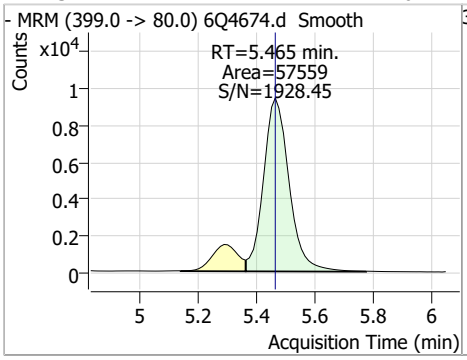
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	16.99	5.46	-0.01	23494				

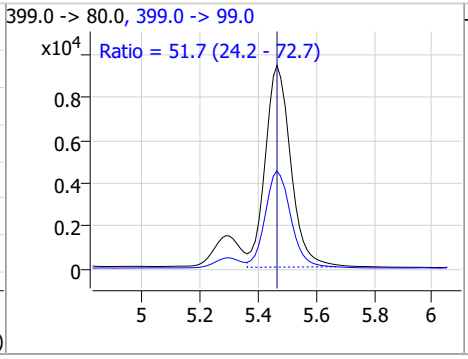


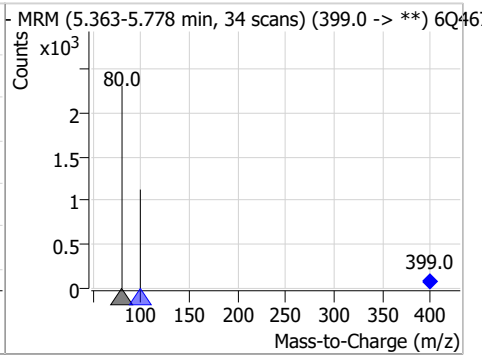




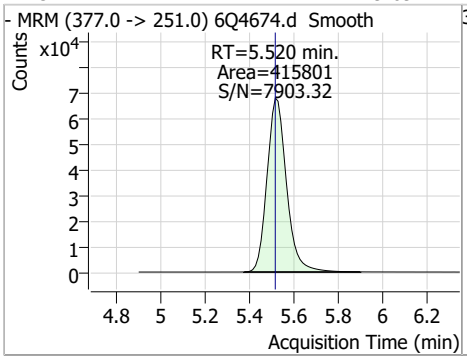
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.10	5.47	-0.01	57559	399.0 -> 99.0	51.7	24.2	72.7

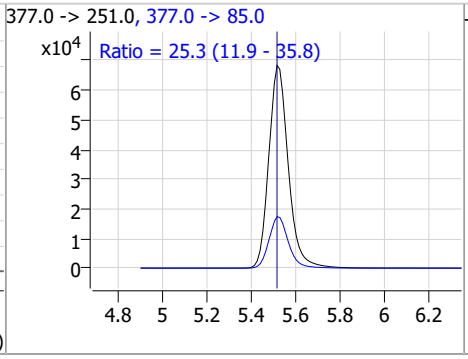


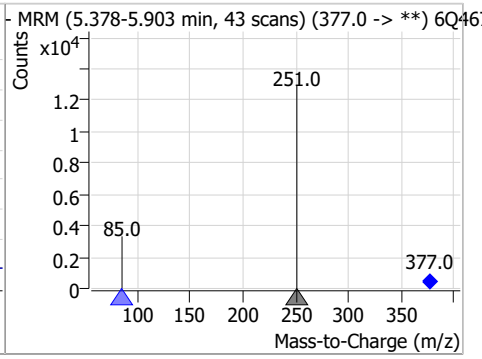




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.09	5.52	-0.01	415801	377.0 -> 85.0	25.3	11.9	35.8

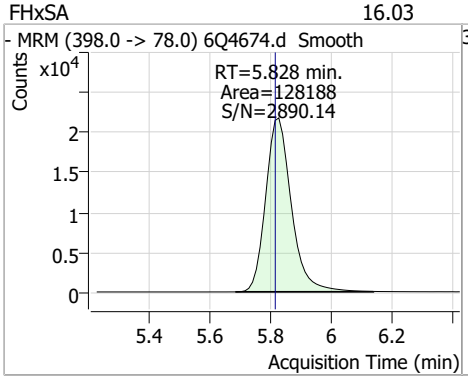


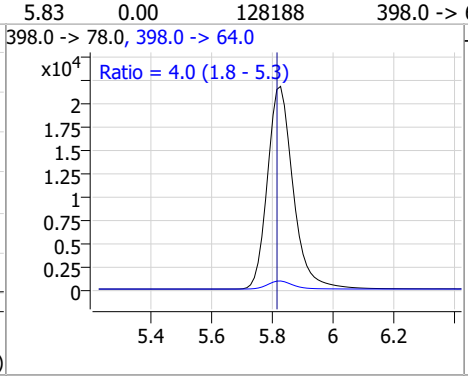


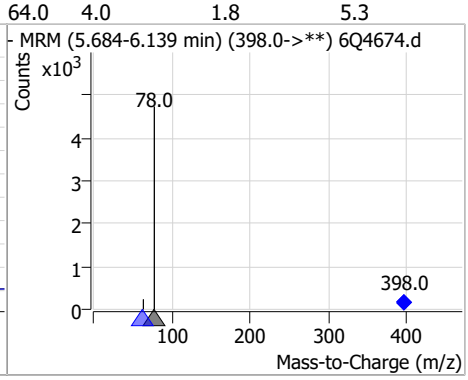


Perfluorinated Compounds by LC/MS/MS

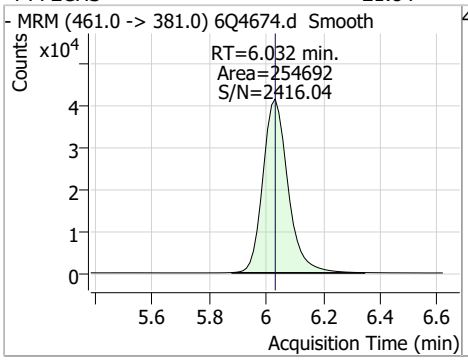
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	16.03	5.83	0.00	128188	398.0 -> 64.0	4.0	1.8	5.3

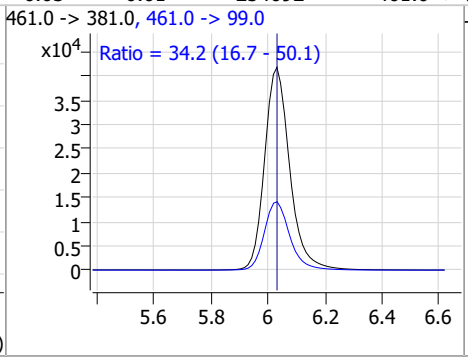


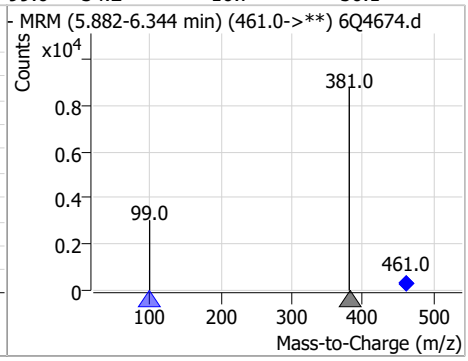




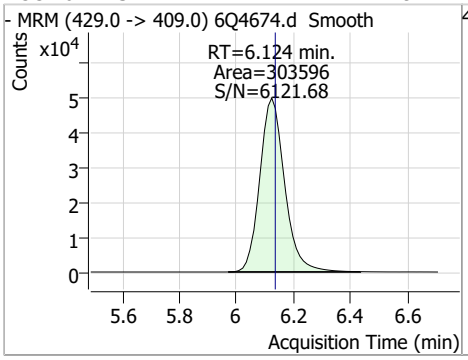
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	21.84	6.03	-0.01	254692	461.0 -> 99.0	34.2	16.7	50.1

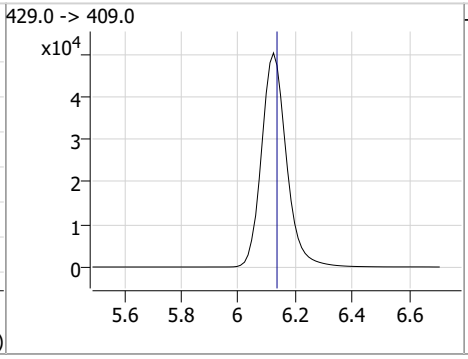


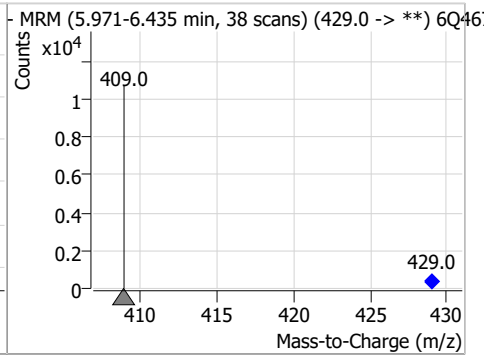




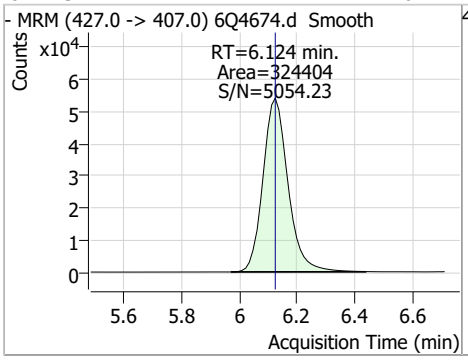
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.79	6.12	-0.01	303596				

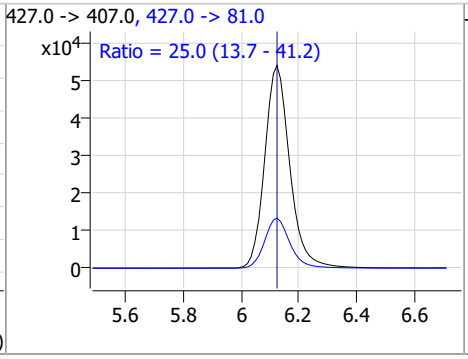


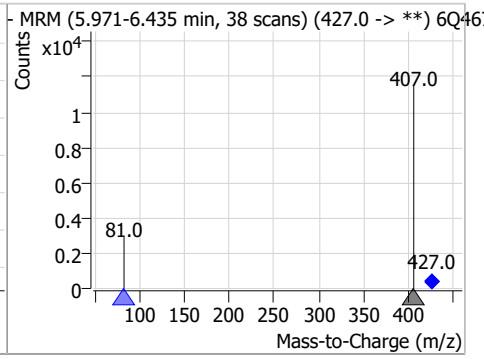




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.10	6.12	-0.01	324404	427.0 -> 81.0	25.0	13.7	41.2

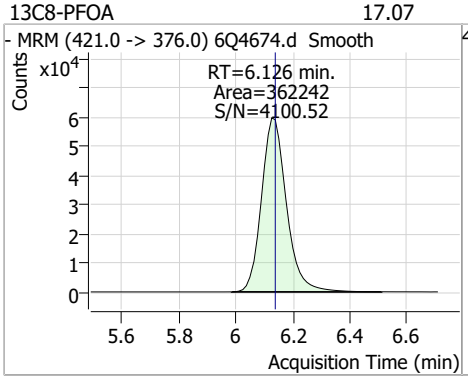


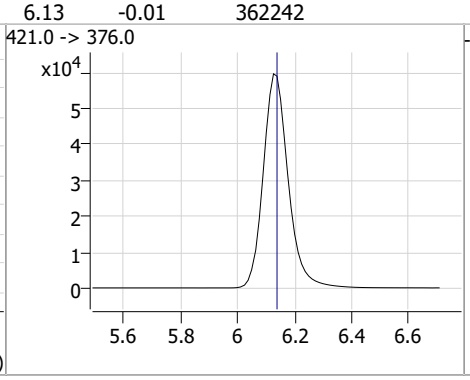


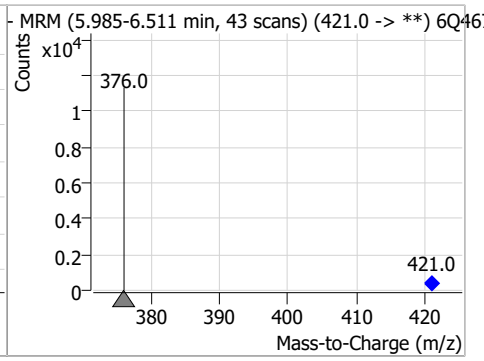


Perfluorinated Compounds by LC/MS/MS

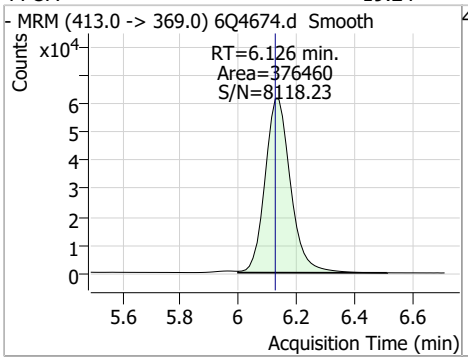
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.07	6.13	-0.01	362242				

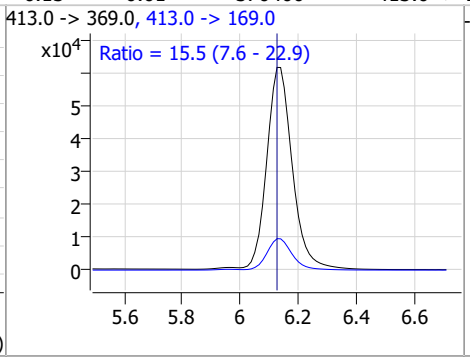


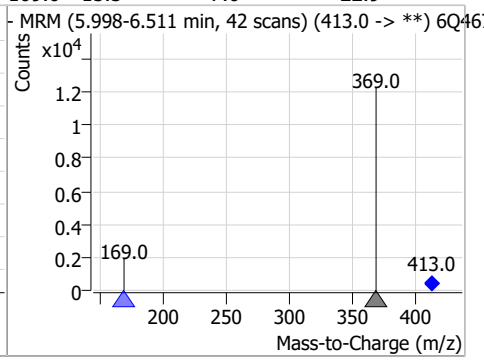




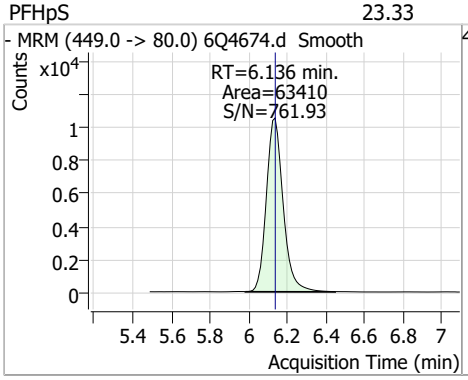
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.24	6.13	-0.01	376460	413.0 -> 169.0	15.5	7.6	22.9

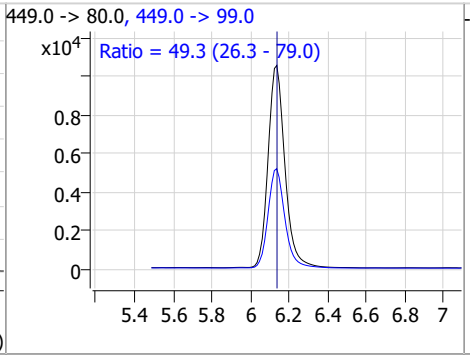


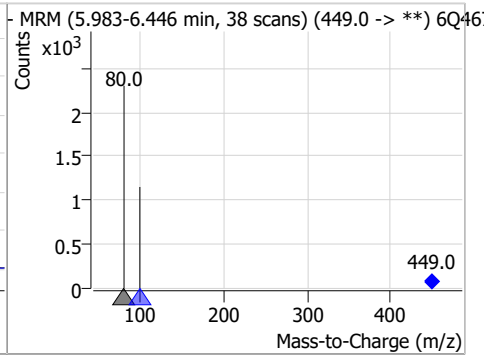




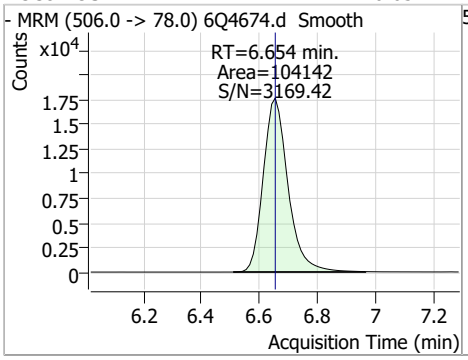
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	23.33	6.14	-0.01	63410	449.0 -> 99.0	49.3	26.3	79.0

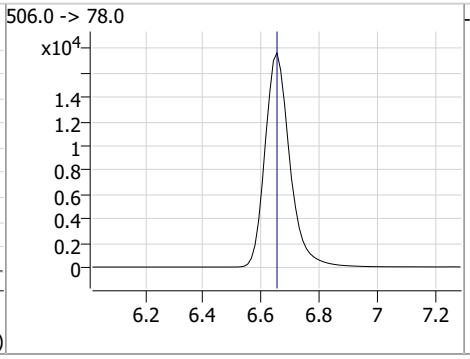


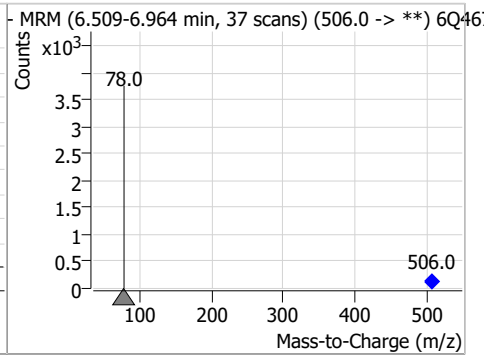




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	10.65	6.65	0.00	104142				

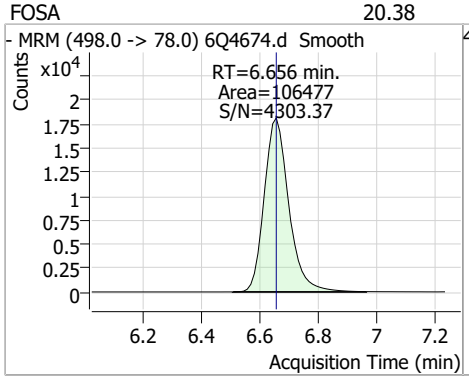


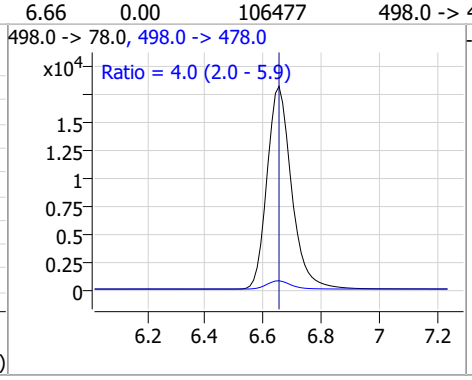


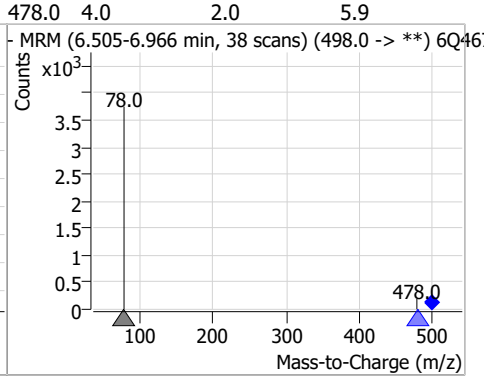


Perfluorinated Compounds by LC/MS/MS

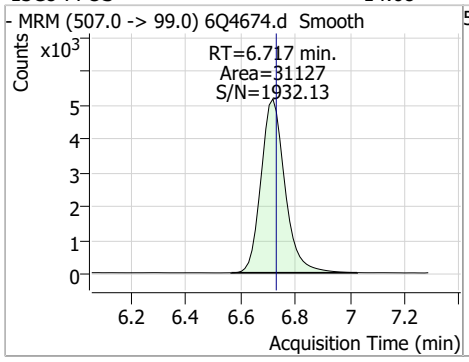
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.38	6.66	0.00	106477	498.0 -> 478.0	4.0	2.0	5.9

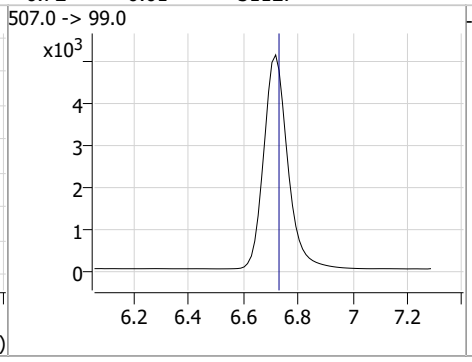


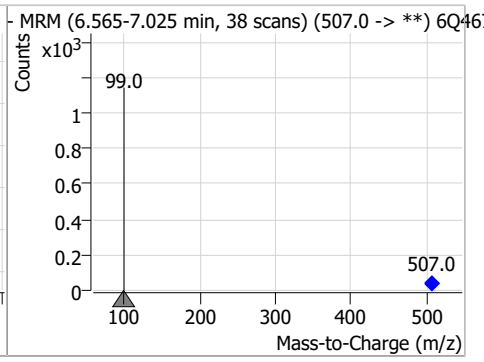




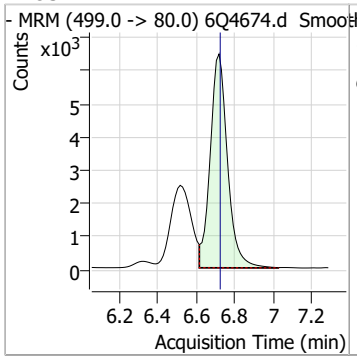
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.68	6.72	-0.01	31127				

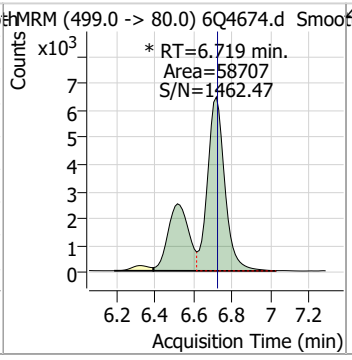


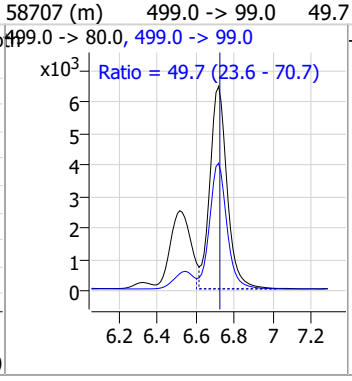


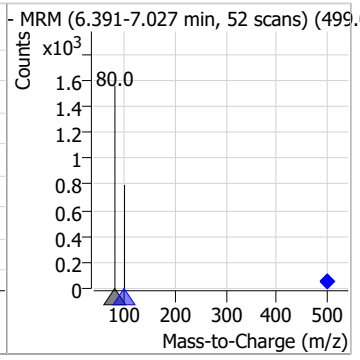


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.34	6.72	-0.01	58707 (m)	499.0 -> 99.0	49.7	23.6	70.7

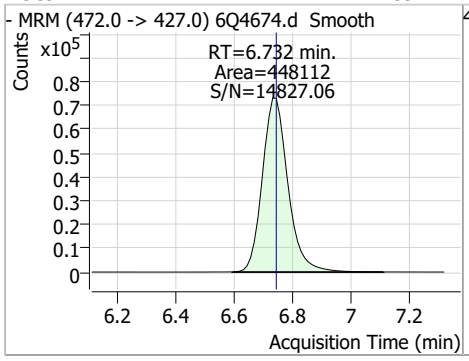


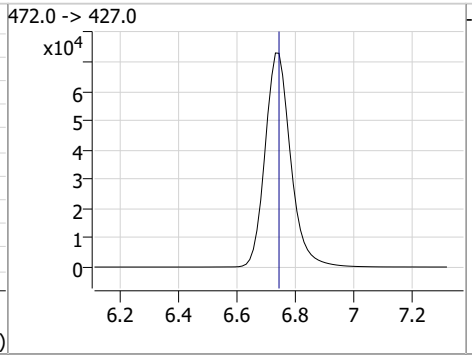


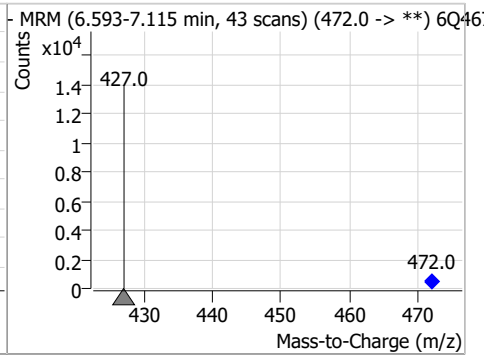




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.39	6.73	-0.01	448112				

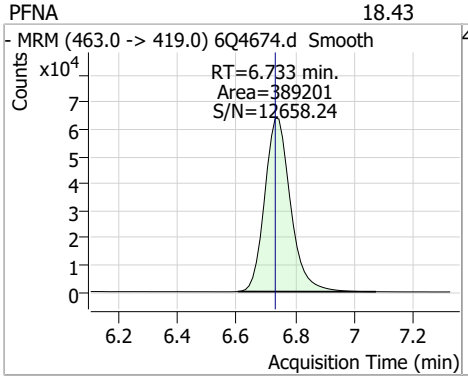


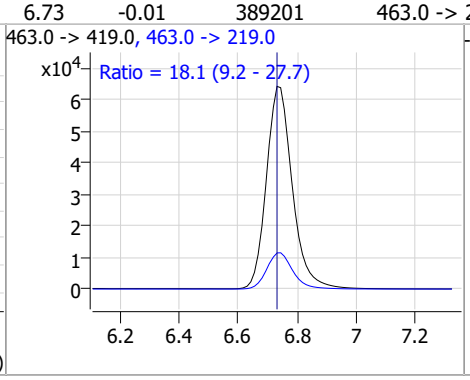


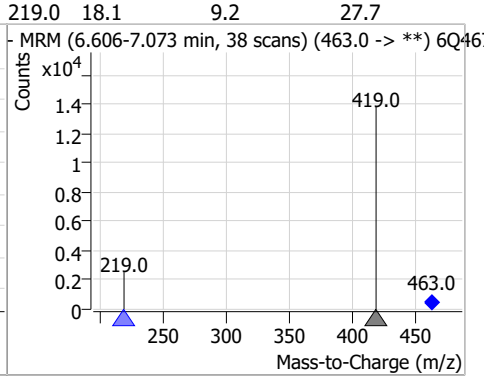


Perfluorinated Compounds by LC/MS/MS

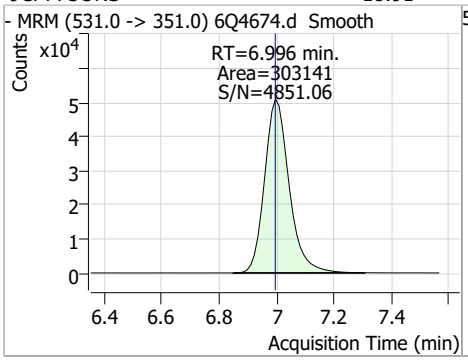
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.43	6.73	-0.01	389201	463.0 -> 219.0	18.1	9.2	27.7

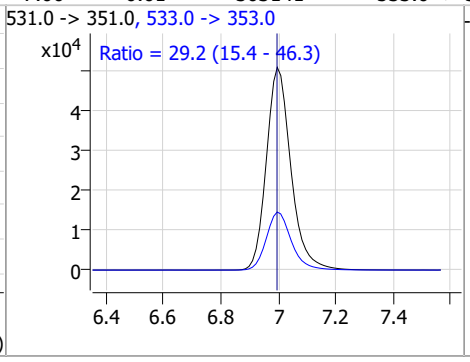


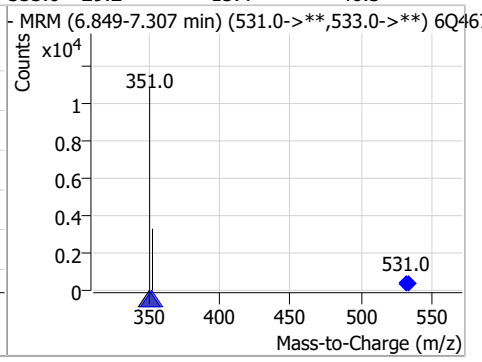




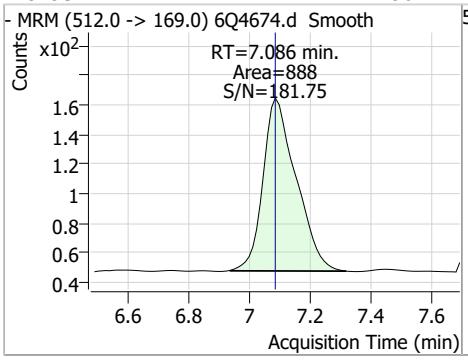
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.91	7.00	-0.01	303141	533.0 -> 353.0	29.2	15.4	46.3

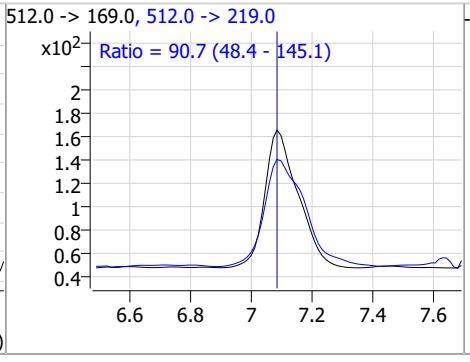


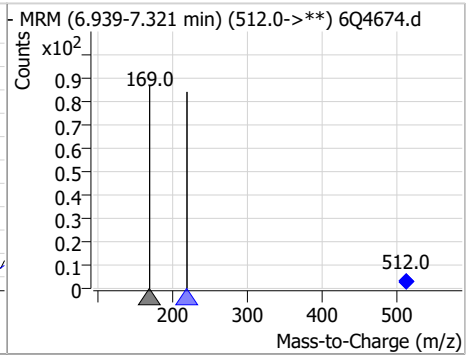




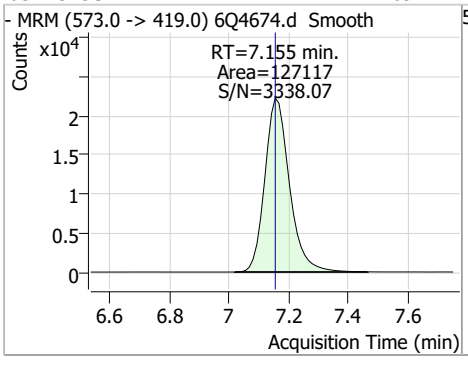
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	24.90	7.09	0.00	888	512.0 -> 219.0	90.7	48.4	145.1

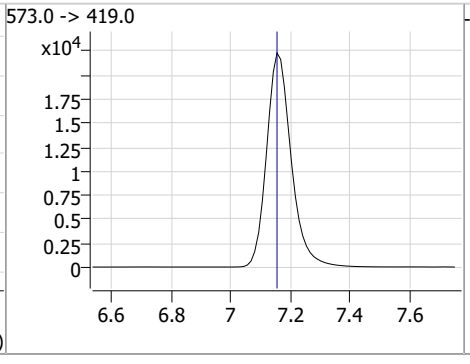


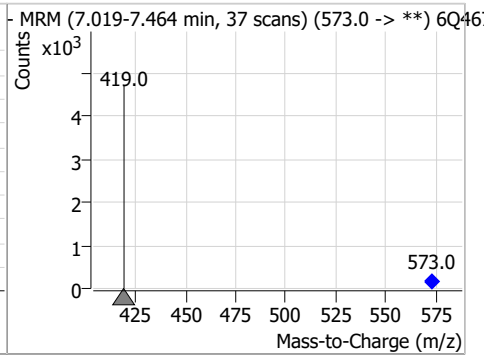




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.69	7.15	0.00	127117				

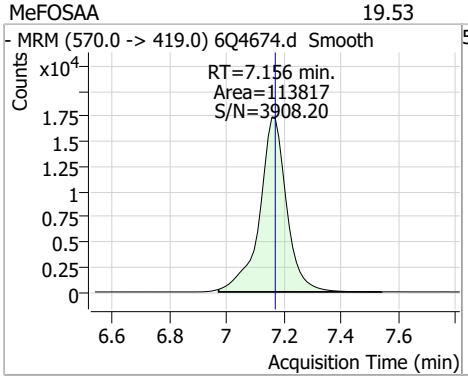


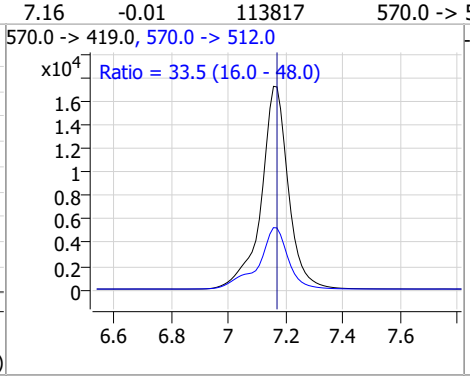


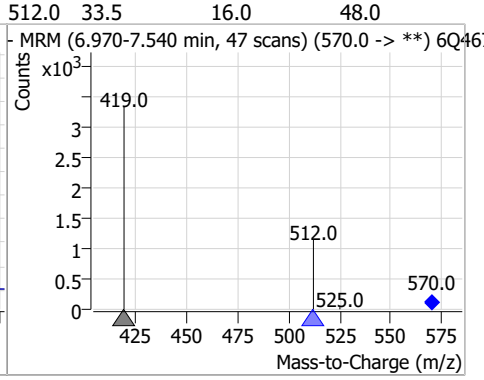


Perfluorinated Compounds by LC/MS/MS

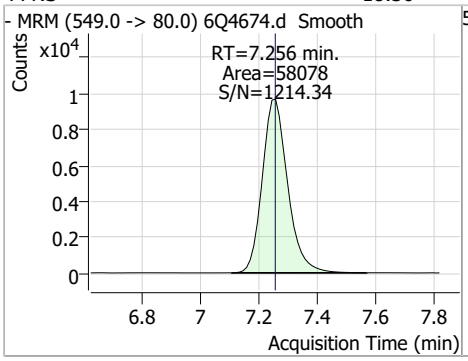
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.53	7.16	-0.01	113817	570.0 -> 512.0	33.5	16.0	48.0

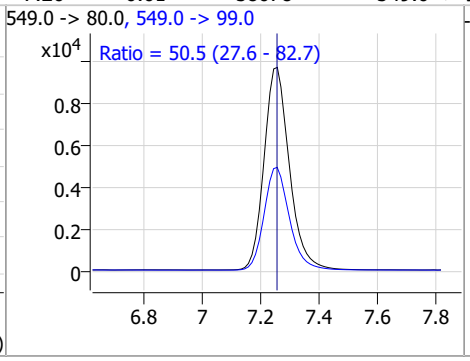


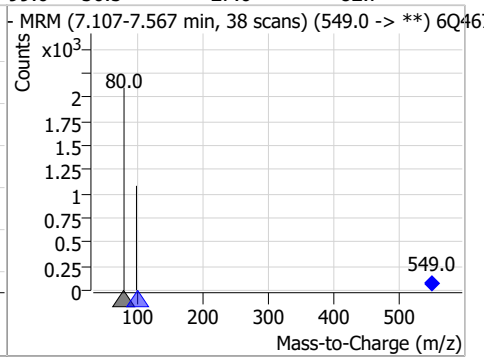




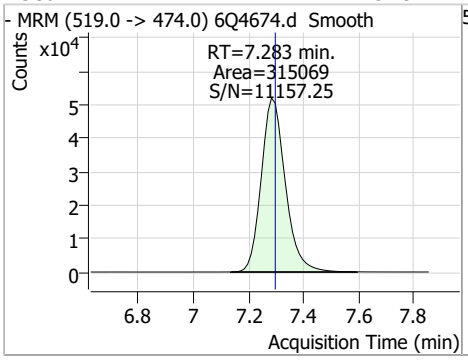
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.36	7.26	-0.01	58078	549.0 -> 99.0	50.5	27.6	82.7

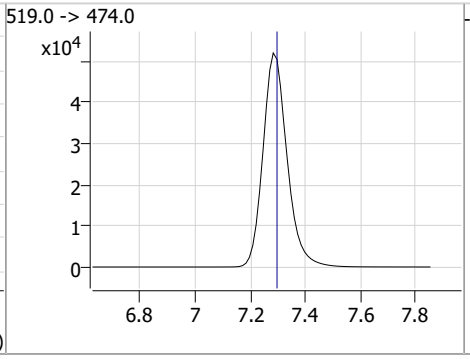


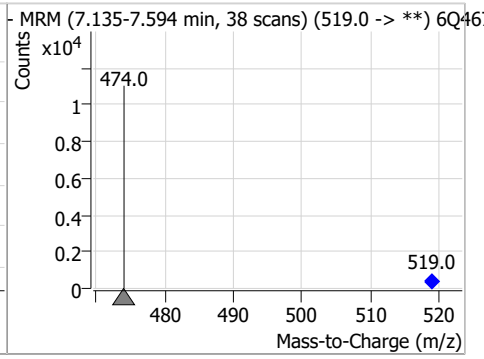




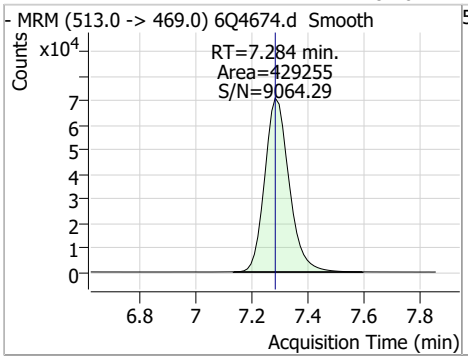
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.49	7.28	-0.01	315069				

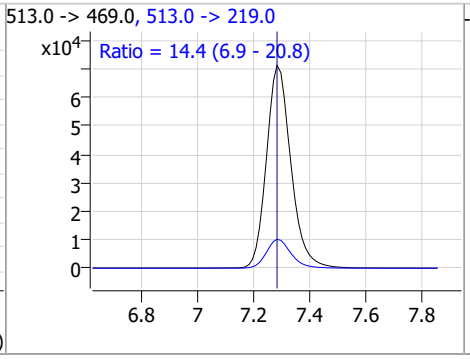


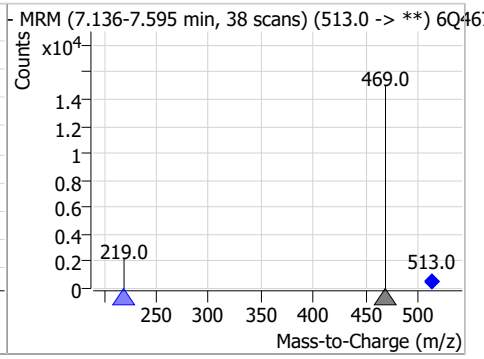




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.46	7.28	-0.01	429255	513.0 -> 219.0	14.4	6.9	20.8

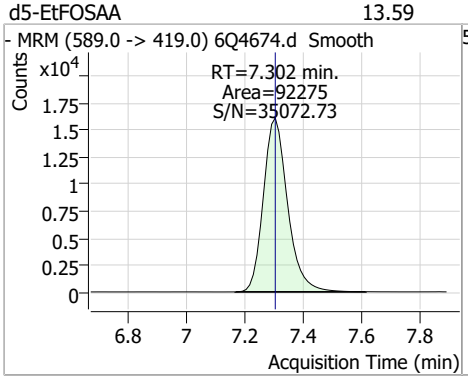


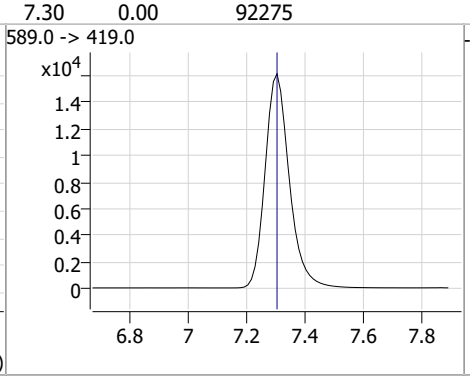


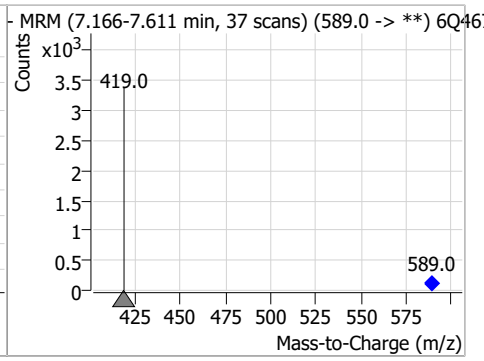


Perfluorinated Compounds by LC/MS/MS

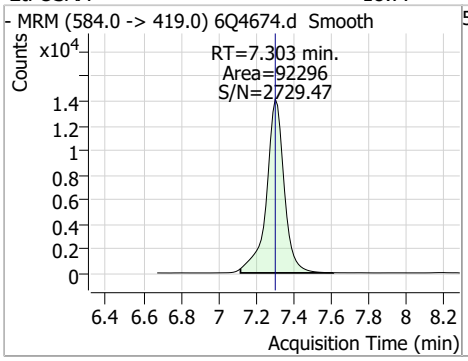
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	13.59	7.30	0.00	92275				

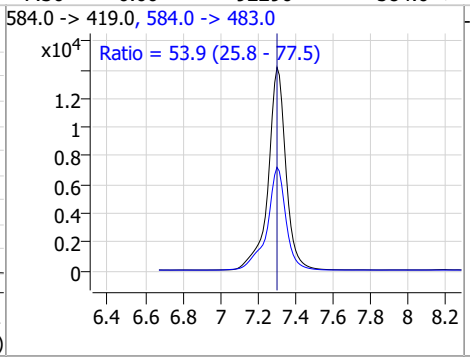


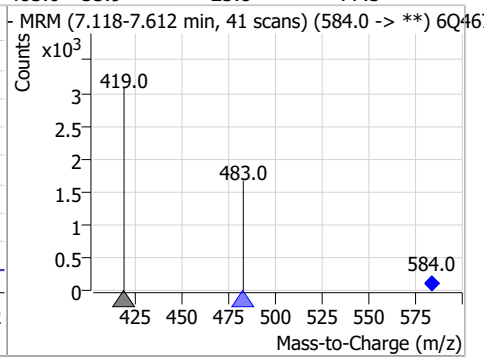




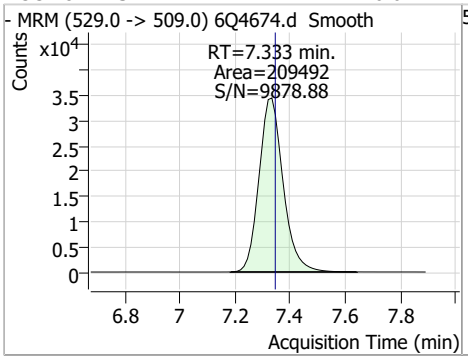
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.77	7.30	0.00	92296	584.0 -> 483.0	53.9	25.8	77.5

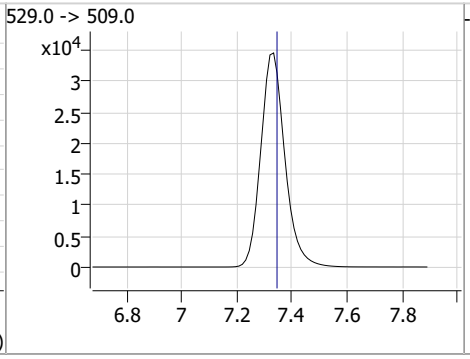


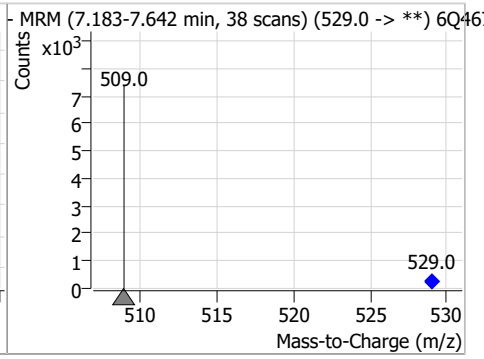




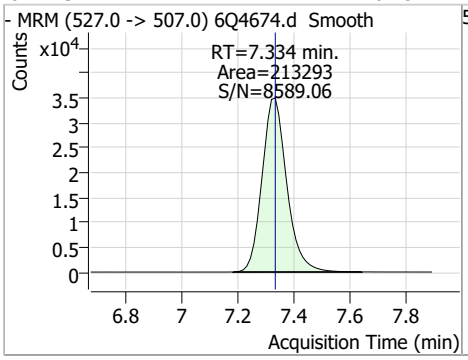
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.07	7.33	-0.01	209492				

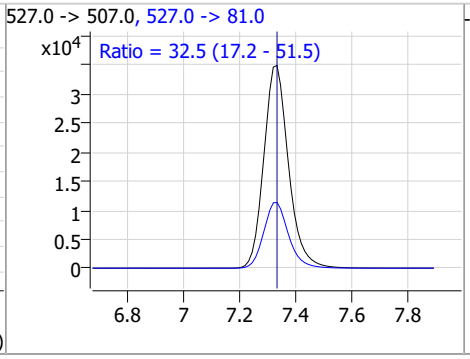


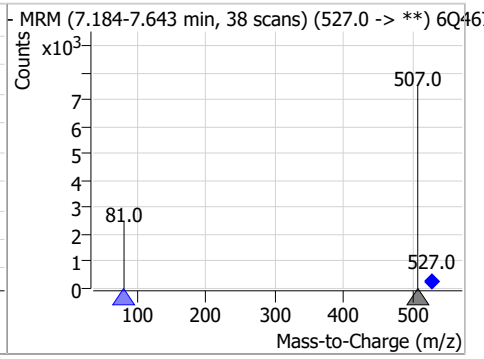




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.25	7.33	-0.01	213293	527.0 -> 81.0	32.5	17.2	51.5

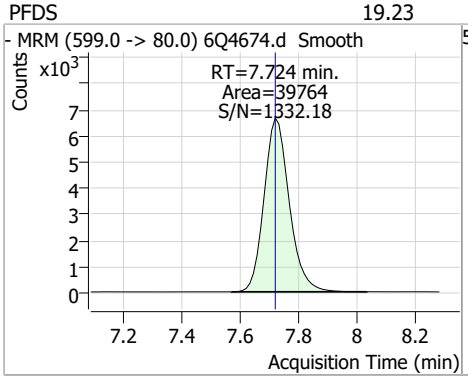


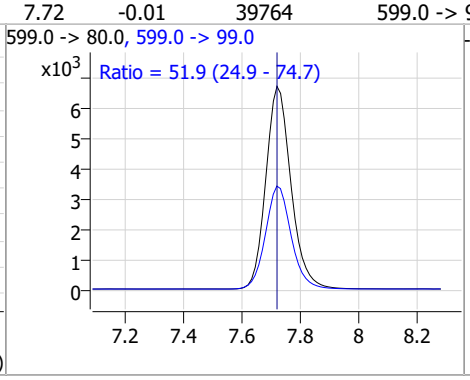


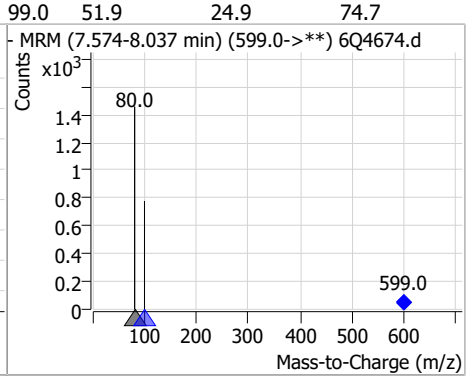


Perfluorinated Compounds by LC/MS/MS

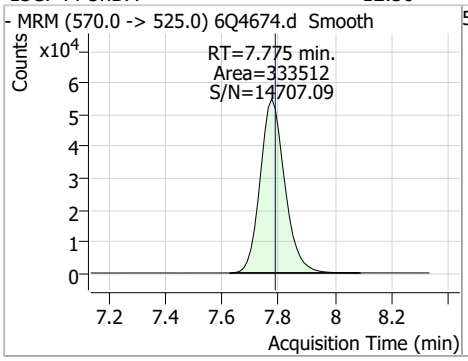
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.23	7.72	-0.01	39764	599.0 -> 99.0	51.9	24.9	74.7

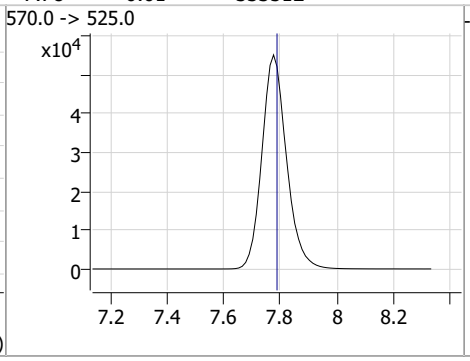


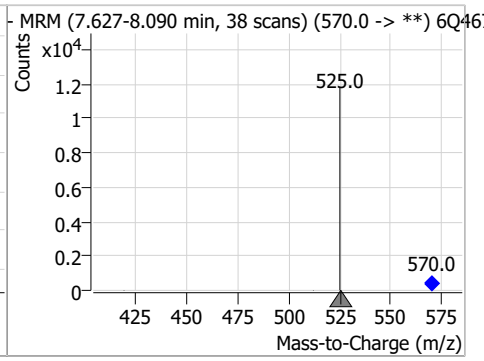




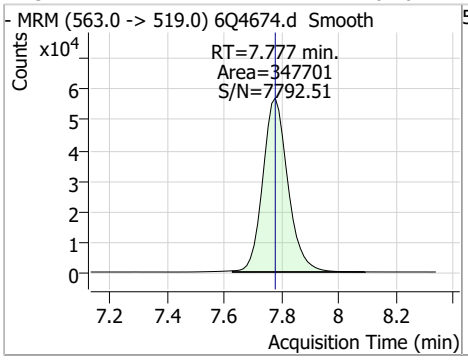
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.56	7.78	-0.01	333512				

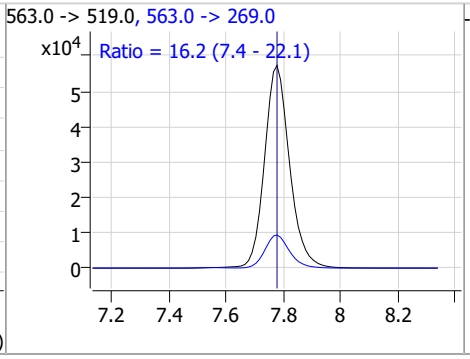


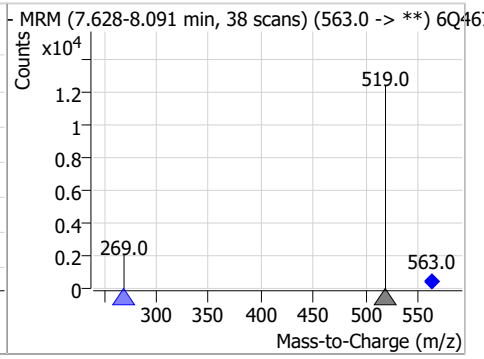




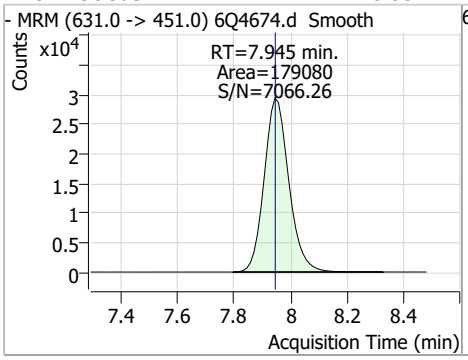
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.16	7.78	-0.01	347701	563.0 -> 269.0	16.2	7.4	22.1

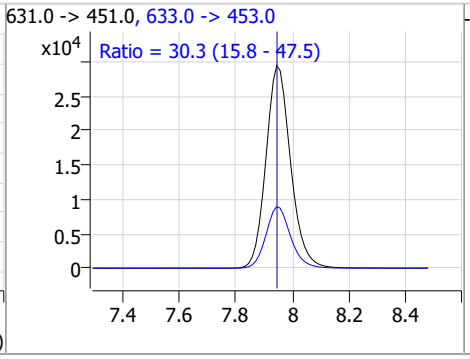


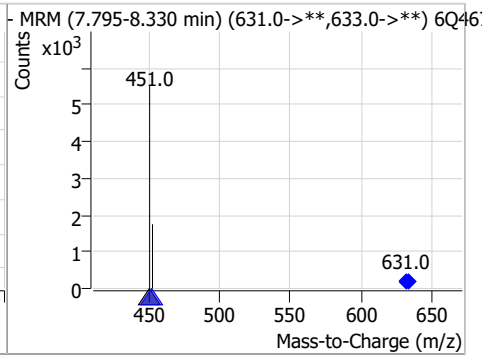




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.93	7.94	-0.02	179080	633.0 -> 453.0	30.3	15.8	47.5

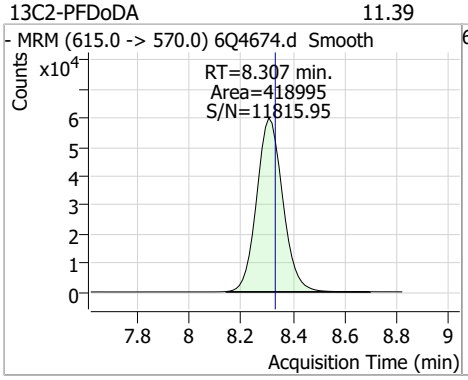


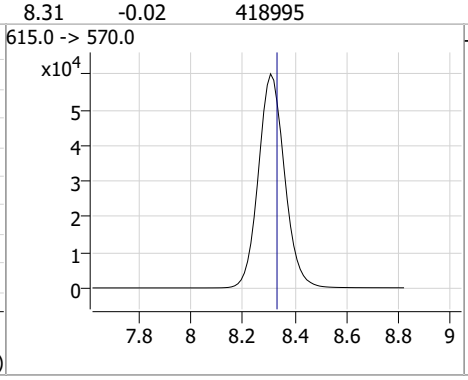


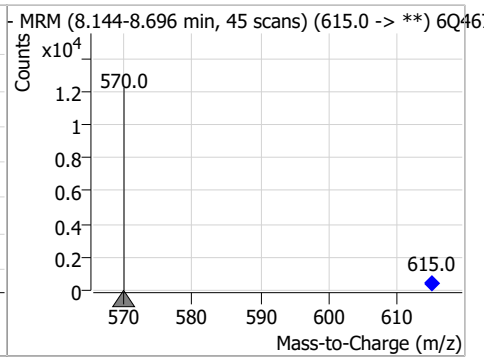


Perfluorinated Compounds by LC/MS/MS

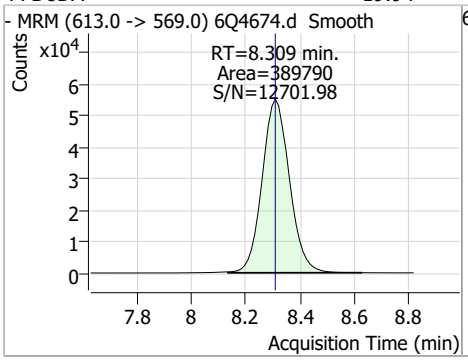
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.39	8.31	-0.02	418995				

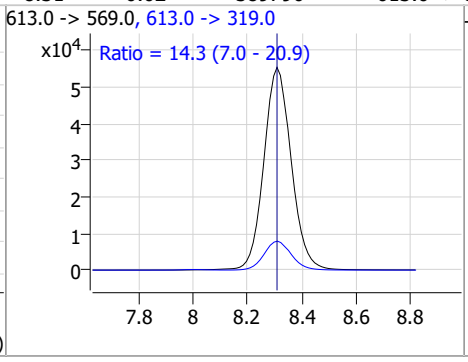


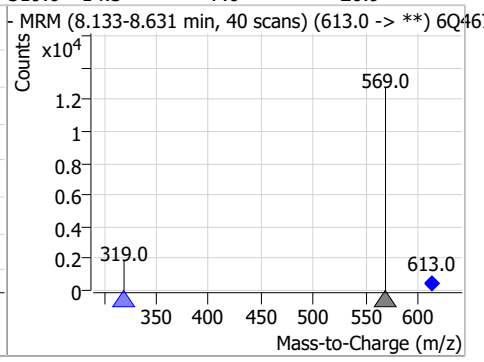




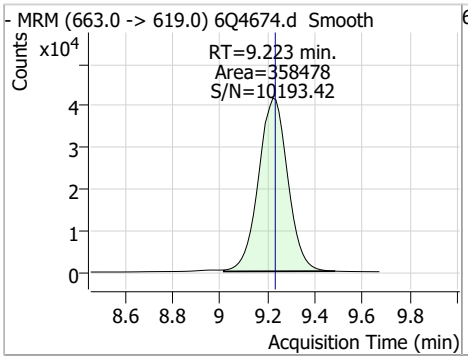
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.94	8.31	-0.02	389790	613.0 -> 319.0	14.3	7.0	20.9

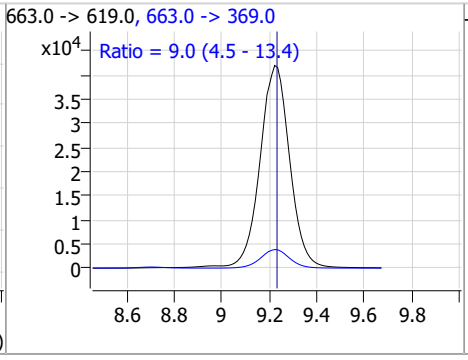


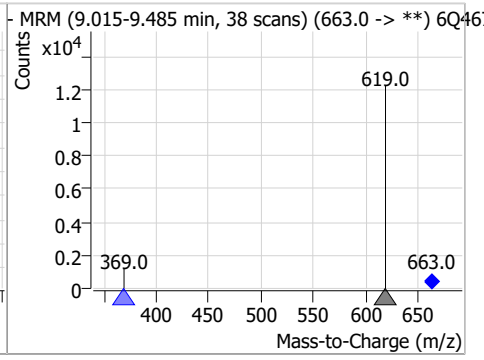




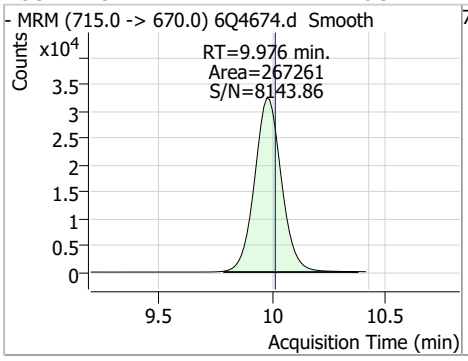
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	17.72	9.22	-0.04	358478	663.0 -> 369.0	9.0	4.5	13.4

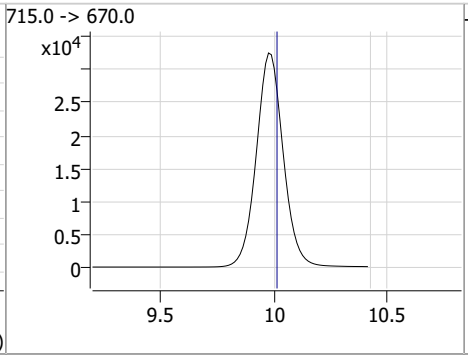


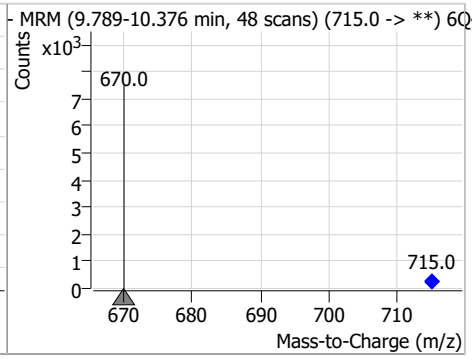




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	8.91	9.98	-0.04	267261				

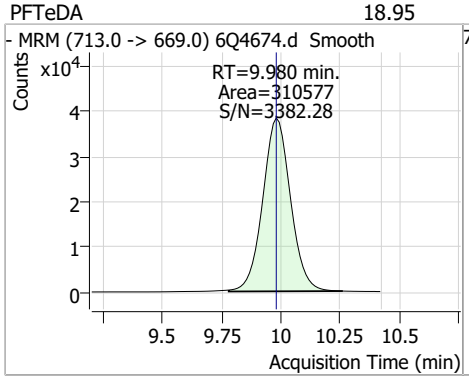


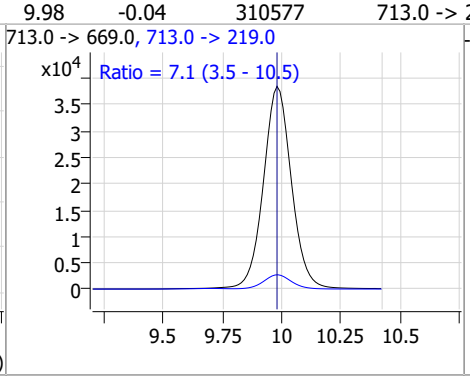


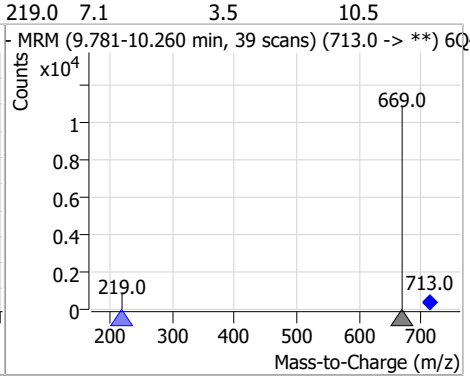


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.95	9.98	-0.04	310577	713.0 -> 219.0	7.1	3.5	10.5







Manual Integration Approval Summary

Sample Number: OP92764-MS
Lab FileID: 6Q4674.D
Injection Time: 09/15/22 01:25
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 16:53 Norman Farmer
Supervisor approved: 09/20/22 16:57 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.43	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:36

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4608.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:43:27 PM
Sample Name : op92794-ms
Vial : P1-C2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,255,,,1.0,1,water

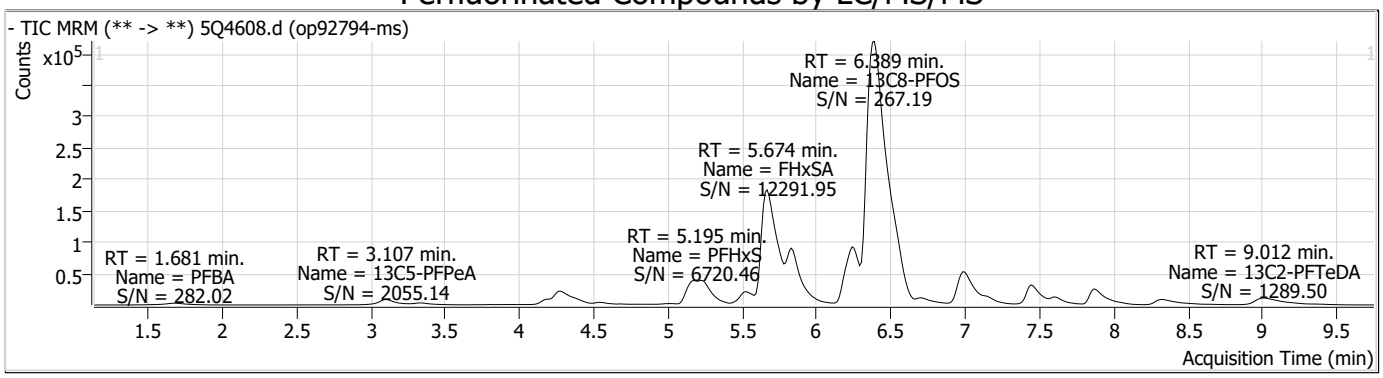
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	20934	20.00 µg/L	-0.013
M5-PFPeA	3.107	268.0 -> 223.0	35000	20.00 µg/L	-0.025
M5-PFHxA	4.278	318.0 -> 273.0	61647	20.00 µg/L	-0.025
M4-PFHpA	5.149	367.0 -> 322.0	58468	20.00 µg/L	-0.014
M8-PFOA	5.845	421.0 -> 376.0	89113	20.00 µg/L	-0.012
M9-PFNA	6.405	472.0 -> 427.0	63586	20.00 µg/L	-0.050
M6-PFDA	6.989	519.0 -> 474.0	73933	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	90215	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	93008	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	67909	20.00 µg/L	-0.025
M8-FOSA	6.530	506.0 -> 78.0	10741	20.00 µg/L	0.000
M3-PFBS	3.337	302.0 -> 99.0	4578	20.00 µg/L	-0.025
M3-PFHxS	5.194	402.0 -> 99.0	5057	20.00 µg/L	-0.012
M8-PFOS	6.389	507.0 -> 99.0	5959	20.00 µg/L	-0.051
M2-4:2FTS	4.187	329.0 -> 309.0	22137	20.00 µg/L	-0.025
M2-6:2FTS	5.830	429.0 -> 409.0	37040	20.00 µg/L	-0.012
M2-8:2FTS	7.025	529.0 -> 509.0	35250	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16908	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4256	20.00 µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	973	20.00 µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	19149	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	22137	15.07 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.4%	
13C2-6:2FTS	5.830	429.0 -> 409.0	37040	16.57 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.8%	
13C2-8:2FTS	7.025	529.0 -> 509.0	35250	15.69 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.5%	
13C2-PFDoDA	7.879	615.0 -> 570.0	93008	12.83 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.2%	
13C2-PFTeDA	9.012	715.0 -> 670.0	67909	9.00 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 45.0%	
13C3-PFBS	3.337	302.0 -> 99.0	4578	14.05 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.3%	
13C3-PFHxS	5.194	402.0 -> 99.0	5057	14.83 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%	
13C4-PFBA	1.687	217.0 -> 172.0	20934	11.71 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.6%	
13C4-PFHpA	5.149	367.0 -> 322.0	58468	14.32 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%	
13C5-PFHxA	4.278	318.0 -> 273.0	61647	14.10 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.5%	
13C5-PFPeA	3.107	268.0 -> 223.0	35000	12.04 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 60.2%	
13C6-PFDA	6.989	519.0 -> 474.0	73933	13.73 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

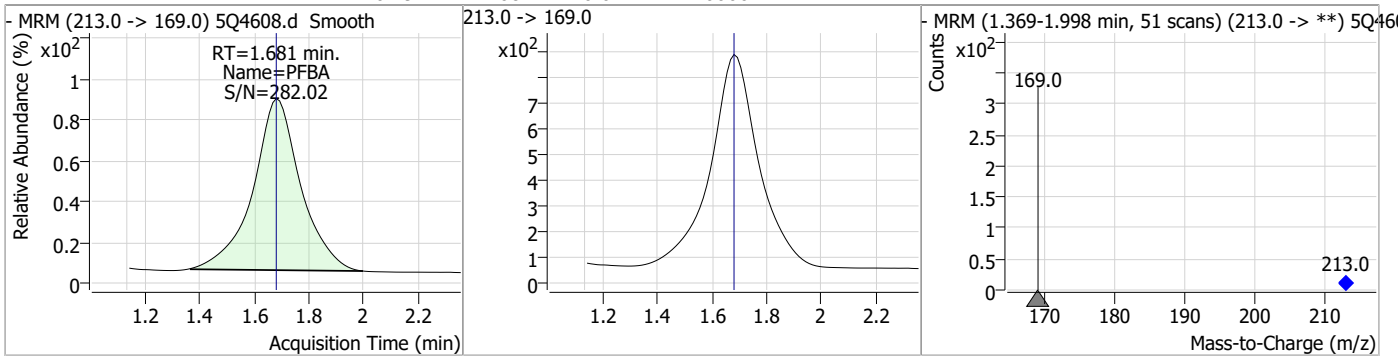
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	90215	12.81	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.1%			
13C8-FOSA	6.530	506.0 -> 78.0	10741	9.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 47.3%			
13C8-PFOA	5.845	421.0 -> 376.0	89113	14.73	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%			
13C8-PFOS	6.389	507.0 -> 99.0	5959	9.13	µg/L		-0.051
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 45.6%			
13C9-PFNA	6.405	472.0 -> 427.0	63586	9.68	µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 48.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16908	17.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4256	12.67	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%			
d3-MeFOSA	6.965	515.0 -> 169.0	973	3.19	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 16.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	19149	17.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	22936	18.51	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	42580	21.67	µg/L		99
8:2FTS	7.026	527.0 -> 507.0	48588	25.86	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	13084	19.31	µg/L		100
FOSA	6.519	498.0 -> 78.0	117793	213.14	µg/L		97
MeFOSAA	7.010	570.0 -> 419.0	14813	19.13	µg/L		98
PFBA	1.681	213.0 -> 169.0	10006	20.29	µg/L		100
PFBS	3.342	299.0 -> 80.0	12958	18.84	µg/L		100
PFDA	6.990	513.0 -> 469.0	141814	31.23	µg/L	m	100
PFDoDA	7.880	613.0 -> 569.0	86408	18.94	µg/L		96
PFDS	7.419	599.0 -> 80.0	9814	16.12	µg/L		98
PFHpA	5.150	363.0 -> 319.0	83572	21.76	µg/L		99
PFHpS	5.855	449.0 -> 80.0	25569	57.07	µg/L	m	99
PFHxA	4.279	313.0 -> 269.0	66849	22.19	µg/L		100
PFHxS	5.195	399.0 -> 80.0	95597	127.28	µg/L	m	96
PFNA	6.406	463.0 -> 419.0	129883	45.59	µg/L		100
PFNS	6.949	549.0 -> 80.0	12542	28.51	µg/L		98
PFOA	5.845	413.0 -> 369.0	243439	45.05	µg/L	m	99
PFOS	6.391	499.0 -> 80.0	2794512	5324.34	µg/L		90
PFPeA	3.109	263.0 -> 219.0	35882	20.75	µg/L		100
PFPeS	4.398	349.0 -> 80.0	11472	21.45	µg/L		100
PFTeDA	9.014	713.0 -> 669.0	67045	18.97	µg/L		99
PFTrDA	8.325	663.0 -> 619.0	85387	15.66	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	99209	22.02	µg/L		98
11Cl-PF3OUdS	7.615	631.0 -> 451.0	39821	17.23	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	41664	16.31	µg/L		100
ADONA	5.261	377.0 -> 251.0	92352	17.76	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	13359	18.60	µg/L		97
MeFOSA	6.966	512.0 -> 169.0	984	18.79	µg/L		99
4-PFECHS	5.741	461.0 -> 381.0	32877	20.50	µg/L		100
FBSA	4.356	298.0 -> 78.0	22967	22.46	µg/L		99
FHxSA	5.674	398.0 -> 78.0	1330007	1467.30	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

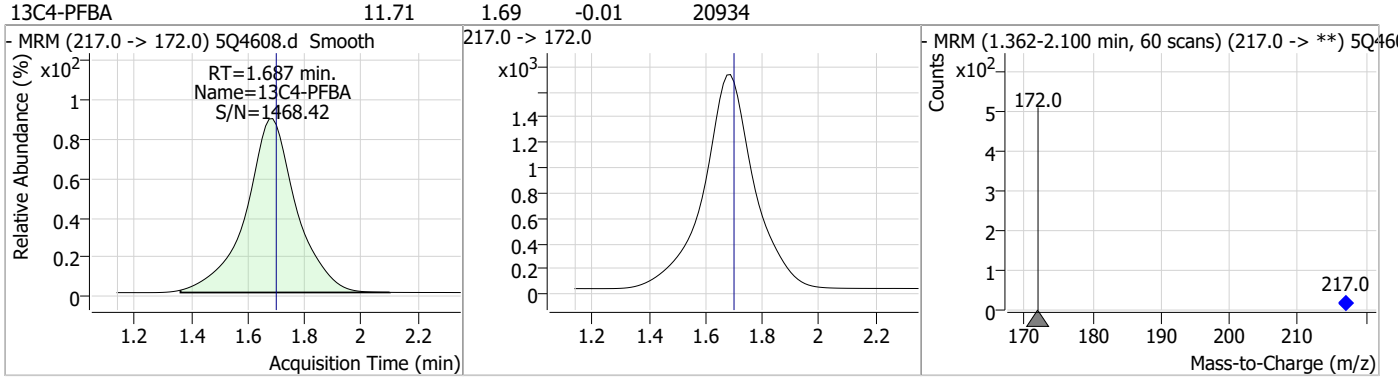
Perfluorinated Compounds by LC/MS/MS



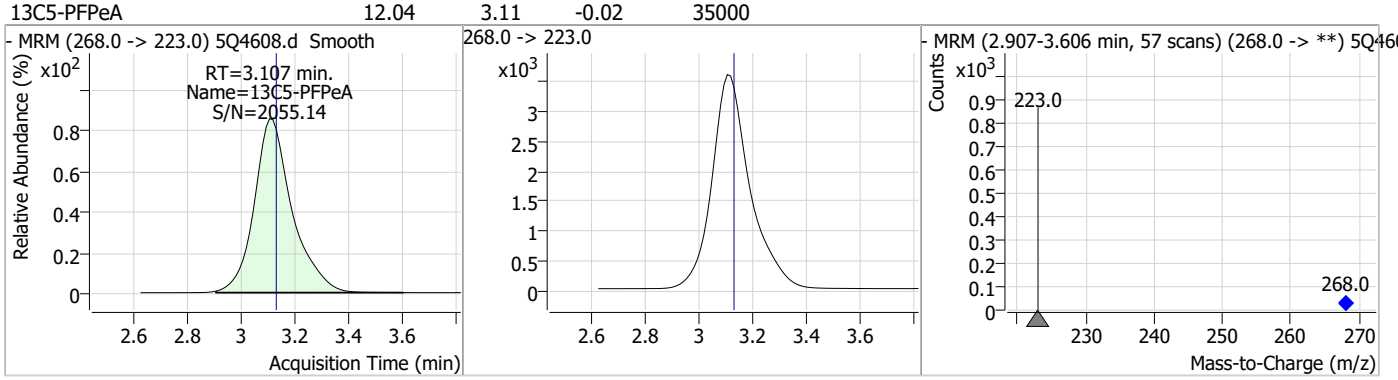
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.29	1.68	-0.01	10006				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	11.71	1.69	-0.01	20934				

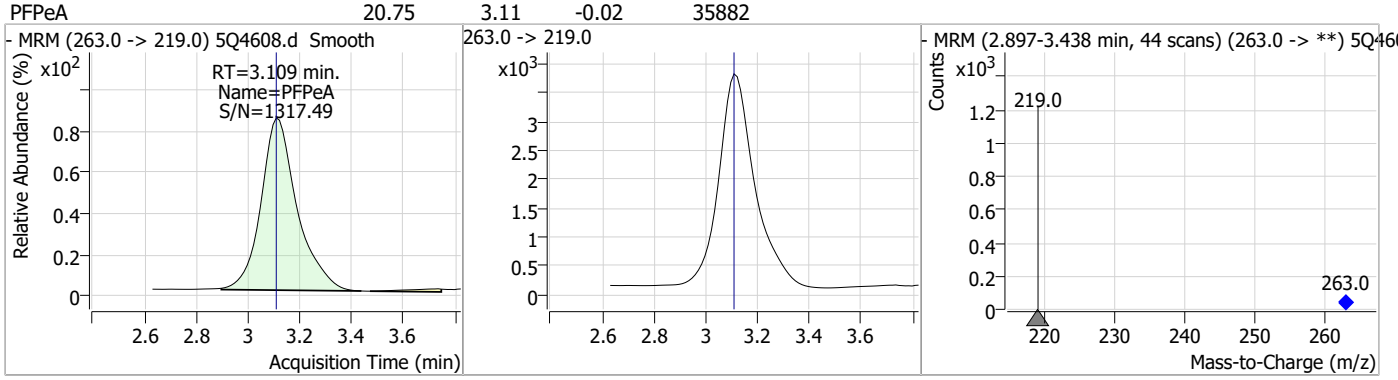


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.04	3.11	-0.02	35000				

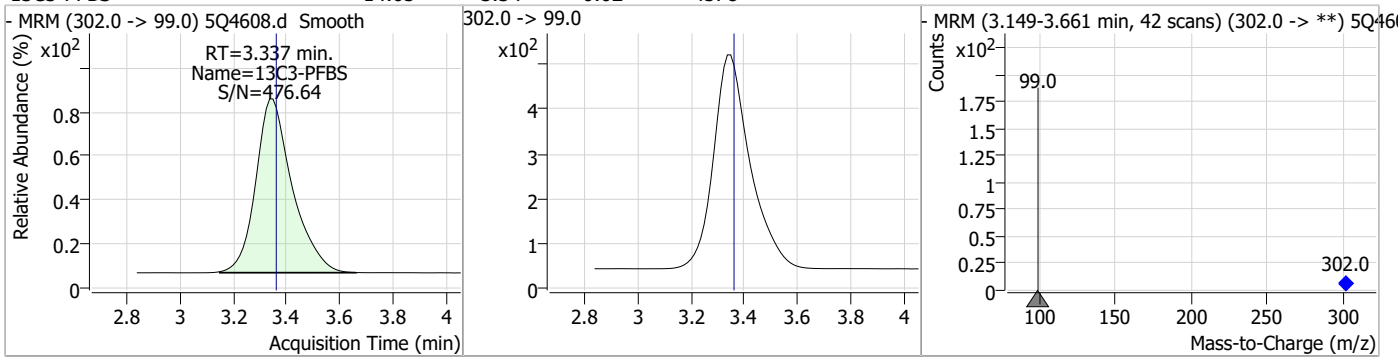


Perfluorinated Compounds by LC/MS/MS

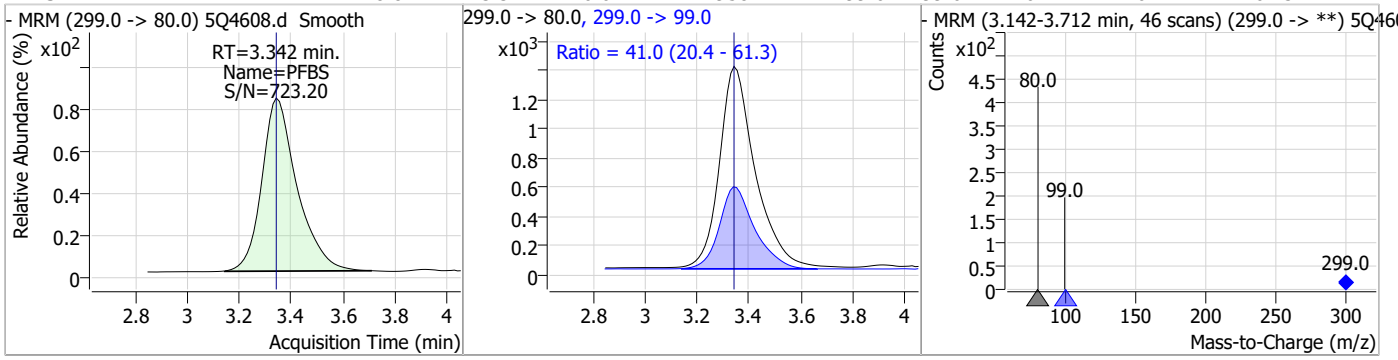
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.75	3.11	-0.02	35882				



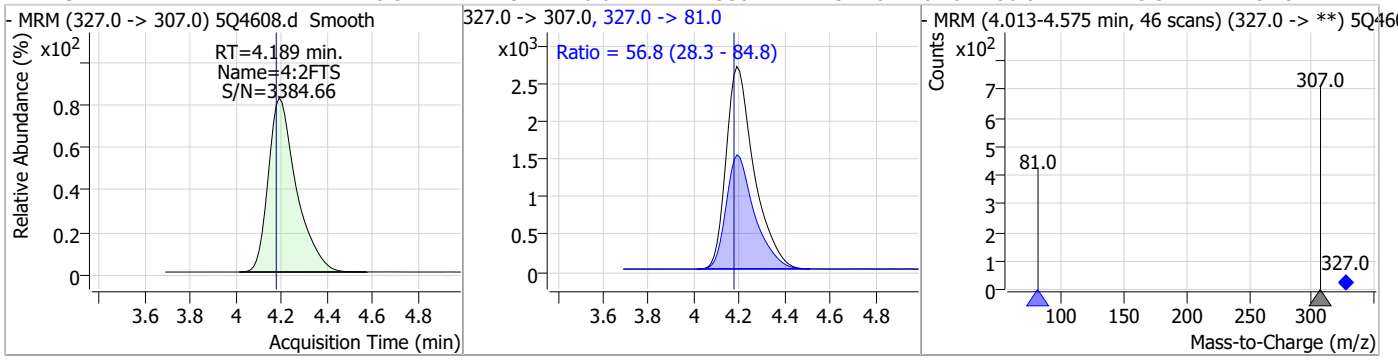
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.05	3.34	-0.02	4578				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.84	3.34	-0.02	12958	299.0 -> 99.0	41.0	20.4	61.3

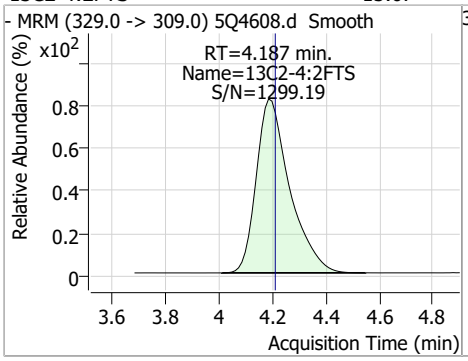


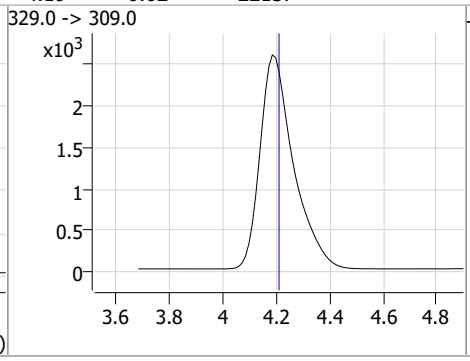
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	18.51	4.19	-0.01	22936	327.0 -> 81.0	56.8	28.3	84.8

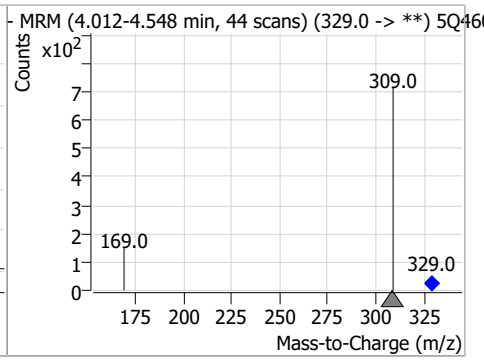


Perfluorinated Compounds by LC/MS/MS

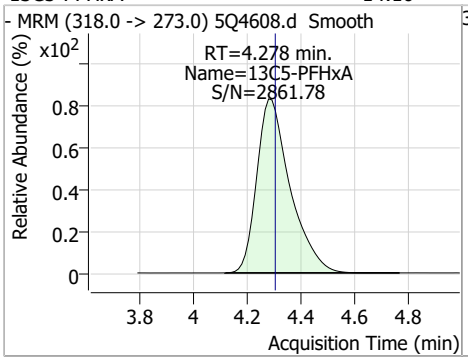
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	15.07	4.19	-0.02	22137				

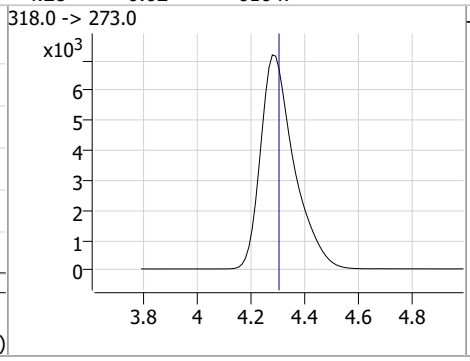


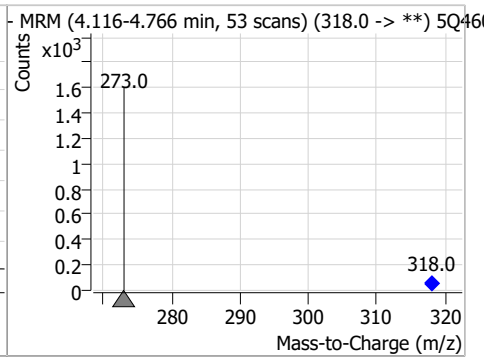




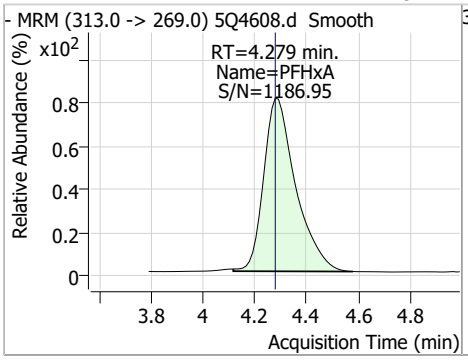
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.10	4.28	-0.02	61647				

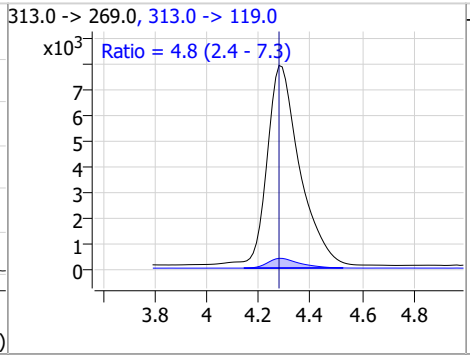


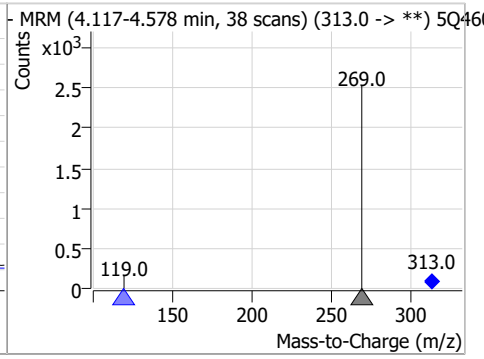




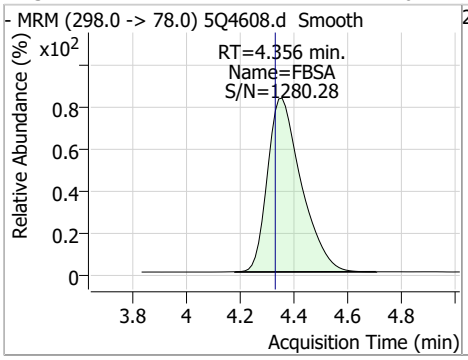
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	22.19	4.28	-0.02	66849	313.0 -> 119.0	4.8	2.4	7.3

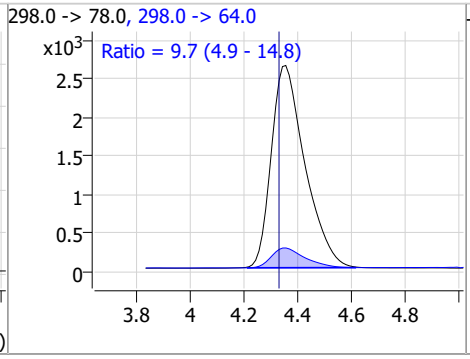


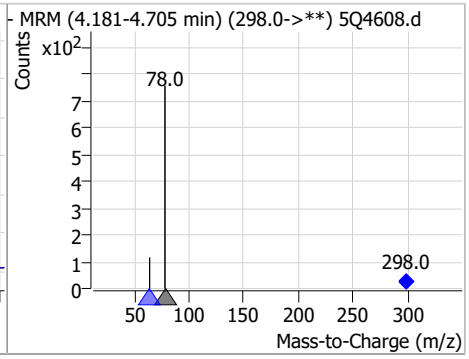




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	22.46	4.36	0.00	22967	298.0 -> 64.0	9.7	4.9	14.8

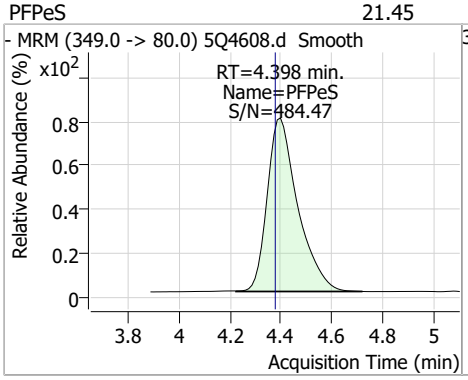


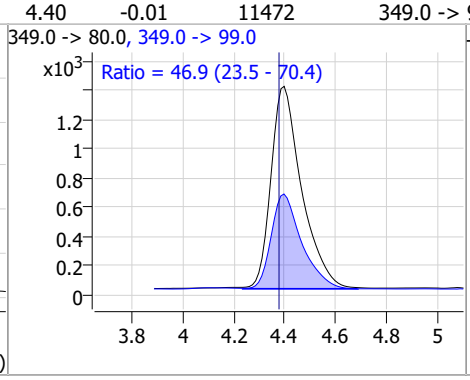


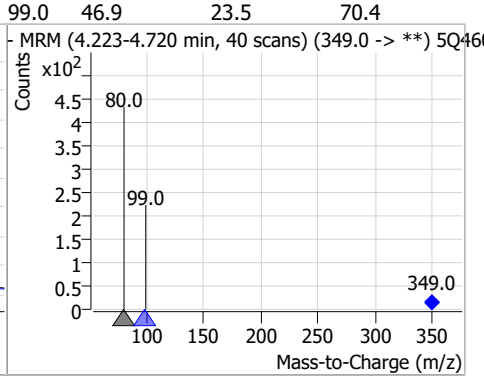


Perfluorinated Compounds by LC/MS/MS

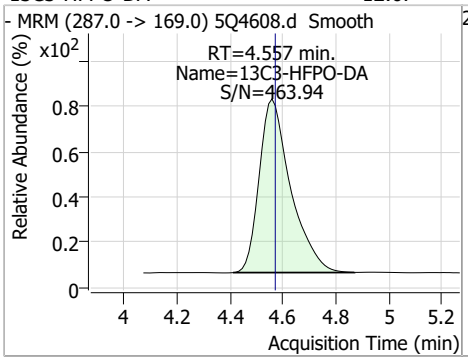
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	21.45	4.40	-0.01	11472	349.0 -> 99.0	46.9	23.5	70.4

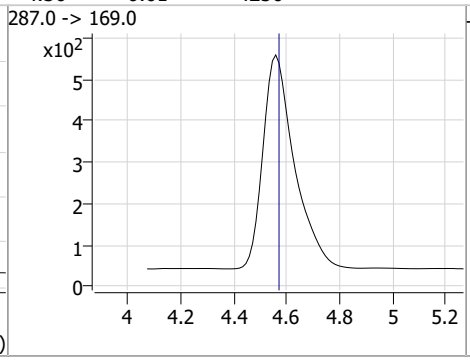


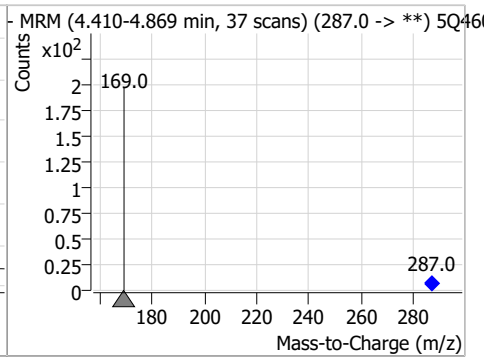




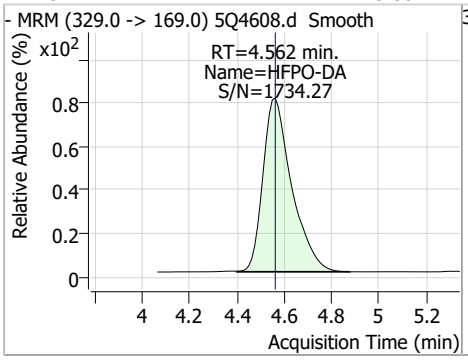
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.67	4.56	-0.01	4256				

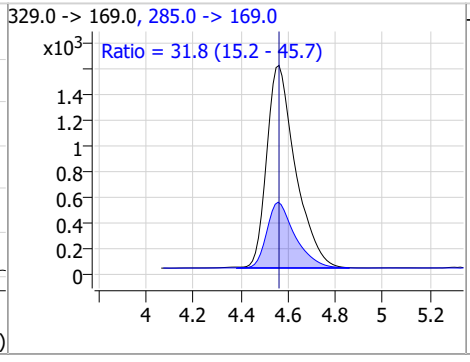


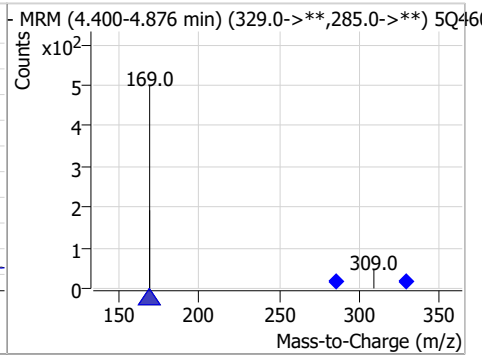




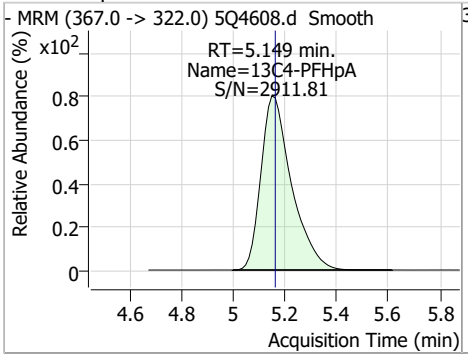
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.60	4.56	-0.01	13359	285.0 -> 169.0	31.8	15.2	45.7

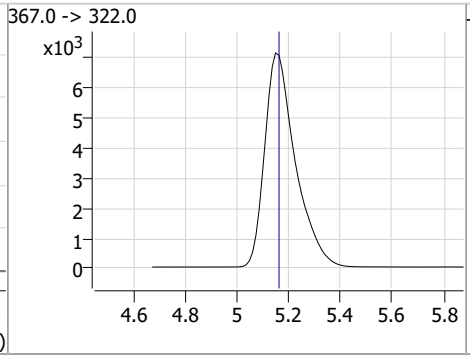


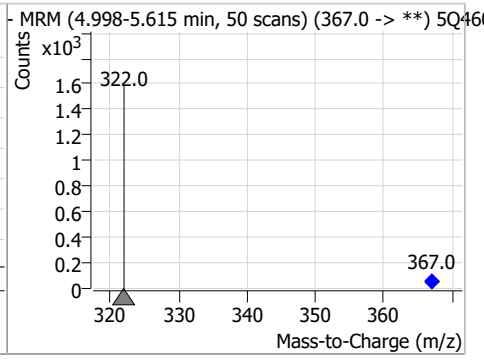




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.32	5.15	-0.01	58468				

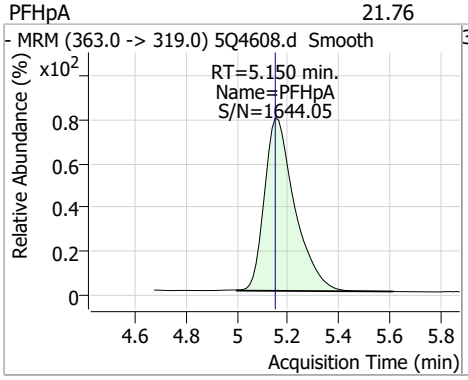


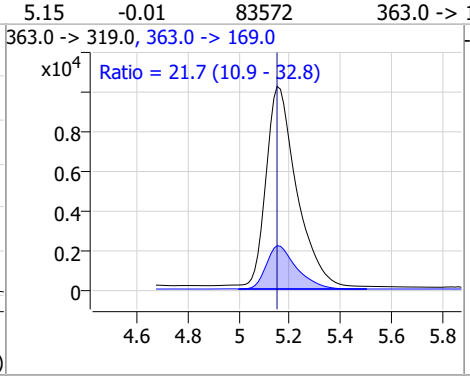


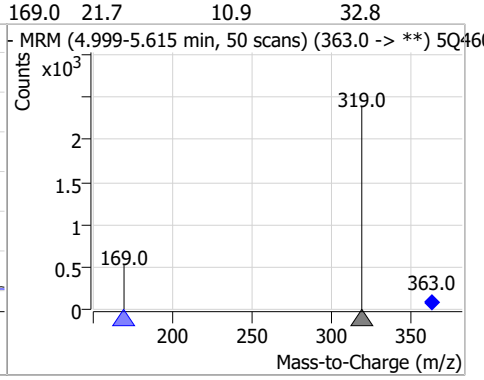


Perfluorinated Compounds by LC/MS/MS

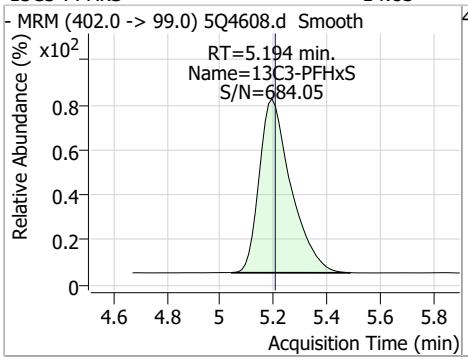
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.76	5.15	-0.01	83572	363.0 -> 169.0	21.7	10.9	32.8

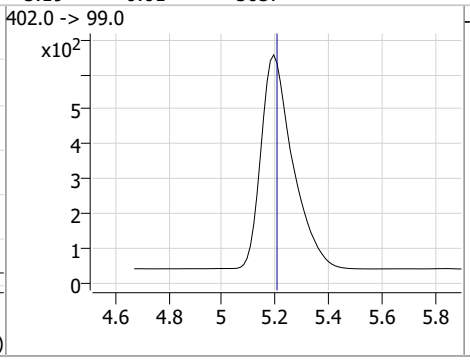


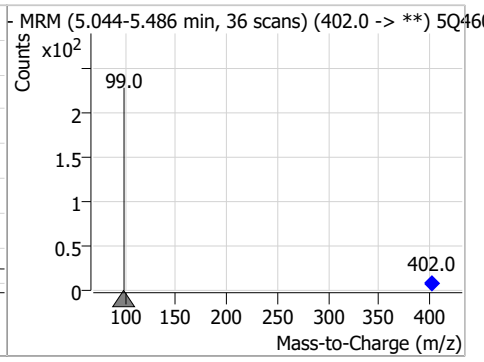




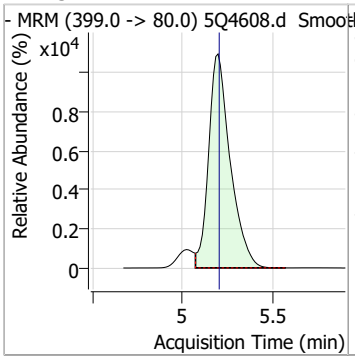
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	14.83	5.19	-0.01	5057				

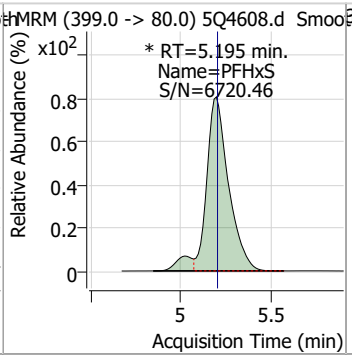


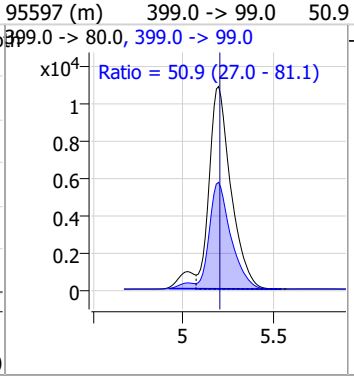


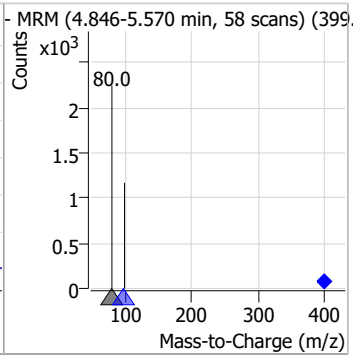


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	127.28	5.20	-0.01	95597 (m)	399.0 -> 99.0	50.9	27.0	81.1

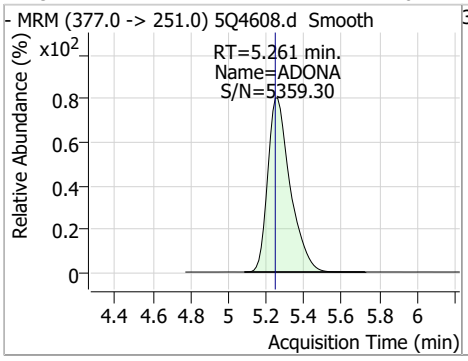


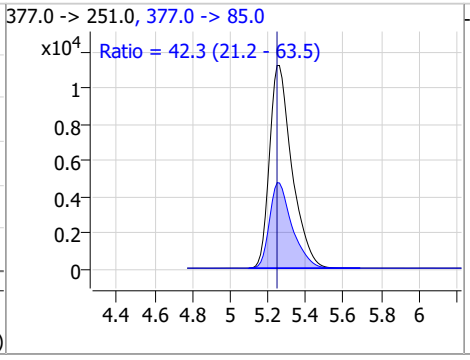


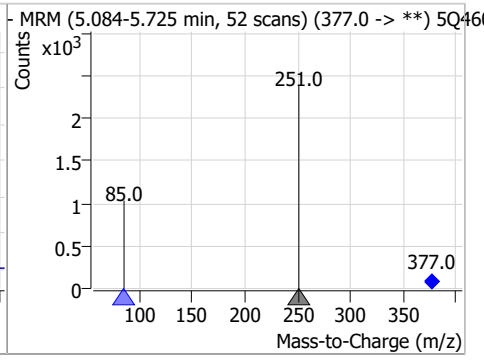




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.76	5.26	0.00	92352	377.0 -> 85.0	42.3	21.2	63.5

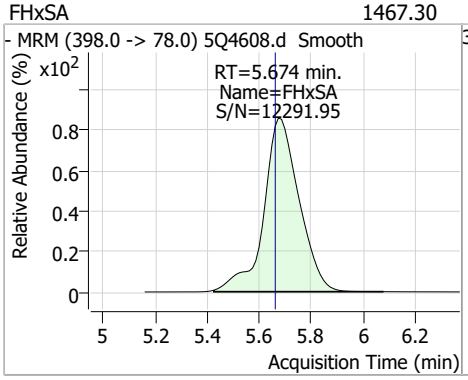


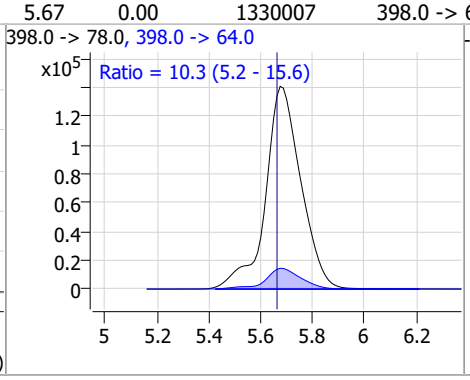


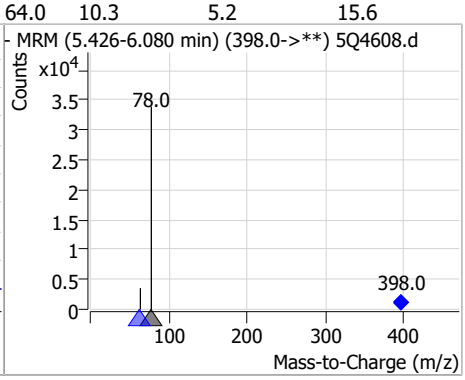


Perfluorinated Compounds by LC/MS/MS

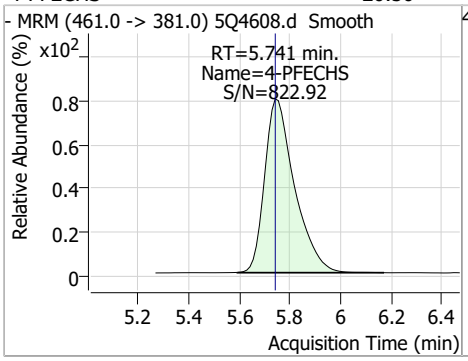
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1467.30	5.67	0.00	1330007	398.0 -> 64.0	10.3	5.2	15.6

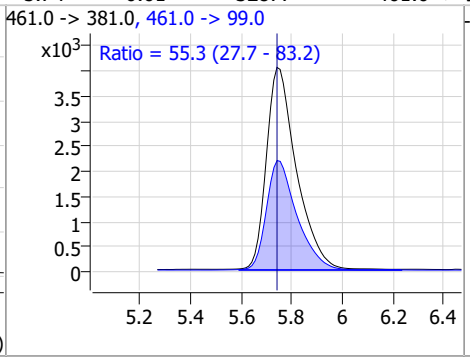


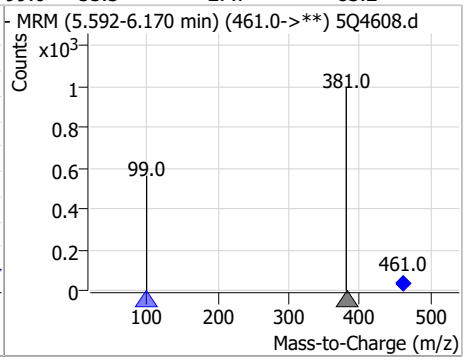




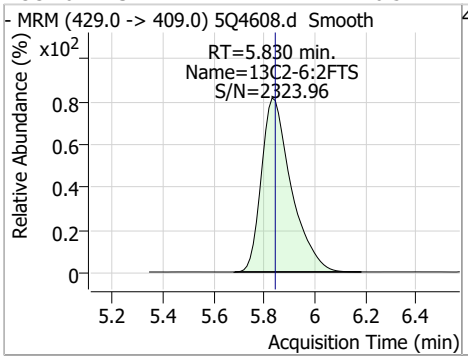
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.50	5.74	-0.01	32877	461.0 -> 99.0	55.3	27.7	83.2

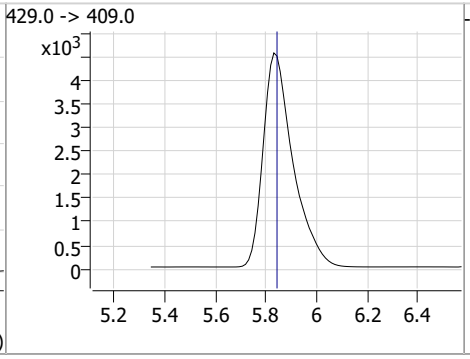


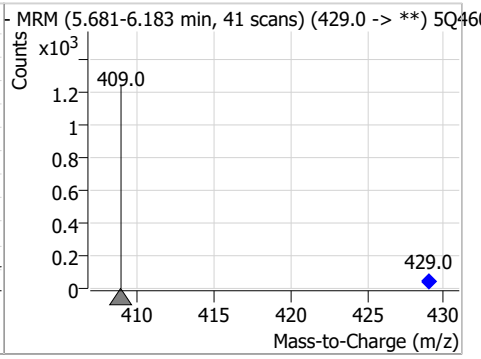




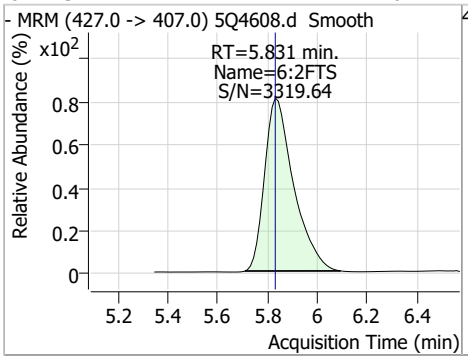
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.57	5.83	-0.01	37040				

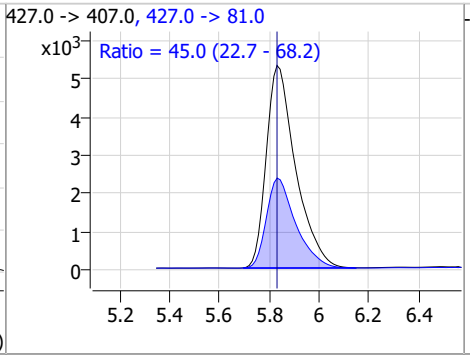


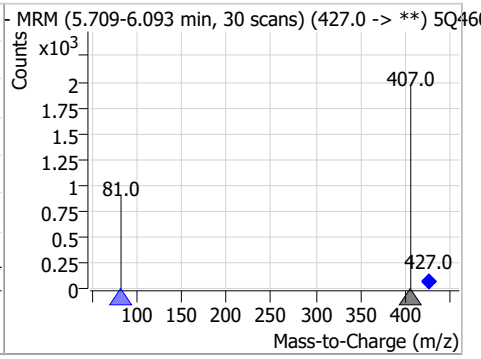




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.67	5.83	-0.01	42580	427.0 -> 81.0	45.0	22.7	68.2

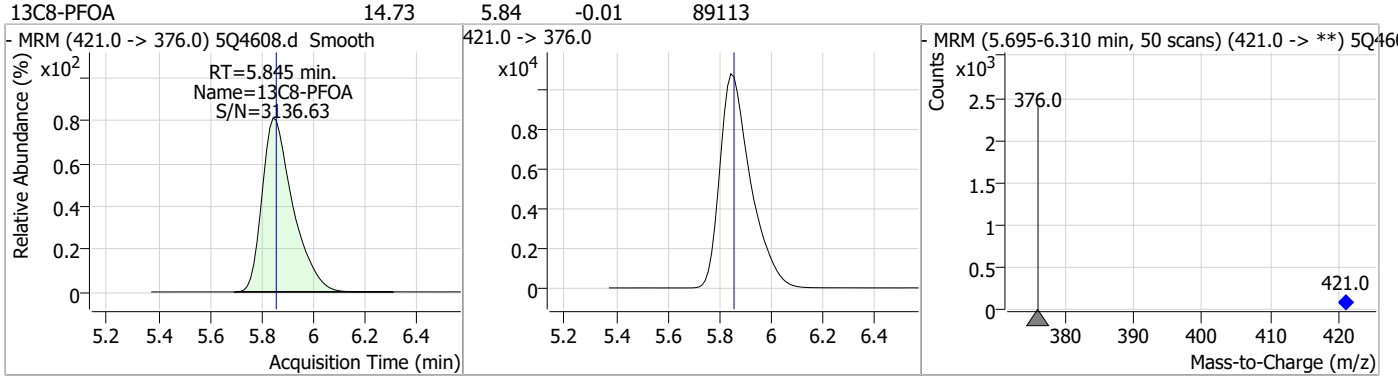




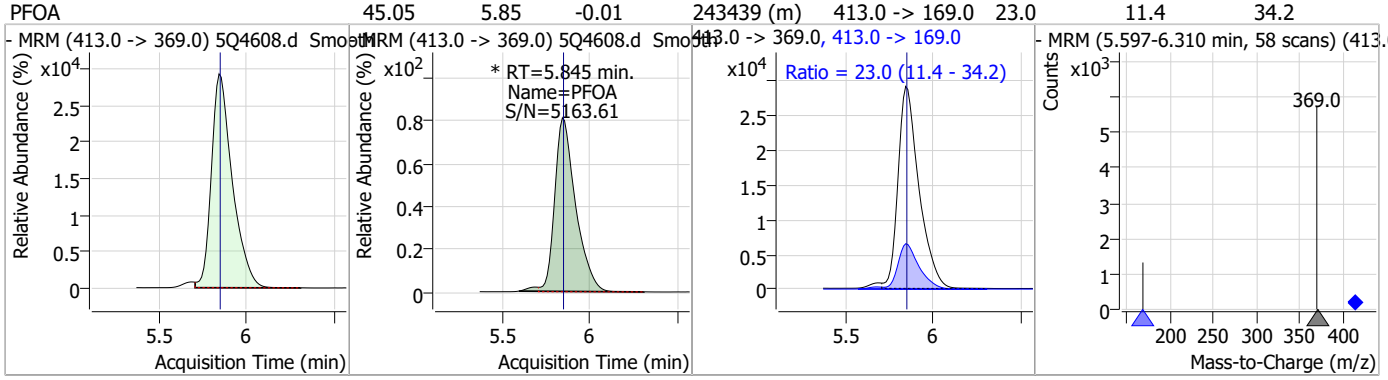


Perfluorinated Compounds by LC/MS/MS

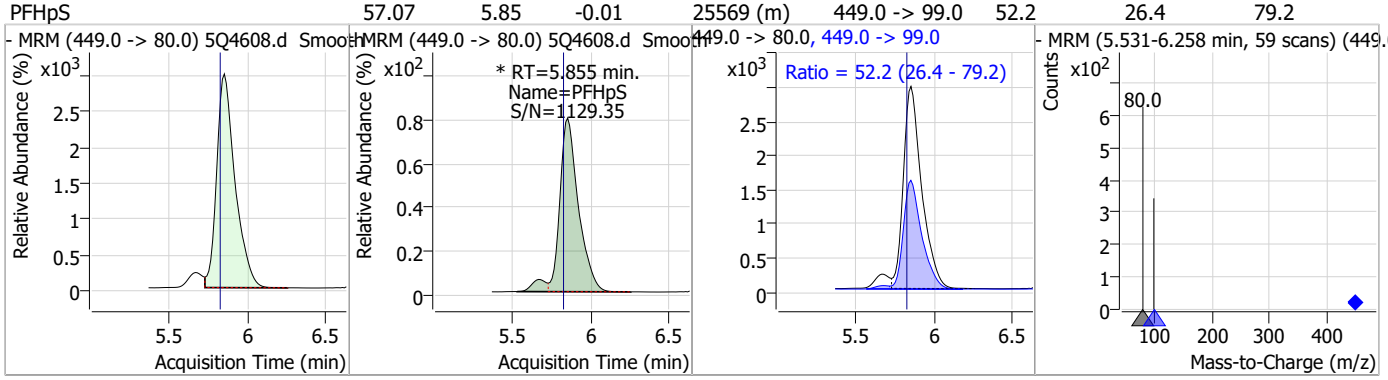
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	14.73	5.84	-0.01	89113				



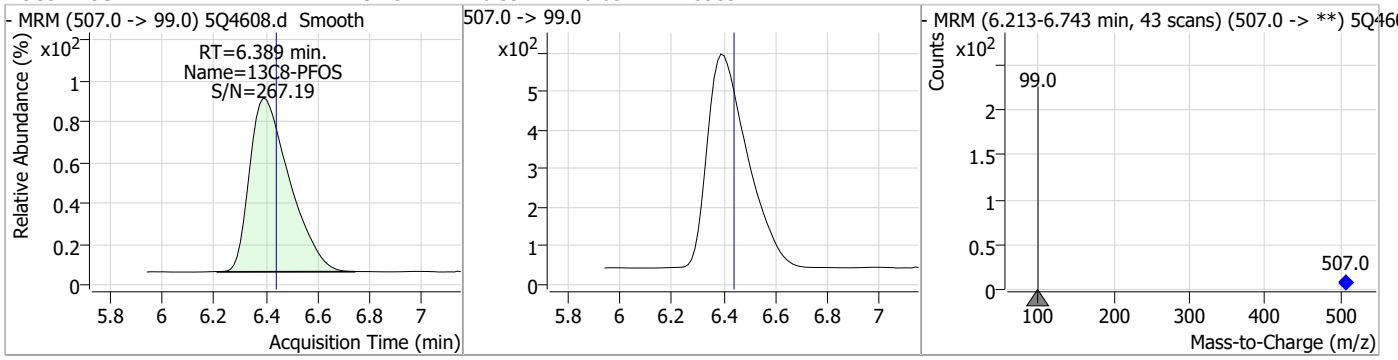
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	45.05	5.85	-0.01	243439 (m)	413.0 -> 169.0	23.0	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	57.07	5.85	-0.01	25569 (m)	449.0 -> 99.0	52.2	26.4	79.2

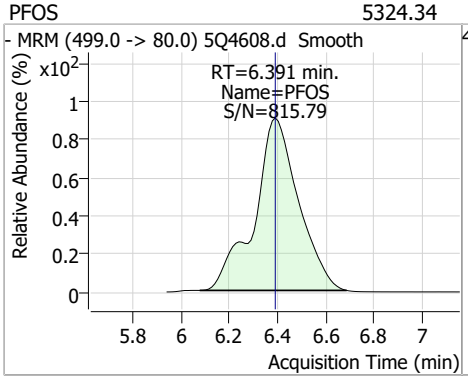


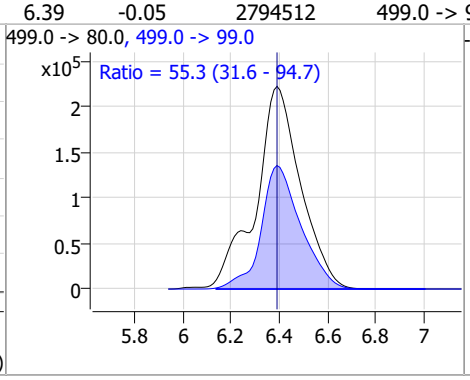
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	9.13	6.39	-0.05	5959				

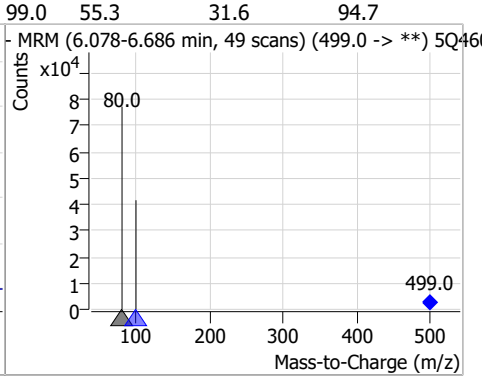


Perfluorinated Compounds by LC/MS/MS

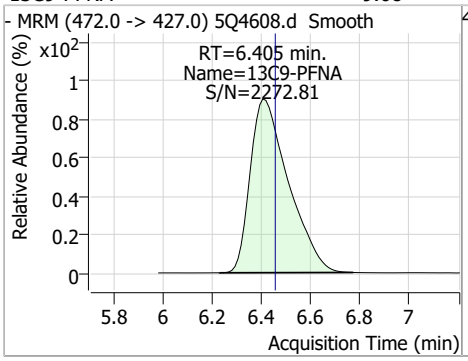
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5324.34	6.39	-0.05	2794512	499.0 -> 99.0	55.3	31.6	94.7

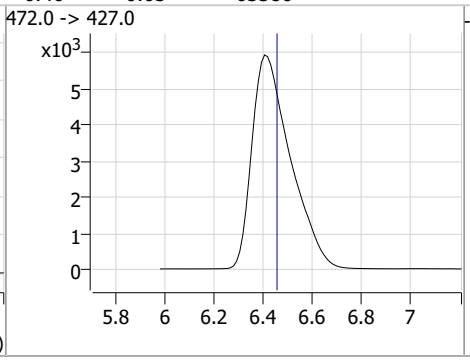


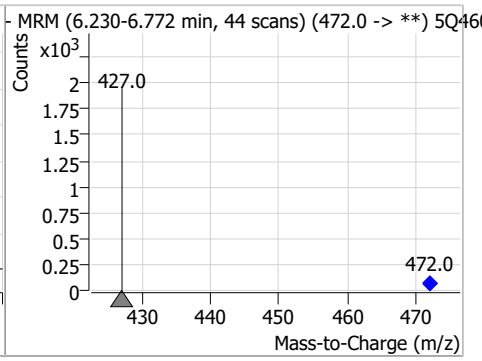




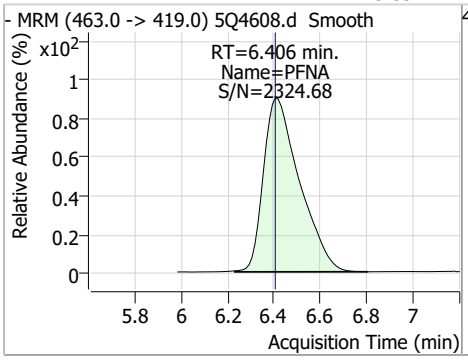
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	9.68	6.40	-0.05	63586				

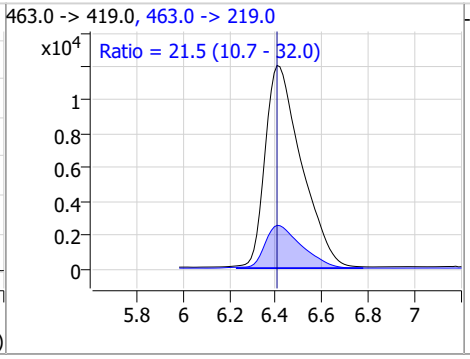


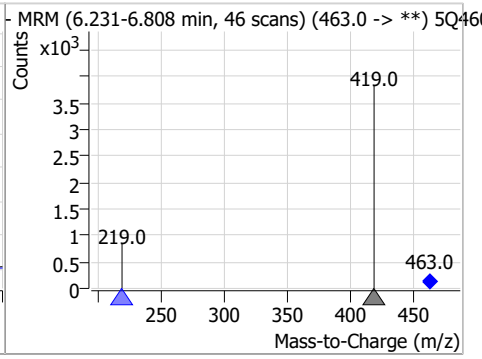




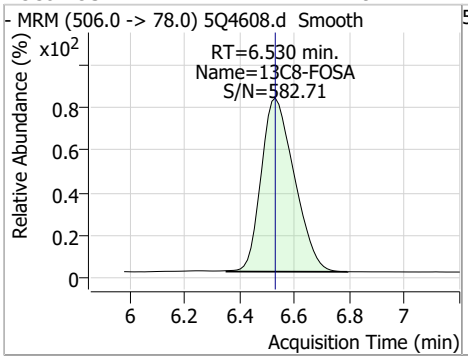
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	45.59	6.41	-0.05	129883	463.0 -> 219.0	21.5	10.7	32.0

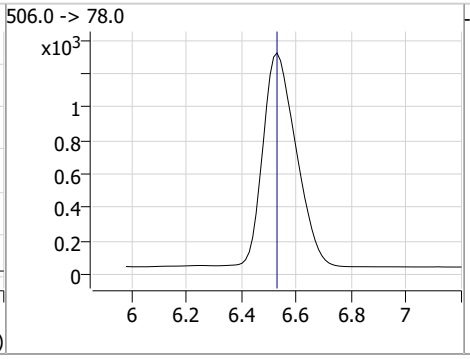


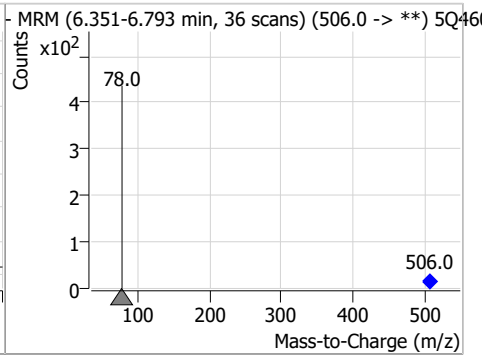




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	9.47	6.53	0.00	10741				

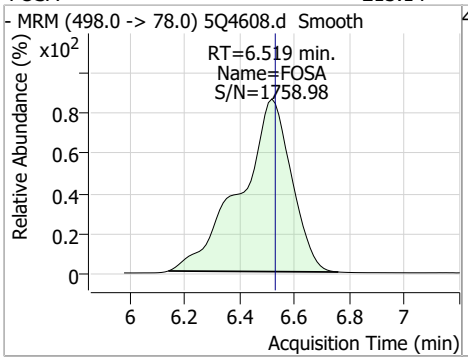


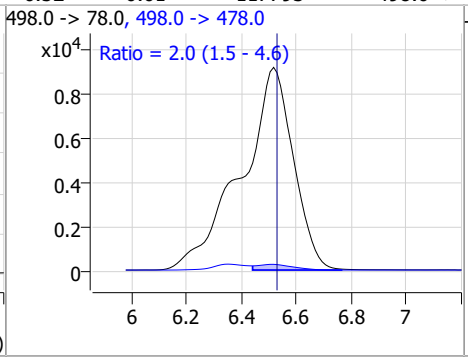


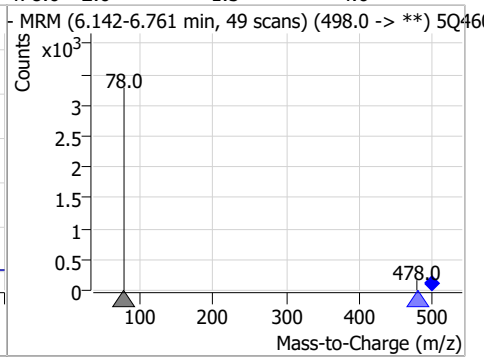


Perfluorinated Compounds by LC/MS/MS

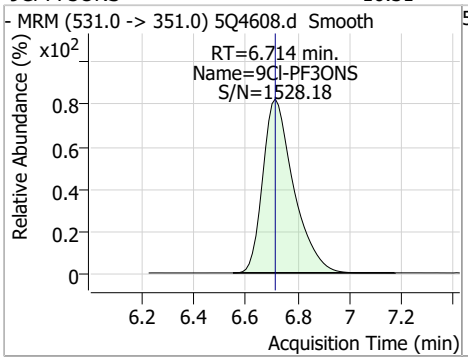
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	213.14	6.52	-0.01	117793	498.0 -> 478.0	2.0	1.5	4.6

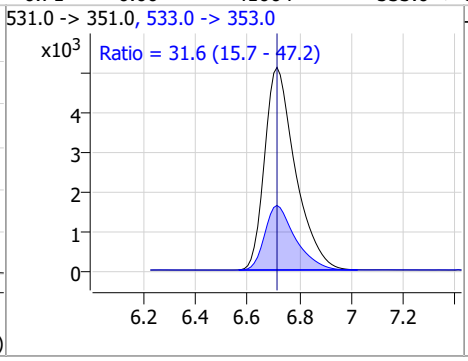


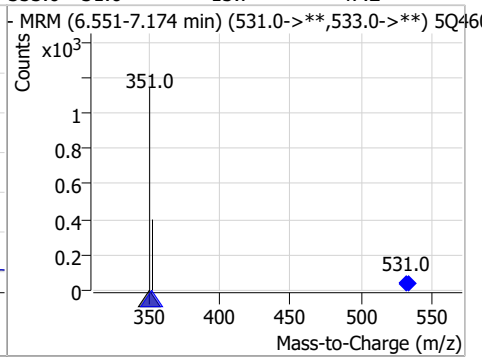




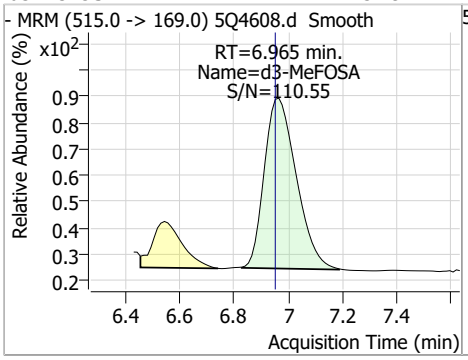
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	16.31	6.71	0.00	41664	533.0 -> 353.0	31.6	15.7	47.2

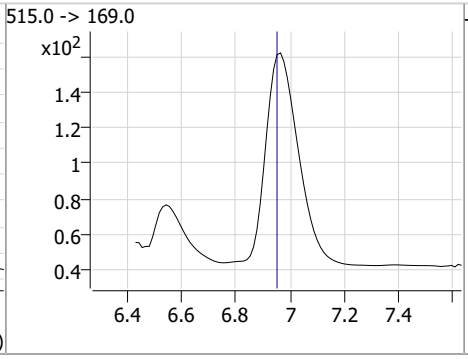


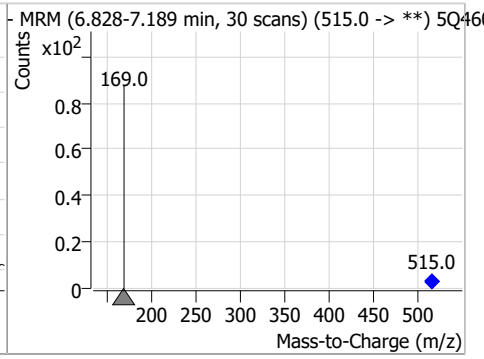




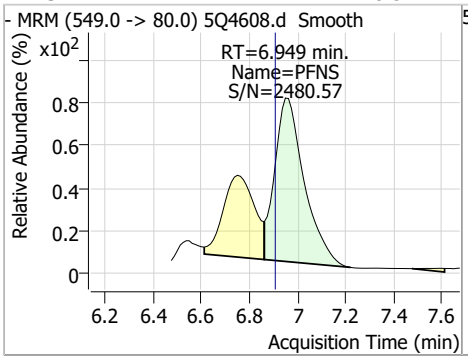
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	3.19	6.96	0.01	973				

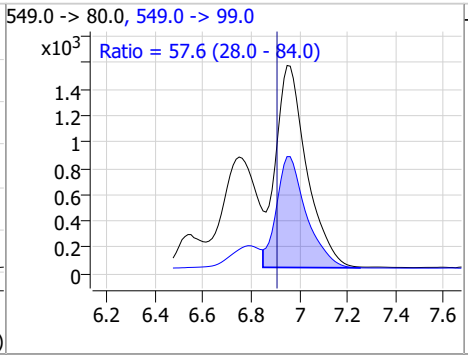


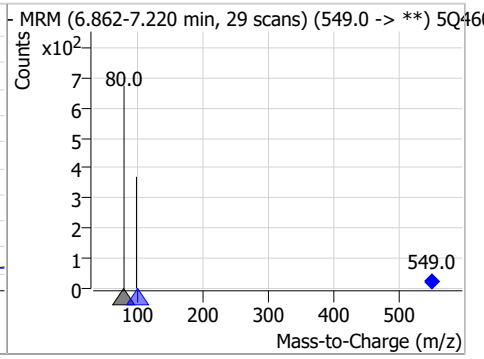




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	28.51	6.95	-0.01	12542	549.0 -> 99.0	57.6	28.0	84.0

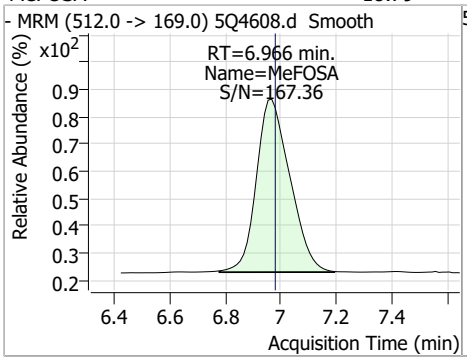


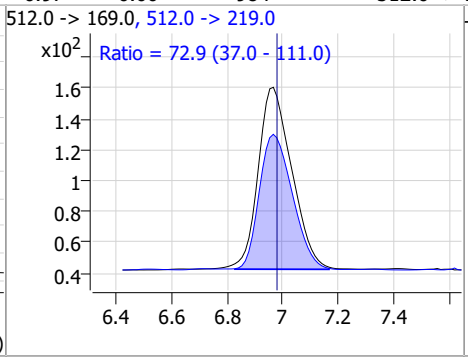


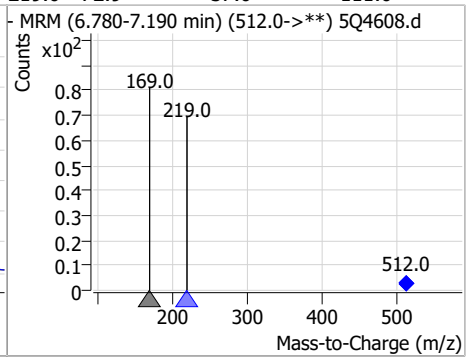


Perfluorinated Compounds by LC/MS/MS

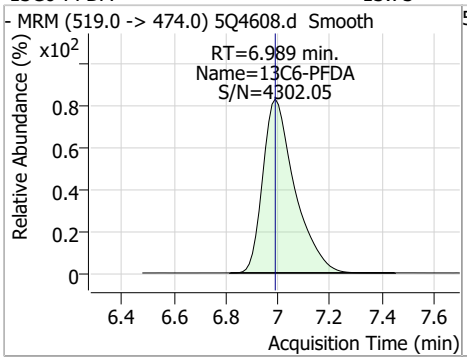
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.79	6.97	0.00	984	512.0 -> 219.0	72.9	37.0	111.0

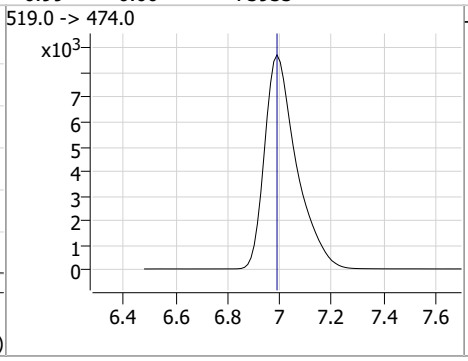


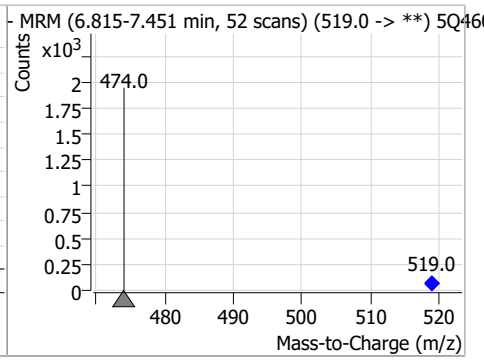




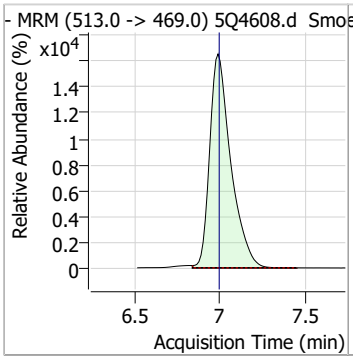
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.73	6.99	0.00	73933				

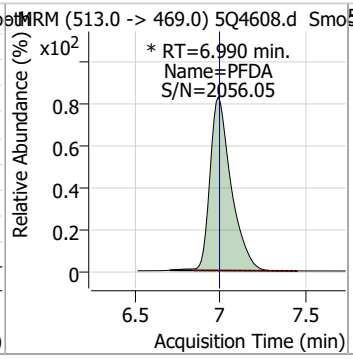


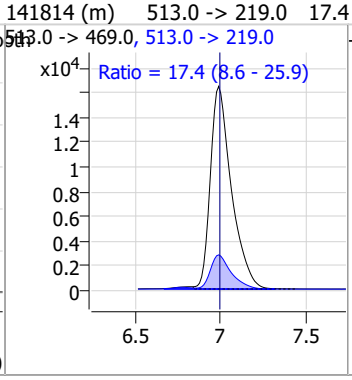


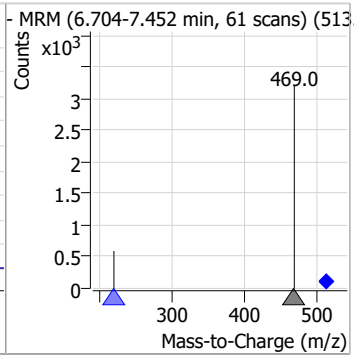


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	31.23	6.99	0.00	141814 (m)	513.0 -> 219.0	17.4	8.6	25.9

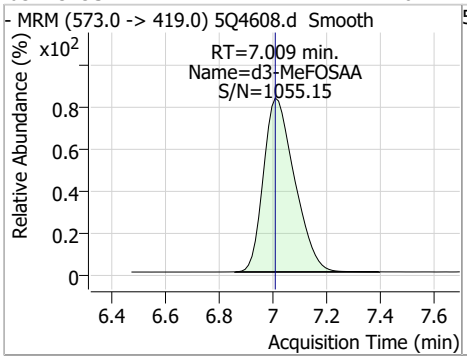


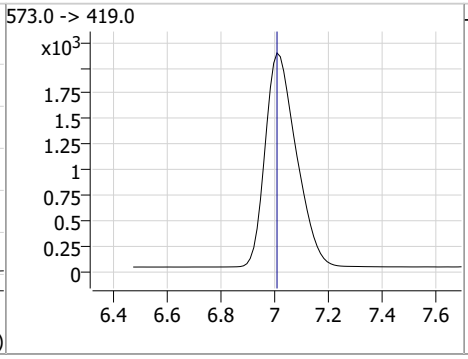


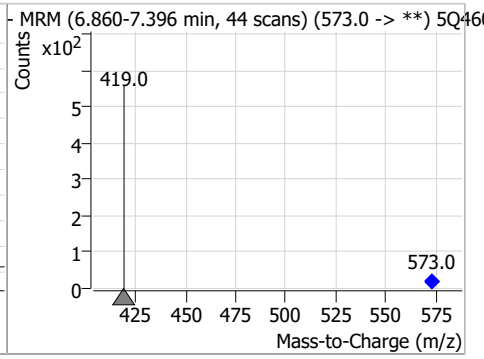




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.40	7.01	0.00	16908				

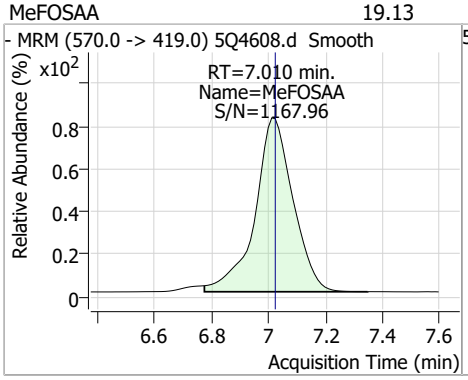


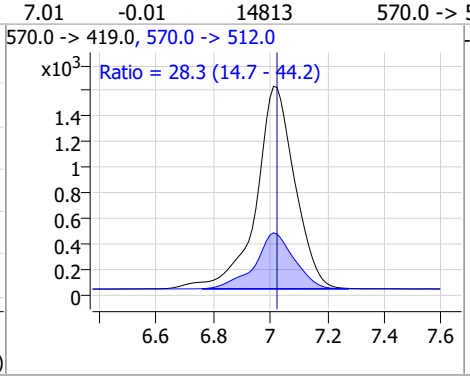


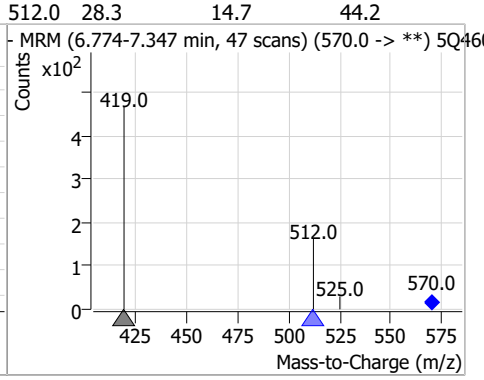


Perfluorinated Compounds by LC/MS/MS

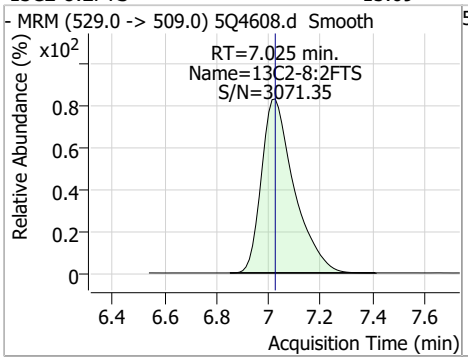
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.13	7.01	-0.01	14813	570.0 -> 512.0	28.3	14.7	44.2

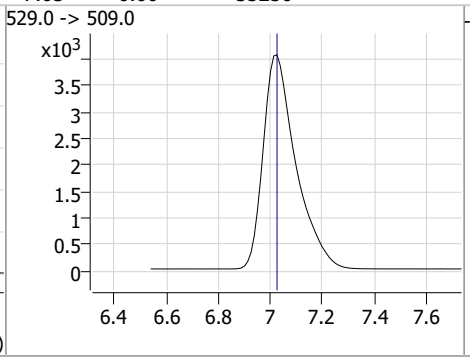


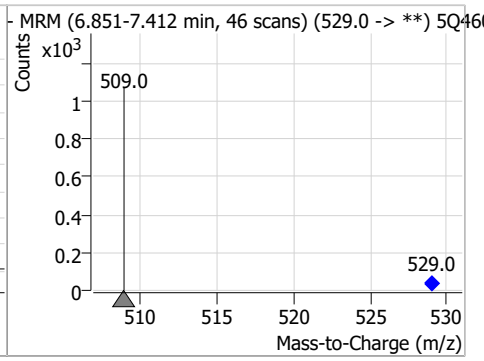




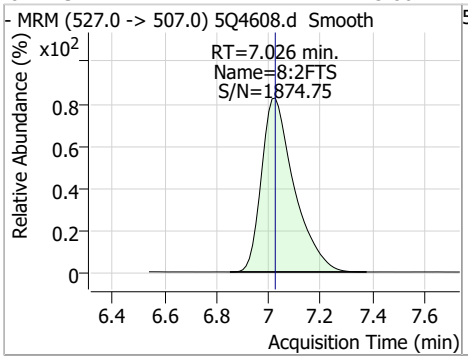
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.69	7.03	0.00	35250				

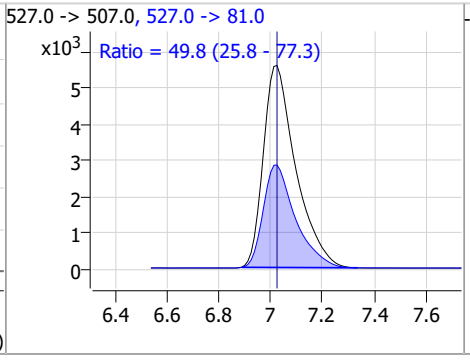


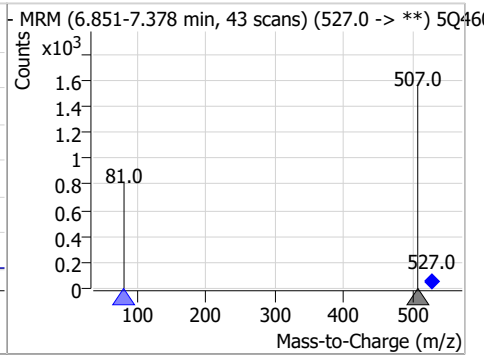




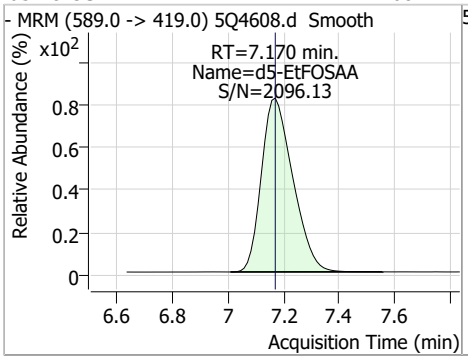
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	25.86	7.03	0.00	48588	527.0 -> 81.0	49.8	25.8	77.3

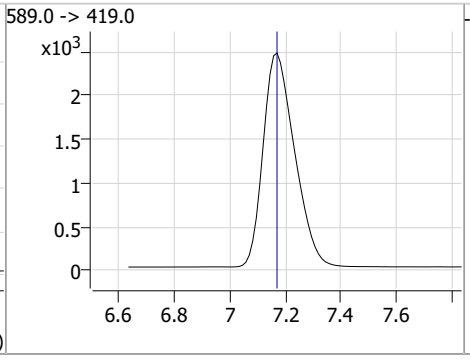


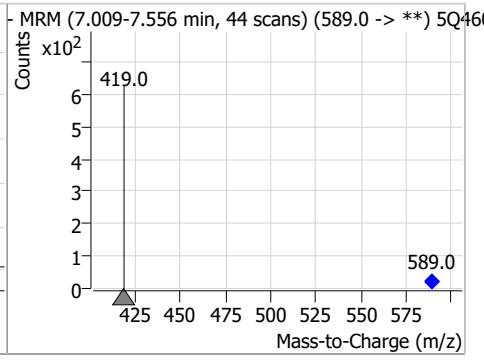




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.08	7.17	0.00	19149				

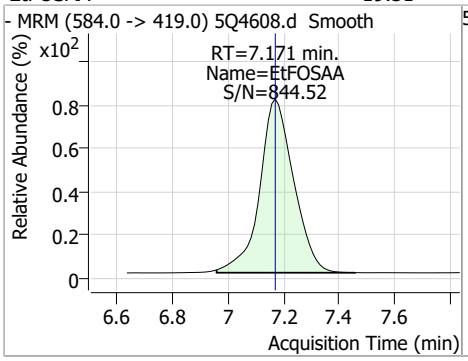


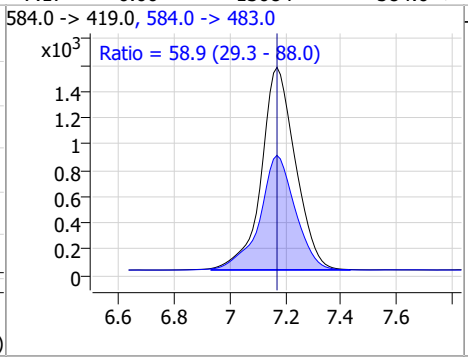


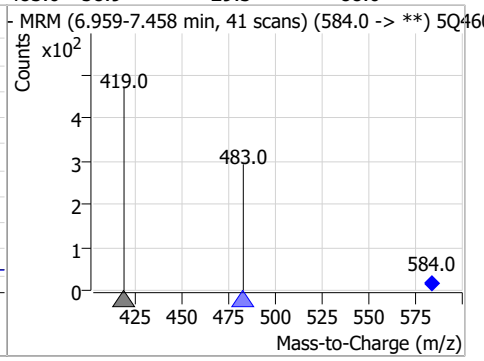


Perfluorinated Compounds by LC/MS/MS

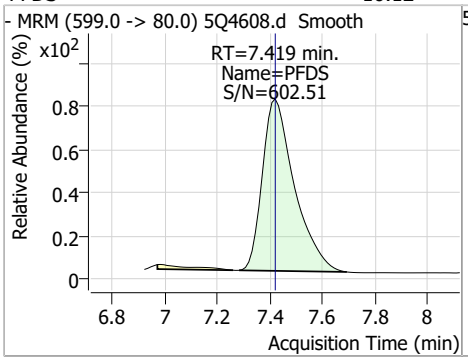
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.31	7.17	0.00	13084	584.0 -> 483.0	58.9	29.3	88.0

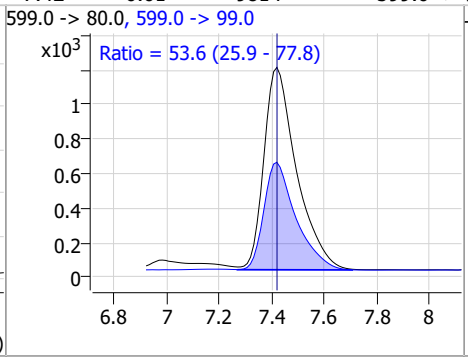


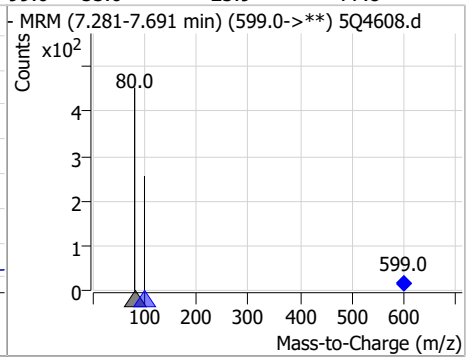




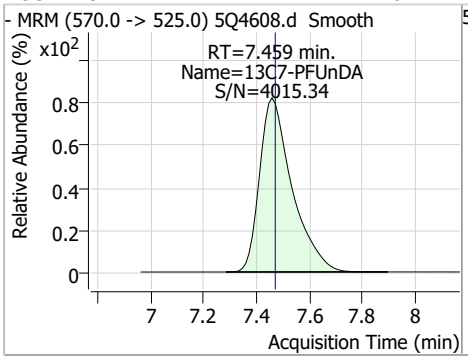
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.12	7.42	-0.01	9814	599.0 -> 99.0	53.6	25.9	77.8

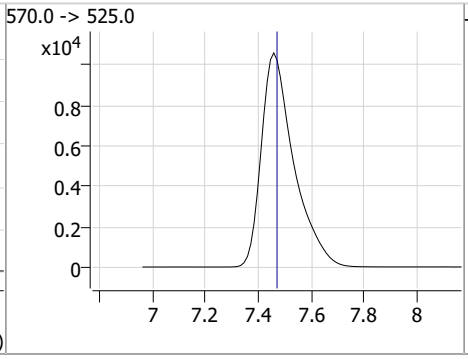


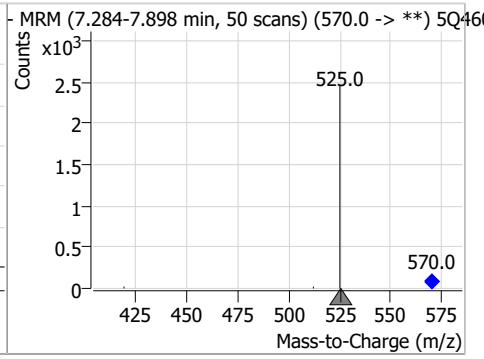




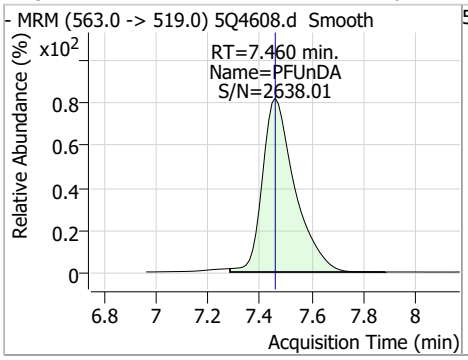
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	12.81	7.46	-0.01	90215				

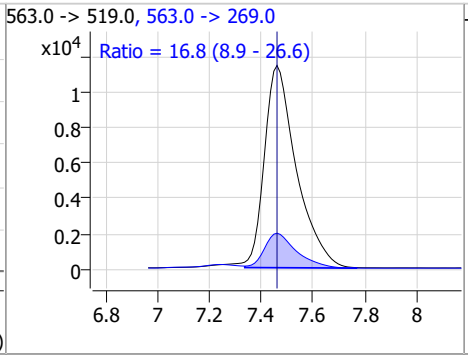


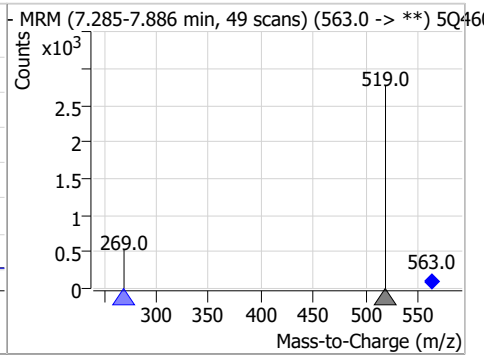




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.02	7.46	-0.01	99209	563.0 -> 269.0	16.8	8.9	26.6

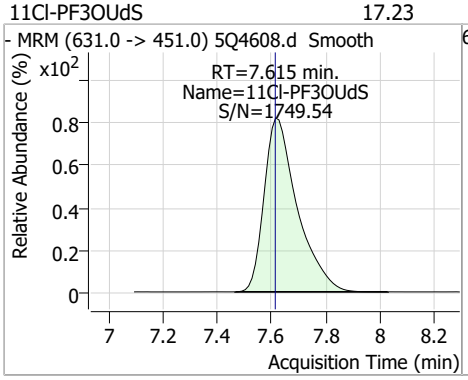


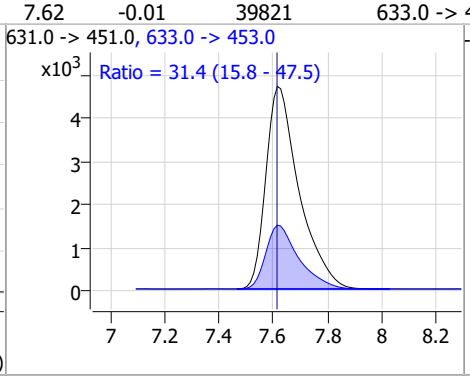


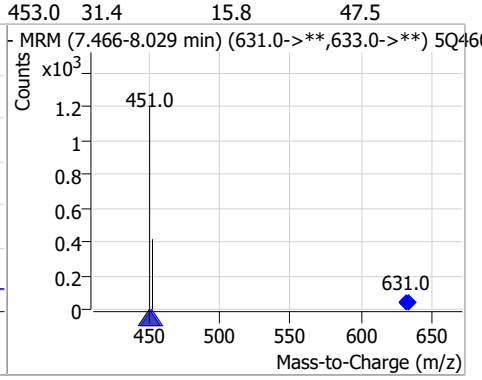


Perfluorinated Compounds by LC/MS/MS

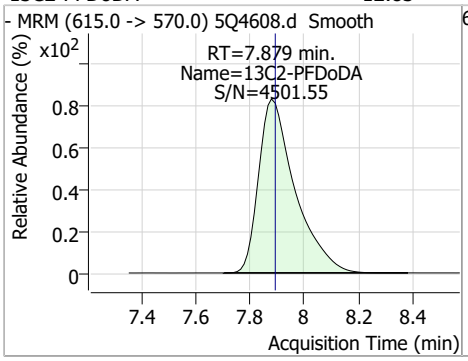
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.23	7.62	-0.01	39821	633.0 -> 453.0	31.4	15.8	47.5

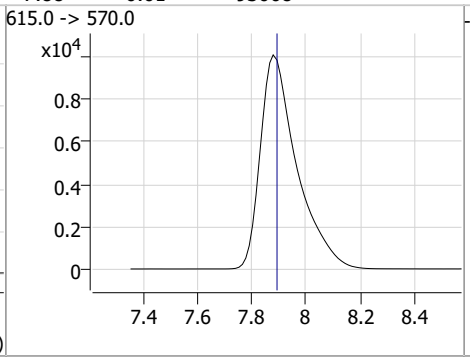


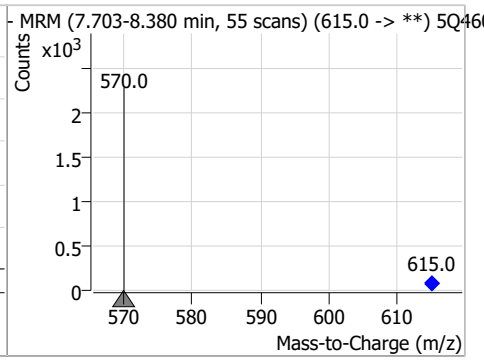




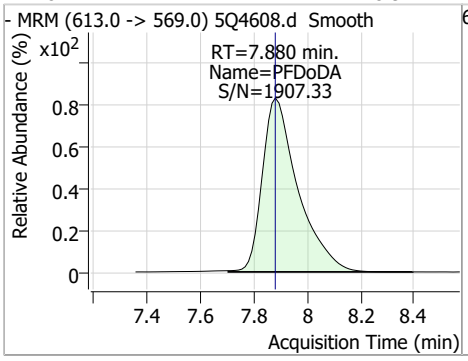
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.83	7.88	-0.01	93008				

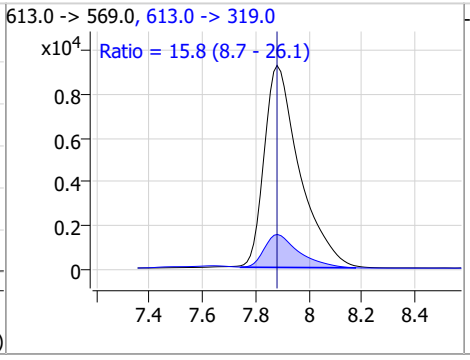


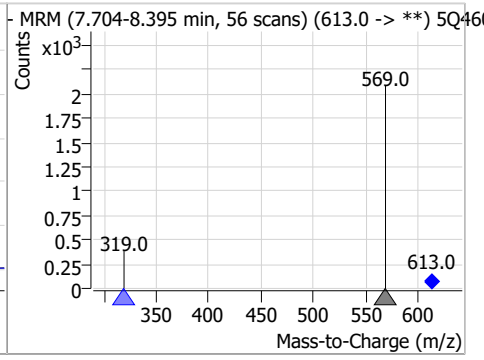




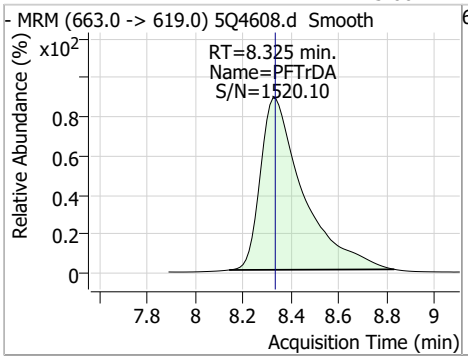
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.94	7.88	-0.01	86408	613.0 -> 319.0	15.8	8.7	26.1

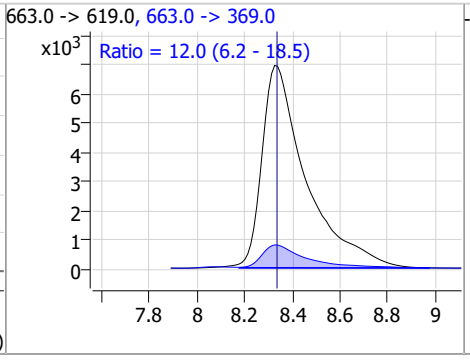


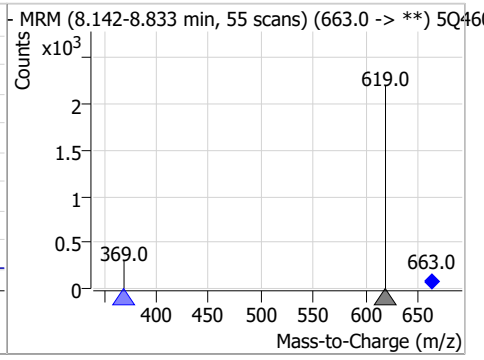




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	15.66	8.33	-0.02	85387	663.0 -> 369.0	12.0	6.2	18.5

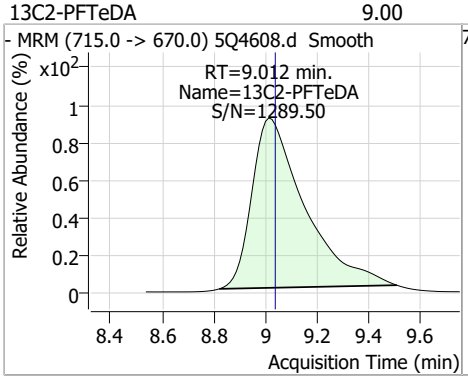


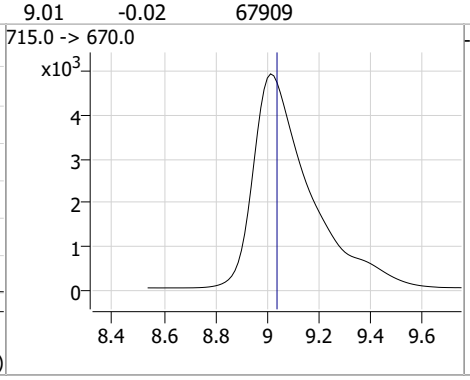


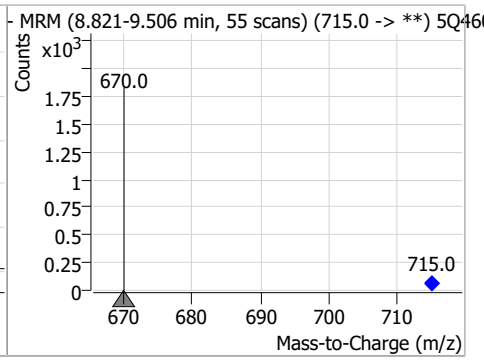


Perfluorinated Compounds by LC/MS/MS

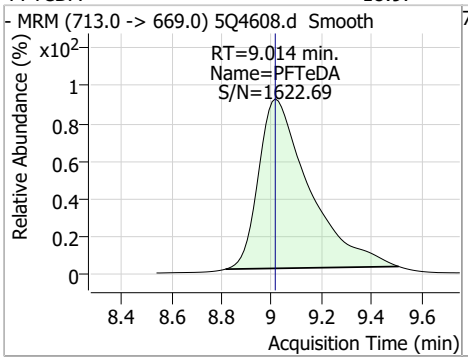
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	9.00	9.01	-0.02	67909				

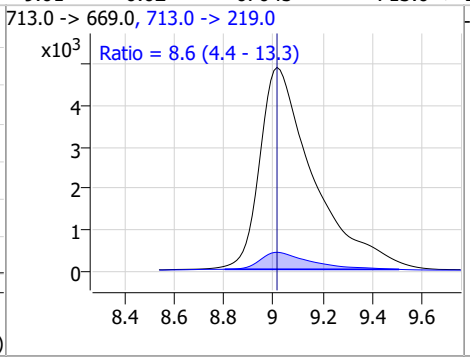


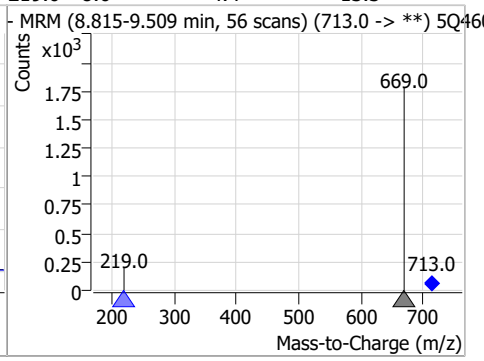




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.97	9.01	-0.02	67045	713.0 -> 219.0	8.6	4.4	13.3







7.4.5

7

Manual Integration Approval Summary

Sample Number: OP92794-MS
Lab FileID: 5Q4608.D
Injection Time: 09/14/22 23:43
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:09 Anna Ludwig
Supervisor approved: 09/16/22 19:36 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanoic acid	335-67-1		5.84	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorodecanoic acid	335-76-2		6.99	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4635.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:37:45 AM
Sample Name : op92763-dup
Vial : P1-E4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92763,S5Q71,125,,,1.0,1,water

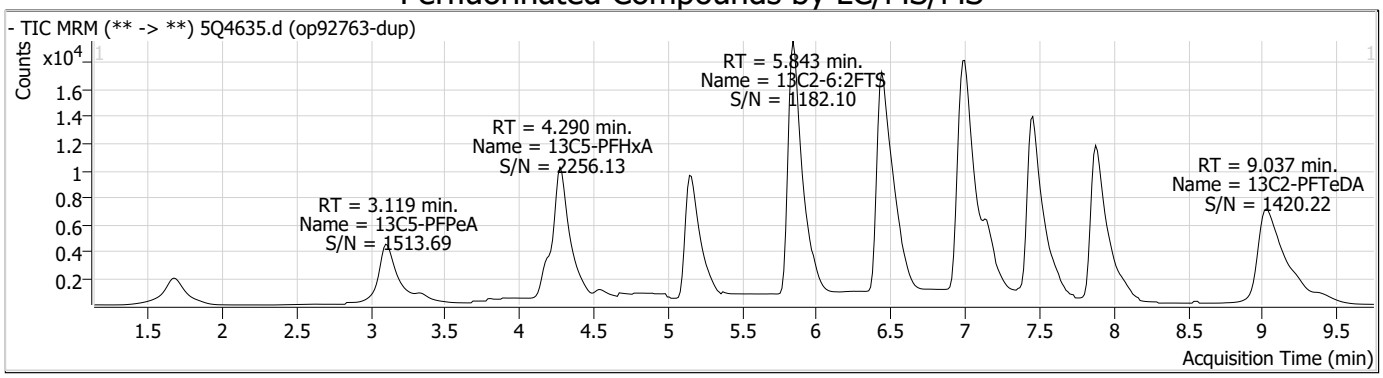
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.675	217.0 -> 172.0	22198	20.00	µg/L	-0.025
M5-PFPeA	3.119	268.0 -> 223.0	37448	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	61898	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	60257	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	92686	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	101427	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	81394	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	92473	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	89725	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	88913	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	13190	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	4723	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	5285	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	9554	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	20218	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	34677	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	33209	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	16443	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	4280	20.00	µg/L	-0.012
M3-MeFOSA	6.965	515.0 -> 169.0	434	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	17079	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	20218	13.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.8%		
13C2-6:2FTS	5.843	429.0 -> 409.0	34677	15.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	33209	14.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	89725	12.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 61.9%		
13C2-PFTeDA	9.037	715.0 -> 670.0	88913	11.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.9%		
13C3-PFBS	3.349	302.0 -> 99.0	4723	14.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	5285	15.50	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.5%		
13C4-PFBA	1.675	217.0 -> 172.0	22198	12.42	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.1%		
13C4-PFHpA	5.163	367.0 -> 322.0	60257	14.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.8%		
13C5-PFHxA	4.290	318.0 -> 273.0	61898	14.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%		
13C5-PFPeA	3.119	268.0 -> 223.0	37448	12.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.4%		
13C6-PFDA	6.989	519.0 -> 474.0	81394	15.12	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

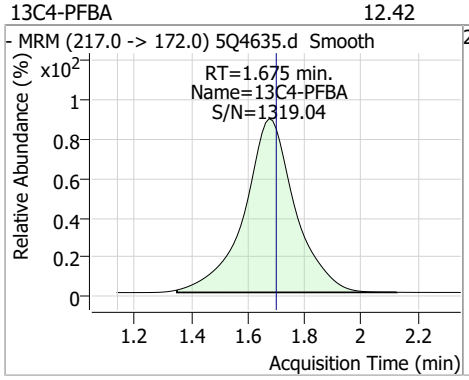
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 75.6%			
13C7-PFUnDA	7.459	570.0 -> 525.0	92473	13.13	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%			
13C8-FOSA	6.530	506.0 -> 78.0	13190	11.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 58.1%			
13C8-PFOA	5.857	421.0 -> 376.0	92686	15.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.6%			
13C8-PFOS	6.428	507.0 -> 99.0	9554	14.63	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.2%			
13C9-PFNA	6.455	472.0 -> 427.0	101427	15.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 77.2%			
d3-MeFOSAA	7.009	573.0 -> 419.0	16443	16.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	4280	12.75	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.7%			
d3-MeFOSA	6.965	515.0 -> 169.0	434	1.43	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 7.1%			
d5-EtFOSAA	7.170	589.0 -> 419.0	17079	15.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.2%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.497	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	5.195	399.0 -> 80.0	136	0.17	µg/L		100
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	6.241	499.0 -> 80.0	411	0.49	µg/L	m	66
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

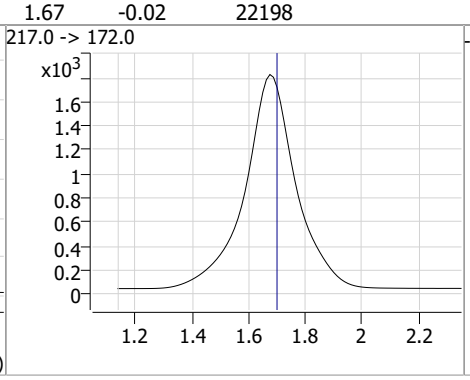
 # = Qualifier out of range, m = manually integrated, + = Area summed

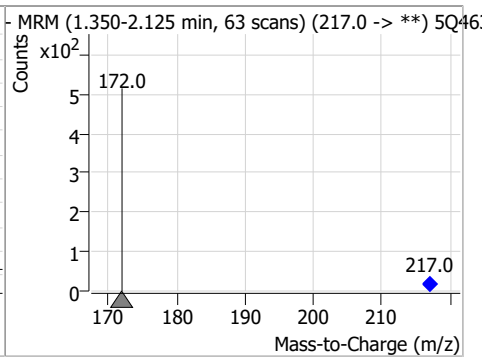
Perfluorinated Compounds by LC/MS/MS



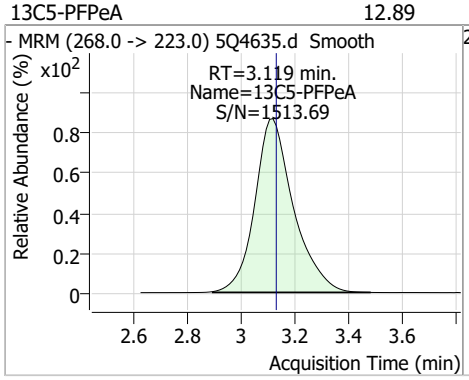
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	12.42	1.67	-0.02	22198				

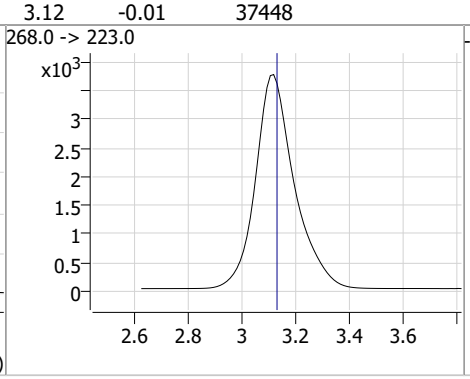


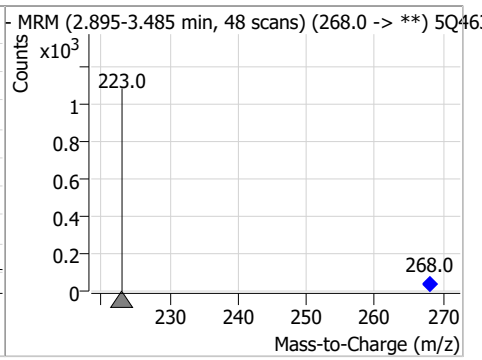




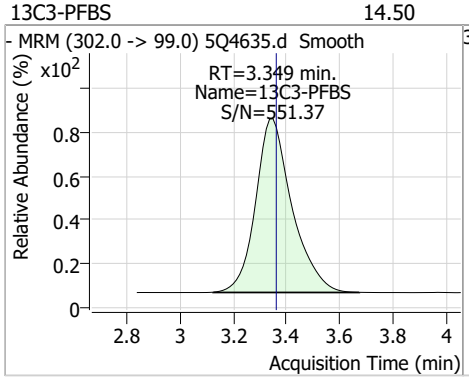
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	12.89	3.12	-0.01	37448				

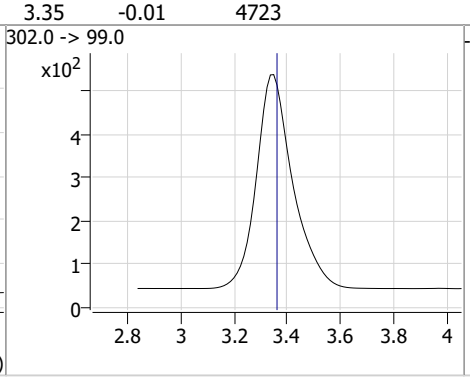


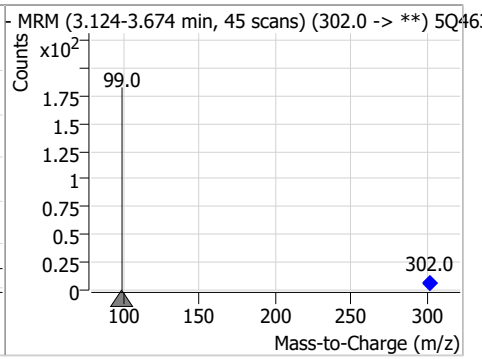




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	14.50	3.35	-0.01	4723				

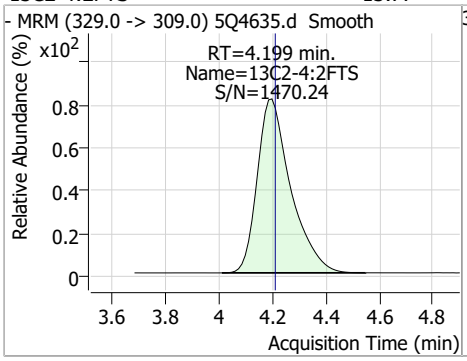


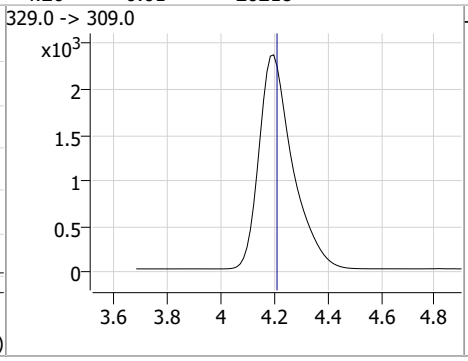


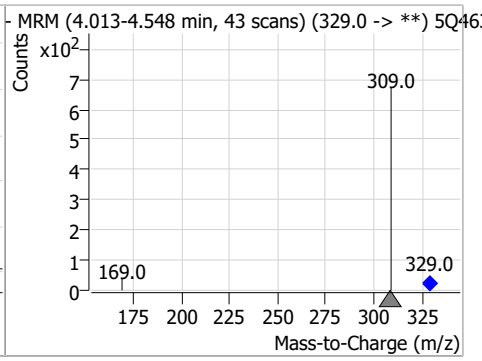


Perfluorinated Compounds by LC/MS/MS

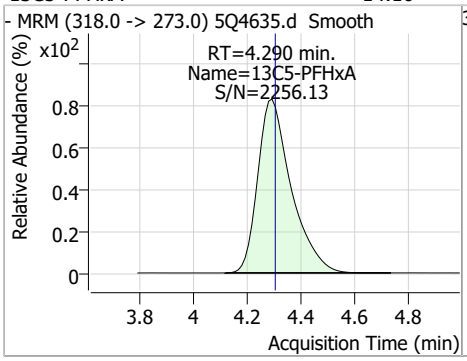
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	13.77	4.20	-0.01	20218				

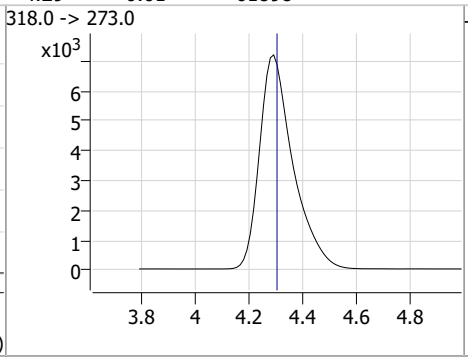


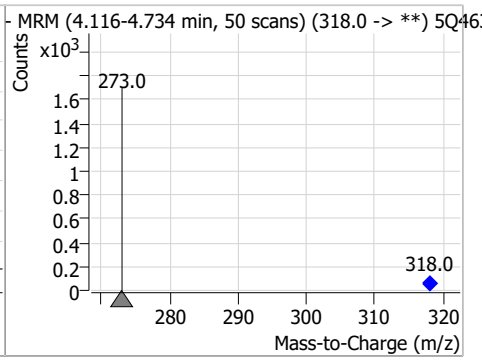




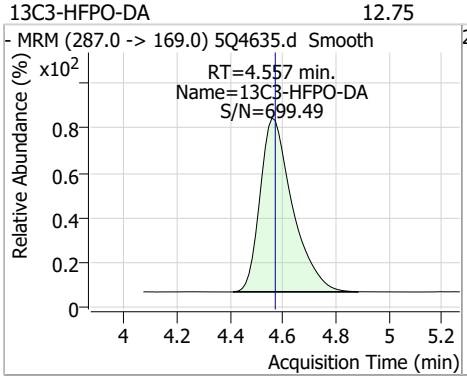
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	14.16	4.29	-0.01	61898				

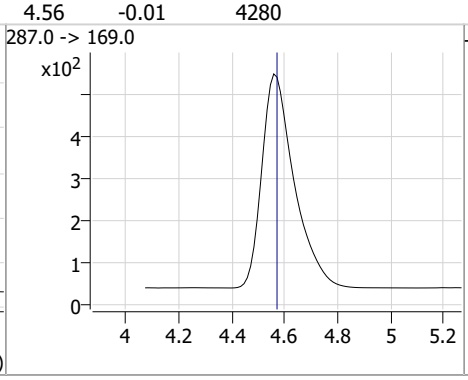


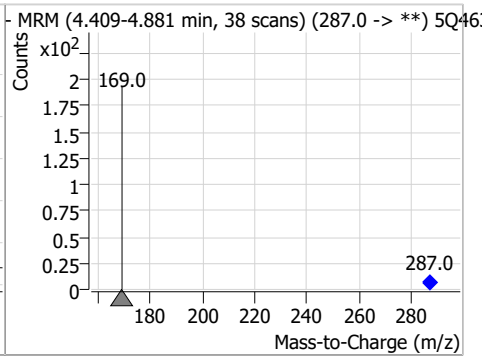




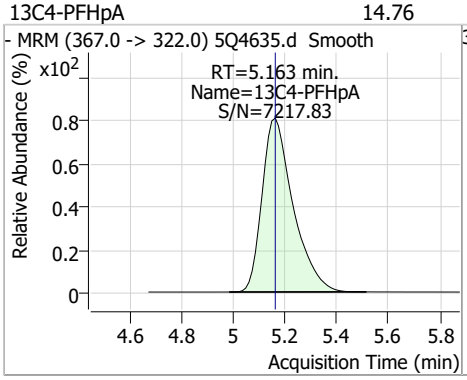
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	12.75	4.56	-0.01	4280				

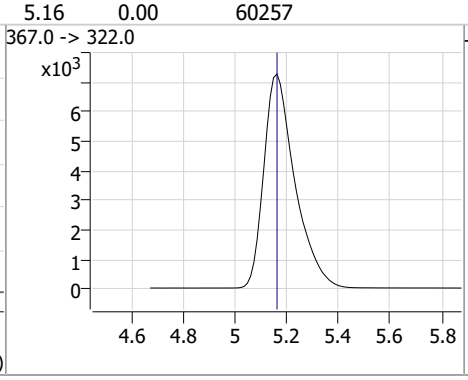


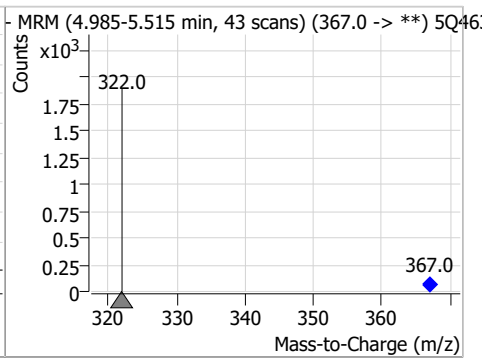




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	14.76	5.16	0.00	60257				

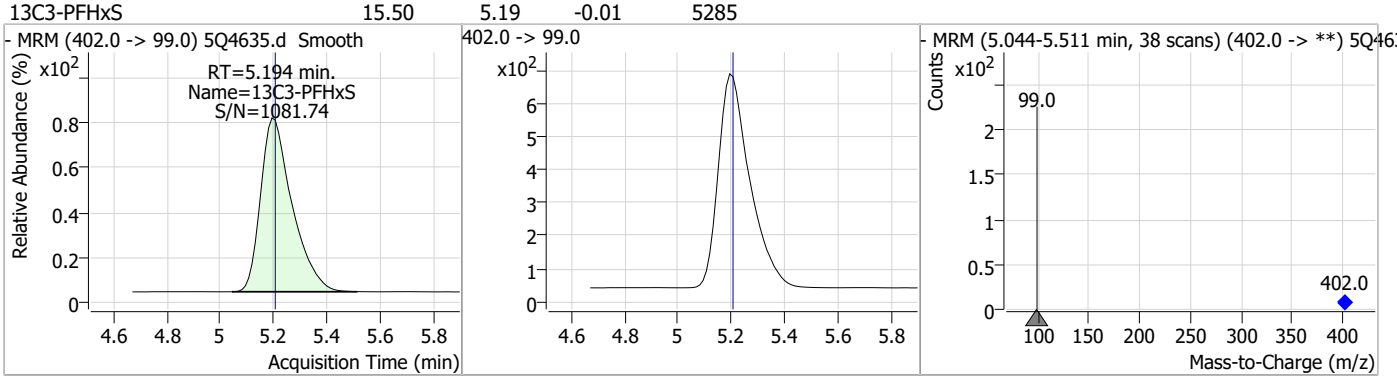




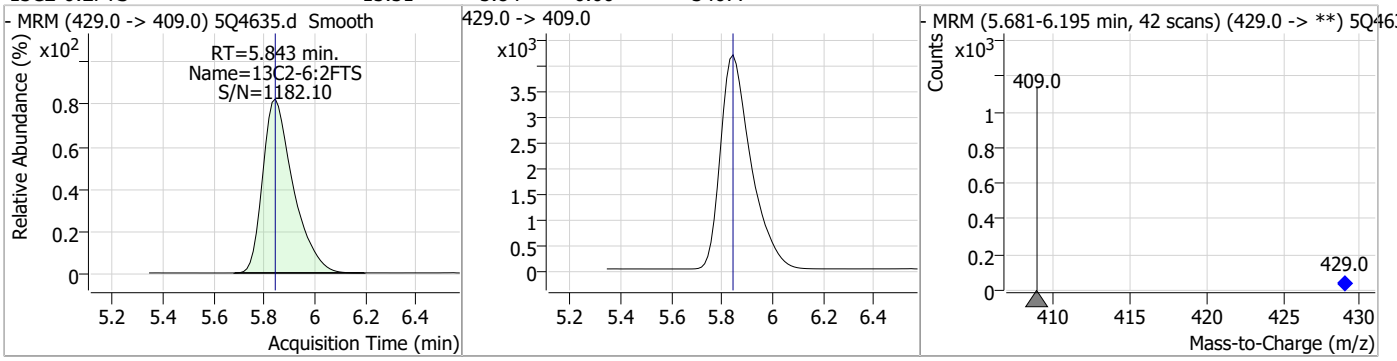


Perfluorinated Compounds by LC/MS/MS

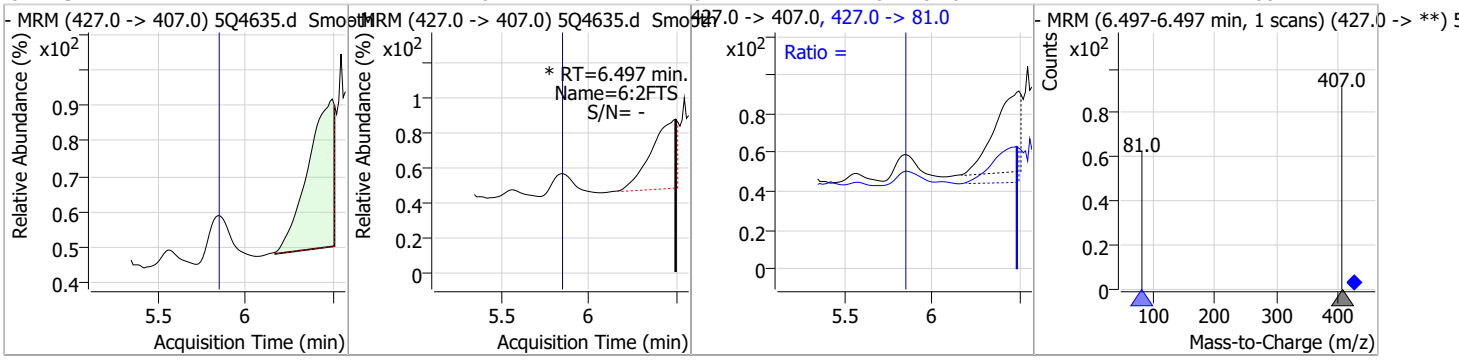
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	15.50	5.19	-0.01	5285				



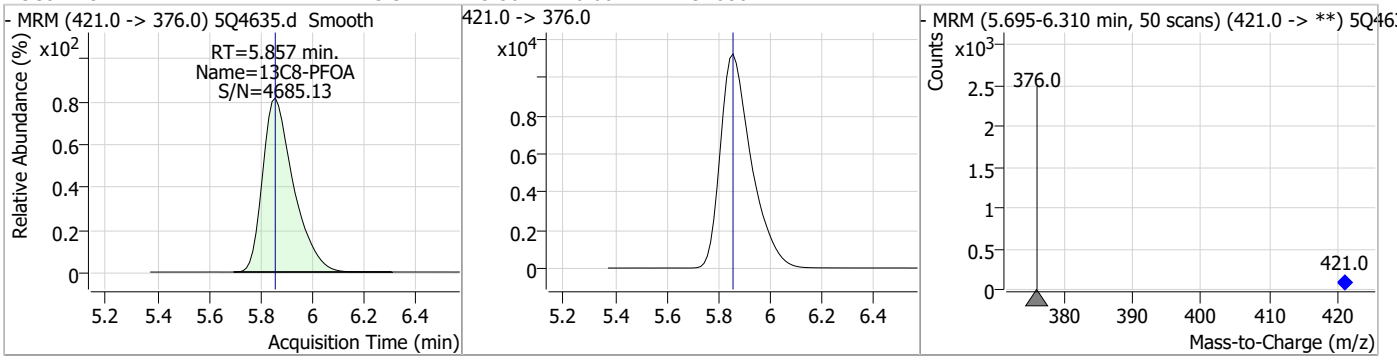
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	15.51	5.84	0.00	34677				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

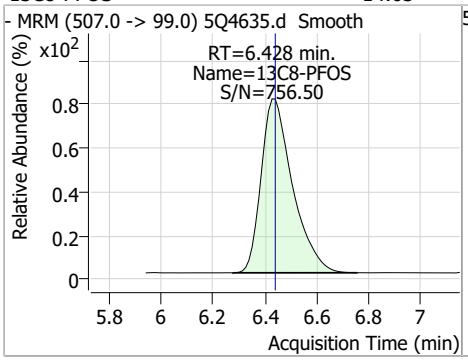


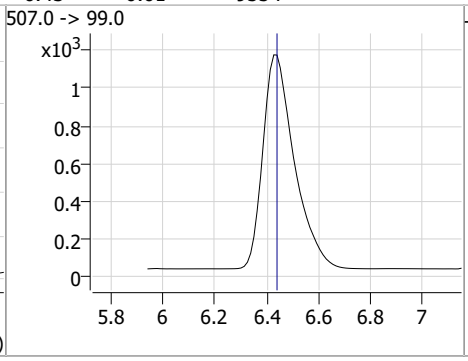
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	15.32	5.86	0.00	92686				

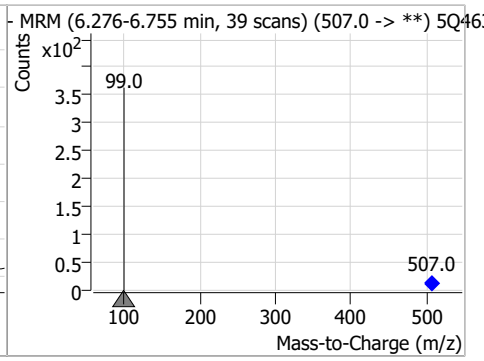


Perfluorinated Compounds by LC/MS/MS

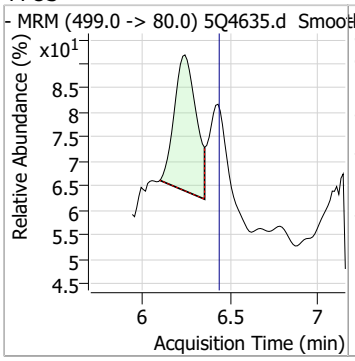
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	14.63	6.43	-0.01	9554				

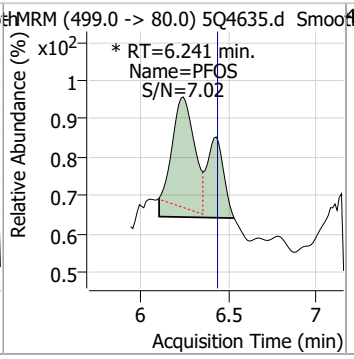


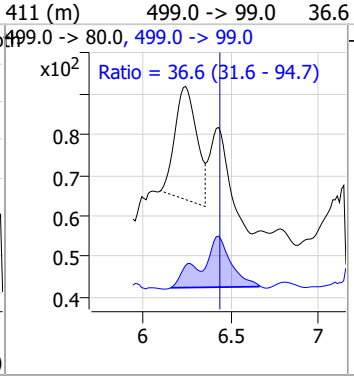


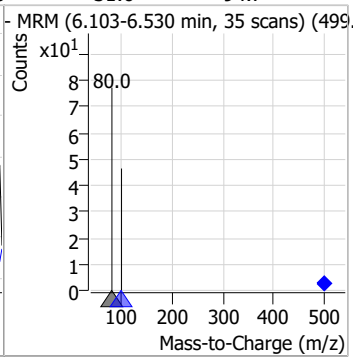


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.49	6.24	-0.20	411 (m)	499.0 -> 99.0	36.6	31.6	94.7

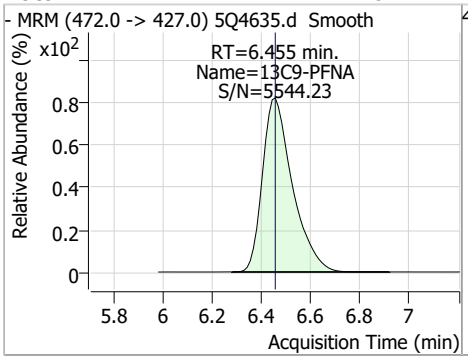


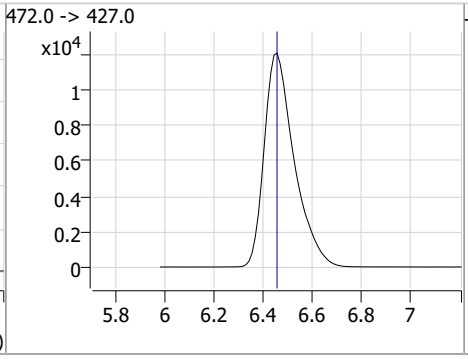


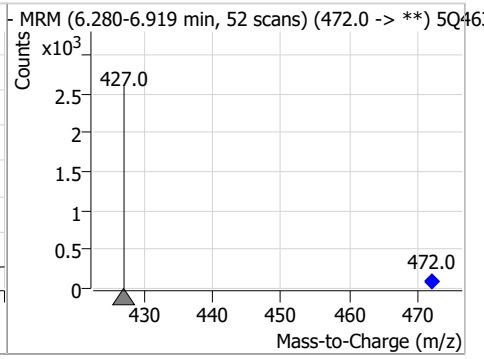




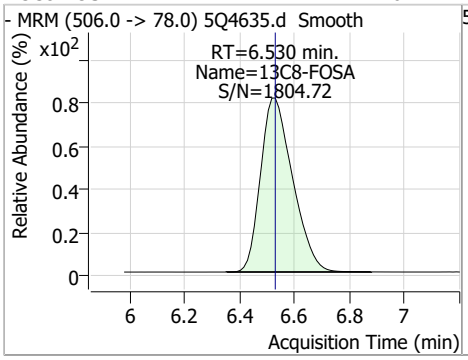
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	15.44	6.46	0.00	101427				

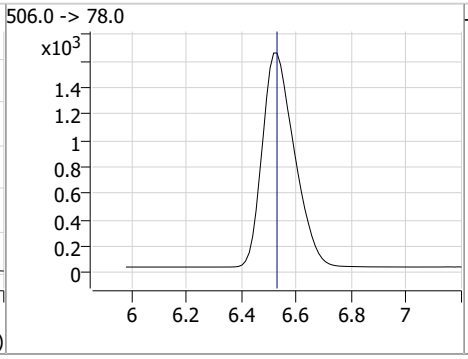


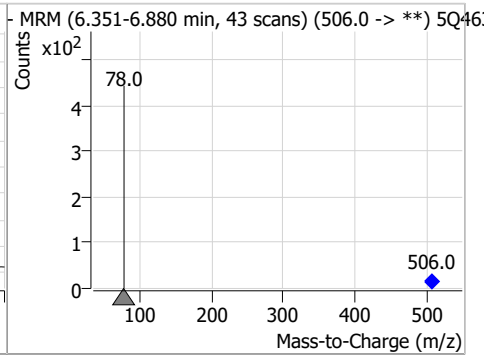




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	11.62	6.53	0.00	13190				

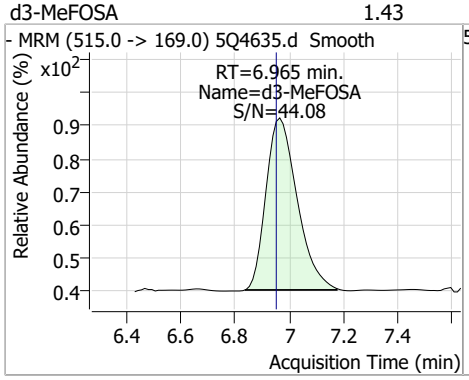


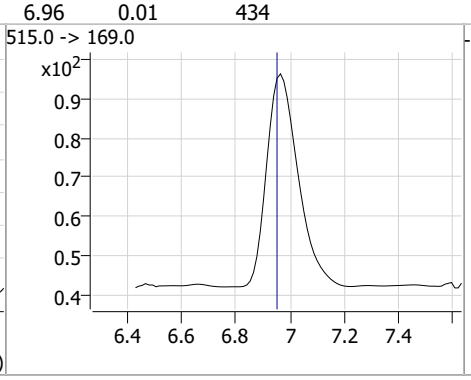


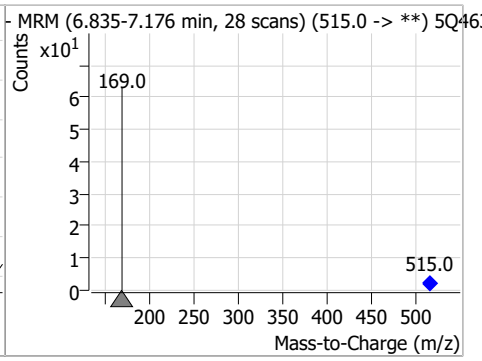


Perfluorinated Compounds by LC/MS/MS

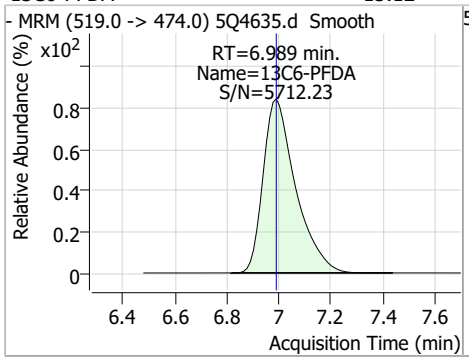
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	1.43	6.96	0.01	434				

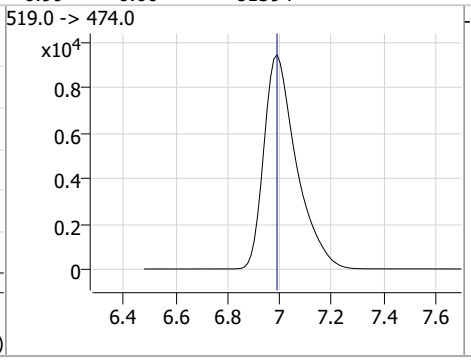


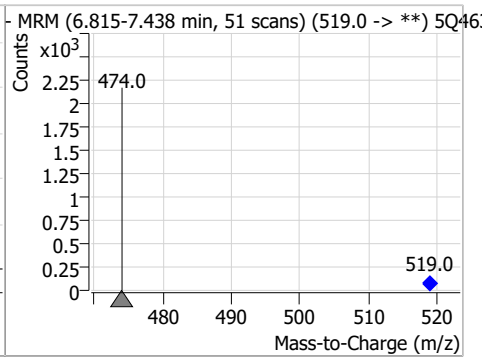




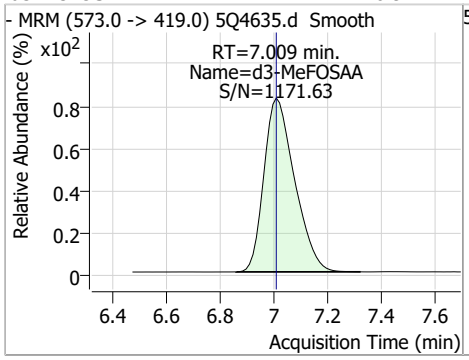
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.12	6.99	0.00	81394				

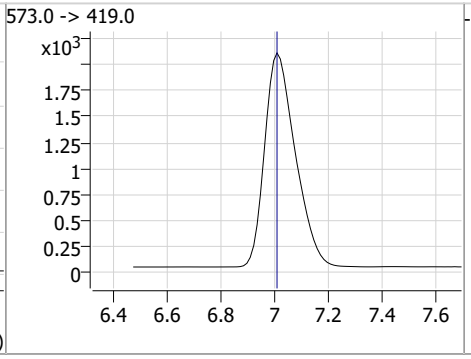


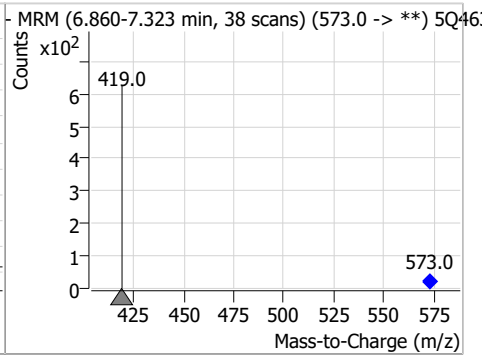




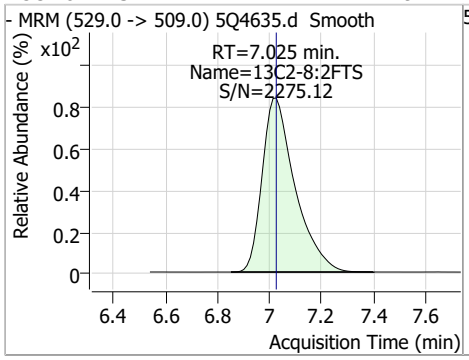
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	16.92	7.01	0.00	16443				

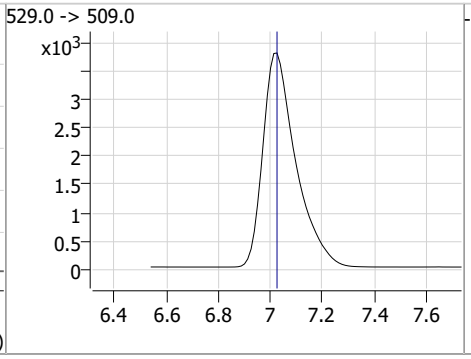


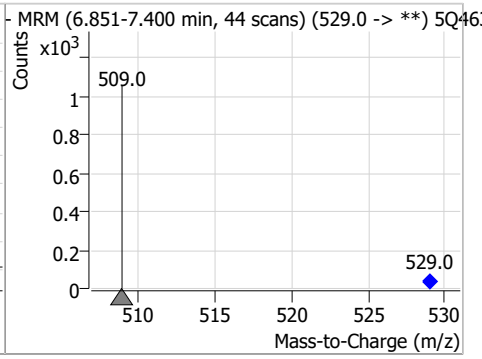




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.79	7.03	0.00	33209				

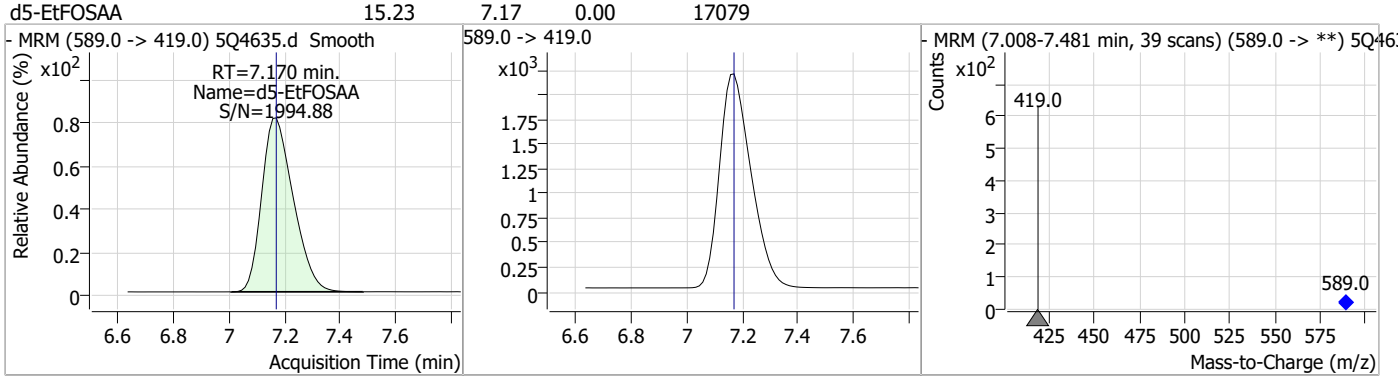




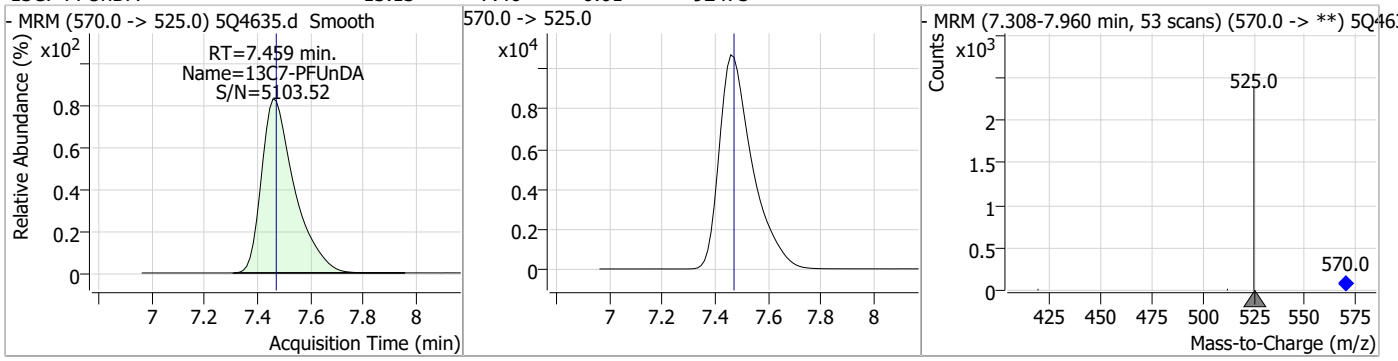


Perfluorinated Compounds by LC/MS/MS

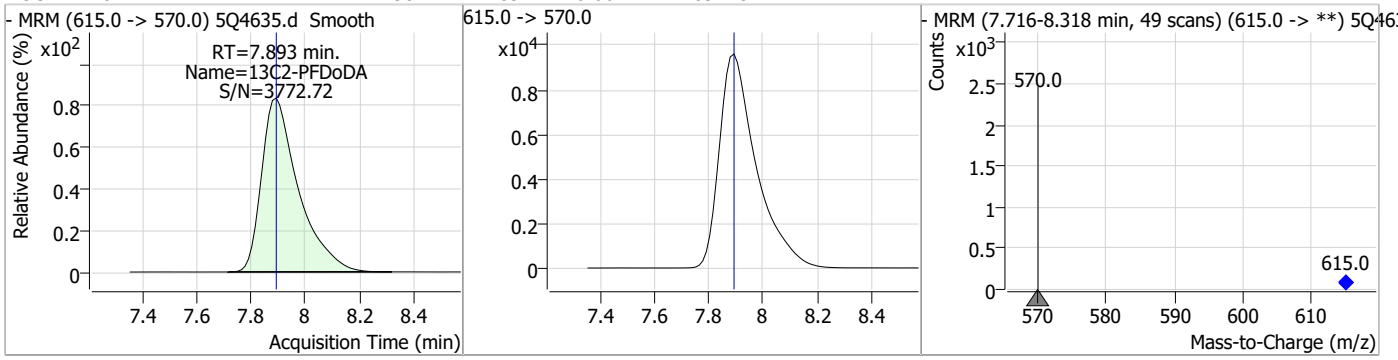
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	15.23	7.17	0.00	17079				



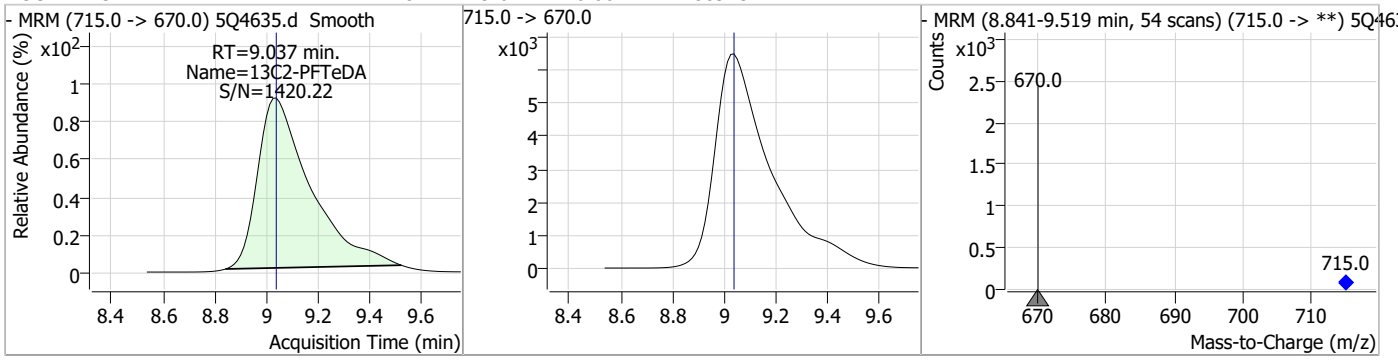
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	13.13	7.46	-0.01	92473				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	12.38	7.89	0.00	89725				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.78	9.04	0.00	88913				



Manual Integration Approval Summary

Sample Number: OP92763-DUP
Lab FileID: 5Q4635.D
Injection Time: 09/15/22 06:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:11 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.24	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4676.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 1:57:29 AM
Sample Name : op92764-dup
Vial : P5-E3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92764,S6Q85,125,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.936	217.0 -> 172.0	62063	20.00	µg/L	-0.012
M5-PFPeA	3.405	268.0 -> 223.0	116791	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	184662	20.00	µg/L	0.000
M4-PFHpA	5.433	367.0 -> 322.0	214935	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	383435	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	443418	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	319200	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	371609	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	435342	20.00	µg/L	-0.025
M2-PFTeDA	9.976	715.0 -> 670.0	399193	20.00	µg/L	-0.037
M8-FOSA	6.654	506.0 -> 78.0	134851	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	26530	20.00	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	24630	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	33581	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	218333	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	277250	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	199448	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	126305	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4332	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	9929	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	99747	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	218333	16.17	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 80.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	277250	16.24	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.2%		
13C2-8:2FTS	7.333	529.0 -> 509.0	199448	15.30	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 76.5%		
13C2-PFDoDA	8.307	615.0 -> 570.0	435342	11.84	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.2%		
13C2-PFTeDA	9.976	715.0 -> 670.0	399193	13.31	µg/L	-0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.5%		
13C3-PFBS	3.622	302.0 -> 99.0	26530	17.32	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.6%		
13C3-PFHxS	5.475	402.0 -> 99.0	24630	17.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C4-PFBA	1.936	217.0 -> 172.0	62063	15.59	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%		
13C4-PFHpA	5.433	367.0 -> 322.0	214935	17.37	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C5-PFHxA	4.573	318.0 -> 273.0	184662	17.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	116791	16.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.3%		
13C6-PFDA	7.283	519.0 -> 474.0	319200	15.69	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

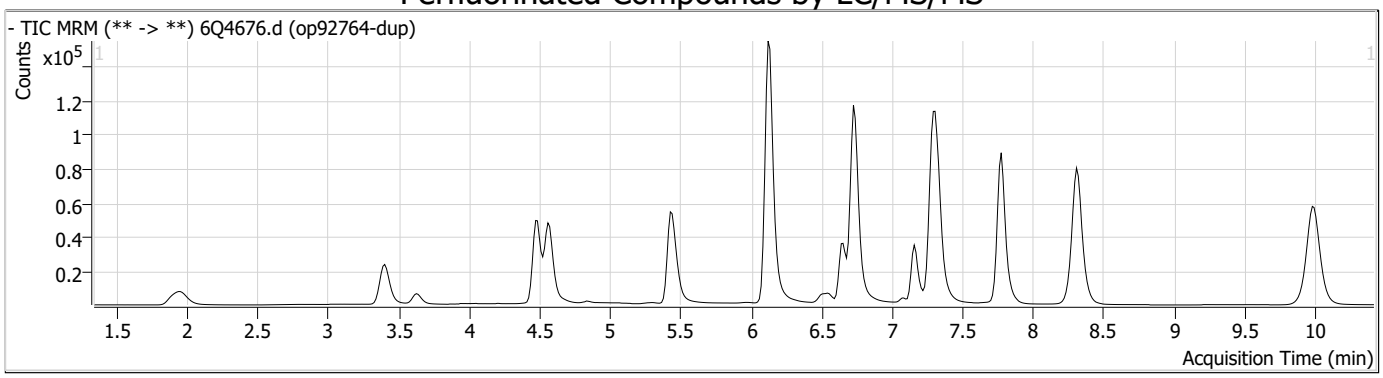
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.4%			
13C7-PFUnDA	7.775	570.0 -> 525.0	371609	14.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.0%			
13C8-FOSA	6.654	506.0 -> 78.0	134851	13.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.9%			
13C8-PFOA	6.138	421.0 -> 376.0	383435	18.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
13C8-PFOS	6.717	507.0 -> 99.0	33581	15.83	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.2%			
13C9-PFNA	6.745	472.0 -> 427.0	443418	17.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%			
d3-MeFOSAA	7.155	573.0 -> 419.0	126305	14.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.0%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	4339	16.32	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%			
d3-MeFOSA	-	515.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d5-EtFOSAA	7.302	589.0 -> 419.0	99836	14.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.5%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	1.943	213.0 -> 169.0	4393	3.24	µg/L		100
PFBS	3.627	299.0 -> 80.0	1634	0.37	µg/L		100
		299.0 -> 99.0	615				
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.434	363.0 -> 319.0	6281	0.45	µg/L	m	99
		363.0 -> 169.0	941				
PFHpS	6.136	449.0 -> 80.0	1191	0.41	µg/L	m	87
		449.0 -> 99.0	520				
PFHxA	4.574	313.0 -> 269.0	8683	0.89	µg/L		100
		313.0 -> 119.0	202				
PFHxS	5.465	399.0 -> 80.0	13780	3.90	µg/L	m	99
		399.0 -> 99.0	6553				
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	-	413.0 -> 369.0	-	N.D.			
		413.0 -> 169.0					
PFOS	6.529	499.0 -> 80.0	39404	12.66	µg/L	m	81

Perfluorinated Compounds by LC/MS/MS

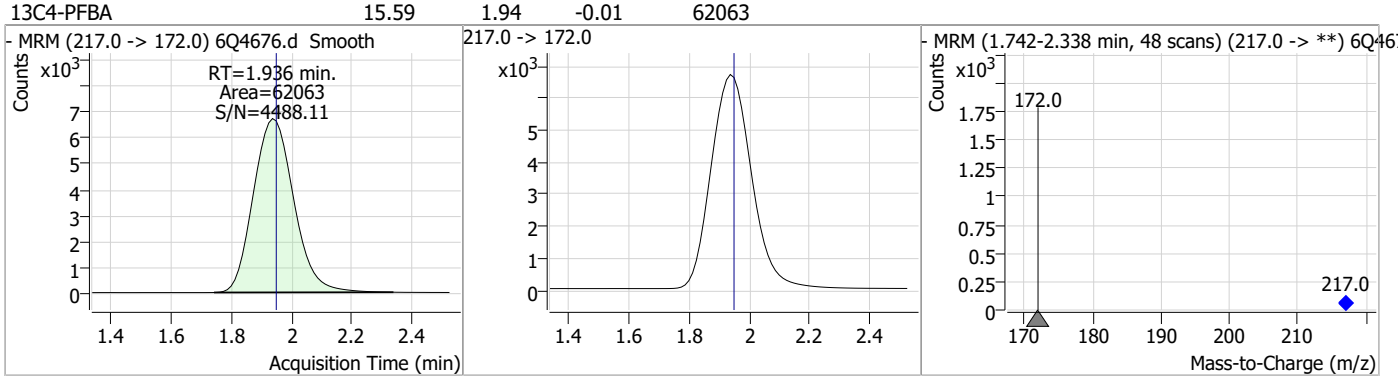
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	13456				
PFPeA	3.408	263.0 -> 219.0	5775	1.17	µg/L	m	100
PFPeS	4.668	349.0 -> 80.0	2070	0.56	µg/L	m	98
		349.0 -> 99.0	969				
PFTeDA	-	713.0 -> 669.0	-	N.D.			
		713.0 -> 219.0					
PFTrDA	-	663.0 -> 619.0	-	N.D.			
		663.0 -> 369.0					
PFUnDA	-	563.0 -> 519.0	-	N.D.			
		563.0 -> 269.0					
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
		633.0 -> 453.0					
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
		533.0 -> 353.0					
ADONA	-	377.0 -> 251.0	-	N.D.			
		377.0 -> 85.0					
HFPO-DA	-	285.0 -> 169.0	-	N.D.			
		285.0 -> 185.0					
MeFOSA	-	512.0 -> 169.0	-	N.D.			
		512.0 -> 219.0					
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	-	298.0 -> 78.0	-	N.D.			
		298.0 -> 64.0					
FHxSA	-	398.0 -> 78.0	-	N.D.			
		398.0 -> 64.0					

 # = Qualifier out of range, m = manually integrated, + = Area summed

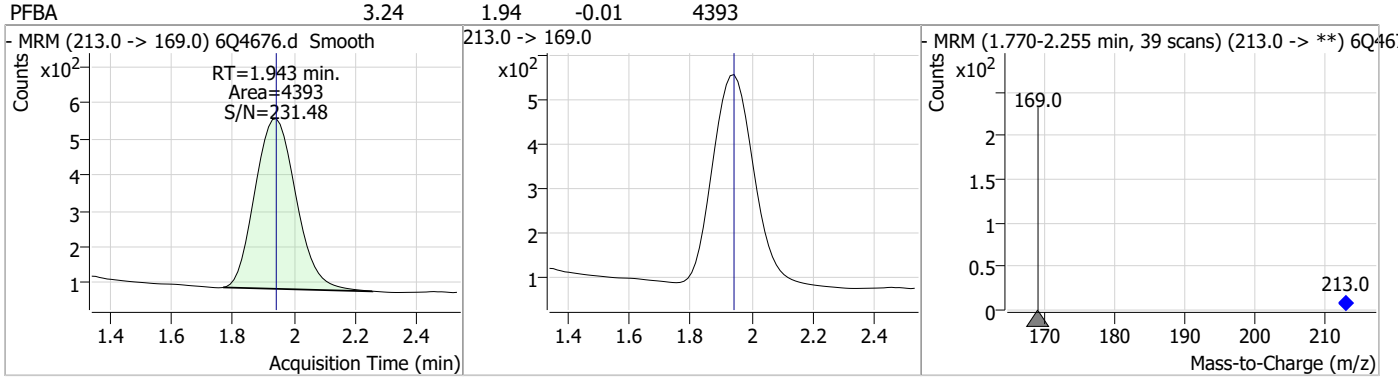
Perfluorinated Compounds by LC/MS/MS



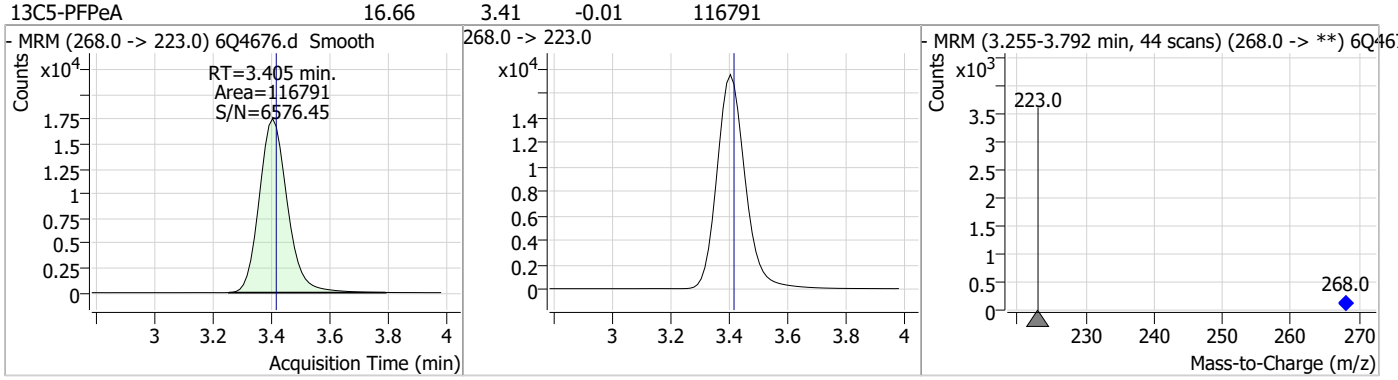
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	15.59	1.94	-0.01	62063				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	3.24	1.94	-0.01	4393				

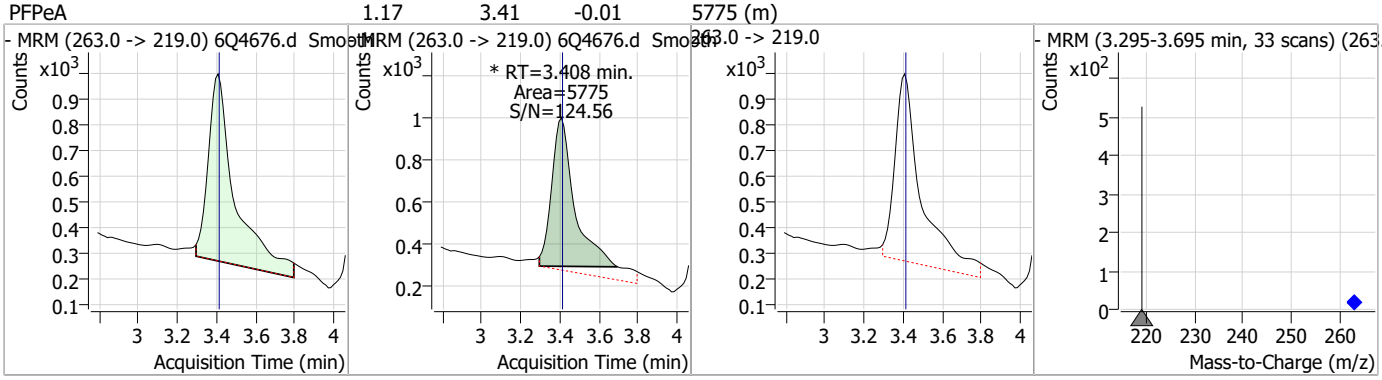


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	16.66	3.41	-0.01	116791				

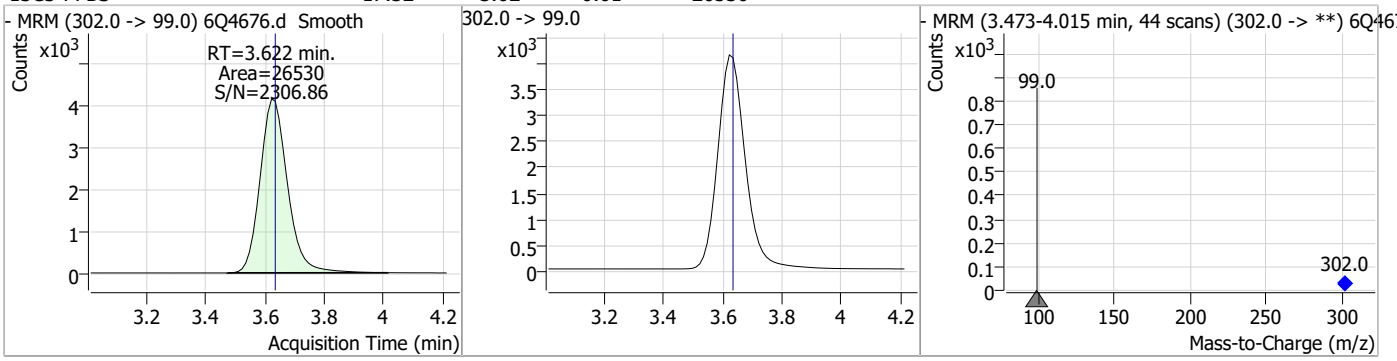


Perfluorinated Compounds by LC/MS/MS

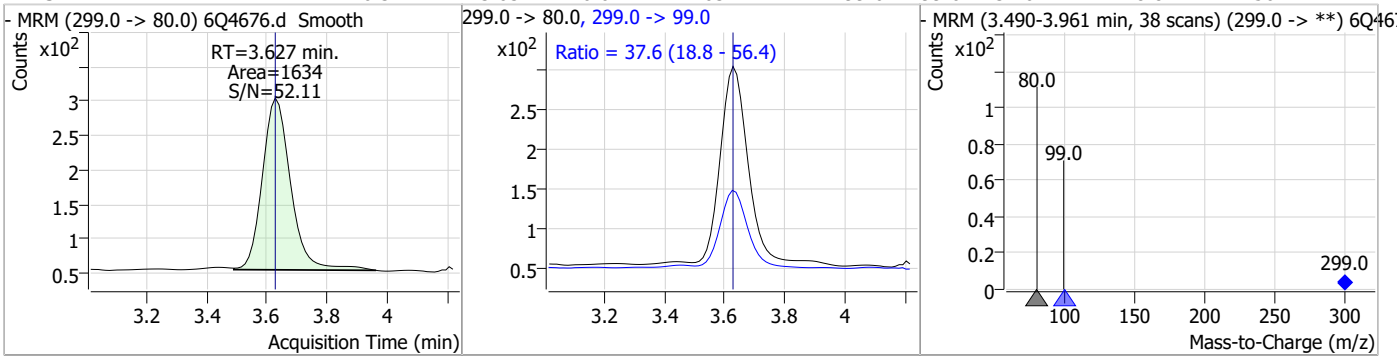
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.17	3.41	-0.01	5775 (m)				



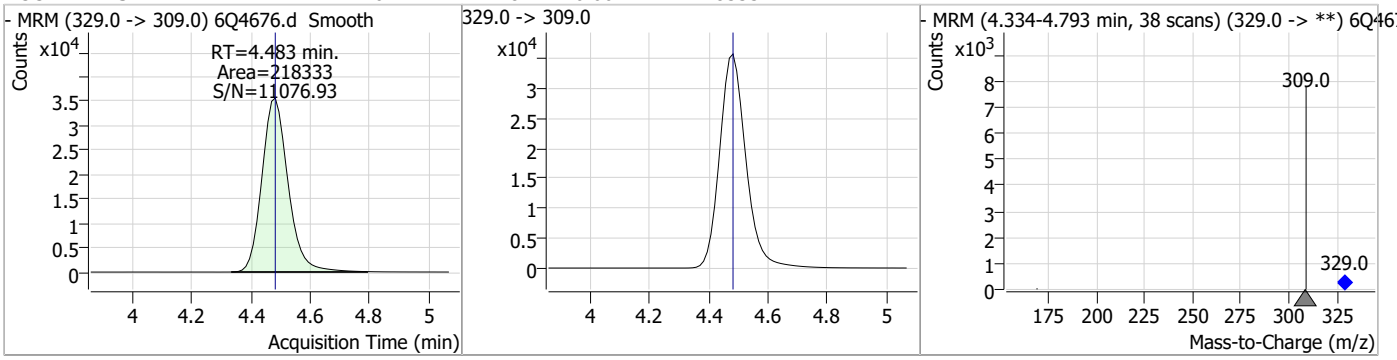
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.32	3.62	-0.01	26530				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.37	3.63	-0.01	1634	299.0 -> 99.0	37.6	18.8	56.4

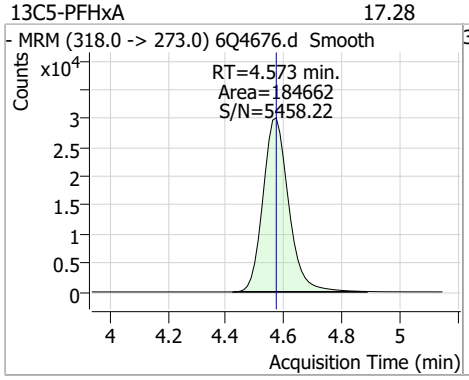


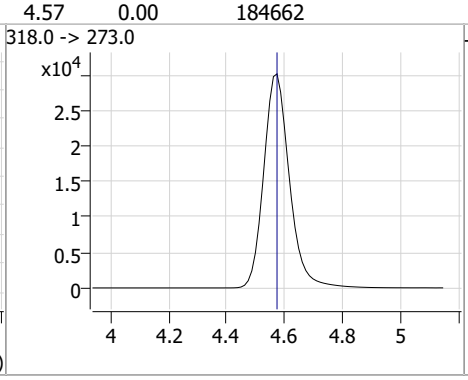
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	16.17	4.48	0.00	218333				

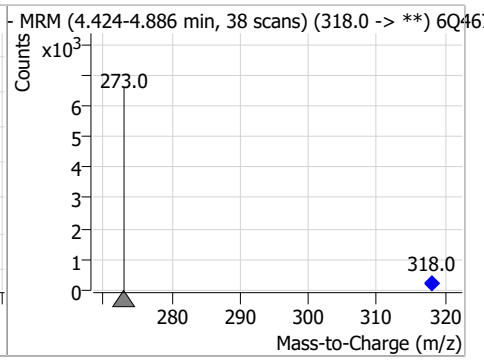


Perfluorinated Compounds by LC/MS/MS

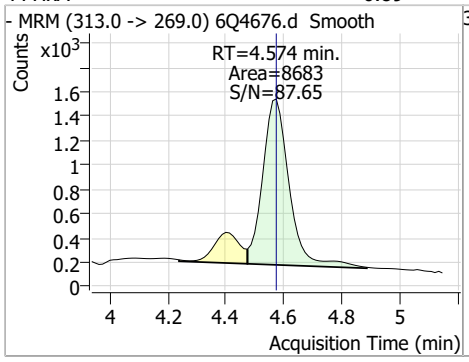
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.28	4.57	0.00	184662				

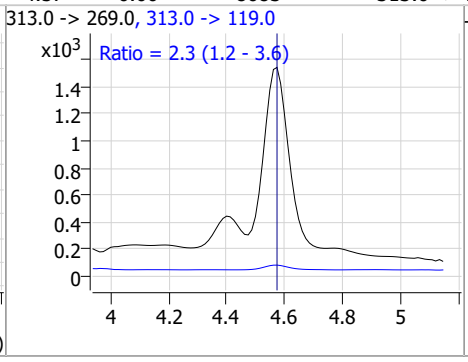


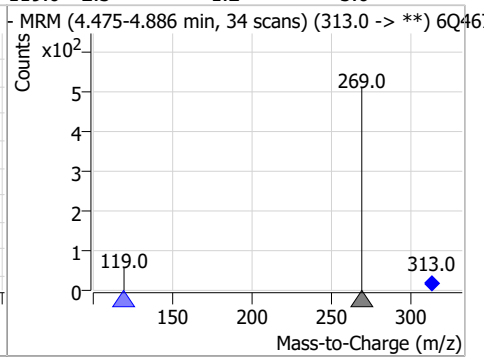




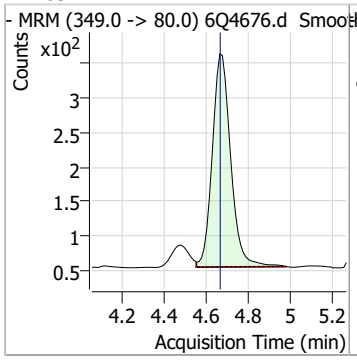
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.89	4.57	0.00	8683	313.0 -> 119.0	2.3	1.2	3.6

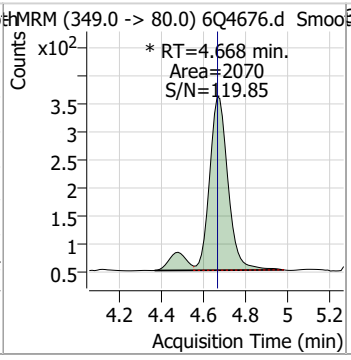


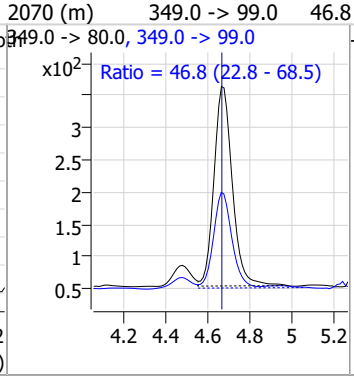


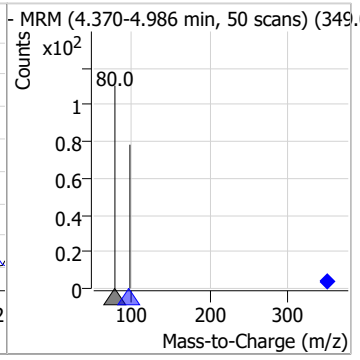


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.56	4.67	-0.01	2070 (m)	349.0 -> 99.0	46.8	22.8	68.5

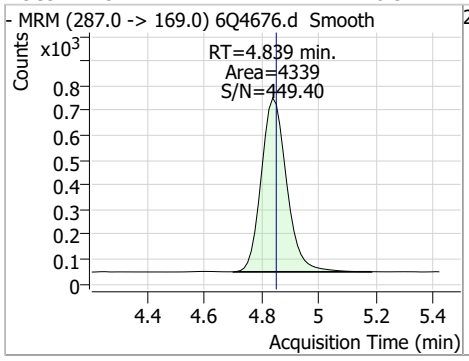


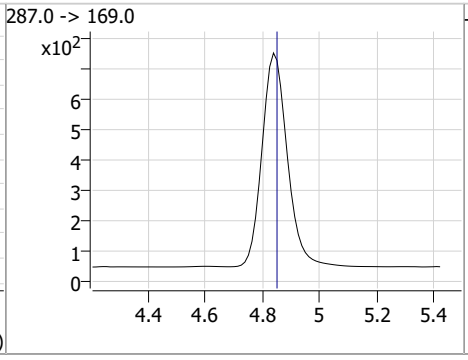


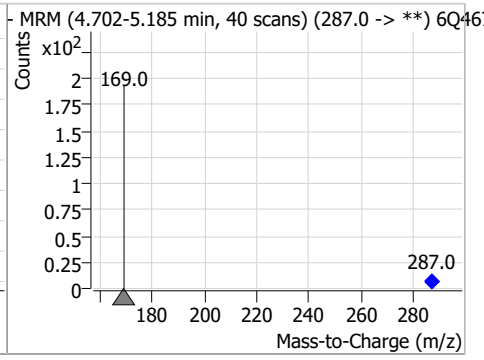




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	16.32	4.84	-0.01	4339				

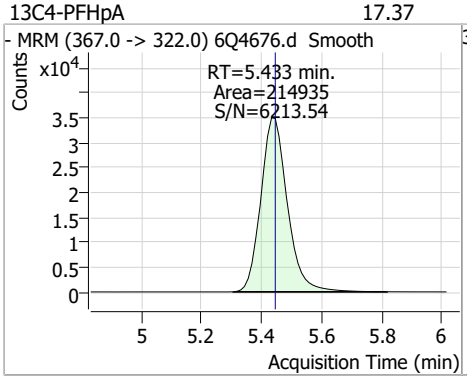


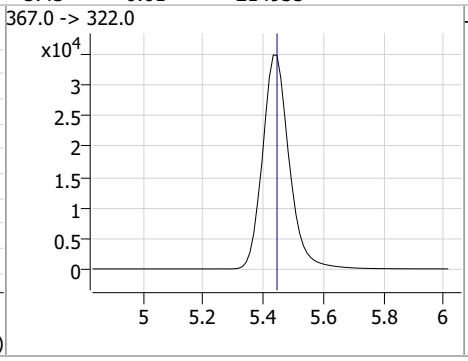


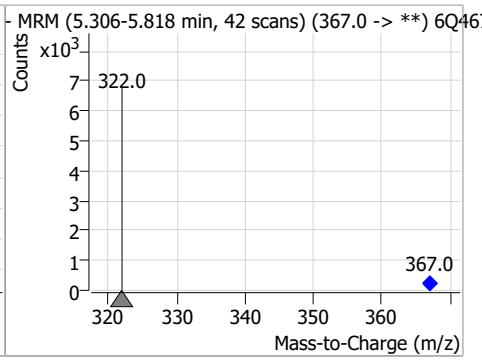


Perfluorinated Compounds by LC/MS/MS

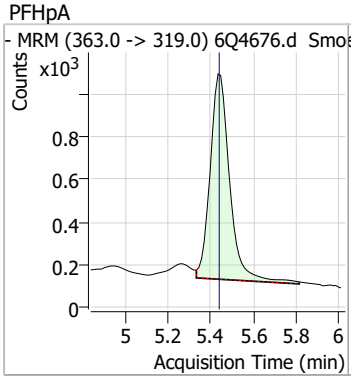
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.37	5.43	-0.01	214935				

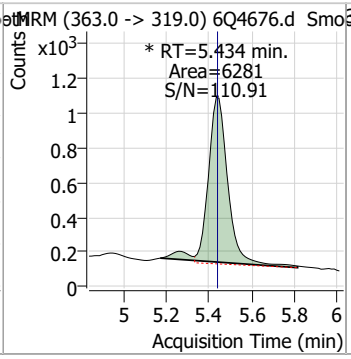


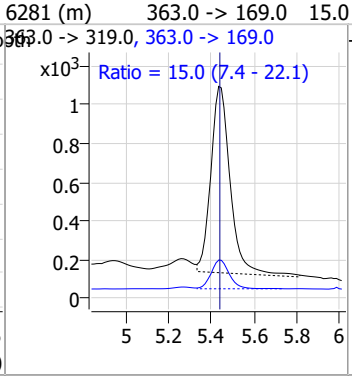


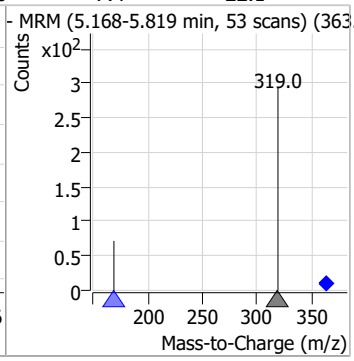


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.45	5.43	-0.01	6281 (m)	363.0 -> 169.0	15.0	7.4	22.1

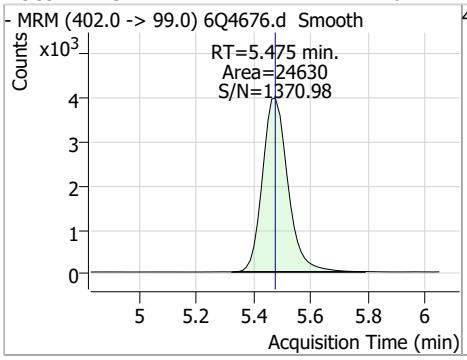


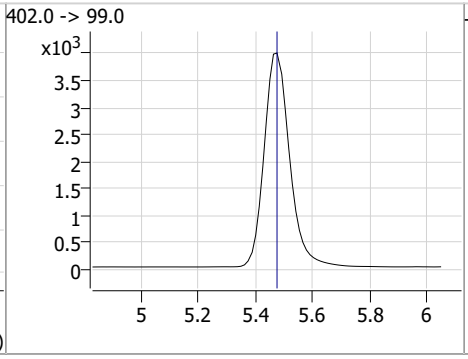


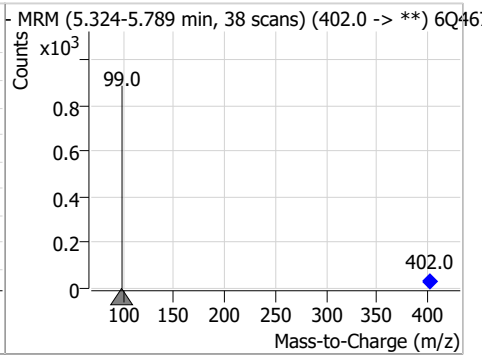




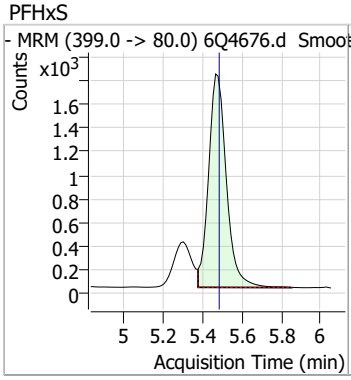
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.81	5.48	0.00	24630				

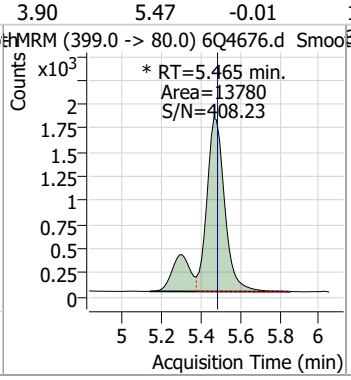


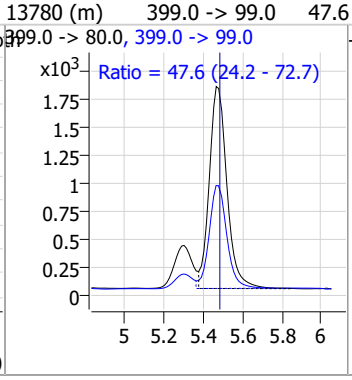


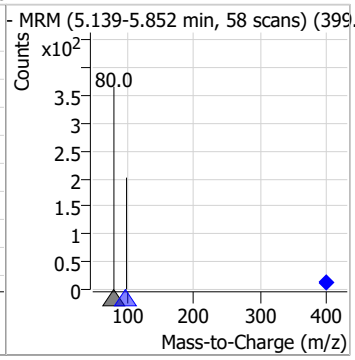


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	3.90	5.47	-0.01	13780 (m)	399.0 -> 99.0	47.6	24.2	72.7



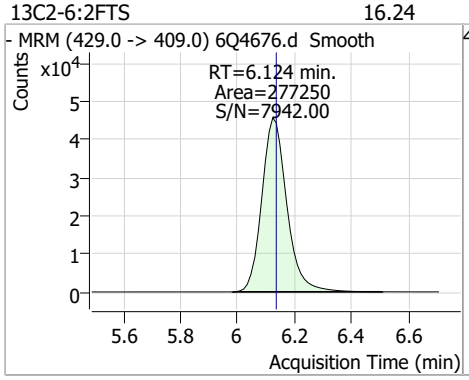


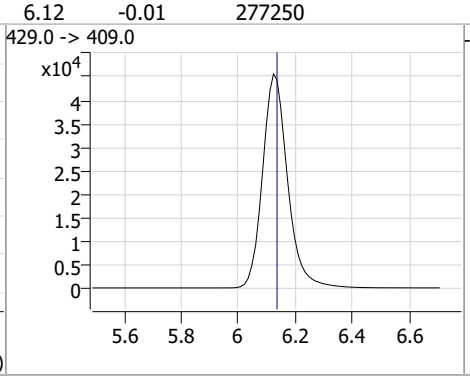


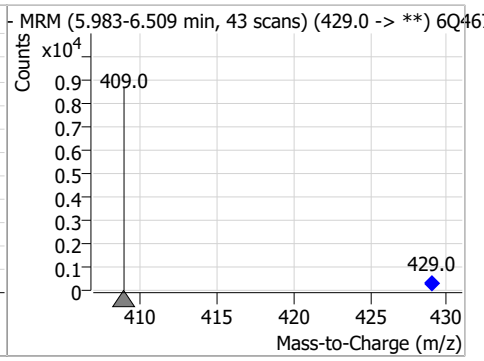


Perfluorinated Compounds by LC/MS/MS

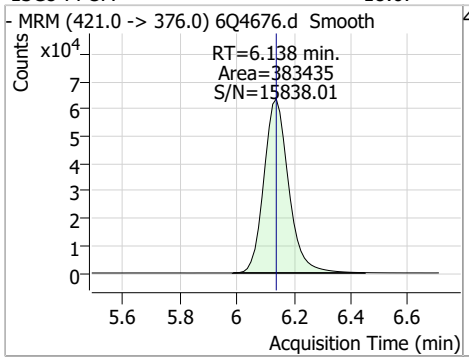
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.24	6.12	-0.01	277250				

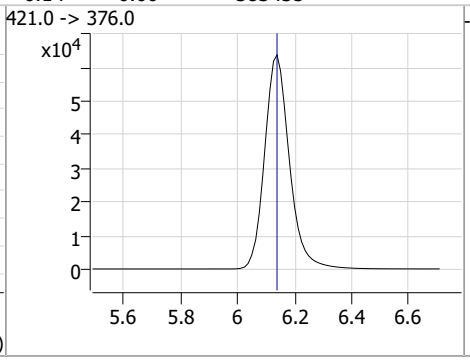


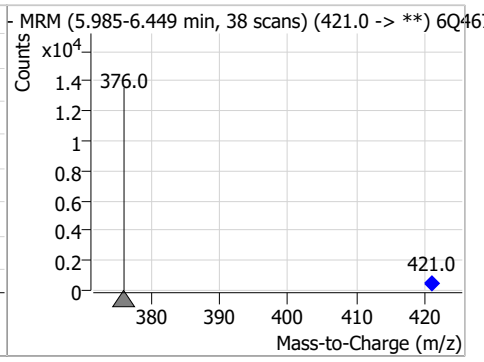




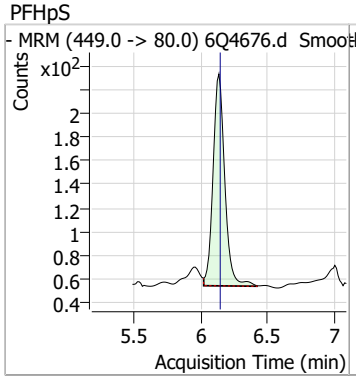
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.07	6.14	0.00	383435				

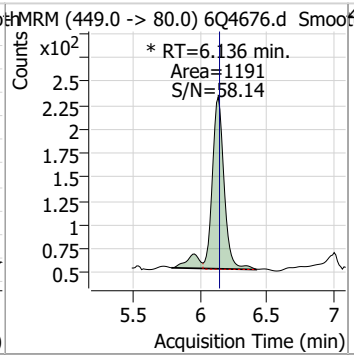


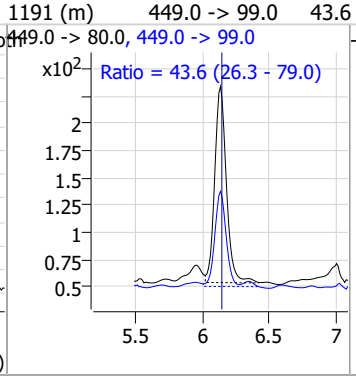


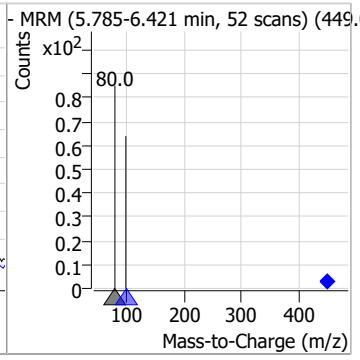


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.41	6.14	-0.01	1191 (m)	449.0 -> 99.0	43.6	26.3	79.0

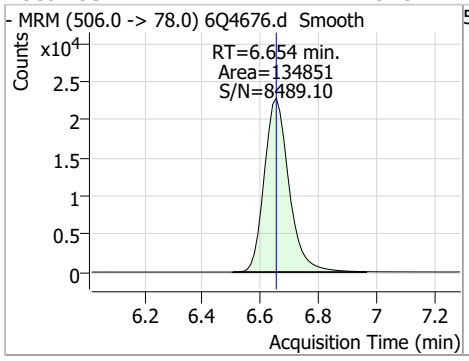


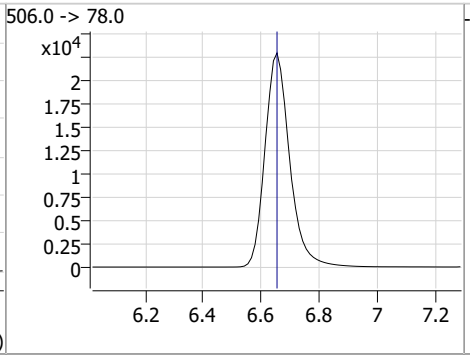


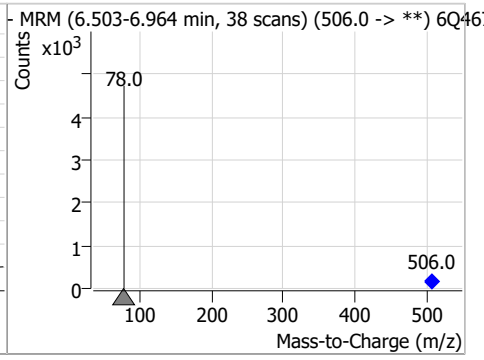




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	13.79	6.65	0.00	134851				

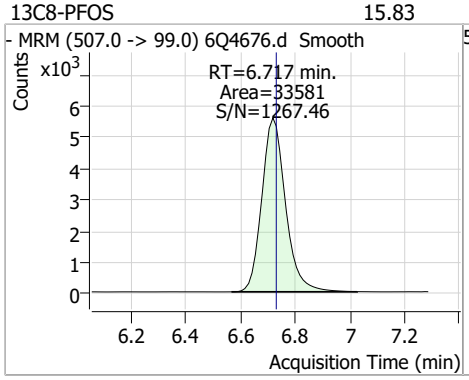


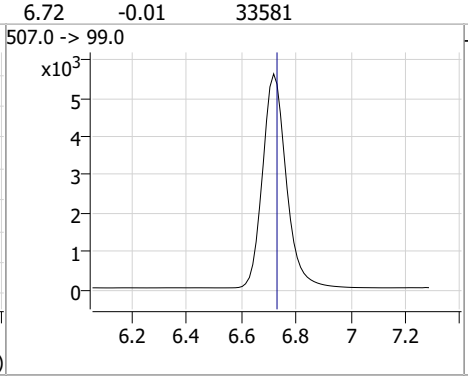


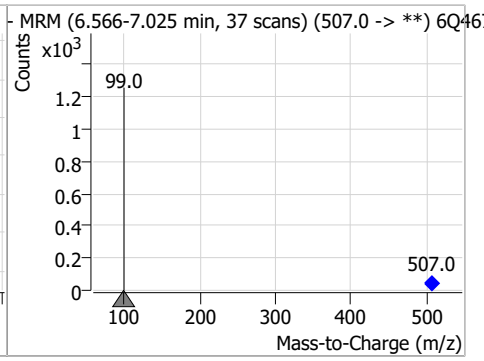


Perfluorinated Compounds by LC/MS/MS

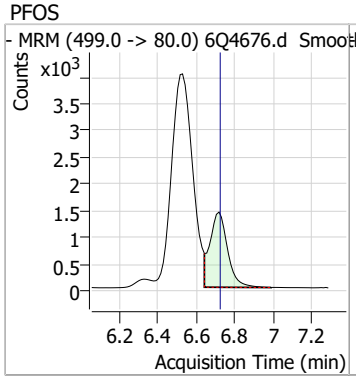
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	15.83	6.72	-0.01	33581				

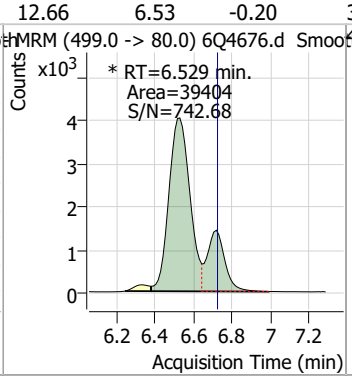


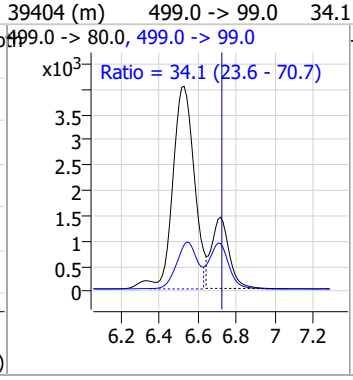


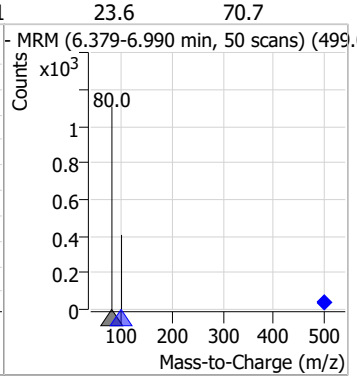


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	12.66	6.53	-0.20	39404 (m)	499.0 -> 99.0	34.1	23.6	70.7

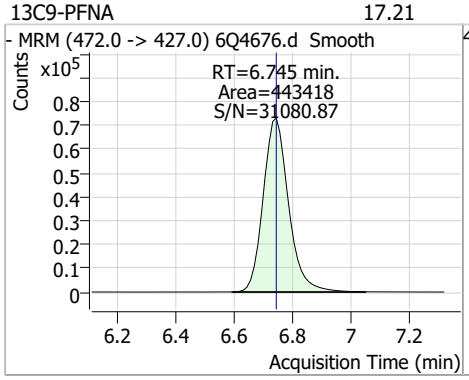


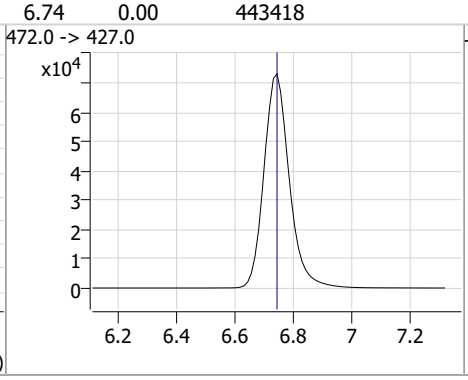


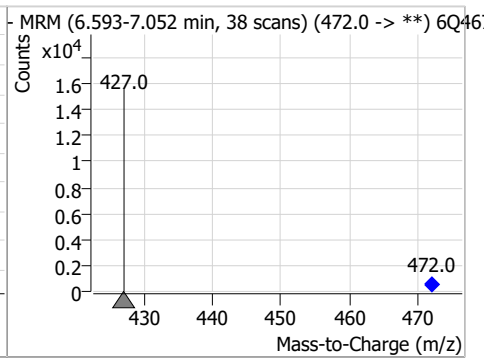




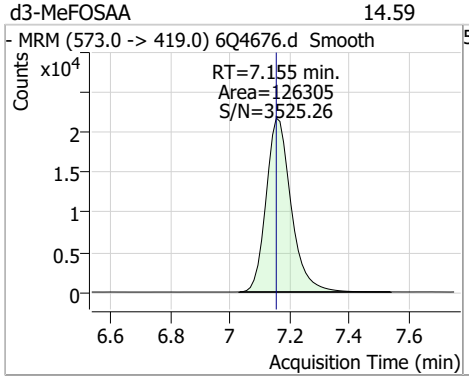
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.21	6.74	0.00	443418				

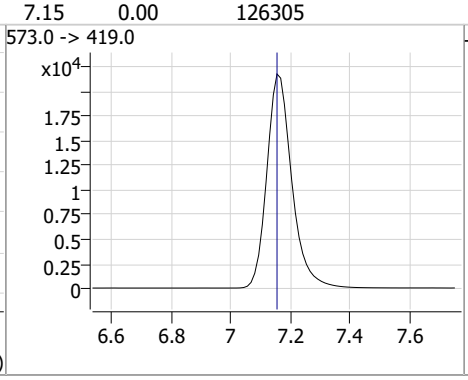


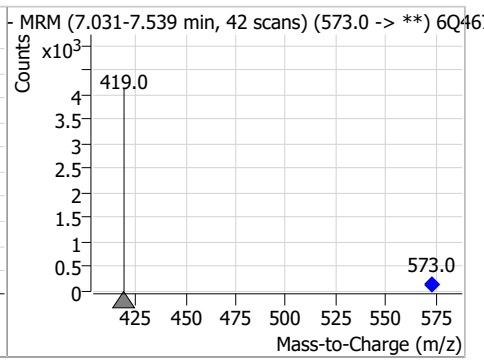




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.59	7.15	0.00	126305				

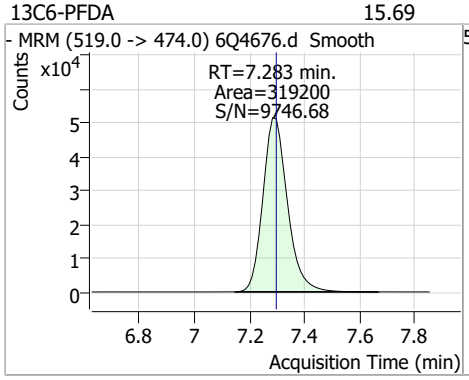


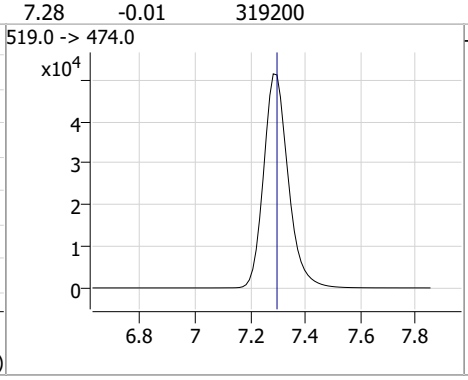


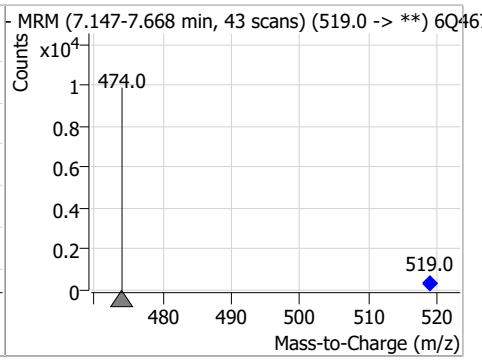


Perfluorinated Compounds by LC/MS/MS

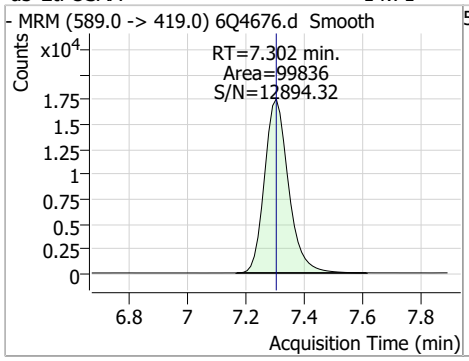
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	15.69	7.28	-0.01	319200				

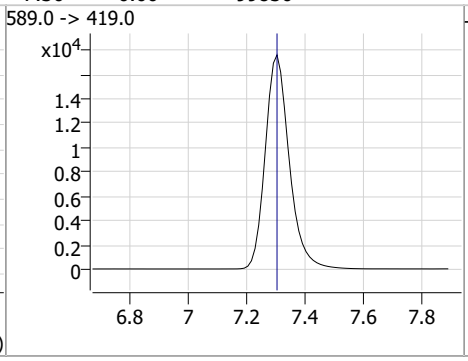


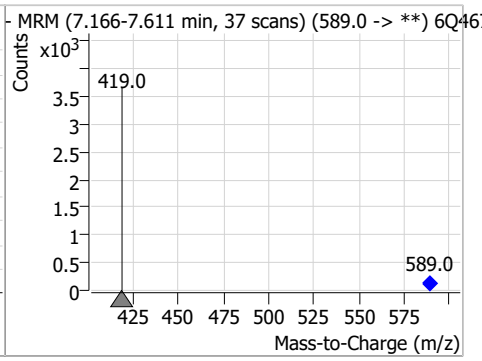




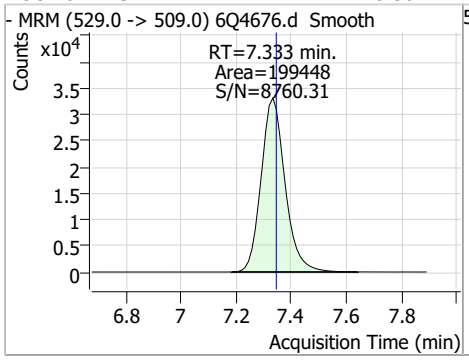
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	14.71	7.30	0.00	99836				

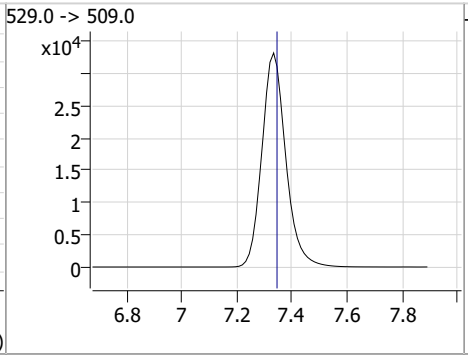


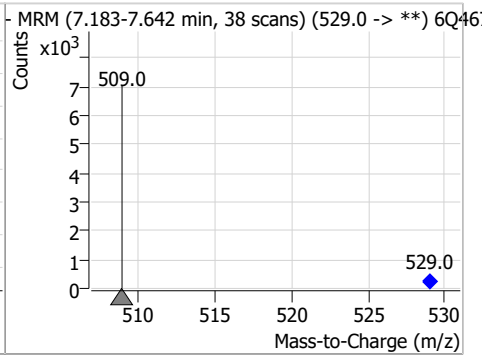




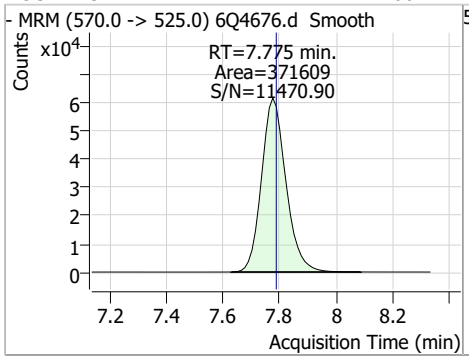
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.30	7.33	-0.01	199448				

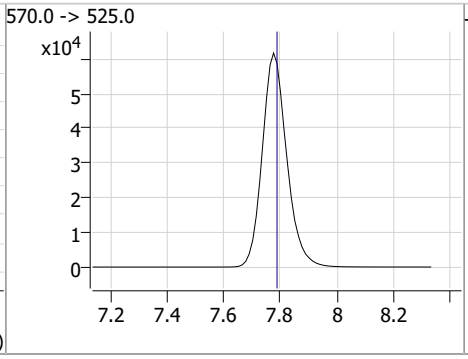


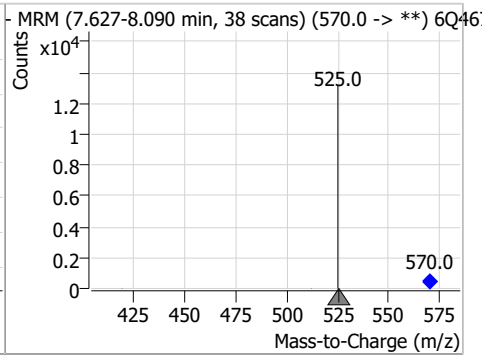




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	14.00	7.78	-0.01	371609				

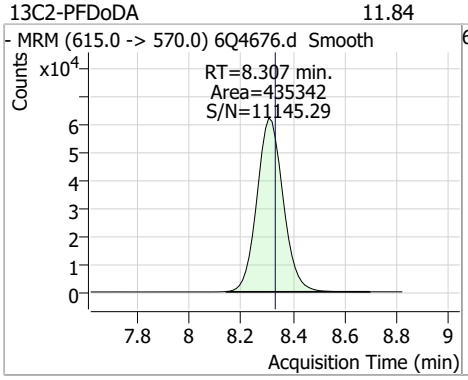


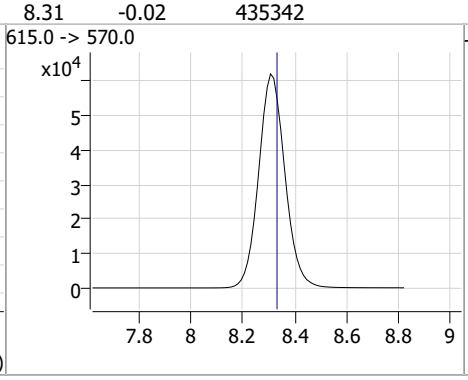


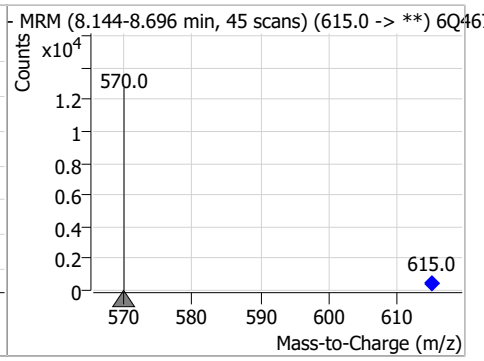


Perfluorinated Compounds by LC/MS/MS

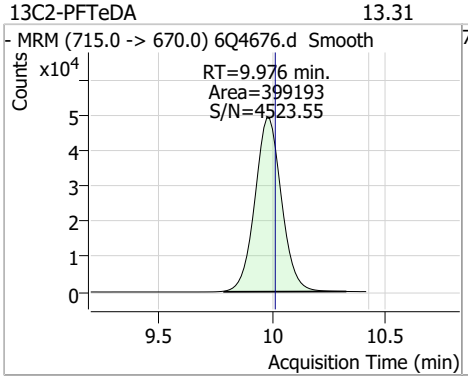
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.84	8.31	-0.02	435342				

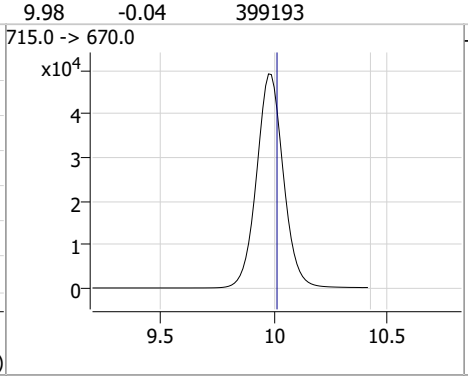


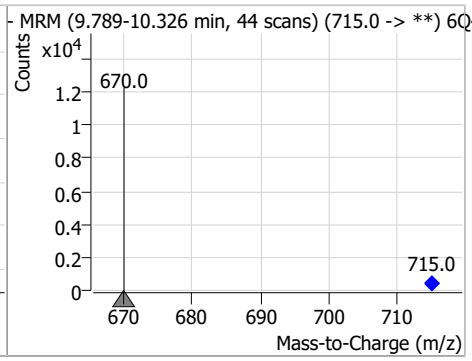




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	13.31	9.98	-0.04	399193				







Manual Integration Approval Summary

Sample Number: OP92764-DUP
Lab FileID: 6Q4676.D
Injection Time: 09/15/22 01:57
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 17:12 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoropentanoic acid	2706-90-3		3.41	Split peak
Perfluoropentanesulfonic acid	2706-91-4		4.67	Split peak
Perfluoroheptanoic acid	375-85-9		5.43	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluoroheptanesulfonic acid	375-92-8		6.14	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.53	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4615.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 1:30:50 AM
Sample Name : op92794-dup
Vial : P1-C7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92794,S5Q71,260,,,1.0,1,water

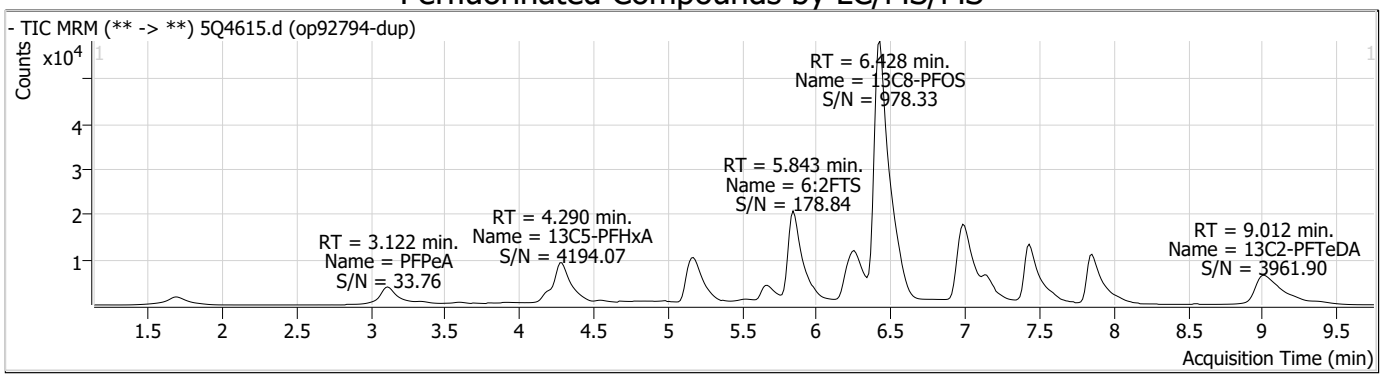
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	19495	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	32467	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	54801	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	52625	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	79435	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	86750	20.00 µg/L	-0.012
M6-PFDA	6.977	519.0 -> 474.0	71471	20.00 µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	83225	20.00 µg/L	-0.025
M2-PFDoDA	7.854	615.0 -> 570.0	79713	20.00 µg/L	-0.039
M2-PFTeDA	9.012	715.0 -> 670.0	90385	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	14679	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	4094	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	4558	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	8275	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	17590	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	30562	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	31808	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	18277	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	3576	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	2285	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	19691	20.00 µg/L	-0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	17590	11.98 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%	
13C2-6:2FTS	5.843	429.0 -> 409.0	30562	13.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 68.3%	
13C2-8:2FTS	7.013	529.0 -> 509.0	31808	14.16 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 70.8%	
13C2-PFDoDA	7.854	615.0 -> 570.0	79713	11.00 µg/L	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.0%	
13C2-PFTeDA	9.012	715.0 -> 670.0	90385	11.98 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.9%	
13C3-PFBS	3.349	302.0 -> 99.0	4094	12.57 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.8%	
13C3-PFHxS	5.194	402.0 -> 99.0	4558	13.37 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.8%	
13C4-PFBA	1.687	217.0 -> 172.0	19495	10.91 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 54.5%	
13C4-PFHpA	5.163	367.0 -> 322.0	52625	12.89 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.5%	
13C5-PFHxA	4.290	318.0 -> 273.0	54801	12.53 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 62.7%	
13C5-PFPeA	3.119	268.0 -> 223.0	32467	11.17 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 55.9%	
13C6-PFDA	6.977	519.0 -> 474.0	71471	13.28 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

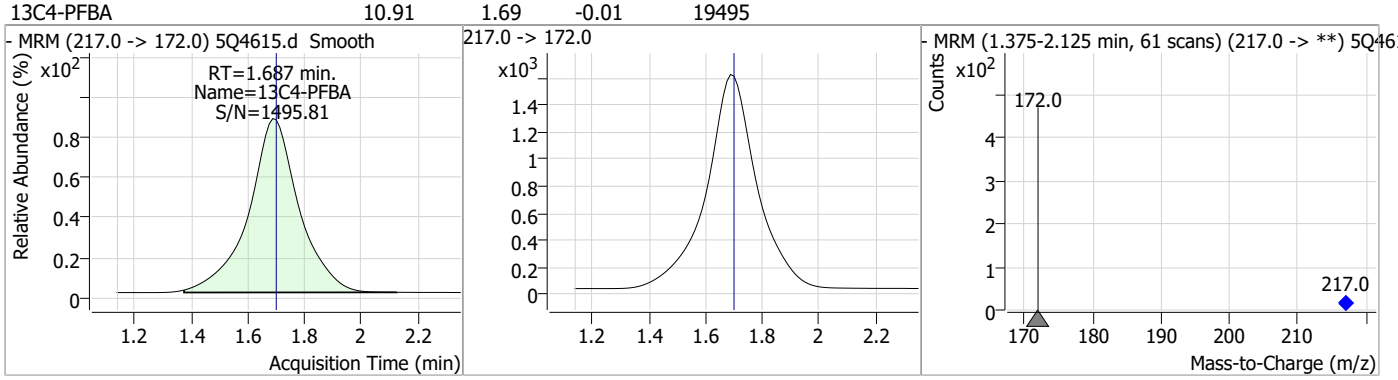
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.4%			
13C7-PFUnDA	7.446	570.0 -> 525.0	83225	11.82	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 59.1%			
13C8-FOSA	6.517	506.0 -> 78.0	14679	12.94	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 64.7%			
13C8-PFOA	5.857	421.0 -> 376.0	79435	13.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 65.7%			
13C8-PFOS	6.428	507.0 -> 99.0	8275	12.67	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 63.4%			
13C9-PFNA	6.443	472.0 -> 427.0	86750	13.21	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 66.0%			
d3-MeFOSAA	7.009	573.0 -> 419.0	18277	18.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	3576	10.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 53.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	2285	7.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 37.5%			
d5-EtFOSAA	7.157	589.0 -> 419.0	19691	17.56	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	5.843	427.0 -> 407.0	2535	1.56	µg/L		97
8:2FTS	7.013	527.0 -> 507.0	1397	0.82	µg/L		94
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	6.506	498.0 -> 78.0	1309	1.73	µg/L		99
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	3.604	299.0 -> 80.0	0		µg/L	m	1
PFDA	6.978	513.0 -> 469.0	1289	0.29	µg/L	m	94
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	2114	0.61	µg/L	m	99
PFHpS	5.855	449.0 -> 80.0	1273	2.05	µg/L	m	96
PFHxA	4.291	313.0 -> 269.0	2787	1.04	µg/L		96
PFHxS	5.195	399.0 -> 80.0	13848	20.46	µg/L	m	97
PFNA	6.444	463.0 -> 419.0	6981	1.80	µg/L		100
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	17192	3.57	µg/L	m	98
PFOS	6.429	499.0 -> 80.0	253448	347.75	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	631	0.39	µg/L		100
PFPeS	4.398	349.0 -> 80.0	0		µg/L	m	1
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.343	298.0 -> 78.0	1242	1.37	µg/L		92
FHxSA	5.674	398.0 -> 78.0	24513	30.34	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

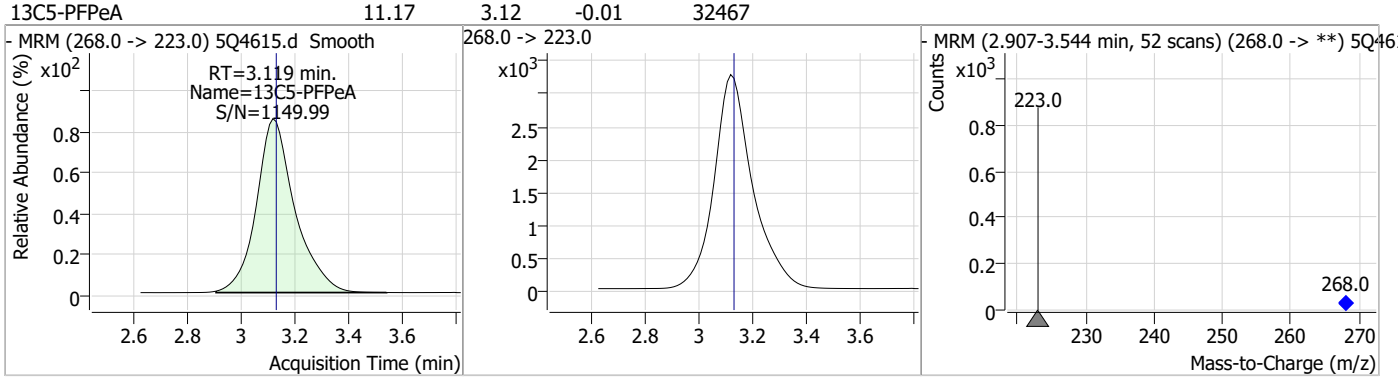
Perfluorinated Compounds by LC/MS/MS



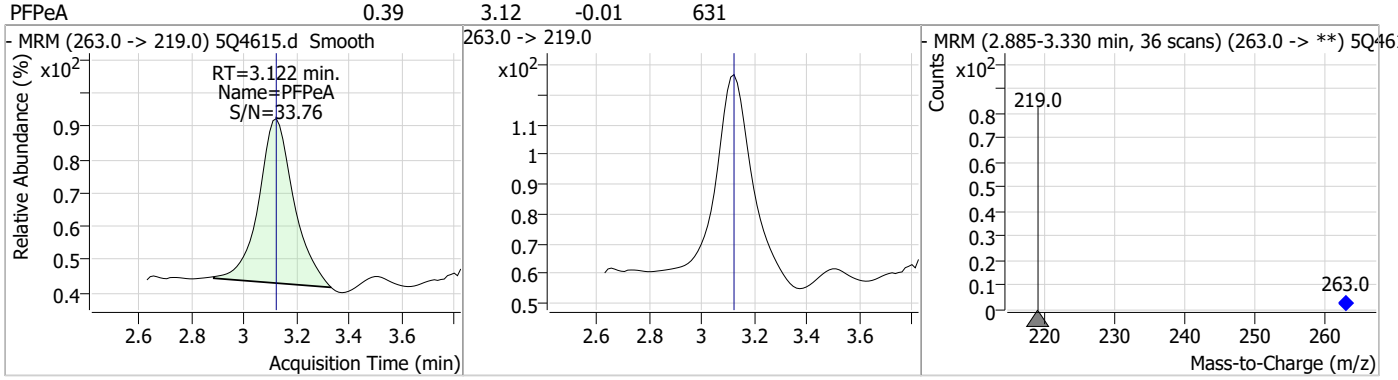
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	10.91	1.69	-0.01	19495				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	11.17	3.12	-0.01	32467				

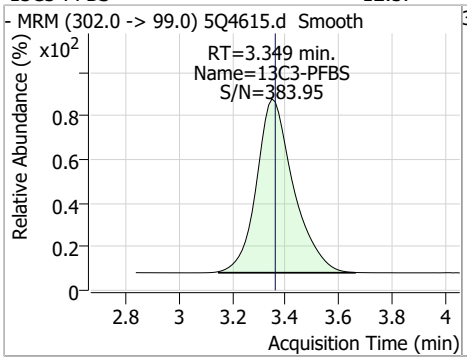


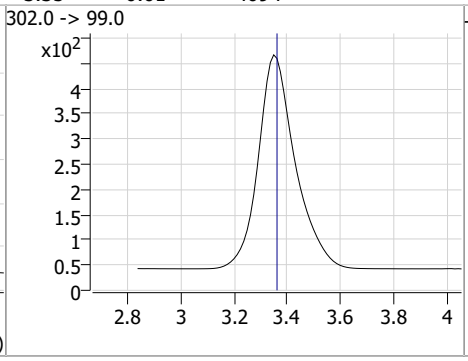
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.39	3.12	-0.01	631				

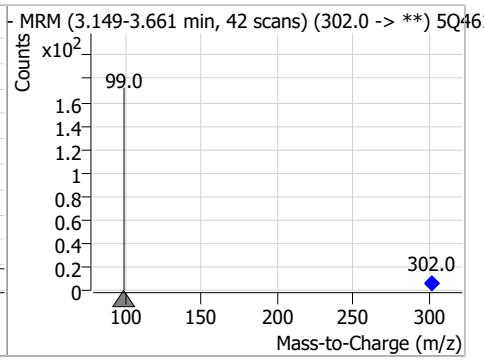


Perfluorinated Compounds by LC/MS/MS

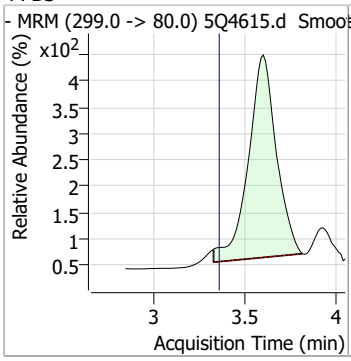
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	12.57	3.35	-0.01	4094				

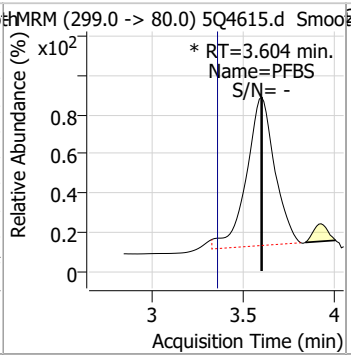


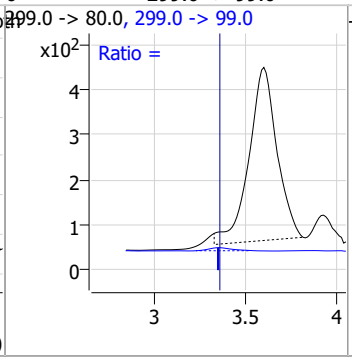


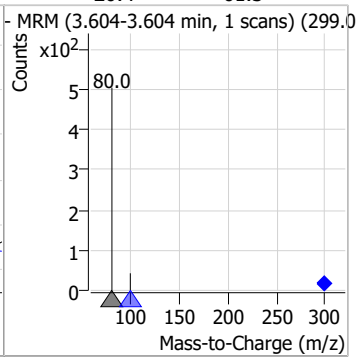


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS		0		0	299.0 -> 99.0		20.4	61.3

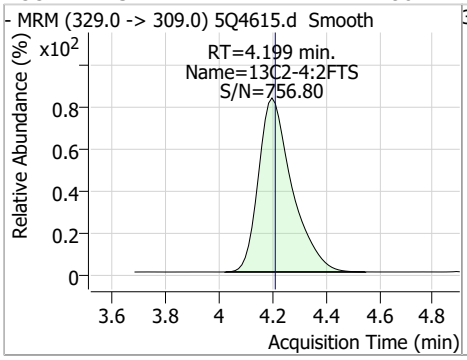


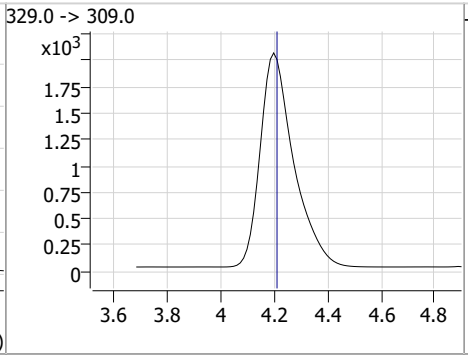


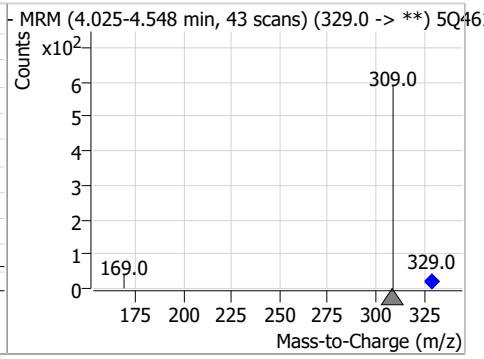




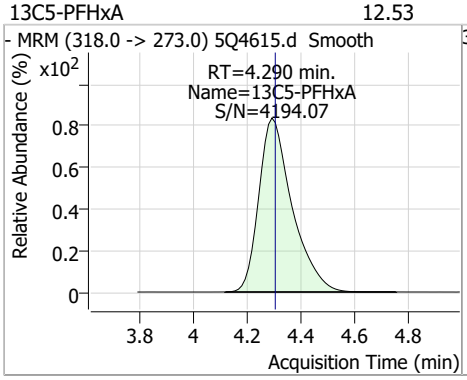
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	11.98	4.20	-0.01	17590				

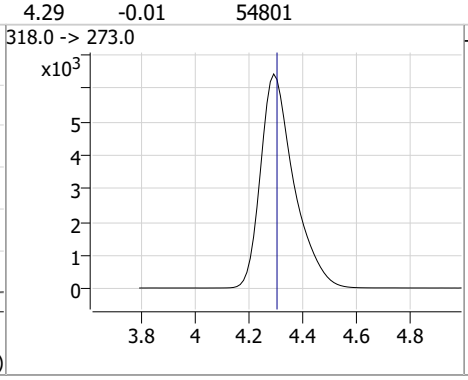


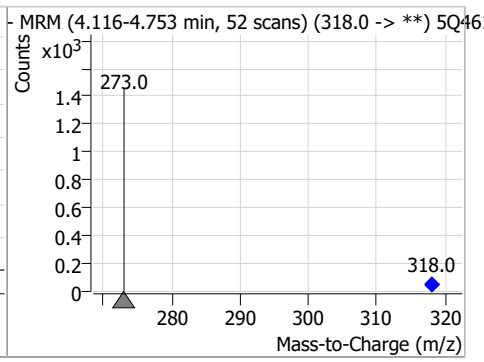




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	12.53	4.29	-0.01	54801				

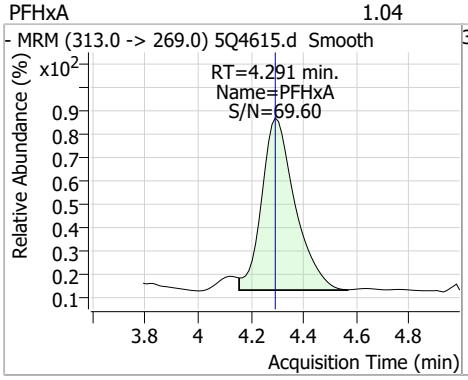


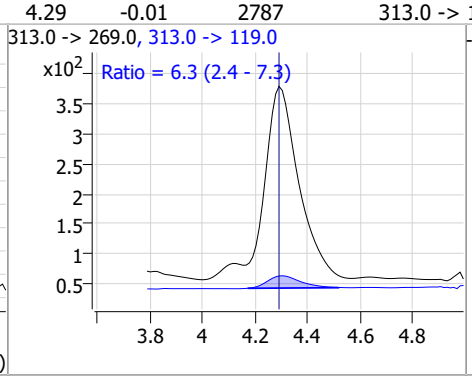


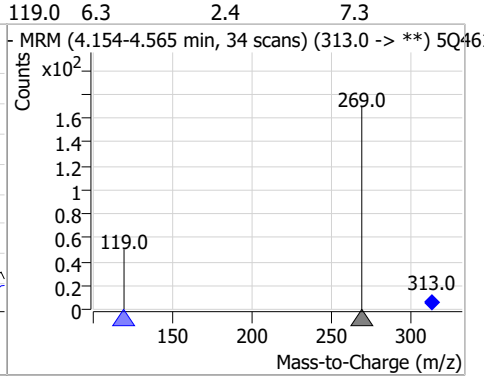


Perfluorinated Compounds by LC/MS/MS

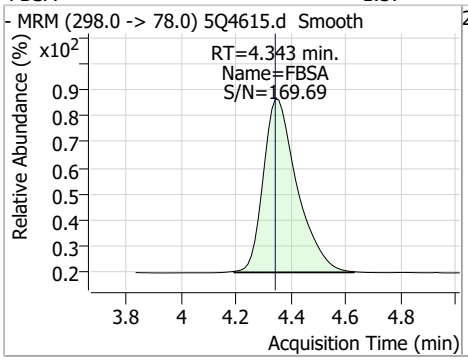
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.04	4.29	-0.01	2787	313.0 -> 119.0	6.3	2.4	7.3

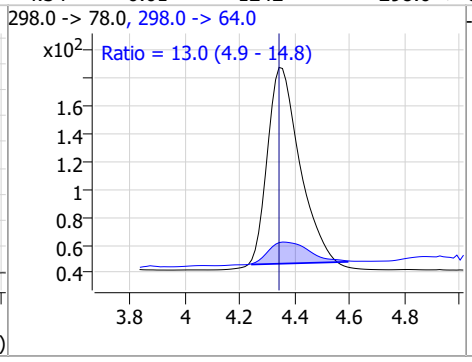


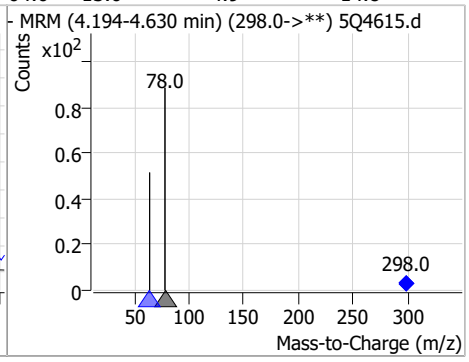




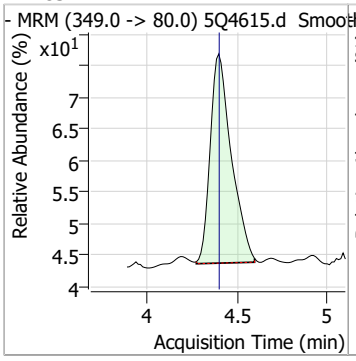
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.37	4.34	-0.01	1242	298.0 -> 64.0	13.0	4.9	14.8

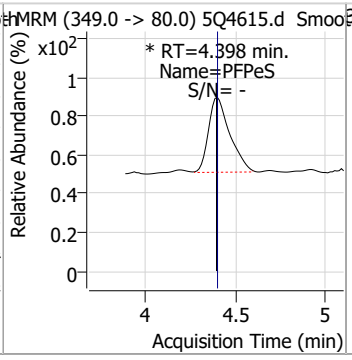


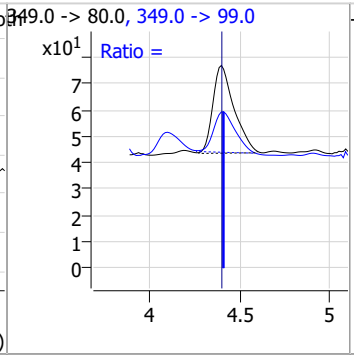


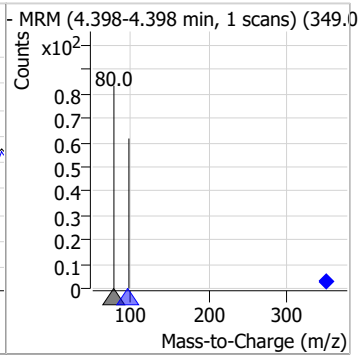


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS		0		0	349.0 -> 99.0		23.5	70.4

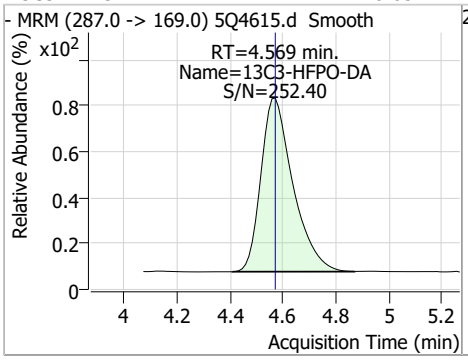


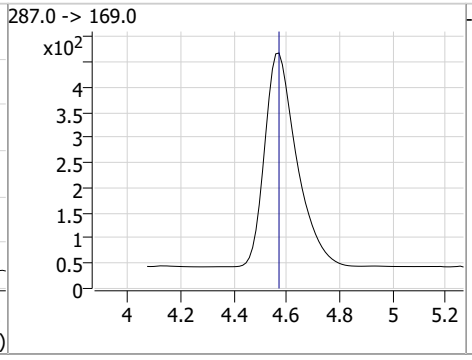


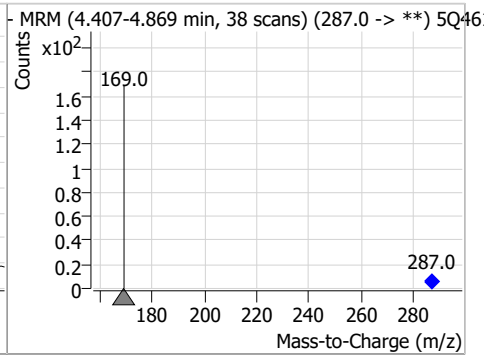




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	10.65	4.57	0.00	3576				

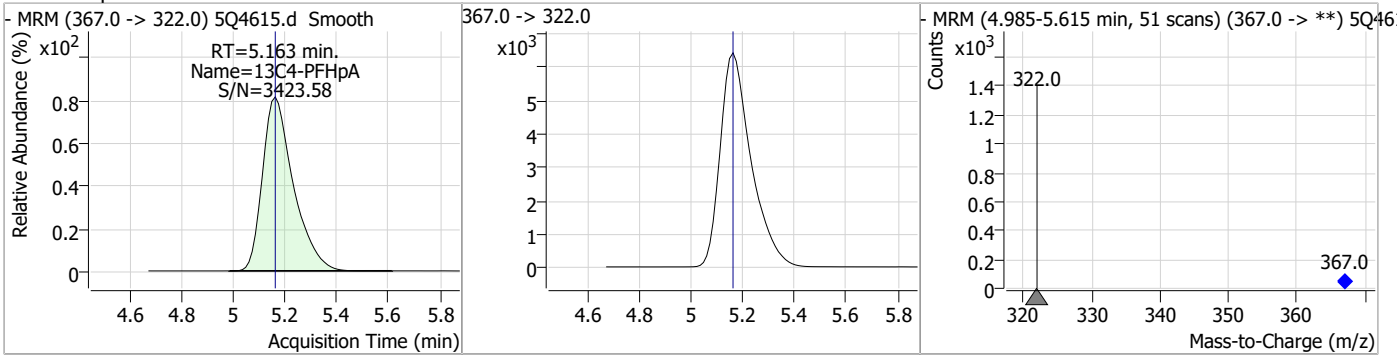




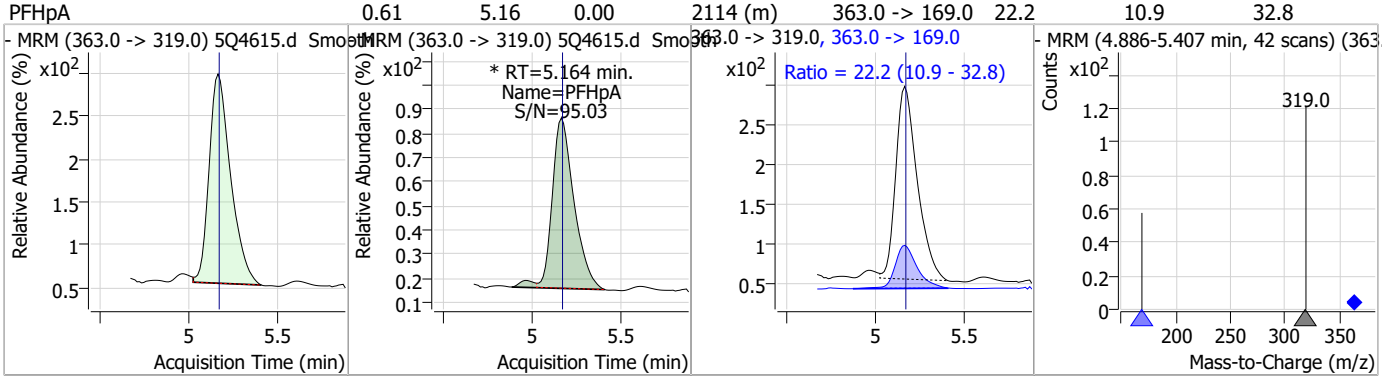


Perfluorinated Compounds by LC/MS/MS

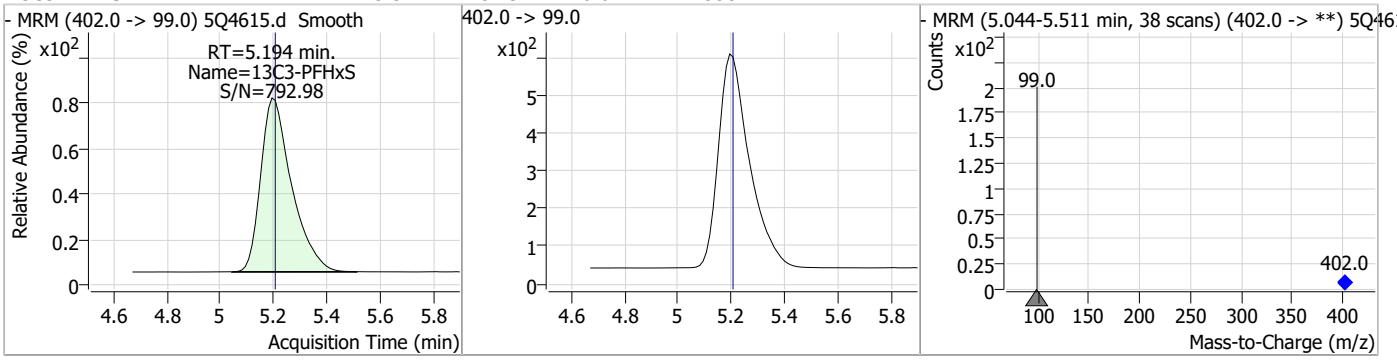
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	12.89	5.16	0.00	52625				



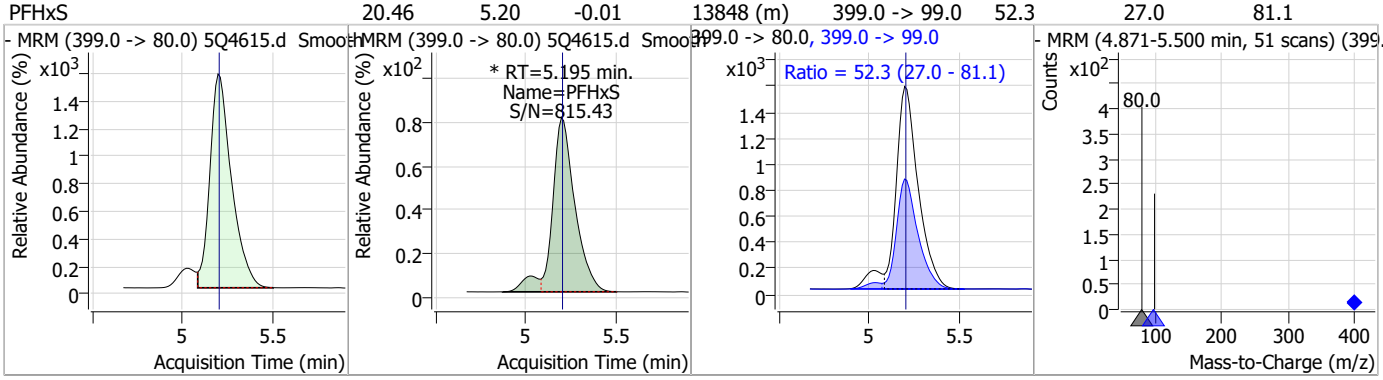
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.61	5.16	0.00	2114 (m)	363.0 -> 169.0	22.2	10.9	32.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	13.37	5.19	-0.01	4558				

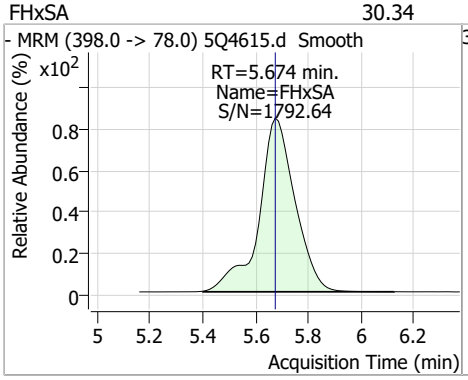


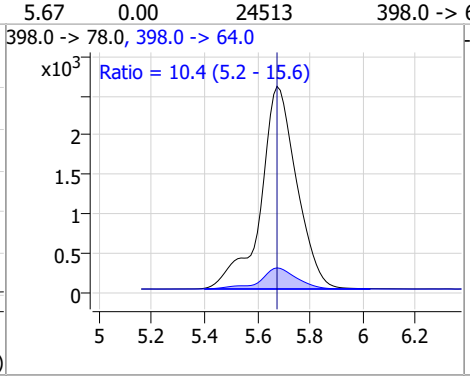
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.46	5.20	-0.01	13848 (m)	399.0 -> 99.0	52.3	27.0	81.1

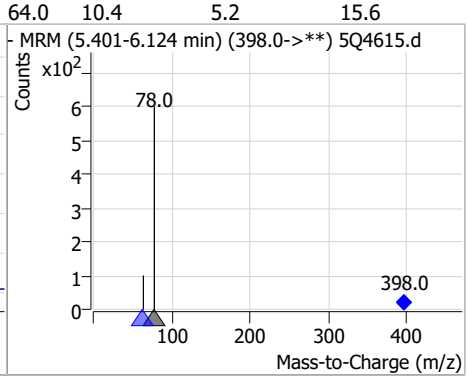


Perfluorinated Compounds by LC/MS/MS

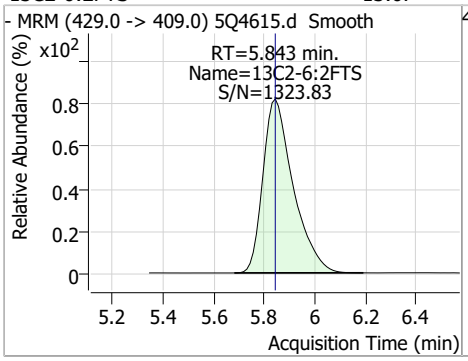
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	30.34	5.67	0.00	24513	398.0 -> 64.0	10.4	5.2	15.6

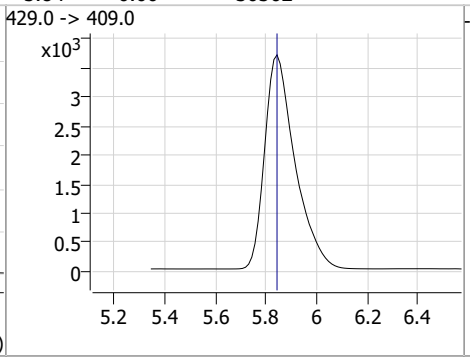


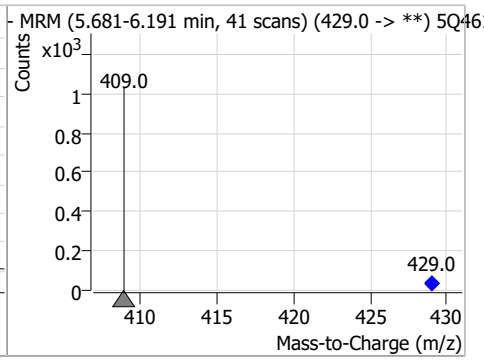




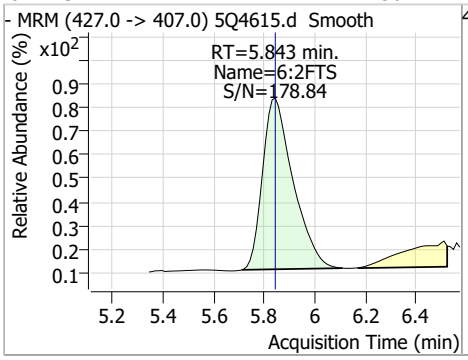
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	13.67	5.84	0.00	30562				

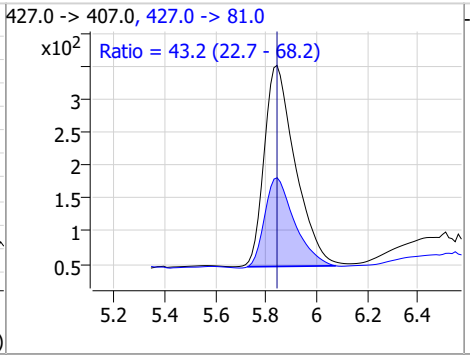


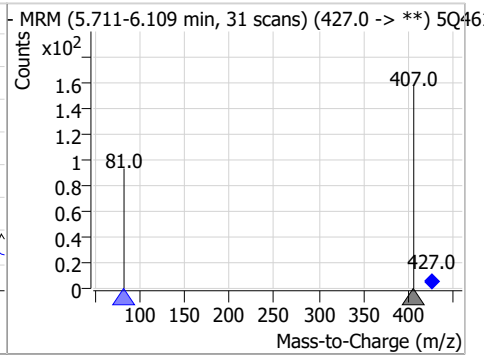




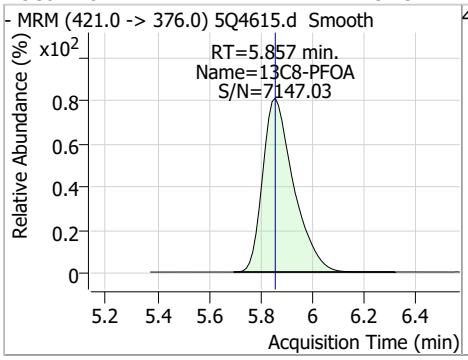
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.56	5.84	0.00	2535	427.0 -> 81.0	43.2	22.7	68.2

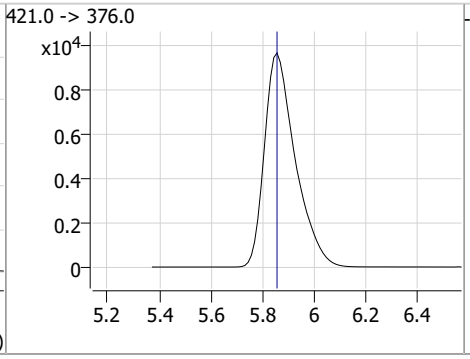


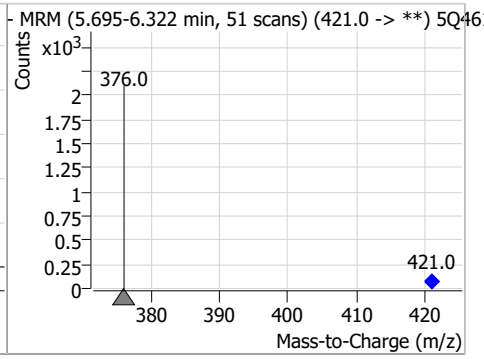




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	13.13	5.86	0.00	79435				

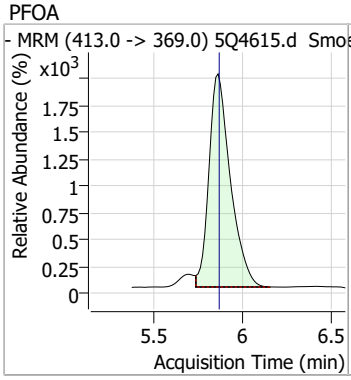


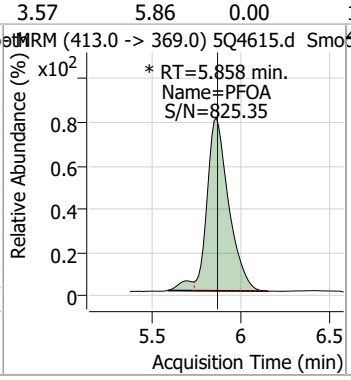


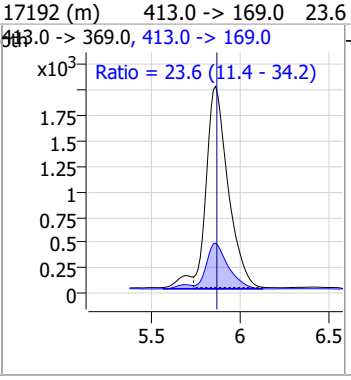


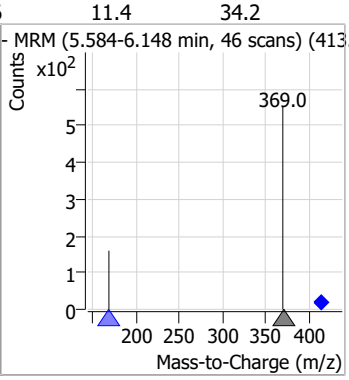
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	3.57	5.86	0.00	17192 (m)	413.0 -> 169.0	23.6	11.4	34.2

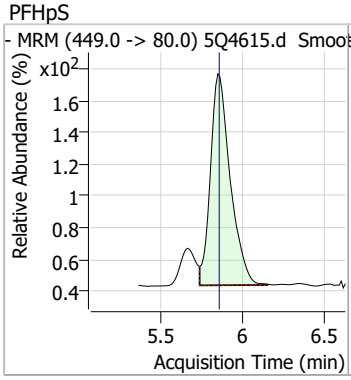


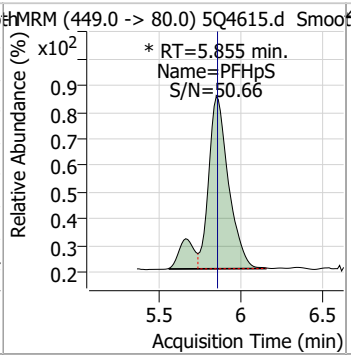


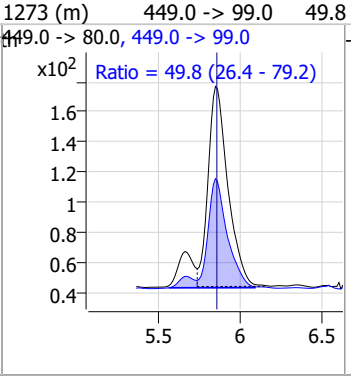


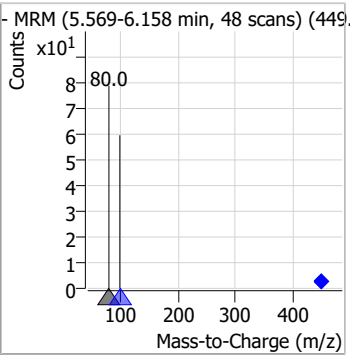


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.05	5.85	-0.01	1273 (m)	449.0 -> 99.0	49.8	26.4	79.2

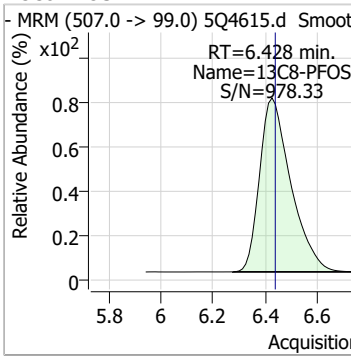


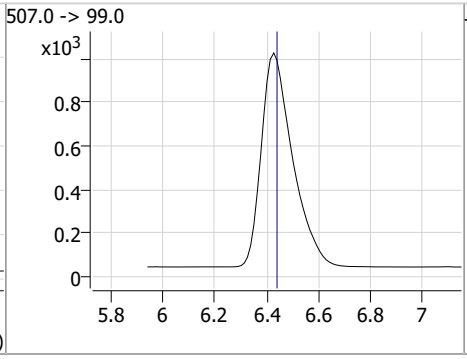


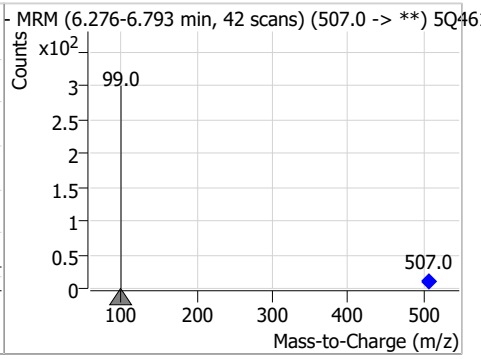




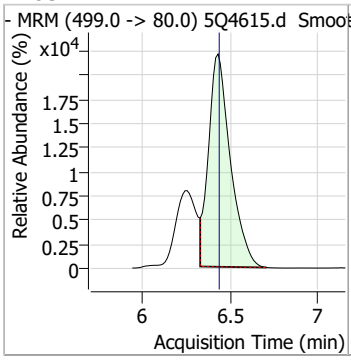
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	12.67	6.43	-0.01	8275				

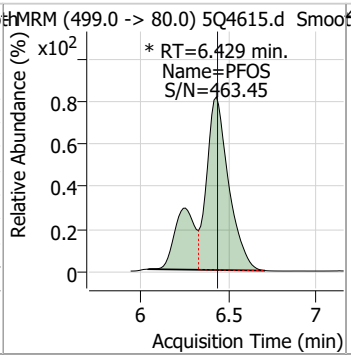


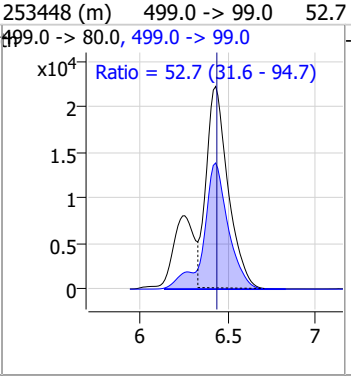


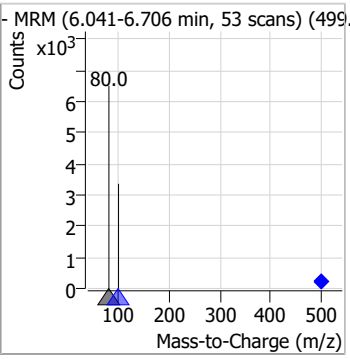


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	347.75	6.43	-0.01	253448 (m)	499.0 -> 99.0	52.7	31.6	94.7



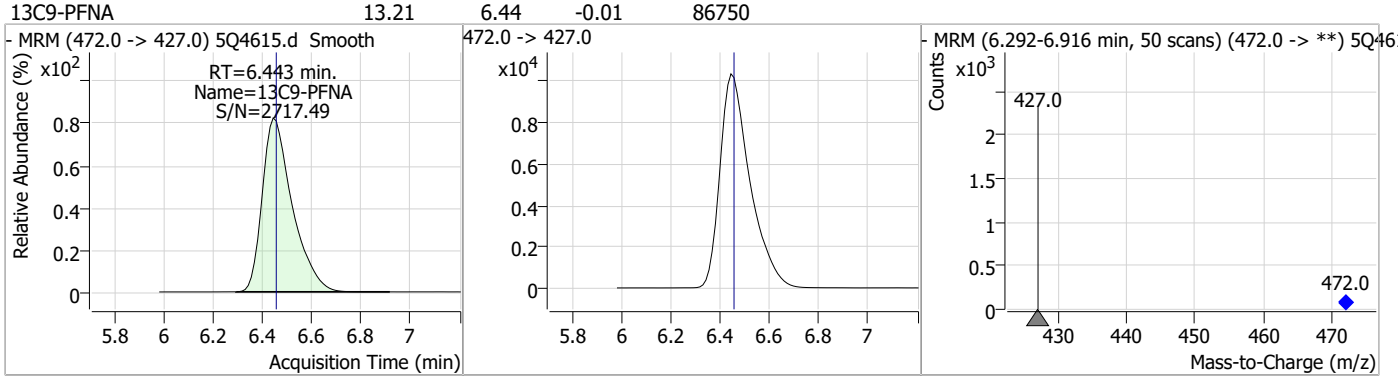




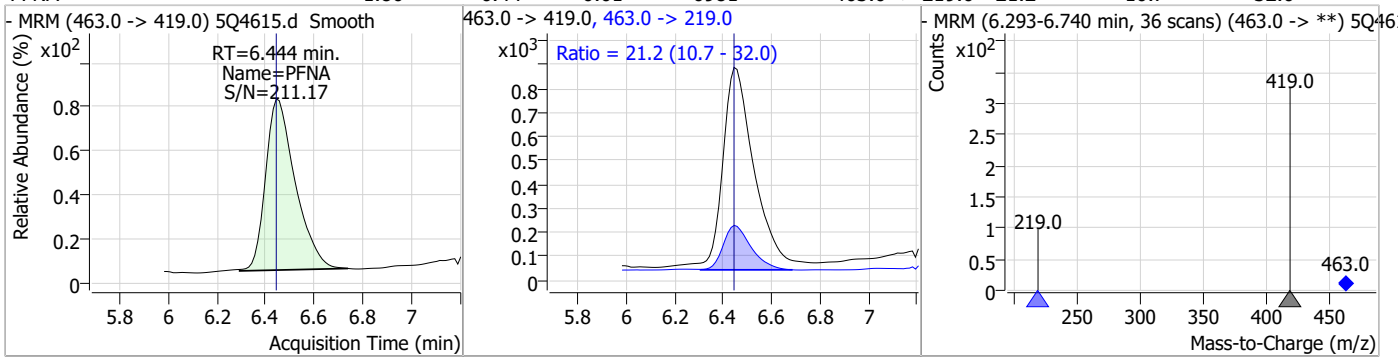


Perfluorinated Compounds by LC/MS/MS

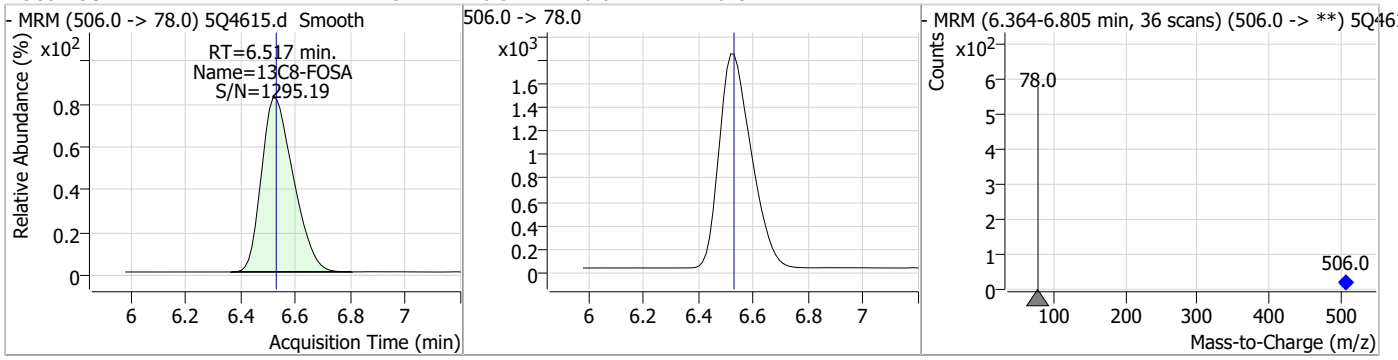
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	13.21	6.44	-0.01	86750				



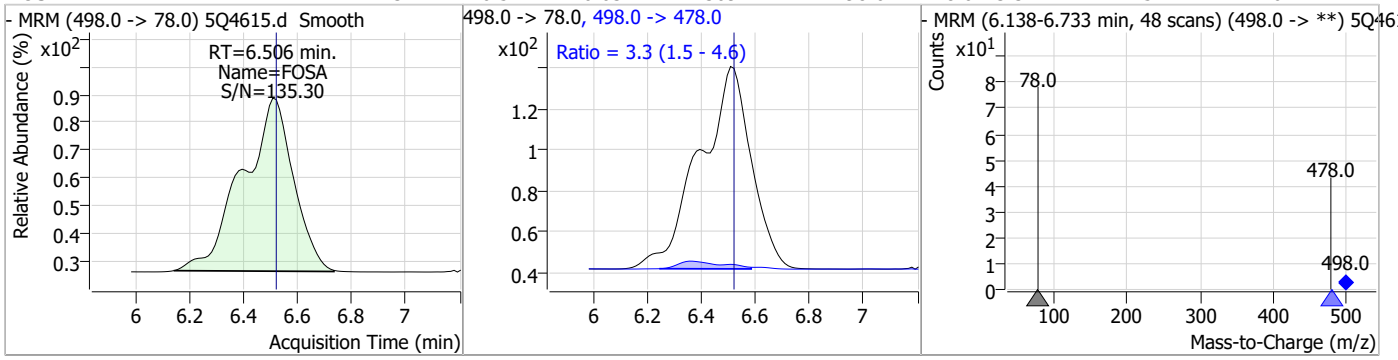
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.80	6.44	-0.01	6981	463.0 -> 219.0	21.2	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	12.94	6.52	-0.01	14679				

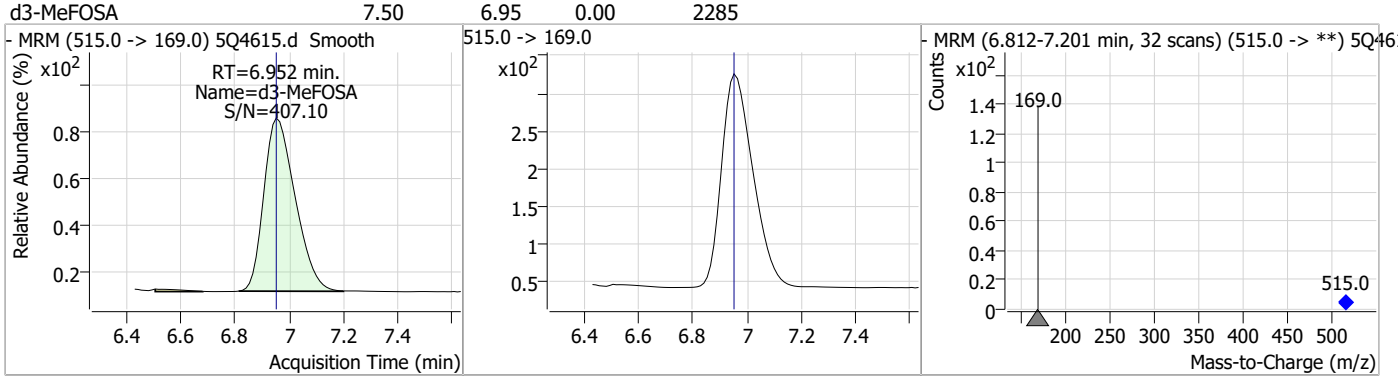


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.73	6.51	-0.03	1309	498.0 -> 478.0	3.3	1.5	4.6

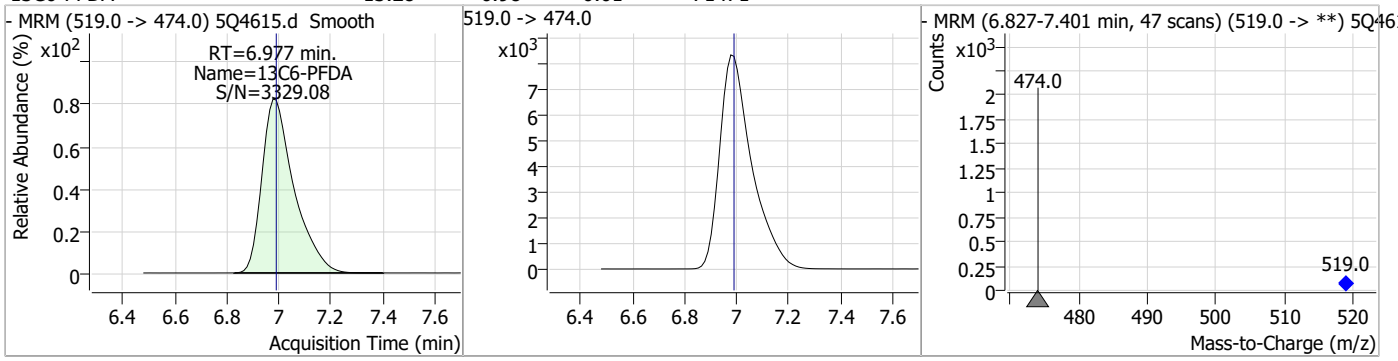


Perfluorinated Compounds by LC/MS/MS

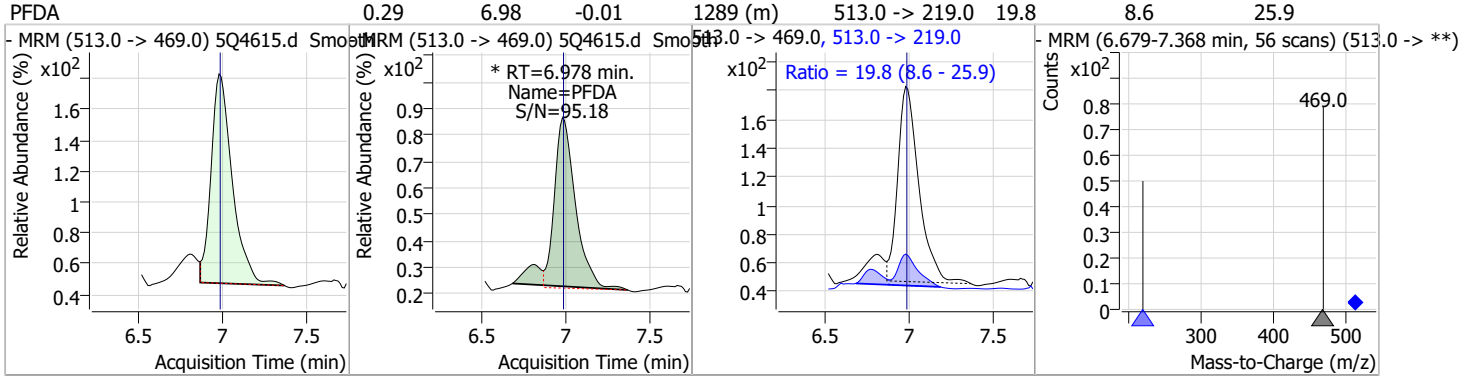
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	7.50	6.95	0.00	2285				



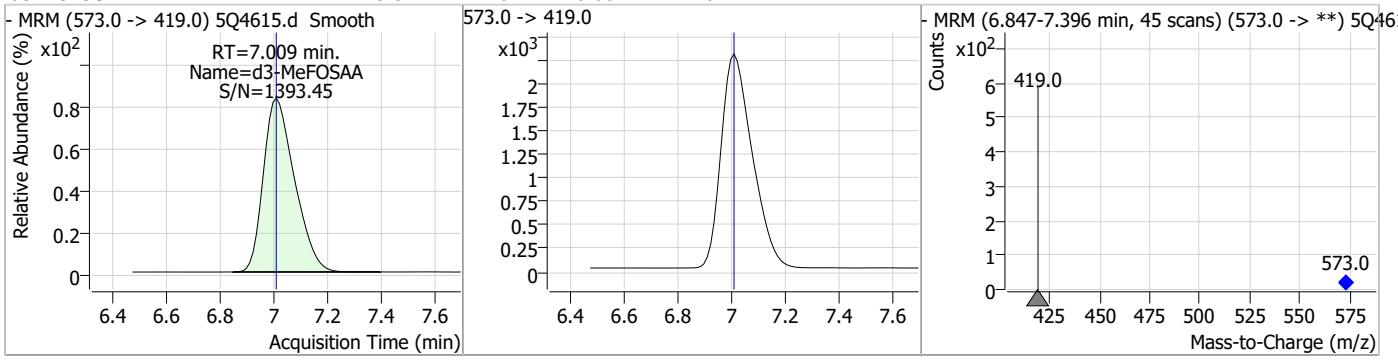
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	13.28	6.98	-0.01	71471				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.29	6.98	-0.01	1289 (m)	513.0 -> 219.0	19.8	8.6	25.9

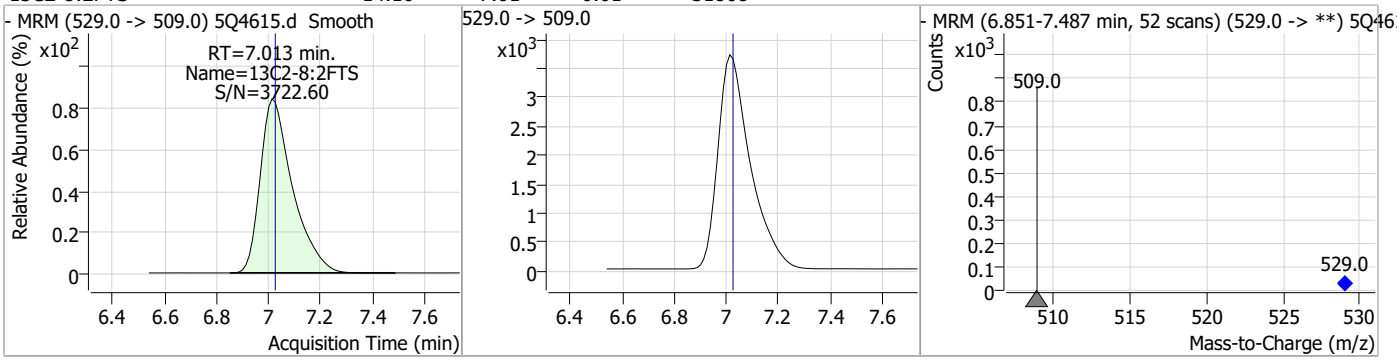


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.81	7.01	0.00	18277				

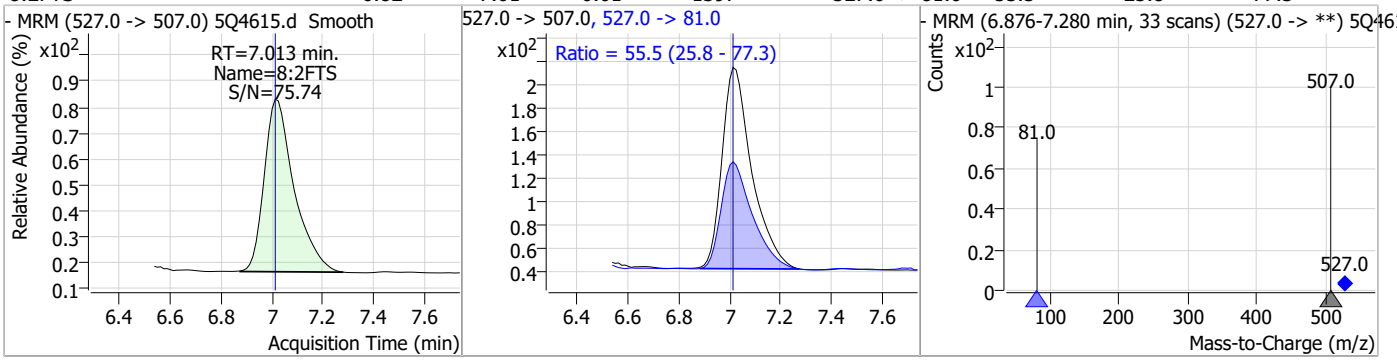


Perfluorinated Compounds by LC/MS/MS

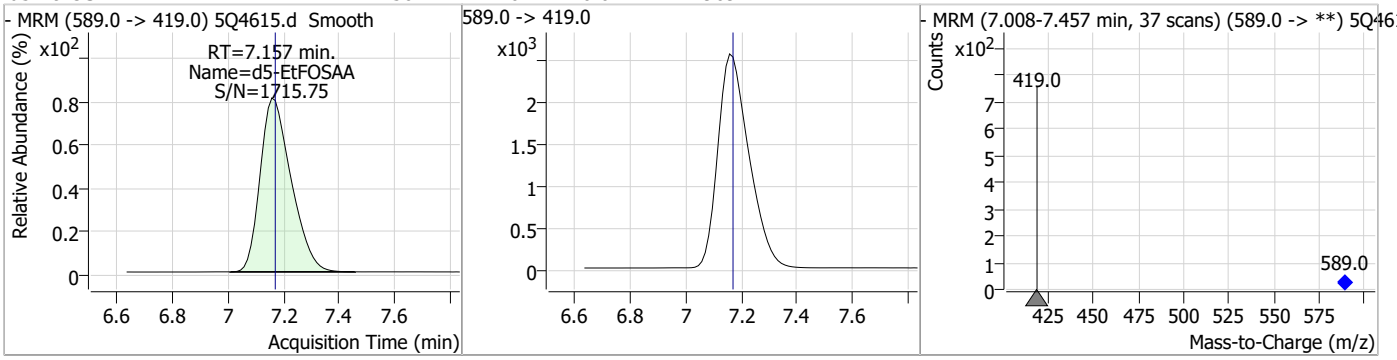
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	14.16	7.01	-0.01	31808				



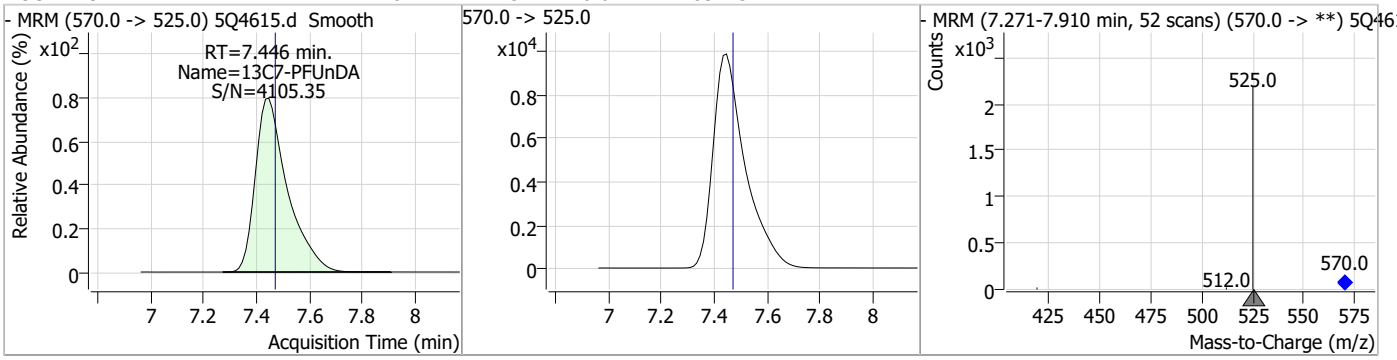
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.82	7.01	-0.01	1397	527.0 -> 81.0	55.5	25.8	77.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.56	7.16	-0.01	19691				

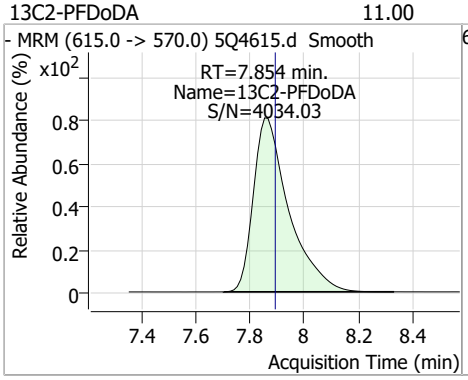


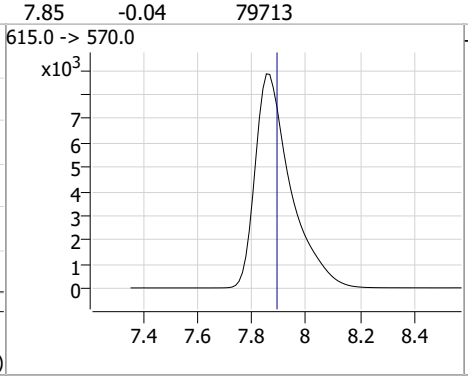
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	11.82	7.45	-0.02	83225				

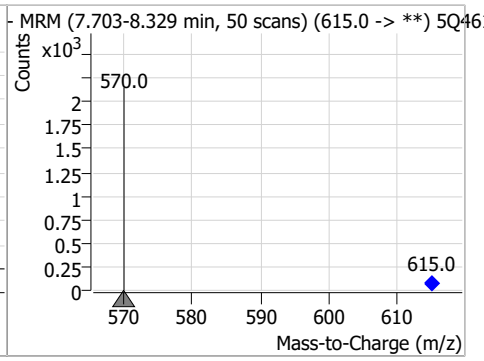


Perfluorinated Compounds by LC/MS/MS

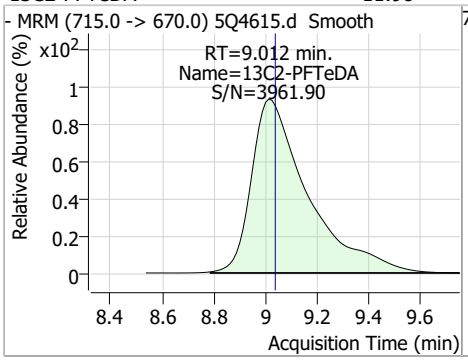
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	11.00	7.85	-0.04	79713				

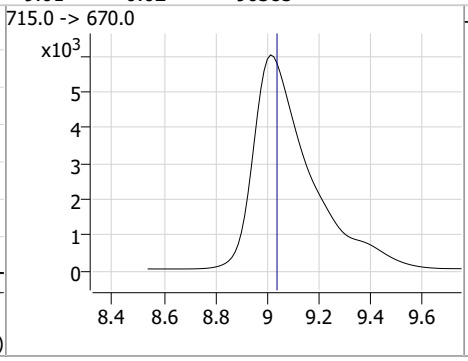


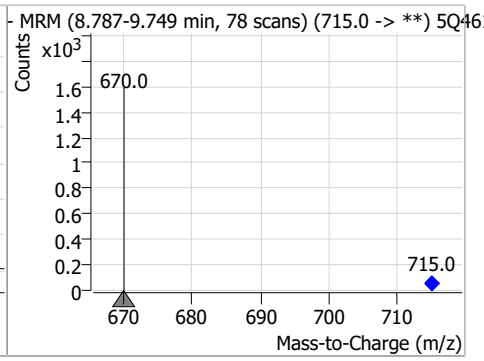




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	11.98	9.01	-0.02	90385				







Manual Integration Approval Summary

Sample Number: OP92794-DUP
Lab FileID: 5Q4615.D
Injection Time: 09/15/22 01:30
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:08 Anna Ludwig
Supervisor approved: 09/16/22 19:34 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluoroheptanoic acid	375-85-9		5.16	Split peak
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluoroheptanesulfonic acid	375-92-8		5.86	Split peak
Perfluorooctanoic acid	335-67-1		5.86	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak
Perfluorodecanoic acid	335-76-2		6.98	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65689.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 7:25:31 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

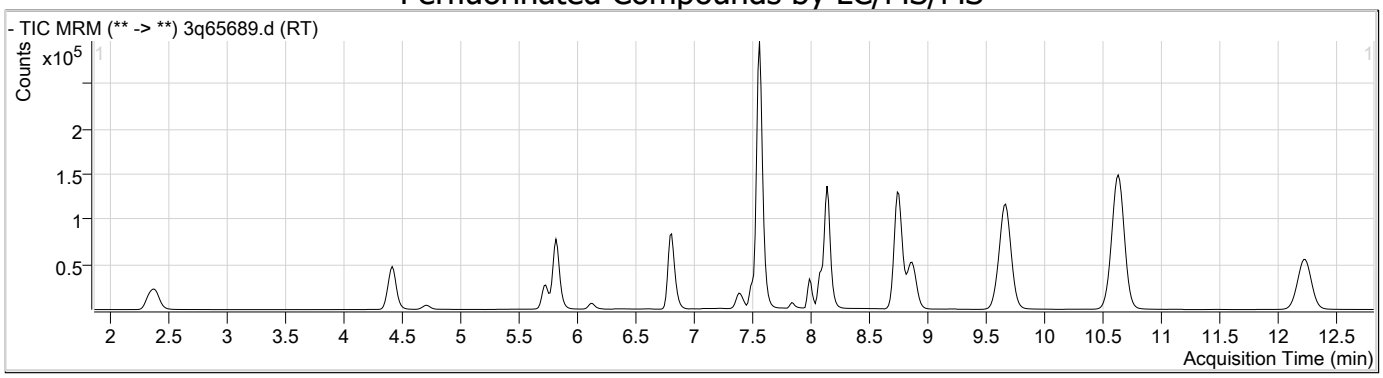
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	162371	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	238339	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	314804	20.00	µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	315749	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	424662	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	456517	20.00	µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	639812	20.00	µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	847508	20.00	µg/L	-0.013
M2-PFDoDA	10.621	615.0 -> 570.0	1125116	20.00	µg/L	-0.013
M2-PFTeDA	12.210	715.0 -> 670.0	466683	20.00	µg/L	-0.025
M8-FOSA	7.491	506.0 -> 78.0	83778	20.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	21788	20.00	µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	27021	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	40053	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	111810	20.00	µg/L	0.013
M2-6:2FTS	7.558	429.0 -> 409.0	156484	20.00	µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	278314	20.00	µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	95065	20.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	25945	20.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	18581	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	101199	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	111810	19.36	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C2-6:2FTS	7.558	429.0 -> 409.0	156484	19.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-8:2FTS	8.860	529.0 -> 509.0	278314	19.15	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-PFDoDA	10.621	615.0 -> 570.0	1125116	20.80	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-PFTeDA	12.210	715.0 -> 670.0	466683	20.60	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-PFBS	4.692	302.0 -> 99.0	21788	20.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C3-PFHxS	6.822	402.0 -> 99.0	27021	20.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFBA	2.365	217.0 -> 172.0	162371	20.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C4-PFHpA	6.793	367.0 -> 322.0	315749	20.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C5-PFHxA	5.813	318.0 -> 273.0	314804	20.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C5-PFPeA	4.411	268.0 -> 223.0	238339	20.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C6-PFDA	8.739	519.0 -> 474.0	639812	20.14	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

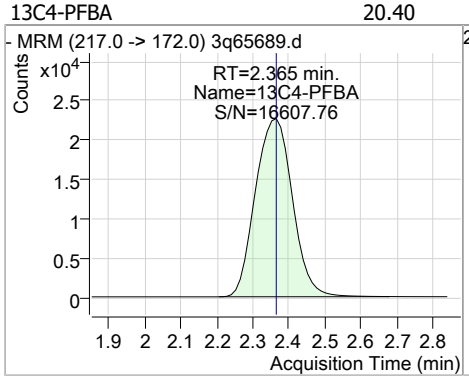
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
13C7-PFUnDA	9.664	570.0 -> 525.0	847508	20.53	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
13C8-FOSA	7.491	506.0 -> 78.0	83778	22.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%			
13C8-PFOA	7.560	421.0 -> 376.0	424662	21.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%			
13C8-PFOS	8.111	507.0 -> 99.0	40053	20.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
13C9-PFNA	8.138	472.0 -> 427.0	456517	20.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
d3-MeFOSAA	7.978	573.0 -> 419.0	95065	21.14	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	25945	20.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
d3-MeFOSA	7.829	515.0 -> 169.0	18581	20.99	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%			
d5-EtFOSAA	8.065	589.0 -> 419.0	101209	21.62	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	8.078	584.0 -> 419.0	0	0.00	µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.794	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.561	413.0 -> 369.0	462246	17.83	µg/L	m	97
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

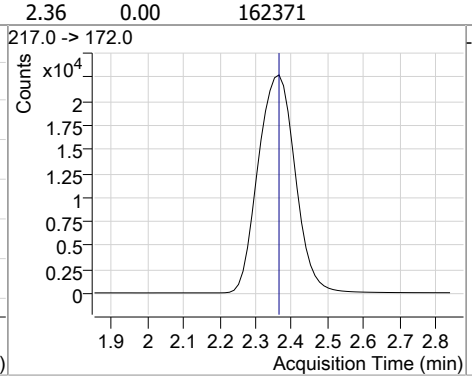
 # = Qualifier out of range, m = manually integrated, + = Area summed

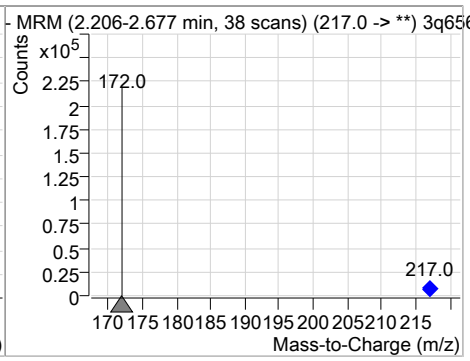
Perfluorinated Compounds by LC/MS/MS



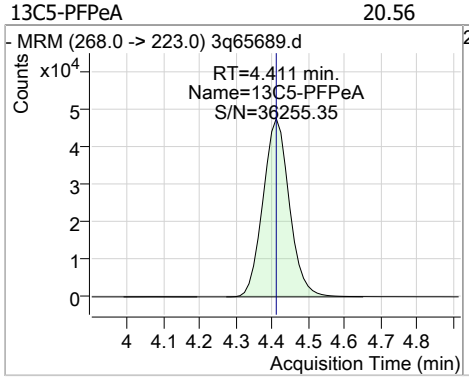
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.40	2.36	0.00	162371				

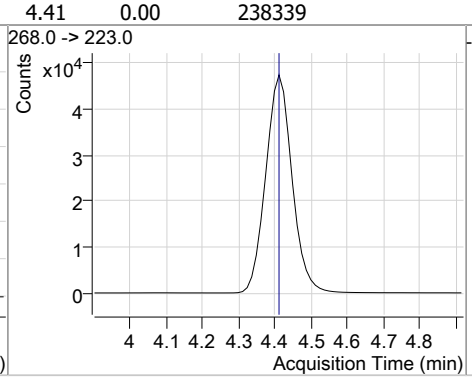


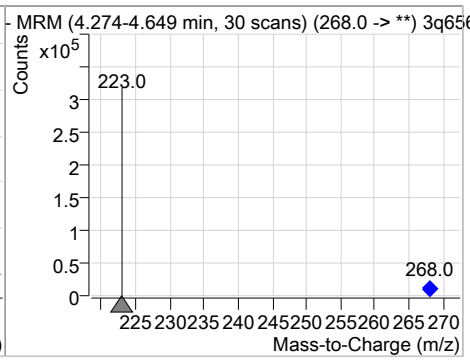




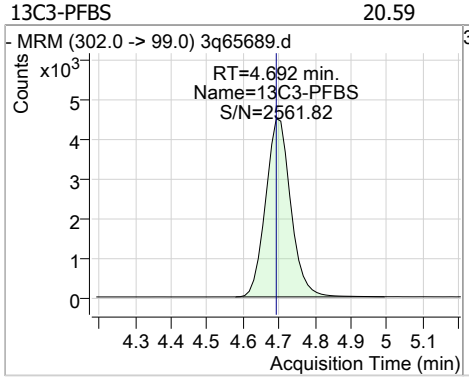
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.56	4.41	0.00	238339				

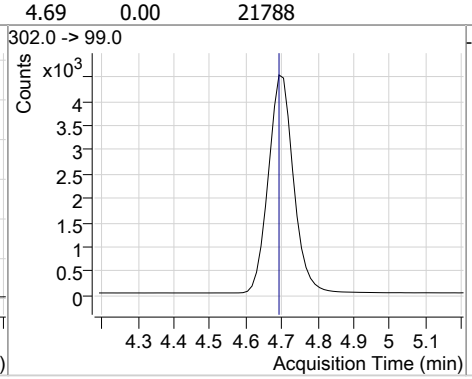


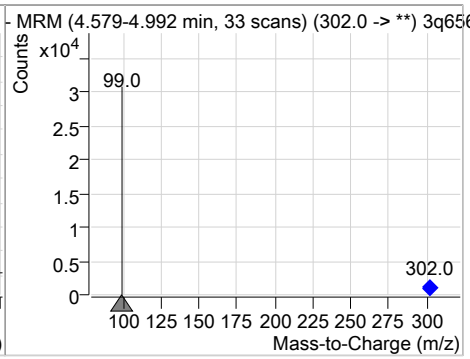




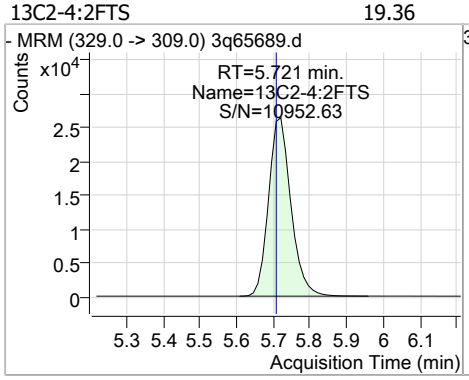
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.59	4.69	0.00	21788				

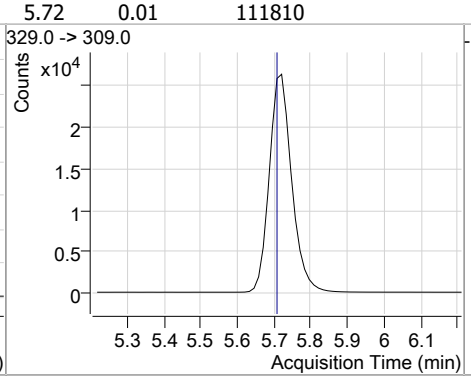


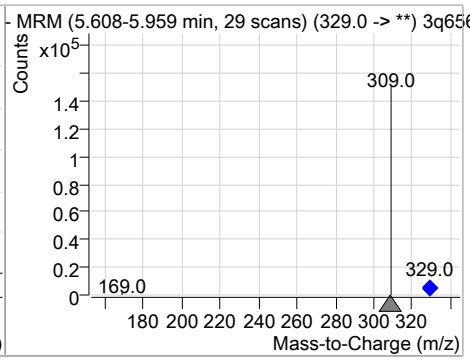




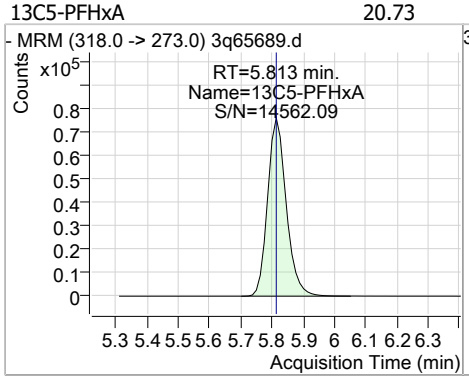
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.36	5.72	0.01	111810				

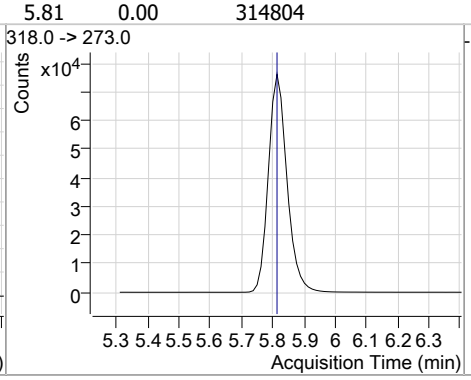


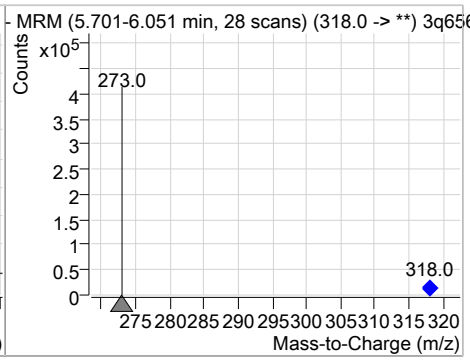




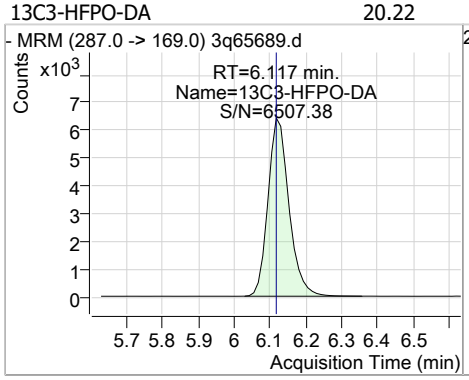
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.73	5.81	0.00	314804				

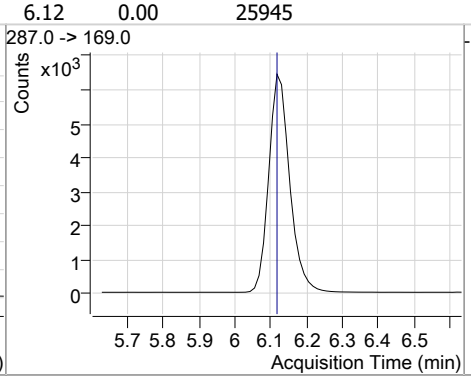


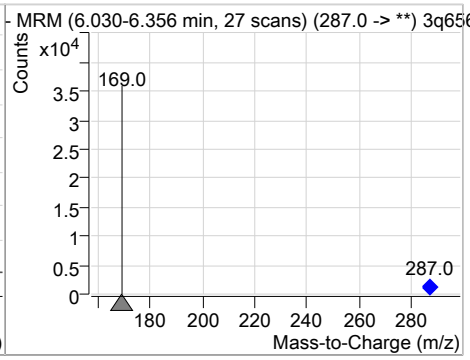




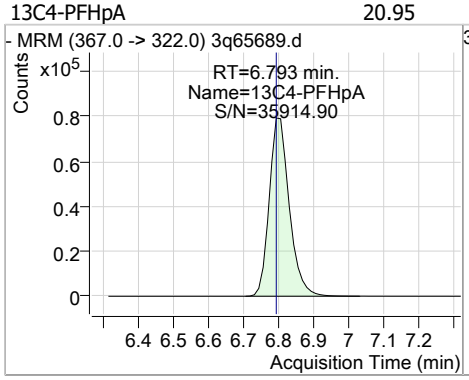
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.22	6.12	0.00	25945				

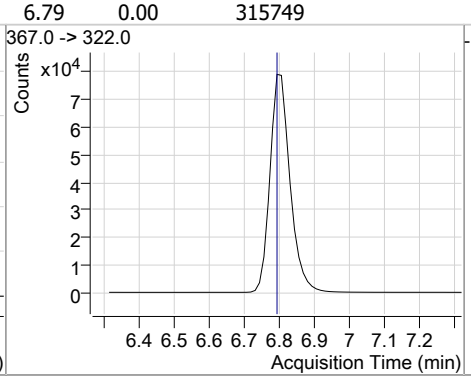


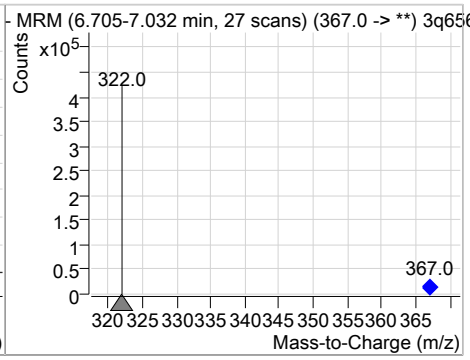




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.95	6.79	0.00	315749				

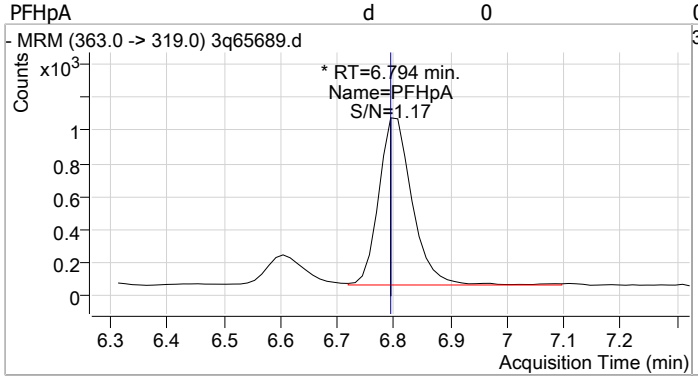


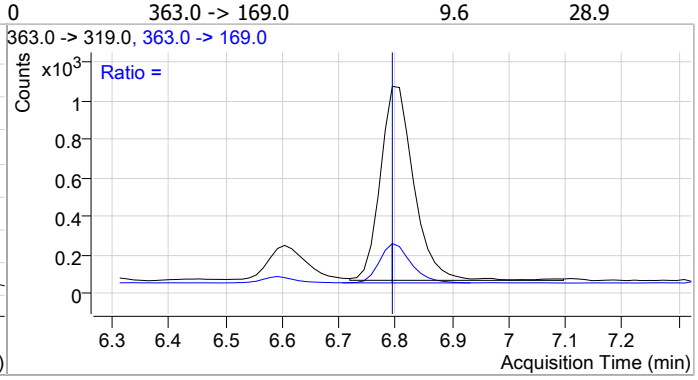




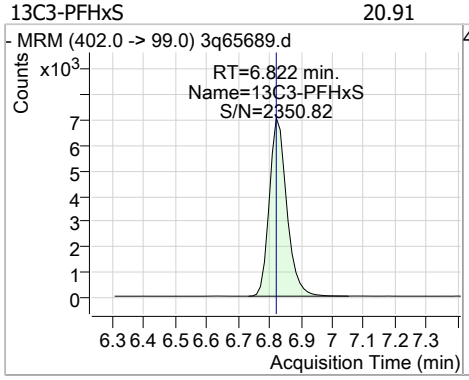
Perfluorinated Compounds by LC/MS/MS

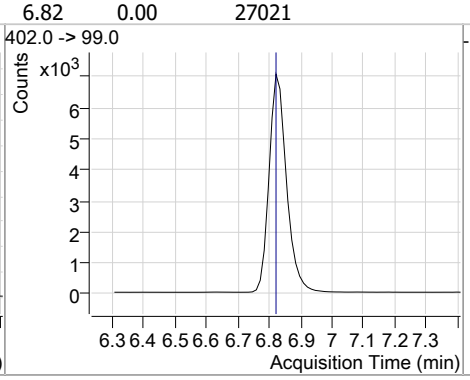
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	d	0		0	363.0 -> 169.0		9.6	28.9

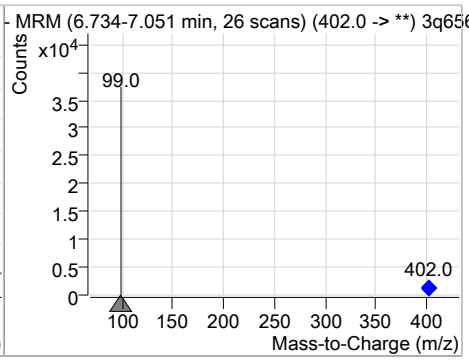




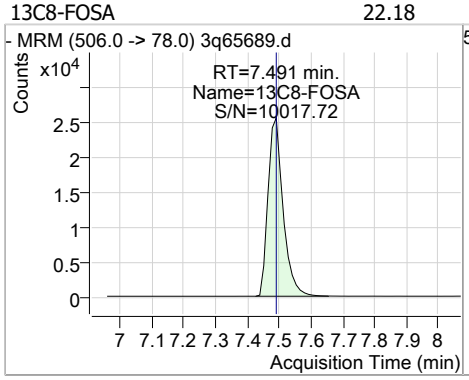
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.91	6.82	0.00	27021				

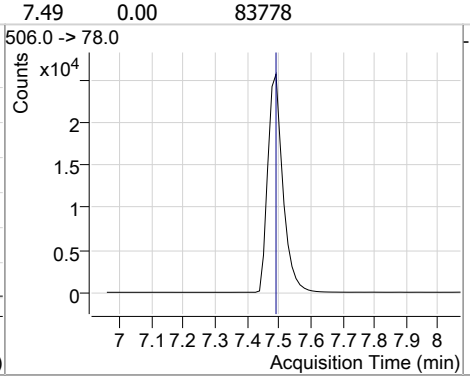


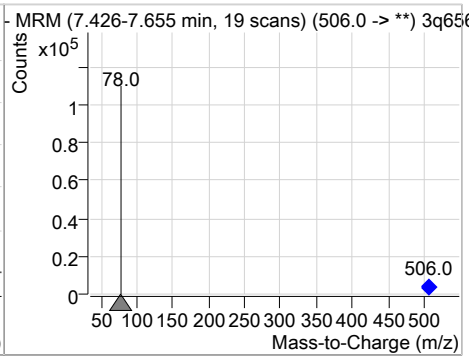




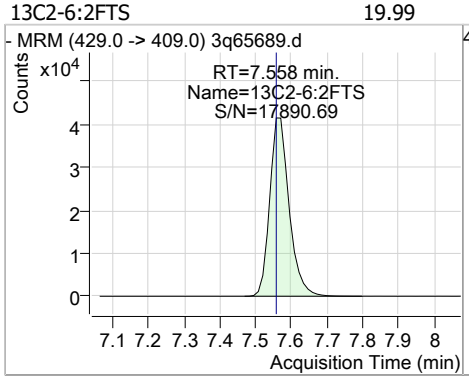
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.18	7.49	0.00	83778				

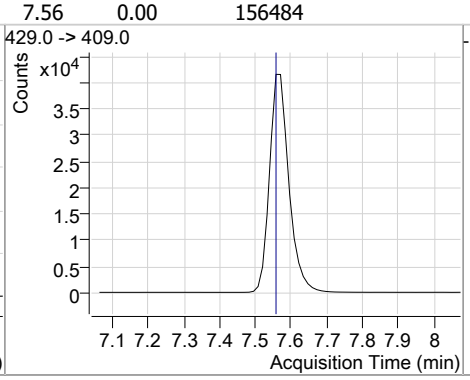


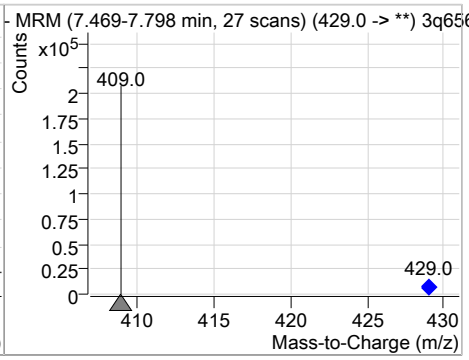




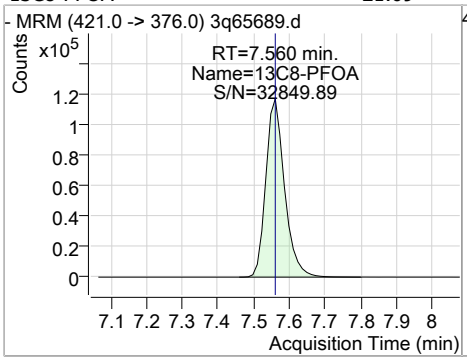
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.99	7.56	0.00	156484				

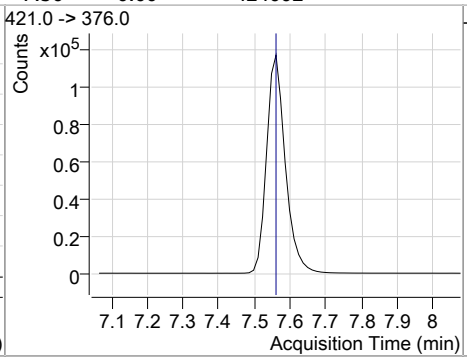


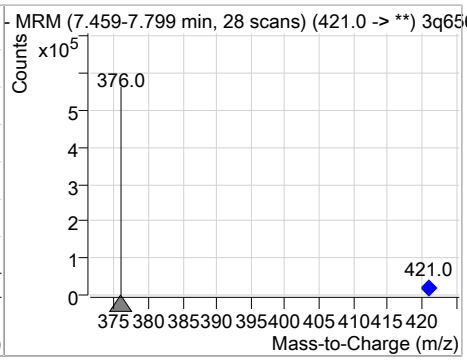




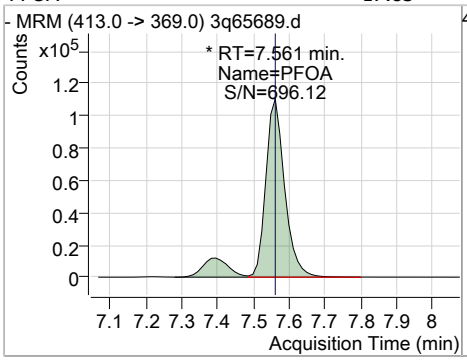
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.09	7.56	0.00	424662				

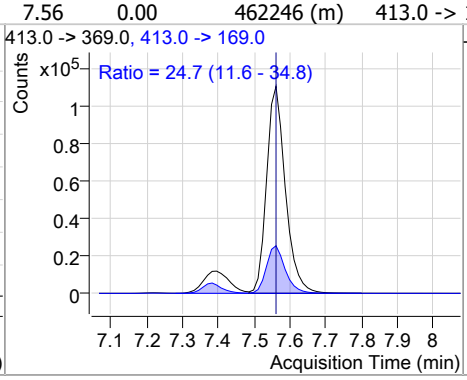


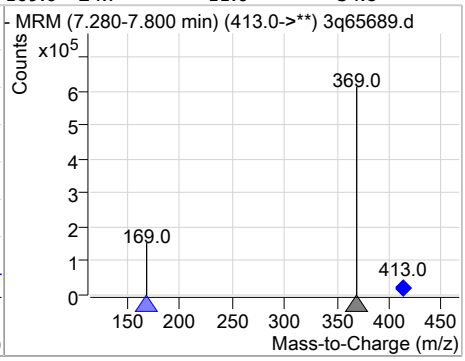




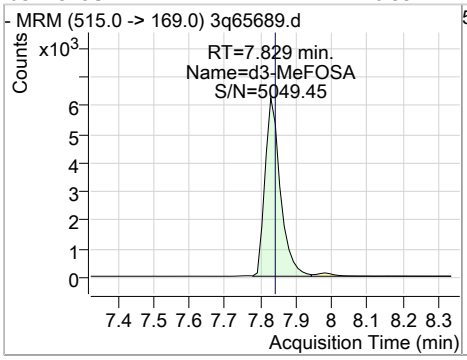
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.83	7.56	0.00	462246 (m)	413.0 -> 169.0	24.7	11.6	34.8

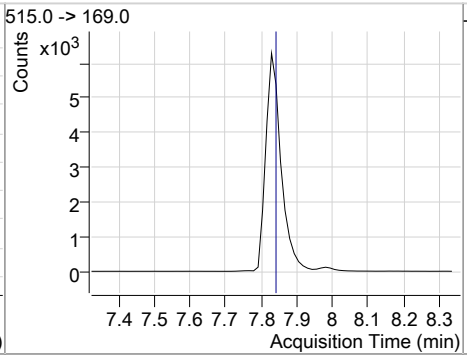


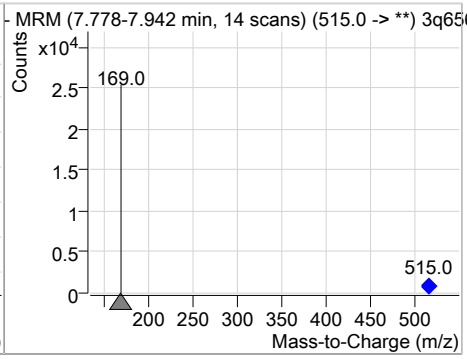




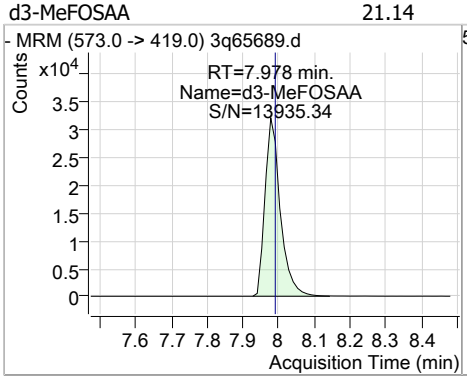
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.99	7.83	-0.01	18581				

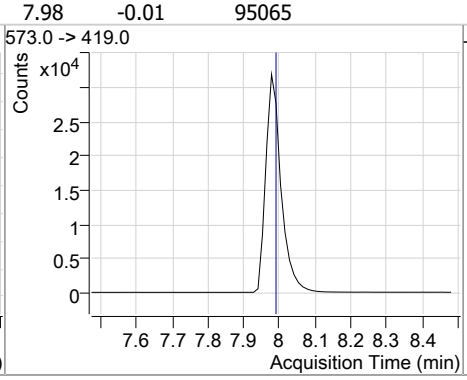


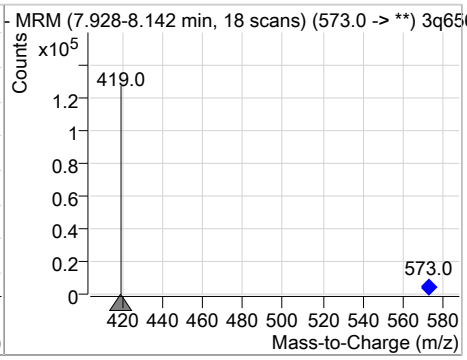




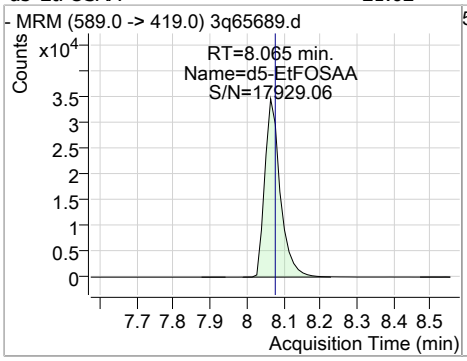
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.14	7.98	-0.01	95065				

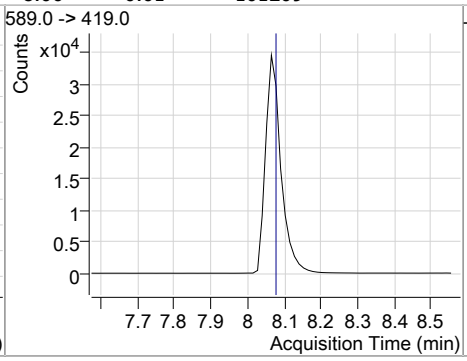


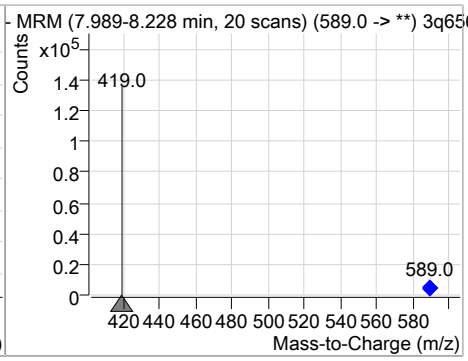




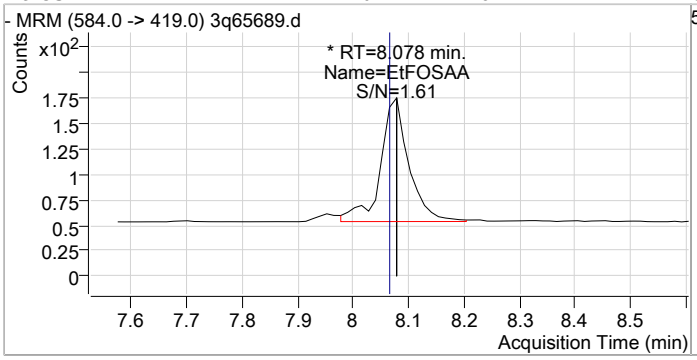
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.62	8.06	-0.01	101209				

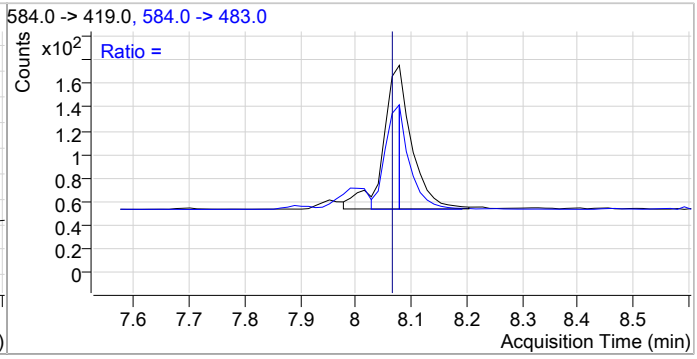




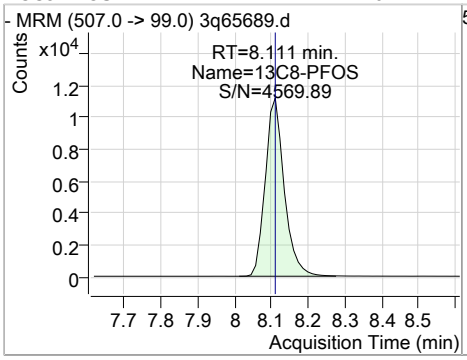


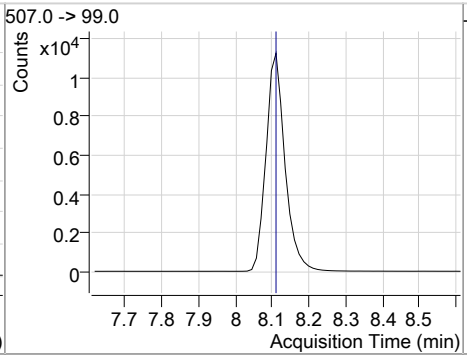
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	d	0		0	584.0 -> 483.0		32.3	97.0

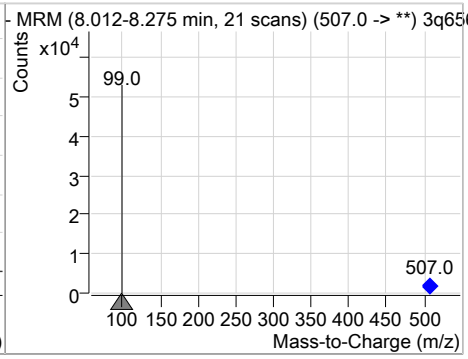




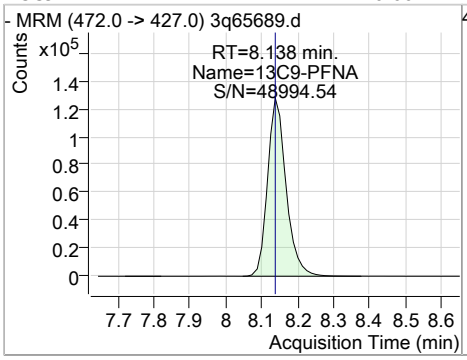
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.41	8.11	0.00	40053				

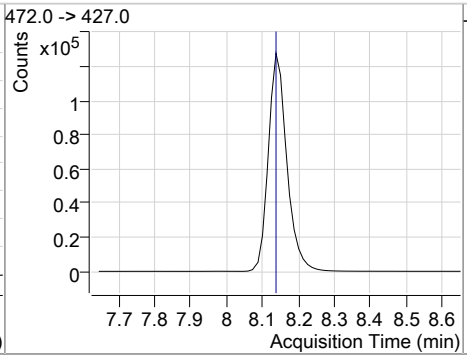


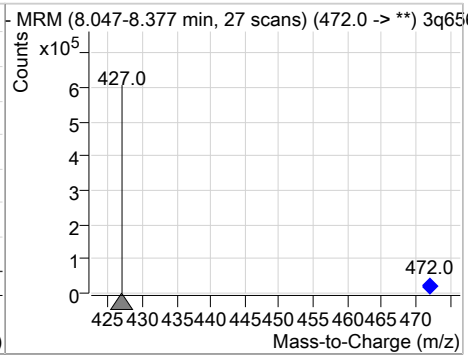




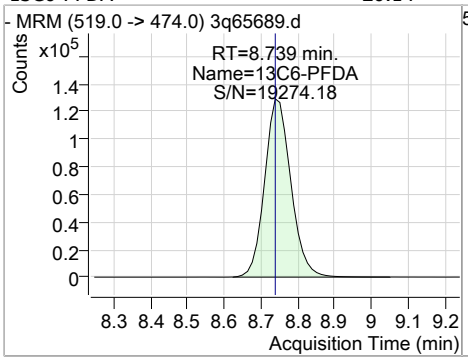
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.66	8.14	0.00	456517				

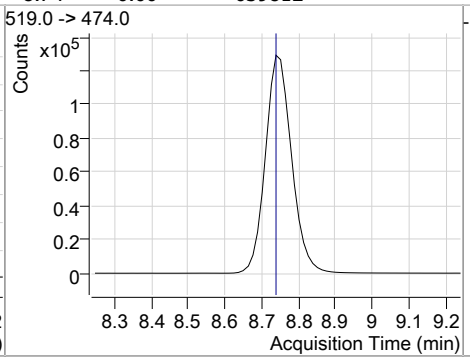


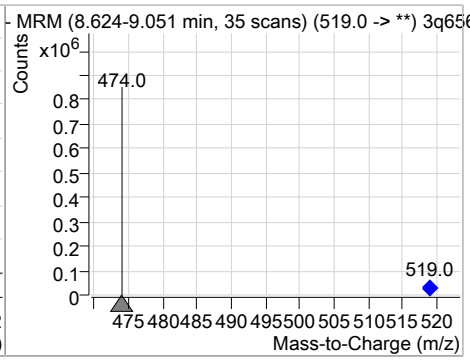




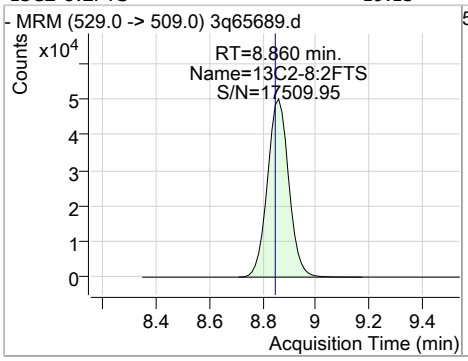
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.14	8.74	0.00	639812				

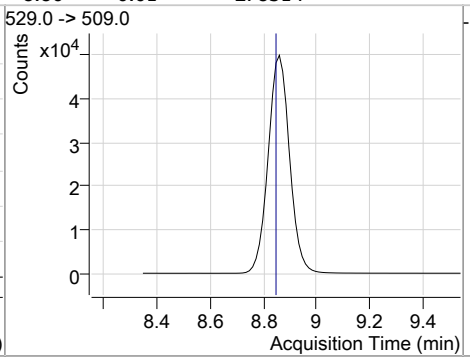


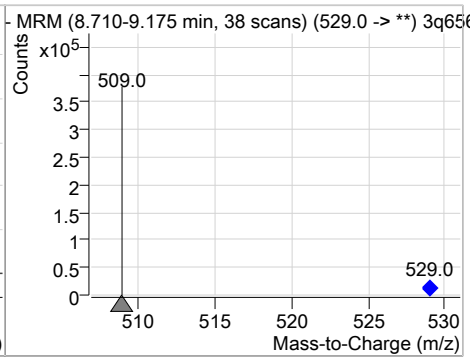




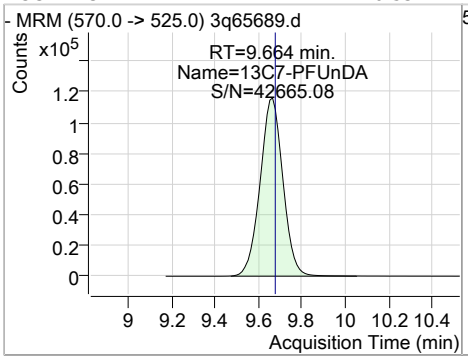
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.15	8.86	0.01	278314				

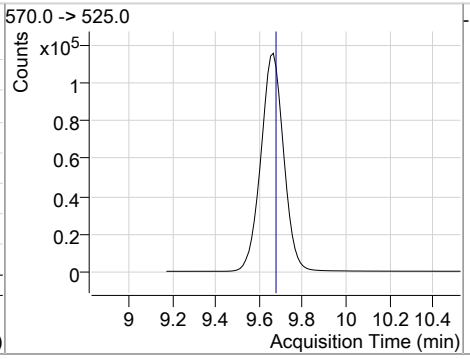


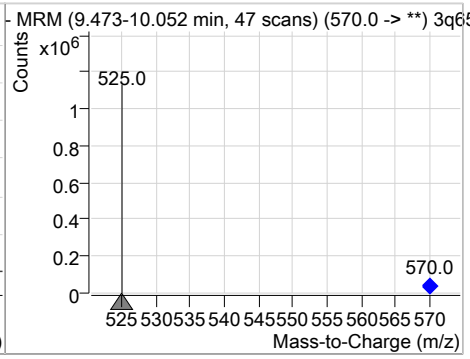




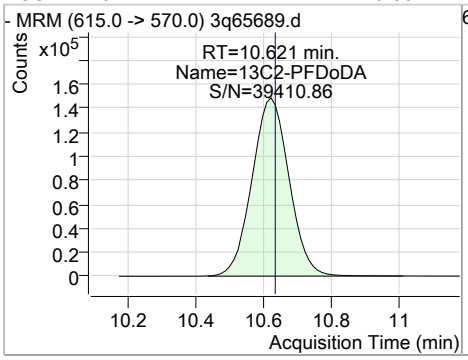
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.53	9.66	-0.01	847508				

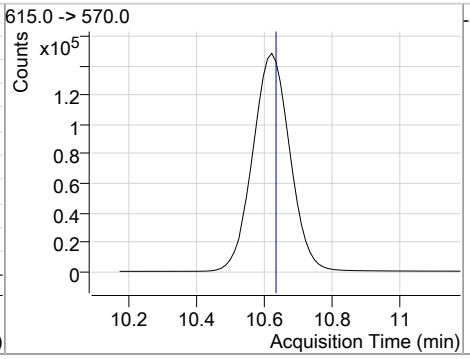


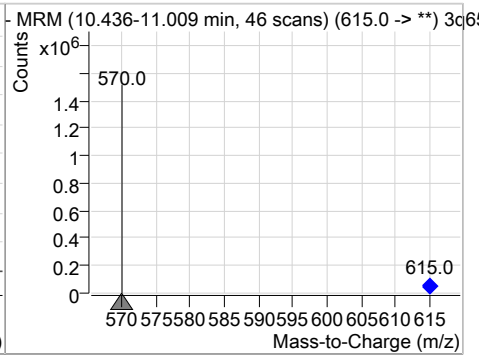




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.80	10.62	-0.01	1125116				

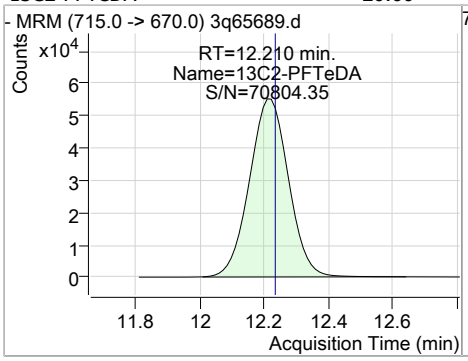


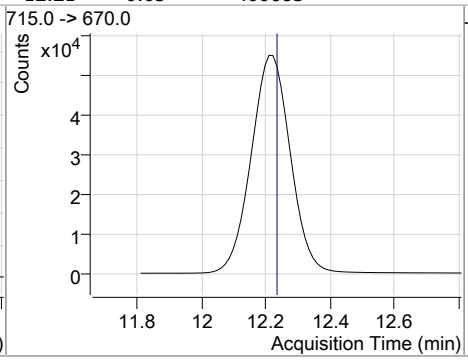


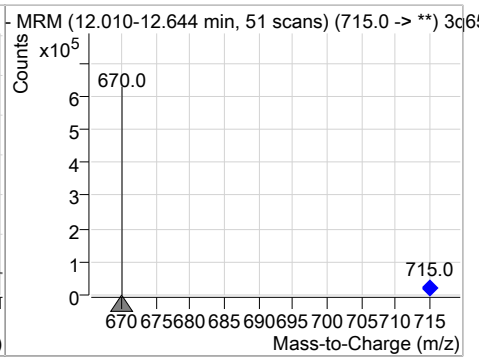


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.60	12.21	-0.03	466683				







7.6.1

7

Manual Integration Approval Summary

Sample Number: S3Q898-RT
Lab FileID: 3Q65689.D
Injection Time: 09/13/22 19:25
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.56	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65836.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:44:28 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

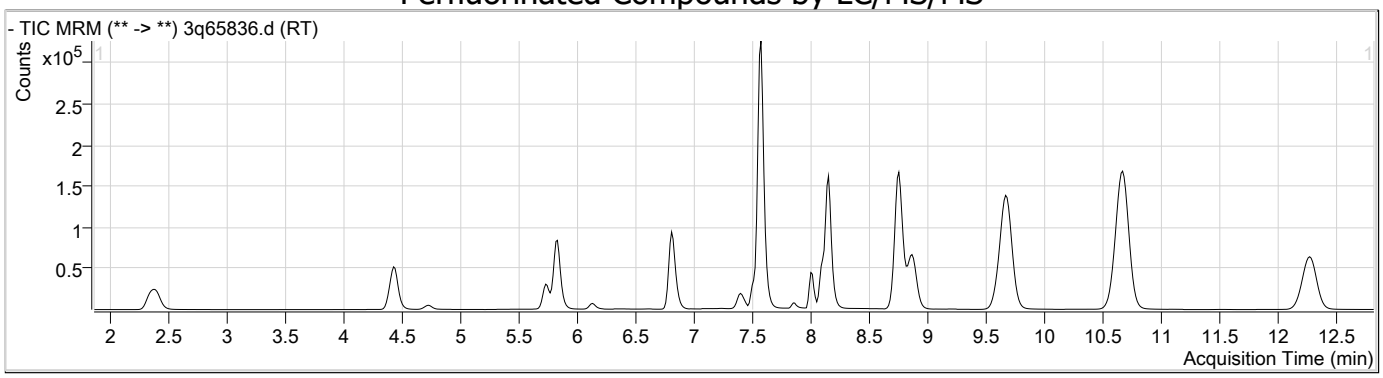
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	181649	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	266445	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	352330	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	350665	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	484566	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	545839	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	812828	20.00	µg/L	0.013
M7-PFUnDA	9.664	570.0 -> 525.0	1050119	20.00	µg/L	-0.013
M2-PFDoDA	10.659	615.0 -> 570.0	1351347	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	558101	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	91586	20.00	µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	24094	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	29590	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	45324	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	126852	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	184288	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	353194	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	132349	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	27721	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	19840	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	131164	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	126852	20.67	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-6:2FTS	7.571	429.0 -> 409.0	184288	21.36	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C2-8:2FTS	8.860	529.0 -> 509.0	353194	20.63	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1351347	22.25	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C2-PFTeDA	12.260	715.0 -> 670.0	558101	21.86	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C3-PFBS	4.717	302.0 -> 99.0	24094	21.77	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C3-PFHxS	6.834	402.0 -> 99.0	29590	21.97	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C4-PFBA	2.365	217.0 -> 172.0	181649	21.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C4-PFHpA	6.805	367.0 -> 322.0	350665	22.23	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C5-PFHxA	5.826	318.0 -> 273.0	352330	21.97	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C5-PFPeA	4.424	268.0 -> 223.0	266445	22.03	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
13C6-PFDA	8.751	519.0 -> 474.0	812828	22.36	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

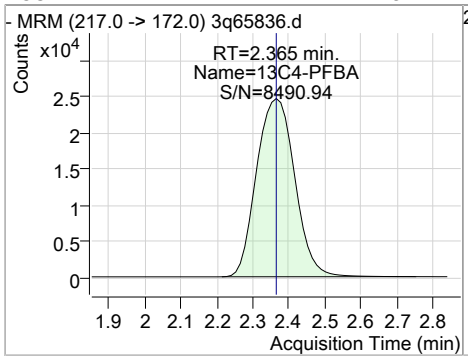
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.8%			
13C7-PFUnDA	9.664	570.0 -> 525.0	1050119	22.05	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%			
13C8-FOSA	7.503	506.0 -> 78.0	91586	25.70	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.5%			
13C8-PFOA	7.573	421.0 -> 376.0	484566	22.78	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%			
13C8-PFOS	8.111	507.0 -> 99.0	45324	21.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%			
13C9-PFNA	8.150	472.0 -> 427.0	545839	22.88	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%			
d3-MeFOSAA	7.991	573.0 -> 419.0	132349	23.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	27671	21.43	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%			
d3-MeFOSA	7.841	515.0 -> 169.0	19840	24.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.9%			
d5-EtFOSAA	8.077	589.0 -> 419.0	131285	23.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	8.091	584.0 -> 419.0	0	0.00	µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	6.807	363.0 -> 319.0	0	0.00	µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.573	413.0 -> 369.0	505269	16.27	µg/L	m	97
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

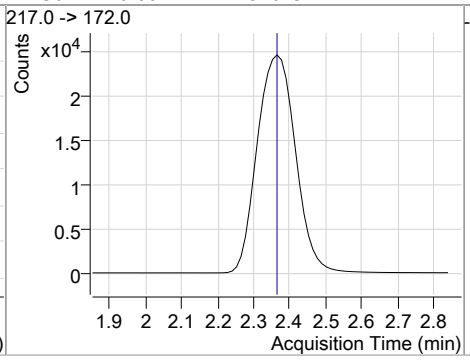
 # = Qualifier out of range, m = manually integrated, + = Area summed

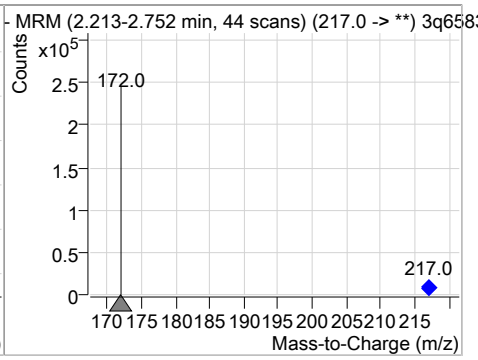
Perfluorinated Compounds by LC/MS/MS



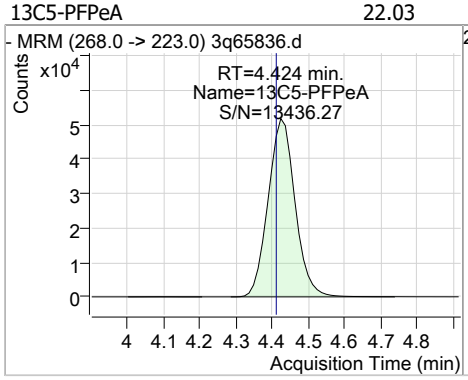
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.91	2.36	0.00	181649				

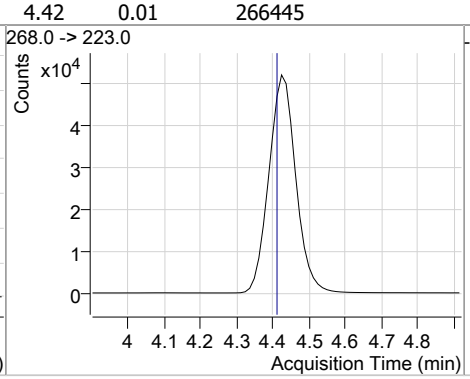


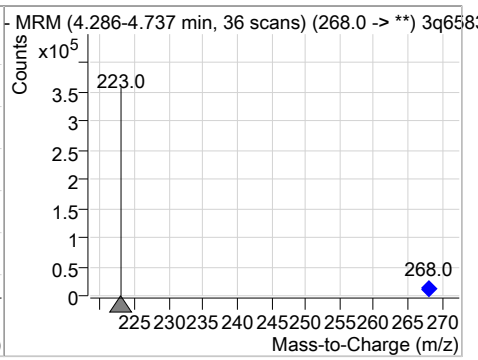




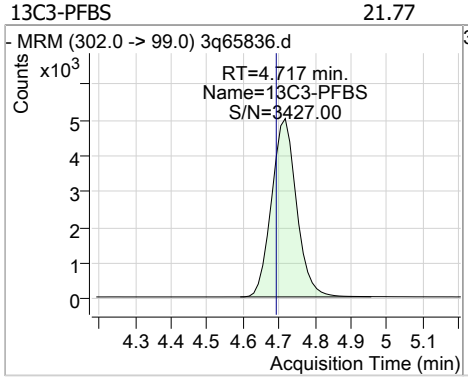
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.03	4.42	0.01	266445				

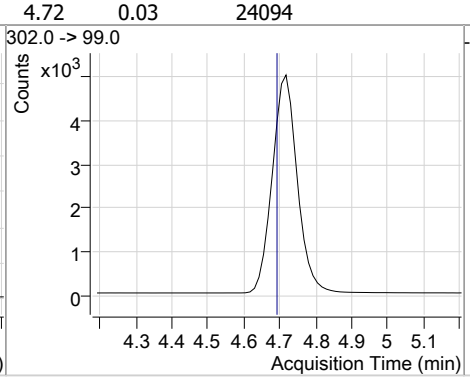


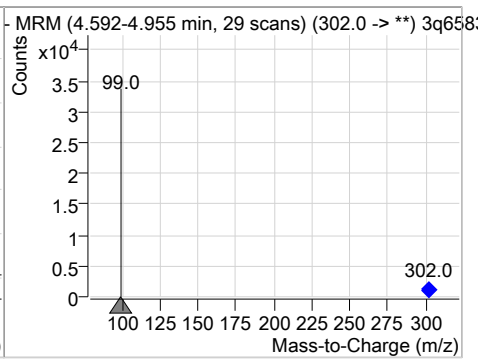




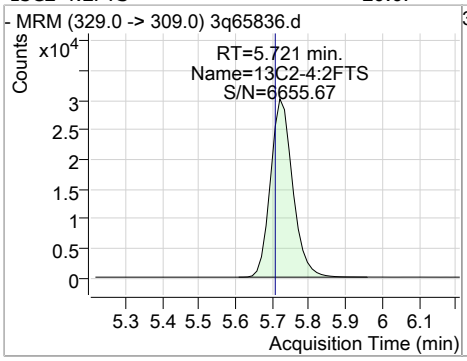
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.77	4.72	0.03	24094				

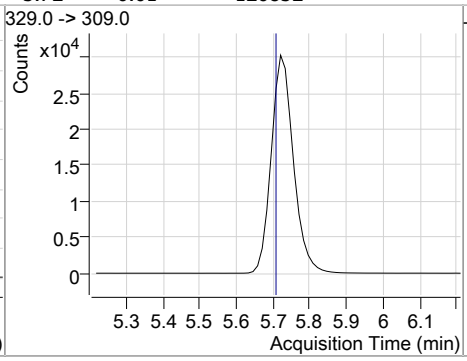


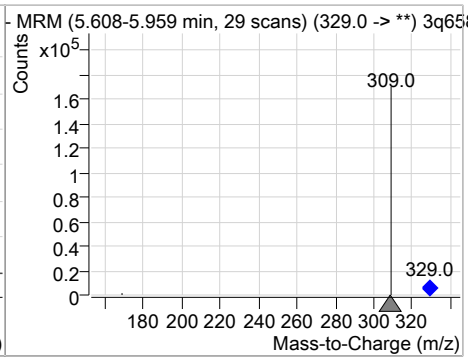




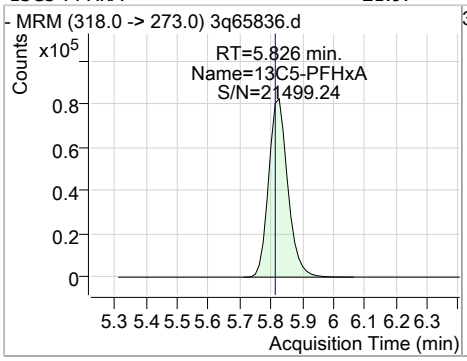
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.67	5.72	0.01	126852				

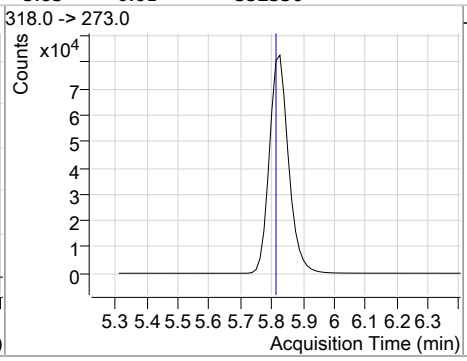


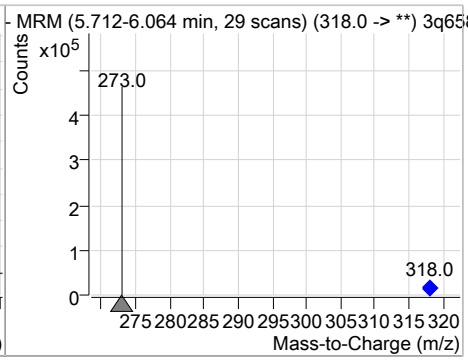




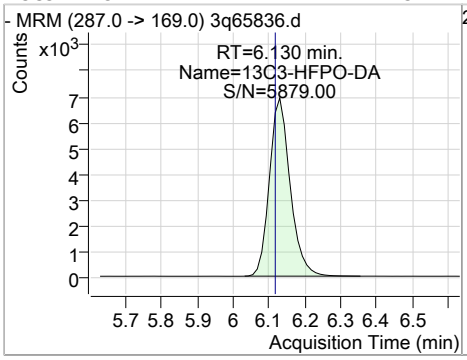
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.97	5.83	0.01	352330				

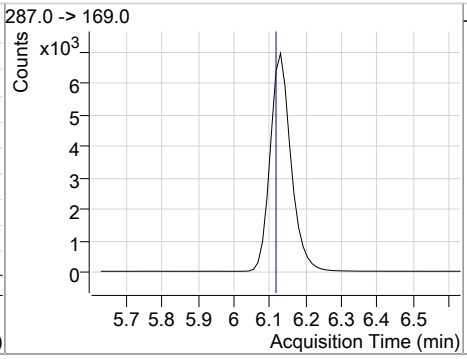


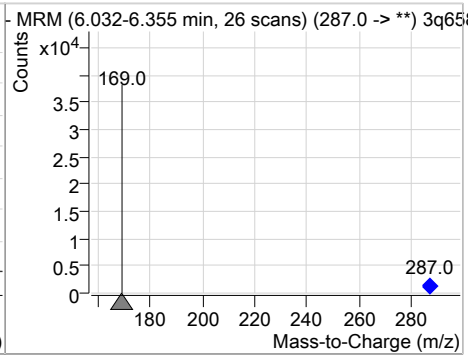




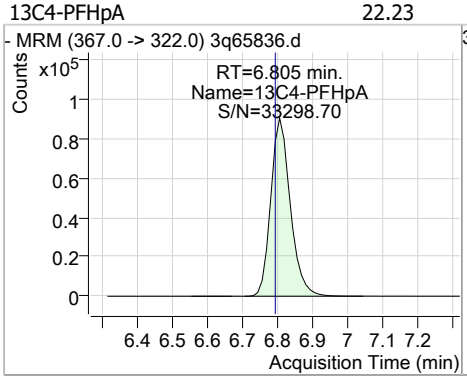
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.43	6.13	0.01	27671				

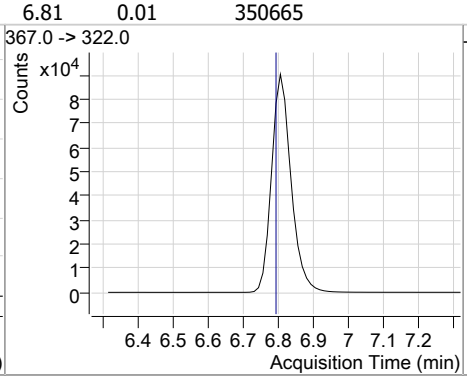


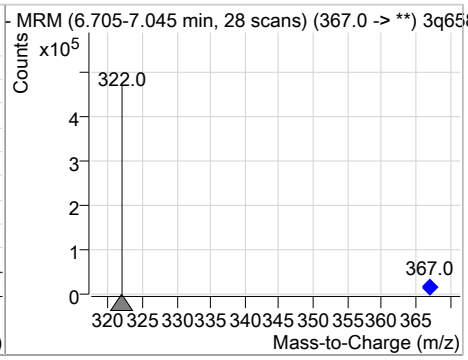




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.23	6.81	0.01	350665				

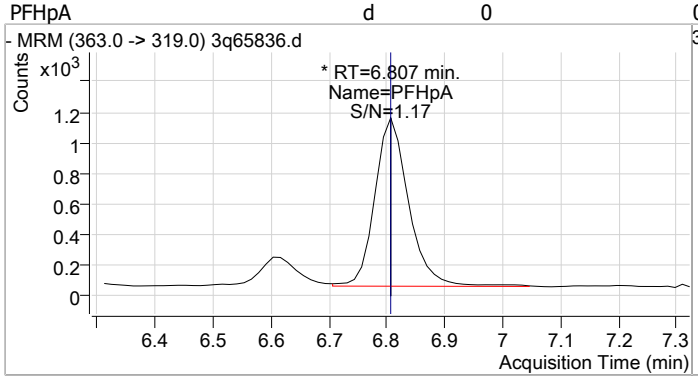


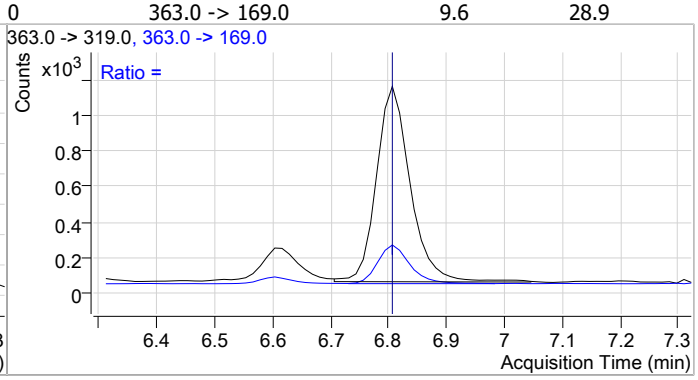




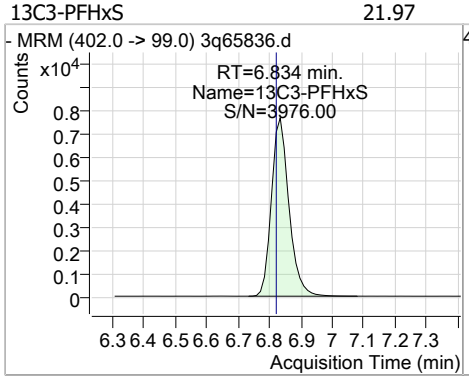
Perfluorinated Compounds by LC/MS/MS

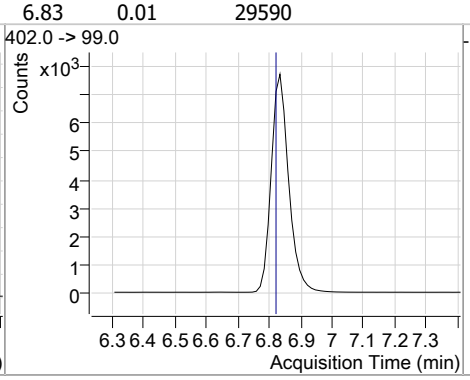
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	d	0		0	363.0 -> 169.0		9.6	28.9

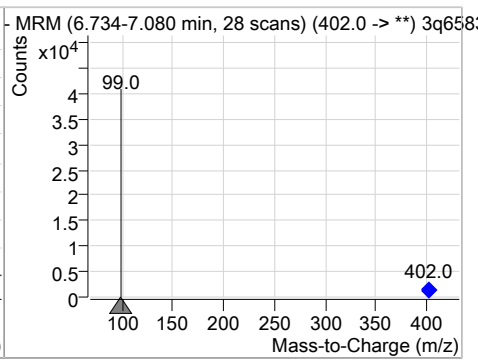




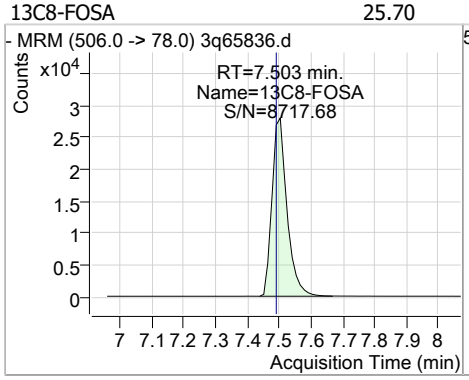
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.97	6.83	0.01	29590				

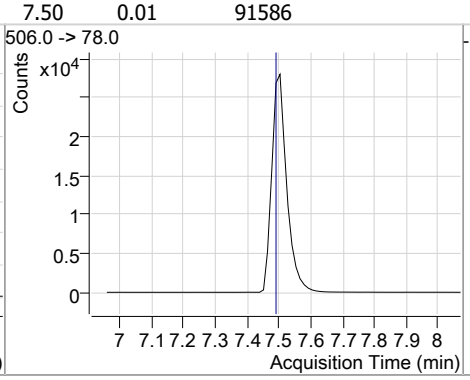


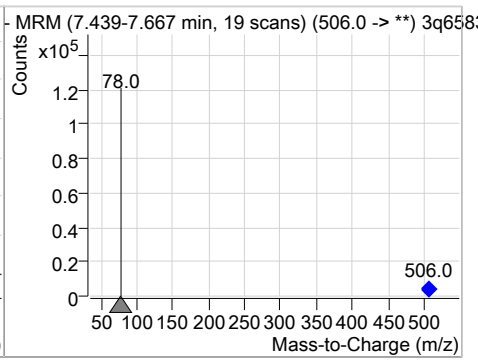




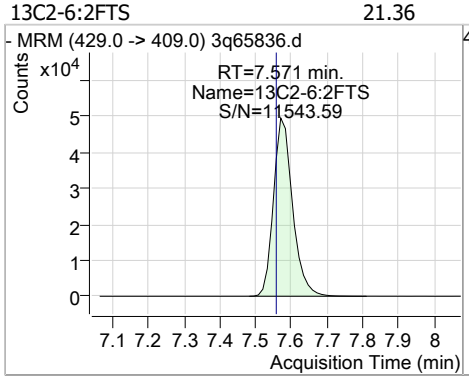
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	25.70	7.50	0.01	91586				

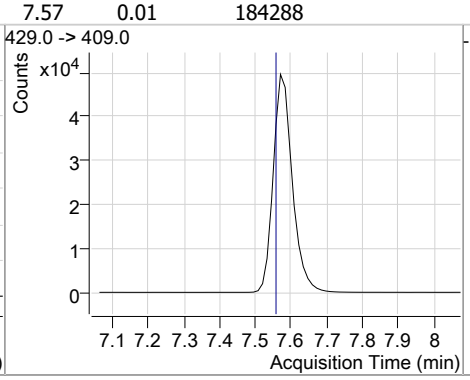


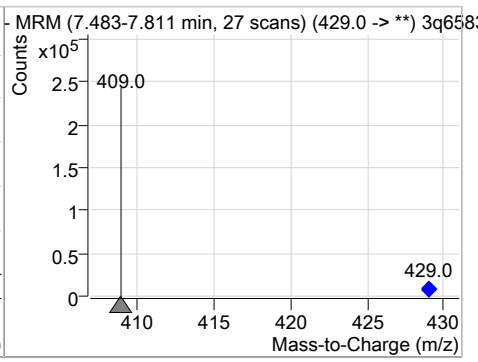




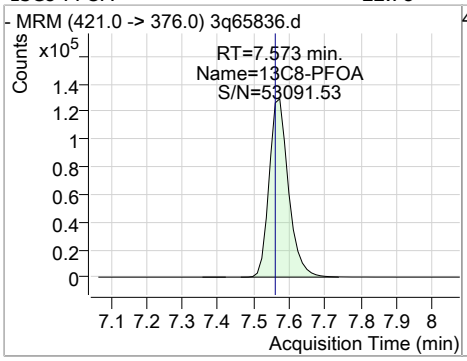
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.36	7.57	0.01	184288				

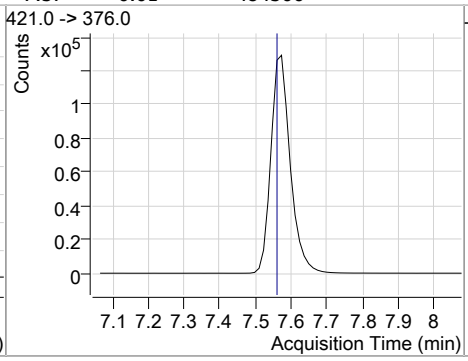


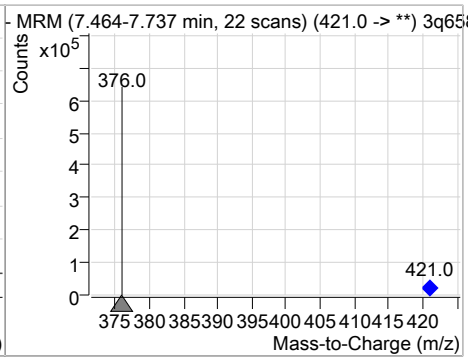




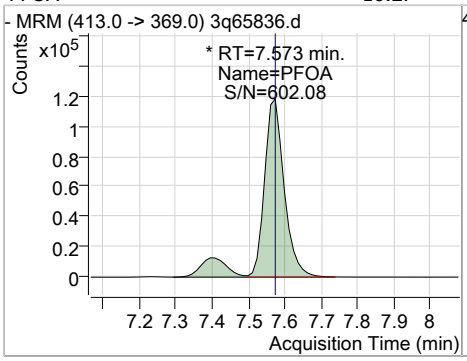
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.78	7.57	0.01	484566				

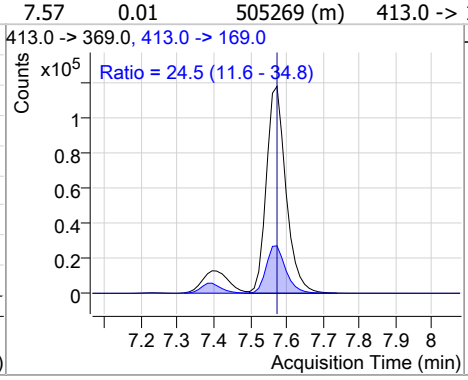


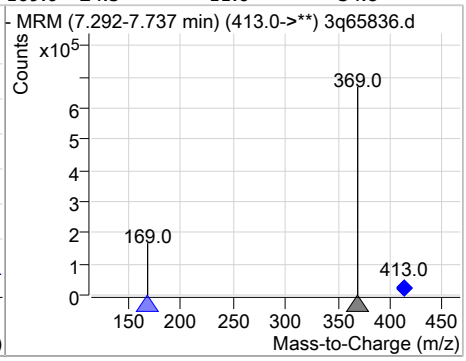




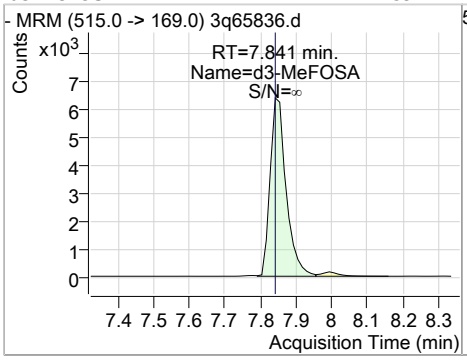
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	16.27	7.57	0.01	505269 (m)	413.0 -> 169.0	24.5	11.6	34.8

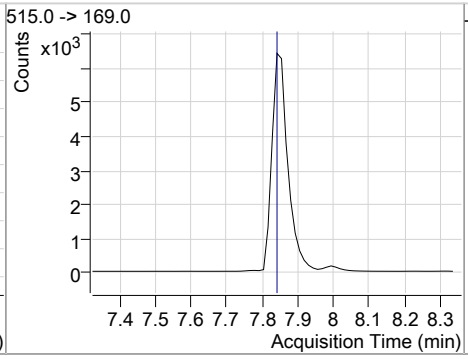


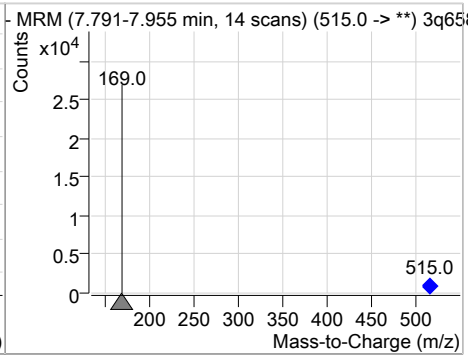




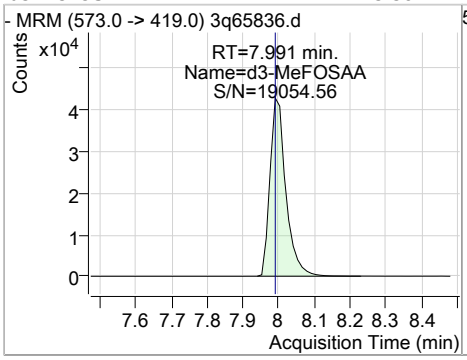
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	24.59	7.84	0.00	19840				

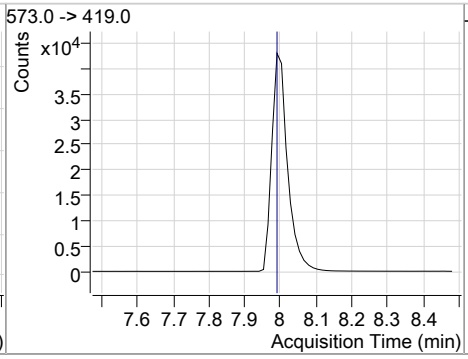


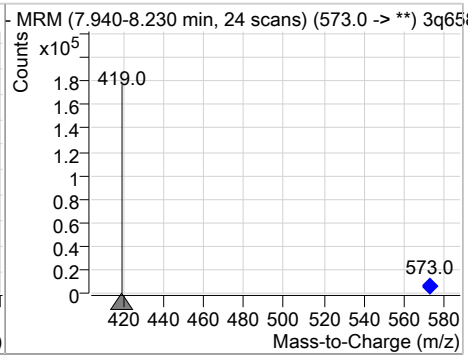




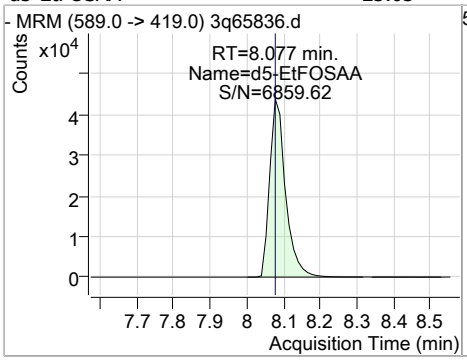
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.38	7.99	0.00	132349				

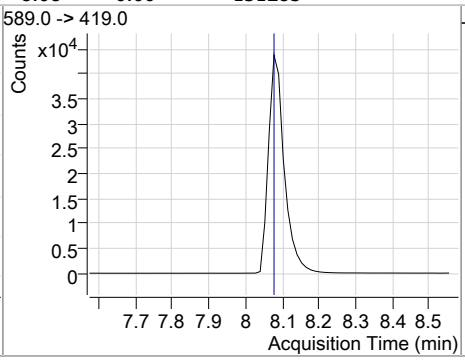


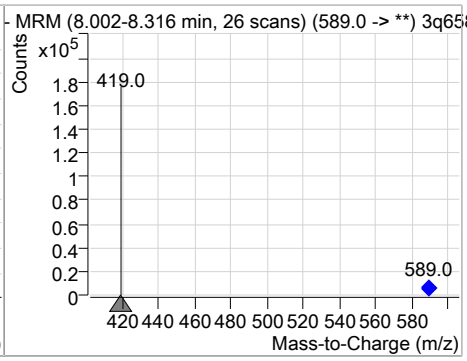




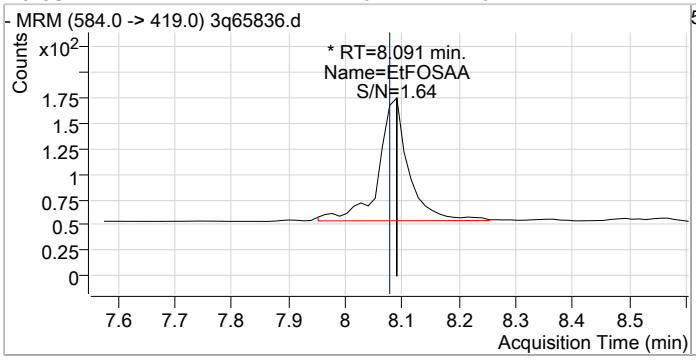
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.05	8.08	0.00	131285				

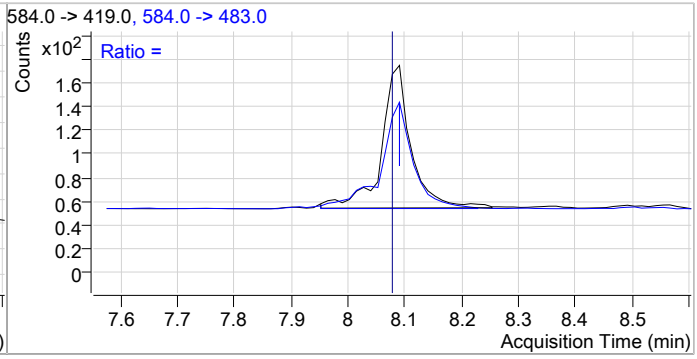




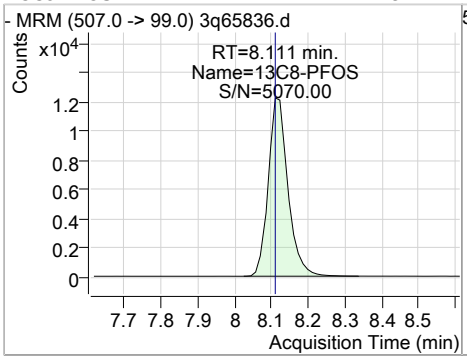


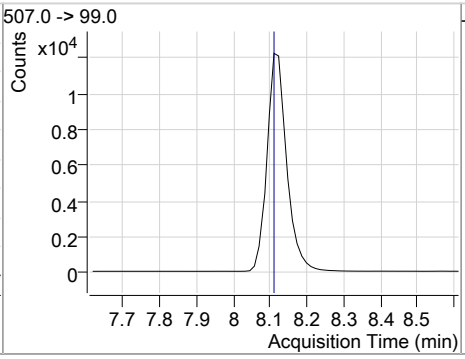
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	d	0		0	584.0 -> 483.0		28.3	85.0

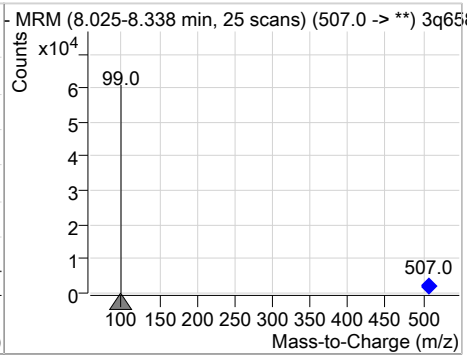




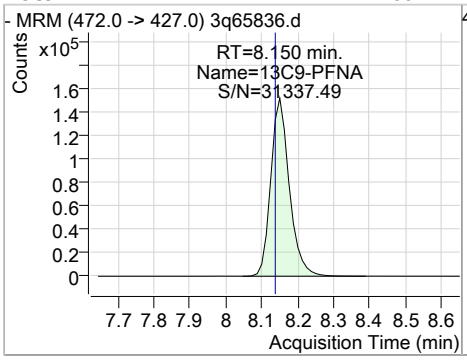
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.91	8.11	0.00	45324				

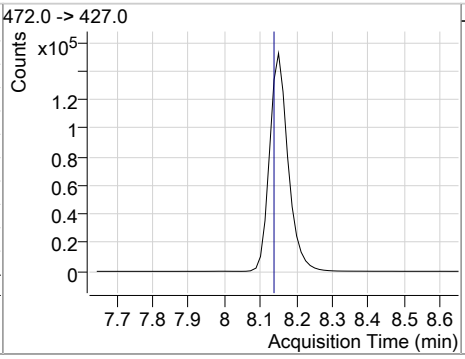


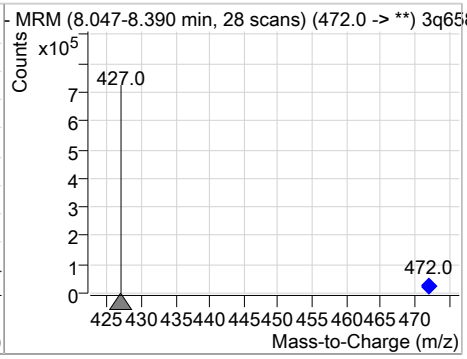




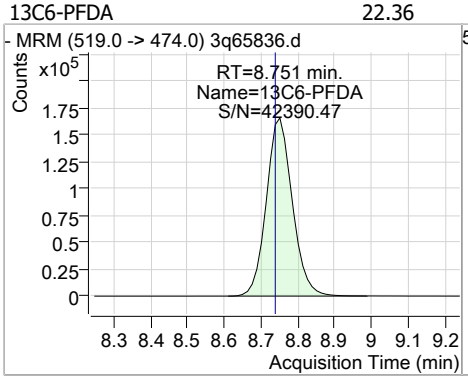
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.88	8.15	0.01	545839				

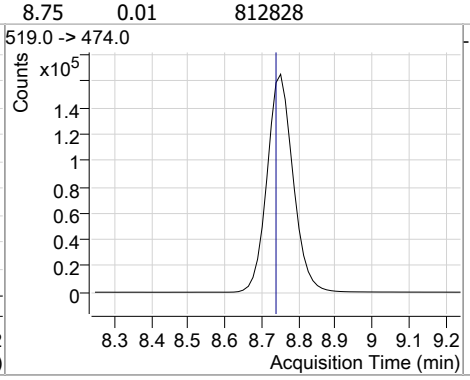


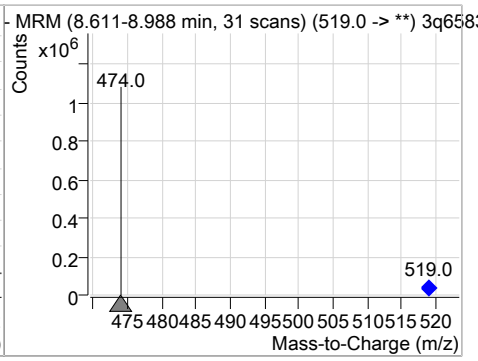




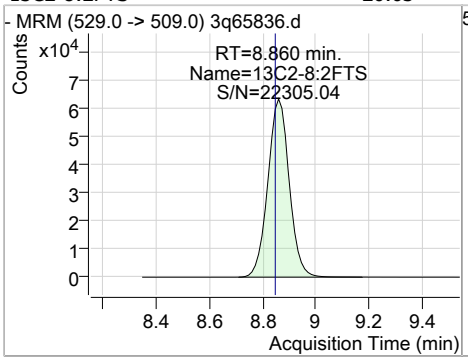
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.36	8.75	0.01	812828				

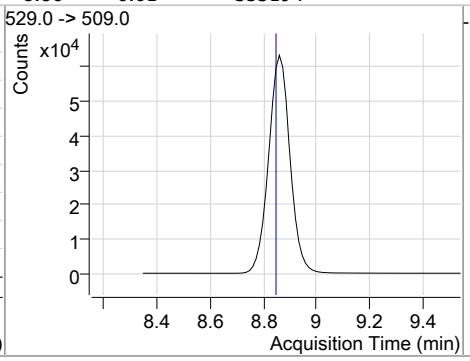


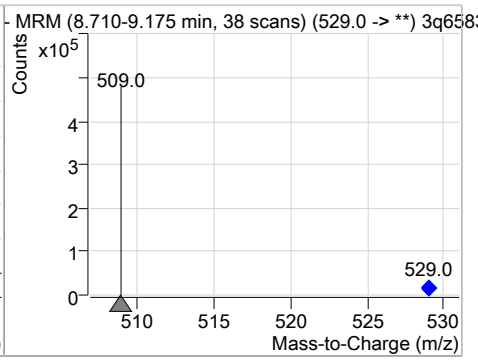




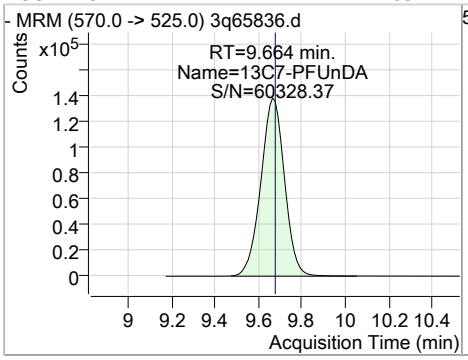
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.63	8.86	0.01	353194				

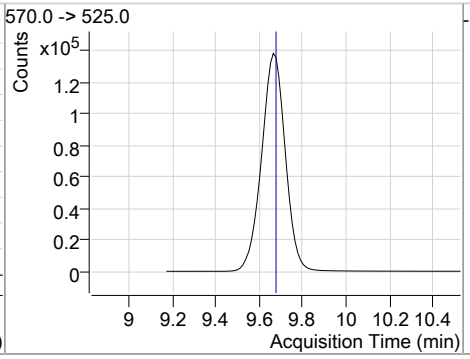


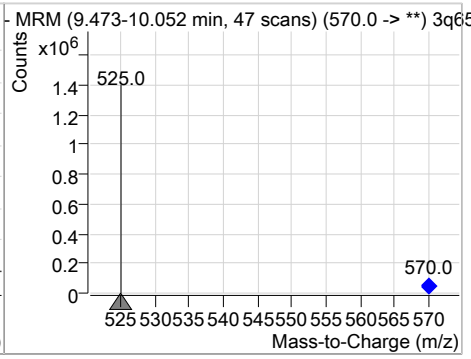




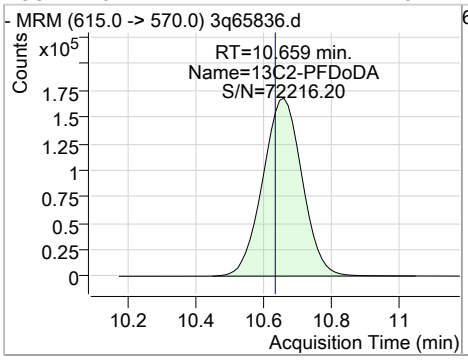
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.05	9.66	-0.01	1050119				

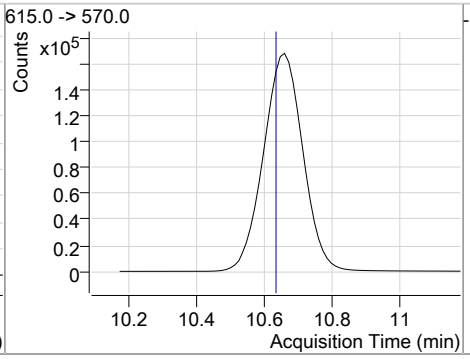


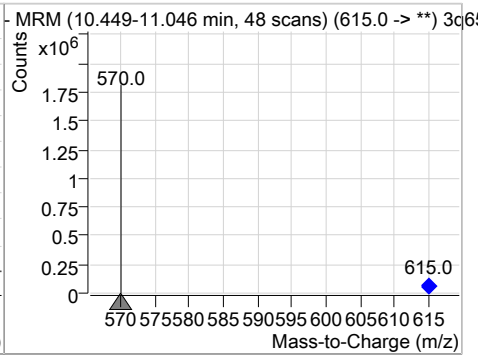




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.25	10.66	0.03	1351347				

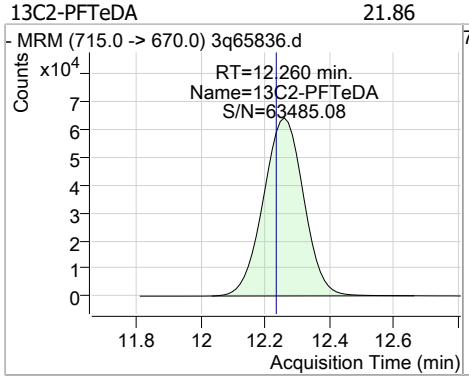


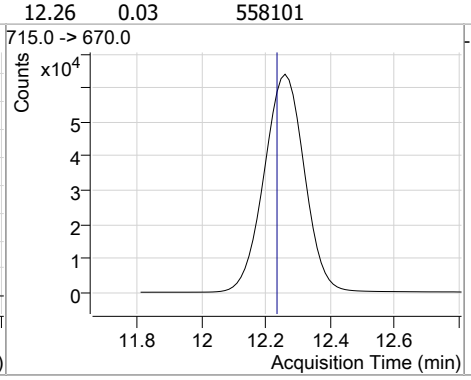


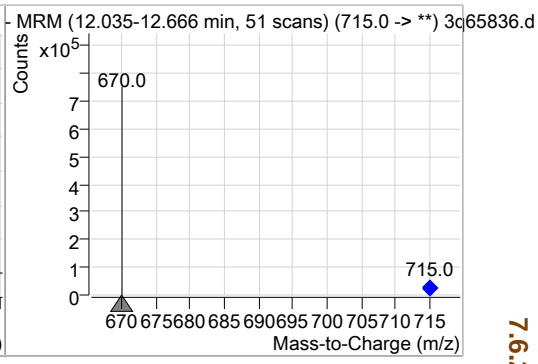


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.86	12.26	0.03	558101				







7.6.2

7

Manual Integration Approval Summary

Sample Number: S3Q900-RT
Lab FileID: 3Q65836.D
Injection Time: 09/15/22 21:44
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		7.57	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4568.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:29:47 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

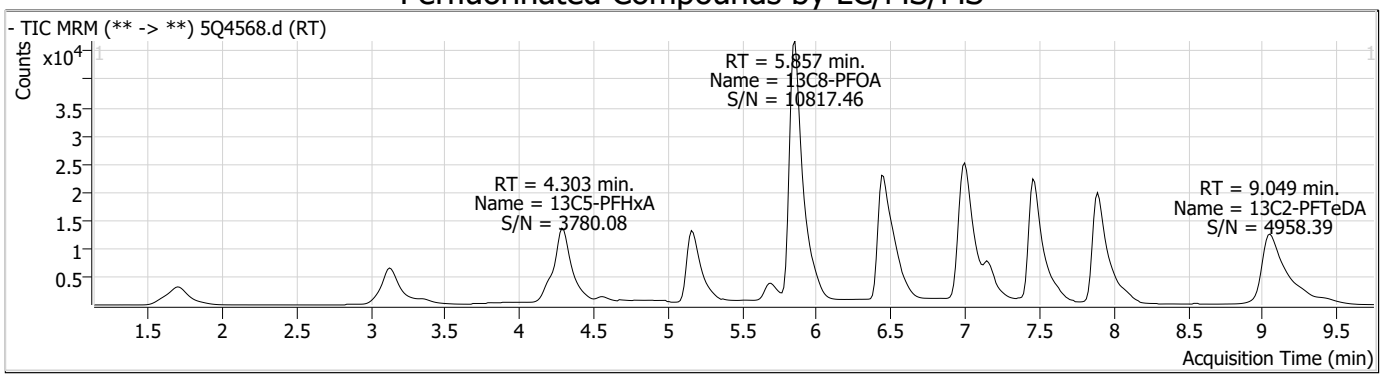
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35344	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	56937	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	86431	20.00	µg/L	0.000
M4-PFHpA	5.175	367.0 -> 322.0	80033	20.00	µg/L	0.012
M8-PFOA	5.857	421.0 -> 376.0	119858	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	128937	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	107377	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	139890	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	144546	20.00	µg/L	0.012
M2-PFTeDA	9.049	715.0 -> 670.0	155803	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	22254	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6439	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6711	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12900	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	26784	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	41337	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	41600	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	19591	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6505	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6138	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22737	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	26784	18.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%		
13C2-6:2FTS	5.843	429.0 -> 409.0	41337	18.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C2-8:2FTS	7.025	529.0 -> 509.0	41600	18.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-PFDoDA	7.905	615.0 -> 570.0	144546	19.94	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C2-PFTeDA	9.049	715.0 -> 670.0	155803	20.65	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C3-PFBS	3.362	302.0 -> 99.0	6439	19.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C3-PFHxS	5.206	402.0 -> 99.0	6711	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFBA	1.700	217.0 -> 172.0	35344	19.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C4-PFHpA	5.175	367.0 -> 322.0	80033	19.60	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C5-PFHxA	4.303	318.0 -> 273.0	86431	19.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFPeA	3.132	268.0 -> 223.0	56937	19.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C6-PFDA	6.989	519.0 -> 474.0	107377	19.95	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

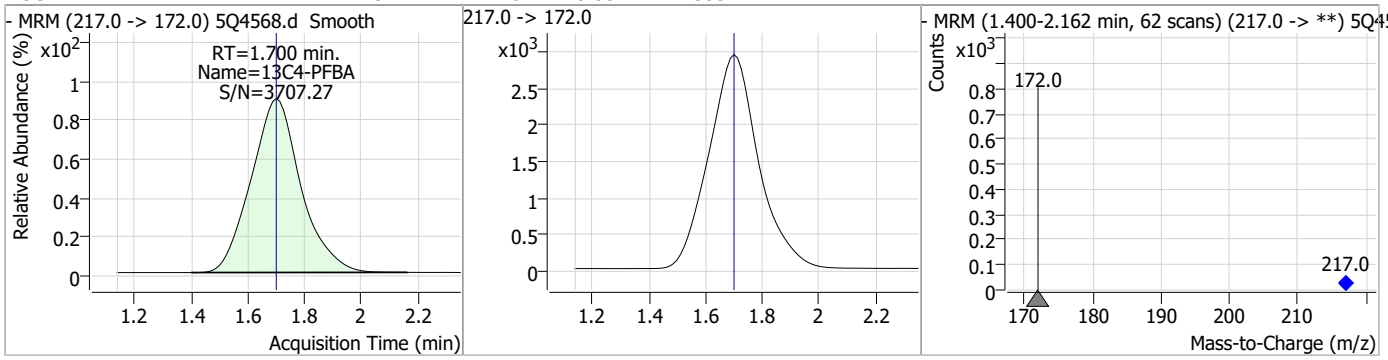
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C7-PFUnDA	7.471	570.0 -> 525.0	139890	19.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
13C8-FOSA	6.530	506.0 -> 78.0	22254	19.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
13C8-PFOA	5.857	421.0 -> 376.0	119858	19.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOS	6.440	507.0 -> 99.0	12900	19.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
13C9-PFNA	6.455	472.0 -> 427.0	128937	19.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19591	20.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6505	19.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	6138	20.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22737	20.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.497	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	0		µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	126160	17.36	µg/L	m	98
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

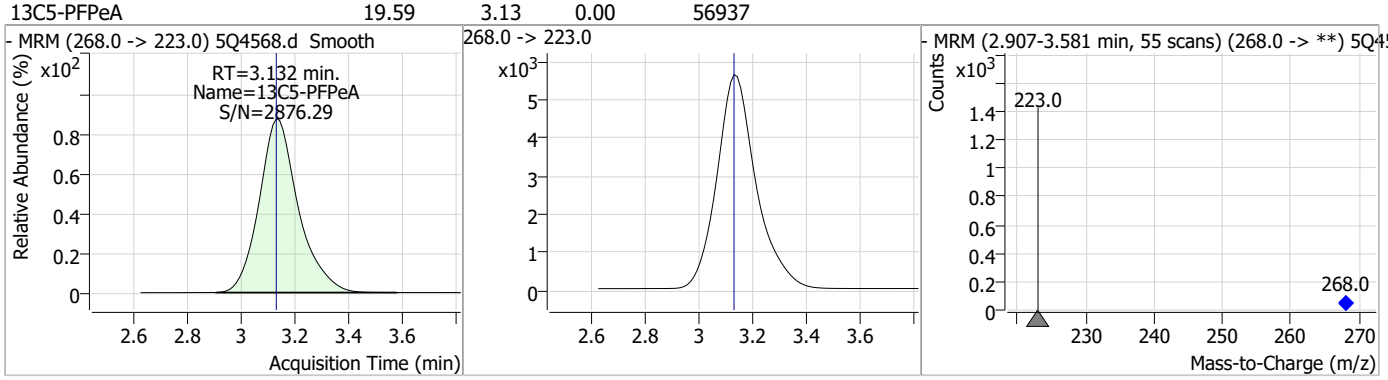
Perfluorinated Compounds by LC/MS/MS



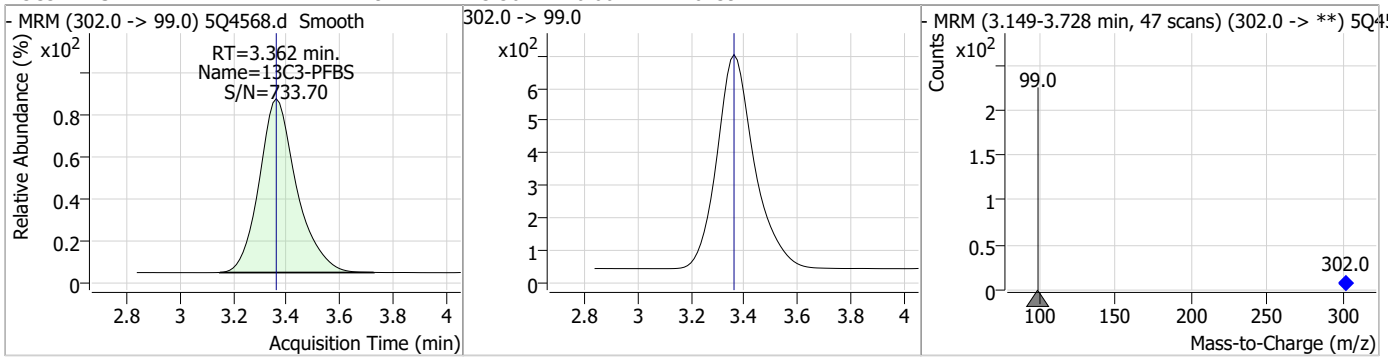
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.77	1.70	0.00	35344				



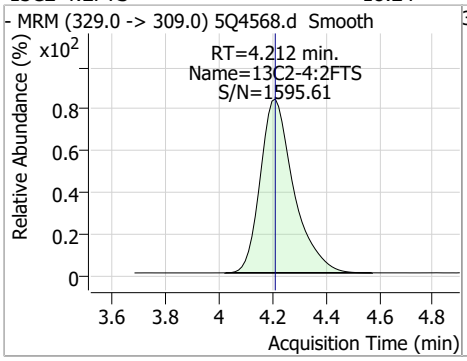
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.59	3.13	0.00	56937				

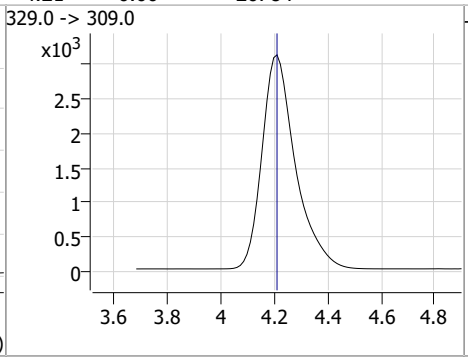


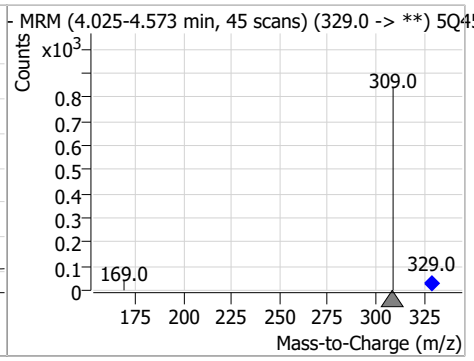
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.77	3.36	0.00	6439				



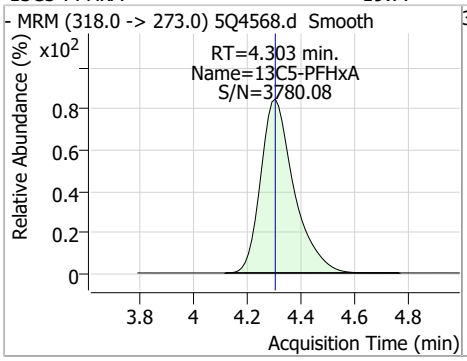
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.24	4.21	0.00	26784				

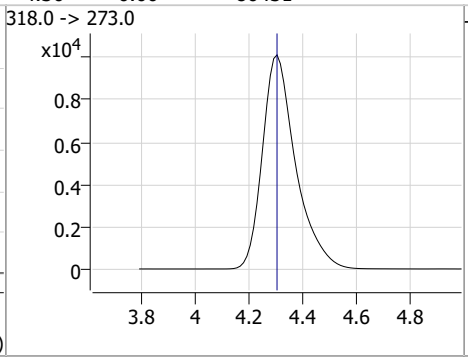


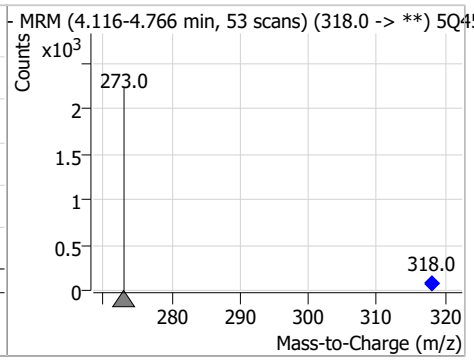




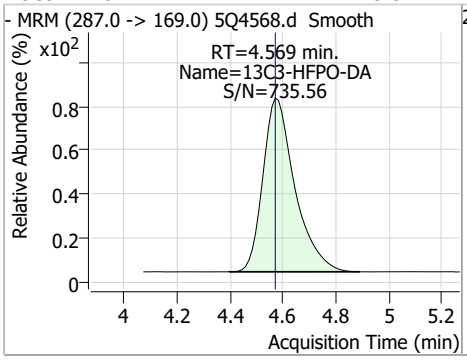
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.77	4.30	0.00	86431				

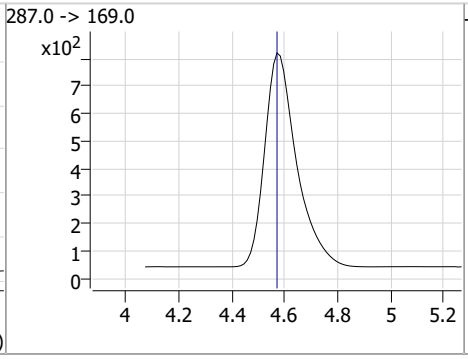


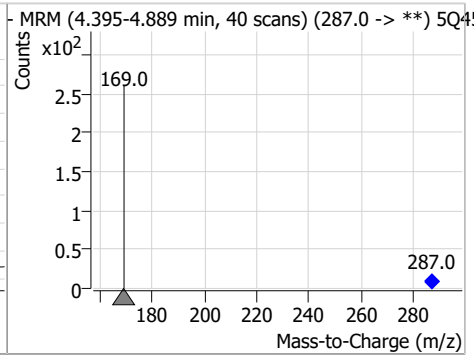




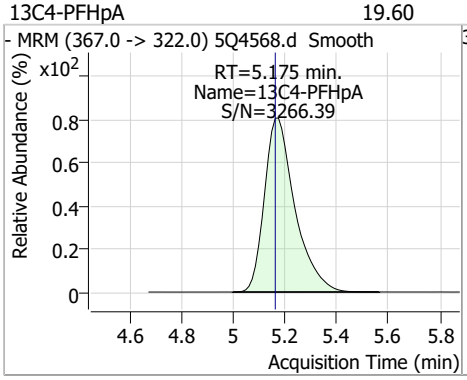
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.37	4.57	0.00	6505				

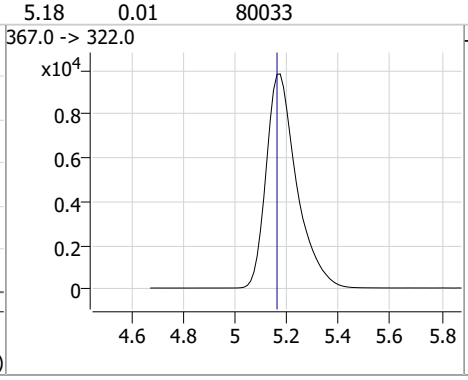


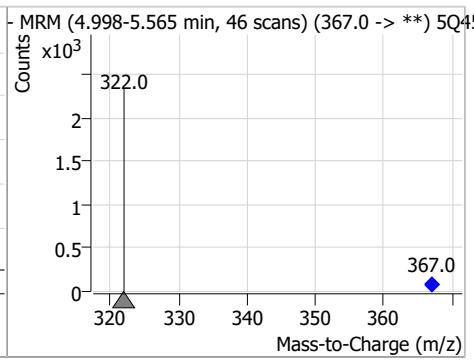




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.60	5.18	0.01	80033				

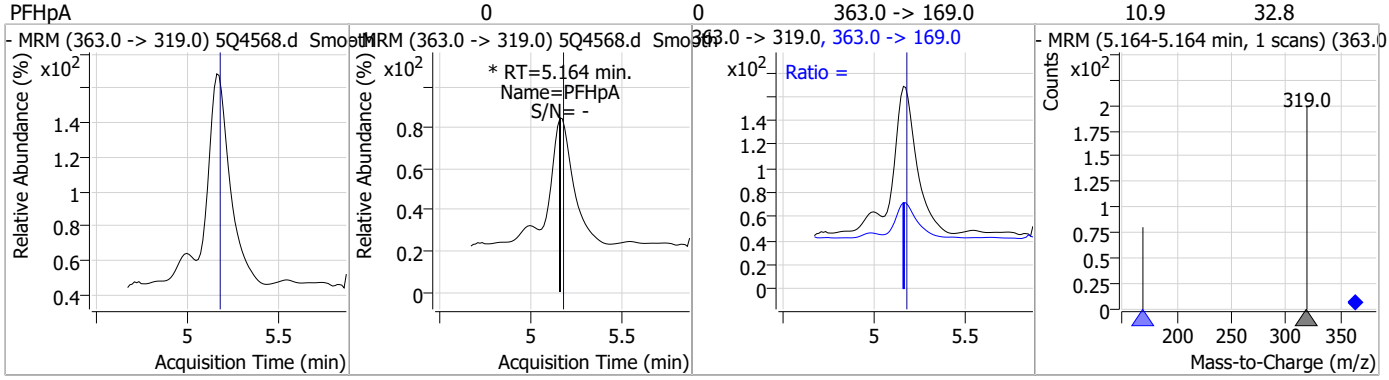




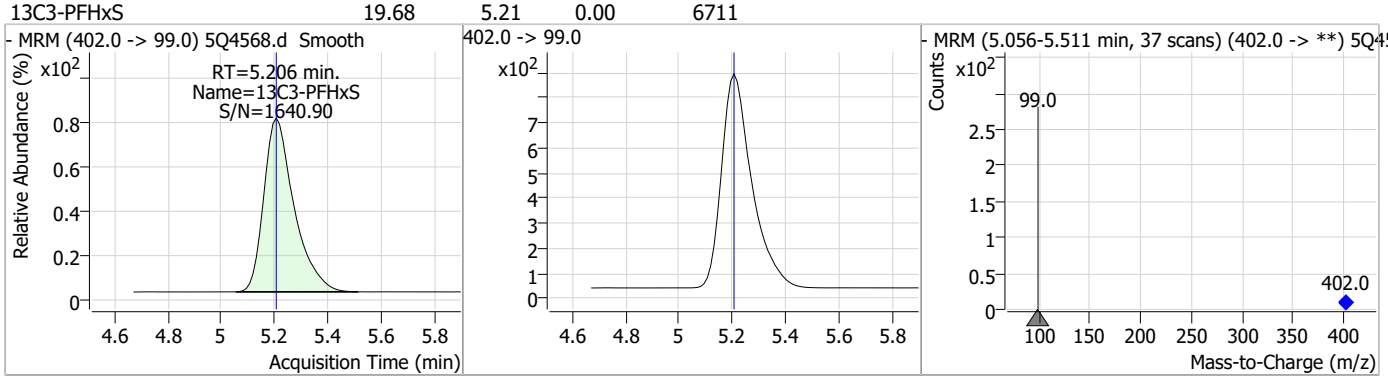


Perfluorinated Compounds by LC/MS/MS

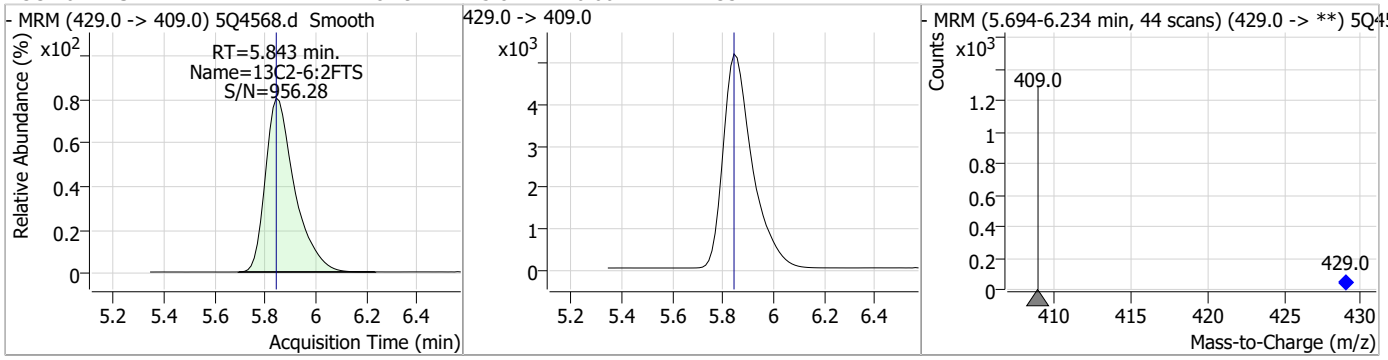
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.9	32.8



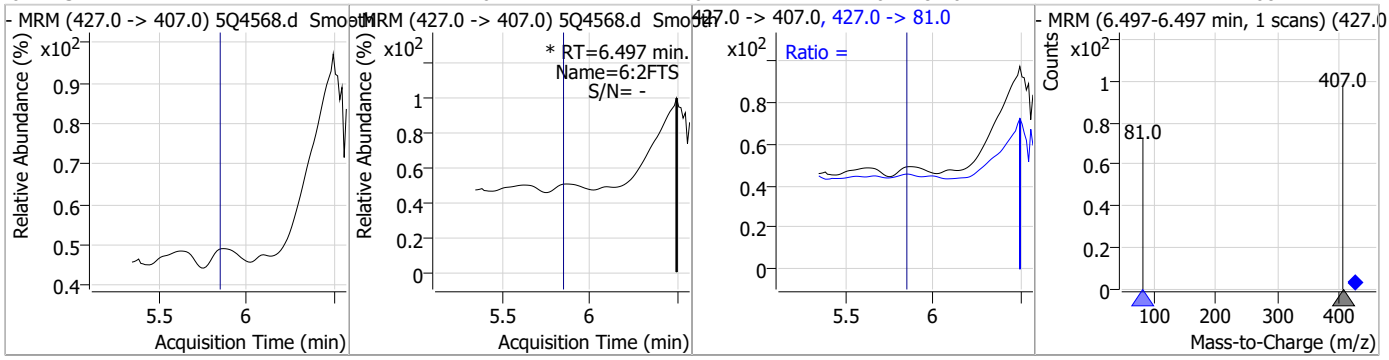
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.68	5.21	0.00	6711				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.49	5.84	0.00	41337				

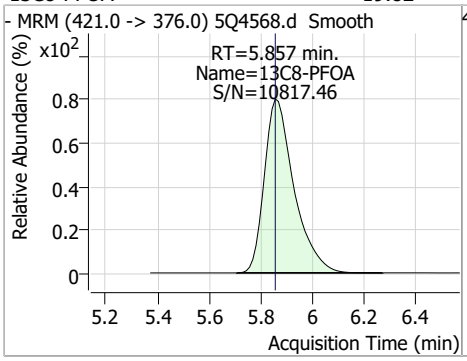


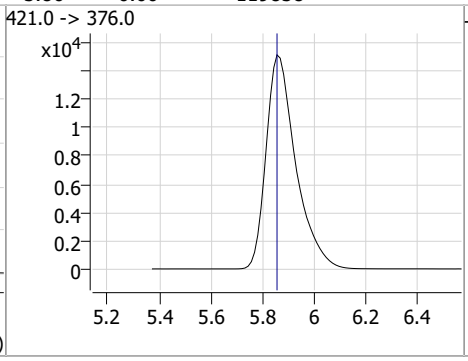
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2

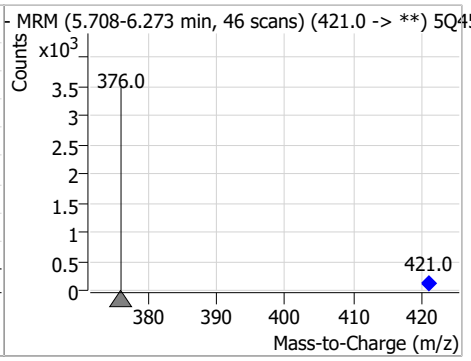


Perfluorinated Compounds by LC/MS/MS

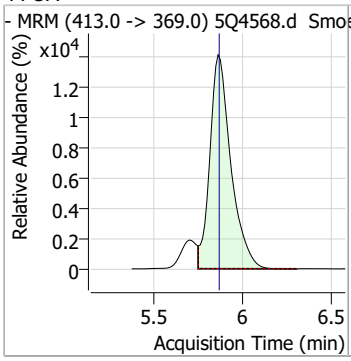
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.82	5.86	0.00	119858				

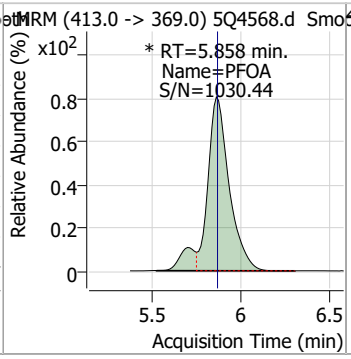


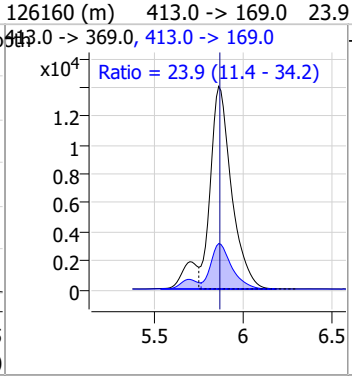


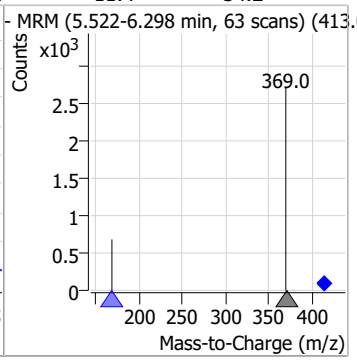


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.36	5.86	0.00	126160 (m)	413.0 -> 169.0	23.9	11.4	34.2

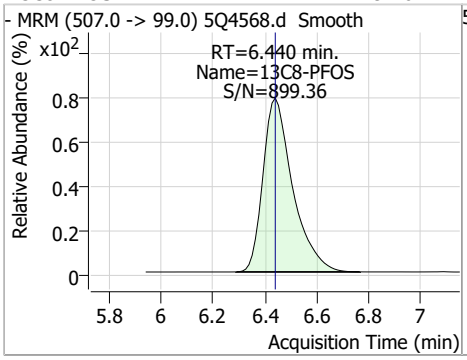


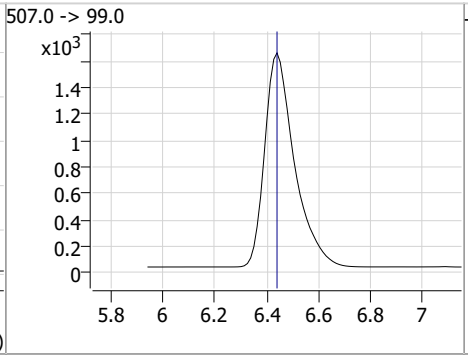


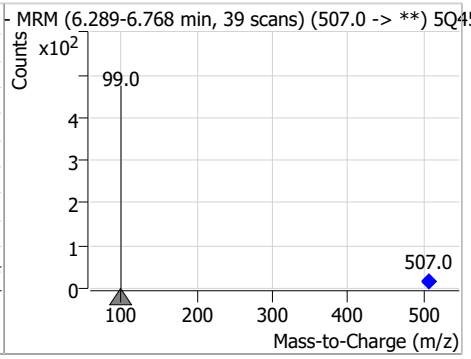




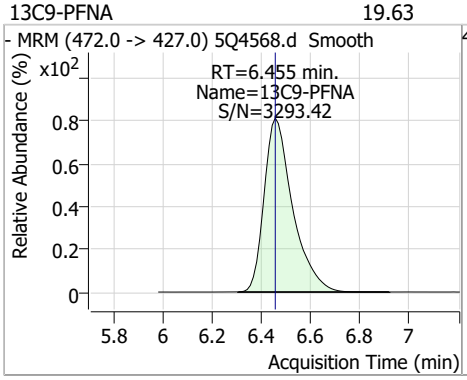
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.76	6.44	0.00	12900				

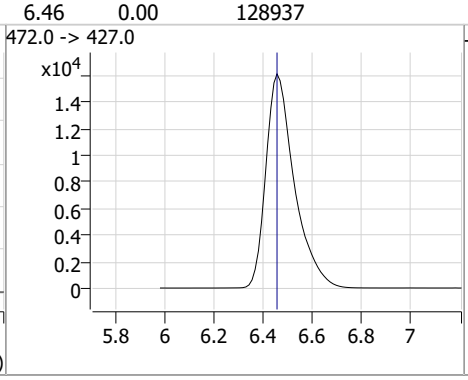


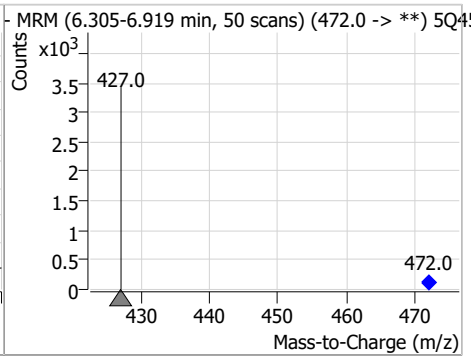




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.63	6.46	0.00	128937				

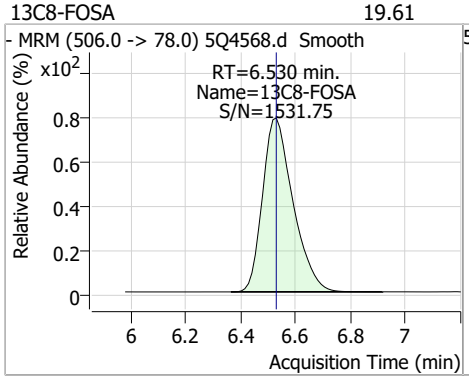


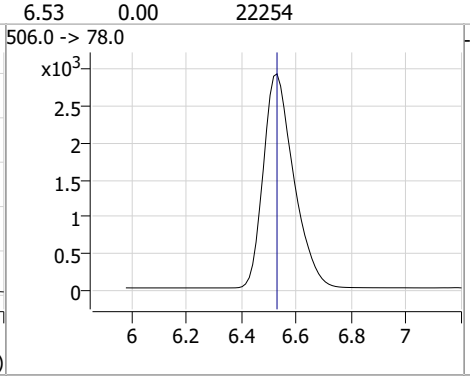


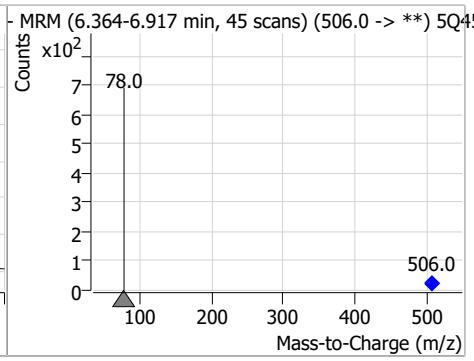


Perfluorinated Compounds by LC/MS/MS

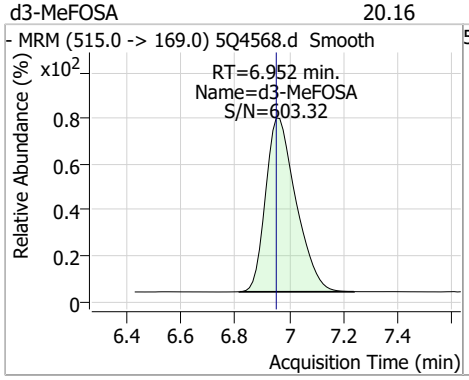
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.61	6.53	0.00	22254				

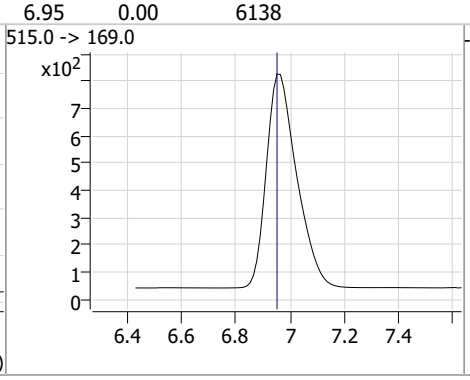


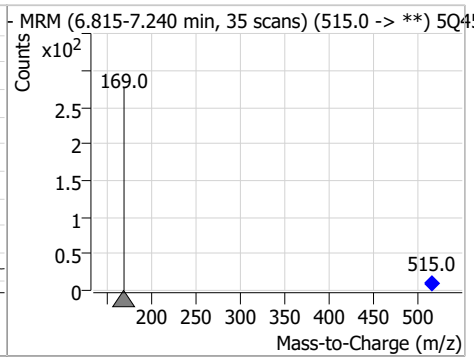




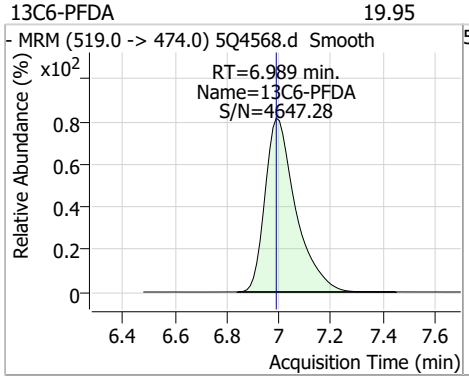
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.16	6.95	0.00	6138				

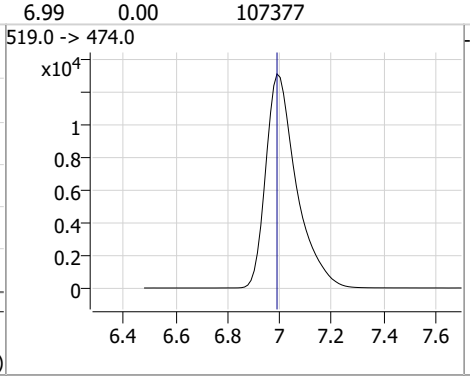


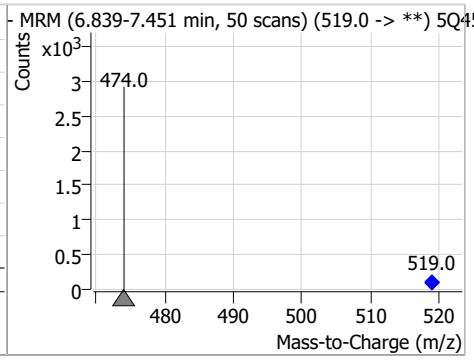




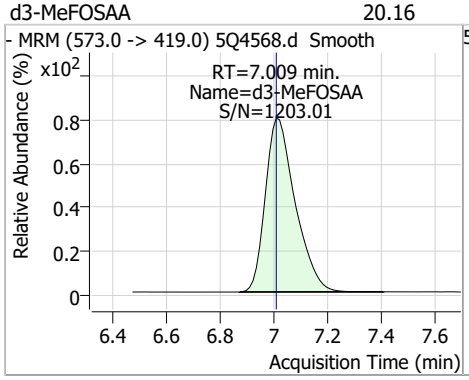
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.95	6.99	0.00	107377				

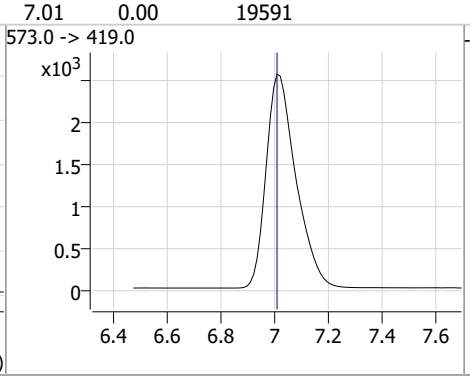


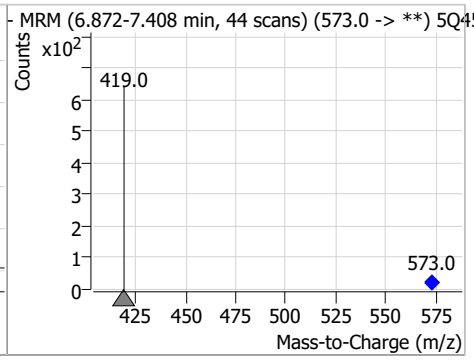




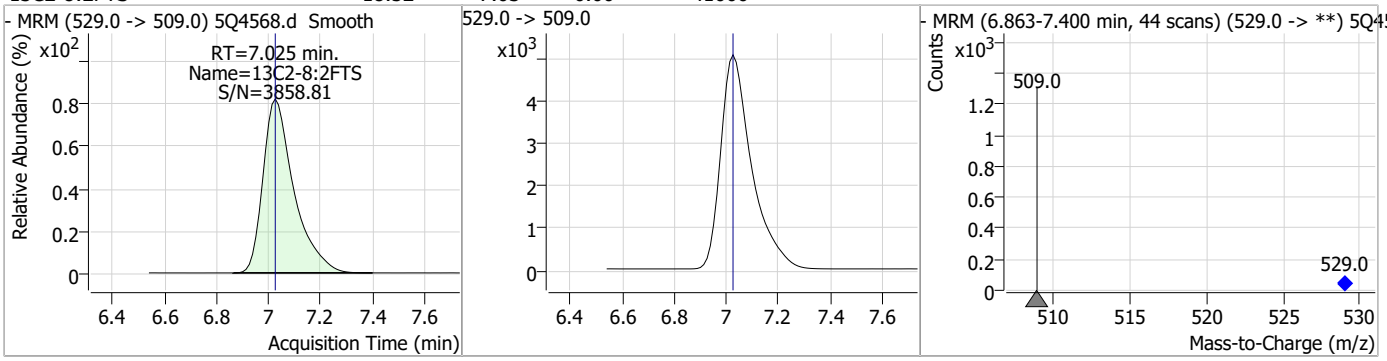
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.16	7.01	0.00	19591				



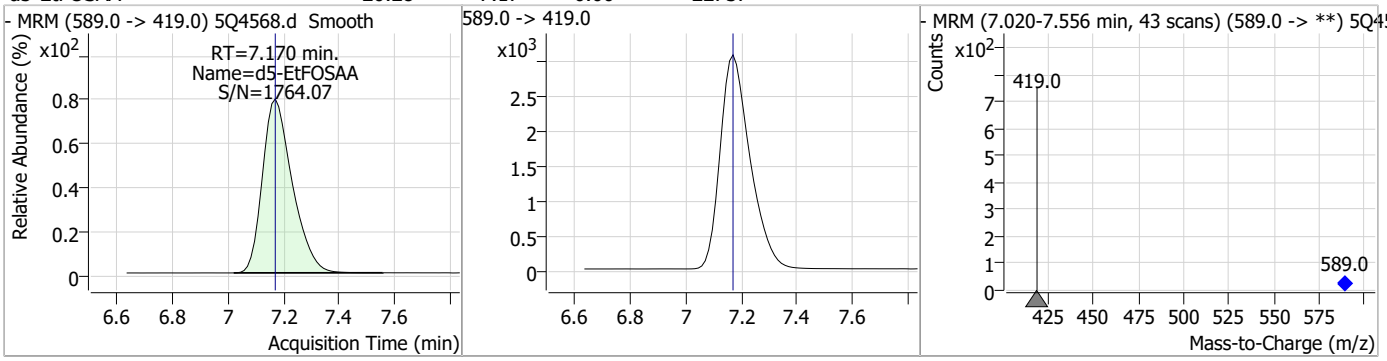




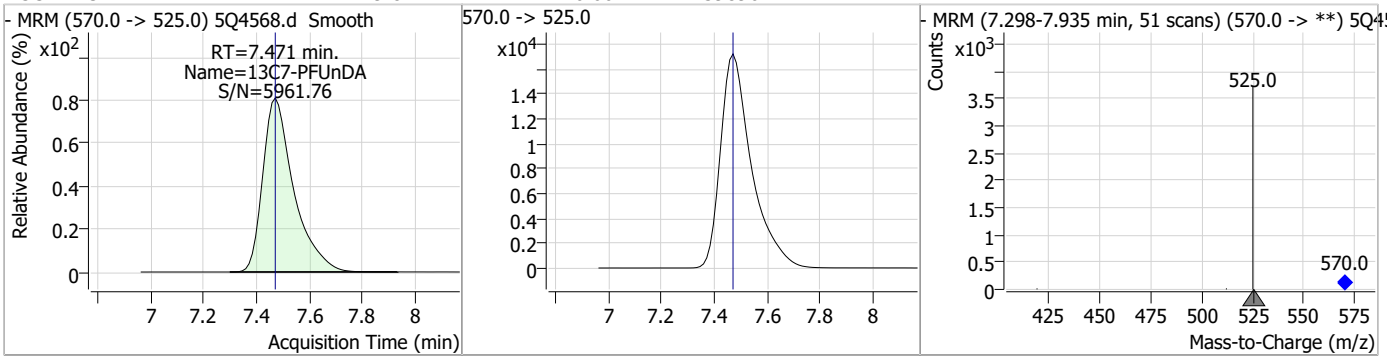
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.52	7.03	0.00	41600				



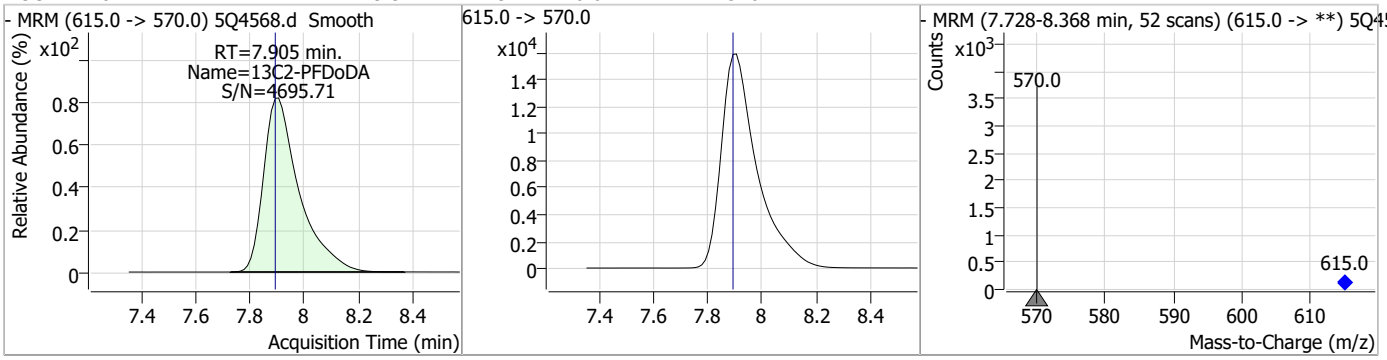
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.28	7.17	0.00	22737				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.87	7.47	0.00	139890				

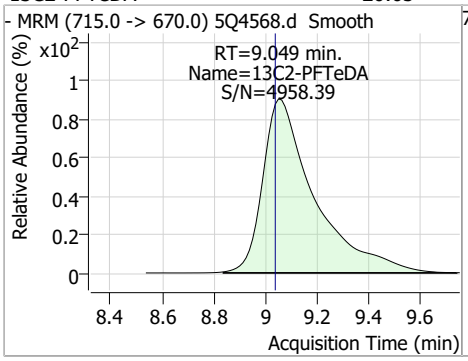


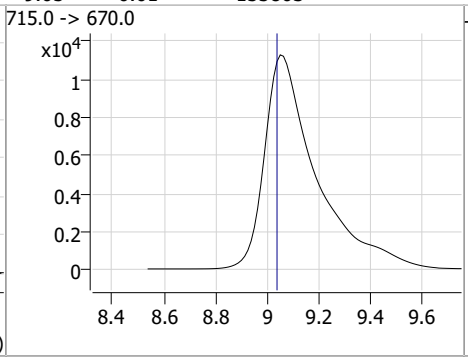
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.94	7.91	0.01	144546				

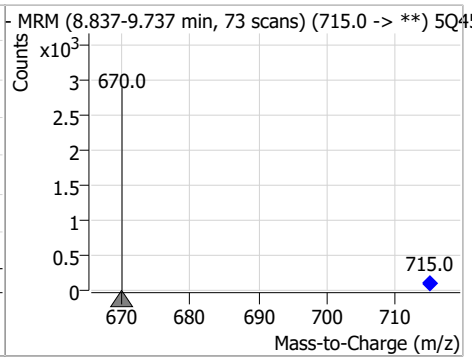


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.65	9.05	0.01	155803				







7.6.3

7

Manual Integration Approval Summary

Sample Number: S5Q71-RT
Lab FileID: 5Q4568.D
Injection Time: 09/14/22 13:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		5.86	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4666.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:38:17 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

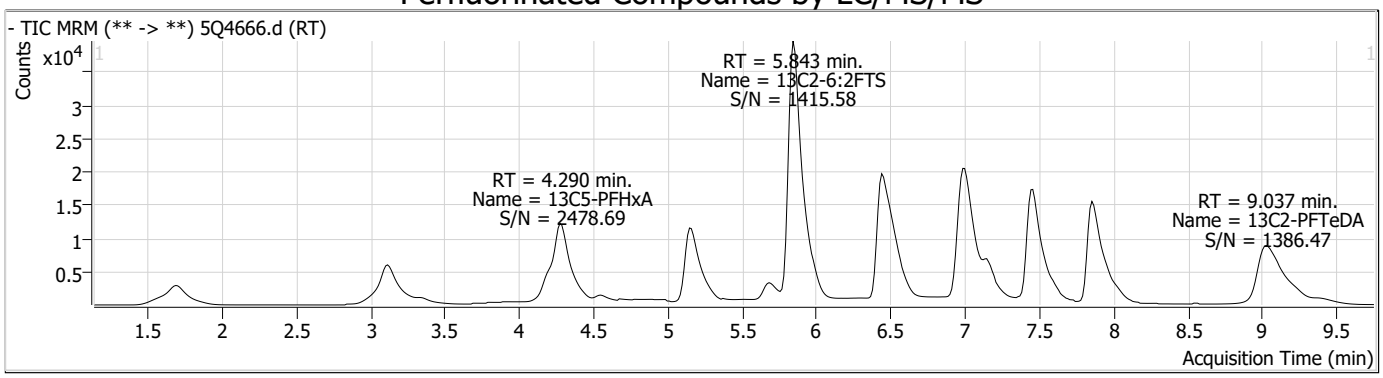
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	34111	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	56297	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	81254	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	73475	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	103417	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	112742	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	92093	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	114956	20.00	µg/L	-0.012
M2-PFDoDA	7.866	615.0 -> 570.0	115873	20.00	µg/L	-0.027
M2-PFTeDA	9.037	715.0 -> 670.0	111776	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	22399	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	7224	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	7414	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	14120	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	25731	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	38904	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	38093	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	14325	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6794	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6770	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	19818	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	25731	17.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	38904	17.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%		
13C2-8:2FTS	7.025	529.0 -> 509.0	38093	16.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.8%		
13C2-PFDoDA	7.866	615.0 -> 570.0	115873	15.99	µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.9%		
13C2-PFTeDA	9.037	715.0 -> 670.0	111776	14.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 74.1%		
13C3-PFBS	3.349	302.0 -> 99.0	7224	22.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%		
13C3-PFHxS	5.194	402.0 -> 99.0	7414	21.74	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C4-PFBA	1.687	217.0 -> 172.0	34111	19.08	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C4-PFHpA	5.163	367.0 -> 322.0	73475	18.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	81254	18.58	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C5-PFPeA	3.119	268.0 -> 223.0	56297	19.37	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C6-PFDA	6.989	519.0 -> 474.0	92093	17.11	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

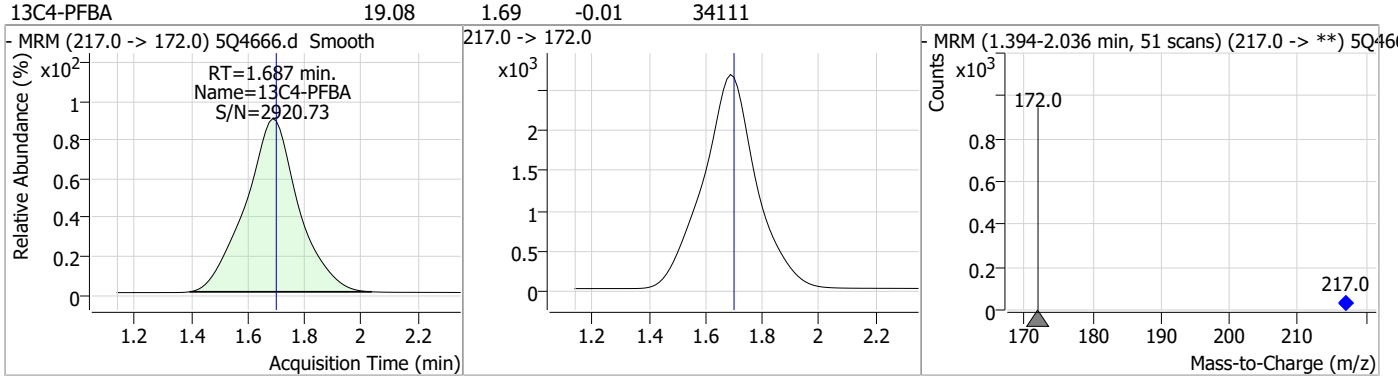
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	114956	16.33	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 81.6%			
13C8-FOSA	6.517	506.0 -> 78.0	22399	19.74	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-PFOA	5.857	421.0 -> 376.0	103417	17.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C8-PFOS	6.440	507.0 -> 99.0	14120	21.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%			
13C9-PFNA	6.455	472.0 -> 427.0	112742	17.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14325	14.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 73.7%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	6794	20.23	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	6770	22.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%			
d5-EtFOSAA	7.170	589.0 -> 419.0	19818	17.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	6.334	427.0 -> 407.0	0		µg/L	m	1
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	0		µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	109931	17.53	µg/L	m	97
PFOS	7.117	499.0 -> 80.0	0		µg/L	m	1
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

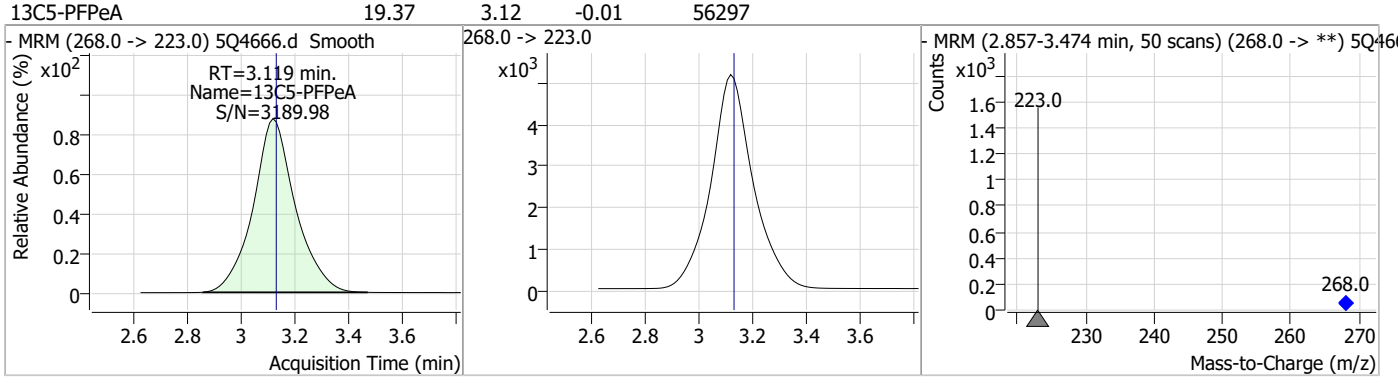
Perfluorinated Compounds by LC/MS/MS



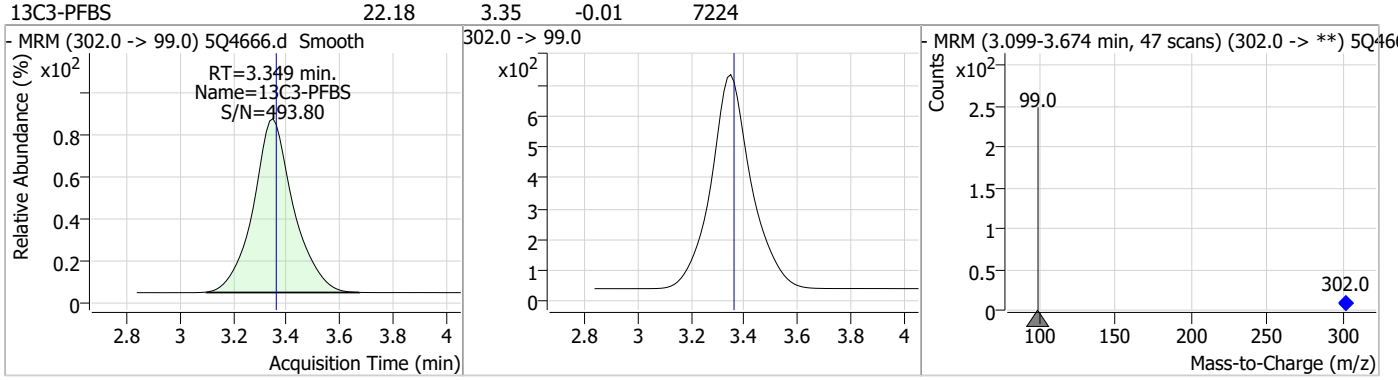
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.08	1.69	-0.01	34111				



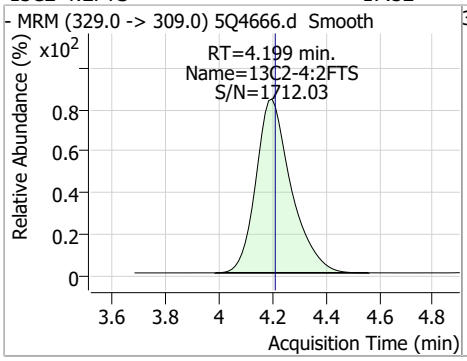
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.37	3.12	-0.01	56297				

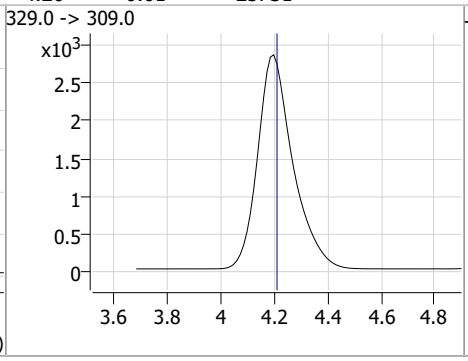


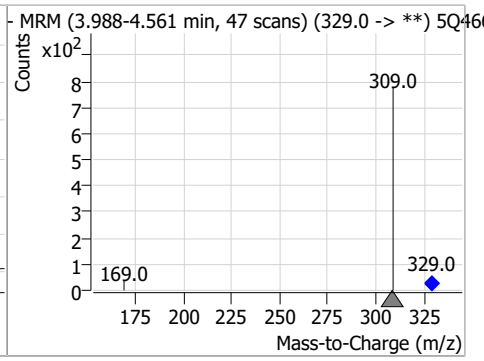
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.18	3.35	-0.01	7224				



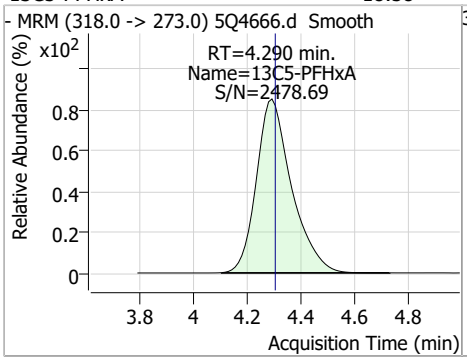
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.52	4.20	-0.01	25731				

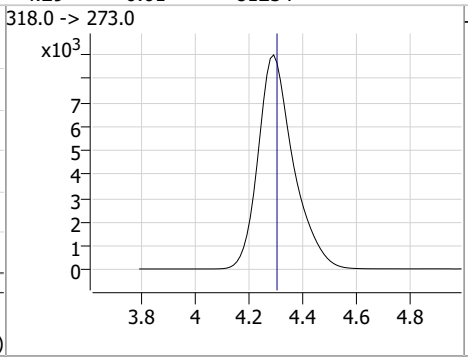


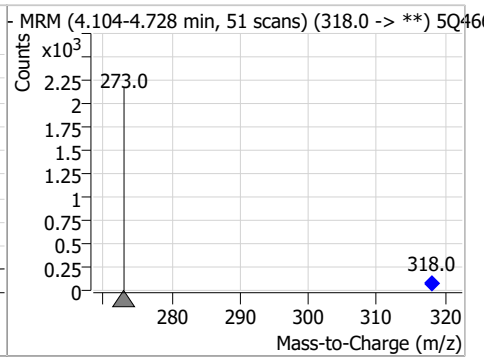




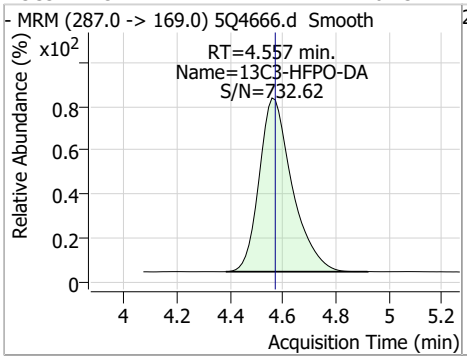
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.58	4.29	-0.01	81254				

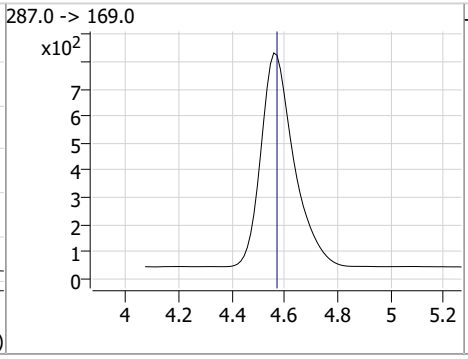


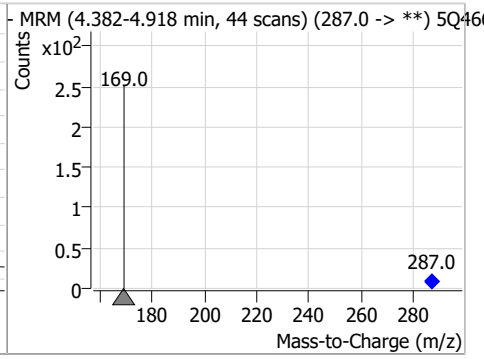




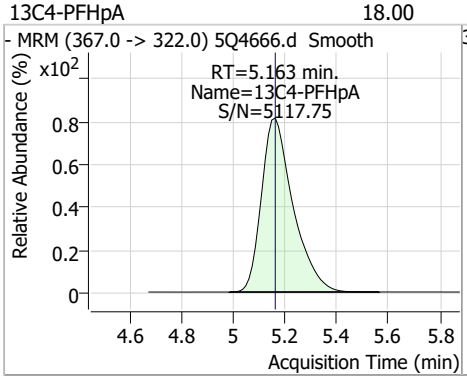
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.23	4.56	-0.01	6794				

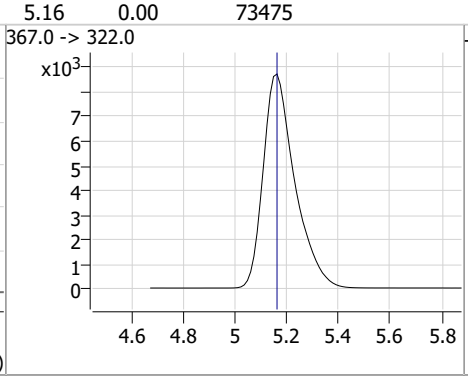


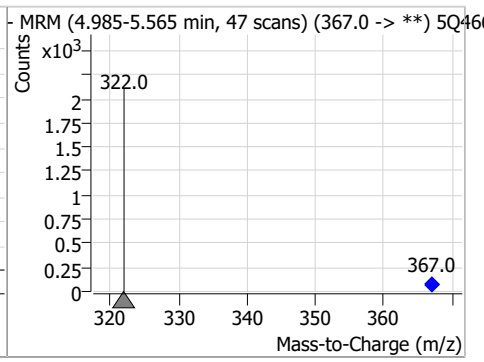




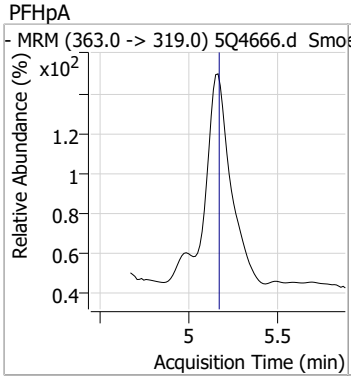
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.00	5.16	0.00	73475				

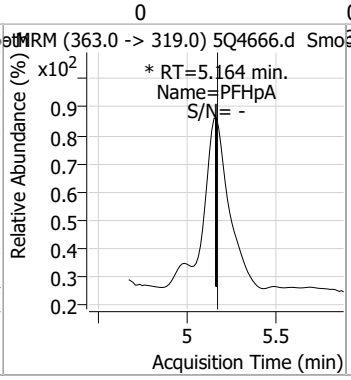


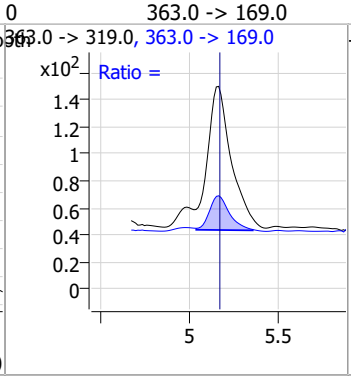


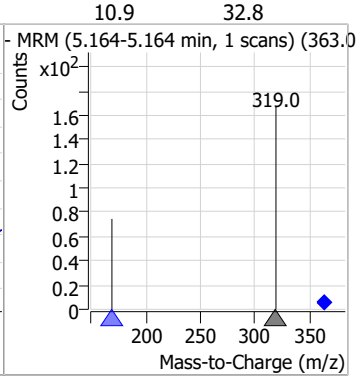


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		10.9	32.8

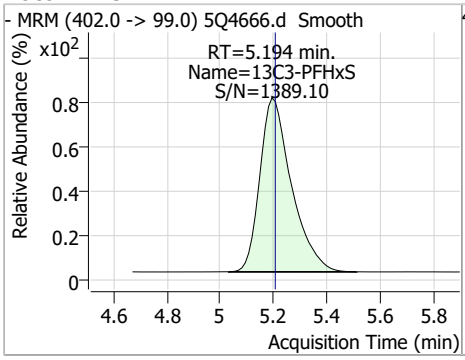


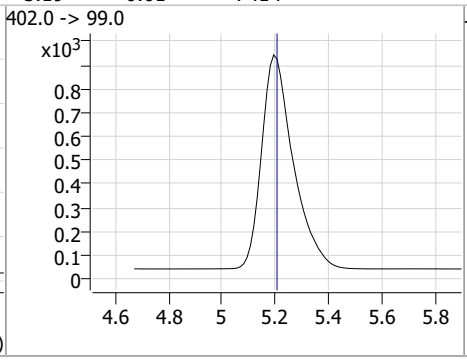


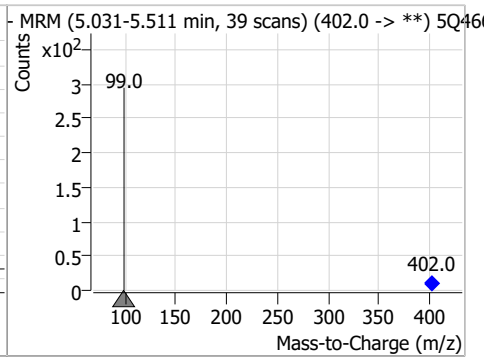




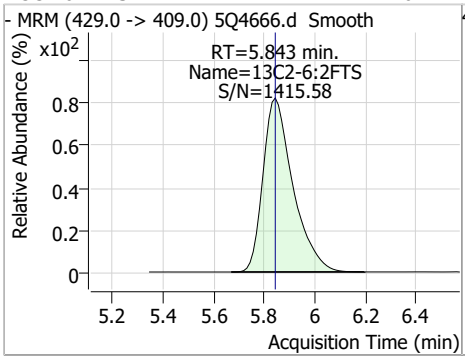
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.74	5.19	-0.01	7414				

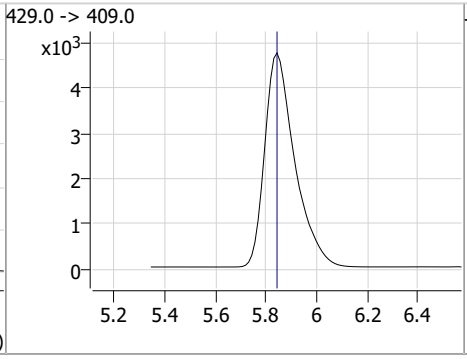


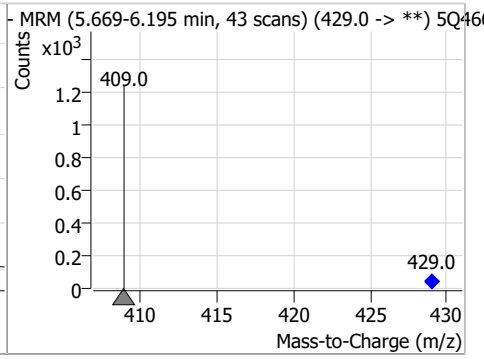




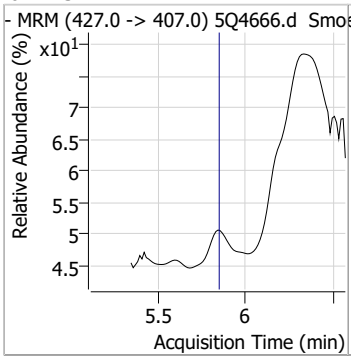
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.40	5.84	0.00	38904				

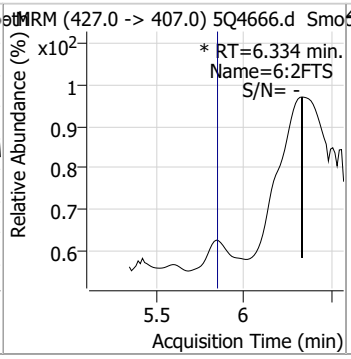


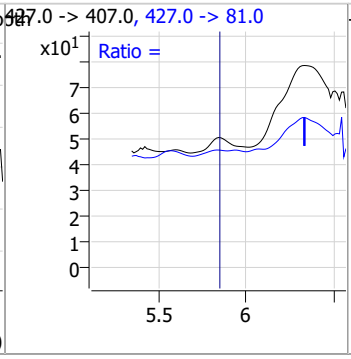


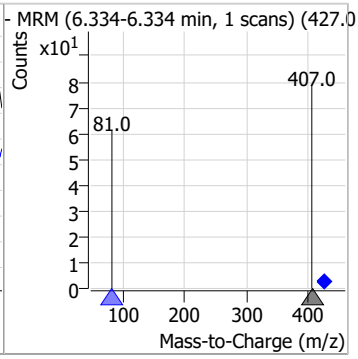


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS		0		0	427.0 -> 81.0		22.7	68.2



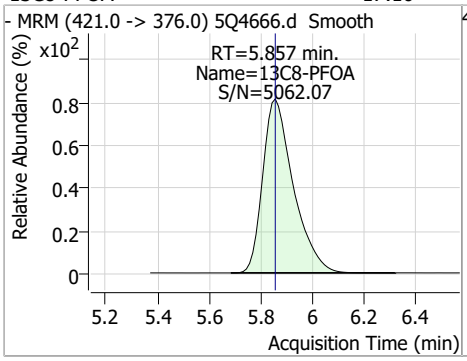


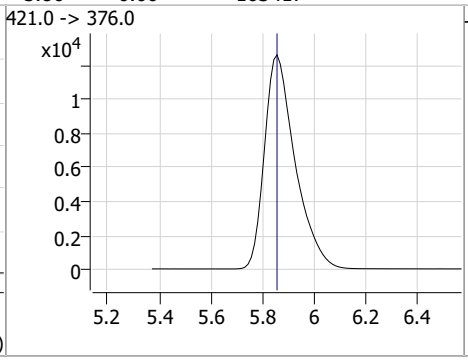


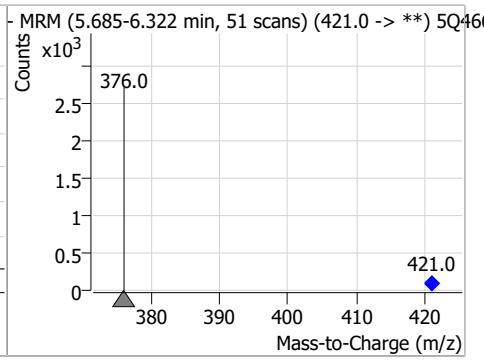


Perfluorinated Compounds by LC/MS/MS

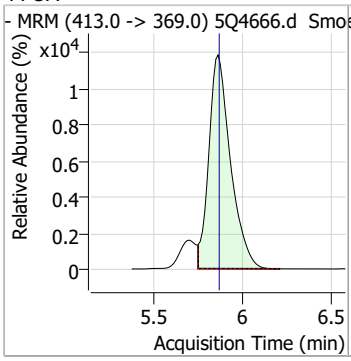
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.10	5.86	0.00	103417				

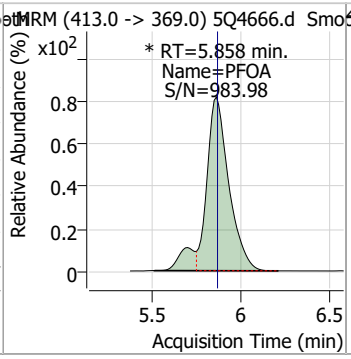


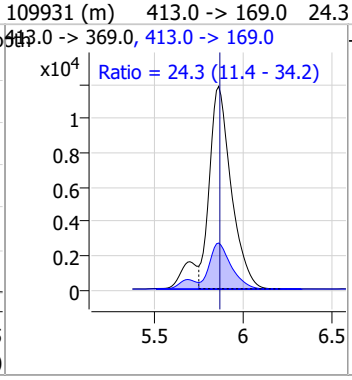


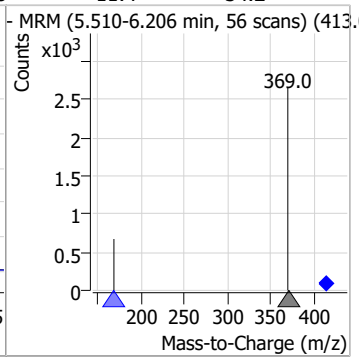


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.53	5.86	0.00	109931 (m)	413.0 -> 169.0	24.3	11.4	34.2

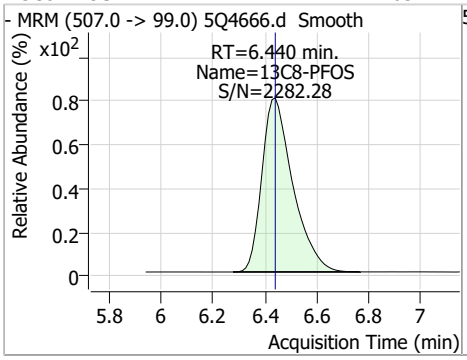


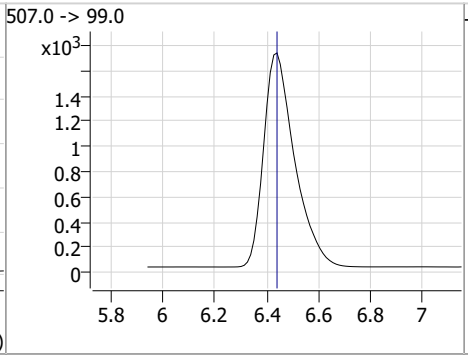


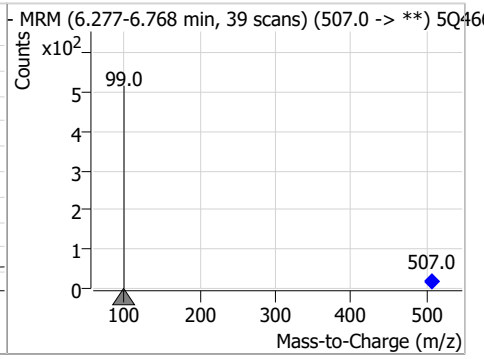




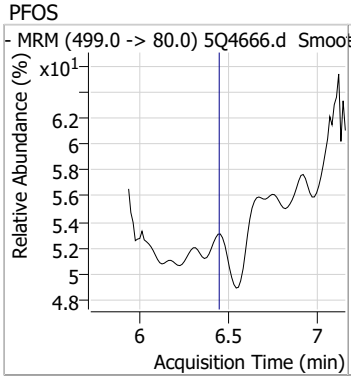
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.63	6.44	0.00	14120				

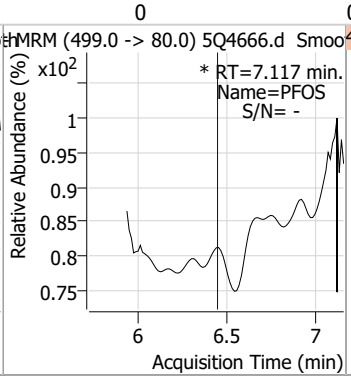


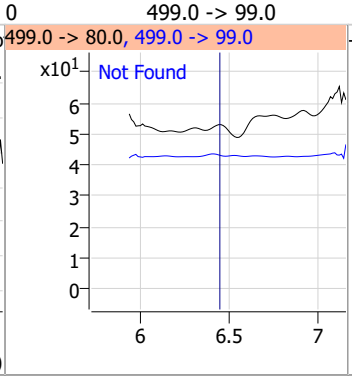


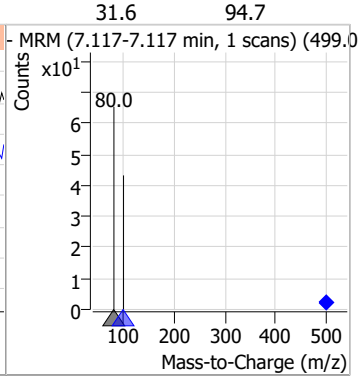


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS		0		0	499.0 -> 99.0		31.6	94.7

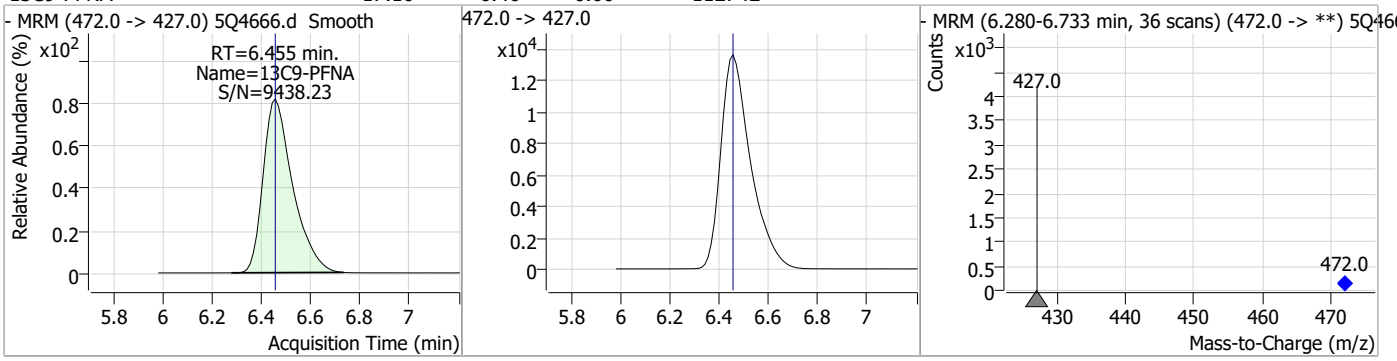




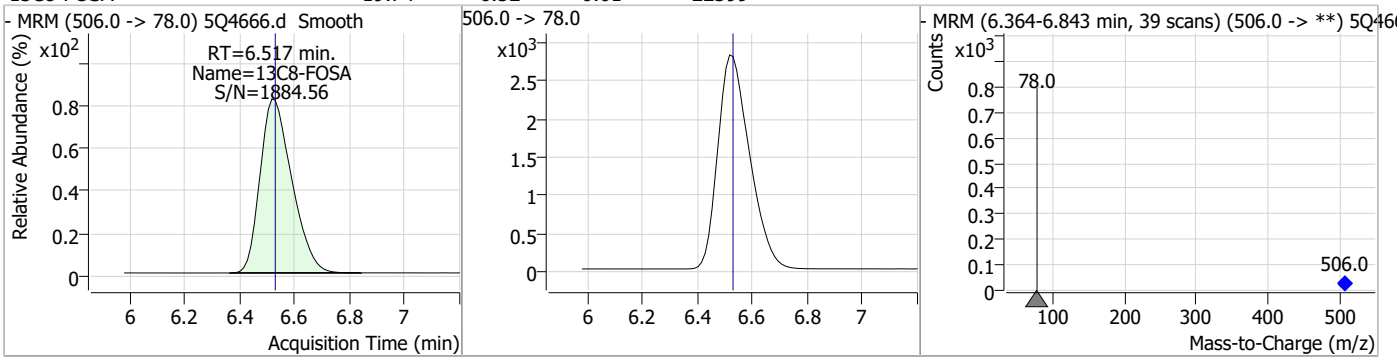




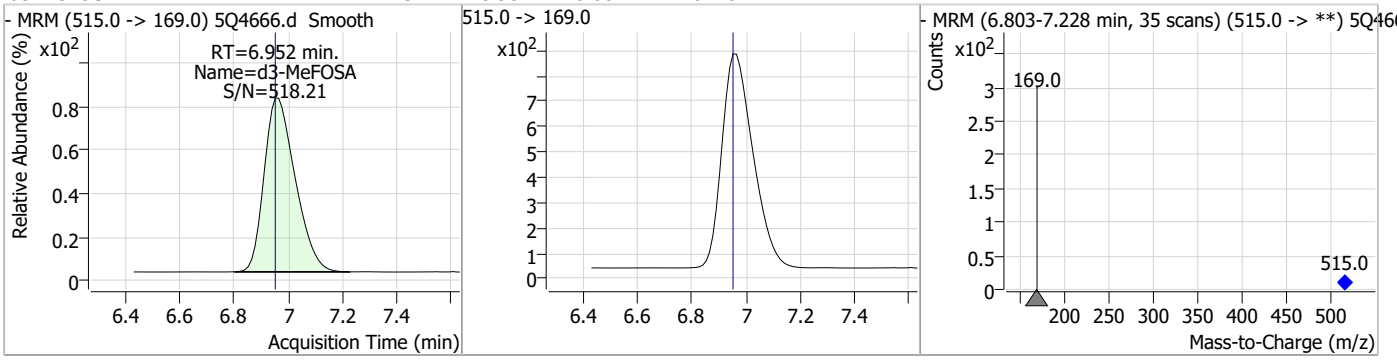
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.16	6.46	0.00	112742				



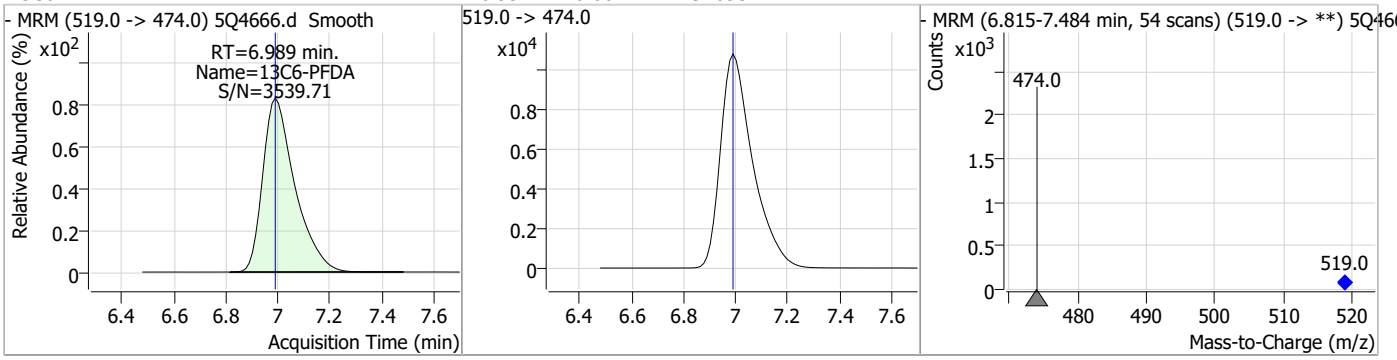
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.74	6.52	-0.01	22399				



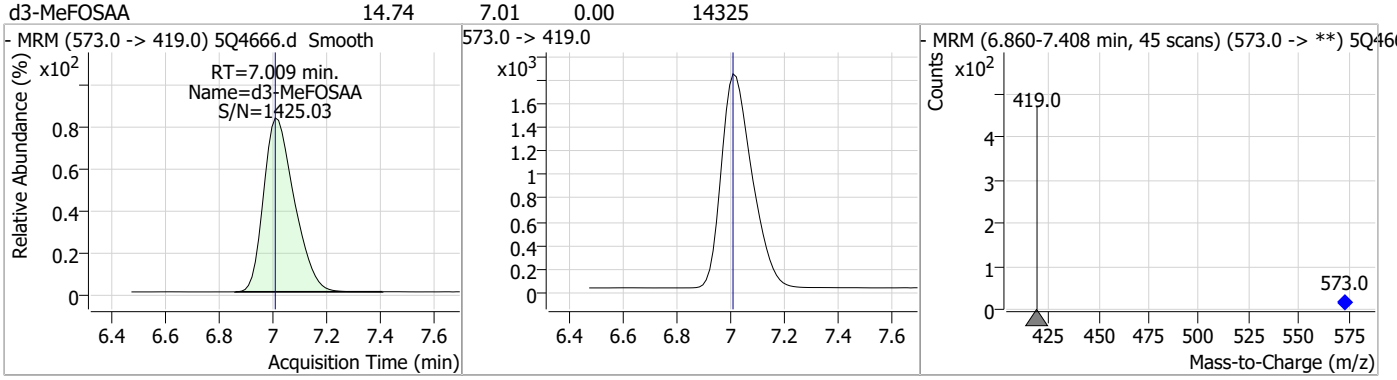
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.23	6.95	0.00	6770				



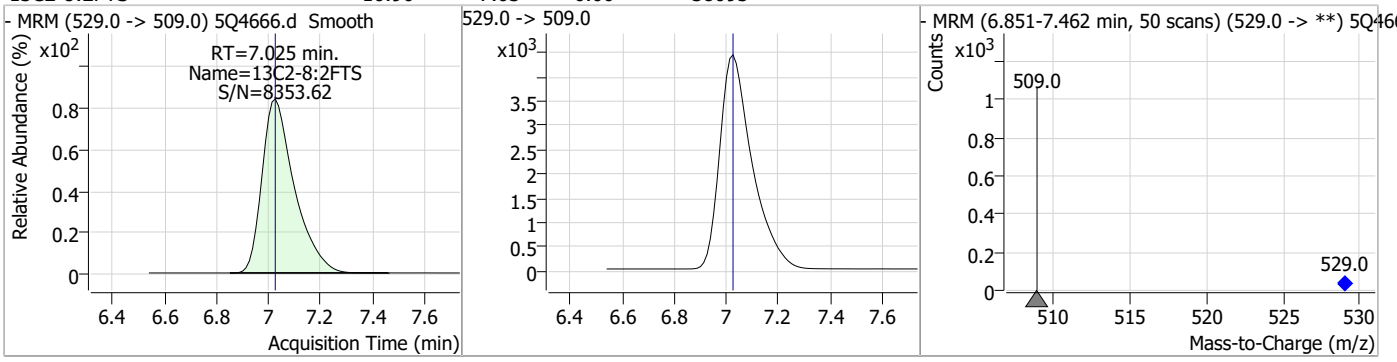
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.11	6.99	0.00	92093				



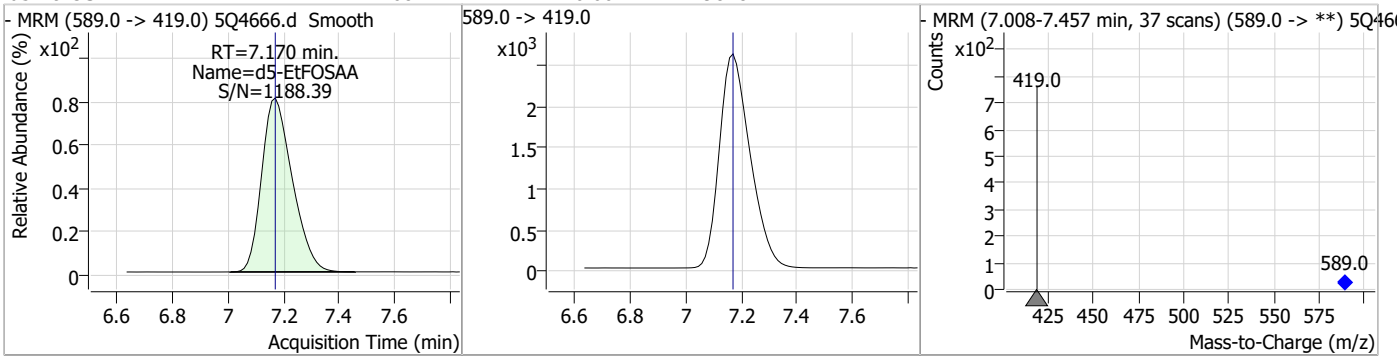
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.74	7.01	0.00	14325				



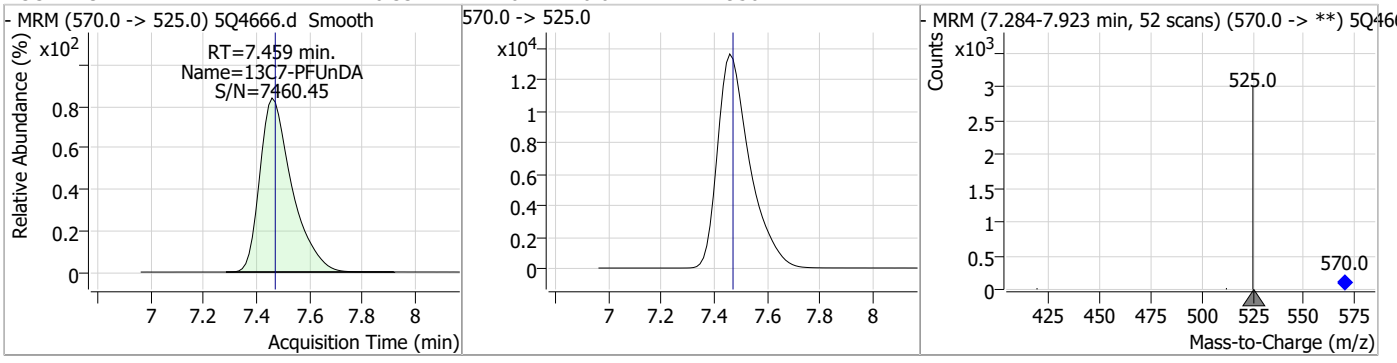
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	16.96	7.03	0.00	38093				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.68	7.17	0.00	19818				

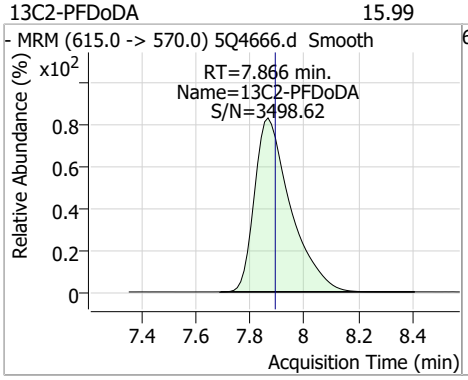


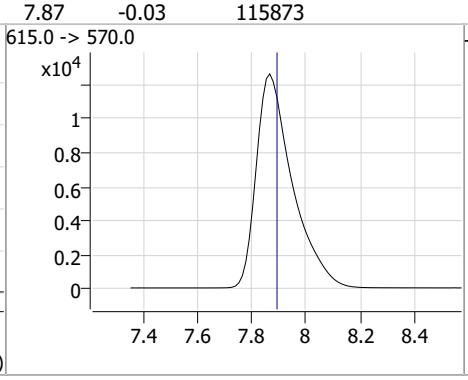
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.33	7.46	-0.01	114956				

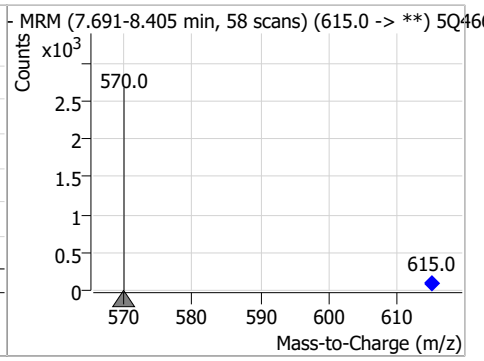


Perfluorinated Compounds by LC/MS/MS

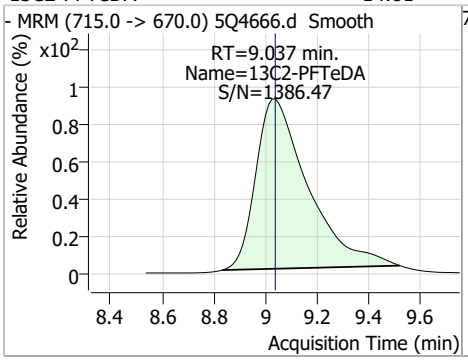
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.99	7.87	-0.03	115873				

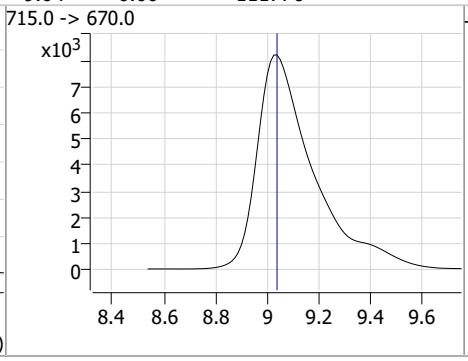


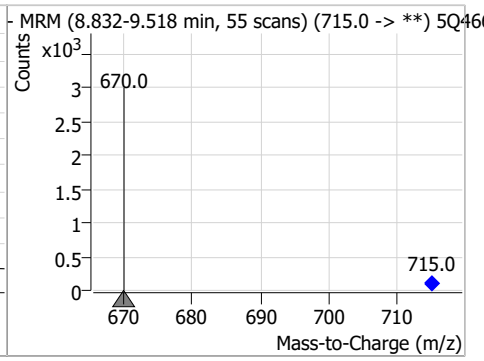




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.81	9.04	0.00	111776				







Manual Integration Approval Summary

Sample Number: S5Q72-RT
Lab FileID: 5Q4666.D
Injection Time: 09/15/22 16:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		5.86	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4826.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 3:06:11 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

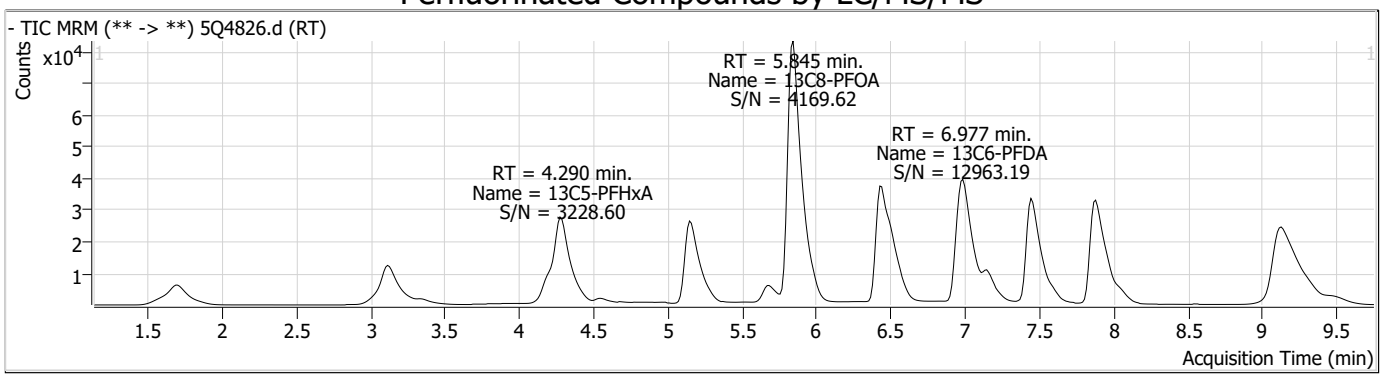
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	70537	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	113422	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	181931	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	169106	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	224454	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	225980	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	180126	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	225056	20.00	µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	259256	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	336323	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	45018	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12942	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	13031	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	22171	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	56595	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	76869	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	68522	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	33169	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10927	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	11635	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	39874	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	56595	18.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C2-6:2FTS	5.830	429.0 -> 409.0	76869	17.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%		
13C2-8:2FTS	7.013	529.0 -> 509.0	68522	17.83	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C2-PFDoDA	7.879	615.0 -> 570.0	259256	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-PFTeDA	9.124	715.0 -> 670.0	336323	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFBS	3.349	302.0 -> 99.0	12942	19.36	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C3-PFHxS	5.194	402.0 -> 99.0	13031	19.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C4-PFBA	1.687	217.0 -> 172.0	70537	19.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	169106	19.23	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C5-PFHxA	4.290	318.0 -> 273.0	181931	19.24	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C5-PFPeA	3.119	268.0 -> 223.0	113422	19.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C6-PFDA	6.977	519.0 -> 474.0	180126	19.39	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

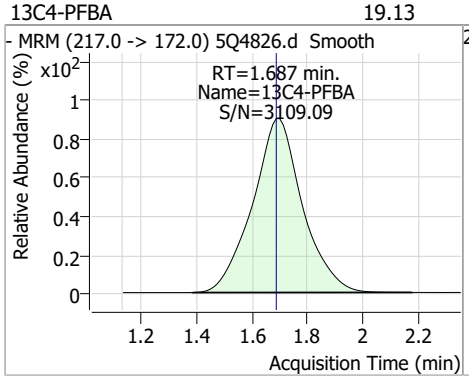
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
13C7-PFUnDA	7.459	570.0 -> 525.0	225056	19.42	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C8-FOSA	6.517	506.0 -> 78.0	45018	19.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C8-PFOA	5.845	421.0 -> 376.0	224454	19.06	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
13C8-PFOS	6.428	507.0 -> 99.0	22171	19.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C9-PFNA	6.443	472.0 -> 427.0	225980	19.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	33169	19.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10927	19.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	11635	20.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	39874	18.91	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.171	584.0 -> 419.0	0		µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.010	570.0 -> 419.0	0		µg/L	m	1
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	7.880	613.0 -> 569.0	0		µg/L	m	1
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.150	363.0 -> 319.0	0		µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.845	413.0 -> 369.0	235857	17.28	µg/L	m	98
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

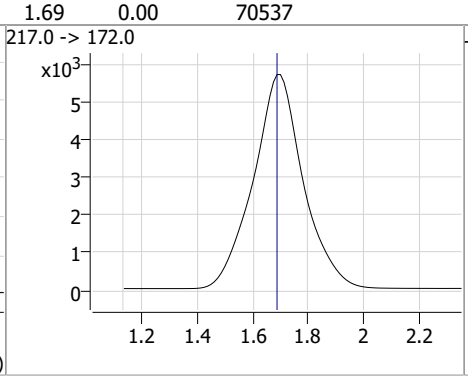
 # = Qualifier out of range, m = manually integrated, + = Area summed

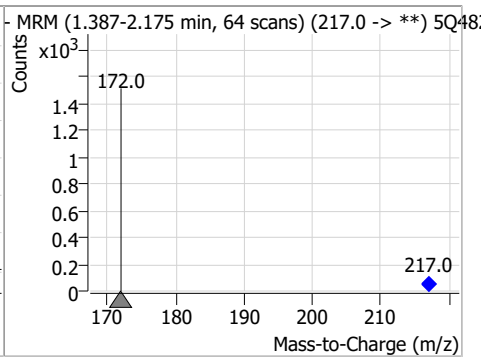
Perfluorinated Compounds by LC/MS/MS



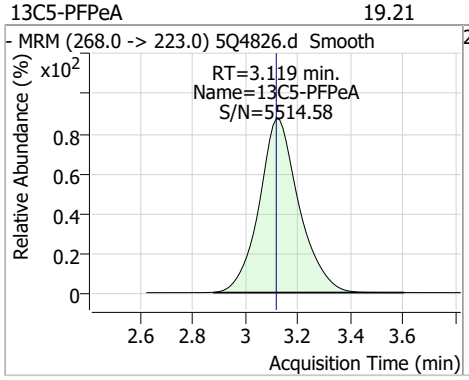
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.13	1.69	0.00	70537				

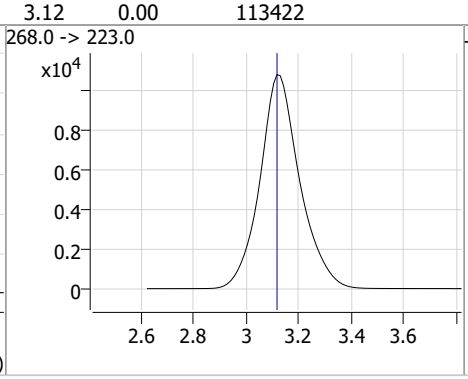


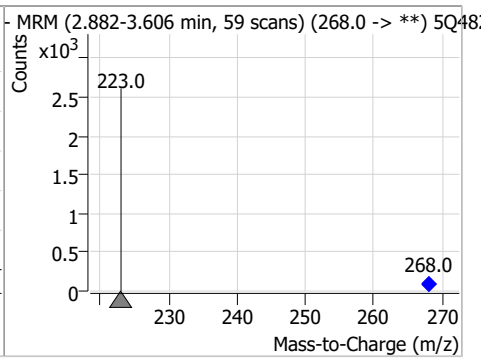




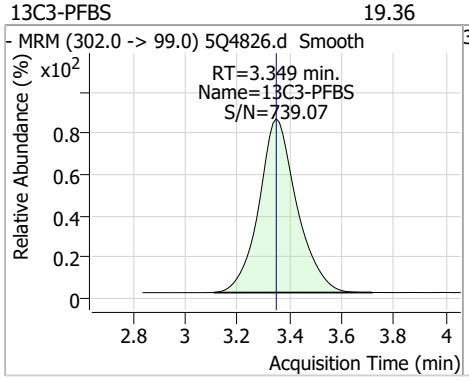
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.21	3.12	0.00	113422				

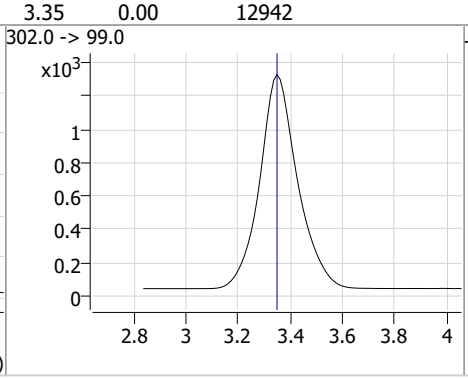


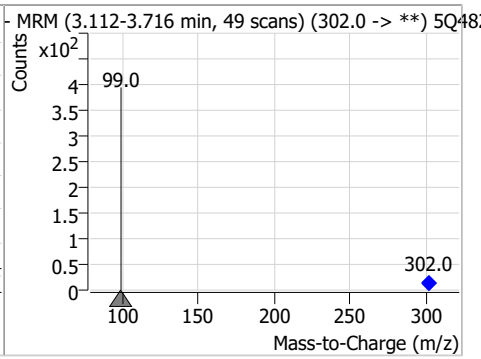




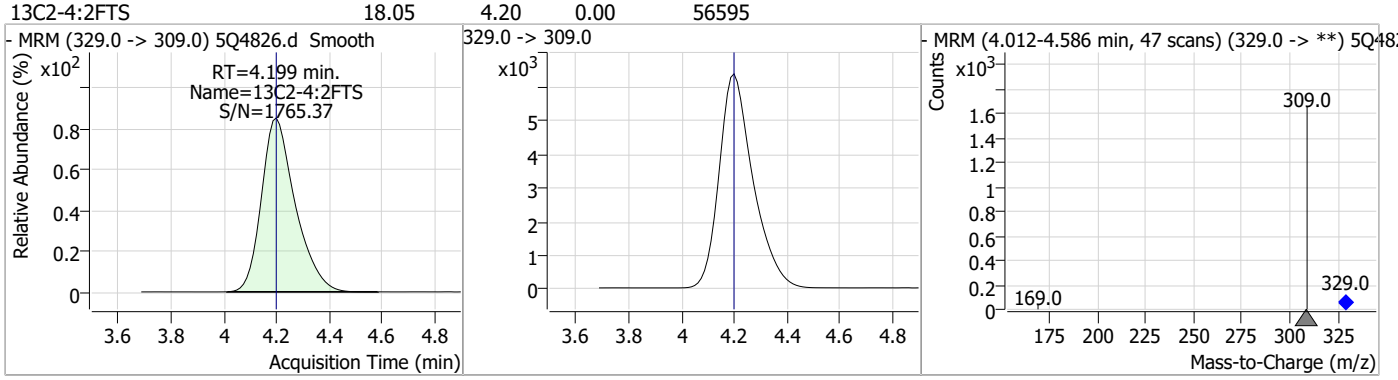
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.36	3.35	0.00	12942				







Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.05	4.20	0.00	56595				



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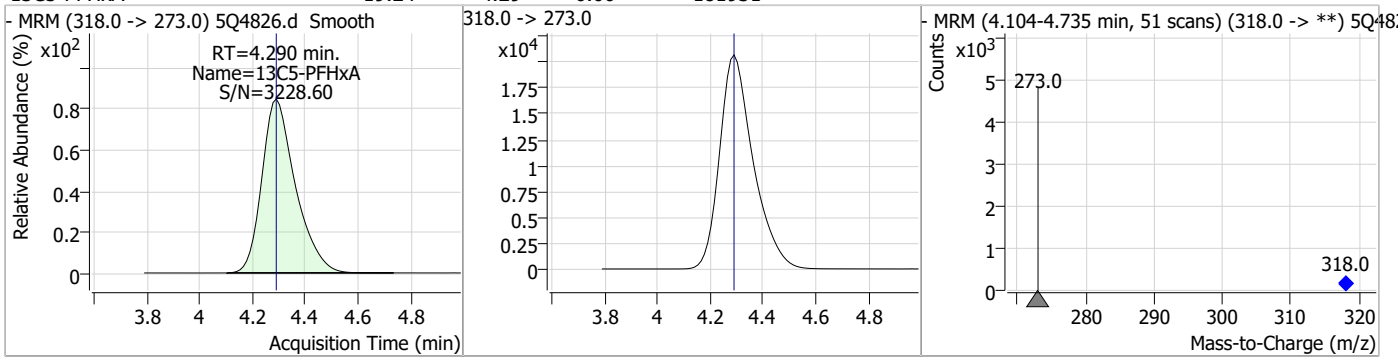
13C5-PFHxA	19.24	4.29	0.00	181931				



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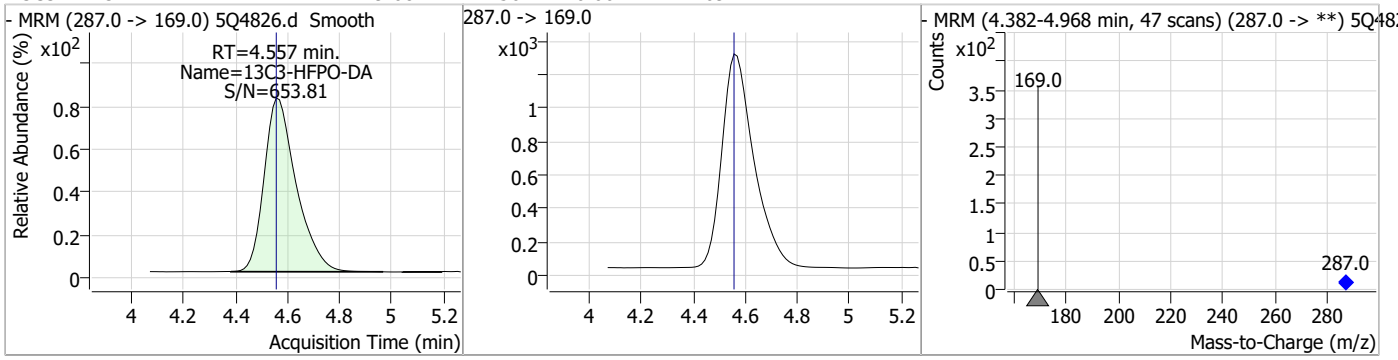
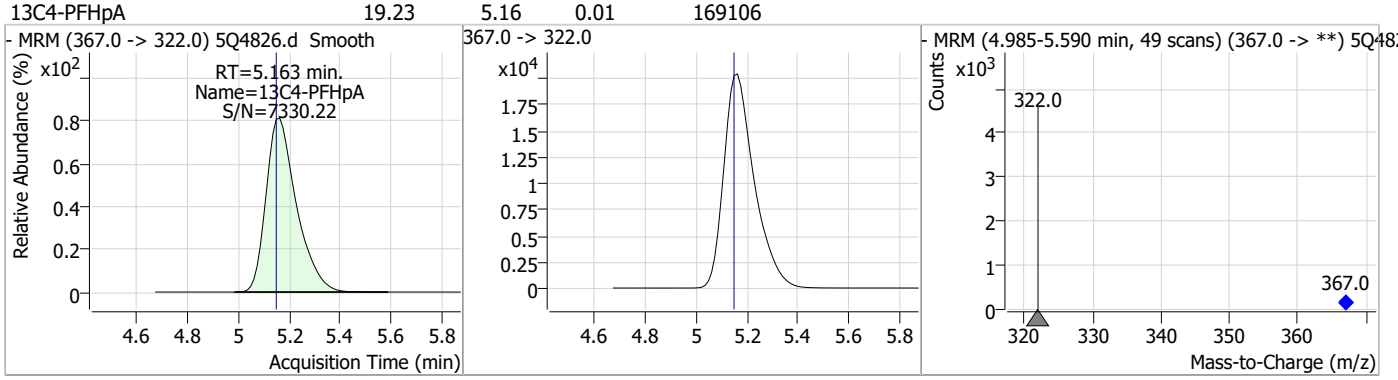
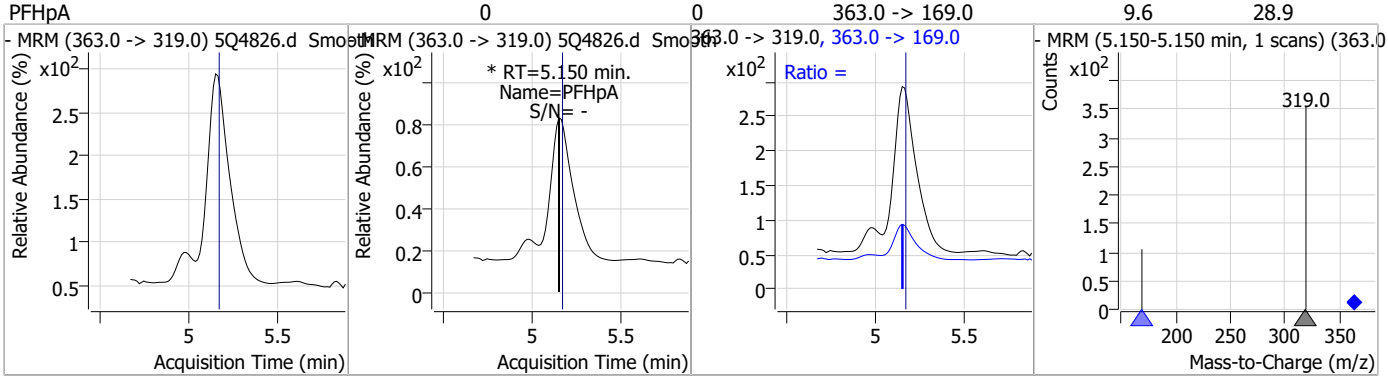
13C3-HFPO-DA	19.08	4.56	0.00	10927				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.23	5.16	0.01	169106				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		9.6	28.9



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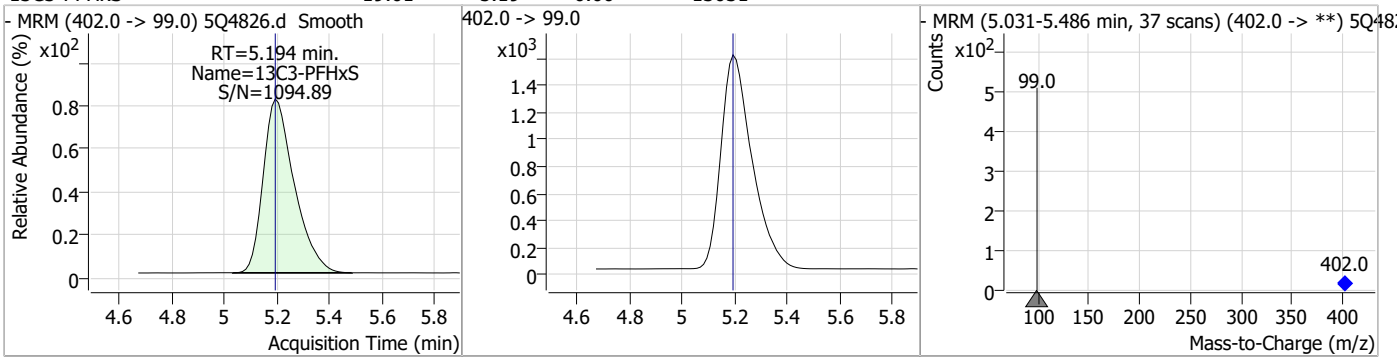
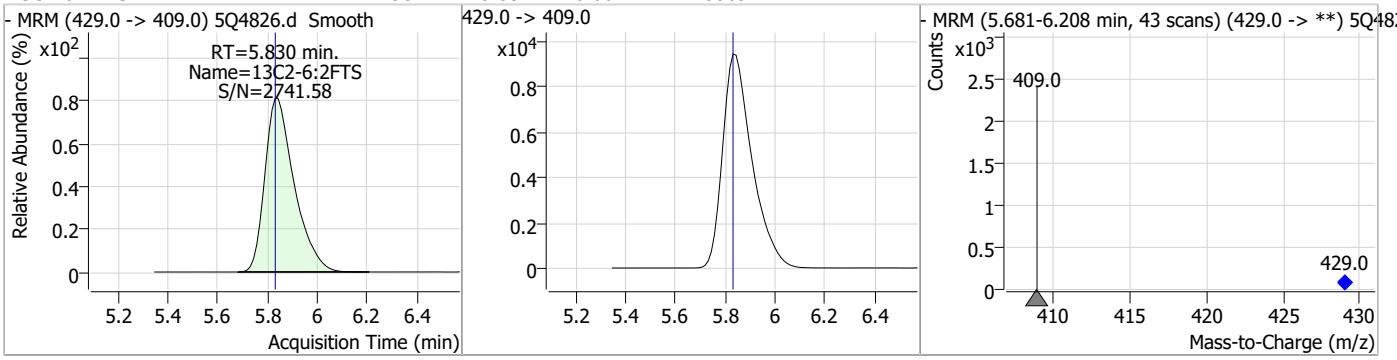
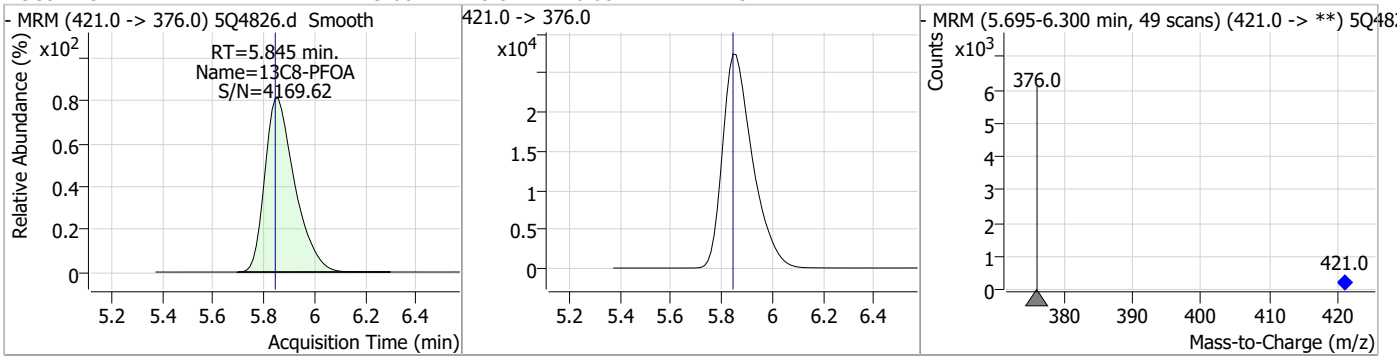
13C3-PFHxS	19.01	5.19	0.00	13031				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.93	5.83	0.00	76869				

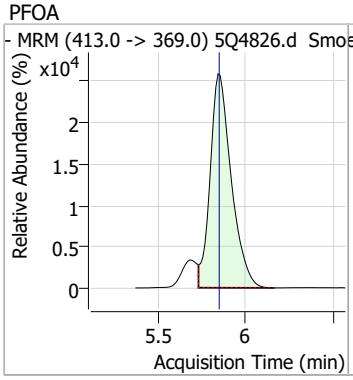


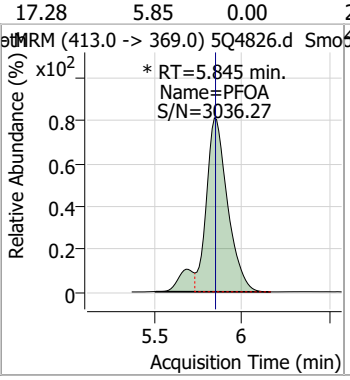
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.06	5.84	0.00	224454				

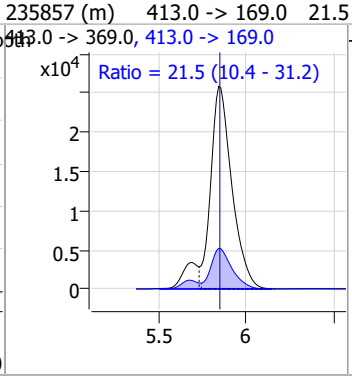


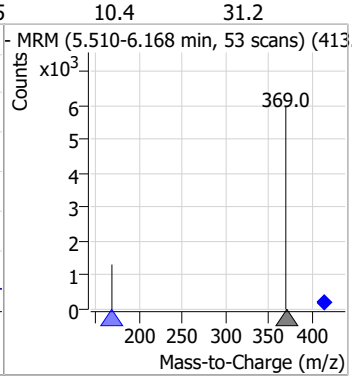
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.28	5.85	0.00	235857 (m)	413.0 -> 169.0	21.5	10.4	31.2

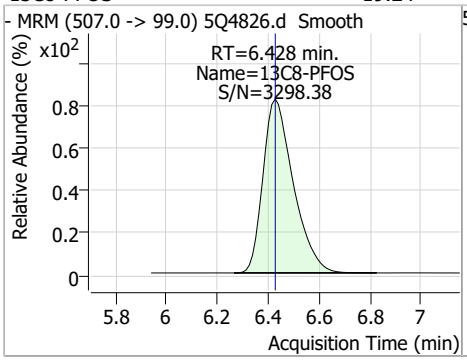


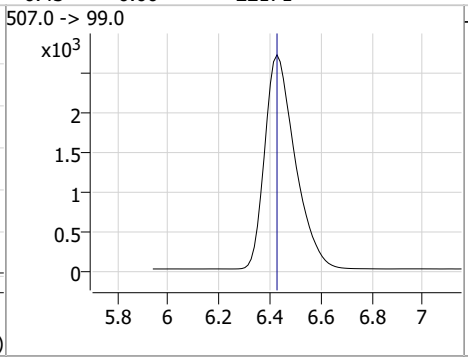


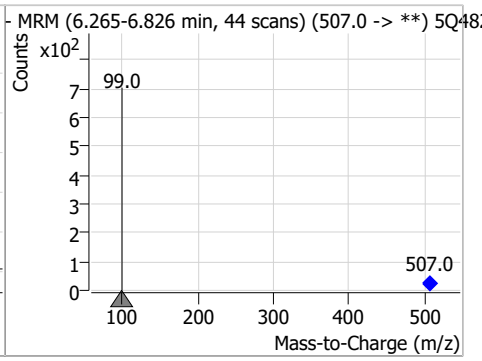




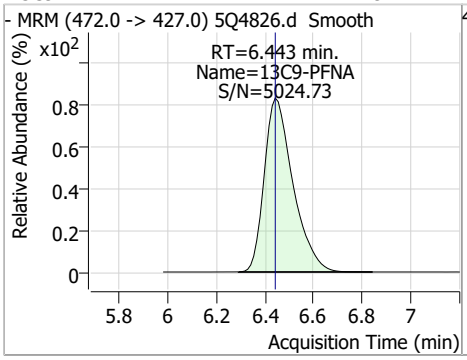
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.24	6.43	0.00	22171				

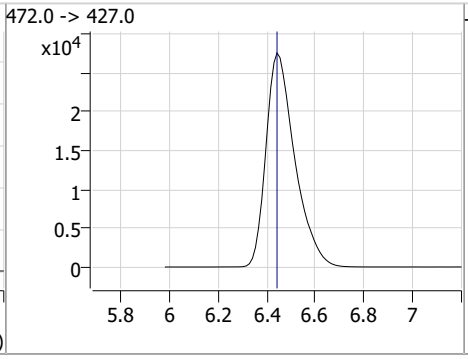


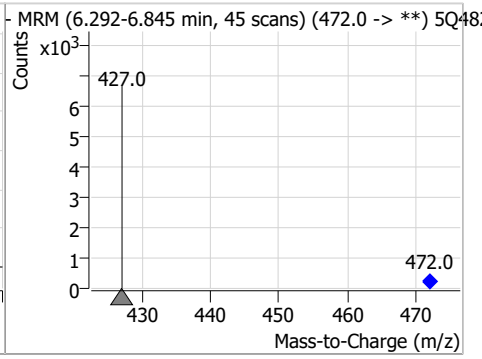




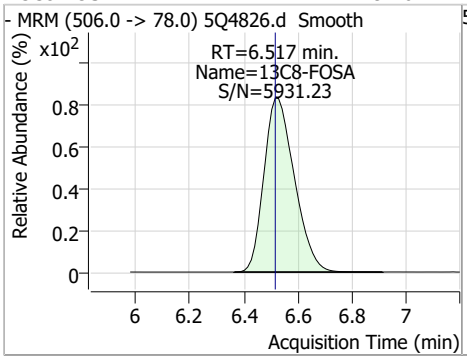
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.17	6.44	0.00	225980				

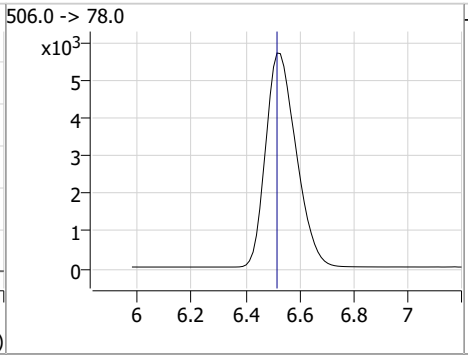


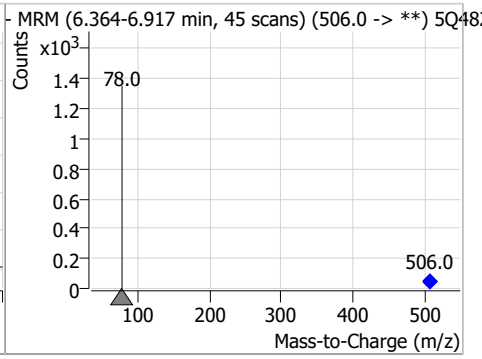




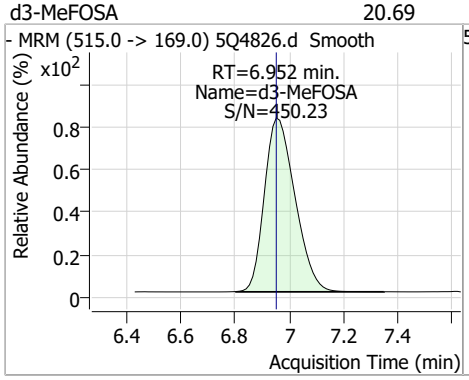
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.16	6.52	0.00	45018				

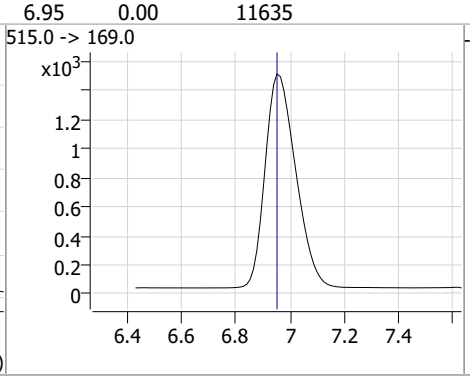


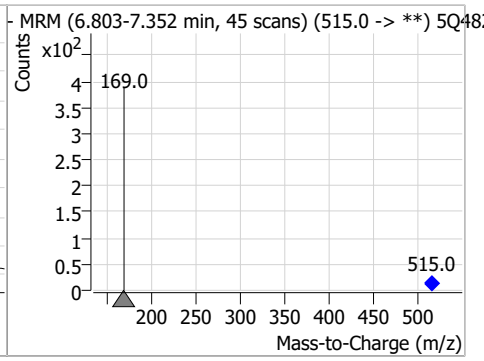




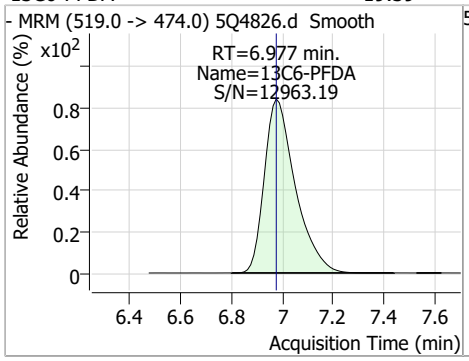
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.69	6.95	0.00	11635				

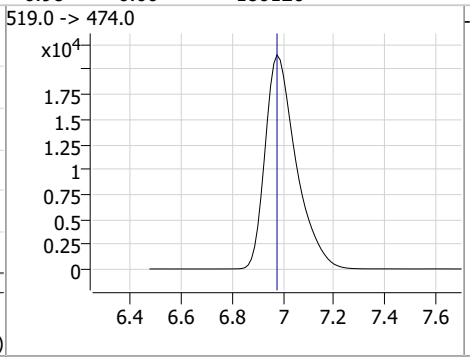


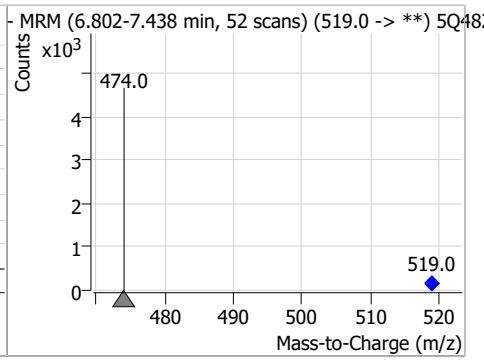




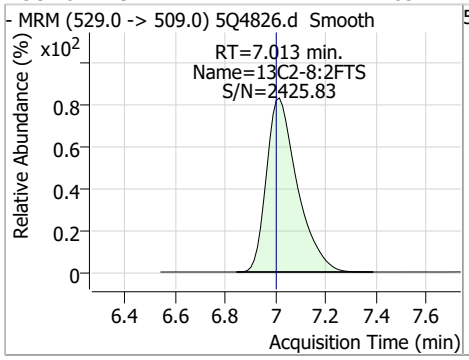
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.39	6.98	0.00	180126				

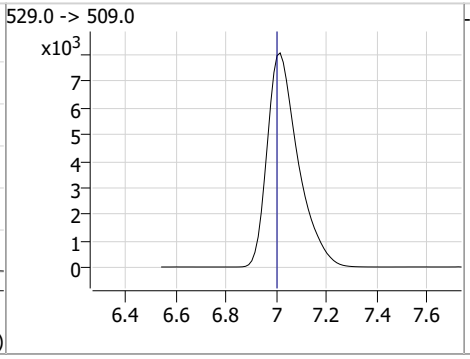


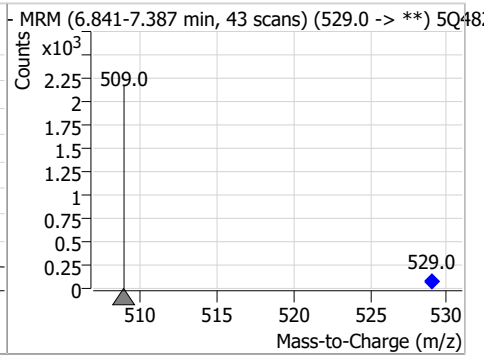




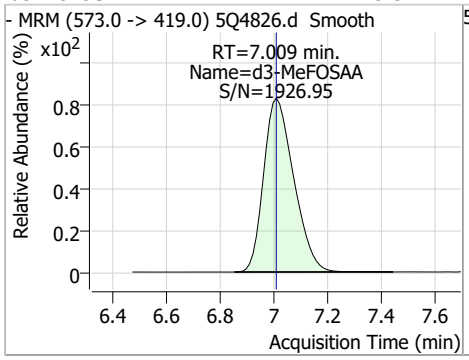
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.83	7.01	0.01	68522				

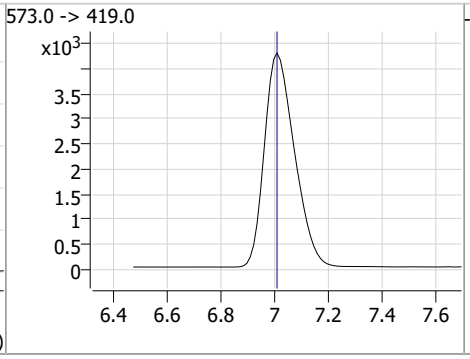


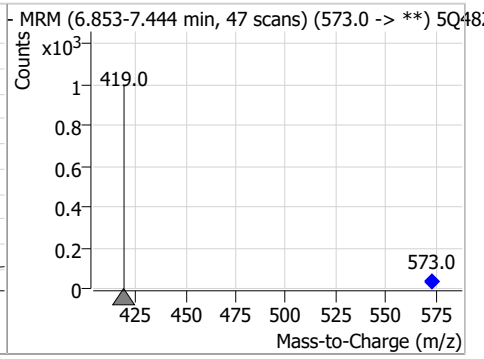




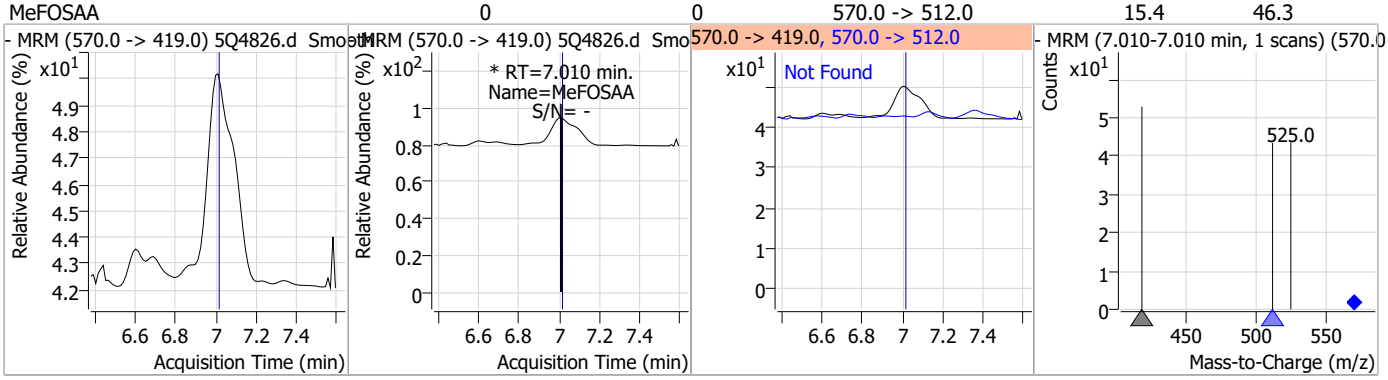
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.34	7.01	0.00	33169				



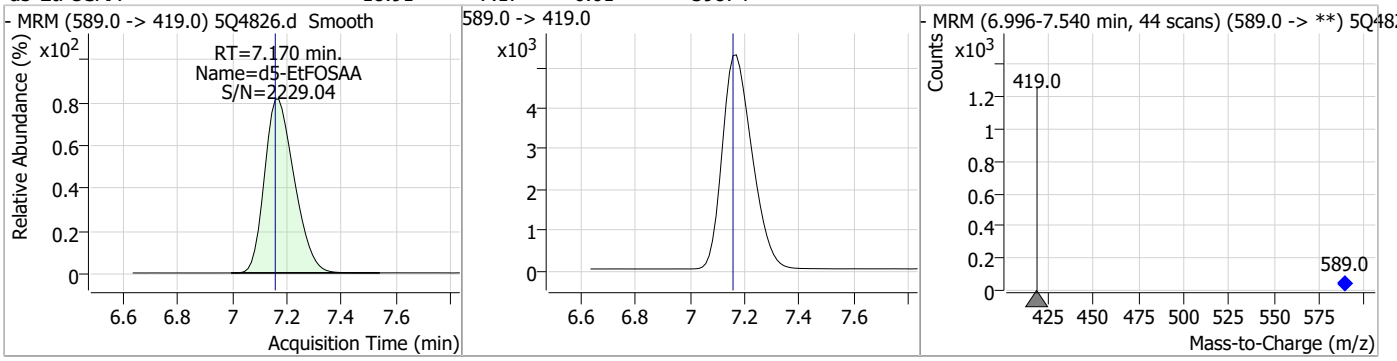




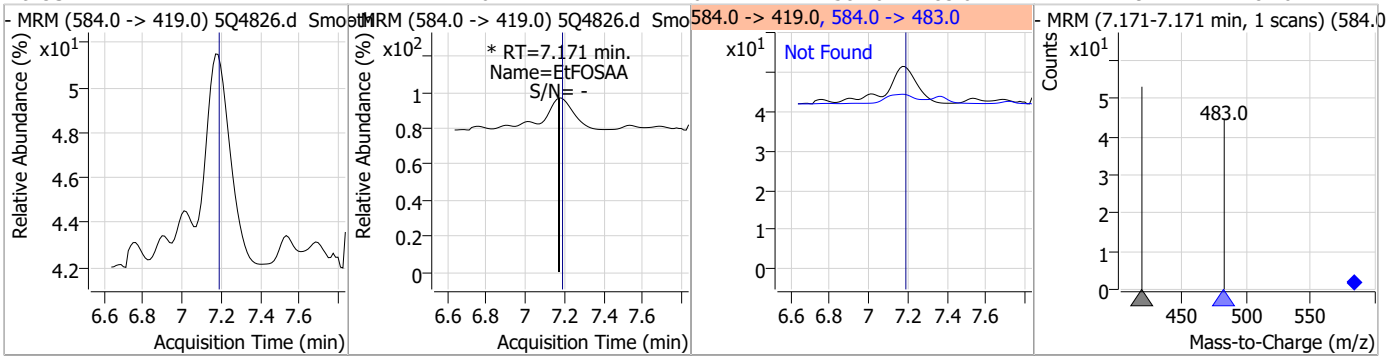
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA		0		0	570.0 -> 512.0		15.4	46.3



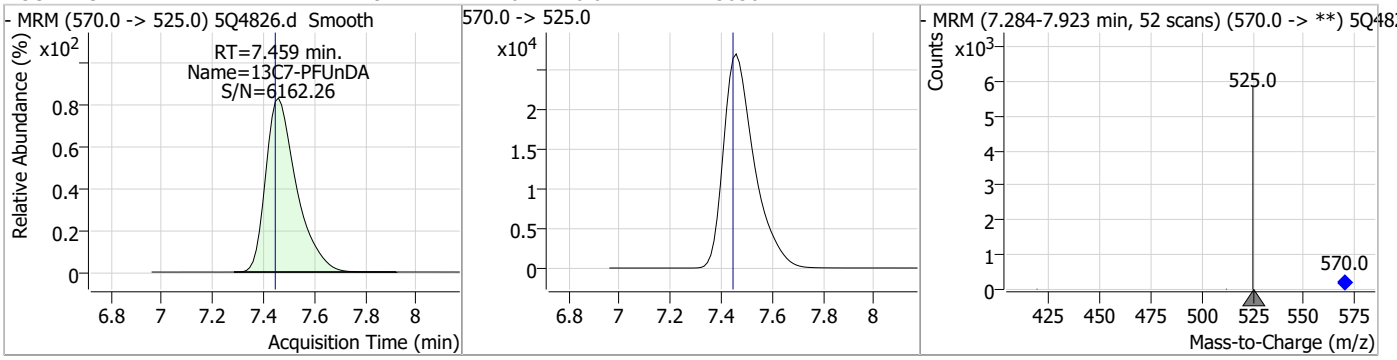
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.91	7.17	0.01	39874				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA		0		0	584.0 -> 483.0		29.2	87.6

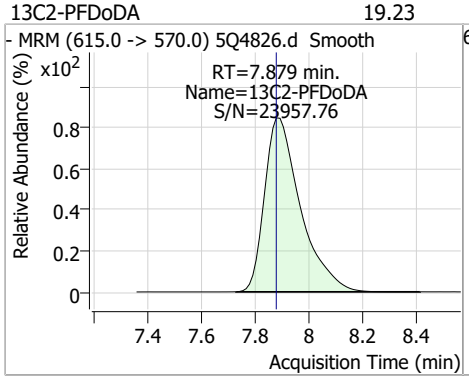


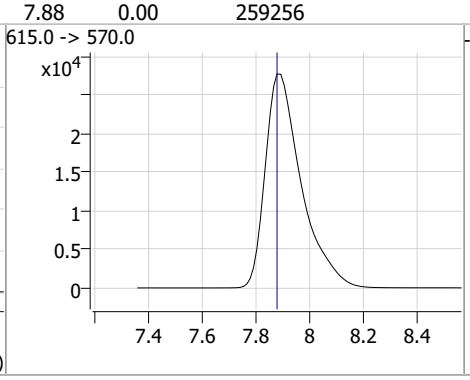
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.42	7.46	0.01	225056				

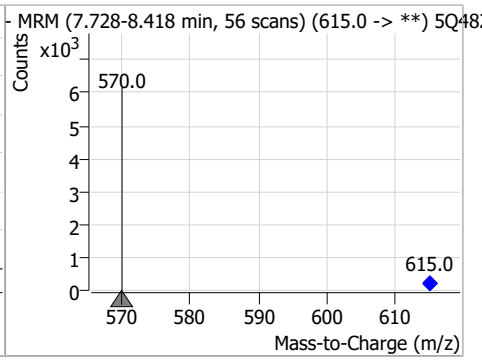


Perfluorinated Compounds by LC/MS/MS

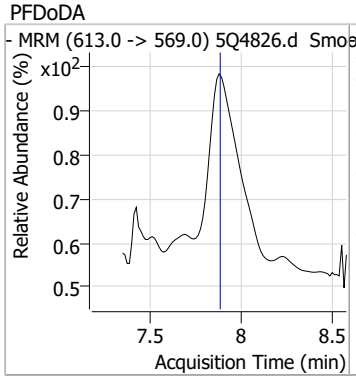
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.23	7.88	0.00	259256				

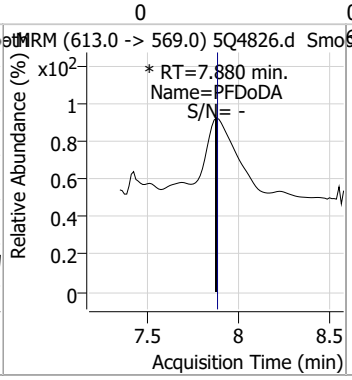


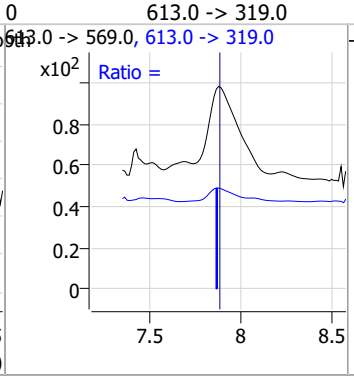


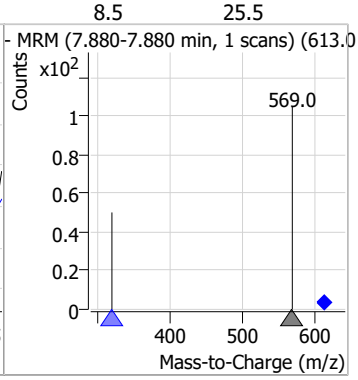


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA		0		0	613.0 -> 319.0		8.5	25.5

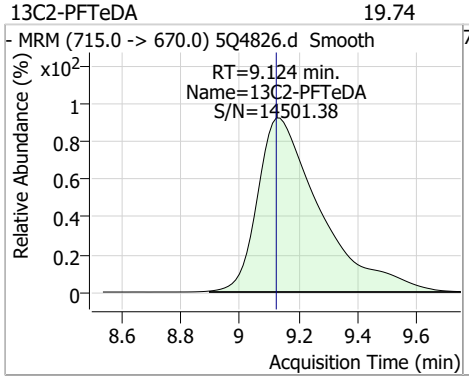


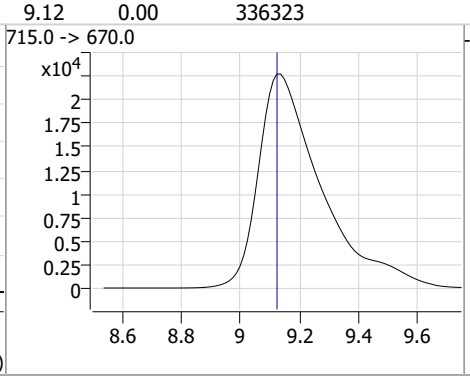


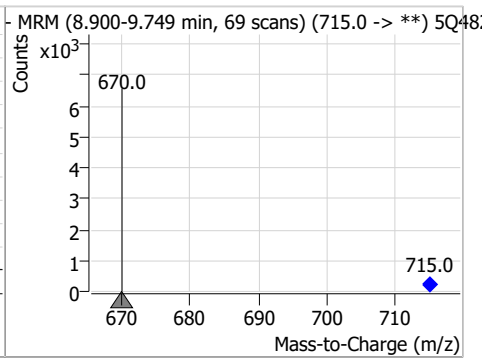




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.74	9.12	0.00	336323				







Manual Integration Approval Summary

Sample Number: S5Q73-RT
Lab FileID: 5Q4826.D
Injection Time: 09/17/22 15:06
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		5.84	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:39

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4911.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/19/2022 5:55:38 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q74.batch.bin
Sample Information : OP92656,S5Q74,250,,,1.0,1,water

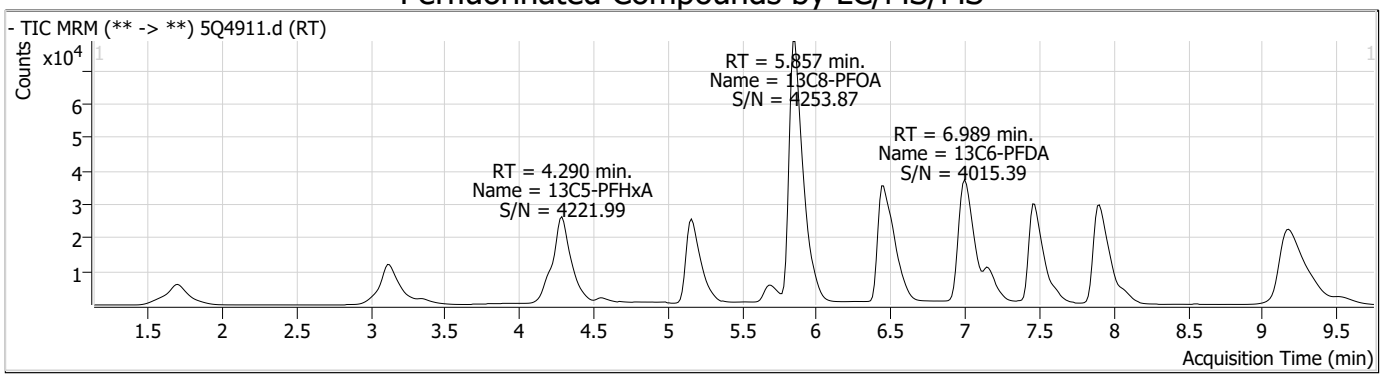
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	69190	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	111645	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	174318	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	162519	20.00	µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	209610	20.00	µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	208310	20.00	µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	161517	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	201442	20.00	µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	234908	20.00	µg/L	0.027
M2-PFTeDA	9.174	715.0 -> 670.0	306358	20.00	µg/L	0.050
M8-FOSA	6.530	506.0 -> 78.0	42503	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12889	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	12942	20.00	µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	22374	20.00	µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	54704	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	75149	20.00	µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	67827	20.00	µg/L	0.025
M3-MeFOSAA	7.021	573.0 -> 419.0	31114	20.00	µg/L	0.012
M3-HFPO-DA	4.569	287.0 -> 169.0	11155	20.00	µg/L	0.012
M3-MeFOSA	6.965	515.0 -> 169.0	10171	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	40610	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	54704	17.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C2-6:2FTS	5.843	429.0 -> 409.0	75149	17.53	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	67827	17.65	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.3%		
13C2-PFDoDA	7.905	615.0 -> 570.0	234908	17.42	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%		
13C2-PFTeDA	9.174	715.0 -> 670.0	306358	17.98	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.9%		
13C3-PFBS	3.349	302.0 -> 99.0	12889	19.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C3-PFHxS	5.206	402.0 -> 99.0	12942	18.88	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C4-PFBA	1.700	217.0 -> 172.0	69190	18.76	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C4-PFHpA	5.163	367.0 -> 322.0	162519	18.48	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C5-PFHxA	4.290	318.0 -> 273.0	174318	18.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	111645	18.90	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C6-PFDA	6.989	519.0 -> 474.0	161517	17.39	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

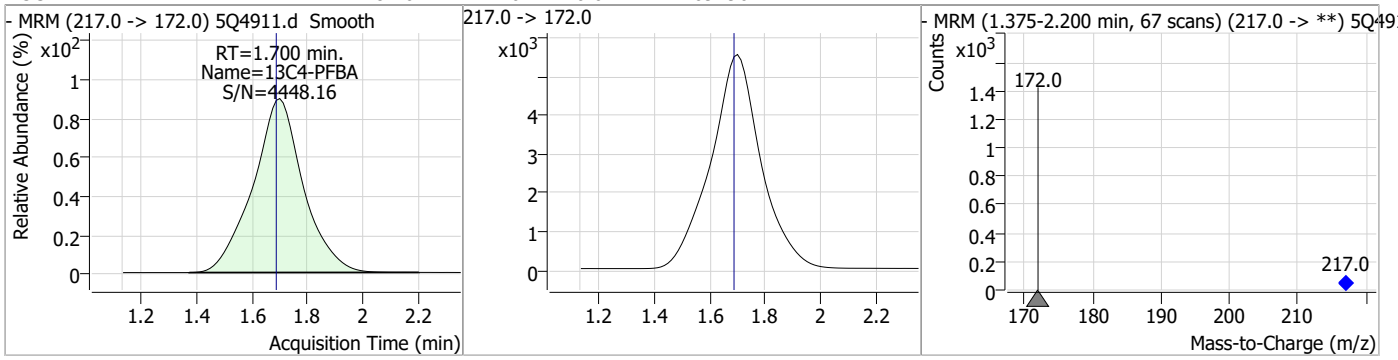
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%			
13C7-PFUnDA	7.471	570.0 -> 525.0	201442	17.38	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%			
13C8-FOSA	6.530	506.0 -> 78.0	42503	18.09	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
13C8-PFOA	5.857	421.0 -> 376.0	209610	17.80	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
13C8-PFOS	6.440	507.0 -> 99.0	22374	19.42	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
13C9-PFNA	6.455	472.0 -> 427.0	208310	17.67	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%			
d3-MeFOSAA	7.021	573.0 -> 419.0	31114	18.14	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	11155	19.47	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
d3-MeFOSA	6.965	515.0 -> 169.0	10171	18.09	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	40610	19.26	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
Target Compounds							**QValue**
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
PFDA	-	513.0 -> 469.0	-	N.D.			
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	5.164	363.0 -> 319.0	0		µg/L	m	1
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	224245	17.59	µg/L	m	98
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	-	263.0 -> 219.0	-	N.D.			
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	-	713.0 -> 669.0	-	N.D.			
PFTrDA	-	663.0 -> 619.0	-	N.D.			
PFUnDA	7.472	563.0 -> 519.0	0		µg/L	m	1
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	-	512.0 -> 169.0	-	N.D.			
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

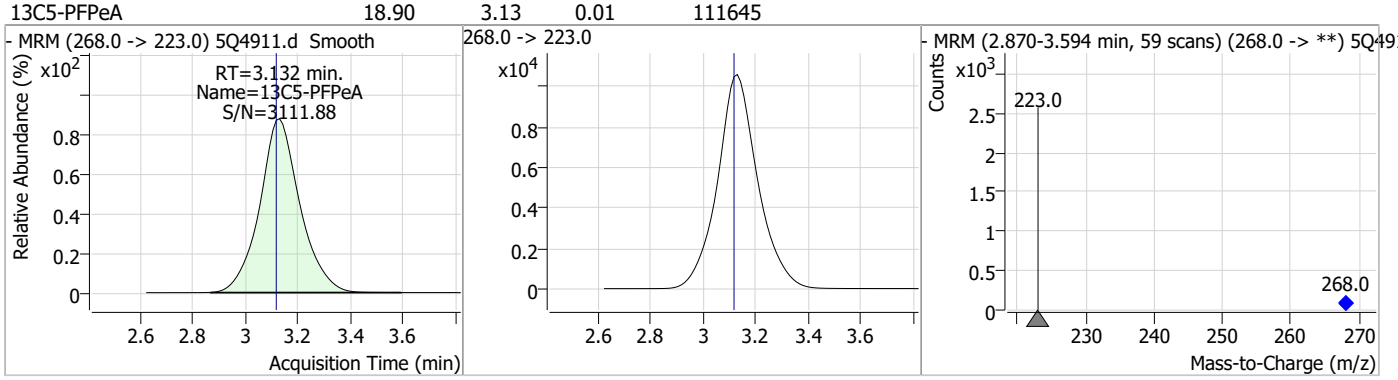
Perfluorinated Compounds by LC/MS/MS



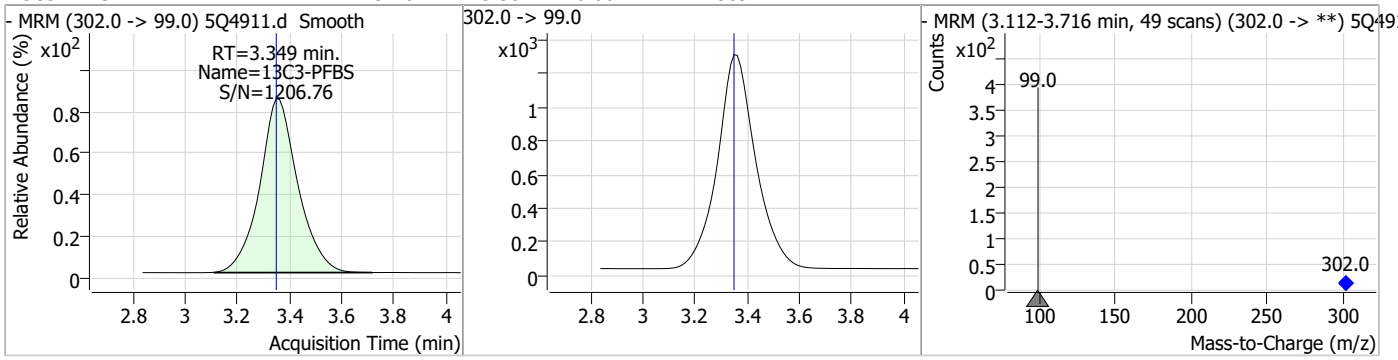
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.76	1.70	0.01	69190				



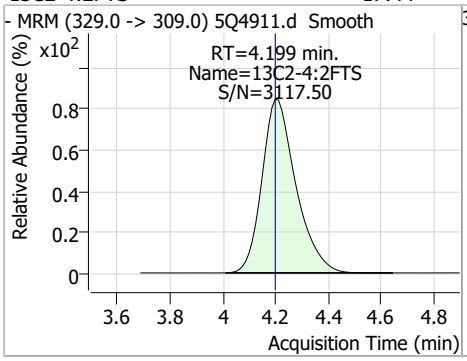
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.90	3.13	0.01	111645				

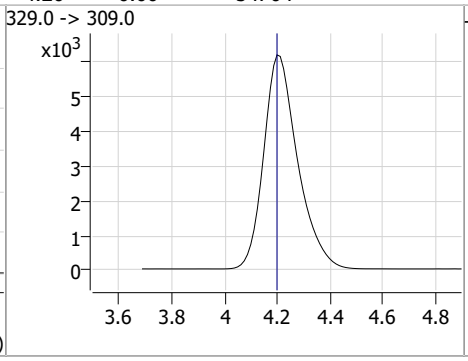


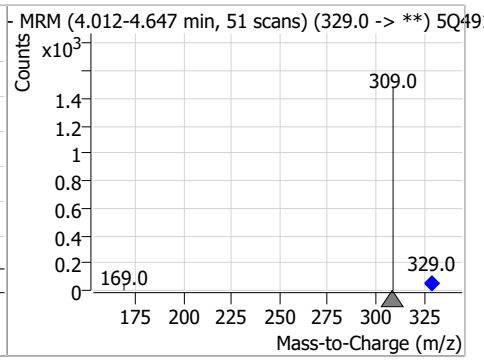
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.28	3.35	0.00	12889				



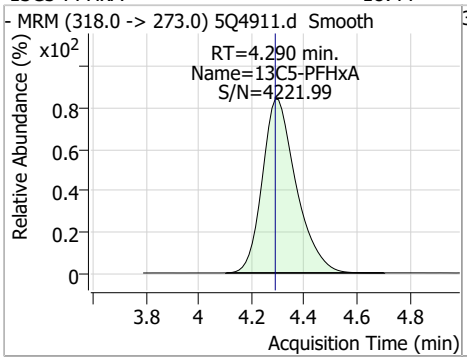
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.44	4.20	0.00	54704				

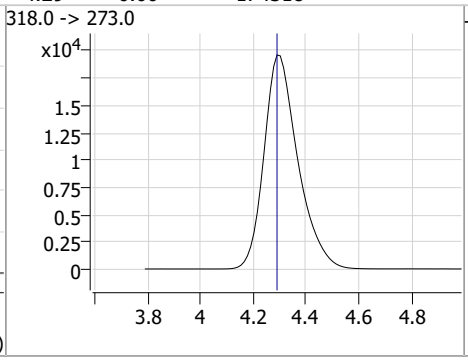


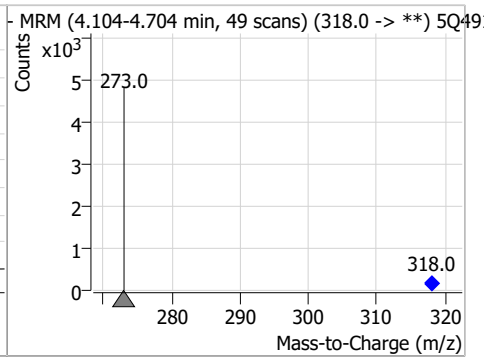




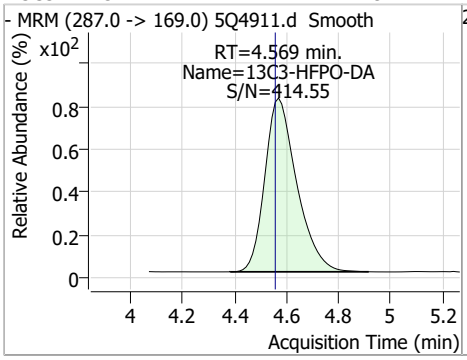
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.44	4.29	0.00	174318				

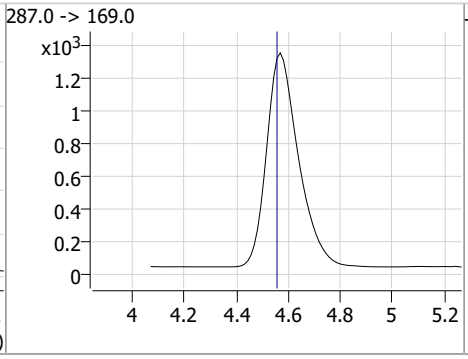


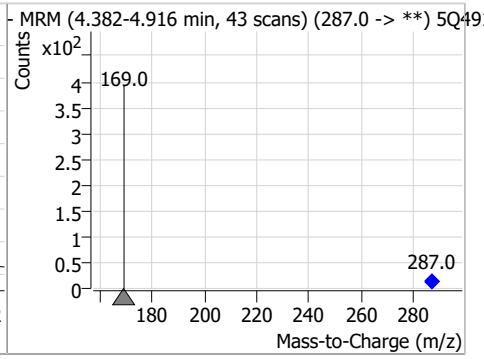




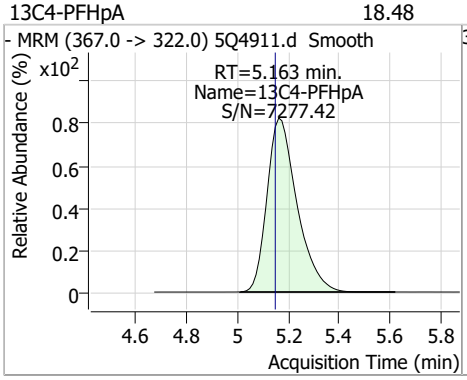
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.47	4.57	0.01	11155				

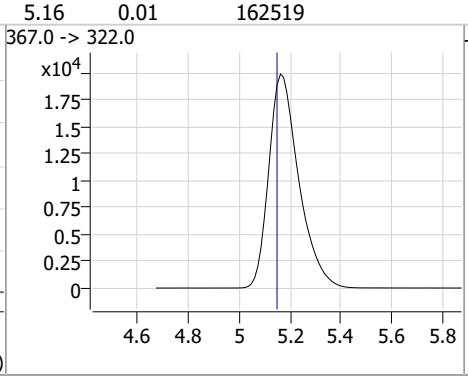


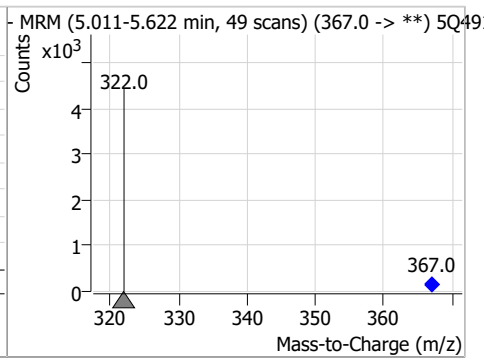




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.48	5.16	0.01	162519				

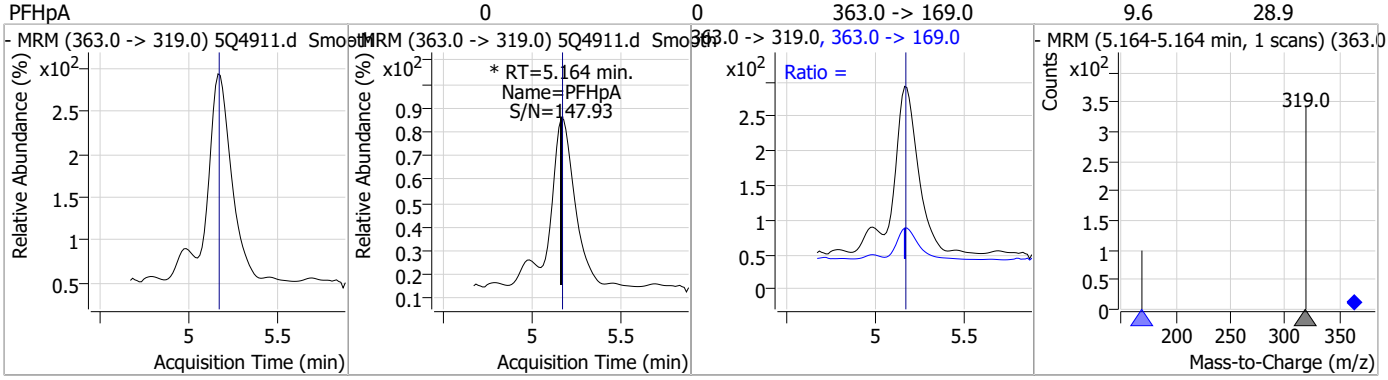




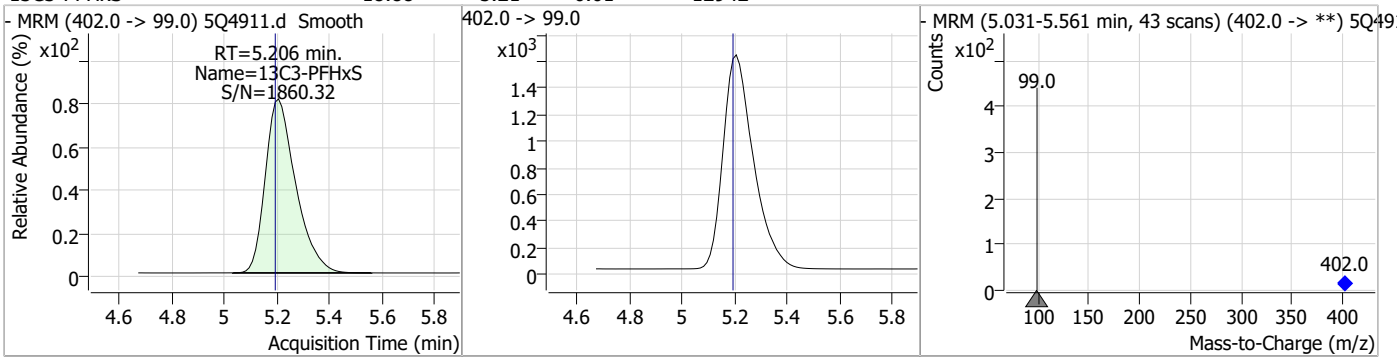


Perfluorinated Compounds by LC/MS/MS

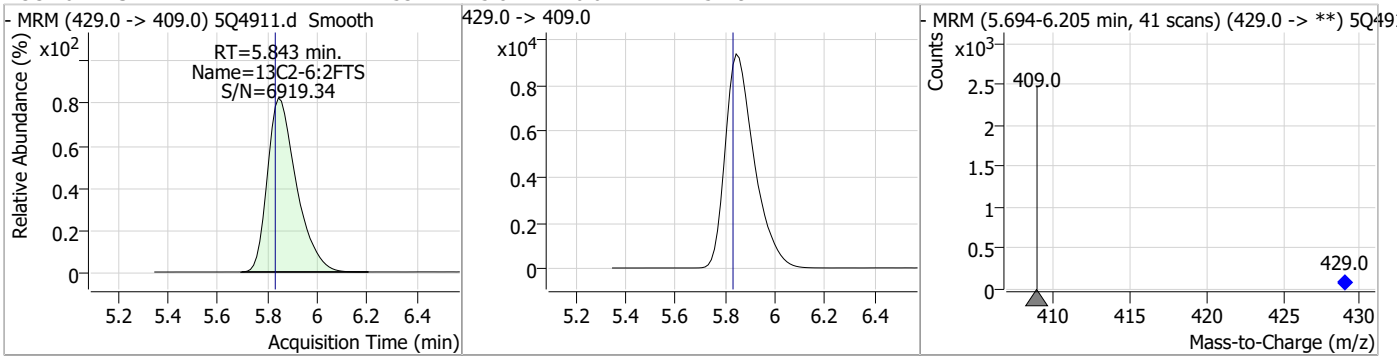
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		9.6	28.9



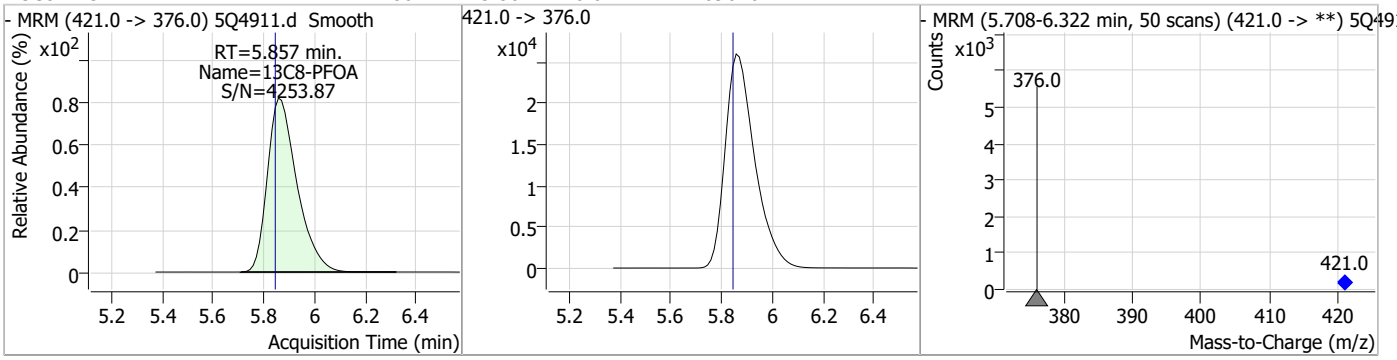
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.88	5.21	0.01	12942				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.53	5.84	0.01	75149				

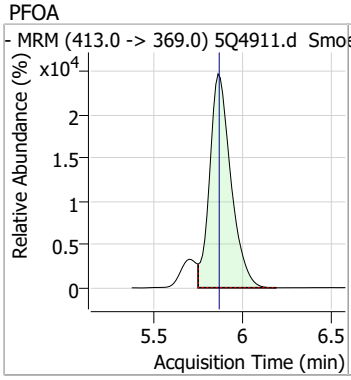


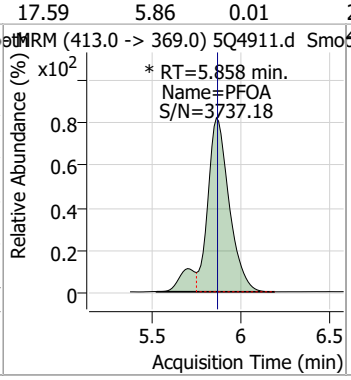
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.80	5.86	0.01	209610				

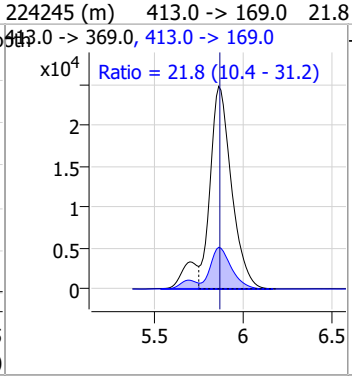


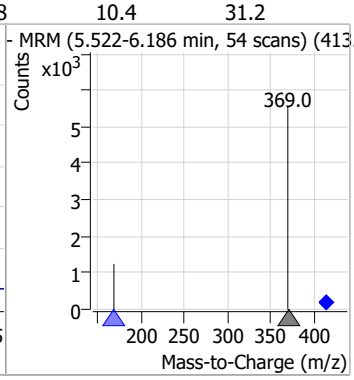
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.59	5.86	0.01	224245 (m)	413.0 -> 169.0	21.8	10.4	31.2

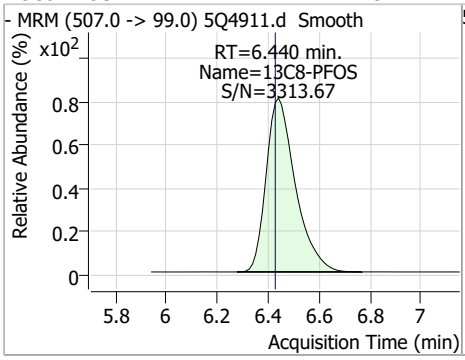


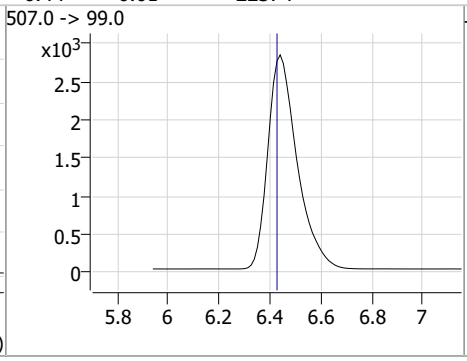


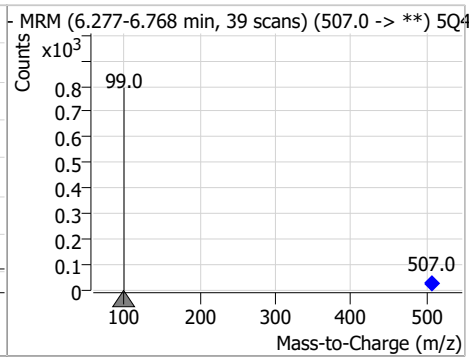




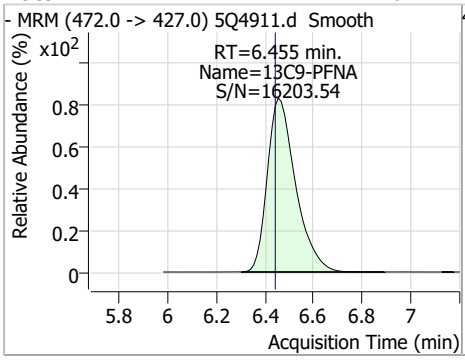
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.42	6.44	0.01	22374				

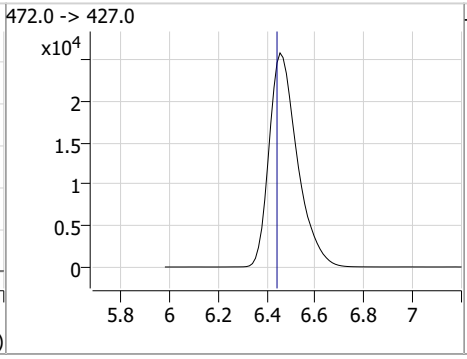


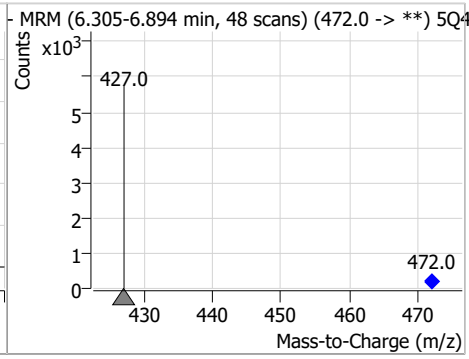




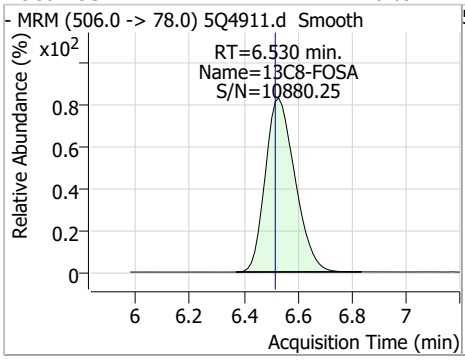
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.67	6.46	0.01	208310				

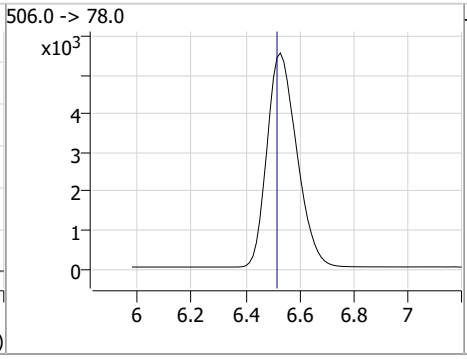


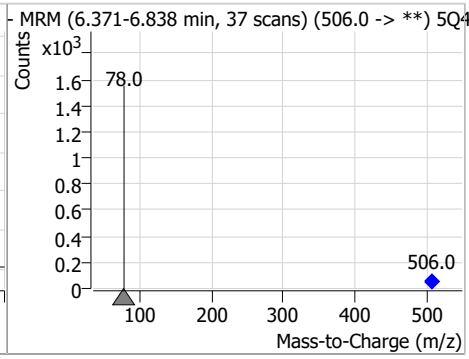




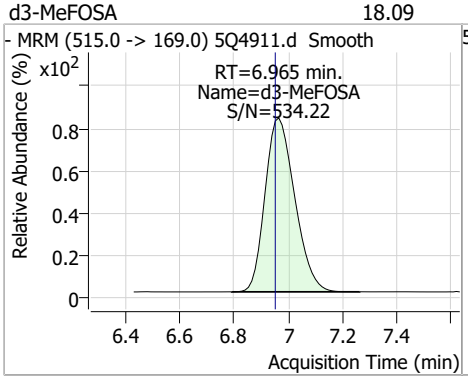
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.09	6.53	0.01	42503				

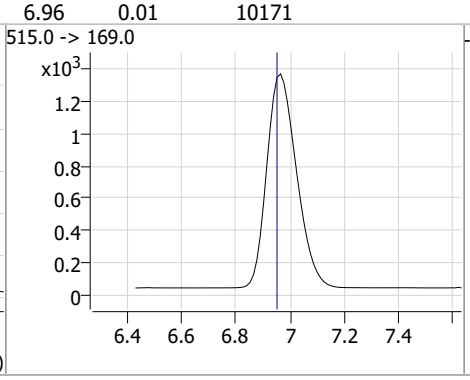


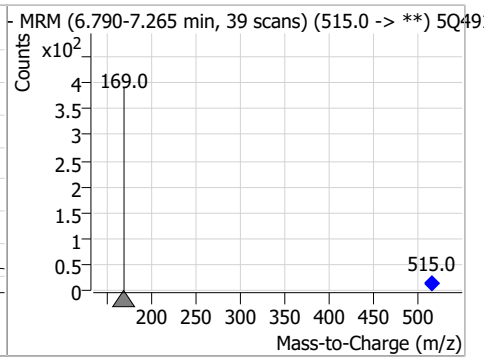




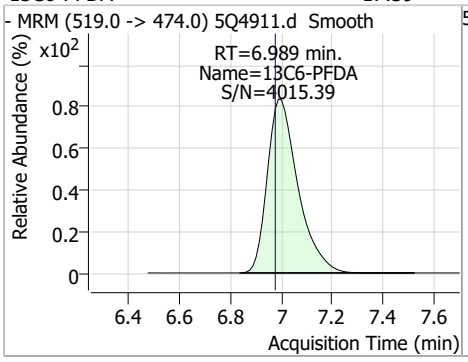
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.09	6.96	0.01	10171				

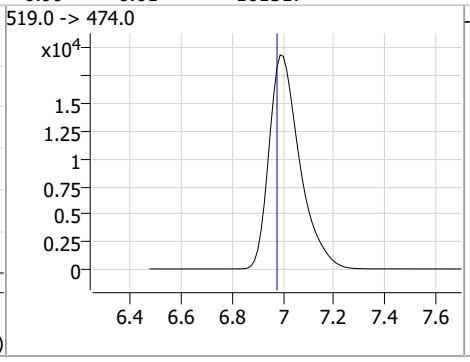


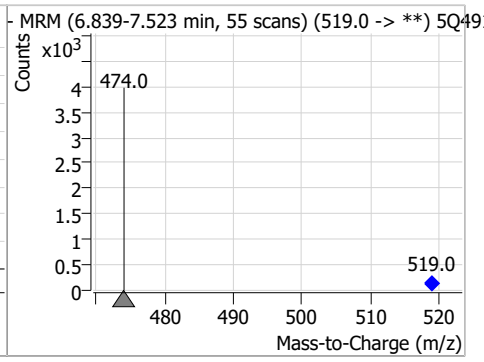




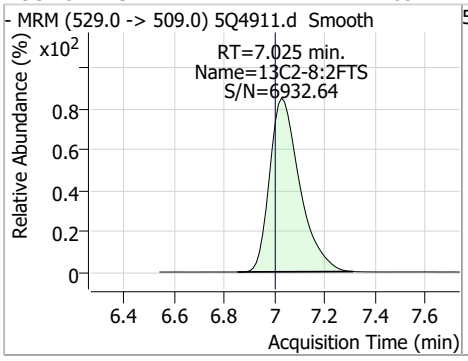
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.39	6.99	0.01	161517				

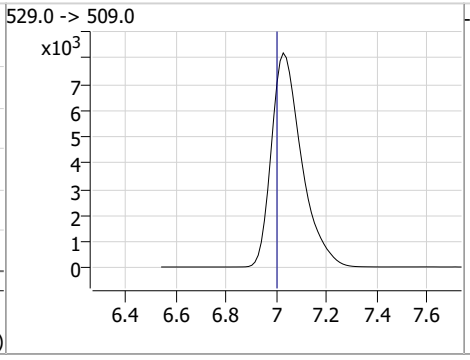


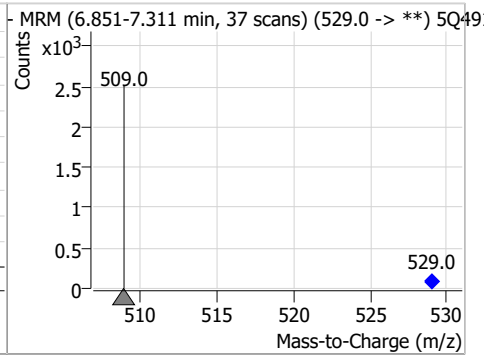




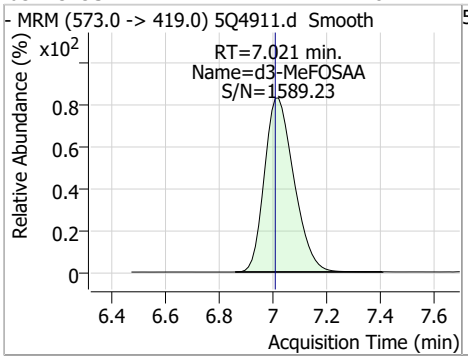
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.65	7.03	0.02	67827				

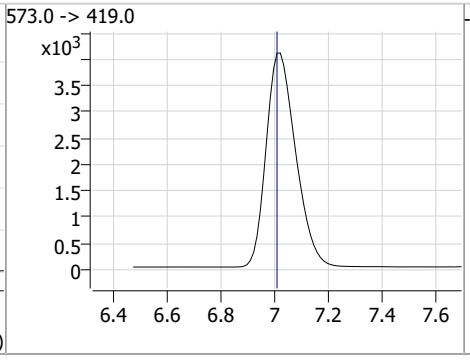


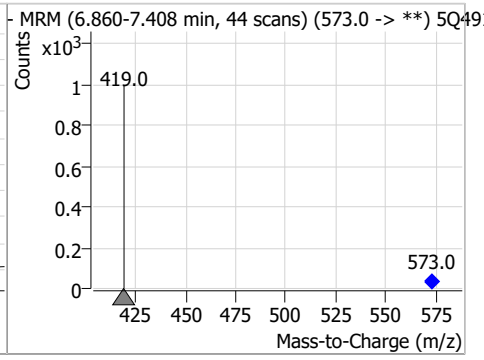




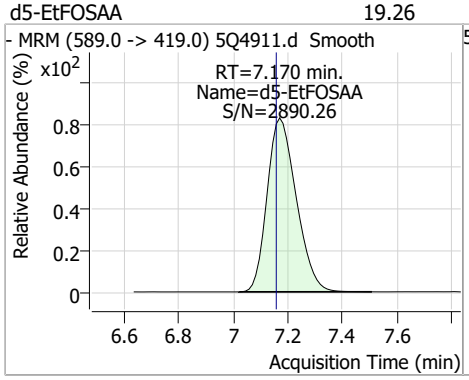
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.14	7.02	0.01	31114				

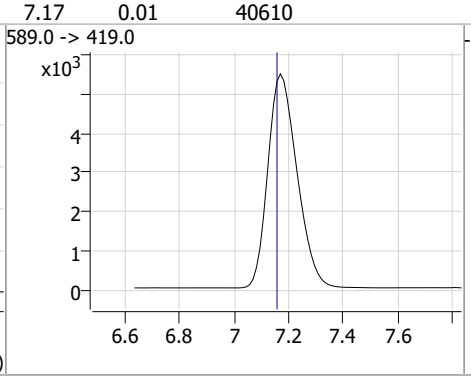


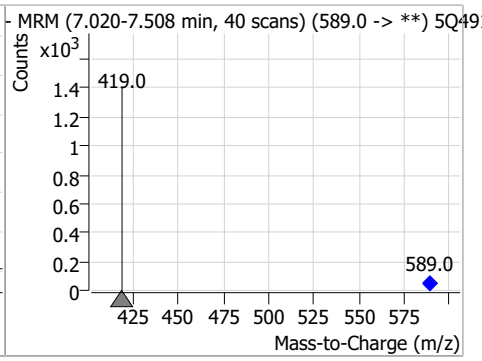




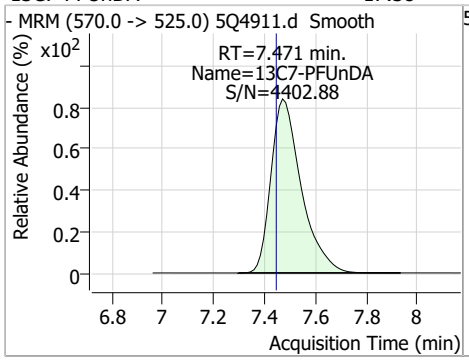
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.26	7.17	0.01	40610				

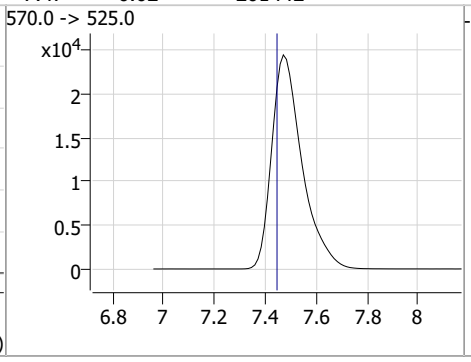


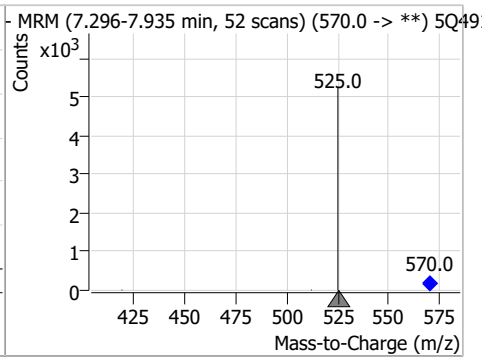




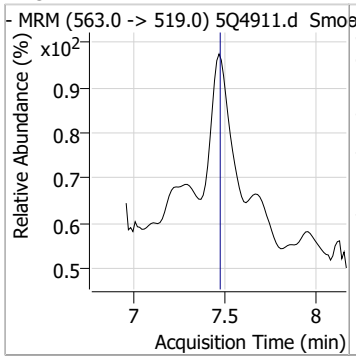
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.38	7.47	0.02	201442				

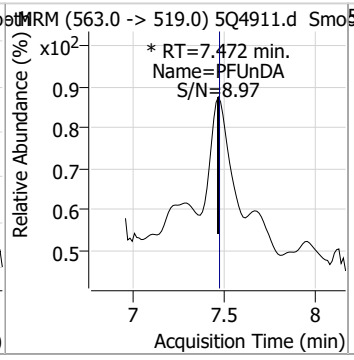


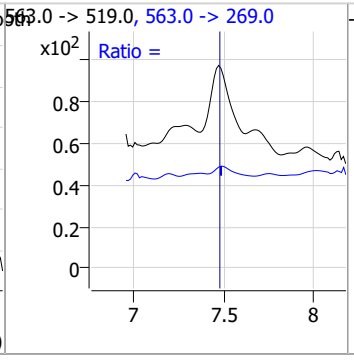


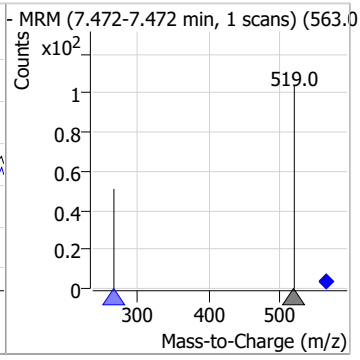


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA		0		0	563.0 -> 269.0		8.6	25.9

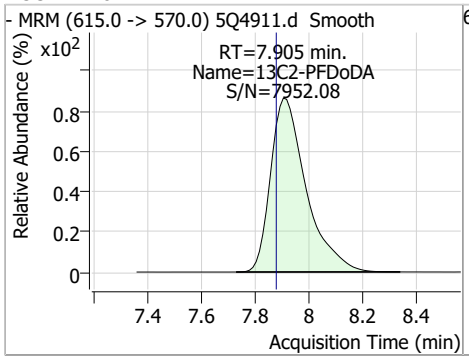


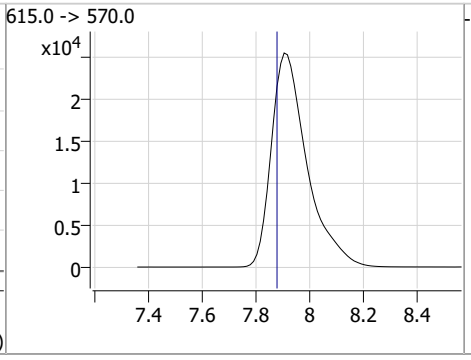


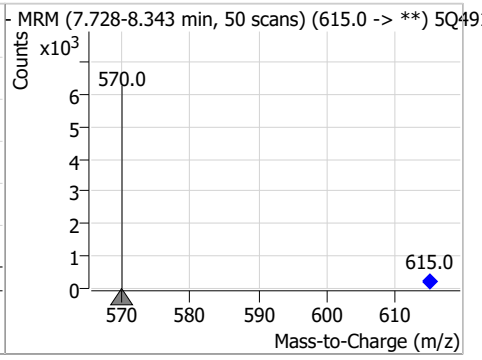




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.42	7.91	0.03	234908				

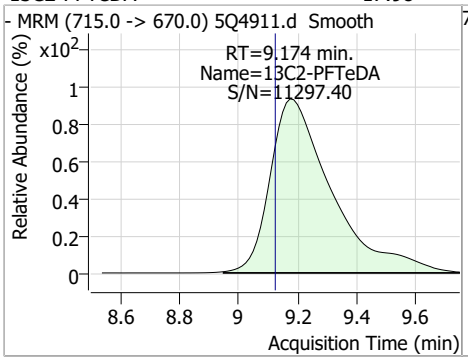


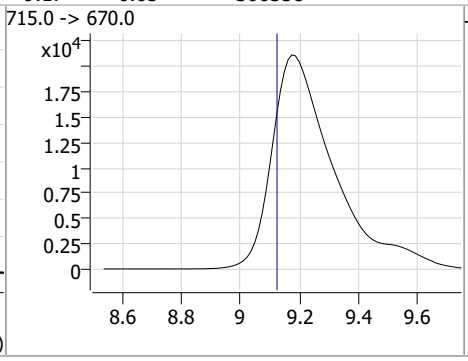


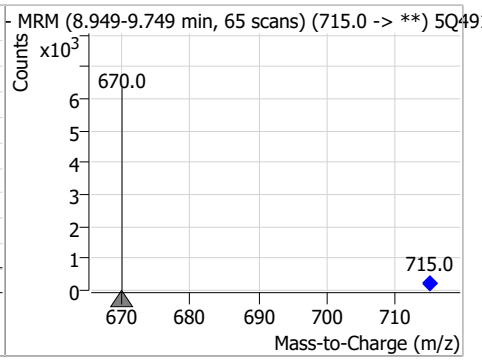


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.98	9.17	0.05	306358				







7.6.6

7

Manual Integration Approval Summary

Sample Number: S5Q74-RT
Lab FileID: 5Q4911.D
Injection Time: 09/19/22 17:55
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 10:49 Anna Ludwig
Supervisor approved: 09/20/22 13:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		5.86	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4628.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:08:11 PM
Sample Name : RT
Vial : P1-B3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	82037	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	143668	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	219460	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	256380	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	437436	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	544517	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	422962	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	548423	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	747991	20.00	µg/L	0.000
M2-PFTeDA	10.014	715.0 -> 670.0	616016	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	207441	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31363	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	28325	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	44089	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	255632	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	328826	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	246806	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	180943	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5059	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	50118	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	138671	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	255632	18.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C2-6:2FTS	6.136	429.0 -> 409.0	328826	19.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-8:2FTS	7.333	529.0 -> 509.0	246806	18.93	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-PFDoDA	8.332	615.0 -> 570.0	747991	20.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C2-PFTeDA	10.014	715.0 -> 670.0	616016	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C3-PFBS	3.635	302.0 -> 99.0	31363	20.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C3-PFHxS	5.475	402.0 -> 99.0	28325	20.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C4-PFBA	1.949	217.0 -> 172.0	82037	20.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C4-PFHpA	5.445	367.0 -> 322.0	256380	20.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C5-PFHxA	4.573	318.0 -> 273.0	219460	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C5-PFPeA	3.405	268.0 -> 223.0	143668	20.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C6-PFDA	7.297	519.0 -> 474.0	422962	20.79	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

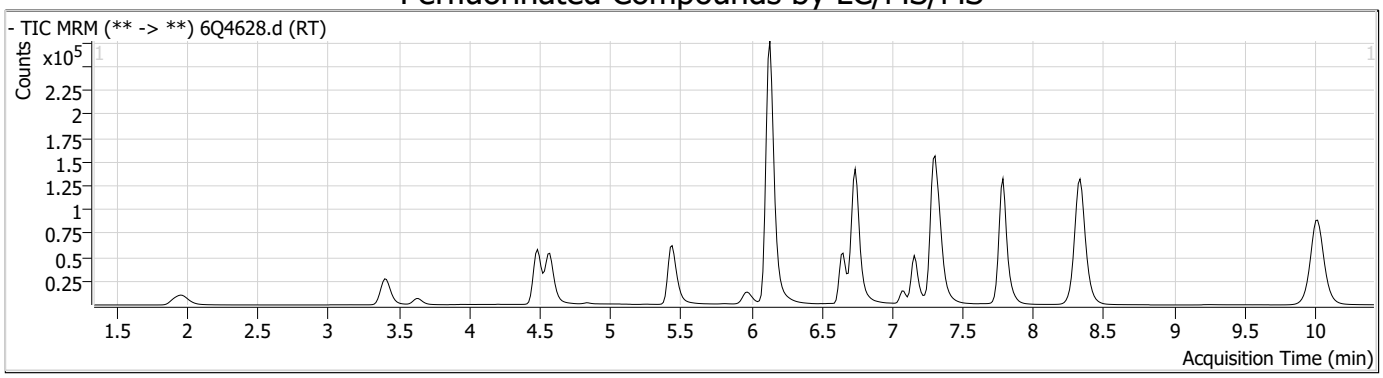
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
13C7-PFUnDA	7.788	570.0 -> 525.0	548423	20.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C8-FOSA	6.654	506.0 -> 78.0	207441	21.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%			
13C8-PFOA	6.138	421.0 -> 376.0	437436	20.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%			
13C8-PFOS	6.730	507.0 -> 99.0	44089	20.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
13C9-PFNA	6.745	472.0 -> 427.0	544517	21.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
d3-MeFOSAA	7.155	573.0 -> 419.0	180943	20.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	5048	18.99	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
d3-MeFOSA	7.085	515.0 -> 169.0	50118	22.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%			
d5-EtFOSAA	7.302	589.0 -> 419.0	138872	20.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
		327.0 -> 81.0					
6:2FTS	-	427.0 -> 407.0	-	N.D.			
		427.0 -> 81.0					
8:2FTS	-	527.0 -> 507.0	-	N.D.			
		527.0 -> 81.0					
EtFOSAA	-	584.0 -> 419.0	-	N.D.			
		584.0 -> 483.0					
FOSA	-	498.0 -> 78.0	-	N.D.			
		498.0 -> 478.0					
MeFOSAA	-	570.0 -> 419.0	-	N.D.			
		570.0 -> 512.0					
PFBA	-	213.0 -> 169.0	-	N.D.			
PFBS	-	299.0 -> 80.0	-	N.D.			
		299.0 -> 99.0					
PFDA	-	513.0 -> 469.0	-	N.D.			
		513.0 -> 219.0					
PFDoDA	-	613.0 -> 569.0	-	N.D.			
		613.0 -> 319.0					
PFDS	-	599.0 -> 80.0	-	N.D.			
		599.0 -> 99.0					
PFHpA	5.446	363.0 -> 319.0	0		µg/L	m	1
		363.0 -> 169.0	0				
PFHpS	-	449.0 -> 80.0	-	N.D.			
		449.0 -> 99.0					
PFHxA	-	313.0 -> 269.0	-	N.D.			
		313.0 -> 119.0					
PFHxS	-	399.0 -> 80.0	-	N.D.			
		399.0 -> 99.0					
PFNA	-	463.0 -> 419.0	-	N.D.			
		463.0 -> 219.0					
PFNS	-	549.0 -> 80.0	-	N.D.			
		549.0 -> 99.0					
PFOA	6.138	413.0 -> 369.0	403095	17.06	µg/L	m	98
		413.0 -> 169.0	65482				
PFOS	-	499.0 -> 80.0	-	N.D.			

Perfluorinated Compounds by LC/MS/MS

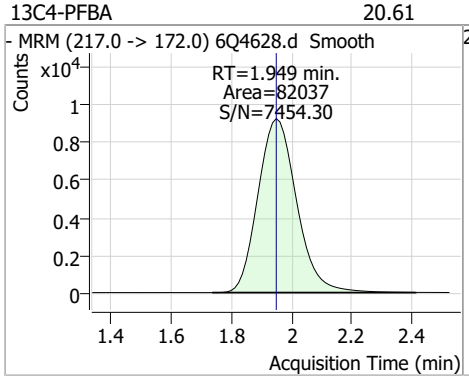
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

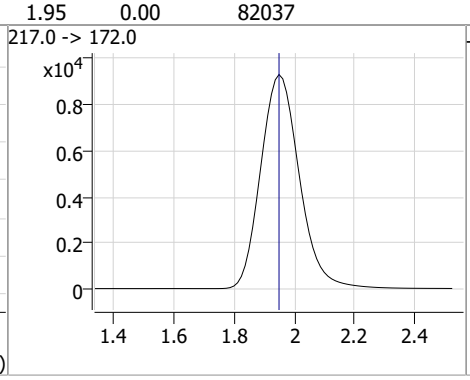
 # = Qualifier out of range, m = manually integrated, + = Area summed

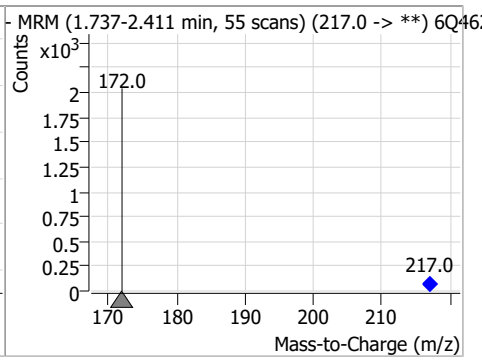
Perfluorinated Compounds by LC/MS/MS



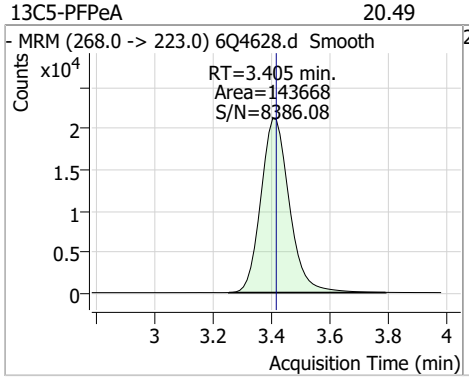
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.61	1.95	0.00	82037				

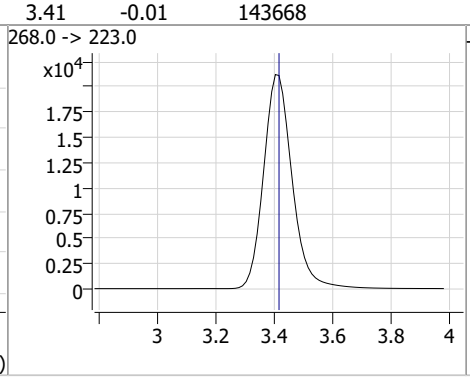


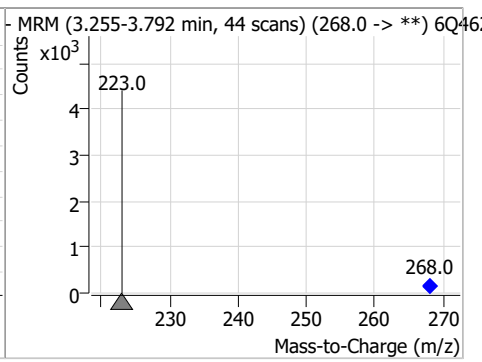




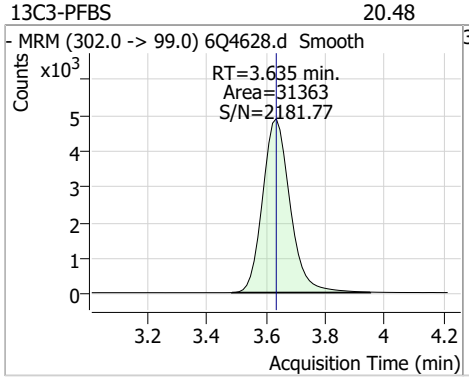
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.49	3.41	-0.01	143668				

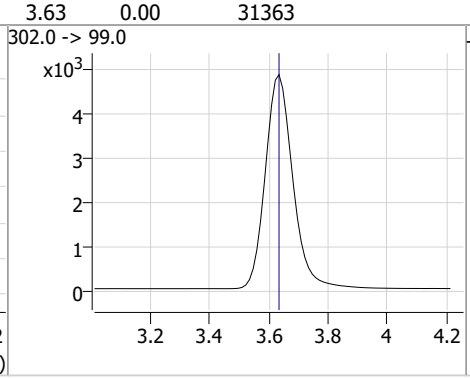


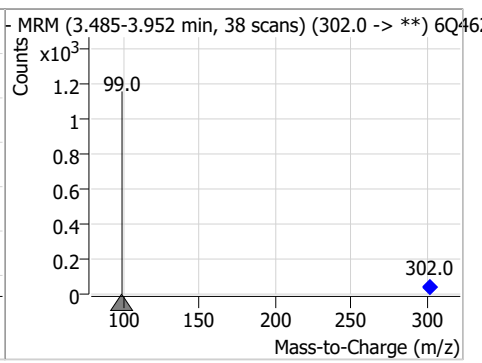




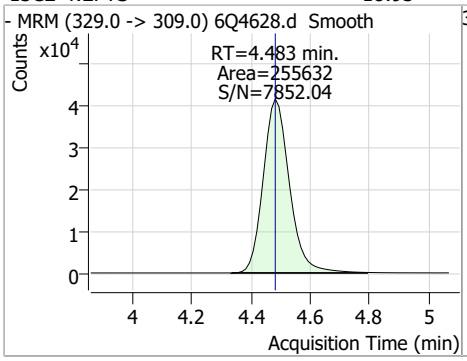
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.48	3.63	0.00	31363				

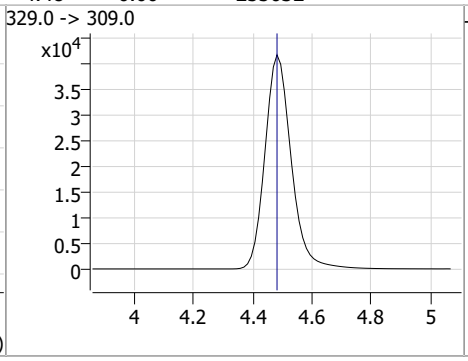


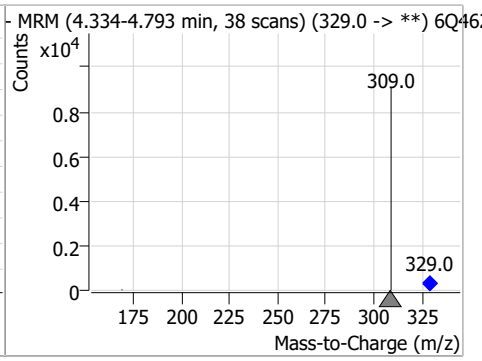




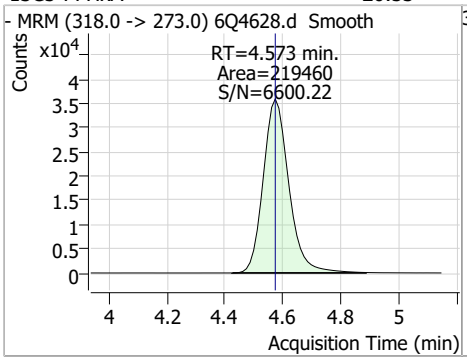
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.93	4.48	0.00	255632				

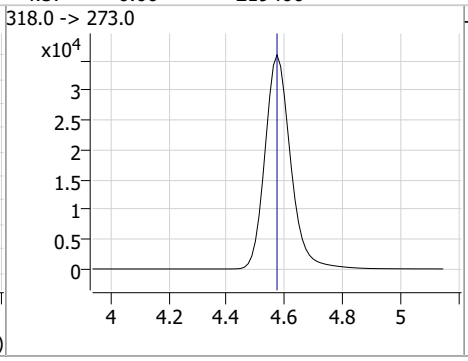


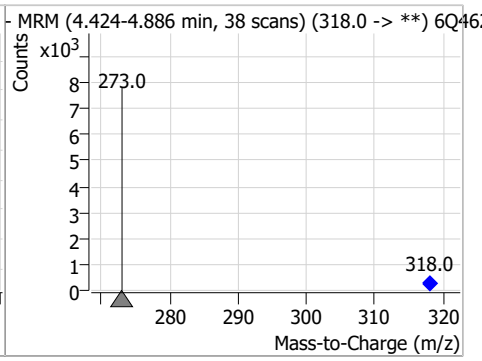




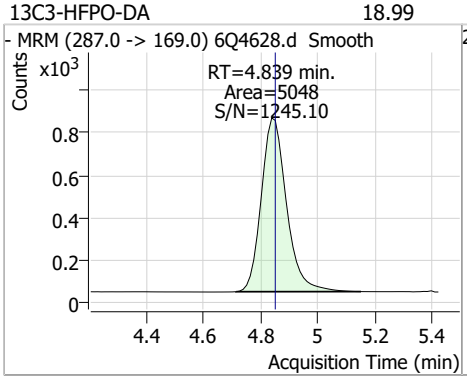
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.53	4.57	0.00	219460				

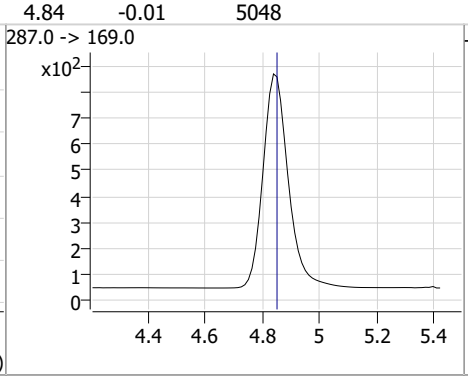


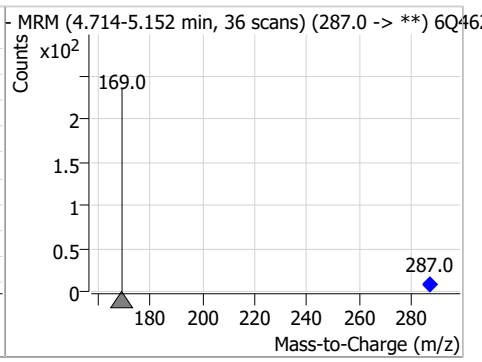




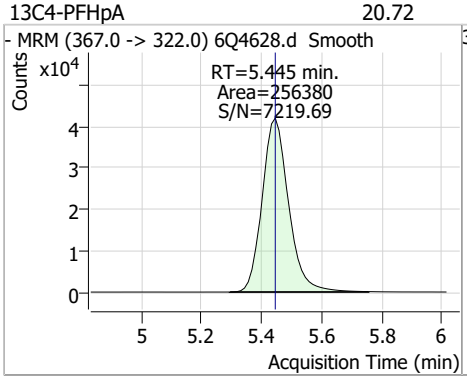
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.99	4.84	-0.01	5048				

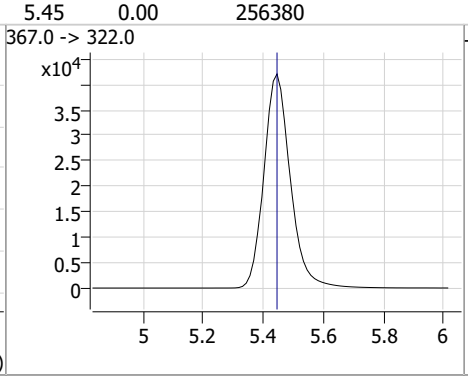


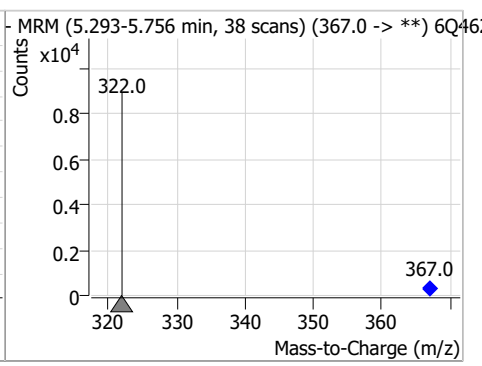




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.72	5.45	0.00	256380				

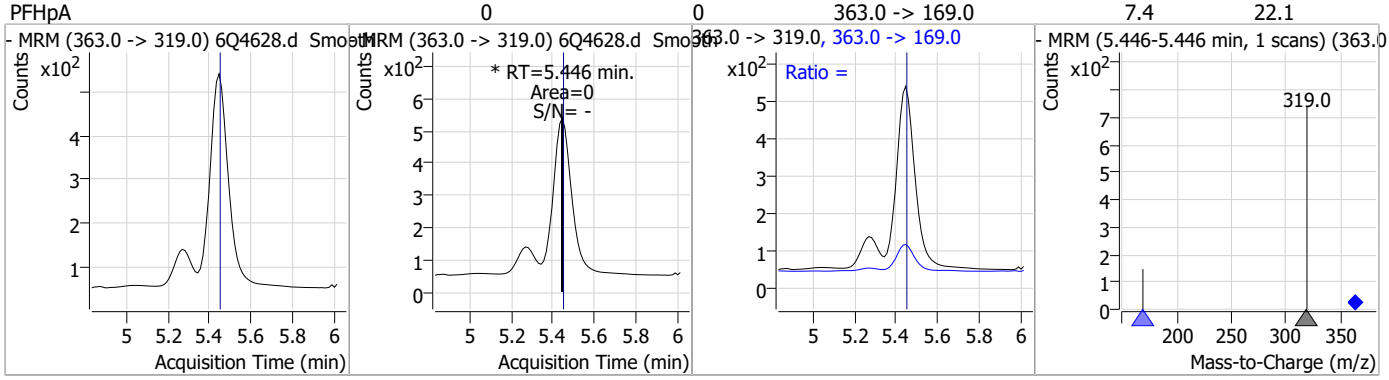




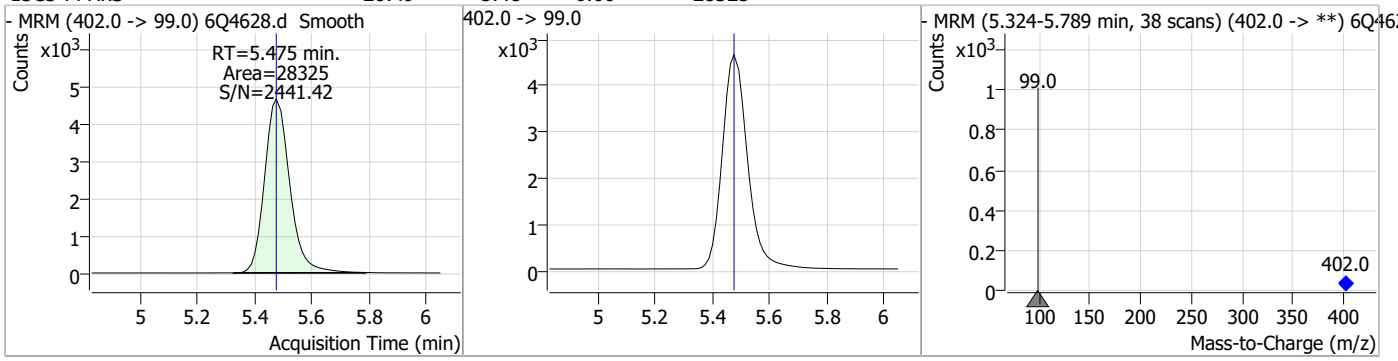


Perfluorinated Compounds by LC/MS/MS

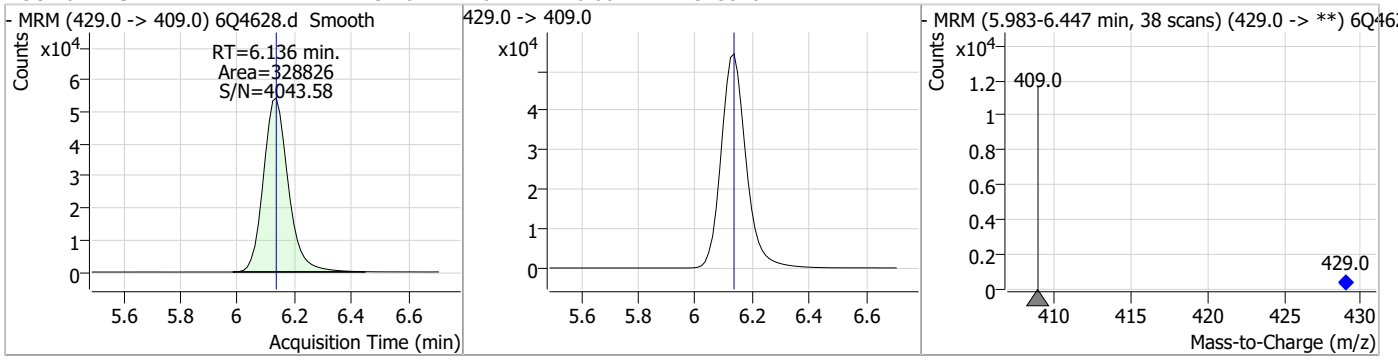
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA		0		0	363.0 -> 169.0		7.4	22.1



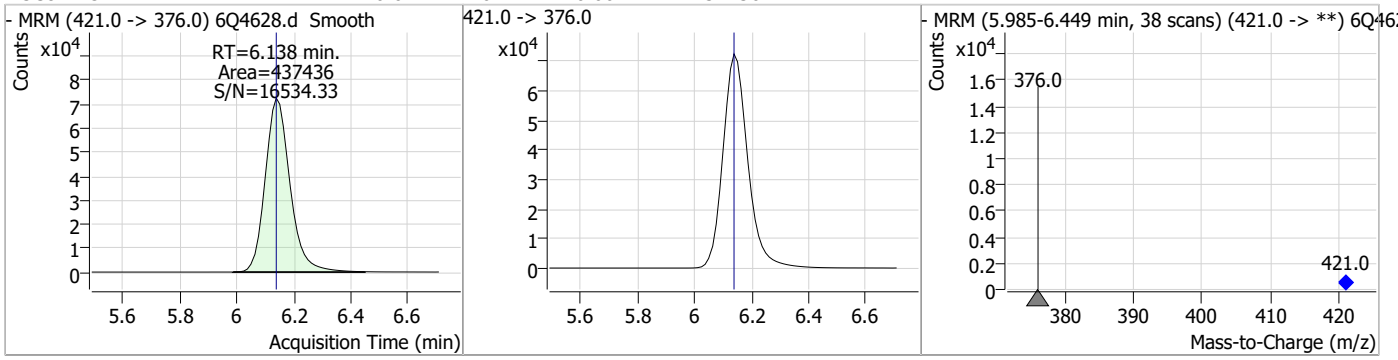
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.49	5.48	0.00	28325				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.26	6.14	0.00	328826				

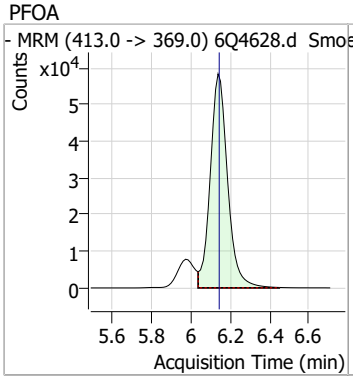


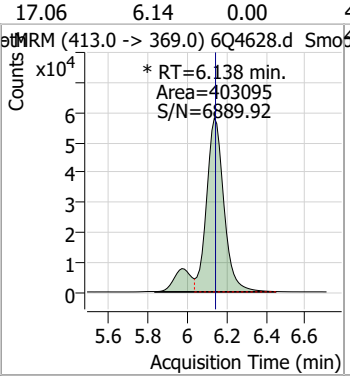
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.62	6.14	0.00	437436				

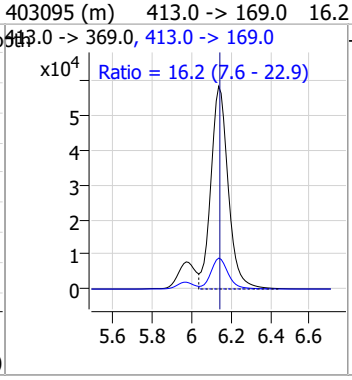


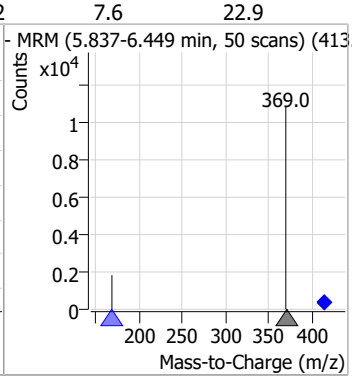
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.06	6.14	0.00	403095 (m)	413.0 -> 169.0	16.2	7.6	22.9

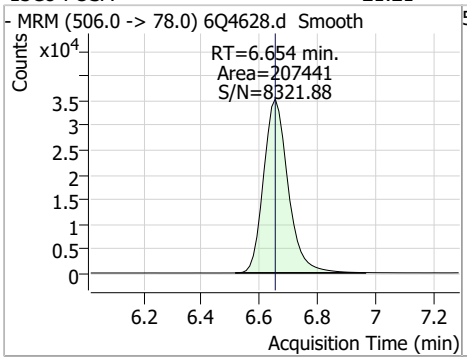


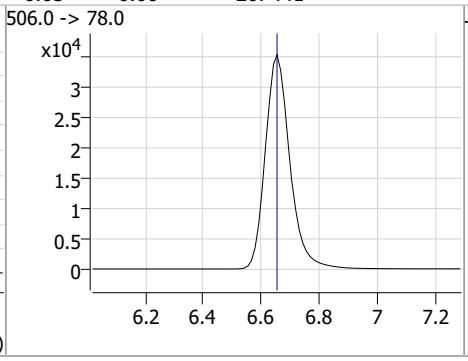


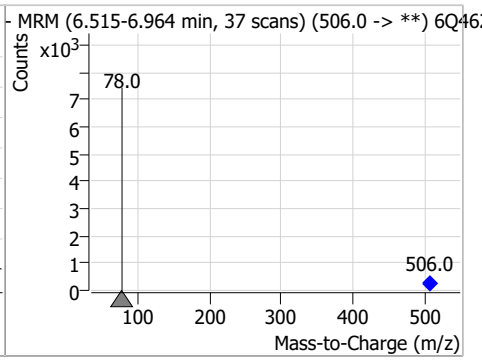




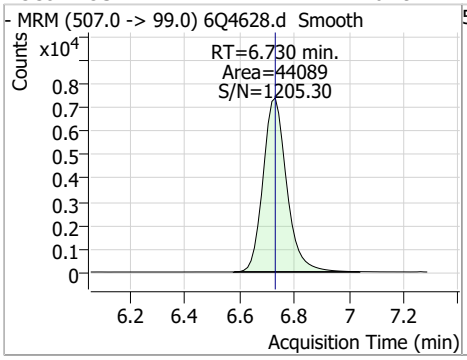
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.21	6.65	0.00	207441				

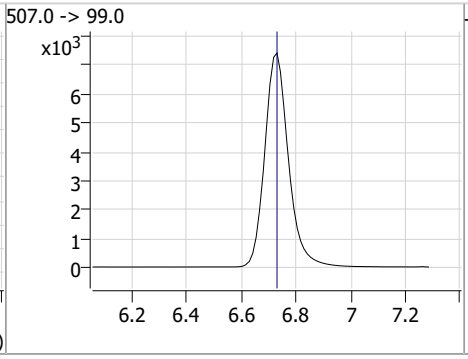


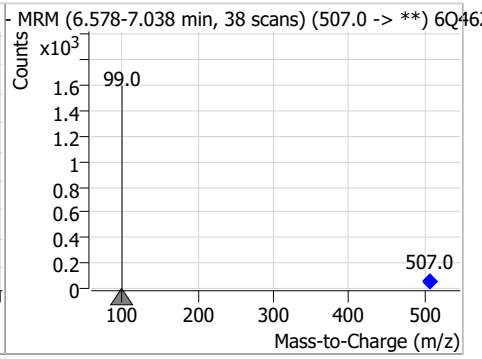




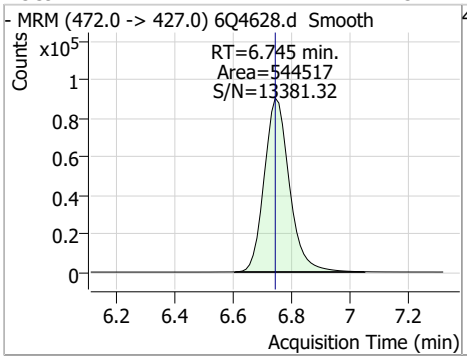
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.79	6.73	0.00	44089				

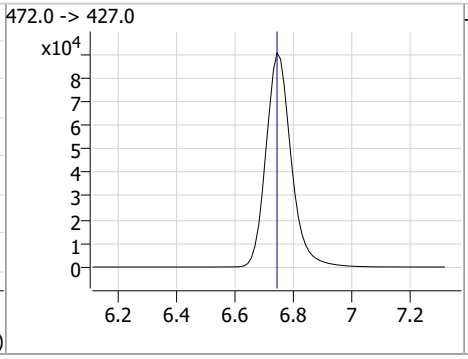


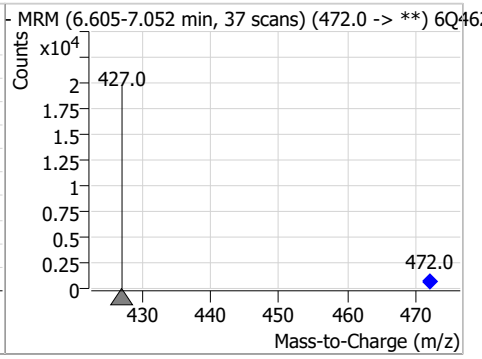




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.13	6.74	0.00	544517				

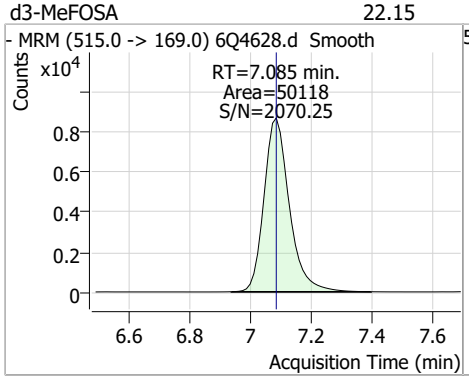


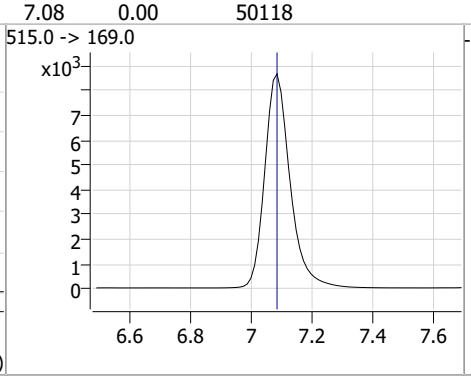


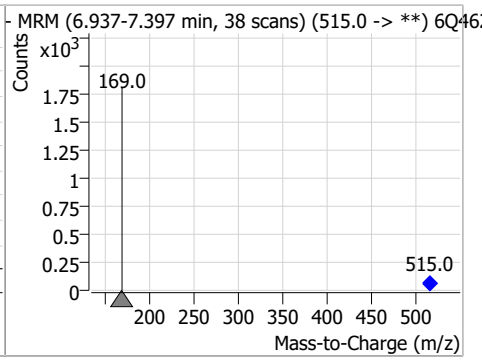


Perfluorinated Compounds by LC/MS/MS

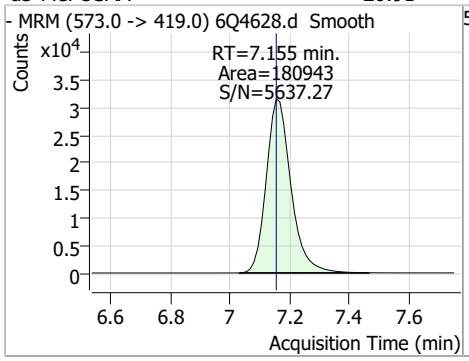
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.15	7.08	0.00	50118				

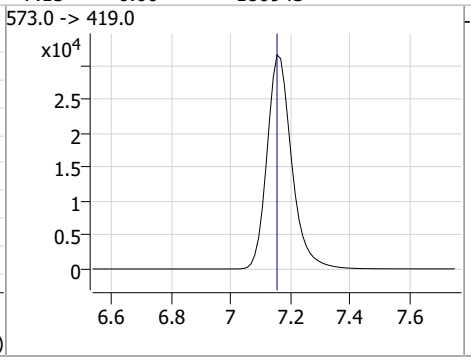


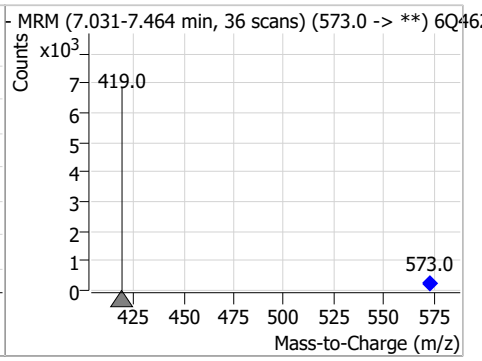




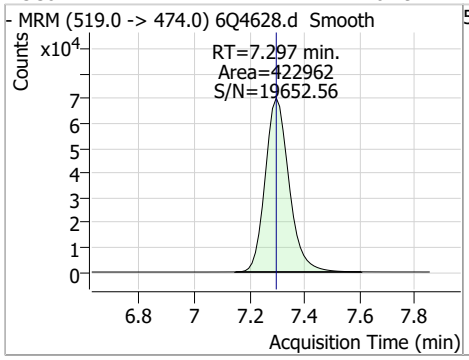
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.91	7.15	0.00	180943				

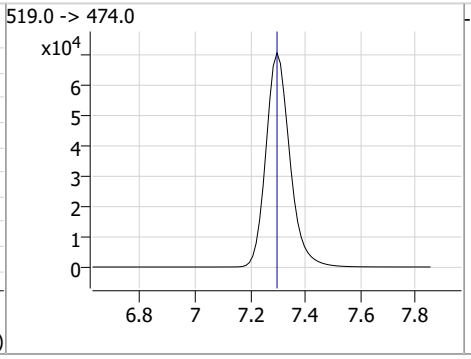


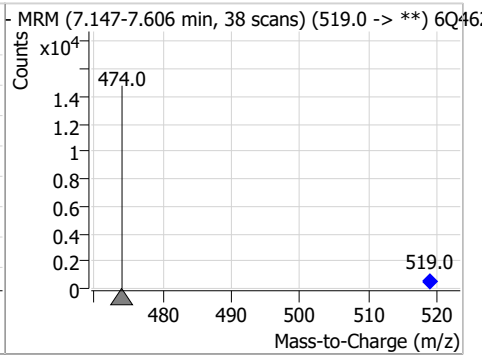




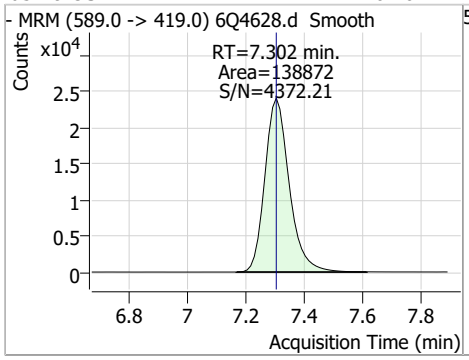
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.79	7.30	0.00	422962				

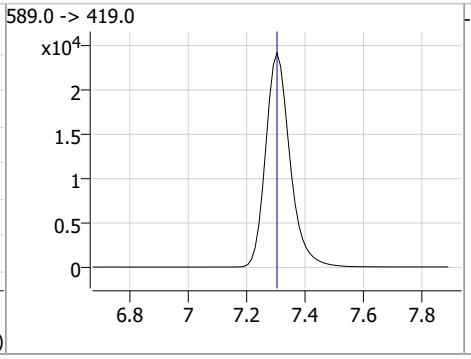


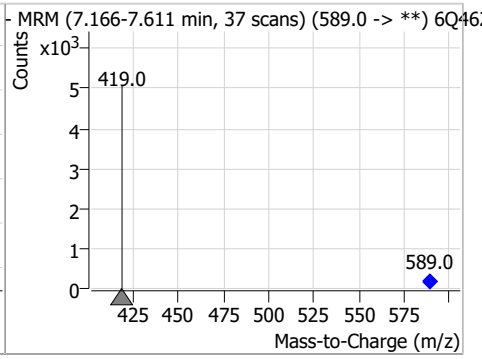




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.46	7.30	0.00	138872				

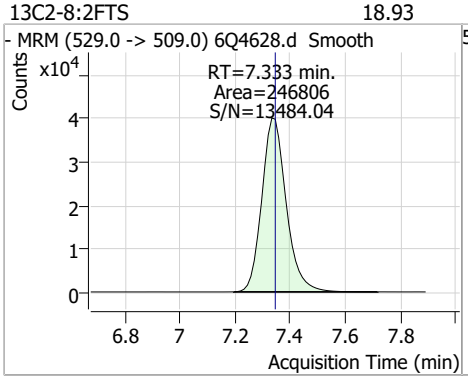


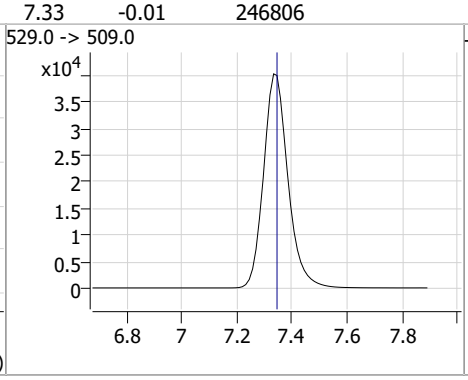


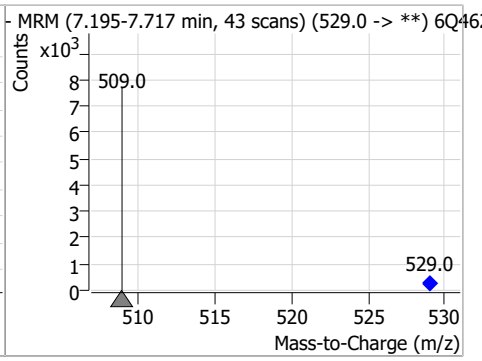


Perfluorinated Compounds by LC/MS/MS

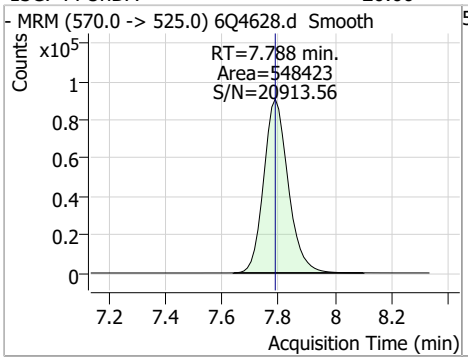
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.93	7.33	-0.01	246806				

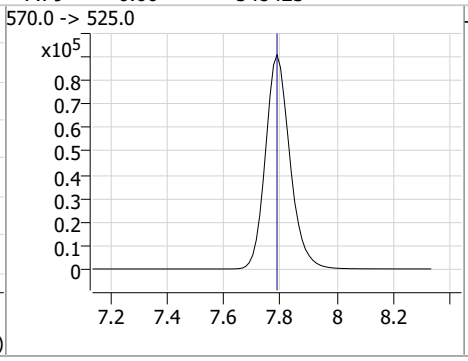


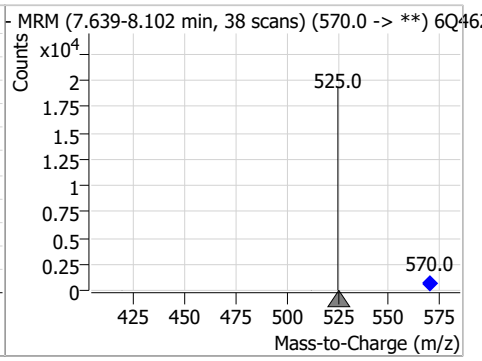




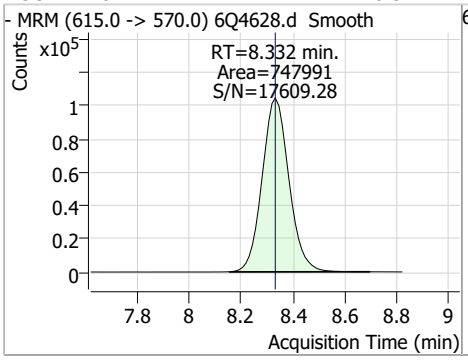
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.66	7.79	0.00	548423				

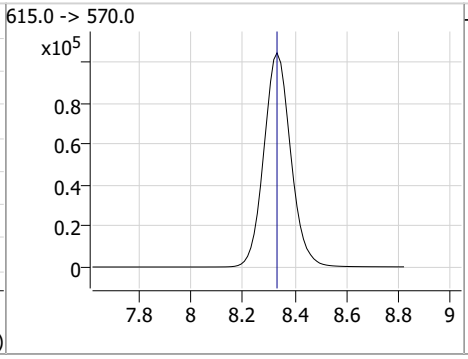


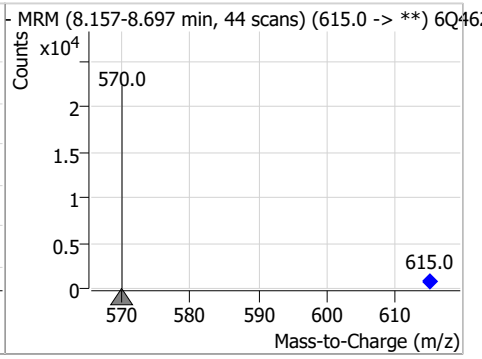




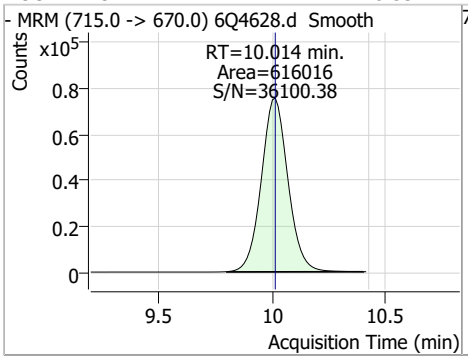
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.34	8.33	0.00	747991				

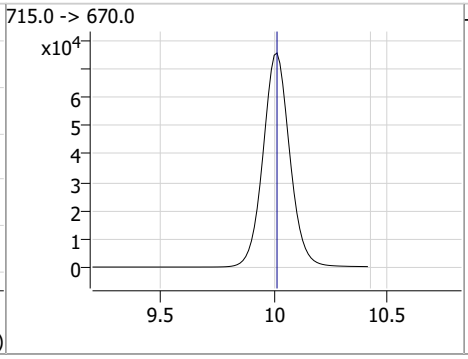


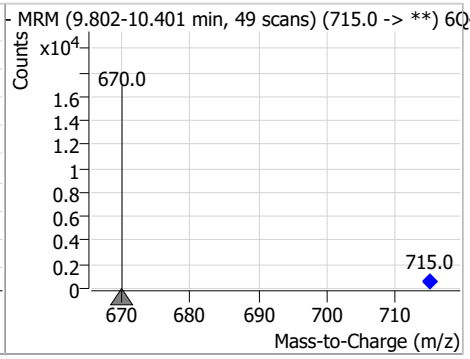




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.53	10.01	0.00	616016				







Manual Integration Approval Summary

Sample Number: S6Q85-RT
Lab FileID: 6Q4628.D
Injection Time: 09/14/22 13:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanoic acid	335-67-1		6.14	Split peak

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4705.d
Operator	:	jamesb
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 3:48:25 PM
Sample Name	:	RT
Vial	:	P1-B3
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	S6Q86.batch.bin
Sample Information	:	OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.949	217.0 -> 172.0	86537	20.00 µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	150752	20.00 µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	234998	20.00 µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	271406	20.00 µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	469027	20.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	553159	20.00 µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	430127	20.00 µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	598564	20.00 µg/L	0.000
M2-PFDoDA	8.320	615.0 -> 570.0	779844	20.00 µg/L	-0.012
M2-PFTeDA	10.001	715.0 -> 670.0	642595	20.00 µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	215641	20.00 µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	33152	20.00 µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	30503	20.00 µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	44971	20.00 µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	268113	20.00 µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	354618	20.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	253872	20.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	191982	20.00 µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5267	20.00 µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	48740	20.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	152077	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.483	329.0 -> 309.0	268113	19.85 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C2-6:2FTS	6.124	429.0 -> 409.0	354618	20.78 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C2-8:2FTS	7.333	529.0 -> 509.0	253872	19.48 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%	
13C2-PFDoDA	8.320	615.0 -> 570.0	779844	21.20 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C2-PFTeDA	10.001	715.0 -> 670.0	642595	21.42 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C3-PFBS	3.635	302.0 -> 99.0	33152	21.65 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C3-PFHxS	5.475	402.0 -> 99.0	30503	22.06 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C4-PFBA	1.949	217.0 -> 172.0	86537	21.74 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C4-PFHpA	5.445	367.0 -> 322.0	271406	21.93 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C5-PFHxA	4.573	318.0 -> 273.0	234998	21.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%	
13C5-PFPeA	3.418	268.0 -> 223.0	150752	21.50 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C6-PFDA	7.297	519.0 -> 474.0	430127	21.14 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

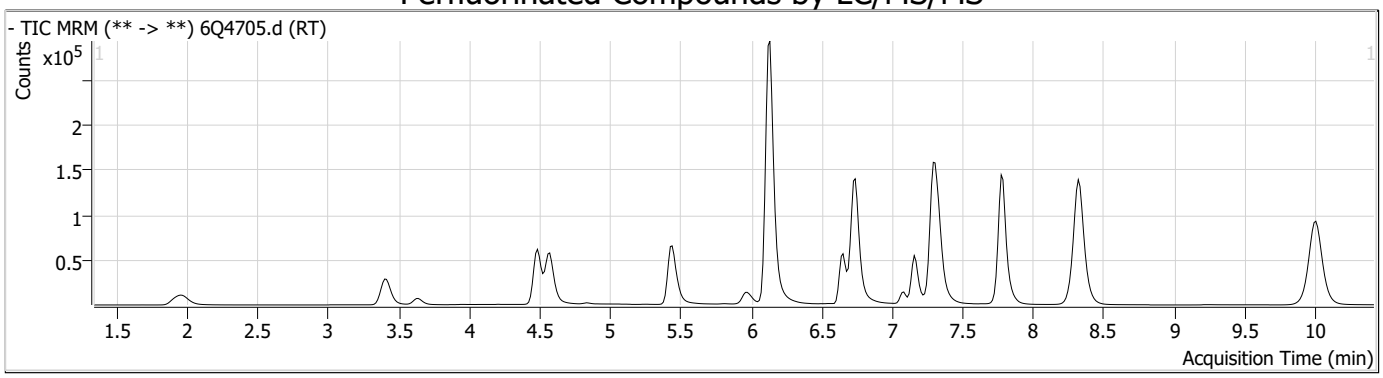
Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C7-PFUnDA	7.788	570.0 -> 525.0	598564	22.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%	
13C8-FOSA	6.654	506.0 -> 78.0	215641	22.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C8-PFOA	6.138	421.0 -> 376.0	469027	22.11 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C8-PFOS	6.717	507.0 -> 99.0	44971	21.20 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C9-PFNA	6.745	472.0 -> 427.0	553159	21.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
d3-MeFOSAA	7.155	573.0 -> 419.0	191982	22.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.9%	
13C3-HFPO-DA	4.839	287.0 -> 169.0	5277	19.85 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
d3-MeFOSA	7.085	515.0 -> 169.0	48740	21.54 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%	
d5-EtFOSAA	7.302	589.0 -> 419.0	152123	22.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
Target Compounds					QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.	
		327.0 -> 81.0			
6:2FTS	-	427.0 -> 407.0	-	N.D.	
		427.0 -> 81.0			
8:2FTS	-	527.0 -> 507.0	-	N.D.	
		527.0 -> 81.0			
EtFOSAA	-	584.0 -> 419.0	-	N.D.	
		584.0 -> 483.0			
FOSA	-	498.0 -> 78.0	-	N.D.	
		498.0 -> 478.0			
MeFOSAA	-	570.0 -> 419.0	-	N.D.	
		570.0 -> 512.0			
PFBA	-	213.0 -> 169.0	-	N.D.	
PFBS	-	299.0 -> 80.0	-	N.D.	
		299.0 -> 99.0			
PFDA	-	513.0 -> 469.0	-	N.D.	
		513.0 -> 219.0			
PFDoDA	-	613.0 -> 569.0	-	N.D.	
		613.0 -> 319.0			
PFDS	-	599.0 -> 80.0	-	N.D.	
		599.0 -> 99.0			
PFHpA	5.446	363.0 -> 319.0	2881	0.16 µg/L	93
		363.0 -> 169.0	504		
PFHpS	-	449.0 -> 80.0	-	N.D.	
		449.0 -> 99.0			
PFHxA	-	313.0 -> 269.0	-	N.D.	
		313.0 -> 119.0			
PFHxS	-	399.0 -> 80.0	-	N.D.	
		399.0 -> 99.0			
PFNA	-	463.0 -> 419.0	-	N.D.	
		463.0 -> 219.0			
PFNS	-	549.0 -> 80.0	-	N.D.	
		549.0 -> 99.0			
PFOA	6.138	413.0 -> 369.0	378257	14.93 µg/L	98
		413.0 -> 169.0	55490		
PFOS	-	499.0 -> 80.0	-	N.D.	

Perfluorinated Compounds by LC/MS/MS

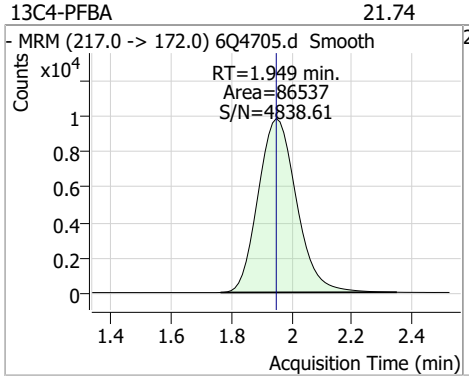
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0				
PFPeA	-	263.0 -> 219.0	-	N.D.		
PFPeS	-	349.0 -> 80.0	-	N.D.		
		349.0 -> 99.0				
PFTeDA	-	713.0 -> 669.0	-	N.D.		
		713.0 -> 219.0				
PFTrDA	-	663.0 -> 619.0	-	N.D.		
		663.0 -> 369.0				
PFUnDA	-	563.0 -> 519.0	-	N.D.		
		563.0 -> 269.0				
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	-	512.0 -> 169.0	-	N.D.		
		512.0 -> 219.0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

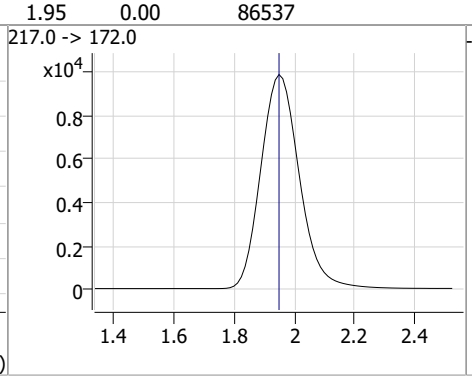
 # = Qualifier out of range, m = manually integrated, + = Area summed

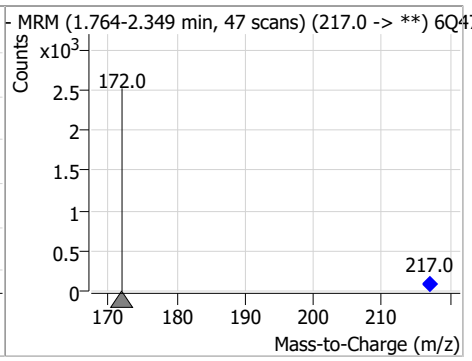
Perfluorinated Compounds by LC/MS/MS



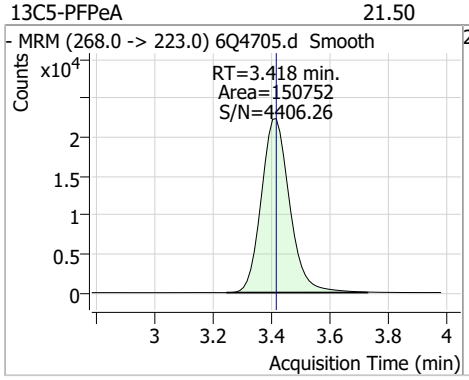
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.74	1.95	0.00	86537				

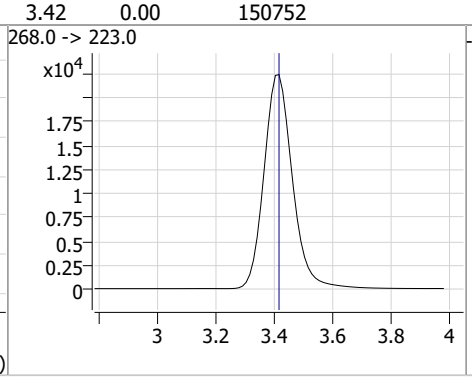


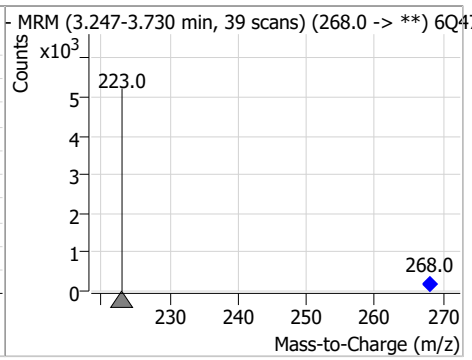




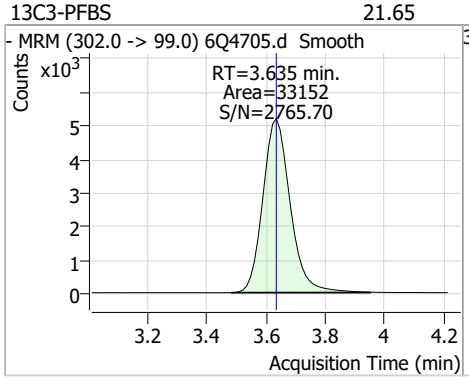
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.50	3.42	0.00	150752				

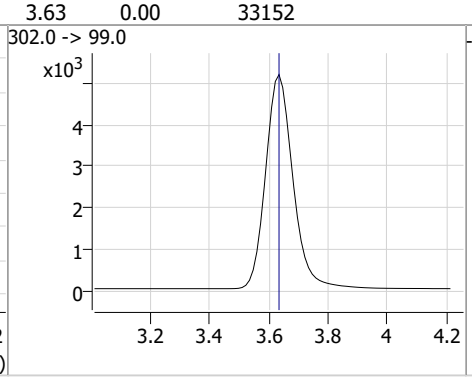


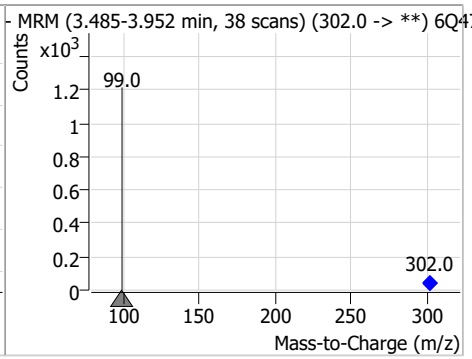




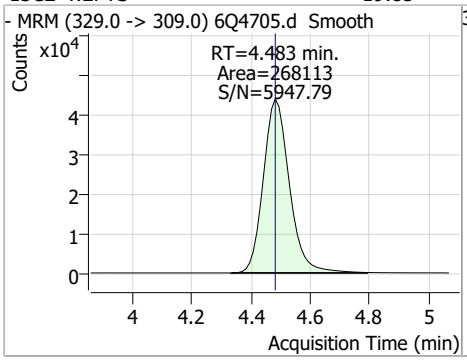
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.65	3.63	0.00	33152				

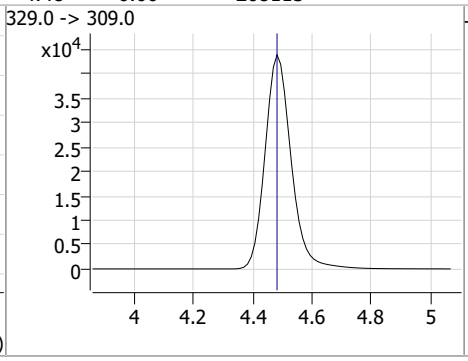


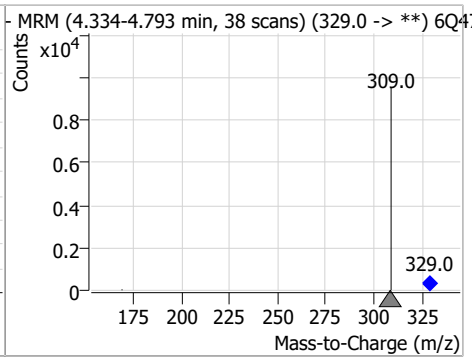




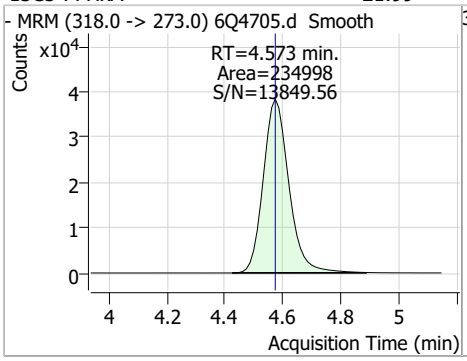
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.85	4.48	0.00	268113				

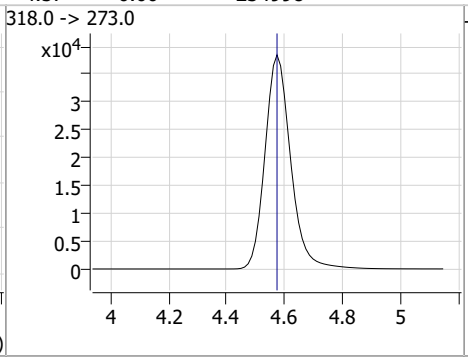


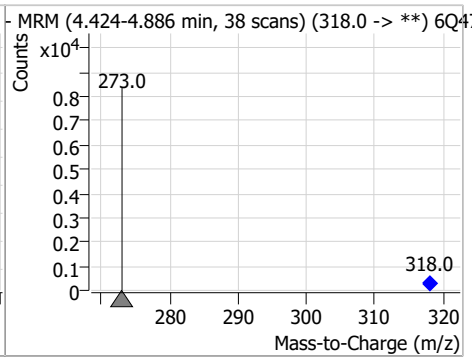




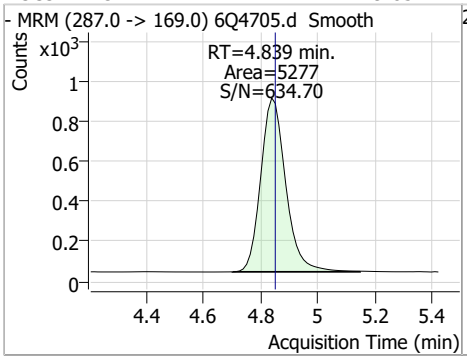
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.99	4.57	0.00	234998				

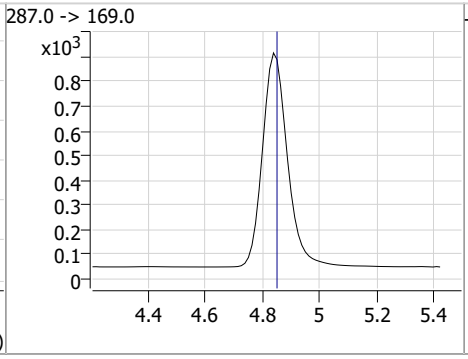


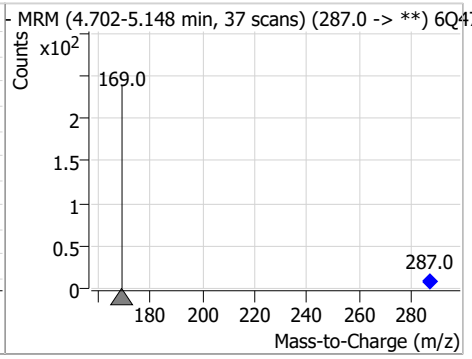




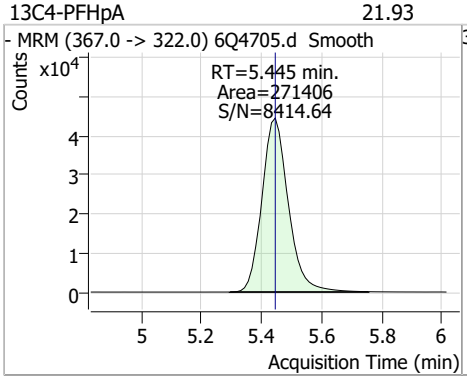
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.85	4.84	-0.01	5277				

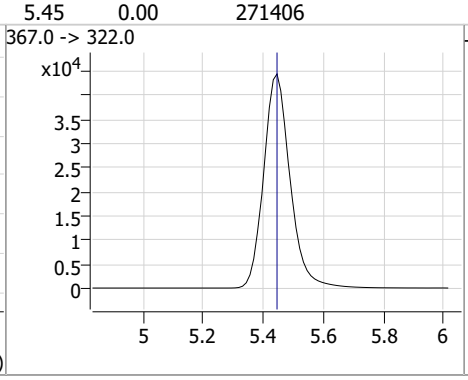


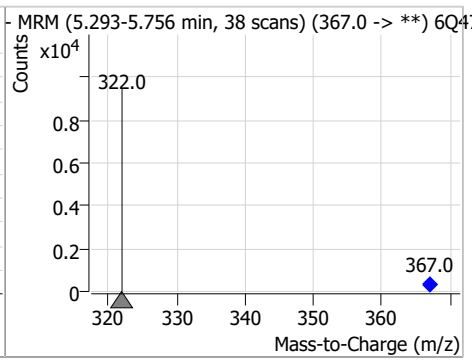




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.93	5.45	0.00	271406				

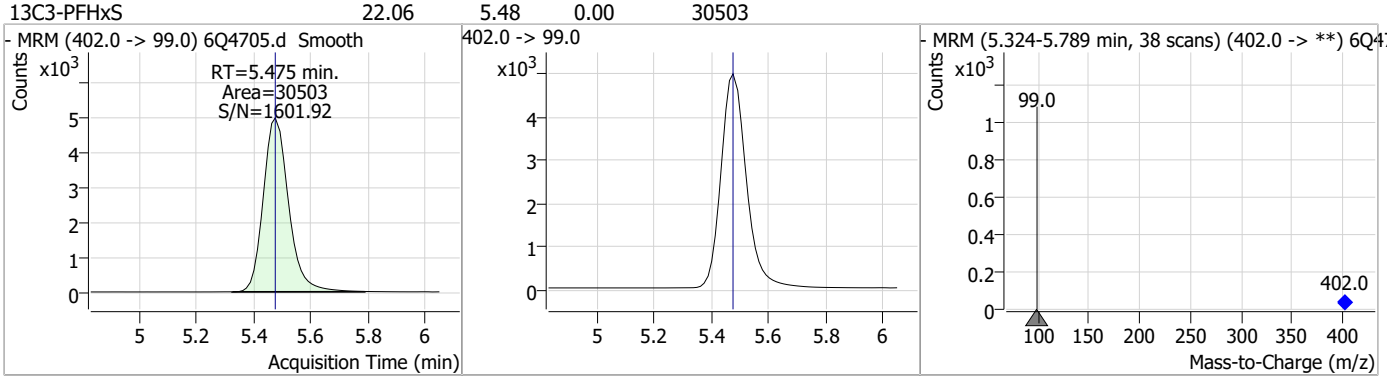




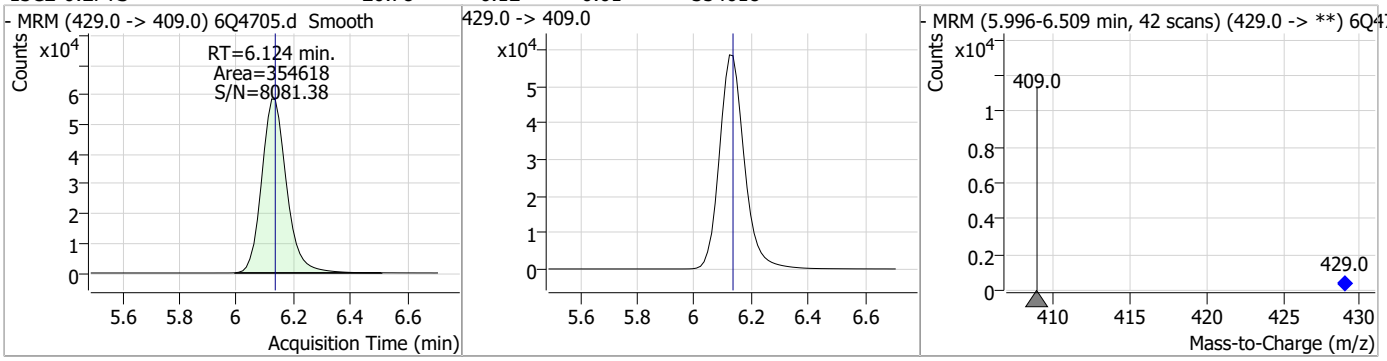


Perfluorinated Compounds by LC/MS/MS

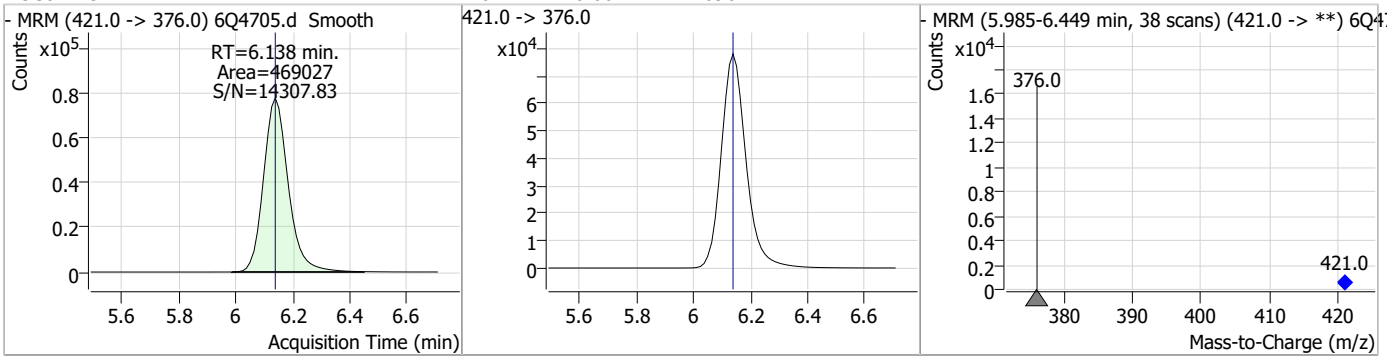
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.06	5.48	0.00	30503				



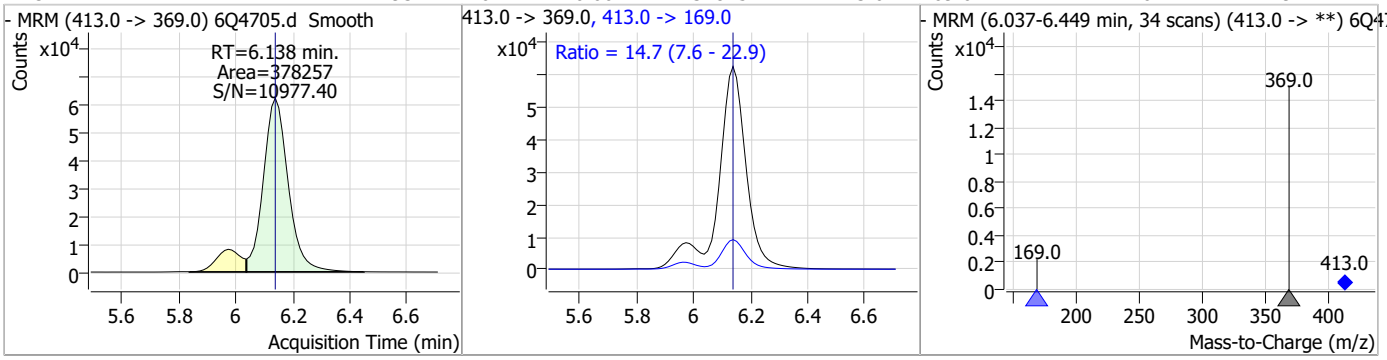
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.78	6.12	-0.01	354618				



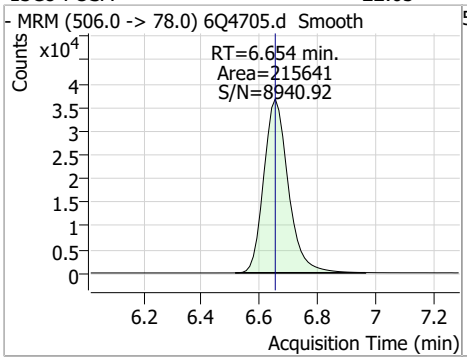
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.11	6.14	0.00	469027				

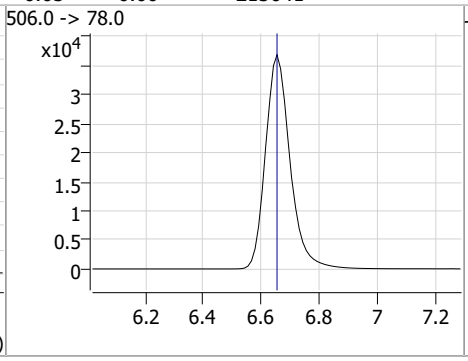


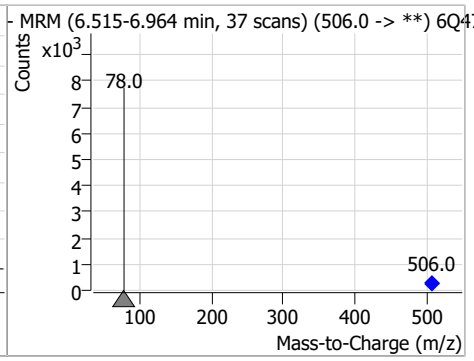
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	14.93	6.14	0.00	378257	413.0 -> 169.0	14.7	7.6	22.9



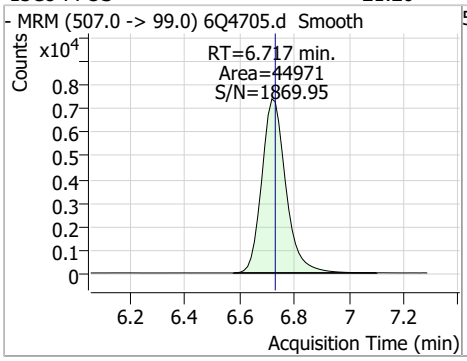
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.05	6.65	0.00	215641				

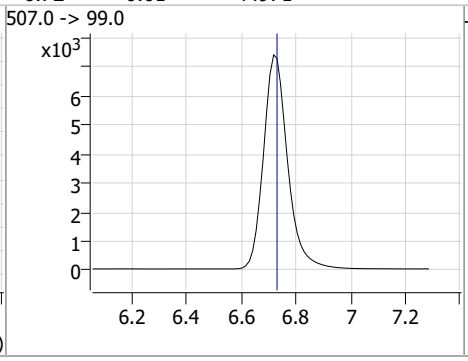


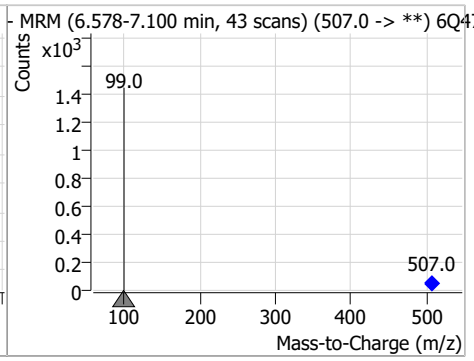




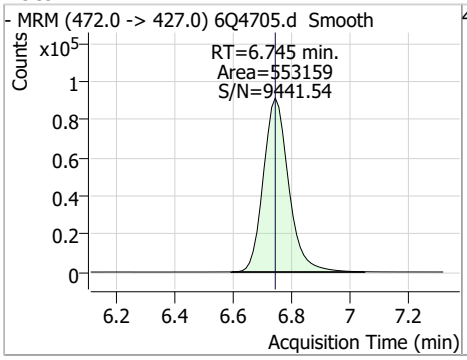
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.20	6.72	-0.01	44971				

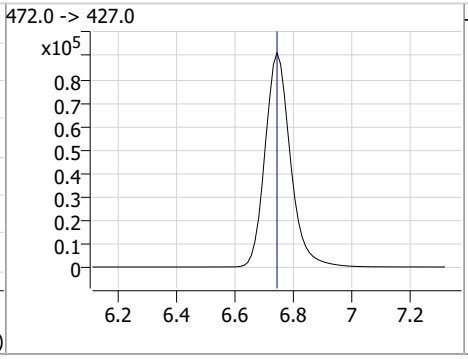


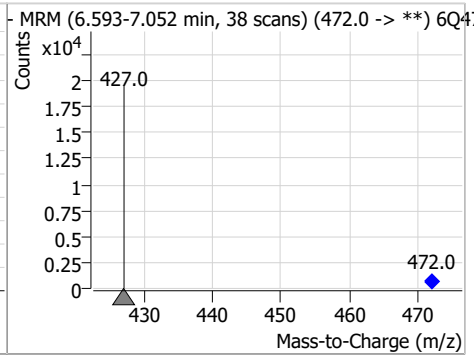




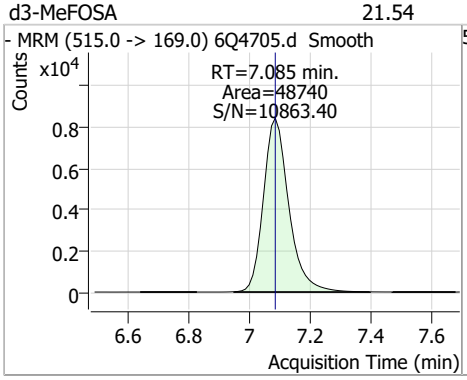
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.47	6.74	0.00	553159				

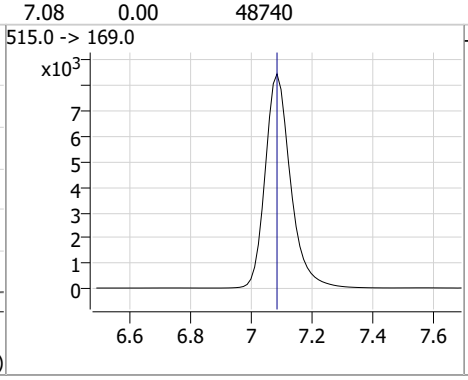


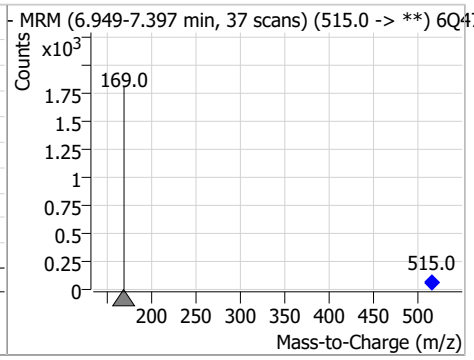




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.54	7.08	0.00	48740				

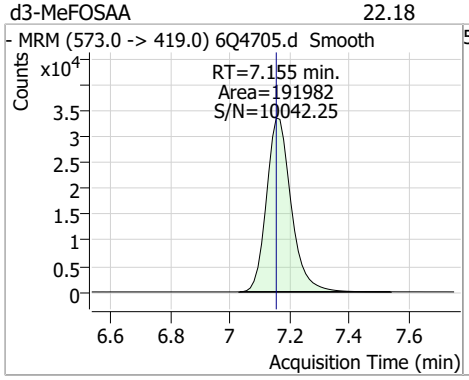


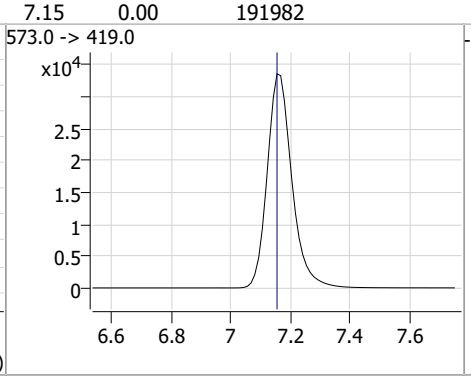


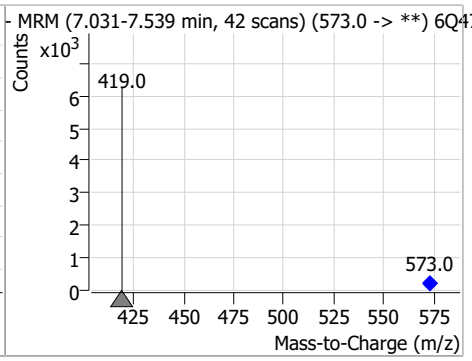


Perfluorinated Compounds by LC/MS/MS

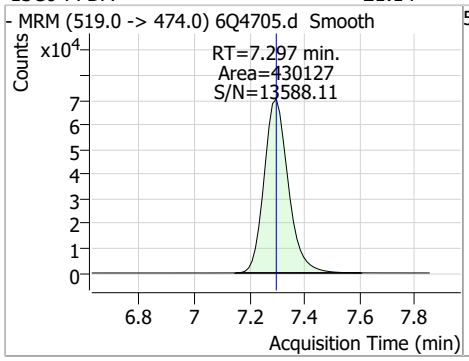
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.18	7.15	0.00	191982				

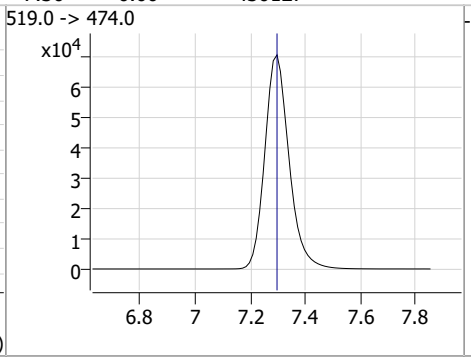


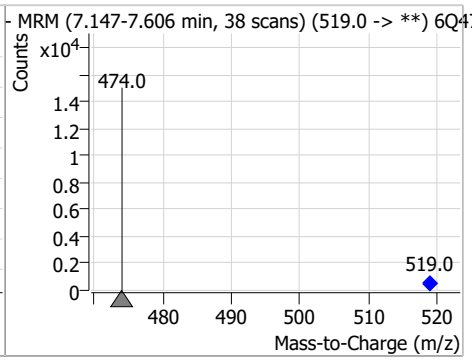




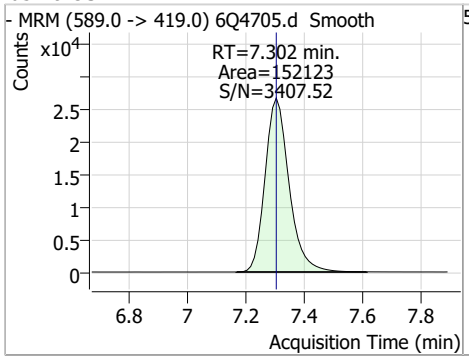
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.14	7.30	0.00	430127				

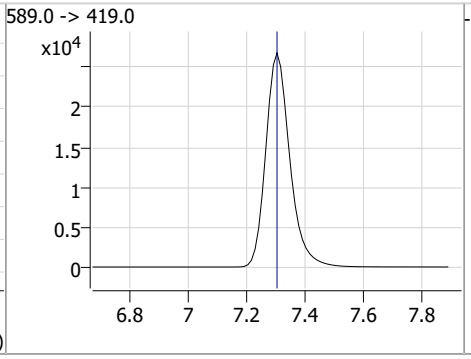


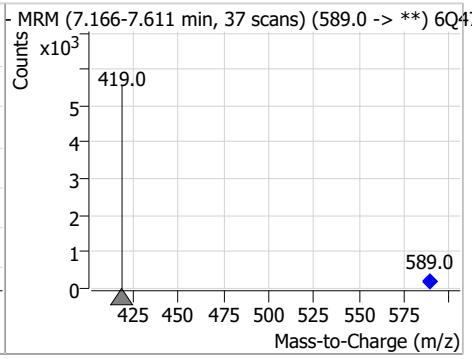




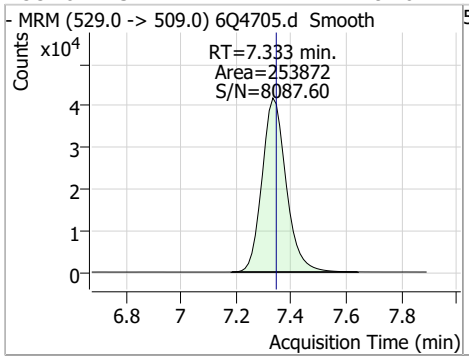
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.41	7.30	0.00	152123				

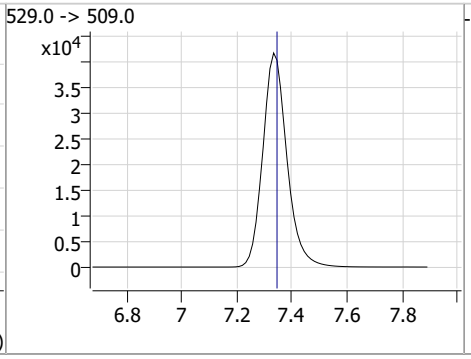


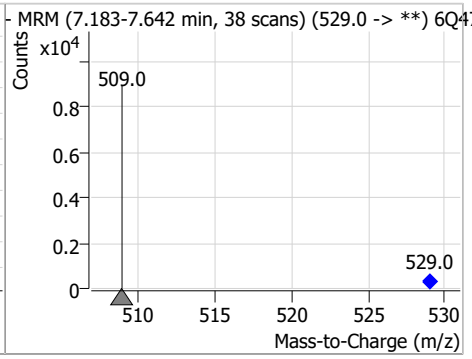




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.48	7.33	-0.01	253872				

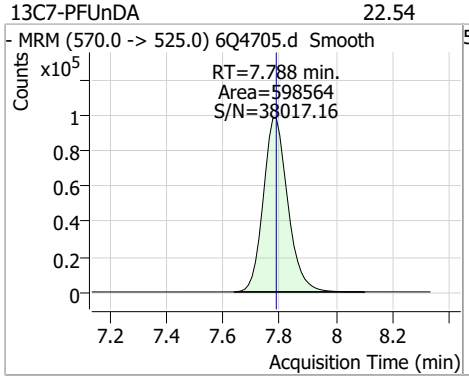


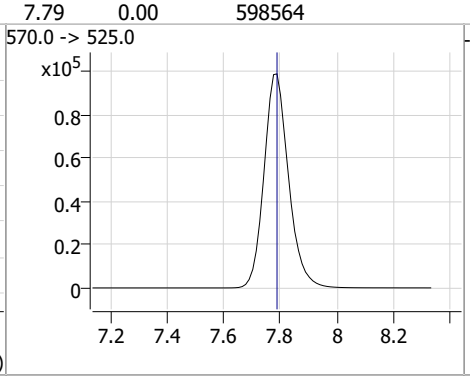


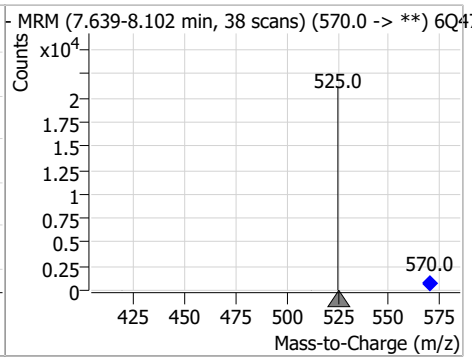


Perfluorinated Compounds by LC/MS/MS

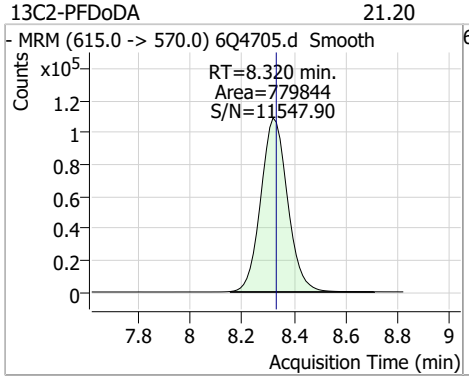
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.54	7.79	0.00	598564				

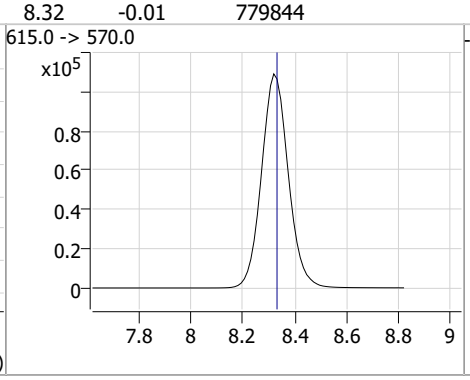


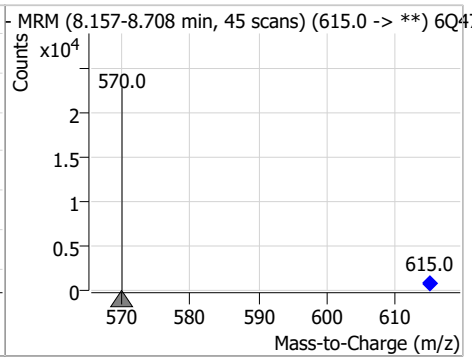




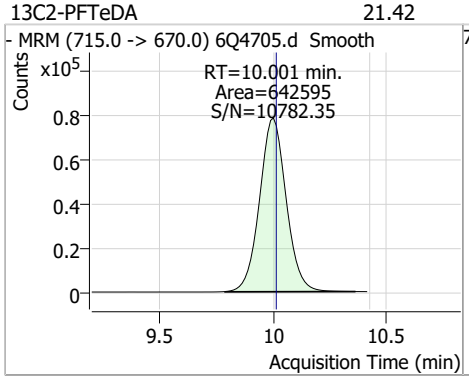
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.20	8.32	-0.01	779844				

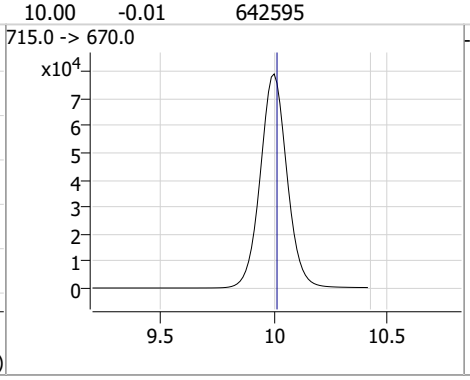


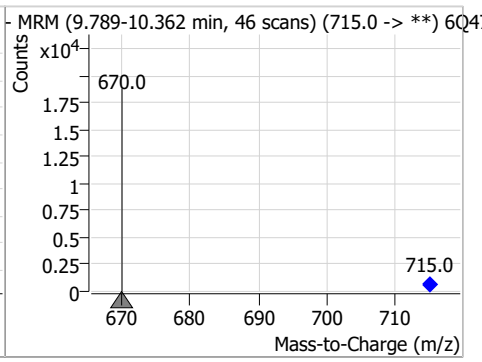




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.42	10.00	-0.01	642595				







QQQ Check Tune Report

Agilent Technologies

Instrument Name	Instrument 1
MS Model	G6470A
MS Instrument Serial	SG1752G107
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	13 September 2022 11:29:13
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.58E+0[R]; 2.50E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

QQQ Check Tune Report

Agilent Technologies

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	0.70	0.73	0.03	Pass	148250
302.00	302.01	0.01	Pass	0.70	0.69	-0.01	Pass	27972
601.98	602.04	0.06	Pass	0.70	0.67	-0.03	Pass	125781
1033.99	1034.05	0.06	Pass	0.70	0.65	-0.05	Pass	417718
1633.95	1633.95	0.00	Pass	0.70	0.66	-0.04	Pass	851945
2233.91	2233.85	-0.06	Pass	0.70	0.68	-0.02	Pass	727888

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	0.70	0.63	-0.07	Pass	37781
112.99	112.99	0.00	Pass	0.70	0.71	0.01	Pass	152060
302.00	301.98	-0.02	Pass	0.70	0.71	0.01	Pass	27392
601.98	601.92	-0.06	Pass	0.70	0.71	0.01	Pass	115914
1033.99	1033.96	-0.03	Pass	0.70	0.72	0.02	Pass	395404
1633.95	1633.83	-0.12	Pass	0.70	0.71	0.01	Pass	733516
2233.91	2233.77	-0.14	Pass	0.70	0.77	0.07	Pass	664240

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.06	0.07	Pass	1.20	1.18	-0.02	Pass	180540
302.00	302.10	0.10	Pass	1.20	1.26	0.06	Pass	37902
601.98	601.98	0.00	Pass	1.20	1.40	0.20	Pass	228263
1033.99	1034.02	0.03	Pass	1.20	1.36	0.16	Pass	841937
1633.95	1633.95	0.00	Pass	1.20	1.30	0.10	Pass	1802767
2233.91	2233.90	-0.01	Pass	1.20	1.28	0.08	Pass	1674200

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	1.20	1.12	-0.08	Pass	47941
112.99	113.02	0.03	Pass	1.20	1.23	0.03	Pass	198493
302.00	302.04	0.04	Pass	1.20	1.32	0.12	Pass	33888
601.98	601.95	-0.03	Pass	1.20	1.37	0.17	Pass	175937
1033.99	1033.91	-0.08	Pass	1.20	1.42	0.22	Pass	685683
1633.95	1633.76	-0.19	Pass	1.20	1.38	0.18	Pass	1514518
2233.91	2233.77	-0.14	Pass	1.20	1.34	0.14	Pass	1220493

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.02	0.03	Pass	2.50	2.50	0.00	Pass	247642
302.00	302.06	0.06	Pass	2.50	2.56	0.06	Pass	52037
601.98	601.80	-0.18	Pass	2.50	2.72	0.22	Pass	291165
1033.99	1034.02	0.03	Pass	2.50	2.59	0.09	Pass	1346665
1633.95	1633.94	-0.01	Pass	2.50	2.23	-0.27	Pass	4306675
2233.91	2233.86	-0.05	Pass	2.50	2.46	-0.04	Pass	5661355

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	2.50	2.30	-0.20	Pass	56724
112.99	113.03	0.04	Pass	2.50	2.42	-0.08	Pass	238918
302.00	301.92	-0.08	Pass	2.50	2.51	0.01	Pass	46927
601.98	601.84	-0.14	Pass	2.50	2.62	0.12	Pass	228396
1033.99	1034.13	0.14	Pass	2.50	2.66	0.16	Pass	1113515
1633.95	1633.74	-0.21	Pass	2.50	2.56	0.06	Pass	3326414
2233.91	2233.85	-0.06	Pass	2.50	2.58	0.08	Pass	3041622

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65678.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 3:50:20 PM
Sample Name : ic898-0.5
Vial : P1-A2
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

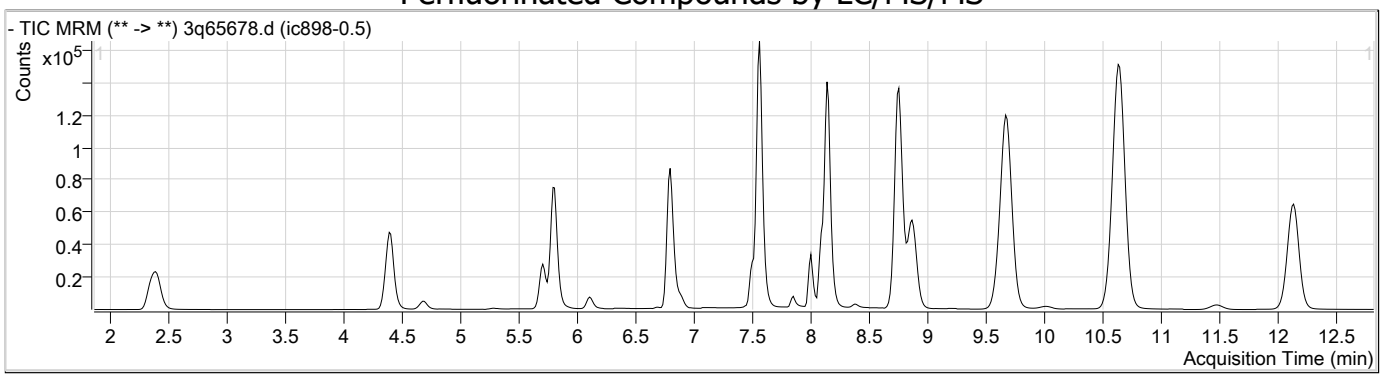
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.377	217.0 -> 172.0	163125	20.00 µg/L	0.013
M5-PFPeA	4.386	268.0 -> 223.0	235375	20.00 µg/L	-0.025
M5-PFHxA	5.800	318.0 -> 273.0	306717	20.00 µg/L	-0.014
M4-PFHpA	6.793	367.0 -> 322.0	311413	20.00 µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	420432	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	456562	20.00 µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	642583	20.00 µg/L	0.013
M7-PFUnDA	9.664	570.0 -> 525.0	837036	20.00 µg/L	-0.013
M2-PFDoDA	10.621	615.0 -> 570.0	1110424	20.00 µg/L	-0.013
M2-PFTeDA	12.123	715.0 -> 670.0	445116	20.00 µg/L	-0.113
M8-FOSA	7.491	506.0 -> 78.0	79791	20.00 µg/L	0.000
M3-PFBS	4.667	302.0 -> 99.0	21486	20.00 µg/L	-0.025
M3-PFHxS	6.822	402.0 -> 99.0	26717	20.00 µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	40018	20.00 µg/L	0.000
M2-4:2FTS	5.696	329.0 -> 309.0	109319	20.00 µg/L	-0.013
M2-6:2FTS	7.558	429.0 -> 409.0	154363	20.00 µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	278247	20.00 µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	91633	20.00 µg/L	0.000
M3-HFPO-DA	6.105	287.0 -> 169.0	26439	20.00 µg/L	-0.013
M3-MeFOSA	7.841	515.0 -> 169.0	18463	20.00 µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	97078	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.696	329.0 -> 309.0	109319	18.93 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C2-6:2FTS	7.558	429.0 -> 409.0	154363	19.72 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C2-8:2FTS	8.860	529.0 -> 509.0	278247	19.14 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C2-PFDoDA	10.621	615.0 -> 570.0	1110424	20.53 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C2-PFTeDA	12.123	715.0 -> 670.0	445116	19.65 µg/L	-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-PFBS	4.667	302.0 -> 99.0	21486	20.31 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFHxS	6.822	402.0 -> 99.0	26717	20.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	2.377	217.0 -> 172.0	163125	20.50 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C4-PFHpA	6.793	367.0 -> 322.0	311413	20.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	5.800	318.0 -> 273.0	306717	20.20 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C5-PFPeA	4.386	268.0 -> 223.0	235375	20.30 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C6-PFDA	8.751	519.0 -> 474.0	642583	20.23 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

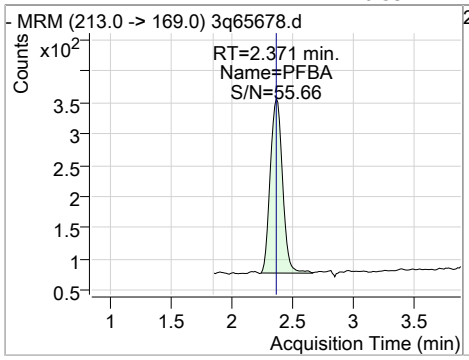
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C7-PFUnDA	9.664	570.0 -> 525.0	837036	20.28 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C8-FOSA	7.491	506.0 -> 78.0	79791	21.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C8-PFOA	7.560	421.0 -> 376.0	420432	20.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C8-PFOS	8.111	507.0 -> 99.0	40018	20.40 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C9-PFNA	8.138	472.0 -> 427.0	456562	20.67 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
d3-MeFOSAA	7.991	573.0 -> 419.0	91633	20.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-HFPO-DA	6.105	287.0 -> 169.0	26445	20.61 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
d3-MeFOSA	7.841	515.0 -> 169.0	18463	20.86 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d5-EtFOSAA	8.077	589.0 -> 419.0	97095	20.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
Target Compounds						**QValue**
4:2FTS	5.697	327.0 -> 307.0	3154	0.55 µg/L		98
6:2FTS	7.559	427.0 -> 407.0	4263	0.53 µg/L		95
8:2FTS	8.861	527.0 -> 507.0	8125	0.58 µg/L		97
EtFOSAA	8.078	584.0 -> 419.0	2107	0.54 µg/L	m	98
FOSA	7.491	498.0 -> 78.0	2078	0.55 µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	1991	0.49 µg/L	m	94
PFBA	2.371	213.0 -> 169.0	1963	0.53 µg/L		100
PFBS	4.669	299.0 -> 80.0	1671	0.55 µg/L		97
PFDA	8.752	513.0 -> 469.0	16027	0.52 µg/L		98
PFDoDA	10.625	613.0 -> 569.0	26665	0.52 µg/L		99
PFDS	9.560	599.0 -> 80.0	1930	0.53 µg/L		98
PFHpA	6.794	363.0 -> 319.0	11293	0.51 µg/L		97
PFHpS	7.544	449.0 -> 80.0	1406	0.54 µg/L		97
PFHxA	5.801	313.0 -> 269.0	8679	0.53 µg/L		100
PFHxS	6.810	399.0 -> 80.0	1712	0.55 µg/L	m	98
PFNA	8.139	463.0 -> 419.0	10376	0.52 µg/L		97
PFNS	8.680	549.0 -> 80.0	1606	0.49 µg/L		100
PFOA	7.561	413.0 -> 369.0	13231	0.52 µg/L		99
PFOS	8.111	499.0 -> 80.0	1757	0.53 µg/L	m	99
PFPeA	4.389	263.0 -> 219.0	5593	0.54 µg/L		100
PFPeS	5.907	349.0 -> 80.0	1257	0.53 µg/L		98
PFTeDA	12.127	713.0 -> 669.0	15984	0.53 µg/L		99
PFTrDA	11.459	663.0 -> 619.0	20693	0.52 µg/L		99
PFUnDA	9.666	563.0 -> 519.0	23336	0.52 µg/L		99
11Cl-PF3OUdS	9.997	631.0 -> 451.0	8122	0.50 µg/L		98
9Cl-PF3ONS	8.371	531.0 -> 351.0	5879	0.53 µg/L		99
ADONA	6.891	377.0 -> 251.0	16557	0.49 µg/L		98
HFPO-DA	6.097	329.0 -> 169.0	1706	0.54 µg/L		97
MeFOSA	7.842	512.0 -> 169.0	495	0.50 µg/L		97
4-PFECHS	7.441	461.0 -> 381.0	4485	0.47 µg/L		97
FBSA	5.275	298.0 -> 78.0	2789	0.53 µg/L		98
FHxSA	6.675	398.0 -> 78.0	3236	0.52 µg/L		97

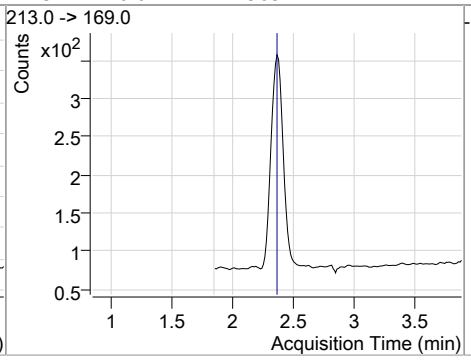
 # = Qualifier out of range, m = manually integrated, + = Area summed

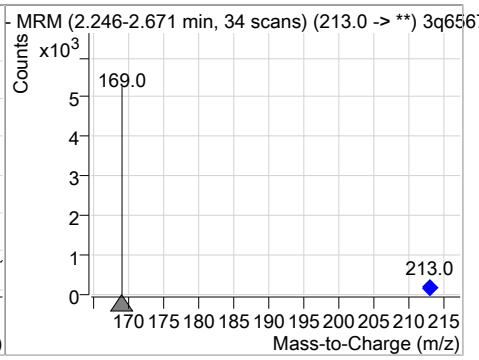
Perfluorinated Compounds by LC/MS/MS



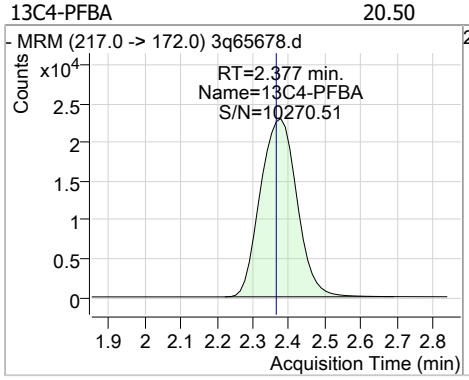
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.53	2.37	0.01	1963				

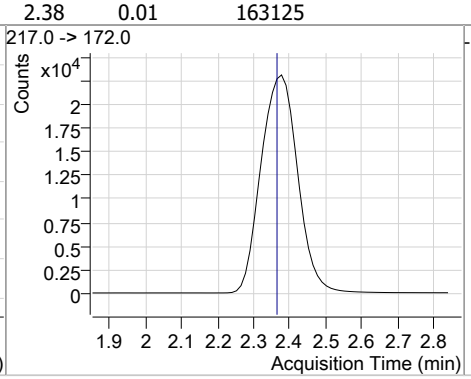


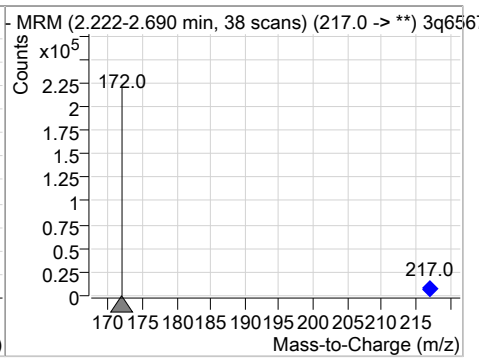




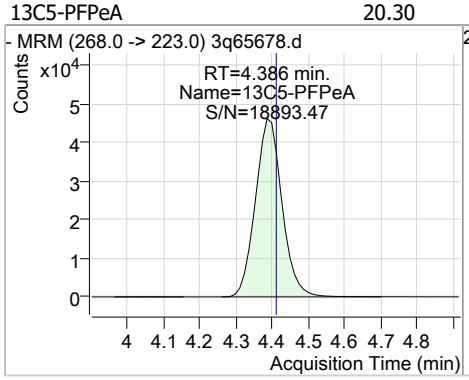
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.50	2.38	0.01	163125				

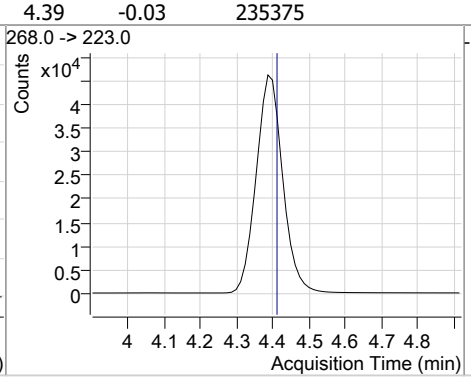


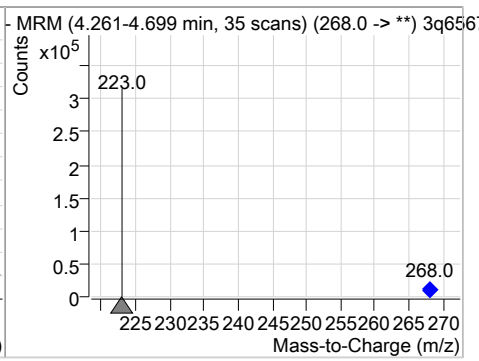




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.30	4.39	-0.03	235375				

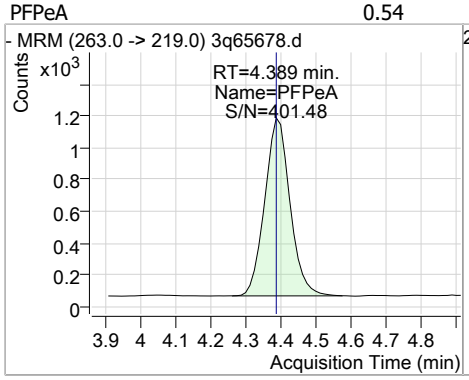


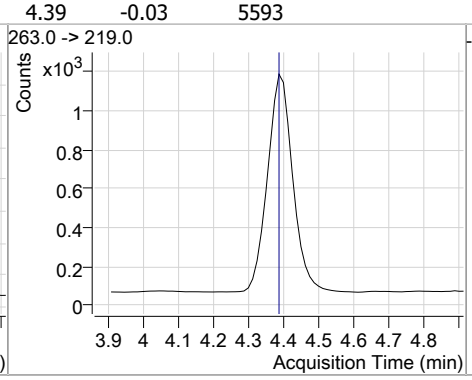


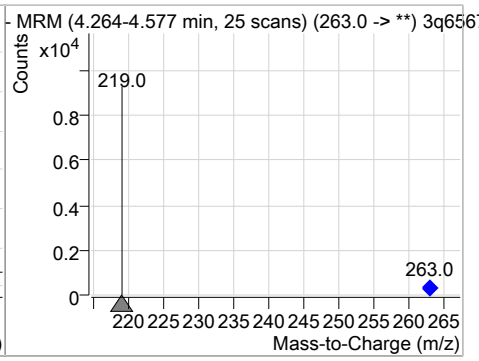


Perfluorinated Compounds by LC/MS/MS

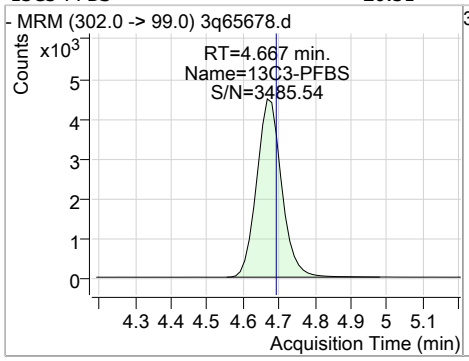
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.54	4.39	-0.03	5593				

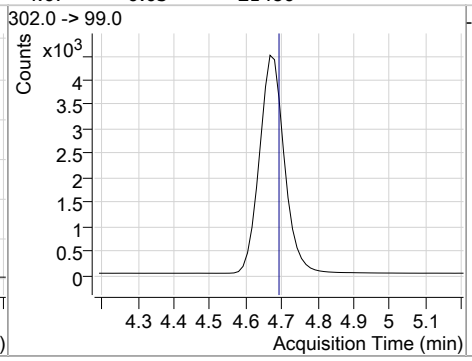


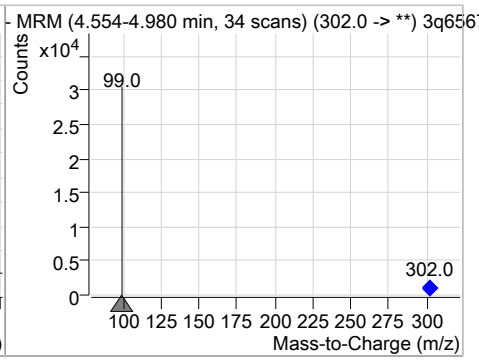




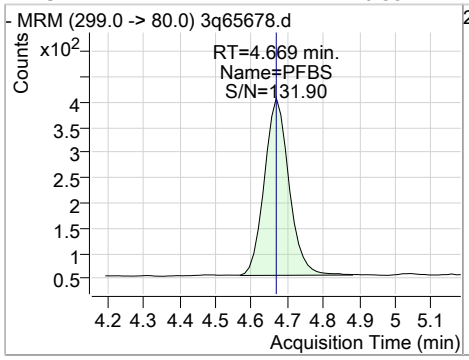
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.31	4.67	-0.03	21486				

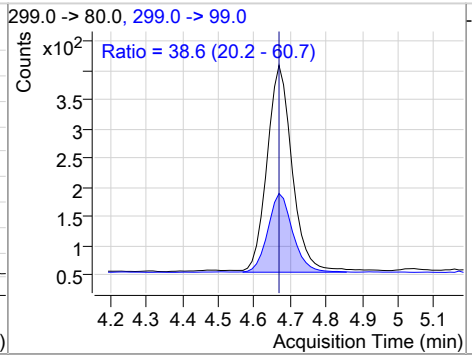


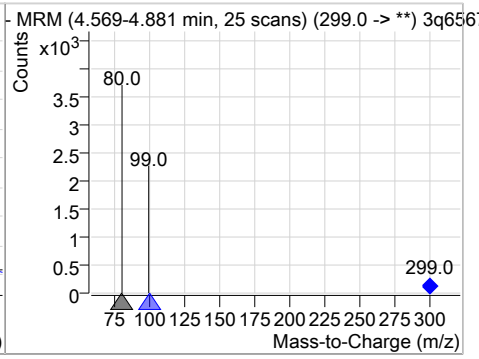




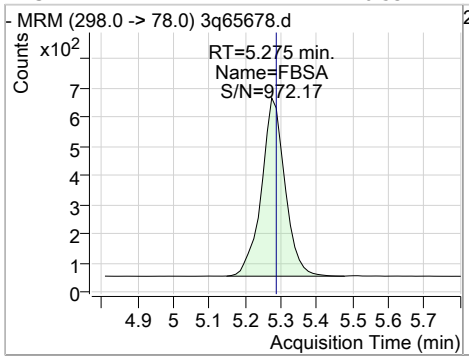
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.55	4.67	-0.03	1671	299.0 -> 99.0	38.6	20.2	60.7

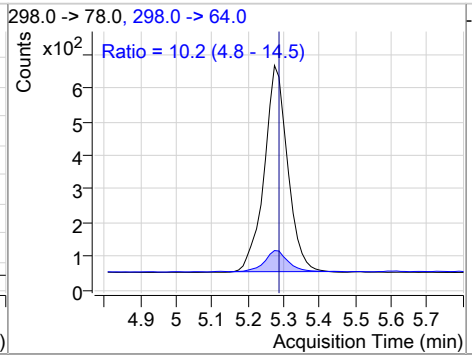


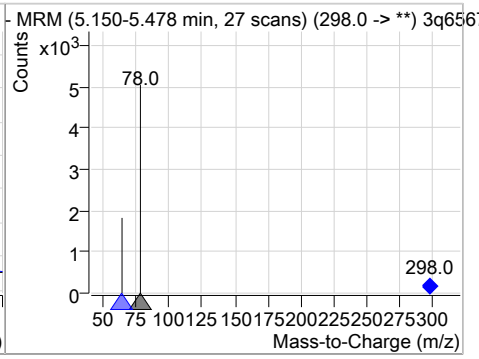




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.53	5.28	-0.03	2789	298.0 -> 64.0	10.2	4.8	14.5

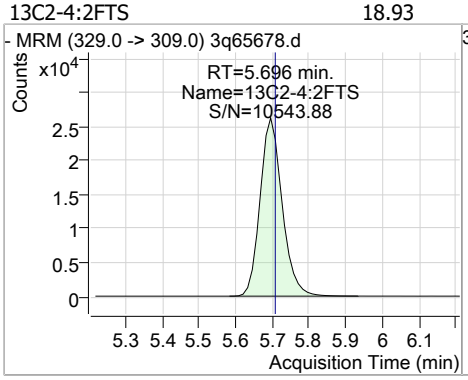


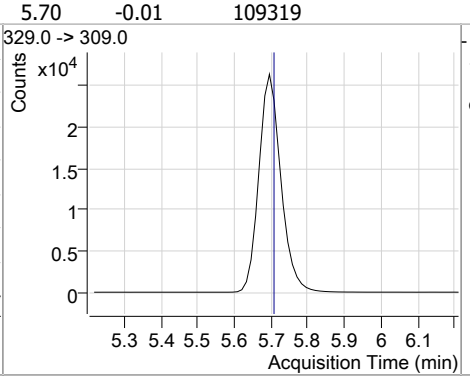


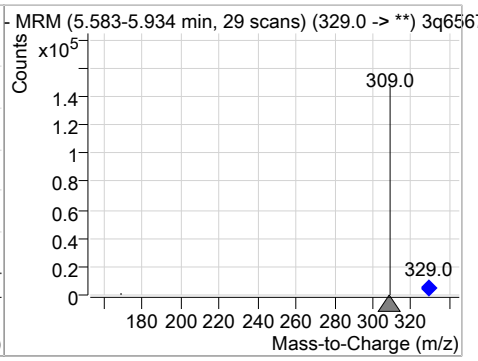


Perfluorinated Compounds by LC/MS/MS

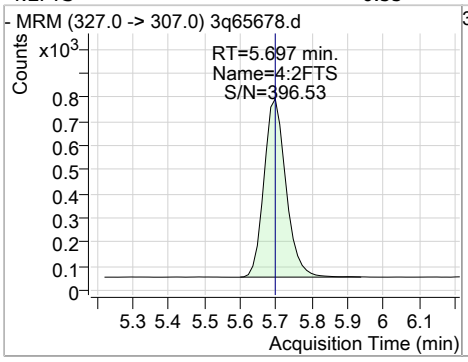
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.93	5.70	-0.01	109319				

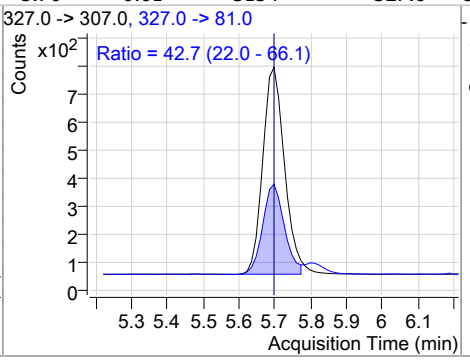


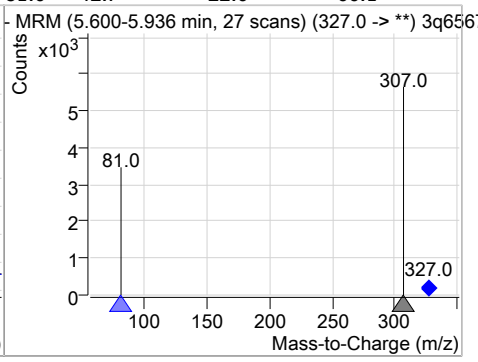




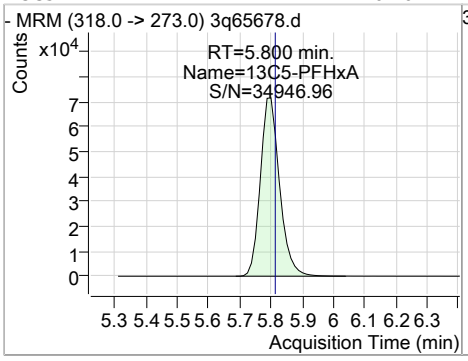
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.55	5.70	-0.01	3154	327.0 -> 81.0	42.7	22.0	66.1

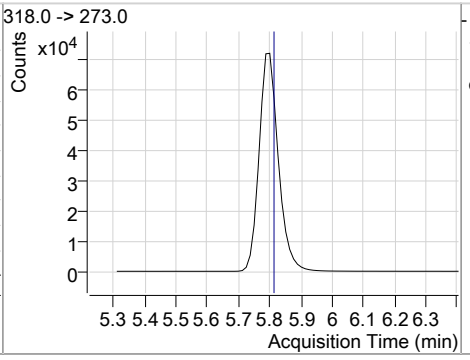


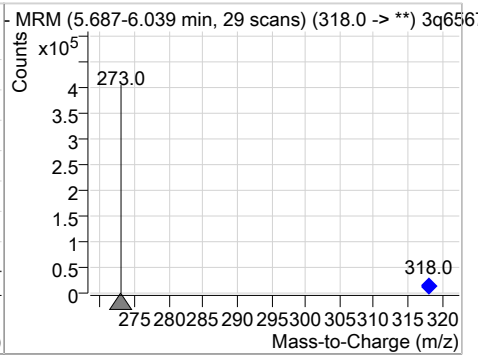




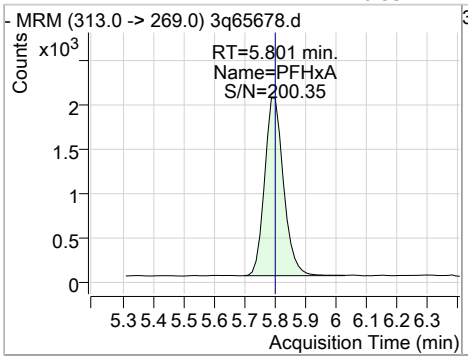
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.20	5.80	-0.01	306717				

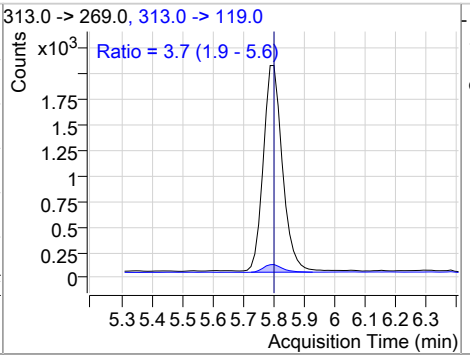


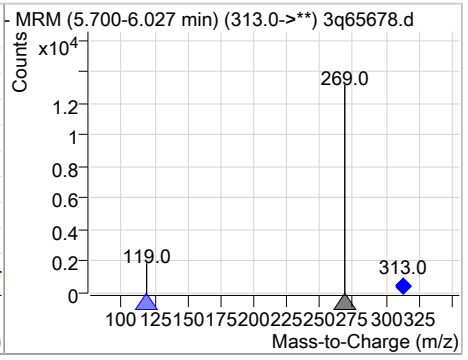




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.53	5.80	-0.01	8679	313.0 -> 119.0	3.7	1.9	5.6

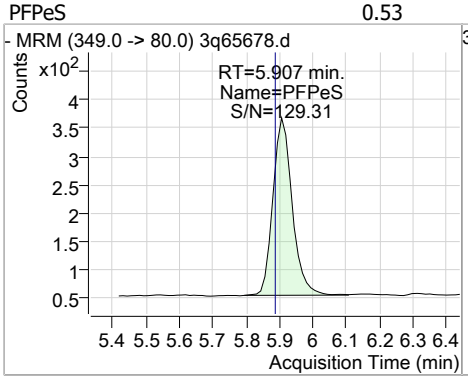


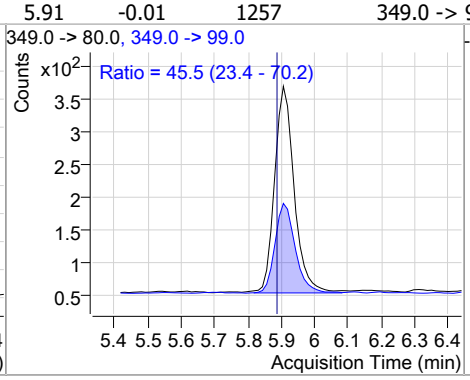


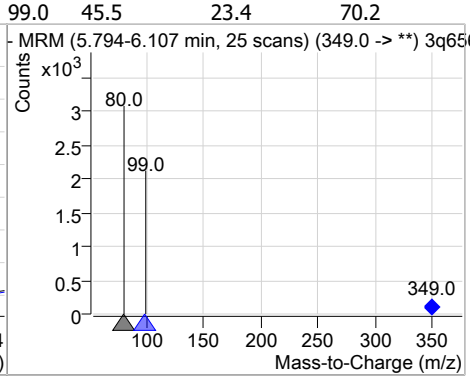


Perfluorinated Compounds by LC/MS/MS

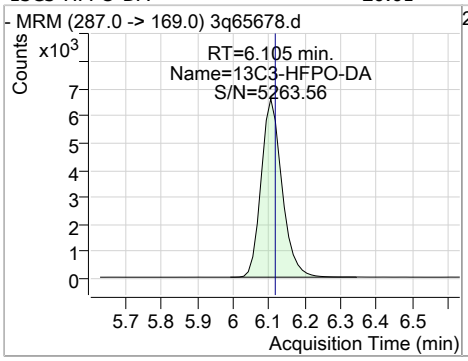
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.53	5.91	-0.01	1257	349.0 -> 99.0	45.5	23.4	70.2

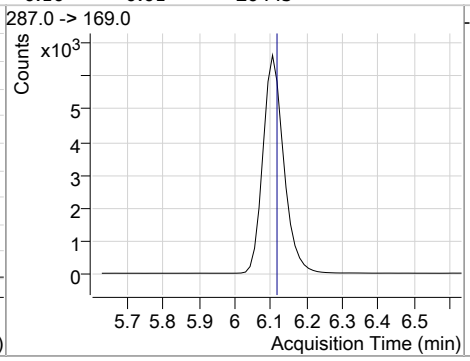


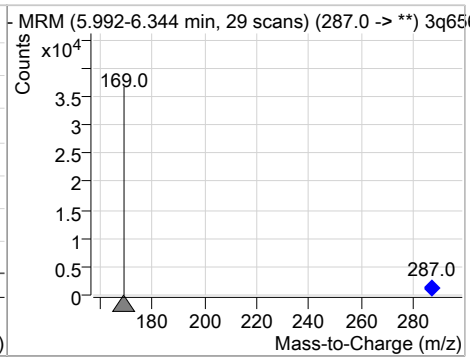




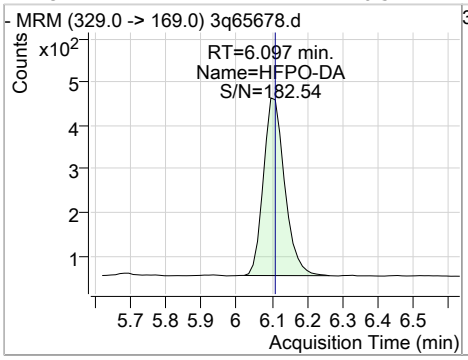
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.61	6.10	-0.01	26445				

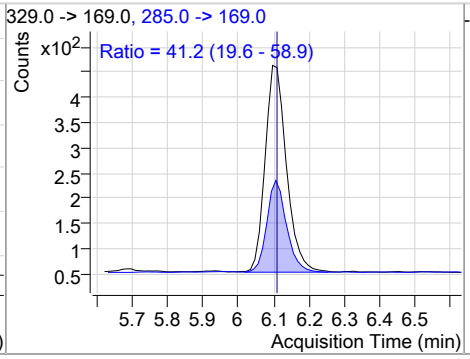


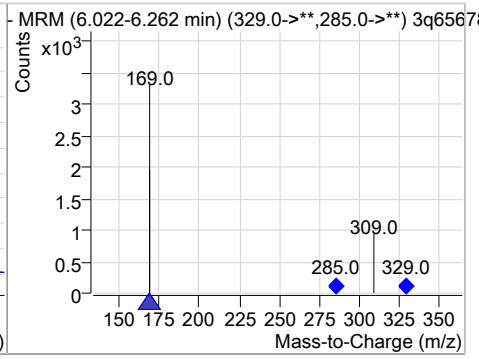




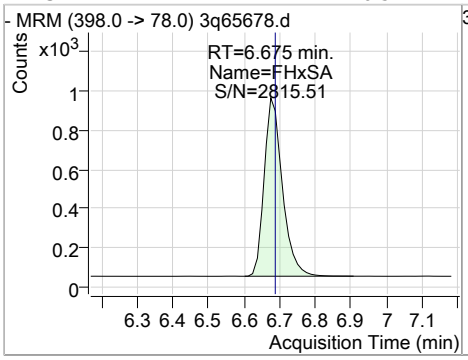
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.54	6.10	-0.03	1706	285.0 -> 169.0	41.2	19.6	58.9

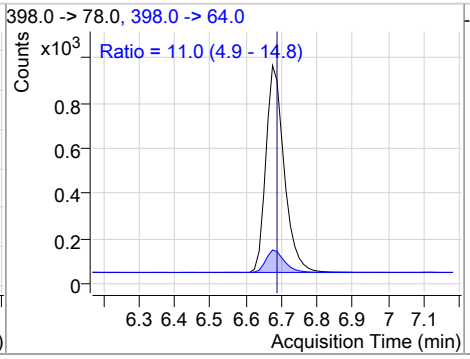


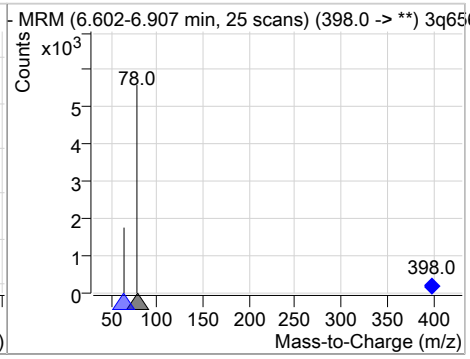




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.52	6.68	-0.01	3236	398.0 -> 64.0	11.0	4.9	14.8

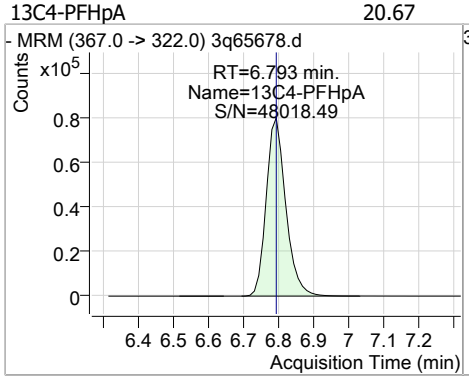


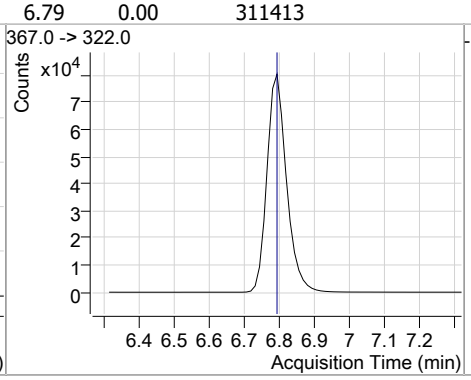


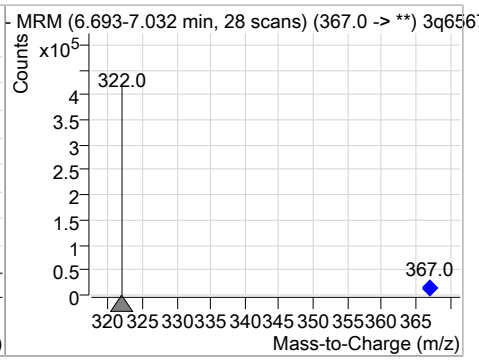


Perfluorinated Compounds by LC/MS/MS

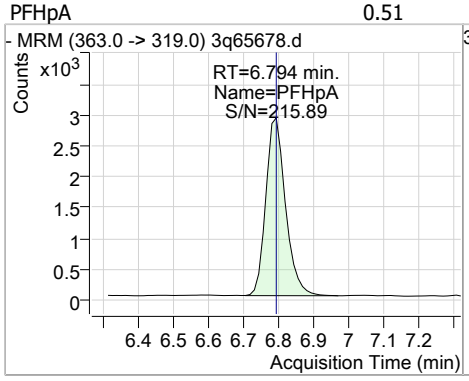
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	6.79	0.00	311413				

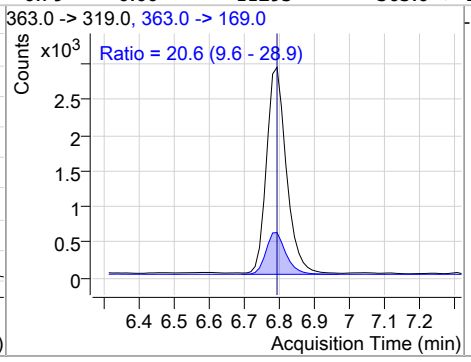


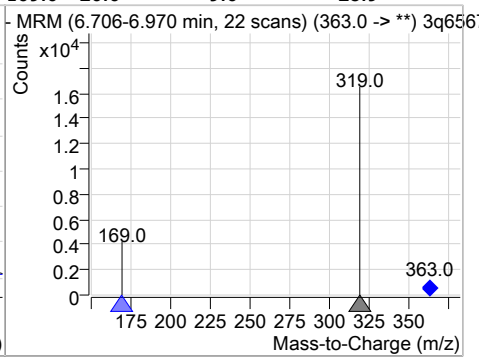




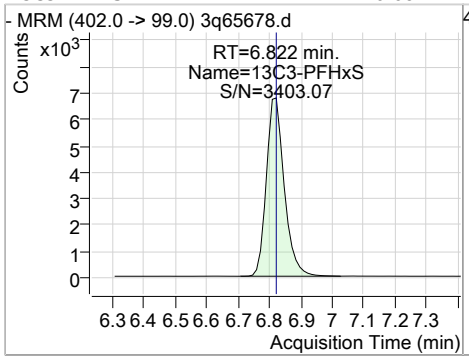
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.51	6.79	0.00	11293	363.0 -> 169.0	20.6	9.6	28.9

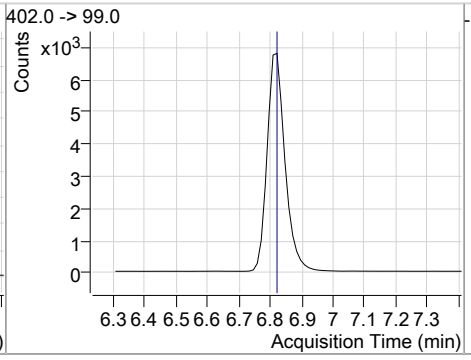


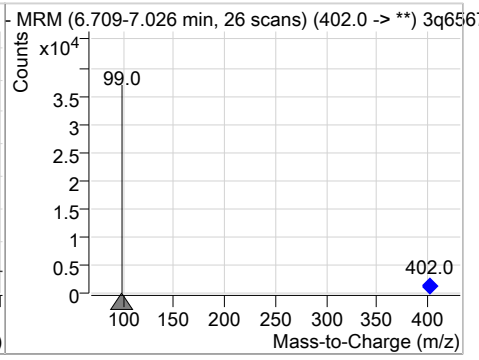




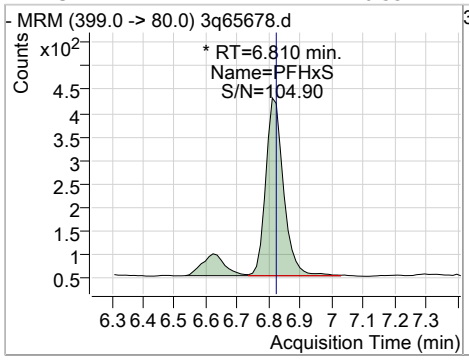
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.68	6.82	0.00	26717				

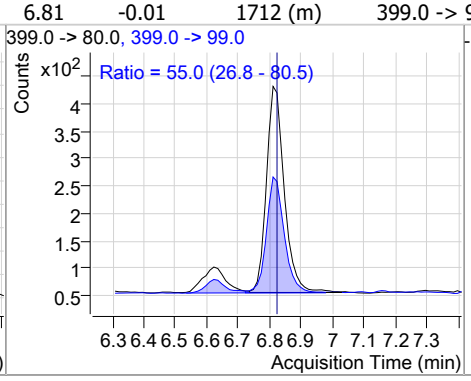


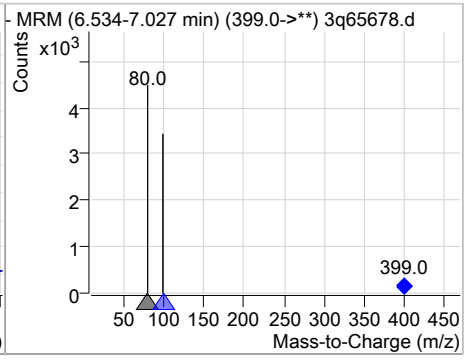




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.55	6.81	-0.01	1712 (m)	399.0 -> 99.0	55.0	26.8	80.5

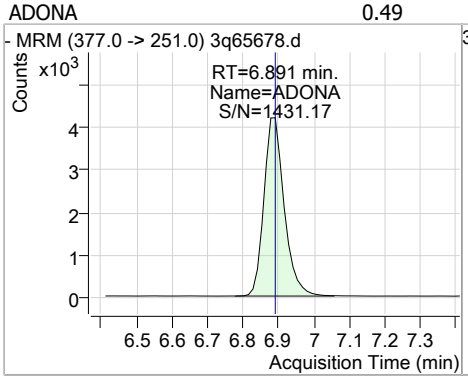


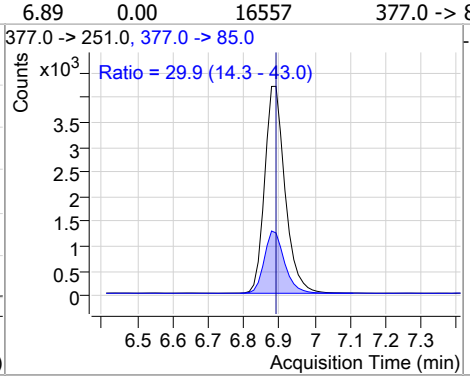


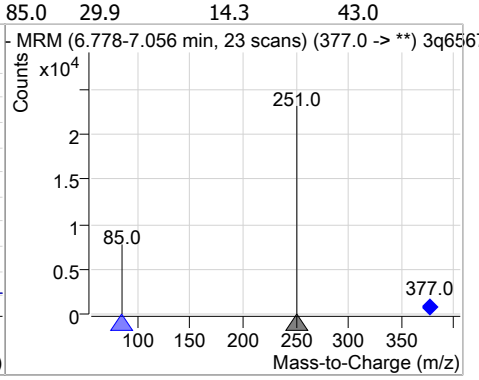


Perfluorinated Compounds by LC/MS/MS

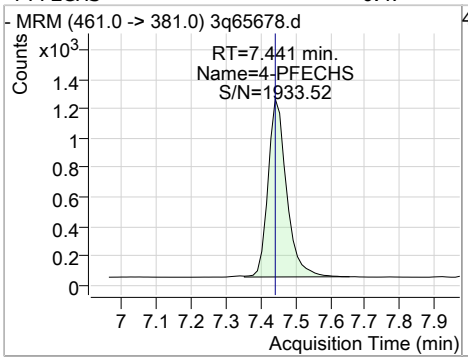
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.49	6.89	0.00	16557	377.0 -> 85.0	29.9	14.3	43.0

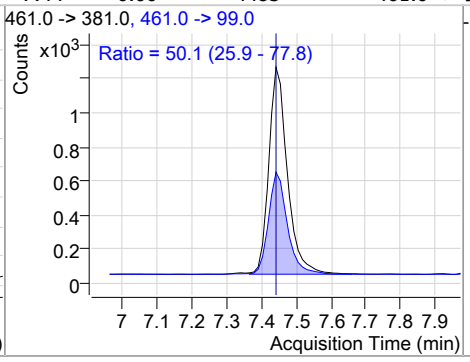


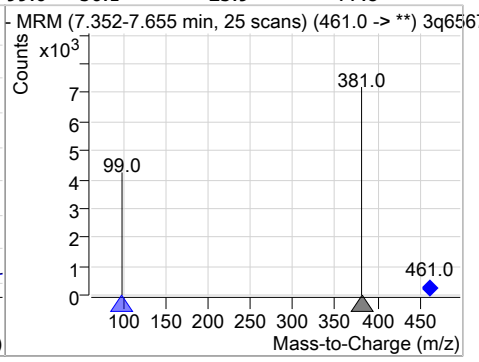




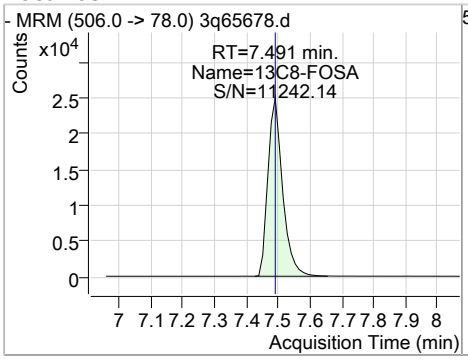
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.47	7.44	0.00	4485	461.0 -> 99.0	50.1	25.9	77.8

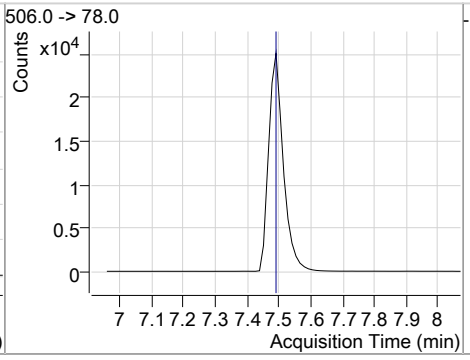


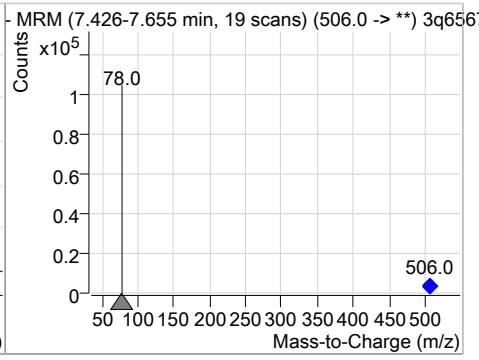




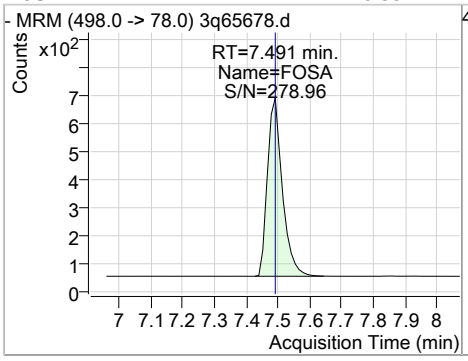
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.12	7.49	0.00	79791				

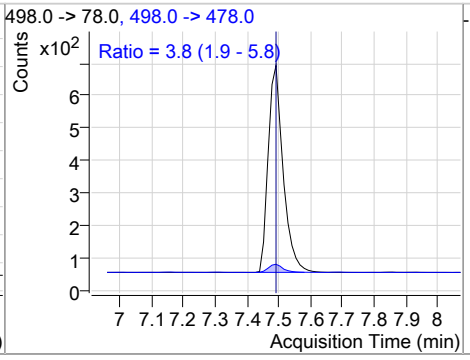


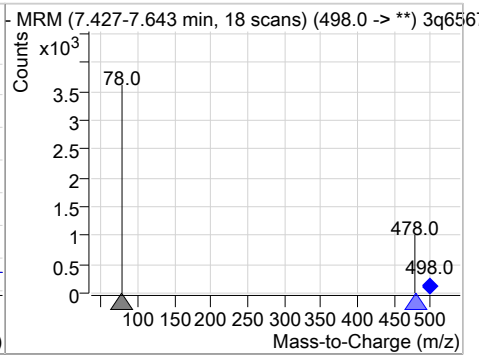




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.55	7.49	0.00	2078	498.0 -> 478.0	3.8	1.9	5.8

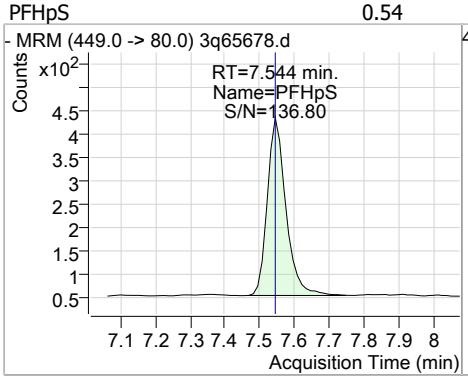


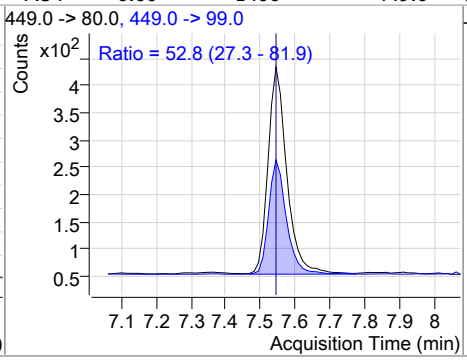


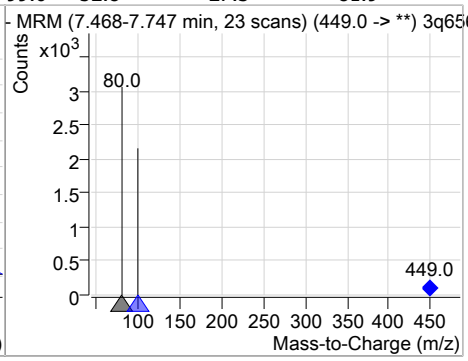


Perfluorinated Compounds by LC/MS/MS

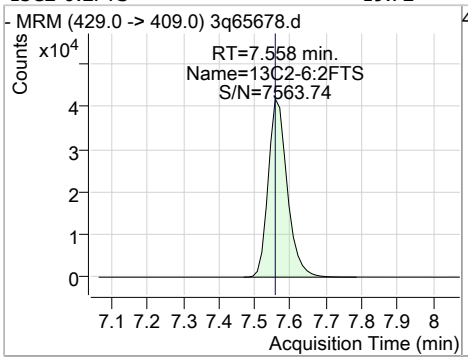
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.54	7.54	0.00	1406	449.0 -> 99.0	52.8	27.3	81.9

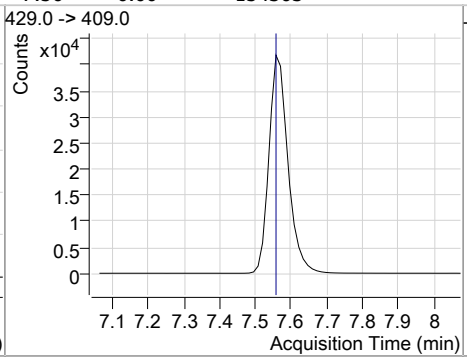


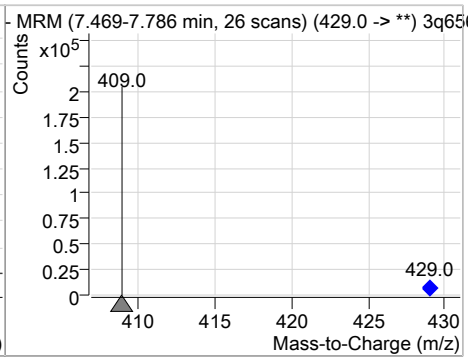




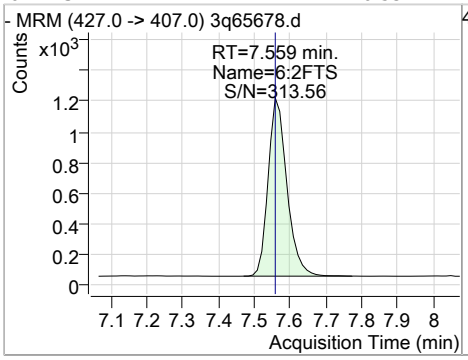
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.72	7.56	0.00	154363				

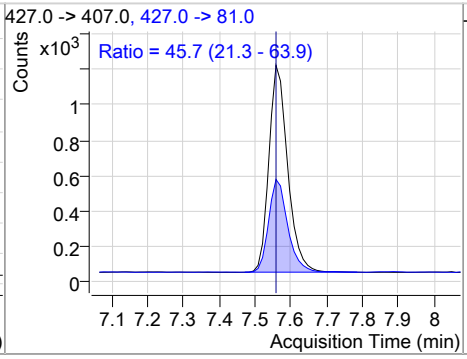


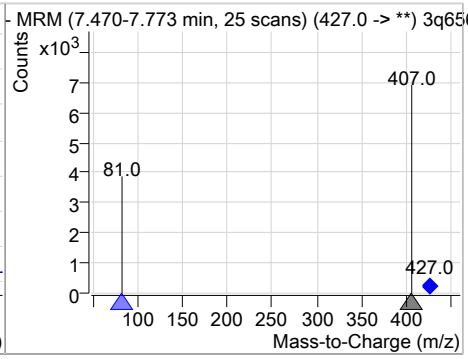




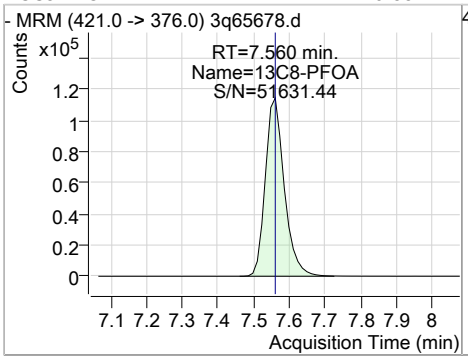
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.53	7.56	0.00	4263	427.0 -> 81.0	45.7	21.3	63.9

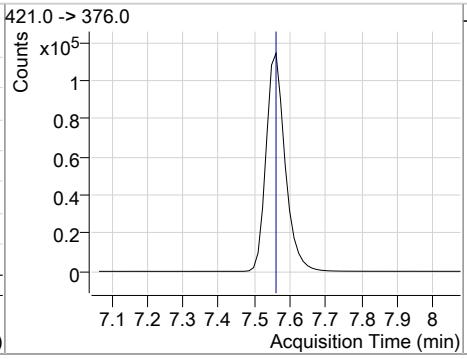


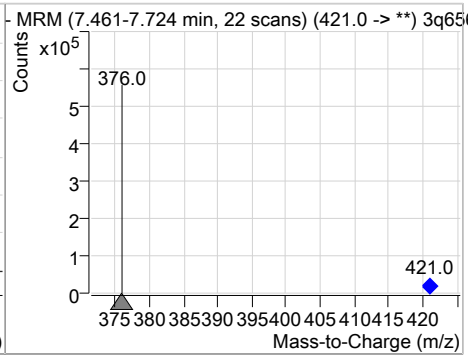




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.88	7.56	0.00	420432				

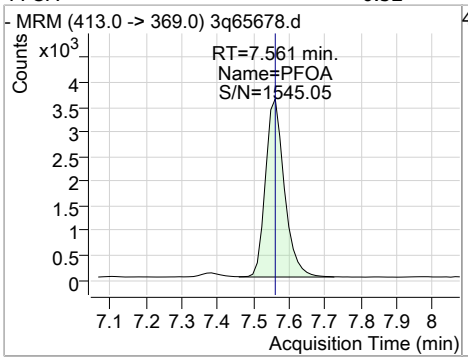


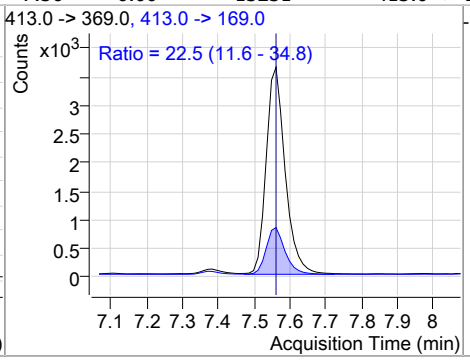


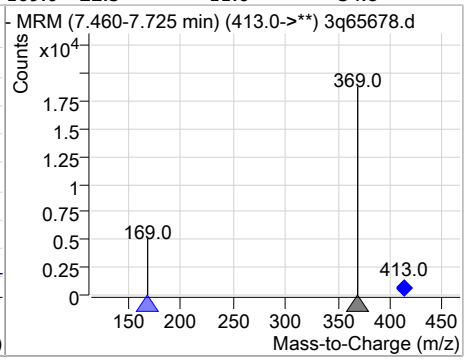


Perfluorinated Compounds by LC/MS/MS

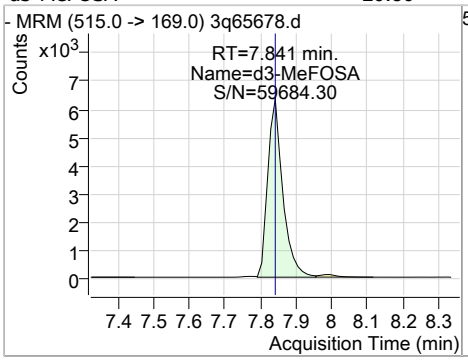
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.52	7.56	0.00	13231	413.0 -> 169.0	22.5	11.6	34.8

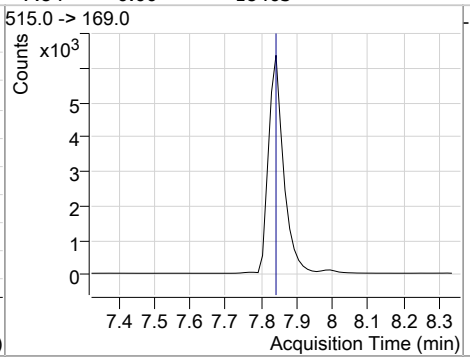


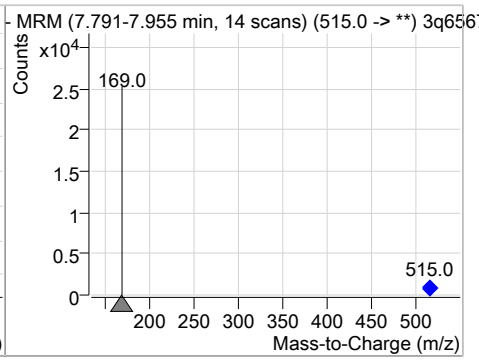




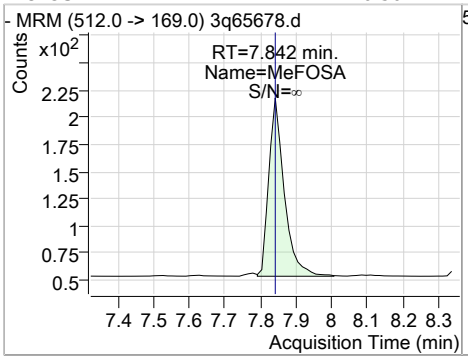
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.86	7.84	0.00	18463				

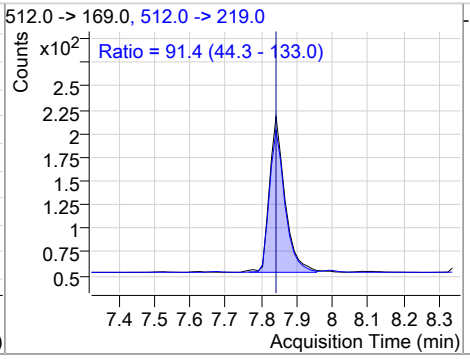


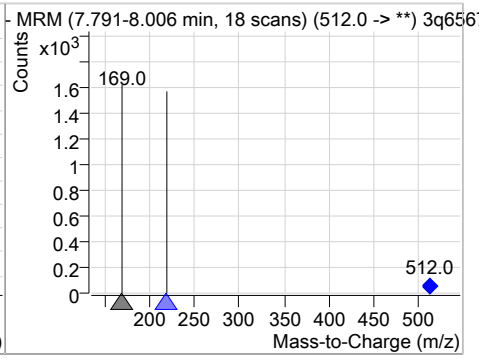




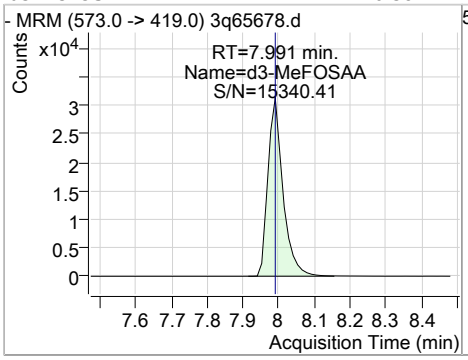
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.50	7.84	0.00	495	512.0 -> 219.0	91.4	44.3	133.0

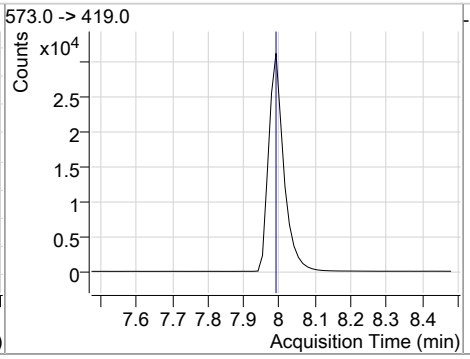


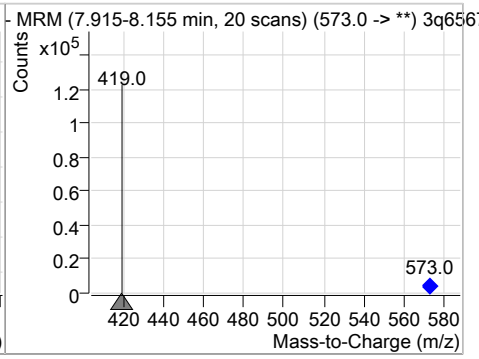




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.38	7.99	0.00	91633				

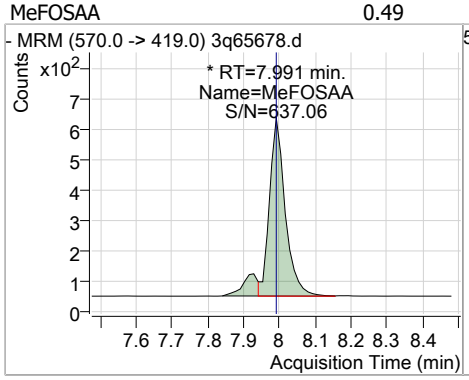


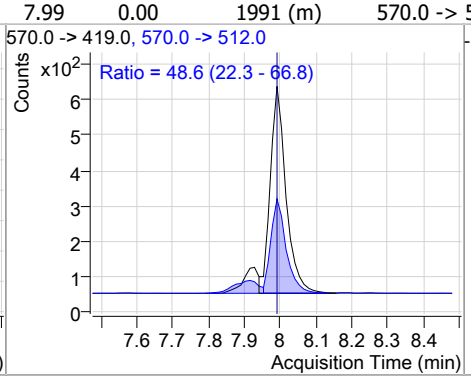


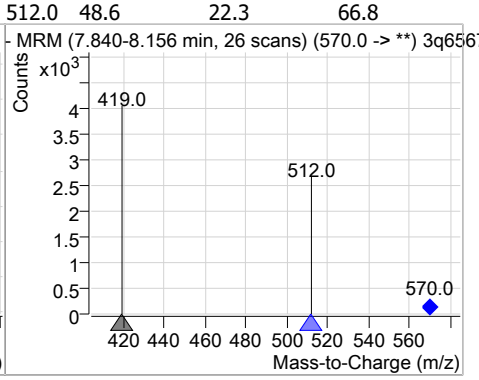


Perfluorinated Compounds by LC/MS/MS

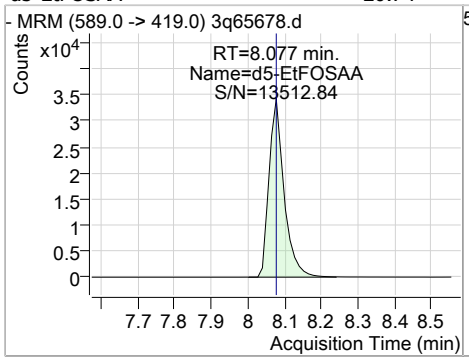
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.49	7.99	0.00	1991 (m)	570.0 -> 512.0	48.6	22.3	66.8

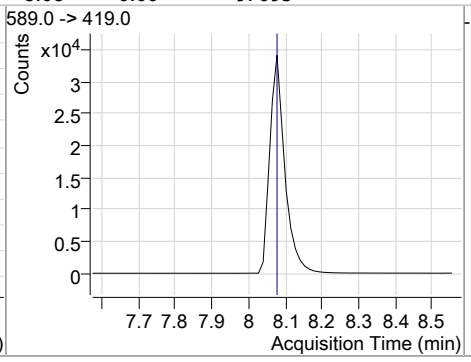


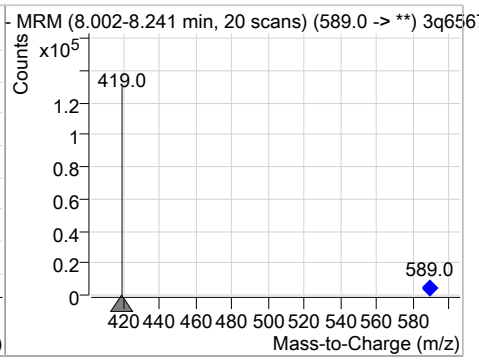




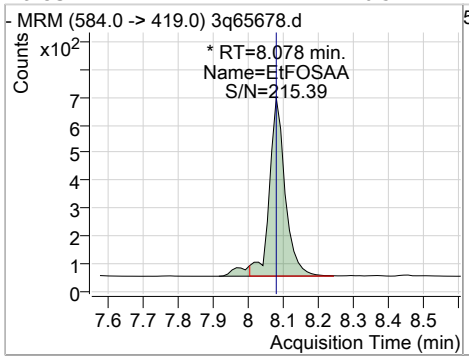
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.74	8.08	0.00	97095				

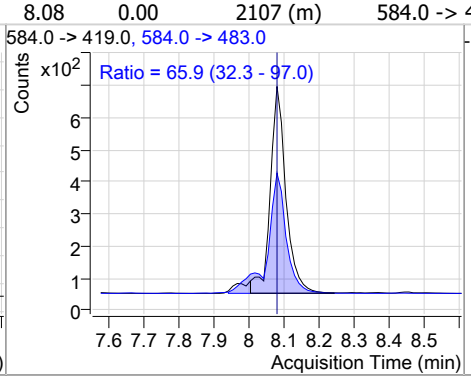


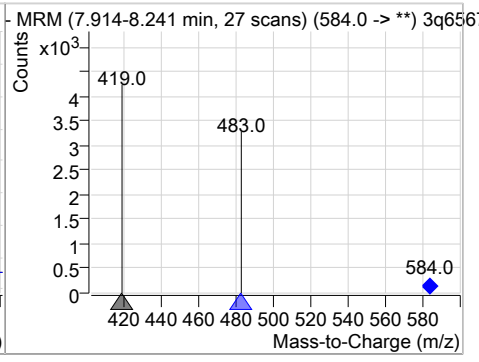




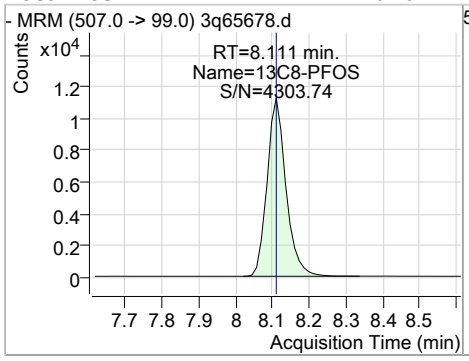
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.54	8.08	0.00	2107 (m)	584.0 -> 483.0	65.9	32.3	97.0

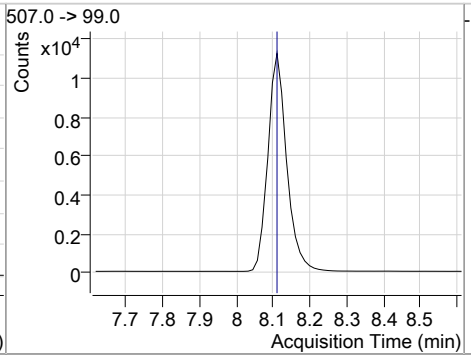


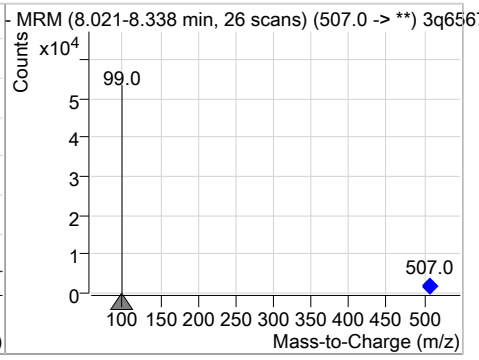




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.40	8.11	0.00	40018				

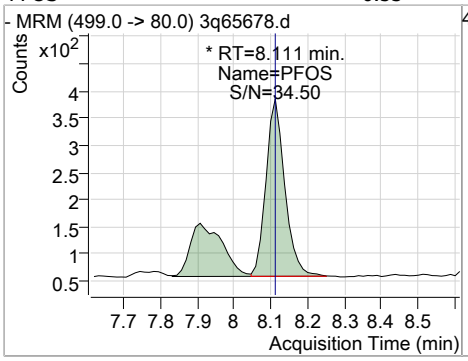


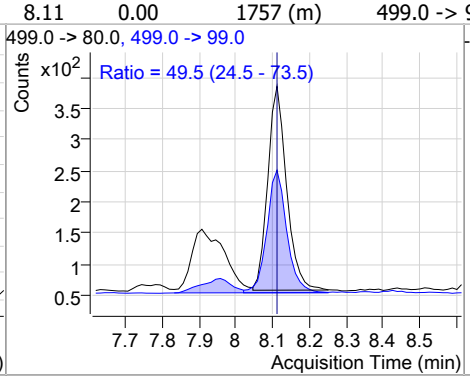


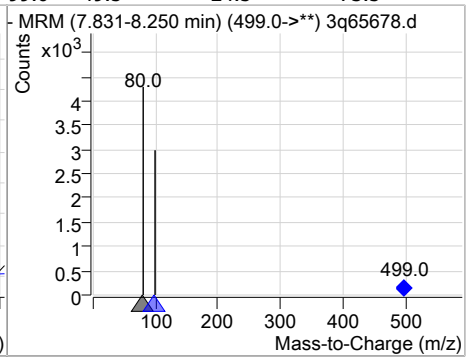


Perfluorinated Compounds by LC/MS/MS

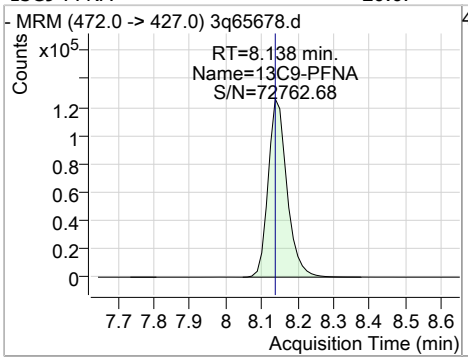
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.53	8.11	0.00	1757 (m)	499.0 -> 99.0	49.5	24.5	73.5

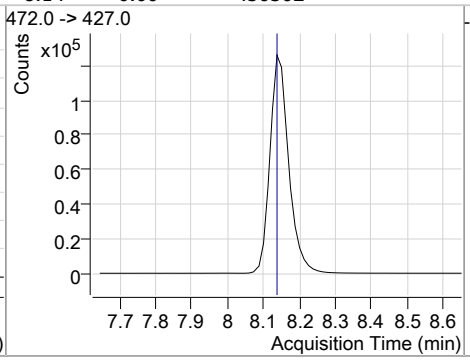


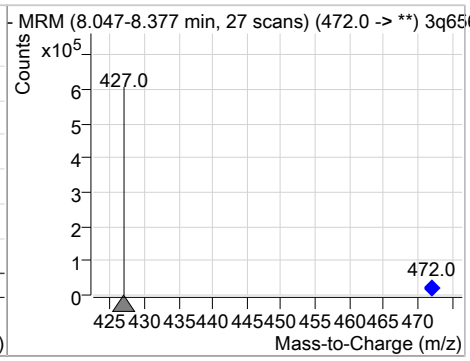




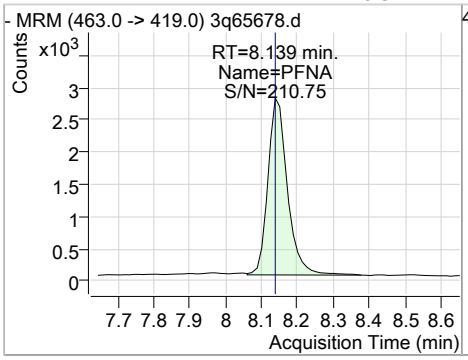
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.67	8.14	0.00	456562				

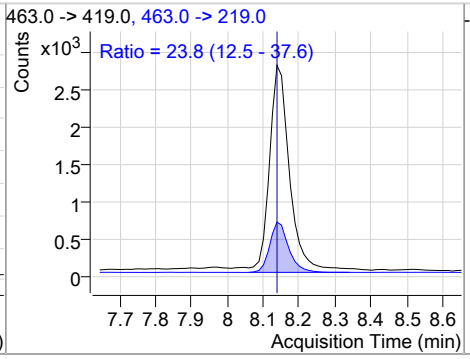


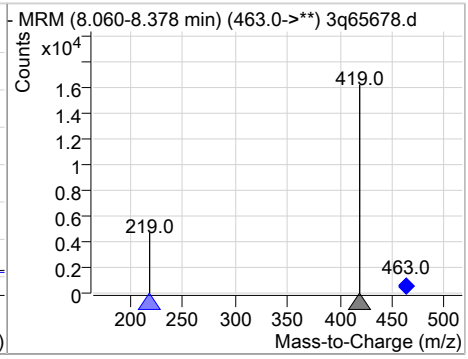




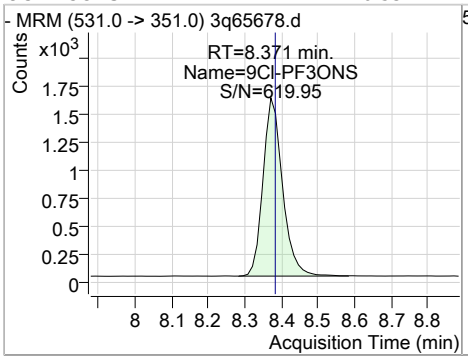
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.52	8.14	0.00	10376	463.0 -> 219.0	23.8	12.5	37.6

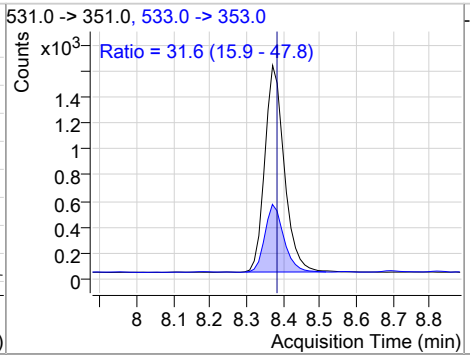


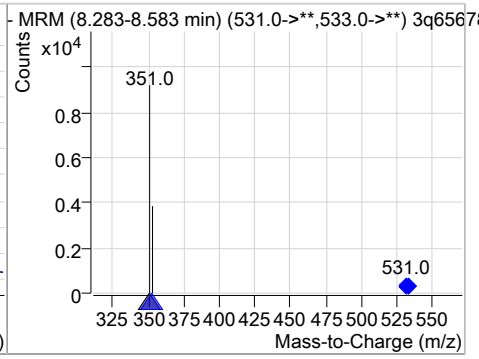




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.53	8.37	0.00	5879	533.0 -> 353.0	31.6	15.9	47.8

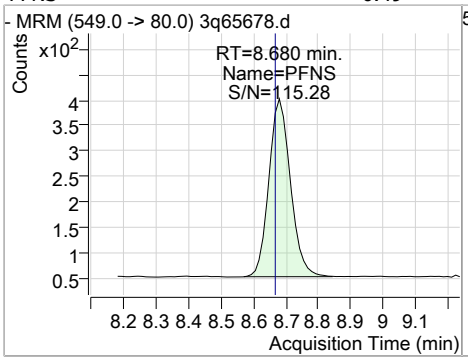


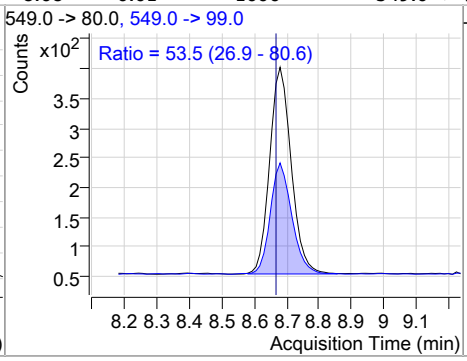


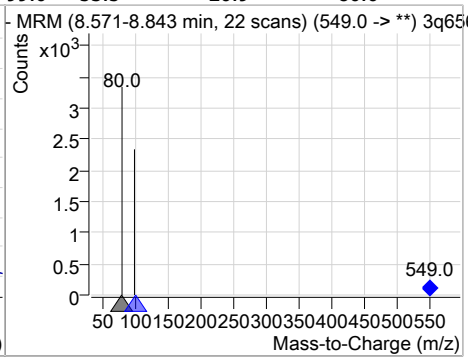


Perfluorinated Compounds by LC/MS/MS

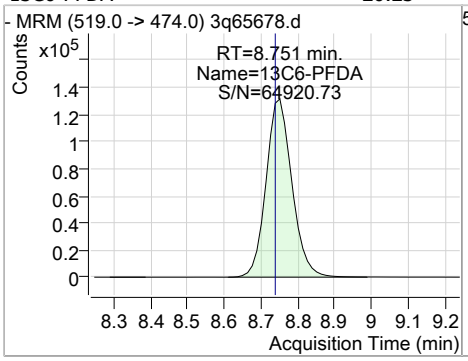
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.49	8.68	0.01	1606	549.0 -> 99.0	53.5	26.9	80.6

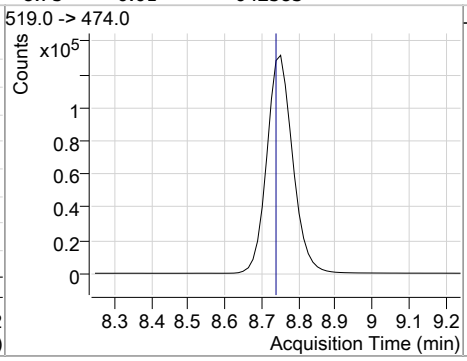


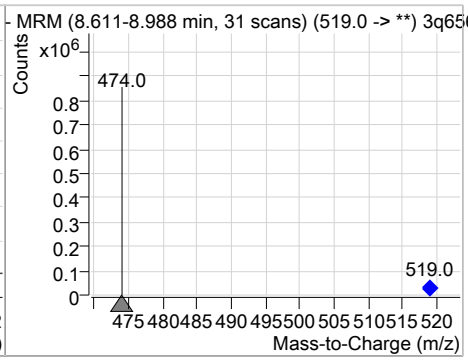




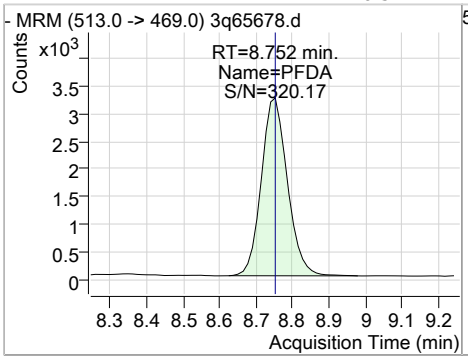
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.23	8.75	0.01	642583				

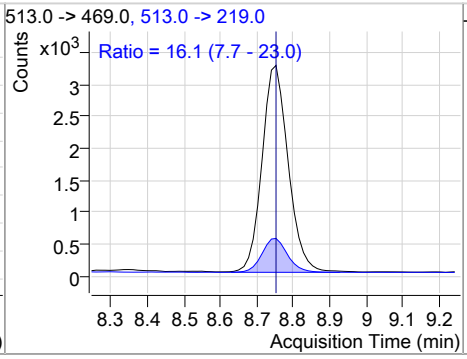


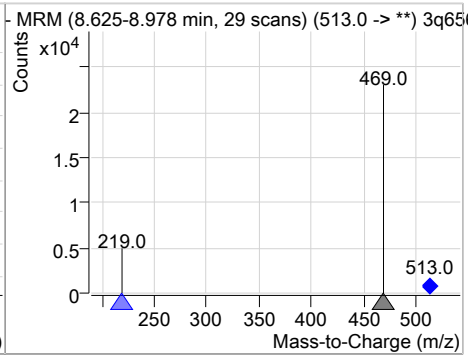




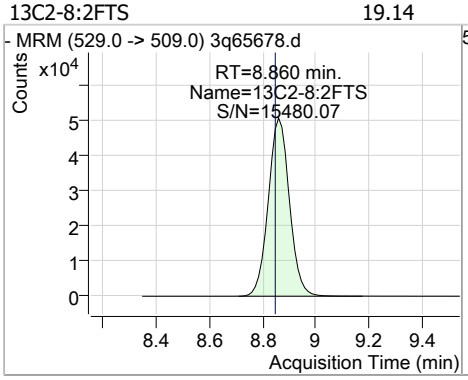
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.52	8.75	0.01	16027	513.0 -> 219.0	16.1	7.7	23.0

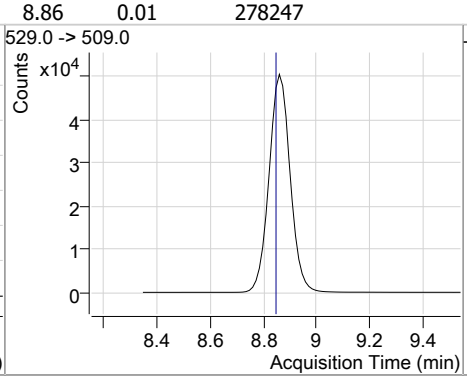


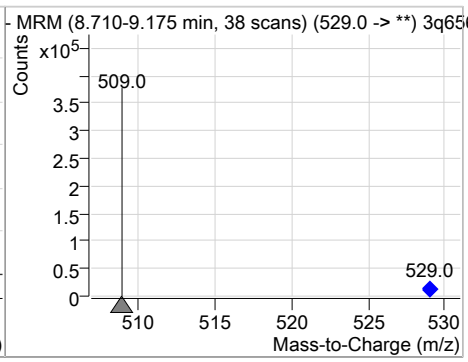




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.14	8.86	0.01	278247				

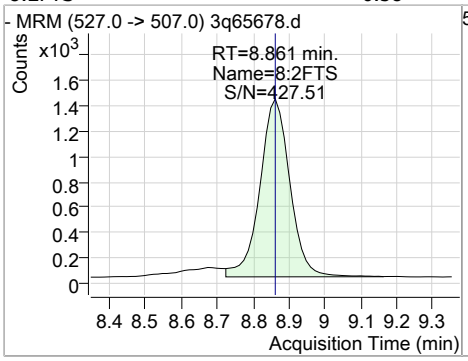


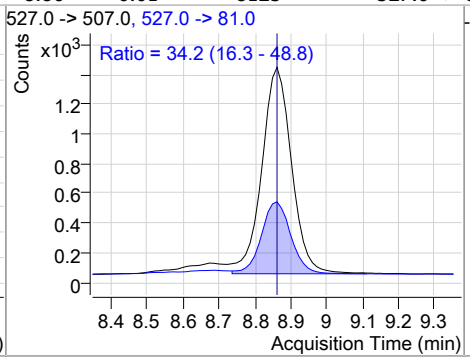


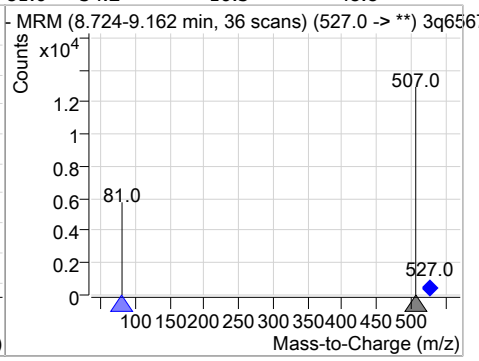


Perfluorinated Compounds by LC/MS/MS

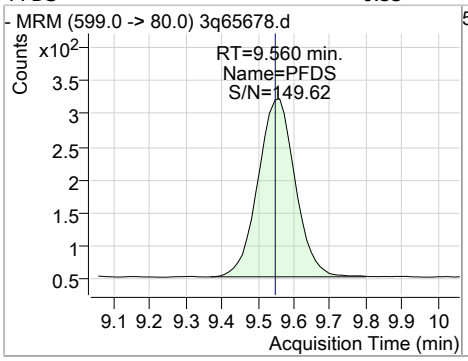
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.58	8.86	0.01	8125	527.0 -> 81.0	34.2	16.3	48.8

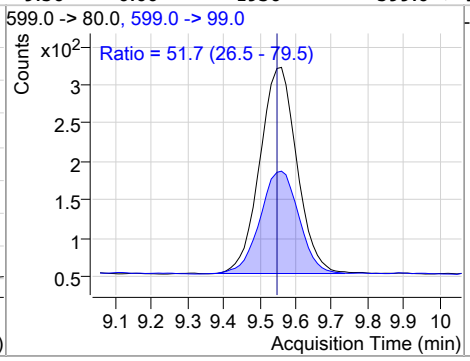


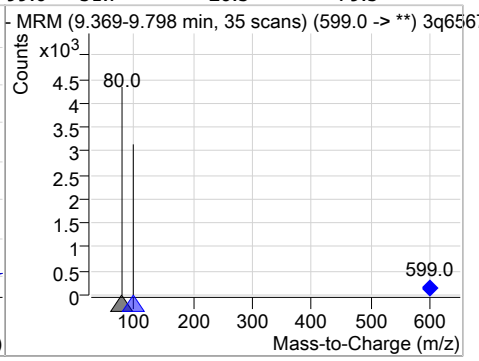




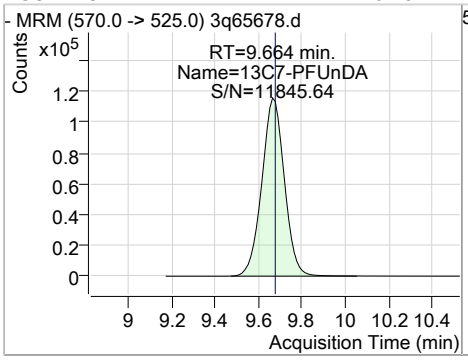
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.53	9.56	0.00	1930	599.0 -> 99.0	51.7	26.5	79.5

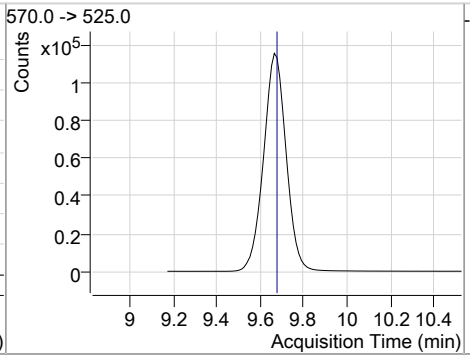


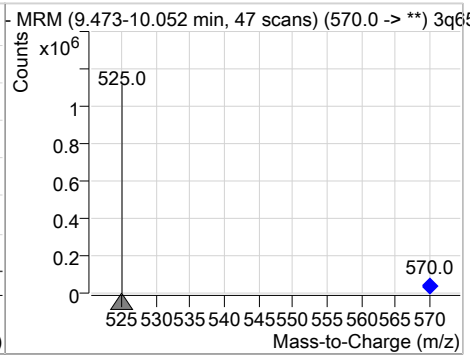




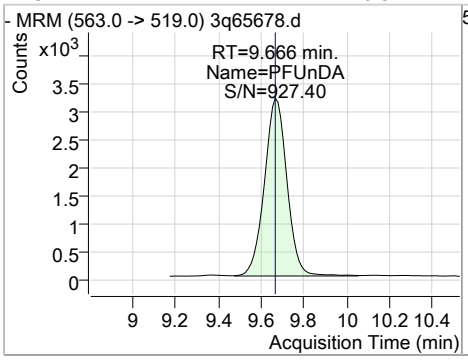
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.28	9.66	-0.01	837036				

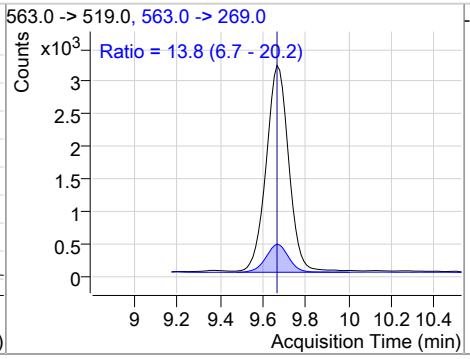


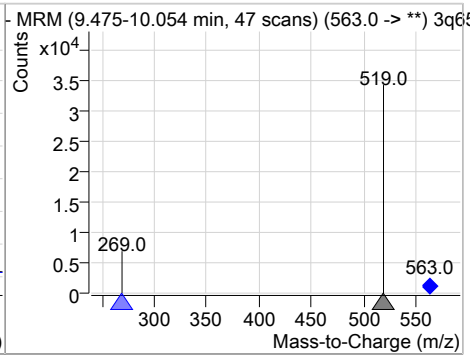




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.52	9.67	-0.01	23336	563.0 -> 269.0	13.8	6.7	20.2

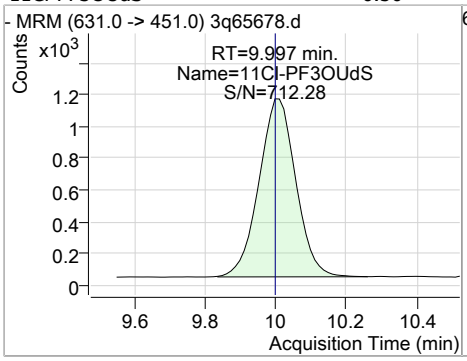


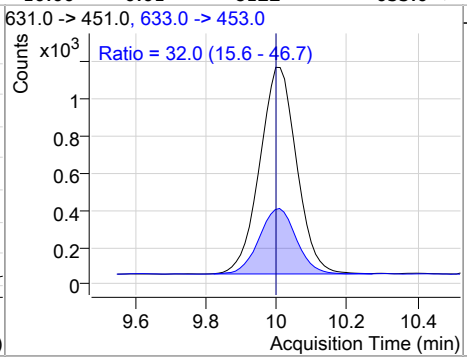


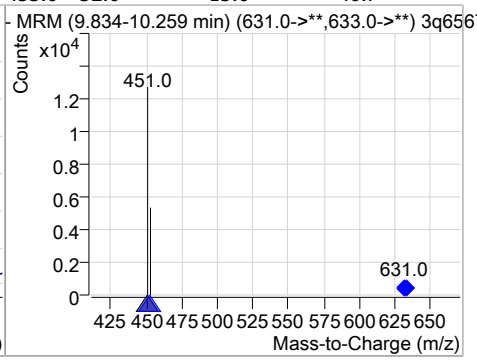


Perfluorinated Compounds by LC/MS/MS

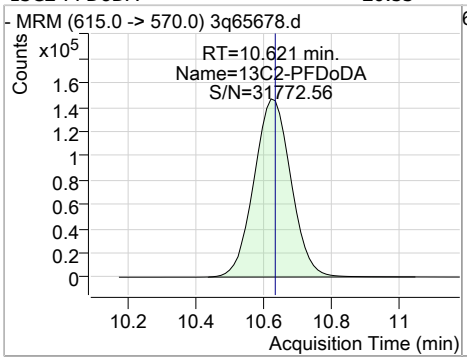
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.50	10.00	-0.01	8122	633.0 -> 453.0	32.0	15.6	46.7

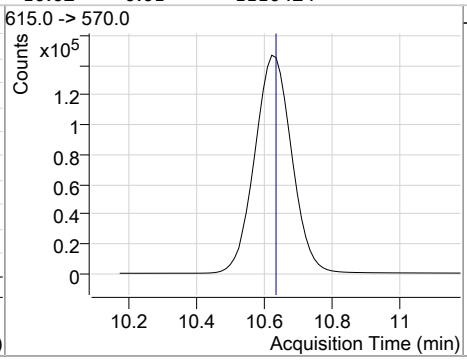


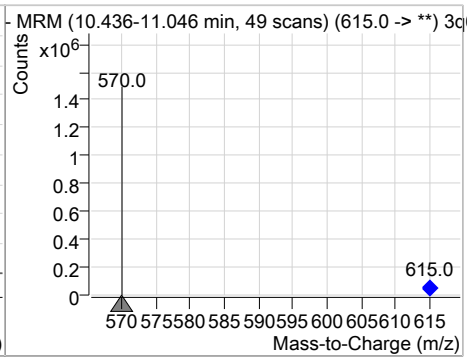




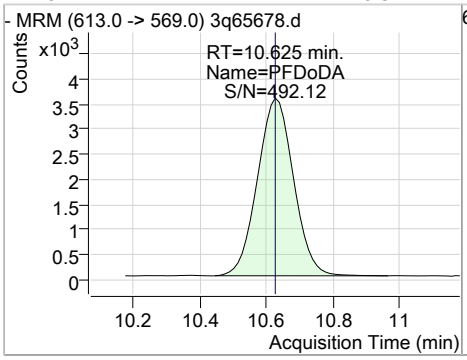
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.53	10.62	-0.01	1110424				

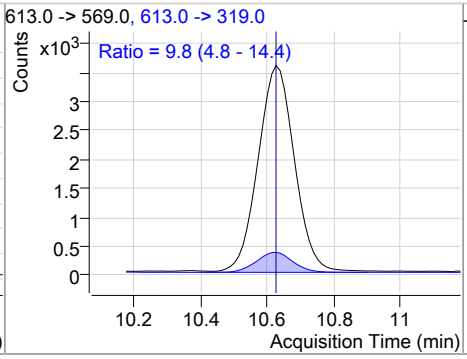


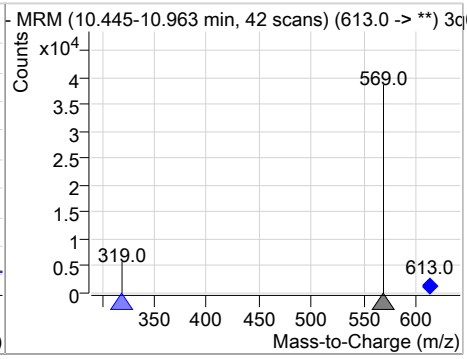




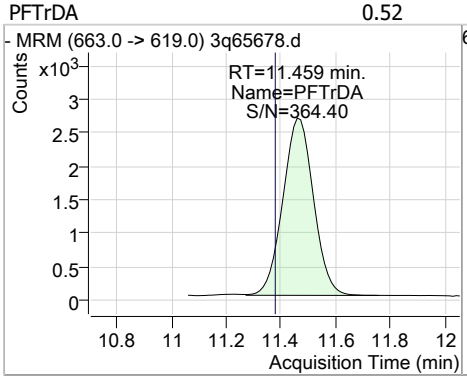
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.52	10.63	-0.01	26665	613.0 -> 319.0	9.8	4.8	14.4

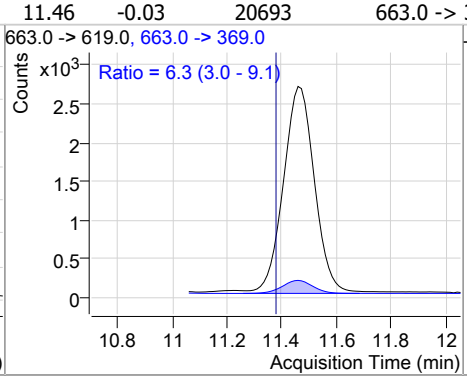


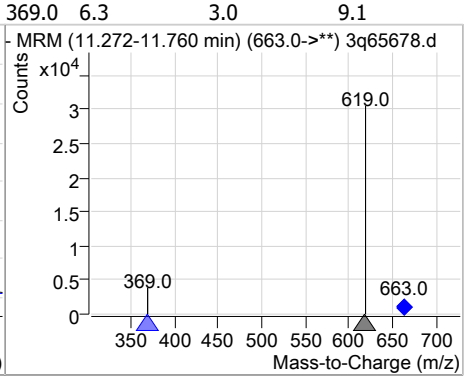




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.52	11.46	-0.03	20693	663.0 -> 369.0	6.3	3.0	9.1

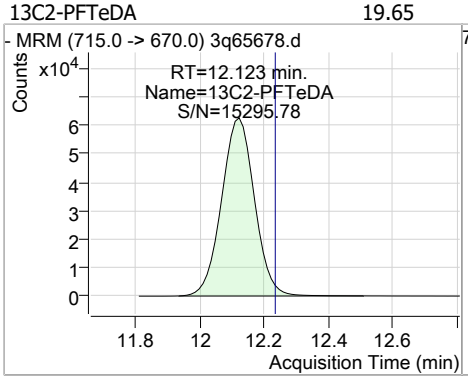


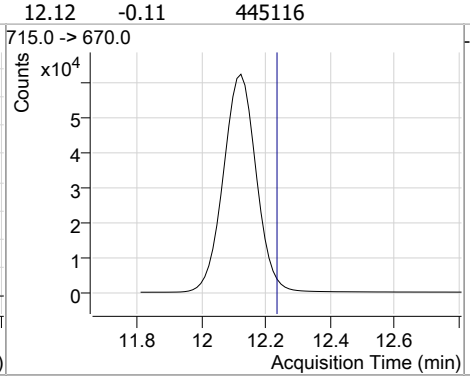


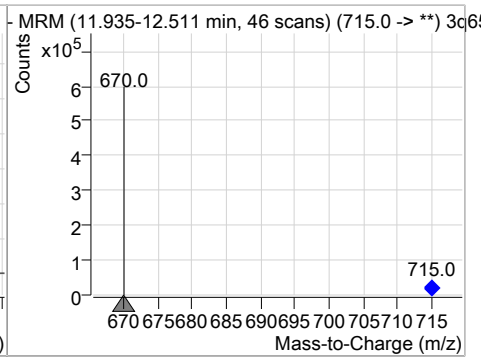


Perfluorinated Compounds by LC/MS/MS

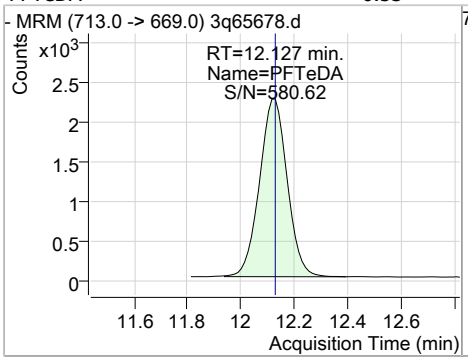
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.65	12.12	-0.11	445116				

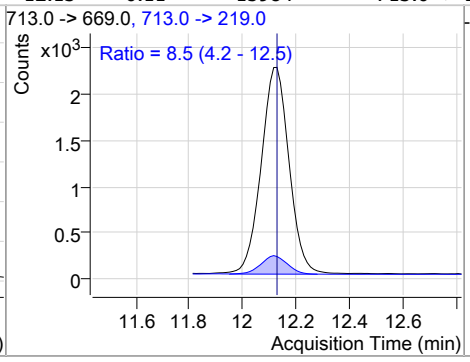


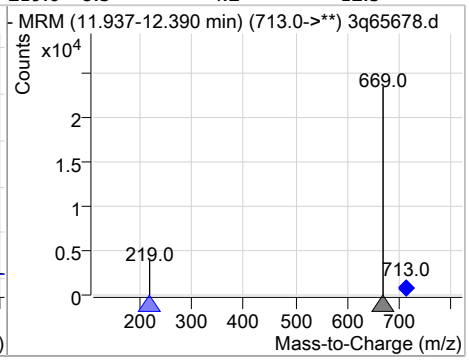




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.53	12.13	-0.11	15984	713.0 -> 219.0	8.5	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65678.D
Injection Time: 09/13/22 15:50
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65679.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 4:09:53 PM
Sample Name : ic898-1
Vial : P1-A3
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

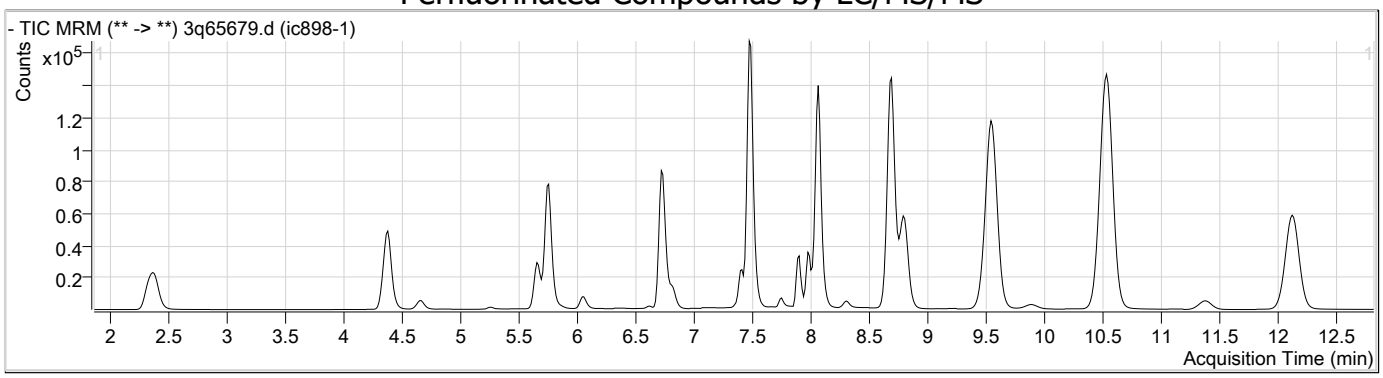
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M4-PFBA	2.352	217.0 -> 172.0	162195	20.00	µg/L		-0.013
M5-PFPeA	4.374	268.0 -> 223.0	236109	20.00	µg/L		-0.038
M5-PFHxA	5.750	318.0 -> 273.0	306357	20.00	µg/L		-0.064
M4-PFHpA	6.718	367.0 -> 322.0	301253	20.00	µg/L		-0.075
M8-PFOA	7.472	421.0 -> 376.0	422715	20.00	µg/L		-0.088
M9-PFNA	8.060	472.0 -> 427.0	455422	20.00	µg/L		-0.078
M6-PFDA	8.689	519.0 -> 474.0	652625	20.00	µg/L		-0.050
M7-PFUnDA	9.536	570.0 -> 525.0	817082	20.00	µg/L		-0.141
M2-PFDoDA	10.524	615.0 -> 570.0	1066266	20.00	µg/L		-0.110
M2-PFTeDA	12.110	715.0 -> 670.0	457599	20.00	µg/L		-0.125
M8-FOSA	7.401	506.0 -> 78.0	68381	20.00	µg/L		-0.090
M3-PFBS	4.642	302.0 -> 99.0	21555	20.00	µg/L		-0.050
M3-PFHxS	6.747	402.0 -> 99.0	25721	20.00	µg/L		-0.075
M8-PFOS	8.032	507.0 -> 99.0	40623	20.00	µg/L		-0.079
M2-4:2FTS	5.645	329.0 -> 309.0	110681	20.00	µg/L		-0.063
M2-6:2FTS	7.483	429.0 -> 409.0	160316	20.00	µg/L		-0.075
M2-8:2FTS	8.785	529.0 -> 509.0	272680	20.00	µg/L		-0.063
M3-MeFOSAA	7.890	573.0 -> 419.0	91461	20.00	µg/L		-0.101
M3-HFPO-DA	6.042	287.0 -> 169.0	25936	20.00	µg/L		-0.075
M3-MeFOSA	7.741	515.0 -> 169.0	15382	20.00	µg/L	m	-0.101
M5-EtFOSAA	7.964	589.0 -> 419.0	94133	20.00	µg/L		-0.113
System Monitoring Compounds							
13C2-4:2FTS	5.645	329.0 -> 309.0	110681	19.16	µg/L		-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C2-6:2FTS	7.483	429.0 -> 409.0	160316	20.48	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C2-8:2FTS	8.785	529.0 -> 509.0	272680	18.76	µg/L		-0.063
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C2-PFDoDA	10.524	615.0 -> 570.0	1066266	19.71	µg/L		-0.110
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
13C2-PFTeDA	12.110	715.0 -> 670.0	457599	20.20	µg/L		-0.125
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
13C3-PFBS	4.642	302.0 -> 99.0	21555	20.37	µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C3-PFHxS	6.747	402.0 -> 99.0	25721	19.91	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C4-PFBA	2.352	217.0 -> 172.0	162195	20.38	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C4-PFHpA	6.718	367.0 -> 322.0	301253	19.99	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%			
13C5-PFHxA	5.750	318.0 -> 273.0	306357	20.18	µg/L		-0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C5-PFPeA	4.374	268.0 -> 223.0	236109	20.37	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%			
13C6-PFDA	8.689	519.0 -> 474.0	652625	20.54	µg/L		-0.050

Perfluorinated Compounds by LC/MS/MS

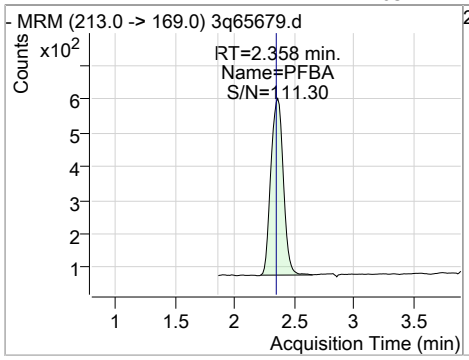
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C7-PFUnDA	9.536	570.0 -> 525.0	817082	19.79 µg/L		-0.141
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C8-FOSA	7.401	506.0 -> 78.0	68381	18.10 µg/L		-0.090
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C8-PFOA	7.472	421.0 -> 376.0	422715	21.00 µg/L		-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-PFOS	8.032	507.0 -> 99.0	40623	20.70 µg/L		-0.079
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C9-PFNA	8.060	472.0 -> 427.0	455422	20.61 µg/L		-0.078
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
d3-MeFOSAA	7.890	573.0 -> 419.0	91461	20.34 µg/L		-0.101
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C3-HFPO-DA	6.042	287.0 -> 169.0	25928	20.20 µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
d3-MeFOSA	7.741	515.0 -> 169.0	15382	17.38 µg/L	m	-0.101
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
d5-EtFOSAA	7.964	589.0 -> 419.0	94075	20.09 µg/L		-0.113
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
Target Compounds						**QValue**
4:2FTS	5.647	327.0 -> 307.0	6206	1.06 µg/L		95
6:2FTS	7.483	427.0 -> 407.0	9006	1.08 µg/L		100
8:2FTS	8.786	527.0 -> 507.0	14667	1.06 µg/L		95
EtFOSAA	7.977	584.0 -> 419.0	3683	0.98 µg/L	m	94
FOSA	7.389	498.0 -> 78.0	3320	1.02 µg/L		99
MeFOSAA	7.891	570.0 -> 419.0	4217	1.03 µg/L	m	98
PFBA	2.358	213.0 -> 169.0	3811	1.03 µg/L		100
PFBS	4.644	299.0 -> 80.0	3086	1.01 µg/L		99
PFDA	8.690	513.0 -> 469.0	31596	1.00 µg/L		98
PFDoDA	10.526	613.0 -> 569.0	49530	1.00 µg/L		99
PFDS	9.432	599.0 -> 80.0	3676	1.03 µg/L		99
PFHpA	6.719	363.0 -> 319.0	21816	1.01 µg/L		100
PFHpS	7.468	449.0 -> 80.0	2971	1.12 µg/L		100
PFHxA	5.751	313.0 -> 269.0	16727	1.02 µg/L		100
PFHxS	6.748	399.0 -> 80.0	3123	1.04 µg/L	m	99
PFNA	8.060	463.0 -> 419.0	19876	1.01 µg/L		99
PFNS	8.617	549.0 -> 80.0	3320	1.00 µg/L		99
PFOA	7.473	413.0 -> 369.0	26196	1.01 µg/L		99
PFOS	8.020	499.0 -> 80.0	3438	1.03 µg/L	m	97
PFPeA	4.376	263.0 -> 219.0	10524	1.02 µg/L		100
PFPeS	5.857	349.0 -> 80.0	2362	0.99 µg/L		99
PFTeDA	12.114	713.0 -> 669.0	31453	1.02 µg/L		99
PFTrDA	11.372	663.0 -> 619.0	40362	0.99 µg/L		99
PFUnDA	9.538	563.0 -> 519.0	43771	0.99 µg/L		99
11Cl-PF3OUdS	9.872	631.0 -> 451.0	15324	0.99 µg/L		98
9Cl-PF3ONS	8.296	531.0 -> 351.0	11834	1.05 µg/L		99
ADONA	6.815	377.0 -> 251.0	31603	0.97 µg/L		100
HFPO-DA	6.047	329.0 -> 169.0	3335	1.08 µg/L		98
MeFOSA	7.741	512.0 -> 169.0	865	1.05 µg/L		100
4-PFECHS	7.365	461.0 -> 381.0	8599	0.90 µg/L		97
FBSA	5.250	298.0 -> 78.0	5374	1.03 µg/L		98
FHxSA	6.612	398.0 -> 78.0	4931	0.79 µg/L		99

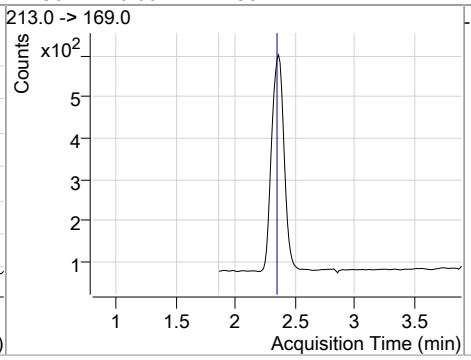
 # = Qualifier out of range, m = manually integrated, + = Area summed

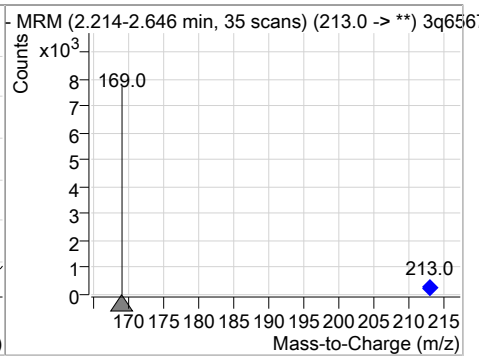
Perfluorinated Compounds by LC/MS/MS



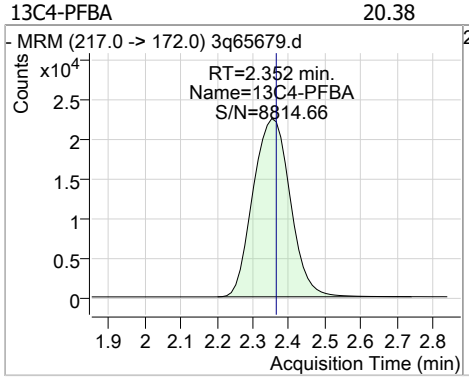
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.03	2.36	0.00	3811				

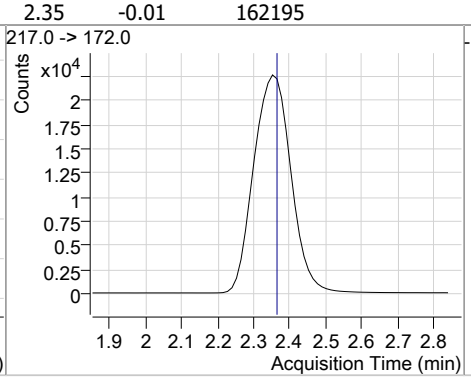


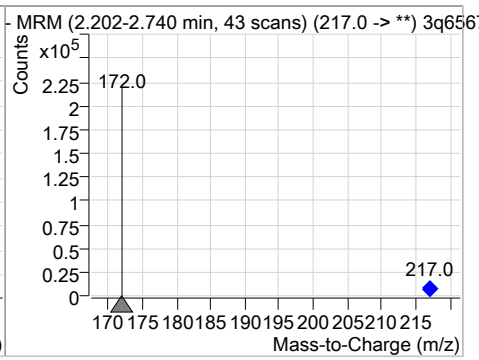




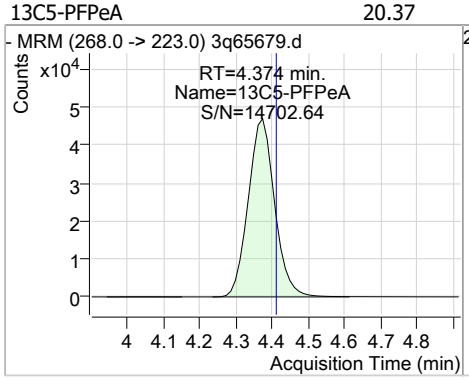
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.38	2.35	-0.01	162195				

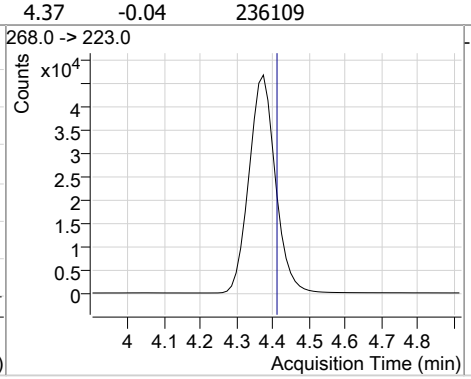


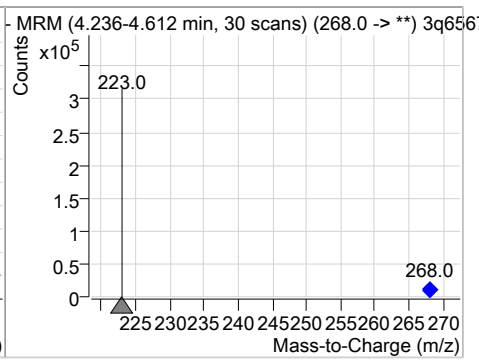




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.37	4.37	-0.04	236109				

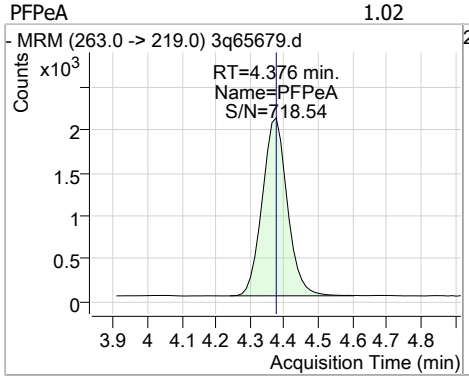


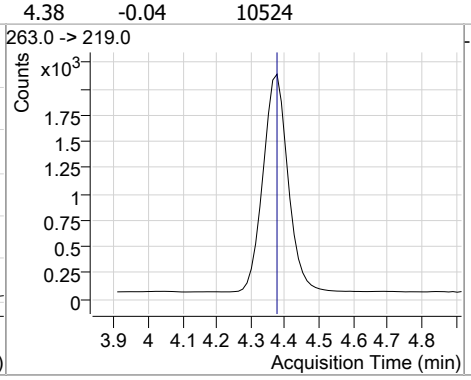


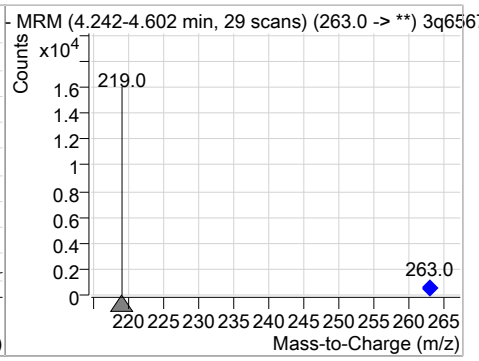


Perfluorinated Compounds by LC/MS/MS

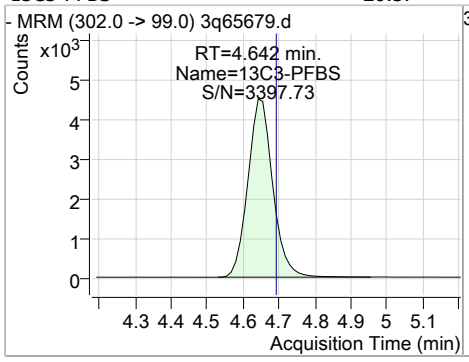
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.02	4.38	-0.04	10524				

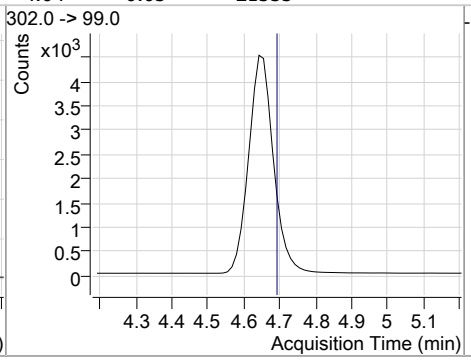


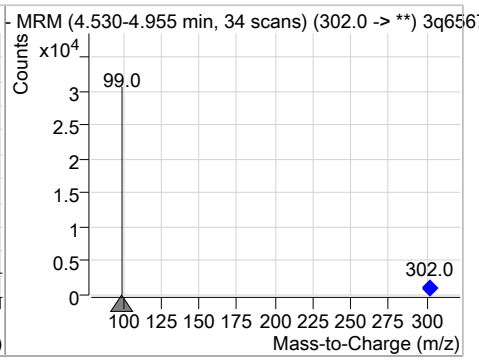




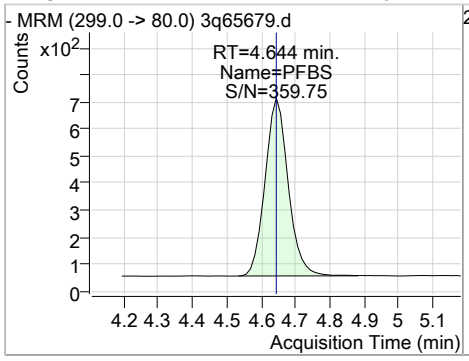
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.37	4.64	-0.05	21555				

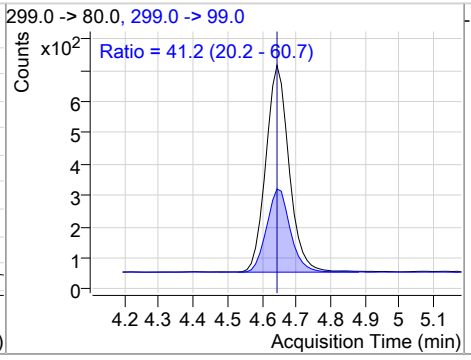


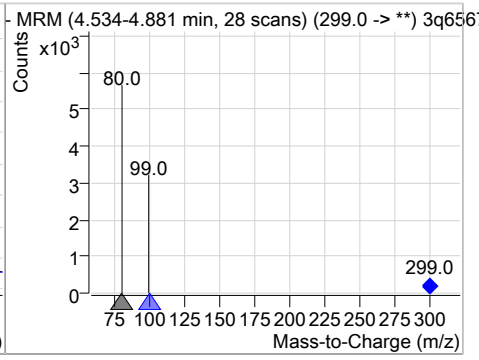




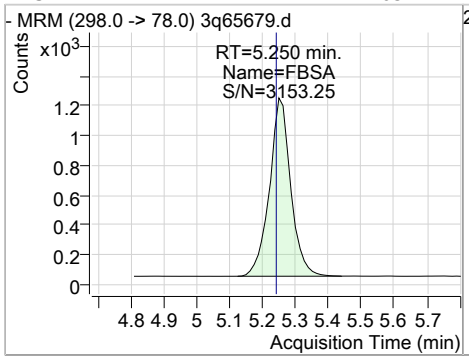
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.01	4.64	-0.05	3086	299.0 -> 99.0	41.2	20.2	60.7

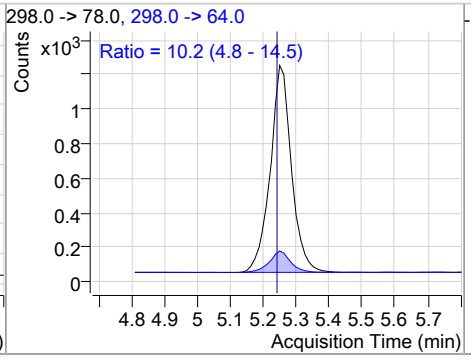


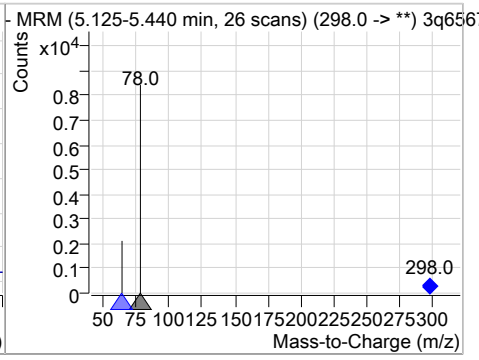




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.03	5.25	-0.05	5374	298.0 -> 64.0	10.2	4.8	14.5

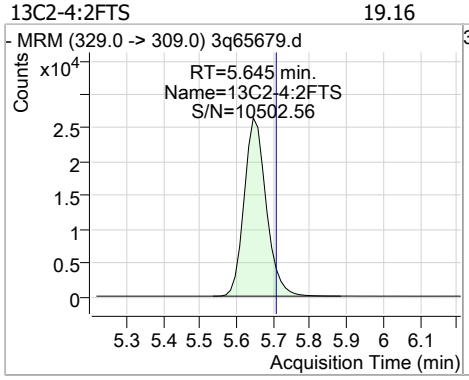


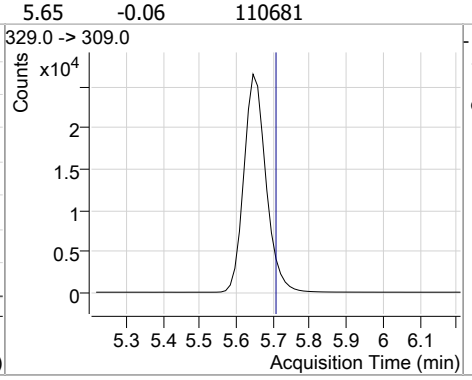


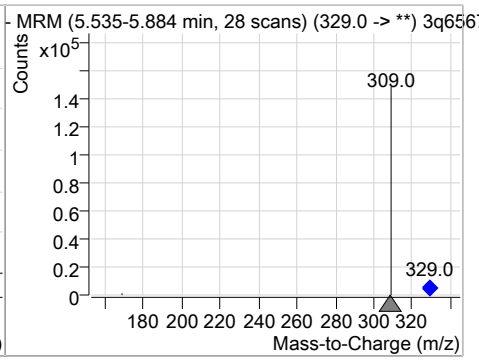


Perfluorinated Compounds by LC/MS/MS

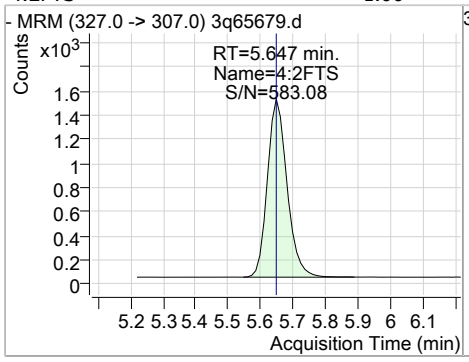
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.16	5.65	-0.06	110681				

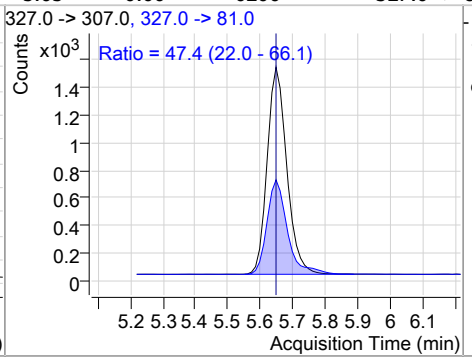


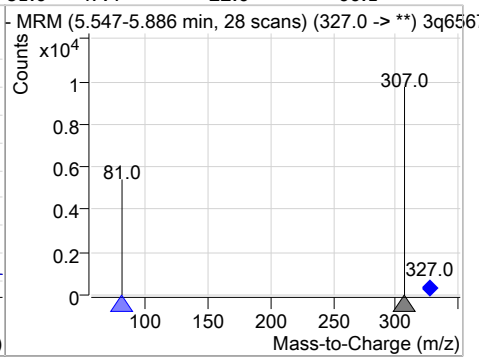




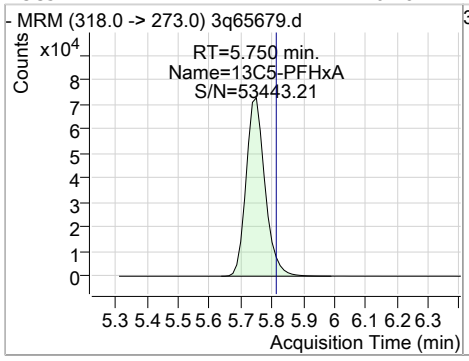
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.06	5.65	-0.06	6206	327.0 -> 81.0	47.4	22.0	66.1

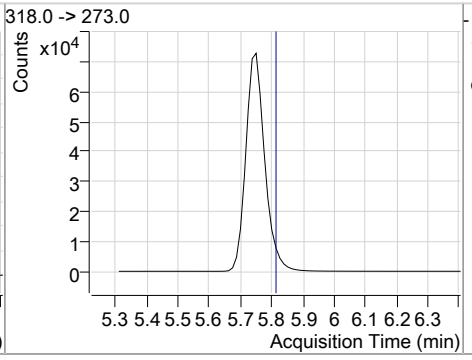


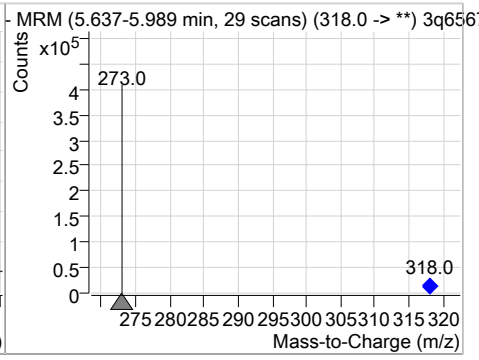




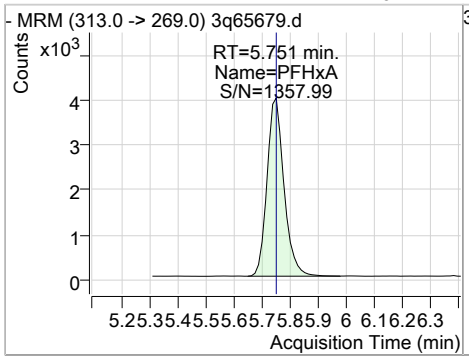
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.18	5.75	-0.06	306357				

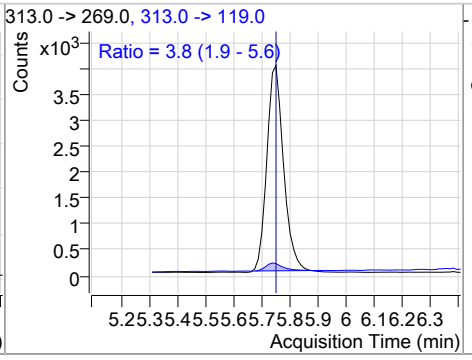


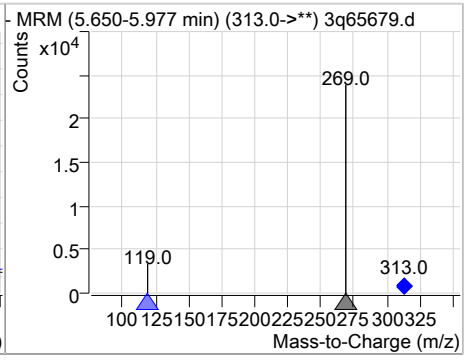




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.02	5.75	-0.06	16727	313.0 -> 119.0	3.8	1.9	5.6

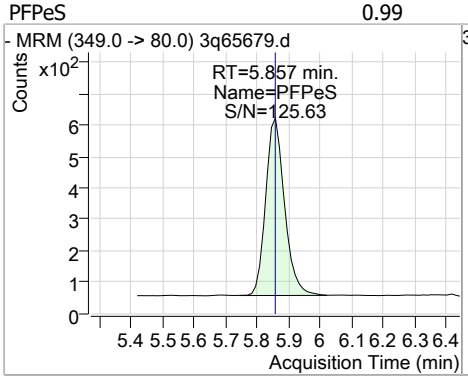


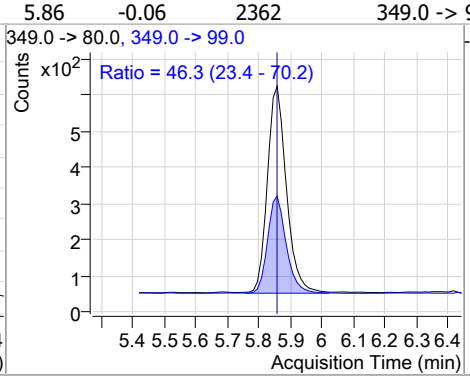


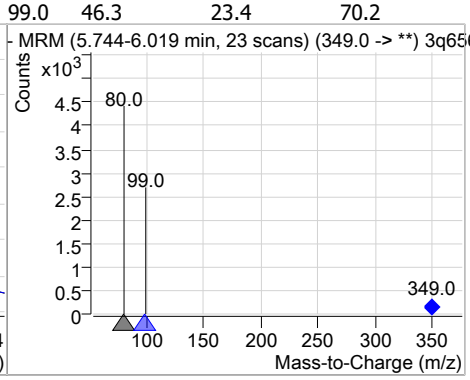


Perfluorinated Compounds by LC/MS/MS

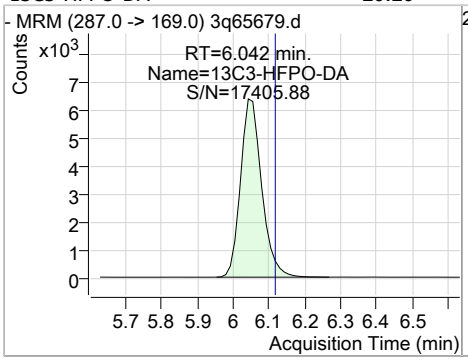
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.99	5.86	-0.06	2362	349.0 -> 99.0	46.3	23.4	70.2

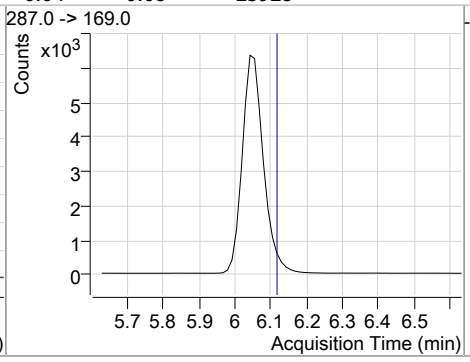


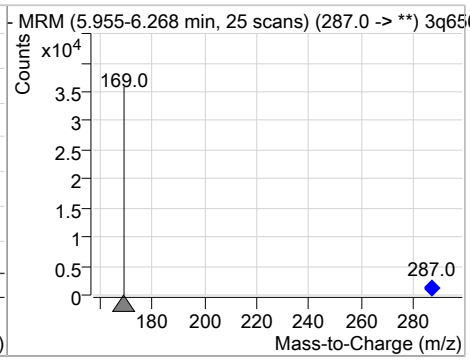




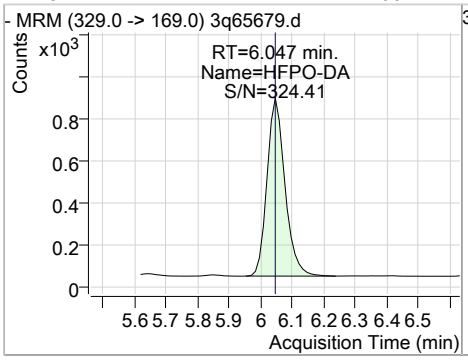
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.20	6.04	-0.08	25928				

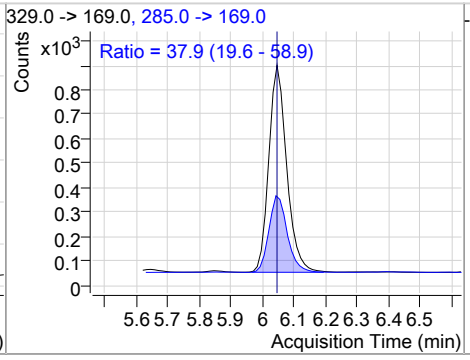


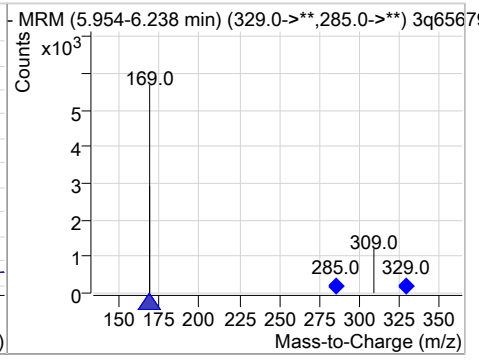




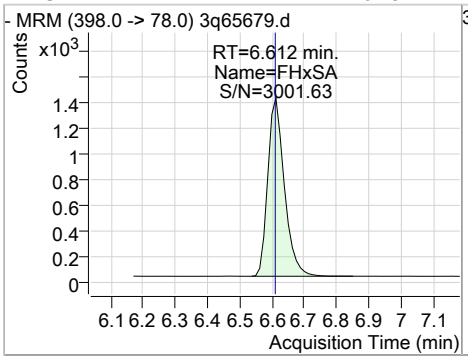
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.08	6.05	-0.08	3335	285.0 -> 169.0	37.9	19.6	58.9

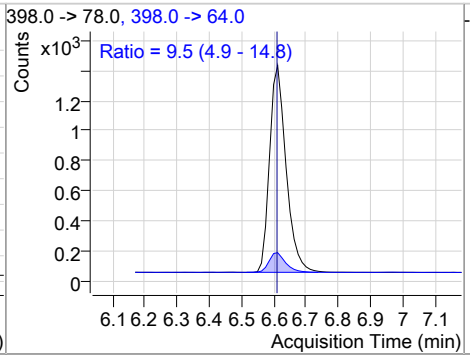


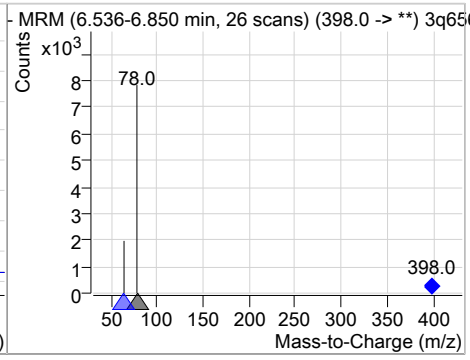




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.79	6.61	-0.08	4931	398.0 -> 64.0	9.5	4.9	14.8

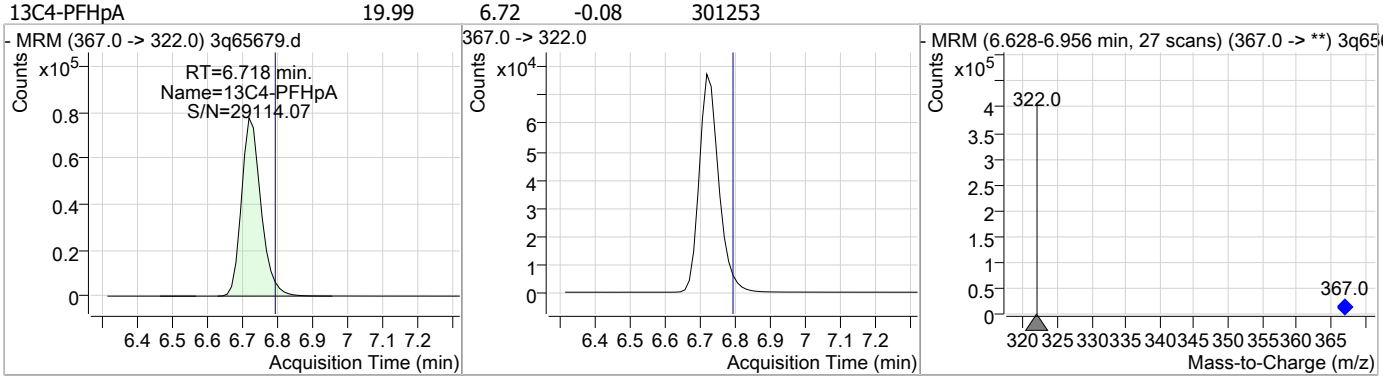




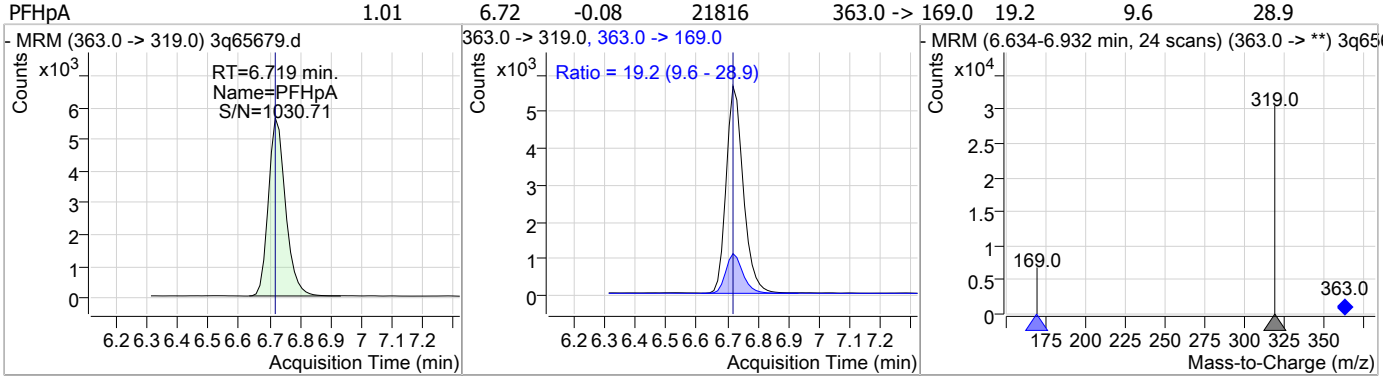


Perfluorinated Compounds by LC/MS/MS

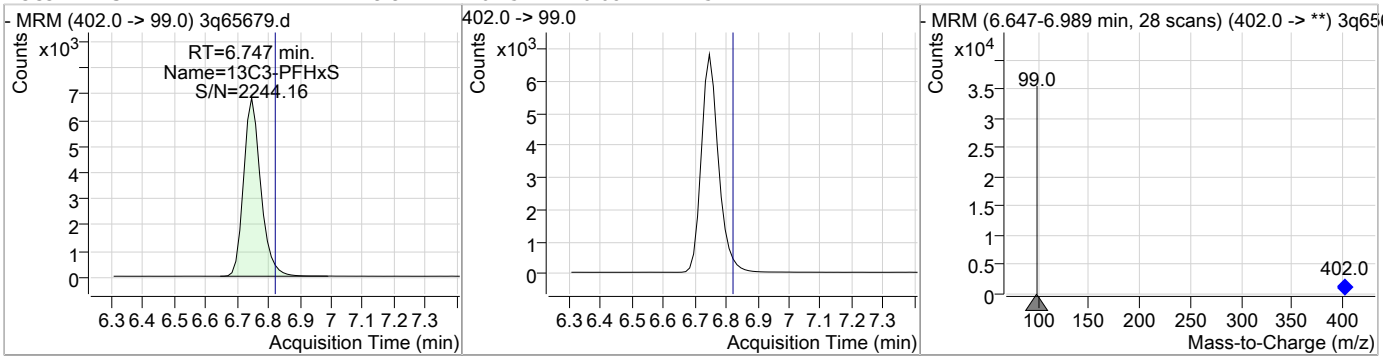
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.99	6.72	-0.08	301253				



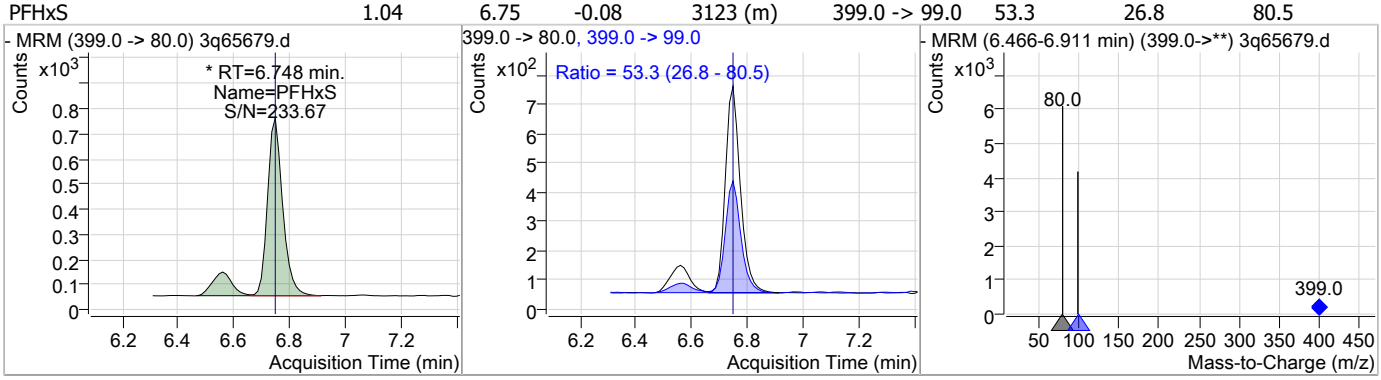
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.01	6.72	-0.08	21816	363.0 -> 169.0	19.2	9.6	28.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.91	6.75	-0.08	25721				

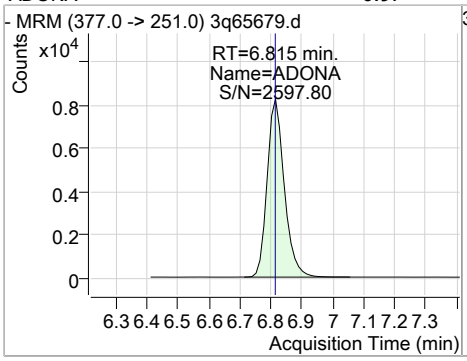


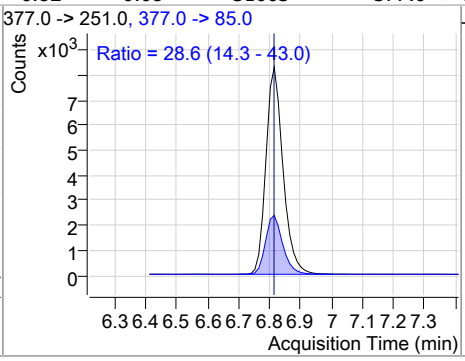
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.04	6.75	-0.08	3123 (m)	399.0 -> 99.0	53.3	26.8	80.5

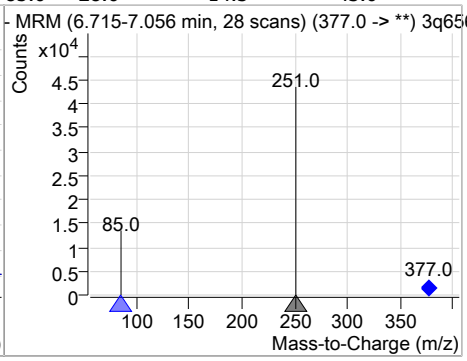


Perfluorinated Compounds by LC/MS/MS

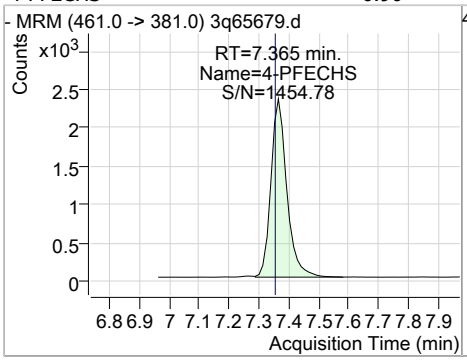
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.97	6.82	-0.08	31603	377.0 -> 85.0	28.6	14.3	43.0

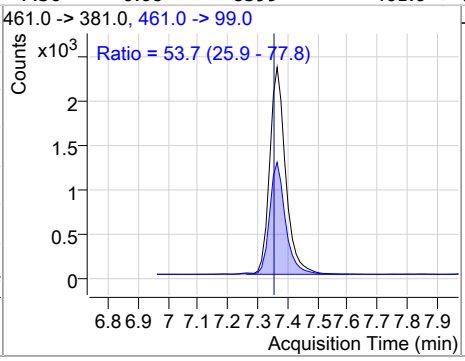


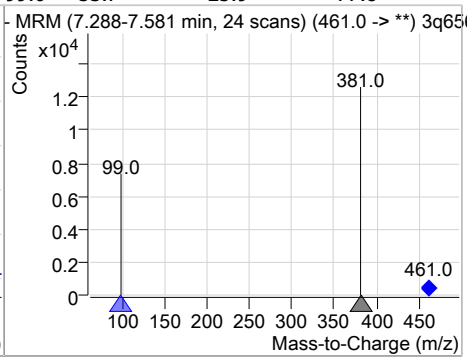




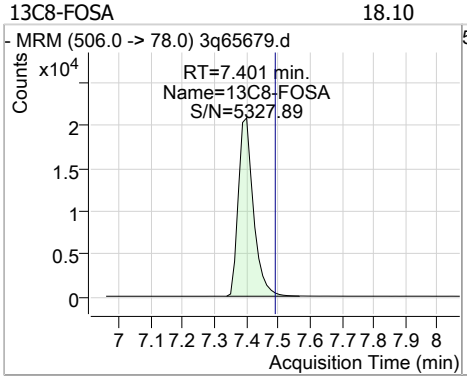
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.90	7.36	-0.08	8599	461.0 -> 99.0	53.7	25.9	77.8

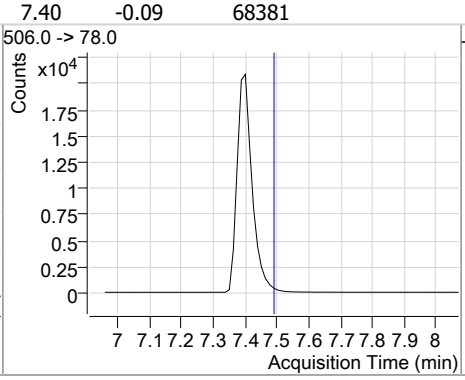


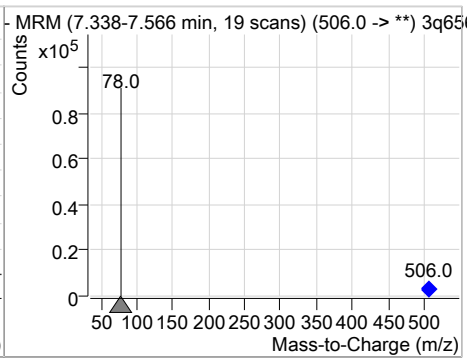




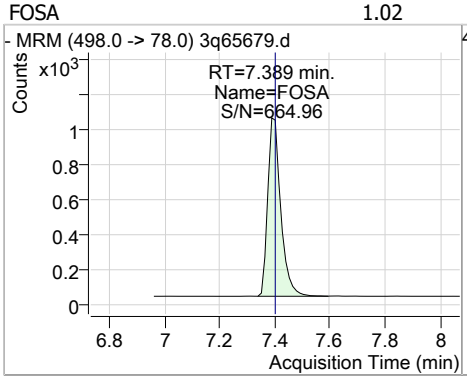
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.10	7.40	-0.09	68381				

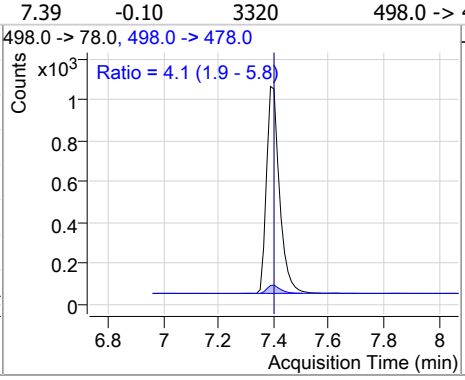


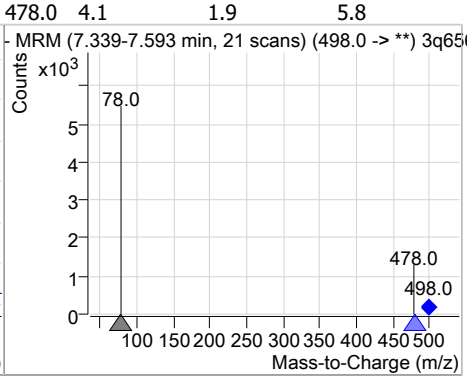




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.02	7.39	-0.10	3320	498.0 -> 478.0	4.1	1.9	5.8

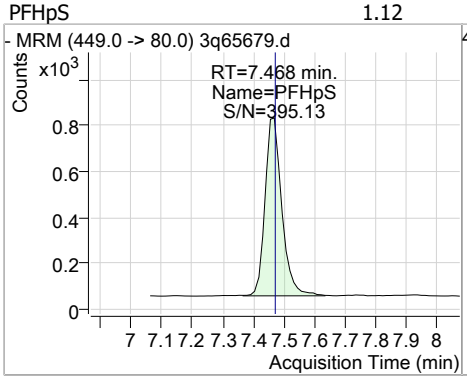


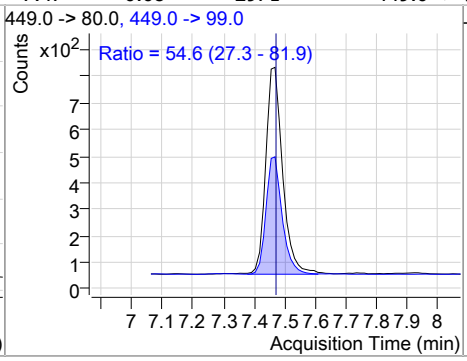


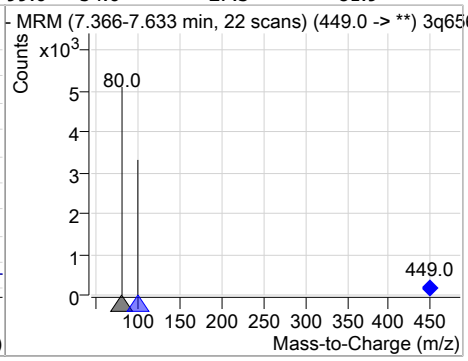


Perfluorinated Compounds by LC/MS/MS

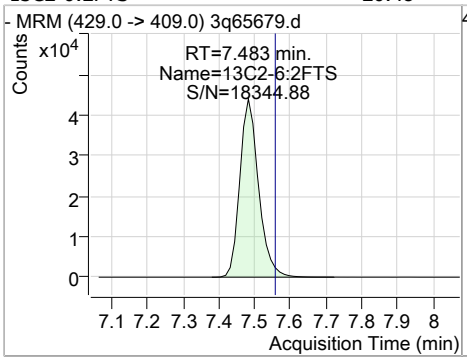
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.12	7.47	-0.08	2971	449.0 -> 99.0	54.6	27.3	81.9

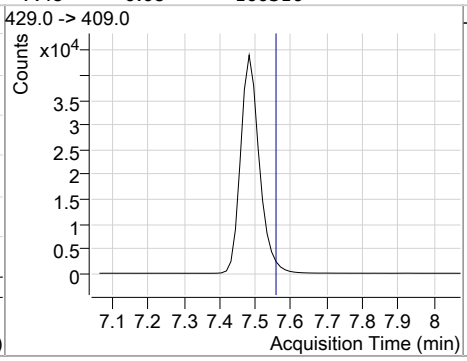


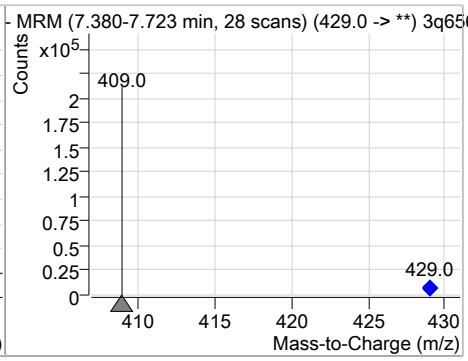




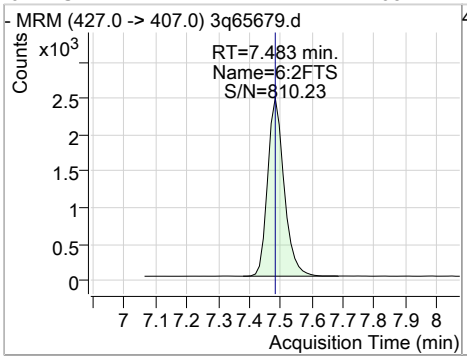
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.48	7.48	-0.08	160316				

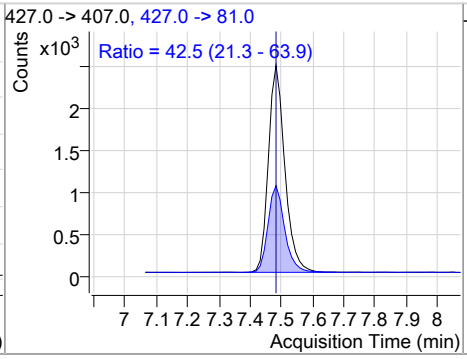


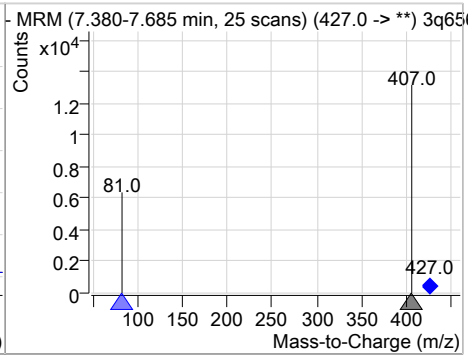




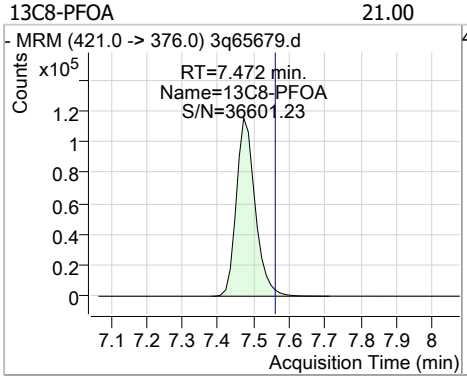
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.08	7.48	-0.08	9006	427.0 -> 81.0	42.5	21.3	63.9

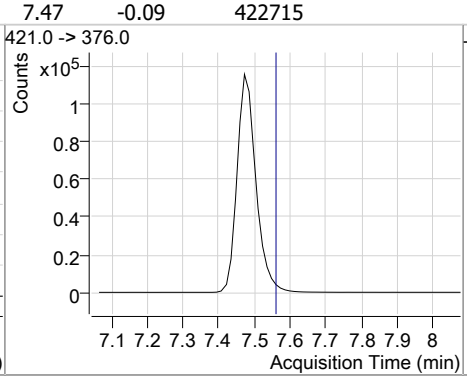


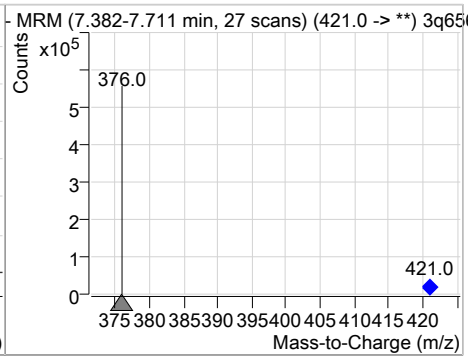




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.00	7.47	-0.09	422715				

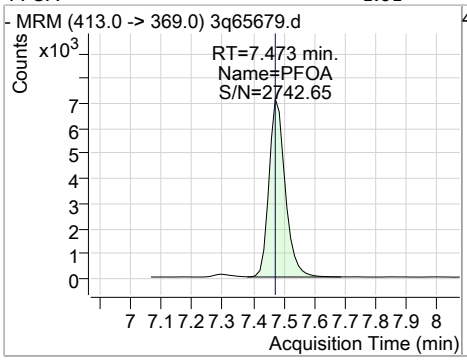


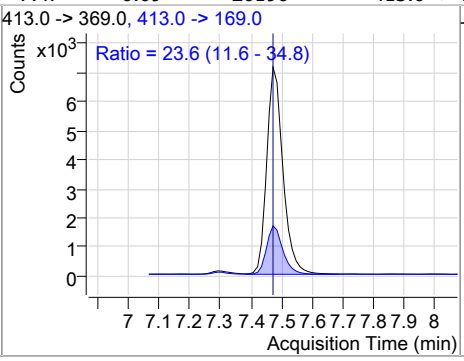


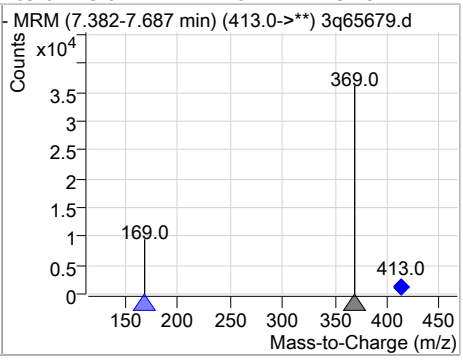


Perfluorinated Compounds by LC/MS/MS

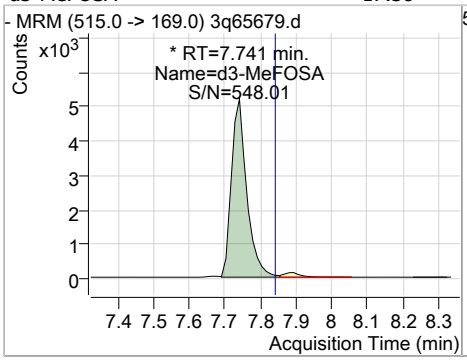
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.01	7.47	-0.09	26196	413.0 -> 169.0	23.6	11.6	34.8

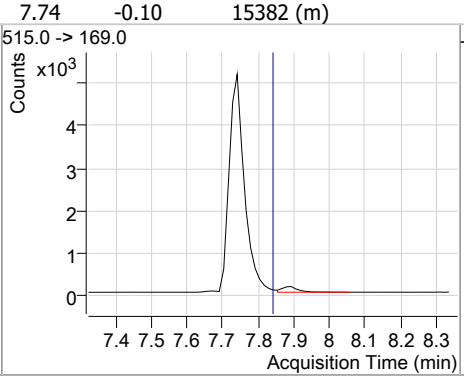


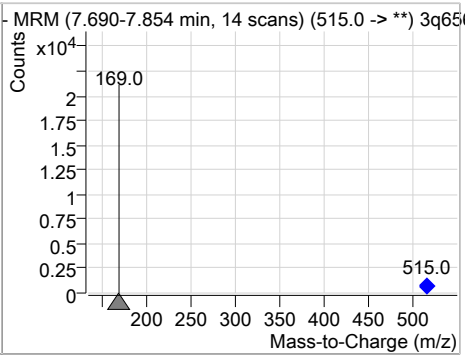




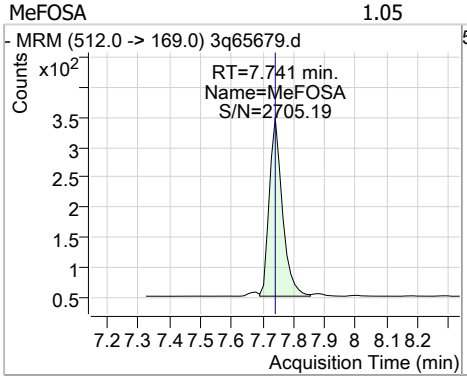
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.38	7.74	-0.10	15382 (m)				

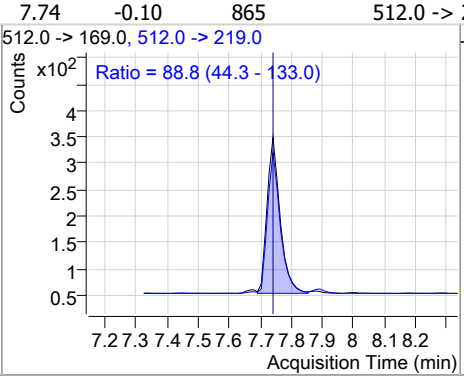


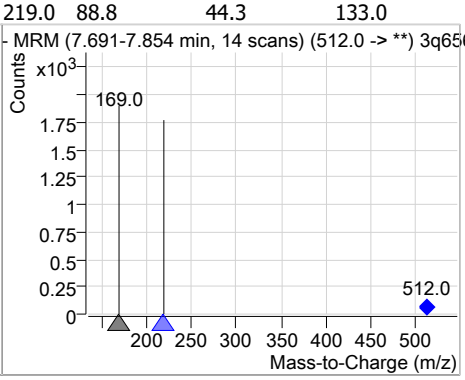




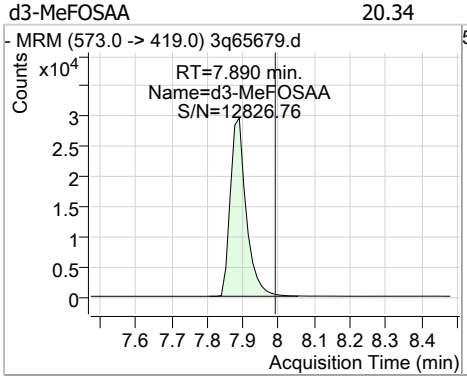
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.05	7.74	-0.10	865	512.0 -> 219.0	88.8	44.3	133.0

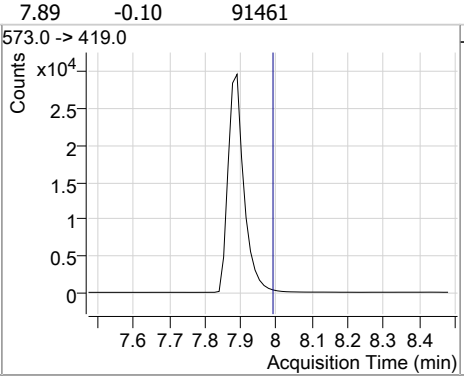


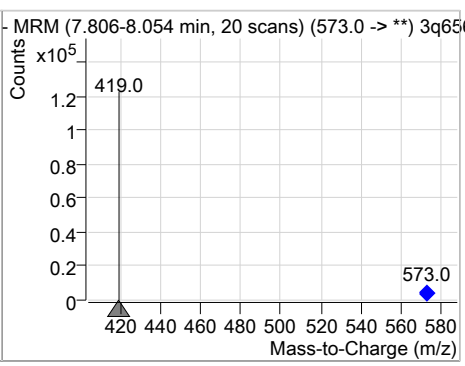




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.34	7.89	-0.10	91461				

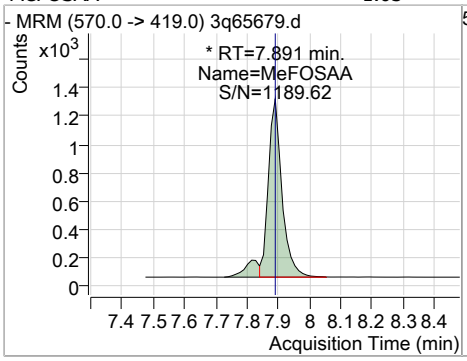


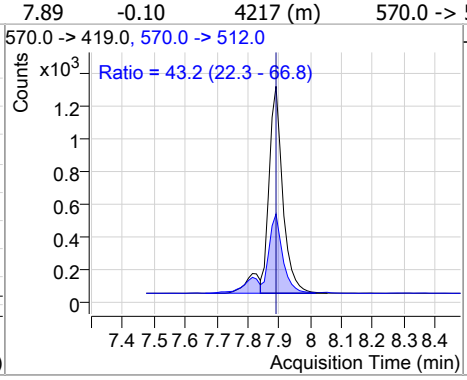


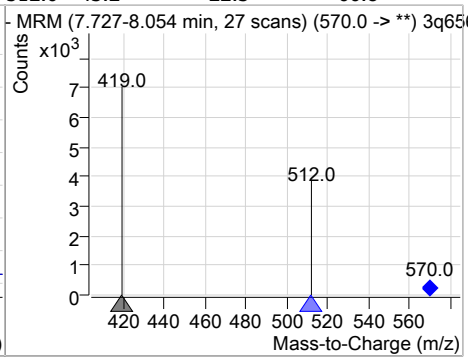


Perfluorinated Compounds by LC/MS/MS

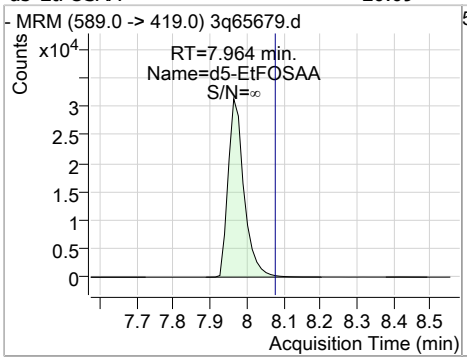
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.03	7.89	-0.10	4217 (m)	570.0 -> 512.0	43.2	22.3	66.8

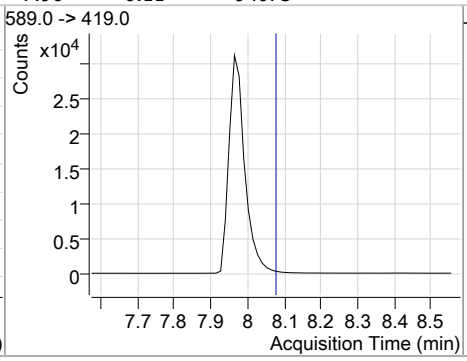


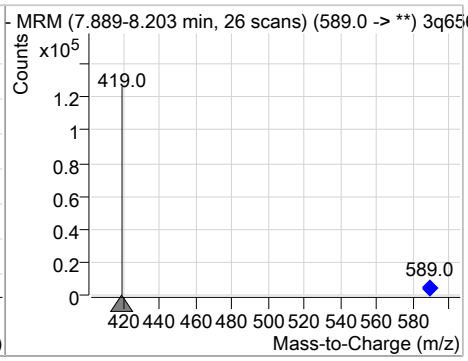




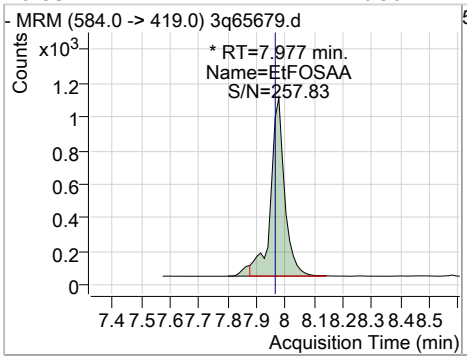
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.09	7.96	-0.11	94075				

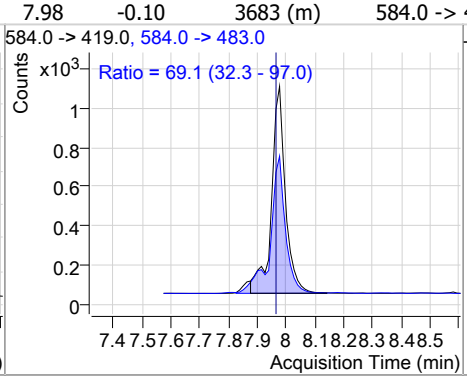


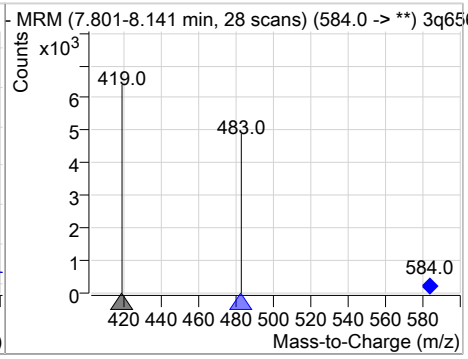




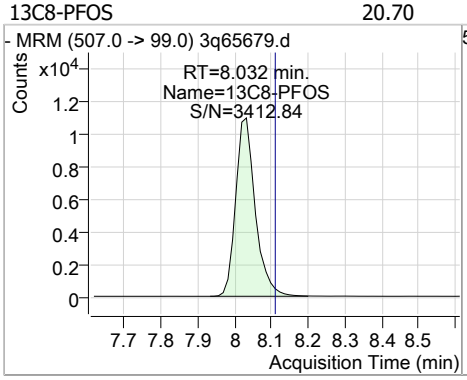
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.98	7.98	-0.10	3683 (m)	584.0 -> 483.0	69.1	32.3	97.0

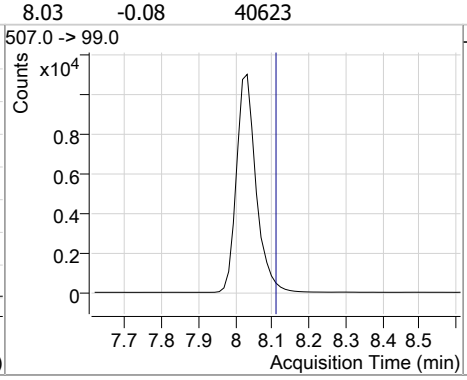


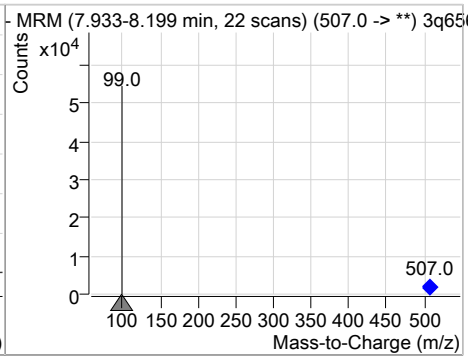




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.70	8.03	-0.08	40623				

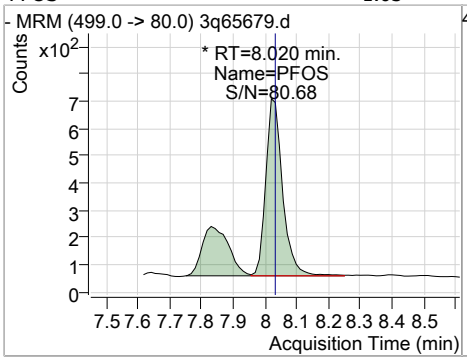


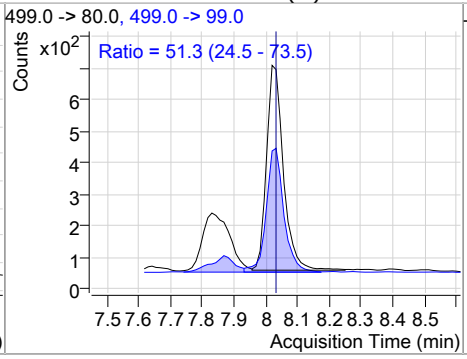


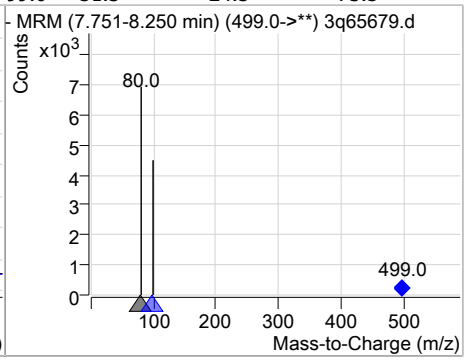


Perfluorinated Compounds by LC/MS/MS

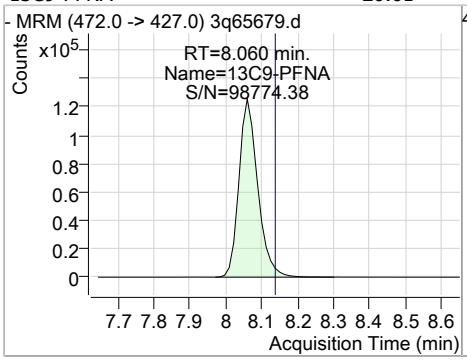
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.03	8.02	-0.09	3438 (m)	499.0 -> 99.0	51.3	24.5	73.5

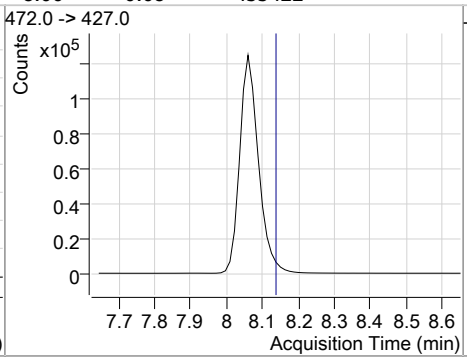


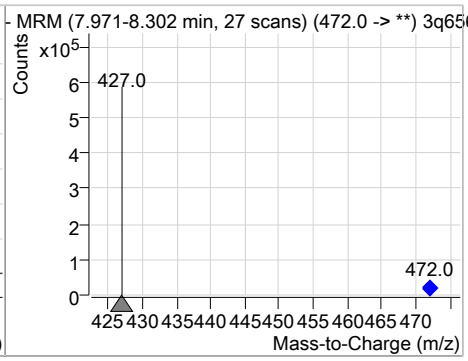




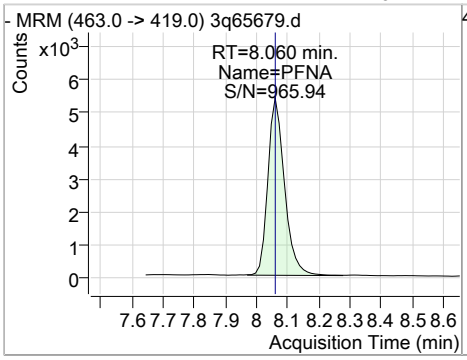
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.61	8.06	-0.08	455422				

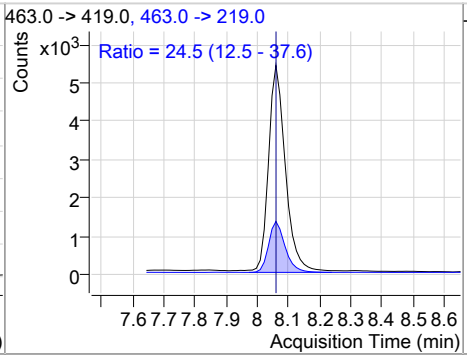


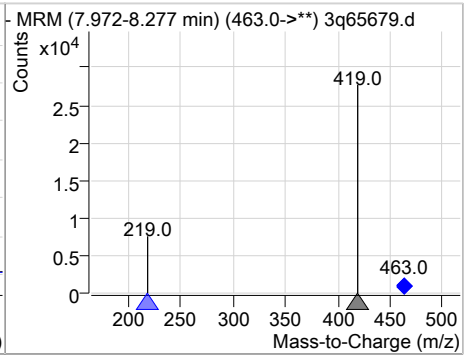




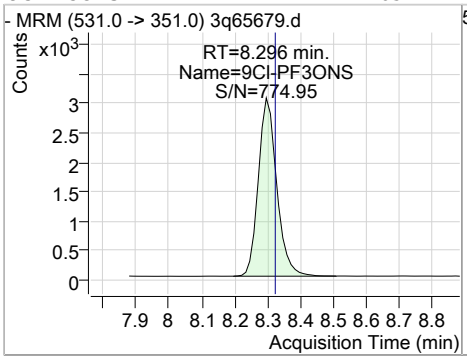
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.01	8.06	-0.08	19876	463.0 -> 219.0	24.5	12.5	37.6

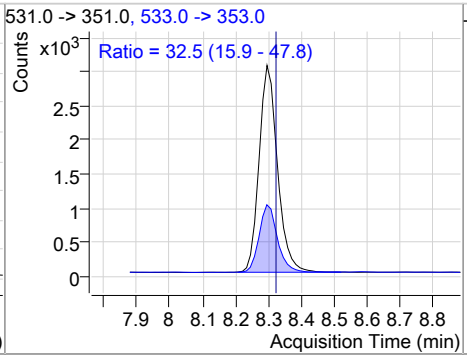


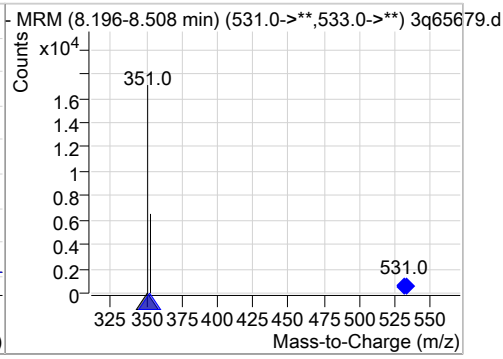




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.05	8.30	-0.08	11834	533.0 -> 353.0	32.5	15.9	47.8

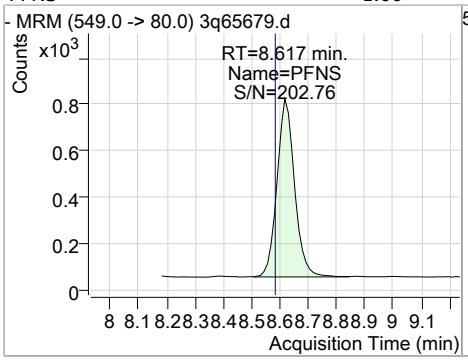


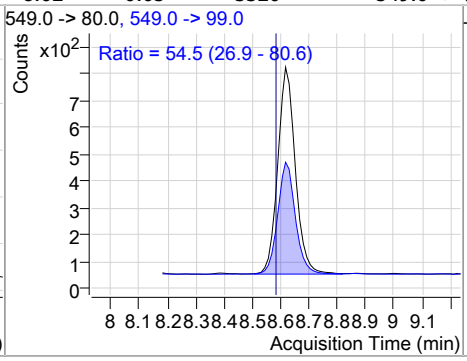


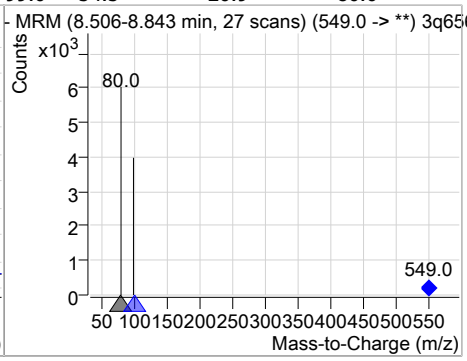


Perfluorinated Compounds by LC/MS/MS

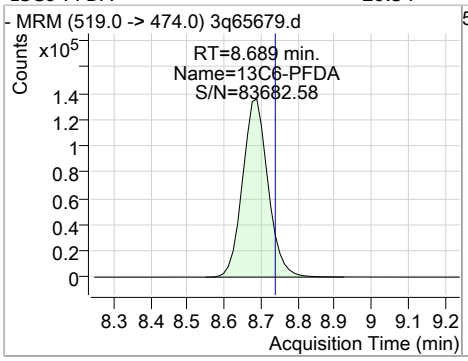
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.00	8.62	-0.05	3320	549.0 -> 99.0	54.5	26.9	80.6

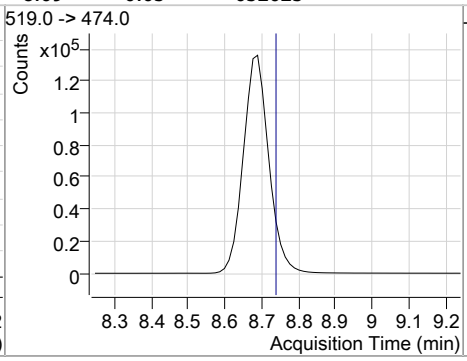


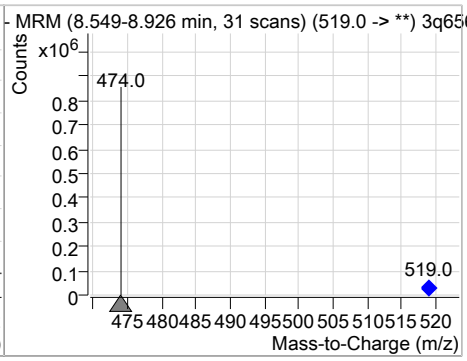




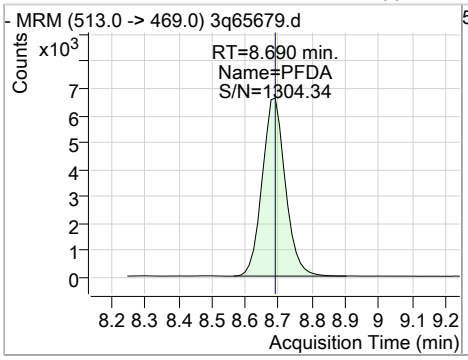
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.54	8.69	-0.05	652625				

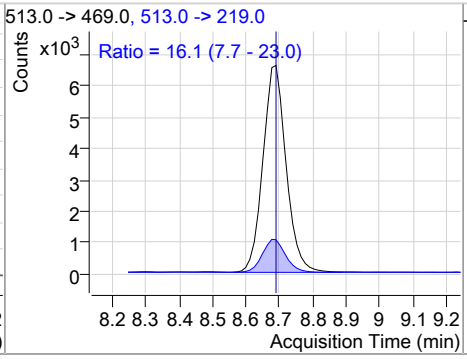


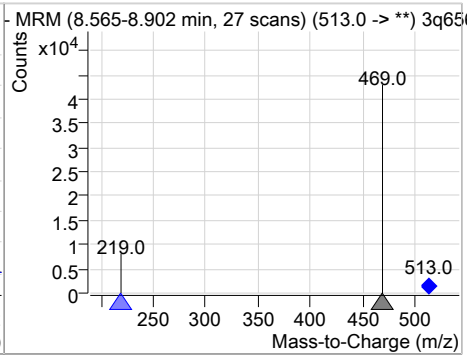




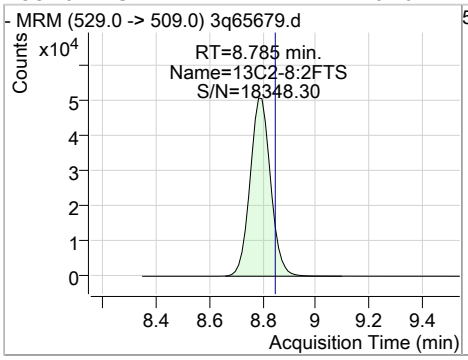
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.00	8.69	-0.05	31596	513.0 -> 219.0	16.1	7.7	23.0

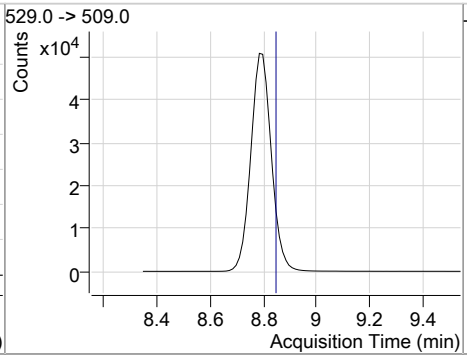


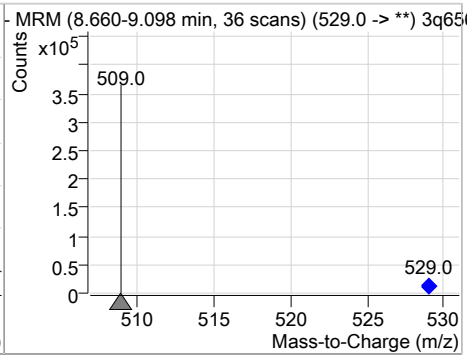




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.76	8.79	-0.06	272680				

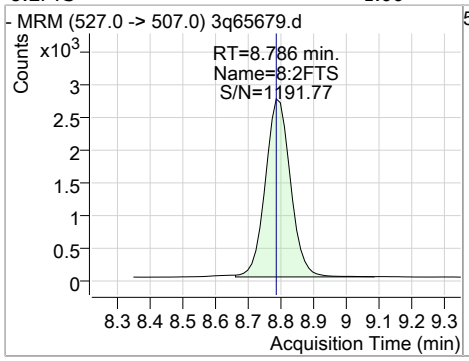


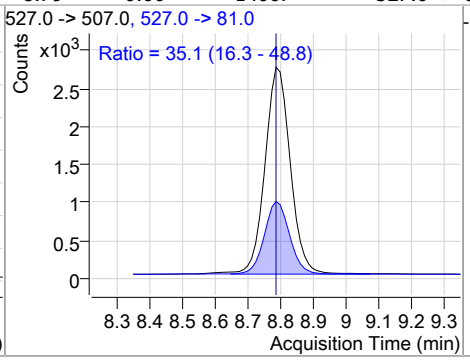


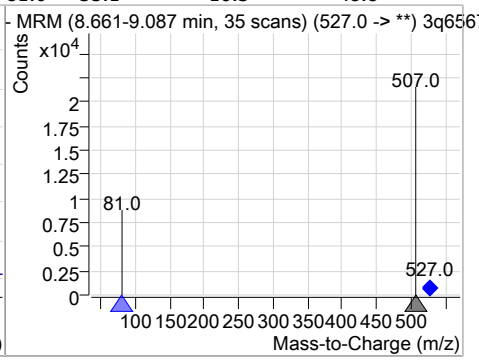


Perfluorinated Compounds by LC/MS/MS

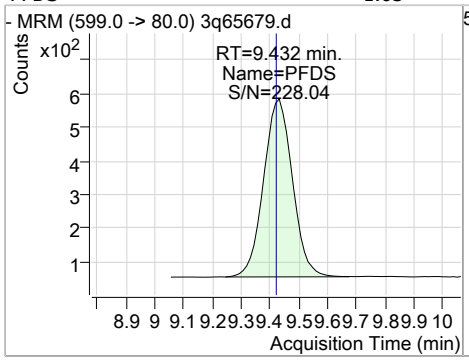
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.06	8.79	-0.06	14667	527.0 -> 81.0	35.1	16.3	48.8

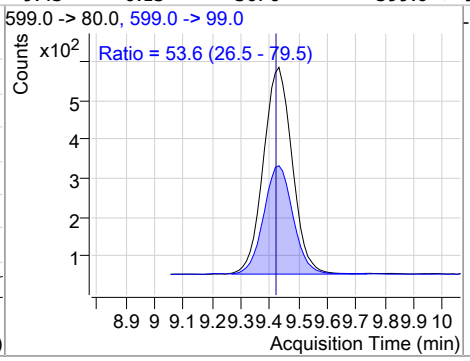


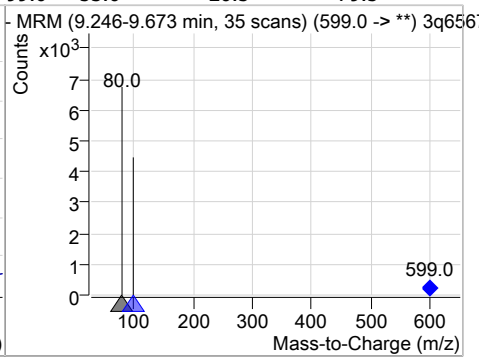




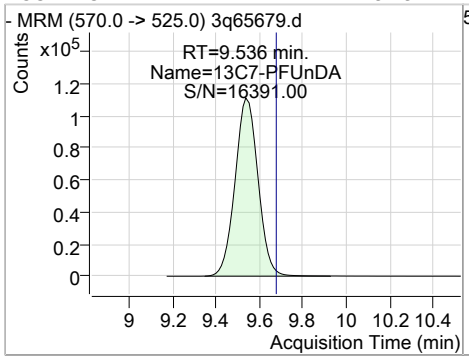
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.03	9.43	-0.13	3676	599.0 -> 99.0	53.6	26.5	79.5

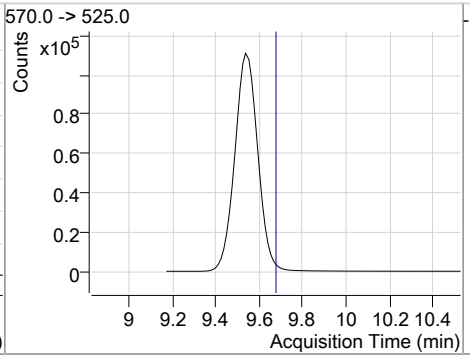


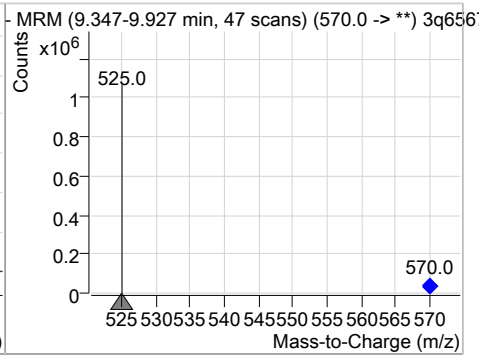




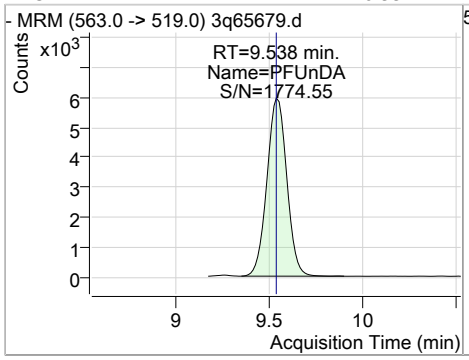
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.79	9.54	-0.14	817082				

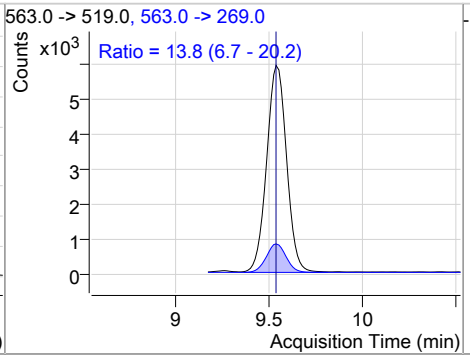


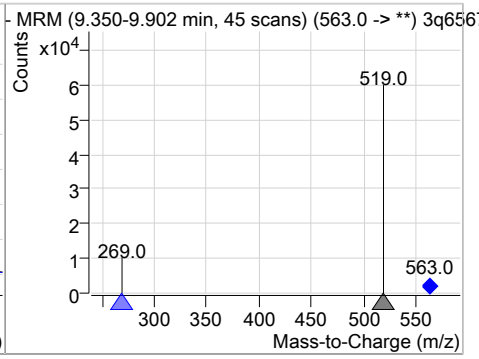




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.99	9.54	-0.14	43771	563.0 -> 269.0	13.8	6.7	20.2

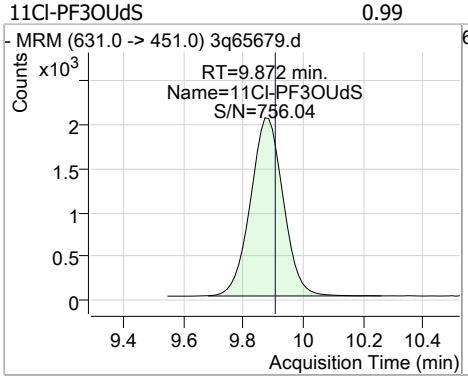


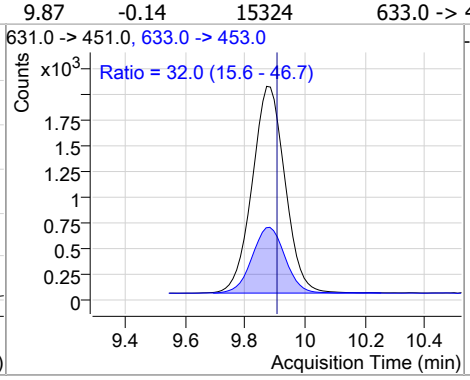


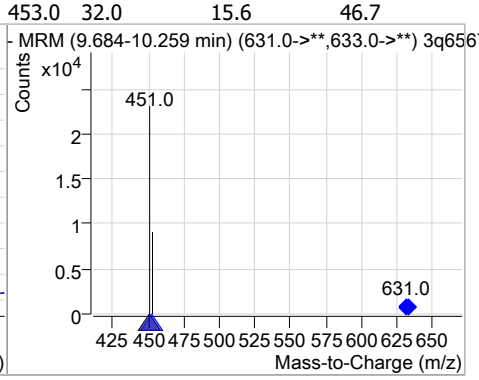


Perfluorinated Compounds by LC/MS/MS

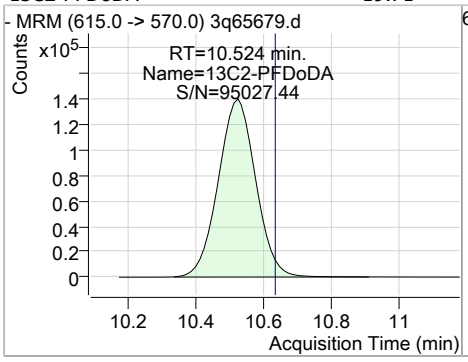
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.99	9.87	-0.14	15324	633.0 -> 453.0	32.0	15.6	46.7

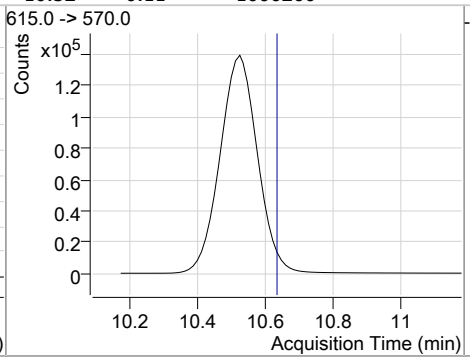


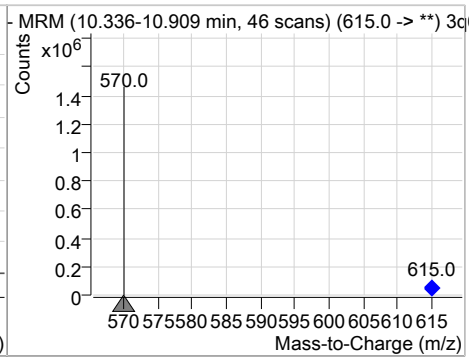




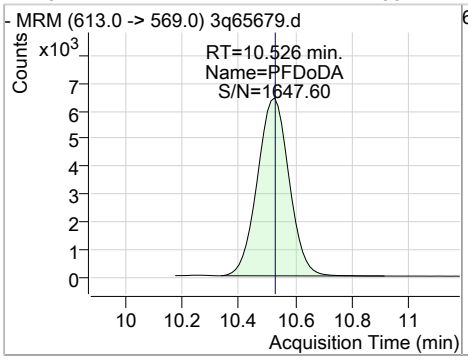
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.71	10.52	-0.11	1066266				

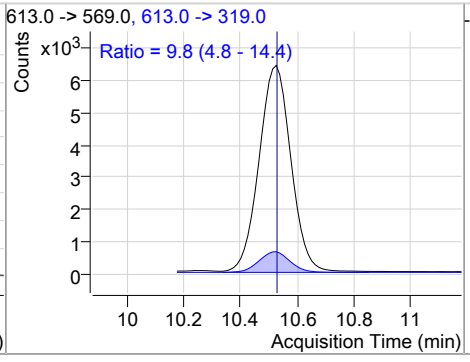


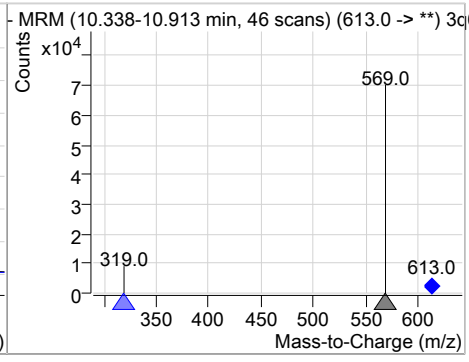




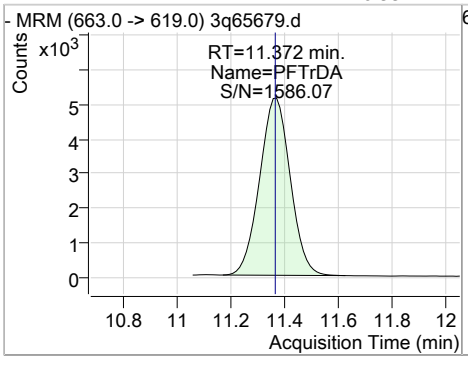
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.00	10.53	-0.11	49530	613.0 -> 319.0	9.8	4.8	14.4

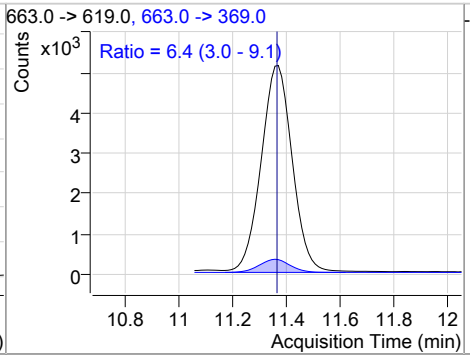


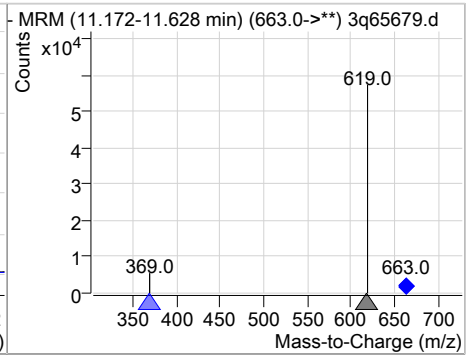




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.99	11.37	-0.11	40362	663.0 -> 369.0	6.4	3.0	9.1

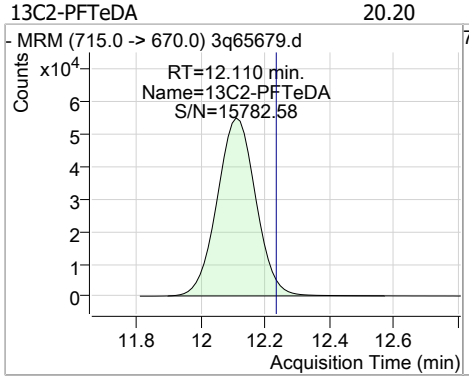


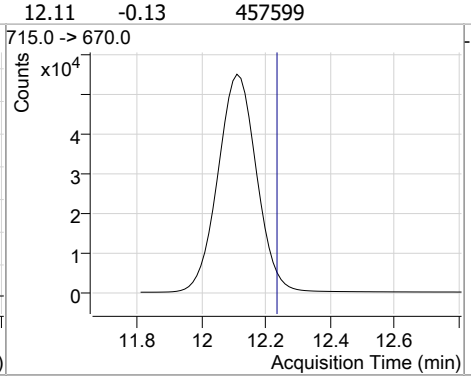


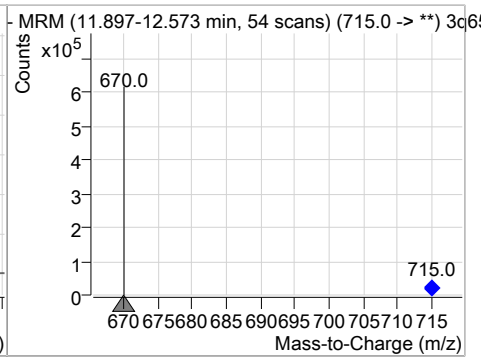


Perfluorinated Compounds by LC/MS/MS

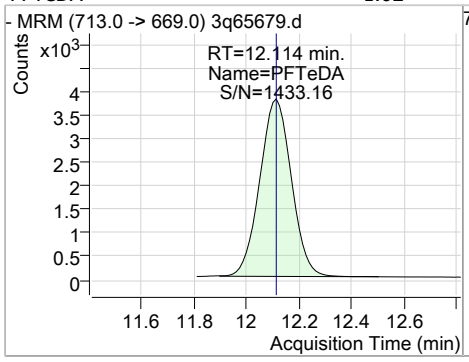
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.20	12.11	-0.13	457599				

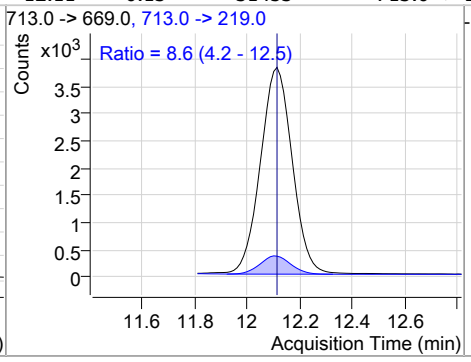


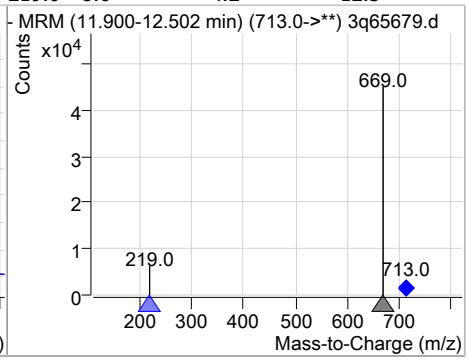




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.02	12.11	-0.13	31453	713.0 -> 219.0	8.6	4.2	12.5







7.7.3

7

Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65679.D
Injection Time: 09/13/22 16:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.75	Split peak
d3-MeFOSA			7.74	Missed peak
MeFOSAA	2355-31-9		7.89	Split peak
EtFOSAA	2991-50-6		7.98	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.02	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65680.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 4:29:26 PM
Sample Name : ic898-2
Vial : P1-A4
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

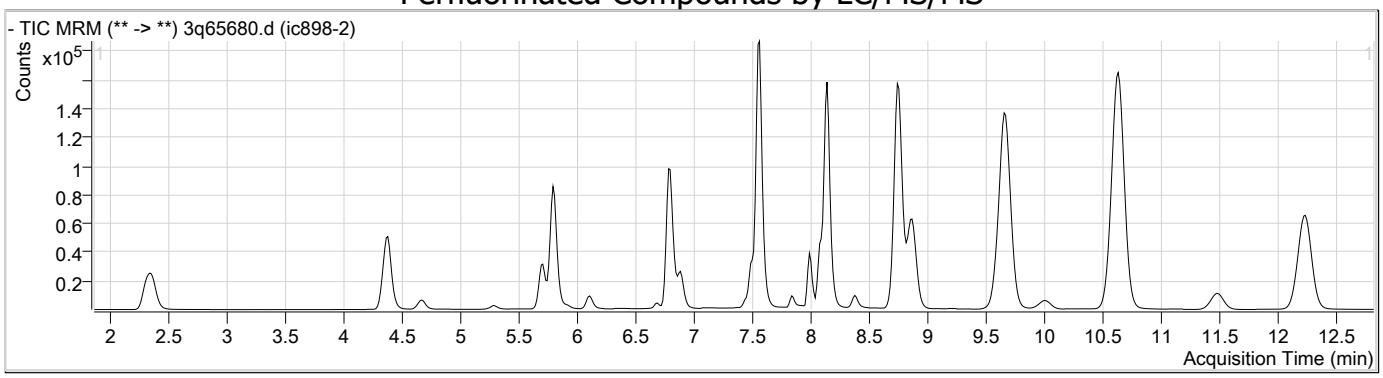
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.327	217.0 -> 172.0	168906	20.00 µg/L	-0.038
M5-PFPeA	4.374	268.0 -> 223.0	241625	20.00 µg/L	-0.038
M5-PFHxA	5.787	318.0 -> 273.0	318164	20.00 µg/L	-0.026
M4-PFHpA	6.780	367.0 -> 322.0	323177	20.00 µg/L	-0.013
M8-PFOA	7.547	421.0 -> 376.0	436067	20.00 µg/L	-0.013
M9-PFNA	8.138	472.0 -> 427.0	477922	20.00 µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	692723	20.00 µg/L	0.000
M7-PFUnDA	9.652	570.0 -> 525.0	882397	20.00 µg/L	-0.025
M2-PFDoDA	10.621	615.0 -> 570.0	1141819	20.00 µg/L	-0.013
M2-PFTeDA	12.223	715.0 -> 670.0	479423	20.00 µg/L	-0.013
M8-FOSA	7.478	506.0 -> 78.0	85769	20.00 µg/L	-0.013
M3-PFBS	4.654	302.0 -> 99.0	22120	20.00 µg/L	-0.038
M3-PFHxS	6.809	402.0 -> 99.0	27301	20.00 µg/L	-0.013
M8-PFOS	8.111	507.0 -> 99.0	41568	20.00 µg/L	0.000
M2-4:2FTS	5.696	329.0 -> 309.0	113696	20.00 µg/L	-0.013
M2-6:2FTS	7.558	429.0 -> 409.0	161062	20.00 µg/L	0.000
M2-8:2FTS	8.860	529.0 -> 509.0	292335	20.00 µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	99379	20.00 µg/L	-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	27394	20.00 µg/L	-0.013
M3-MeFOSA	7.829	515.0 -> 169.0	19784	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	99247	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.696	329.0 -> 309.0	113696	19.69 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%	
13C2-6:2FTS	7.558	429.0 -> 409.0	161062	20.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C2-8:2FTS	8.860	529.0 -> 509.0	292335	20.11 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C2-PFDoDA	10.621	615.0 -> 570.0	1141819	21.11 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C2-PFTeDA	12.223	715.0 -> 670.0	479423	21.16 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C3-PFBS	4.654	302.0 -> 99.0	22120	20.90 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%	
13C3-PFHxS	6.809	402.0 -> 99.0	27301	21.13 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C4-PFBA	2.327	217.0 -> 172.0	168906	21.23 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C4-PFHpA	6.780	367.0 -> 322.0	323177	21.45 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%	
13C5-PFHxA	5.787	318.0 -> 273.0	318164	20.96 µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C5-PFPeA	4.374	268.0 -> 223.0	241625	20.84 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C6-PFDA	8.739	519.0 -> 474.0	692723	21.81 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

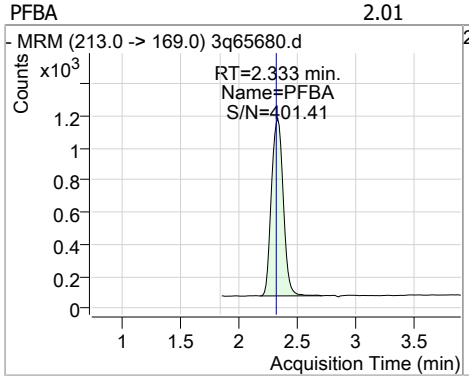
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C7-PFUnDA	9.652	570.0 -> 525.0	882397	21.37 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C8-FOSA	7.478	506.0 -> 78.0	85769	22.71 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C8-PFOA	7.547	421.0 -> 376.0	436067	21.66 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C8-PFOS	8.111	507.0 -> 99.0	41568	21.19 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%		
13C9-PFNA	8.138	472.0 -> 427.0	477922	21.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
d3-MeFOSAA	7.978	573.0 -> 419.0	99379	22.10 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C3-HFPO-DA	6.105	287.0 -> 169.0	27391	21.34 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
d3-MeFOSA	7.829	515.0 -> 169.0	19784	22.35 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%		
d5-EtFOSAA	8.065	589.0 -> 419.0	99267	21.20 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
Target Compounds						**QValue**
4:2FTS	5.685	327.0 -> 307.0	12364	2.06 µg/L		96
6:2FTS	7.559	427.0 -> 407.0	17317	2.07 µg/L		100
8:2FTS	8.861	527.0 -> 507.0	30807	2.08 µg/L		98
EtFOSAA	8.065	584.0 -> 419.0	7829	1.98 µg/L	m	99
FOSA	7.479	498.0 -> 78.0	8242	2.02 µg/L		98
MeFOSAA	7.979	570.0 -> 419.0	8631	1.94 µg/L	m	98
PFBA	2.333	213.0 -> 169.0	7771	2.01 µg/L		100
PFBS	4.657	299.0 -> 80.0	6338	2.02 µg/L		100
PFDA	8.740	513.0 -> 469.0	65854	1.97 µg/L		99
PFDoDA	10.625	613.0 -> 569.0	106095	2.00 µg/L		100
PFDS	9.548	599.0 -> 80.0	7658	1.99 µg/L		99
PFHpA	6.782	363.0 -> 319.0	45920	1.99 µg/L		99
PFHpS	7.544	449.0 -> 80.0	5704	2.10 µg/L		96
PFHxA	5.788	313.0 -> 269.0	34198	2.02 µg/L		100
PFHxS	6.810	399.0 -> 80.0	6482	2.04 µg/L	m	98
PFNA	8.139	463.0 -> 419.0	42055	2.03 µg/L		100
PFNS	8.680	549.0 -> 80.0	6584	1.94 µg/L		98
PFOA	7.548	413.0 -> 369.0	52748	1.98 µg/L		99
PFOS	8.111	499.0 -> 80.0	6814	1.99 µg/L	m	100
PFPeA	4.376	263.0 -> 219.0	21121	2.00 µg/L		100
PFPeS	5.907	349.0 -> 80.0	5010	2.05 µg/L		100
PFTeDA	12.214	713.0 -> 669.0	64851	2.00 µg/L		99
PFTrDA	11.472	663.0 -> 619.0	84208	1.97 µg/L		100
PFUnDA	9.653	563.0 -> 519.0	93309	1.96 µg/L		100
11Cl-PF3OUdS	9.997	631.0 -> 451.0	32325	1.95 µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	23477	1.97 µg/L		100
ADONA	6.878	377.0 -> 251.0	67513	1.95 µg/L		100
HFPO-DA	6.097	329.0 -> 169.0	6679	2.05 µg/L		100
MeFOSA	7.829	512.0 -> 169.0	2152	2.02 µg/L		98
4-PFECHS	7.441	461.0 -> 381.0	17471	1.78 µg/L		100
FBSA	5.288	298.0 -> 78.0	11342	2.09 µg/L		100
FHxSA	6.675	398.0 -> 78.0	13073	2.03 µg/L		99

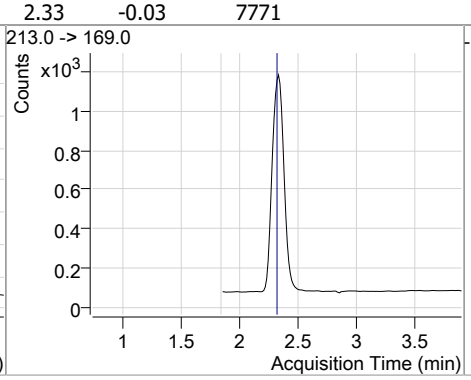
 # = Qualifier out of range, m = manually integrated, + = Area summed

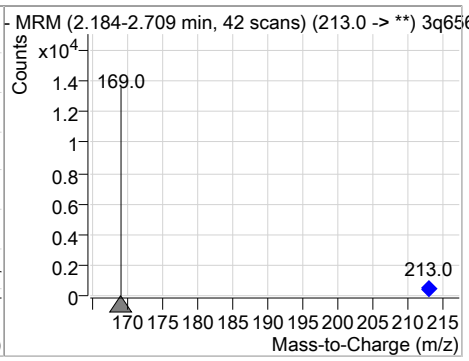
Perfluorinated Compounds by LC/MS/MS



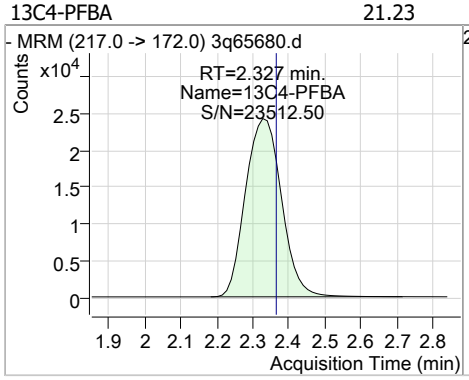
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	2.01	2.33	-0.03	7771				

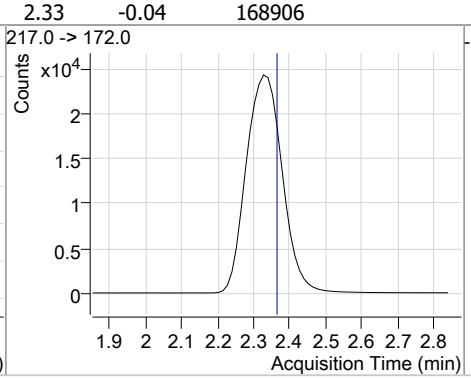


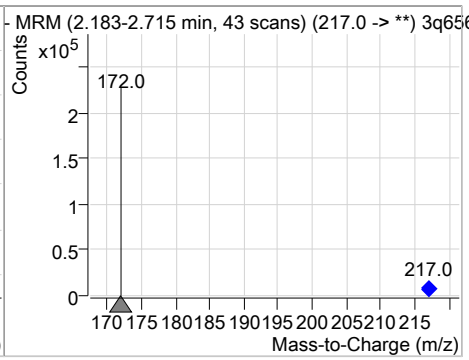




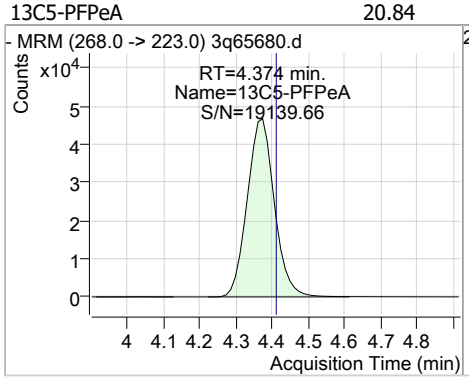
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.23	2.33	-0.04	168906				

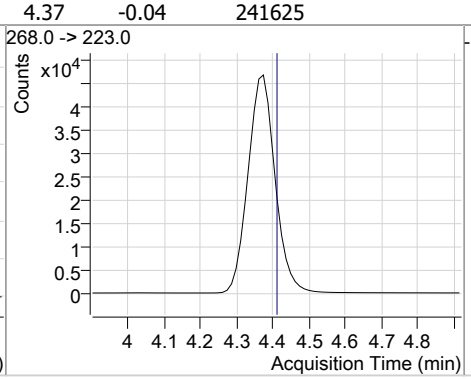


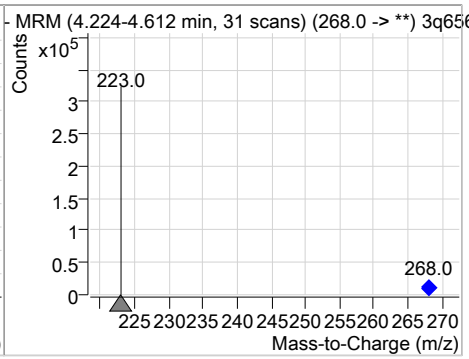




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.84	4.37	-0.04	241625				

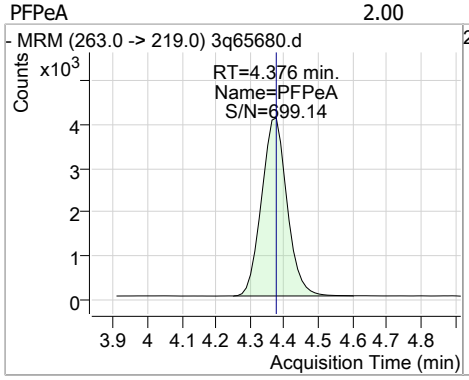


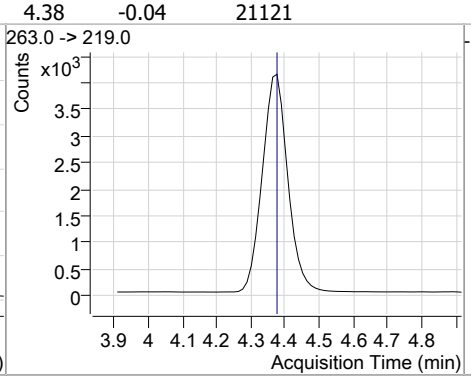


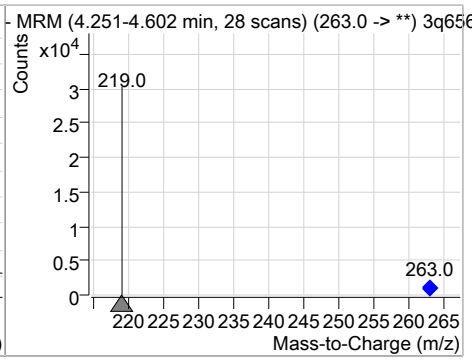


Perfluorinated Compounds by LC/MS/MS

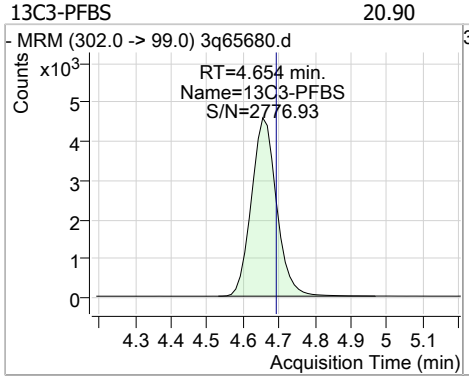
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	2.00	4.38	-0.04	21121				

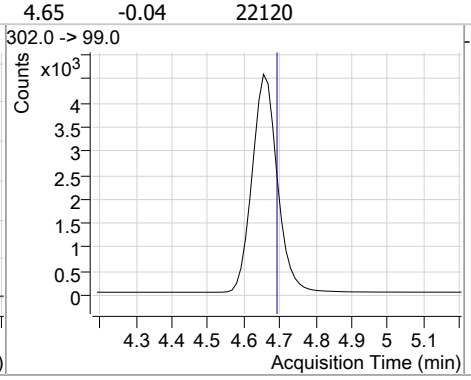


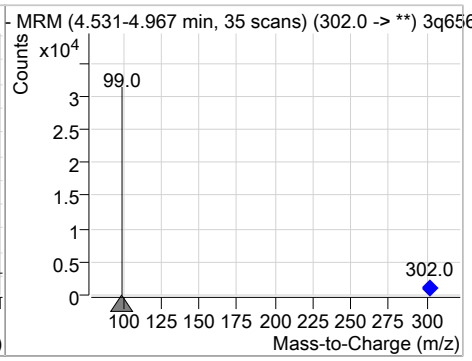




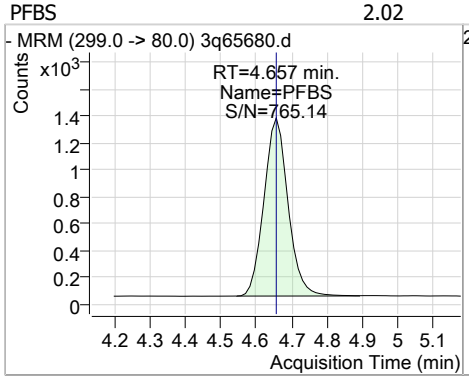
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.90	4.65	-0.04	22120				

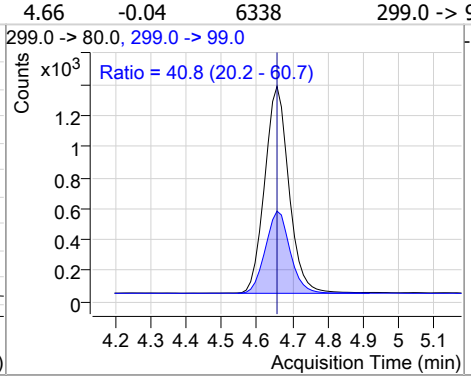


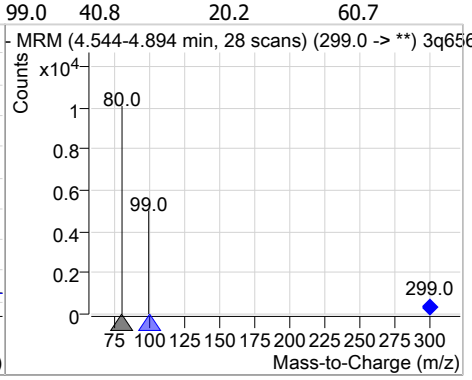




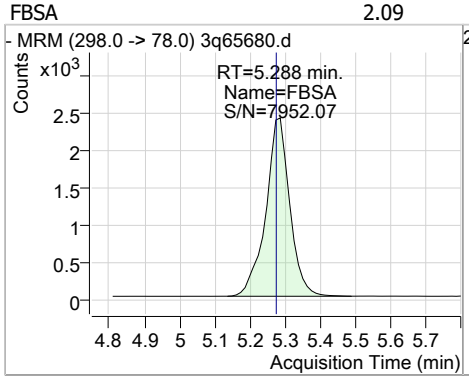
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	2.02	4.66	-0.04	6338	299.0 -> 99.0	40.8	20.2	60.7

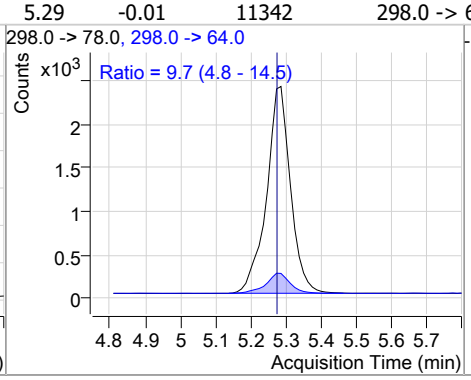


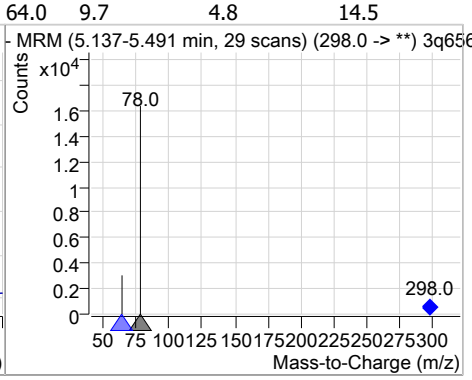




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	2.09	5.29	-0.01	11342	298.0 -> 64.0	9.7	4.8	14.5

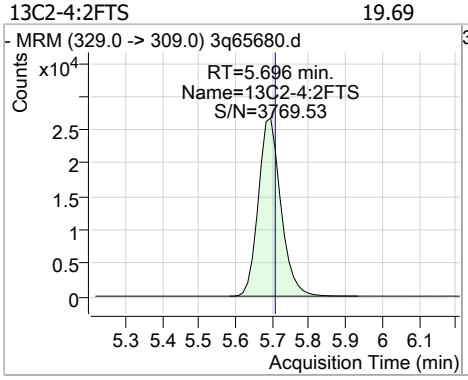


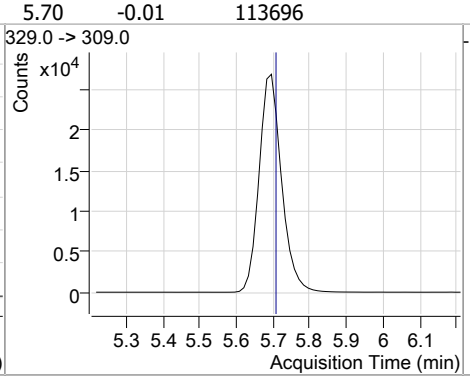


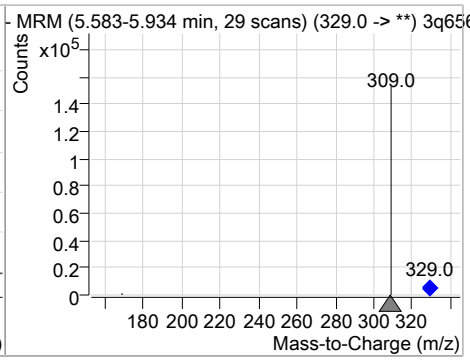


Perfluorinated Compounds by LC/MS/MS

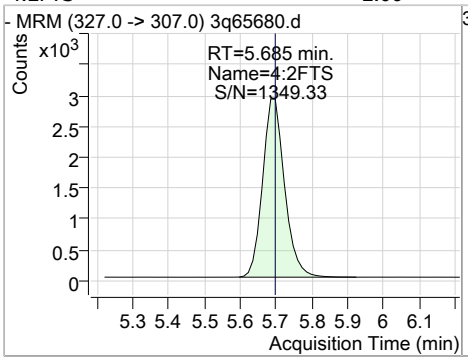
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.69	5.70	-0.01	113696				

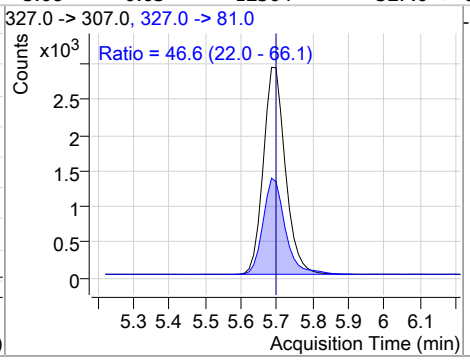


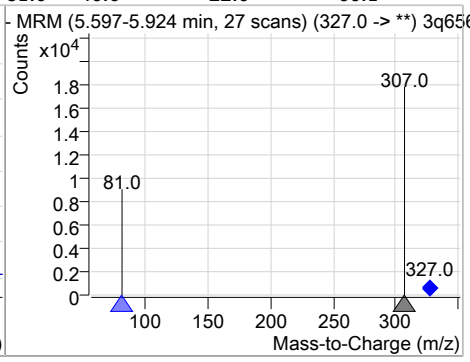




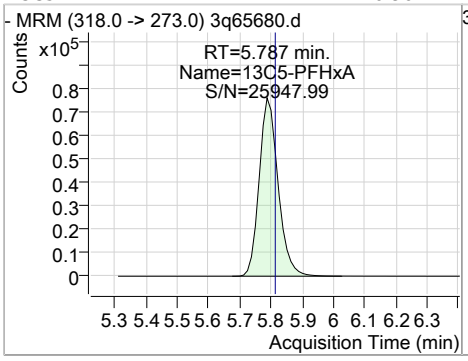
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.06	5.68	-0.03	12364	327.0 -> 81.0	46.6	22.0	66.1

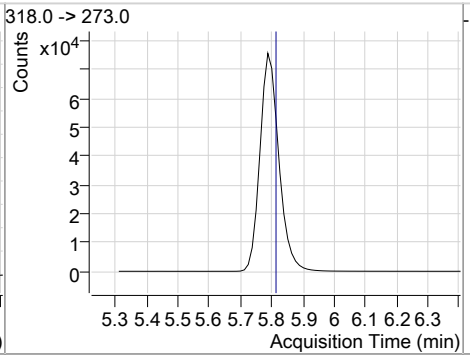


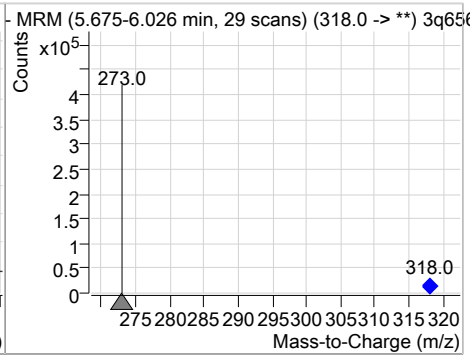




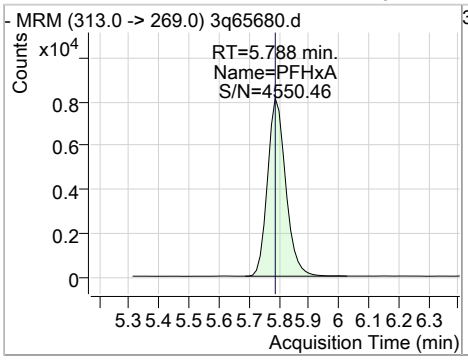
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.96	5.79	-0.03	318164				

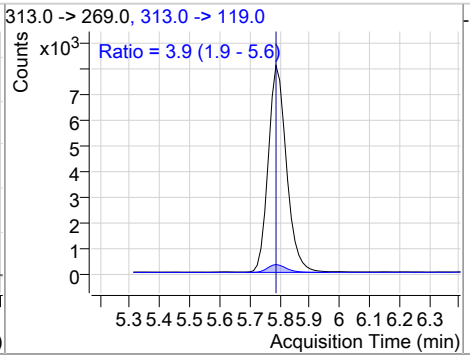


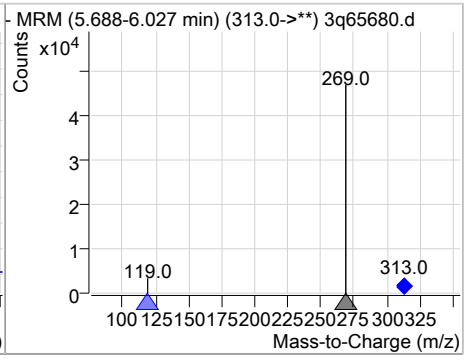




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	2.02	5.79	-0.03	34198	313.0 -> 119.0	3.9	1.9	5.6

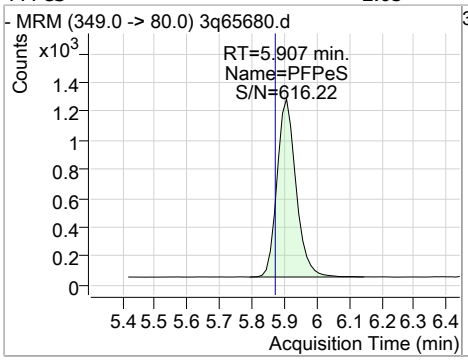


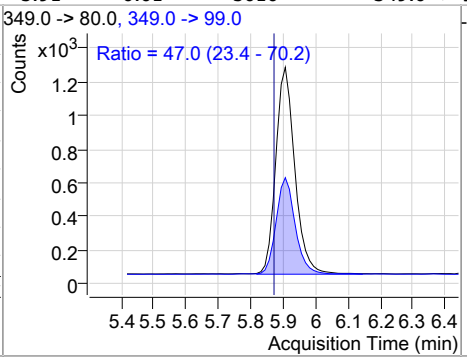


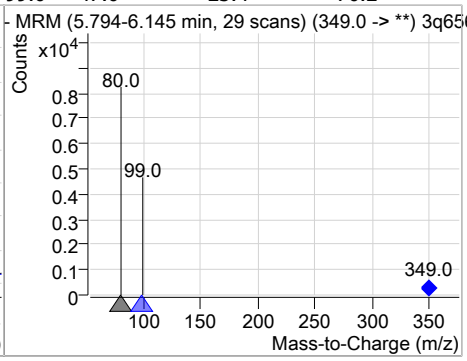


Perfluorinated Compounds by LC/MS/MS

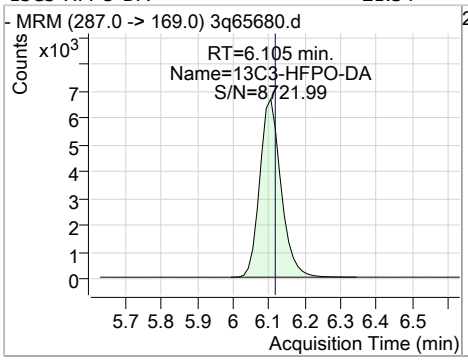
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	2.05	5.91	-0.01	5010	349.0 -> 99.0	47.0	23.4	70.2

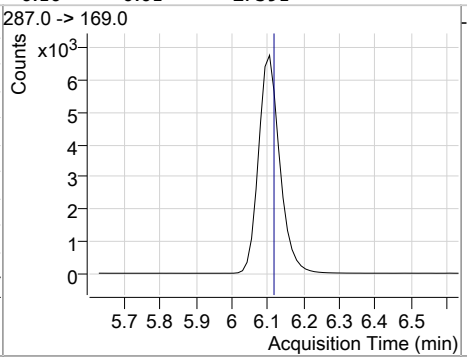


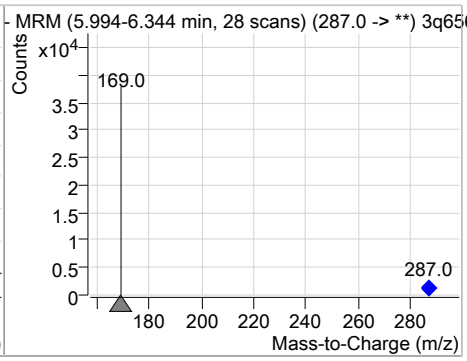




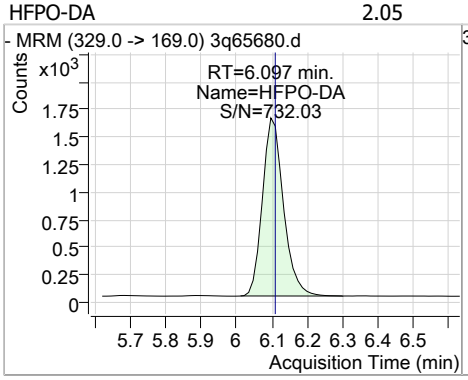
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.34	6.10	-0.01	27391				

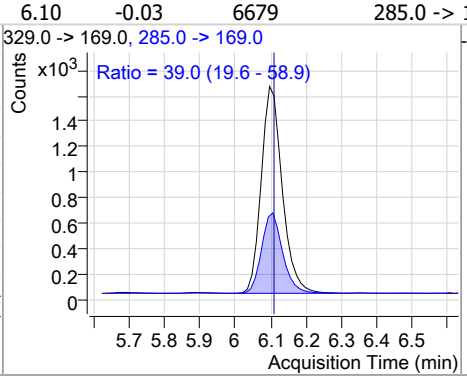


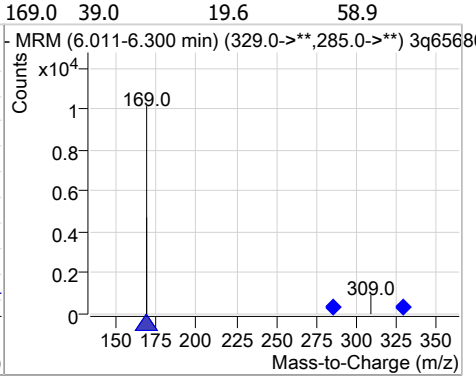




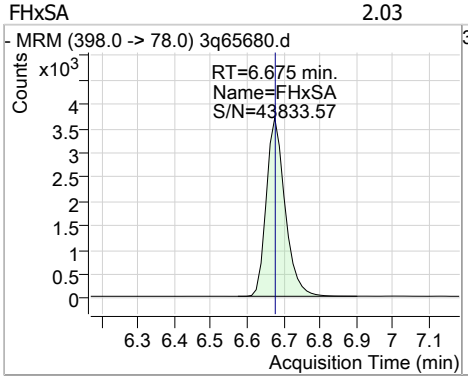
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.05	6.10	-0.03	6679	285.0 -> 169.0	39.0	19.6	58.9

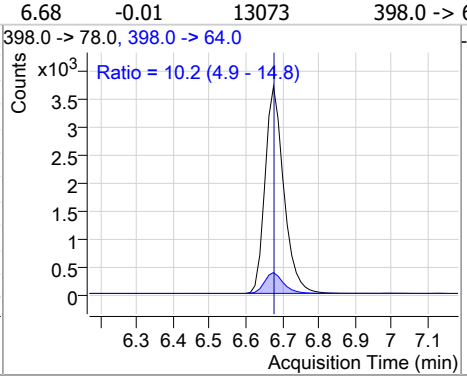


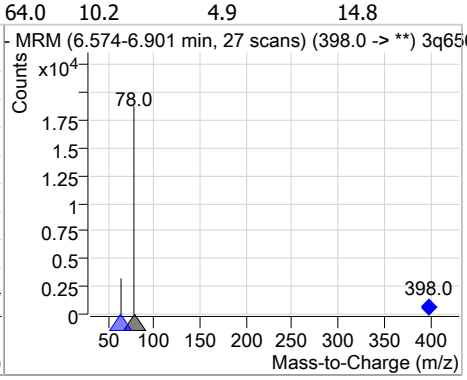




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	2.03	6.68	-0.01	13073	398.0 -> 64.0	10.2	4.9	14.8

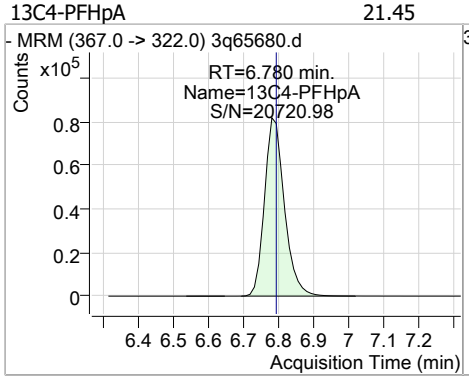


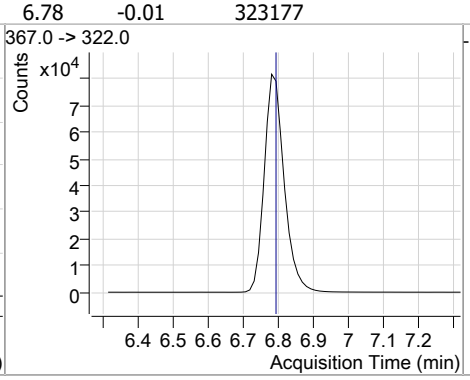


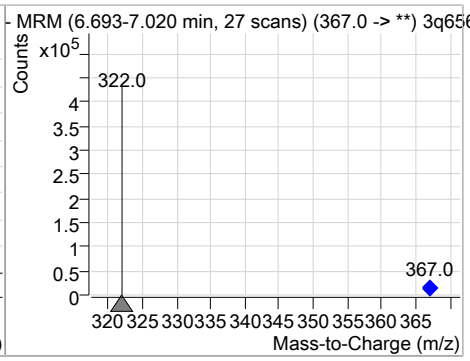


Perfluorinated Compounds by LC/MS/MS

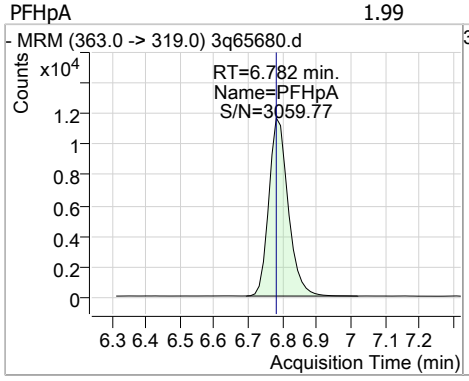
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.45	6.78	-0.01	323177				

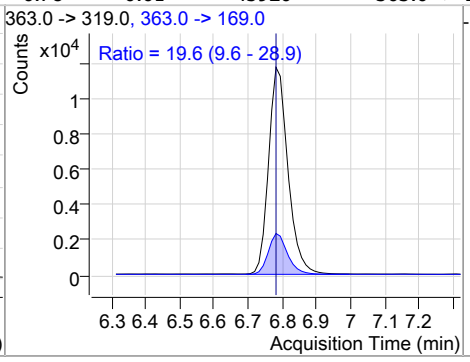


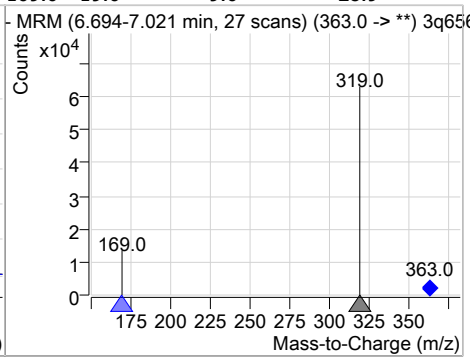




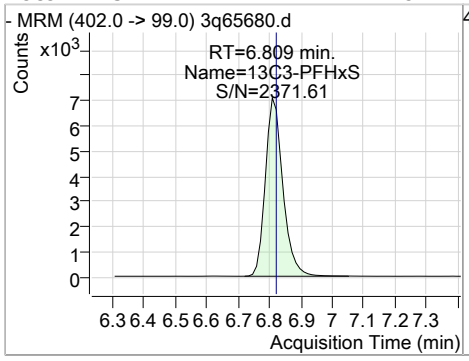
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.99	6.78	-0.01	45920	363.0 -> 169.0	19.6	9.6	28.9

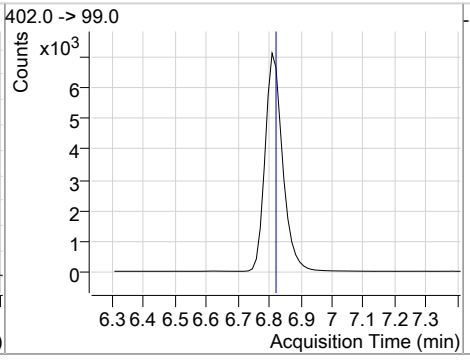


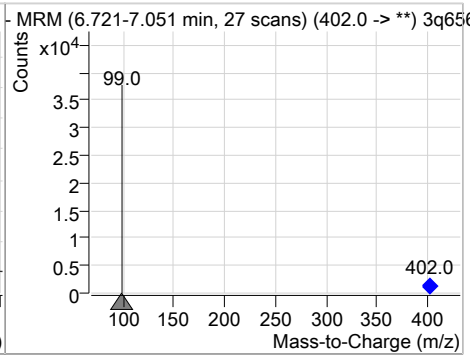




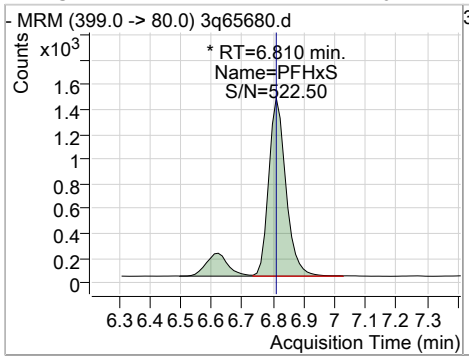
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.13	6.81	-0.01	27301				

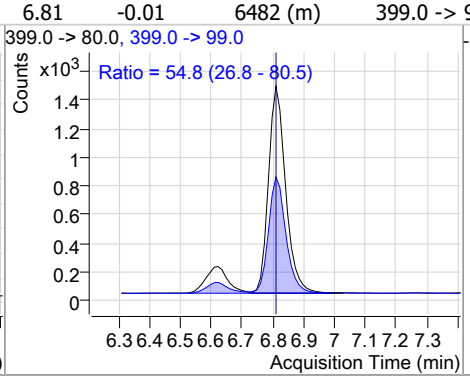


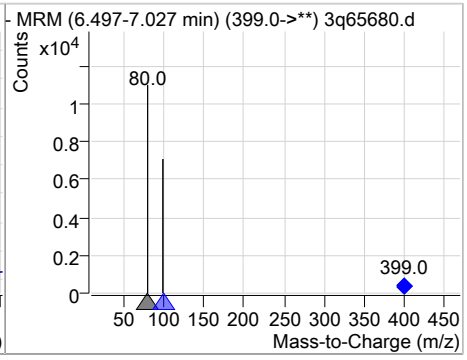




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	2.04	6.81	-0.01	6482 (m)	399.0 -> 99.0	54.8	26.8	80.5

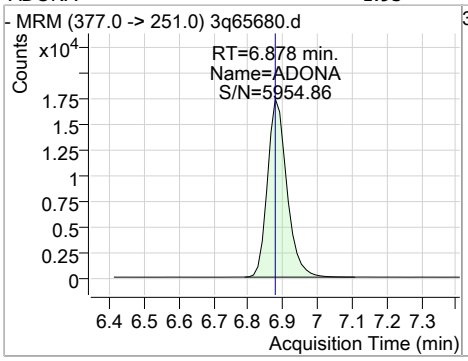


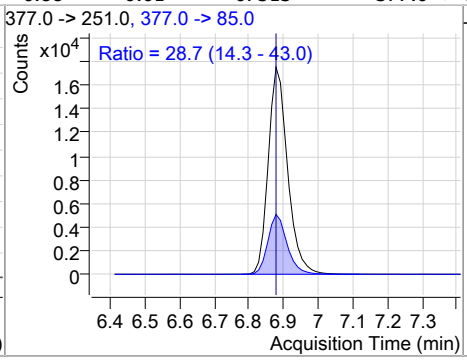


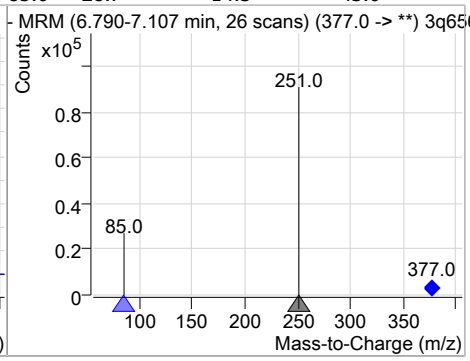


Perfluorinated Compounds by LC/MS/MS

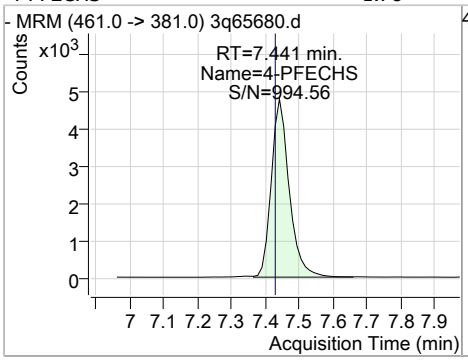
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.95	6.88	-0.01	67513	377.0 -> 85.0	28.7	14.3	43.0

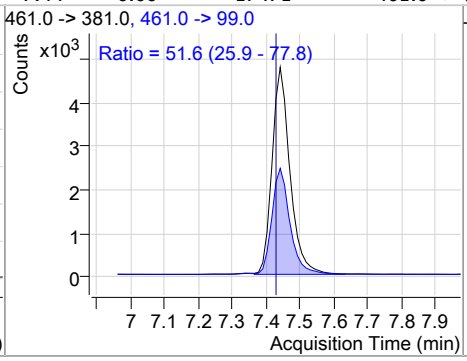


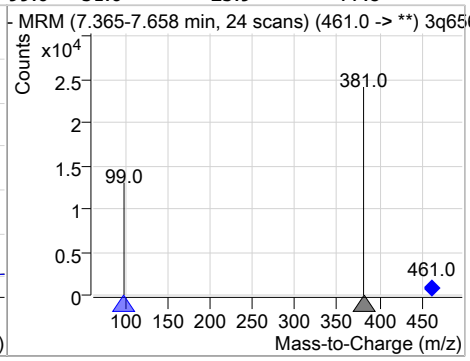




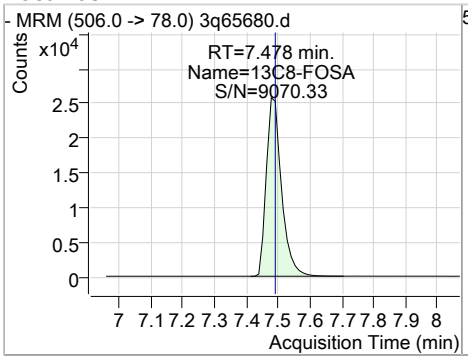
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.78	7.44	0.00	17471	461.0 -> 99.0	51.6	25.9	77.8

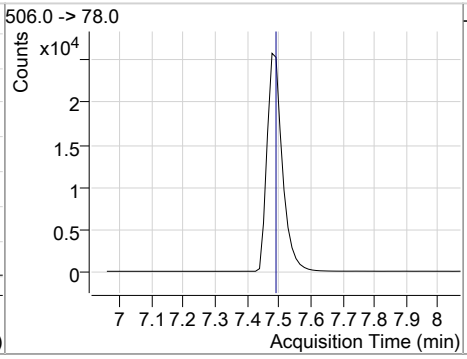


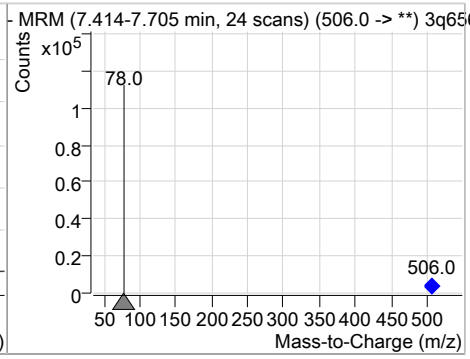




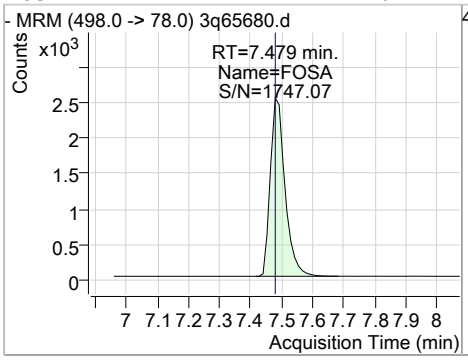
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.71	7.48	-0.01	85769				

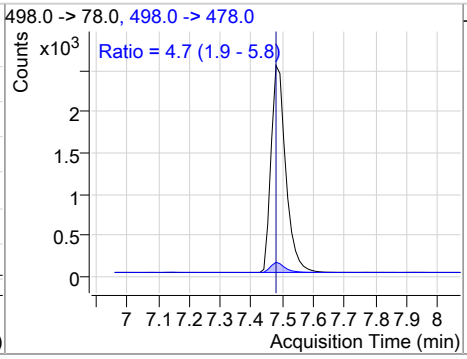


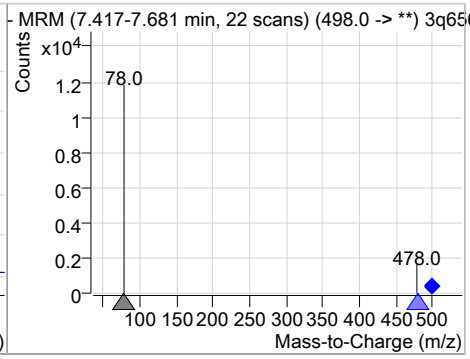




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	2.02	7.48	-0.01	8242	498.0 -> 478.0	4.7	1.9	5.8

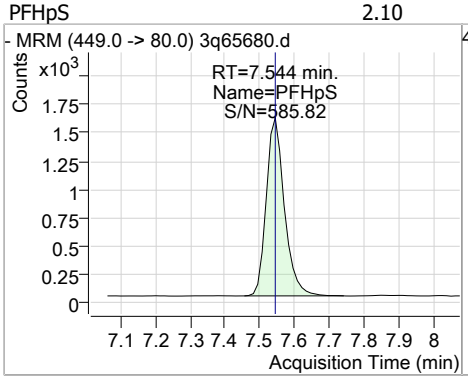


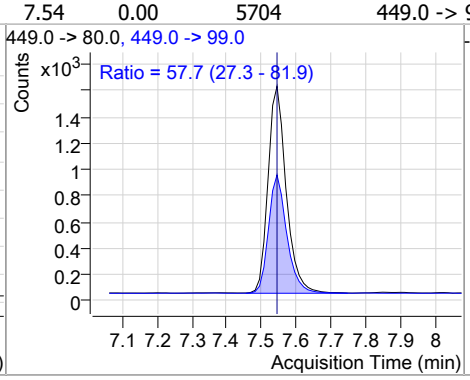


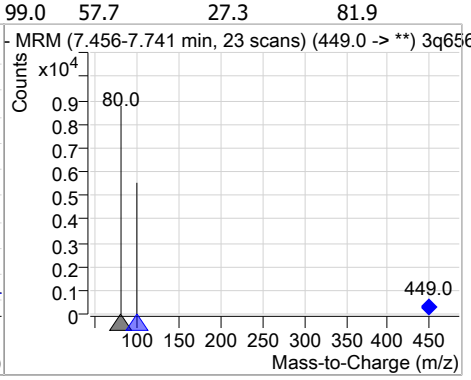


Perfluorinated Compounds by LC/MS/MS

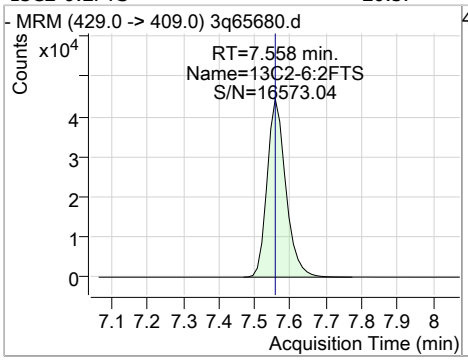
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.10	7.54	0.00	5704	449.0 -> 99.0	57.7	27.3	81.9

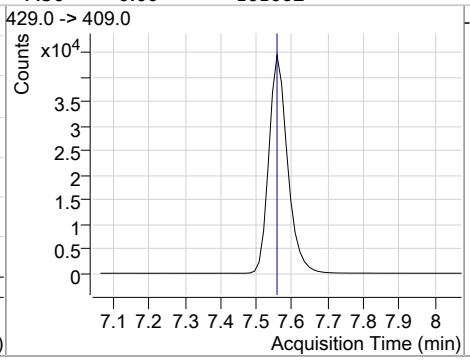


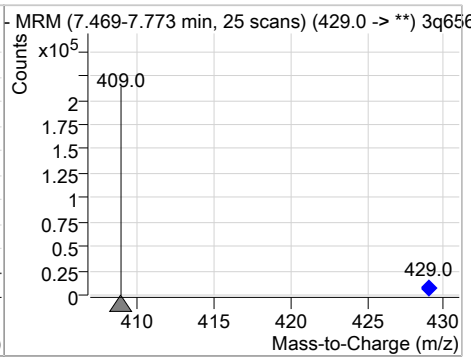




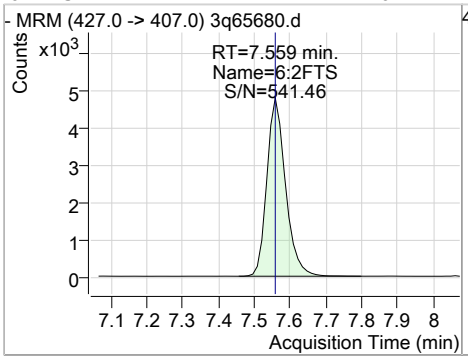
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.57	7.56	0.00	161062				

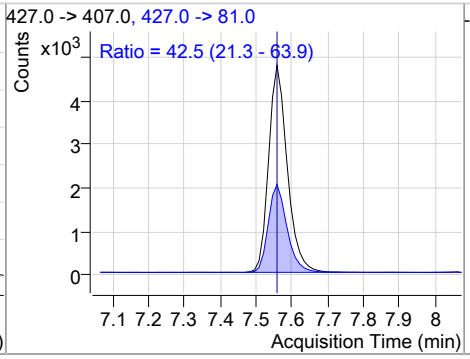


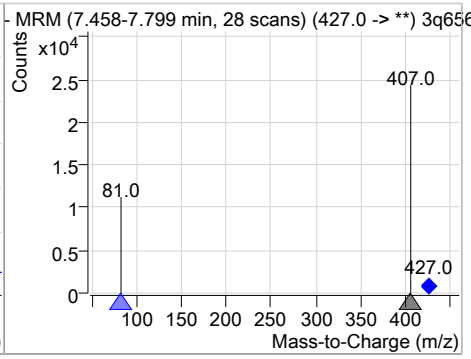




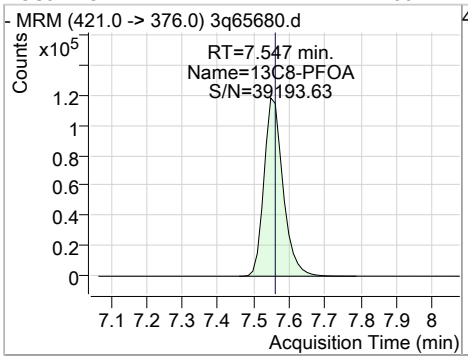
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.07	7.56	0.00	17317	427.0 -> 81.0	42.5	21.3	63.9

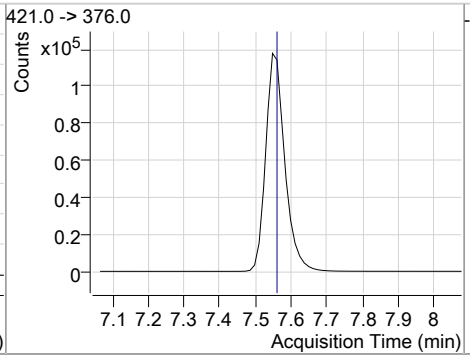


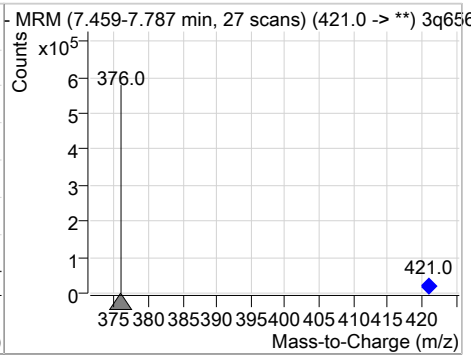




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.66	7.55	-0.01	436067				

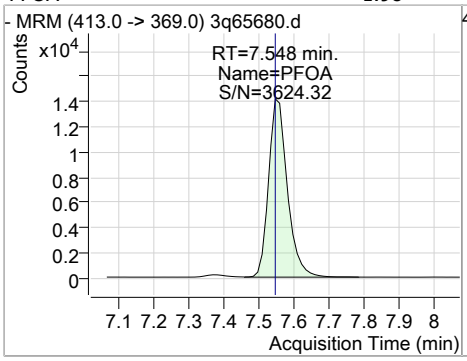


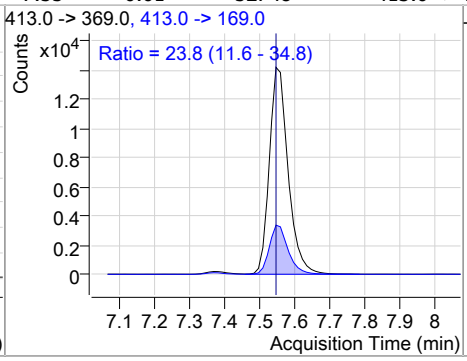


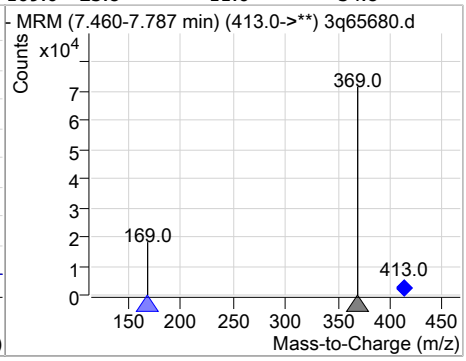


Perfluorinated Compounds by LC/MS/MS

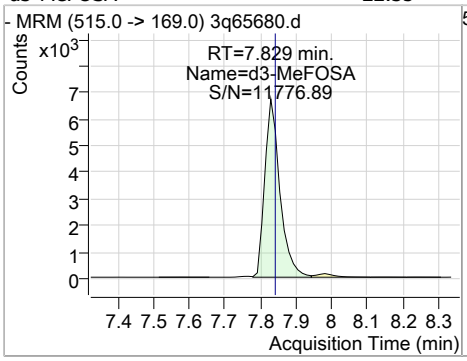
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.98	7.55	-0.01	52748	413.0 -> 169.0	23.8	11.6	34.8

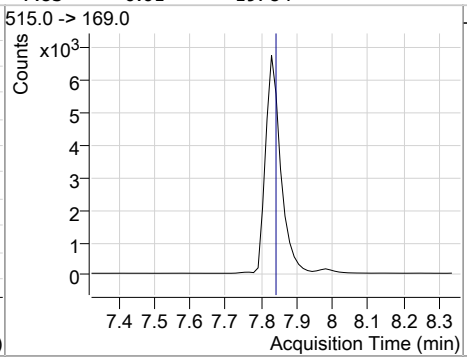


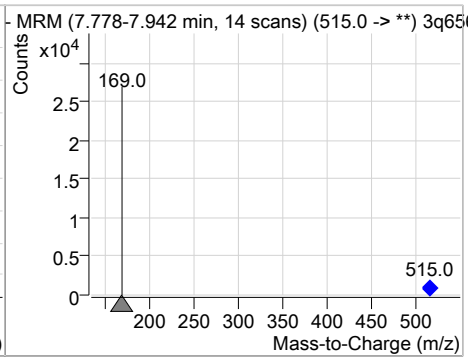




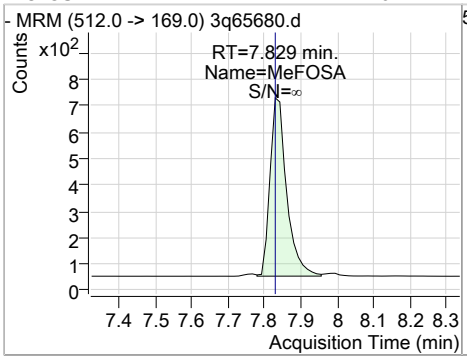
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.35	7.83	-0.01	19784				

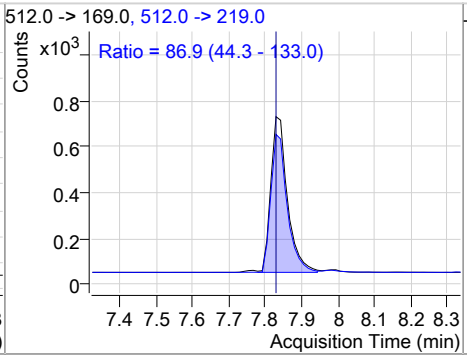


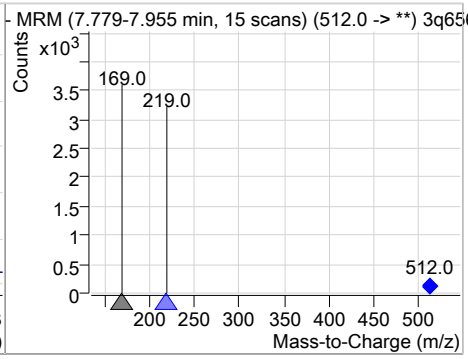




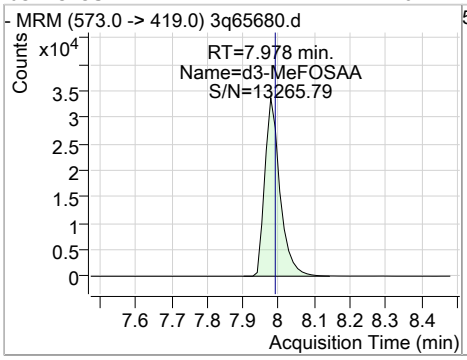
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.02	7.83	-0.01	2152	512.0 -> 219.0	86.9	44.3	133.0

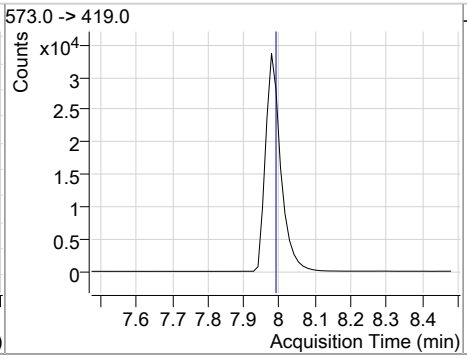


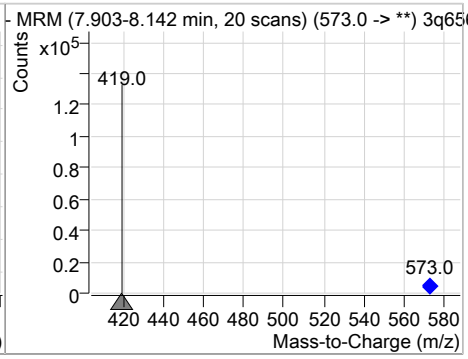




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.10	7.98	-0.01	99379				

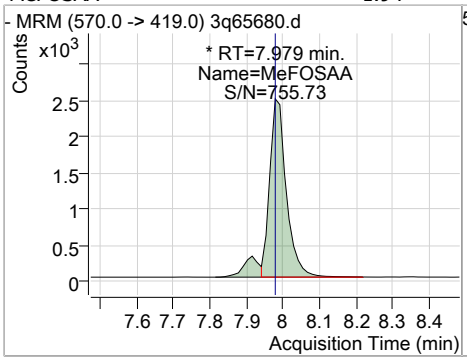


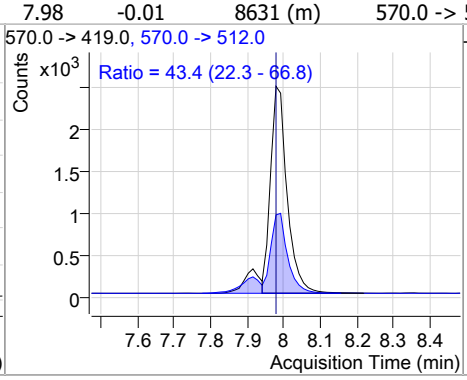


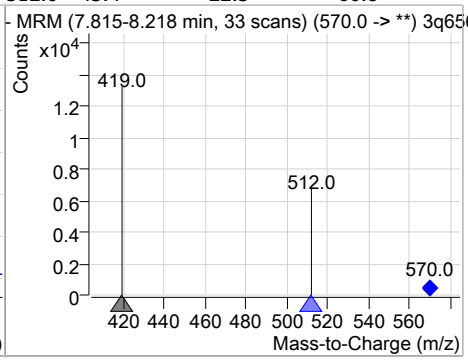


Perfluorinated Compounds by LC/MS/MS

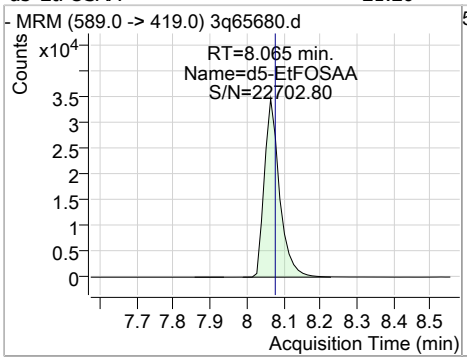
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.94	7.98	-0.01	8631 (m)	570.0 -> 512.0	43.4	22.3	66.8

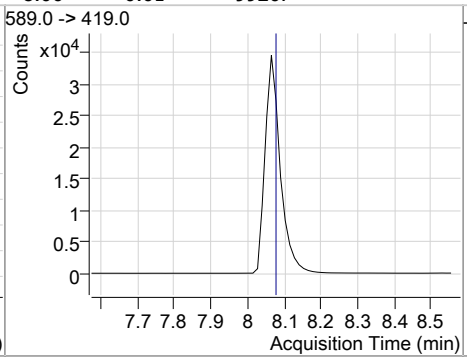


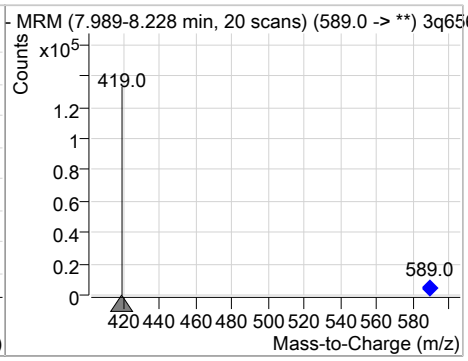




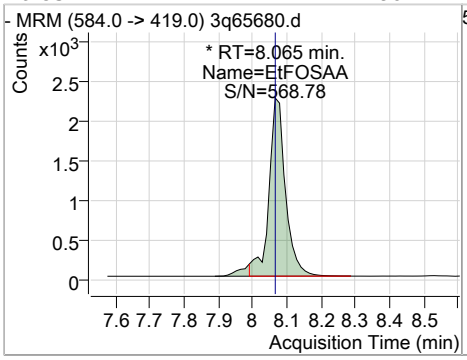
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.20	8.06	-0.01	99267				

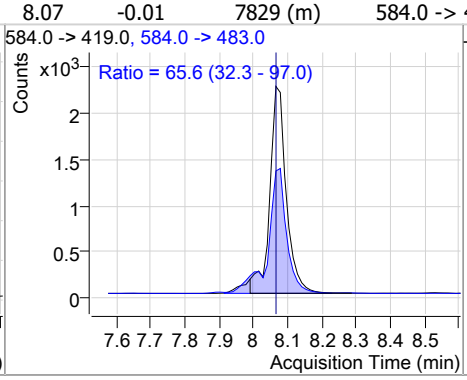


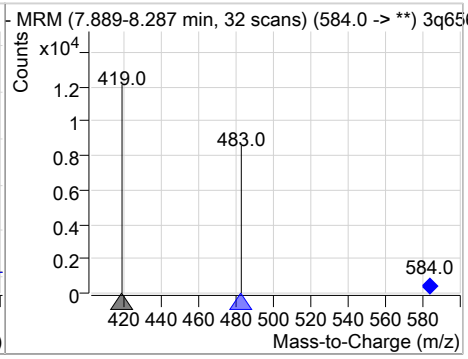




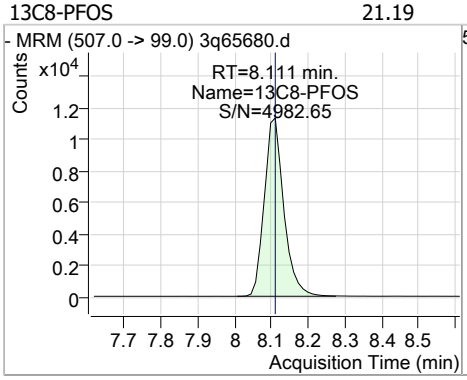
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.98	8.07	-0.01	7829 (m)	584.0 -> 483.0	65.6	32.3	97.0

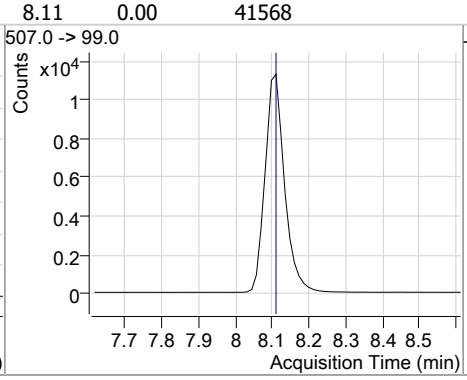


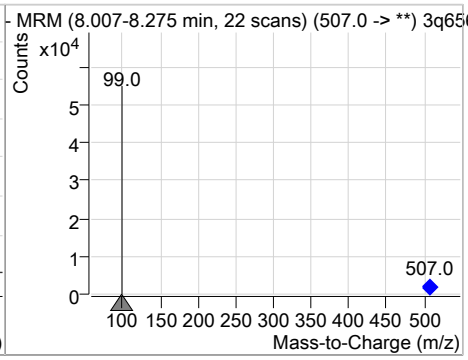




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.19	8.11	0.00	41568				

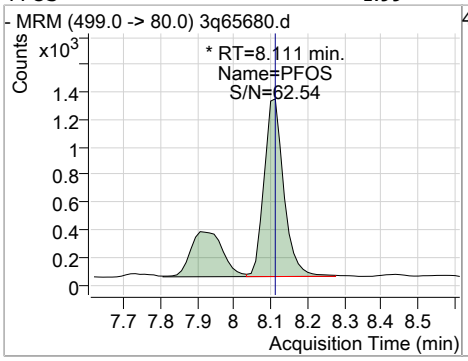


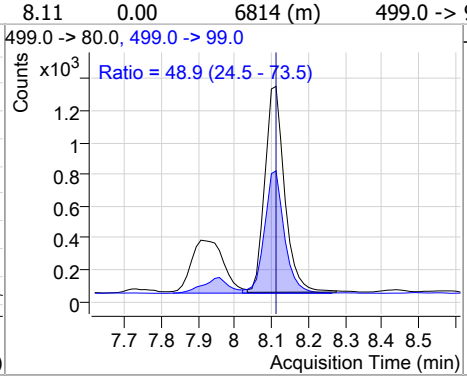


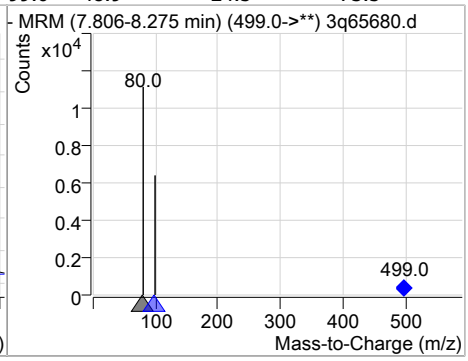


Perfluorinated Compounds by LC/MS/MS

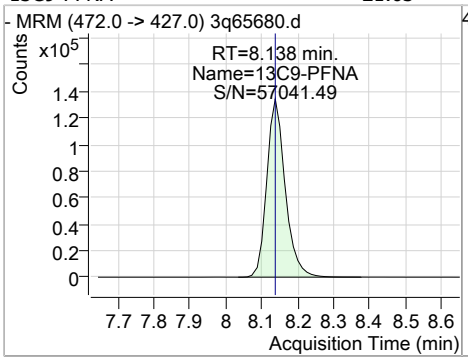
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.99	8.11	0.00	6814 (m)	499.0 -> 99.0	48.9	24.5	73.5

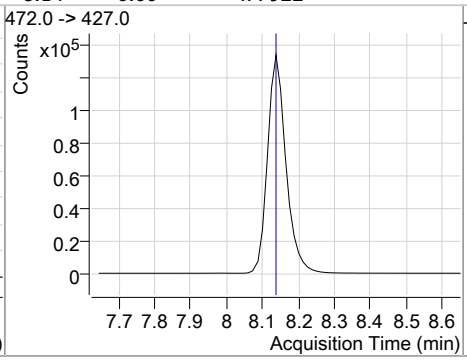


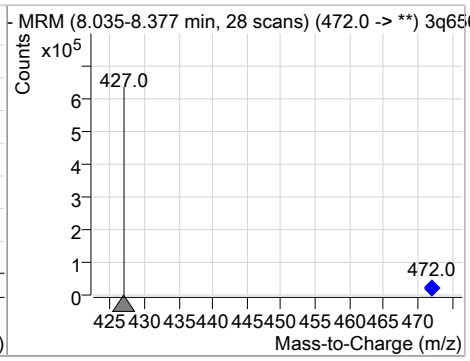




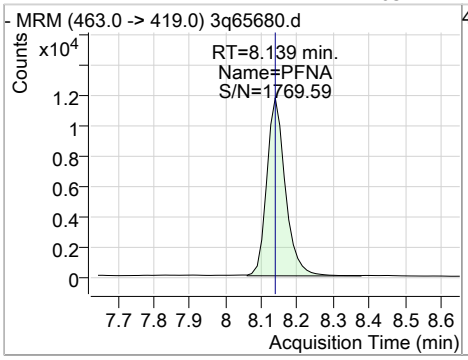
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.63	8.14	0.00	477922				

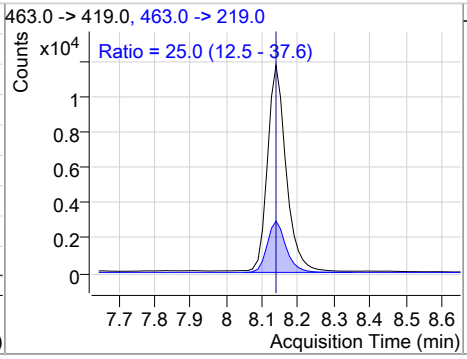


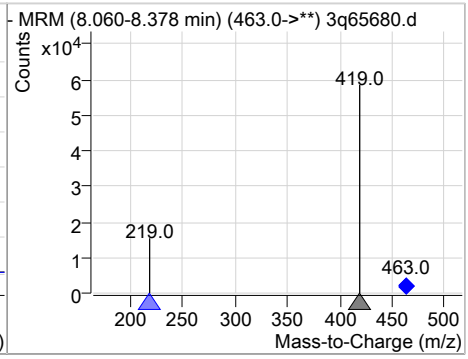




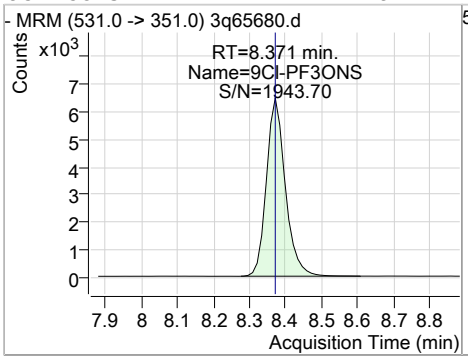
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	2.03	8.14	0.00	42055	463.0 -> 219.0	25.0	12.5	37.6

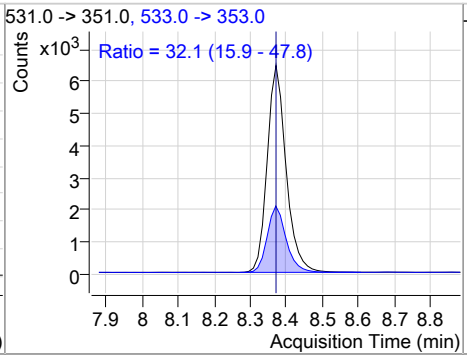


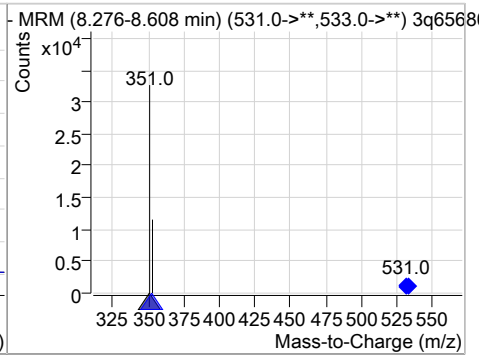




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.97	8.37	0.00	23477	533.0 -> 353.0	32.1	15.9	47.8

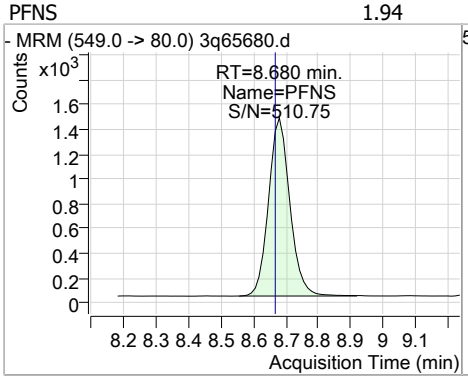


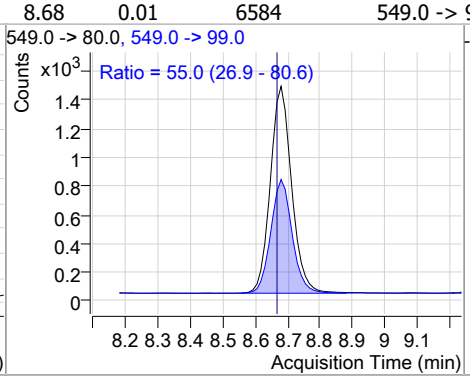


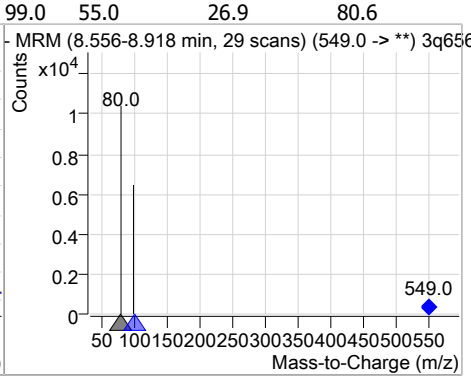


Perfluorinated Compounds by LC/MS/MS

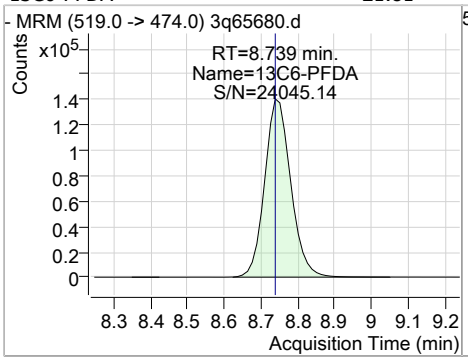
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.94	8.68	0.01	6584	549.0 -> 99.0	55.0	26.9	80.6

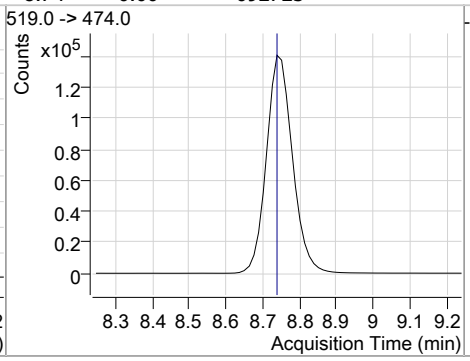


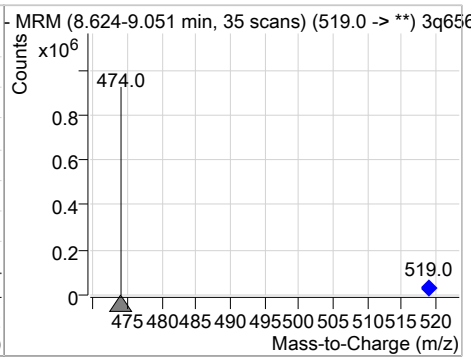




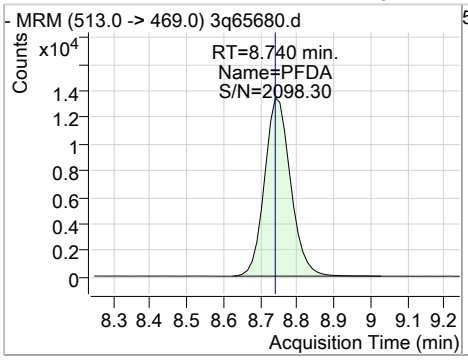
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.81	8.74	0.00	692723				

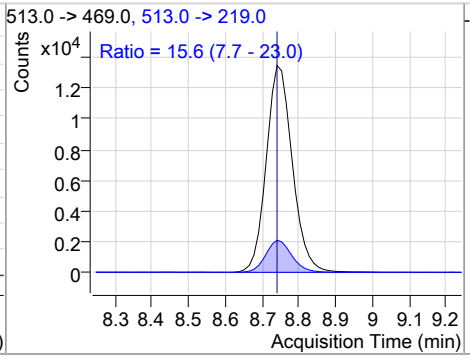


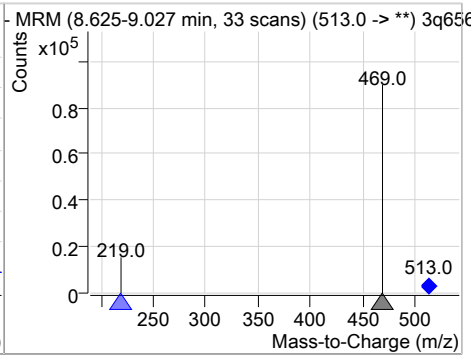




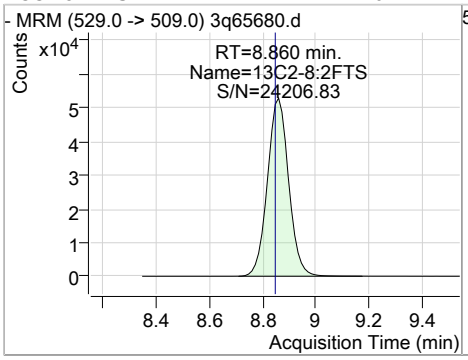
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.97	8.74	0.00	65854	513.0 -> 219.0	15.6	7.7	23.0

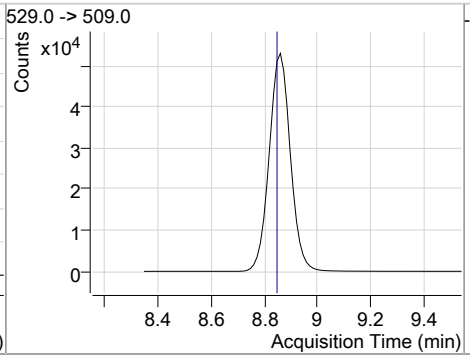


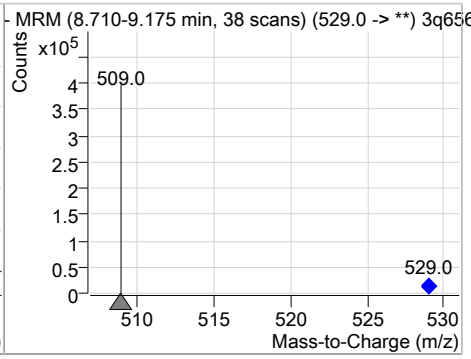




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.11	8.86	0.01	292335				

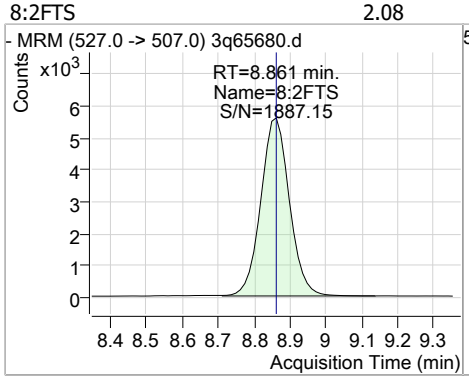


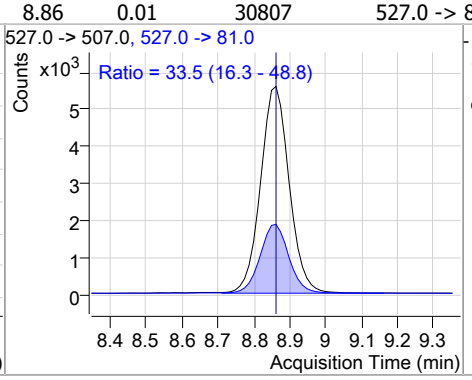


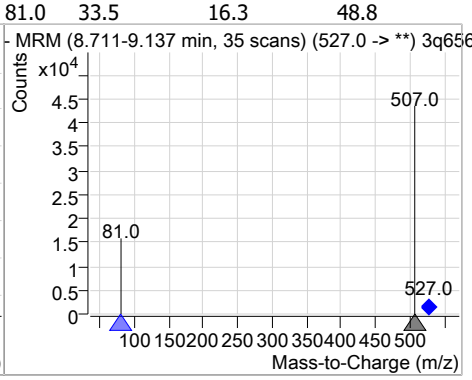


Perfluorinated Compounds by LC/MS/MS

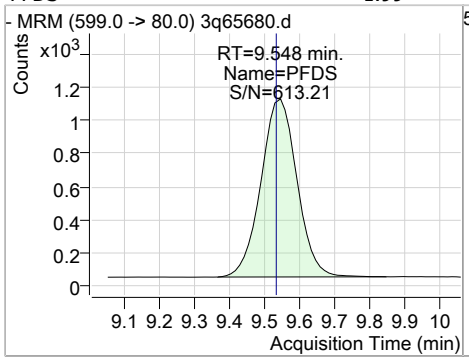
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.08	8.86	0.01	30807	527.0 -> 81.0	33.5	16.3	48.8

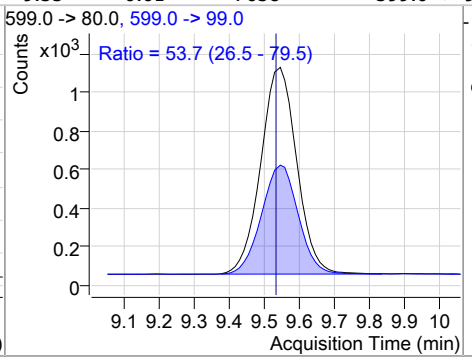


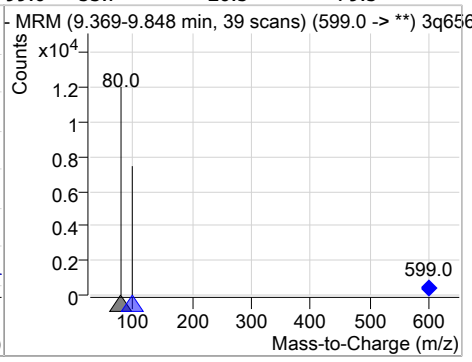




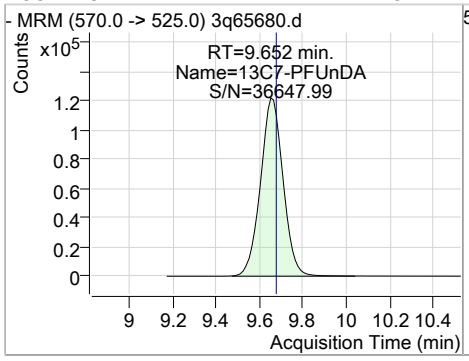
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.99	9.55	-0.01	7658	599.0 -> 99.0	53.7	26.5	79.5

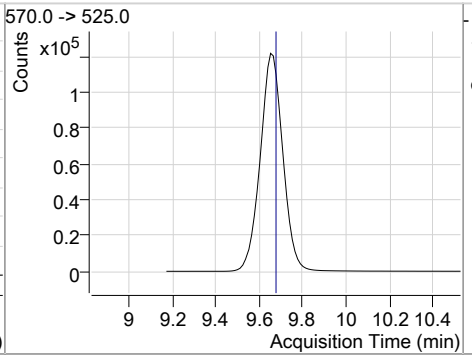


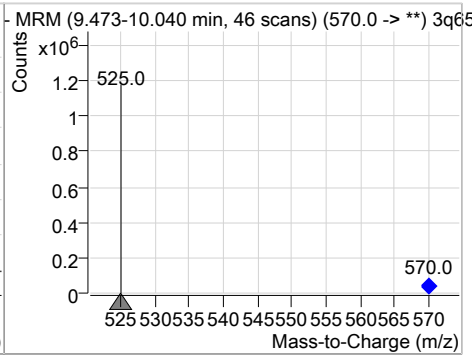




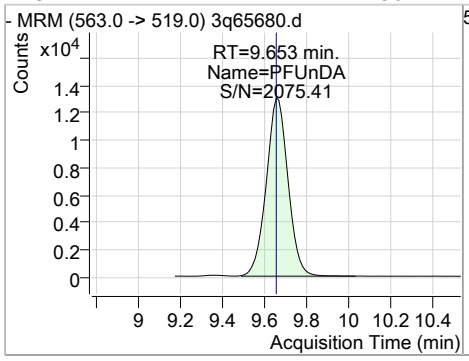
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.37	9.65	-0.03	882397				

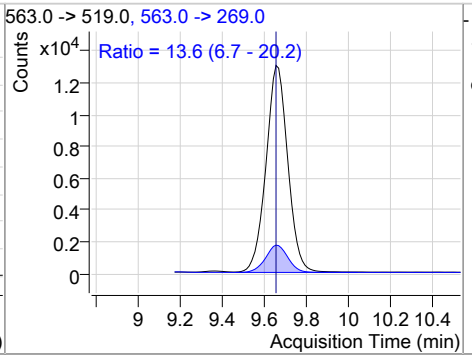


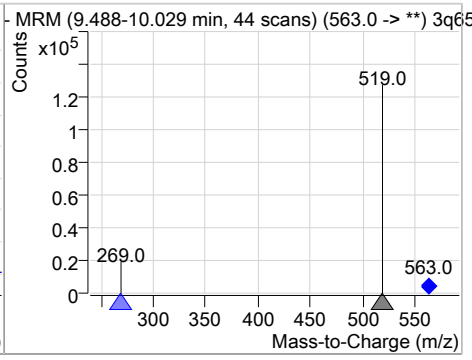




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.96	9.65	-0.03	93309	563.0 -> 269.0	13.6	6.7	20.2

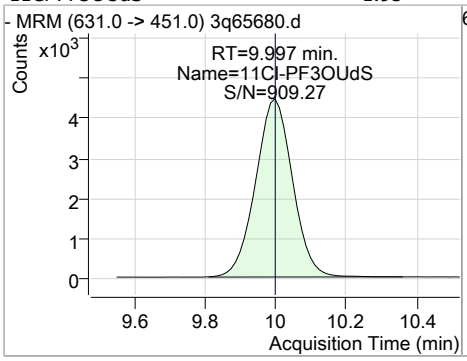


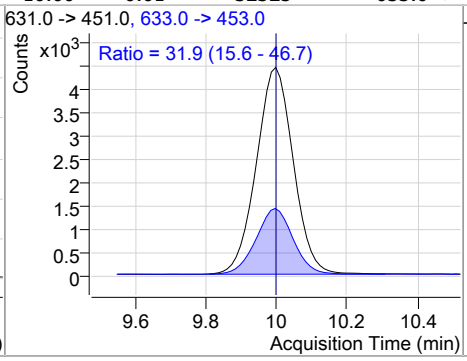


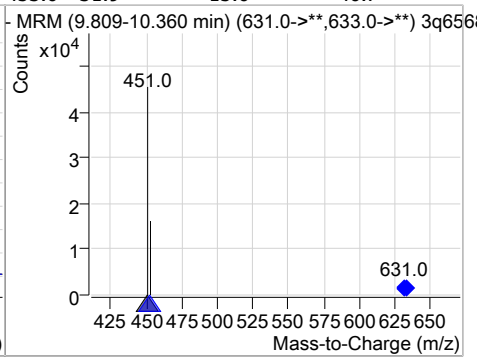


Perfluorinated Compounds by LC/MS/MS

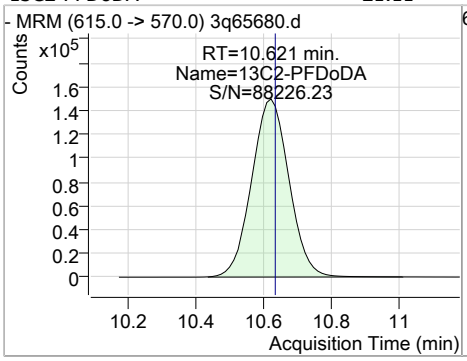
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.95	10.00	-0.01	32325	633.0 -> 453.0	31.9	15.6	46.7

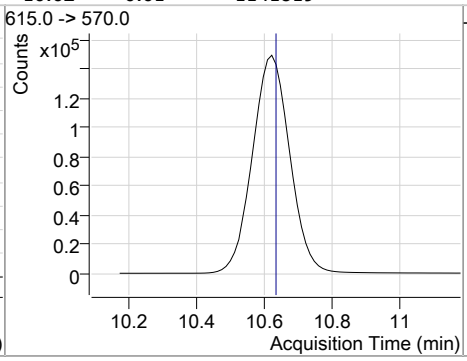


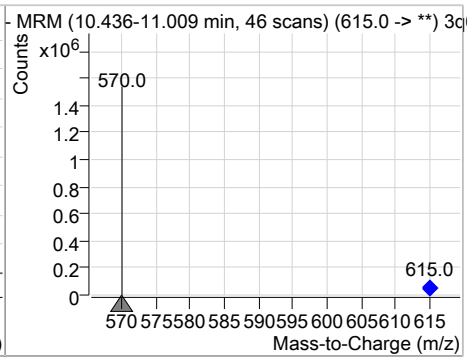




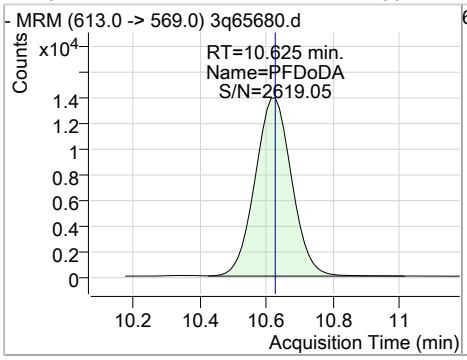
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.11	10.62	-0.01	1141819				

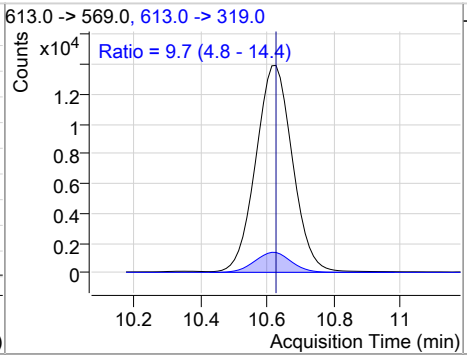


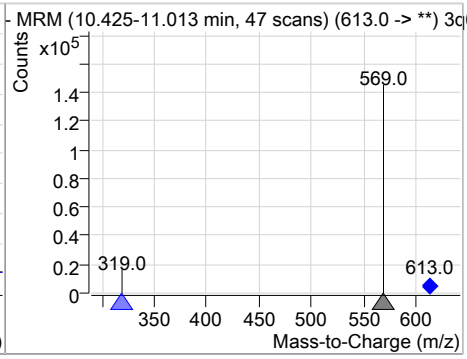




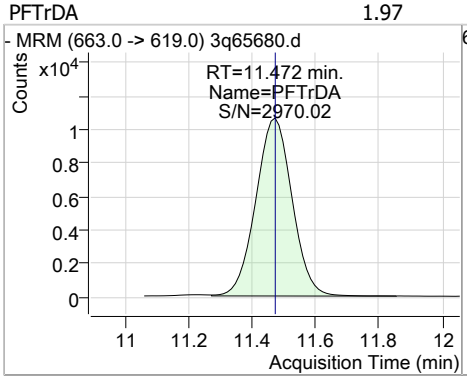
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	2.00	10.63	-0.01	106095	613.0 -> 319.0	9.7	4.8	14.4

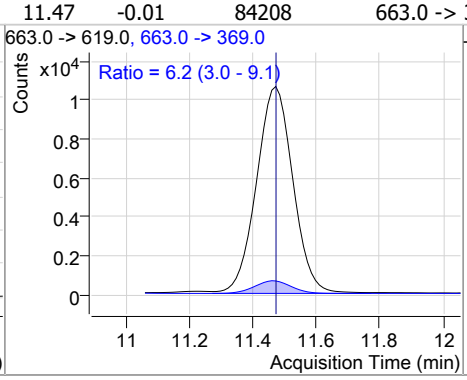


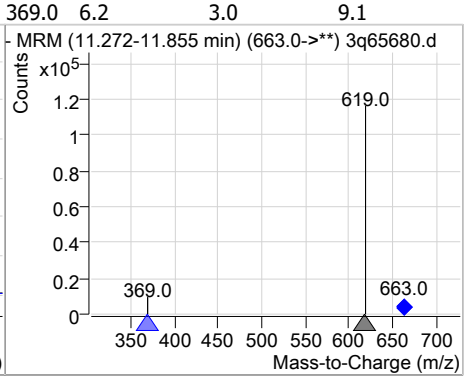




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.97	11.47	-0.01	84208	663.0 -> 369.0	6.2	3.0	9.1

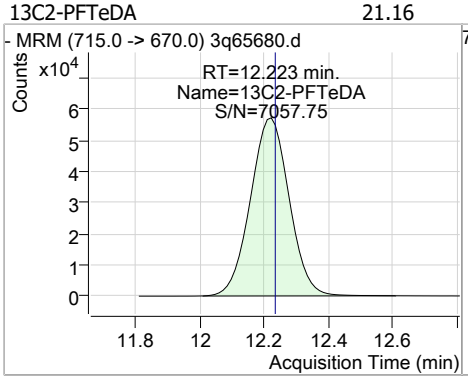


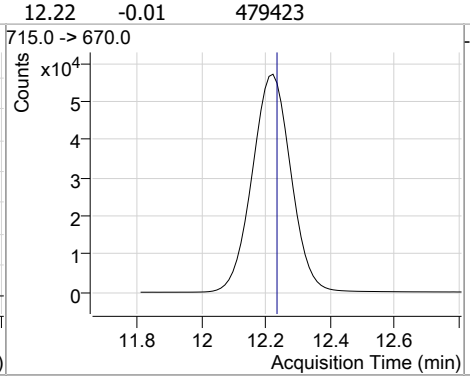


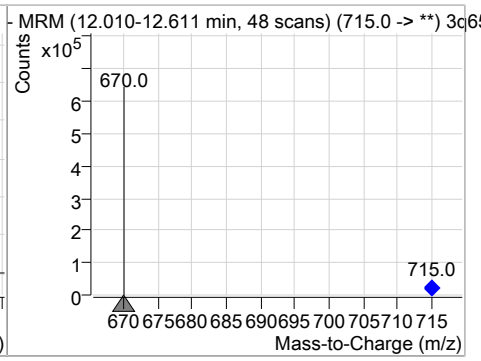


Perfluorinated Compounds by LC/MS/MS

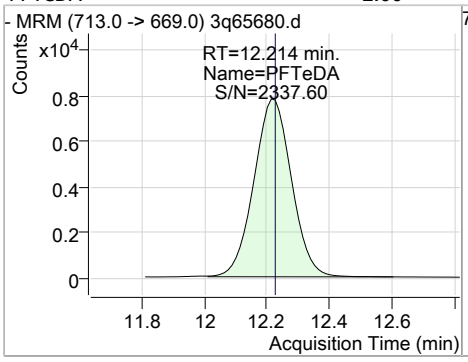
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.16	12.22	-0.01	479423				

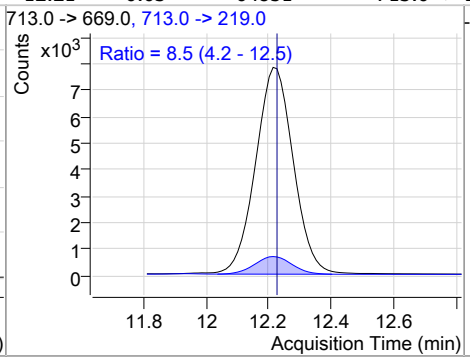


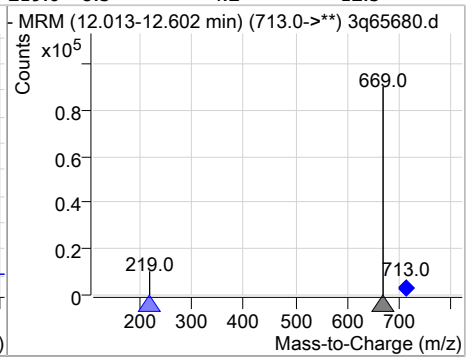




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	2.00	12.21	-0.03	64851	713.0 -> 219.0	8.5	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65680.D
Injection Time: 09/13/22 16:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
MeFOSAA	2355-31-9		7.98	Split peak
EtFOSAA	2991-50-6		8.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65681.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 4:48:59 PM
Sample Name : ic898-5
Vial : P1-A5
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

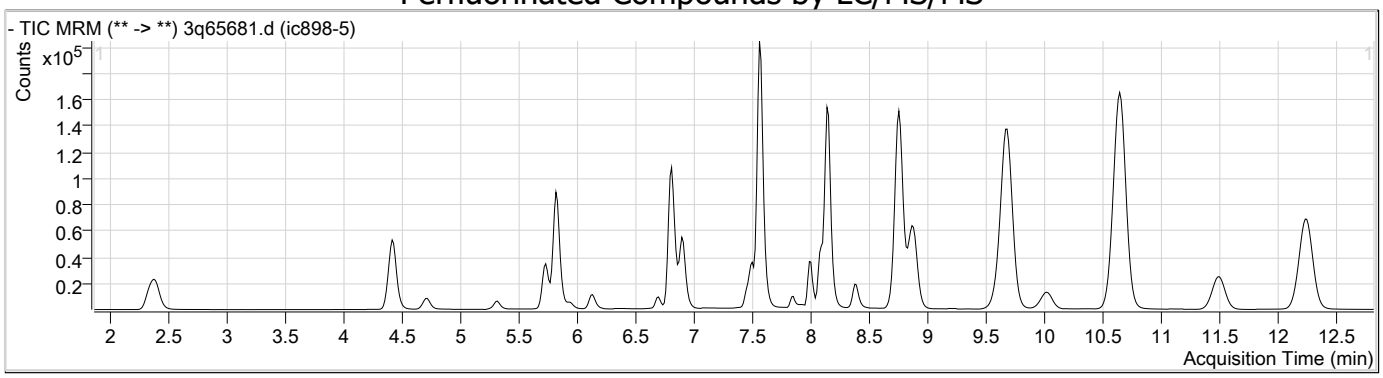
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	145225	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	214468	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	281787	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	281185	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	382413	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	410409	20.00	µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	580534	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	768414	20.00	µg/L	0.000
M2-PFDoDA	10.634	615.0 -> 570.0	1002436	20.00	µg/L	0.000
M2-PFTeDA	12.235	715.0 -> 670.0	423393	20.00	µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	74651	20.00	µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	19656	20.00	µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	24180	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	36535	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	100743	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	142590	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	253364	20.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	83211	20.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	23889	20.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	17111	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	89915	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	100743	17.44	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C2-6:2FTS	7.571	429.0 -> 409.0	142590	18.22	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C2-8:2FTS	8.873	529.0 -> 509.0	253364	17.43	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%		
13C2-PFDoDA	10.634	615.0 -> 570.0	1002436	18.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C2-PFTeDA	12.235	715.0 -> 670.0	423393	18.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C3-PFBS	4.704	302.0 -> 99.0	19656	18.58	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C3-PFHxS	6.822	402.0 -> 99.0	24180	18.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFBA	2.365	217.0 -> 172.0	145225	18.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%		
13C4-PFHpA	6.805	367.0 -> 322.0	281185	18.66	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C5-PFHxA	5.813	318.0 -> 273.0	281787	18.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C5-PFPeA	4.411	268.0 -> 223.0	214468	18.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C6-PFDA	8.751	519.0 -> 474.0	580534	18.27	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

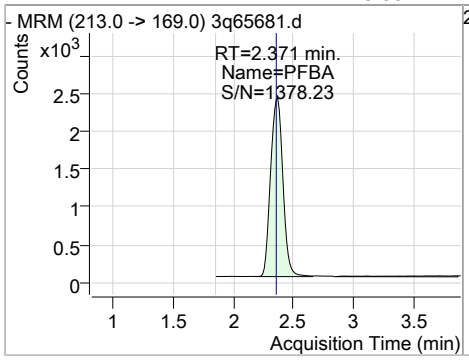
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C7-PFUnDA	9.677	570.0 -> 525.0	768414	18.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C8-FOSA	7.491	506.0 -> 78.0	74651	19.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
13C8-PFOA	7.560	421.0 -> 376.0	382413	19.00	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
13C8-PFOS	8.111	507.0 -> 99.0	36535	18.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C9-PFNA	8.138	472.0 -> 427.0	410409	18.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
d3-MeFOSAA	7.978	573.0 -> 419.0	83211	18.51	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	23889	18.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
d3-MeFOSA	7.829	515.0 -> 169.0	17111	19.33	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%			
d5-EtFOSAA	8.065	589.0 -> 419.0	89899	19.20	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	27924	5.26	µg/L		99
6:2FTS	7.571	427.0 -> 407.0	38600	5.21	µg/L		99
8:2FTS	8.861	527.0 -> 507.0	65803	5.13	µg/L		99
EtFOSAA	8.078	584.0 -> 419.0	17746	4.95	µg/L	m	100
FOSA	7.491	498.0 -> 78.0	18272	5.14	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	18802	5.06	µg/L	m	100
PFBA	2.371	213.0 -> 169.0	16873	5.08	µg/L		100
PFBS	4.694	299.0 -> 80.0	14086	5.04	µg/L		99
PFDA	8.752	513.0 -> 469.0	139432	4.98	µg/L		100
PFDoDA	10.638	613.0 -> 569.0	235279	5.05	µg/L		100
PFDS	9.560	599.0 -> 80.0	16836	5.03	µg/L		98
PFHpA	6.807	363.0 -> 319.0	101573	5.05	µg/L		100
PFHpS	7.544	449.0 -> 80.0	12572	5.28	µg/L		100
PFHxA	5.814	313.0 -> 269.0	76506	5.09	µg/L		100
PFHxS	6.823	399.0 -> 80.0	14076	4.99	µg/L	m	98
PFNA	8.139	463.0 -> 419.0	89767	5.05	µg/L		99
PFNS	8.680	549.0 -> 80.0	14252	4.78	µg/L		100
PFOA	7.561	413.0 -> 369.0	117350	5.03	µg/L		99
PFOS	8.111	499.0 -> 80.0	15254	5.07	µg/L	m	100
PFPeA	4.414	263.0 -> 219.0	47211	5.04	µg/L		100
PFPeS	5.932	349.0 -> 80.0	11001	5.07	µg/L		100
PFTeDA	12.227	713.0 -> 669.0	144040	5.02	µg/L		100
PFTrDA	11.484	663.0 -> 619.0	188268	5.00	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	208099	5.03	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	71161	4.89	µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	51985	5.20	µg/L		99
ADONA	6.891	377.0 -> 251.0	150609	4.91	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	14720	5.17	µg/L		98
MeFOSA	7.842	512.0 -> 169.0	4838	5.25	µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	38346	4.45	µg/L		99
FBSA	5.315	298.0 -> 78.0	24879	5.18	µg/L		100
FHxSA	6.688	398.0 -> 78.0	28585	5.07	µg/L		99

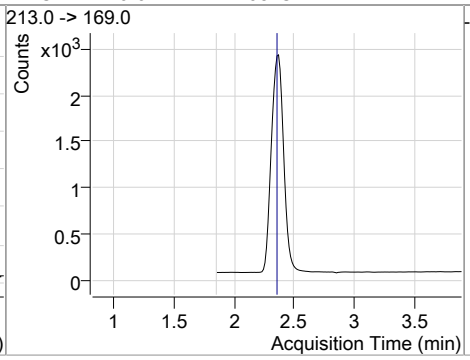
 # = Qualifier out of range, m = manually integrated, + = Area summed

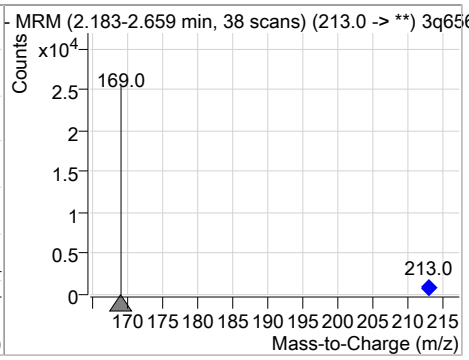
Perfluorinated Compounds by LC/MS/MS



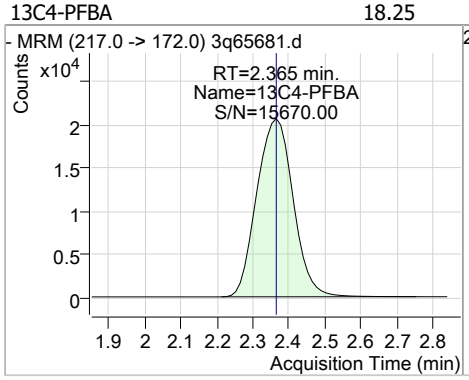
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.08	2.37	0.01	16873				

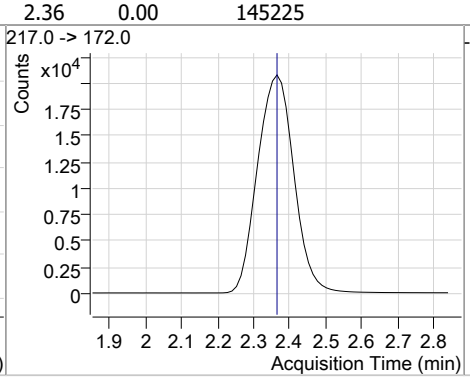


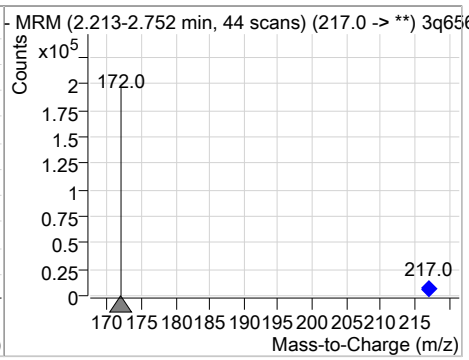




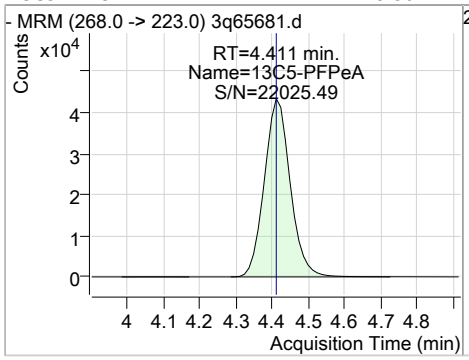
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.25	2.36	0.00	145225				

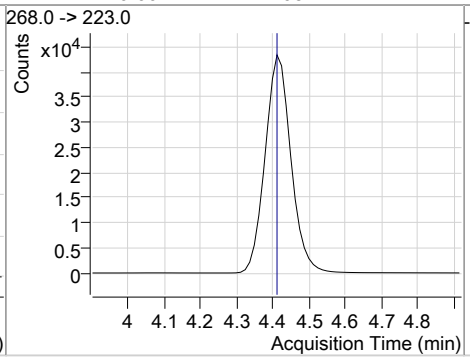


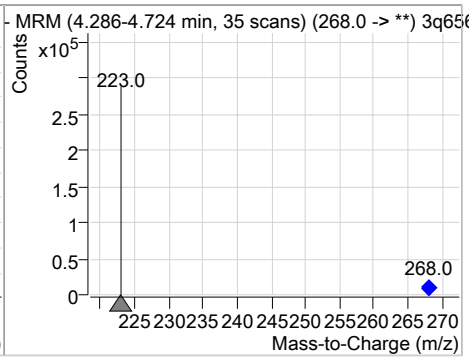




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.50	4.41	0.00	214468				

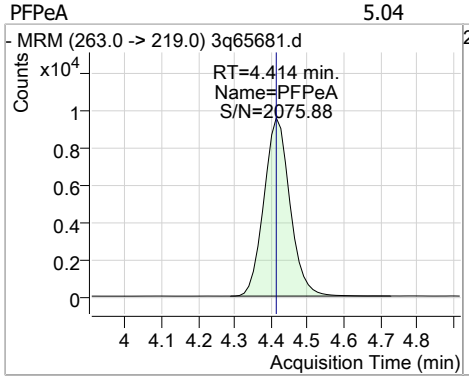


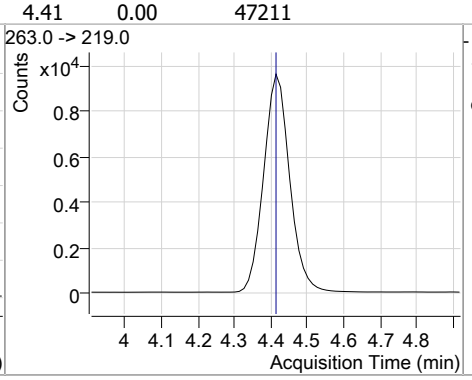


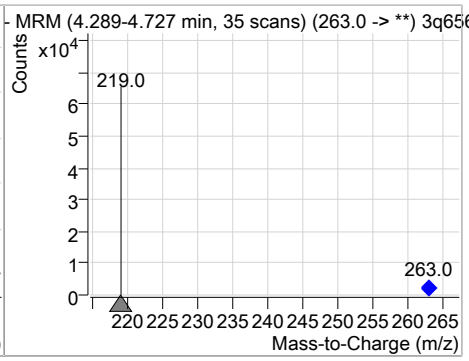


Perfluorinated Compounds by LC/MS/MS

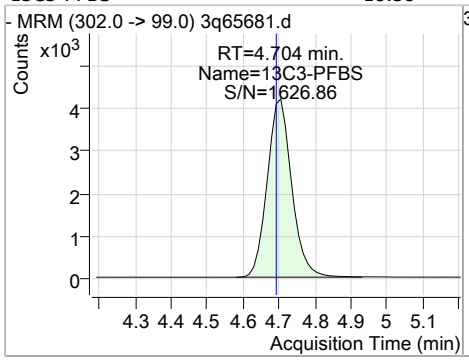
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	5.04	4.41	0.00	47211				

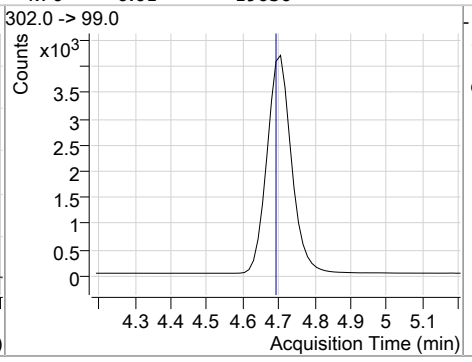


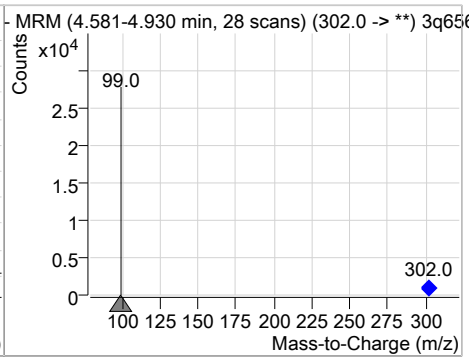




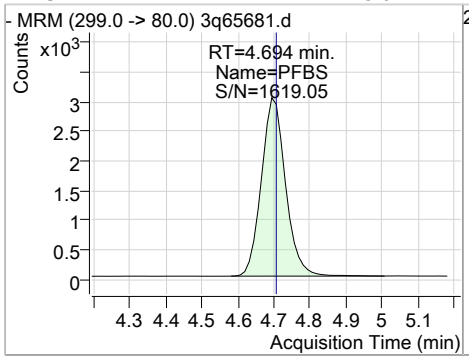
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.58	4.70	0.01	19656				

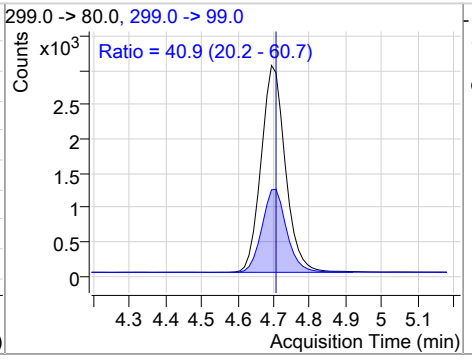


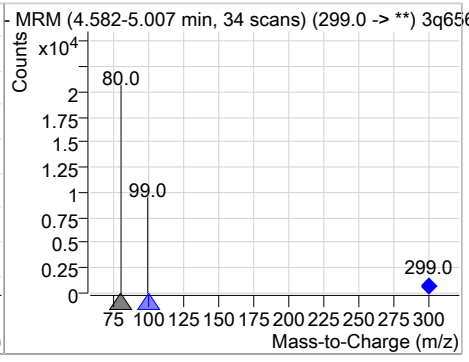




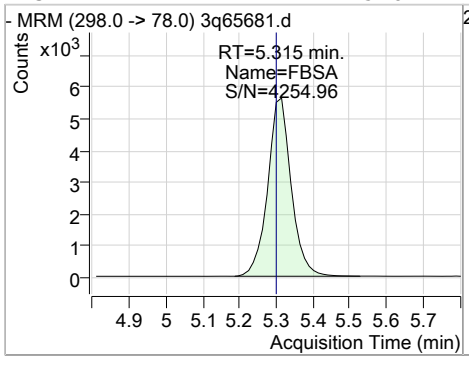
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.04	4.69	0.00	14086	299.0 -> 99.0	40.9	20.2	60.7

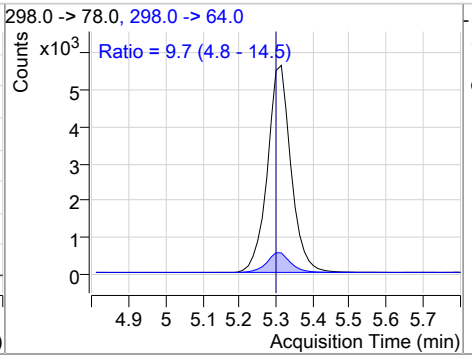


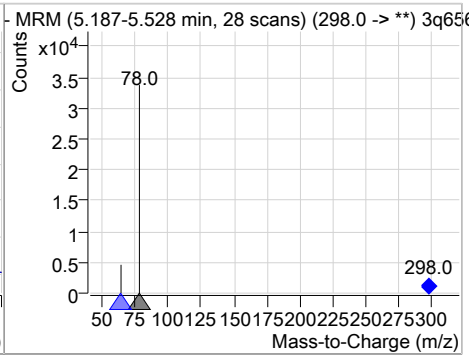




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	5.18	5.31	0.01	24879	298.0 -> 64.0	9.7	4.8	14.5

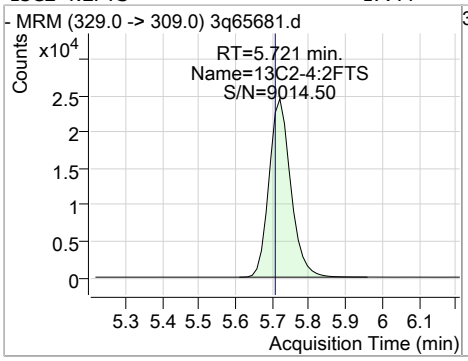


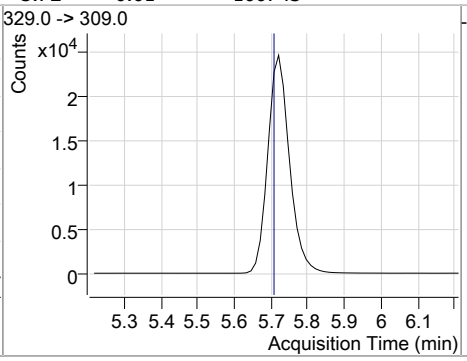


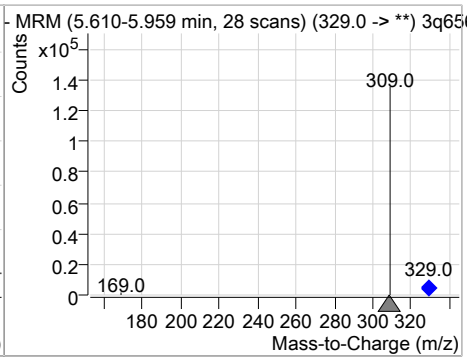


Perfluorinated Compounds by LC/MS/MS

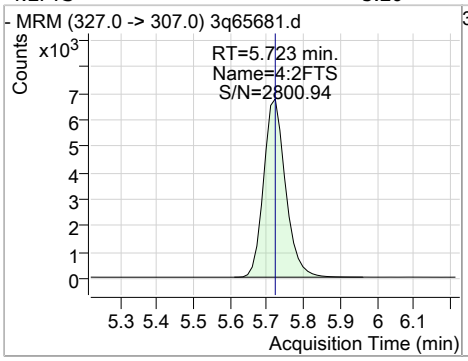
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.44	5.72	0.01	100743				

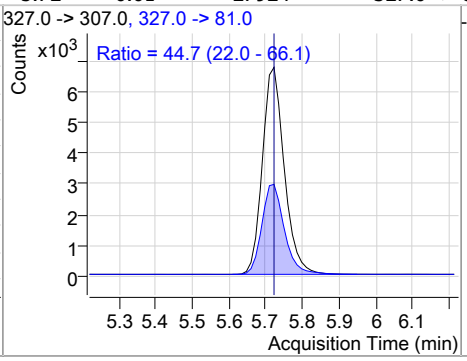


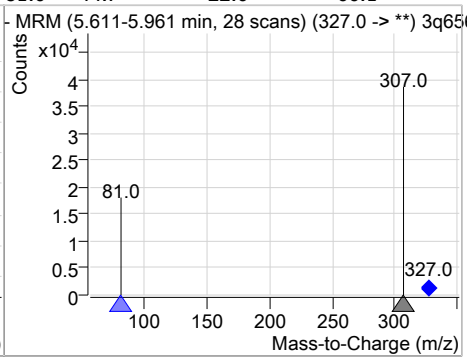




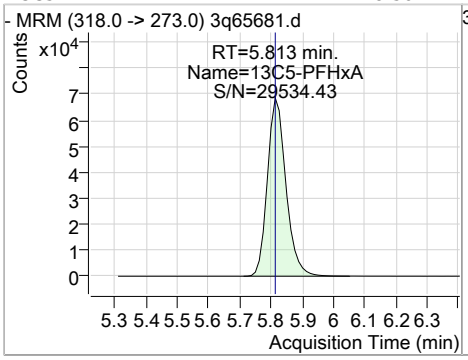
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.26	5.72	0.01	27924	327.0 -> 81.0	44.7	22.0	66.1

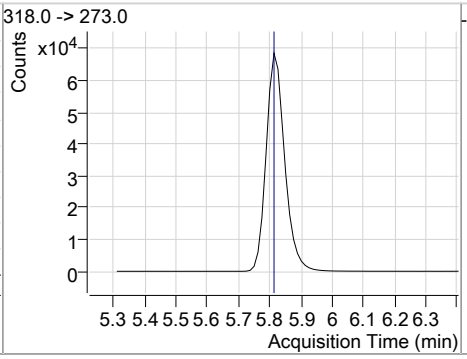


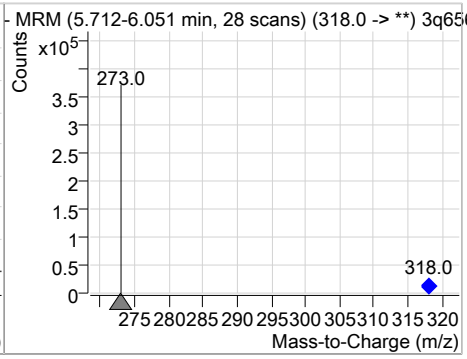




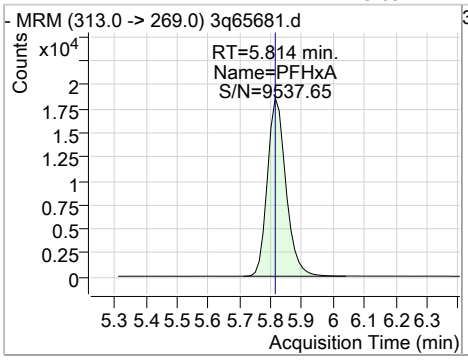
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.56	5.81	0.00	281787				

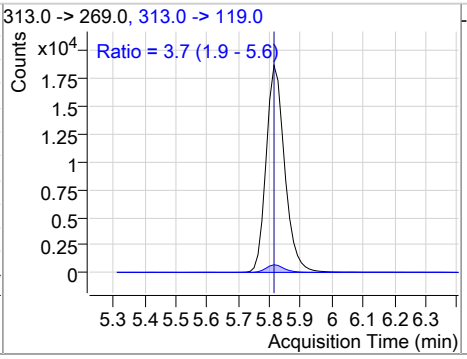


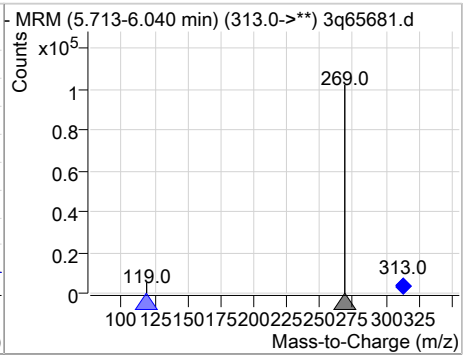




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	5.09	5.81	0.00	76506	313.0 -> 119.0	3.7	1.9	5.6

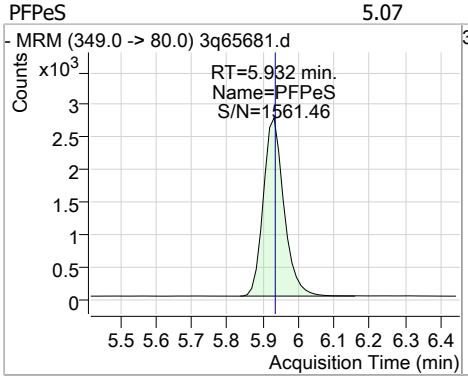


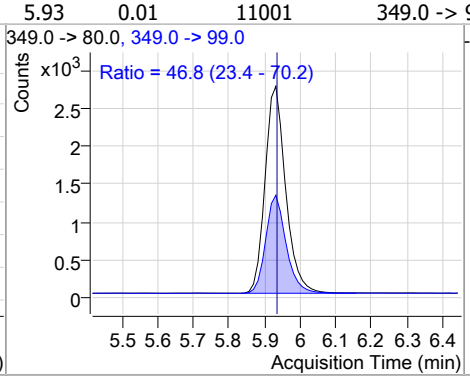


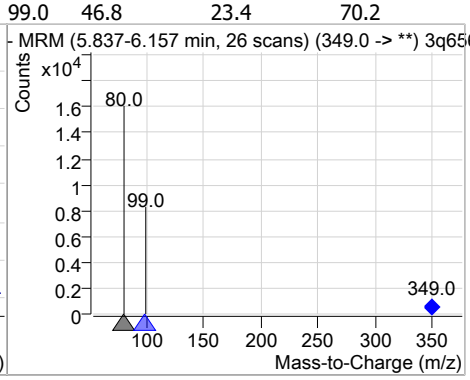


Perfluorinated Compounds by LC/MS/MS

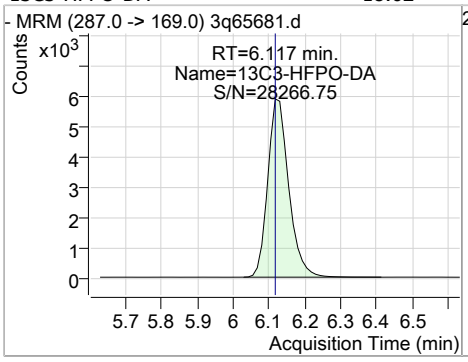
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	5.07	5.93	0.01	11001	349.0 -> 99.0	46.8	23.4	70.2

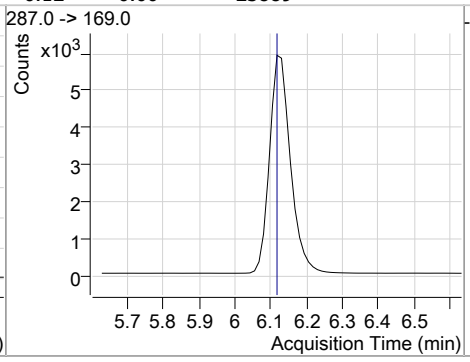


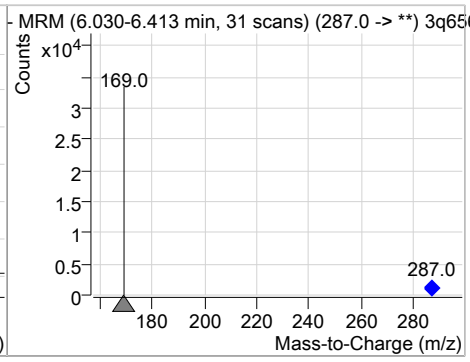




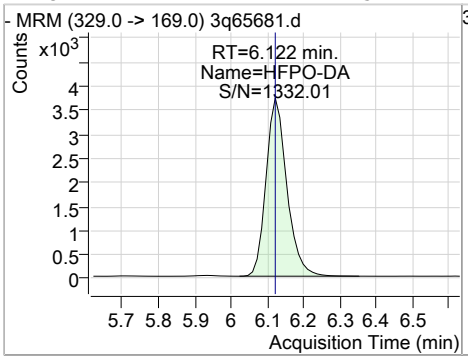
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.62	6.12	0.00	23889				

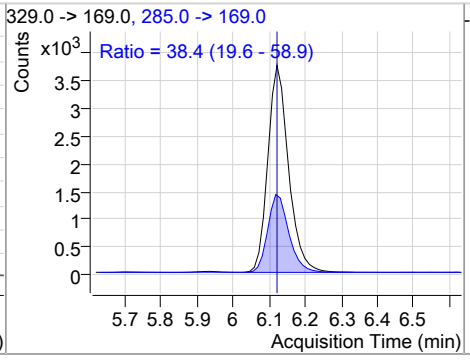


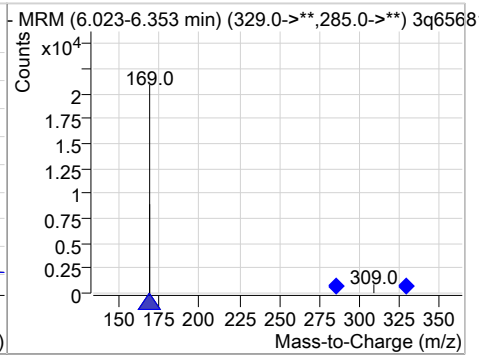




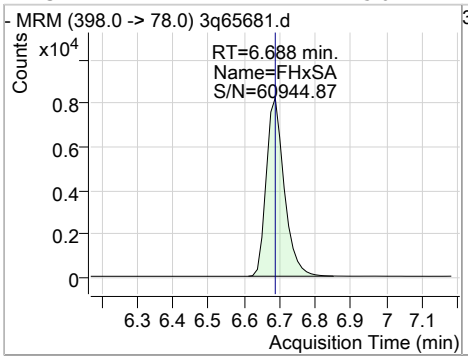
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.17	6.12	0.00	14720	285.0 -> 169.0	38.4	19.6	58.9

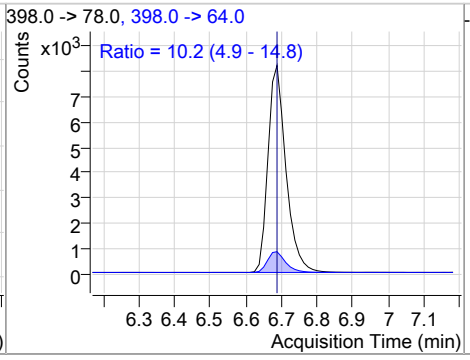


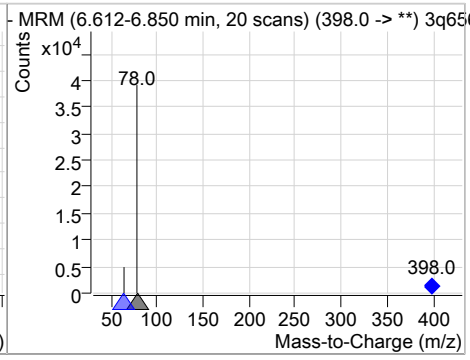




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	5.07	6.69	0.00	28585	398.0 -> 64.0	10.2	4.9	14.8

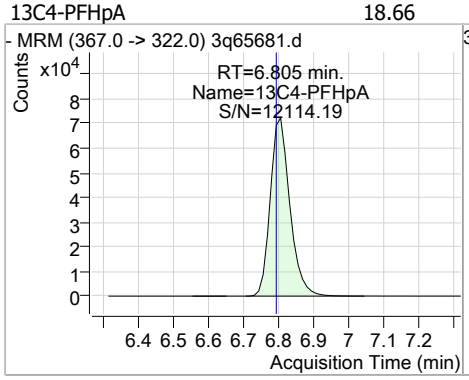


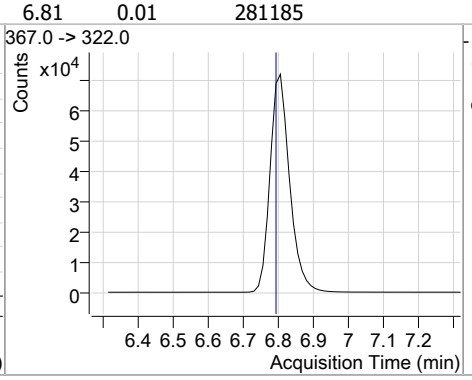


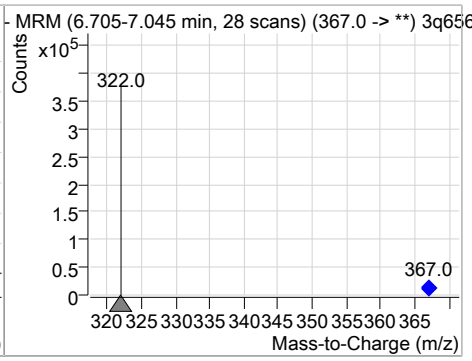


Perfluorinated Compounds by LC/MS/MS

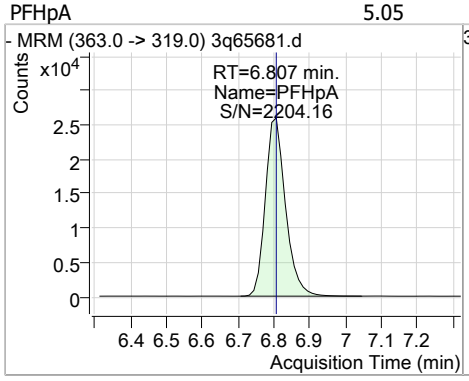
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.66	6.81	0.01	281185				

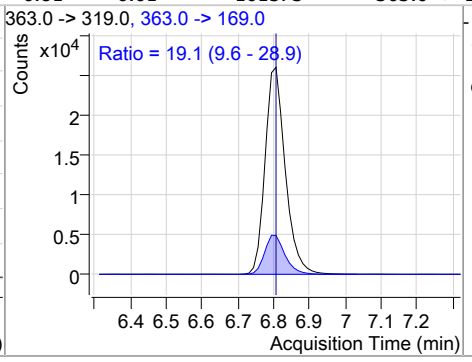


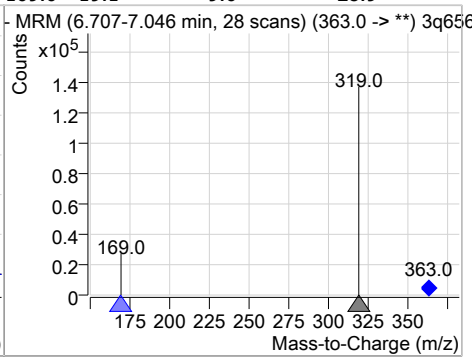




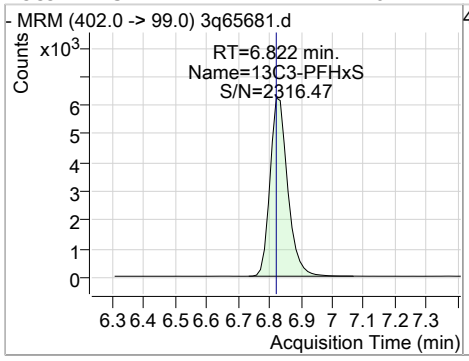
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.05	6.81	0.01	101573	363.0 -> 169.0	19.1	9.6	28.9

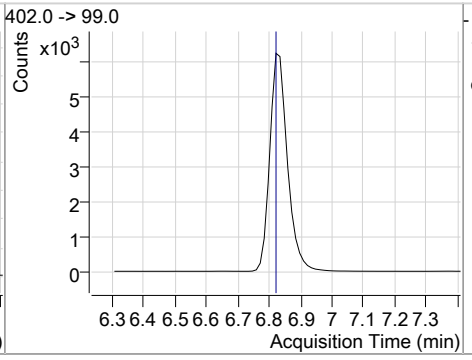


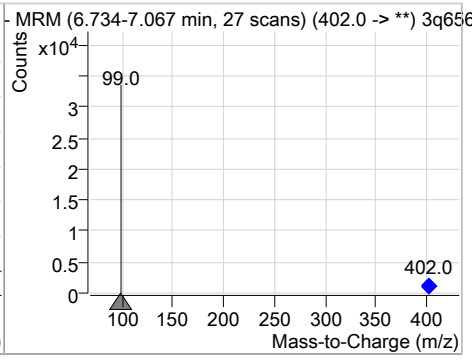




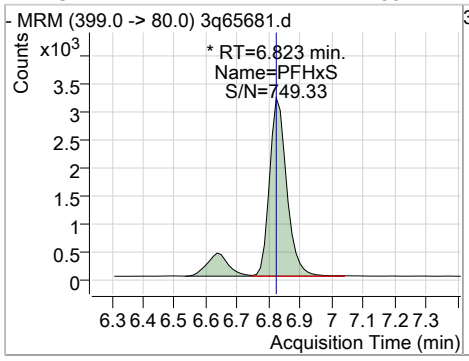
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.71	6.82	0.00	24180				

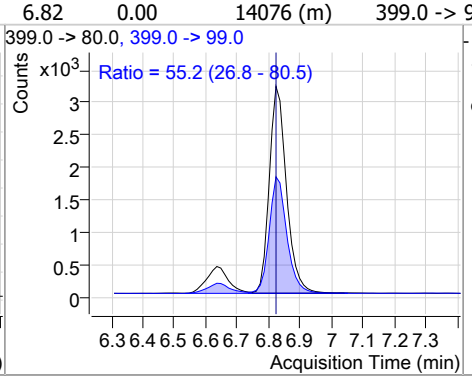


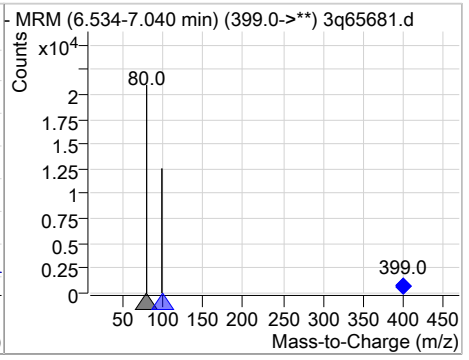




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.99	6.82	0.00	14076 (m)	399.0 -> 99.0	55.2	26.8	80.5

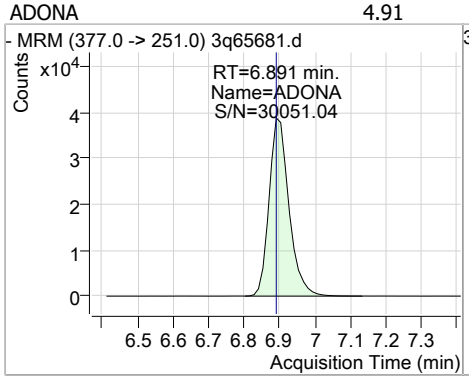


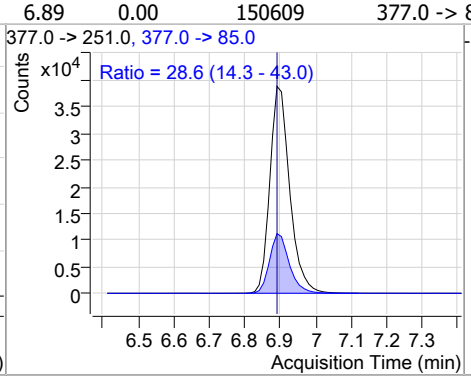


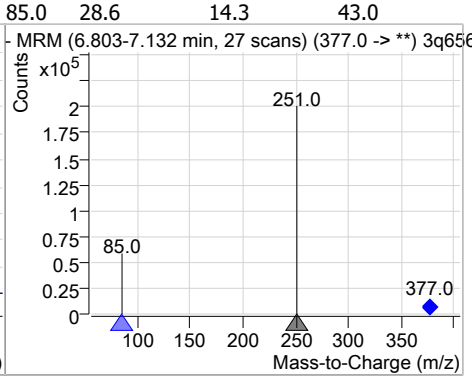


Perfluorinated Compounds by LC/MS/MS

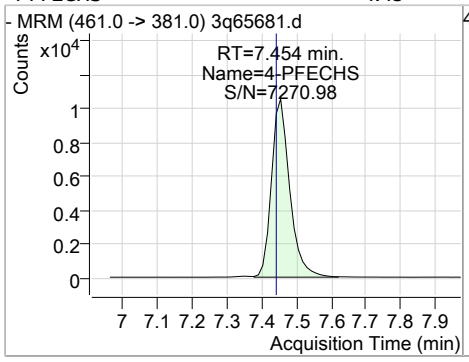
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.91	6.89	0.00	150609	377.0 -> 85.0	28.6	14.3	43.0

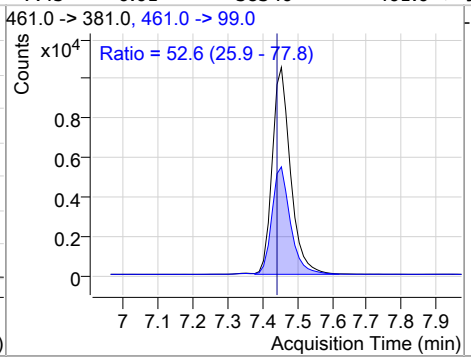


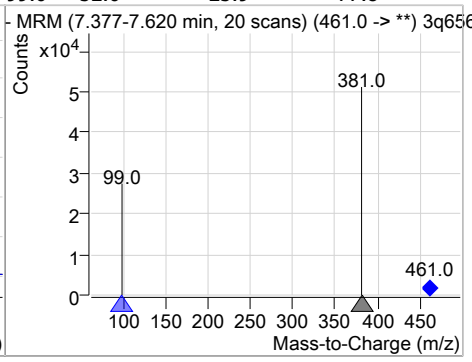




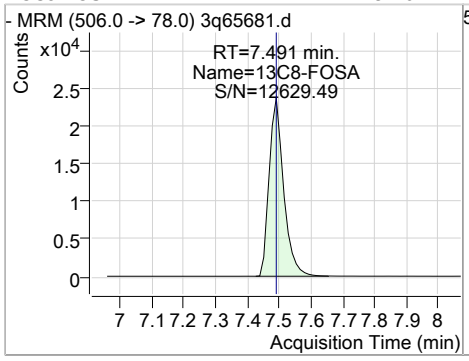
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.45	7.45	0.01	38346	461.0 -> 99.0	52.6	25.9	77.8

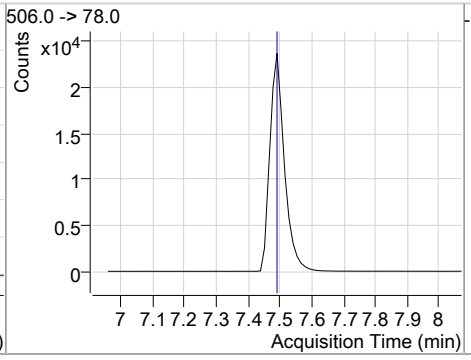


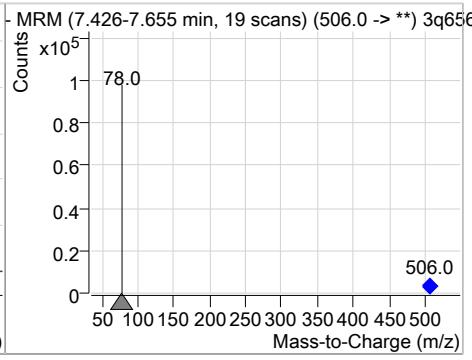




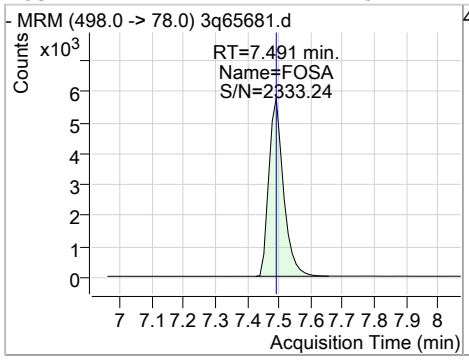
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.76	7.49	0.00	74651				

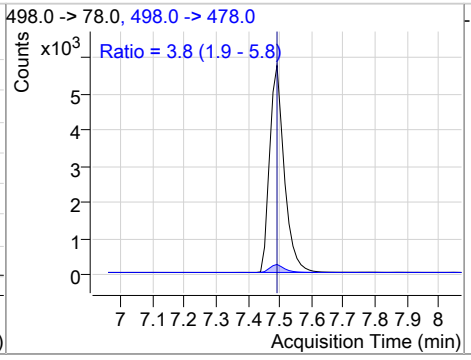


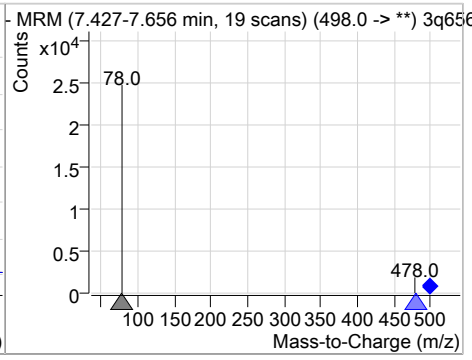




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.14	7.49	0.00	18272	498.0 -> 478.0	3.8	1.9	5.8

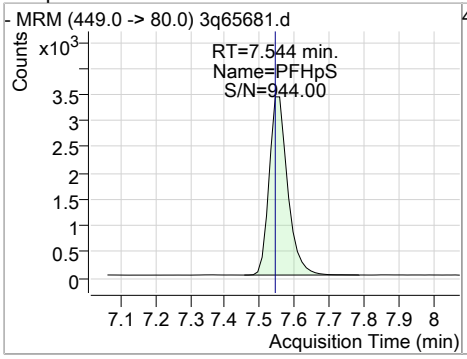


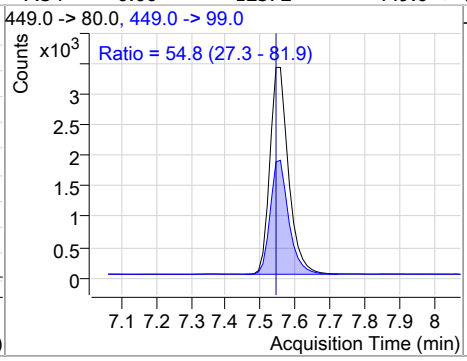


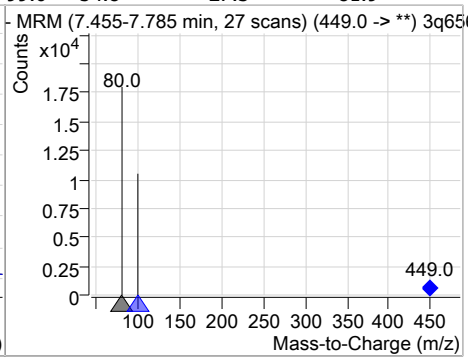


Perfluorinated Compounds by LC/MS/MS

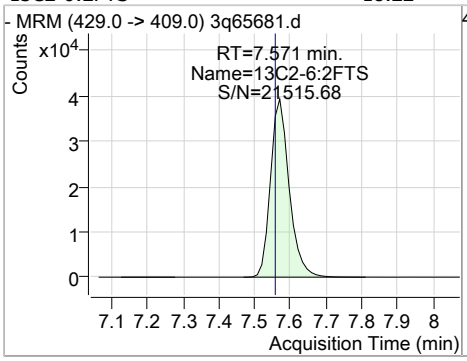
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.28	7.54	0.00	12572	449.0 -> 99.0	54.8	27.3	81.9

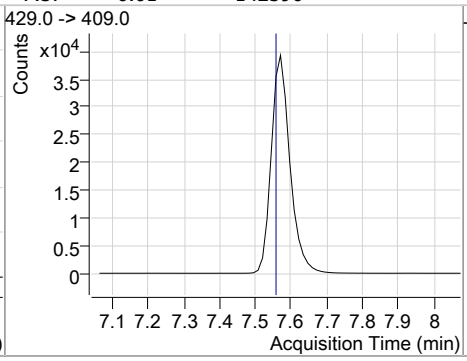


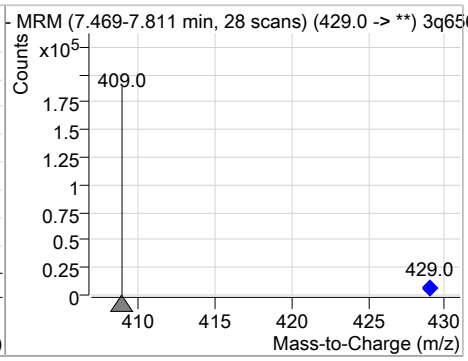




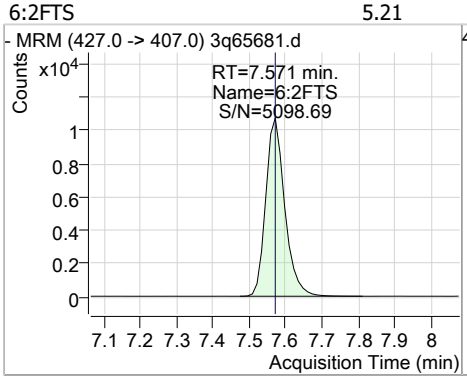
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.22	7.57	0.01	142590				

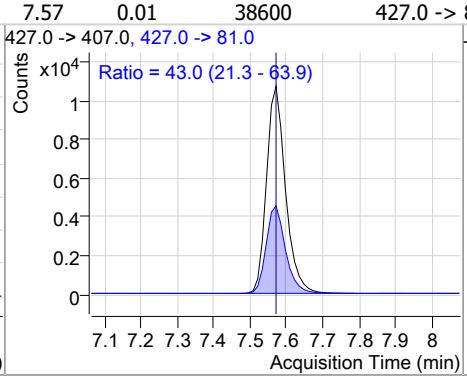


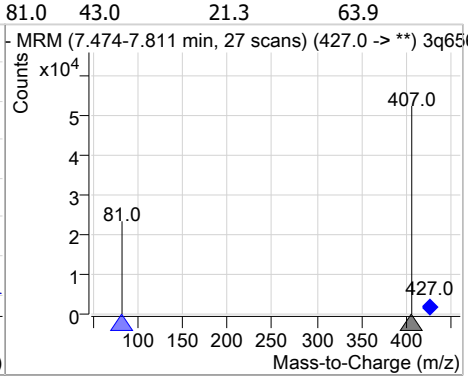




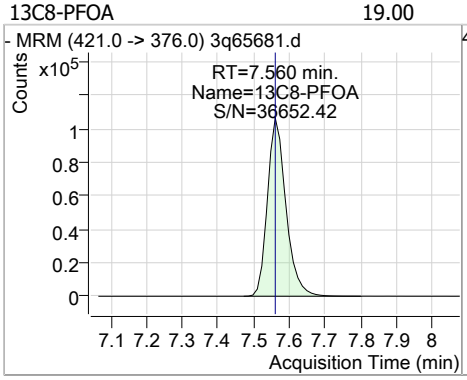
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.21	7.57	0.01	38600	427.0 -> 81.0	43.0	21.3	63.9

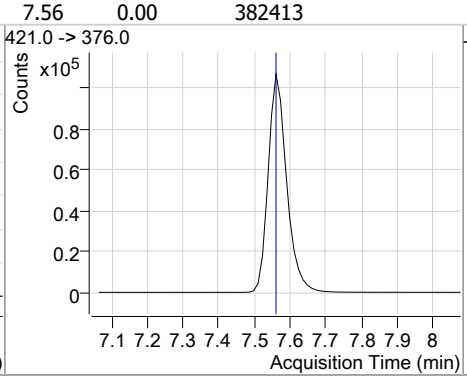


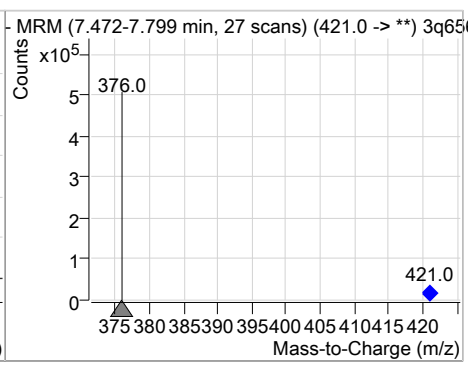




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.00	7.56	0.00	382413				

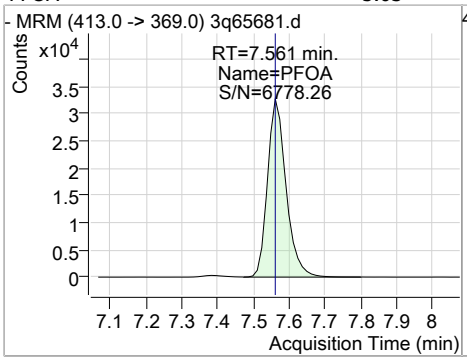


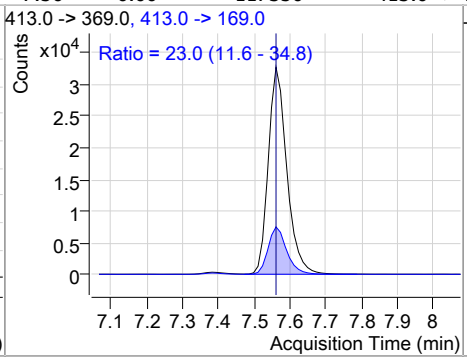


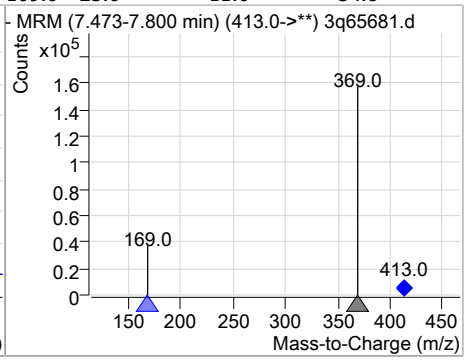


Perfluorinated Compounds by LC/MS/MS

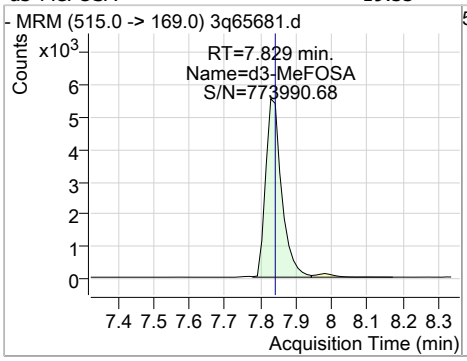
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	5.03	7.56	0.00	117350	413.0 -> 169.0	23.0	11.6	34.8

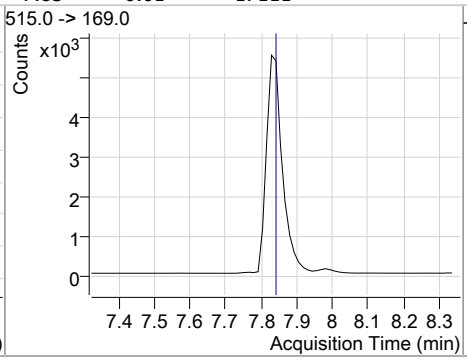


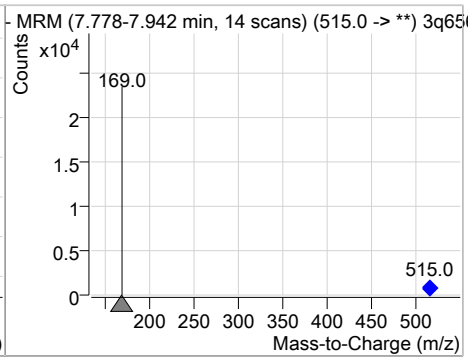




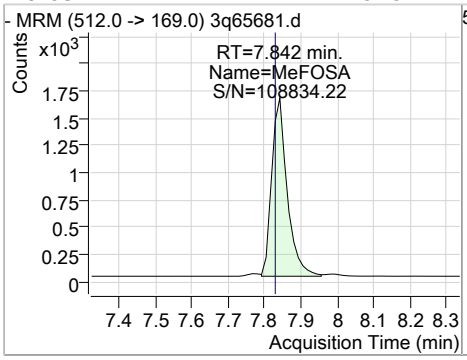
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.33	7.83	-0.01	17111				

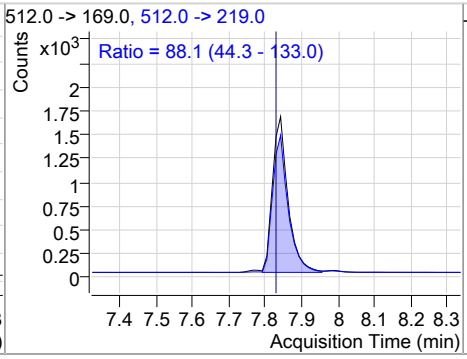


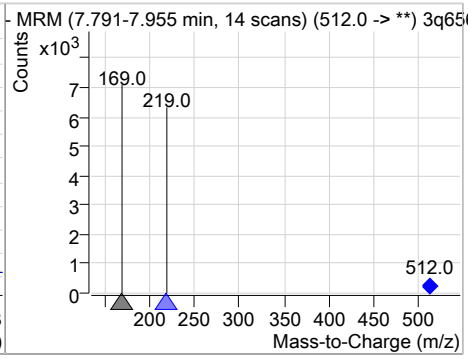




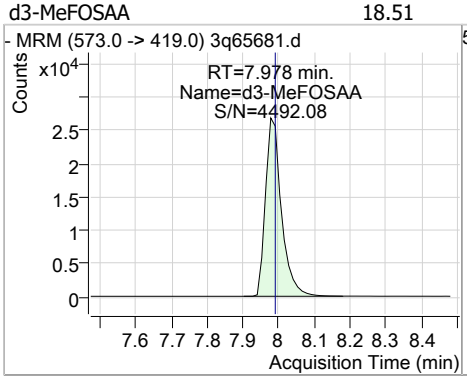
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.25	7.84	0.00	4838	512.0 -> 219.0	88.1	44.3	133.0

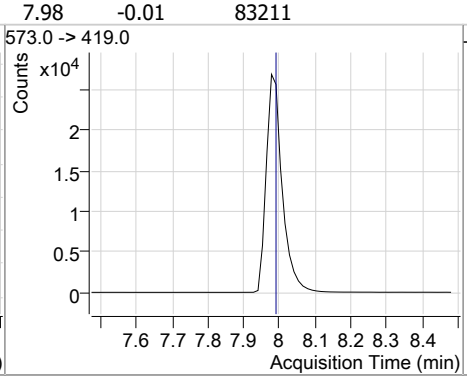


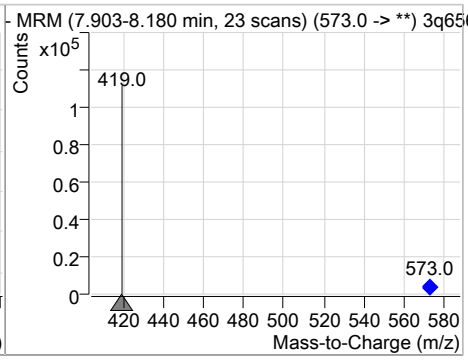




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.51	7.98	-0.01	83211				

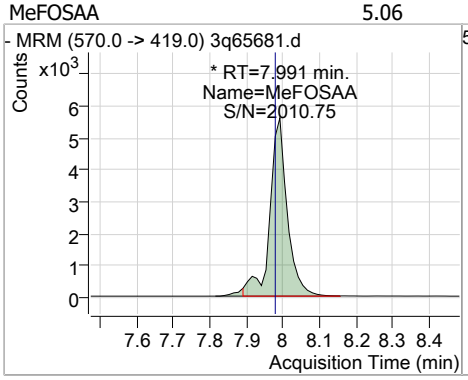


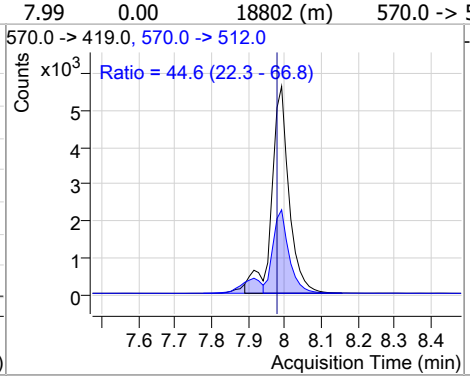


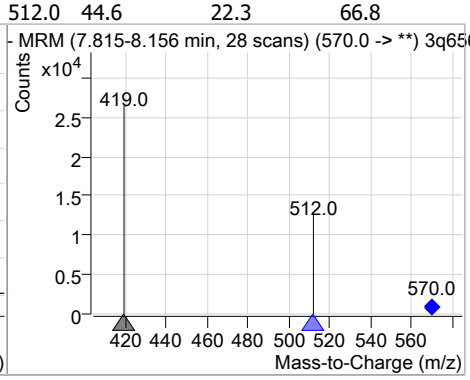


Perfluorinated Compounds by LC/MS/MS

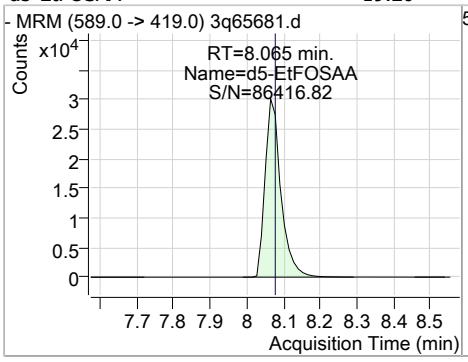
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.06	7.99	0.00	18802 (m)	570.0 -> 512.0	44.6	22.3	66.8

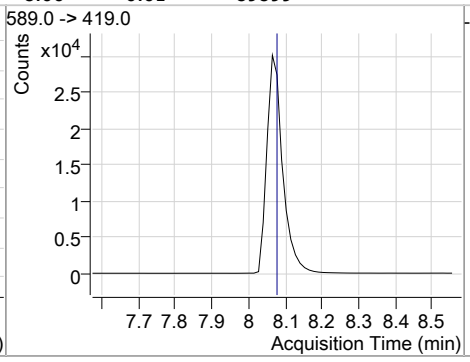


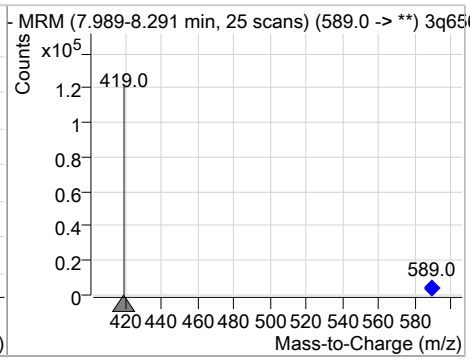




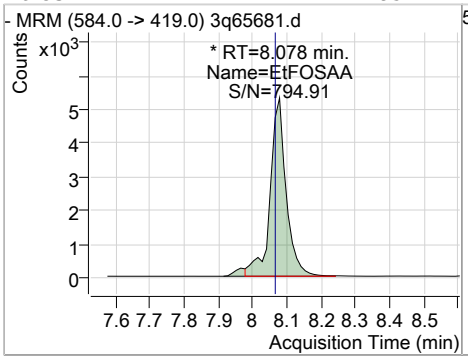
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.20	8.06	-0.01	89899				

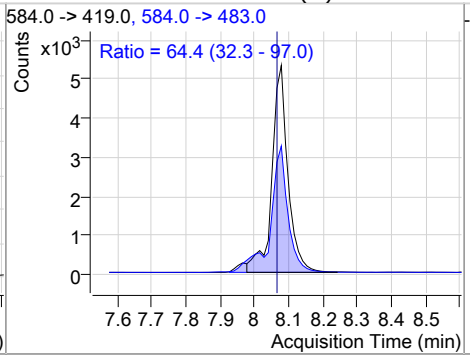


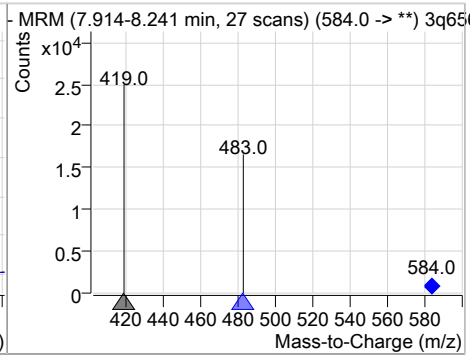




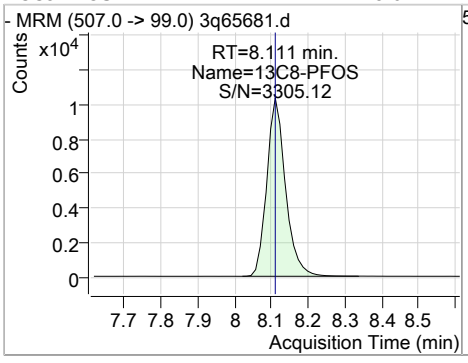
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.95	8.08	0.00	17746 (m)	584.0 -> 483.0	64.4	32.3	97.0

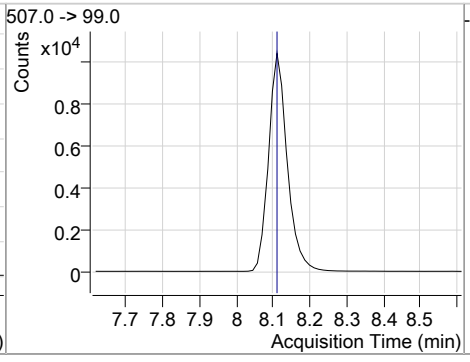


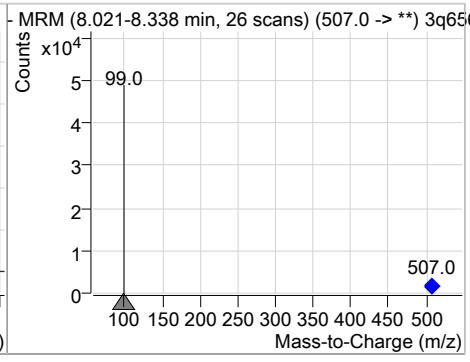




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.62	8.11	0.00	36535				

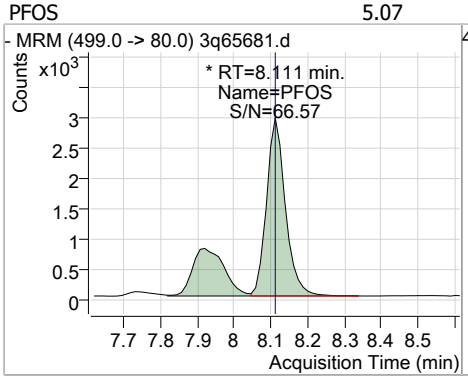


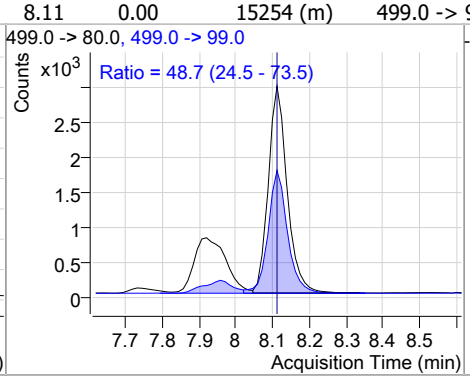


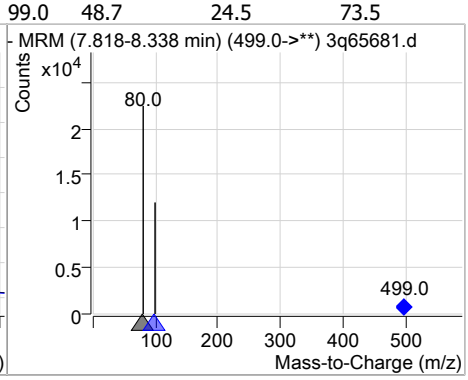


Perfluorinated Compounds by LC/MS/MS

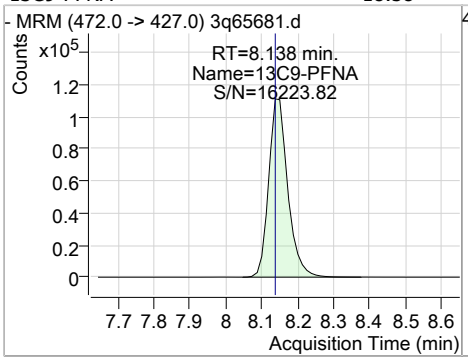
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	5.07	8.11	0.00	15254 (m)	499.0 -> 99.0	48.7	24.5	73.5

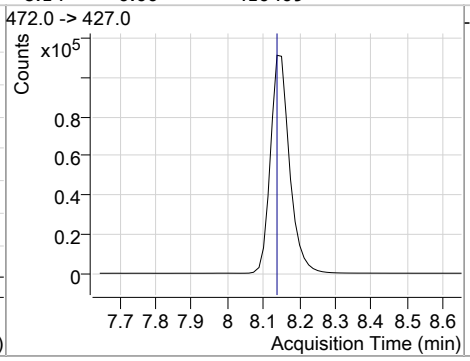


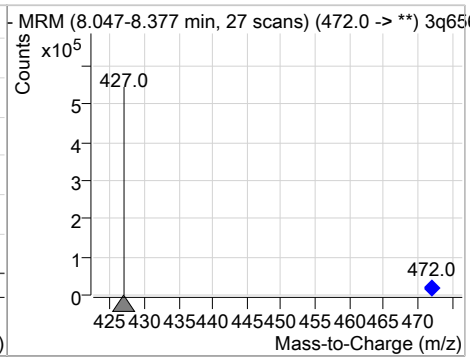




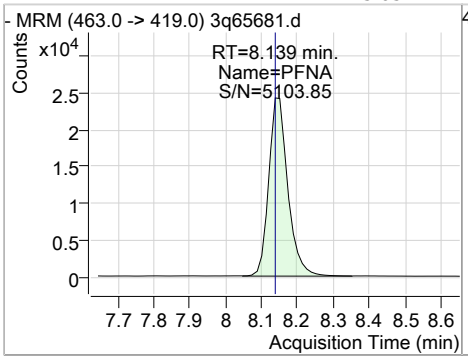
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.58	8.14	0.00	410409				

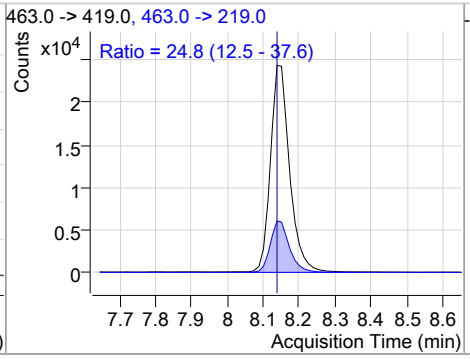


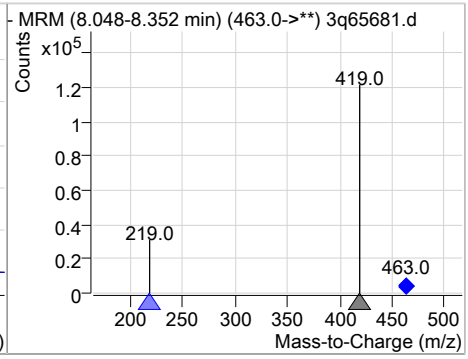




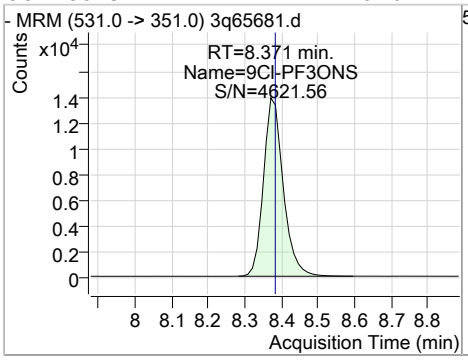
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	5.05	8.14	0.00	89767	463.0 -> 219.0	24.8	12.5	37.6

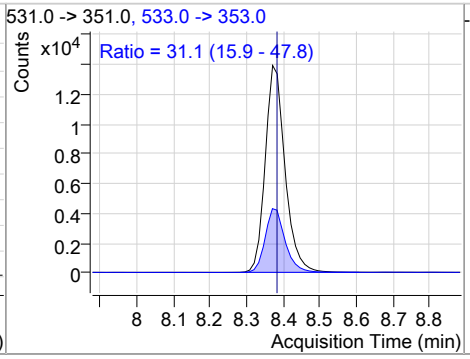


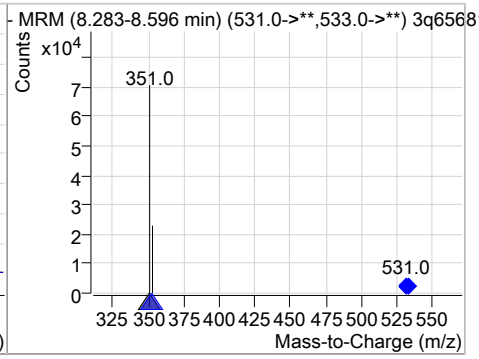




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	5.20	8.37	0.00	51985	533.0 -> 353.0	31.1	15.9	47.8

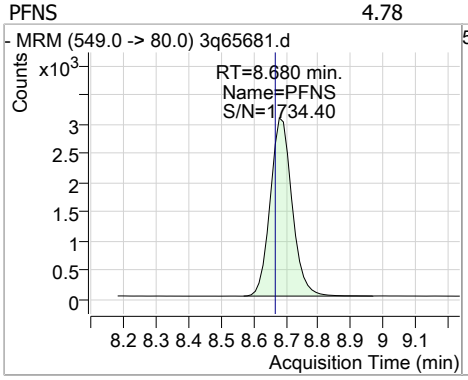


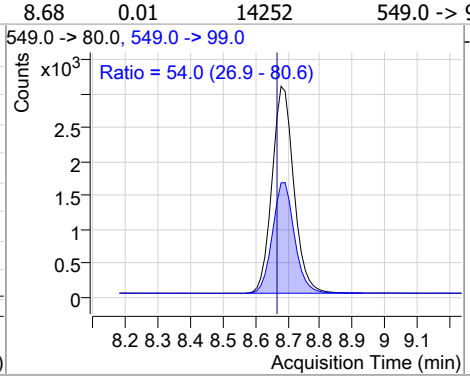


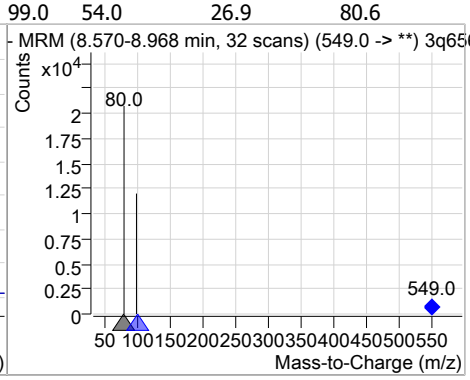


Perfluorinated Compounds by LC/MS/MS

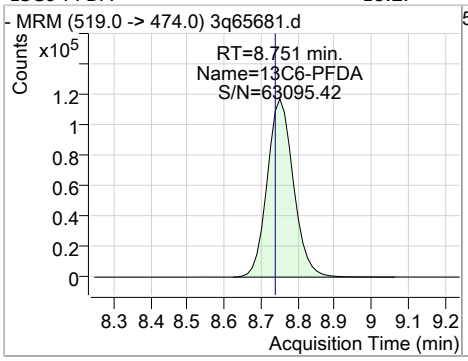
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.78	8.68	0.01	14252	549.0 -> 99.0	54.0	26.9	80.6

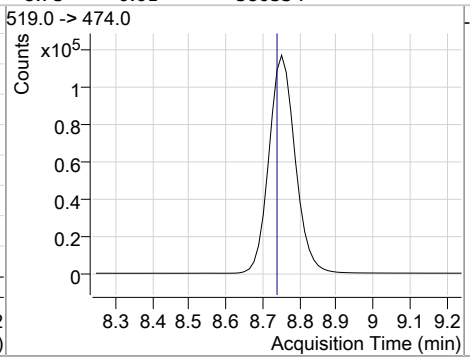


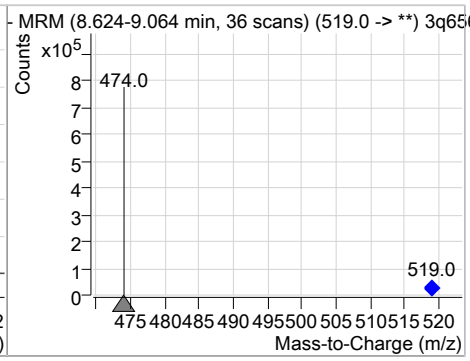




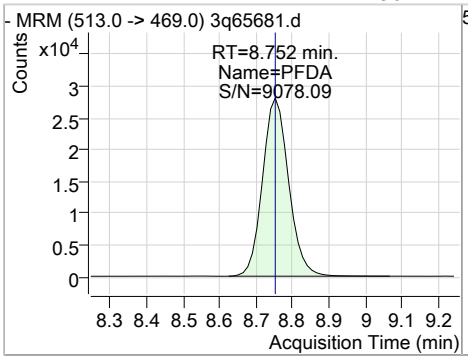
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.27	8.75	0.01	580534				

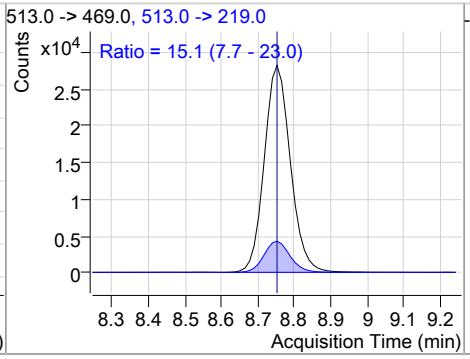


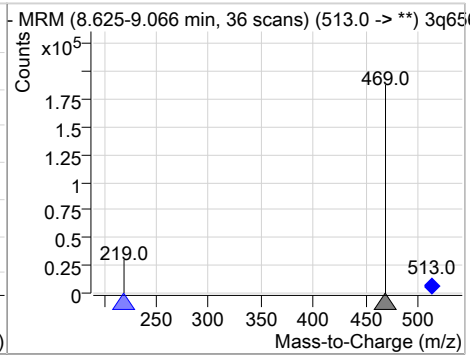




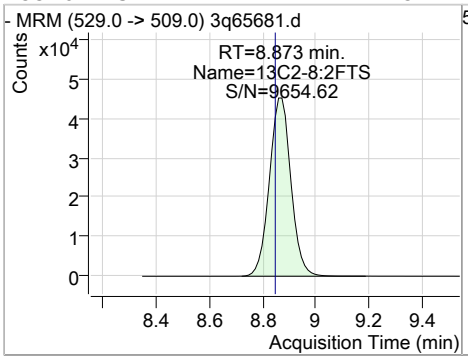
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.98	8.75	0.01	139432	513.0 -> 219.0	15.1	7.7	23.0

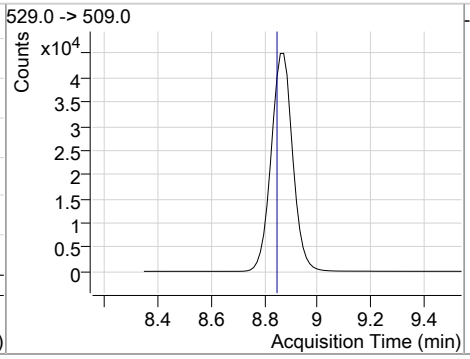


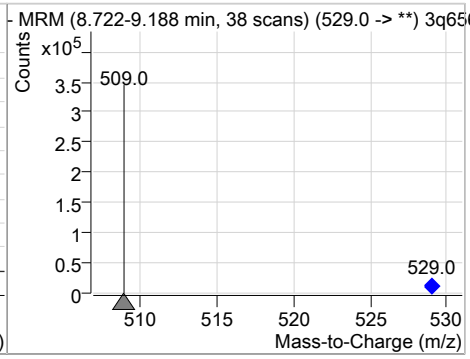




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.43	8.87	0.03	253364				

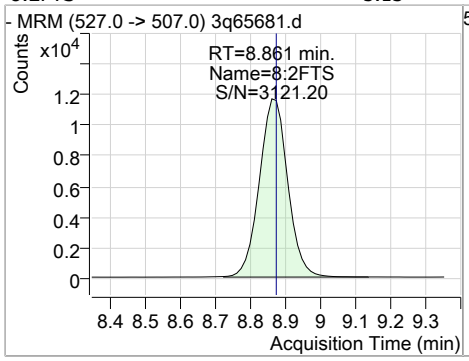


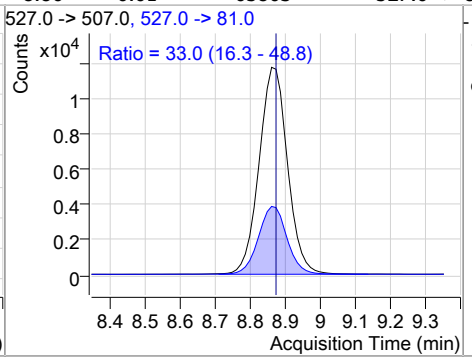


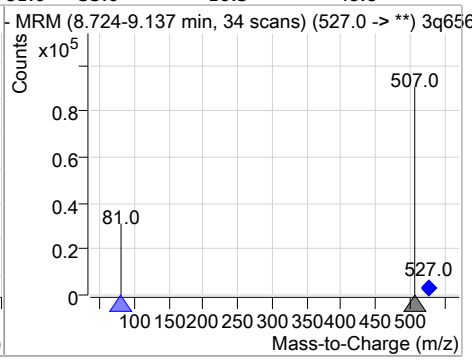


Perfluorinated Compounds by LC/MS/MS

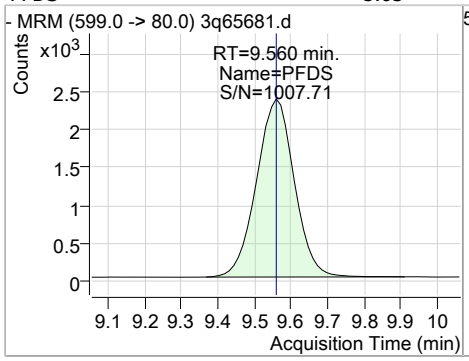
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.13	8.86	0.01	65803	527.0 -> 81.0	33.0	16.3	48.8

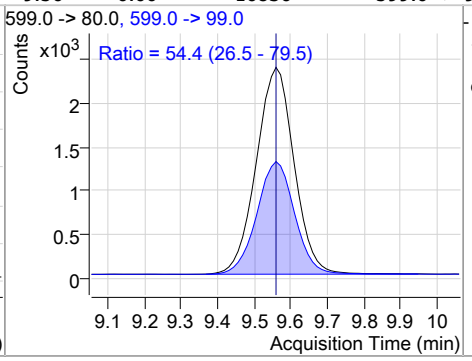


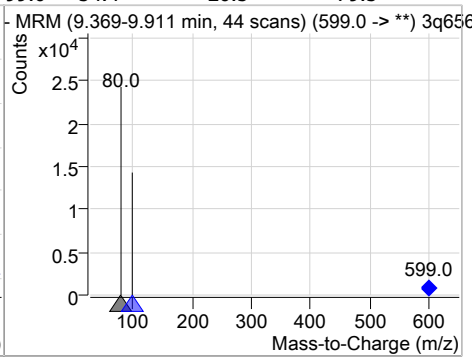




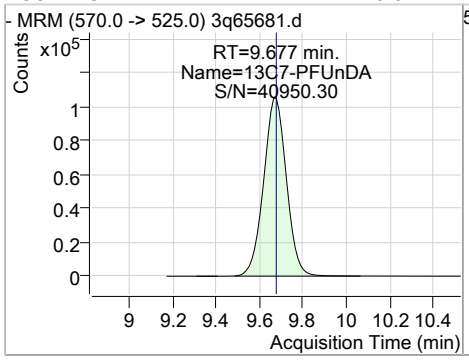
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.03	9.56	0.00	16836	599.0 -> 99.0	54.4	26.5	79.5

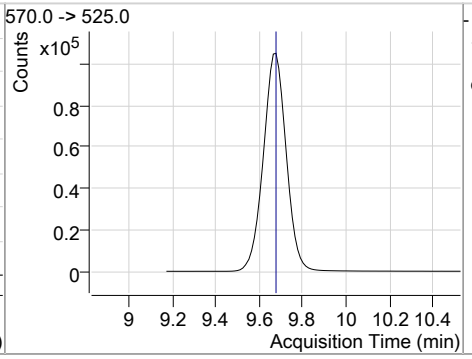


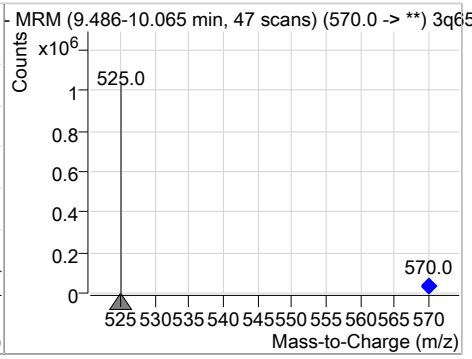




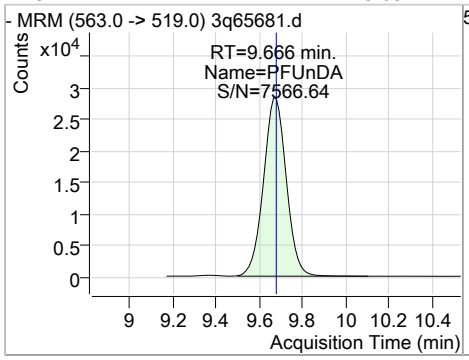
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.61	9.68	0.00	768414				

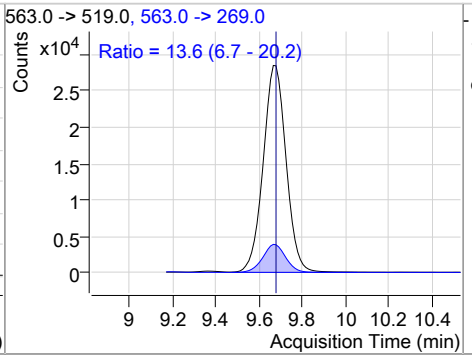


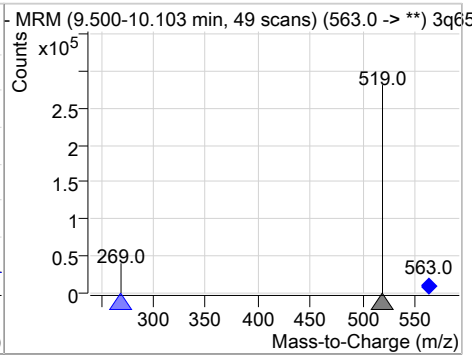




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	5.03	9.67	-0.01	208099	563.0 -> 269.0	13.6	6.7	20.2

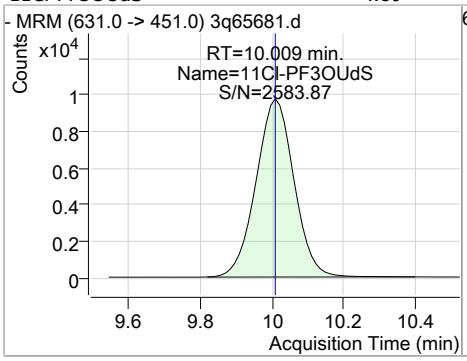


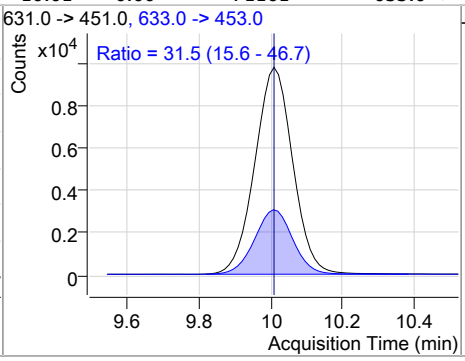


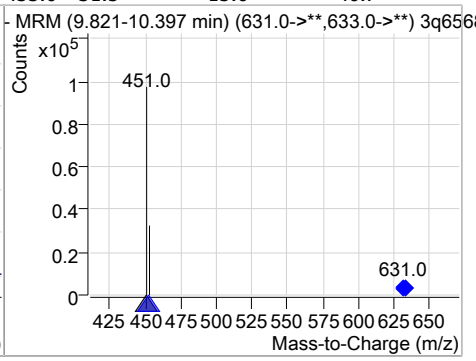


Perfluorinated Compounds by LC/MS/MS

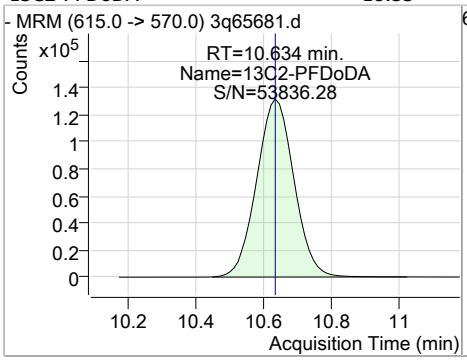
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.89	10.01	0.00	71161	633.0 -> 453.0	31.5	15.6	46.7

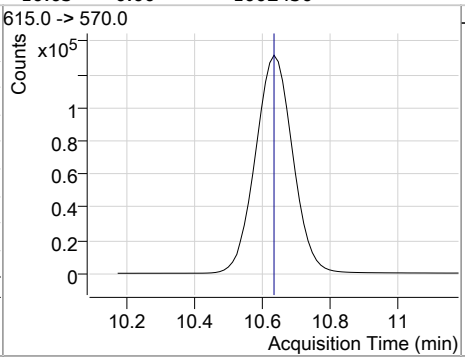


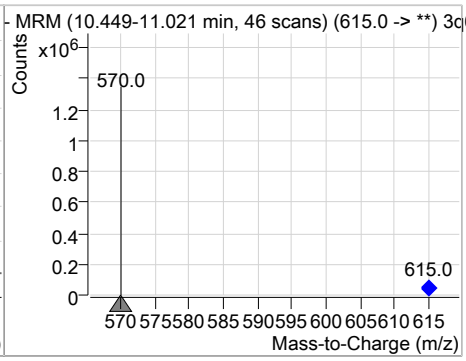




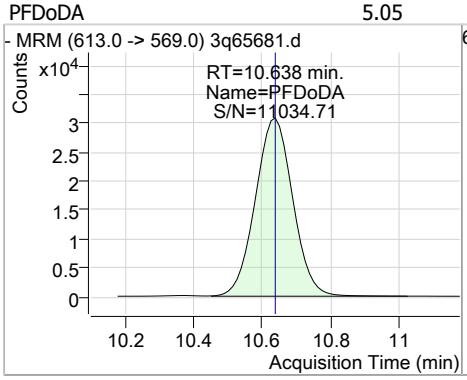
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.53	10.63	0.00	1002436				

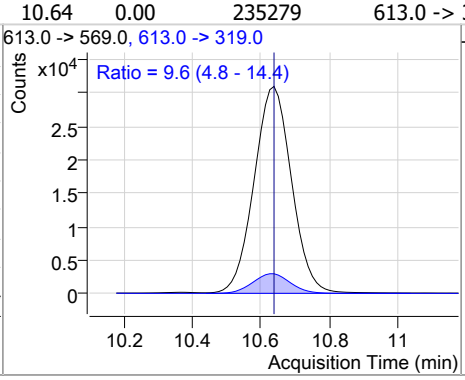


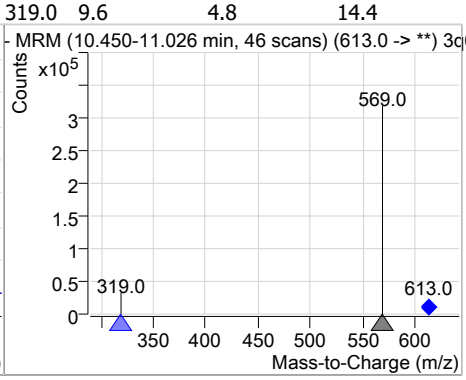




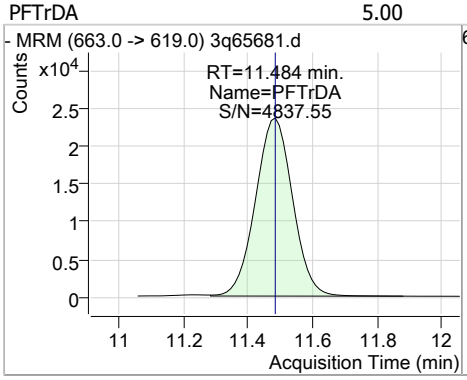
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	5.05	10.64	0.00	235279	613.0 -> 319.0	9.6	4.8	14.4

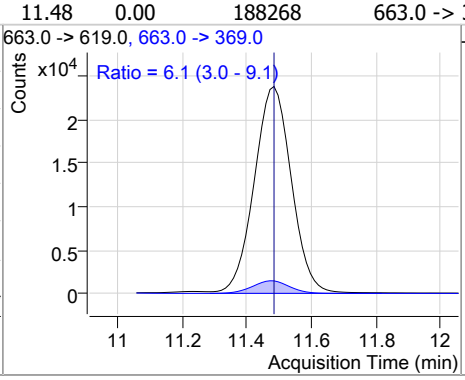


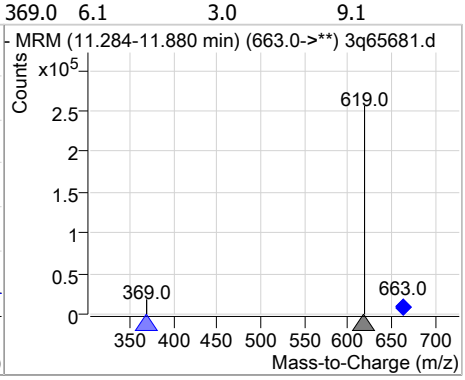




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.00	11.48	0.00	188268	663.0 -> 369.0	6.1	3.0	9.1

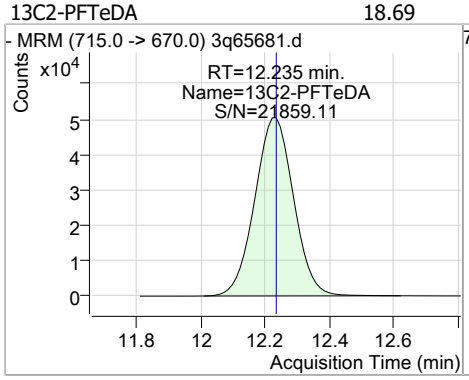


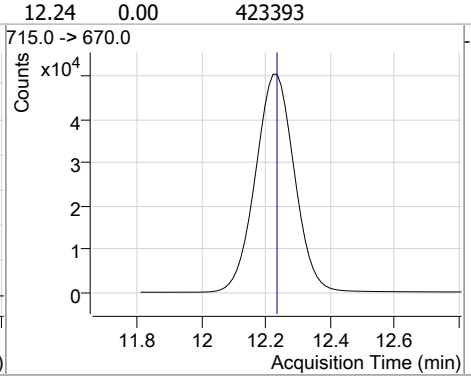


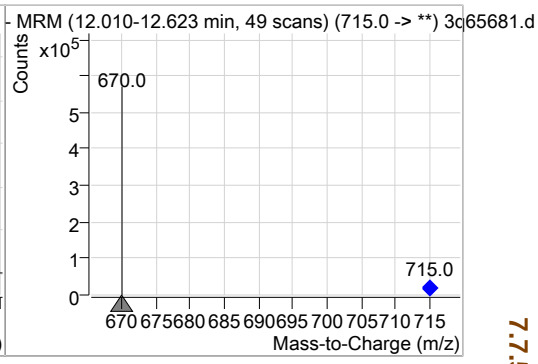


Perfluorinated Compounds by LC/MS/MS

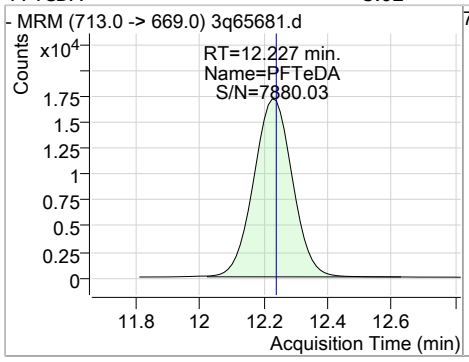
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.69	12.24	0.00	423393				

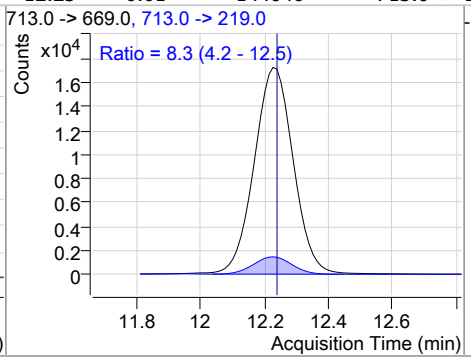


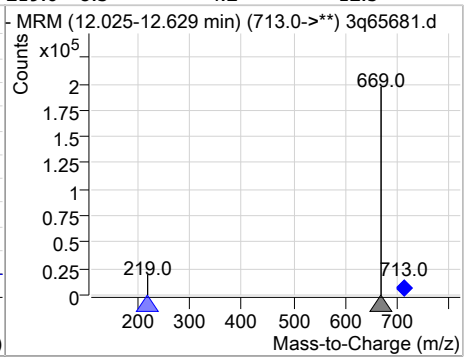




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	5.02	12.23	-0.01	144040	713.0 -> 219.0	8.3	4.2	12.5







7.7.5

7

Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65681.D
Injection Time: 09/13/22 16:48
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65682.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 5:08:33 PM
Sample Name : ic898-10
Vial : P1-A6
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

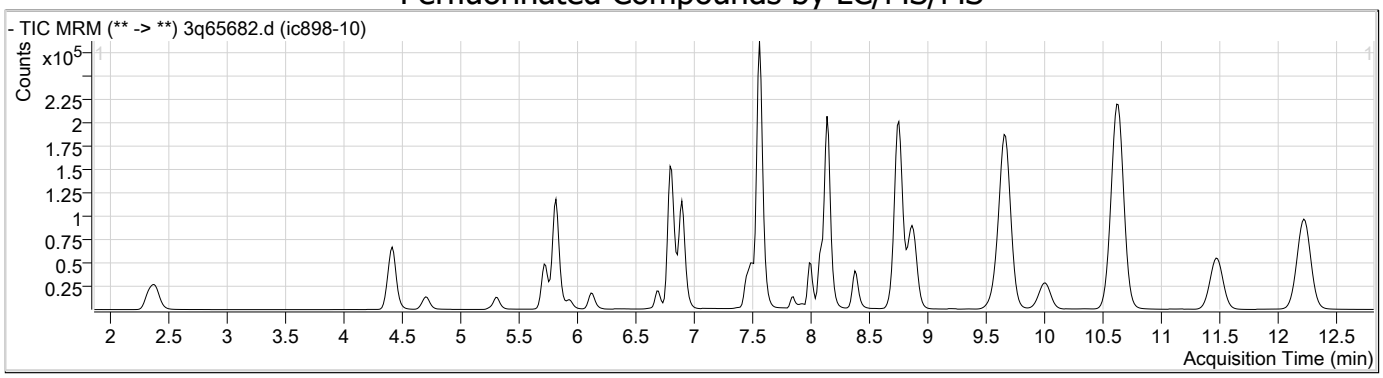
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	162169	20.00 µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	237238	20.00 µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	314343	20.00 µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	313866	20.00 µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	416080	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	449897	20.00 µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	638943	20.00 µg/L	0.013
M7-PFUnDA	9.652	570.0 -> 525.0	845984	20.00 µg/L	-0.025
M2-PFDoDA	10.621	615.0 -> 570.0	1118817	20.00 µg/L	-0.013
M2-PFTeDA	12.210	715.0 -> 670.0	467552	20.00 µg/L	-0.025
M8-FOSA	7.491	506.0 -> 78.0	81120	20.00 µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	21652	20.00 µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	26710	20.00 µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	40318	20.00 µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	114975	20.00 µg/L	0.000
M2-6:2FTS	7.571	429.0 -> 409.0	157346	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	286522	20.00 µg/L	0.013
M3-MeFOSAA	7.978	573.0 -> 419.0	93129	20.00 µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	26429	20.00 µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	18460	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	98482	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.708	329.0 -> 309.0	114975	19.91 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C2-6:2FTS	7.571	429.0 -> 409.0	157346	20.10 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C2-8:2FTS	8.860	529.0 -> 509.0	286522	19.71 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C2-PFDoDA	10.621	615.0 -> 570.0	1118817	20.68 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C2-PFTeDA	12.210	715.0 -> 670.0	467552	20.64 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C3-PFBS	4.692	302.0 -> 99.0	21652	20.46 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C3-PFHxS	6.822	402.0 -> 99.0	26710	20.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	2.365	217.0 -> 172.0	162169	20.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C4-PFHpA	6.793	367.0 -> 322.0	313866	20.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C5-PFHxA	5.813	318.0 -> 273.0	314343	20.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C5-PFPeA	4.411	268.0 -> 223.0	237238	20.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%	
13C6-PFDA	8.751	519.0 -> 474.0	638943	20.11 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

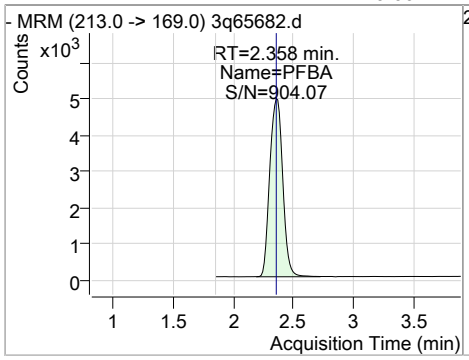
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C7-PFUnDA	9.652	570.0 -> 525.0	845984	20.49 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-FOSA	7.491	506.0 -> 78.0	81120	21.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C8-PFOA	7.560	421.0 -> 376.0	416080	20.67 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-PFOS	8.111	507.0 -> 99.0	40318	20.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C9-PFNA	8.138	472.0 -> 427.0	449897	20.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
d3-MeFOSAA	7.978	573.0 -> 419.0	93129	20.71 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C3-HFPO-DA	6.117	287.0 -> 169.0	26423	20.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
d3-MeFOSA	7.829	515.0 -> 169.0	18460	20.85 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
d5-EtFOSAA	8.065	589.0 -> 419.0	98537	21.05 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
Target Compounds						**QValue**
4:2FTS	5.710	327.0 -> 307.0	61198	10.10 µg/L		100
6:2FTS	7.559	427.0 -> 407.0	84024	10.28 µg/L		98
8:2FTS	8.861	527.0 -> 507.0	146252	10.08 µg/L		99
EtFOSAA	8.078	584.0 -> 419.0	38338	9.76 µg/L	m	97
FOSA	7.491	498.0 -> 78.0	38848	10.06 µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	40495	9.74 µg/L	m	97
PFBA	2.358	213.0 -> 169.0	37055	10.00 µg/L		100
PFBS	4.694	299.0 -> 80.0	30841	10.02 µg/L		100
PFDA	8.752	513.0 -> 469.0	303704	9.86 µg/L		100
PFDoDA	10.613	613.0 -> 569.0	516382	9.94 µg/L		100
PFDS	9.548	599.0 -> 80.0	36413	9.88 µg/L		99
PFHpA	6.794	363.0 -> 319.0	221687	9.87 µg/L		100
PFHpS	7.544	449.0 -> 80.0	27509	10.46 µg/L		99
PFHxA	5.814	313.0 -> 269.0	167118	9.97 µg/L		100
PFHxS	6.823	399.0 -> 80.0	31120	9.99 µg/L	m	99
PFNA	8.139	463.0 -> 419.0	195009	10.01 µg/L		100
PFNS	8.680	549.0 -> 80.0	30896	9.40 µg/L		99
PFOA	7.561	413.0 -> 369.0	251471	9.90 µg/L		100
PFOS	8.111	499.0 -> 80.0	33283	10.02 µg/L	m	100
PFPeA	4.414	263.0 -> 219.0	103577	10.00 µg/L		100
PFPeS	5.919	349.0 -> 80.0	24106	10.09 µg/L		99
PFTeDA	12.214	713.0 -> 669.0	317612	10.03 µg/L		100
PFTrDA	11.459	663.0 -> 619.0	414951	9.98 µg/L		100
PFUnDA	9.653	563.0 -> 519.0	451996	9.92 µg/L		100
11Cl-PF3OUdS	9.997	631.0 -> 451.0	157678	9.71 µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	113202	10.29 µg/L		100
ADONA	6.891	377.0 -> 251.0	328435	9.70 µg/L		99
HFPO-DA	6.122	329.0 -> 169.0	31747	10.08 µg/L		100
MeFOSA	7.842	512.0 -> 169.0	10238	10.30 µg/L		97
4-PFECHS	7.441	461.0 -> 381.0	85872	9.15 µg/L		100
FBSA	5.300	298.0 -> 78.0	54596	10.19 µg/L		100
FHxSA	6.675	398.0 -> 78.0	63316	10.32 µg/L		100

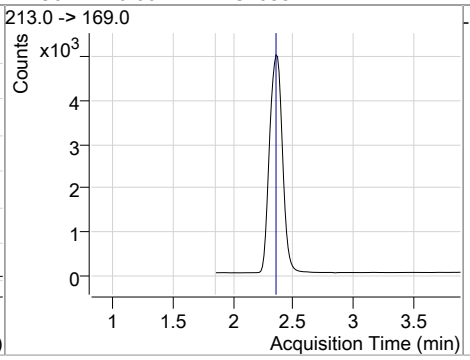
 # = Qualifier out of range, m = manually integrated, + = Area summed

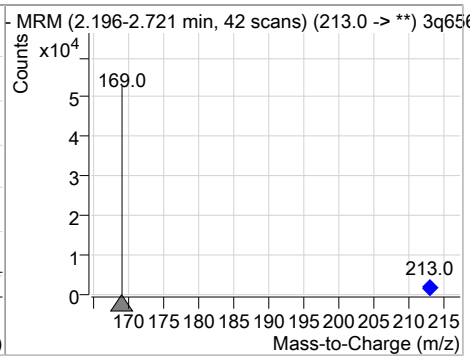
Perfluorinated Compounds by LC/MS/MS



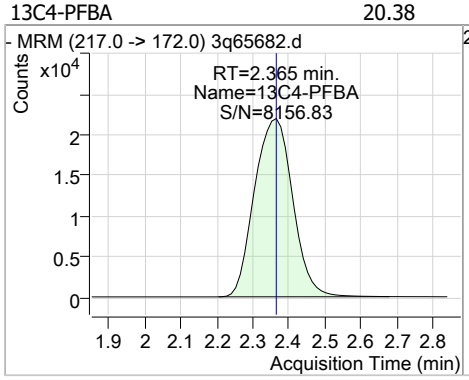
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.00	2.36	0.00	37055				

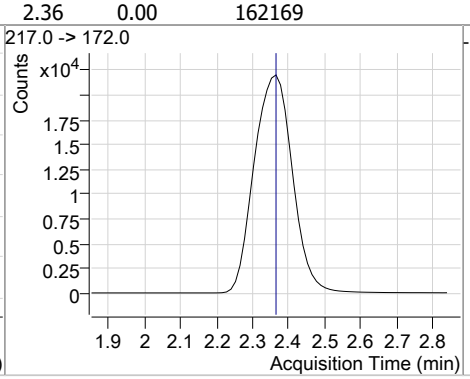


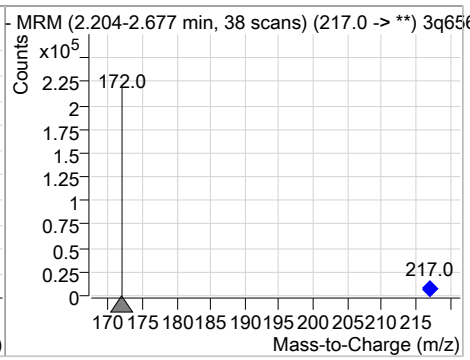




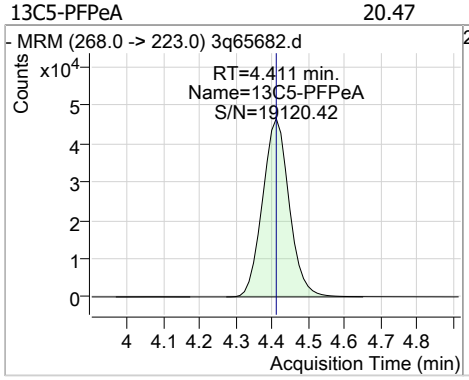
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.38	2.36	0.00	162169				

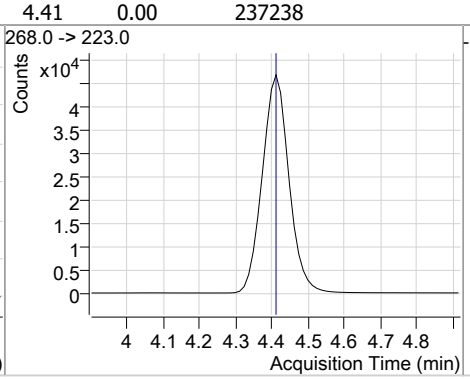


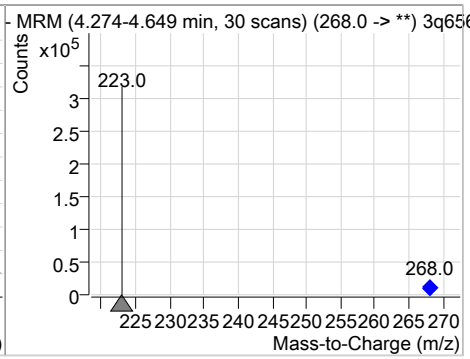




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.47	4.41	0.00	237238				

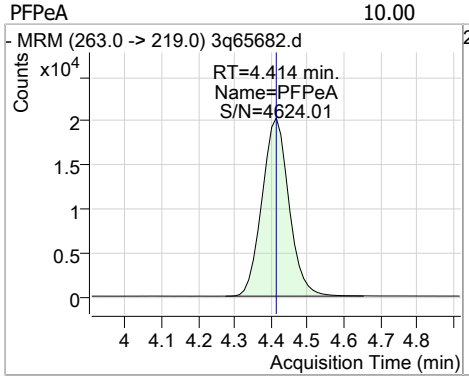


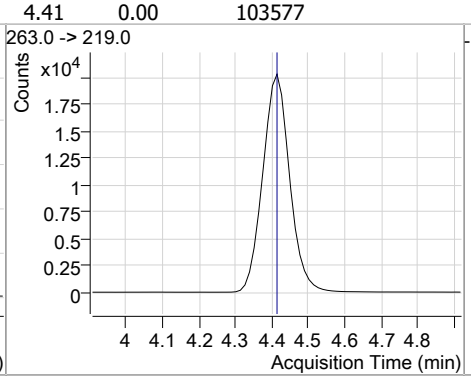


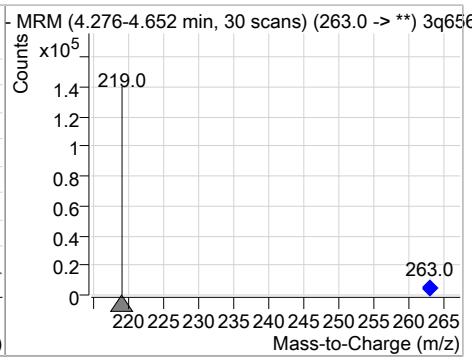


Perfluorinated Compounds by LC/MS/MS

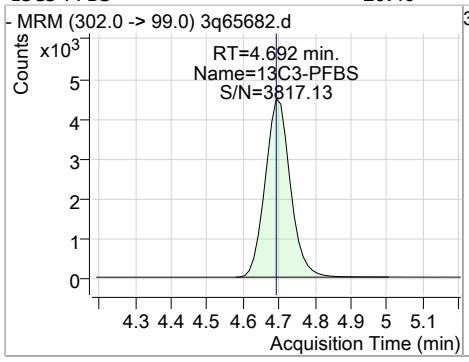
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.00	4.41	0.00	103577				

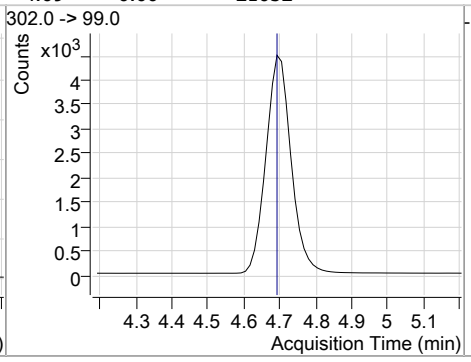


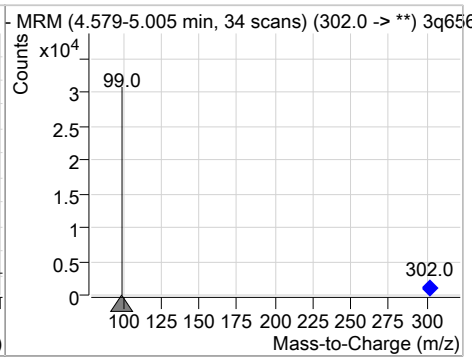




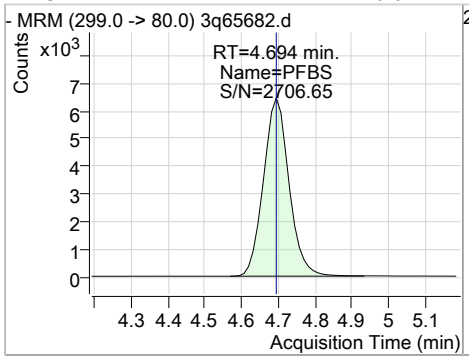
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.46	4.69	0.00	21652				

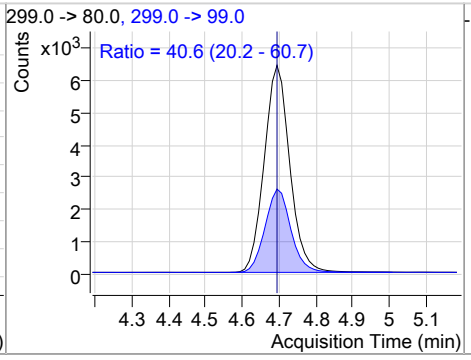


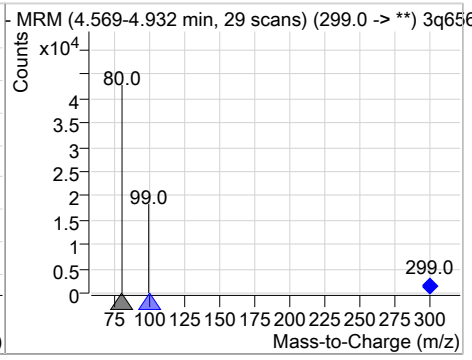




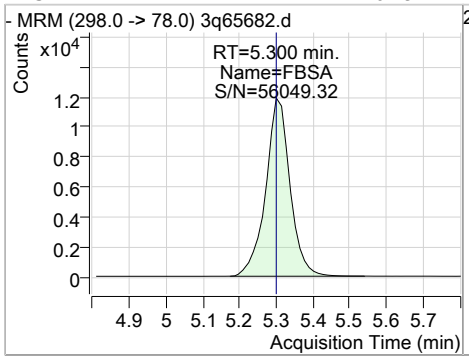
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.02	4.69	0.00	30841	299.0 -> 99.0	40.6	20.2	60.7

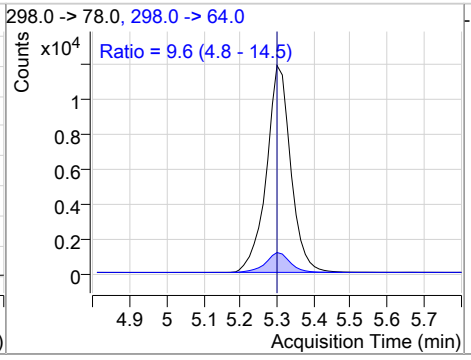


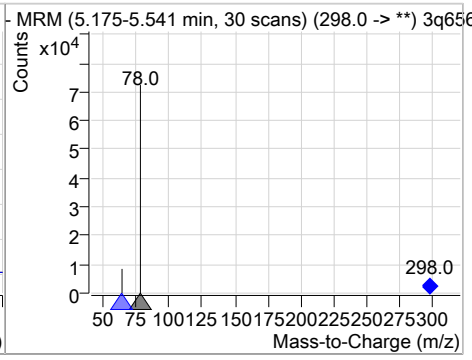




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.19	5.30	0.00	54596	298.0 -> 64.0	9.6	4.8	14.5

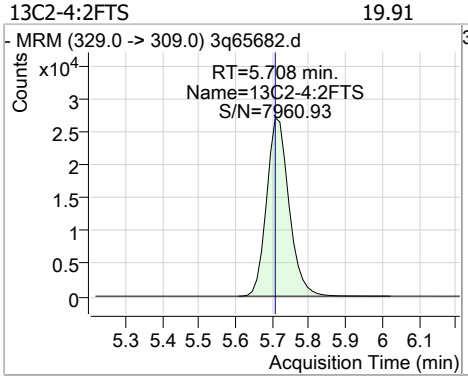


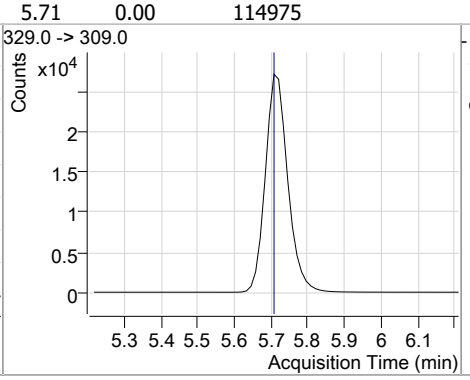


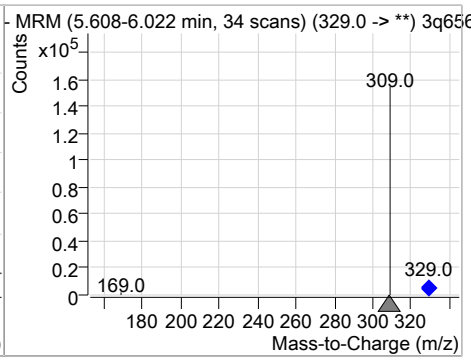


Perfluorinated Compounds by LC/MS/MS

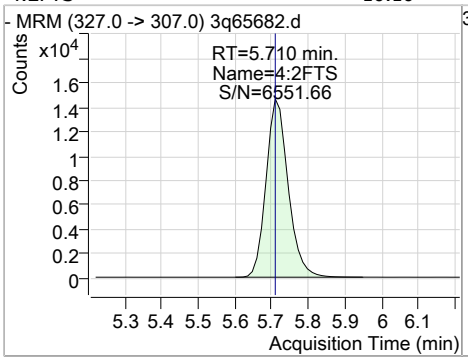
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.91	5.71	0.00	114975				

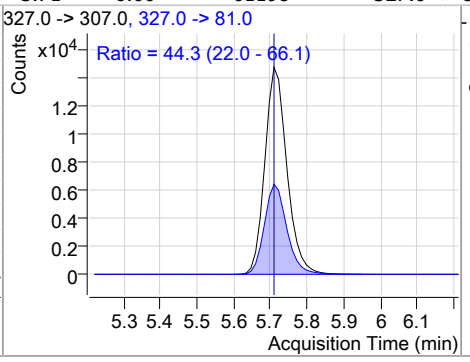


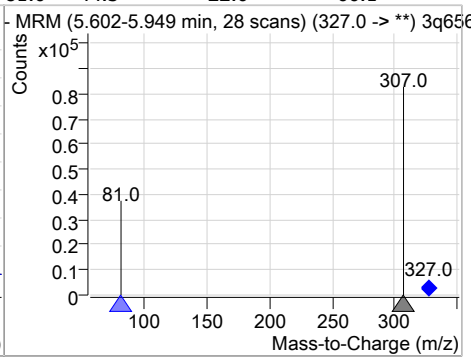




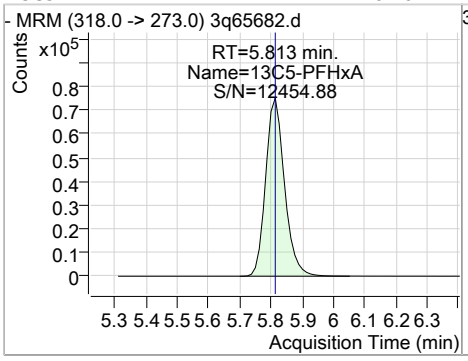
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.10	5.71	0.00	61198	327.0 -> 81.0	44.3	22.0	66.1

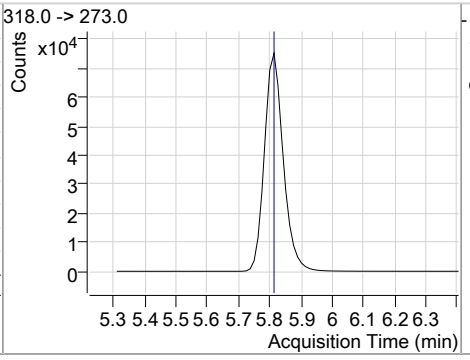


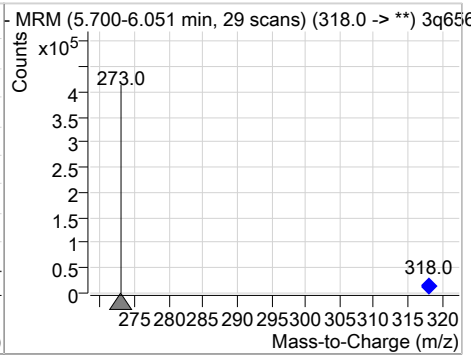




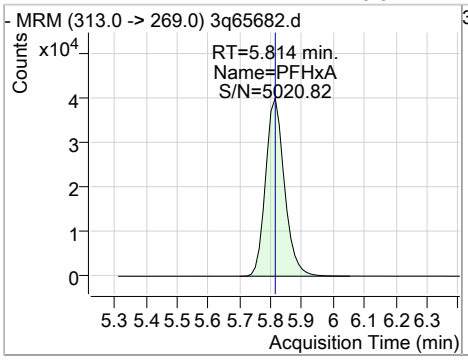
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.70	5.81	0.00	314343				

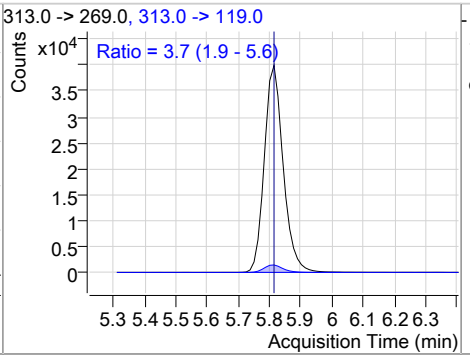


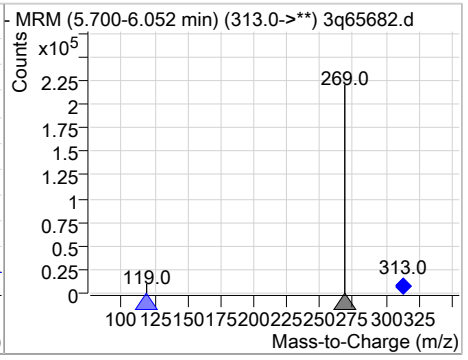




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.97	5.81	0.00	167118	313.0 -> 119.0	3.7	1.9	5.6

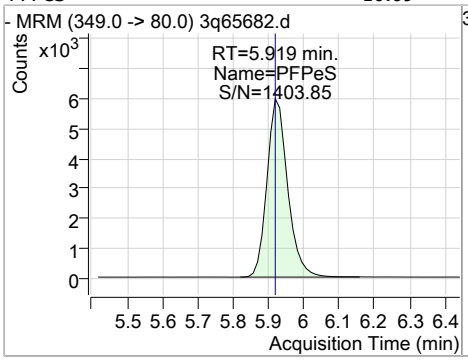


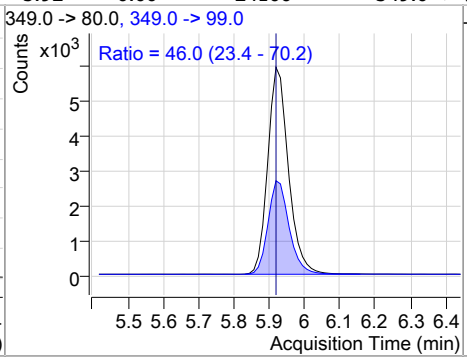


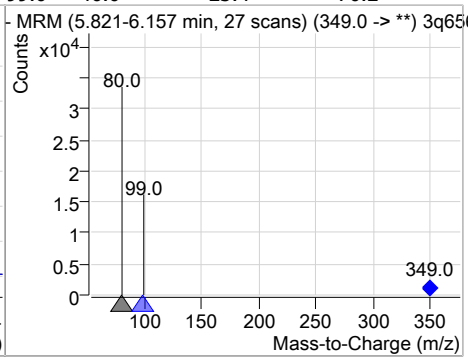


Perfluorinated Compounds by LC/MS/MS

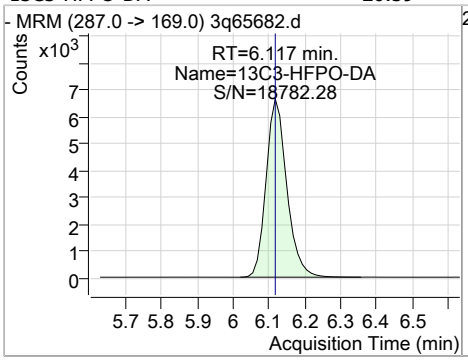
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.09	5.92	0.00	24106	349.0 -> 99.0	46.0	23.4	70.2

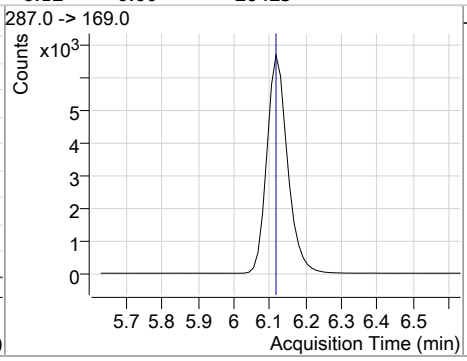


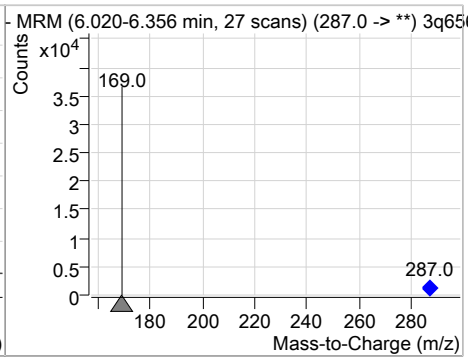




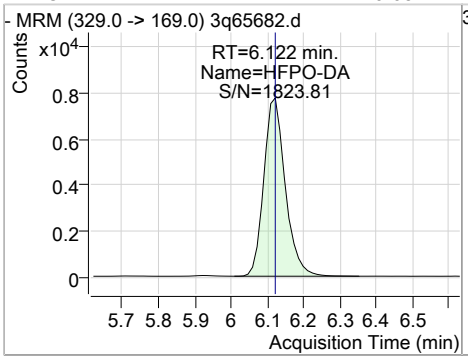
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.59	6.12	0.00	26423				

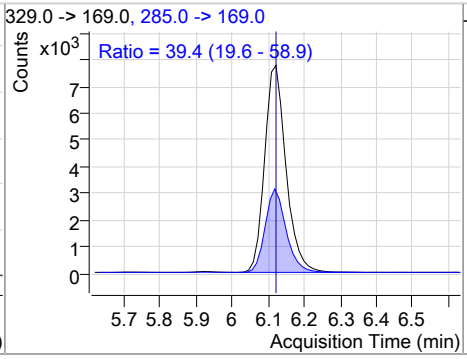


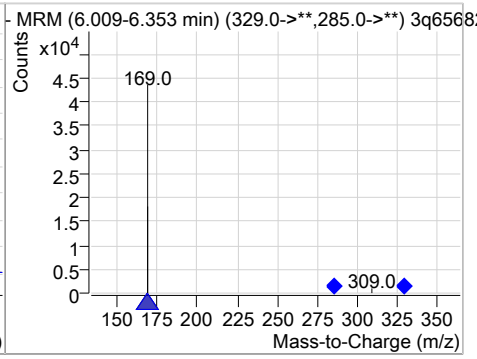




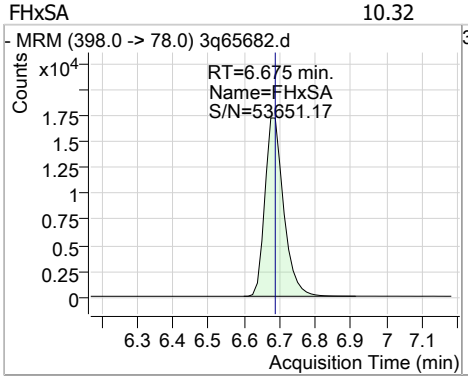
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.08	6.12	0.00	31747	285.0 -> 169.0	39.4	19.6	58.9

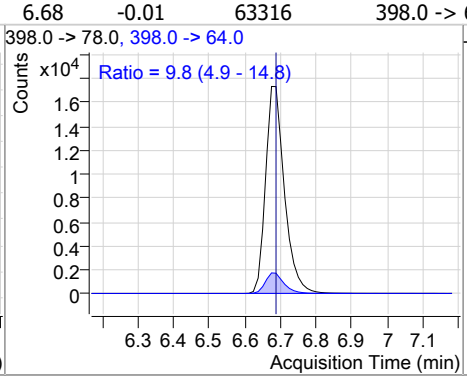


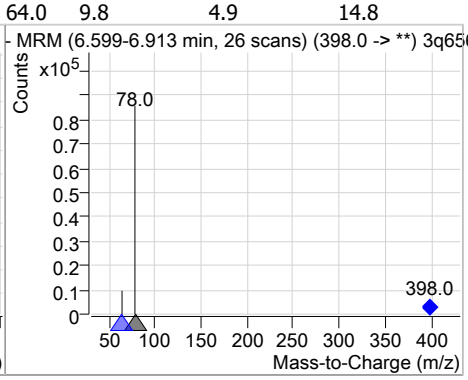




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	10.32	6.68	-0.01	63316	398.0 -> 64.0	9.8	4.9	14.8

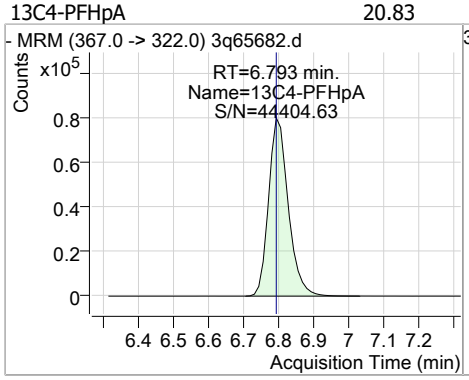


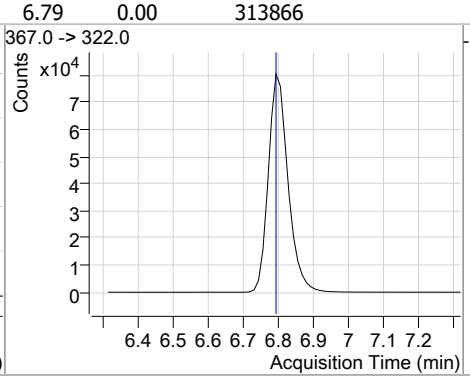


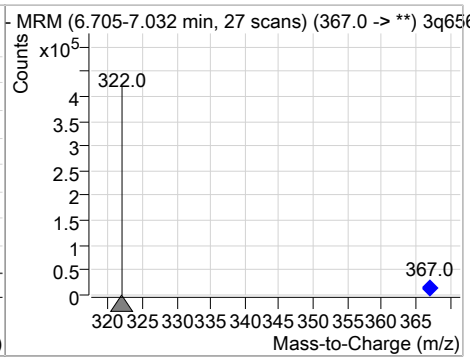


Perfluorinated Compounds by LC/MS/MS

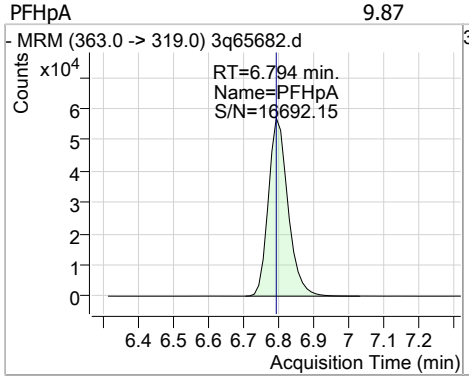
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.83	6.79	0.00	313866				

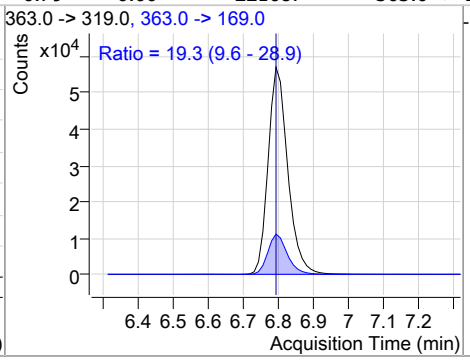


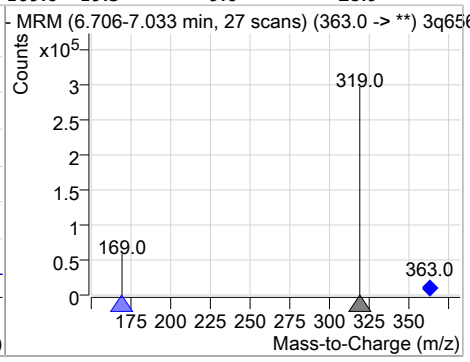




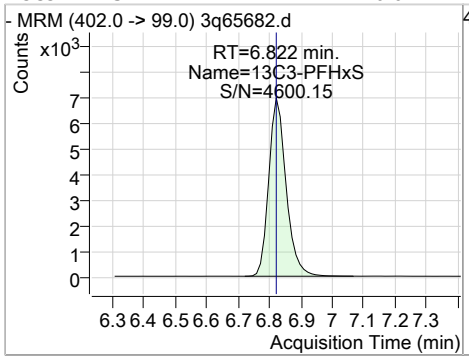
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.87	6.79	0.00	221687	363.0 -> 169.0	19.3	9.6	28.9

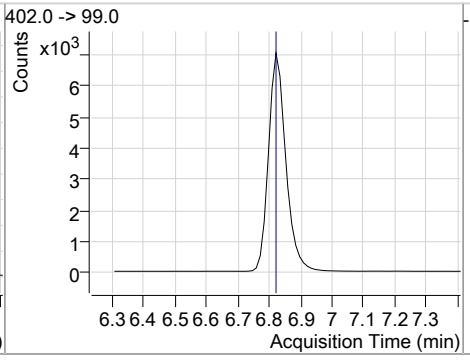


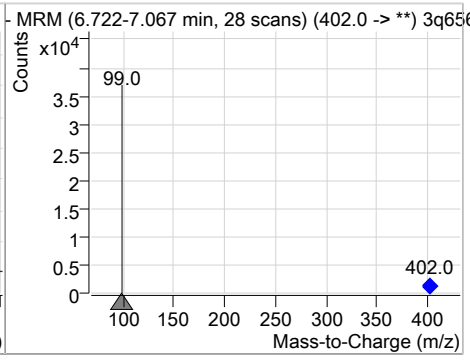




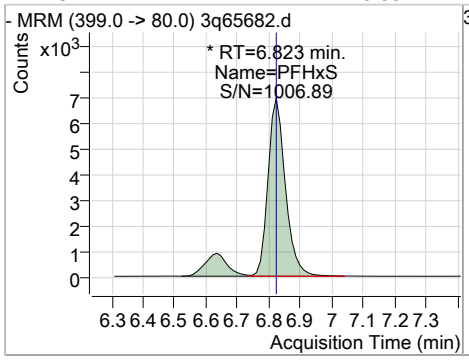
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.67	6.82	0.00	26710				

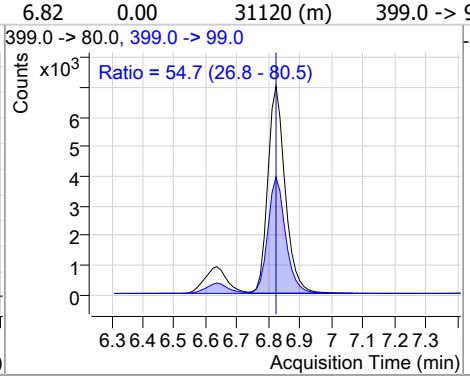


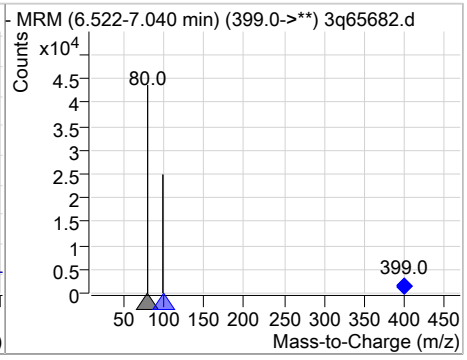




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.99	6.82	0.00	31120 (m)	399.0 -> 99.0	54.7	26.8	80.5

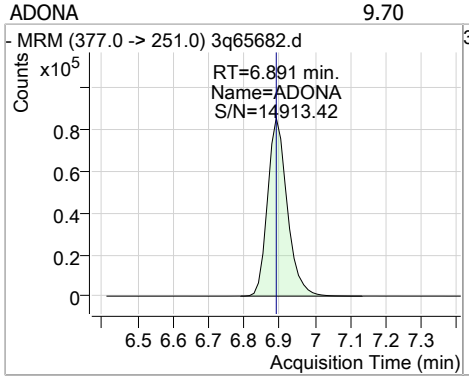


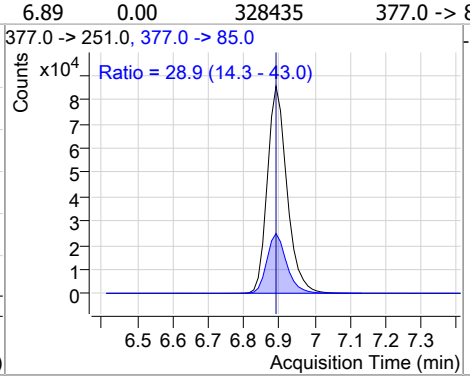


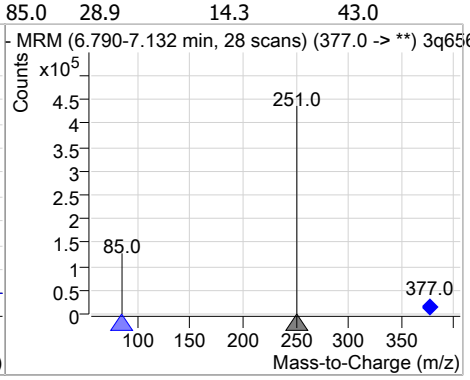


Perfluorinated Compounds by LC/MS/MS

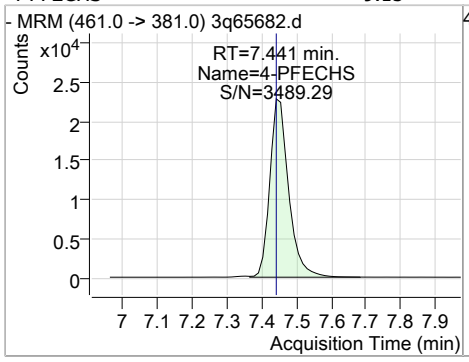
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.70	6.89	0.00	328435	377.0 -> 85.0	28.9	14.3	43.0

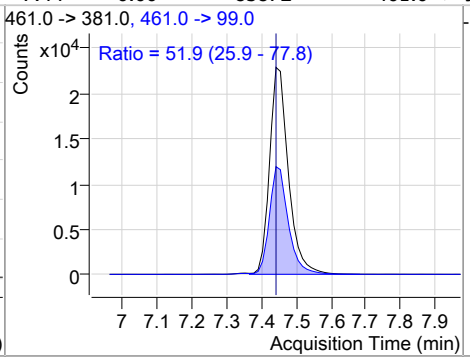


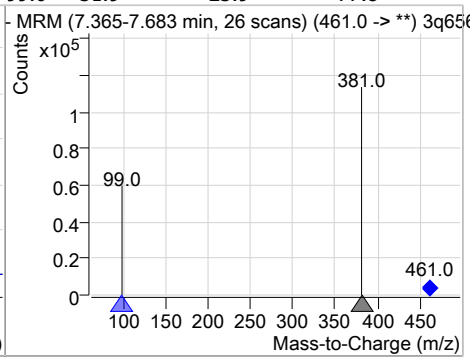




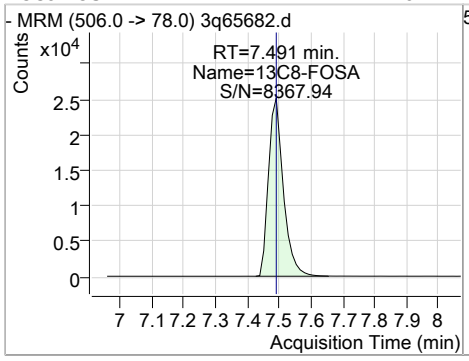
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.15	7.44	0.00	85872	461.0 -> 99.0	51.9	25.9	77.8

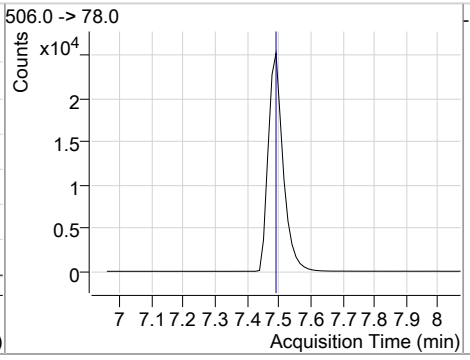


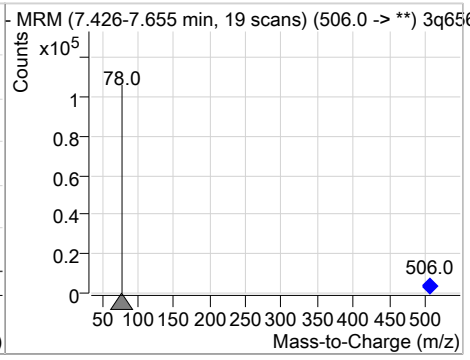




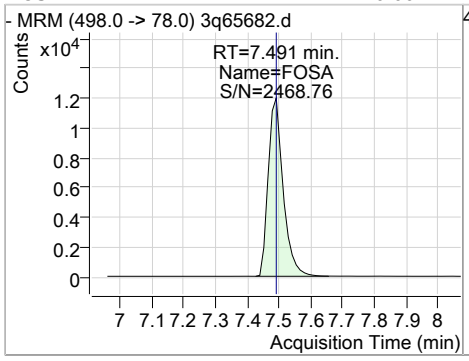
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.48	7.49	0.00	81120				

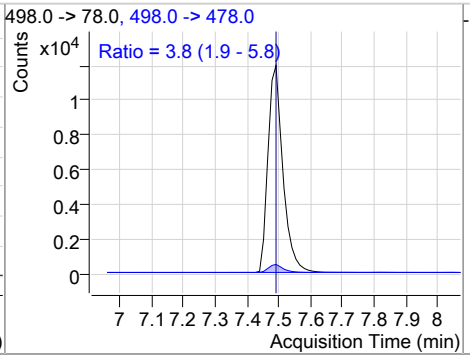


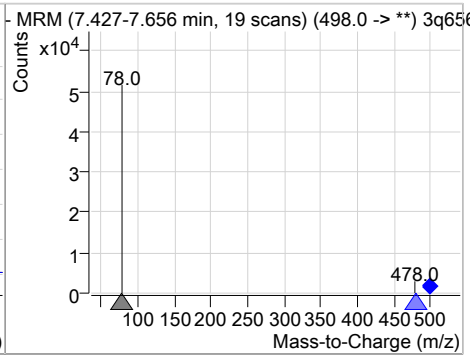




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.06	7.49	0.00	38848	498.0 -> 478.0	3.8	1.9	5.8

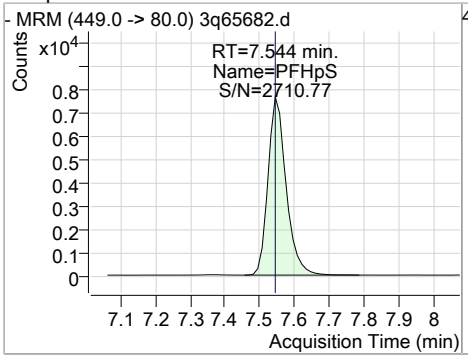


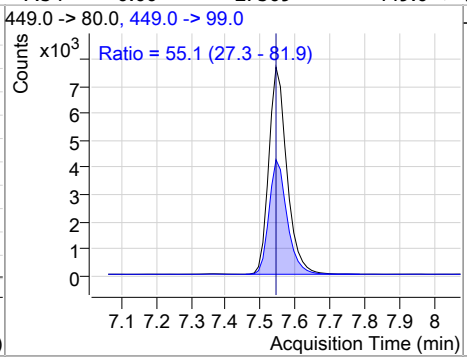


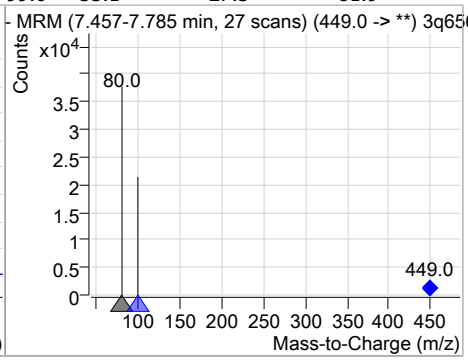


Perfluorinated Compounds by LC/MS/MS

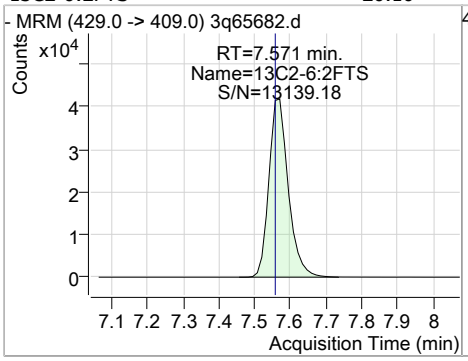
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.46	7.54	0.00	27509	449.0 -> 99.0	55.1	27.3	81.9

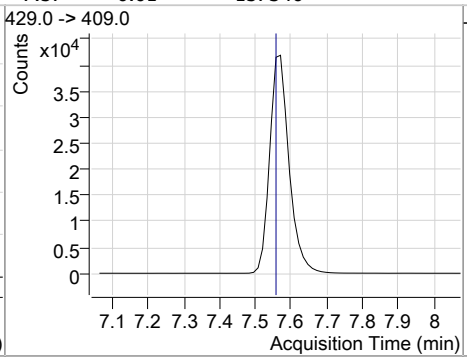


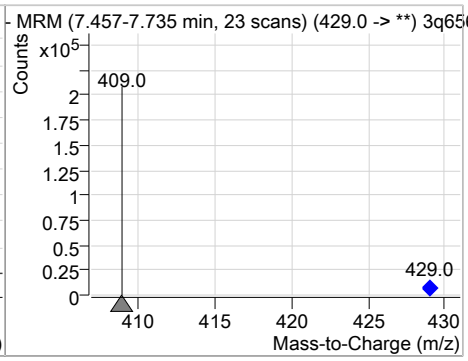




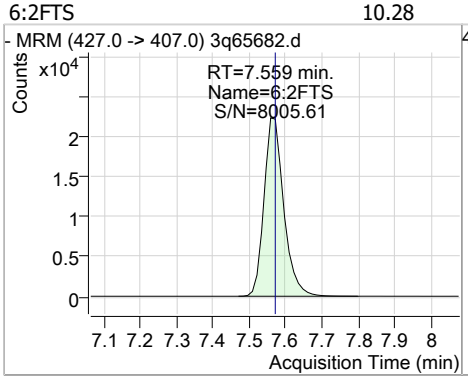
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.10	7.57	0.01	157346				

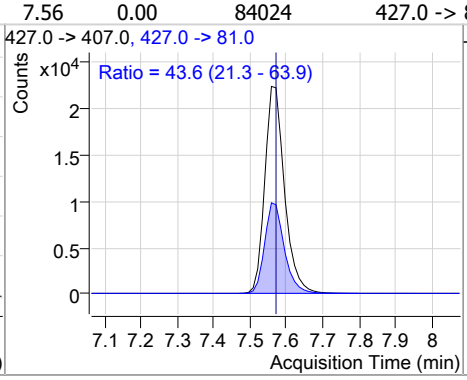


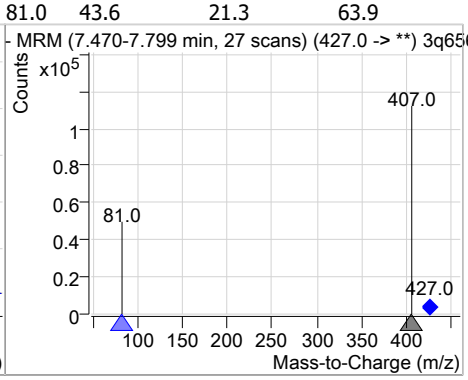




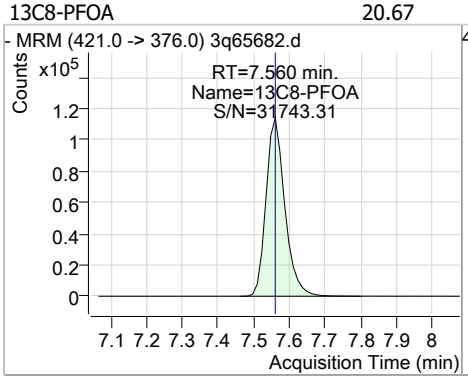
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.28	7.56	0.00	84024	427.0 -> 81.0	43.6	21.3	63.9

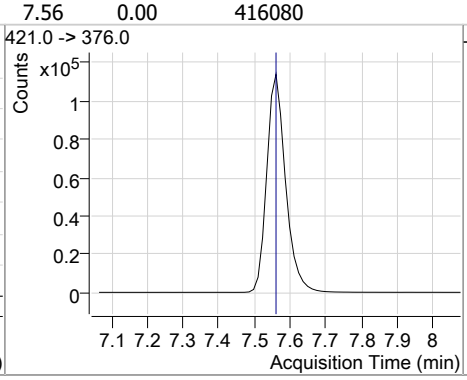


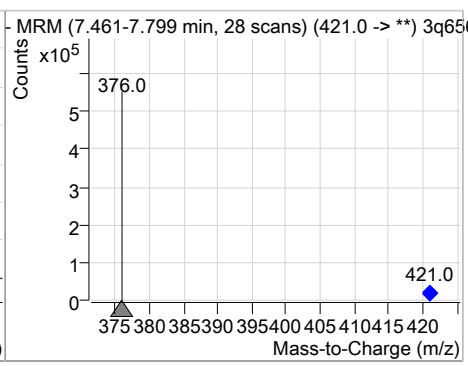




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.67	7.56	0.00	416080				

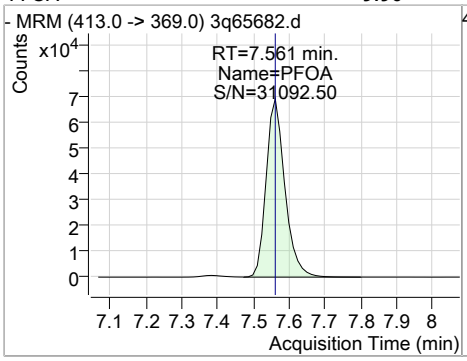


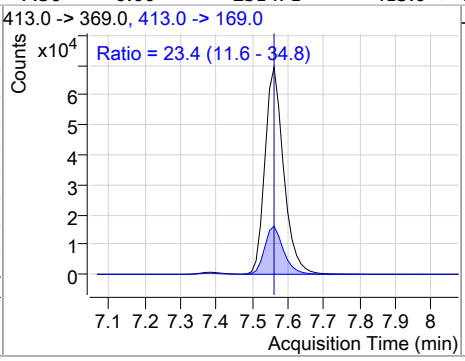


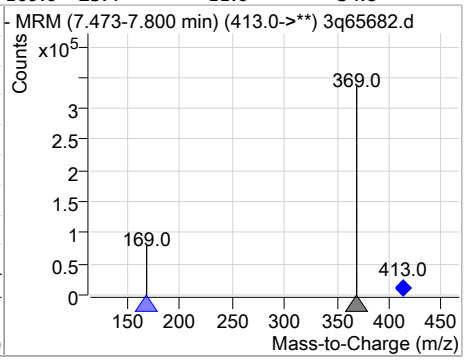


Perfluorinated Compounds by LC/MS/MS

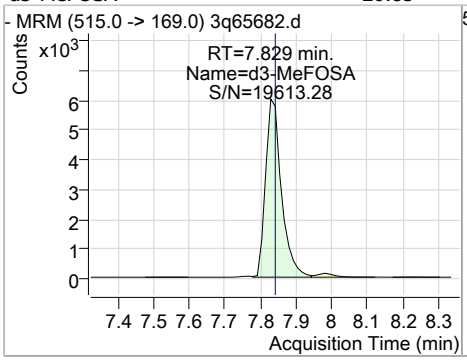
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.90	7.56	0.00	251471	413.0 -> 169.0	23.4	11.6	34.8

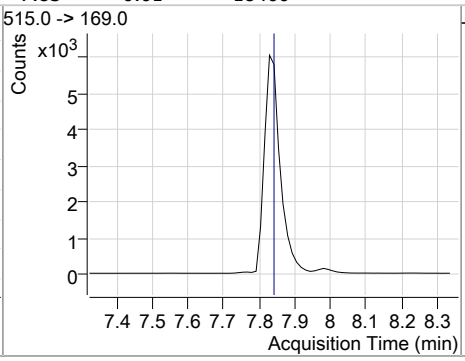


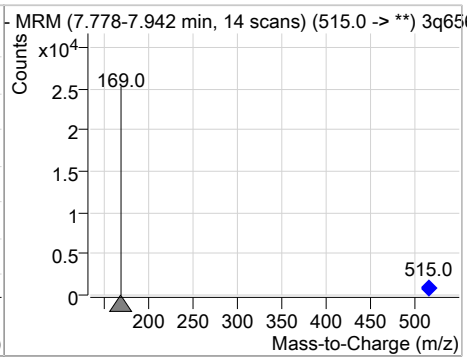




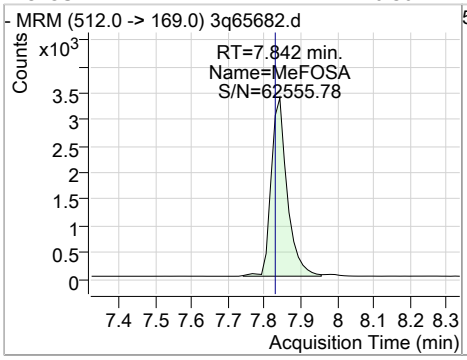
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.85	7.83	-0.01	18460				

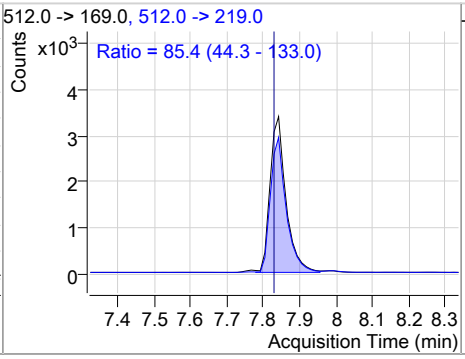


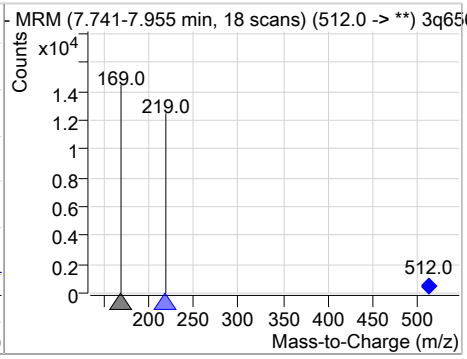




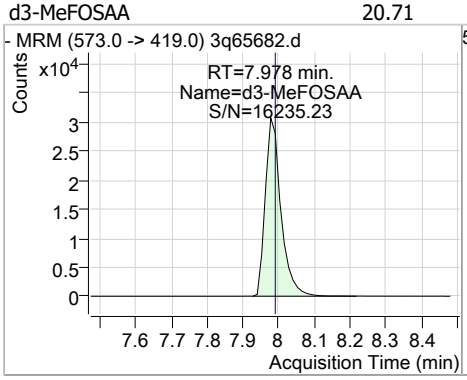
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.30	7.84	0.00	10238	512.0 -> 219.0	85.4	44.3	133.0

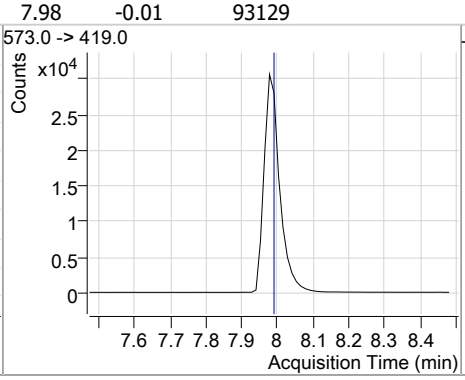


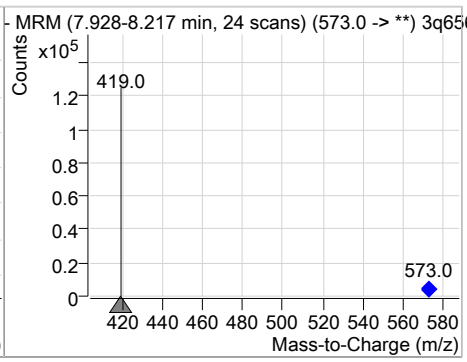




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.71	7.98	-0.01	93129				

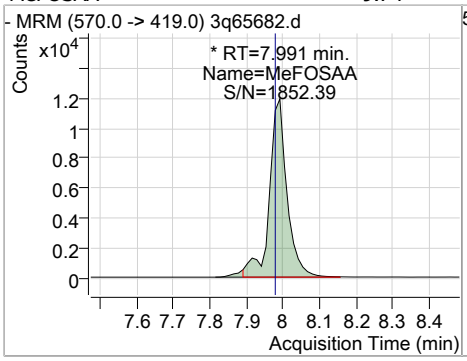


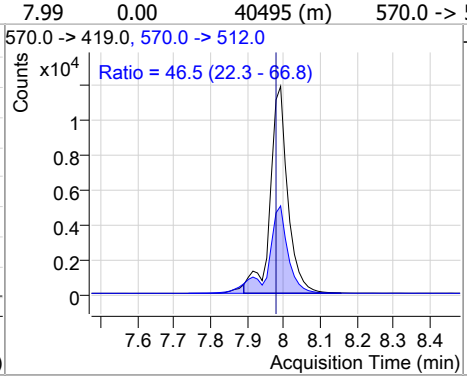


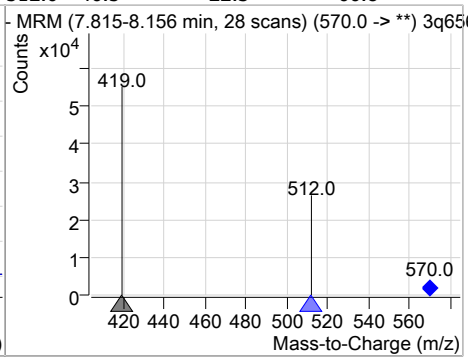


Perfluorinated Compounds by LC/MS/MS

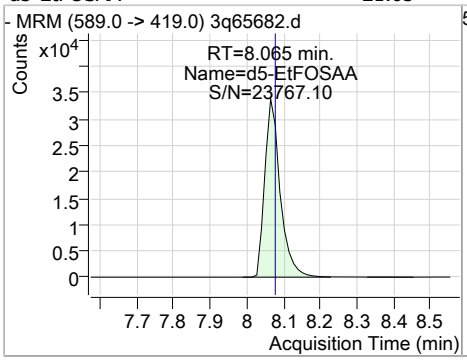
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.74	7.99	0.00	40495 (m)	570.0 -> 512.0	46.5	22.3	66.8

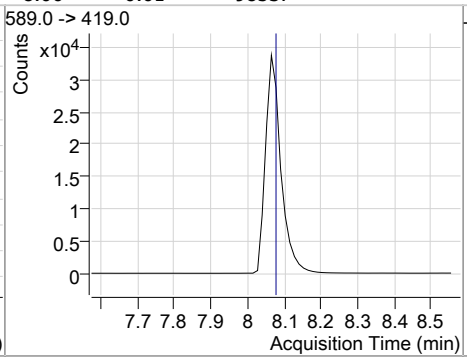


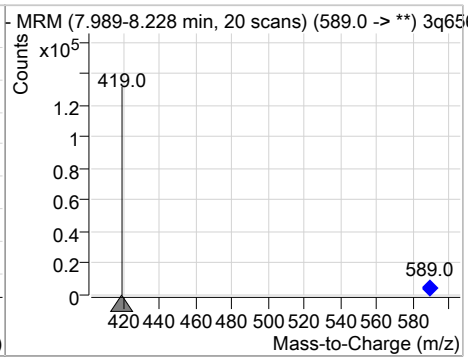




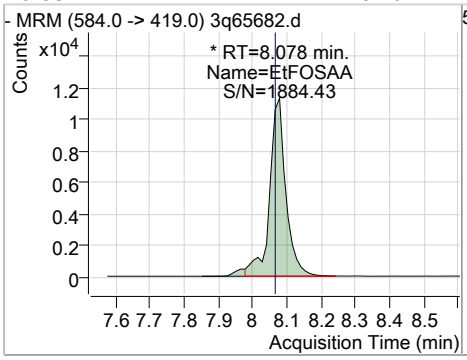
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.05	8.06	-0.01	98537				

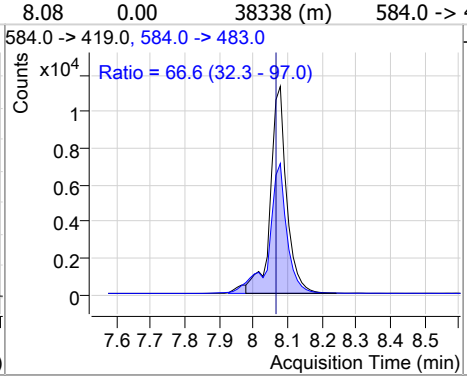


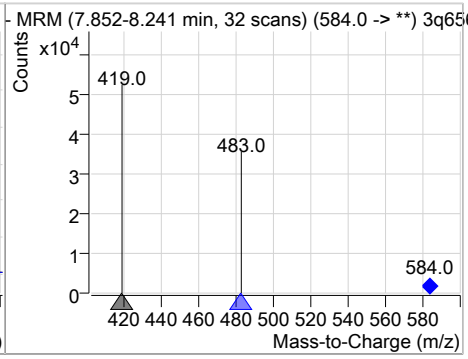




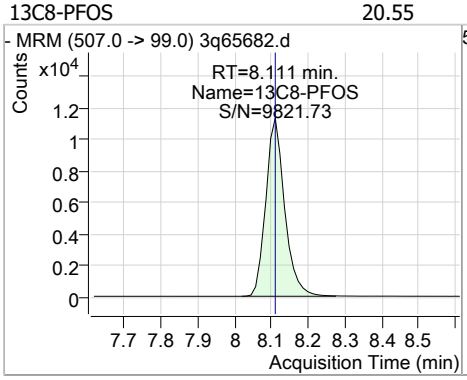
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.76	8.08	0.00	38338 (m)	584.0 -> 483.0	66.6	32.3	97.0

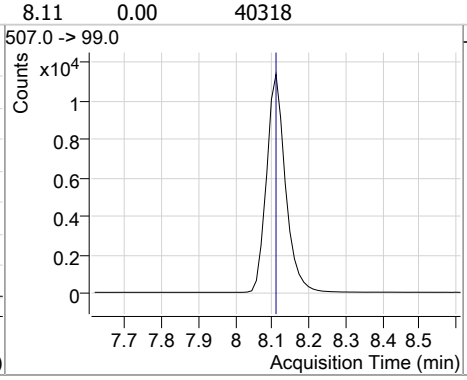


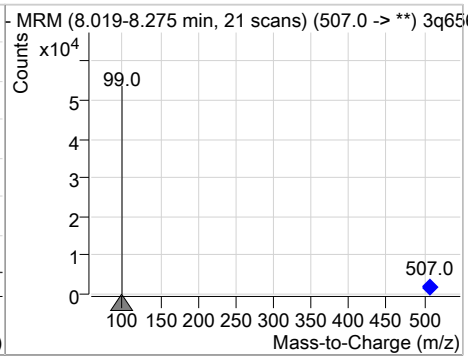




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.55	8.11	0.00	40318				

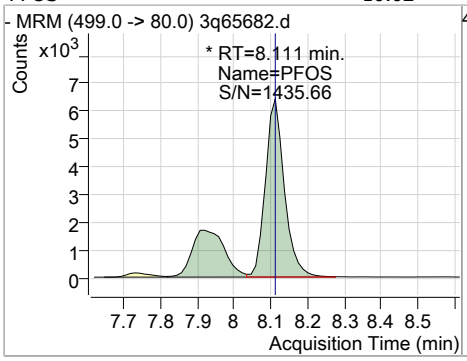


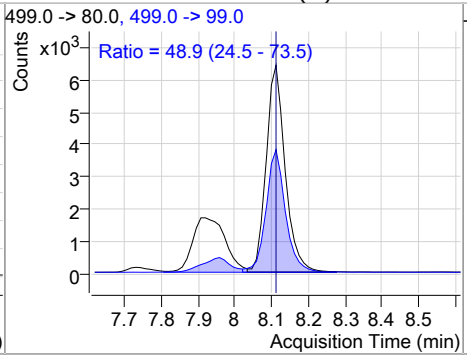


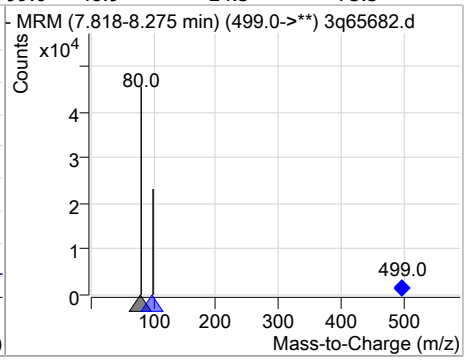


Perfluorinated Compounds by LC/MS/MS

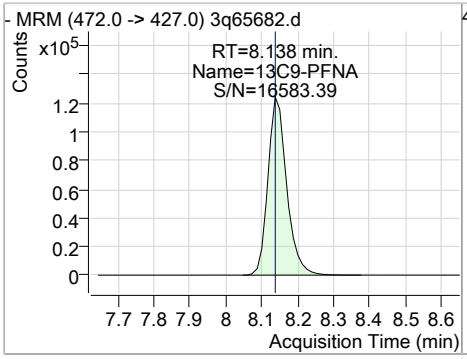
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.02	8.11	0.00	33283 (m)	499.0 -> 99.0	48.9	24.5	73.5

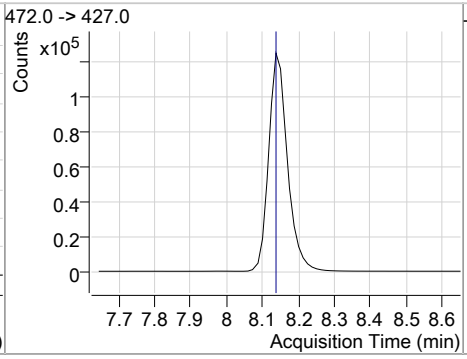


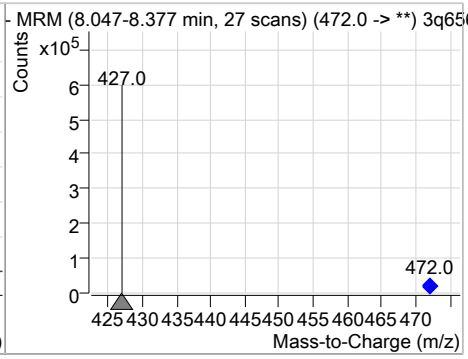




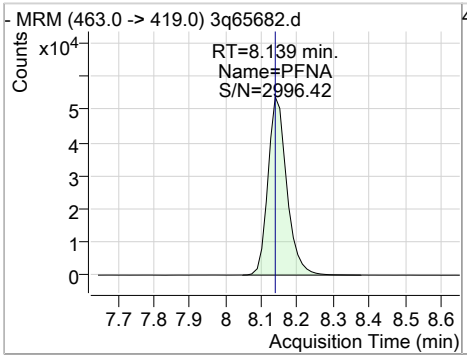
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.36	8.14	0.00	449897				

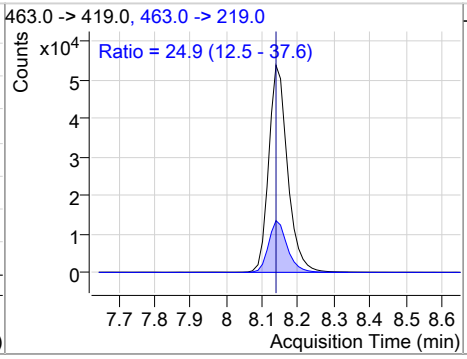


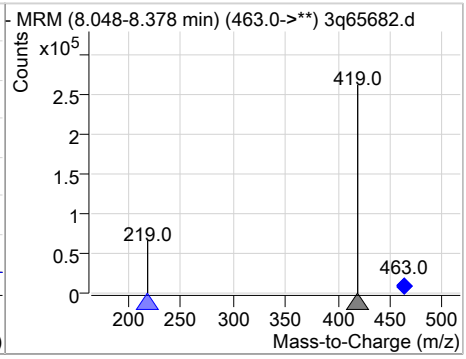




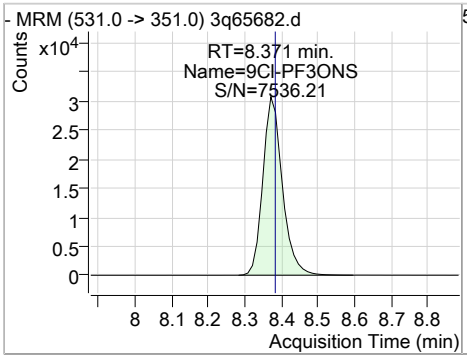
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	10.01	8.14	0.00	195009	463.0 -> 219.0	24.9	12.5	37.6

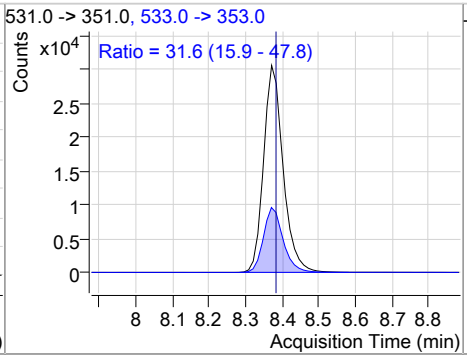


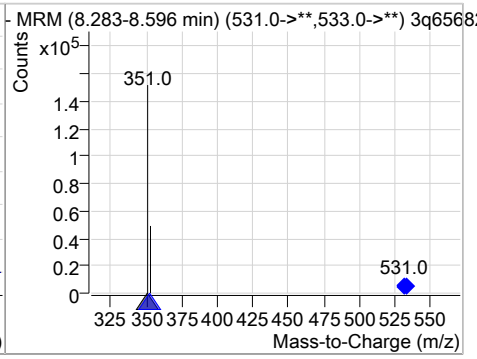




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	10.29	8.37	0.00	113202	533.0 -> 353.0	31.6	15.9	47.8

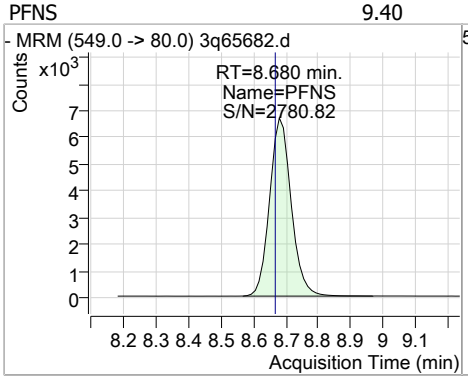


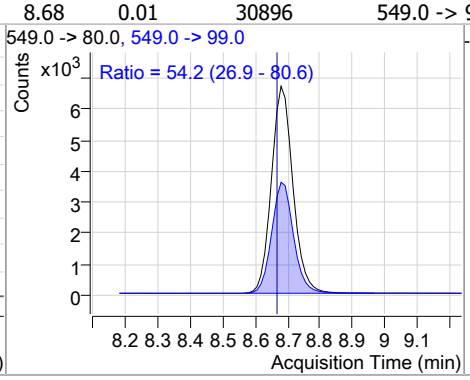


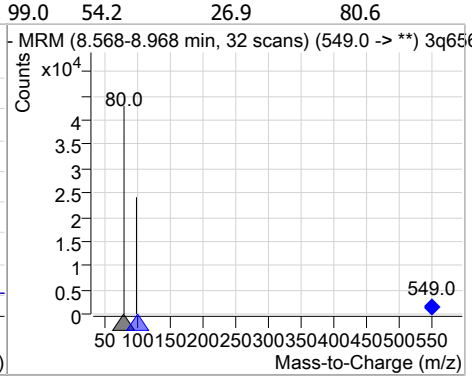


Perfluorinated Compounds by LC/MS/MS

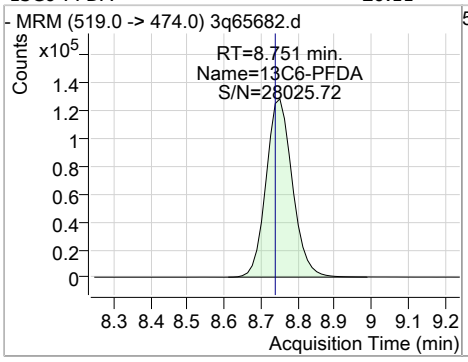
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.40	8.68	0.01	30896	549.0 -> 99.0	54.2	26.9	80.6

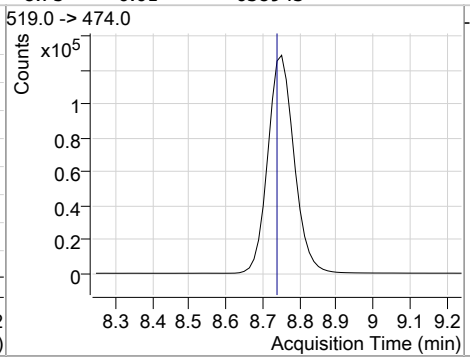


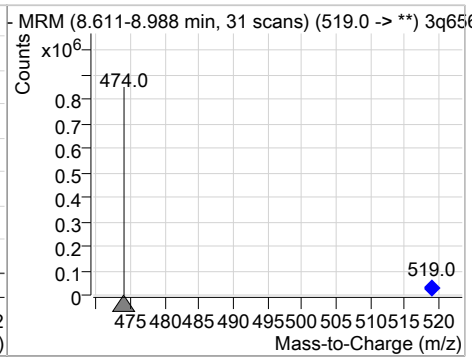




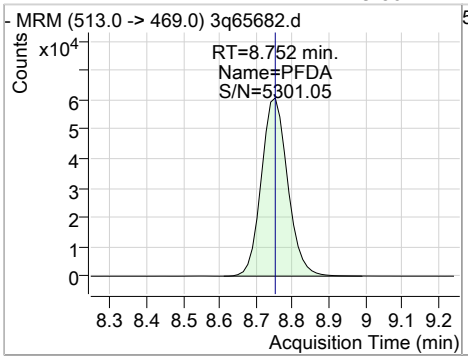
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.11	8.75	0.01	638943				

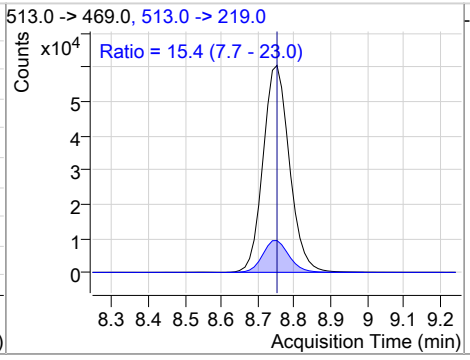


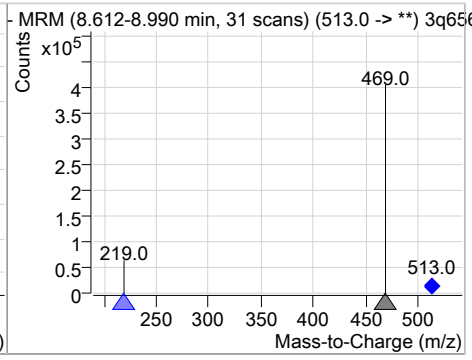




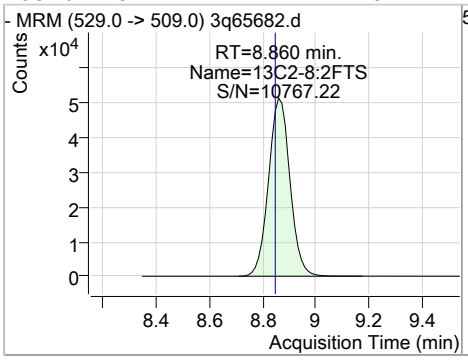
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.86	8.75	0.01	303704	513.0 -> 219.0	15.4	7.7	23.0

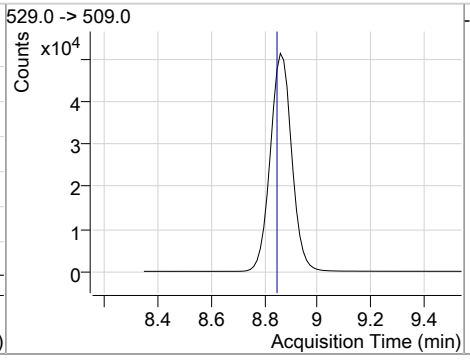


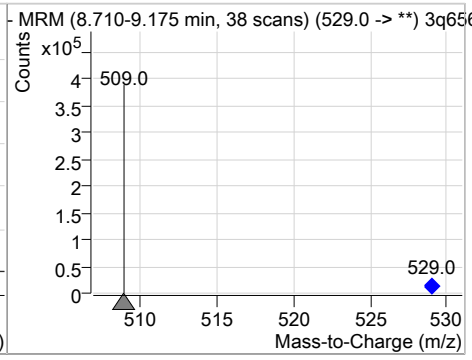




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.71	8.86	0.01	286522				

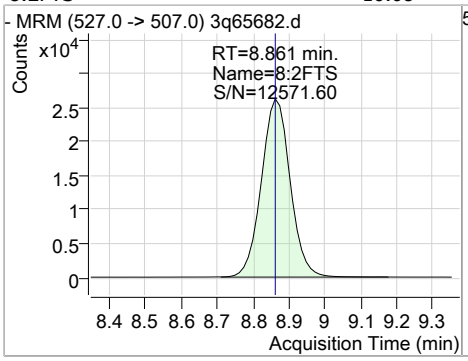


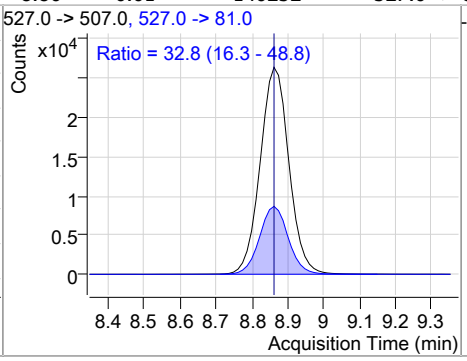


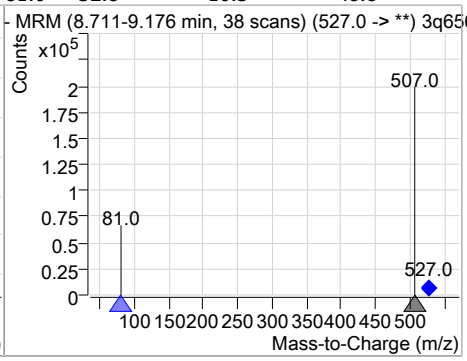


Perfluorinated Compounds by LC/MS/MS

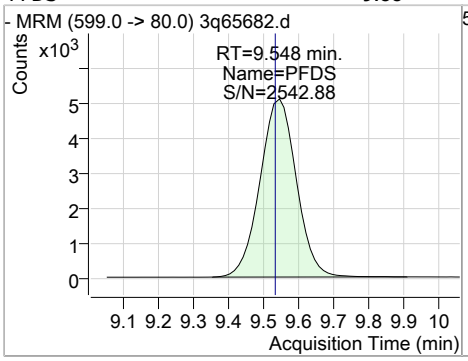
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.08	8.86	0.01	146252	527.0 -> 81.0	32.8	16.3	48.8

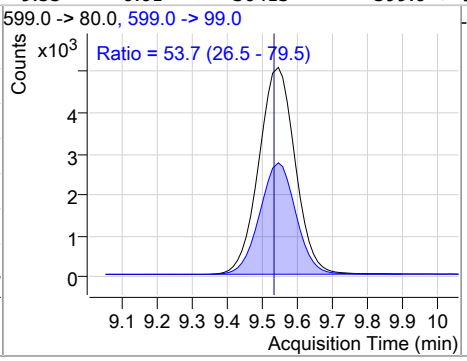


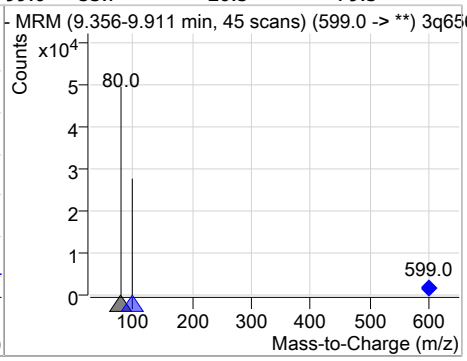




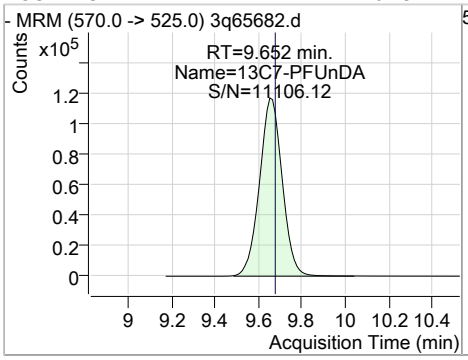
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.88	9.55	-0.01	36413	599.0 -> 99.0	53.7	26.5	79.5

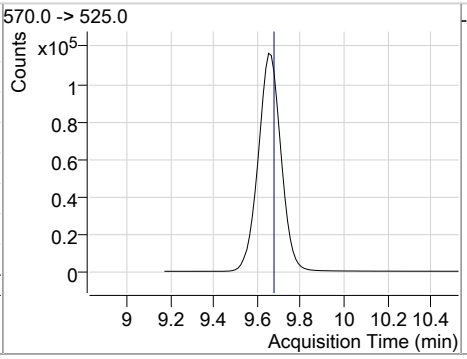


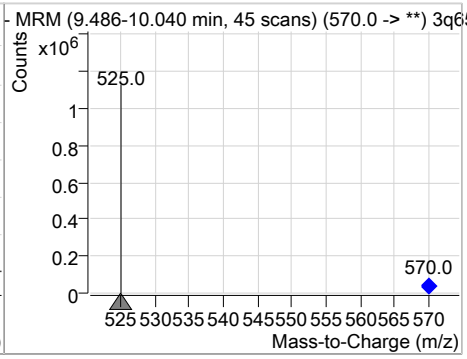




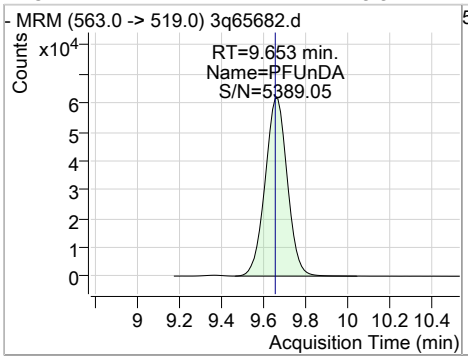
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.49	9.65	-0.03	845984				

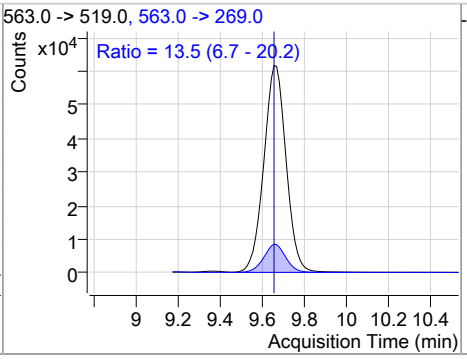


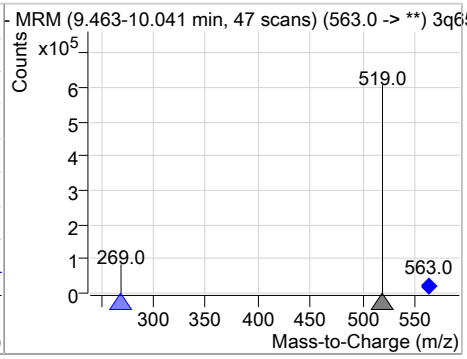




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.92	9.65	-0.03	451996	563.0 -> 269.0	13.5	6.7	20.2

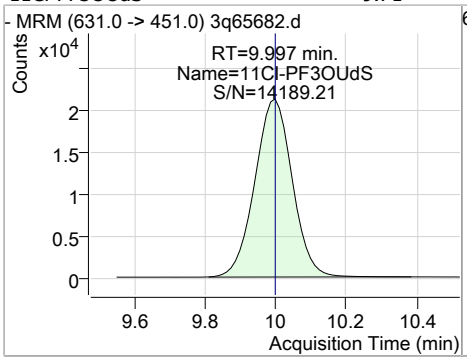


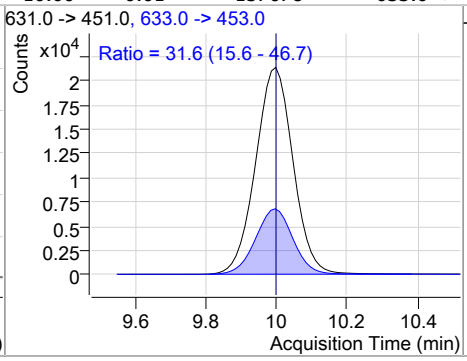


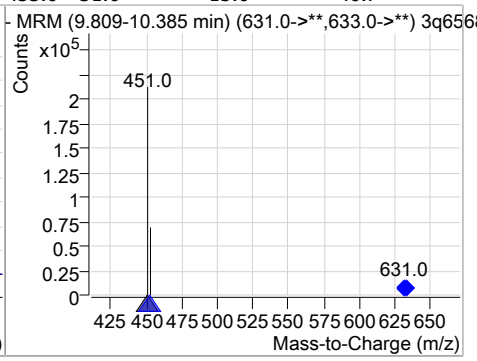


Perfluorinated Compounds by LC/MS/MS

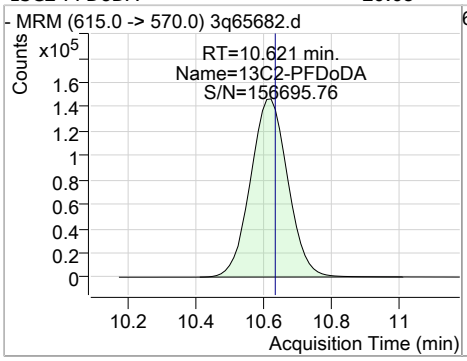
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.71	10.00	-0.01	157678	633.0 -> 453.0	31.6	15.6	46.7

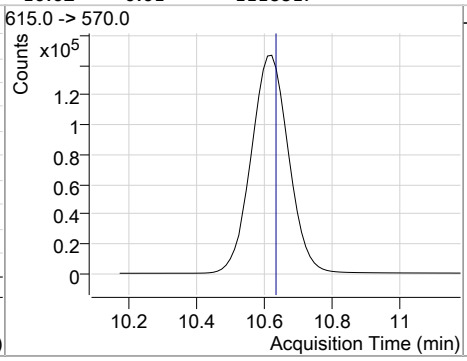


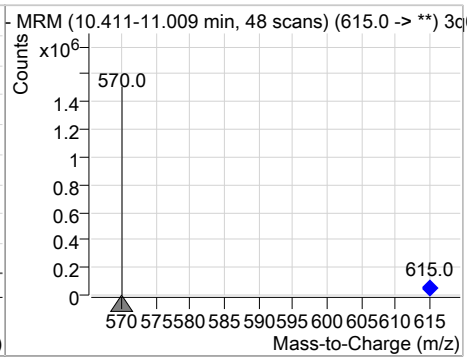




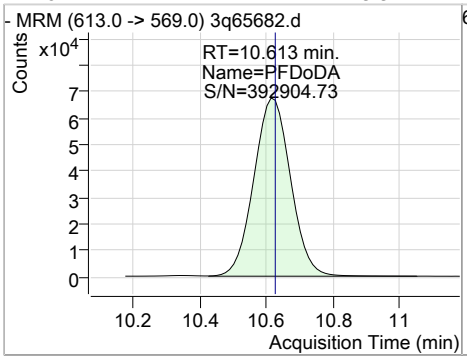
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.68	10.62	-0.01	1118817				

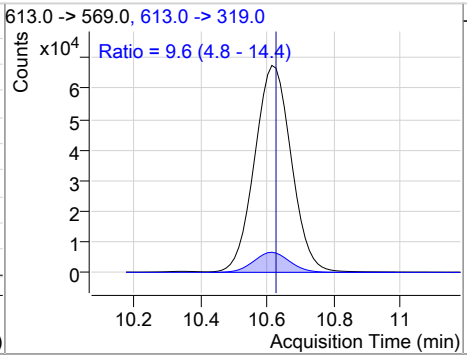


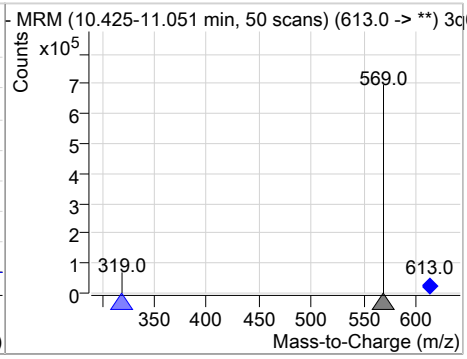




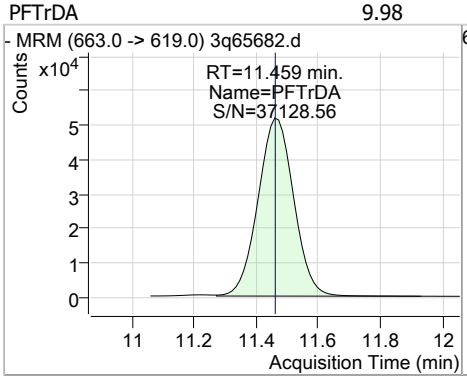
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.94	10.61	-0.03	516382	613.0 -> 319.0	9.6	4.8	14.4

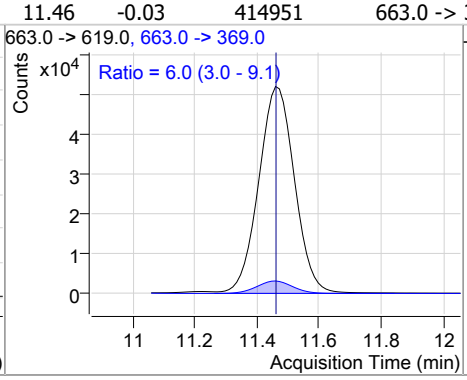


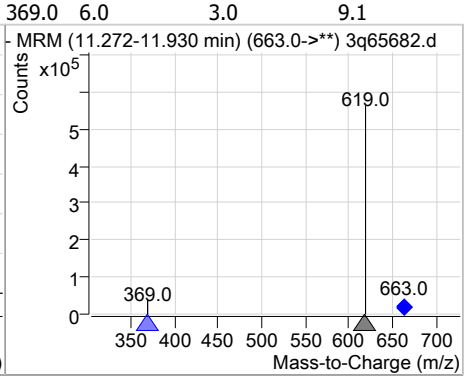




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.98	11.46	-0.03	414951	663.0 -> 369.0	6.0	3.0	9.1

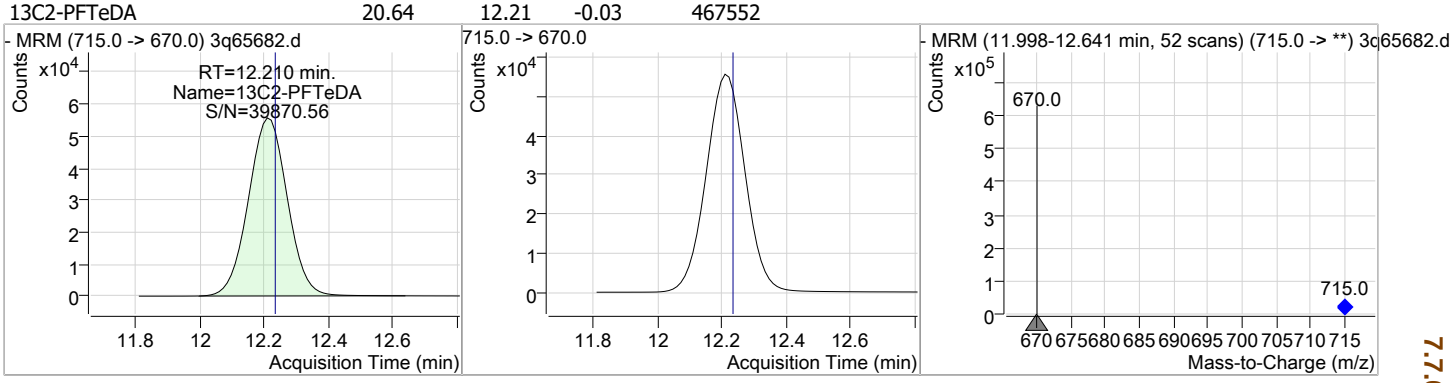




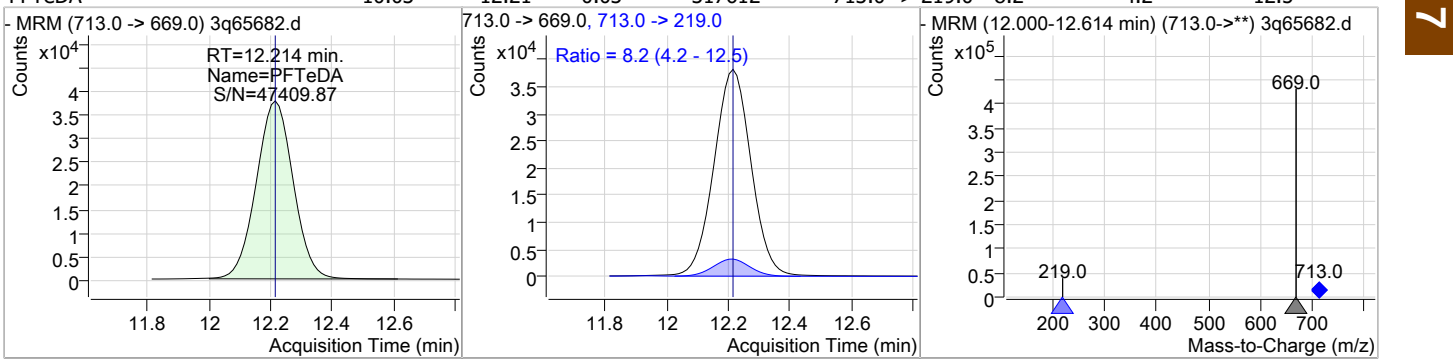


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.64	12.21	-0.03	467552				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	10.03	12.21	-0.03	317612	713.0 -> 219.0	8.2	4.2	12.5



7.7.6

7

Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65682.D
Injection Time: 09/13/22 17:08
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

3Q65683.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65683.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 5:28:06 PM
Sample Name : icc898-20
Vial : P1-A7
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

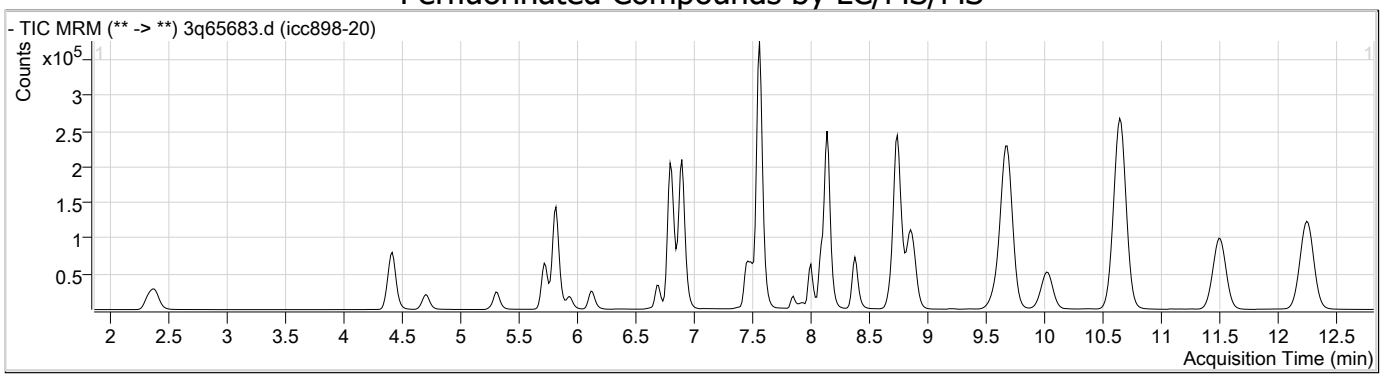
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	144453	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	212538	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	277795	20.00	µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	277398	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	371151	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	391902	20.00	µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	541442	20.00	µg/L	0.000
M7-PFUnDA	9.677	570.0 -> 525.0	754318	20.00	µg/L	0.000
M2-PFDoDA	10.634	615.0 -> 570.0	997761	20.00	µg/L	0.000
M2-PFTeDA	12.235	715.0 -> 670.0	415846	20.00	µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	70487	20.00	µg/L	0.000
M3-PFBS	4.692	302.0 -> 99.0	19442	20.00	µg/L	0.000
M3-PFHxS	6.822	402.0 -> 99.0	23874	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	35618	20.00	µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	104616	20.00	µg/L	0.000
M2-6:2FTS	7.558	429.0 -> 409.0	143230	20.00	µg/L	0.000
M2-8:2FTS	8.848	529.0 -> 509.0	257352	20.00	µg/L	0.000
M3-MeFOSAA	7.991	573.0 -> 419.0	81767	20.00	µg/L	0.000
M3-HFPO-DA	6.117	287.0 -> 169.0	22925	20.00	µg/L	0.000
M3-MeFOSA	7.841	515.0 -> 169.0	16355	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	87278	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.708	329.0 -> 309.0	104616	18.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C2-6:2FTS	7.558	429.0 -> 409.0	143230	18.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C2-8:2FTS	8.848	529.0 -> 509.0	257352	17.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C2-PFDoDA	10.634	615.0 -> 570.0	997761	18.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C2-PFTeDA	12.235	715.0 -> 670.0	415846	18.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%		
13C3-PFBS	4.692	302.0 -> 99.0	19442	18.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C3-PFHxS	6.822	402.0 -> 99.0	23874	18.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C4-PFBA	2.365	217.0 -> 172.0	144453	18.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C4-PFHpA	6.793	367.0 -> 322.0	277398	18.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C5-PFHxA	5.813	318.0 -> 273.0	277795	18.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%		
13C5-PFPeA	4.411	268.0 -> 223.0	212538	18.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C6-PFDA	8.739	519.0 -> 474.0	541442	17.04	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

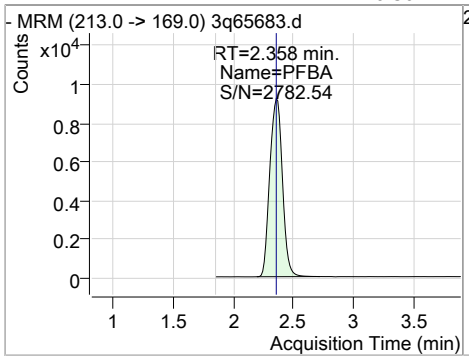
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%			
13C7-PFUnDA	9.677	570.0 -> 525.0	754318	18.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C8-FOSA	7.491	506.0 -> 78.0	70487	18.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C8-PFOA	7.560	421.0 -> 376.0	371151	18.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
13C8-PFOS	8.111	507.0 -> 99.0	35618	18.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
13C9-PFNA	8.138	472.0 -> 427.0	391902	17.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%			
d3-MeFOSAA	7.991	573.0 -> 419.0	81767	18.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	22925	17.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
d3-MeFOSA	7.841	515.0 -> 169.0	16355	18.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
d5-EtFOSAA	8.077	589.0 -> 419.0	87255	18.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
Target Compounds							**QValue**
4:2FTS	5.710	327.0 -> 307.0	112405	20.38	µg/L		100
6:2FTS	7.559	427.0 -> 407.0	152947	20.55	µg/L		100
8:2FTS	8.849	527.0 -> 507.0	261656	20.08	µg/L		100
EtFOSAA	8.078	584.0 -> 419.0	70636	20.30	µg/L	m	100
FOSA	7.491	498.0 -> 78.0	69932	20.84	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	74295	20.35	µg/L	m	100
PFBA	2.358	213.0 -> 169.0	67028	20.30	µg/L		100
PFBS	4.694	299.0 -> 80.0	56114	20.31	µg/L		100
PFDA	8.740	513.0 -> 469.0	533337	20.44	µg/L		100
PFDoDA	10.638	613.0 -> 569.0	945933	20.41	µg/L		100
PFDS	9.560	599.0 -> 80.0	67065	20.40	µg/L		100
PFHpA	6.794	363.0 -> 319.0	403613	20.33	µg/L		100
PFHpS	7.544	449.0 -> 80.0	50064	21.55	µg/L		100
PFHxA	5.814	313.0 -> 269.0	302499	20.42	µg/L		100
PFHxS	6.823	399.0 -> 80.0	56942	20.45	µg/L	m	100
PFNA	8.139	463.0 -> 419.0	344474	20.30	µg/L		100
PFNS	8.667	549.0 -> 80.0	55602	19.14	µg/L		100
PFOA	7.561	413.0 -> 369.0	456924	20.16	µg/L		100
PFOS	8.111	499.0 -> 80.0	59569	20.31	µg/L	m	100
PFPeA	4.414	263.0 -> 219.0	190262	20.50	µg/L		100
PFPeS	5.919	349.0 -> 80.0	44030	20.52	µg/L		100
PFTeDA	12.239	713.0 -> 669.0	575530	20.44	µg/L		100
PFTrDA	11.484	663.0 -> 619.0	754477	20.40	µg/L		100
PFUnDA	9.678	563.0 -> 519.0	826425	20.34	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	290780	20.08	µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	201750	21.64	µg/L		100
ADONA	6.891	377.0 -> 251.0	604548	19.98	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	57979	21.22	µg/L		100
MeFOSA	7.842	512.0 -> 169.0	18049	20.50	µg/L		100
4-PFECHS	7.441	461.0 -> 381.0	156700	18.72	µg/L		100
FBSA	5.300	298.0 -> 78.0	99737	21.07	µg/L		100
FHxSA	6.688	398.0 -> 78.0	108267	19.78	µg/L		100

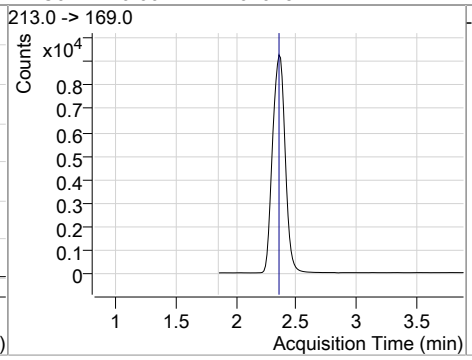
 # = Qualifier out of range, m = manually integrated, + = Area summed

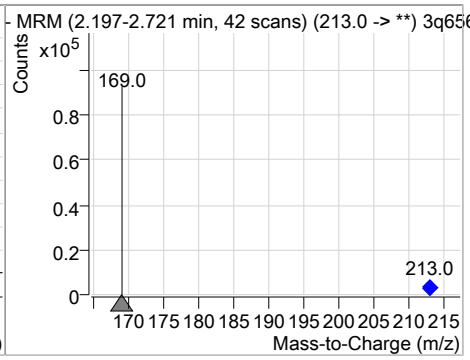
Perfluorinated Compounds by LC/MS/MS



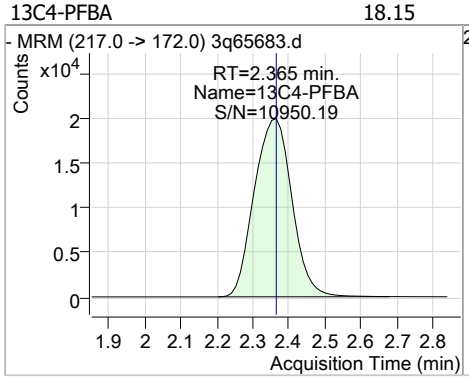
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.30	2.36	0.00	67028				

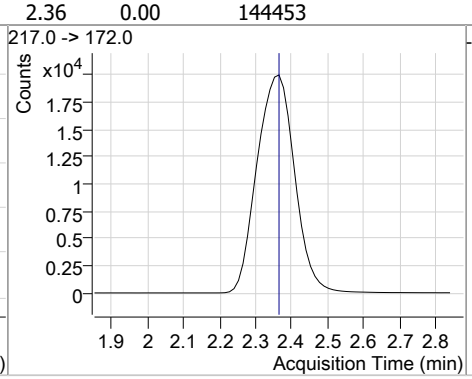


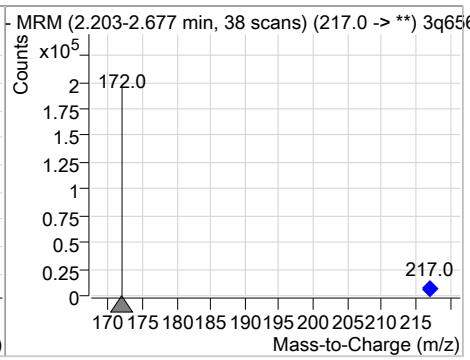




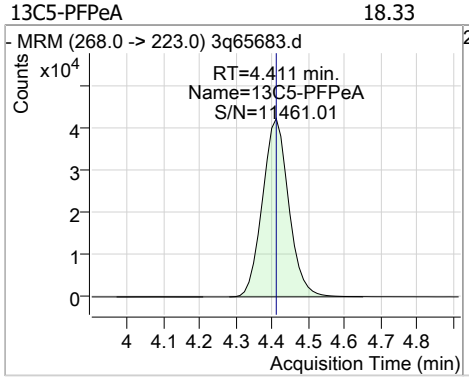
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.15	2.36	0.00	144453				

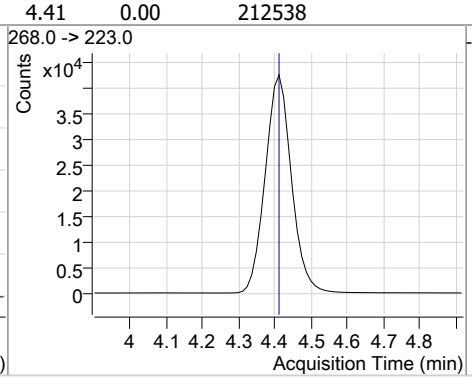


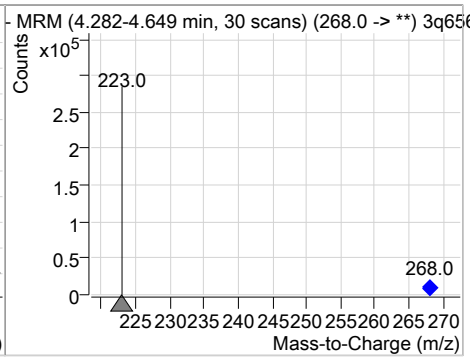




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.33	4.41	0.00	212538				

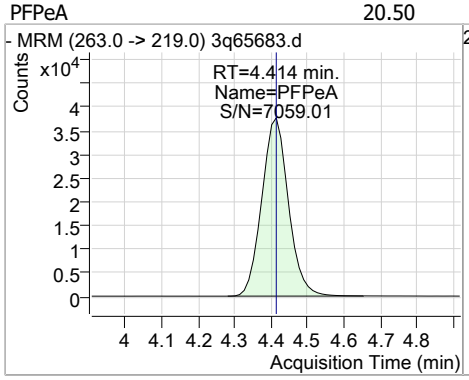


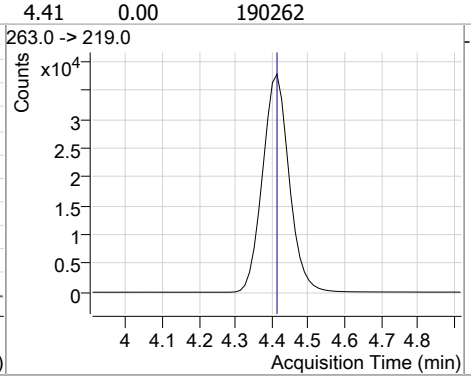


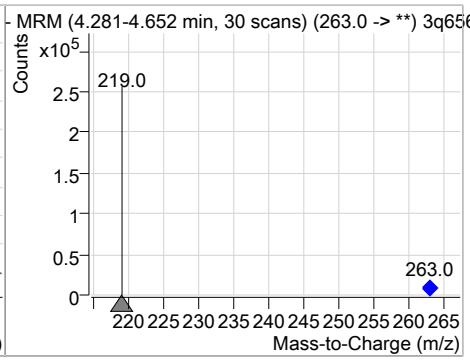


Perfluorinated Compounds by LC/MS/MS

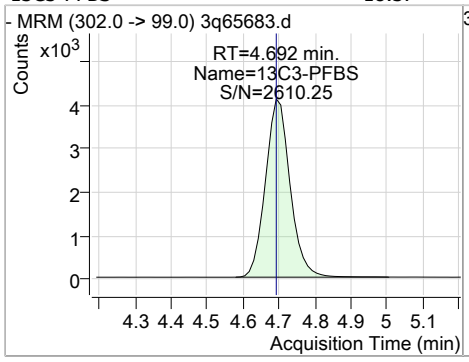
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.50	4.41	0.00	190262				

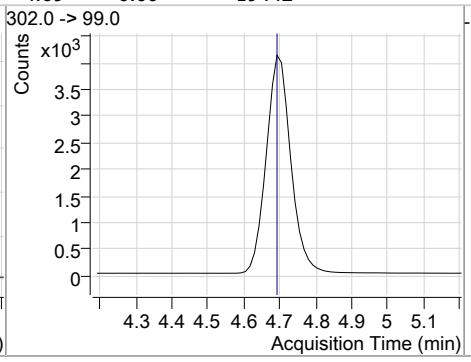


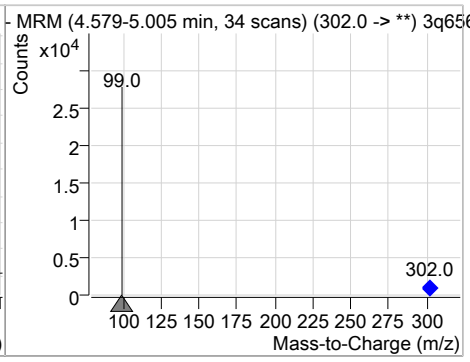




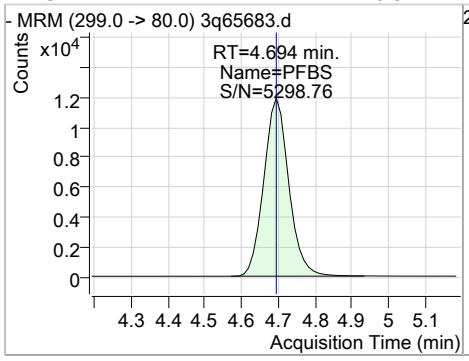
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.37	4.69	0.00	19442				

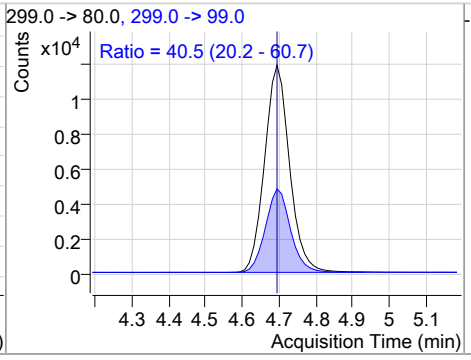


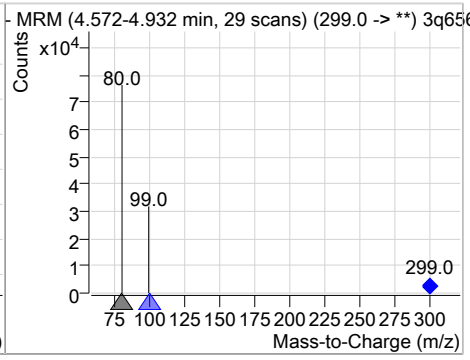




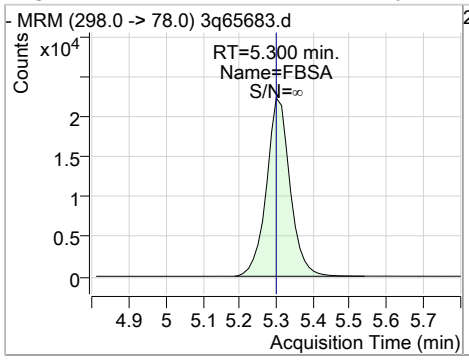
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.31	4.69	0.00	56114	299.0 -> 99.0	40.5	20.2	60.7

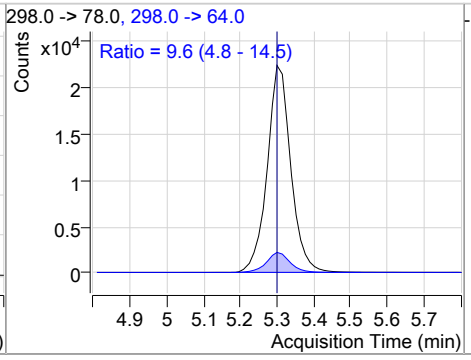


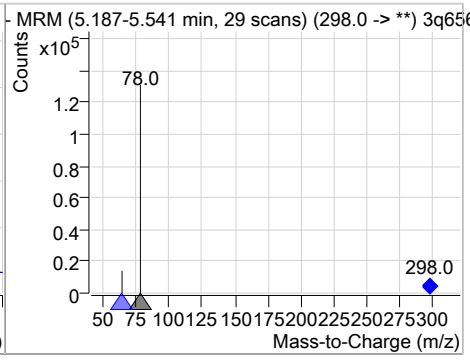




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	21.07	5.30	0.00	99737	298.0 -> 64.0	9.6	4.8	14.5

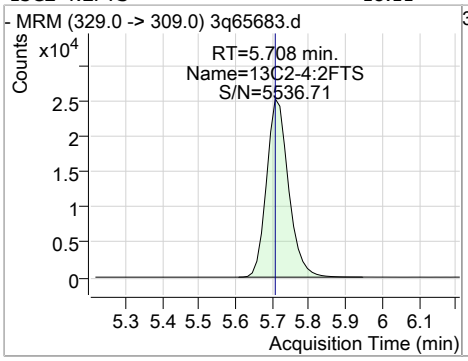


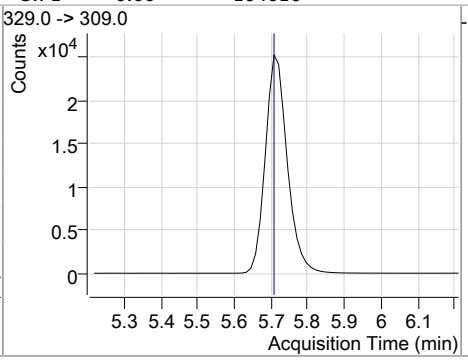


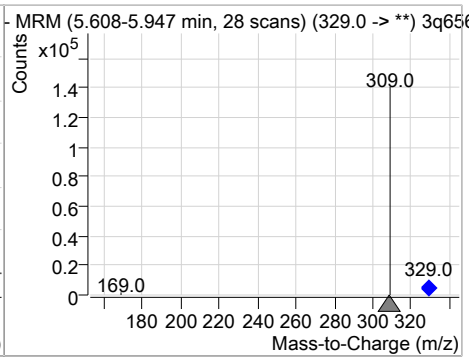


Perfluorinated Compounds by LC/MS/MS

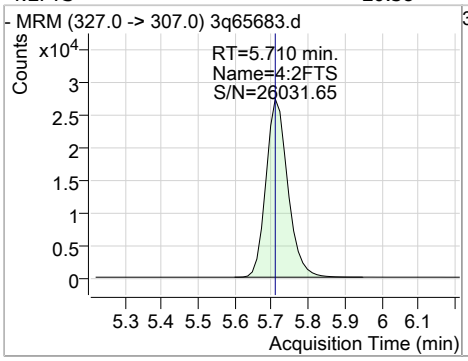
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.11	5.71	0.00	104616				

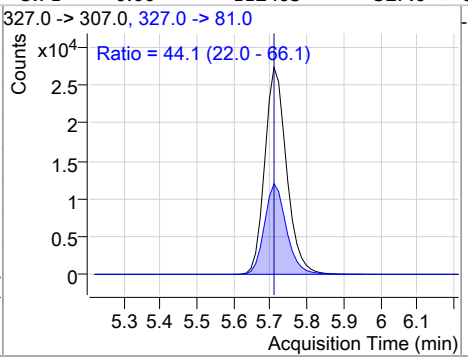


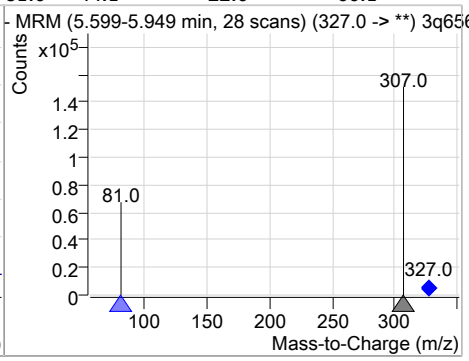




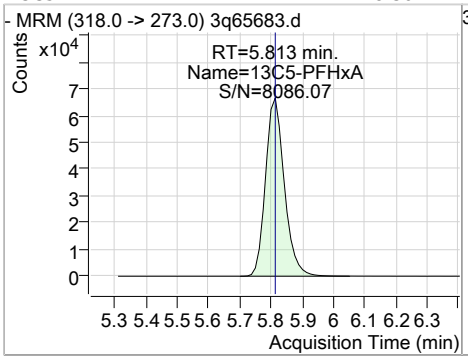
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.38	5.71	0.00	112405	327.0 -> 81.0	44.1	22.0	66.1

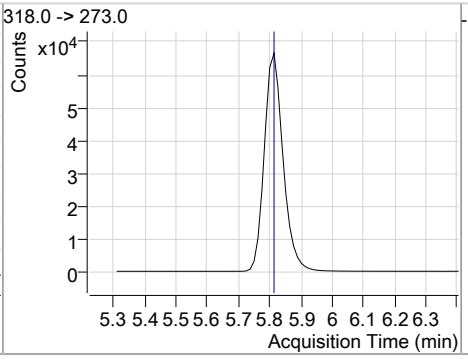


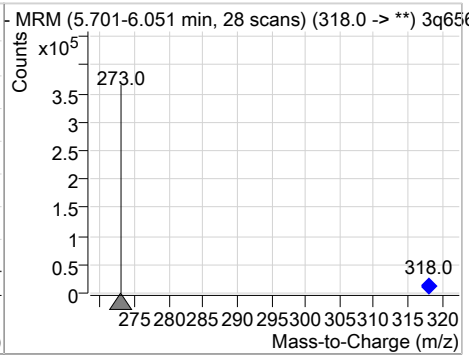




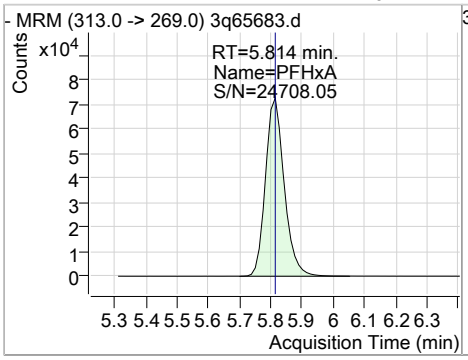
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.30	5.81	0.00	277795				

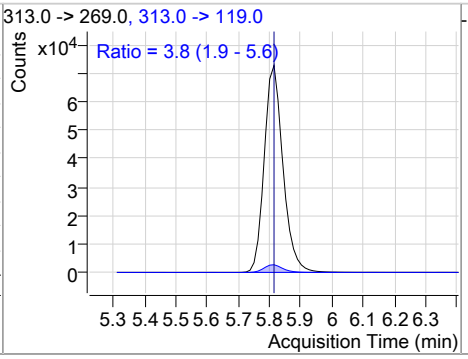


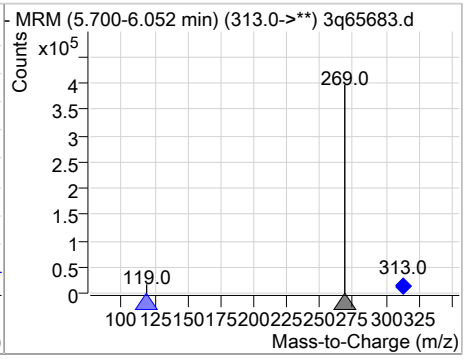




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.42	5.81	0.00	302499	313.0 -> 119.0	3.8	1.9	5.6

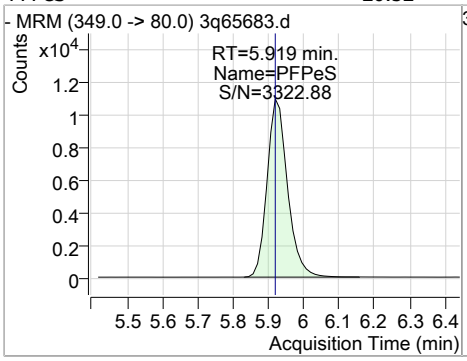


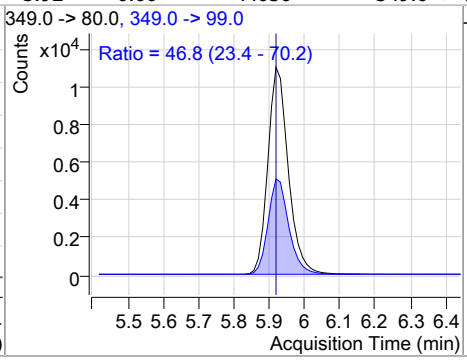


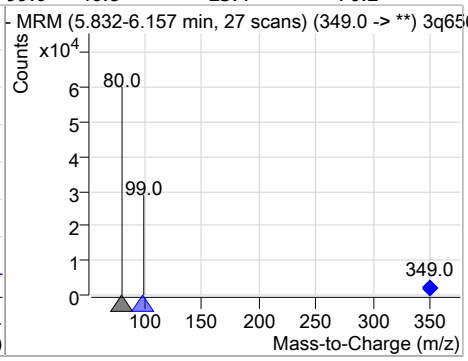


Perfluorinated Compounds by LC/MS/MS

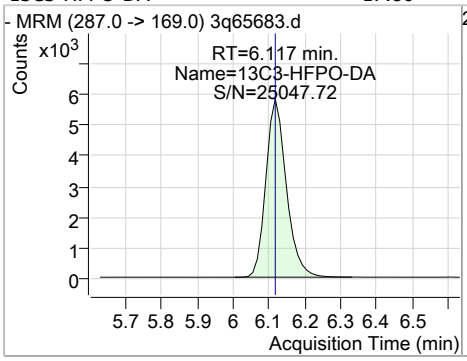
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.52	5.92	0.00	44030	349.0 -> 99.0	46.8	23.4	70.2

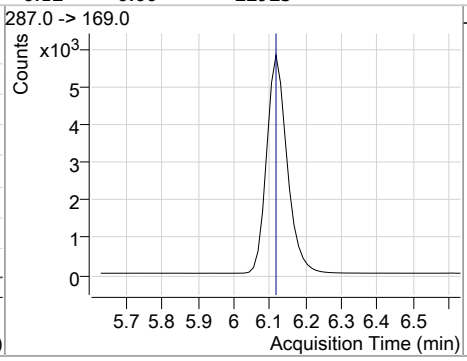


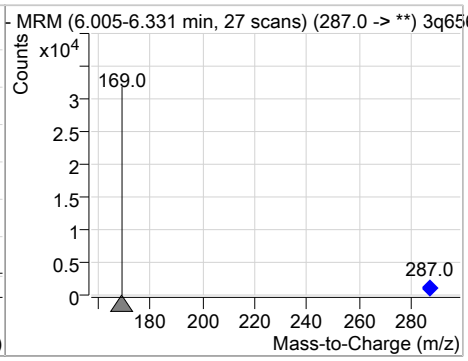




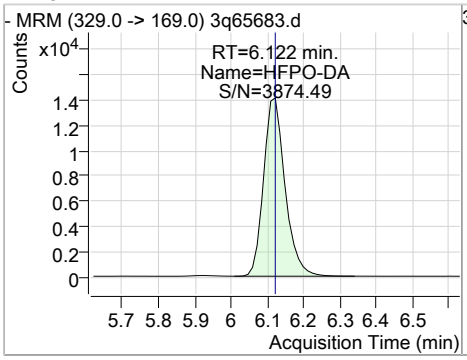
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.86	6.12	0.00	22925				

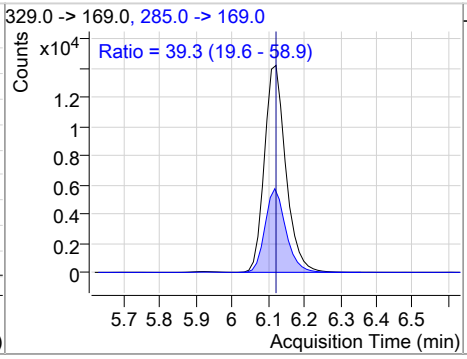


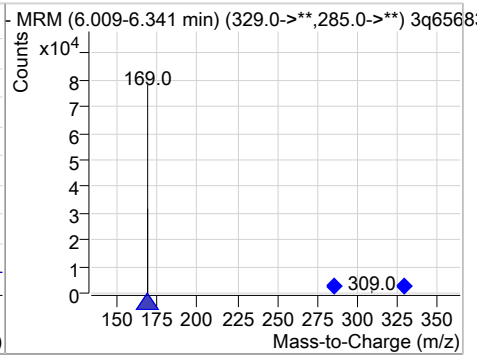




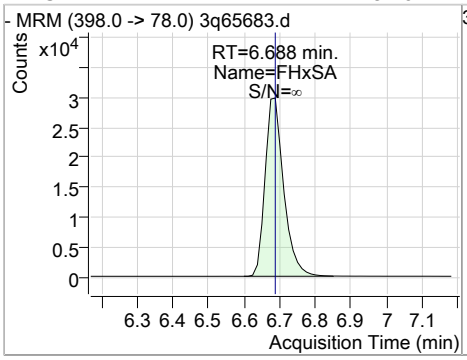
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.22	6.12	0.00	57979	285.0 -> 169.0	39.3	19.6	58.9

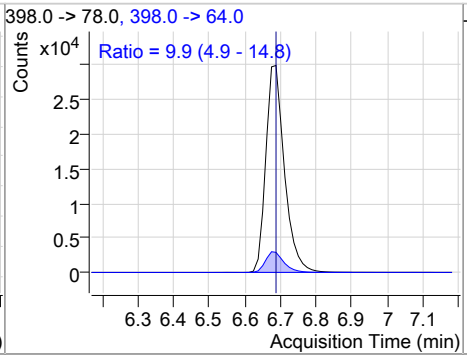


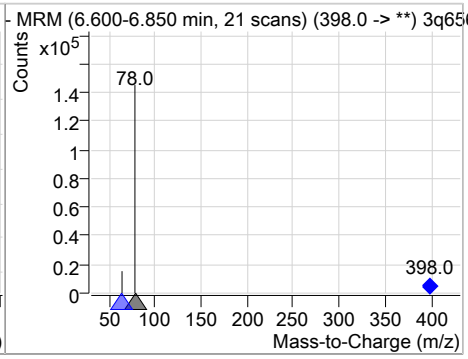




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.78	6.69	0.00	108267	398.0 -> 64.0	9.9	4.9	14.8

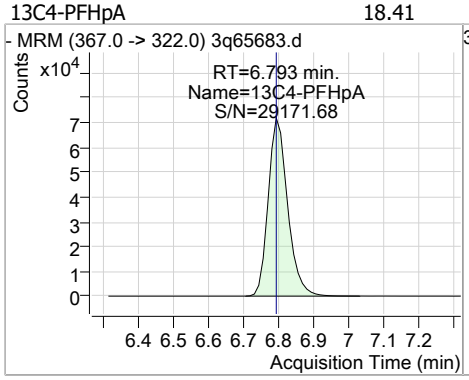


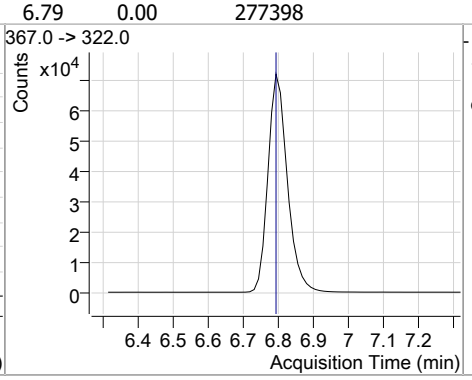


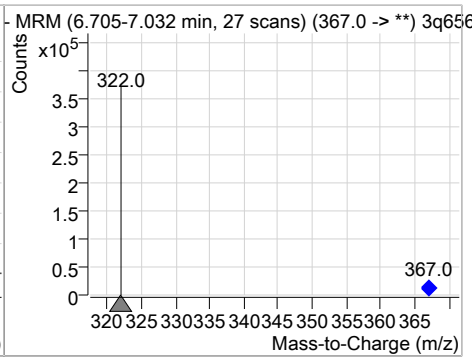


Perfluorinated Compounds by LC/MS/MS

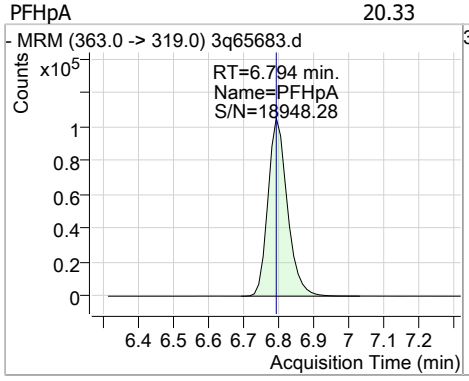
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.41	6.79	0.00	277398				

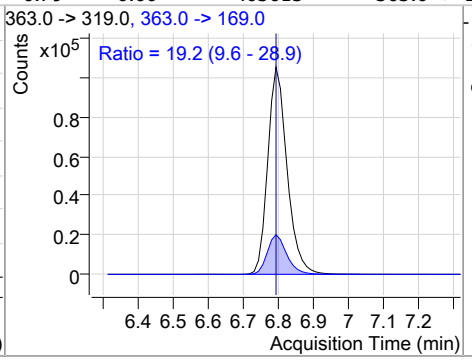


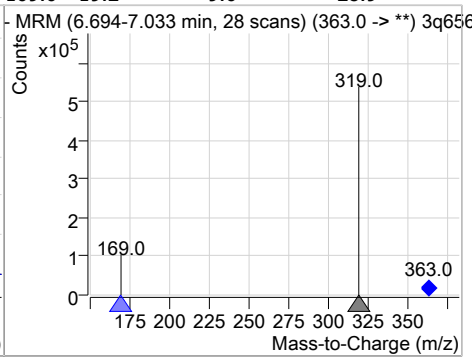




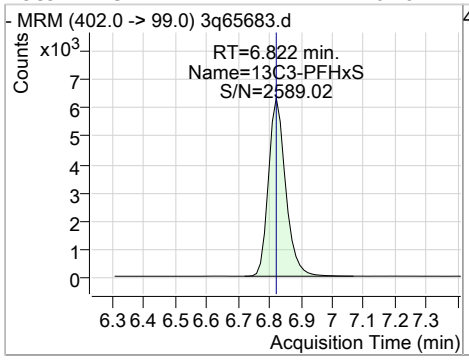
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.33	6.79	0.00	403613	363.0 -> 169.0	19.2	9.6	28.9

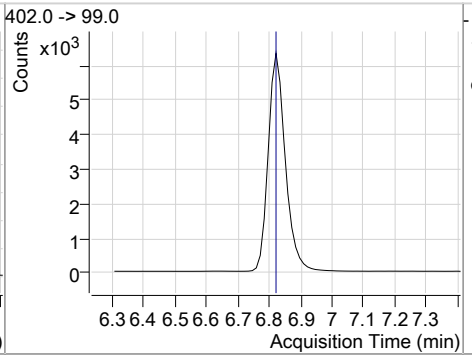


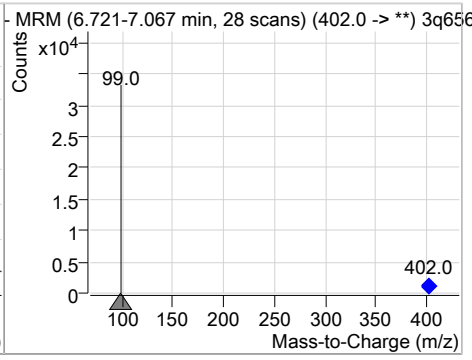




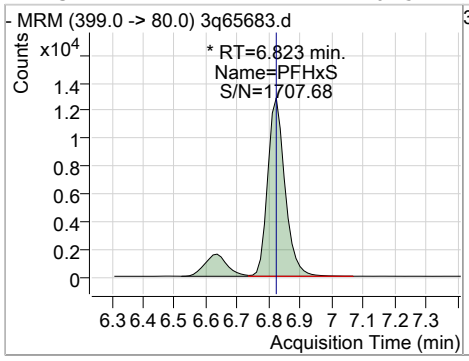
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.48	6.82	0.00	23874				

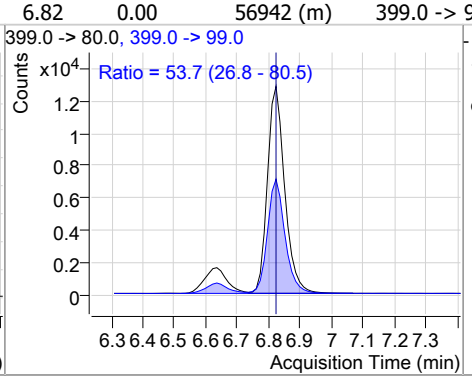


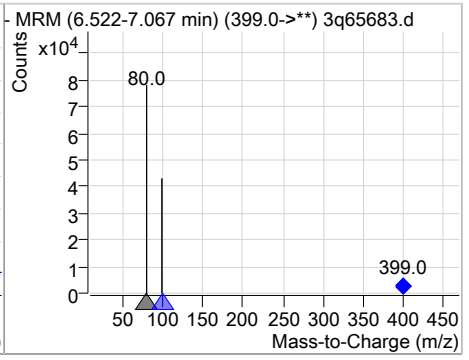




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.45	6.82	0.00	56942 (m)	399.0 -> 99.0	53.7	26.8	80.5

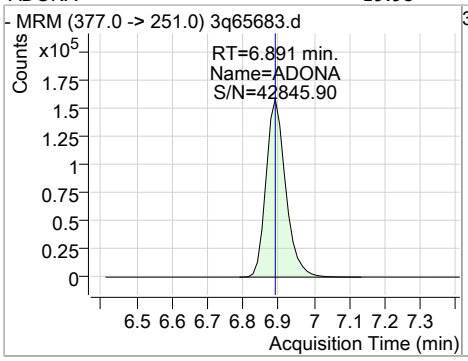


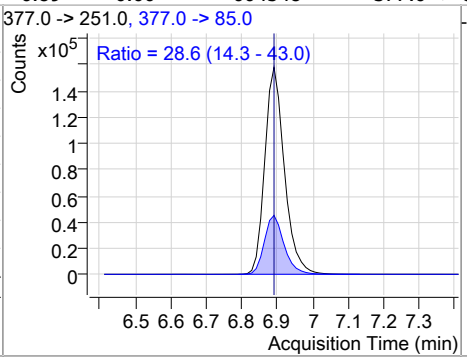


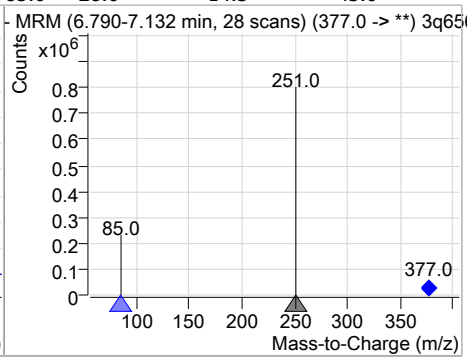


Perfluorinated Compounds by LC/MS/MS

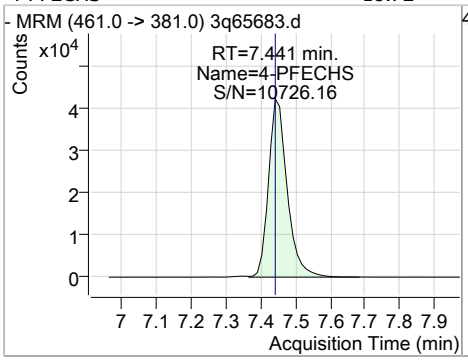
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.98	6.89	0.00	604548	377.0 -> 85.0	28.6	14.3	43.0

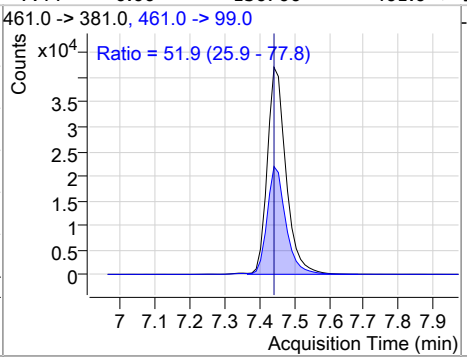


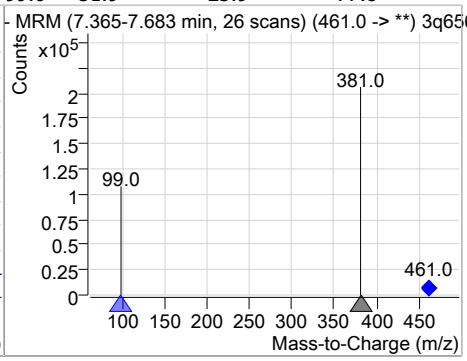




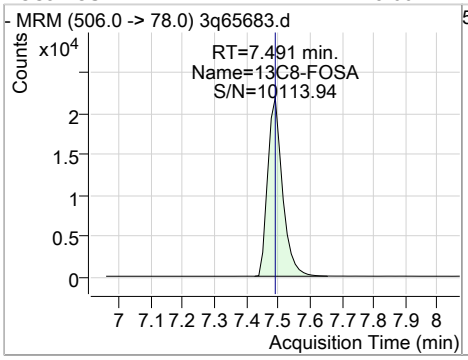
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.72	7.44	0.00	156700	461.0 -> 99.0	51.9	25.9	77.8

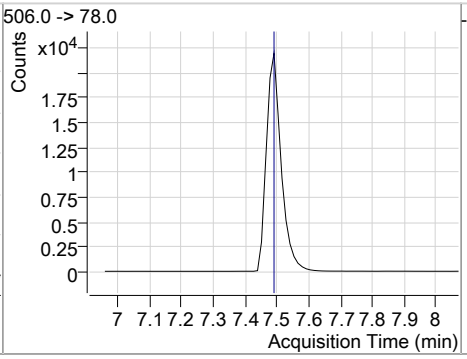


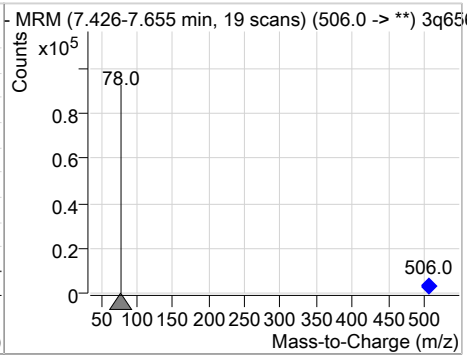




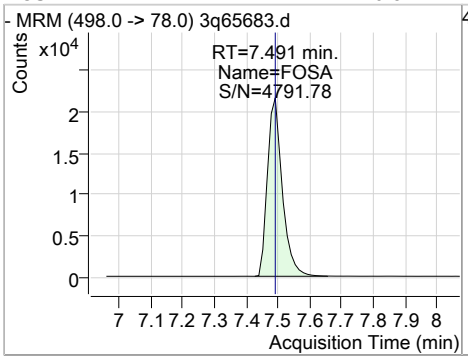
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.66	7.49	0.00	70487				

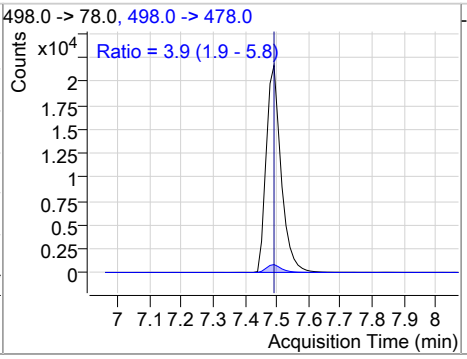


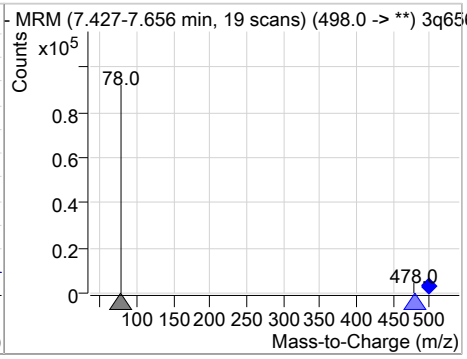




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.84	7.49	0.00	69932	498.0 -> 478.0	3.9	1.9	5.8

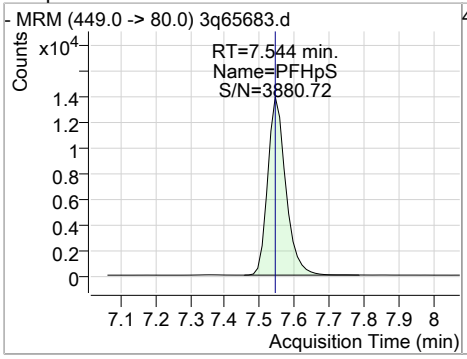


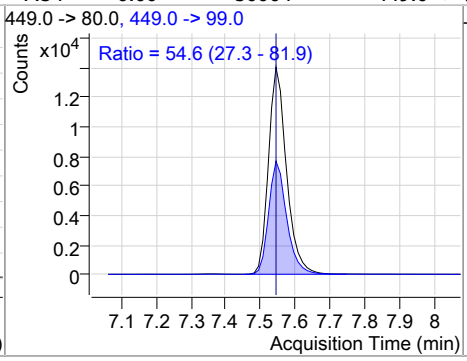


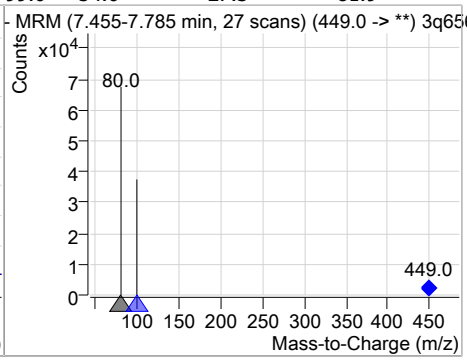


Perfluorinated Compounds by LC/MS/MS

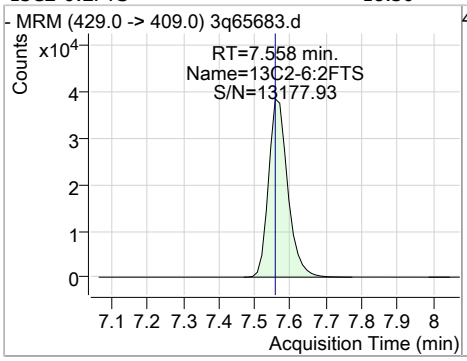
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.55	7.54	0.00	50064	449.0 -> 99.0	54.6	27.3	81.9

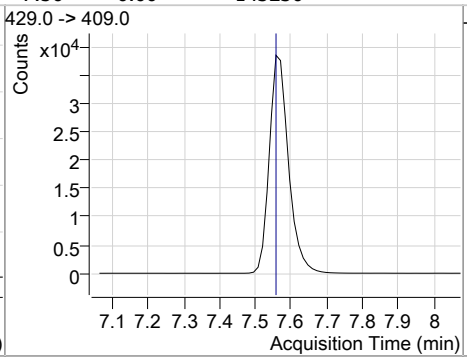


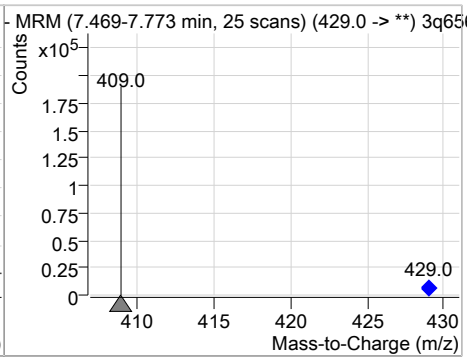




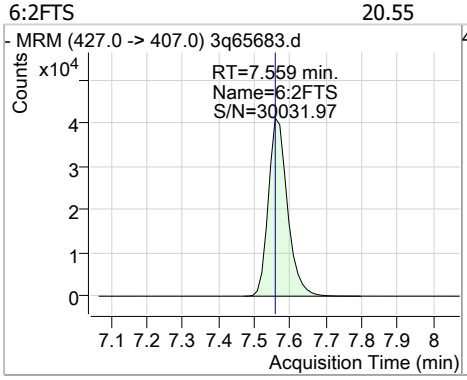
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.30	7.56	0.00	143230				

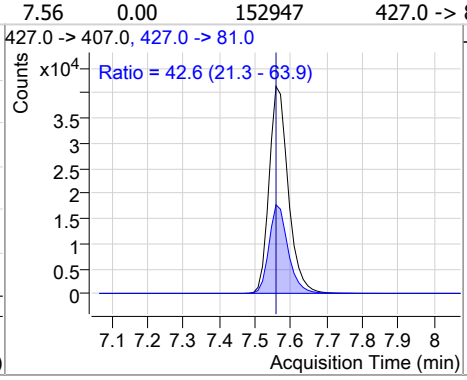


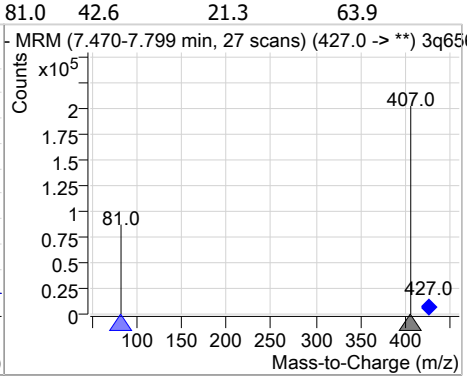




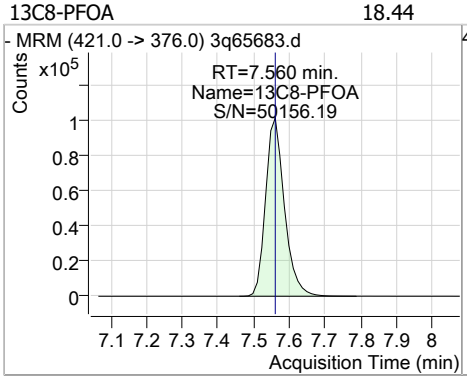
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.55	7.56	0.00	152947	427.0 -> 81.0	42.6	21.3	63.9

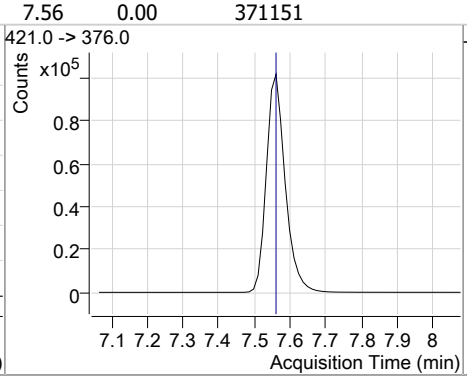


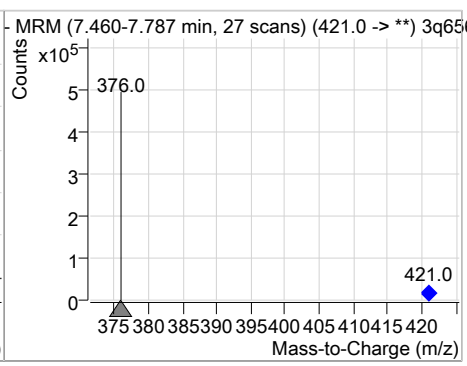




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.44	7.56	0.00	371151				

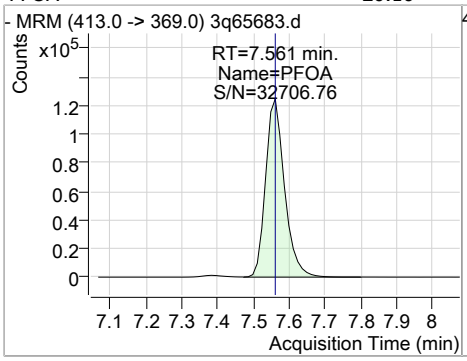


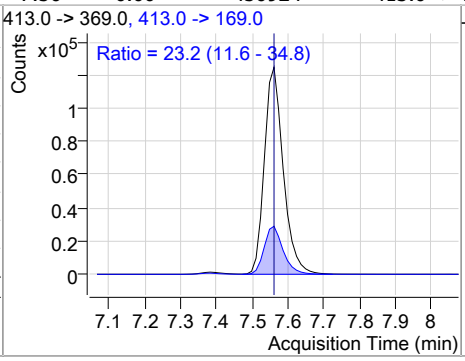


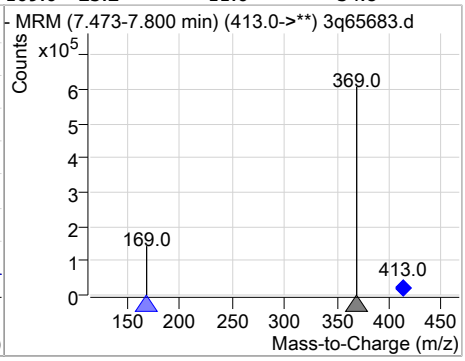


Perfluorinated Compounds by LC/MS/MS

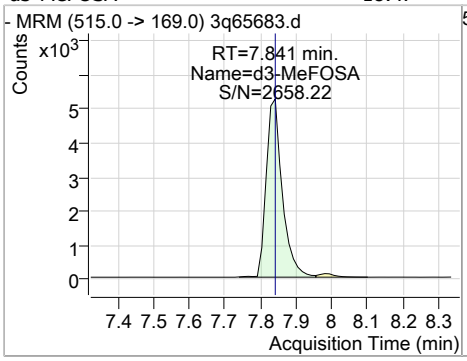
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.16	7.56	0.00	456924	413.0 -> 169.0	23.2	11.6	34.8

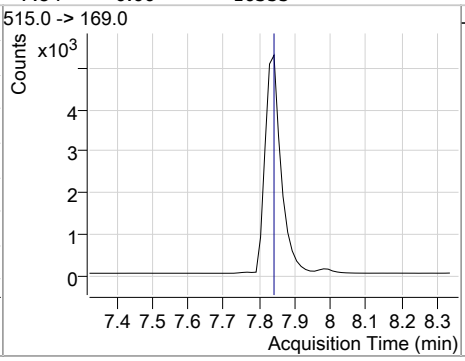


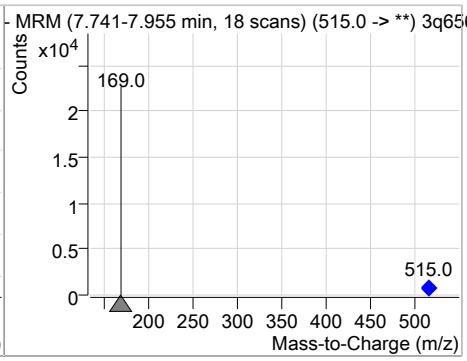




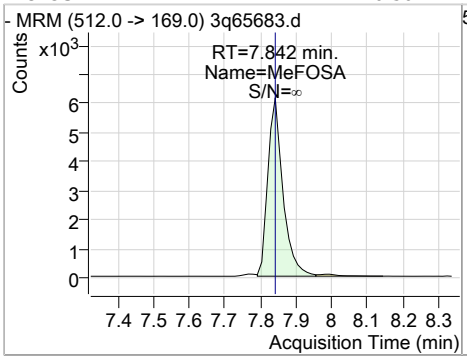
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.47	7.84	0.00	16355				

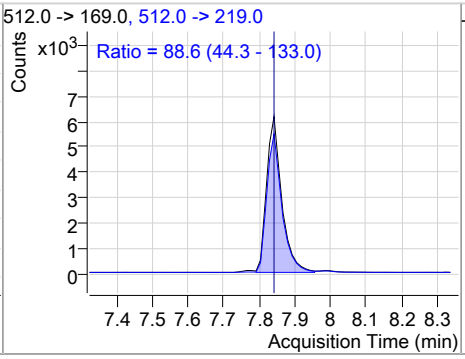


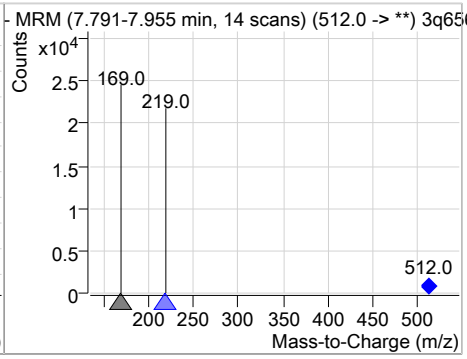




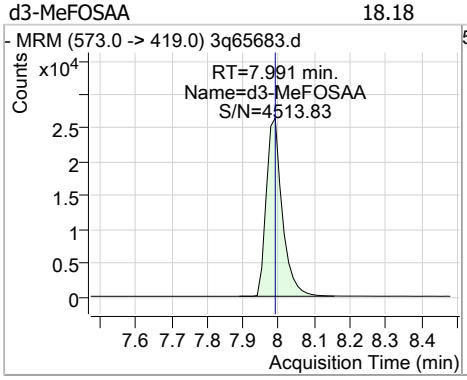
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.50	7.84	0.00	18049	512.0 -> 219.0	88.6	44.3	133.0

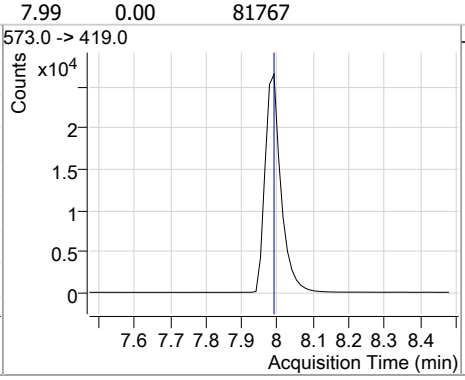


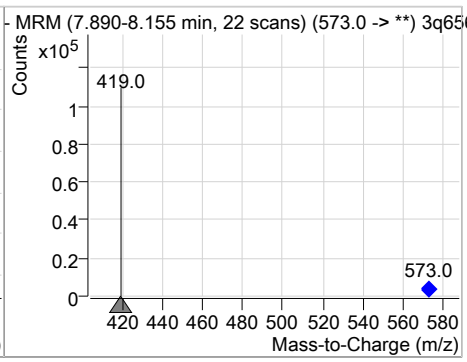




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.18	7.99	0.00	81767				

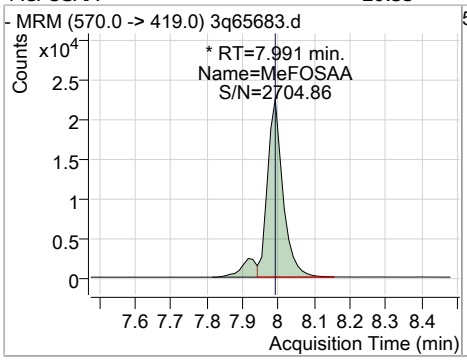


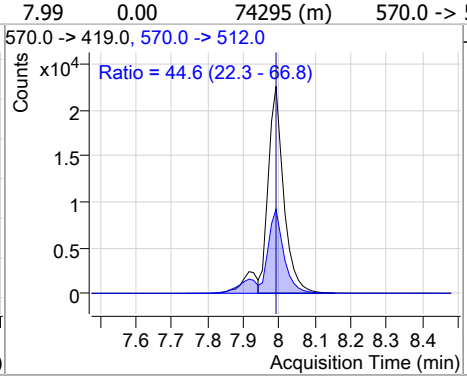


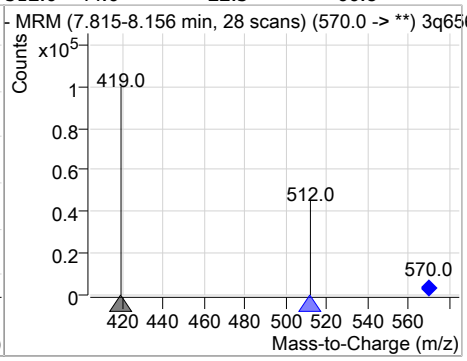


Perfluorinated Compounds by LC/MS/MS

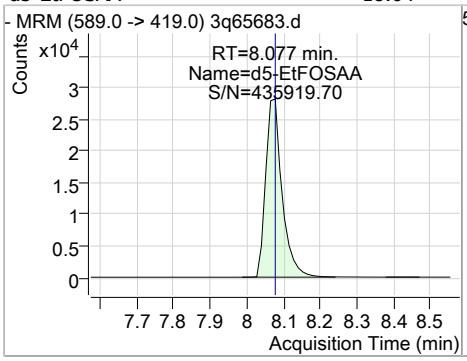
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.35	7.99	0.00	74295 (m)	570.0 -> 512.0	44.6	22.3	66.8

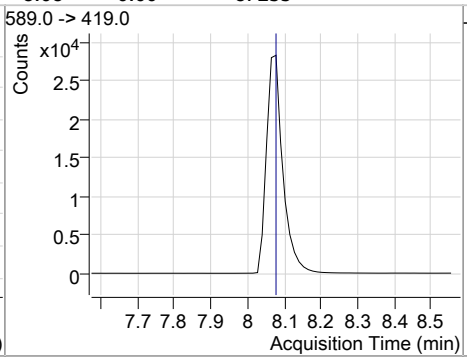


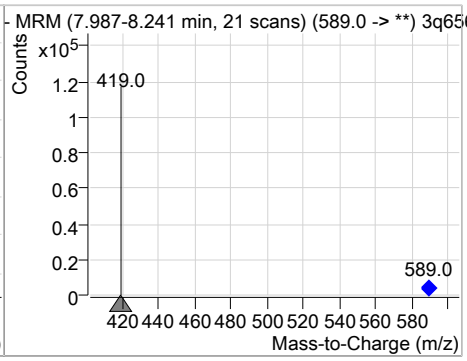




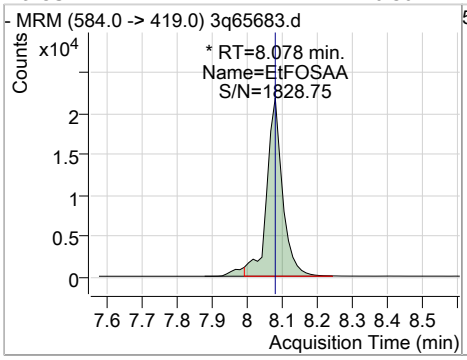
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.64	8.08	0.00	87255				

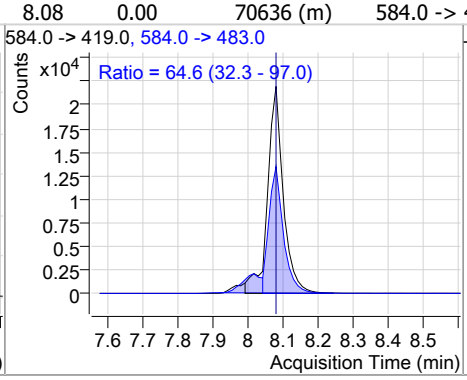


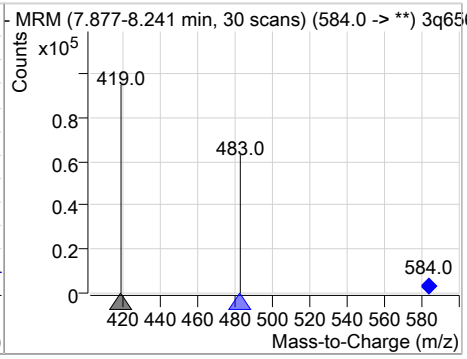




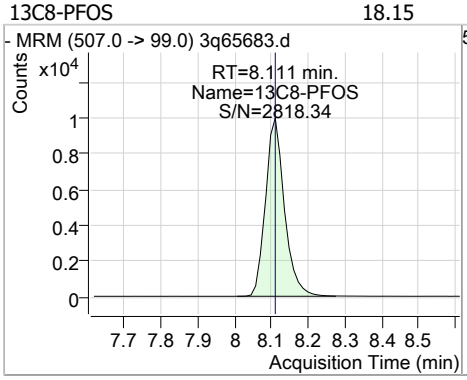
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.30	8.08	0.00	70636 (m)	584.0 -> 483.0	64.6	32.3	97.0

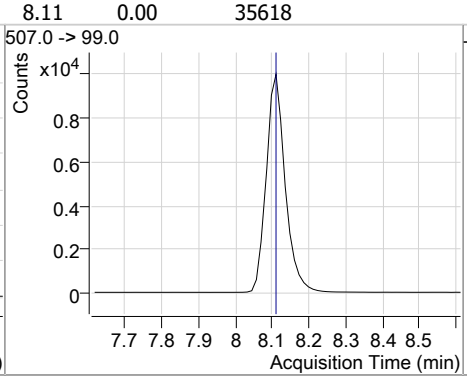


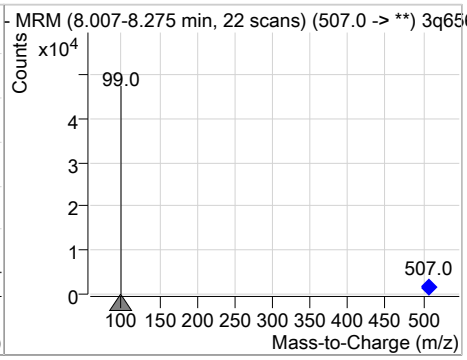




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.15	8.11	0.00	35618				

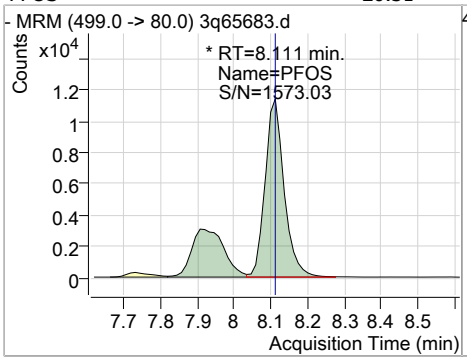


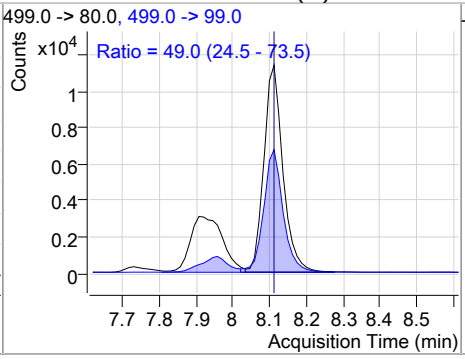


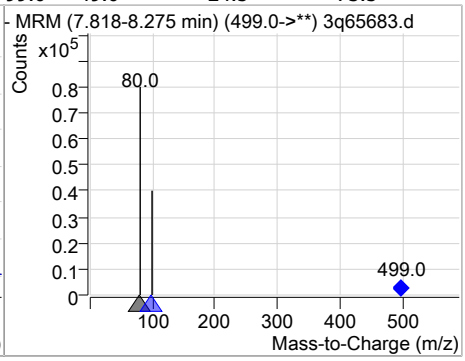


Perfluorinated Compounds by LC/MS/MS

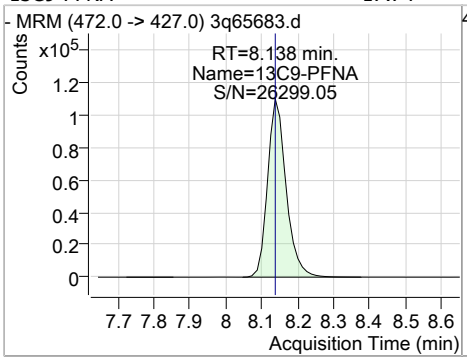
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.31	8.11	0.00	59569 (m)	499.0 -> 99.0	49.0	24.5	73.5

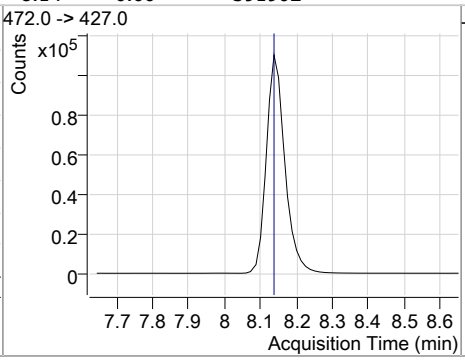


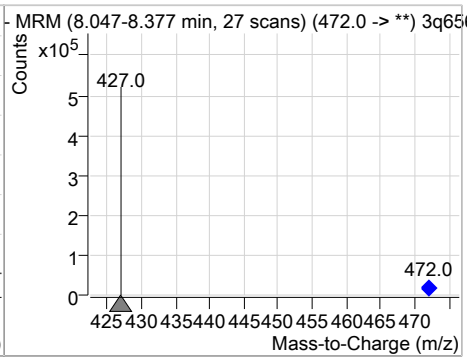




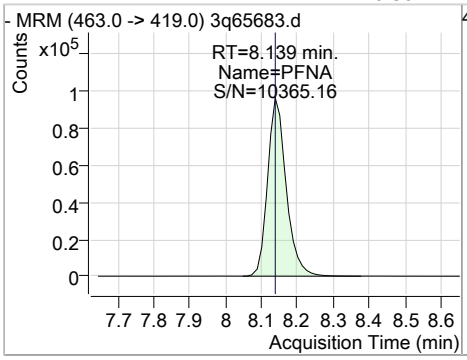
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.74	8.14	0.00	391902				

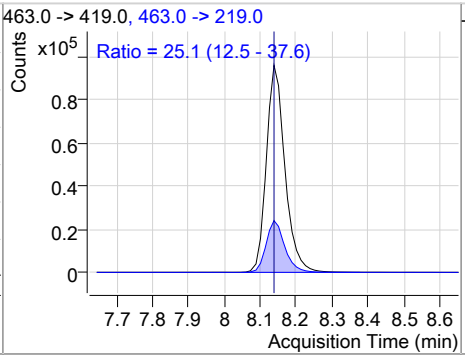


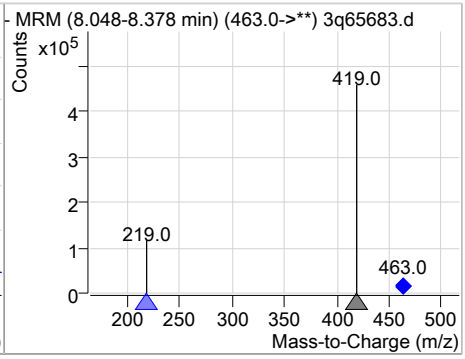




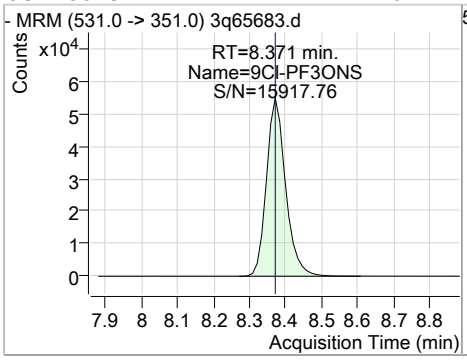
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.30	8.14	0.00	344474	463.0 -> 219.0	25.1	12.5	37.6

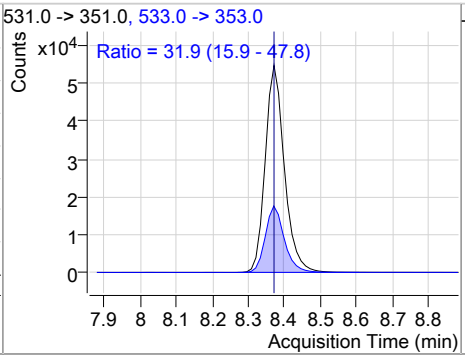


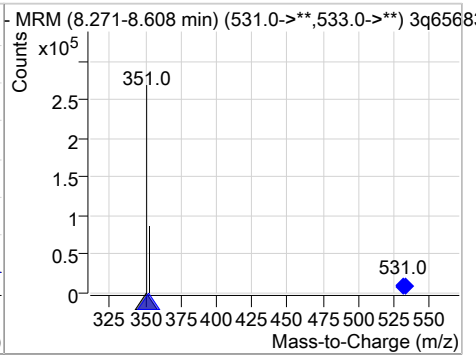




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.64	8.37	0.00	201750	533.0 -> 353.0	31.9	15.9	47.8

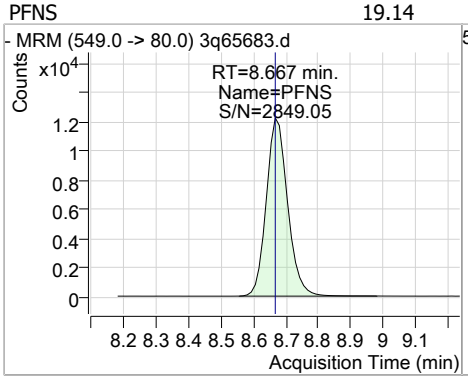


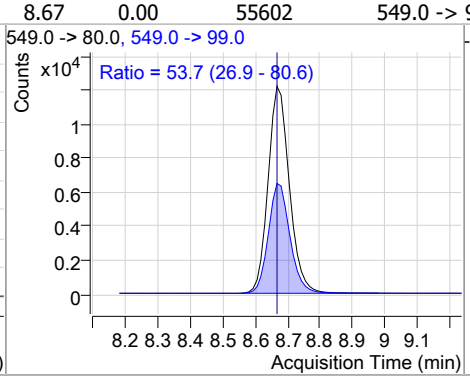


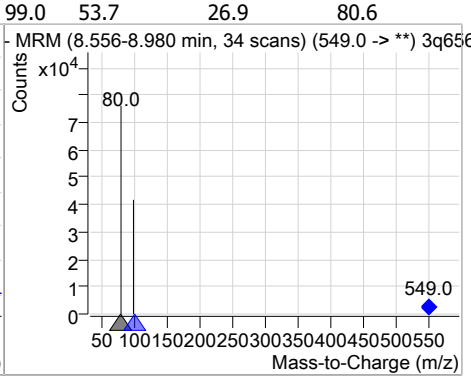


Perfluorinated Compounds by LC/MS/MS

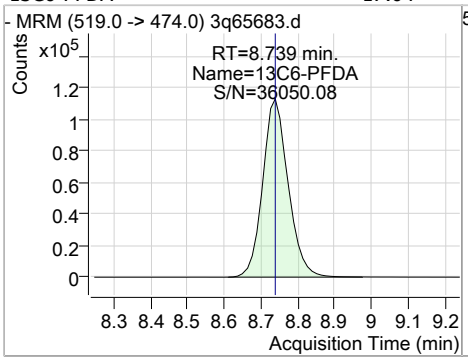
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.14	8.67	0.00	55602	549.0 -> 99.0	53.7	26.9	80.6

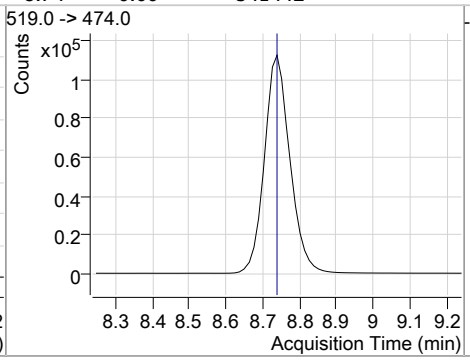


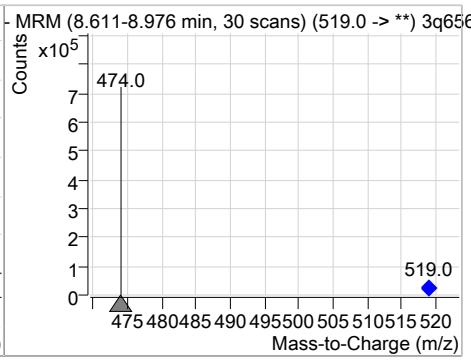




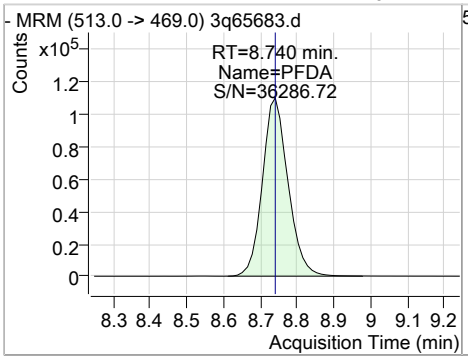
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.04	8.74	0.00	541442				

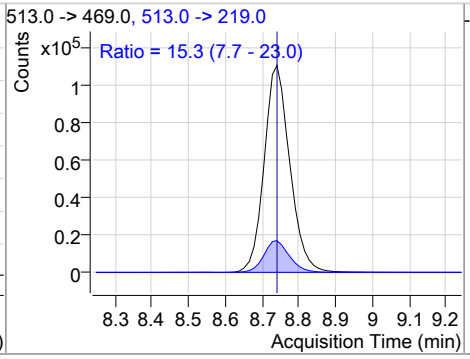


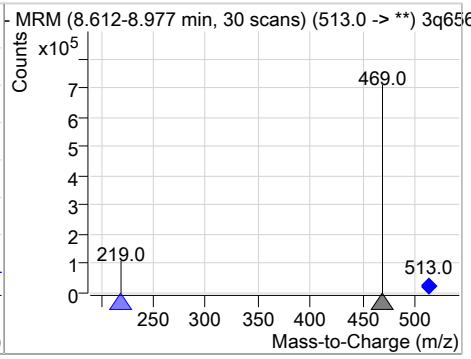




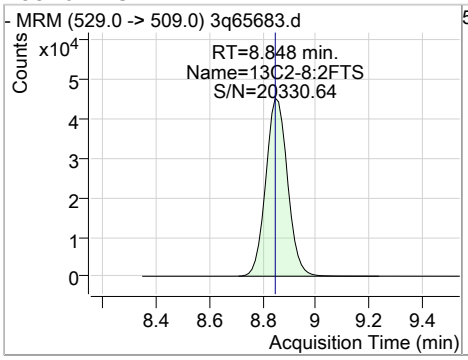
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.44	8.74	0.00	533337	513.0 -> 219.0	15.3	7.7	23.0

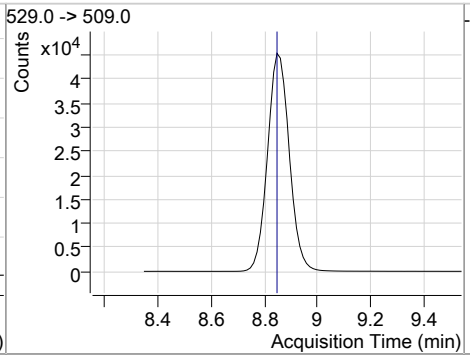


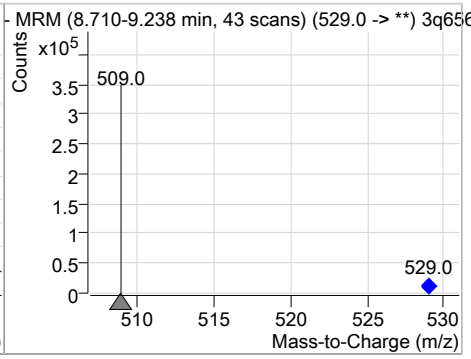




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.71	8.85	0.00	257352				

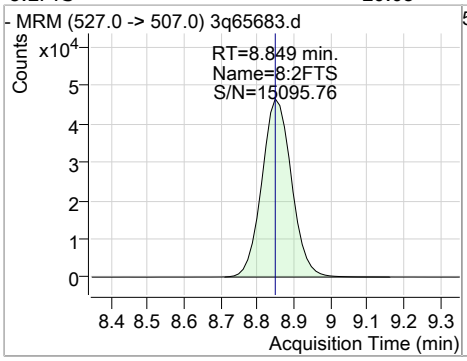


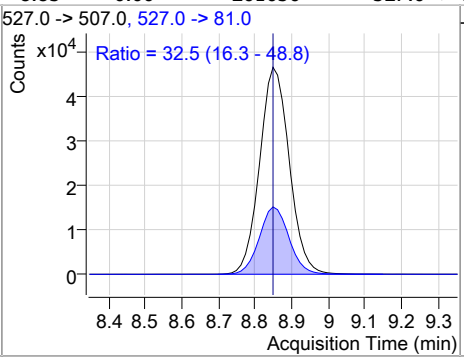


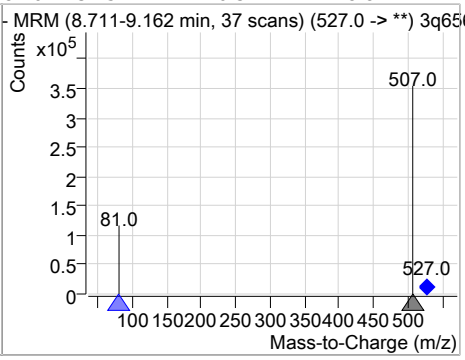


Perfluorinated Compounds by LC/MS/MS

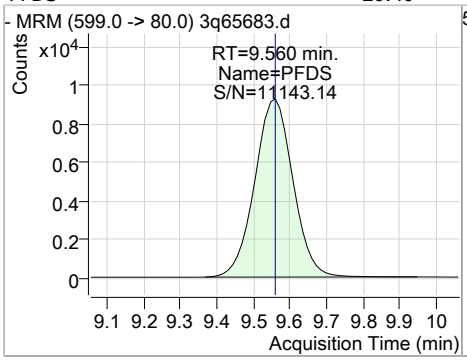
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.08	8.85	0.00	261656	527.0 -> 81.0	32.5	16.3	48.8

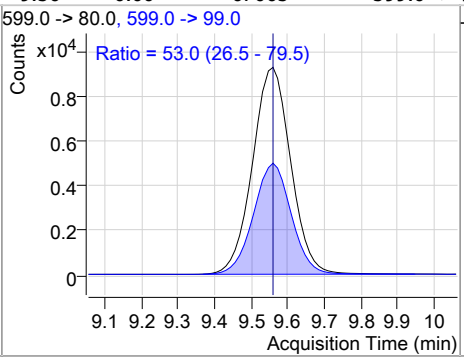


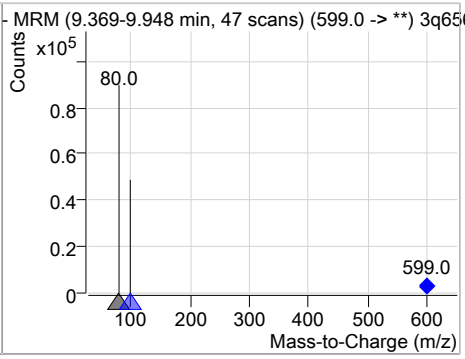




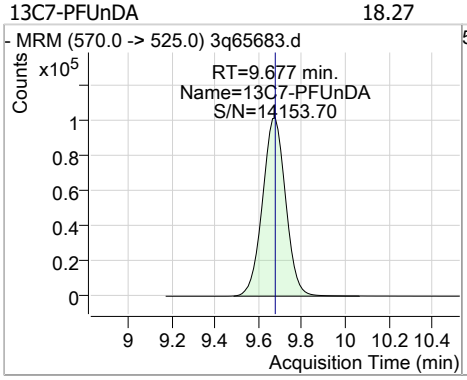
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.40	9.56	0.00	67065	599.0 -> 99.0	53.0	26.5	79.5

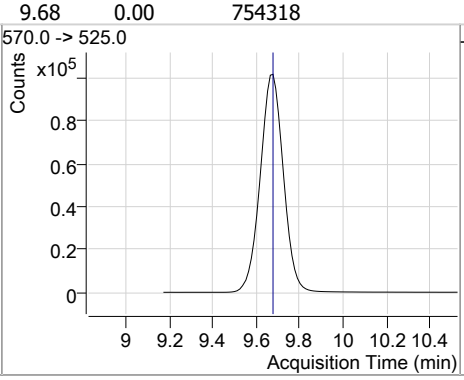


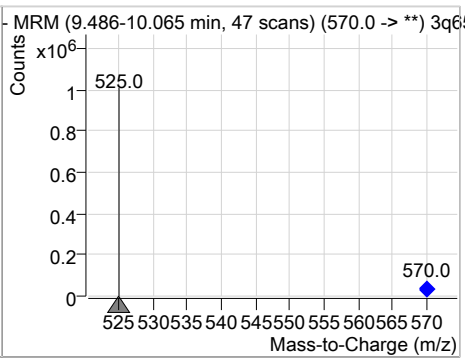




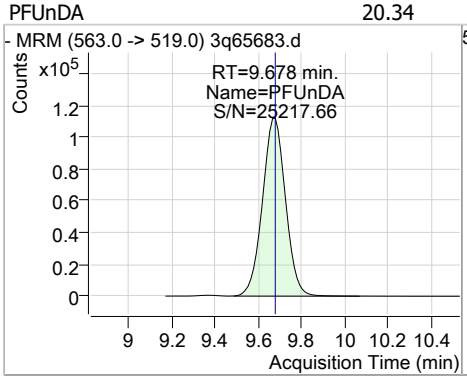
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.27	9.68	0.00	754318				

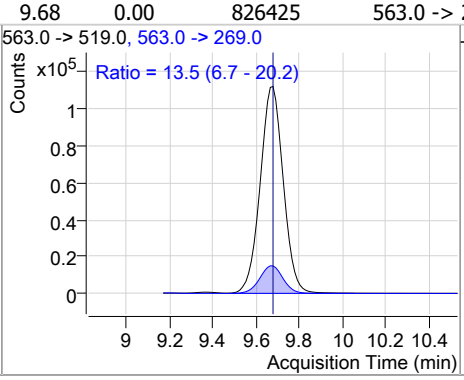


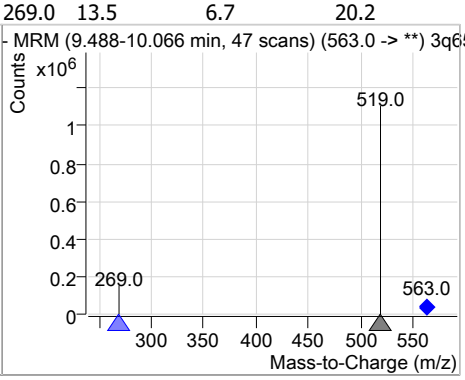




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.34	9.68	0.00	826425	563.0 -> 269.0	13.5	6.7	20.2

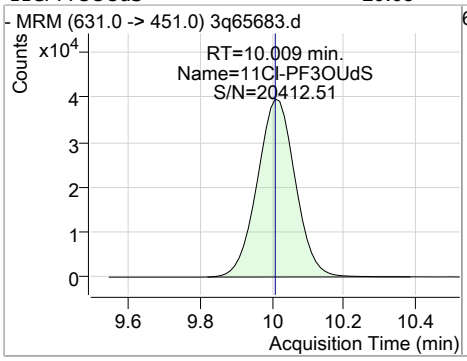


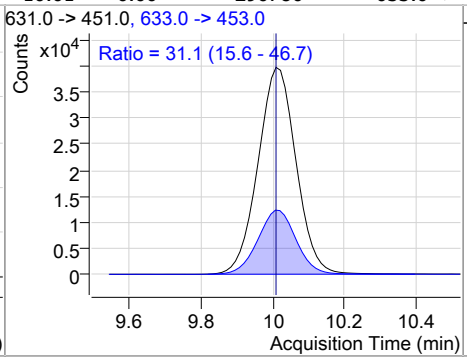


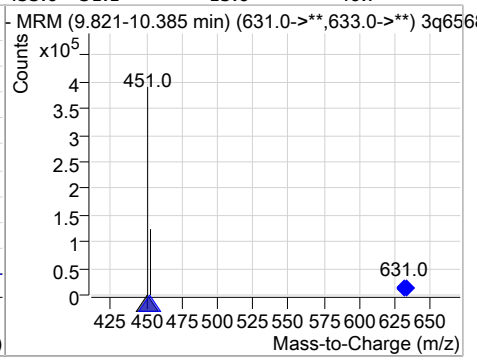


Perfluorinated Compounds by LC/MS/MS

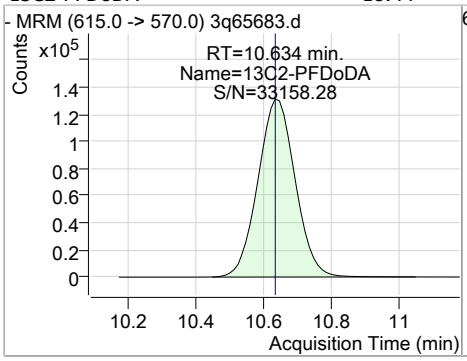
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.08	10.01	0.00	290780	633.0 -> 453.0	31.1	15.6	46.7

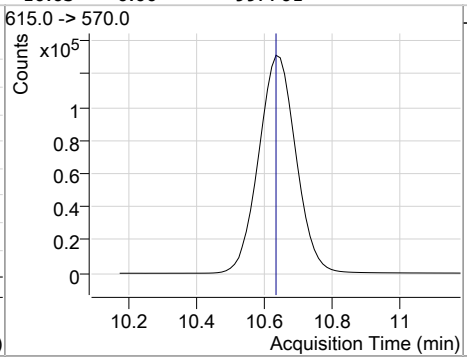


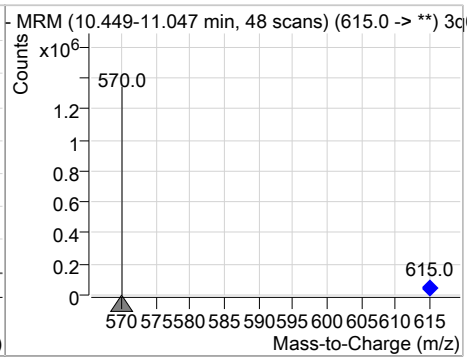




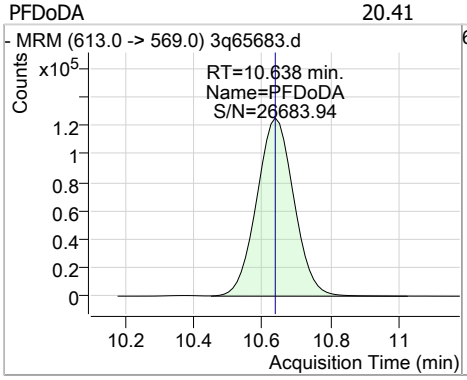
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.44	10.63	0.00	997761				

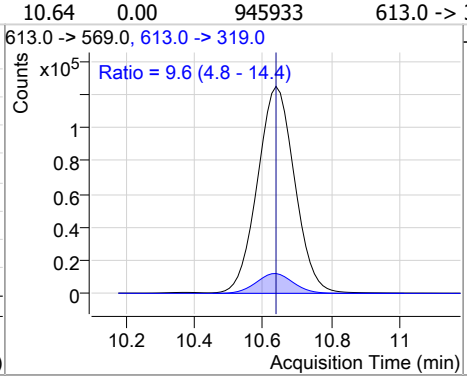


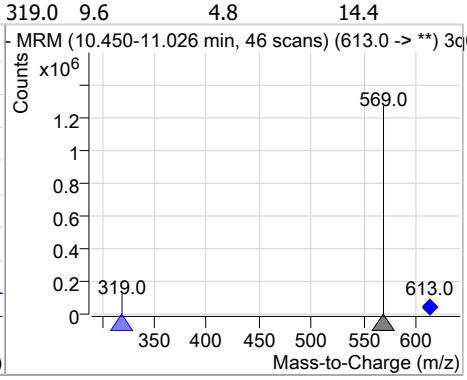




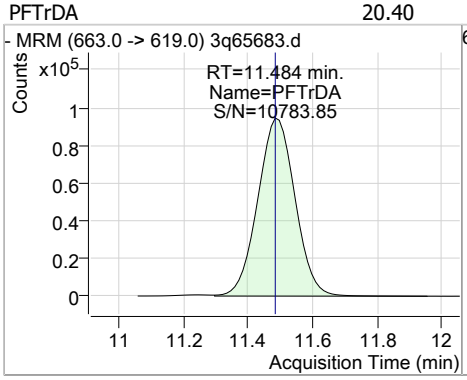
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.41	10.64	0.00	945933	613.0 -> 319.0	9.6	4.8	14.4

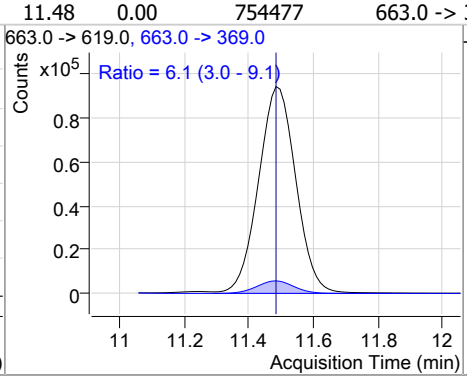


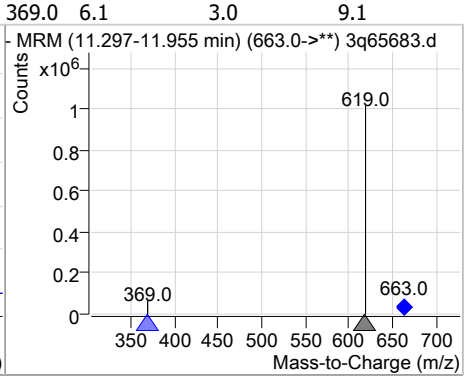




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.40	11.48	0.00	754477	663.0 -> 369.0	6.1	3.0	9.1

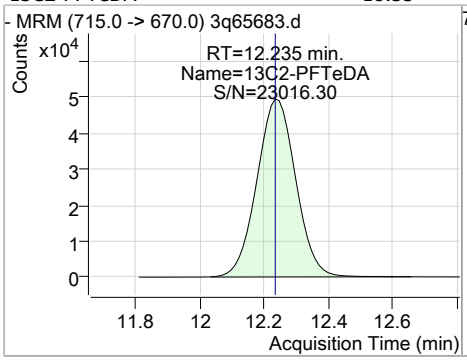


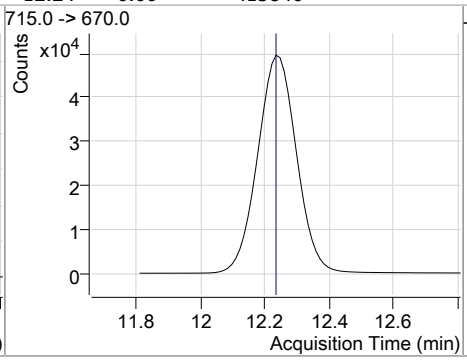


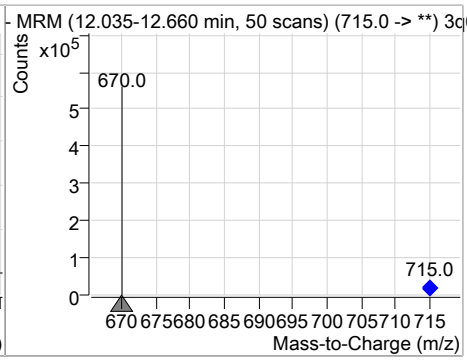


Perfluorinated Compounds by LC/MS/MS

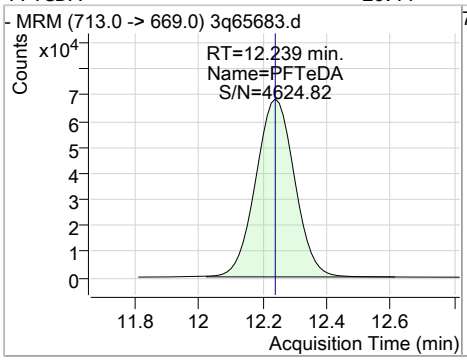
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.35	12.24	0.00	415846				

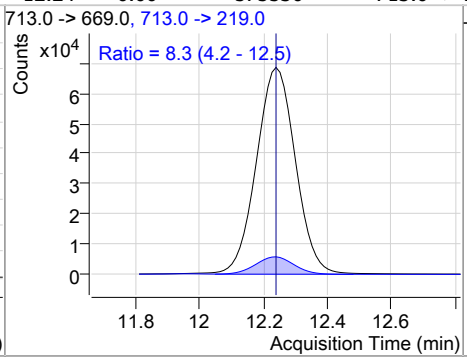


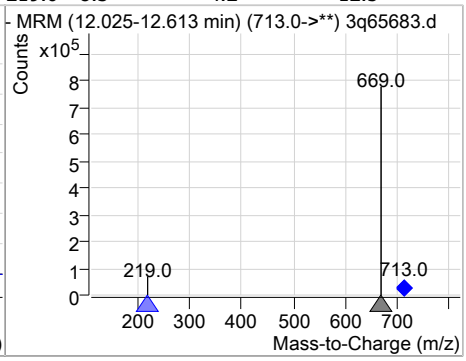




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.44	12.24	0.00	575530	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-ICC898
Lab FileID: 3Q65683.D
Injection Time: 09/13/22 17:28
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65684.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 5:47:45 PM
Sample Name : ic898-50
Vial : P1-A8
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

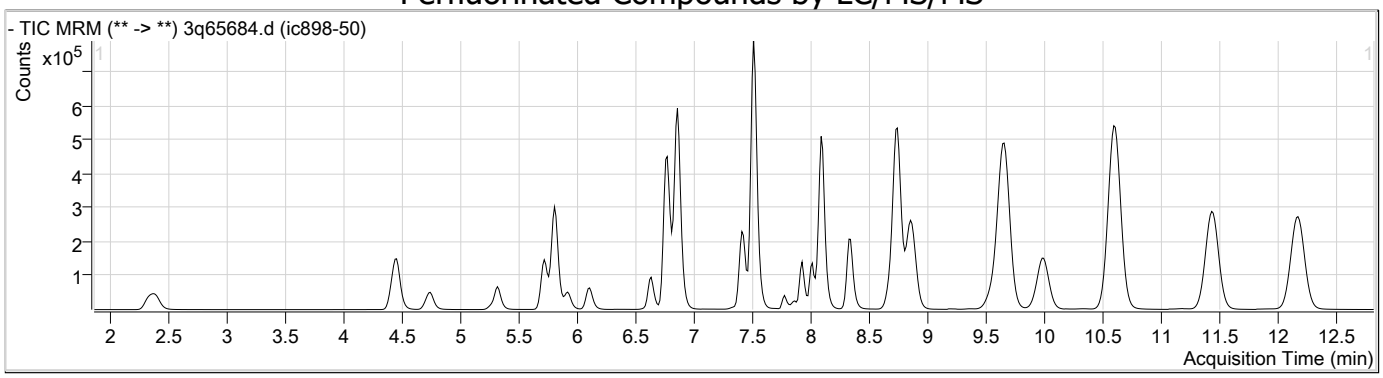
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M4-PFBA	2.365	217.0 -> 172.0	172807	20.00	µg/L		0.000
M5-PFPeA	4.449	268.0 -> 223.0	254498	20.00	µg/L		0.038
M5-PFHxA	5.800	318.0 -> 273.0	337214	20.00	µg/L		-0.014
M4-PFHpA	6.755	367.0 -> 322.0	325749	20.00	µg/L		-0.038
M8-PFOA	7.510	421.0 -> 376.0	426761	20.00	µg/L		-0.050
M9-PFNA	8.088	472.0 -> 427.0	487565	20.00	µg/L		-0.050
M6-PFDA	8.739	519.0 -> 474.0	718952	20.00	µg/L		0.000
M7-PFUnDA	9.652	570.0 -> 525.0	906015	20.00	µg/L		-0.025
M2-PFDoDA	10.596	615.0 -> 570.0	1182236	20.00	µg/L		-0.038
M2-PFTeDA	12.160	715.0 -> 670.0	496698	20.00	µg/L		-0.075
M8-FOSA	7.426	506.0 -> 78.0	78019	20.00	µg/L		-0.064
M3-PFBS	4.729	302.0 -> 99.0	23305	20.00	µg/L		0.038
M3-PFHxS	6.784	402.0 -> 99.0	28463	20.00	µg/L		-0.038
M8-PFOS	8.057	507.0 -> 99.0	42624	20.00	µg/L		-0.053
M2-4:2FTS	5.708	329.0 -> 309.0	137857	20.00	µg/L		0.000
M2-6:2FTS	7.520	429.0 -> 409.0	177241	20.00	µg/L		-0.038
M2-8:2FTS	8.848	529.0 -> 509.0	356900	20.00	µg/L		0.000
M3-MeFOSAA	7.915	573.0 -> 419.0	96098	20.00	µg/L		-0.076
M3-HFPO-DA	6.092	287.0 -> 169.0	28086	20.00	µg/L		-0.025
M3-MeFOSA	7.766	515.0 -> 169.0	19362	20.00	µg/L	m	-0.075
M5-EtFOSAA	7.989	589.0 -> 419.0	102613	20.00	µg/L		-0.088
System Monitoring Compounds							
13C2-4:2FTS	5.708	329.0 -> 309.0	137857	23.87	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.4%			
13C2-6:2FTS	7.520	429.0 -> 409.0	177241	22.64	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%			
13C2-8:2FTS	8.848	529.0 -> 509.0	356900	24.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.8%			
13C2-PFDoDA	10.596	615.0 -> 570.0	1182236	21.85	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
13C2-PFTeDA	12.160	715.0 -> 670.0	496698	21.92	µg/L		-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%			
13C3-PFBS	4.729	302.0 -> 99.0	23305	22.02	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%			
13C3-PFHxS	6.784	402.0 -> 99.0	28463	22.03	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%			
13C4-PFBA	2.365	217.0 -> 172.0	172807	21.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%			
13C4-PFHpA	6.755	367.0 -> 322.0	325749	21.62	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%			
13C5-PFHxA	5.800	318.0 -> 273.0	337214	22.21	µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%			
13C5-PFPeA	4.449	268.0 -> 223.0	254498	21.95	µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%			
13C6-PFDA	8.739	519.0 -> 474.0	718952	22.63	µg/L		0.000

Perfluorinated Compounds by LC/MS/MS

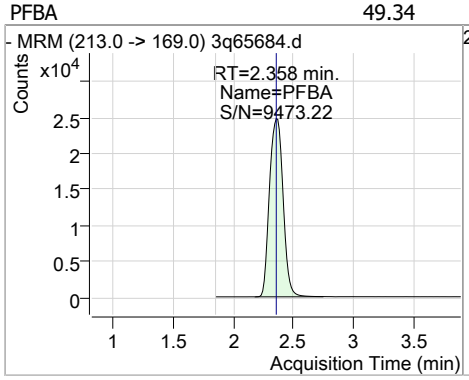
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C7-PFUnDA	9.652	570.0 -> 525.0	906015	21.95 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C8-FOSA	7.426	506.0 -> 78.0	78019	20.65 µg/L		-0.064
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-PFOA	7.510	421.0 -> 376.0	426761	21.20 µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C8-PFOS	8.057	507.0 -> 99.0	42624	21.72 µg/L		-0.053
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C9-PFNA	8.088	472.0 -> 427.0	487565	22.07 µg/L		-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
d3-MeFOSAA	7.915	573.0 -> 419.0	96098	21.37 µg/L		-0.076
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C3-HFPO-DA	6.092	287.0 -> 169.0	28088	21.89 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
d3-MeFOSA	7.766	515.0 -> 169.0	19362	21.87 µg/L	m	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
d5-EtFOSAA	7.989	589.0 -> 419.0	102575	21.91 µg/L		-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
Target Compounds						**QValue**
4:2FTS	5.710	327.0 -> 307.0	329868	45.38 µg/L		100
6:2FTS	7.521	427.0 -> 407.0	416963	45.27 µg/L		100
8:2FTS	8.849	527.0 -> 507.0	815329	45.11 µg/L		100
EtFOSAA	8.002	584.0 -> 419.0	203299	49.69 µg/L	m	100
FOSA	7.427	498.0 -> 78.0	185082	49.84 µg/L		99
MeFOSAA	7.916	570.0 -> 419.0	214149	49.90 µg/L	m	99
PFBA	2.358	213.0 -> 169.0	194894	49.34 µg/L		100
PFBS	4.732	299.0 -> 80.0	162474	49.06 µg/L		100
PFDA	8.740	513.0 -> 469.0	1695753	48.95 µg/L		100
PFDoDA	10.588	613.0 -> 569.0	2705436	49.27 µg/L		100
PFDS	9.532	599.0 -> 80.0	191596	48.53 µg/L		100
PFHpA	6.757	363.0 -> 319.0	1144446	49.10 µg/L		100
PFHpS	7.494	449.0 -> 80.0	144105	51.83 µg/L		100
PFHxA	5.801	313.0 -> 269.0	882336	49.08 µg/L		100
PFHxS	6.785	399.0 -> 80.0	162019	48.82 µg/L	m	99
PFNA	8.088	463.0 -> 419.0	1036518	49.09 µg/L		99
PFNS	8.667	549.0 -> 80.0	166347	47.85 µg/L		99
PFOA	7.511	413.0 -> 369.0	1278099	49.04 µg/L		100
PFOS	8.058	499.0 -> 80.0	171793	48.94 µg/L	m	99
PFPeA	4.451	263.0 -> 219.0	550186	49.51 µg/L		100
PFPeS	5.907	349.0 -> 80.0	128911	50.11 µg/L		99
PFTeDA	12.164	713.0 -> 669.0	1663291	49.45 µg/L		100
PFTrDA	11.422	663.0 -> 619.0	2182603	49.40 µg/L		100
PFUnDA	9.653	563.0 -> 519.0	2395148	49.08 µg/L		100
11Cl-PF3OUdS	9.972	631.0 -> 451.0	843280	49.15 µg/L		99
9Cl-PF3ONS	8.321	531.0 -> 351.0	614290	49.63 µg/L		99
ADONA	6.853	377.0 -> 251.0	1734244	48.06 µg/L		100
HFPO-DA	6.097	329.0 -> 169.0	169114	50.53 µg/L		100
MeFOSA	7.766	512.0 -> 169.0	51613	49.53 µg/L	m	96
4-PFECHS	7.402	461.0 -> 381.0	448406	46.60 µg/L		99
FBSA	5.315	298.0 -> 78.0	285773	49.73 µg/L		100
FHxSA	6.624	398.0 -> 78.0	303476	48.23 µg/L		100

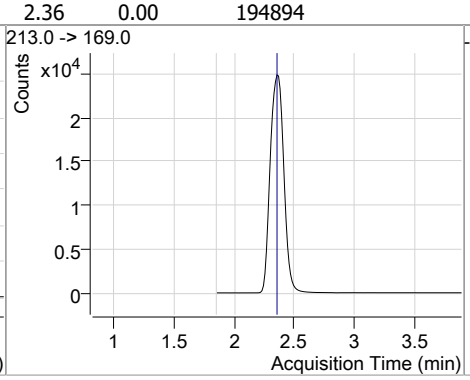
 # = Qualifier out of range, m = manually integrated, + = Area summed

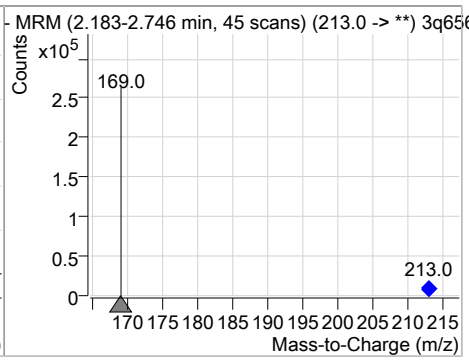
Perfluorinated Compounds by LC/MS/MS



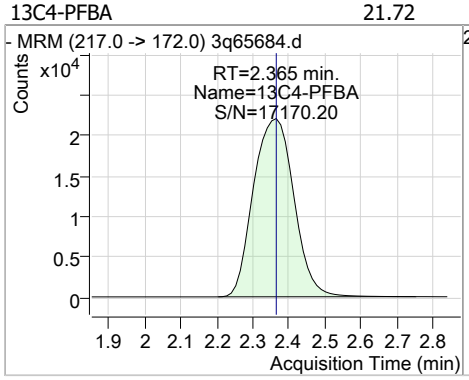
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.34	2.36	0.00	194894				

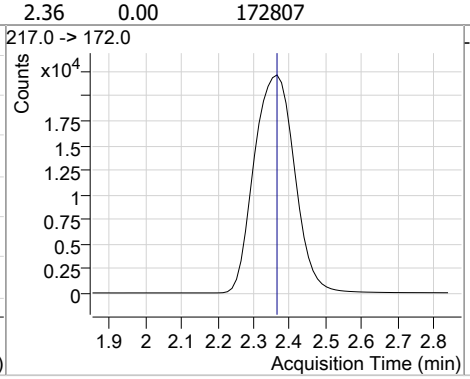


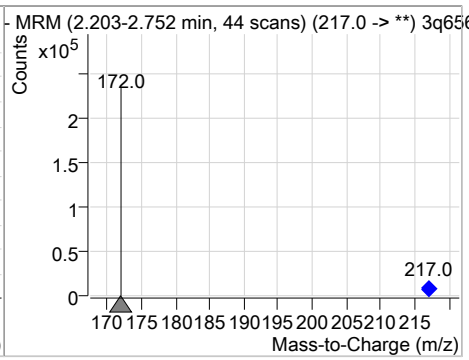




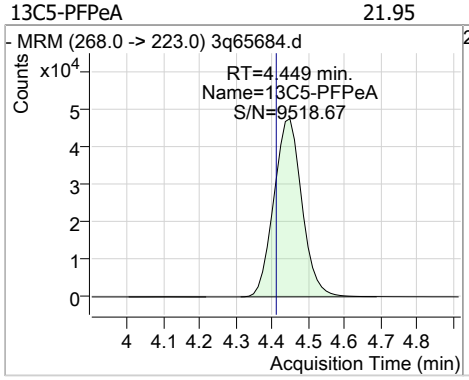
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.72	2.36	0.00	172807				

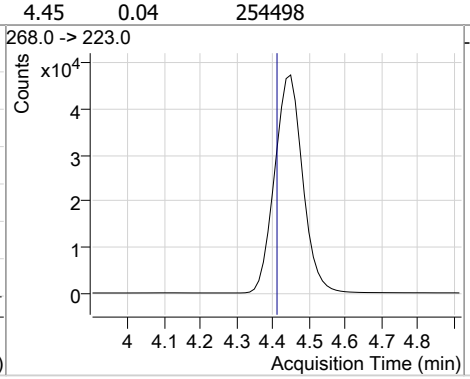


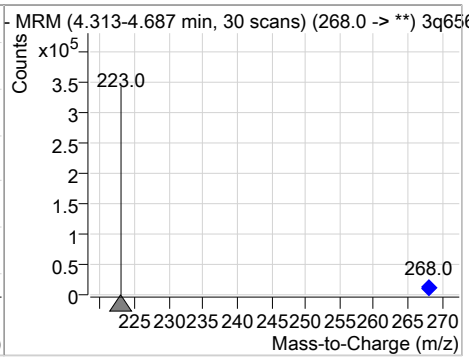




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.95	4.45	0.04	254498				

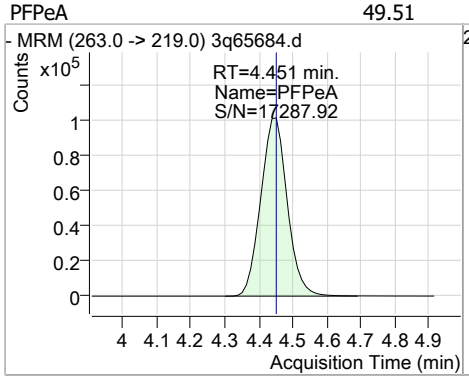


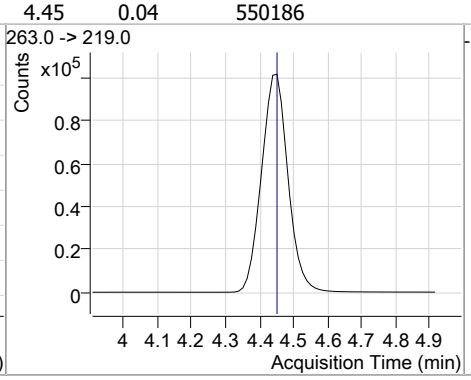


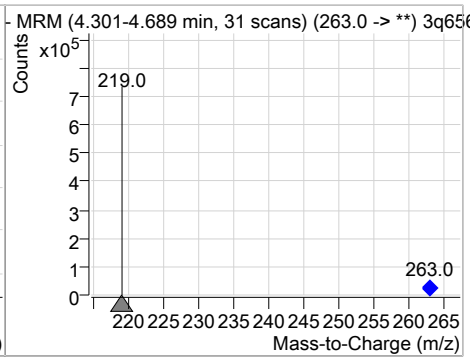


Perfluorinated Compounds by LC/MS/MS

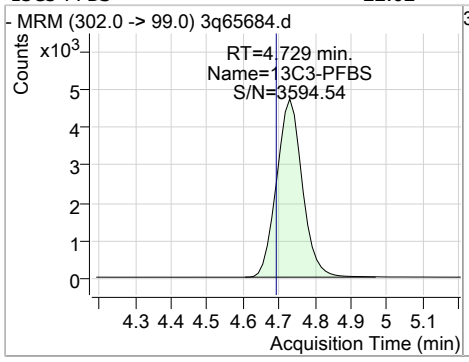
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.51	4.45	0.04	550186				

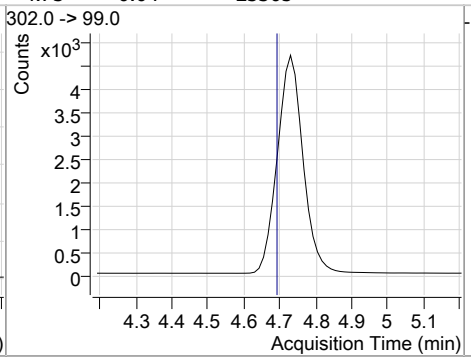


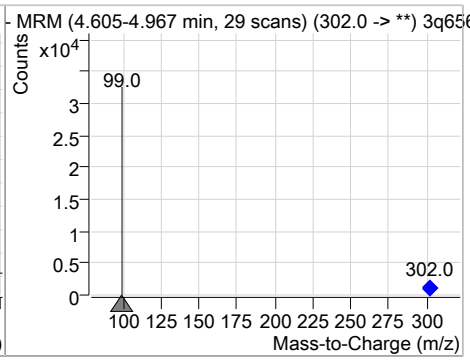




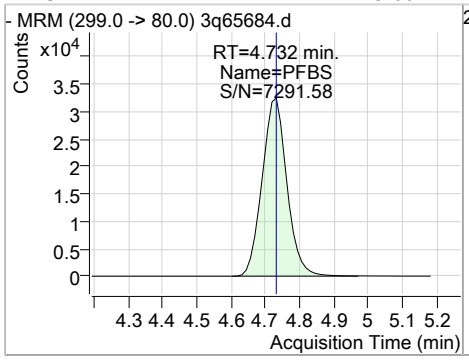
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.02	4.73	0.04	23305				

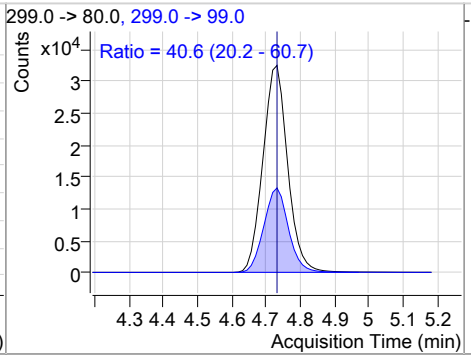


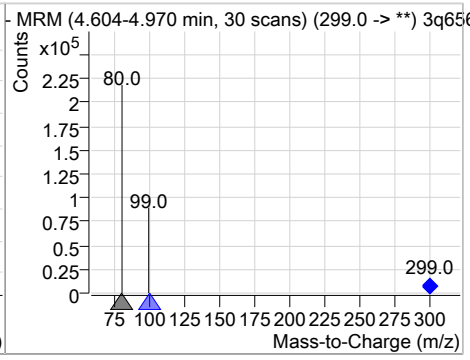




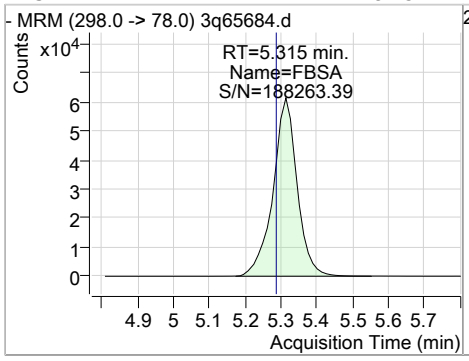
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.06	4.73	0.04	162474	299.0 -> 99.0	40.6	20.2	60.7

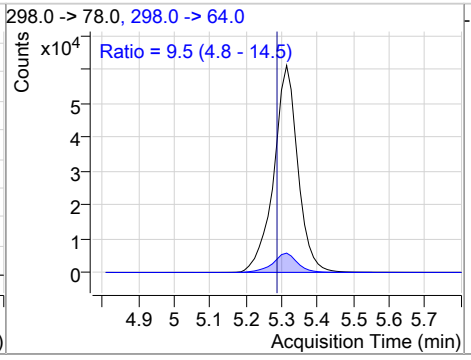


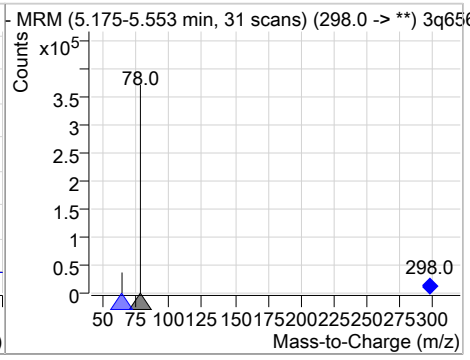




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	49.73	5.31	0.01	285773	298.0 -> 64.0	9.5	4.8	14.5

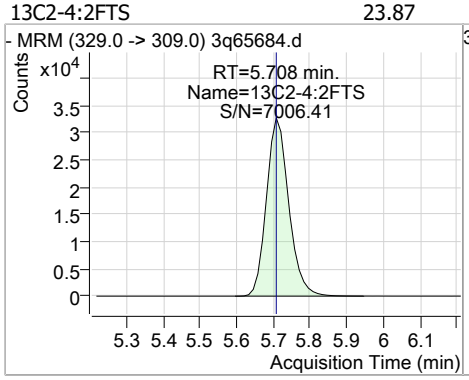


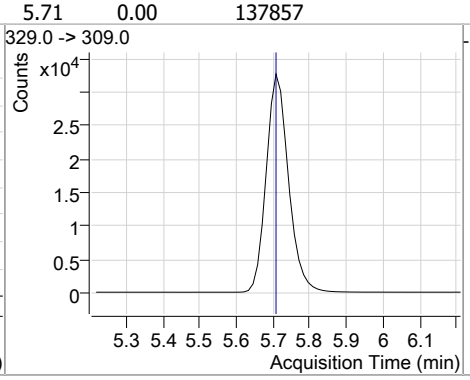


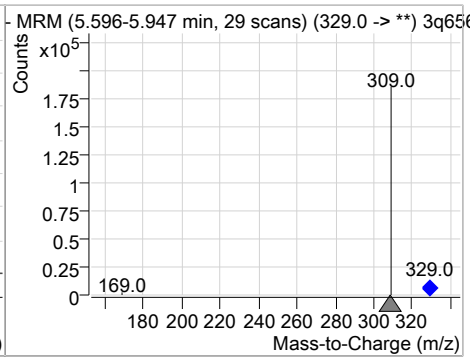


Perfluorinated Compounds by LC/MS/MS

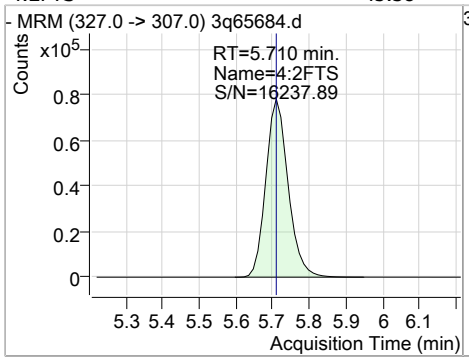
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.87	5.71	0.00	137857				

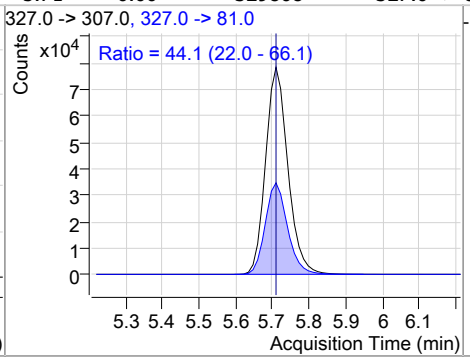


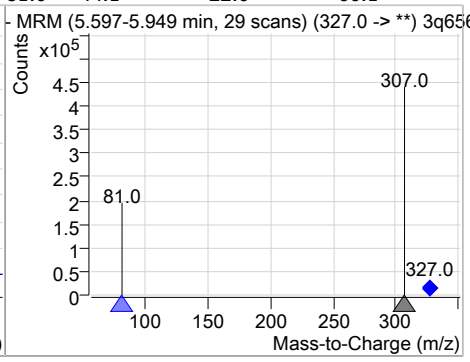




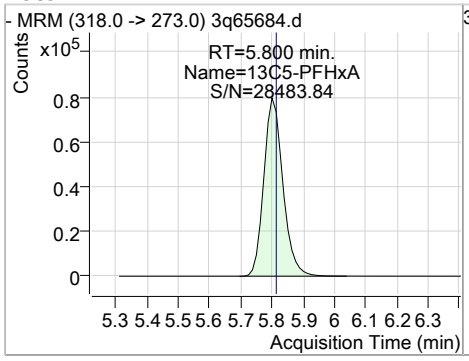
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	45.38	5.71	0.00	329868	327.0 -> 81.0	44.1	22.0	66.1

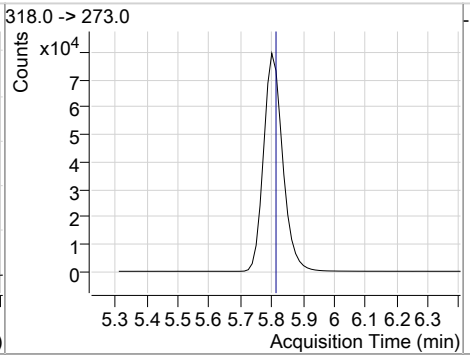


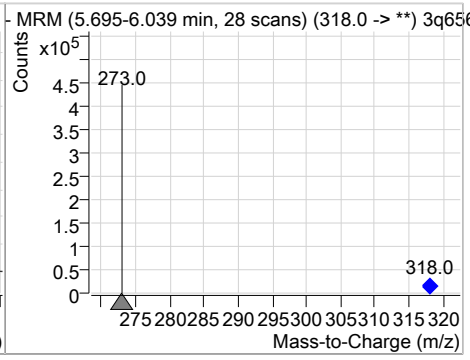




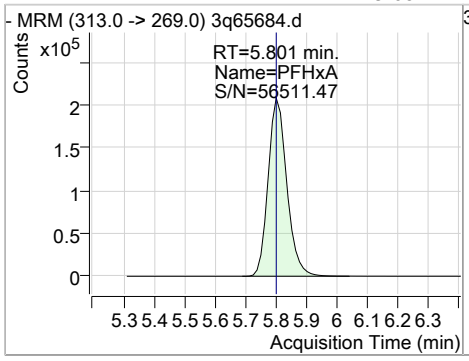
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.21	5.80	-0.01	337214				

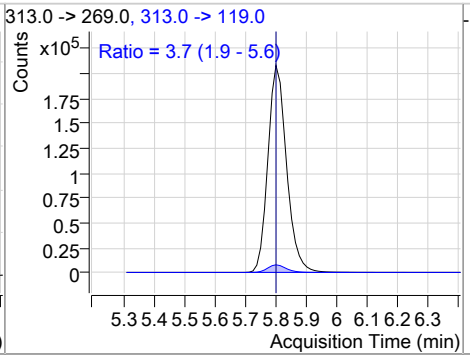


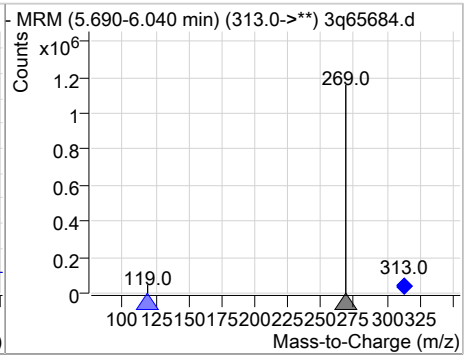




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.08	5.80	-0.01	882336	313.0 -> 119.0	3.7	1.9	5.6

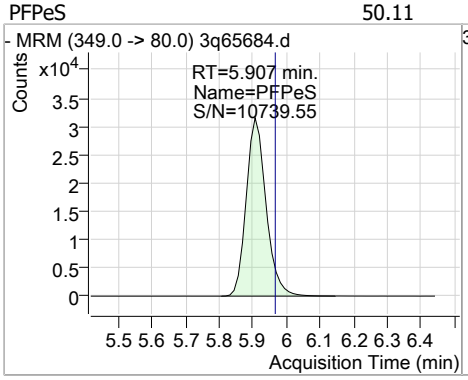


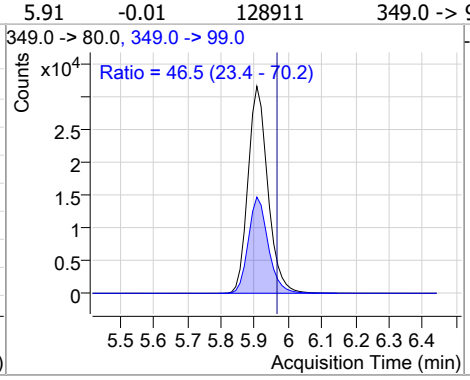


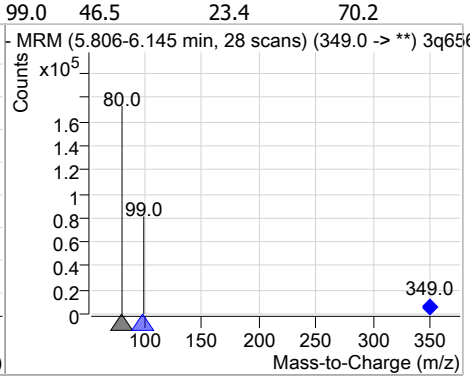


Perfluorinated Compounds by LC/MS/MS

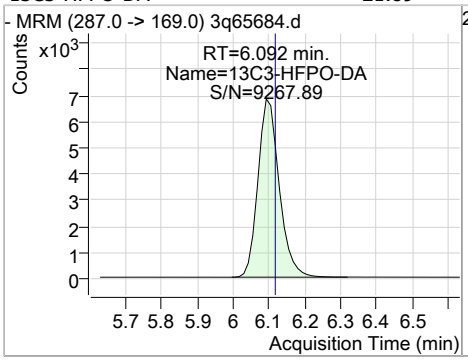
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	50.11	5.91	-0.01	128911	349.0 -> 99.0	46.5	23.4	70.2

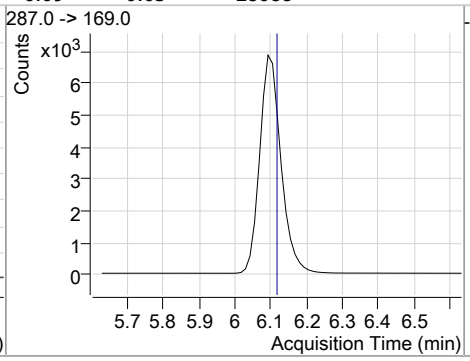


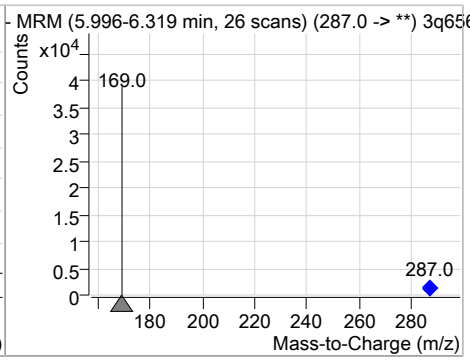




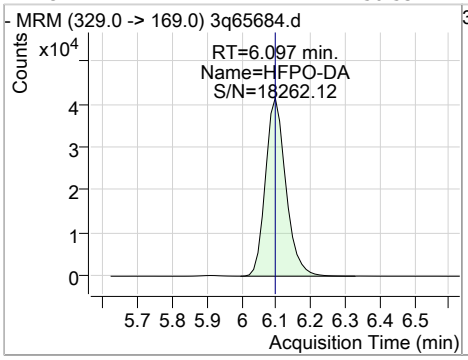
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.89	6.09	-0.03	28088				

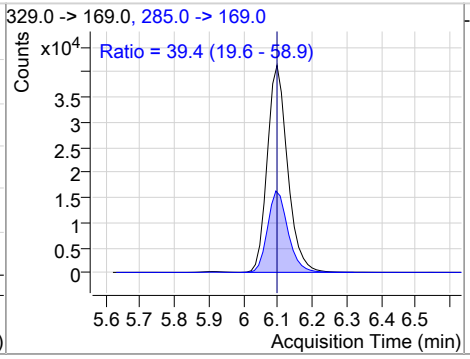


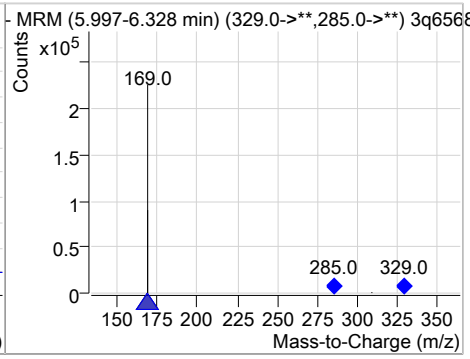




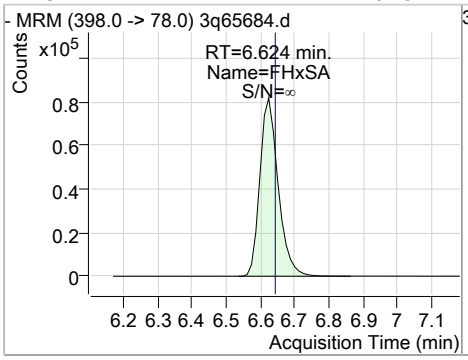
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.53	6.10	-0.03	169114	285.0 -> 169.0	39.4	19.6	58.9

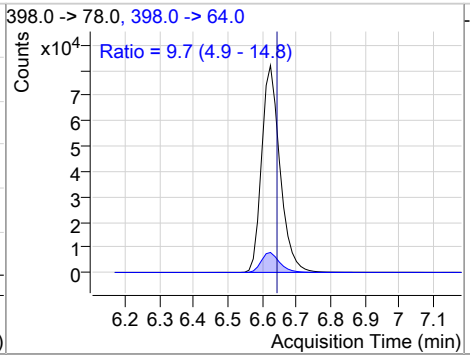


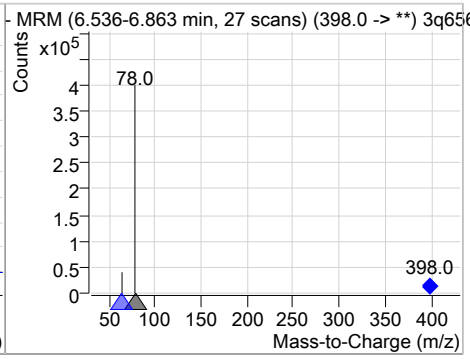




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	48.23	6.62	-0.06	303476	398.0 -> 64.0	9.7	4.9	14.8

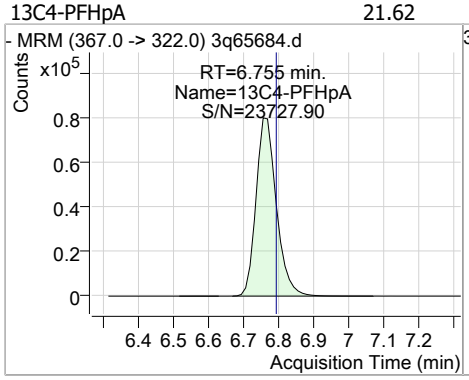


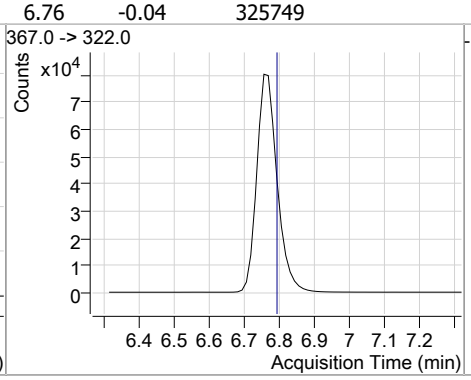


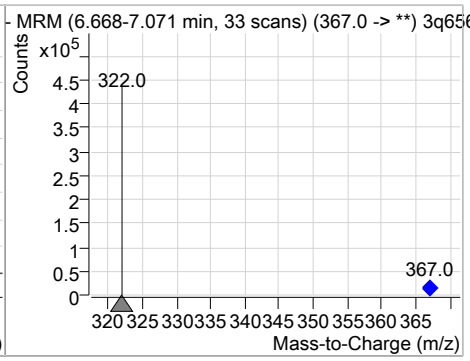


Perfluorinated Compounds by LC/MS/MS

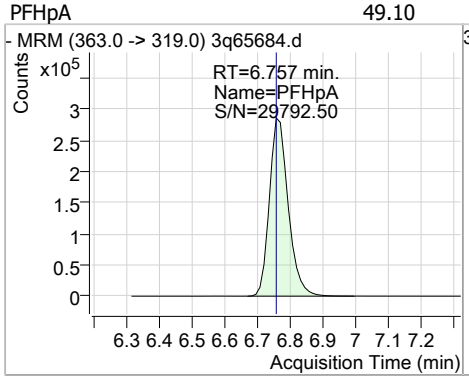
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.62	6.76	-0.04	325749				

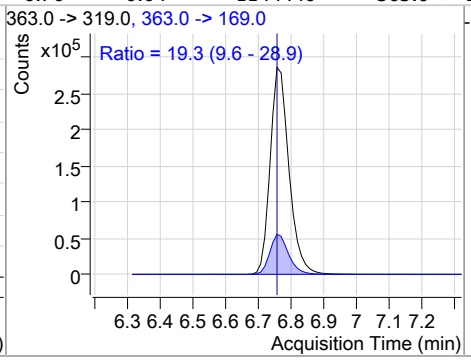


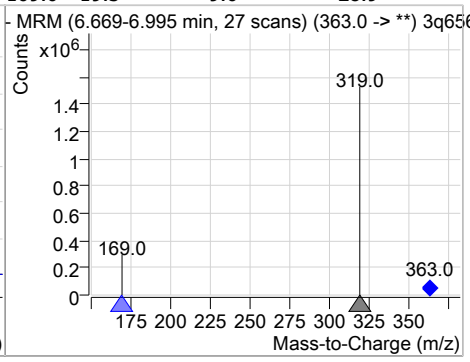




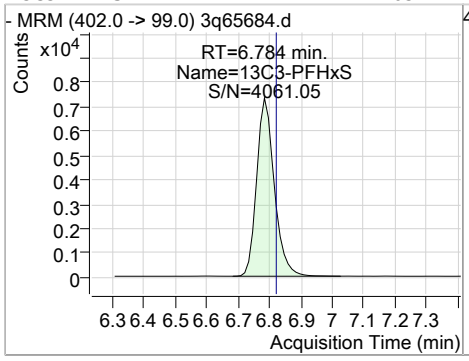
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.10	6.76	-0.04	1144446	363.0 -> 169.0	19.3	9.6	28.9

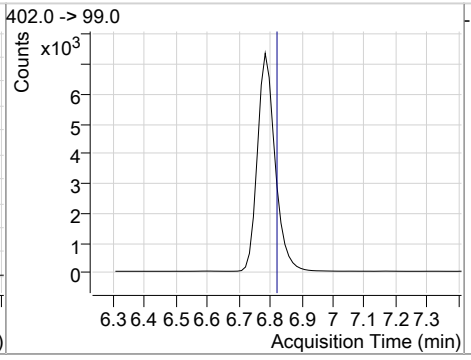


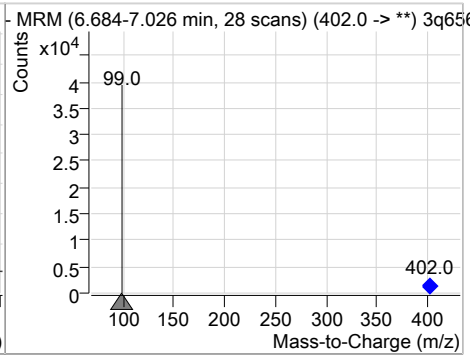




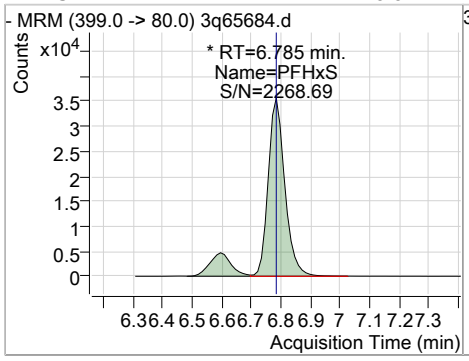
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.03	6.78	-0.04	28463				

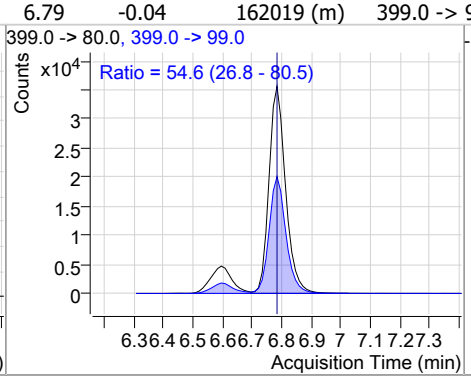


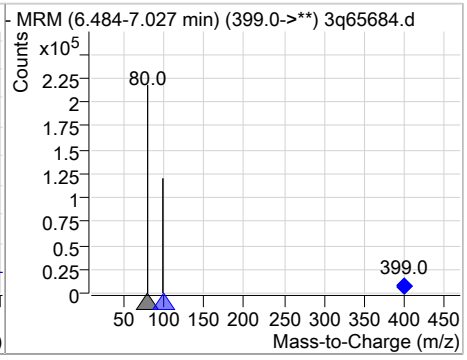




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	48.82	6.79	-0.04	162019 (m)	399.0 -> 99.0	54.6	26.8	80.5

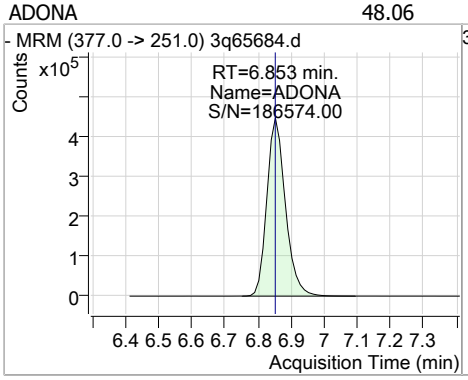


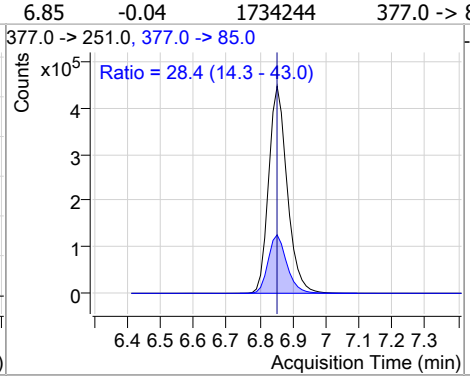


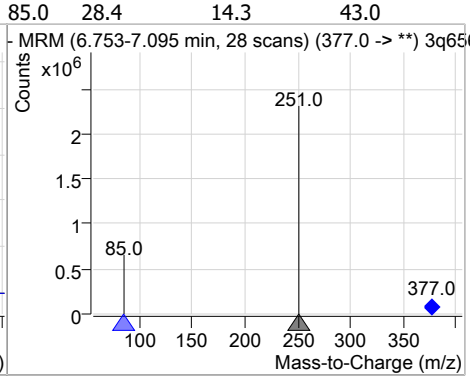


Perfluorinated Compounds by LC/MS/MS

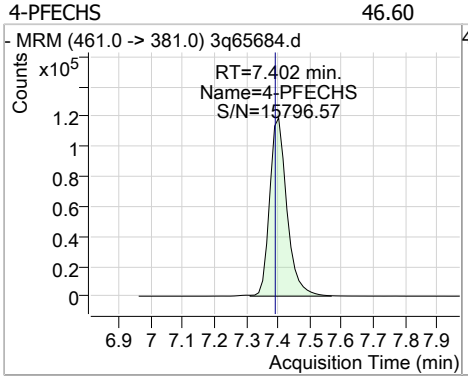
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	48.06	6.85	-0.04	1734244	377.0 -> 85.0	28.4	14.3	43.0

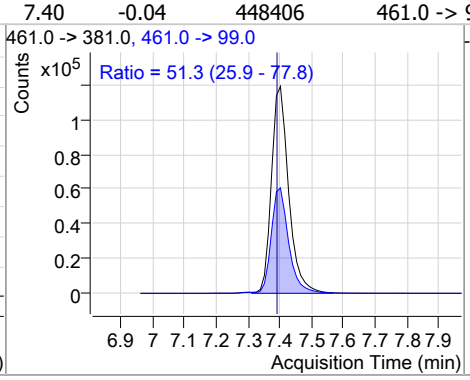


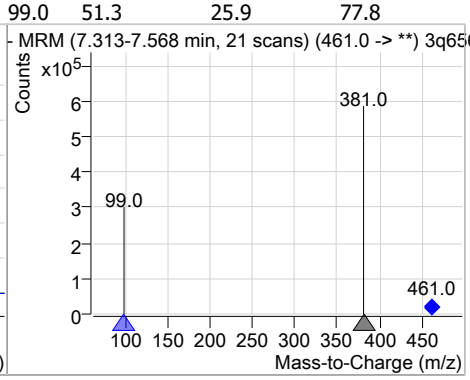




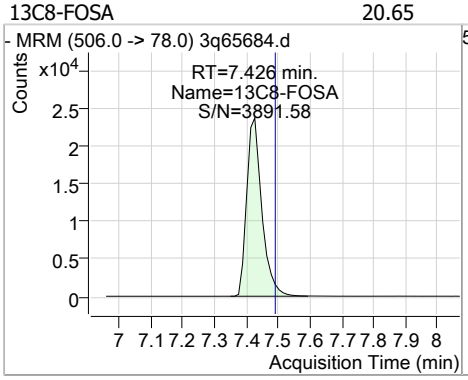
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	46.60	7.40	-0.04	448406	461.0 -> 99.0	51.3	25.9	77.8

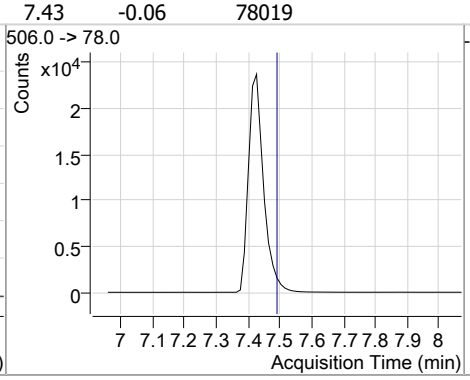


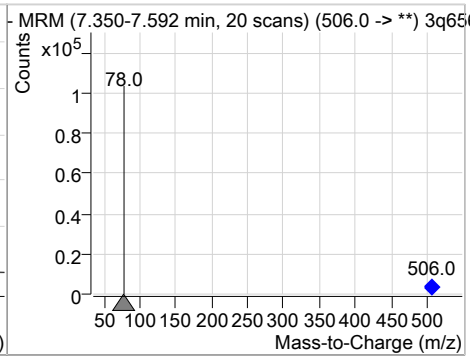




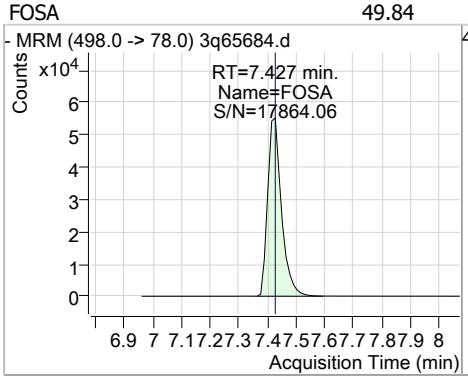
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.65	7.43	-0.06	78019				

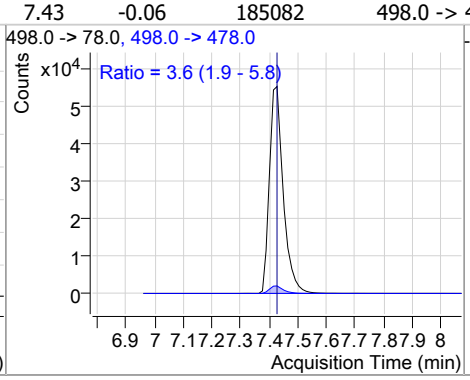


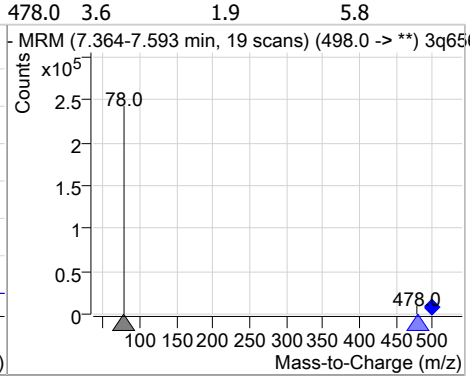




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	49.84	7.43	-0.06	185082	498.0 -> 478.0	3.6	1.9	5.8

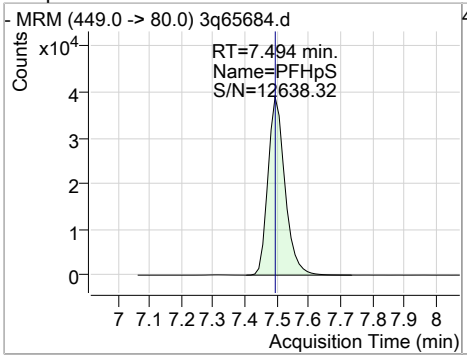


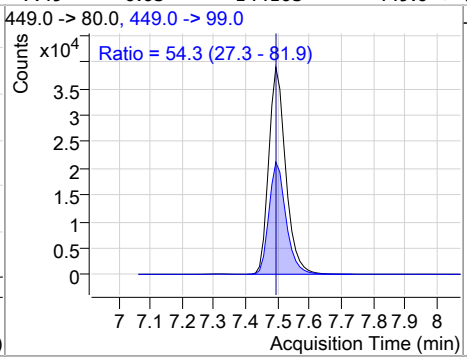


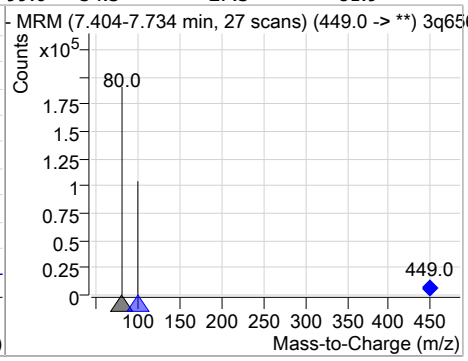


Perfluorinated Compounds by LC/MS/MS

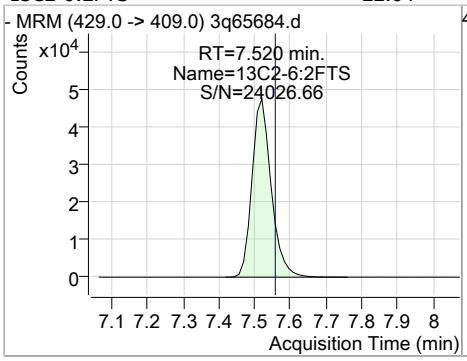
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.83	7.49	-0.05	144105	449.0 -> 99.0	54.3	27.3	81.9

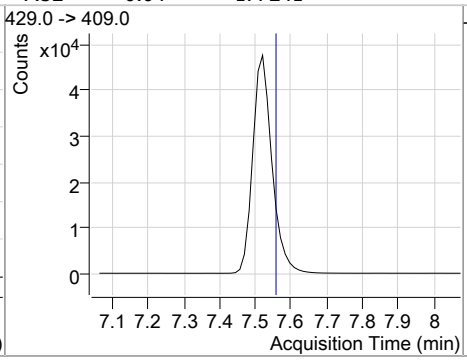


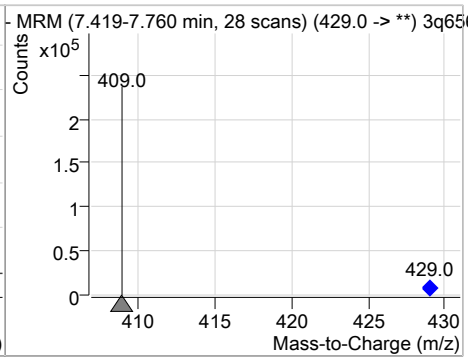




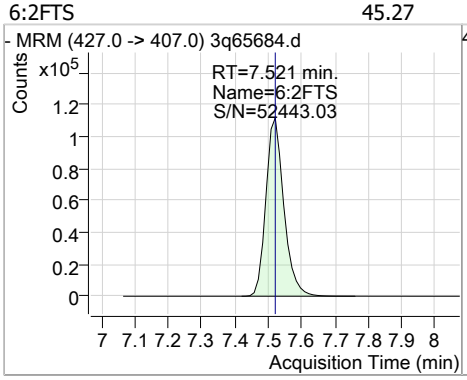
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.64	7.52	-0.04	177241				

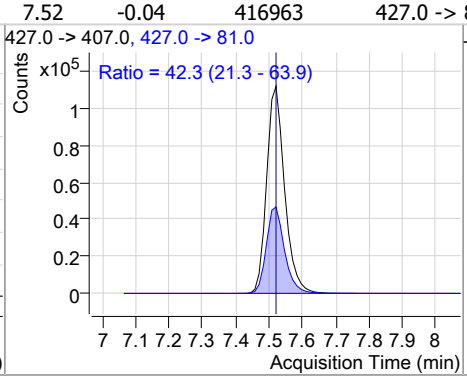


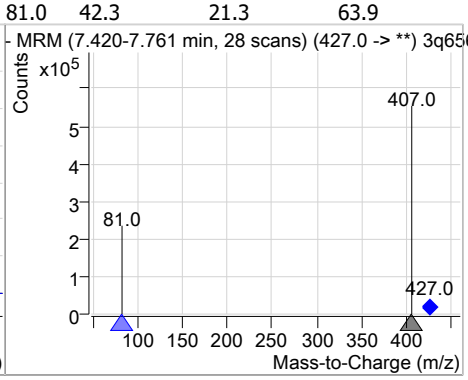




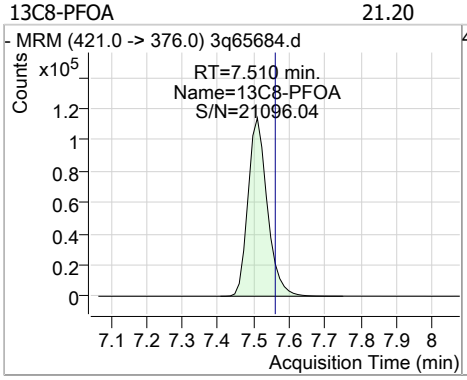
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	45.27	7.52	-0.04	416963	427.0 -> 81.0	42.3	21.3	63.9

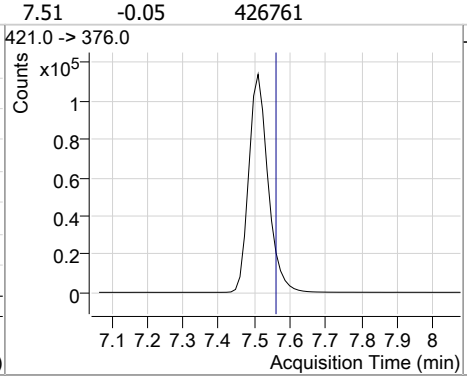


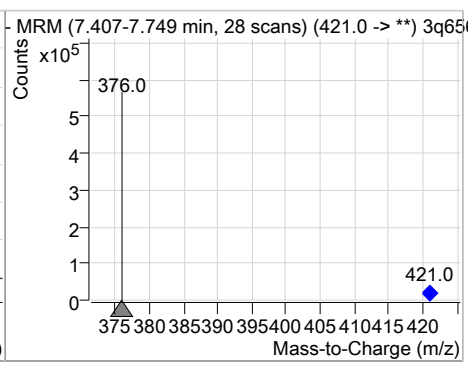




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.20	7.51	-0.05	426761				

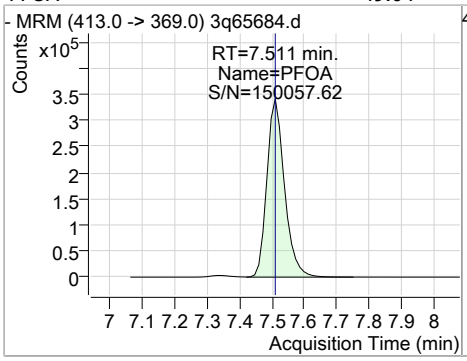


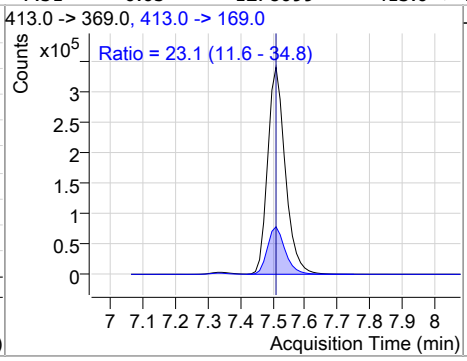


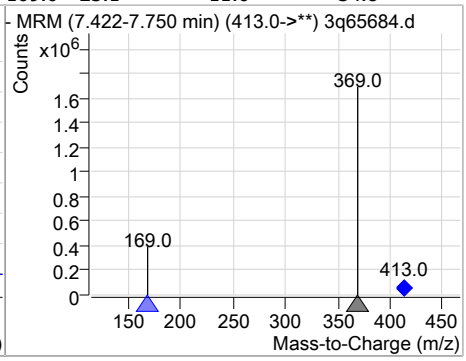


Perfluorinated Compounds by LC/MS/MS

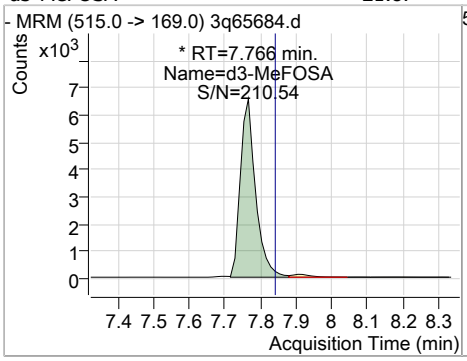
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.04	7.51	-0.05	1278099	413.0 -> 169.0	23.1	11.6	34.8

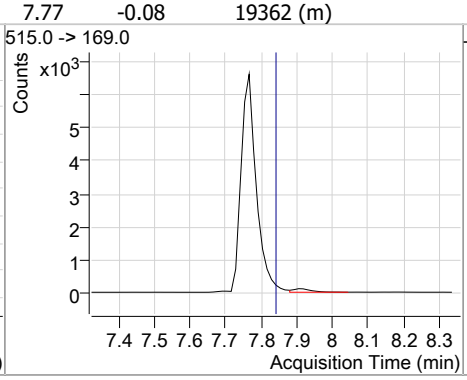


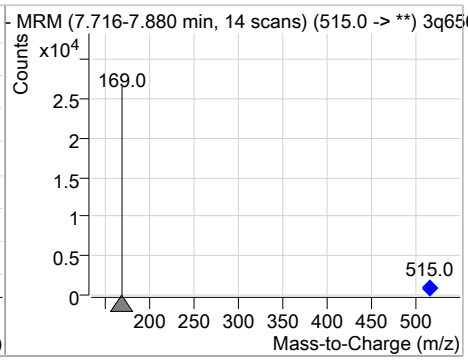




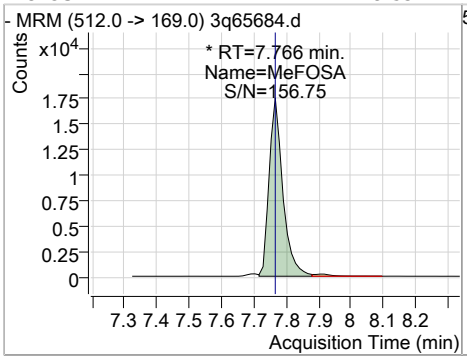
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.87	7.77	-0.08	19362 (m)				

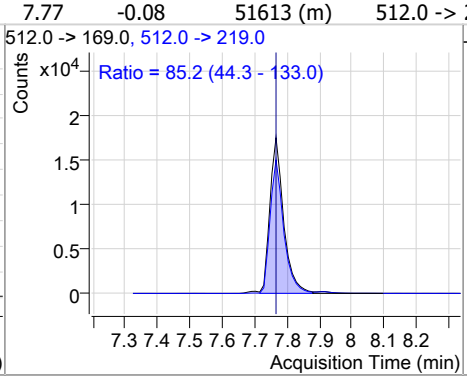


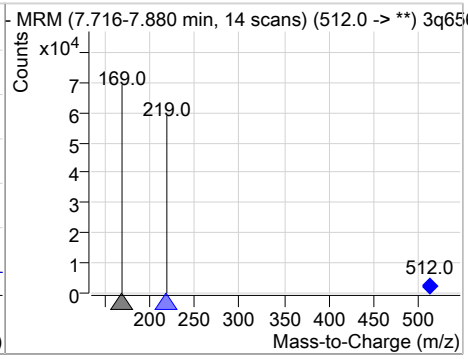




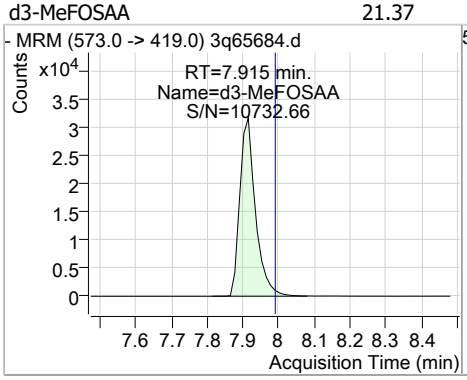
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.53	7.77	-0.08	51613 (m)	512.0 -> 219.0	85.2	44.3	133.0

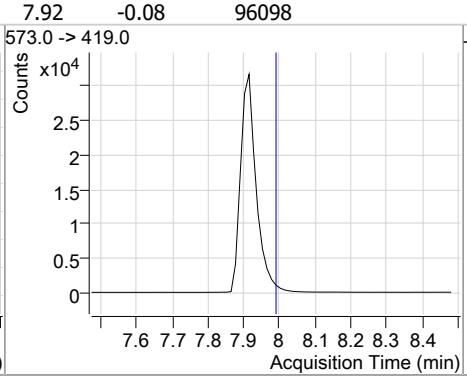


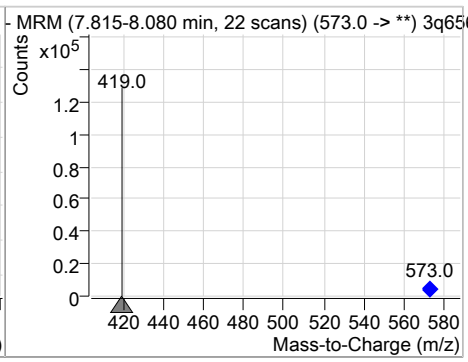




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.37	7.92	-0.08	96098				

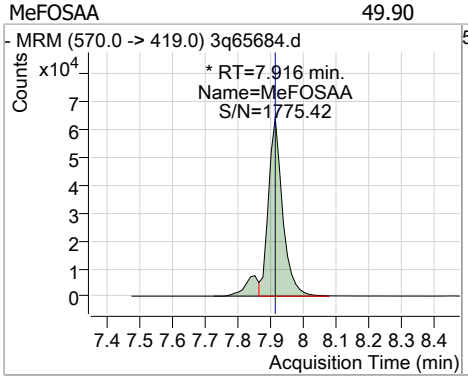


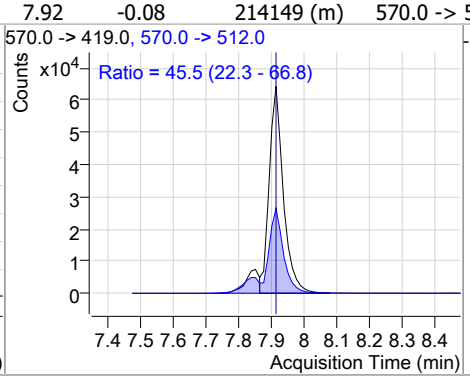


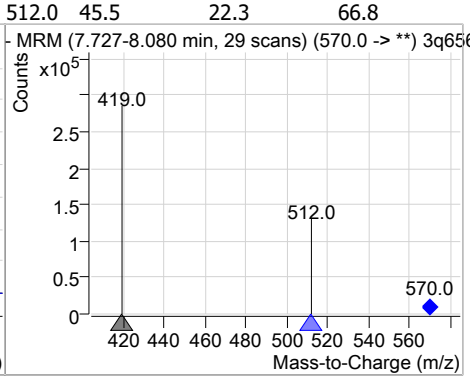


Perfluorinated Compounds by LC/MS/MS

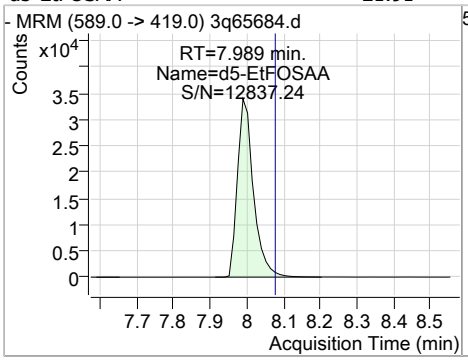
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	49.90	7.92	-0.08	214149 (m)	570.0 -> 512.0	45.5	22.3	66.8

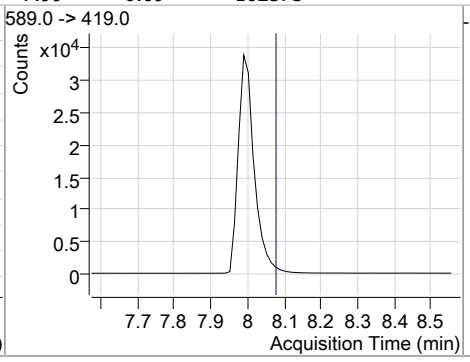


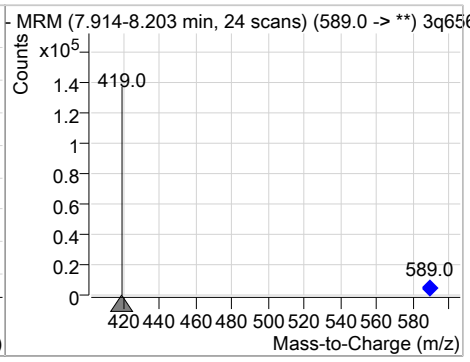




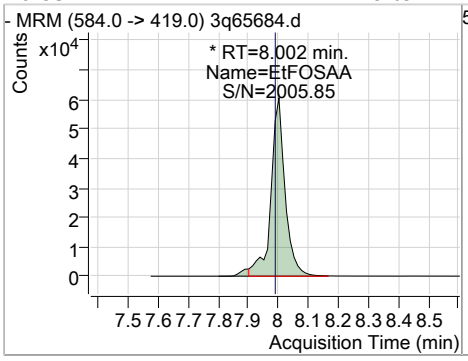
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.91	7.99	-0.09	102575				

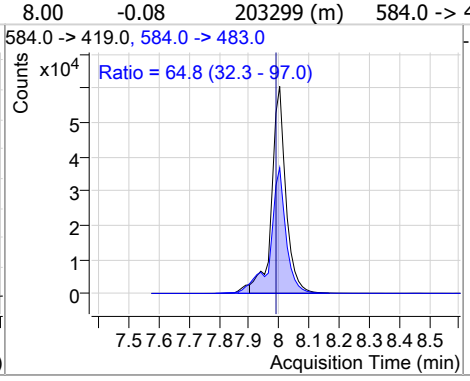


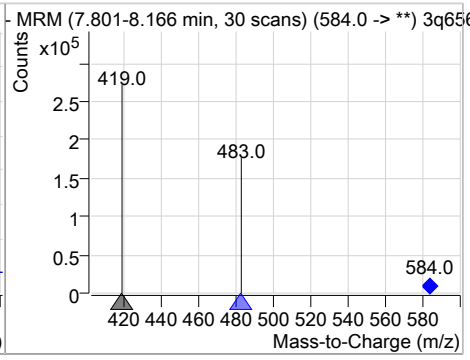




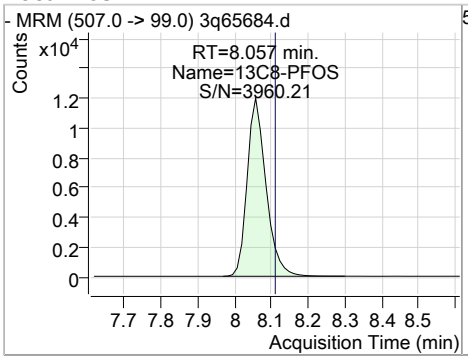
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.69	8.00	-0.08	203299 (m)	584.0 -> 483.0	64.8	32.3	97.0

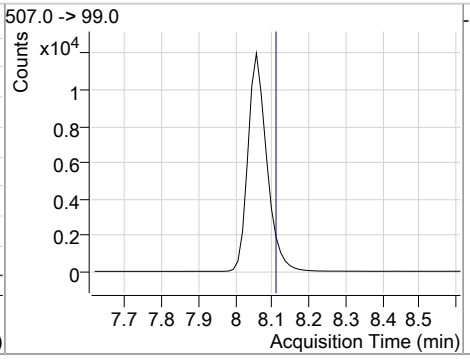


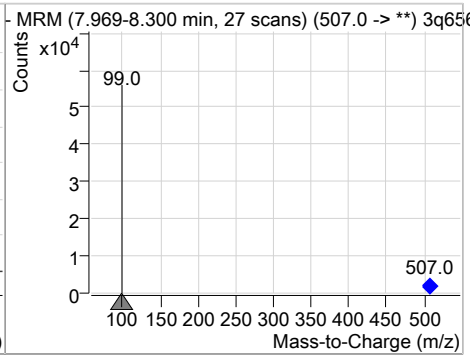




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.72	8.06	-0.05	42624				

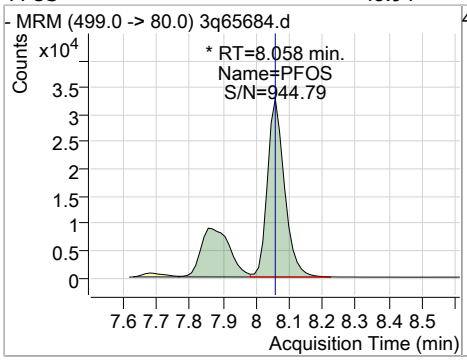


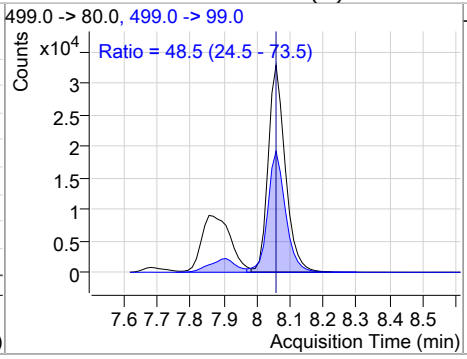


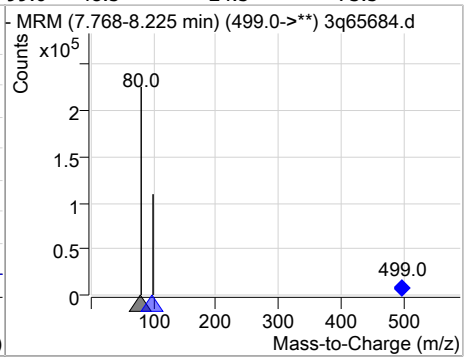


Perfluorinated Compounds by LC/MS/MS

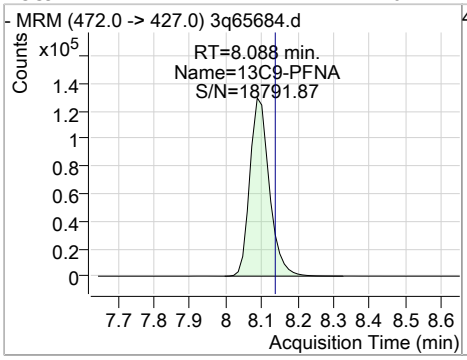
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	48.94	8.06	-0.05	171793 (m)	499.0 -> 99.0	48.5	24.5	73.5

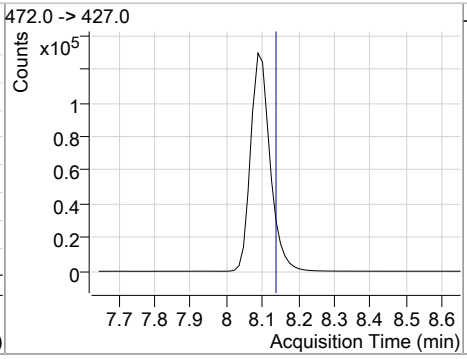


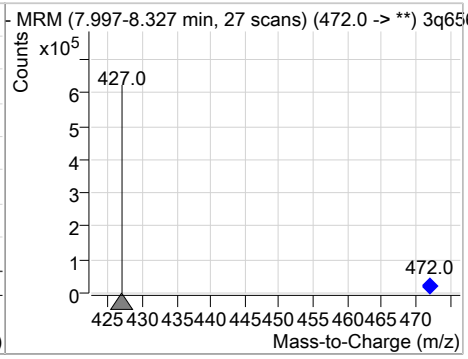




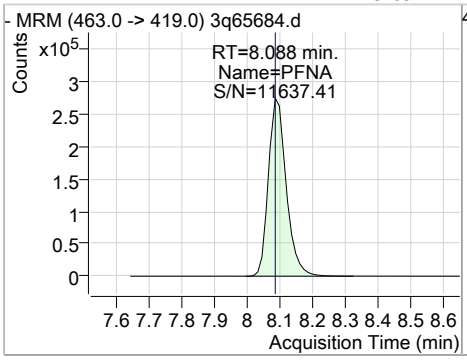
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.07	8.09	-0.05	487565				

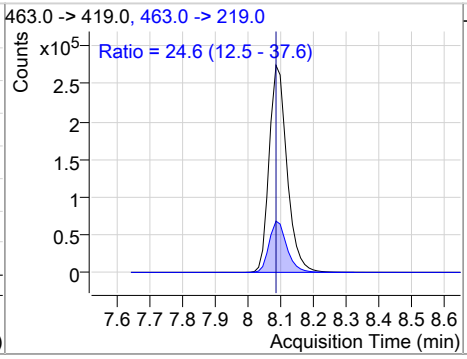


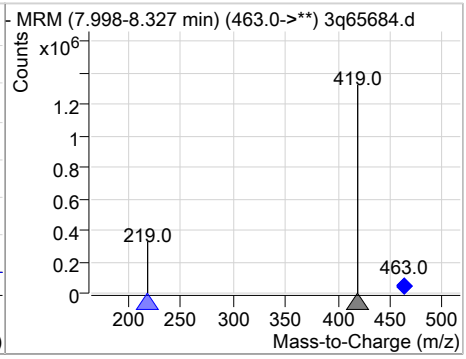




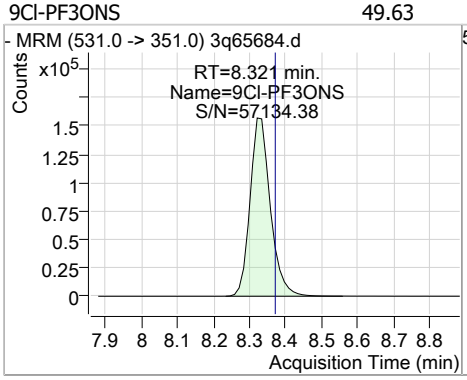
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.09	8.09	-0.05	1036518	463.0 -> 219.0	24.6	12.5	37.6

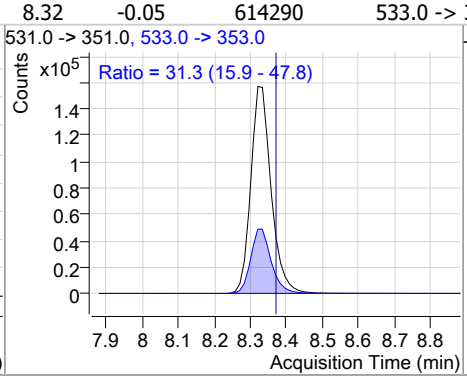


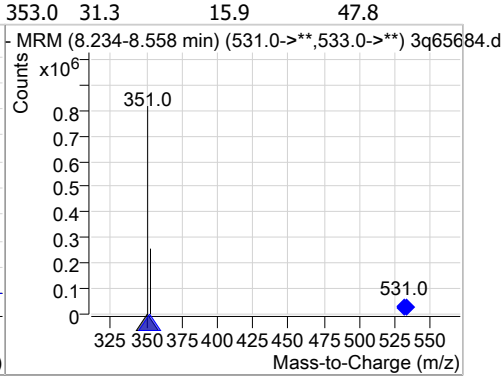




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	49.63	8.32	-0.05	614290	533.0 -> 353.0	31.3	15.9	47.8

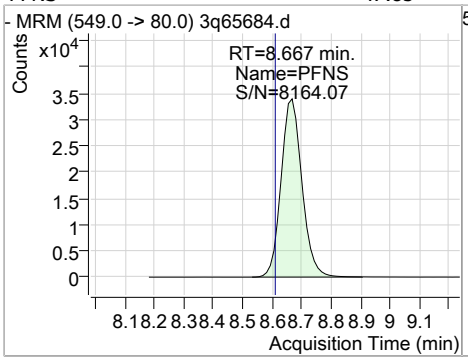


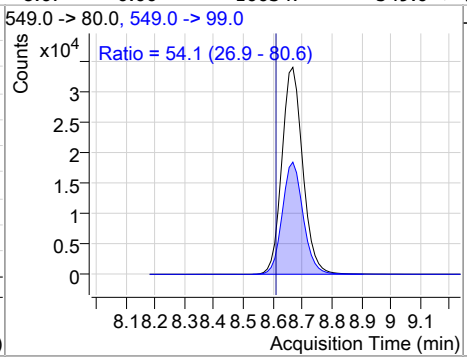


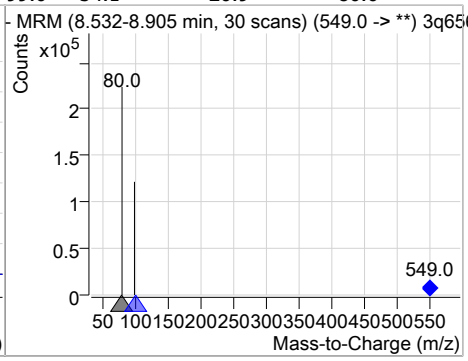


Perfluorinated Compounds by LC/MS/MS

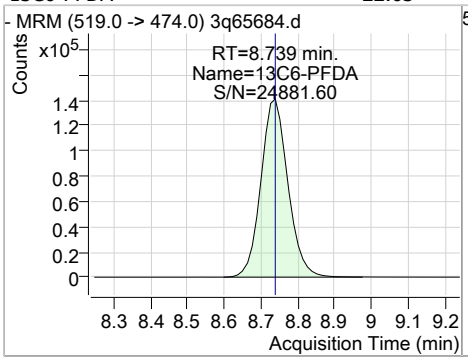
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	47.85	8.67	0.00	166347	549.0 -> 99.0	54.1	26.9	80.6

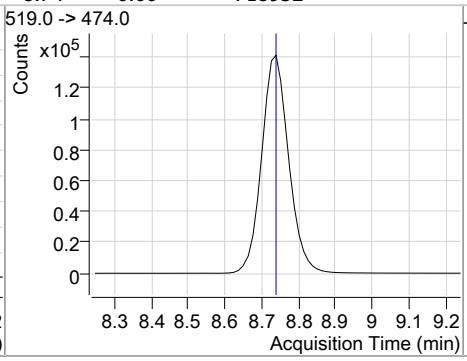


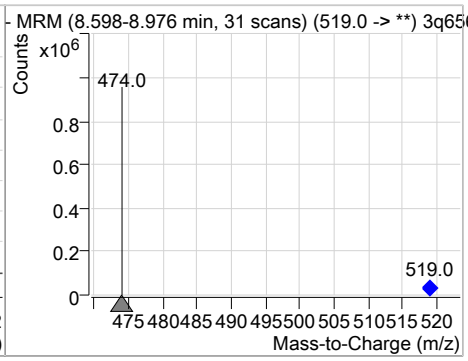




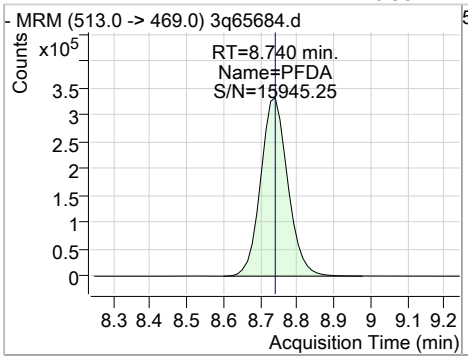
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.63	8.74	0.00	718952				

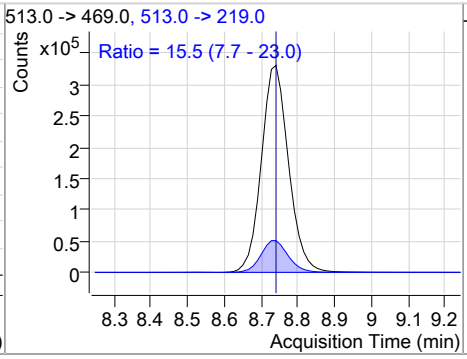


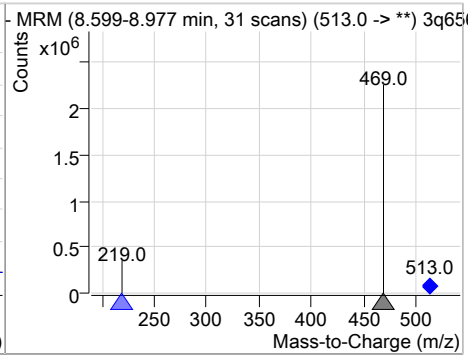




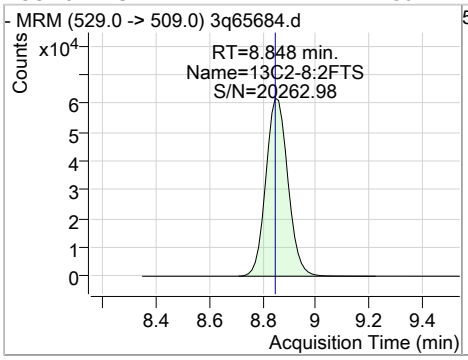
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	48.95	8.74	0.00	1695753	513.0 -> 219.0	15.5	7.7	23.0

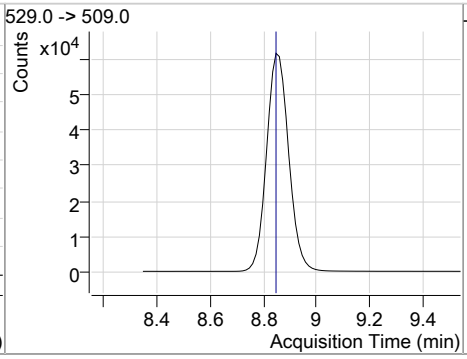


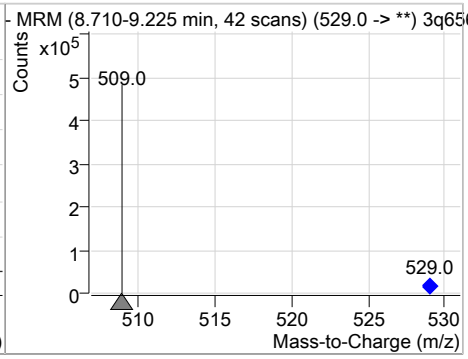




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.56	8.85	0.00	356900				

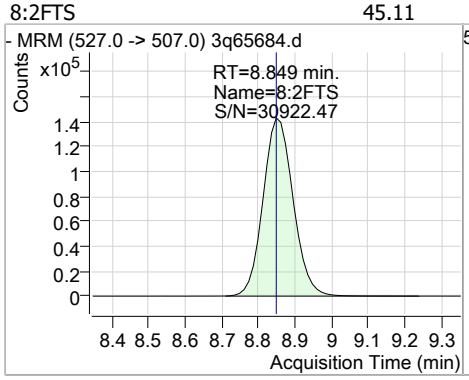


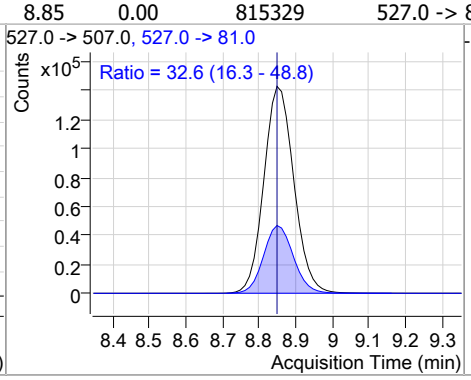


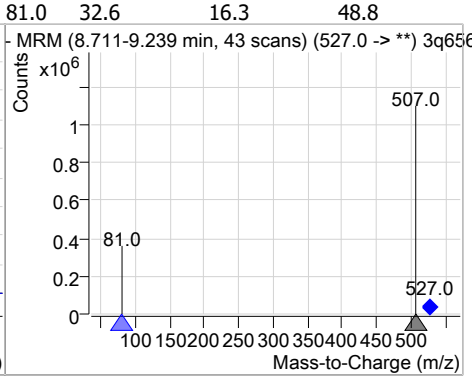


Perfluorinated Compounds by LC/MS/MS

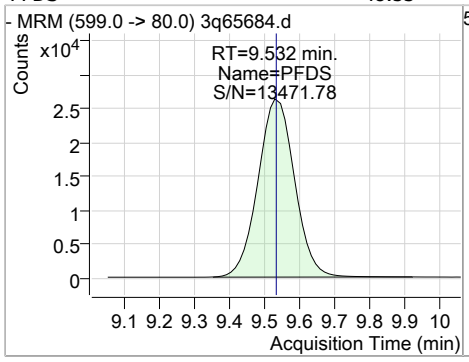
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	45.11	8.85	0.00	815329	527.0 -> 81.0	32.6	16.3	48.8

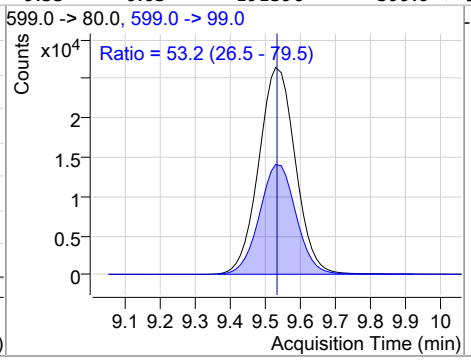


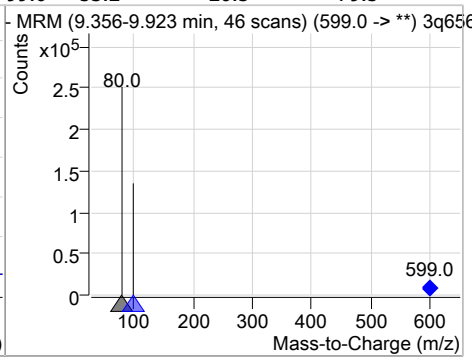




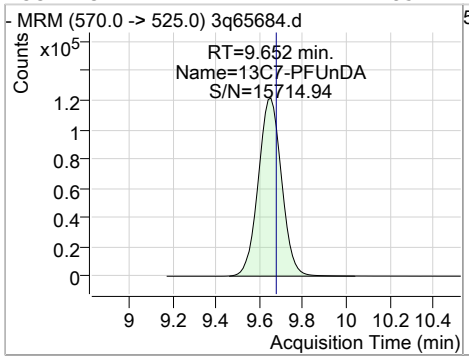
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.53	9.53	-0.03	191596	599.0 -> 99.0	53.2	26.5	79.5

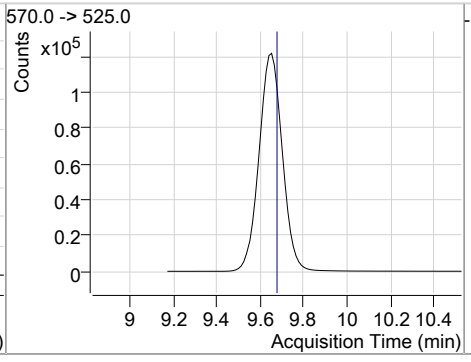


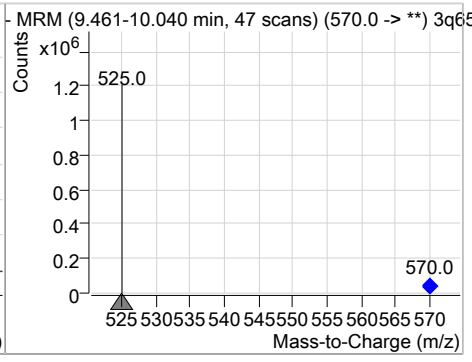




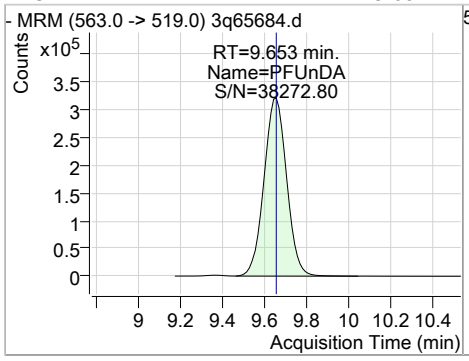
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.95	9.65	-0.03	906015				

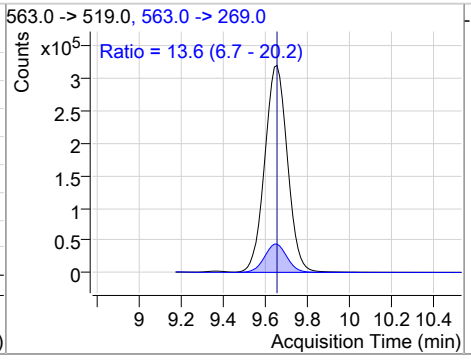


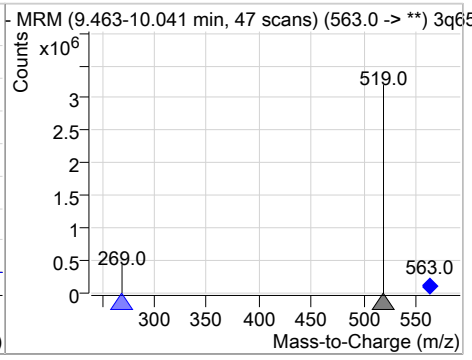




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	49.08	9.65	-0.03	2395148	563.0 -> 269.0	13.6	6.7	20.2

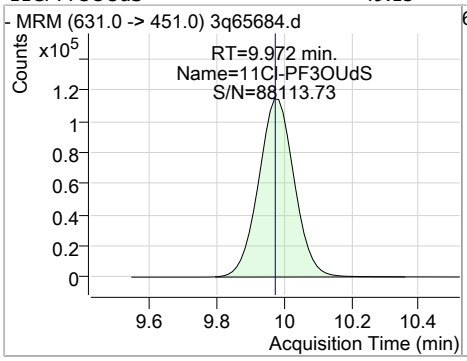


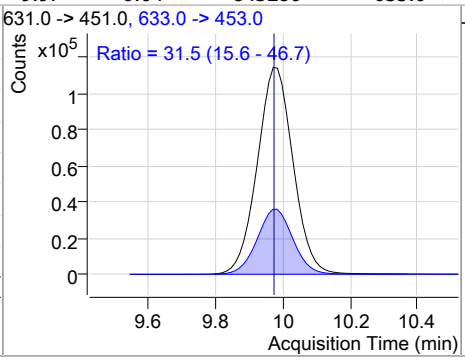


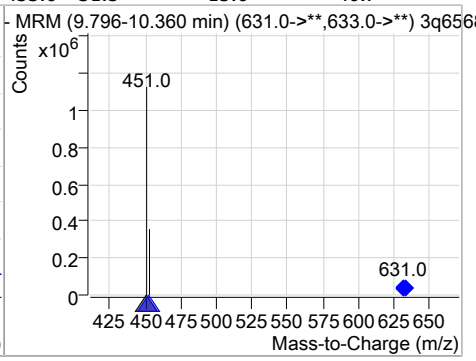


Perfluorinated Compounds by LC/MS/MS

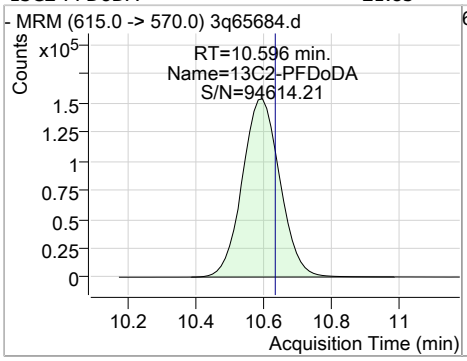
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.15	9.97	-0.04	843280	633.0 -> 453.0	31.5	15.6	46.7

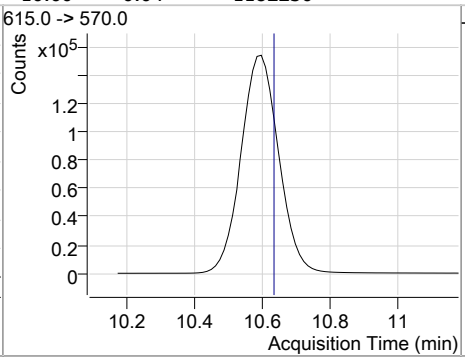


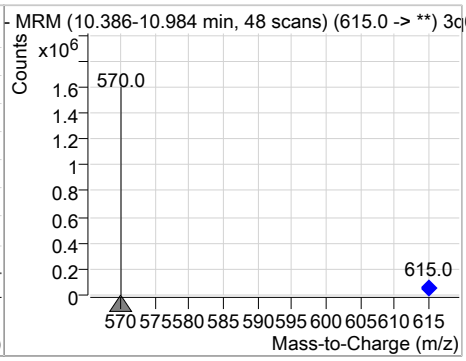




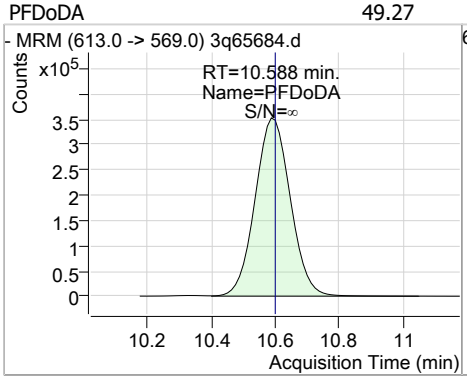
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.85	10.60	-0.04	1182236				

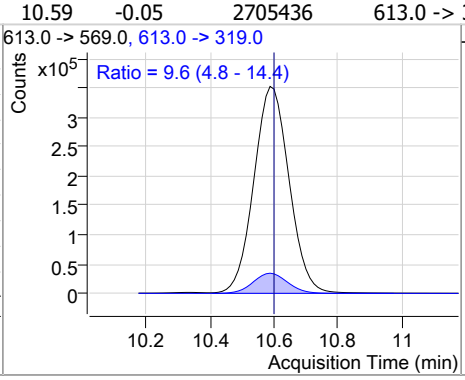


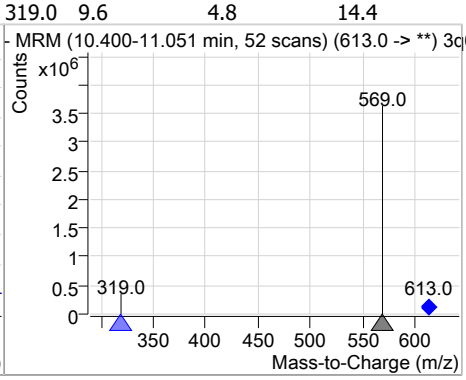




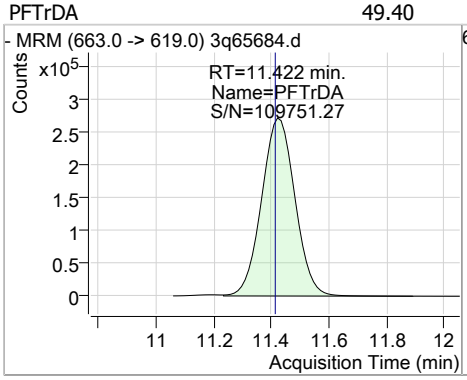
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	49.27	10.59	-0.05	2705436	613.0 -> 319.0	9.6	4.8	14.4

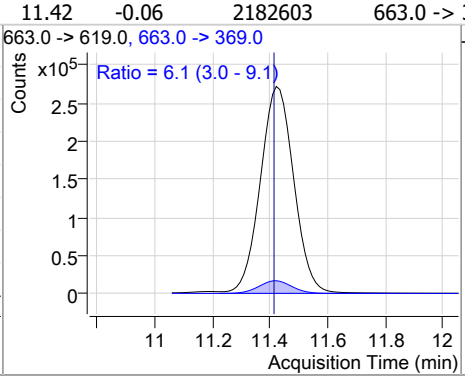


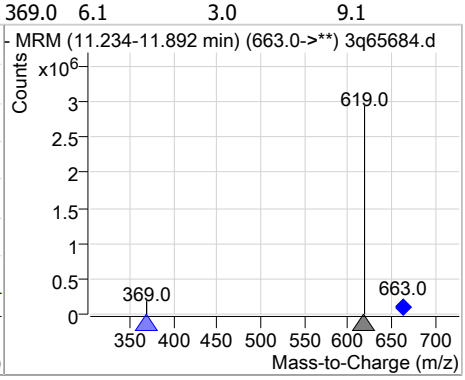




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.40	11.42	-0.06	2182603	663.0 -> 369.0	6.1	3.0	9.1

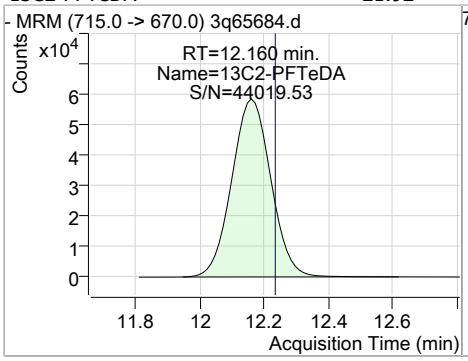


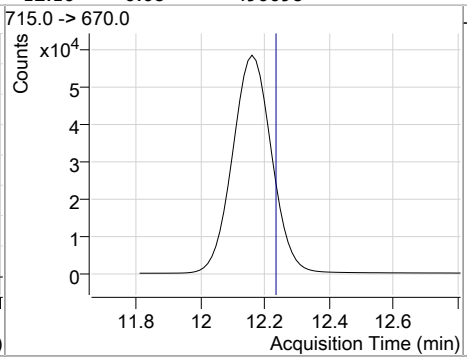


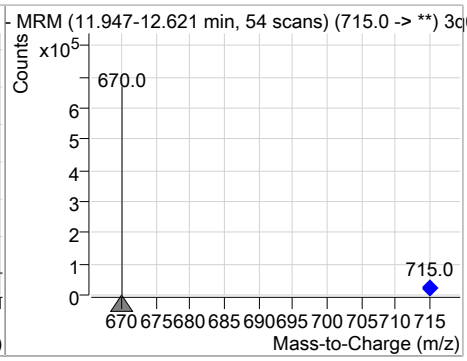


Perfluorinated Compounds by LC/MS/MS

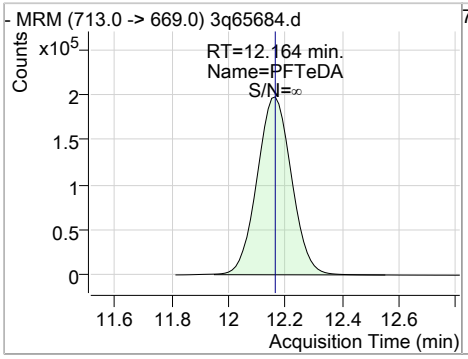
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.92	12.16	-0.08	496698				

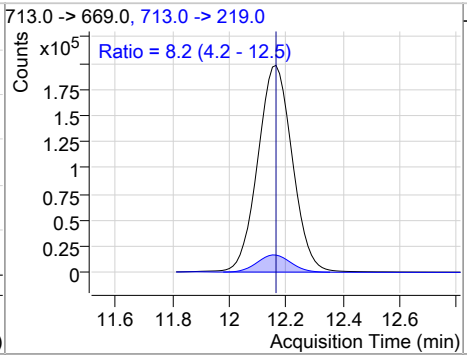


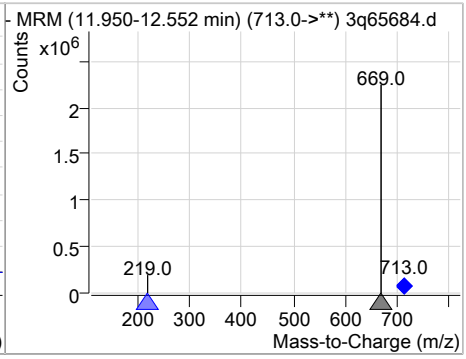




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.45	12.16	-0.08	1663291	713.0 -> 219.0	8.2	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65684.D
Injection Time: 09/13/22 17:47
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.79	Split peak
MeFOSA	31506-32-8		7.77	Split peak
d3-MeFOSA			7.77	Split peak
MeFOSAA	2355-31-9		7.92	Split peak
EtFOSAA	2991-50-6		8.00	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.06	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:40

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65685.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 6:07:18 PM
Sample Name : ic898-100
Vial : P1-A9
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92762,S3Q898,260,,,1,1,water

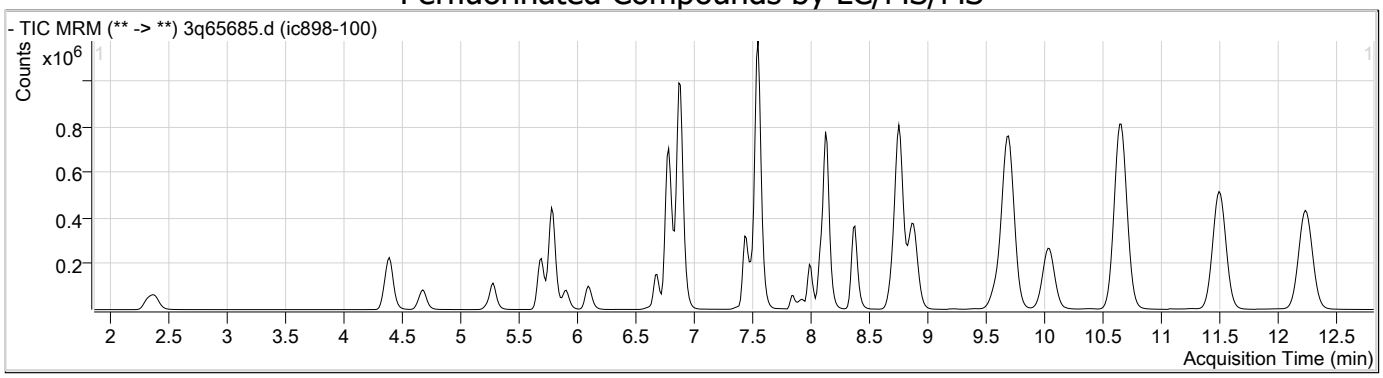
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	154313	20.00	µg/L	0.000
M5-PFPeA	4.386	268.0 -> 223.0	222928	20.00	µg/L	-0.025
M5-PFHxA	5.775	318.0 -> 273.0	286880	20.00	µg/L	-0.039
M4-PFHpA	6.780	367.0 -> 322.0	277069	20.00	µg/L	-0.013
M8-PFOA	7.547	421.0 -> 376.0	345357	20.00	µg/L	-0.013
M9-PFNA	8.125	472.0 -> 427.0	405224	20.00	µg/L	-0.013
M6-PFDA	8.751	519.0 -> 474.0	615109	20.00	µg/L	0.013
M7-PFUnDA	9.689	570.0 -> 525.0	794165	20.00	µg/L	0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1035675	20.00	µg/L	0.013
M2-PFTeDA	12.223	715.0 -> 670.0	439415	20.00	µg/L	-0.013
M8-FOSA	7.491	506.0 -> 78.0	66164	20.00	µg/L	0.000
M3-PFBS	4.667	302.0 -> 99.0	20084	20.00	µg/L	-0.025
M3-PFHxS	6.809	402.0 -> 99.0	23759	20.00	µg/L	-0.013
M8-PFOS	8.098	507.0 -> 99.0	36637	20.00	µg/L	-0.013
M2-4:2FTS	5.683	329.0 -> 309.0	132161	20.00	µg/L	-0.025
M2-6:2FTS	7.546	429.0 -> 409.0	156352	20.00	µg/L	-0.013
M2-8:2FTS	8.873	529.0 -> 509.0	328155	20.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	82763	20.00	µg/L	-0.013
M3-HFPO-DA	6.092	287.0 -> 169.0	24238	20.00	µg/L	-0.025
M3-MeFOSA	7.829	515.0 -> 169.0	16729	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	80410	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.683	329.0 -> 309.0	132161	22.88	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%		
13C2-6:2FTS	7.546	429.0 -> 409.0	156352	19.97	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C2-8:2FTS	8.873	529.0 -> 509.0	328155	22.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%		
13C2-PFDoDA	10.646	615.0 -> 570.0	1035675	19.14	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-PFTeDA	12.223	715.0 -> 670.0	439415	19.39	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C3-PFBS	4.667	302.0 -> 99.0	20084	18.98	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C3-PFHxS	6.809	402.0 -> 99.0	23759	18.39	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C4-PFBA	2.365	217.0 -> 172.0	154313	19.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C4-PFHpA	6.780	367.0 -> 322.0	277069	18.39	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFHxA	5.775	318.0 -> 273.0	286880	18.90	µg/L	-0.039
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C5-PFPeA	4.386	268.0 -> 223.0	222928	19.23	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C6-PFDA	8.751	519.0 -> 474.0	615109	19.36	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

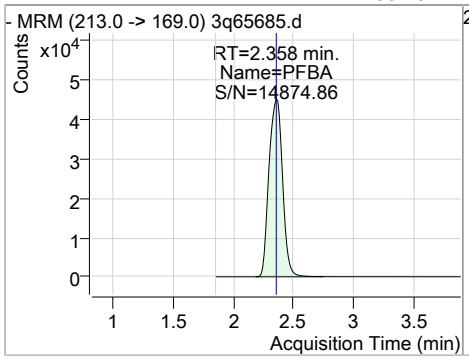
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C7-PFUnDA	9.689	570.0 -> 525.0	794165	19.24	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-FOSA	7.491	506.0 -> 78.0	66164	17.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
13C8-PFOA	7.547	421.0 -> 376.0	345357	17.16	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
13C8-PFOS	8.098	507.0 -> 99.0	36637	18.67	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C9-PFNA	8.125	472.0 -> 427.0	405224	18.34	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
d3-MeFOSAA	7.978	573.0 -> 419.0	82763	18.41	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C3-HFPO-DA	6.092	287.0 -> 169.0	24242	18.89	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
d3-MeFOSA	7.829	515.0 -> 169.0	16729	18.90	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
d5-EtFOSAA	8.065	589.0 -> 419.0	80442	17.18	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.9%			
Target Compounds							**QValue**
4:2FTS	5.685	327.0 -> 307.0	573617	82.32	µg/L		99
6:2FTS	7.546	427.0 -> 407.0	665109	81.87	µg/L		100
8:2FTS	8.874	527.0 -> 507.0	1335546	80.37	µg/L		100
EtFOSAA	8.065	584.0 -> 419.0	321008	100.12	µg/L	m	97
FOSA	7.491	498.0 -> 78.0	314605	99.90	µg/L		100
MeFOSAA	7.979	570.0 -> 419.0	369632	100.01	µg/L	m	97
PFBA	2.358	213.0 -> 169.0	353641	100.26	µg/L		100
PFBS	4.669	299.0 -> 80.0	286550	100.40	µg/L		99
PFDA	8.752	513.0 -> 469.0	2977397	100.45	µg/L		100
PFDoDA	10.638	613.0 -> 569.0	4824079	100.29	µg/L		100
PFDS	9.573	599.0 -> 80.0	348402	100.67	µg/L		100
PFHpA	6.782	363.0 -> 319.0	1990334	100.39	µg/L		100
PFHpS	7.532	449.0 -> 80.0	235900	98.71	µg/L		99
PFHxA	5.776	313.0 -> 269.0	1535220	100.37	µg/L		100
PFHxS	6.798	399.0 -> 80.0	278442	100.50	µg/L	m	97
PFNA	8.126	463.0 -> 419.0	1761724	100.39	µg/L		99
PFNS	8.680	549.0 -> 80.0	302750	101.32	µg/L		99
PFOA	7.548	413.0 -> 369.0	2118546	100.46	µg/L		100
PFOS	8.099	499.0 -> 80.0	303140	100.46	µg/L	m	100
PFPeA	4.389	263.0 -> 219.0	974911	100.15	µg/L		100
PFPeS	5.894	349.0 -> 80.0	221302	99.83	µg/L		100
PFTeDA	12.227	713.0 -> 669.0	2981065	100.18	µg/L		100
PFTrDA	11.484	663.0 -> 619.0	3917557	100.22	µg/L		100
PFUnDA	9.691	563.0 -> 519.0	4294497	100.40	µg/L		99
11Cl-PF3OUdS	10.022	631.0 -> 451.0	1509718	100.44	µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	1057145	99.82	µg/L		99
ADONA	6.878	377.0 -> 251.0	3042236	101.01	µg/L		99
HFPO-DA	6.084	329.0 -> 169.0	287324	99.47	µg/L		98
MeFOSA	7.829	512.0 -> 169.0	90121	100.09	µg/L		99
4-PFECHS	7.429	461.0 -> 381.0	794886	102.07	µg/L		100
FBSA	5.275	298.0 -> 78.0	488290	99.89	µg/L		99
FHxSA	6.675	398.0 -> 78.0	513815	100.90	µg/L		100

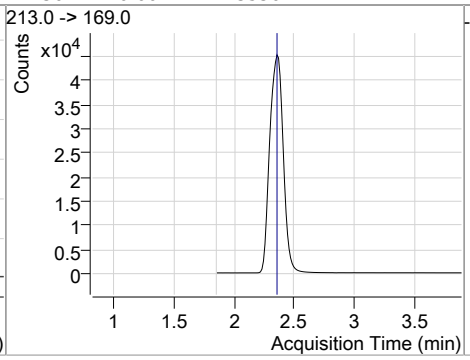
 # = Qualifier out of range, m = manually integrated, + = Area summed

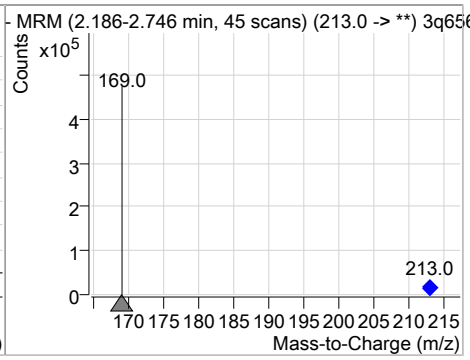
Perfluorinated Compounds by LC/MS/MS



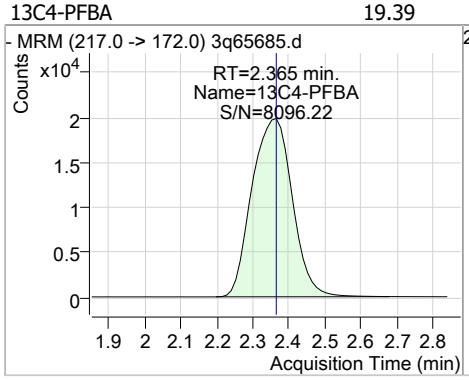
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.26	2.36	0.00	353641				

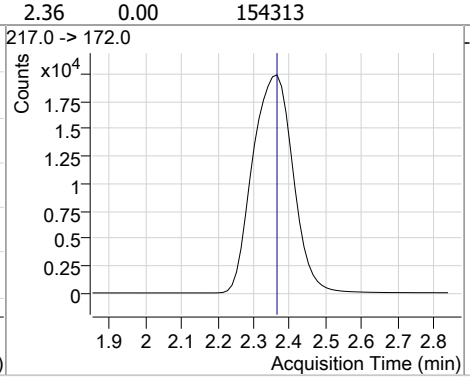


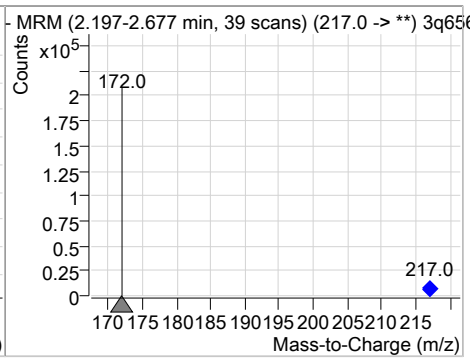




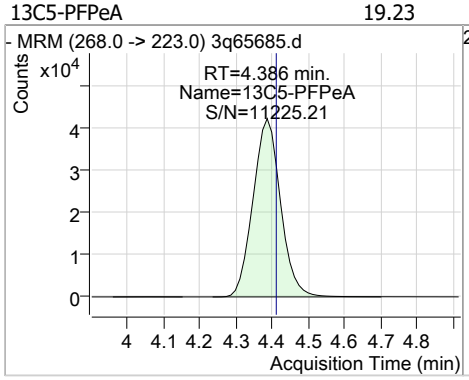
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.39	2.36	0.00	154313				

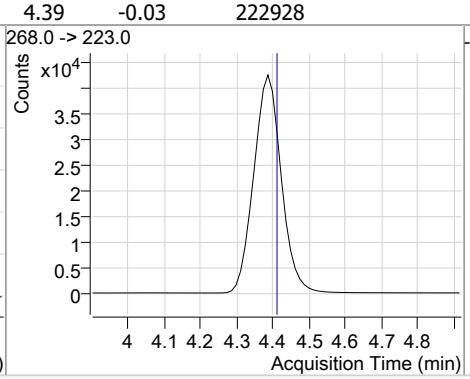


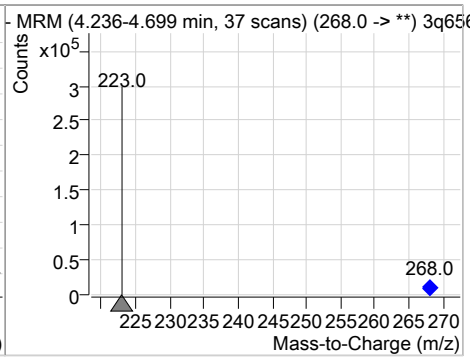




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.23	4.39	-0.03	222928				

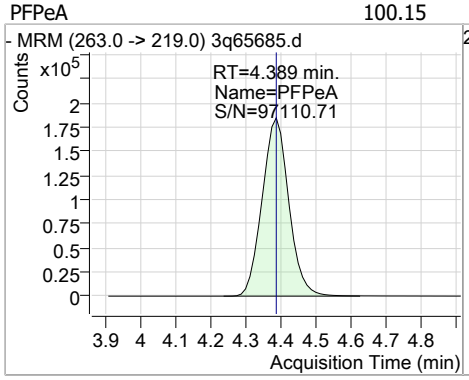


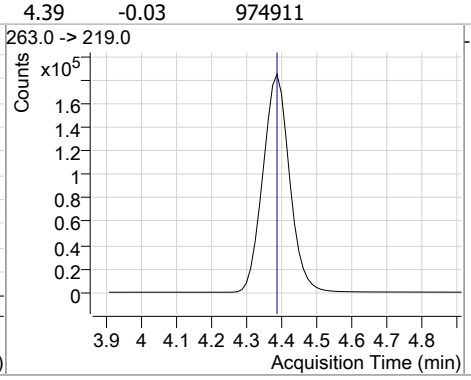


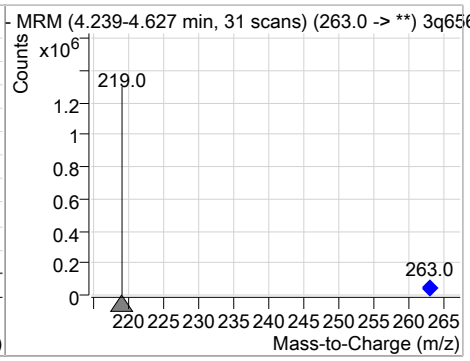


Perfluorinated Compounds by LC/MS/MS

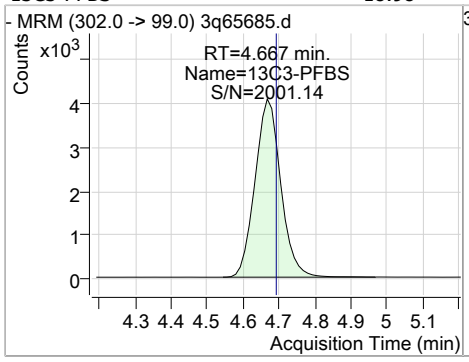
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.15	4.39	-0.03	974911				

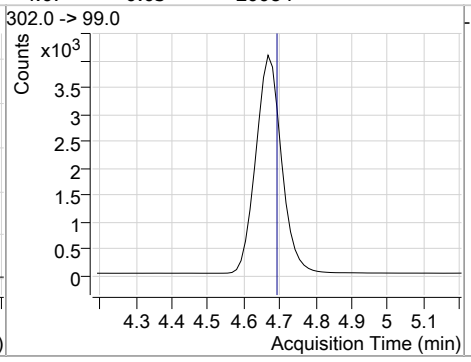


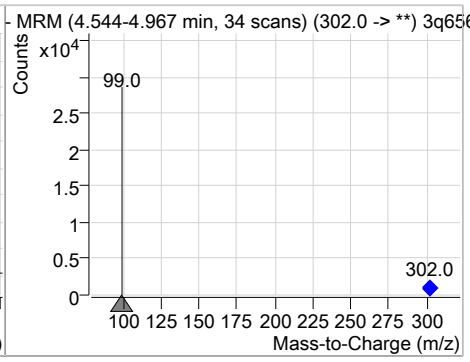




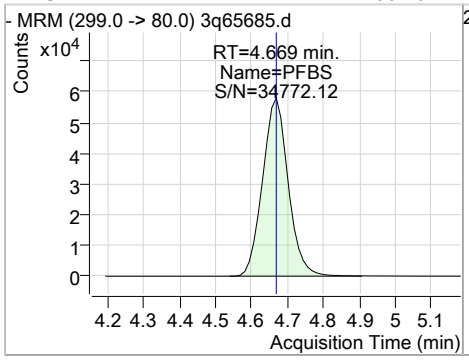
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.98	4.67	-0.03	20084				

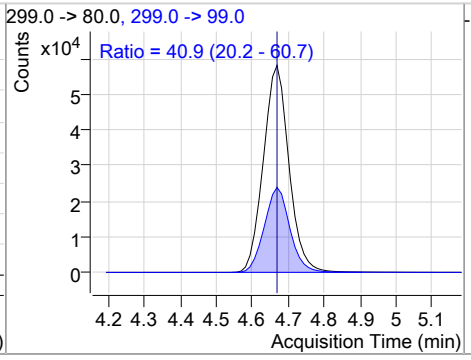


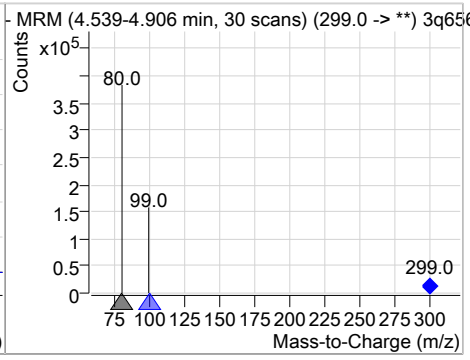




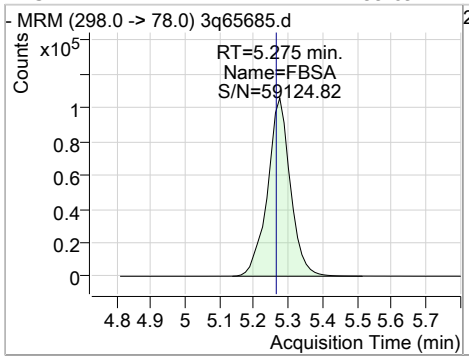
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.40	4.67	-0.03	286550	299.0 -> 99.0	40.9	20.2	60.7

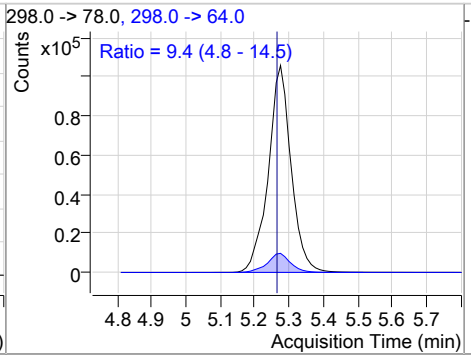


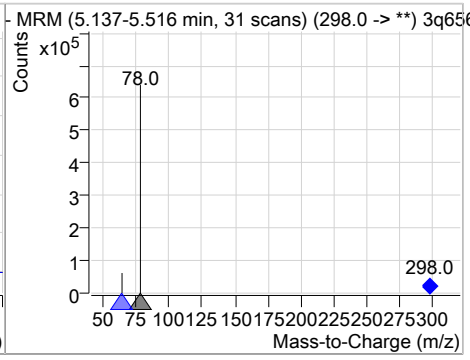




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	99.89	5.28	-0.03	488290	298.0 -> 64.0	9.4	4.8	14.5

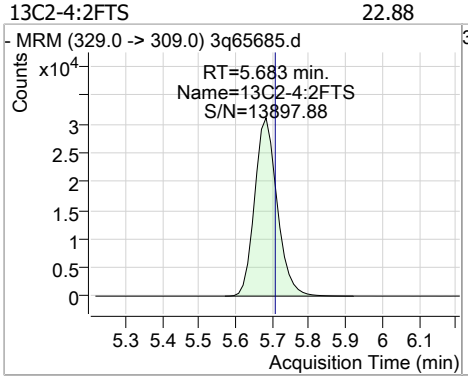


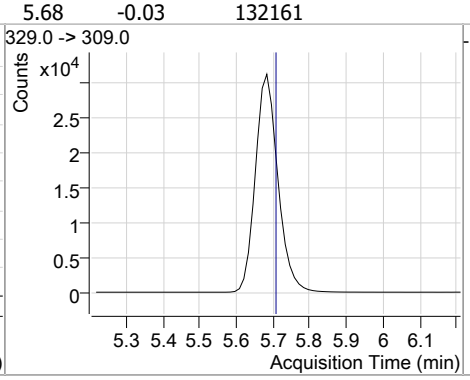


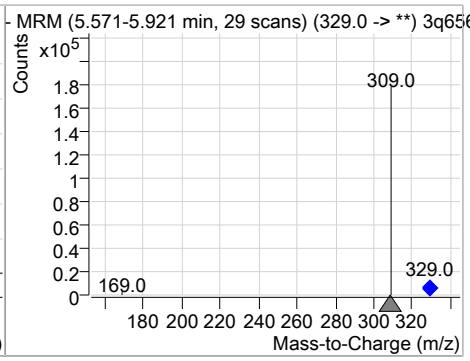


Perfluorinated Compounds by LC/MS/MS

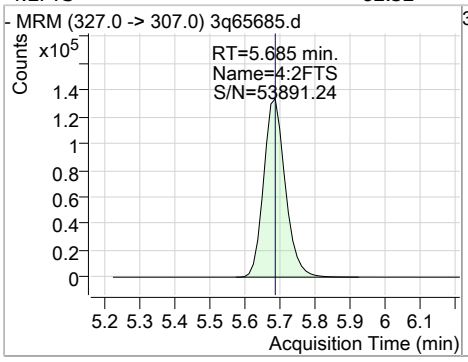
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.88	5.68	-0.03	132161				

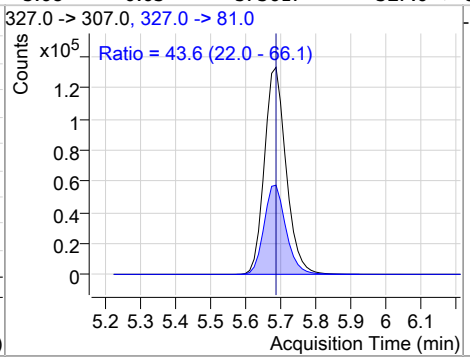


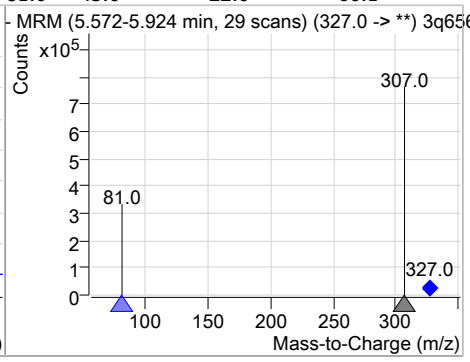




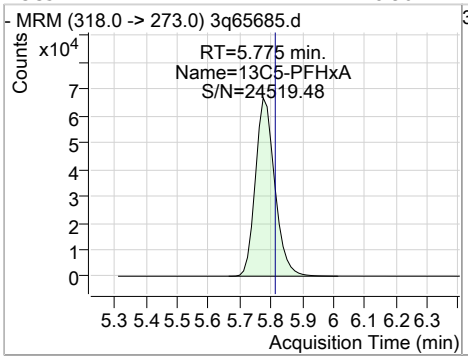
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	82.32	5.68	-0.03	573617	327.0 -> 81.0	43.6	22.0	66.1

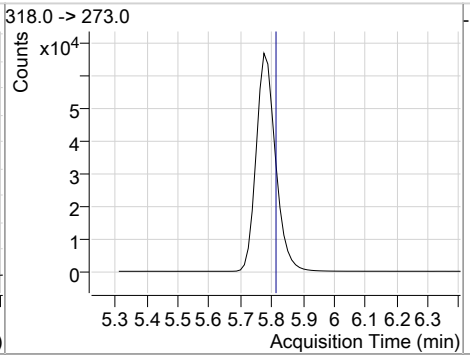


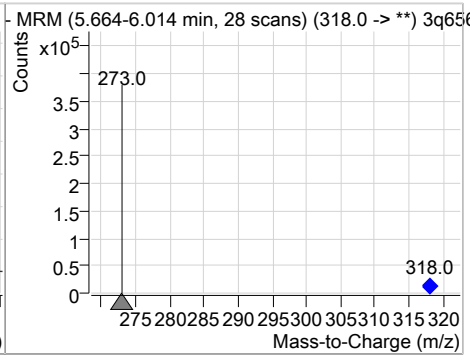




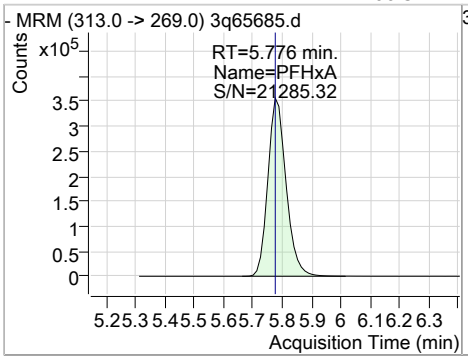
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.90	5.77	-0.04	286880				

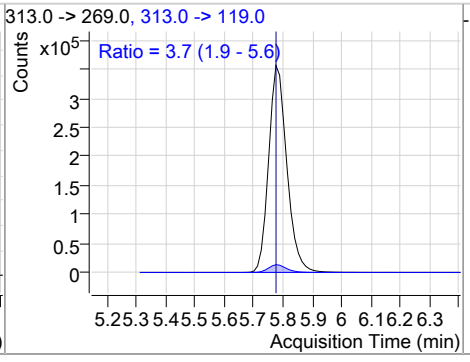


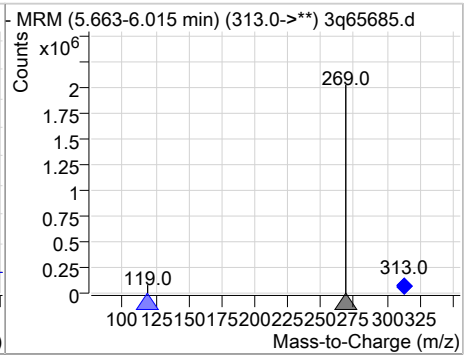




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.37	5.78	-0.04	1535220	313.0 -> 119.0	3.7	1.9	5.6

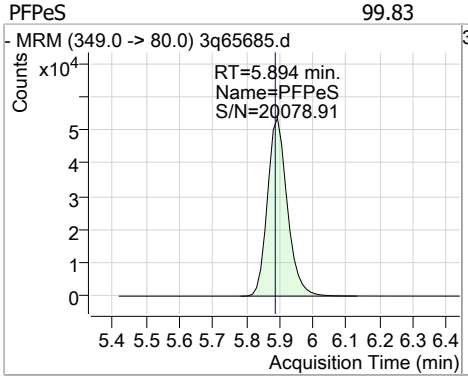


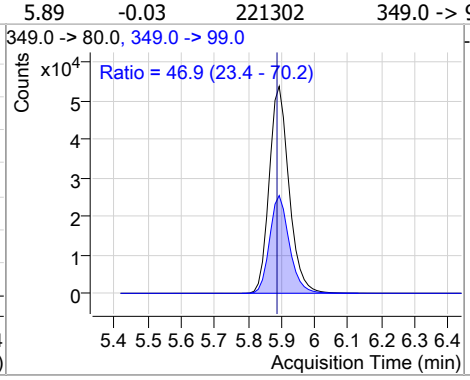


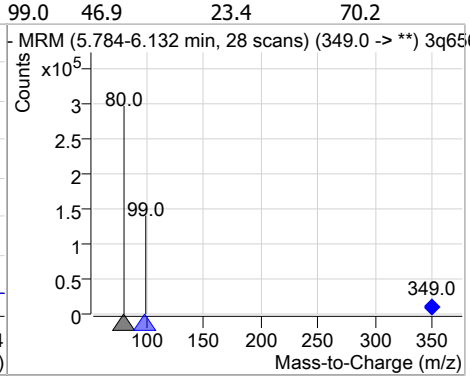


Perfluorinated Compounds by LC/MS/MS

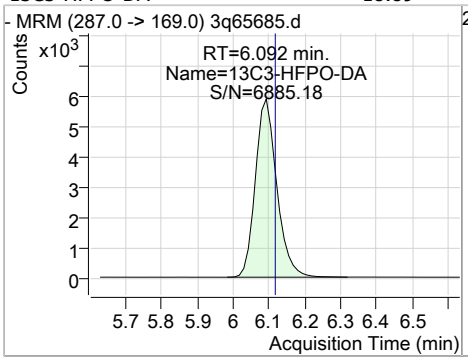
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	99.83	5.89	-0.03	221302	349.0 -> 99.0	46.9	23.4	70.2

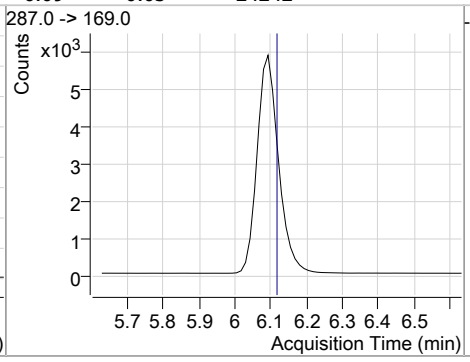


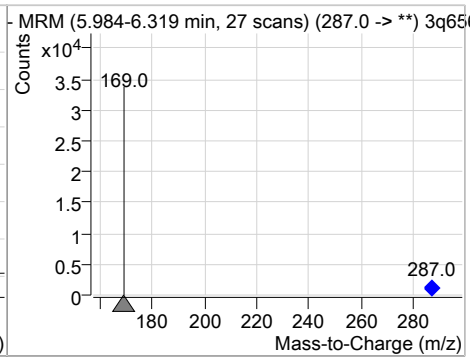




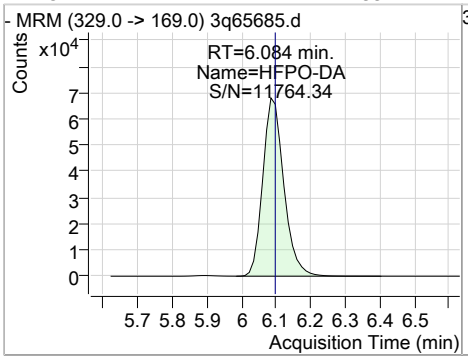
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.89	6.09	-0.03	24242				

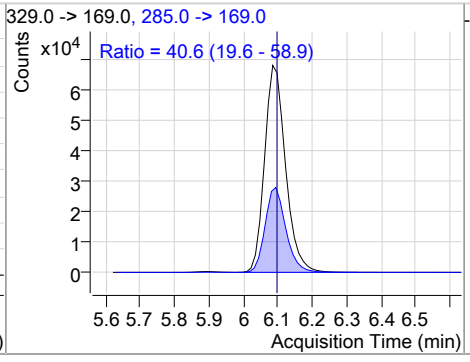


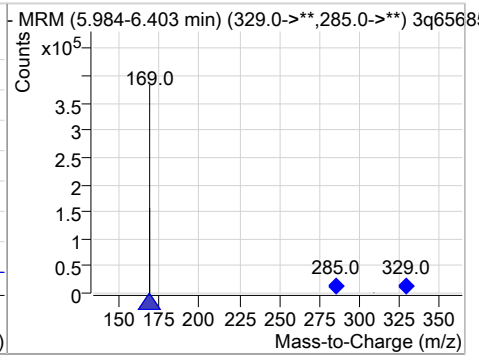




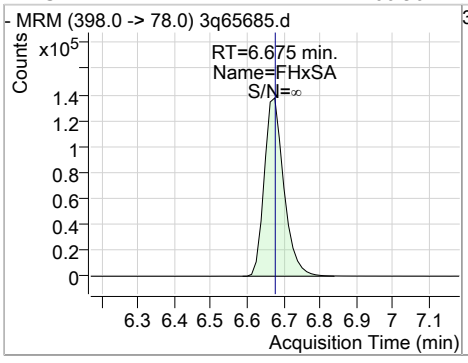
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.47	6.08	-0.04	287324	285.0 -> 169.0	40.6	19.6	58.9

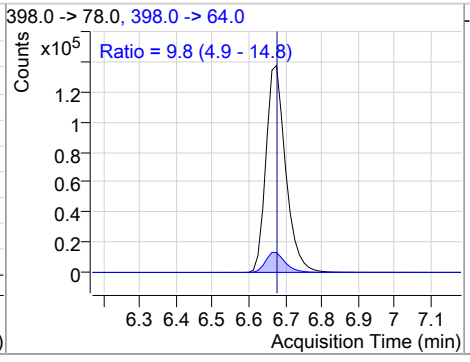


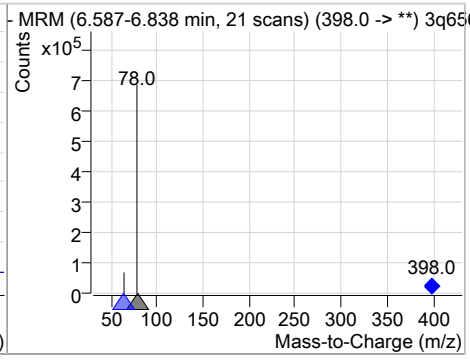




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	100.90	6.68	-0.01	513815	398.0 -> 64.0	9.8	4.9	14.8

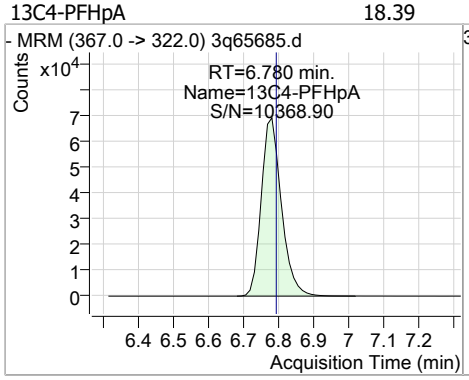


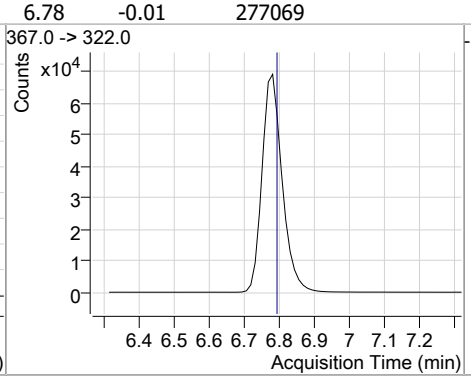


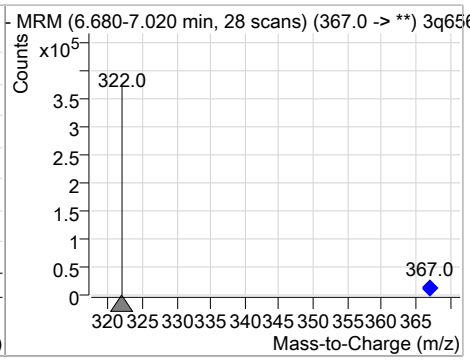


Perfluorinated Compounds by LC/MS/MS

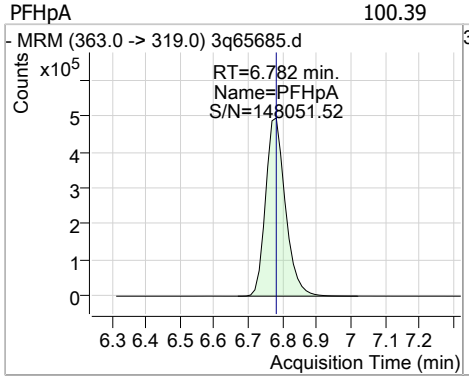
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.39	6.78	-0.01	277069				

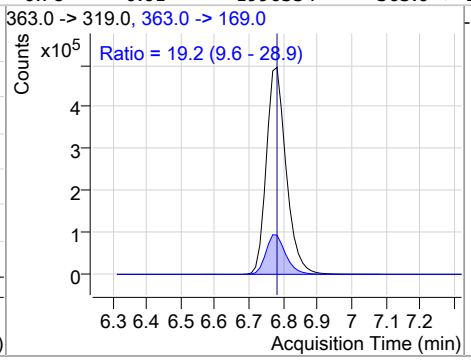


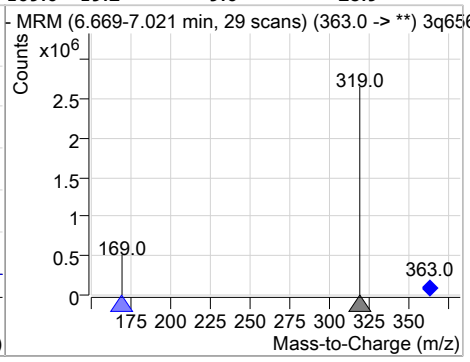




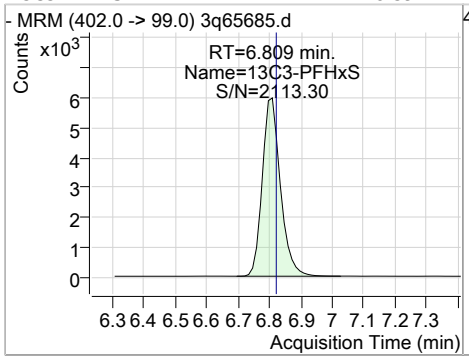
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.39	6.78	-0.01	1990334	363.0 -> 169.0	19.2	9.6	28.9

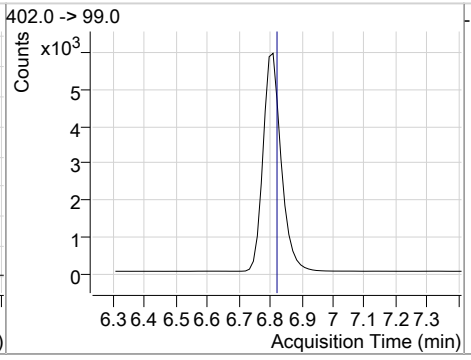


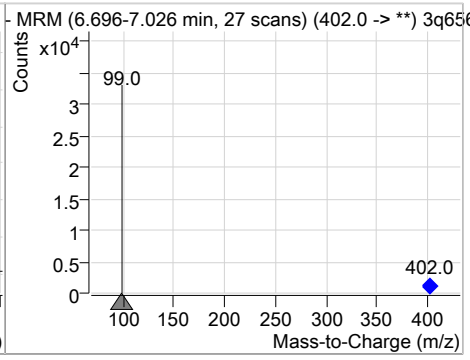




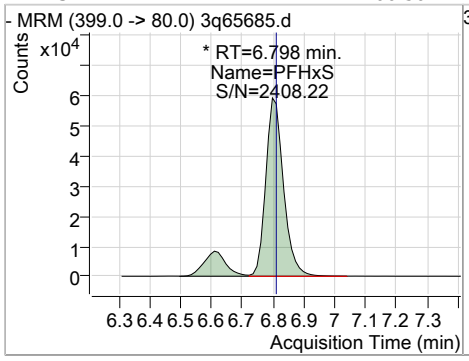
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.39	6.81	-0.01	23759				

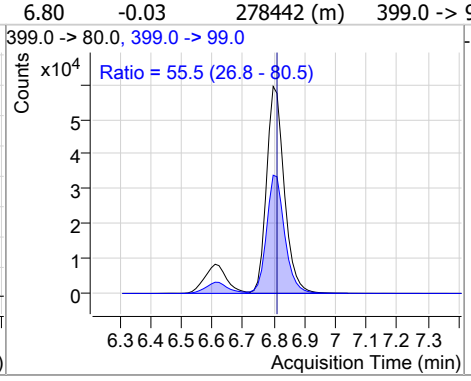


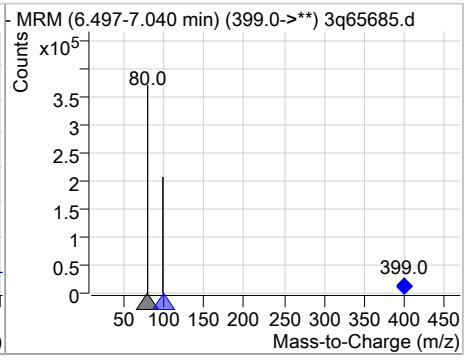




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.50	6.80	-0.03	278442 (m)	399.0 -> 99.0	55.5	26.8	80.5

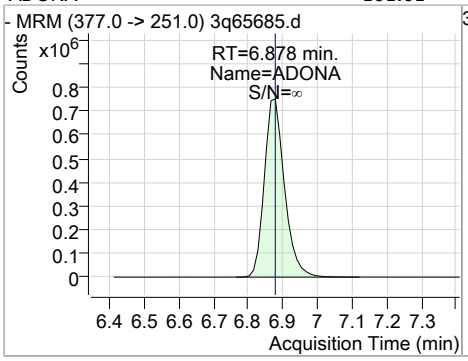


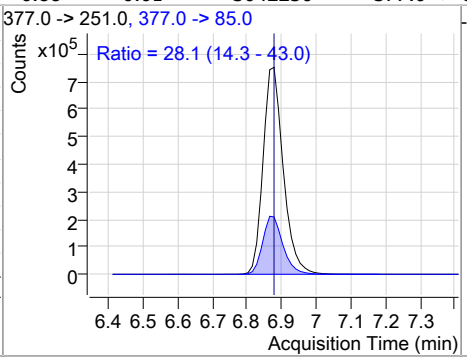


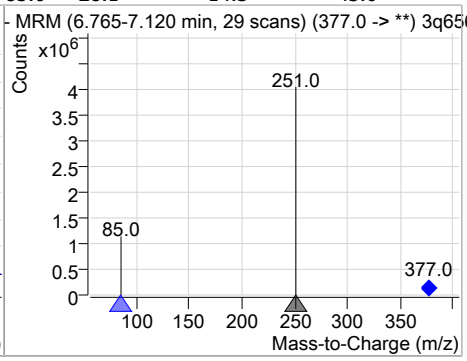


Perfluorinated Compounds by LC/MS/MS

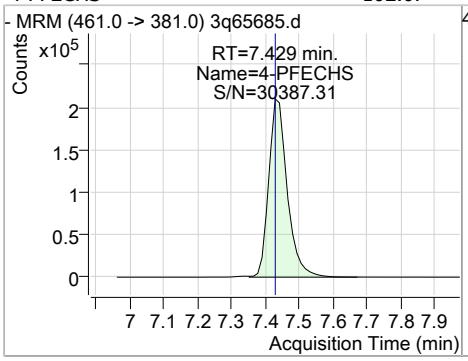
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	101.01	6.88	-0.01	3042236	377.0 -> 85.0	28.1	14.3	43.0

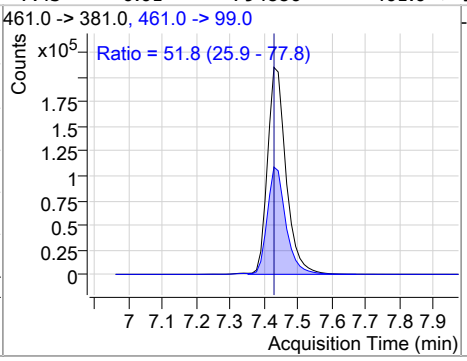


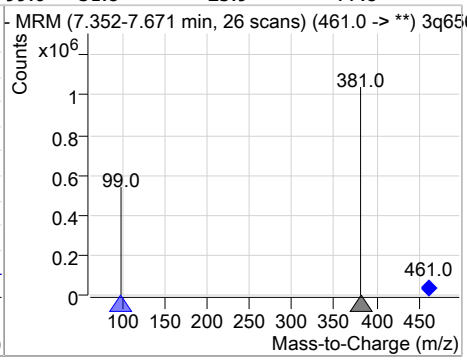




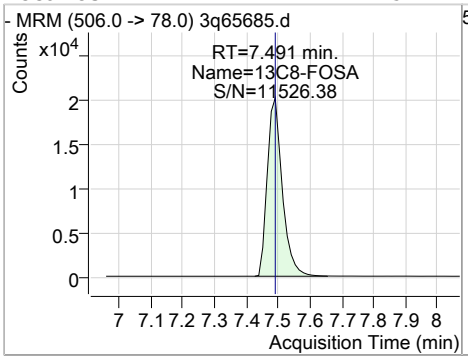
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	102.07	7.43	-0.01	794886	461.0 -> 99.0	51.8	25.9	77.8

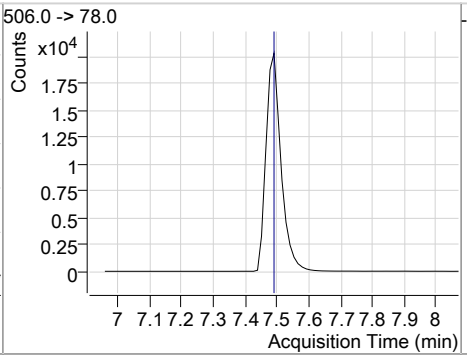


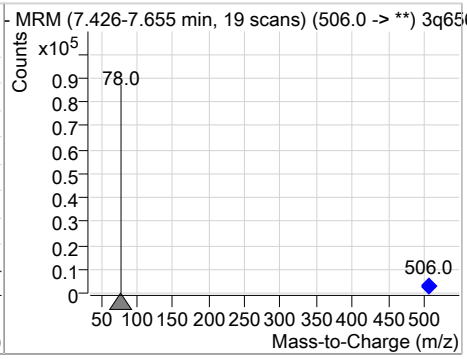




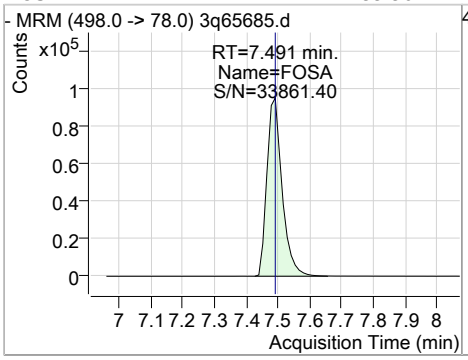
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.52	7.49	0.00	66164				

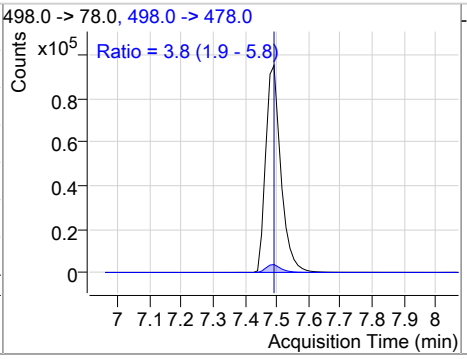


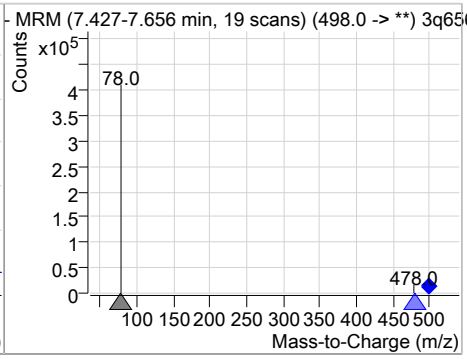




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	99.90	7.49	0.00	314605	498.0 -> 478.0	3.8	1.9	5.8

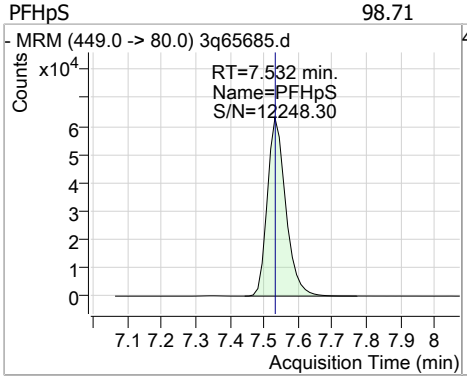


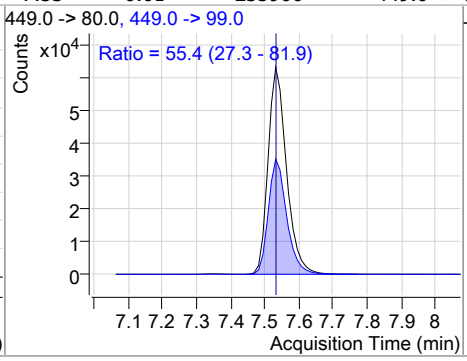


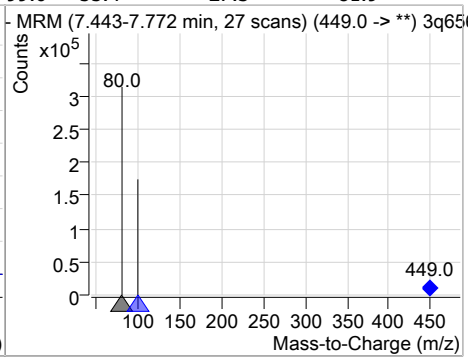


Perfluorinated Compounds by LC/MS/MS

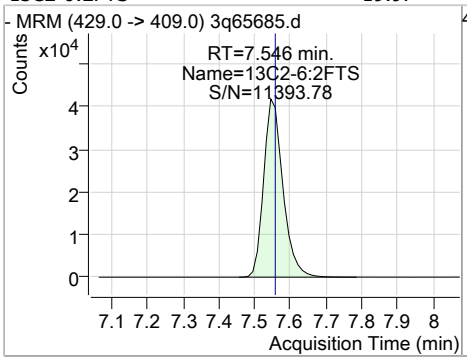
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	98.71	7.53	-0.01	235900	449.0 -> 99.0	55.4	27.3	81.9

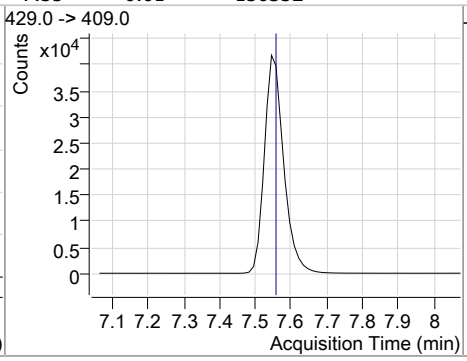


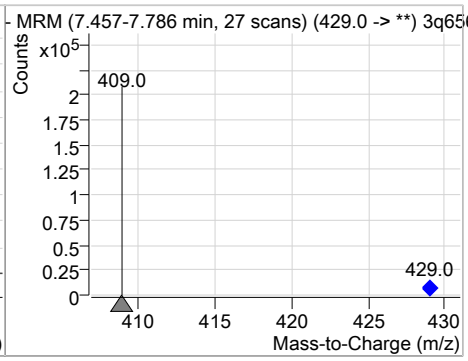




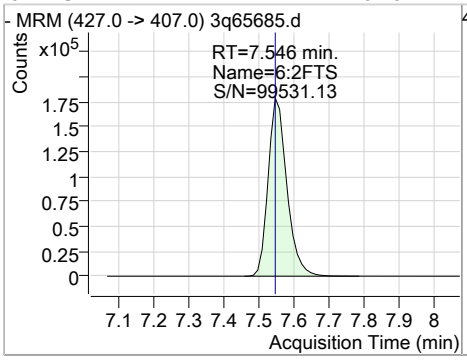
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.97	7.55	-0.01	156352				

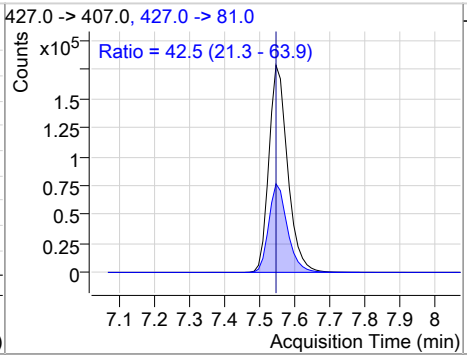


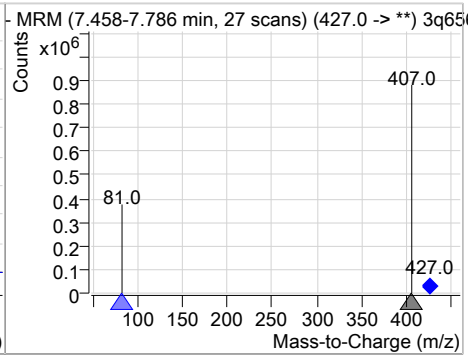




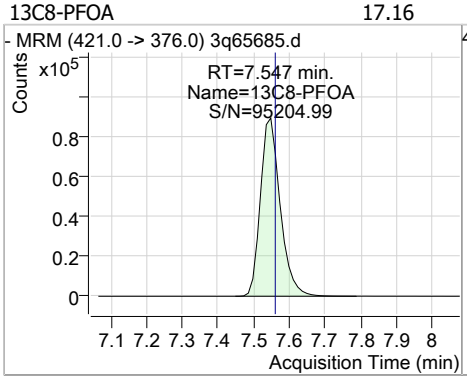
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	81.87	7.55	-0.01	665109	427.0 -> 81.0	42.5	21.3	63.9

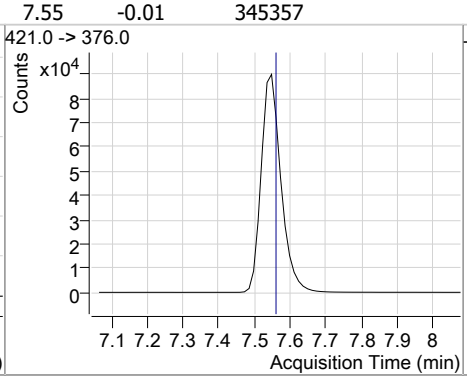


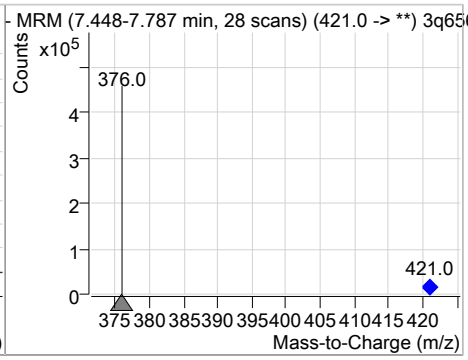




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.16	7.55	-0.01	345357				

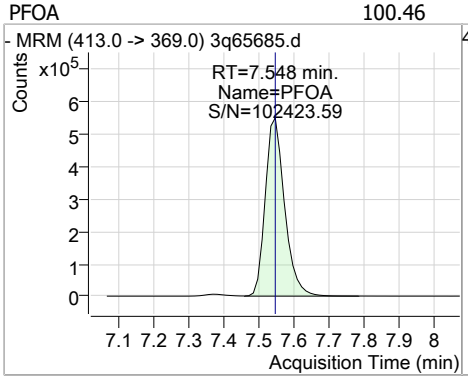


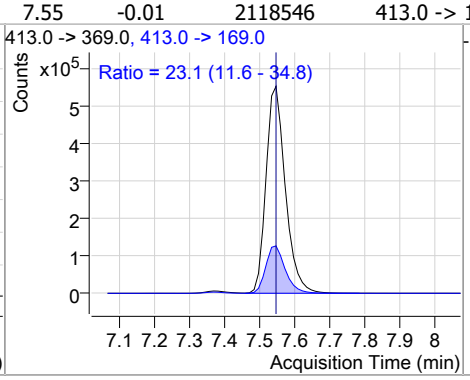


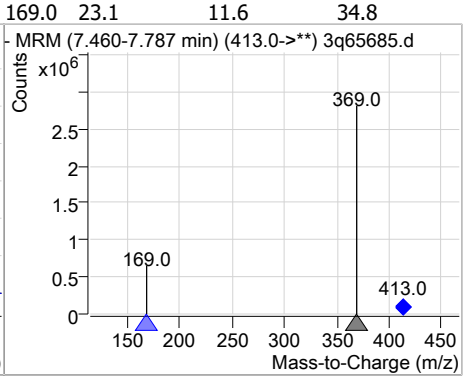


Perfluorinated Compounds by LC/MS/MS

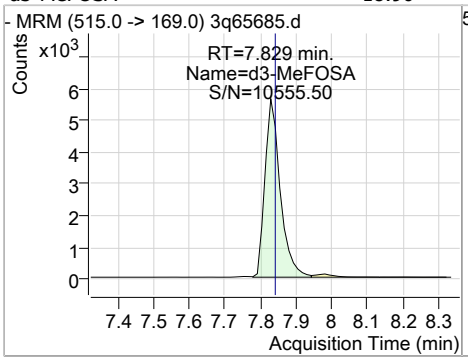
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.46	7.55	-0.01	2118546	413.0 -> 169.0	23.1	11.6	34.8

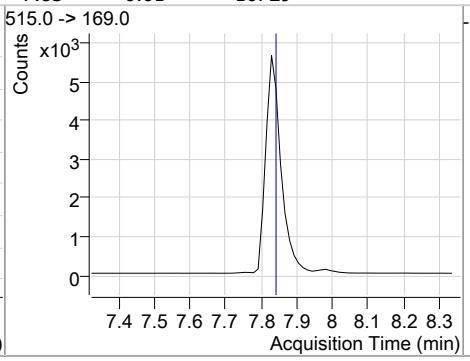


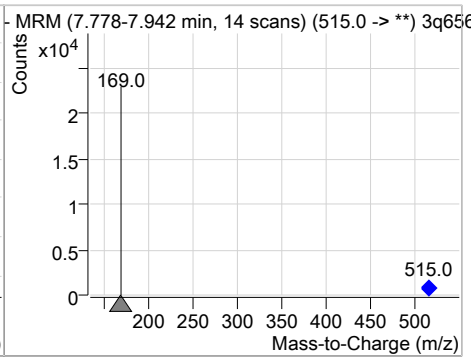




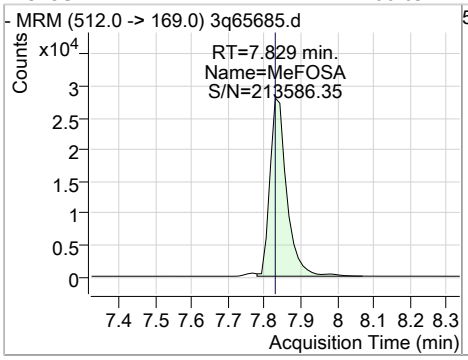
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.90	7.83	-0.01	16729				

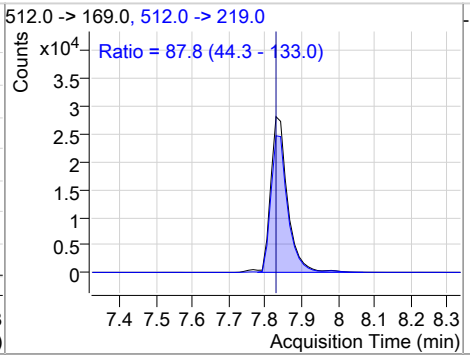


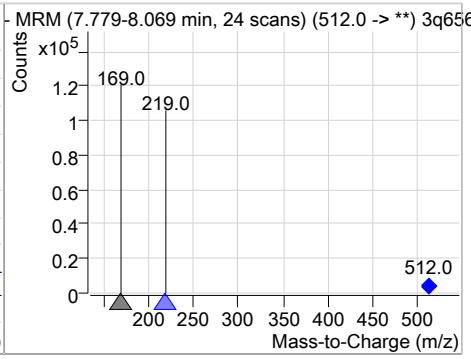




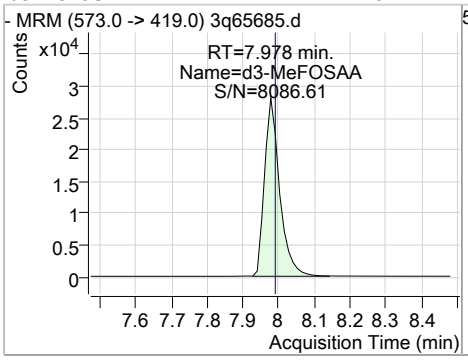
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	100.09	7.83	-0.01	90121	512.0 -> 219.0	87.8	44.3	133.0

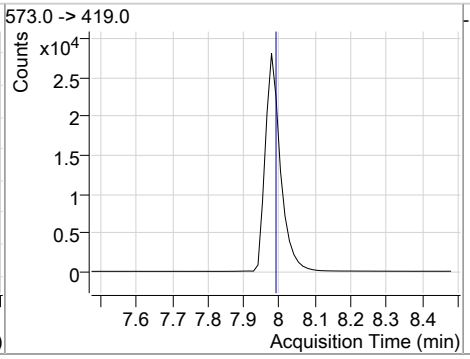


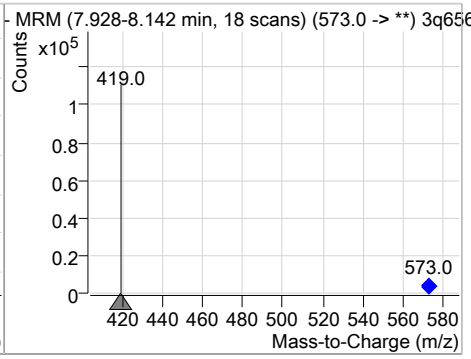




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.41	7.98	-0.01	82763				

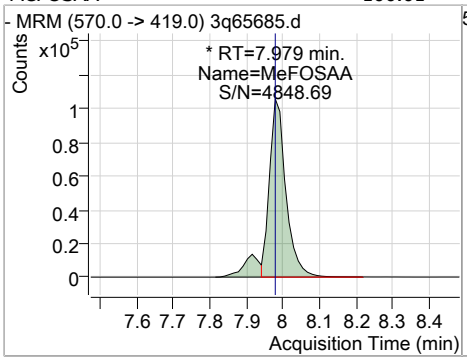


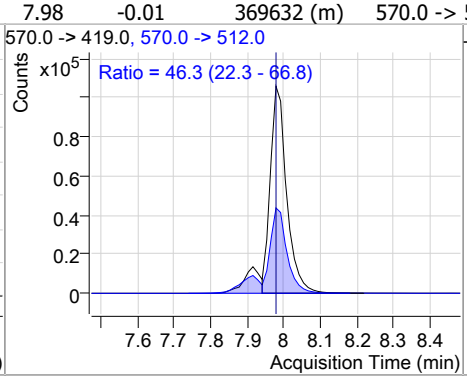


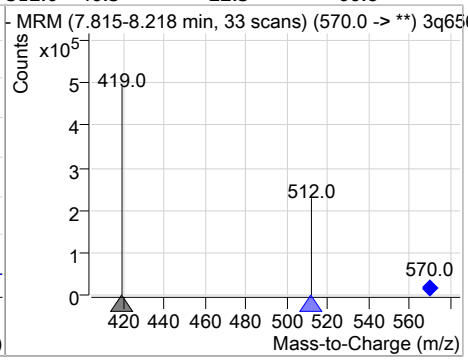


Perfluorinated Compounds by LC/MS/MS

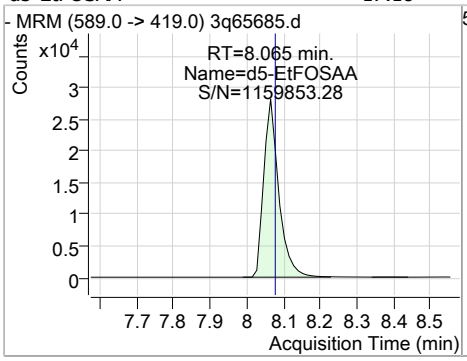
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.01	7.98	-0.01	369632 (m)	570.0 -> 512.0	46.3	22.3	66.8

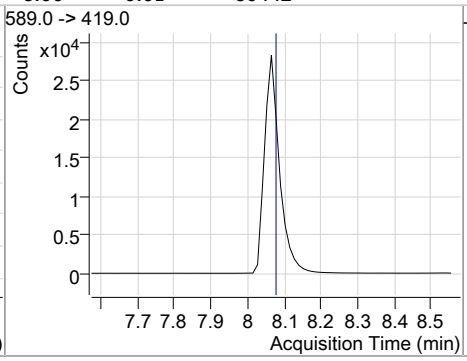


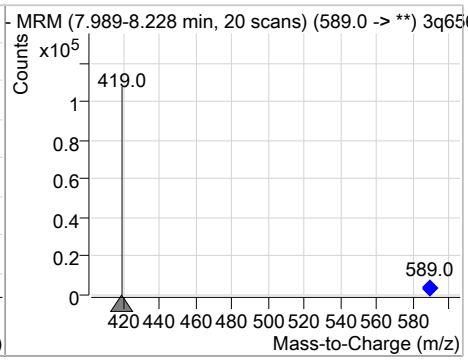




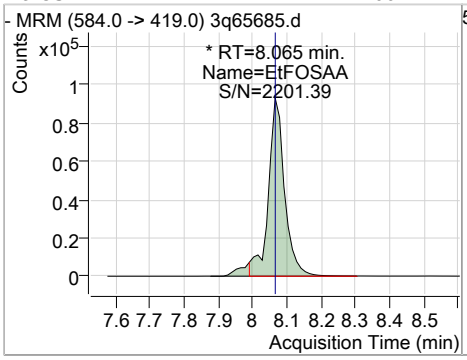
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.18	8.06	-0.01	80442				

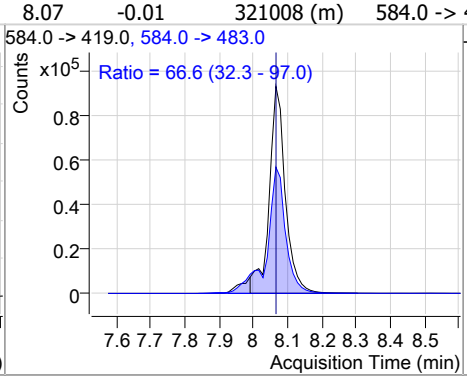


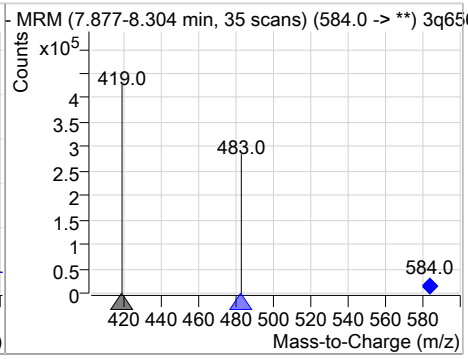




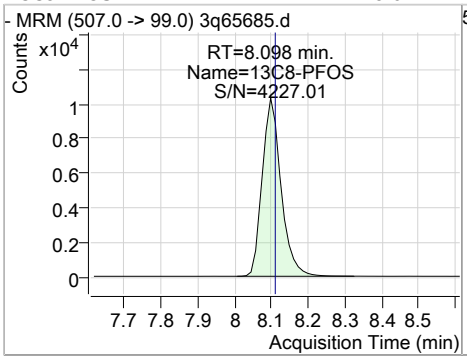
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.12	8.07	-0.01	321008 (m)	584.0 -> 483.0	66.6	32.3	97.0

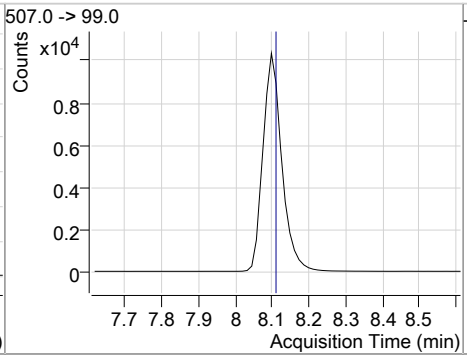


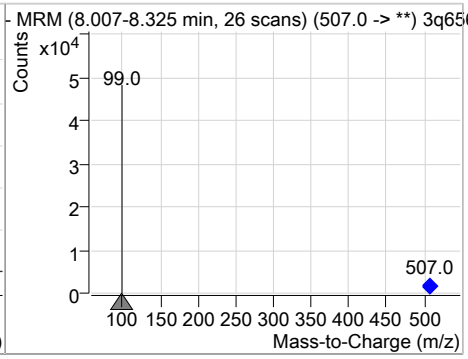




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.67	8.10	-0.01	36637				

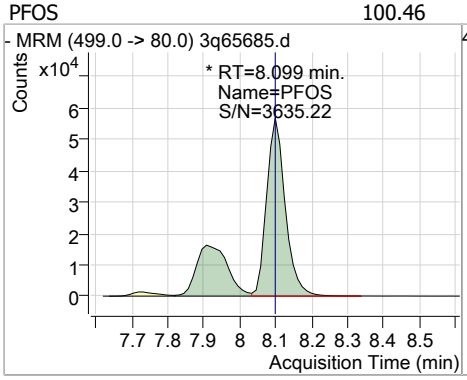


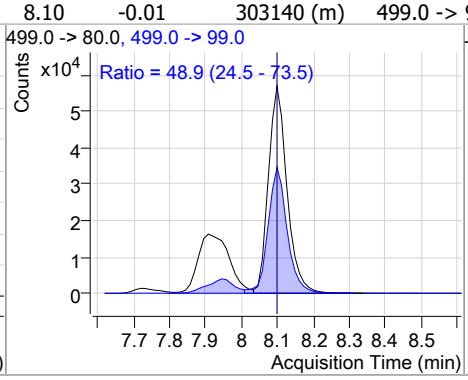


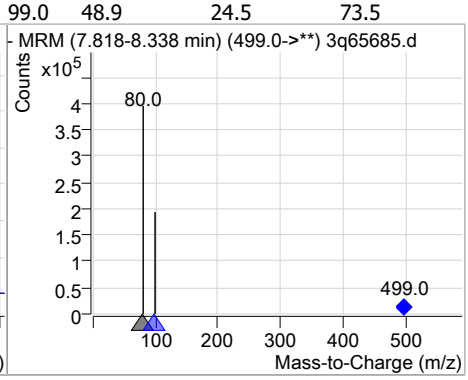


Perfluorinated Compounds by LC/MS/MS

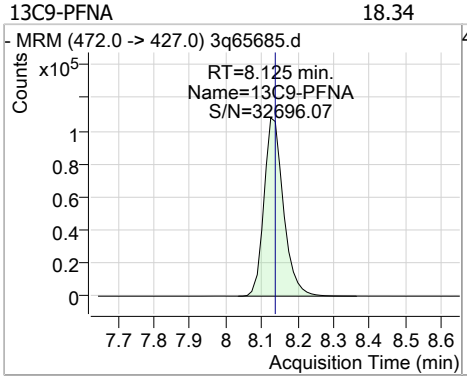
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.46	8.10	-0.01	303140 (m)	499.0 -> 99.0	48.9	24.5	73.5

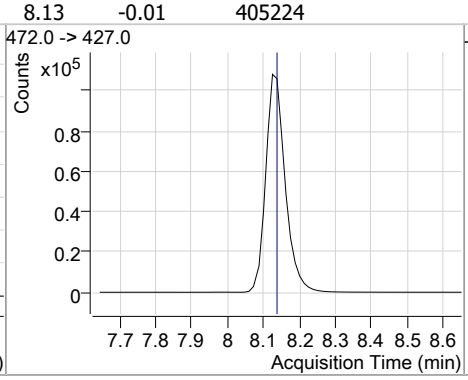


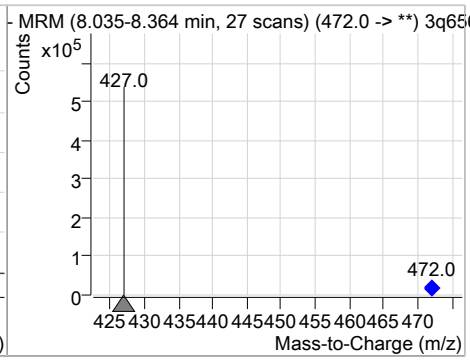




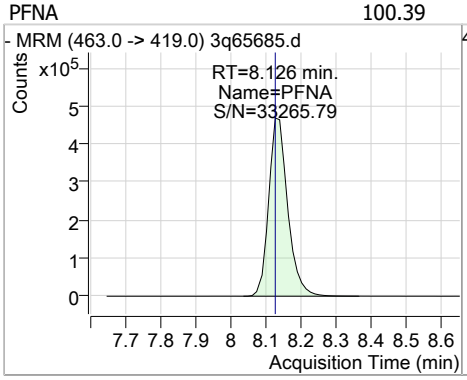
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.34	8.13	-0.01	405224				

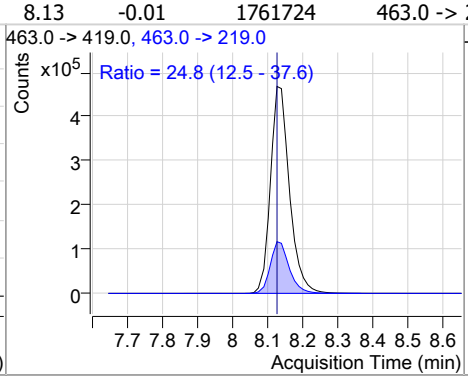


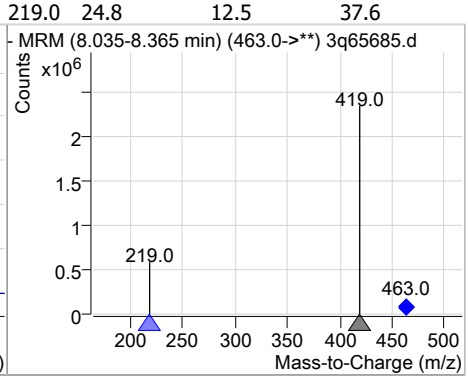




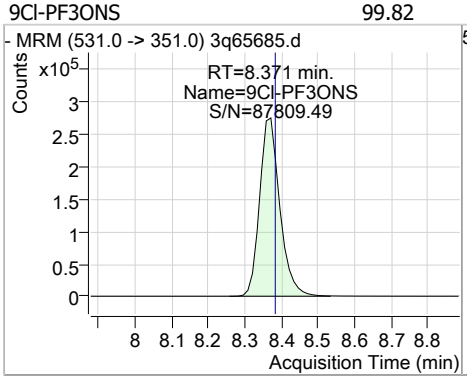
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.39	8.13	-0.01	1761724	463.0 -> 219.0	24.8	12.5	37.6

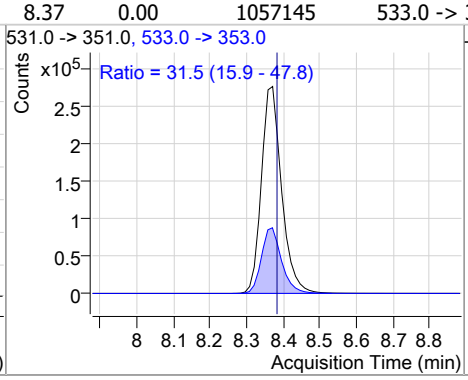


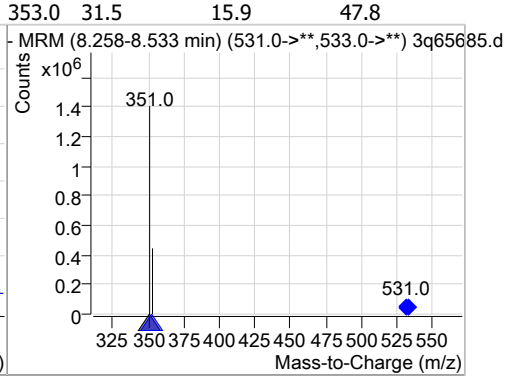




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	99.82	8.37	0.00	1057145	533.0 -> 353.0	31.5	15.9	47.8

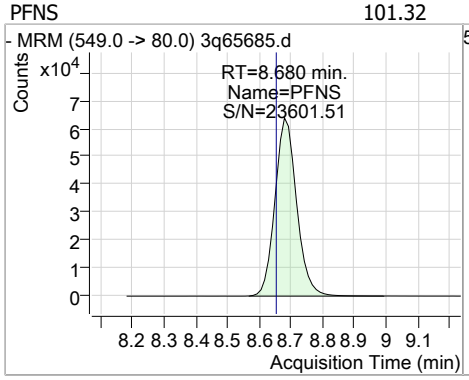


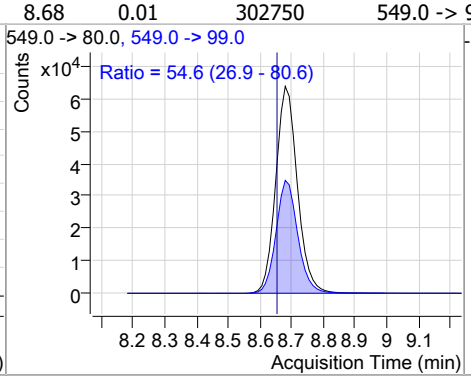


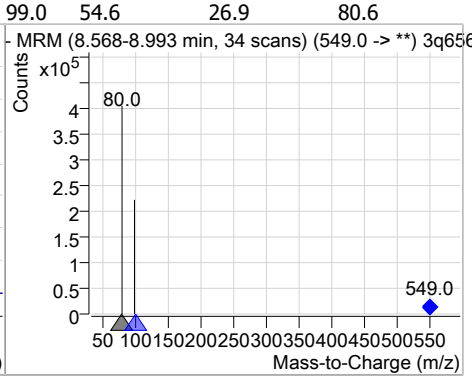


Perfluorinated Compounds by LC/MS/MS

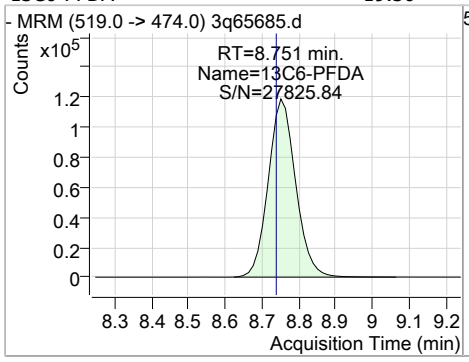
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	101.32	8.68	0.01	302750	549.0 -> 99.0	54.6	26.9	80.6

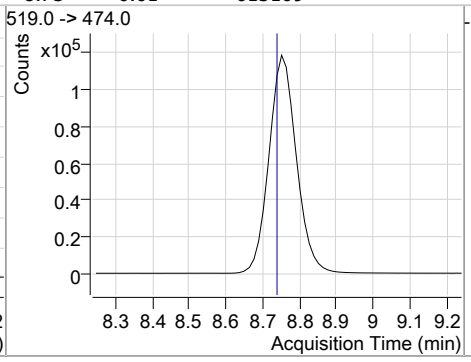


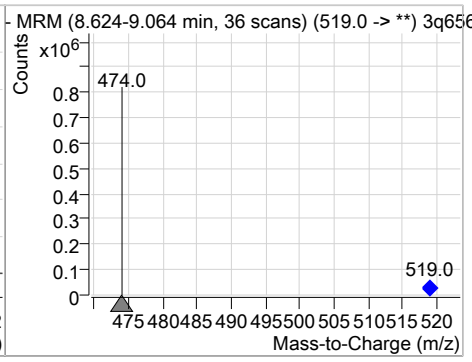




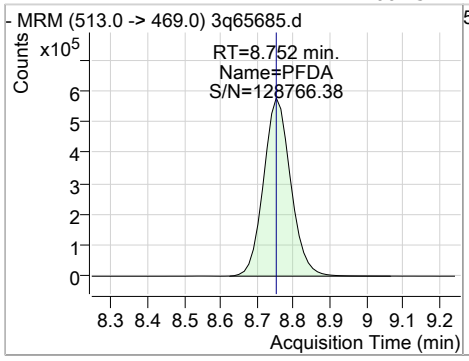
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.36	8.75	0.01	615109				

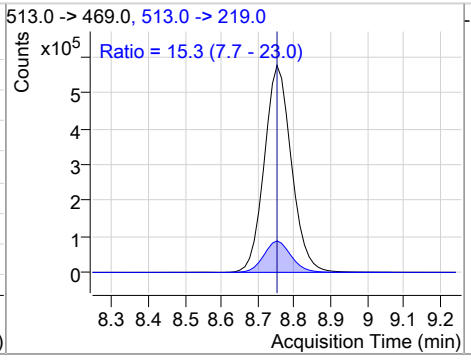


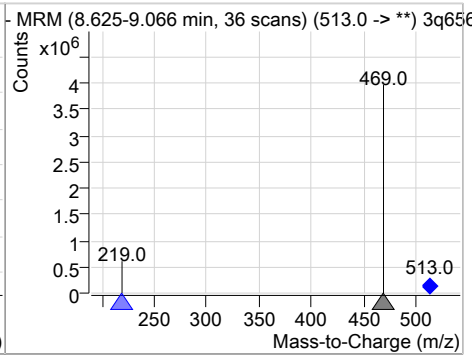




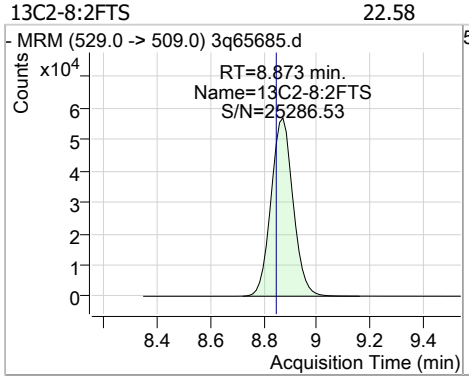
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.45	8.75	0.01	2977397	513.0 -> 219.0	15.3	7.7	23.0

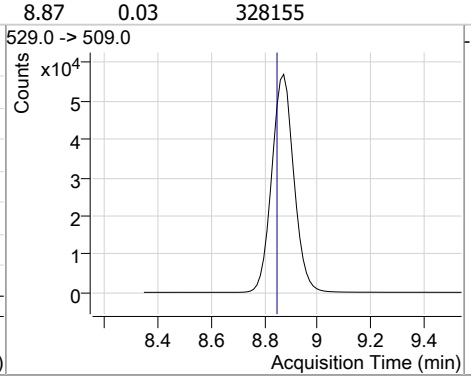


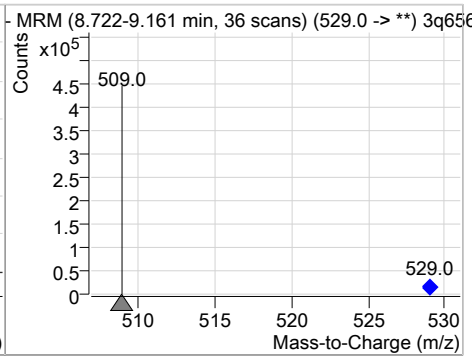




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.58	8.87	0.03	328155				

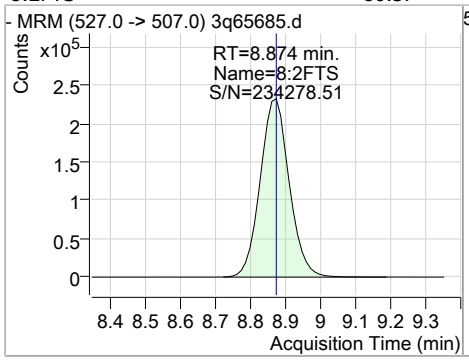


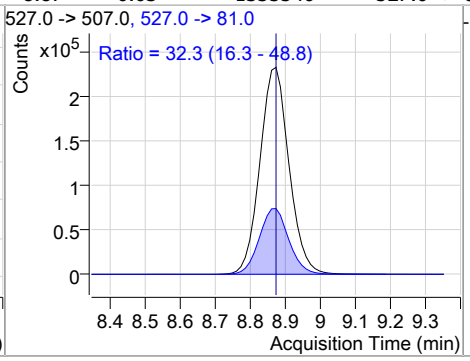


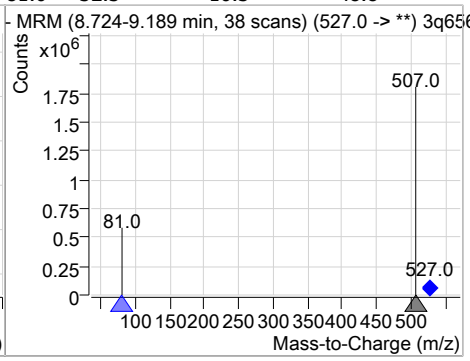


Perfluorinated Compounds by LC/MS/MS

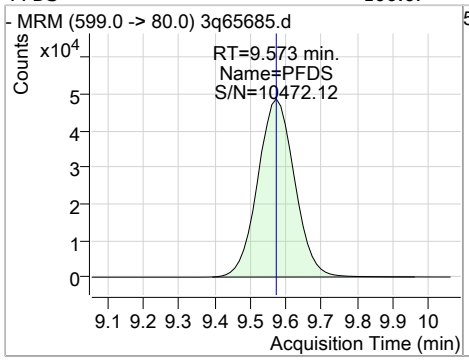
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	80.37	8.87	0.03	1335546	527.0 -> 81.0	32.3	16.3	48.8

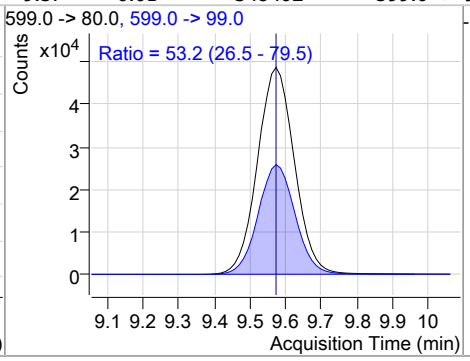


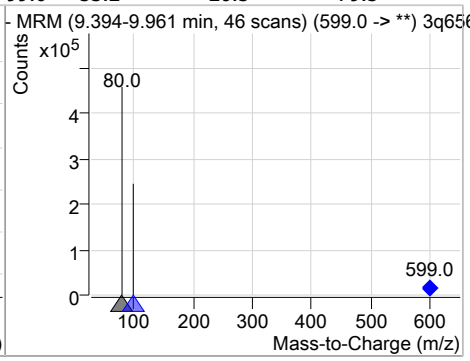




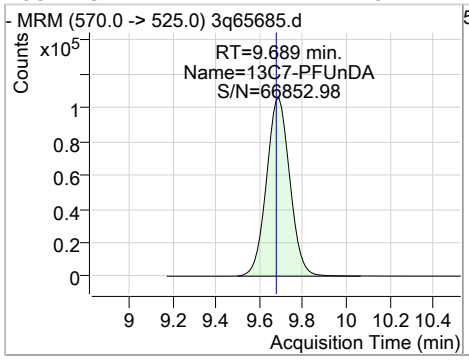
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.67	9.57	0.01	348402	599.0 -> 99.0	53.2	26.5	79.5

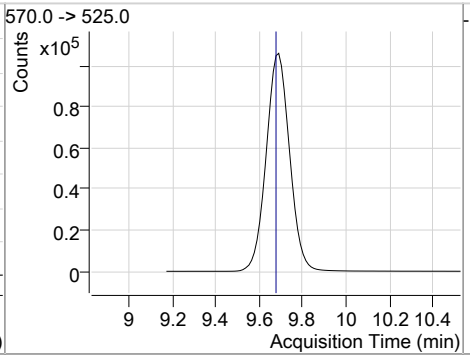


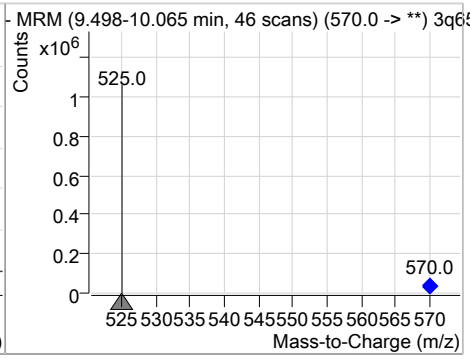




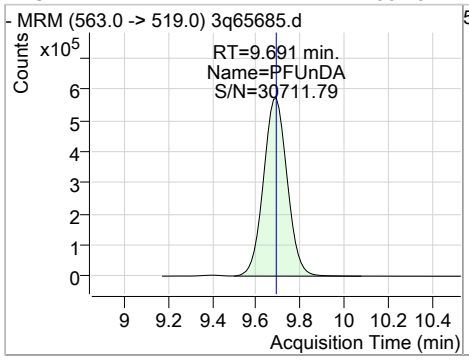
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.24	9.69	0.01	794165				

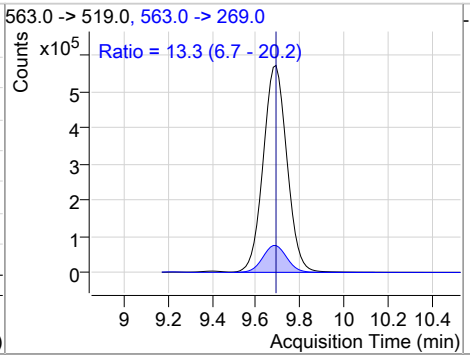


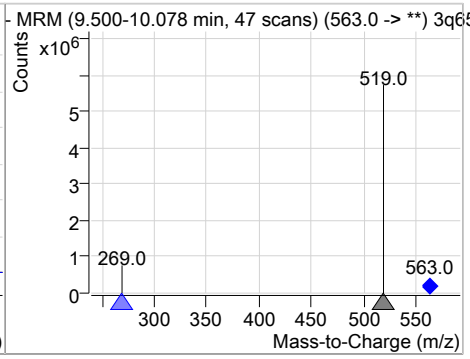




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.40	9.69	0.01	4294497	563.0 -> 269.0	13.3	6.7	20.2

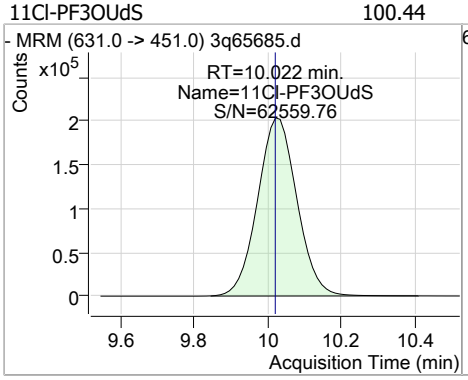


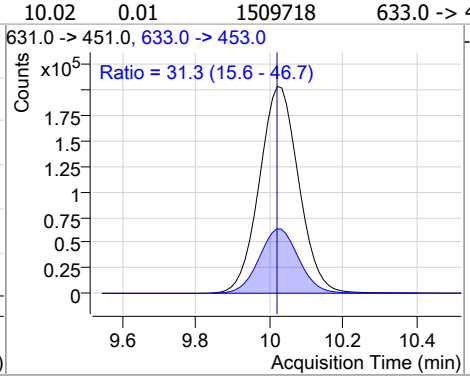


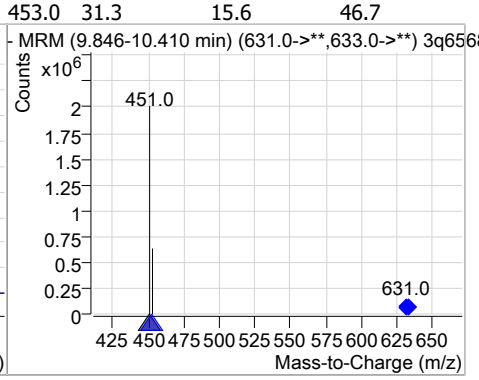


Perfluorinated Compounds by LC/MS/MS

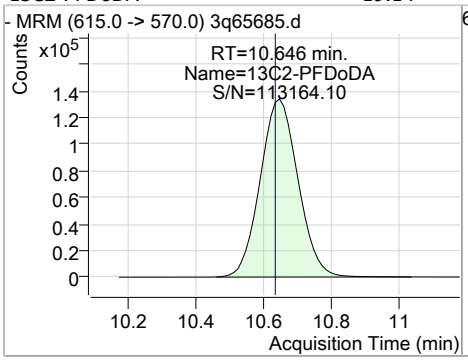
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.44	10.02	0.01	1509718	633.0 -> 453.0	31.3	15.6	46.7

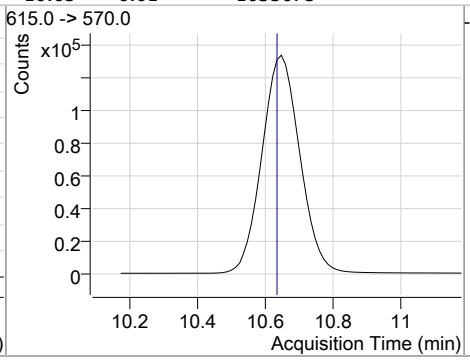


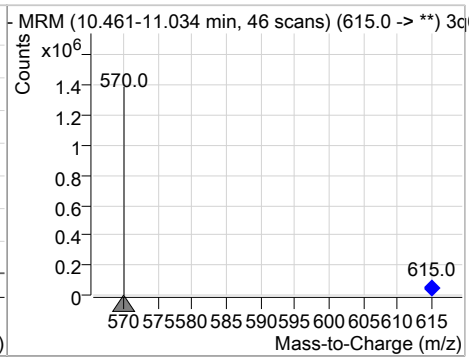




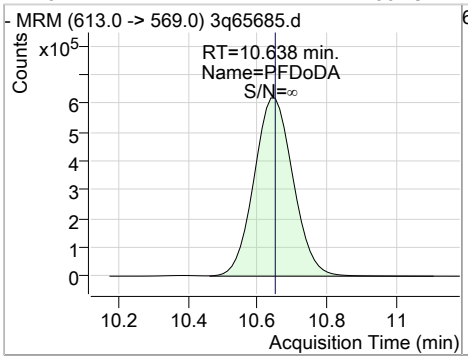
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.14	10.65	0.01	1035675				

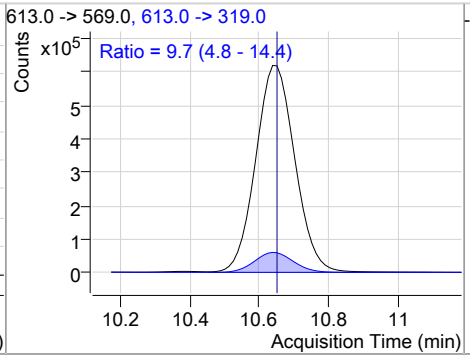


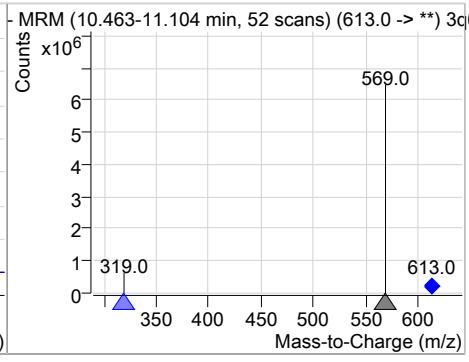




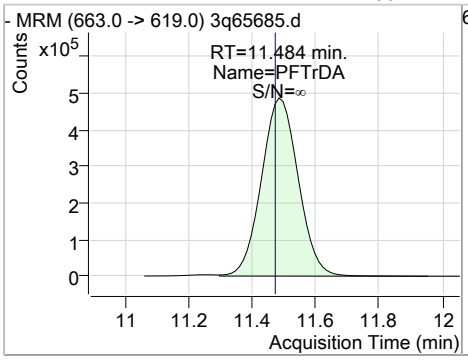
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.29	10.64	0.00	4824079	613.0 -> 319.0	9.7	4.8	14.4

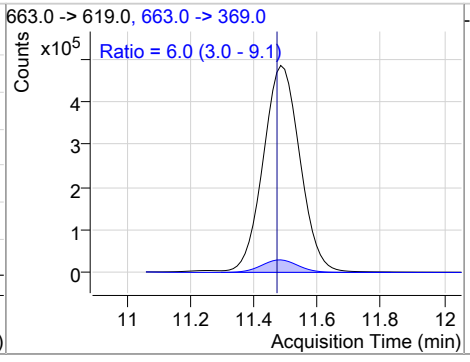


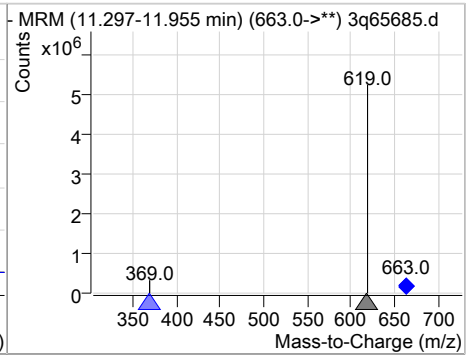




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.22	11.48	0.00	3917557	663.0 -> 369.0	6.0	3.0	9.1

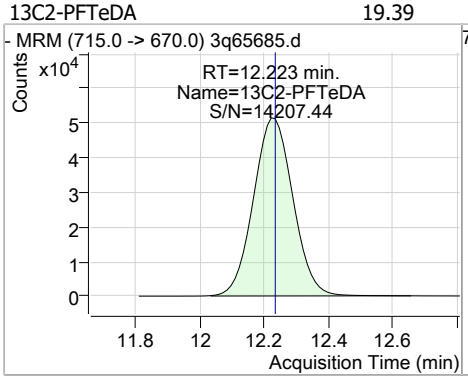


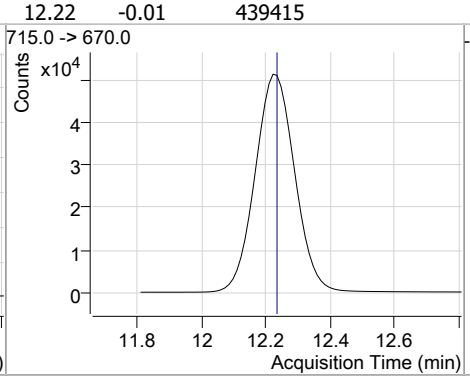


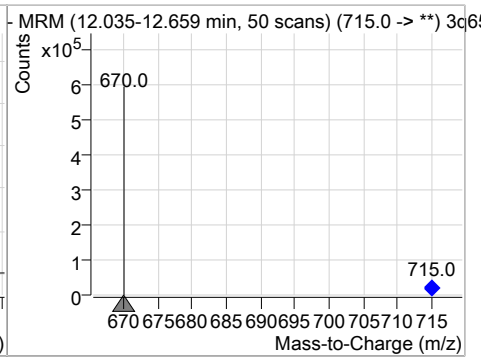


Perfluorinated Compounds by LC/MS/MS

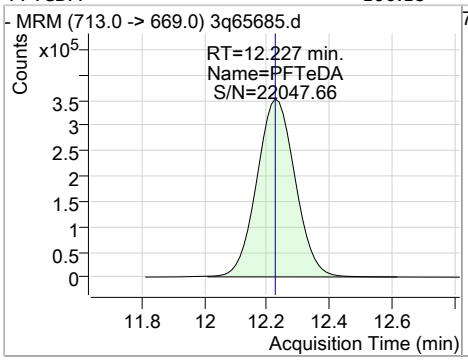
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.39	12.22	-0.01	439415				

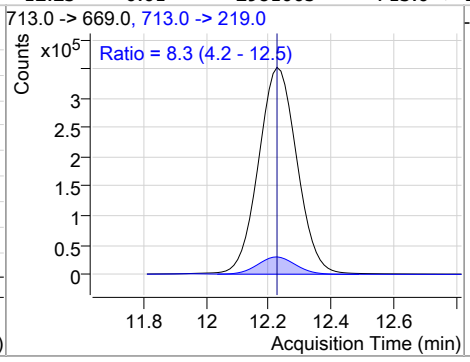


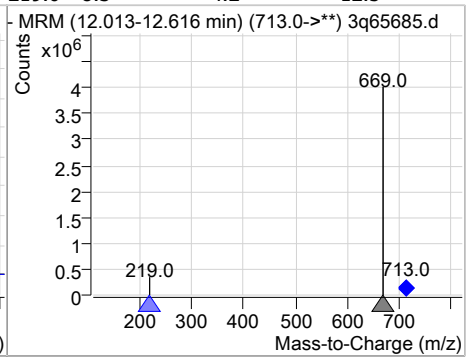




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.18	12.23	-0.01	2981065	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-IC898
Lab FileID: 3Q65685.D
Injection Time: 09/13/22 18:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:40 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.80	Split peak
MeFOSAA	2355-31-9		7.98	Split peak
EtFOSAA	2991-50-6		8.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.10	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65687.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 6:46:25 PM
Sample Name : icv898-20
Vial : P1-B1
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

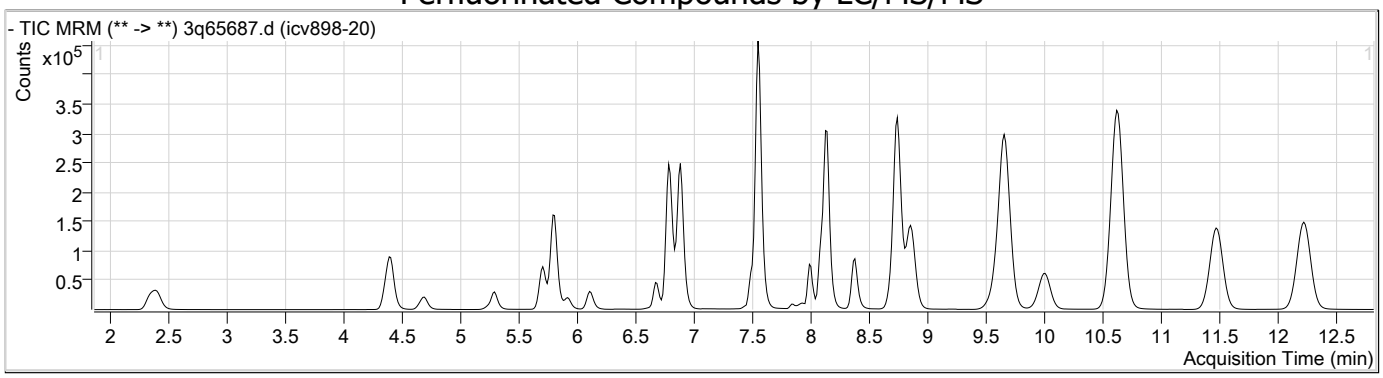
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.377	217.0 -> 172.0	172215	20.00 µg/L	0.013
M5-PFPeA	4.386	268.0 -> 223.0	250934	20.00 µg/L	-0.025
M5-PFHxA	5.800	318.0 -> 273.0	325830	20.00 µg/L	-0.014
M4-PFHpA	6.780	367.0 -> 322.0	328910	20.00 µg/L	-0.013
M8-PFOA	7.547	421.0 -> 376.0	434400	20.00 µg/L	-0.013
M9-PFNA	8.138	472.0 -> 427.0	487614	20.00 µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	700661	20.00 µg/L	0.000
M7-PFUnDA	9.652	570.0 -> 525.0	901047	20.00 µg/L	-0.025
M2-PFDoDA	10.609	615.0 -> 570.0	1191988	20.00 µg/L	-0.025
M2-PFTeDA	12.210	715.0 -> 670.0	497028	20.00 µg/L	-0.025
M8-FOSA	7.478	506.0 -> 78.0	86847	20.00 µg/L	-0.013
M3-PFBS	4.679	302.0 -> 99.0	22875	20.00 µg/L	-0.013
M3-PFHxS	6.809	402.0 -> 99.0	28122	20.00 µg/L	-0.013
M8-PFOS	8.098	507.0 -> 99.0	41935	20.00 µg/L	-0.013
M2-4:2FTS	5.696	329.0 -> 309.0	123881	20.00 µg/L	-0.013
M2-6:2FTS	7.558	429.0 -> 409.0	168347	20.00 µg/L	0.000
M2-8:2FTS	8.848	529.0 -> 509.0	321132	20.00 µg/L	0.000
M3-MeFOSAA	7.978	573.0 -> 419.0	98123	20.00 µg/L	-0.013
M3-HFPO-DA	6.105	287.0 -> 169.0	26916	20.00 µg/L	-0.013
M3-MeFOSA	7.829	515.0 -> 169.0	20138	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	102357	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.696	329.0 -> 309.0	123881	21.45 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C2-6:2FTS	7.558	429.0 -> 409.0	168347	21.51 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C2-8:2FTS	8.848	529.0 -> 509.0	321132	22.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%	
13C2-PFDoDA	10.609	615.0 -> 570.0	1191988	22.03 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C2-PFTeDA	12.210	715.0 -> 670.0	497028	21.94 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%	
13C3-PFBS	4.679	302.0 -> 99.0	22875	21.62 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%	
13C3-PFHxS	6.809	402.0 -> 99.0	28122	21.77 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%	
13C4-PFBA	2.377	217.0 -> 172.0	172215	21.64 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C4-PFHpA	6.780	367.0 -> 322.0	328910	21.83 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%	
13C5-PFHxA	5.800	318.0 -> 273.0	325830	21.46 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%	
13C5-PFPeA	4.386	268.0 -> 223.0	250934	21.65 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C6-PFDA	8.739	519.0 -> 474.0	700661	22.06 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

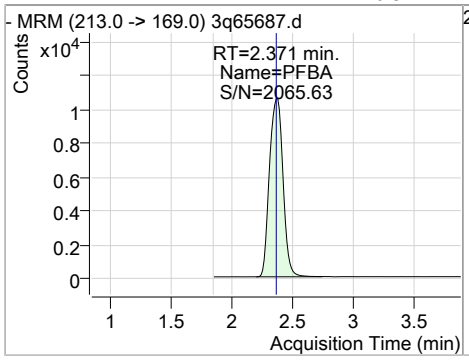
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%			
13C7-PFUnDA	9.652	570.0 -> 525.0	901047	21.83	µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%			
13C8-FOSA	7.478	506.0 -> 78.0	86847	22.99	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.0%			
13C8-PFOA	7.547	421.0 -> 376.0	434400	21.58	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%			
13C8-PFOS	8.098	507.0 -> 99.0	41935	21.37	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%			
13C9-PFNA	8.138	472.0 -> 427.0	487614	22.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%			
d3-MeFOSAA	7.978	573.0 -> 419.0	98123	21.82	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%			
13C3-HFPO-DA	6.105	287.0 -> 169.0	26921	20.98	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%			
d3-MeFOSA	7.829	515.0 -> 169.0	20138	22.75	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%			
d5-EtFOSAA	8.065	589.0 -> 419.0	102381	21.87	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
Target Compounds							**QValue**
4:2FTS	5.697	327.0 -> 307.0	129343	19.80	µg/L		100
6:2FTS	7.559	427.0 -> 407.0	174232	19.92	µg/L		99
8:2FTS	8.849	527.0 -> 507.0	330178	20.30	µg/L		99
EtFOSAA	8.078	584.0 -> 419.0	91266	22.36	µg/L	m	100
FOSA	7.479	498.0 -> 78.0	90266	21.84	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	95500	21.79	µg/L	m	98
PFBA	2.371	213.0 -> 169.0	82289	20.91	µg/L		100
PFBS	4.682	299.0 -> 80.0	59603	18.34	µg/L		100
PFDA	8.740	513.0 -> 469.0	728776	21.59	µg/L		100
PFDoDA	10.613	613.0 -> 569.0	1268028	22.90	µg/L		100
PFDS	9.532	599.0 -> 80.0	79367	20.21	µg/L		99
PFHpA	6.782	363.0 -> 319.0	505331	21.47	µg/L		100
PFHpS	7.532	449.0 -> 80.0	59774	21.85	µg/L		100
PFHxA	5.801	313.0 -> 269.0	357656	20.59	µg/L		100
PFHxS	6.810	399.0 -> 80.0	62970	19.20	µg/L	m	97
PFNA	8.139	463.0 -> 419.0	431285	20.42	µg/L		100
PFNS	8.667	549.0 -> 80.0	69371	20.28	µg/L		99
PFOA	7.548	413.0 -> 369.0	602923	22.73	µg/L		100
PFOS	8.099	499.0 -> 80.0	80445	23.29	µg/L	m	98
PFPeA	4.389	263.0 -> 219.0	236896	21.62	µg/L		100
PFPeS	5.907	349.0 -> 80.0	50495	20.00	µg/L		100
PFTeDA	12.214	713.0 -> 669.0	699733	20.79	µg/L		100
PFTrDA	11.459	663.0 -> 619.0	1048777	23.72	µg/L		100
PFUnDA	9.653	563.0 -> 519.0	1094360	22.55	µg/L		100
11Cl-PF3OUdS	9.997	631.0 -> 451.0	342545	19.80	µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	242929	20.14	µg/L		100
ADONA	6.878	377.0 -> 251.0	728248	20.43	µg/L		100
HFPO-DA	6.097	329.0 -> 169.0	71179	22.19	µg/L		99
MeFOSA	7.842	512.0 -> 169.0	0	0.00	µg/L	m	1
4-PFECHS	7.441	461.0 -> 381.0	0	0.00	µg/L	m	1
FBSA	5.288	298.0 -> 78.0	129403	23.31	µg/L		100
FHxSA	6.663	398.0 -> 78.0	149688	23.37	µg/L		100

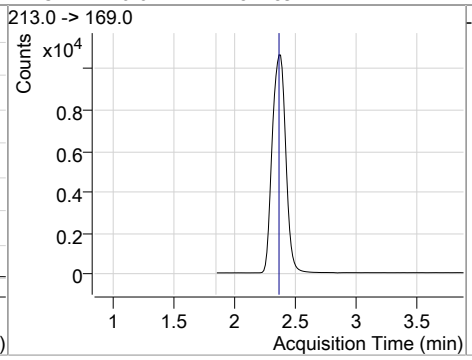
 # = Qualifier out of range, m = manually integrated, + = Area summed

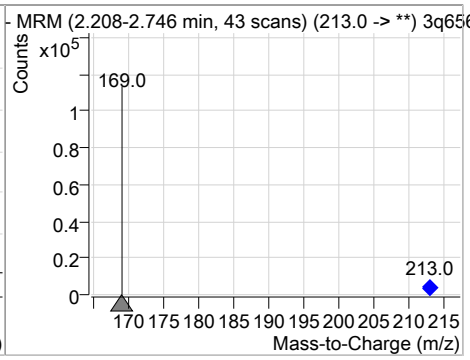
Perfluorinated Compounds by LC/MS/MS



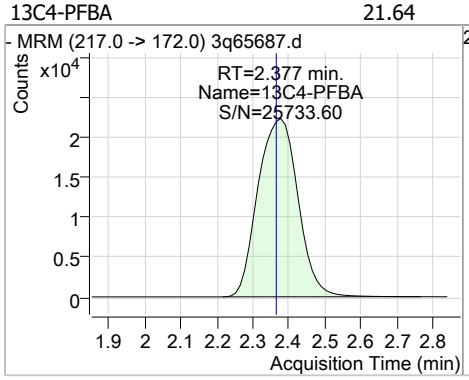
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.91	2.37	0.01	82289				

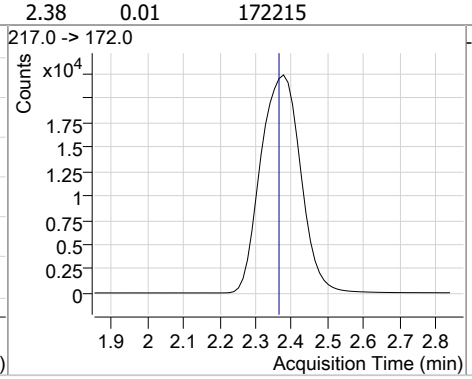


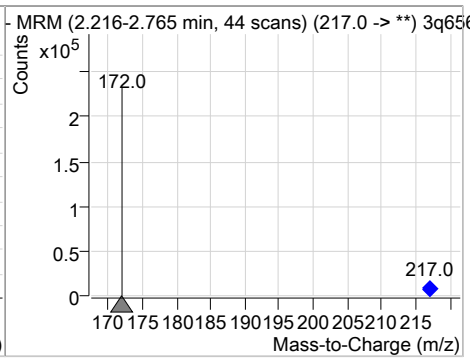




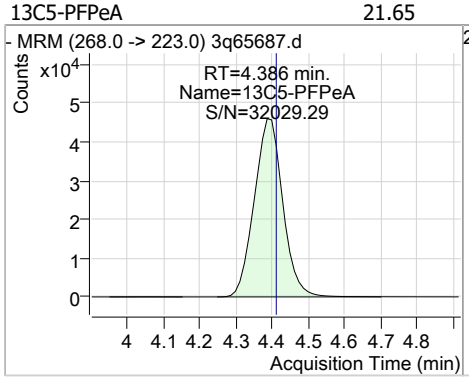
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.64	2.38	0.01	172215				

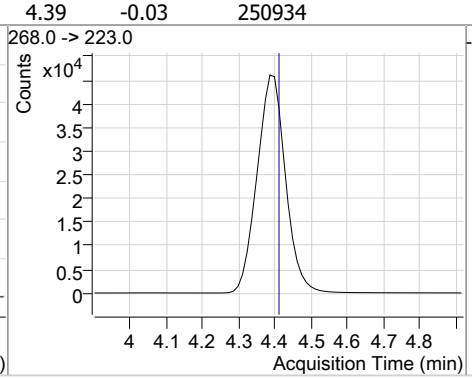


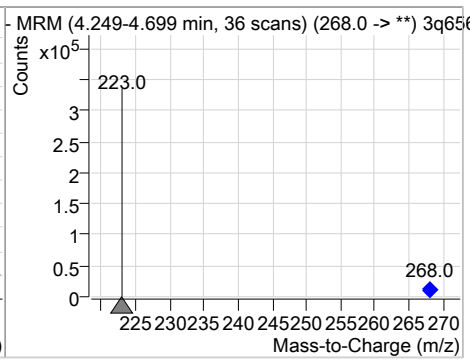




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.65	4.39	-0.03	250934				

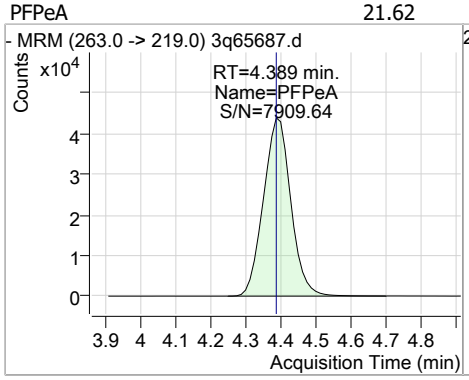


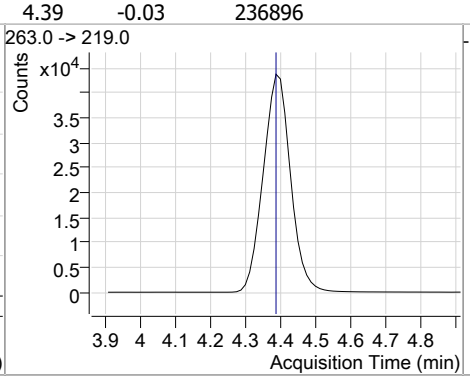


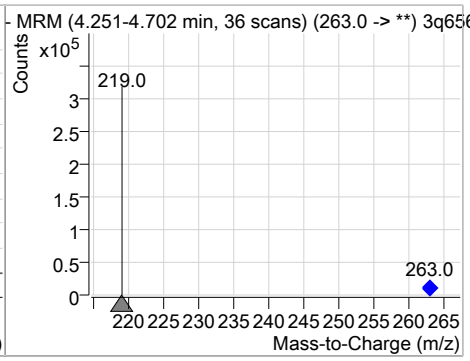


Perfluorinated Compounds by LC/MS/MS

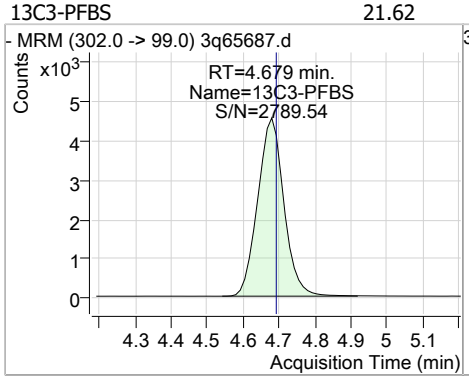
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	21.62	4.39	-0.03	236896				

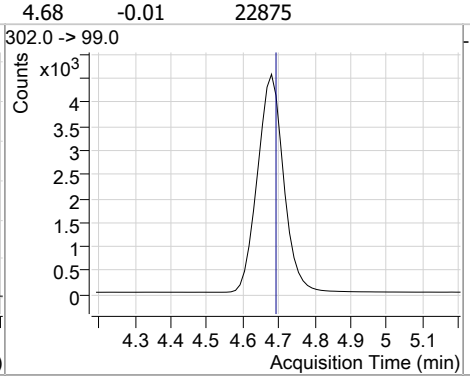


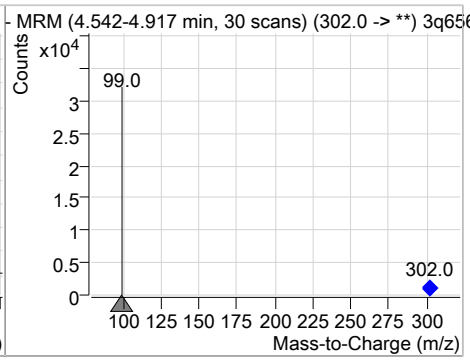




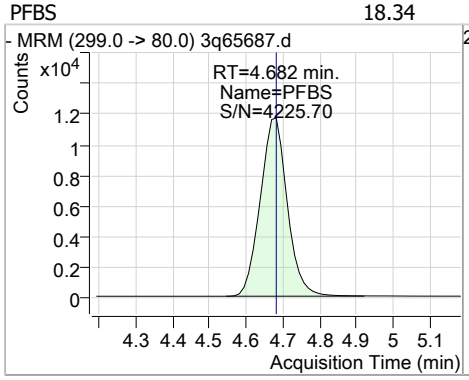
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.62	4.68	-0.01	22875				

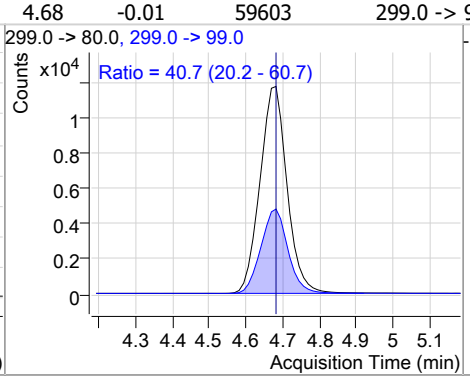


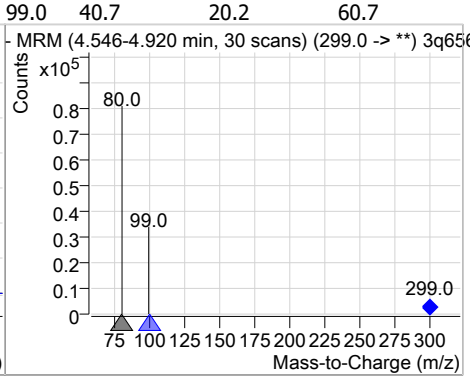




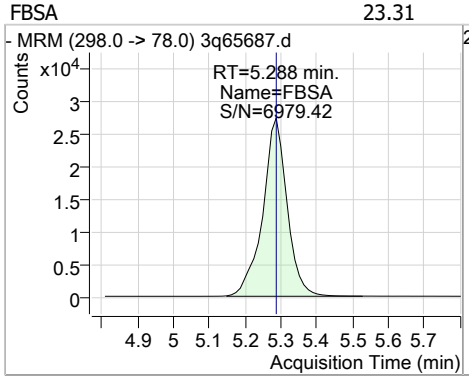
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.34	4.68	-0.01	59603	299.0 -> 99.0	40.7	20.2	60.7

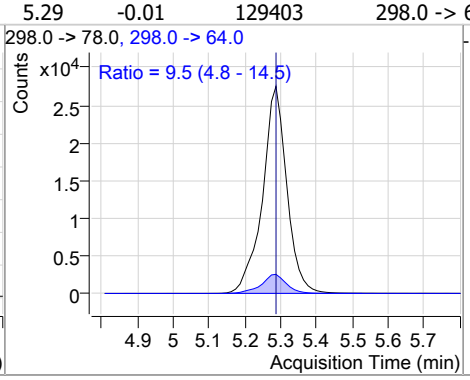


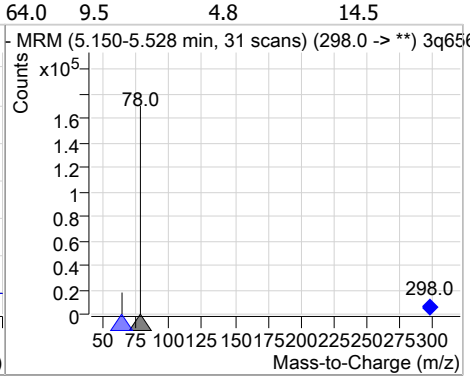




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	23.31	5.29	-0.01	129403	298.0 -> 64.0	9.5	4.8	14.5

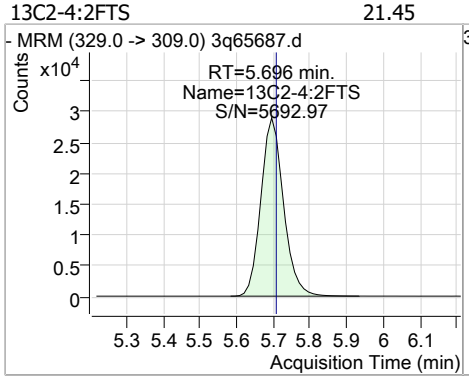


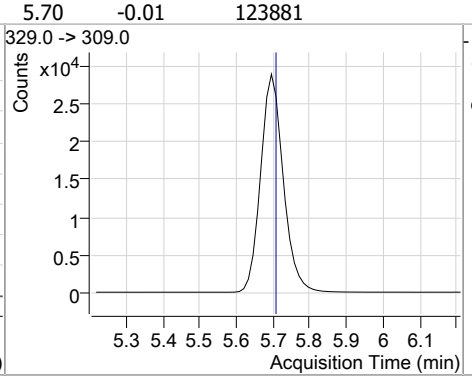


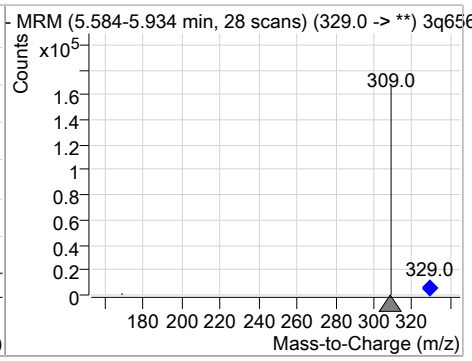


Perfluorinated Compounds by LC/MS/MS

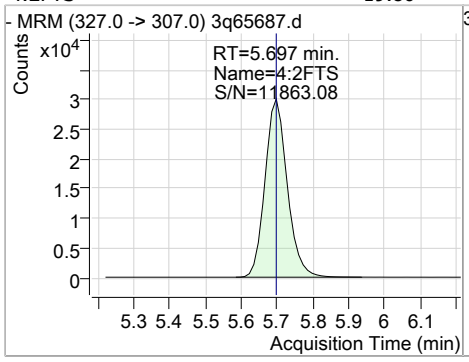
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.45	5.70	-0.01	123881				

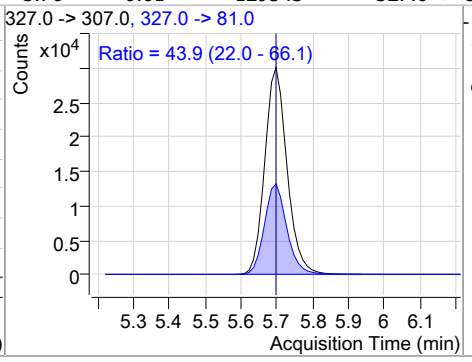


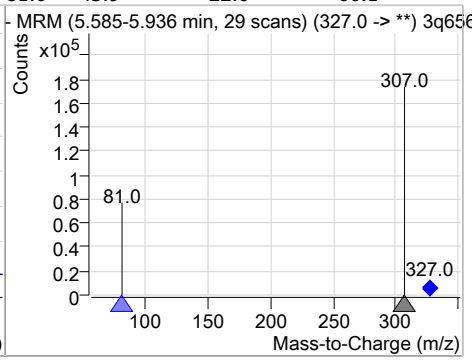




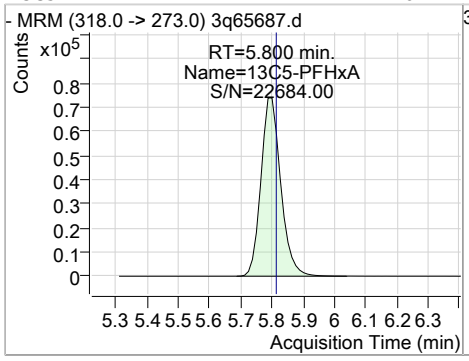
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.80	5.70	-0.01	129343	327.0 -> 81.0	43.9	22.0	66.1

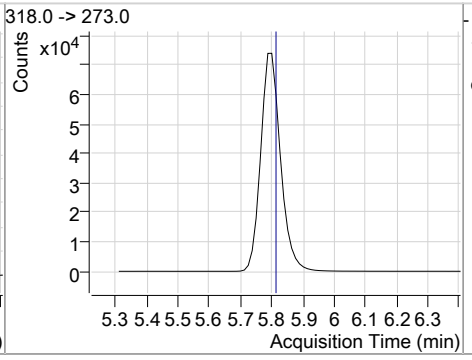


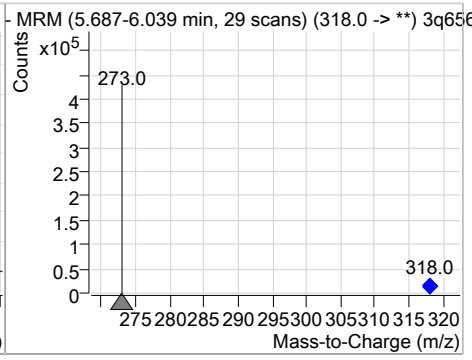




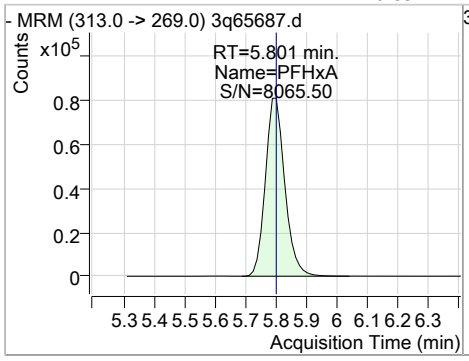
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.46	5.80	-0.01	325830				

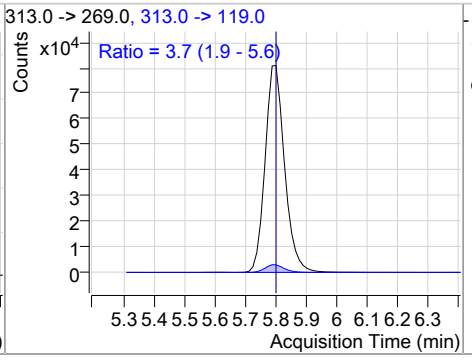


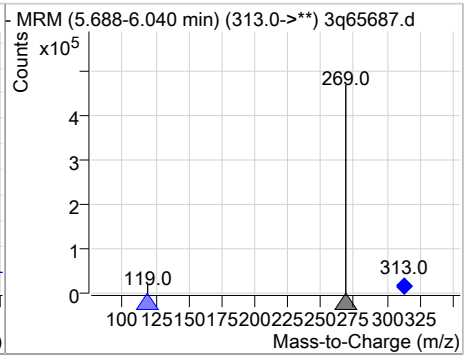




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.59	5.80	-0.01	357656	313.0 -> 119.0	3.7	1.9	5.6

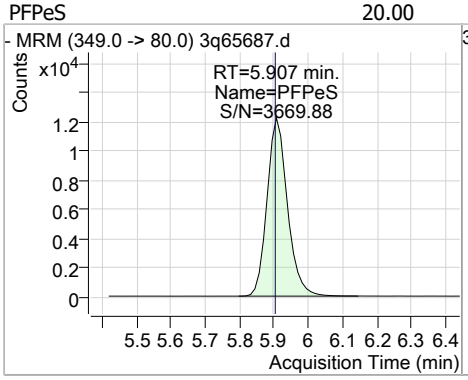


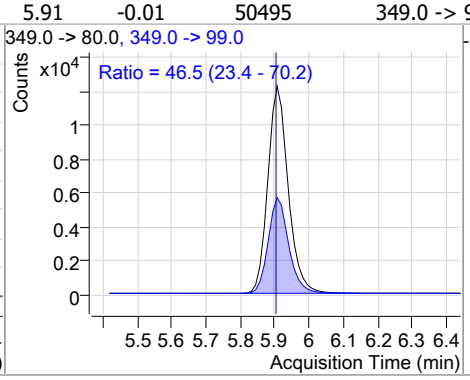


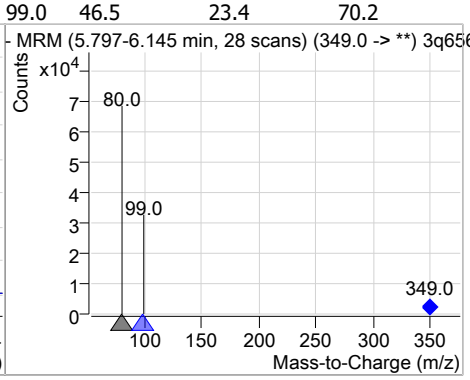


Perfluorinated Compounds by LC/MS/MS

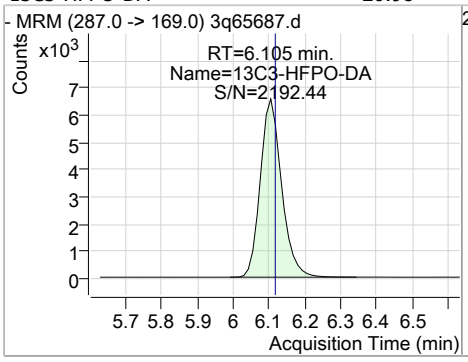
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.00	5.91	-0.01	50495	349.0 -> 99.0	46.5	23.4	70.2

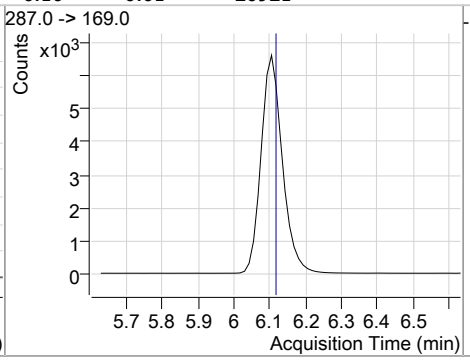


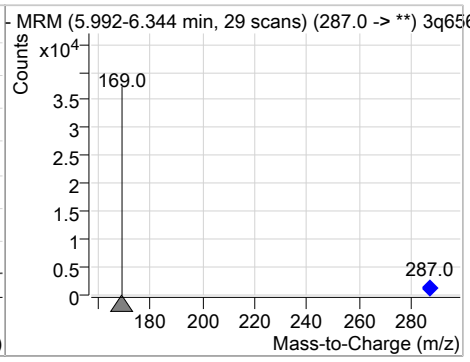




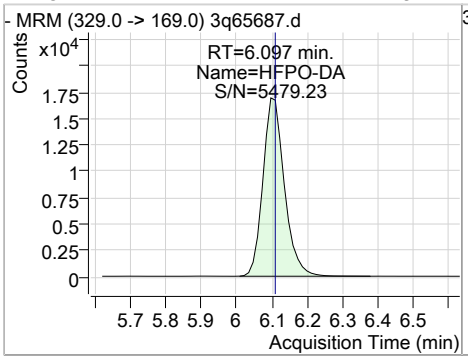
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.98	6.10	-0.01	26921				

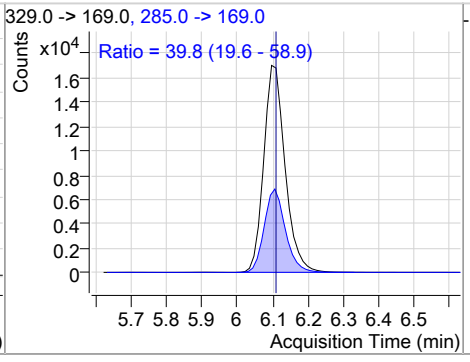


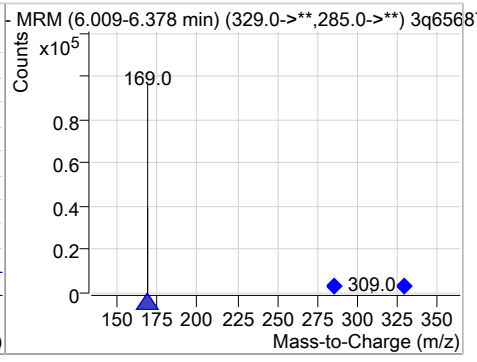




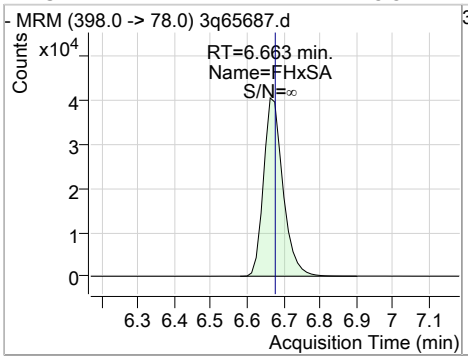
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.19	6.10	-0.03	71179	285.0 -> 169.0	39.8	19.6	58.9

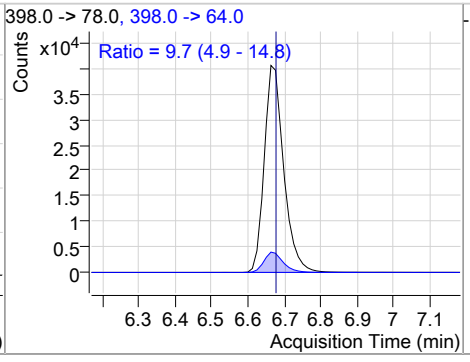


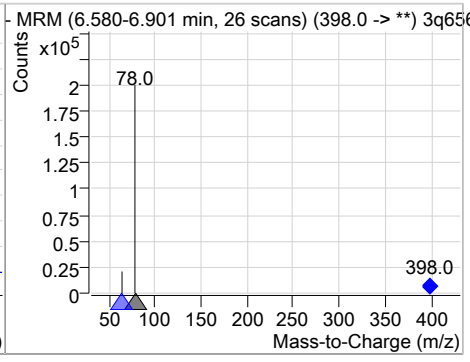




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	23.37	6.66	-0.03	149688	398.0 -> 64.0	9.7	4.9	14.8

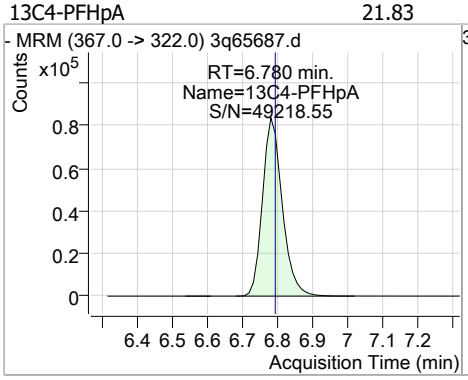


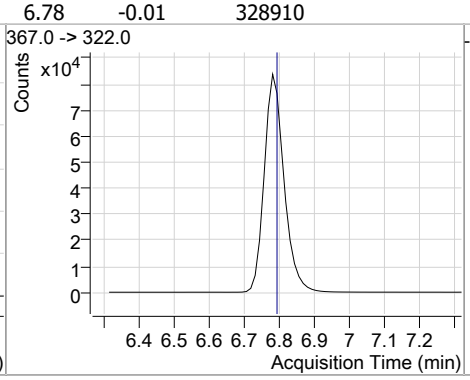


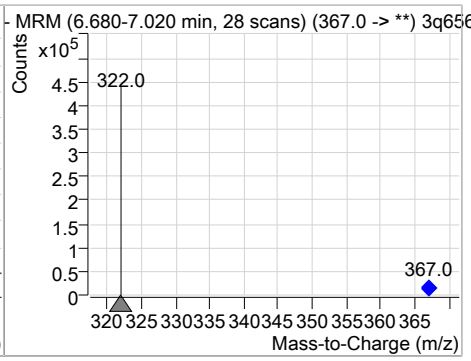


Perfluorinated Compounds by LC/MS/MS

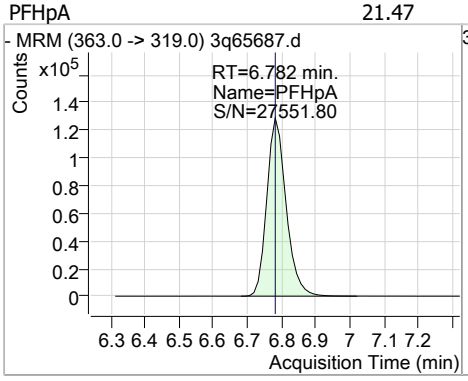
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.83	6.78	-0.01	328910				

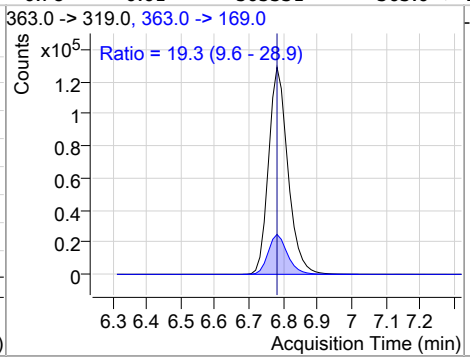


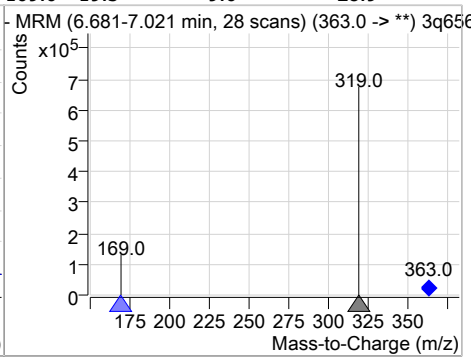




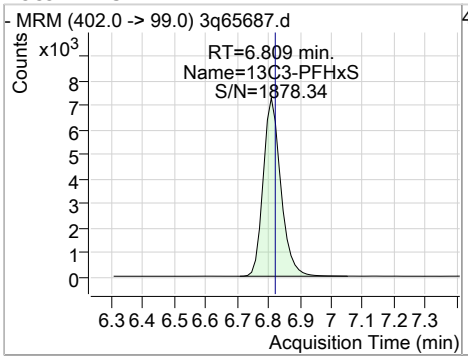
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	21.47	6.78	-0.01	505331	363.0 -> 169.0	19.3	9.6	28.9

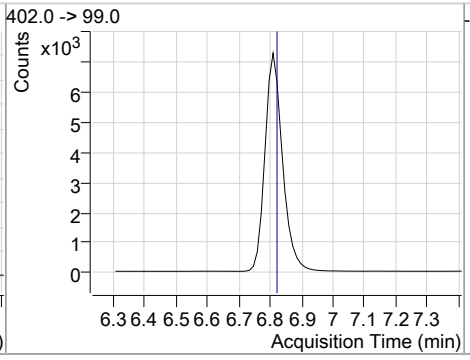


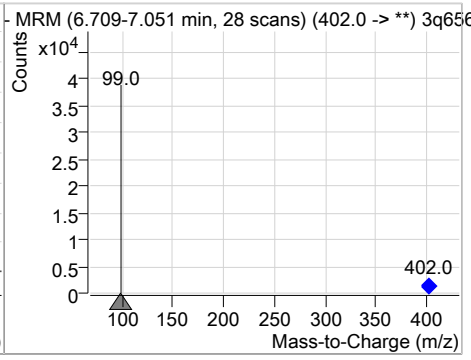




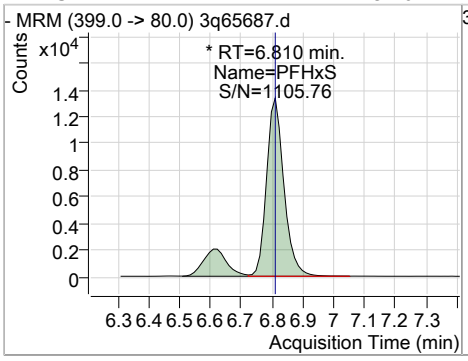
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.77	6.81	-0.01	28122				

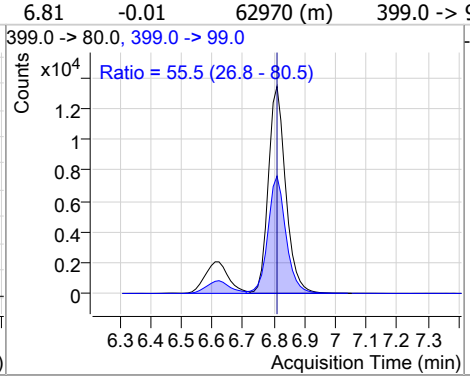


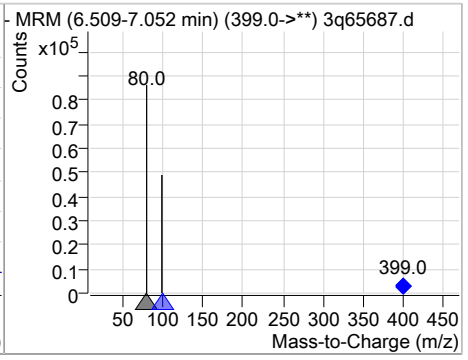




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.20	6.81	-0.01	62970 (m)	399.0 -> 99.0	55.5	26.8	80.5

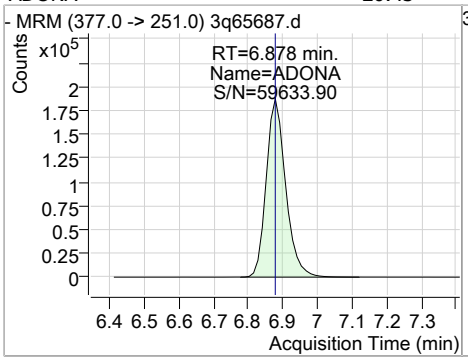


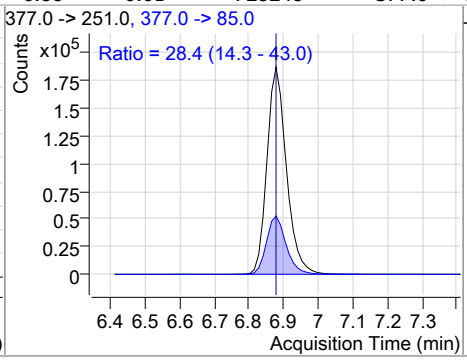


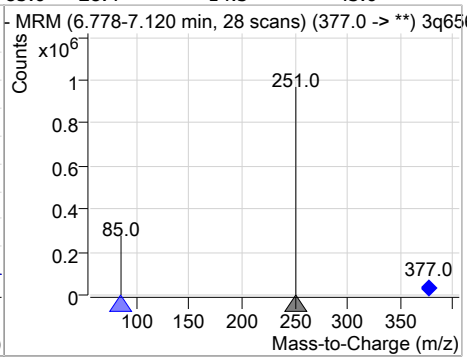


Perfluorinated Compounds by LC/MS/MS

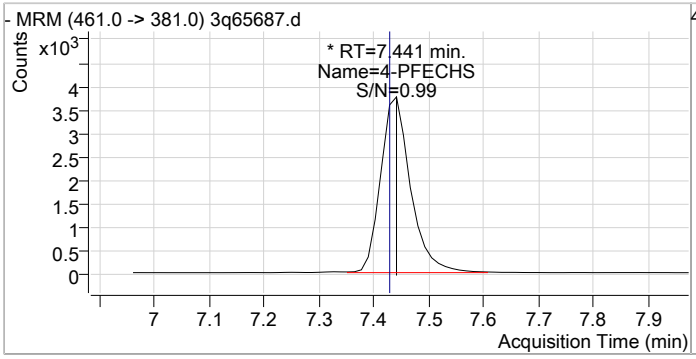
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.43	6.88	-0.01	728248	377.0 -> 85.0	28.4	14.3	43.0

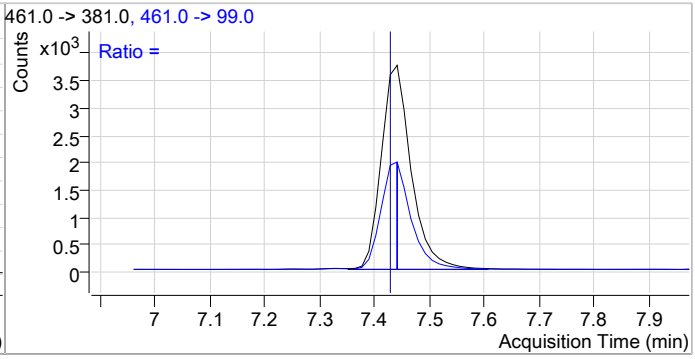




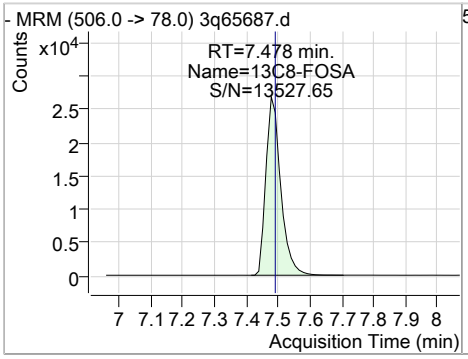


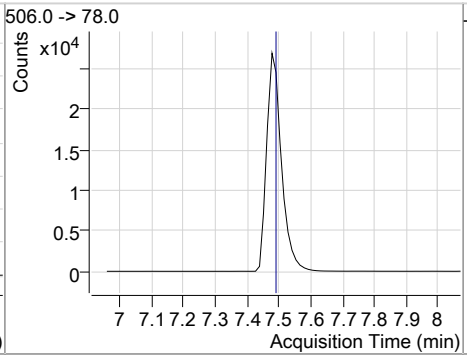
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	d	0		0	461.0 -> 99.0		25.9	77.8

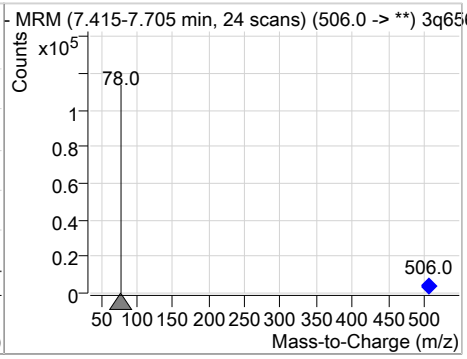




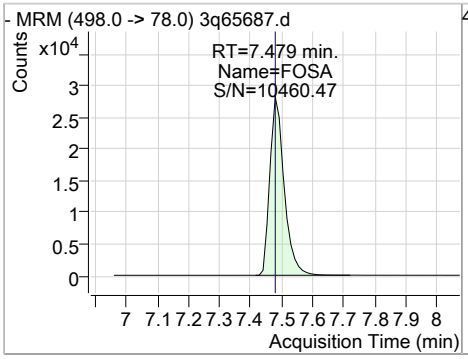
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.99	7.48	-0.01	86847				

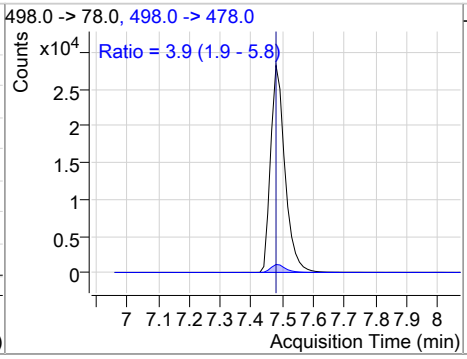


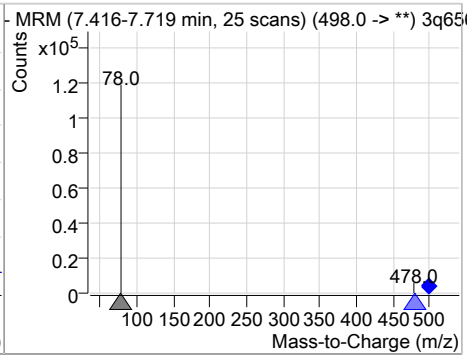




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.84	7.48	-0.01	90266	498.0 -> 478.0	3.9	1.9	5.8

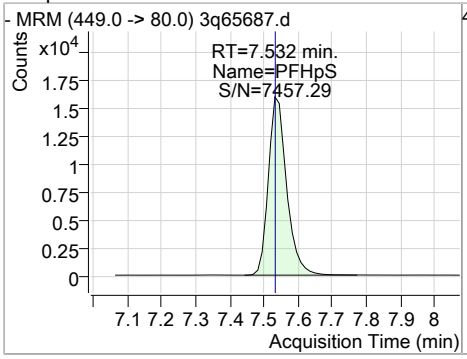


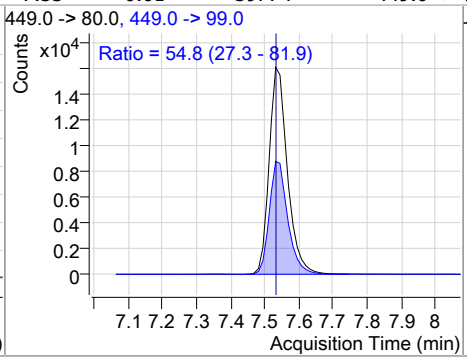


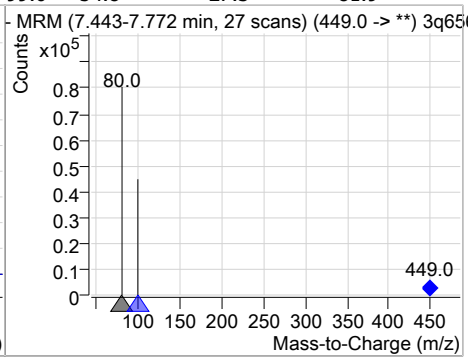


Perfluorinated Compounds by LC/MS/MS

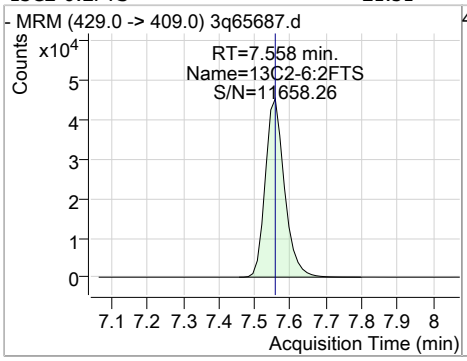
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.85	7.53	-0.01	59774	449.0 -> 99.0	54.8	27.3	81.9

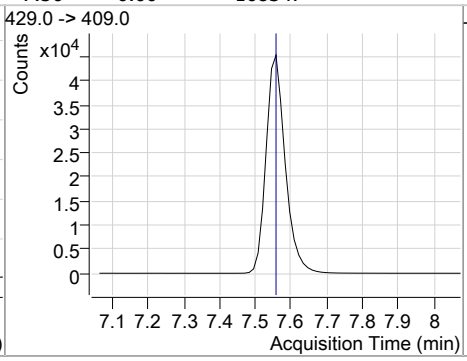


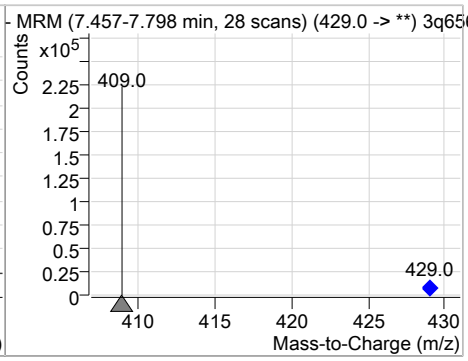




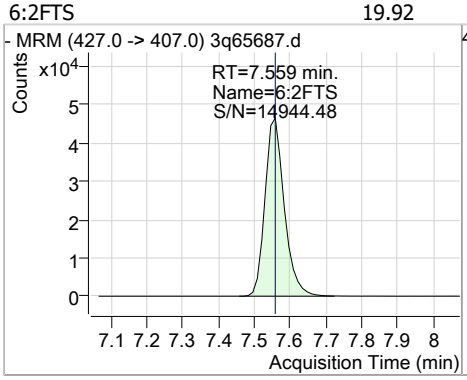
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.51	7.56	0.00	168347				

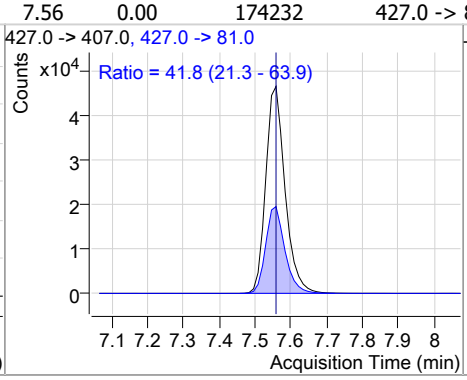


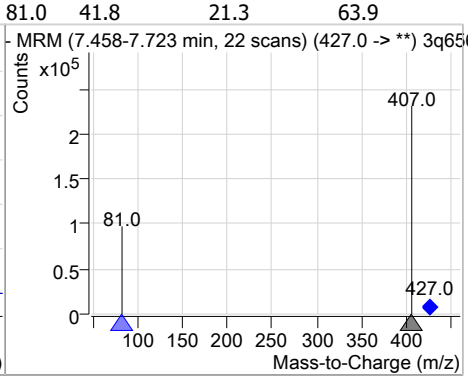




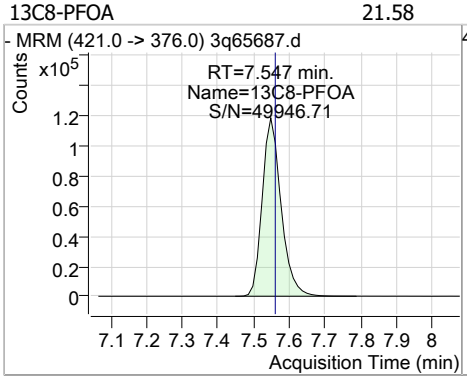
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.92	7.56	0.00	174232	427.0 -> 81.0	41.8	21.3	63.9

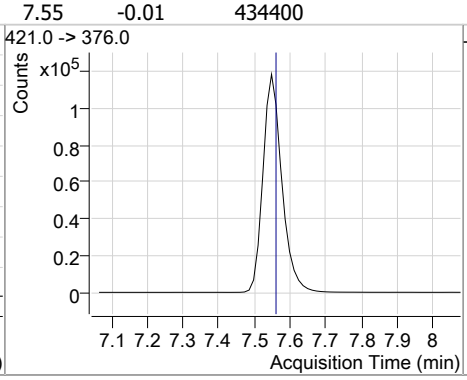


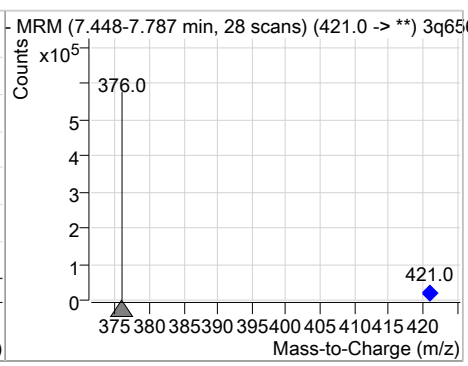




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.58	7.55	-0.01	434400				

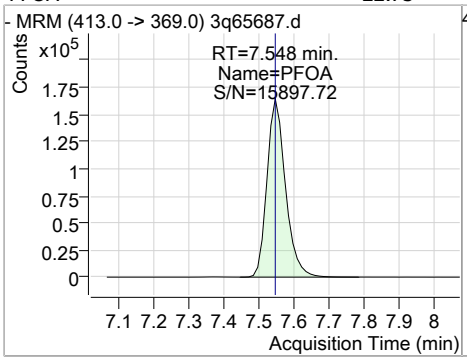


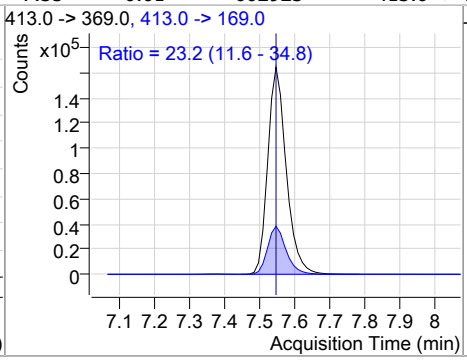


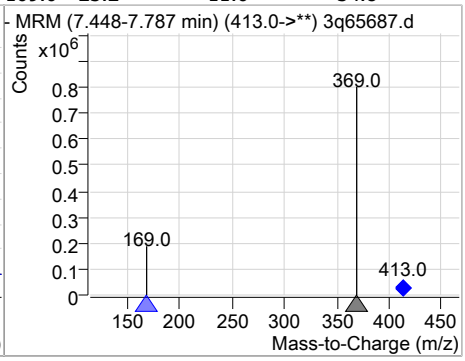


Perfluorinated Compounds by LC/MS/MS

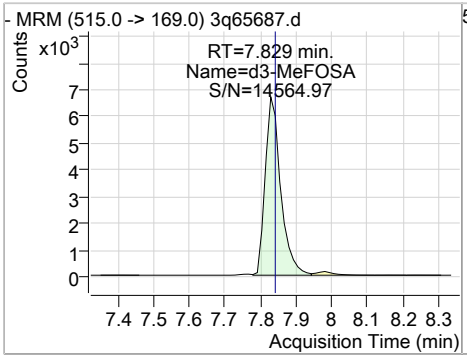
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	22.73	7.55	-0.01	602923	413.0 -> 169.0	23.2	11.6	34.8

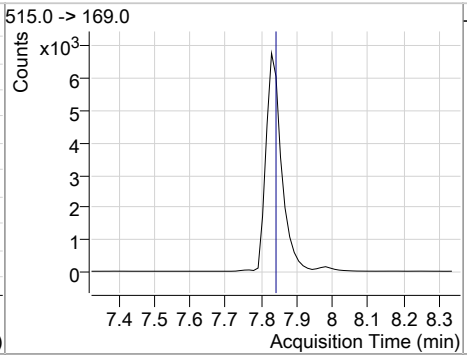


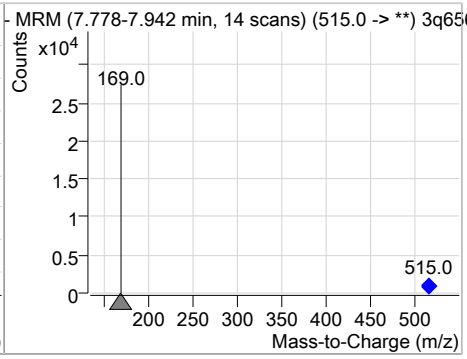




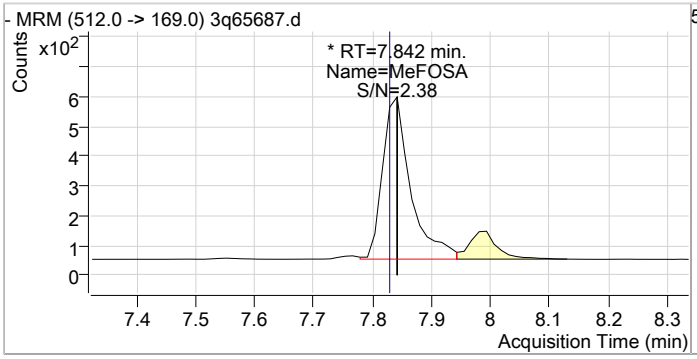
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.75	7.83	-0.01	20138				

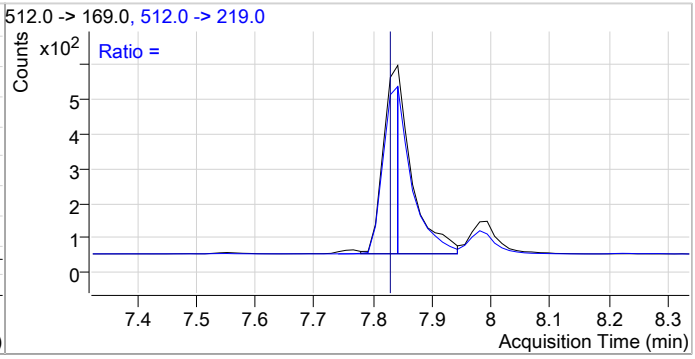




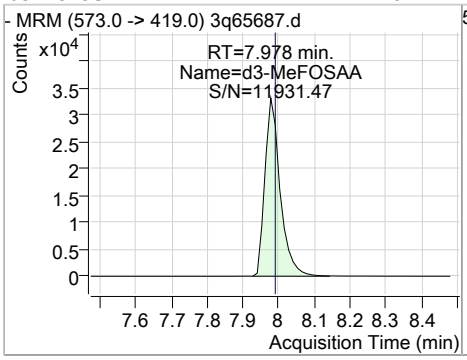


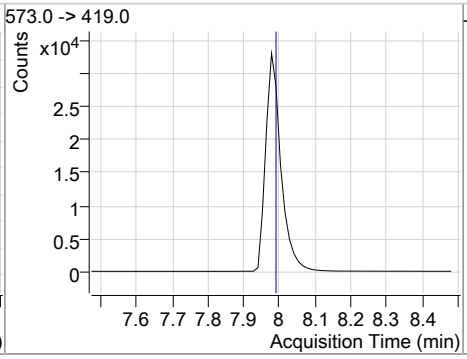
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	d	0		0	512.0 -> 219.0		44.3	133.0

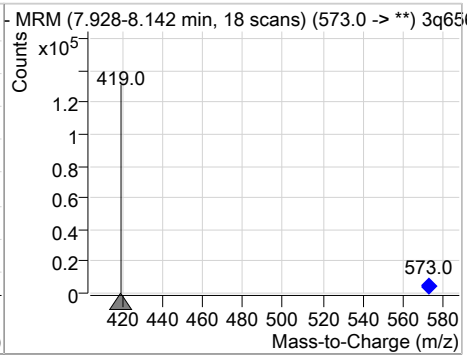




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.82	7.98	-0.01	98123				

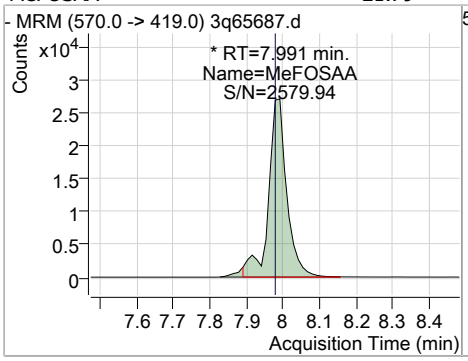


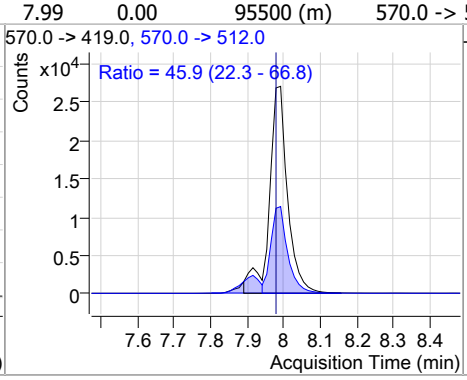


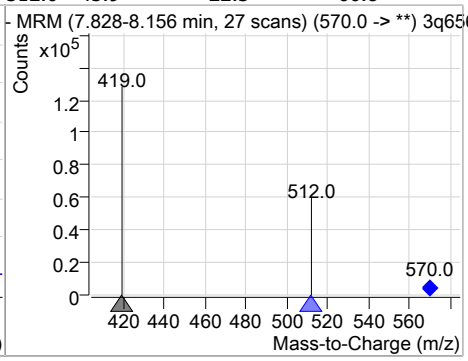


Perfluorinated Compounds by LC/MS/MS

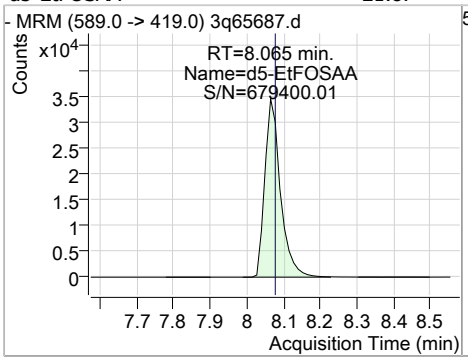
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.79	7.99	0.00	95500 (m)	570.0 -> 512.0	45.9	22.3	66.8

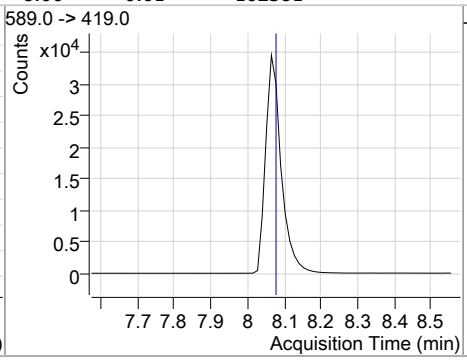


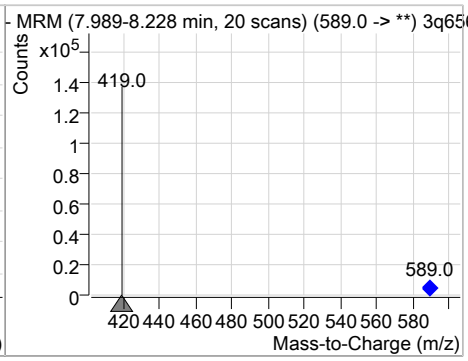




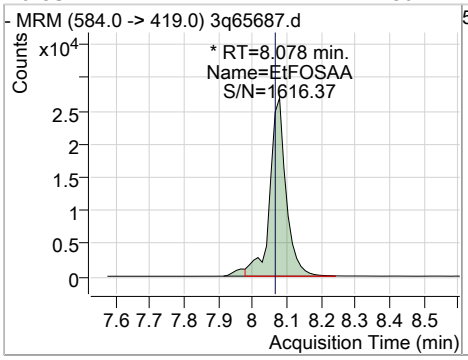
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.87	8.06	-0.01	102381				

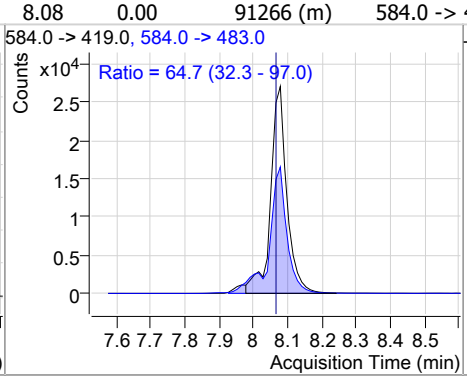


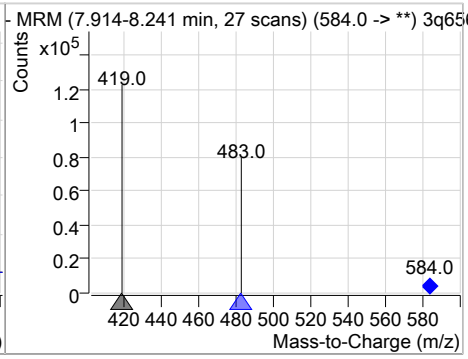




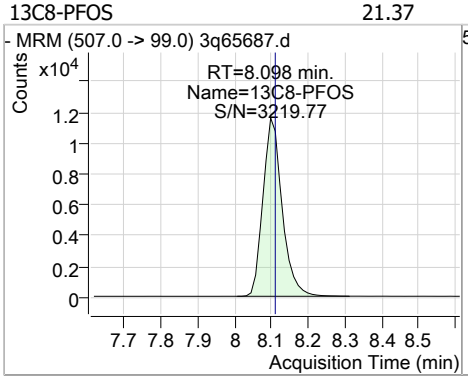
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.36	8.08	0.00	91266 (m)	584.0 -> 483.0	64.7	32.3	97.0

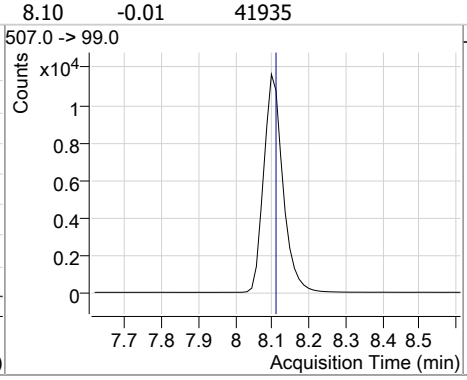


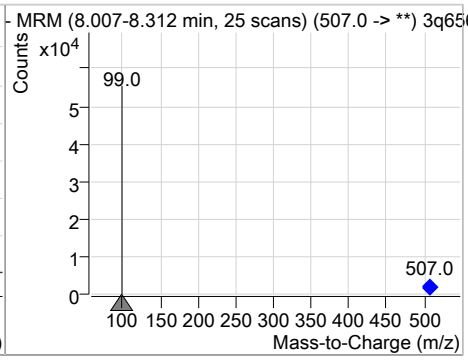




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.37	8.10	-0.01	41935				

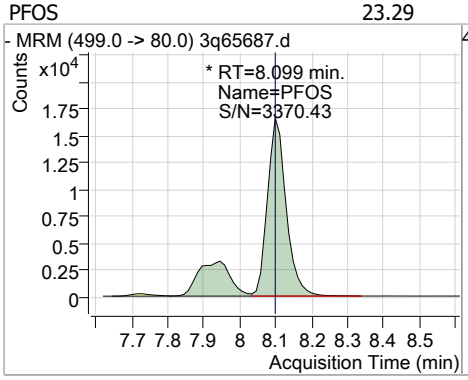


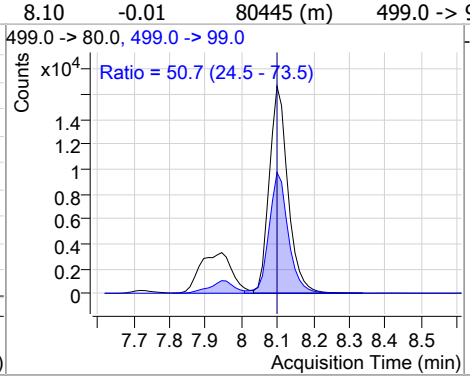


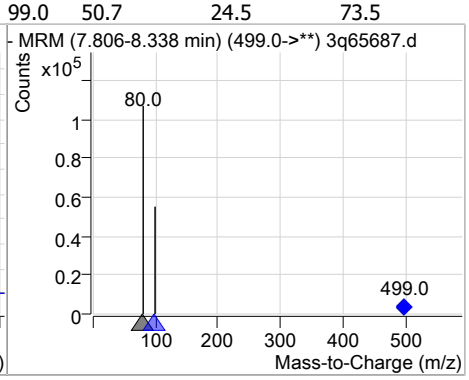


Perfluorinated Compounds by LC/MS/MS

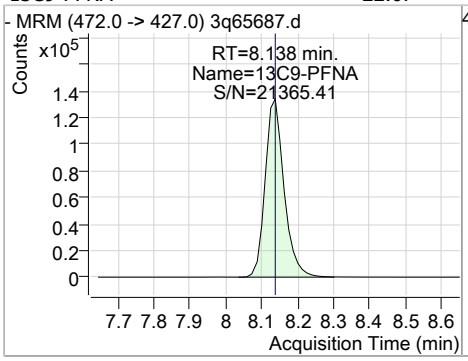
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	23.29	8.10	-0.01	80445 (m)	499.0 -> 99.0	50.7	24.5	73.5

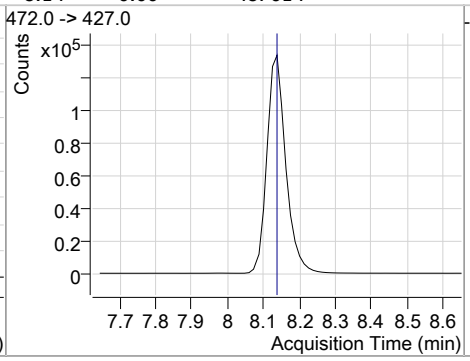


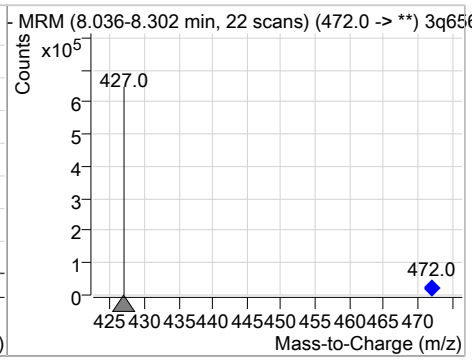




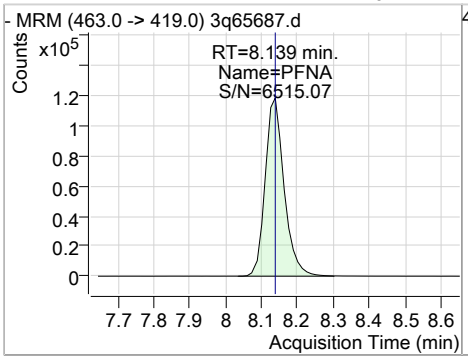
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.07	8.14	0.00	487614				

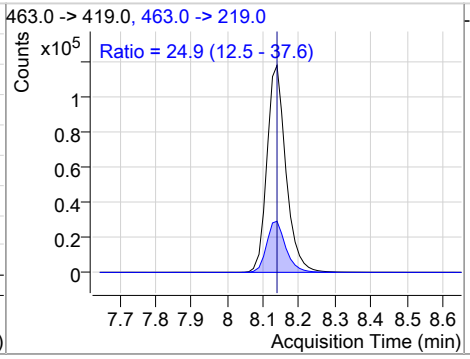


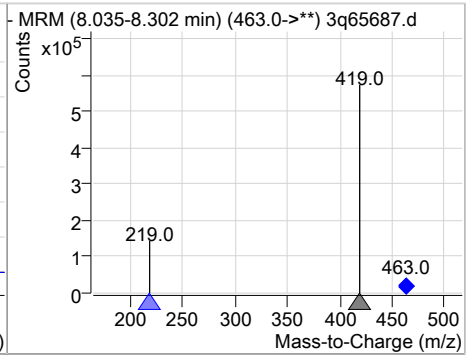




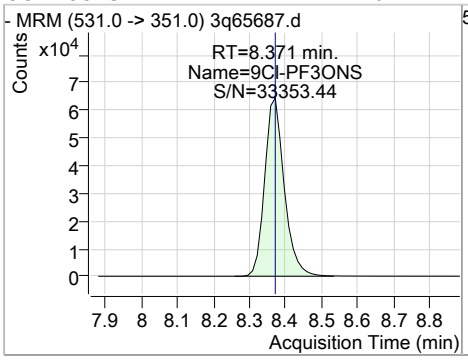
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.42	8.14	0.00	431285	463.0 -> 219.0	24.9	12.5	37.6

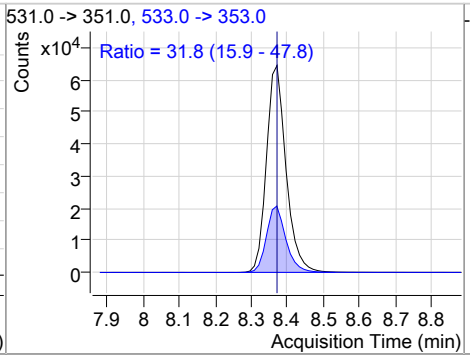


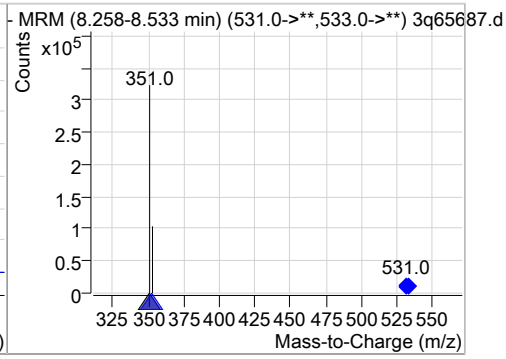




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.14	8.37	0.00	242929	533.0 -> 353.0	31.8	15.9	47.8

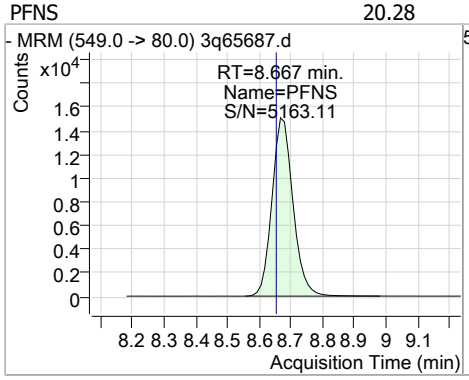


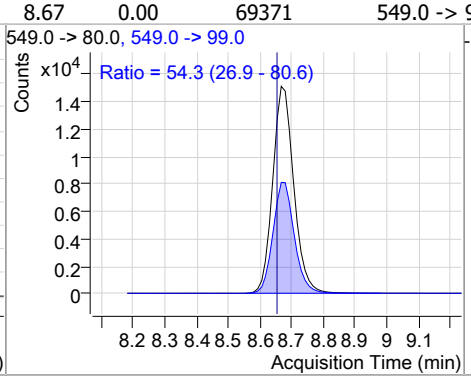


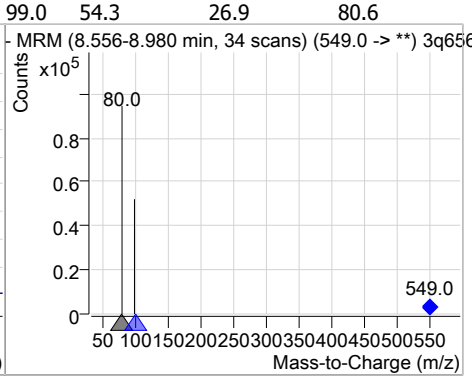


Perfluorinated Compounds by LC/MS/MS

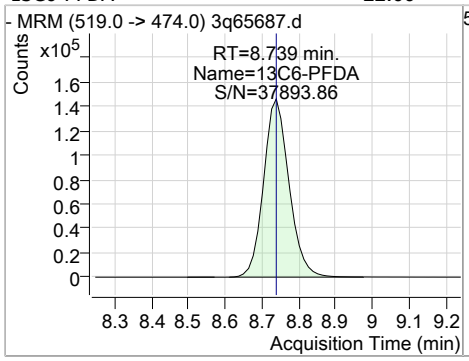
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.28	8.67	0.00	69371	549.0 -> 99.0	54.3	26.9	80.6

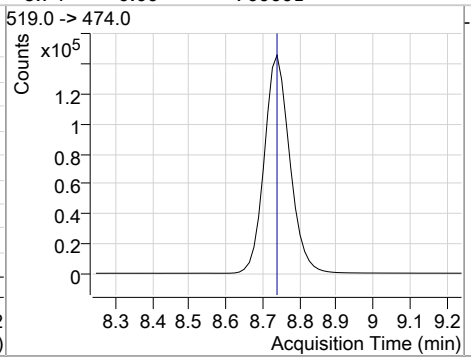


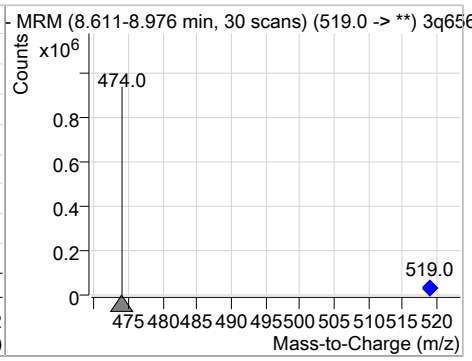




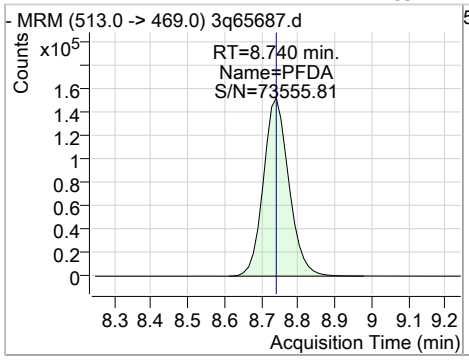
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.06	8.74	0.00	700661				

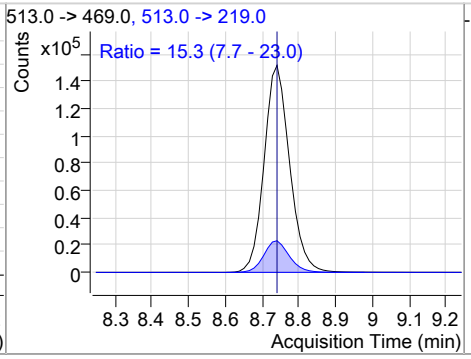


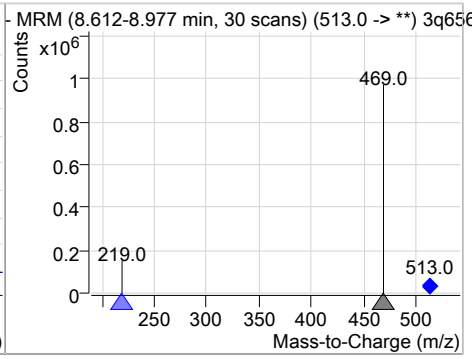




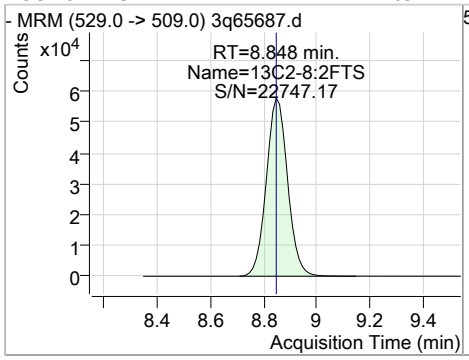
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	21.59	8.74	0.00	728776	513.0 -> 219.0	15.3	7.7	23.0

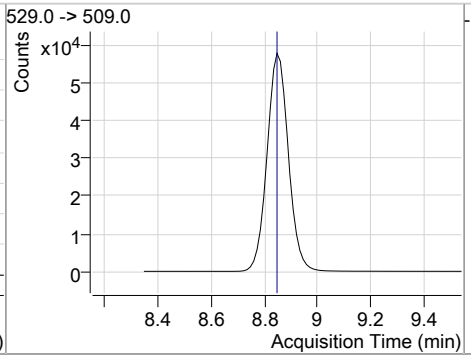


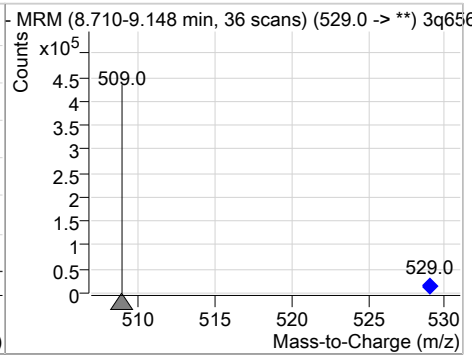




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.09	8.85	0.00	321132				

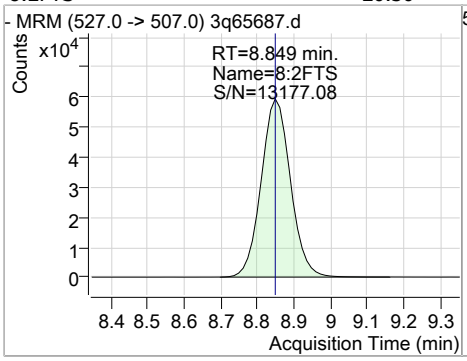


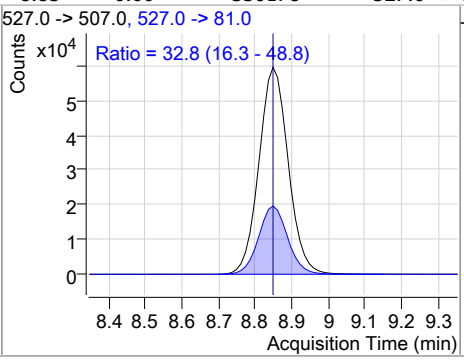


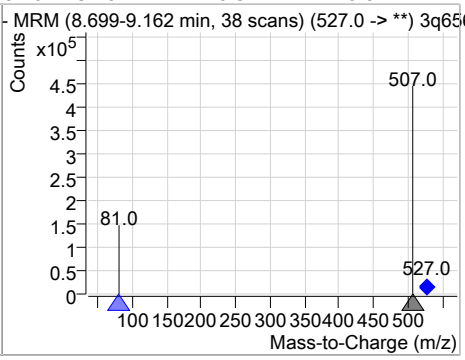


Perfluorinated Compounds by LC/MS/MS

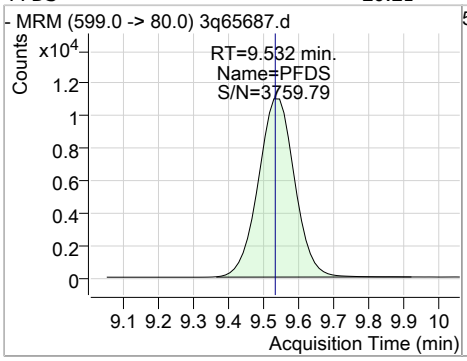
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.30	8.85	0.00	330178	527.0 -> 81.0	32.8	16.3	48.8

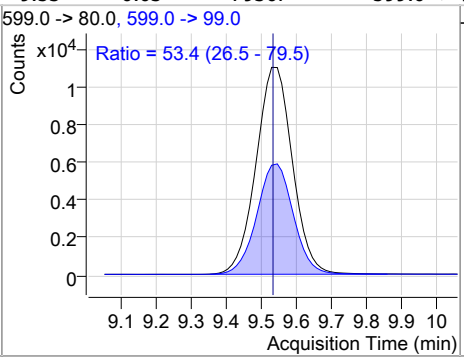


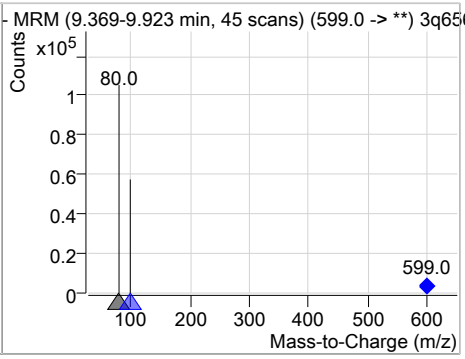




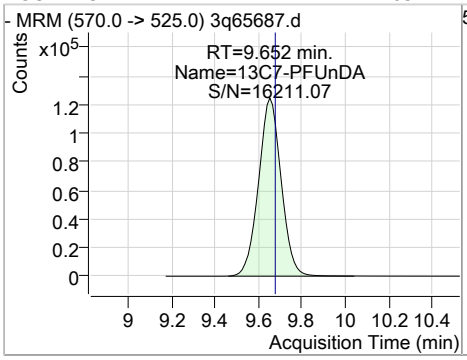
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.21	9.53	-0.03	79367	599.0 -> 99.0	53.4	26.5	79.5

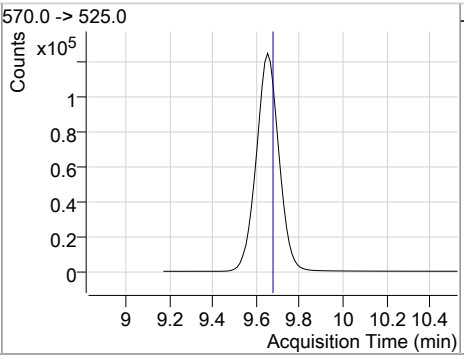


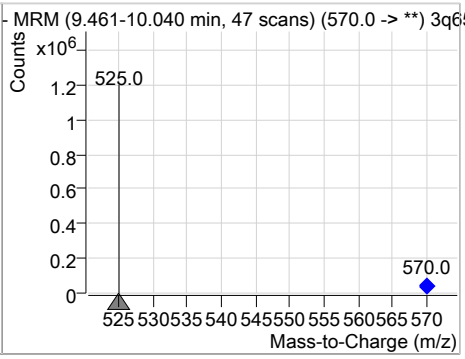




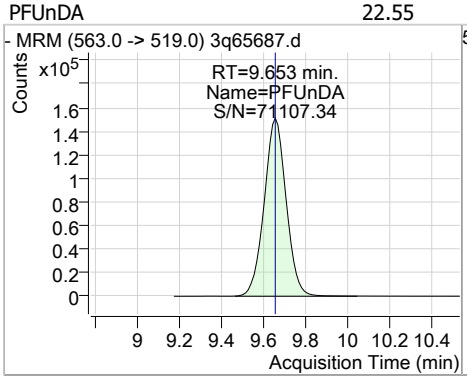
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.83	9.65	-0.03	901047				

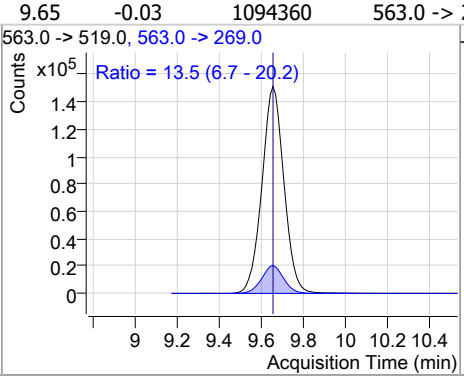


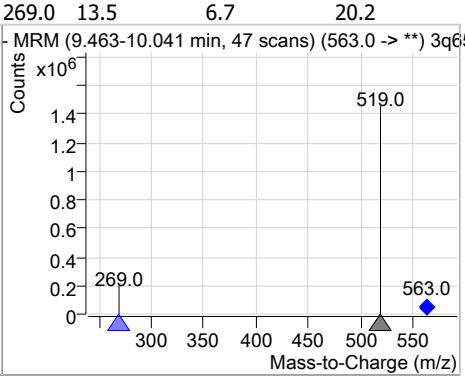




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	22.55	9.65	-0.03	1094360	563.0 -> 269.0	13.5	6.7	20.2

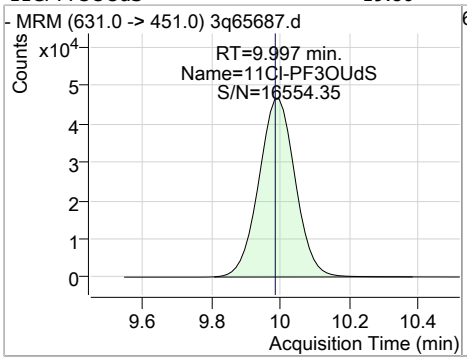


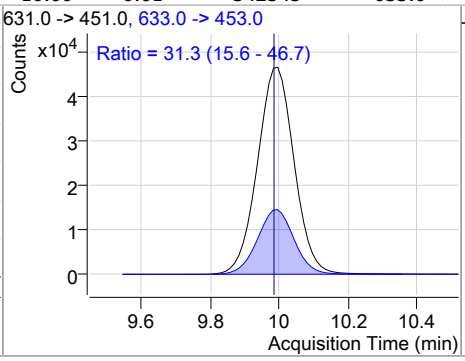


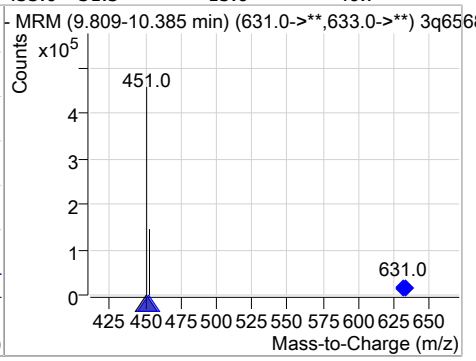


Perfluorinated Compounds by LC/MS/MS

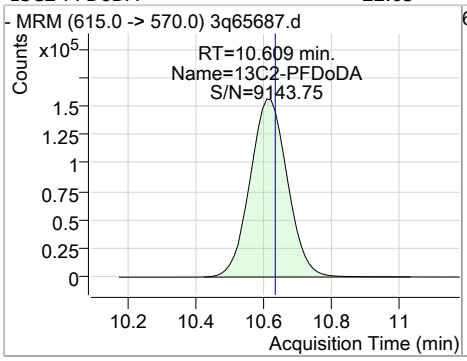
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.80	10.00	-0.01	342545	633.0 -> 453.0	31.3	15.6	46.7

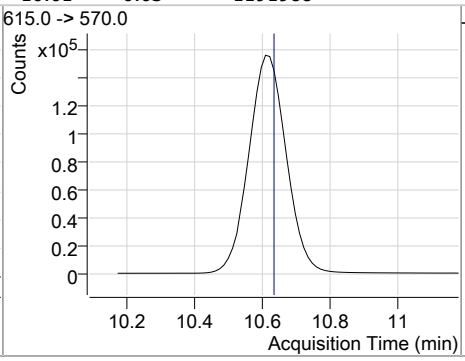


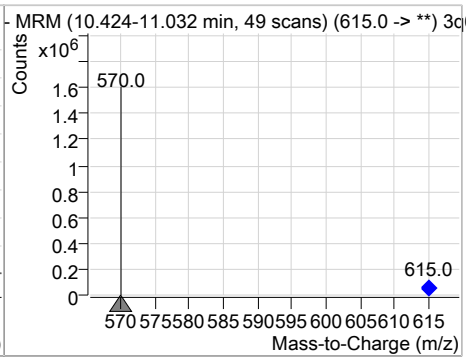




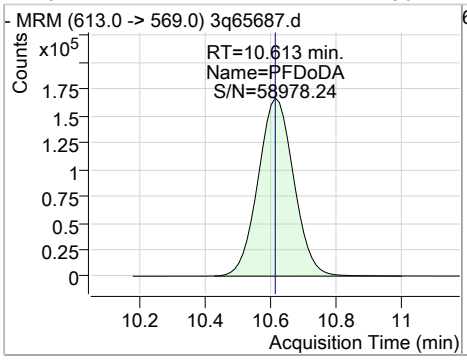
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.03	10.61	-0.03	1191988				

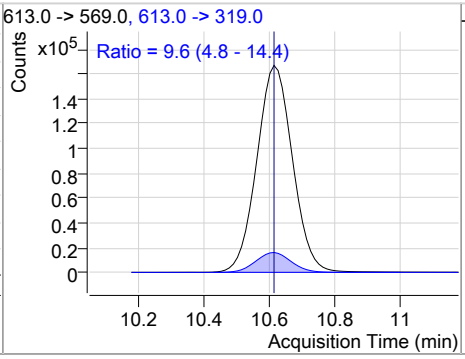


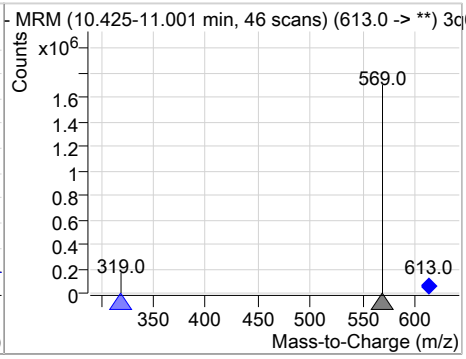




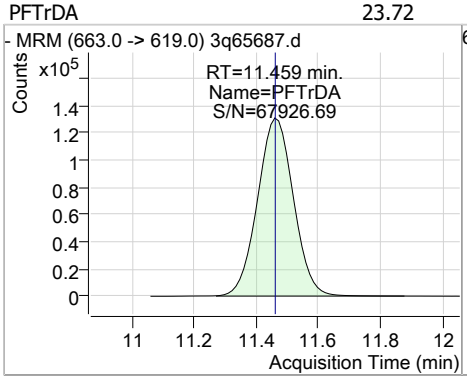
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	22.90	10.61	-0.03	1268028	613.0 -> 319.0	9.6	4.8	14.4

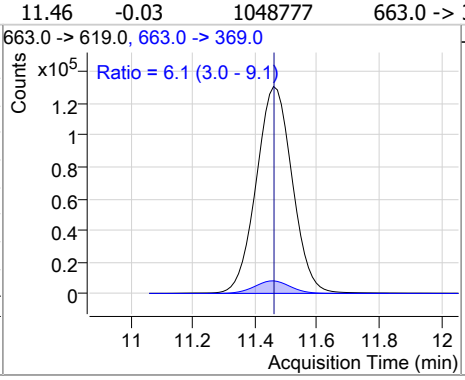


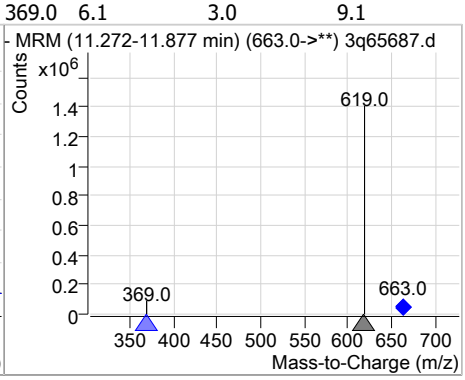




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	23.72	11.46	-0.03	1048777	663.0 -> 369.0	6.1	3.0	9.1

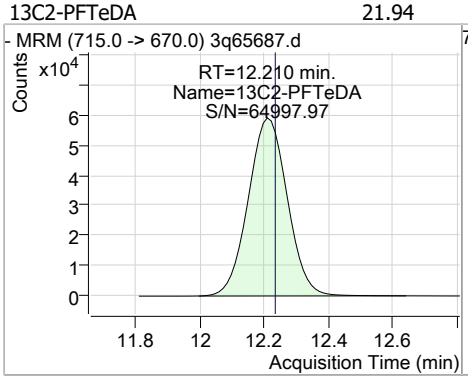


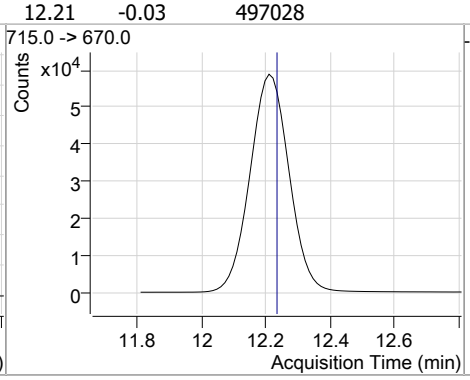


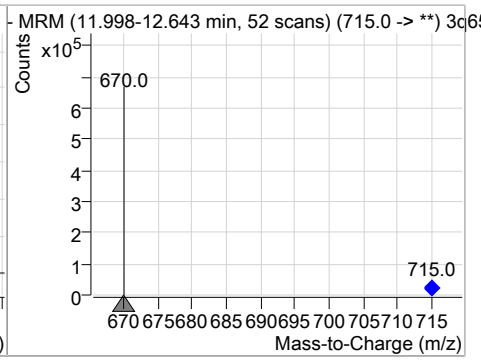


Perfluorinated Compounds by LC/MS/MS

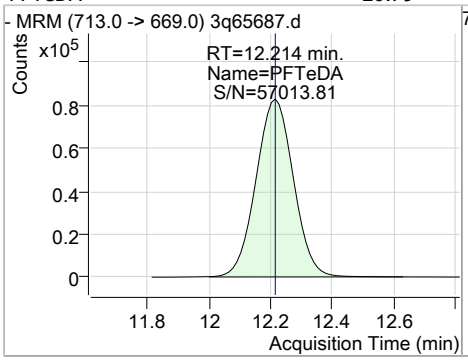
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.94	12.21	-0.03	497028				

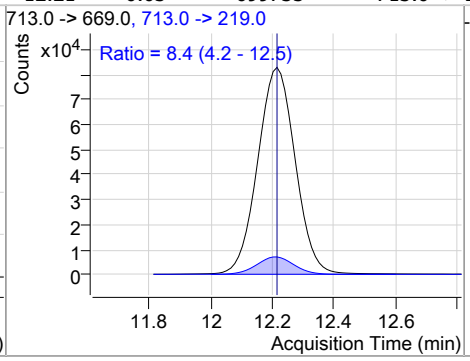


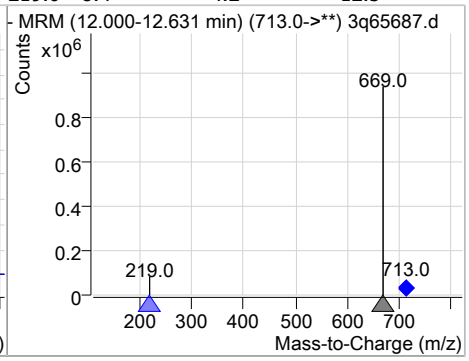




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.79	12.21	-0.03	699733	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-ICV898
Lab FileID: 3Q65687.D
Injection Time: 09/13/22 18:46
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.81	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.10	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65688.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 7:05:58 PM
Sample Name : icv898-20
Vial : P1-B2
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

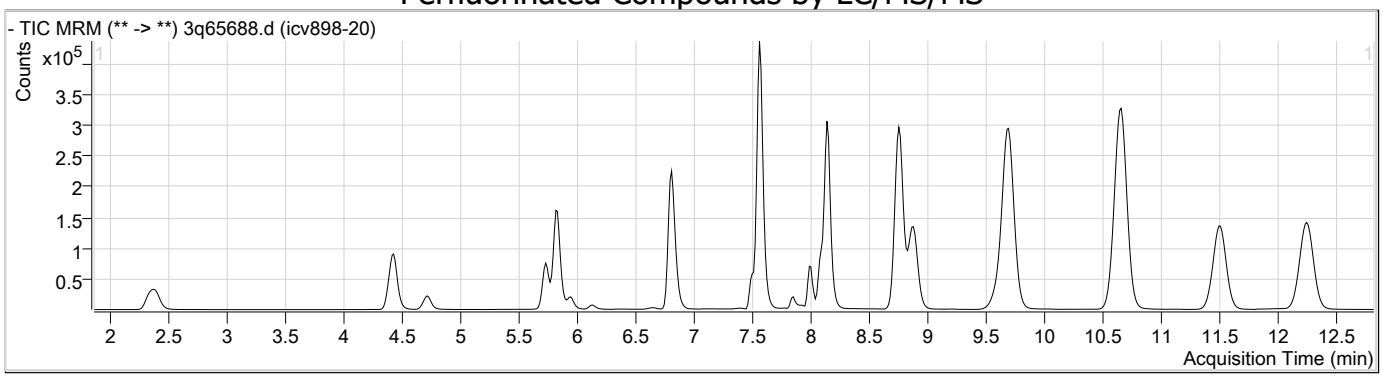
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	174125	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	255490	20.00 µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	338324	20.00 µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	337676	20.00 µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	444910	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	499523	20.00 µg/L	0.000
M6-PFDA	8.751	519.0 -> 474.0	736992	20.00 µg/L	0.013
M7-PFUnDA	9.689	570.0 -> 525.0	932406	20.00 µg/L	0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1218428	20.00 µg/L	0.013
M2-PFTeDA	12.235	715.0 -> 670.0	503529	20.00 µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	89056	20.00 µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	23169	20.00 µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	29156	20.00 µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	43153	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	126077	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	171103	20.00 µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	322762	20.00 µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	103753	20.00 µg/L	-0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	27940	20.00 µg/L	0.013
M3-MeFOSA	7.829	515.0 -> 169.0	20003	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	104060	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	126077	21.83 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%	
13C2-6:2FTS	7.571	429.0 -> 409.0	171103	21.86 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%	
13C2-8:2FTS	8.873	529.0 -> 509.0	322762	22.21 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%	
13C2-PFDoDA	10.646	615.0 -> 570.0	1218428	22.52 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%	
13C2-PFTeDA	12.235	715.0 -> 670.0	503529	22.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C3-PFBS	4.704	302.0 -> 99.0	23169	21.90 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%	
13C3-PFHxS	6.822	402.0 -> 99.0	29156	22.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%	
13C4-PFBA	2.365	217.0 -> 172.0	174125	21.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C4-PFHpA	6.805	367.0 -> 322.0	337676	22.41 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%	
13C5-PFHxA	5.813	318.0 -> 273.0	338324	22.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%	
13C5-PFPeA	4.424	268.0 -> 223.0	255490	22.04 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%	
13C6-PFDA	8.751	519.0 -> 474.0	736992	23.20 µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

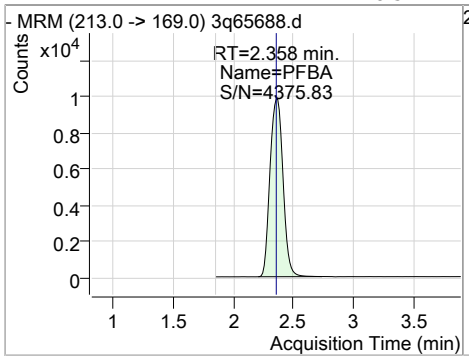
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.0%			
13C7-PFUnDA	9.689	570.0 -> 525.0	932406	22.59	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.9%			
13C8-FOSA	7.491	506.0 -> 78.0	89056	23.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.9%			
13C8-PFOA	7.560	421.0 -> 376.0	444910	22.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%			
13C8-PFOS	8.111	507.0 -> 99.0	43153	21.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%			
13C9-PFNA	8.138	472.0 -> 427.0	499523	22.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%			
d3-MeFOSAA	7.978	573.0 -> 419.0	103753	23.07	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.4%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	27913	21.75	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%			
d3-MeFOSA	7.829	515.0 -> 169.0	20003	22.60	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%			
d5-EtFOSAA	8.065	589.0 -> 419.0	104203	22.26	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	130872	19.69	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	164759	18.53	µg/L		100
8:2FTS	8.874	527.0 -> 507.0	316316	19.35	µg/L		100
EtFOSAA	8.078	584.0 -> 419.0	72408	17.45	µg/L	m	96
FOSA	7.491	498.0 -> 78.0	80207	18.92	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	80231	17.32	µg/L	m	97
PFBA	2.358	213.0 -> 169.0	73898	18.57	µg/L		100
PFBS	4.707	299.0 -> 80.0	59841	18.18	µg/L		100
PFDA	8.752	513.0 -> 469.0	685097	19.29	µg/L		100
PFDoDA	10.650	613.0 -> 569.0	1170471	20.68	µg/L		100
PFDS	9.573	599.0 -> 80.0	77510	19.08	µg/L		100
PFHpA	6.807	363.0 -> 319.0	423593	17.53	µg/L		100
PFHpS	7.544	449.0 -> 80.0	59412	21.11	µg/L		99
PFHxA	5.814	313.0 -> 269.0	334034	18.52	µg/L		100
PFHxS	6.823	399.0 -> 80.0	66104	19.44	µg/L	m	99
PFNA	8.139	463.0 -> 419.0	406148	18.78	µg/L		100
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	7.561	413.0 -> 369.0	546393	20.11	µg/L		100
PFOS	8.111	499.0 -> 80.0	77042	21.68	µg/L		86
PFPeA	4.426	263.0 -> 219.0	216921	19.44	µg/L		100
PFPeS	5.932	349.0 -> 80.0	51022	19.95	µg/L		99
PFTeDA	12.239	713.0 -> 669.0	637048	18.68	µg/L		100
PFTrDA	11.484	663.0 -> 619.0	1026404	22.92	µg/L		100
PFUnDA	9.691	563.0 -> 519.0	1081146	21.53	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	7.842	512.0 -> 169.0	21185	19.68	µg/L		95
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

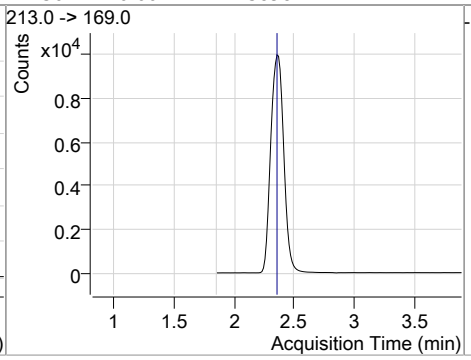
 # = Qualifier out of range, m = manually integrated, + = Area summed

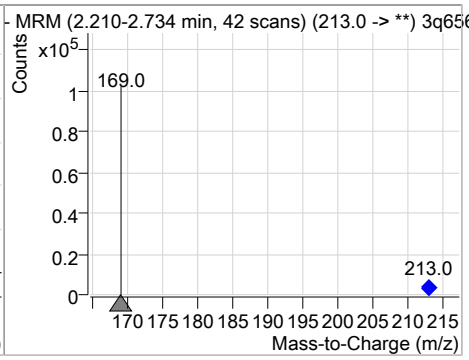
Perfluorinated Compounds by LC/MS/MS



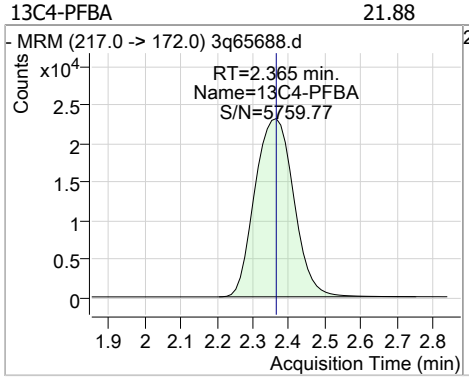
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.57	2.36	0.00	73898				

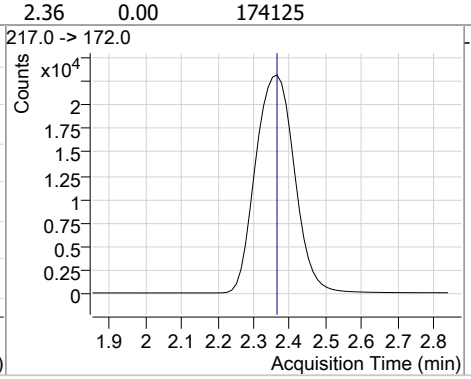


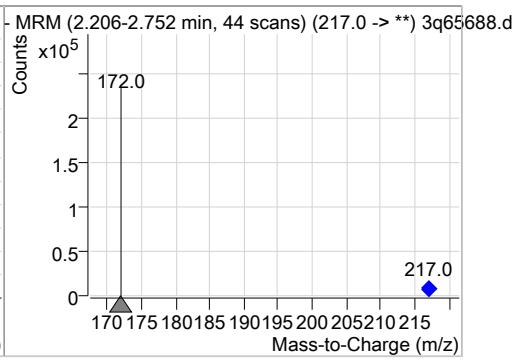




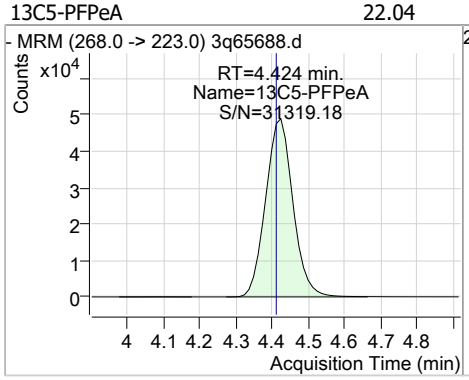
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.88	2.36	0.00	174125				

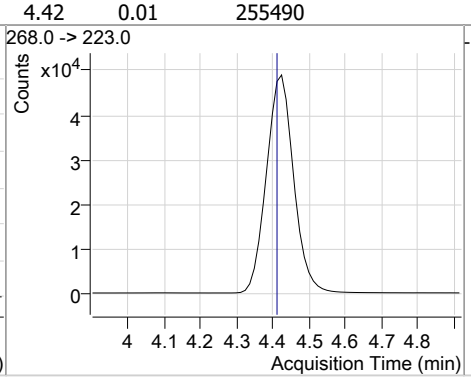


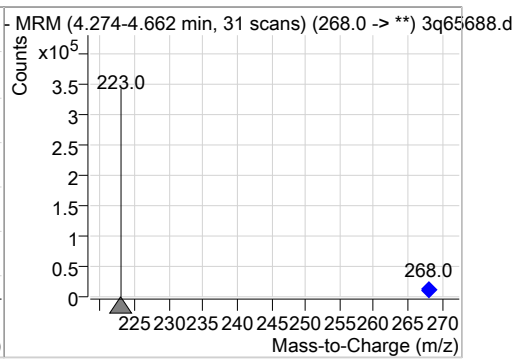




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.04	4.42	0.01	255490				

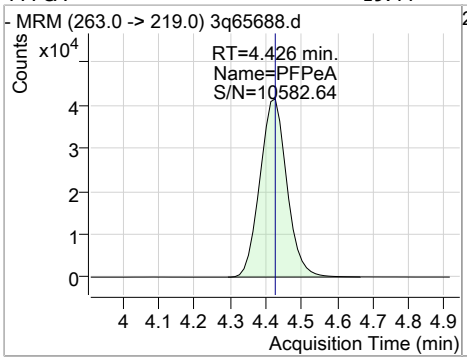


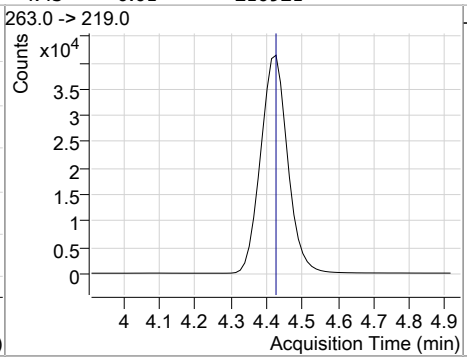


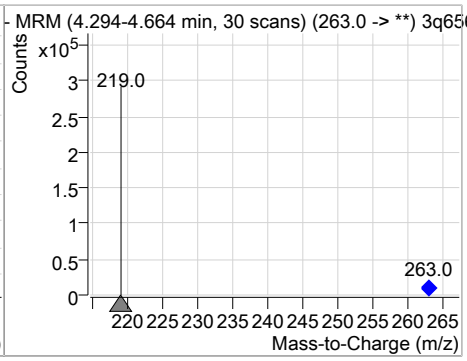


Perfluorinated Compounds by LC/MS/MS

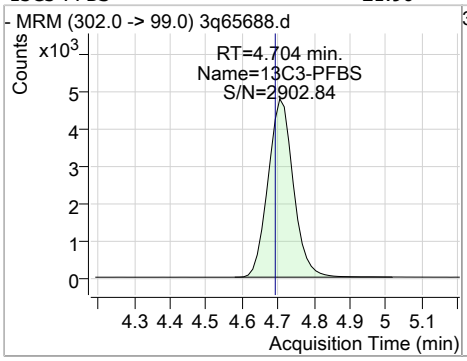
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.44	4.43	0.01	216921				

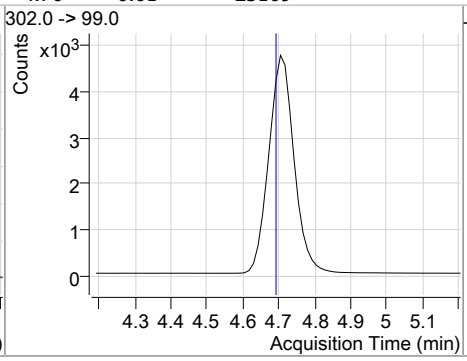


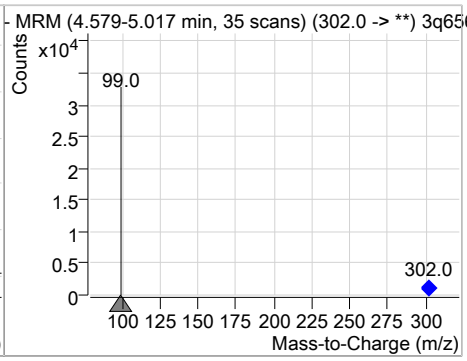




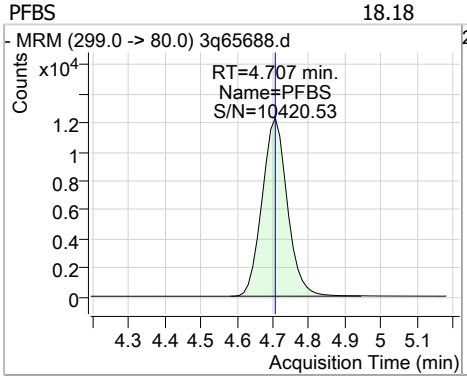
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.90	4.70	0.01	23169				

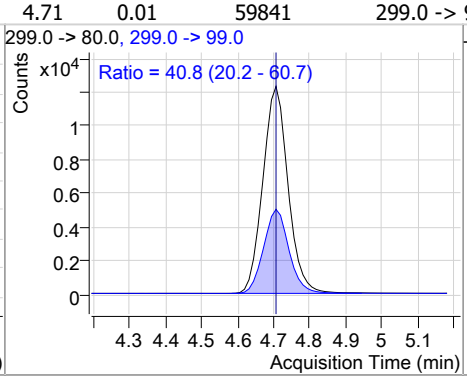


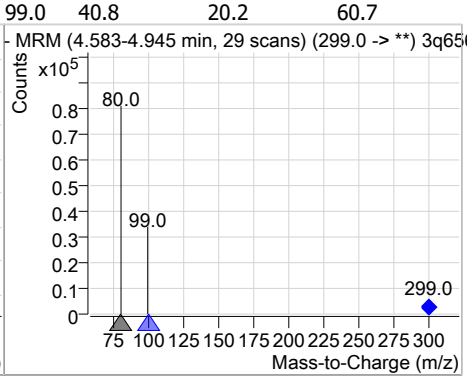




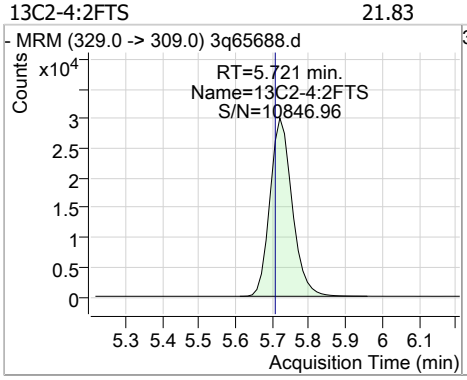
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	18.18	4.71	0.01	59841	299.0 -> 99.0	40.8	20.2	60.7

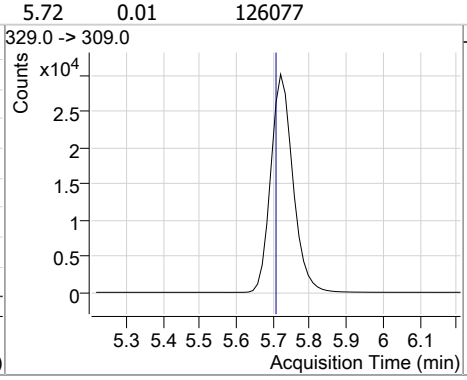


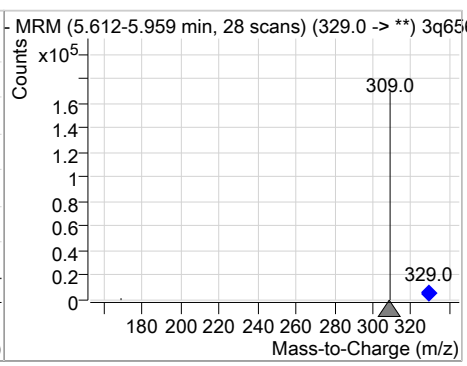




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.83	5.72	0.01	126077				

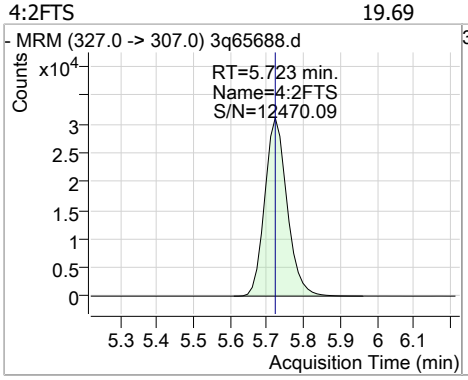


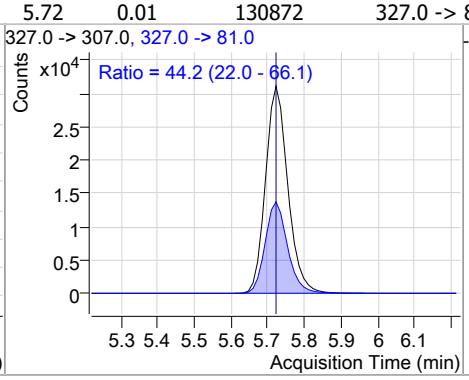


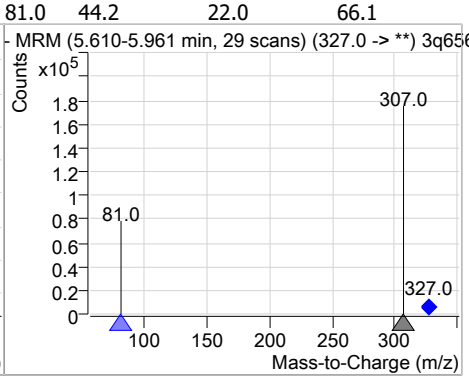


Perfluorinated Compounds by LC/MS/MS

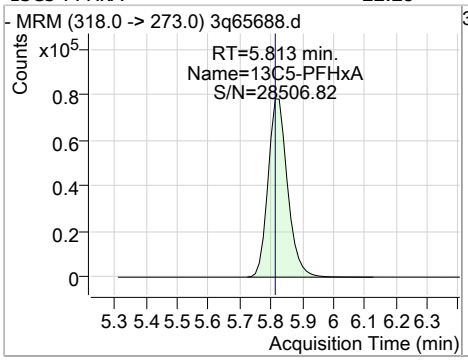
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.69	5.72	0.01	130872	327.0 -> 81.0	44.2	22.0	66.1

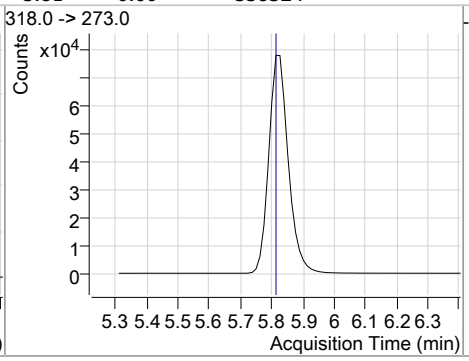


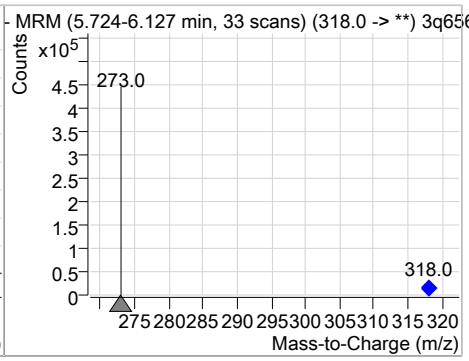




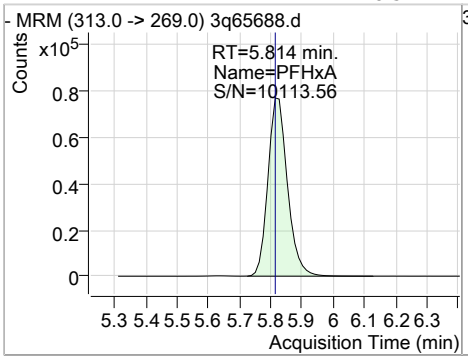
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.28	5.81	0.00	338324				

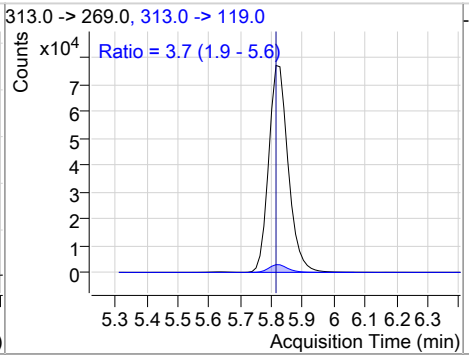


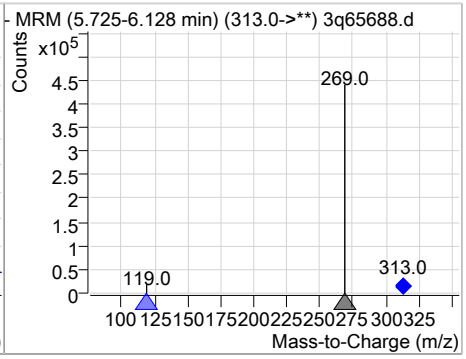




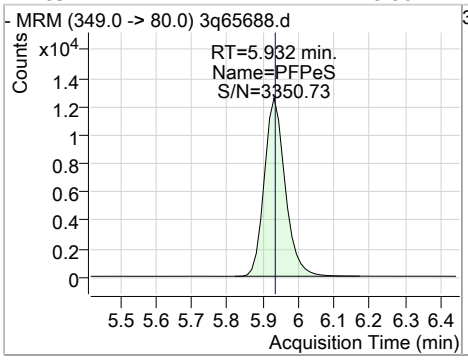
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.52	5.81	0.00	334034	313.0 -> 119.0	3.7	1.9	5.6

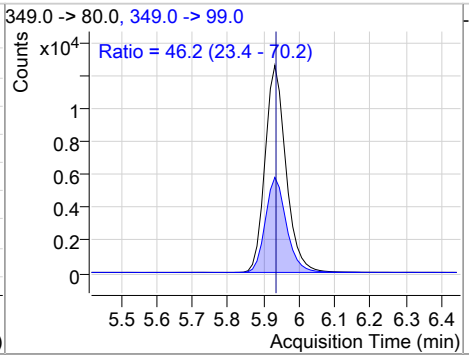


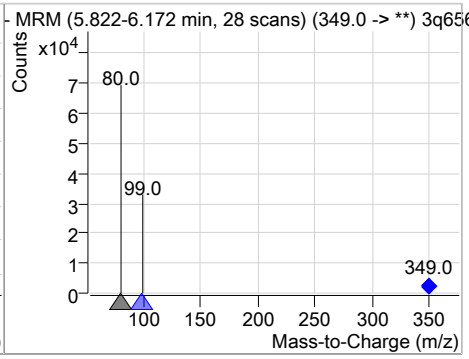




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.95	5.93	0.01	51022	349.0 -> 99.0	46.2	23.4	70.2

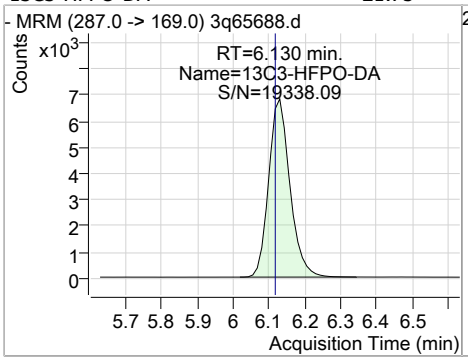


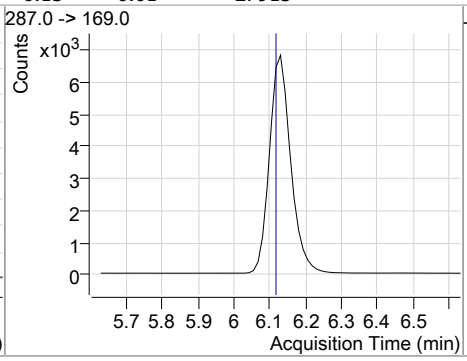


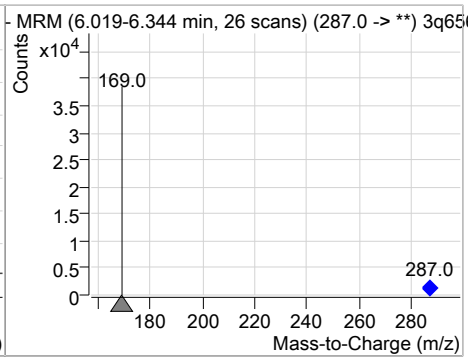


Perfluorinated Compounds by LC/MS/MS

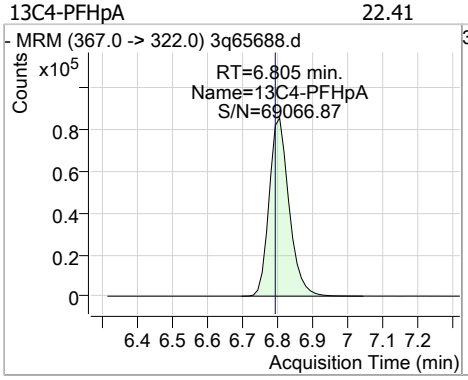
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.75	6.13	0.01	27913				

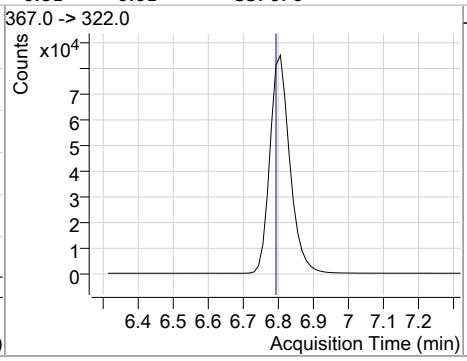


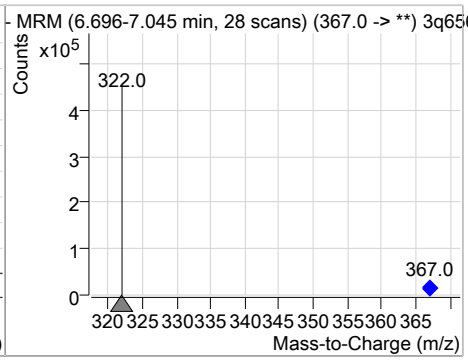




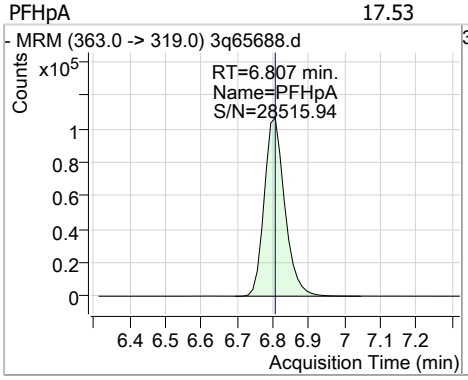
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.41	6.81	0.01	337676				

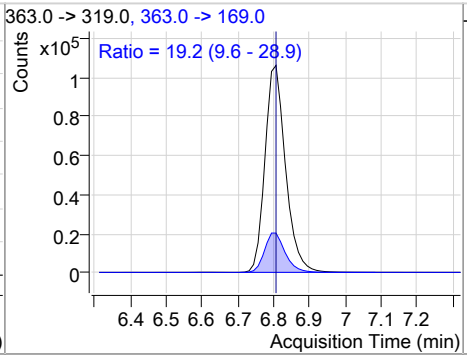


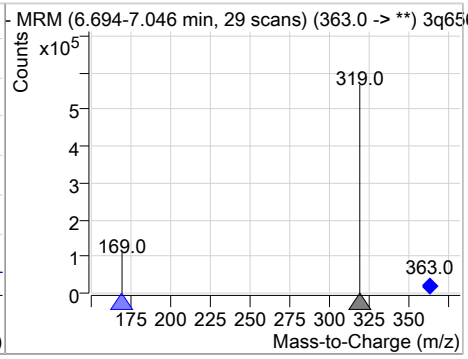




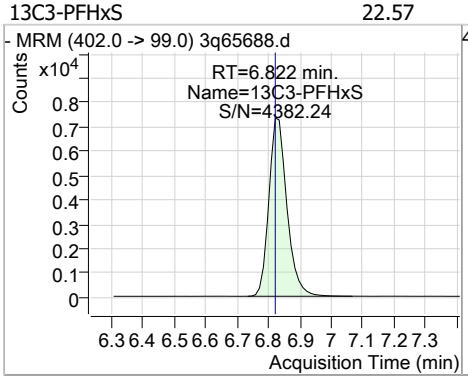
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	17.53	6.81	0.01	423593	363.0 -> 169.0	19.2	9.6	28.9

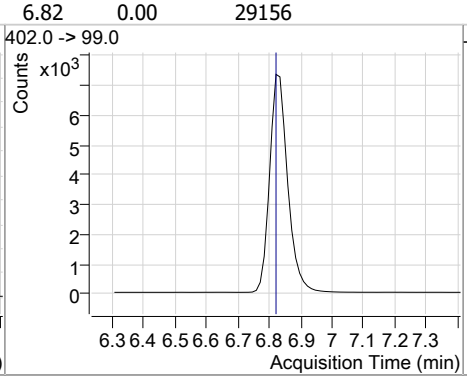


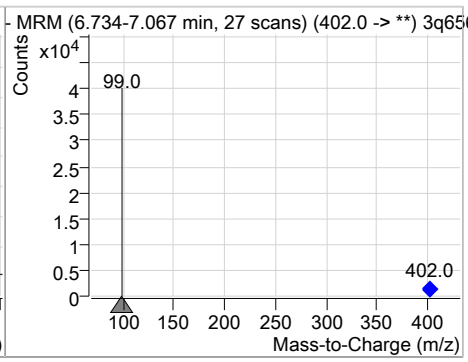




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.57	6.82	0.00	29156				

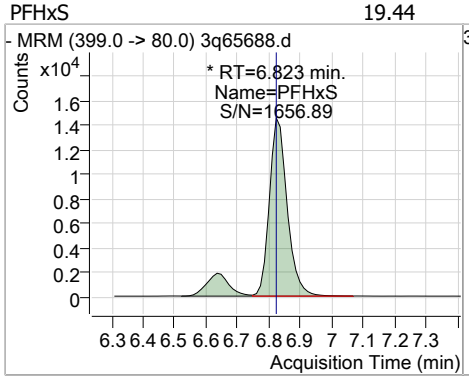


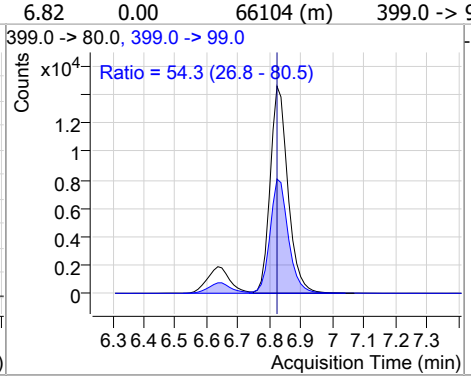


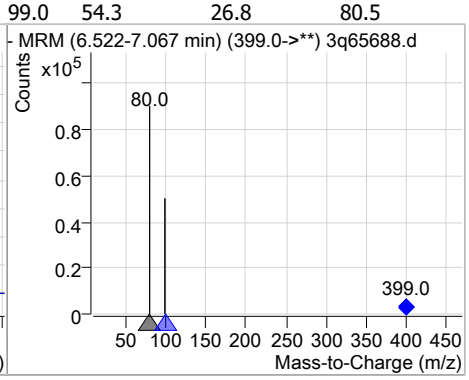


Perfluorinated Compounds by LC/MS/MS

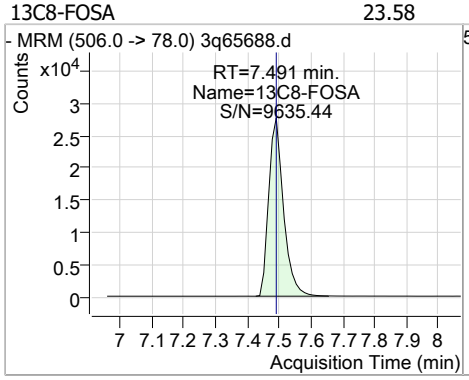
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.44	6.82	0.00	66104 (m)	399.0 -> 99.0	54.3	26.8	80.5

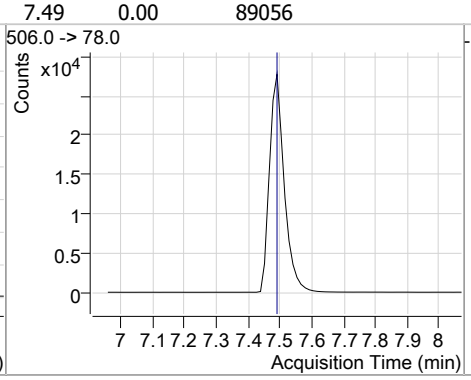


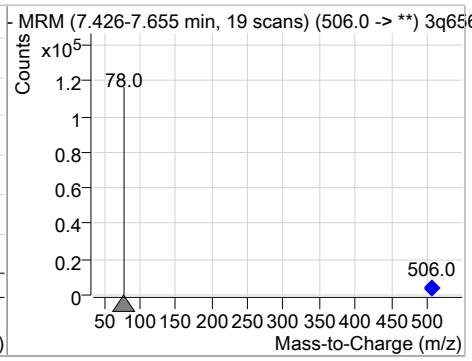




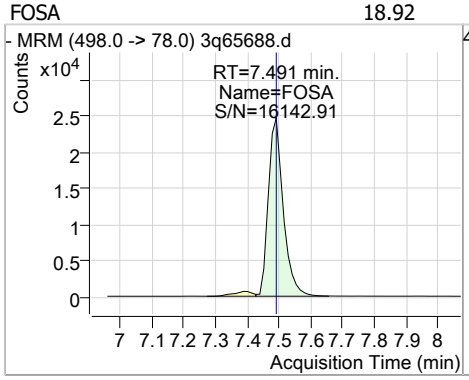
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.58	7.49	0.00	89056				

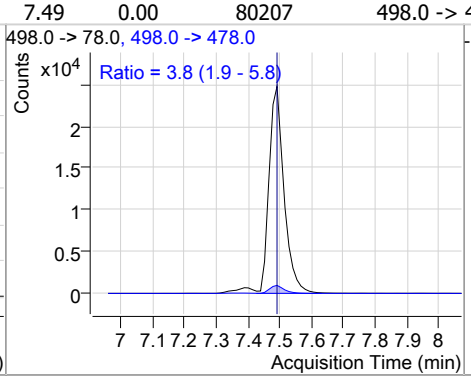


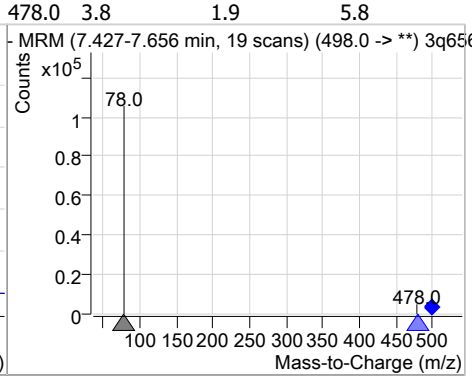




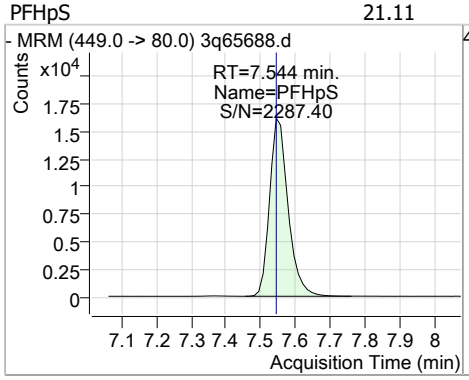
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.92	7.49	0.00	80207	498.0 -> 478.0	3.8	1.9	5.8

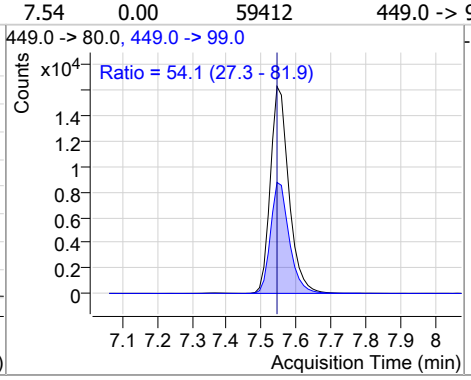


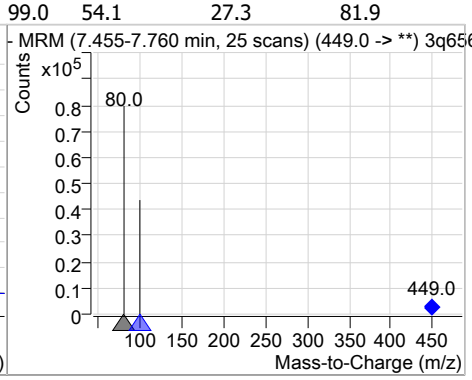




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.11	7.54	0.00	59412	449.0 -> 99.0	54.1	27.3	81.9

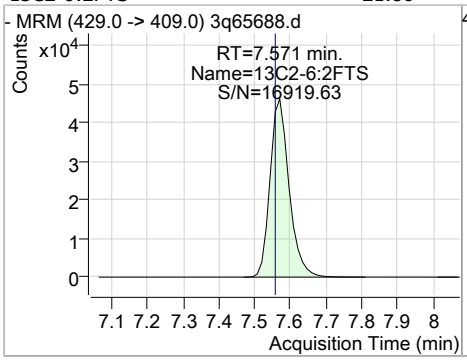


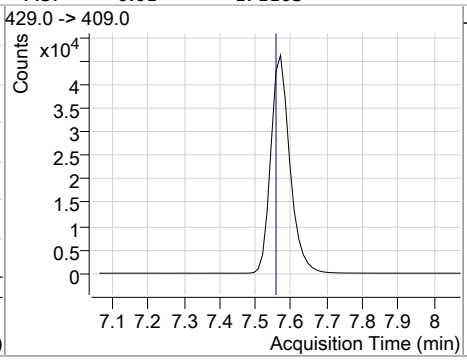


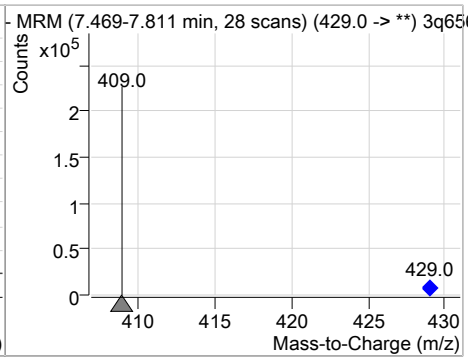


Perfluorinated Compounds by LC/MS/MS

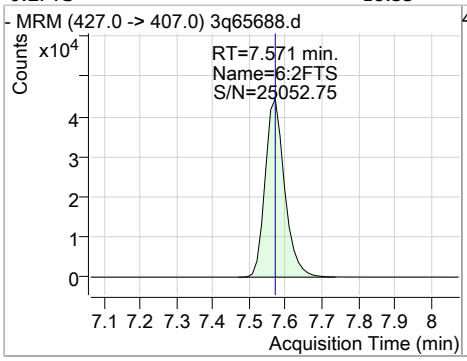
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.86	7.57	0.01	171103				

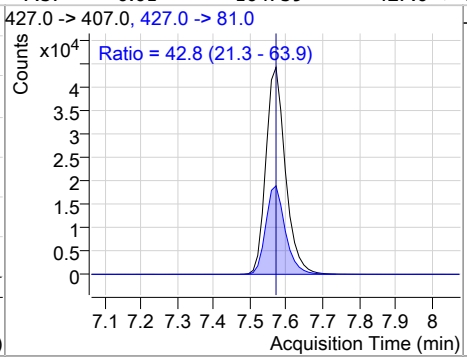


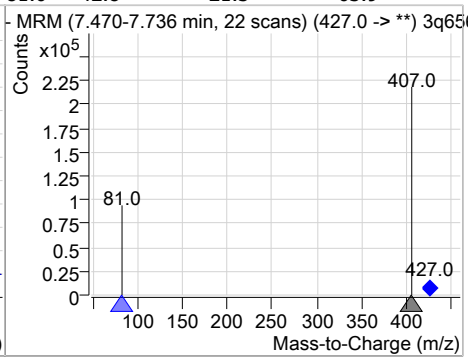




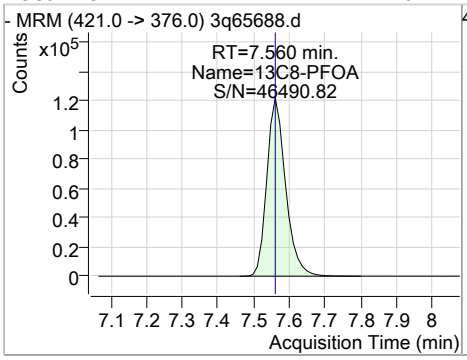
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.53	7.57	0.01	164759	427.0 -> 81.0	42.8	21.3	63.9

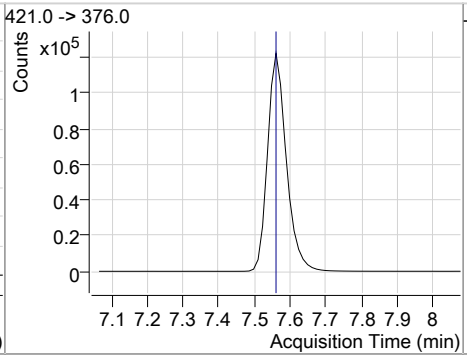


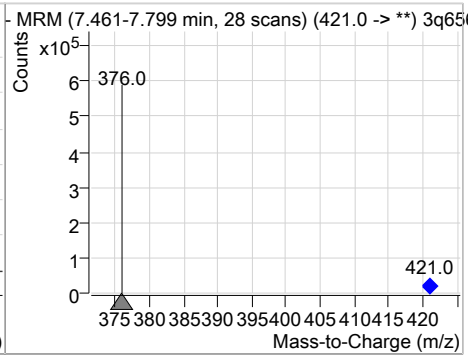




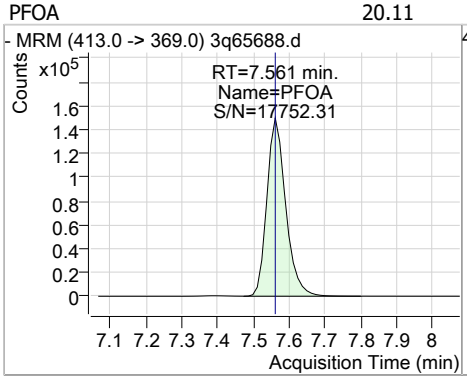
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.10	7.56	0.00	444910				

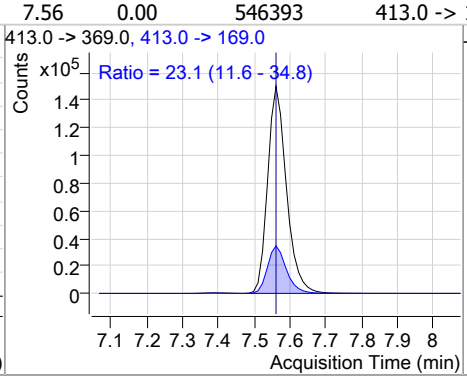


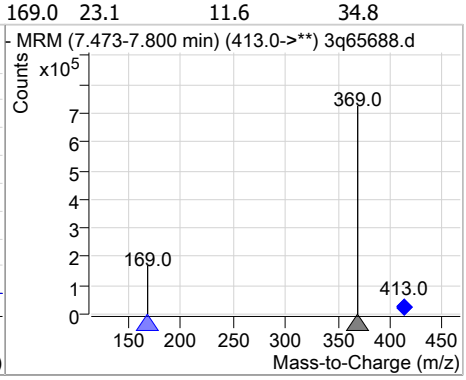




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.11	7.56	0.00	546393	413.0 -> 169.0	23.1	11.6	34.8

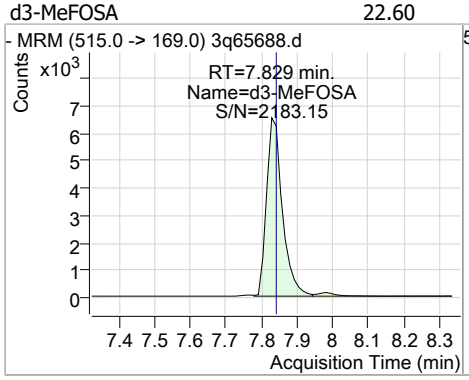


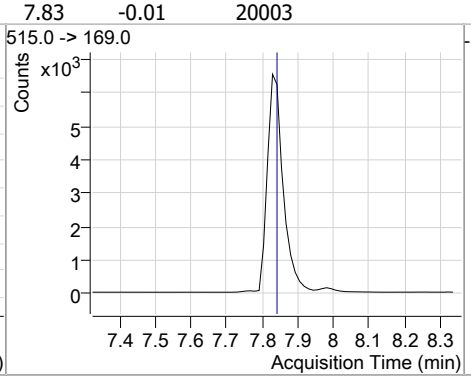


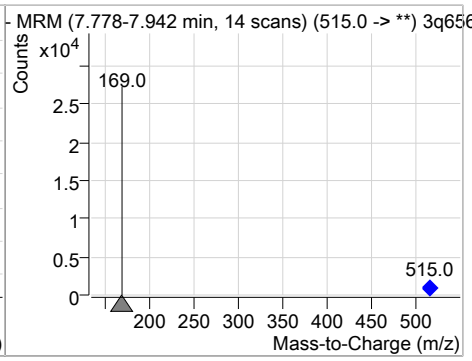


Perfluorinated Compounds by LC/MS/MS

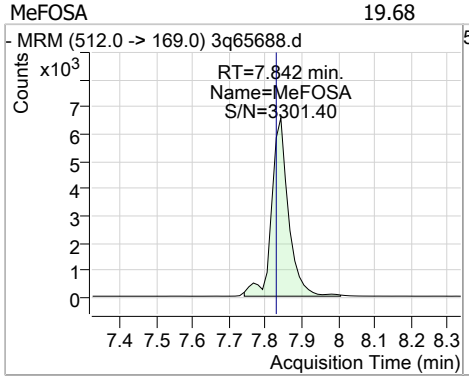
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.60	7.83	-0.01	20003				

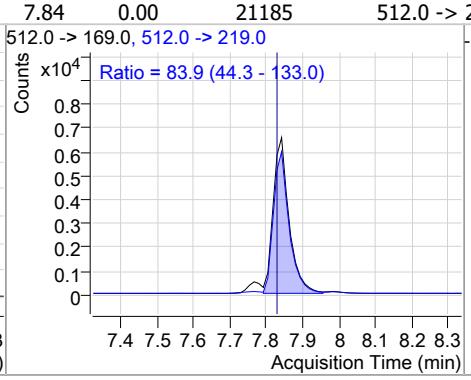


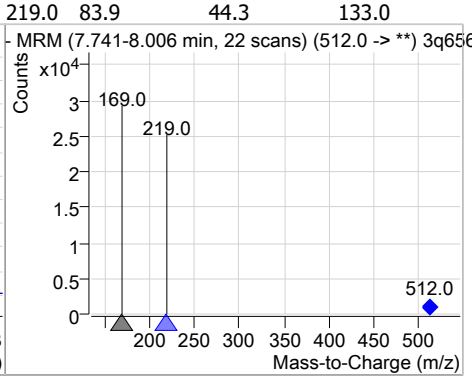




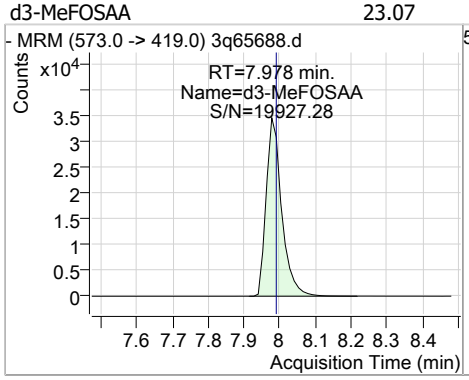
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.68	7.84	0.00	21185	512.0 -> 219.0	83.9	44.3	133.0

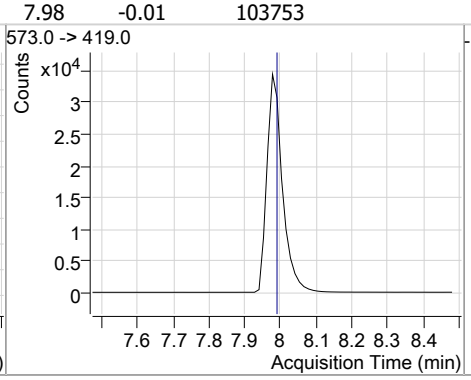


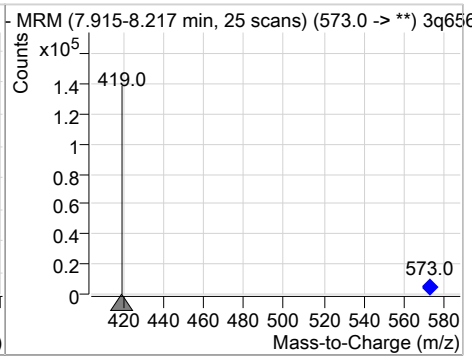




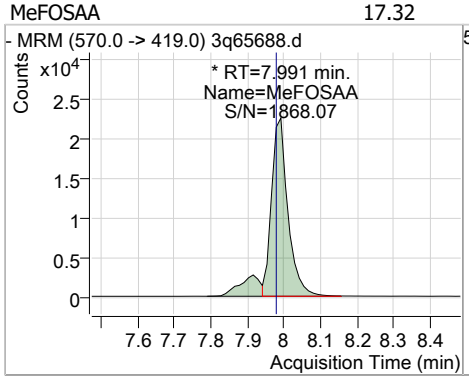
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.07	7.98	-0.01	103753				

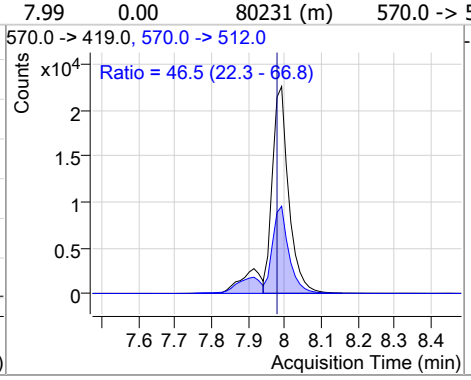


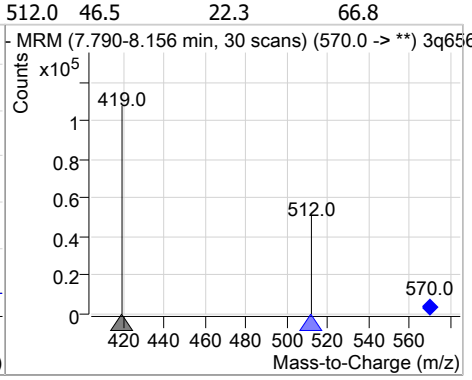




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.32	7.99	0.00	80231 (m)	570.0 -> 512.0	46.5	22.3	66.8

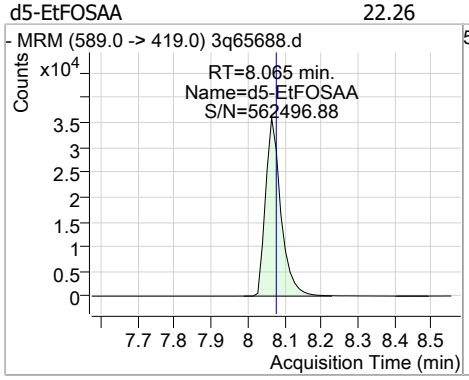


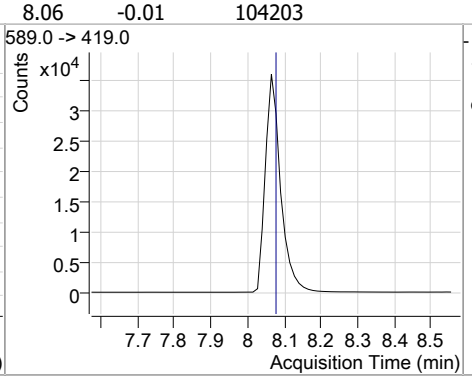


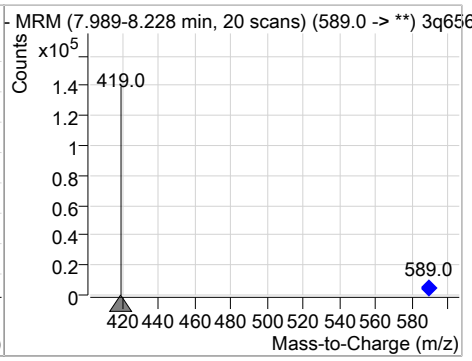


Perfluorinated Compounds by LC/MS/MS

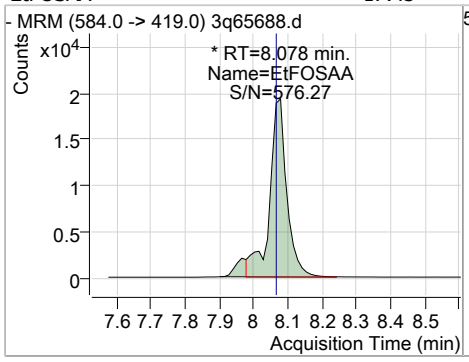
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.26	8.06	-0.01	104203				

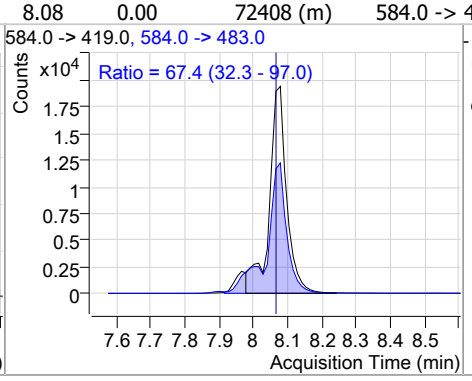


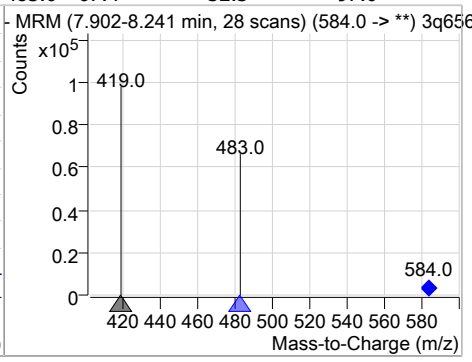




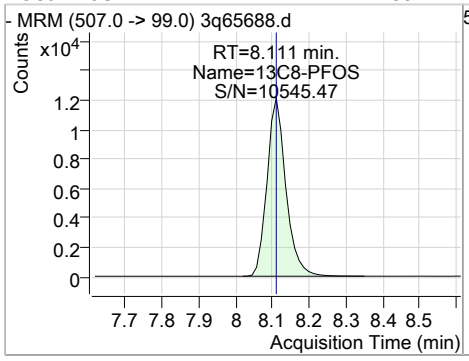
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.45	8.08	0.00	72408 (m)	584.0 -> 483.0	67.4	32.3	97.0

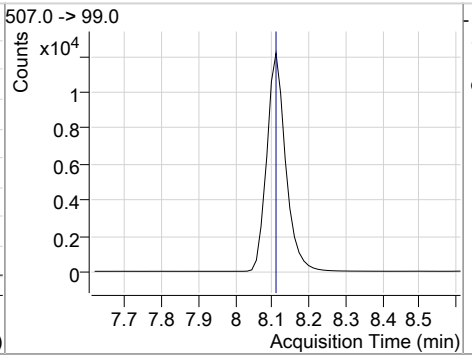


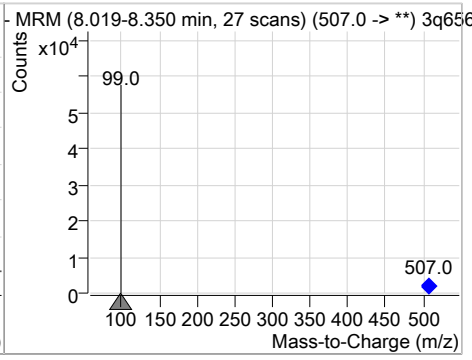




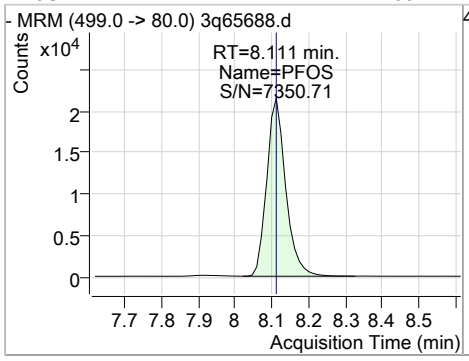
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.99	8.11	0.00	43153				

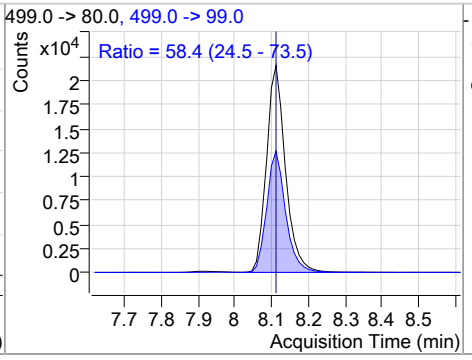


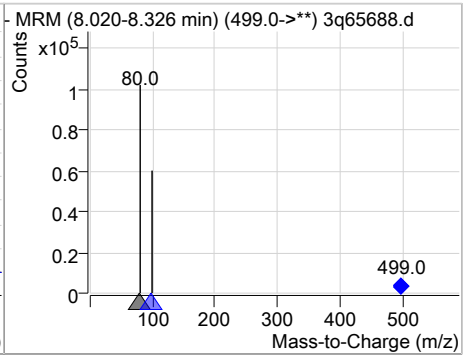




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	21.68	8.11	0.00	77042	499.0 -> 99.0	58.4	24.5	73.5

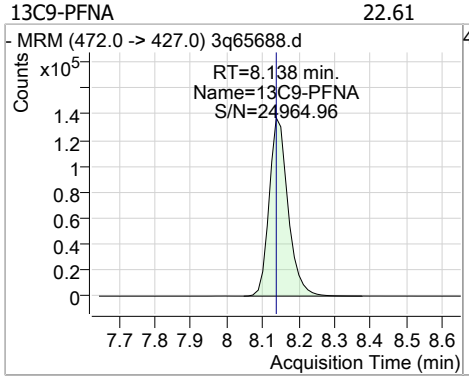


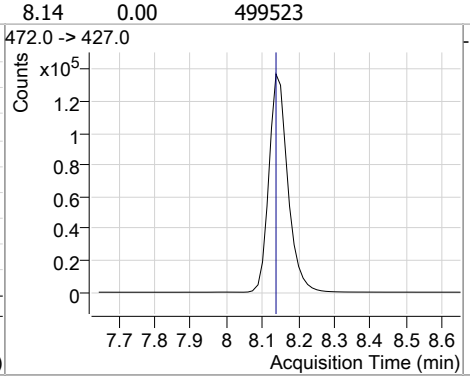


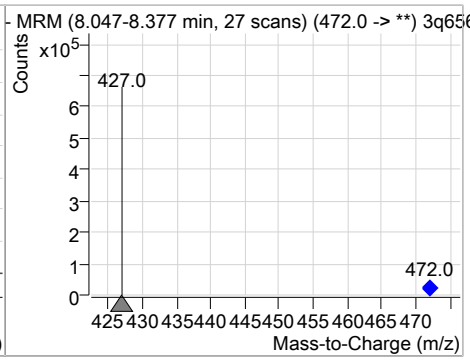


Perfluorinated Compounds by LC/MS/MS

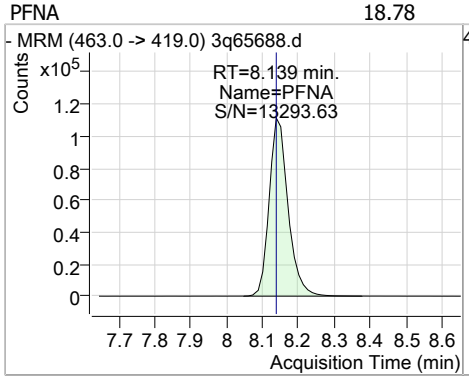
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.61	8.14	0.00	499523				

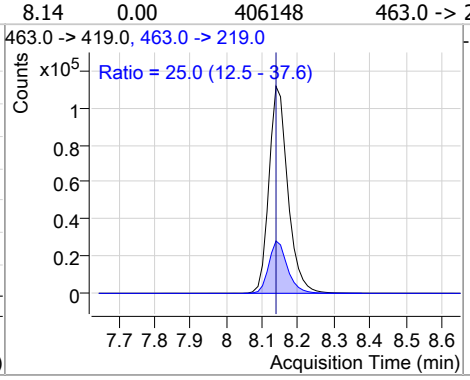


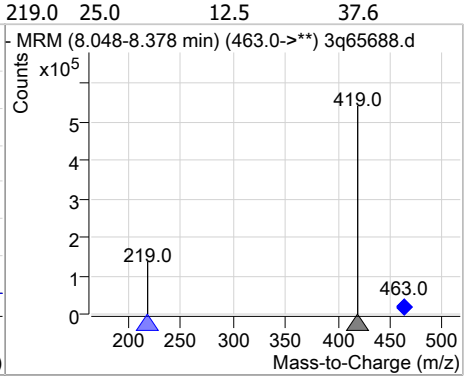




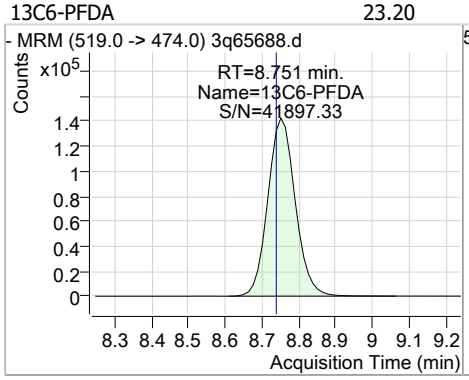
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.78	8.14	0.00	406148	463.0 -> 219.0	25.0	12.5	37.6

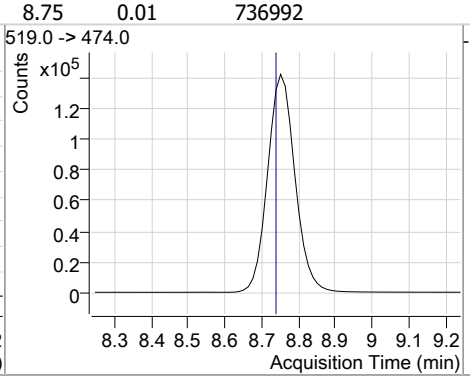


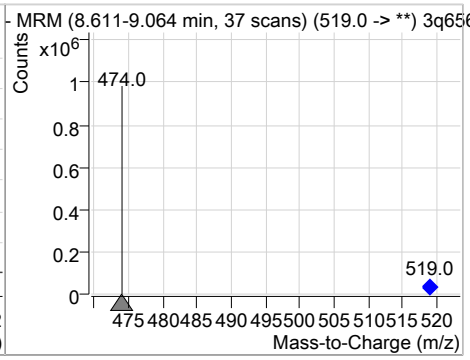




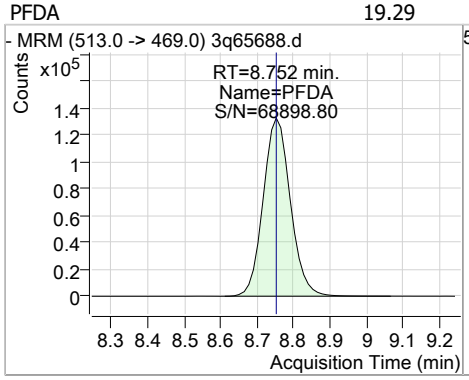
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	23.20	8.75	0.01	736992				

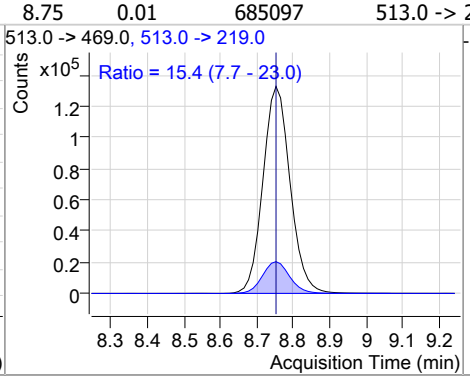


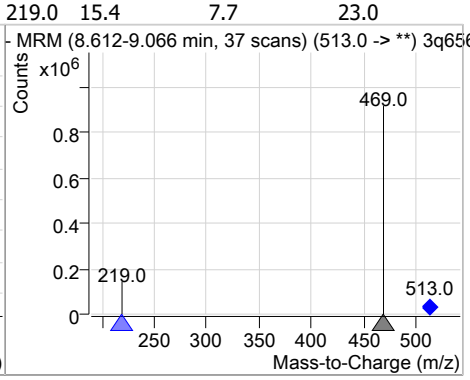




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.29	8.75	0.01	685097	513.0 -> 219.0	15.4	7.7	23.0

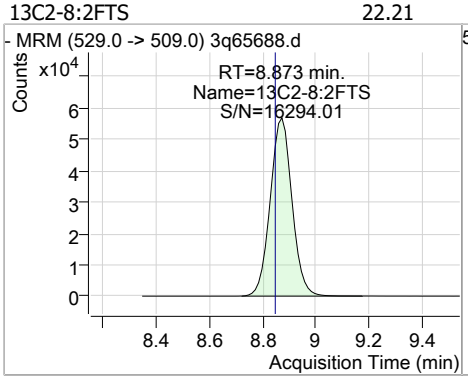


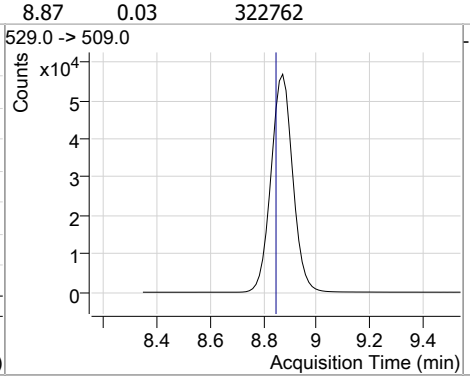


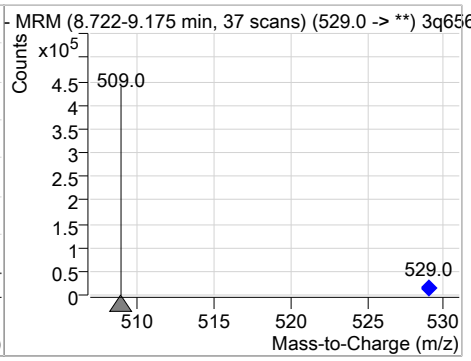


Perfluorinated Compounds by LC/MS/MS

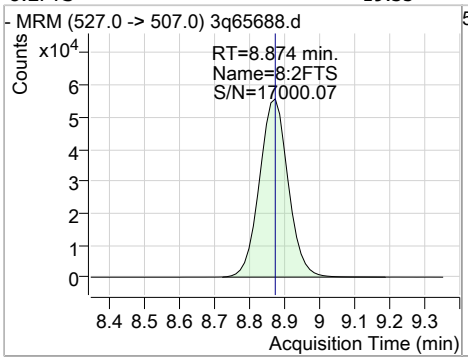
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	22.21	8.87	0.03	322762				

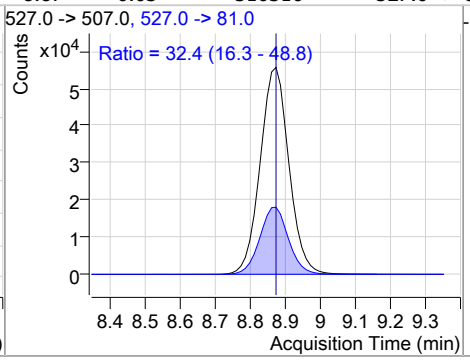


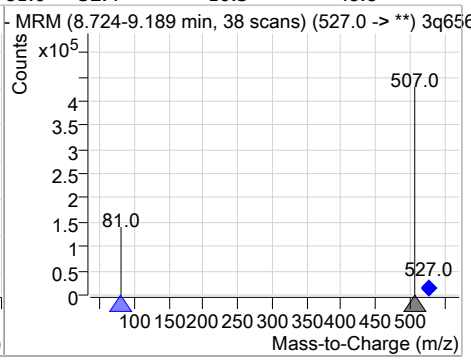




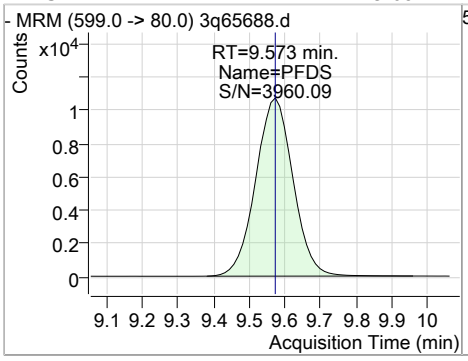
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.35	8.87	0.03	316316	527.0 -> 81.0	32.4	16.3	48.8

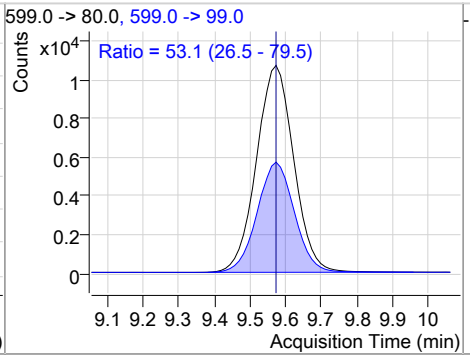


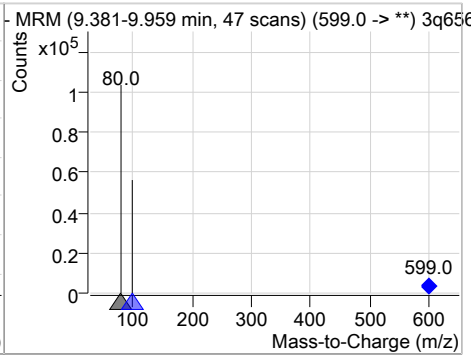




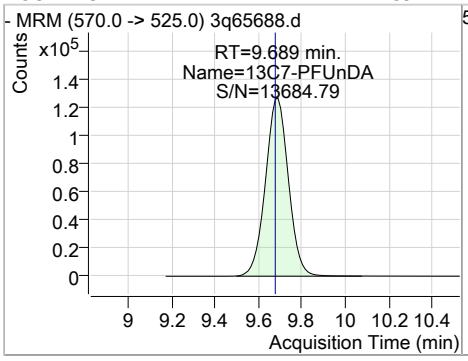
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.08	9.57	0.01	77510	599.0 -> 99.0	53.1	26.5	79.5

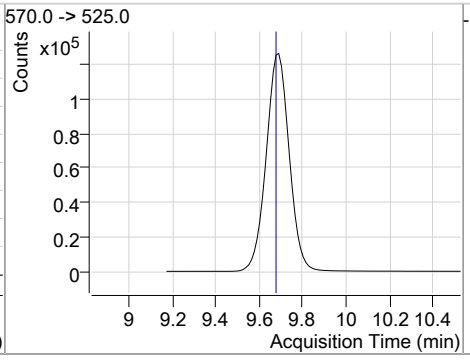


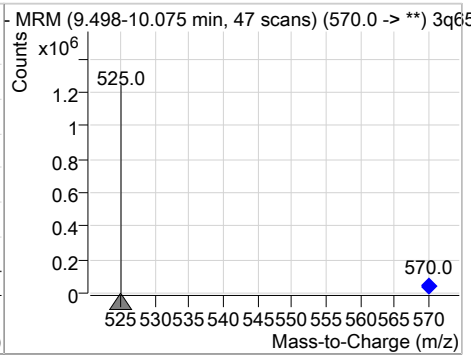




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.59	9.69	0.01	932406				

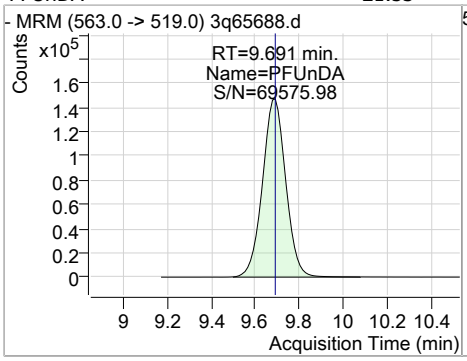


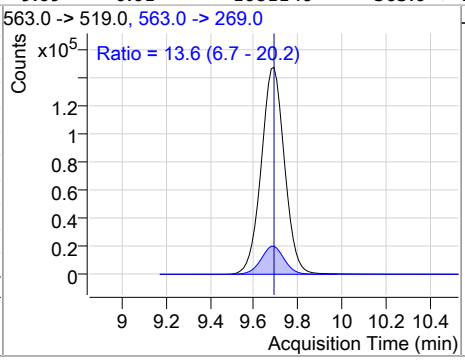


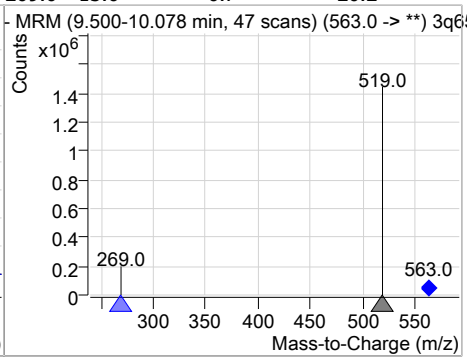


Perfluorinated Compounds by LC/MS/MS

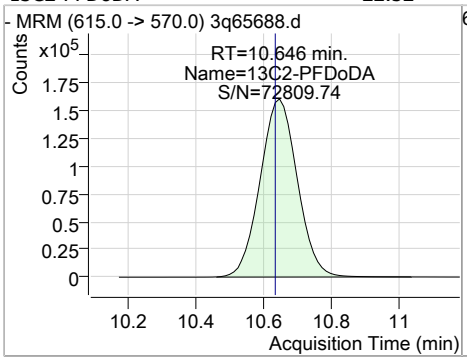
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.53	9.69	0.01	1081146	563.0 -> 269.0	13.6	6.7	20.2

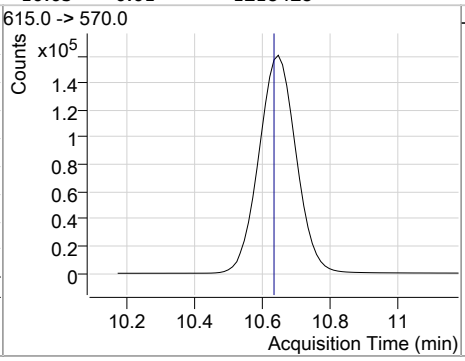


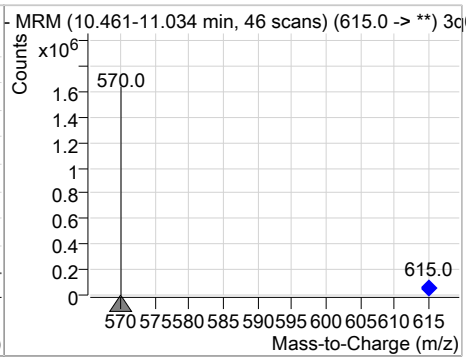




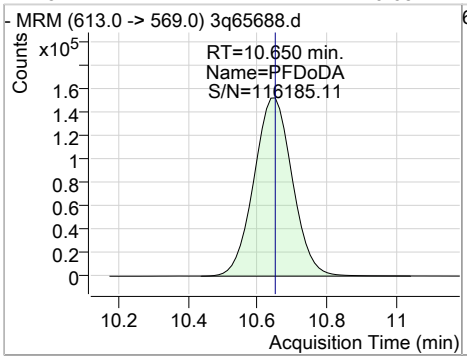
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.52	10.65	0.01	1218428				

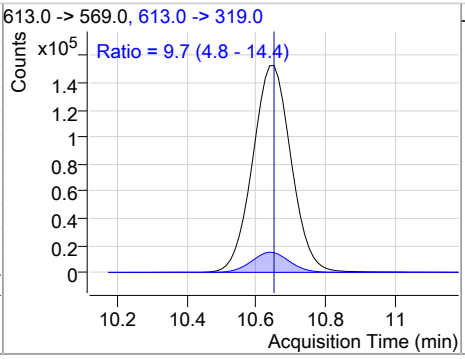


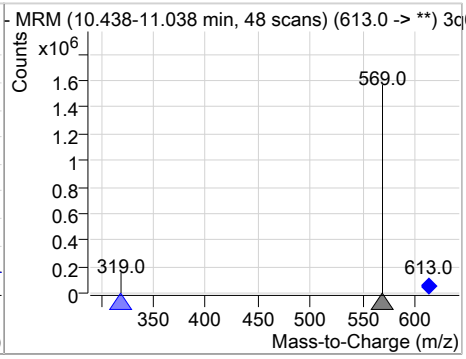




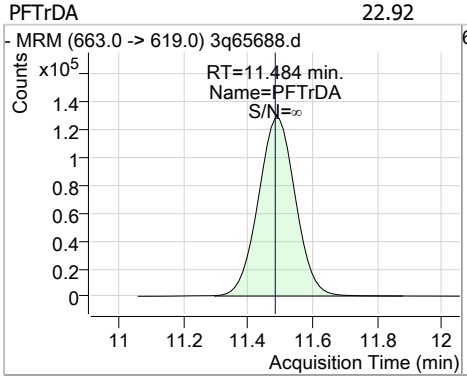
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.68	10.65	0.01	1170471	613.0 -> 319.0	9.7	4.8	14.4

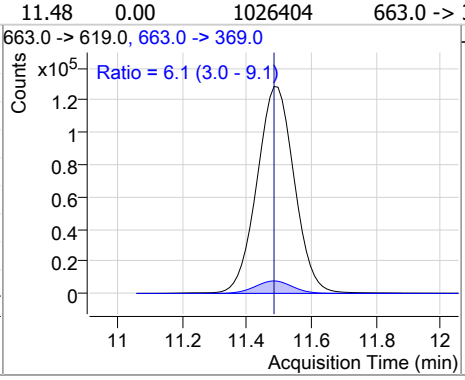


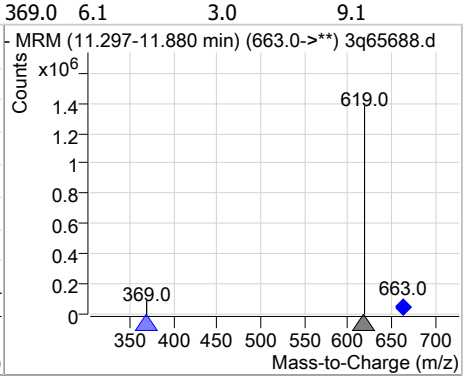




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	22.92	11.48	0.00	1026404	663.0 -> 369.0	6.1	3.0	9.1

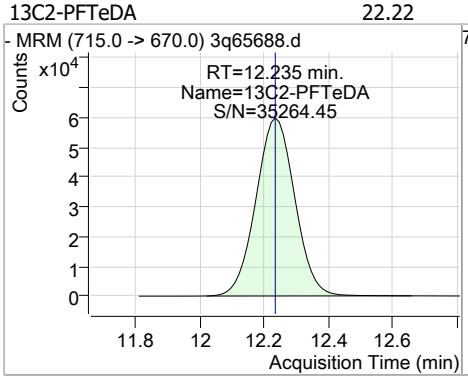


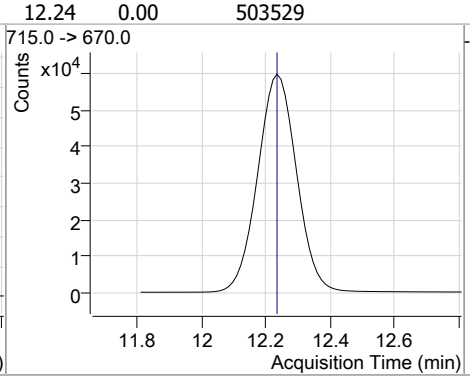


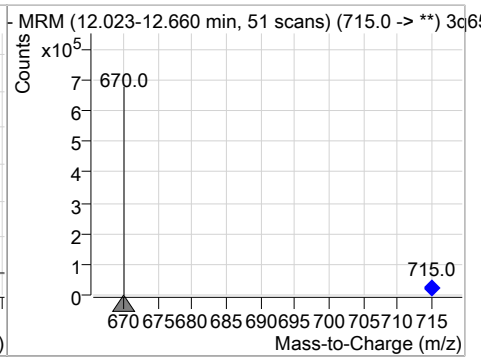


Perfluorinated Compounds by LC/MS/MS

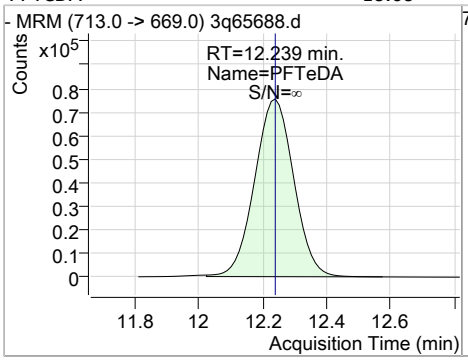
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.22	12.24	0.00	503529				

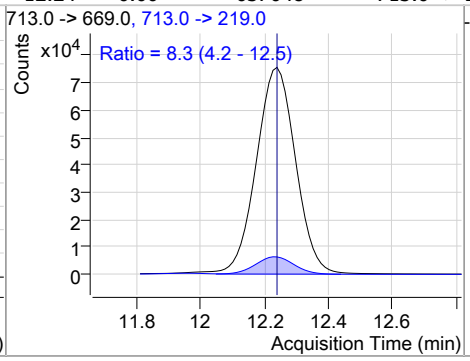


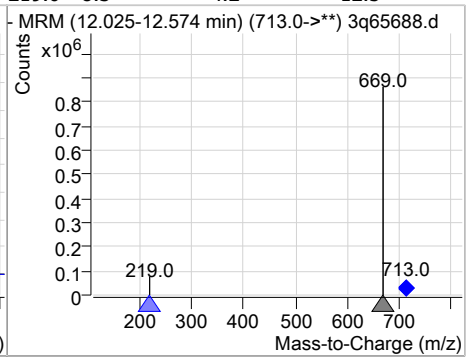




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.68	12.24	0.00	637048	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-ICV898
Lab FileID: 3Q65688.D
Injection Time: 09/13/22 19:05
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65690.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 7:45:05 PM
Sample Name : cc898-20
Vial : P1-A7
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

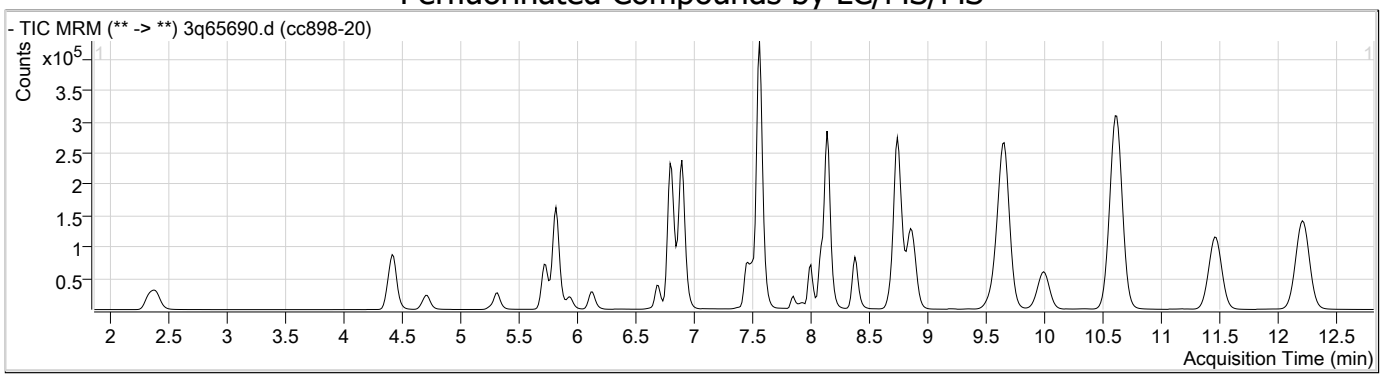
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	166036	20.00 µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	245126	20.00 µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	321761	20.00 µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	320355	20.00 µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	428242	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	453227	20.00 µg/L	0.000
M6-PFDA	8.739	519.0 -> 474.0	613448	20.00 µg/L	0.000
M7-PFUnDA	9.652	570.0 -> 525.0	867367	20.00 µg/L	-0.025
M2-PFDoDA	10.609	615.0 -> 570.0	1155368	20.00 µg/L	-0.025
M2-PFTeDA	12.198	715.0 -> 670.0	477206	20.00 µg/L	-0.038
M8-FOSA	7.491	506.0 -> 78.0	81921	20.00 µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	22460	20.00 µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	27433	20.00 µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	41395	20.00 µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	121552	20.00 µg/L	0.000
M2-6:2FTS	7.558	429.0 -> 409.0	164936	20.00 µg/L	0.000
M2-8:2FTS	8.848	529.0 -> 509.0	296473	20.00 µg/L	0.000
M3-MeFOSAA	7.978	573.0 -> 419.0	93931	20.00 µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	26311	20.00 µg/L	0.000
M3-MeFOSA	7.841	515.0 -> 169.0	18645	20.00 µg/L	0.000
M5-EtFOSAA	8.065	589.0 -> 419.0	101185	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.708	329.0 -> 309.0	121552	21.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C2-6:2FTS	7.558	429.0 -> 409.0	164936	21.07 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C2-8:2FTS	8.848	529.0 -> 509.0	296473	20.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C2-PFDoDA	10.609	615.0 -> 570.0	1155368	21.36 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C2-PFTeDA	12.198	715.0 -> 670.0	477206	21.06 µg/L	-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C3-PFBS	4.704	302.0 -> 99.0	22460	21.23 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C3-PFHxS	6.822	402.0 -> 99.0	27433	21.23 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C4-PFBA	2.365	217.0 -> 172.0	166036	20.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C4-PFHpA	6.793	367.0 -> 322.0	320355	21.26 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%	
13C5-PFHxA	5.813	318.0 -> 273.0	321761	21.19 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%	
13C5-PFPeA	4.411	268.0 -> 223.0	245126	21.15 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C6-PFDA	8.739	519.0 -> 474.0	613448	19.31 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

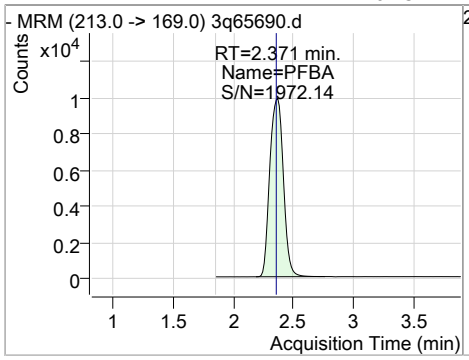
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C7-PFUnDA	9.652	570.0 -> 525.0	867367	21.01 µg/L		-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C8-FOSA	7.491	506.0 -> 78.0	81921	21.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
13C8-PFOA	7.560	421.0 -> 376.0	428242	21.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C8-PFOS	8.111	507.0 -> 99.0	41395	21.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C9-PFNA	8.138	472.0 -> 427.0	453227	20.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
d3-MeFOSAA	7.978	573.0 -> 419.0	93931	20.89 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-HFPO-DA	6.117	287.0 -> 169.0	26311	20.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
d3-MeFOSA	7.841	515.0 -> 169.0	18645	21.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
d5-EtFOSAA	8.065	589.0 -> 419.0	101206	21.62 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
Target Compounds						QValue
4:2FTS	5.710	327.0 -> 307.0	131212	20.47 µg/L		99
6:2FTS	7.559	427.0 -> 407.0	174501	20.36 µg/L		99
8:2FTS	8.849	527.0 -> 507.0	299236	19.93 µg/L		100
EtFOSAA	8.078	584.0 -> 419.0	80802	20.03 µg/L	m	99
FOSA	7.491	498.0 -> 78.0	81532	20.91 µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	84611	20.17 µg/L	m	97
PFBA	2.371	213.0 -> 169.0	77528	20.43 µg/L		100
PFBS	4.694	299.0 -> 80.0	64827	20.31 µg/L		100
PFDA	8.740	513.0 -> 469.0	597627	20.22 µg/L		100
PFDoDA	10.600	613.0 -> 569.0	1098250	20.47 µg/L		100
PFDS	9.532	599.0 -> 80.0	77048	20.38 µg/L		99
PFHpA	6.794	363.0 -> 319.0	464683	20.27 µg/L		100
PFHpS	7.544	449.0 -> 80.0	57836	21.42 µg/L		100
PFHxA	5.814	313.0 -> 269.0	347419	20.25 µg/L		100
PFHxS	6.823	399.0 -> 80.0	65535	20.49 µg/L	m	99
PFNA	8.139	463.0 -> 419.0	393844	20.07 µg/L		100
PFNS	8.680	549.0 -> 80.0	63488	18.80 µg/L		99
PFOA	7.561	413.0 -> 369.0	520312	19.90 µg/L		100
PFOS	8.111	499.0 -> 80.0	68408	20.07 µg/L	m	99
PFPeA	4.414	263.0 -> 219.0	219750	20.53 µg/L		100
PFPeS	5.919	349.0 -> 80.0	50469	20.36 µg/L		100
PFTeDA	12.202	713.0 -> 669.0	660927	20.45 µg/L		100
PFTrDA	11.447	663.0 -> 619.0	871097	20.52 µg/L		100
PFUnDA	9.653	563.0 -> 519.0	947192	20.27 µg/L		100
11Cl-PF3OUdS	9.984	631.0 -> 451.0	335319	20.00 µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	230352	21.81 µg/L		100
ADONA	6.891	377.0 -> 251.0	694211	19.96 µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	65316	20.83 µg/L		100
MeFOSA	7.842	512.0 -> 169.0	20690	20.62 µg/L		99
4-PFECHS	7.441	461.0 -> 381.0	179199	18.56 µg/L		99
FBSA	5.315	298.0 -> 78.0	115678	21.10 µg/L		100
FHxSA	6.675	398.0 -> 78.0	125191	19.83 µg/L		100

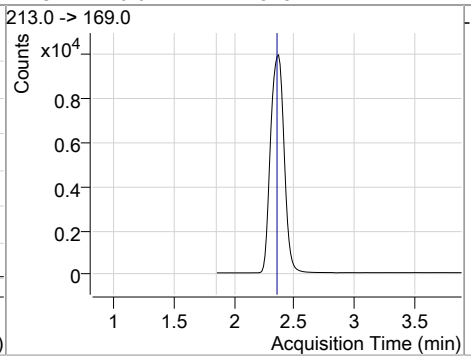
 # = Qualifier out of range, m = manually integrated, + = Area summed

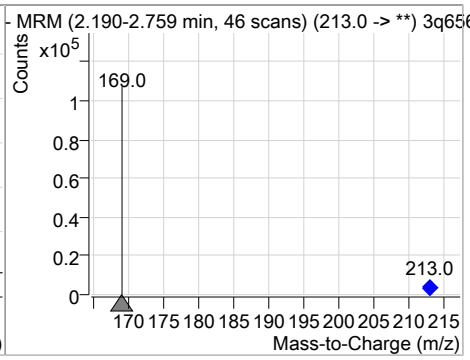
Perfluorinated Compounds by LC/MS/MS



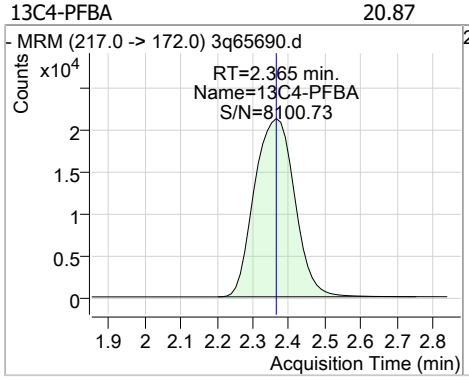
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.43	2.37	0.01	77528				

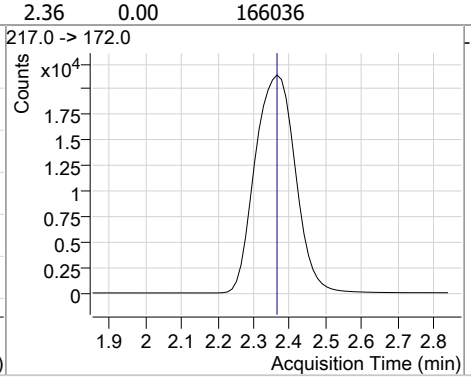


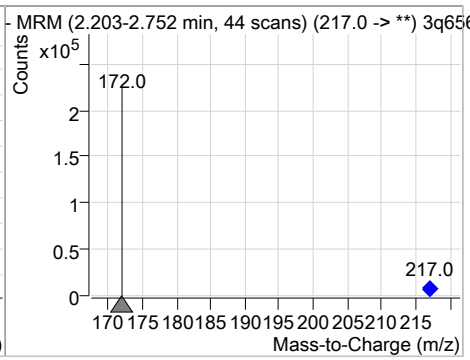




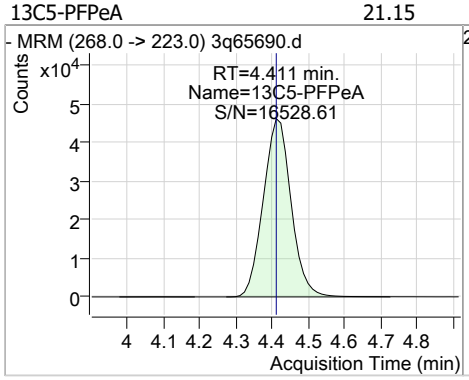
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.87	2.36	0.00	166036				

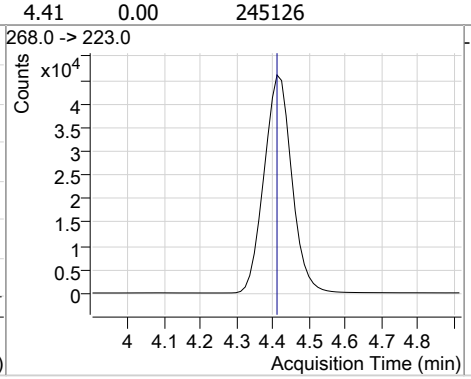


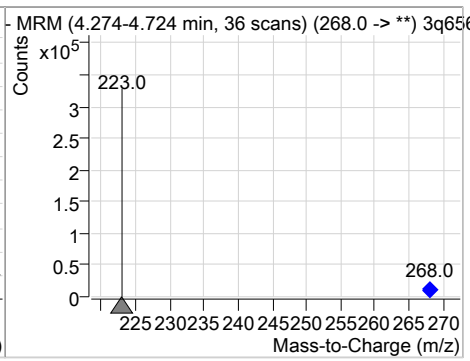




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.15	4.41	0.00	245126				

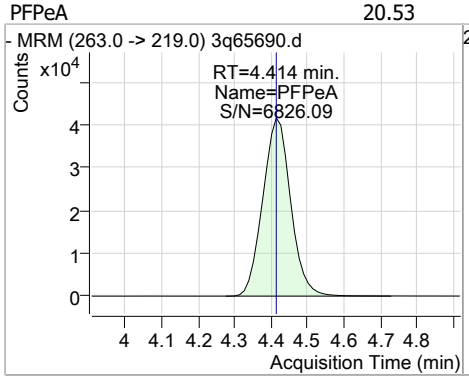


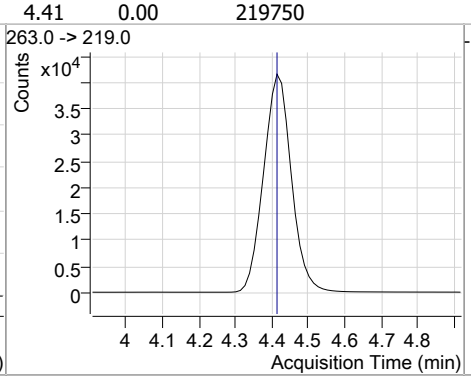


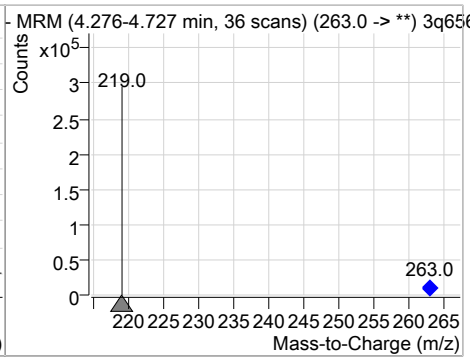


Perfluorinated Compounds by LC/MS/MS

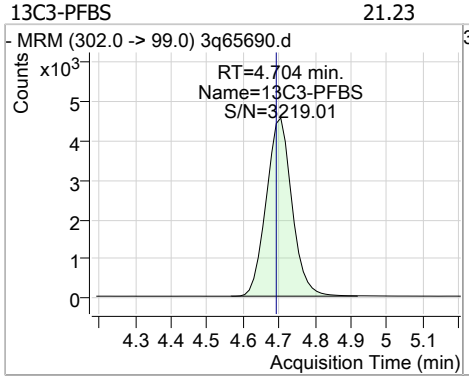
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.53	4.41	0.00	219750				

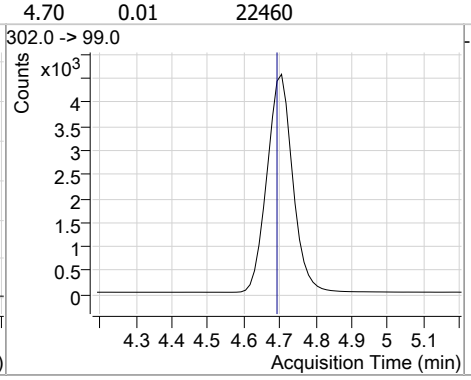


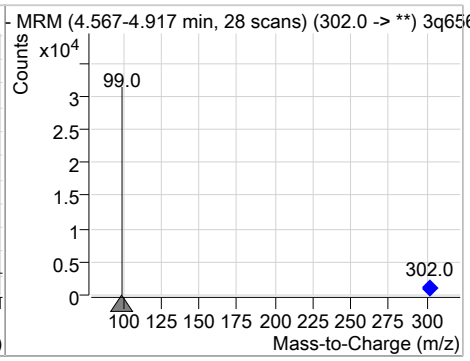




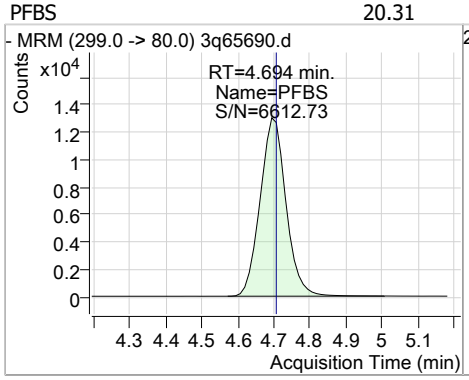
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.23	4.70	0.01	22460				

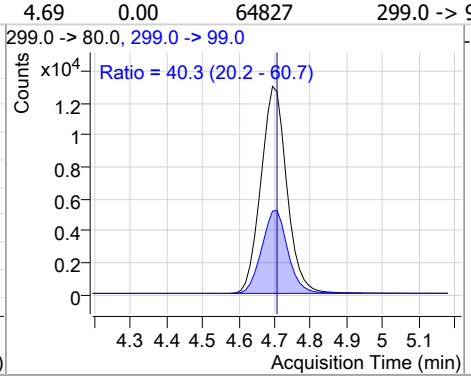


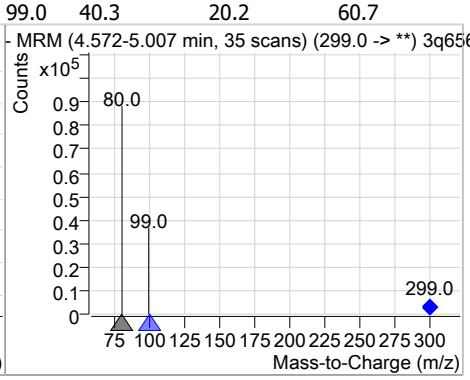




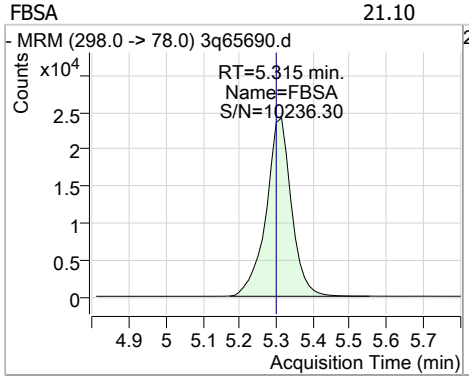
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.31	4.69	0.00	64827	299.0 -> 99.0	40.3	20.2	60.7

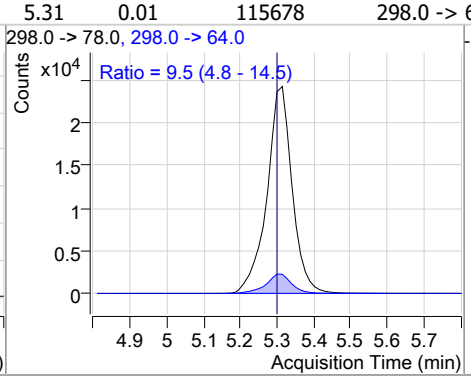


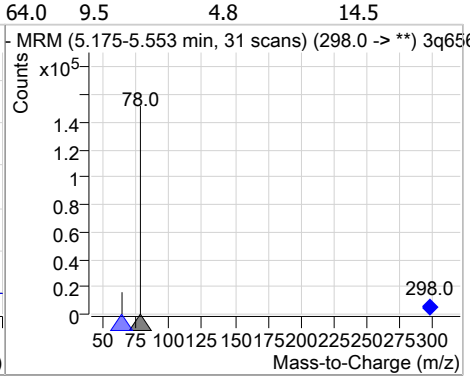




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	21.10	5.31	0.01	115678	298.0 -> 64.0	9.5	4.8	14.5

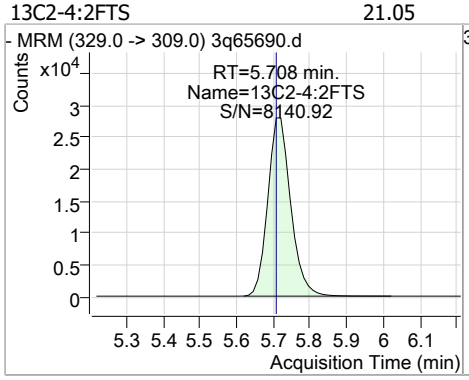


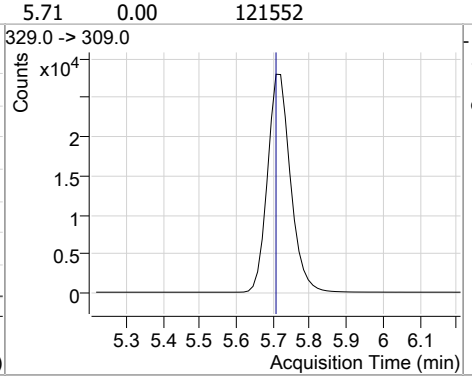


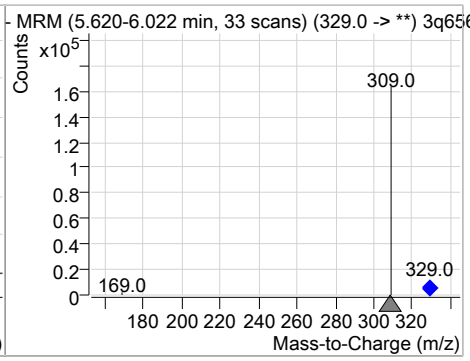


Perfluorinated Compounds by LC/MS/MS

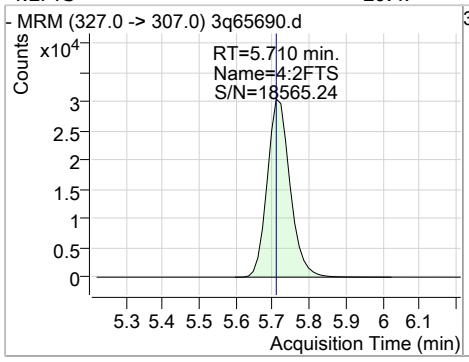
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.05	5.71	0.00	121552				

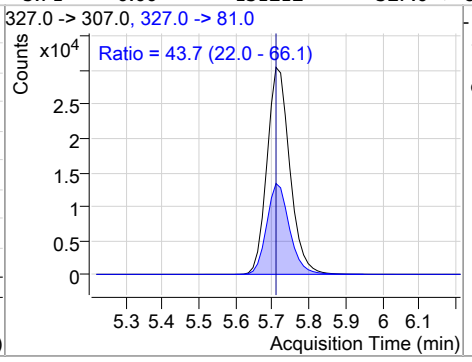


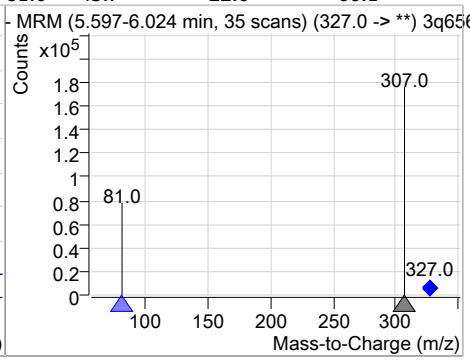




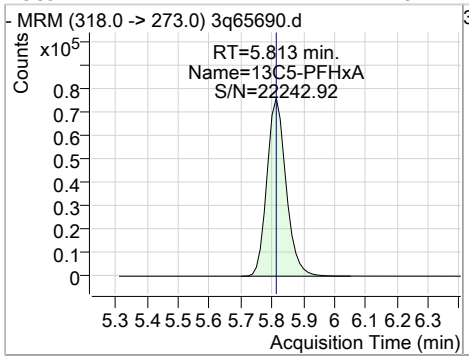
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.47	5.71	0.00	131212	327.0 -> 81.0	43.7	22.0	66.1

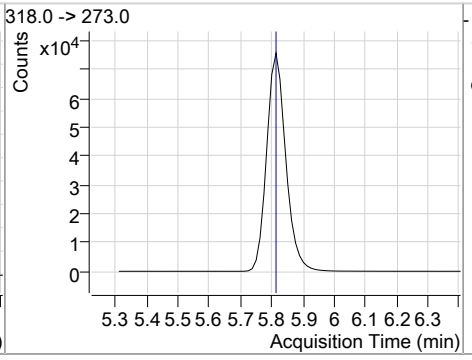


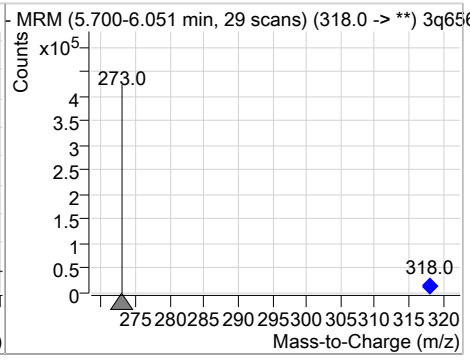




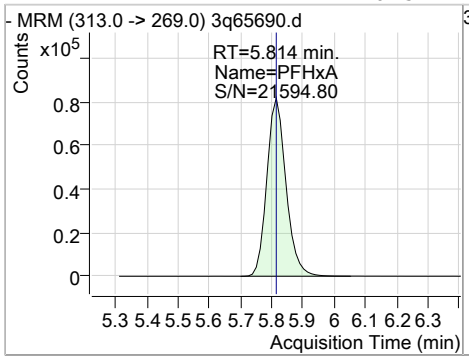
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.19	5.81	0.00	321761				

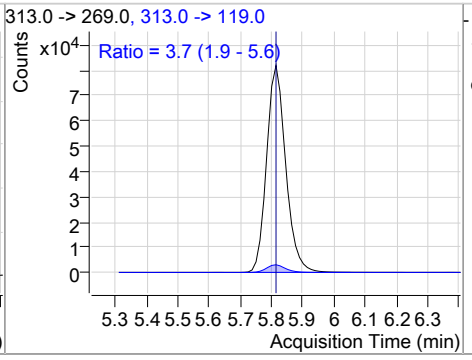


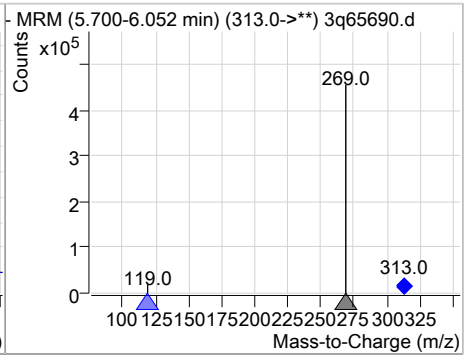




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.25	5.81	0.00	347419	313.0 -> 119.0	3.7	1.9	5.6

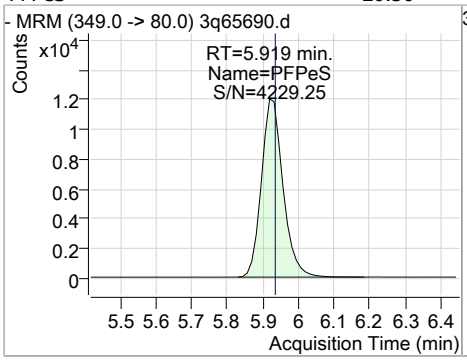


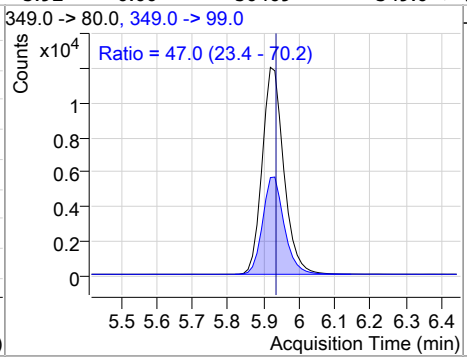


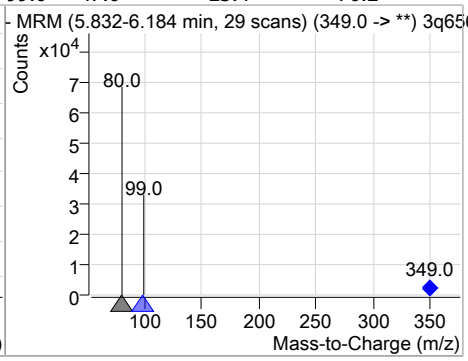


Perfluorinated Compounds by LC/MS/MS

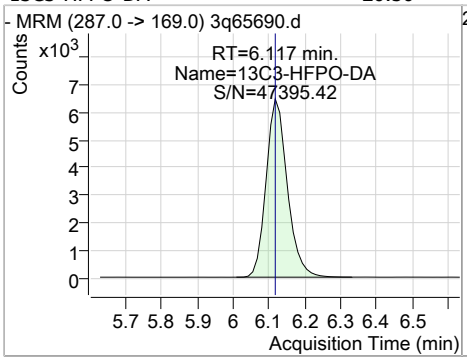
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.36	5.92	0.00	50469	349.0 -> 99.0	47.0	23.4	70.2

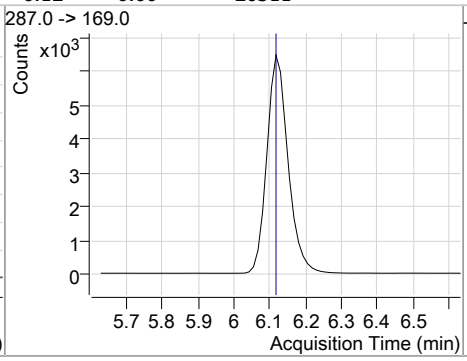


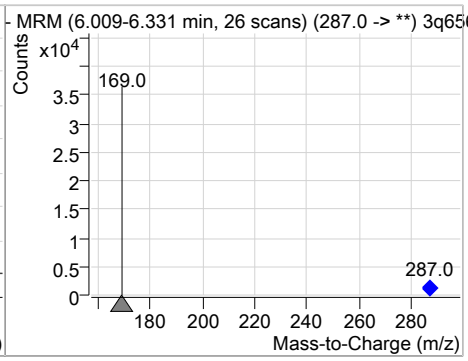




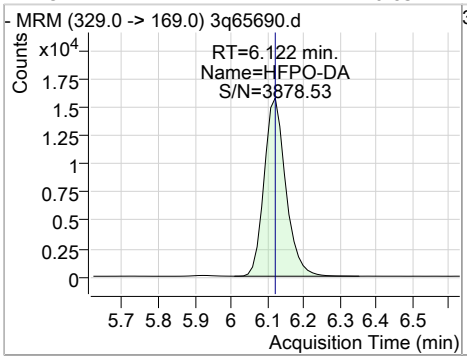
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.50	6.12	0.00	26311				

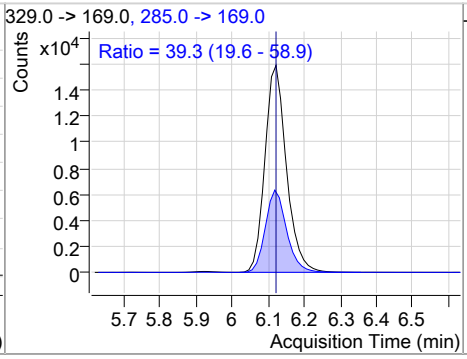


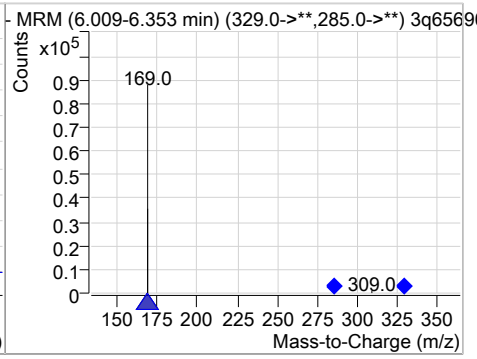




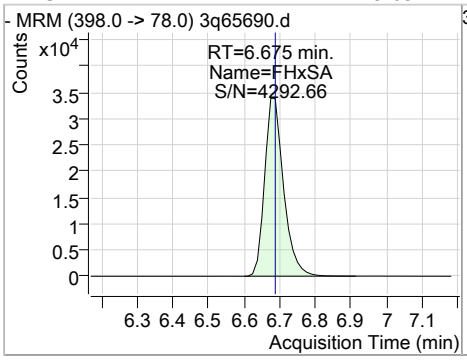
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.83	6.12	0.00	65316	285.0 -> 169.0	39.3	19.6	58.9

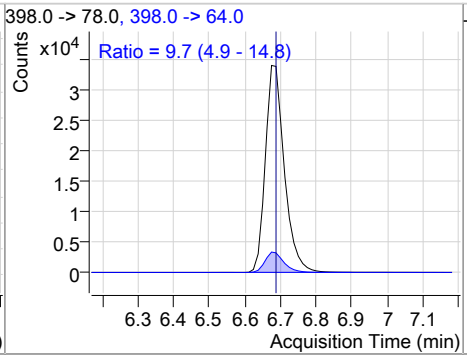


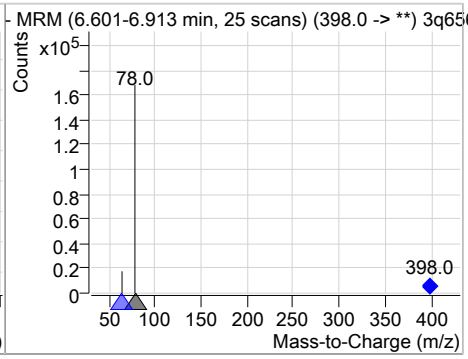




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.83	6.68	-0.01	125191	398.0 -> 64.0	9.7	4.9	14.8

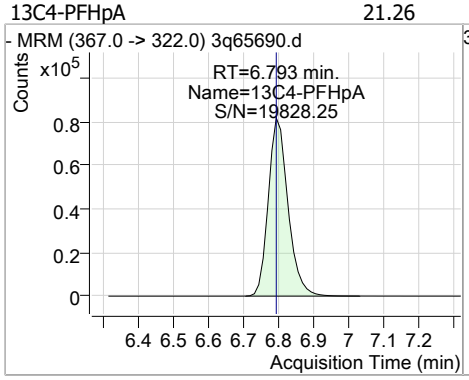


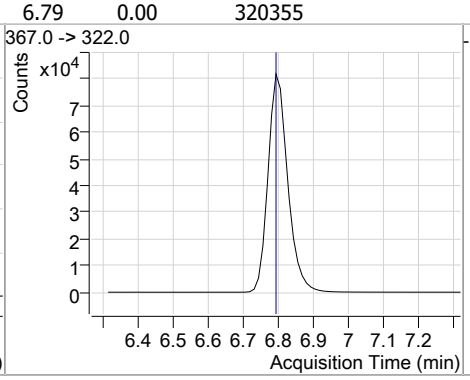


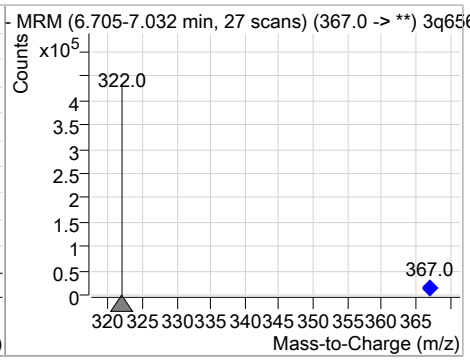


Perfluorinated Compounds by LC/MS/MS

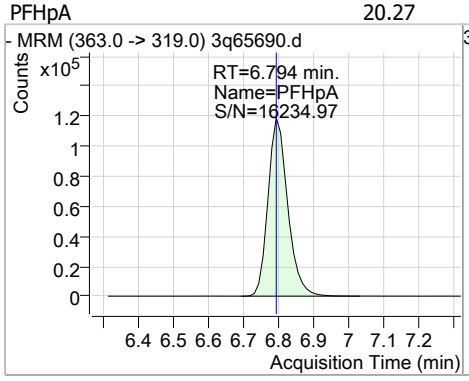
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.26	6.79	0.00	320355				

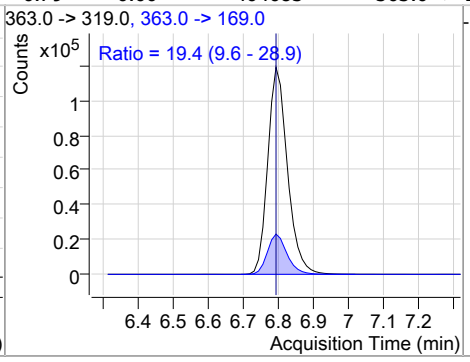


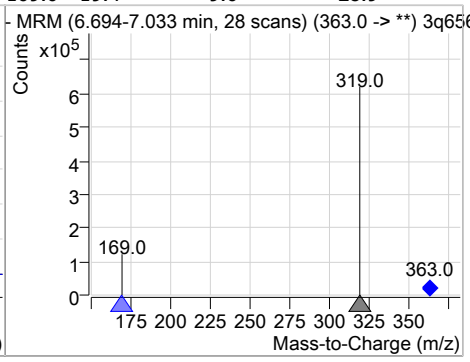




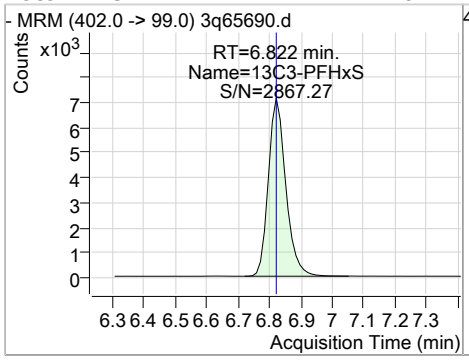
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.27	6.79	0.00	464683	363.0 -> 169.0	19.4	9.6	28.9

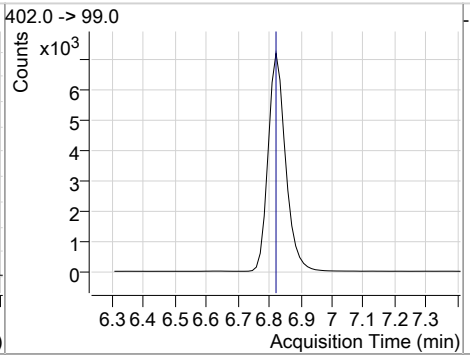


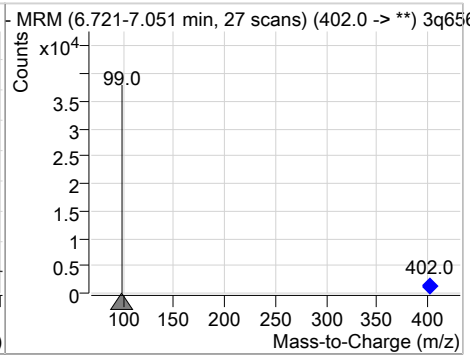




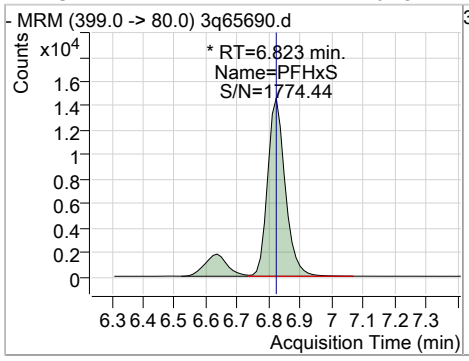
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.23	6.82	0.00	27433				

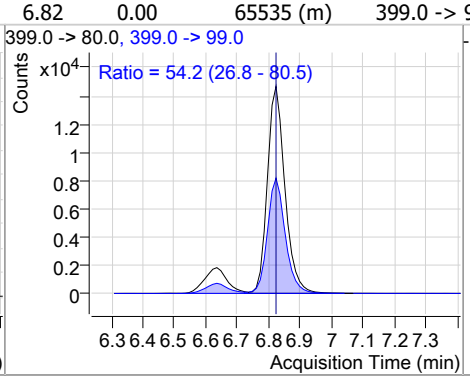


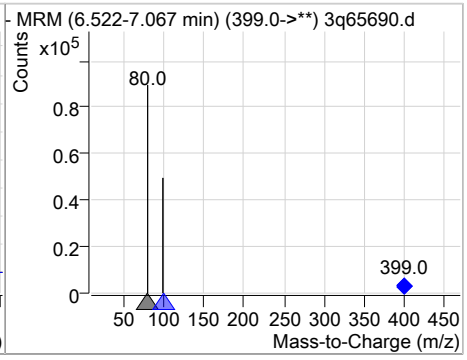




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.49	6.82	0.00	65535 (m)	399.0 -> 99.0	54.2	26.8	80.5

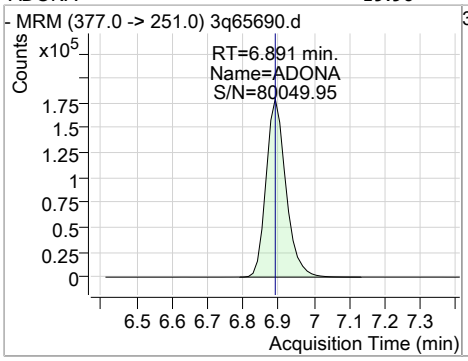


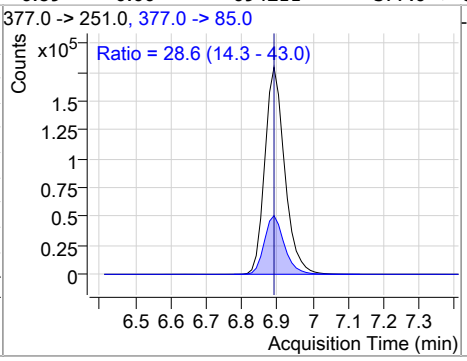


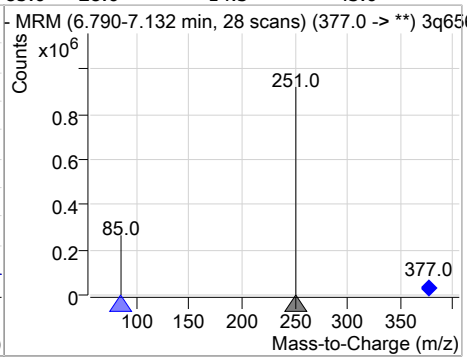


Perfluorinated Compounds by LC/MS/MS

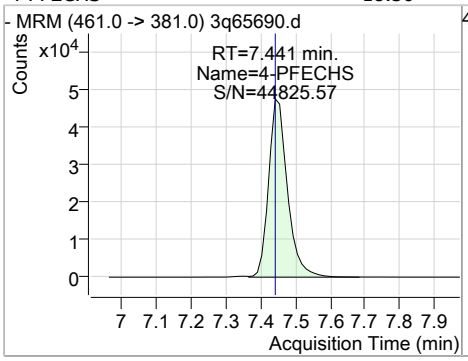
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.96	6.89	0.00	694211	377.0 -> 85.0	28.6	14.3	43.0

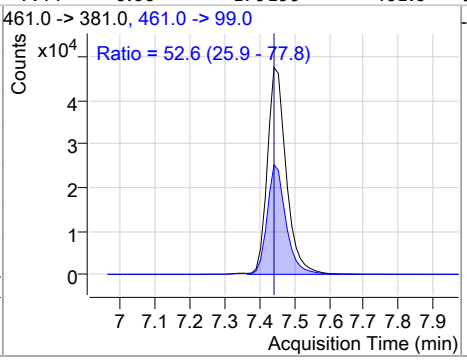


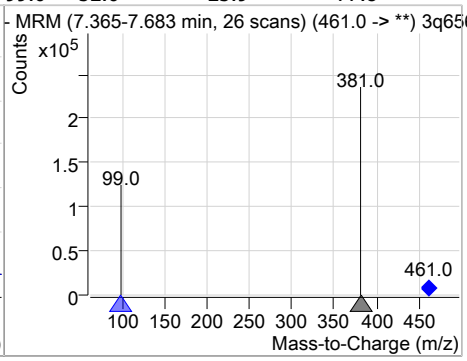




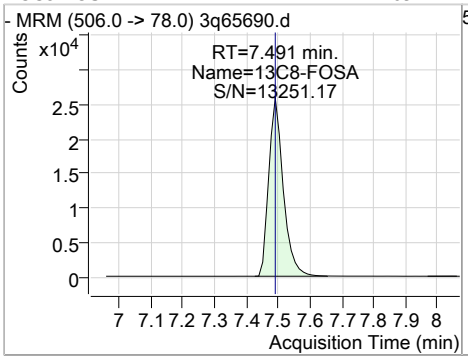
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.56	7.44	0.00	179199	461.0 -> 99.0	52.6	25.9	77.8

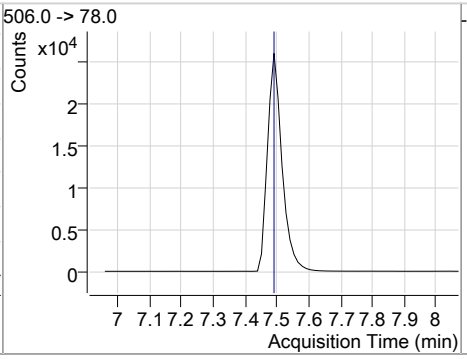


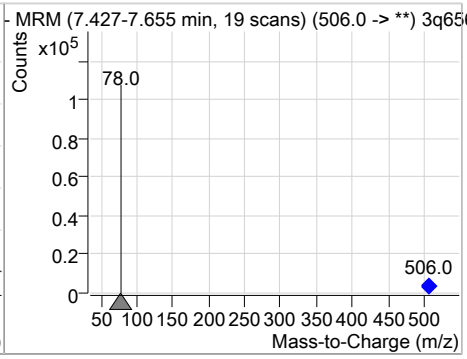




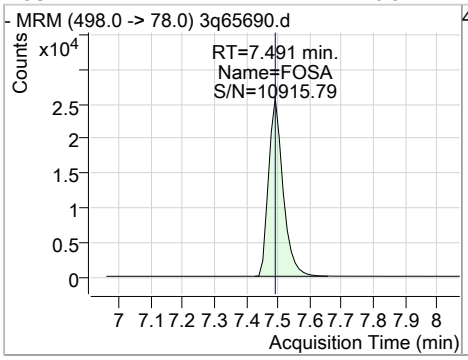
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.69	7.49	0.00	81921				

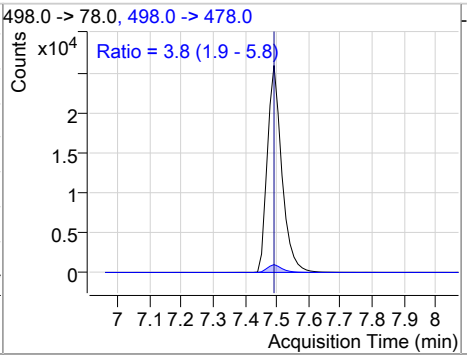


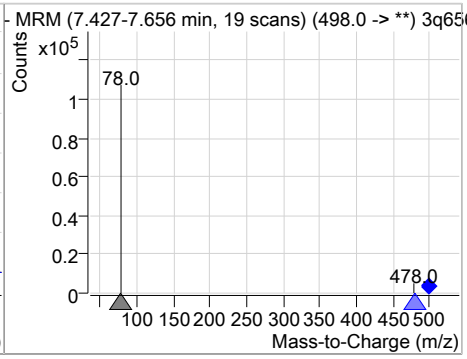




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.91	7.49	0.00	81532	498.0 -> 478.0	3.8	1.9	5.8

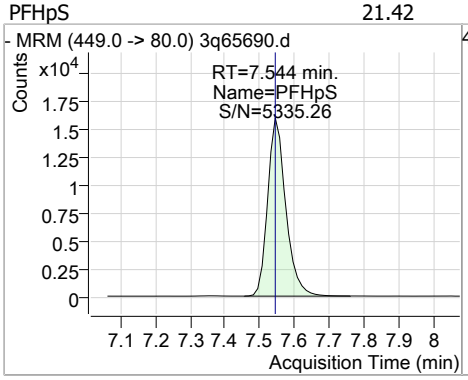


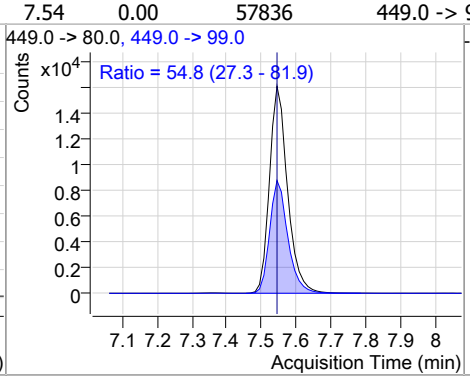


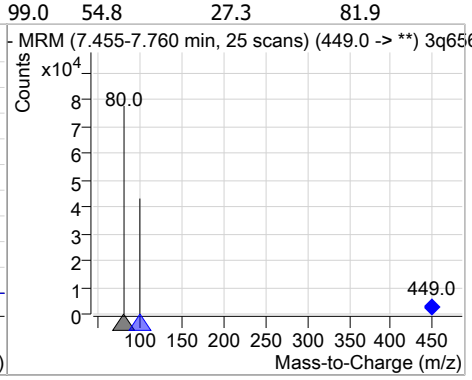


Perfluorinated Compounds by LC/MS/MS

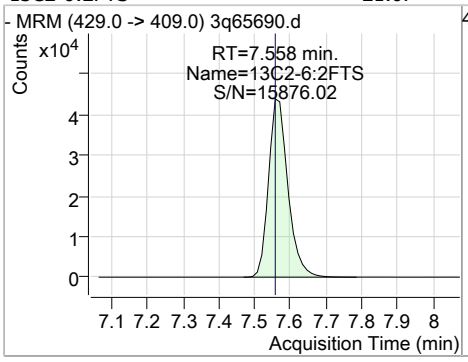
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.42	7.54	0.00	57836	449.0 -> 99.0	54.8	27.3	81.9

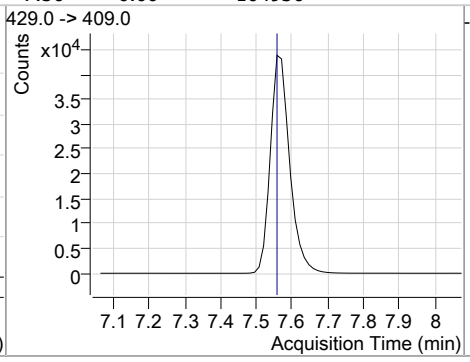


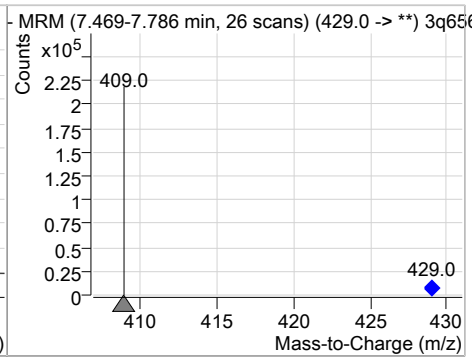




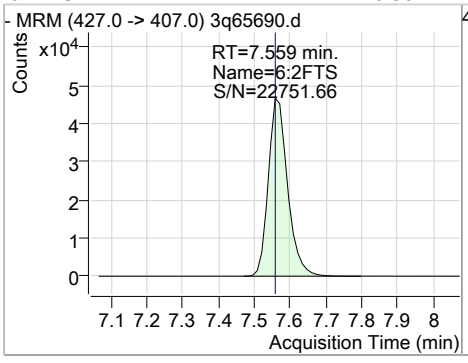
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.07	7.56	0.00	164936				

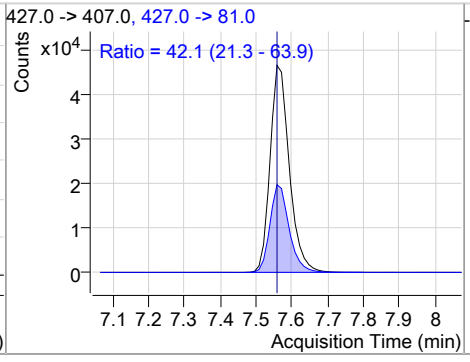


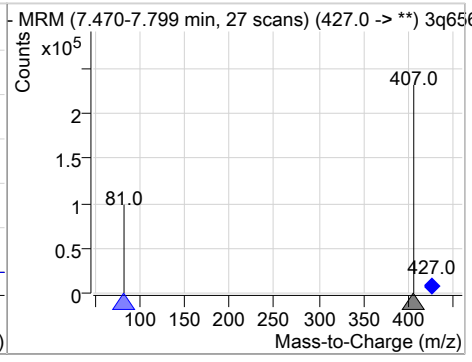




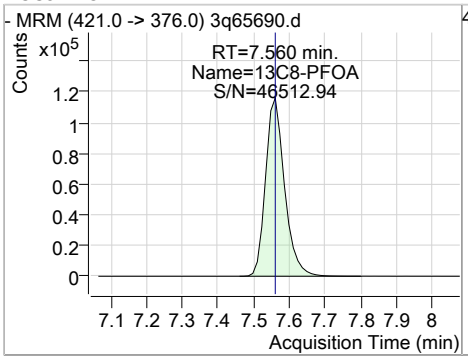
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.36	7.56	0.00	174501	427.0 -> 81.0	42.1	21.3	63.9

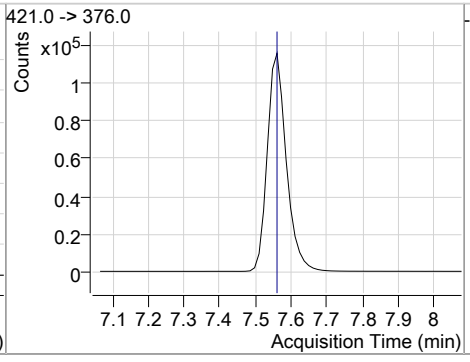


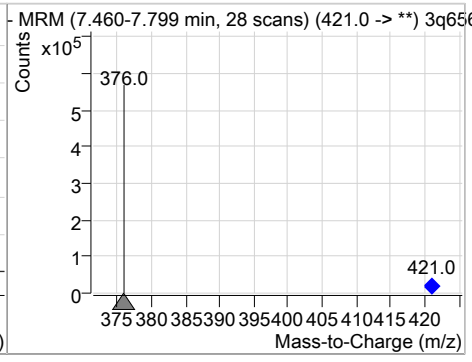




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.27	7.56	0.00	428242				

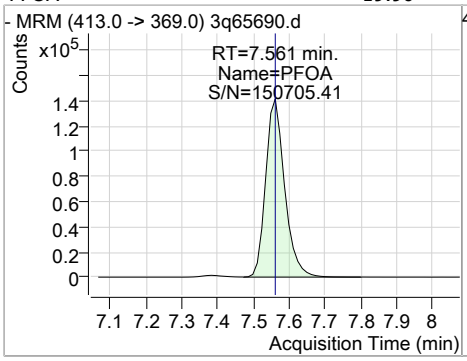


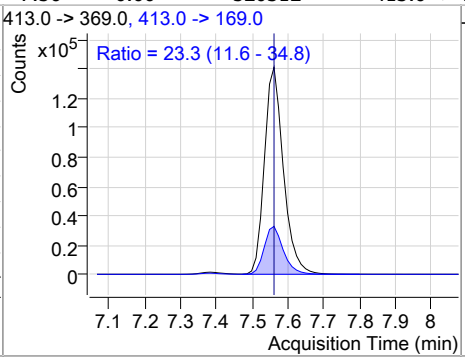


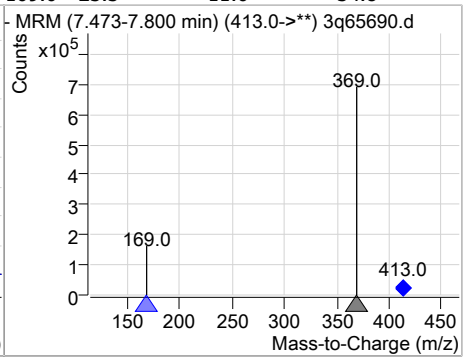


Perfluorinated Compounds by LC/MS/MS

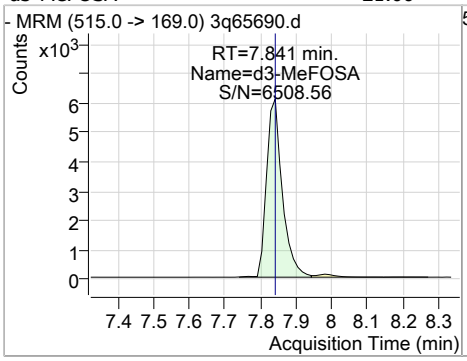
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.90	7.56	0.00	520312	413.0 -> 169.0	23.3	11.6	34.8

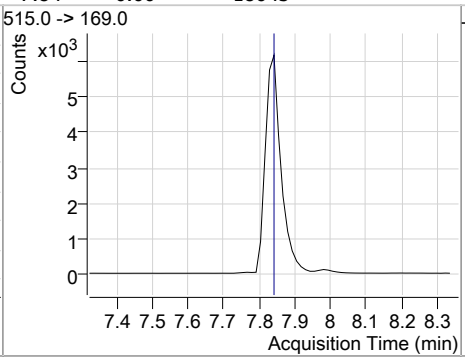


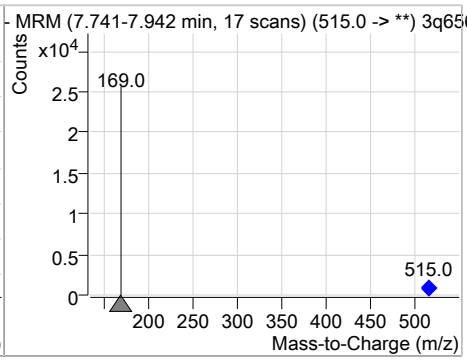




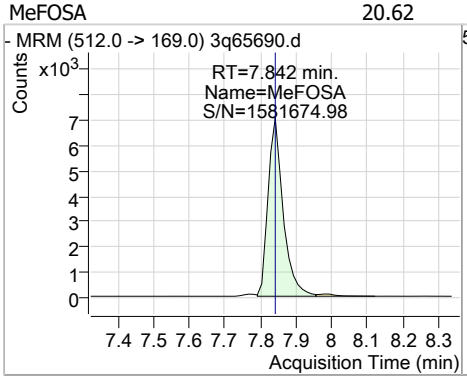
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.06	7.84	0.00	18645				

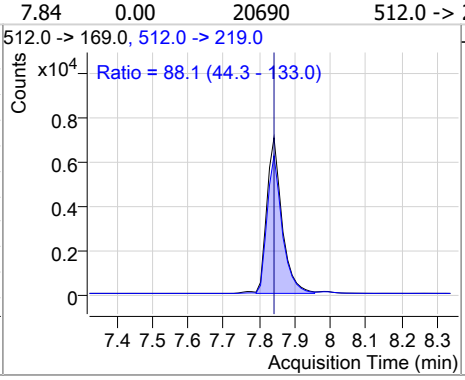


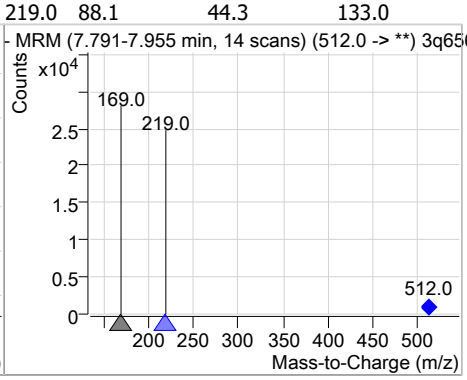




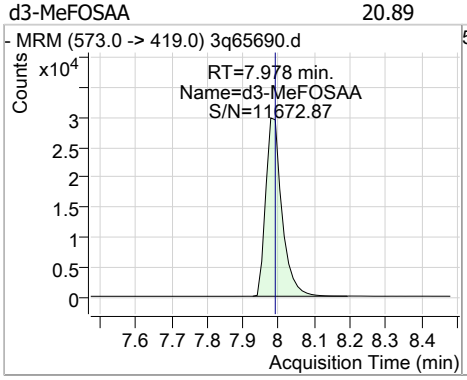
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.62	7.84	0.00	20690	512.0 -> 219.0	88.1	44.3	133.0

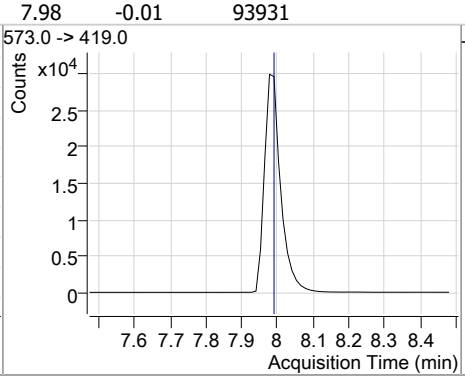


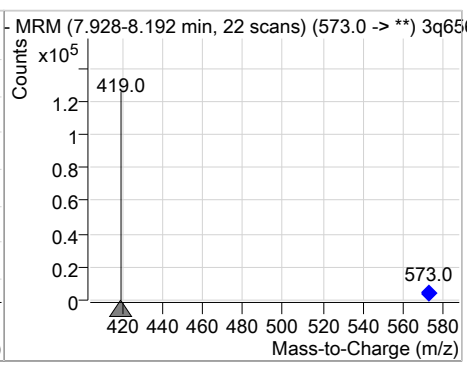




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.89	7.98	-0.01	93931				

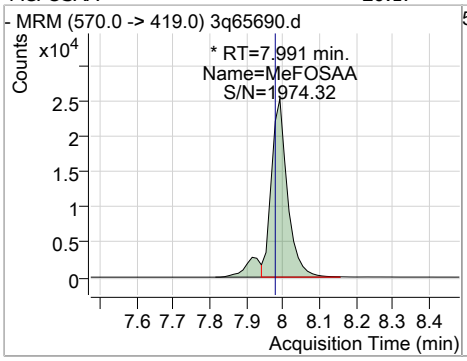


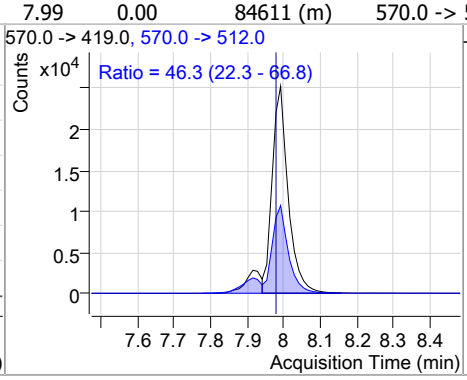


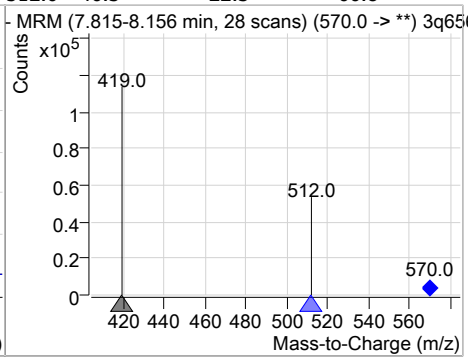


Perfluorinated Compounds by LC/MS/MS

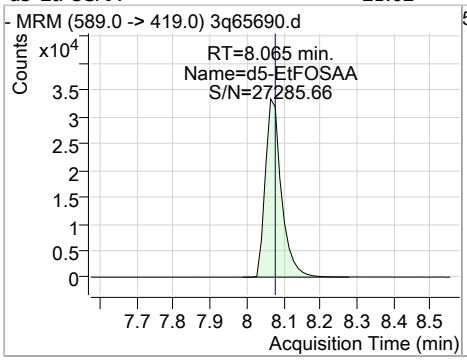
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.17	7.99	0.00	84611 (m)	570.0 -> 512.0	46.3	22.3	66.8

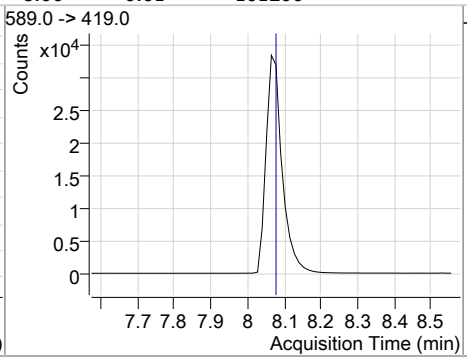


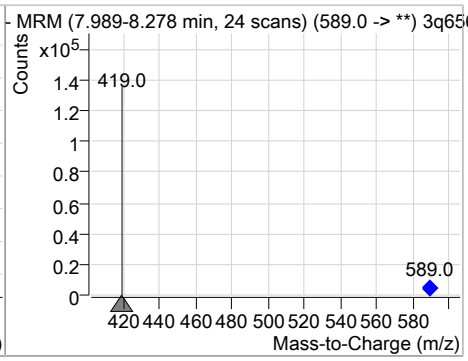




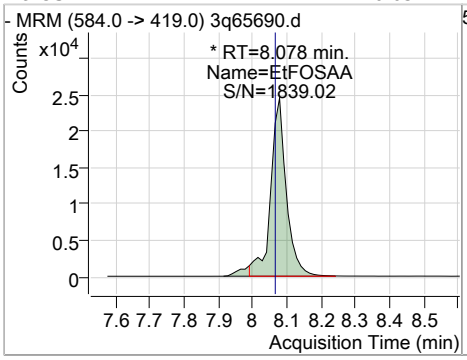
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.62	8.06	-0.01	101206				

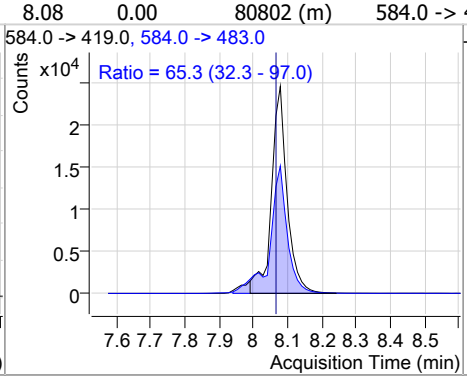


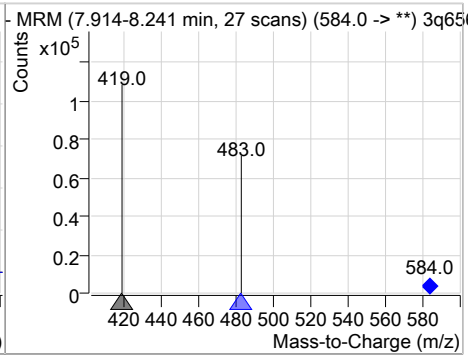




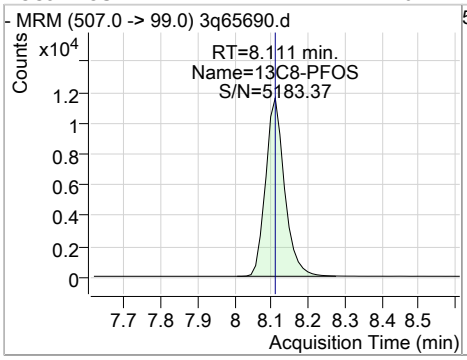
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.03	8.08	0.00	80802 (m)	584.0 -> 483.0	65.3	32.3	97.0

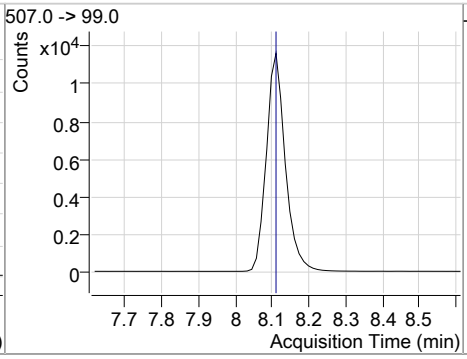


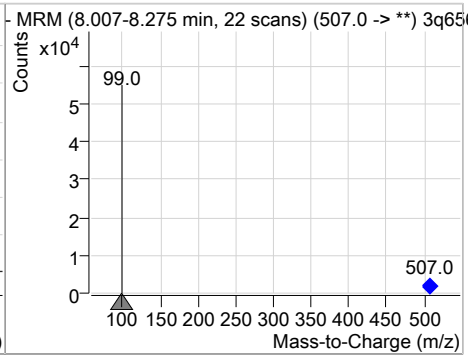




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.10	8.11	0.00	41395				

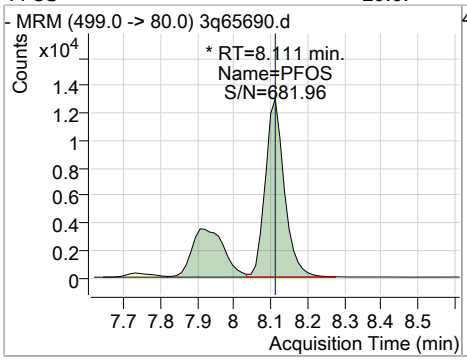


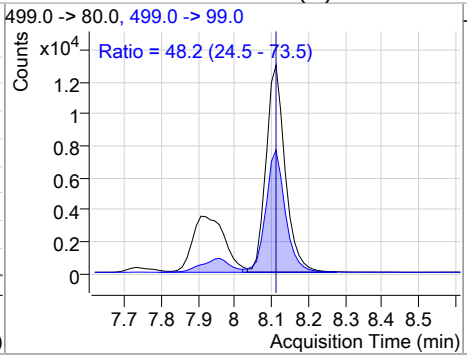


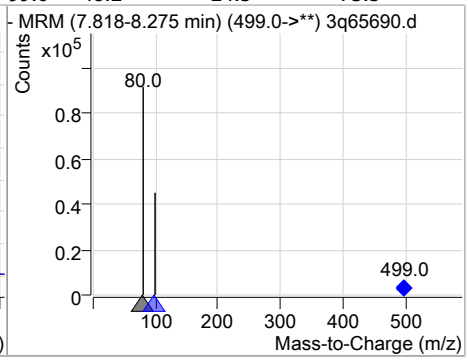


Perfluorinated Compounds by LC/MS/MS

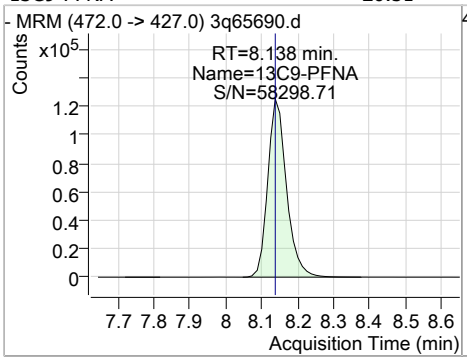
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.07	8.11	0.00	68408 (m)	499.0 -> 99.0	48.2	24.5	73.5

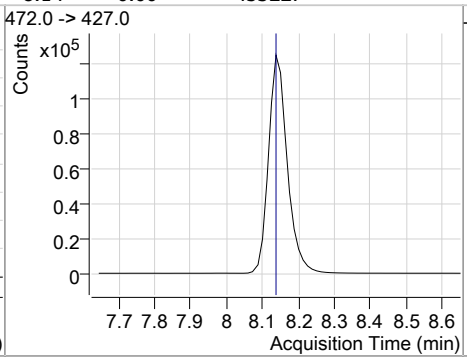


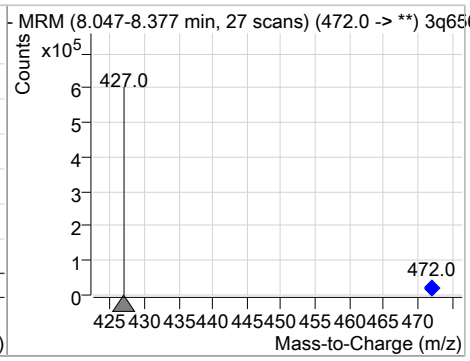




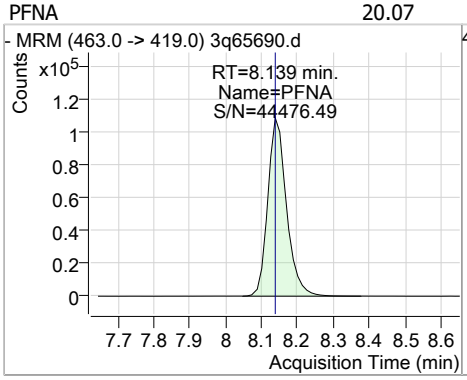
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.51	8.14	0.00	453227				

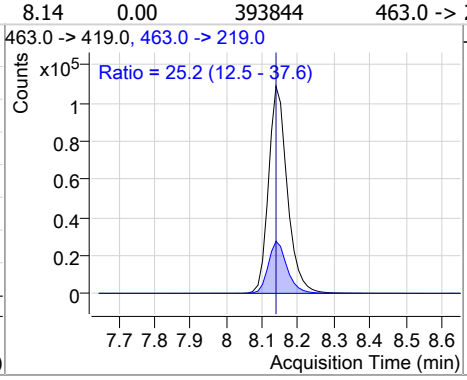


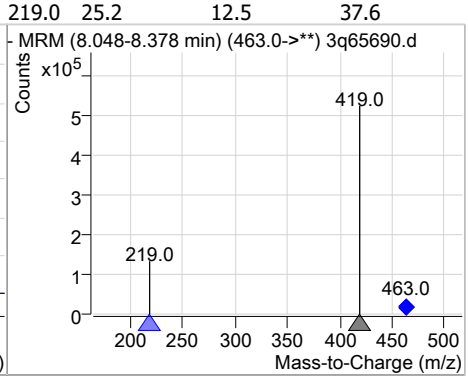




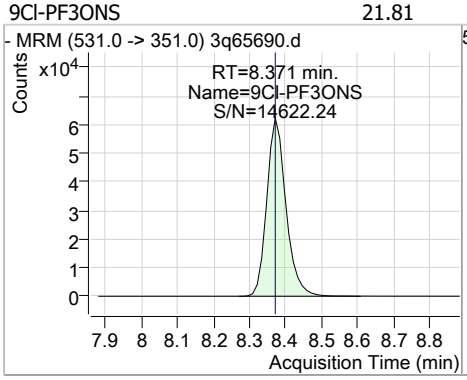
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.07	8.14	0.00	393844	463.0 -> 219.0	25.2	12.5	37.6

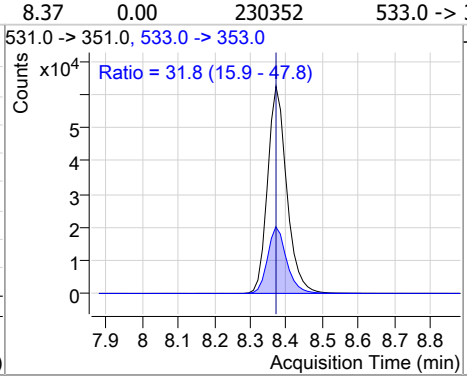


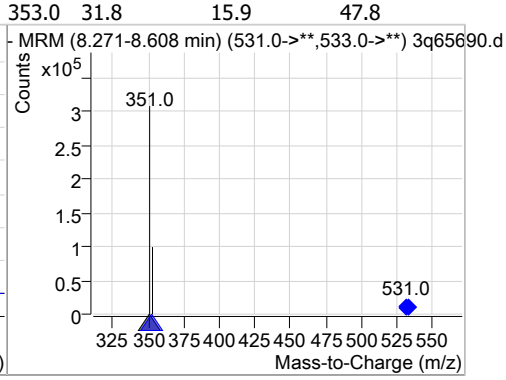




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.81	8.37	0.00	230352	533.0 -> 353.0	31.8	15.9	47.8

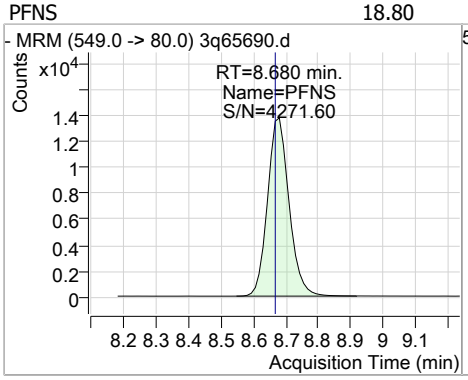


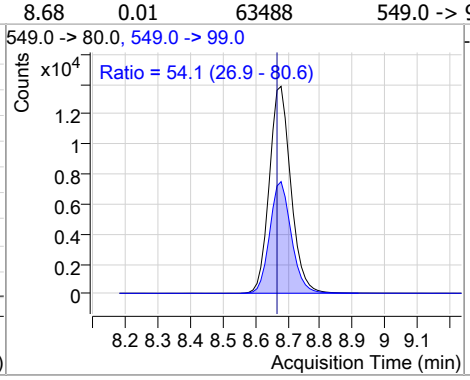


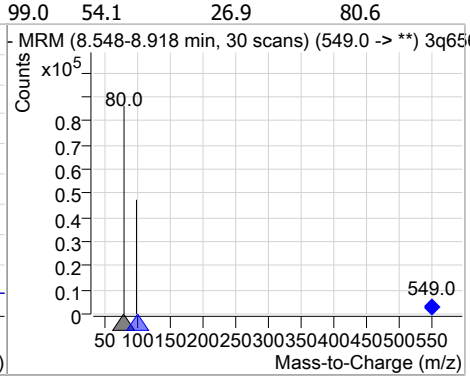


Perfluorinated Compounds by LC/MS/MS

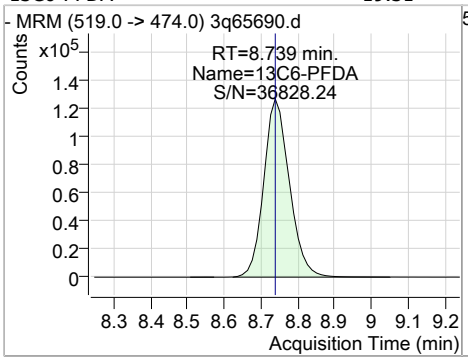
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.80	8.68	0.01	63488	549.0 -> 99.0	54.1	26.9	80.6

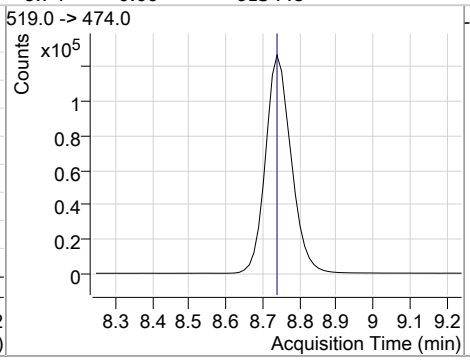


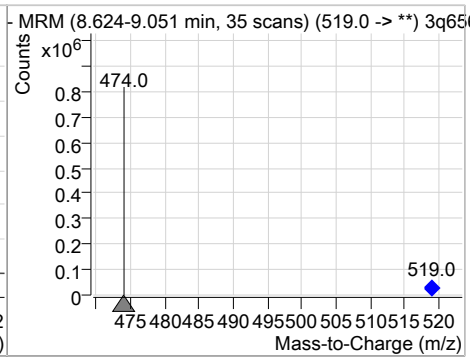




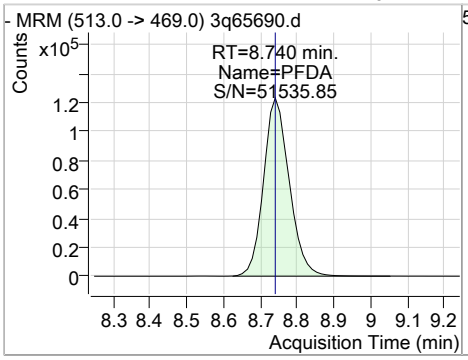
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.31	8.74	0.00	613448				

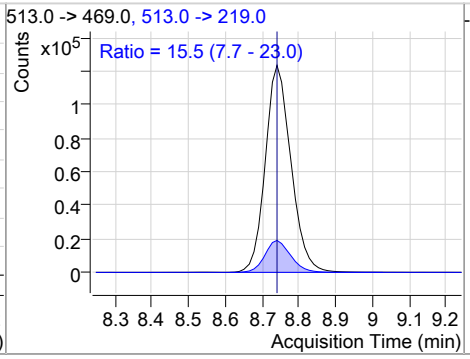


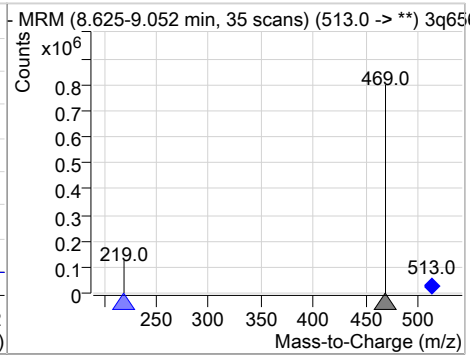




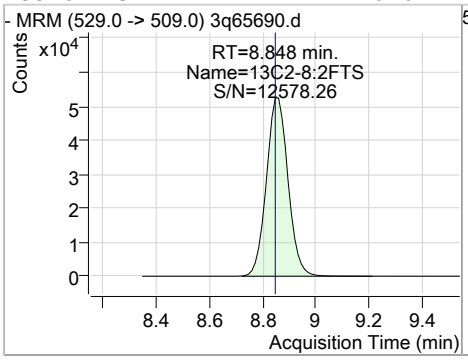
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.22	8.74	0.00	597627	513.0 -> 219.0	15.5	7.7	23.0

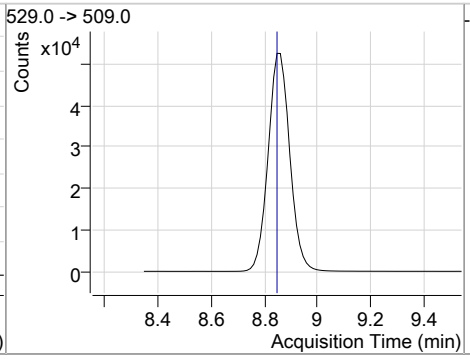


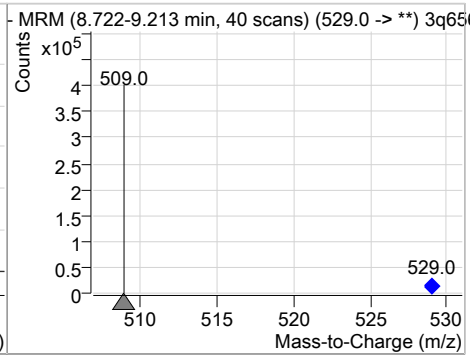




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.40	8.85	0.00	296473				

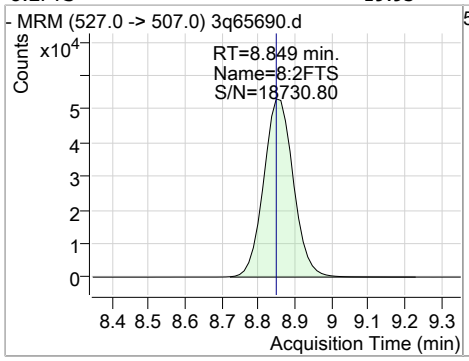


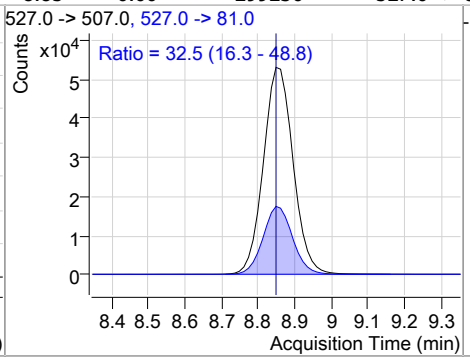


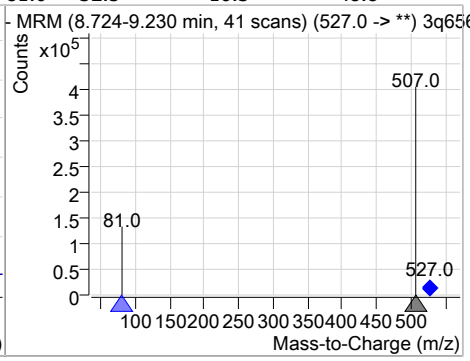


Perfluorinated Compounds by LC/MS/MS

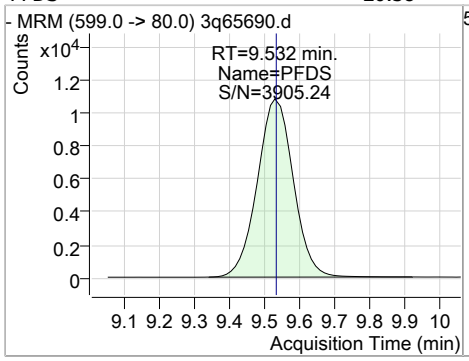
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.93	8.85	0.00	299236	527.0 -> 81.0	32.5	16.3	48.8

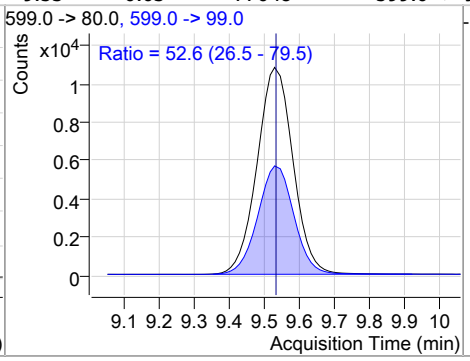


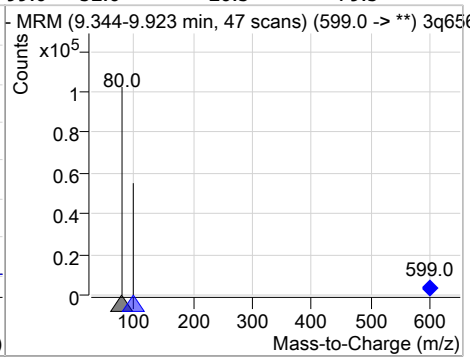




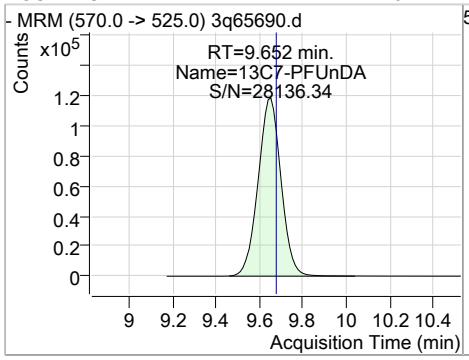
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.38	9.53	-0.03	77048	599.0 -> 99.0	52.6	26.5	79.5

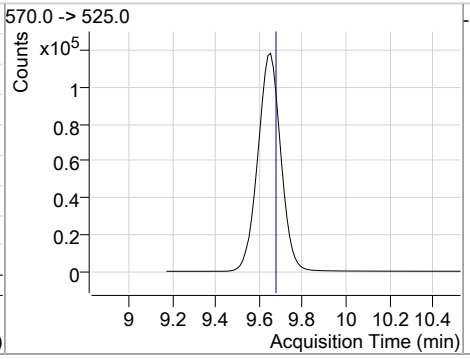


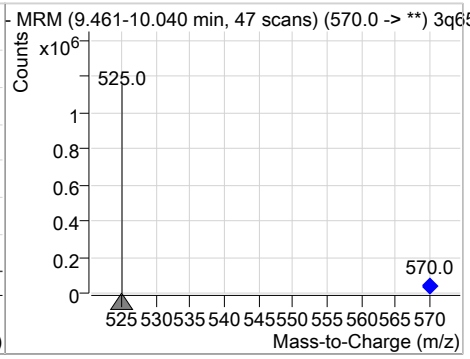




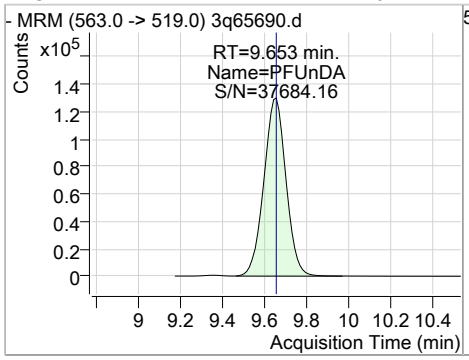
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.01	9.65	-0.03	867367				

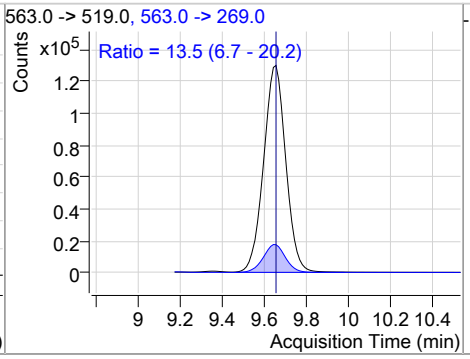


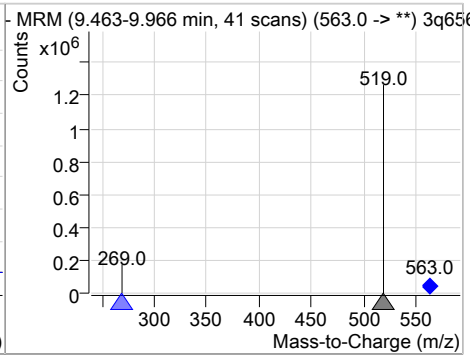




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.27	9.65	-0.03	947192	563.0 -> 269.0	13.5	6.7	20.2

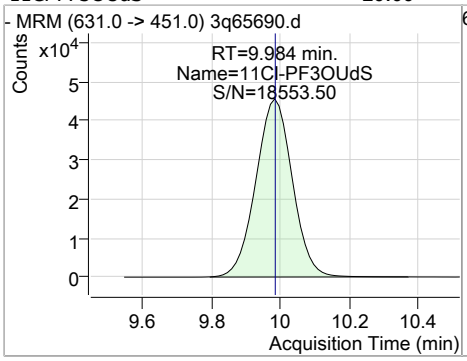


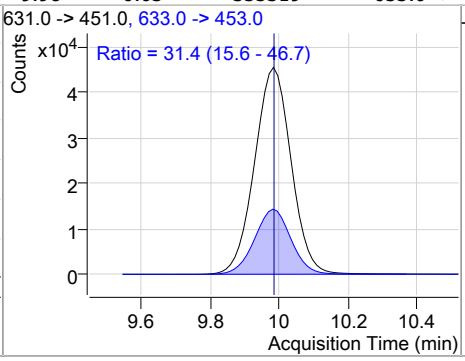


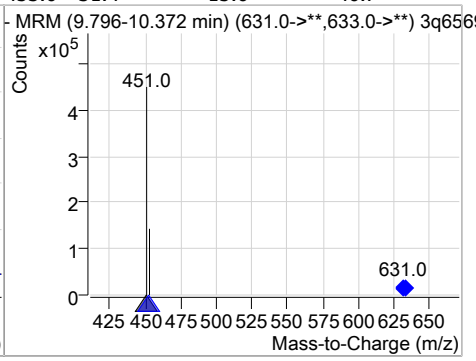


Perfluorinated Compounds by LC/MS/MS

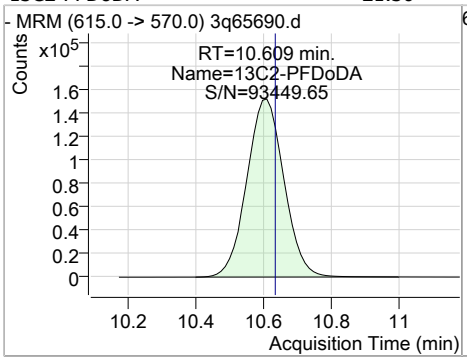
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.00	9.98	-0.03	335319	633.0 -> 453.0	31.4	15.6	46.7

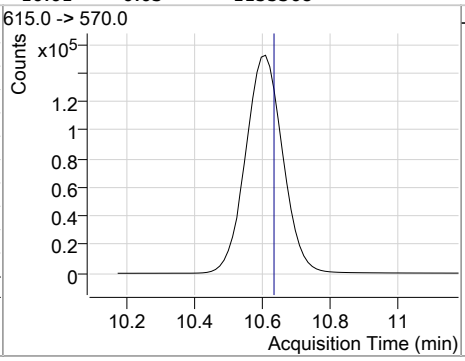


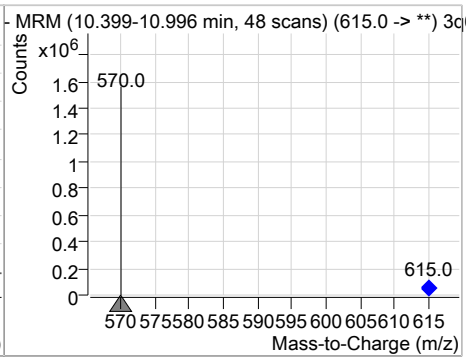




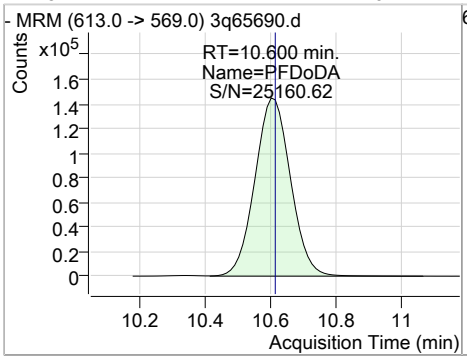
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.36	10.61	-0.03	1155368				

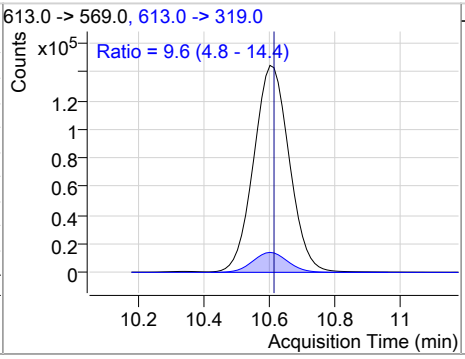


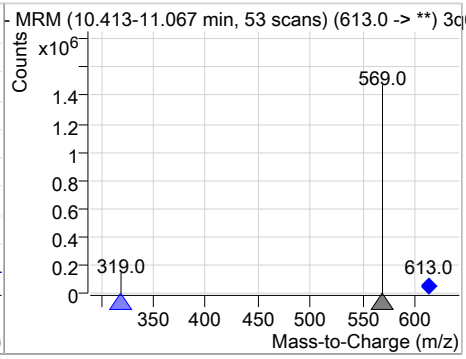




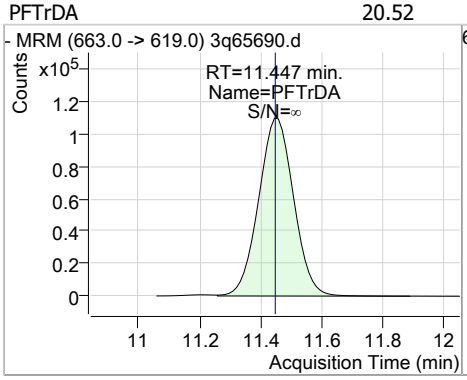
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.47	10.60	-0.04	1098250	613.0 -> 319.0	9.6	4.8	14.4

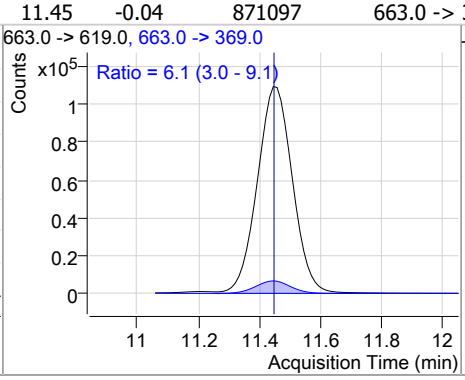


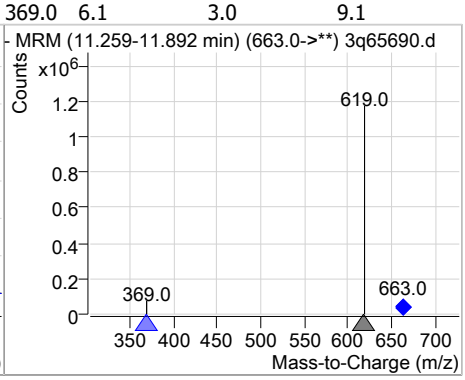




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.52	11.45	-0.04	871097	663.0 -> 369.0	6.1	3.0	9.1

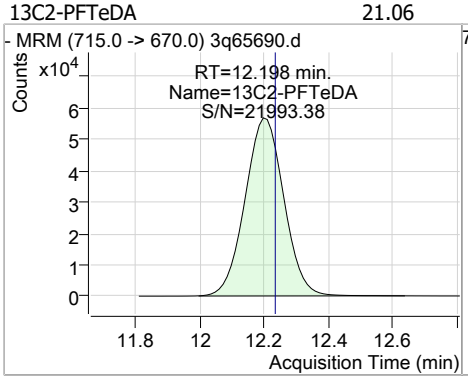


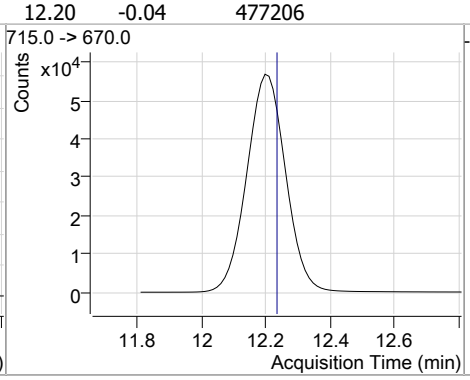


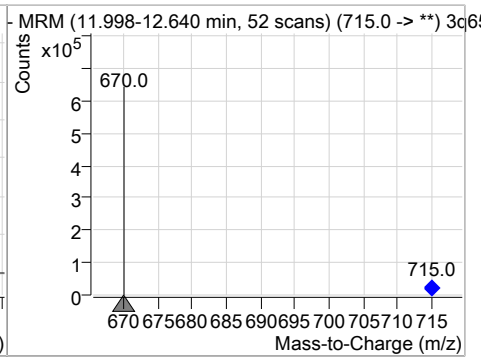


Perfluorinated Compounds by LC/MS/MS

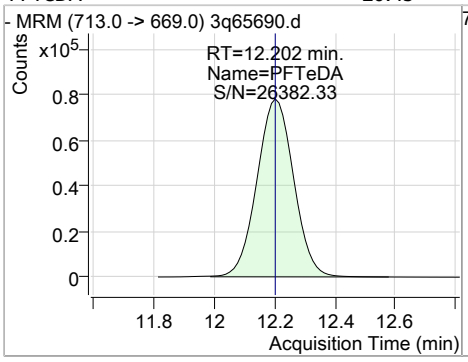
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.06	12.20	-0.04	477206				

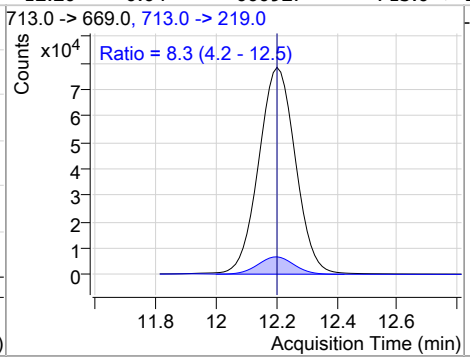


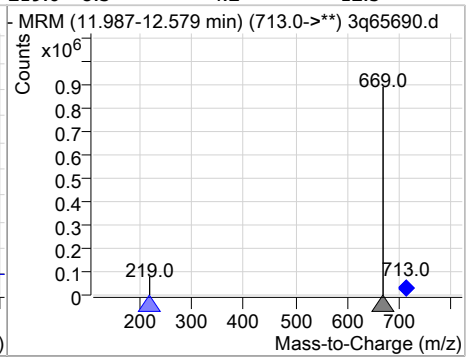




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.45	12.20	-0.04	660927	713.0 -> 219.0	8.3	4.2	12.5







7.7.12

7

Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65690.D
Injection Time: 09/13/22 19:45
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:44

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65691.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 8:04:39 PM
Sample Name : cc898-1.0LL
Vial : P1-A3
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

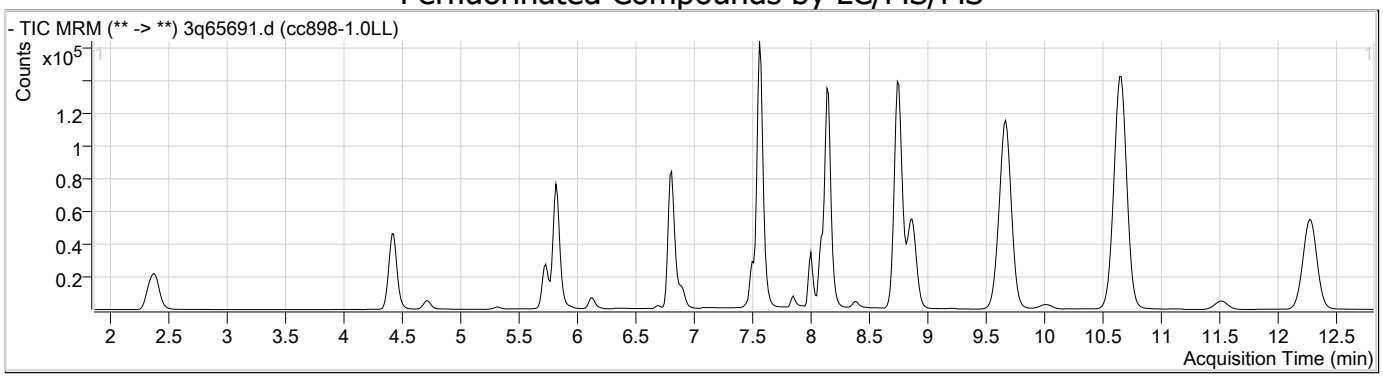
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	149485	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	220652	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	291162	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	291388	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	395749	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	435794	20.00	µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	632084	20.00	µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	795585	20.00	µg/L	-0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1046148	20.00	µg/L	0.013
M2-PFTeDA	12.260	715.0 -> 670.0	432653	20.00	µg/L	0.025
M8-FOSA	7.491	506.0 -> 78.0	78609	20.00	µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	20220	20.00	µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	24807	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	37631	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	102965	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	148390	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	271945	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	91052	20.00	µg/L	0.000
M3-HFPO-DA	6.117	287.0 -> 169.0	23116	20.00	µg/L	0.000
M3-MeFOSA	7.841	515.0 -> 169.0	17645	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	93675	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	102965	17.83	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-6:2FTS	7.571	429.0 -> 409.0	148390	18.96	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-8:2FTS	8.860	529.0 -> 509.0	271945	18.71	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-PFDoDA	10.646	615.0 -> 570.0	1046148	19.34	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-PFTeDA	12.260	715.0 -> 670.0	432653	19.10	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C3-PFBS	4.704	302.0 -> 99.0	20220	19.11	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%		
13C3-PFHxS	6.822	402.0 -> 99.0	24807	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C4-PFBA	2.365	217.0 -> 172.0	149485	18.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C4-PFHpA	6.805	367.0 -> 322.0	291388	19.34	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C5-PFHxA	5.813	318.0 -> 273.0	291162	19.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C5-PFPeA	4.411	268.0 -> 223.0	220652	19.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C6-PFDA	8.739	519.0 -> 474.0	632084	19.90	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

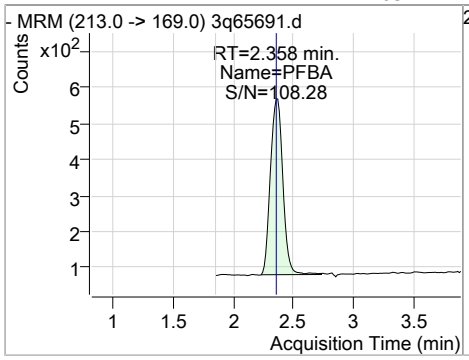
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C7-PFUnDA	9.664	570.0 -> 525.0	795585	19.27	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%			
13C8-FOSA	7.491	506.0 -> 78.0	78609	20.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%			
13C8-PFOA	7.560	421.0 -> 376.0	395749	19.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C8-PFOS	8.111	507.0 -> 99.0	37631	19.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C9-PFNA	8.150	472.0 -> 427.0	435794	19.73	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d3-MeFOSAA	7.991	573.0 -> 419.0	91052	20.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	23113	18.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%			
d3-MeFOSA	7.841	515.0 -> 169.0	17645	19.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
d5-EtFOSAA	8.077	589.0 -> 419.0	93704	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	5920	1.09	µg/L		98
6:2FTS	7.571	427.0 -> 407.0	8176	1.06	µg/L		100
8:2FTS	8.861	527.0 -> 507.0	14346	1.04	µg/L		96
EtFOSAA	8.078	584.0 -> 419.0	4099	1.10	µg/L	m	98
FOSA	7.491	498.0 -> 78.0	3967	1.06	µg/L		97
MeFOSAA	7.991	570.0 -> 419.0	4178	1.03	µg/L	m	95
PFBA	2.358	213.0 -> 169.0	3529	1.03	µg/L		100
PFBS	4.707	299.0 -> 80.0	2842	0.99	µg/L		95
PFDA	8.740	513.0 -> 469.0	30561	1.00	µg/L		99
PFDoDA	10.638	613.0 -> 569.0	49643	1.02	µg/L		99
PFDS	9.548	599.0 -> 80.0	3599	1.04	µg/L		99
PFHpA	6.794	363.0 -> 319.0	21332	1.02	µg/L		98
PFHpS	7.544	449.0 -> 80.0	2626	1.07	µg/L		98
PFHxA	5.814	313.0 -> 269.0	15800	1.02	µg/L		100
PFHxS	6.823	399.0 -> 80.0	2977	1.03	µg/L	m	99
PFNA	8.151	463.0 -> 419.0	19127	1.01	µg/L		99
PFNS	8.680	549.0 -> 80.0	2913	0.95	µg/L		95
PFOA	7.561	413.0 -> 369.0	24153	1.00	µg/L		99
PFOS	8.111	499.0 -> 80.0	3178	1.03	µg/L	m	96
PFPeA	4.414	263.0 -> 219.0	9898	1.03	µg/L		100
PFPeS	5.932	349.0 -> 80.0	2364	1.06	µg/L		98
PFTeDA	12.264	713.0 -> 669.0	30663	1.05	µg/L		100
PFTrDA	11.509	663.0 -> 619.0	39313	1.02	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	43032	1.00	µg/L		99
11Cl-PF3OUdS	10.009	631.0 -> 451.0	14930	0.98	µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	10877	1.00	µg/L		99
ADONA	6.891	377.0 -> 251.0	31236	0.99	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	3003	1.09	µg/L		99
MeFOSA	7.842	512.0 -> 169.0	1096	1.15	µg/L		91
4-PFECHS	7.454	461.0 -> 381.0	7926	0.89	µg/L		98
FBSA	5.315	298.0 -> 78.0	5256	1.06	µg/L		100
FHxSA	6.688	398.0 -> 78.0	6079	1.04	µg/L		99

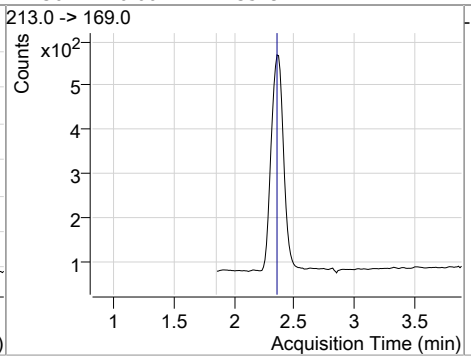
 # = Qualifier out of range, m = manually integrated, + = Area summed

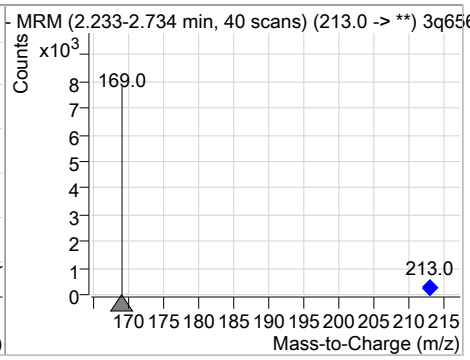
Perfluorinated Compounds by LC/MS/MS



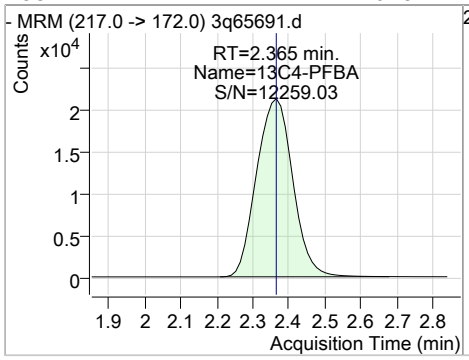
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.03	2.36	0.00	3529				

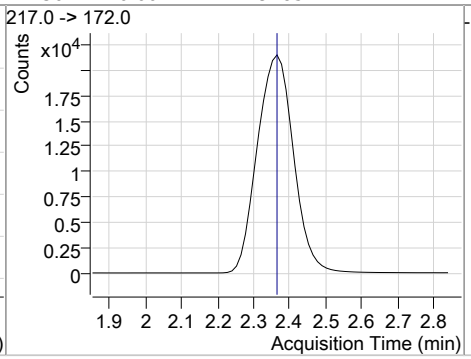


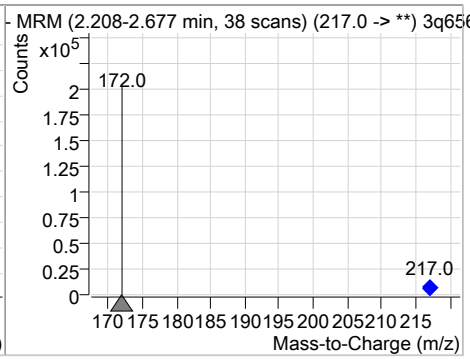




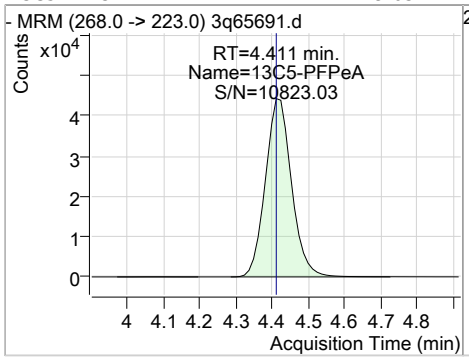
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.79	2.36	0.00	149485				

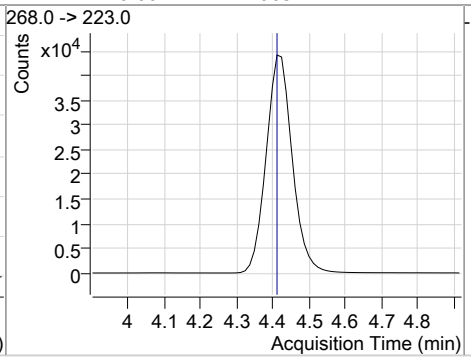


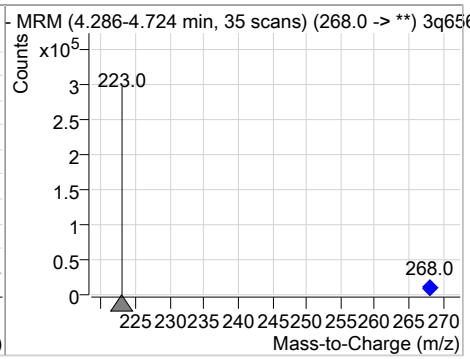




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.03	4.41	0.00	220652				

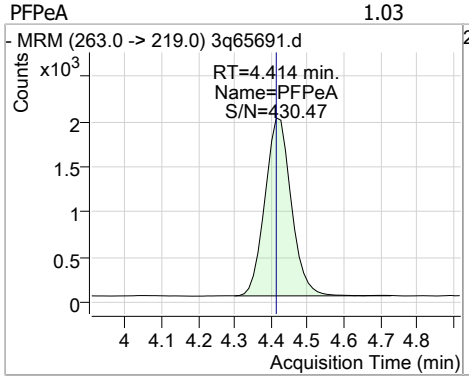


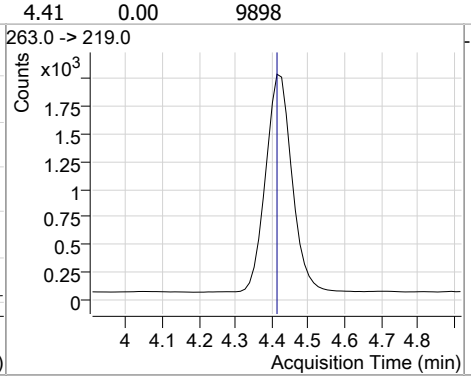


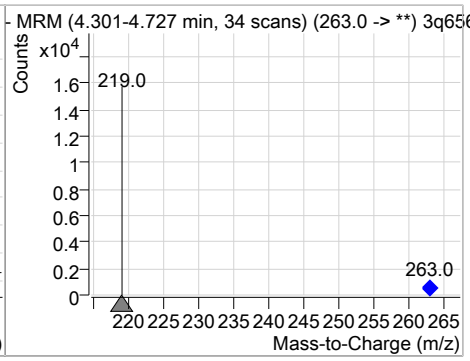


Perfluorinated Compounds by LC/MS/MS

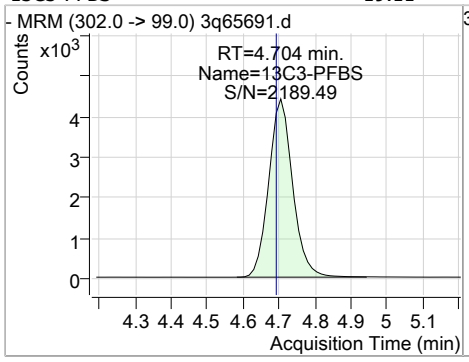
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.03	4.41	0.00	9898				

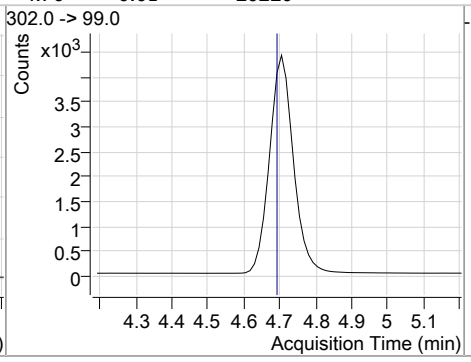


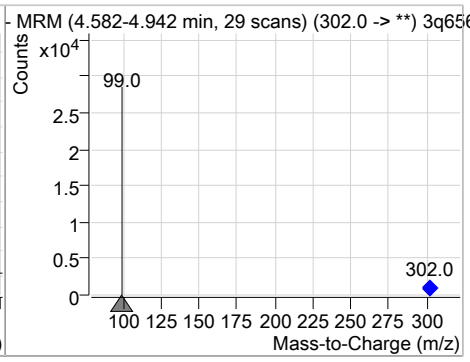




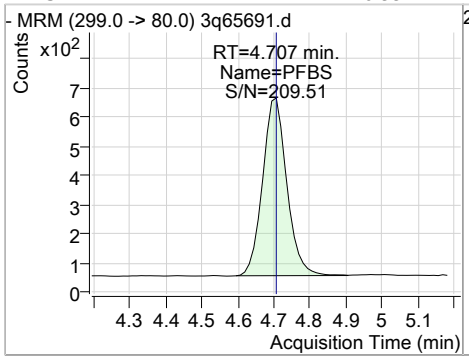
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.11	4.70	0.01	20220				

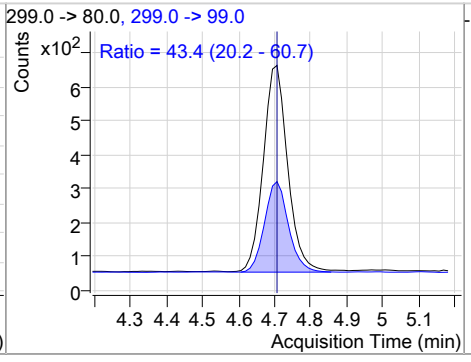


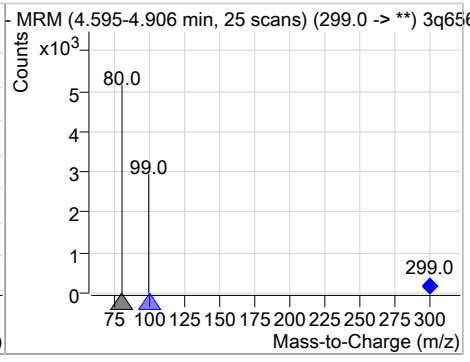




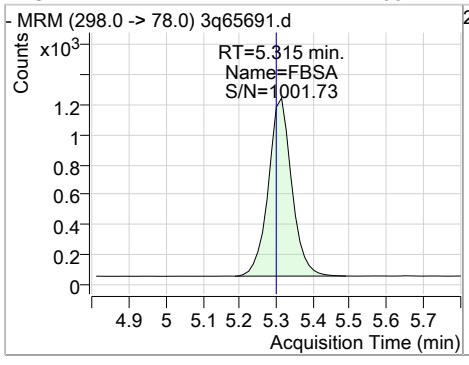
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.99	4.71	0.01	2842	299.0 -> 99.0	43.4	20.2	60.7

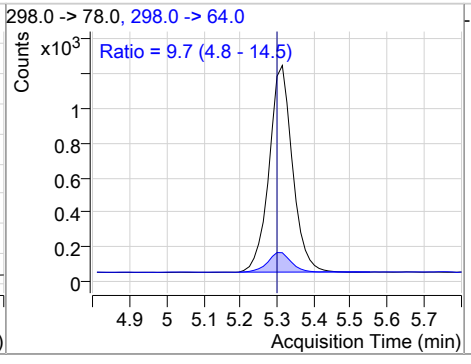


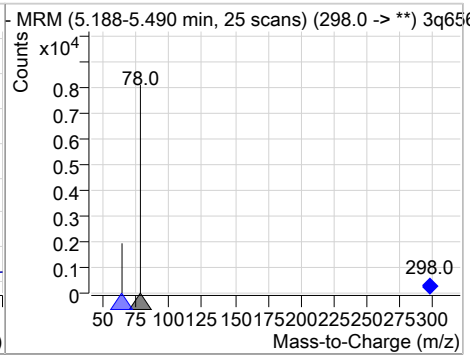




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.06	5.31	0.01	5256	298.0 -> 64.0	9.7	4.8	14.5

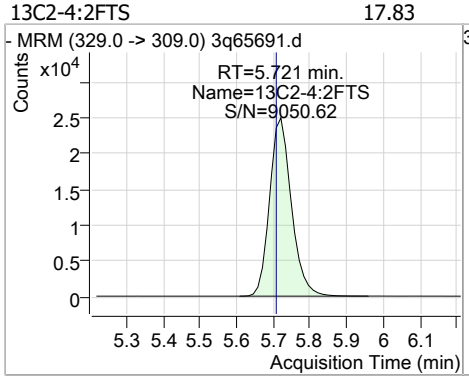


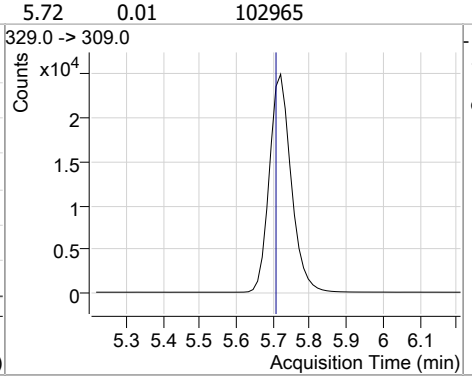


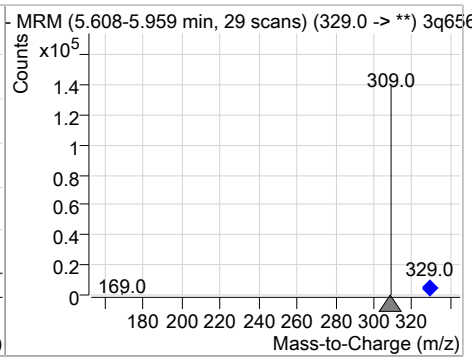


Perfluorinated Compounds by LC/MS/MS

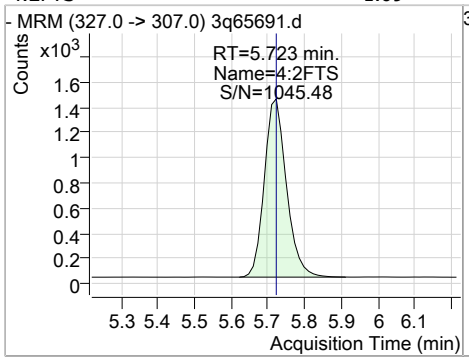
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.83	5.72	0.01	102965				

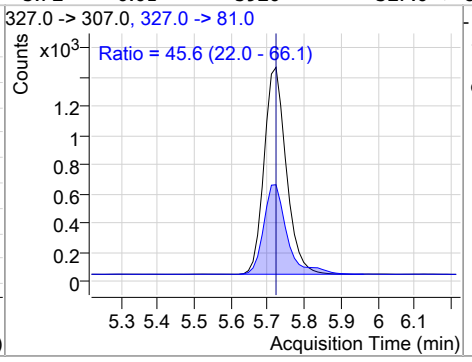


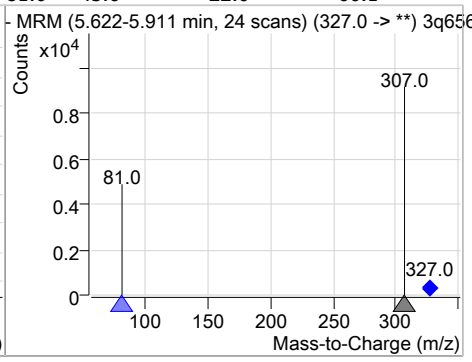




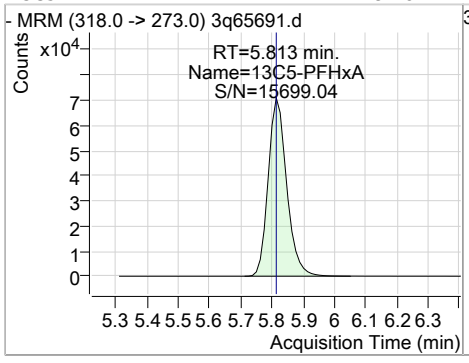
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.09	5.72	0.01	5920	327.0 -> 81.0	45.6	22.0	66.1

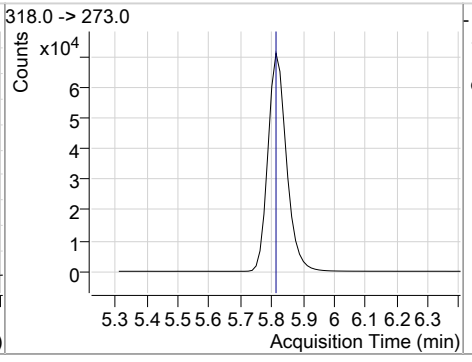


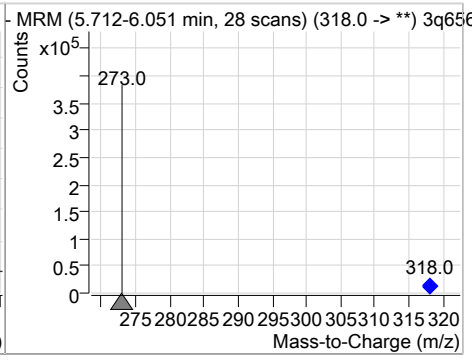




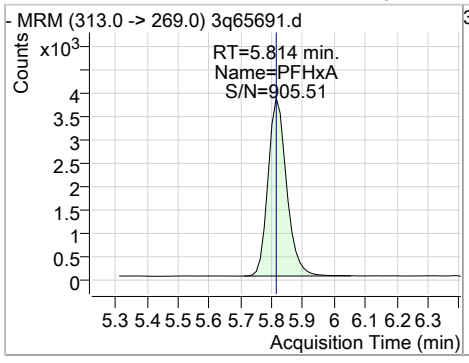
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.18	5.81	0.00	291162				

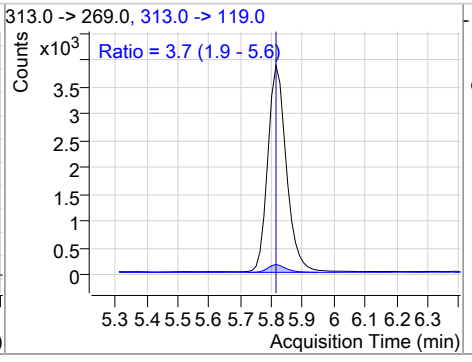


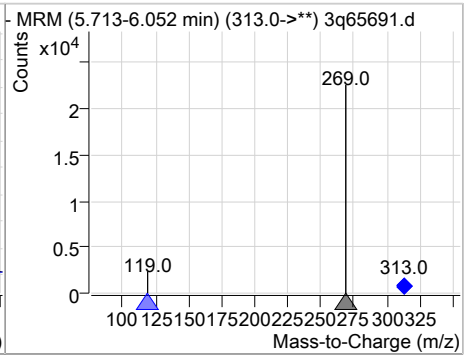




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.02	5.81	0.00	15800	313.0 -> 119.0	3.7	1.9	5.6

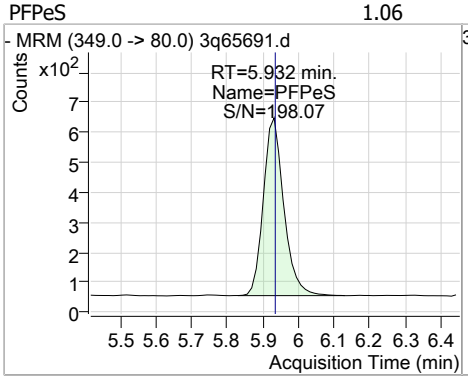


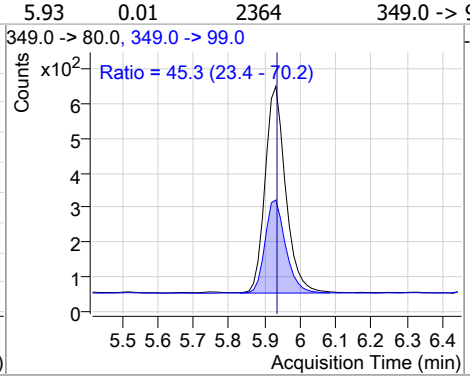


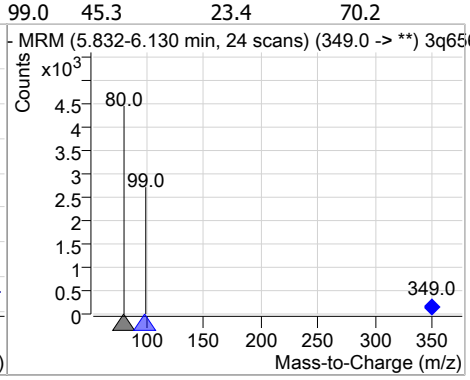


Perfluorinated Compounds by LC/MS/MS

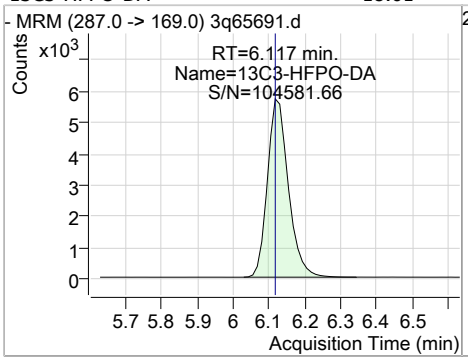
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.06	5.93	0.01	2364	349.0 -> 99.0	45.3	23.4	70.2

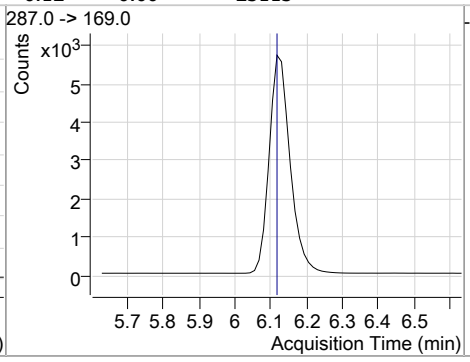


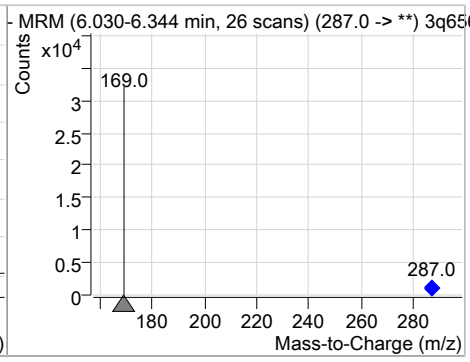




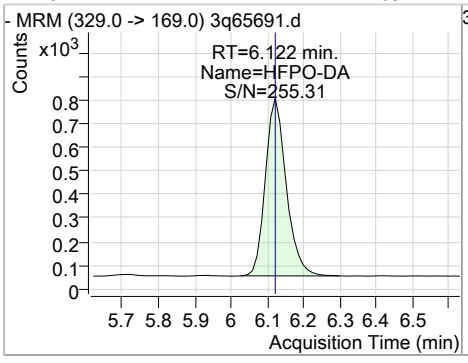
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.01	6.12	0.00	23113				

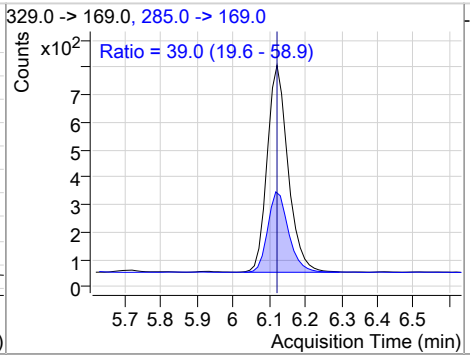


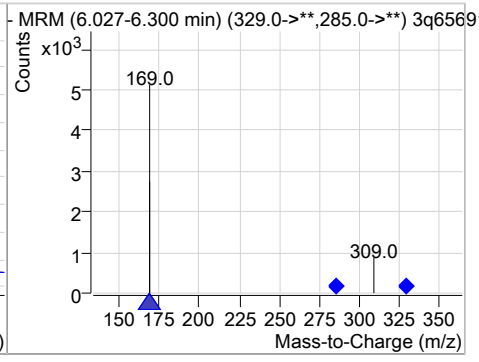




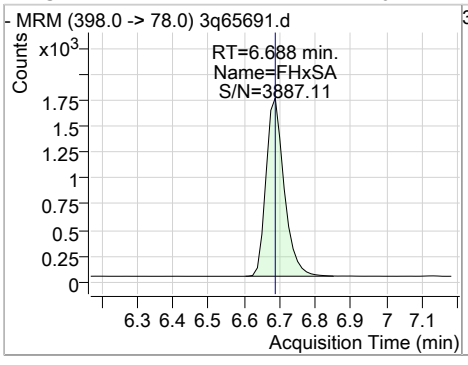
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.09	6.12	0.00	3003	285.0 -> 169.0	39.0	19.6	58.9

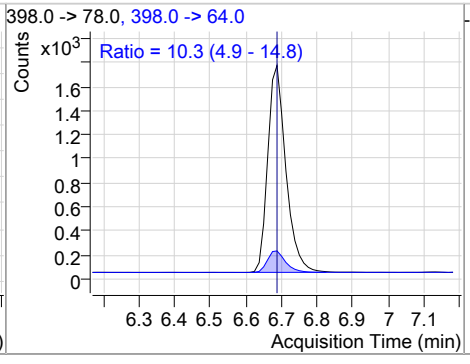


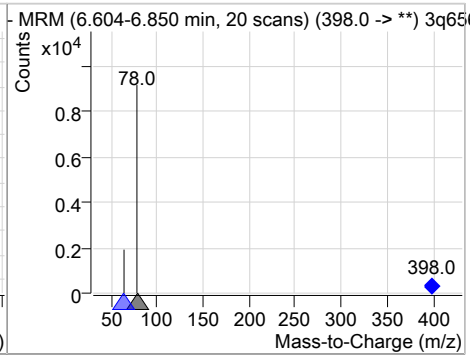




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.04	6.69	0.00	6079	398.0 -> 64.0	10.3	4.9	14.8

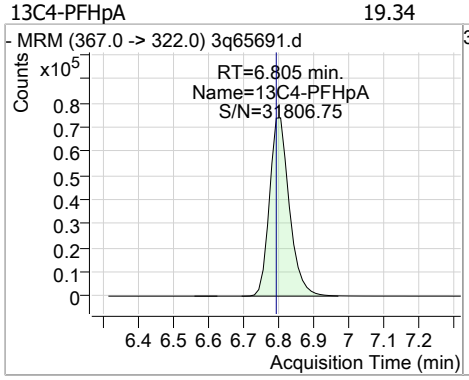


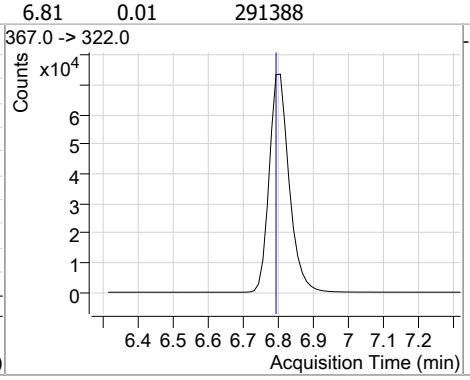


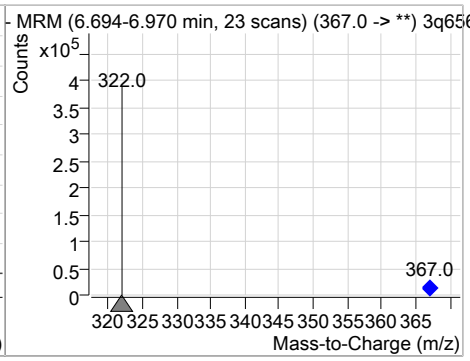


Perfluorinated Compounds by LC/MS/MS

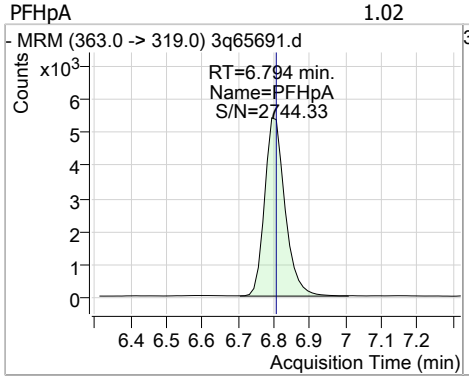
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.34	6.81	0.01	291388				

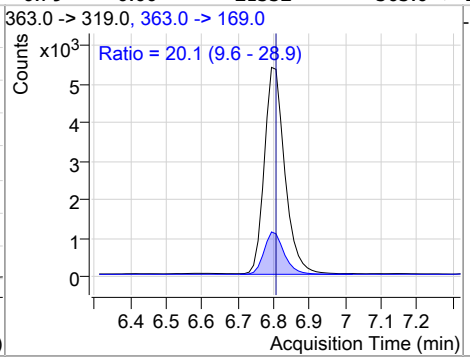


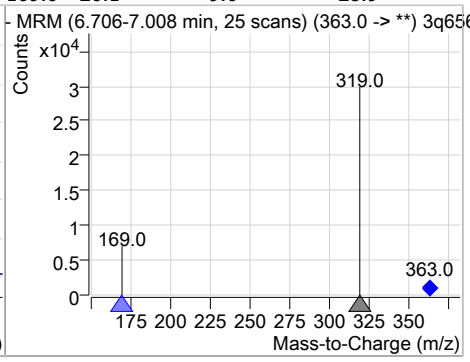




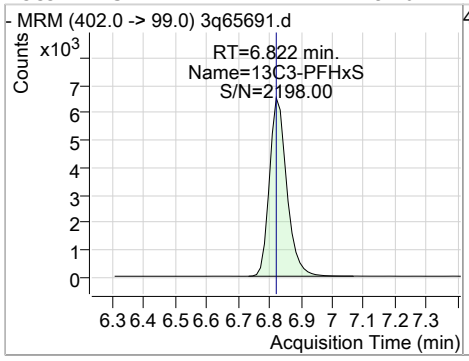
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.02	6.79	0.00	21332	363.0 -> 169.0	20.1	9.6	28.9

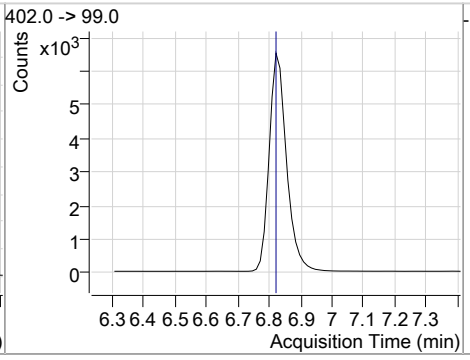


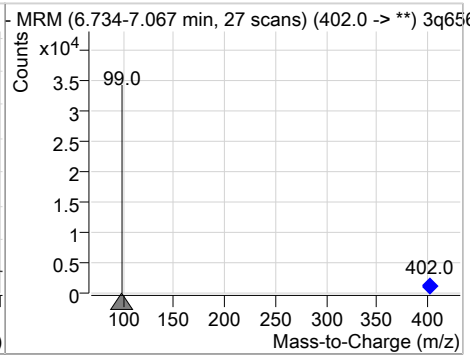




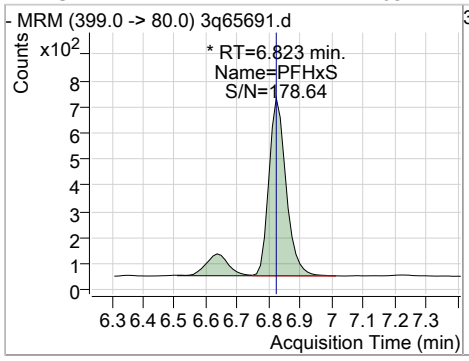
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.20	6.82	0.00	24807				

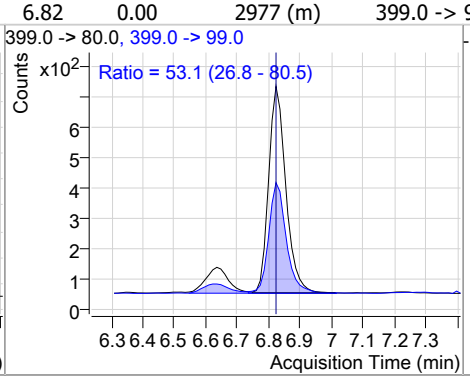


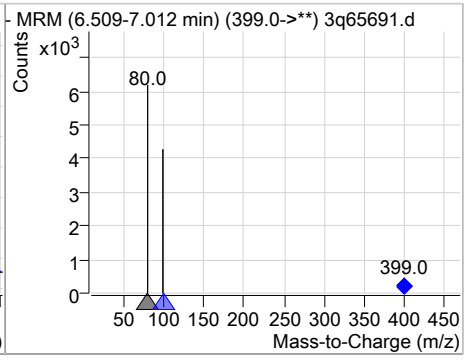




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.03	6.82	0.00	2977 (m)	399.0 -> 99.0	53.1	26.8	80.5

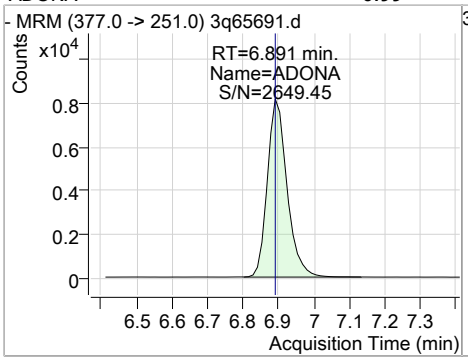


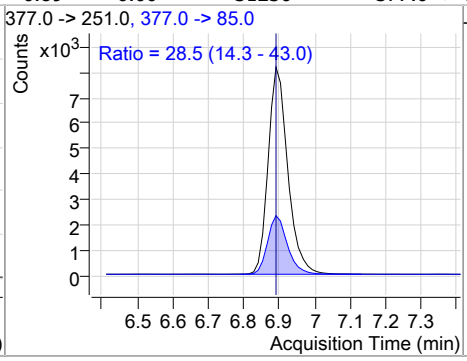


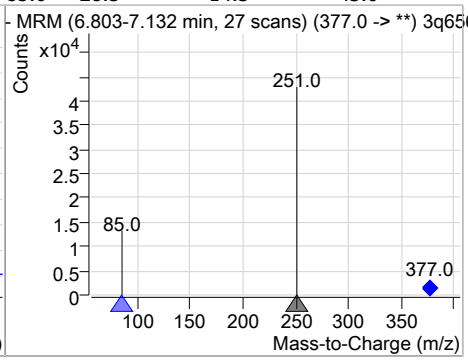


Perfluorinated Compounds by LC/MS/MS

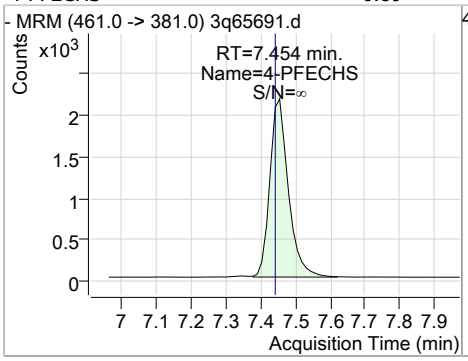
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.99	6.89	0.00	31236	377.0 -> 85.0	28.5	14.3	43.0

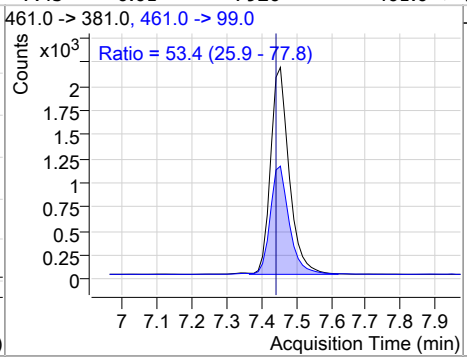


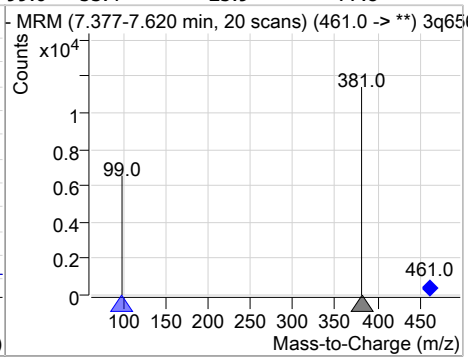




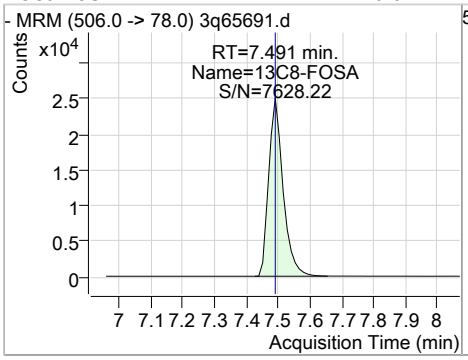
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.89	7.45	0.01	7926	461.0 -> 99.0	53.4	25.9	77.8

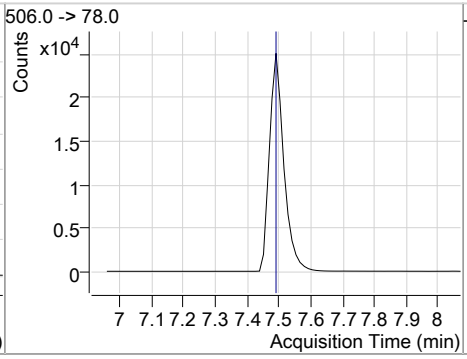


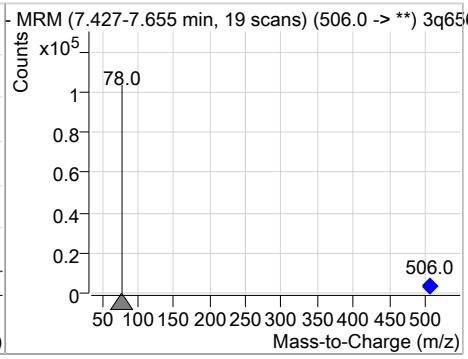




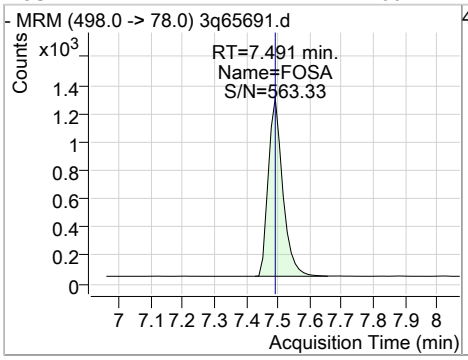
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.81	7.49	0.00	78609				

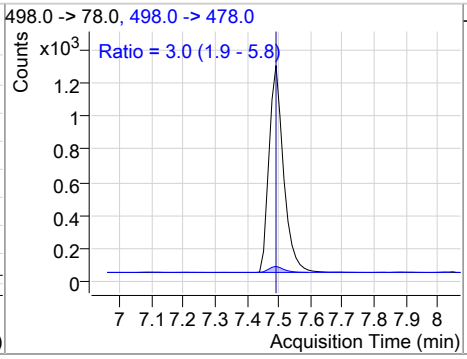


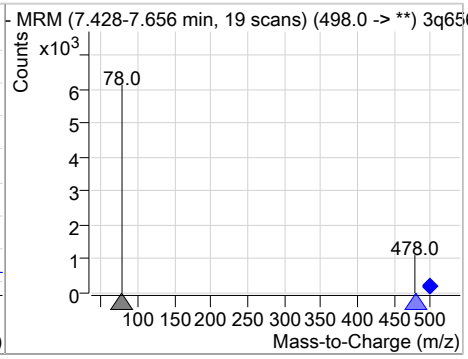




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.06	7.49	0.00	3967	498.0 -> 478.0	3.0	1.9	5.8

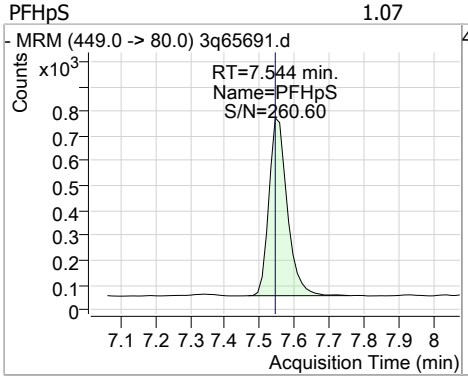


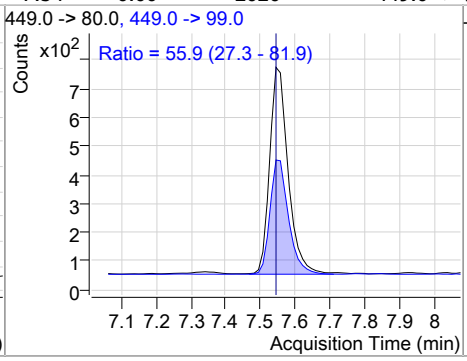


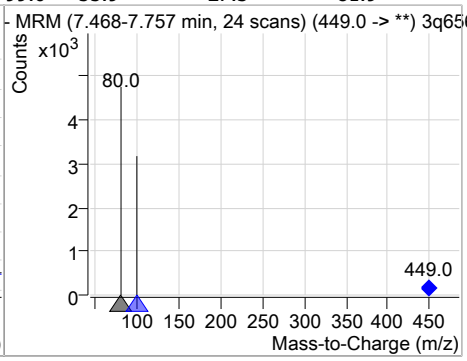


Perfluorinated Compounds by LC/MS/MS

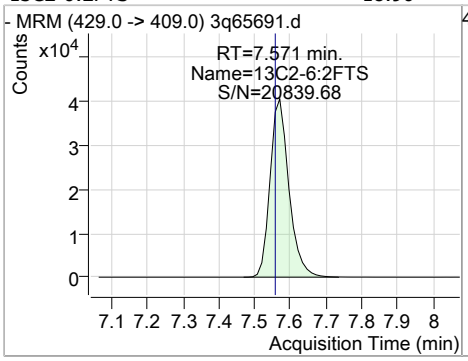
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.07	7.54	0.00	2626	449.0 -> 99.0	55.9	27.3	81.9

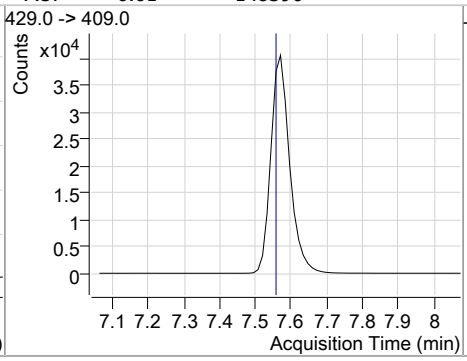


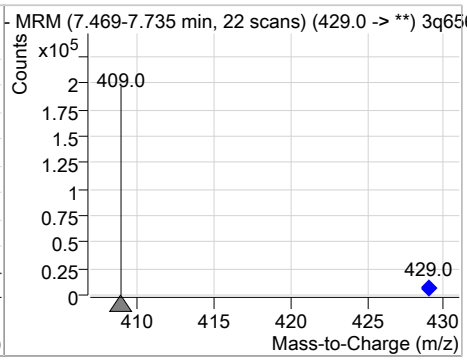




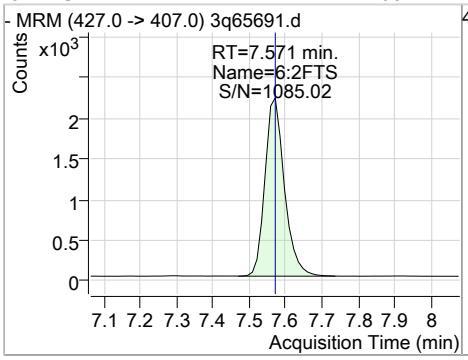
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.96	7.57	0.01	148390				

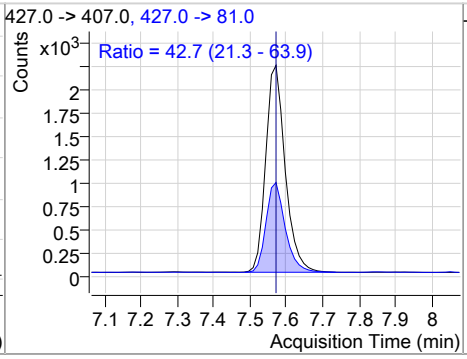


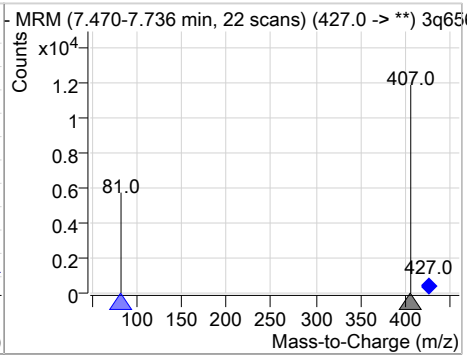




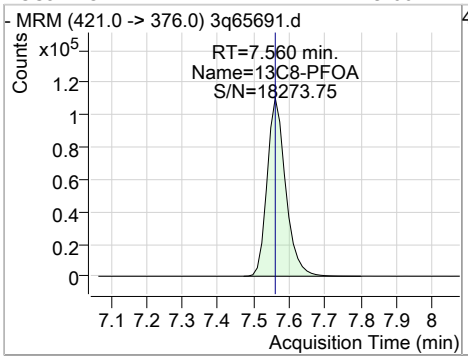
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.06	7.57	0.01	8176	427.0 -> 81.0	42.7	21.3	63.9

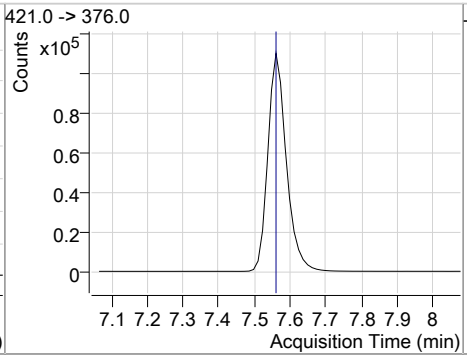


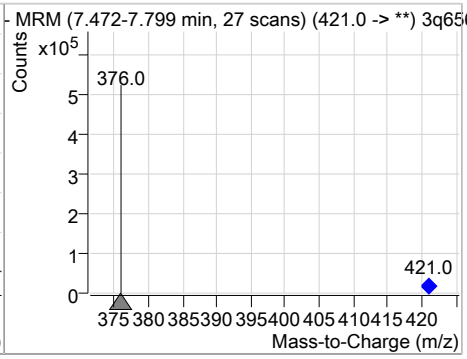




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.66	7.56	0.00	395749				

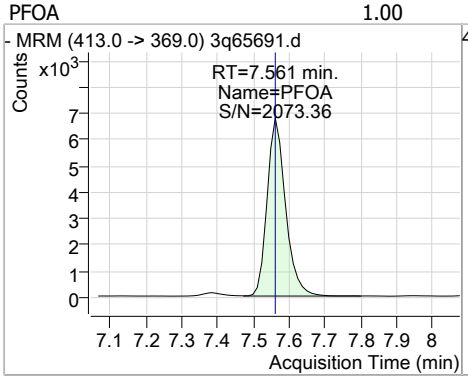


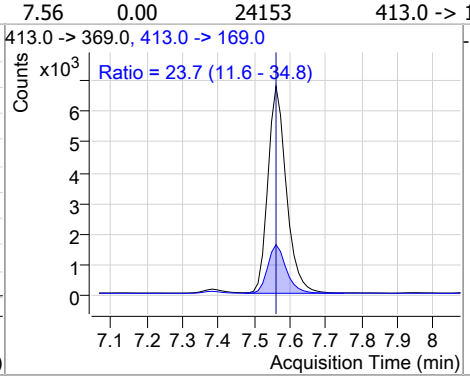


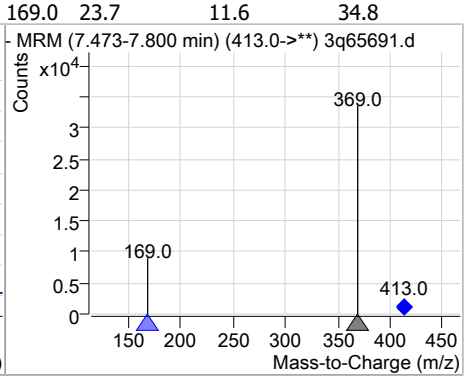


Perfluorinated Compounds by LC/MS/MS

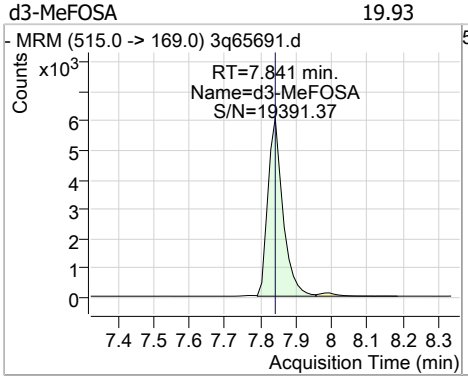
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.00	7.56	0.00	24153	413.0 -> 169.0	23.7	11.6	34.8

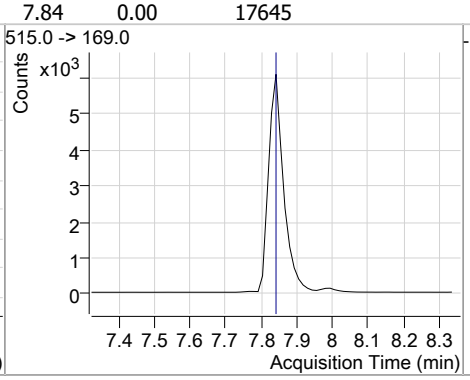


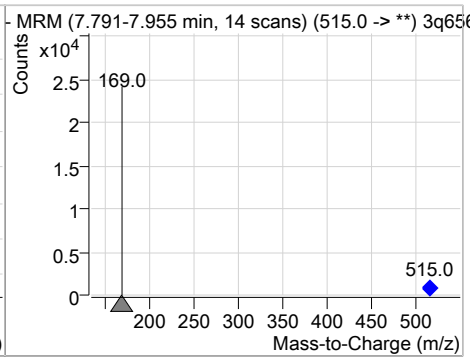




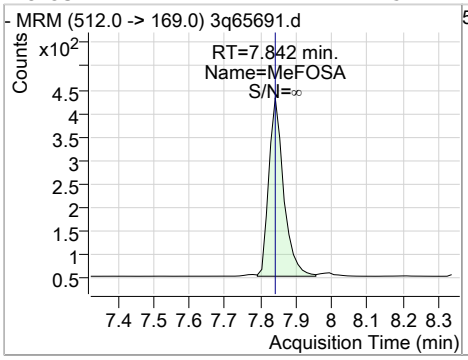
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.93	7.84	0.00	17645				

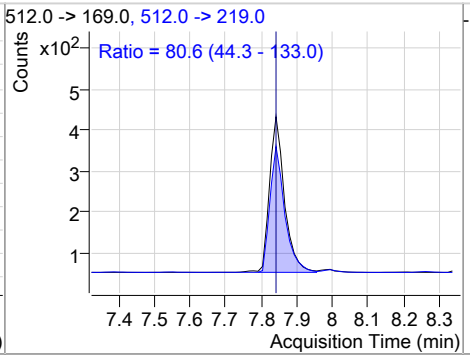


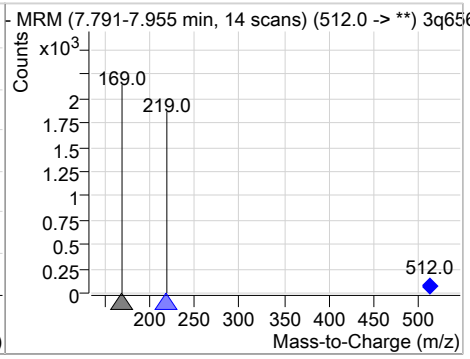




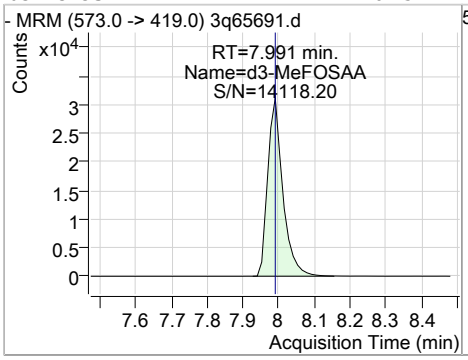
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.15	7.84	0.00	1096	512.0 -> 219.0	80.6	44.3	133.0

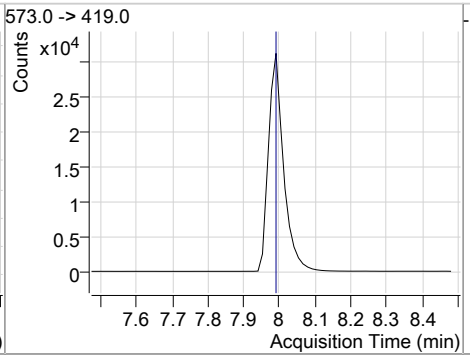


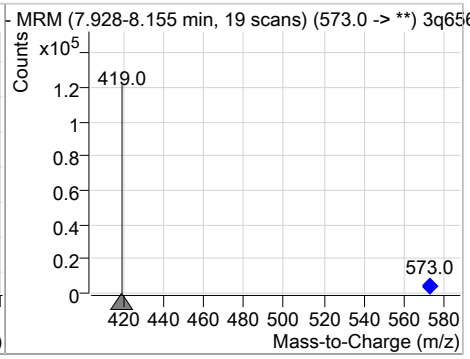




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.25	7.99	0.00	91052				

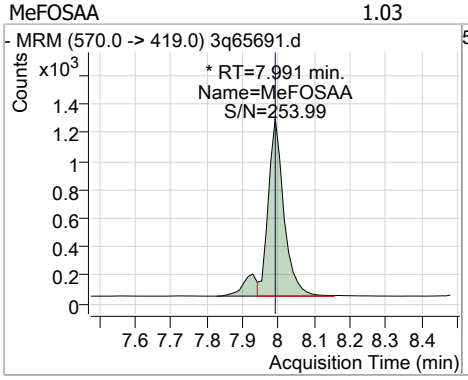


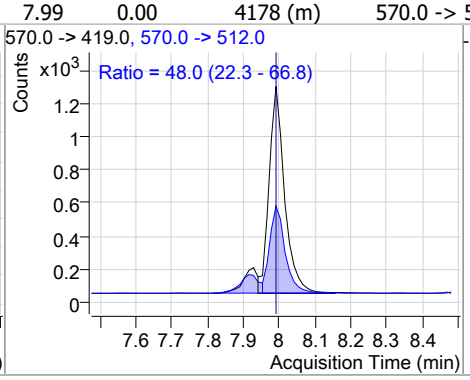


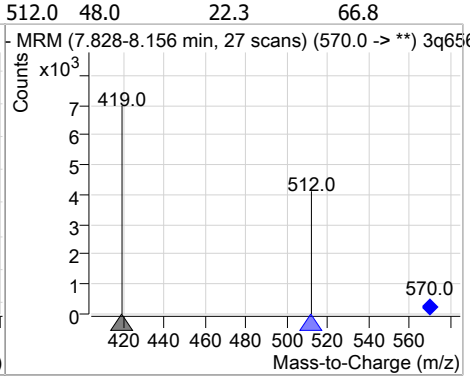


Perfluorinated Compounds by LC/MS/MS

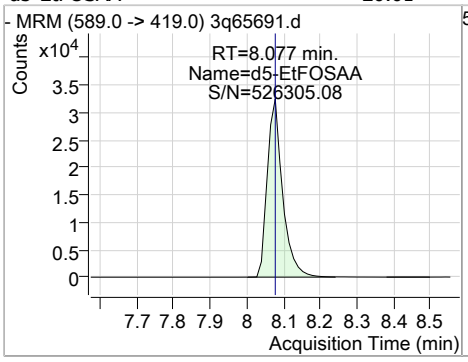
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.03	7.99	0.00	4178 (m)	570.0 -> 512.0	48.0	22.3	66.8

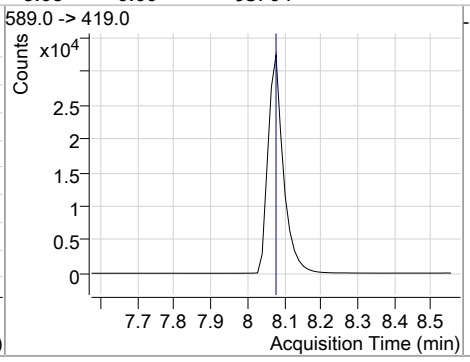


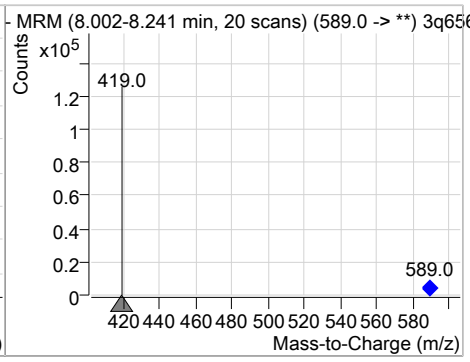




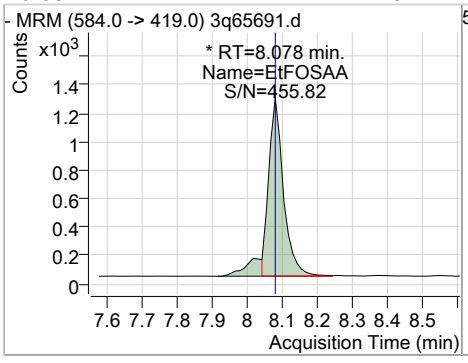
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.01	8.08	0.00	93704				

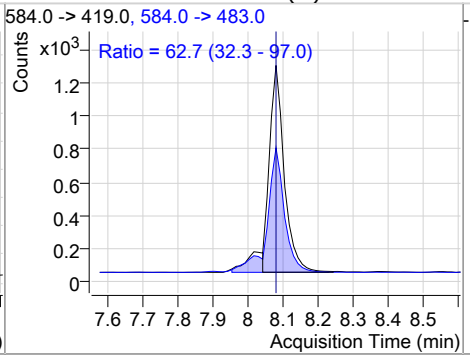


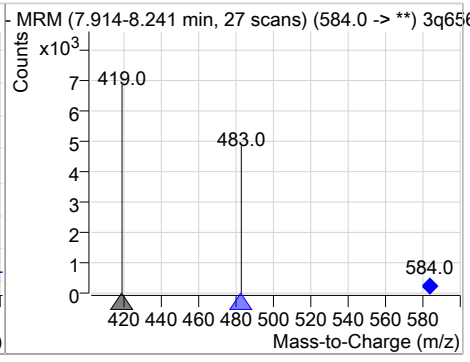




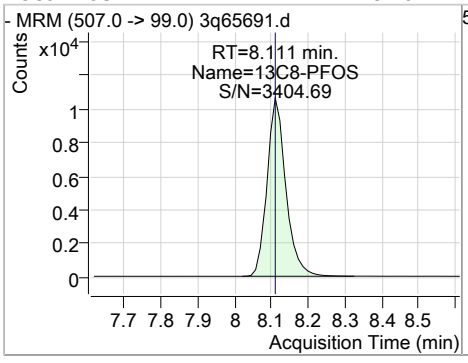
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.10	8.08	0.00	4099 (m)	584.0 -> 483.0	62.7	32.3	97.0

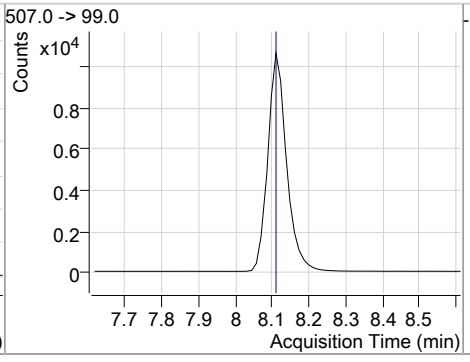


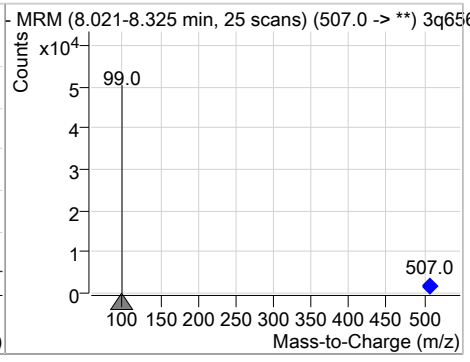




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.18	8.11	0.00	37631				

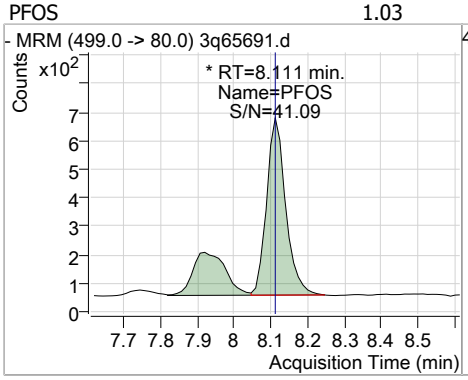


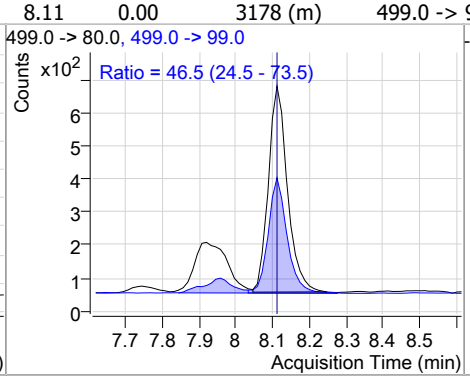


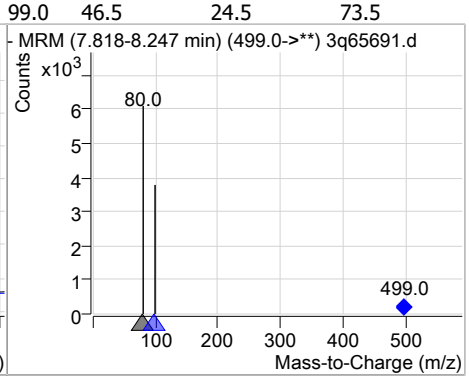


Perfluorinated Compounds by LC/MS/MS

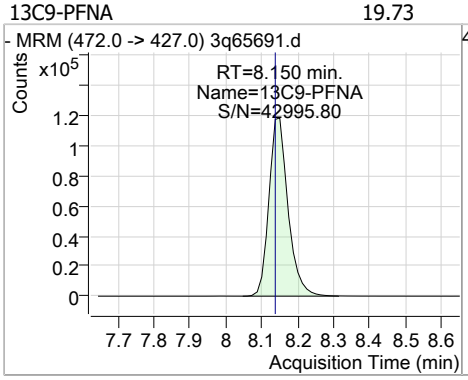
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.03	8.11	0.00	3178 (m)	499.0 -> 99.0	46.5	24.5	73.5

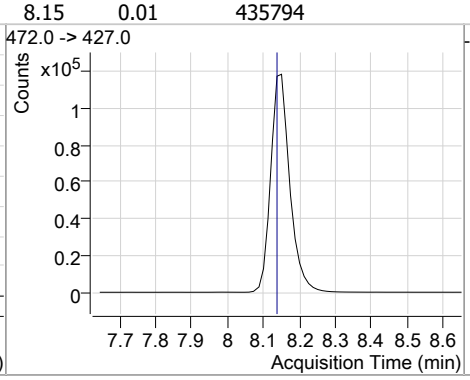


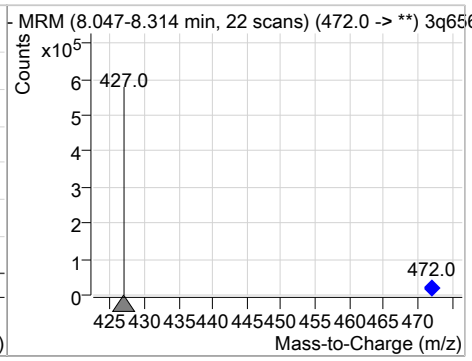




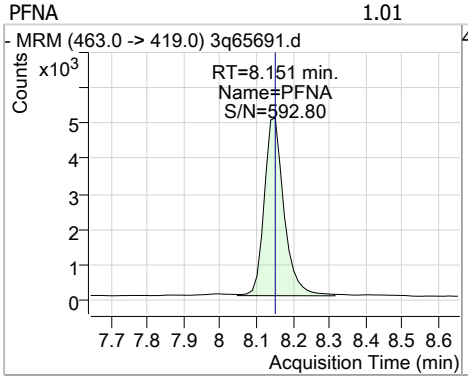
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.73	8.15	0.01	435794				

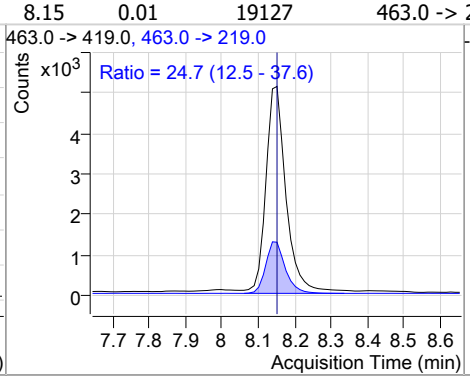


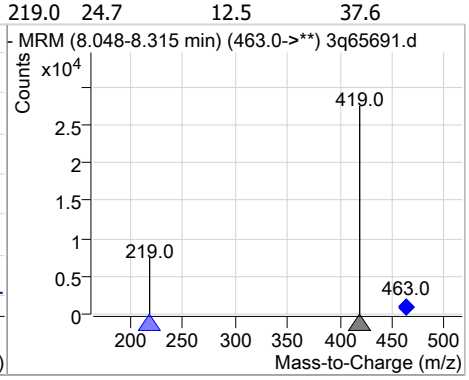




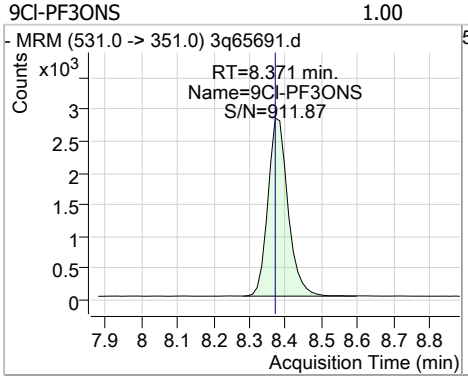
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.01	8.15	0.01	19127	463.0 -> 219.0	24.7	12.5	37.6

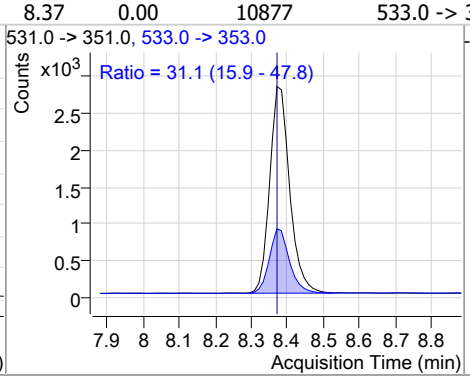


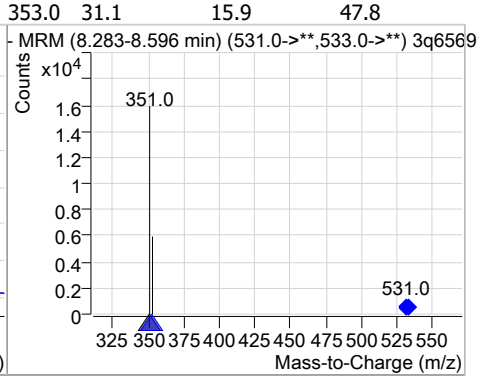




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.00	8.37	0.00	10877	533.0 -> 353.0	31.1	15.9	47.8

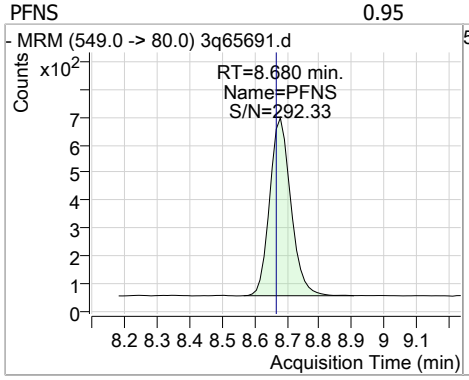


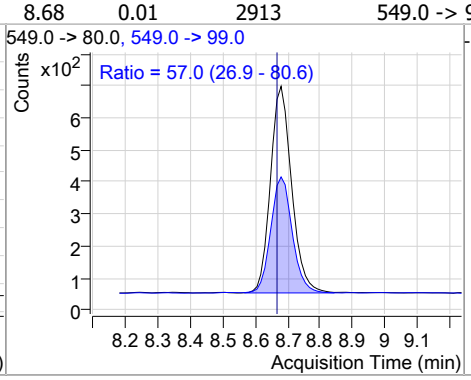


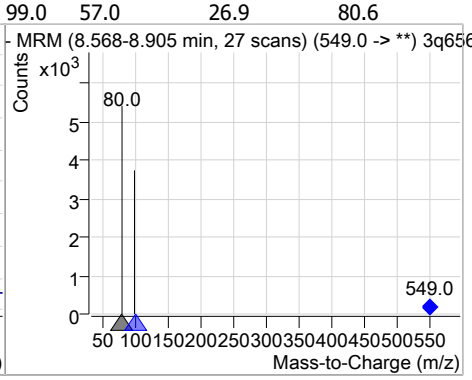


Perfluorinated Compounds by LC/MS/MS

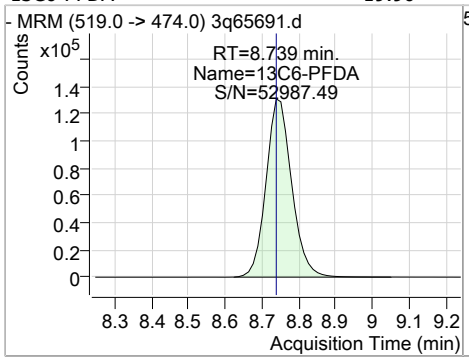
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.95	8.68	0.01	2913	549.0 -> 99.0	57.0	26.9	80.6

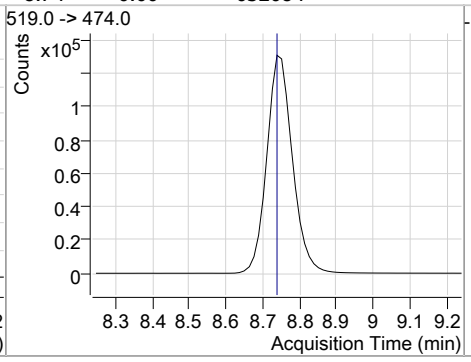


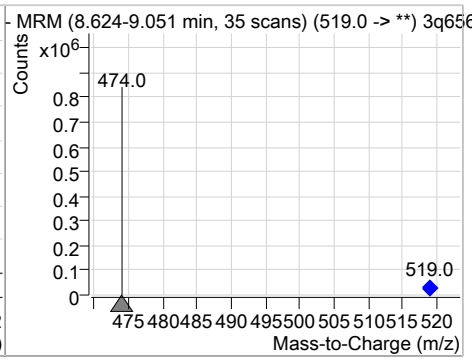




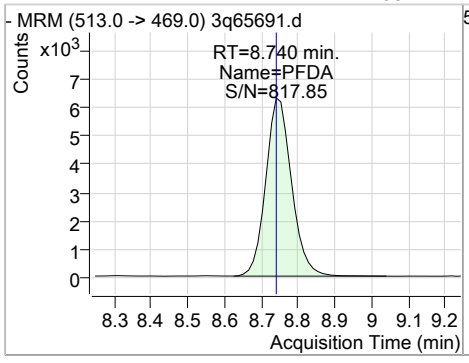
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.90	8.74	0.00	632084				

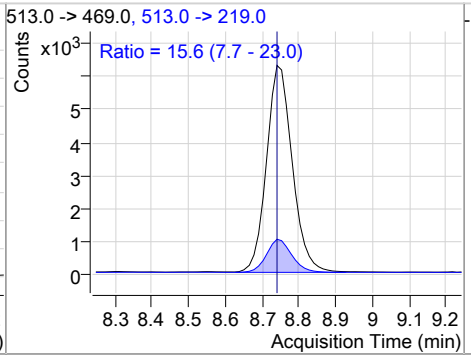


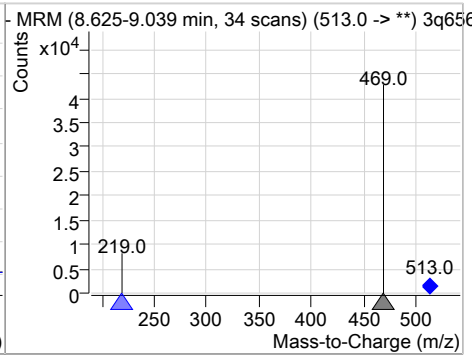




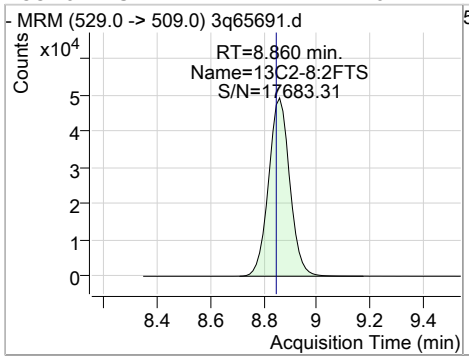
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.00	8.74	0.00	30561	513.0 -> 219.0	15.6	7.7	23.0

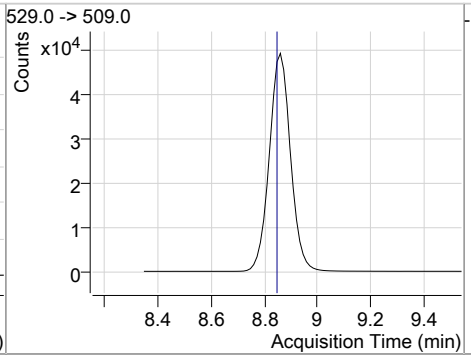


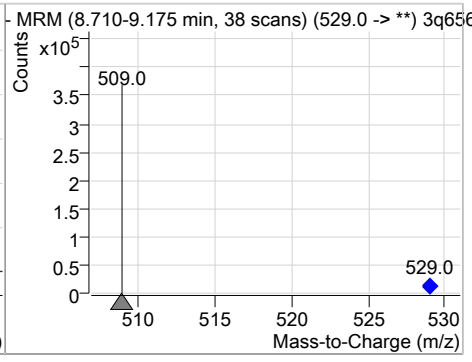




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.71	8.86	0.01	271945				

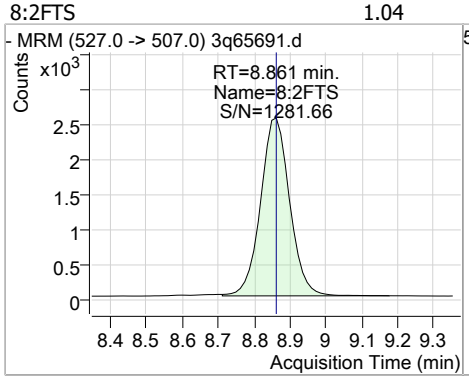


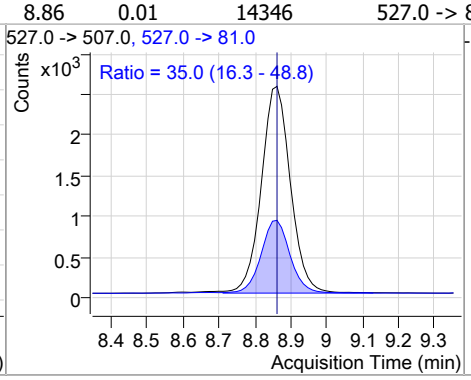


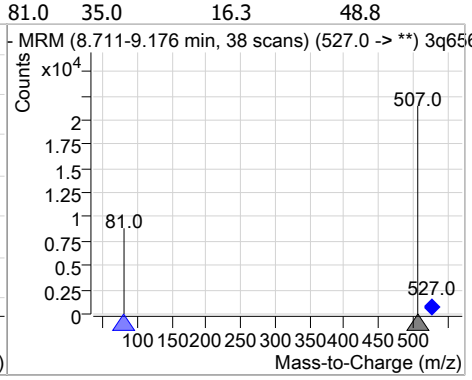


Perfluorinated Compounds by LC/MS/MS

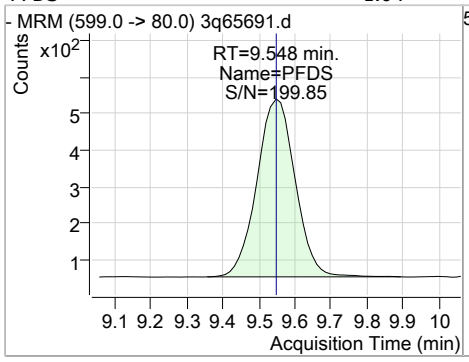
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.86	0.01	14346	527.0 -> 81.0	35.0	16.3	48.8

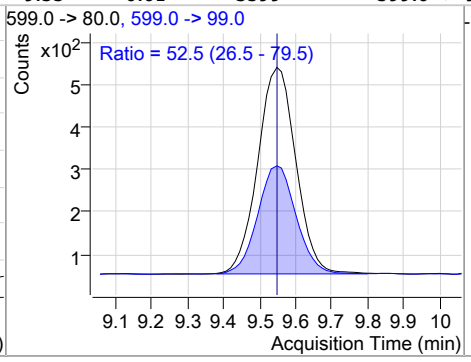


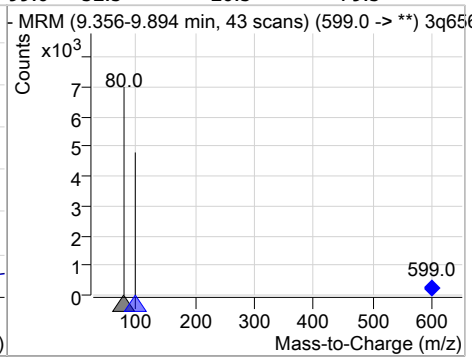




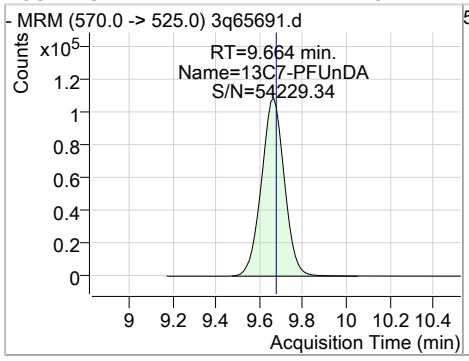
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.04	9.55	-0.01	3599	599.0 -> 99.0	52.5	26.5	79.5

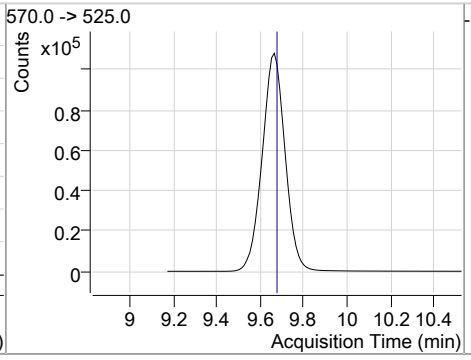


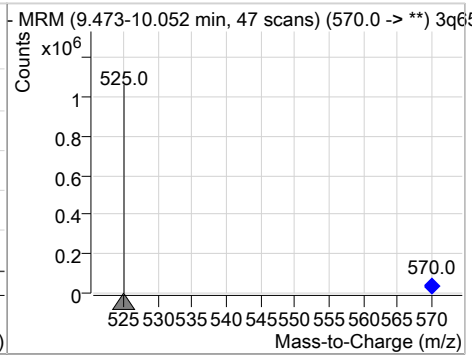




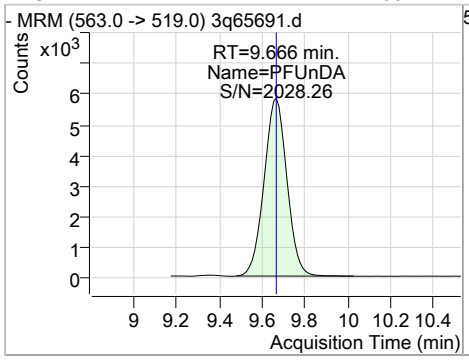
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.27	9.66	-0.01	795585				

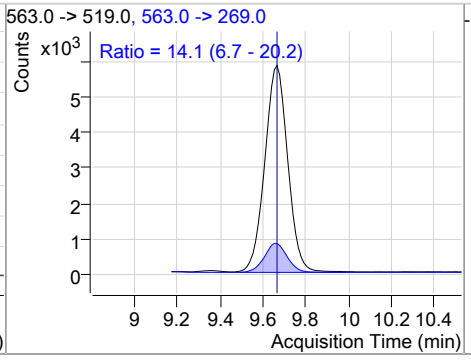


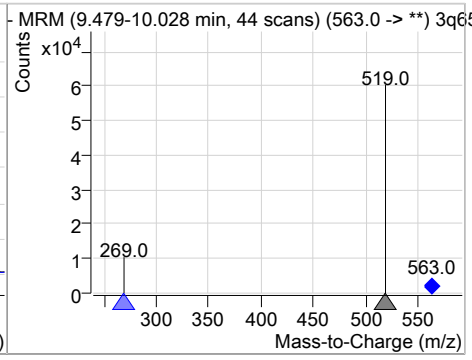




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.00	9.67	-0.01	43032	563.0 -> 269.0	14.1	6.7	20.2

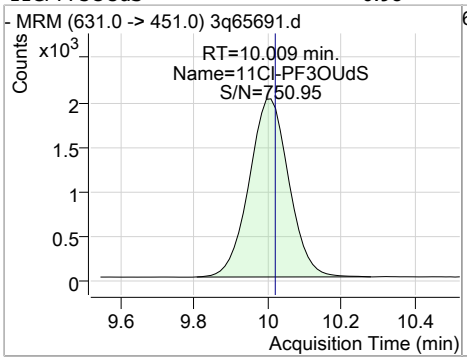


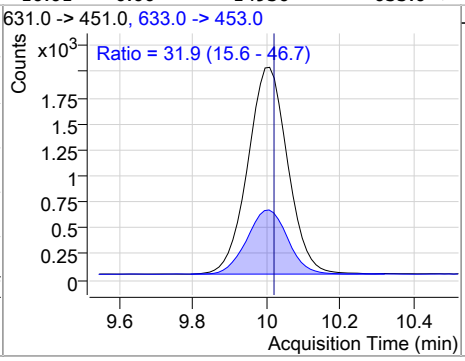


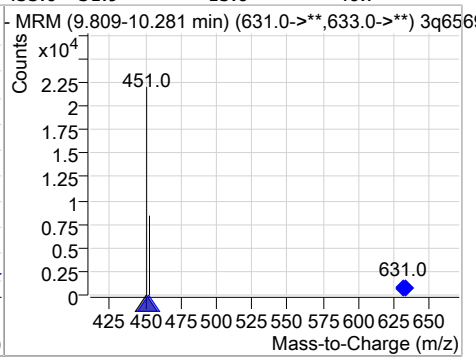


Perfluorinated Compounds by LC/MS/MS

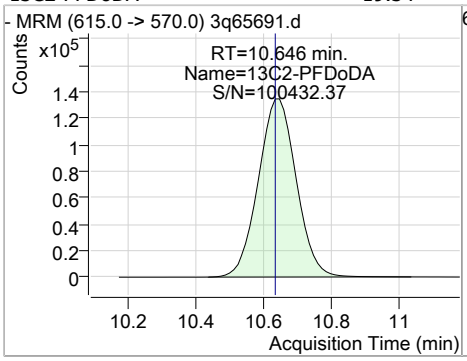
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.98	10.01	0.00	14930	633.0 -> 453.0	31.9	15.6	46.7

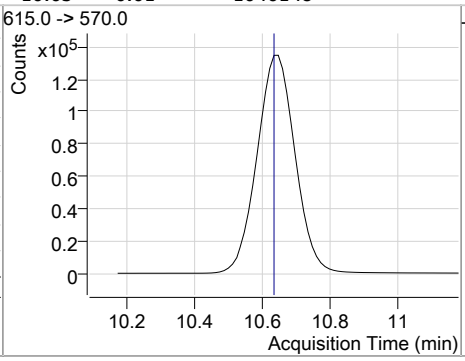


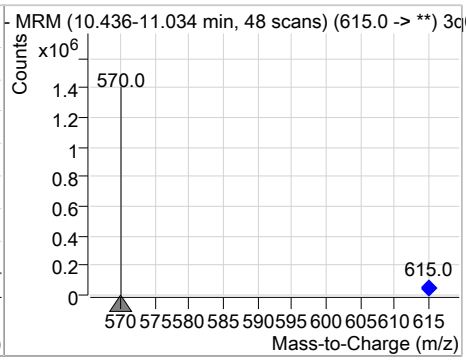




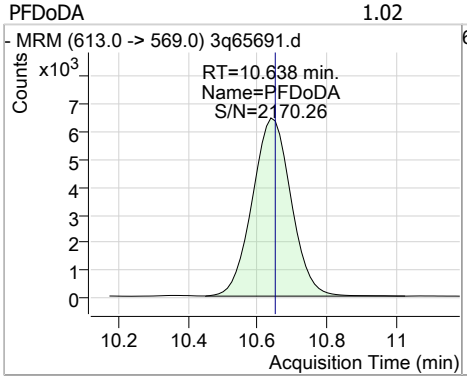
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.34	10.65	0.01	1046148				

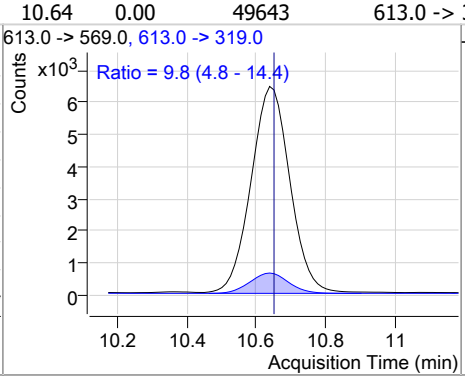


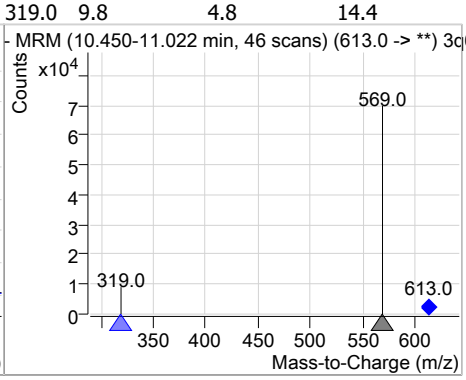




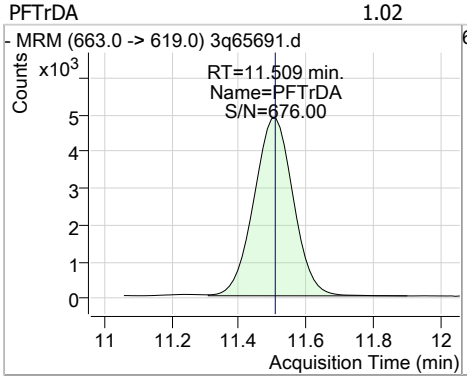
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.02	10.64	0.00	49643	613.0 -> 319.0	9.8	4.8	14.4

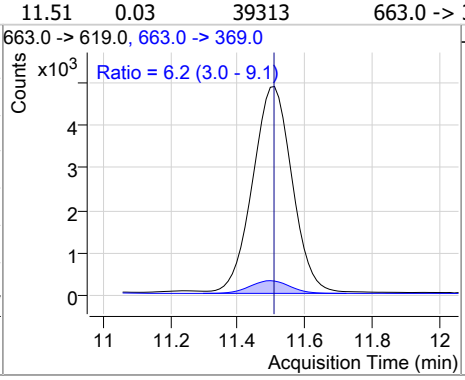


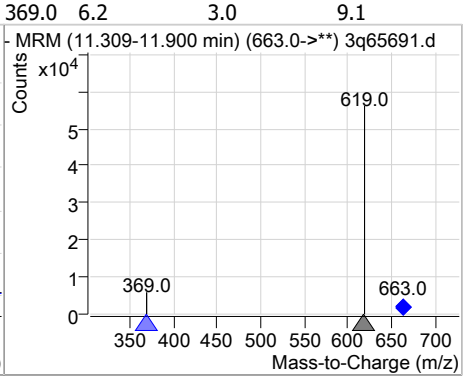




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.02	11.51	0.03	39313	663.0 -> 369.0	6.2	3.0	9.1

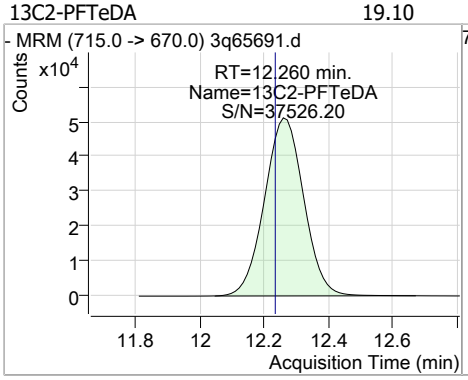


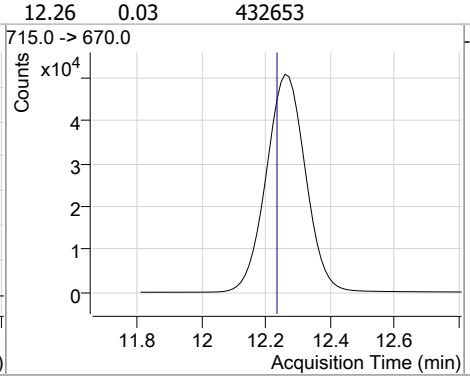


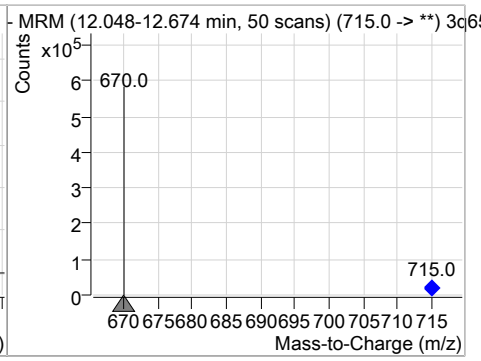


Perfluorinated Compounds by LC/MS/MS

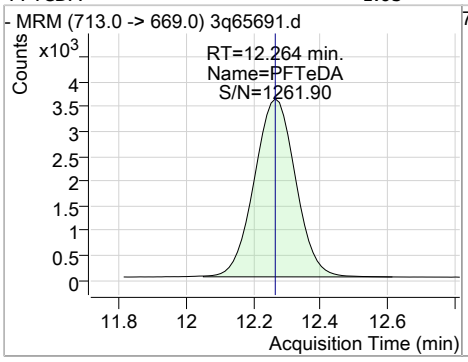
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.10	12.26	0.03	432653				

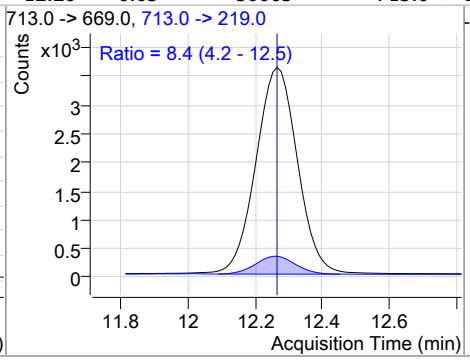


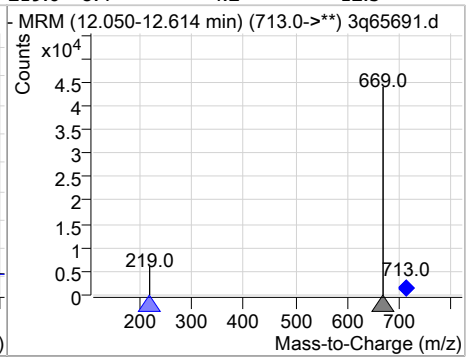




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.05	12.26	0.03	30663	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65691.D
Injection Time: 09/13/22 20:04
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:44 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:05

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65702.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/13/2022 11:39:56 PM
Sample Name : cc898-20
Vial : P1-A7
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

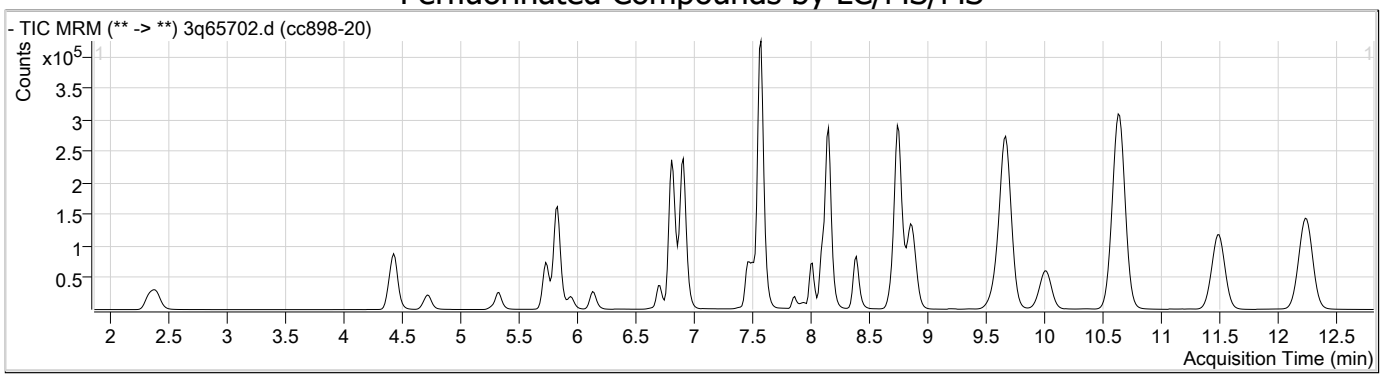
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	168544	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	246129	20.00 µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	324039	20.00 µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	322145	20.00 µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	429061	20.00 µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	458542	20.00 µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	637156	20.00 µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	886562	20.00 µg/L	-0.013
M2-PFDoDA	10.621	615.0 -> 570.0	1176199	20.00 µg/L	-0.013
M2-PFTeDA	12.223	715.0 -> 670.0	490791	20.00 µg/L	-0.013
M8-FOSA	7.503	506.0 -> 78.0	79442	20.00 µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	22521	20.00 µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	27912	20.00 µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	40760	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	122100	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	167001	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	306759	20.00 µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	99139	20.00 µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	26250	20.00 µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	18602	20.00 µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	105136	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	122100	21.14 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%	
13C2-6:2FTS	7.571	429.0 -> 409.0	167001	21.33 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C2-8:2FTS	8.860	529.0 -> 509.0	306759	21.11 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C2-PFDoDA	10.621	615.0 -> 570.0	1176199	21.74 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%	
13C2-PFTeDA	12.223	715.0 -> 670.0	490791	21.66 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C3-PFBS	4.717	302.0 -> 99.0	22521	21.28 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%	
13C3-PFHxS	6.834	402.0 -> 99.0	27912	21.60 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%	
13C4-PFBA	2.365	217.0 -> 172.0	168544	21.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%	
13C4-PFHpA	6.805	367.0 -> 322.0	322145	21.38 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%	
13C5-PFHxA	5.826	318.0 -> 273.0	324039	21.34 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%	
13C5-PFPeA	4.424	268.0 -> 223.0	246129	21.23 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C6-PFDA	8.739	519.0 -> 474.0	637156	20.06 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

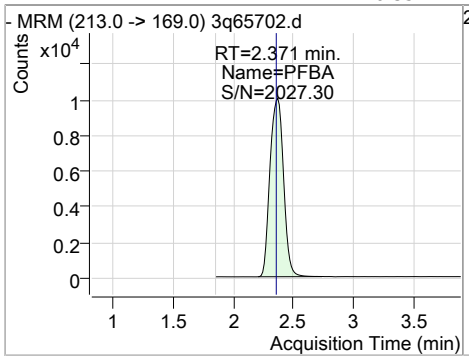
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C7-PFUnDA	9.664	570.0 -> 525.0	886562	21.47 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C8-FOSA	7.503	506.0 -> 78.0	79442	21.03 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C8-PFOA	7.560	421.0 -> 376.0	429061	21.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C8-PFOS	8.111	507.0 -> 99.0	40760	20.77 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C9-PFNA	8.150	472.0 -> 427.0	458542	20.75 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
d3-MeFOSAA	7.991	573.0 -> 419.0	99139	22.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	26248	20.45 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
d3-MeFOSA	7.841	515.0 -> 169.0	18602	21.01 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
d5-EtFOSAA	8.077	589.0 -> 419.0	105127	22.45 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	132374	20.56 µg/L		100
6:2FTS	7.571	427.0 -> 407.0	176249	20.31 µg/L		100
8:2FTS	8.849	527.0 -> 507.0	311419	20.05 µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	85813	20.47 µg/L	m	100
FOSA	7.504	498.0 -> 78.0	79013	20.90 µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	88296	19.94 µg/L	m	100
PFBA	2.371	213.0 -> 169.0	78412	20.35 µg/L		100
PFBS	4.707	299.0 -> 80.0	64924	20.29 µg/L		99
PFDA	8.740	513.0 -> 469.0	622484	20.27 µg/L		100
PFDoDA	10.625	613.0 -> 569.0	1115340	20.42 µg/L		100
PFDS	9.548	599.0 -> 80.0	78554	20.33 µg/L		99
PFHpA	6.807	363.0 -> 319.0	467034	20.26 µg/L		100
PFHpS	7.557	449.0 -> 80.0	58052	21.83 µg/L		98
PFHxA	5.827	313.0 -> 269.0	354400	20.51 µg/L		100
PFHxS	6.835	399.0 -> 80.0	66159	20.33 µg/L	m	99
PFNA	8.151	463.0 -> 419.0	402395	20.26 µg/L		100
PFNS	8.680	549.0 -> 80.0	64978	19.55 µg/L		100
PFOA	7.561	413.0 -> 369.0	533133	20.35 µg/L		100
PFOS	8.111	499.0 -> 80.0	69942	20.83 µg/L	m	99
PFPeA	4.426	263.0 -> 219.0	220736	20.54 µg/L		100
PFPeS	5.932	349.0 -> 80.0	50839	20.45 µg/L		99
PFTeDA	12.227	713.0 -> 669.0	679858	20.46 µg/L		100
PFTrDA	11.484	663.0 -> 619.0	899525	20.60 µg/L		100
PFUnDA	9.666	563.0 -> 519.0	981122	20.55 µg/L		100
11Cl-PF3OUdS	9.997	631.0 -> 451.0	343871	20.14 µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	232074	21.16 µg/L		99
ADONA	6.903	377.0 -> 251.0	703211	19.87 µg/L		100
HFPO-DA	6.134	329.0 -> 169.0	64246	20.54 µg/L		99
MeFOSA	7.854	512.0 -> 169.0	20433	20.41 µg/L		98
4-PFECHS	7.454	461.0 -> 381.0	179070	18.51 µg/L		99
FBSA	5.327	298.0 -> 78.0	115840	20.98 µg/L		99
FHxSA	6.700	398.0 -> 78.0	123350	19.50 µg/L		100

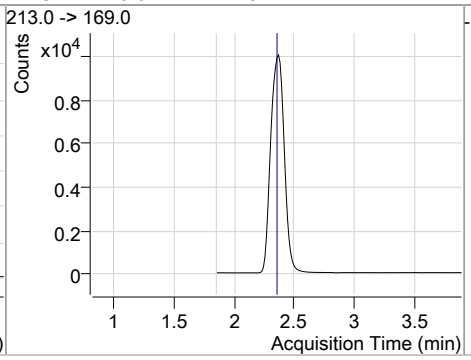
 # = Qualifier out of range, m = manually integrated, + = Area summed

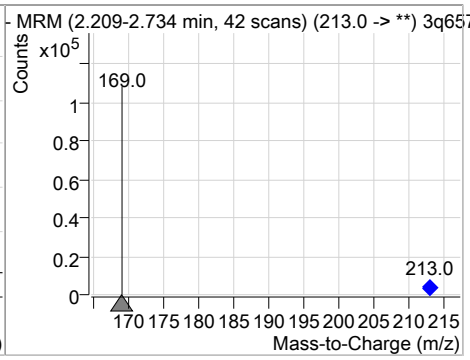
Perfluorinated Compounds by LC/MS/MS



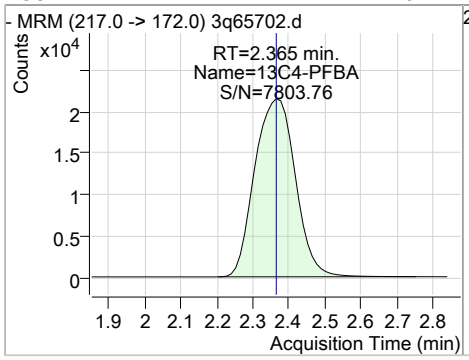
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.35	2.37	0.01	78412				

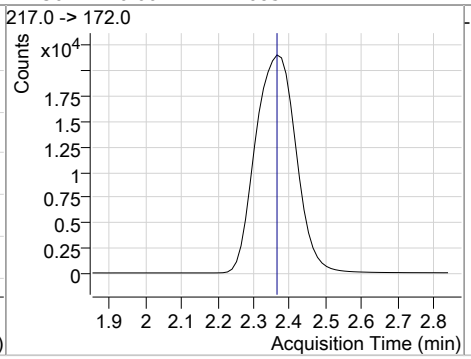


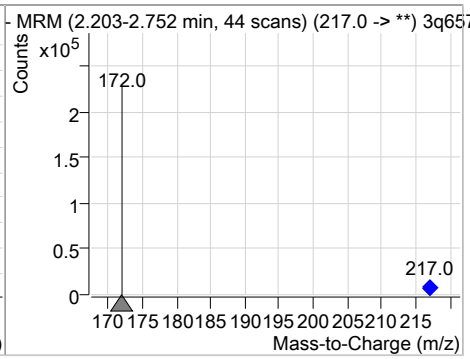




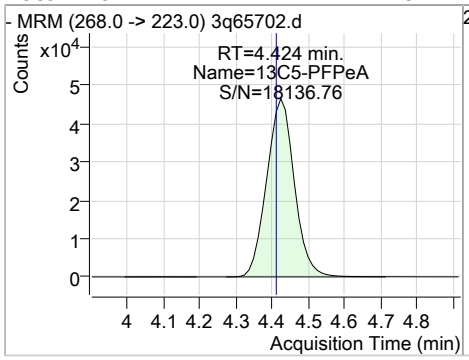
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.18	2.36	0.00	168544				

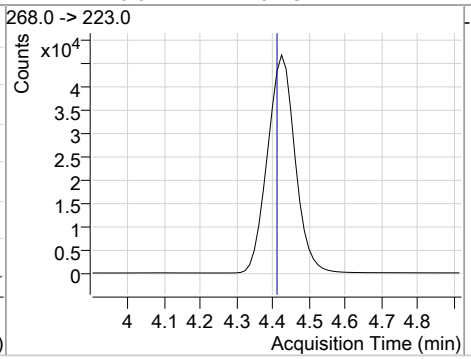


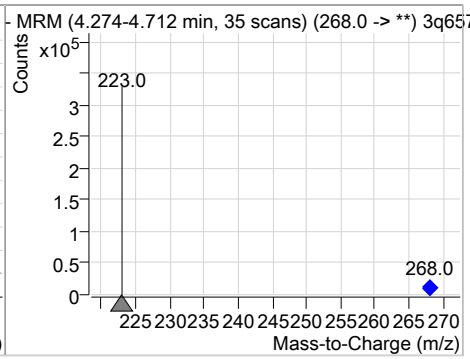




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.23	4.42	0.01	246129				

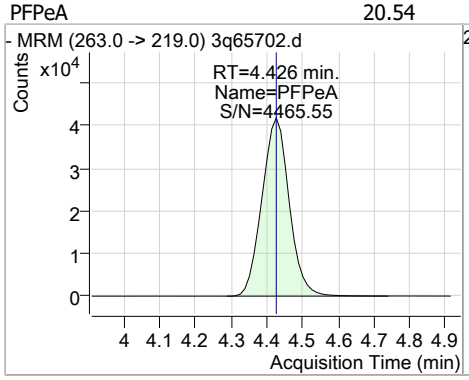


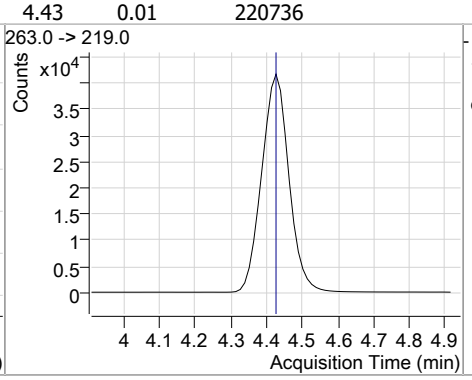


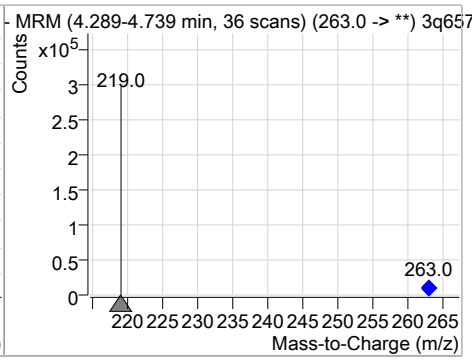


Perfluorinated Compounds by LC/MS/MS

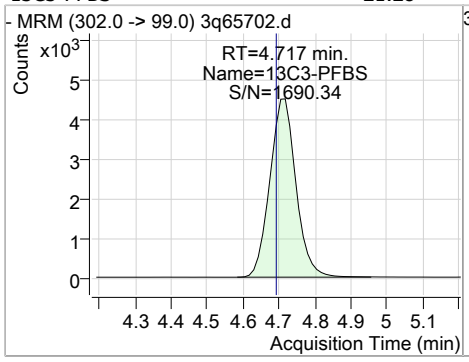
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.54	4.43	0.01	220736				

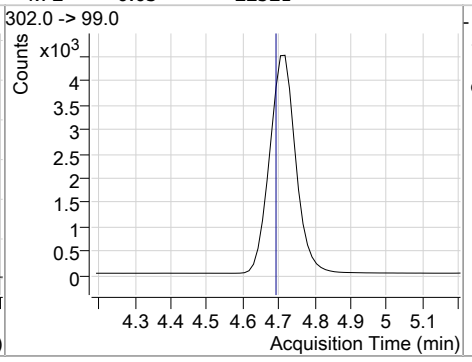


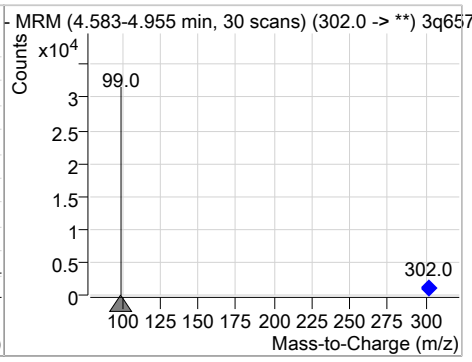




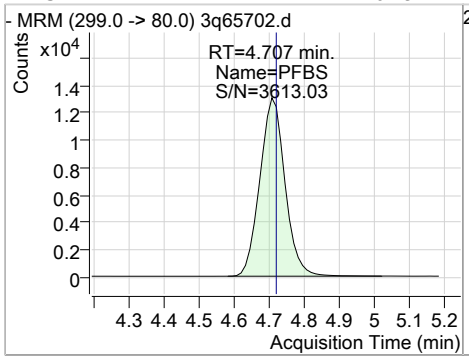
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.28	4.72	0.03	22521				

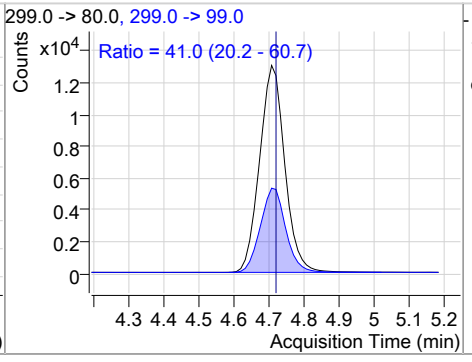


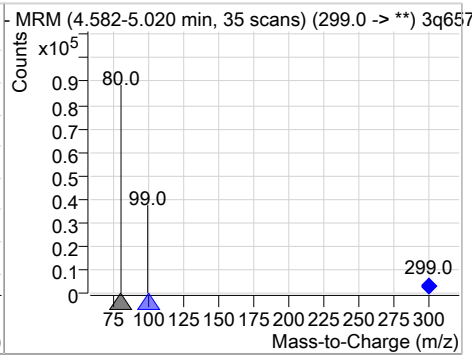




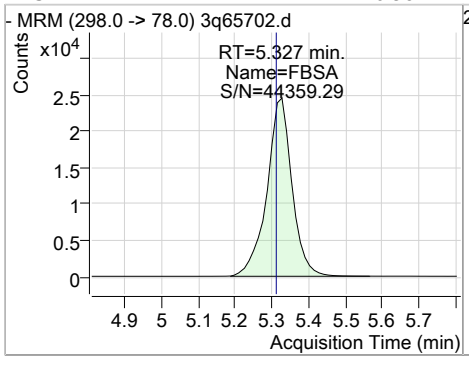
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.29	4.71	0.01	64924	299.0 -> 99.0	41.0	20.2	60.7

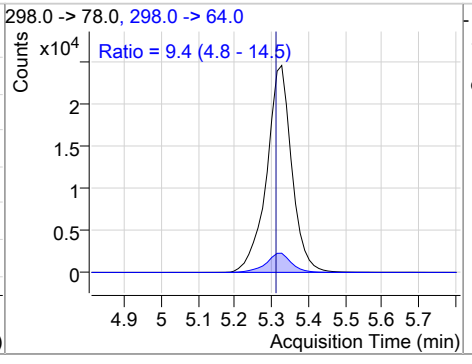


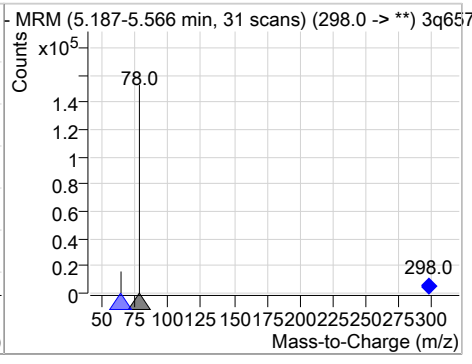




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.98	5.33	0.03	115840	298.0 -> 64.0	9.4	4.8	14.5

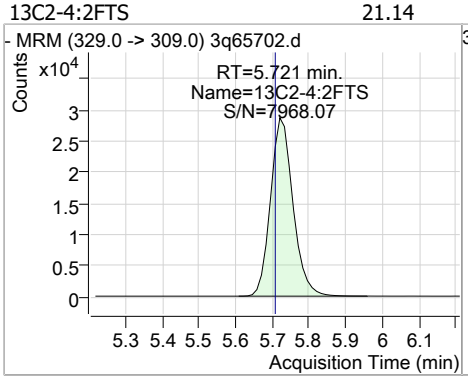


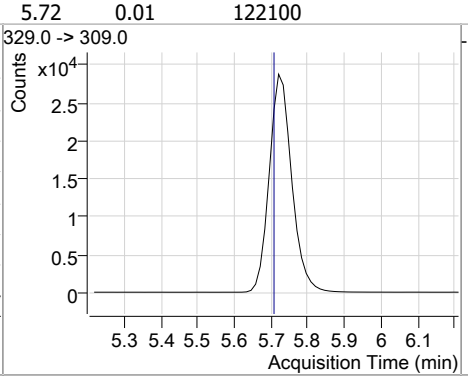


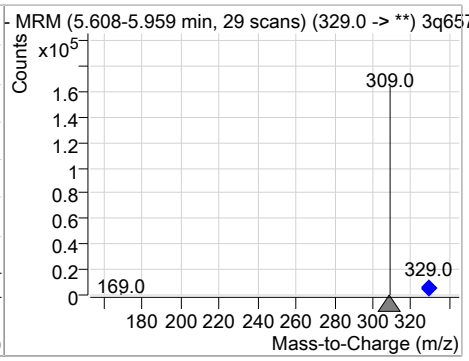


Perfluorinated Compounds by LC/MS/MS

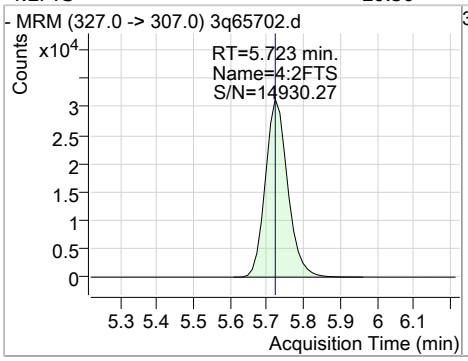
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.14	5.72	0.01	122100				

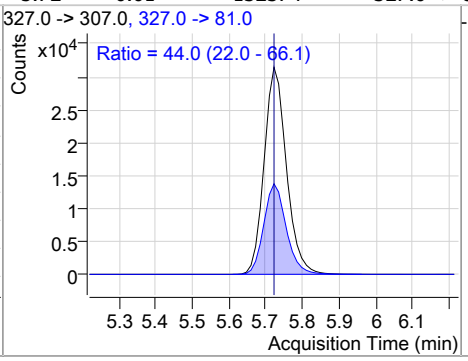


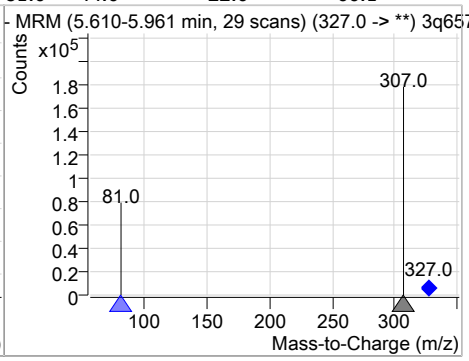




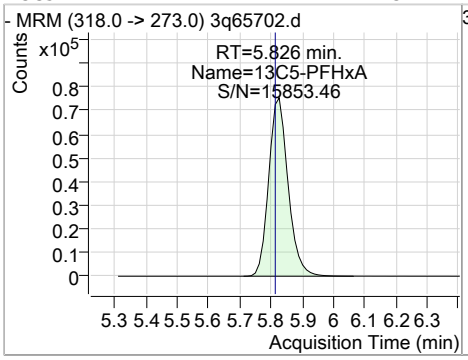
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.56	5.72	0.01	132374	327.0 -> 81.0	44.0	22.0	66.1

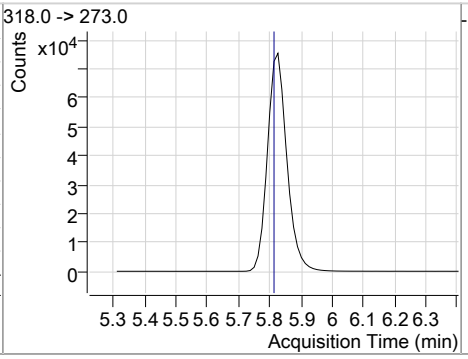


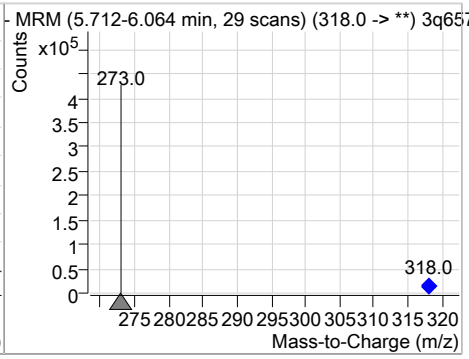




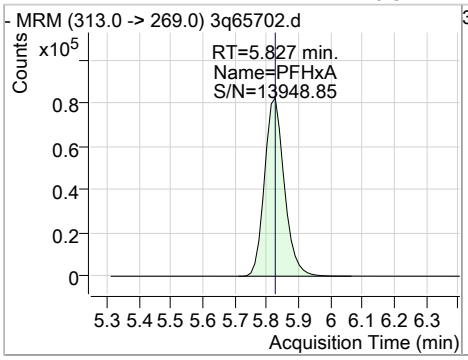
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.34	5.83	0.01	324039				

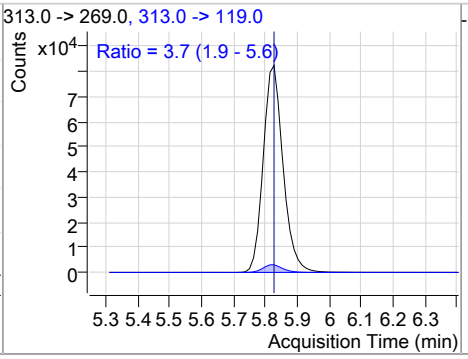


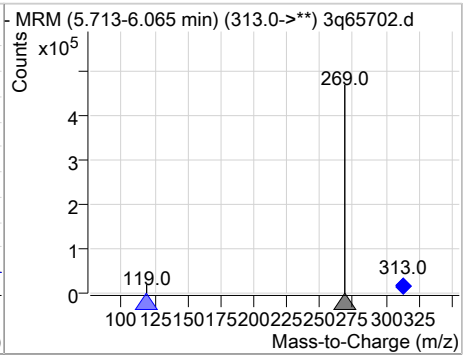




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.51	5.83	0.01	354400	313.0 -> 119.0	3.7	1.9	5.6

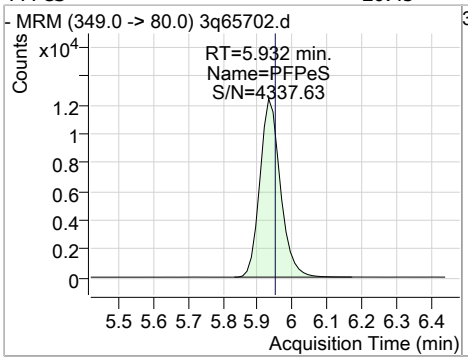


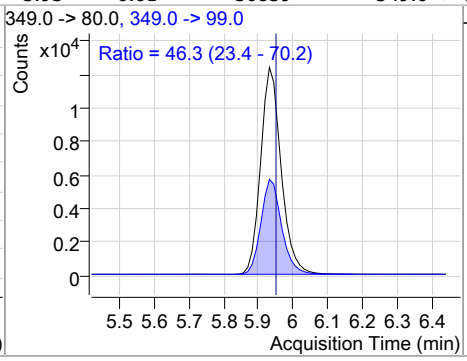


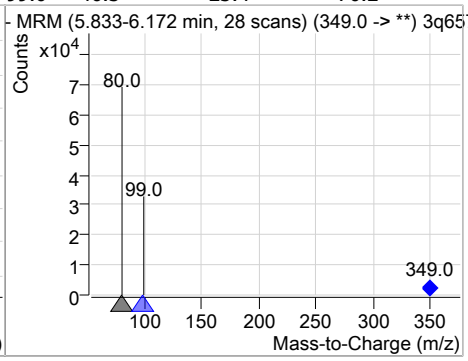


Perfluorinated Compounds by LC/MS/MS

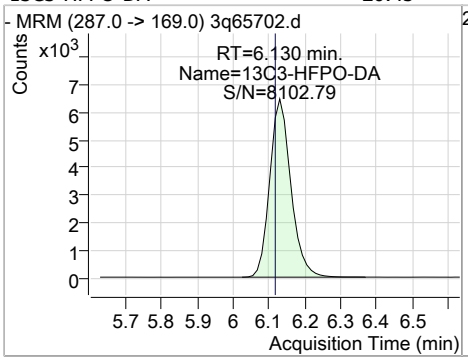
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.45	5.93	0.01	50839	349.0 -> 99.0	46.3	23.4	70.2

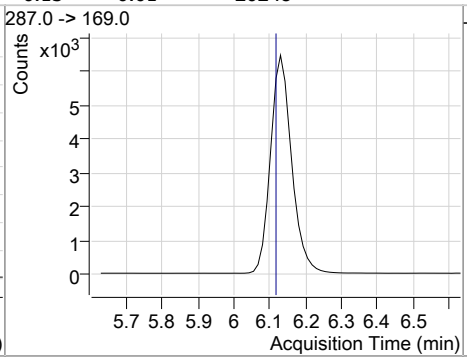


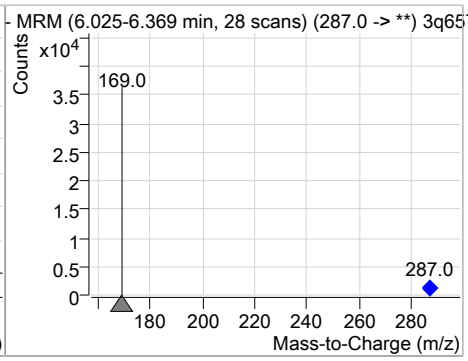




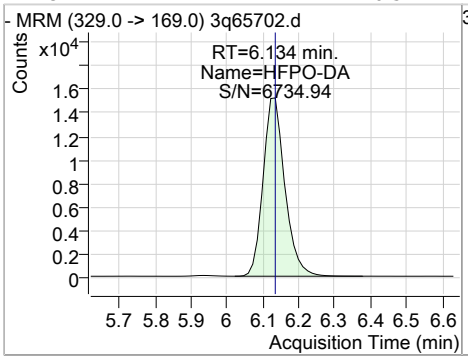
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.45	6.13	0.01	26248				

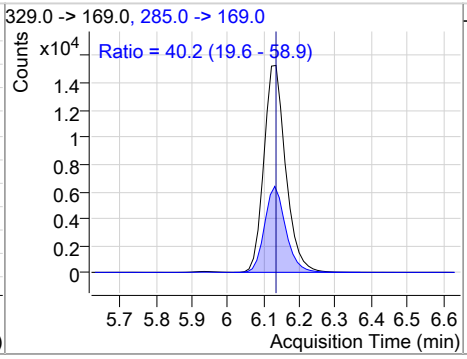


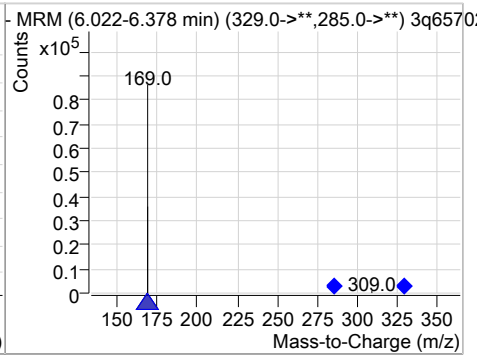




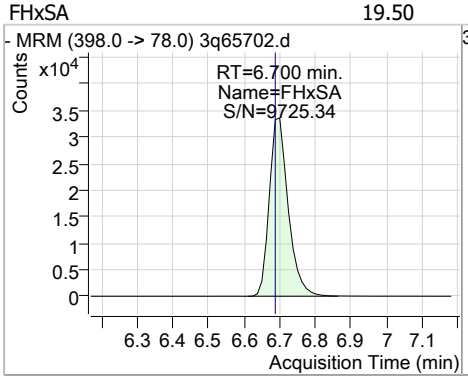
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.54	6.13	0.01	64246	285.0 -> 169.0	40.2	19.6	58.9

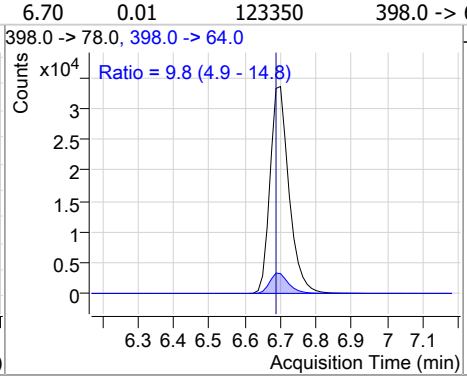


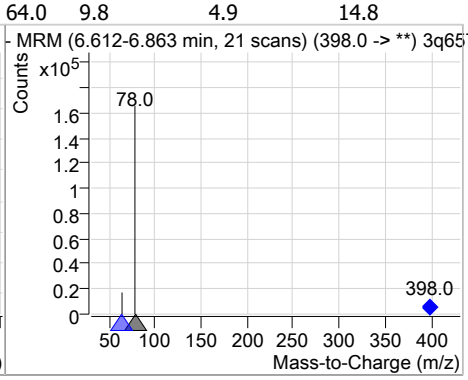




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.50	6.70	0.01	123350	398.0 -> 64.0	9.8	4.9	14.8

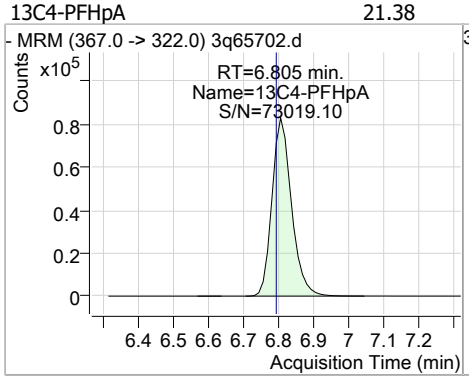


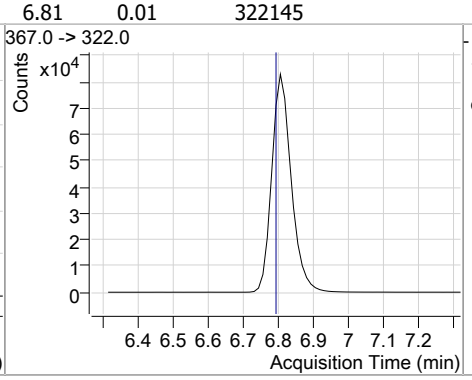


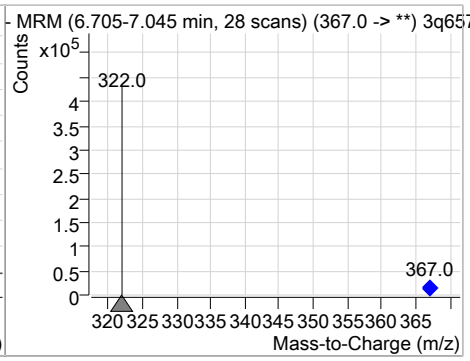


Perfluorinated Compounds by LC/MS/MS

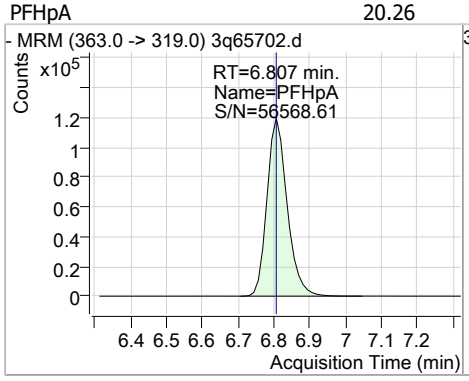
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.38	6.81	0.01	322145				

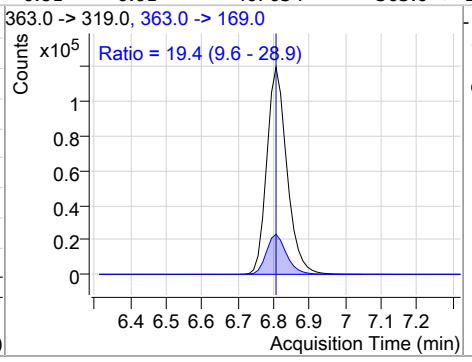


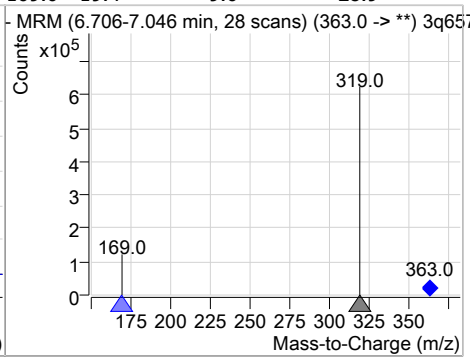




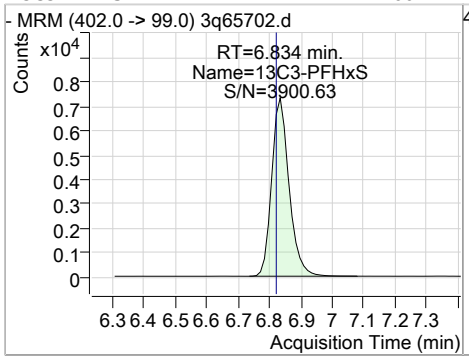
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.26	6.81	0.01	467034	363.0 -> 169.0	19.4	9.6	28.9

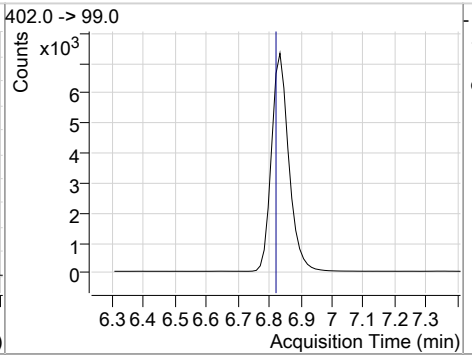


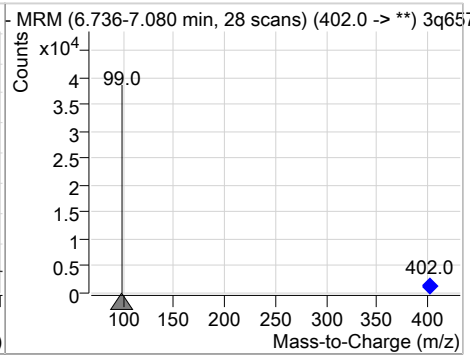




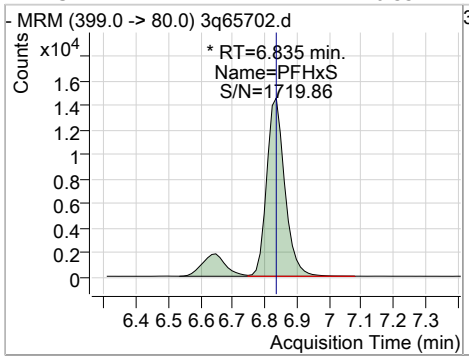
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.60	6.83	0.01	27912				

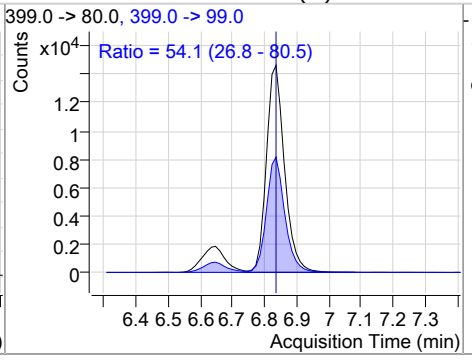


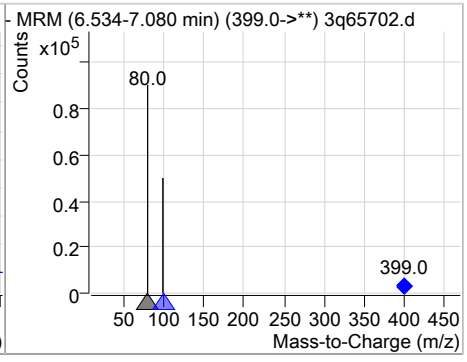




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.33	6.84	0.01	66159 (m)	399.0 -> 99.0	54.1	26.8	80.5

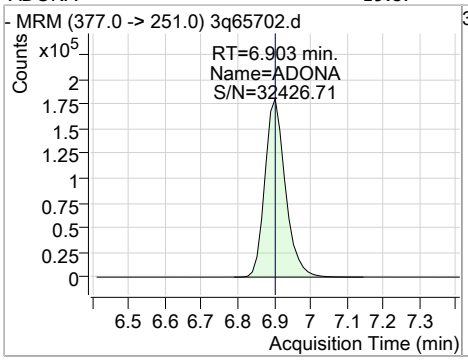


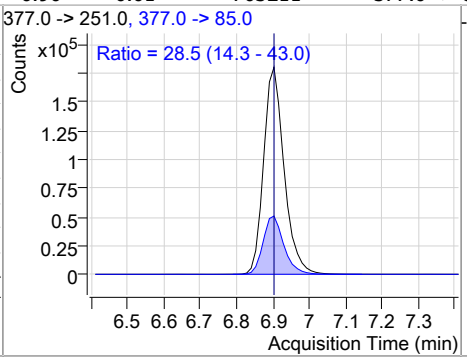


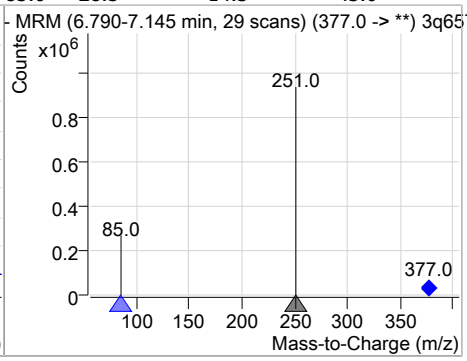


Perfluorinated Compounds by LC/MS/MS

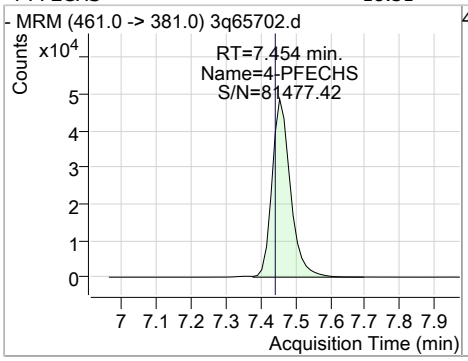
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.87	6.90	0.01	703211	377.0 -> 85.0	28.5	14.3	43.0

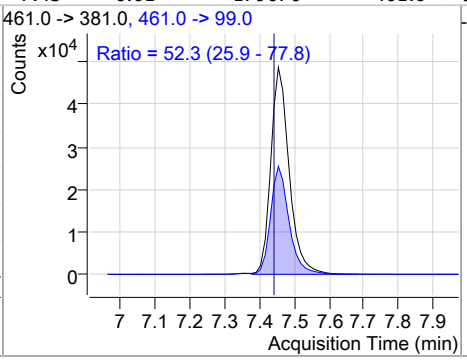


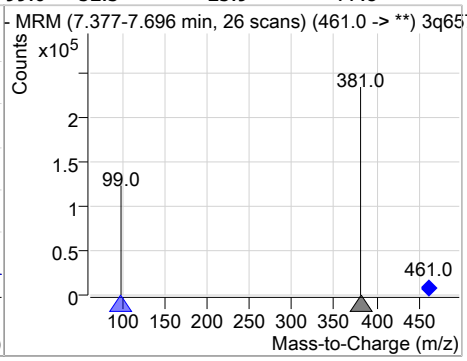




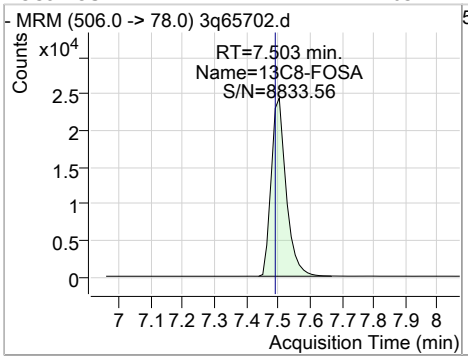
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.51	7.45	0.01	179070	461.0 -> 99.0	52.3	25.9	77.8

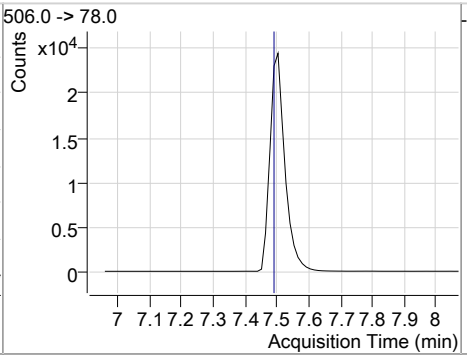


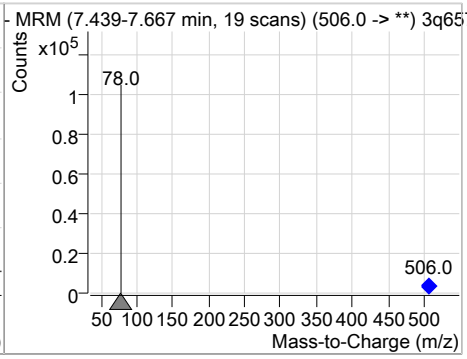




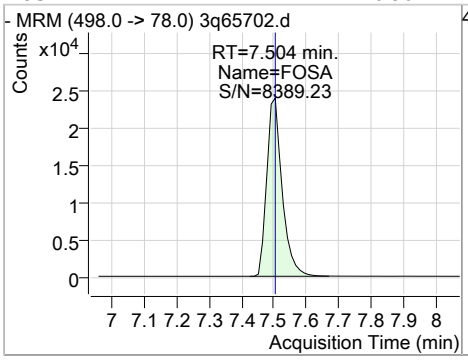
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.03	7.50	0.01	79442				

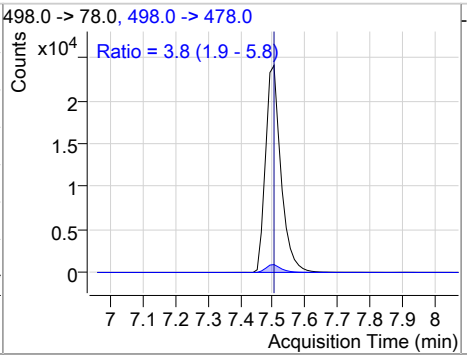


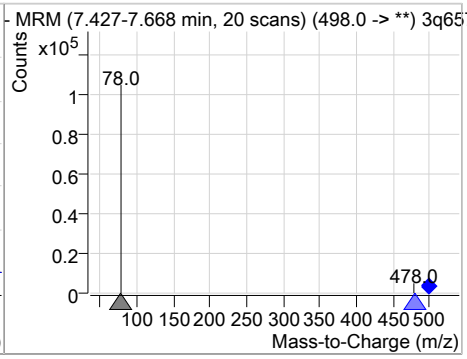




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.90	7.50	0.01	79013	498.0 -> 478.0	3.8	1.9	5.8

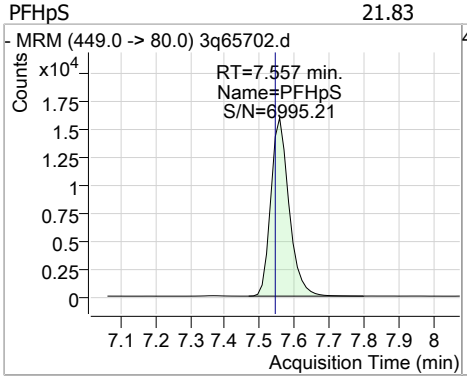


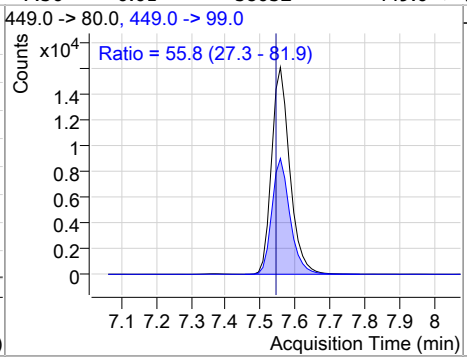


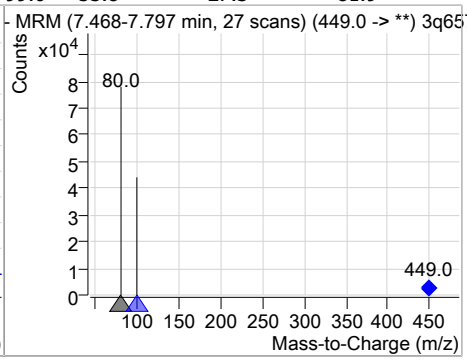


Perfluorinated Compounds by LC/MS/MS

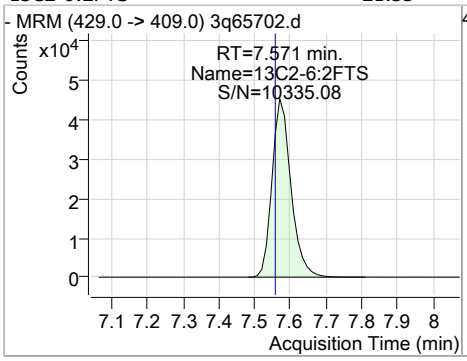
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.83	7.56	0.01	58052	449.0 -> 99.0	55.8	27.3	81.9

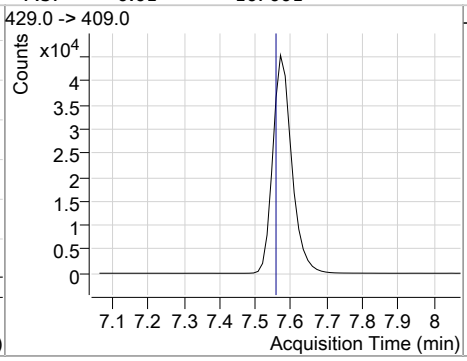


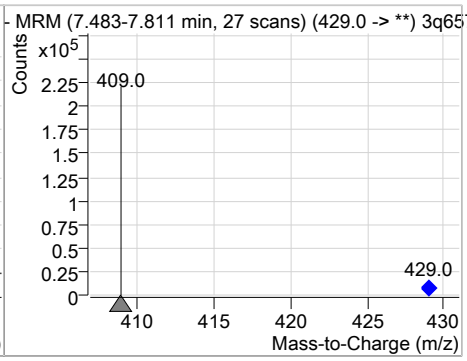




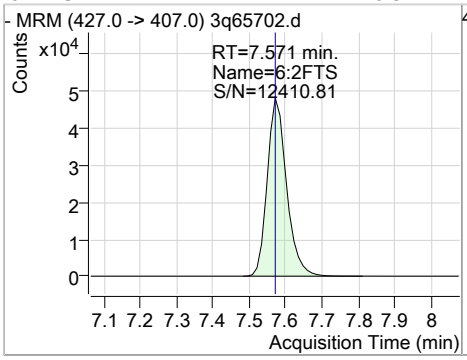
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.33	7.57	0.01	167001				

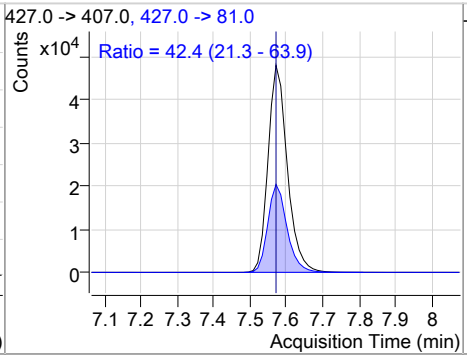


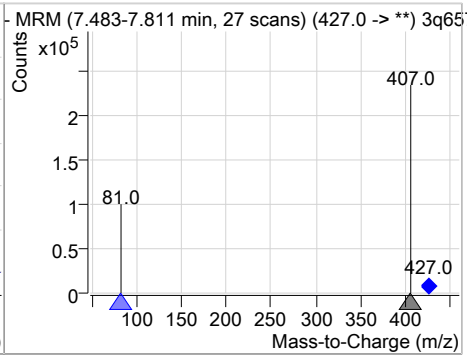




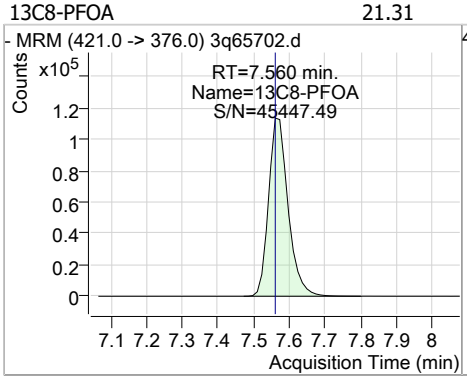
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.31	7.57	0.01	176249	427.0 -> 81.0	42.4	21.3	63.9

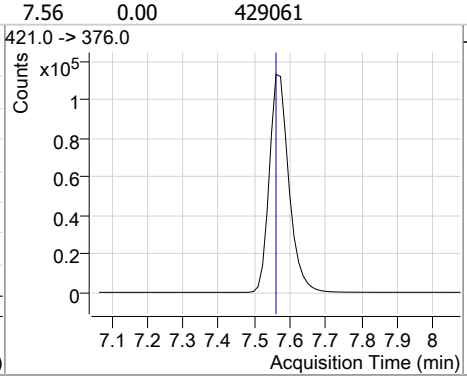


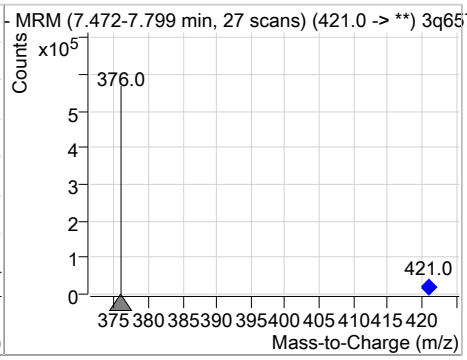




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.31	7.56	0.00	429061				

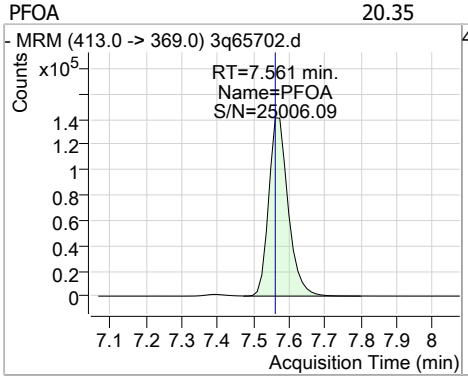


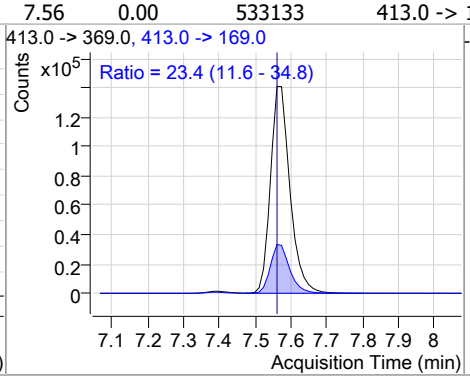


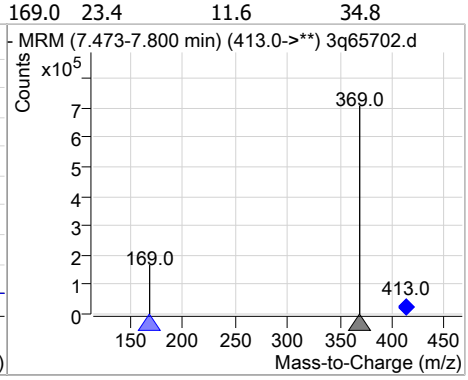


Perfluorinated Compounds by LC/MS/MS

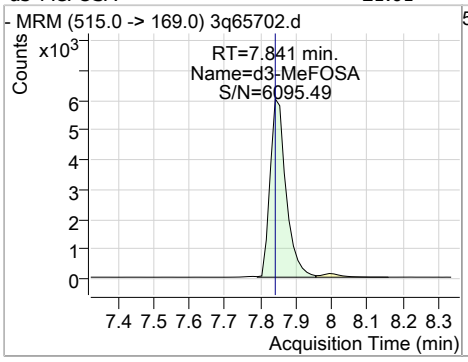
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.35	7.56	0.00	533133	413.0 -> 169.0	23.4	11.6	34.8

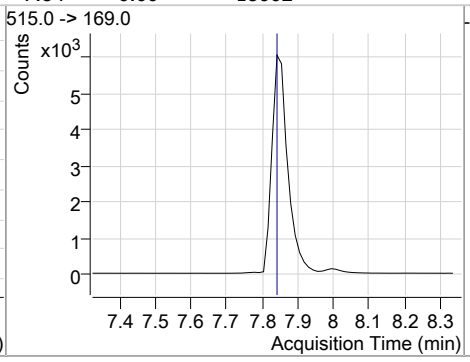


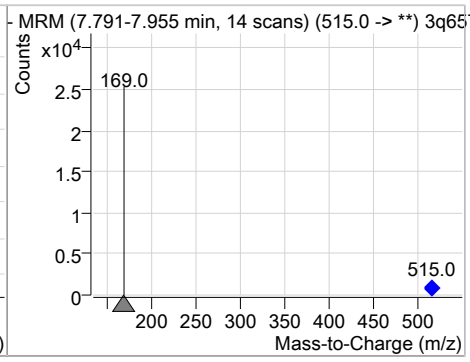




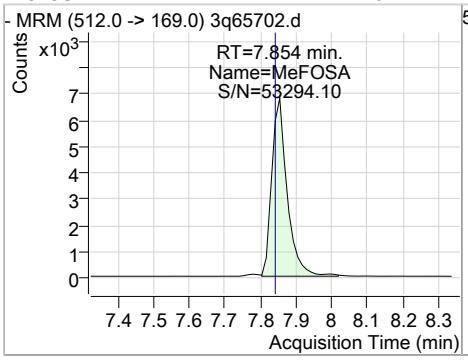
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.01	7.84	0.00	18602				

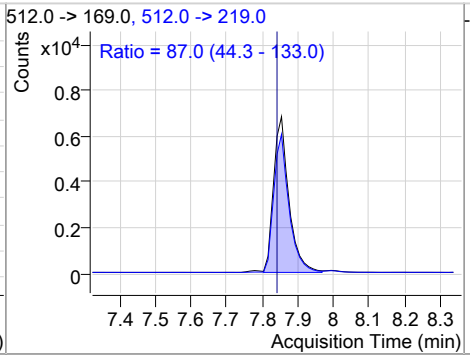


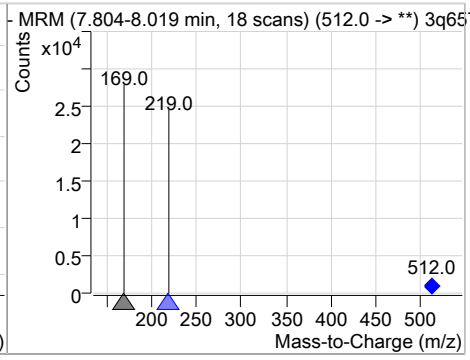




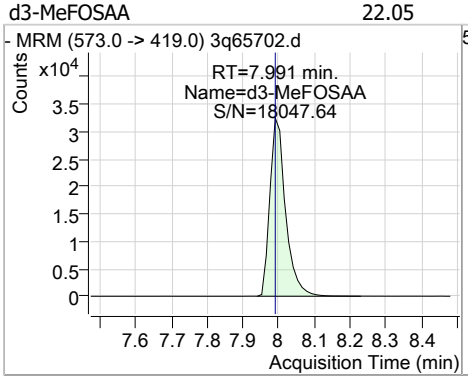
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.41	7.85	0.01	20433	512.0 -> 219.0	87.0	44.3	133.0

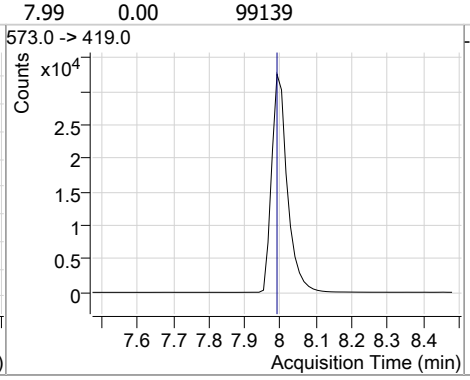


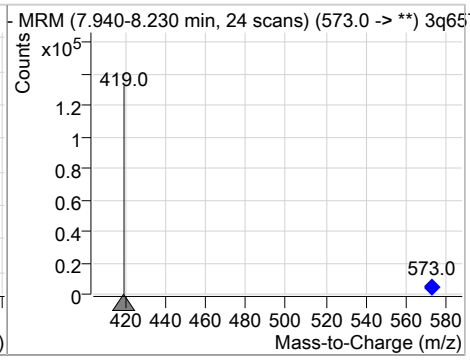




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.05	7.99	0.00	99139				

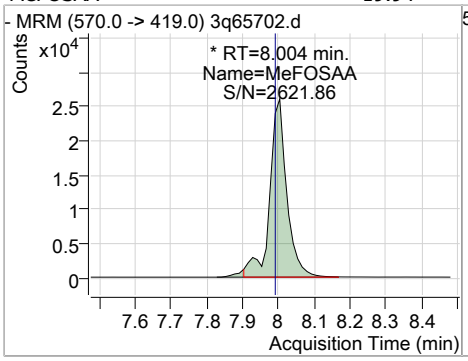


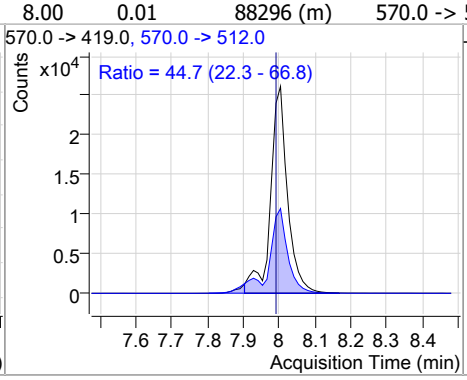


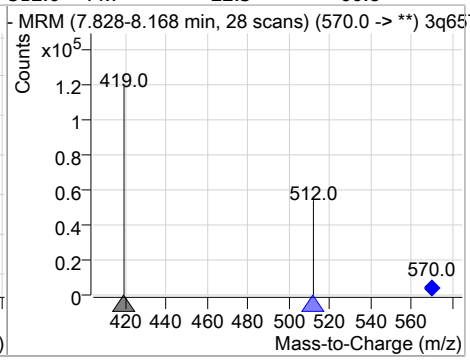


Perfluorinated Compounds by LC/MS/MS

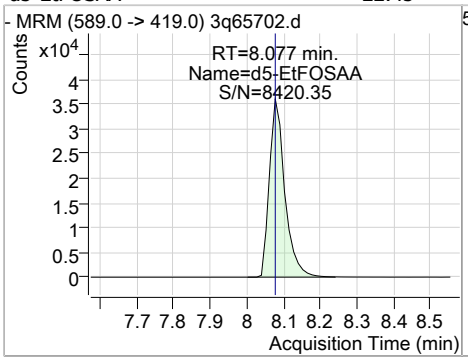
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.94	8.00	0.01	88296 (m)	570.0 -> 512.0	44.7	22.3	66.8

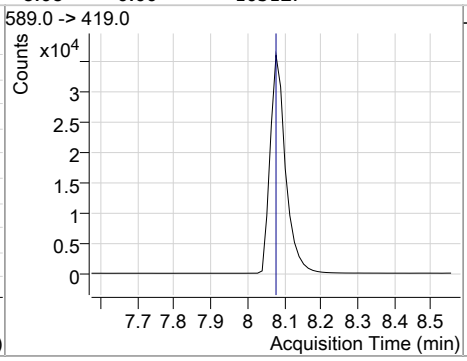


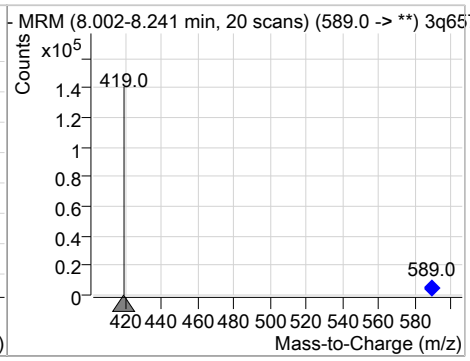




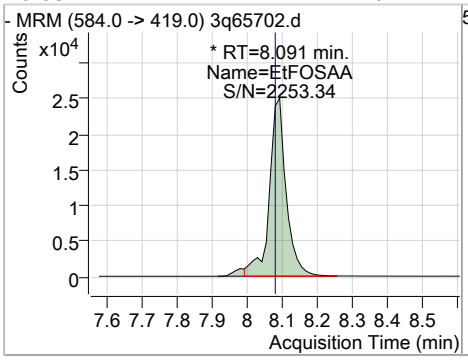
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.45	8.08	0.00	105127				

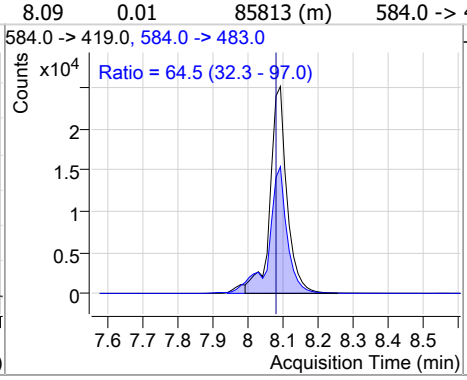


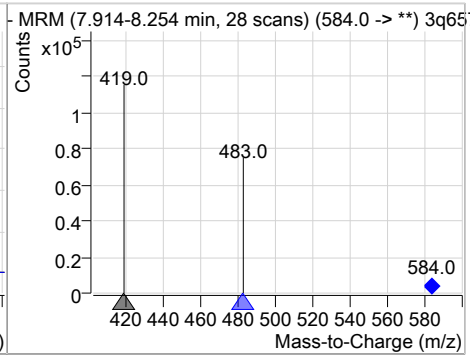




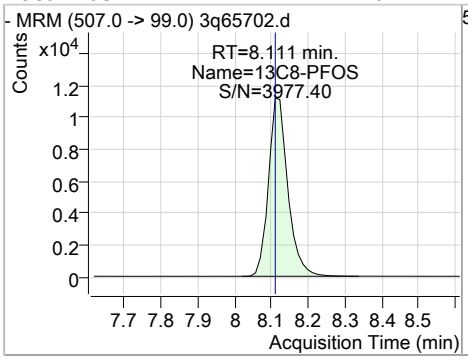
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.47	8.09	0.01	85813 (m)	584.0 -> 483.0	64.5	32.3	97.0

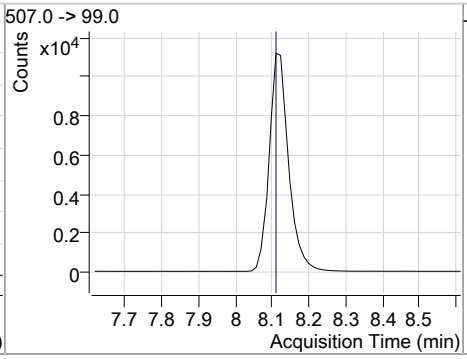


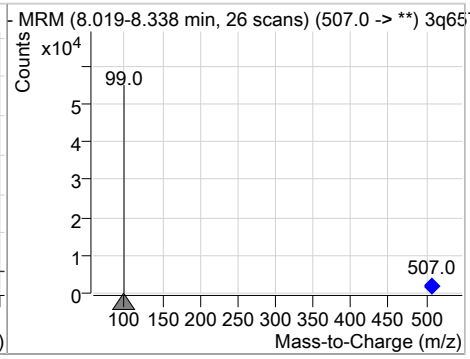




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.77	8.11	0.00	40760				

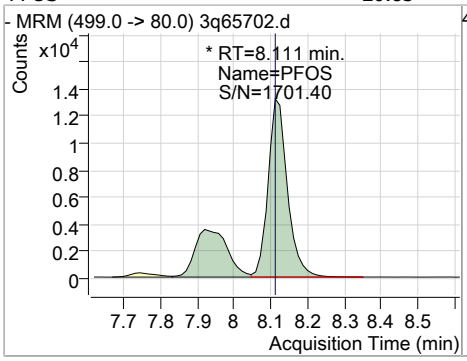


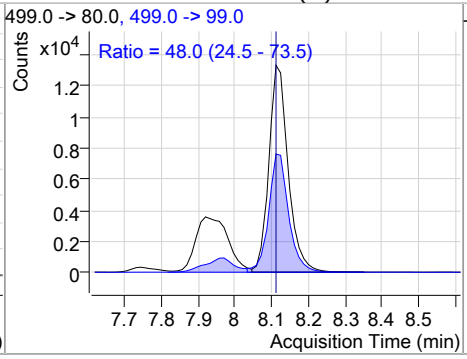


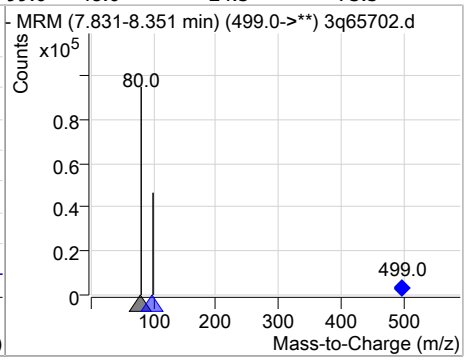


Perfluorinated Compounds by LC/MS/MS

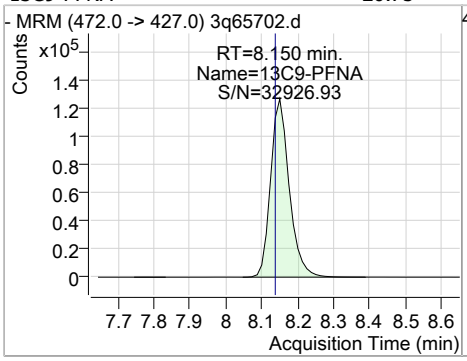
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.83	8.11	0.00	69942 (m)	499.0 -> 99.0	48.0	24.5	73.5

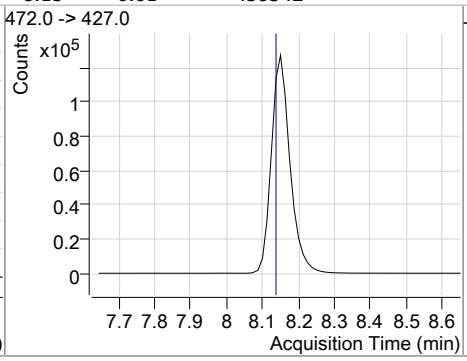


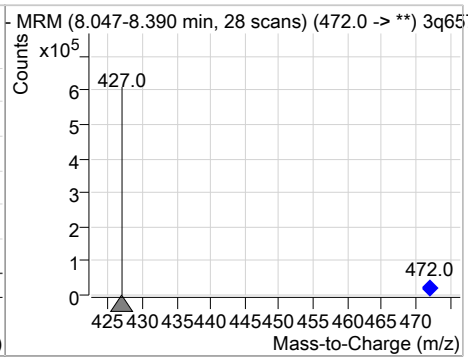




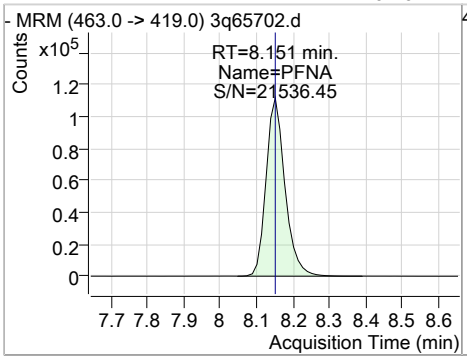
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.75	8.15	0.01	458542				

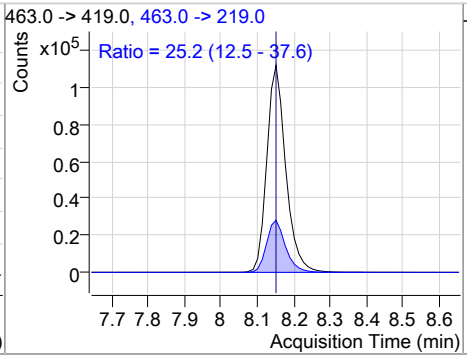


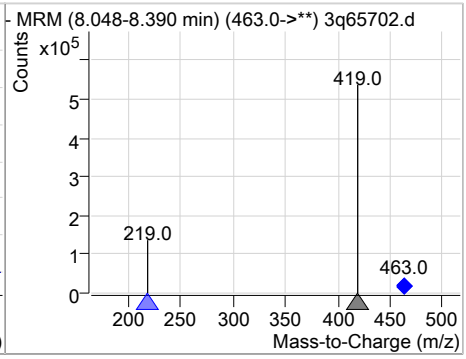




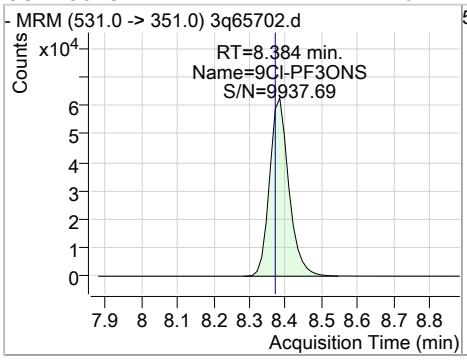
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.26	8.15	0.01	402395	463.0 -> 219.0	25.2	12.5	37.6

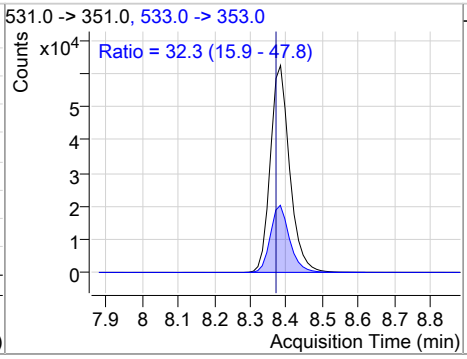


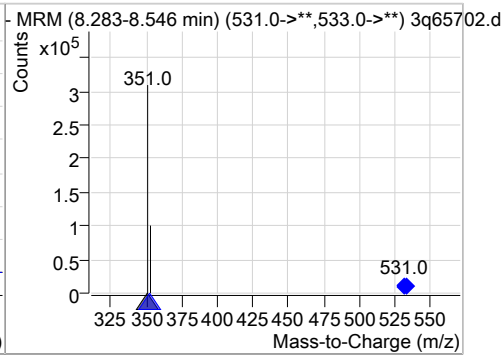




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.16	8.38	0.01	232074	533.0 -> 353.0	32.3	15.9	47.8

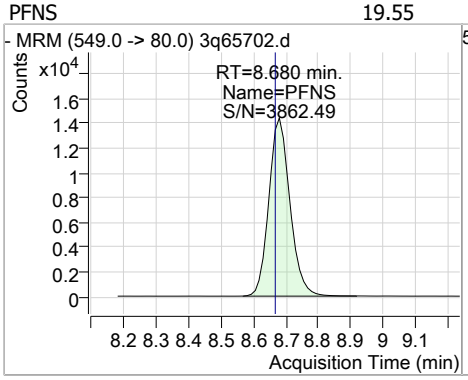


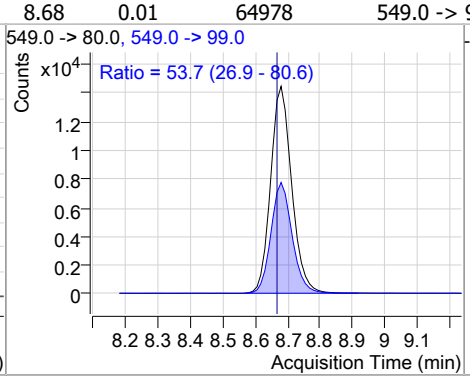


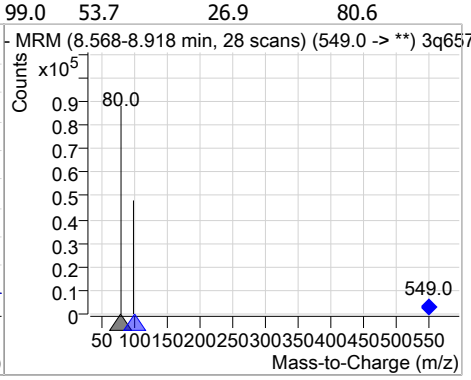


Perfluorinated Compounds by LC/MS/MS

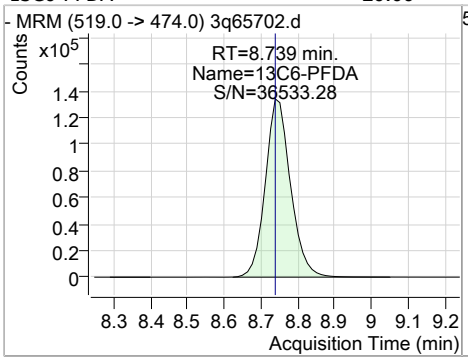
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.55	8.68	0.01	64978	549.0 -> 99.0	53.7	26.9	80.6

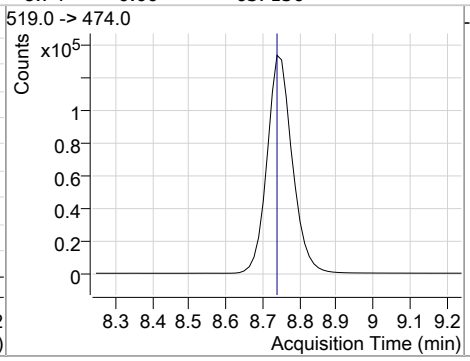


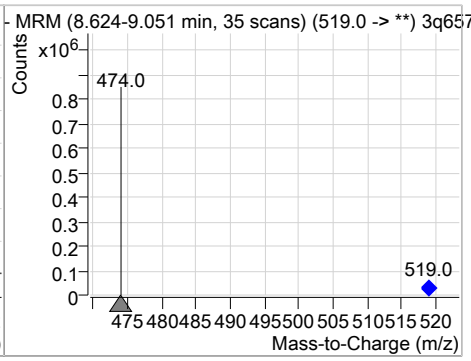




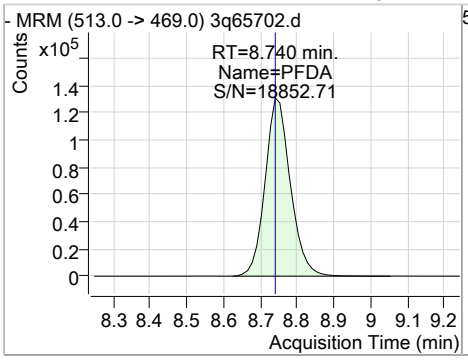
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.06	8.74	0.00	637156				

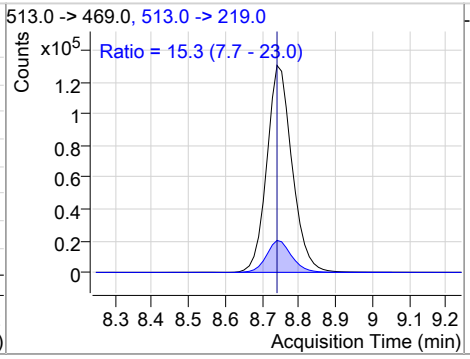


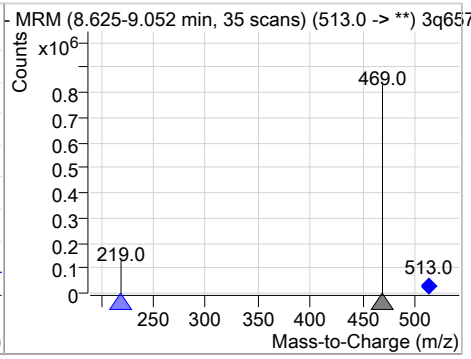




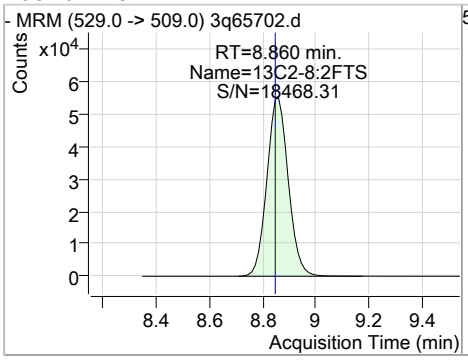
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.27	8.74	0.00	622484	513.0 -> 219.0	15.3	7.7	23.0

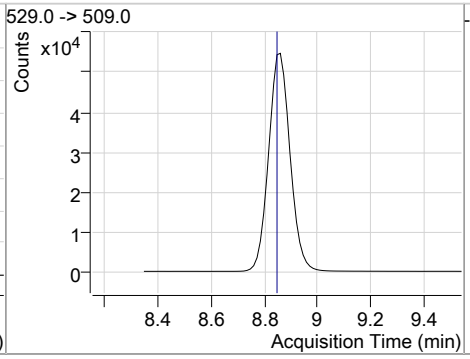


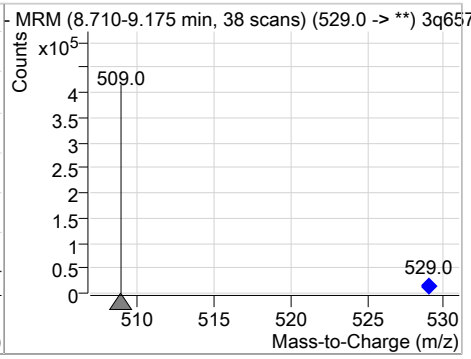




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.11	8.86	0.01	306759				

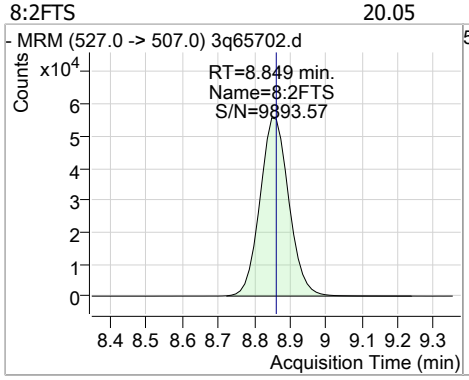


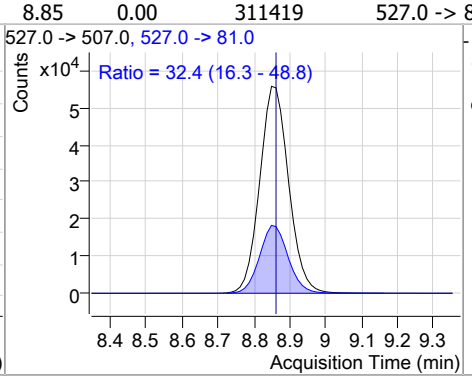


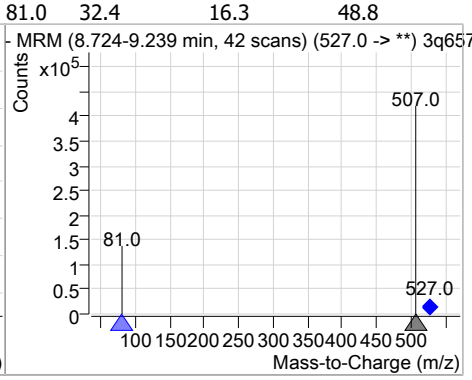


Perfluorinated Compounds by LC/MS/MS

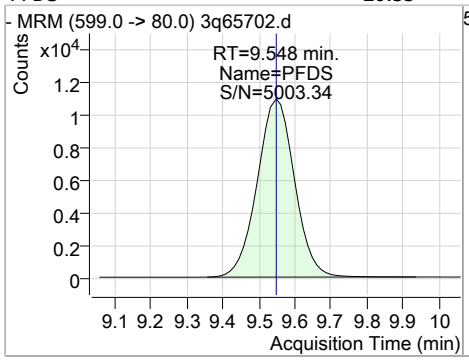
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.05	8.85	0.00	311419	527.0 -> 81.0	32.4	16.3	48.8

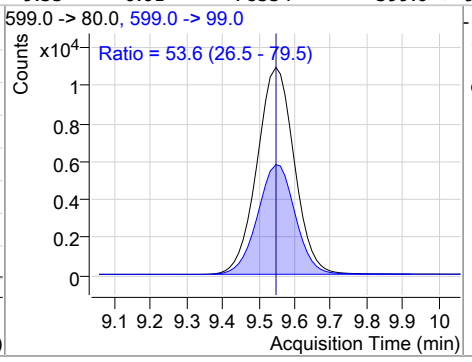


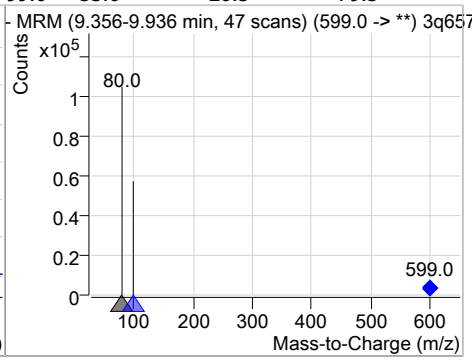




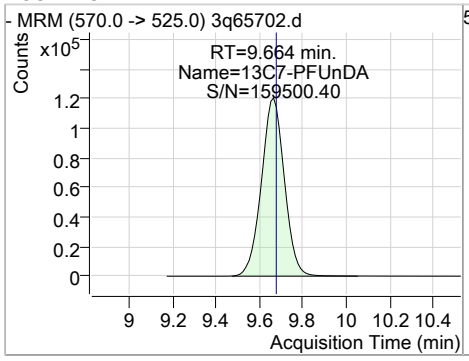
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.33	9.55	-0.01	78554	599.0 -> 99.0	53.6	26.5	79.5

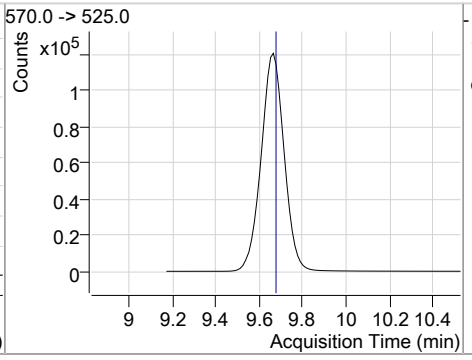


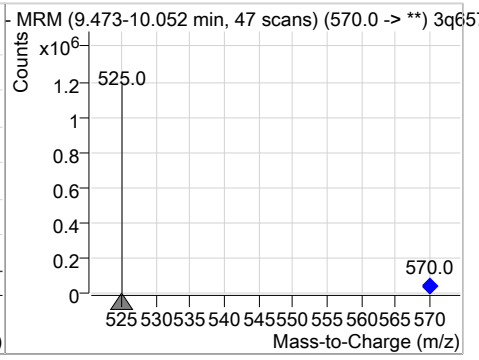




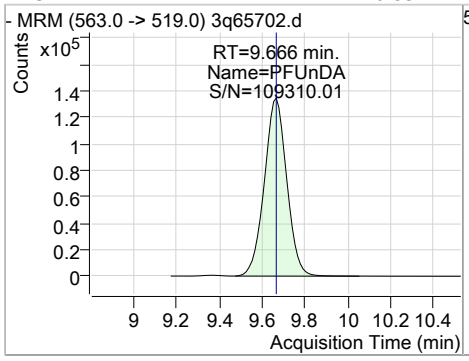
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.47	9.66	-0.01	886562				

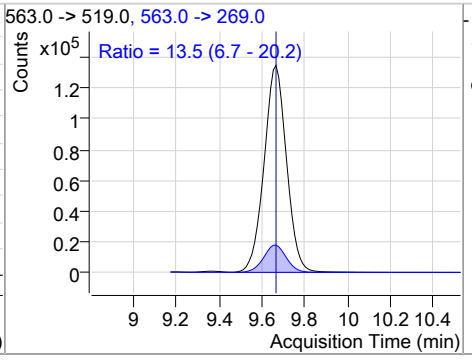


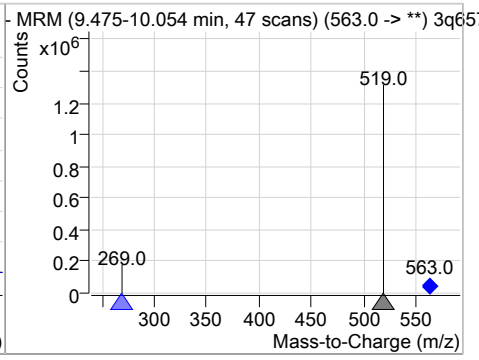




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.55	9.67	-0.01	981122	563.0 -> 269.0	13.5	6.7	20.2

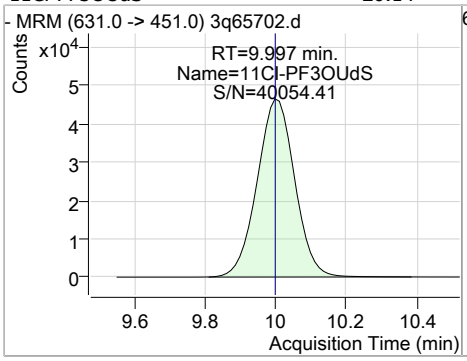


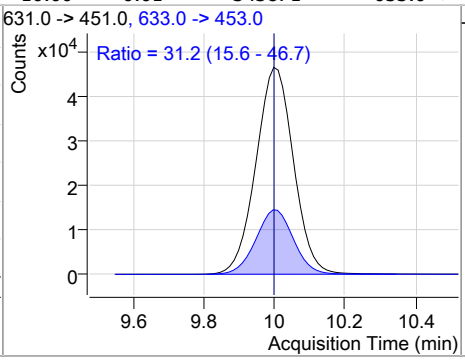


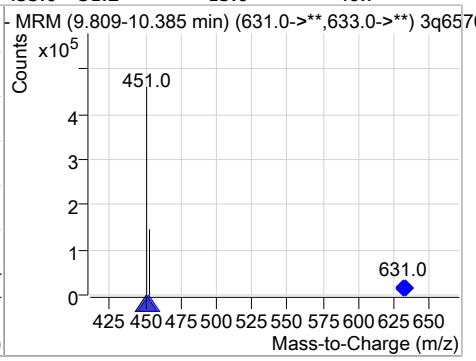


Perfluorinated Compounds by LC/MS/MS

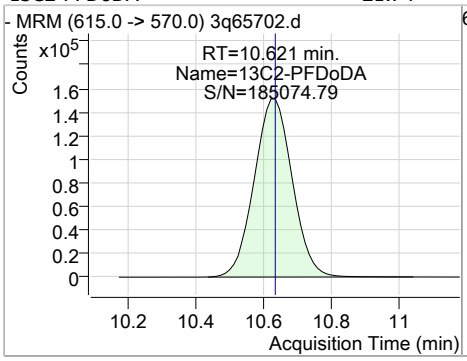
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.14	10.00	-0.01	343871	633.0 -> 453.0	31.2	15.6	46.7

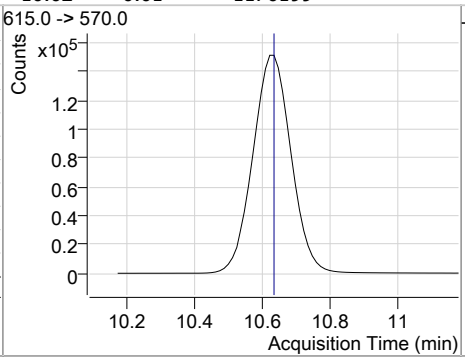


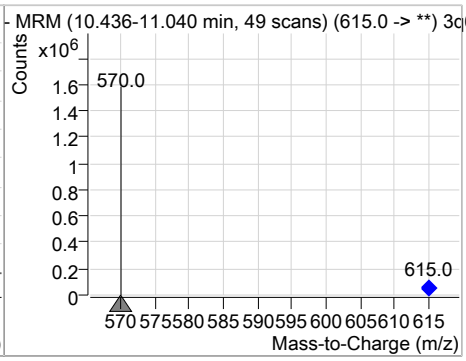




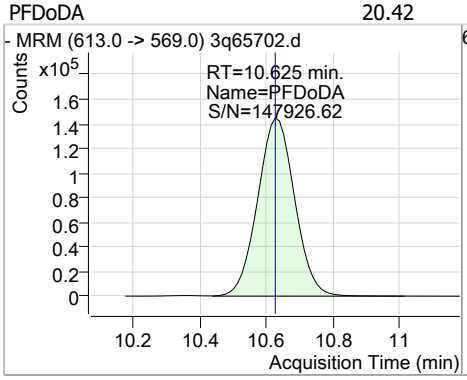
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.74	10.62	-0.01	1176199				

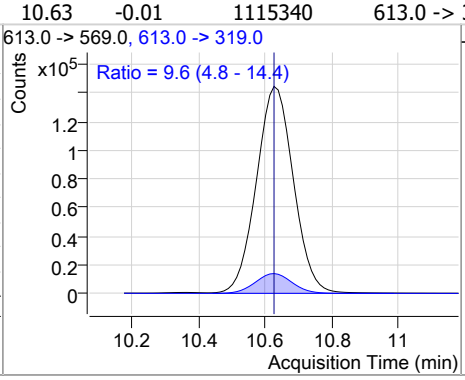


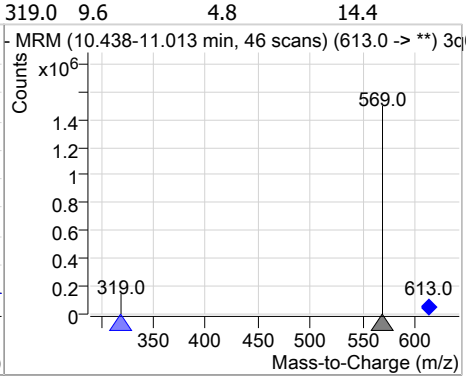




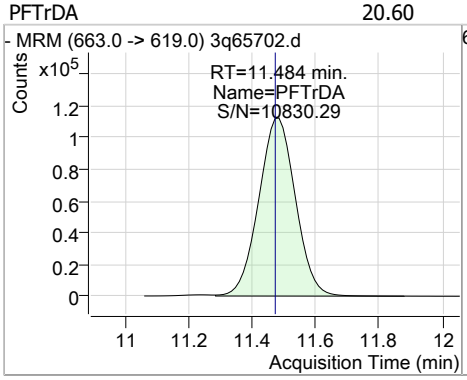
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.42	10.63	-0.01	1115340	613.0 -> 319.0	9.6	4.8	14.4

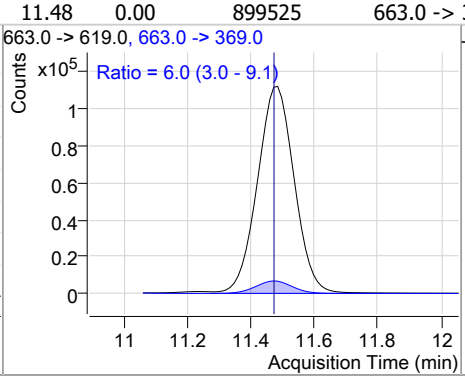


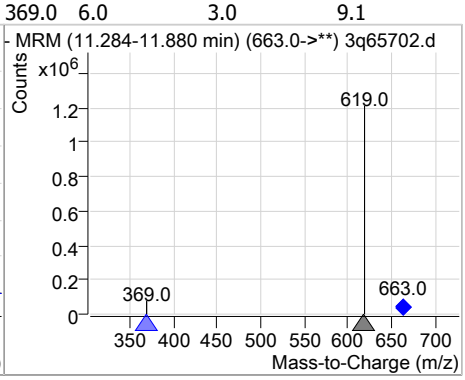




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.60	11.48	0.00	899525	663.0 -> 369.0	6.0	3.0	9.1

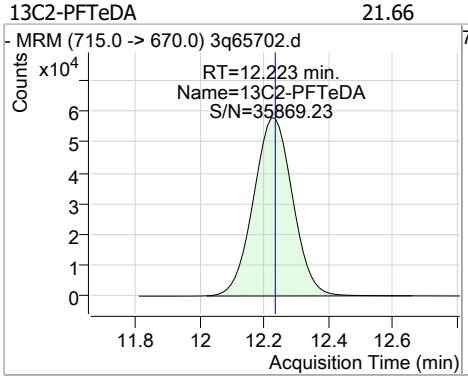


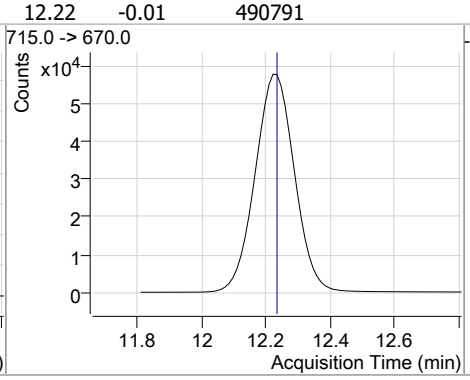


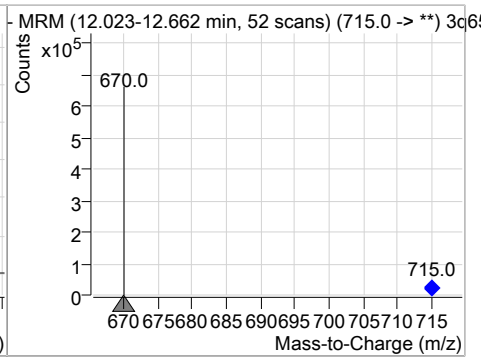


Perfluorinated Compounds by LC/MS/MS

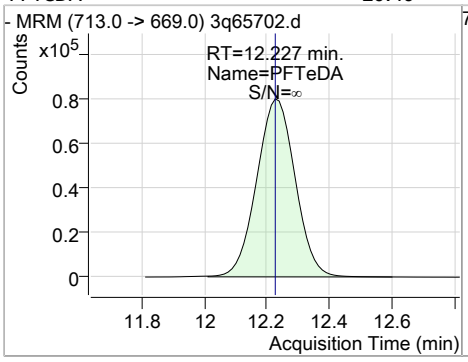
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.66	12.22	-0.01	490791				

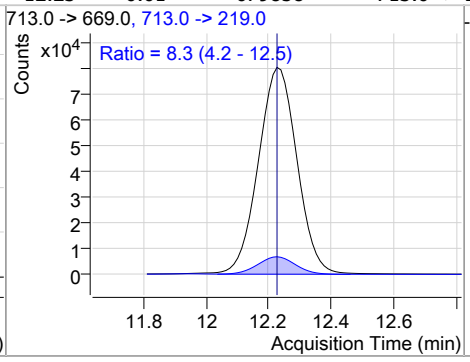


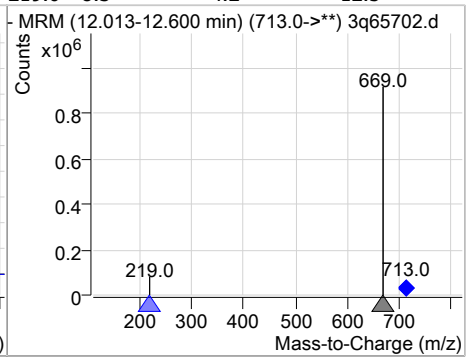




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.46	12.23	-0.01	679858	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65702.D
Injection Time: 09/13/22 23:39

Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 17:05 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65714.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 3:34:46 AM
Sample Name : cc898-20
Vial : P1-A7
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

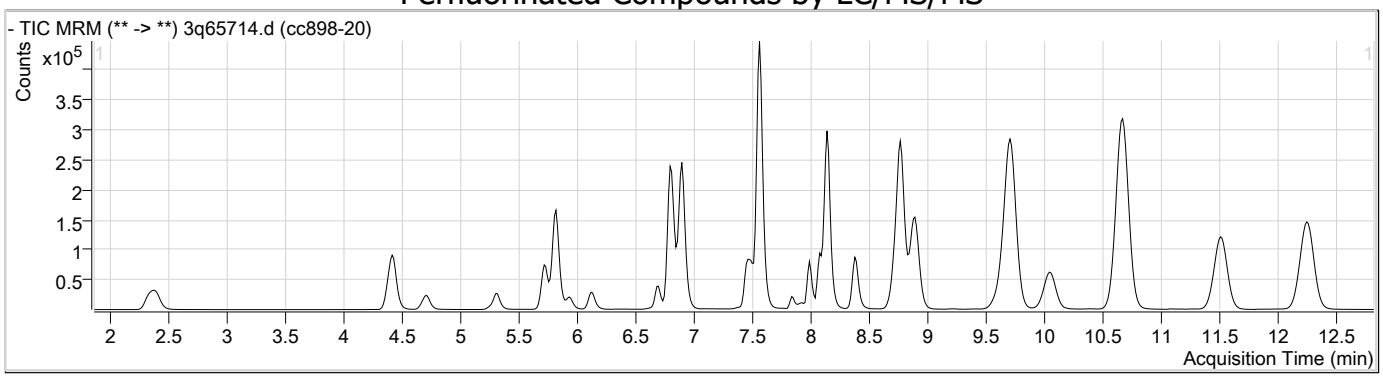
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	172217	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	252136	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	327908	20.00	µg/L	0.000
M4-PFHpA	6.793	367.0 -> 322.0	328572	20.00	µg/L	0.000
M8-PFOA	7.560	421.0 -> 376.0	444215	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	475443	20.00	µg/L	0.000
M6-PFDA	8.764	519.0 -> 474.0	670627	20.00	µg/L	0.025
M7-PFUnDA	9.702	570.0 -> 525.0	931422	20.00	µg/L	0.025
M2-PFDoDA	10.659	615.0 -> 570.0	1206583	20.00	µg/L	0.025
M2-PFTeDA	12.235	715.0 -> 670.0	495817	20.00	µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	82720	20.00	µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	23032	20.00	µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	28521	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	43045	20.00	µg/L	0.000
M2-4:2FTS	5.708	329.0 -> 309.0	123663	20.00	µg/L	0.000
M2-6:2FTS	7.571	429.0 -> 409.0	173523	20.00	µg/L	0.013
M2-8:2FTS	8.885	529.0 -> 509.0	354714	20.00	µg/L	0.038
M3-MeFOSAA	7.978	573.0 -> 419.0	100916	20.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	26746	20.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	19403	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	106651	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.708	329.0 -> 309.0	123663	21.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C2-6:2FTS	7.571	429.0 -> 409.0	173523	22.17	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.8%		
13C2-8:2FTS	8.885	529.0 -> 509.0	354714	24.40	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.0%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1206583	22.30	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C2-PFTeDA	12.235	715.0 -> 670.0	495817	21.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C3-PFBS	4.704	302.0 -> 99.0	23032	21.77	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C3-PFHxS	6.822	402.0 -> 99.0	28521	22.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.4%		
13C4-PFBA	2.365	217.0 -> 172.0	172217	21.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C4-PFHpA	6.793	367.0 -> 322.0	328572	21.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C5-PFHxA	5.813	318.0 -> 273.0	327908	21.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C5-PFPeA	4.411	268.0 -> 223.0	252136	21.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C6-PFDA	8.764	519.0 -> 474.0	670627	21.11	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

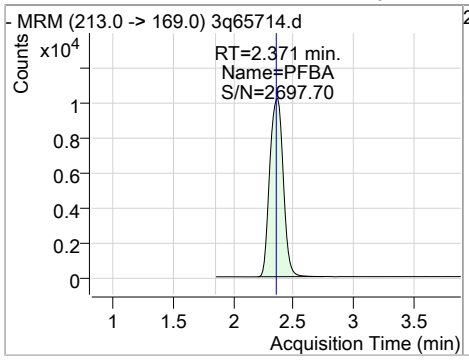
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C7-PFUnDA	9.702	570.0 -> 525.0	931422	22.56 µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C8-FOSA	7.491	506.0 -> 78.0	82720	21.90 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C8-PFOA	7.560	421.0 -> 376.0	444215	22.07 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C8-PFOS	8.111	507.0 -> 99.0	43045	21.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C9-PFNA	8.138	472.0 -> 427.0	475443	21.52 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
d3-MeFOSAA	7.978	573.0 -> 419.0	100916	22.44 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C3-HFPO-DA	6.117	287.0 -> 169.0	26737	20.83 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
d3-MeFOSA	7.829	515.0 -> 169.0	19403	21.92 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
d5-EtFOSAA	8.065	589.0 -> 419.0	106665	22.78 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
Target Compounds						**QValue**
4:2FTS	5.710	327.0 -> 307.0	132572	20.33 µg/L		100
6:2FTS	7.571	427.0 -> 407.0	181839	20.17 µg/L		99
8:2FTS	8.887	527.0 -> 507.0	358240	19.94 µg/L		100
EtFOSAA	8.065	584.0 -> 419.0	87253	20.52 µg/L	m	99
FOSA	7.491	498.0 -> 78.0	83098	21.11 µg/L		99
MeFOSAA	7.979	570.0 -> 419.0	90511	20.08 µg/L	m	99
PFBA	2.371	213.0 -> 169.0	79411	20.17 µg/L		100
PFBS	4.694	299.0 -> 80.0	66278	20.25 µg/L		99
PFDA	8.765	513.0 -> 469.0	657876	20.36 µg/L		100
PFDoDA	10.663	613.0 -> 569.0	1143270	20.40 µg/L		100
PFDS	9.585	599.0 -> 80.0	79533	19.59 µg/L		100
PFHpA	6.794	363.0 -> 319.0	477996	20.33 µg/L		100
PFHpS	7.544	449.0 -> 80.0	59914	21.34 µg/L		99
PFHxA	5.814	313.0 -> 269.0	356889	20.41 µg/L		100
PFHxS	6.823	399.0 -> 80.0	67285	20.23 µg/L	m	99
PFNA	8.139	463.0 -> 419.0	419247	20.36 µg/L		99
PFNS	8.692	549.0 -> 80.0	68581	19.53 µg/L		100
PFOA	7.561	413.0 -> 369.0	551611	20.33 µg/L		99
PFOS	8.111	499.0 -> 80.0	71035	20.04 µg/L	m	100
PFPeA	4.414	263.0 -> 219.0	227510	20.66 µg/L		100
PFPeS	5.919	349.0 -> 80.0	51608	20.30 µg/L		98
PFTeDA	12.239	713.0 -> 669.0	690074	20.55 µg/L		100
PFTrDA	11.497	663.0 -> 619.0	920240	20.86 µg/L		100
PFUnDA	9.703	563.0 -> 519.0	1020413	20.34 µg/L		100
11Cl-PF3OUdS	10.034	631.0 -> 451.0	349361	19.95 µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	246198	21.32 µg/L		99
ADONA	6.891	377.0 -> 251.0	717708	19.85 µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	66048	20.72 µg/L		100
MeFOSA	7.829	512.0 -> 169.0	21502	20.59 µg/L		97
4-PFECHS	7.454	461.0 -> 381.0	187863	18.76 µg/L		100
FBSA	5.300	298.0 -> 78.0	117348	21.00 µg/L		100
FHxSA	6.688	398.0 -> 78.0	126563	19.32 µg/L		100

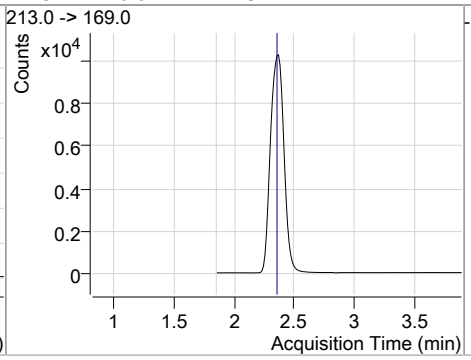
 # = Qualifier out of range, m = manually integrated, + = Area summed

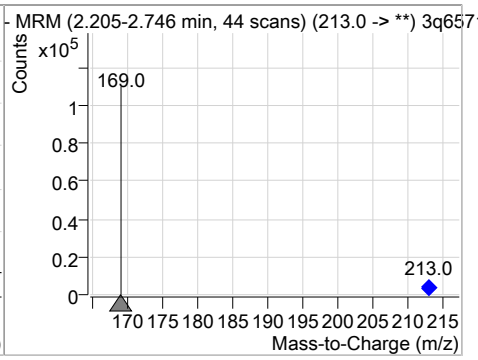
Perfluorinated Compounds by LC/MS/MS



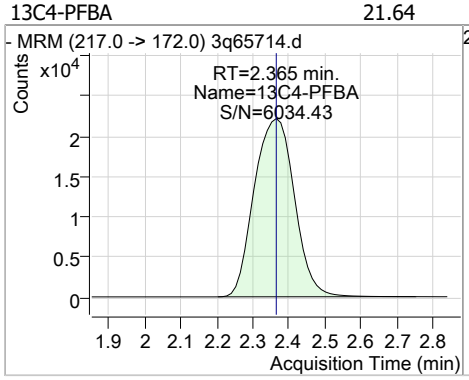
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.17	2.37	0.01	79411				

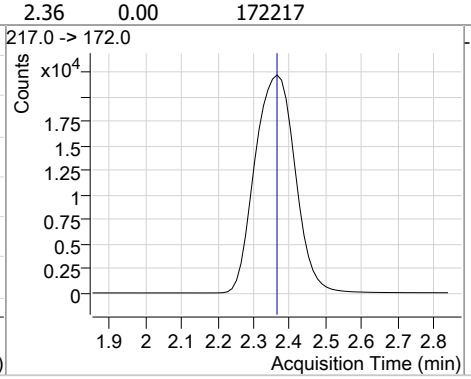


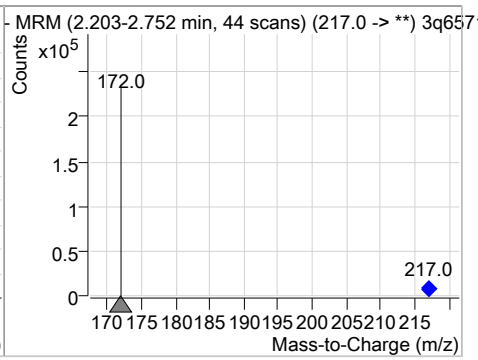




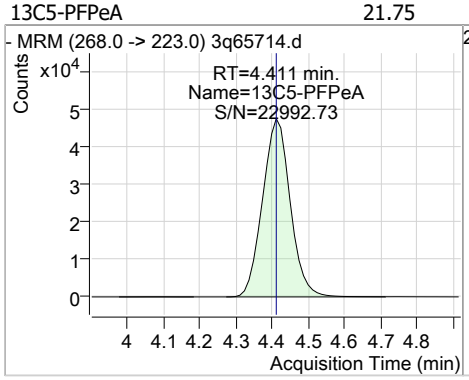
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.64	2.36	0.00	172217				

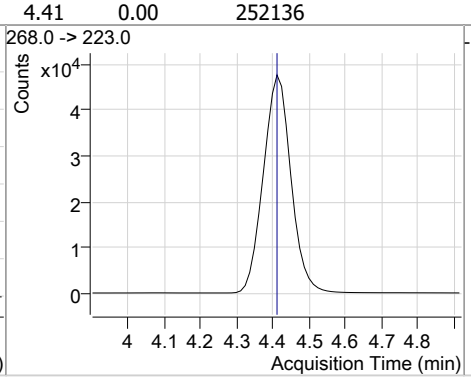


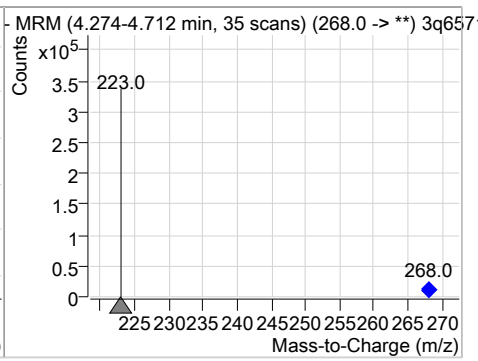




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.75	4.41	0.00	252136				

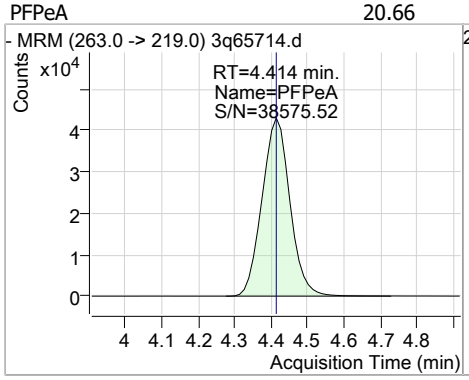


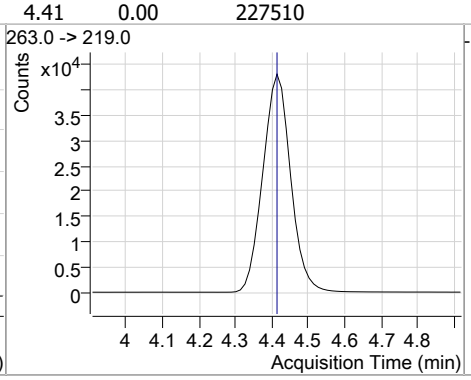


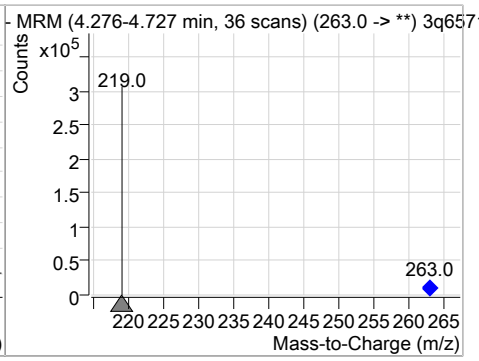


Perfluorinated Compounds by LC/MS/MS

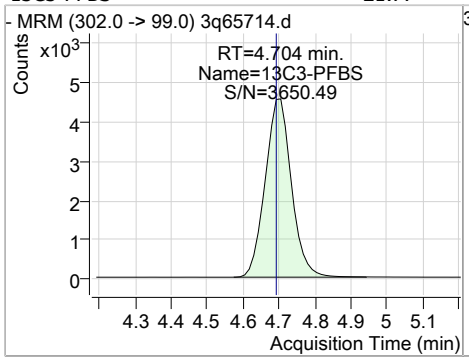
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.66	4.41	0.00	227510				

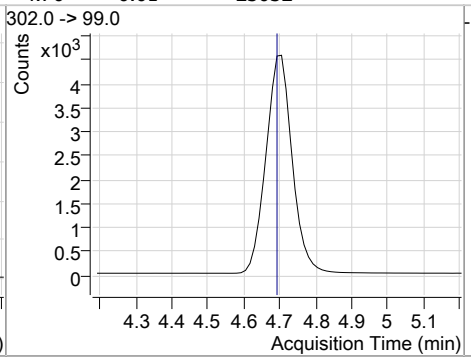


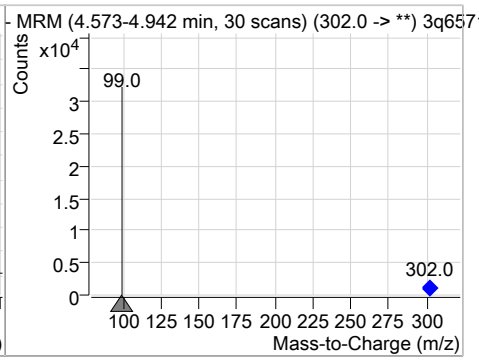




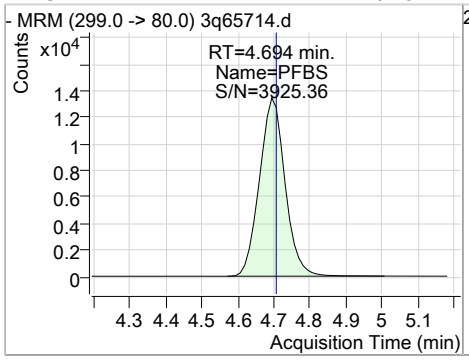
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.77	4.70	0.01	23032				

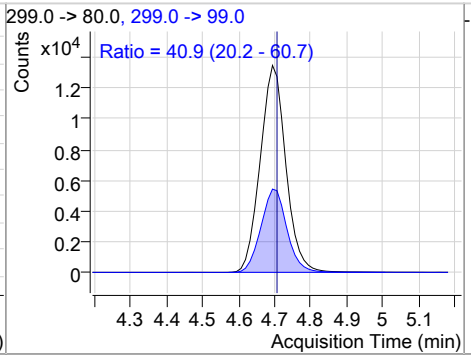


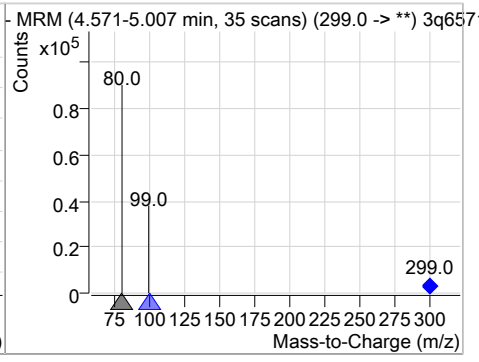




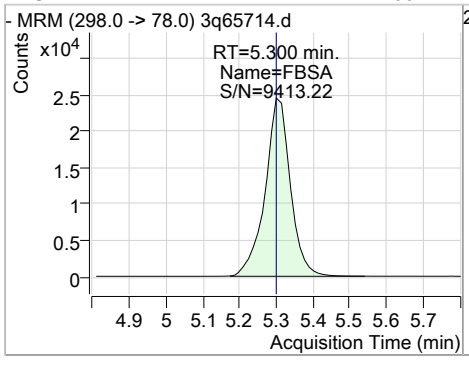
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.25	4.69	0.00	66278	299.0 -> 99.0	40.9	20.2	60.7

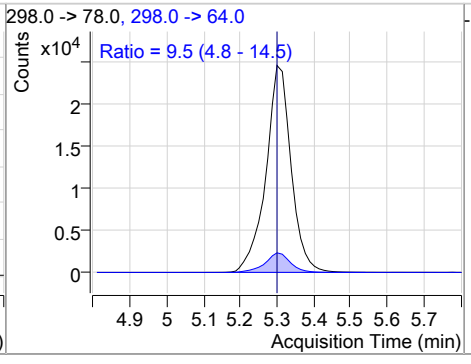


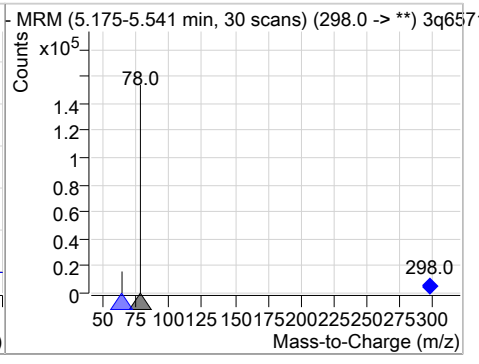




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	21.00	5.30	0.00	117348	298.0 -> 64.0	9.5	4.8	14.5

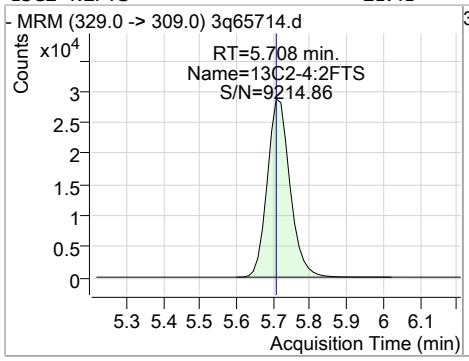


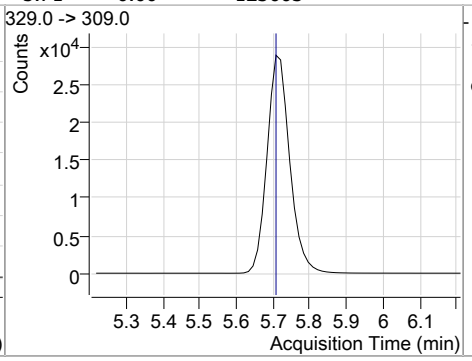


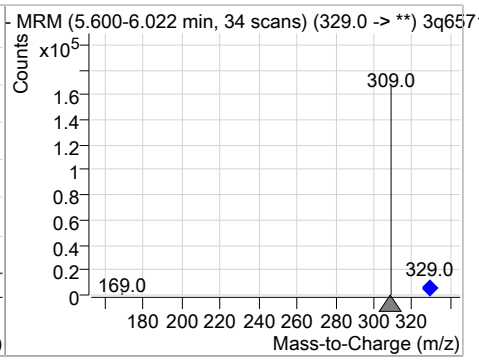


Perfluorinated Compounds by LC/MS/MS

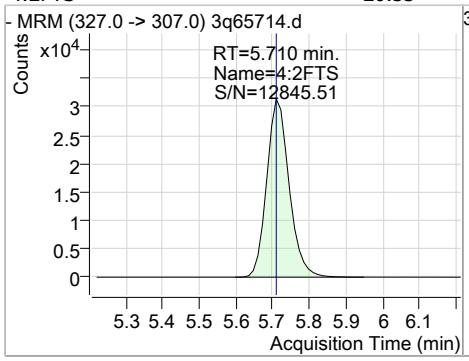
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.41	5.71	0.00	123663				

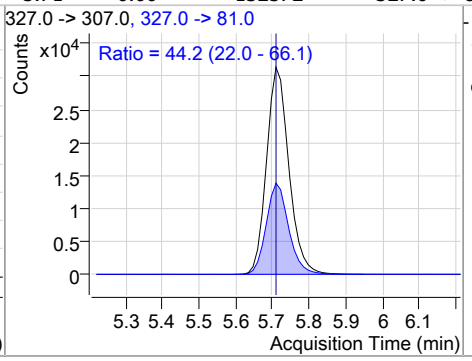


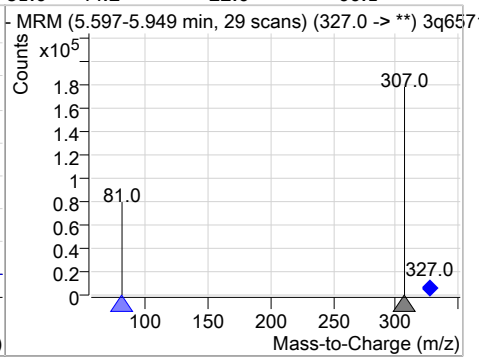




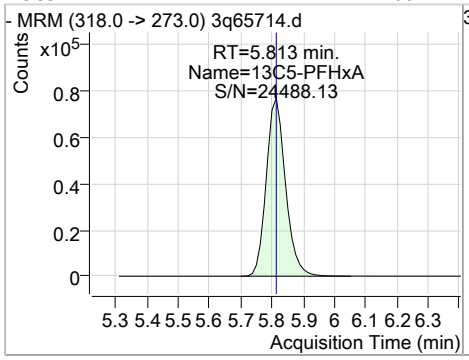
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.33	5.71	0.00	132572	327.0 -> 81.0	44.2	22.0	66.1

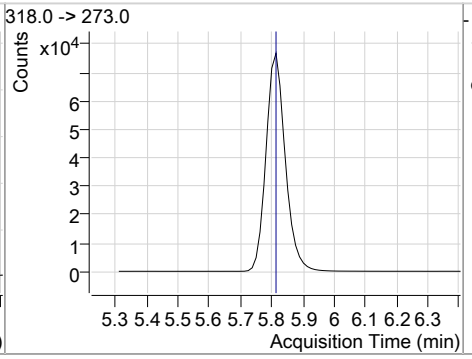


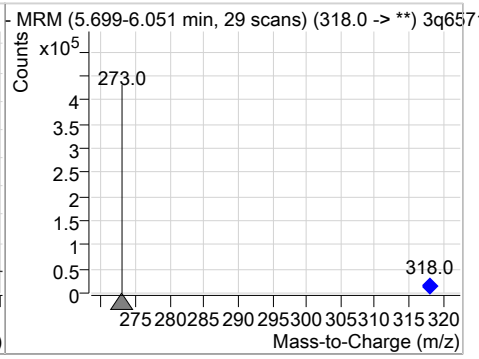




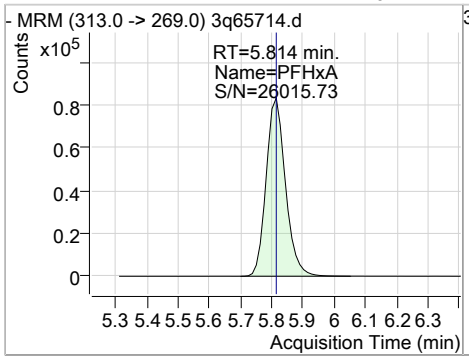
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.60	5.81	0.00	327908				

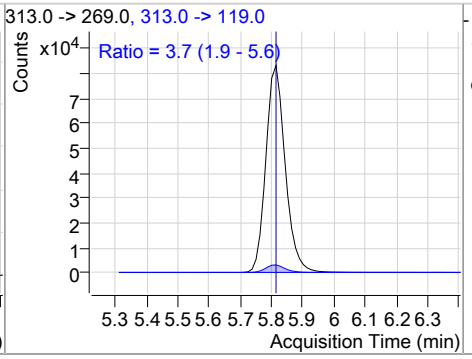


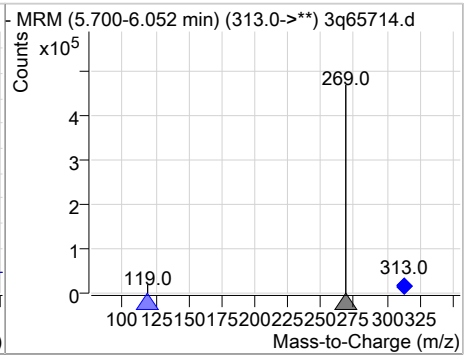




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.41	5.81	0.00	356889	313.0 -> 119.0	3.7	1.9	5.6

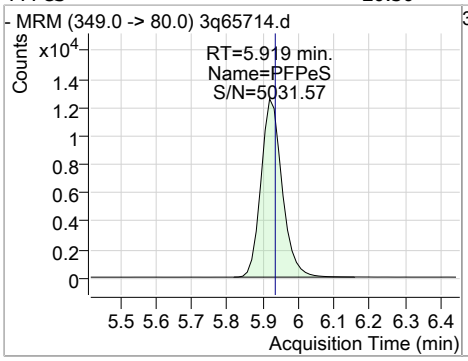


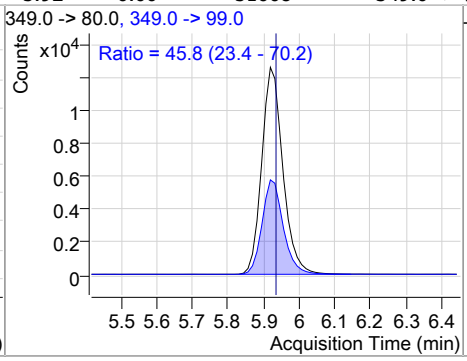


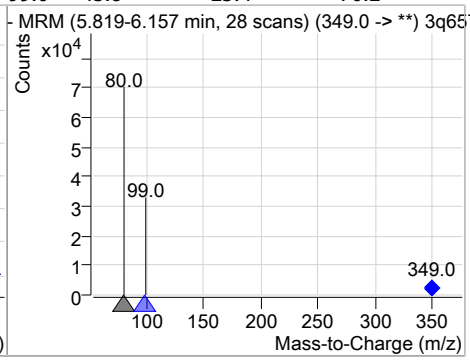


Perfluorinated Compounds by LC/MS/MS

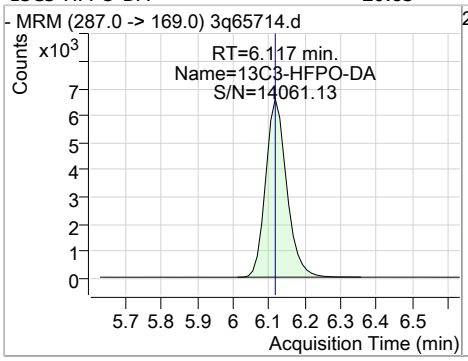
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.30	5.92	0.00	51608	349.0 -> 99.0	45.8	23.4	70.2

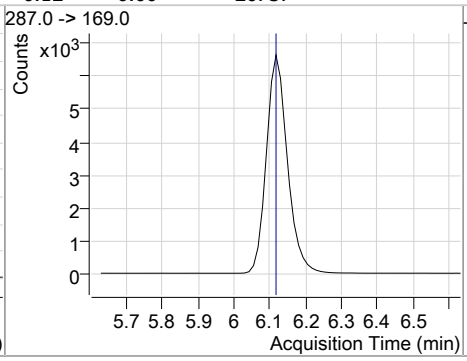


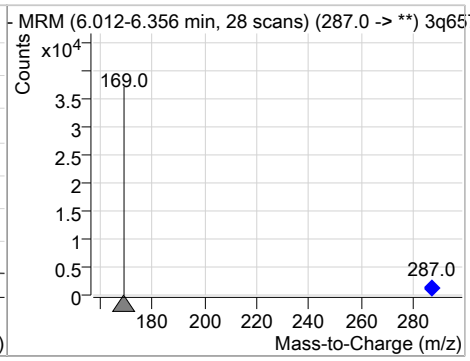




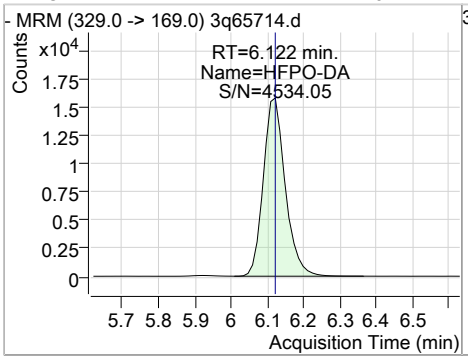
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.83	6.12	0.00	26737				

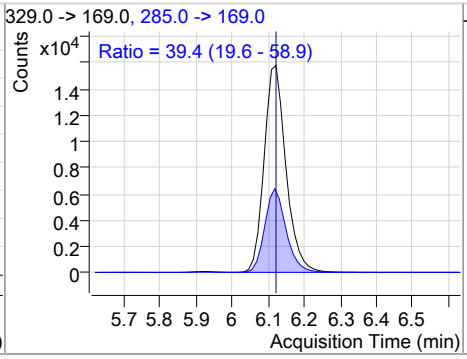


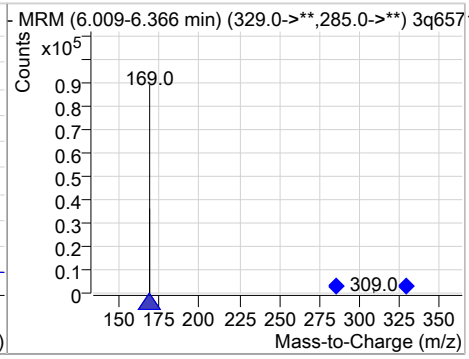




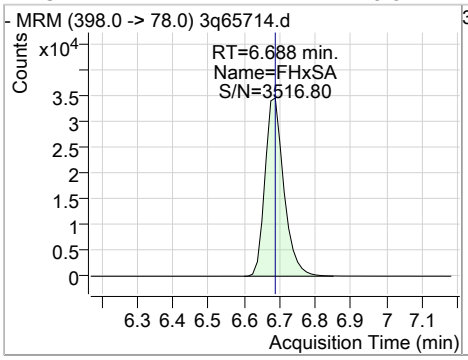
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.72	6.12	0.00	66048	285.0 -> 169.0	39.4	19.6	58.9

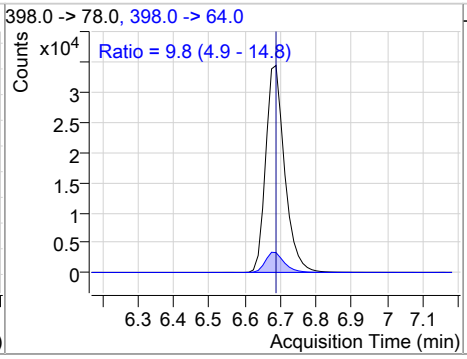


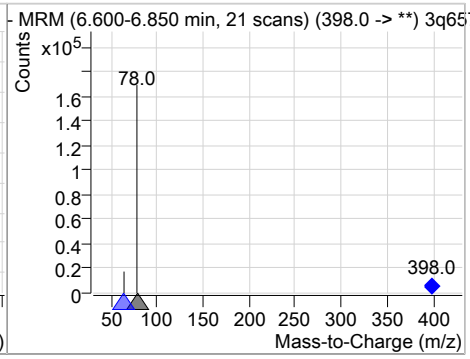




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.32	6.69	0.00	126563	398.0 -> 64.0	9.8	4.9	14.8

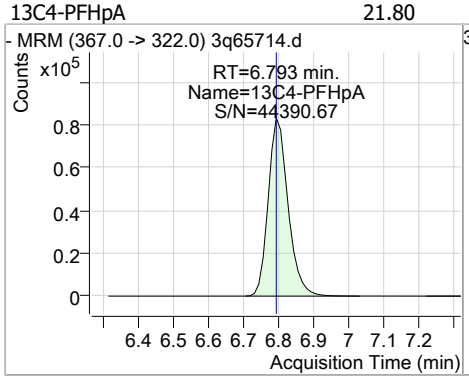


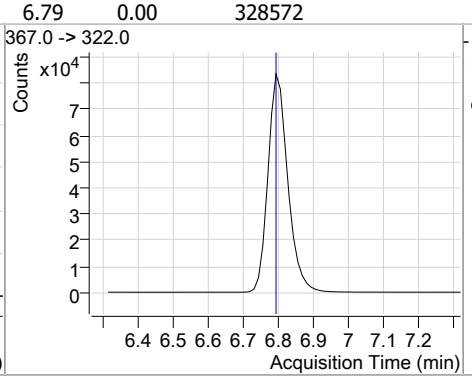


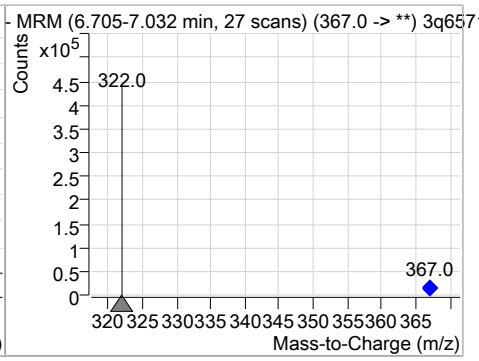


Perfluorinated Compounds by LC/MS/MS

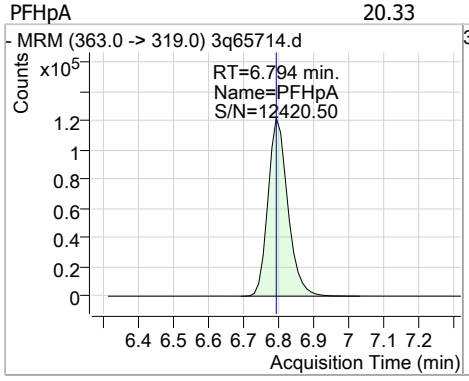
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.80	6.79	0.00	328572				

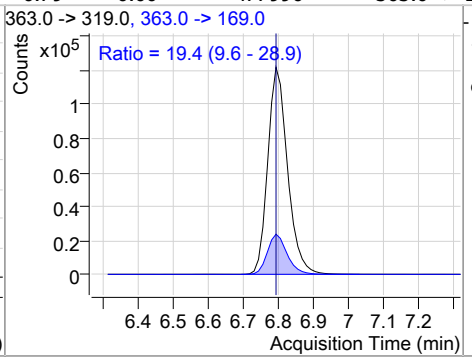


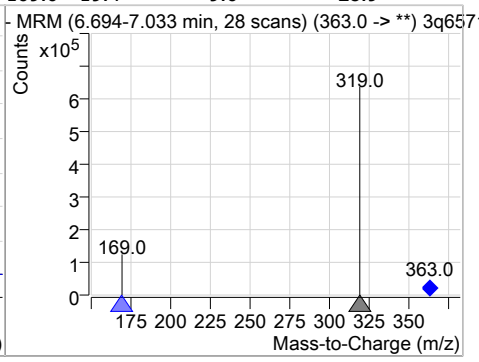




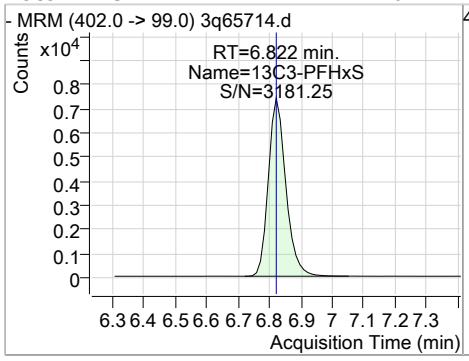
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.33	6.79	0.00	477996	363.0 -> 169.0	19.4	9.6	28.9

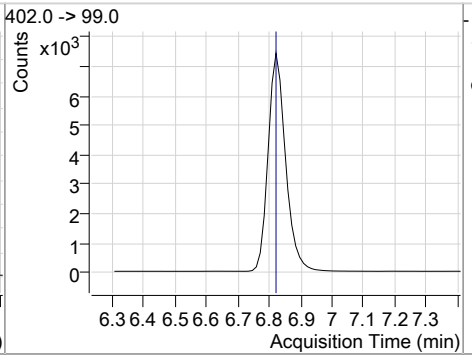


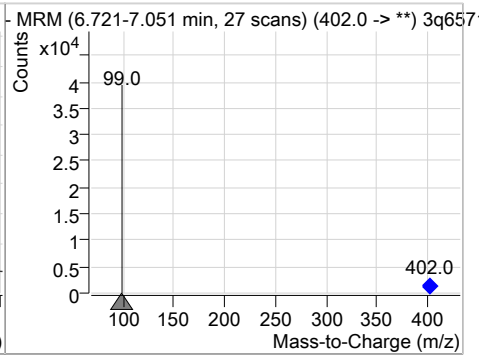




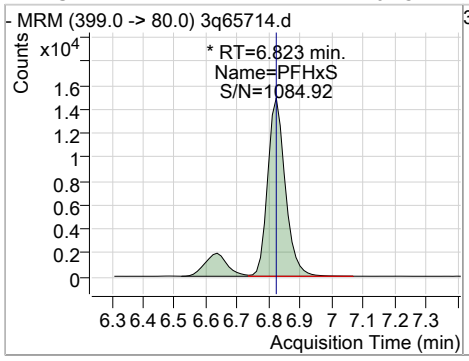
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.07	6.82	0.00	28521				

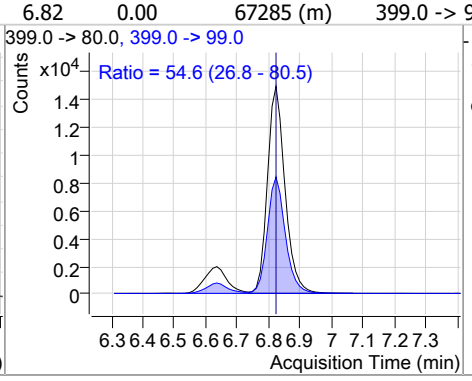


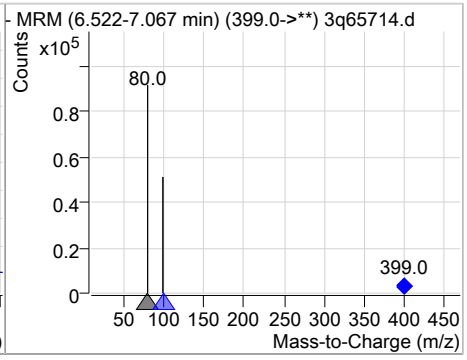




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.23	6.82	0.00	67285 (m)	399.0 -> 99.0	54.6	26.8	80.5

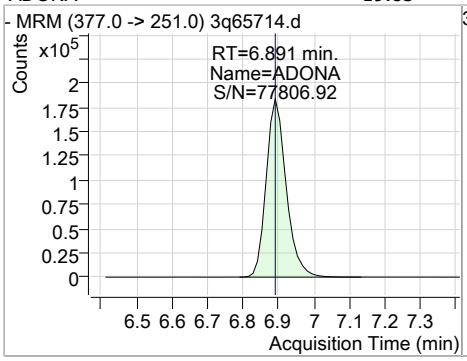


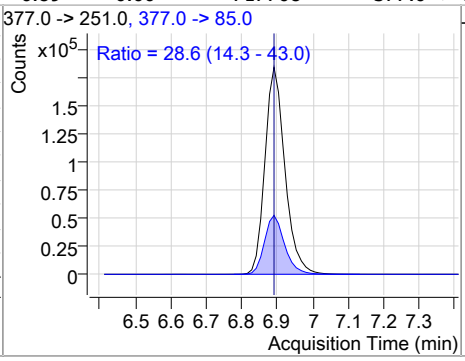


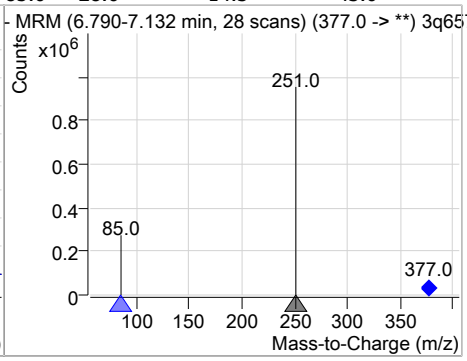


Perfluorinated Compounds by LC/MS/MS

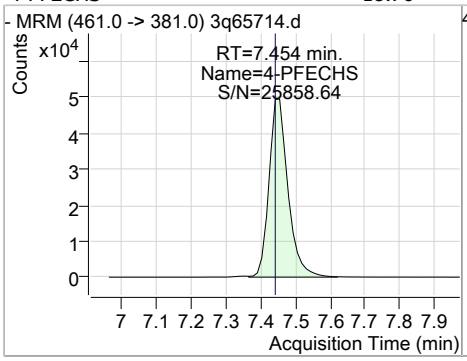
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.85	6.89	0.00	717708	377.0 -> 85.0	28.6	14.3	43.0

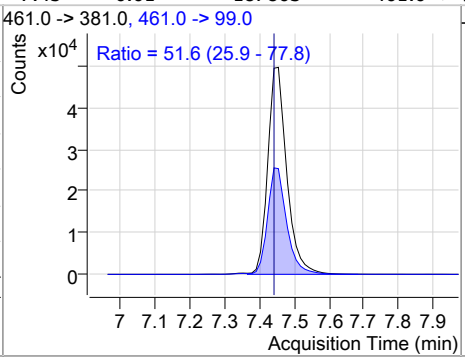


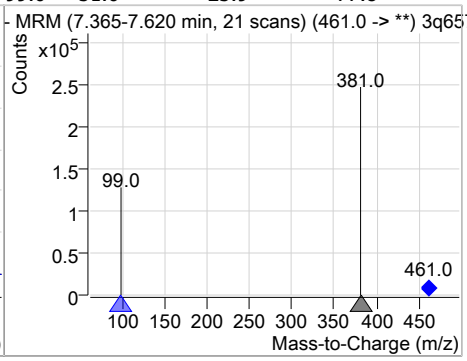




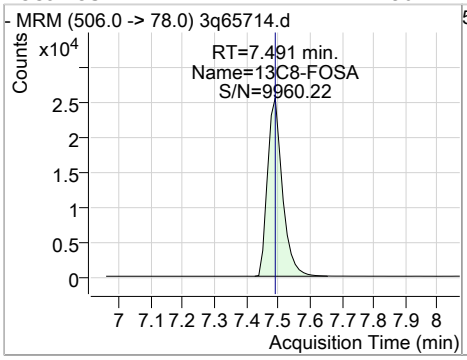
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.76	7.45	0.01	187863	461.0 -> 99.0	51.6	25.9	77.8

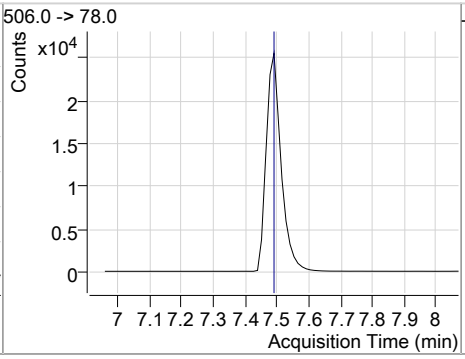


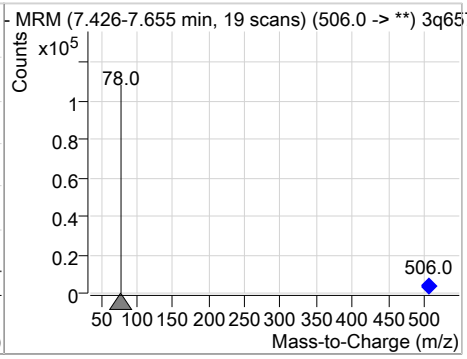




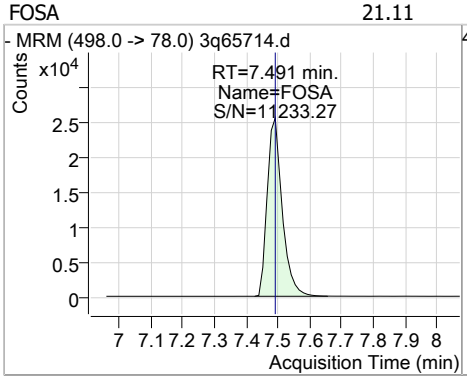
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.90	7.49	0.00	82720				

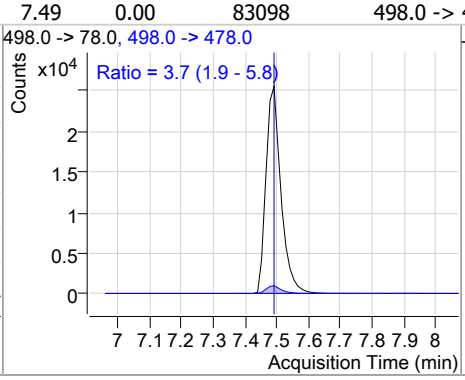


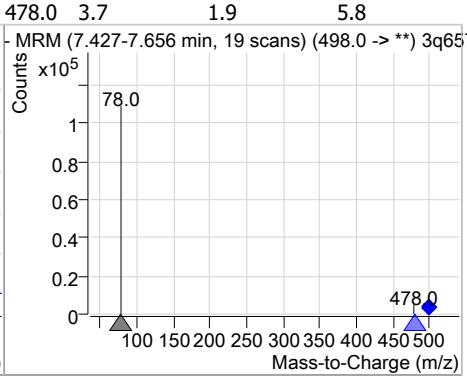




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.11	7.49	0.00	83098	498.0 -> 478.0	3.7	1.9	5.8

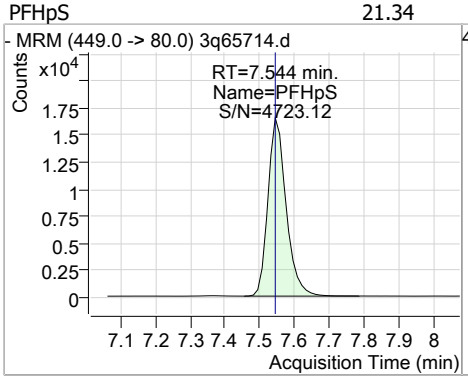


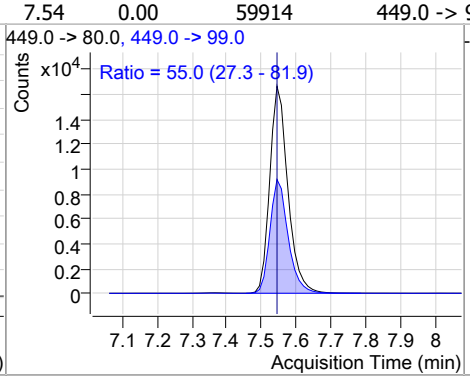


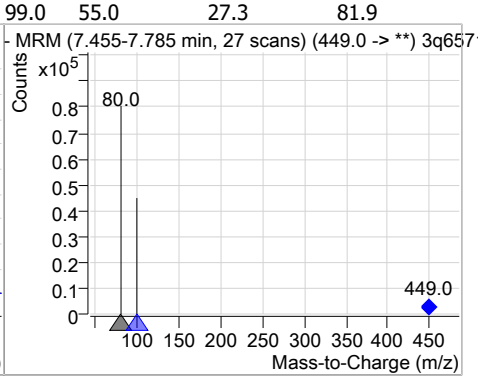


Perfluorinated Compounds by LC/MS/MS

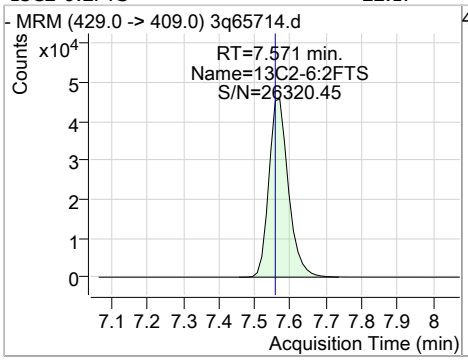
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.34	7.54	0.00	59914	449.0 -> 99.0	55.0	27.3	81.9

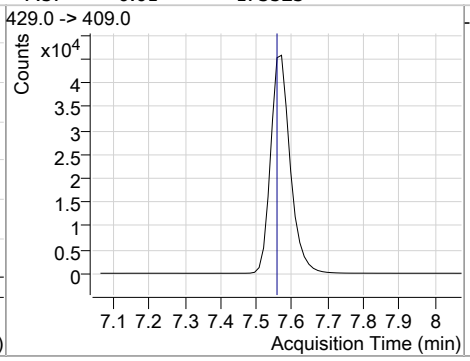


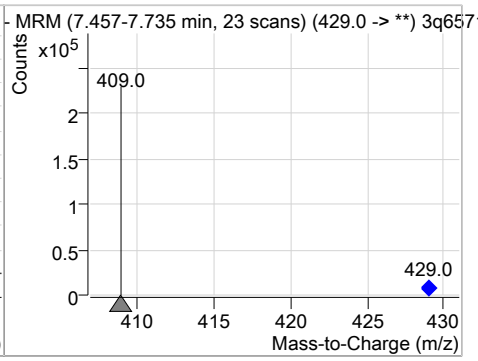




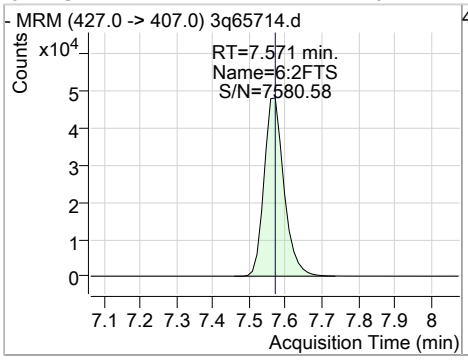
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.17	7.57	0.01	173523				

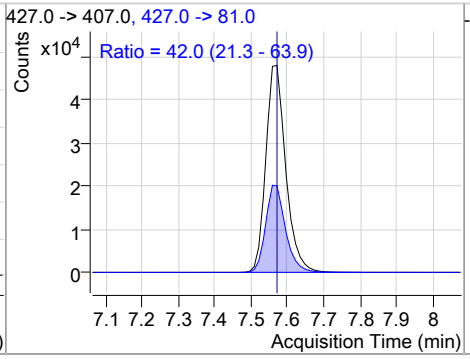


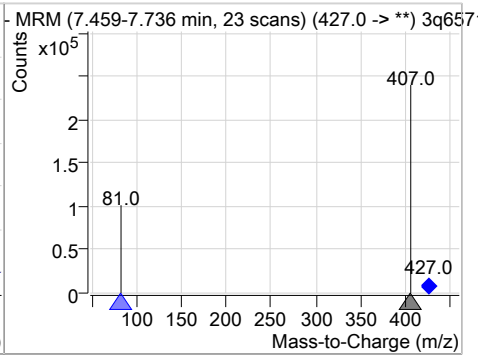




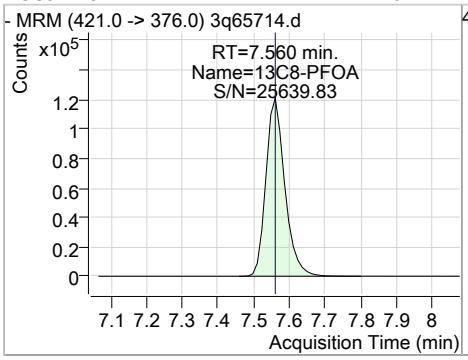
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.17	7.57	0.01	181839	427.0 -> 81.0	42.0	21.3	63.9

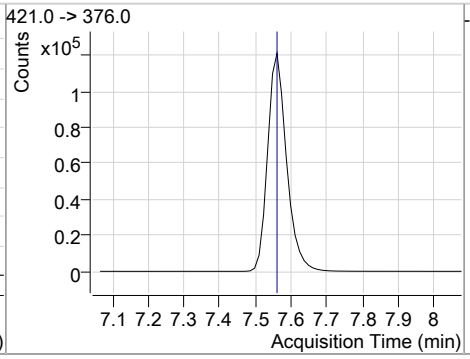


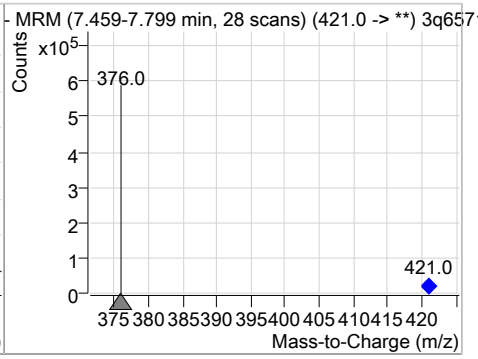




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.07	7.56	0.00	444215				

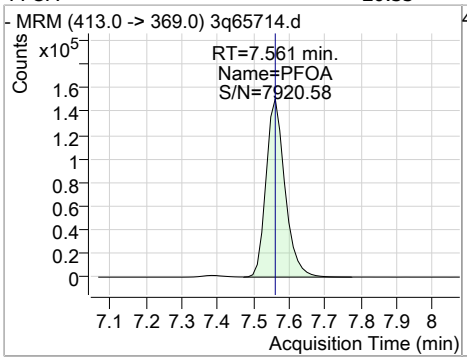


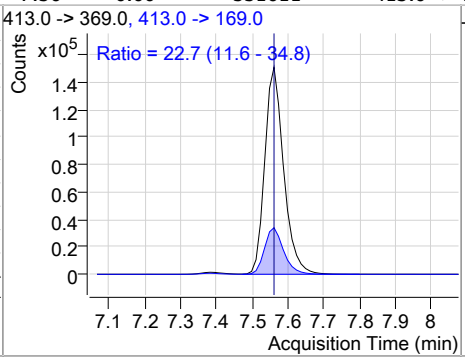


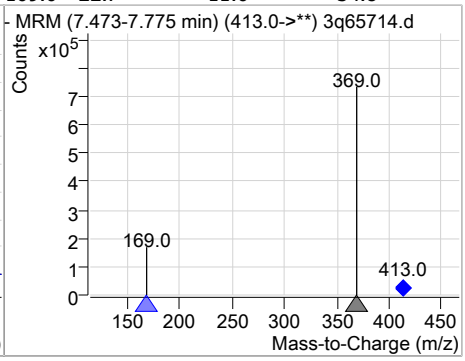


Perfluorinated Compounds by LC/MS/MS

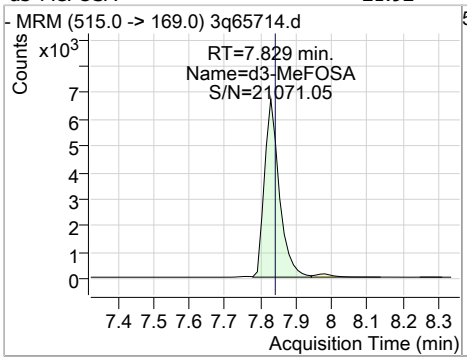
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.33	7.56	0.00	551611	413.0 -> 169.0	22.7	11.6	34.8

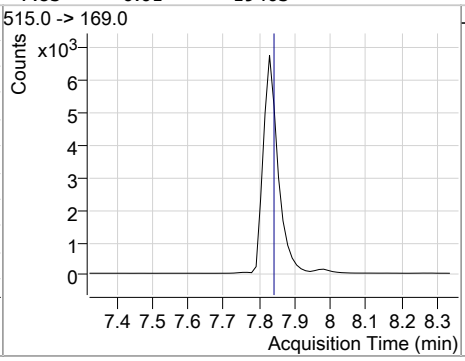


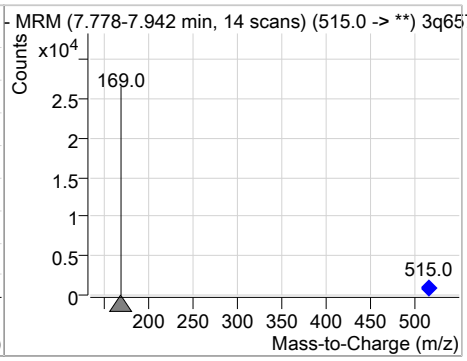




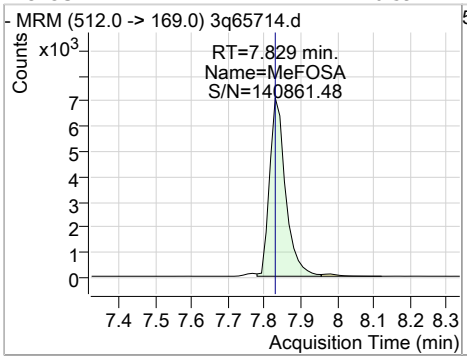
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.92	7.83	-0.01	19403				

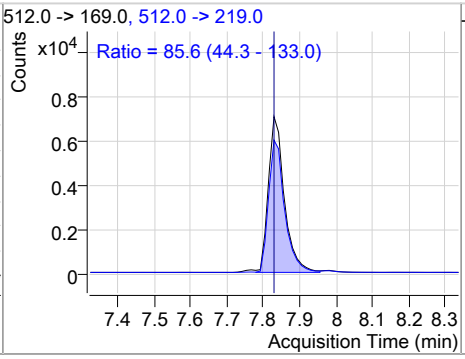


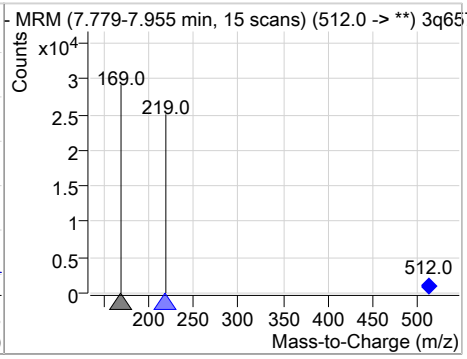




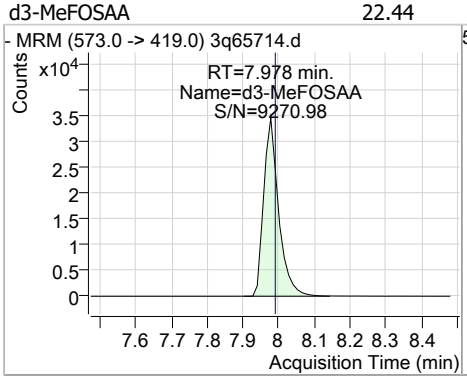
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.59	7.83	-0.01	21502	512.0 -> 219.0	85.6	44.3	133.0

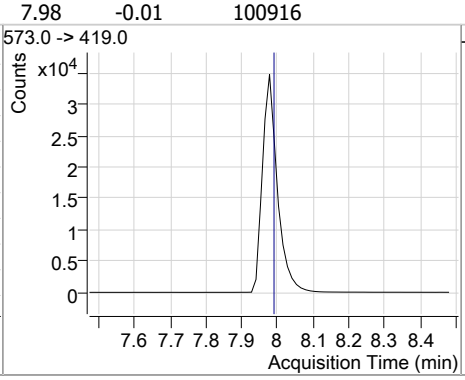


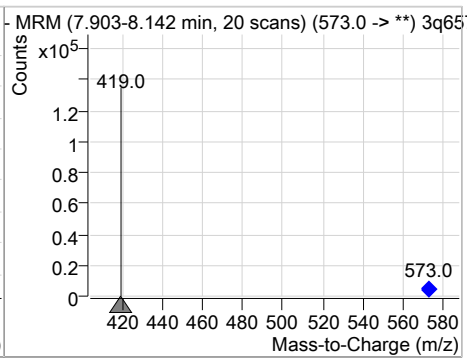




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.44	7.98	-0.01	100916				

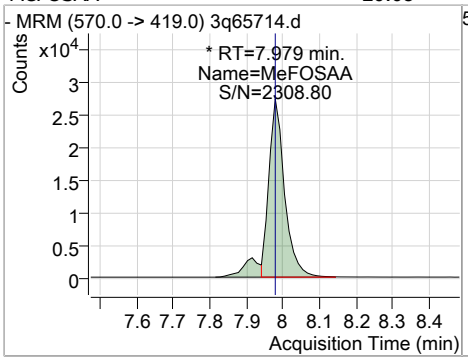


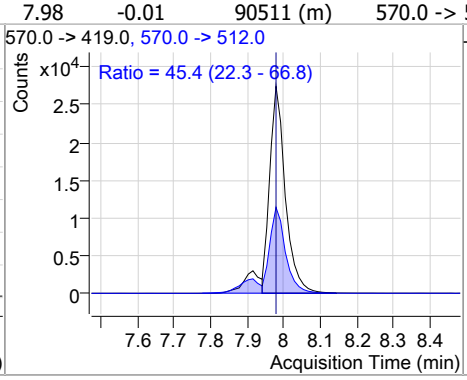


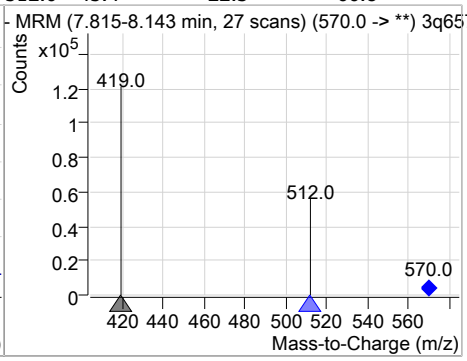


Perfluorinated Compounds by LC/MS/MS

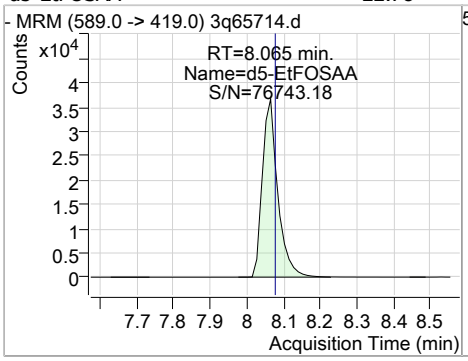
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.08	7.98	-0.01	90511 (m)	570.0 -> 512.0	45.4	22.3	66.8

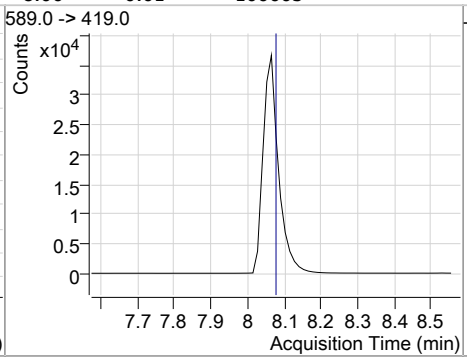


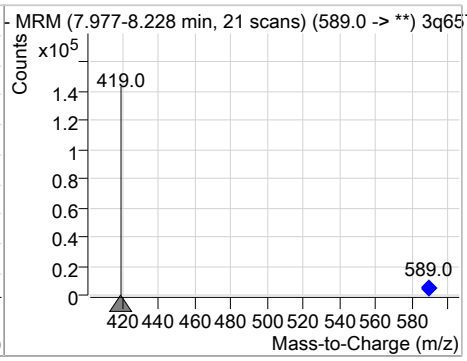




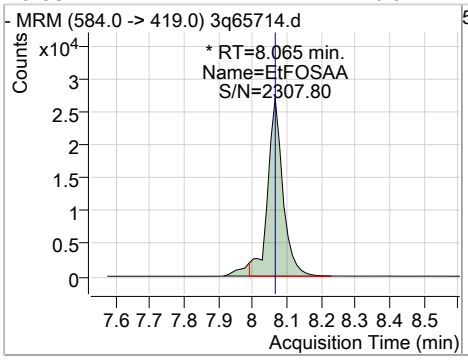
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.78	8.06	-0.01	106665				

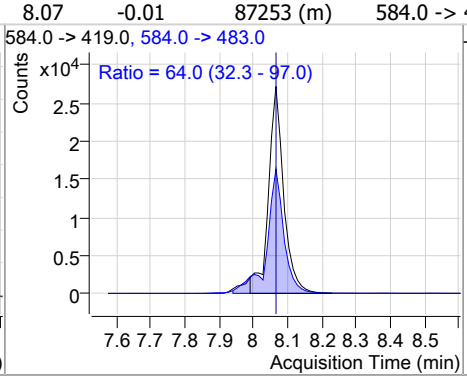


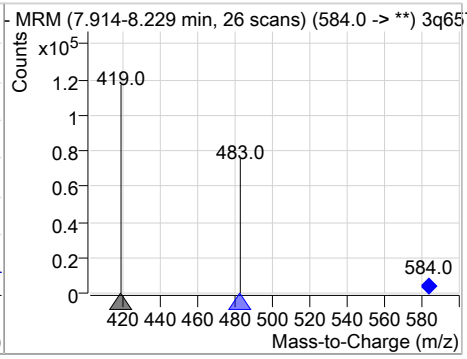




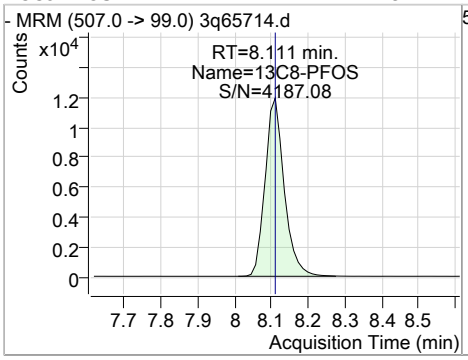
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.52	8.07	-0.01	87253 (m)	584.0 -> 483.0	64.0	32.3	97.0

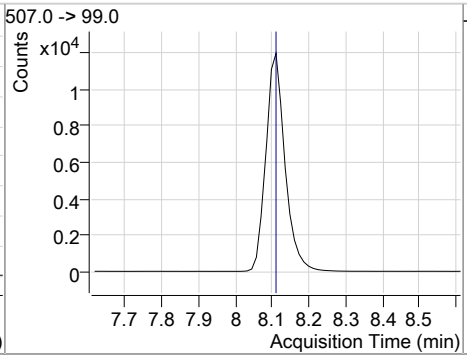


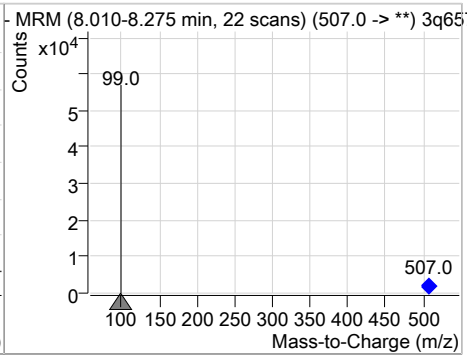




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.94	8.11	0.00	43045				

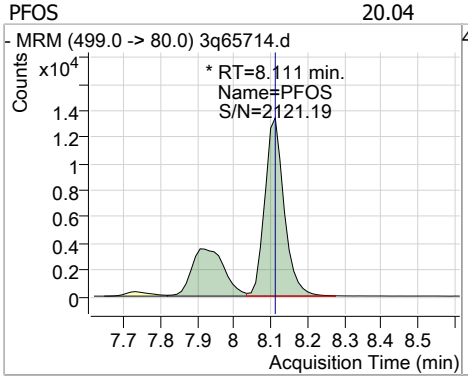


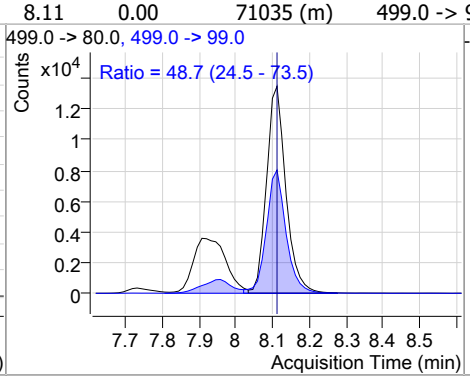


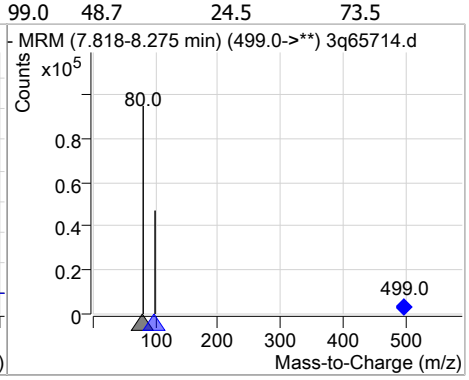


Perfluorinated Compounds by LC/MS/MS

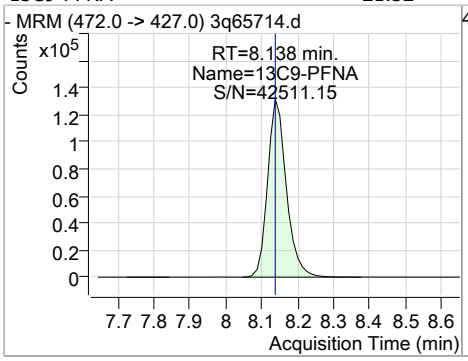
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.04	8.11	0.00	71035 (m)	499.0 -> 99.0	48.7	24.5	73.5

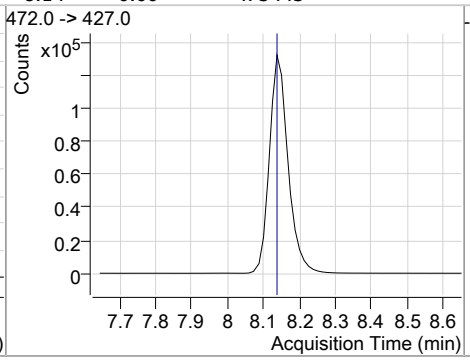


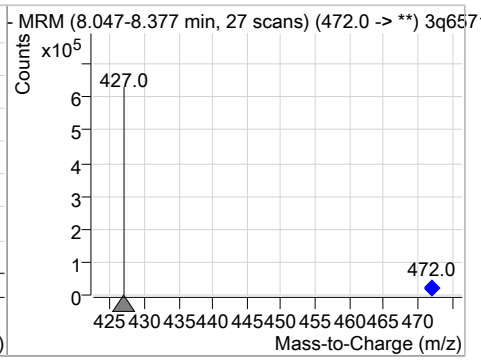




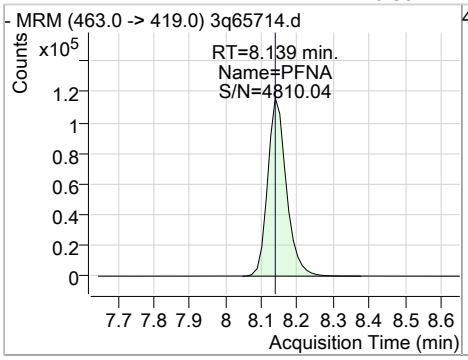
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.52	8.14	0.00	475443				

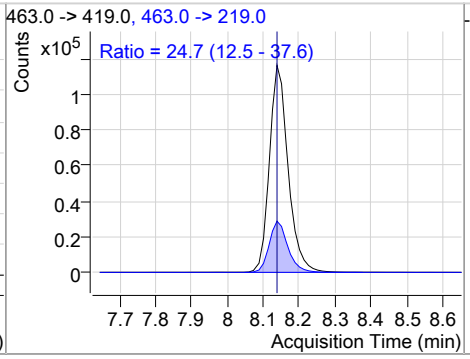


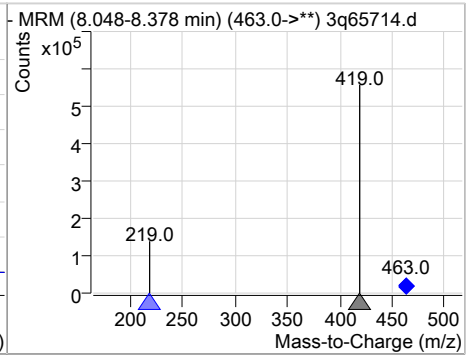




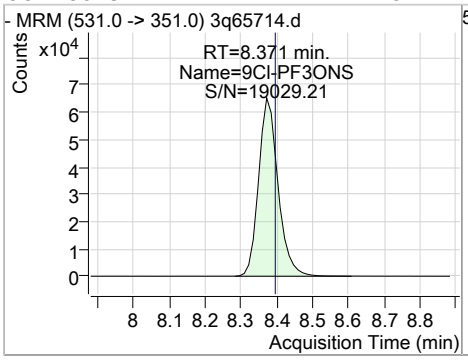
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.36	8.14	0.00	419247	463.0 -> 219.0	24.7	12.5	37.6

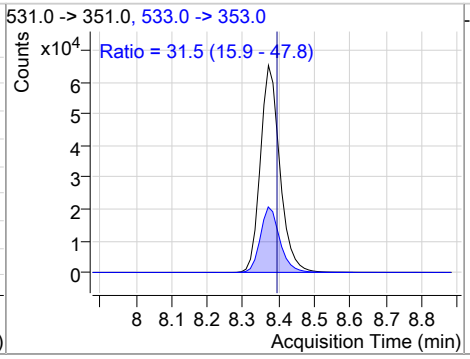


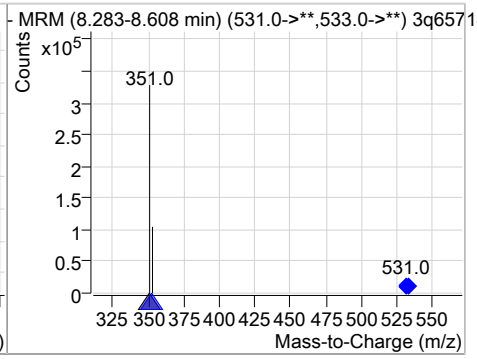




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.32	8.37	0.00	246198	533.0 -> 353.0	31.5	15.9	47.8

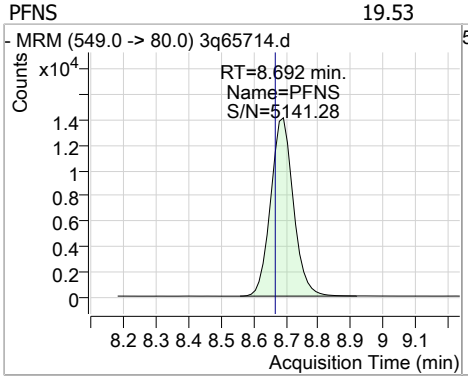


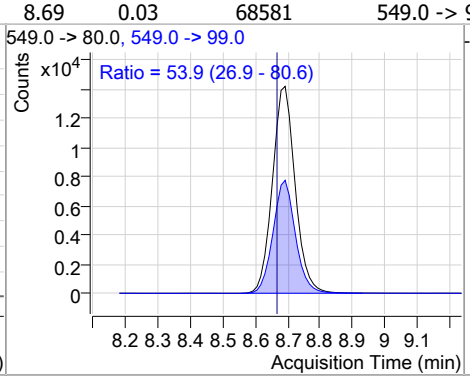


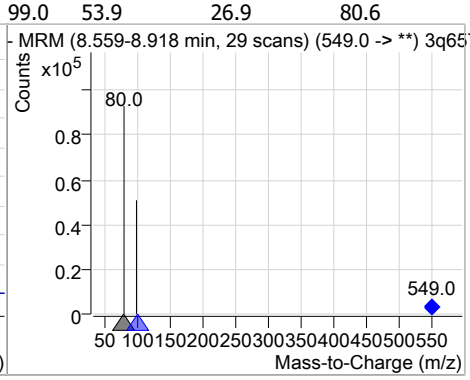


Perfluorinated Compounds by LC/MS/MS

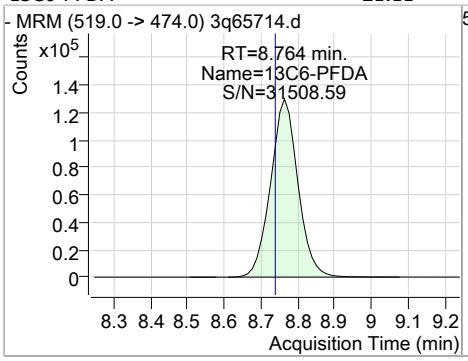
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.53	8.69	0.03	68581	549.0 -> 99.0	53.9	26.9	80.6

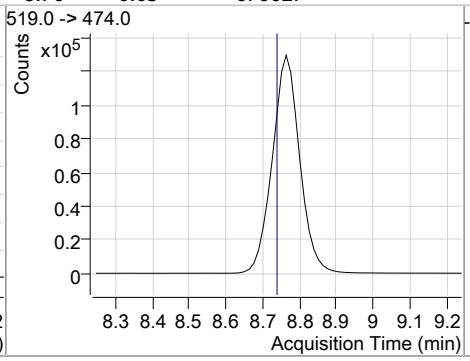


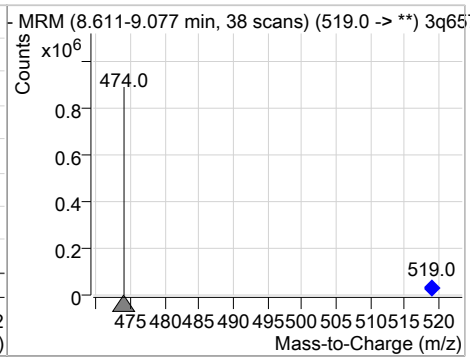




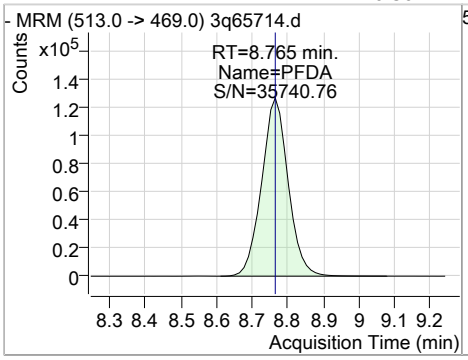
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.11	8.76	0.03	670627				

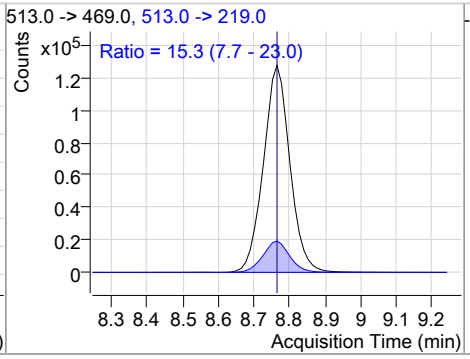


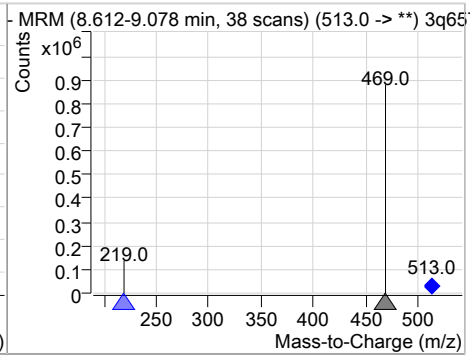




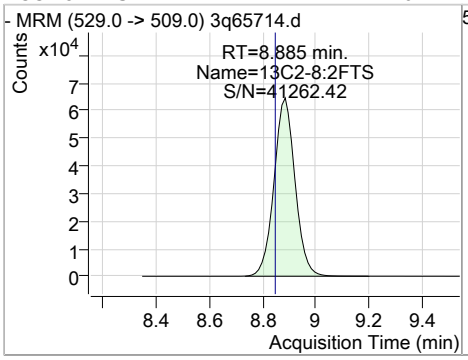
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.36	8.77	0.03	657876	513.0 -> 219.0	15.3	7.7	23.0

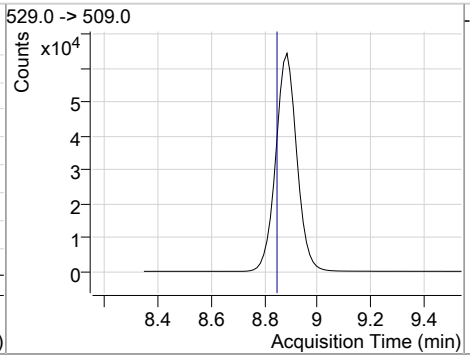


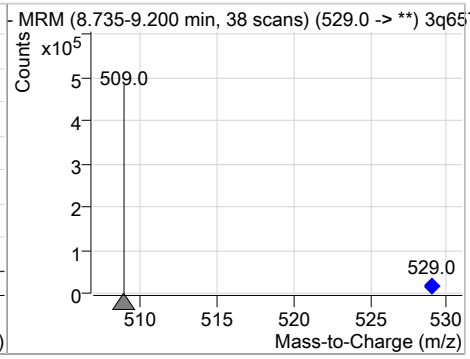




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.40	8.89	0.04	354714				

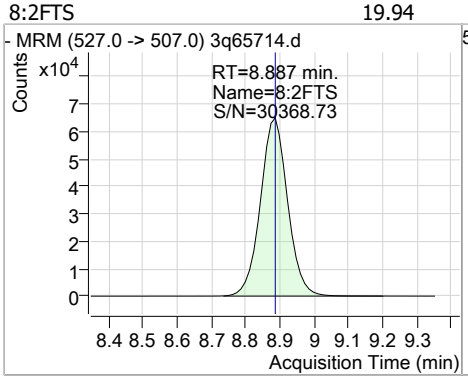


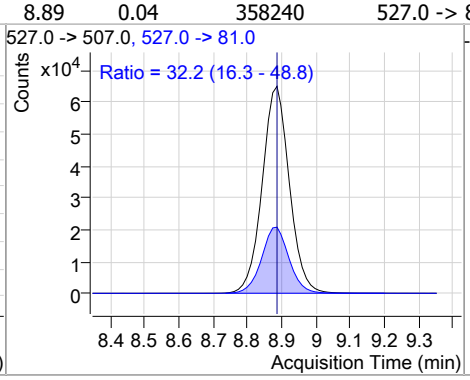


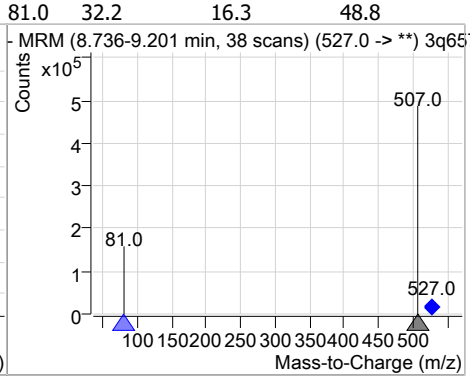


Perfluorinated Compounds by LC/MS/MS

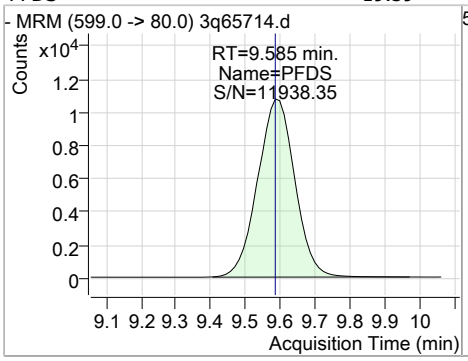
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.94	8.89	0.04	358240	527.0 -> 81.0	32.2	16.3	48.8

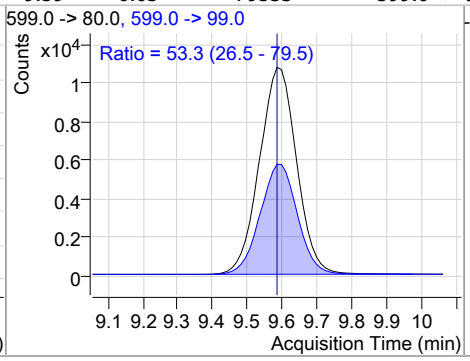


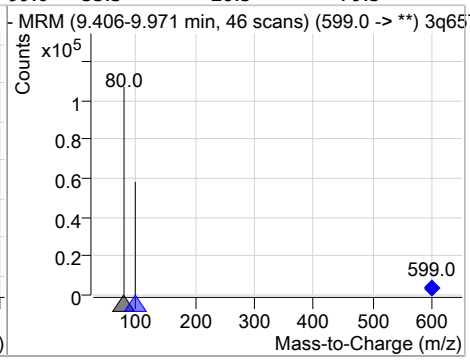




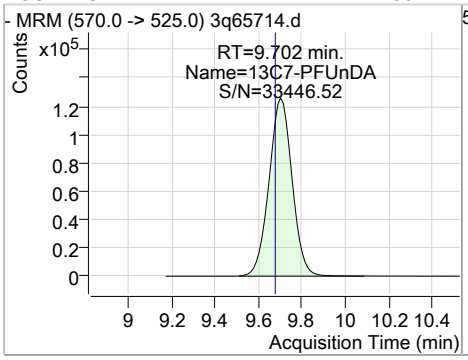
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.59	9.59	0.03	79533	599.0 -> 99.0	53.3	26.5	79.5

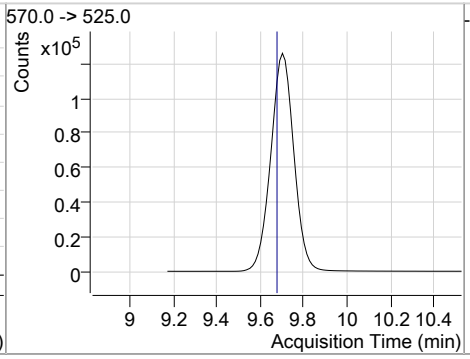


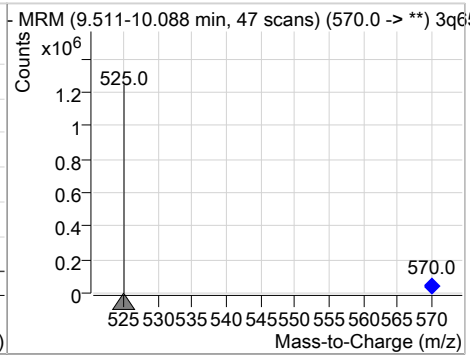




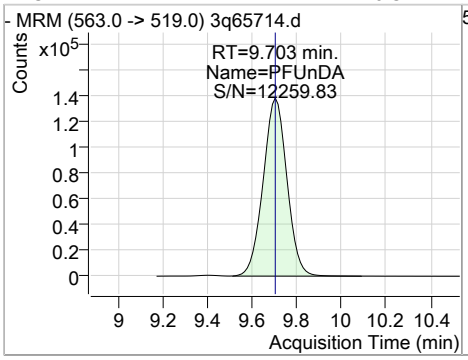
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.56	9.70	0.03	931422				

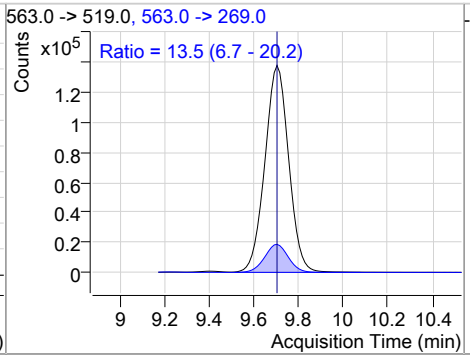


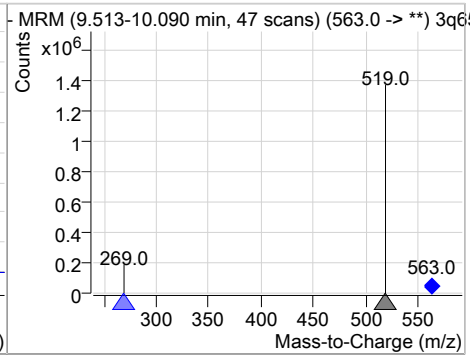




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.34	9.70	0.03	1020413	563.0 -> 269.0	13.5	6.7	20.2

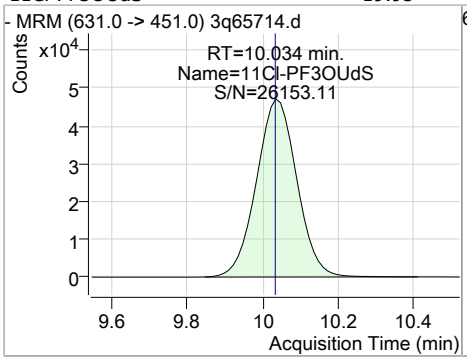


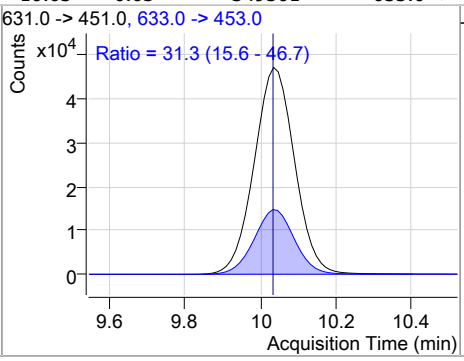


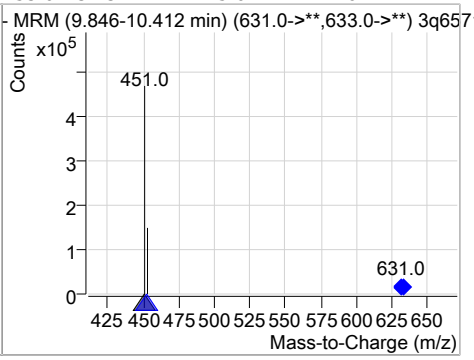


Perfluorinated Compounds by LC/MS/MS

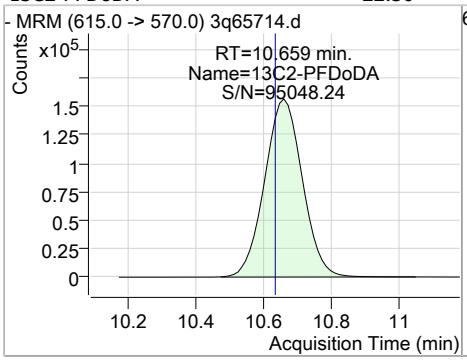
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.95	10.03	0.03	349361	633.0 -> 453.0	31.3	15.6	46.7

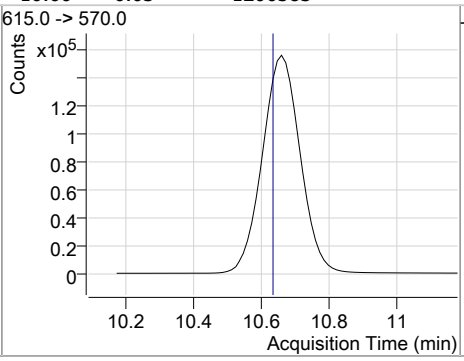


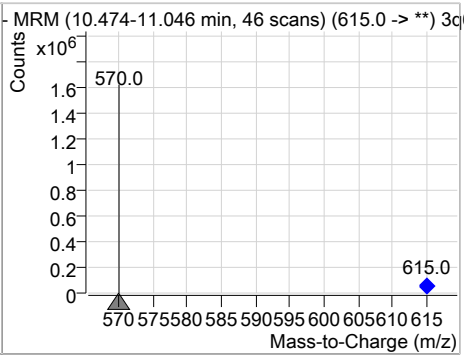




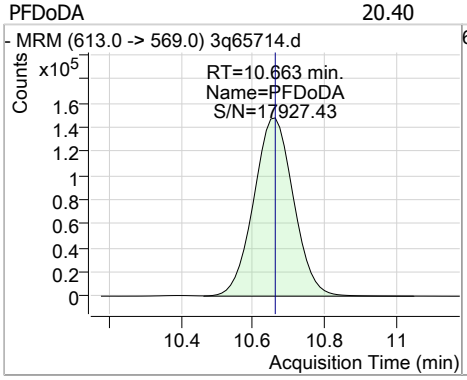
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.30	10.66	0.03	1206583				

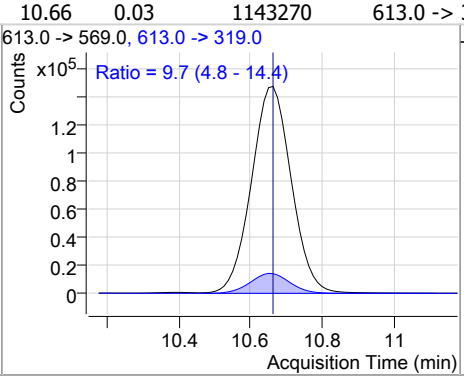


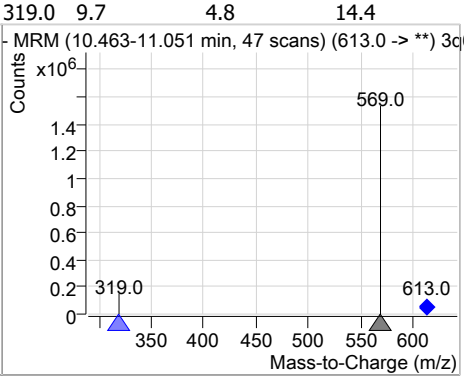




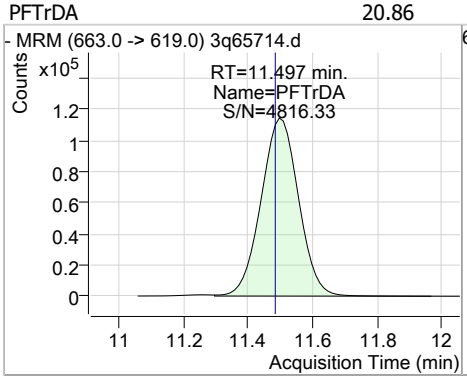
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.40	10.66	0.03	1143270	613.0 -> 319.0	9.7	4.8	14.4

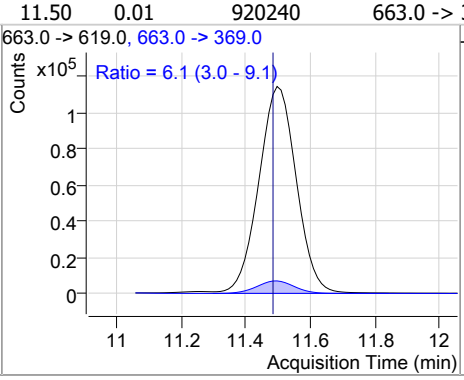


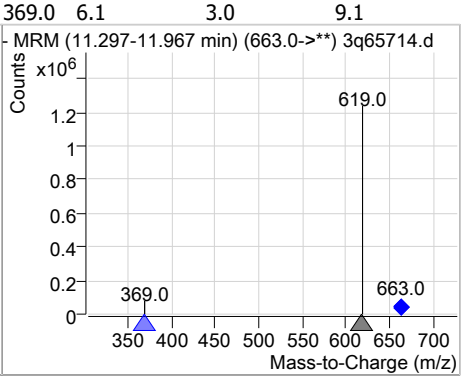




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.86	11.50	0.01	920240	663.0 -> 369.0	6.1	3.0	9.1

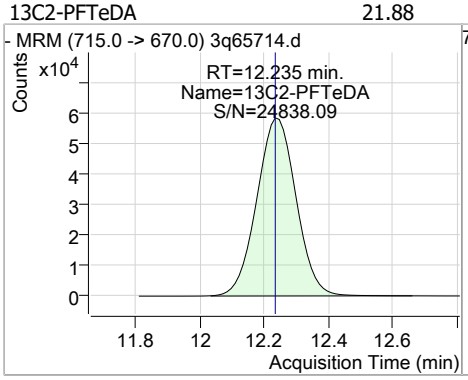


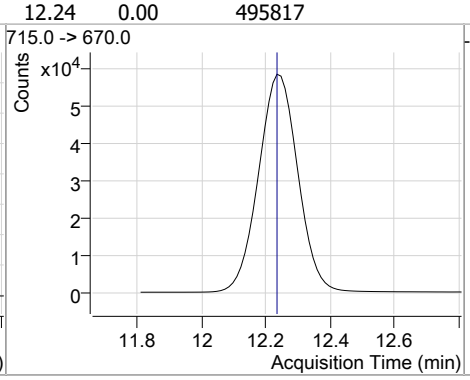


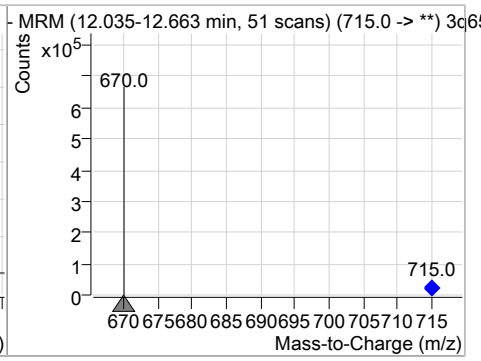


Perfluorinated Compounds by LC/MS/MS

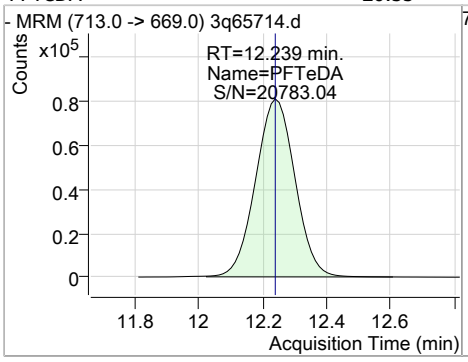
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.88	12.24	0.00	495817				

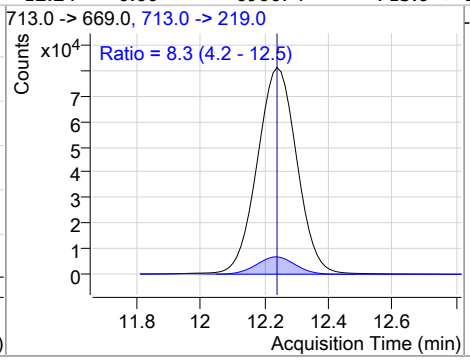


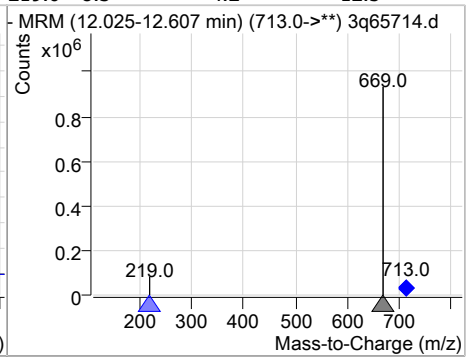




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.55	12.24	0.00	690074	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65714.D
Injection Time: 09/14/22 03:34
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.98	Split peak
EtFOSAA	2991-50-6		8.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65721.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 5:51:42 AM
Sample Name : cc898-20
Vial : P1-A7
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

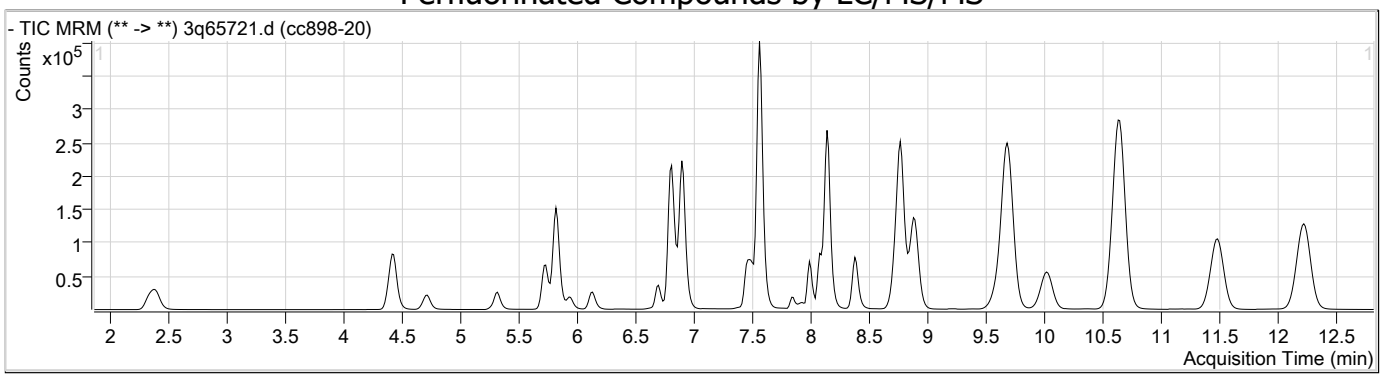
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	152942	20.00	µg/L	0.000
M5-PFPeA	4.411	268.0 -> 223.0	222434	20.00	µg/L	0.000
M5-PFHxA	5.813	318.0 -> 273.0	292476	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	293894	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	393412	20.00	µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	428691	20.00	µg/L	0.000
M6-PFDA	8.764	519.0 -> 474.0	587362	20.00	µg/L	0.025
M7-PFUnDA	9.677	570.0 -> 525.0	808981	20.00	µg/L	0.000
M2-PFDoDA	10.634	615.0 -> 570.0	1076612	20.00	µg/L	0.000
M2-PFTeDA	12.210	715.0 -> 670.0	434713	20.00	µg/L	-0.025
M8-FOSA	7.491	506.0 -> 78.0	76362	20.00	µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	20165	20.00	µg/L	0.013
M3-PFHxS	6.822	402.0 -> 99.0	25355	20.00	µg/L	0.000
M8-PFOS	8.111	507.0 -> 99.0	37487	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	109748	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	155934	20.00	µg/L	0.013
M2-8:2FTS	8.885	529.0 -> 509.0	309308	20.00	µg/L	0.038
M3-MeFOSAA	7.978	573.0 -> 419.0	90751	20.00	µg/L	-0.013
M3-HFPO-DA	6.117	287.0 -> 169.0	23739	20.00	µg/L	0.000
M3-MeFOSA	7.829	515.0 -> 169.0	17114	20.00	µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	96869	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	109748	19.00	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-6:2FTS	7.571	429.0 -> 409.0	155934	19.92	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-8:2FTS	8.885	529.0 -> 509.0	309308	21.28	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C2-PFDoDA	10.634	615.0 -> 570.0	1076612	19.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-PFTeDA	12.210	715.0 -> 670.0	434713	19.19	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-PFBS	4.704	302.0 -> 99.0	20165	19.06	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-PFHxS	6.822	402.0 -> 99.0	25355	19.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C4-PFBA	2.365	217.0 -> 172.0	152942	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C4-PFHpA	6.805	367.0 -> 322.0	293894	19.50	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C5-PFHxA	5.813	318.0 -> 273.0	292476	19.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C5-PFPeA	4.411	268.0 -> 223.0	222434	19.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C6-PFDA	8.764	519.0 -> 474.0	587362	18.49	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

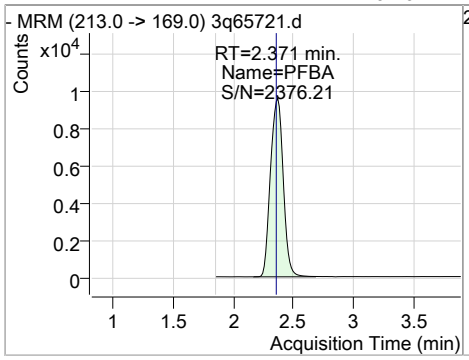
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C7-PFUnDA	9.677	570.0 -> 525.0	808981	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-FOSA	7.491	506.0 -> 78.0	76362	20.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C8-PFOA	7.560	421.0 -> 376.0	393412	19.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C8-PFOS	8.111	507.0 -> 99.0	37487	19.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C9-PFNA	8.138	472.0 -> 427.0	428691	19.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
d3-MeFOSAA	7.978	573.0 -> 419.0	90751	20.18	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C3-HFPO-DA	6.117	287.0 -> 169.0	23736	18.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%			
d3-MeFOSA	7.829	515.0 -> 169.0	17114	19.33	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
d5-EtFOSAA	8.065	589.0 -> 419.0	96852	20.69	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
Target Compounds							**QValue**
4:2FTS	5.710	327.0 -> 307.0	117860	20.37	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	165532	20.43	µg/L		98
8:2FTS	8.874	527.0 -> 507.0	313915	20.04	µg/L		99
EtFOSAA	8.065	584.0 -> 419.0	77744	20.13	µg/L	m	98
FOSA	7.491	498.0 -> 78.0	75573	20.79	µg/L		100
MeFOSAA	7.979	570.0 -> 419.0	83549	20.61	µg/L	m	100
PFBA	2.371	213.0 -> 169.0	70476	20.16	µg/L		100
PFBS	4.707	299.0 -> 80.0	58815	20.52	µg/L		100
PFDA	8.765	513.0 -> 469.0	576250	20.36	µg/L		100
PFDoDA	10.625	613.0 -> 569.0	1019505	20.39	µg/L		100
PFDS	9.560	599.0 -> 80.0	70289	19.94	µg/L		100
PFHpA	6.794	363.0 -> 319.0	430526	20.47	µg/L		100
PFHpS	7.544	449.0 -> 80.0	52854	21.62	µg/L		100
PFHxA	5.814	313.0 -> 269.0	316940	20.33	µg/L		100
PFHxS	6.823	399.0 -> 80.0	59482	20.12	µg/L	m	98
PFNA	8.139	463.0 -> 419.0	376841	20.30	µg/L		99
PFNS	8.692	549.0 -> 80.0	59901	19.59	µg/L		100
PFOA	7.561	413.0 -> 369.0	489816	20.39	µg/L		100
PFOS	8.111	499.0 -> 80.0	63793	20.66	µg/L	m	98
PFPeA	4.414	263.0 -> 219.0	202388	20.84	µg/L		100
PFPeS	5.932	349.0 -> 80.0	45703	20.53	µg/L		99
PFTeDA	12.214	713.0 -> 669.0	608659	20.68	µg/L		100
PFTrDA	11.472	663.0 -> 619.0	806750	20.86	µg/L		100
PFUnDA	9.678	563.0 -> 519.0	898550	20.62	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	314154	20.11	µg/L		99
9Cl-PF3ONS	8.371	531.0 -> 351.0	218039	21.56	µg/L		99
ADONA	6.891	377.0 -> 251.0	639679	19.90	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	58767	20.77	µg/L		100
MeFOSA	7.829	512.0 -> 169.0	18874	20.49	µg/L		97
4-PFECHS	7.454	461.0 -> 381.0	167807	18.92	µg/L		99
FBSA	5.315	298.0 -> 78.0	104113	20.89	µg/L		100
FHxSA	6.688	398.0 -> 78.0	115083	19.84	µg/L		99

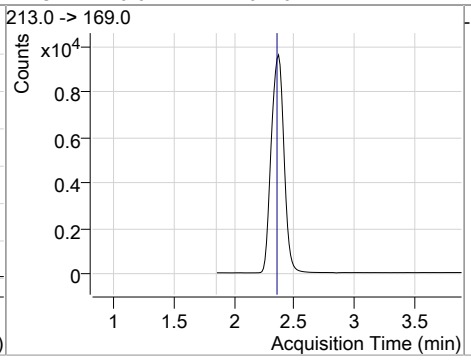
 # = Qualifier out of range, m = manually integrated, + = Area summed

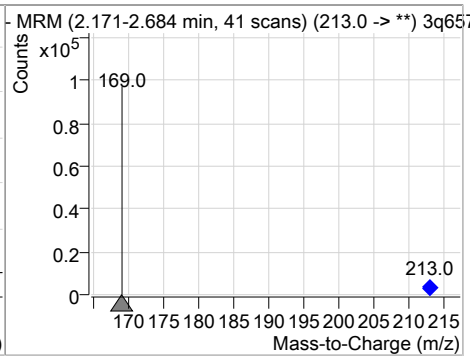
Perfluorinated Compounds by LC/MS/MS



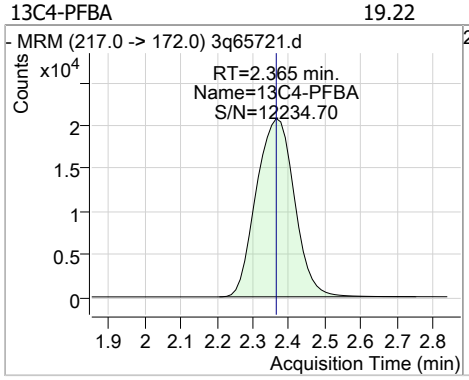
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.16	2.37	0.01	70476				

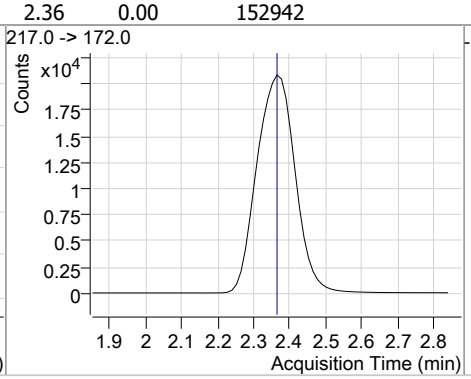


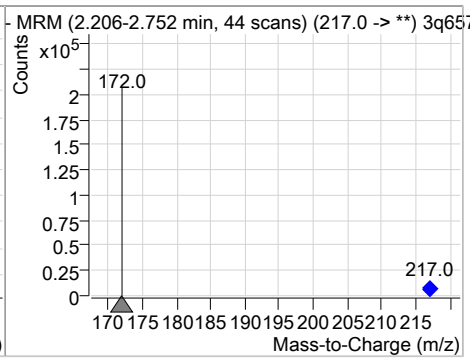




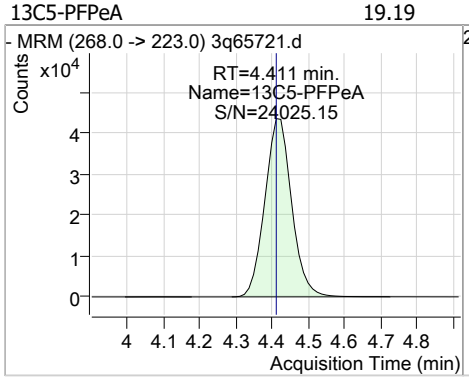
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.22	2.36	0.00	152942				

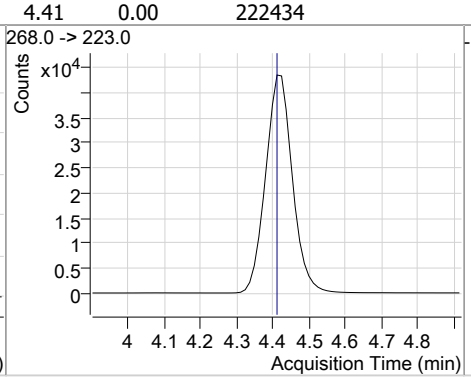


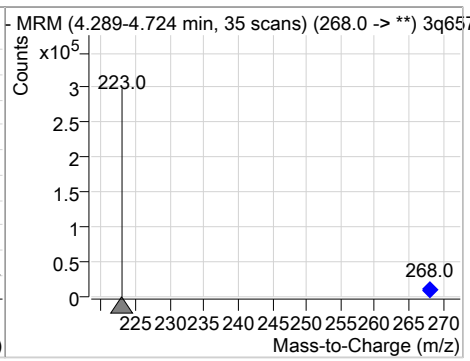




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.19	4.41	0.00	222434				

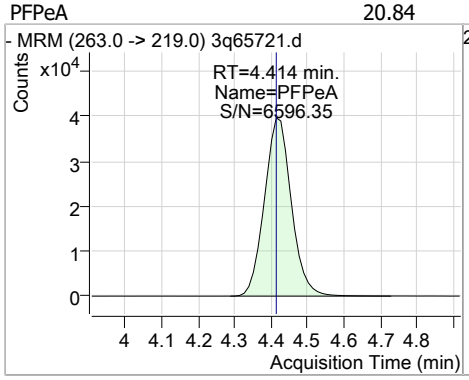


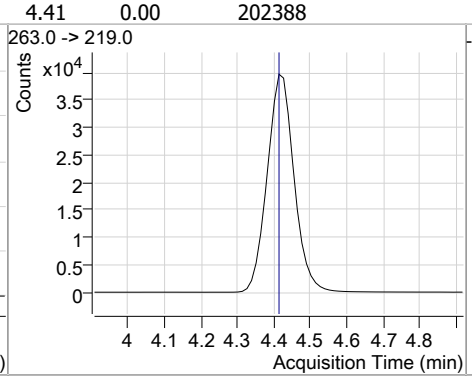


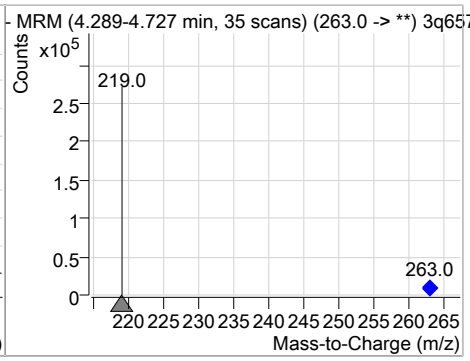


Perfluorinated Compounds by LC/MS/MS

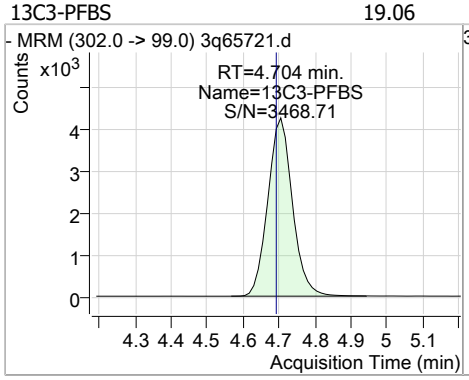
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.84	4.41	0.00	202388				

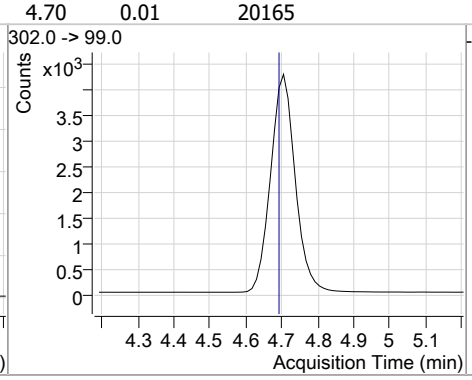


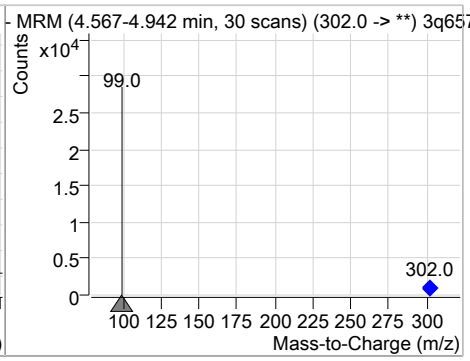




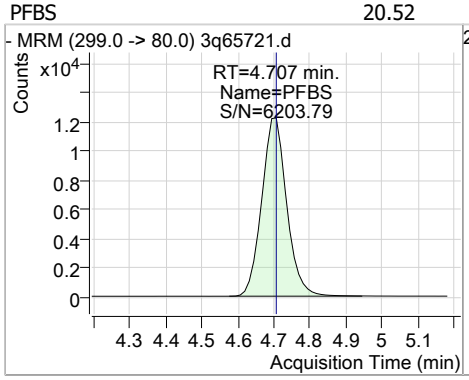
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.06	4.70	0.01	20165				

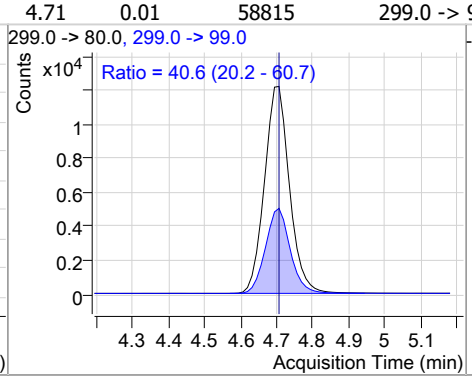


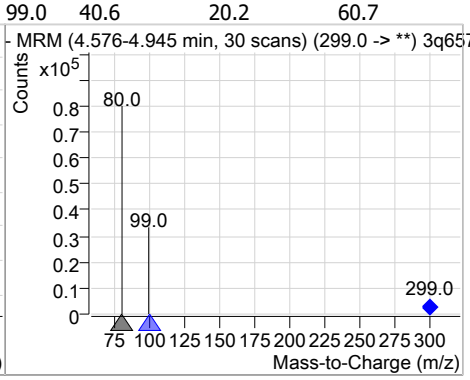




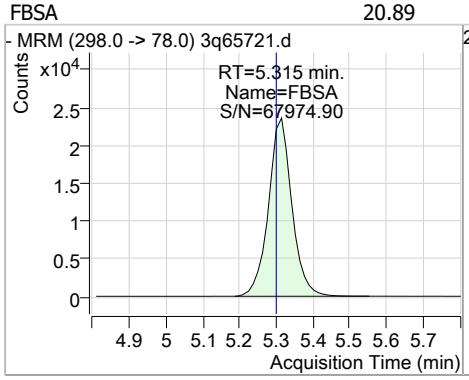
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.52	4.71	0.01	58815	299.0 -> 99.0	40.6	20.2	60.7

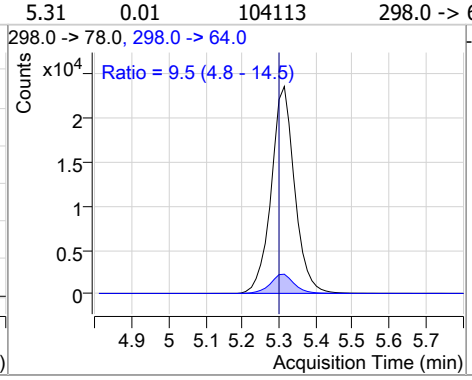


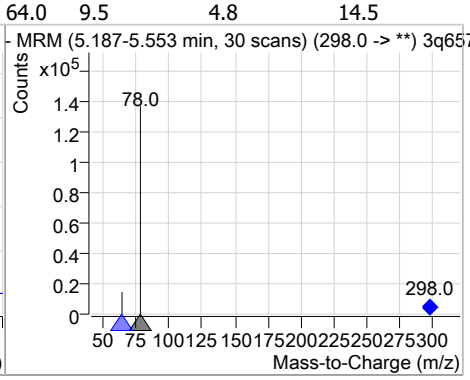




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.89	5.31	0.01	104113	298.0 -> 64.0	9.5	4.8	14.5

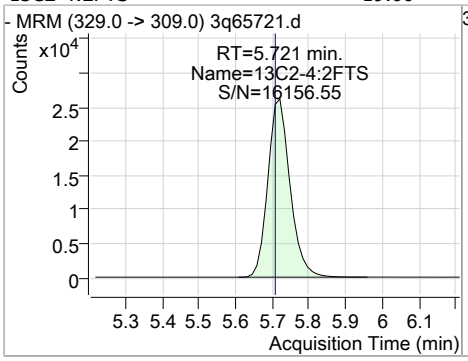


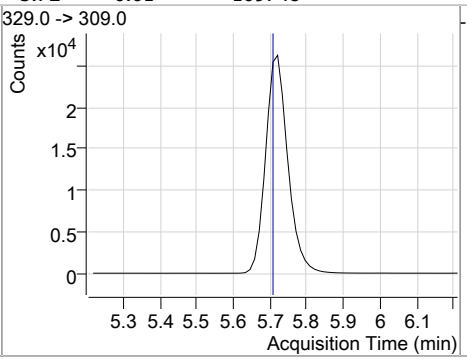


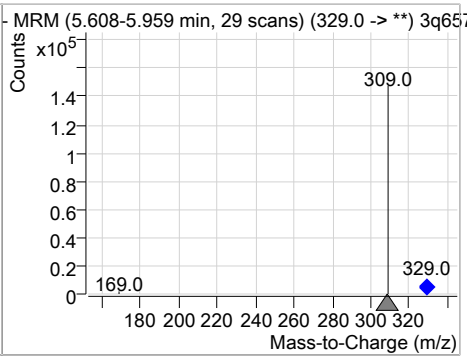


Perfluorinated Compounds by LC/MS/MS

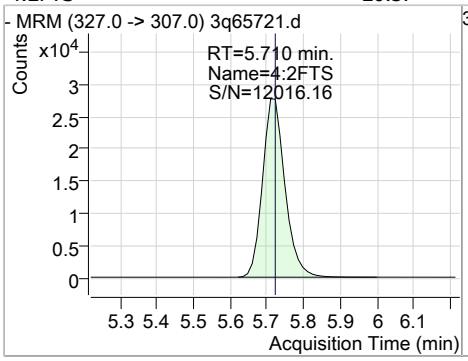
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.00	5.72	0.01	109748				

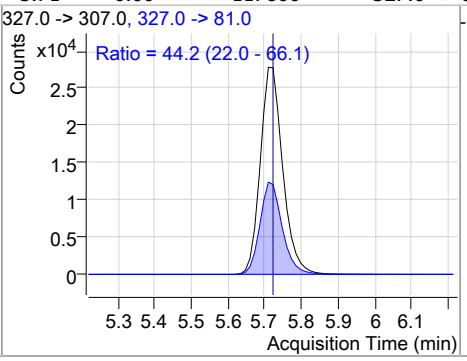


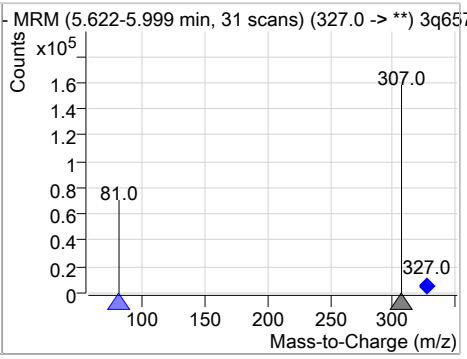




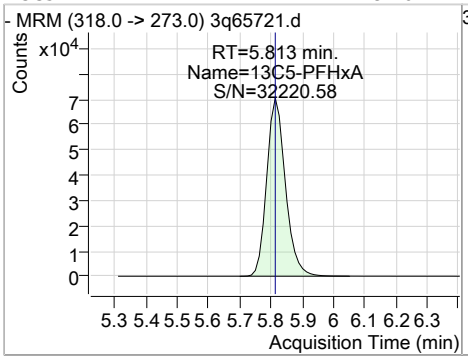
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.37	5.71	0.00	117860	327.0 -> 81.0	44.2	22.0	66.1

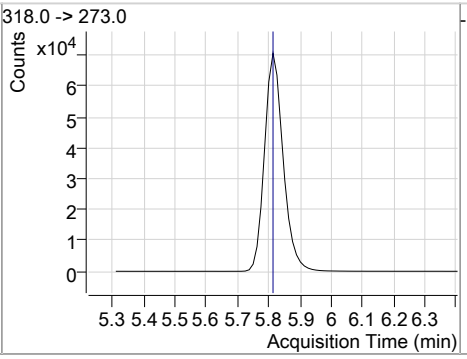


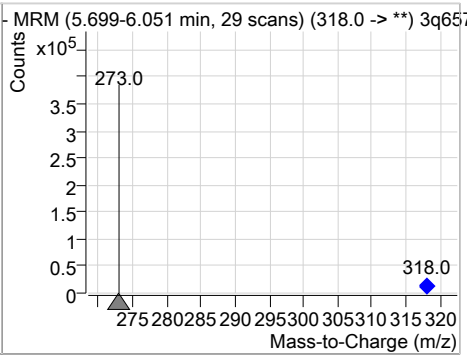




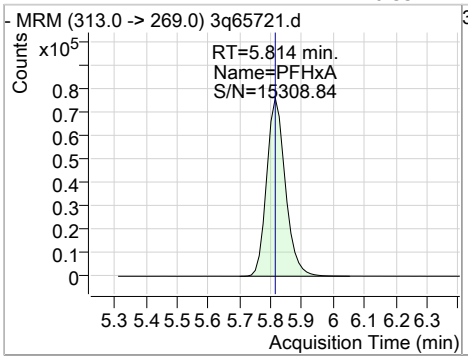
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.26	5.81	0.00	292476				

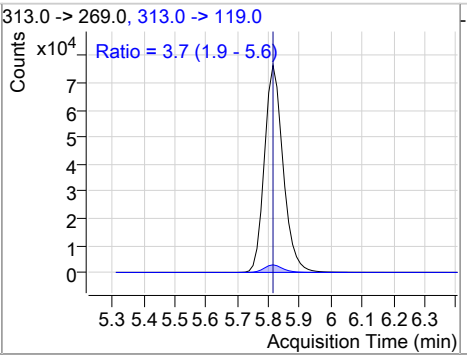


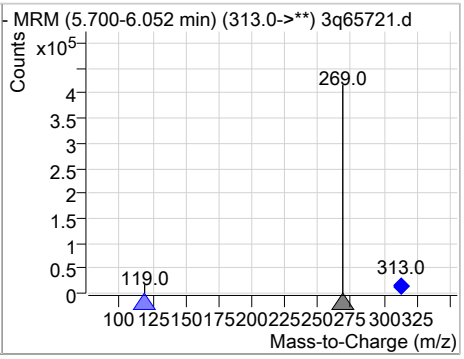




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.33	5.81	0.00	316940	313.0 -> 119.0	3.7	1.9	5.6

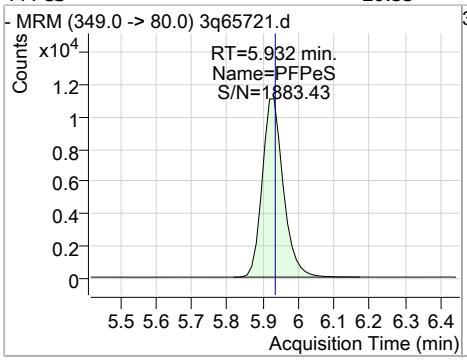


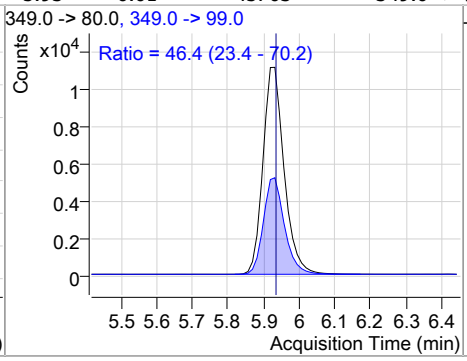


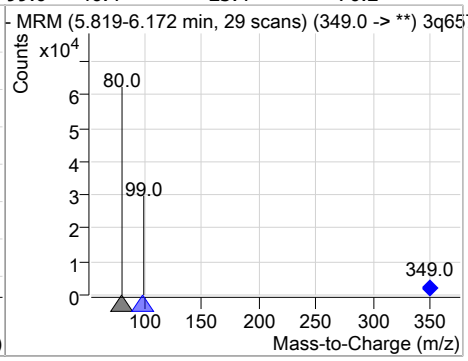


Perfluorinated Compounds by LC/MS/MS

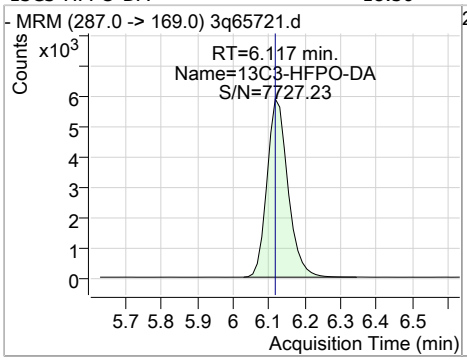
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.53	5.93	0.01	45703	349.0 -> 99.0	46.4	23.4	70.2

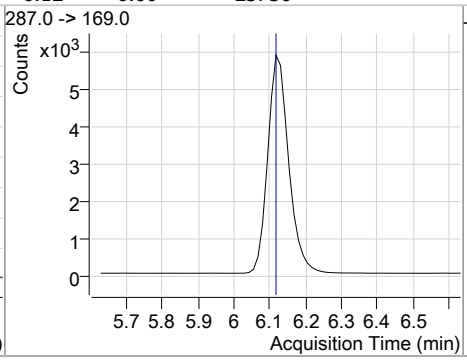


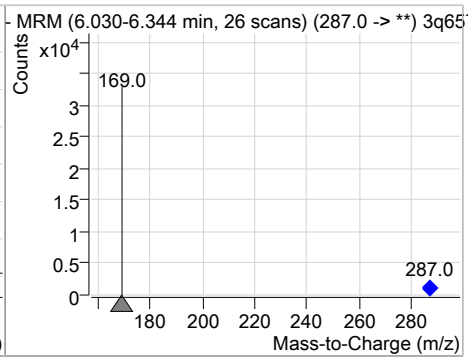




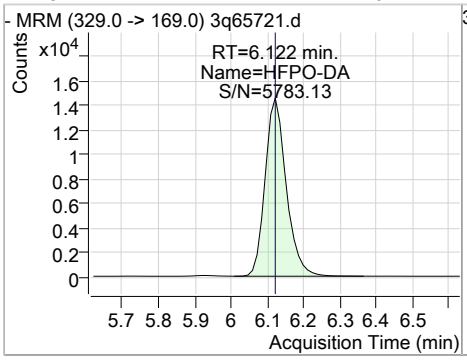
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.50	6.12	0.00	23736				

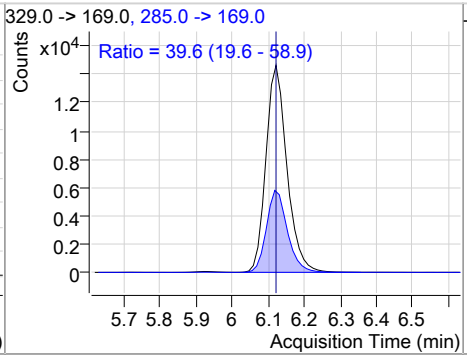


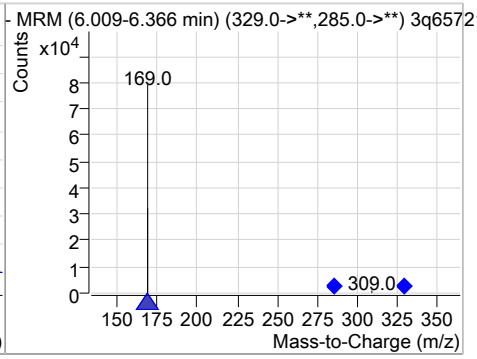




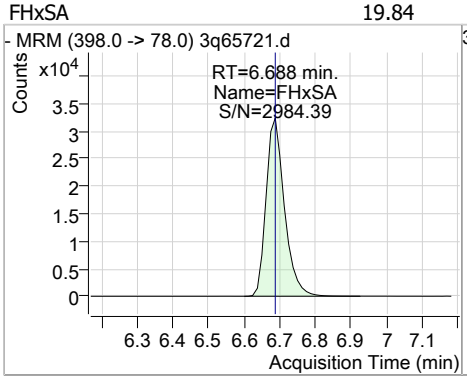
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.77	6.12	0.00	58767	285.0 -> 169.0	39.6	19.6	58.9

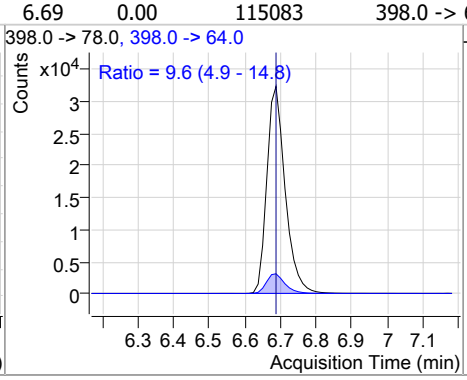


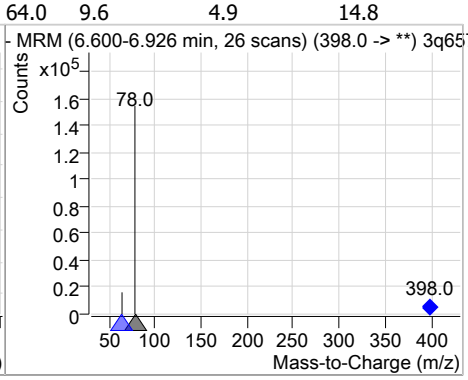




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.84	6.69	0.00	115083	398.0 -> 64.0	9.6	4.9	14.8

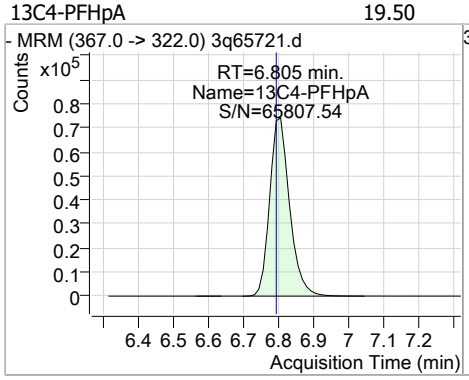


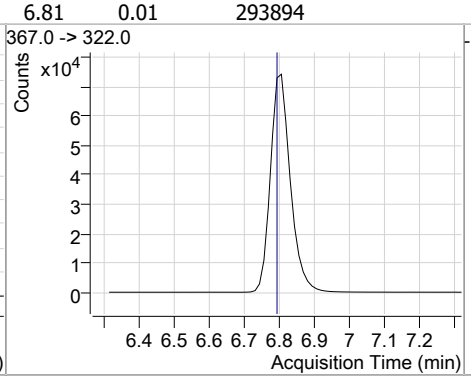


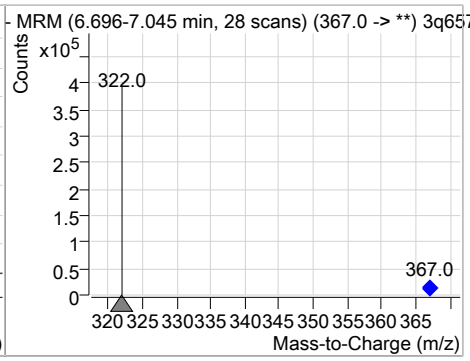


Perfluorinated Compounds by LC/MS/MS

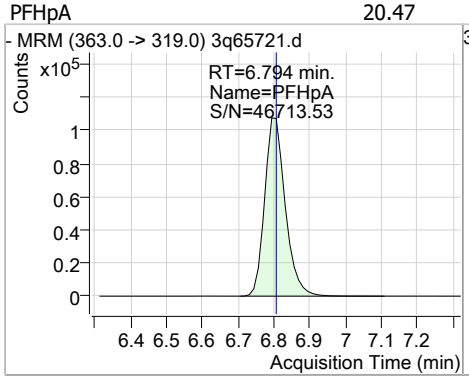
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.50	6.81	0.01	293894				

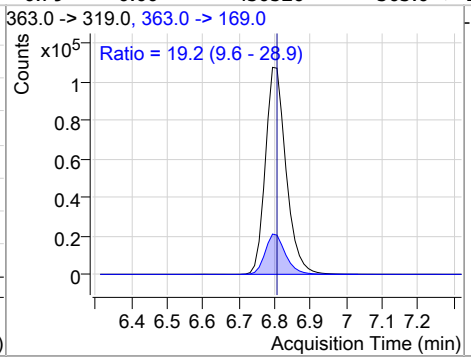


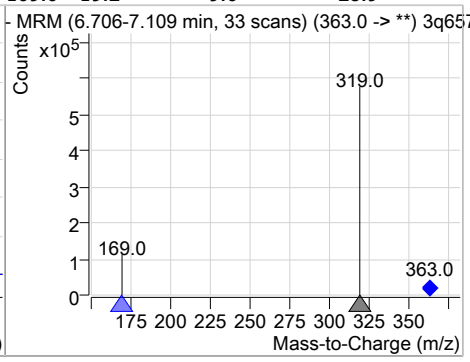




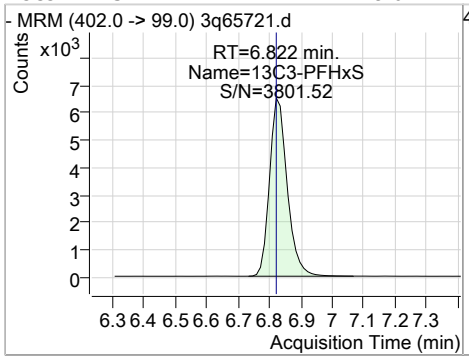
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.47	6.79	0.00	430526	363.0 -> 169.0	19.2	9.6	28.9

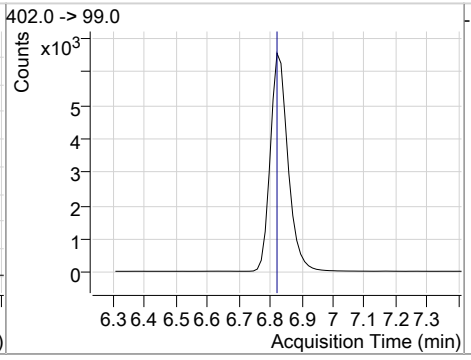


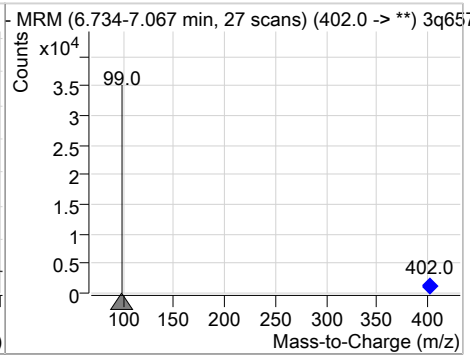




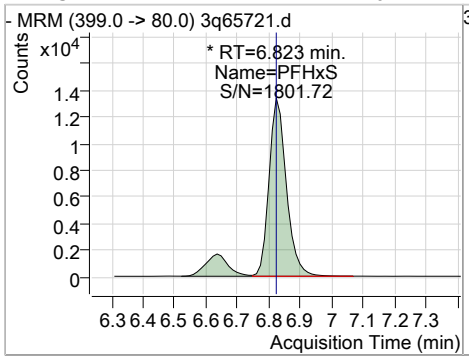
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.62	6.82	0.00	25355				

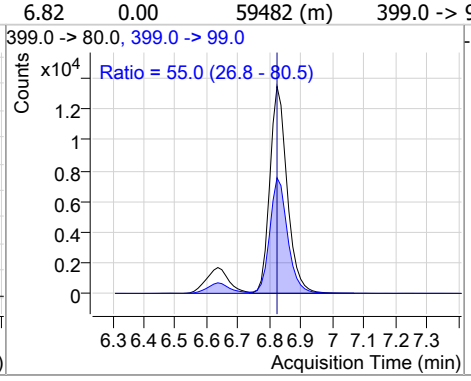


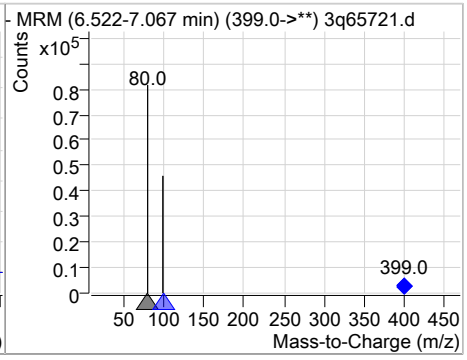




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.12	6.82	0.00	59482 (m)	399.0 -> 99.0	55.0	26.8	80.5

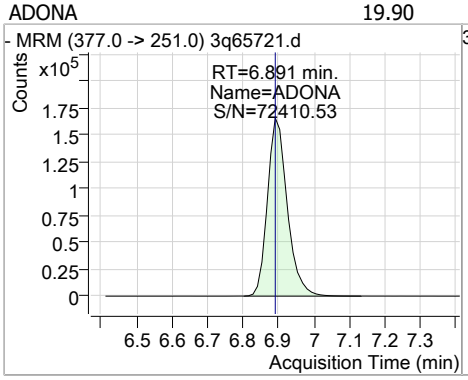


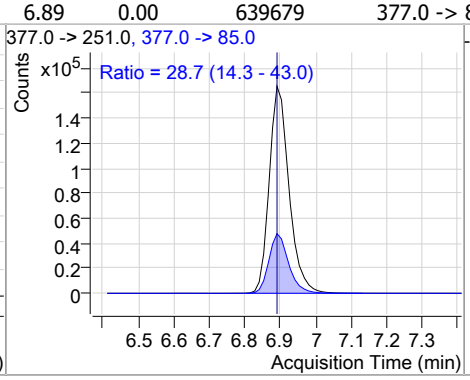


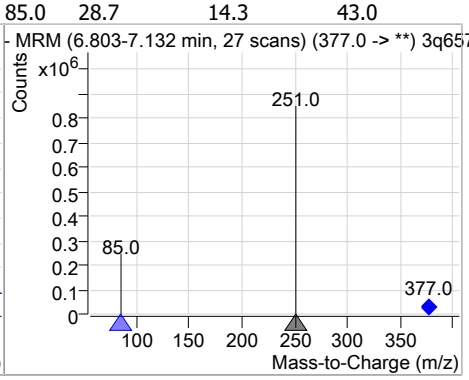


Perfluorinated Compounds by LC/MS/MS

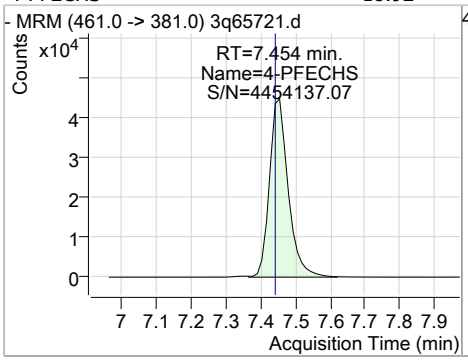
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.90	6.89	0.00	639679	377.0 -> 85.0	28.7	14.3	43.0

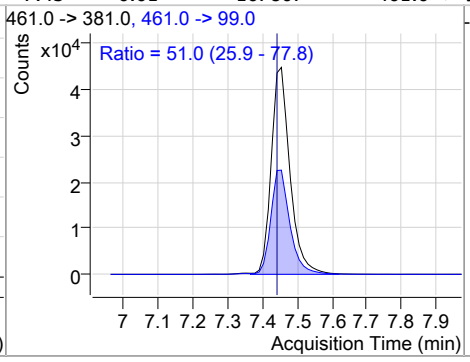


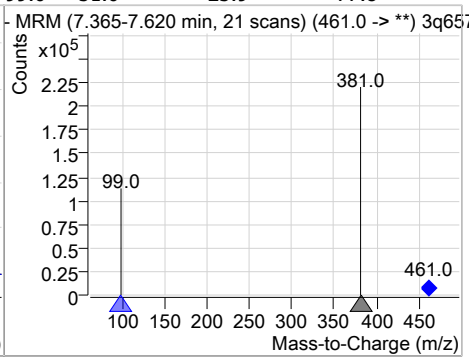




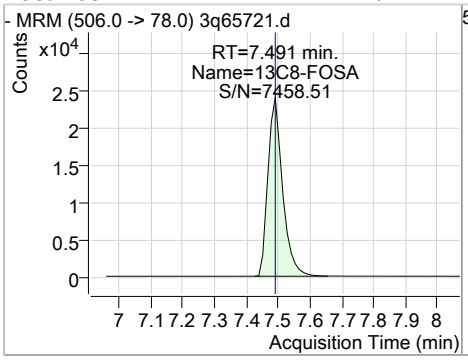
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.92	7.45	0.01	167807	461.0 -> 99.0	51.0	25.9	77.8

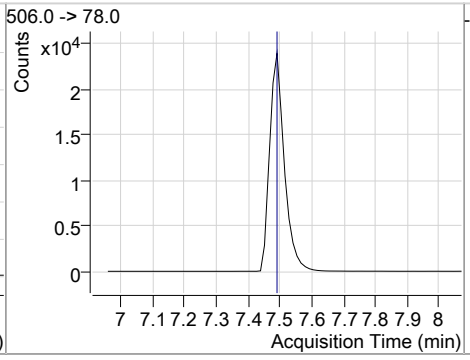


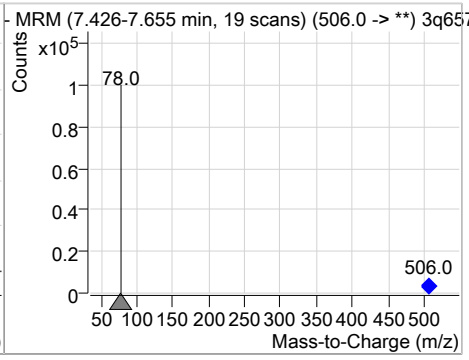




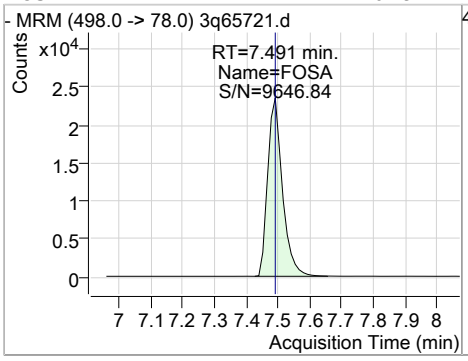
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.22	7.49	0.00	76362				

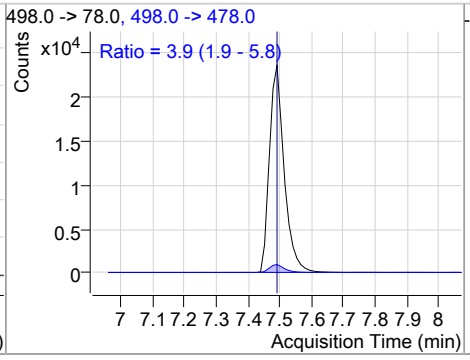


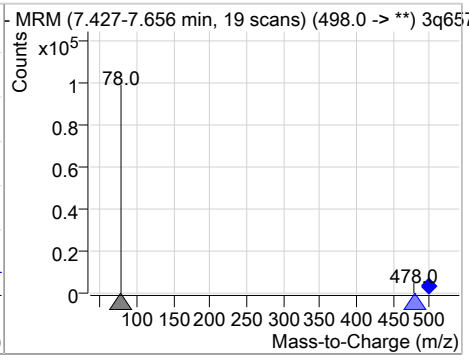




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.79	7.49	0.00	75573	498.0 -> 478.0	3.9	1.9	5.8

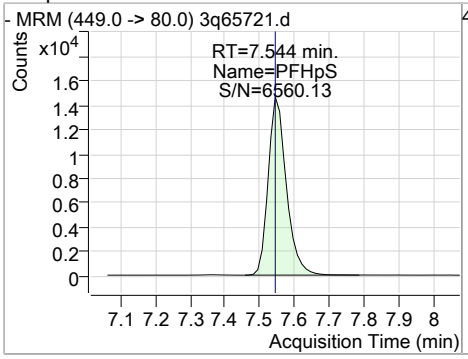


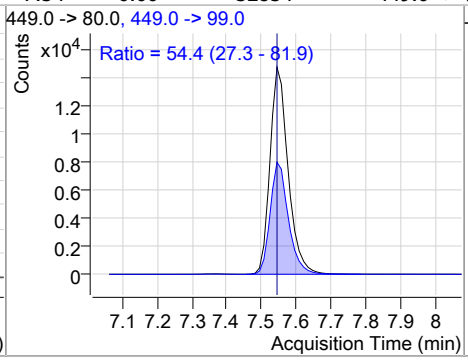


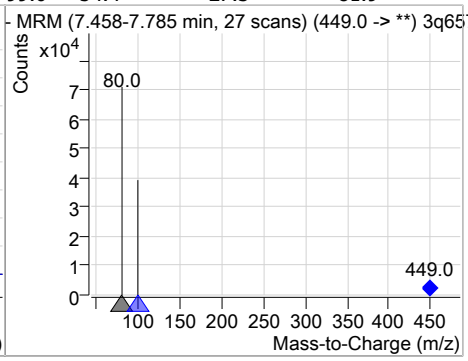


Perfluorinated Compounds by LC/MS/MS

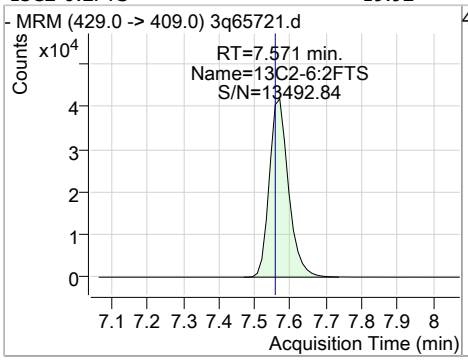
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.62	7.54	0.00	52854	449.0 -> 99.0	54.4	27.3	81.9

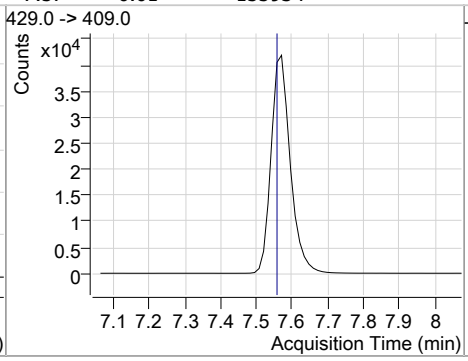


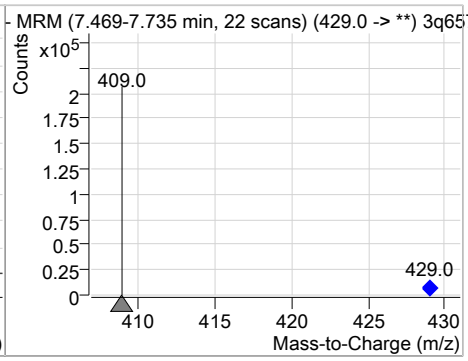




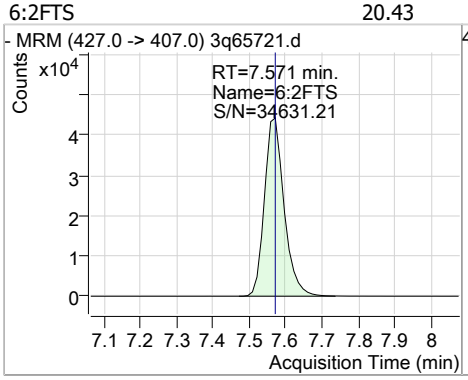
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.92	7.57	0.01	155934				

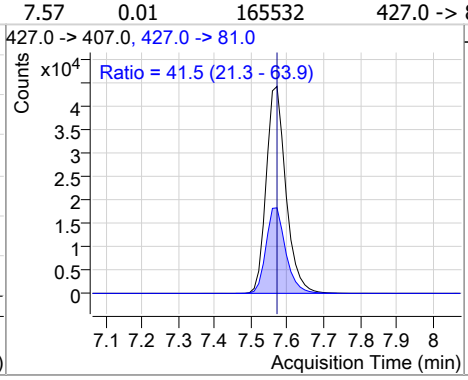


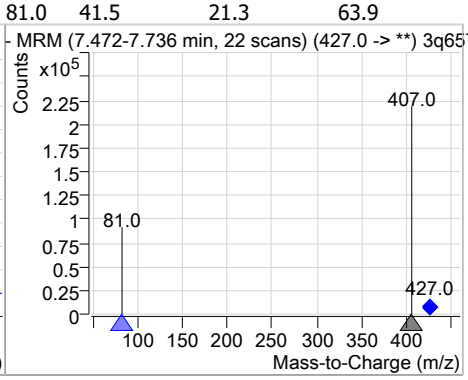




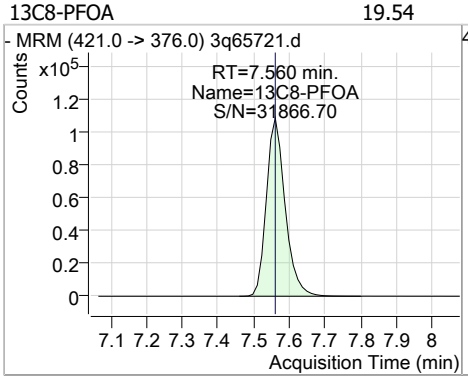
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.43	7.57	0.01	165532	427.0 -> 81.0	41.5	21.3	63.9

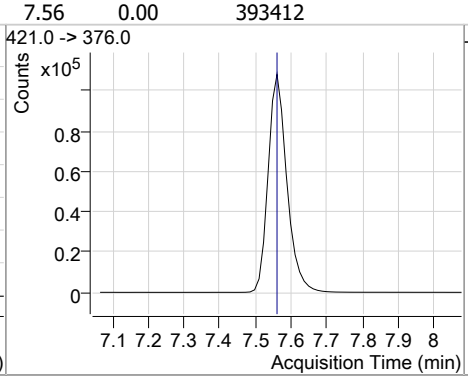


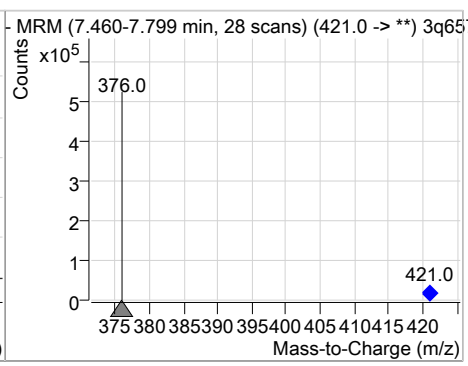




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.54	7.56	0.00	393412				

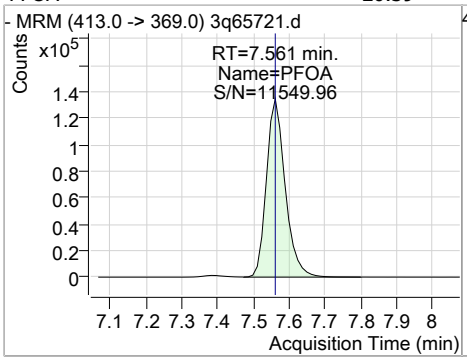


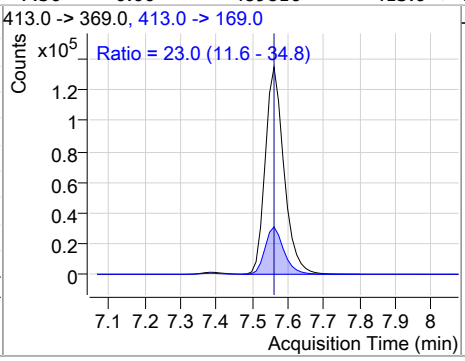


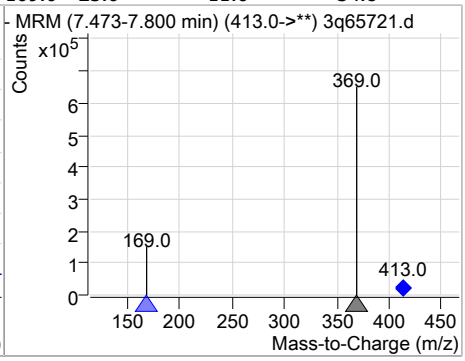


Perfluorinated Compounds by LC/MS/MS

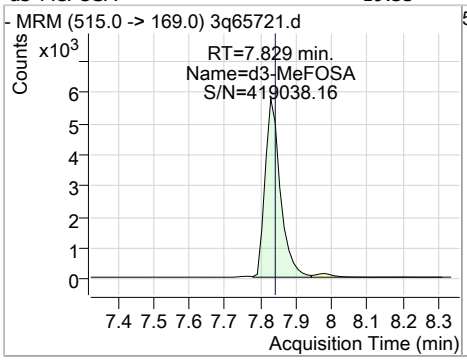
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	20.39	7.56	0.00	489816	413.0 -> 169.0	23.0	11.6	34.8

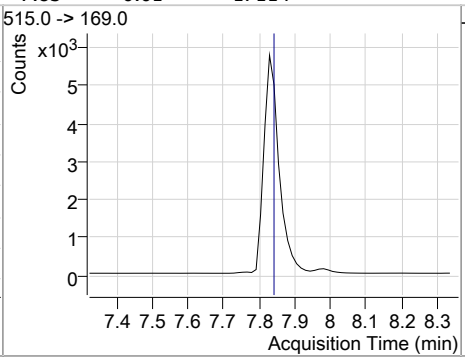


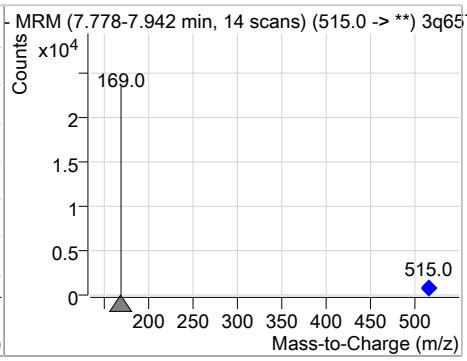




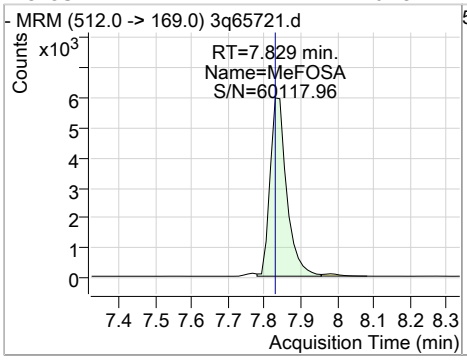
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.33	7.83	-0.01	17114				

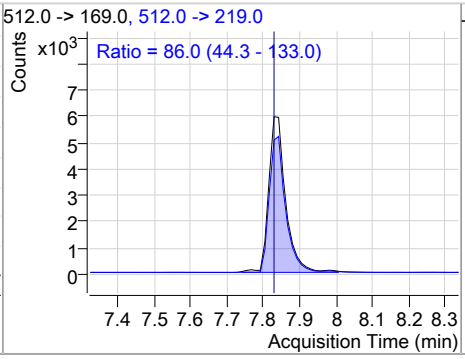


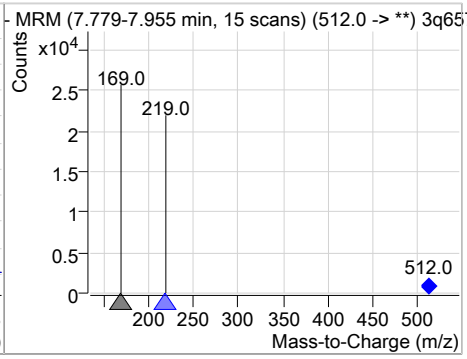




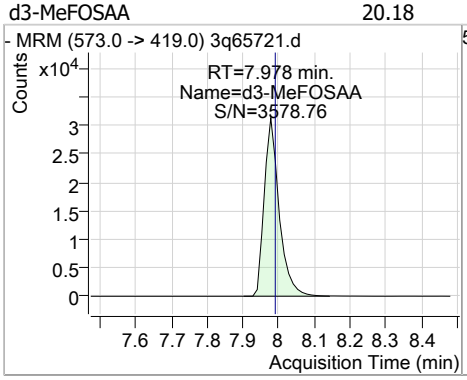
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.49	7.83	-0.01	18874	512.0 -> 219.0	86.0	44.3	133.0

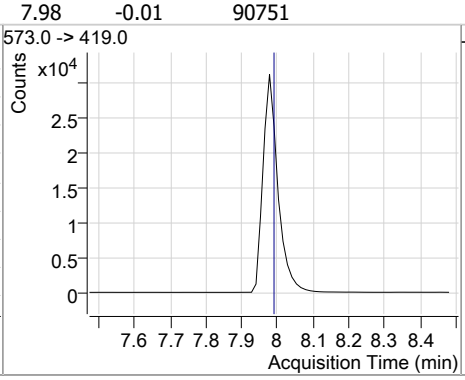


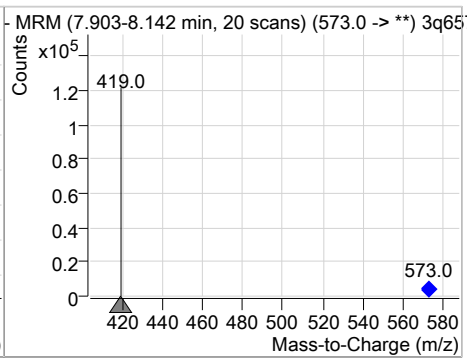




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.18	7.98	-0.01	90751				

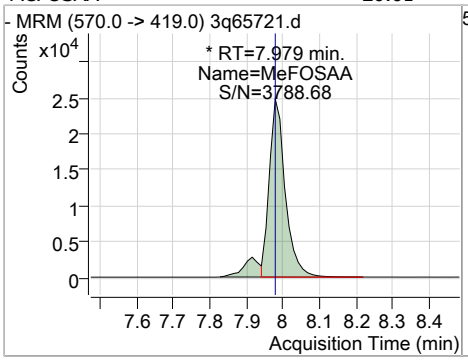


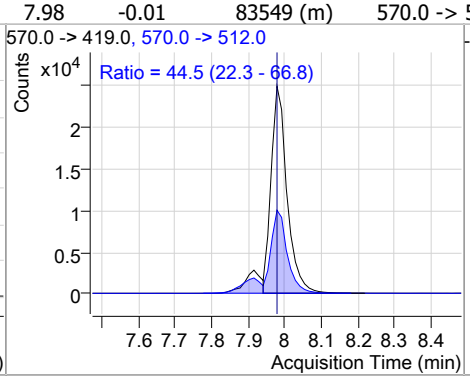


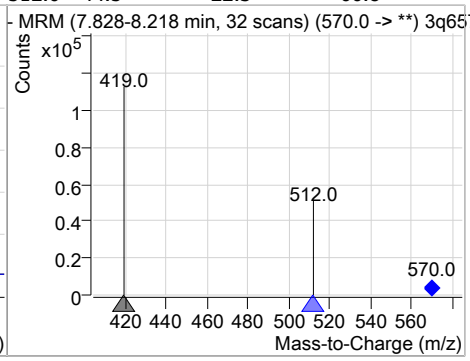


Perfluorinated Compounds by LC/MS/MS

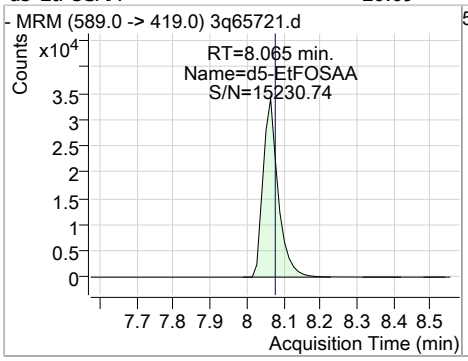
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.61	7.98	-0.01	83549 (m)	570.0 -> 512.0	44.5	22.3	66.8

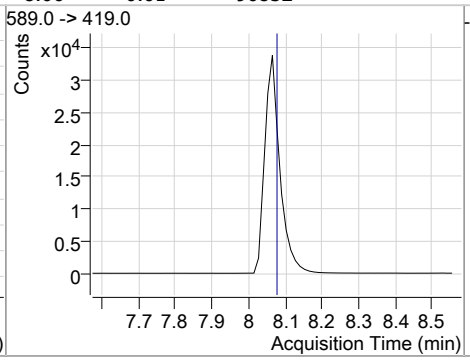


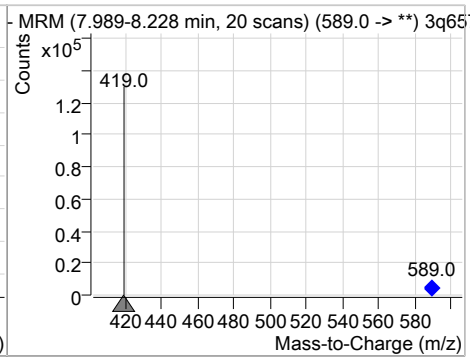




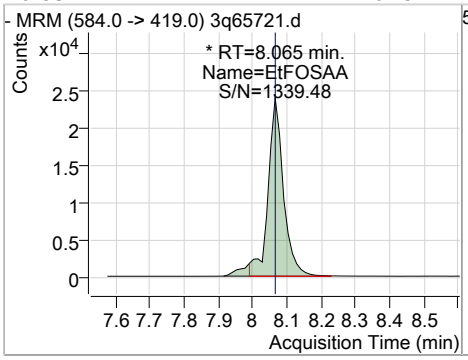
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.69	8.06	-0.01	96852				

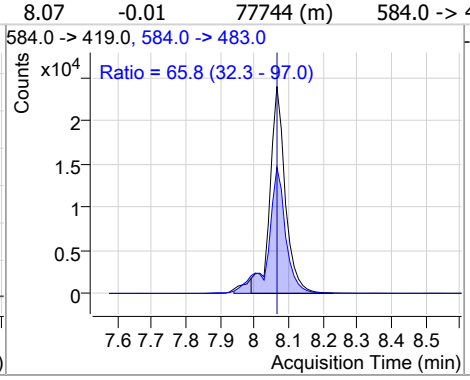


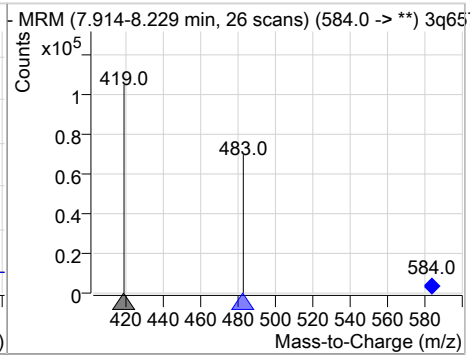




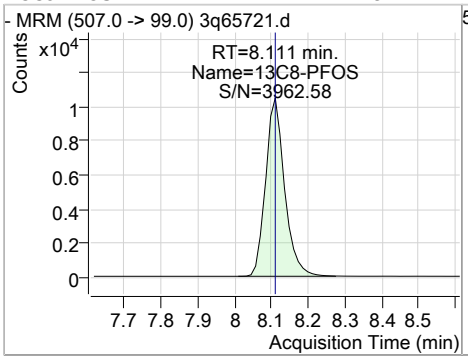
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.13	8.07	-0.01	77744 (m)	584.0 -> 483.0	65.8	32.3	97.0

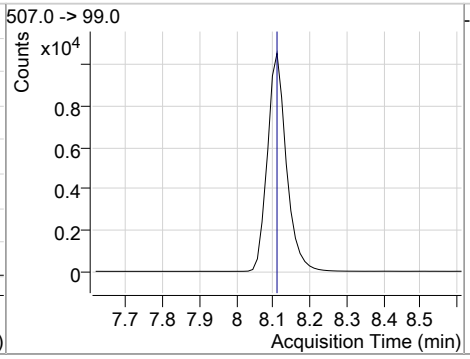


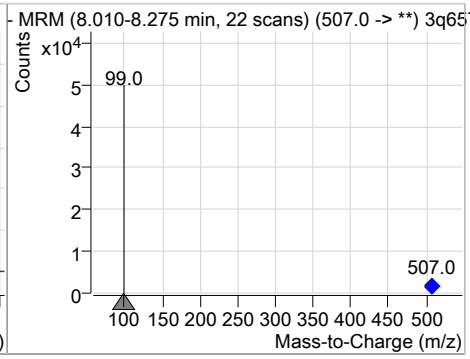




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.11	8.11	0.00	37487				

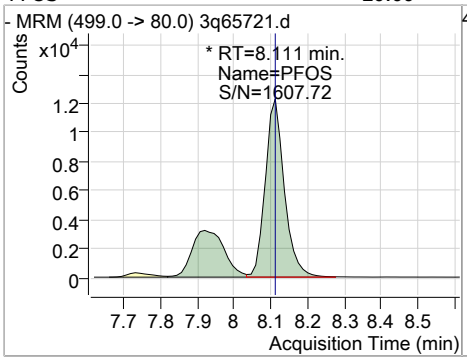


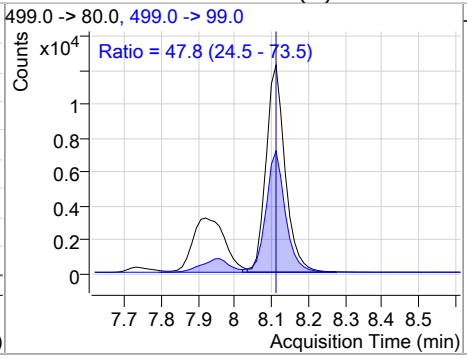


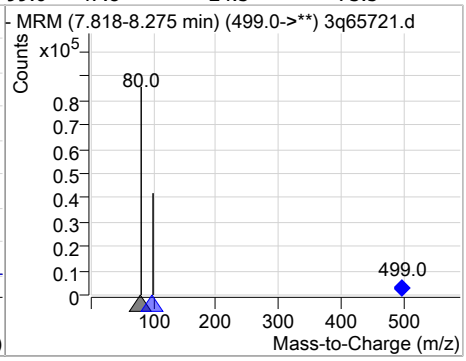


Perfluorinated Compounds by LC/MS/MS

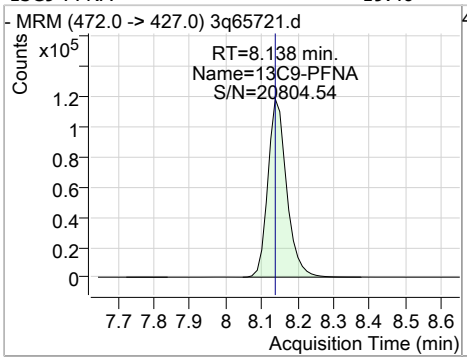
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.66	8.11	0.00	63793 (m)	499.0 -> 99.0	47.8	24.5	73.5

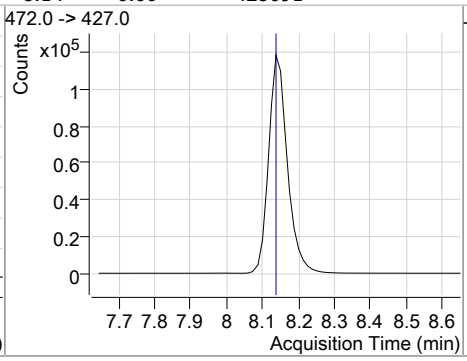


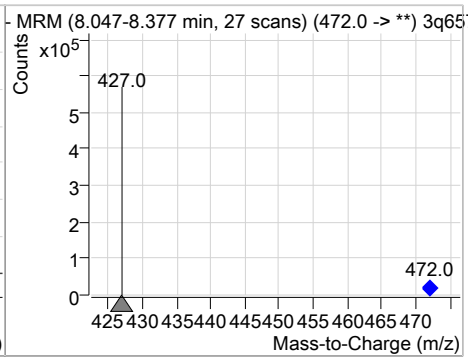




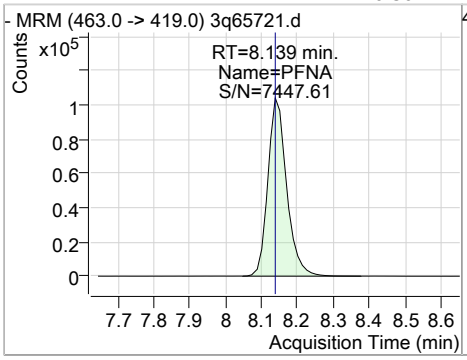
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.40	8.14	0.00	428691				

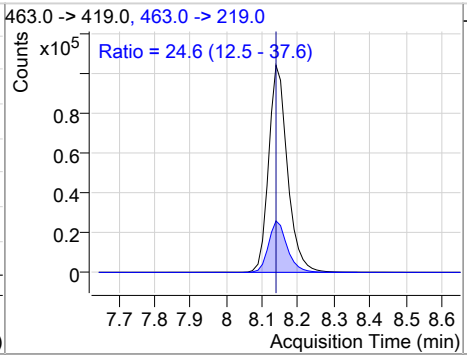


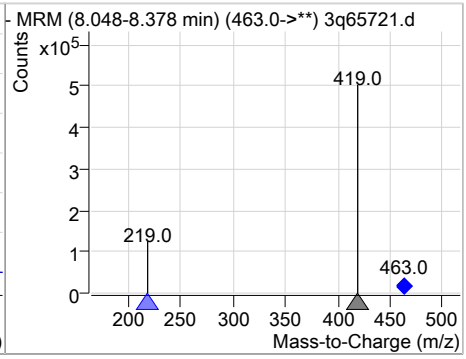




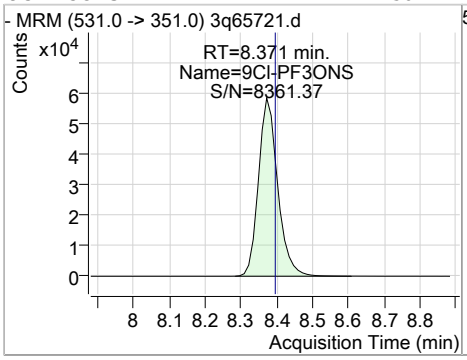
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.30	8.14	0.00	376841	463.0 -> 219.0	24.6	12.5	37.6

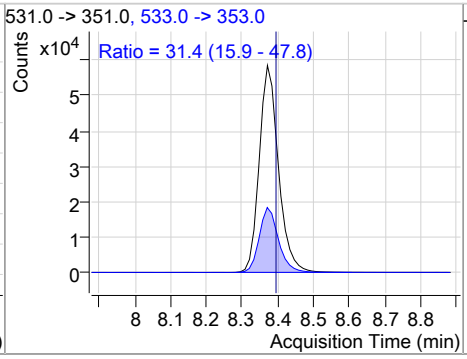


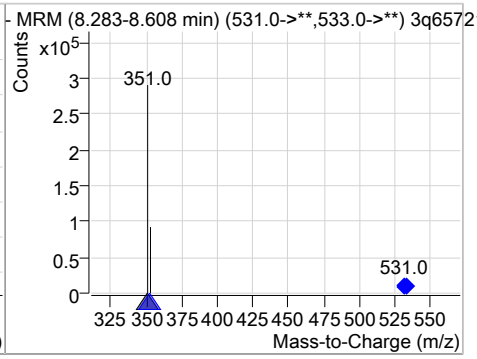




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.56	8.37	0.00	218039	533.0 -> 353.0	31.4	15.9	47.8

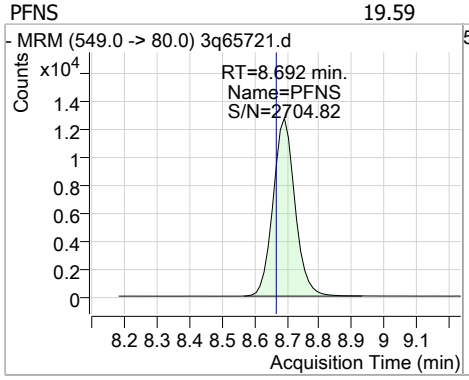


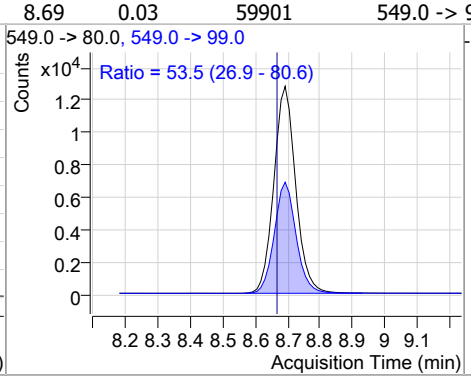


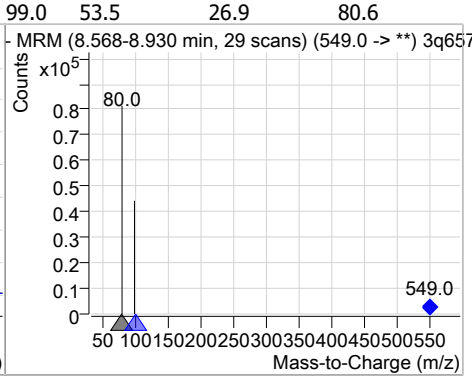


Perfluorinated Compounds by LC/MS/MS

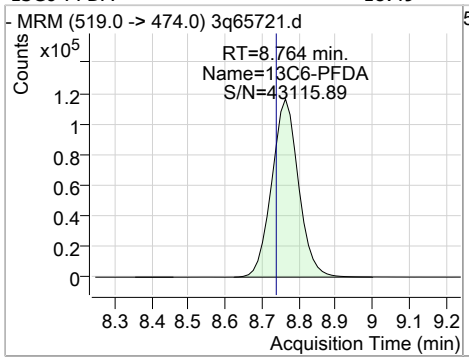
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.59	8.69	0.03	59901	549.0 -> 99.0	53.5	26.9	80.6

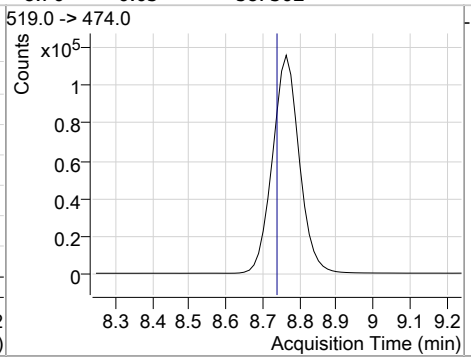


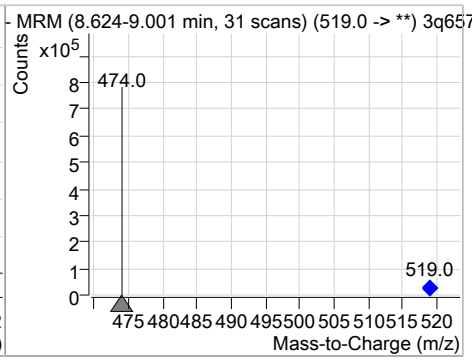




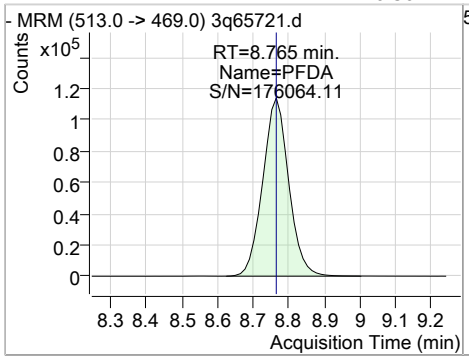
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.49	8.76	0.03	587362				

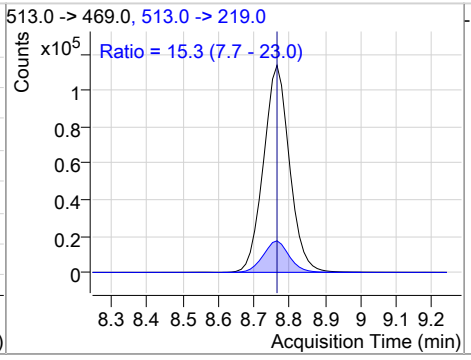


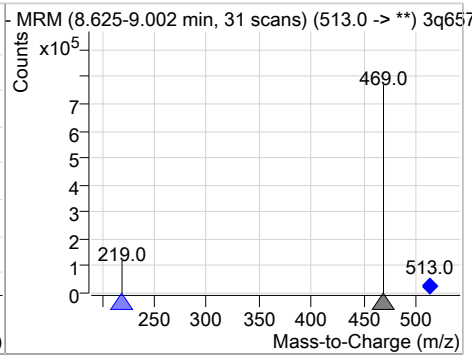




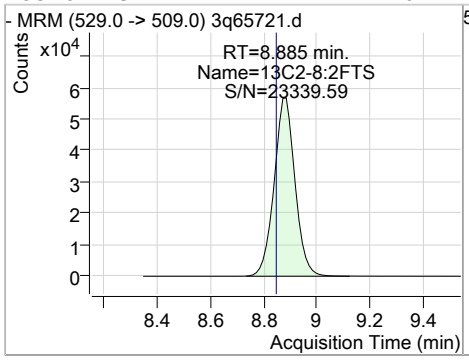
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.36	8.77	0.03	576250	513.0 -> 219.0	15.3	7.7	23.0

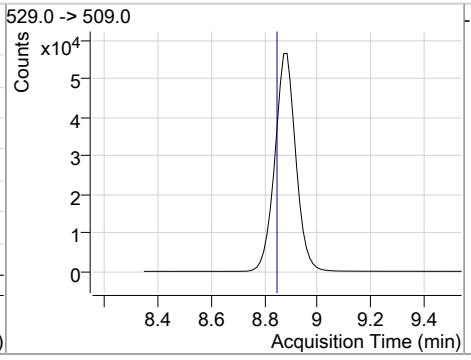


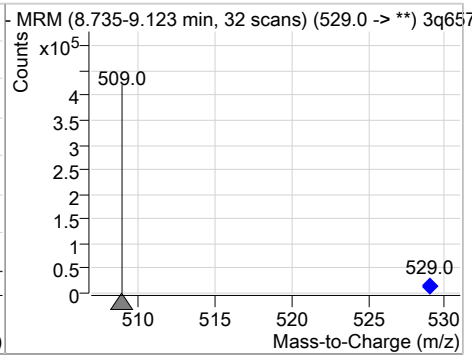




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.28	8.89	0.04	309308				

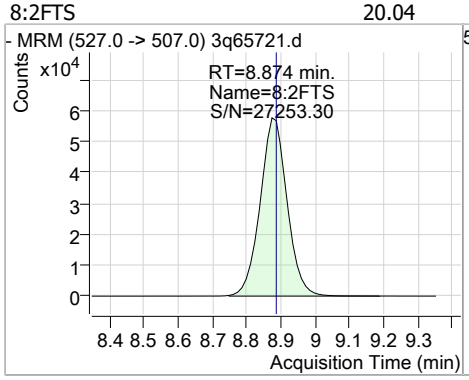


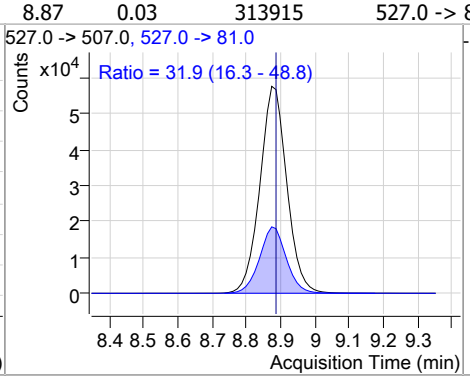


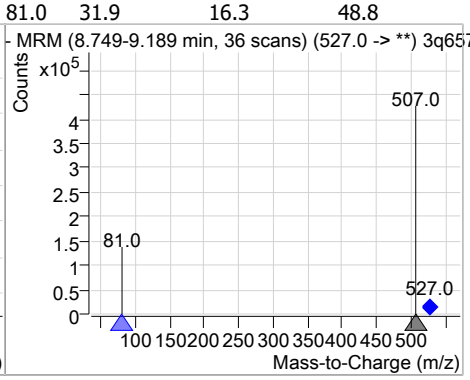


Perfluorinated Compounds by LC/MS/MS

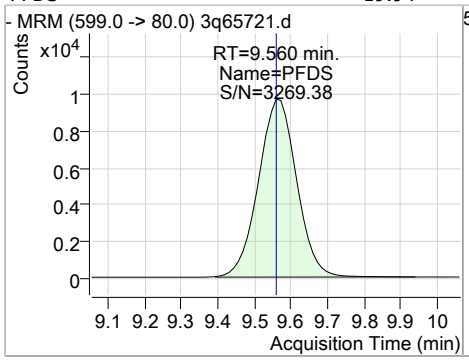
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.04	8.87	0.03	313915	527.0 -> 81.0	31.9	16.3	48.8

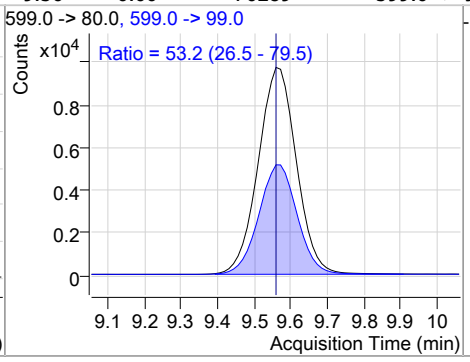


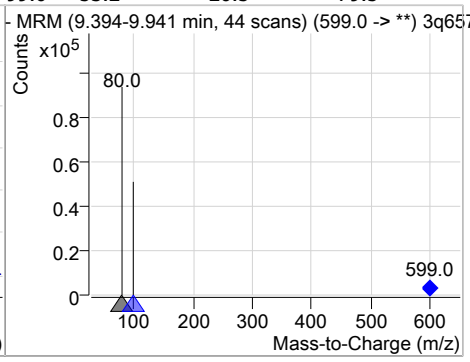




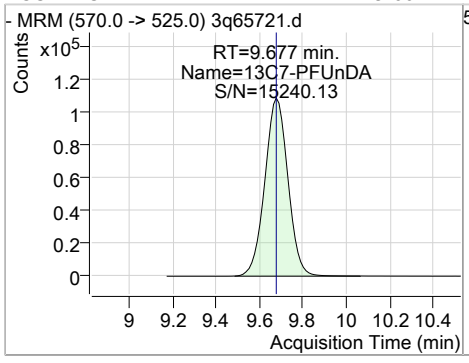
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.94	9.56	0.00	70289	599.0 -> 99.0	53.2	26.5	79.5

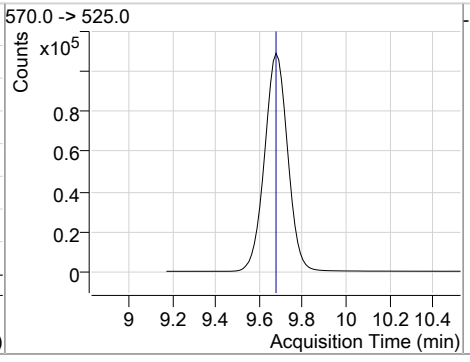


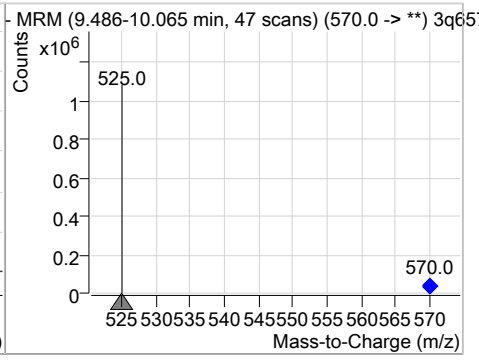




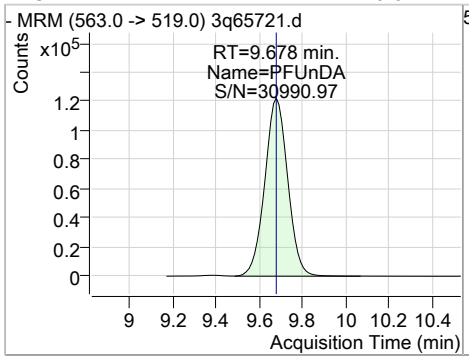
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.60	9.68	0.00	808981				

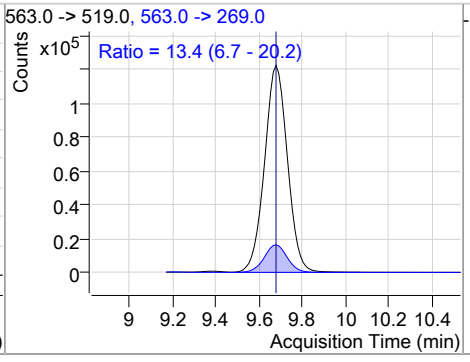


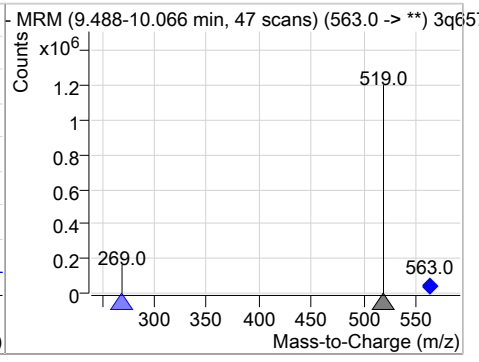




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.62	9.68	0.00	898550	563.0 -> 269.0	13.4	6.7	20.2

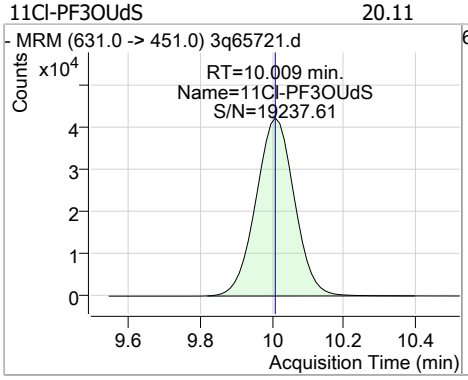


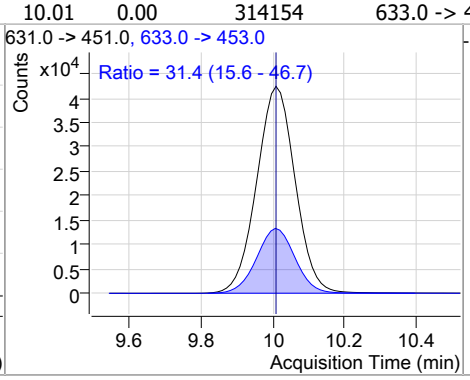


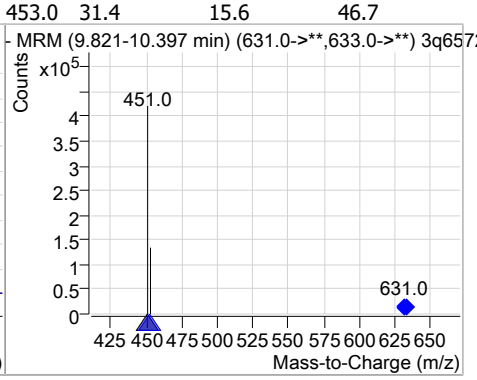


Perfluorinated Compounds by LC/MS/MS

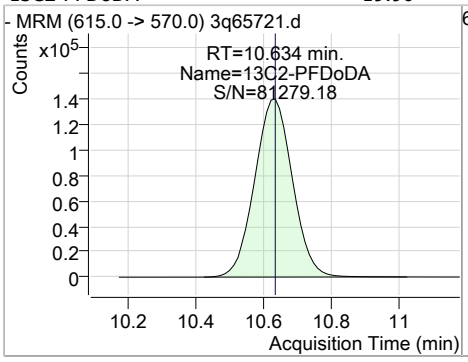
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.11	10.01	0.00	314154	633.0 -> 453.0	31.4	15.6	46.7

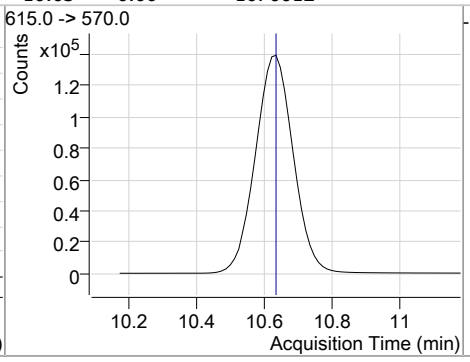


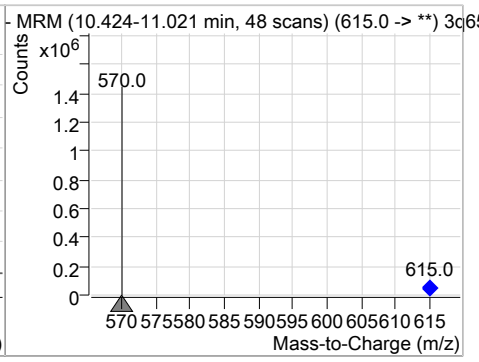




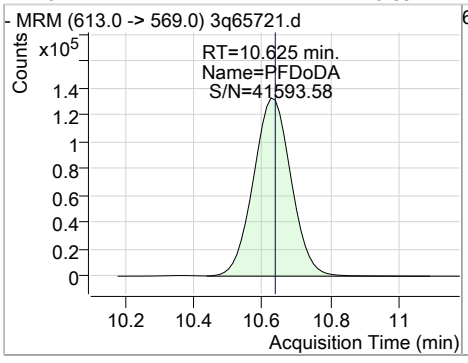
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.90	10.63	0.00	1076612				

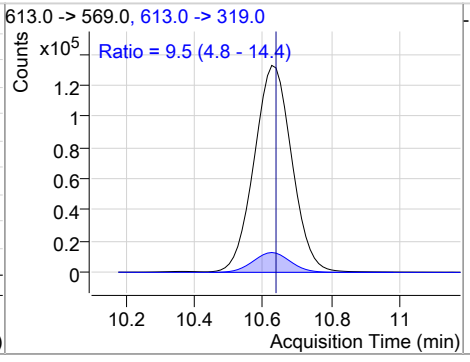


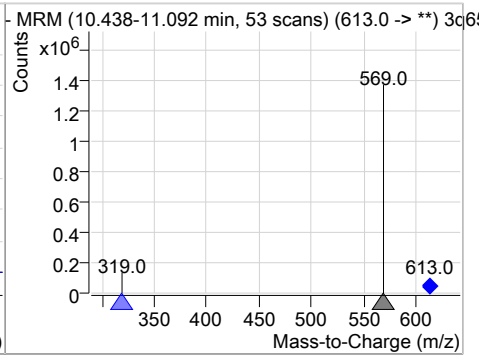




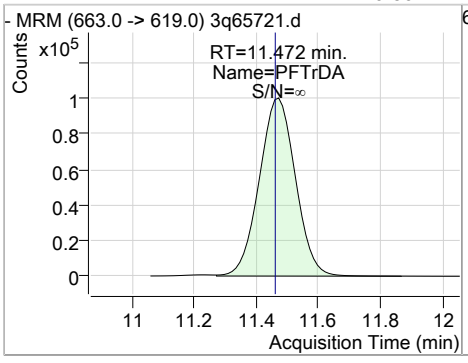
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.39	10.63	-0.01	1019505	613.0 -> 319.0	9.5	4.8	14.4

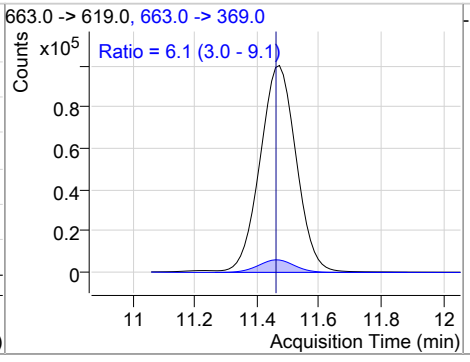


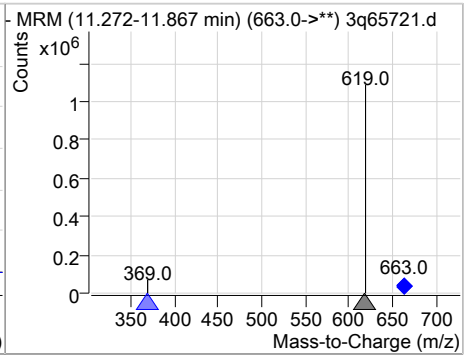




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.86	11.47	-0.01	806750	663.0 -> 369.0	6.1	3.0	9.1

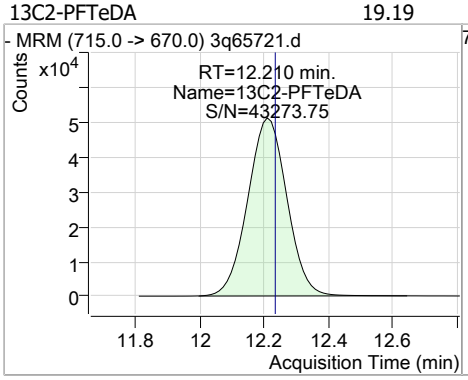


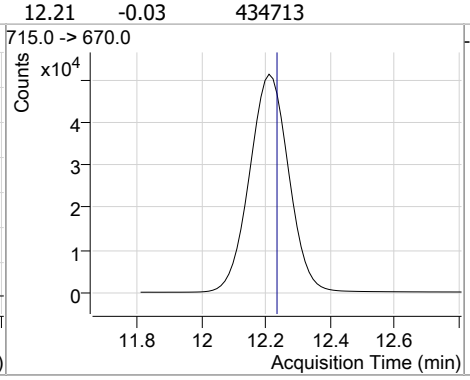


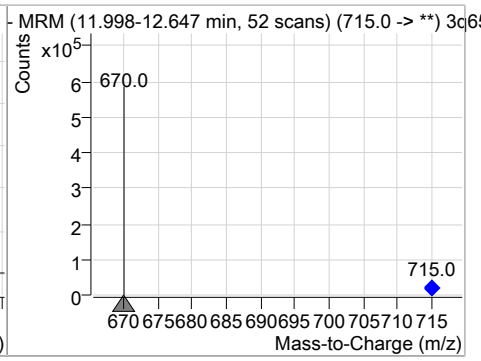


Perfluorinated Compounds by LC/MS/MS

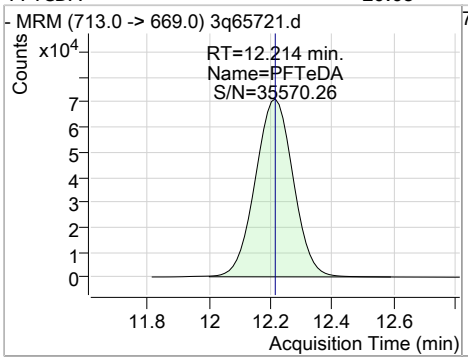
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.19	12.21	-0.03	434713				

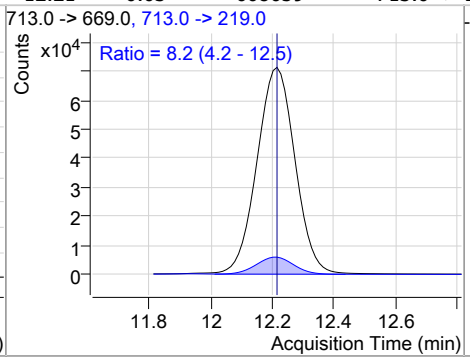


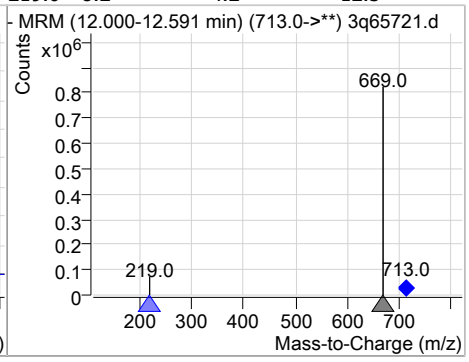




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.68	12.21	-0.03	608659	713.0 -> 219.0	8.2	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65721.D
Injection Time: 09/14/22 05:51
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.98	Split peak
EtFOSAA	2991-50-6		8.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 16:54

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65723.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 6:30:48 AM
Sample Name : cc898-1.0LL
Vial : P1-A3
DA Method File : ID_091322_S3Q898.quantmethod.xml
Batch Name : s3q898.batch.bin
Sample Information : op92590,S3Q898,250,,,1,1,water

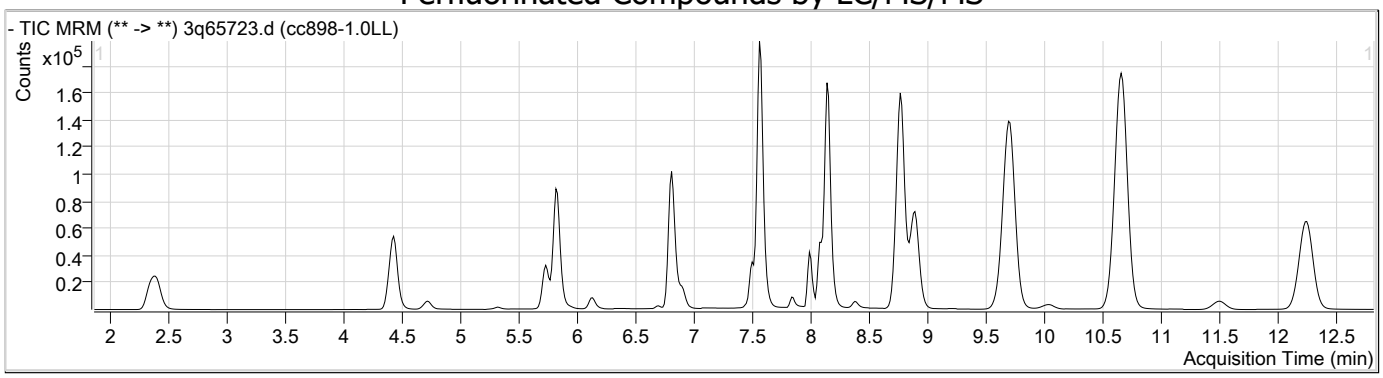
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	181697	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	267111	20.00 µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	353574	20.00 µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	355144	20.00 µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	489019	20.00 µg/L	0.000
M9-PFNA	8.138	472.0 -> 427.0	541478	20.00 µg/L	0.000
M6-PFDA	8.764	519.0 -> 474.0	766327	20.00 µg/L	0.025
M7-PFUnDA	9.689	570.0 -> 525.0	975182	20.00 µg/L	0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1278510	20.00 µg/L	0.013
M2-PFTeDA	12.235	715.0 -> 670.0	516243	20.00 µg/L	0.000
M8-FOSA	7.491	506.0 -> 78.0	95778	20.00 µg/L	0.000
M3-PFBS	4.704	302.0 -> 99.0	24142	20.00 µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	30398	20.00 µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	45934	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	125065	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	183727	20.00 µg/L	0.013
M2-8:2FTS	8.885	529.0 -> 509.0	361093	20.00 µg/L	0.038
M3-MeFOSAA	7.978	573.0 -> 419.0	114355	20.00 µg/L	-0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	28779	20.00 µg/L	0.013
M3-MeFOSA	7.829	515.0 -> 169.0	21262	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	118979	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	125065	21.66 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%	
13C2-6:2FTS	7.571	429.0 -> 409.0	183727	23.47 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.4%	
13C2-8:2FTS	8.885	529.0 -> 509.0	361093	24.84 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.2%	
13C2-PFDoDA	10.646	615.0 -> 570.0	1278510	23.63 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
13C2-PFTeDA	12.235	715.0 -> 670.0	516243	22.79 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%	
13C3-PFBS	4.704	302.0 -> 99.0	24142	22.82 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.1%	
13C3-PFHxS	6.834	402.0 -> 99.0	30398	23.53 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.6%	
13C4-PFBA	2.365	217.0 -> 172.0	181697	22.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.2%	
13C4-PFHpA	6.805	367.0 -> 322.0	355144	23.57 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.8%	
13C5-PFHxA	5.813	318.0 -> 273.0	353574	23.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.4%	
13C5-PFPeA	4.424	268.0 -> 223.0	267111	23.04 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%	
13C6-PFDA	8.764	519.0 -> 474.0	766327	24.12 µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

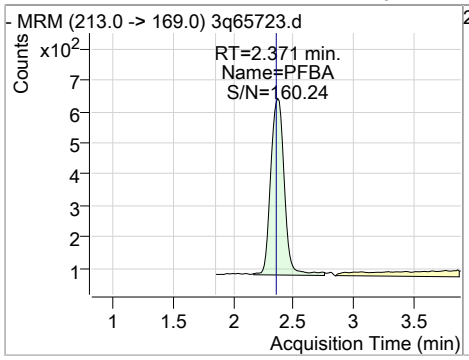
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.6%		
13C7-PFUnDA	9.689	570.0 -> 525.0	975182	23.62 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.1%		
13C8-FOSA	7.491	506.0 -> 78.0	95778	25.36 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.8%		
13C8-PFOA	7.560	421.0 -> 376.0	489019	24.29 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.5%		
13C8-PFOS	8.111	507.0 -> 99.0	45934	23.41 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.1%		
13C9-PFNA	8.138	472.0 -> 427.0	541478	24.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.5%		
d3-MeFOSAA	7.978	573.0 -> 419.0	114355	25.43 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.2%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	28774	22.42 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
d3-MeFOSA	7.829	515.0 -> 169.0	21262	24.02 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.1%		
d5-EtFOSAA	8.065	589.0 -> 419.0	119106	25.44 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.2%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	6955	1.05 µg/L		94
6:2FTS	7.571	427.0 -> 407.0	9918	1.04 µg/L		99
8:2FTS	8.887	527.0 -> 507.0	19221	1.05 µg/L		97
EtFOSAA	8.078	584.0 -> 419.0	4604	0.97 µg/L	m	92
FOSA	7.491	498.0 -> 78.0	4601	1.01 µg/L		99
MeFOSAA	7.991	570.0 -> 419.0	4971	0.97 µg/L	m	90
PFBA	2.371	213.0 -> 169.0	4451	1.07 µg/L		100
PFBS	4.707	299.0 -> 80.0	3518	1.03 µg/L		97
PFDA	8.765	513.0 -> 469.0	37454	1.01 µg/L		100
PFDoDA	10.650	613.0 -> 569.0	59835	1.01 µg/L		99
PFDS	9.585	599.0 -> 80.0	4261	1.00 µg/L		98
PFHpA	6.807	363.0 -> 319.0	25678	1.01 µg/L		100
PFHpS	7.544	449.0 -> 80.0	3225	1.08 µg/L		99
PFHxA	5.814	313.0 -> 269.0	19057	1.01 µg/L		100
PFHxS	6.823	399.0 -> 80.0	3624	1.02 µg/L	m	97
PFNA	8.139	463.0 -> 419.0	24315	1.04 µg/L		98
PFNS	8.692	549.0 -> 80.0	3814	1.02 µg/L		98
PFOA	7.561	413.0 -> 369.0	29896	1.00 µg/L		99
PFOS	8.111	499.0 -> 80.0	3930	1.04 µg/L	m	97
PFPeA	4.426	263.0 -> 219.0	12144	1.04 µg/L		100
PFPeS	5.932	349.0 -> 80.0	2814	1.06 µg/L		97
PFTeDA	12.227	713.0 -> 669.0	36233	1.04 µg/L		100
PFTrDA	11.484	663.0 -> 619.0	46820	1.02 µg/L		100
PFUnDA	9.691	563.0 -> 519.0	53226	1.01 µg/L		99
11Cl-PF3OUdS	10.022	631.0 -> 451.0	18192	0.98 µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	13365	1.01 µg/L		98
ADONA	6.891	377.0 -> 251.0	37743	0.98 µg/L		98
HFPO-DA	6.122	329.0 -> 169.0	3587	1.05 µg/L		97
MeFOSA	7.842	512.0 -> 169.0	1183	1.03 µg/L		93
4-PFECHS	7.454	461.0 -> 381.0	9713	0.88 µg/L		96
FBSA	5.315	298.0 -> 78.0	6336	1.05 µg/L		99
FHxSA	6.688	398.0 -> 78.0	7385	1.02 µg/L		99

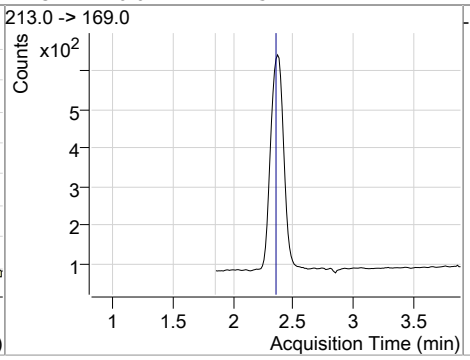
 # = Qualifier out of range, m = manually integrated, + = Area summed

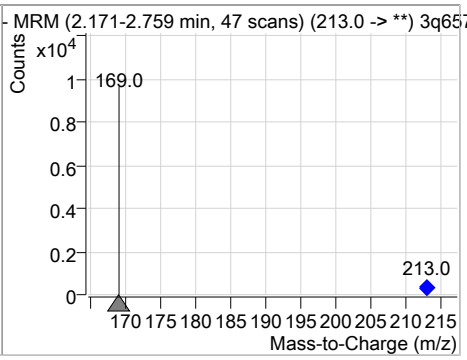
Perfluorinated Compounds by LC/MS/MS



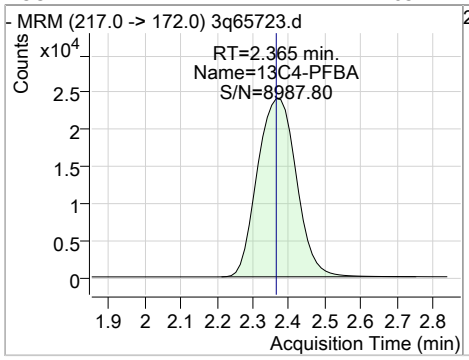
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.07	2.37	0.01	4451				

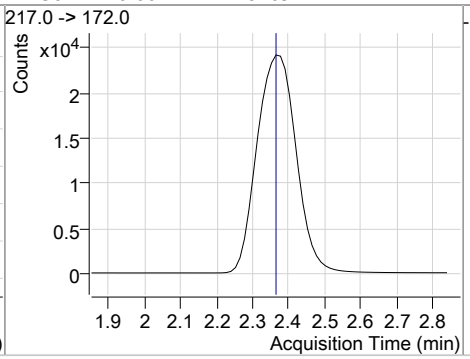


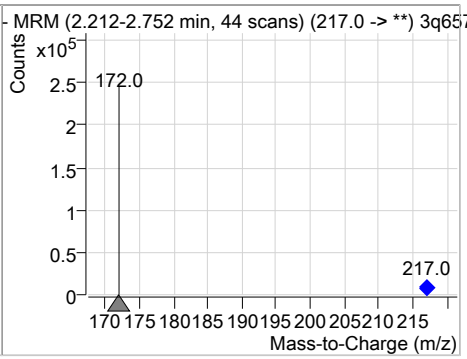




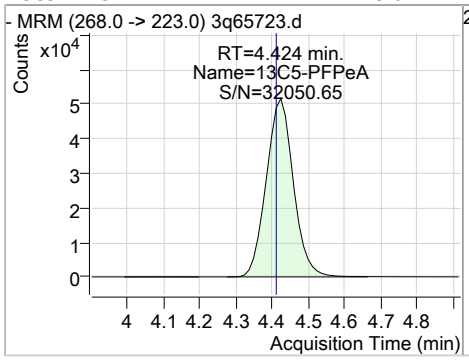
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.83	2.36	0.00	181697				

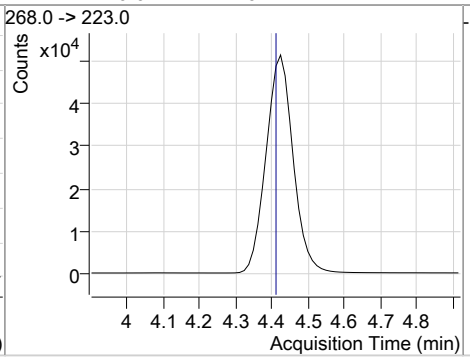


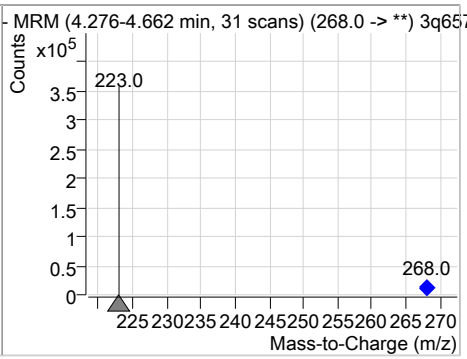




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	23.04	4.42	0.01	267111				

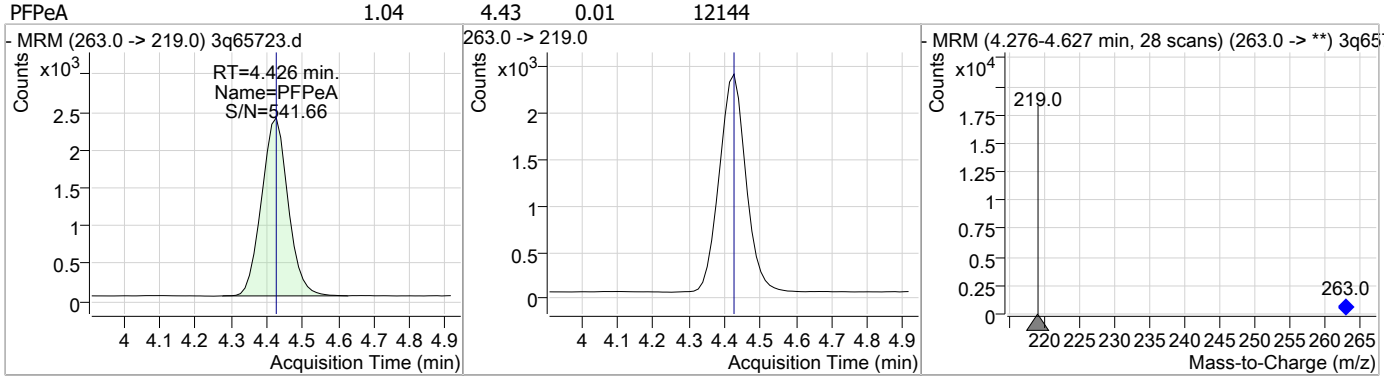




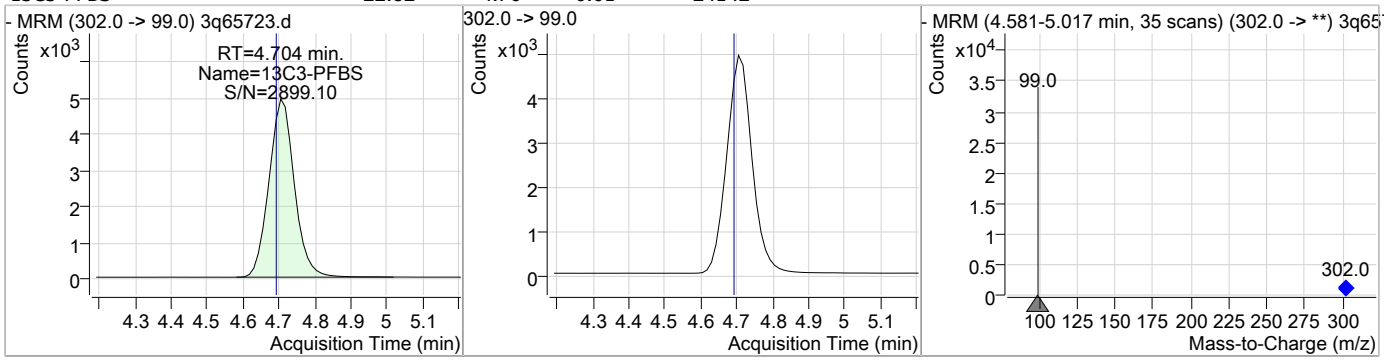


Perfluorinated Compounds by LC/MS/MS

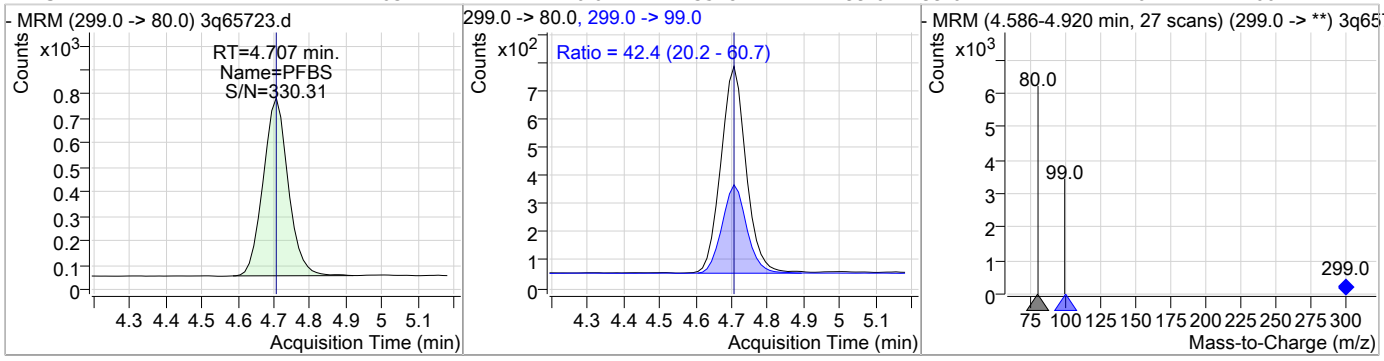
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.04	4.43	0.01	12144				



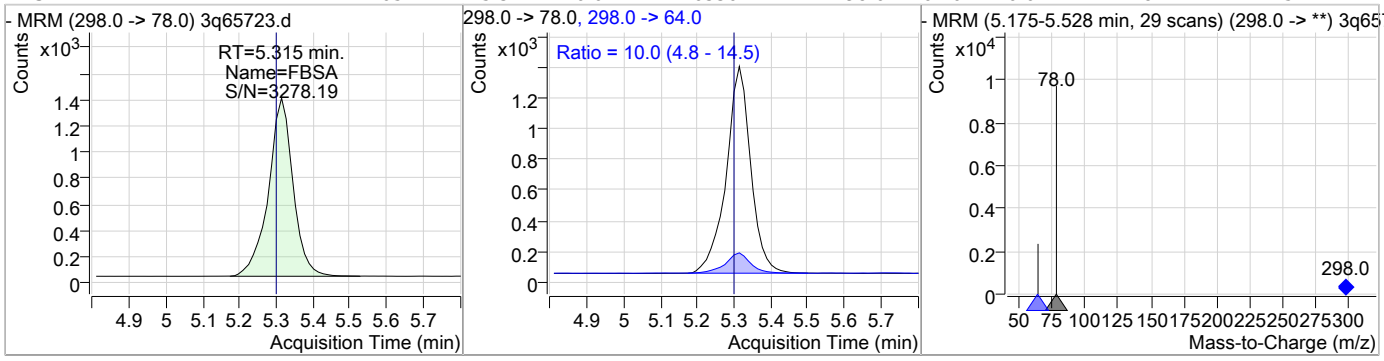
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.82	4.70	0.01	24142				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.03	4.71	0.01	3518	299.0 -> 99.0	42.4	20.2	60.7

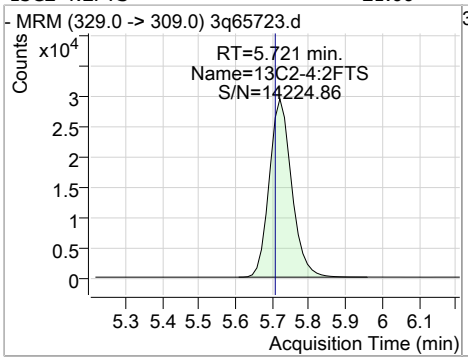


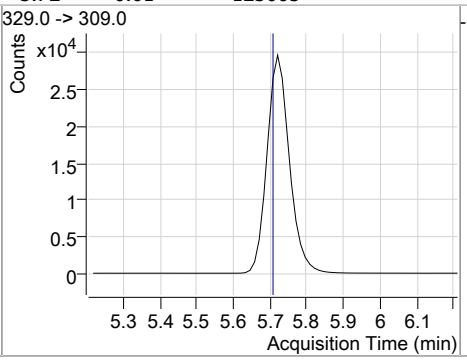
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.05	5.31	0.01	6336	298.0 -> 64.0	10.0	4.8	14.5

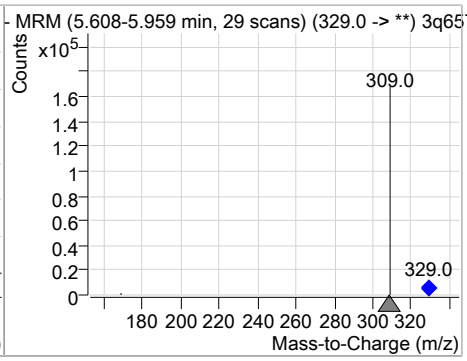


Perfluorinated Compounds by LC/MS/MS

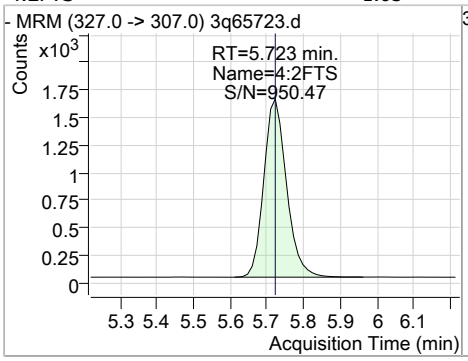
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.66	5.72	0.01	125065				

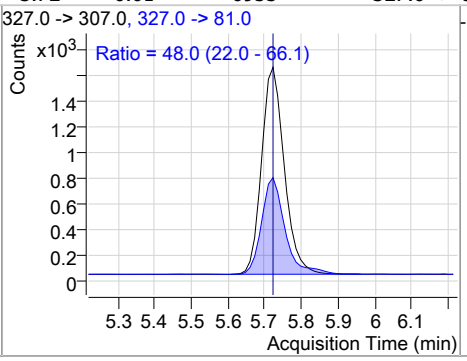


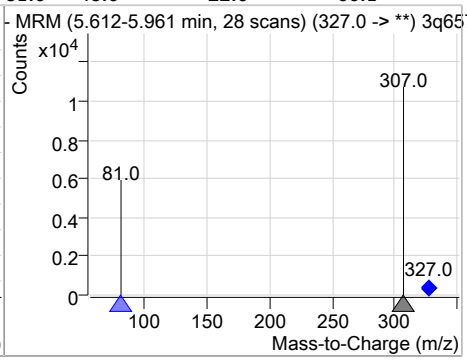




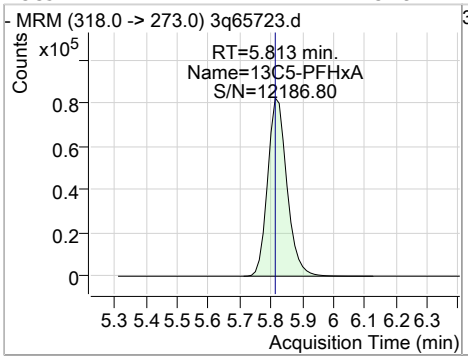
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	5.72	0.01	6955	327.0 -> 81.0	48.0	22.0	66.1

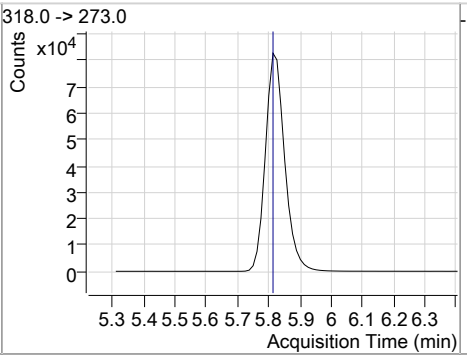


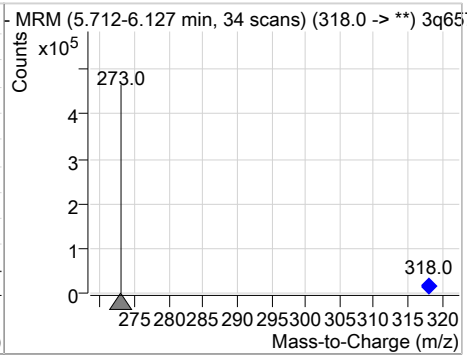




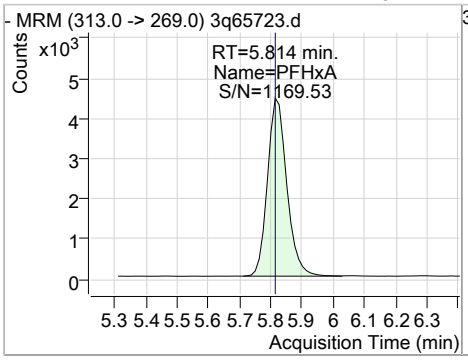
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	23.29	5.81	0.00	353574				

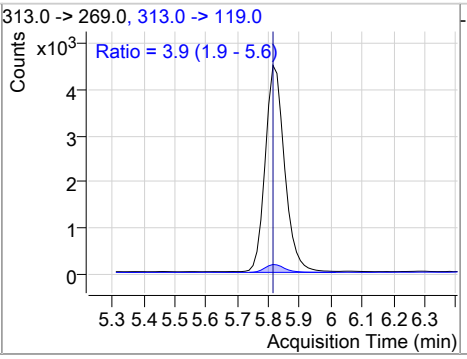


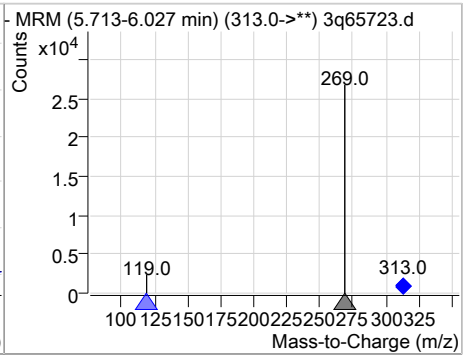




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.01	5.81	0.00	19057	313.0 -> 119.0	3.9	1.9	5.6

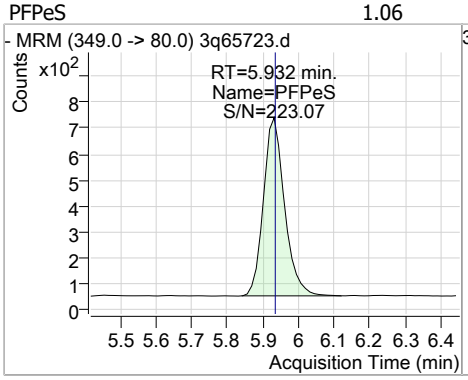


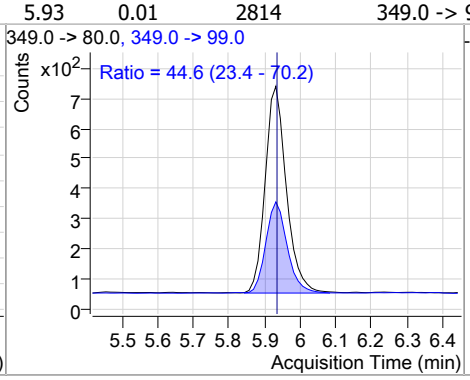


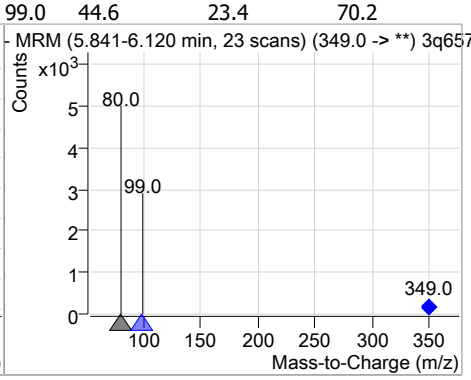


Perfluorinated Compounds by LC/MS/MS

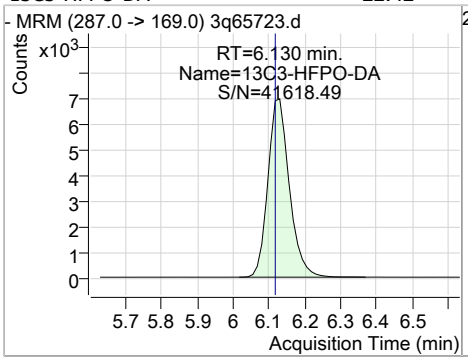
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.06	5.93	0.01	2814	349.0 -> 99.0	44.6	23.4	70.2

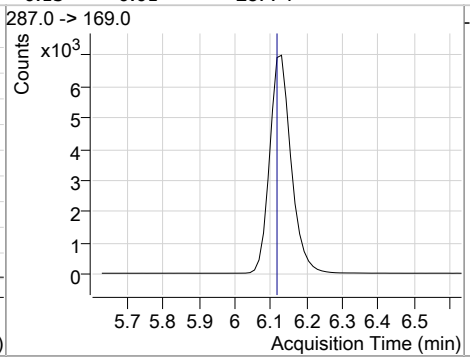


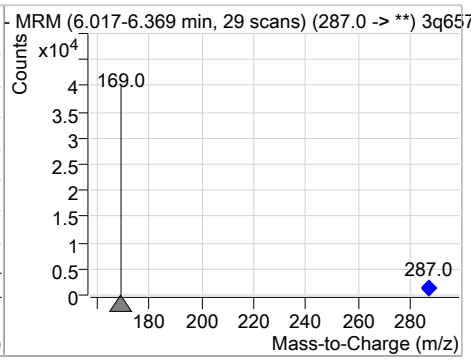




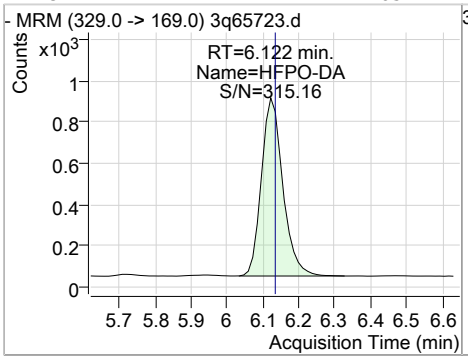
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.42	6.13	0.01	28774				

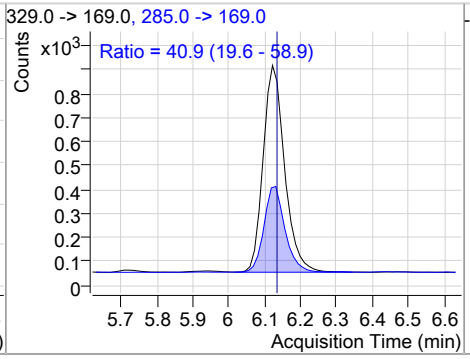


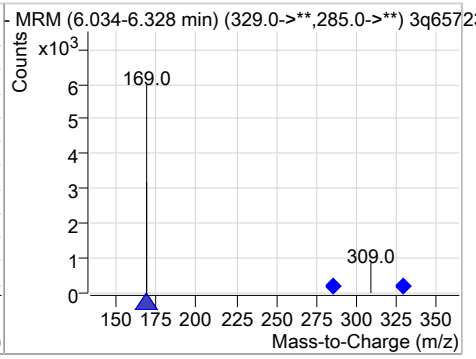




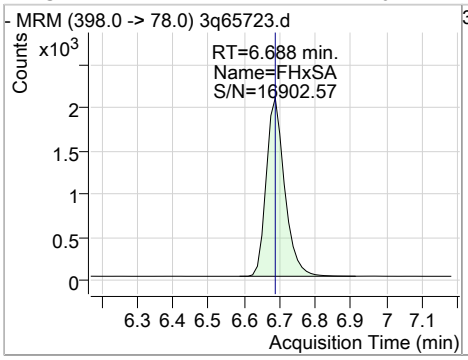
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.05	6.12	0.00	3587	285.0 -> 169.0	40.9	19.6	58.9

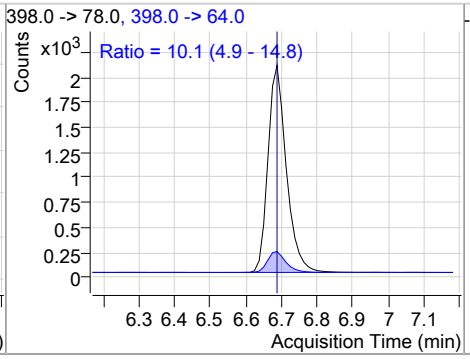


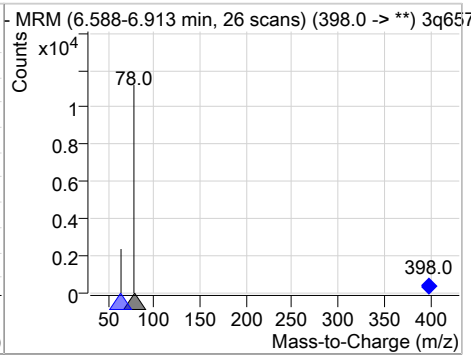




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.02	6.69	0.00	7385	398.0 -> 64.0	10.1	4.9	14.8

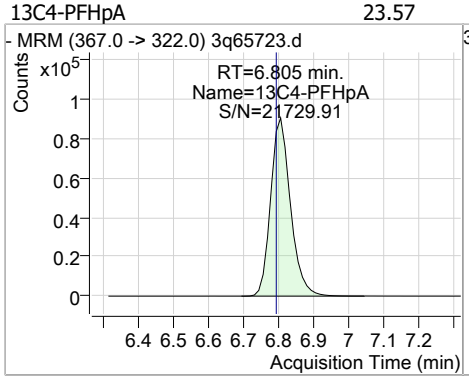


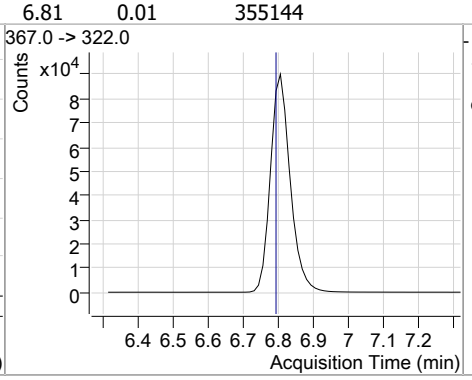


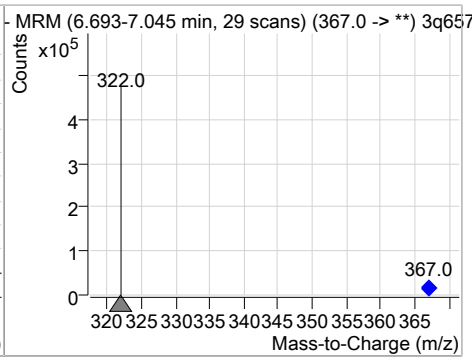


Perfluorinated Compounds by LC/MS/MS

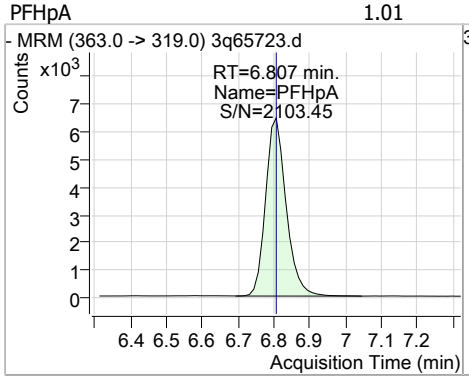
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	23.57	6.81	0.01	355144				

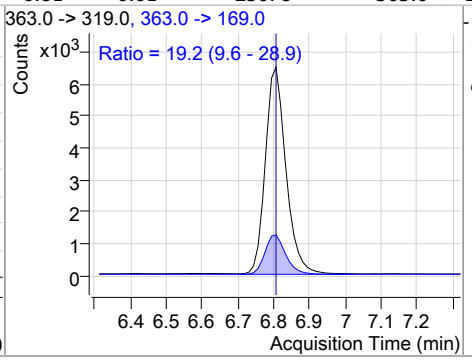


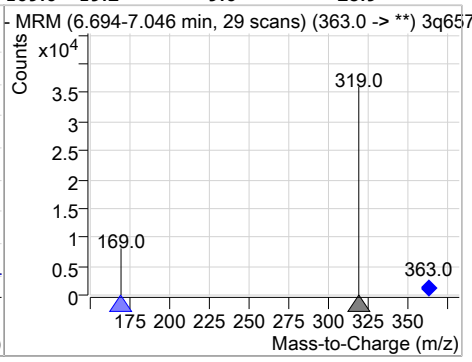




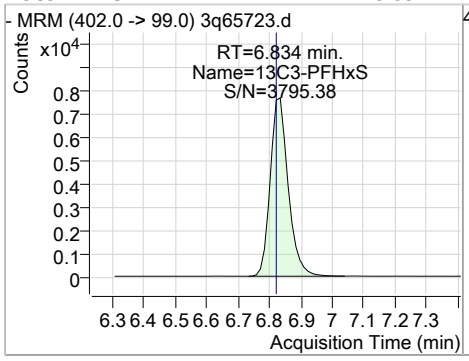
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.01	6.81	0.01	25678	363.0 -> 169.0	19.2	9.6	28.9

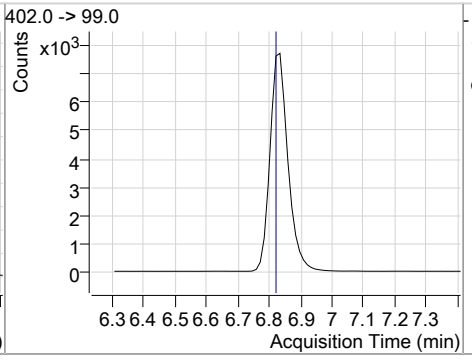


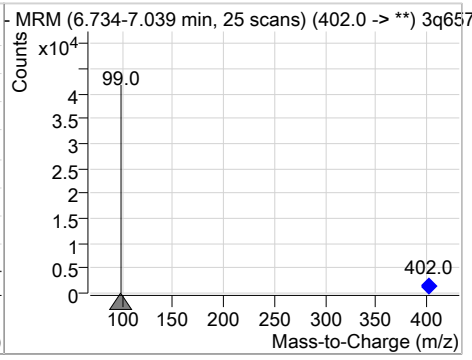




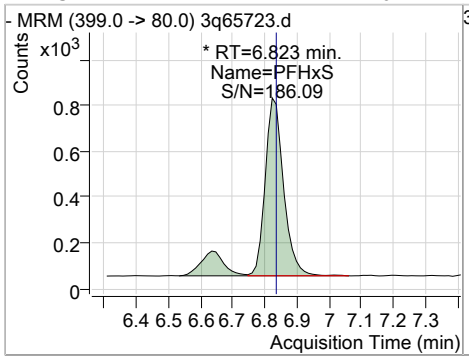
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	23.53	6.83	0.01	30398				

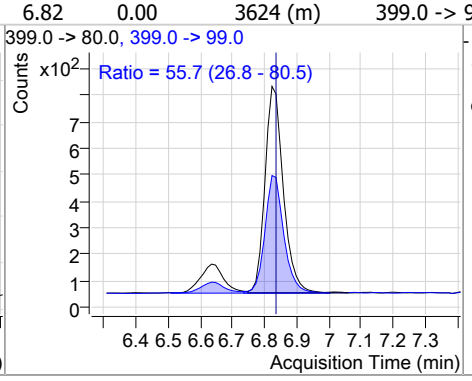


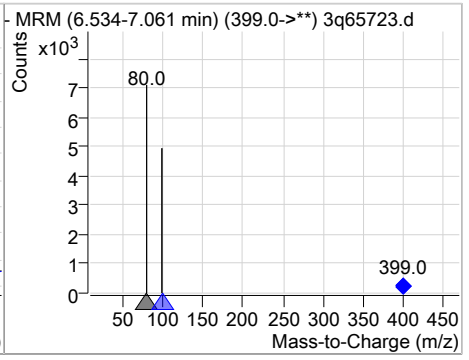




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.02	6.82	0.00	3624 (m)	399.0 -> 99.0	55.7	26.8	80.5

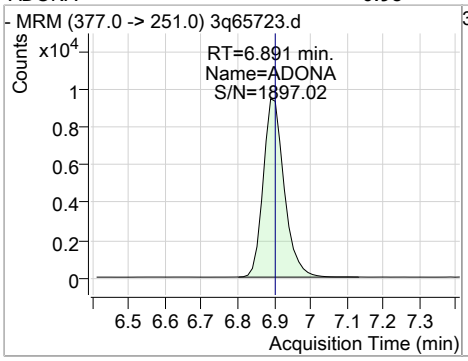


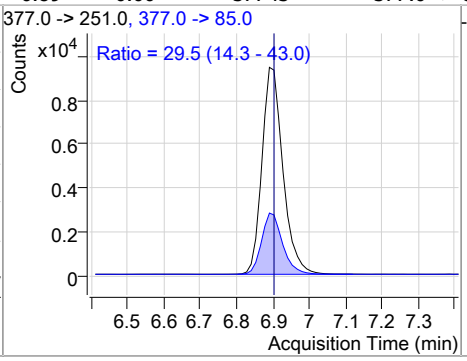


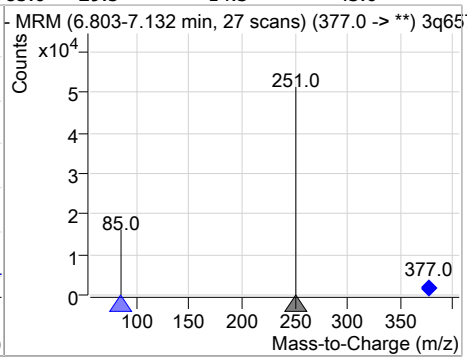


Perfluorinated Compounds by LC/MS/MS

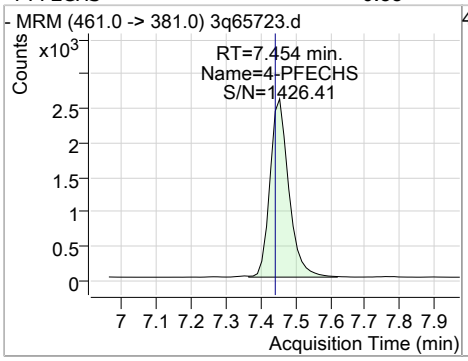
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.98	6.89	0.00	37743	377.0 -> 85.0	29.5	14.3	43.0

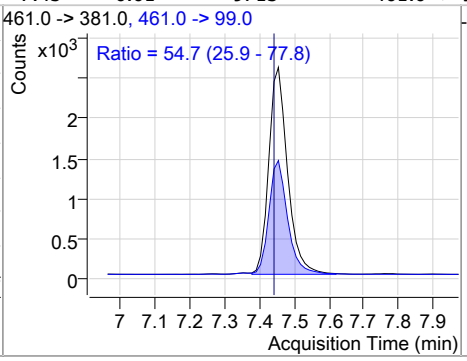


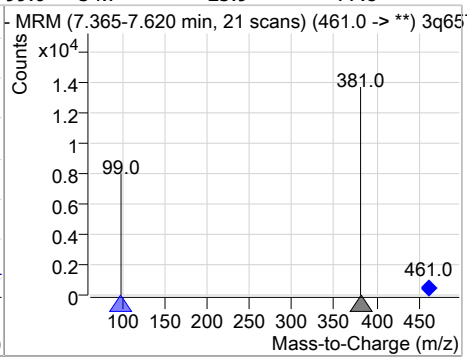




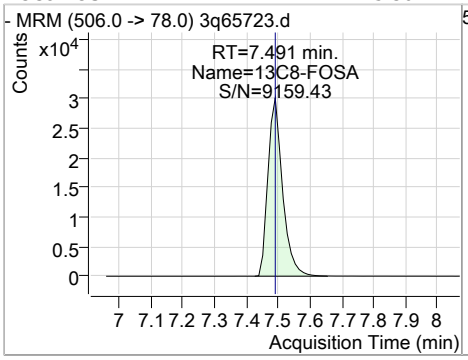
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.88	7.45	0.01	9713	461.0 -> 99.0	54.7	25.9	77.8

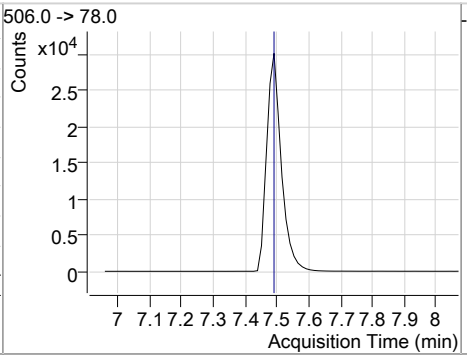


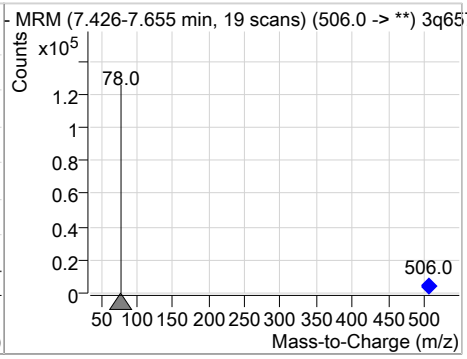




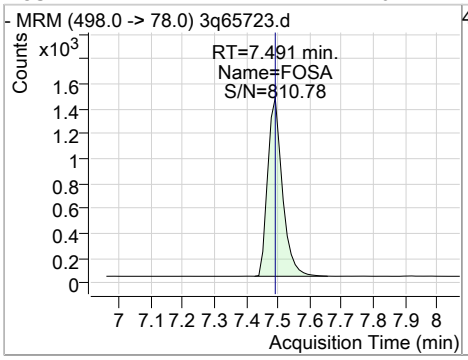
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	25.36	7.49	0.00	95778				

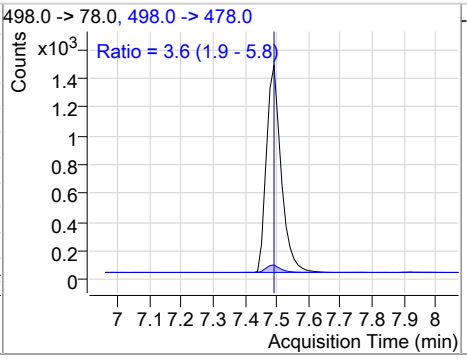


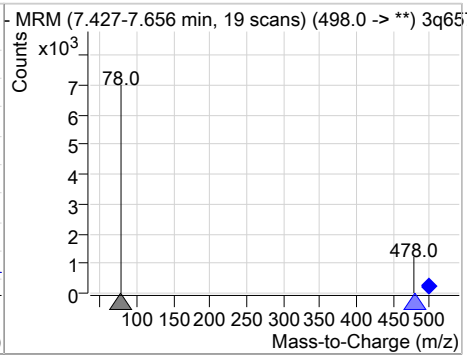




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	7.49	0.00	4601	498.0 -> 478.0	3.6	1.9	5.8

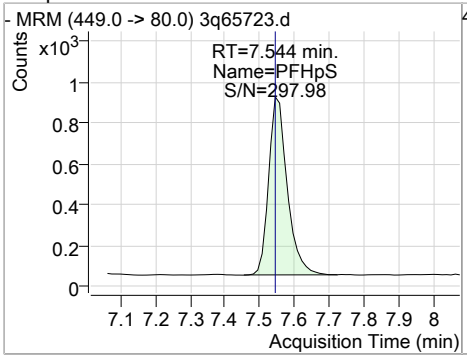


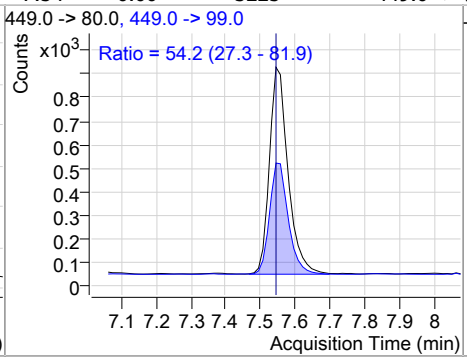


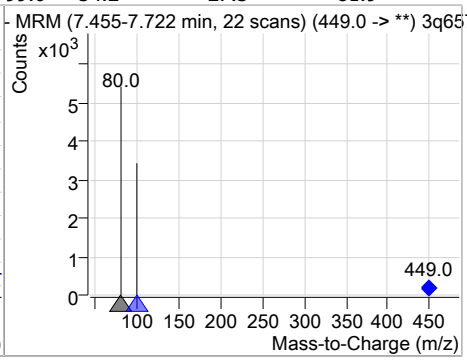


Perfluorinated Compounds by LC/MS/MS

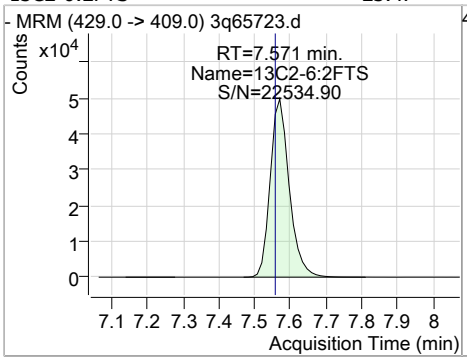
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.08	7.54	0.00	3225	449.0 -> 99.0	54.2	27.3	81.9

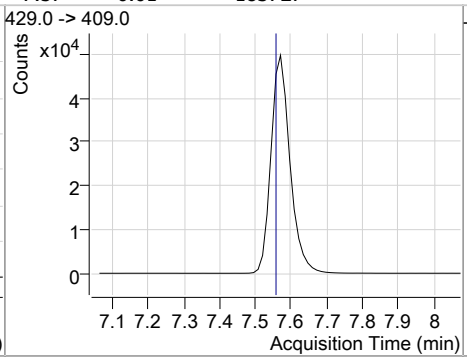


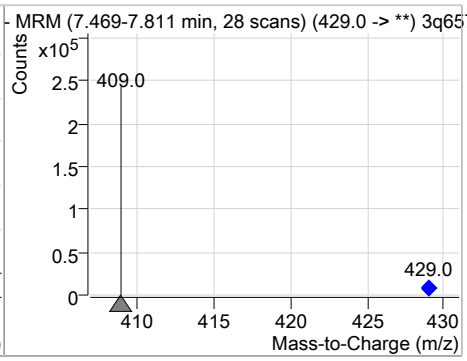




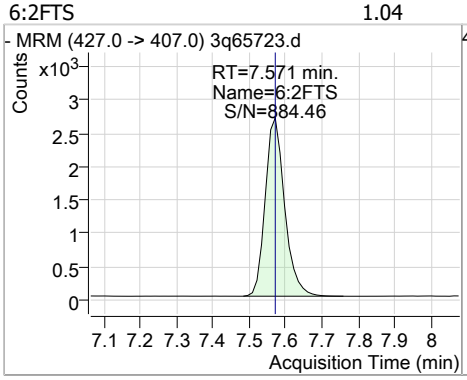
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.47	7.57	0.01	183727				

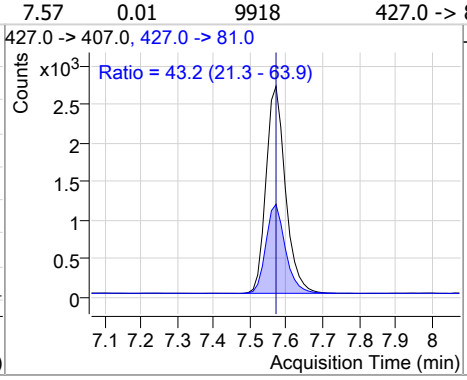


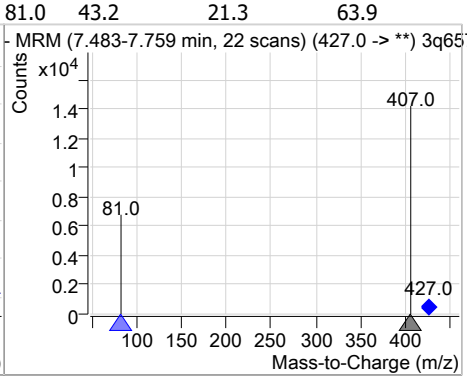




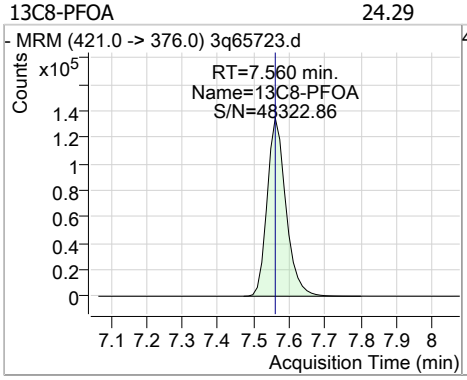
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.04	7.57	0.01	9918	427.0 -> 81.0	43.2	21.3	63.9

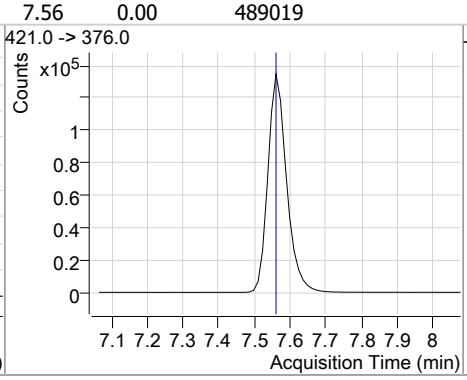


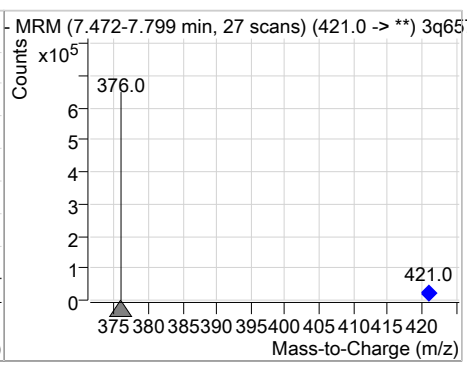




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	24.29	7.56	0.00	489019				

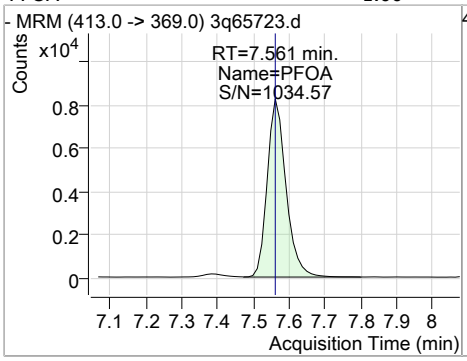


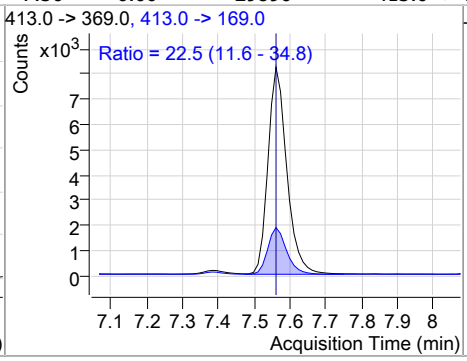


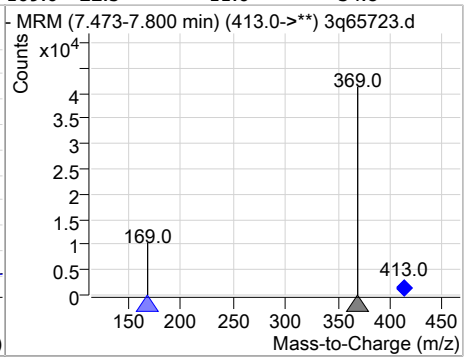


Perfluorinated Compounds by LC/MS/MS

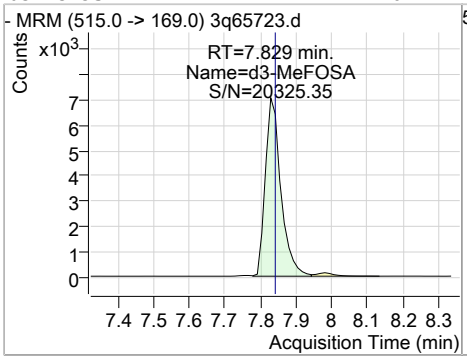
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.00	7.56	0.00	29896	413.0 -> 169.0	22.5	11.6	34.8

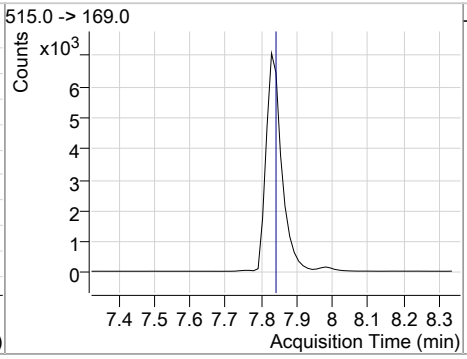


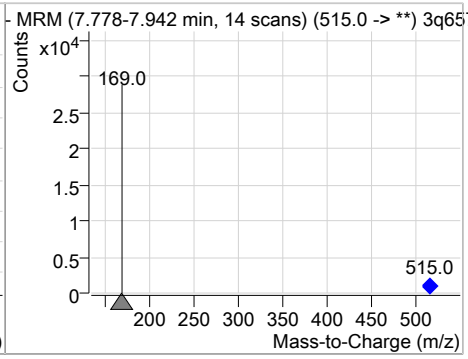




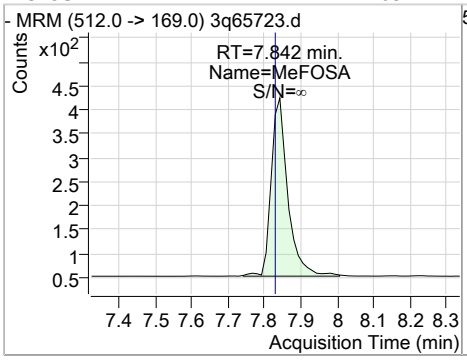
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	24.02	7.83	-0.01	21262				

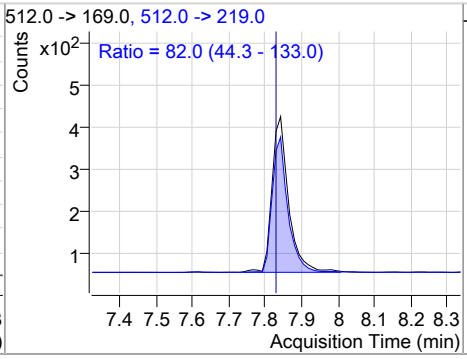


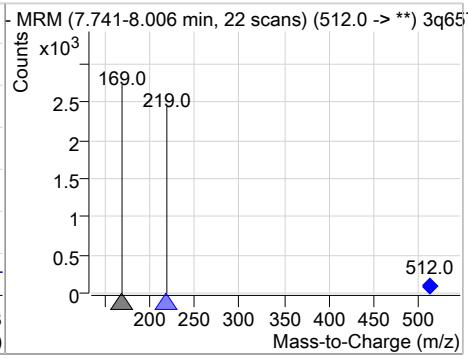




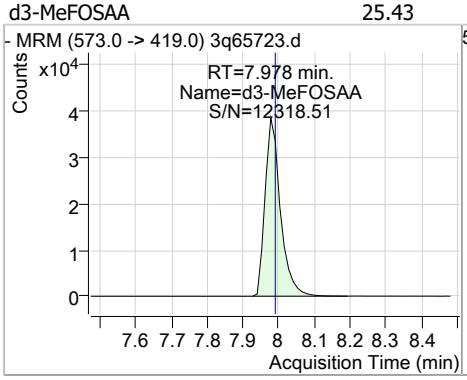
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.03	7.84	0.00	1183	512.0 -> 219.0	82.0	44.3	133.0

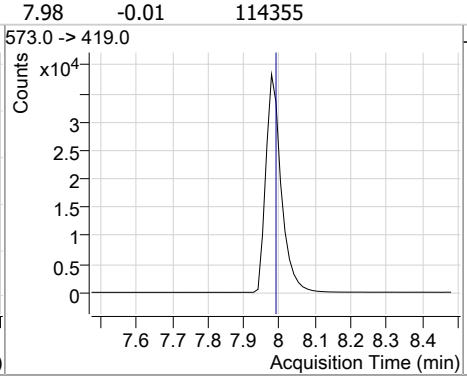


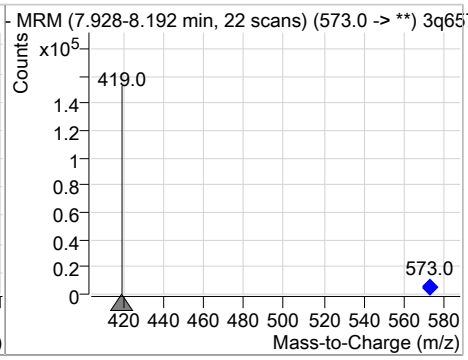




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	25.43	7.98	-0.01	114355				

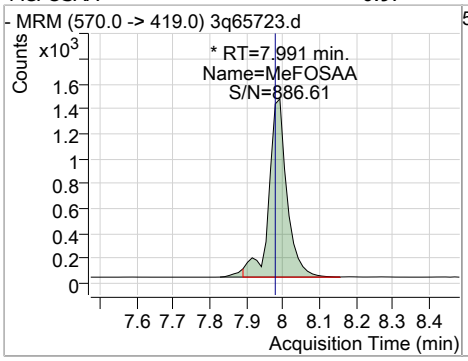


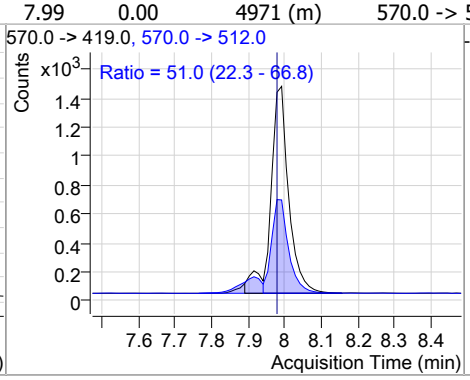


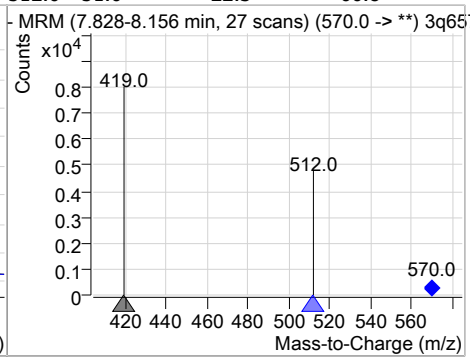


Perfluorinated Compounds by LC/MS/MS

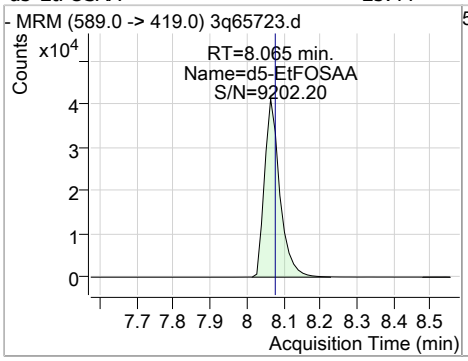
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.97	7.99	0.00	4971 (m)	570.0 -> 512.0	51.0	22.3	66.8

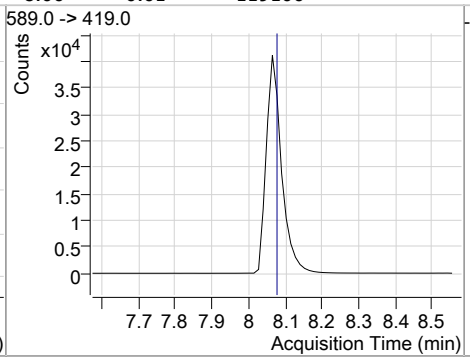


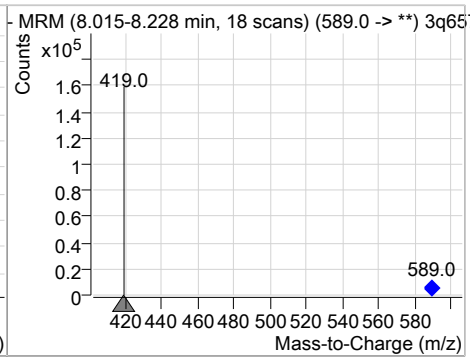




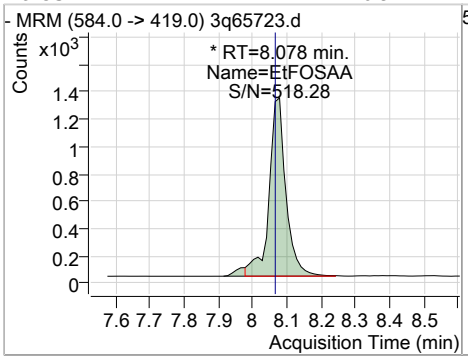
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	25.44	8.06	-0.01	119106				

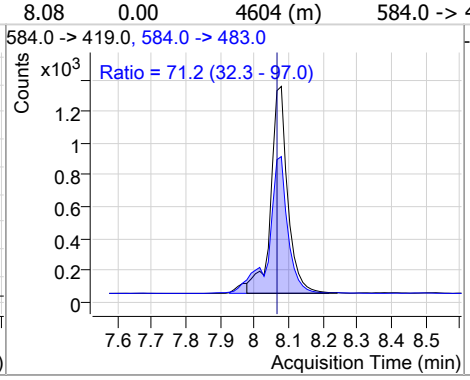


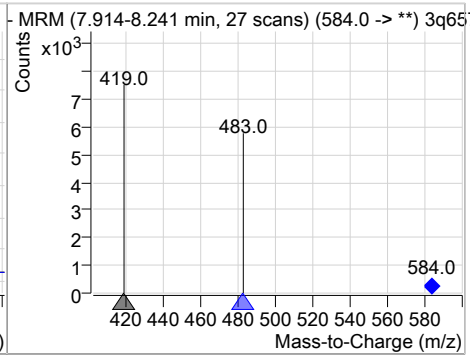




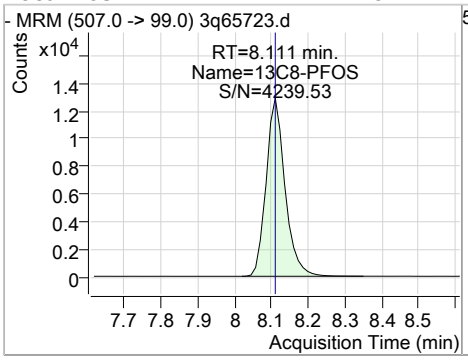
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.97	8.08	0.00	4604 (m)	584.0 -> 483.0	71.2	32.3	97.0

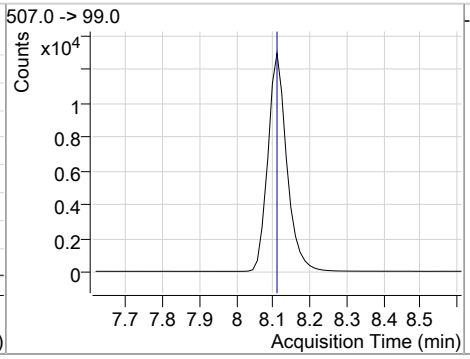


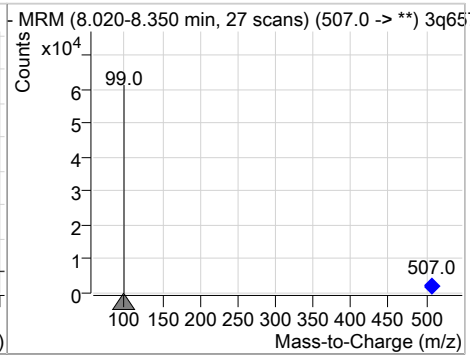




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.41	8.11	0.00	45934				

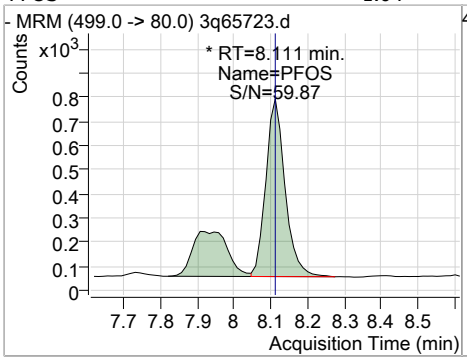


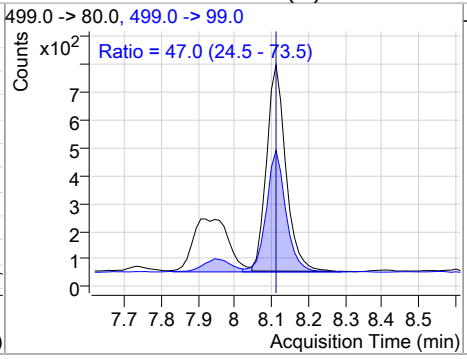


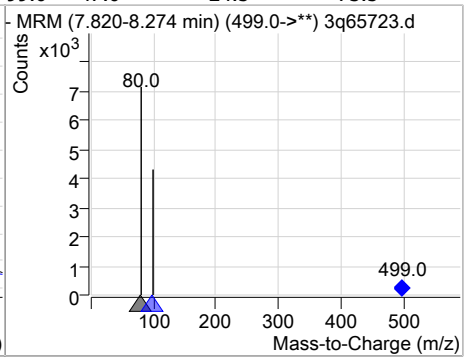


Perfluorinated Compounds by LC/MS/MS

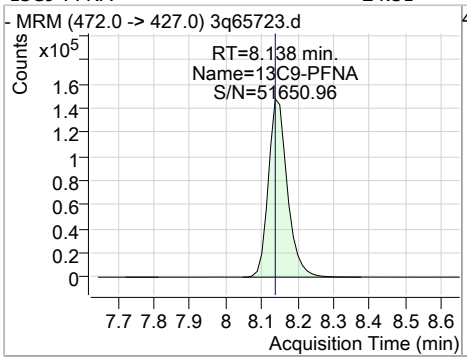
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.04	8.11	0.00	3930 (m)	499.0 -> 99.0	47.0	24.5	73.5

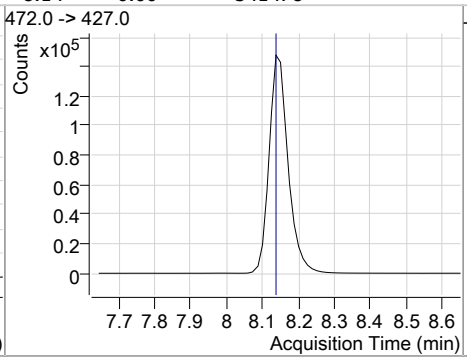


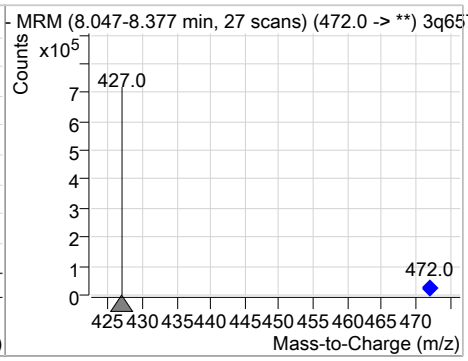




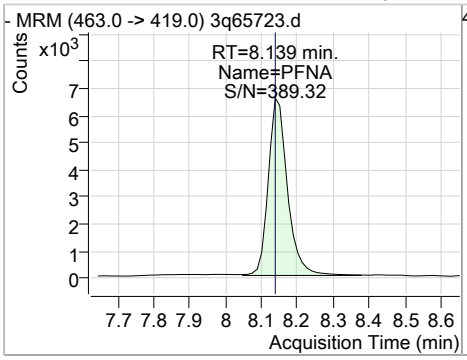
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	24.51	8.14	0.00	541478				

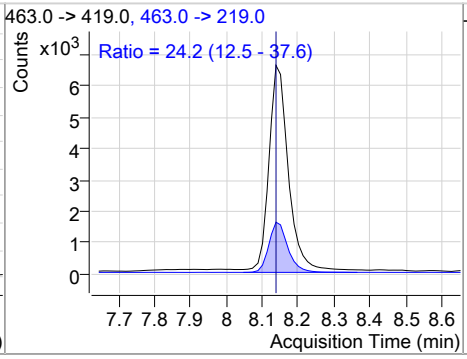


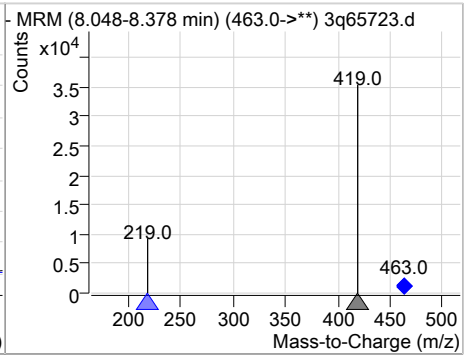




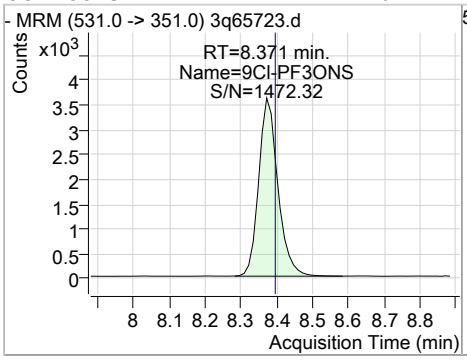
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.04	8.14	0.00	24315	463.0 -> 219.0	24.2	12.5	37.6

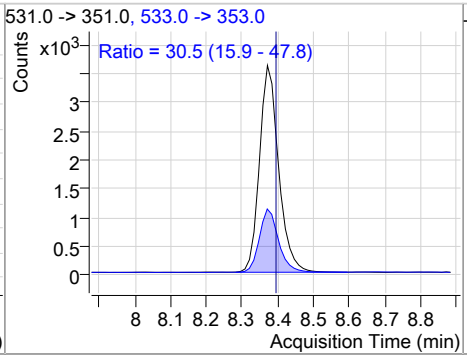


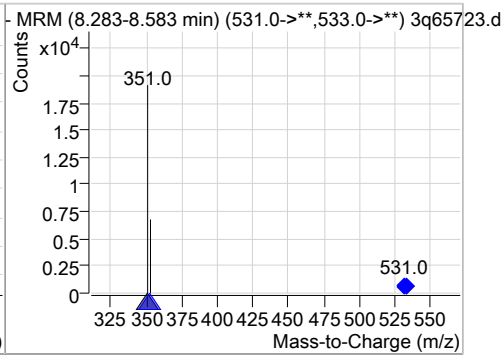




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.01	8.37	0.00	13365	533.0 -> 353.0	30.5	15.9	47.8

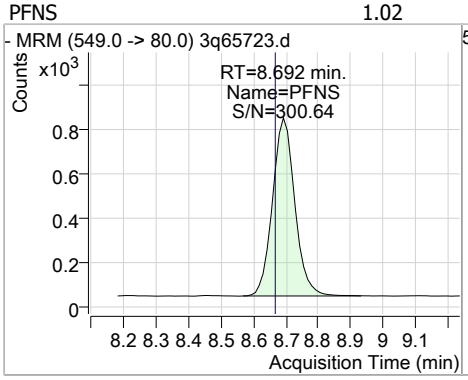


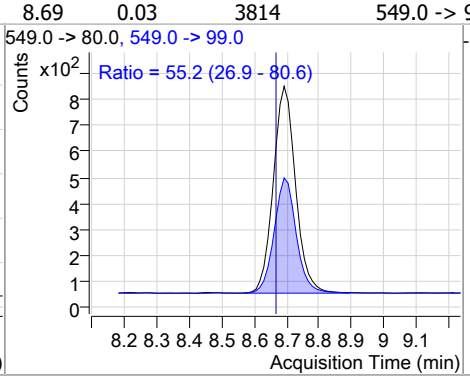


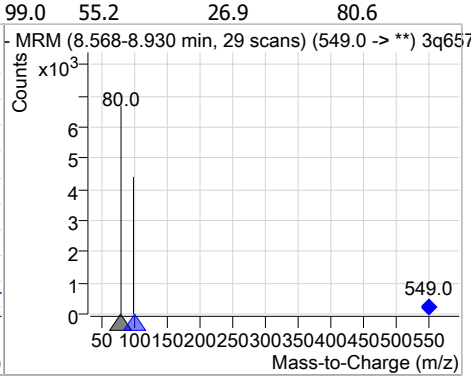


Perfluorinated Compounds by LC/MS/MS

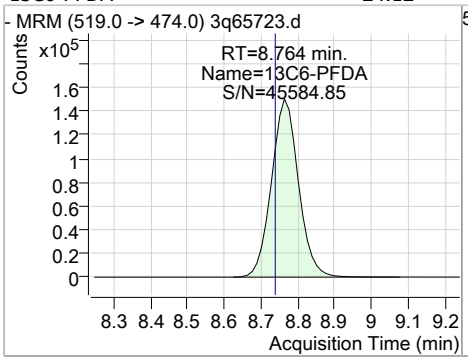
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.02	8.69	0.03	3814	549.0 -> 99.0	55.2	26.9	80.6

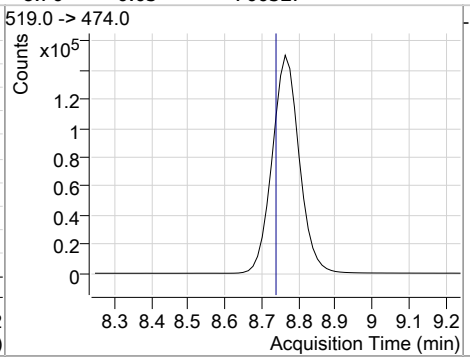


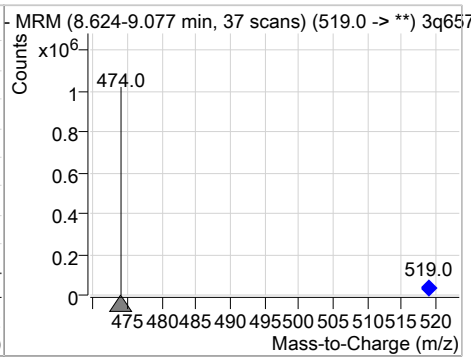




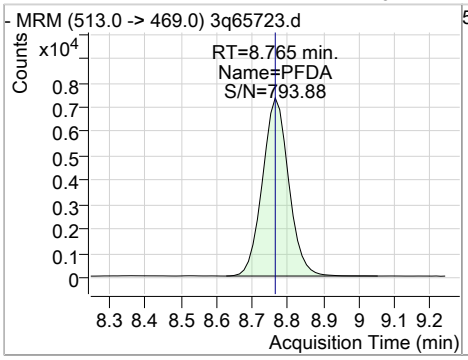
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	24.12	8.76	0.03	766327				

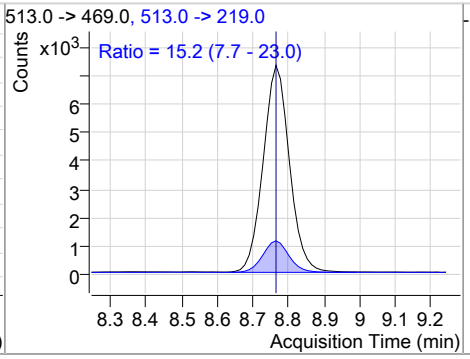


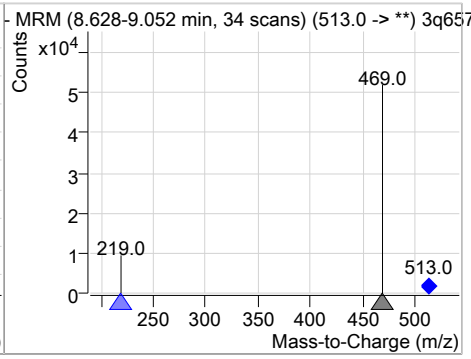




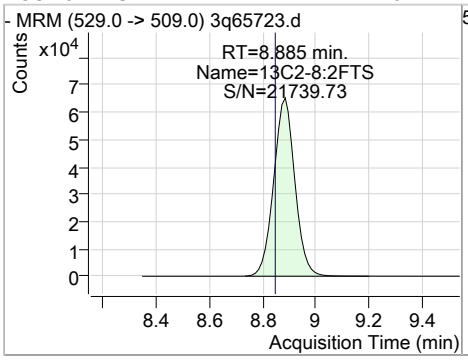
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.01	8.77	0.03	37454	513.0 -> 219.0	15.2	7.7	23.0

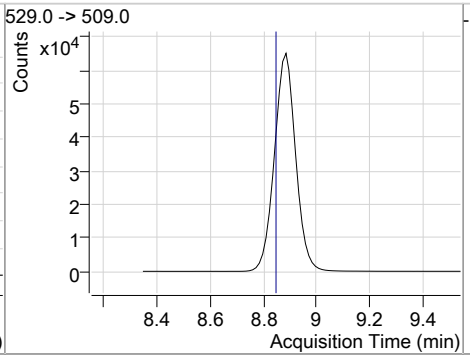


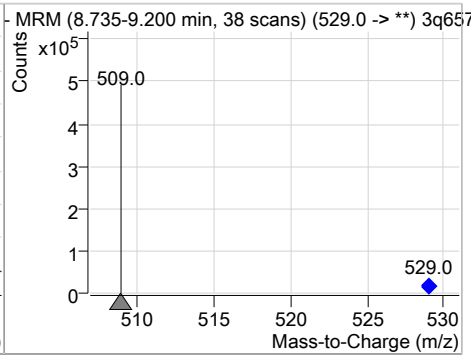




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.84	8.89	0.04	361093				

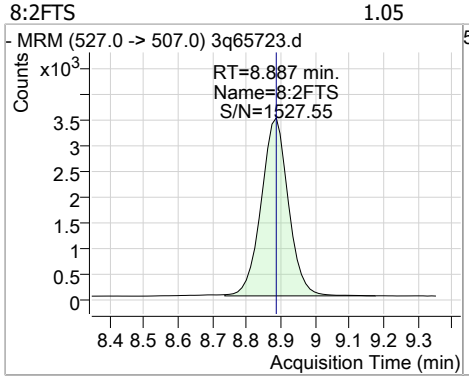


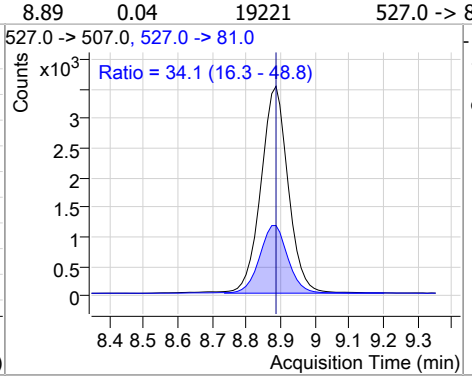


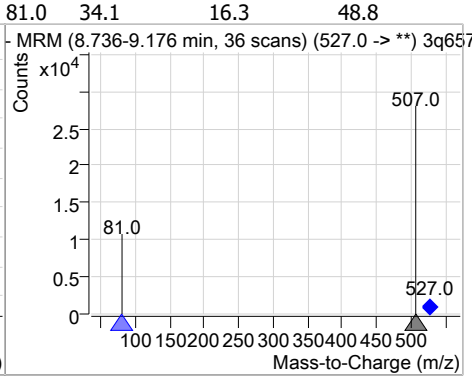


Perfluorinated Compounds by LC/MS/MS

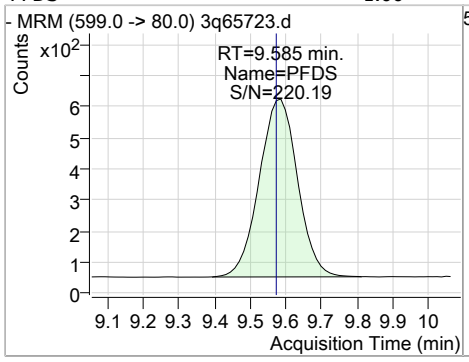
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.05	8.89	0.04	19221	527.0 -> 81.0	34.1	16.3	48.8

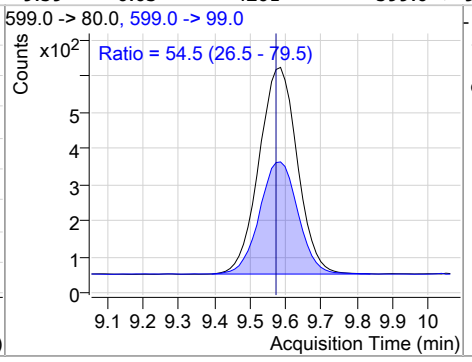


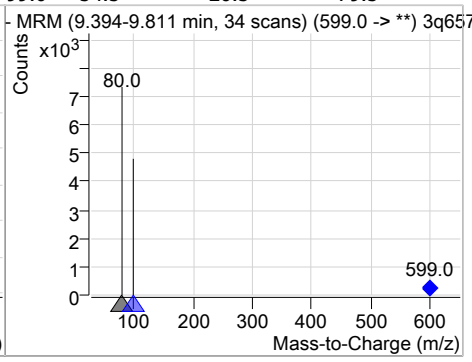




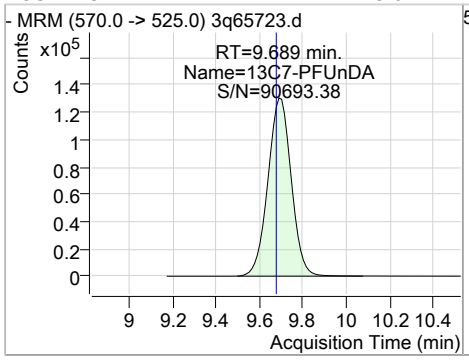
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.00	9.59	0.03	4261	599.0 -> 99.0	54.5	26.5	79.5

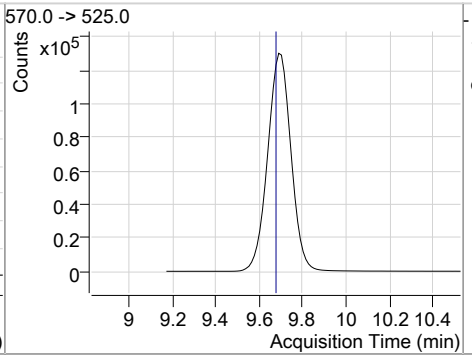


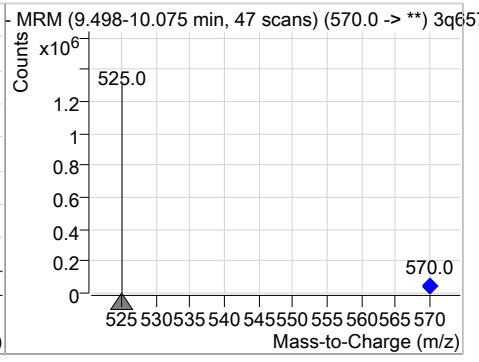




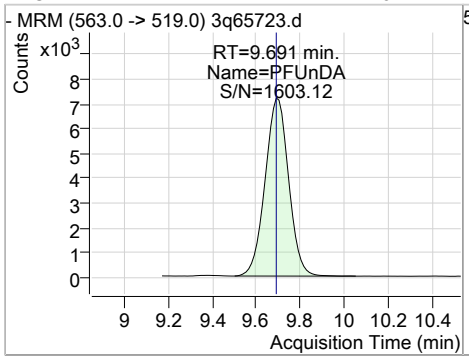
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	23.62	9.69	0.01	975182				

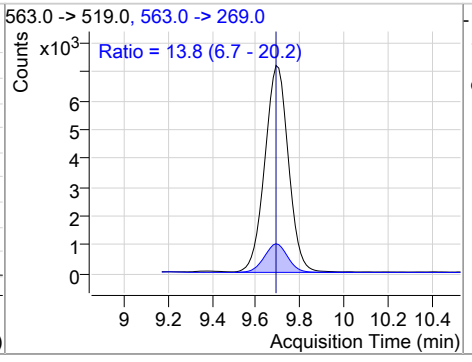


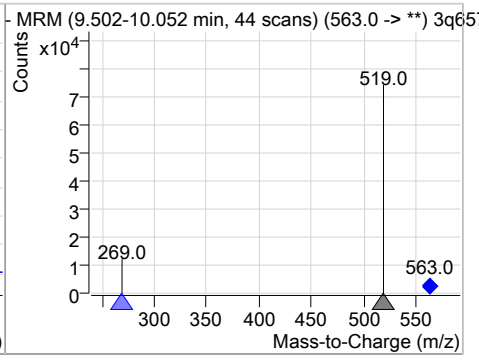




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.01	9.69	0.01	53226	563.0 -> 269.0	13.8	6.7	20.2

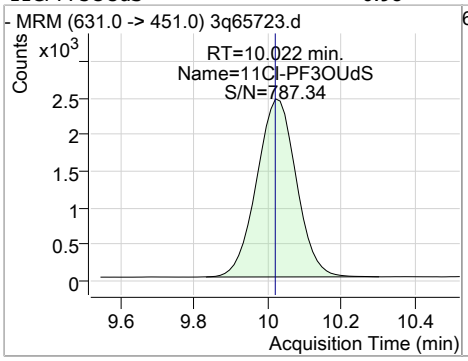


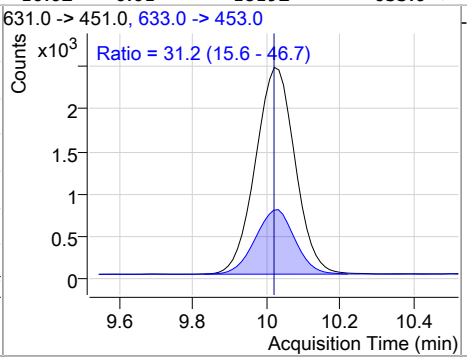


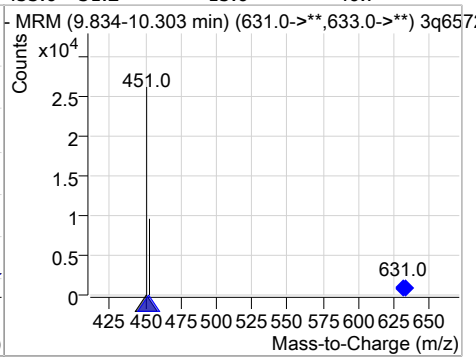


Perfluorinated Compounds by LC/MS/MS

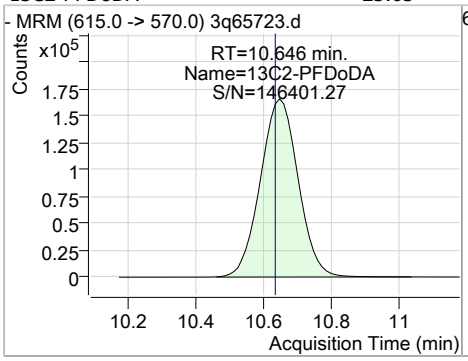
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.98	10.02	0.01	18192	633.0 -> 453.0	31.2	15.6	46.7

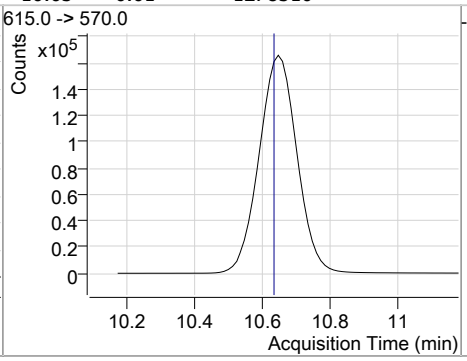


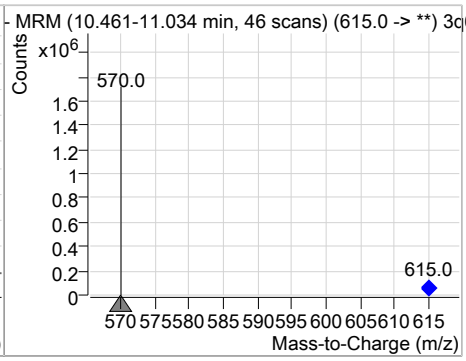




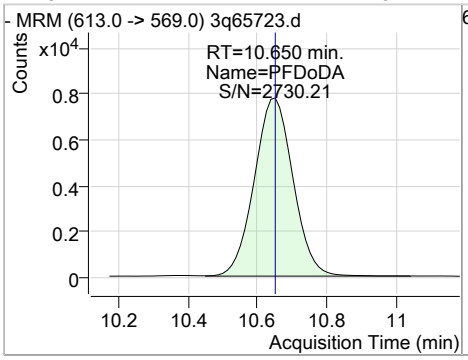
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	23.63	10.65	0.01	1278510				

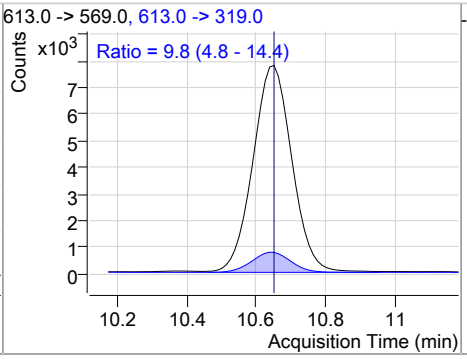


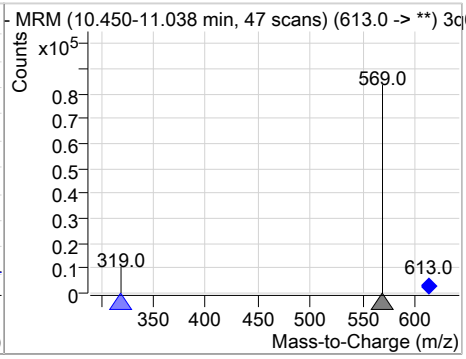




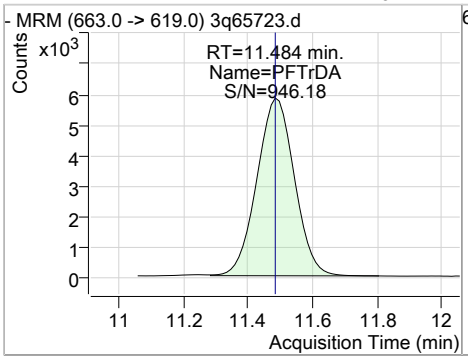
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.01	10.65	0.01	59835	613.0 -> 319.0	9.8	4.8	14.4

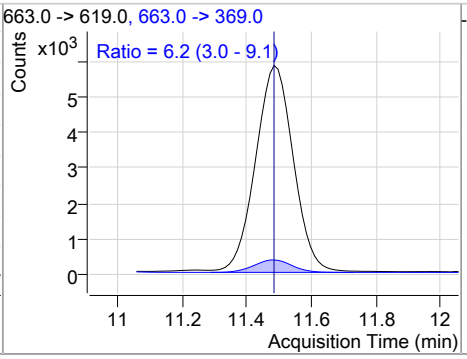


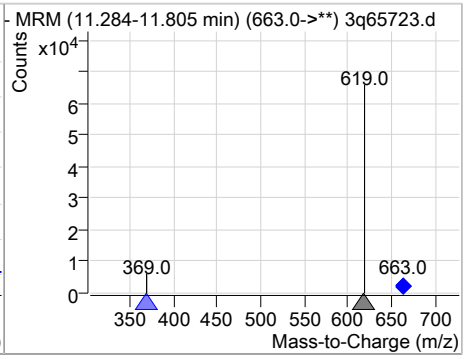




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.02	11.48	0.00	46820	663.0 -> 369.0	6.2	3.0	9.1

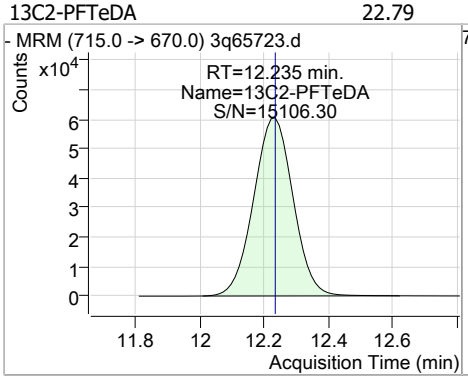


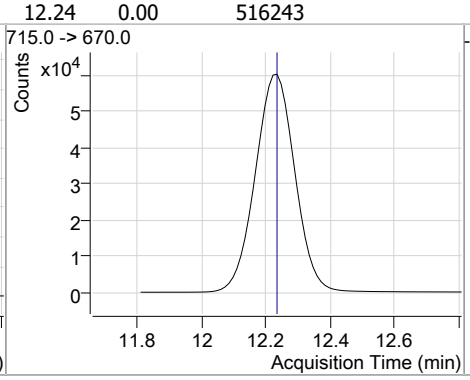


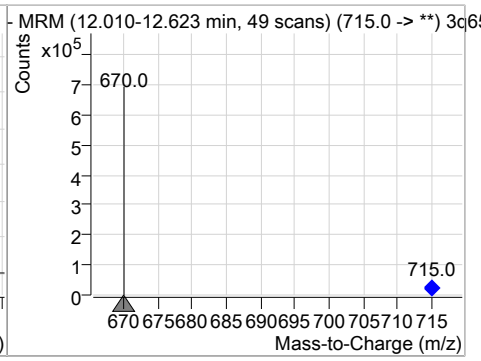


Perfluorinated Compounds by LC/MS/MS

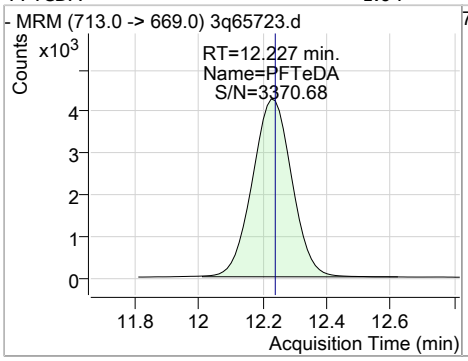
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.79	12.24	0.00	516243				

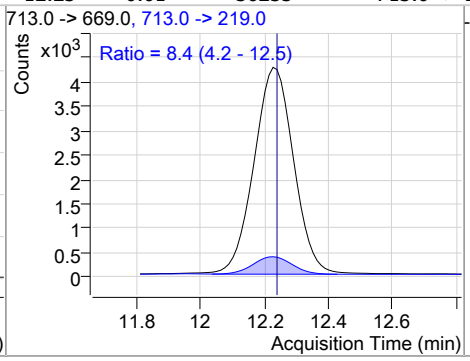


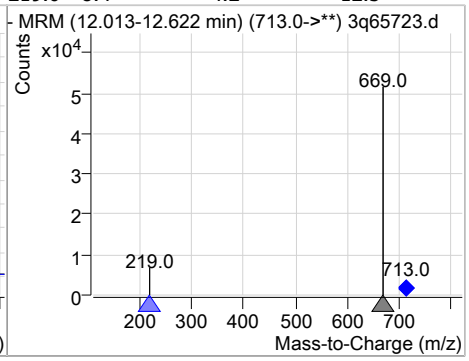




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.04	12.23	-0.01	36233	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q898-CC898
Lab FileID: 3Q65723.D
Injection Time: 09/14/22 06:30
Method: EPA 537M BY ID
Analyst approved: 09/14/22 12:09 Martha Valls
Supervisor approved: 09/16/22 16:54 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

QQQ Check Tune Report

Agilent Technologies

Instrument Name	Instrument 1
MS Model	G6470A
MS Instrument Serial	SG1752G107
Software_Firmware Version	B.08.02.B8260.0, FW: A.00.08.62
Tune Date & Time	13 September 2022 11:29:13
Data Path	D:\MassHunter\Tune\QQQ\G6470A\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.58E+0[R]; 2.50E-5[H]

Source Parameters

Parameter	Value
Gas Temp	300
Gas Flow	8
Nebulizer	15
Capillary	4000
Nozzle Voltage	1500
Sheath Gas Temp	250
Sheath Gas Flow	7

7.7.18

7

QQQ Check Tune Report

Agilent Technologies

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.99	0.00	Pass	0.70	0.73	0.03	Pass	148250
302.00	302.01	0.01	Pass	0.70	0.69	-0.01	Pass	27972
601.98	602.04	0.06	Pass	0.70	0.67	-0.03	Pass	125781
1033.99	1034.05	0.06	Pass	0.70	0.65	-0.05	Pass	417718
1633.95	1633.95	0.00	Pass	0.70	0.66	-0.04	Pass	851945
2233.91	2233.85	-0.06	Pass	0.70	0.68	-0.02	Pass	727888

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	0.70	0.63	-0.07	Pass	37781
112.99	112.99	0.00	Pass	0.70	0.71	0.01	Pass	152060
302.00	301.98	-0.02	Pass	0.70	0.71	0.01	Pass	27392
601.98	601.92	-0.06	Pass	0.70	0.71	0.01	Pass	115914
1033.99	1033.96	-0.03	Pass	0.70	0.72	0.02	Pass	395404
1633.95	1633.83	-0.12	Pass	0.70	0.71	0.01	Pass	733516
2233.91	2233.77	-0.14	Pass	0.70	0.77	0.07	Pass	664240

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.06	0.07	Pass	1.20	1.18	-0.02	Pass	180540
302.00	302.10	0.10	Pass	1.20	1.26	0.06	Pass	37902
601.98	601.98	0.00	Pass	1.20	1.40	0.20	Pass	228263
1033.99	1034.02	0.03	Pass	1.20	1.36	0.16	Pass	841937
1633.95	1633.95	0.00	Pass	1.20	1.30	0.10	Pass	1802767
2233.91	2233.90	-0.01	Pass	1.20	1.28	0.08	Pass	1674200

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	1.20	1.12	-0.08	Pass	47941
112.99	113.02	0.03	Pass	1.20	1.23	0.03	Pass	198493
302.00	302.04	0.04	Pass	1.20	1.32	0.12	Pass	33888
601.98	601.95	-0.03	Pass	1.20	1.37	0.17	Pass	175937
1033.99	1033.91	-0.08	Pass	1.20	1.42	0.22	Pass	685683
1633.95	1633.76	-0.19	Pass	1.20	1.38	0.18	Pass	1514518
2233.91	2233.77	-0.14	Pass	1.20	1.34	0.14	Pass	1220493

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	113.02	0.03	Pass	2.50	2.50	0.00	Pass	247642
302.00	302.06	0.06	Pass	2.50	2.56	0.06	Pass	52037
601.98	601.80	-0.18	Pass	2.50	2.72	0.22	Pass	291165
1033.99	1034.02	0.03	Pass	2.50	2.59	0.09	Pass	1346665
1633.95	1633.94	-0.01	Pass	2.50	2.23	-0.27	Pass	4306675
2233.91	2233.86	-0.05	Pass	2.50	2.46	-0.04	Pass	5661355

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.10	0.10	Pass	2.50	2.30	-0.20	Pass	56724
112.99	113.03	0.04	Pass	2.50	2.42	-0.08	Pass	238918
302.00	301.92	-0.08	Pass	2.50	2.51	0.01	Pass	46927
601.98	601.84	-0.14	Pass	2.50	2.62	0.12	Pass	228396
1033.99	1034.13	0.14	Pass	2.50	2.66	0.16	Pass	1113515
1633.95	1633.74	-0.21	Pass	2.50	2.56	0.06	Pass	3326414
2233.91	2233.85	-0.06	Pass	2.50	2.58	0.08	Pass	3041622

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65825.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:09:16 PM
Sample Name : ic900-0.5
Vial : P1-A2
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

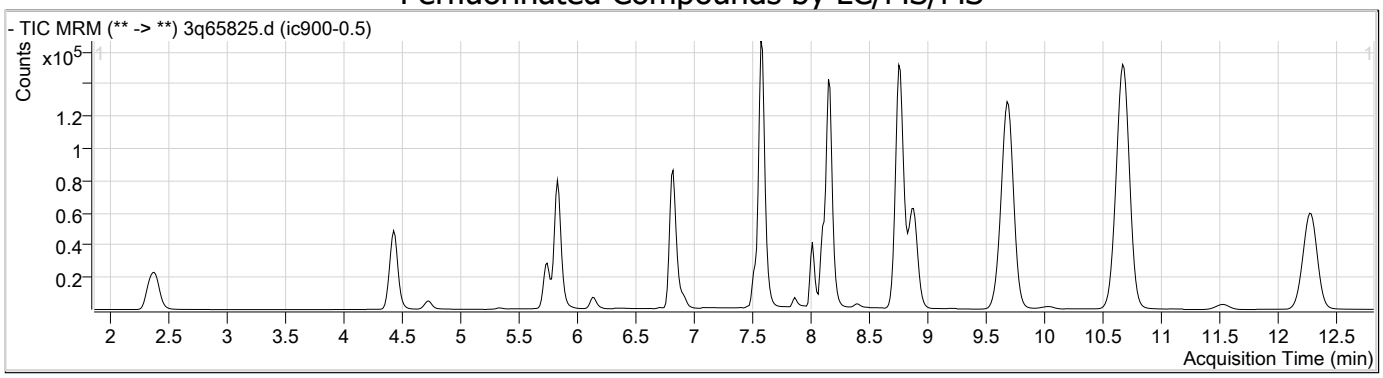
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	162313	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	238420	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	315825	20.00	µg/L	0.013
M4-PFHpA	6.818	367.0 -> 322.0	312836	20.00	µg/L	0.025
M8-PFOA	7.573	421.0 -> 376.0	424155	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	473269	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	722448	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	939733	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	1188619	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	498551	20.00	µg/L	0.025
M8-FOSA	7.516	506.0 -> 78.0	68577	20.00	µg/L	0.025
M3-PFBS	4.717	302.0 -> 99.0	21694	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	26400	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	40383	20.00	µg/L	0.013
M2-4:2FTS	5.733	329.0 -> 309.0	112418	20.00	µg/L	0.025
M2-6:2FTS	7.584	429.0 -> 409.0	166608	20.00	µg/L	0.026
M2-8:2FTS	8.873	529.0 -> 509.0	322287	20.00	µg/L	0.025
M3-MeFOSAA	8.003	573.0 -> 419.0	112020	20.00	µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	25992	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	15796	20.00	µg/L	0.013
M5-EtFOSAA	8.090	589.0 -> 419.0	113046	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.733	329.0 -> 309.0	112418	18.31	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.6%		
13C2-6:2FTS	7.584	429.0 -> 409.0	166608	19.31	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-8:2FTS	8.873	529.0 -> 509.0	322287	18.82	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1188619	19.57	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFTeDA	12.260	715.0 -> 670.0	498551	19.52	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C3-PFBS	4.717	302.0 -> 99.0	21694	19.60	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C3-PFHxS	6.834	402.0 -> 99.0	26400	19.60	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C4-PFBA	2.365	217.0 -> 172.0	162313	19.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C4-PFHpA	6.818	367.0 -> 322.0	312836	19.83	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFHxA	5.826	318.0 -> 273.0	315825	19.69	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C5-PFPeA	4.424	268.0 -> 223.0	238420	19.71	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C6-PFDA	8.751	519.0 -> 474.0	722448	19.87	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

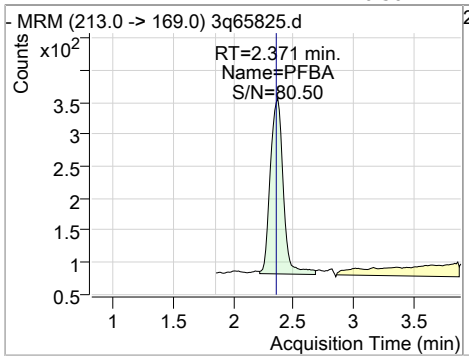
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%			
13C7-PFUnDA	9.677	570.0 -> 525.0	939733	19.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-FOSA	7.516	506.0 -> 78.0	68577	19.25	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C8-PFOA	7.573	421.0 -> 376.0	424155	19.94	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C8-PFOS	8.123	507.0 -> 99.0	40383	19.52	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C9-PFNA	8.150	472.0 -> 427.0	473269	19.84	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
d3-MeFOSAA	8.003	573.0 -> 419.0	112020	19.79	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	26002	20.14	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
d3-MeFOSA	7.854	515.0 -> 169.0	15796	19.58	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d5-EtFOSAA	8.090	589.0 -> 419.0	113047	19.85	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	3684	0.59	µg/L		98
6:2FTS	7.584	427.0 -> 407.0	4676	0.54	µg/L		95
8:2FTS	8.874	527.0 -> 507.0	9211	0.56	µg/L		93
EtFOSAA	8.091	584.0 -> 419.0	2622	0.54	µg/L	m	84
FOSA	7.504	498.0 -> 78.0	1751	0.52	µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	2767	0.54	µg/L	m	87
PFBA	2.371	213.0 -> 169.0	2060	0.56	µg/L		100
PFBS	4.707	299.0 -> 80.0	1719	0.54	µg/L		99
PFDA	8.752	513.0 -> 469.0	18587	0.51	µg/L		98
PFDoDA	10.663	613.0 -> 569.0	29103	0.52	µg/L		99
PFDS	9.560	599.0 -> 80.0	2020	0.51	µg/L		98
PFHpA	6.807	363.0 -> 319.0	12159	0.51	µg/L		99
PFHpS	7.569	449.0 -> 80.0	1506	0.56	µg/L		99
PFHxA	5.827	313.0 -> 269.0	9310	0.53	µg/L		100
PFHxS	6.835	399.0 -> 80.0	1654	0.51	µg/L	m	96
PFNA	8.151	463.0 -> 419.0	11064	0.53	µg/L		99
PFNS	8.692	549.0 -> 80.0	1867	0.55	µg/L		99
PFOA	7.573	413.0 -> 369.0	14209	0.52	µg/L		98
PFOS	8.124	499.0 -> 80.0	2144	0.59	µg/L	m	79
PFPeA	4.426	263.0 -> 219.0	5768	0.52	µg/L		100
PFPeS	5.944	349.0 -> 80.0	1293	0.53	µg/L		98
PFTeDA	12.264	713.0 -> 669.0	18897	0.53	µg/L		99
PFTrDA	11.522	663.0 -> 619.0	24640	0.51	µg/L		99
PFUnDA	9.678	563.0 -> 519.0	26086	0.50	µg/L		99
11Cl-PF3OUdS	10.022	631.0 -> 451.0	8181	0.50	µg/L		98
9Cl-PF3ONS	8.384	531.0 -> 351.0	6146	0.49	µg/L		100
ADONA	6.903	377.0 -> 251.0	17199	0.49	µg/L		98
HFPO-DA	6.134	329.0 -> 169.0	1820	0.56	µg/L		98
MeFOSA	7.854	512.0 -> 169.0	521	0.61	µg/L		86
4-PFECHS	7.466	461.0 -> 381.0	3554	0.46	µg/L		95
FBSA	5.327	298.0 -> 78.0	2736	0.54	µg/L		99
FHxSA	6.700	398.0 -> 78.0	2526	0.50	µg/L		98

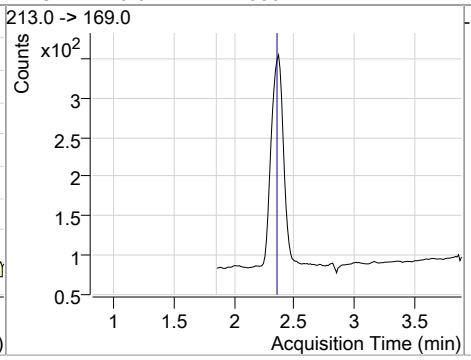
 # = Qualifier out of range, m = manually integrated, + = Area summed

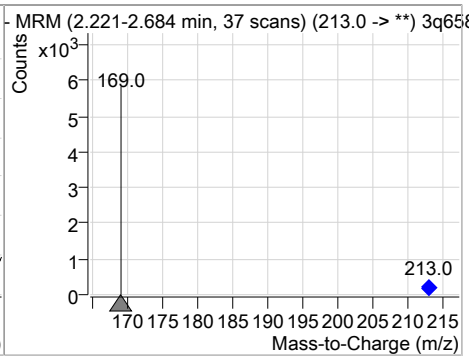
Perfluorinated Compounds by LC/MS/MS



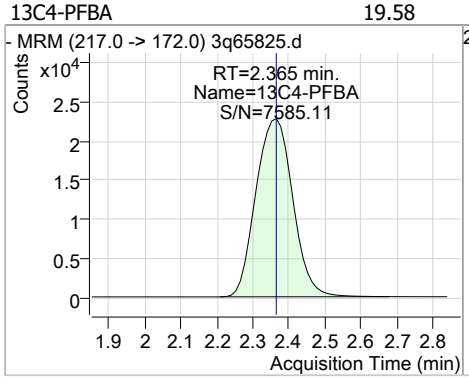
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.56	2.37	0.01	2060				

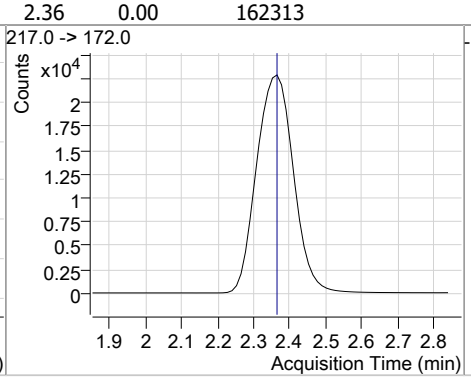


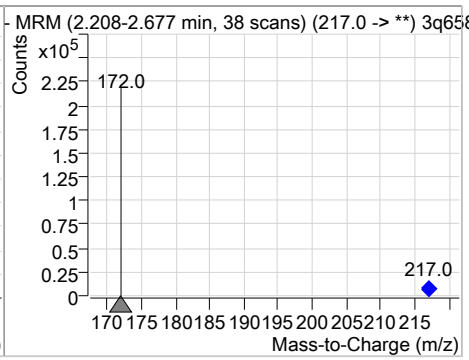




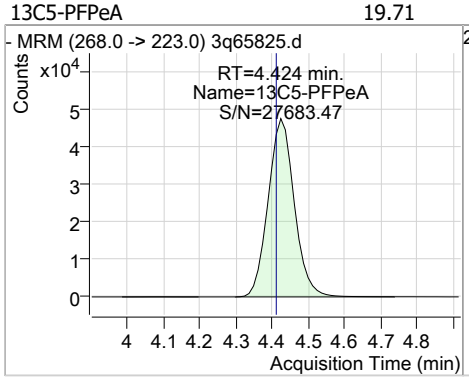
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.58	2.36	0.00	162313				

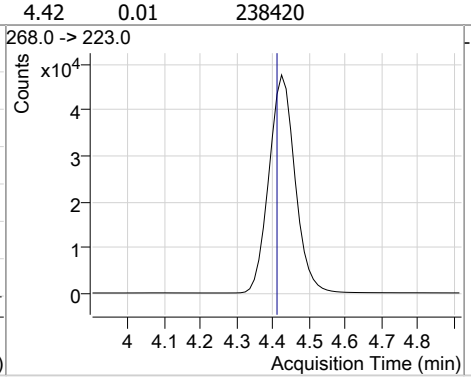


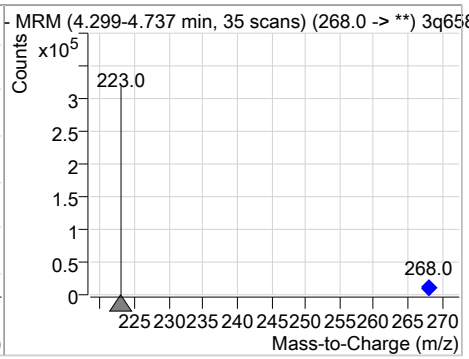




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.71	4.42	0.01	238420				

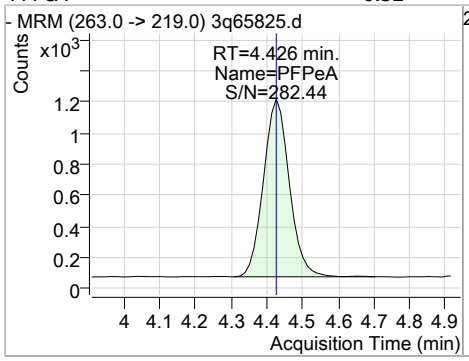


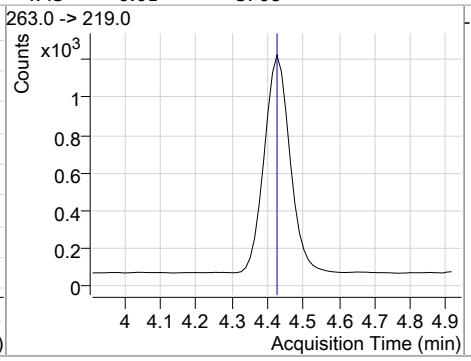


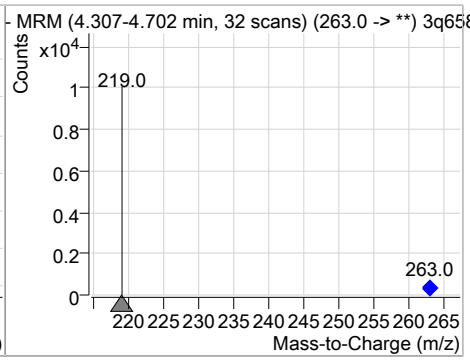


Perfluorinated Compounds by LC/MS/MS

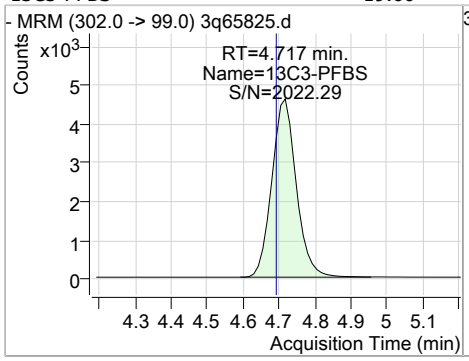
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.52	4.43	0.01	5768				

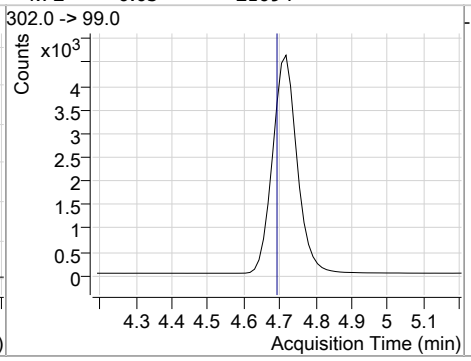


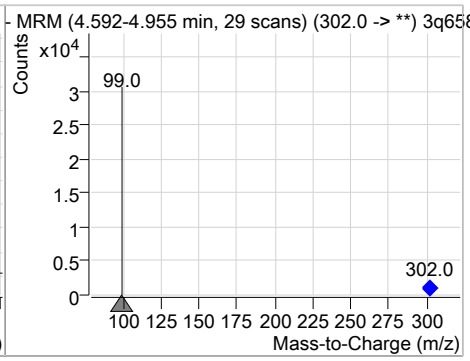




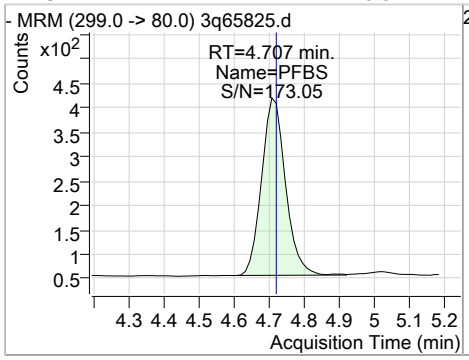
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.60	4.72	0.03	21694				

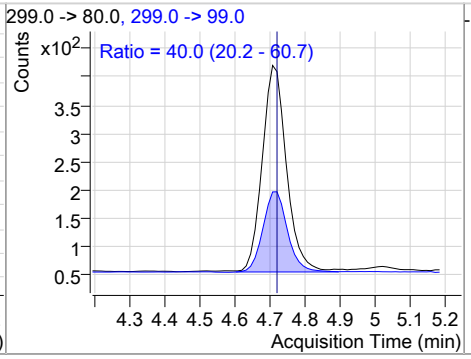


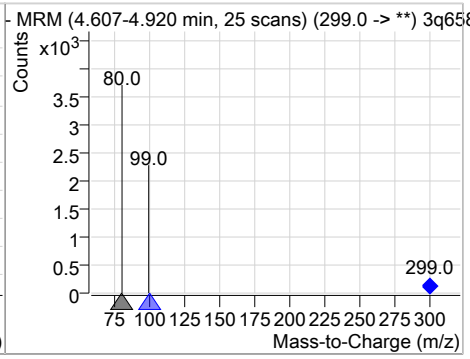




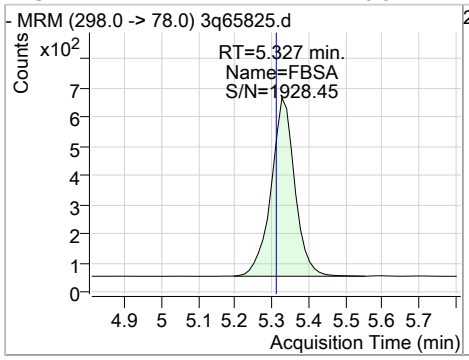
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.54	4.71	0.01	1719	299.0 -> 99.0	40.0	20.2	60.7

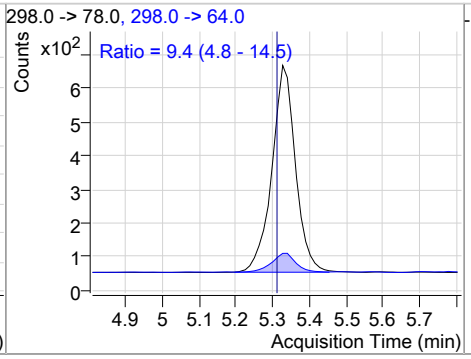


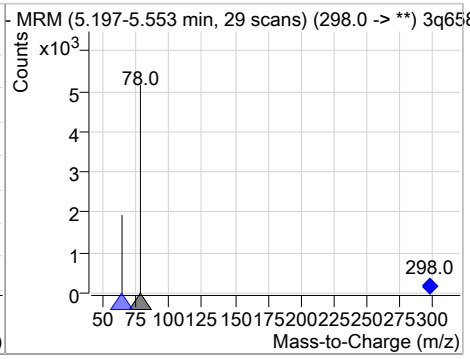




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.54	5.33	0.03	2736	298.0 -> 64.0	9.4	4.8	14.5

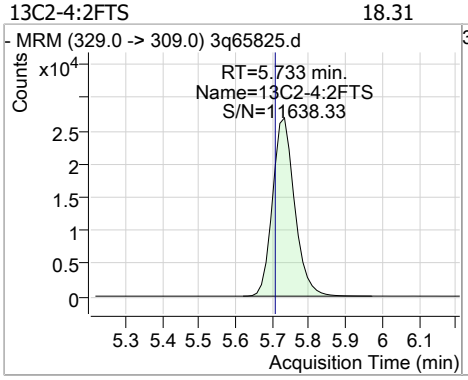


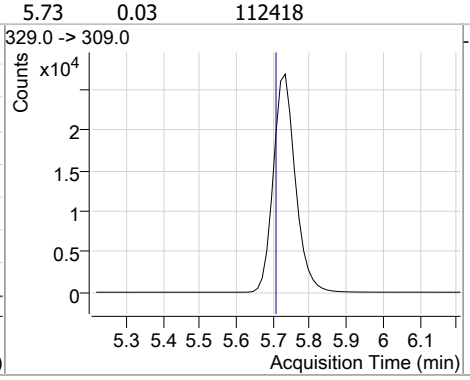


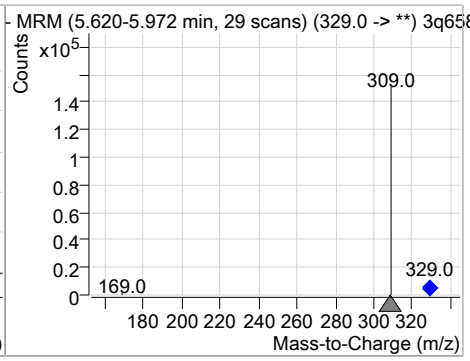


Perfluorinated Compounds by LC/MS/MS

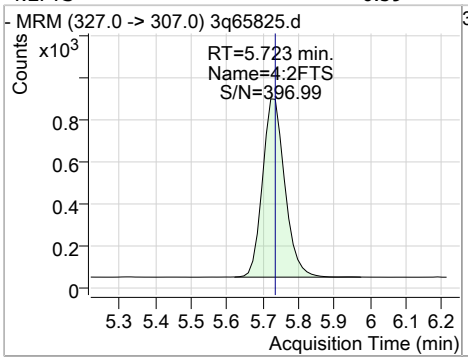
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.31	5.73	0.03	112418				

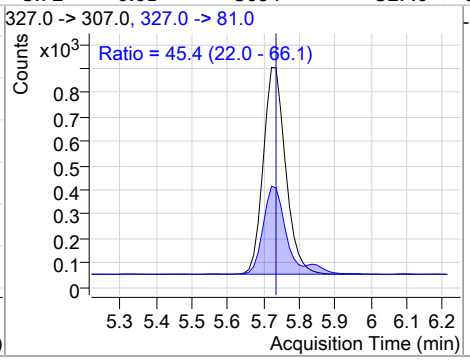


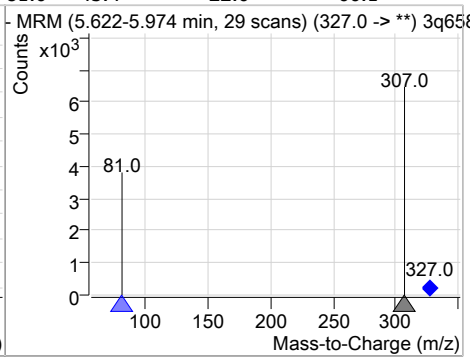




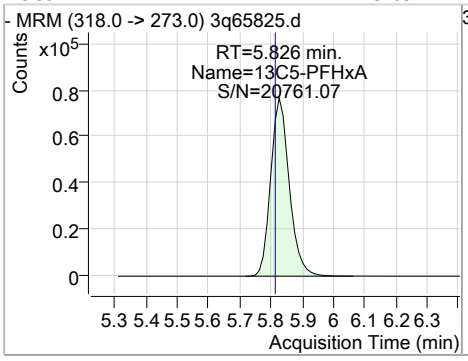
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.59	5.72	0.01	3684	327.0 -> 81.0	45.4	22.0	66.1

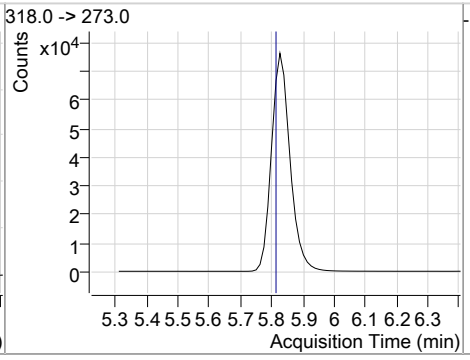


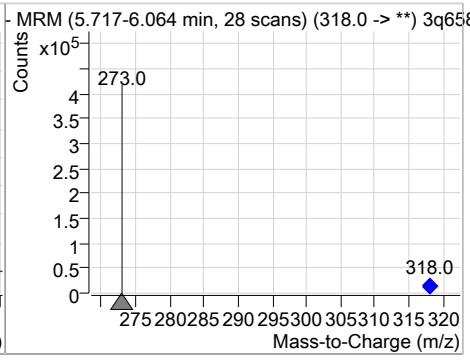




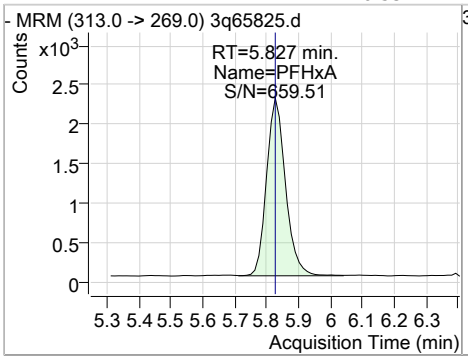
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.69	5.83	0.01	315825				

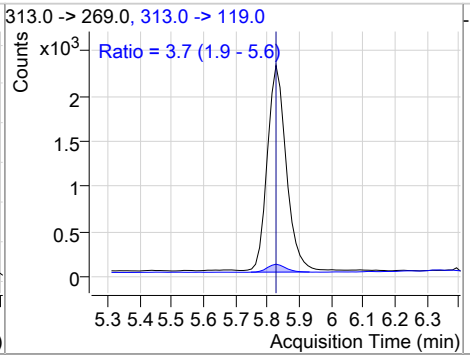


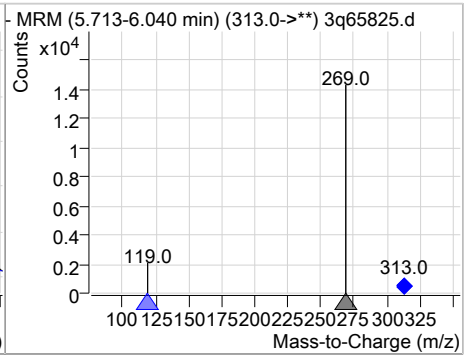




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.53	5.83	0.01	9310	313.0 -> 119.0	3.7	1.9	5.6

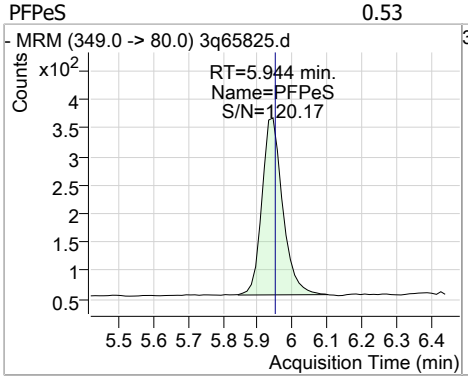


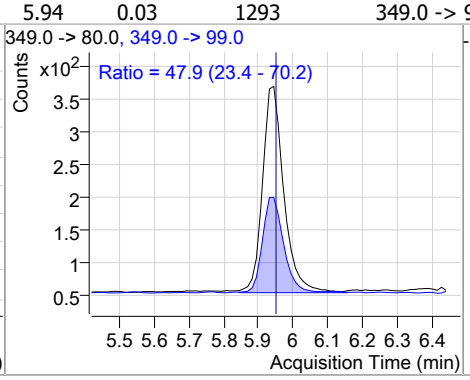


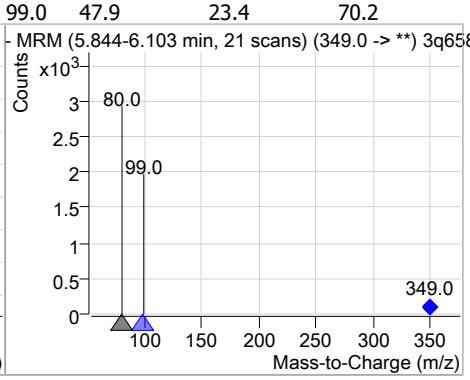


Perfluorinated Compounds by LC/MS/MS

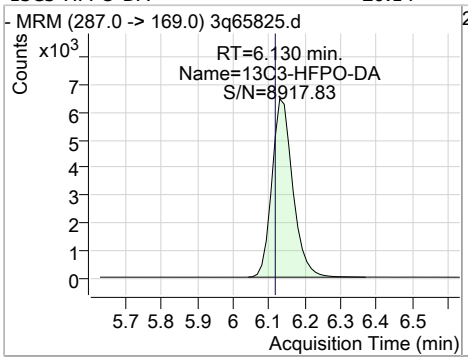
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.53	5.94	0.03	1293	349.0 -> 99.0	47.9	23.4	70.2

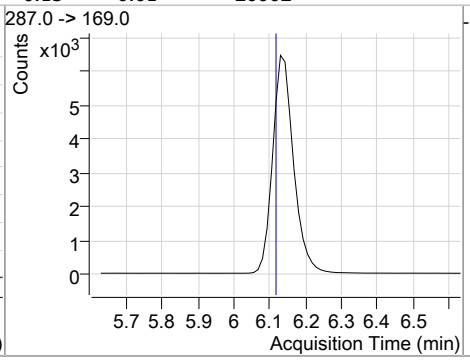


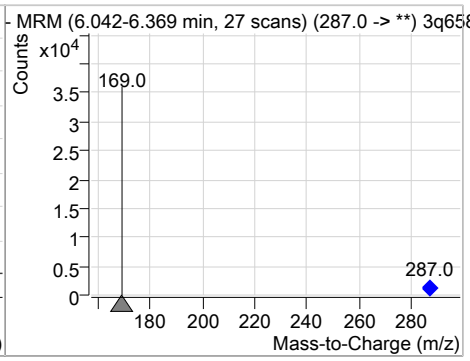




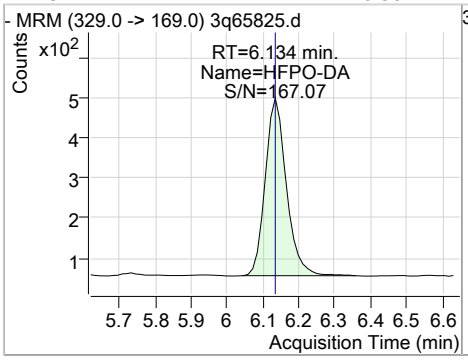
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.14	6.13	0.01	26002				

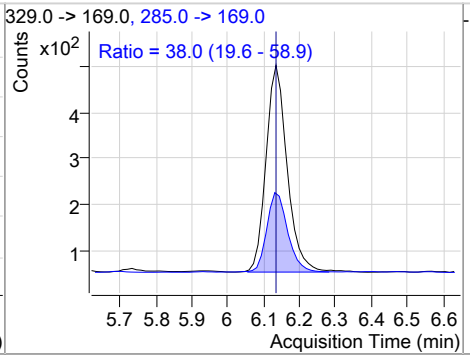


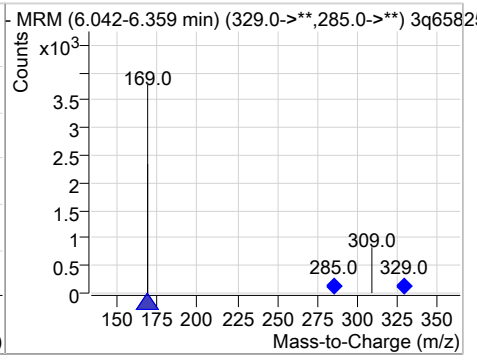




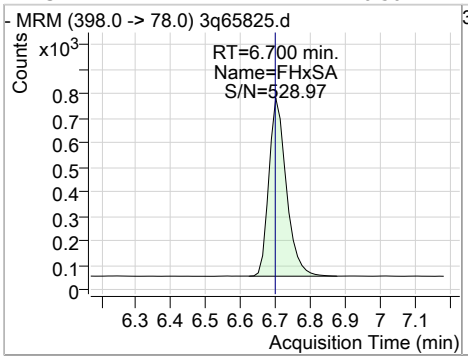
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.56	6.13	0.01	1820	285.0 -> 169.0	38.0	19.6	58.9

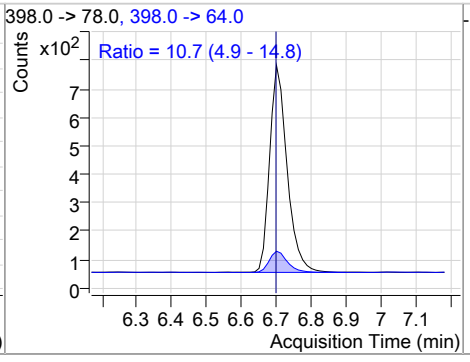


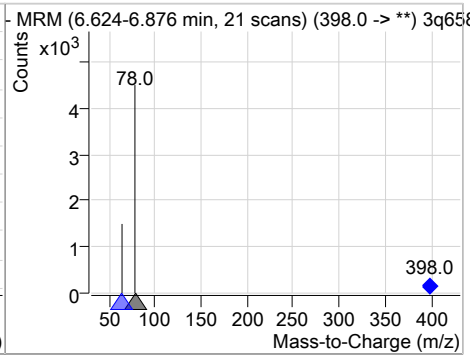




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.50	6.70	0.01	2526	398.0 -> 64.0	10.7	4.9	14.8

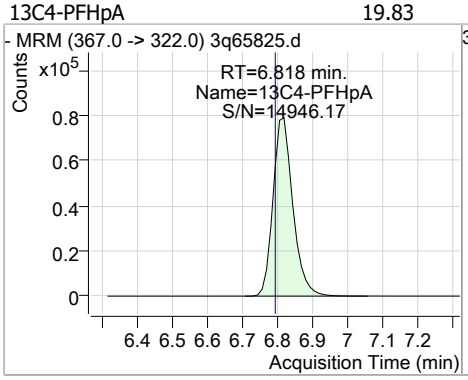


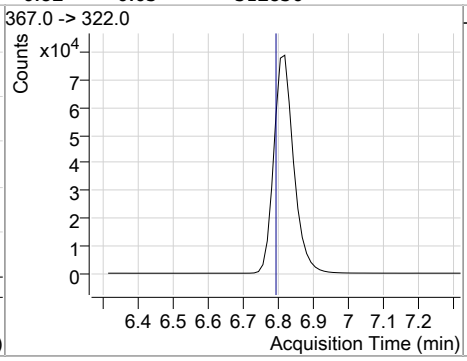


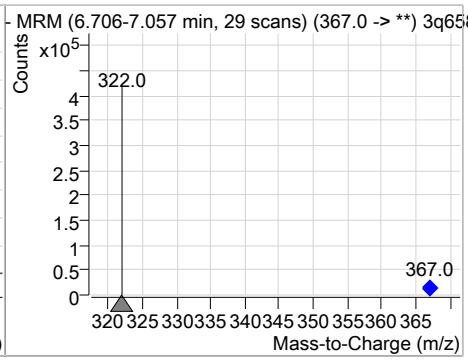


Perfluorinated Compounds by LC/MS/MS

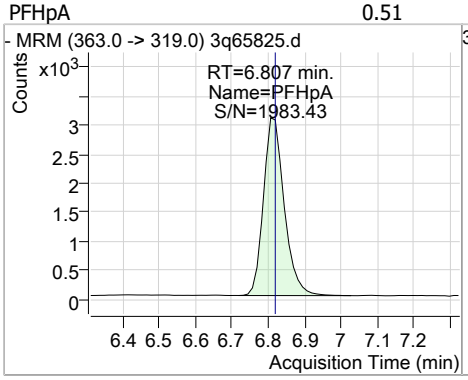
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.83	6.82	0.03	312836				

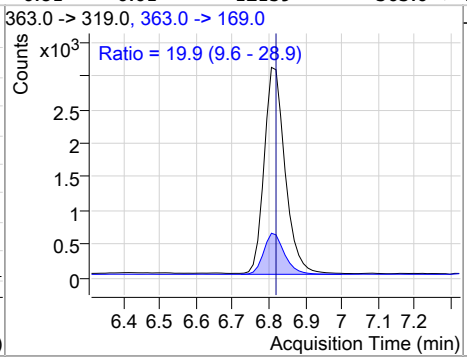


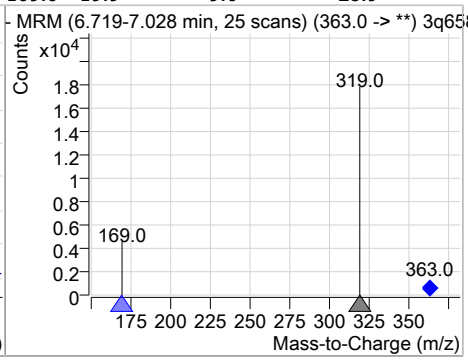




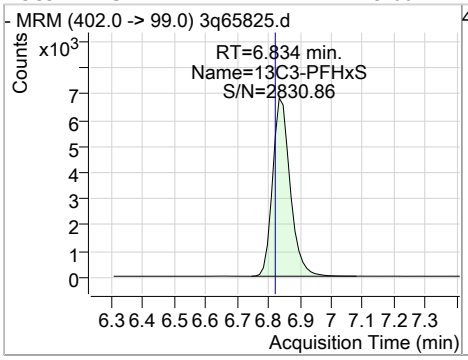
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.51	6.81	0.01	12159	363.0 -> 169.0	19.9	9.6	28.9

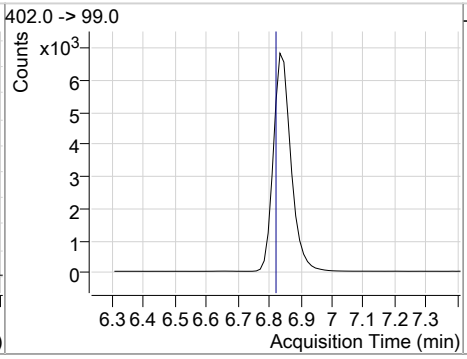


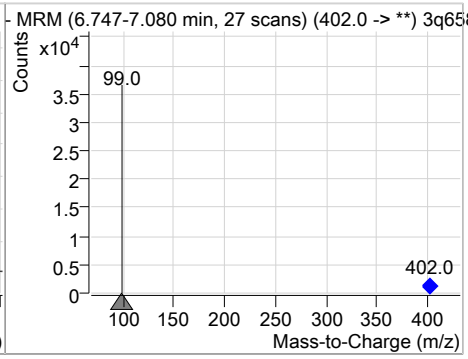




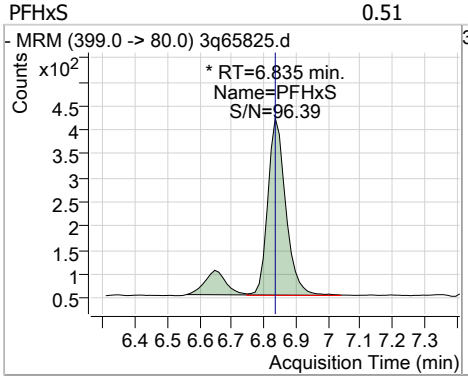
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.60	6.83	0.01	26400				

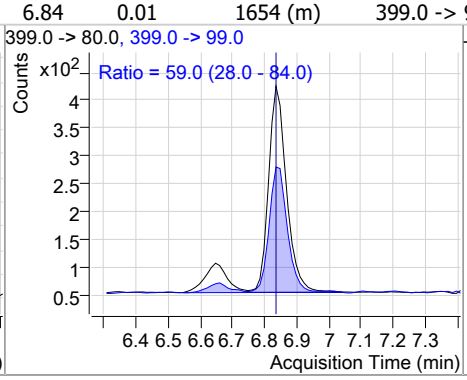


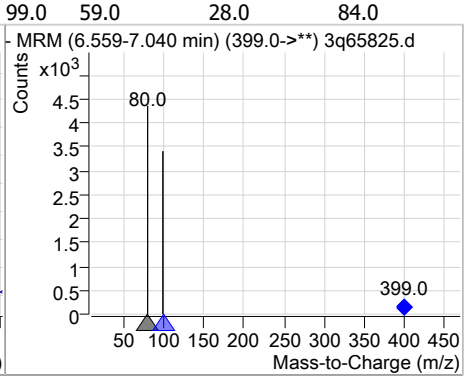




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.51	6.84	0.01	1654 (m)	399.0 -> 99.0	59.0	28.0	84.0

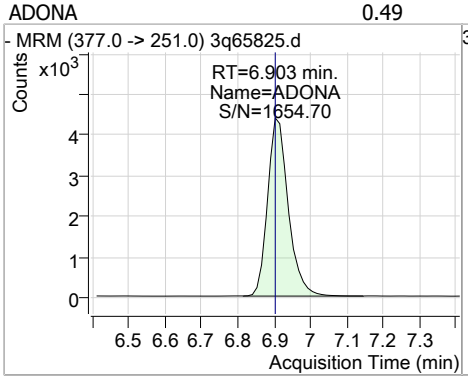


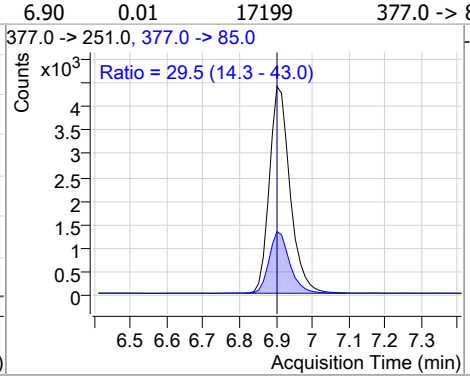


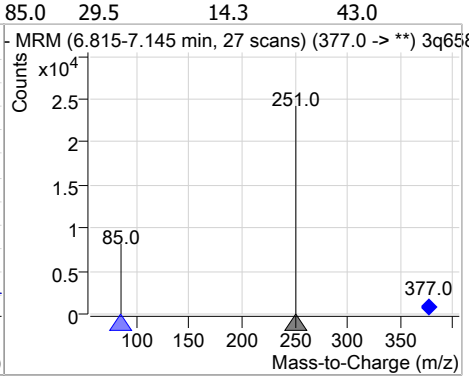


Perfluorinated Compounds by LC/MS/MS

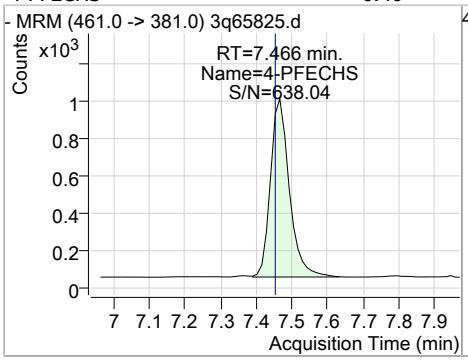
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.49	6.90	0.01	17199	377.0 -> 85.0	29.5	14.3	43.0

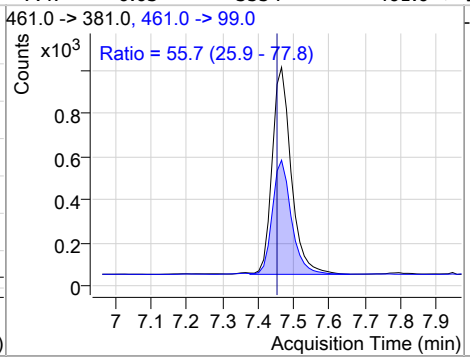


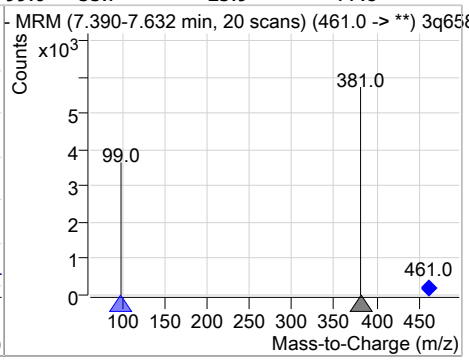




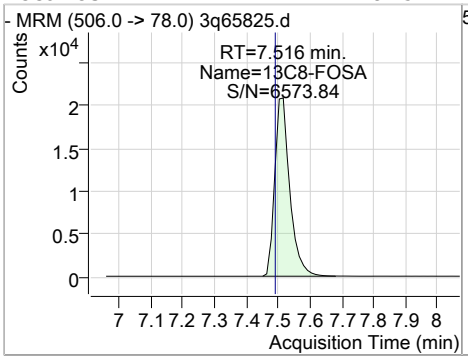
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.46	7.47	0.03	3554	461.0 -> 99.0	55.7	25.9	77.8

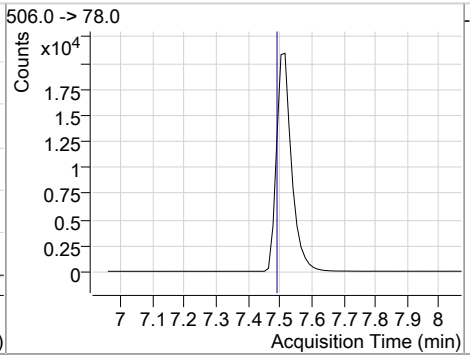


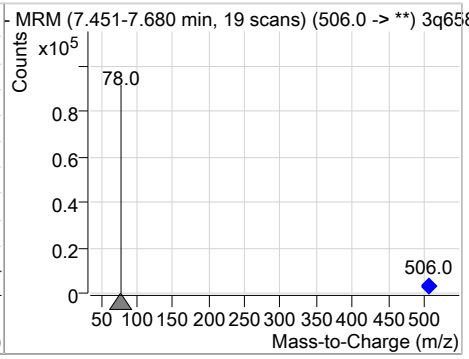




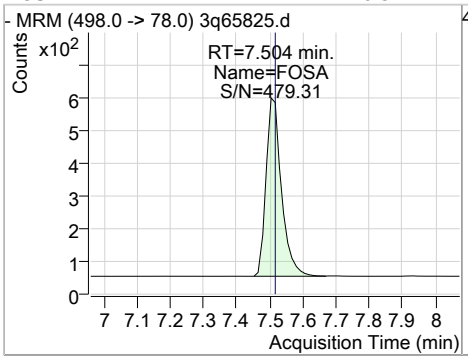
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.25	7.52	0.03	68577				

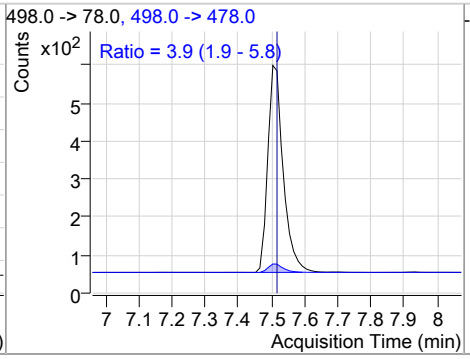


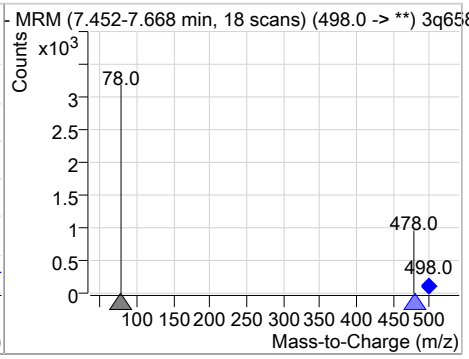




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.52	7.50	0.01	1751	498.0 -> 478.0	3.9	1.9	5.8

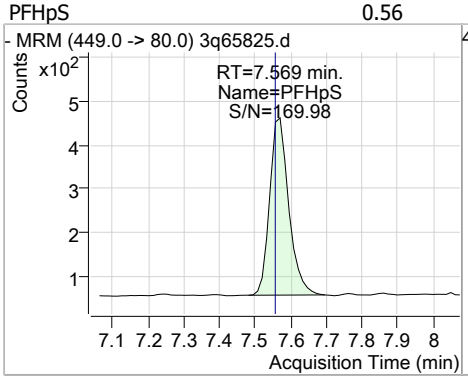


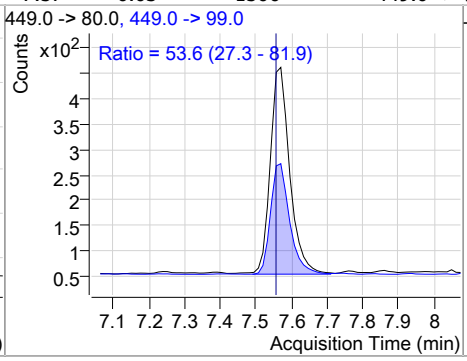


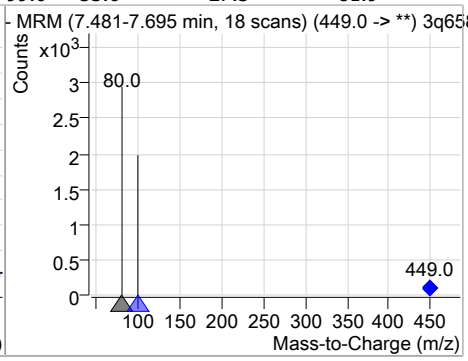


Perfluorinated Compounds by LC/MS/MS

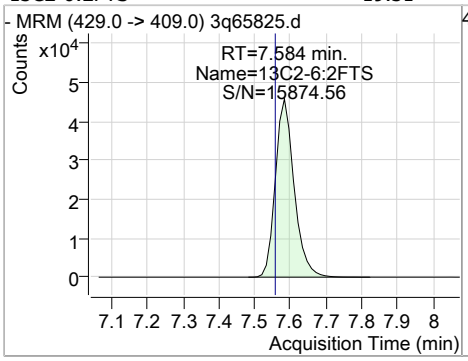
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.56	7.57	0.03	1506	449.0 -> 99.0	53.6	27.3	81.9

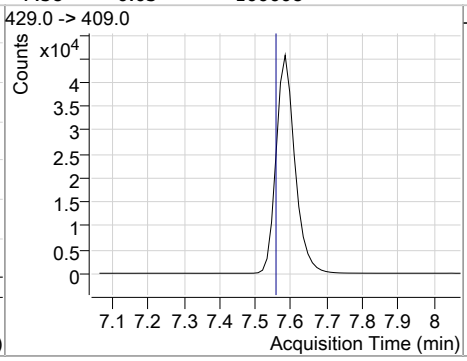


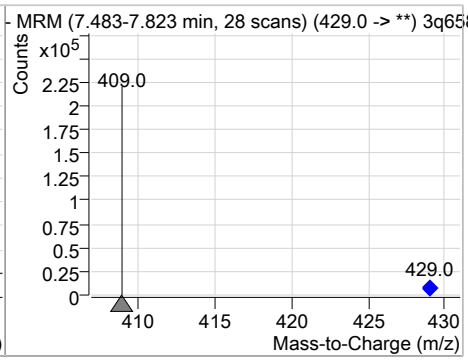




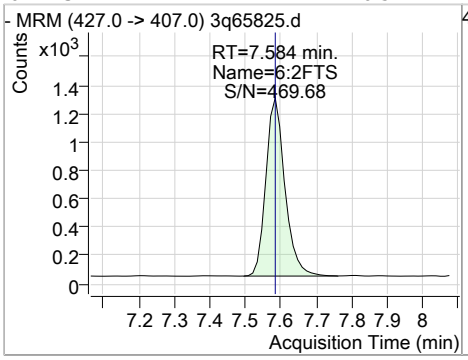
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.31	7.58	0.03	166608				

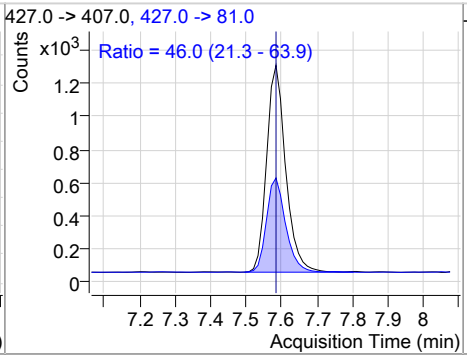


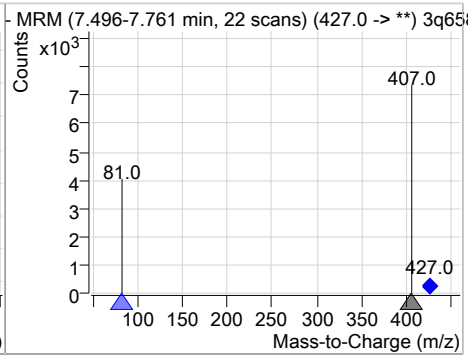




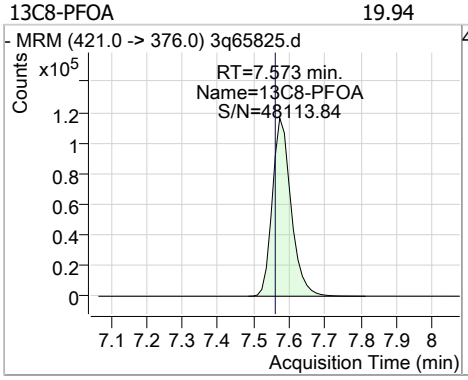
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.54	7.58	0.03	4676	427.0 -> 81.0	46.0	21.3	63.9

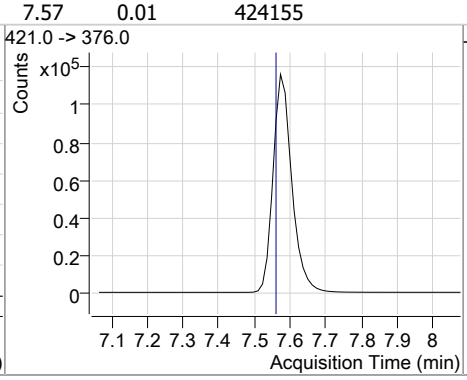


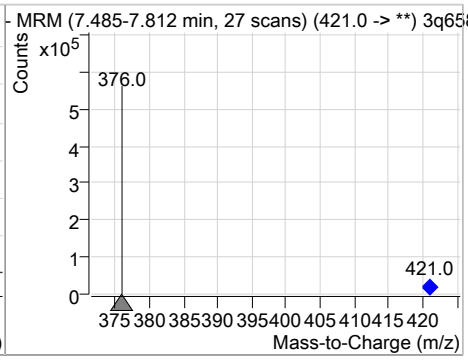




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.94	7.57	0.01	424155				

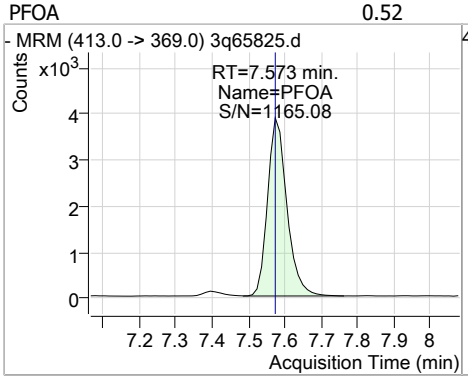


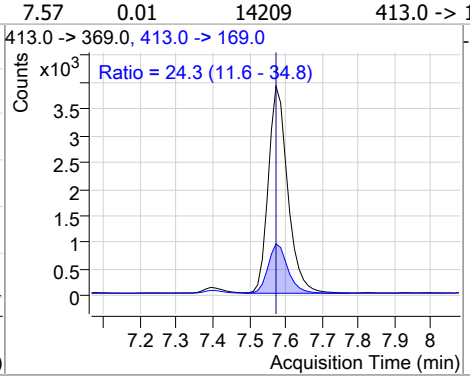


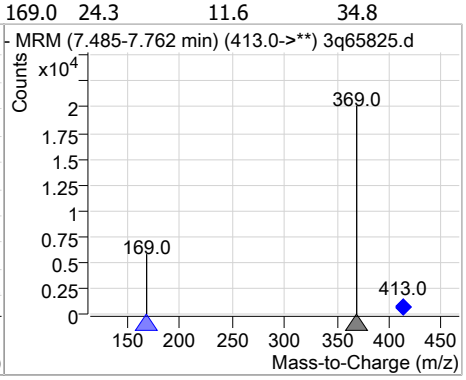


Perfluorinated Compounds by LC/MS/MS

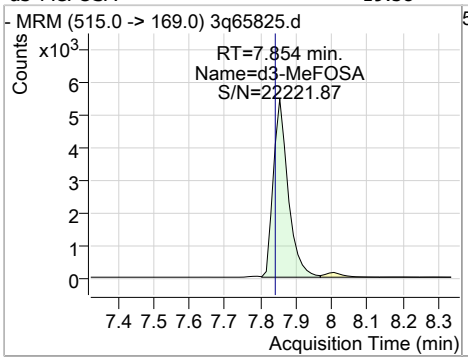
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.52	7.57	0.01	14209	413.0 -> 169.0	24.3	11.6	34.8

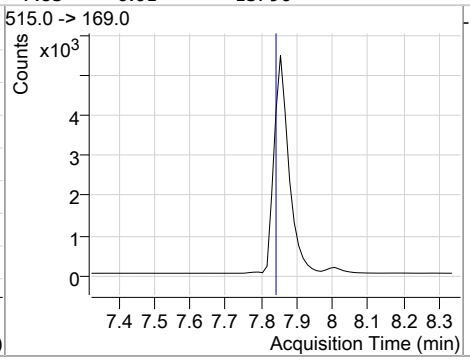


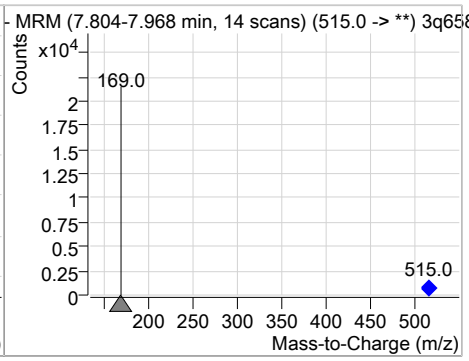




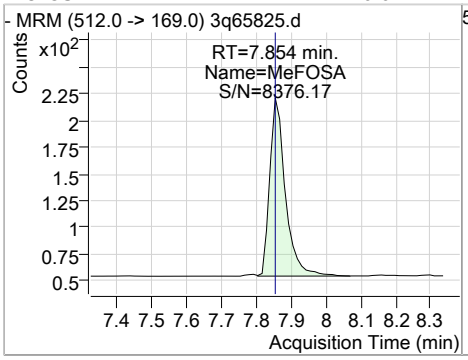
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.58	7.85	0.01	15796				

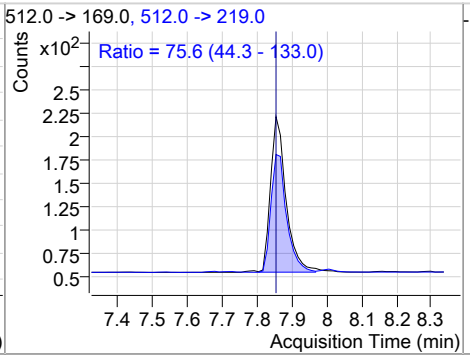


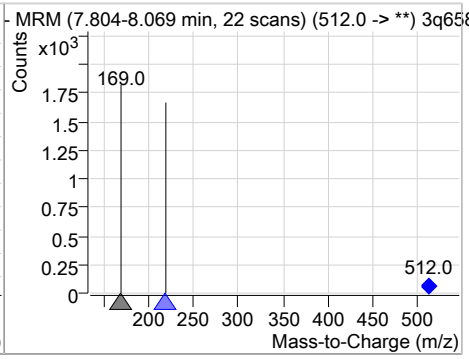




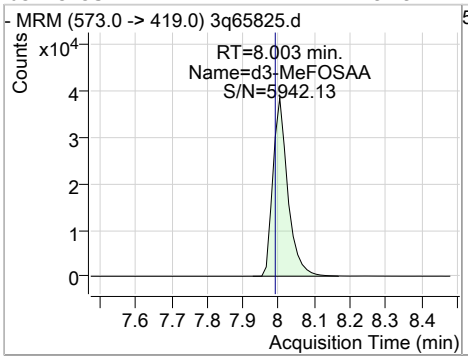
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.61	7.85	0.01	521	512.0 -> 219.0	75.6	44.3	133.0

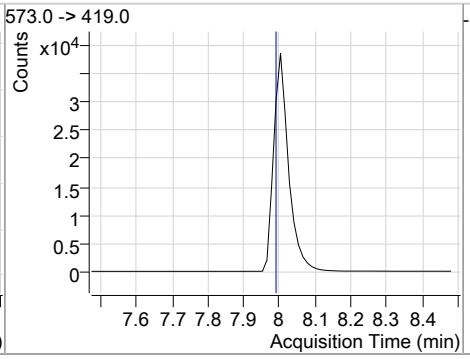


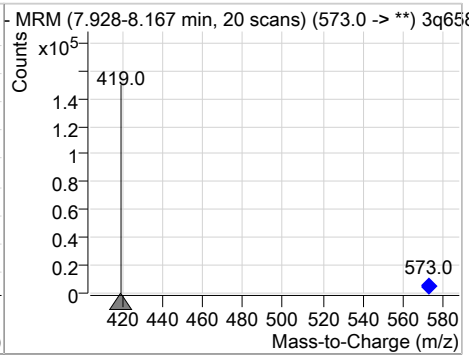




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.79	8.00	0.01	112020				

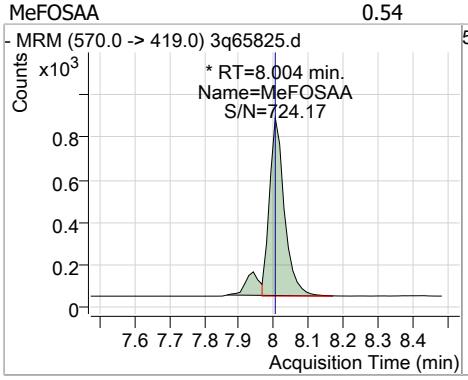


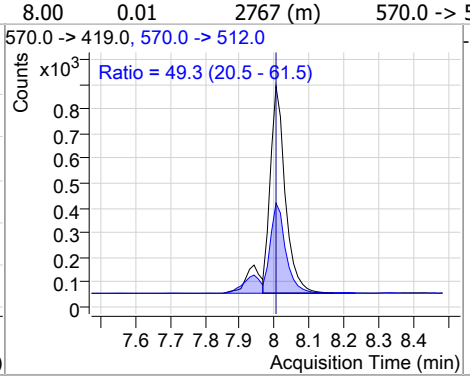


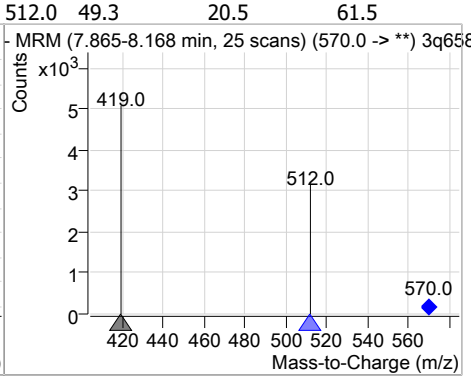


Perfluorinated Compounds by LC/MS/MS

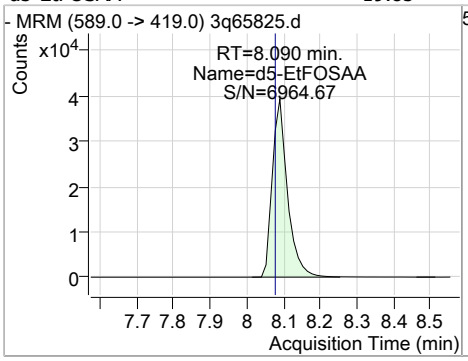
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.54	8.00	0.01	2767 (m)	570.0 -> 512.0	49.3	20.5	61.5

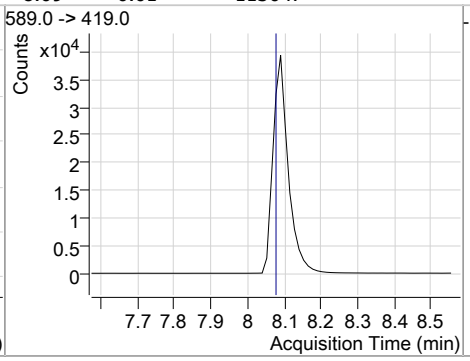


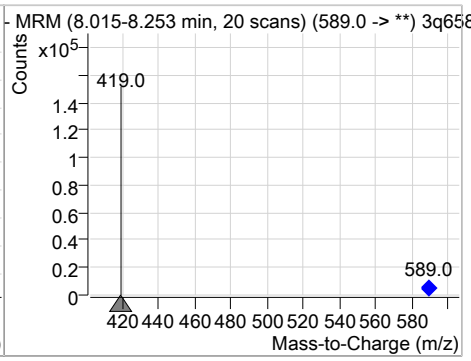




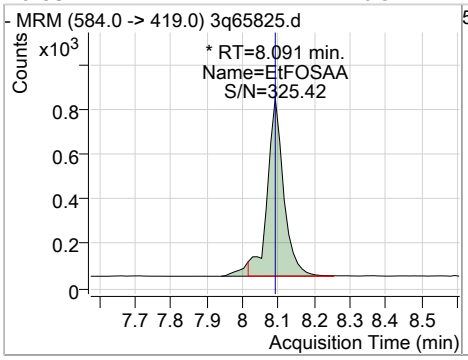
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.85	8.09	0.01	113047				

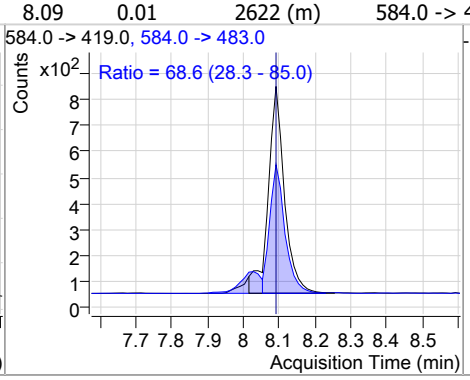


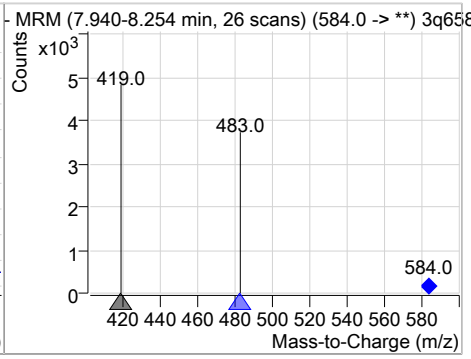




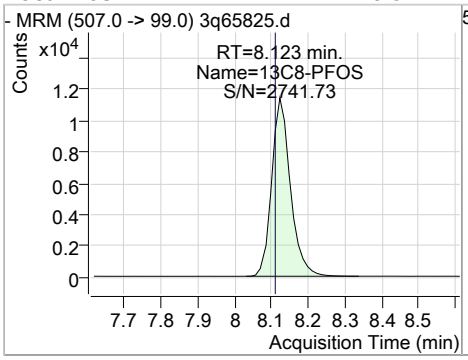
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.54	8.09	0.01	2622 (m)	584.0 -> 483.0	68.6	28.3	85.0

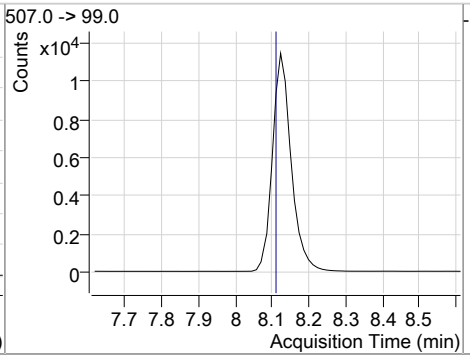


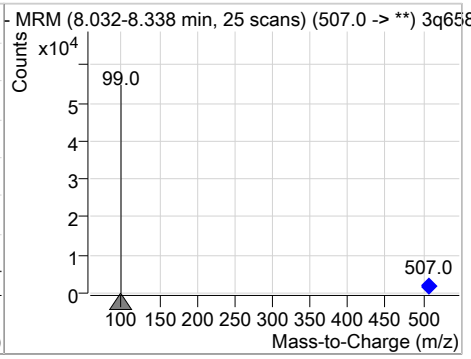




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.52	8.12	0.01	40383				

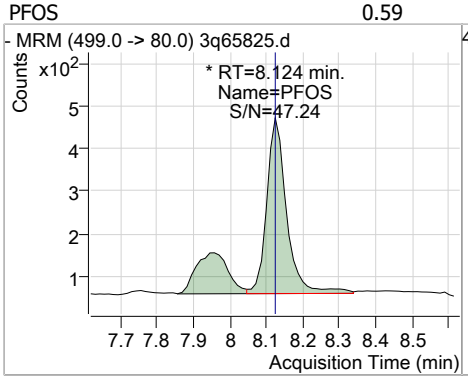


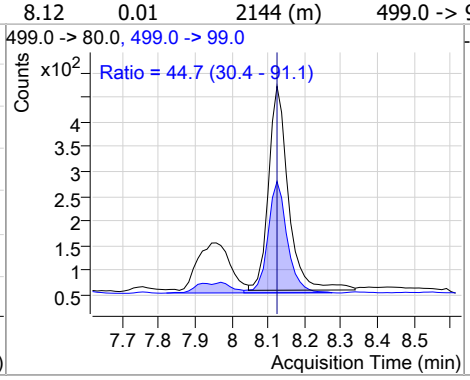


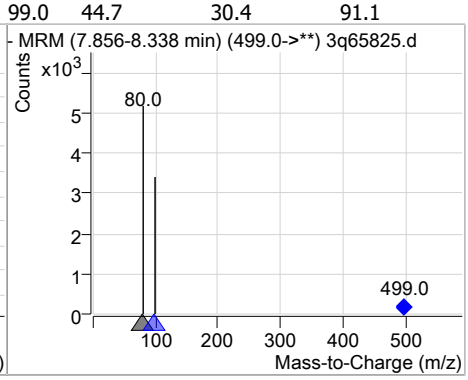


Perfluorinated Compounds by LC/MS/MS

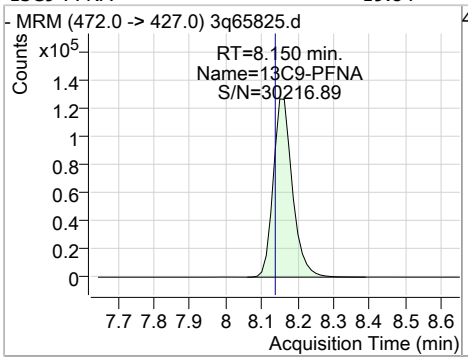
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.59	8.12	0.01	2144 (m)	499.0 -> 99.0	44.7	30.4	91.1

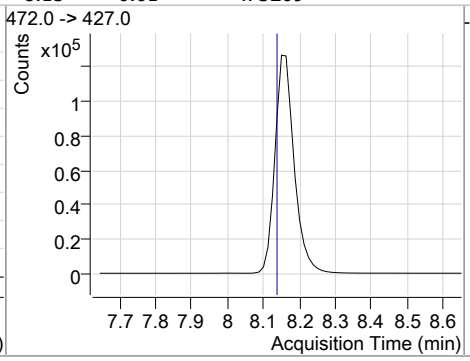


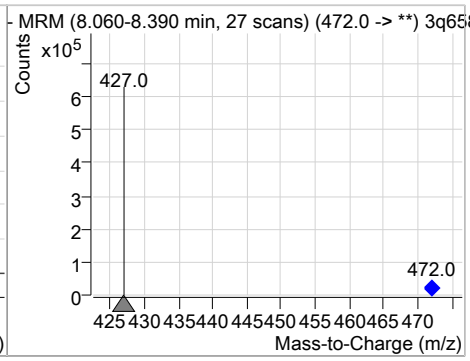




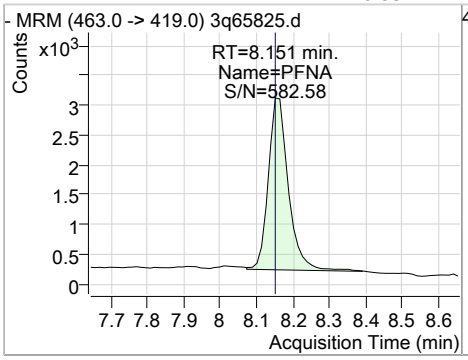
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.84	8.15	0.01	473269				

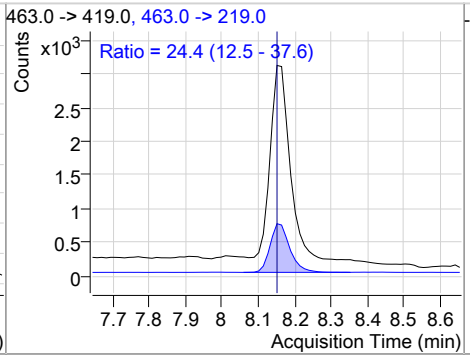


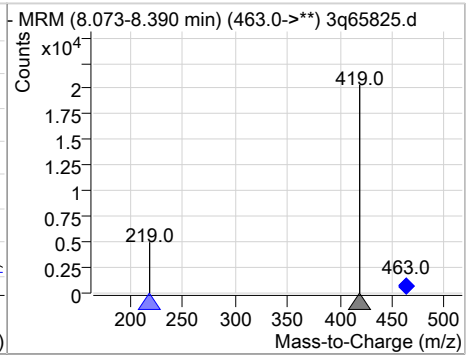




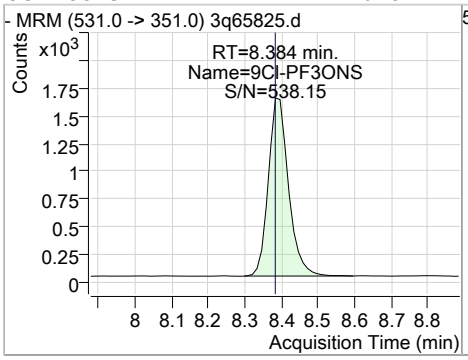
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.53	8.15	0.01	11064	463.0 -> 219.0	24.4	12.5	37.6

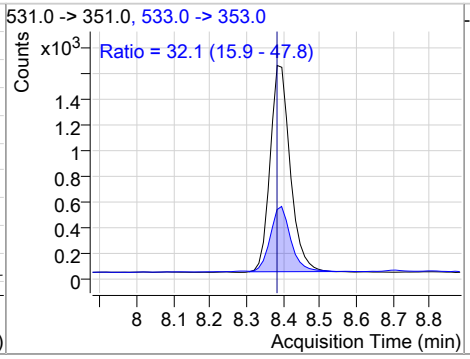


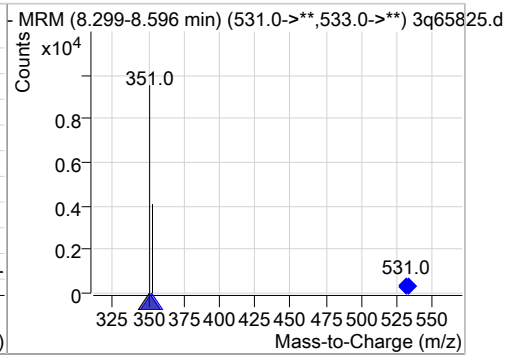




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.49	8.38	0.01	6146	533.0 -> 353.0	32.1	15.9	47.8

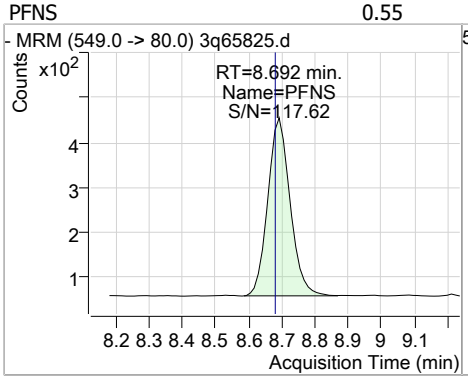


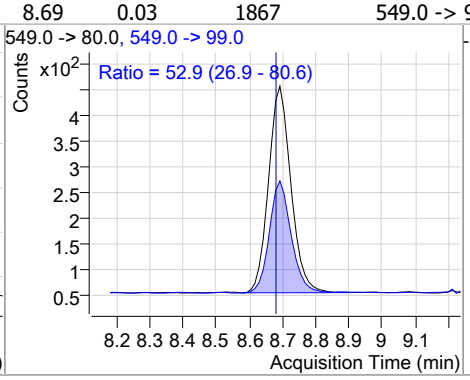


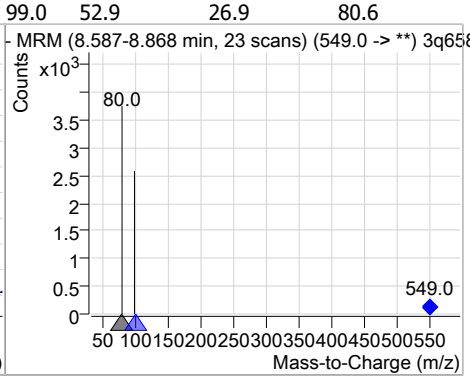


Perfluorinated Compounds by LC/MS/MS

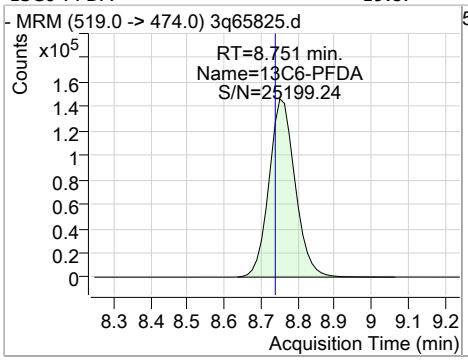
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.55	8.69	0.03	1867	549.0 -> 99.0	52.9	26.9	80.6

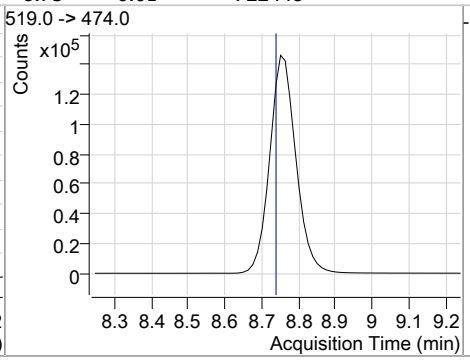


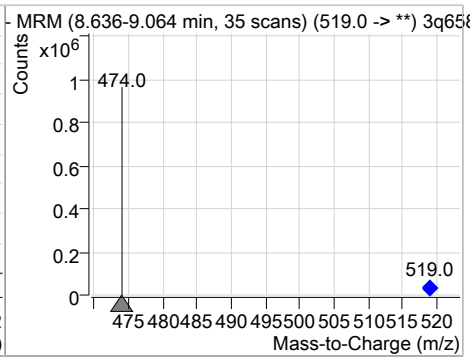




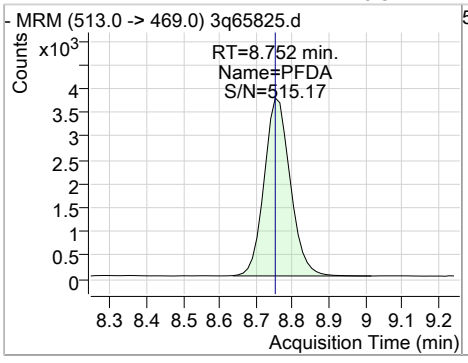
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.87	8.75	0.01	722448				

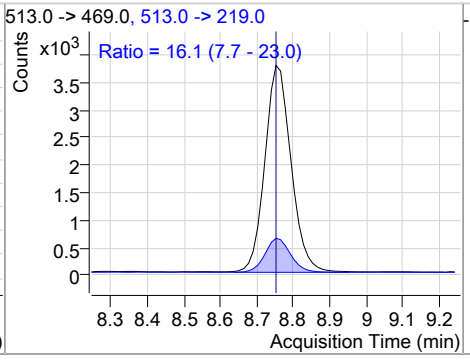


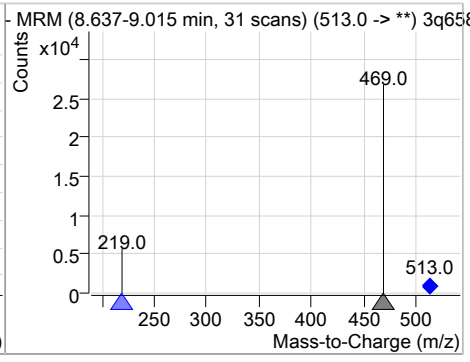




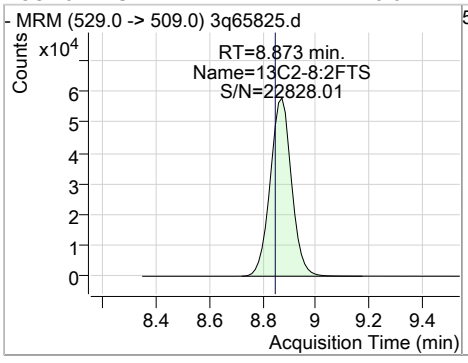
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.51	8.75	0.01	18587	513.0 -> 219.0	16.1	7.7	23.0

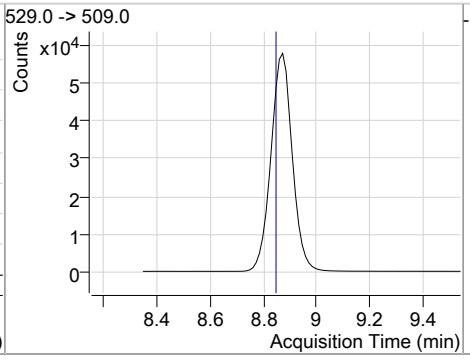


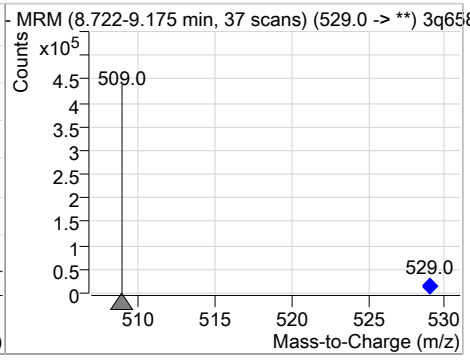




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.82	8.87	0.03	322287				

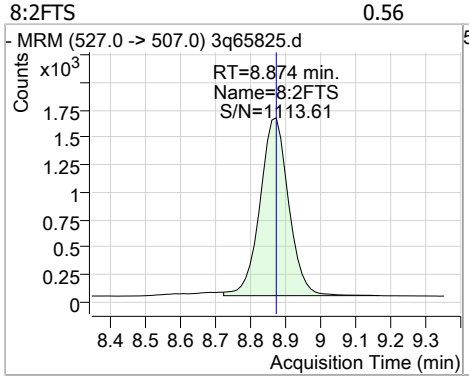


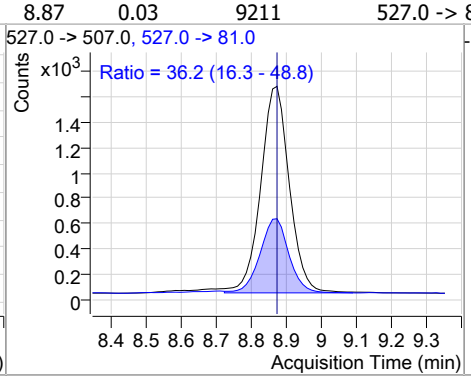


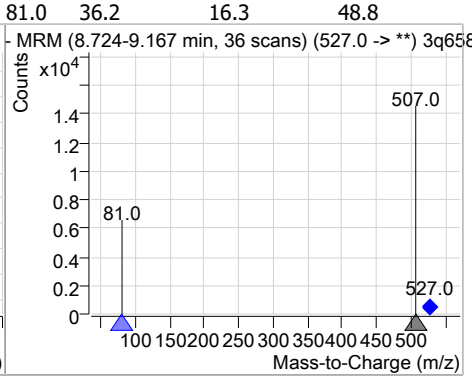


Perfluorinated Compounds by LC/MS/MS

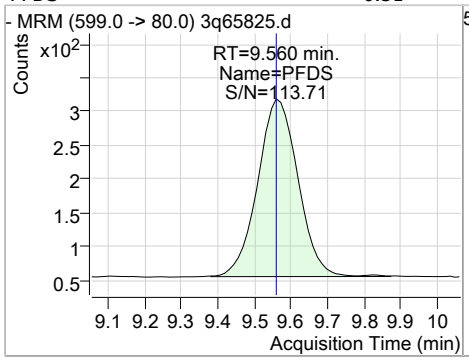
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.56	8.87	0.03	9211	527.0 -> 81.0	36.2	16.3	48.8

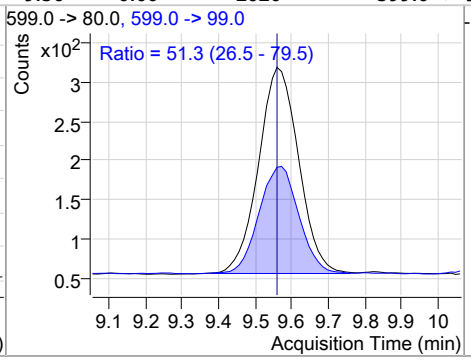


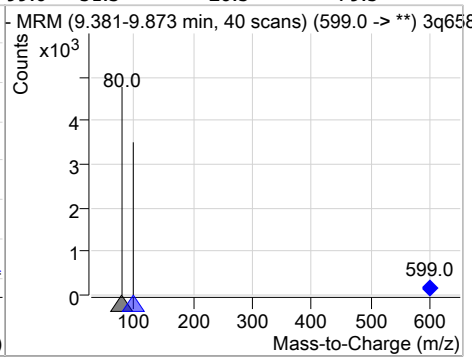




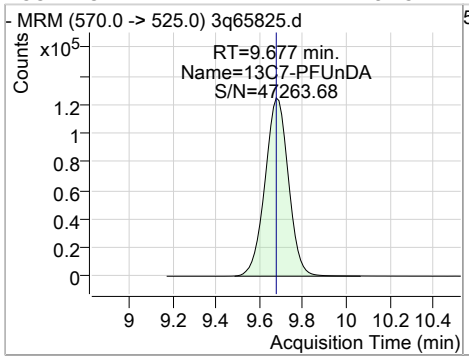
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.51	9.56	0.00	2020	599.0 -> 99.0	51.3	26.5	79.5

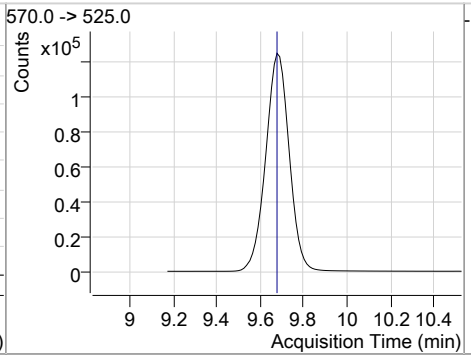


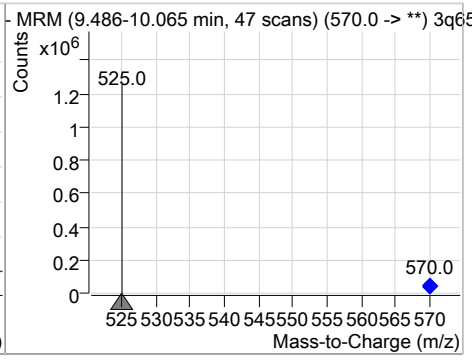




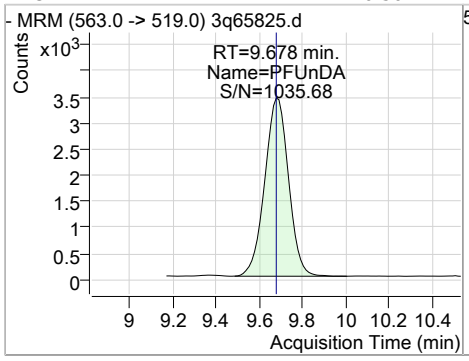
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.73	9.68	0.00	939733				

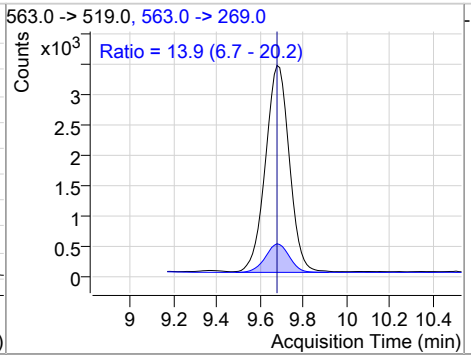


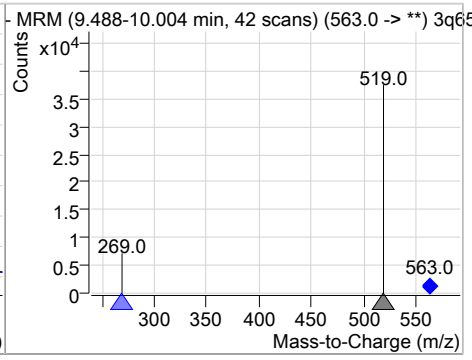




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.50	9.68	0.00	26086	563.0 -> 269.0	13.9	6.7	20.2

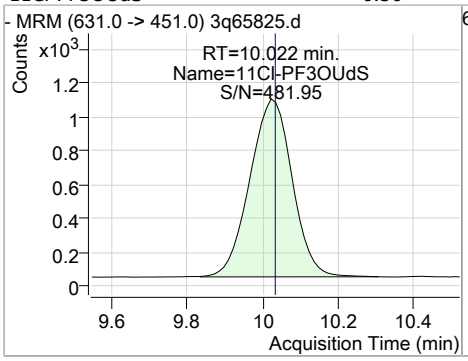


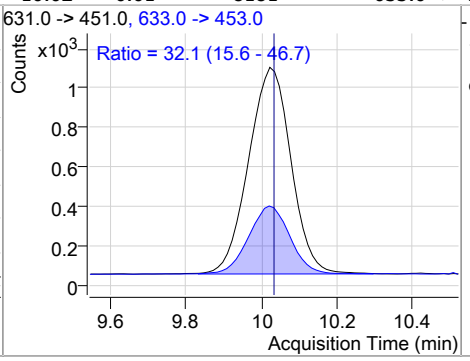


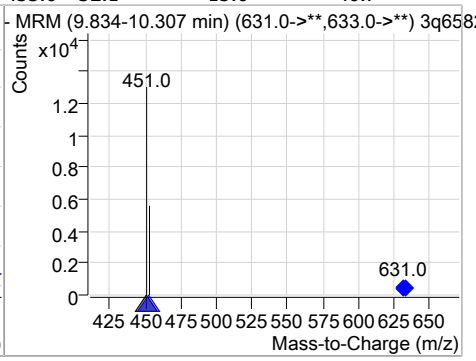


Perfluorinated Compounds by LC/MS/MS

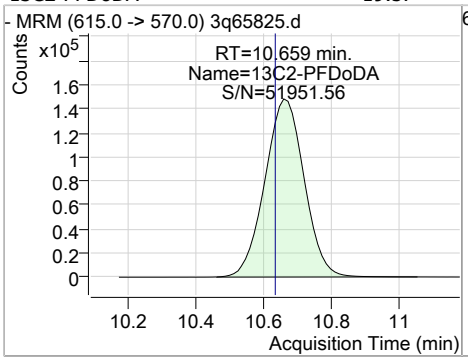
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.50	10.02	0.01	8181	633.0 -> 453.0	32.1	15.6	46.7

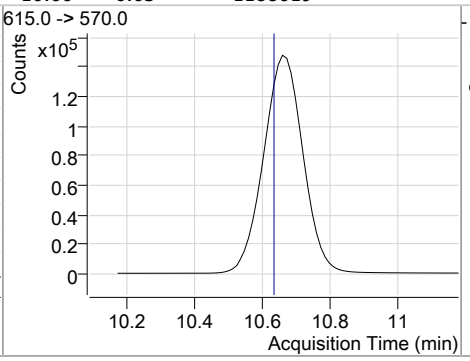


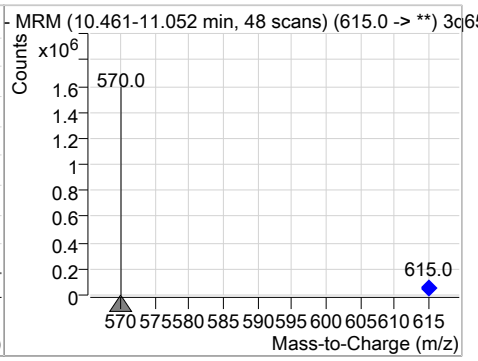




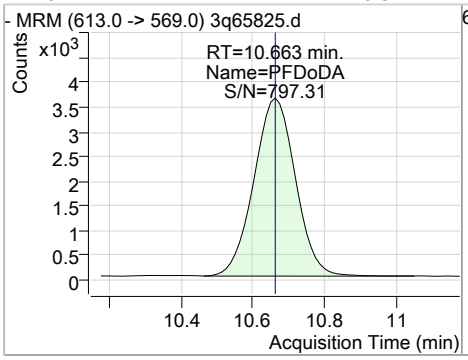
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.57	10.66	0.03	1188619				

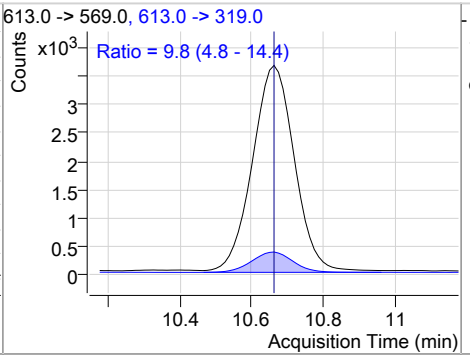


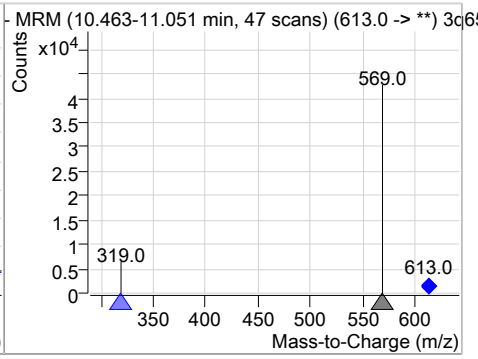




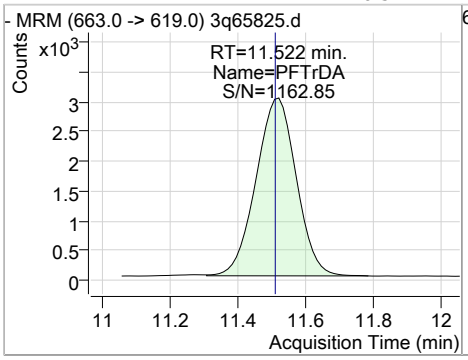
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.52	10.66	0.03	29103	613.0 -> 319.0	9.8	4.8	14.4

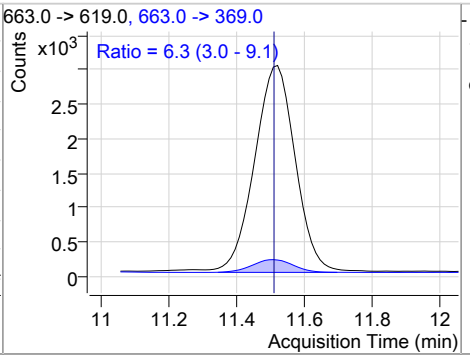


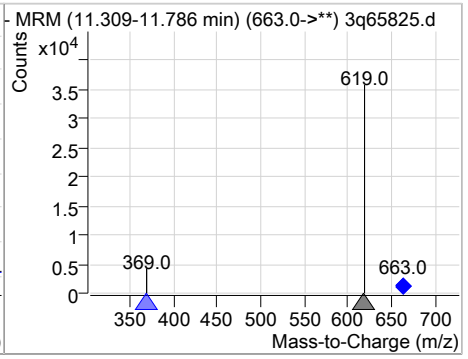




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.51	11.52	0.04	24640	663.0 -> 369.0	6.3	3.0	9.1

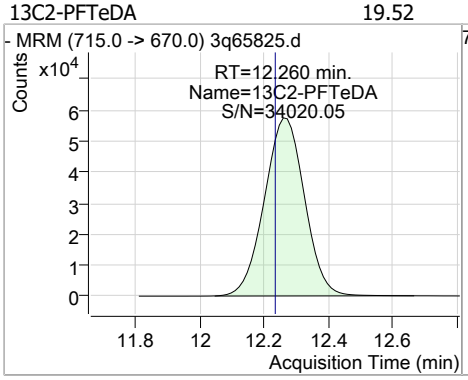


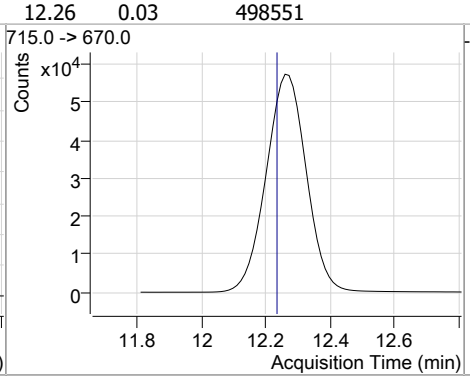


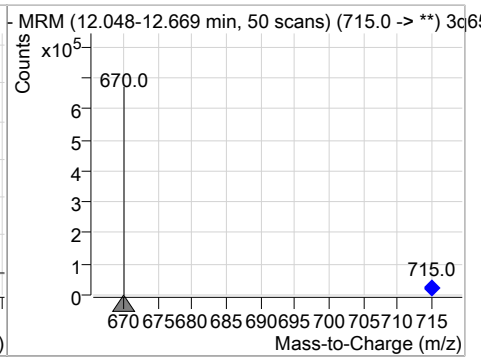


Perfluorinated Compounds by LC/MS/MS

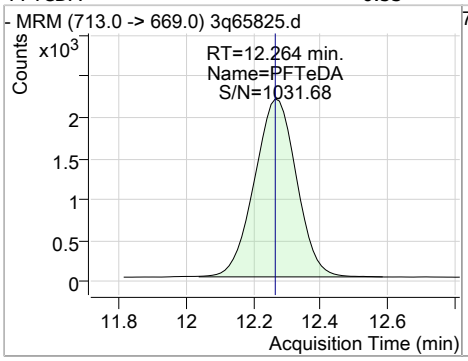
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.52	12.26	0.03	498551				

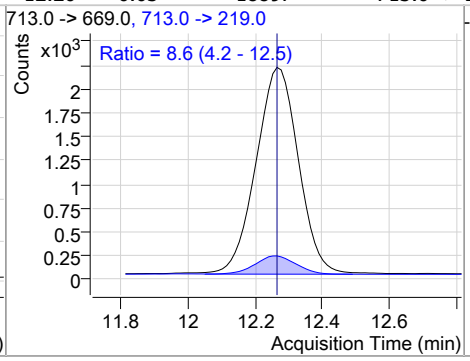


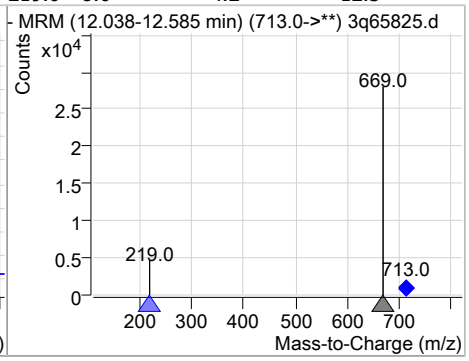




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.53	12.26	0.03	18897	713.0 -> 219.0	8.6	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65825.D
Injection Time: 09/15/22 18:09

Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65826.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:28:49 PM
Sample Name : ic900-1
Vial : P1-A3
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

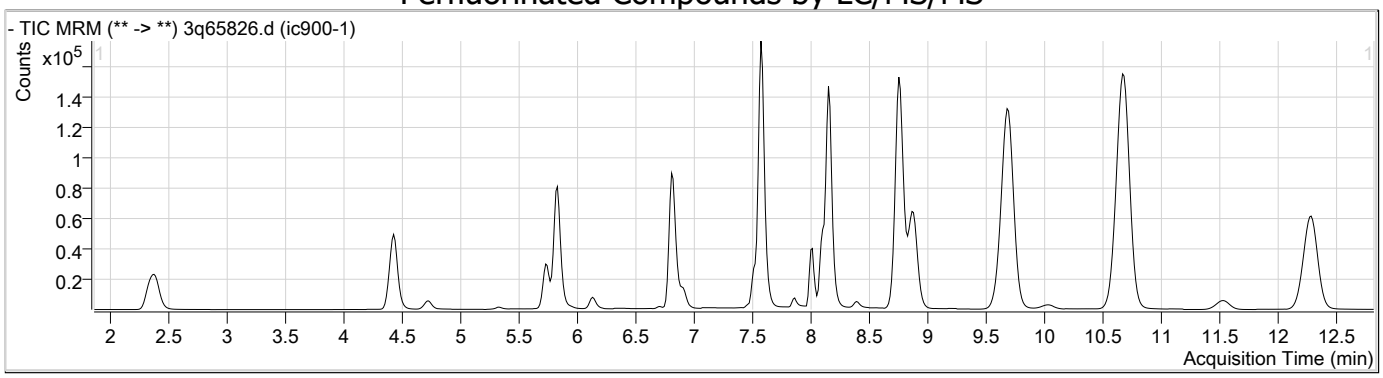
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	161525	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	235415	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	315135	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	312730	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	425879	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	468929	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	709971	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	938789	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	1189466	20.00	µg/L	0.025
M2-PFTeDA	12.273	715.0 -> 670.0	497098	20.00	µg/L	0.038
M8-FOSA	7.503	506.0 -> 78.0	71267	20.00	µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	21704	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	26404	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	40494	20.00	µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	112889	20.00	µg/L	0.013
M2-6:2FTS	7.584	429.0 -> 409.0	166829	20.00	µg/L	0.026
M2-8:2FTS	8.873	529.0 -> 509.0	322215	20.00	µg/L	0.025
M3-MeFOSAA	8.003	573.0 -> 419.0	112576	20.00	µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	25572	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	16186	20.00	µg/L	0.013
M5-EtFOSAA	8.077	589.0 -> 419.0	114531	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	112889	18.39	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-6:2FTS	7.584	429.0 -> 409.0	166829	19.34	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-8:2FTS	8.873	529.0 -> 509.0	322215	18.82	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1189466	19.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C2-PFTeDA	12.273	715.0 -> 670.0	497098	19.47	µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C3-PFBS	4.717	302.0 -> 99.0	21704	19.61	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C3-PFHxS	6.834	402.0 -> 99.0	26404	19.60	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C4-PFBA	2.365	217.0 -> 172.0	161525	19.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C4-PFHpA	6.805	367.0 -> 322.0	312730	19.83	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C5-PFHxA	5.826	318.0 -> 273.0	315135	19.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFPeA	4.424	268.0 -> 223.0	235415	19.46	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C6-PFDA	8.751	519.0 -> 474.0	709971	19.53	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

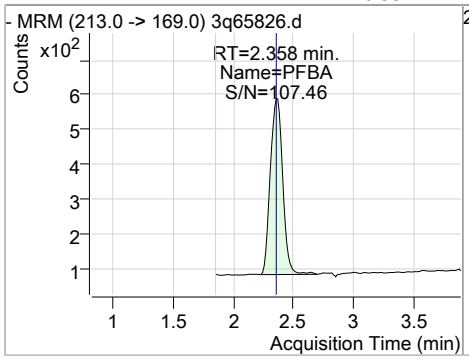
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C7-PFUnDA	9.677	570.0 -> 525.0	938789	19.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C8-FOSA	7.503	506.0 -> 78.0	71267	20.00 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-PFOA	7.573	421.0 -> 376.0	425879	20.02 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C8-PFOS	8.123	507.0 -> 99.0	40494	19.57 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%		
13C9-PFNA	8.150	472.0 -> 427.0	468929	19.65 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
d3-MeFOSAA	8.003	573.0 -> 419.0	112576	19.89 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	25574	19.80 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
d3-MeFOSA	7.854	515.0 -> 169.0	16186	20.06 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
d5-EtFOSAA	8.077	589.0 -> 419.0	114467	20.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	6564	1.04 µg/L		96
6:2FTS	7.584	427.0 -> 407.0	8842	1.02 µg/L		98
8:2FTS	8.861	527.0 -> 507.0	17144	1.04 µg/L		97
EtFOSAA	8.091	584.0 -> 419.0	4795	0.97 µg/L	m	88
FOSA	7.504	498.0 -> 78.0	3503	1.00 µg/L		98
MeFOSAA	8.004	570.0 -> 419.0	4986	0.97 µg/L	m	92
PFBA	2.358	213.0 -> 169.0	3631	0.99 µg/L		100
PFBS	4.707	299.0 -> 80.0	3097	0.98 µg/L		99
PFDA	8.752	513.0 -> 469.0	34416	0.96 µg/L		98
PFDoDA	10.663	613.0 -> 569.0	54050	0.96 µg/L		99
PFDS	9.560	599.0 -> 80.0	3700	0.94 µg/L		100
PFHpA	6.807	363.0 -> 319.0	22674	0.95 µg/L		99
PFHpS	7.557	449.0 -> 80.0	2898	1.07 µg/L		97
PFHxA	5.827	313.0 -> 269.0	17083	0.97 µg/L		99
PFHxS	6.835	399.0 -> 80.0	3293	1.01 µg/L	m	100
PFNA	8.151	463.0 -> 419.0	20529	0.99 µg/L		99
PFNS	8.692	549.0 -> 80.0	3331	0.99 µg/L		97
PFOA	7.573	413.0 -> 369.0	26187	0.96 µg/L		100
PFOS	8.124	499.0 -> 80.0	3502	0.97 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	10686	0.98 µg/L		100
PFPeS	5.932	349.0 -> 80.0	2490	1.01 µg/L		100
PFTeDA	12.264	713.0 -> 669.0	34578	0.98 µg/L		100
PFTrDA	11.522	663.0 -> 619.0	46489	0.96 µg/L		100
PFUnDA	9.678	563.0 -> 519.0	48941	0.94 µg/L		99
11Cl-PF3OUdS	10.022	631.0 -> 451.0	15266	0.93 µg/L		98
9Cl-PF3ONS	8.384	531.0 -> 351.0	10930	0.89 µg/L		97
ADONA	6.903	377.0 -> 251.0	32582	0.94 µg/L		100
HFPO-DA	6.134	329.0 -> 169.0	3196	1.01 µg/L		98
MeFOSA	7.854	512.0 -> 169.0	868	0.99 µg/L		97
4-PFECHS	7.466	461.0 -> 381.0	6676	0.87 µg/L		98
FBSA	5.327	298.0 -> 78.0	5048	1.00 µg/L		99
FHxSA	6.700	398.0 -> 78.0	4913	0.96 µg/L		98

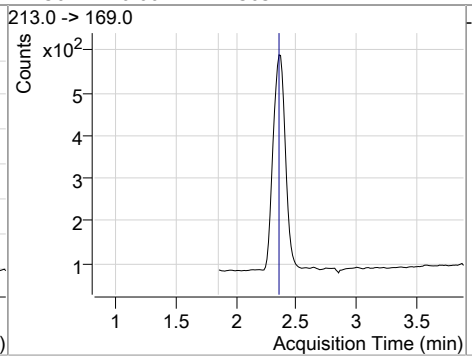
 # = Qualifier out of range, m = manually integrated, + = Area summed

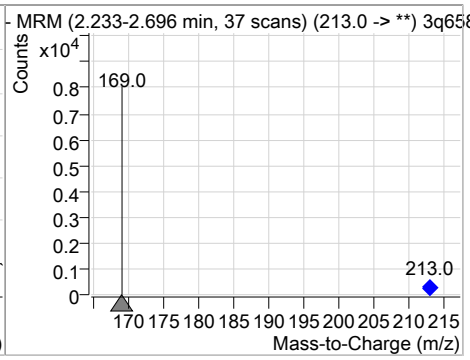
Perfluorinated Compounds by LC/MS/MS



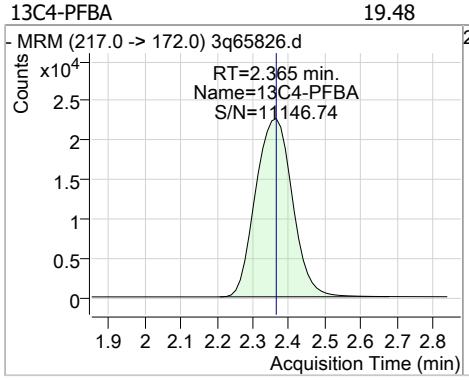
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.99	2.36	0.00	3631				

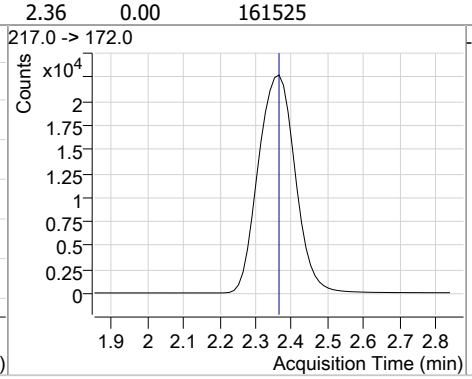


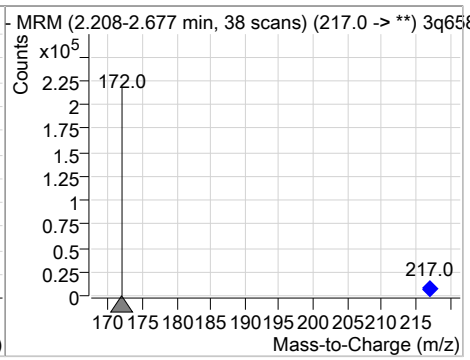




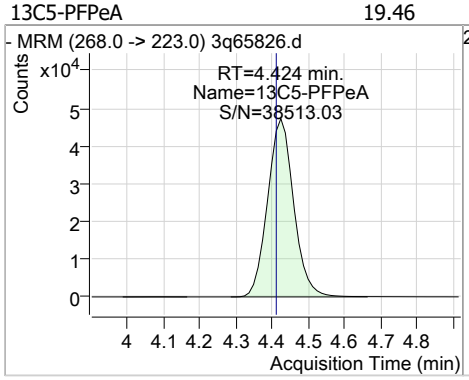
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.48	2.36	0.00	161525				

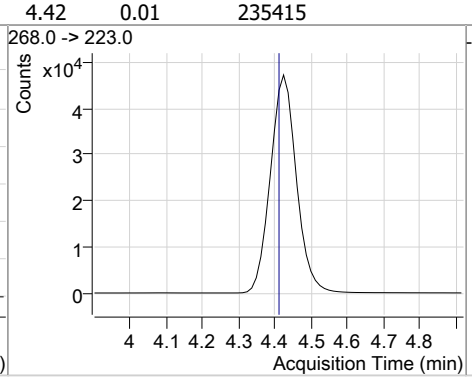


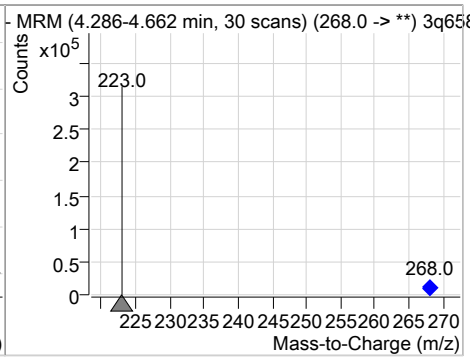




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.46	4.42	0.01	235415				

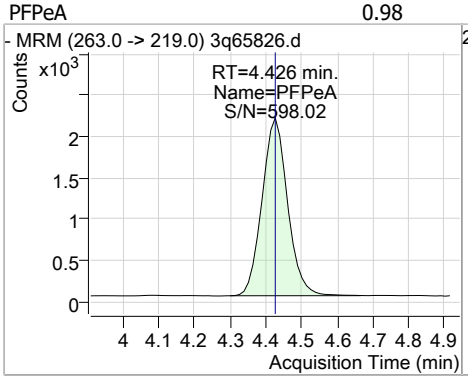


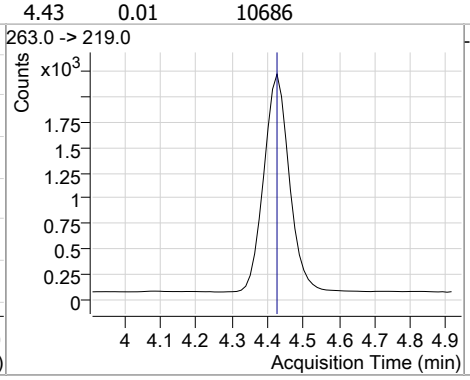


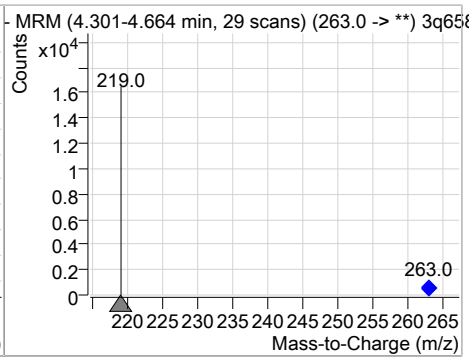


Perfluorinated Compounds by LC/MS/MS

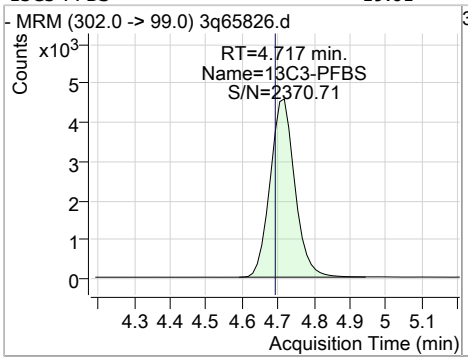
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.98	4.43	0.01	10686				

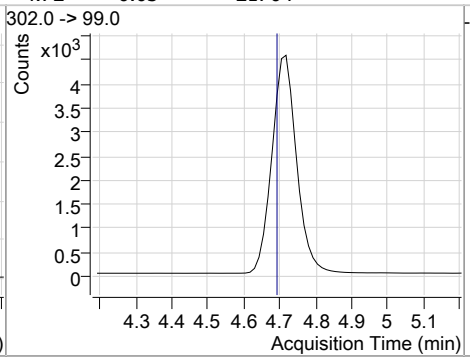


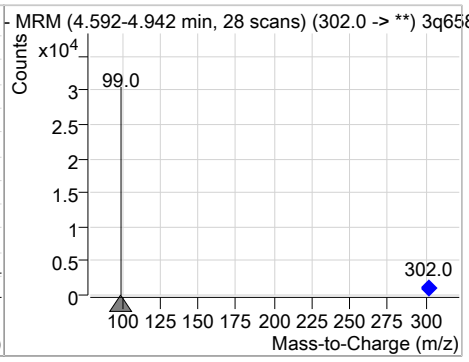




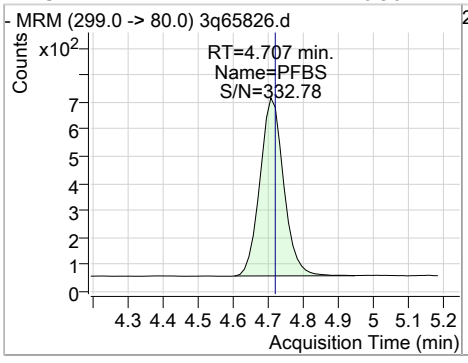
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.61	4.72	0.03	21704				

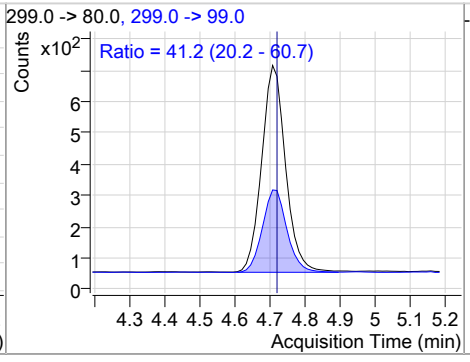


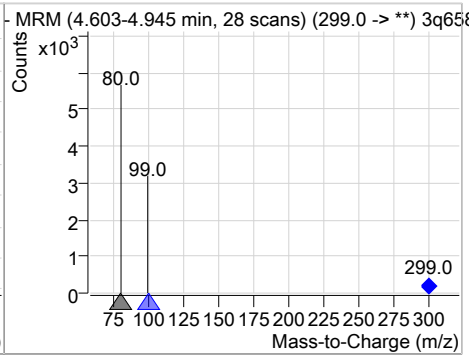




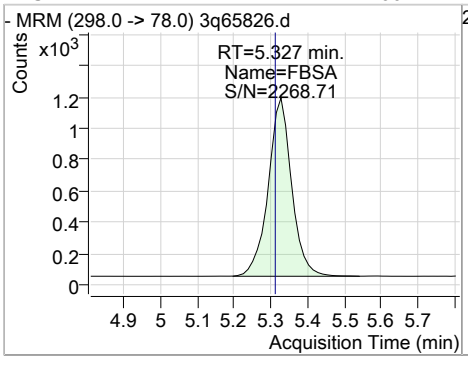
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.98	4.71	0.01	3097	299.0 -> 99.0	41.2	20.2	60.7

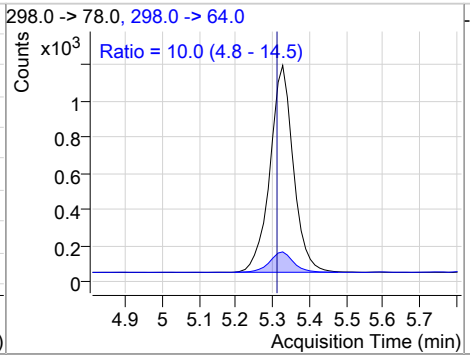


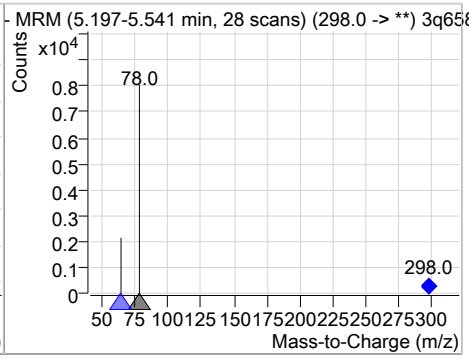




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.00	5.33	0.03	5048	298.0 -> 64.0	10.0	4.8	14.5

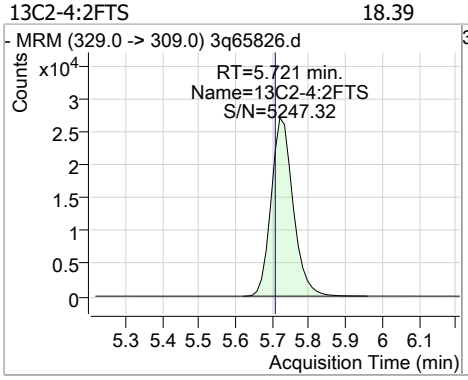


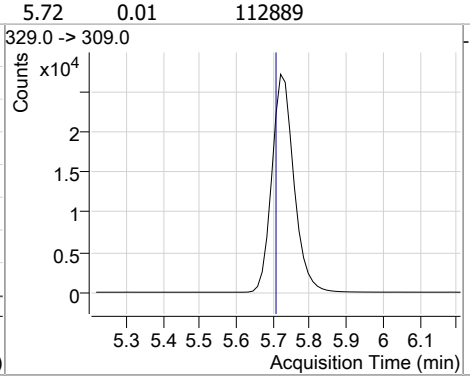


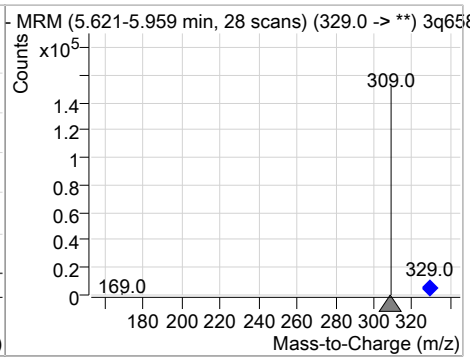


Perfluorinated Compounds by LC/MS/MS

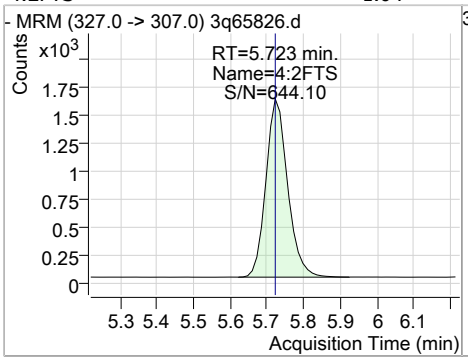
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.39	5.72	0.01	112889				

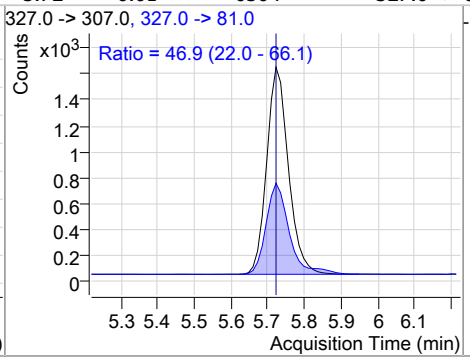


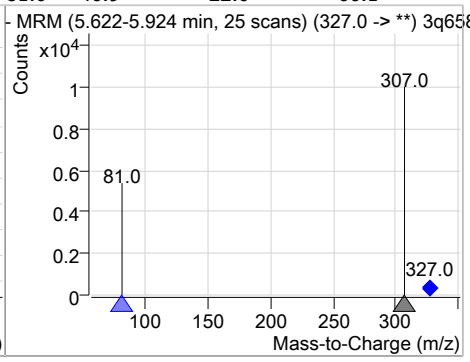




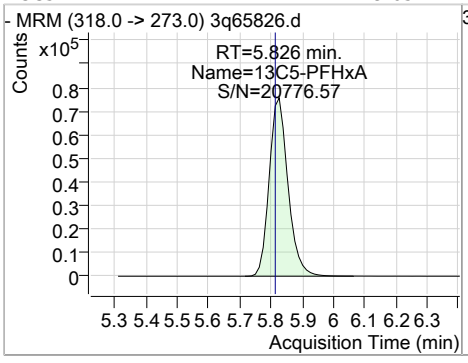
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.04	5.72	0.01	6564	327.0 -> 81.0	46.9	22.0	66.1

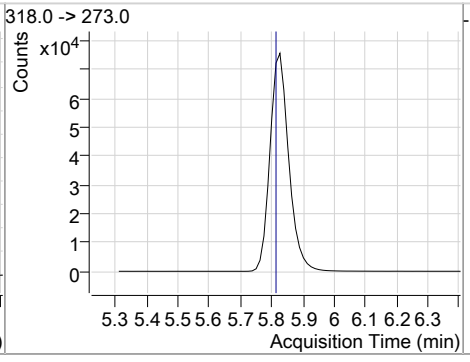


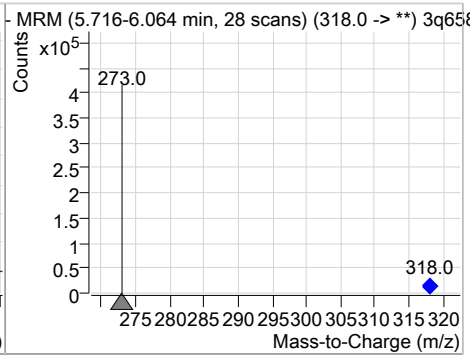




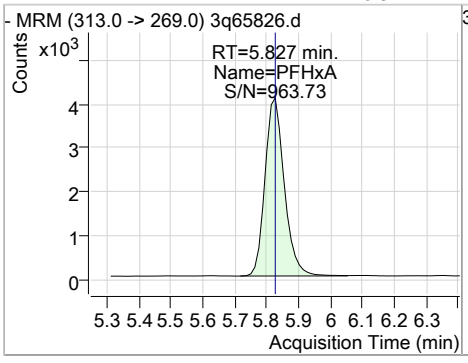
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.65	5.83	0.01	315135				

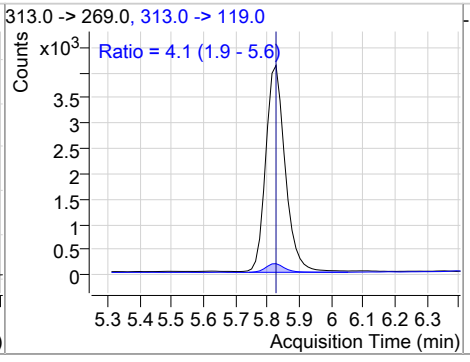


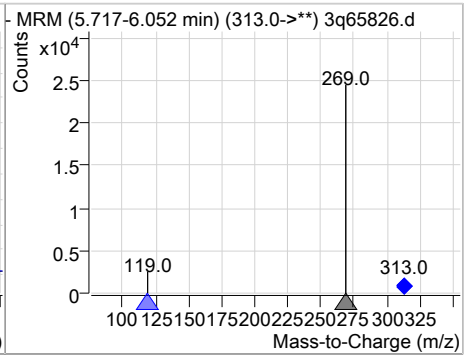




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.97	5.83	0.01	17083	313.0 -> 119.0	4.1	1.9	5.6

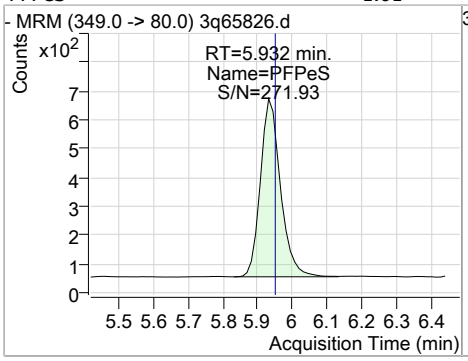


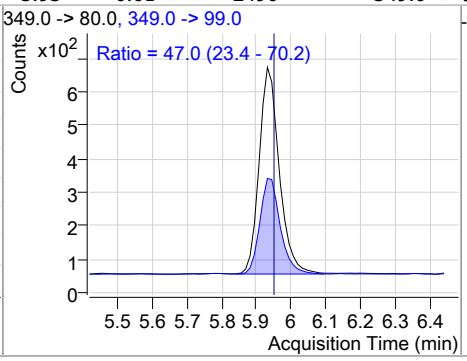


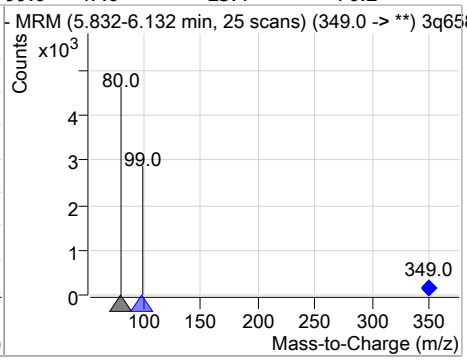


Perfluorinated Compounds by LC/MS/MS

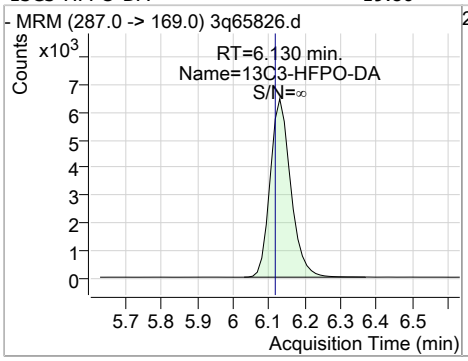
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.01	5.93	0.01	2490	349.0 -> 99.0	47.0	23.4	70.2

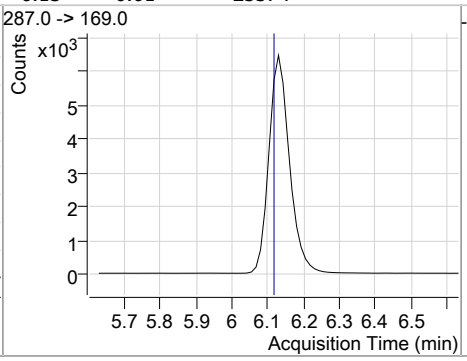


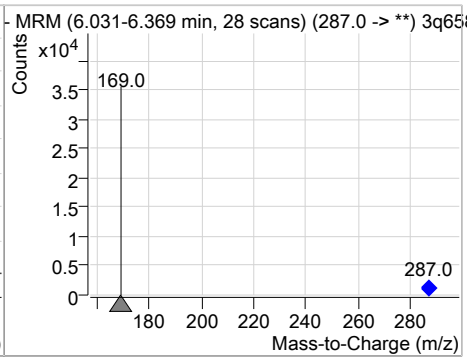




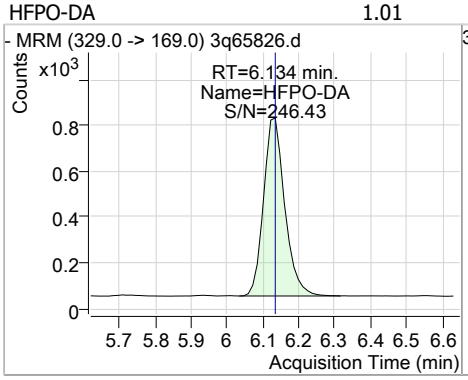
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.80	6.13	0.01	25574				

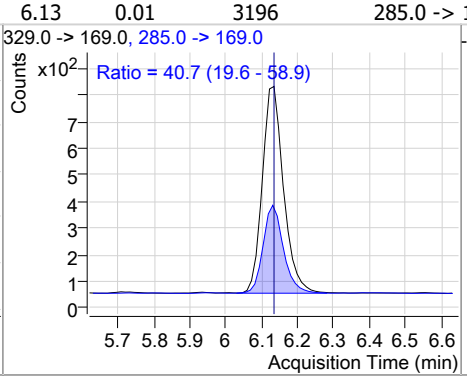


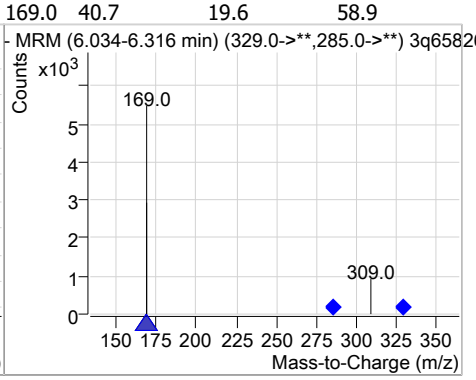




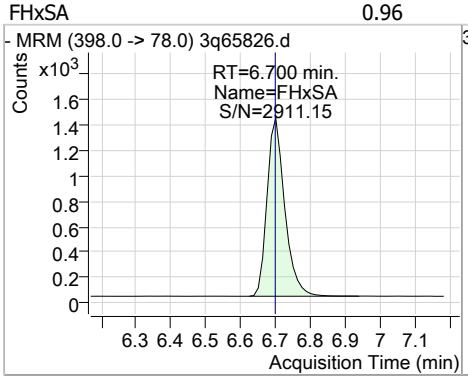
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.01	6.13	0.01	3196	285.0 -> 169.0	40.7	19.6	58.9

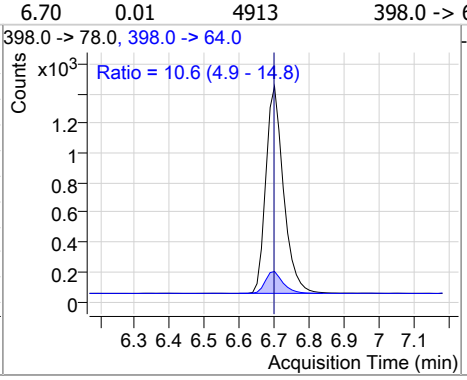


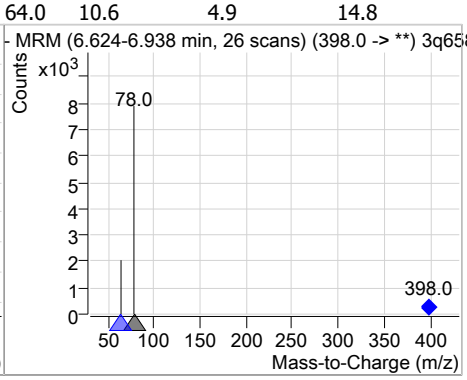




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.96	6.70	0.01	4913	398.0 -> 64.0	10.6	4.9	14.8

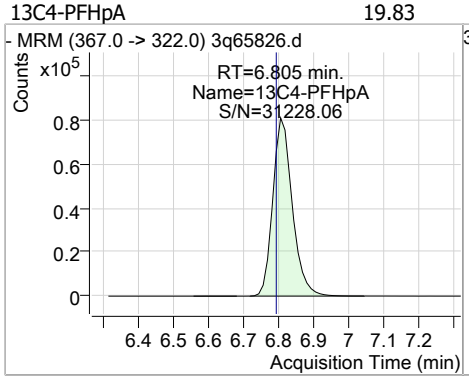


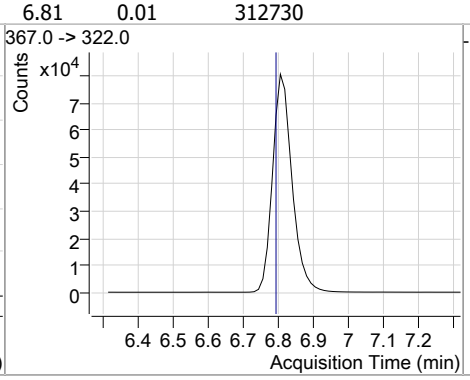


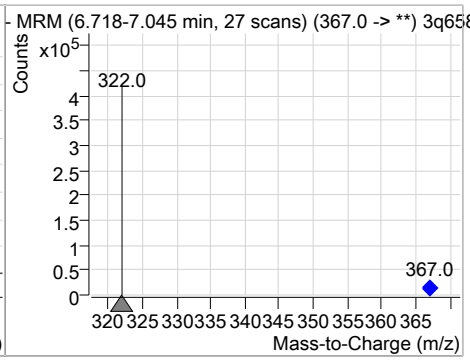


Perfluorinated Compounds by LC/MS/MS

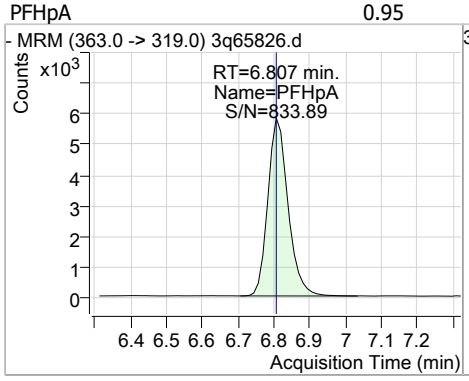
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.83	6.81	0.01	312730				

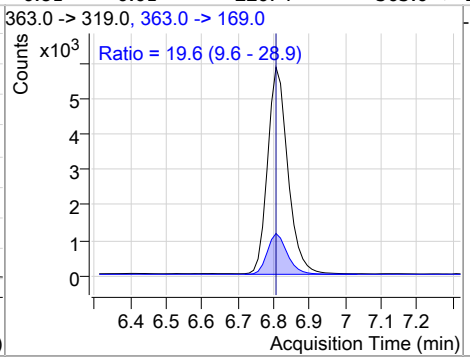


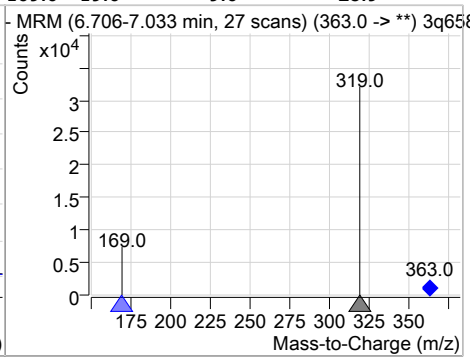




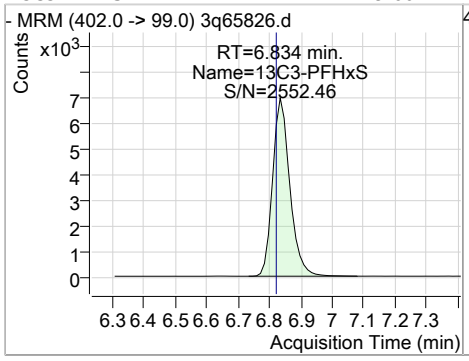
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	6.81	0.01	22674	363.0 -> 169.0	19.6	9.6	28.9

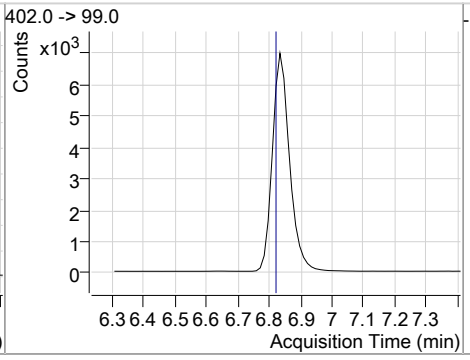


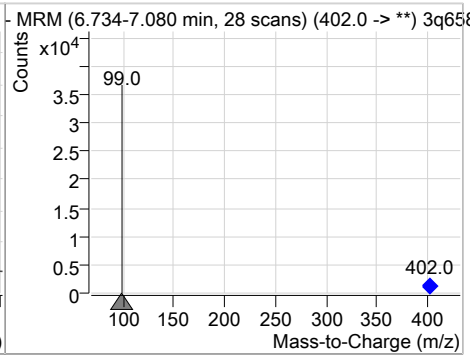




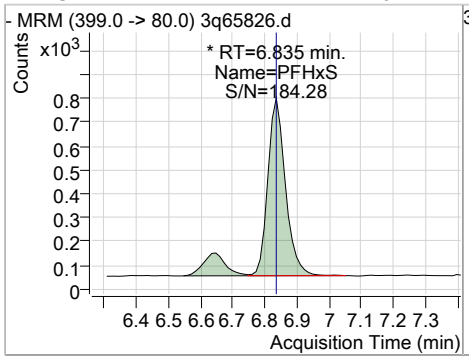
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.60	6.83	0.01	26404				

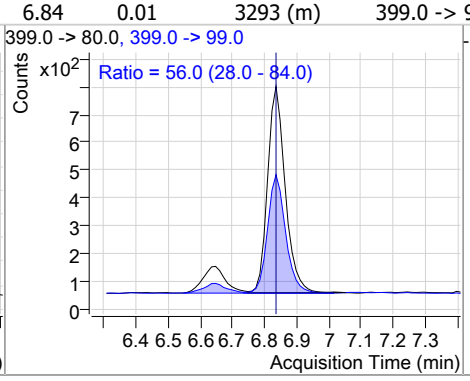


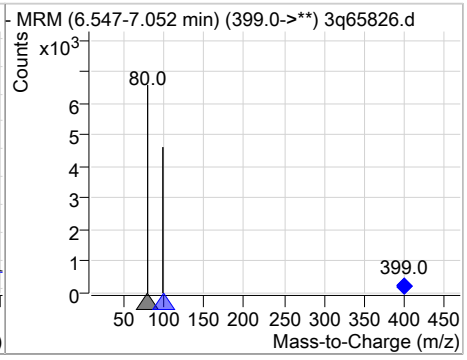




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.01	6.84	0.01	3293 (m)	399.0 -> 99.0	56.0	28.0	84.0

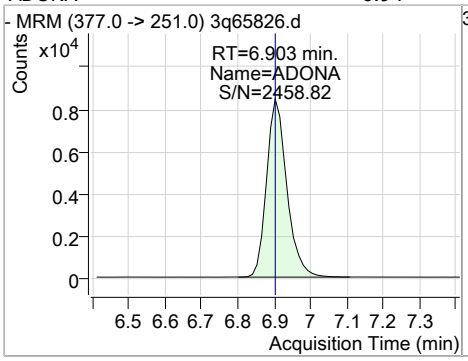


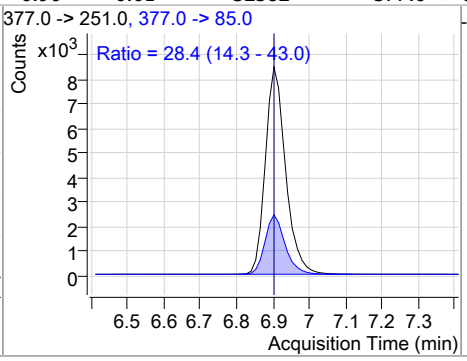


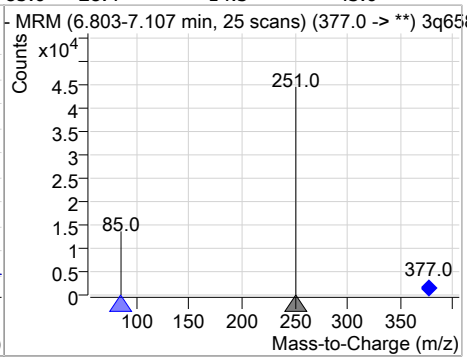


Perfluorinated Compounds by LC/MS/MS

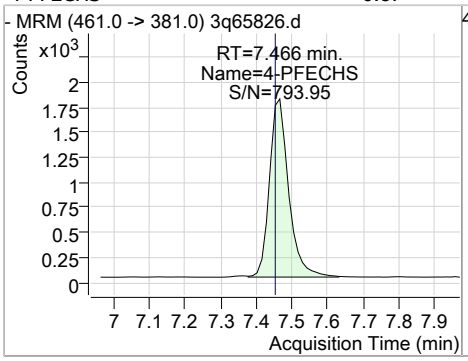
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.94	6.90	0.01	32582	377.0 -> 85.0	28.4	14.3	43.0

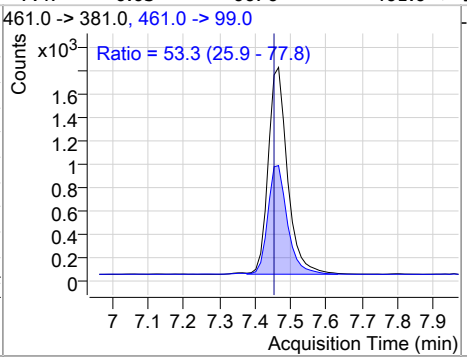


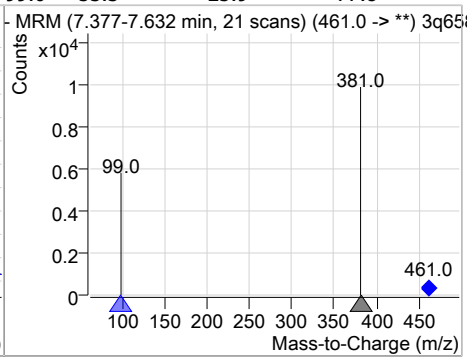




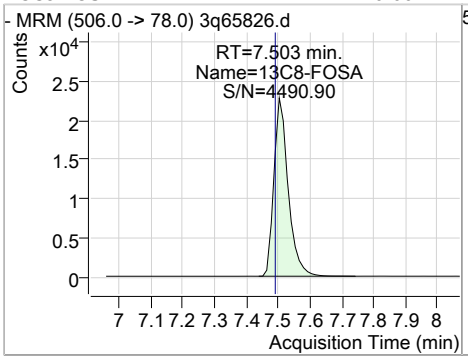
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.87	7.47	0.03	6676	461.0 -> 99.0	53.3	25.9	77.8

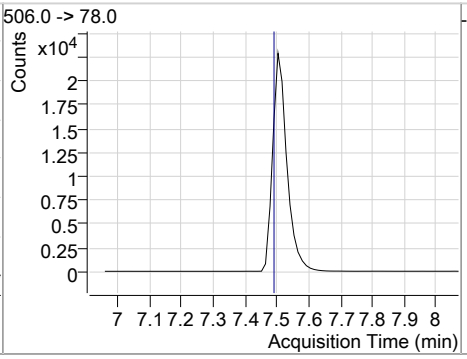


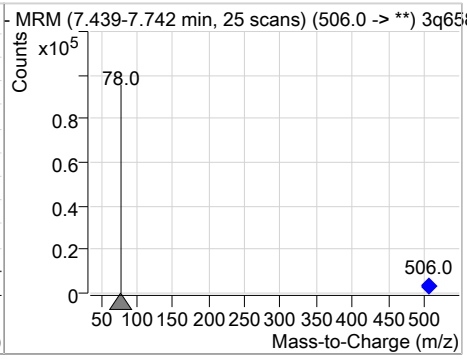




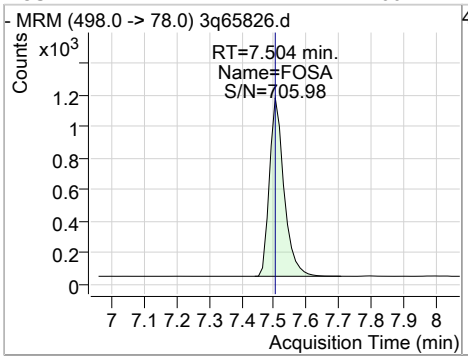
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.00	7.50	0.01	71267				

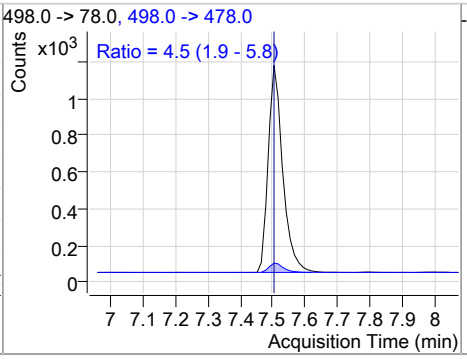


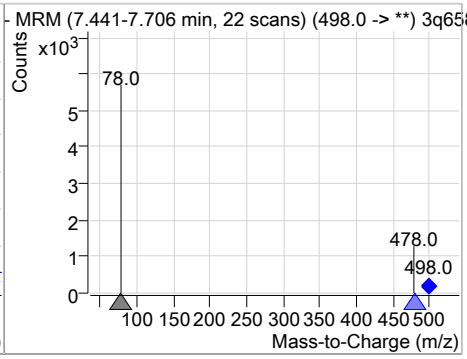




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.00	7.50	0.01	3503	498.0 -> 478.0	4.5	1.9	5.8

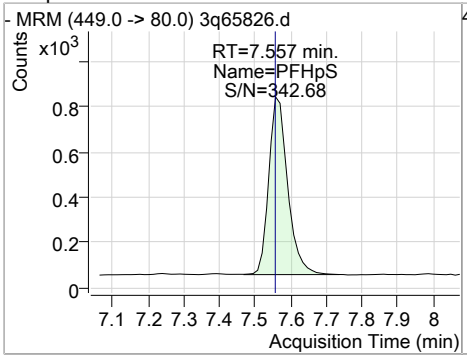


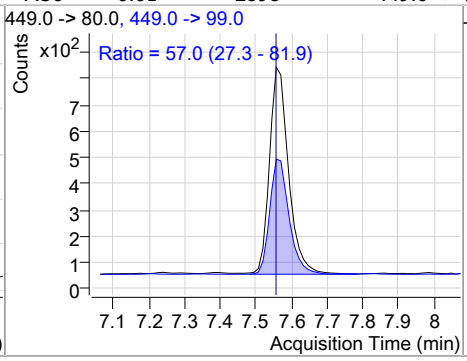


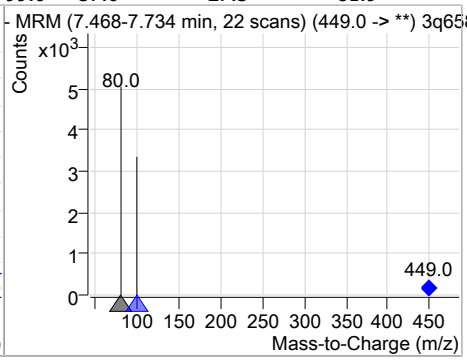


Perfluorinated Compounds by LC/MS/MS

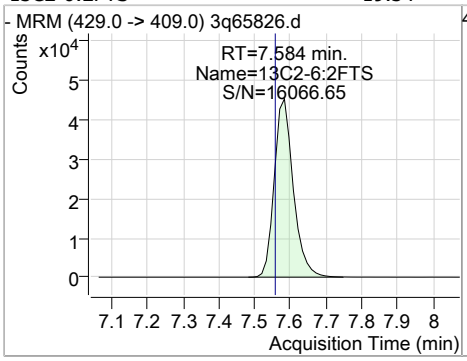
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.07	7.56	0.01	2898	449.0 -> 99.0	57.0	27.3	81.9

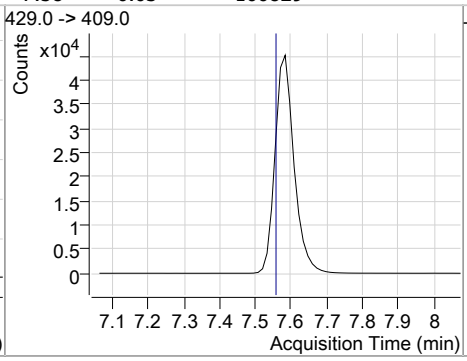


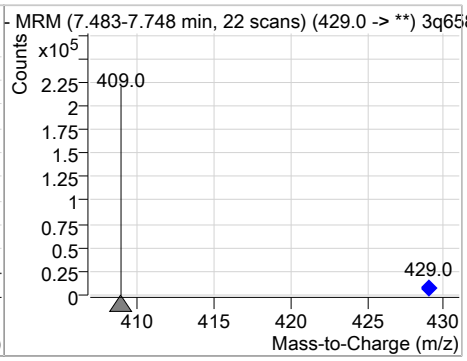




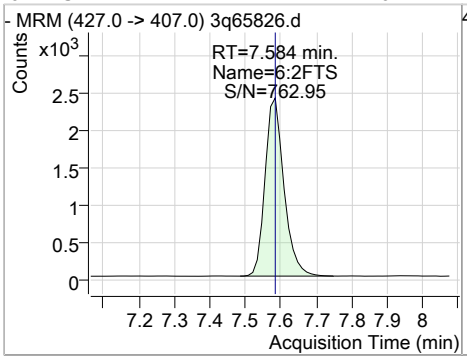
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.34	7.58	0.03	166829				

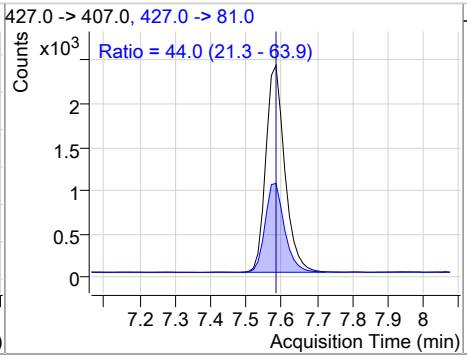


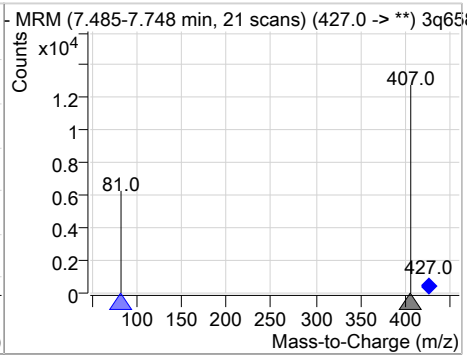




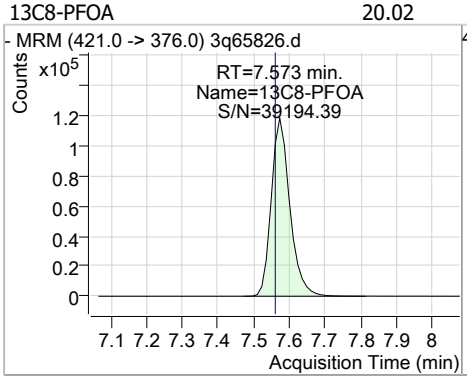
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.02	7.58	0.03	8842	427.0 -> 81.0	44.0	21.3	63.9

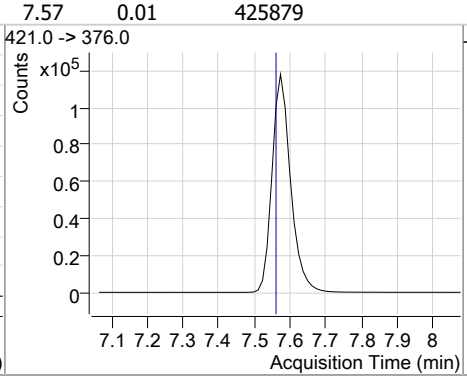


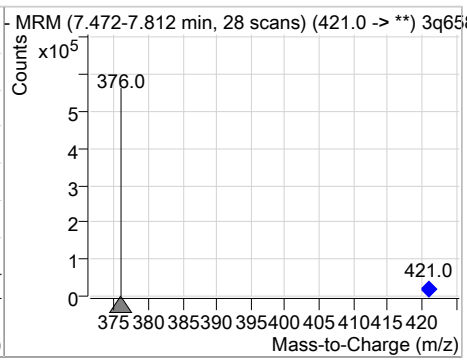




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.02	7.57	0.01	425879				

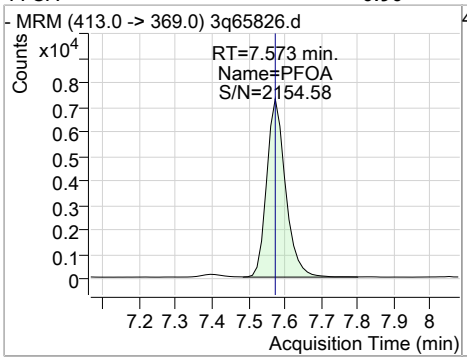


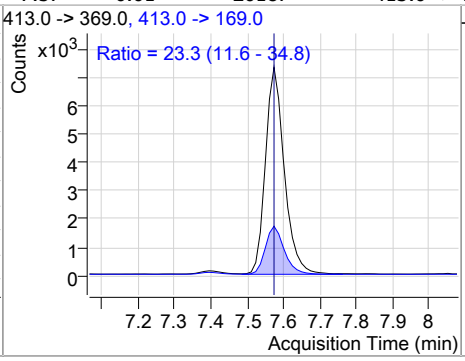


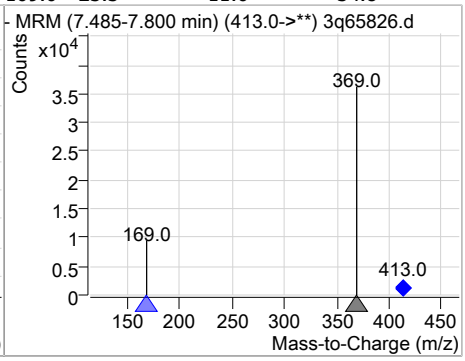


Perfluorinated Compounds by LC/MS/MS

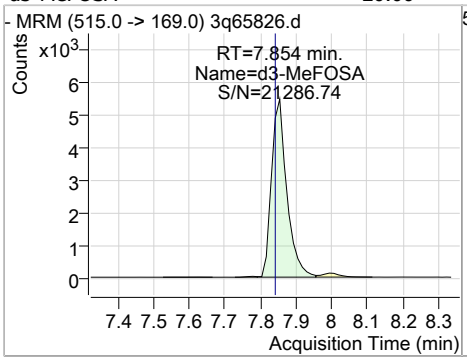
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.96	7.57	0.01	26187	413.0 -> 169.0	23.3	11.6	34.8

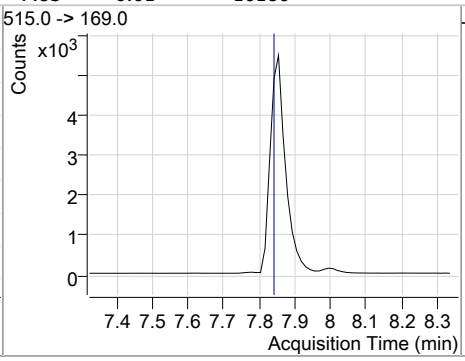


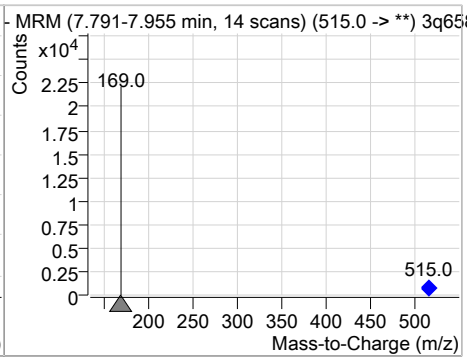




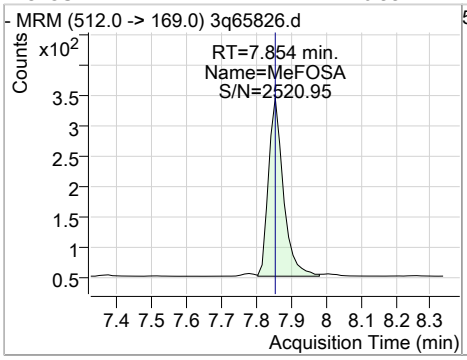
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.06	7.85	0.01	16186				

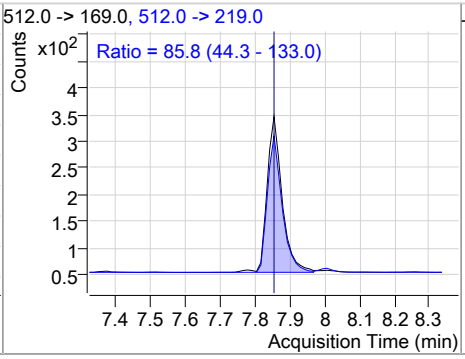


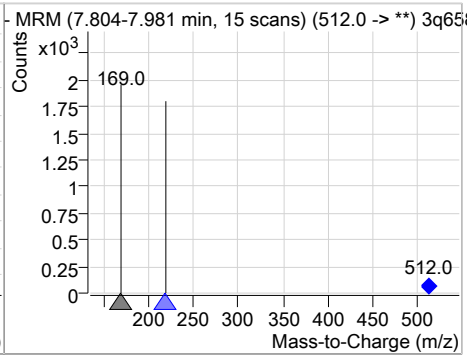




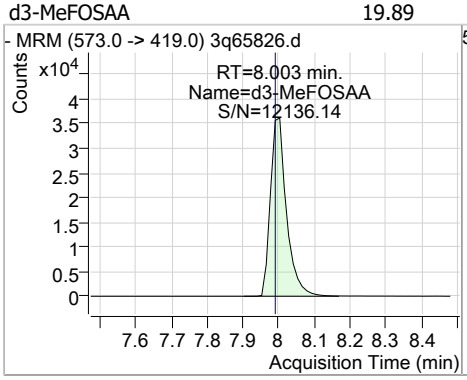
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.99	7.85	0.01	868	512.0 -> 219.0	85.8	44.3	133.0

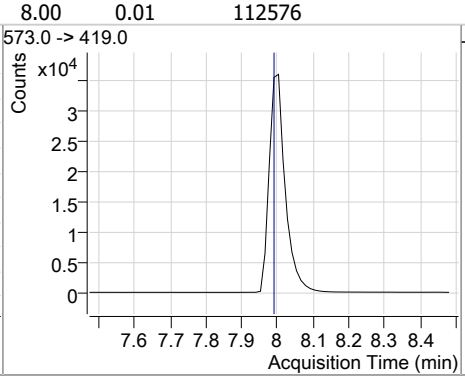


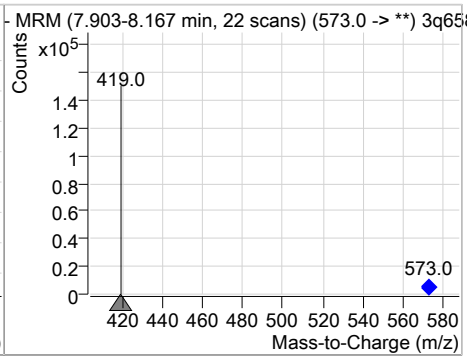




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.89	8.00	0.01	112576				

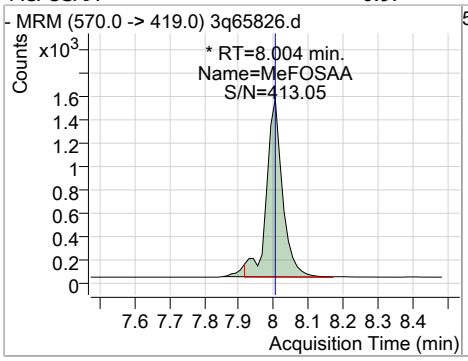


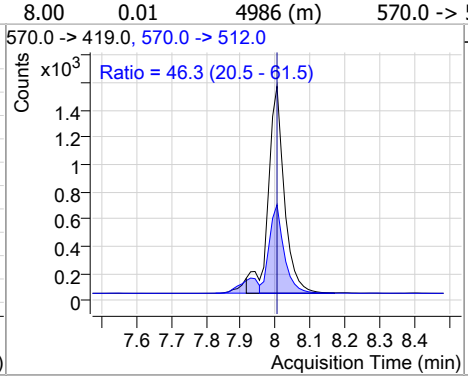


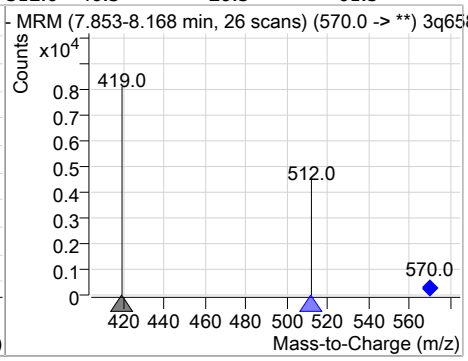


Perfluorinated Compounds by LC/MS/MS

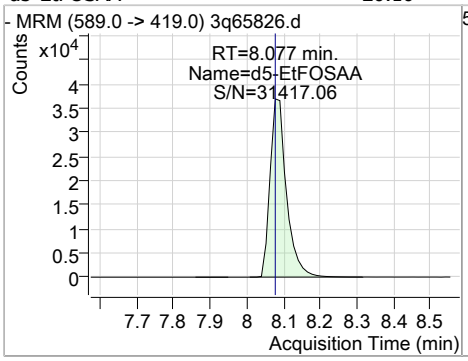
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.97	8.00	0.01	4986 (m)	570.0 -> 512.0	46.3	20.5	61.5

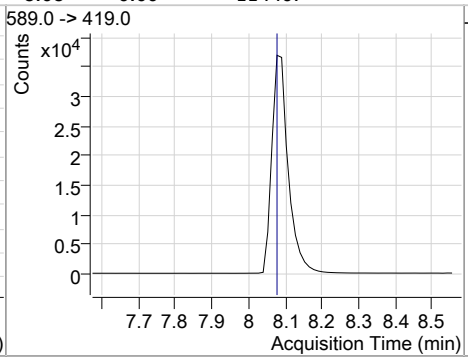


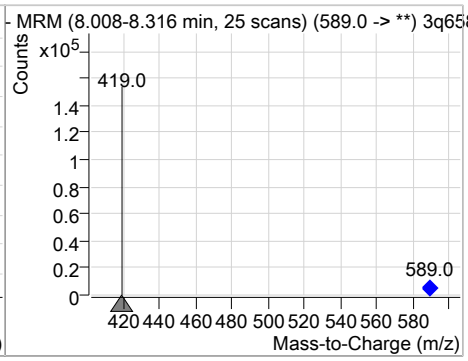




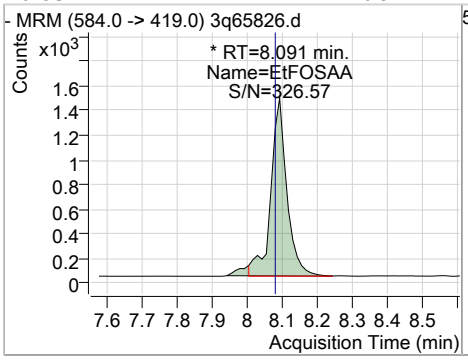
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.10	8.08	0.00	114467				

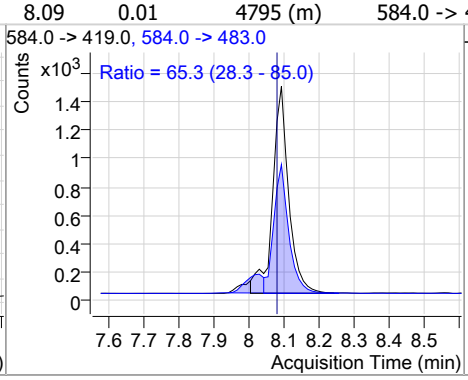


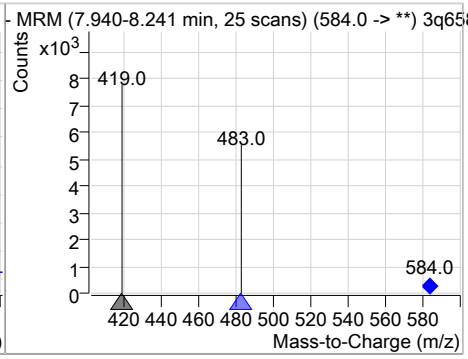




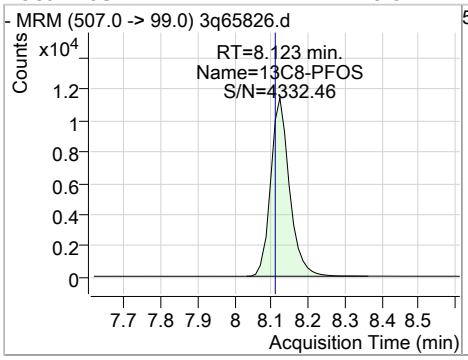
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.97	8.09	0.01	4795 (m)	584.0 -> 483.0	65.3	28.3	85.0

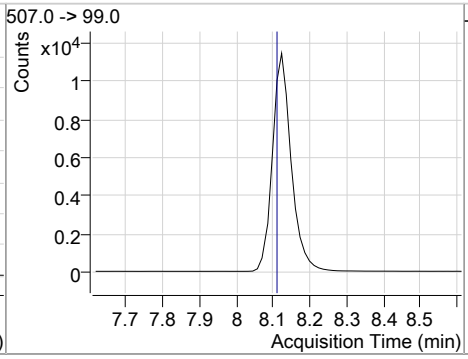


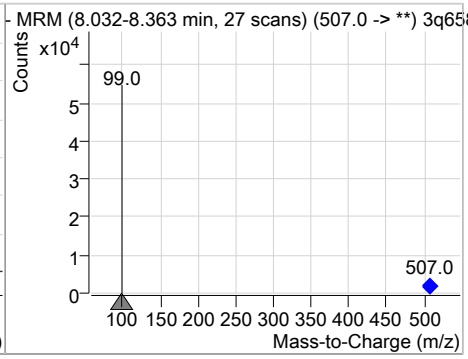




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.57	8.12	0.01	40494				

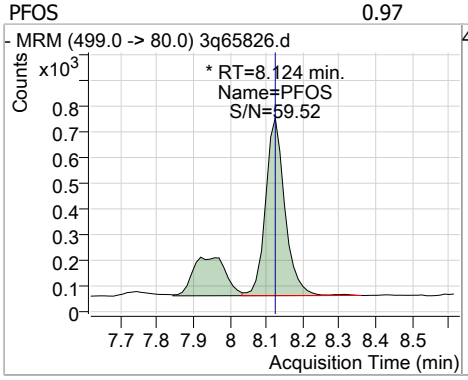


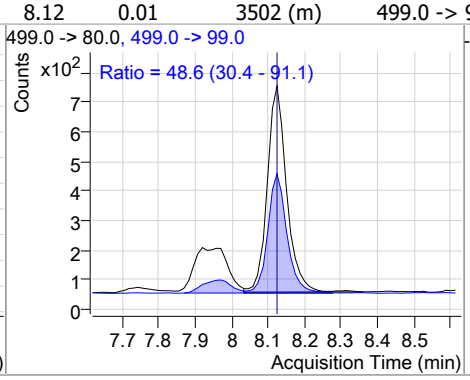


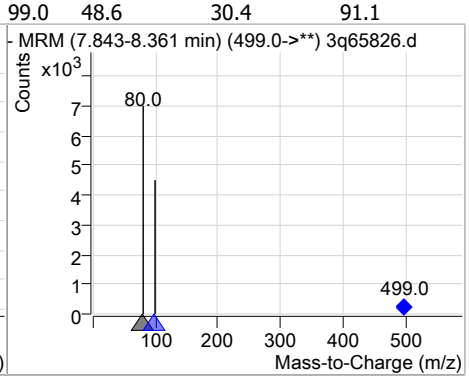


Perfluorinated Compounds by LC/MS/MS

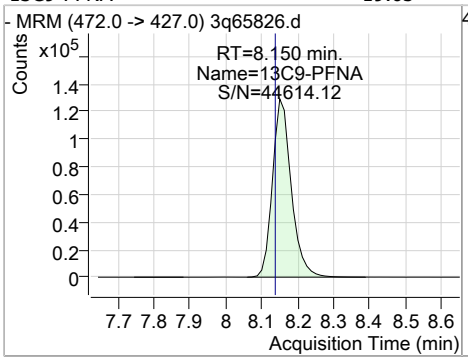
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.97	8.12	0.01	3502 (m)	499.0 -> 99.0	48.6	30.4	91.1

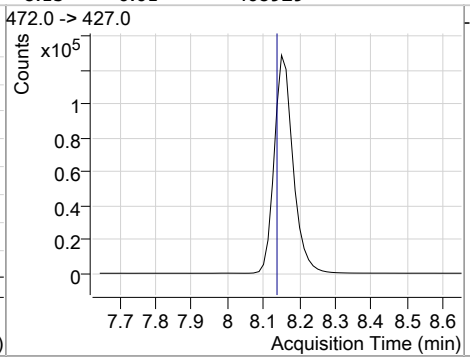


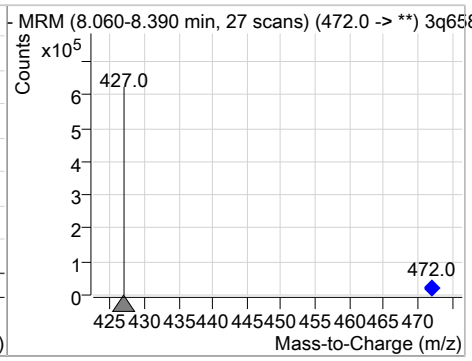




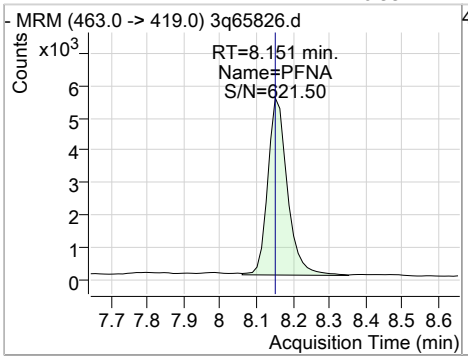
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.65	8.15	0.01	468929				

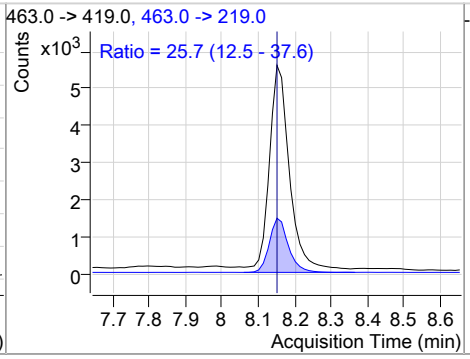


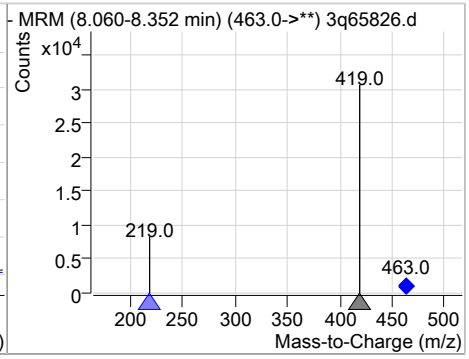




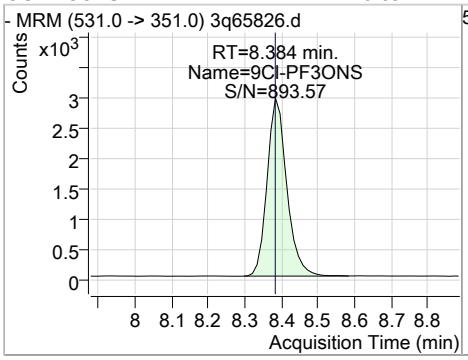
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.99	8.15	0.01	20529	463.0 -> 219.0	25.7	12.5	37.6

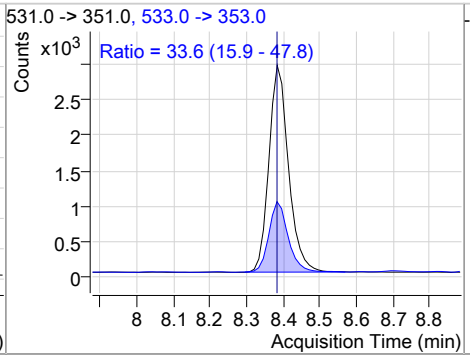


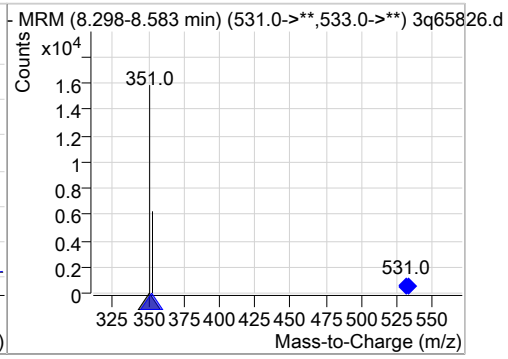




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.89	8.38	0.01	10930	533.0 -> 353.0	33.6	15.9	47.8

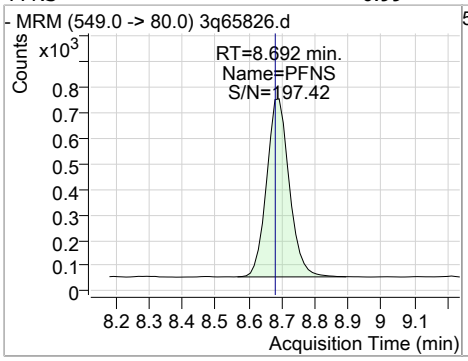


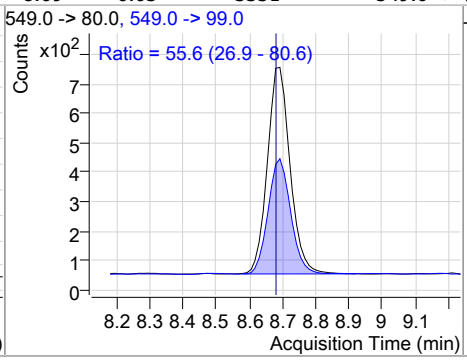


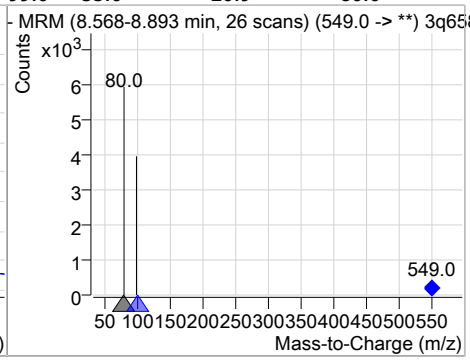


Perfluorinated Compounds by LC/MS/MS

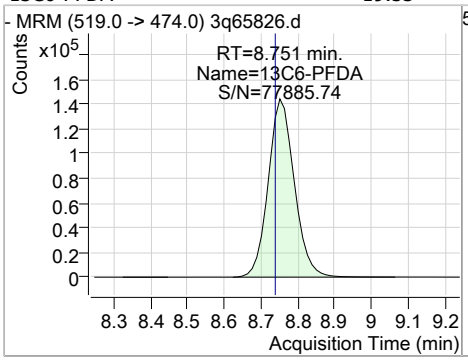
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.99	8.69	0.03	3331	549.0 -> 99.0	55.6	26.9	80.6

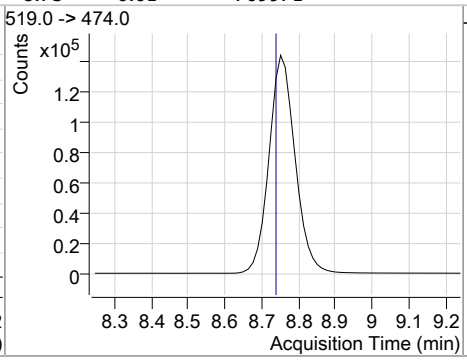


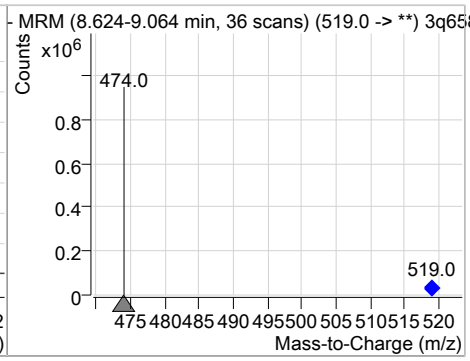




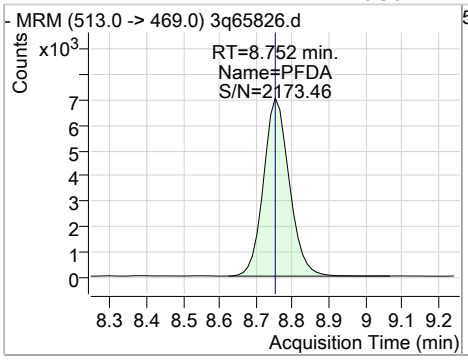
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.53	8.75	0.01	709971				

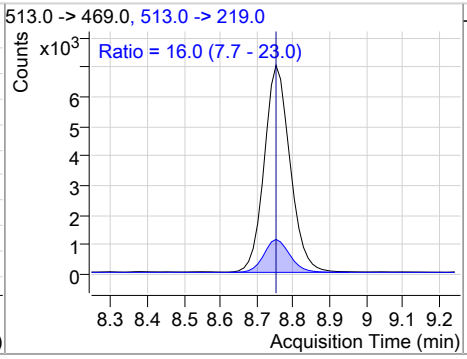


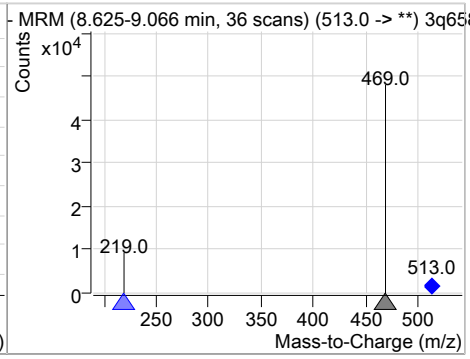




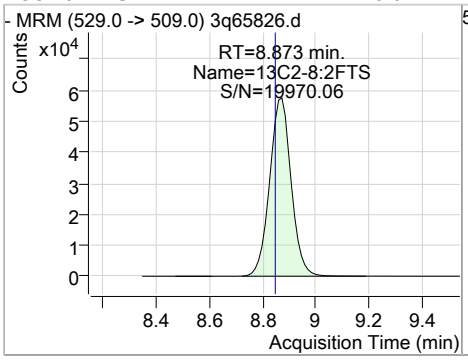
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.96	8.75	0.01	34416	513.0 -> 219.0	16.0	7.7	23.0

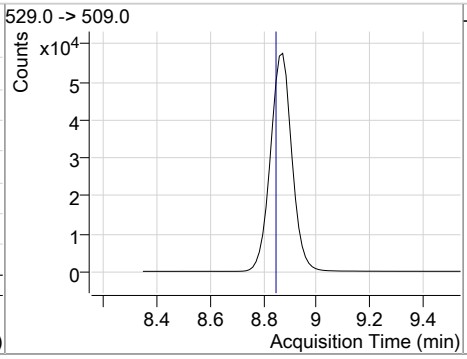


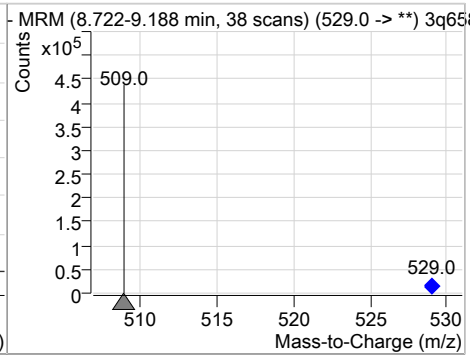




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.82	8.87	0.03	322215				

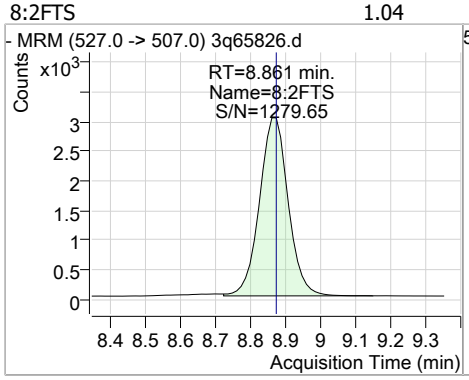


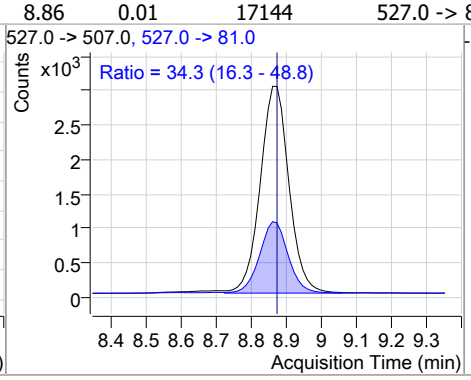


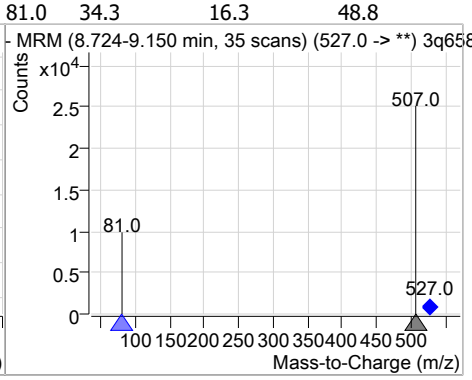


Perfluorinated Compounds by LC/MS/MS

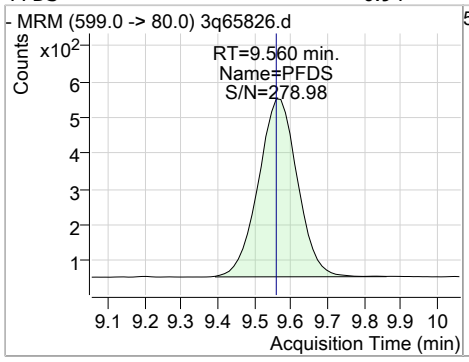
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.86	0.01	17144	527.0 -> 81.0	34.3	16.3	48.8

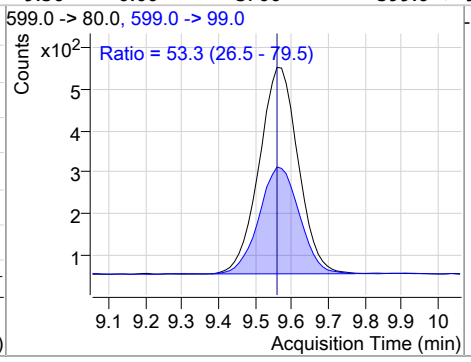


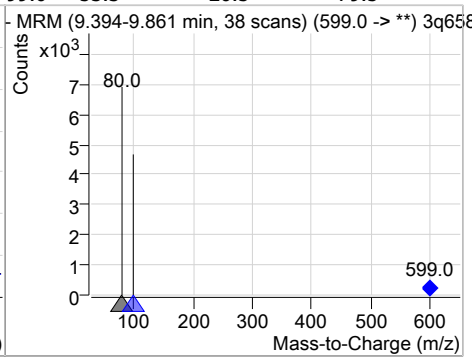




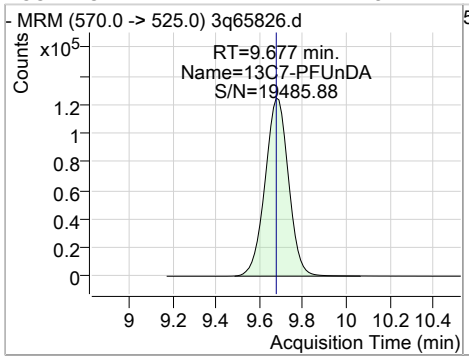
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.94	9.56	0.00	3700	599.0 -> 99.0	53.3	26.5	79.5

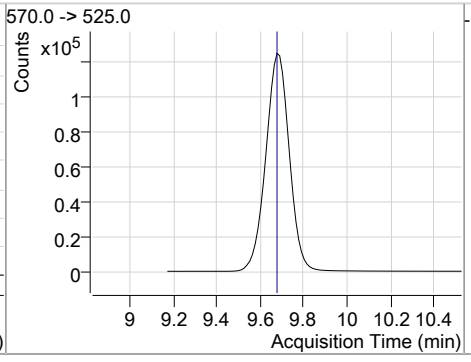


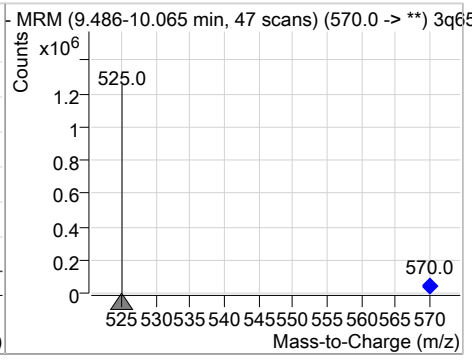




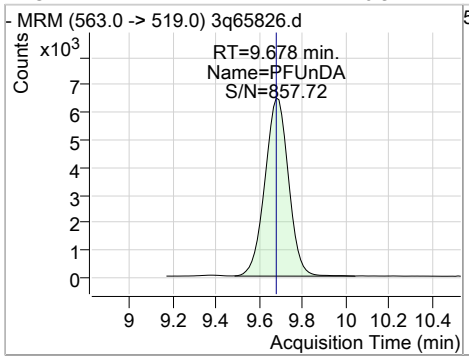
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.71	9.68	0.00	938789				

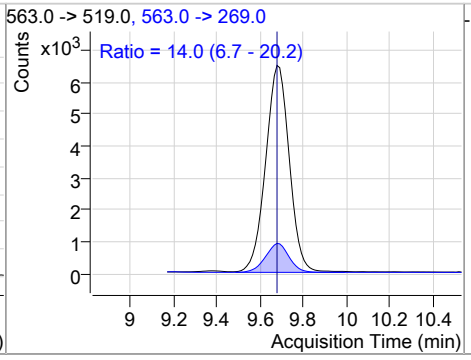


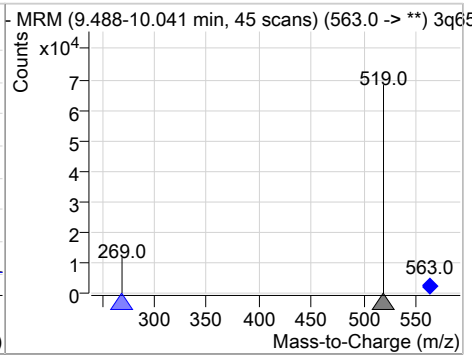




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	9.68	0.00	48941	563.0 -> 269.0	14.0	6.7	20.2

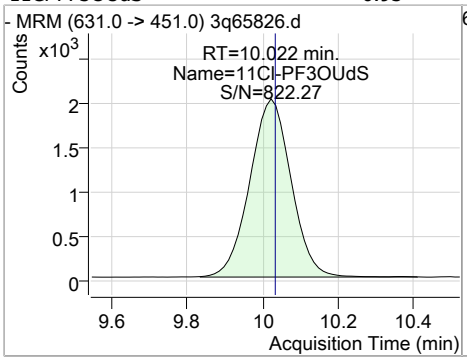


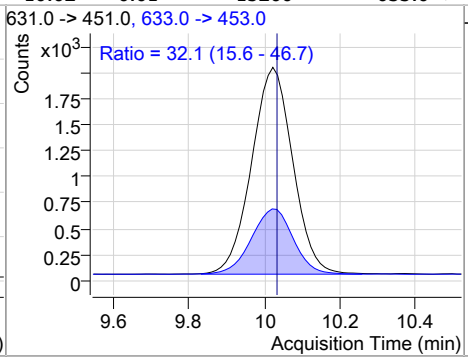


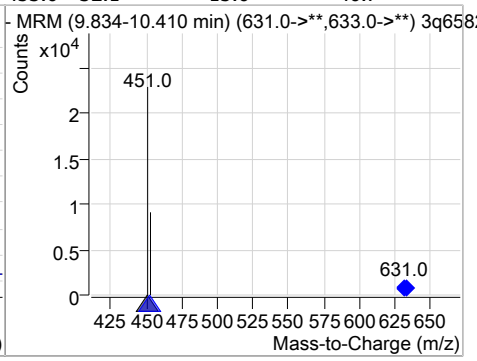


Perfluorinated Compounds by LC/MS/MS

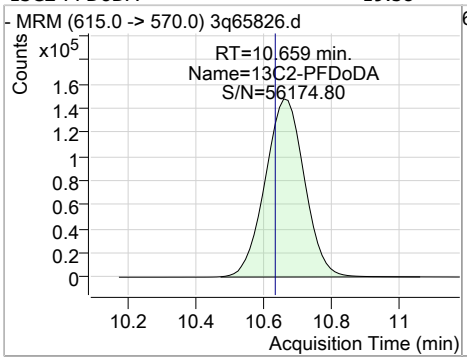
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.93	10.02	0.01	15266	633.0 -> 453.0	32.1	15.6	46.7

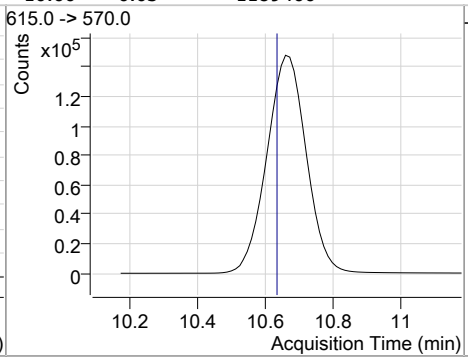


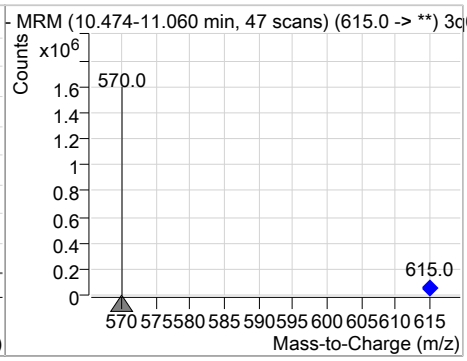




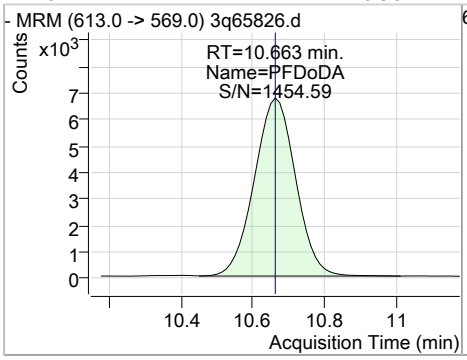
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.58	10.66	0.03	1189466				

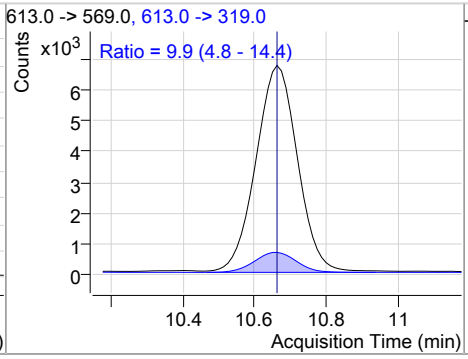


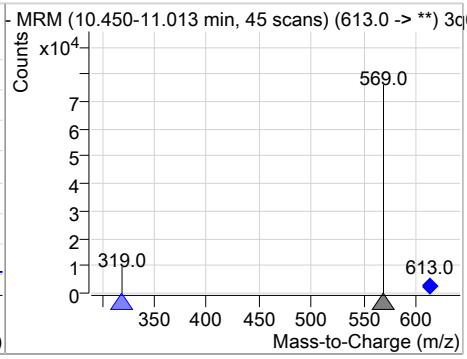




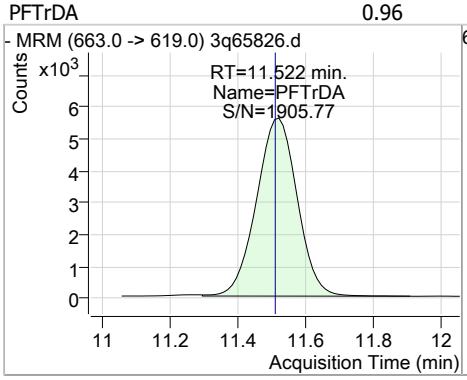
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.96	10.66	0.03	54050	613.0 -> 319.0	9.9	4.8	14.4

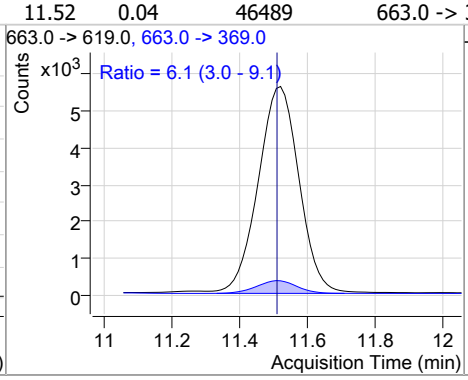


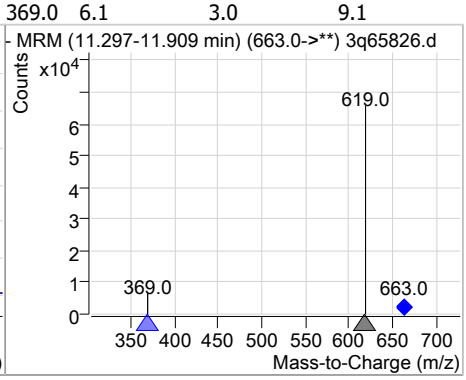




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.96	11.52	0.04	46489	663.0 -> 369.0	6.1	3.0	9.1

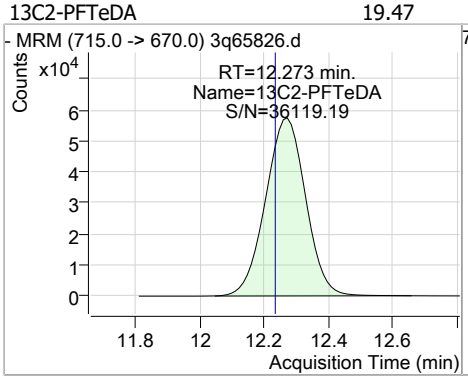


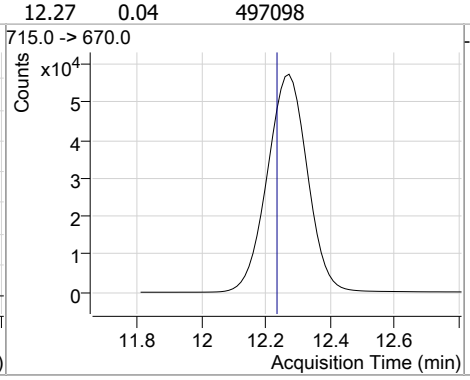


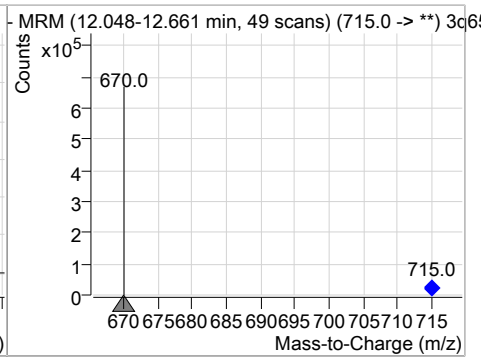


Perfluorinated Compounds by LC/MS/MS

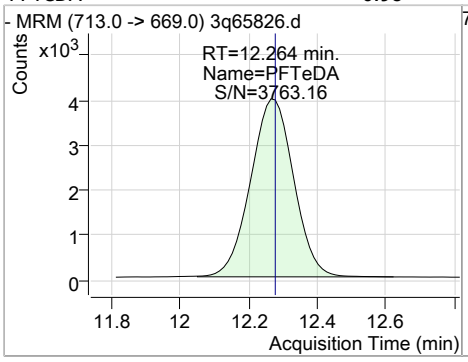
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.47	12.27	0.04	497098				

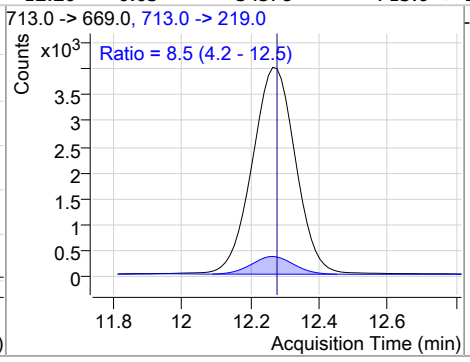


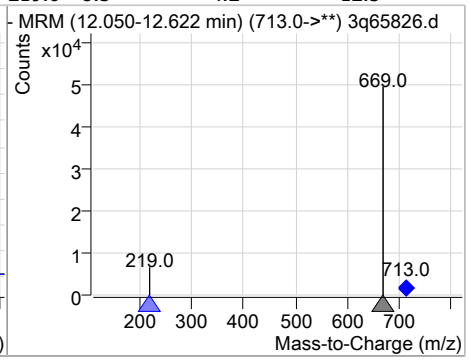




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.98	12.26	0.03	34578	713.0 -> 219.0	8.5	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65826.D
Injection Time: 09/15/22 18:28

Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65827.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:48:22 PM
Sample Name : ic900-2
Vial : P1-A4
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

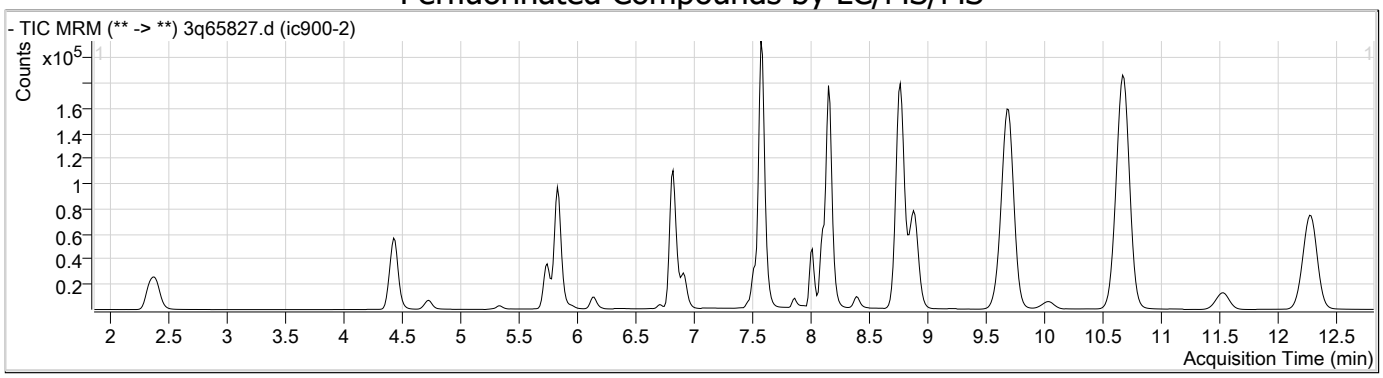
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	184727	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	269978	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	361665	20.00	µg/L	0.013
M4-PFHpA	6.818	367.0 -> 322.0	359204	20.00	µg/L	0.025
M8-PFOA	7.573	421.0 -> 376.0	487959	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	542344	20.00	µg/L	0.013
M6-PFDA	8.764	519.0 -> 474.0	820080	20.00	µg/L	0.025
M7-PFUnDA	9.677	570.0 -> 525.0	1076219	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	1363178	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	569132	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	82012	20.00	µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	24704	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	30518	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	46391	20.00	µg/L	0.013
M2-4:2FTS	5.733	329.0 -> 309.0	128997	20.00	µg/L	0.025
M2-6:2FTS	7.584	429.0 -> 409.0	190087	20.00	µg/L	0.026
M2-8:2FTS	8.873	529.0 -> 509.0	367655	20.00	µg/L	0.025
M3-MeFOSAA	8.003	573.0 -> 419.0	127102	20.00	µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	29073	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	18331	20.00	µg/L	0.013
M5-EtFOSAA	8.090	589.0 -> 419.0	130857	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.733	329.0 -> 309.0	128997	21.02	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C2-6:2FTS	7.584	429.0 -> 409.0	190087	22.03	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C2-8:2FTS	8.873	529.0 -> 509.0	367655	21.47	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1363178	22.44	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C2-PFTeDA	12.260	715.0 -> 670.0	569132	22.29	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C3-PFBS	4.717	302.0 -> 99.0	24704	22.32	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
13C3-PFHxS	6.834	402.0 -> 99.0	30518	22.66	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.3%		
13C4-PFBA	2.365	217.0 -> 172.0	184727	22.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C4-PFHpA	6.818	367.0 -> 322.0	359204	22.77	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C5-PFHxA	5.826	318.0 -> 273.0	361665	22.55	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C5-PFPeA	4.424	268.0 -> 223.0	269978	22.32	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
13C6-PFDA	8.764	519.0 -> 474.0	820080	22.56	µg/L	0.025

Perfluorinated Compounds by LC/MS/MS

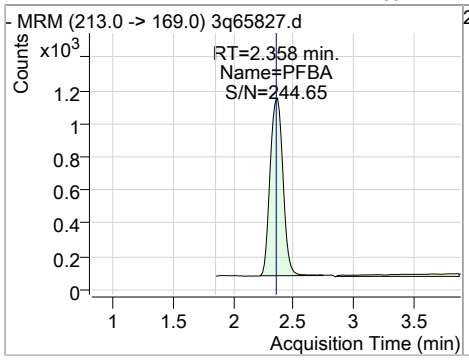
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C7-PFUnDA	9.677	570.0 -> 525.0	1076219	22.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C8-FOSA	7.503	506.0 -> 78.0	82012	23.02 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.1%		
13C8-PFOA	7.573	421.0 -> 376.0	487959	22.94 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.7%		
13C8-PFOS	8.123	507.0 -> 99.0	46391	22.42 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C9-PFNA	8.150	472.0 -> 427.0	542344	22.73 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.7%		
d3-MeFOSAA	8.003	573.0 -> 419.0	127102	22.45 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	28933	22.40 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
d3-MeFOSA	7.854	515.0 -> 169.0	18331	22.72 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.6%		
d5-EtFOSAA	8.090	589.0 -> 419.0	130876	22.98 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%		
Target Compounds						**QValue**
4:2FTS	5.735	327.0 -> 307.0	14632	2.03 µg/L		97
6:2FTS	7.584	427.0 -> 407.0	20593	2.09 µg/L		99
8:2FTS	8.874	527.0 -> 507.0	38807	2.06 µg/L		98
EtFOSAA	8.091	584.0 -> 419.0	10442	1.86 µg/L	m	89
FOSA	7.504	498.0 -> 78.0	7824	1.94 µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	11072	1.91 µg/L	m	96
PFBA	2.358	213.0 -> 169.0	7974	1.89 µg/L		100
PFBS	4.719	299.0 -> 80.0	6948	1.93 µg/L		99
PFDA	8.765	513.0 -> 469.0	77557	1.87 µg/L		99
PFDoDA	10.663	613.0 -> 569.0	121416	1.88 µg/L		100
PFDS	9.573	599.0 -> 80.0	8316	1.84 µg/L		100
PFHpA	6.819	363.0 -> 319.0	51274	1.88 µg/L		100
PFHpS	7.569	449.0 -> 80.0	6325	2.04 µg/L		99
PFHxA	5.827	313.0 -> 269.0	38345	1.89 µg/L		99
PFHxS	6.835	399.0 -> 80.0	7330	1.95 µg/L	m	99
PFNA	8.151	463.0 -> 419.0	44958	1.87 µg/L		99
PFNS	8.692	549.0 -> 80.0	7676	1.98 µg/L		98
PFOA	7.573	413.0 -> 369.0	59087	1.89 µg/L		99
PFOS	8.124	499.0 -> 80.0	8123	1.96 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	23656	1.90 µg/L		100
PFPeS	5.944	349.0 -> 80.0	5350	1.92 µg/L		100
PFTeDA	12.264	713.0 -> 669.0	77265	1.90 µg/L		100
PFTrDA	11.522	663.0 -> 619.0	104207	1.87 µg/L		100
PFUnDA	9.678	563.0 -> 519.0	110941	1.86 µg/L		100
11Cl-PF3OUdS	10.022	631.0 -> 451.0	34115	1.80 µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	25726	1.82 µg/L		99
ADONA	6.903	377.0 -> 251.0	74380	1.85 µg/L		100
HFPO-DA	6.134	329.0 -> 169.0	6809	1.89 µg/L		96
MeFOSA	7.854	512.0 -> 169.0	1960	1.97 µg/L		90
4-PFECHS	7.466	461.0 -> 381.0	14762	1.68 µg/L		100
FBSA	5.327	298.0 -> 78.0	11450	1.97 µg/L		100
FHxSA	6.700	398.0 -> 78.0	10963	1.87 µg/L		100

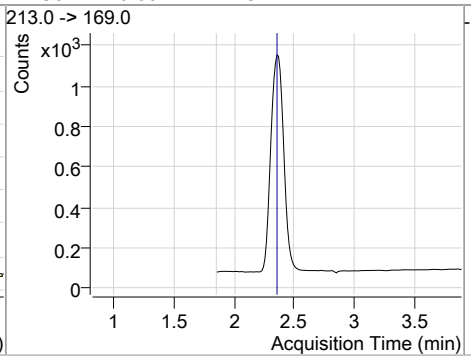
 # = Qualifier out of range, m = manually integrated, + = Area summed

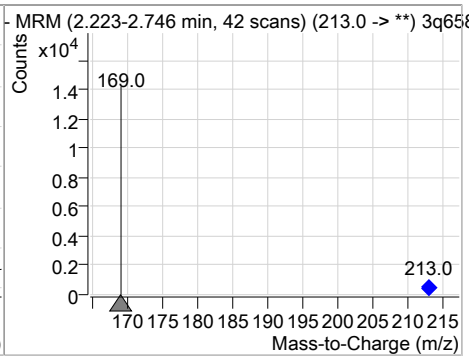
Perfluorinated Compounds by LC/MS/MS



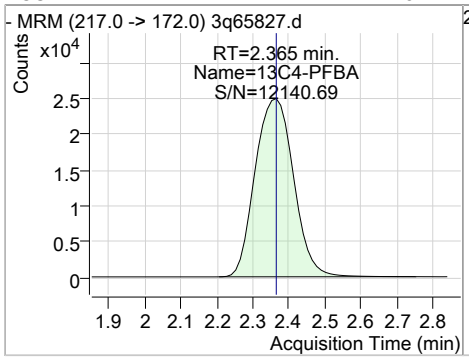
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.89	2.36	0.00	7974				

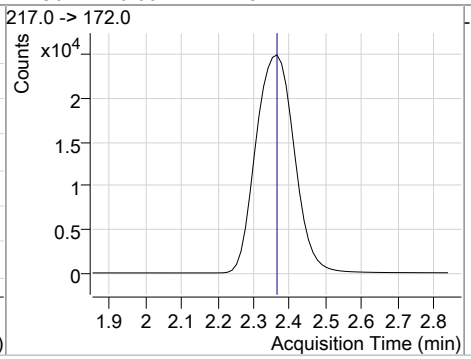


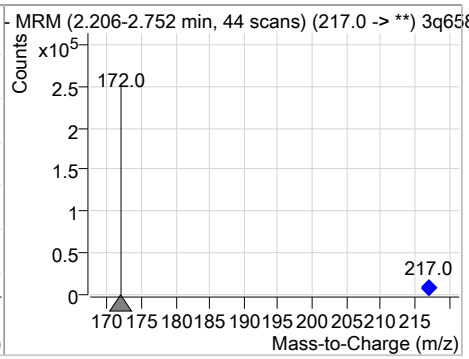




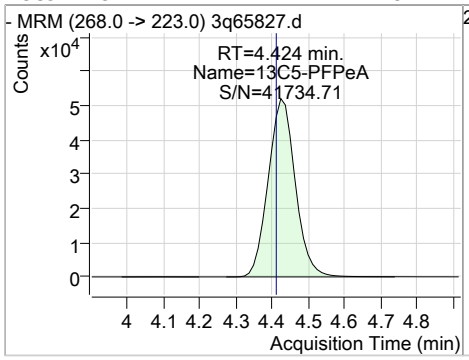
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.28	2.36	0.00	184727				

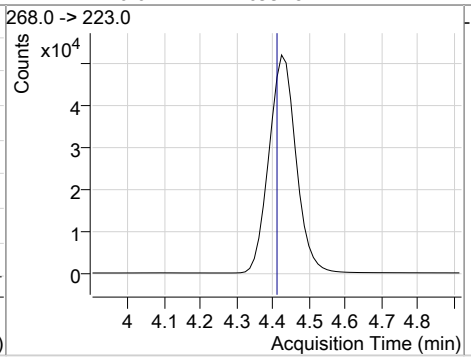


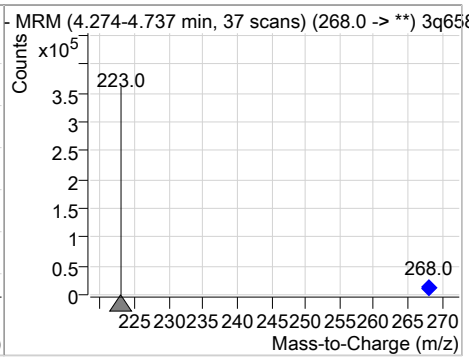




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.32	4.42	0.01	269978				

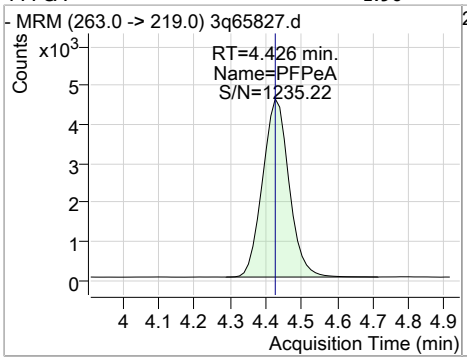


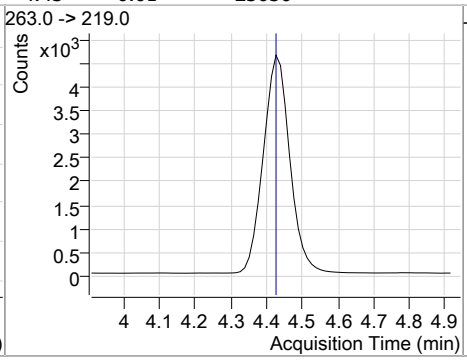


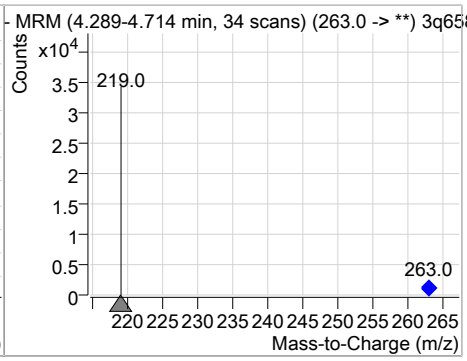


Perfluorinated Compounds by LC/MS/MS

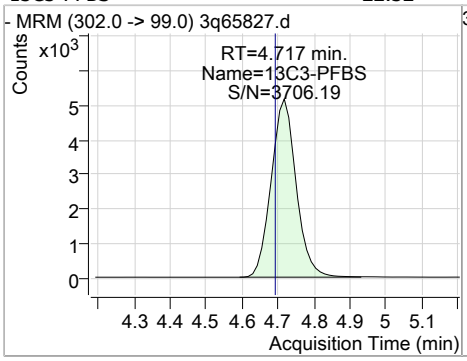
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.90	4.43	0.01	23656				

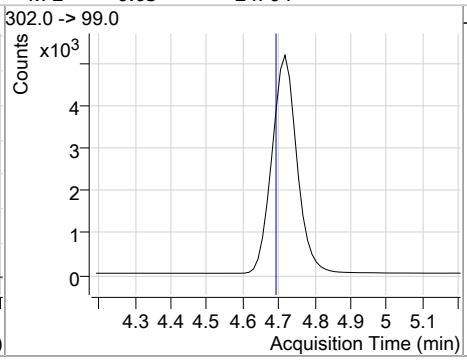


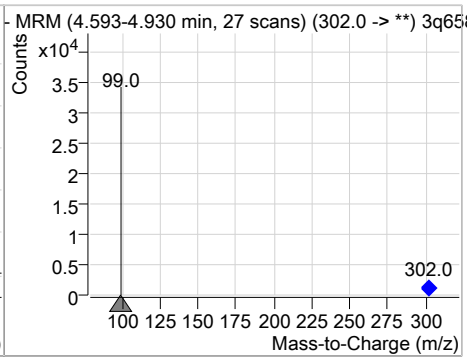




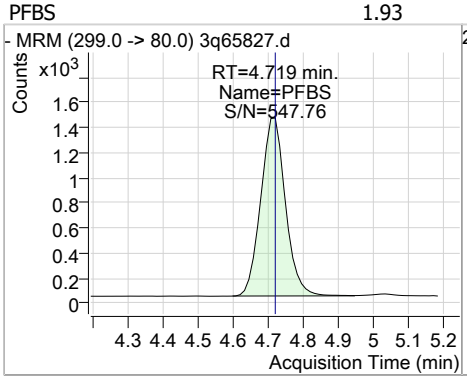
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.32	4.72	0.03	24704				

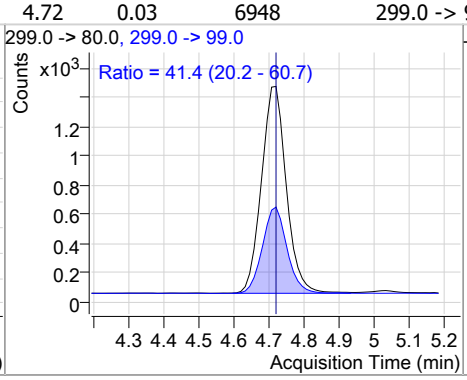


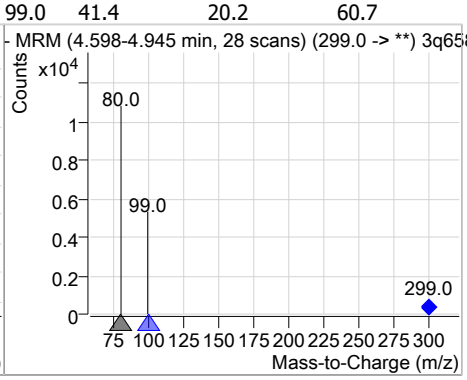




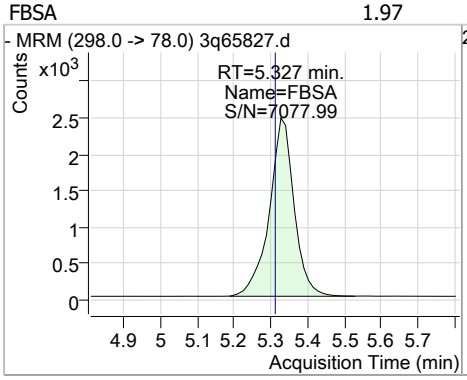
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.93	4.72	0.03	6948	299.0 -> 99.0	41.4	20.2	60.7

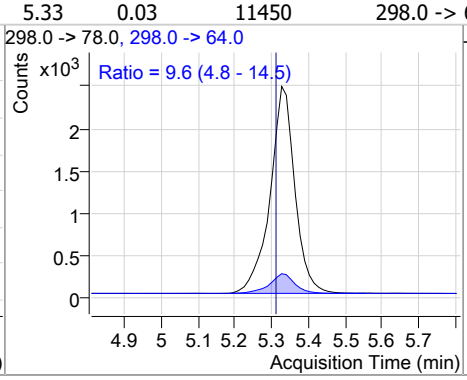


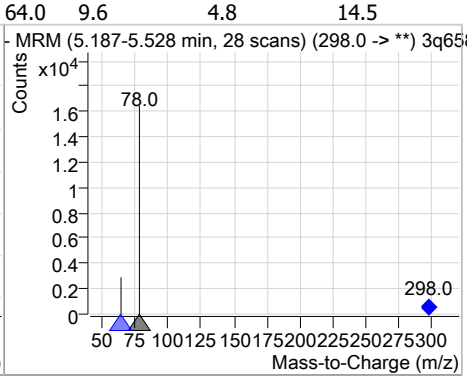




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.97	5.33	0.03	11450	298.0 -> 64.0	9.6	4.8	14.5

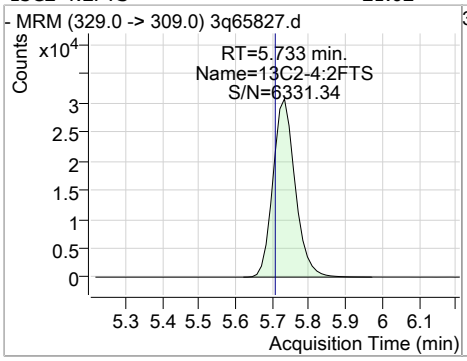


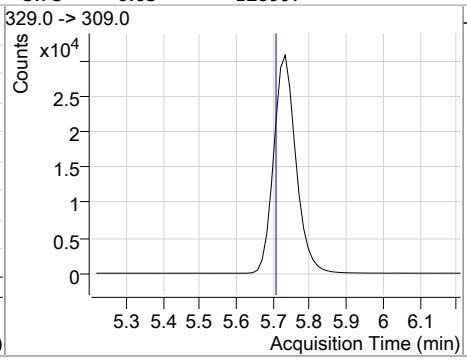


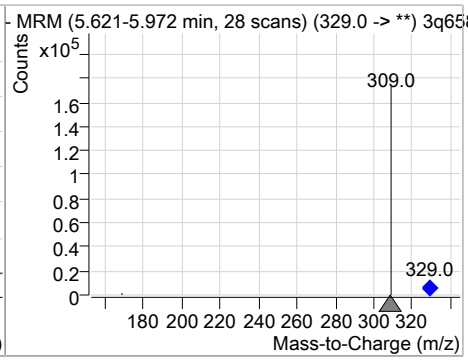


Perfluorinated Compounds by LC/MS/MS

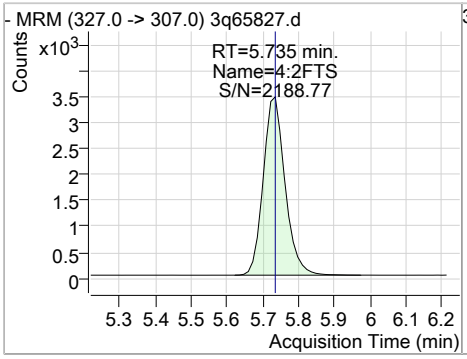
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.02	5.73	0.03	128997				

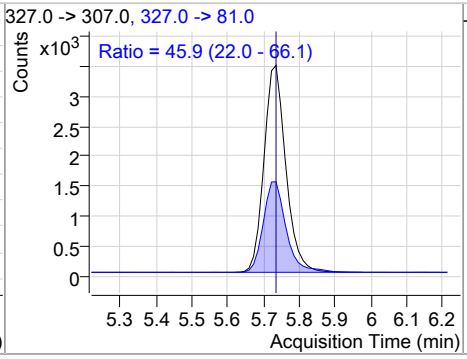


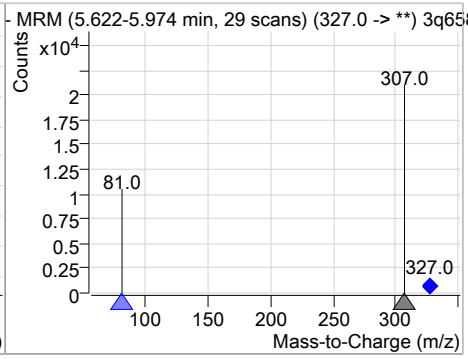




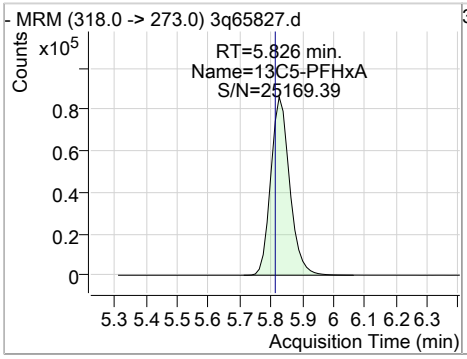
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.03	5.74	0.03	14632	327.0 -> 81.0	45.9	22.0	66.1

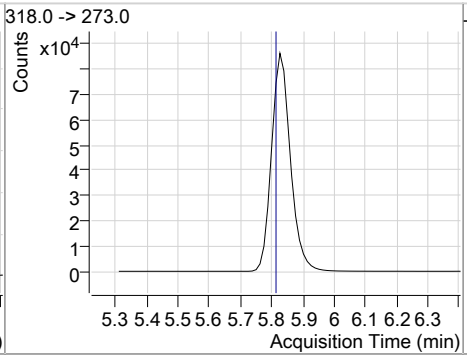


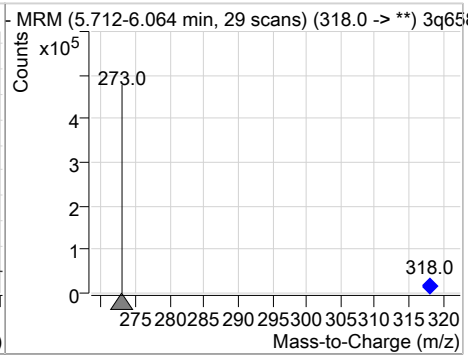




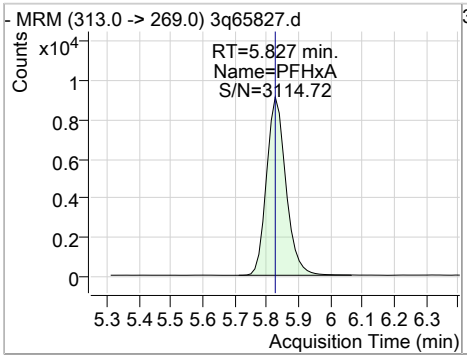
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.55	5.83	0.01	361665				

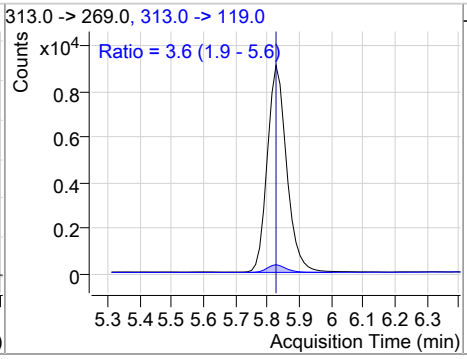


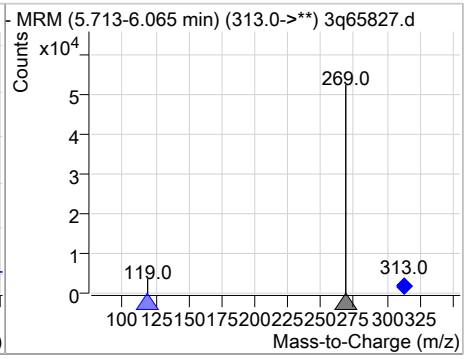




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.89	5.83	0.01	38345	313.0 -> 119.0	3.6	1.9	5.6

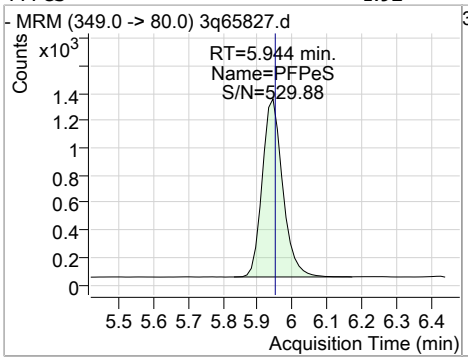


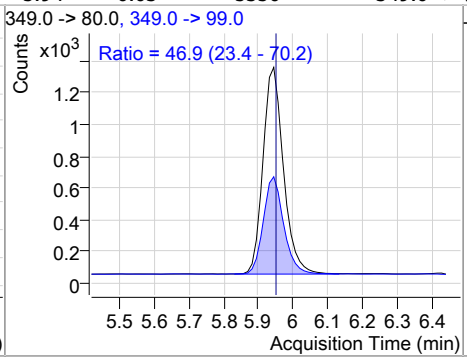


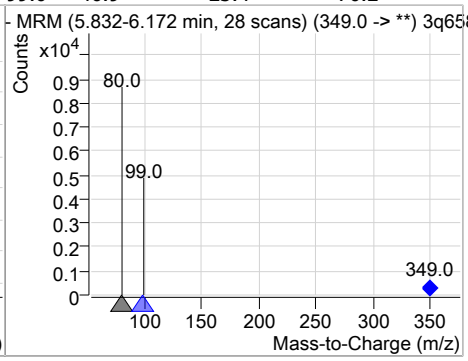


Perfluorinated Compounds by LC/MS/MS

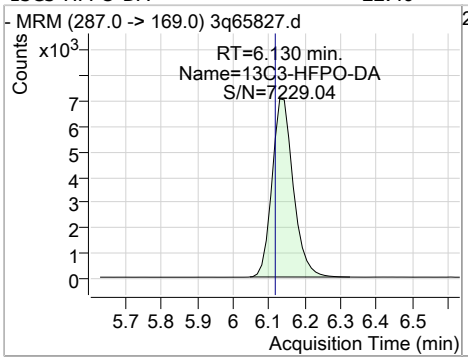
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.92	5.94	0.03	5350	349.0 -> 99.0	46.9	23.4	70.2

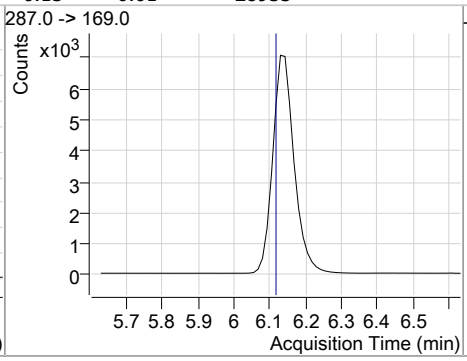


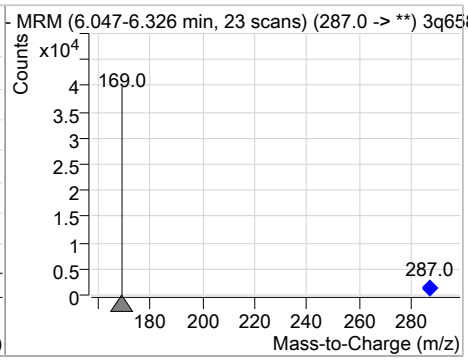




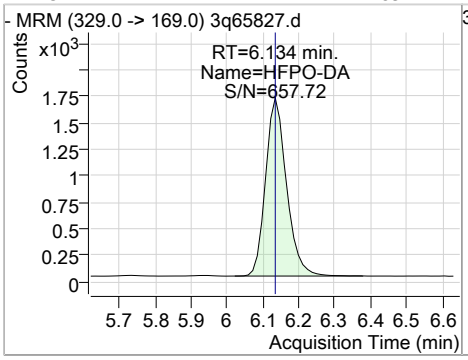
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	22.40	6.13	0.01	28933				

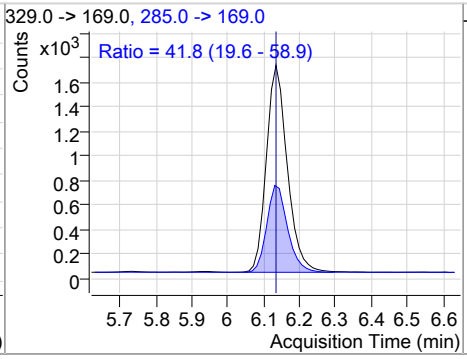


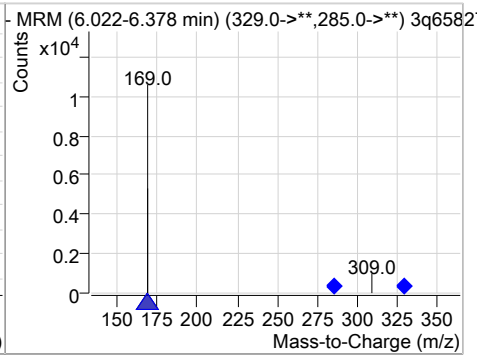




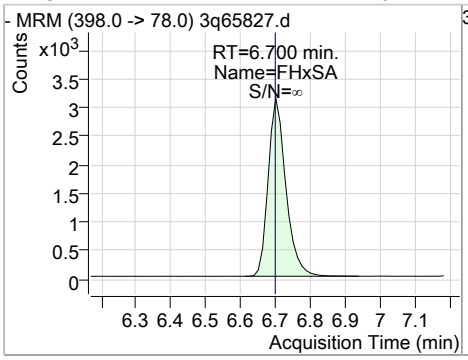
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.89	6.13	0.01	6809	285.0 -> 169.0	41.8	19.6	58.9

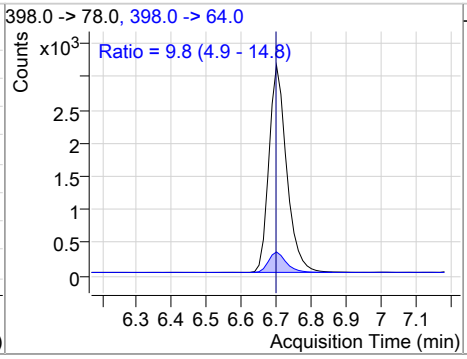


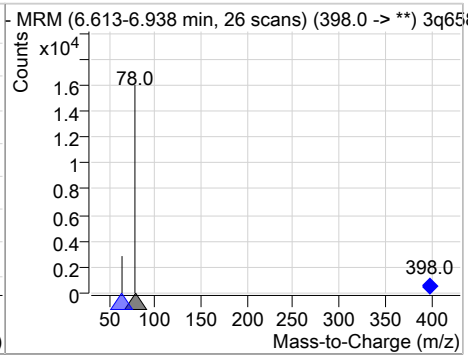




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.87	6.70	0.01	10963	398.0 -> 64.0	9.8	4.9	14.8

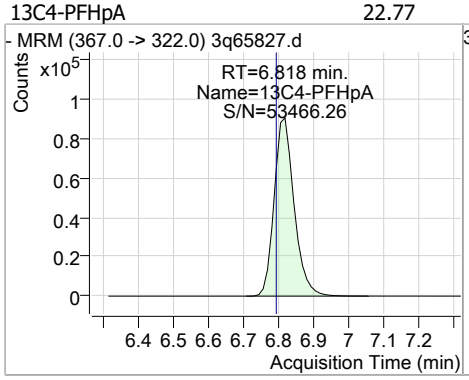


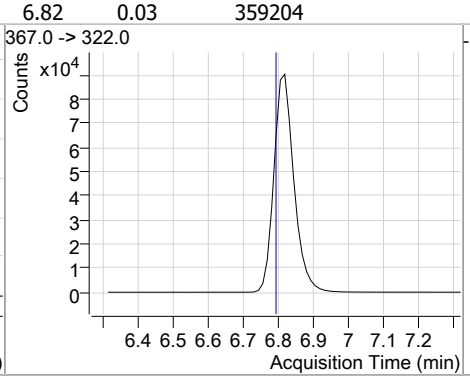


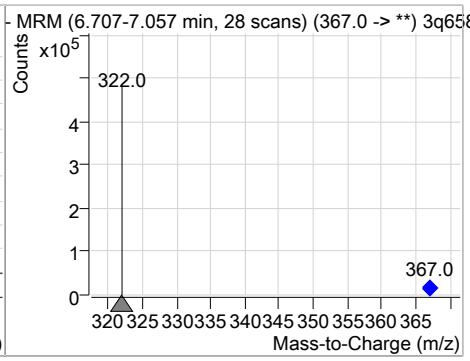


Perfluorinated Compounds by LC/MS/MS

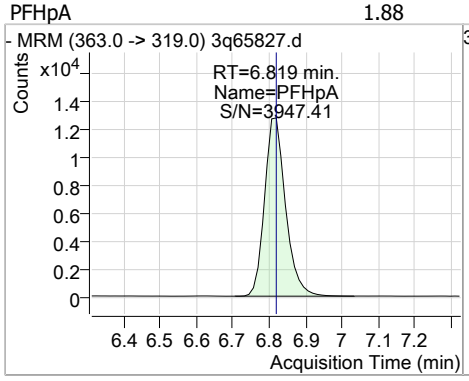
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.77	6.82	0.03	359204				

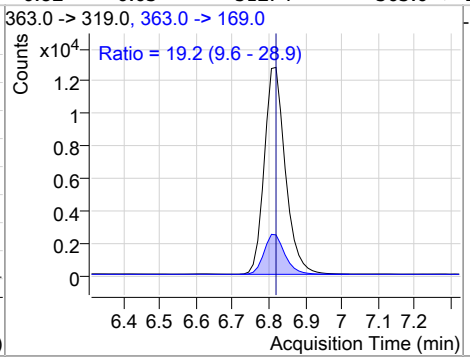


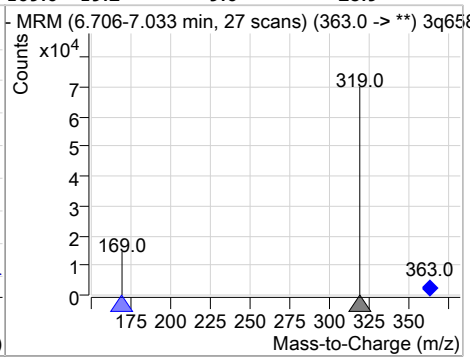




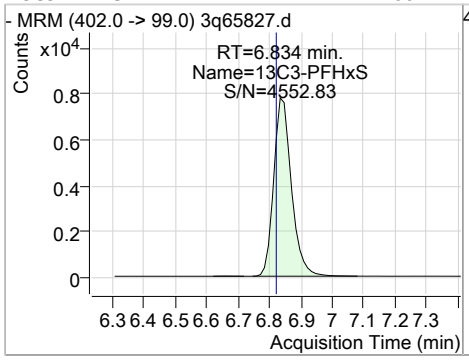
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.88	6.82	0.03	51274	363.0 -> 169.0	19.2	9.6	28.9

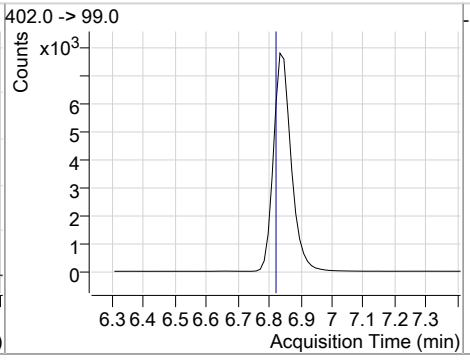


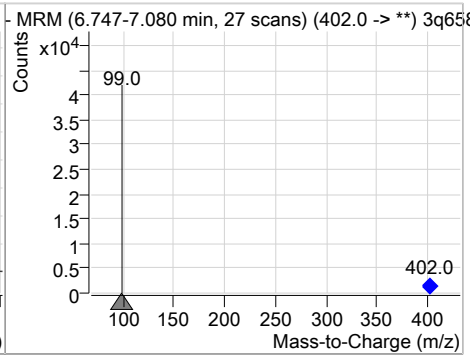




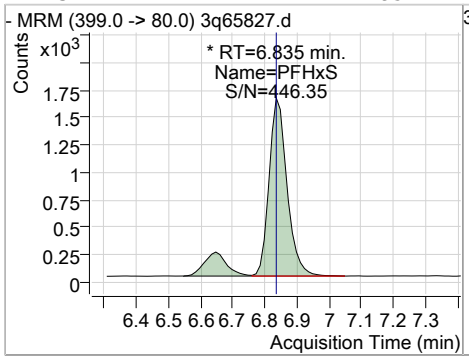
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.66	6.83	0.01	30518				

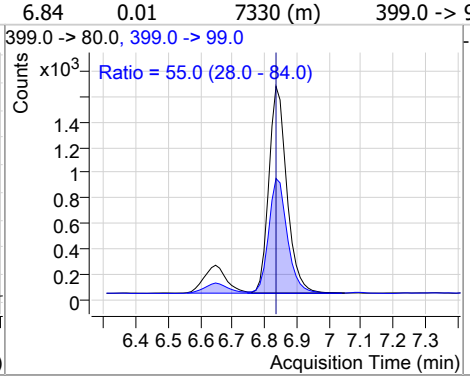


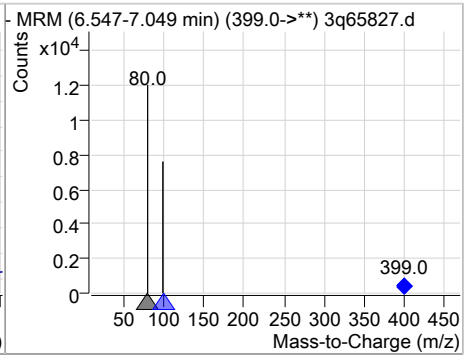




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.95	6.84	0.01	7330 (m)	399.0 -> 99.0	55.0	28.0	84.0

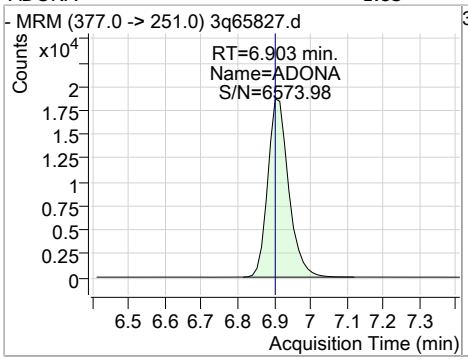


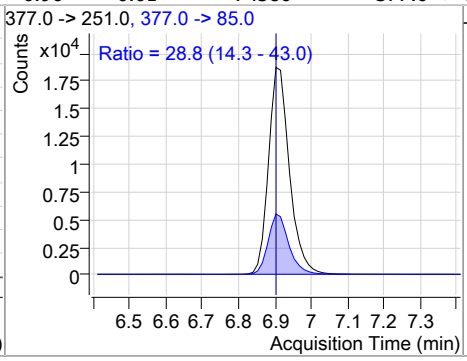


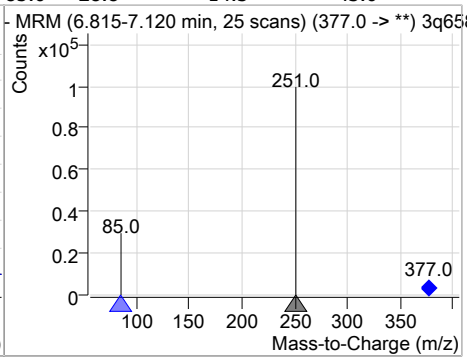


Perfluorinated Compounds by LC/MS/MS

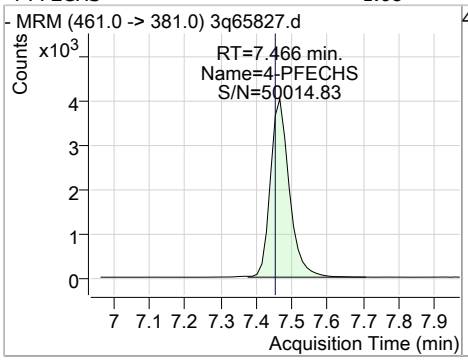
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.85	6.90	0.01	74380	377.0 -> 85.0	28.8	14.3	43.0

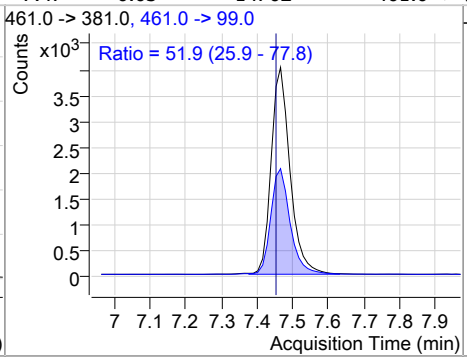


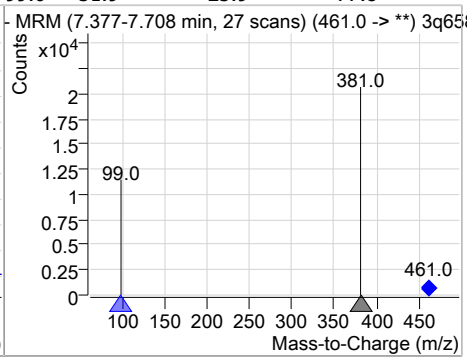




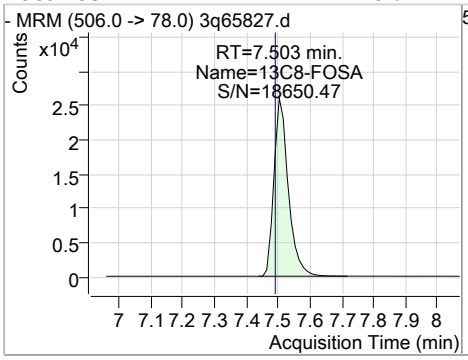
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.68	7.47	0.03	14762	461.0 -> 99.0	51.9	25.9	77.8

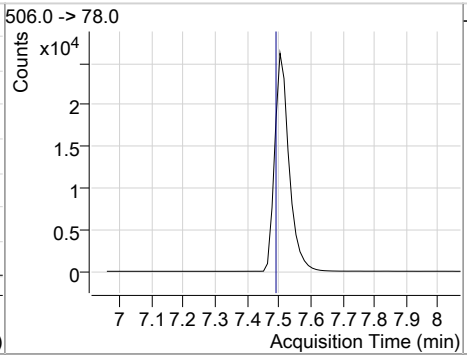


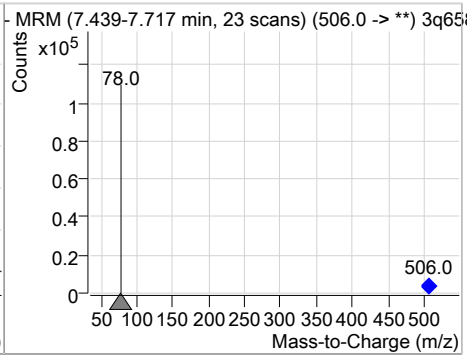




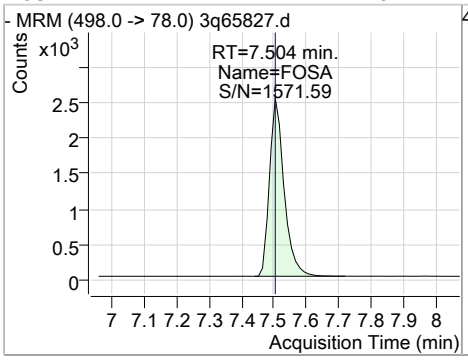
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.02	7.50	0.01	82012				

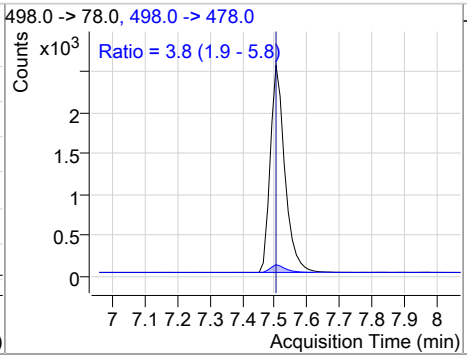


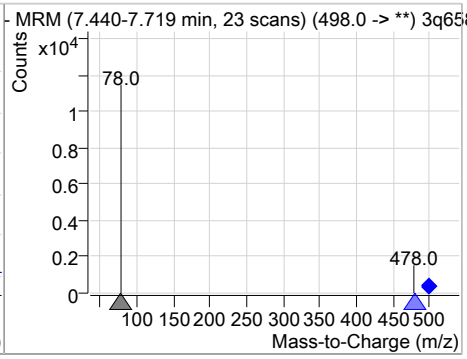




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.94	7.50	0.01	7824	498.0 -> 478.0	3.8	1.9	5.8

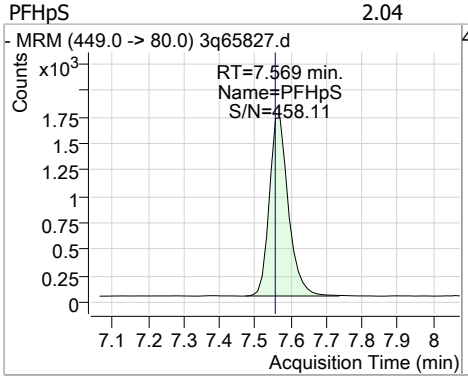


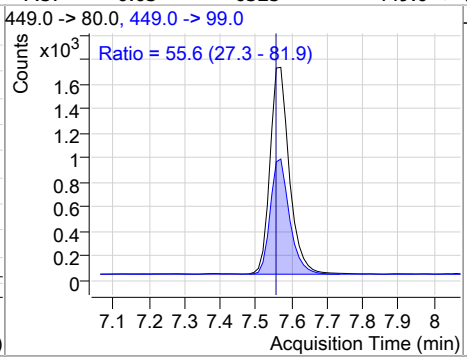


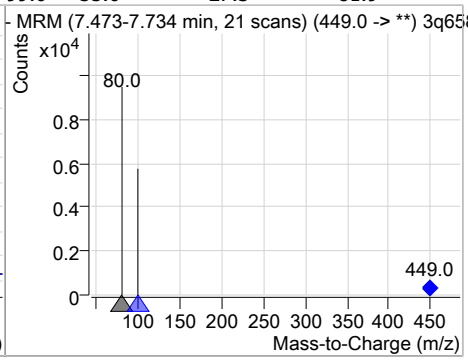


Perfluorinated Compounds by LC/MS/MS

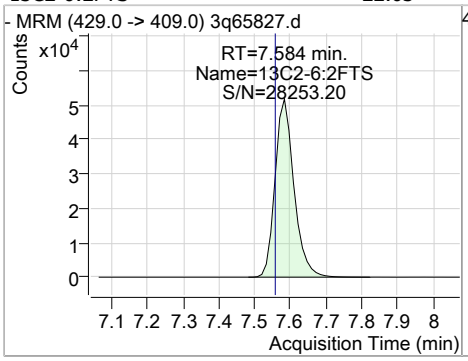
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	2.04	7.57	0.03	6325	449.0 -> 99.0	55.6	27.3	81.9

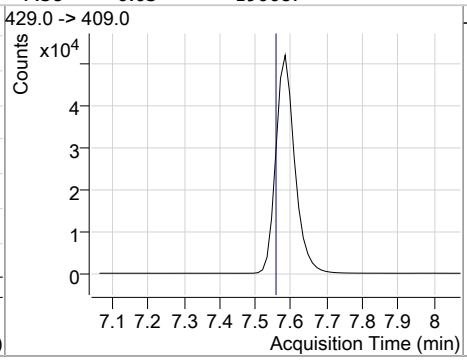


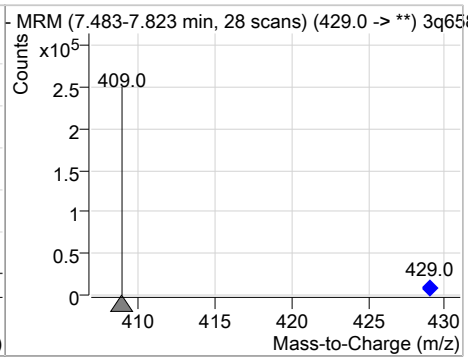




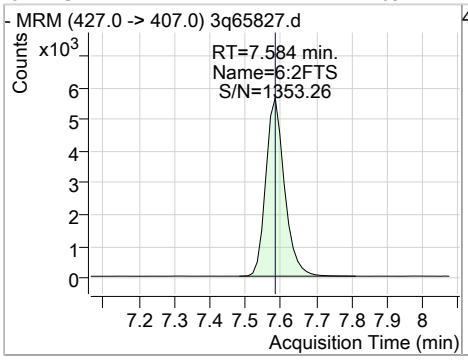
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.03	7.58	0.03	190087				

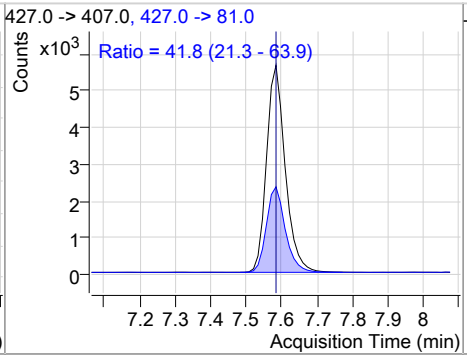


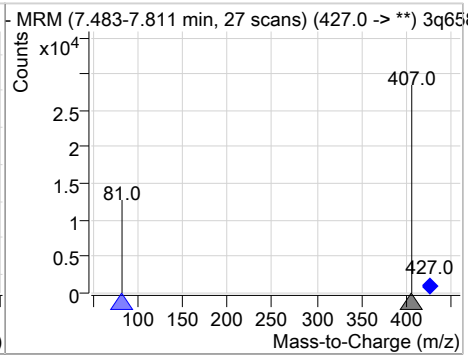




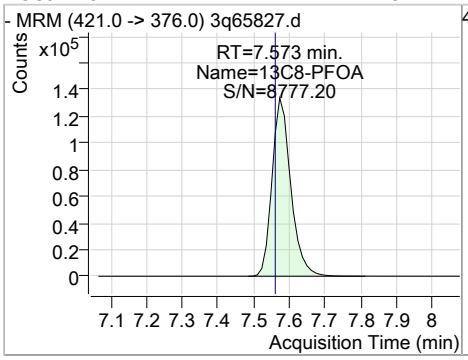
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.09	7.58	0.03	20593	427.0 -> 81.0	41.8	21.3	63.9

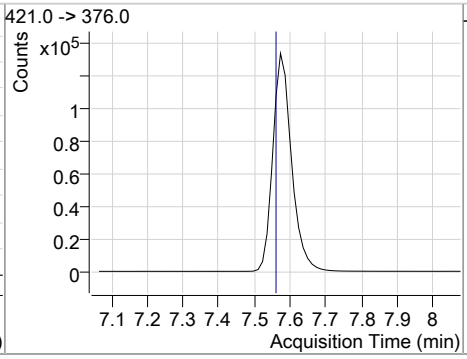


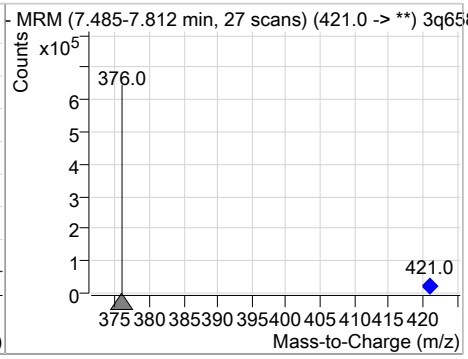




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.94	7.57	0.01	487959				

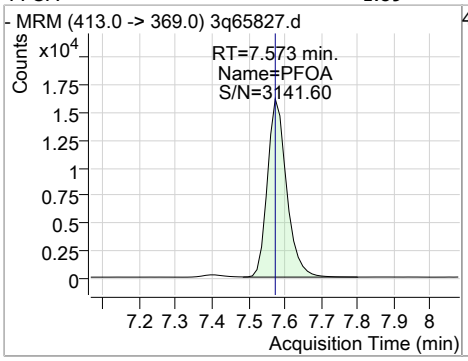


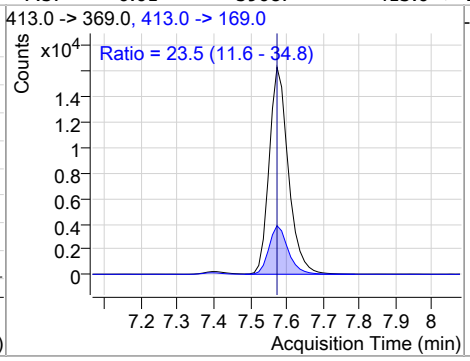


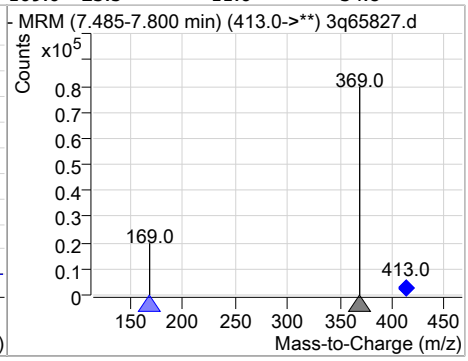


Perfluorinated Compounds by LC/MS/MS

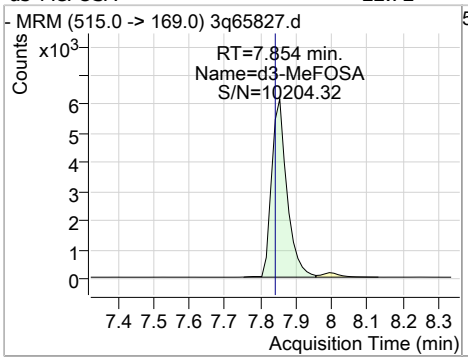
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.89	7.57	0.01	59087	413.0 -> 169.0	23.5	11.6	34.8

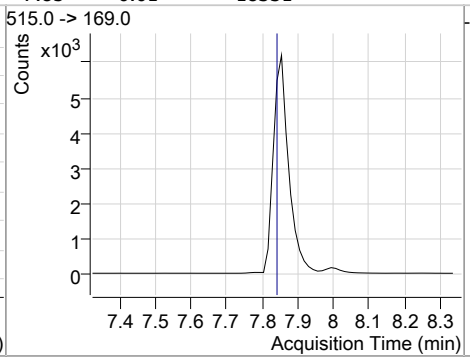


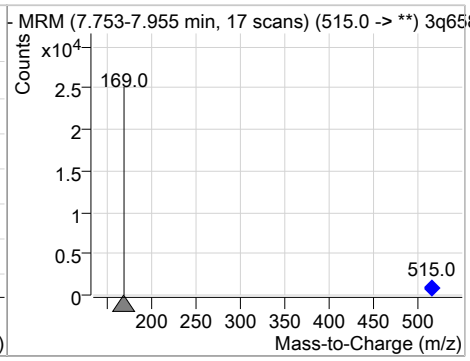




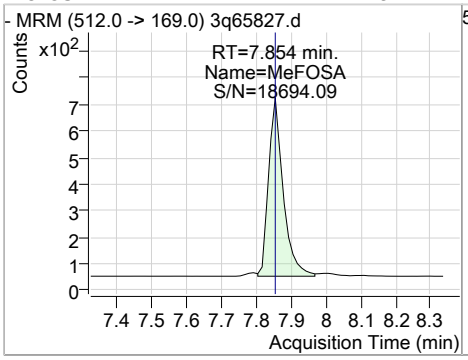
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.72	7.85	0.01	18331				

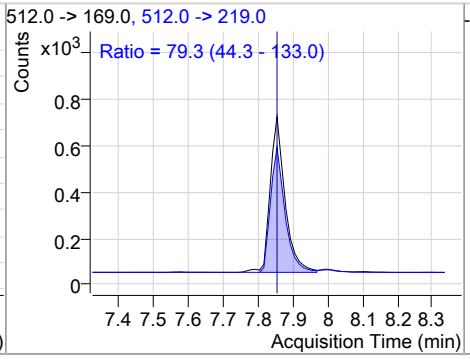


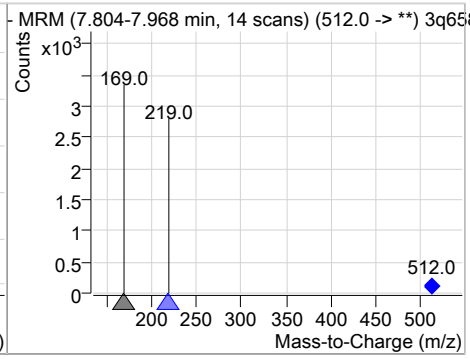




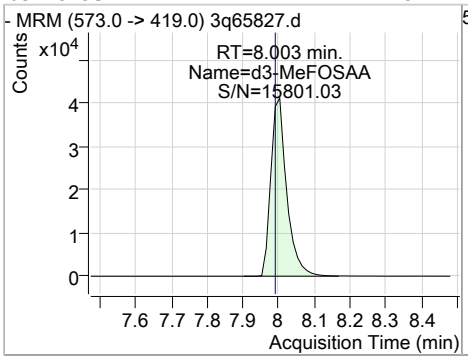
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.97	7.85	0.01	1960	512.0 -> 219.0	79.3	44.3	133.0

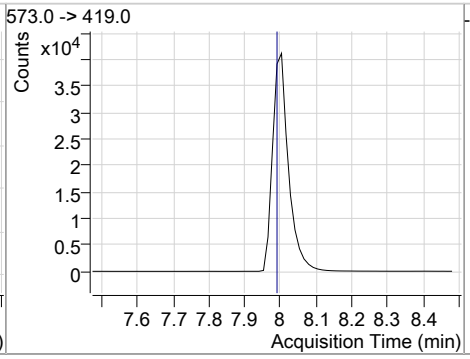


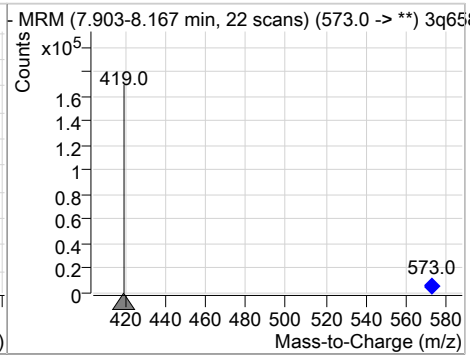




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.45	8.00	0.01	127102				

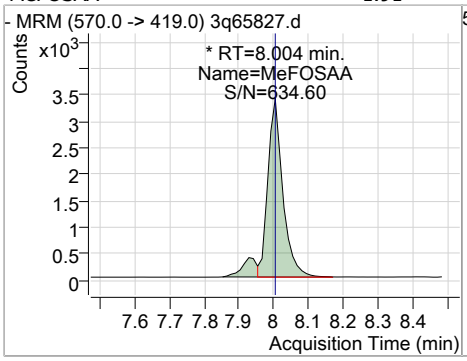


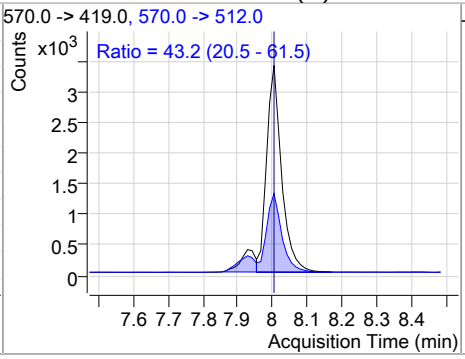


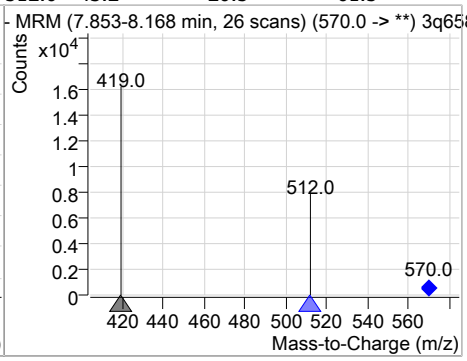


Perfluorinated Compounds by LC/MS/MS

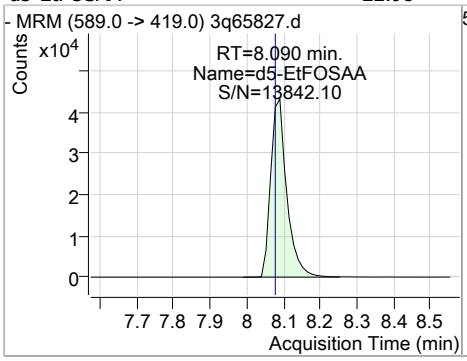
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.91	8.00	0.01	11072 (m)	570.0 -> 512.0	43.2	20.5	61.5

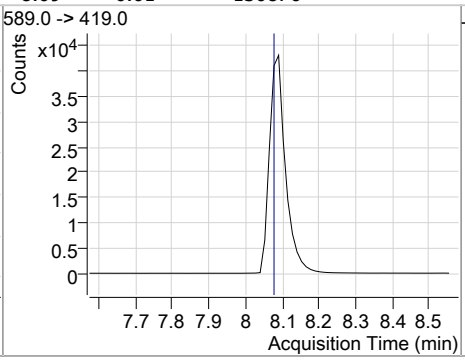


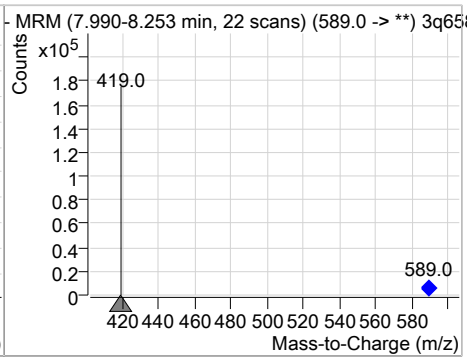




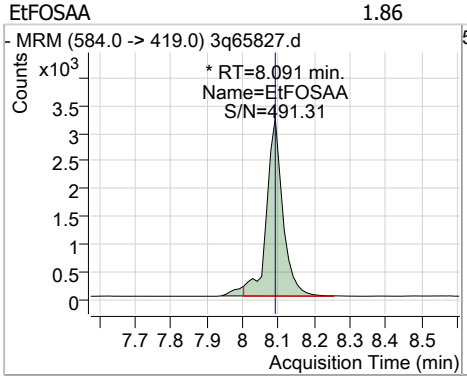
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.98	8.09	0.01	130876				

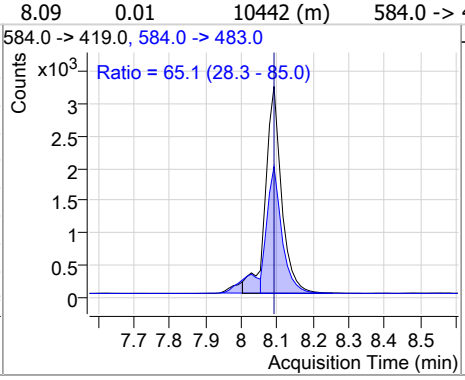


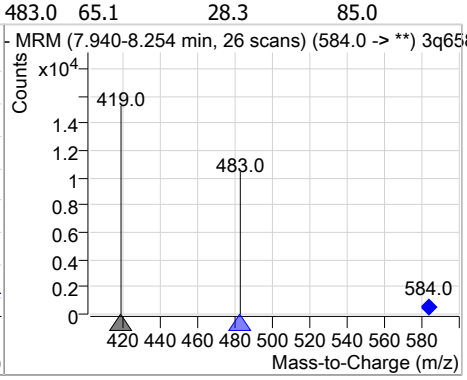




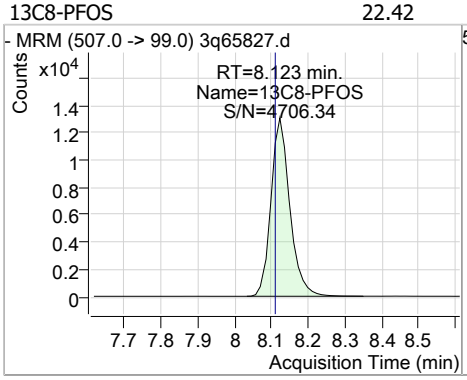
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.86	8.09	0.01	10442 (m)	584.0 -> 483.0	65.1	28.3	85.0

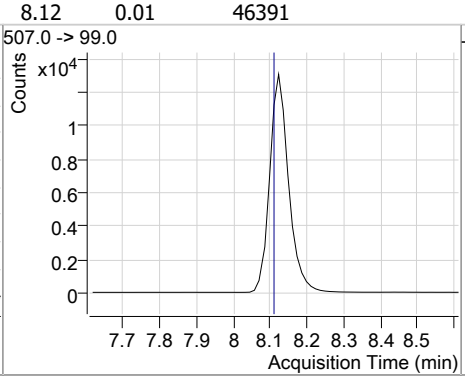


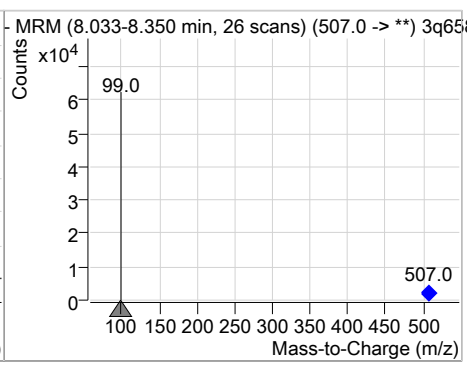




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.42	8.12	0.01	46391				

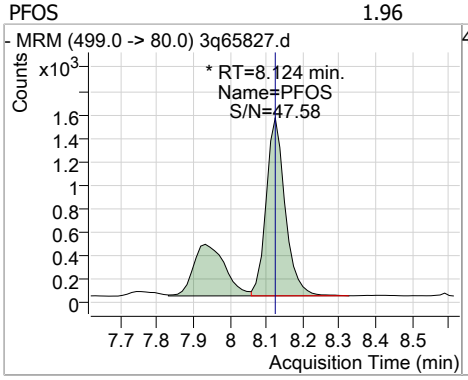


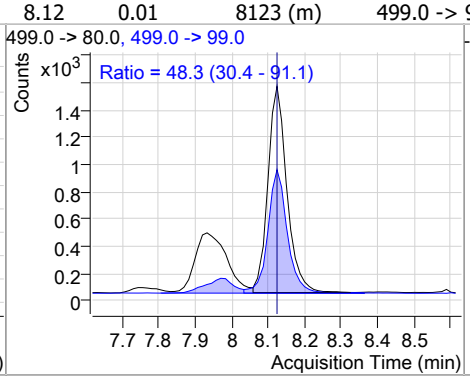


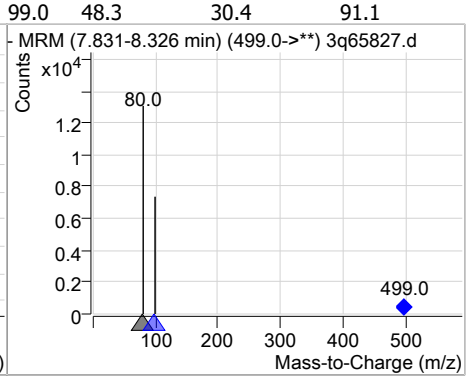


Perfluorinated Compounds by LC/MS/MS

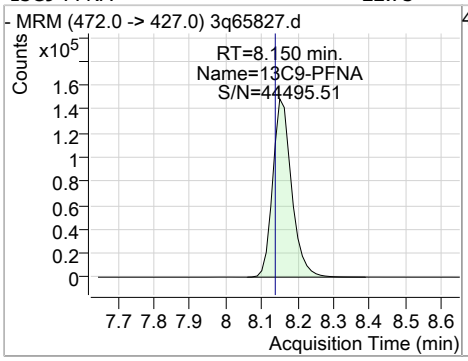
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.96	8.12	0.01	8123 (m)	499.0 -> 99.0	48.3	30.4	91.1

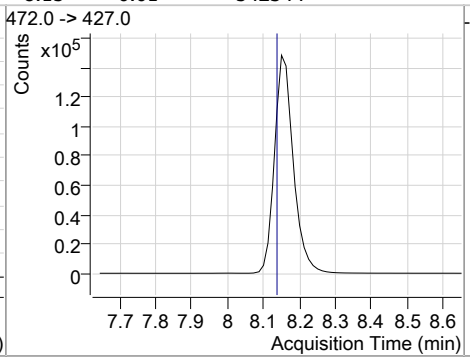


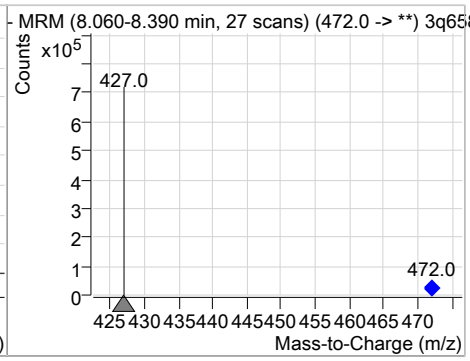




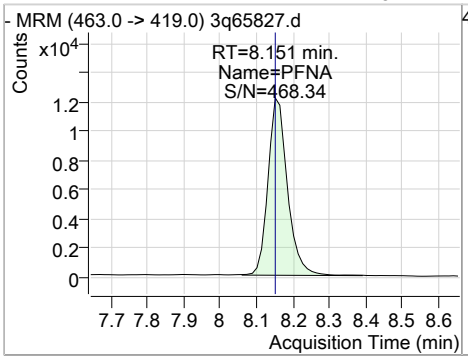
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.73	8.15	0.01	542344				

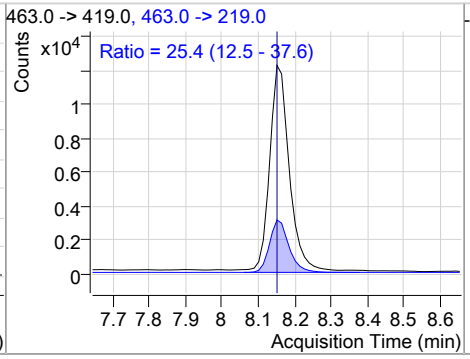


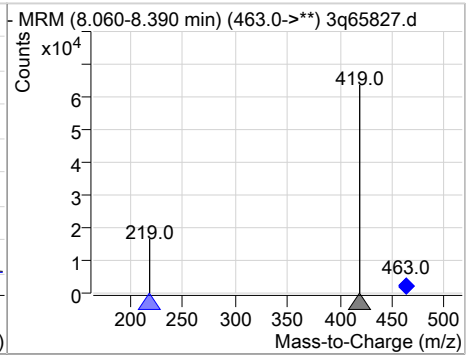




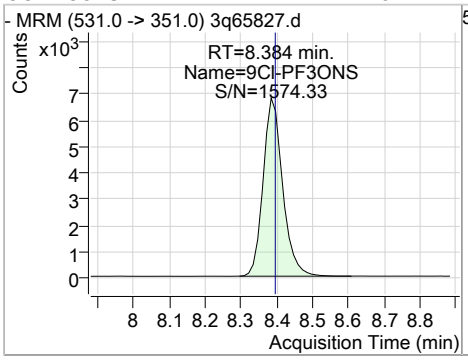
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.87	8.15	0.01	44958	463.0 -> 219.0	25.4	12.5	37.6

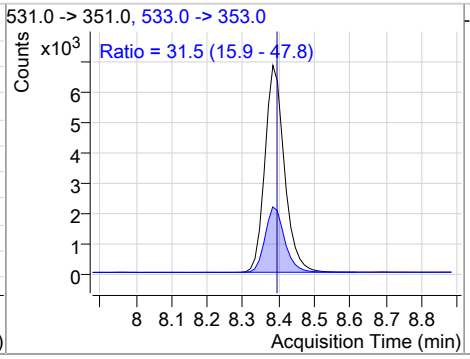


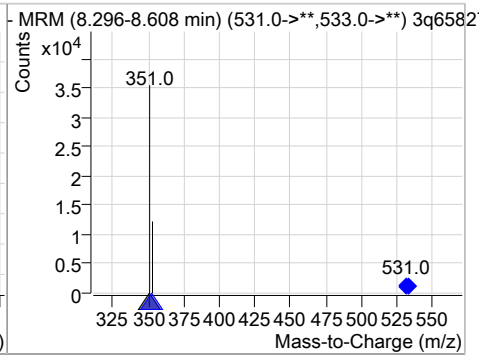




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.82	8.38	0.01	25726	533.0 -> 353.0	31.5	15.9	47.8

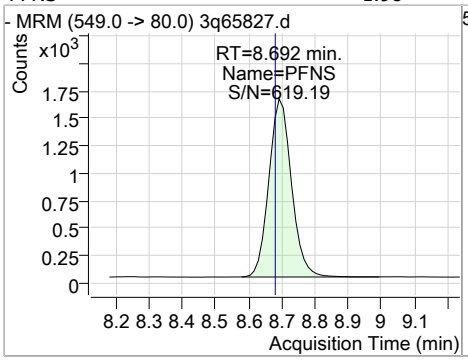


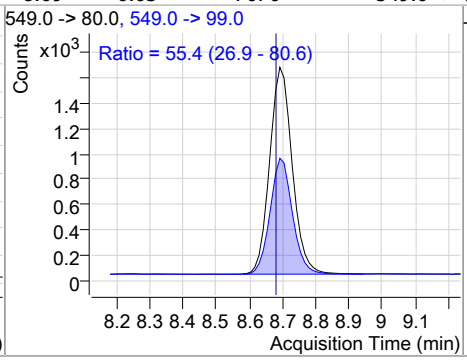


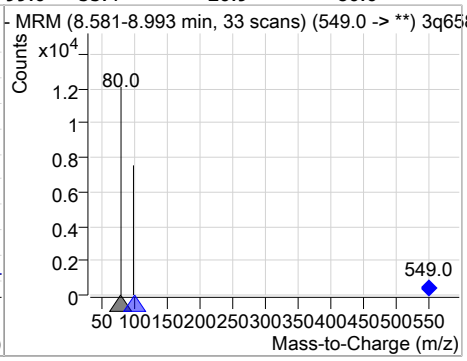


Perfluorinated Compounds by LC/MS/MS

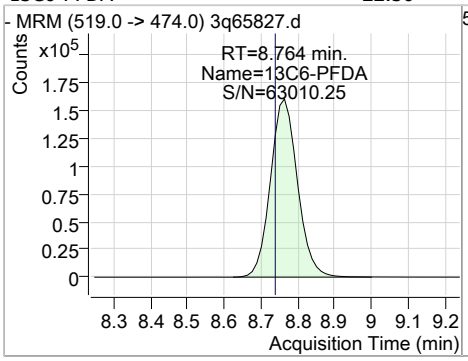
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.98	8.69	0.03	7676	549.0 -> 99.0	55.4	26.9	80.6

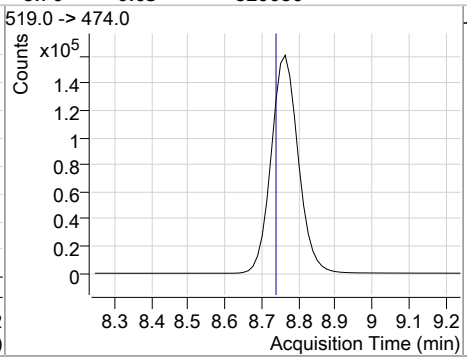


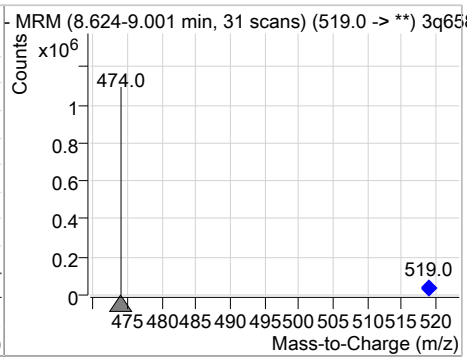




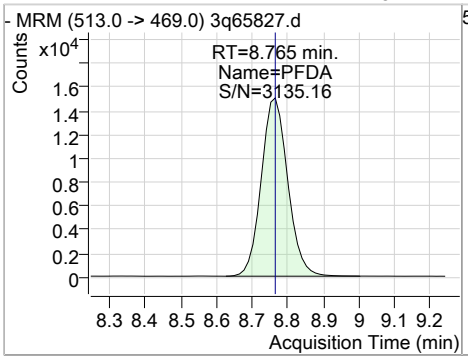
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.56	8.76	0.03	820080				

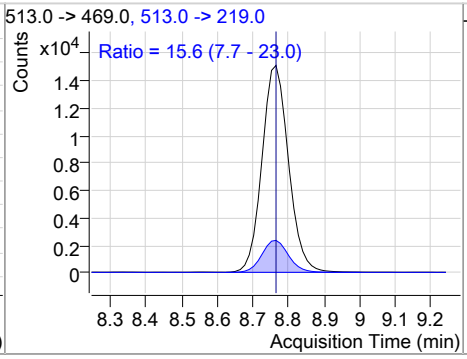


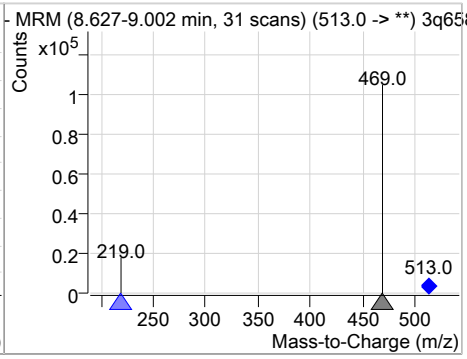




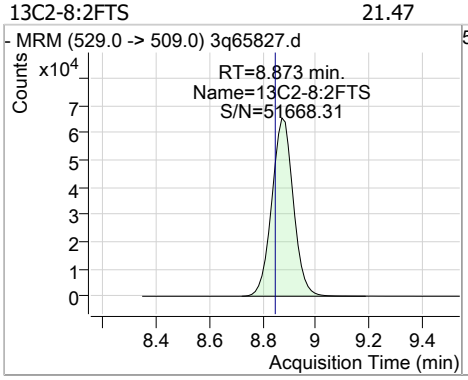
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.87	8.77	0.03	77557	513.0 -> 219.0	15.6	7.7	23.0

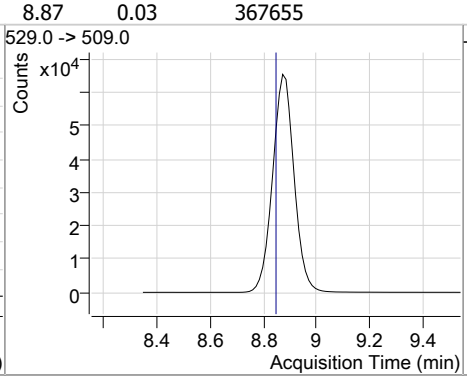


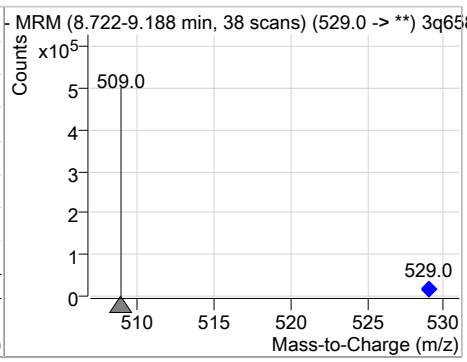




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.47	8.87	0.03	367655				

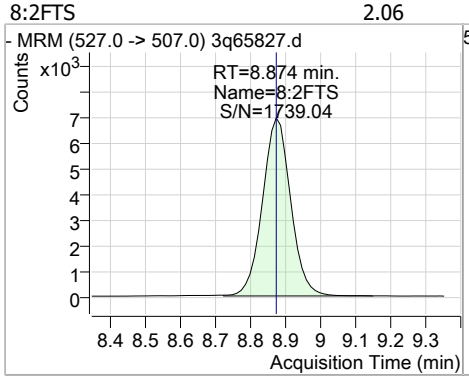


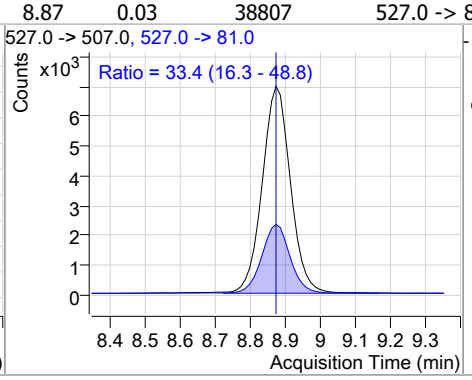


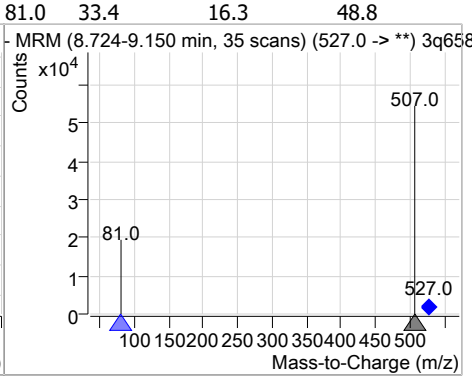


Perfluorinated Compounds by LC/MS/MS

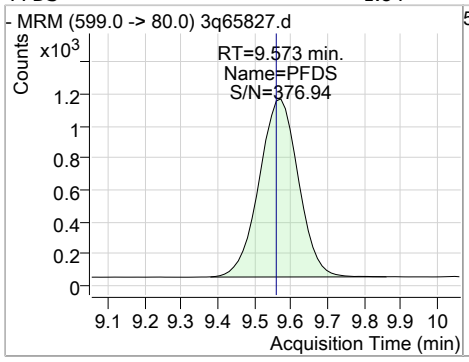
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.06	8.87	0.03	38807	527.0 -> 81.0	33.4	16.3	48.8

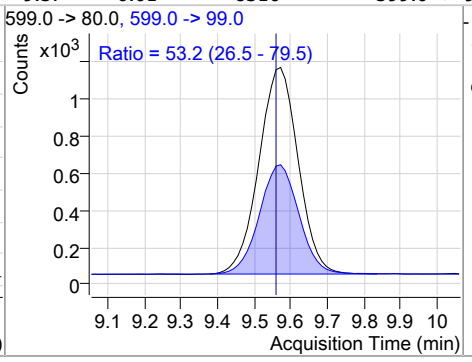


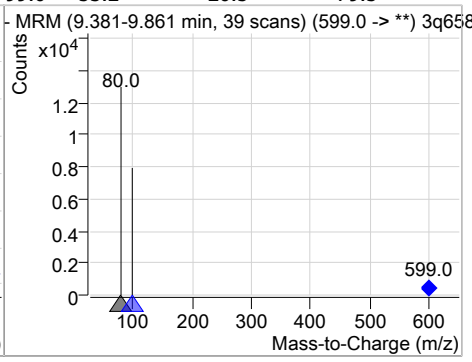




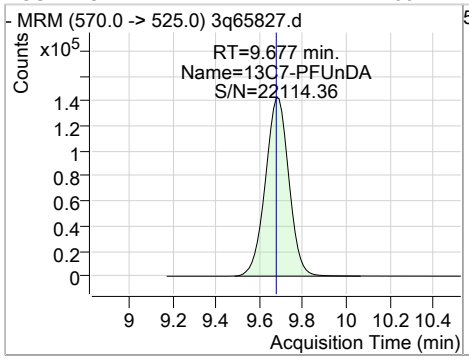
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.84	9.57	0.01	8316	599.0 -> 99.0	53.2	26.5	79.5

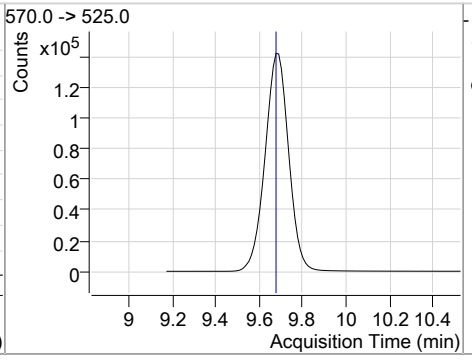


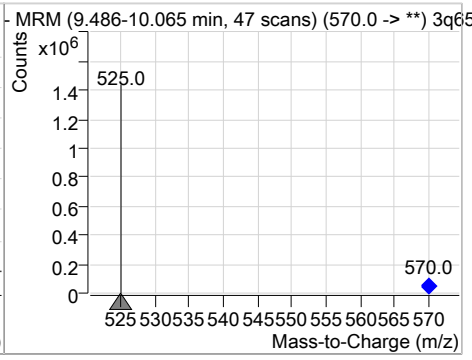




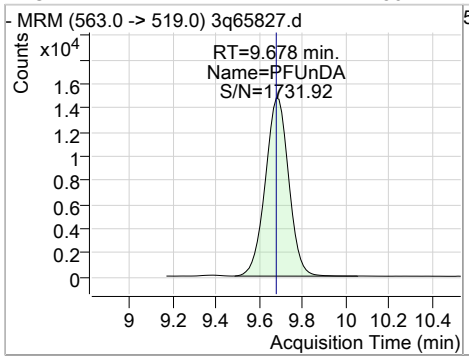
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.60	9.68	0.00	1076219				

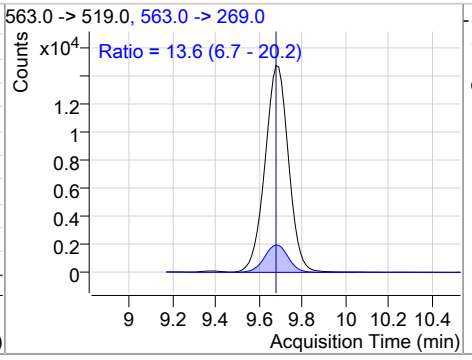


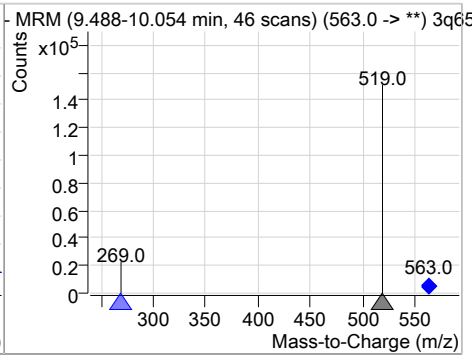




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.86	9.68	0.00	110941	563.0 -> 269.0	13.6	6.7	20.2

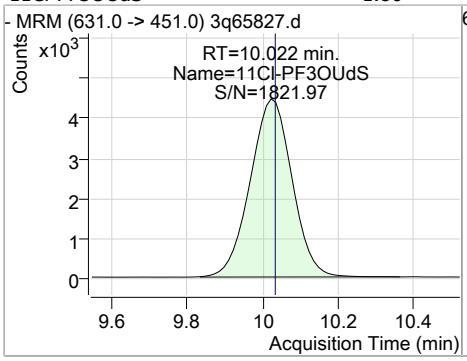


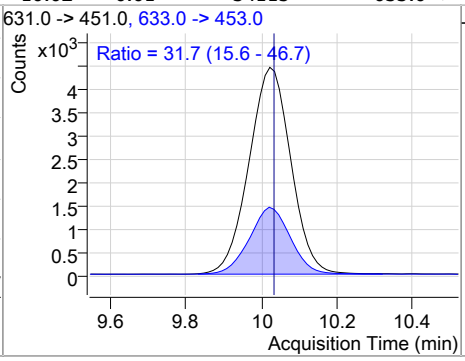


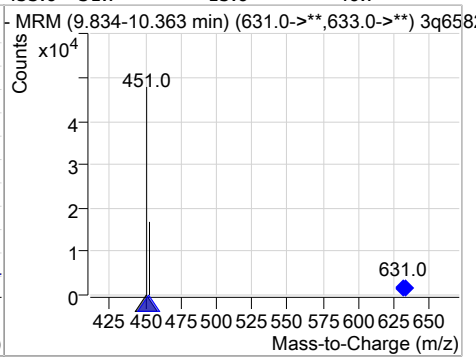


Perfluorinated Compounds by LC/MS/MS

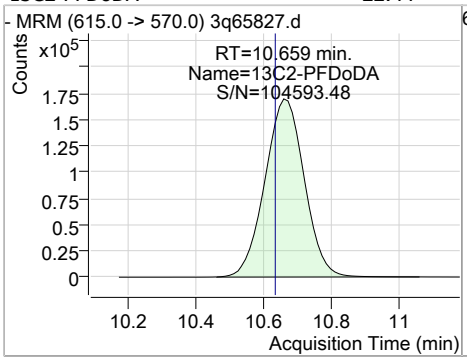
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.80	10.02	0.01	34115	633.0 -> 453.0	31.7	15.6	46.7

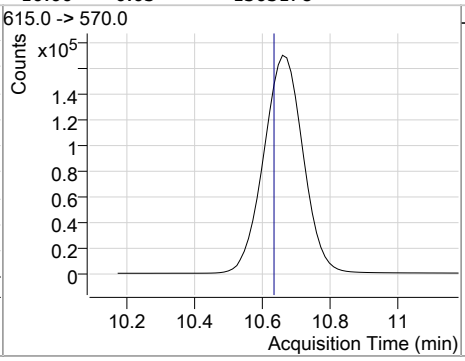


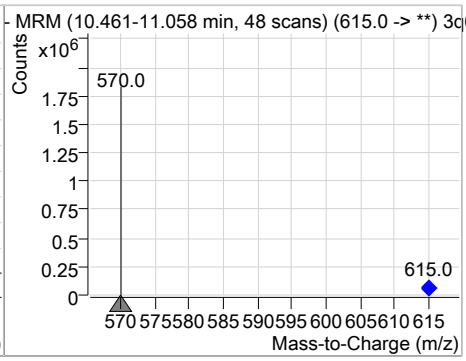




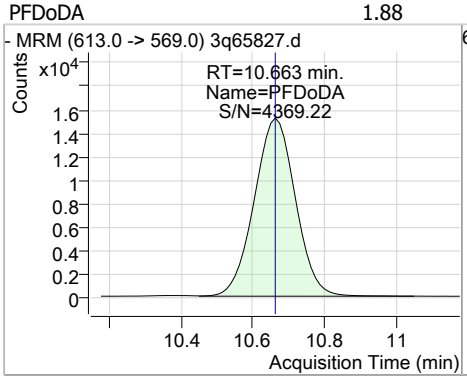
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	22.44	10.66	0.03	1363178				

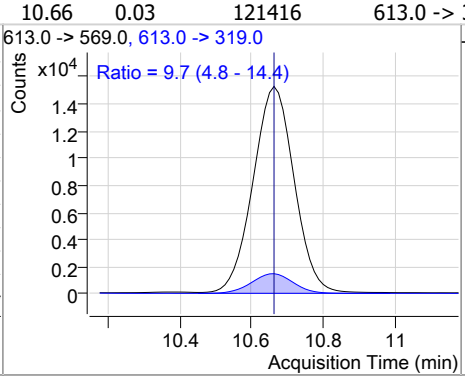


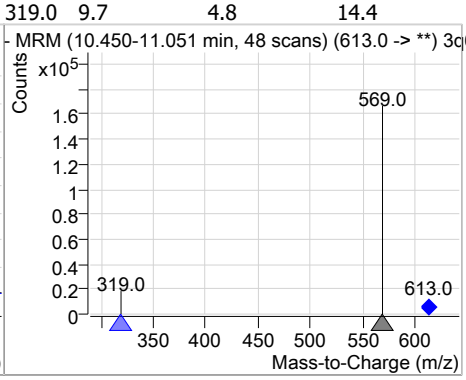




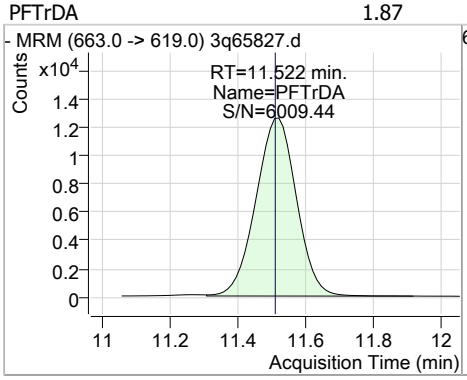
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.88	10.66	0.03	121416	613.0 -> 319.0	9.7	4.8	14.4

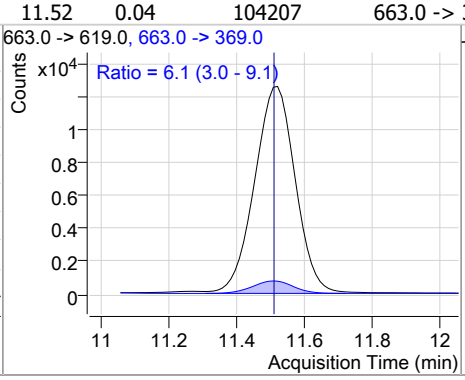


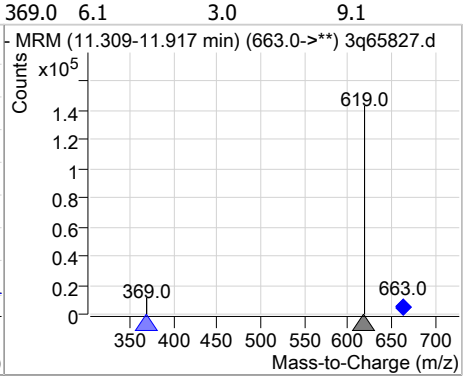




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.87	11.52	0.04	104207	663.0 -> 369.0	6.1	3.0	9.1

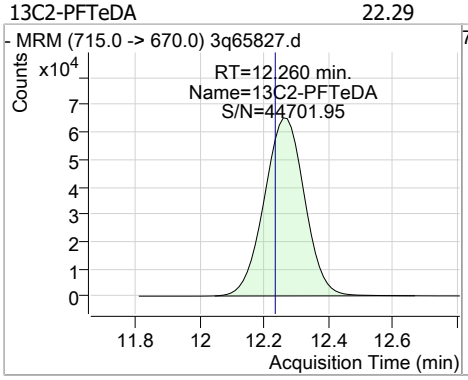


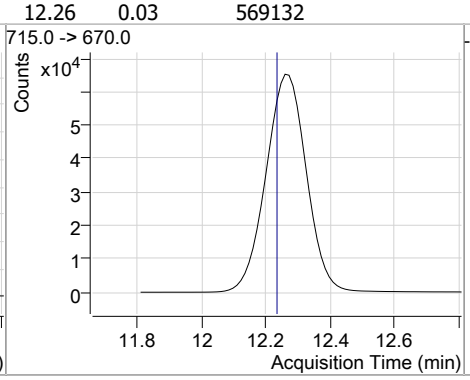


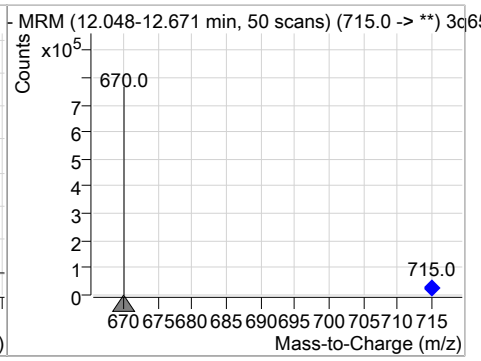


Perfluorinated Compounds by LC/MS/MS

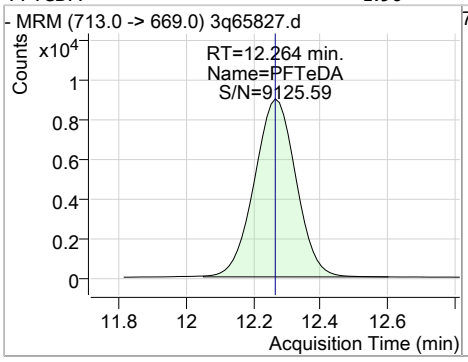
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.29	12.26	0.03	569132				

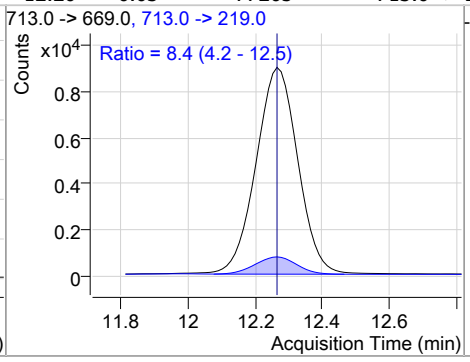


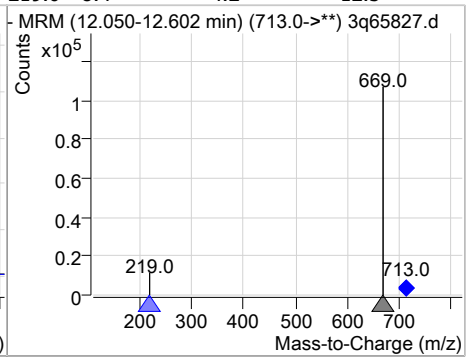




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.90	12.26	0.03	77265	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65827.D
Injection Time: 09/15/22 18:48
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65828.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:07:55 PM
Sample Name : ic900-5
Vial : P1-A5
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

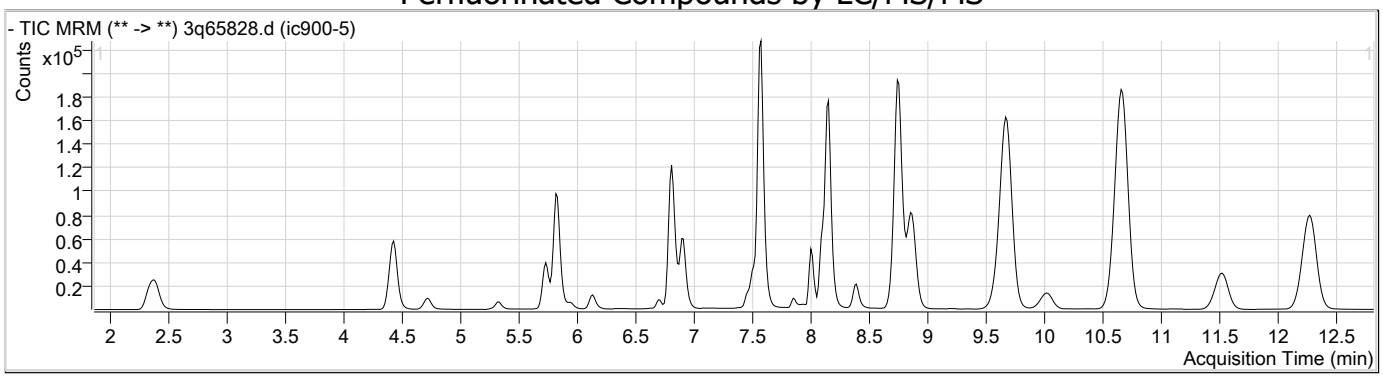
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	161051	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	235455	20.00	µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	312637	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	312648	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	425562	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	468404	20.00	µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	725365	20.00	µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	936800	20.00	µg/L	-0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1188610	20.00	µg/L	0.013
M2-PFTeDA	12.260	715.0 -> 670.0	499329	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	71926	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	21563	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	26600	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	40449	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	113133	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	167496	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	319368	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	112511	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	25357	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	15571	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	111371	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	113133	18.43	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C2-6:2FTS	7.571	429.0 -> 409.0	167496	19.41	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-8:2FTS	8.860	529.0 -> 509.0	319368	18.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-PFDoDA	10.646	615.0 -> 570.0	1188610	19.57	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFTeDA	12.260	715.0 -> 670.0	499329	19.56	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C3-PFBS	4.704	302.0 -> 99.0	21563	19.48	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C3-PFHxS	6.834	402.0 -> 99.0	26600	19.75	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C4-PFBA	2.365	217.0 -> 172.0	161051	19.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C4-PFHpA	6.805	367.0 -> 322.0	312648	19.82	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C5-PFHxA	5.813	318.0 -> 273.0	312637	19.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C5-PFPeA	4.424	268.0 -> 223.0	235455	19.47	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C6-PFDA	8.739	519.0 -> 474.0	725365	19.95	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

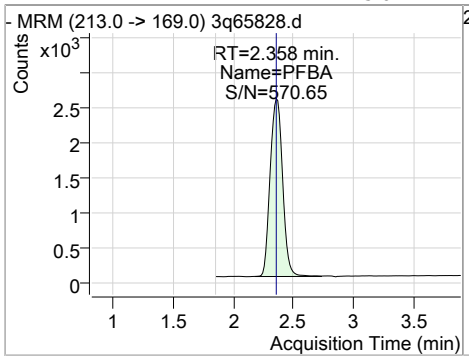
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C7-PFUnDA	9.664	570.0 -> 525.0	936800	19.67 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C8-FOSA	7.503	506.0 -> 78.0	71926	20.19 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C8-PFOA	7.560	421.0 -> 376.0	425562	20.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-PFOS	8.111	507.0 -> 99.0	40449	19.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C9-PFNA	8.150	472.0 -> 427.0	468404	19.63 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
d3-MeFOSAA	7.991	573.0 -> 419.0	112511	19.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	25366	19.64 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
d3-MeFOSA	7.841	515.0 -> 169.0	15571	19.30 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
d5-EtFOSAA	8.077	589.0 -> 419.0	111398	19.56 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	32758	5.18 µg/L		98
6:2FTS	7.571	427.0 -> 407.0	45679	5.26 µg/L		99
8:2FTS	8.849	527.0 -> 507.0	85917	5.26 µg/L		99
EtFOSAA	8.091	584.0 -> 419.0	24708	5.16 µg/L	m	91
FOSA	7.504	498.0 -> 78.0	17457	4.94 µg/L		99
MeFOSAA	8.004	570.0 -> 419.0	26272	5.13 µg/L	m	96
PFBA	2.358	213.0 -> 169.0	18383	5.01 µg/L		100
PFBS	4.707	299.0 -> 80.0	15740	5.00 µg/L		98
PFDA	8.740	513.0 -> 469.0	178591	4.86 µg/L		100
PFDoDA	10.650	613.0 -> 569.0	279112	4.96 µg/L		100
PFDS	9.548	599.0 -> 80.0	18595	4.72 µg/L		98
PFHpA	6.807	363.0 -> 319.0	116149	4.88 µg/L		100
PFHpS	7.557	449.0 -> 80.0	14163	5.25 µg/L		100
PFHxA	5.814	313.0 -> 269.0	87225	4.98 µg/L		100
PFHxS	6.823	399.0 -> 80.0	16091	4.90 µg/L	m	99
PFNA	8.151	463.0 -> 419.0	102792	4.95 µg/L		100
PFNS	8.680	549.0 -> 80.0	17073	5.06 µg/L		99
PFOA	7.561	413.0 -> 369.0	135312	4.96 µg/L		100
PFOS	8.111	499.0 -> 80.0	17884	4.94 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	53804	4.96 µg/L		100
PFPeS	5.932	349.0 -> 80.0	12156	4.99 µg/L		100
PFTeDA	12.264	713.0 -> 669.0	176689	4.96 µg/L		100
PFTrDA	11.509	663.0 -> 619.0	240055	4.94 µg/L		100
PFUnDA	9.666	563.0 -> 519.0	253299	4.88 µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	78437	4.76 µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	58207	4.66 µg/L		99
ADONA	6.903	377.0 -> 251.0	170159	4.85 µg/L		99
HFPO-DA	6.122	329.0 -> 169.0	16012	5.09 µg/L		99
MeFOSA	7.842	512.0 -> 169.0	4331	5.12 µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	33769	4.40 µg/L		98
FBSA	5.327	298.0 -> 78.0	25620	5.10 µg/L		100
FHxSA	6.688	398.0 -> 78.0	24584	4.82 µg/L		100

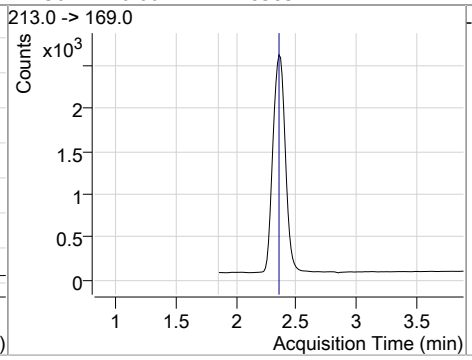
 # = Qualifier out of range, m = manually integrated, + = Area summed

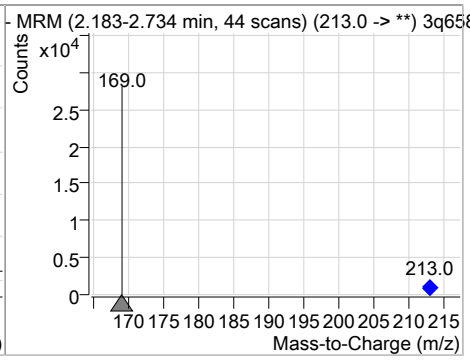
Perfluorinated Compounds by LC/MS/MS



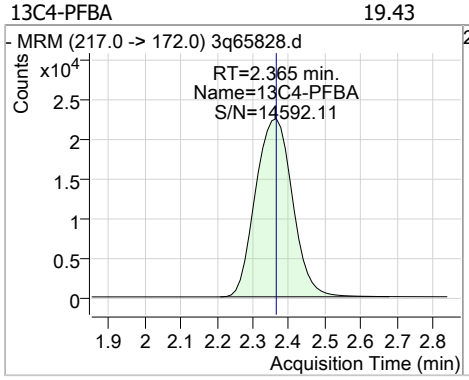
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	5.01	2.36	0.00	18383				

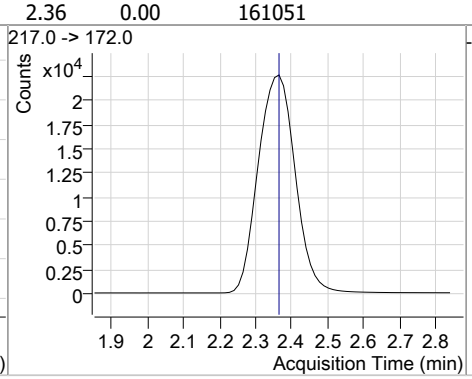


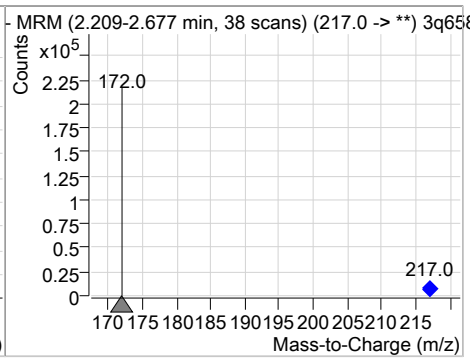




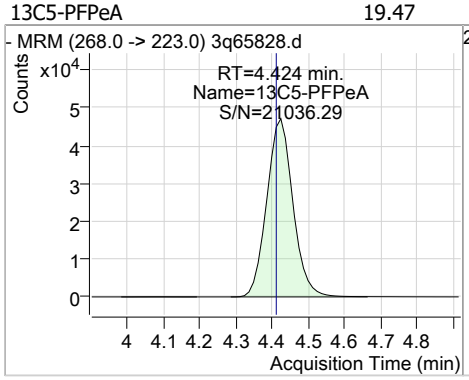
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.43	2.36	0.00	161051				

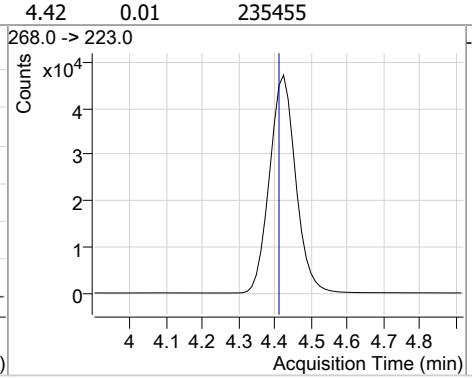


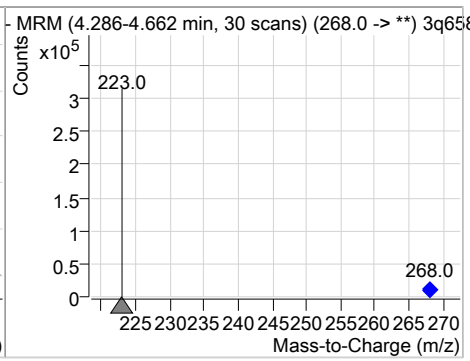




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.47	4.42	0.01	235455				

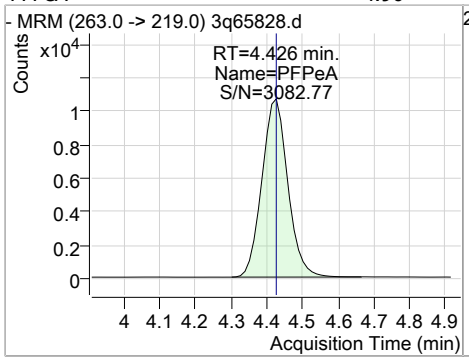


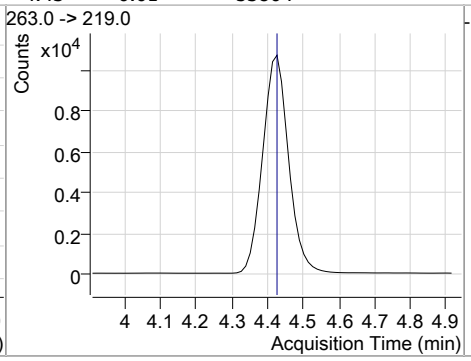


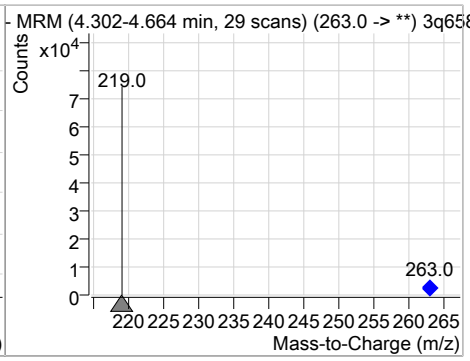


Perfluorinated Compounds by LC/MS/MS

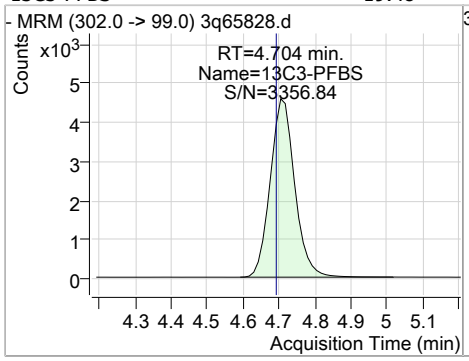
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.96	4.43	0.01	53804				

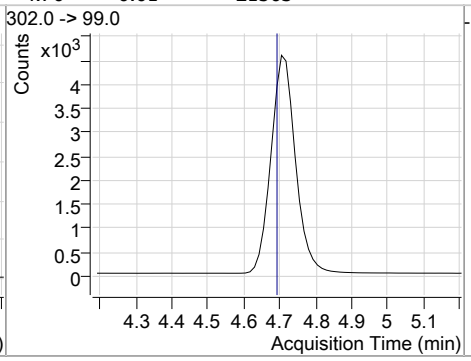


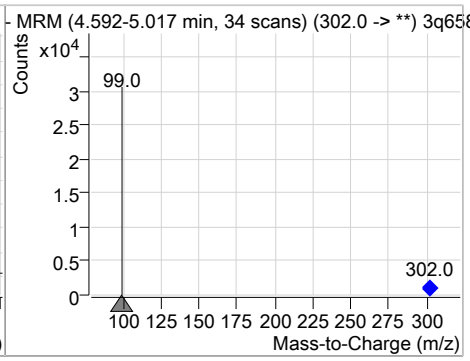




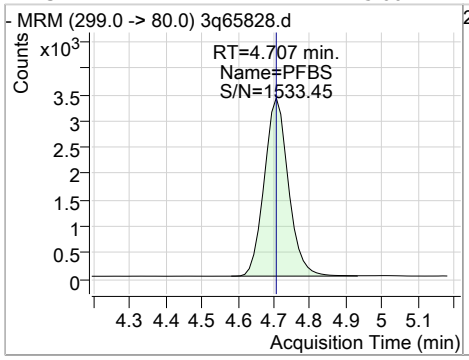
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.48	4.70	0.01	21563				

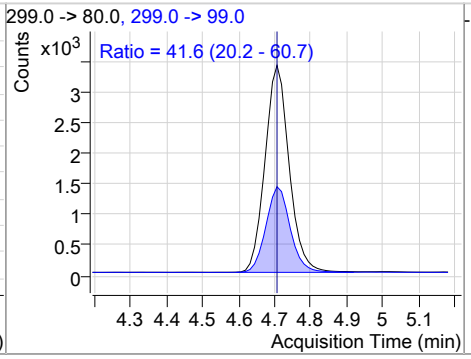


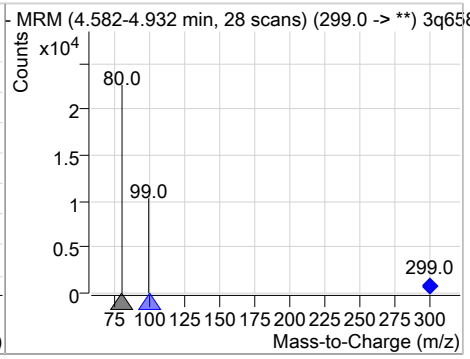




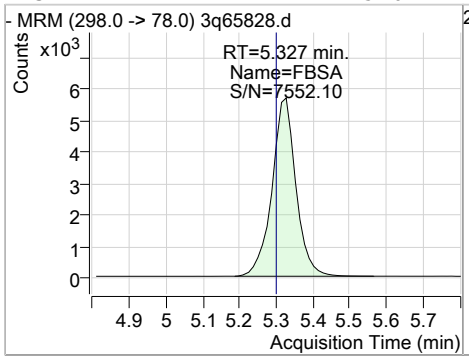
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	5.00	4.71	0.01	15740	299.0 -> 99.0	41.6	20.2	60.7

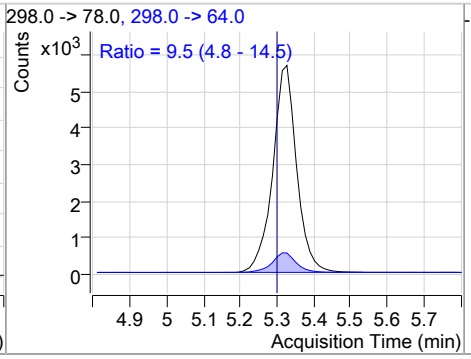


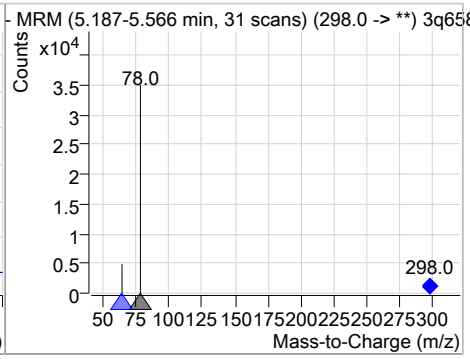




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	5.10	5.33	0.03	25620	298.0 -> 64.0	9.5	4.8	14.5

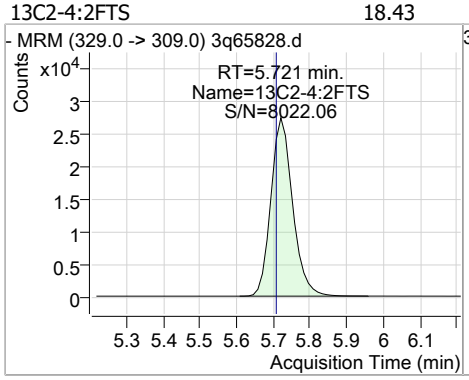


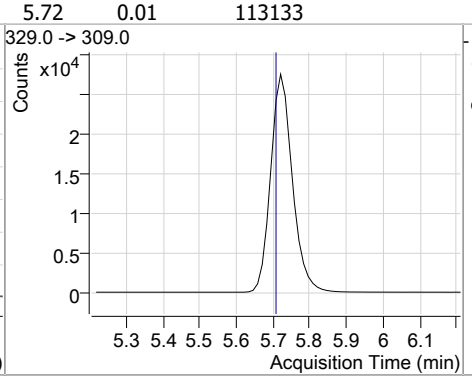


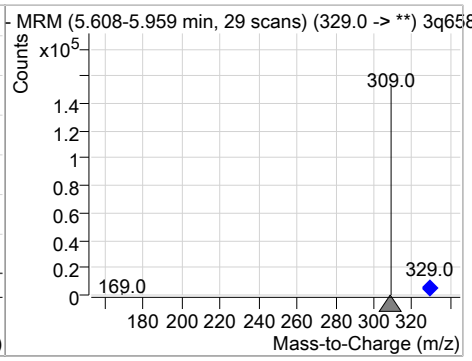


Perfluorinated Compounds by LC/MS/MS

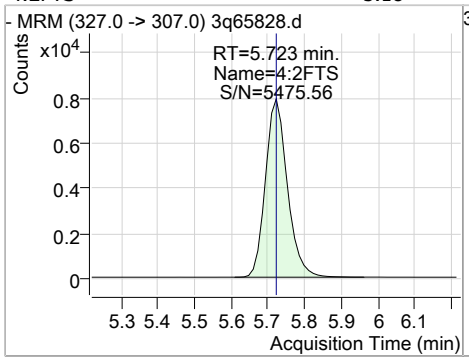
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.43	5.72	0.01	113133				

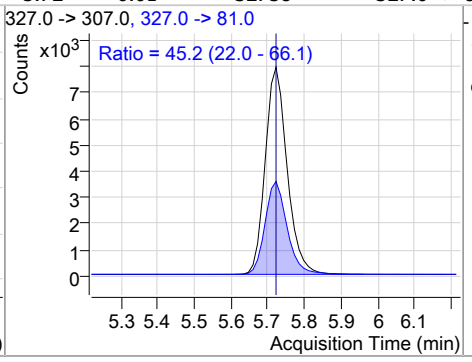


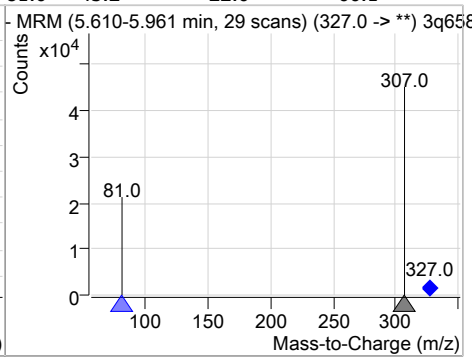




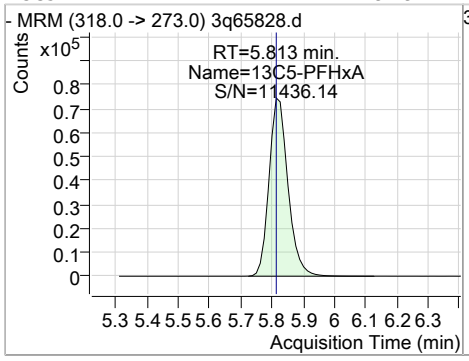
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.18	5.72	0.01	32758	327.0 -> 81.0	45.2	22.0	66.1

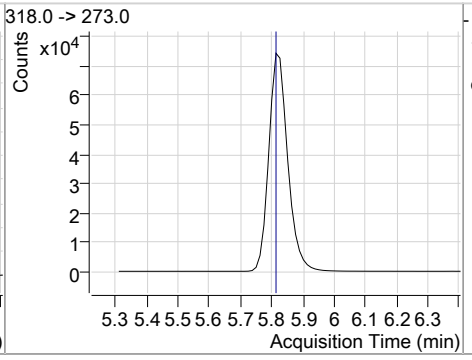


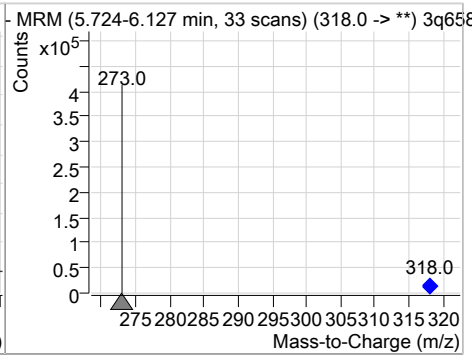




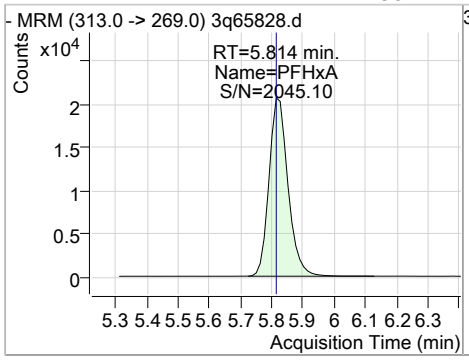
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.49	5.81	0.00	312637				

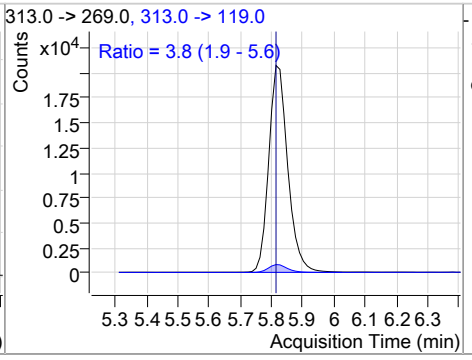


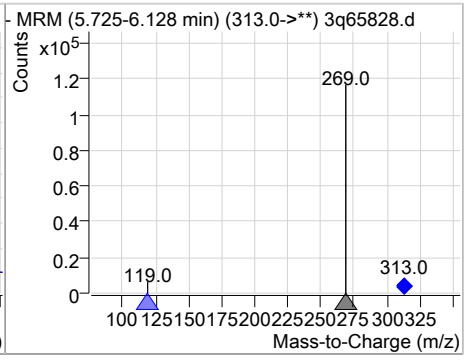




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.98	5.81	0.00	87225	313.0 -> 119.0	3.8	1.9	5.6

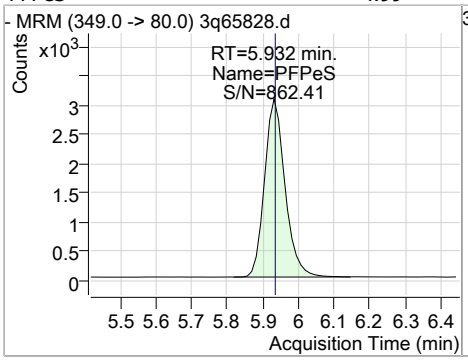


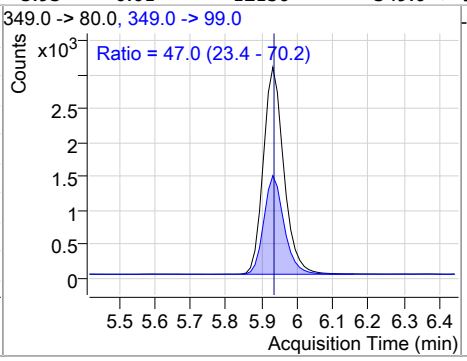


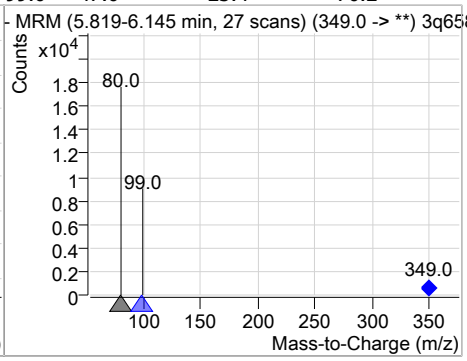


Perfluorinated Compounds by LC/MS/MS

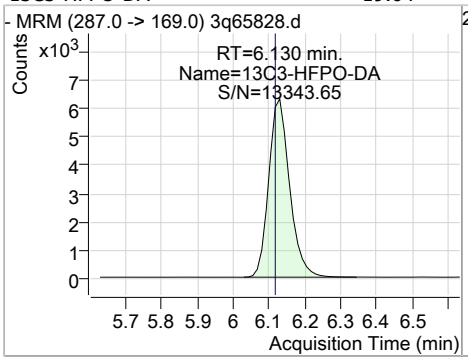
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.99	5.93	0.01	12156	349.0 -> 99.0	47.0	23.4	70.2

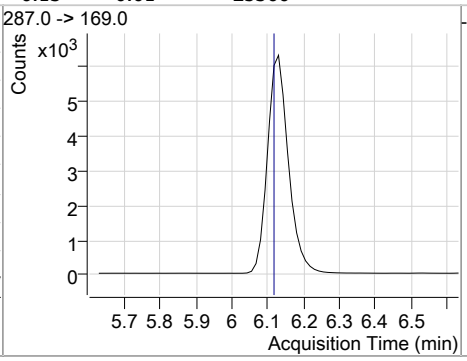


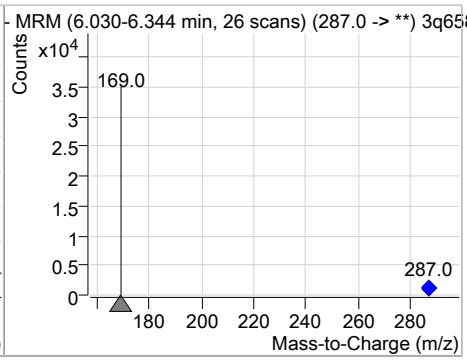




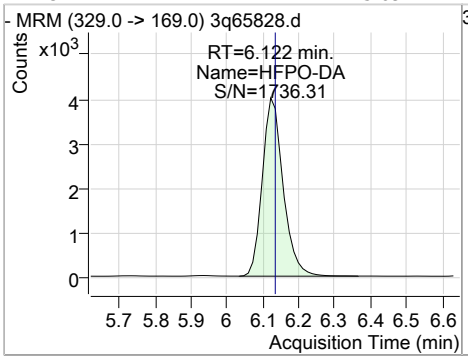
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.64	6.13	0.01	25366				

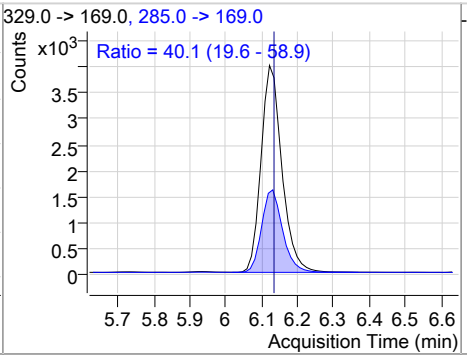


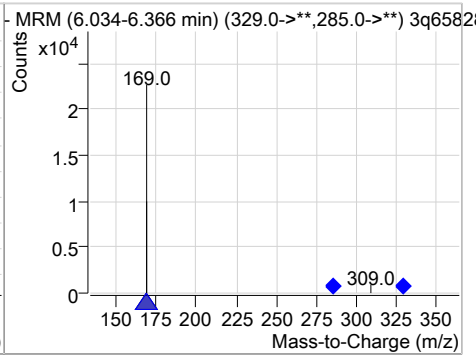




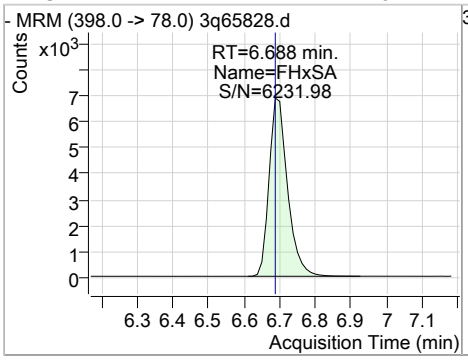
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.09	6.12	0.00	16012	285.0 -> 169.0	40.1	19.6	58.9

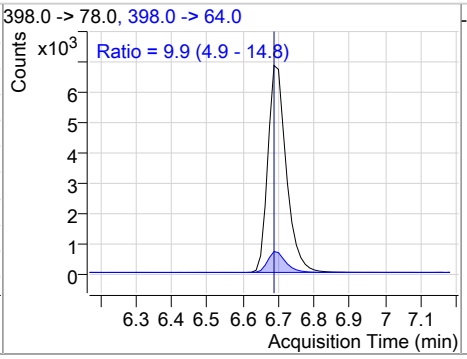


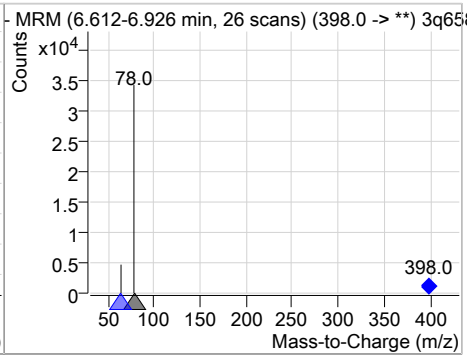




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.82	6.69	0.00	24584	398.0 -> 64.0	9.9	4.9	14.8

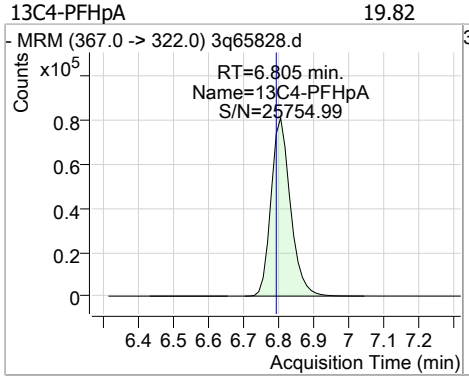


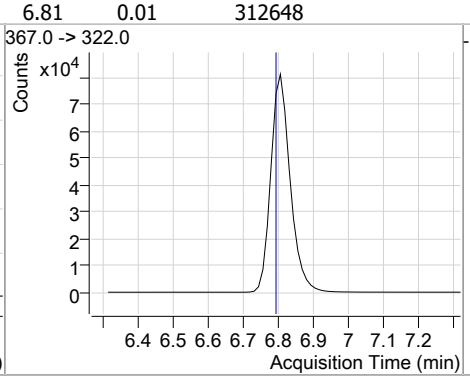


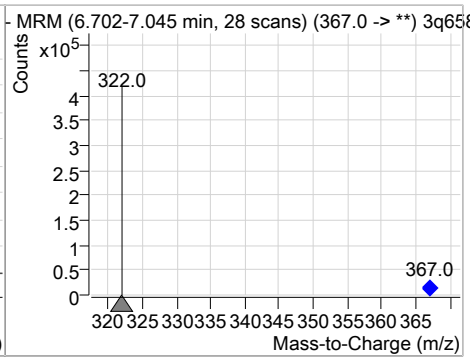


Perfluorinated Compounds by LC/MS/MS

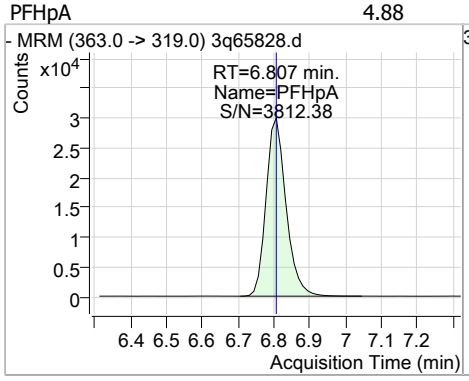
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.82	6.81	0.01	312648				

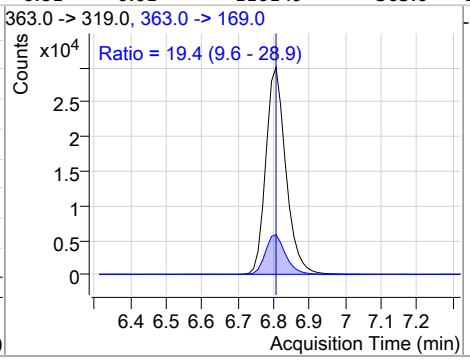


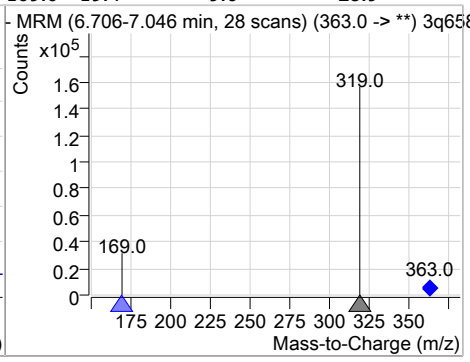




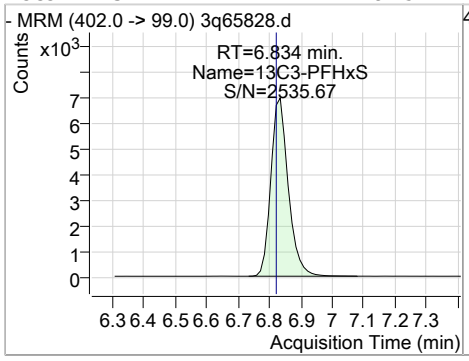
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.88	6.81	0.01	116149	363.0 -> 169.0	19.4	9.6	28.9

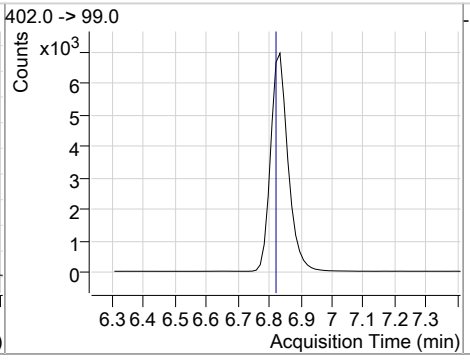


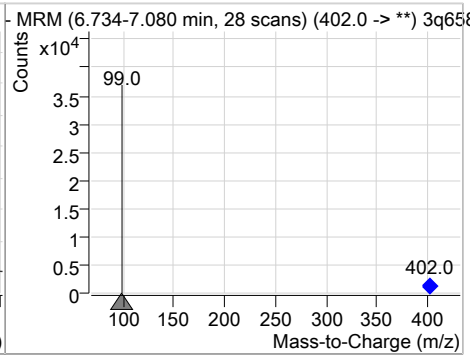




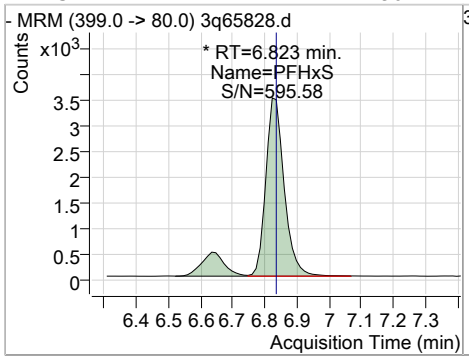
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.75	6.83	0.01	26600				

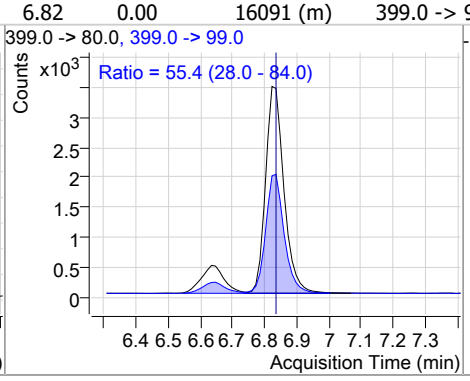


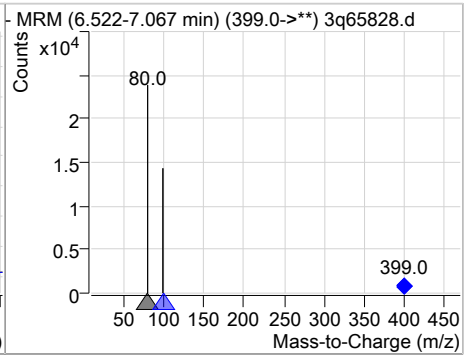




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.90	6.82	0.00	16091 (m)	399.0 -> 99.0	55.4	28.0	84.0

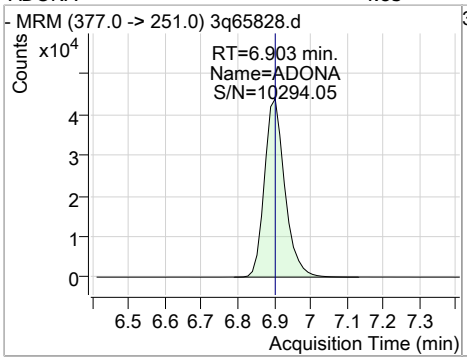


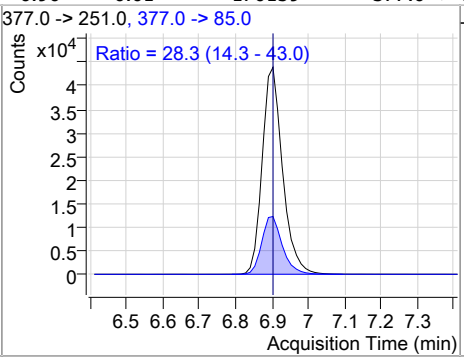


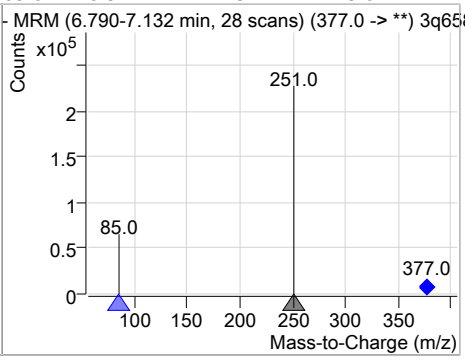


Perfluorinated Compounds by LC/MS/MS

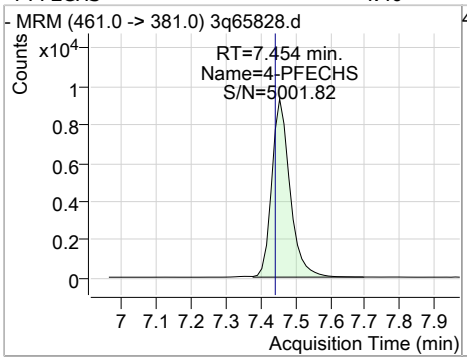
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.85	6.90	0.01	170159	377.0 -> 85.0	28.3	14.3	43.0

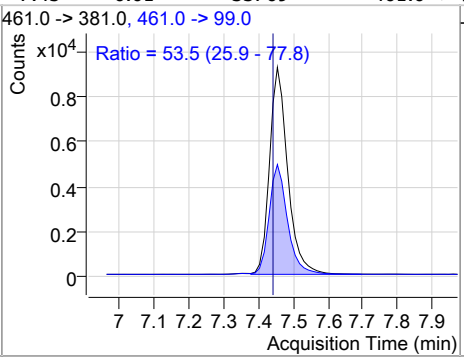


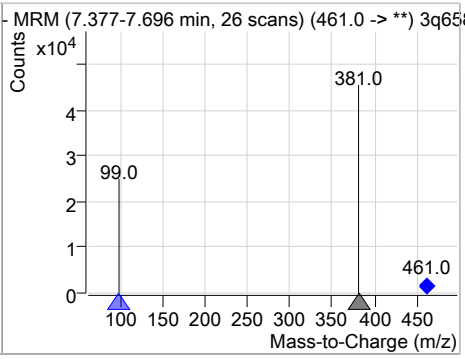




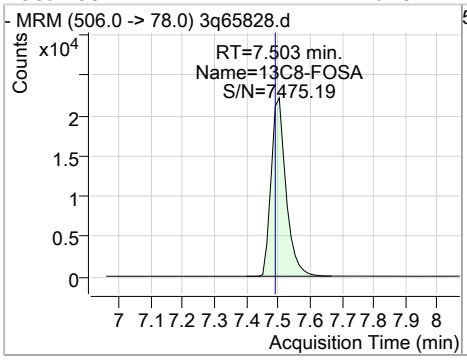
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.40	7.45	0.01	33769	461.0 -> 99.0	53.5	25.9	77.8

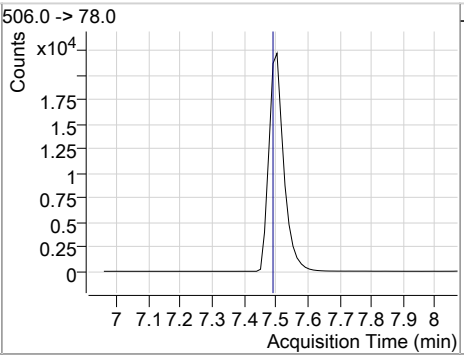


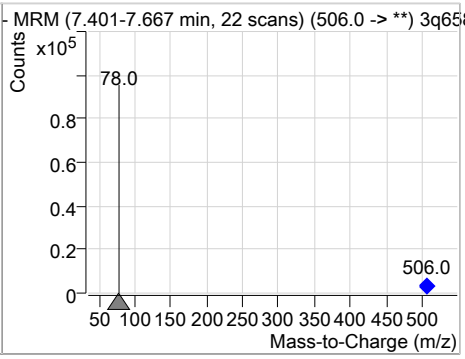




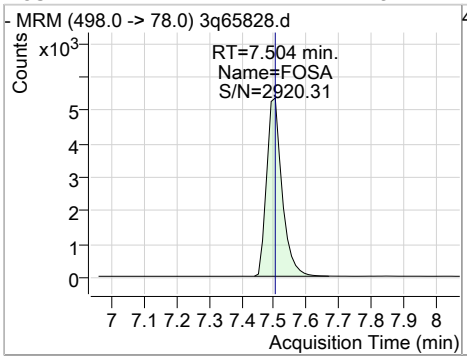
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.19	7.50	0.01	71926				

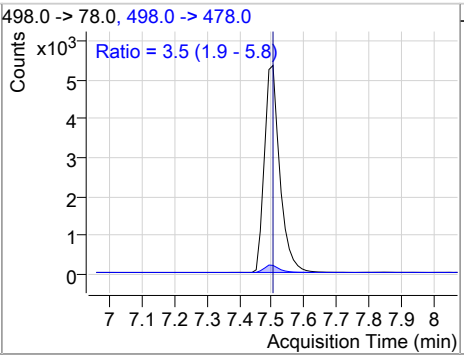


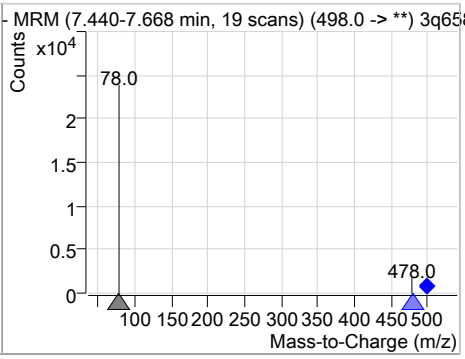




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.94	7.50	0.01	17457	498.0 -> 478.0	3.5	1.9	5.8

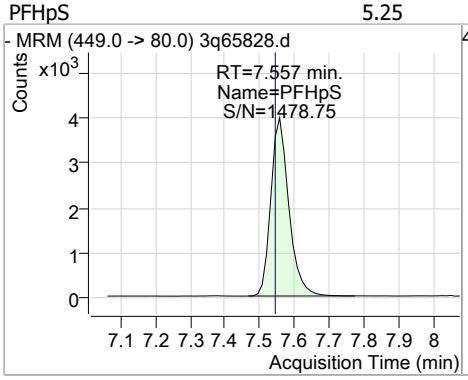


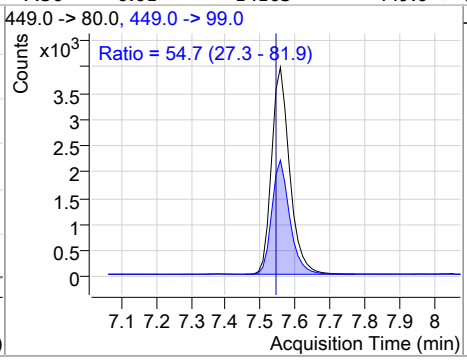


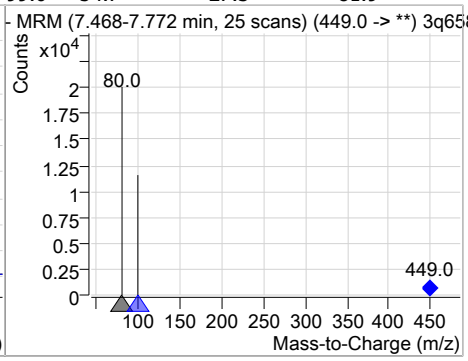


Perfluorinated Compounds by LC/MS/MS

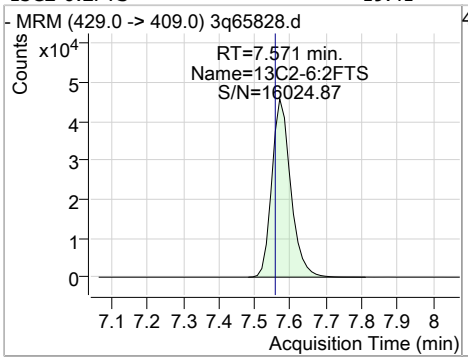
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.25	7.56	0.01	14163	449.0 -> 99.0	54.7	27.3	81.9

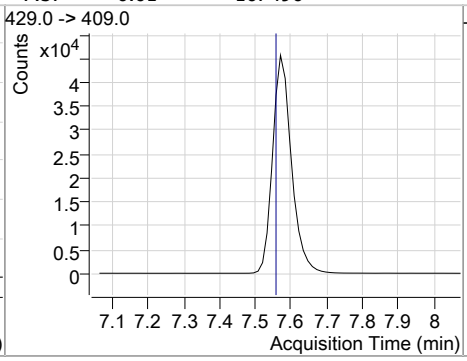


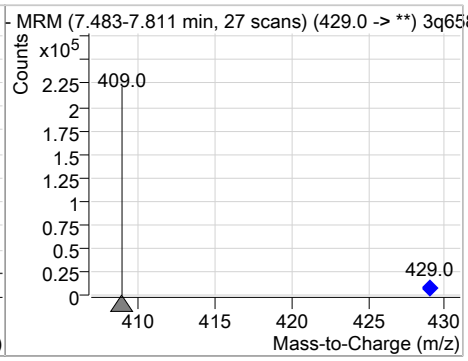




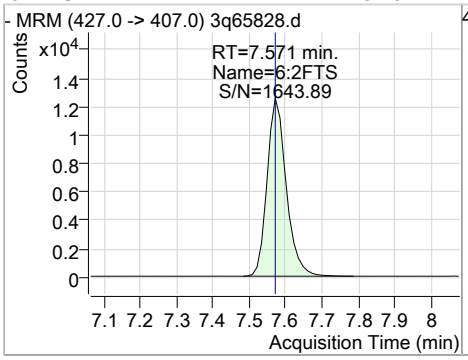
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.41	7.57	0.01	167496				

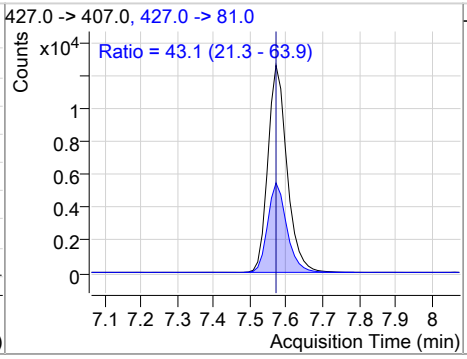


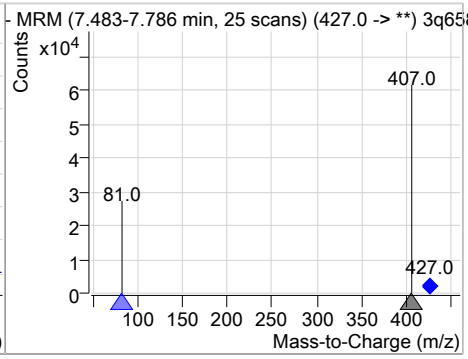




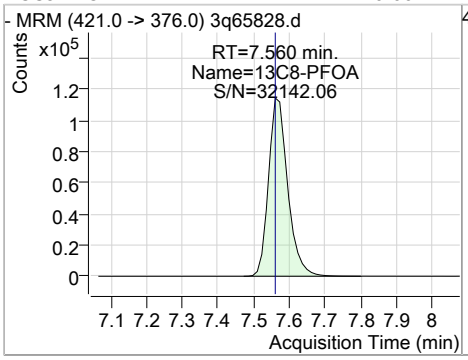
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.26	7.57	0.01	45679	427.0 -> 81.0	43.1	21.3	63.9

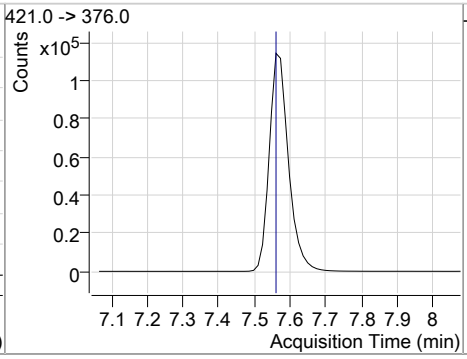


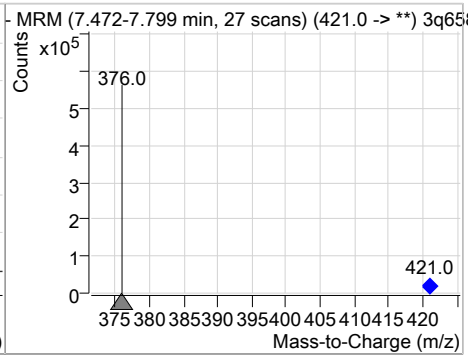




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.00	7.56	0.00	425562				

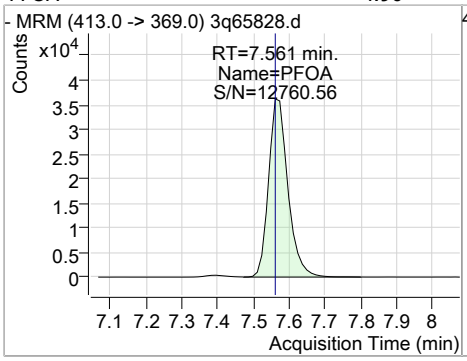


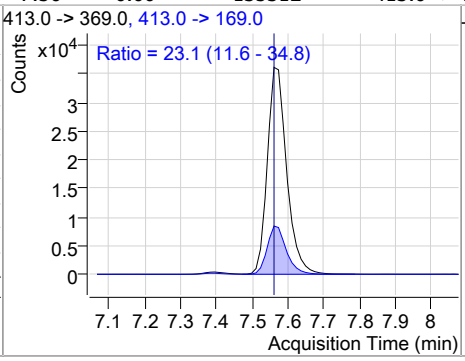


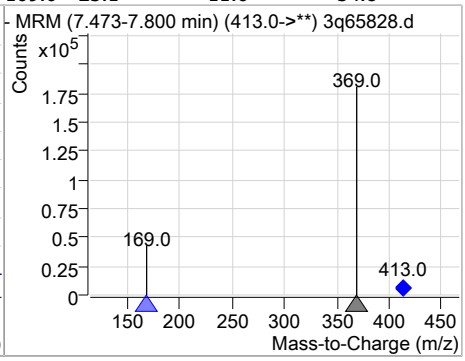


Perfluorinated Compounds by LC/MS/MS

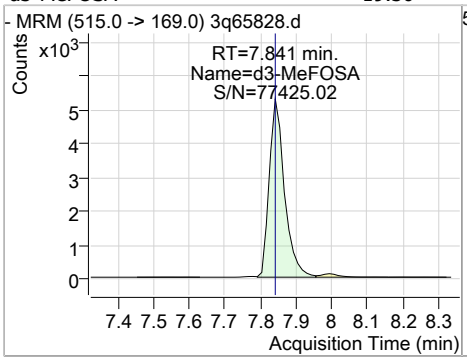
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.96	7.56	0.00	135312	413.0 -> 169.0	23.1	11.6	34.8

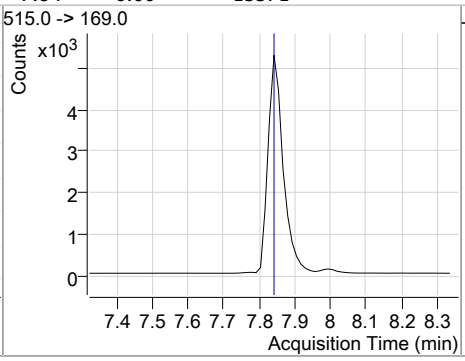


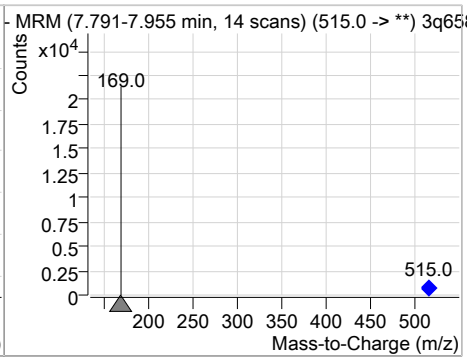




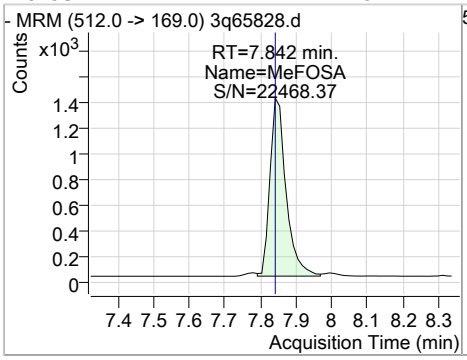
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.30	7.84	0.00	15571				

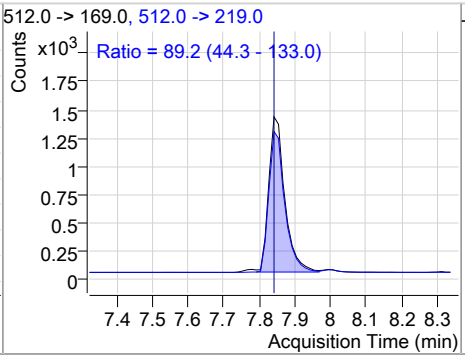


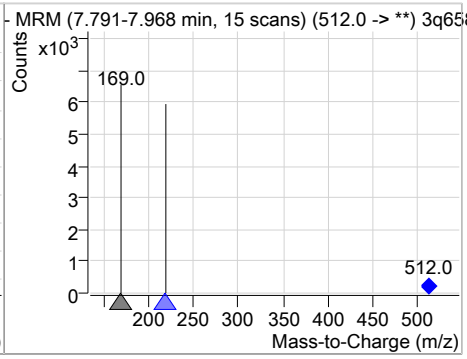




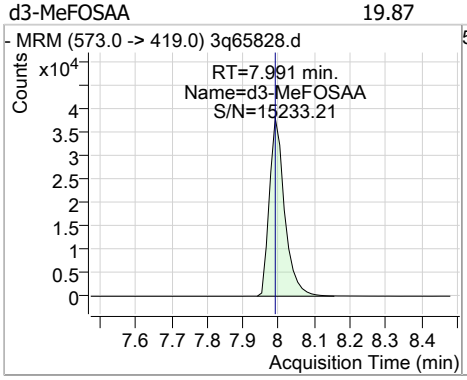
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.12	7.84	0.00	4331	512.0 -> 219.0	89.2	44.3	133.0

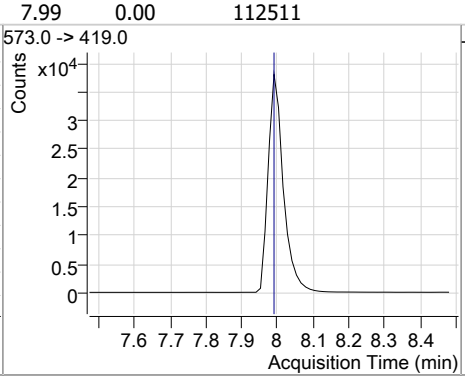


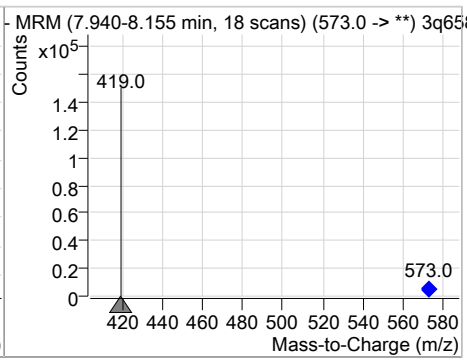




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.87	7.99	0.00	112511				

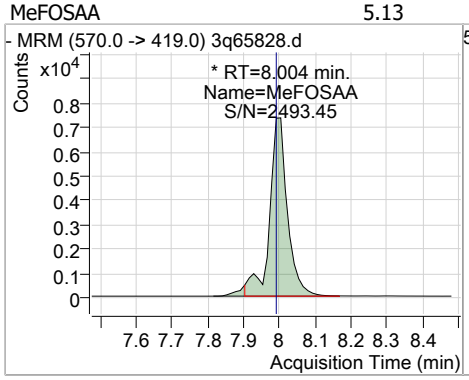


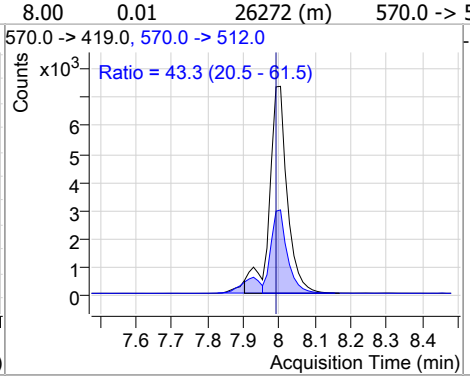


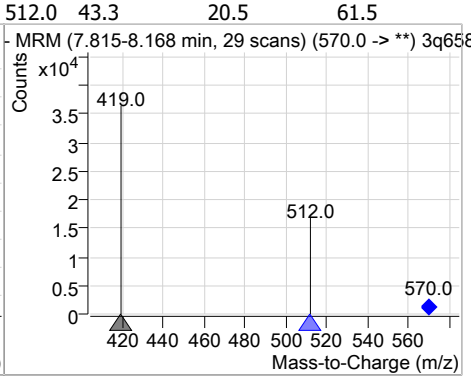


Perfluorinated Compounds by LC/MS/MS

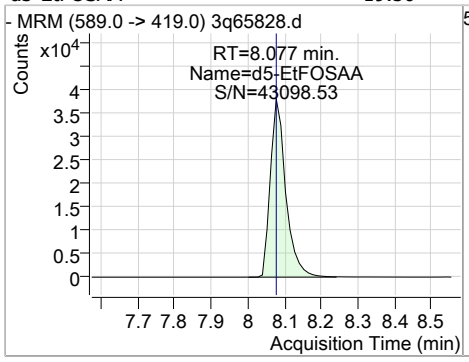
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.13	8.00	0.01	26272 (m)	570.0 -> 512.0	43.3	20.5	61.5

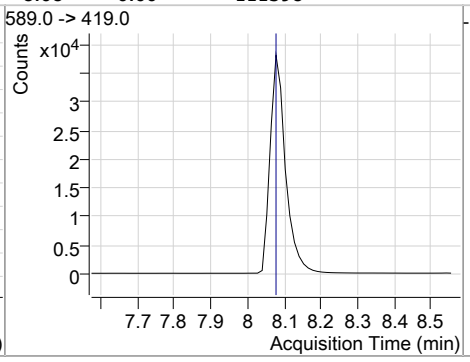


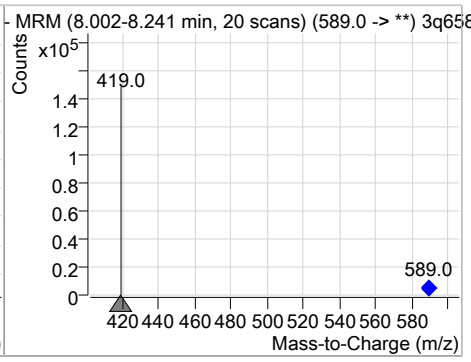




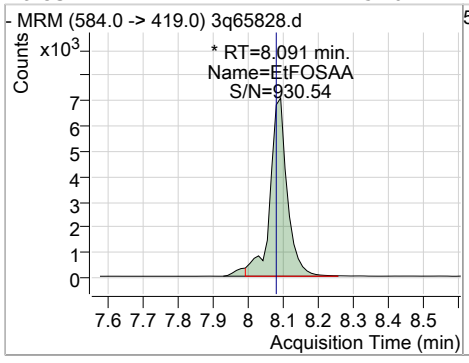
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.56	8.08	0.00	111398				

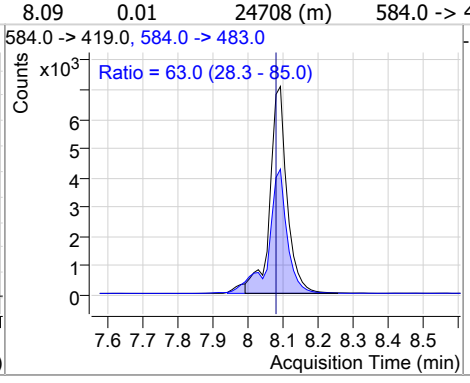


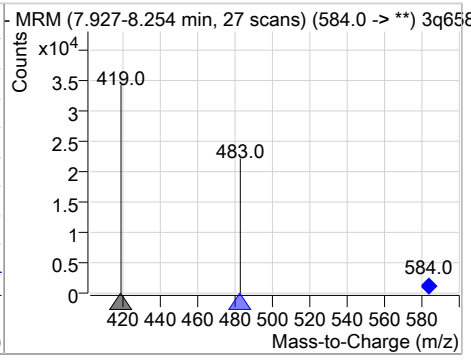




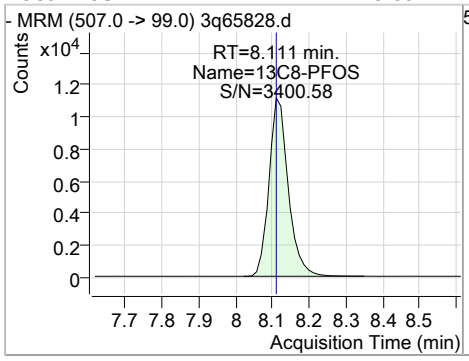
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.16	8.09	0.01	24708 (m)	584.0 -> 483.0	63.0	28.3	85.0

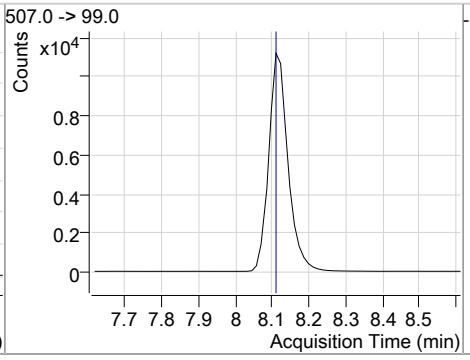


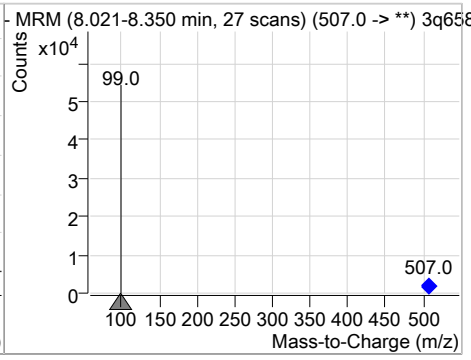




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.55	8.11	0.00	40449				

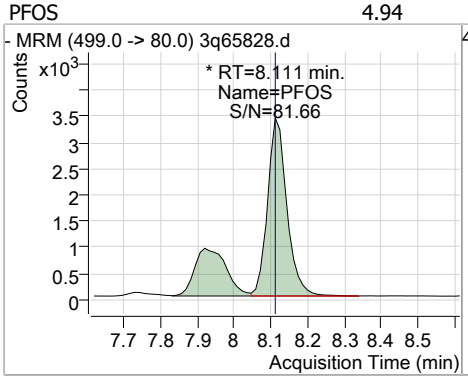


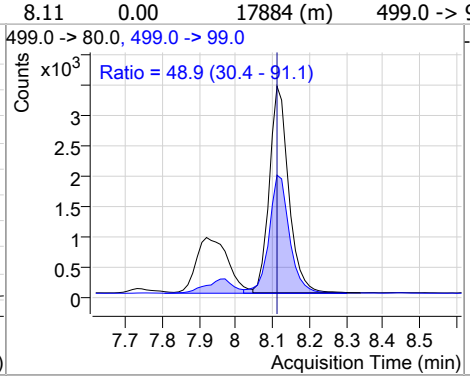


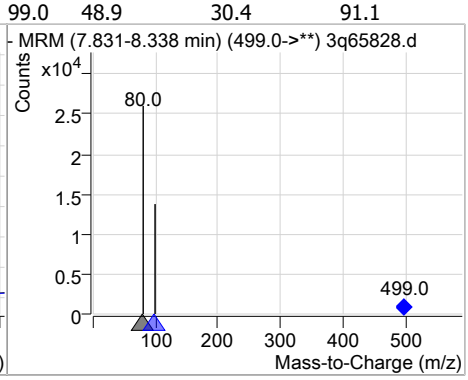


Perfluorinated Compounds by LC/MS/MS

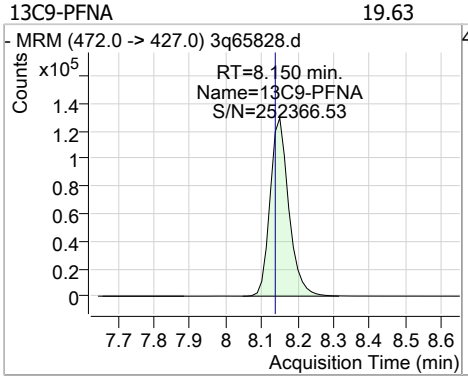
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.94	8.11	0.00	17884 (m)	499.0 -> 99.0	48.9	30.4	91.1

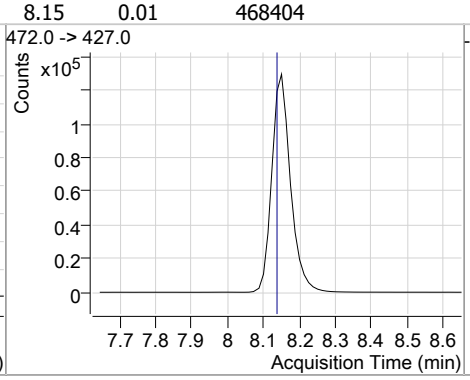


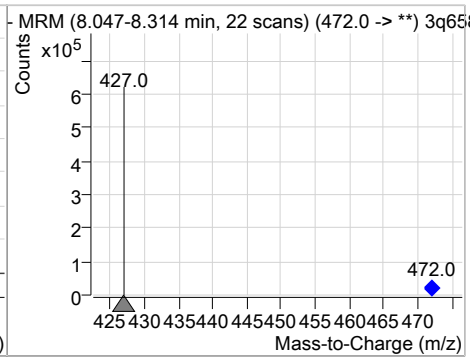




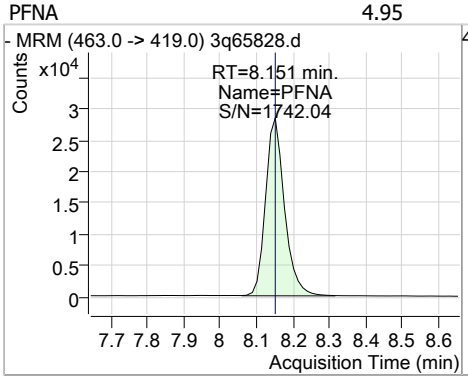
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.63	8.15	0.01	468404				

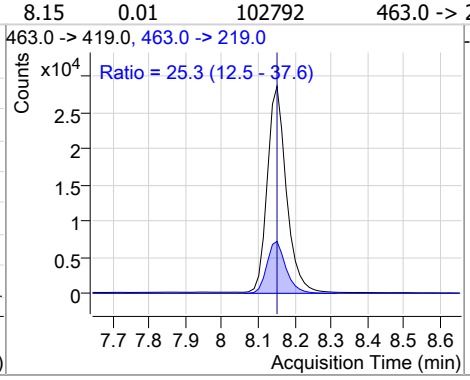


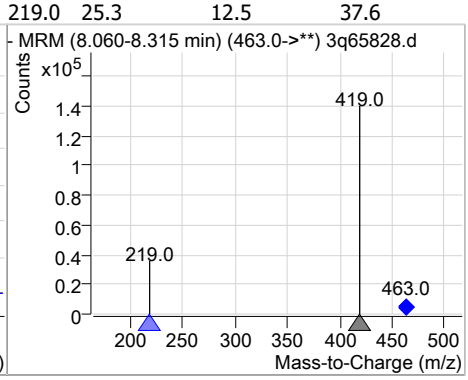




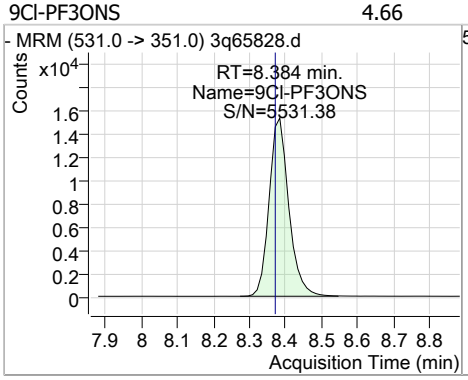
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.95	8.15	0.01	102792	463.0 -> 219.0	25.3	12.5	37.6

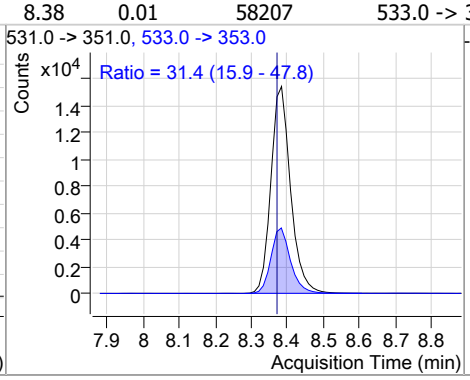


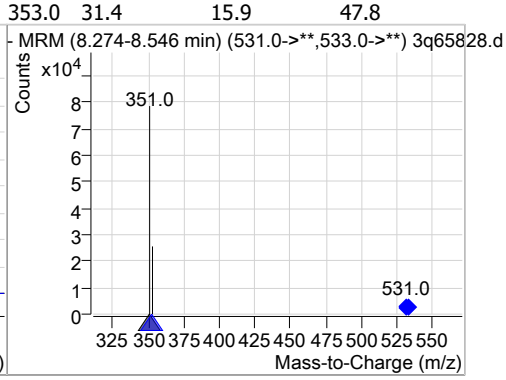




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.66	8.38	0.01	58207	533.0 -> 353.0	31.4	15.9	47.8

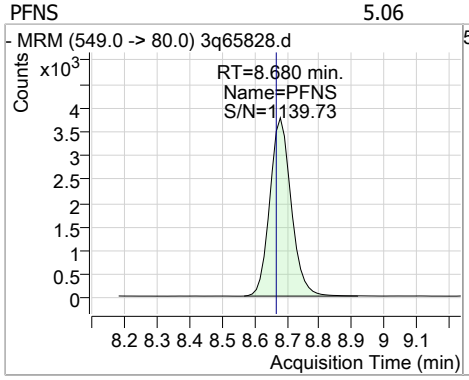


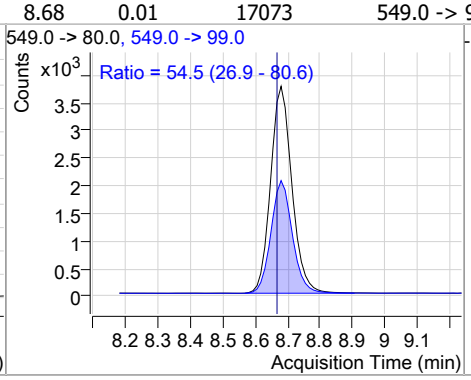


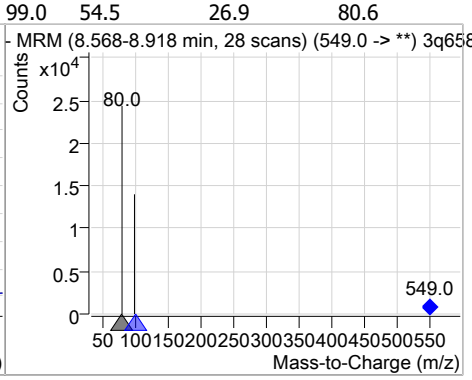


Perfluorinated Compounds by LC/MS/MS

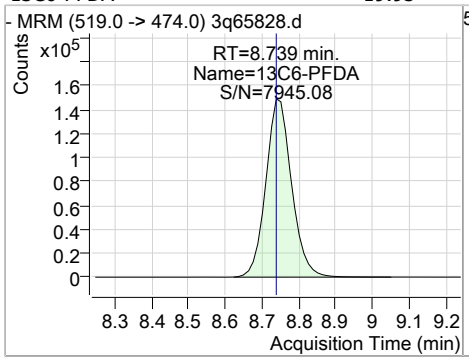
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.06	8.68	0.01	17073	549.0 -> 99.0	54.5	26.9	80.6

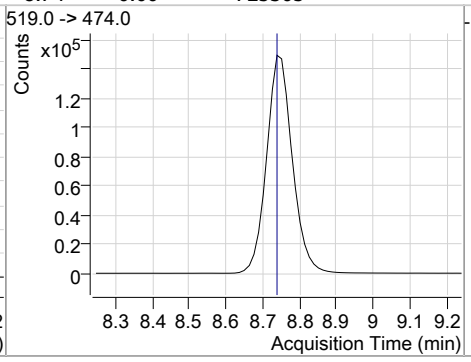


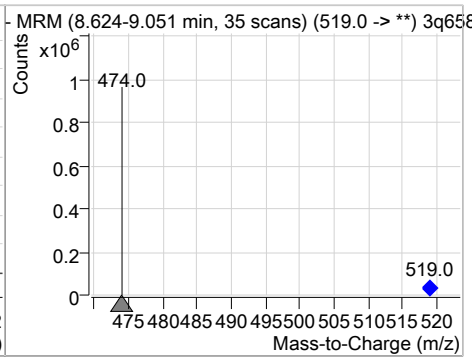




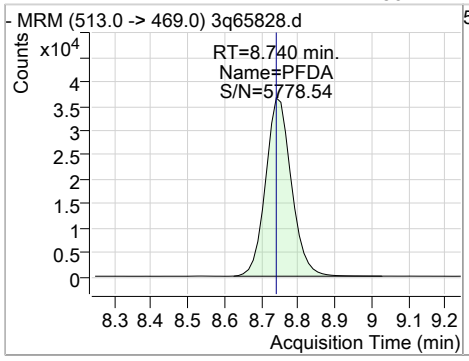
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.95	8.74	0.00	725365				

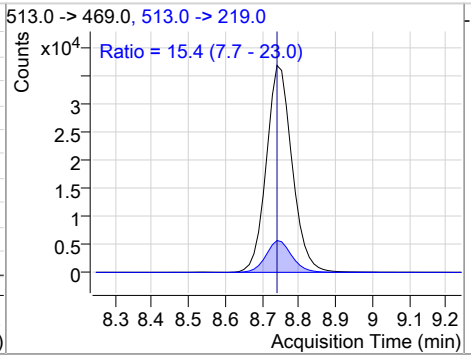


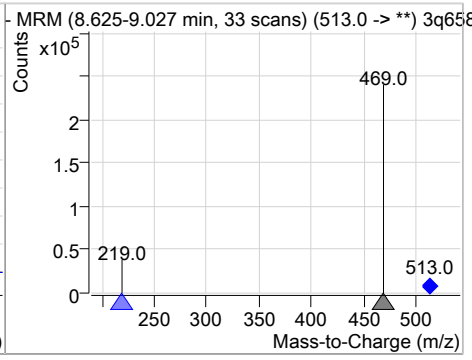




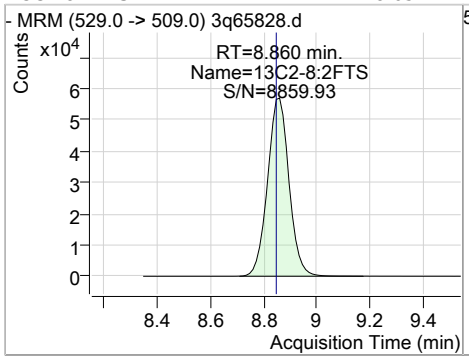
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.86	8.74	0.00	178591	513.0 -> 219.0	15.4	7.7	23.0

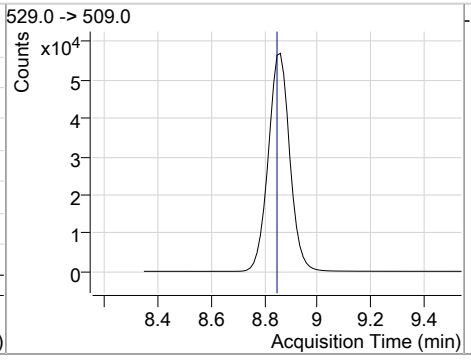


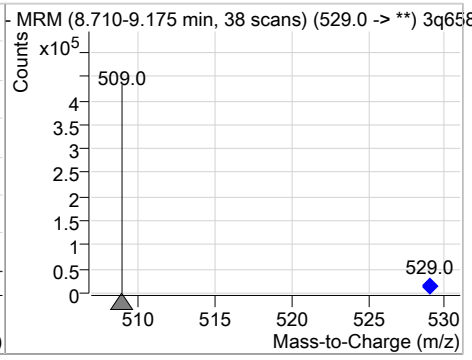




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.65	8.86	0.01	319368				

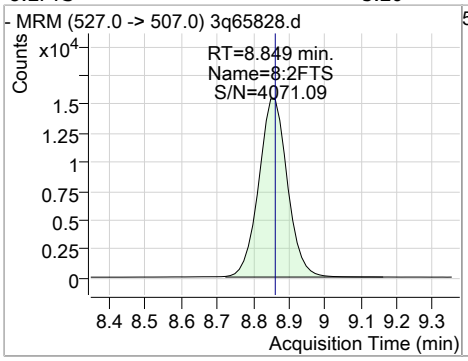


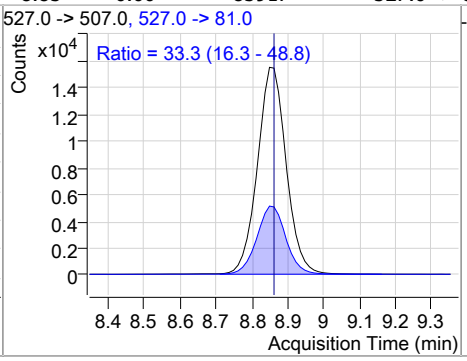


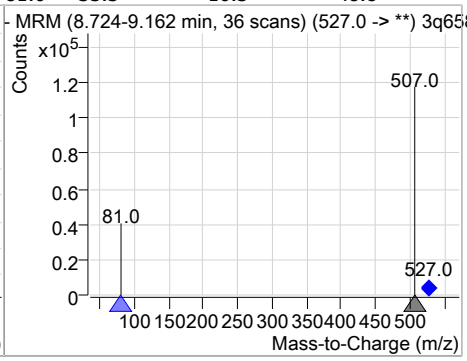


Perfluorinated Compounds by LC/MS/MS

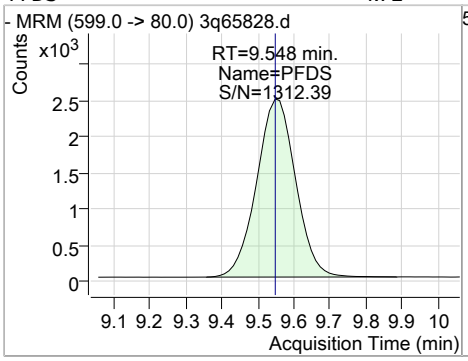
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.26	8.85	0.00	85917	527.0 -> 81.0	33.3	16.3	48.8

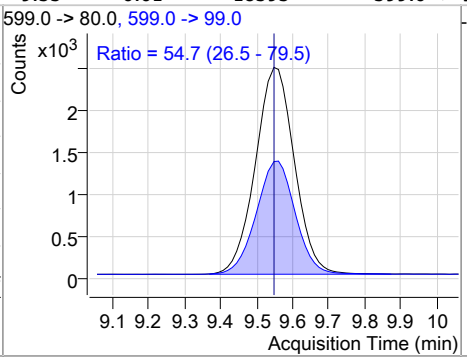


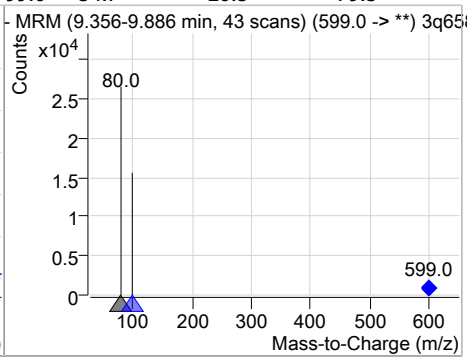




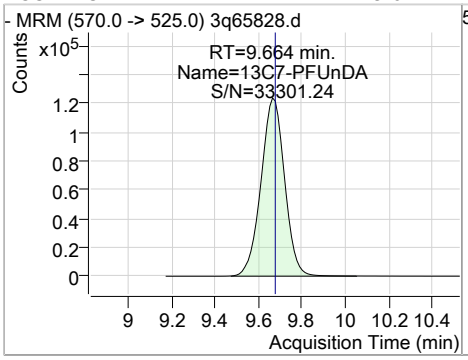
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.72	9.55	-0.01	18595	599.0 -> 99.0	54.7	26.5	79.5

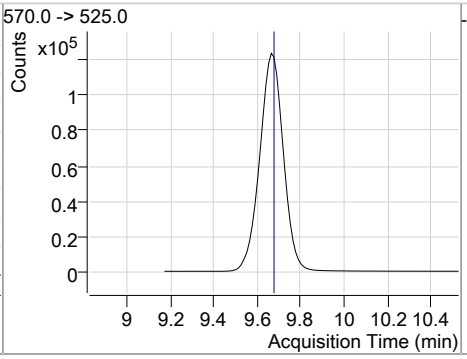


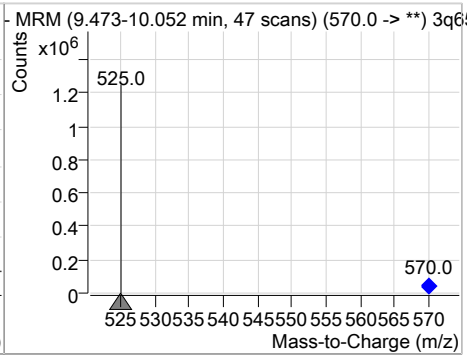




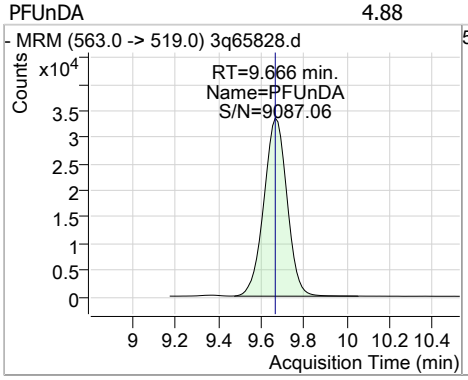
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.67	9.66	-0.01	936800				

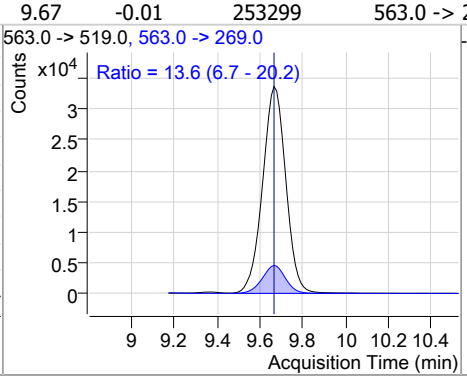


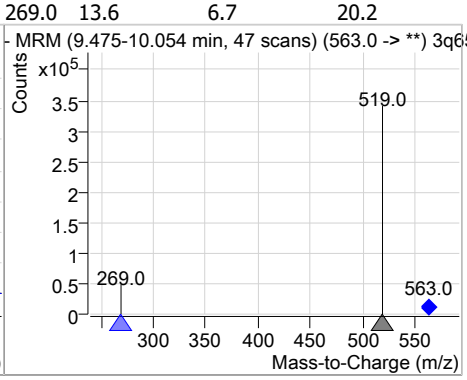




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.88	9.67	-0.01	253299	563.0 -> 269.0	13.6	6.7	20.2

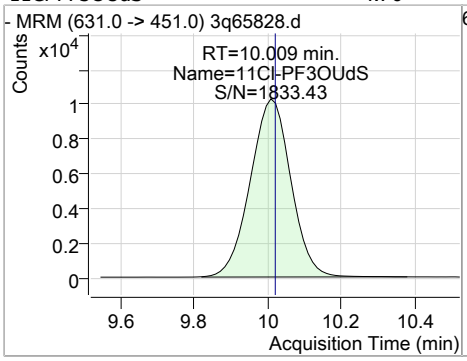


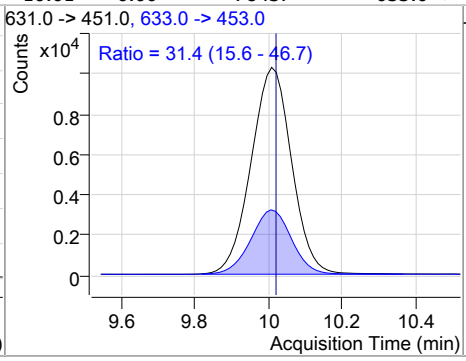


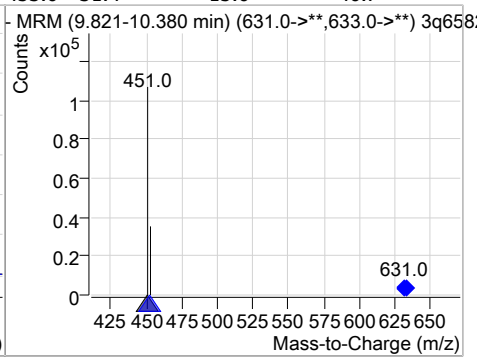


Perfluorinated Compounds by LC/MS/MS

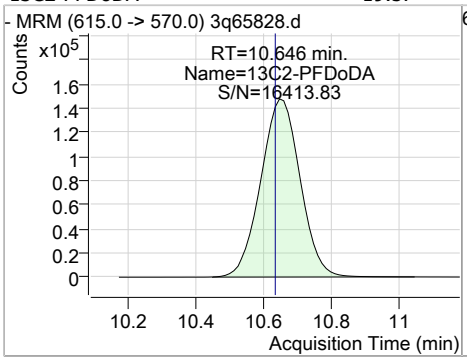
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.76	10.01	0.00	78437	633.0 -> 453.0	31.4	15.6	46.7

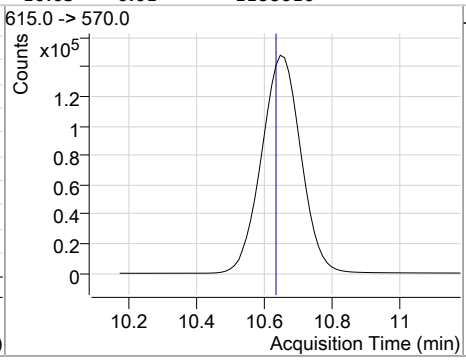


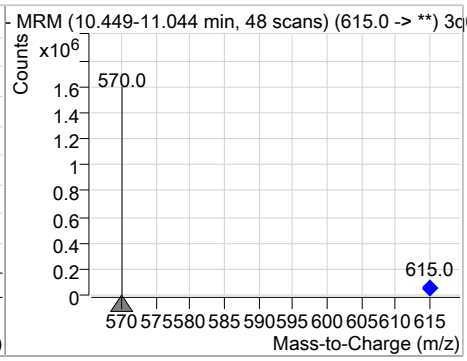




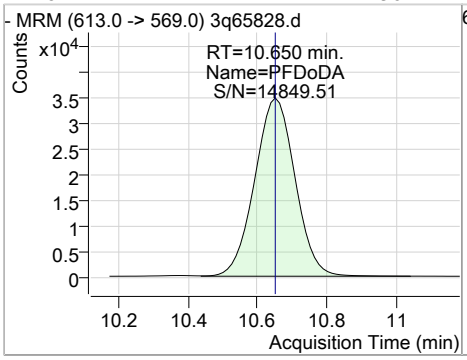
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.57	10.65	0.01	1188610				

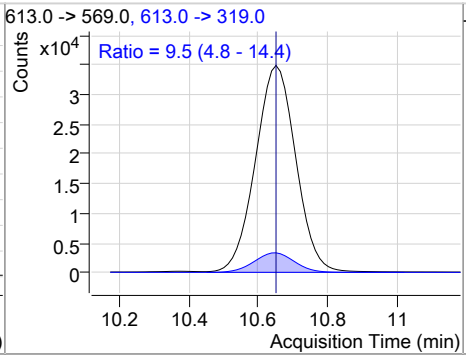


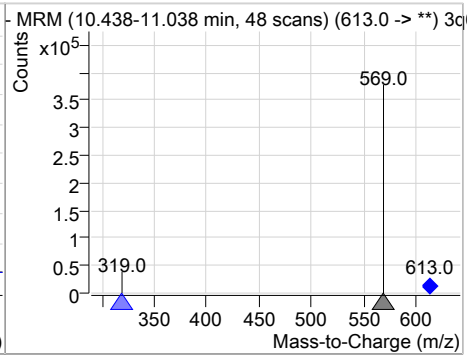




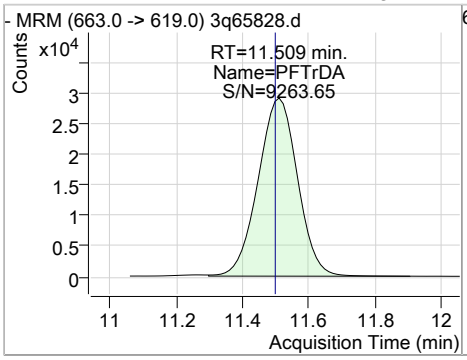
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.96	10.65	0.01	279112	613.0 -> 319.0	9.5	4.8	14.4

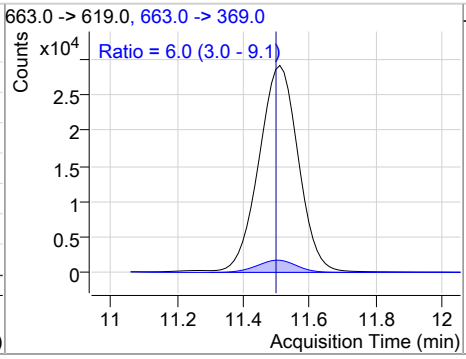


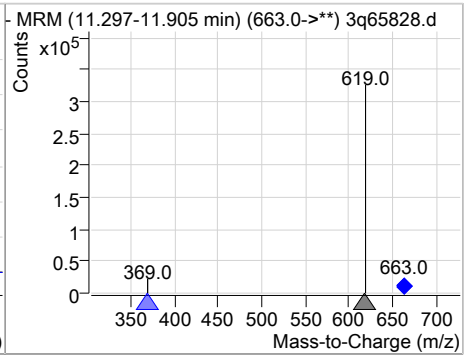




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.94	11.51	0.03	240055	663.0 -> 369.0	6.0	3.0	9.1

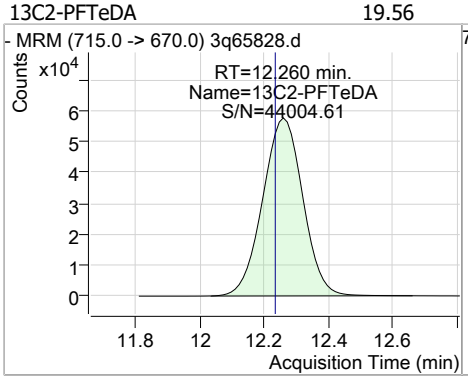


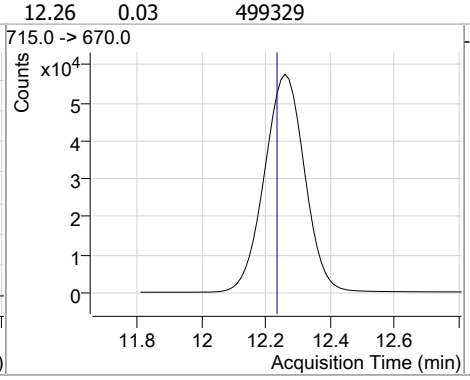


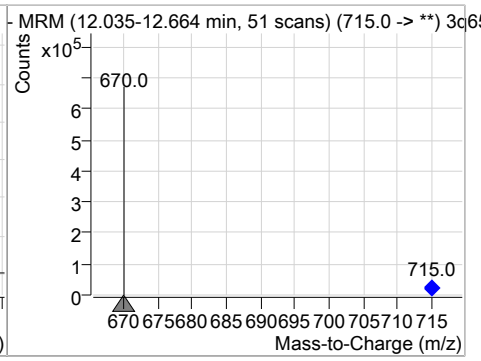


Perfluorinated Compounds by LC/MS/MS

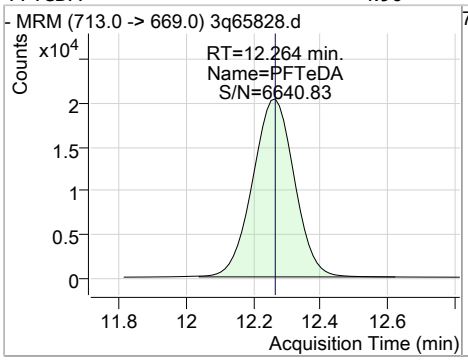
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.56	12.26	0.03	499329				

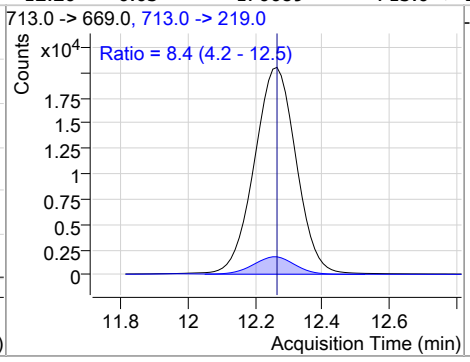


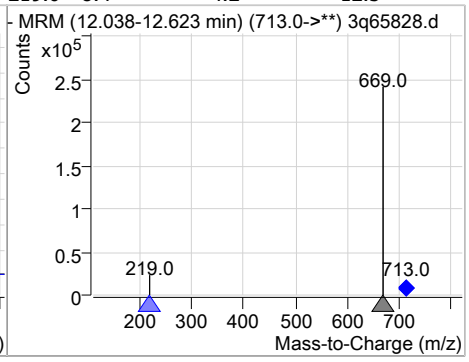




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.96	12.26	0.03	176689	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65828.D
Injection Time: 09/15/22 19:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65829.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:27:29 PM
Sample Name : ic900-10
Vial : P1-A6
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

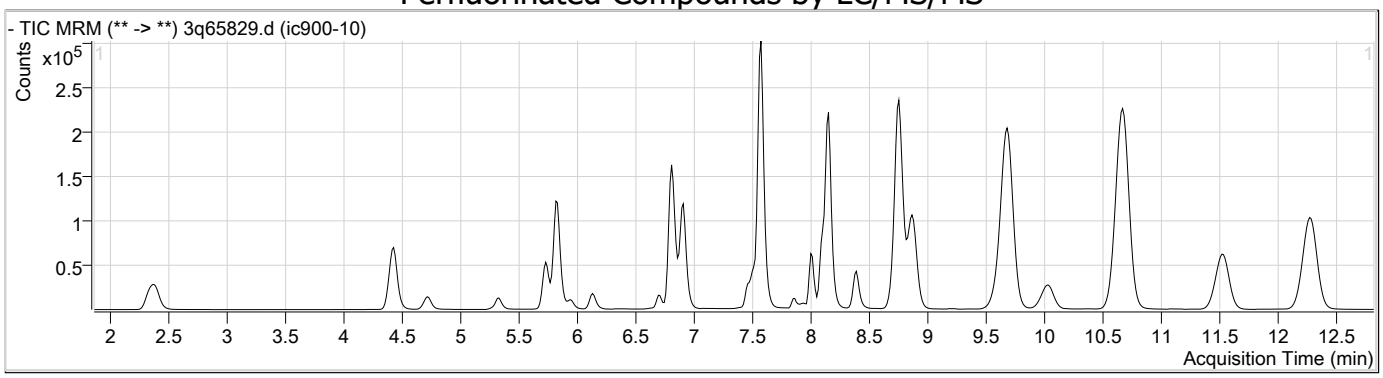
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	166442	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	242619	20.00	µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	322421	20.00	µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	320938	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	438386	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	484414	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	737652	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	962292	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	1220173	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	512827	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	74643	20.00	µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	22265	20.00	µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	27306	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	42268	20.00	µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	119469	20.00	µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	171907	20.00	µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	336466	20.00	µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	115396	20.00	µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	25901	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	16841	20.00	µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	116382	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	119469	19.46	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-6:2FTS	7.571	429.0 -> 409.0	171907	19.93	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-8:2FTS	8.860	529.0 -> 509.0	336466	19.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1220173	20.09	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-PFTeDA	12.260	715.0 -> 670.0	512827	20.08	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-PFBS	4.704	302.0 -> 99.0	22265	20.12	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C3-PFHxS	6.834	402.0 -> 99.0	27306	20.27	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFBA	2.365	217.0 -> 172.0	166442	20.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C4-PFHpA	6.805	367.0 -> 322.0	320938	20.35	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C5-PFHxA	5.813	318.0 -> 273.0	322421	20.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C5-PFPeA	4.424	268.0 -> 223.0	242619	20.06	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C6-PFDA	8.751	519.0 -> 474.0	737652	20.29	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

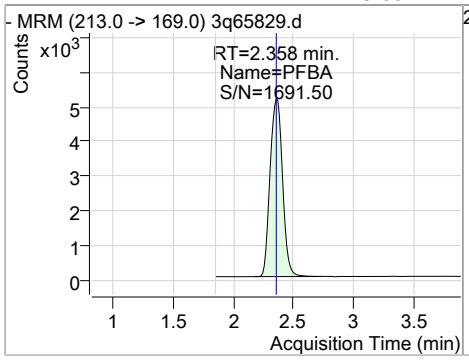
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C7-PFUnDA	9.677	570.0 -> 525.0	962292	20.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C8-FOSA	7.503	506.0 -> 78.0	74643	20.95 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C8-PFOA	7.573	421.0 -> 376.0	438386	20.61 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-PFOS	8.111	507.0 -> 99.0	42268	20.43 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C9-PFNA	8.150	472.0 -> 427.0	484414	20.30 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	7.991	573.0 -> 419.0	115396	20.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	25907	20.06 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
d3-MeFOSA	7.841	515.0 -> 169.0	16841	20.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
d5-EtFOSAA	8.077	589.0 -> 419.0	116370	20.43 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	68156	10.21 µg/L		100
6:2FTS	7.571	427.0 -> 407.0	92517	10.38 µg/L		99
8:2FTS	8.861	527.0 -> 507.0	176734	10.26 µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	49994	9.99 µg/L	m	88
FOSA	7.504	498.0 -> 78.0	35393	9.64 µg/L		99
MeFOSAA	8.004	570.0 -> 419.0	51956	9.89 µg/L	m	93
PFBA	2.358	213.0 -> 169.0	37164	9.80 µg/L		100
PFBS	4.707	299.0 -> 80.0	31959	9.83 µg/L		99
PFDA	8.752	513.0 -> 469.0	362316	9.70 µg/L		100
PFDoDA	10.663	613.0 -> 569.0	561184	9.71 µg/L		100
PFDS	9.560	599.0 -> 80.0	37763	9.32 µg/L		99
PFHpA	6.807	363.0 -> 319.0	235592	9.64 µg/L		100
PFHpS	7.557	449.0 -> 80.0	29115	10.33 µg/L		99
PFHxA	5.814	313.0 -> 269.0	177409	9.82 µg/L		100
PFHxS	6.835	399.0 -> 80.0	32632	9.69 µg/L	m	98
PFNA	8.151	463.0 -> 419.0	207261	9.65 µg/L		99
PFNS	8.680	549.0 -> 80.0	34669	9.84 µg/L		98
PFOA	7.573	413.0 -> 369.0	269252	9.58 µg/L		100
PFOS	8.111	499.0 -> 80.0	36806	9.74 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	109538	9.80 µg/L		100
PFPeS	5.932	349.0 -> 80.0	24913	9.90 µg/L		99
PFTeDA	12.264	713.0 -> 669.0	360005	9.84 µg/L		100
PFTrDA	11.509	663.0 -> 619.0	489266	9.81 µg/L		99
PFUnDA	9.678	563.0 -> 519.0	512073	9.60 µg/L		100
11Cl-PF3OUdS	10.022	631.0 -> 451.0	159183	9.40 µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	119899	9.44 µg/L		99
ADONA	6.903	377.0 -> 251.0	343283	9.54 µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	31608	9.84 µg/L		97
MeFOSA	7.854	512.0 -> 169.0	8949	9.78 µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	68120	8.62 µg/L		99
FBSA	5.327	298.0 -> 78.0	52288	10.09 µg/L		99
FHxSA	6.688	398.0 -> 78.0	50369	9.58 µg/L		99

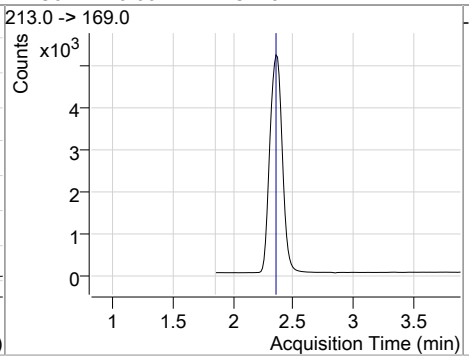
 # = Qualifier out of range, m = manually integrated, + = Area summed

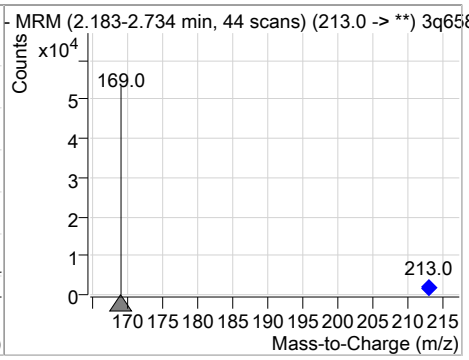
Perfluorinated Compounds by LC/MS/MS



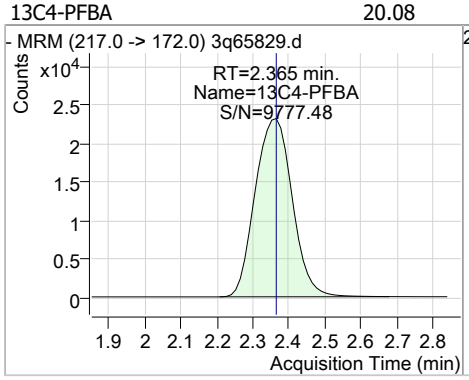
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.80	2.36	0.00	37164				

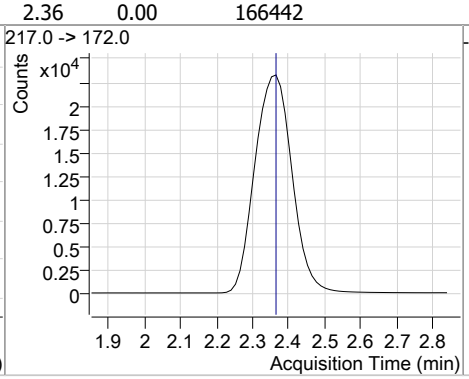


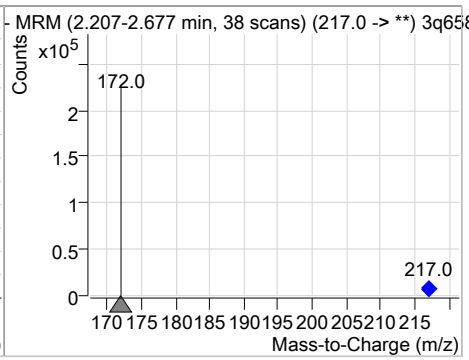




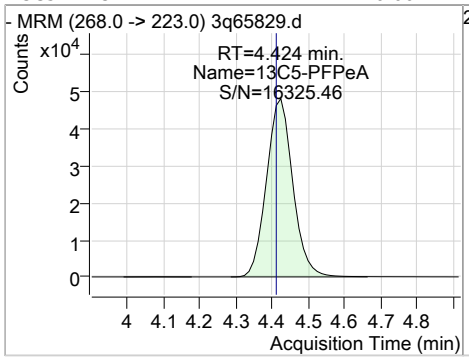
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.08	2.36	0.00	166442				

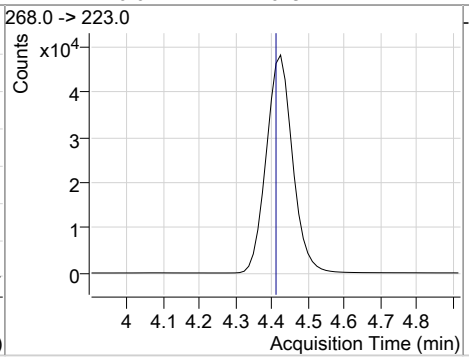


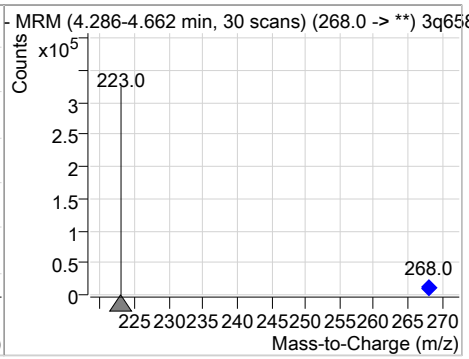




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.06	4.42	0.01	242619				

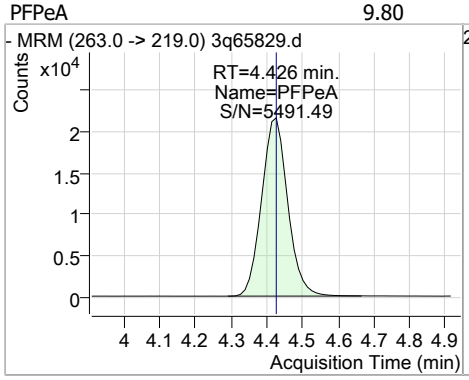


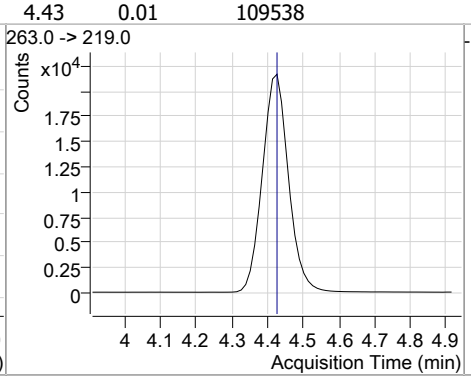


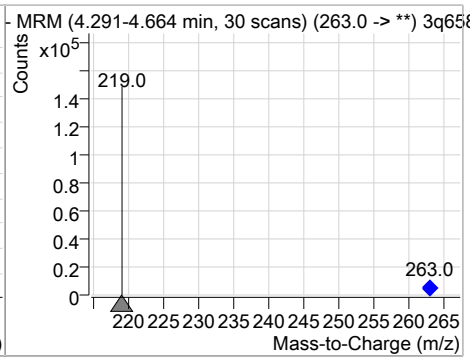


Perfluorinated Compounds by LC/MS/MS

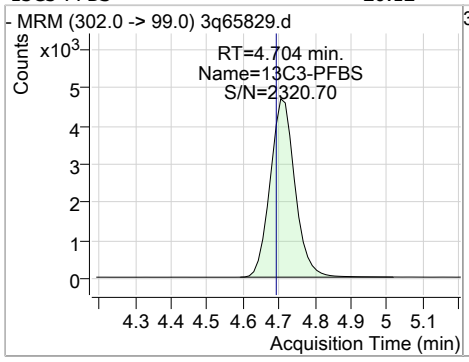
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.80	4.43	0.01	109538				

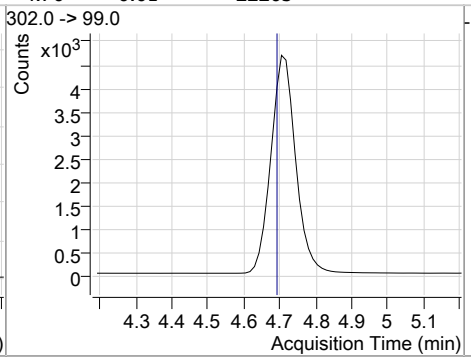


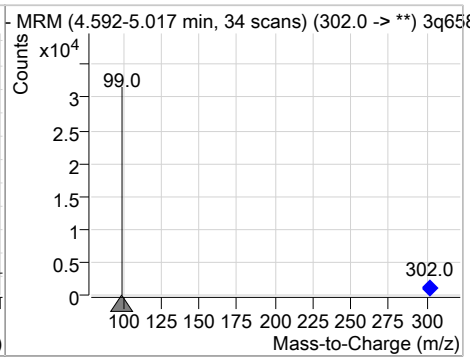




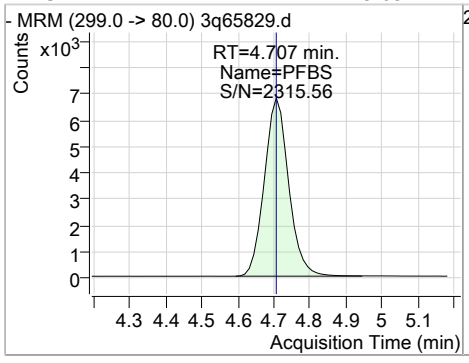
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.12	4.70	0.01	22265				

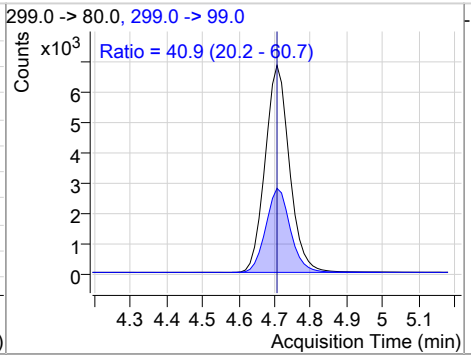


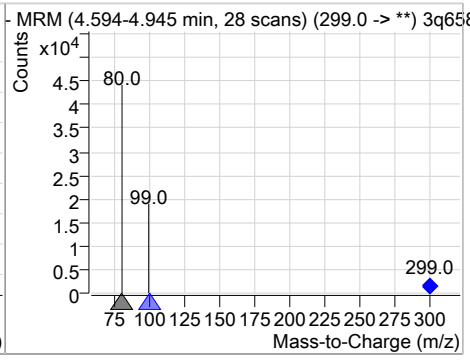




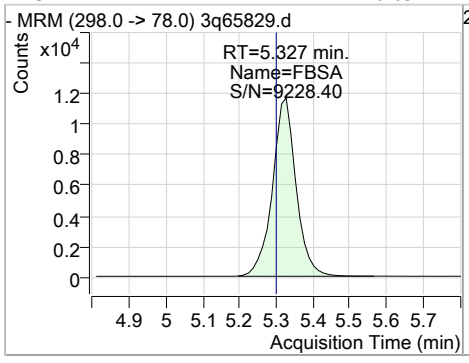
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.83	4.71	0.01	31959	299.0 -> 99.0	40.9	20.2	60.7

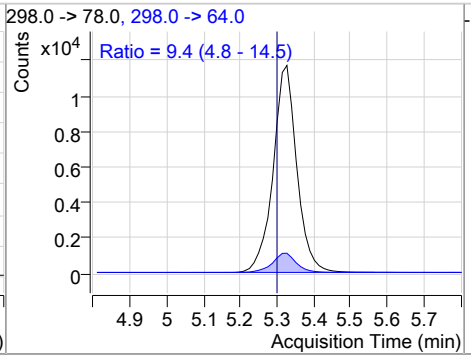


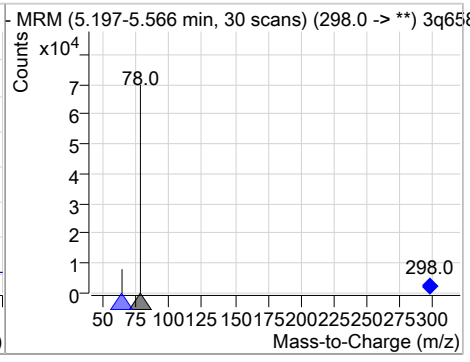




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.09	5.33	0.03	52288	298.0 -> 64.0	9.4	4.8	14.5

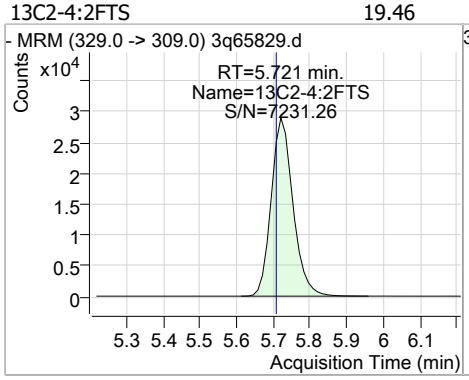


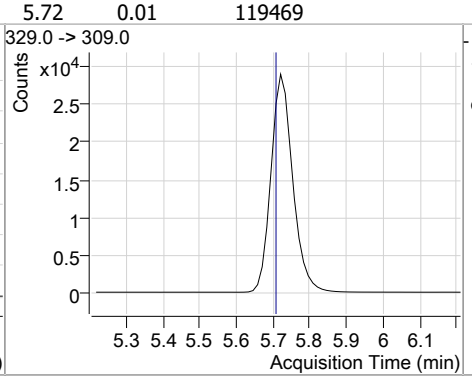


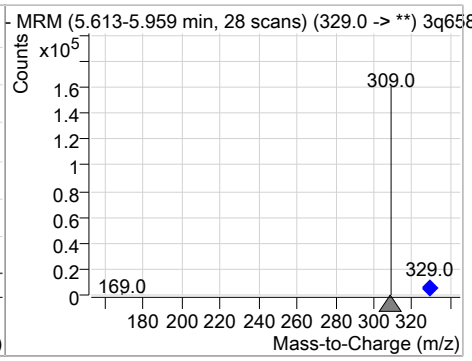


Perfluorinated Compounds by LC/MS/MS

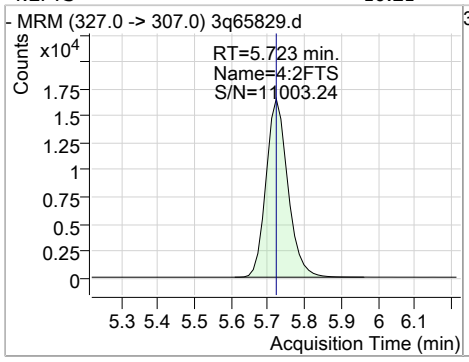
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.46	5.72	0.01	119469				

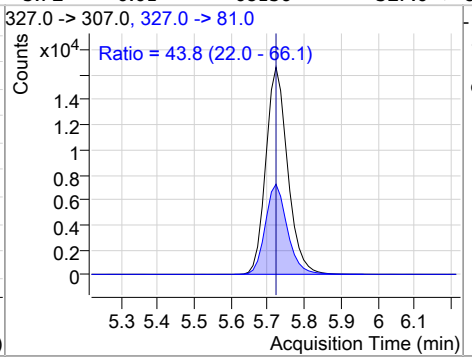


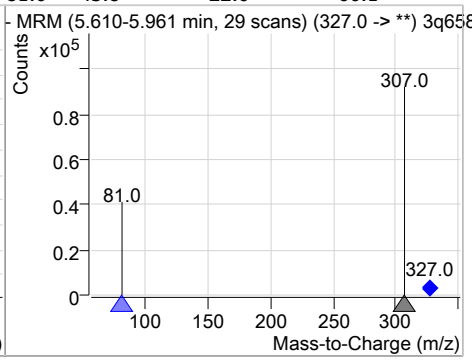




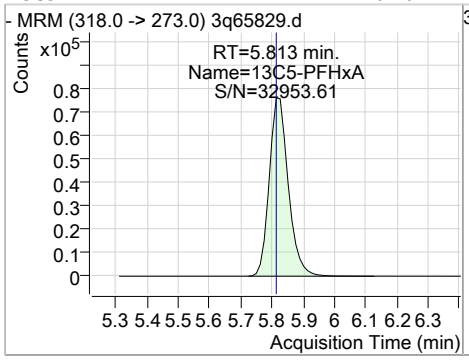
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.21	5.72	0.01	68156	327.0 -> 81.0	43.8	22.0	66.1

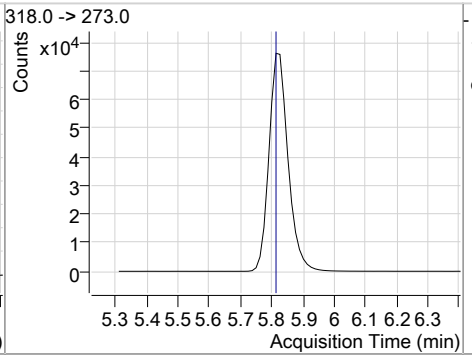


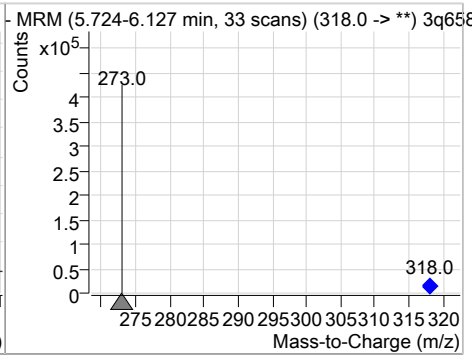




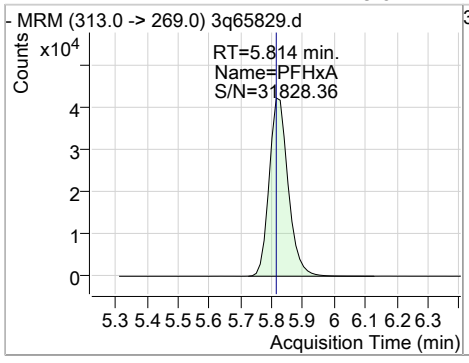
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.10	5.81	0.00	322421				

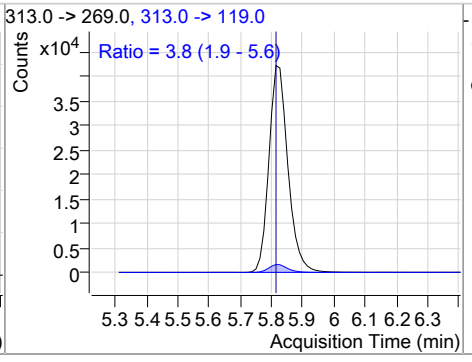


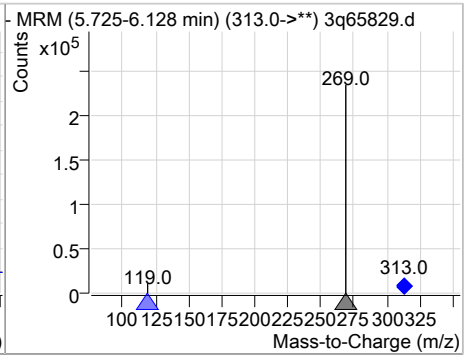




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.82	5.81	0.00	177409	313.0 -> 119.0	3.8	1.9	5.6

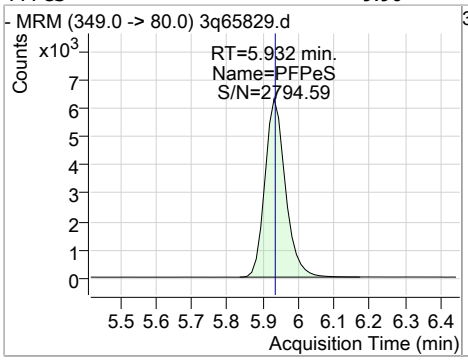


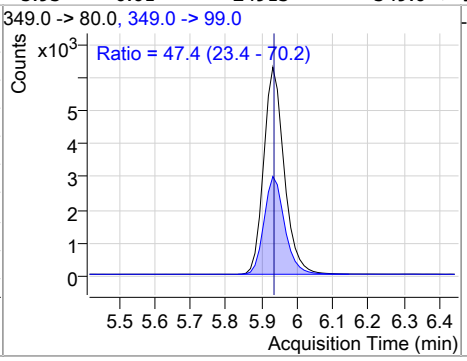


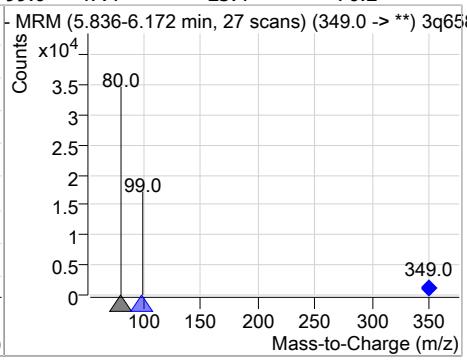


Perfluorinated Compounds by LC/MS/MS

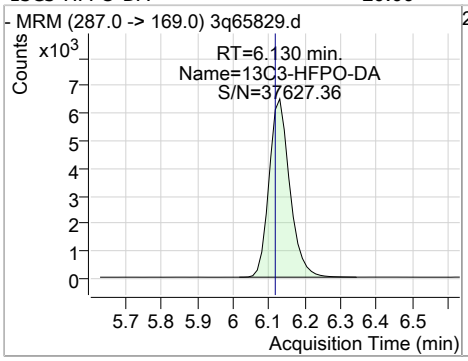
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.90	5.93	0.01	24913	349.0 -> 99.0	47.4	23.4	70.2

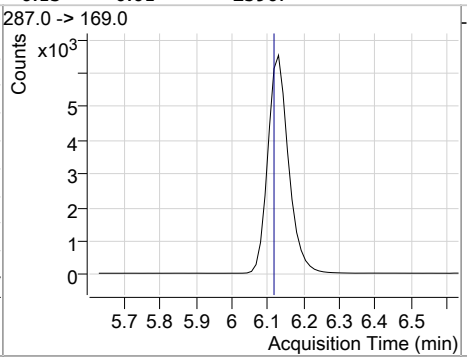


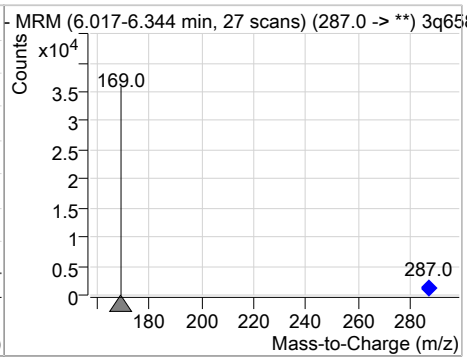




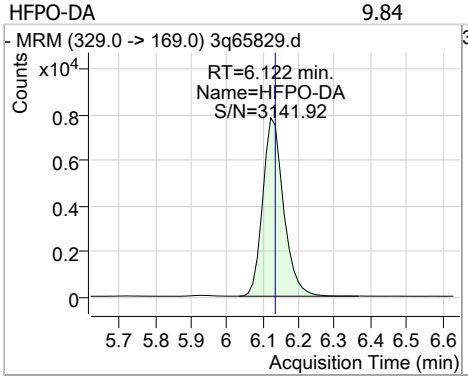
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.06	6.13	0.01	25907				

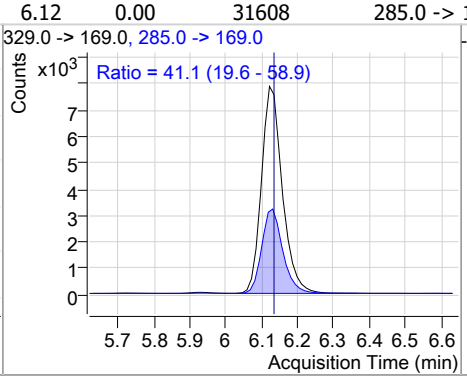


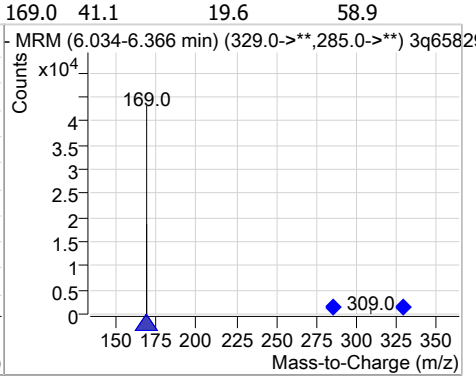




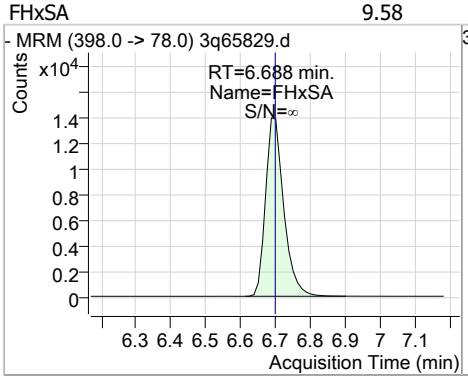
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	9.84	6.12	0.00	31608	285.0 -> 169.0	41.1	19.6	58.9

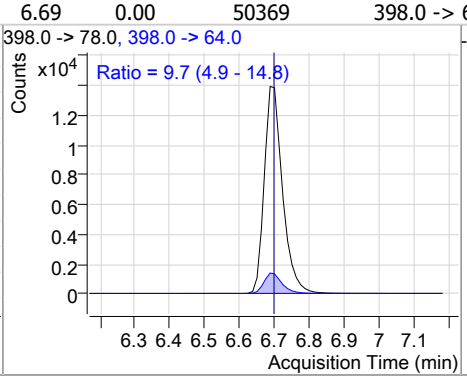


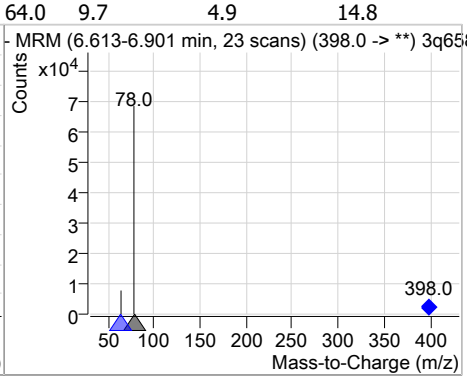




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	9.58	6.69	0.00	50369	398.0 -> 64.0	9.7	4.9	14.8

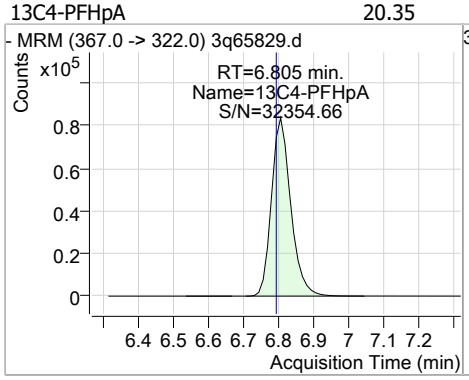


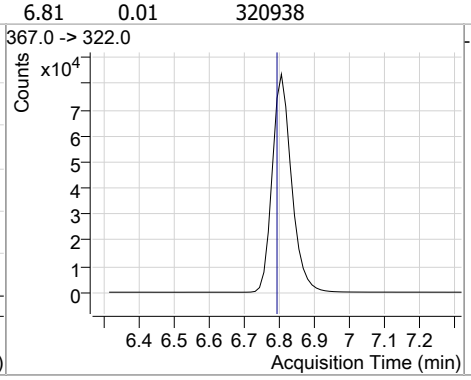


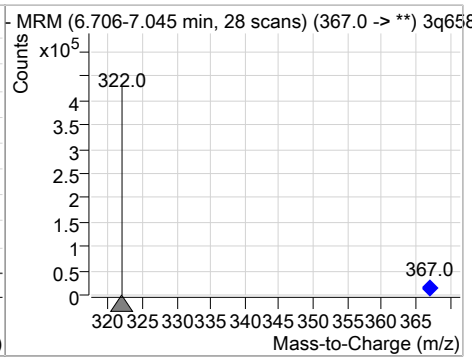


Perfluorinated Compounds by LC/MS/MS

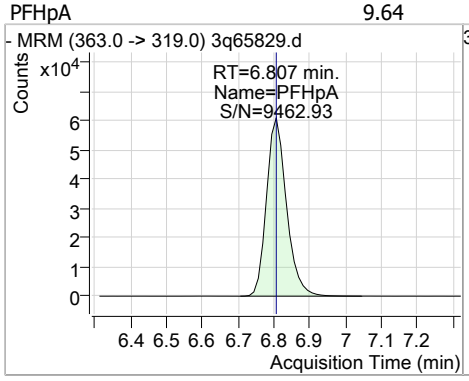
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.35	6.81	0.01	320938				

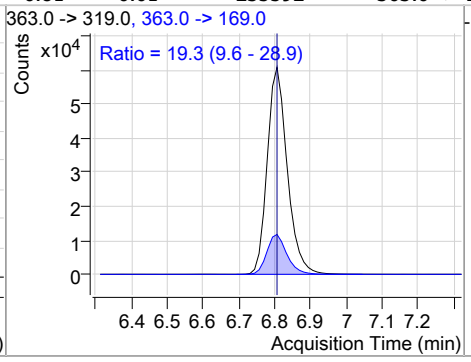


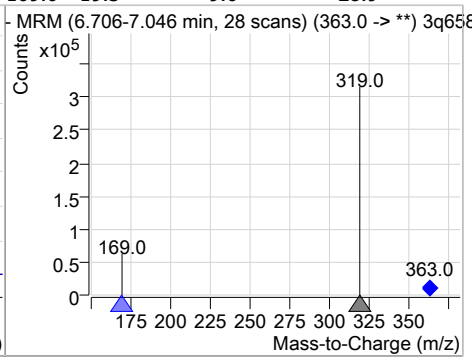




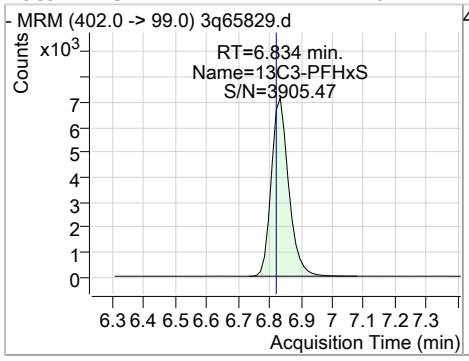
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.64	6.81	0.01	235592	363.0 -> 169.0	19.3	9.6	28.9

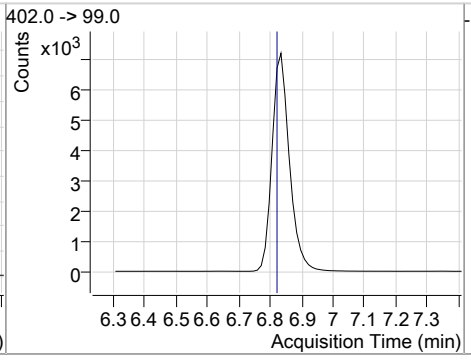


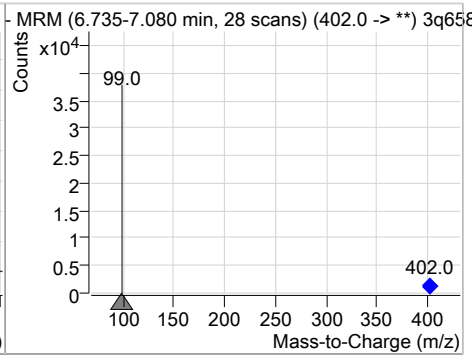




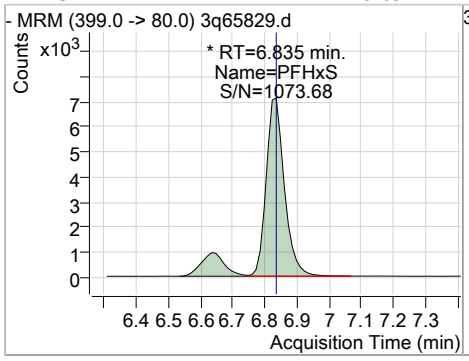
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.27	6.83	0.01	27306				

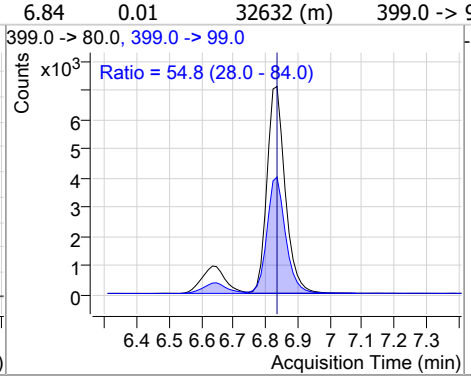


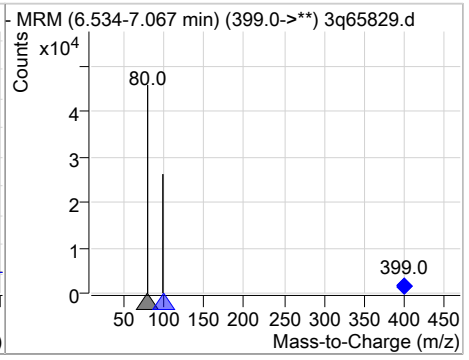




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.69	6.84	0.01	32632 (m)	399.0 -> 99.0	54.8	28.0	84.0

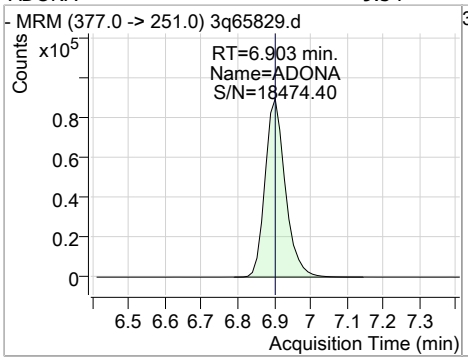


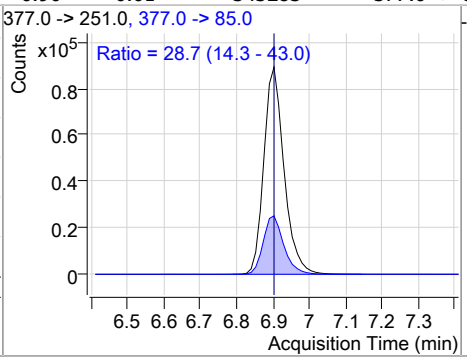


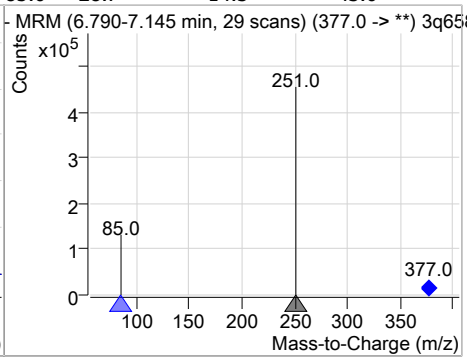


Perfluorinated Compounds by LC/MS/MS

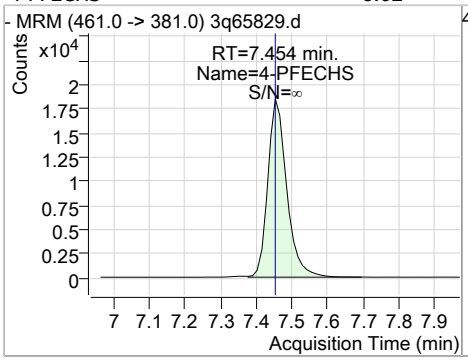
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.54	6.90	0.01	343283	377.0 -> 85.0	28.7	14.3	43.0

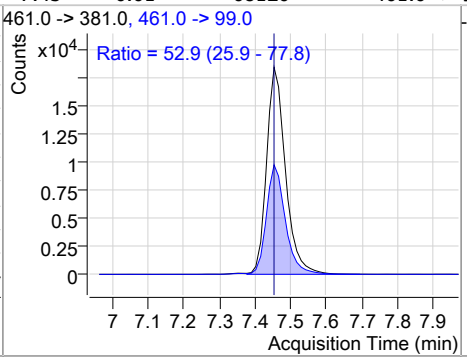


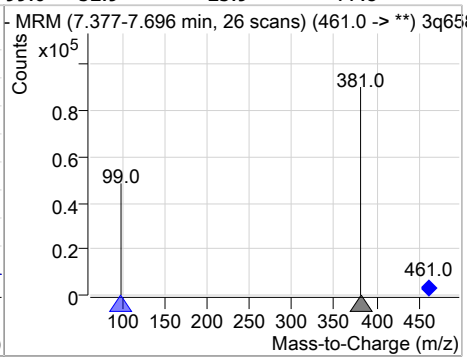




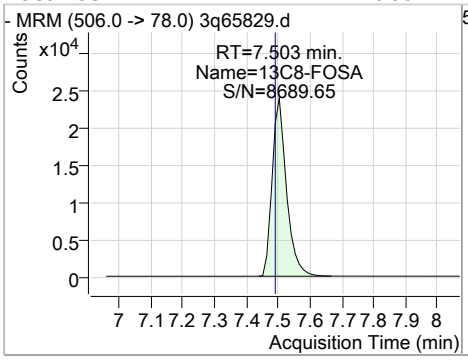
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	8.62	7.45	0.01	68120	461.0 -> 99.0	52.9	25.9	77.8

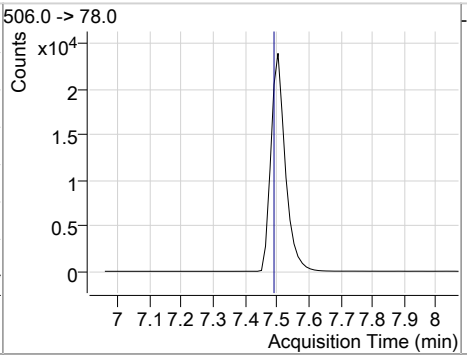


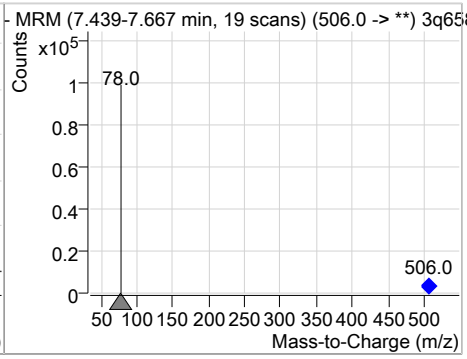




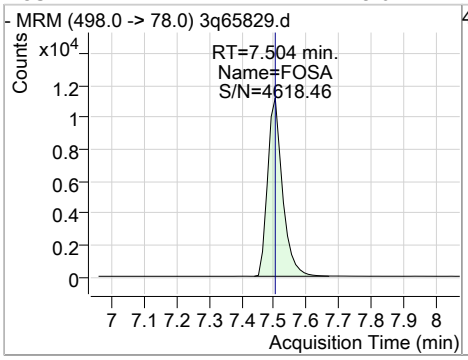
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.95	7.50	0.01	74643				

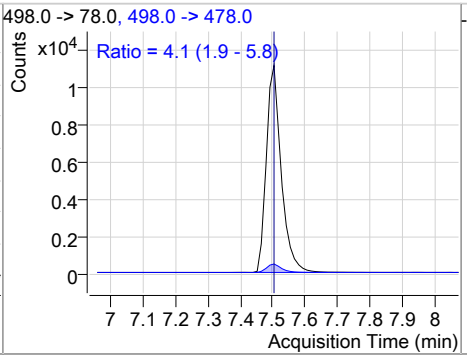


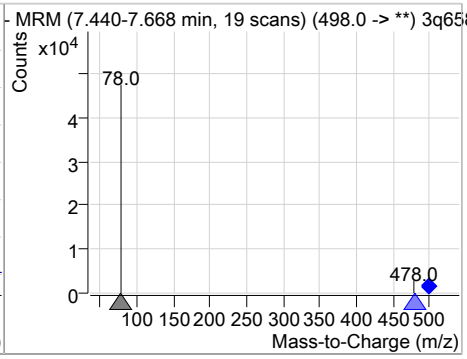




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.64	7.50	0.01	35393	498.0 -> 478.0	4.1	1.9	5.8

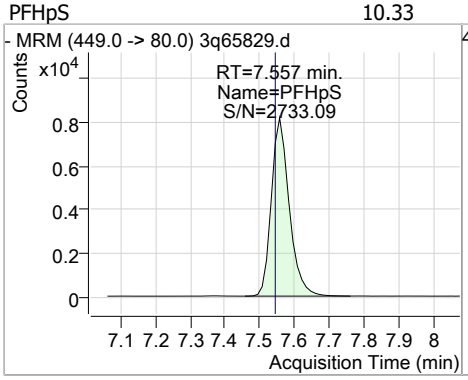


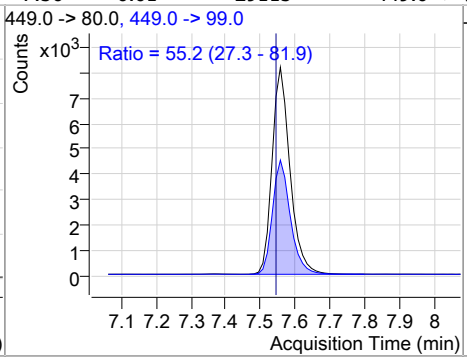


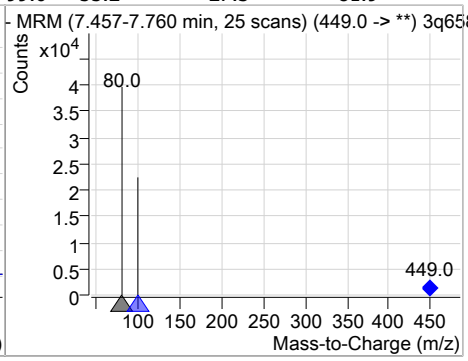


Perfluorinated Compounds by LC/MS/MS

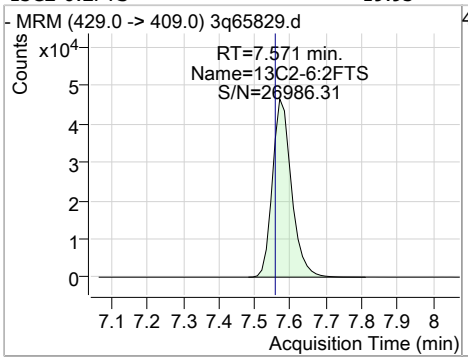
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.33	7.56	0.01	29115	449.0 -> 99.0	55.2	27.3	81.9

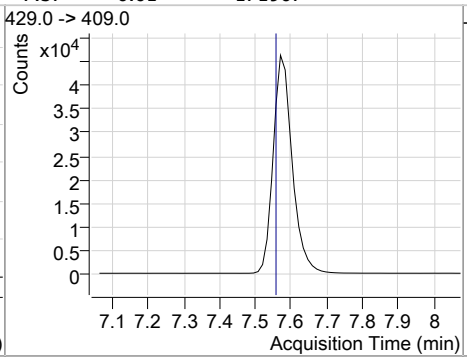


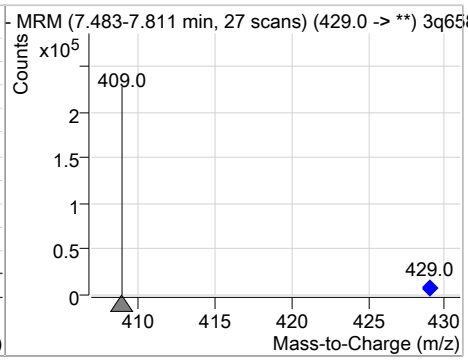




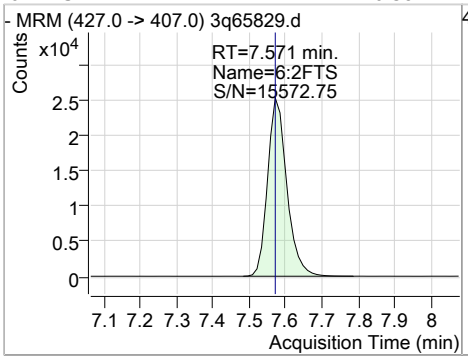
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.93	7.57	0.01	171907				

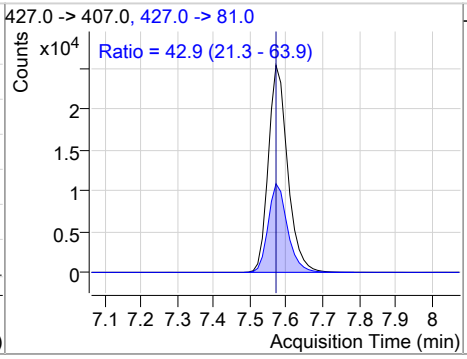


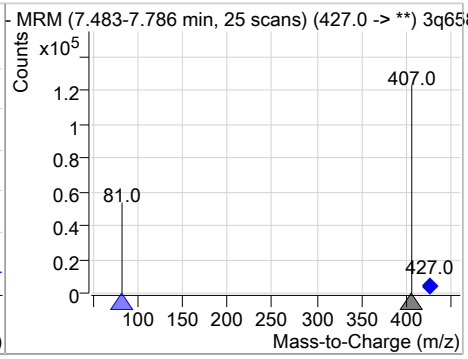




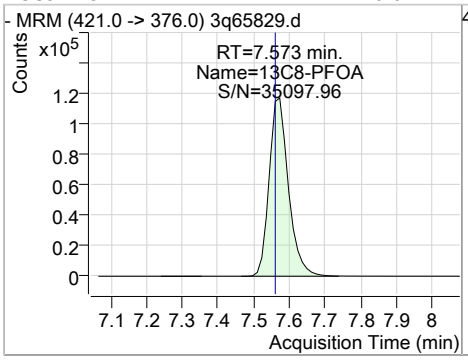
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.38	7.57	0.01	92517	427.0 -> 81.0	42.9	21.3	63.9

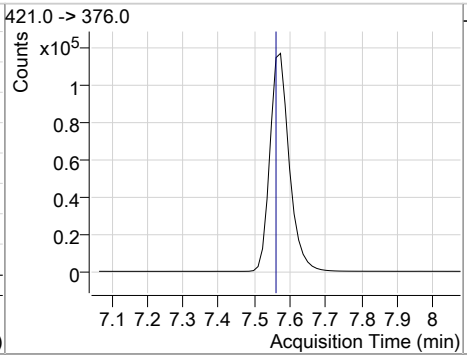


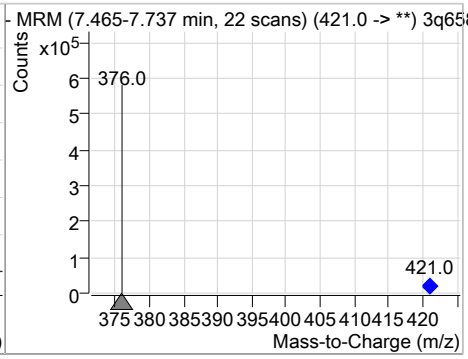




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.61	7.57	0.01	438386				

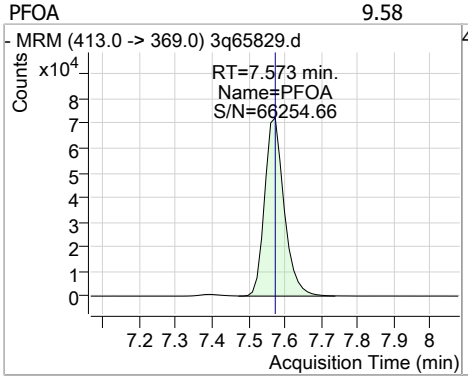


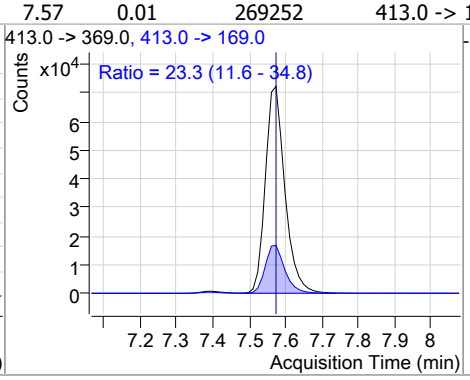


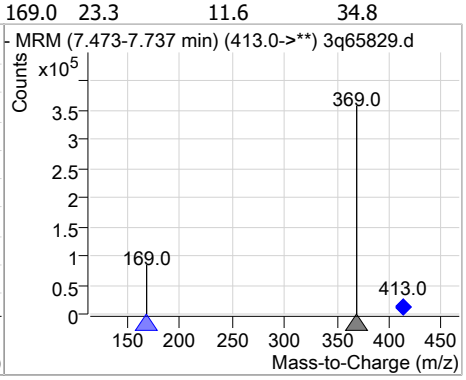


Perfluorinated Compounds by LC/MS/MS

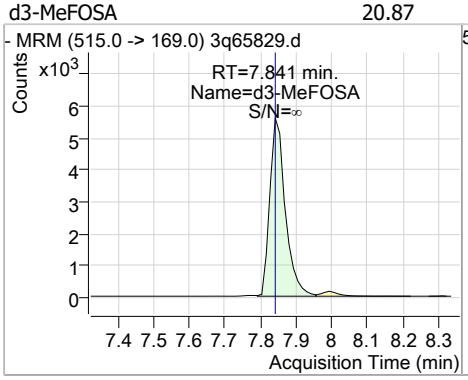
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.58	7.57	0.01	269252	413.0 -> 169.0	23.3	11.6	34.8

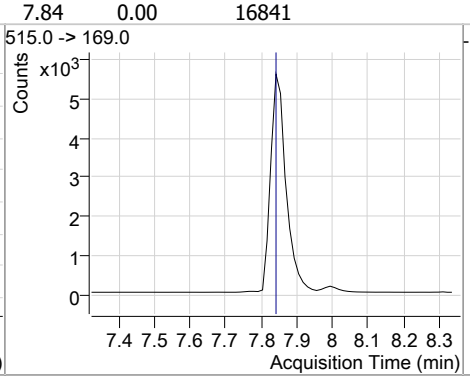


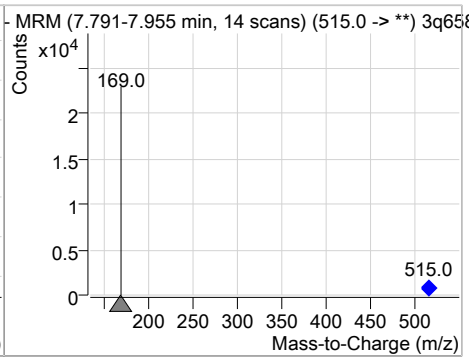




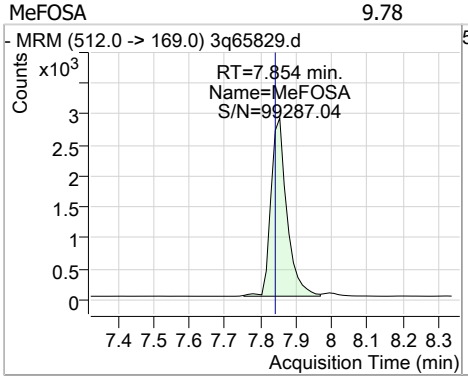
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.87	7.84	0.00	16841				

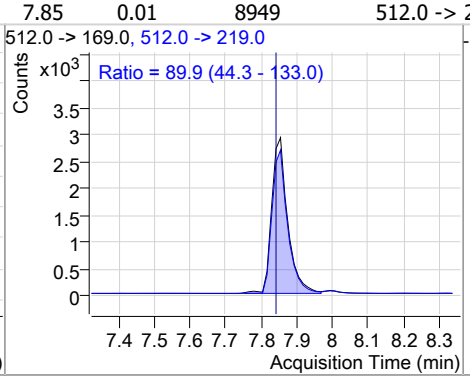


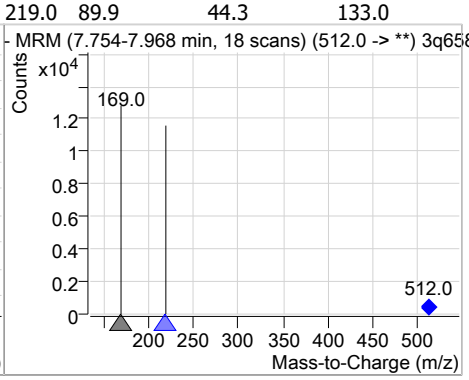




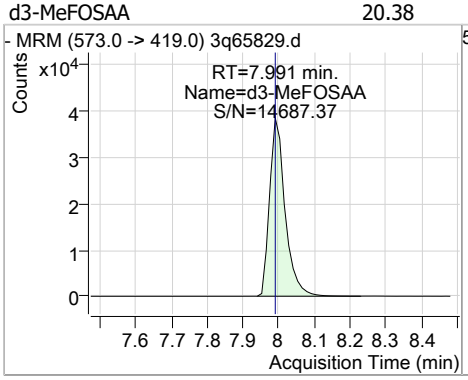
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	9.78	7.85	0.01	8949	512.0 -> 219.0	89.9	44.3	133.0

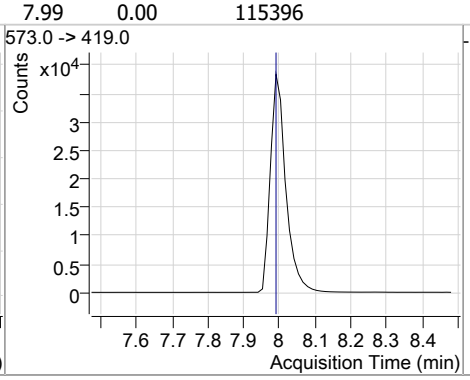


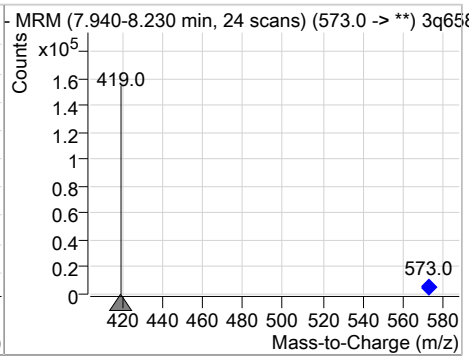




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.38	7.99	0.00	115396				

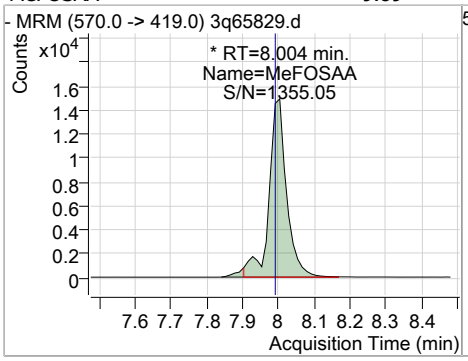


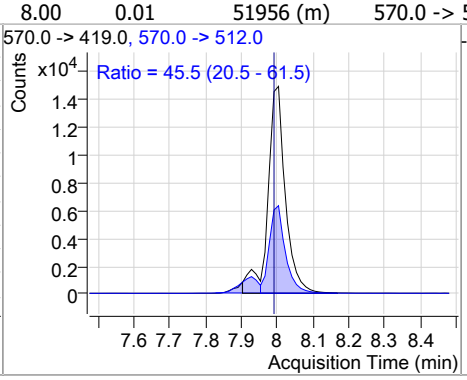


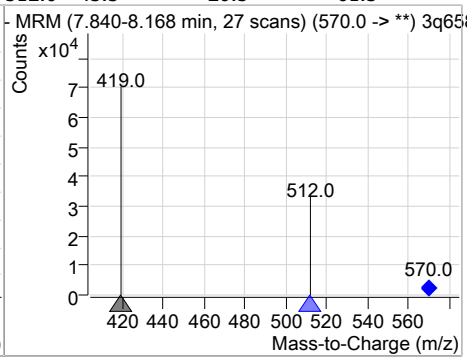


Perfluorinated Compounds by LC/MS/MS

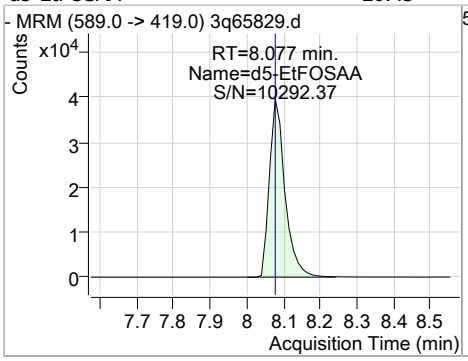
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	9.89	8.00	0.01	51956 (m)	570.0 -> 512.0	45.5	20.5	61.5

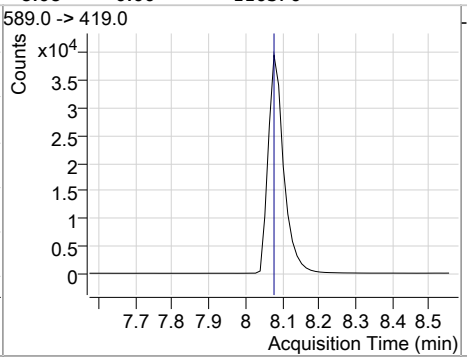


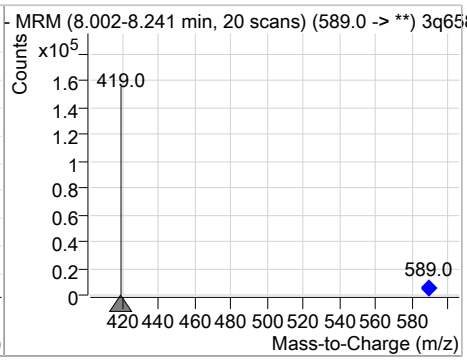




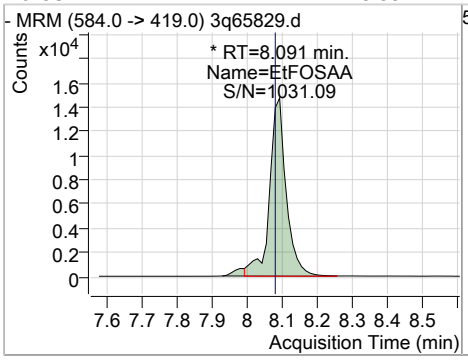
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.43	8.08	0.00	116370				

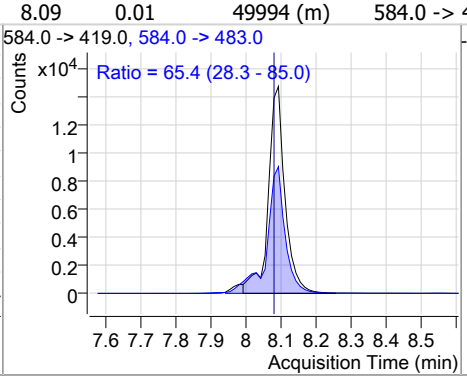


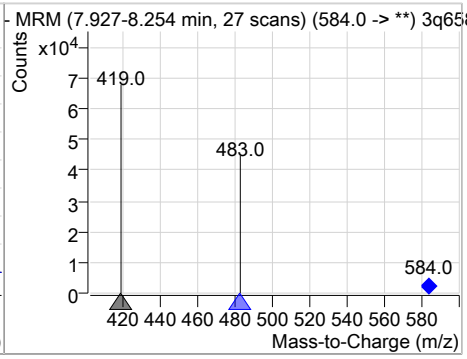




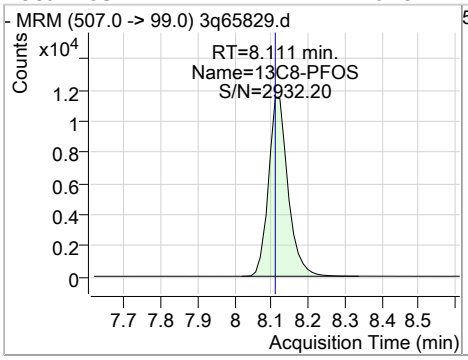
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	9.99	8.09	0.01	49994 (m)	584.0 -> 483.0	65.4	28.3	85.0

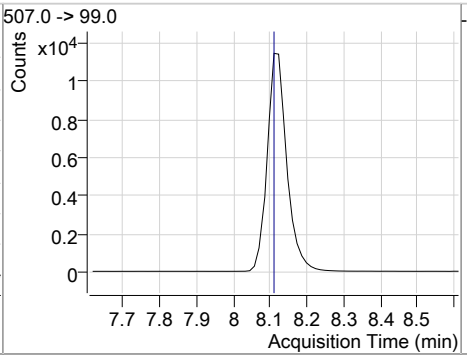


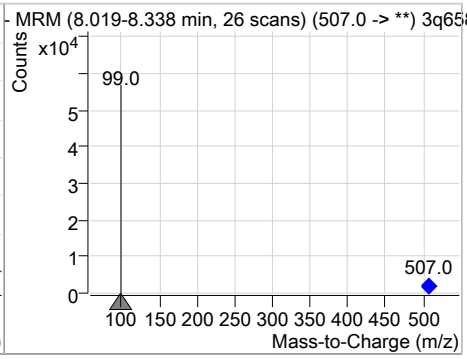




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.43	8.11	0.00	42268				

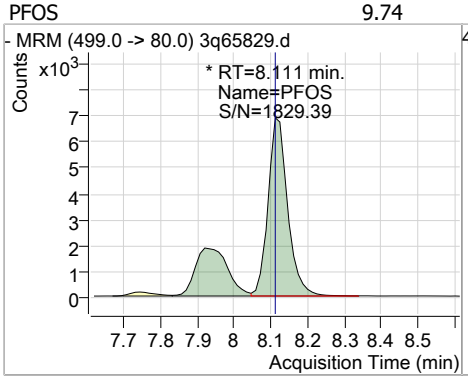


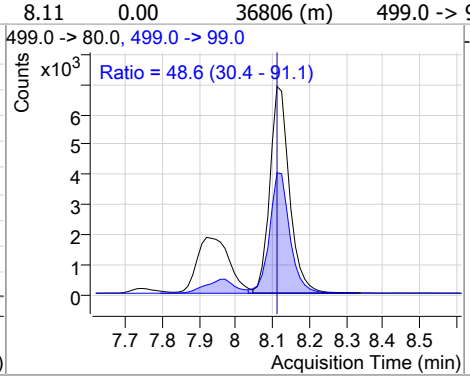


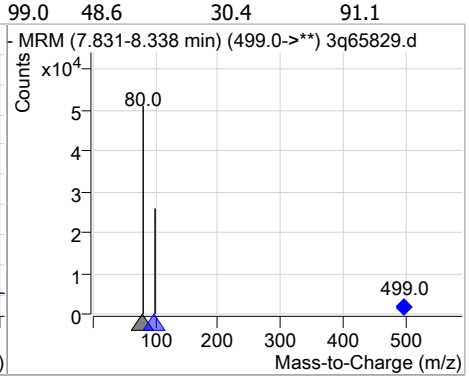


Perfluorinated Compounds by LC/MS/MS

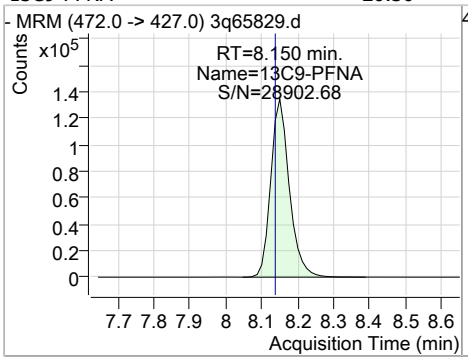
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	9.74	8.11	0.00	36806 (m)	499.0 -> 99.0	48.6	30.4	91.1

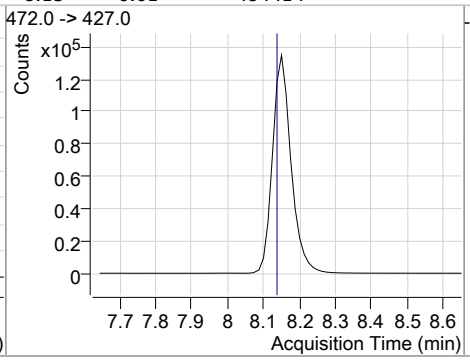


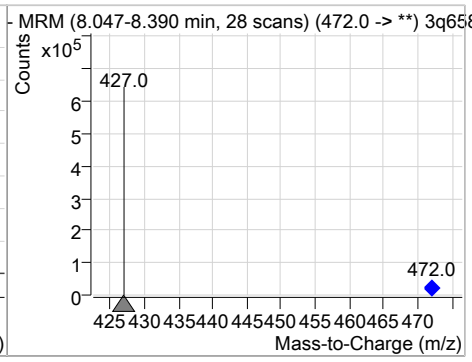




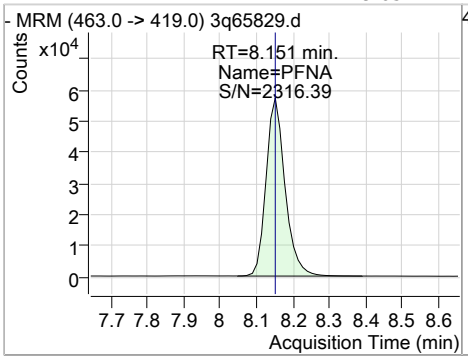
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.30	8.15	0.01	484414				

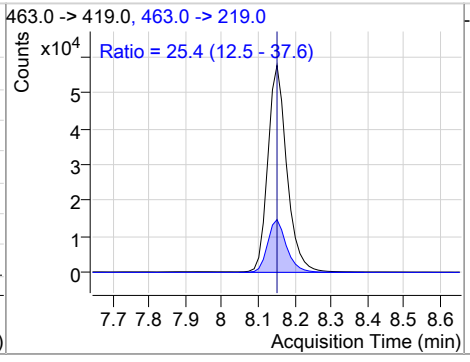


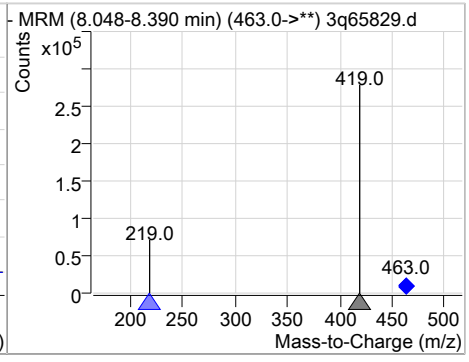




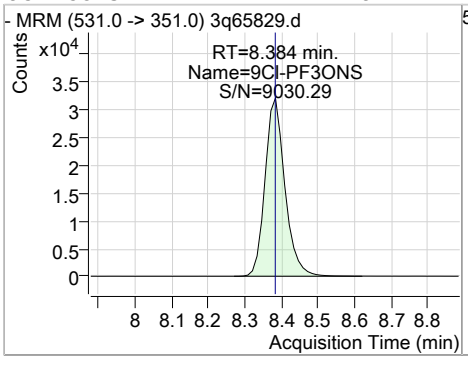
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.65	8.15	0.01	207261	463.0 -> 219.0	25.4	12.5	37.6

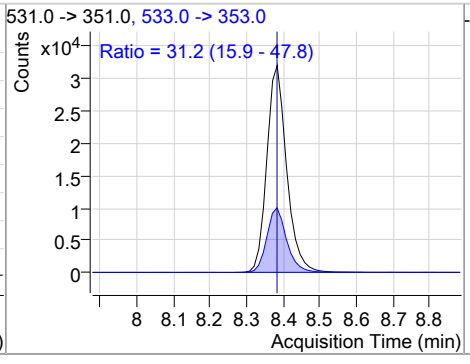


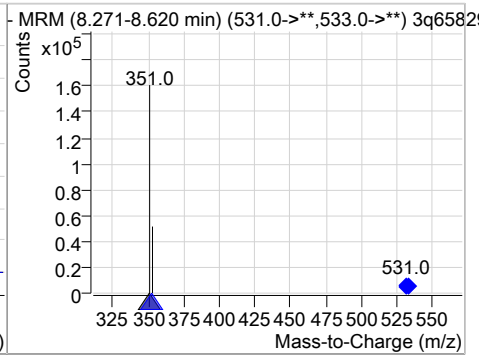




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.44	8.38	0.01	119899	533.0 -> 353.0	31.2	15.9	47.8

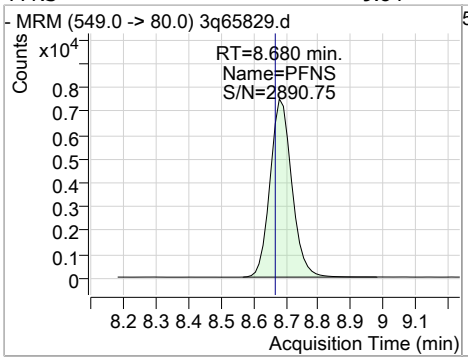


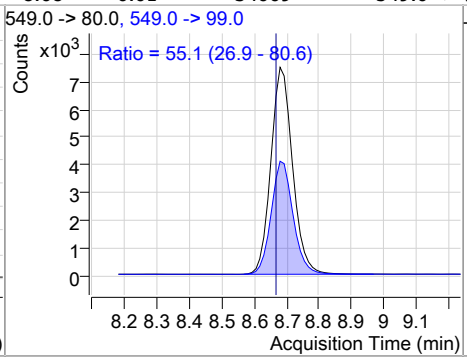


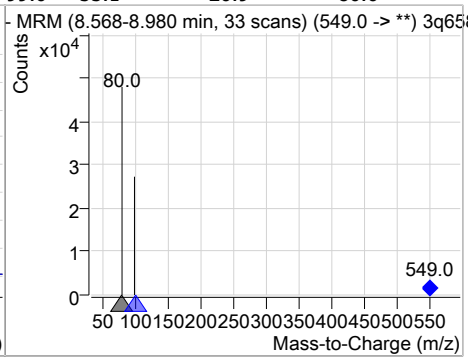


Perfluorinated Compounds by LC/MS/MS

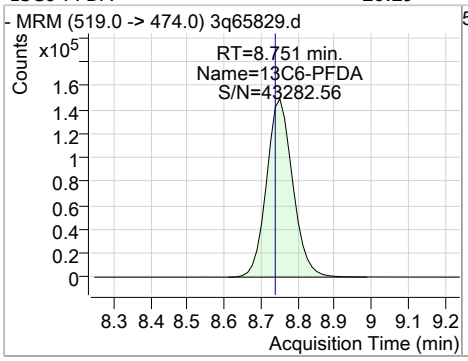
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.84	8.68	0.01	34669	549.0 -> 99.0	55.1	26.9	80.6

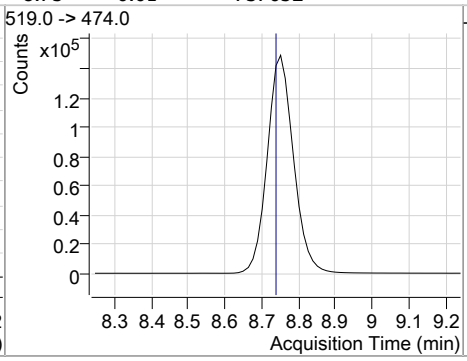


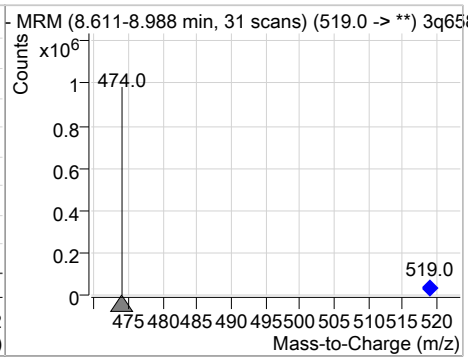




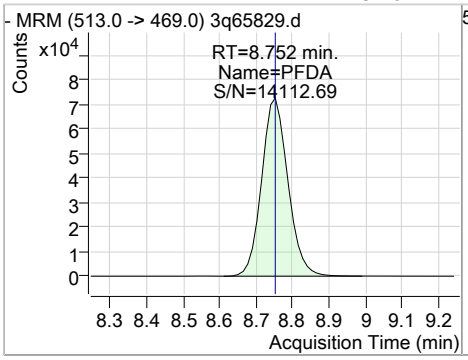
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.29	8.75	0.01	737652				

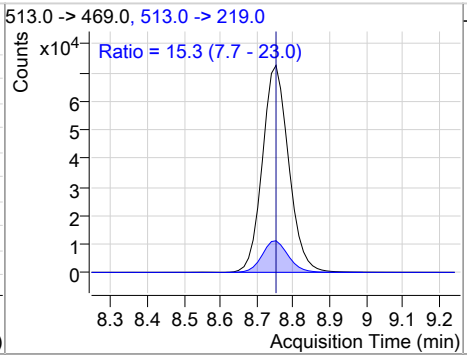


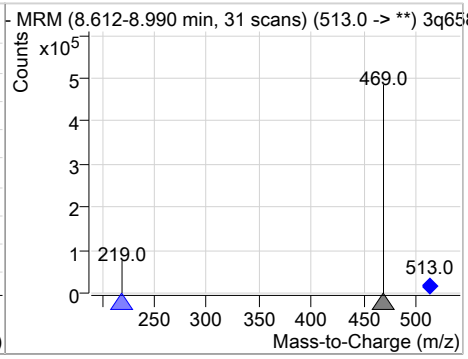




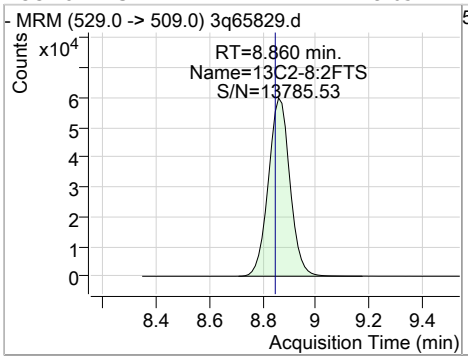
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.70	8.75	0.01	362316	513.0 -> 219.0	15.3	7.7	23.0

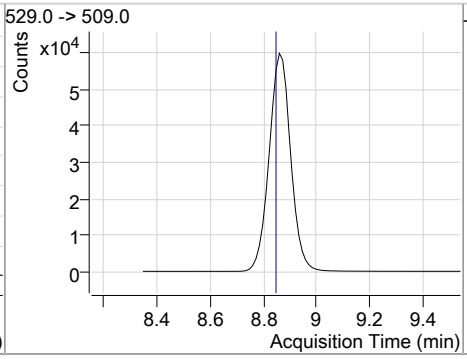


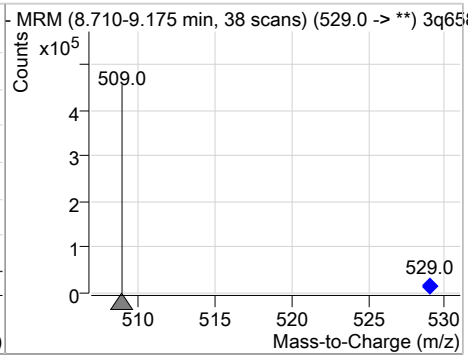




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.65	8.86	0.01	336466				

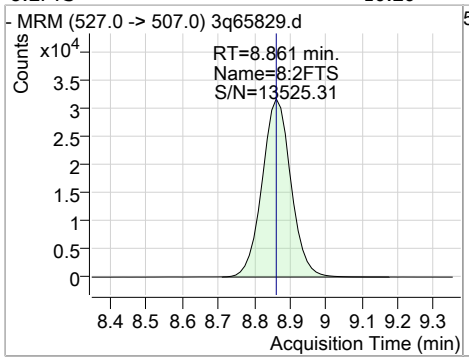


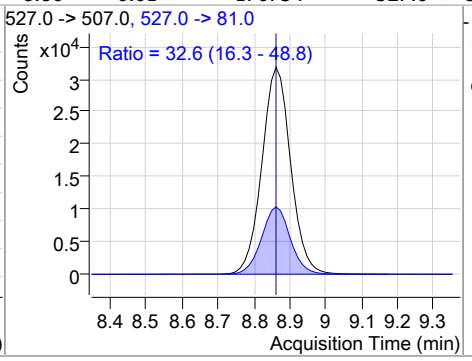


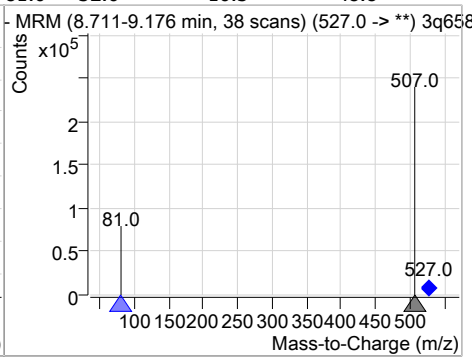


Perfluorinated Compounds by LC/MS/MS

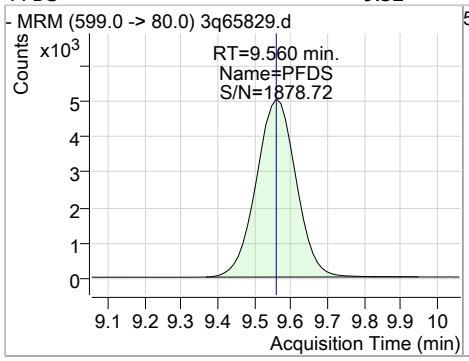
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.26	8.86	0.01	176734	527.0 -> 81.0	32.6	16.3	48.8

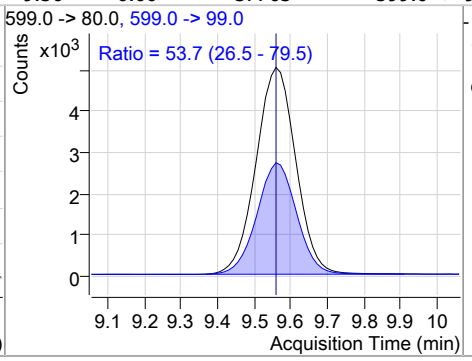


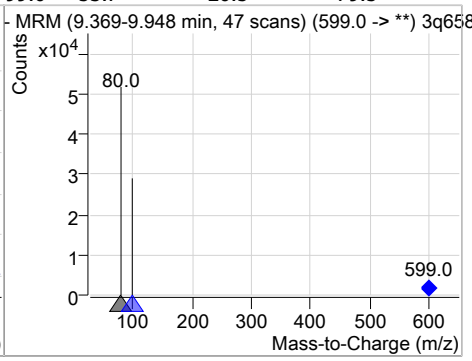




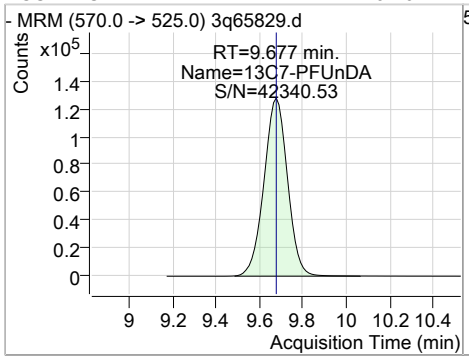
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.32	9.56	0.00	37763	599.0 -> 99.0	53.7	26.5	79.5

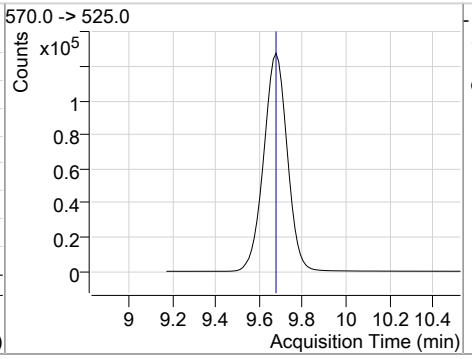


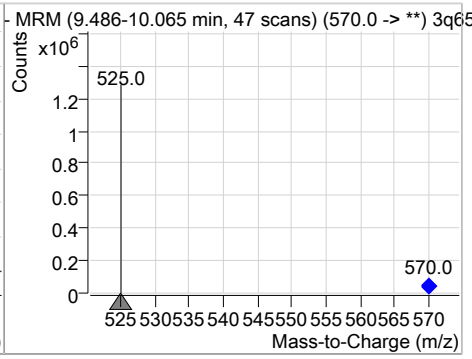




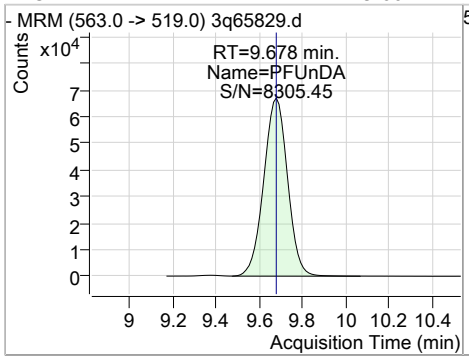
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.20	9.68	0.00	962292				

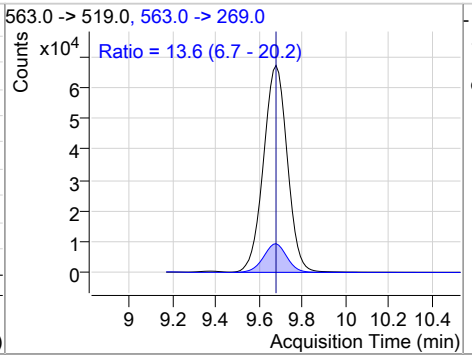


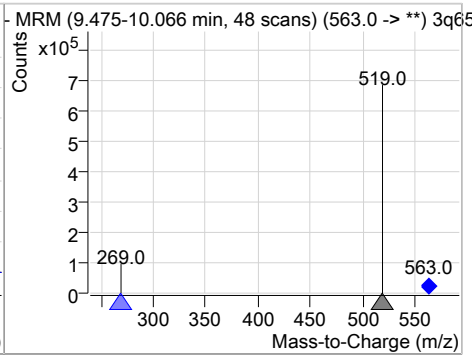




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.60	9.68	0.00	512073	563.0 -> 269.0	13.6	6.7	20.2

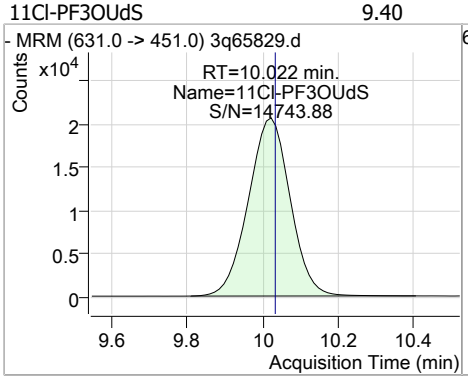


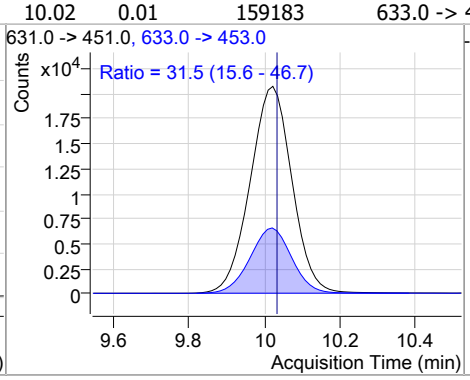


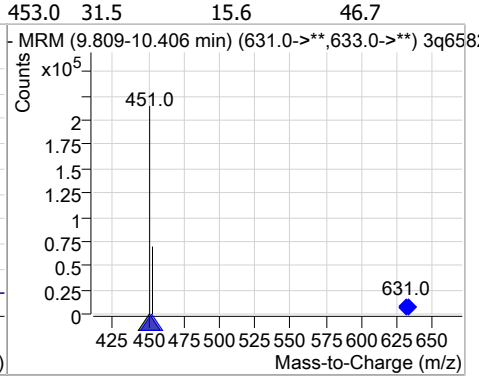


Perfluorinated Compounds by LC/MS/MS

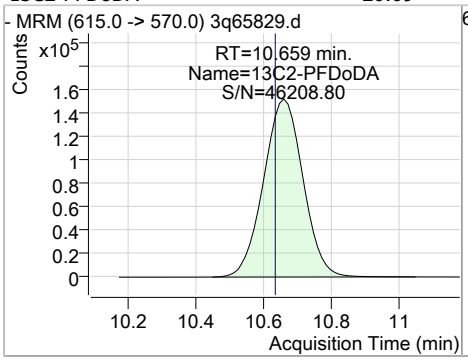
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.40	10.02	0.01	159183	633.0 -> 453.0	31.5	15.6	46.7

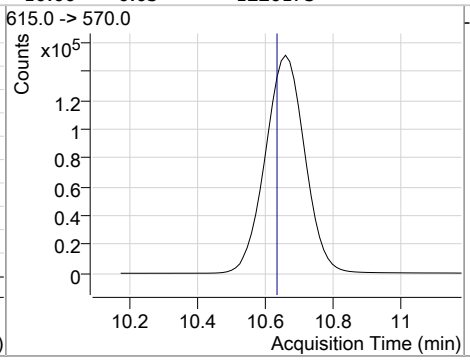


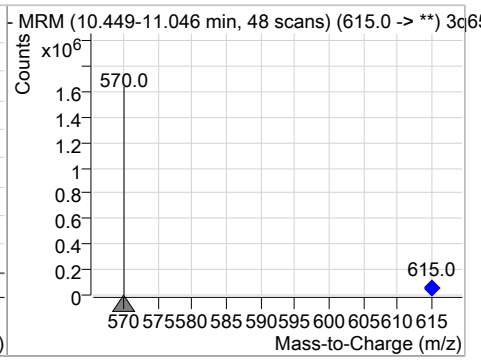




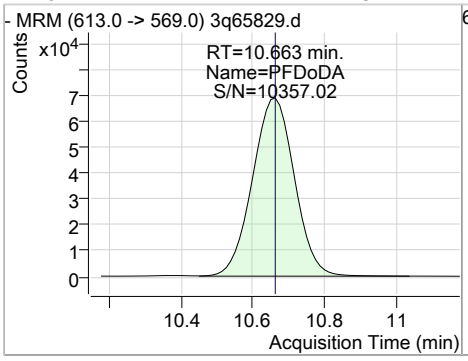
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.09	10.66	0.03	1220173				

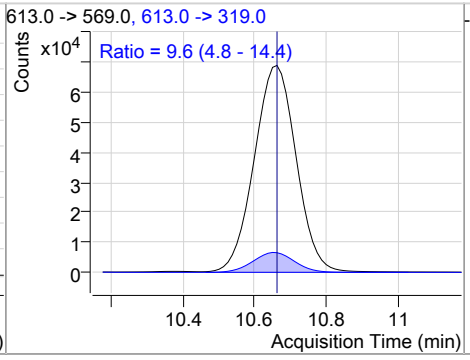


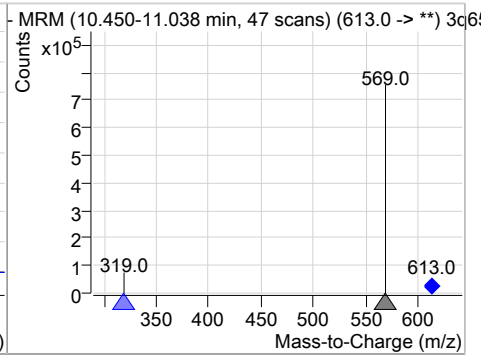




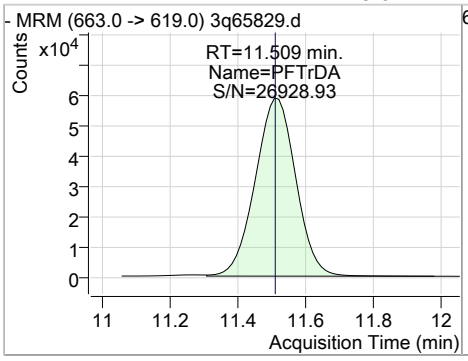
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.71	10.66	0.03	561184	613.0 -> 319.0	9.6	4.8	14.4

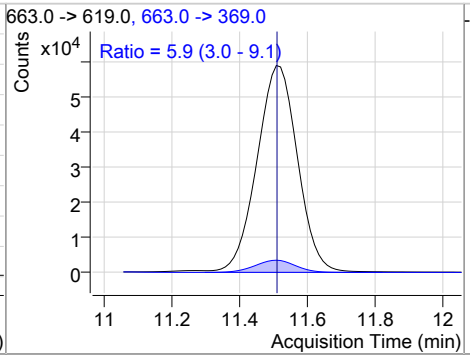


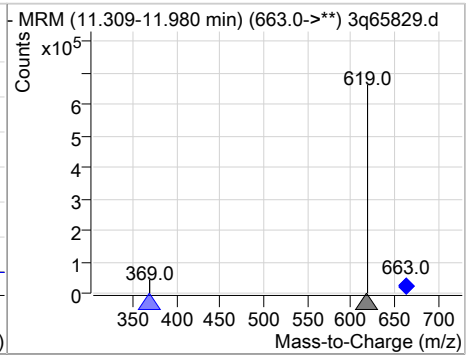




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.81	11.51	0.03	489266	663.0 -> 369.0	5.9	3.0	9.1

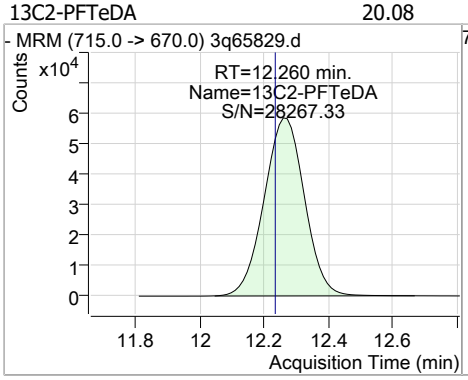


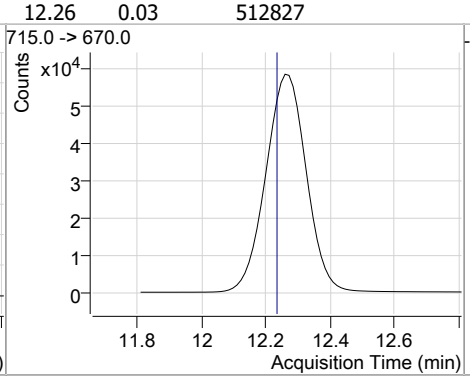


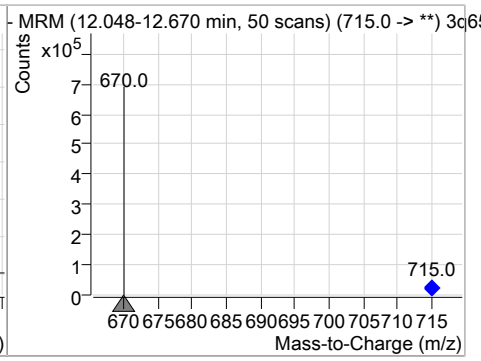


Perfluorinated Compounds by LC/MS/MS

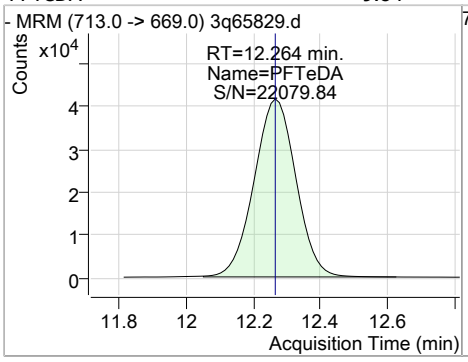
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.08	12.26	0.03	512827				

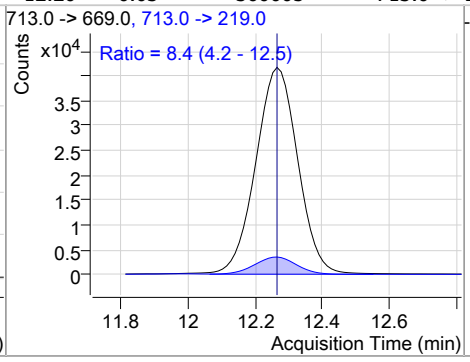


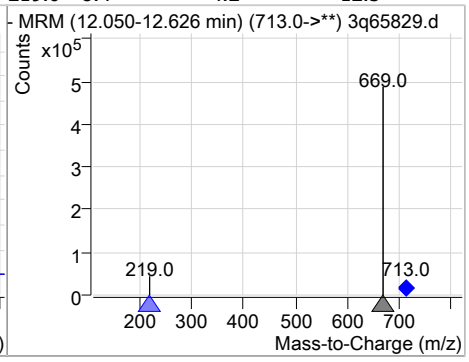




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.84	12.26	0.03	360005	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65829.D
Injection Time: 09/15/22 19:27
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

3Q65830.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File	:	3q65830.d
Operator	:	marthav
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/15/2022 7:47:03 PM
Sample Name	:	icc900-20
Vial	:	P1-A7
DA Method File	:	ID_091522_S3Q900.quantmethod.xml
Batch Name	:	S3Q900.batch.bin
Sample Information	:	op92823,S3Q900,250,,,1,1,water

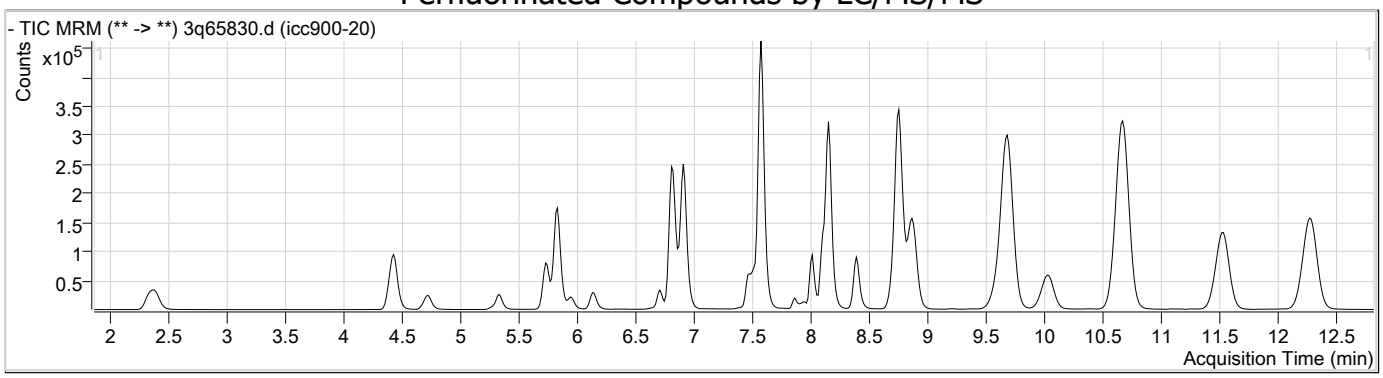
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	177901	20.00	µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	260365	20.00	µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	344712	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	338262	20.00	µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	457588	20.00	µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	517790	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	779030	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	1024000	20.00	µg/L	0.000
M2-PFDoDA	10.659	615.0 -> 570.0	1306279	20.00	µg/L	0.025
M2-PFTeDA	12.260	715.0 -> 670.0	549359	20.00	µg/L	0.025
M8-FOSA	7.503	506.0 -> 78.0	77952	20.00	µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	23629	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	29083	20.00	µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	44614	20.00	µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	130901	20.00	µg/L	0.013
M2-6:2FTS	7.584	429.0 -> 409.0	183999	20.00	µg/L	0.026
M2-8:2FTS	8.860	529.0 -> 509.0	363220	20.00	µg/L	0.013
M3-MeFOSAA	8.003	573.0 -> 419.0	121901	20.00	µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	27261	20.00	µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	17272	20.00	µg/L	0.013
M5-EtFOSAA	8.090	589.0 -> 419.0	122636	20.00	µg/L	0.013
System Monitoring Compounds						
13C2-4:2FTS	5.721	329.0 -> 309.0	130901	21.33	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C2-6:2FTS	7.584	429.0 -> 409.0	183999	21.33	µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%		
13C2-8:2FTS	8.860	529.0 -> 509.0	363220	21.21	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-PFDoDA	10.659	615.0 -> 570.0	1306279	21.51	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C2-PFTeDA	12.260	715.0 -> 670.0	549359	21.51	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C3-PFBS	4.717	302.0 -> 99.0	23629	21.35	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
13C3-PFHxS	6.834	402.0 -> 99.0	29083	21.59	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C4-PFBA	2.365	217.0 -> 172.0	177901	21.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C4-PFHpA	6.805	367.0 -> 322.0	338262	21.45	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C5-PFHxA	5.826	318.0 -> 273.0	344712	21.49	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C5-PFPeA	4.424	268.0 -> 223.0	260365	21.53	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C6-PFDA	8.751	519.0 -> 474.0	779030	21.43	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

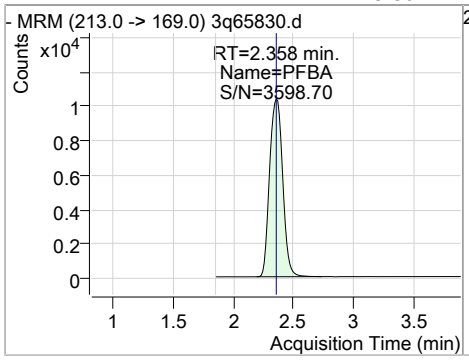
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C7-PFUnDA	9.677	570.0 -> 525.0	1024000	21.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C8-FOSA	7.503	506.0 -> 78.0	77952	21.88 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C8-PFOA	7.573	421.0 -> 376.0	457588	21.51 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C8-PFOS	8.123	507.0 -> 99.0	44614	21.56 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%		
13C9-PFNA	8.150	472.0 -> 427.0	517790	21.70 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.5%		
d3-MeFOSAA	8.003	573.0 -> 419.0	121901	21.53 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	27258	21.11 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
d3-MeFOSA	7.854	515.0 -> 169.0	17272	21.41 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
d5-EtFOSAA	8.090	589.0 -> 419.0	122654	21.53 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	143961	19.68 µg/L		100
6:2FTS	7.584	427.0 -> 407.0	190072	19.93 µg/L		100
8:2FTS	8.861	527.0 -> 507.0	366855	19.73 µg/L		99
EtFOSAA	8.091	584.0 -> 419.0	104079	19.74 µg/L	m	89
FOSA	7.504	498.0 -> 78.0	74191	19.35 µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	108911	19.63 µg/L	m	90
PFBA	2.358	213.0 -> 169.0	78235	19.30 µg/L		100
PFBS	4.707	299.0 -> 80.0	67825	19.66 µg/L		100
PFDA	8.752	513.0 -> 469.0	759785	19.25 µg/L		100
PFDoDA	10.663	613.0 -> 569.0	1196869	19.34 µg/L		100
PFDS	9.560	599.0 -> 80.0	80427	18.66 µg/L		100
PFHpA	6.807	363.0 -> 319.0	494861	19.22 µg/L		100
PFHpS	7.557	449.0 -> 80.0	60341	20.27 µg/L		100
PFHxA	5.827	313.0 -> 269.0	372882	19.30 µg/L		100
PFHxS	6.835	399.0 -> 80.0	69384	19.33 µg/L	m	98
PFNA	8.151	463.0 -> 419.0	438264	19.10 µg/L		100
PFNS	8.680	549.0 -> 80.0	73776	19.84 µg/L		100
PFOA	7.573	413.0 -> 369.0	563812	19.22 µg/L		100
PFOS	8.124	499.0 -> 80.0	77025	19.30 µg/L	m	85
PFPeA	4.426	263.0 -> 219.0	231814	19.32 µg/L		100
PFPeS	5.932	349.0 -> 80.0	52909	19.80 µg/L		99
PFTeDA	12.264	713.0 -> 669.0	760154	19.40 µg/L		100
PFTrDA	11.509	663.0 -> 619.0	1039010	19.45 µg/L		100
PFUnDA	9.678	563.0 -> 519.0	1088831	19.17 µg/L		100
11Cl-PF3OUdS	10.022	631.0 -> 451.0	342796	18.91 µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	249621	18.61 µg/L		100
ADONA	6.903	377.0 -> 251.0	731509	19.08 µg/L		99
HFPO-DA	6.134	329.0 -> 169.0	65857	19.48 µg/L		98
MeFOSA	7.854	512.0 -> 169.0	18975	20.21 µg/L		96
4-PFECHS	7.466	461.0 -> 381.0	145860	17.68 µg/L		99
FBSA	5.327	298.0 -> 78.0	109495	19.77 µg/L		99
FHxSA	6.700	398.0 -> 78.0	104222	19.00 µg/L		100

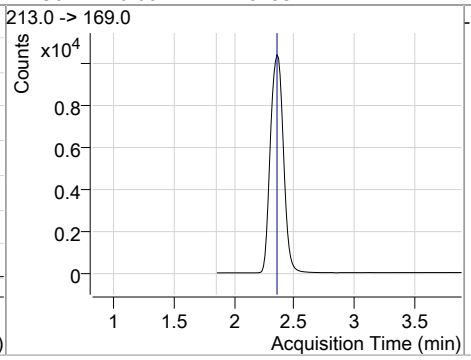
 # = Qualifier out of range, m = manually integrated, + = Area summed

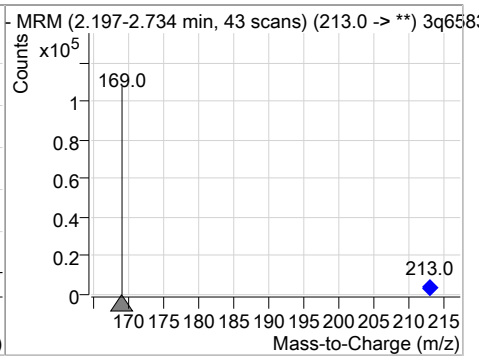
Perfluorinated Compounds by LC/MS/MS



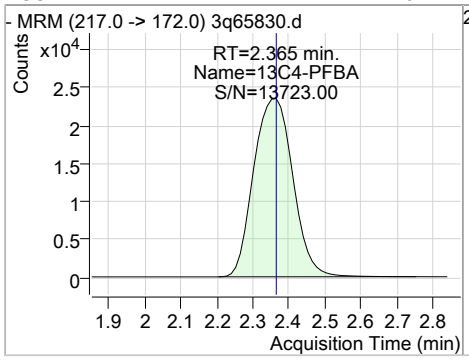
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.30	2.36	0.00	78235				

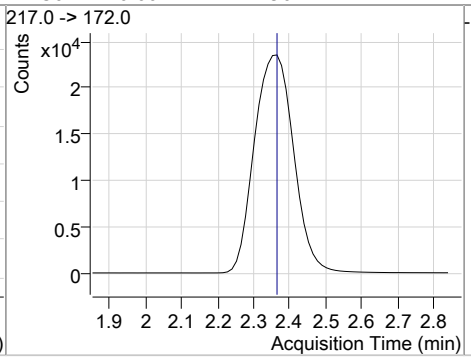


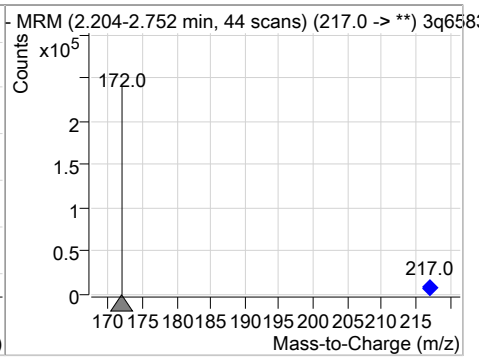




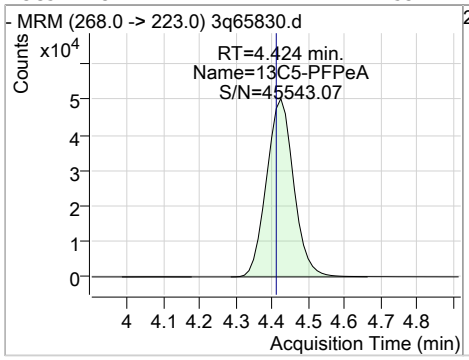
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.46	2.36	0.00	177901				

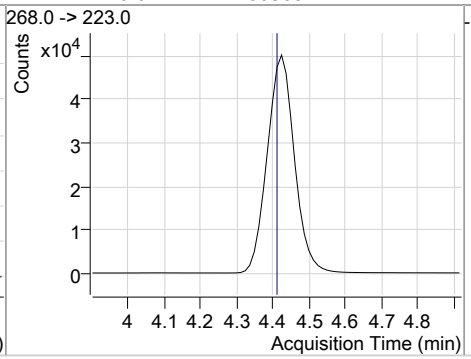


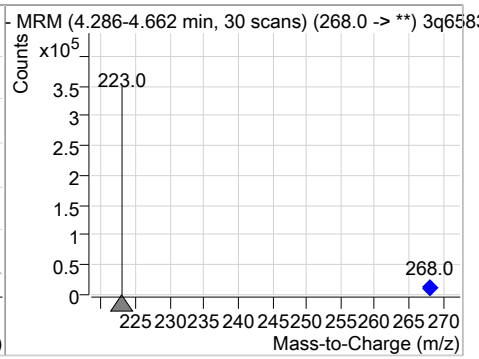




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.53	4.42	0.01	260365				

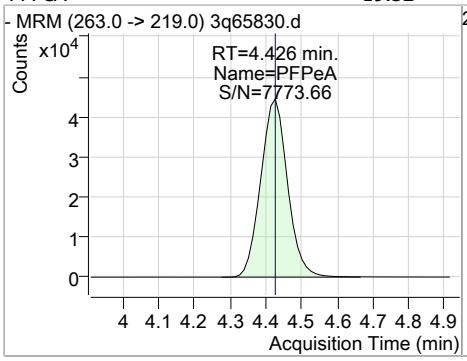


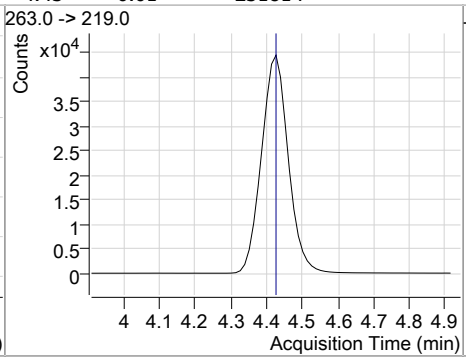


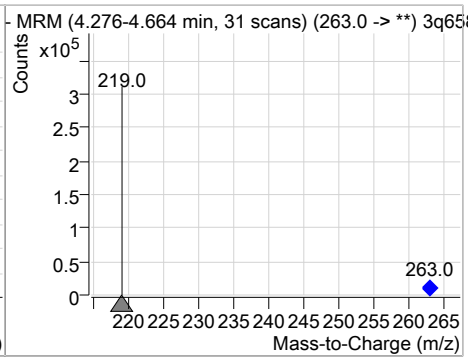


Perfluorinated Compounds by LC/MS/MS

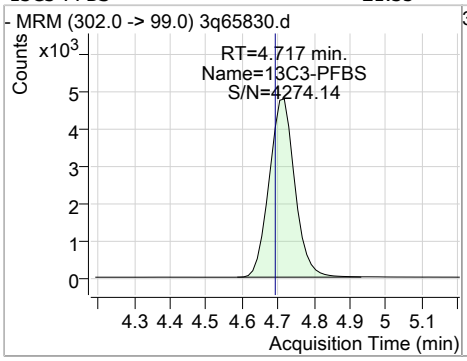
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.32	4.43	0.01	231814				

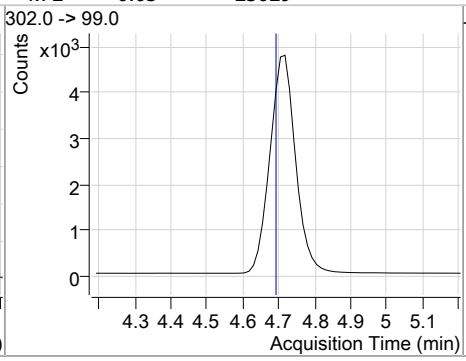


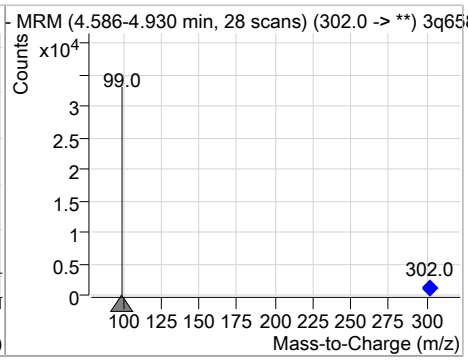




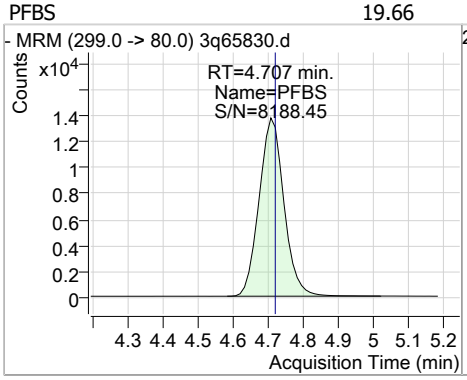
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.35	4.72	0.03	23629				

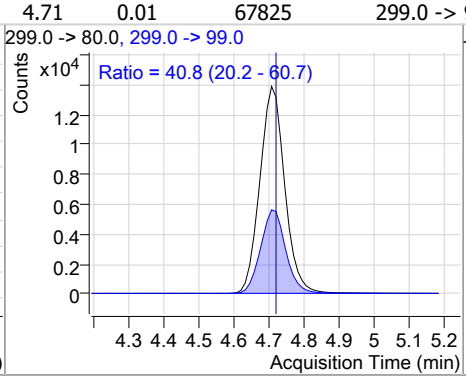


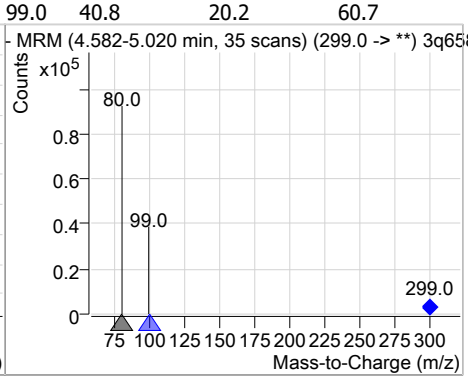




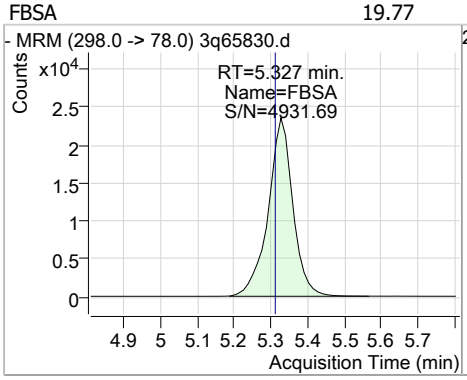
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.66	4.71	0.01	67825	299.0 -> 99.0	40.8	20.2	60.7

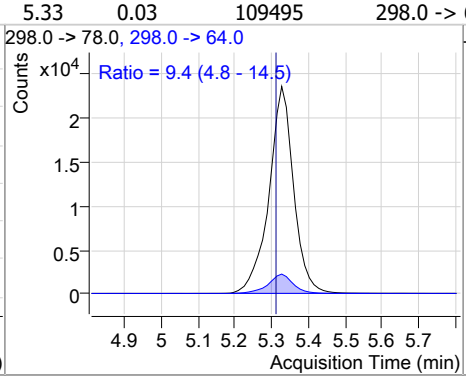


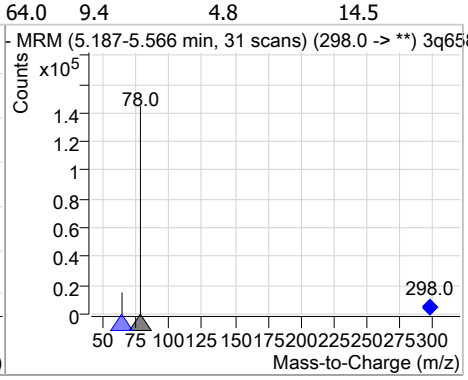




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.77	5.33	0.03	109495	298.0 -> 64.0	9.4	4.8	14.5

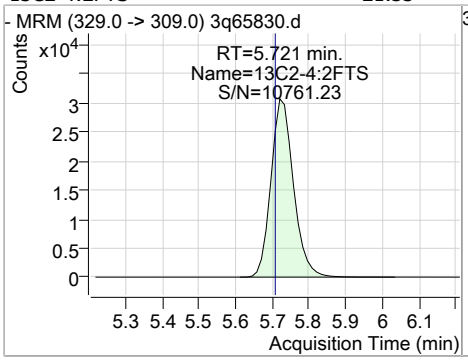


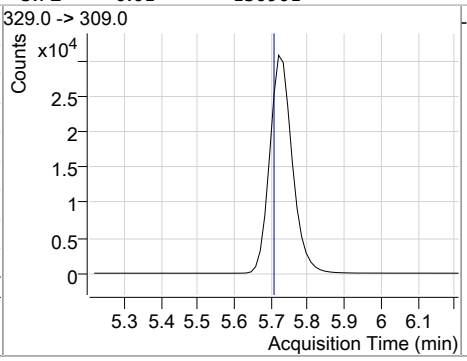


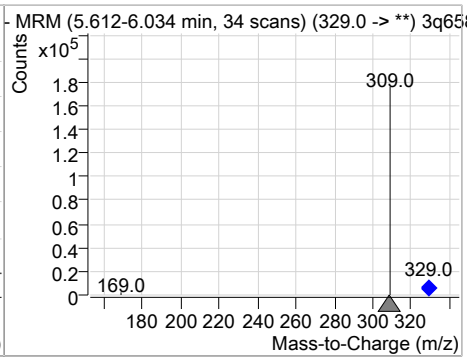


Perfluorinated Compounds by LC/MS/MS

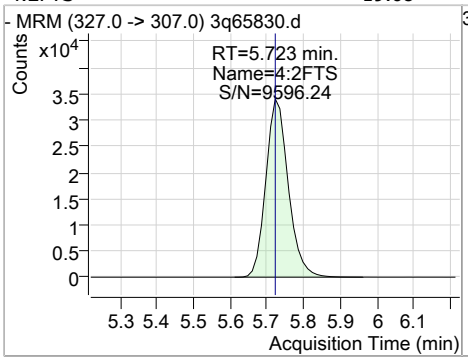
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.33	5.72	0.01	130901				

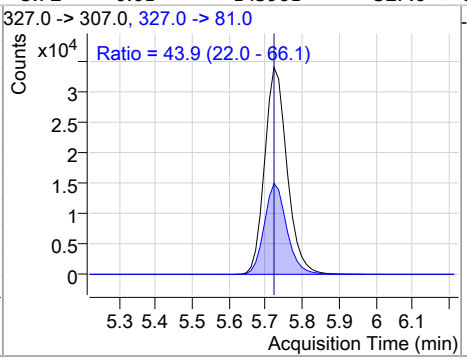


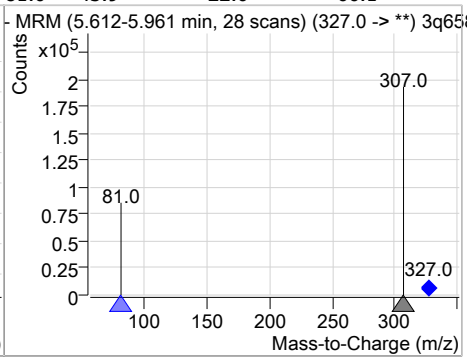




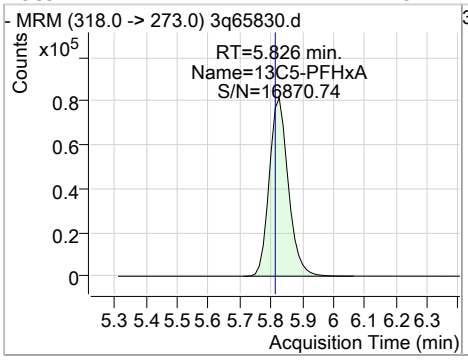
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.68	5.72	0.01	143961	327.0 -> 81.0	43.9	22.0	66.1

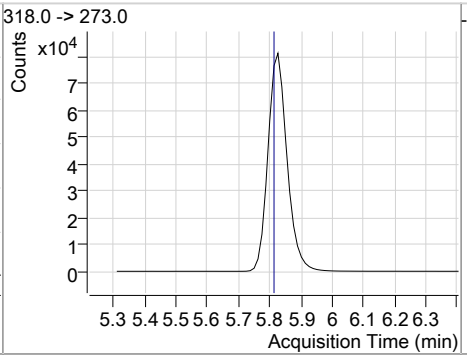


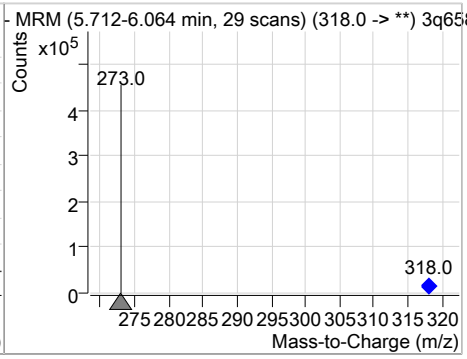




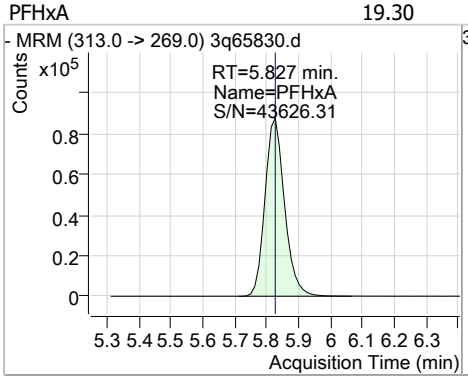
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.49	5.83	0.01	344712				

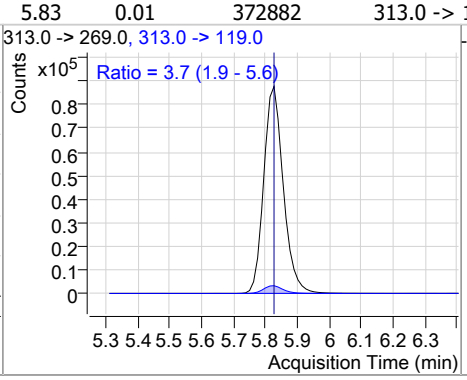


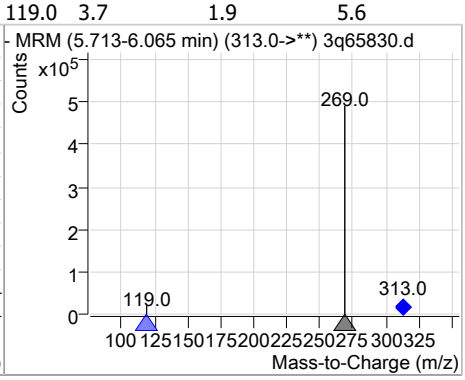




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.30	5.83	0.01	372882	313.0 -> 119.0	3.7	1.9	5.6

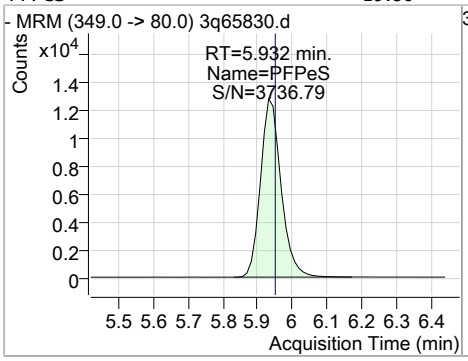


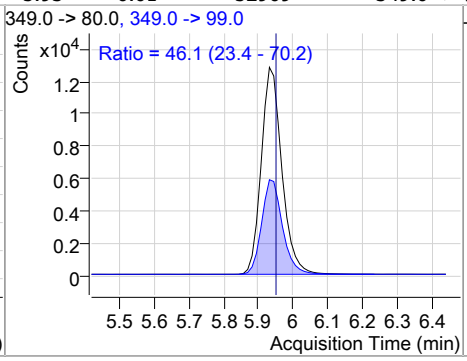


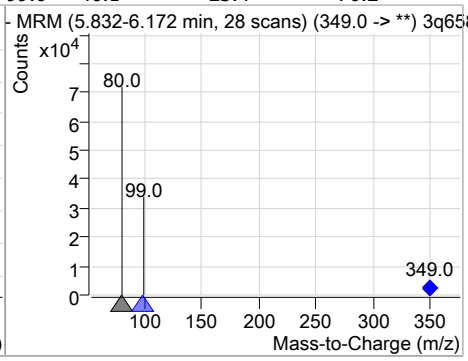


Perfluorinated Compounds by LC/MS/MS

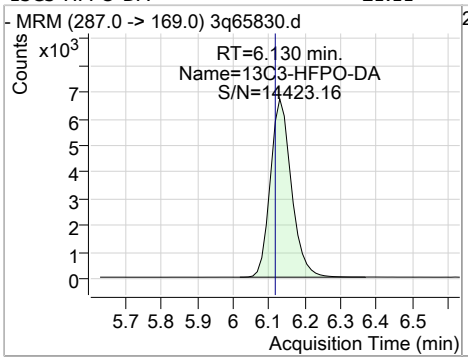
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.80	5.93	0.01	52909	349.0 -> 99.0	46.1	23.4	70.2

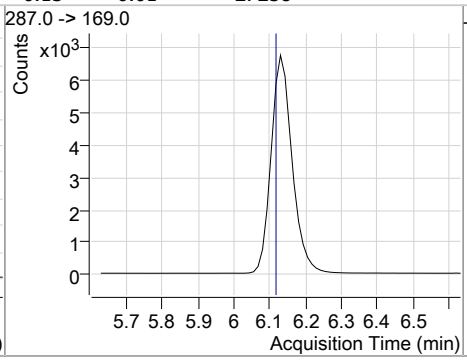


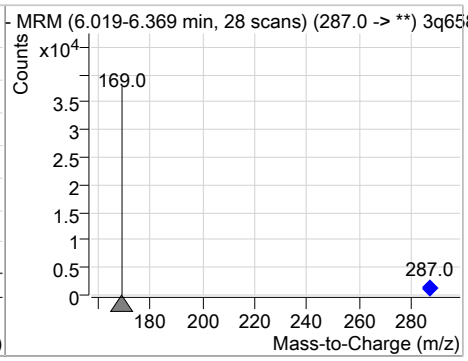




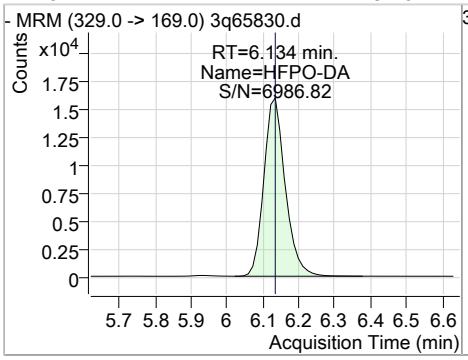
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.11	6.13	0.01	27258				

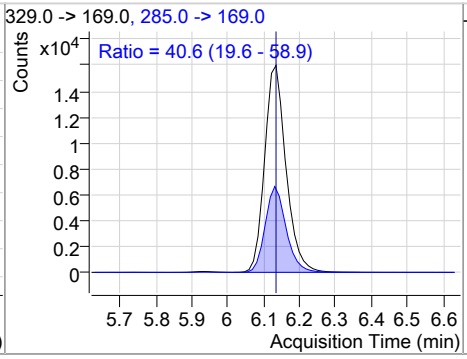


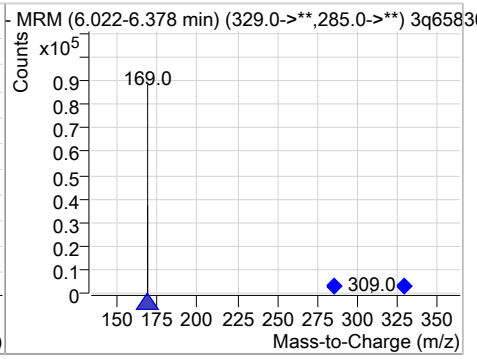




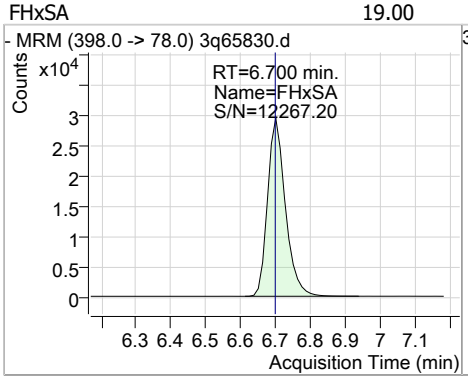
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.48	6.13	0.01	65857	285.0 -> 169.0	40.6	19.6	58.9

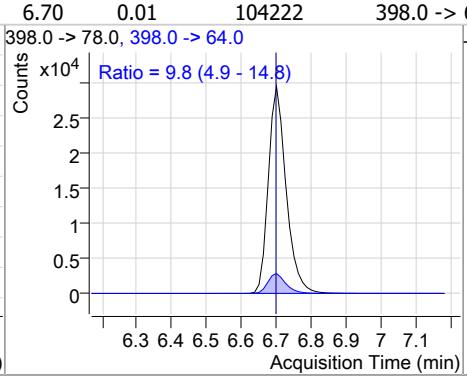


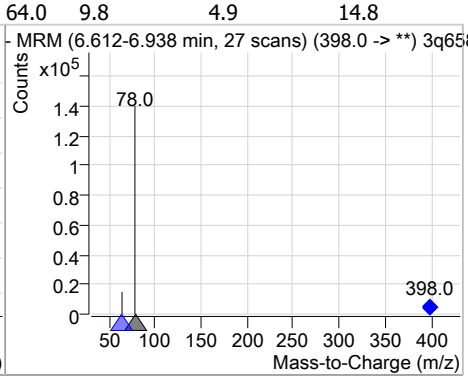




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.00	6.70	0.01	104222	398.0 -> 64.0	9.8	4.9	14.8

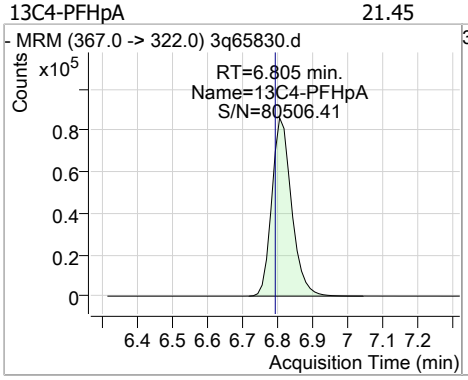


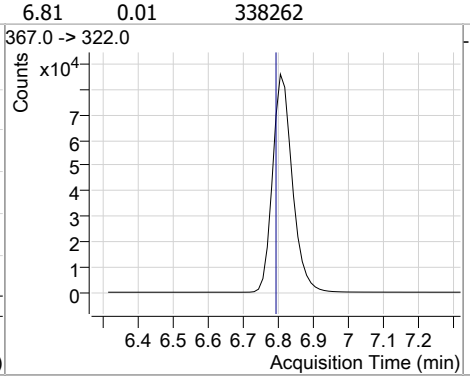


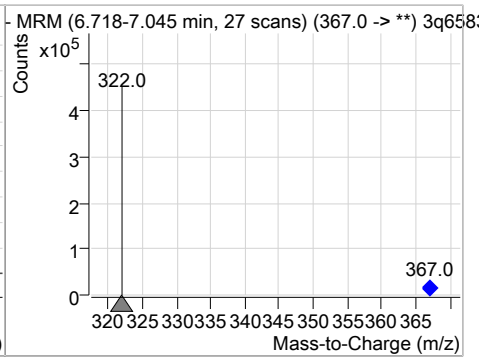


Perfluorinated Compounds by LC/MS/MS

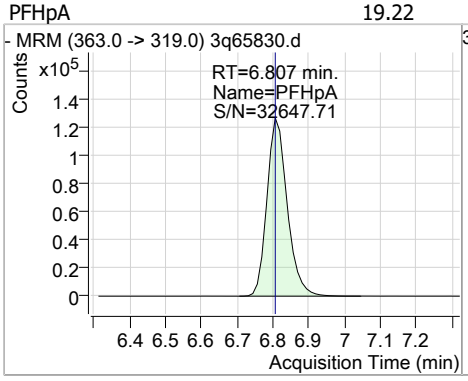
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.45	6.81	0.01	338262				

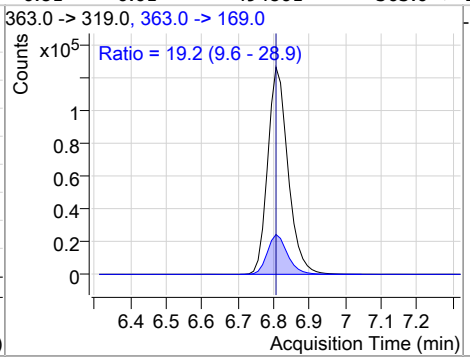


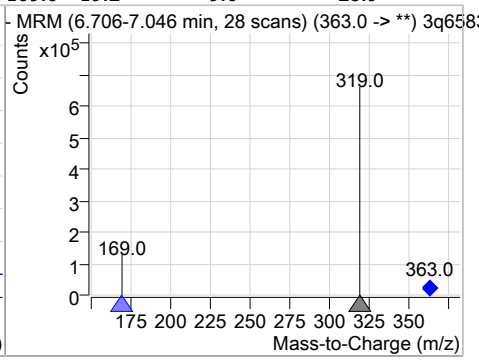




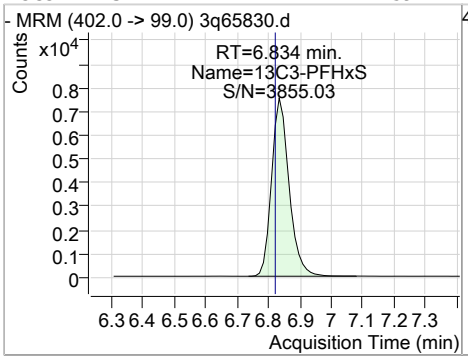
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.22	6.81	0.01	494861	363.0 -> 169.0	19.2	9.6	28.9

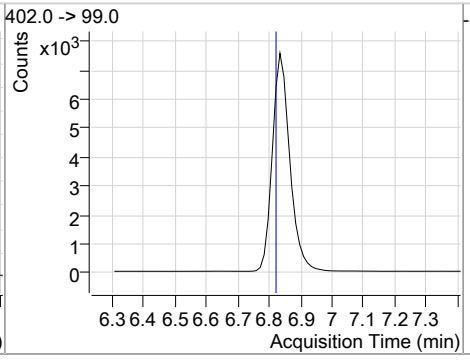


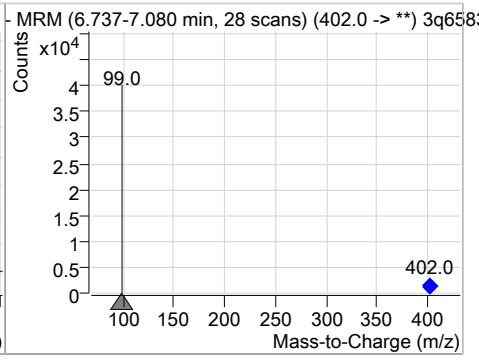




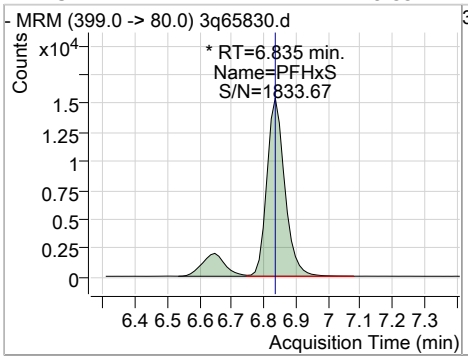
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.59	6.83	0.01	29083				

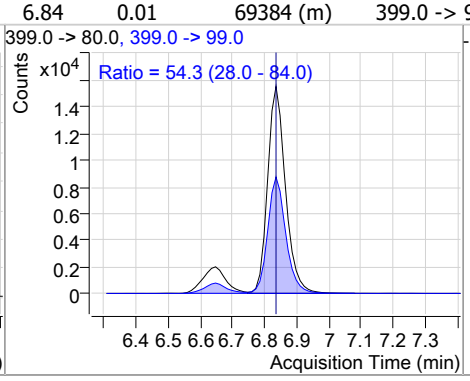


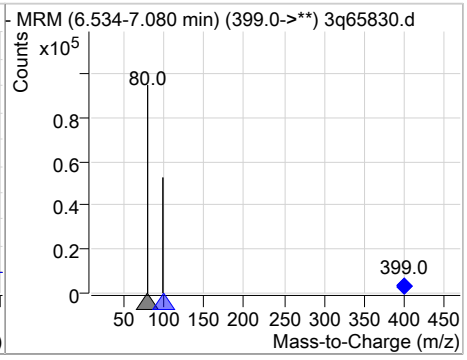




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.33	6.84	0.01	69384 (m)	399.0 -> 99.0	54.3	28.0	84.0

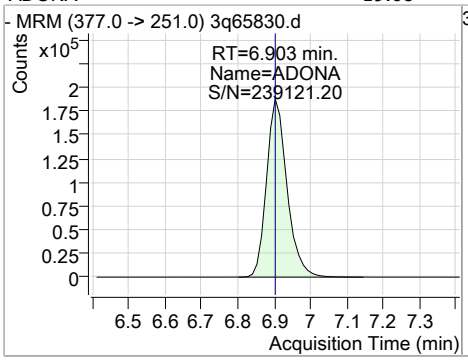


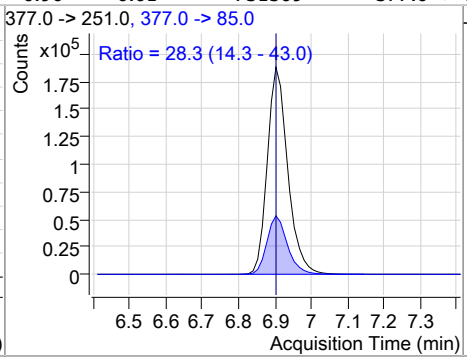


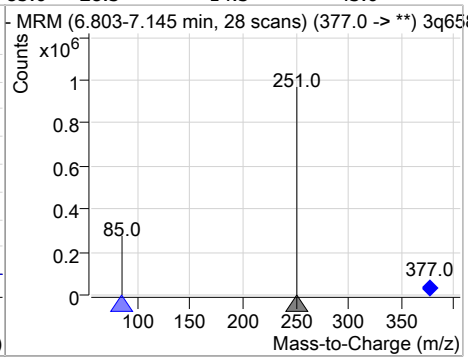


Perfluorinated Compounds by LC/MS/MS

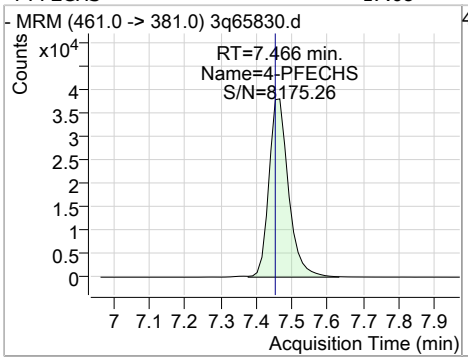
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.08	6.90	0.01	731509	377.0 -> 85.0	28.3	14.3	43.0

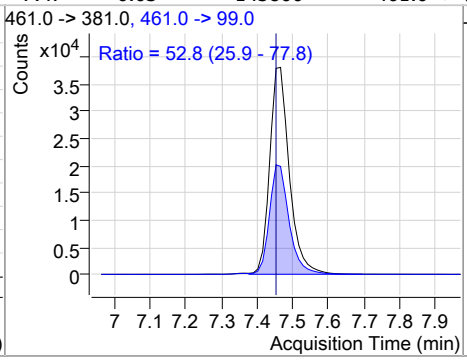


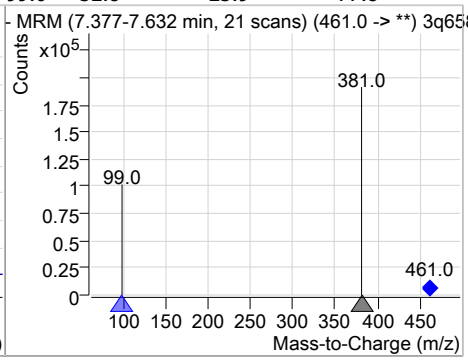




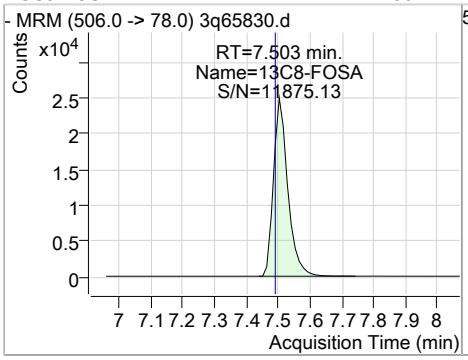
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.68	7.47	0.03	145860	461.0 -> 99.0	52.8	25.9	77.8

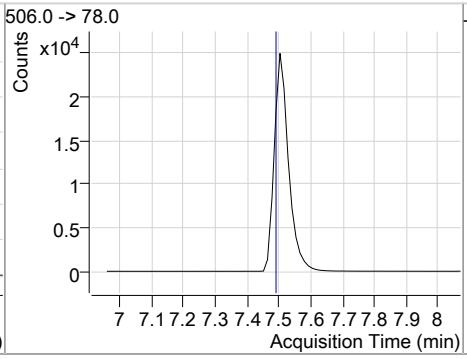


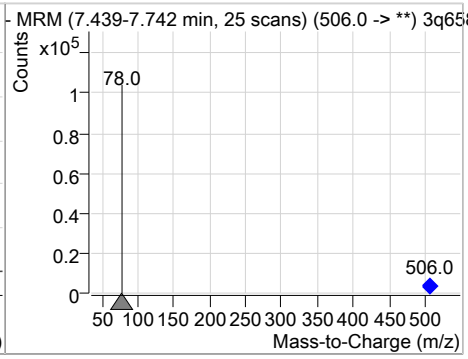




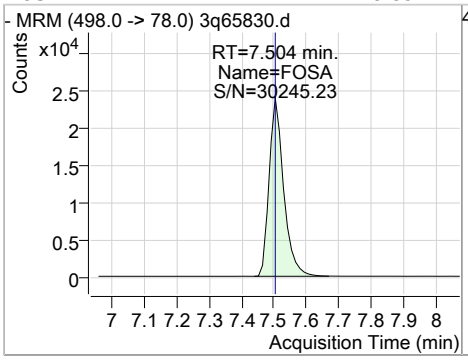
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.88	7.50	0.01	77952				

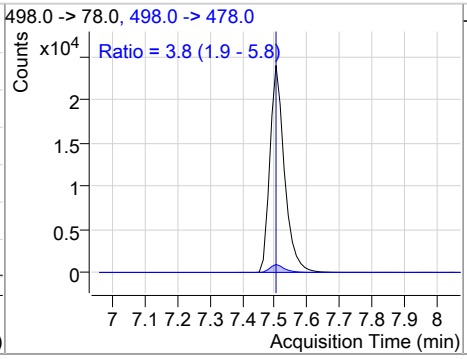


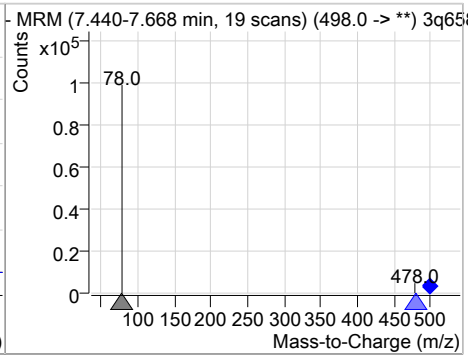




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.35	7.50	0.01	74191	498.0 -> 478.0	3.8	1.9	5.8





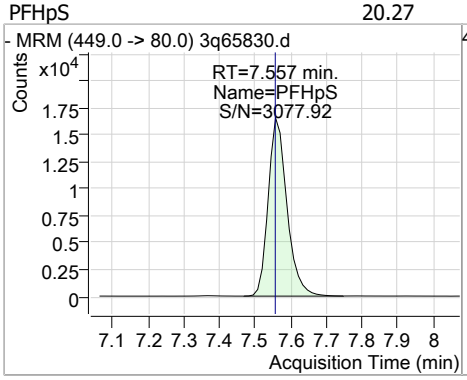


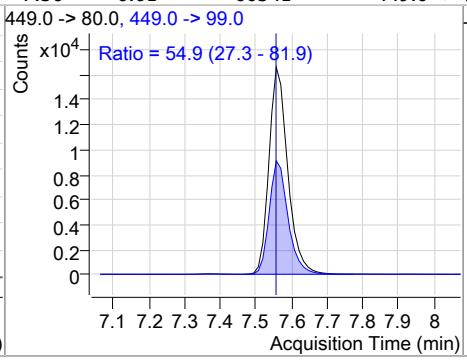
7.7.24

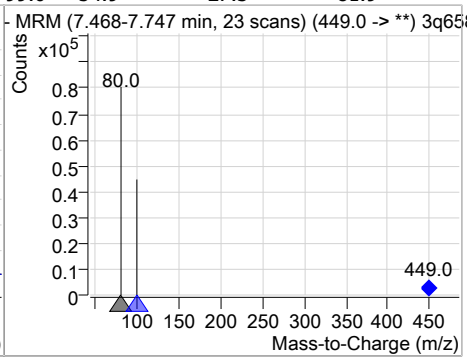
7

Perfluorinated Compounds by LC/MS/MS

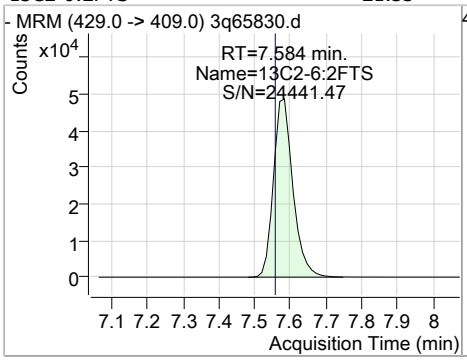
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.27	7.56	0.01	60341	449.0 -> 99.0	54.9	27.3	81.9

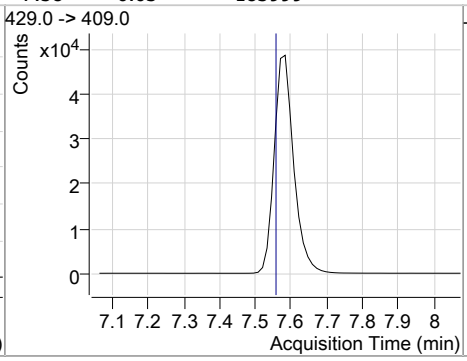


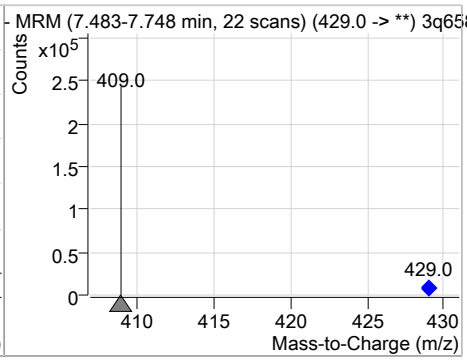




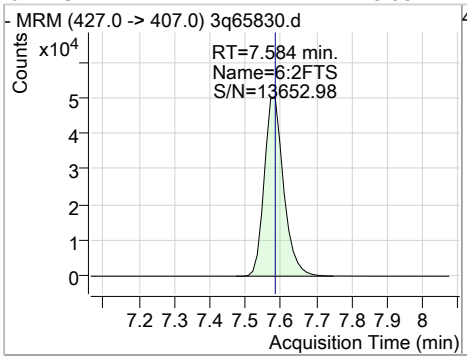
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.33	7.58	0.03	183999				

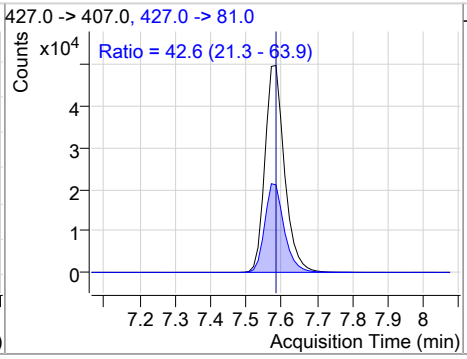


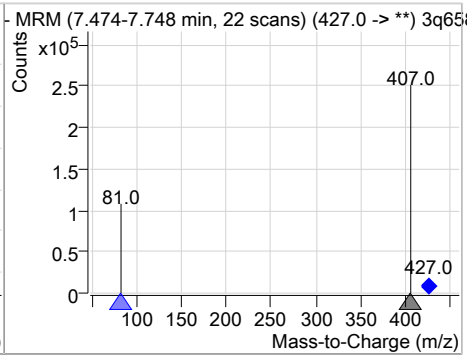




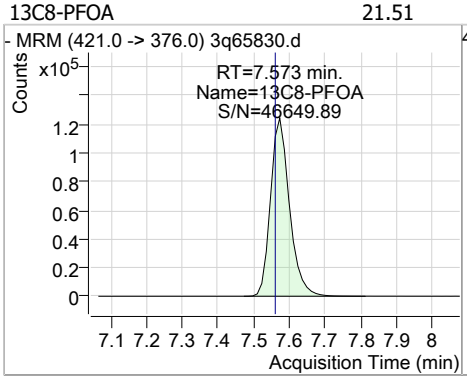
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.93	7.58	0.03	190072	427.0 -> 81.0	42.6	21.3	63.9

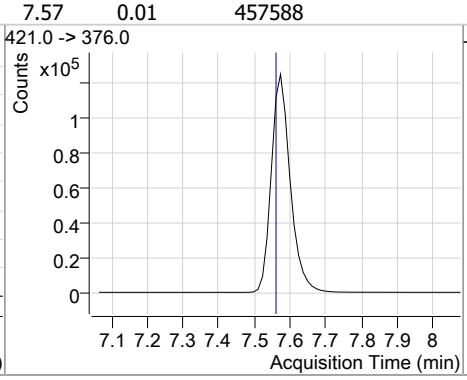


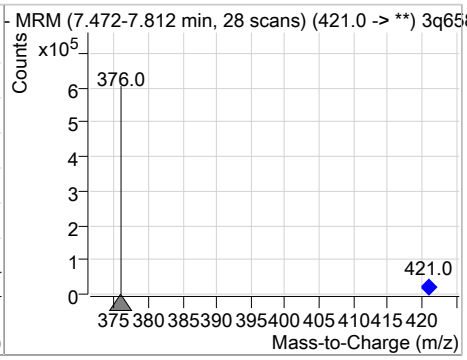




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.51	7.57	0.01	457588				

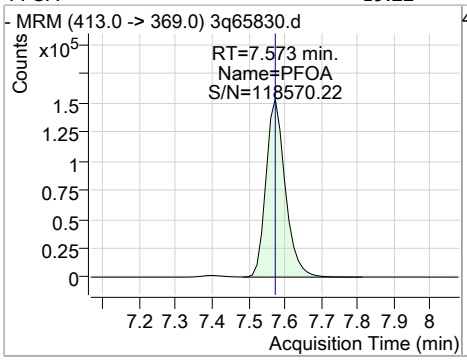


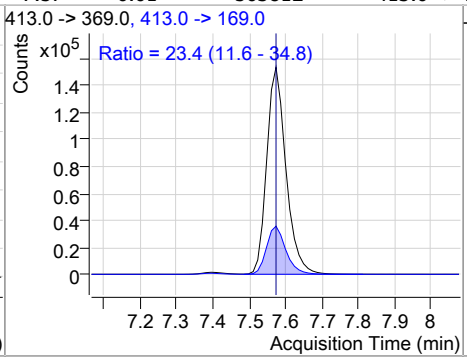


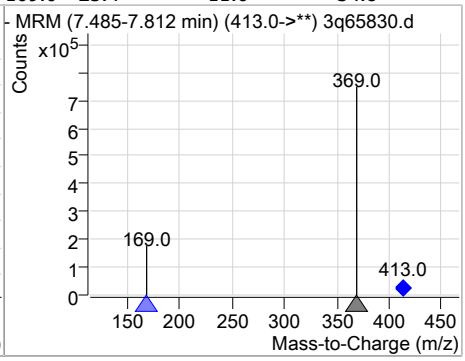


Perfluorinated Compounds by LC/MS/MS

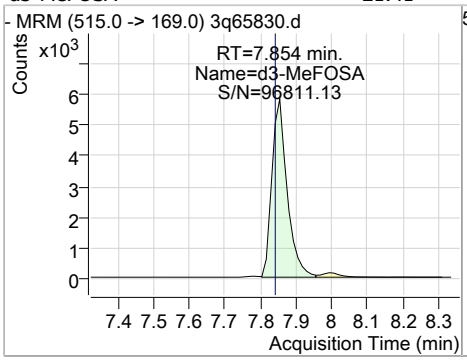
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.22	7.57	0.01	563812	413.0 -> 169.0	23.4	11.6	34.8

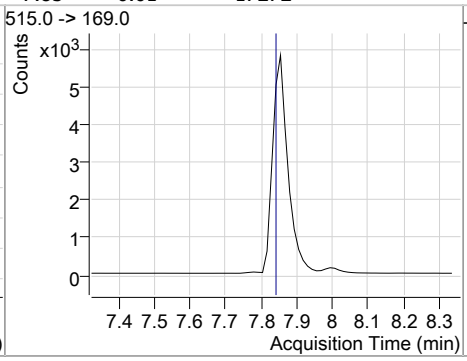


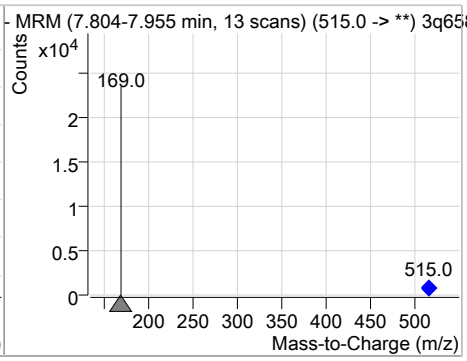




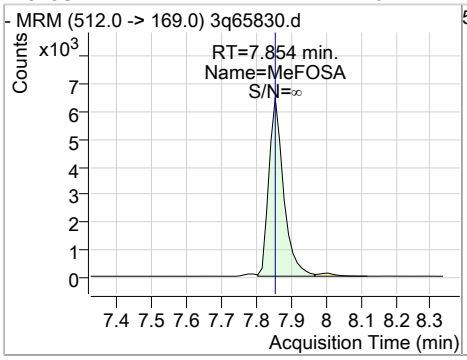
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.41	7.85	0.01	17272				

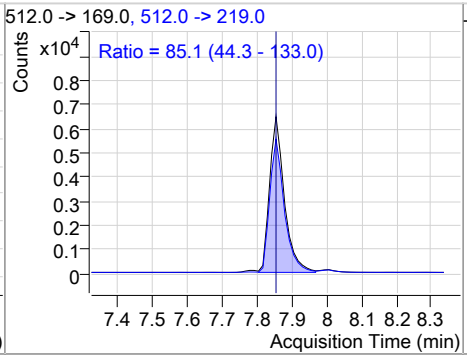


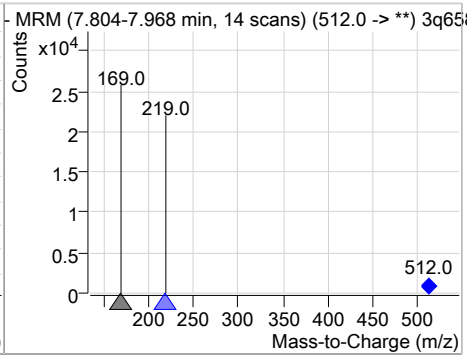




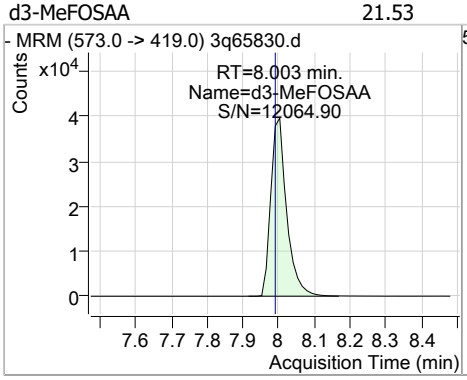
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.21	7.85	0.01	18975	512.0 -> 219.0	85.1	44.3	133.0

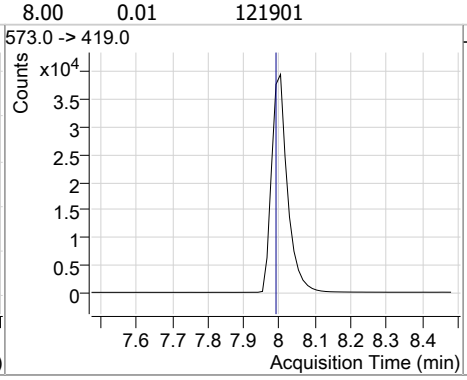


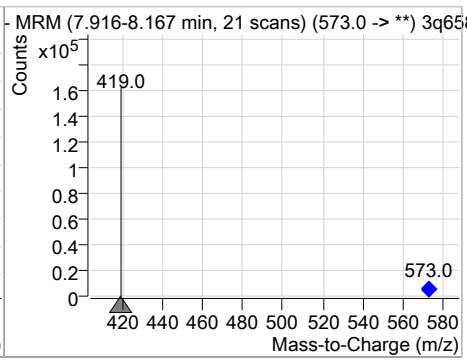




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.53	8.00	0.01	121901				

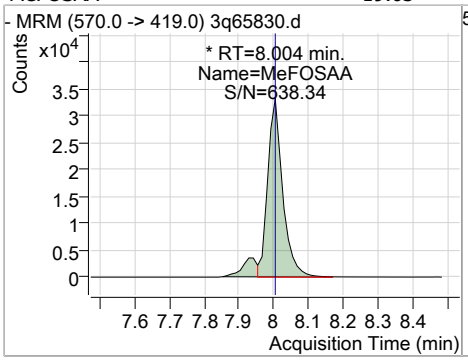


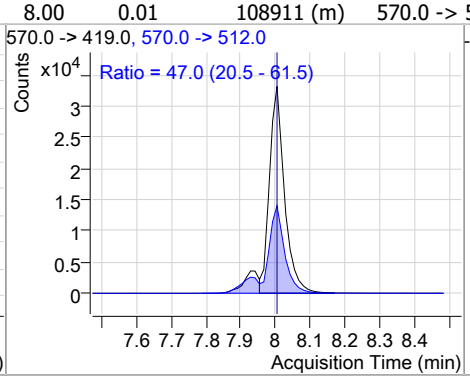


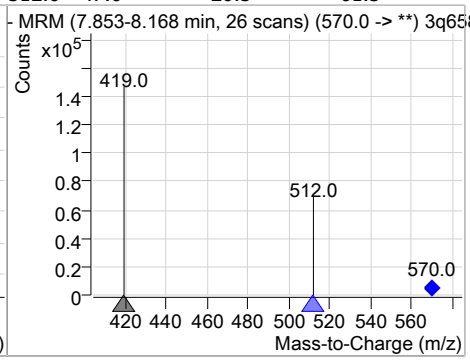


Perfluorinated Compounds by LC/MS/MS

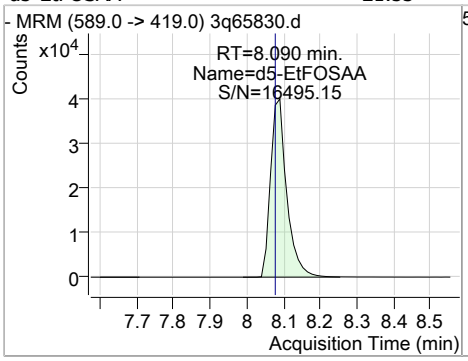
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.63	8.00	0.01	108911 (m)	570.0 -> 512.0	47.0	20.5	61.5

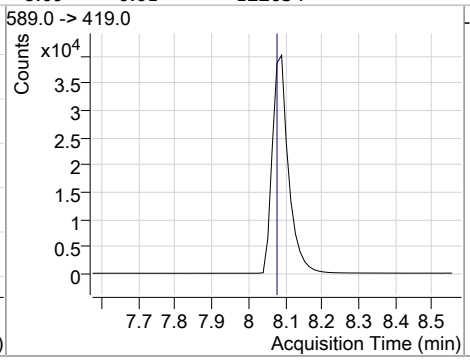


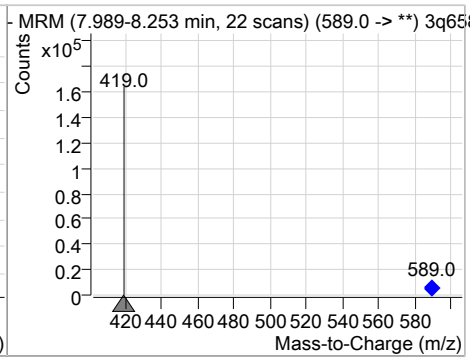




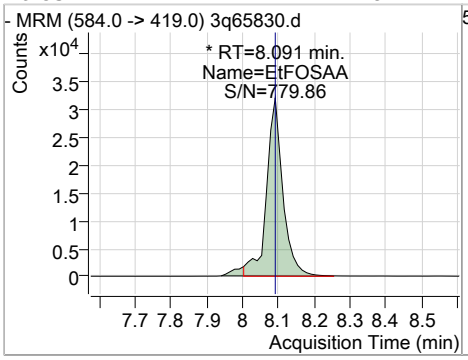
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.53	8.09	0.01	122654				

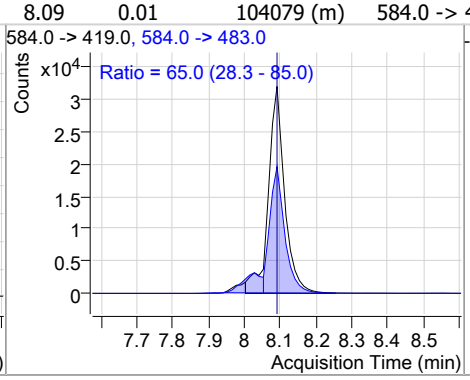


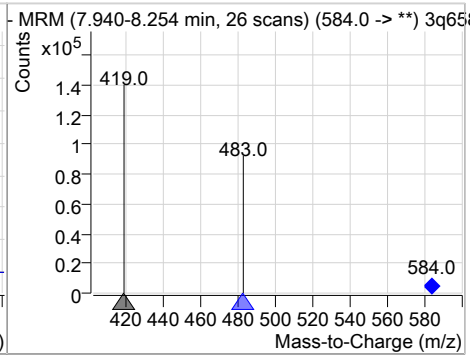




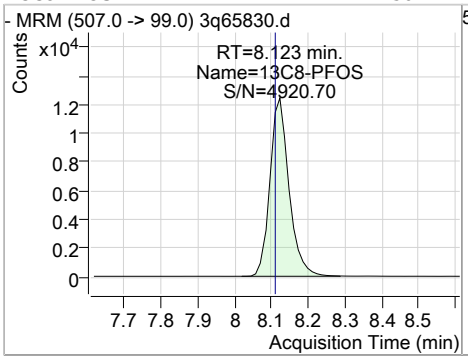
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.74	8.09	0.01	104079 (m)	584.0 -> 483.0	65.0	28.3	85.0

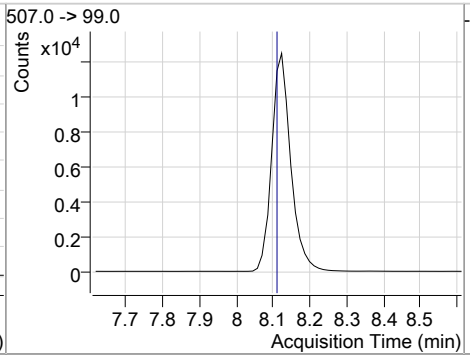


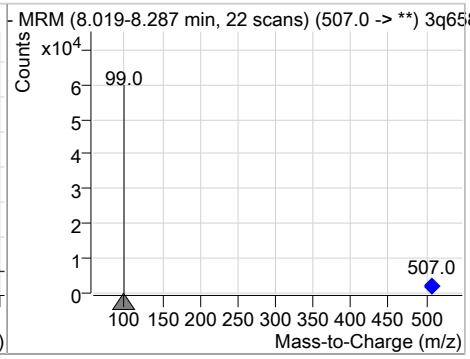




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.56	8.12	0.01	44614				

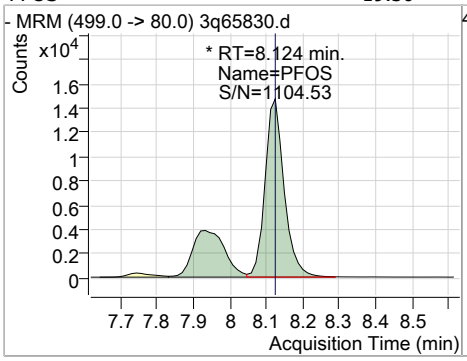


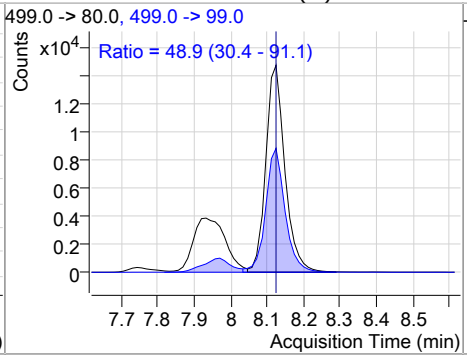


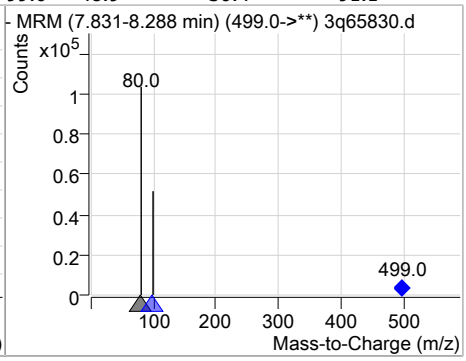


Perfluorinated Compounds by LC/MS/MS

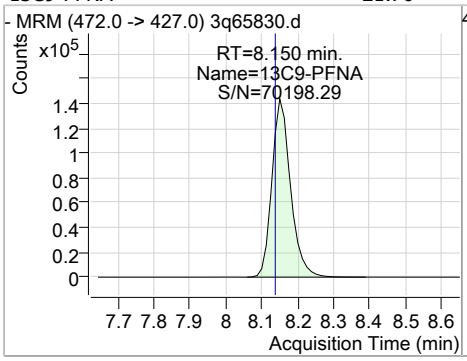
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.30	8.12	0.01	77025 (m)	499.0 -> 99.0	48.9	30.4	91.1

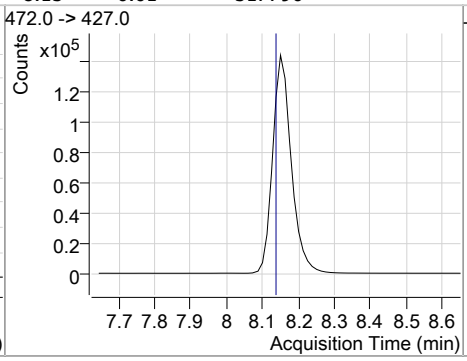


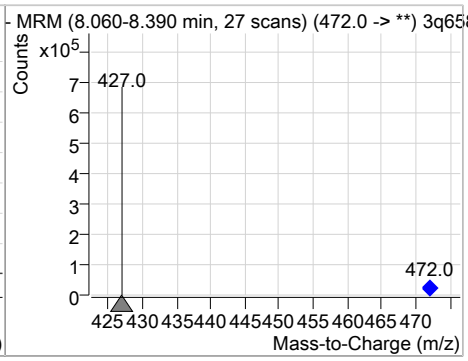




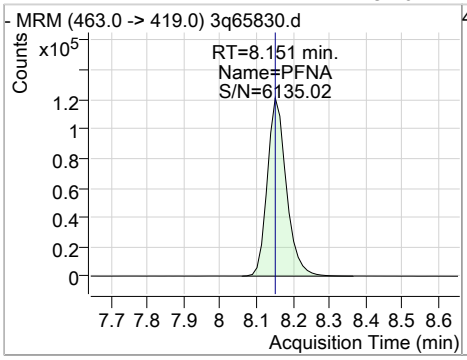
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.70	8.15	0.01	517790				

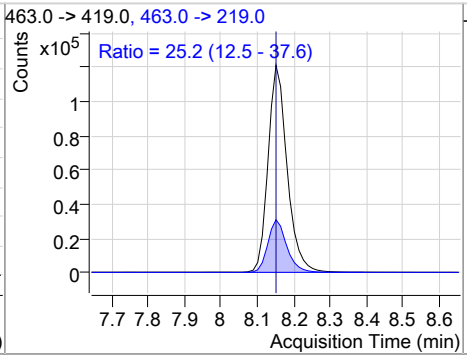


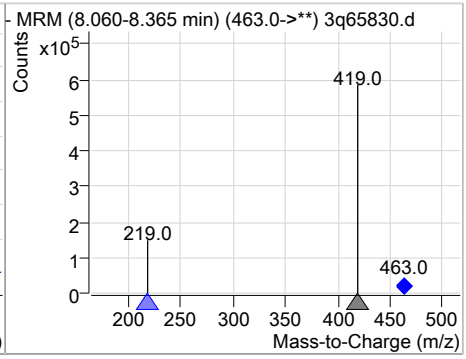




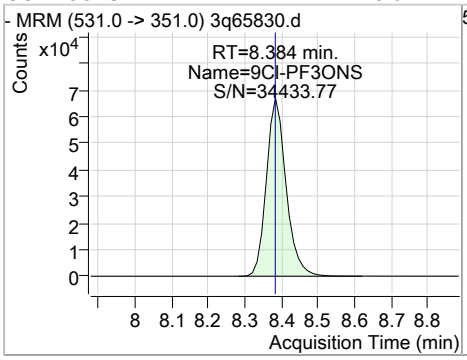
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.10	8.15	0.01	438264	463.0 -> 219.0	25.2	12.5	37.6

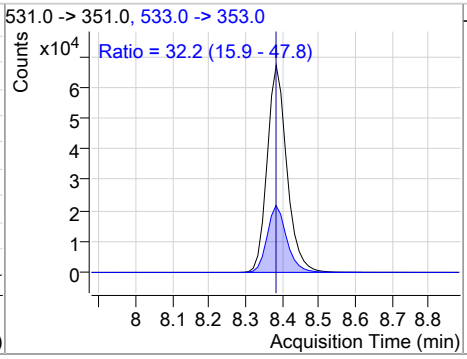


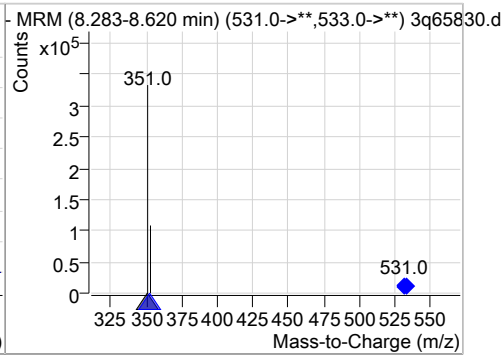




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.61	8.38	0.01	249621	533.0 -> 353.0	32.2	15.9	47.8

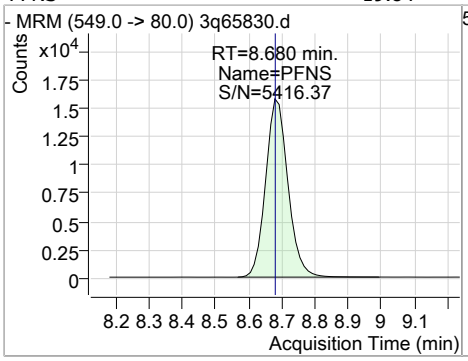


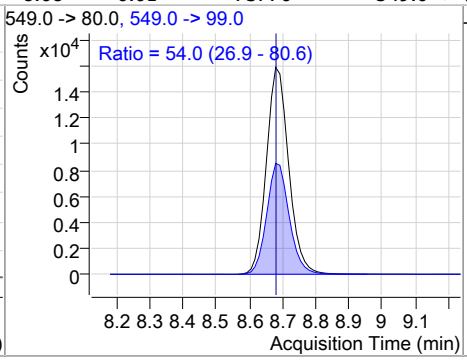


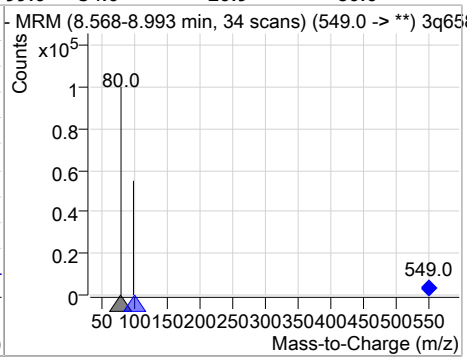


Perfluorinated Compounds by LC/MS/MS

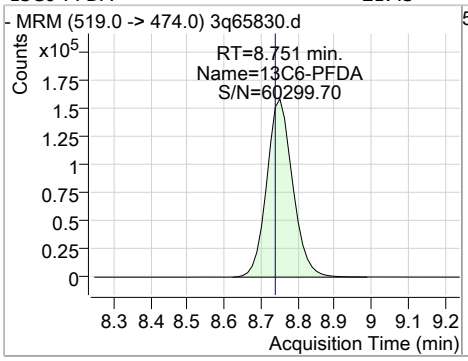
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.84	8.68	0.01	73776	549.0 -> 99.0	54.0	26.9	80.6

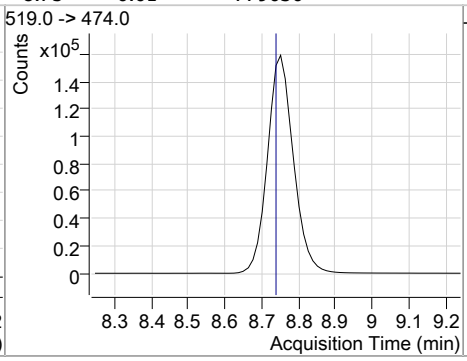


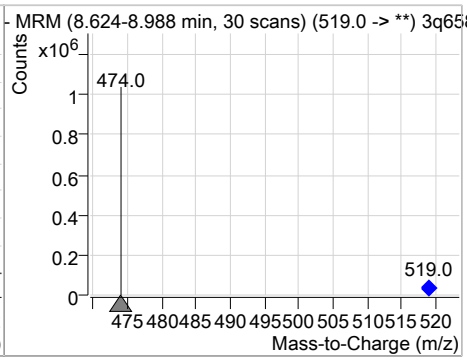




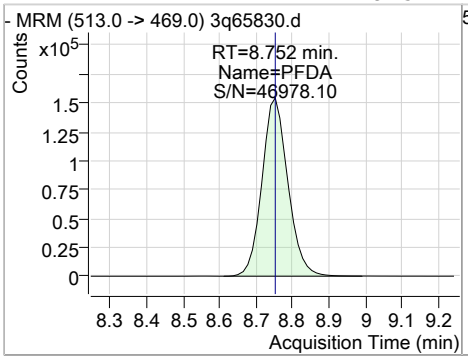
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.43	8.75	0.01	779030				

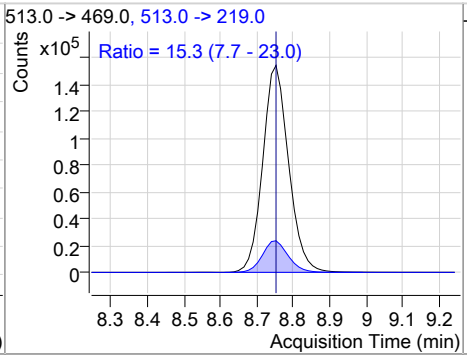


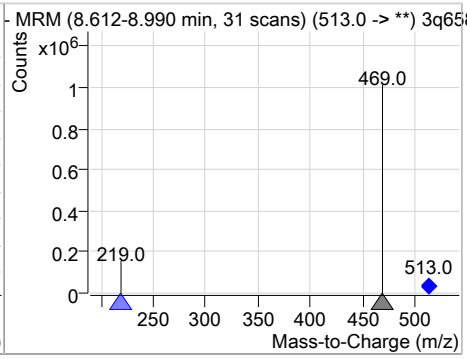




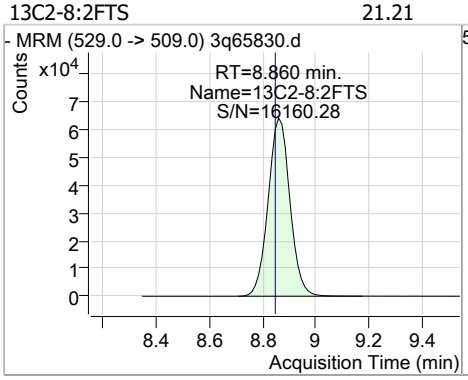
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.25	8.75	0.01	759785	513.0 -> 219.0	15.3	7.7	23.0

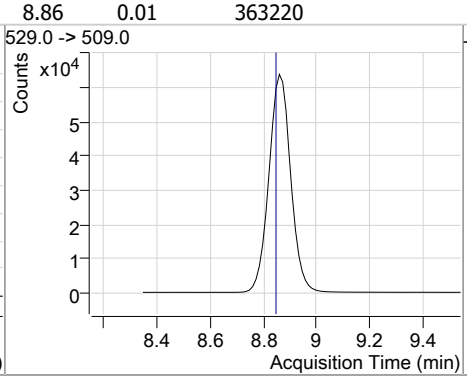


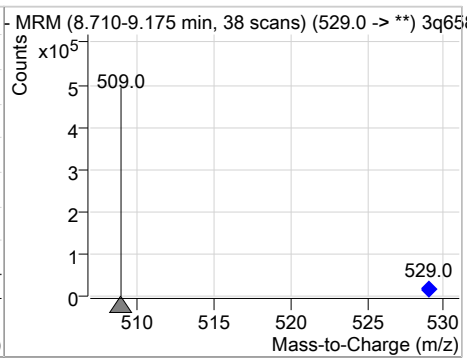




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.21	8.86	0.01	363220				

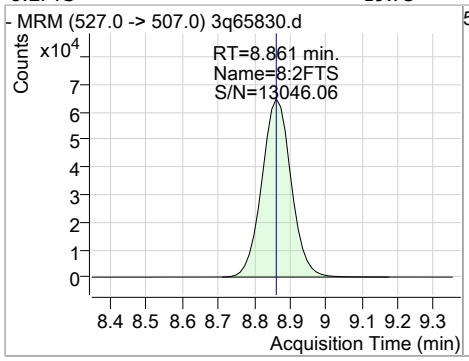


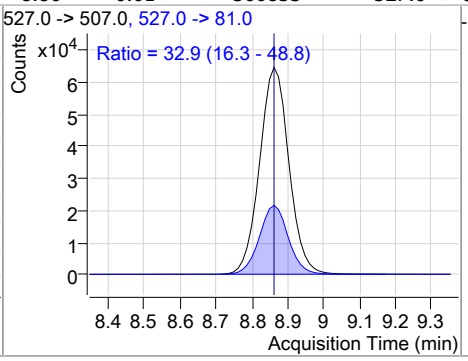


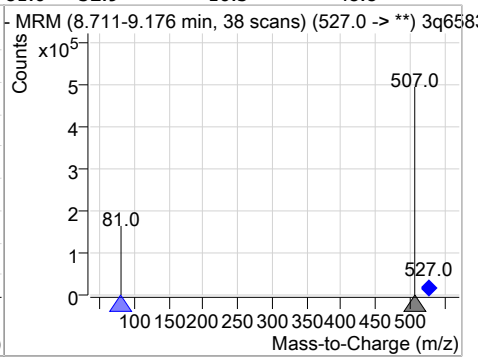


Perfluorinated Compounds by LC/MS/MS

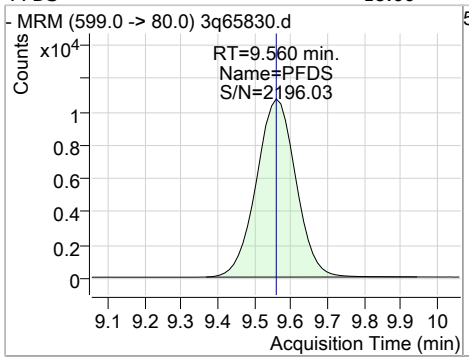
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.73	8.86	0.01	366855	527.0 -> 81.0	32.9	16.3	48.8

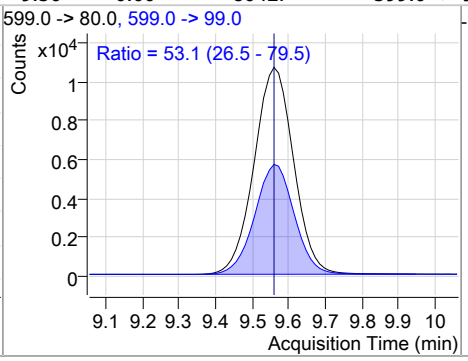


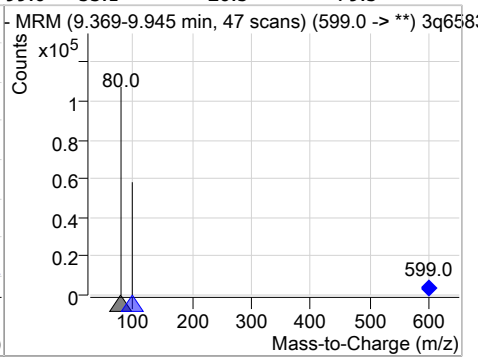




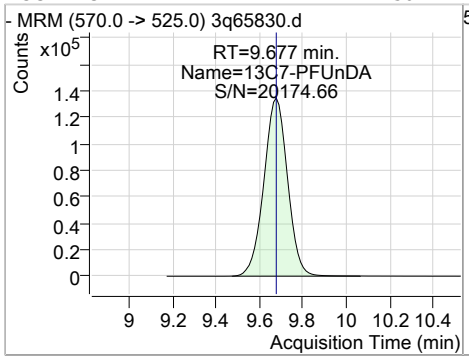
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.66	9.56	0.00	80427	599.0 -> 99.0	53.1	26.5	79.5

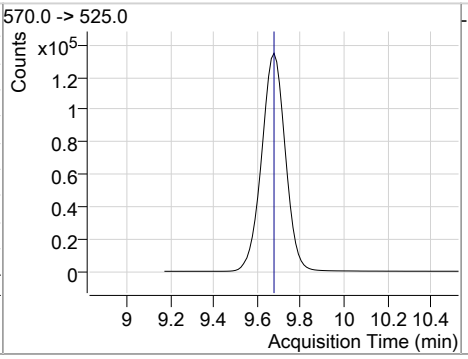


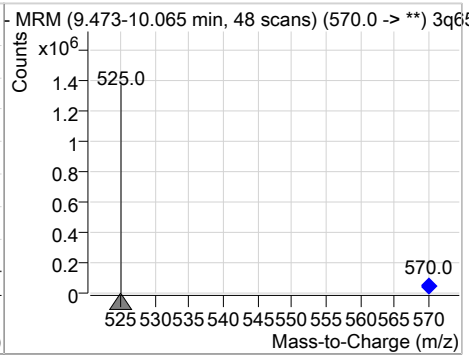




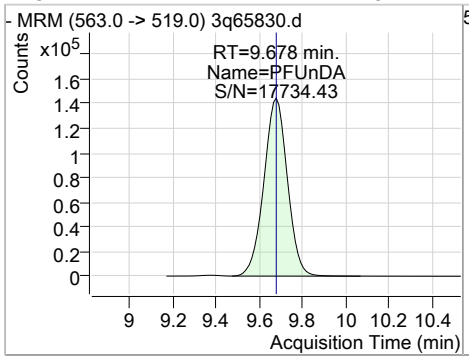
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.50	9.68	0.00	1024000				

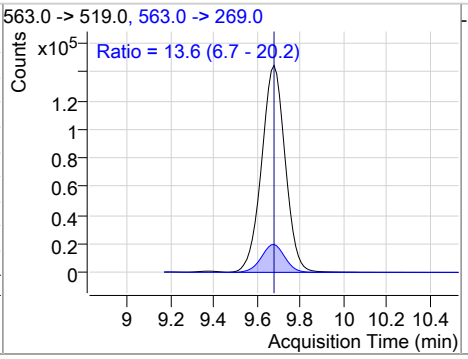


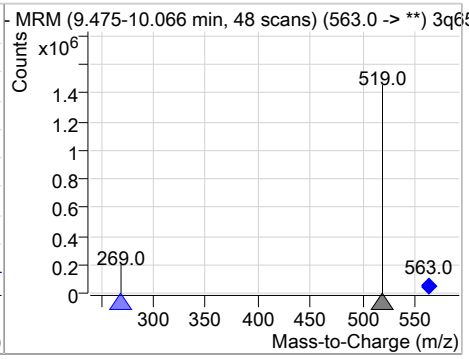




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.17	9.68	0.00	1088831	563.0 -> 269.0	13.6	6.7	20.2

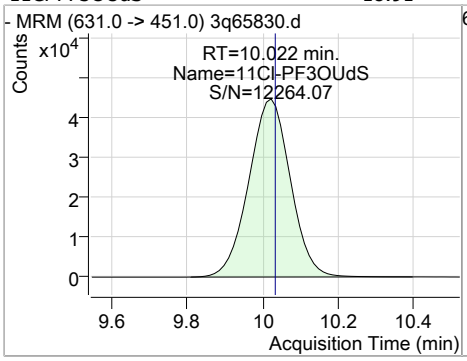


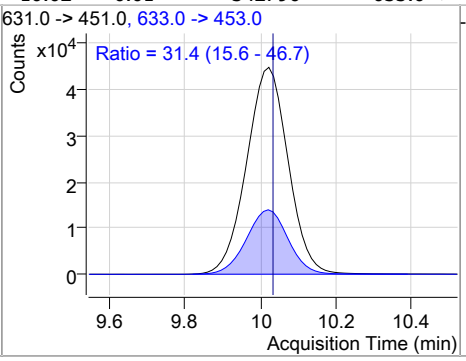


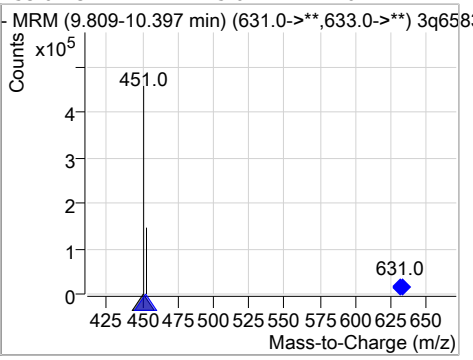


Perfluorinated Compounds by LC/MS/MS

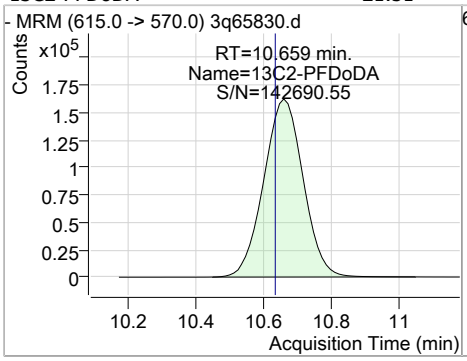
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.91	10.02	0.01	342796	633.0 -> 453.0	31.4	15.6	46.7

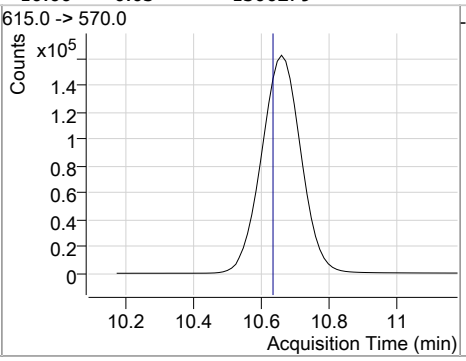


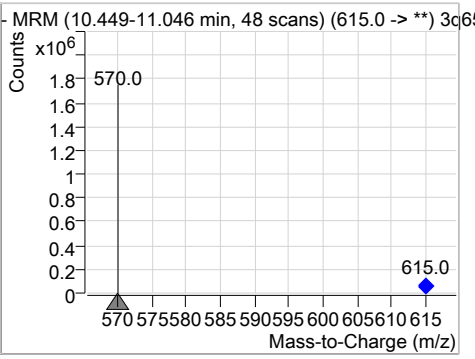




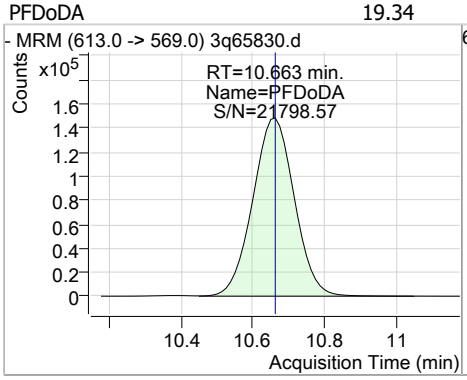
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.51	10.66	0.03	1306279				

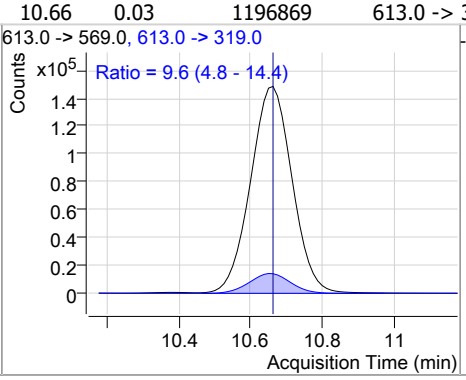


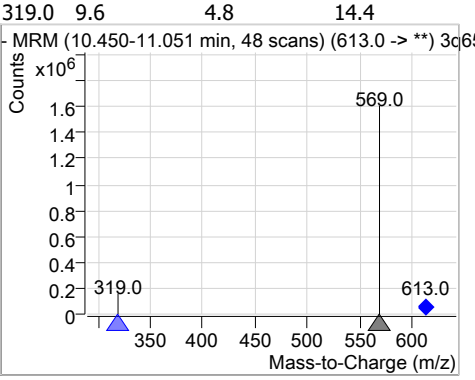




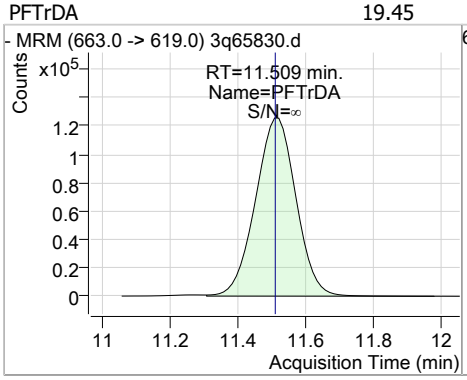
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.34	10.66	0.03	1196869	613.0 -> 319.0	9.6	4.8	14.4

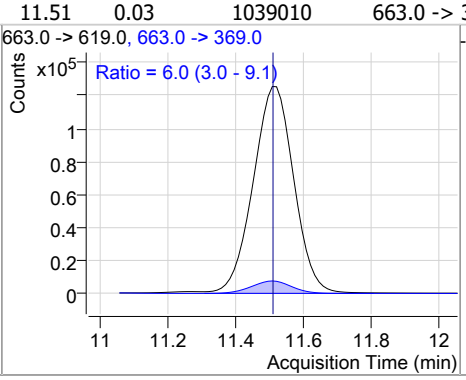


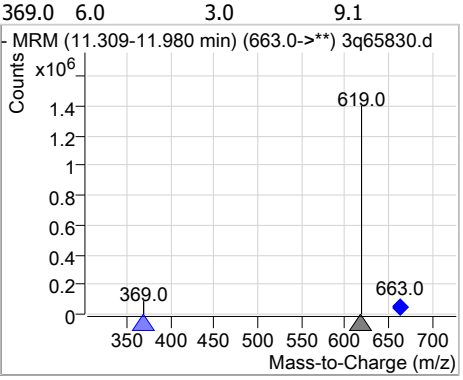




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.45	11.51	0.03	1039010	663.0 -> 369.0	6.0	3.0	9.1

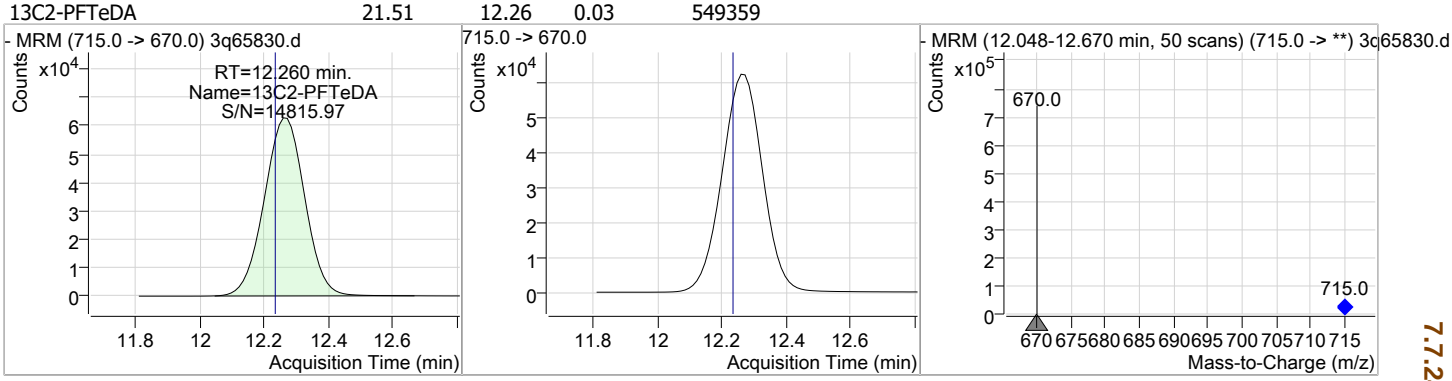




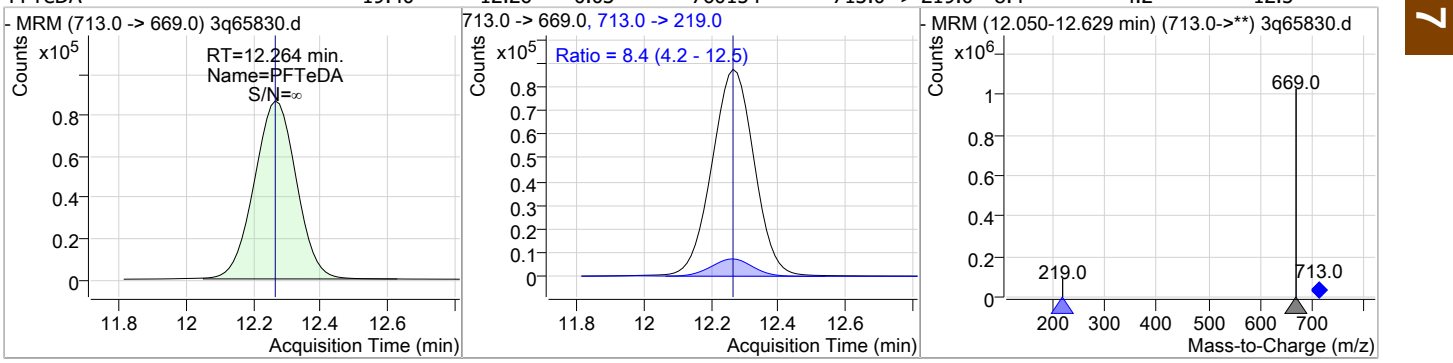


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.51	12.26	0.03	549359				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.40	12.26	0.03	760154	713.0 -> 219.0	8.4	4.2	12.5



7.7.24

7

Manual Integration Approval Summary

Sample Number: S3Q900-ICC900
Lab FileID: 3Q65830.D
Injection Time: 09/15/22 19:47
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65831.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:06:37 PM
Sample Name : ic900-50
Vial : P1-A8
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

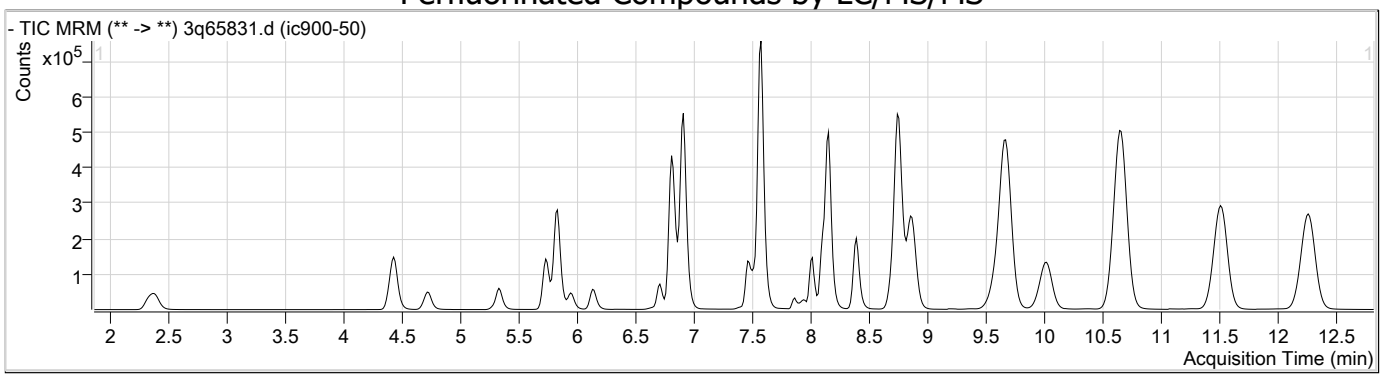
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	158274	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	230630	20.00 µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	303458	20.00 µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	294361	20.00 µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	391428	20.00 µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	446627	20.00 µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	683356	20.00 µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	895611	20.00 µg/L	-0.013
M2-PFDoDA	10.646	615.0 -> 570.0	1150400	20.00 µg/L	0.013
M2-PFTeDA	12.248	715.0 -> 670.0	486267	20.00 µg/L	0.013
M8-FOSA	7.503	506.0 -> 78.0	65073	20.00 µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	21089	20.00 µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	25353	20.00 µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	38882	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	126688	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	168598	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	342038	20.00 µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	105186	20.00 µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	24141	20.00 µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	14918	20.00 µg/L	0.013
M5-EtFOSAA	8.077	589.0 -> 419.0	106763	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	126688	20.64 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C2-6:2FTS	7.571	429.0 -> 409.0	168598	19.54 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%	
13C2-8:2FTS	8.860	529.0 -> 509.0	342038	19.98 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C2-PFDoDA	10.646	615.0 -> 570.0	1150400	18.94 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%	
13C2-PFTeDA	12.248	715.0 -> 670.0	486267	19.04 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%	
13C3-PFBS	4.717	302.0 -> 99.0	21089	19.05 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C3-PFHxS	6.834	402.0 -> 99.0	25353	18.82 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%	
13C4-PFBA	2.365	217.0 -> 172.0	158274	19.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C4-PFHpA	6.805	367.0 -> 322.0	294361	18.66 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C5-PFHxA	5.826	318.0 -> 273.0	303458	18.92 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%	
13C5-PFPeA	4.424	268.0 -> 223.0	230630	19.07 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%	
13C6-PFDA	8.739	519.0 -> 474.0	683356	18.80 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

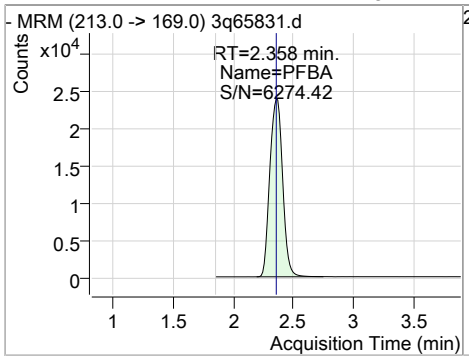
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C7-PFUnDA	9.664	570.0 -> 525.0	895611	18.80	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C8-FOSA	7.503	506.0 -> 78.0	65073	18.26	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
13C8-PFOA	7.573	421.0 -> 376.0	391428	18.40	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C8-PFOS	8.111	507.0 -> 99.0	38882	18.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C9-PFNA	8.150	472.0 -> 427.0	446627	18.72	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
d3-MeFOSAA	7.991	573.0 -> 419.0	105186	18.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	24140	18.69	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
d3-MeFOSA	7.854	515.0 -> 169.0	14918	18.49	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
d5-EtFOSAA	8.077	589.0 -> 419.0	106948	18.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	321546	45.43	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	401065	45.89	µg/L		100
8:2FTS	8.861	527.0 -> 507.0	806645	46.08	µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	224550	48.93	µg/L	m	90
FOSA	7.504	498.0 -> 78.0	154353	48.24	µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	240337	50.19	µg/L	m	91
PFBA	2.358	213.0 -> 169.0	177472	49.21	µg/L		100
PFBS	4.707	299.0 -> 80.0	152711	49.61	µg/L		100
PFDA	8.740	513.0 -> 469.0	1687335	48.74	µg/L		100
PFDoDA	10.638	613.0 -> 569.0	2671656	49.03	µg/L		100
PFDS	9.548	599.0 -> 80.0	181694	48.20	µg/L		99
PFHpA	6.807	363.0 -> 319.0	1090811	48.69	µg/L		100
PFHpS	7.557	449.0 -> 80.0	132683	51.15	µg/L		99
PFHxA	5.827	313.0 -> 269.0	832884	48.98	µg/L		100
PFHxS	6.835	399.0 -> 80.0	154317	49.33	µg/L	m	98
PFNA	8.151	463.0 -> 419.0	974363	49.22	µg/L		99
PFNS	8.680	549.0 -> 80.0	163822	50.54	µg/L		99
PFOA	7.573	413.0 -> 369.0	1223400	48.76	µg/L		99
PFOS	8.111	499.0 -> 80.0	173998	50.03	µg/L	m	83
PFPeA	4.426	263.0 -> 219.0	519390	48.87	µg/L		100
PFPeS	5.932	349.0 -> 80.0	118589	49.74	µg/L		99
PFTeDA	12.252	713.0 -> 669.0	1714249	49.43	µg/L		100
PFTrDA	11.497	663.0 -> 619.0	2315490	49.23	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	2422922	48.78	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	775576	48.59	µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	566006	48.11	µg/L		99
ADONA	6.903	377.0 -> 251.0	1626039	48.66	µg/L		99
HFPO-DA	6.134	329.0 -> 169.0	146438	48.92	µg/L		97
MeFOSA	7.854	512.0 -> 169.0	40603	50.08	µg/L		96
4-PFECHS	7.454	461.0 -> 381.0	327676	46.43	µg/L		98
FBSA	5.327	298.0 -> 78.0	241916	49.62	µg/L		99
FHxSA	6.700	398.0 -> 78.0	225106	47.96	µg/L		99

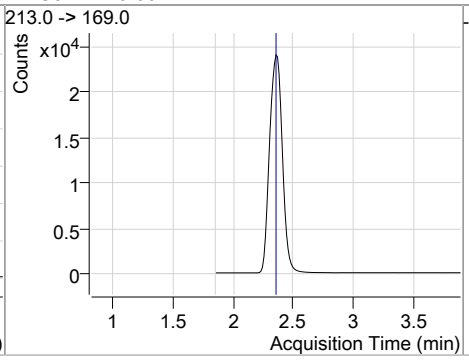
 # = Qualifier out of range, m = manually integrated, + = Area summed

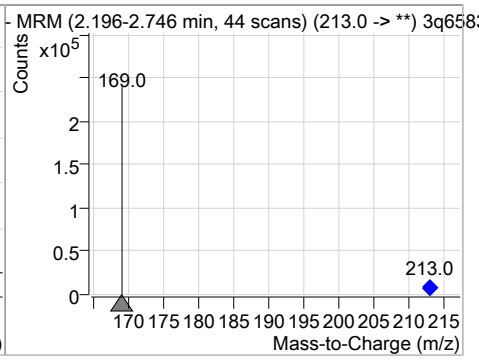
Perfluorinated Compounds by LC/MS/MS



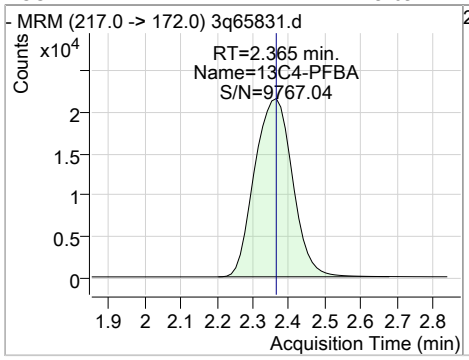
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.21	2.36	0.00	177472				

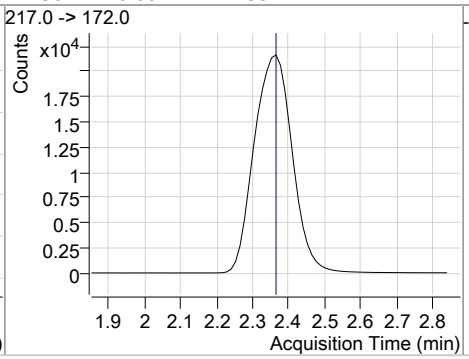


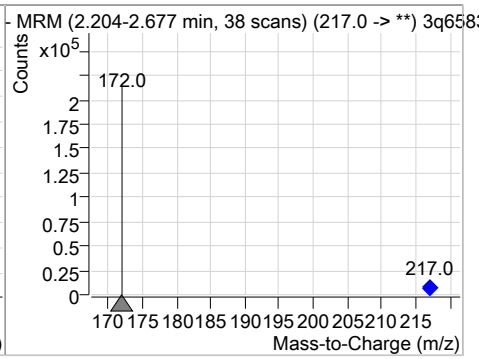




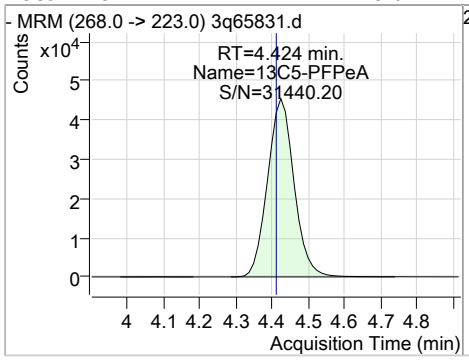
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.09	2.36	0.00	158274				

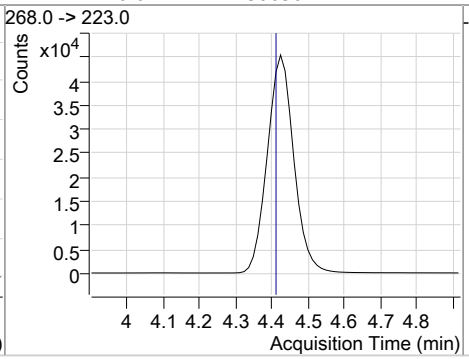


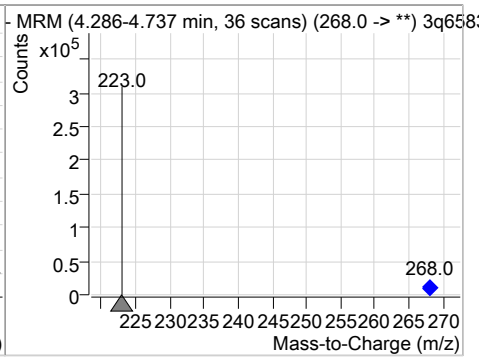




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.07	4.42	0.01	230630				

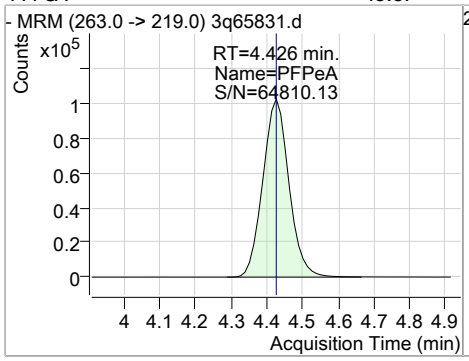


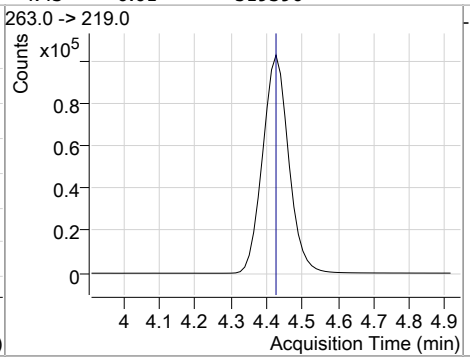


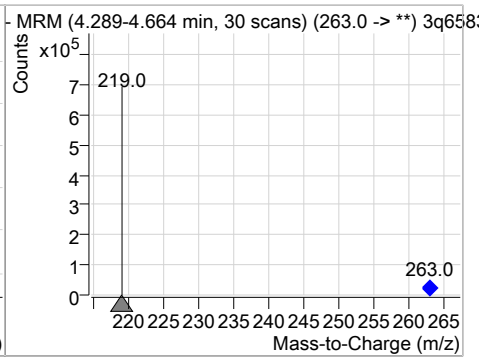


Perfluorinated Compounds by LC/MS/MS

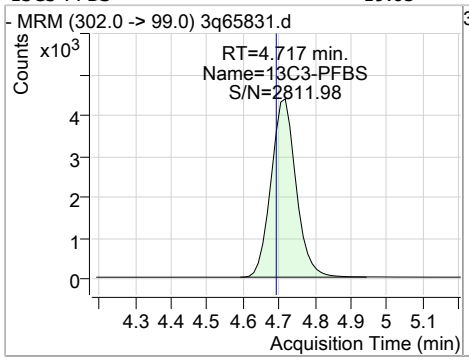
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	48.87	4.43	0.01	519390				

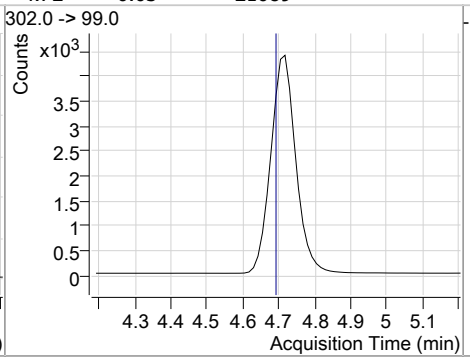


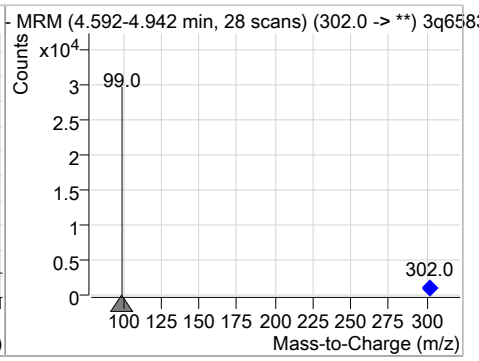




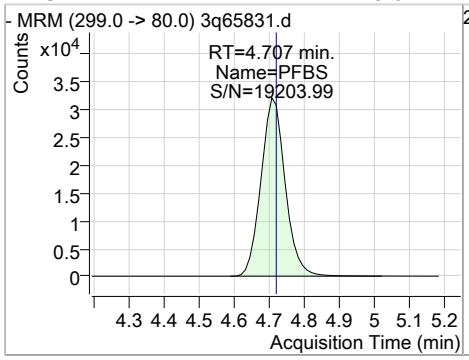
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.05	4.72	0.03	21089				

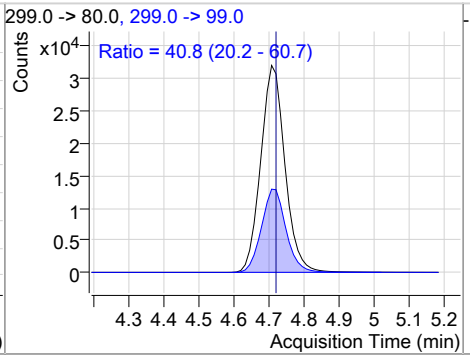


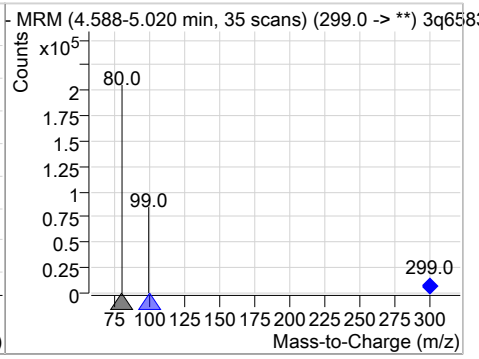




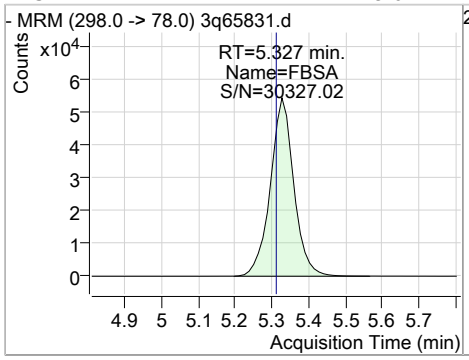
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.61	4.71	0.01	152711	299.0 -> 99.0	40.8	20.2	60.7

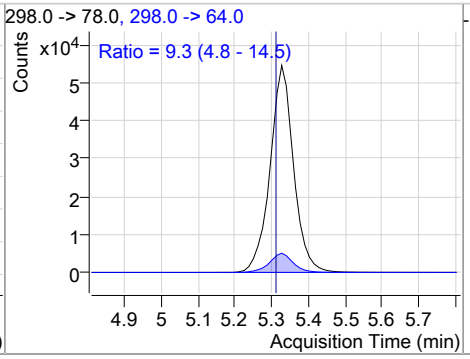


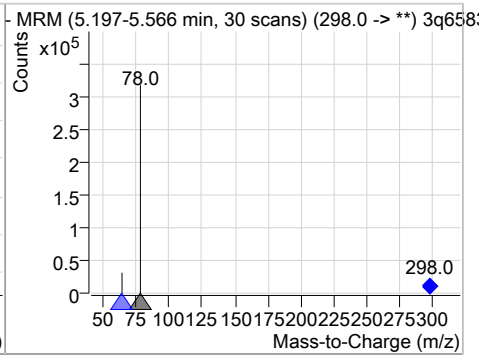




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	49.62	5.33	0.03	241916	298.0 -> 64.0	9.3	4.8	14.5

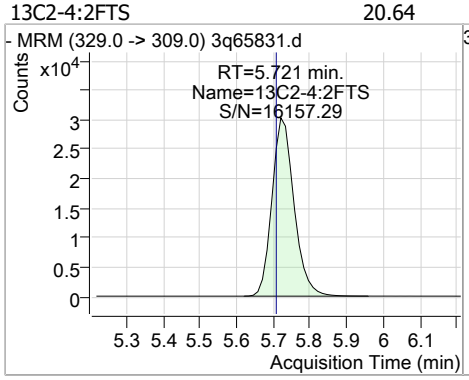


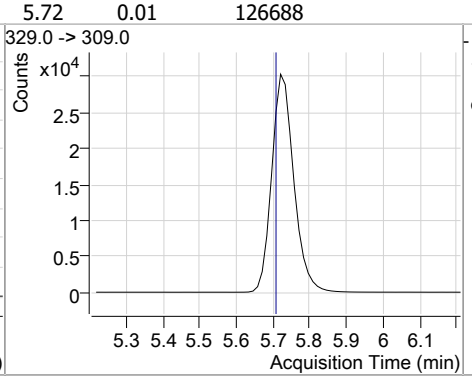


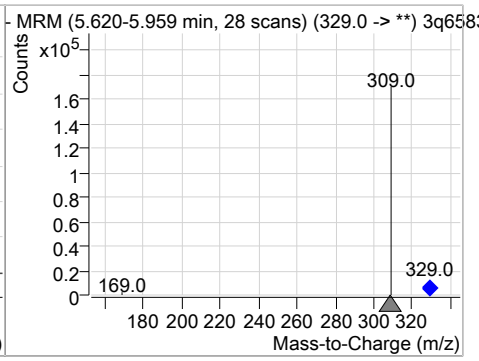


Perfluorinated Compounds by LC/MS/MS

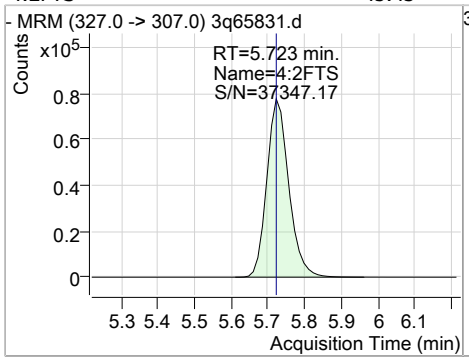
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.64	5.72	0.01	126688				

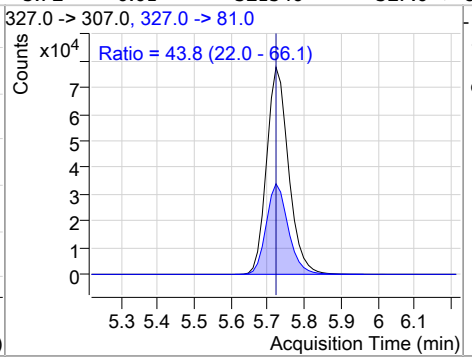


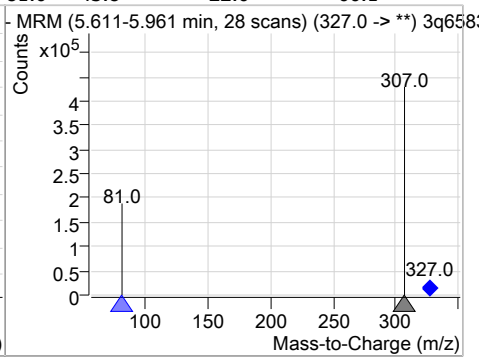




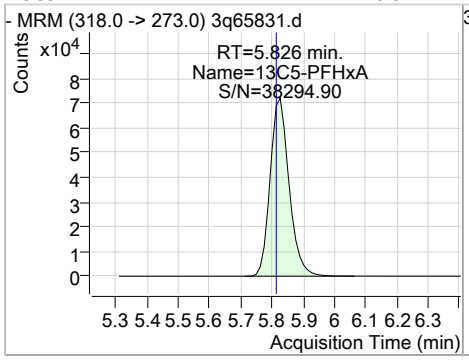
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	45.43	5.72	0.01	321546	327.0 -> 81.0	43.8	22.0	66.1

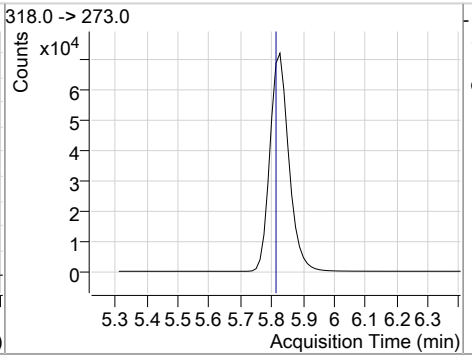


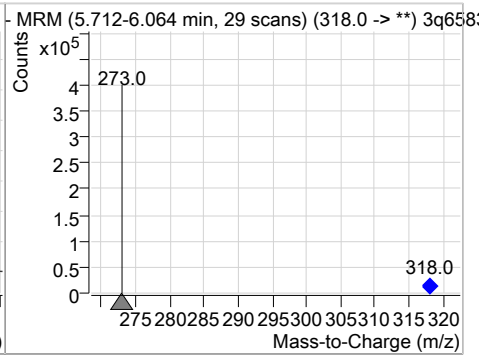




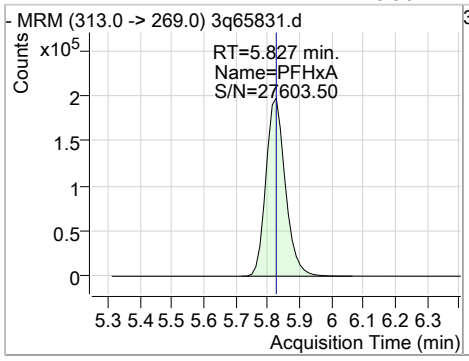
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.92	5.83	0.01	303458				

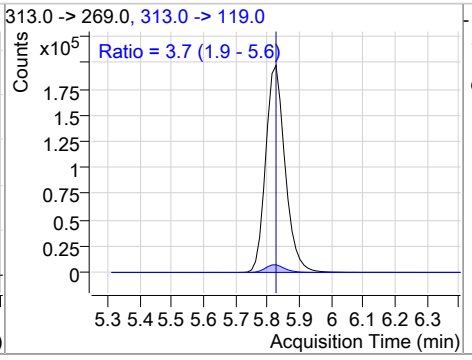


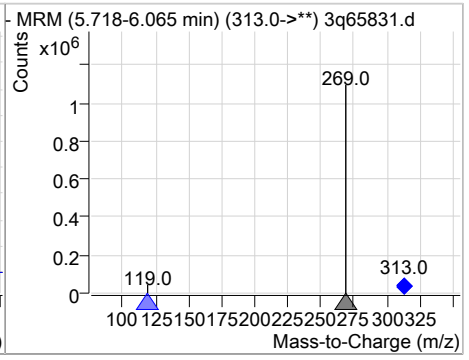




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	48.98	5.83	0.01	832884	313.0 -> 119.0	3.7	1.9	5.6

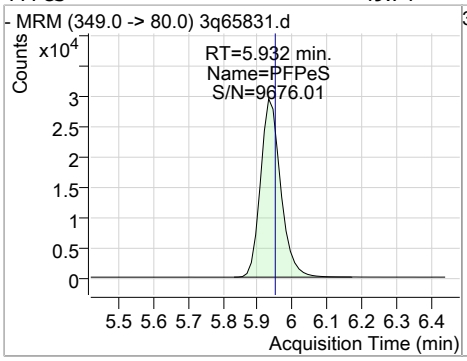


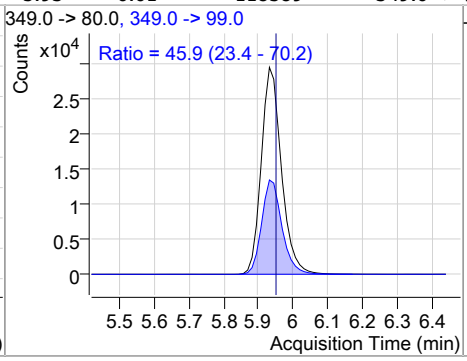


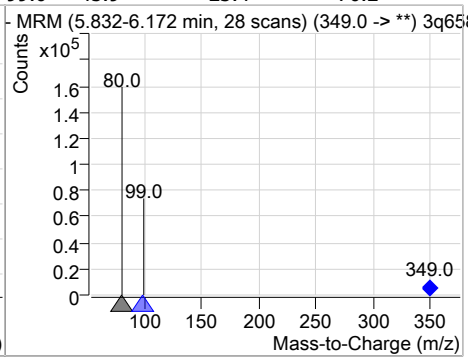


Perfluorinated Compounds by LC/MS/MS

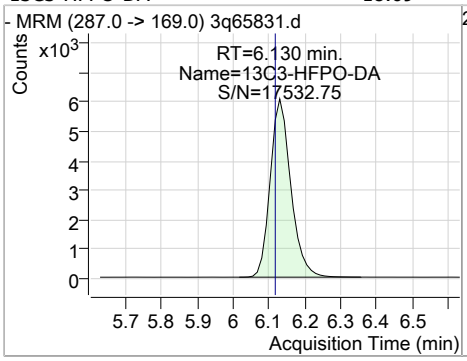
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.74	5.93	0.01	118589	349.0 -> 99.0	45.9	23.4	70.2

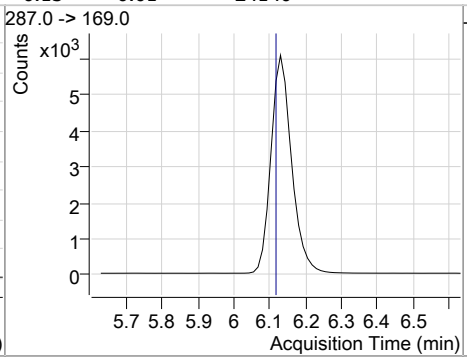


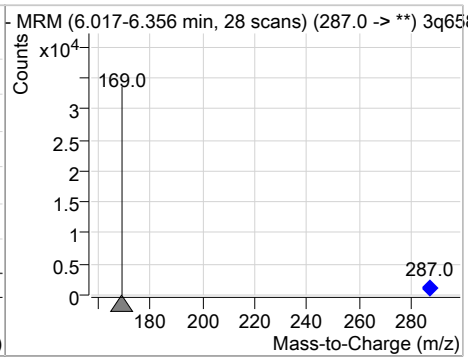




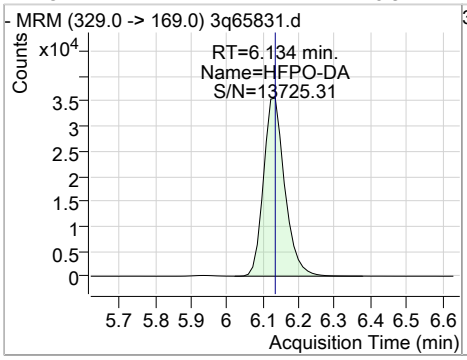
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.69	6.13	0.01	24140				

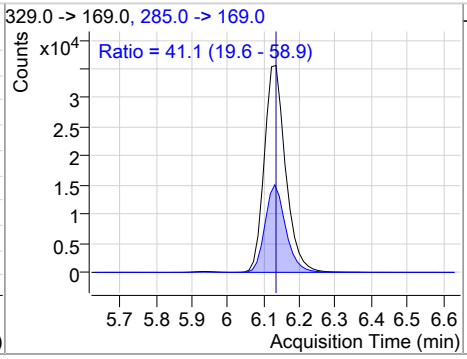


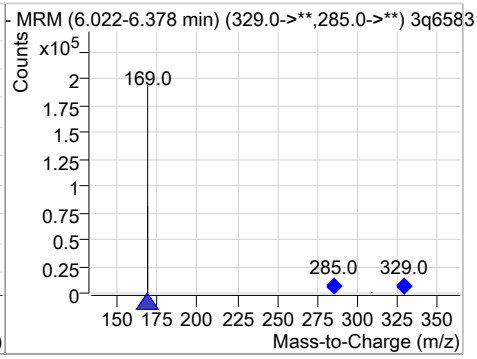




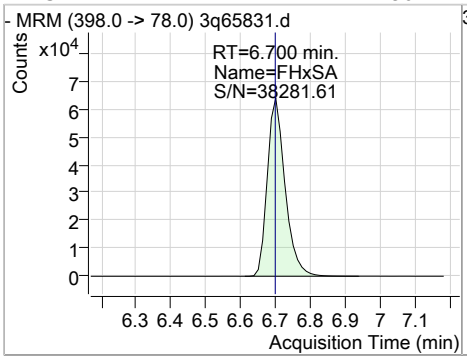
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	48.92	6.13	0.01	146438	285.0 -> 169.0	41.1	19.6	58.9

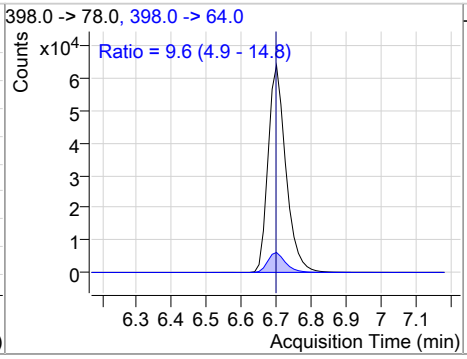


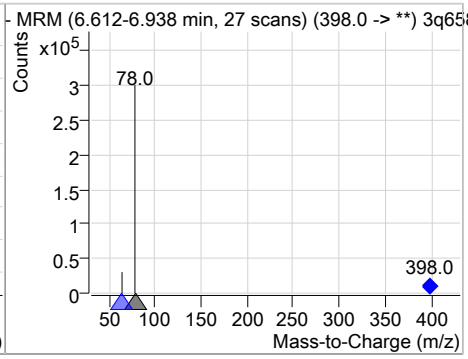




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	47.96	6.70	0.01	225106	398.0 -> 64.0	9.6	4.9	14.8

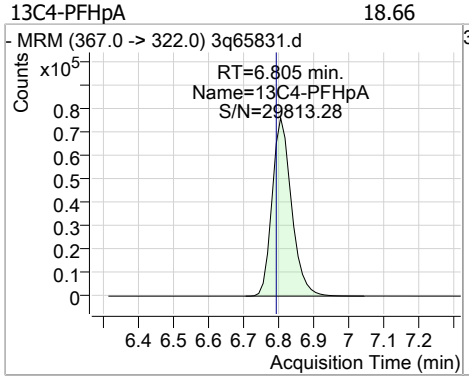


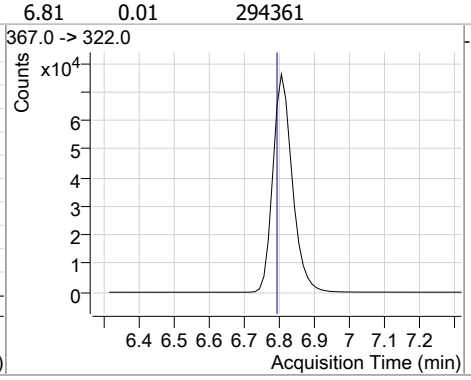


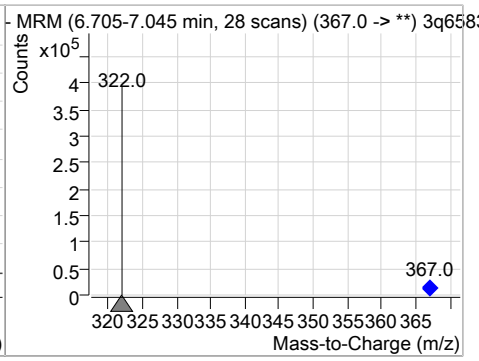


Perfluorinated Compounds by LC/MS/MS

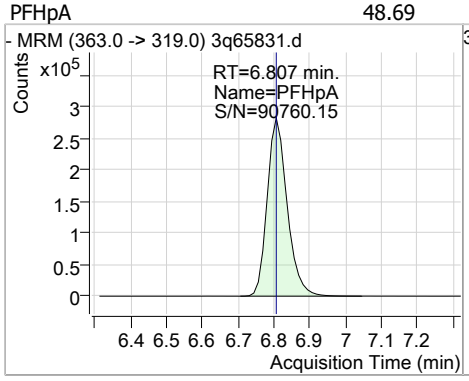
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.66	6.81	0.01	294361				

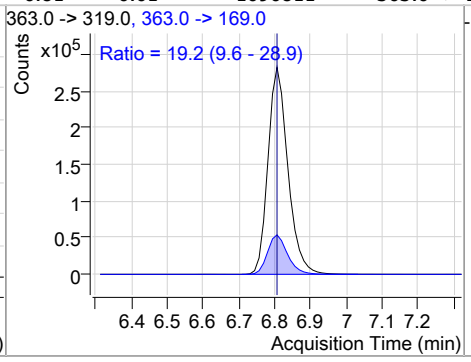


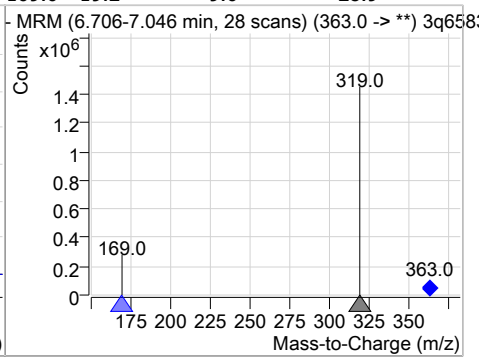




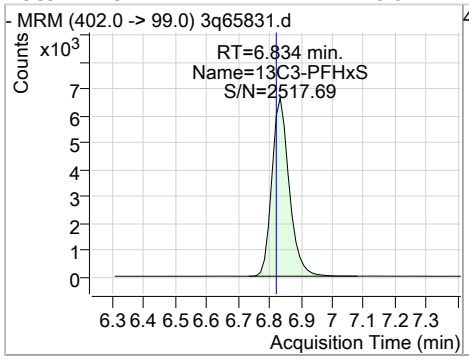
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	48.69	6.81	0.01	1090811	363.0 -> 169.0	19.2	9.6	28.9

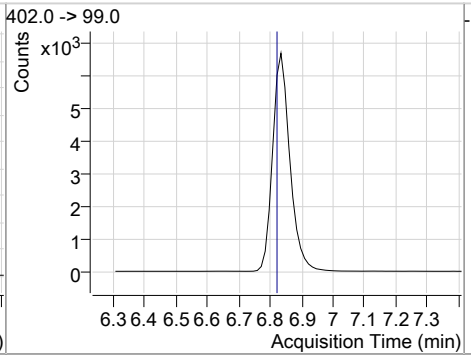


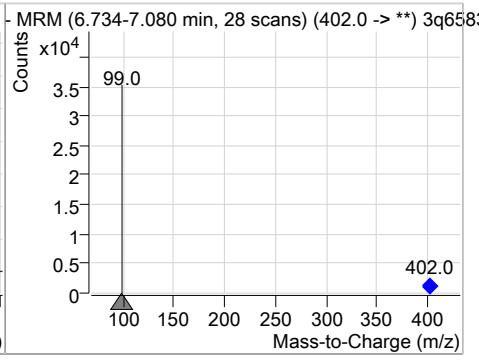




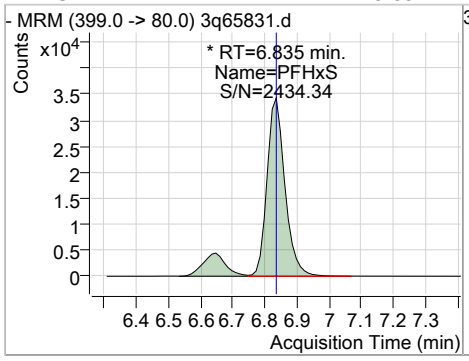
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.82	6.83	0.01	25353				

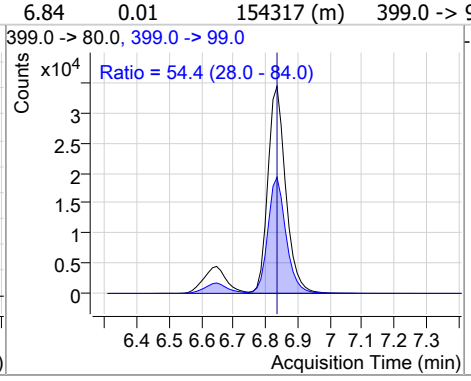


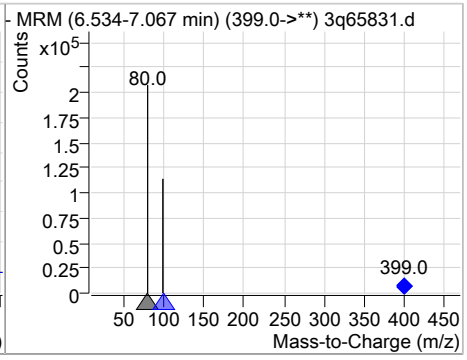




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.33	6.84	0.01	154317 (m)	399.0 -> 99.0	54.4	28.0	84.0

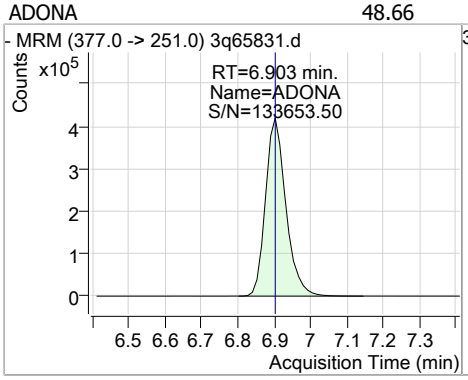


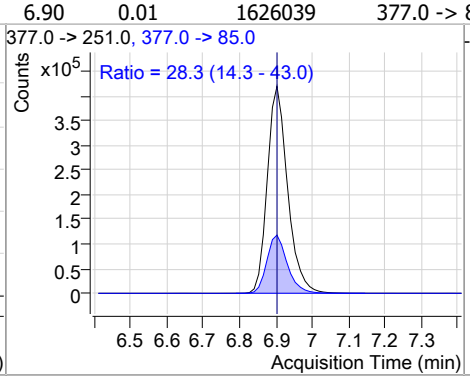


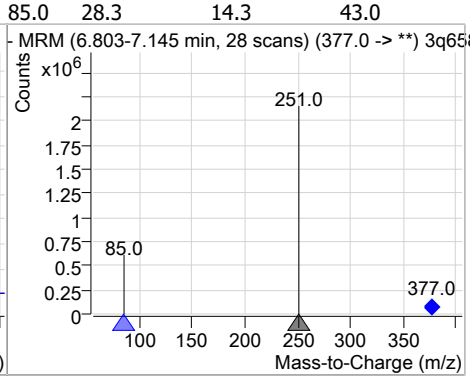


Perfluorinated Compounds by LC/MS/MS

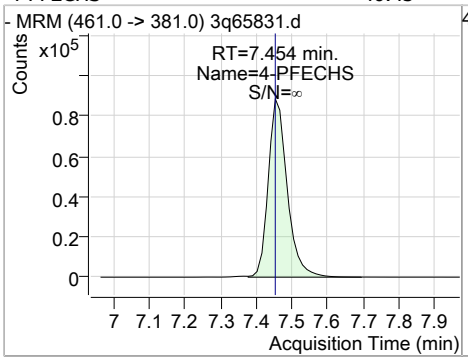
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	48.66	6.90	0.01	1626039	377.0 -> 85.0	28.3	14.3	43.0

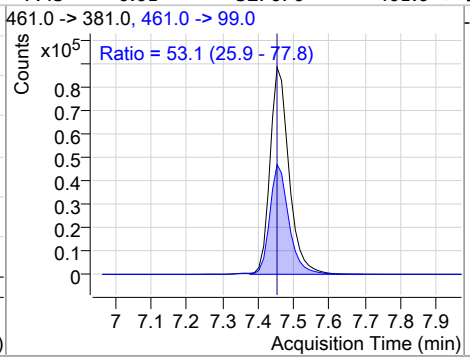


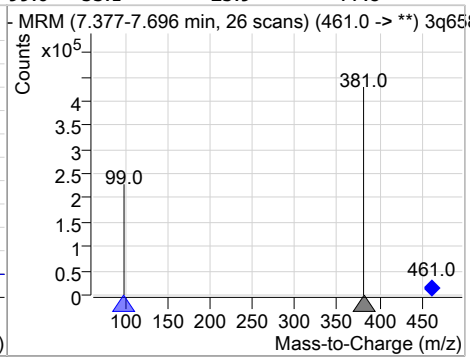




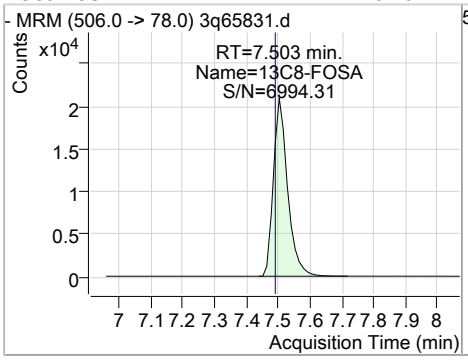
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	46.43	7.45	0.01	327676	461.0 -> 99.0	53.1	25.9	77.8

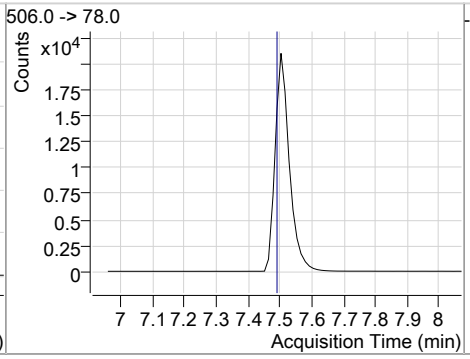


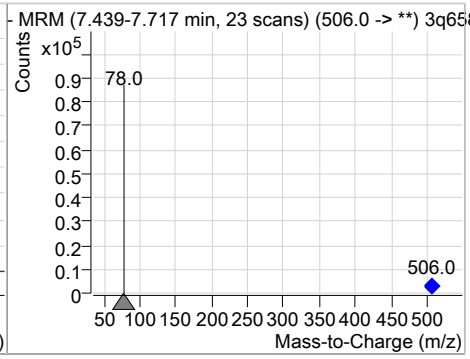




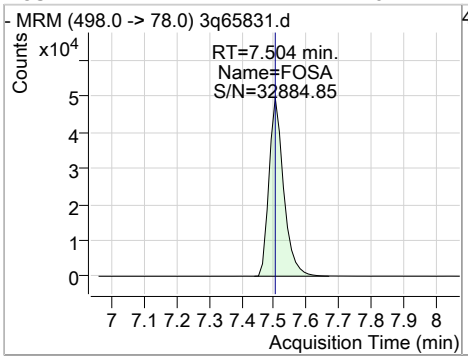
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.26	7.50	0.01	65073				

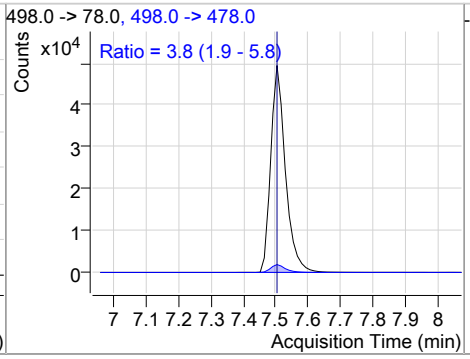


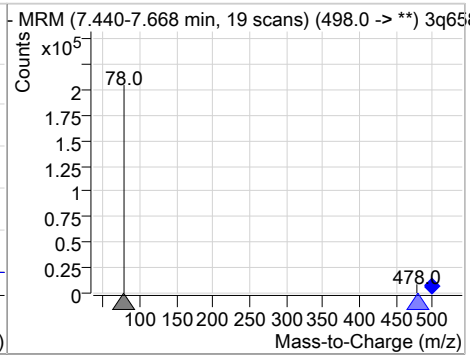




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.24	7.50	0.01	154353	498.0 -> 478.0	3.8	1.9	5.8

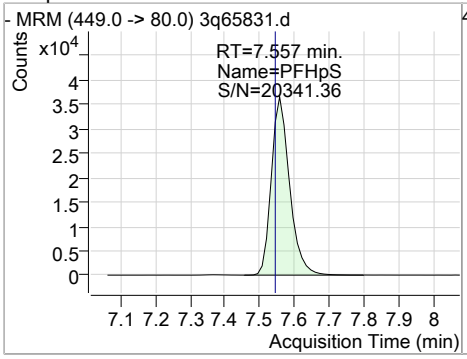


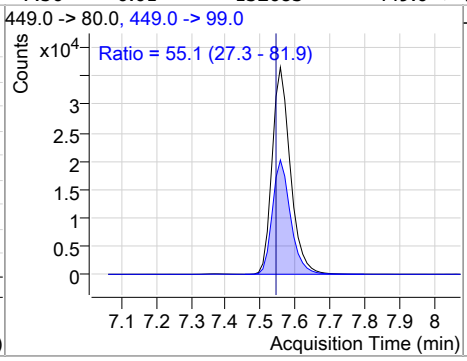


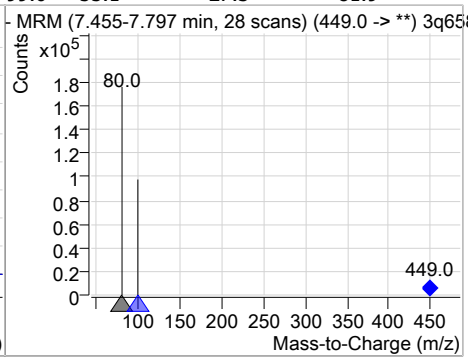


Perfluorinated Compounds by LC/MS/MS

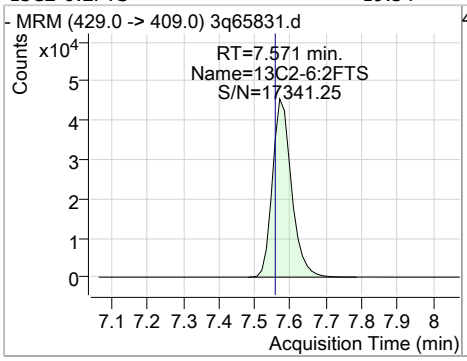
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.15	7.56	0.01	132683	449.0 -> 99.0	55.1	27.3	81.9

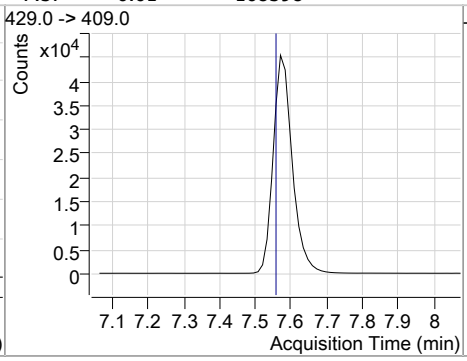


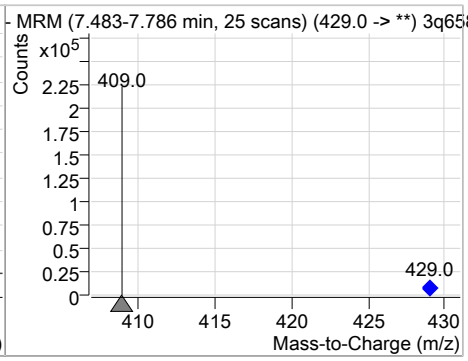




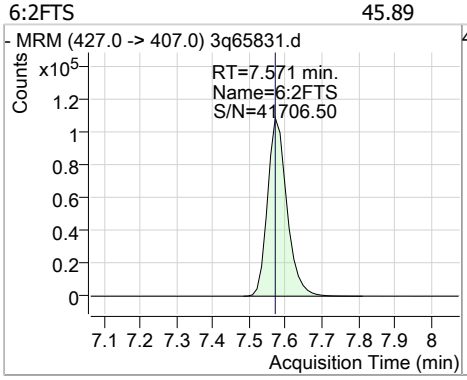
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.54	7.57	0.01	168598				

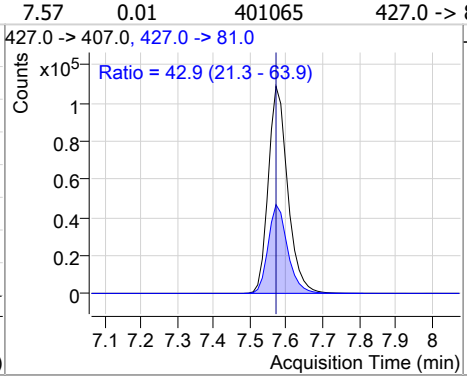


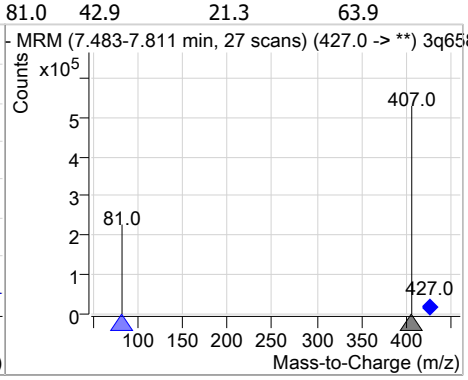




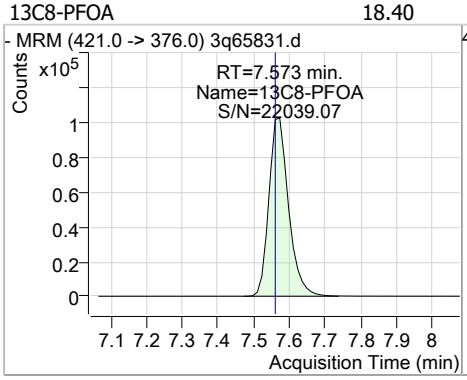
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	45.89	7.57	0.01	401065	427.0 -> 81.0	42.9	21.3	63.9

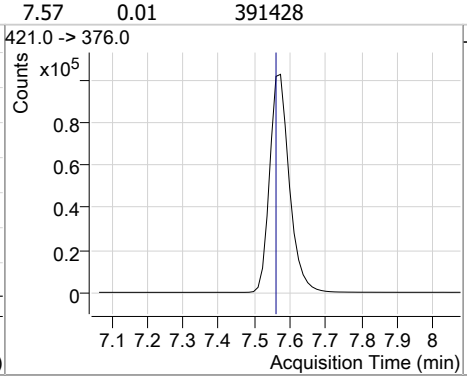


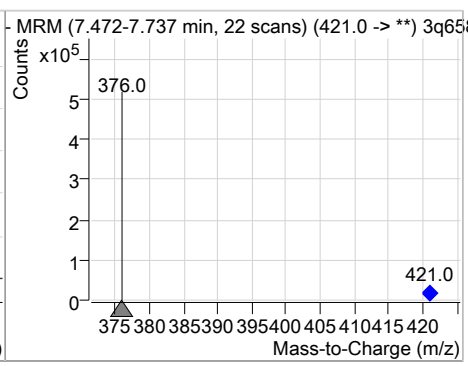




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.40	7.57	0.01	391428				

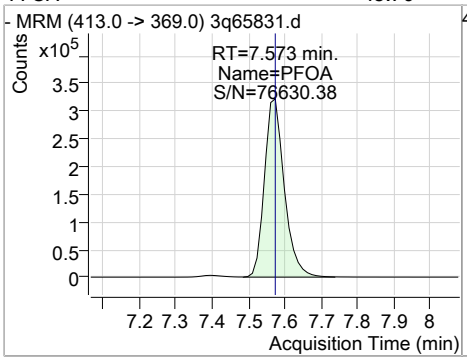


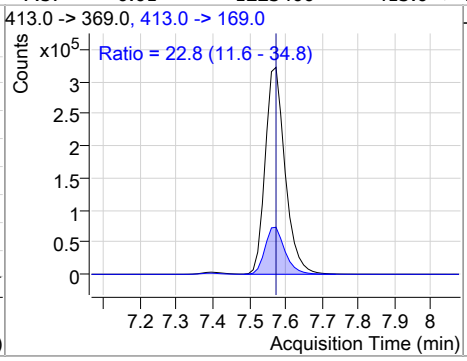


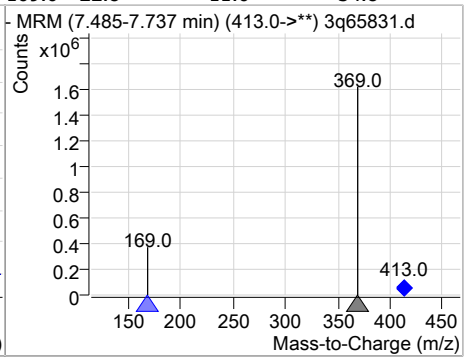


Perfluorinated Compounds by LC/MS/MS

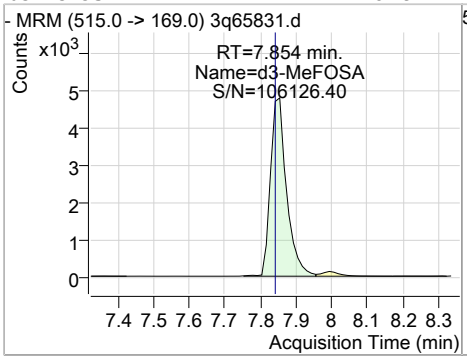
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	48.76	7.57	0.01	1223400	413.0 -> 169.0	22.8	11.6	34.8

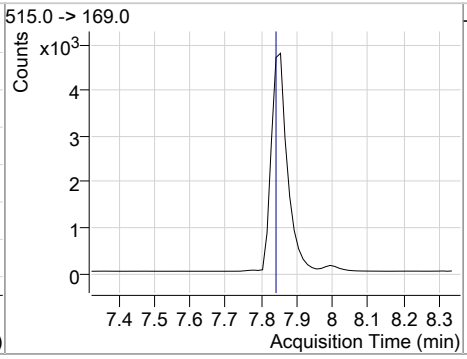


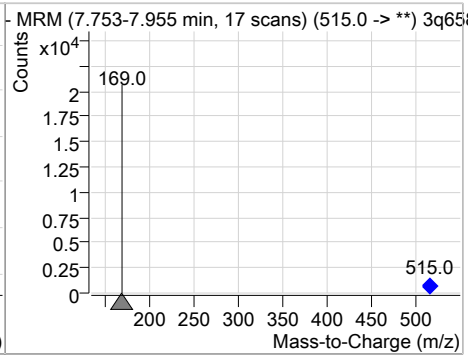




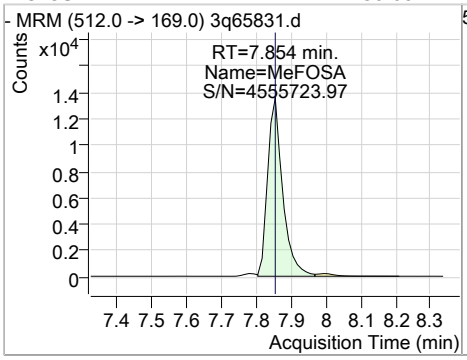
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.49	7.85	0.01	14918				

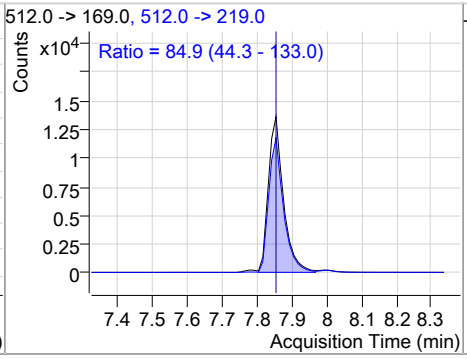


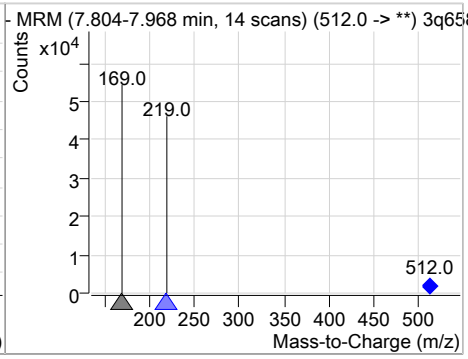




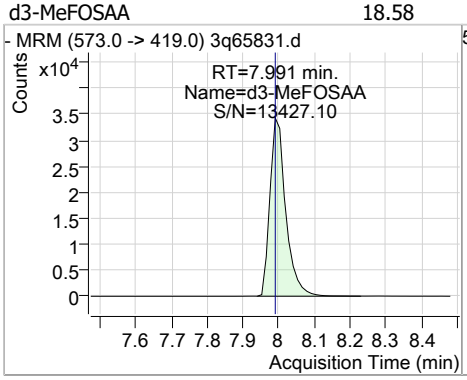
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	50.08	7.85	0.01	40603	512.0 -> 219.0	84.9	44.3	133.0

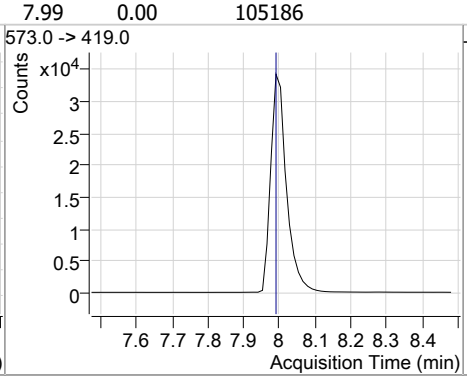


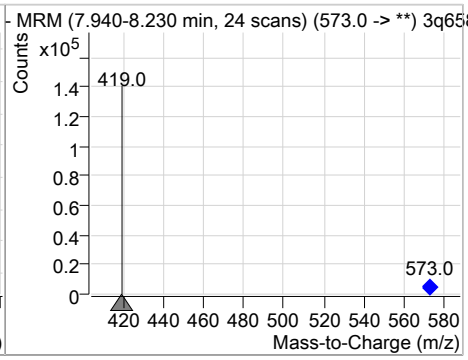




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.58	7.99	0.00	105186				

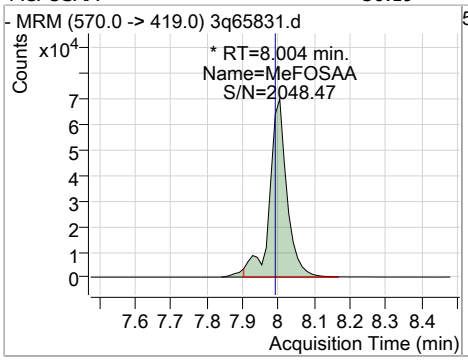


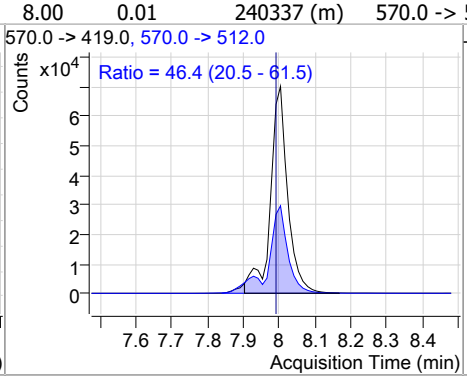


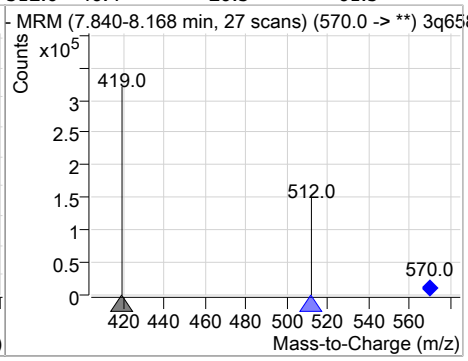


Perfluorinated Compounds by LC/MS/MS

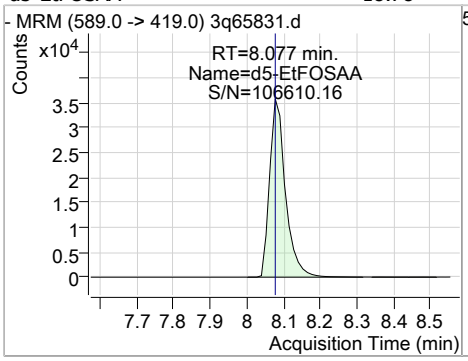
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	50.19	8.00	0.01	240337 (m)	570.0 -> 512.0	46.4	20.5	61.5

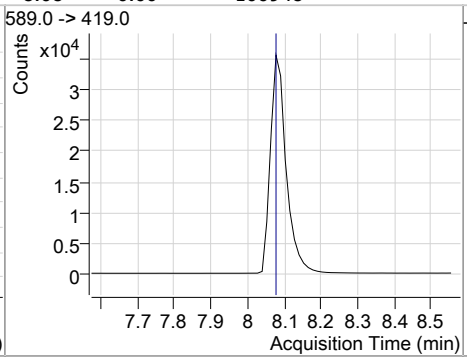


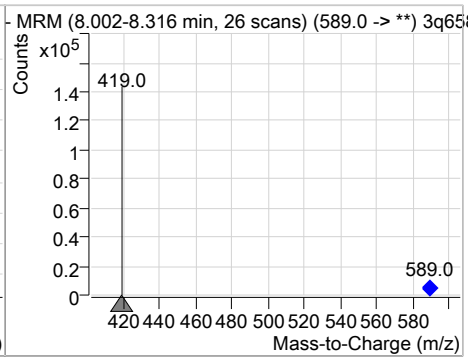




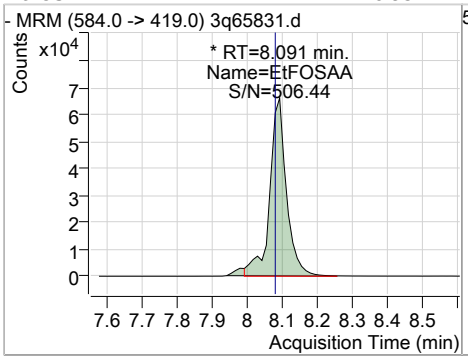
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.78	8.08	0.00	106948				

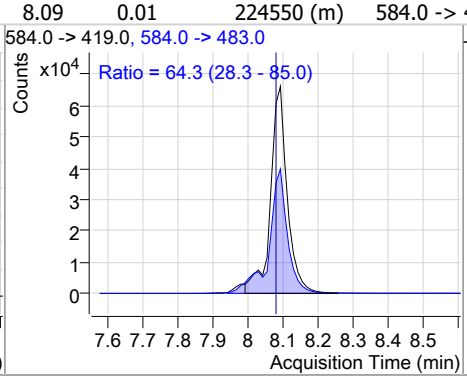


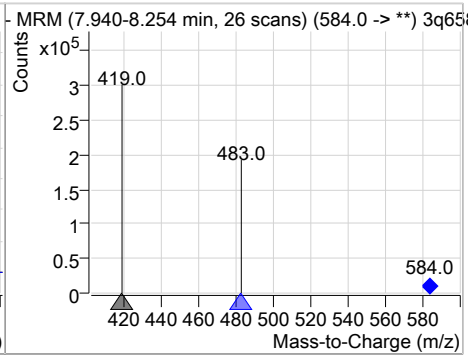




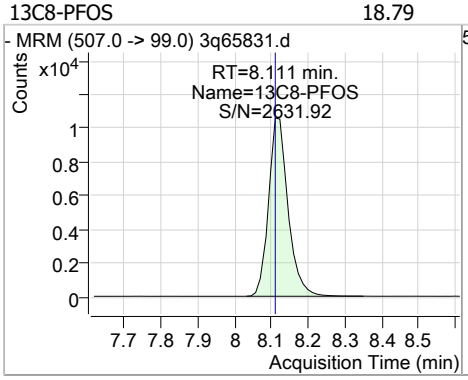
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	48.93	8.09	0.01	224550 (m)	584.0 -> 483.0	64.3	28.3	85.0

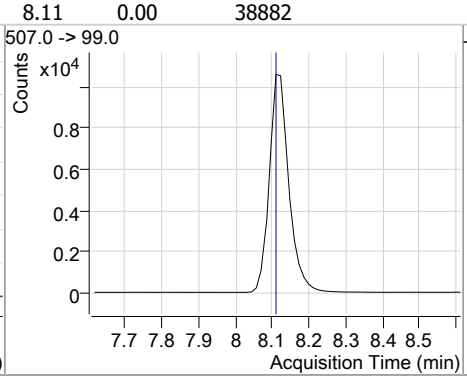


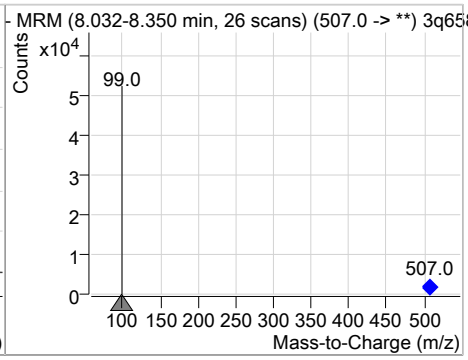




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.79	8.11	0.00	38882				

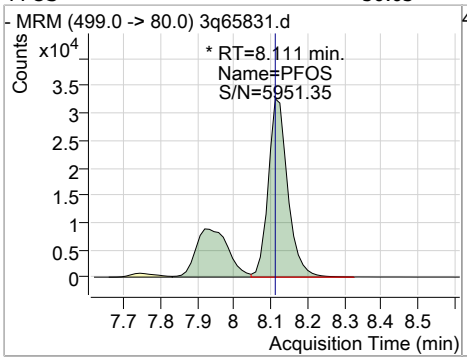


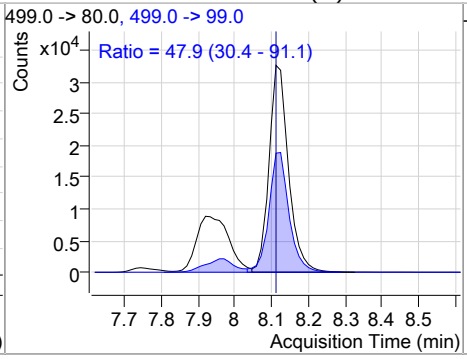


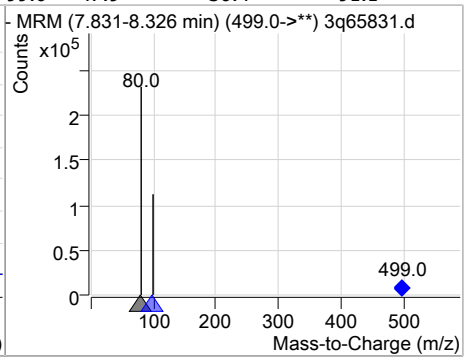


Perfluorinated Compounds by LC/MS/MS

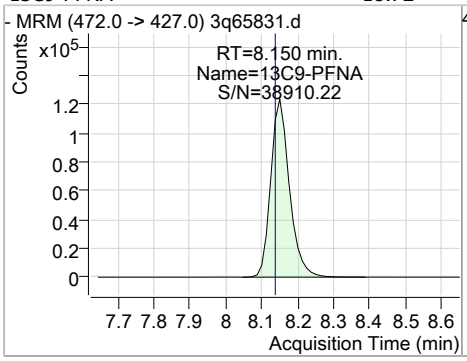
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	50.03	8.11	0.00	173998 (m)	499.0 -> 99.0	47.9	30.4	91.1

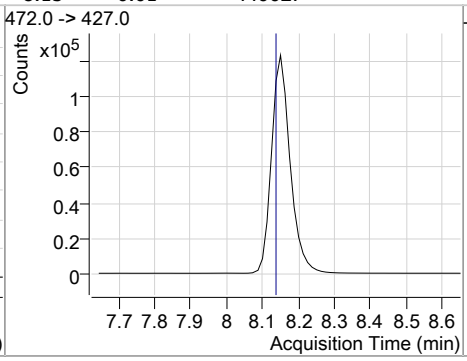


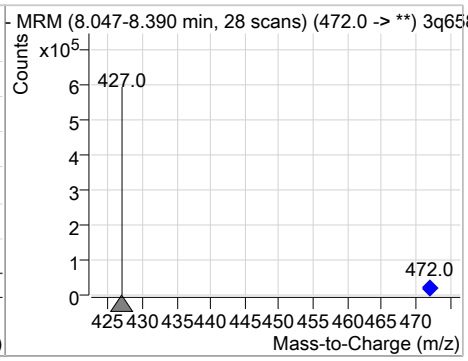




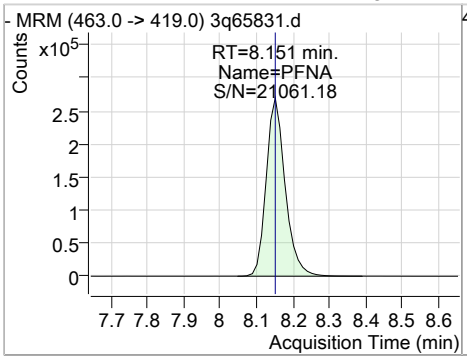
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.72	8.15	0.01	446627				

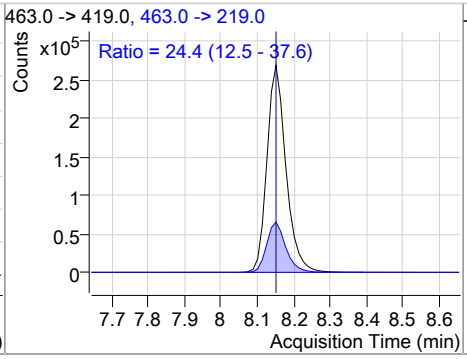


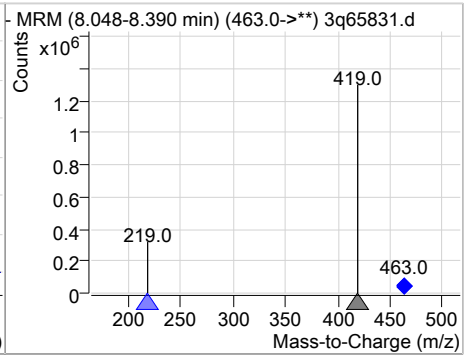




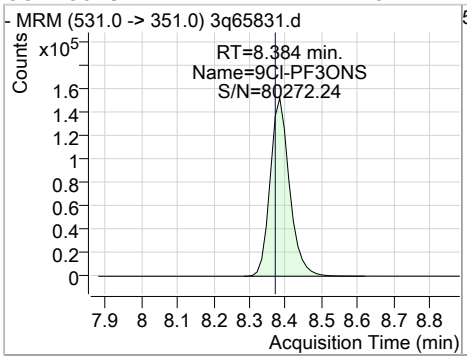
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.22	8.15	0.01	974363	463.0 -> 219.0	24.4	12.5	37.6

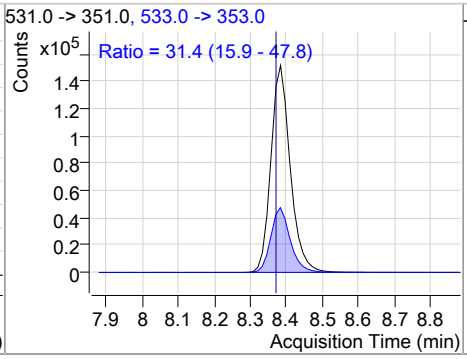


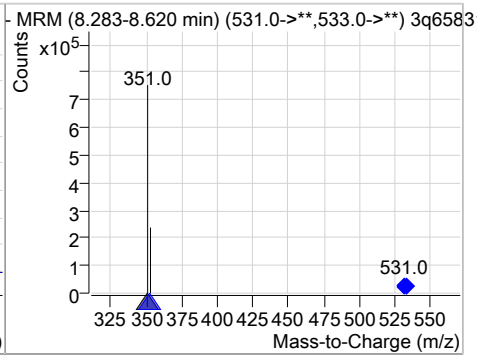




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	48.11	8.38	0.01	566006	533.0 -> 353.0	31.4	15.9	47.8

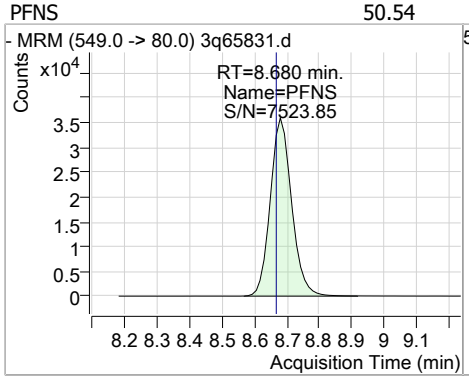


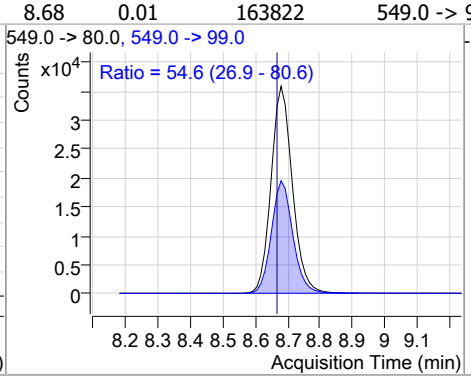


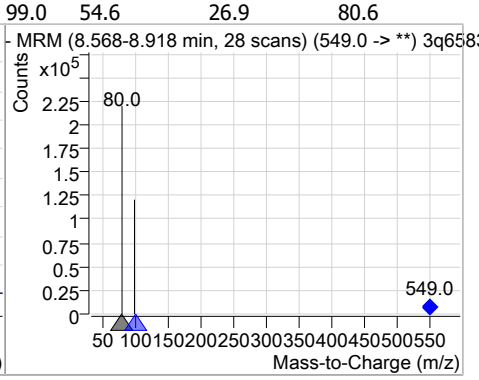


Perfluorinated Compounds by LC/MS/MS

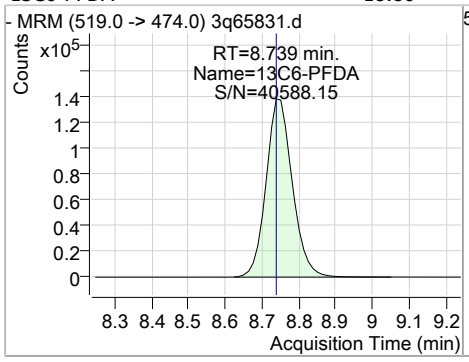
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.54	8.68	0.01	163822	549.0 -> 99.0	54.6	26.9	80.6

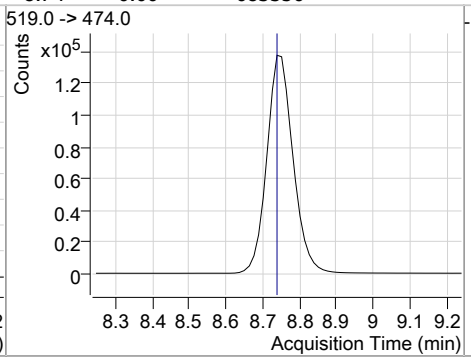


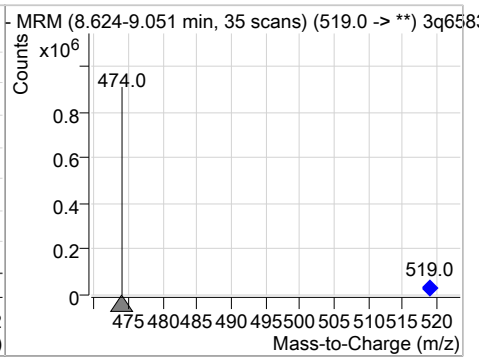




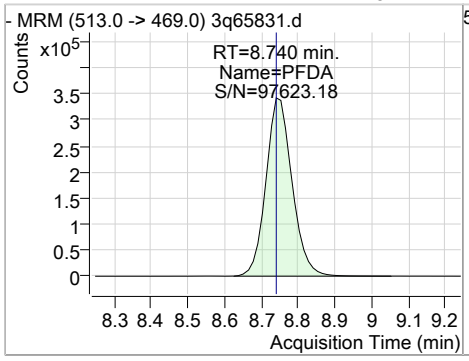
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.80	8.74	0.00	683356				

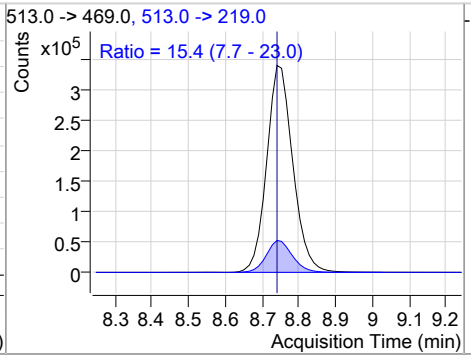


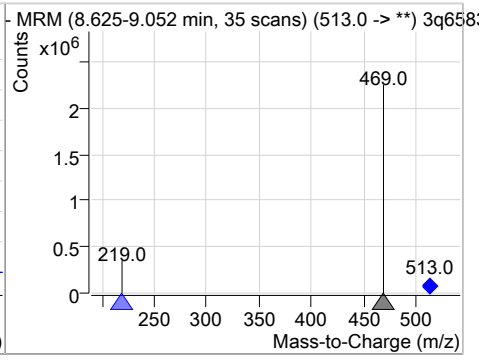




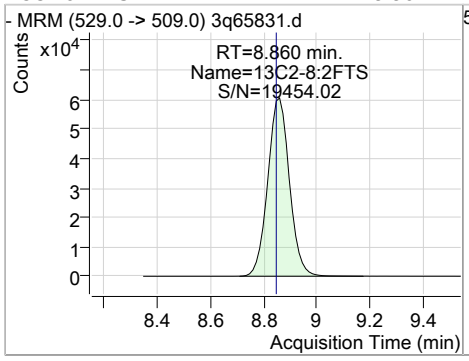
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	48.74	8.74	0.00	1687335	513.0 -> 219.0	15.4	7.7	23.0

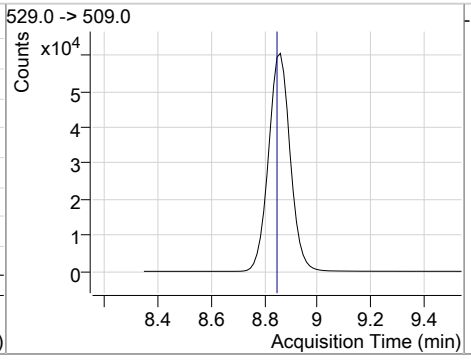


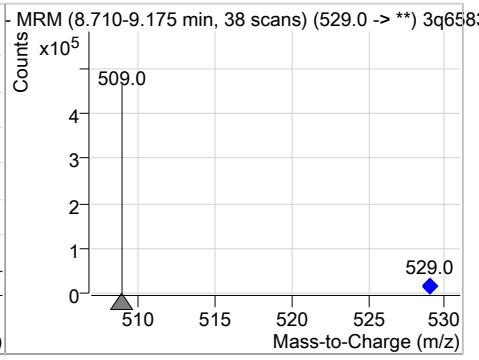




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.98	8.86	0.01	342038				

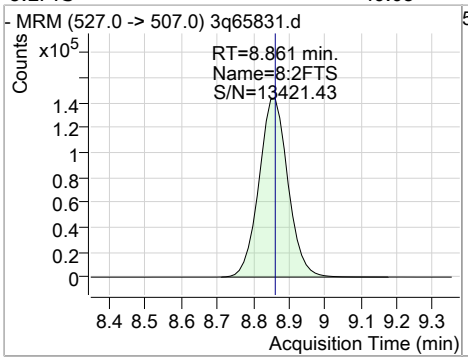


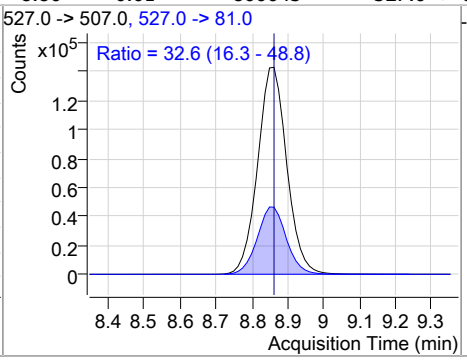


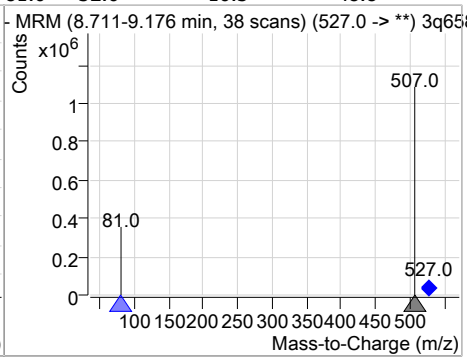


Perfluorinated Compounds by LC/MS/MS

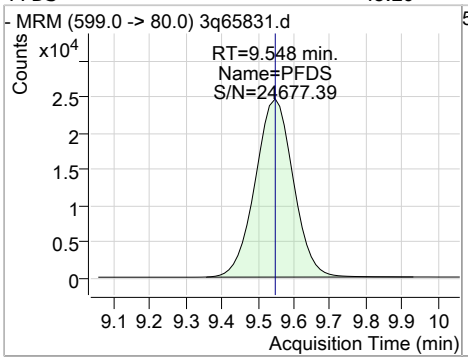
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	46.08	8.86	0.01	806645	527.0 -> 81.0	32.6	16.3	48.8

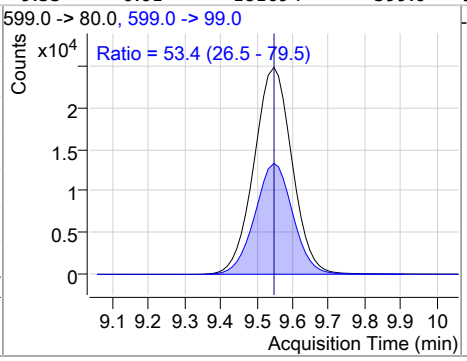


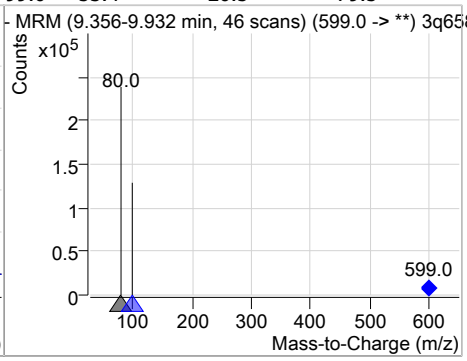




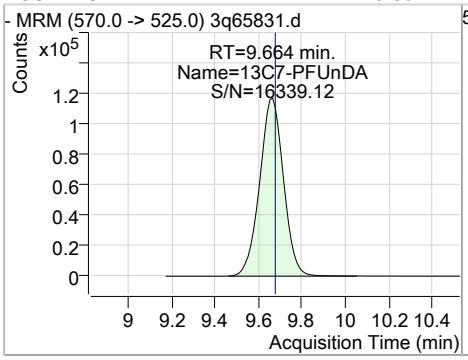
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.20	9.55	-0.01	181694	599.0 -> 99.0	53.4	26.5	79.5

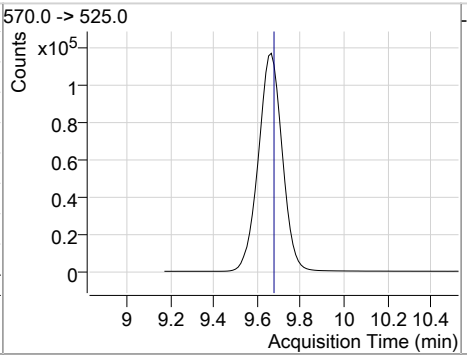


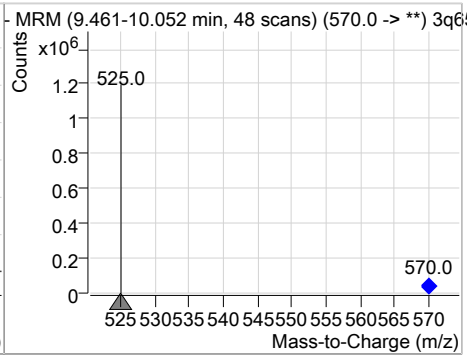




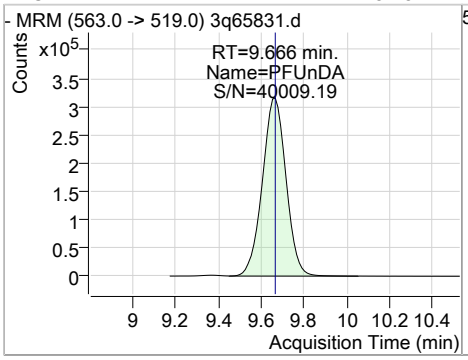
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.80	9.66	-0.01	895611				

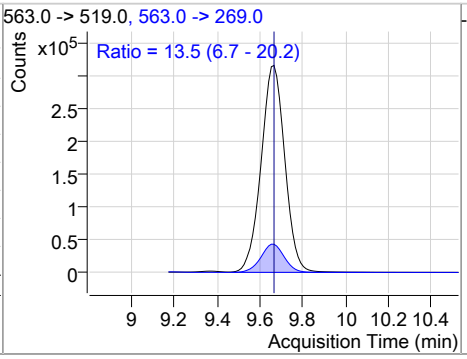


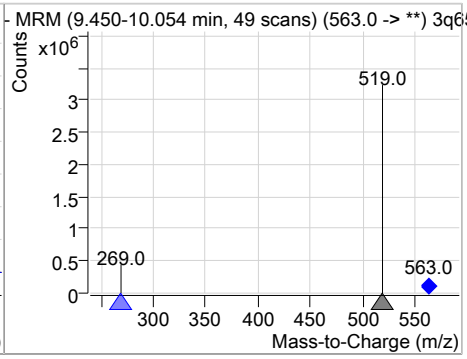




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	48.78	9.67	-0.01	2422922	563.0 -> 269.0	13.5	6.7	20.2

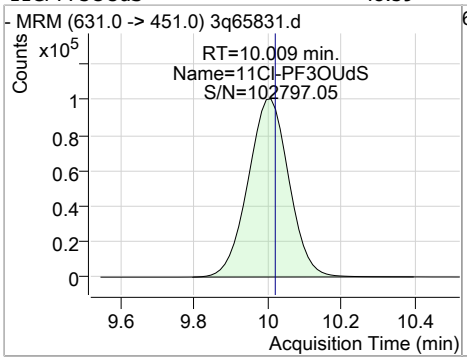


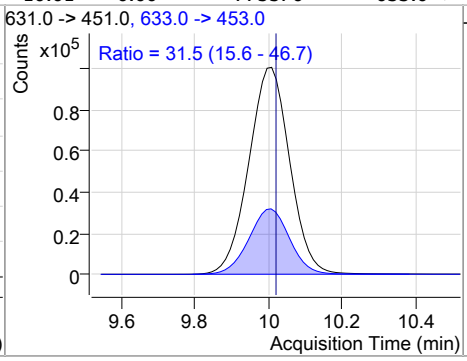


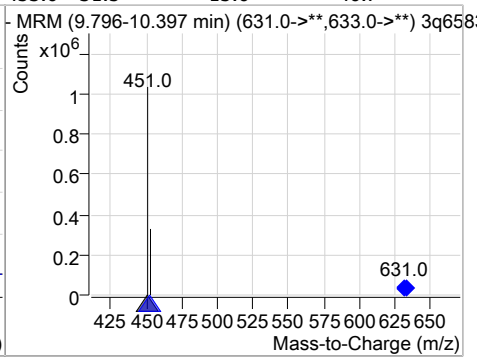


Perfluorinated Compounds by LC/MS/MS

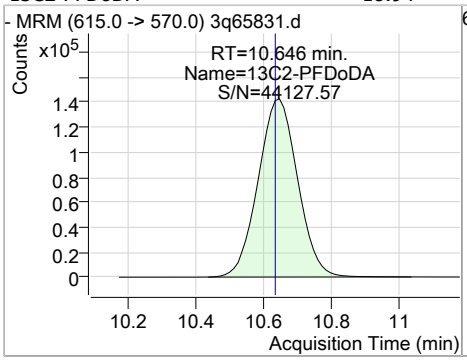
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	48.59	10.01	0.00	775576	633.0 -> 453.0	31.5	15.6	46.7

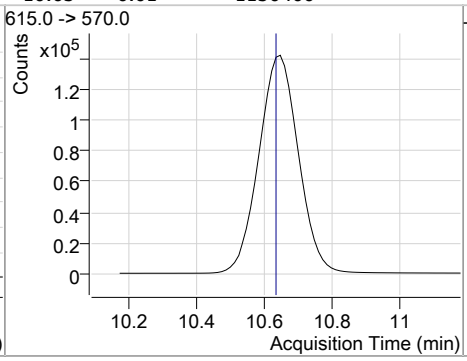


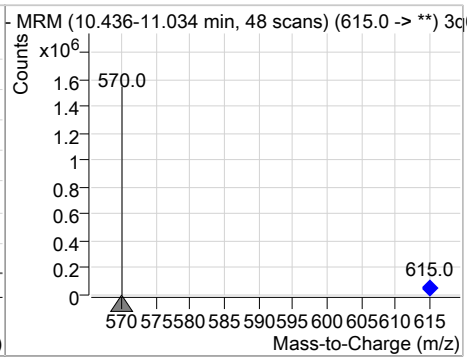




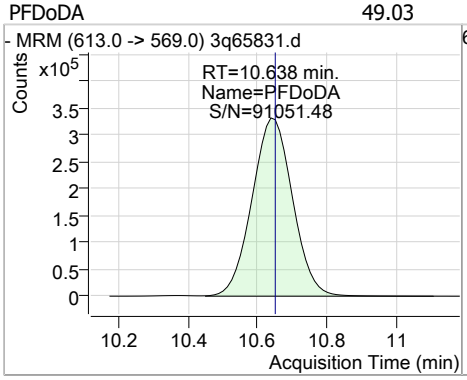
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.94	10.65	0.01	1150400				

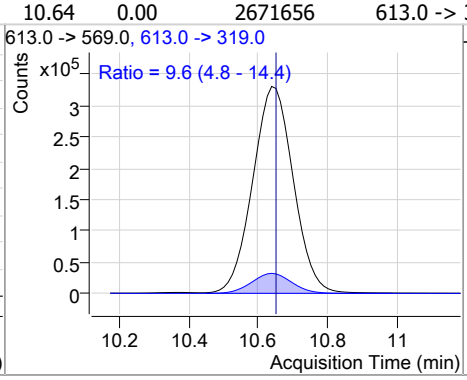


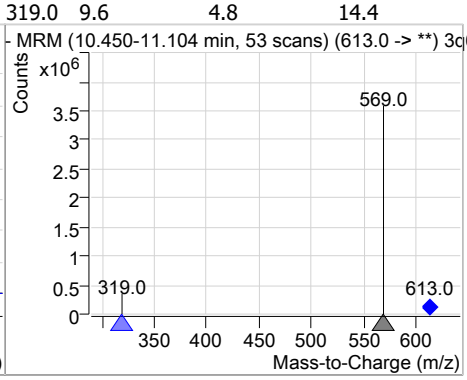




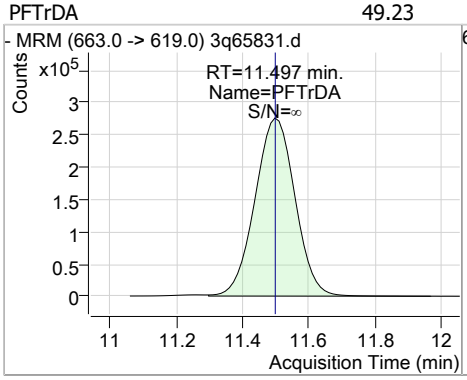
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	49.03	10.64	0.00	2671656	613.0 -> 319.0	9.6	4.8	14.4

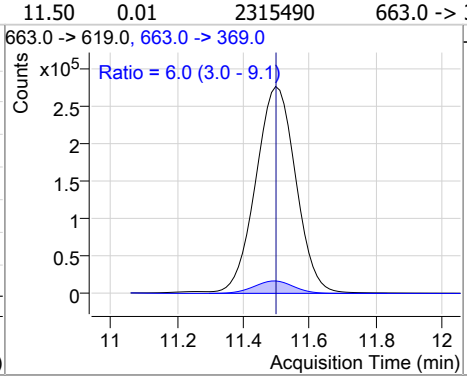


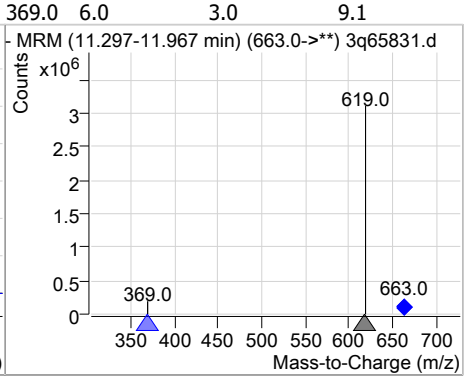




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.23	11.50	0.01	2315490	663.0 -> 369.0	6.0	3.0	9.1

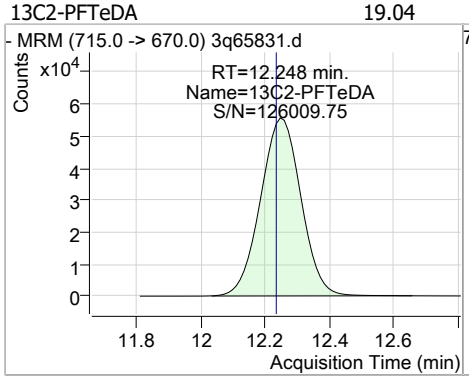


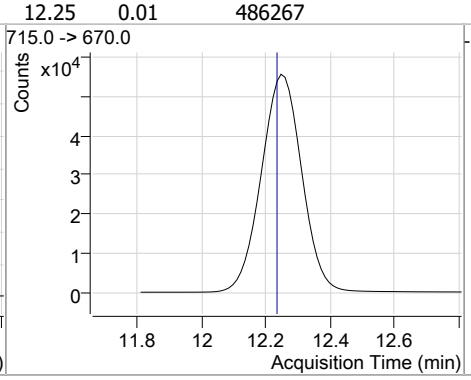


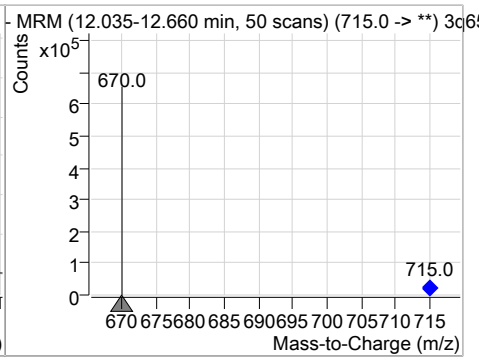


Perfluorinated Compounds by LC/MS/MS

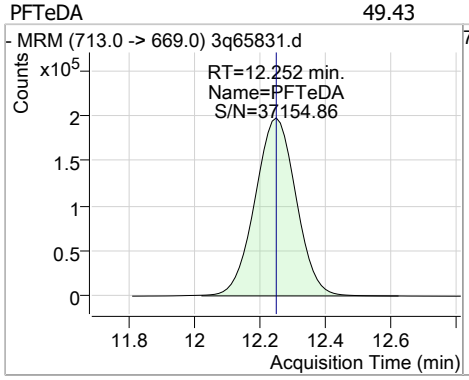
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.04	12.25	0.01	486267				

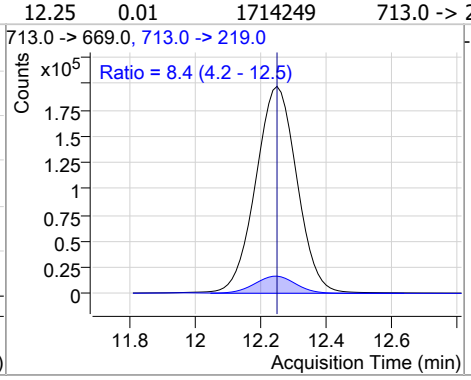


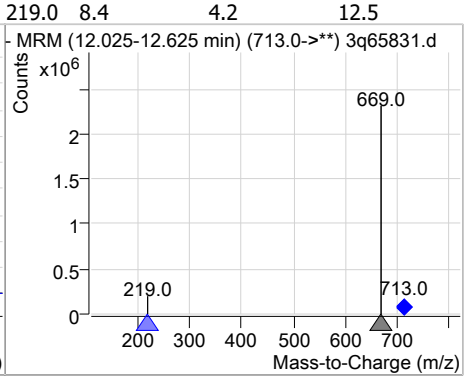




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.43	12.25	0.01	1714249	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65831.D
Injection Time: 09/15/22 20:06
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65832.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:26:11 PM
Sample Name : ic900-100
Vial : P1-A9
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

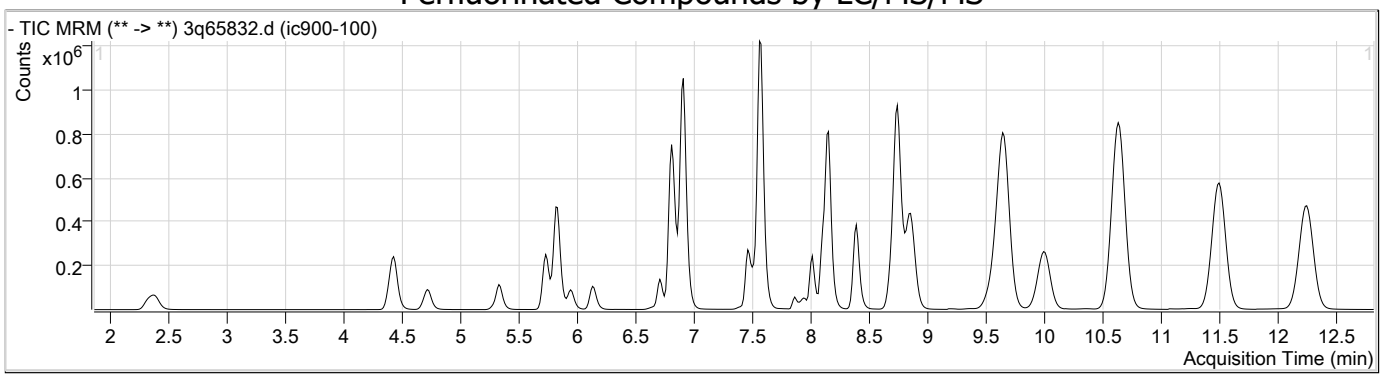
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	154135	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	222291	20.00 µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	290119	20.00 µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	272690	20.00 µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	352774	20.00 µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	415562	20.00 µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	638171	20.00 µg/L	0.000
M7-PFUnDA	9.639	570.0 -> 525.0	847263	20.00 µg/L	-0.038
M2-PFDoDA	10.621	615.0 -> 570.0	1111358	20.00 µg/L	-0.013
M2-PFTeDA	12.235	715.0 -> 670.0	472884	20.00 µg/L	0.000
M8-FOSA	7.503	506.0 -> 78.0	58674	20.00 µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	20436	20.00 µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	23857	20.00 µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	37549	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	137597	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	164858	20.00 µg/L	0.013
M2-8:2FTS	8.848	529.0 -> 509.0	366390	20.00 µg/L	0.000
M3-MeFOSAA	8.003	573.0 -> 419.0	99078	20.00 µg/L	0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	23455	20.00 µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	14188	20.00 µg/L	0.013
M5-EtFOSAA	8.077	589.0 -> 419.0	95573	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	137597	22.42 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%	
13C2-6:2FTS	7.571	429.0 -> 409.0	164858	19.11 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%	
13C2-8:2FTS	8.848	529.0 -> 509.0	366390	21.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%	
13C2-PFDoDA	10.621	615.0 -> 570.0	1111358	18.30 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C2-PFTeDA	12.235	715.0 -> 670.0	472884	18.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C3-PFBS	4.704	302.0 -> 99.0	20436	18.46 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C3-PFHxS	6.834	402.0 -> 99.0	23857	17.71 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
13C4-PFBA	2.365	217.0 -> 172.0	154135	18.59 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%	
13C4-PFHpA	6.805	367.0 -> 322.0	272690	17.29 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.4%	
13C5-PFHxA	5.826	318.0 -> 273.0	290119	18.09 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%	
13C5-PFPeA	4.424	268.0 -> 223.0	222291	18.38 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C6-PFDA	8.739	519.0 -> 474.0	638171	17.56 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

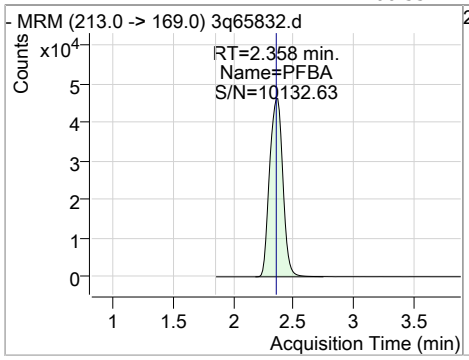
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%			
13C7-PFUnDA	9.639	570.0 -> 525.0	847263	17.79	µg/L		-0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%			
13C8-FOSA	7.503	506.0 -> 78.0	58674	16.47	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%			
13C8-PFOA	7.560	421.0 -> 376.0	352774	16.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.9%			
13C8-PFOS	8.111	507.0 -> 99.0	37549	18.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%			
13C9-PFNA	8.150	472.0 -> 427.0	415562	17.42	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%			
d3-MeFOSAA	8.003	573.0 -> 419.0	99078	17.50	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	23440	18.15	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
d3-MeFOSA	7.854	515.0 -> 169.0	14188	17.58	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.9%			
d5-EtFOSAA	8.077	589.0 -> 419.0	95599	16.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.9%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	631143	82.10	µg/L		99
6:2FTS	7.571	427.0 -> 407.0	722950	84.59	µg/L		100
8:2FTS	8.849	527.0 -> 507.0	1551076	82.71	µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	413226	100.58	µg/L	m	88
FOSA	7.504	498.0 -> 78.0	291557	101.05	µg/L		99
MeFOSAA	8.004	570.0 -> 419.0	450978	99.99	µg/L	m	93
PFBA	2.358	213.0 -> 169.0	353127	100.55	µg/L		100
PFBS	4.707	299.0 -> 80.0	299145	100.28	µg/L		99
PFDA	8.740	513.0 -> 469.0	3259319	100.82	µg/L		100
PFDoDA	10.625	613.0 -> 569.0	5298626	100.65	µg/L		100
PFDS	9.532	599.0 -> 80.0	361041	101.25	µg/L		99
PFHpA	6.807	363.0 -> 319.0	2093331	100.86	µg/L		100
PFHpS	7.557	449.0 -> 80.0	248796	99.32	µg/L		99
PFHxA	5.827	313.0 -> 269.0	1636732	100.67	µg/L		100
PFHxS	6.835	399.0 -> 80.0	295859	100.51	µg/L	m	98
PFNA	8.151	463.0 -> 419.0	1852940	100.61	µg/L		100
PFNS	8.667	549.0 -> 80.0	312317	99.78	µg/L		98
PFOA	7.561	413.0 -> 369.0	2279693	100.82	µg/L		100
PFOS	8.111	499.0 -> 80.0	336344	100.15	µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	1031831	100.73	µg/L		100
PFPeS	5.932	349.0 -> 80.0	231478	100.18	µg/L		100
PFTeDA	12.239	713.0 -> 669.0	3387043	100.43	µg/L		100
PFTrDA	11.484	663.0 -> 619.0	4567533	100.52	µg/L		100
PFUnDA	9.641	563.0 -> 519.0	4737475	100.82	µg/L		100
11Cl-PF3OUdS	9.984	631.0 -> 451.0	1557236	101.00	µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	1112955	101.30	µg/L		99
ADONA	6.903	377.0 -> 251.0	3173345	100.91	µg/L		99
HFPO-DA	6.122	329.0 -> 169.0	292709	100.65	µg/L		97
MeFOSA	7.854	512.0 -> 169.0	77060	99.93	µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	651561	102.43	µg/L		99
FBSA	5.327	298.0 -> 78.0	467146	100.22	µg/L		99
FHxSA	6.700	398.0 -> 78.0	428385	101.27	µg/L		100

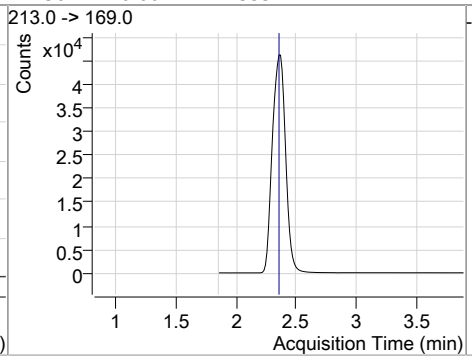
 # = Qualifier out of range, m = manually integrated, + = Area summed

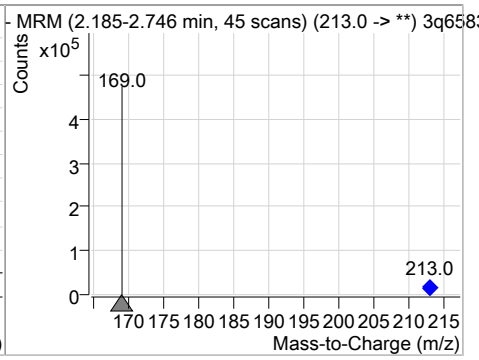
Perfluorinated Compounds by LC/MS/MS



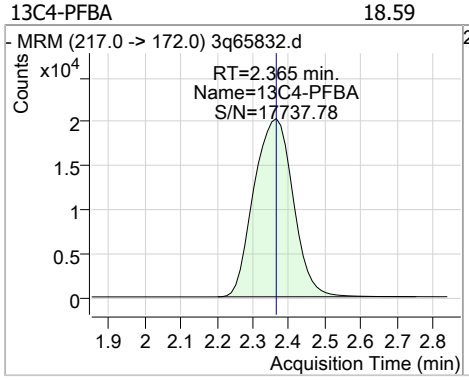
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.55	2.36	0.00	353127				

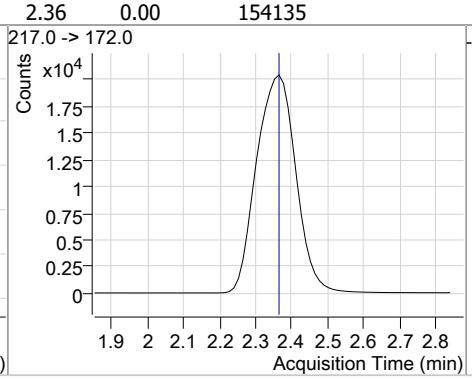


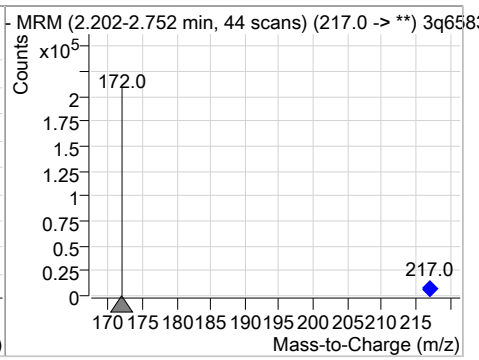




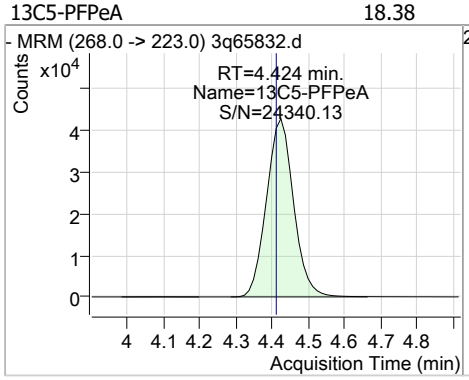
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.59	2.36	0.00	154135				

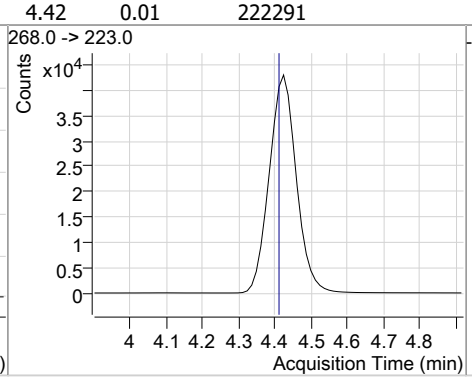


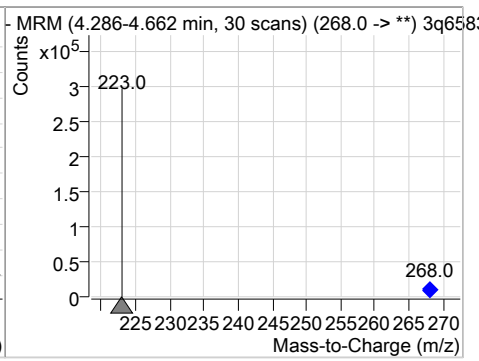




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.38	4.42	0.01	222291				

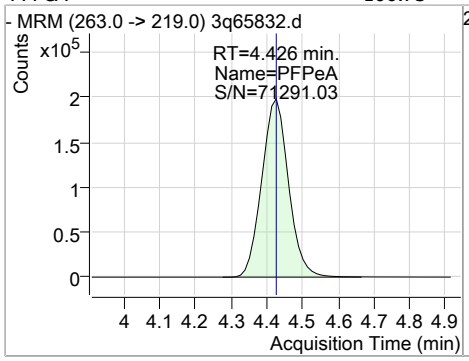


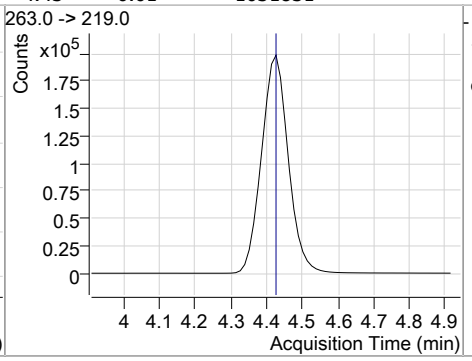


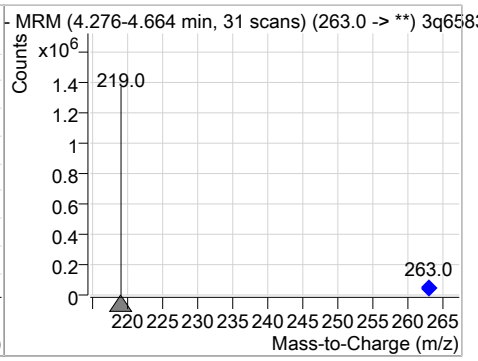


Perfluorinated Compounds by LC/MS/MS

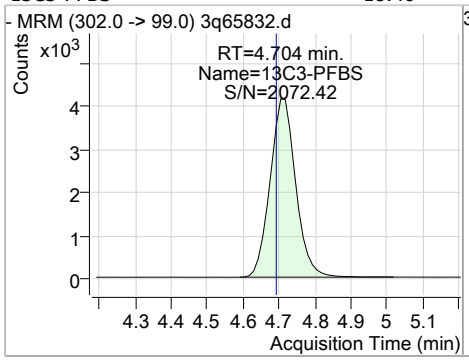
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.73	4.43	0.01	1031831				

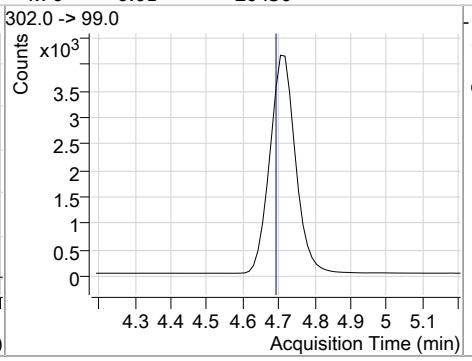


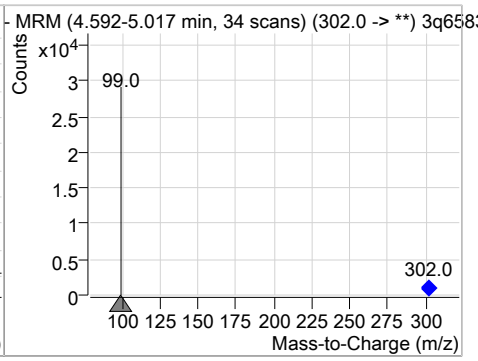




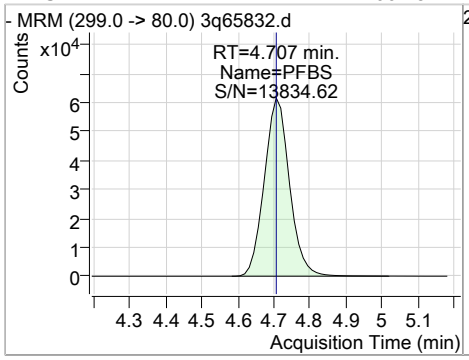
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.46	4.70	0.01	20436				

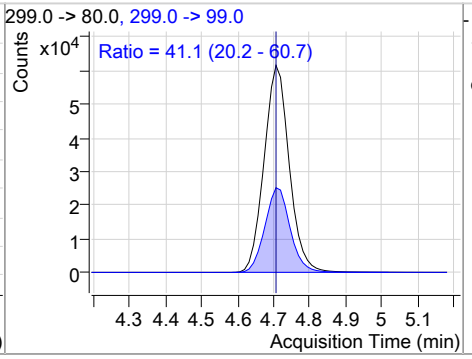


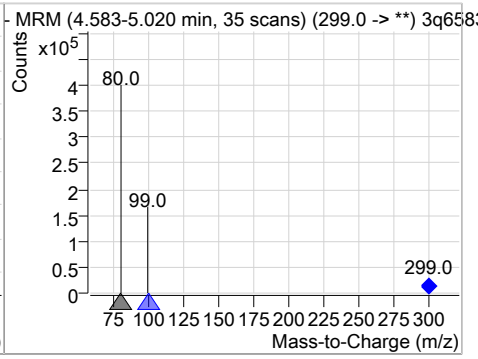




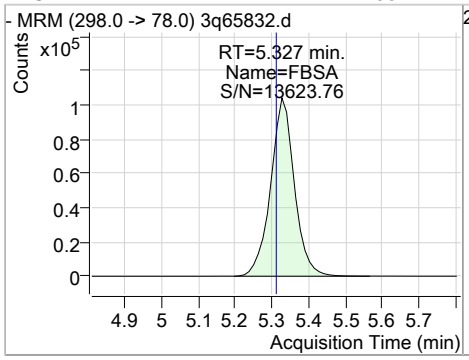
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.28	4.71	0.01	299145	299.0 -> 99.0	41.1	20.2	60.7

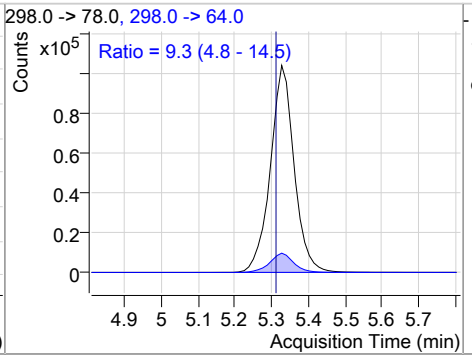


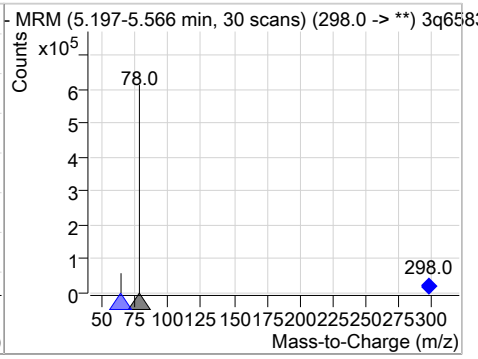




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	100.22	5.33	0.03	467146	298.0 -> 64.0	9.3	4.8	14.5

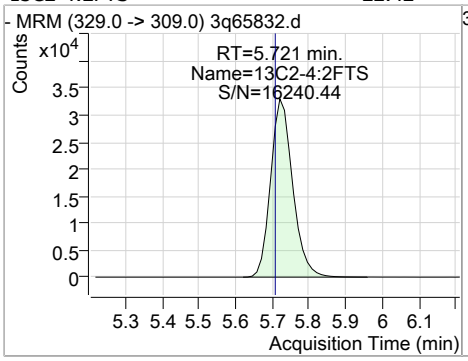


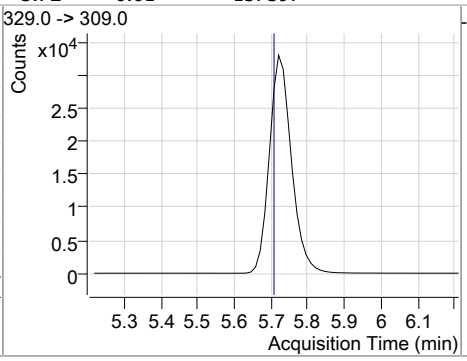


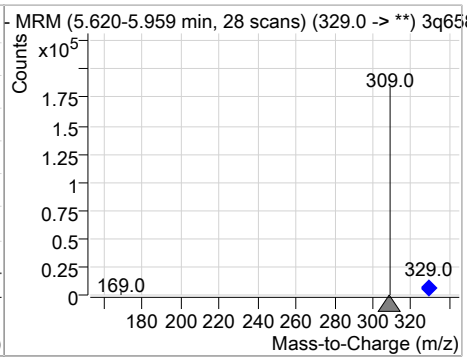


Perfluorinated Compounds by LC/MS/MS

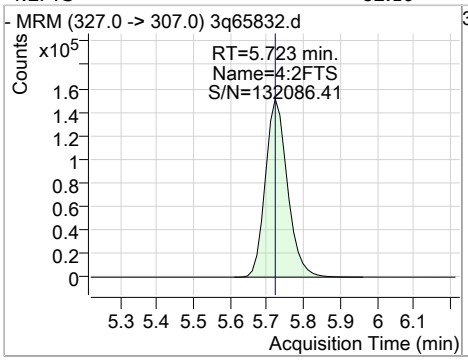
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.42	5.72	0.01	137597				

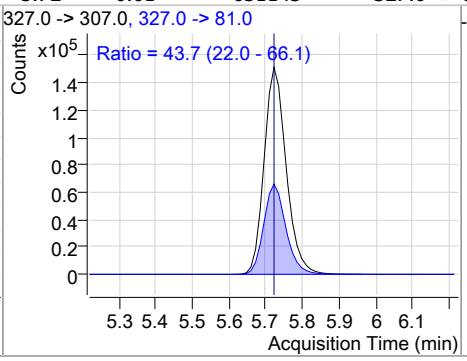


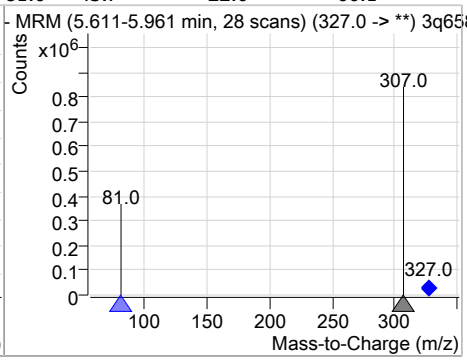




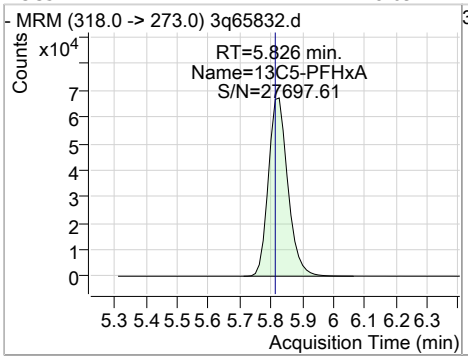
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	82.10	5.72	0.01	631143	327.0 -> 81.0	43.7	22.0	66.1

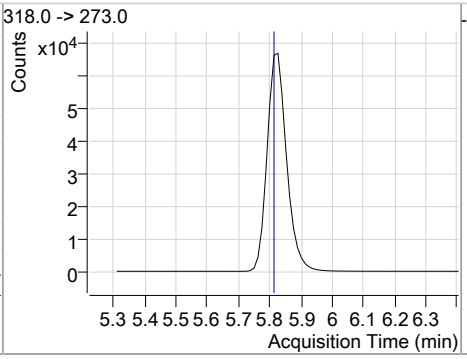


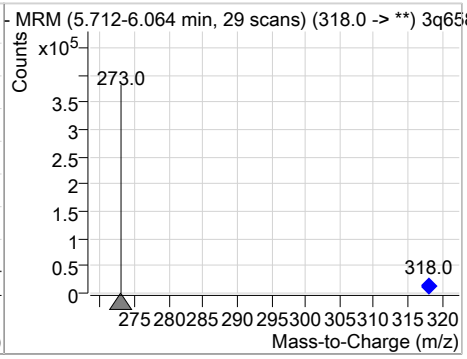




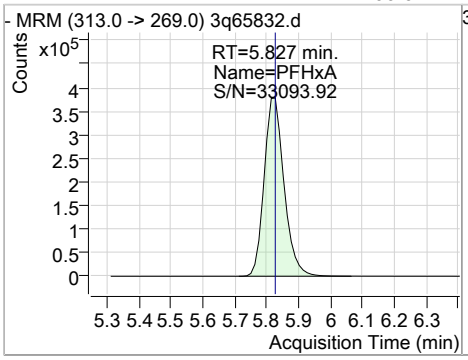
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.09	5.83	0.01	290119				

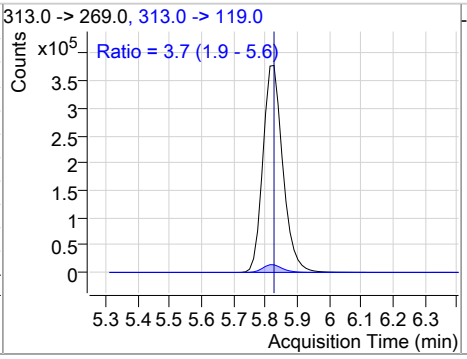


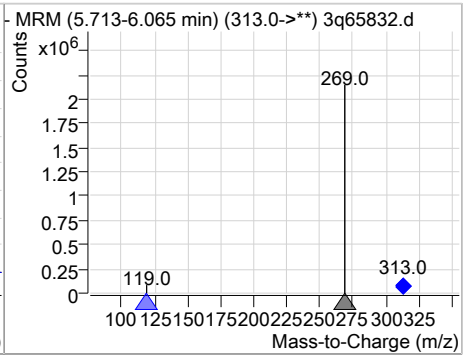




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.67	5.83	0.01	1636732	313.0 -> 119.0	3.7	1.9	5.6

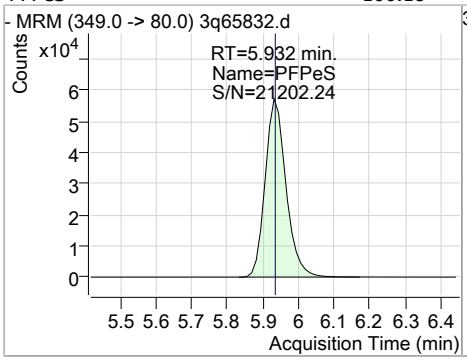


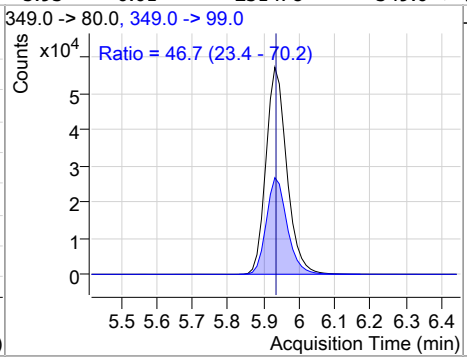


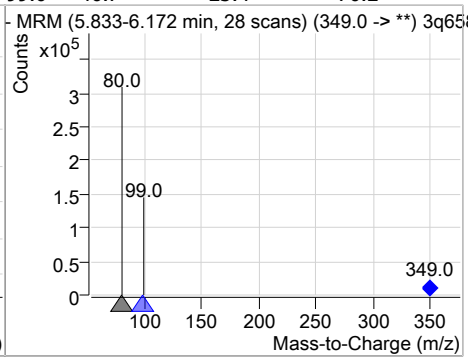


Perfluorinated Compounds by LC/MS/MS

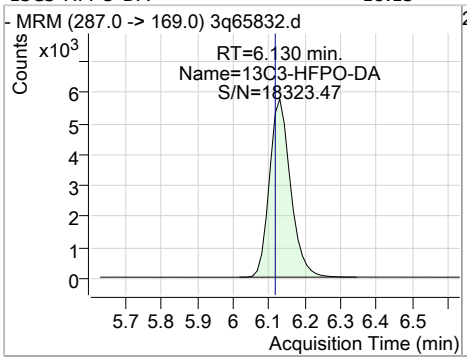
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.18	5.93	0.01	231478	349.0 -> 99.0	46.7	23.4	70.2

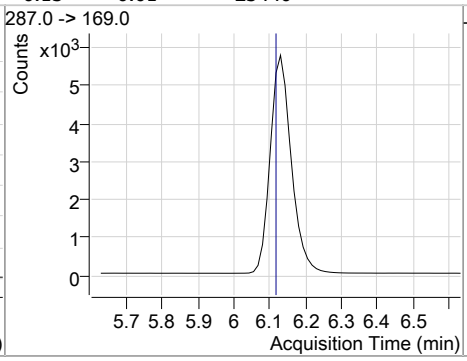


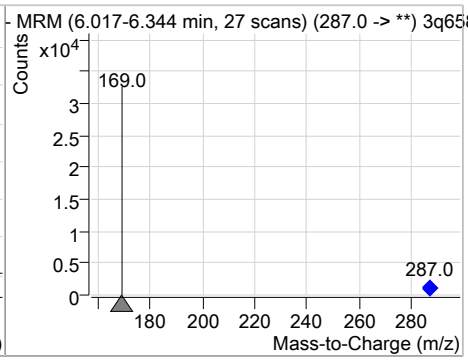




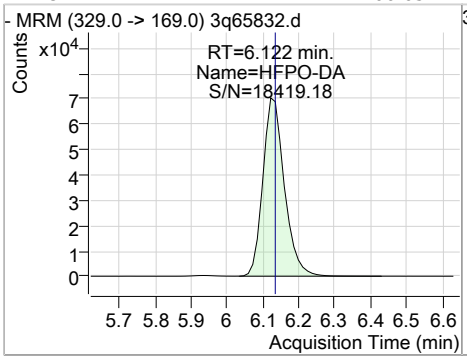
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.15	6.13	0.01	23440				

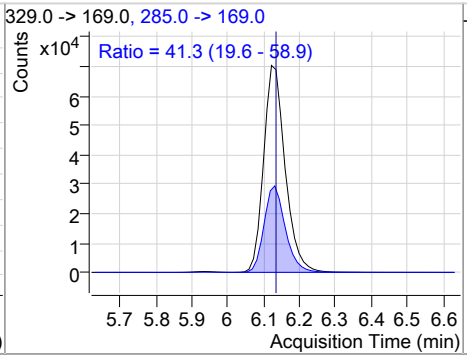


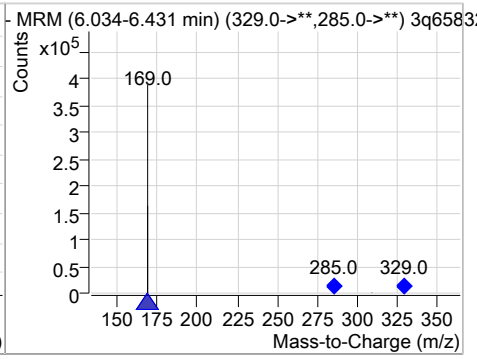




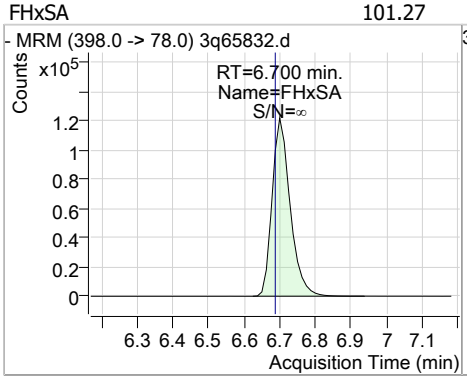
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	100.65	6.12	0.00	292709	285.0 -> 169.0	41.3	19.6	58.9

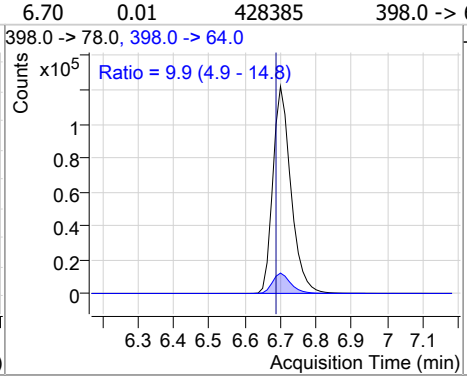


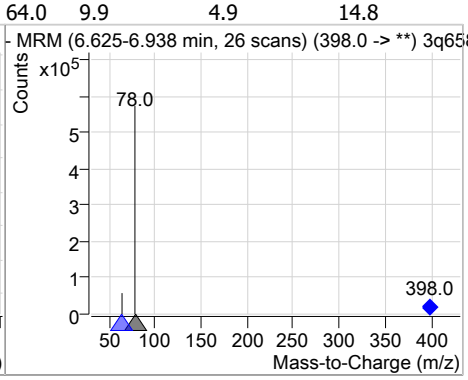




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	101.27	6.70	0.01	428385	398.0 -> 64.0	9.9	4.9	14.8

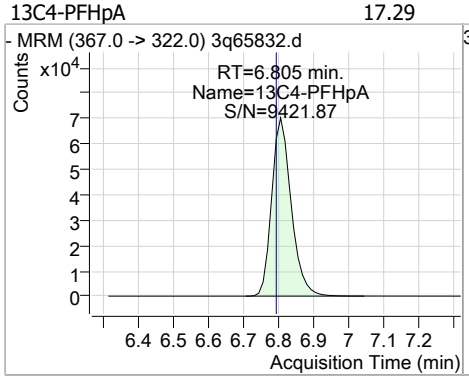


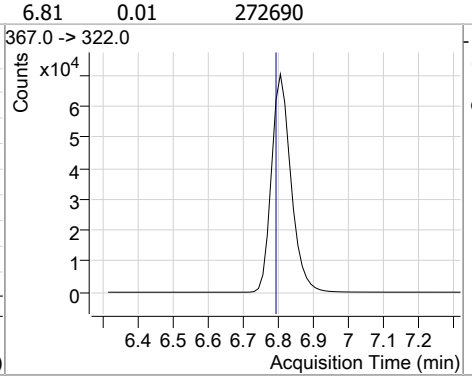


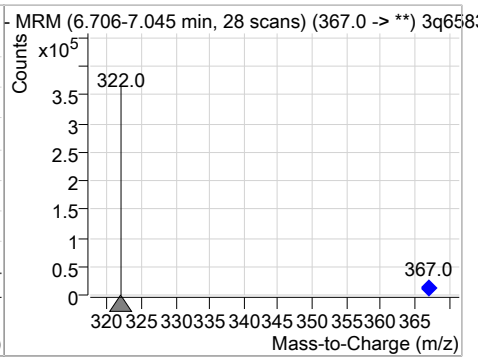


Perfluorinated Compounds by LC/MS/MS

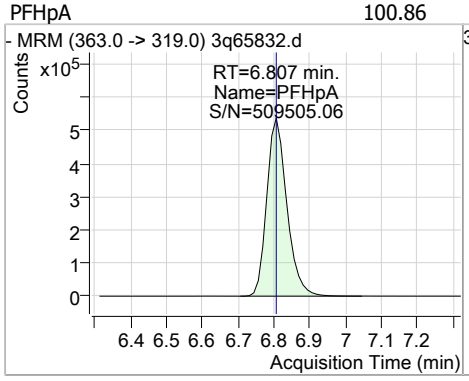
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.29	6.81	0.01	272690				

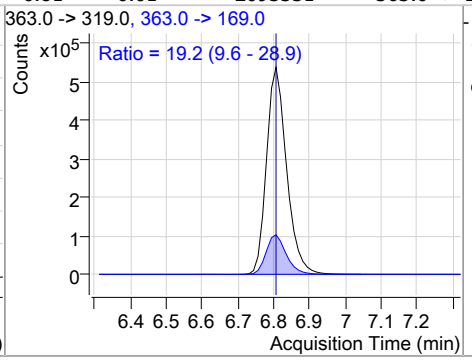


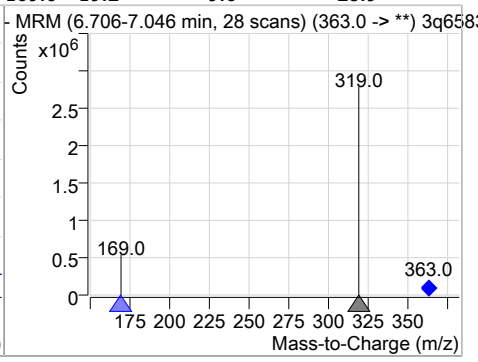




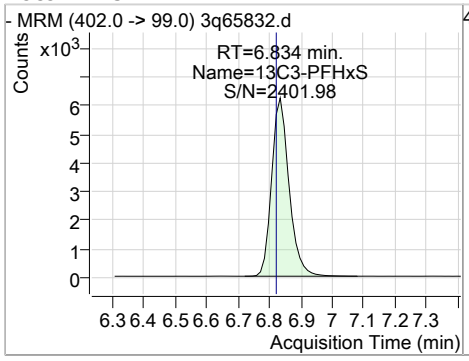
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.86	6.81	0.01	2093331	363.0 -> 169.0	19.2	9.6	28.9

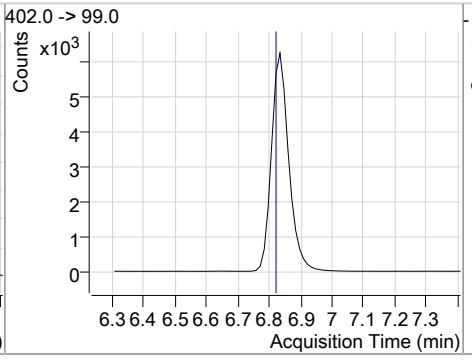


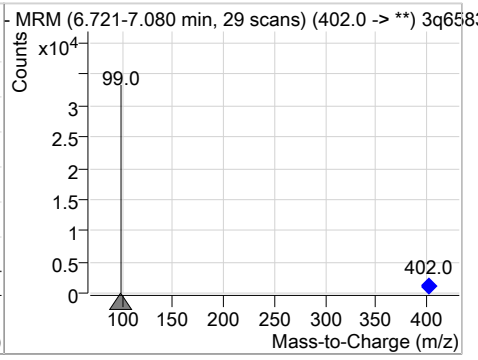




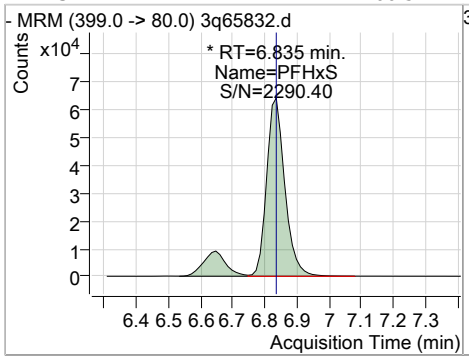
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	17.71	6.83	0.01	23857				

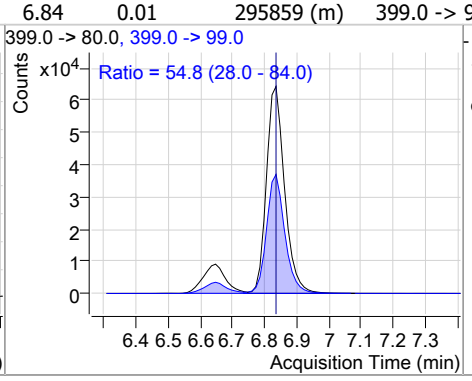


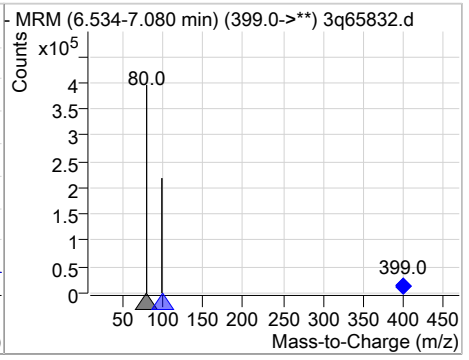




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.51	6.84	0.01	295859 (m)	399.0 -> 99.0	54.8	28.0	84.0

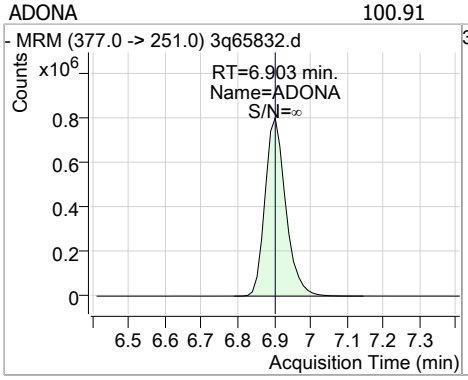


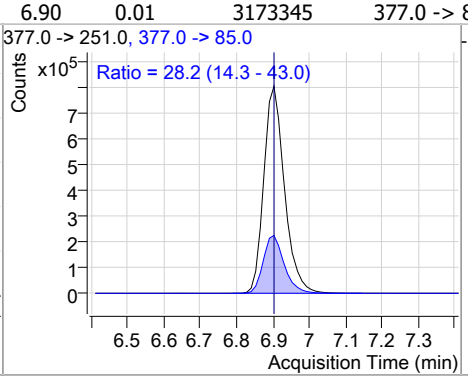


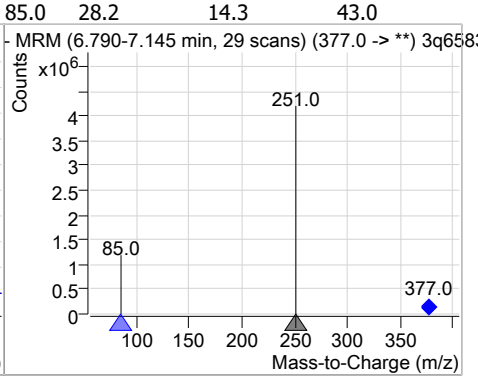


Perfluorinated Compounds by LC/MS/MS

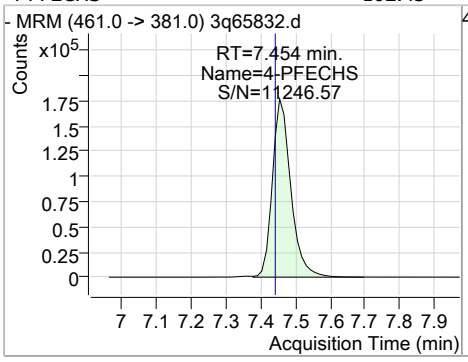
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	100.91	6.90	0.01	3173345	377.0 -> 85.0	28.2	14.3	43.0

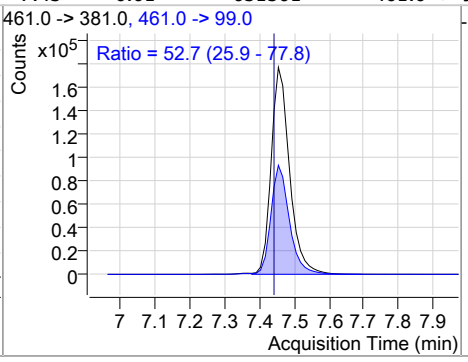


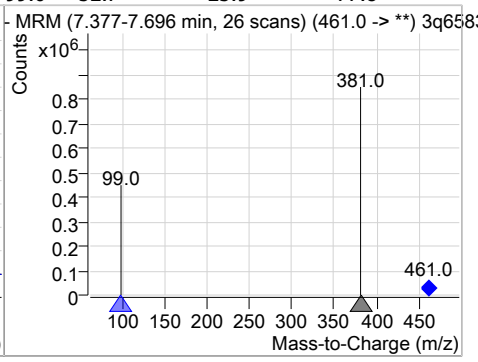




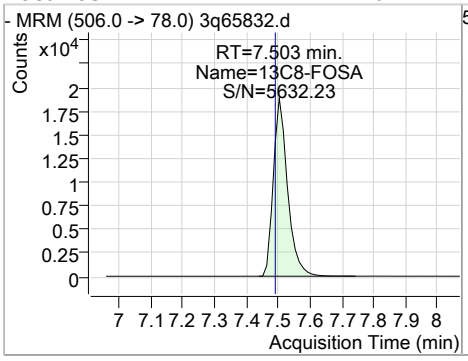
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	102.43	7.45	0.01	651561	461.0 -> 99.0	52.7	25.9	77.8

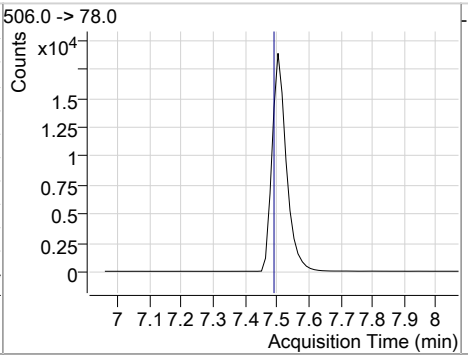


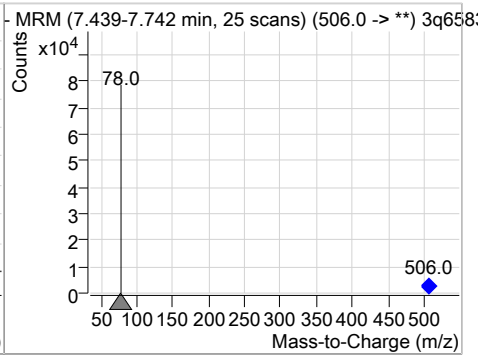




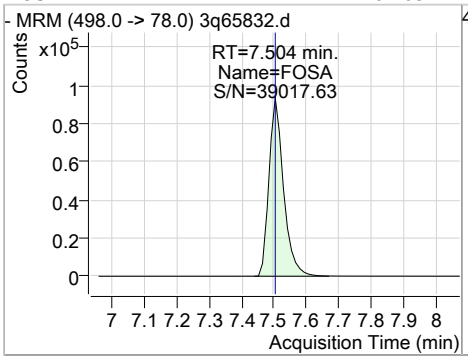
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	16.47	7.50	0.01	58674				

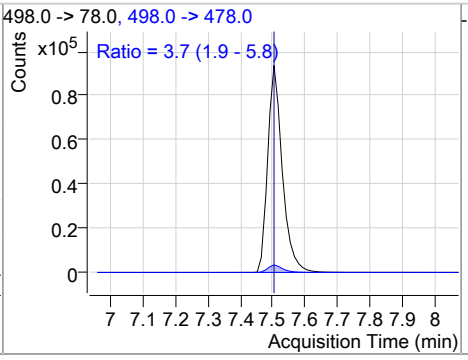


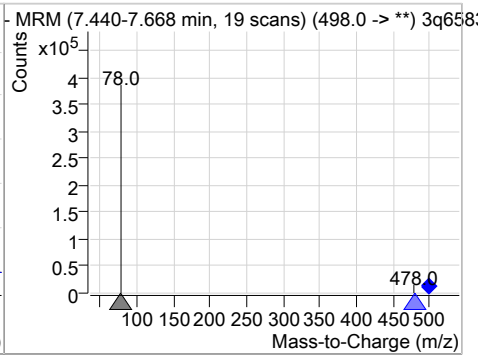




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	101.05	7.50	0.01	291557	498.0 -> 478.0	3.7	1.9	5.8

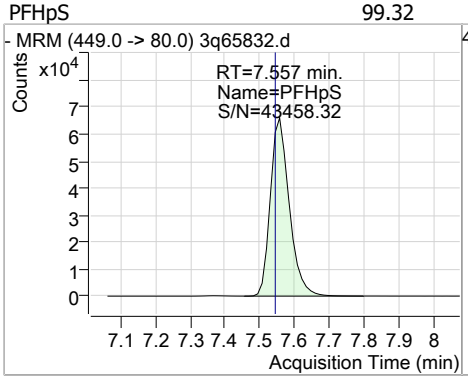


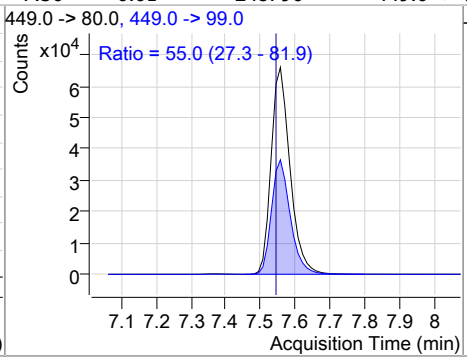


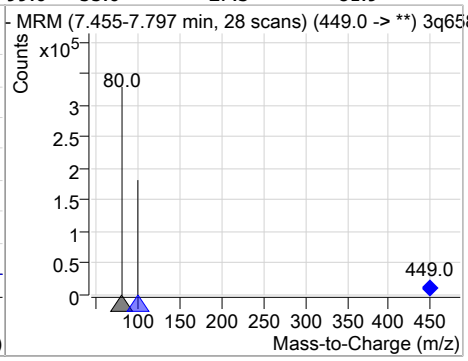


Perfluorinated Compounds by LC/MS/MS

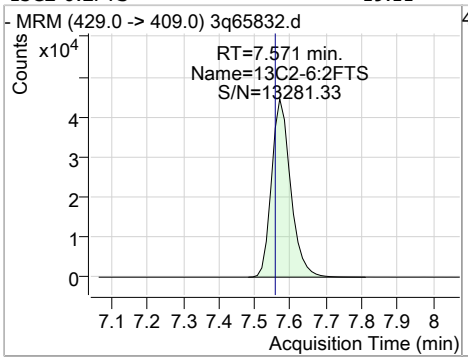
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.32	7.56	0.01	248796	449.0 -> 99.0	55.0	27.3	81.9

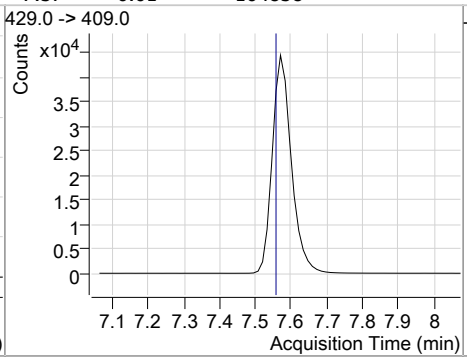


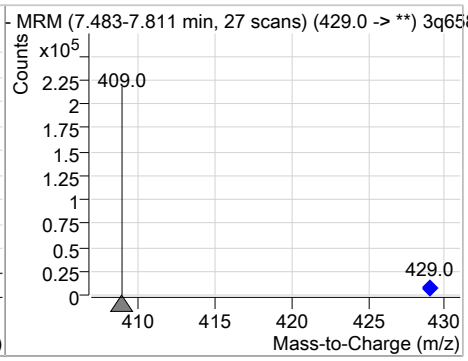




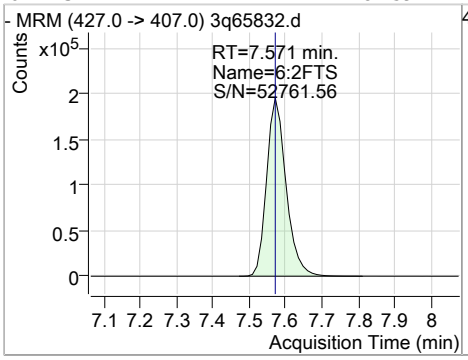
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.11	7.57	0.01	164858				

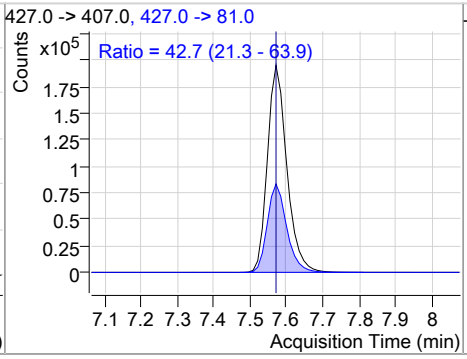


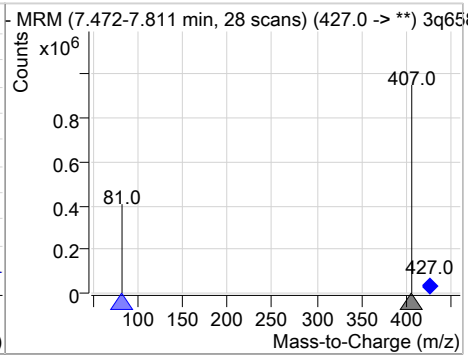




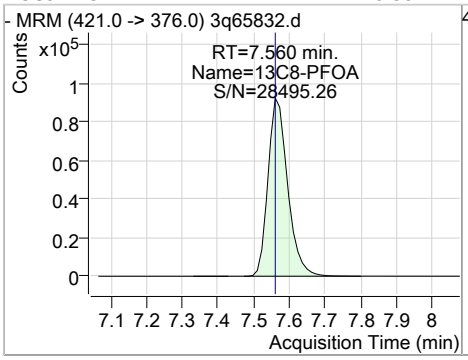
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	84.59	7.57	0.01	722950	427.0 -> 81.0	42.7	21.3	63.9

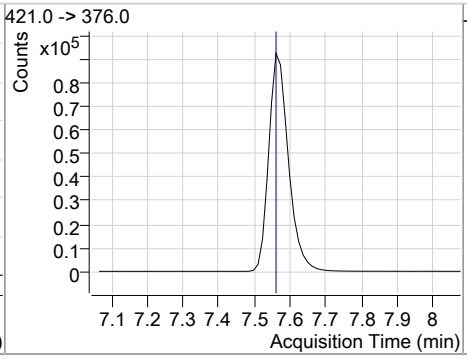


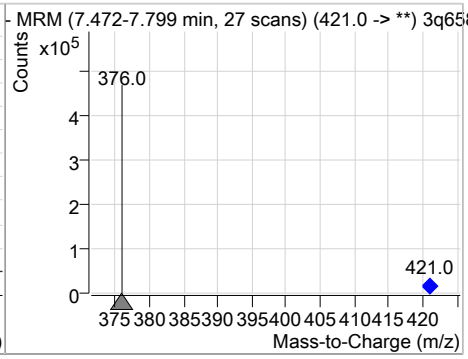




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.58	7.56	0.00	352774				

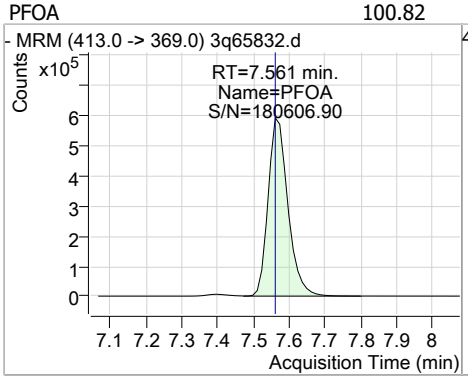


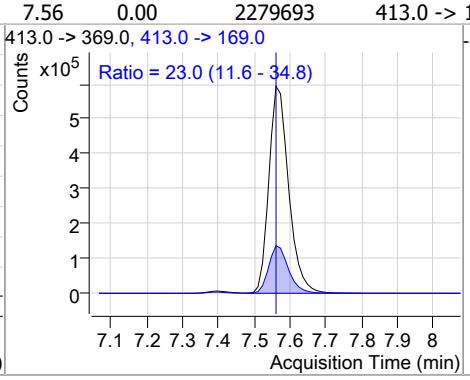


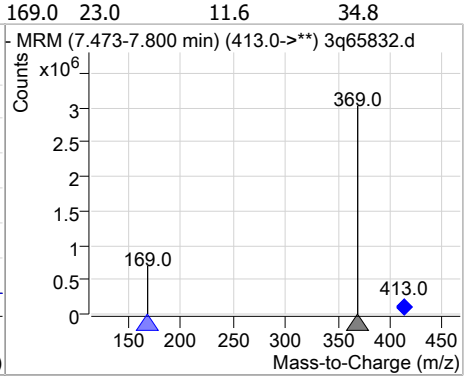


Perfluorinated Compounds by LC/MS/MS

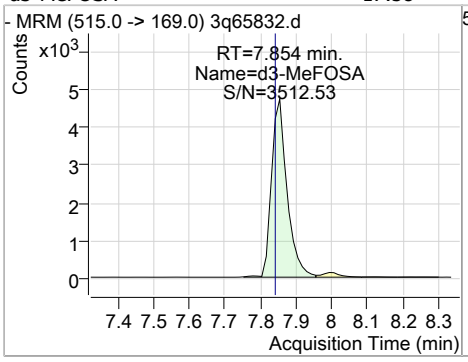
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.82	7.56	0.00	2279693	413.0 -> 169.0	23.0	11.6	34.8

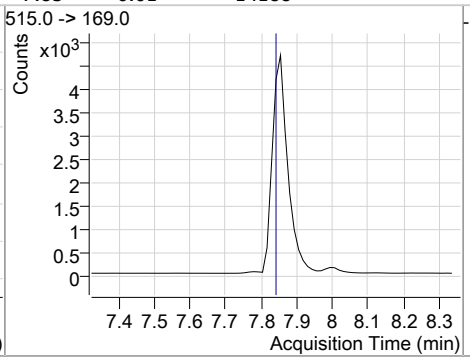


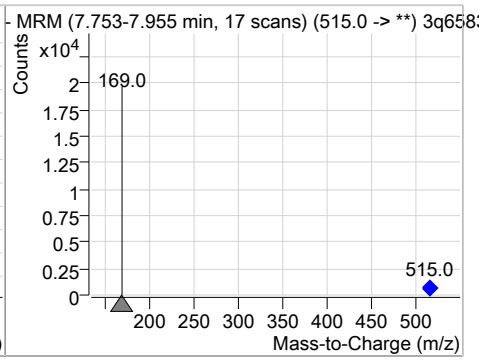




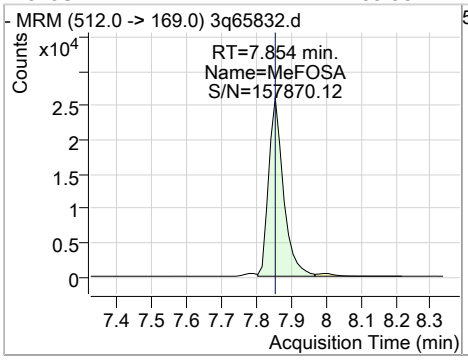
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.58	7.85	0.01	14188				

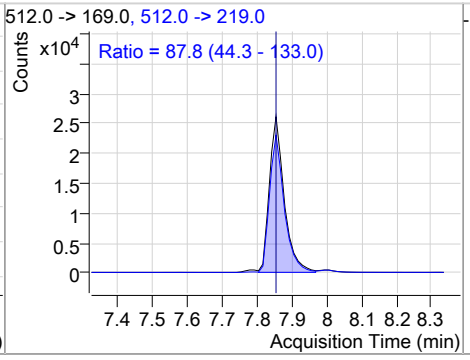


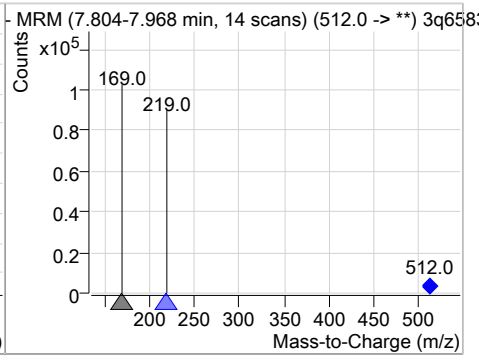




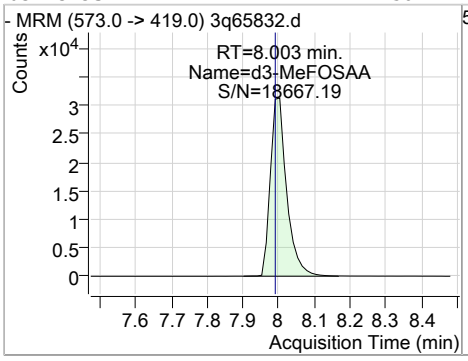
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	99.93	7.85	0.01	77060	512.0 -> 219.0	87.8	44.3	133.0

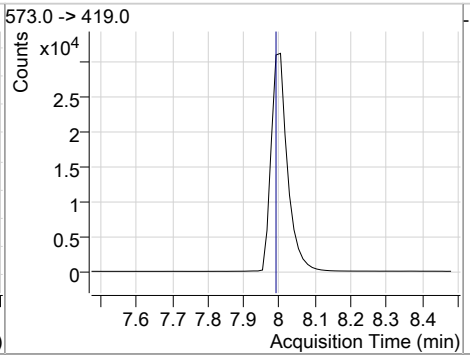


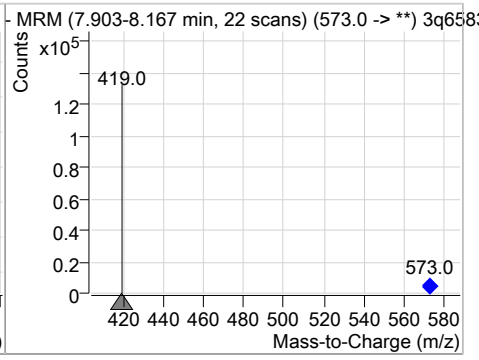




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.50	8.00	0.01	99078				

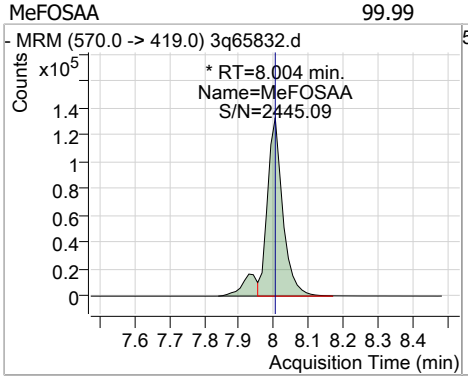


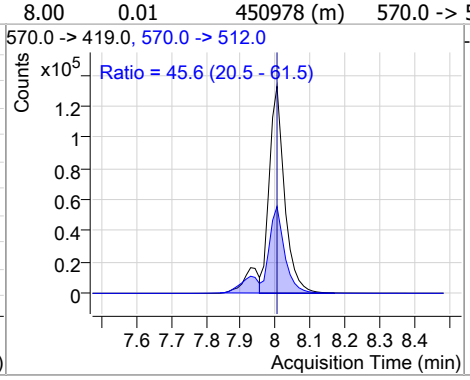


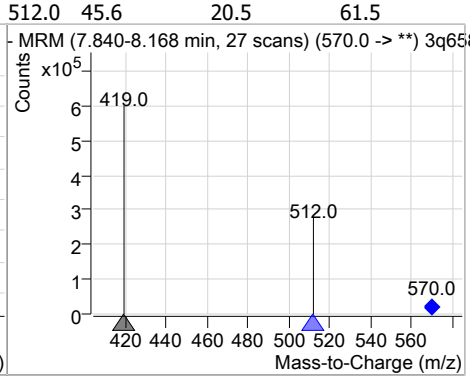


Perfluorinated Compounds by LC/MS/MS

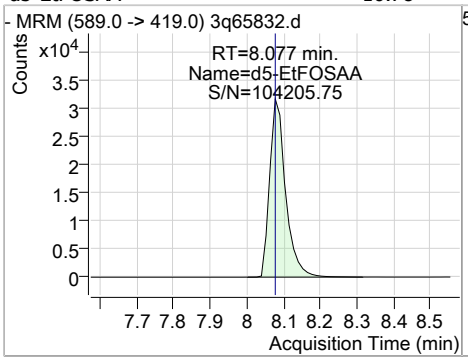
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	99.99	8.00	0.01	450978 (m)	570.0 -> 512.0	45.6	20.5	61.5

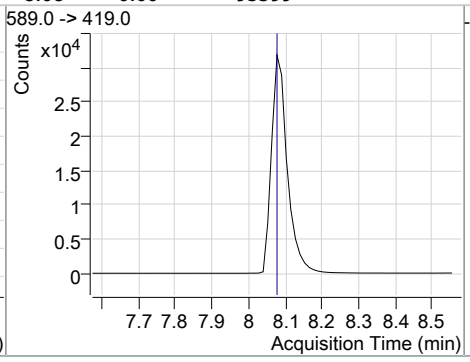


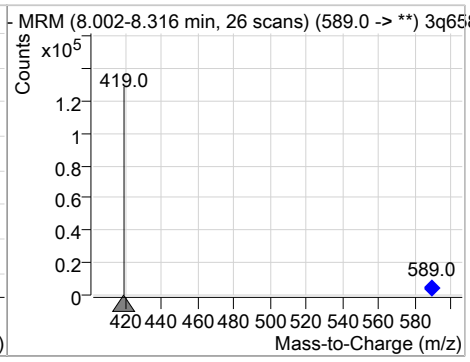




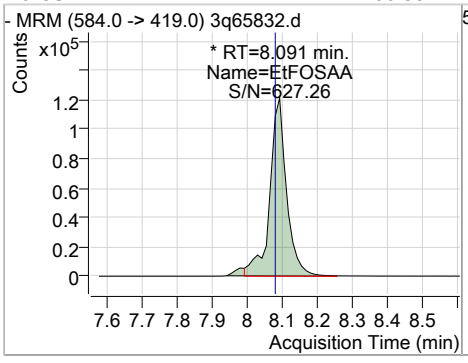
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	16.78	8.08	0.00	95599				

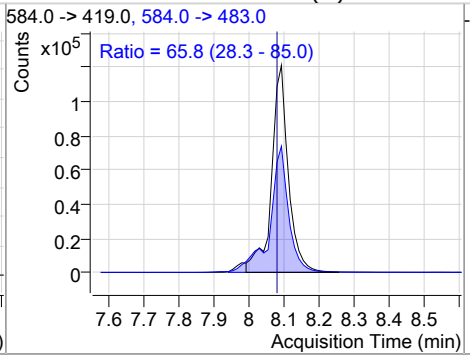


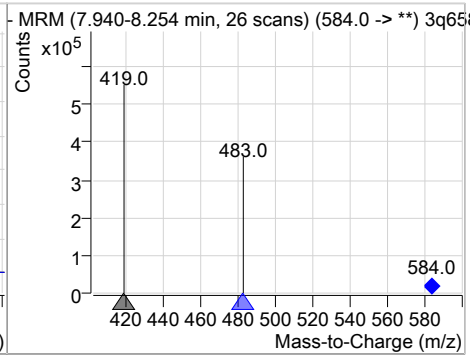




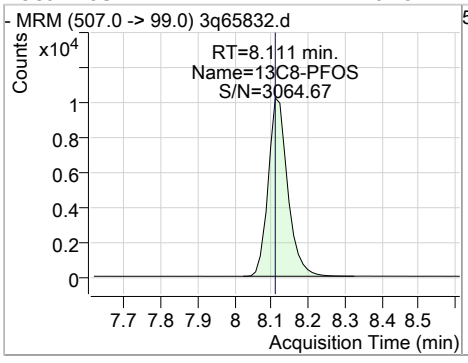
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.58	8.09	0.01	413226 (m)	584.0 -> 483.0	65.8	28.3	85.0

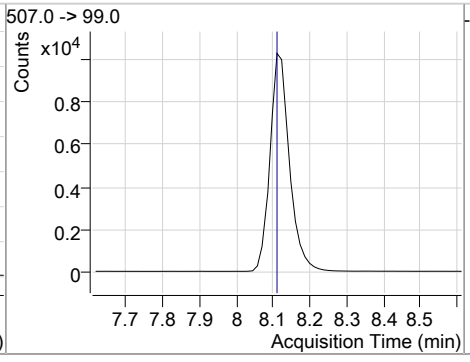


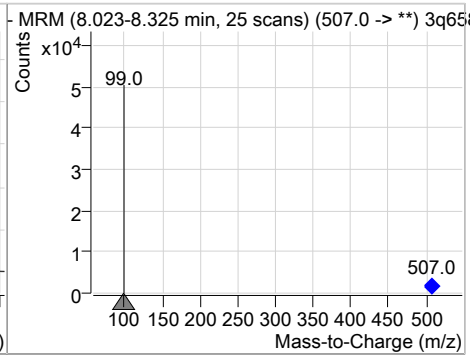




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.15	8.11	0.00	37549				

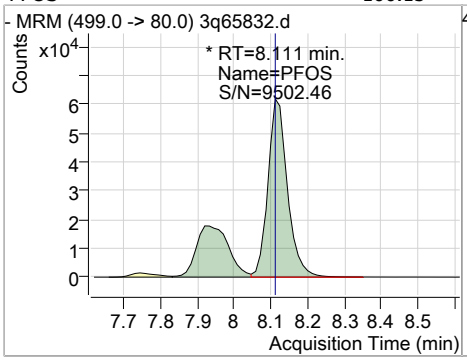


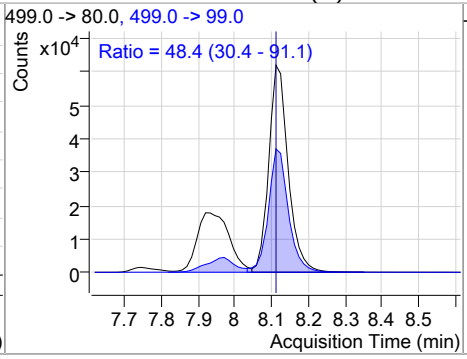


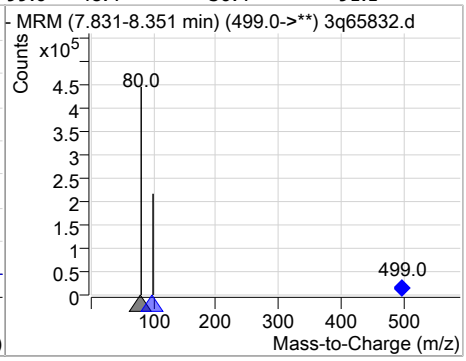


Perfluorinated Compounds by LC/MS/MS

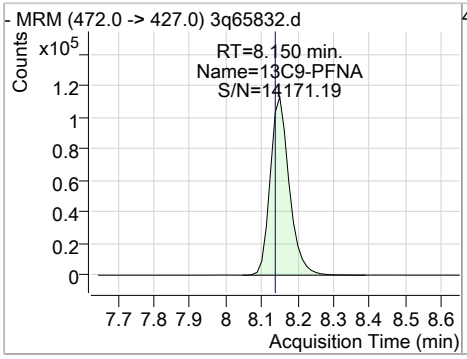
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.15	8.11	0.00	336344 (m)	499.0 -> 99.0	48.4	30.4	91.1

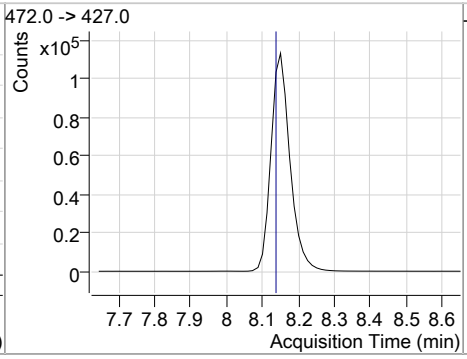


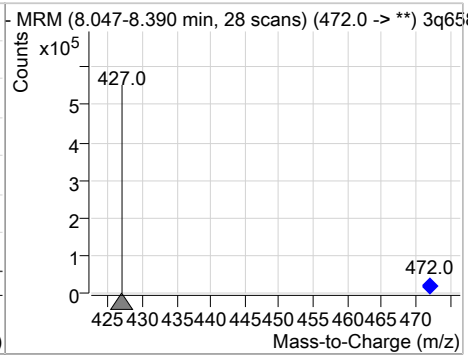




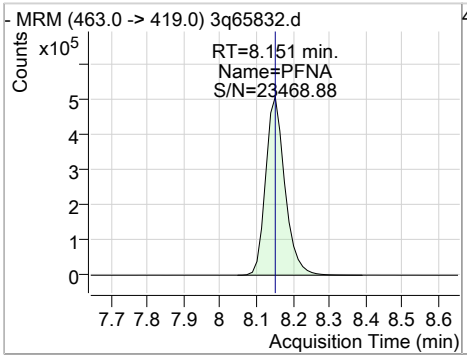
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.42	8.15	0.01	415562				

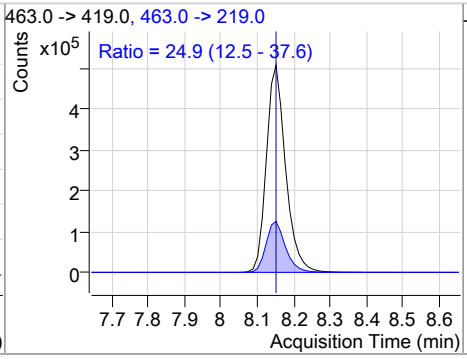


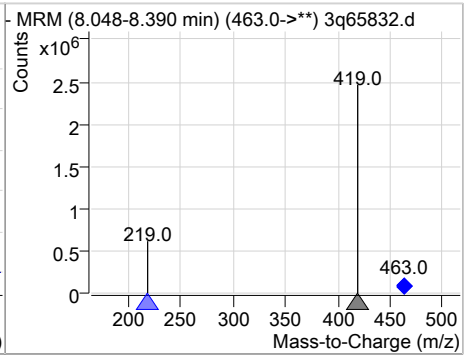




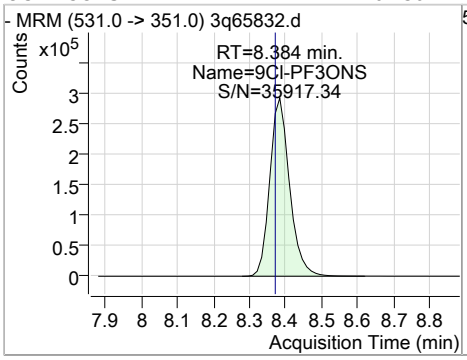
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.61	8.15	0.01	1852940	463.0 -> 219.0	24.9	12.5	37.6

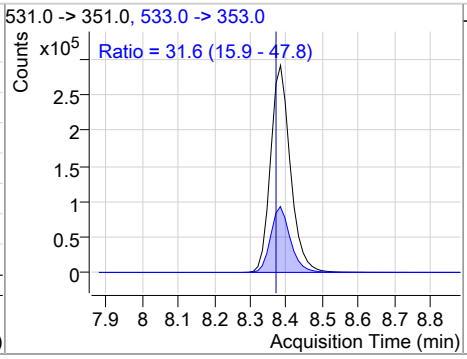


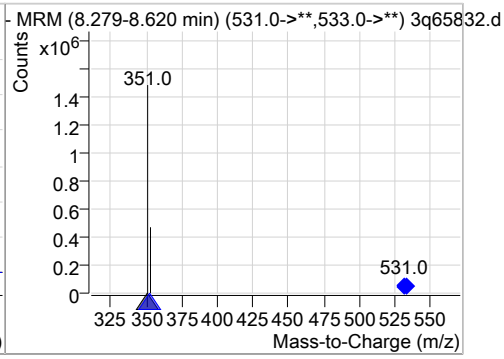




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	101.30	8.38	0.01	1112955	533.0 -> 353.0	31.6	15.9	47.8

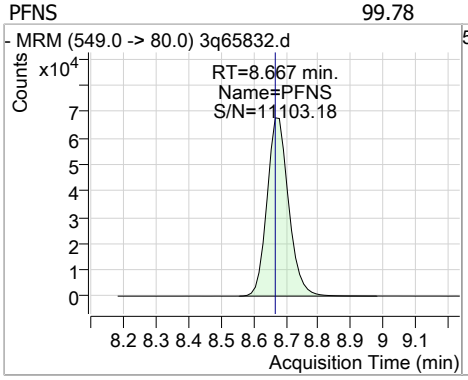


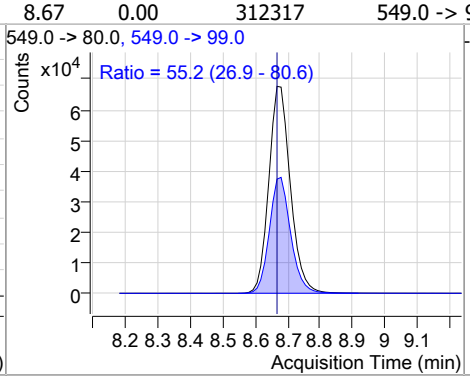


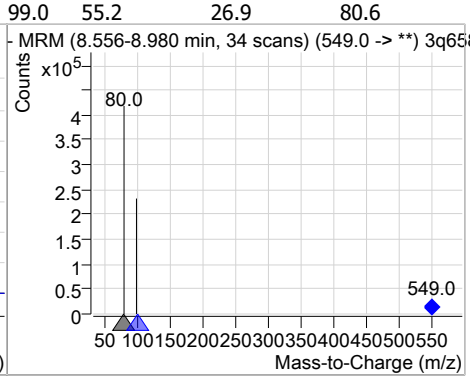


Perfluorinated Compounds by LC/MS/MS

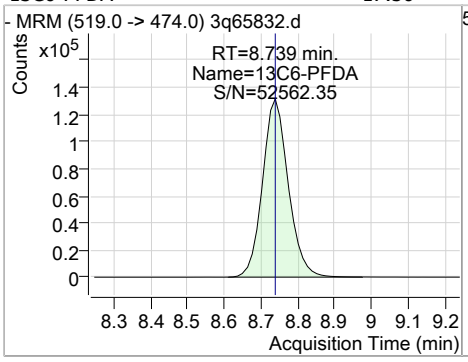
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.78	8.67	0.00	312317	549.0 -> 99.0	55.2	26.9	80.6

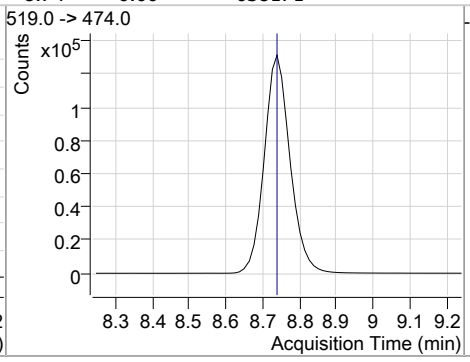


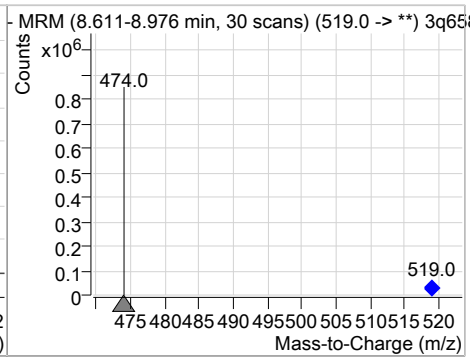




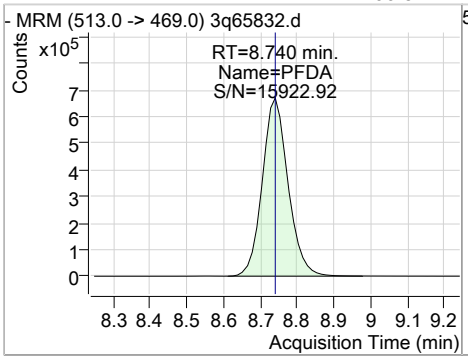
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.56	8.74	0.00	638171				

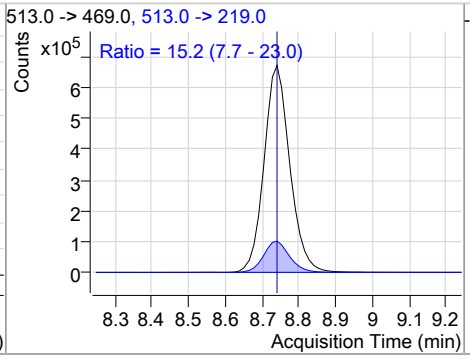


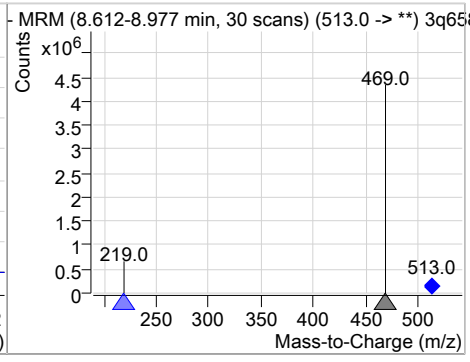




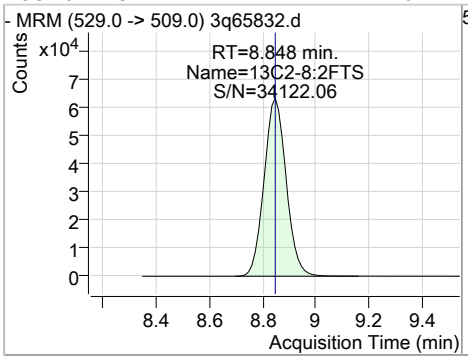
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.82	8.74	0.00	3259319	513.0 -> 219.0	15.2	7.7	23.0

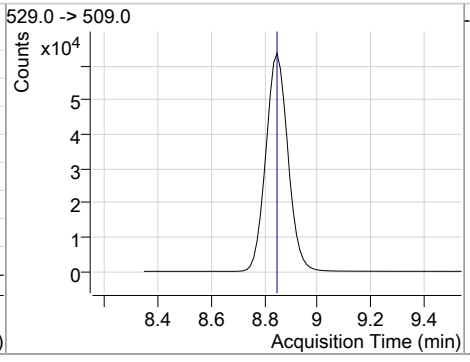


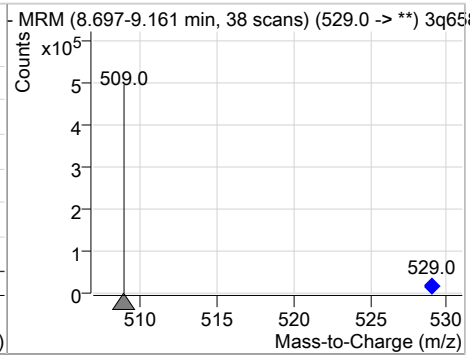




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.40	8.85	0.00	366390				

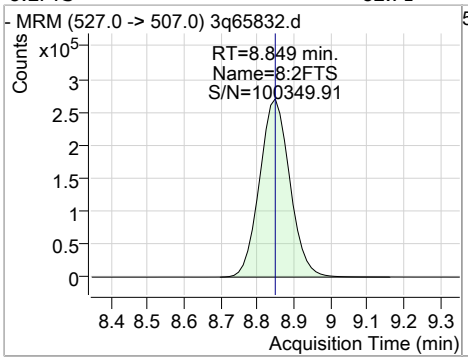


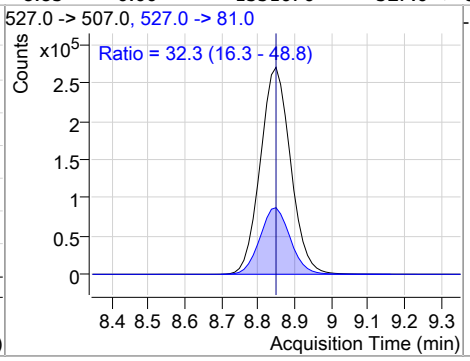


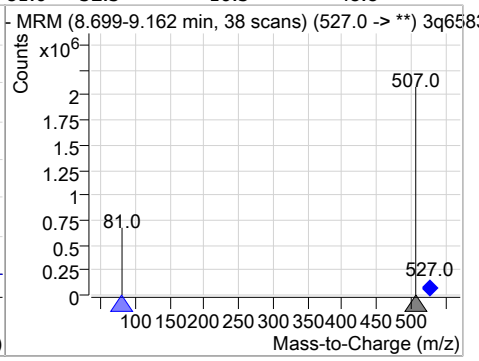


Perfluorinated Compounds by LC/MS/MS

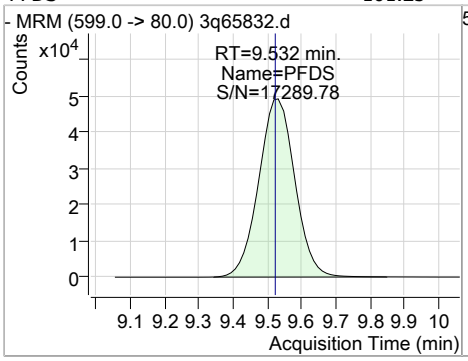
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	82.71	8.85	0.00	1551076	527.0 -> 81.0	32.3	16.3	48.8

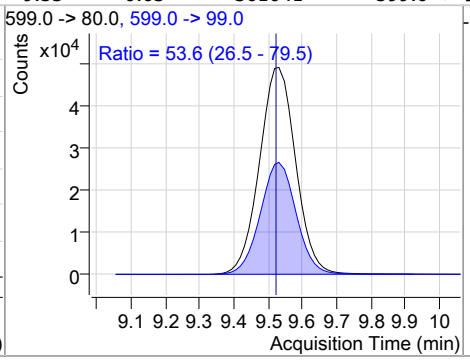


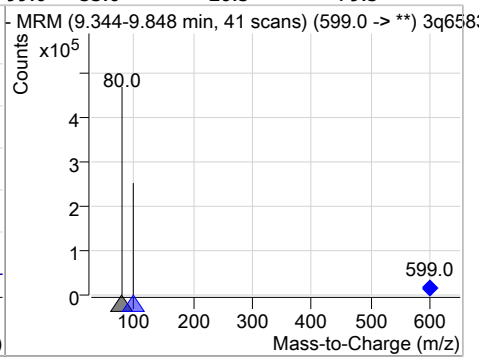




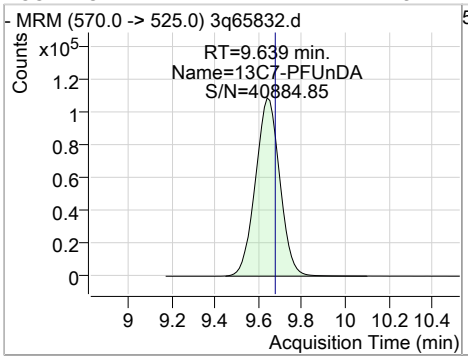
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	101.25	9.53	-0.03	361041	599.0 -> 99.0	53.6	26.5	79.5

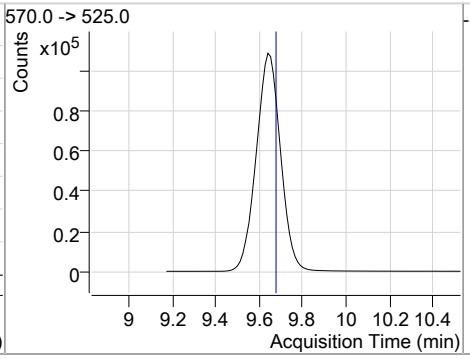


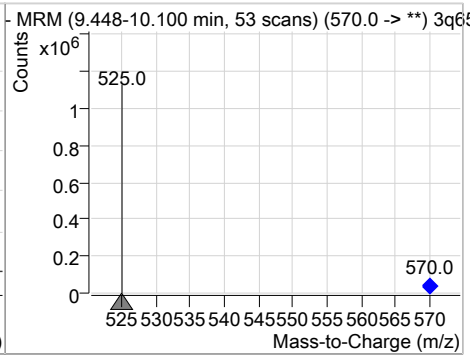




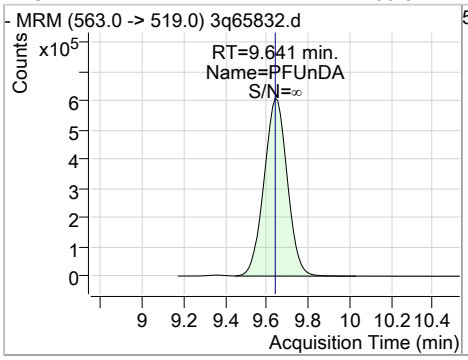
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.79	9.64	-0.04	847263				

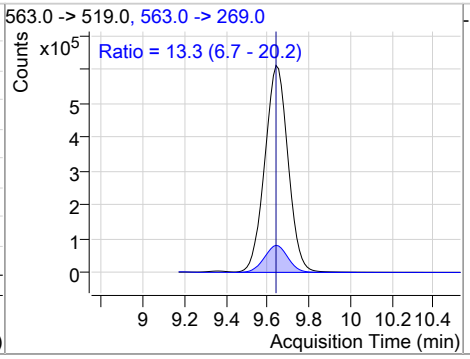


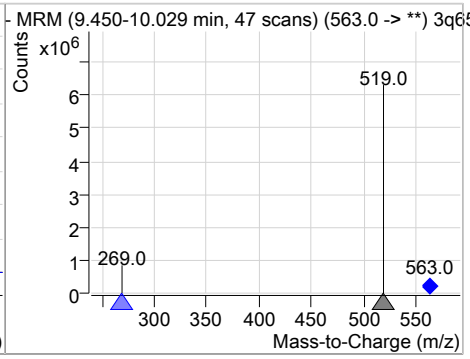




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.82	9.64	-0.04	4737475	563.0 -> 269.0	13.3	6.7	20.2

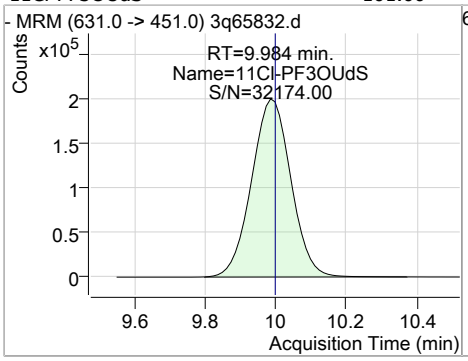


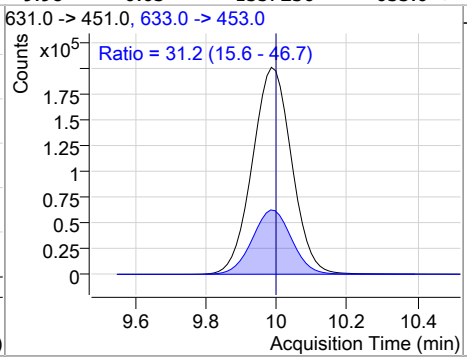


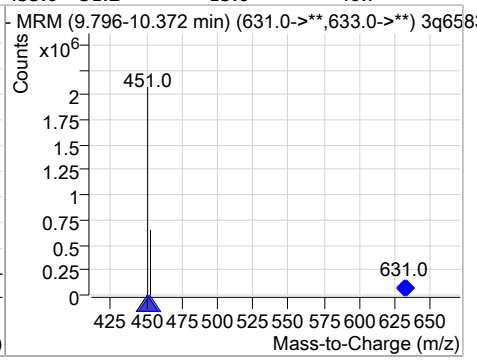


Perfluorinated Compounds by LC/MS/MS

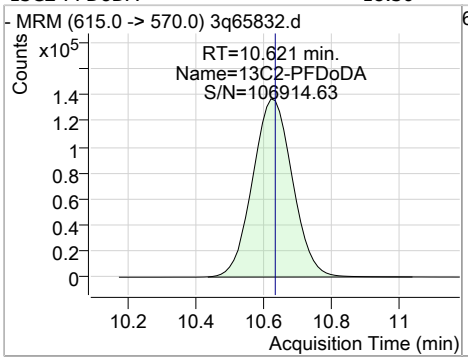
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	101.00	9.98	-0.03	1557236	633.0 -> 453.0	31.2	15.6	46.7

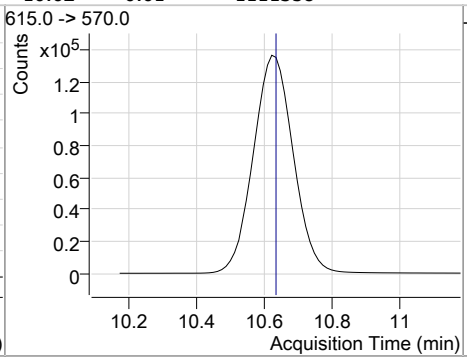


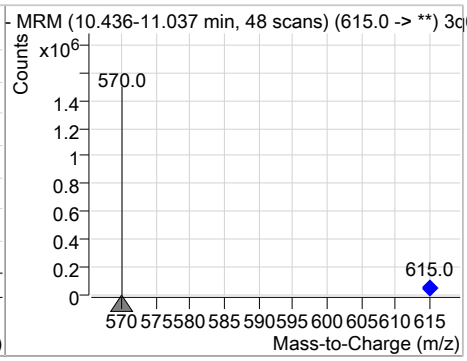




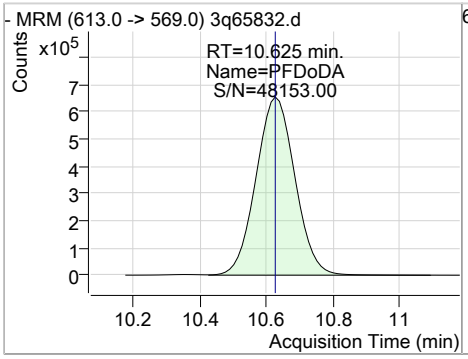
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.30	10.62	-0.01	1111358				

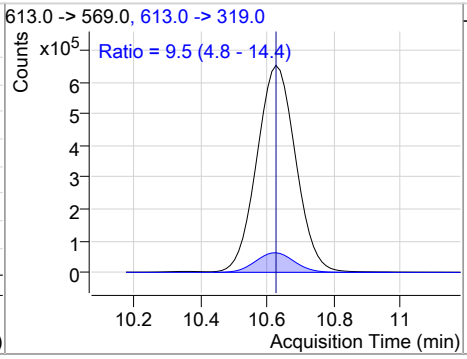


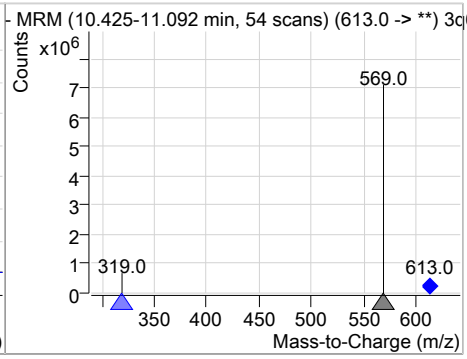




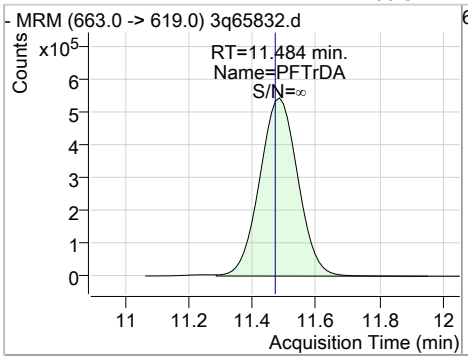
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.65	10.63	-0.01	5298626	613.0 -> 319.0	9.5	4.8	14.4

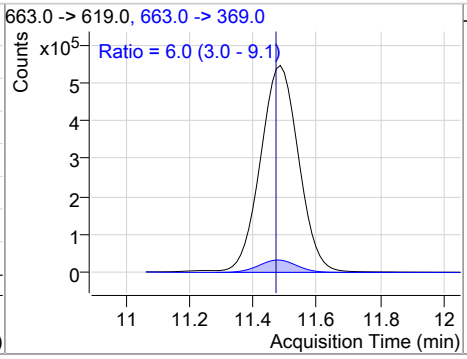


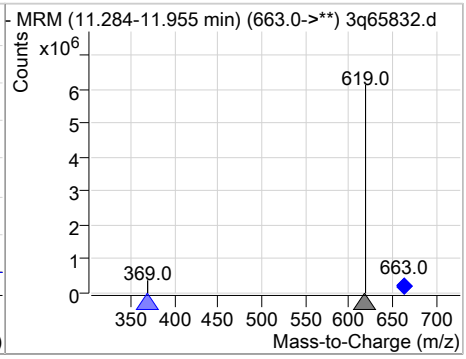




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.52	11.48	0.00	4567533	663.0 -> 369.0	6.0	3.0	9.1

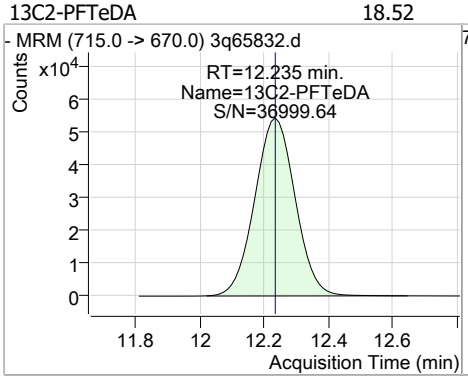


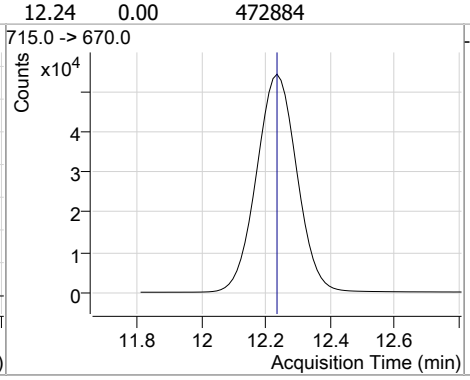


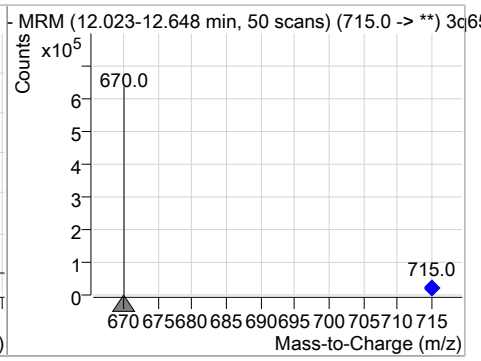


Perfluorinated Compounds by LC/MS/MS

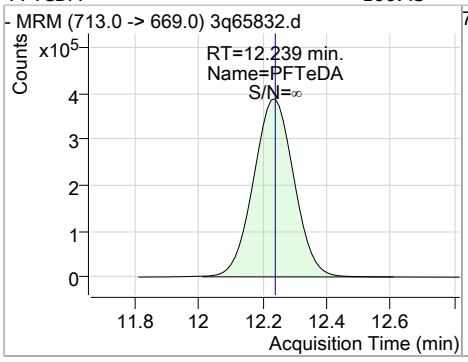
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.52	12.24	0.00	472884				

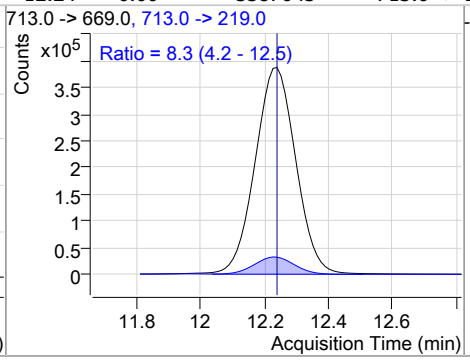


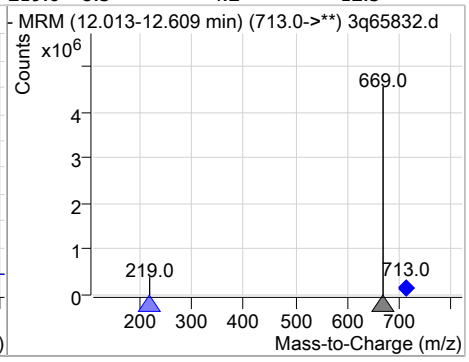




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.43	12.24	0.00	3387043	713.0 -> 219.0	8.3	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-IC900
Lab FileID: 3Q65832.D
Injection Time: 09/15/22 20:26
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65834.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:05:22 PM
Sample Name : icv900-20
Vial : P1-B1
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

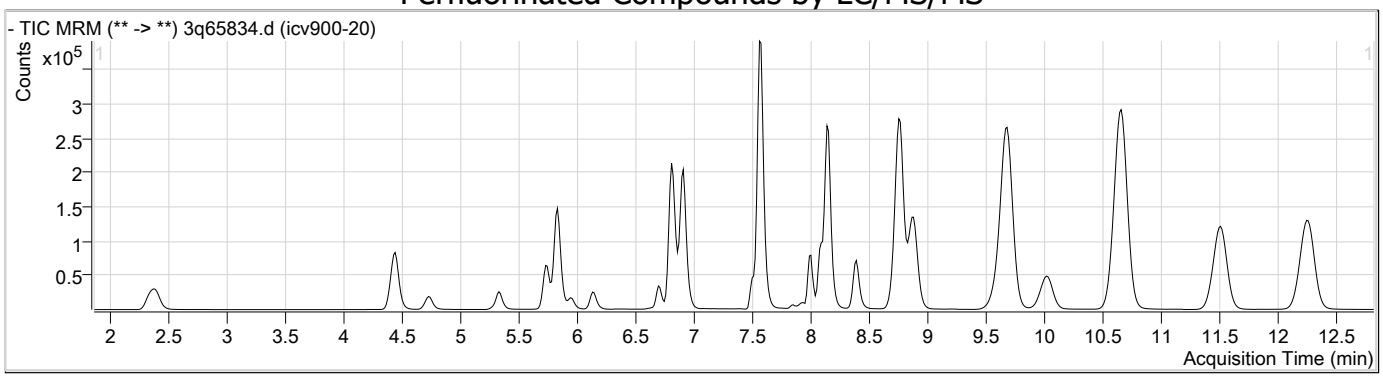
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	2.365	217.0 -> 172.0	153435	20.00	µg/L	0.000
M5-PFPeA	4.436	268.0 -> 223.0	224758	20.00	µg/L	0.025
M5-PFHxA	5.826	318.0 -> 273.0	298840	20.00	µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	295629	20.00	µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	400112	20.00	µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	454223	20.00	µg/L	0.013
M6-PFDA	8.751	519.0 -> 474.0	673385	20.00	µg/L	0.013
M7-PFUnDA	9.677	570.0 -> 525.0	886392	20.00	µg/L	0.000
M2-PFDoDA	10.646	615.0 -> 570.0	1134610	20.00	µg/L	0.013
M2-PFTeDA	12.248	715.0 -> 670.0	475716	20.00	µg/L	0.013
M8-FOSA	7.491	506.0 -> 78.0	68761	20.00	µg/L	0.000
M3-PFBS	4.717	302.0 -> 99.0	20583	20.00	µg/L	0.025
M3-PFHxS	6.834	402.0 -> 99.0	25215	20.00	µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	39643	20.00	µg/L	0.000
M2-4:2FTS	5.733	329.0 -> 309.0	112921	20.00	µg/L	0.025
M2-6:2FTS	7.571	429.0 -> 409.0	162975	20.00	µg/L	0.013
M2-8:2FTS	8.873	529.0 -> 509.0	322916	20.00	µg/L	0.025
M3-MeFOSAA	7.978	573.0 -> 419.0	107688	20.00	µg/L	-0.013
M3-HFPO-DA	6.130	287.0 -> 169.0	24038	20.00	µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	15413	20.00	µg/L	0.000
M5-EtFOSAA	8.065	589.0 -> 419.0	107233	20.00	µg/L	-0.013
System Monitoring Compounds						
13C2-4:2FTS	5.733	329.0 -> 309.0	112921	18.40	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-6:2FTS	7.571	429.0 -> 409.0	162975	18.89	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C2-8:2FTS	8.873	529.0 -> 509.0	322916	18.86	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFDoDA	10.646	615.0 -> 570.0	1134610	18.68	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C2-PFTeDA	12.248	715.0 -> 670.0	475716	18.63	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C3-PFBS	4.717	302.0 -> 99.0	20583	18.60	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C3-PFHxS	6.834	402.0 -> 99.0	25215	18.72	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFBA	2.365	217.0 -> 172.0	153435	18.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C4-PFHpA	6.805	367.0 -> 322.0	295629	18.74	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C5-PFHxA	5.826	318.0 -> 273.0	298840	18.63	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C5-PFPeA	4.436	268.0 -> 223.0	224758	18.58	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C6-PFDA	8.751	519.0 -> 474.0	673385	18.52	µg/L	0.013

Perfluorinated Compounds by LC/MS/MS

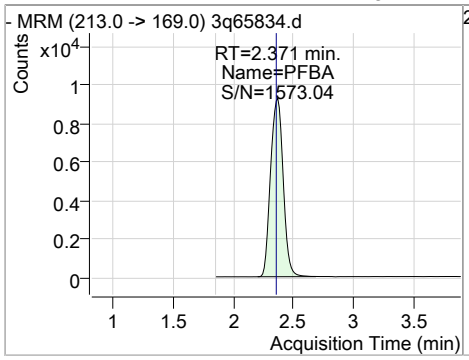
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%			
13C7-PFUnDA	9.677	570.0 -> 525.0	886392	18.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
13C8-FOSA	7.491	506.0 -> 78.0	68761	19.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C8-PFOA	7.560	421.0 -> 376.0	400112	18.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C8-PFOS	8.111	507.0 -> 99.0	39643	19.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C9-PFNA	8.150	472.0 -> 427.0	454223	19.04	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
d3-MeFOSAA	7.978	573.0 -> 419.0	107688	19.02	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	24047	18.62	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%			
d3-MeFOSA	7.841	515.0 -> 169.0	15413	19.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
d5-EtFOSAA	8.065	589.0 -> 419.0	107283	18.83	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	108617	17.22	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	154715	18.31	µg/L		100
8:2FTS	8.874	527.0 -> 507.0	309424	18.72	µg/L		100
EtFOSAA	8.078	584.0 -> 419.0	89850	19.49	µg/L	m	87
FOSA	7.491	498.0 -> 78.0	64821	19.17	µg/L		100
MeFOSAA	7.991	570.0 -> 419.0	94576	19.29	µg/L	m	92
PFBA	2.371	213.0 -> 169.0	67199	19.22	µg/L		100
PFBS	4.719	299.0 -> 80.0	48635	16.19	µg/L		99
PFDA	8.752	513.0 -> 469.0	638106	18.71	µg/L		100
PFDoDA	10.650	613.0 -> 569.0	1107758	20.61	µg/L		100
PFDS	9.560	599.0 -> 80.0	65946	17.68	µg/L		99
PFHpA	6.807	363.0 -> 319.0	415405	18.46	µg/L		99
PFHpS	7.557	449.0 -> 80.0	49318	18.65	µg/L		100
PFHxA	5.827	313.0 -> 269.0	297295	17.75	µg/L		100
PFHxS	6.835	399.0 -> 80.0	50633	16.27	µg/L	m	100
PFNA	8.151	463.0 -> 419.0	366040	18.18	µg/L		100
PFNS	8.692	549.0 -> 80.0	59228	17.92	µg/L		100
PFOA	7.561	413.0 -> 369.0	510776	19.92	µg/L		100
PFOS	8.111	499.0 -> 80.0	68699	19.38	µg/L	m	87
PFPeA	4.439	263.0 -> 219.0	195229	18.85	µg/L		100
PFPeS	5.932	349.0 -> 80.0	41718	17.93	µg/L		99
PFTeDA	12.239	713.0 -> 669.0	616981	18.18	µg/L		100
PFTrDA	11.497	663.0 -> 619.0	952992	20.54	µg/L		100
PFUnDA	9.678	563.0 -> 519.0	987793	20.09	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	281947	17.91	µg/L		100
9Cl-PF3ONS	8.384	531.0 -> 351.0	206145	17.78	µg/L		99
ADONA	6.903	377.0 -> 251.0	593563	17.86	µg/L		100
HFPO-DA	6.134	329.0 -> 169.0	56212	18.86	µg/L		99
MeFOSA	7.981	512.0 -> 169.0	0	0.00	µg/L	m	1
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	5.327	298.0 -> 78.0	103855	21.63	µg/L		99
FHxSA	6.688	398.0 -> 78.0	107150	22.33	µg/L		100

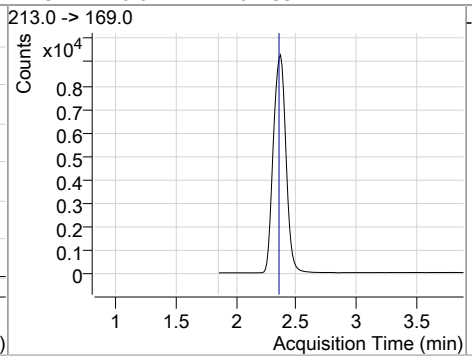
 # = Qualifier out of range, m = manually integrated, + = Area summed

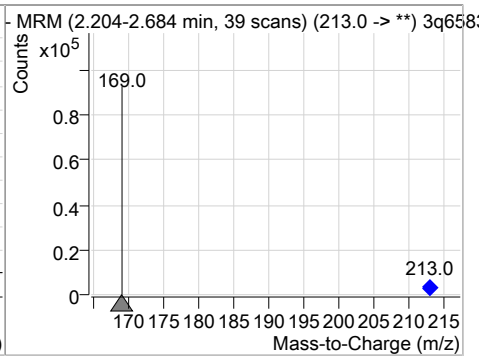
Perfluorinated Compounds by LC/MS/MS



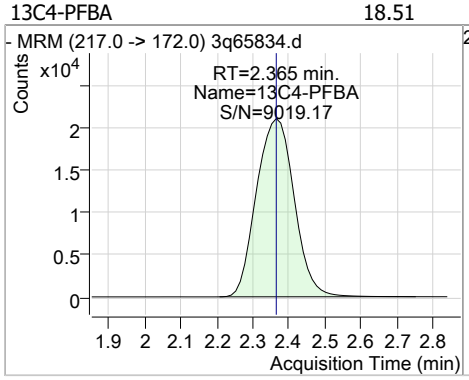
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.22	2.37	0.01	67199				

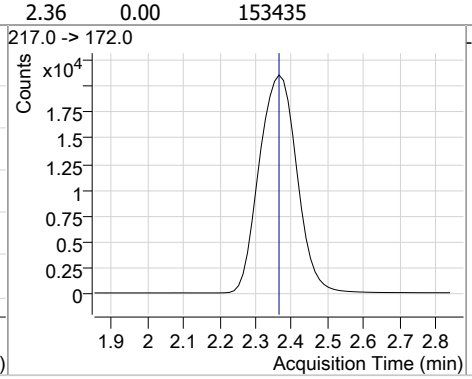


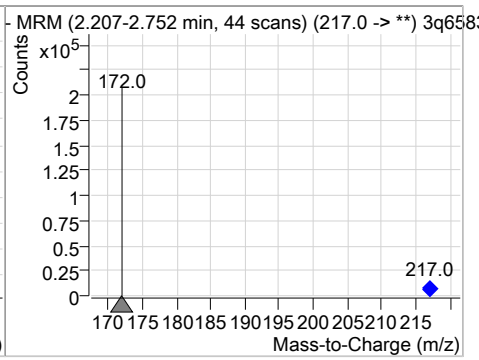




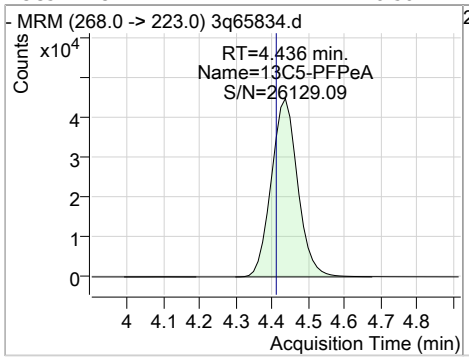
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.51	2.36	0.00	153435				

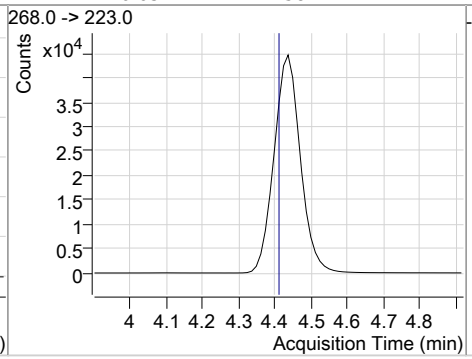


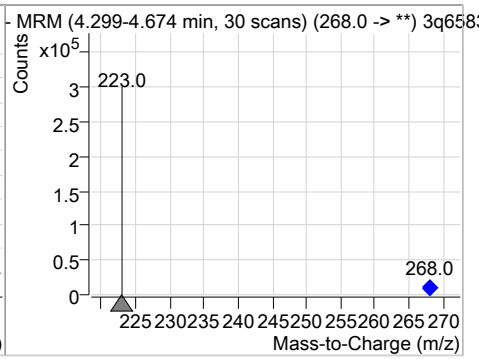




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.58	4.44	0.03	224758				

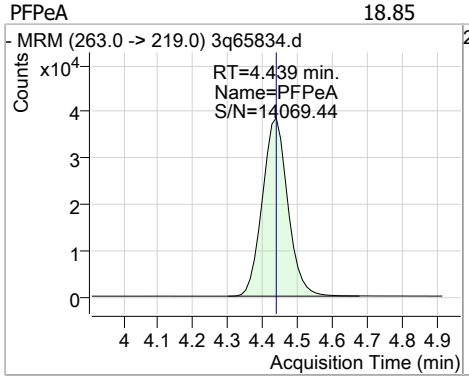


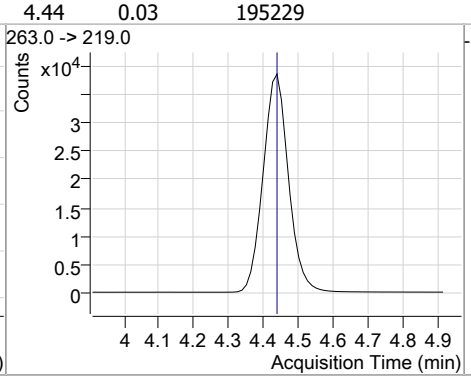


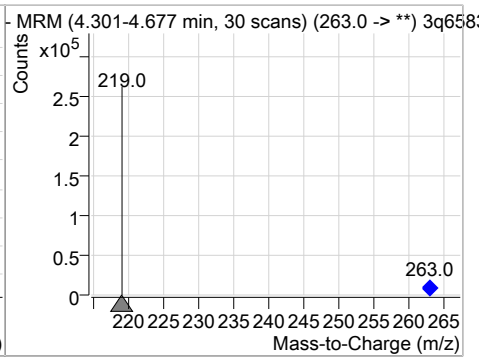


Perfluorinated Compounds by LC/MS/MS

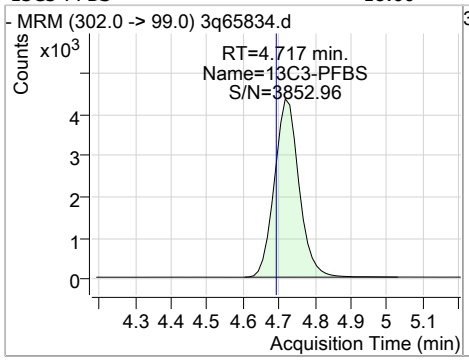
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	18.85	4.44	0.03	195229				

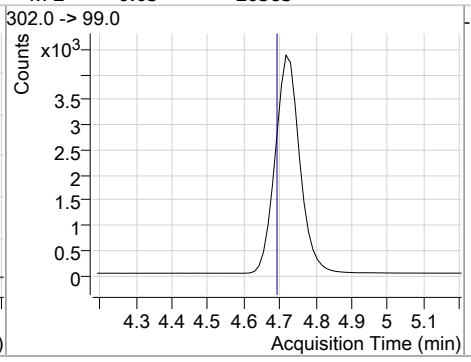


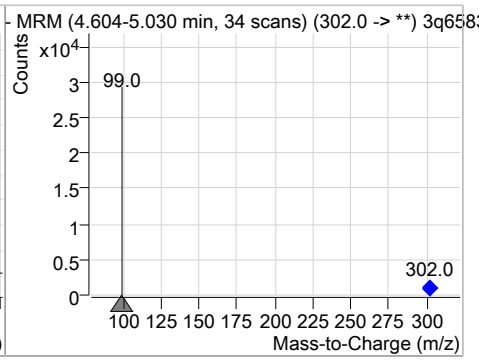




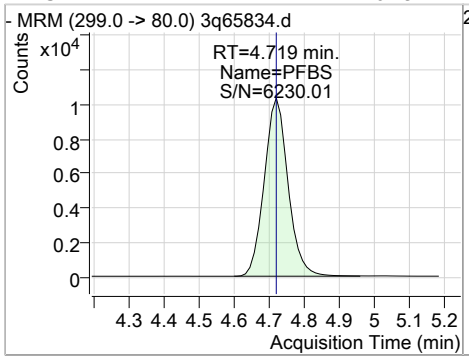
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.60	4.72	0.03	20583				

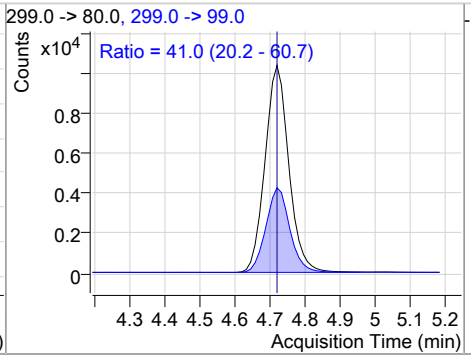


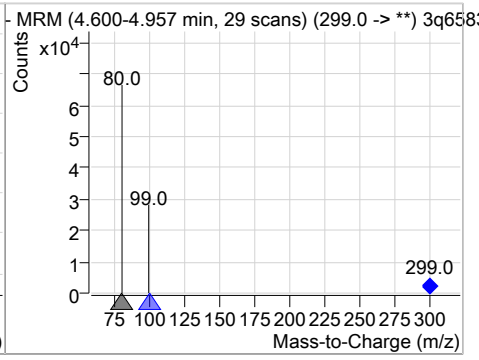




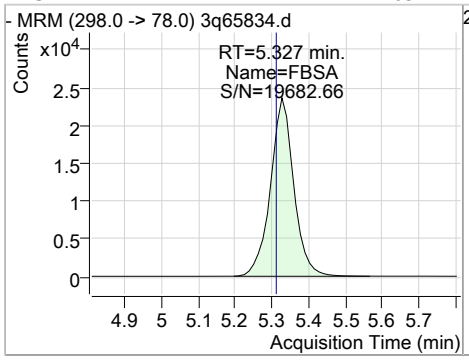
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.19	4.72	0.03	48635	299.0 -> 99.0	41.0	20.2	60.7

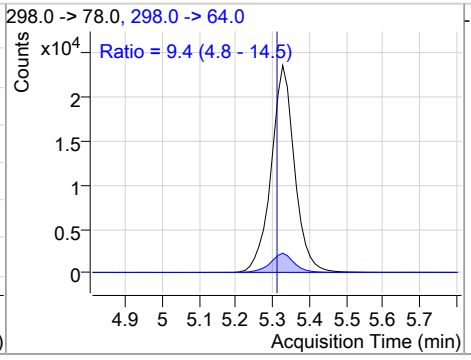


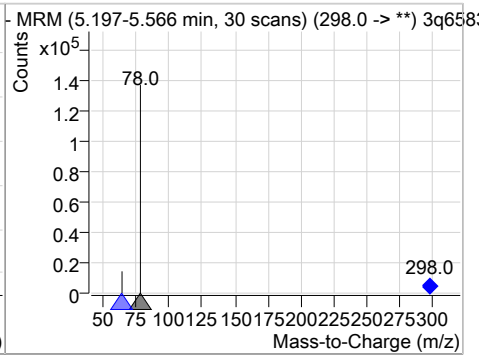




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	21.63	5.33	0.03	103855	298.0 -> 64.0	9.4	4.8	14.5

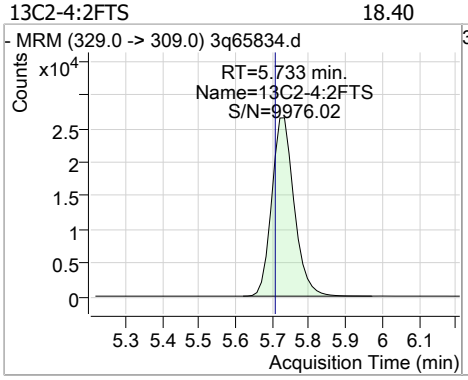


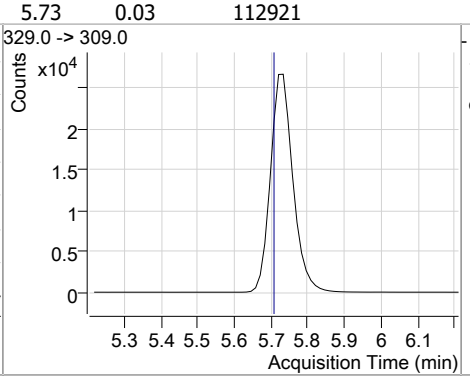


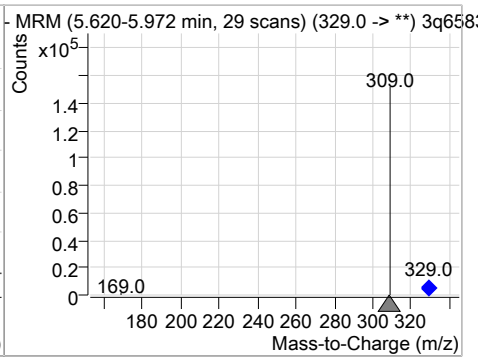


Perfluorinated Compounds by LC/MS/MS

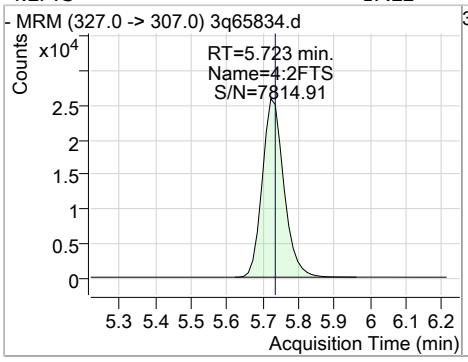
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.40	5.73	0.03	112921				

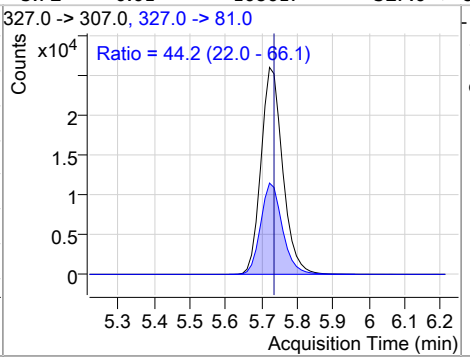


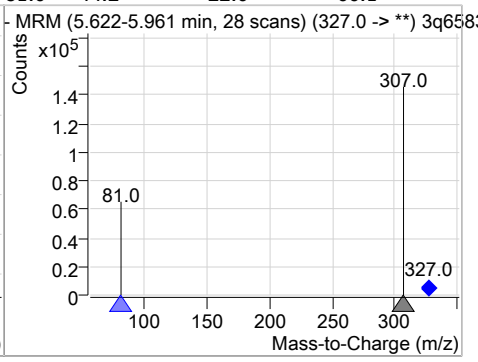




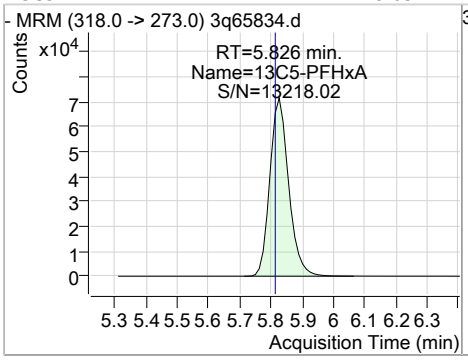
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.22	5.72	0.01	108617	327.0 -> 81.0	44.2	22.0	66.1

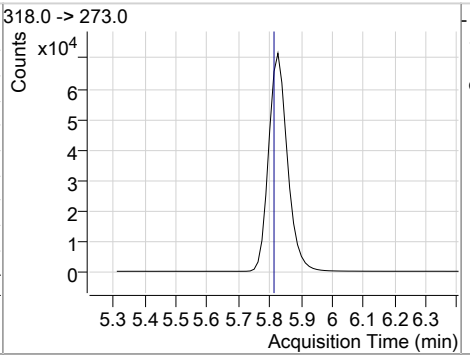


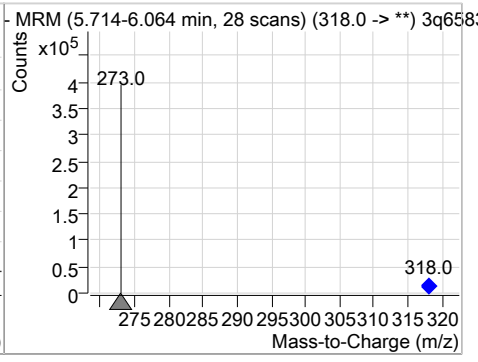




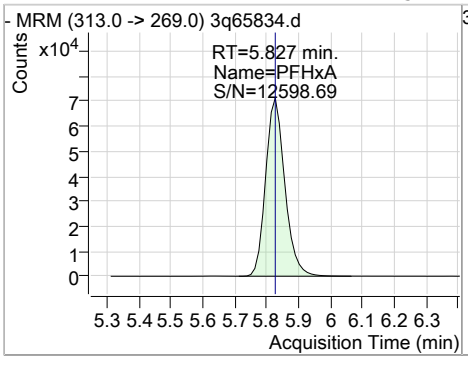
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.63	5.83	0.01	298840				

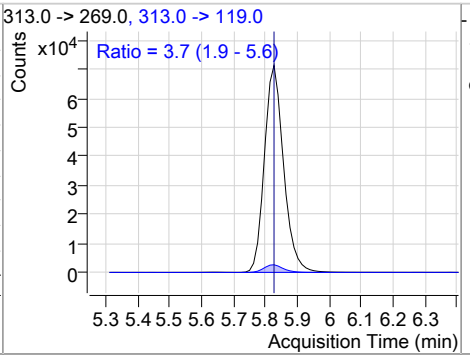


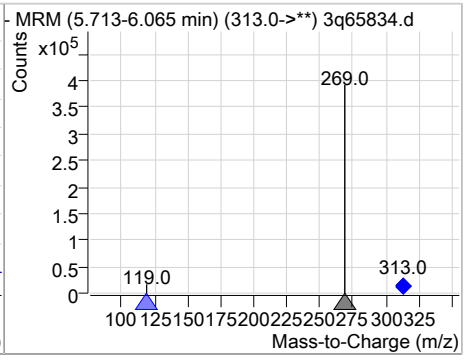




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	17.75	5.83	0.01	297295	313.0 -> 119.0	3.7	1.9	5.6

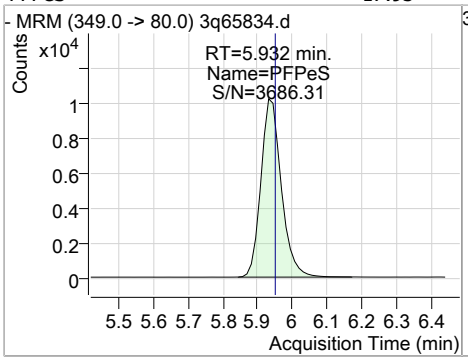


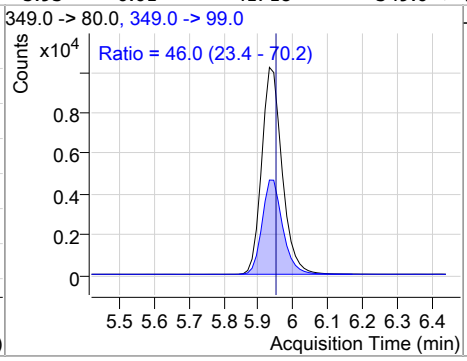


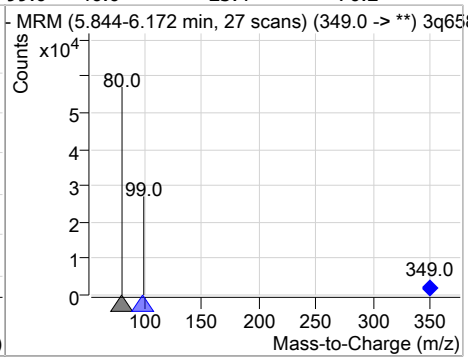


Perfluorinated Compounds by LC/MS/MS

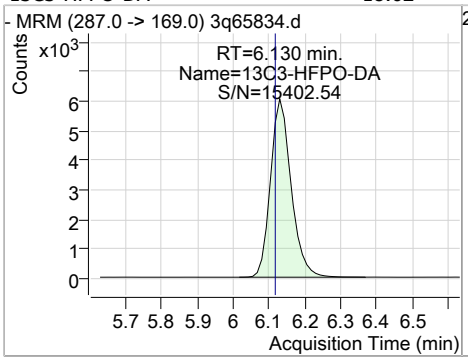
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.93	5.93	0.01	41718	349.0 -> 99.0	46.0	23.4	70.2

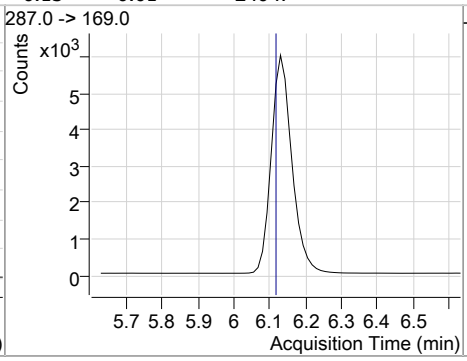


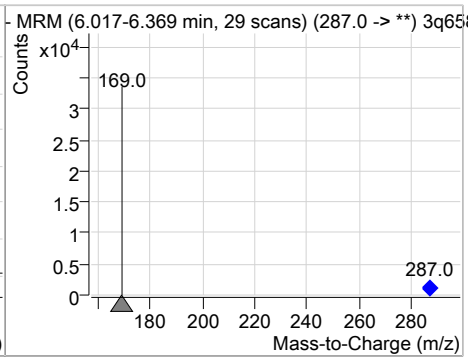




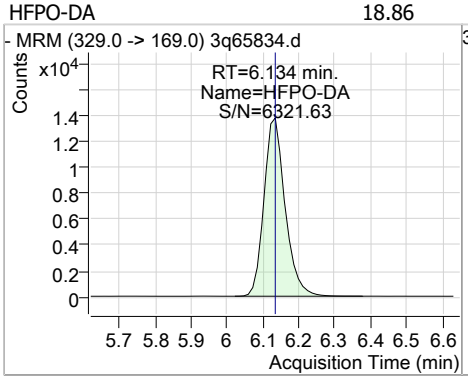
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.62	6.13	0.01	24047				

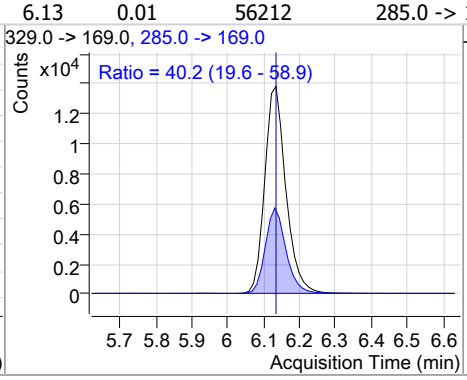


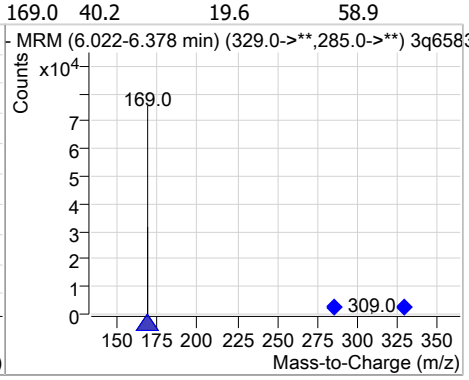




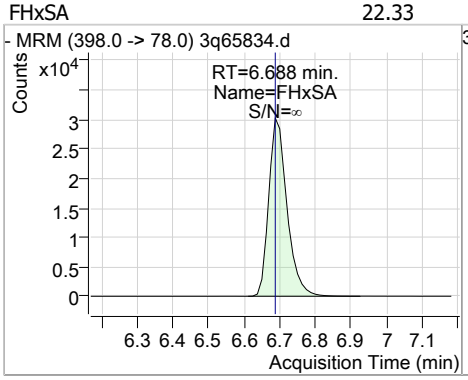
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.86	6.13	0.01	56212	285.0 -> 169.0	40.2	19.6	58.9

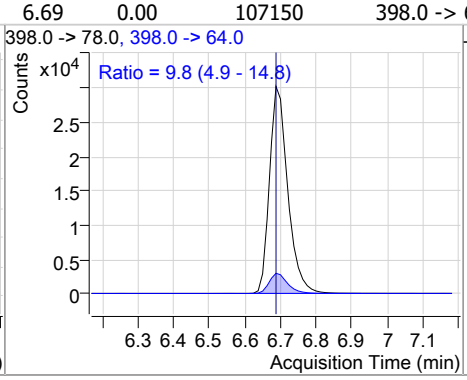


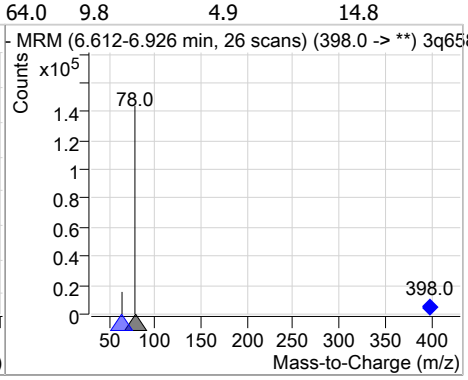




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	22.33	6.69	0.00	107150	398.0 -> 64.0	9.8	4.9	14.8

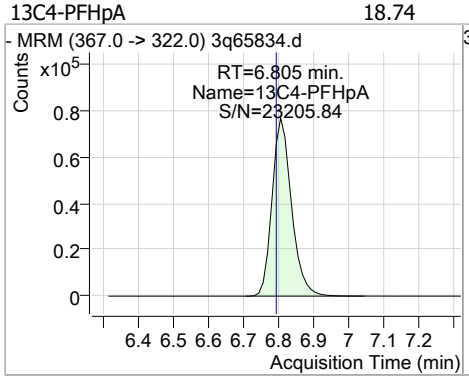


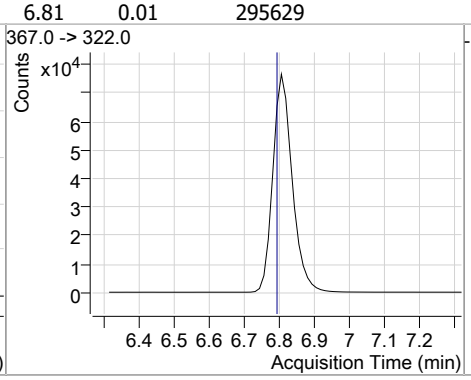


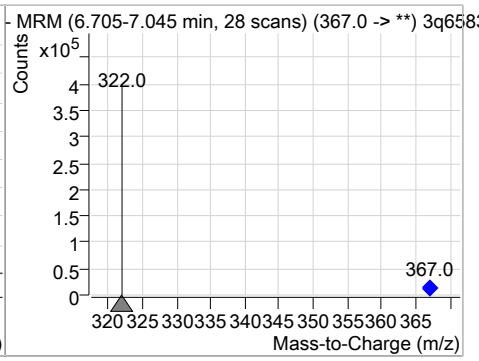


Perfluorinated Compounds by LC/MS/MS

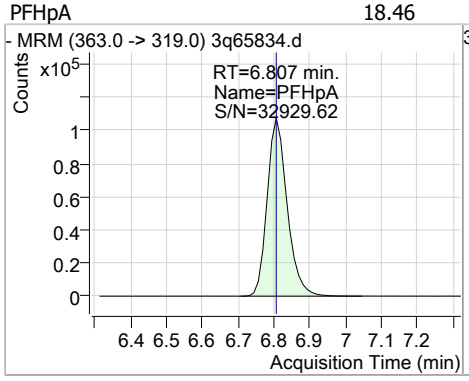
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.74	6.81	0.01	295629				

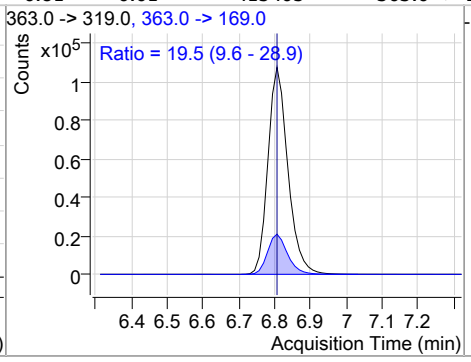


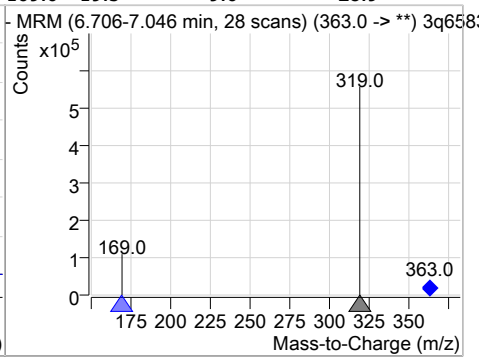




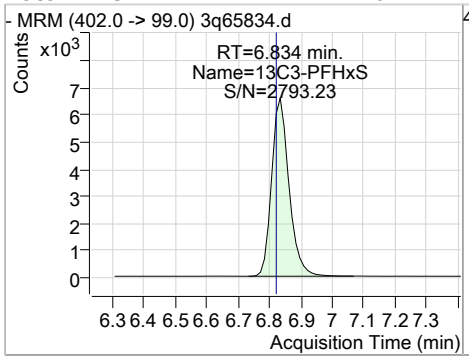
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.46	6.81	0.01	415405	363.0 -> 169.0	19.5	9.6	28.9

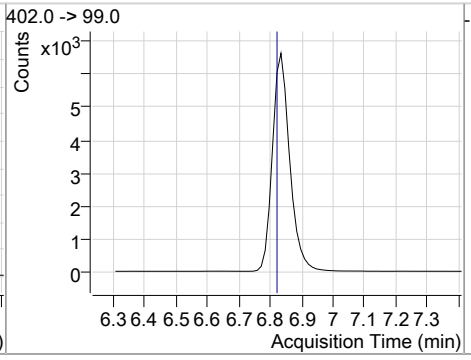


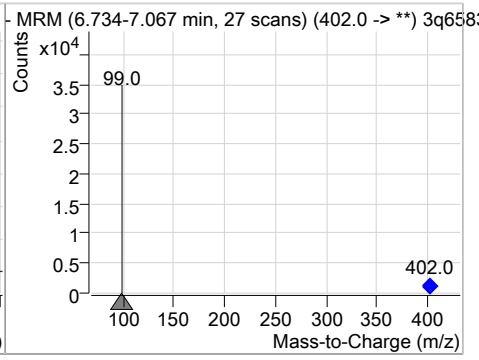




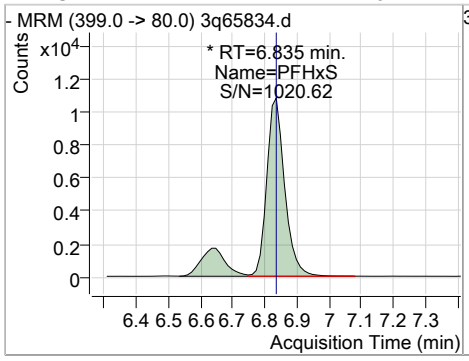
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.72	6.83	0.01	25215				

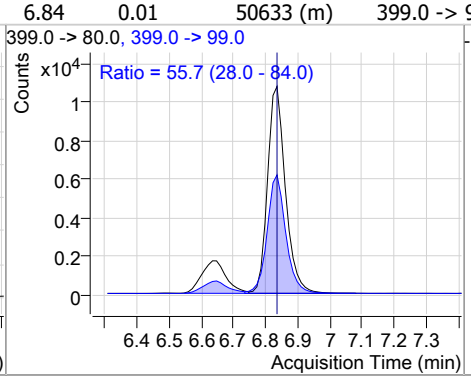


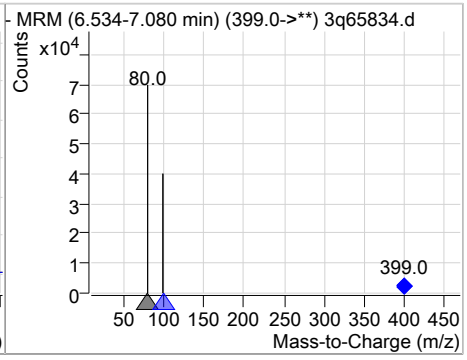




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.27	6.84	0.01	50633 (m)	399.0 -> 99.0	55.7	28.0	84.0

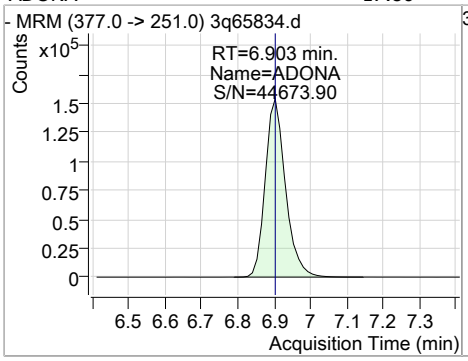


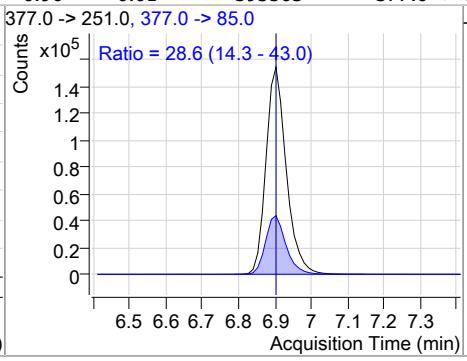


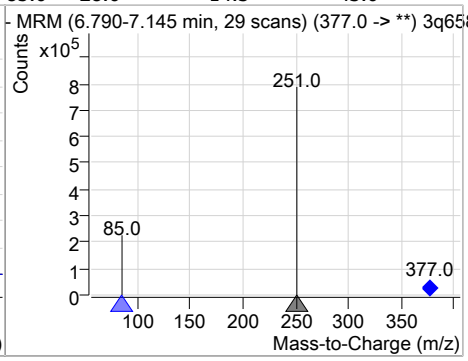


Perfluorinated Compounds by LC/MS/MS

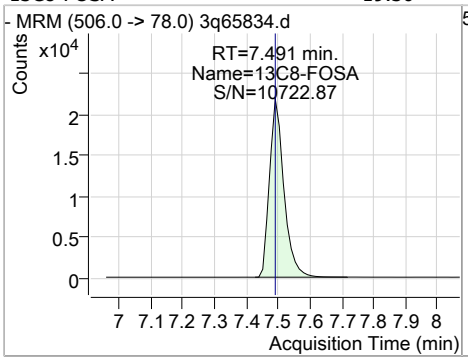
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.86	6.90	0.01	593563	377.0 -> 85.0	28.6	14.3	43.0

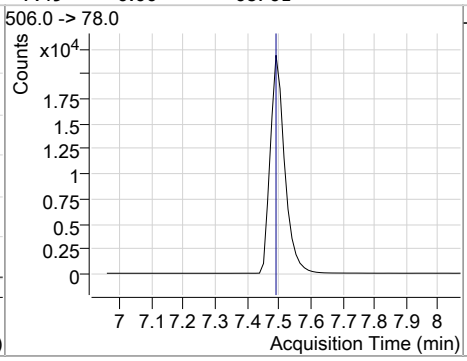


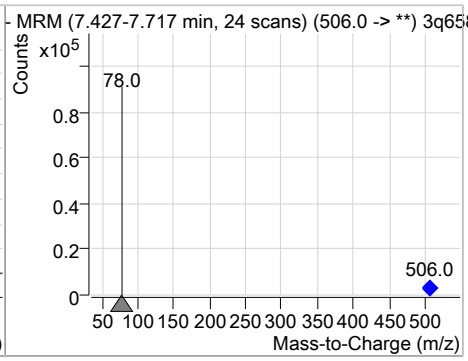




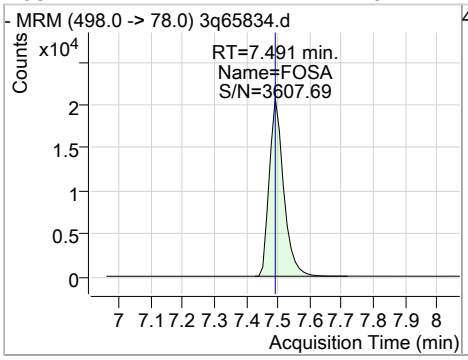
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.30	7.49	0.00	68761				

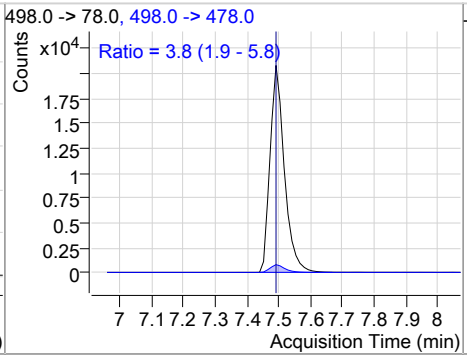


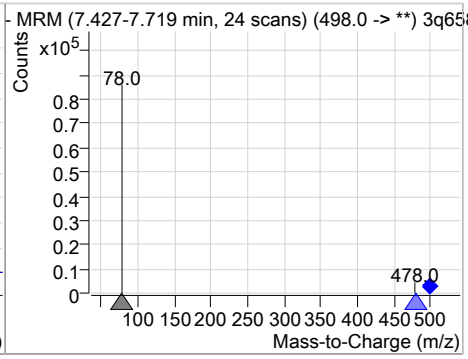




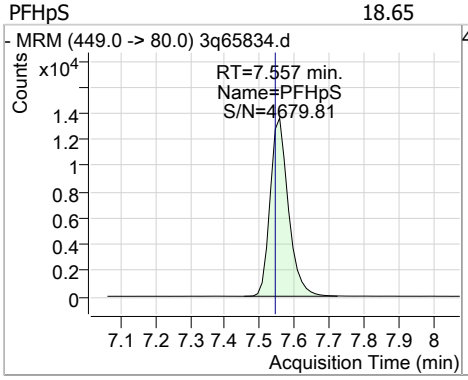
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.17	7.49	0.00	64821	498.0 -> 478.0	3.8	1.9	5.8

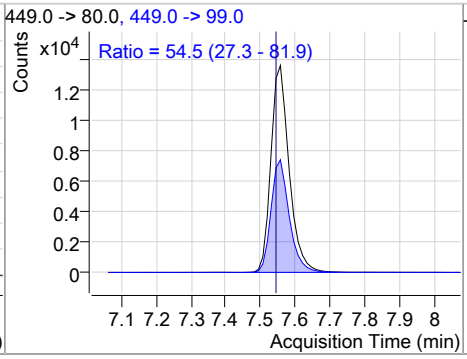


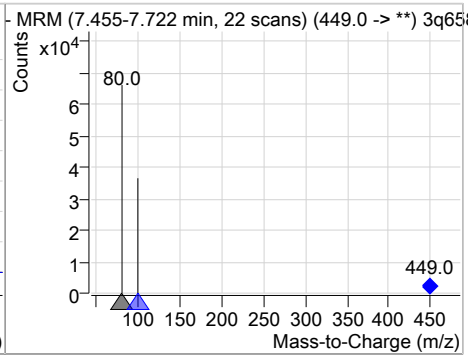




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	18.65	7.56	0.01	49318	449.0 -> 99.0	54.5	27.3	81.9

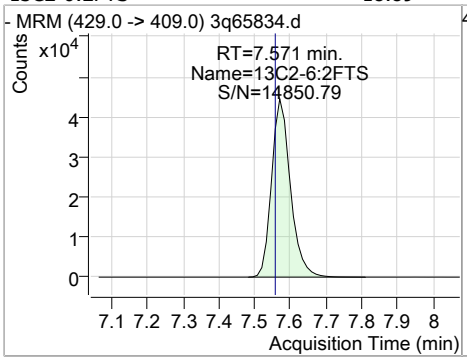


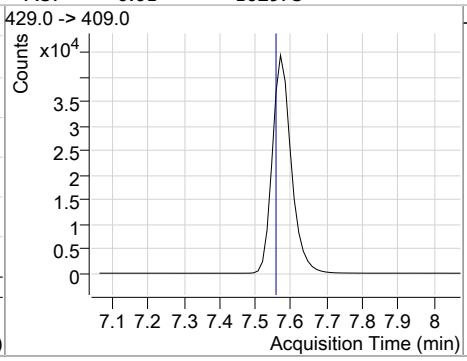


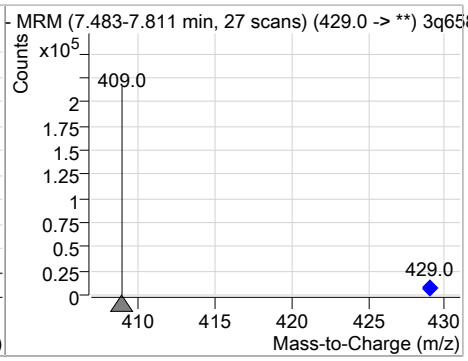


Perfluorinated Compounds by LC/MS/MS

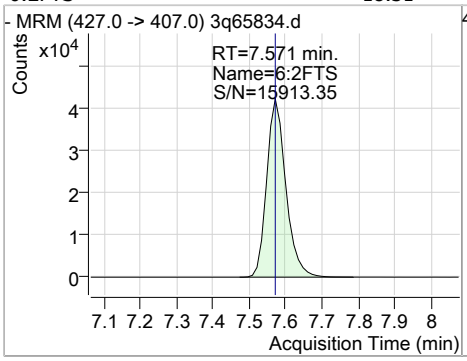
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.89	7.57	0.01	162975				

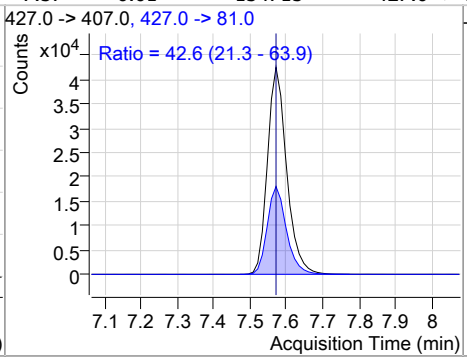


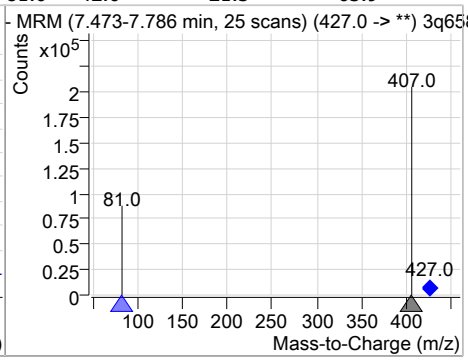




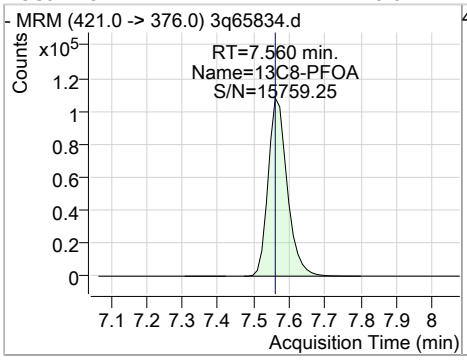
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	18.31	7.57	0.01	154715	427.0 -> 81.0	42.6	21.3	63.9

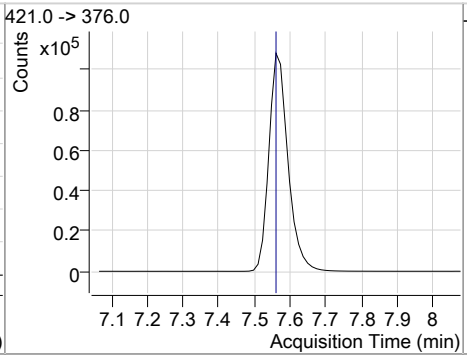


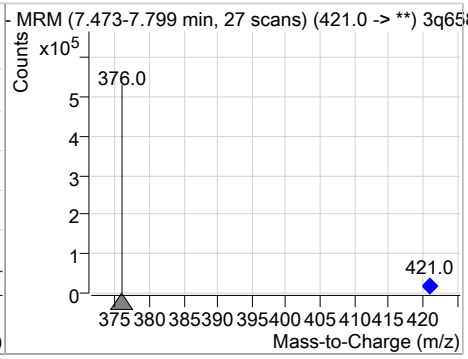




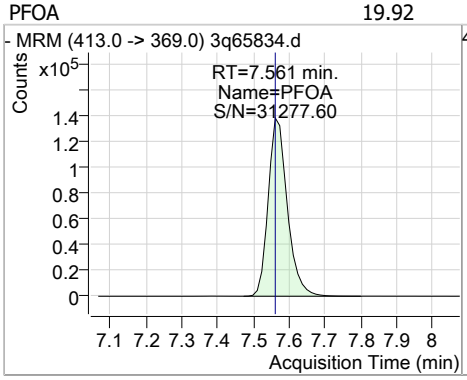
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.81	7.56	0.00	400112				

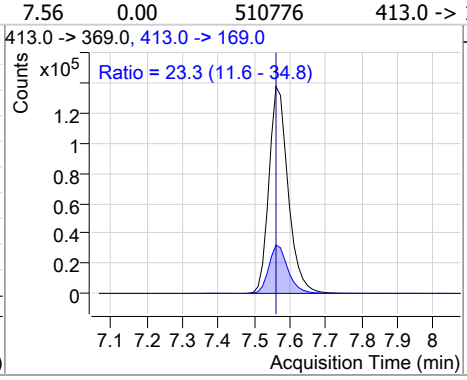


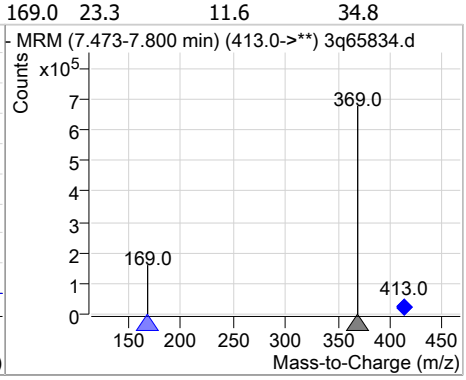




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.92	7.56	0.00	510776	413.0 -> 169.0	23.3	11.6	34.8

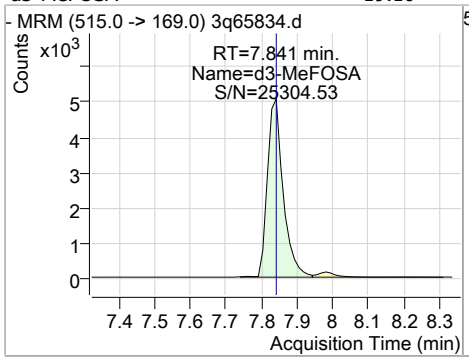


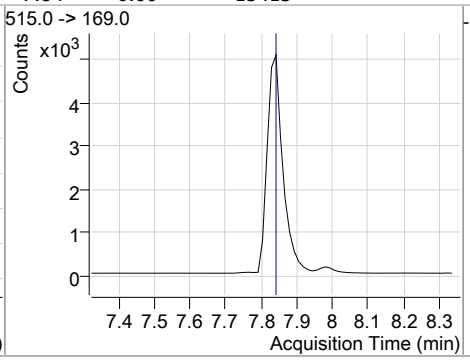


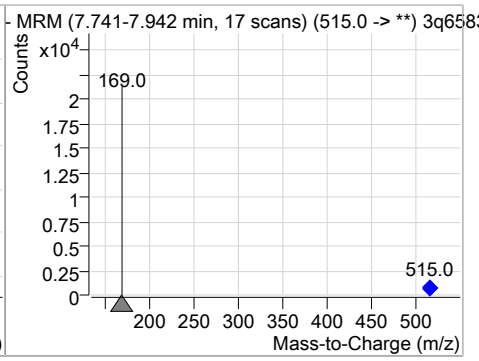


Perfluorinated Compounds by LC/MS/MS

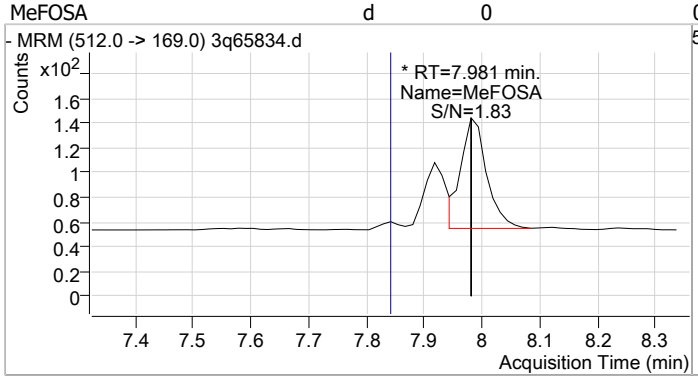
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.10	7.84	0.00	15413				

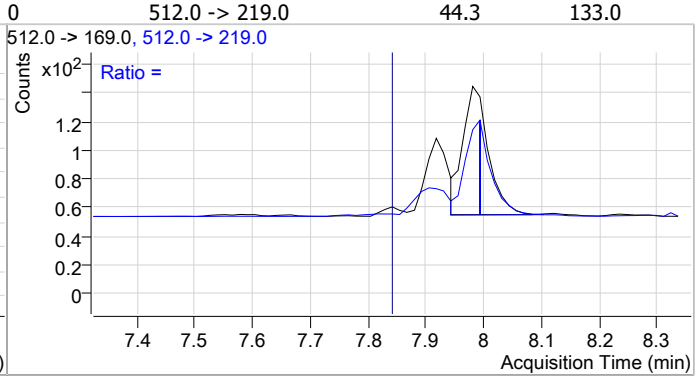




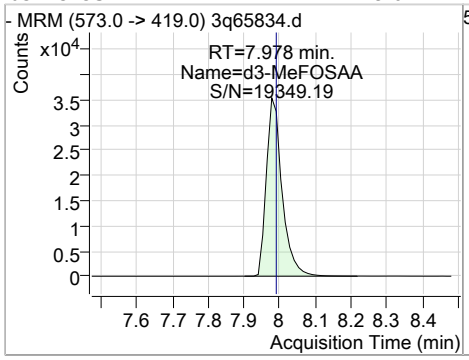


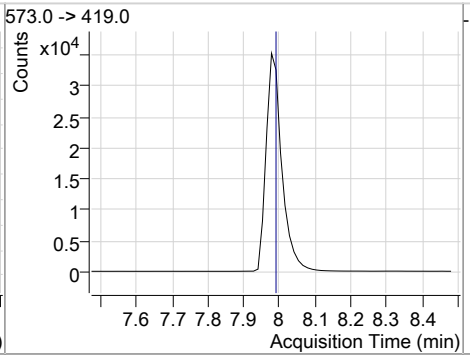
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	d	0		0	512.0 -> 219.0		44.3	133.0

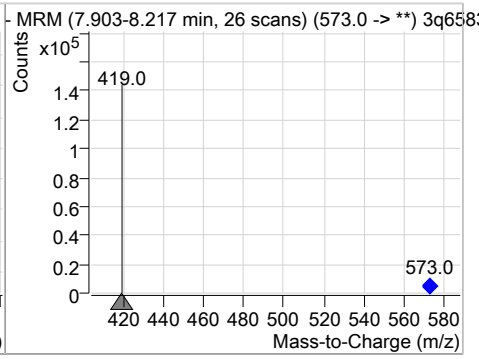




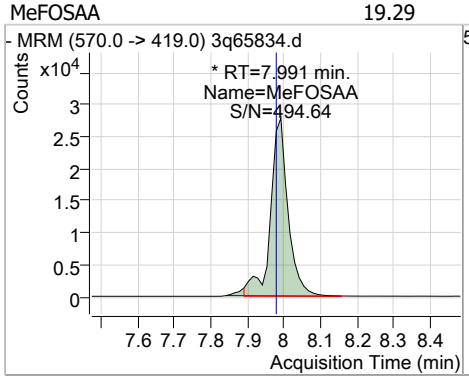
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.02	7.98	-0.01	107688				

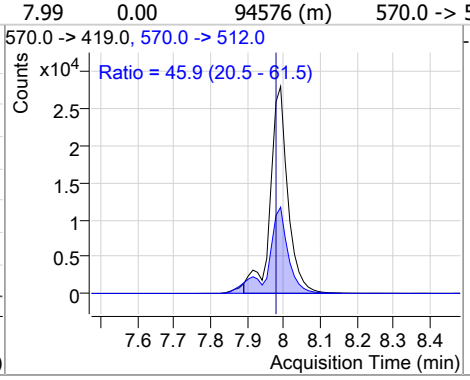


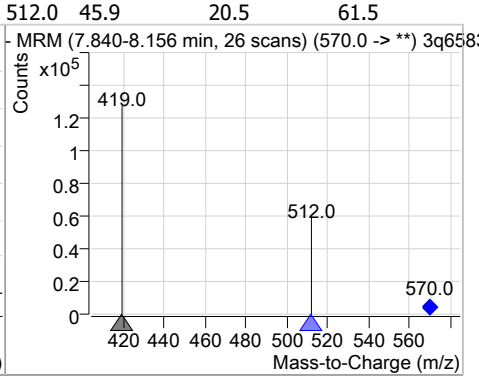




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.29	7.99	0.00	94576 (m)	570.0 -> 512.0	45.9	20.5	61.5

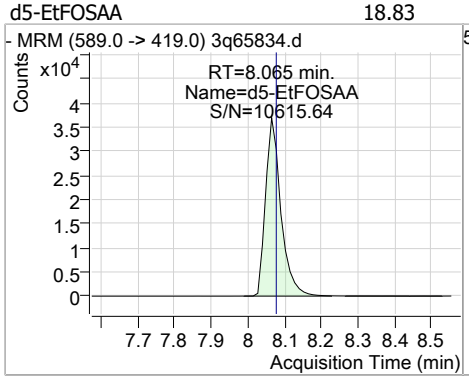


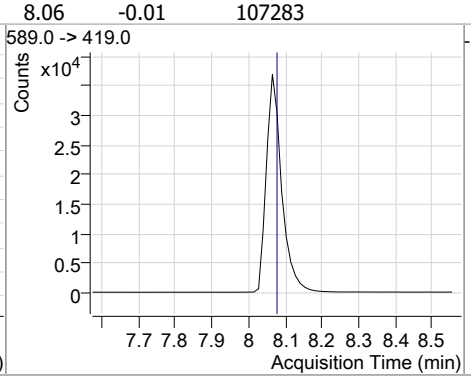


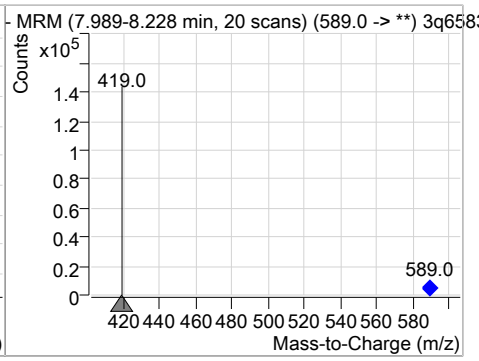


Perfluorinated Compounds by LC/MS/MS

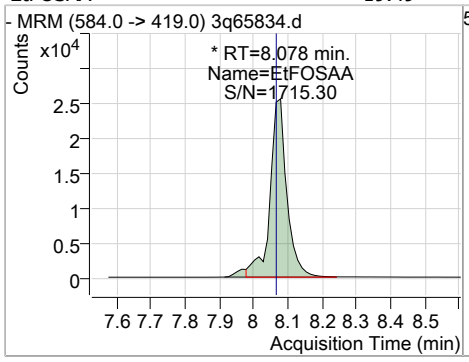
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.83	8.06	-0.01	107283				

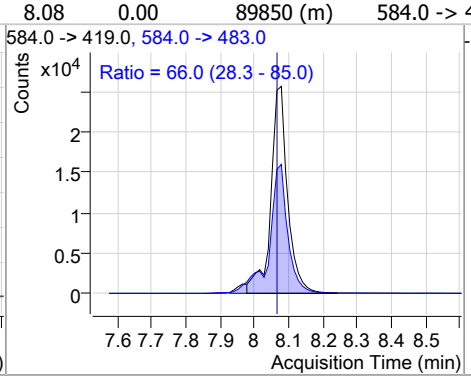


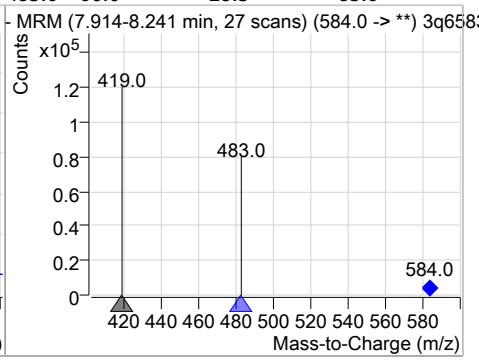




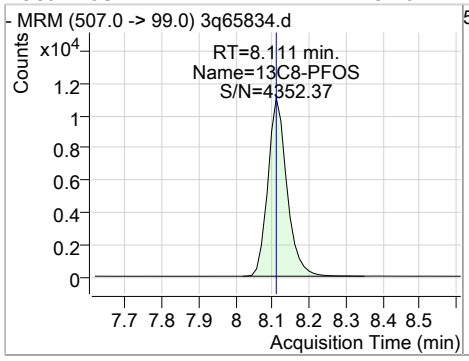
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.49	8.08	0.00	89850 (m)	584.0 -> 483.0	66.0	28.3	85.0

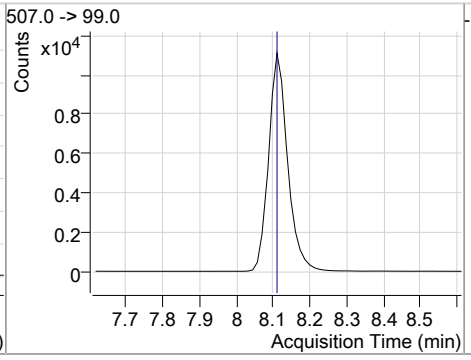


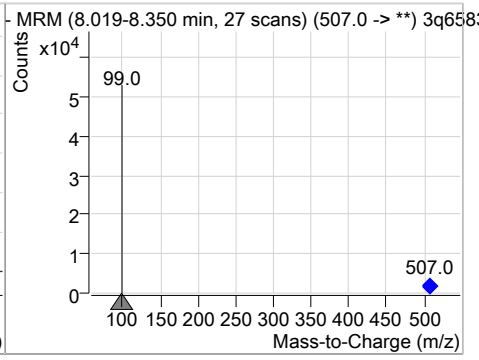




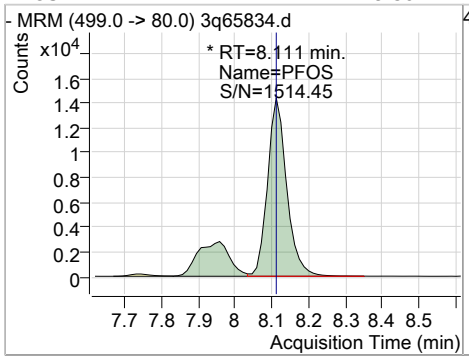
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.16	8.11	0.00	39643				

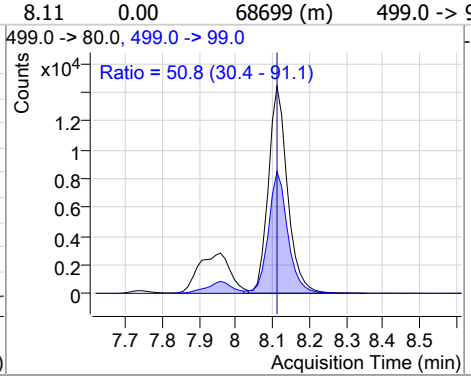


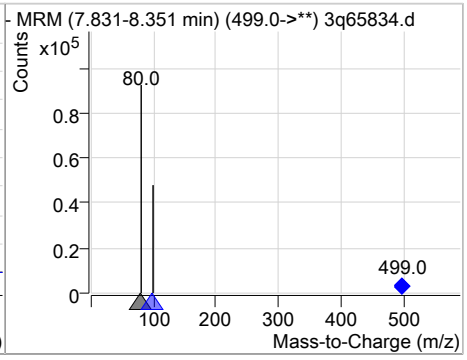




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.38	8.11	0.00	68699 (m)	499.0 -> 99.0	50.8	30.4	91.1

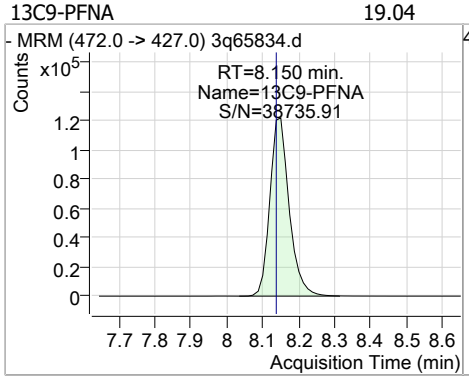


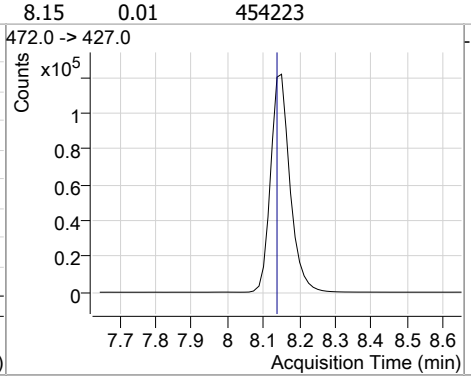


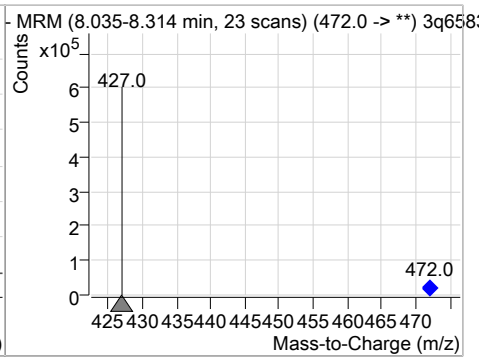


Perfluorinated Compounds by LC/MS/MS

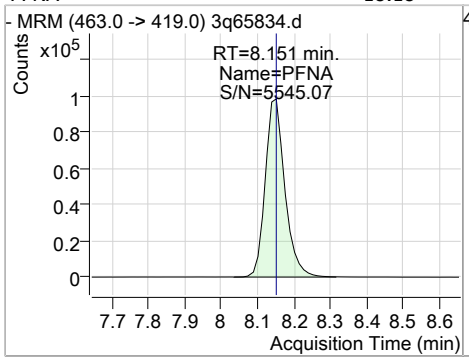
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.04	8.15	0.01	454223				

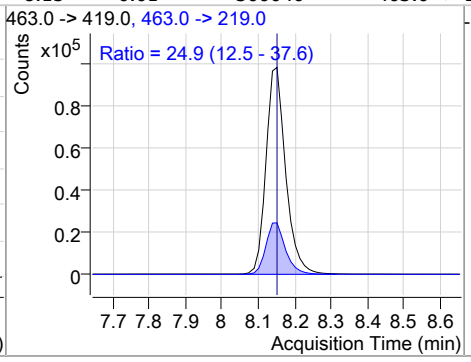


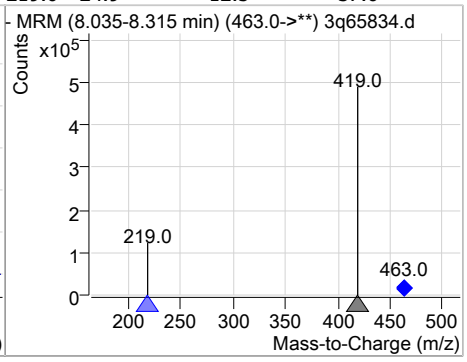




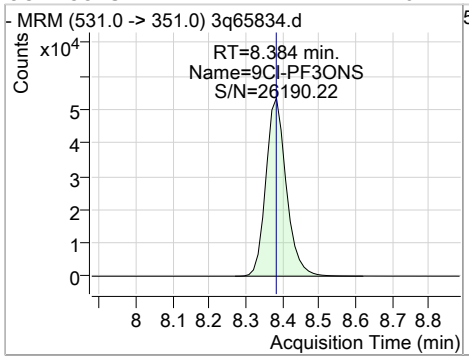
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.18	8.15	0.01	366040	463.0 -> 219.0	24.9	12.5	37.6

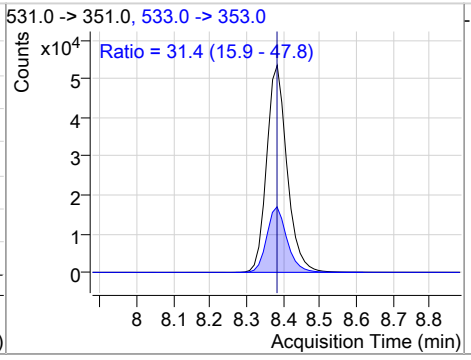


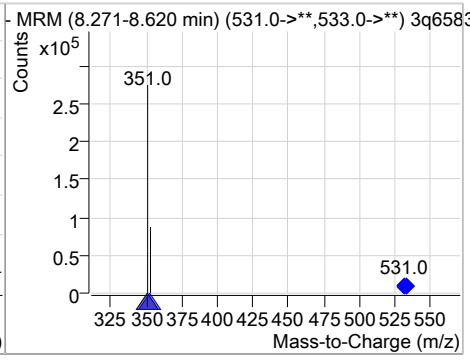




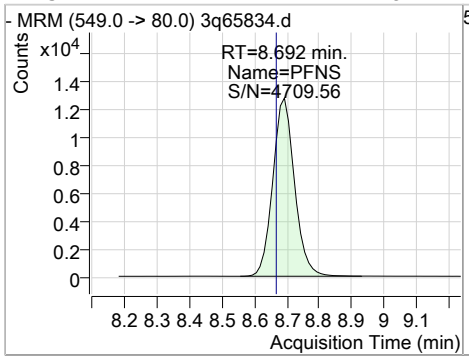
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.78	8.38	0.01	206145	533.0 -> 353.0	31.4	15.9	47.8

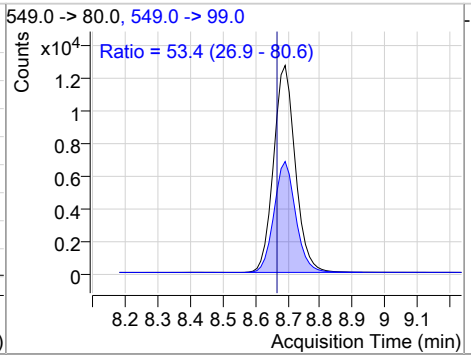


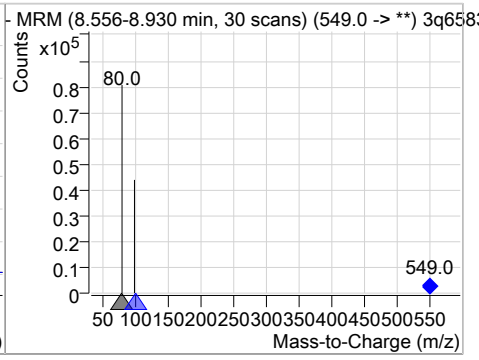




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	17.92	8.69	0.03	59228	549.0 -> 99.0	53.4	26.9	80.6

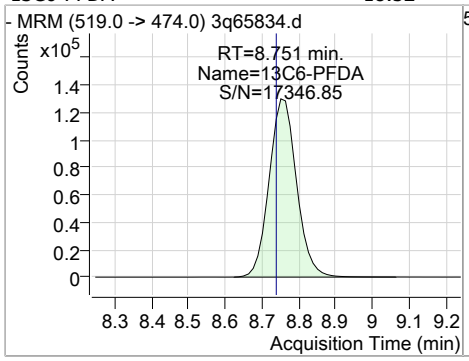


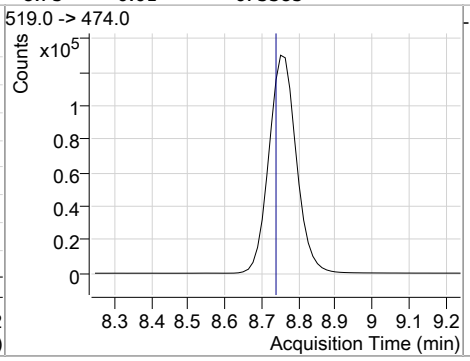


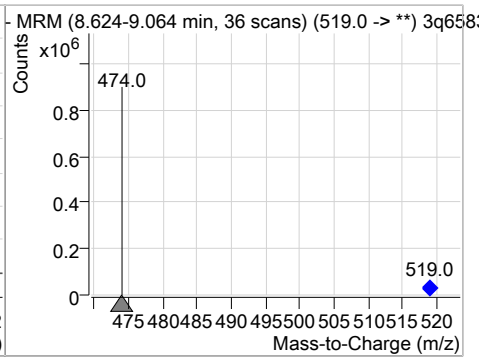


Perfluorinated Compounds by LC/MS/MS

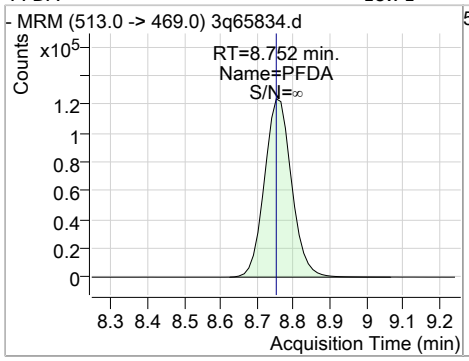
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.52	8.75	0.01	673385				

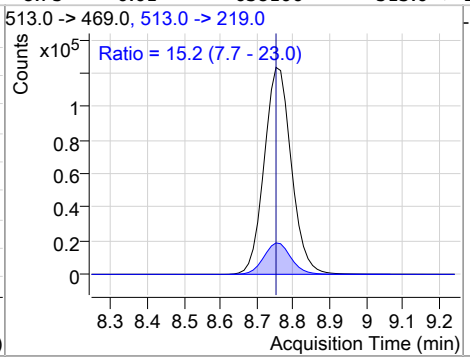


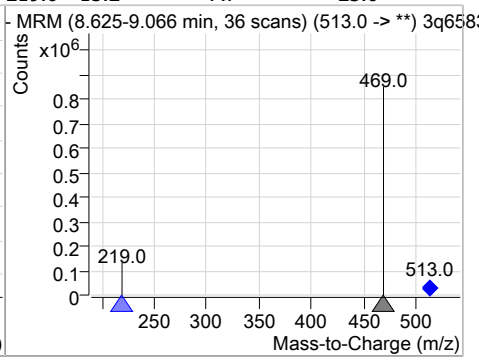




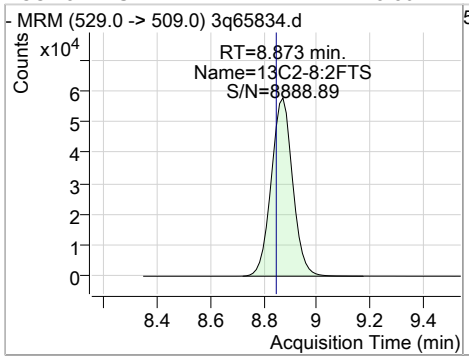
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.71	8.75	0.01	638106	513.0 -> 219.0	15.2	7.7	23.0

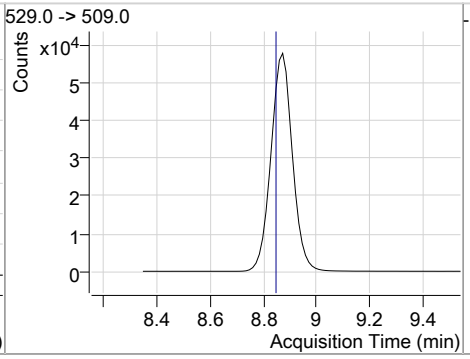


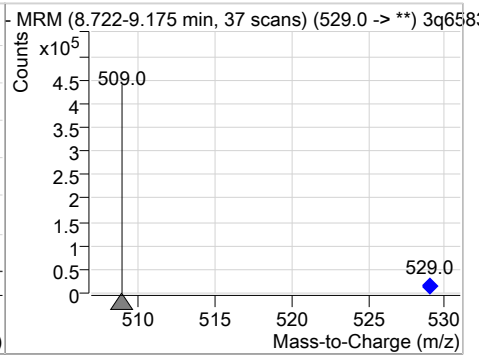




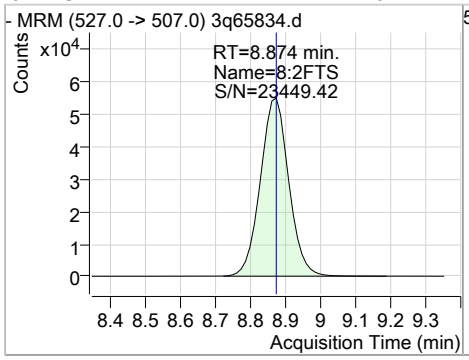
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.86	8.87	0.03	322916				

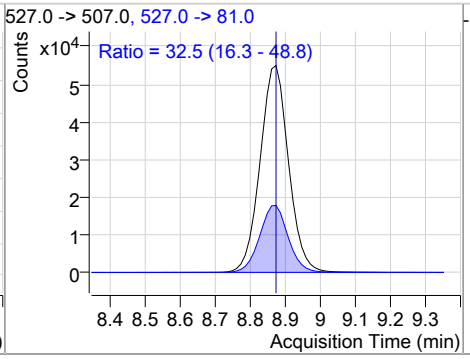


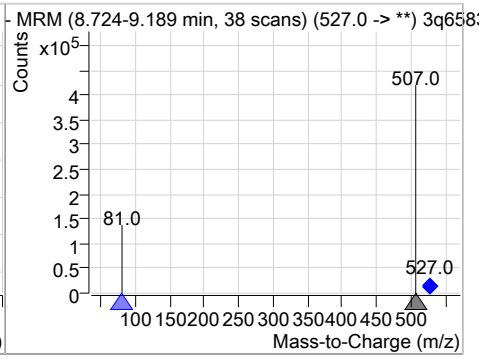




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.72	8.87	0.03	309424	527.0 -> 81.0	32.5	16.3	48.8

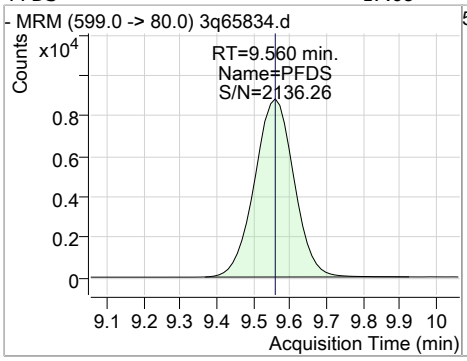


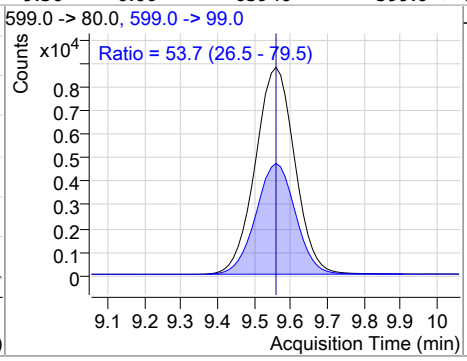


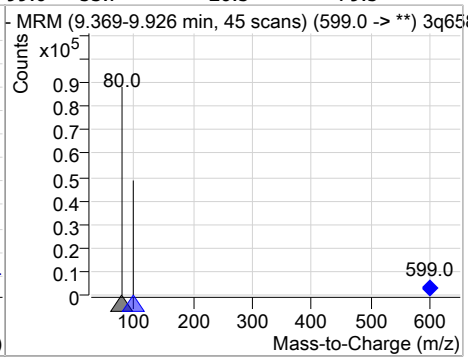


Perfluorinated Compounds by LC/MS/MS

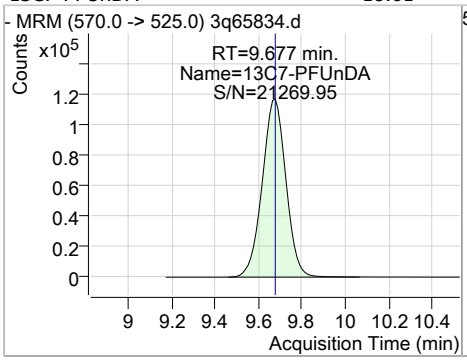
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.68	9.56	0.00	65946	599.0 -> 99.0	53.7	26.5	79.5

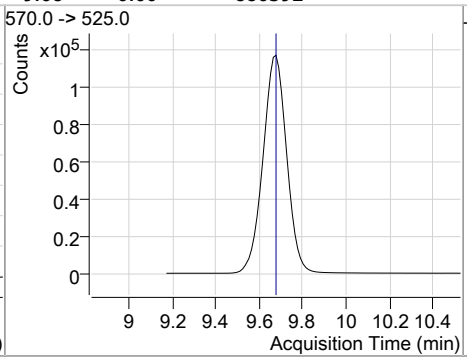


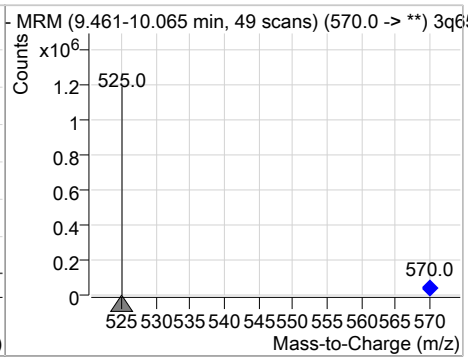




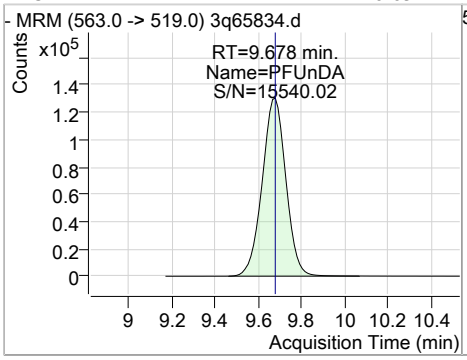
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.61	9.68	0.00	886392				

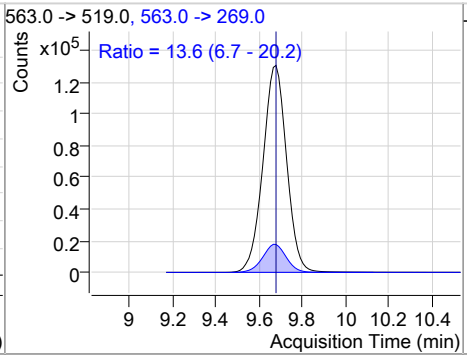


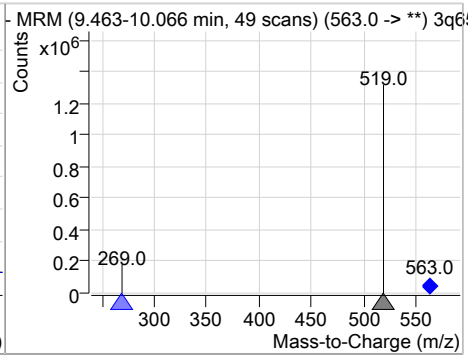




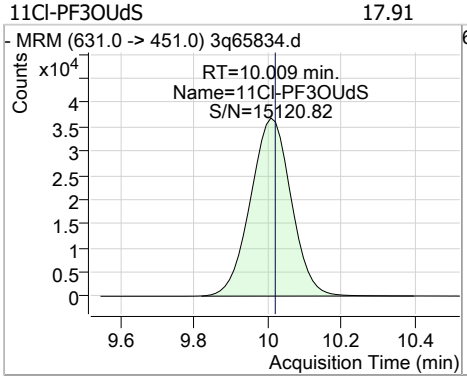
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.09	9.68	0.00	987793	563.0 -> 269.0	13.6	6.7	20.2

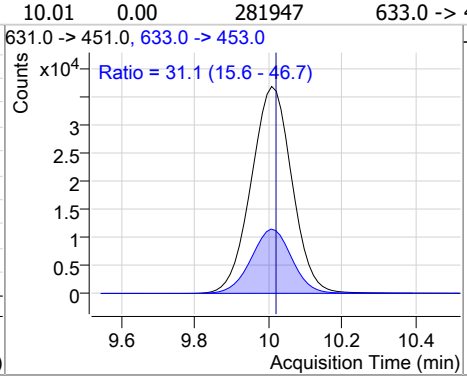


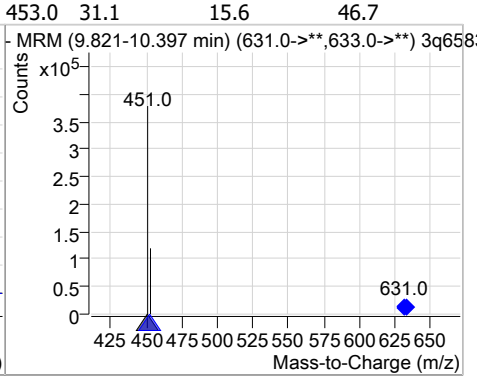




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.91	10.01	0.00	281947	633.0 -> 453.0	31.1	15.6	46.7

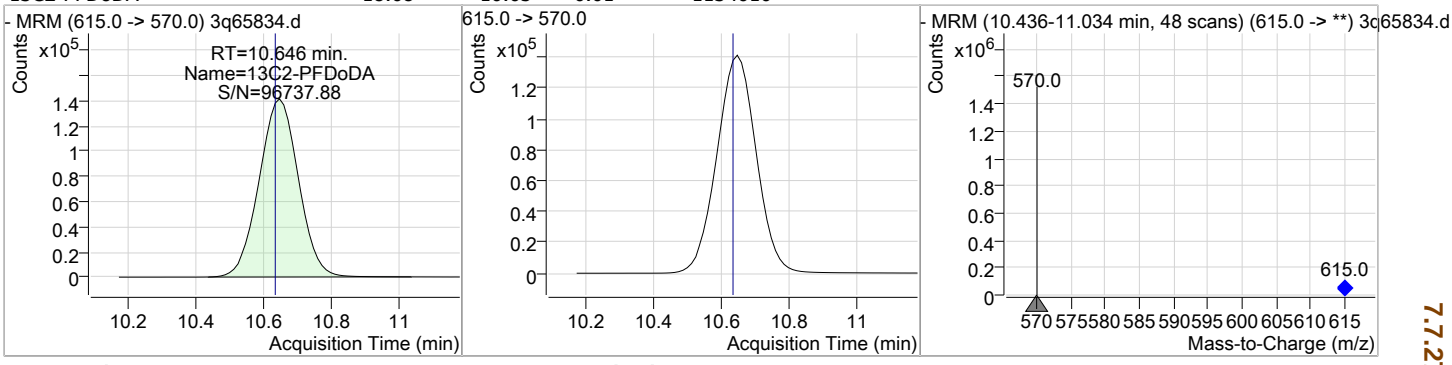




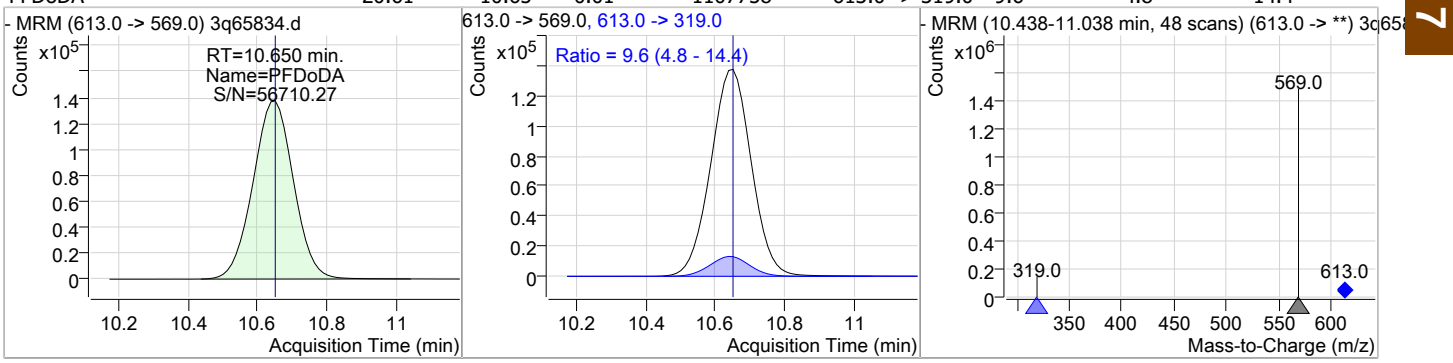


Perfluorinated Compounds by LC/MS/MS

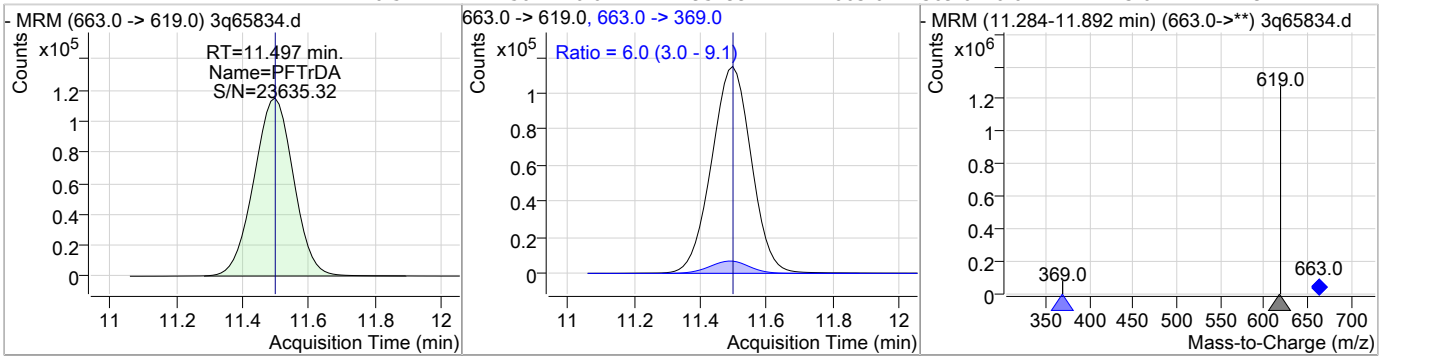
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.68	10.65	0.01	1134610				



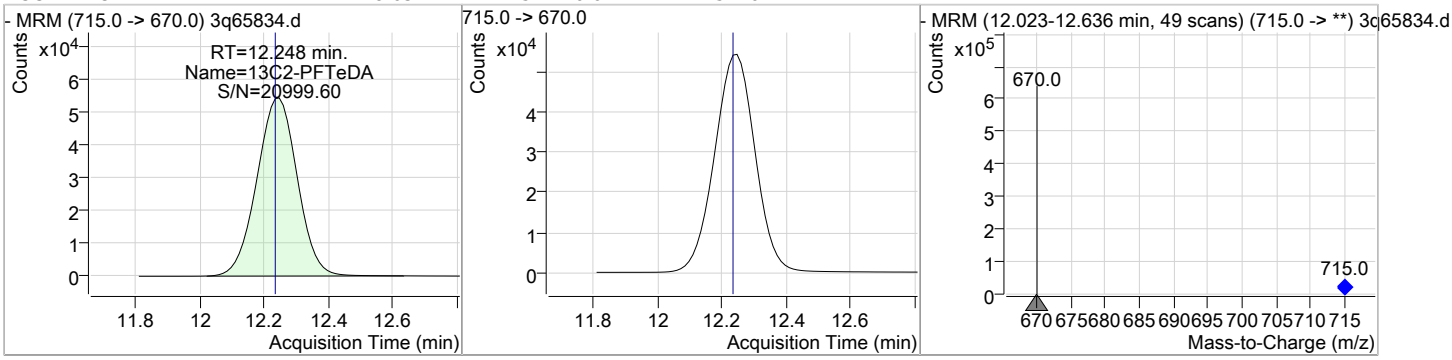
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.61	10.65	0.01	1107758	613.0 -> 319.0	9.6	4.8	14.4



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.54	11.50	0.01	952992	663.0 -> 369.0	6.0	3.0	9.1

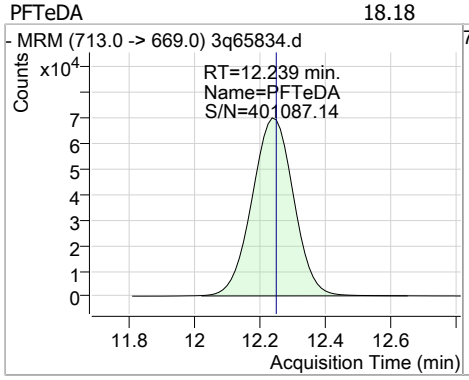


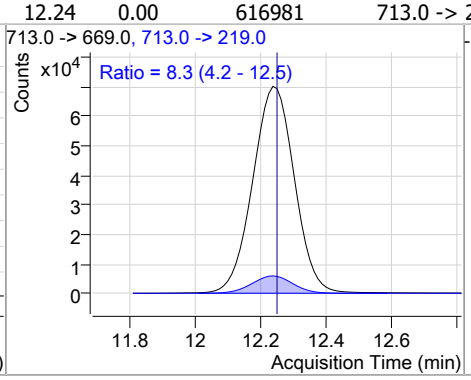
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.63	12.25	0.01	475716				

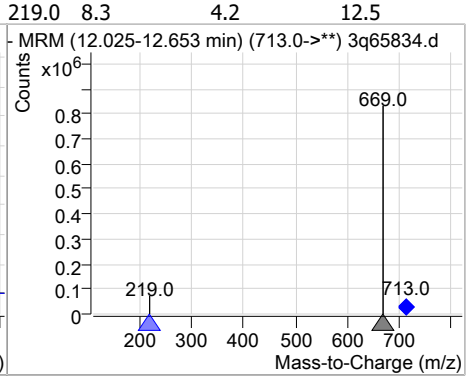


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.18	12.24	0.00	616981	713.0 -> 219.0	8.3	4.2	12.5







7.7.27

7

Manual Integration Approval Summary

Sample Number: S3Q900-ICV900
Lab FileID: 3Q65834.D
Injection Time: 09/15/22 21:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		7.99	Split peak
EtFOSAA	2991-50-6		8.08	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65835.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 9:24:55 PM
Sample Name : icv900-20
Vial : P1-B2
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

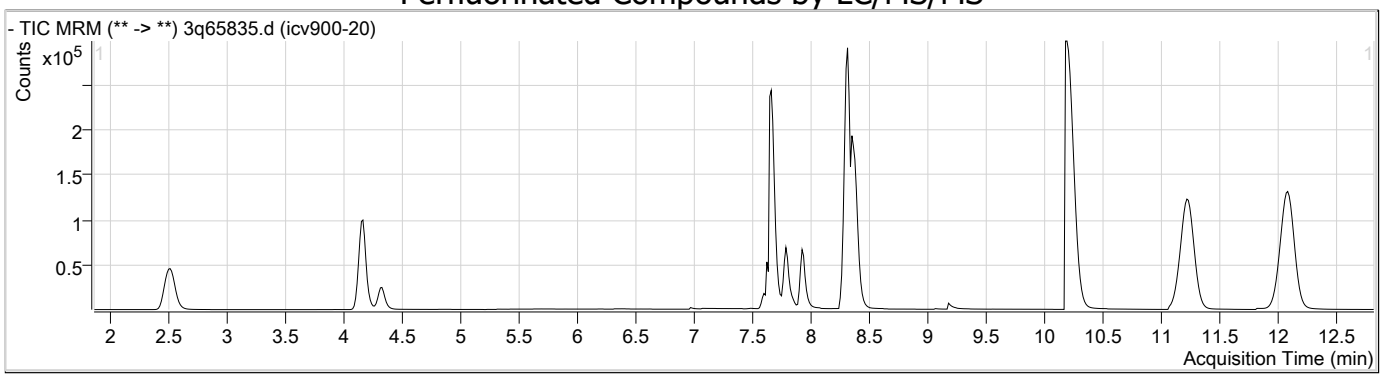
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Internal Standards							
M4-PFBA	2.502	217.0 -> 172.0	0	20.00	µg/L	m	0.138
M5-PFPeA	4.153	268.0 -> 223.0	0	20.00	µg/L	m	-0.258
M5-PFHxA	-	318.0 -> 273.0	-	N.D.			
M4-PFHpA	6.439	367.0 -> 322.0	0	20.00	µg/L	m	-0.354
M8-PFOA	7.472	421.0 -> 376.0	0	20.00	µg/L	m	-0.088
M9-PFNA	8.035	472.0 -> 427.0	0	20.00	µg/L	m	-0.103
M6-PFDA	8.309	519.0 -> 474.0	0	20.00	µg/L	m	-0.430
M7-PFUnDA	9.689	570.0 -> 525.0	0	20.00	µg/L	m	0.013
M2-PFDoDA	-	615.0 -> 570.0	-	N.D.			
M2-PFTeDA	12.073	715.0 -> 670.0	0	20.00	µg/L	m	-0.163
M8-FOSA	7.211	506.0 -> 78.0	0	20.00	µg/L	m	-0.280
M3-PFBS	4.316	302.0 -> 99.0	0	20.00	µg/L	m	-0.376
M3-PFHxS	-	402.0 -> 99.0	-	N.D.			
M8-PFOS	-	507.0 -> 99.0	-	N.D.			
M2-4:2FTS	5.896	329.0 -> 309.0	0	20.00	µg/L	m	0.188
M2-6:2FTS	7.483	429.0 -> 409.0	0	20.00	µg/L	m	-0.075
M2-8:2FTS	-	529.0 -> 509.0	-	N.D.			
M3-MeFOSAA	7.777	573.0 -> 419.0	0	20.00	µg/L	m	-0.214
M3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
M3-MeFOSA	7.591	515.0 -> 169.0	17426	20.00	µg/L	m	-0.251
M5-EtFOSAA	7.914	589.0 -> 419.0	0	20.00	µg/L	m	-0.163
System Monitoring Compounds							
13C2-4:2FTS	5.896	329.0 -> 309.0	0	0.00	µg/L	m	0.188
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C2-6:2FTS	7.483	429.0 -> 409.0	0	0.00	µg/L	m	-0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C2-8:2FTS	-	529.0 -> 509.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C2-PFDoDA	-	615.0 -> 570.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C2-PFTeDA	12.073	715.0 -> 670.0	0	0.00	µg/L	m	-0.163
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-PFBS	4.316	302.0 -> 99.0	0	0.00	µg/L	m	-0.376
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-PFHxS	-	402.0 -> 99.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C4-PFBA	2.502	217.0 -> 172.0	0	0.00	µg/L	m	0.138
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C4-PFHpA	6.439	367.0 -> 322.0	0	0.00	µg/L	m	-0.354
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C5-PFHxA	-	318.0 -> 273.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C5-PFPeA	4.153	268.0 -> 223.0	0	0.00	µg/L	m	-0.258
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C6-PFDA	8.309	519.0 -> 474.0	0	0.00	µg/L	m	-0.430

Perfluorinated Compounds by LC/MS/MS

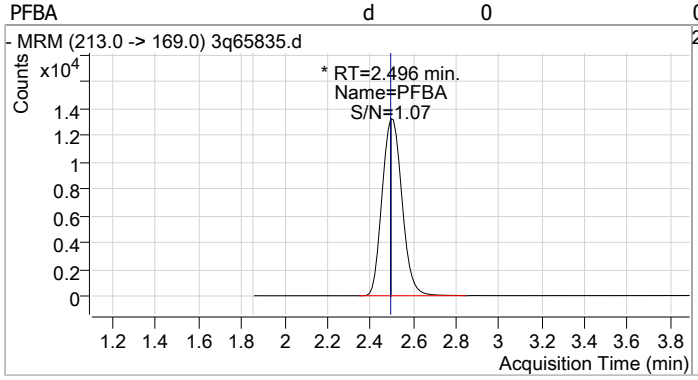
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C7-PFUnDA	9.689	570.0 -> 525.0	0	0.00	µg/L	m	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C8-FOSA	7.211	506.0 -> 78.0	0	0.00	µg/L	m	-0.280
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C8-PFOA	7.472	421.0 -> 376.0	0	0.00	µg/L	m	-0.088
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C8-PFOS	-	507.0 -> 99.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C9-PFNA	8.035	472.0 -> 427.0	0	0.00	µg/L	m	-0.103
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d3-MeFOSAA	7.777	573.0 -> 419.0	0	0.00	µg/L	m	-0.214
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
13C3-HFPO-DA	-	287.0 -> 169.0	-	N.D.			
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
d3-MeFOSA	7.591	515.0 -> 169.0	17426	21.60	µg/L	m	-0.251
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%			
d5-EtFOSAA	7.914	589.0 -> 419.0	0	0.00	µg/L	m	-0.163
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = NA%			
Target Compounds							QValue
4:2FTS	-	327.0 -> 307.0	-	N.D.			
6:2FTS	-	427.0 -> 407.0	-	N.D.			
8:2FTS	-	527.0 -> 507.0	-	N.D.			
EtFOSAA	7.927	584.0 -> 419.0	0	0.00	µg/L	m	1
FOSA	-	498.0 -> 78.0	-	N.D.			
MeFOSAA	7.777	570.0 -> 419.0	0	0.00	µg/L	m	1
PFBA	2.496	213.0 -> 169.0	0	0.00	µg/L	m	1
PFBS	4.306	299.0 -> 80.0	0	0.00	µg/L	m	1
PFDA	8.310	513.0 -> 469.0	0	0.00	µg/L	m	1
PFDoDA	-	613.0 -> 569.0	-	N.D.			
PFDS	-	599.0 -> 80.0	-	N.D.			
PFHpA	-	363.0 -> 319.0	-	N.D.			
PFHpS	-	449.0 -> 80.0	-	N.D.			
PFHxA	-	313.0 -> 269.0	-	N.D.			
PFHxS	-	399.0 -> 80.0	-	N.D.			
PFNA	-	463.0 -> 419.0	-	N.D.			
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	-	413.0 -> 369.0	-	N.D.			
PFOS	-	499.0 -> 80.0	-	N.D.			
PFPeA	4.147	263.0 -> 219.0	0	0.00	µg/L	m	1
PFPeS	-	349.0 -> 80.0	-	N.D.			
PFTeDA	12.077	713.0 -> 669.0	0	0.00	µg/L	m	1
PFTrDA	11.209	663.0 -> 619.0	0	0.00	µg/L	m	1
PFUnDA	-	563.0 -> 519.0	-	N.D.			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	7.591	512.0 -> 169.0	16978	17.93	µg/L	m	98
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

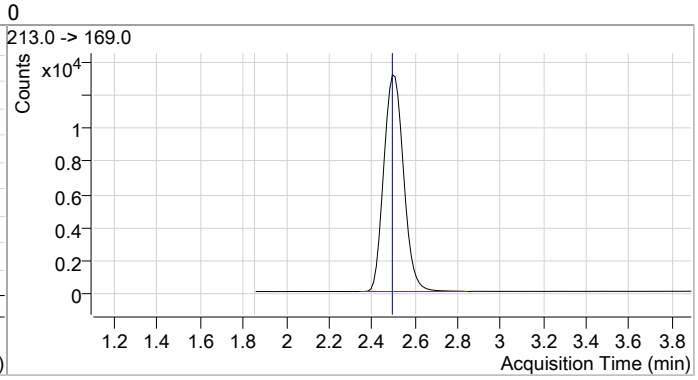
 # = Qualifier out of range, m = manually integrated, + = Area summed

Perfluorinated Compounds by LC/MS/MS

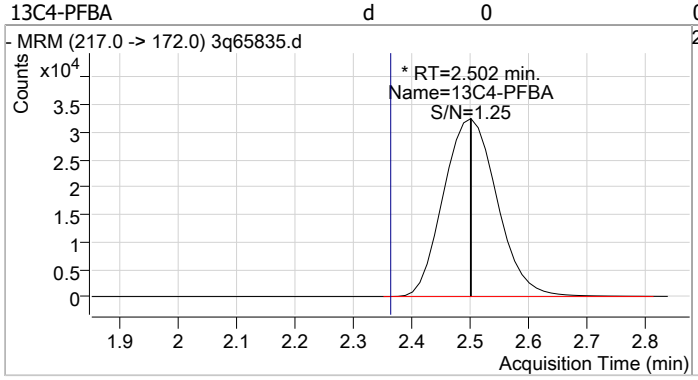


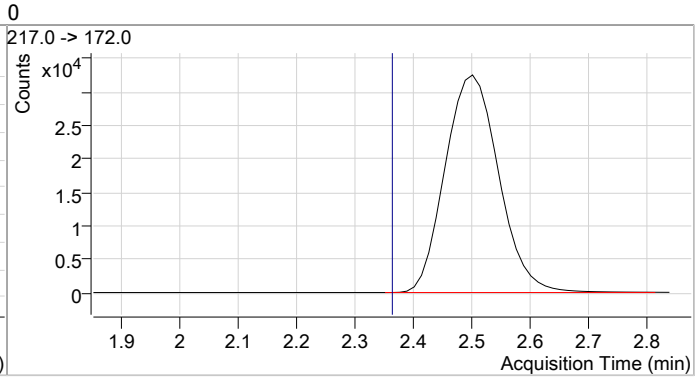
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	d	0		0				



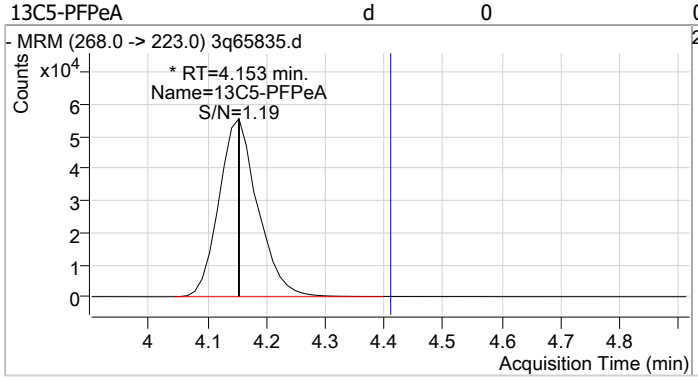


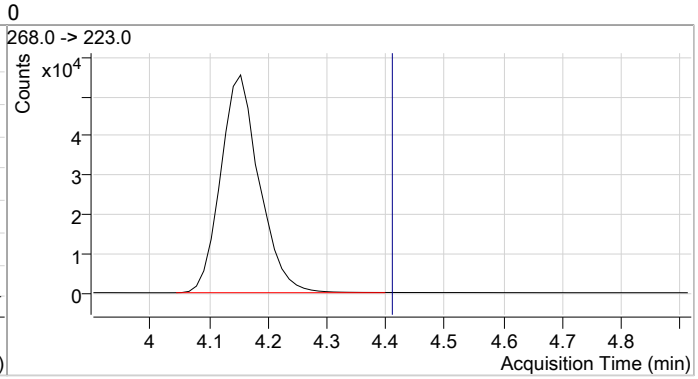
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	d	0		0				





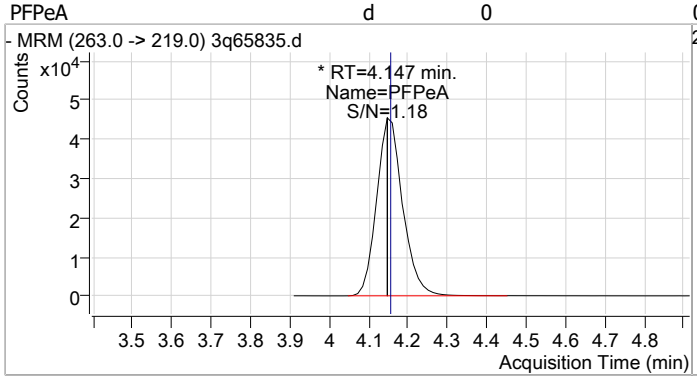
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	d	0		0				

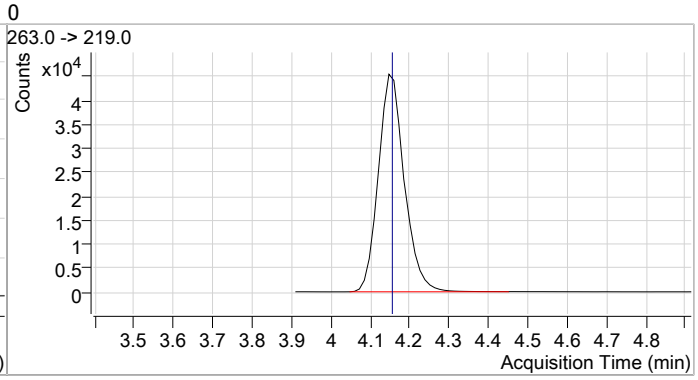




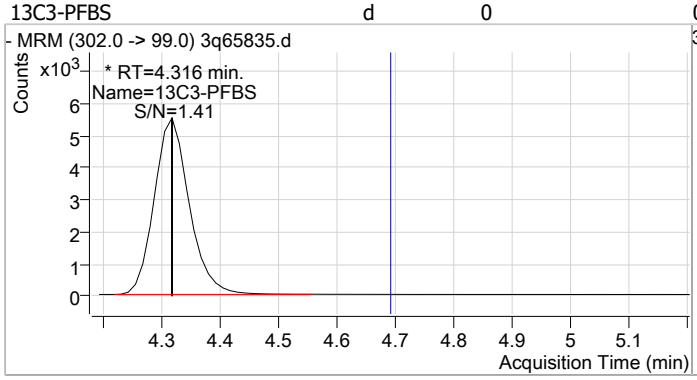
Perfluorinated Compounds by LC/MS/MS

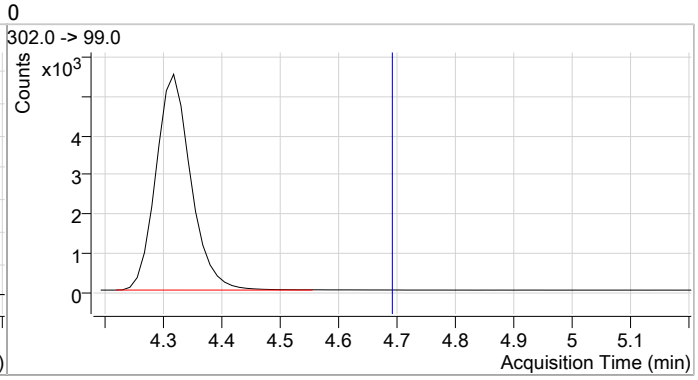
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	d	0		0				



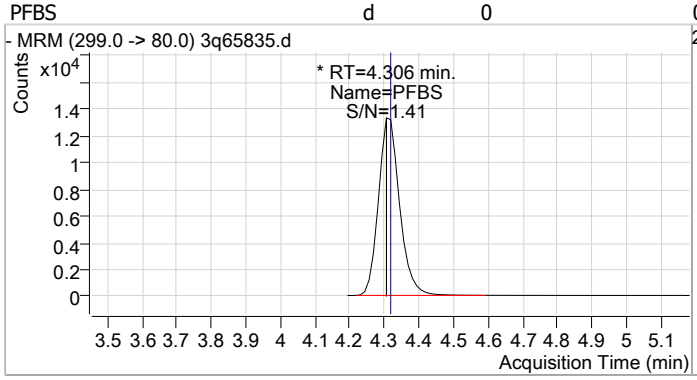


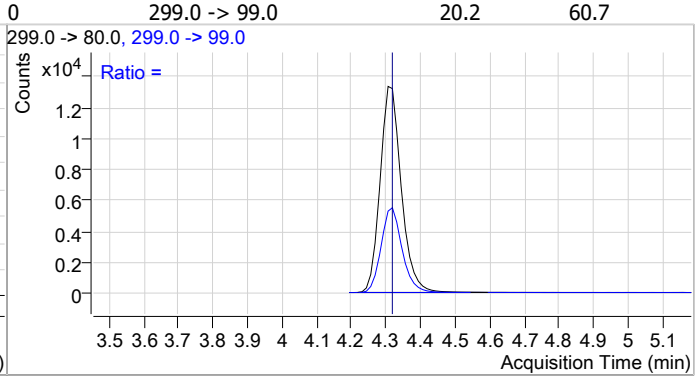
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	d	0		0				



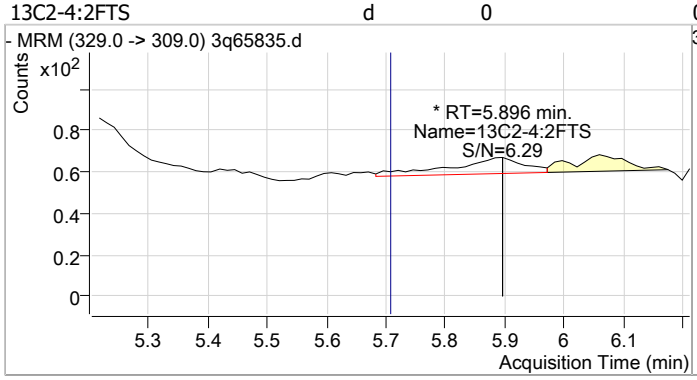


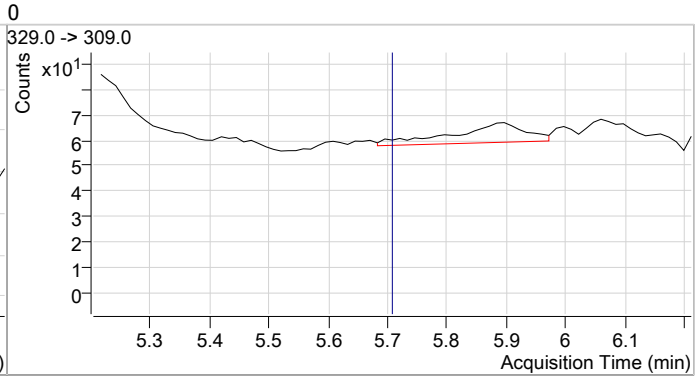
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	d	0		0	299.0 -> 99.0		20.2	60.7





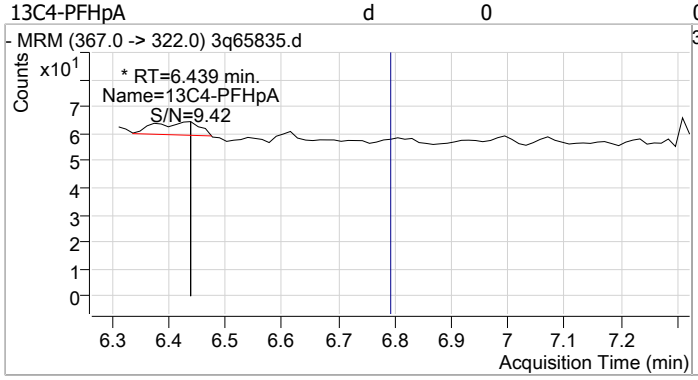
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	d	0		0				

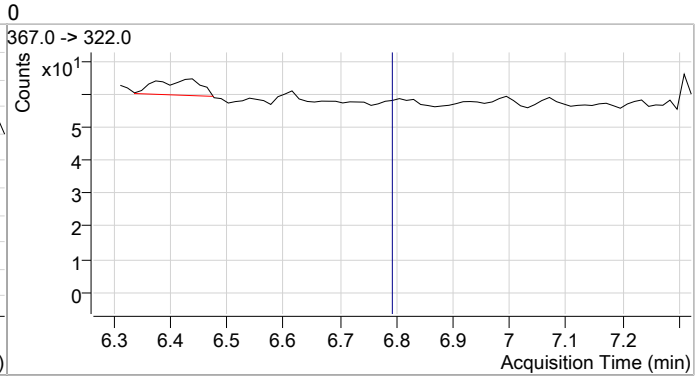




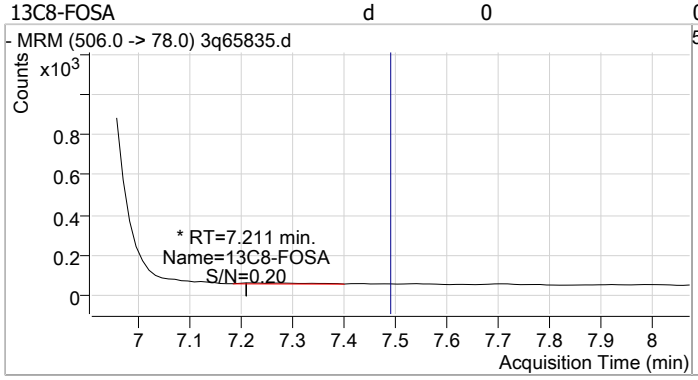
Perfluorinated Compounds by LC/MS/MS

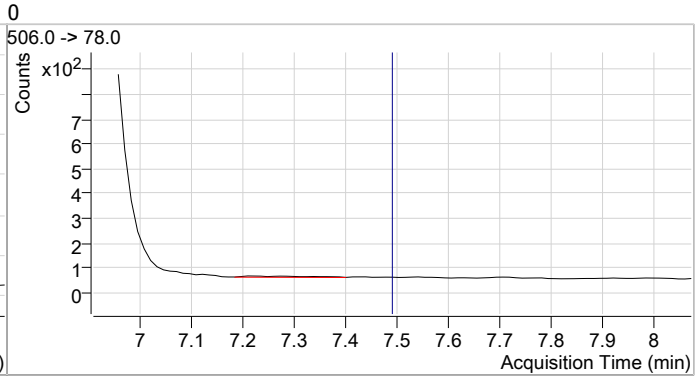
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	d	0		0				



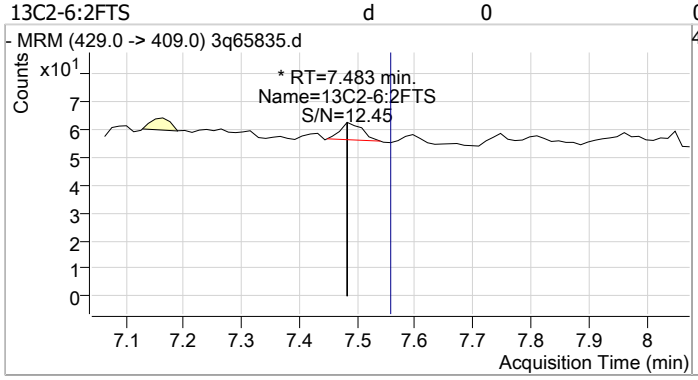


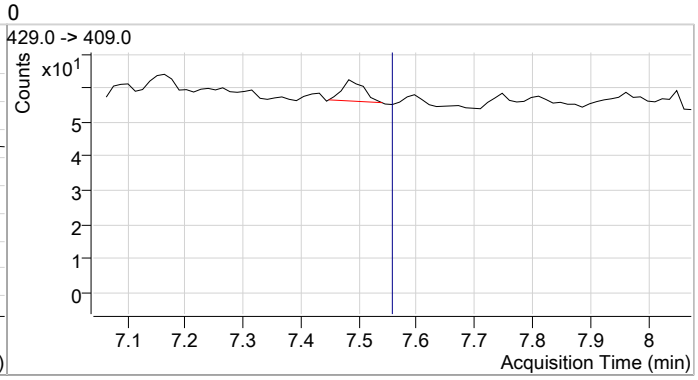
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	d	0		0				



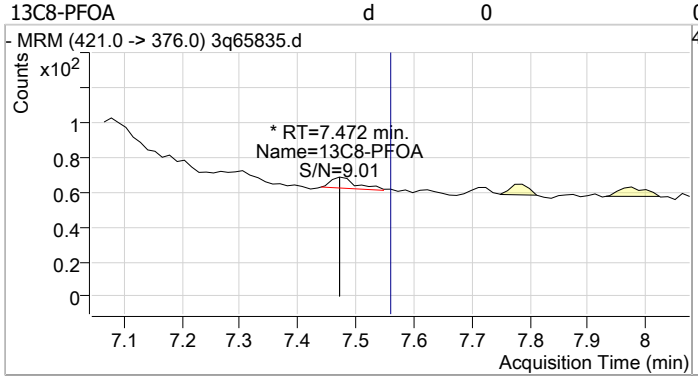


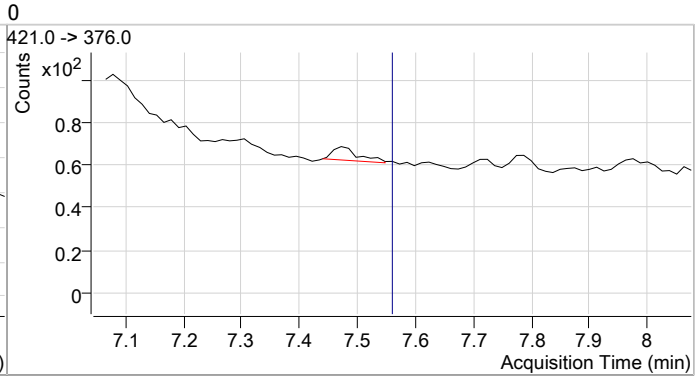
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	d	0		0				





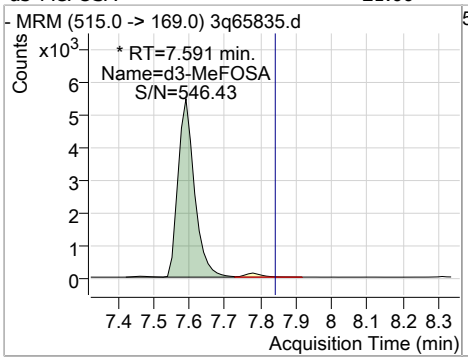
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	d	0		0				

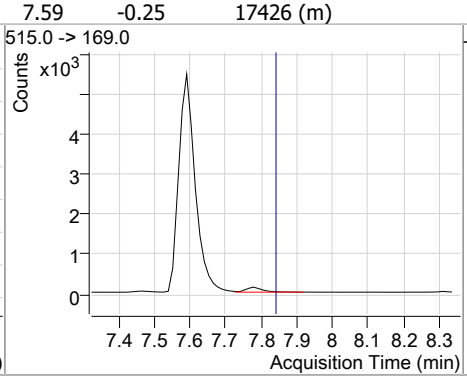


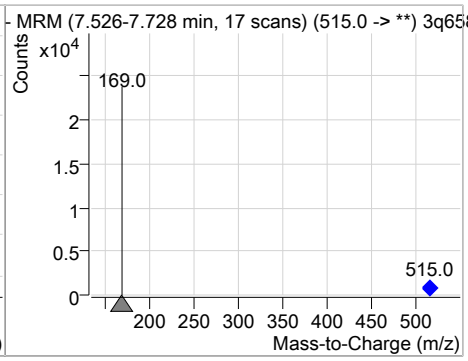


Perfluorinated Compounds by LC/MS/MS

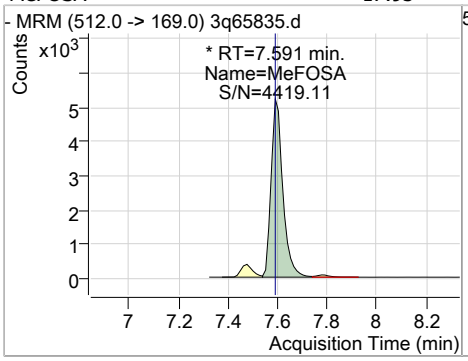
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.60	7.59	-0.25	17426 (m)				

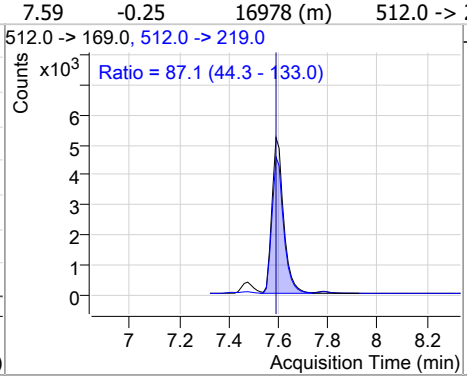


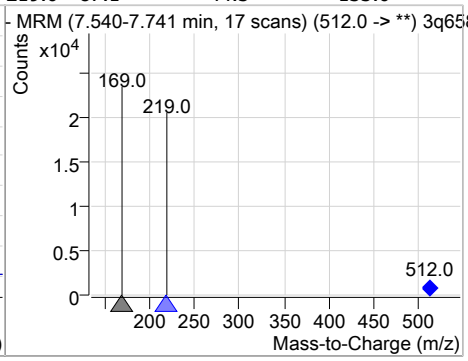




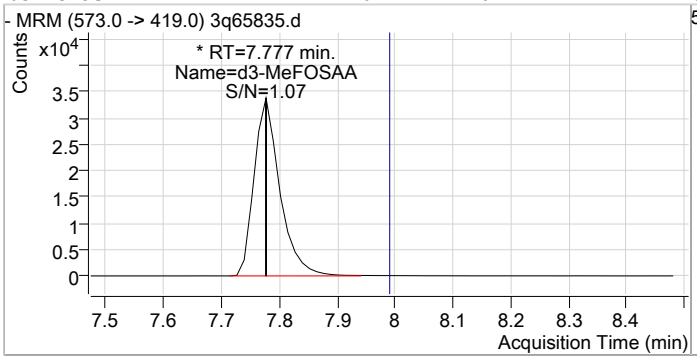
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.93	7.59	-0.25	16978 (m)	512.0 -> 219.0	87.1	44.3	133.0

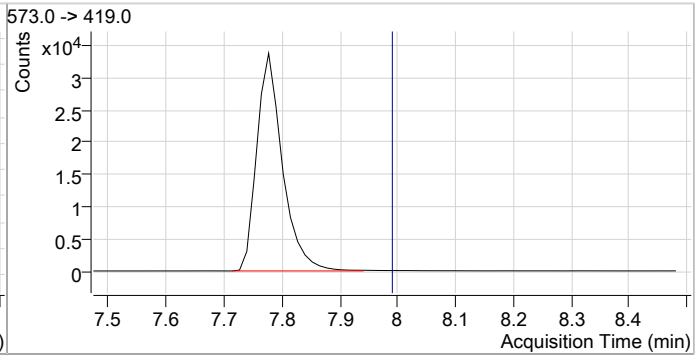




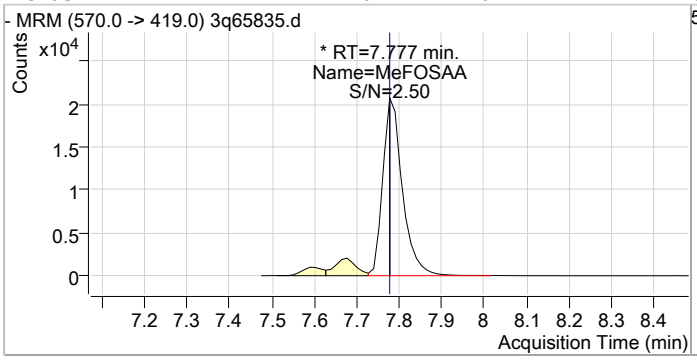


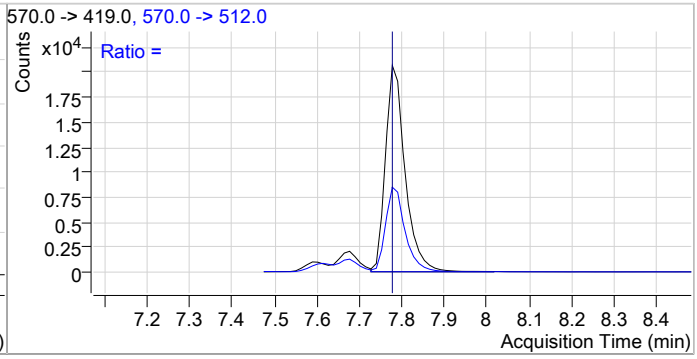
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	d	0		0				





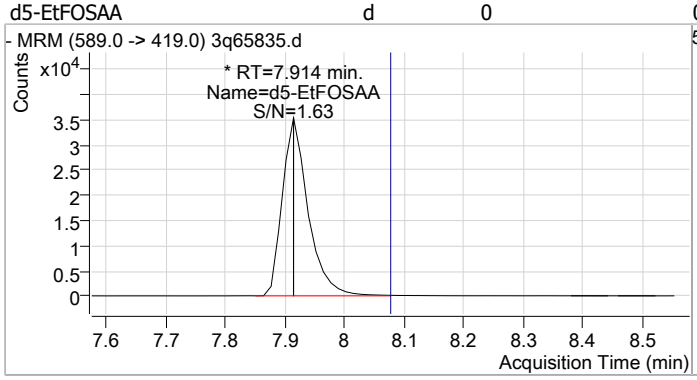
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	d	0		0	570.0 -> 512.0		20.5	61.5

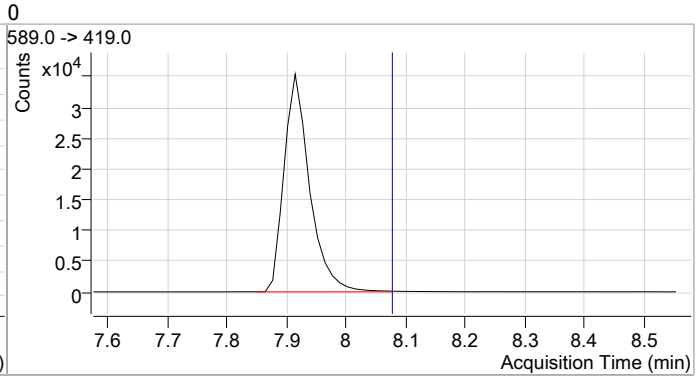




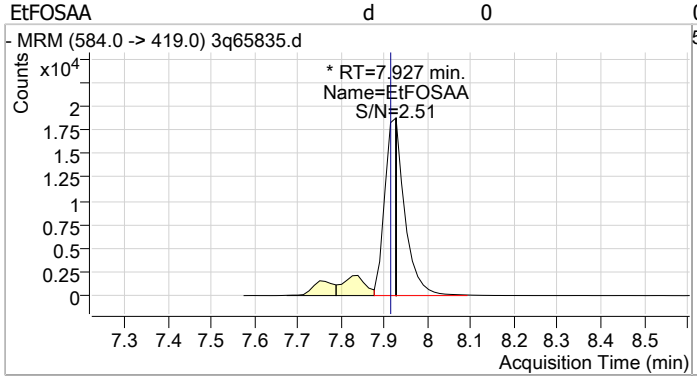
Perfluorinated Compounds by LC/MS/MS

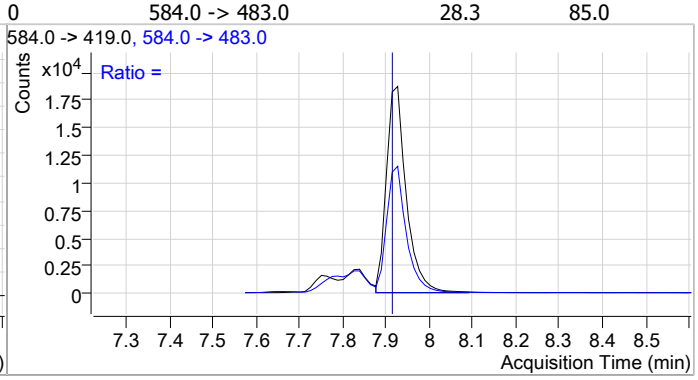
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	d	0		0				



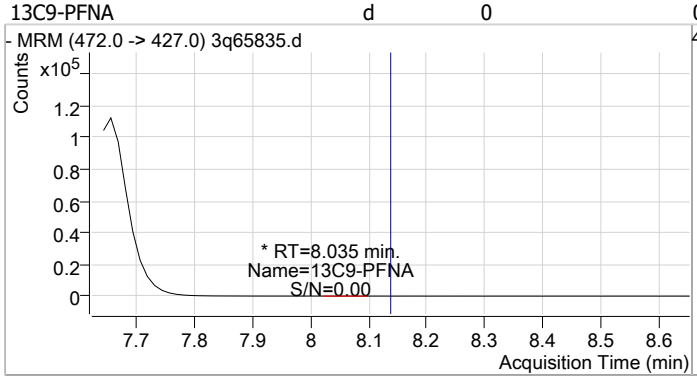


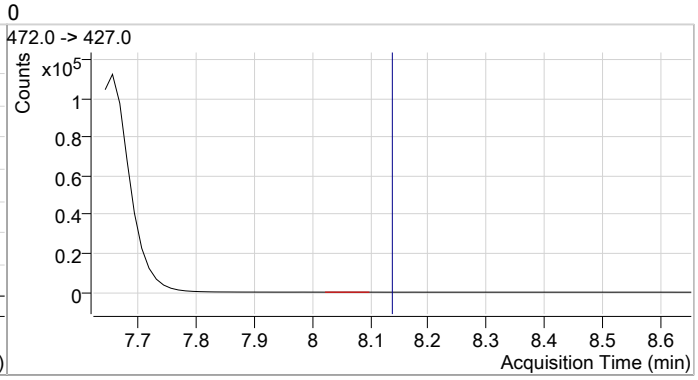
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	d	0		0	584.0 -> 483.0		28.3	85.0



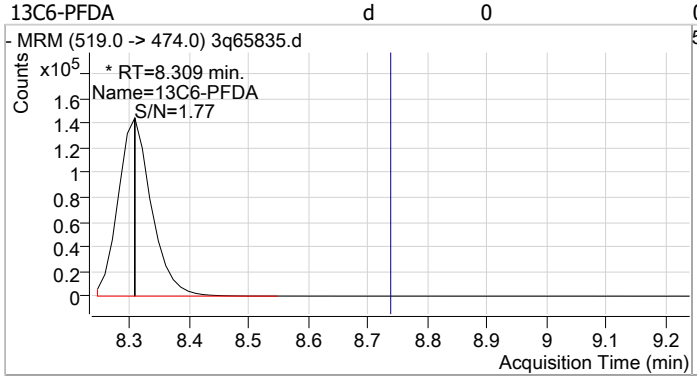


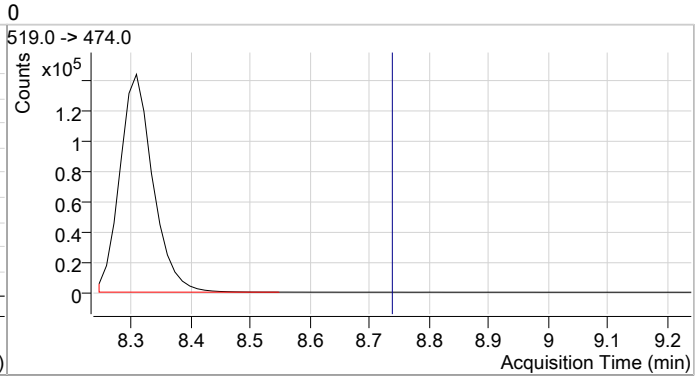
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	d	0		0				





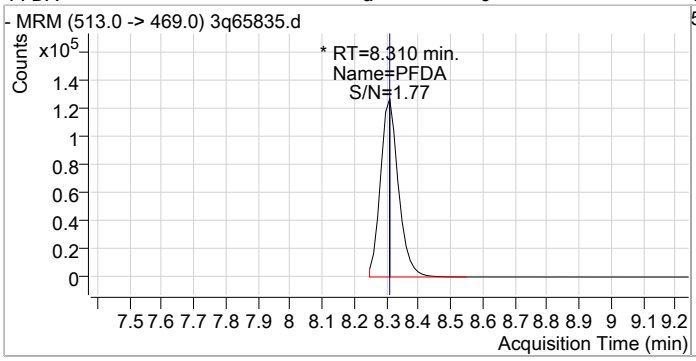
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	d	0		0				

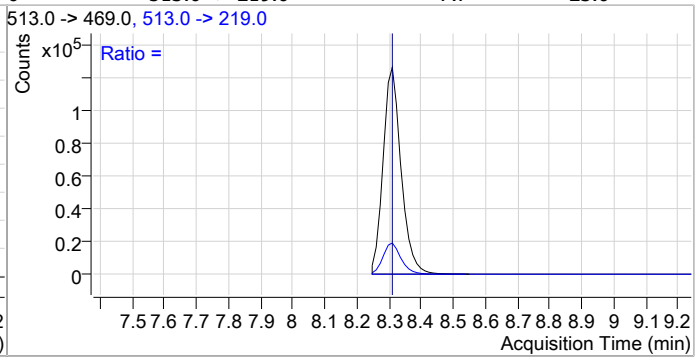




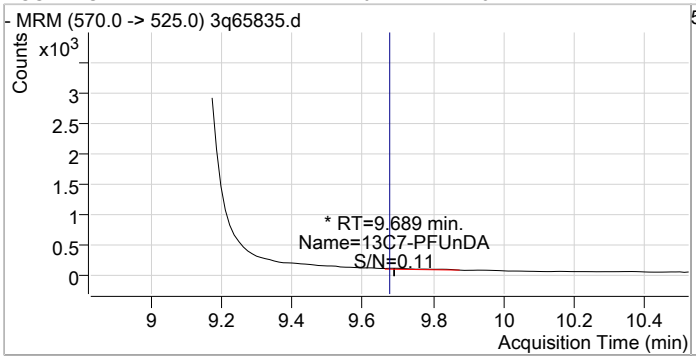
Perfluorinated Compounds by LC/MS/MS

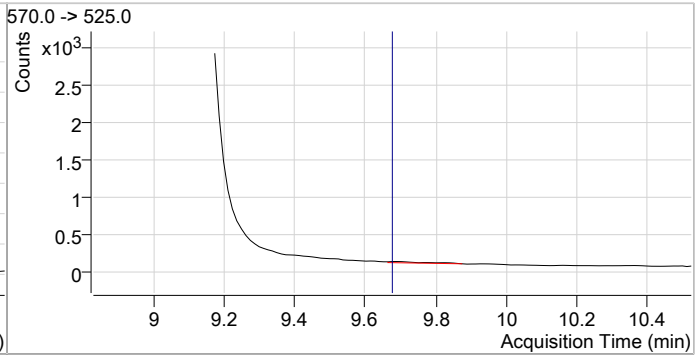
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	d	0		0	513.0 -> 219.0		7.7	23.0



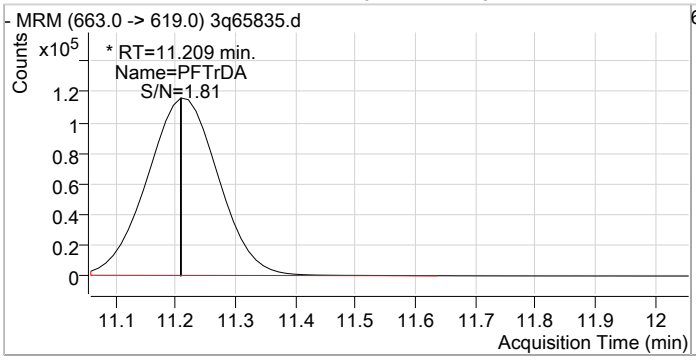


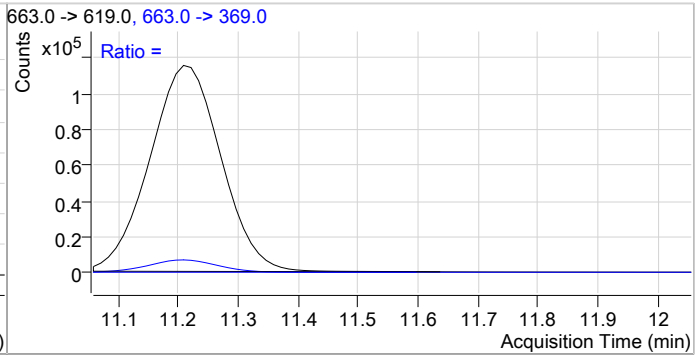
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	d	0		0				



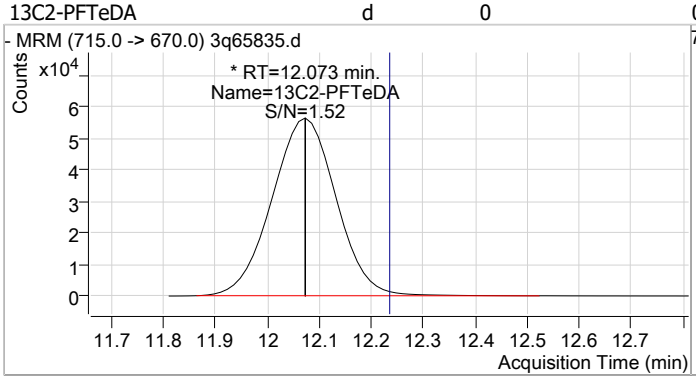


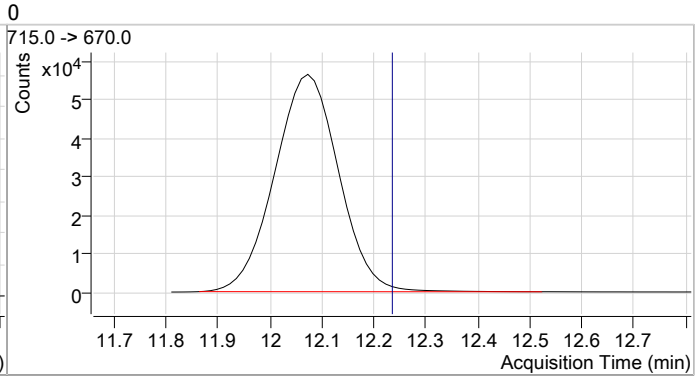
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	d	0		0	663.0 -> 369.0		3.0	9.1





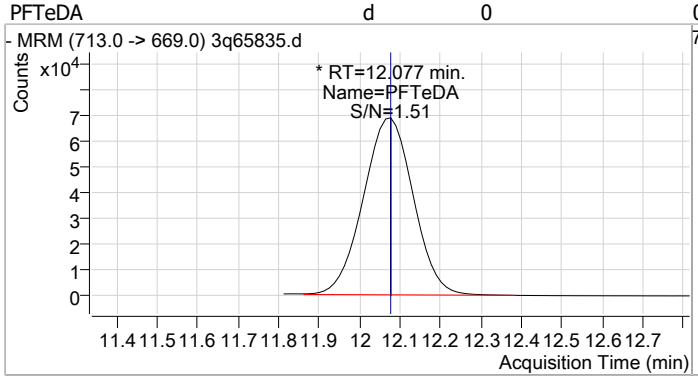
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	d	0		0				

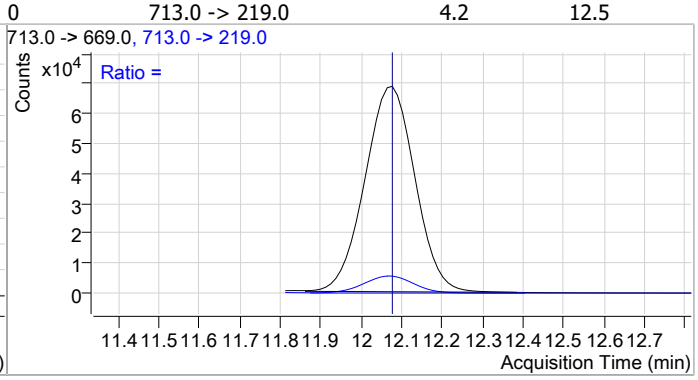




Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	d	0		0	713.0 -> 219.0		4.2	12.5





Manual Integration Approval Summary

Sample Number: S3Q900-ICV900
Lab FileID: 3Q65835.D
Injection Time: 09/15/22 21:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
MeFOSA	31506-32-8		7.59	Split peak
d3-MeFOSA			7.59	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65837.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:04:03 PM
Sample Name : cc900-20
Vial : P1-A7
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

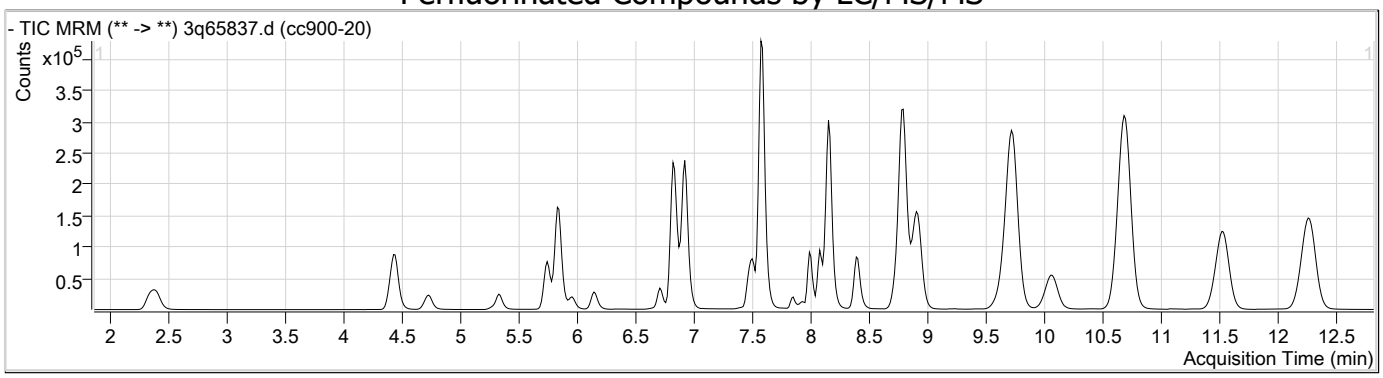
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	166517	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	243455	20.00 µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	324324	20.00 µg/L	0.013
M4-PFHpA	6.818	367.0 -> 322.0	321892	20.00 µg/L	0.025
M8-PFOA	7.573	421.0 -> 376.0	438956	20.00 µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	499345	20.00 µg/L	0.013
M6-PFDA	8.789	519.0 -> 474.0	763743	20.00 µg/L	0.050
M7-PFUnDA	9.714	570.0 -> 525.0	972163	20.00 µg/L	0.038
M2-PFDoDA	10.671	615.0 -> 570.0	1238997	20.00 µg/L	0.038
M2-PFTeDA	12.248	715.0 -> 670.0	514366	20.00 µg/L	0.013
M8-FOSA	7.503	506.0 -> 78.0	83490	20.00 µg/L	0.013
M3-PFBS	4.717	302.0 -> 99.0	22402	20.00 µg/L	0.025
M3-PFHxS	6.847	402.0 -> 99.0	27796	20.00 µg/L	0.025
M8-PFOS	8.123	507.0 -> 99.0	42634	20.00 µg/L	0.013
M2-4:2FTS	5.733	329.0 -> 309.0	124098	20.00 µg/L	0.025
M2-6:2FTS	7.584	429.0 -> 409.0	175135	20.00 µg/L	0.026
M2-8:2FTS	8.896	529.0 -> 509.0	372056	20.00 µg/L	0.048
M3-MeFOSAA	7.978	573.0 -> 419.0	119019	20.00 µg/L	-0.013
M3-HFPO-DA	6.142	287.0 -> 169.0	25681	20.00 µg/L	0.025
M3-MeFOSA	7.829	515.0 -> 169.0	18484	20.00 µg/L	-0.013
M5-EtFOSAA	8.065	589.0 -> 419.0	118098	20.00 µg/L	-0.013
System Monitoring Compounds					
13C2-4:2FTS	5.733	329.0 -> 309.0	124098	20.22 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C2-6:2FTS	7.584	429.0 -> 409.0	175135	20.30 µg/L	0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C2-8:2FTS	8.896	529.0 -> 509.0	372056	21.73 µg/L	0.048
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%	
13C2-PFDoDA	10.671	615.0 -> 570.0	1238997	20.40 µg/L	0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C2-PFTeDA	12.248	715.0 -> 670.0	514366	20.14 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C3-PFBS	4.717	302.0 -> 99.0	22402	20.24 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%	
13C3-PFHxS	6.847	402.0 -> 99.0	27796	20.64 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C4-PFBA	2.365	217.0 -> 172.0	166517	20.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C4-PFHpA	6.818	367.0 -> 322.0	321892	20.41 µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	5.826	318.0 -> 273.0	324324	20.22 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C5-PFPeA	4.424	268.0 -> 223.0	243455	20.13 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C6-PFDA	8.789	519.0 -> 474.0	763743	21.01 µg/L	0.050

Perfluorinated Compounds by LC/MS/MS

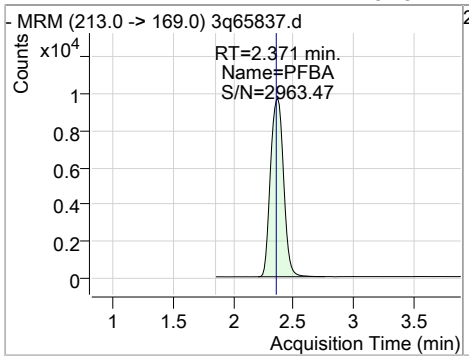
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C7-PFUnDA	9.714	570.0 -> 525.0	972163	20.41 µg/L		0.038
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C8-FOSA	7.503	506.0 -> 78.0	83490	23.43 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.2%		
13C8-PFOA	7.573	421.0 -> 376.0	438956	20.63 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C8-PFOS	8.123	507.0 -> 99.0	42634	20.61 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C9-PFNA	8.150	472.0 -> 427.0	499345	20.93 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
d3-MeFOSAA	7.978	573.0 -> 419.0	119019	21.02 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-HFPO-DA	6.142	287.0 -> 169.0	25680	19.89 µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d3-MeFOSA	7.829	515.0 -> 169.0	18484	22.91 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.5%		
d5-EtFOSAA	8.065	589.0 -> 419.0	118142	20.74 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
Target Compounds						QValue
4:2FTS	5.735	327.0 -> 307.0	135883	19.60 µg/L		100
6:2FTS	7.584	427.0 -> 407.0	178816	19.69 µg/L		99
8:2FTS	8.898	527.0 -> 507.0	375110	19.70 µg/L		100
EtFOSAA	8.065	584.0 -> 419.0	98781	19.46 µg/L	m	89
FOSA	7.504	498.0 -> 78.0	79677	19.41 µg/L		100
MeFOSAA	7.979	570.0 -> 419.0	106490	19.65 µg/L	m	93
PFBA	2.371	213.0 -> 169.0	73204	19.29 µg/L		100
PFBS	4.719	299.0 -> 80.0	63837	19.52 µg/L		99
PFDA	8.790	513.0 -> 469.0	749478	19.37 µg/L		100
PFDoDA	10.675	613.0 -> 569.0	1136416	19.36 µg/L		100
PFDS	9.610	599.0 -> 80.0	74365	18.18 µg/L		99
PFHpA	6.819	363.0 -> 319.0	469740	19.17 µg/L		100
PFHpS	7.569	449.0 -> 80.0	57556	20.24 µg/L		99
PFHxA	5.827	313.0 -> 269.0	353770	19.46 µg/L		100
PFHxS	6.848	399.0 -> 80.0	66151	19.29 µg/L	m	97
PFNA	8.151	463.0 -> 419.0	426534	19.27 µg/L		100
PFNS	8.717	549.0 -> 80.0	70492	19.83 µg/L		99
PFOA	7.573	413.0 -> 369.0	540873	19.22 µg/L		100
PFOS	8.124	499.0 -> 80.0	74343	19.50 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	218775	19.50 µg/L		100
PFPeS	5.944	349.0 -> 80.0	50091	19.78 µg/L		99
PFTeDA	12.252	713.0 -> 669.0	705588	19.23 µg/L		100
PFTrDA	11.509	663.0 -> 619.0	972216	19.19 µg/L		100
PFUnDA	9.716	563.0 -> 519.0	1038684	19.27 µg/L		100
11Cl-PF3OUdS	10.047	631.0 -> 451.0	322061	18.74 µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	244913	18.63 µg/L		99
ADONA	6.916	377.0 -> 251.0	694682	18.96 µg/L		100
HFPO-DA	6.134	329.0 -> 169.0	62457	19.62 µg/L		98
MeFOSA	7.842	512.0 -> 169.0	19214	19.13 µg/L		99
4-PFECHS	7.466	461.0 -> 381.0	140368	17.73 µg/L		99
FBSA	5.327	298.0 -> 78.0	103602	19.88 µg/L		100
FHxSA	6.700	398.0 -> 78.0	106967	20.32 µg/L		100

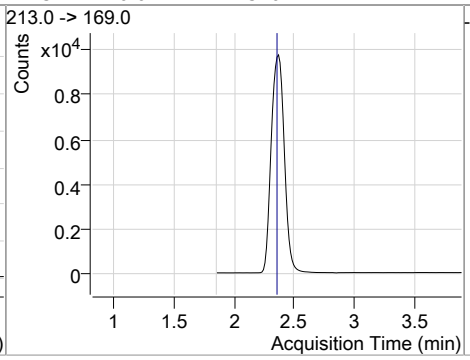
 # = Qualifier out of range, m = manually integrated, + = Area summed

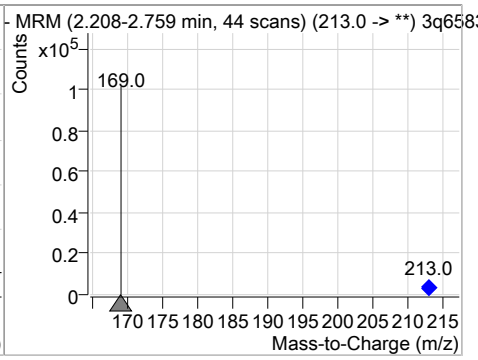
Perfluorinated Compounds by LC/MS/MS



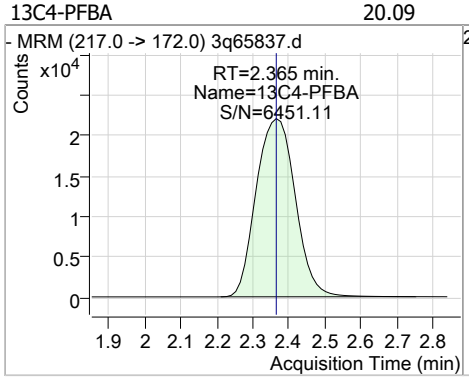
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.29	2.37	0.01	73204				

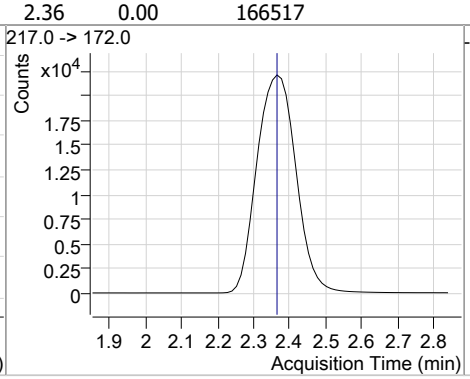


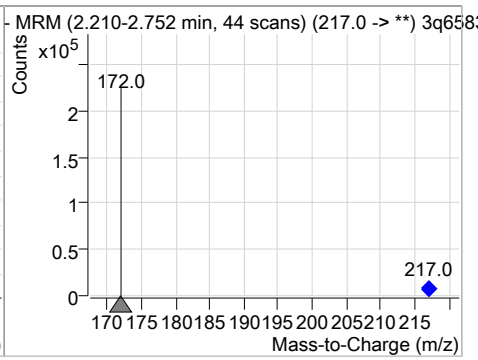




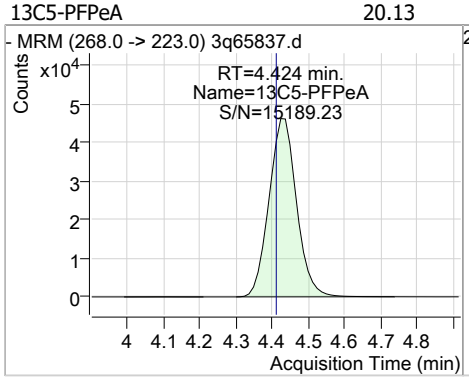
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.09	2.36	0.00	166517				

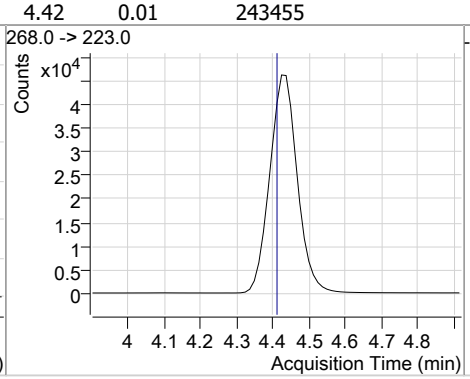


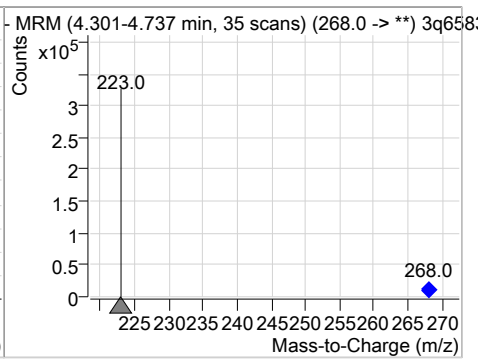




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.13	4.42	0.01	243455				

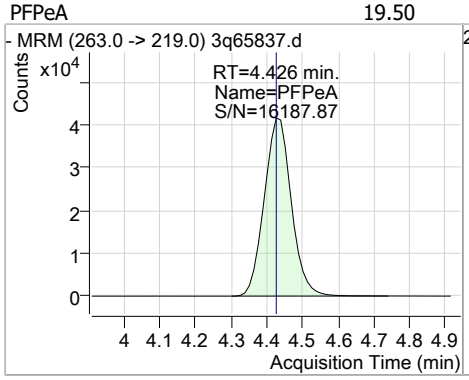


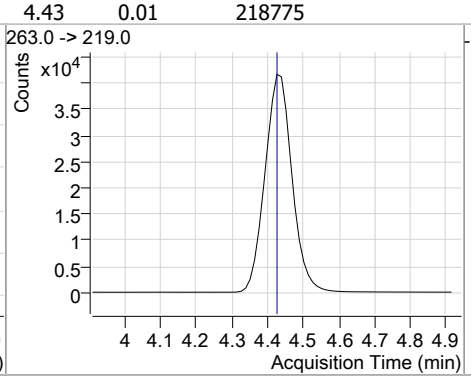


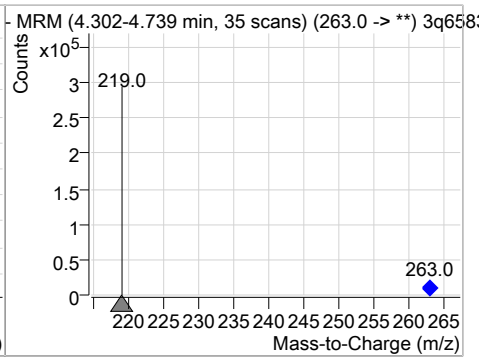


Perfluorinated Compounds by LC/MS/MS

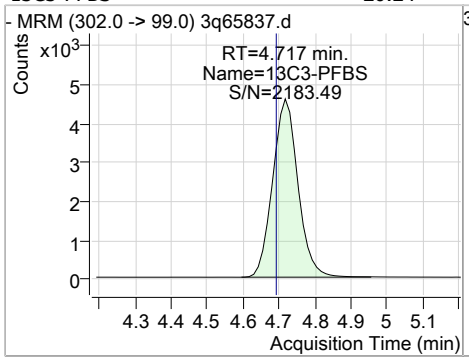
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.50	4.43	0.01	218775				

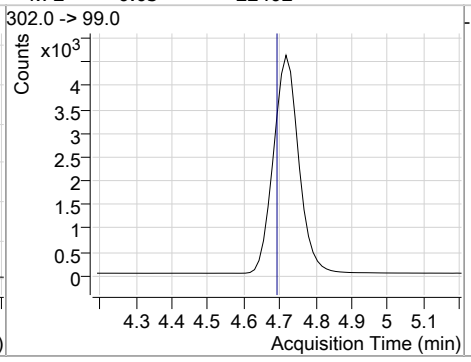


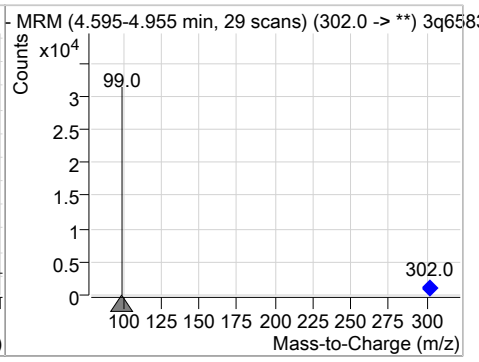




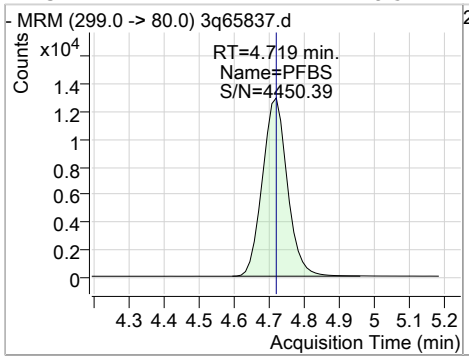
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.24	4.72	0.03	22402				

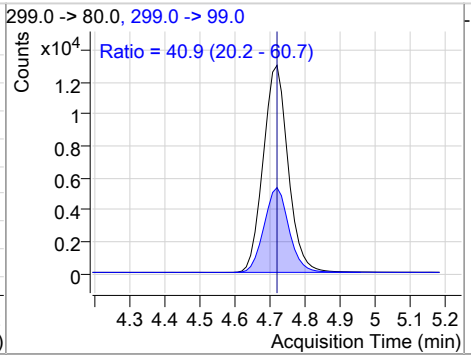


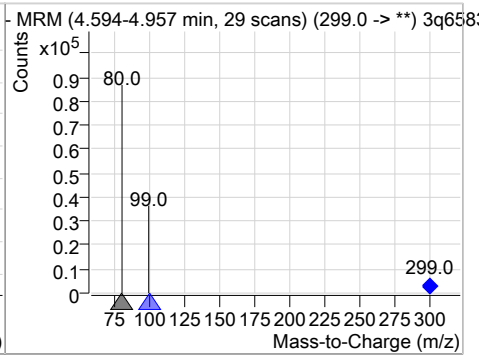




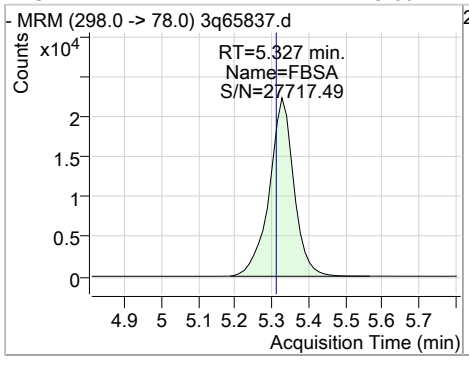
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.52	4.72	0.03	63837	299.0 -> 99.0	40.9	20.2	60.7

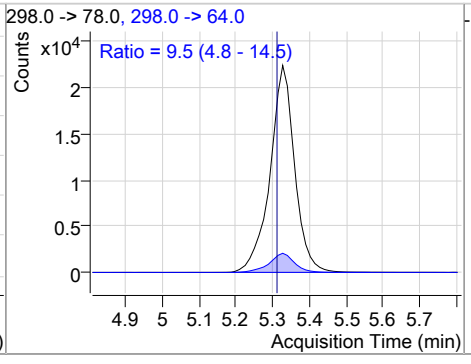


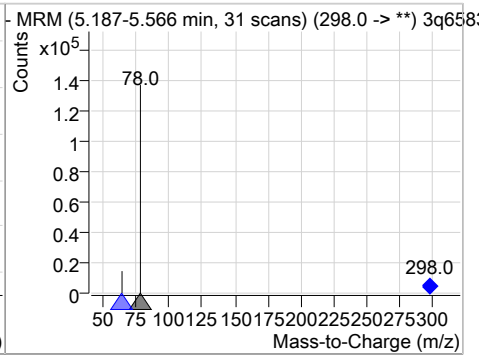




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.88	5.33	0.03	103602	298.0 -> 64.0	9.5	4.8	14.5

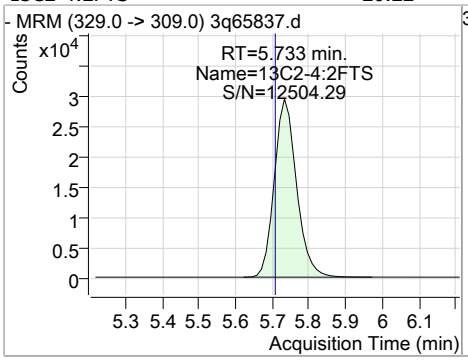


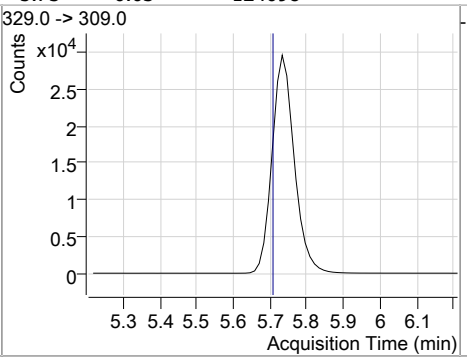


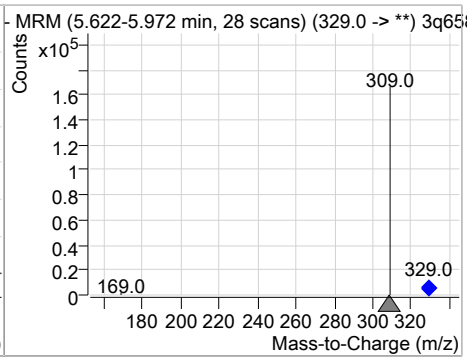


Perfluorinated Compounds by LC/MS/MS

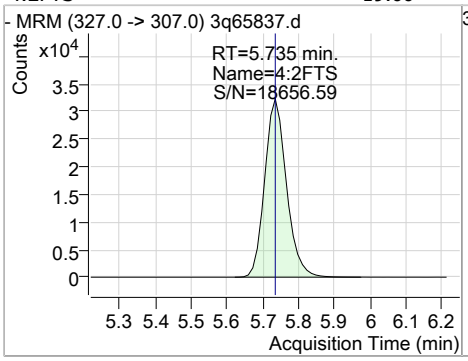
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.22	5.73	0.03	124098				

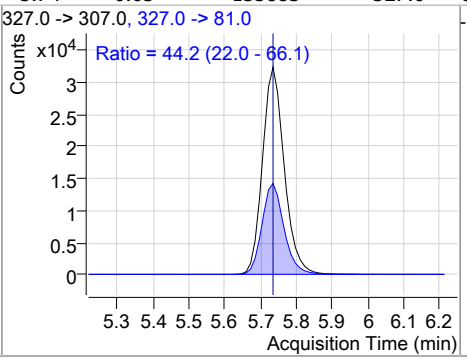


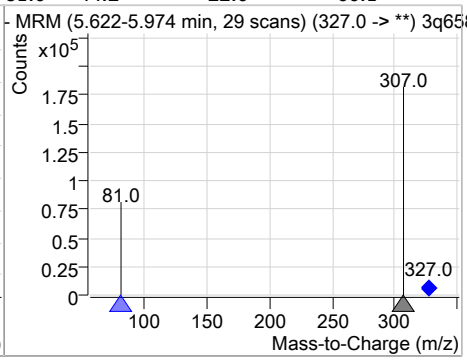




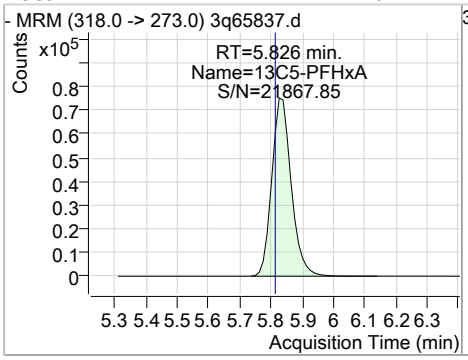
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.60	5.74	0.03	135883	327.0 -> 81.0	44.2	22.0	66.1

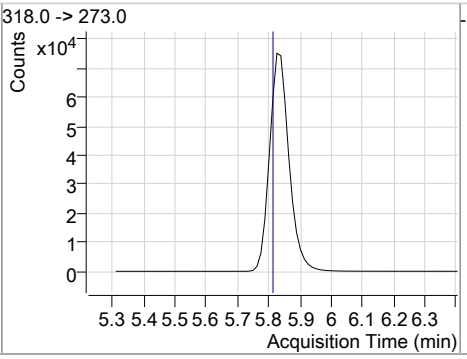


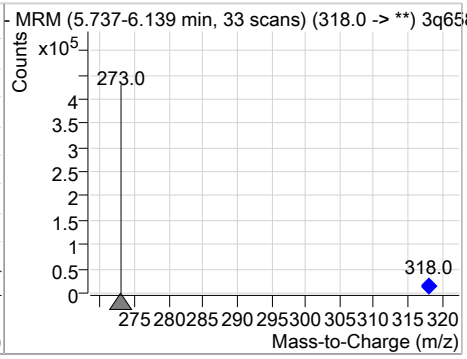




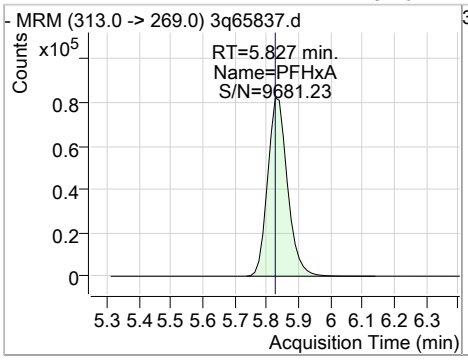
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.22	5.83	0.01	324324				

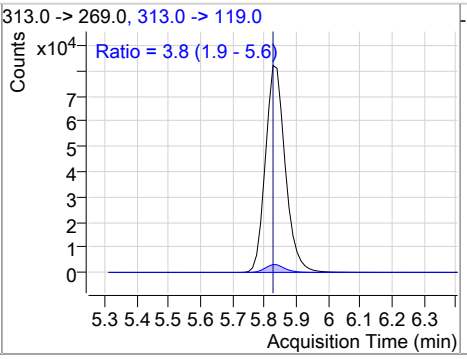


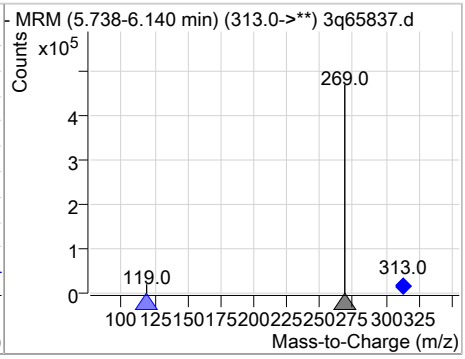




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.46	5.83	0.01	353770	313.0 -> 119.0	3.8	1.9	5.6

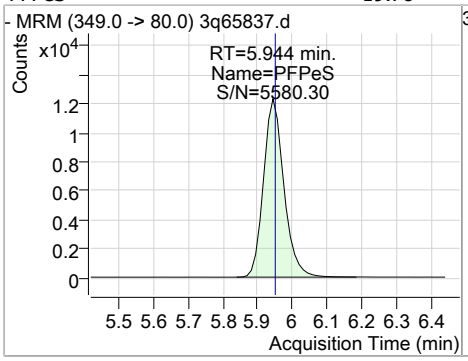


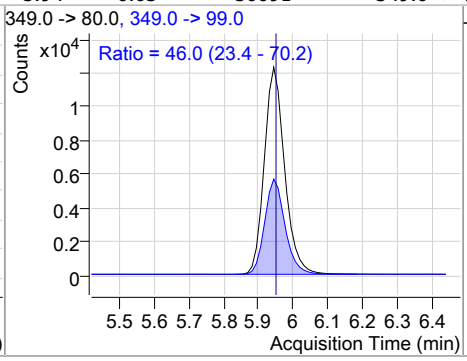


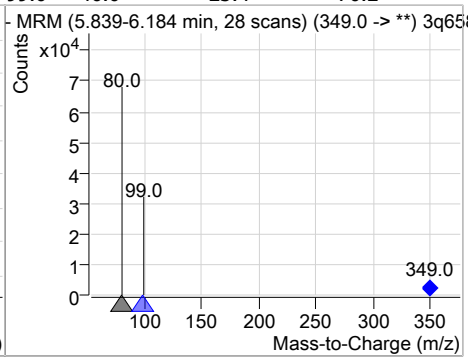


Perfluorinated Compounds by LC/MS/MS

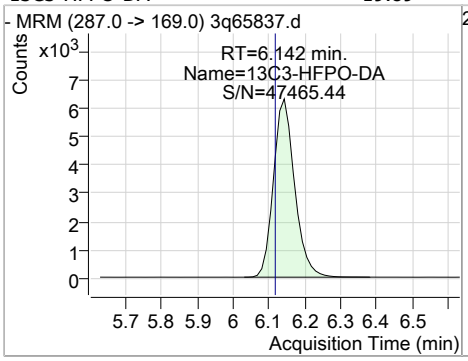
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.78	5.94	0.03	50091	349.0 -> 99.0	46.0	23.4	70.2

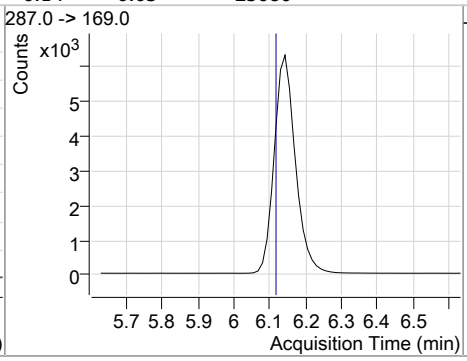


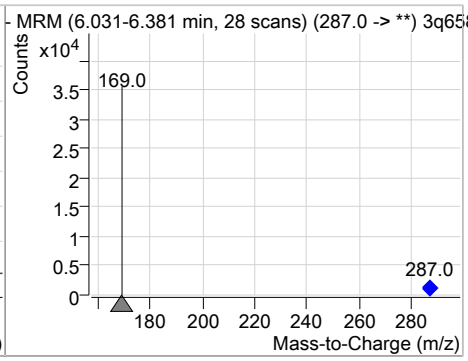




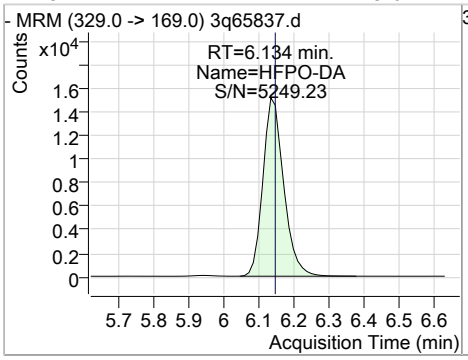
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.89	6.14	0.03	25680				

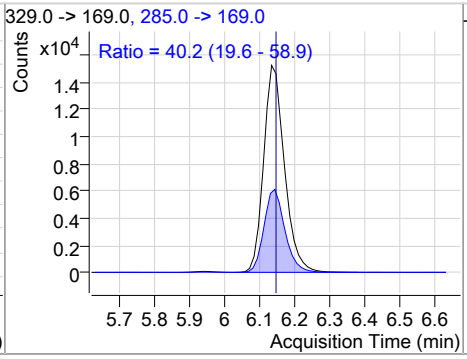


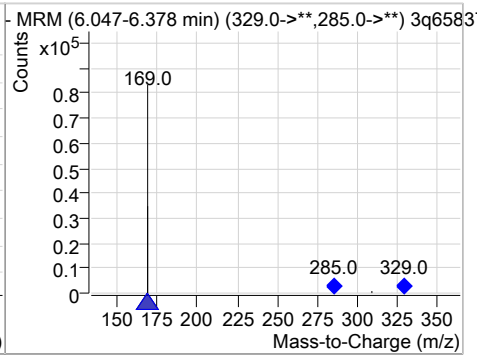




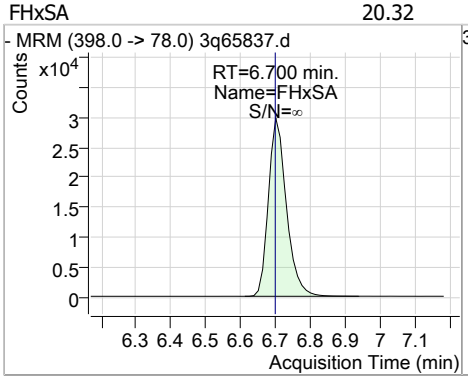
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.62	6.13	0.01	62457	285.0 -> 169.0	40.2	19.6	58.9

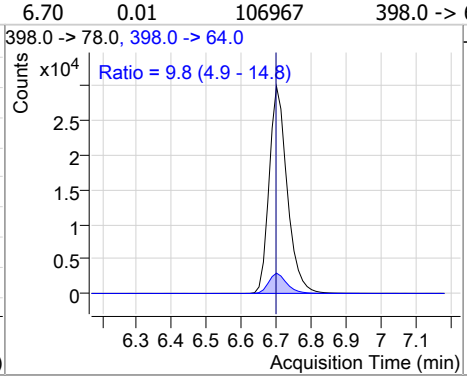


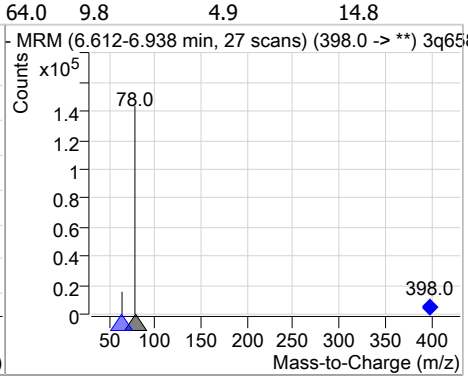




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.32	6.70	0.01	106967	398.0 -> 64.0	9.8	4.9	14.8

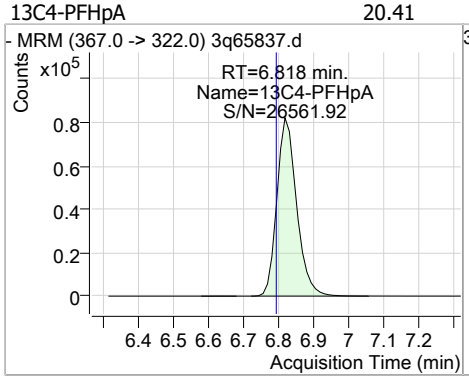


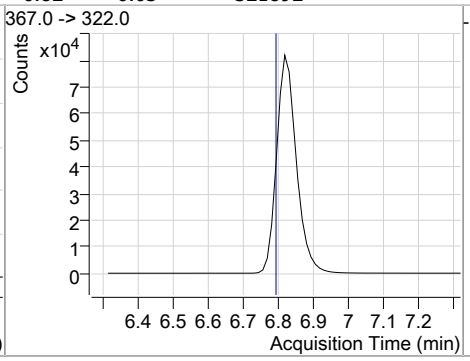


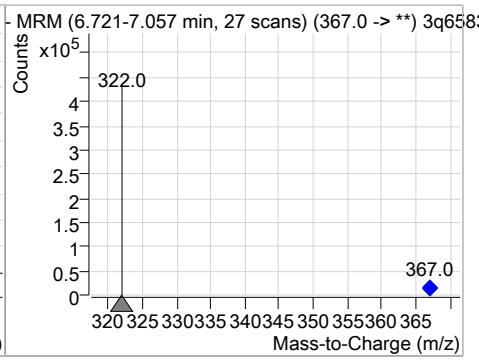


Perfluorinated Compounds by LC/MS/MS

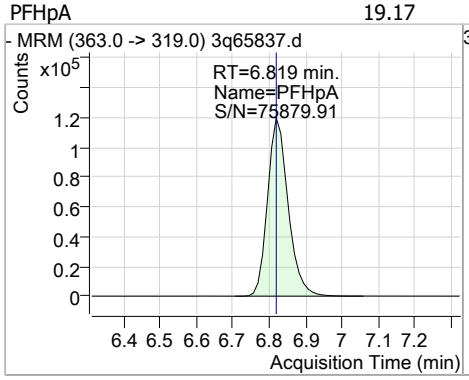
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.41	6.82	0.03	321892				

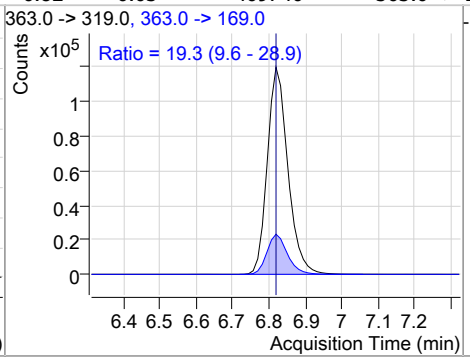


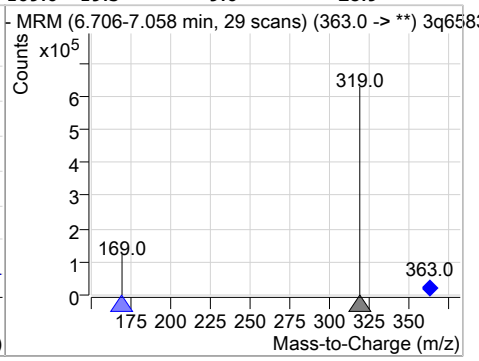




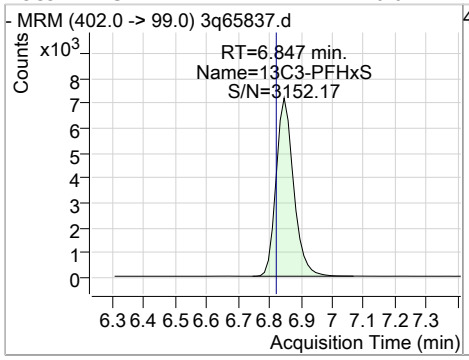
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.17	6.82	0.03	469740	363.0 -> 169.0	19.3	9.6	28.9

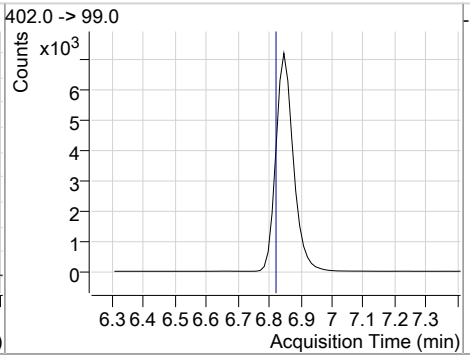


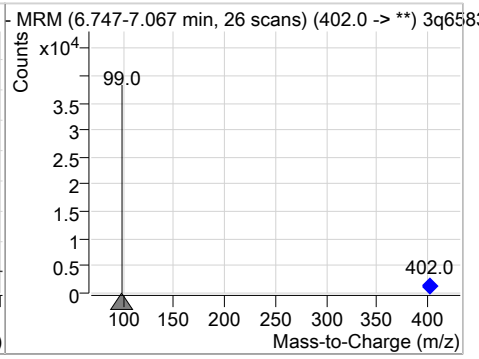




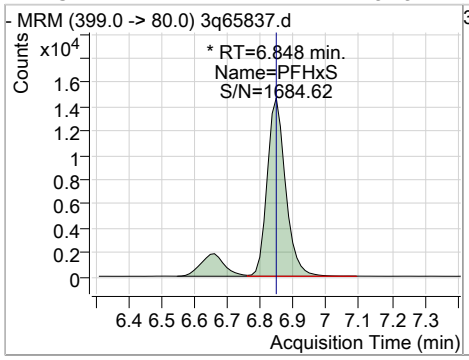
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.64	6.85	0.03	27796				

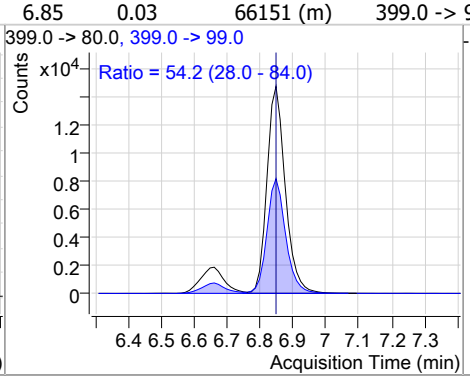


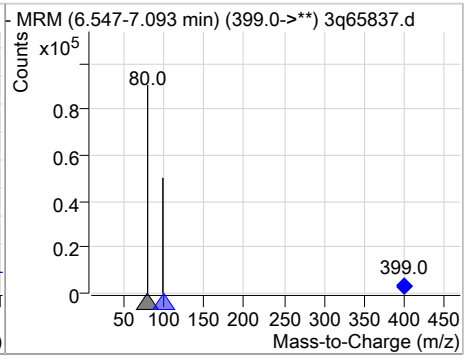




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.29	6.85	0.03	66151 (m)	399.0 -> 99.0	54.2	28.0	84.0

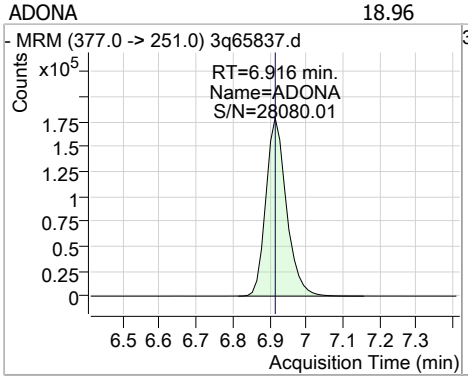


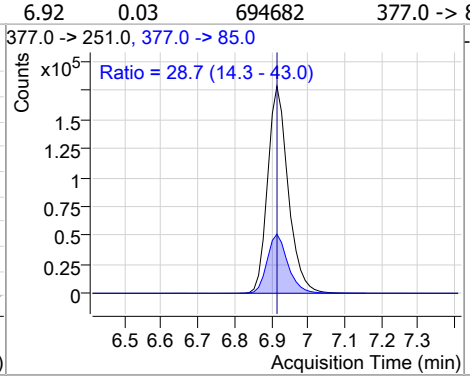


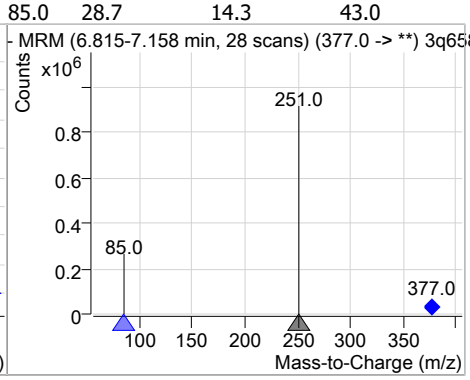


Perfluorinated Compounds by LC/MS/MS

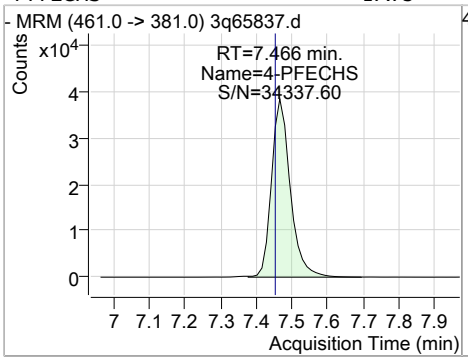
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.96	6.92	0.03	694682	377.0 -> 85.0	28.7	14.3	43.0

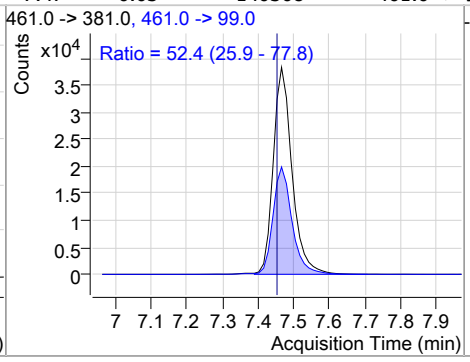


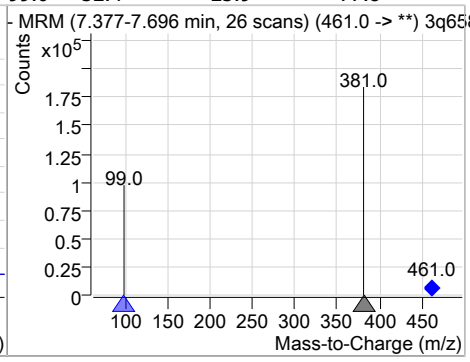




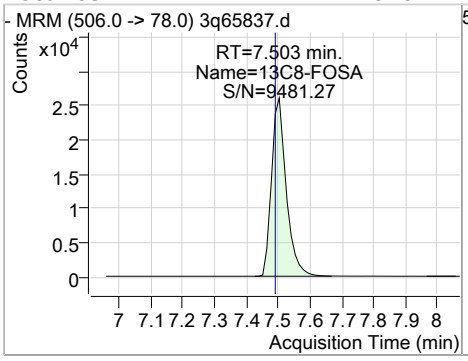
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.73	7.47	0.03	140368	461.0 -> 99.0	52.4	25.9	77.8

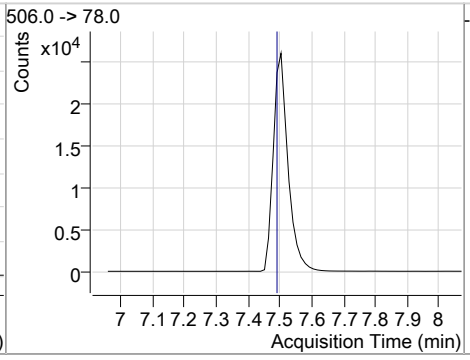


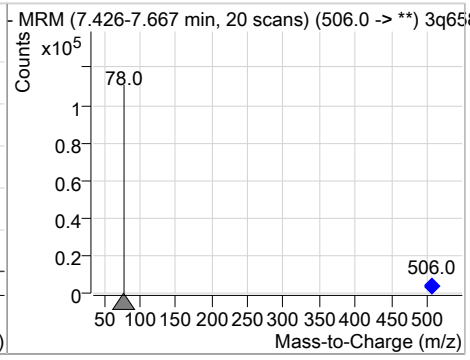




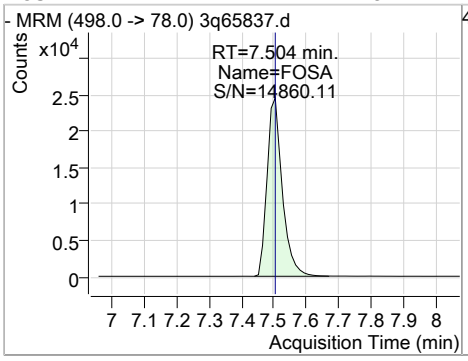
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.43	7.50	0.01	83490				

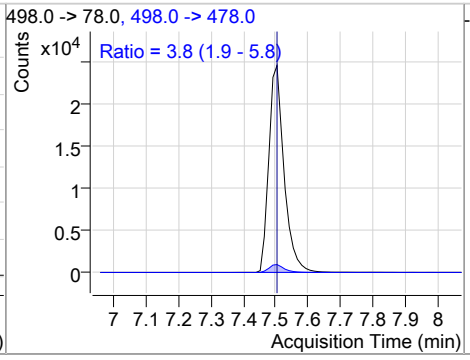


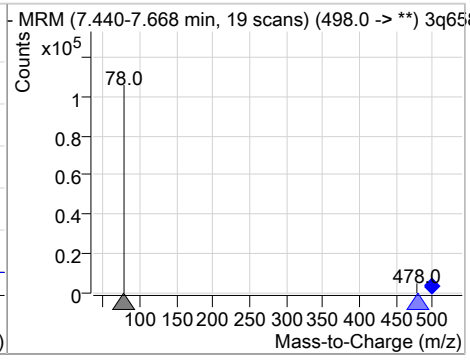




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.41	7.50	0.01	79677	498.0 -> 478.0	3.8	1.9	5.8

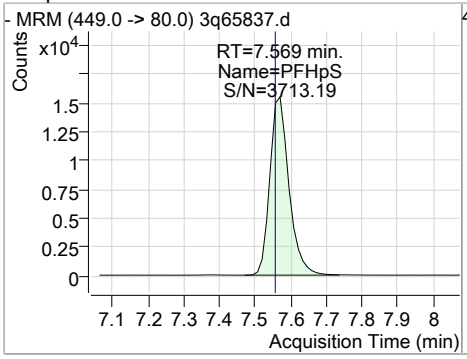


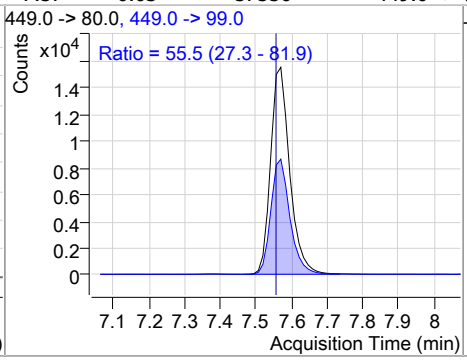


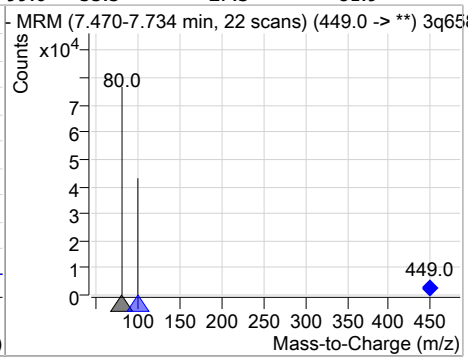


Perfluorinated Compounds by LC/MS/MS

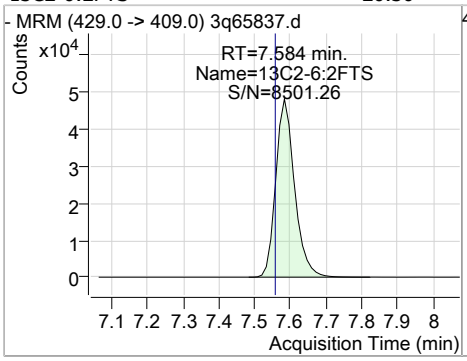
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.24	7.57	0.03	57556	449.0 -> 99.0	55.5	27.3	81.9

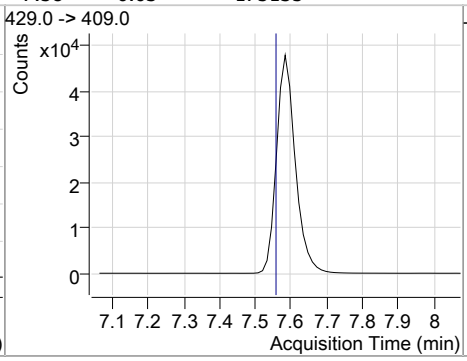


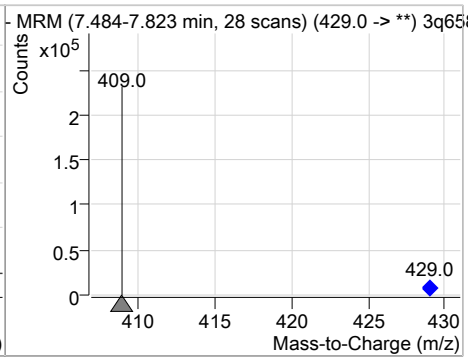




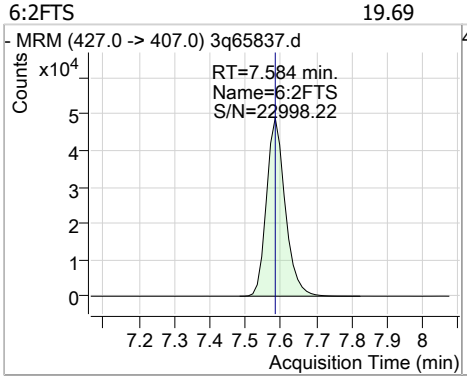
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.30	7.58	0.03	175135				

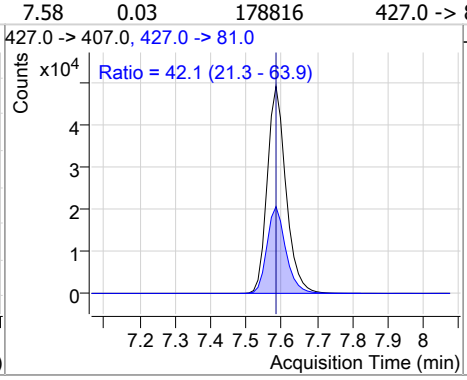


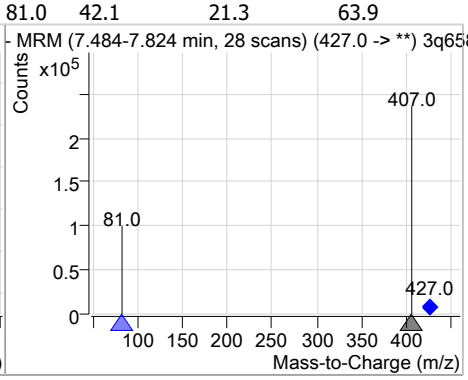




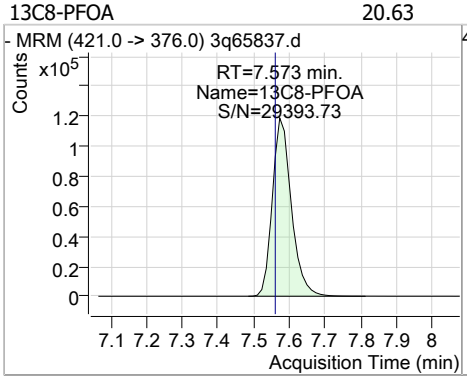
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.69	7.58	0.03	178816	427.0 -> 81.0	42.1	21.3	63.9

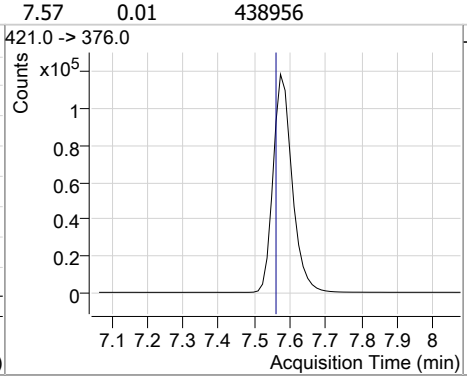


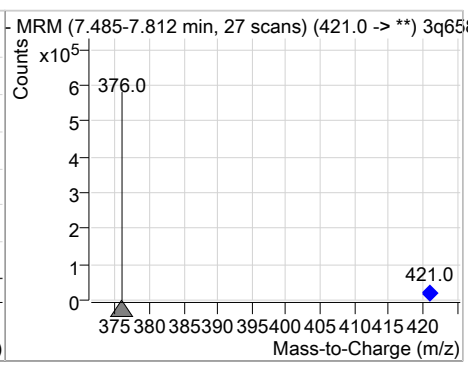




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.63	7.57	0.01	438956				

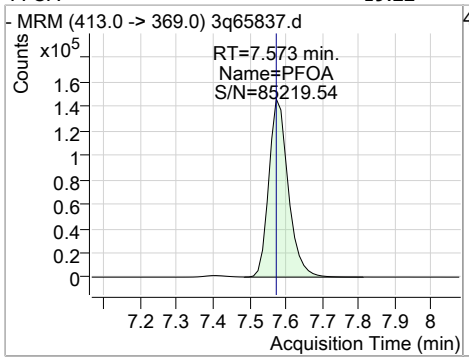


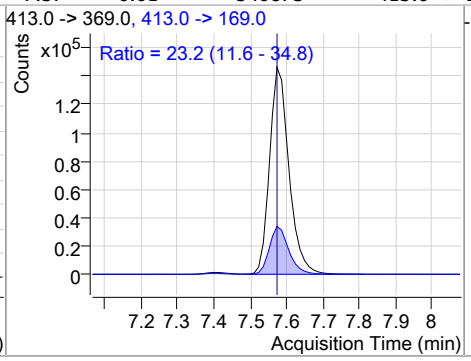


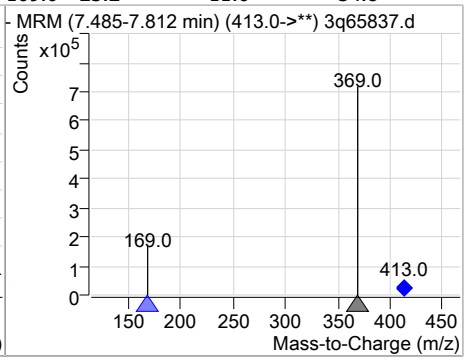


Perfluorinated Compounds by LC/MS/MS

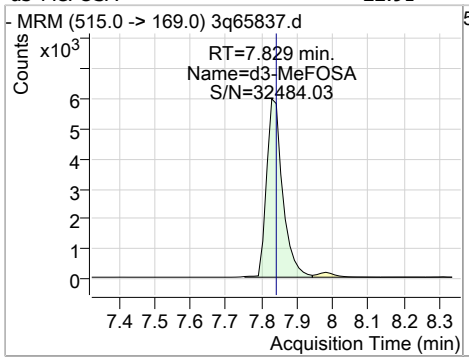
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.22	7.57	0.01	540873	413.0 -> 169.0	23.2	11.6	34.8

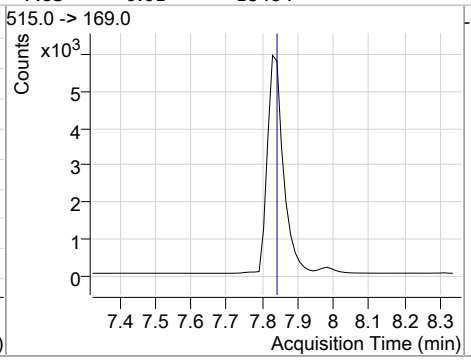


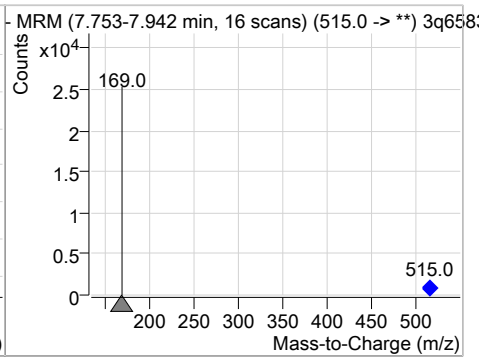




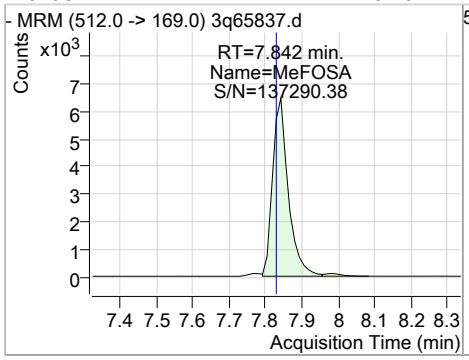
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.91	7.83	-0.01	18484				

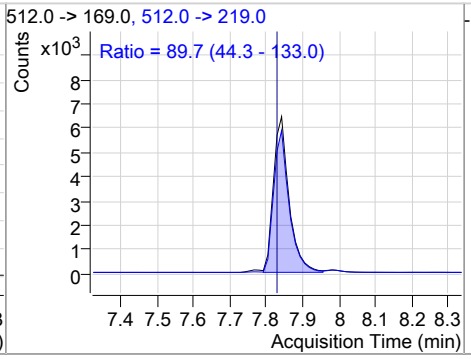


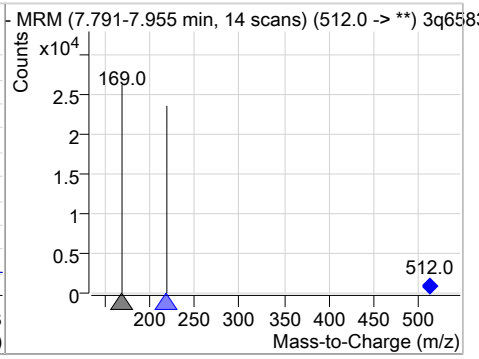




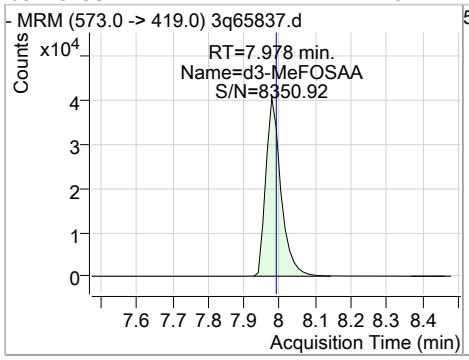
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.13	7.84	0.00	19214	512.0 -> 219.0	89.7	44.3	133.0

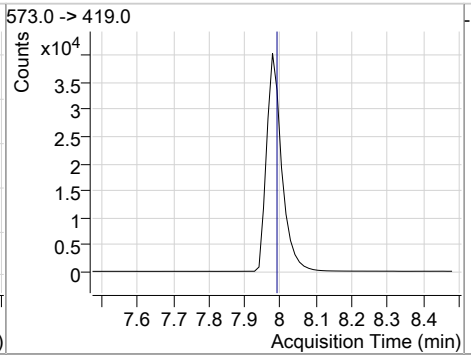


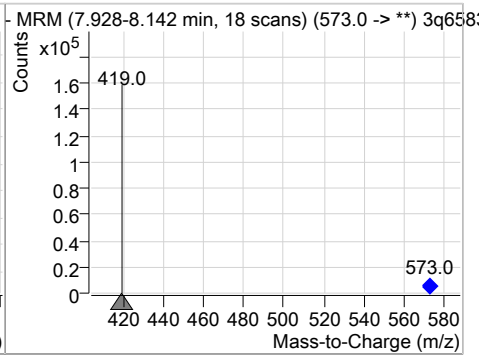




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.02	7.98	-0.01	119019				

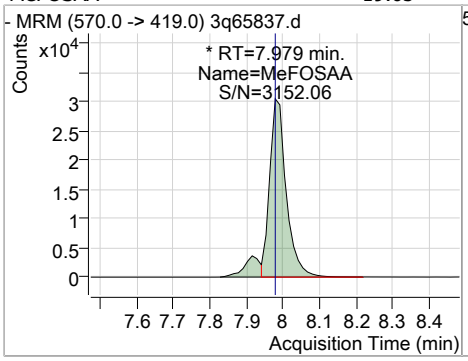


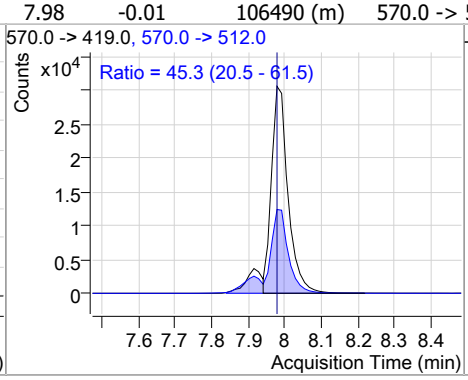


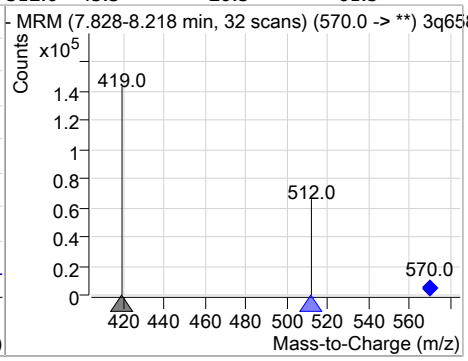


Perfluorinated Compounds by LC/MS/MS

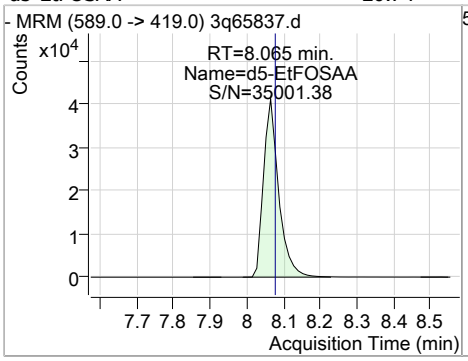
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.65	7.98	-0.01	106490 (m)	570.0 -> 512.0	45.3	20.5	61.5

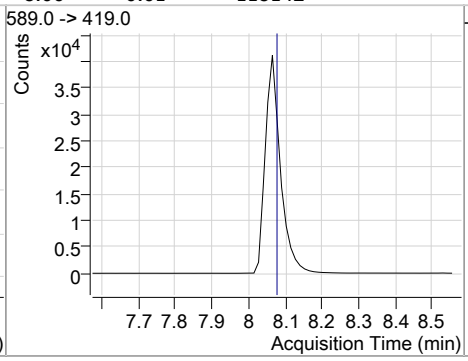


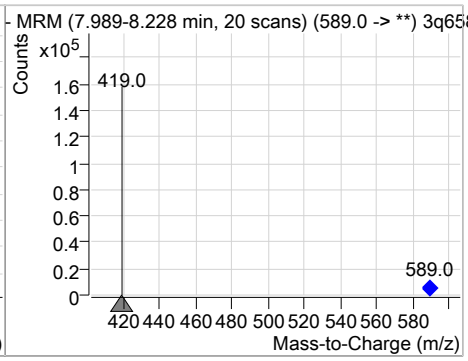




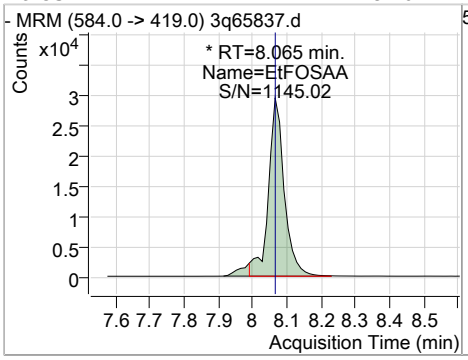
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.74	8.06	-0.01	118142				

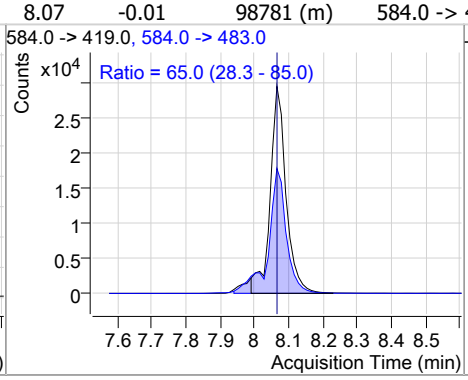


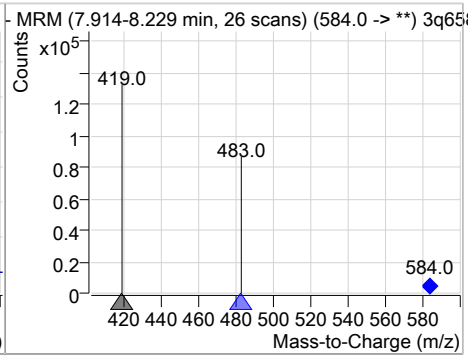




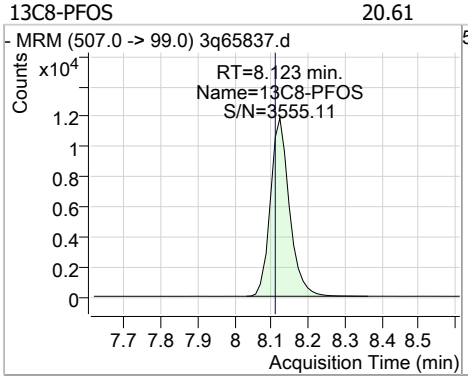
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.46	8.07	-0.01	98781 (m)	584.0 -> 483.0	65.0	28.3	85.0

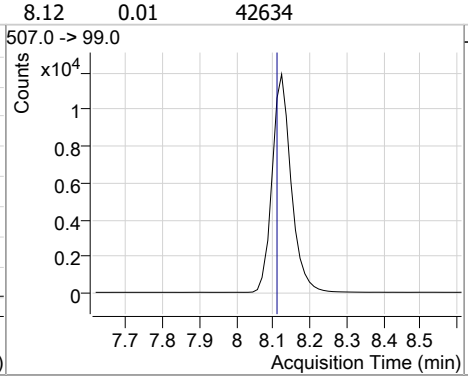


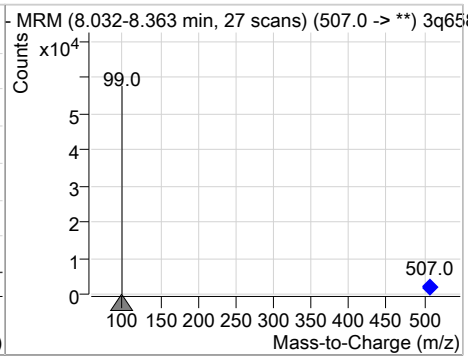




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.61	8.12	0.01	42634				

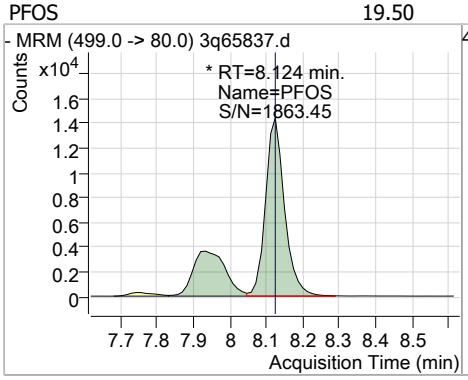


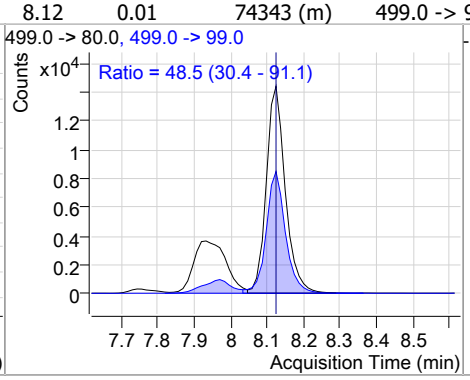


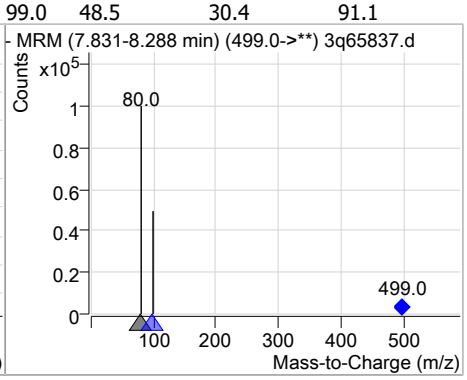


Perfluorinated Compounds by LC/MS/MS

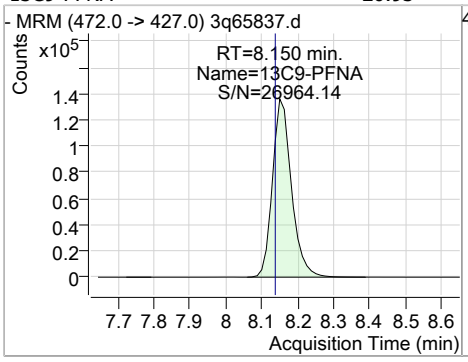
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.50	8.12	0.01	74343 (m)	499.0 -> 99.0	48.5	30.4	91.1

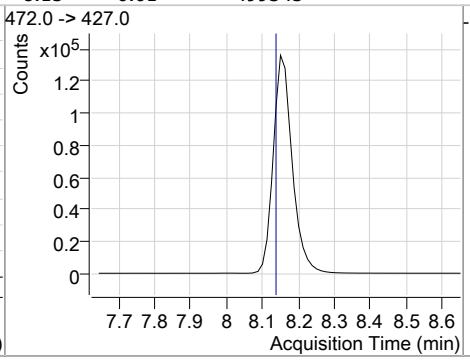


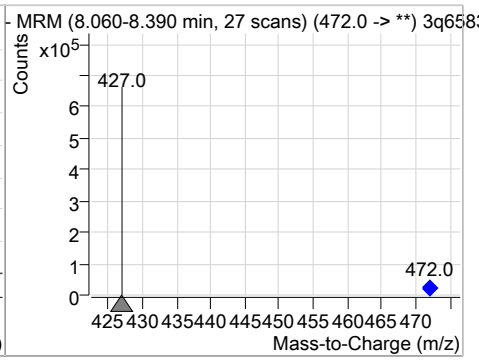




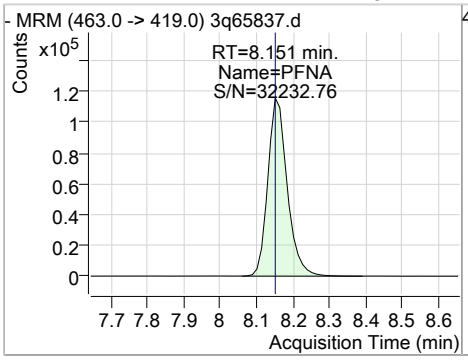
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.93	8.15	0.01	499345				

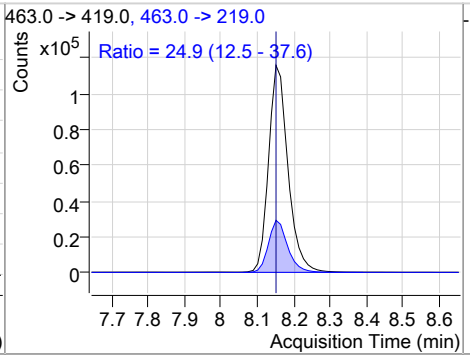


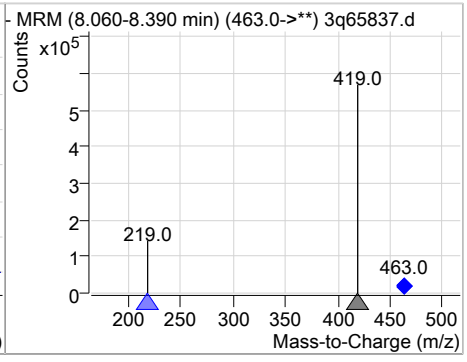




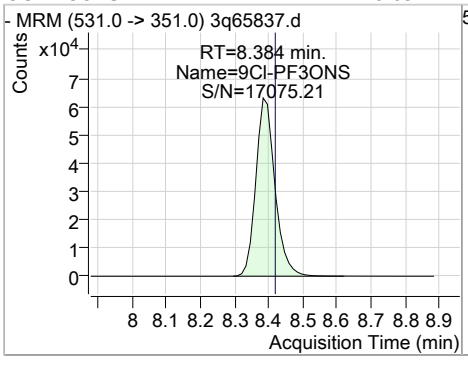
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.27	8.15	0.01	426534	463.0 -> 219.0	24.9	12.5	37.6

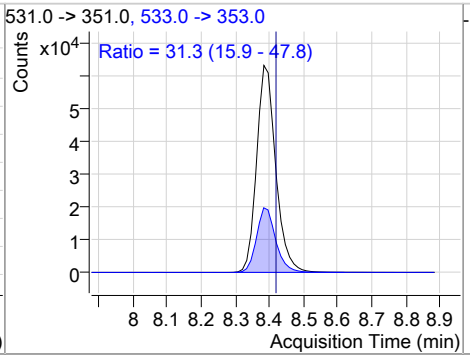


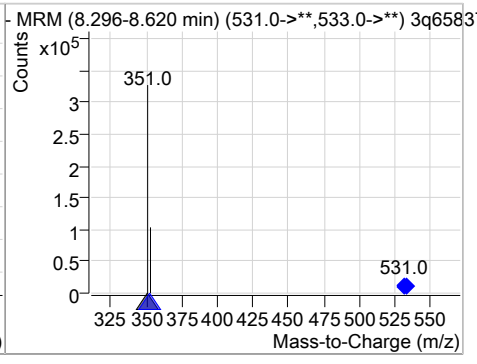




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.63	8.38	0.01	244913	533.0 -> 353.0	31.3	15.9	47.8

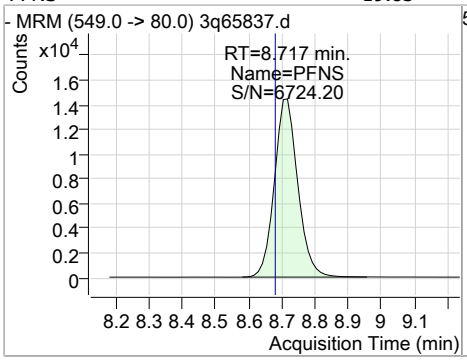


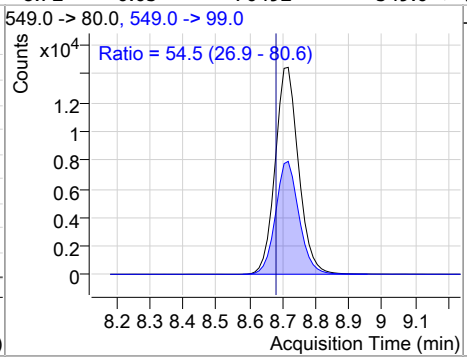


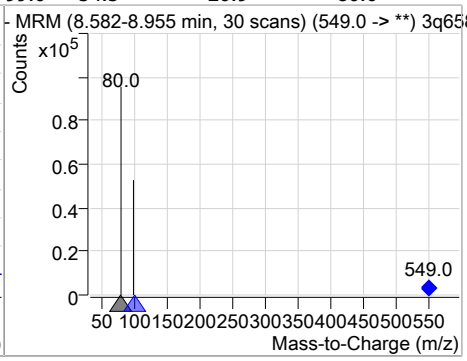


Perfluorinated Compounds by LC/MS/MS

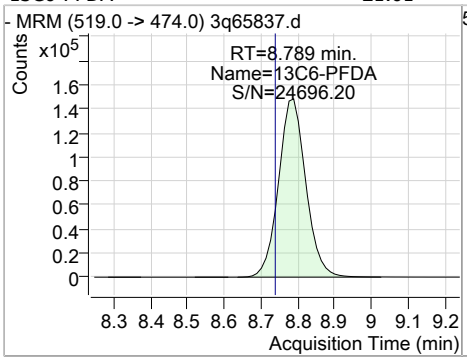
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.83	8.72	0.05	70492	549.0 -> 99.0	54.5	26.9	80.6

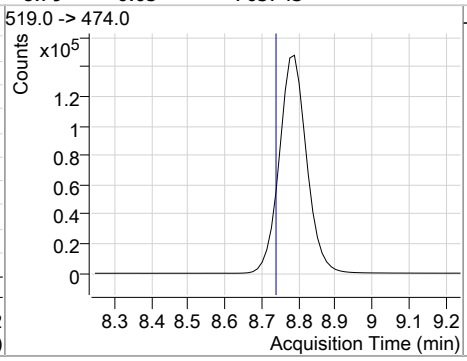


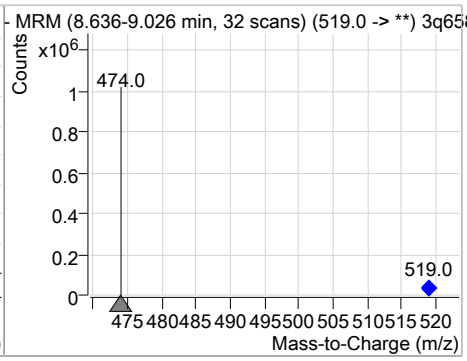




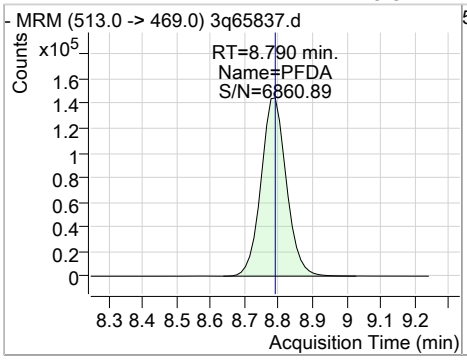
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.01	8.79	0.05	763743				

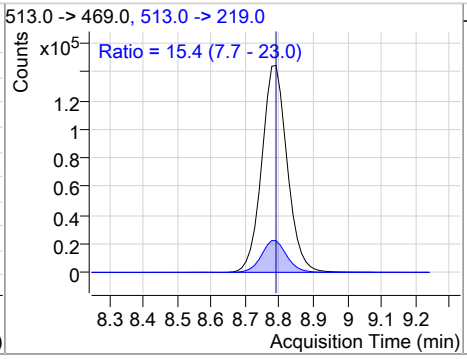


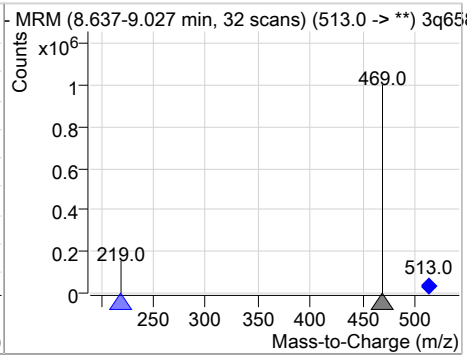




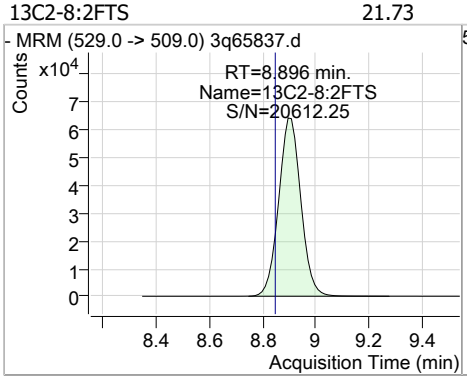
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.37	8.79	0.05	749478	513.0 -> 219.0	15.4	7.7	23.0

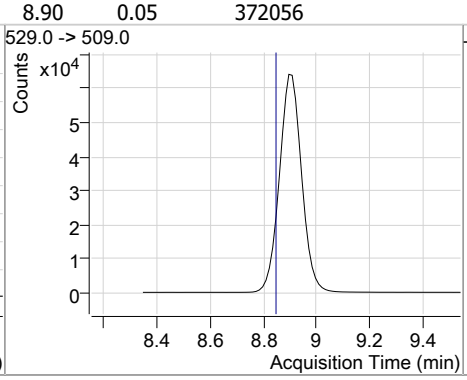


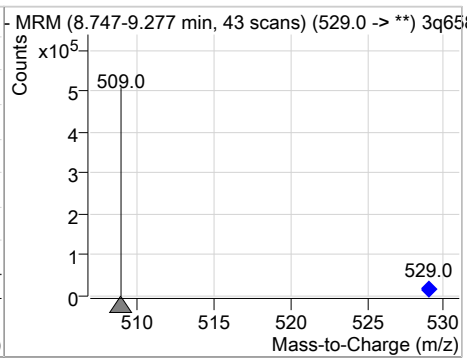




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.73	8.90	0.05	372056				

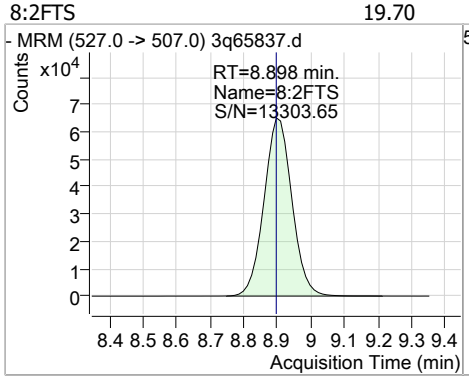


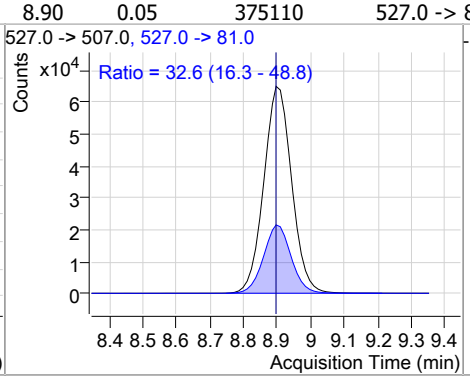


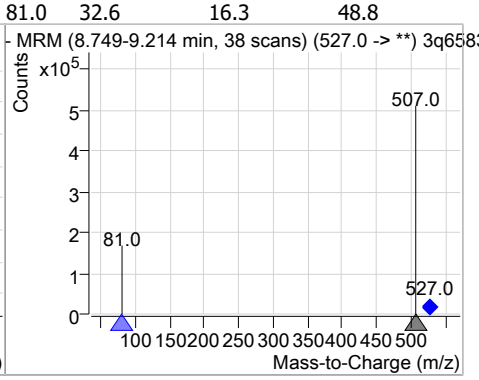


Perfluorinated Compounds by LC/MS/MS

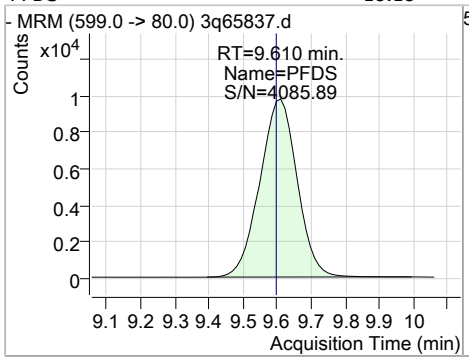
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.70	8.90	0.05	375110	527.0 -> 81.0	32.6	16.3	48.8

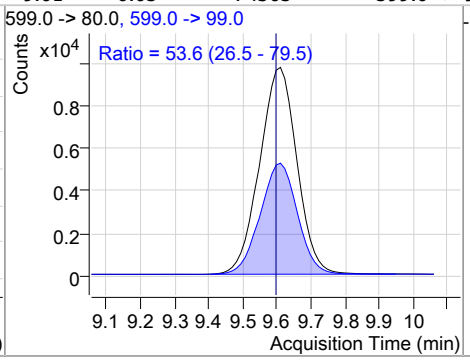


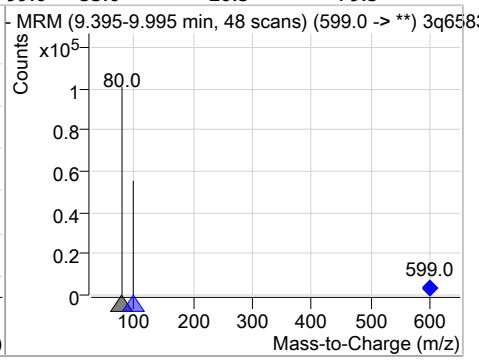




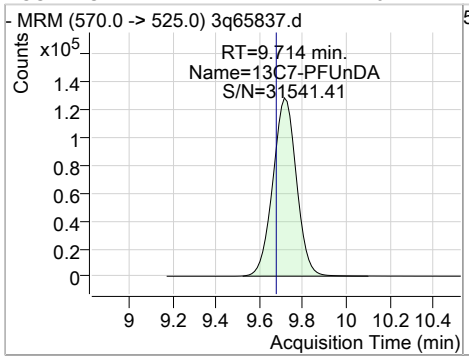
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.18	9.61	0.05	74365	599.0 -> 99.0	53.6	26.5	79.5

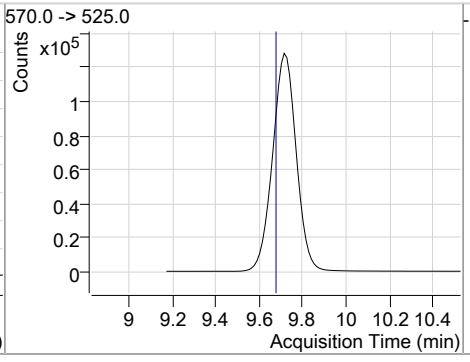


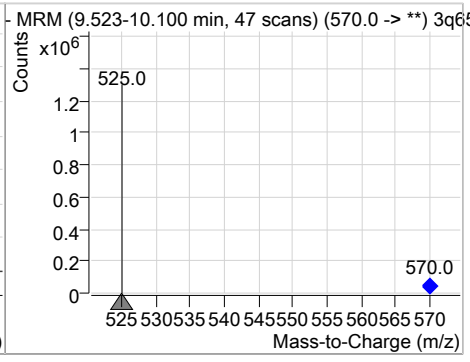




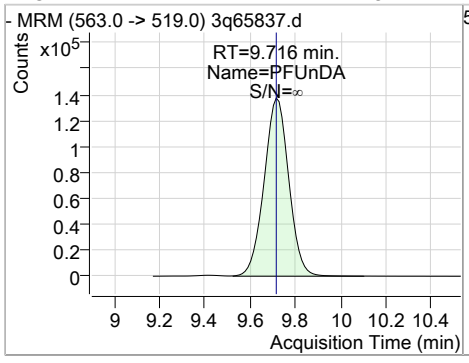
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.41	9.71	0.04	972163				

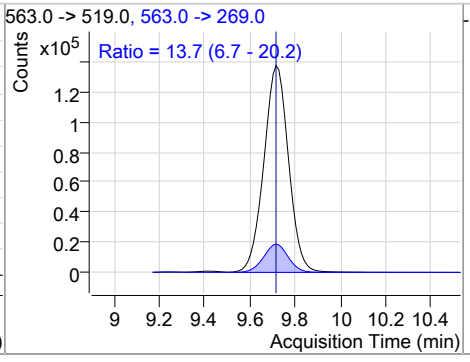


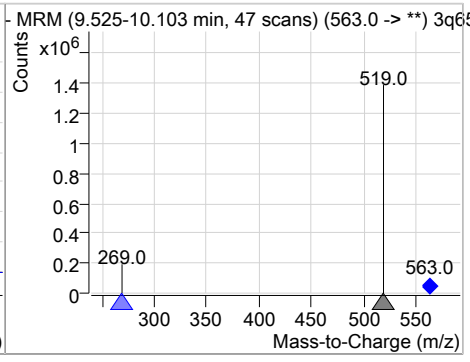




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.27	9.72	0.04	1038684	563.0 -> 269.0	13.7	6.7	20.2

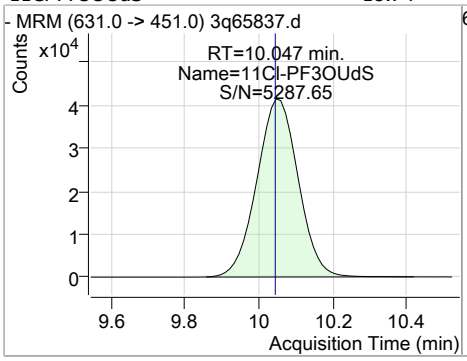


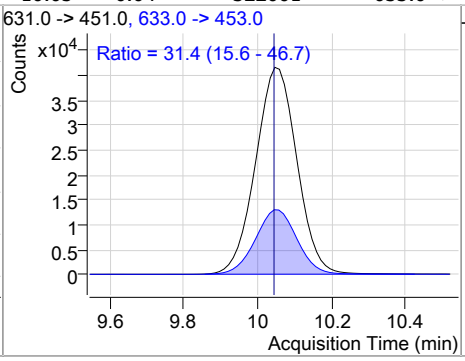


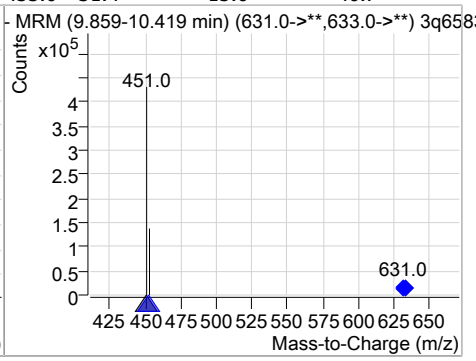


Perfluorinated Compounds by LC/MS/MS

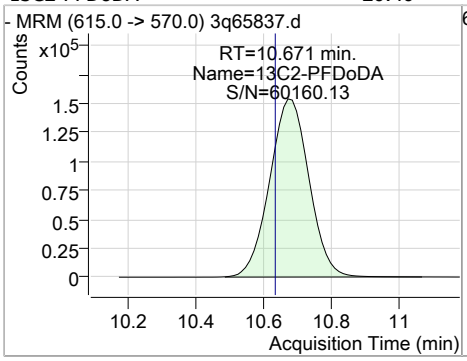
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.74	10.05	0.04	322061	633.0 -> 453.0	31.4	15.6	46.7

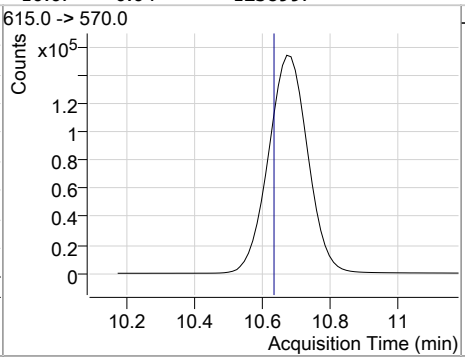


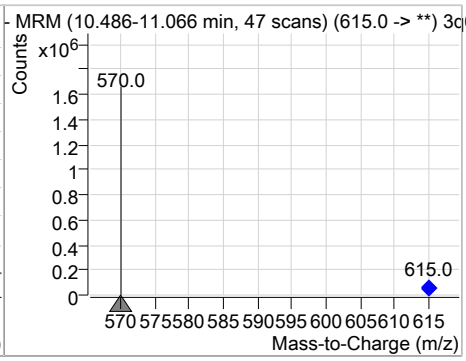




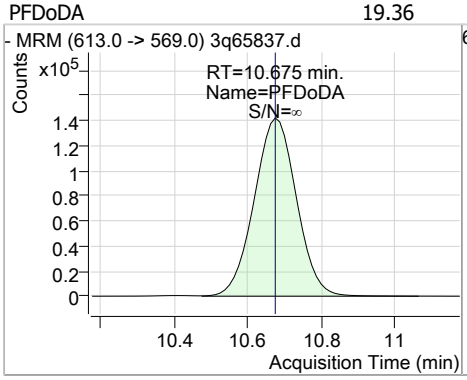
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.40	10.67	0.04	1238997				

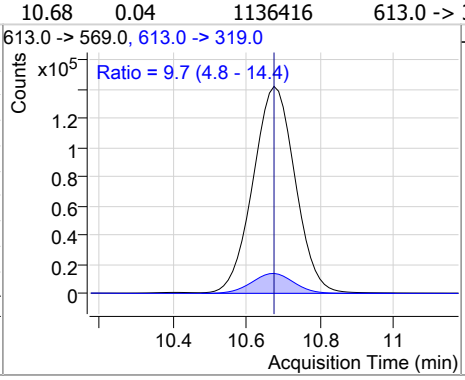


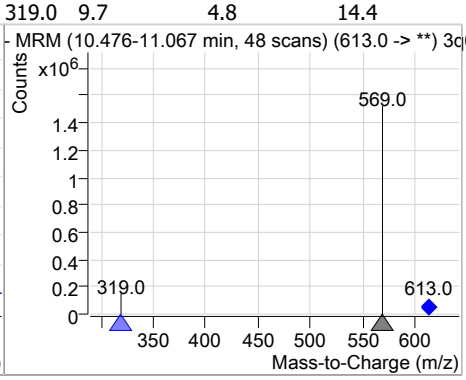




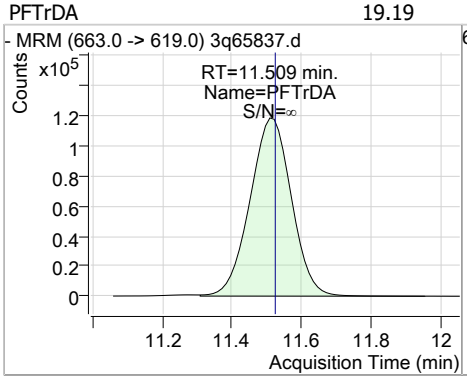
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.36	10.68	0.04	1136416	613.0 -> 319.0	9.7	4.8	14.4

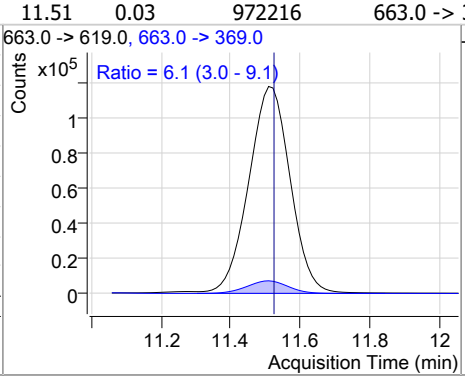


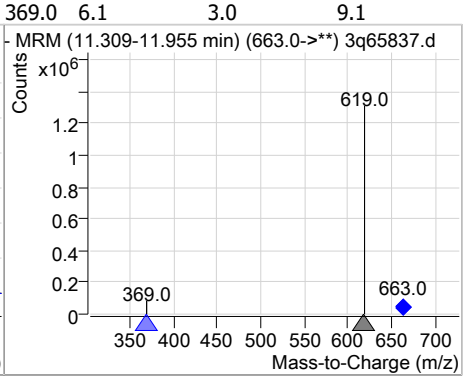




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.19	11.51	0.03	972216	663.0 -> 369.0	6.1	3.0	9.1

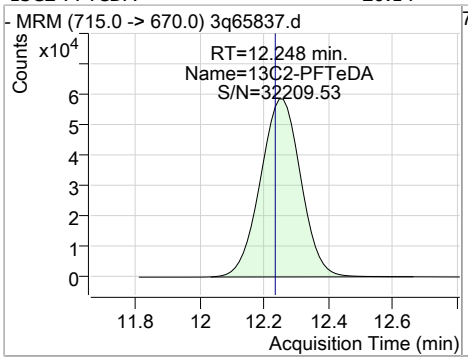


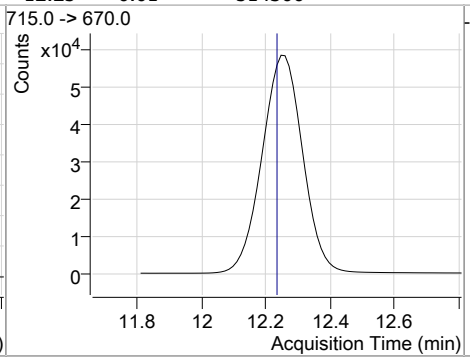


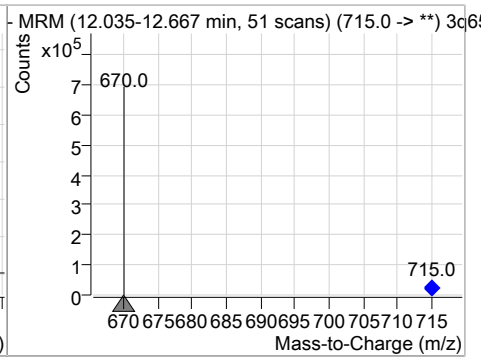


Perfluorinated Compounds by LC/MS/MS

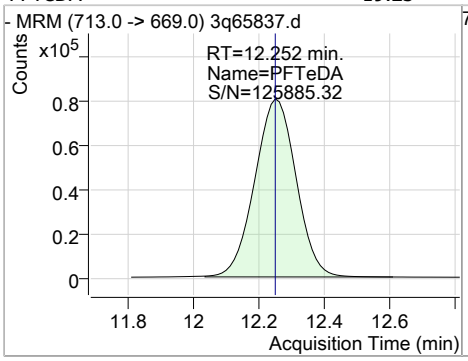
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.14	12.25	0.01	514366				

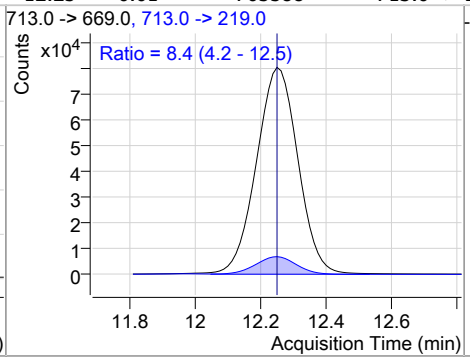


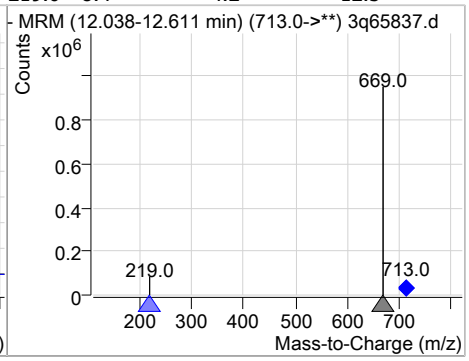




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.23	12.25	0.01	705588	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-CC900
Lab FileID: 3Q65837.D
Injection Time: 09/15/22 22:04

Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.85	Split peak
MeFOSAA	2355-31-9		7.98	Split peak
EtFOSAA	2991-50-6		8.06	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65838.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:23:37 PM
Sample Name : cc900-1.0LL
Vial : P1-A3
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92823,S3Q900,250,,,1,1,water

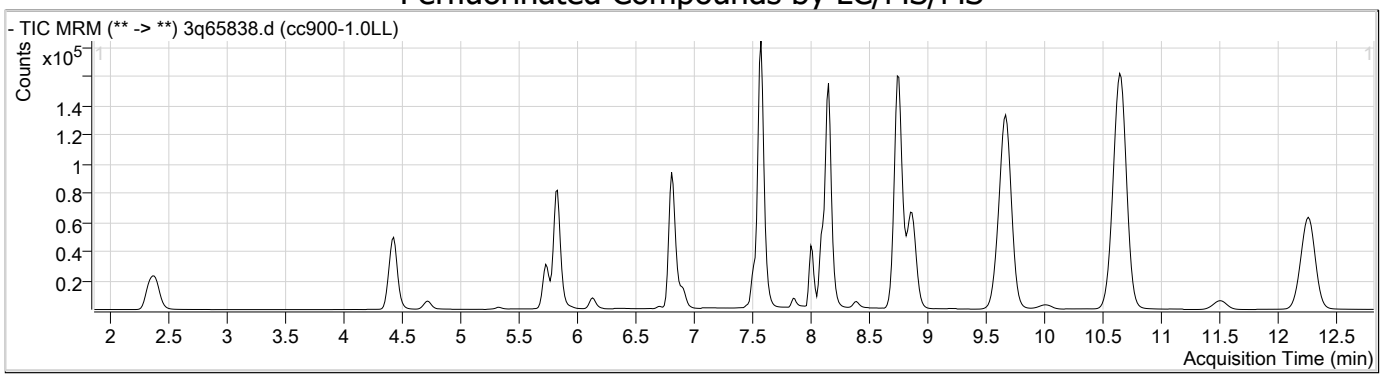
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	166814	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	244302	20.00 µg/L	0.013
M5-PFHxA	5.826	318.0 -> 273.0	326809	20.00 µg/L	0.013
M4-PFHpA	6.805	367.0 -> 322.0	325607	20.00 µg/L	0.013
M8-PFOA	7.573	421.0 -> 376.0	447269	20.00 µg/L	0.013
M9-PFNA	8.150	472.0 -> 427.0	496375	20.00 µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	737118	20.00 µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	952964	20.00 µg/L	-0.013
M2-PFDoDA	10.634	615.0 -> 570.0	1238250	20.00 µg/L	0.000
M2-PFTeDA	12.248	715.0 -> 670.0	513456	20.00 µg/L	0.013
M8-FOSA	7.503	506.0 -> 78.0	76321	20.00 µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	22463	20.00 µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	27663	20.00 µg/L	0.013
M8-PFOS	8.123	507.0 -> 99.0	42289	20.00 µg/L	0.013
M2-4:2FTS	5.721	329.0 -> 309.0	116665	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	175791	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	332531	20.00 µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	119837	20.00 µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	26061	20.00 µg/L	0.013
M3-MeFOSA	7.841	515.0 -> 169.0	17131	20.00 µg/L	0.000
M5-EtFOSAA	8.077	589.0 -> 419.0	120214	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	116665	19.01 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C2-6:2FTS	7.571	429.0 -> 409.0	175791	20.38 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C2-8:2FTS	8.860	529.0 -> 509.0	332531	19.42 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%	
13C2-PFDoDA	10.634	615.0 -> 570.0	1238250	20.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C2-PFTeDA	12.248	715.0 -> 670.0	513456	20.11 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-PFBS	4.704	302.0 -> 99.0	22463	20.30 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFHxS	6.834	402.0 -> 99.0	27663	20.54 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%	
13C4-PFBA	2.365	217.0 -> 172.0	166814	20.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	6.805	367.0 -> 322.0	325607	20.64 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C5-PFHxA	5.826	318.0 -> 273.0	326809	20.38 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFPeA	4.424	268.0 -> 223.0	244302	20.20 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C6-PFDA	8.739	519.0 -> 474.0	737118	20.28 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

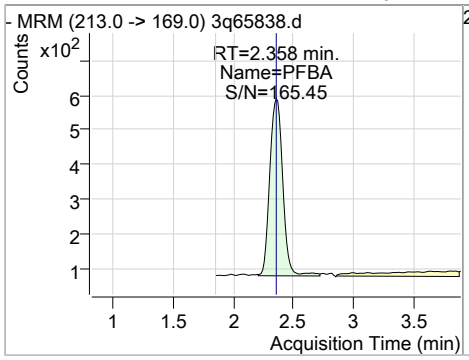
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C7-PFUnDA	9.664	570.0 -> 525.0	952964	20.01 µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-FOSA	7.503	506.0 -> 78.0	76321	21.42 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C8-PFOA	7.573	421.0 -> 376.0	447269	21.02 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C8-PFOS	8.123	507.0 -> 99.0	42289	20.44 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C9-PFNA	8.150	472.0 -> 427.0	496375	20.81 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
d3-MeFOSAA	7.991	573.0 -> 419.0	119837	21.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C3-HFPO-DA	6.130	287.0 -> 169.0	26065	20.18 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSA	7.841	515.0 -> 169.0	17131	21.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
d5-EtFOSAA	8.077	589.0 -> 419.0	120264	21.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
Target Compounds						**QValue**
4:2FTS	5.723	327.0 -> 307.0	6792	1.04 µg/L		94
6:2FTS	7.571	427.0 -> 407.0	9433	1.04 µg/L		96
8:2FTS	8.861	527.0 -> 507.0	17664	1.04 µg/L		97
EtFOSAA	8.091	584.0 -> 419.0	5236	1.01 µg/L	m	86
FOSA	7.504	498.0 -> 78.0	3771	1.00 µg/L		99
MeFOSAA	8.004	570.0 -> 419.0	5482	1.00 µg/L	m	89
PFBA	2.358	213.0 -> 169.0	3855	1.01 µg/L		100
PFBS	4.707	299.0 -> 80.0	3257	0.99 µg/L		98
PFDA	8.740	513.0 -> 469.0	36170	0.97 µg/L		99
PFDoDA	10.638	613.0 -> 569.0	56996	0.97 µg/L		99
PFDS	9.548	599.0 -> 80.0	3944	0.98 µg/L		98
PFHpA	6.807	363.0 -> 319.0	23745	0.96 µg/L		99
PFHpS	7.557	449.0 -> 80.0	2982	1.06 µg/L		99
PFHxA	5.827	313.0 -> 269.0	17467	0.95 µg/L		100
PFHxS	6.835	399.0 -> 80.0	3353	0.98 µg/L	m	99
PFNA	8.151	463.0 -> 419.0	22149	1.01 µg/L		98
PFNS	8.680	549.0 -> 80.0	3468	0.98 µg/L		96
PFOA	7.573	413.0 -> 369.0	27615	0.96 µg/L		99
PFOS	8.124	499.0 -> 80.0	3792	1.00 µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	11142	0.99 µg/L		100
PFPeS	5.932	349.0 -> 80.0	2573	1.01 µg/L		98
PFTeDA	12.252	713.0 -> 669.0	36251	0.99 µg/L		99
PFTrDA	11.497	663.0 -> 619.0	48135	0.95 µg/L		99
PFUnDA	9.666	563.0 -> 519.0	50506	0.96 µg/L		99
11Cl-PF3OUdS	9.997	631.0 -> 451.0	16353	0.95 µg/L		99
9Cl-PF3ONS	8.384	531.0 -> 351.0	12024	0.95 µg/L		100
ADONA	6.903	377.0 -> 251.0	34233	0.94 µg/L		99
HFPO-DA	6.122	329.0 -> 169.0	3161	0.98 µg/L		99
MeFOSA	7.854	512.0 -> 169.0	978	1.05 µg/L		96
4-PFECHS	7.454	461.0 -> 381.0	6769	0.84 µg/L		97
FBSA	5.327	298.0 -> 78.0	5276	1.00 µg/L		100
FHxSA	6.700	398.0 -> 78.0	5508	1.03 µg/L		100

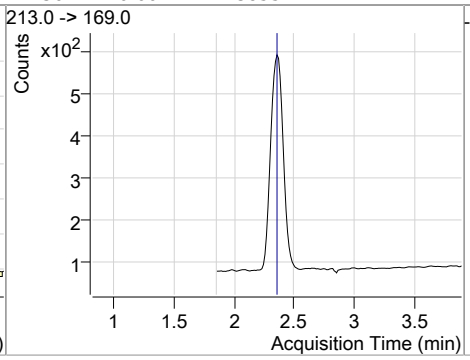
 # = Qualifier out of range, m = manually integrated, + = Area summed

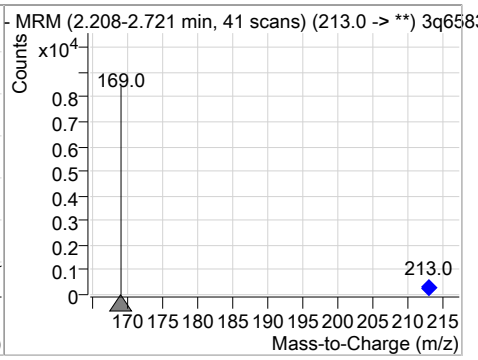
Perfluorinated Compounds by LC/MS/MS



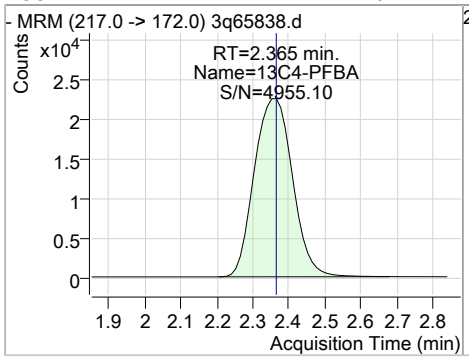
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.01	2.36	0.00	3855				

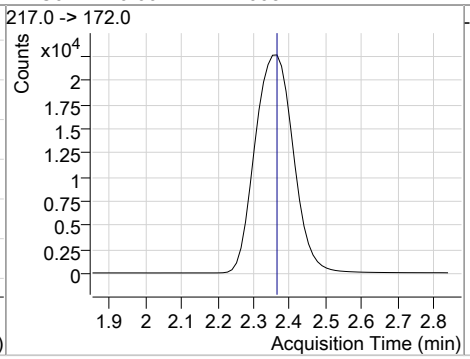


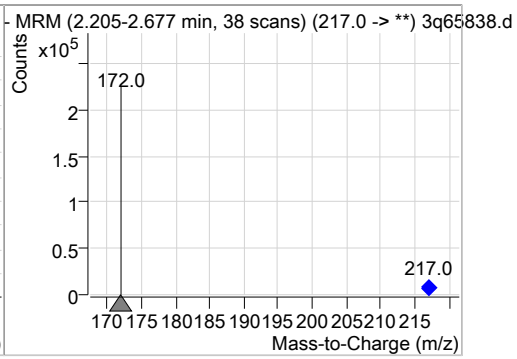




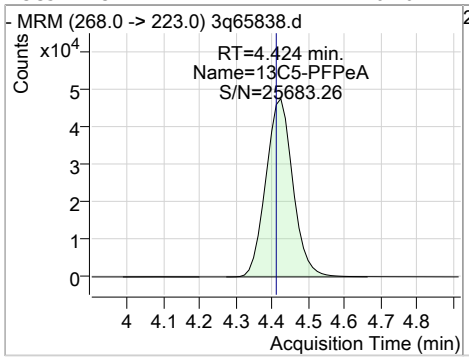
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.12	2.36	0.00	166814				

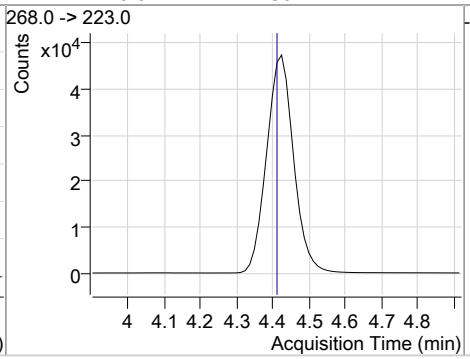


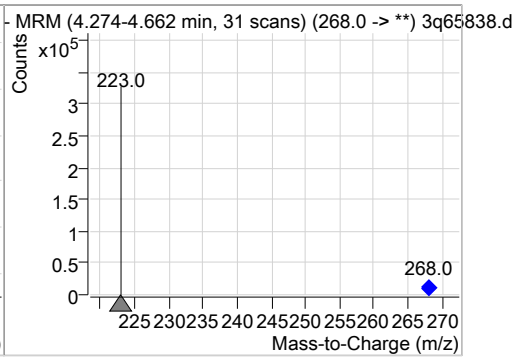




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.20	4.42	0.01	244302				

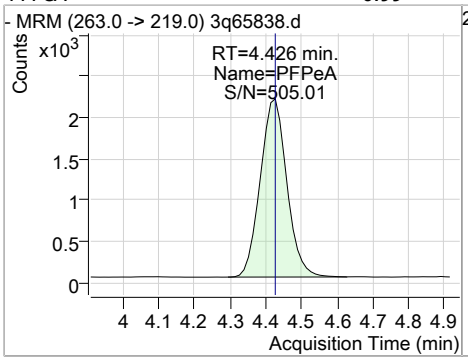


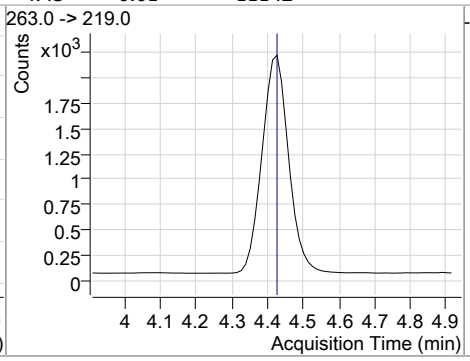


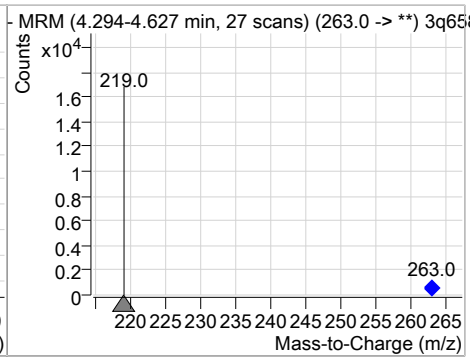


Perfluorinated Compounds by LC/MS/MS

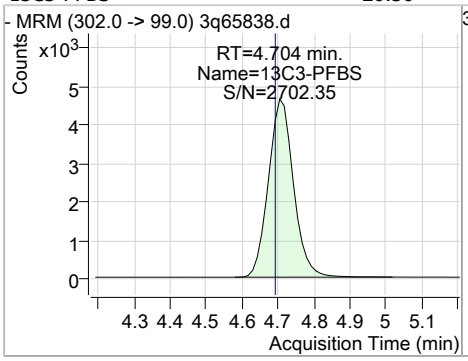
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.99	4.43	0.01	11142				

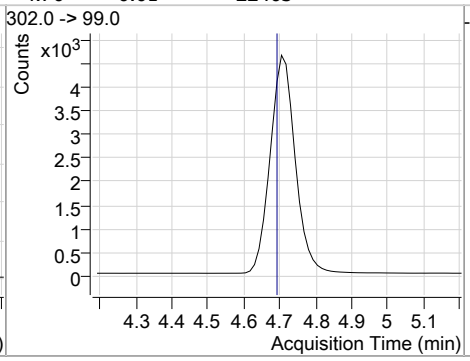


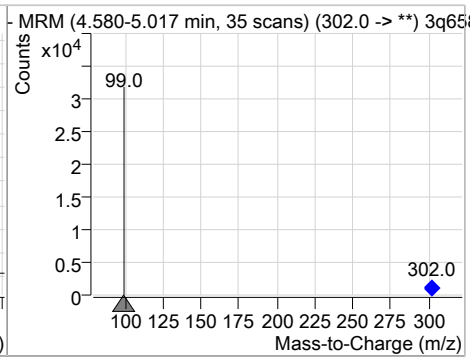




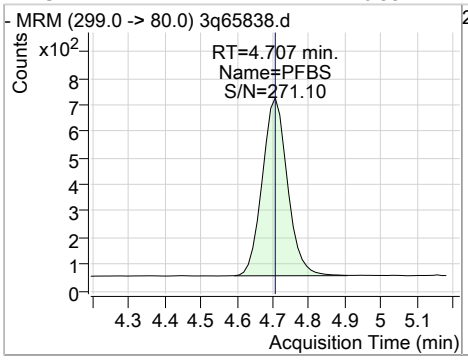
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.30	4.70	0.01	22463				

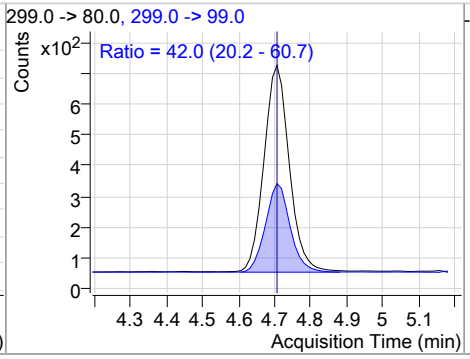


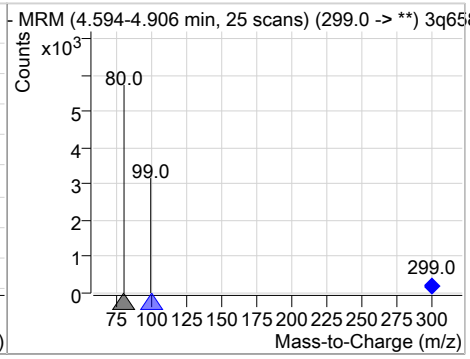




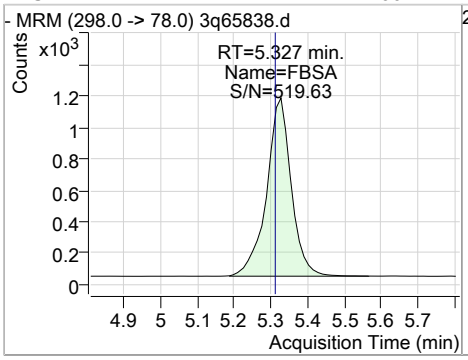
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.99	4.71	0.01	3257	299.0 -> 99.0	42.0	20.2	60.7

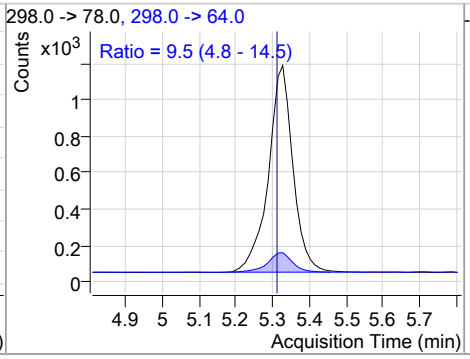


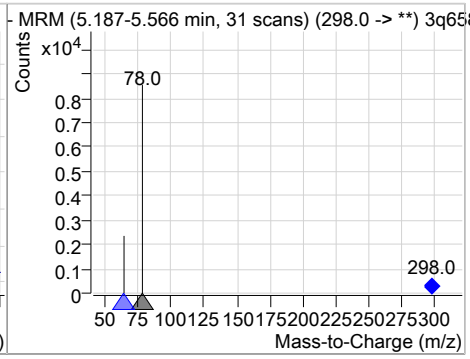




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.00	5.33	0.03	5276	298.0 -> 64.0	9.5	4.8	14.5

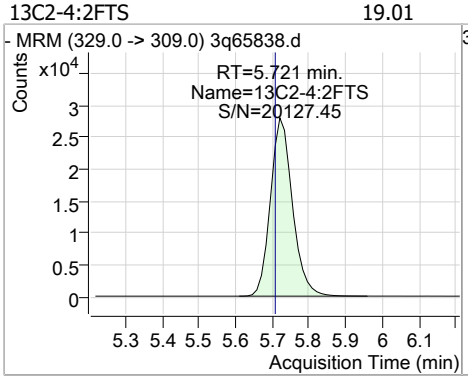


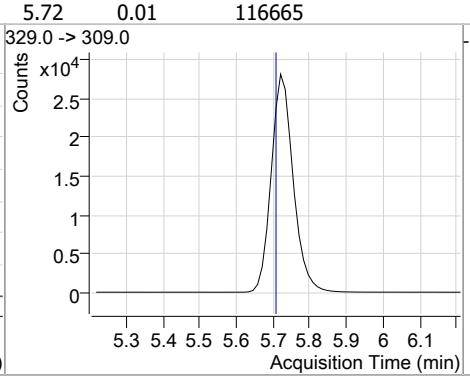


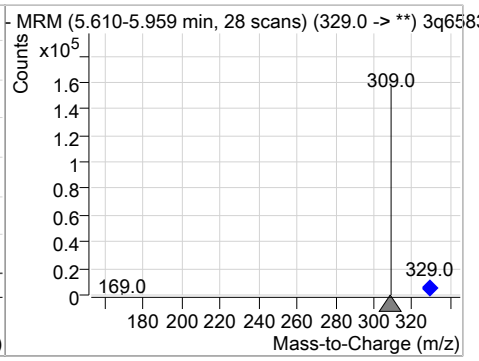


Perfluorinated Compounds by LC/MS/MS

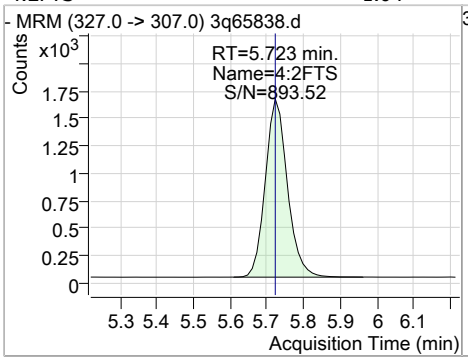
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.01	5.72	0.01	116665				

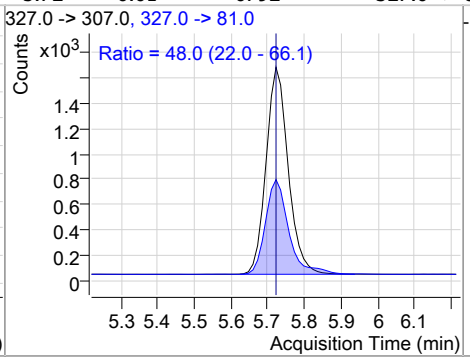


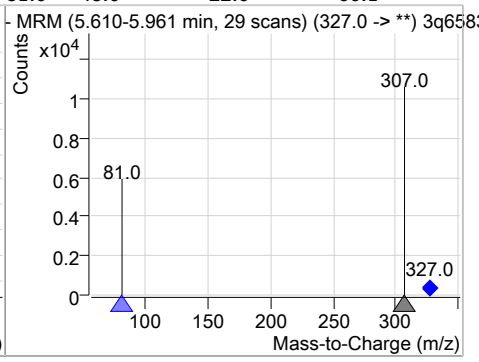




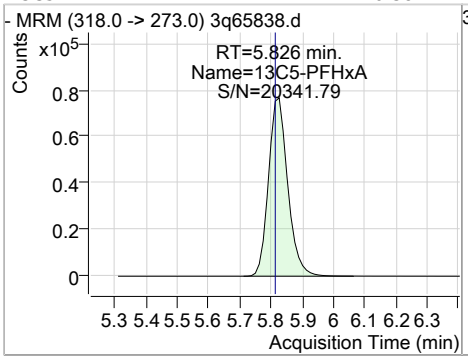
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.04	5.72	0.01	6792	327.0 -> 81.0	48.0	22.0	66.1

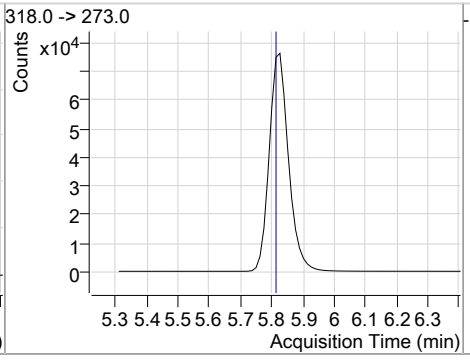


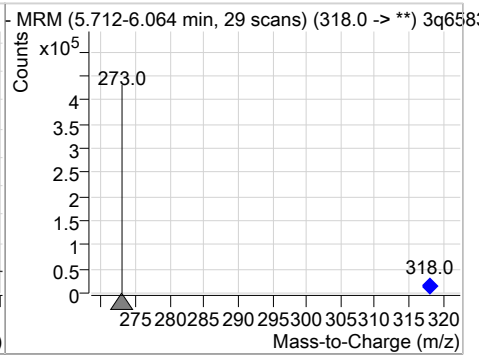




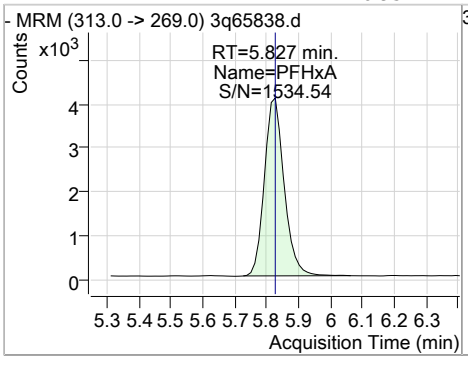
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.38	5.83	0.01	326809				

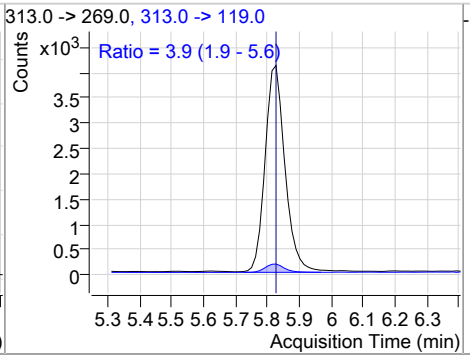


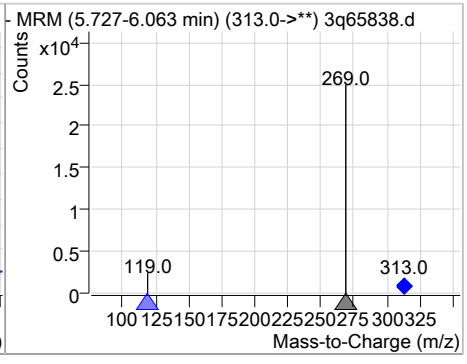




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.95	5.83	0.01	17467	313.0 -> 119.0	3.9	1.9	5.6

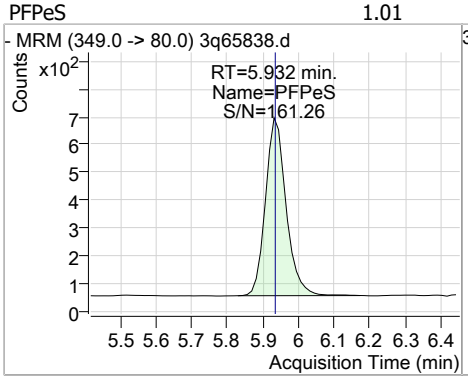


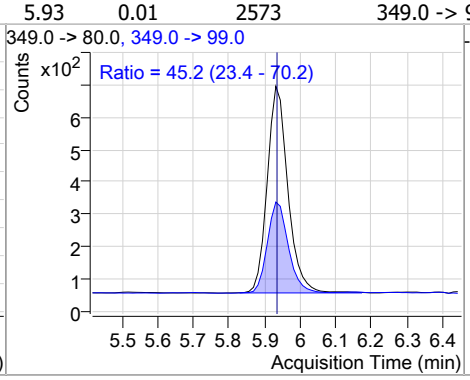


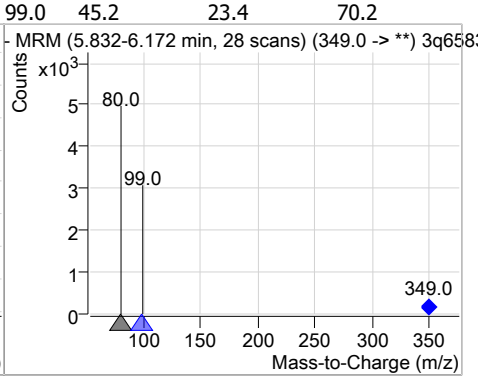


Perfluorinated Compounds by LC/MS/MS

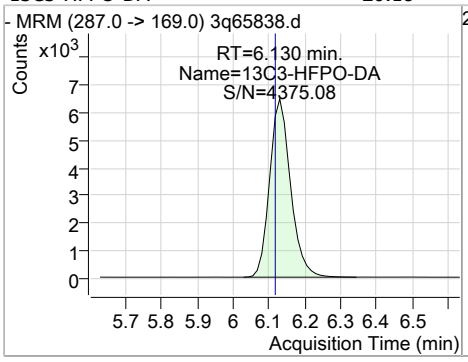
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.01	5.93	0.01	2573	349.0 -> 99.0	45.2	23.4	70.2

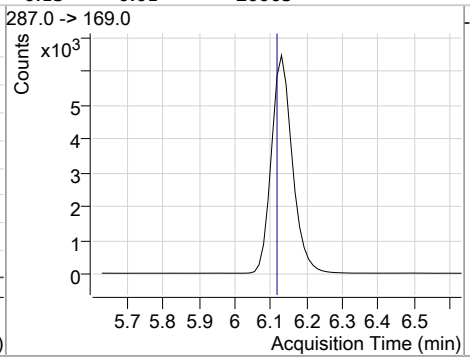


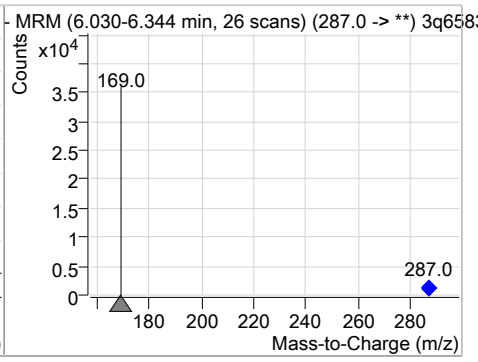




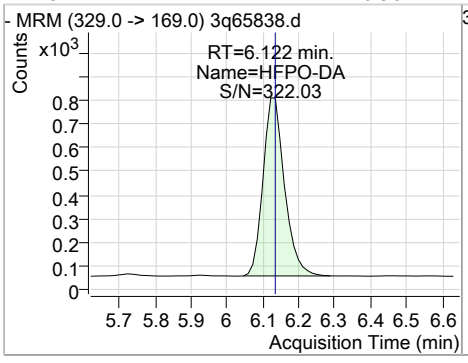
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.18	6.13	0.01	26065				

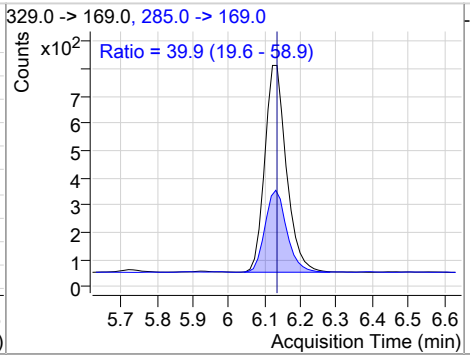


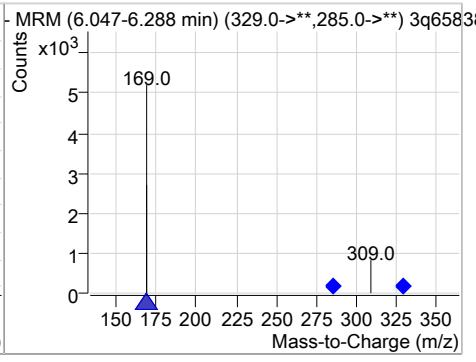




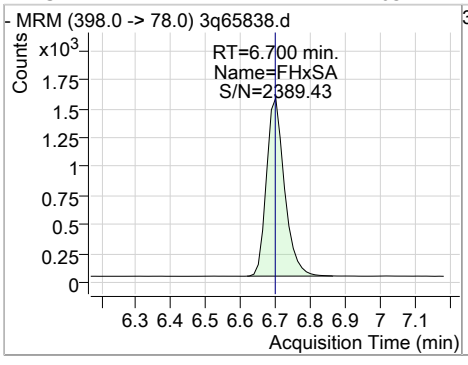
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.98	6.12	0.00	3161	285.0 -> 169.0	39.9	19.6	58.9

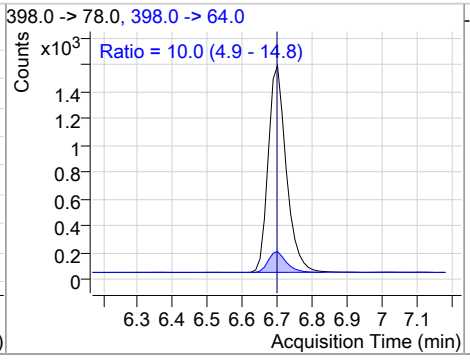


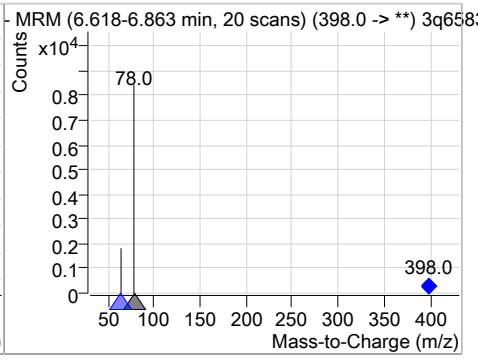




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.03	6.70	0.01	5508	398.0 -> 64.0	10.0	4.9	14.8

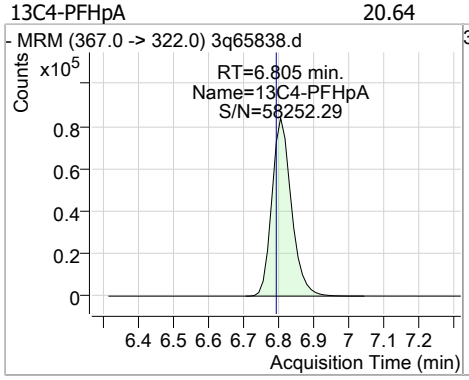


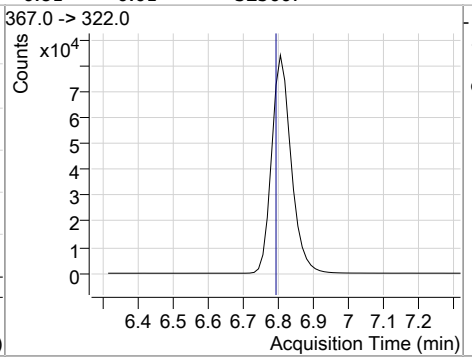


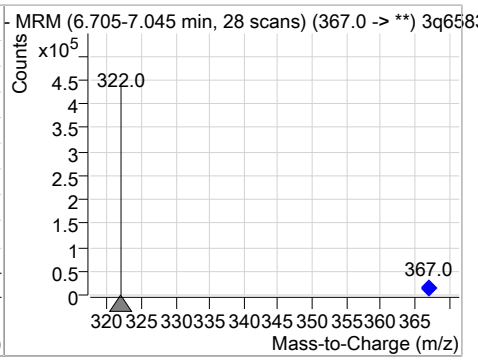


Perfluorinated Compounds by LC/MS/MS

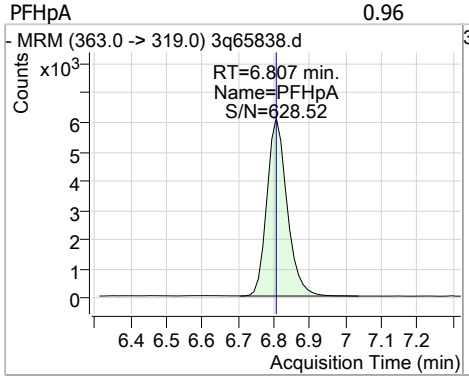
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.64	6.81	0.01	325607				

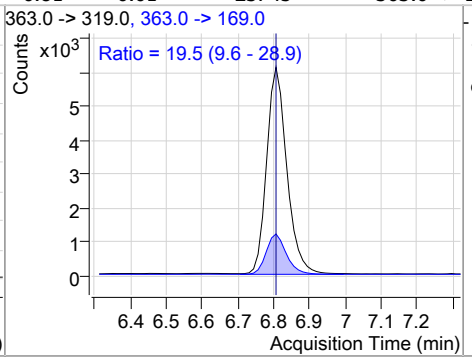


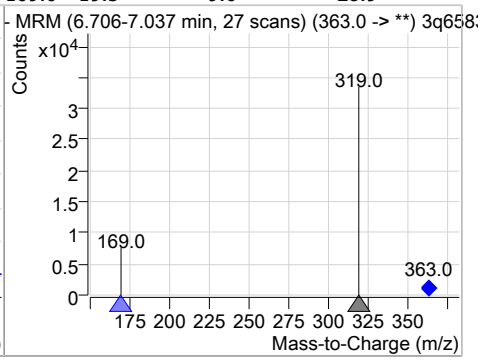




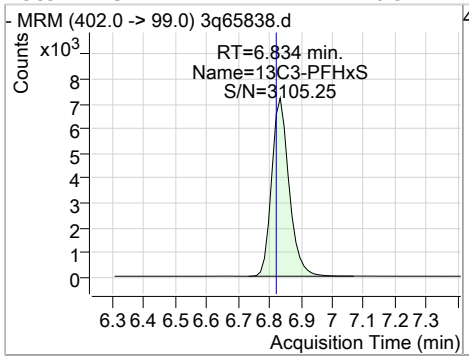
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.96	6.81	0.01	23745	363.0 -> 169.0	19.5	9.6	28.9

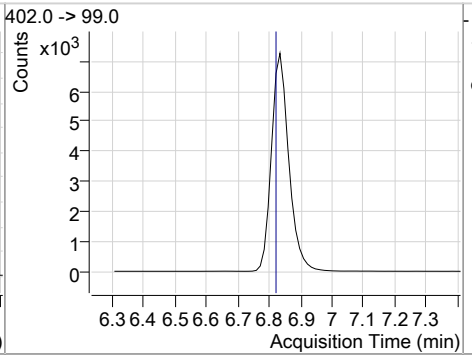


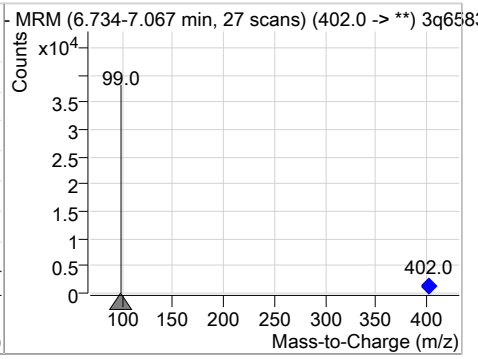




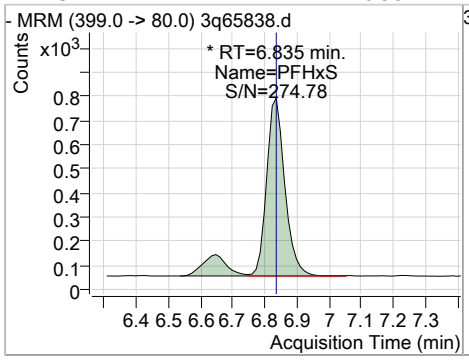
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.54	6.83	0.01	27663				

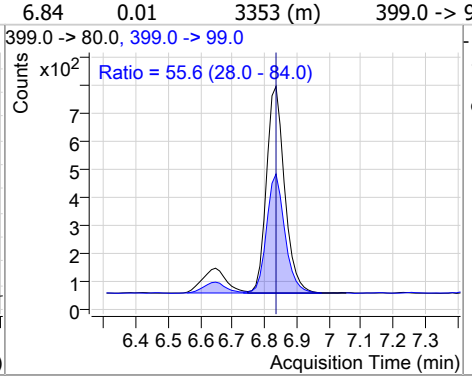


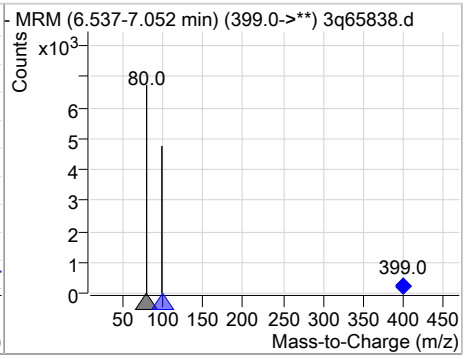




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.98	6.84	0.01	3353 (m)	399.0 -> 99.0	55.6	28.0	84.0

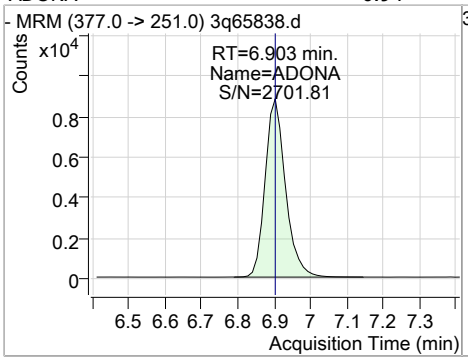


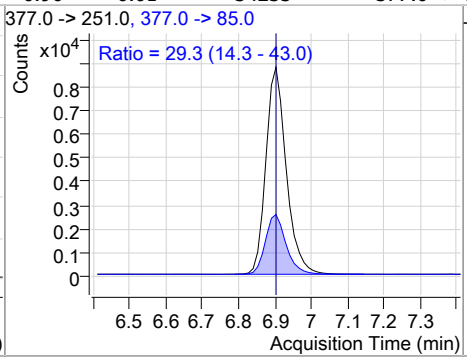


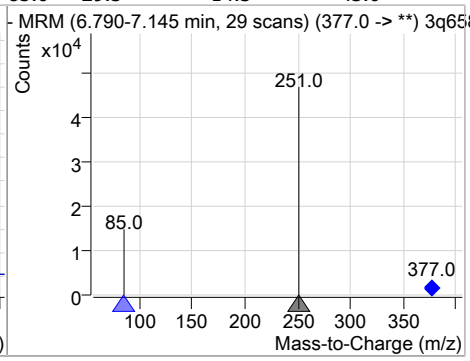


Perfluorinated Compounds by LC/MS/MS

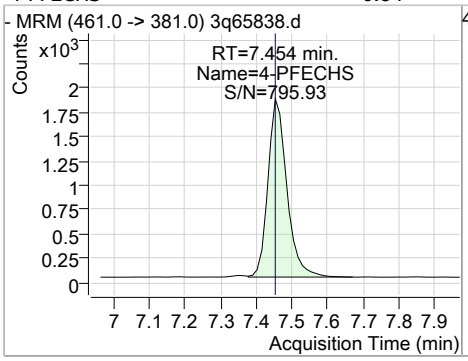
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.94	6.90	0.01	34233	377.0 -> 85.0	29.3	14.3	43.0

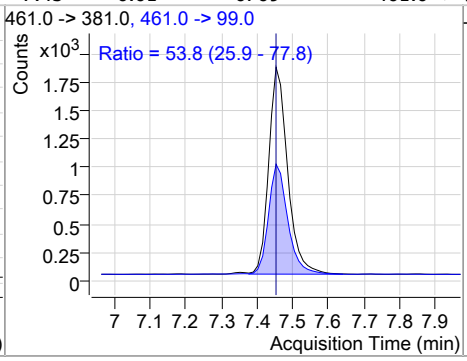


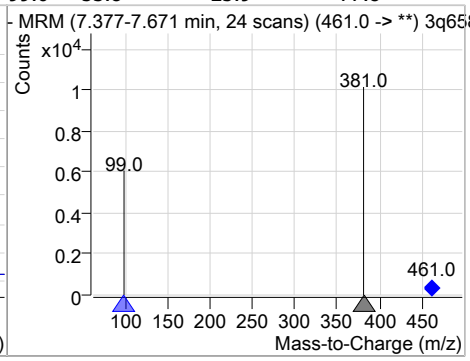




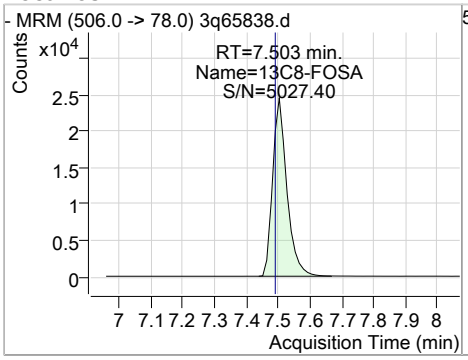
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.84	7.45	0.01	6769	461.0 -> 99.0	53.8	25.9	77.8

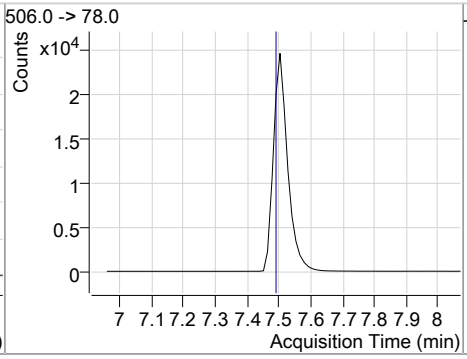


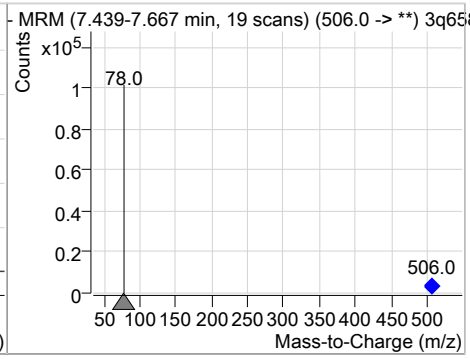




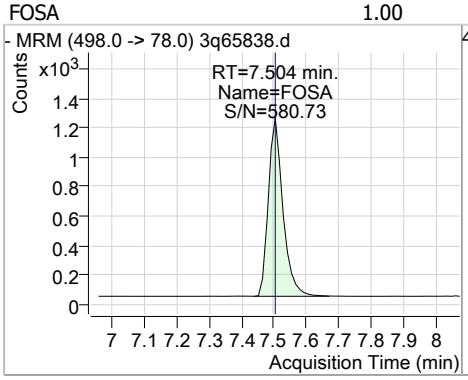
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.42	7.50	0.01	76321				

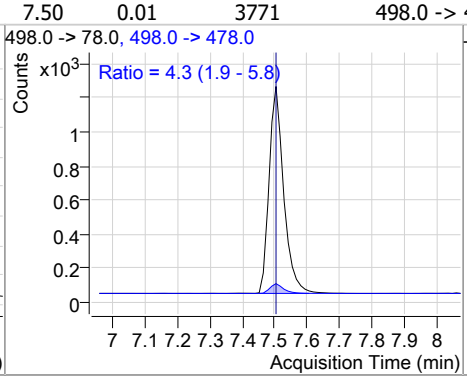


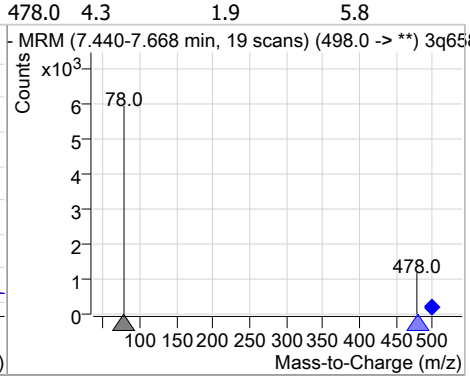




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.00	7.50	0.01	3771	498.0 -> 478.0	4.3	1.9	5.8

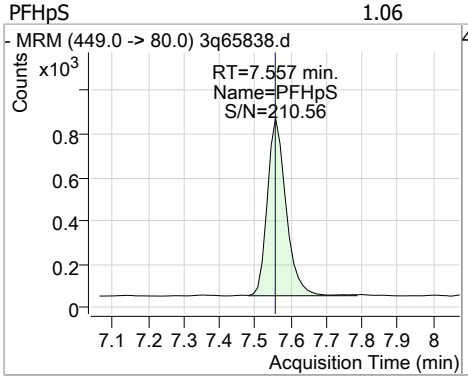


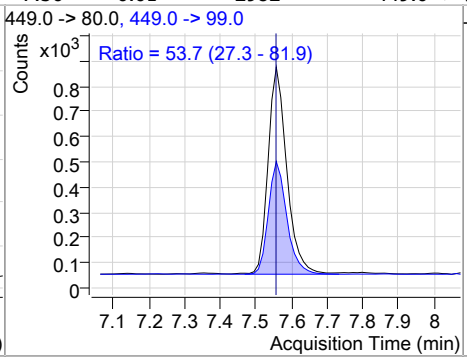


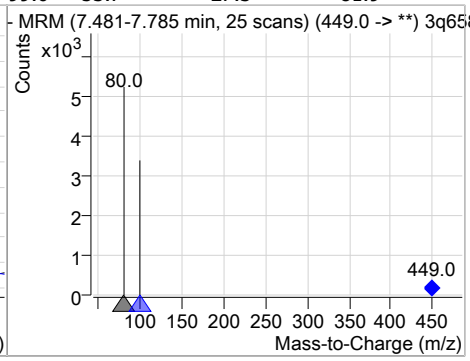


Perfluorinated Compounds by LC/MS/MS

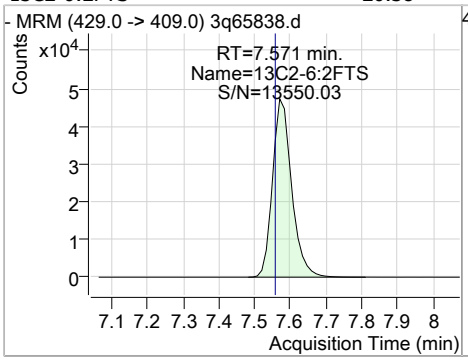
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.06	7.56	0.01	2982	449.0 -> 99.0	53.7	27.3	81.9

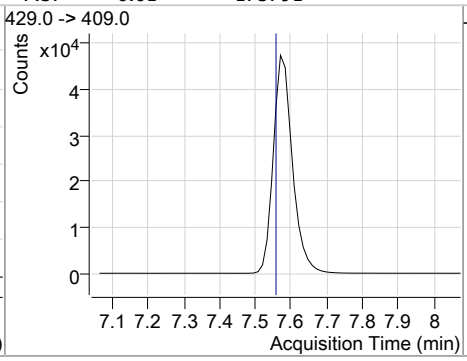


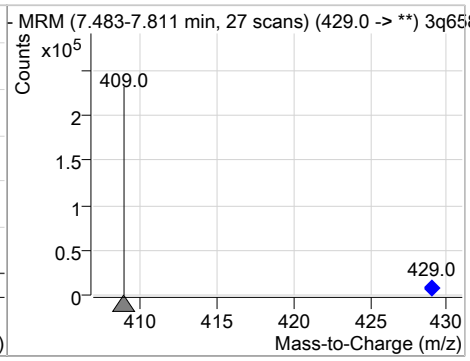




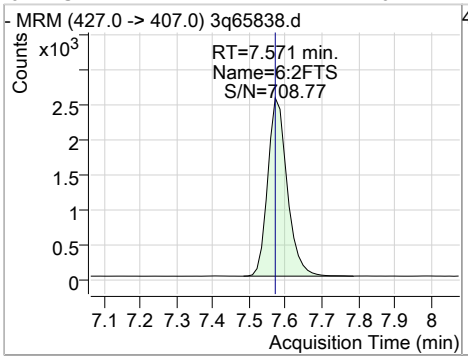
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.38	7.57	0.01	175791				

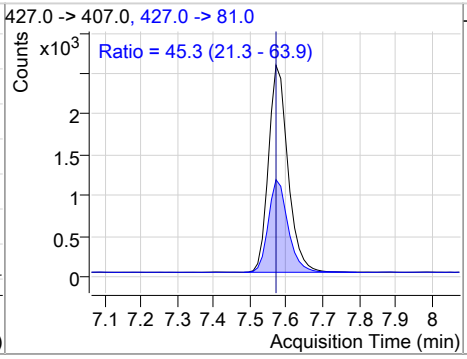


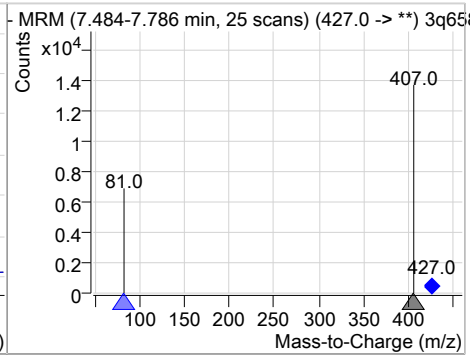




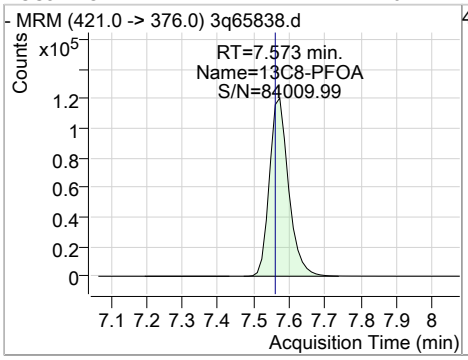
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.04	7.57	0.01	9433	427.0 -> 81.0	45.3	21.3	63.9

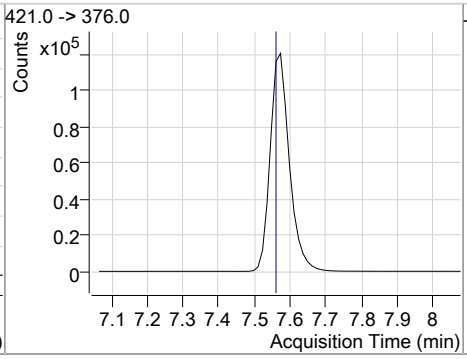


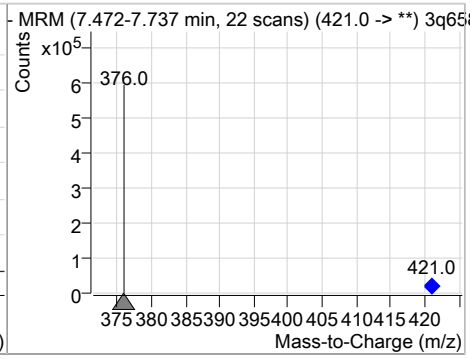




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.02	7.57	0.01	447269				

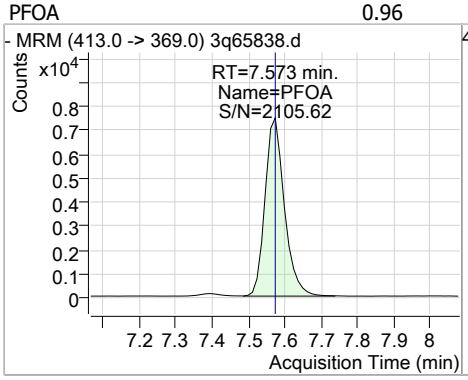


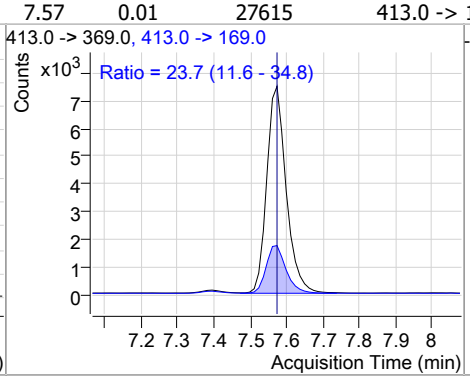


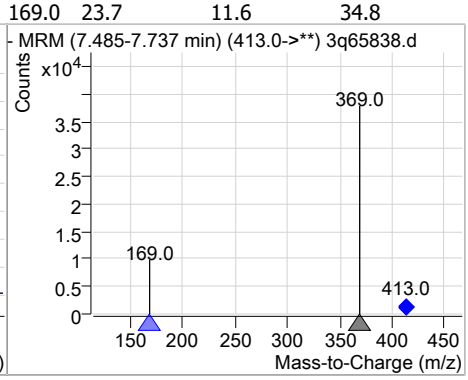


Perfluorinated Compounds by LC/MS/MS

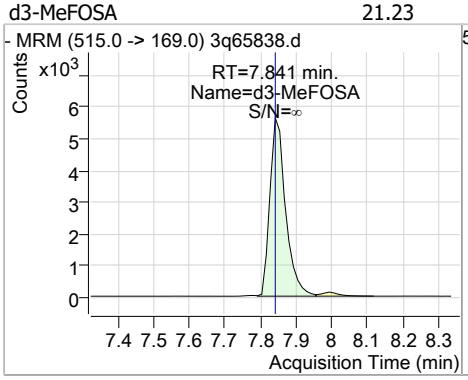
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.96	7.57	0.01	27615	413.0 -> 169.0	23.7	11.6	34.8

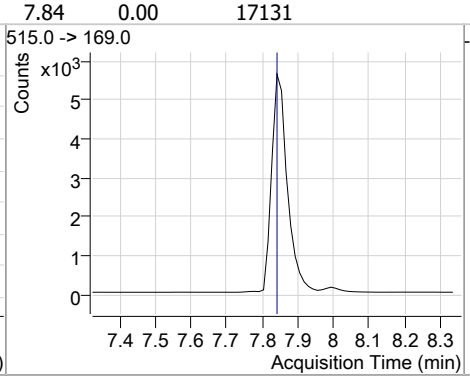


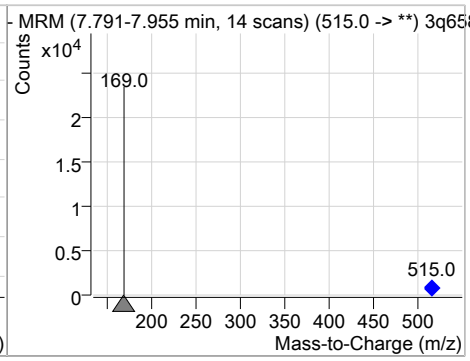




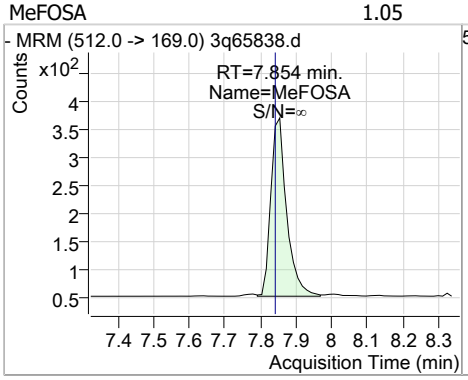
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.23	7.84	0.00	17131				

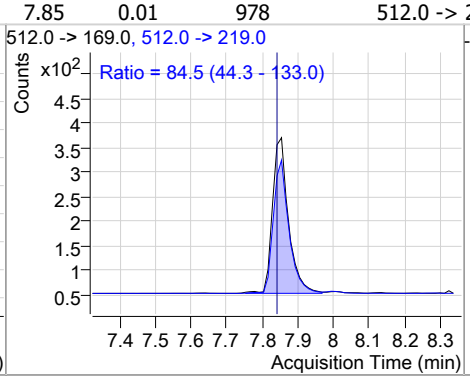


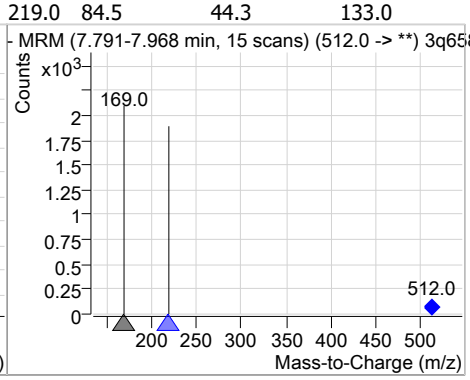




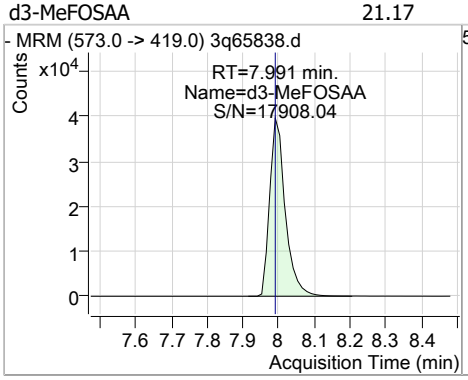
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.05	7.85	0.01	978	512.0 -> 219.0	84.5	44.3	133.0

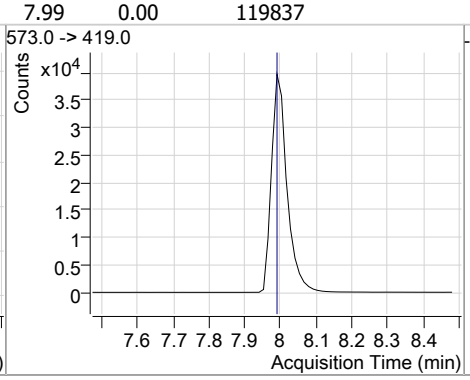


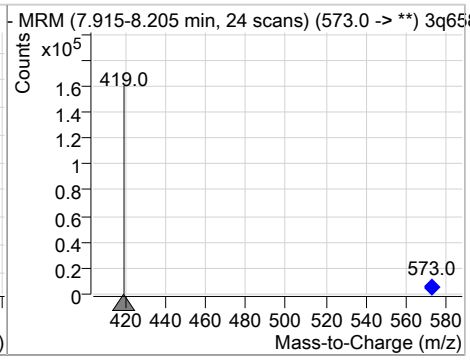




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.17	7.99	0.00	119837				

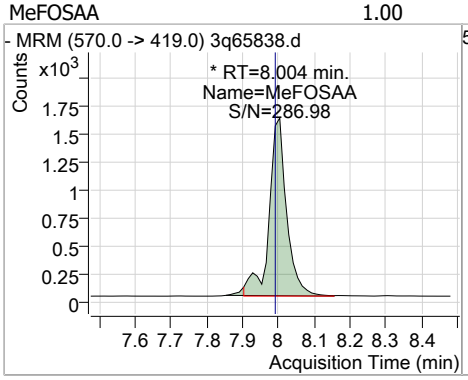


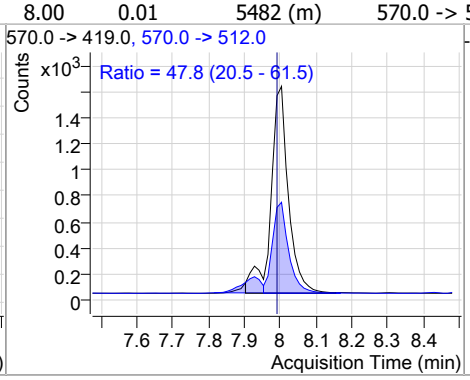


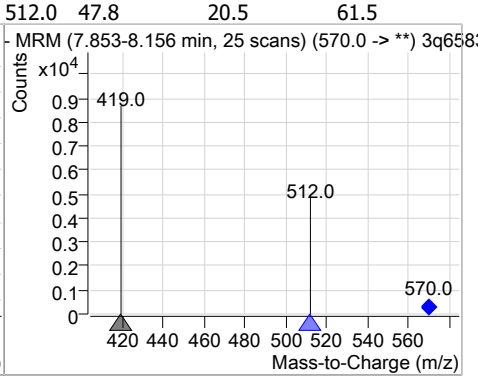


Perfluorinated Compounds by LC/MS/MS

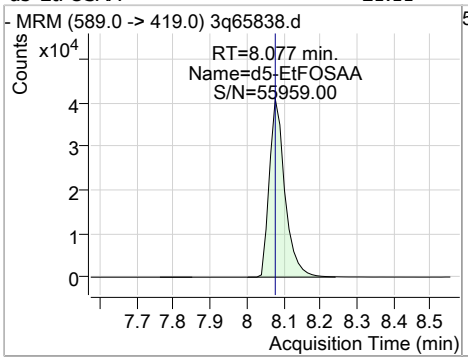
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.00	8.00	0.01	5482 (m)	570.0 -> 512.0	47.8	20.5	61.5

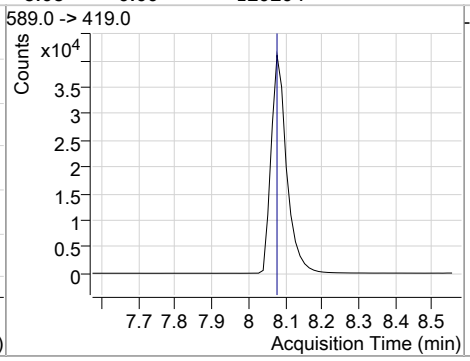


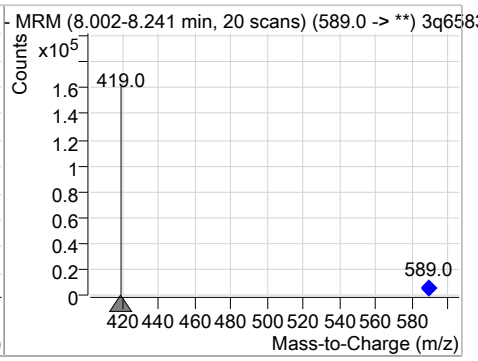




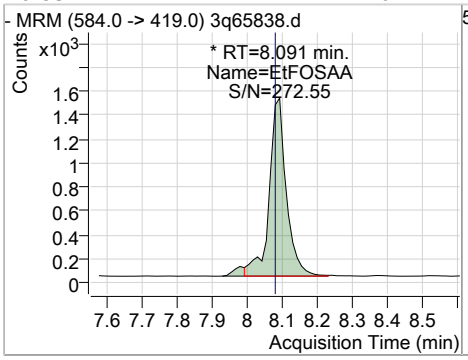
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.11	8.08	0.00	120264				

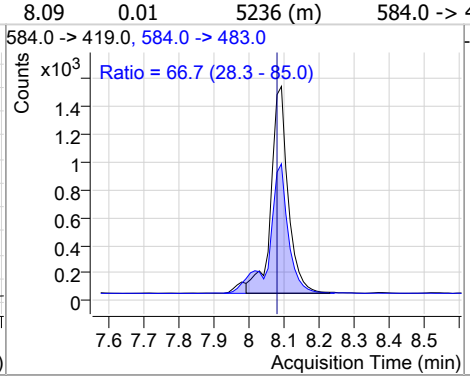


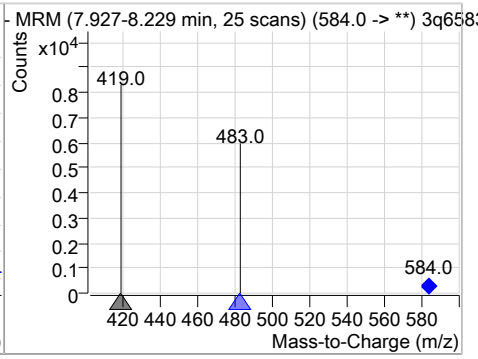




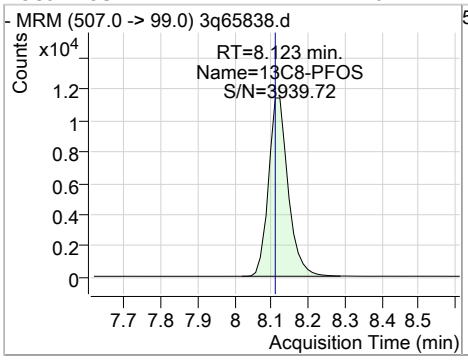
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.01	8.09	0.01	5236 (m)	584.0 -> 483.0	66.7	28.3	85.0

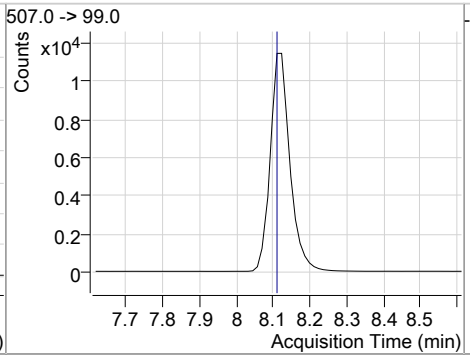


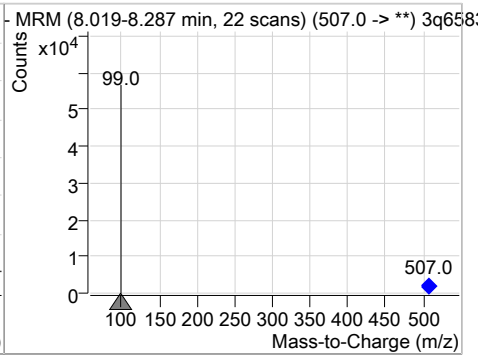




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.44	8.12	0.01	42289				

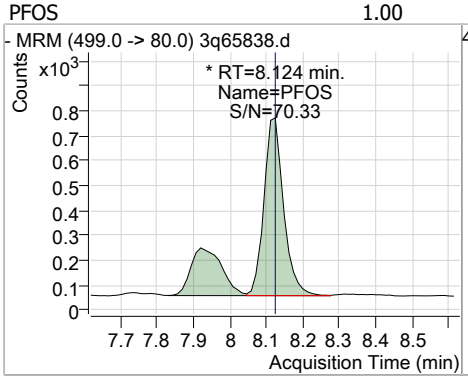


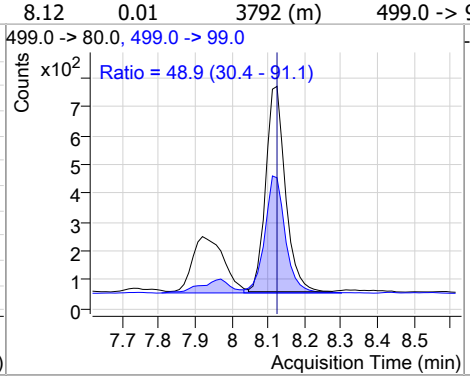


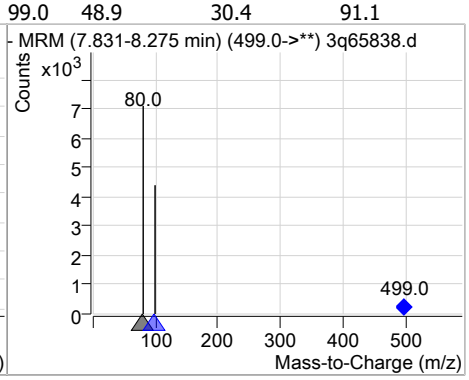


Perfluorinated Compounds by LC/MS/MS

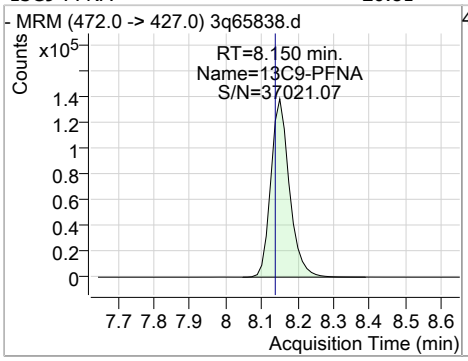
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	8.12	0.01	3792 (m)	499.0 -> 99.0	48.9	30.4	91.1

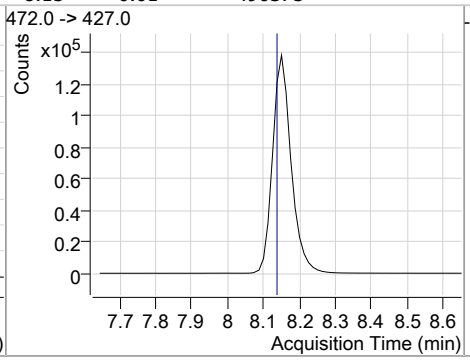


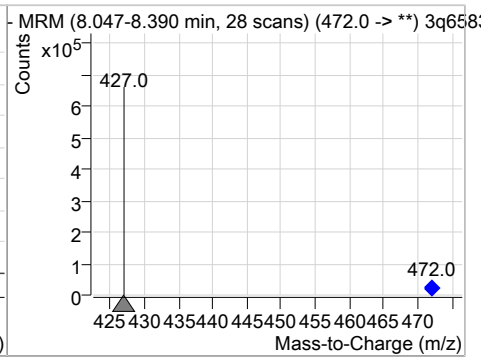




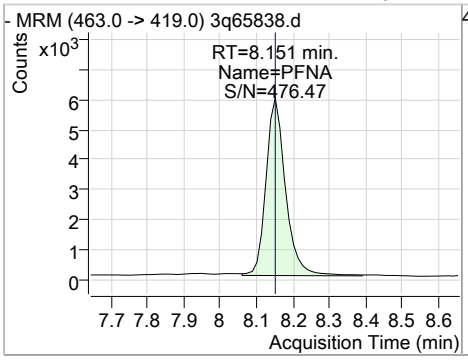
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.81	8.15	0.01	496375				

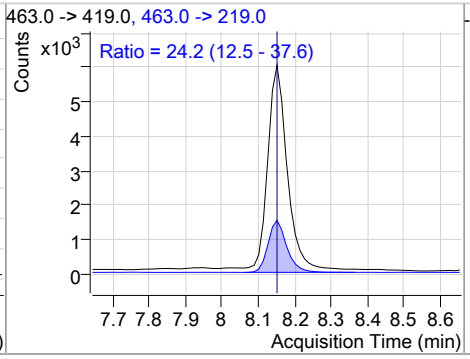


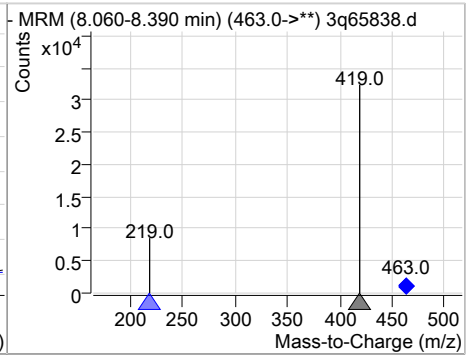




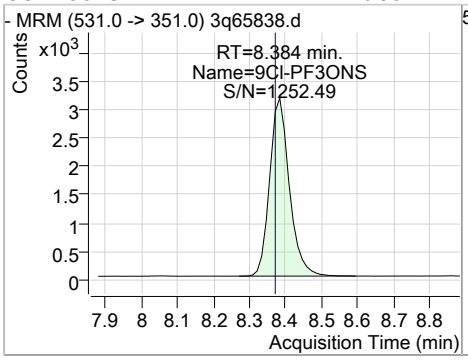
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.01	8.15	0.01	22149	463.0 -> 219.0	24.2	12.5	37.6

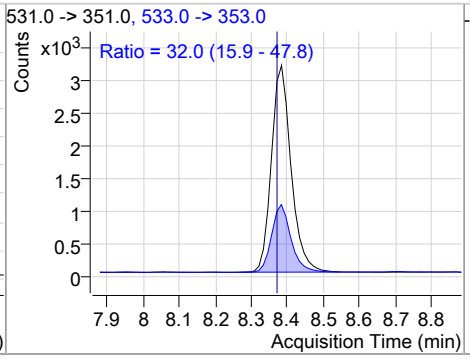


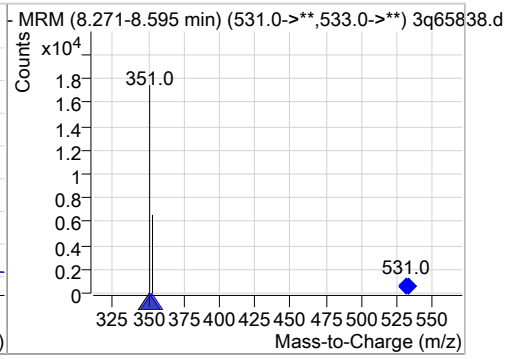




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.95	8.38	0.01	12024	533.0 -> 353.0	32.0	15.9	47.8

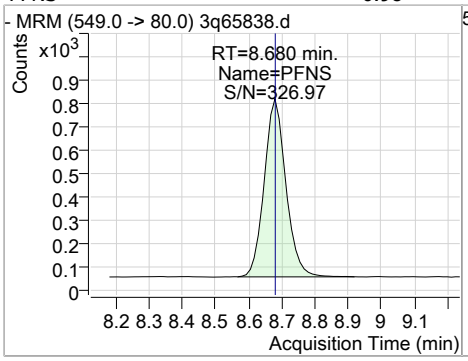


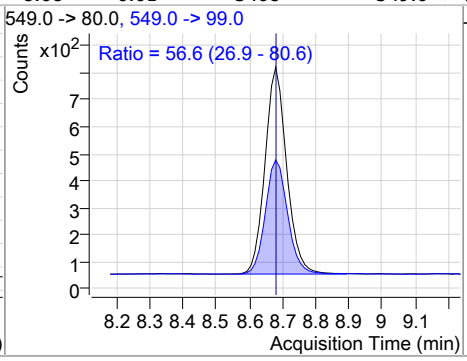


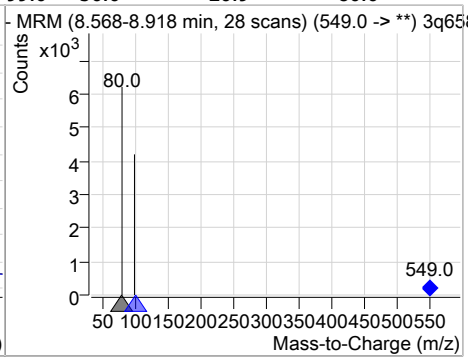


Perfluorinated Compounds by LC/MS/MS

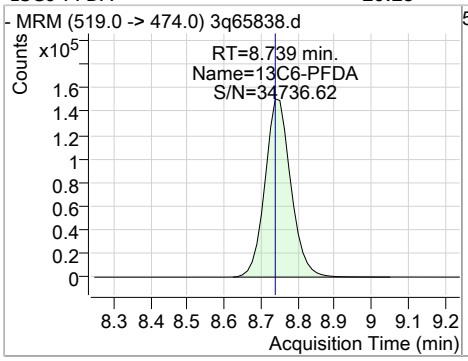
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.98	8.68	0.01	3468	549.0 -> 99.0	56.6	26.9	80.6

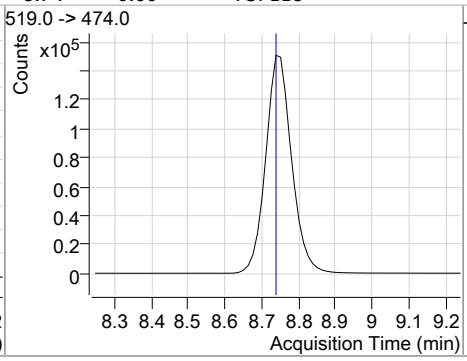


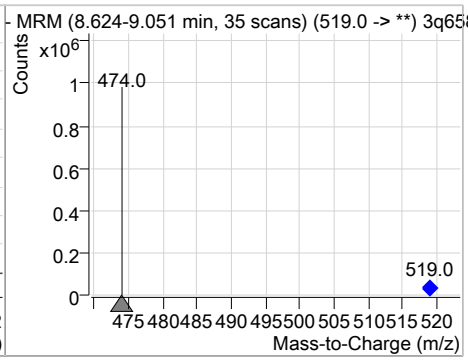




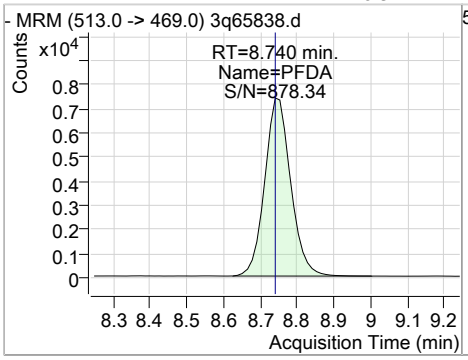
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.28	8.74	0.00	737118				

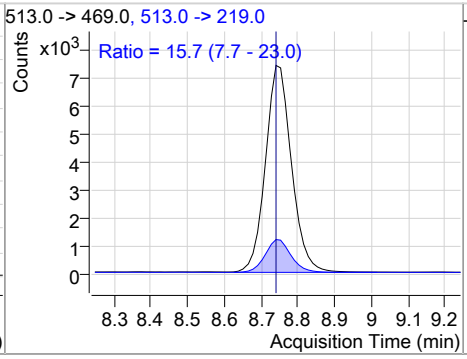


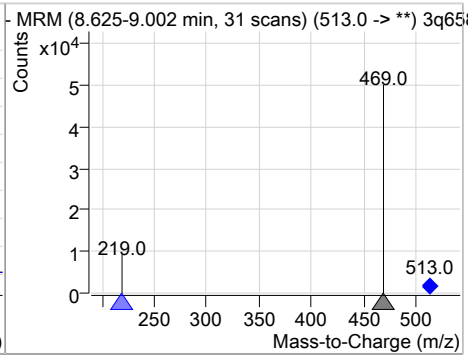




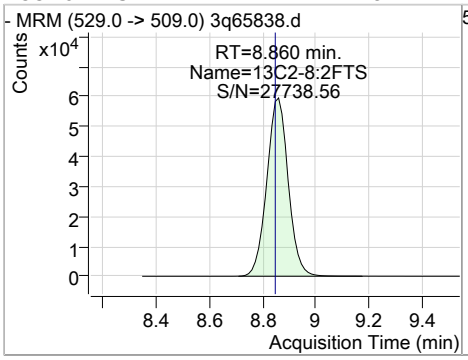
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.97	8.74	0.00	36170	513.0 -> 219.0	15.7	7.7	23.0

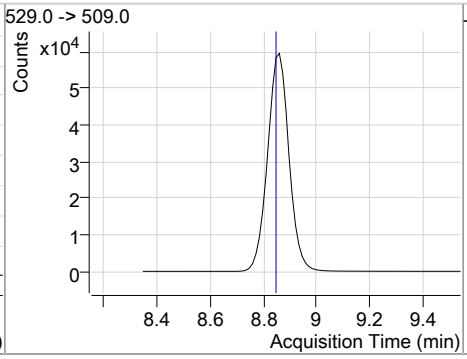


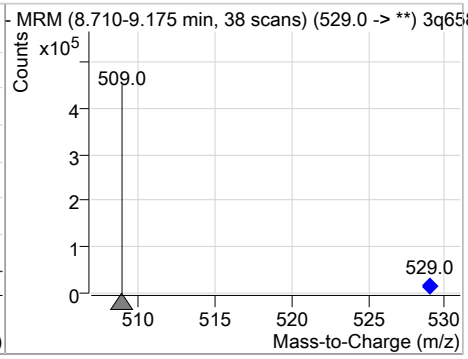




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.42	8.86	0.01	332531				

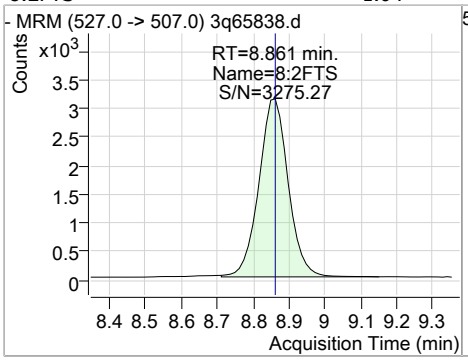


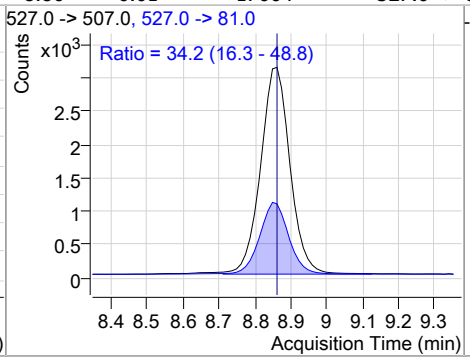


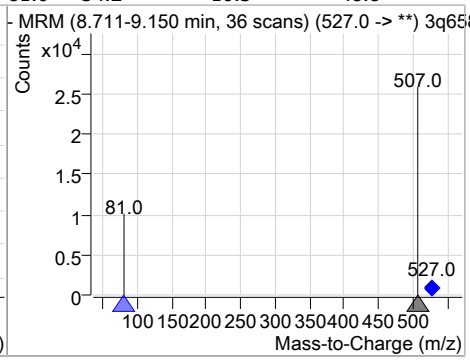


Perfluorinated Compounds by LC/MS/MS

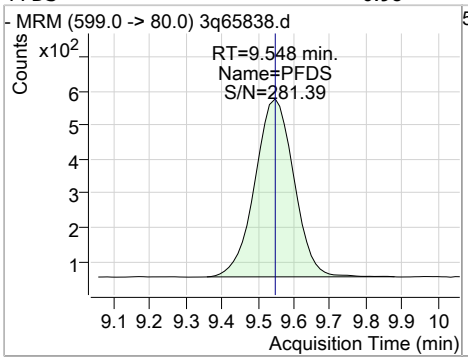
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	8.86	0.01	17664	527.0 -> 81.0	34.2	16.3	48.8

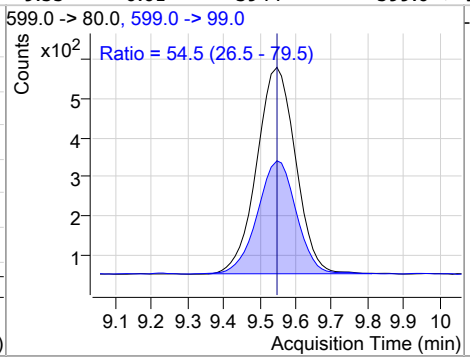


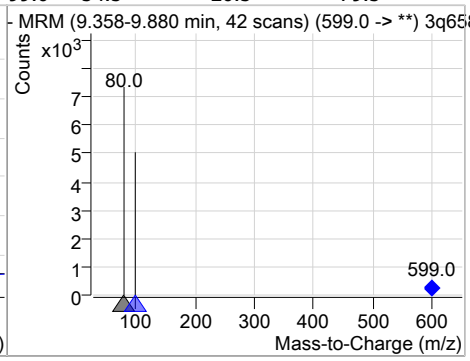




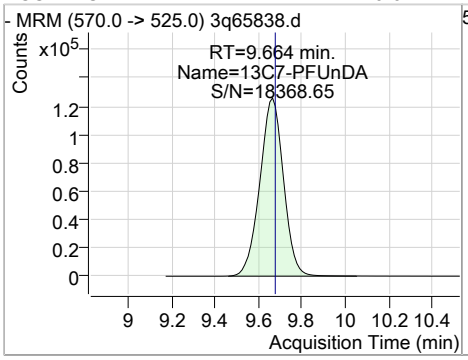
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.98	9.55	-0.01	3944	599.0 -> 99.0	54.5	26.5	79.5

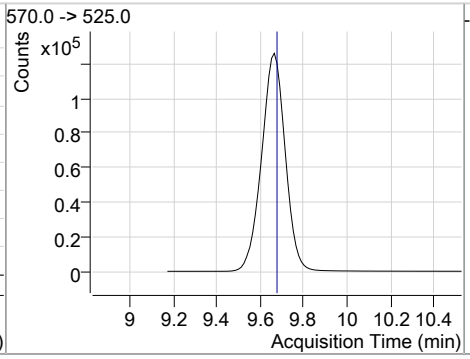


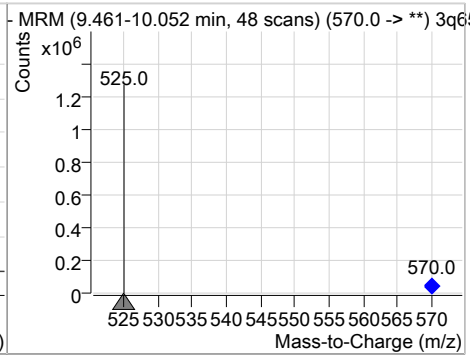




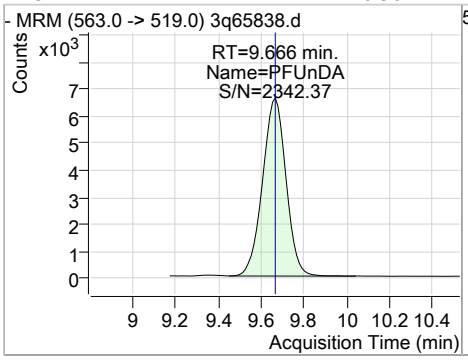
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.01	9.66	-0.01	952964				

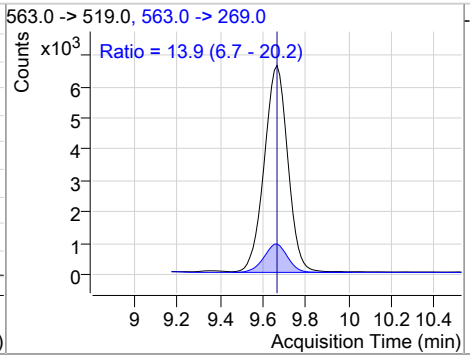


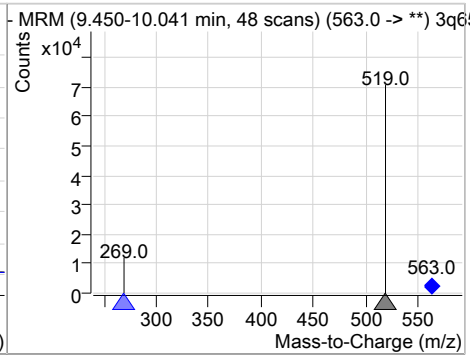




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.96	9.67	-0.01	50506	563.0 -> 269.0	13.9	6.7	20.2

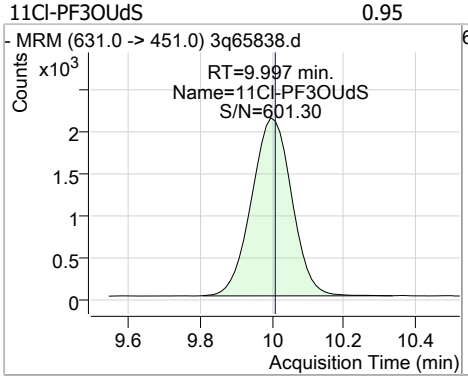


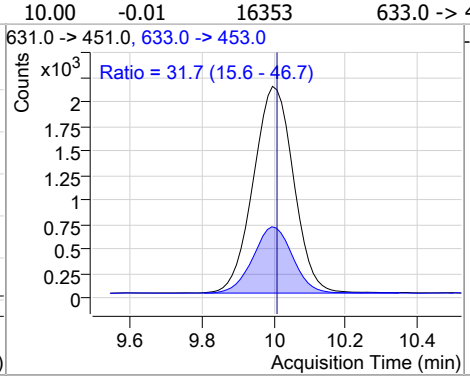


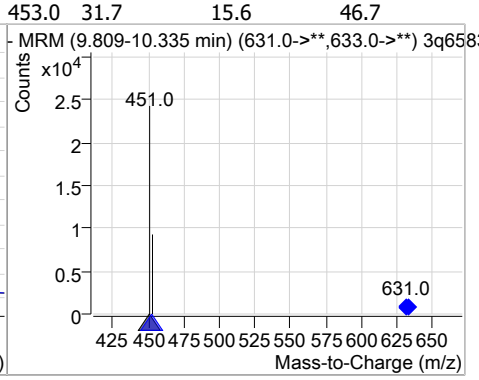


Perfluorinated Compounds by LC/MS/MS

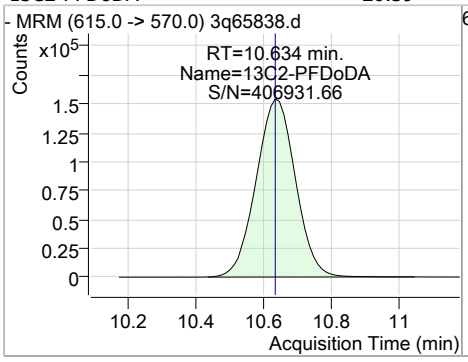
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.95	10.00	-0.01	16353	633.0 -> 453.0	31.7	15.6	46.7

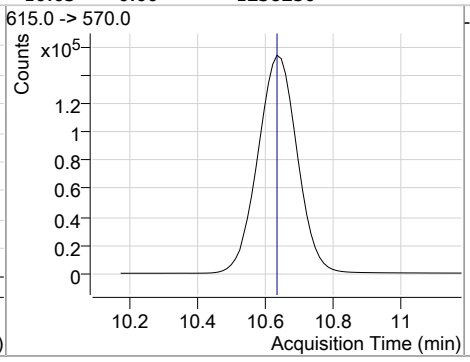


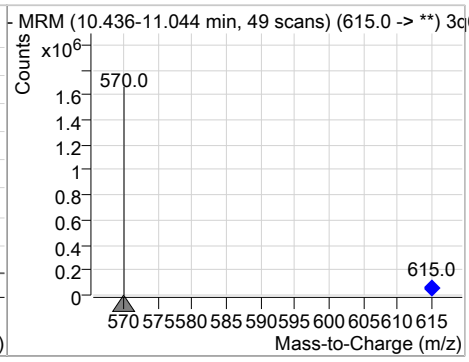




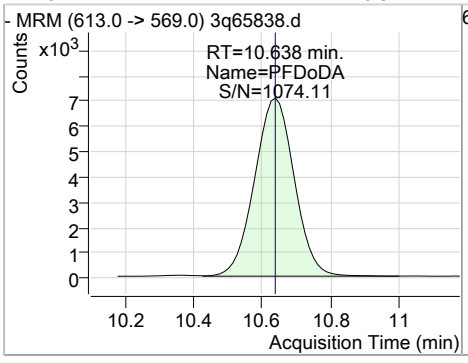
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.39	10.63	0.00	1238250				

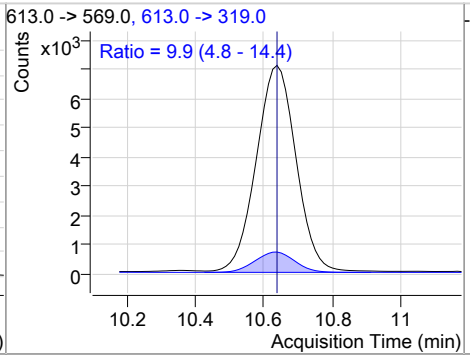


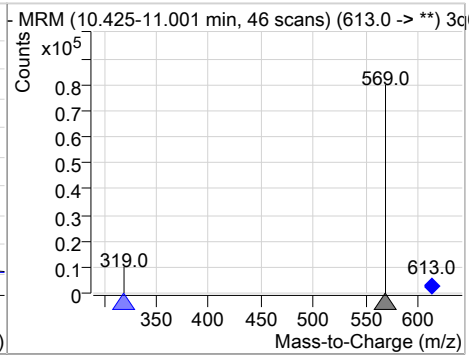




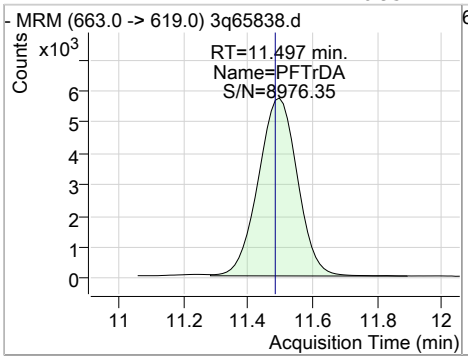
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.97	10.64	0.00	56996	613.0 -> 319.0	9.9	4.8	14.4

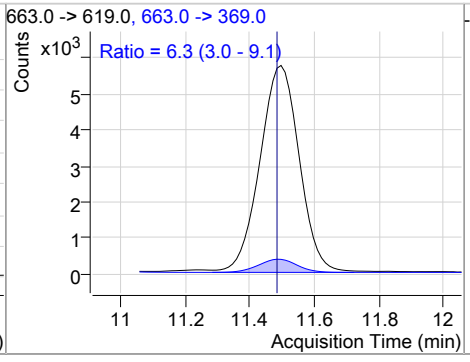


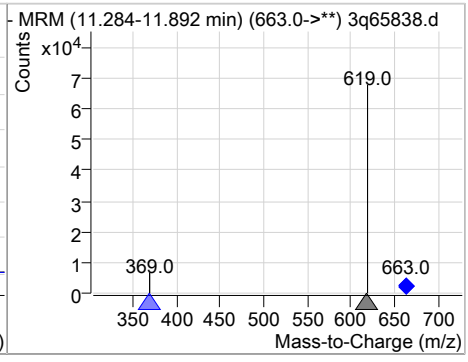




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.95	11.50	0.01	48135	663.0 -> 369.0	6.3	3.0	9.1

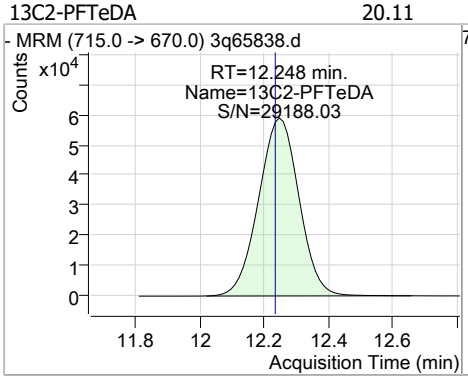


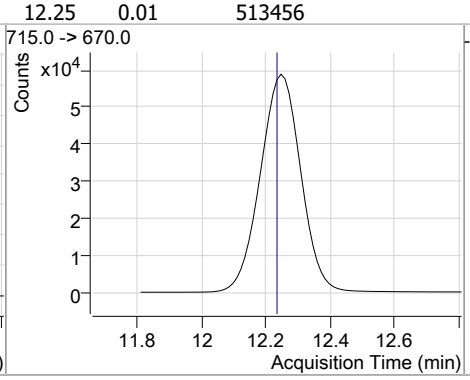


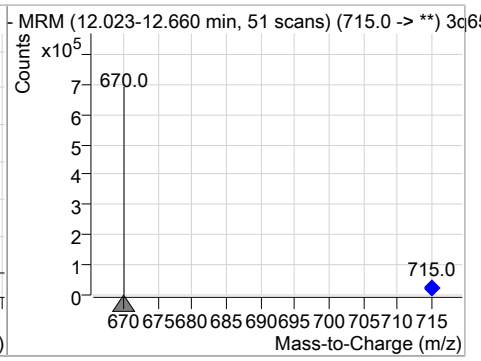


Perfluorinated Compounds by LC/MS/MS

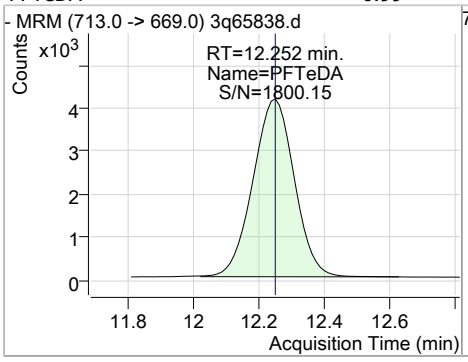
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.11	12.25	0.01	513456				

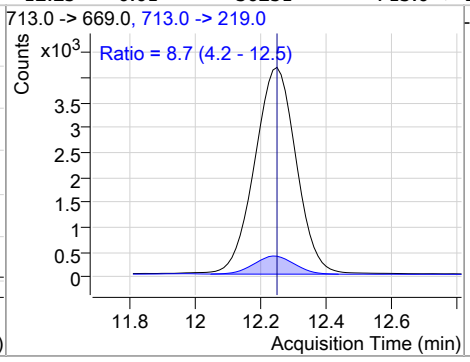


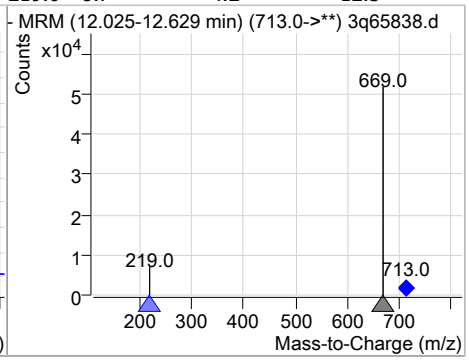




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.99	12.25	0.01	36251	713.0 -> 219.0	8.7	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-CC900
Lab FileID: 3Q65838.D
Injection Time: 09/15/22 22:23

Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 14:30 Natasha Gumtie
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.83	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.12	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/19/22 13:20

Perfluorinated Compounds by LC/MS/MS

Data File : 3q65849.d
Operator : marthav
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 1:58:45 AM
Sample Name : cc900-20
Vial : P1-A7
DA Method File : ID_091522_S3Q900.quantmethod.xml
Batch Name : S3Q900.batch.bin
Sample Information : op92590,S3Q900,250,,,1,1,water

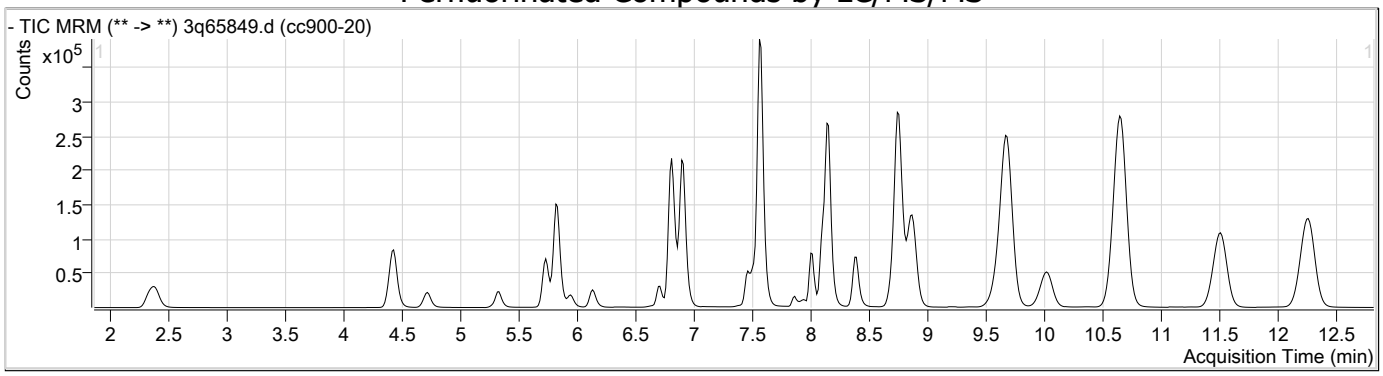
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	2.365	217.0 -> 172.0	153107	20.00 µg/L	0.000
M5-PFPeA	4.424	268.0 -> 223.0	221138	20.00 µg/L	0.013
M5-PFHxA	5.813	318.0 -> 273.0	292589	20.00 µg/L	0.000
M4-PFHpA	6.805	367.0 -> 322.0	290545	20.00 µg/L	0.013
M8-PFOA	7.560	421.0 -> 376.0	392383	20.00 µg/L	0.000
M9-PFNA	8.150	472.0 -> 427.0	440935	20.00 µg/L	0.013
M6-PFDA	8.739	519.0 -> 474.0	650183	20.00 µg/L	0.000
M7-PFUnDA	9.664	570.0 -> 525.0	854095	20.00 µg/L	-0.013
M2-PFDoDA	10.634	615.0 -> 570.0	1117487	20.00 µg/L	0.000
M2-PFTeDA	12.248	715.0 -> 670.0	458495	20.00 µg/L	0.013
M8-FOSA	7.503	506.0 -> 78.0	67813	20.00 µg/L	0.013
M3-PFBS	4.704	302.0 -> 99.0	20463	20.00 µg/L	0.013
M3-PFHxS	6.834	402.0 -> 99.0	24753	20.00 µg/L	0.013
M8-PFOS	8.111	507.0 -> 99.0	36952	20.00 µg/L	0.000
M2-4:2FTS	5.721	329.0 -> 309.0	112748	20.00 µg/L	0.013
M2-6:2FTS	7.571	429.0 -> 409.0	159162	20.00 µg/L	0.013
M2-8:2FTS	8.860	529.0 -> 509.0	316812	20.00 µg/L	0.013
M3-MeFOSAA	7.991	573.0 -> 419.0	109277	20.00 µg/L	0.000
M3-HFPO-DA	6.130	287.0 -> 169.0	23454	20.00 µg/L	0.013
M3-MeFOSA	7.854	515.0 -> 169.0	14771	20.00 µg/L	0.013
M5-EtFOSAA	8.077	589.0 -> 419.0	110536	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	5.721	329.0 -> 309.0	112748	18.37 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%	
13C2-6:2FTS	7.571	429.0 -> 409.0	159162	18.45 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C2-8:2FTS	8.860	529.0 -> 509.0	316812	18.50 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%	
13C2-PFDoDA	10.634	615.0 -> 570.0	1117487	18.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%	
13C2-PFTeDA	12.248	715.0 -> 670.0	458495	17.96 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%	
13C3-PFBS	4.704	302.0 -> 99.0	20463	18.49 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%	
13C3-PFHxS	6.834	402.0 -> 99.0	24753	18.38 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C4-PFBA	2.365	217.0 -> 172.0	153107	18.47 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%	
13C4-PFHpA	6.805	367.0 -> 322.0	290545	18.42 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%	
13C5-PFHxA	5.813	318.0 -> 273.0	292589	18.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%	
13C5-PFPeA	4.424	268.0 -> 223.0	221138	18.28 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C6-PFDA	8.739	519.0 -> 474.0	650183	17.89 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

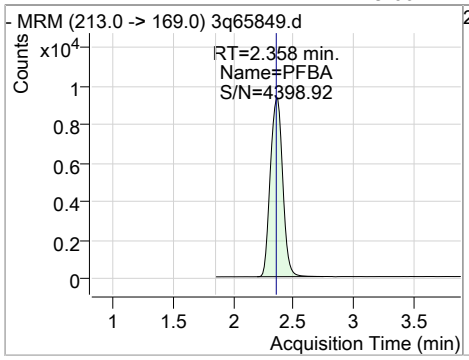
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C7-PFUnDA	9.664	570.0 -> 525.0	854095	17.93	µg/L		-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C8-FOSA	7.503	506.0 -> 78.0	67813	19.03	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
13C8-PFOA	7.560	421.0 -> 376.0	392383	18.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
13C8-PFOS	8.111	507.0 -> 99.0	36952	17.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
13C9-PFNA	8.150	472.0 -> 427.0	440935	18.48	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
d3-MeFOSAA	7.991	573.0 -> 419.0	109277	19.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C3-HFPO-DA	6.130	287.0 -> 169.0	23459	18.17	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
d3-MeFOSA	7.854	515.0 -> 169.0	14771	18.31	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d5-EtFOSAA	8.077	589.0 -> 419.0	110271	19.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
Target Compounds							**QValue**
4:2FTS	5.723	327.0 -> 307.0	122608	19.46	µg/L		100
6:2FTS	7.571	427.0 -> 407.0	165083	20.01	µg/L		99
8:2FTS	8.861	527.0 -> 507.0	318231	19.62	µg/L		100
EtFOSAA	8.091	584.0 -> 419.0	93382	19.65	µg/L	m	90
FOSA	7.504	498.0 -> 78.0	64753	19.42	µg/L		100
MeFOSAA	8.004	570.0 -> 419.0	96296	19.36	µg/L	m	94
PFBA	2.358	213.0 -> 169.0	66500	19.06	µg/L		100
PFBS	4.707	299.0 -> 80.0	57788	19.35	µg/L		99
PFDA	8.740	513.0 -> 469.0	640289	19.44	µg/L		100
PFDoDA	10.638	613.0 -> 569.0	1021479	19.30	µg/L		100
PFDS	9.560	599.0 -> 80.0	68659	19.10	µg/L		99
PFHpA	6.807	363.0 -> 319.0	425903	19.26	µg/L		99
PFHpS	7.557	449.0 -> 80.0	50869	20.64	µg/L		99
PFHxA	5.814	313.0 -> 269.0	317000	19.33	µg/L		100
PFHxS	6.823	399.0 -> 80.0	59983	19.64	µg/L	m	98
PFNA	8.151	463.0 -> 419.0	371589	19.01	µg/L		99
PFNS	8.680	549.0 -> 80.0	61272	19.89	µg/L		99
PFOA	7.561	413.0 -> 369.0	482891	19.20	µg/L		100
PFOS	8.111	499.0 -> 80.0	65071	19.69	µg/L	m	84
PFPeA	4.426	263.0 -> 219.0	200573	19.68	µg/L		100
PFPeS	5.932	349.0 -> 80.0	44424	19.20	µg/L		99
PFTeDA	12.252	713.0 -> 669.0	633108	19.36	µg/L		100
PFTrDA	11.497	663.0 -> 619.0	861092	18.85	µg/L		100
PFUnDA	9.666	563.0 -> 519.0	920575	19.44	µg/L		100
11Cl-PF3OUdS	10.009	631.0 -> 451.0	298902	19.28	µg/L		100
9Cl-PF3ONS	8.371	531.0 -> 351.0	211867	18.93	µg/L		100
ADONA	6.903	377.0 -> 251.0	625968	19.19	µg/L		100
HFPO-DA	6.122	329.0 -> 169.0	56263	19.35	µg/L		98
MeFOSA	7.854	512.0 -> 169.0	15251	19.00	µg/L		99
4-PFECHS	7.454	461.0 -> 381.0	125770	17.78	µg/L		100
FBSA	5.327	298.0 -> 78.0	93287	19.84	µg/L		100
FHxSA	6.700	398.0 -> 78.0	99247	21.09	µg/L		100

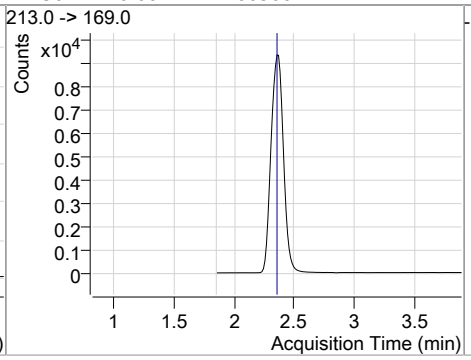
 # = Qualifier out of range, m = manually integrated, + = Area summed

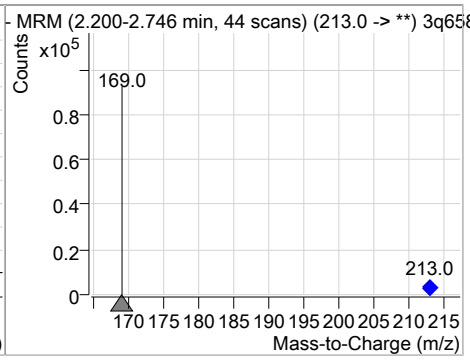
Perfluorinated Compounds by LC/MS/MS



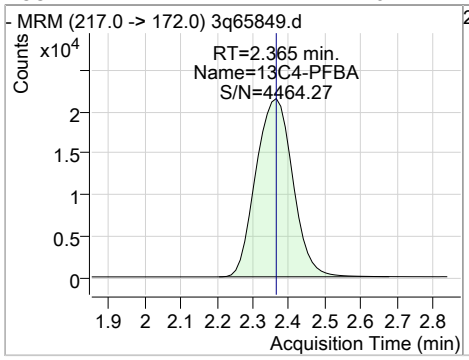
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.06	2.36	0.00	66500				

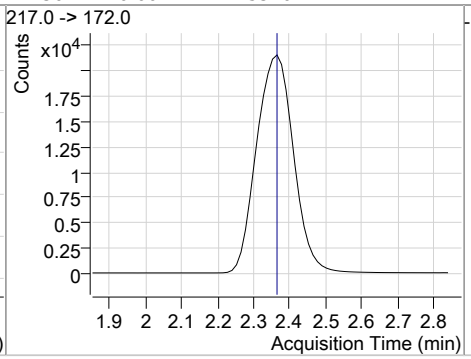


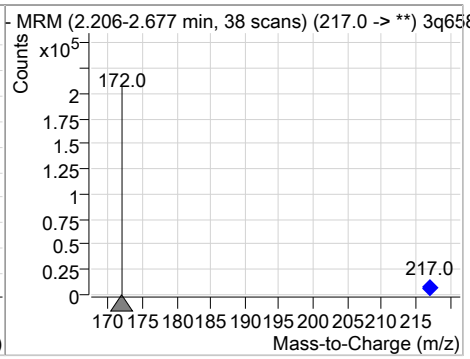




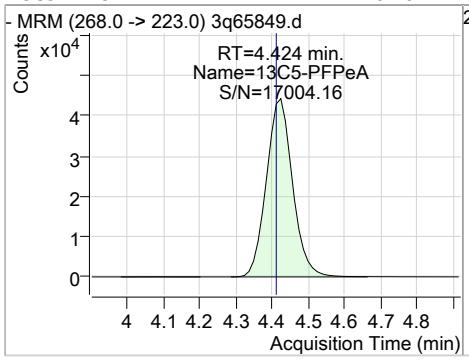
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.47	2.36	0.00	153107				

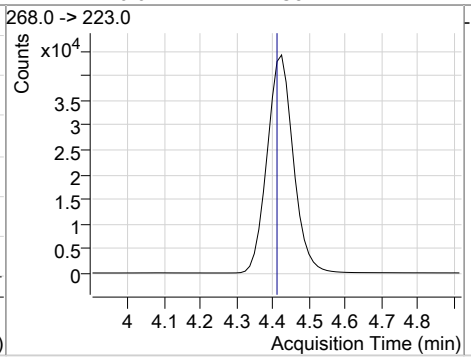


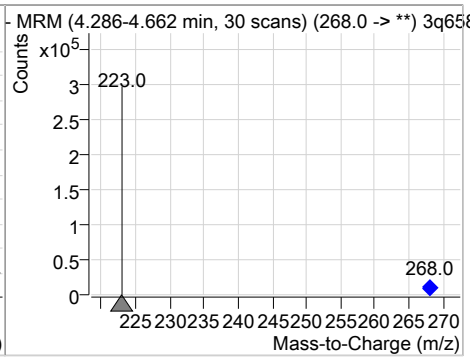




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.28	4.42	0.01	221138				

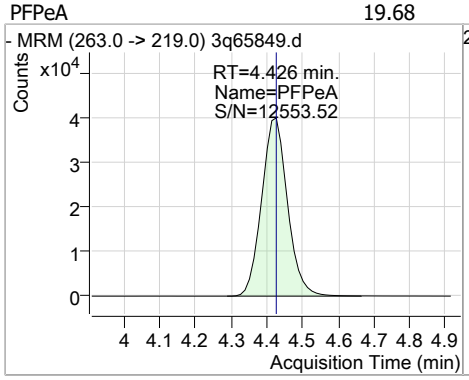


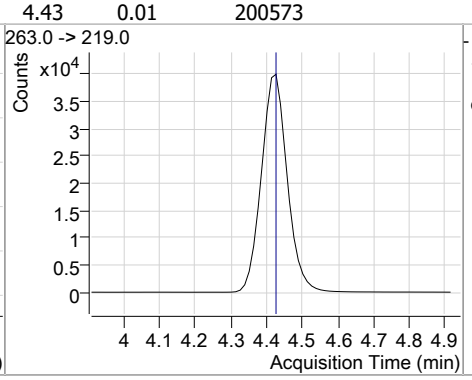


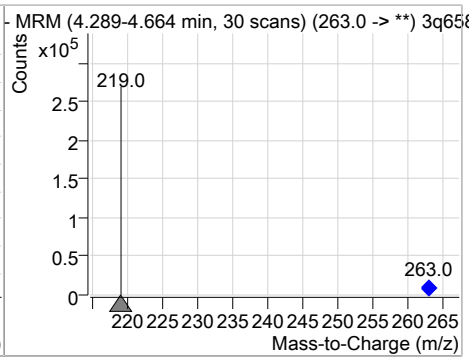


Perfluorinated Compounds by LC/MS/MS

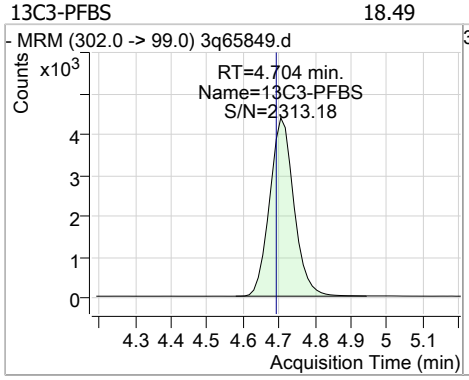
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.68	4.43	0.01	200573				

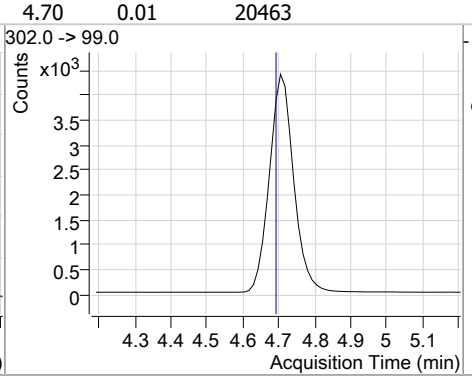


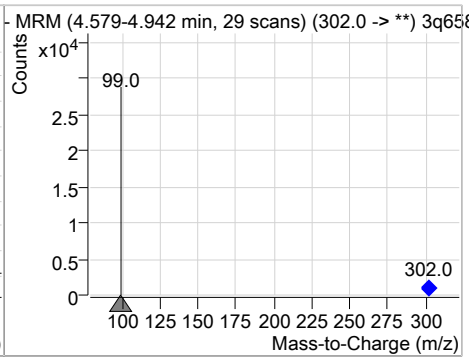




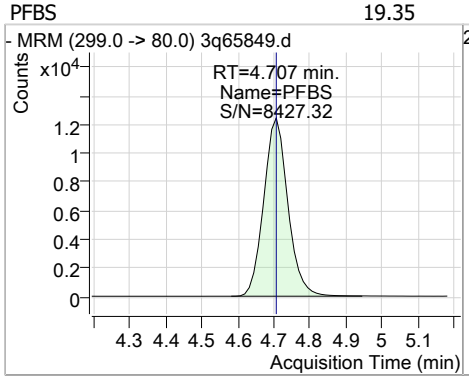
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.49	4.70	0.01	20463				

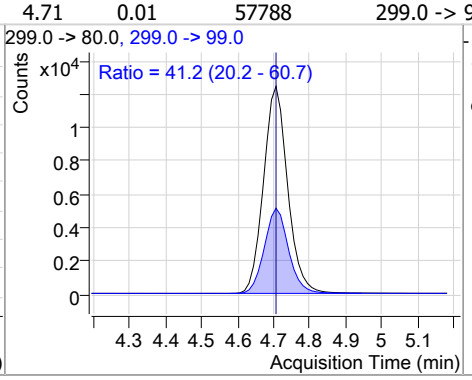


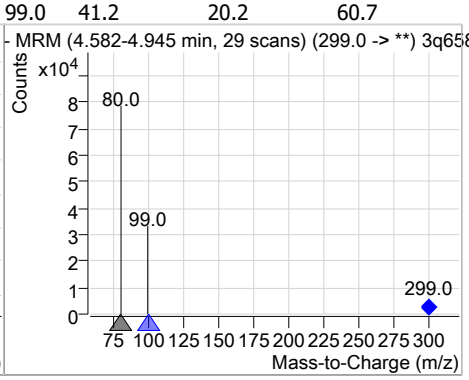




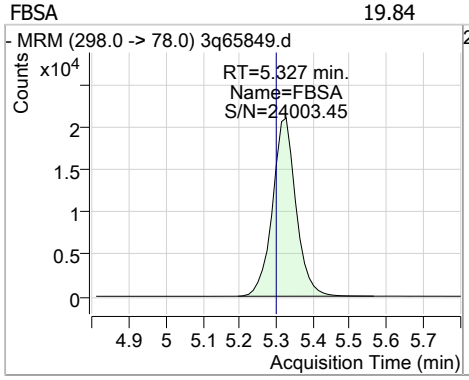
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.35	4.71	0.01	57788	299.0 -> 99.0	41.2	20.2	60.7

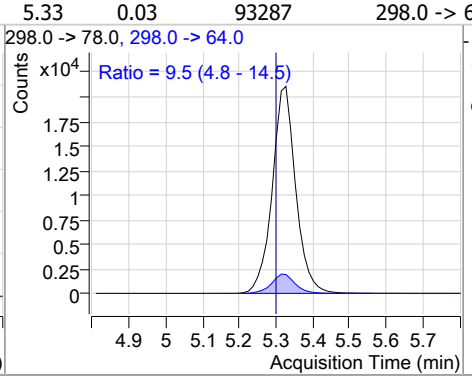


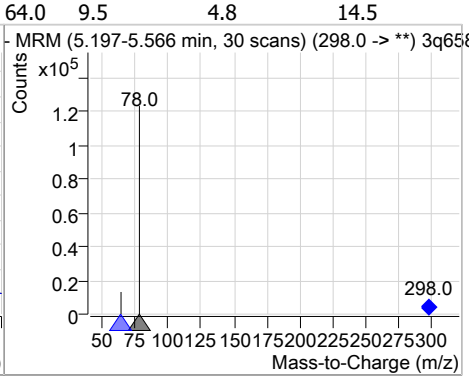




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.84	5.33	0.03	93287	298.0 -> 64.0	9.5	4.8	14.5

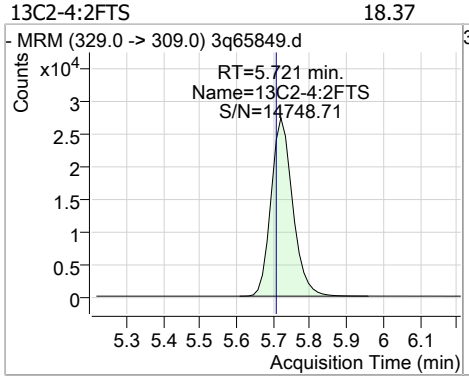


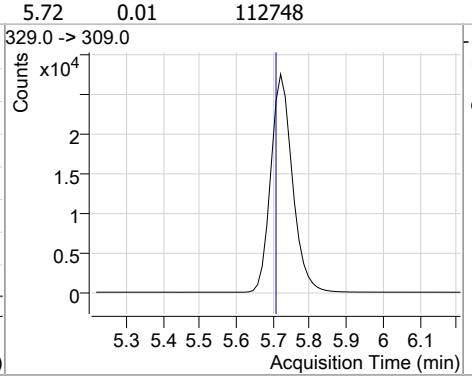


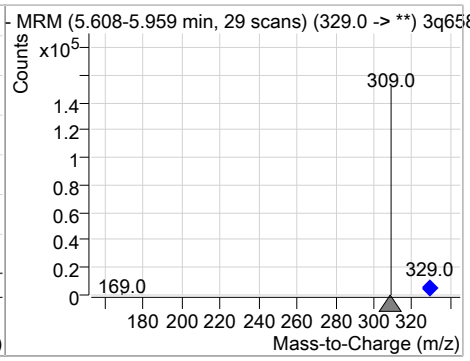


Perfluorinated Compounds by LC/MS/MS

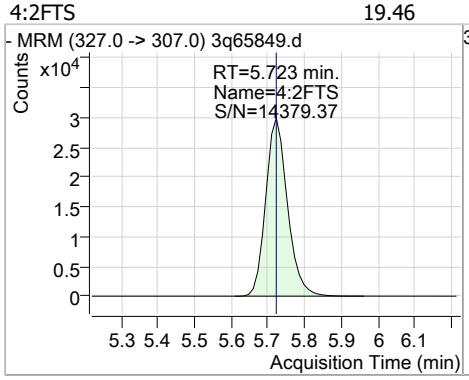
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.37	5.72	0.01	112748				

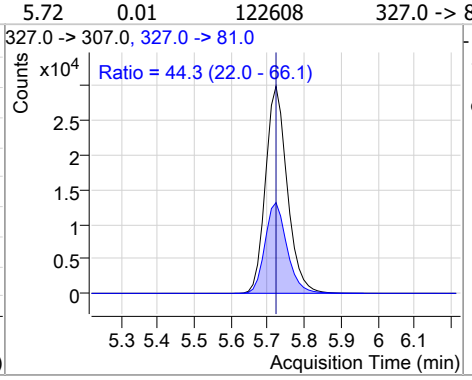


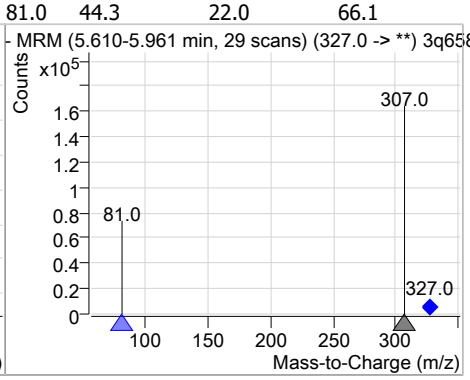




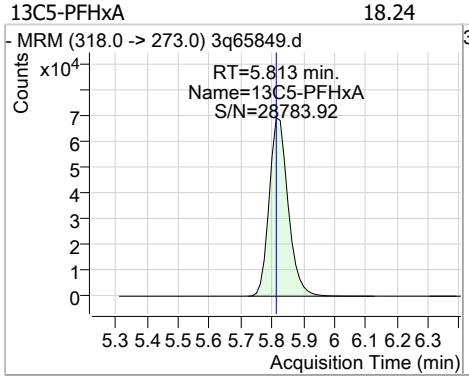
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.46	5.72	0.01	122608	327.0 -> 81.0	44.3	22.0	66.1

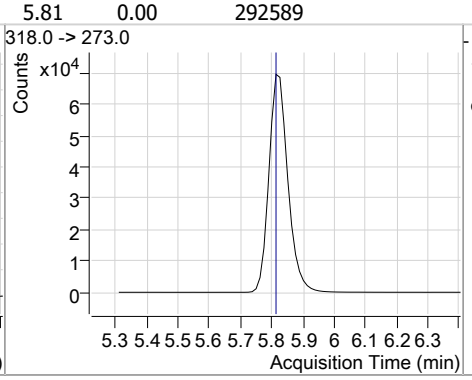


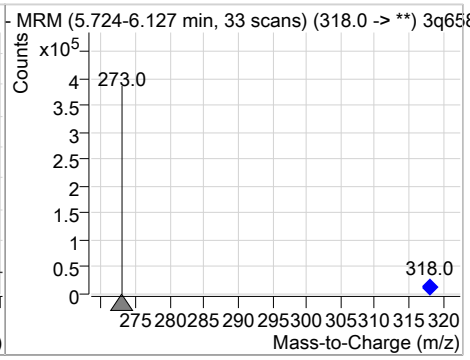




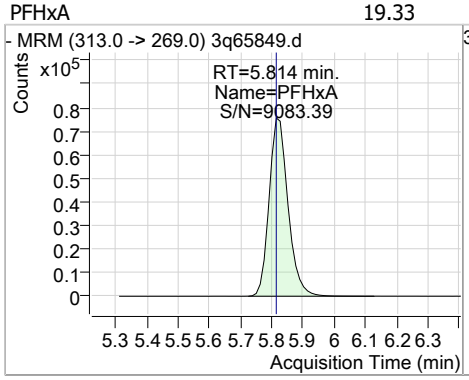
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.24	5.81	0.00	292589				

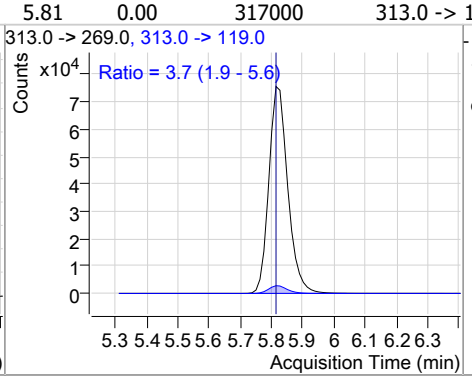


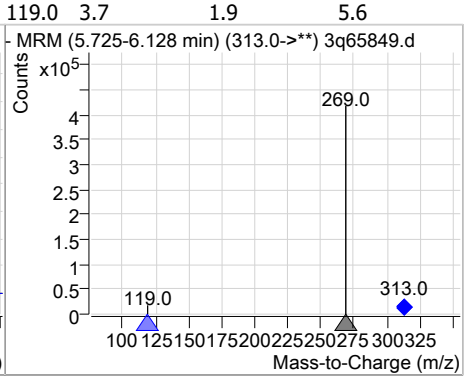




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.33	5.81	0.00	317000	313.0 -> 119.0	3.7	1.9	5.6

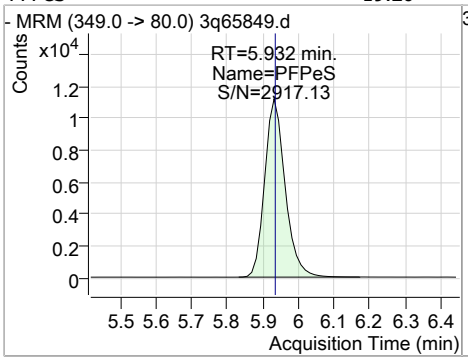


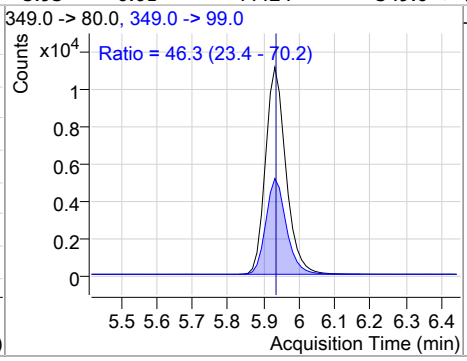


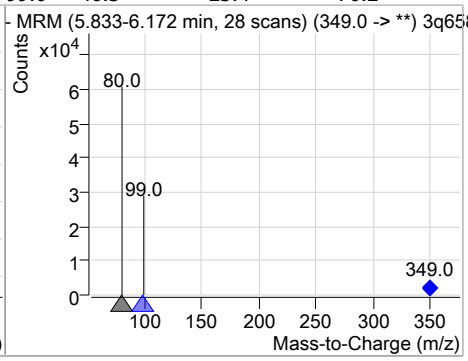


Perfluorinated Compounds by LC/MS/MS

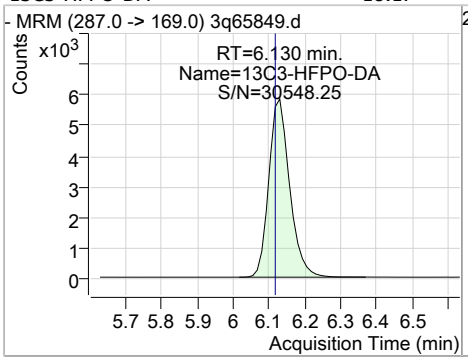
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.20	5.93	0.01	44424	349.0 -> 99.0	46.3	23.4	70.2

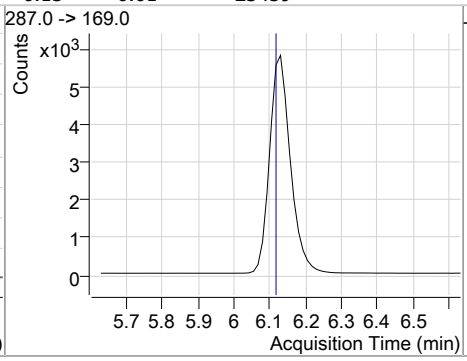


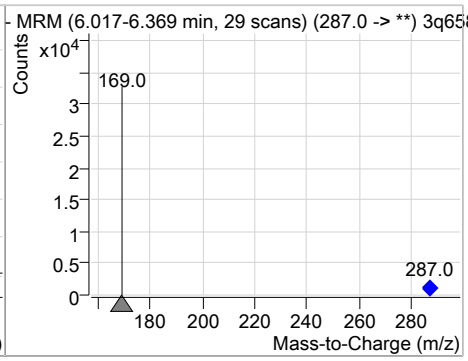




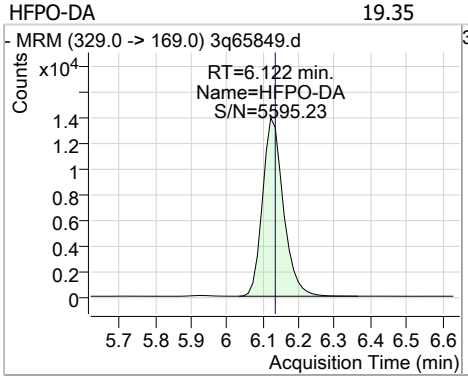
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.17	6.13	0.01	23459				

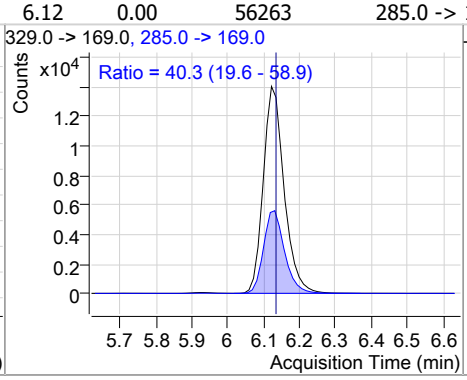


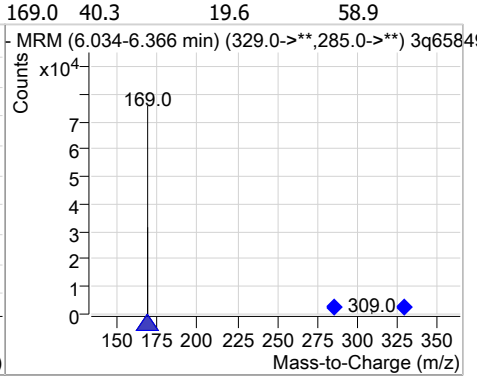




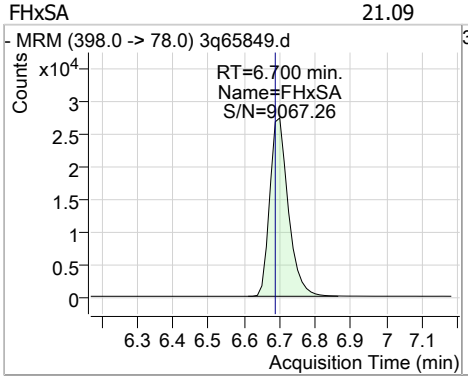
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.35	6.12	0.00	56263	285.0 -> 169.0	40.3	19.6	58.9

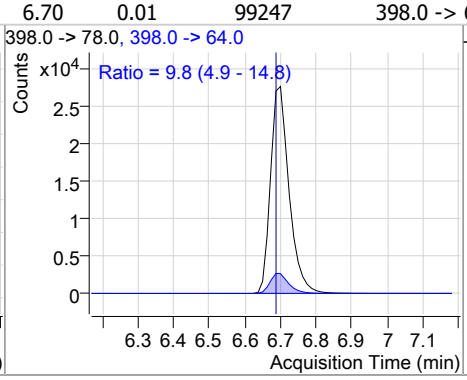


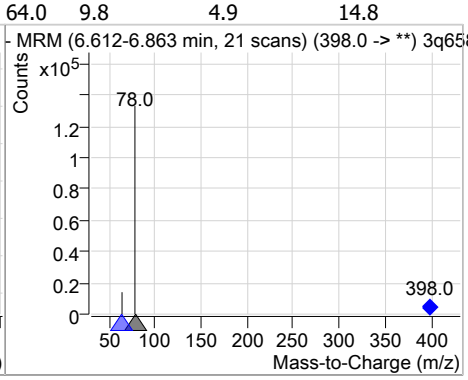




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	21.09	6.70	0.01	99247	398.0 -> 64.0	9.8	4.9	14.8

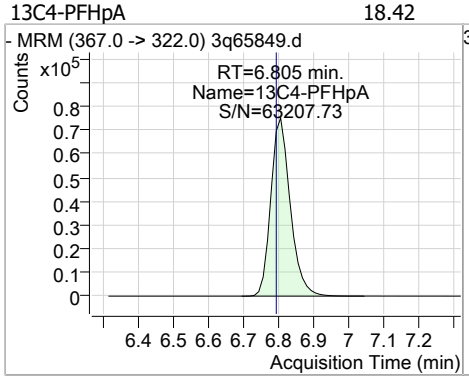


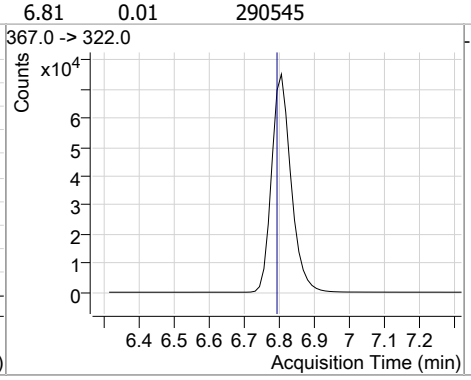


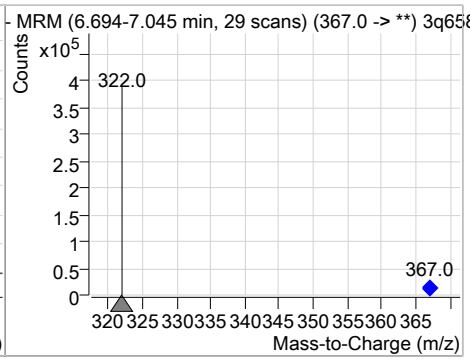


Perfluorinated Compounds by LC/MS/MS

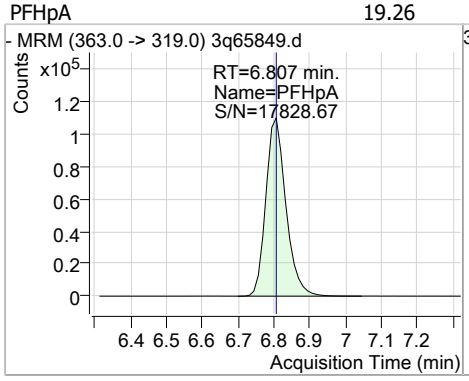
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.42	6.81	0.01	290545				

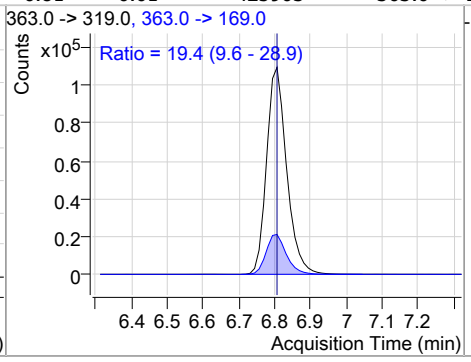


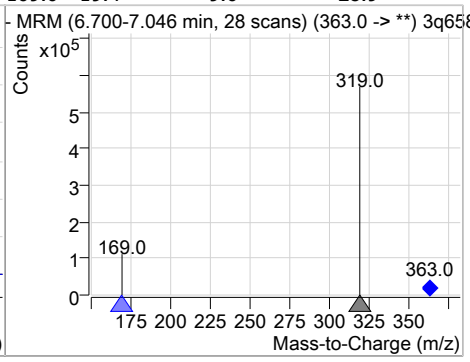




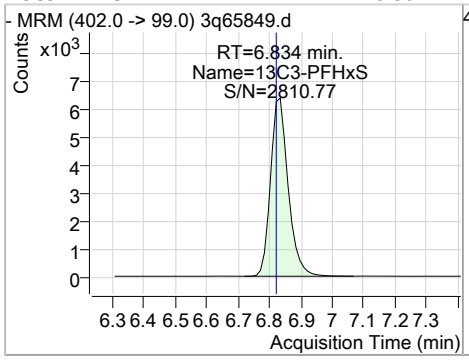
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.26	6.81	0.01	425903	363.0 -> 169.0	19.4	9.6	28.9

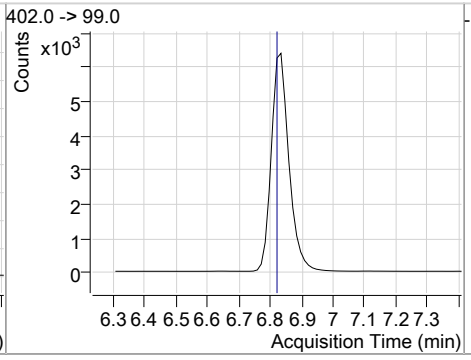


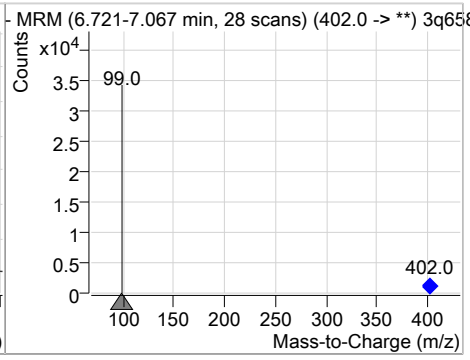




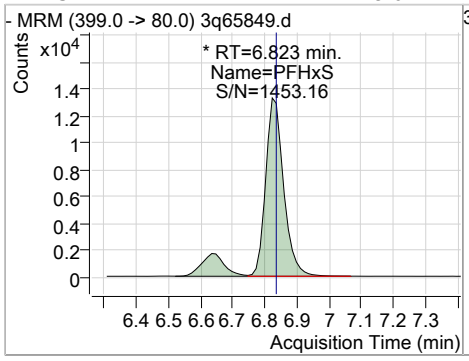
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.38	6.83	0.01	24753				

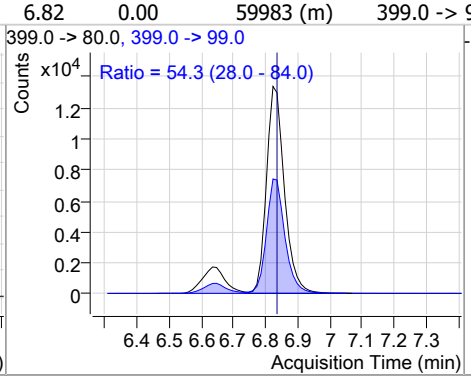


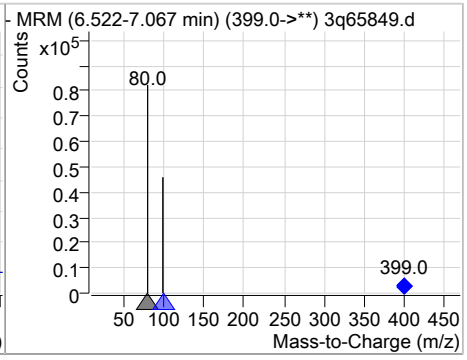




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.64	6.82	0.00	59983 (m)	399.0 -> 99.0	54.3	28.0	84.0

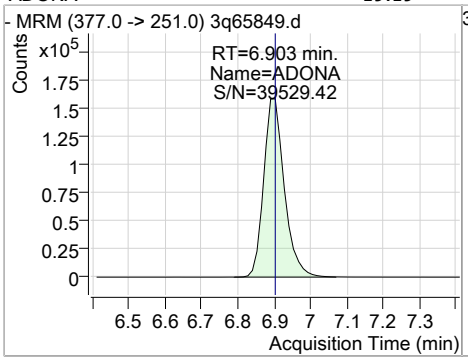


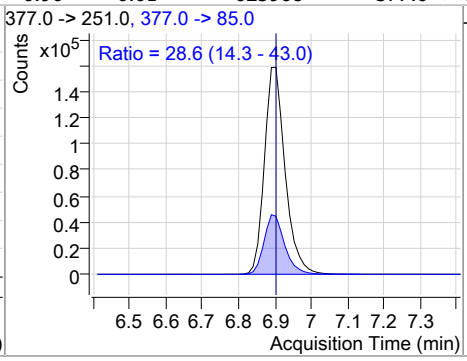


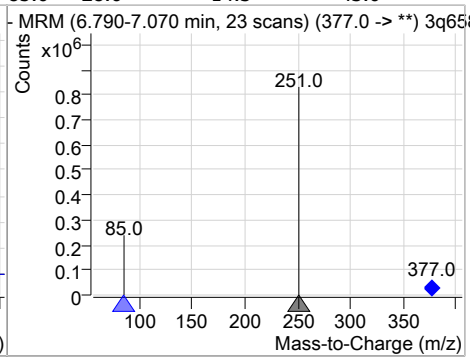


Perfluorinated Compounds by LC/MS/MS

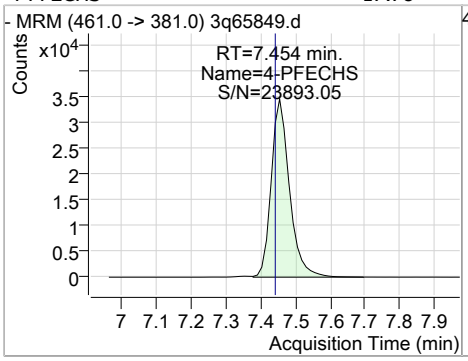
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.19	6.90	0.01	625968	377.0 -> 85.0	28.6	14.3	43.0

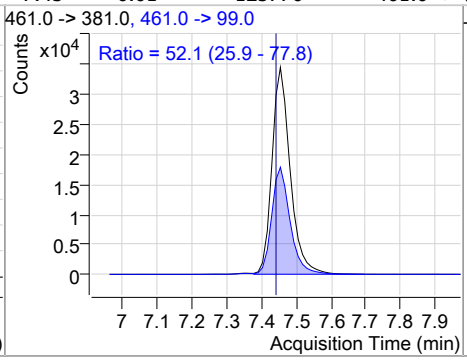


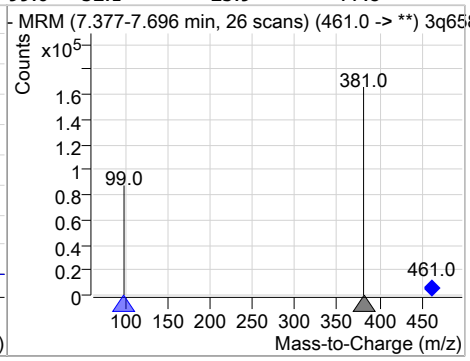




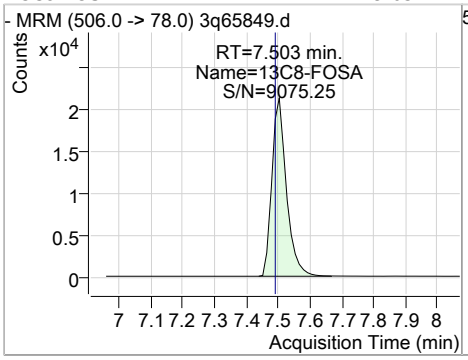
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	17.78	7.45	0.01	125770	461.0 -> 99.0	52.1	25.9	77.8

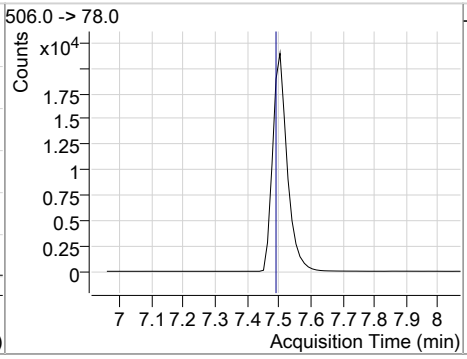


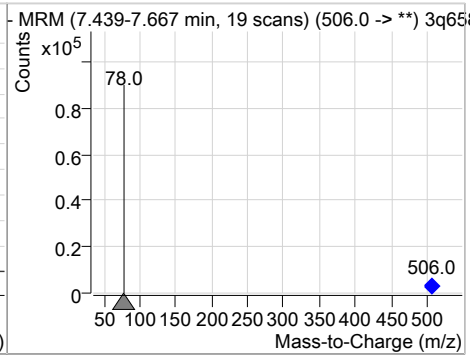




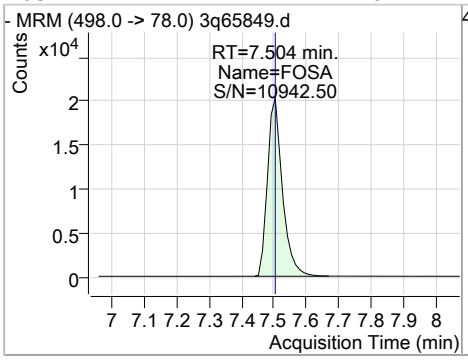
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.03	7.50	0.01	67813				

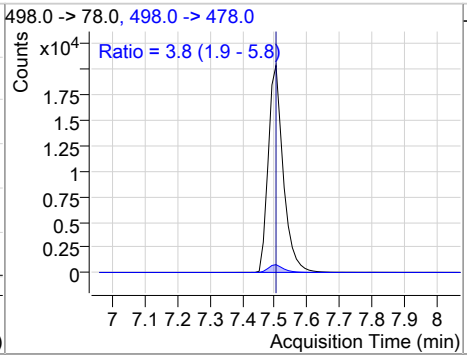


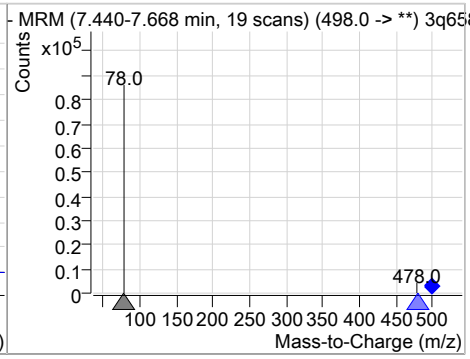




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.42	7.50	0.01	64753	498.0 -> 478.0	3.8	1.9	5.8

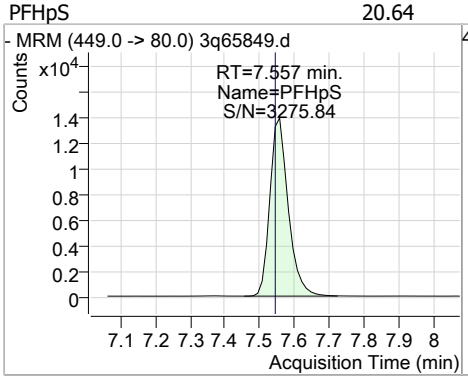


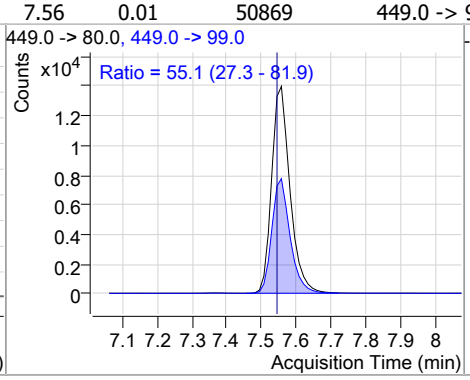


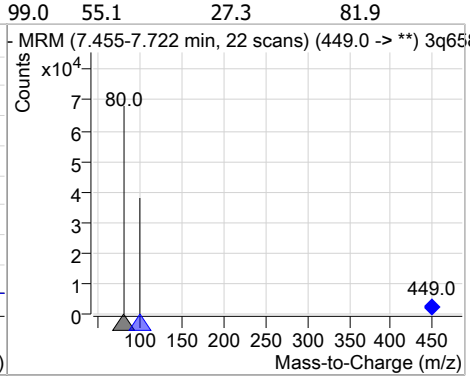


Perfluorinated Compounds by LC/MS/MS

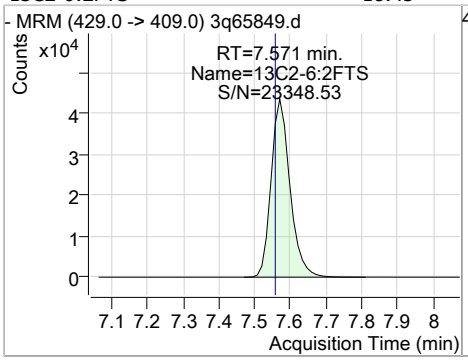
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.64	7.56	0.01	50869	449.0 -> 99.0	55.1	27.3	81.9

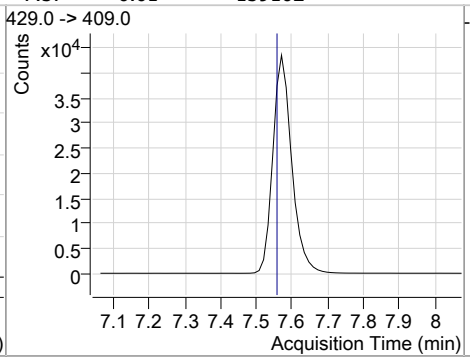


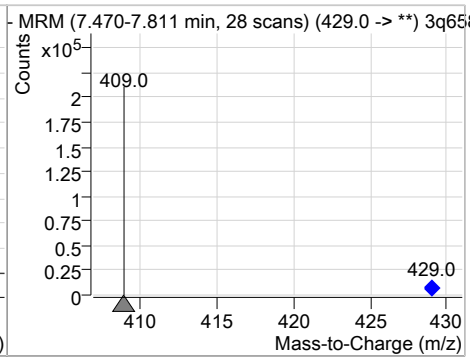




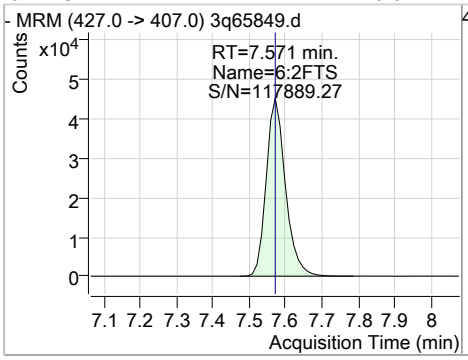
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.45	7.57	0.01	159162				

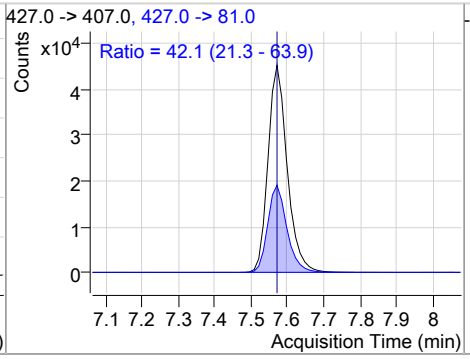


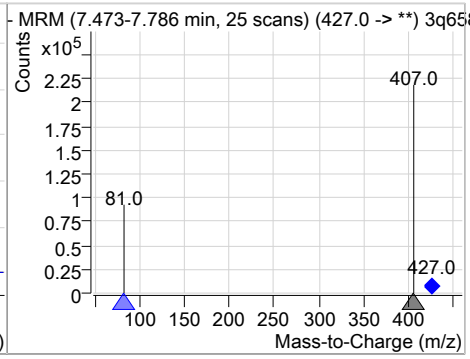




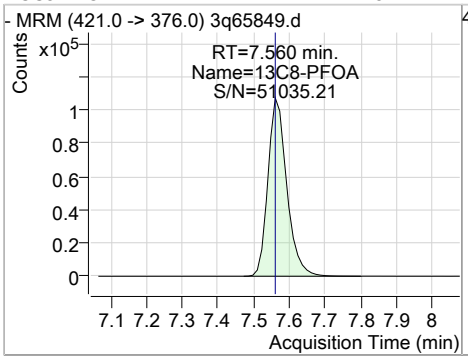
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.01	7.57	0.01	165083	427.0 -> 81.0	42.1	21.3	63.9

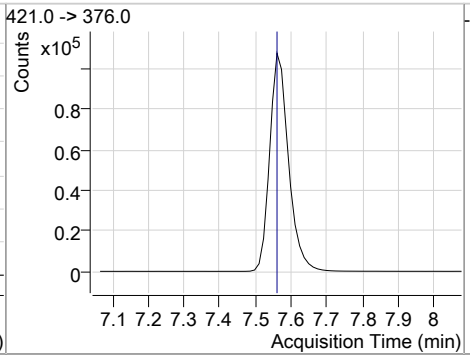


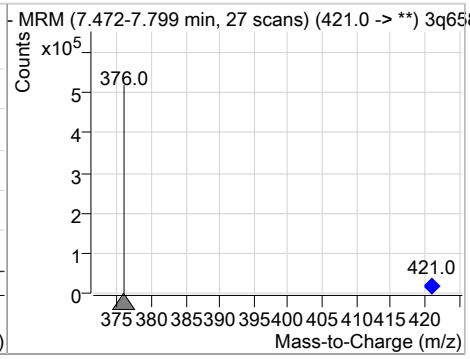




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.44	7.56	0.00	392383				

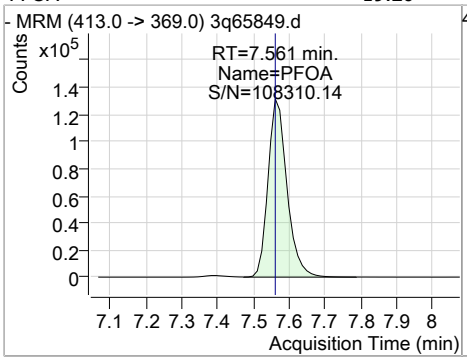


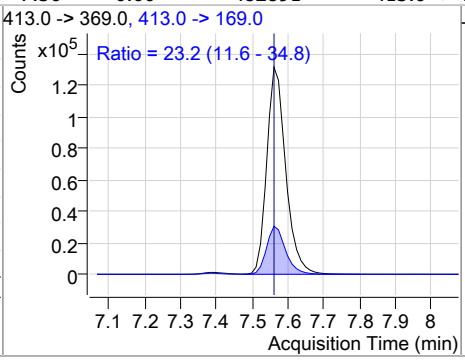


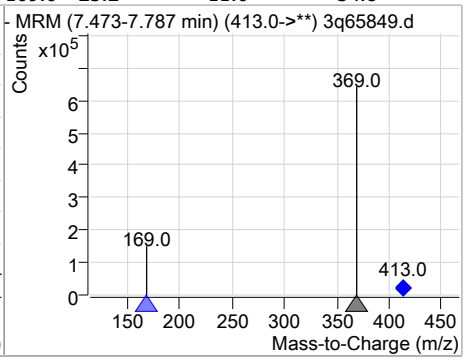


Perfluorinated Compounds by LC/MS/MS

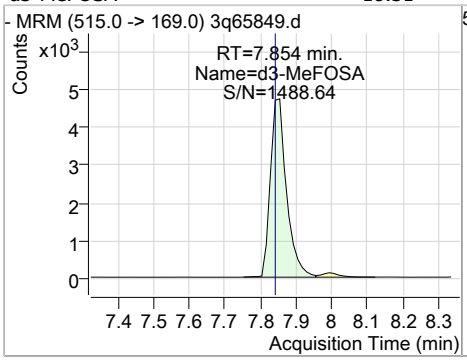
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.20	7.56	0.00	482891	413.0 -> 169.0	23.2	11.6	34.8

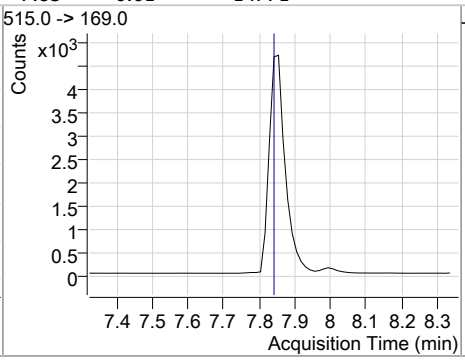


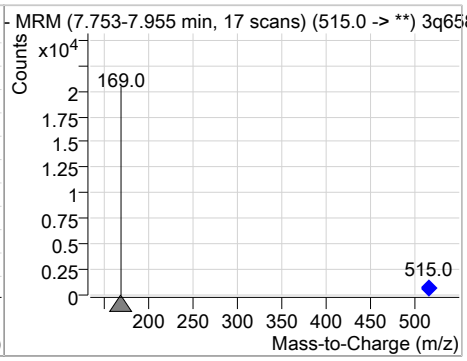




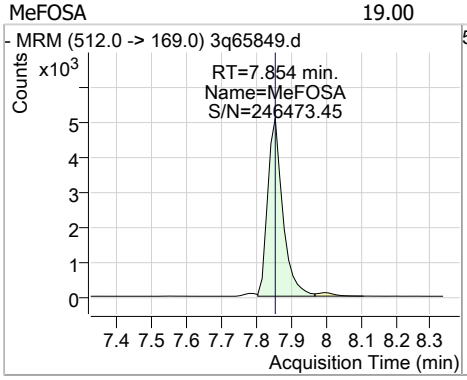
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.31	7.85	0.01	14771				

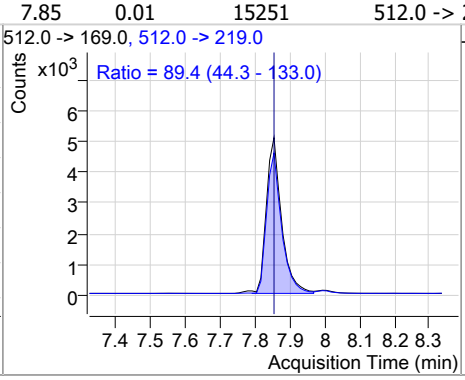


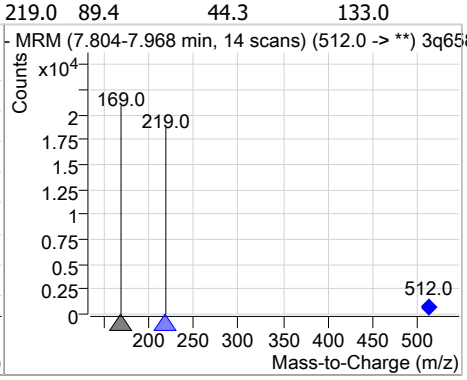




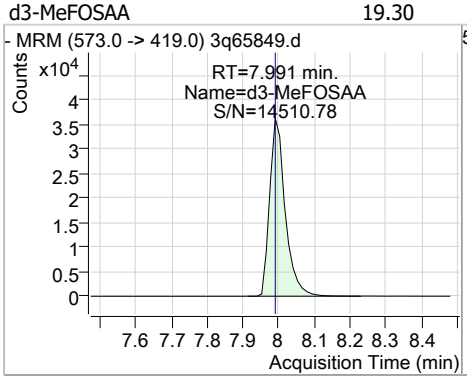
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.00	7.85	0.01	15251	512.0 -> 219.0	89.4	44.3	133.0

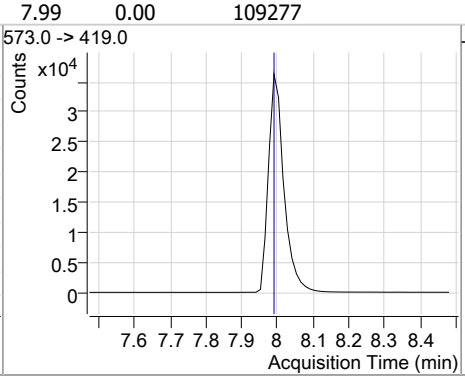


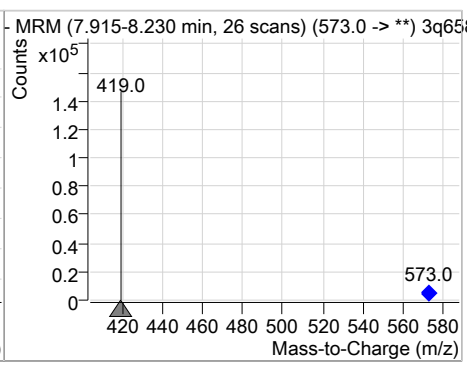




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.30	7.99	0.00	109277				

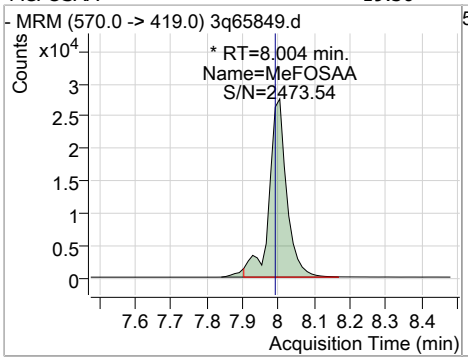


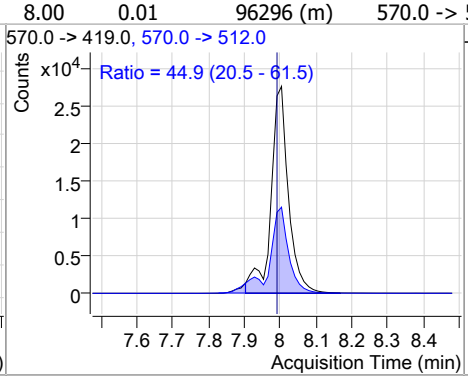


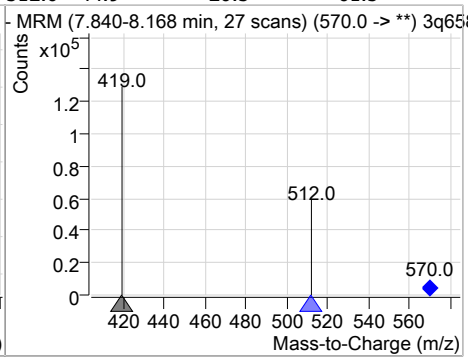


Perfluorinated Compounds by LC/MS/MS

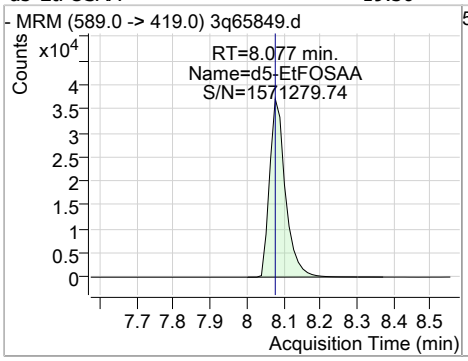
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.36	8.00	0.01	96296 (m)	570.0 -> 512.0	44.9	20.5	61.5

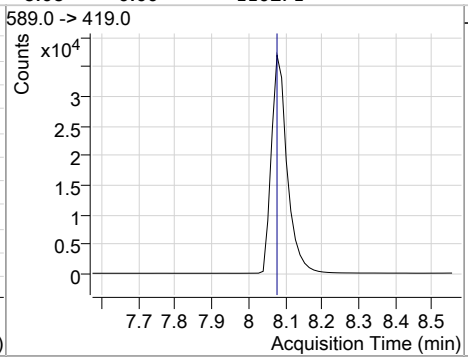


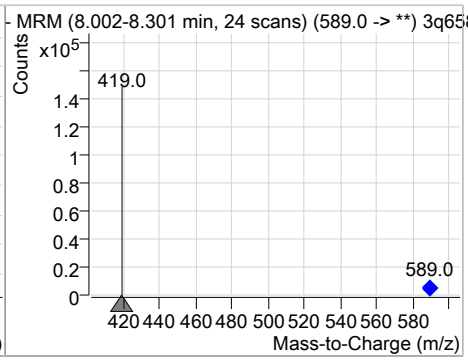




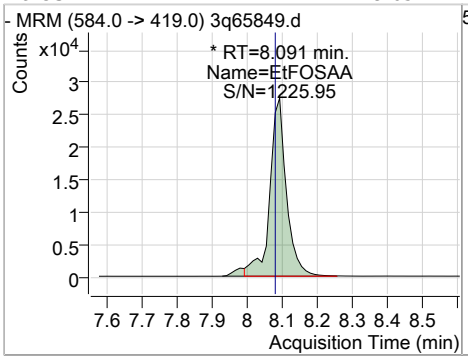
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.36	8.08	0.00	110271				

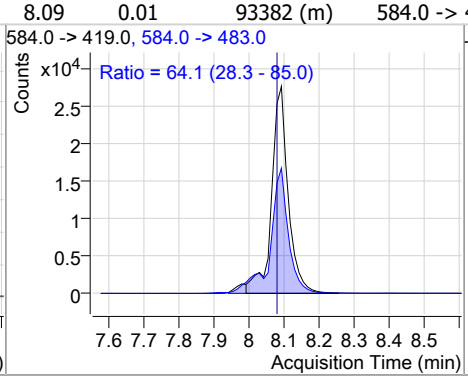


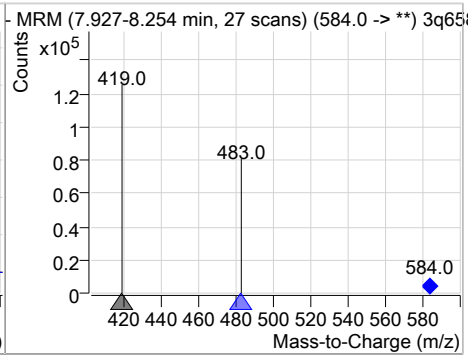




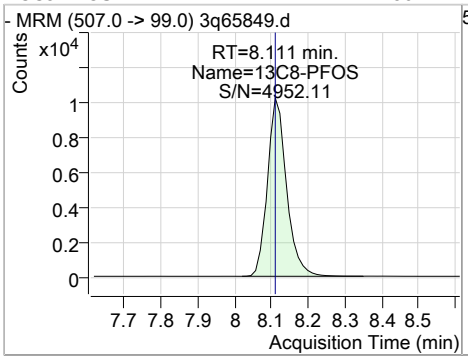
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.65	8.09	0.01	93382 (m)	584.0 -> 483.0	64.1	28.3	85.0

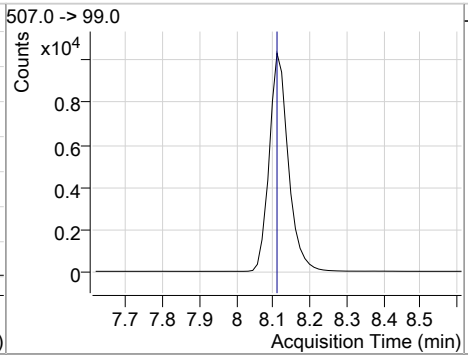


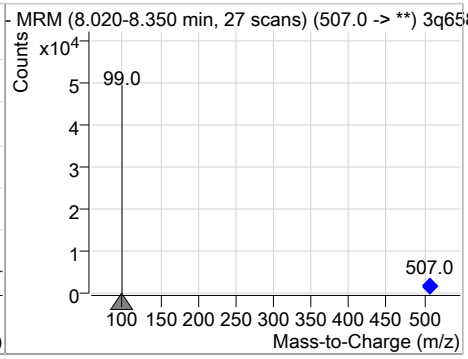




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.86	8.11	0.00	36952				

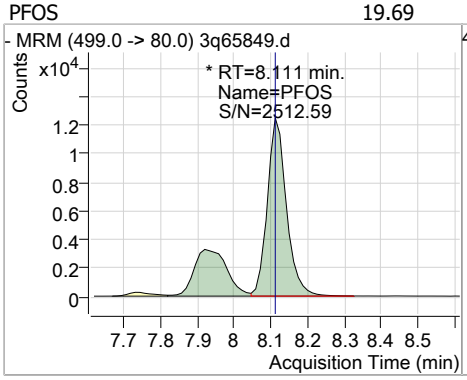


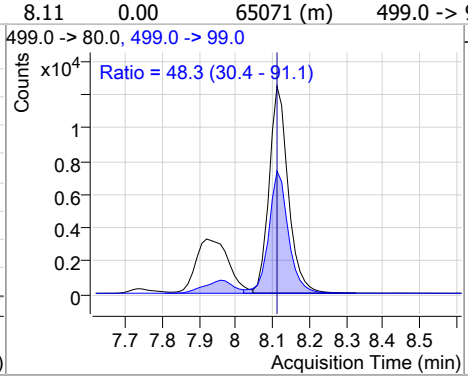


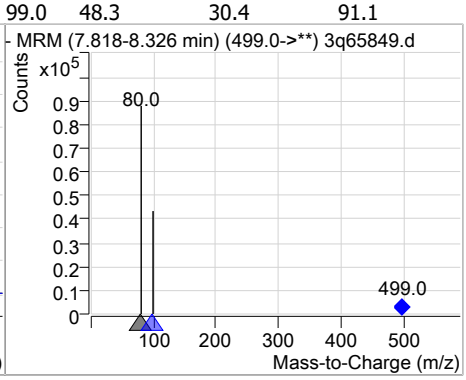


Perfluorinated Compounds by LC/MS/MS

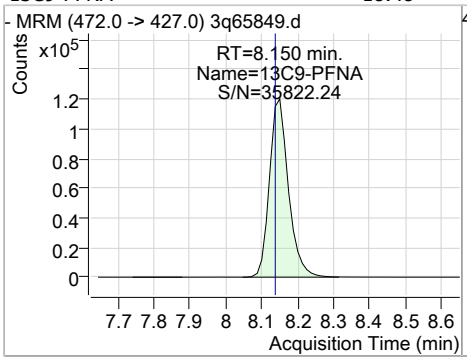
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.69	8.11	0.00	65071 (m)	499.0 -> 99.0	48.3	30.4	91.1

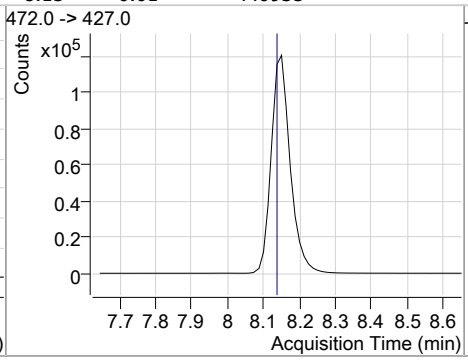


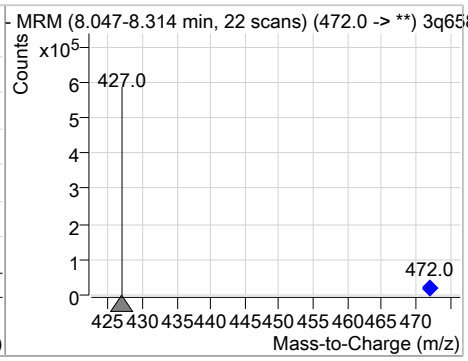




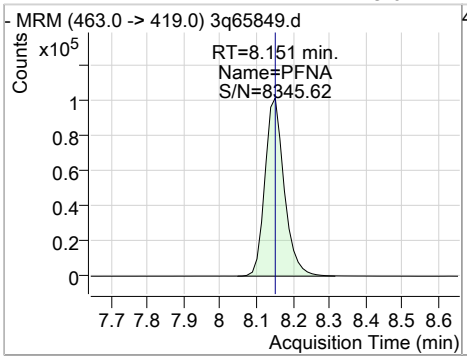
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.48	8.15	0.01	440935				

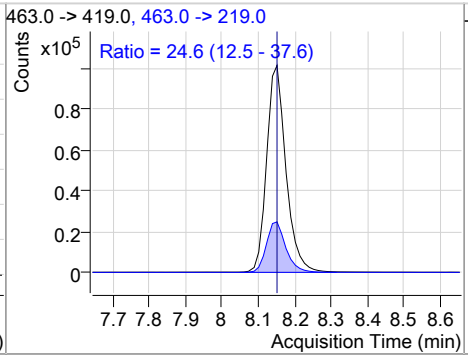


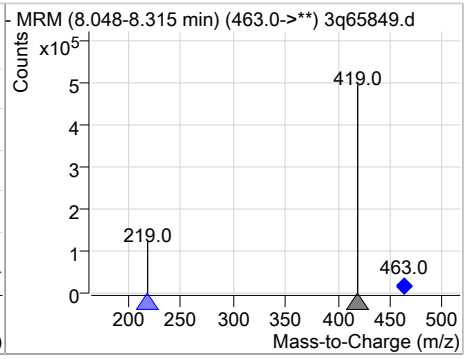




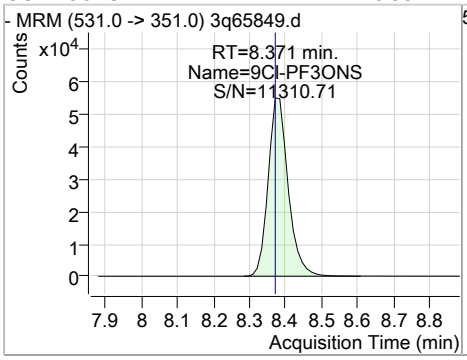
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.01	8.15	0.01	371589	463.0 -> 219.0	24.6	12.5	37.6

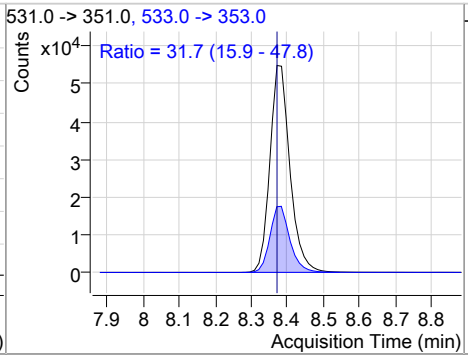


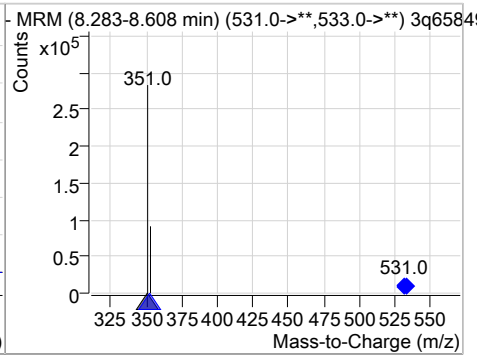




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.93	8.37	0.00	211867	533.0 -> 353.0	31.7	15.9	47.8

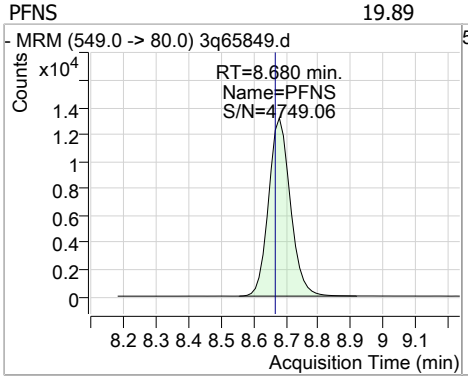


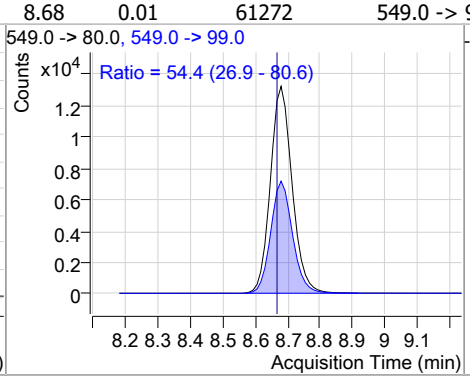


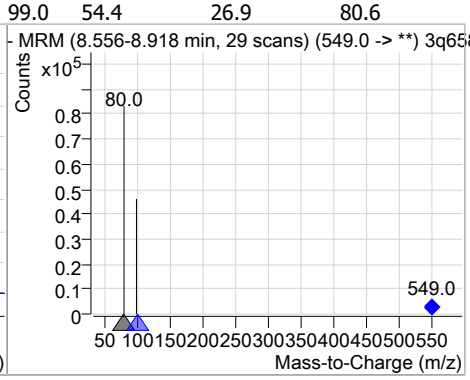


Perfluorinated Compounds by LC/MS/MS

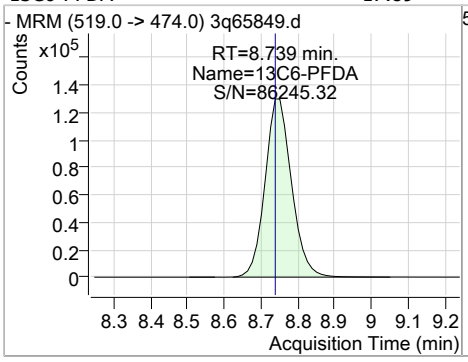
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.89	8.68	0.01	61272	549.0 -> 99.0	54.4	26.9	80.6

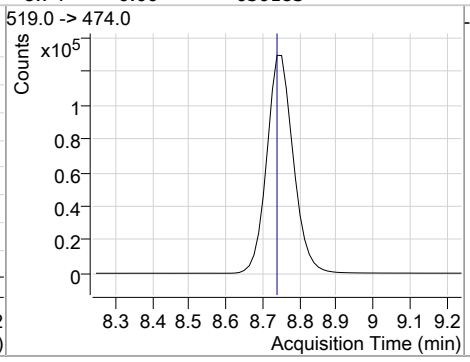


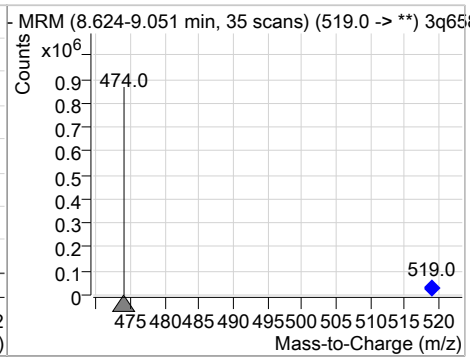




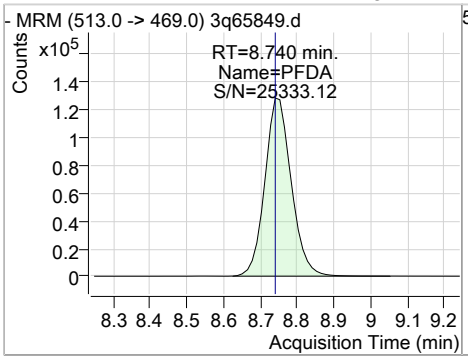
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.89	8.74	0.00	650183				

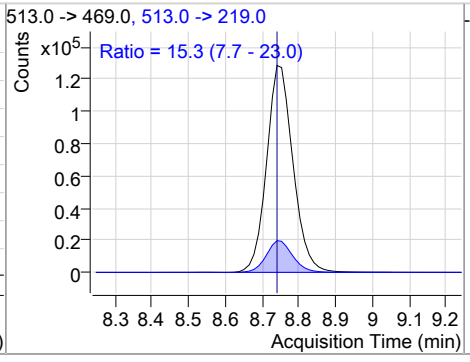


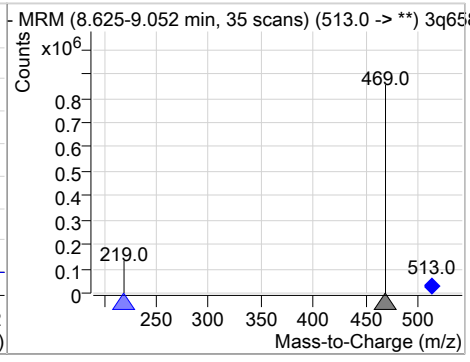




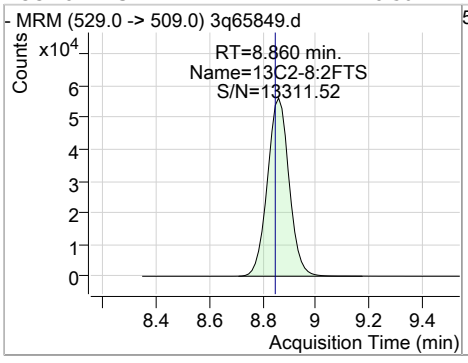
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.44	8.74	0.00	640289	513.0 -> 219.0	15.3	7.7	23.0

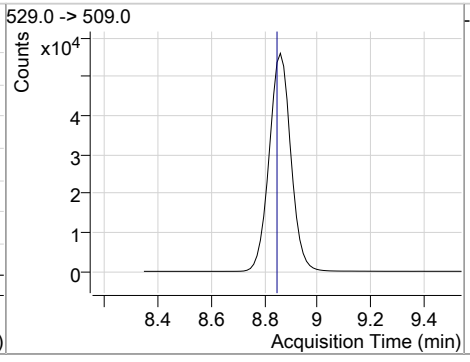


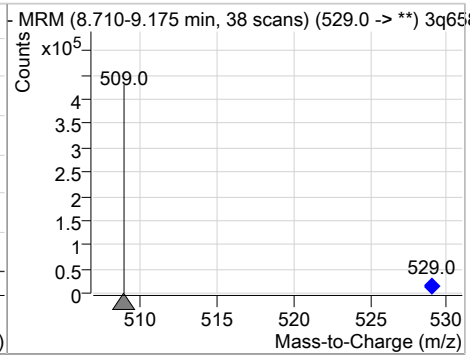




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.50	8.86	0.01	316812				

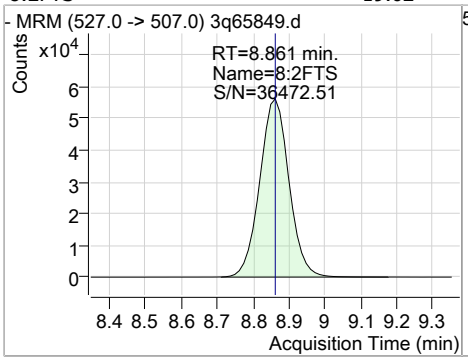


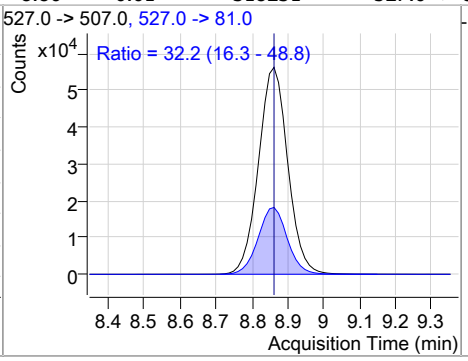


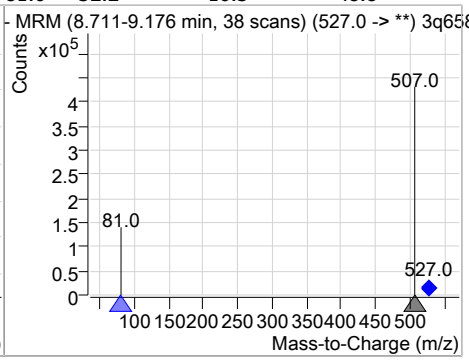


Perfluorinated Compounds by LC/MS/MS

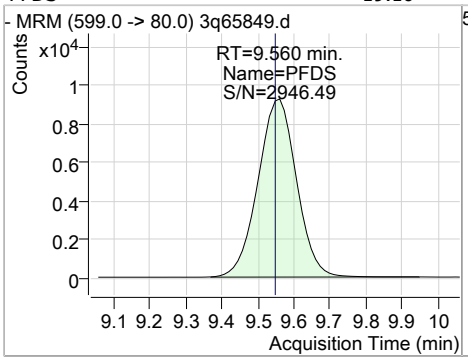
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.62	8.86	0.01	318231	527.0 -> 81.0	32.2	16.3	48.8

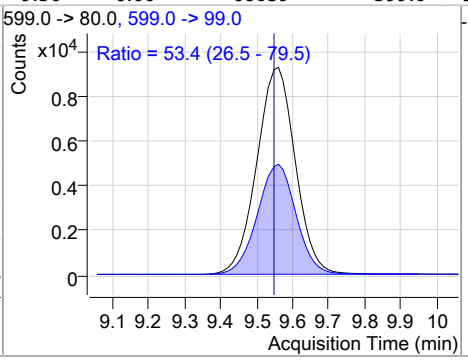


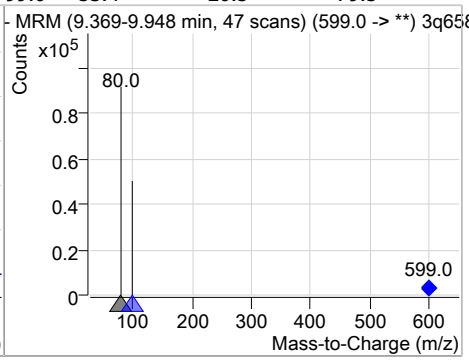




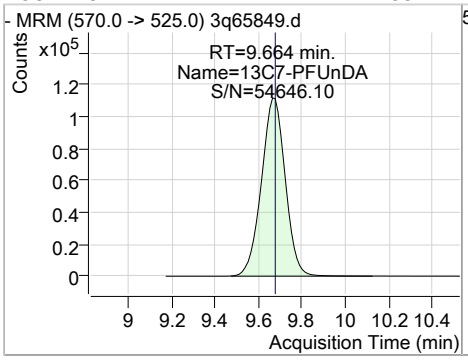
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.10	9.56	0.00	68659	599.0 -> 99.0	53.4	26.5	79.5

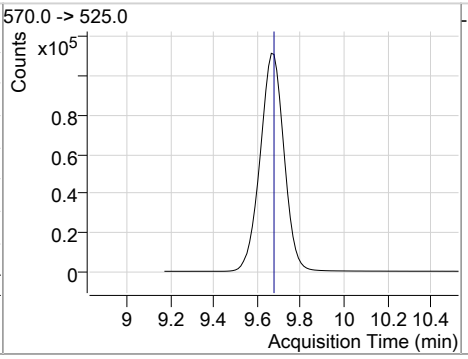


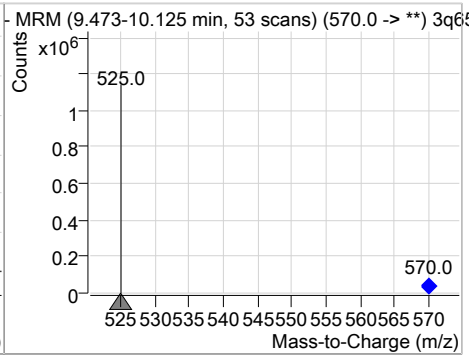




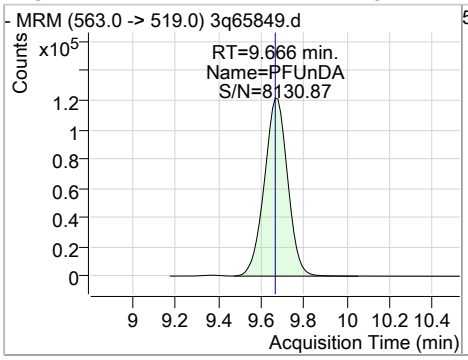
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.93	9.66	-0.01	854095				

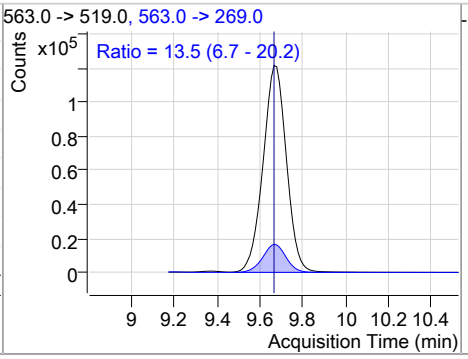


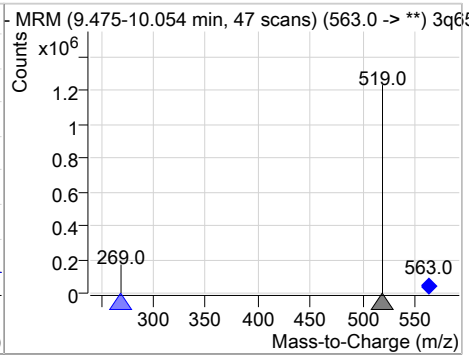




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.44	9.67	-0.01	920575	563.0 -> 269.0	13.5	6.7	20.2

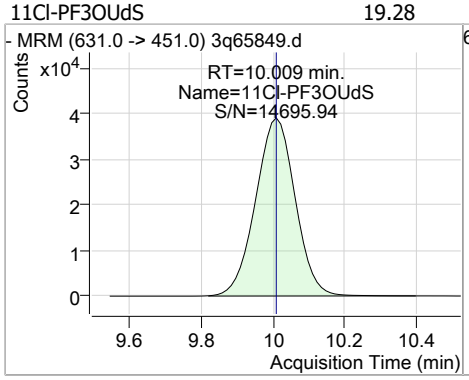


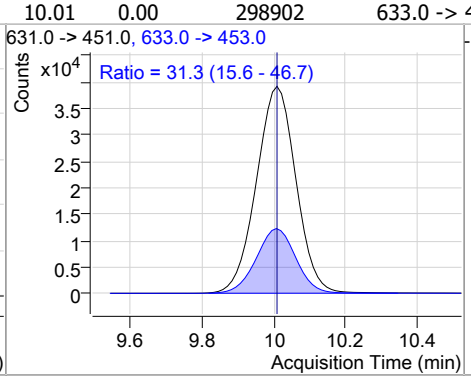


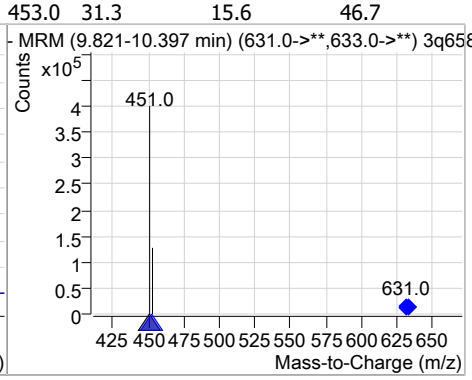


Perfluorinated Compounds by LC/MS/MS

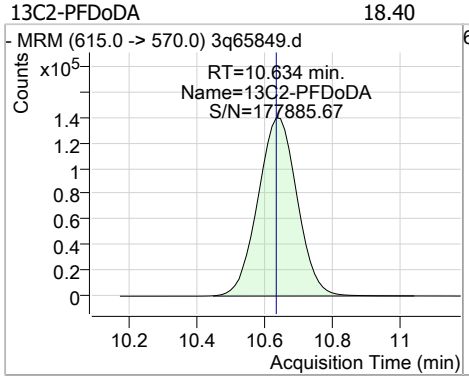
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.28	10.01	0.00	298902	633.0 -> 453.0	31.3	15.6	46.7

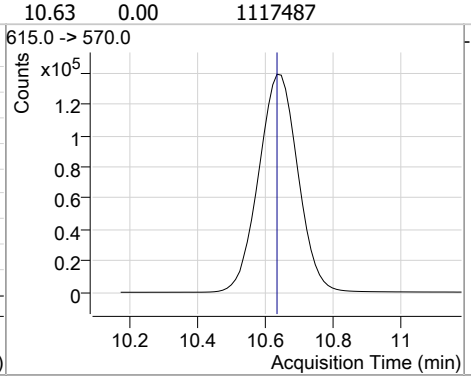


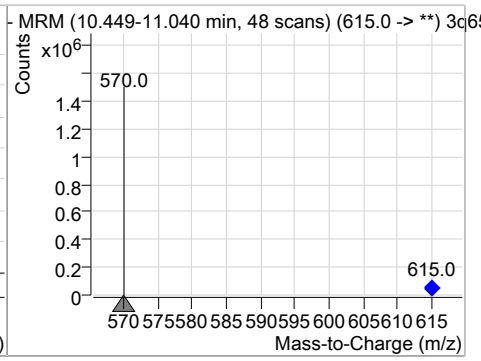




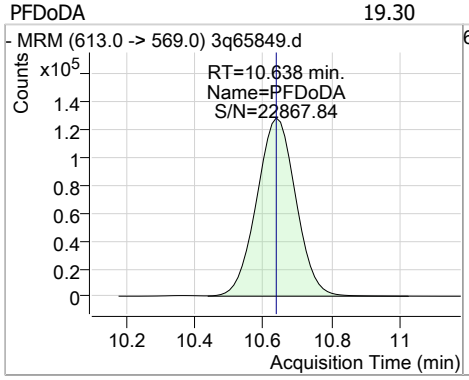
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.40	10.63	0.00	1117487				

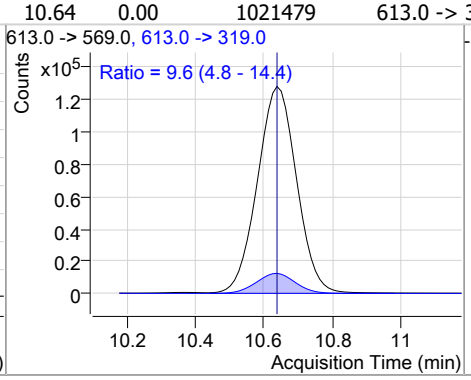


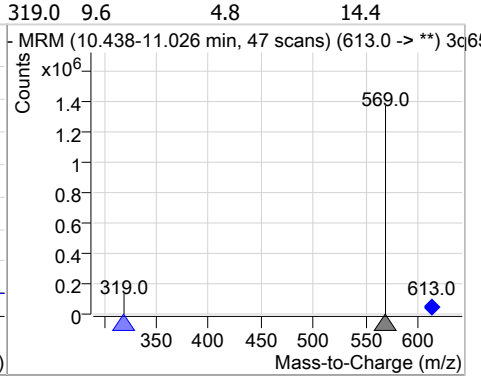




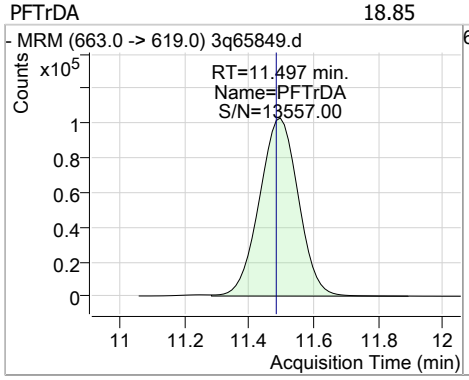
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.30	10.64	0.00	1021479	613.0 -> 319.0	9.6	4.8	14.4

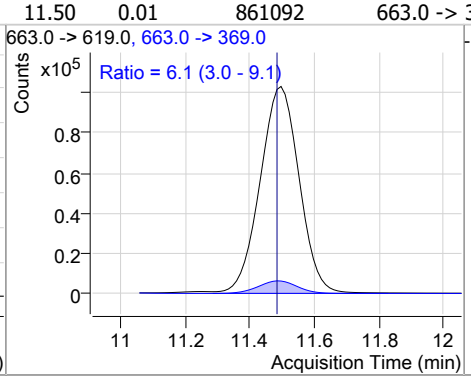


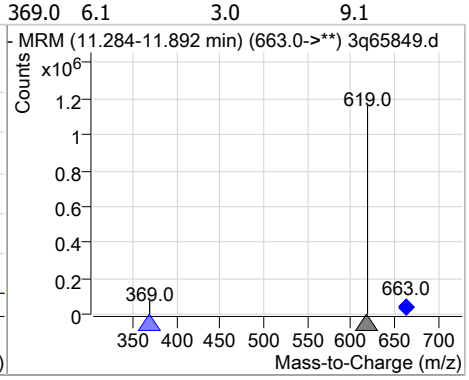




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.85	11.50	0.01	861092	663.0 -> 369.0	6.1	3.0	9.1

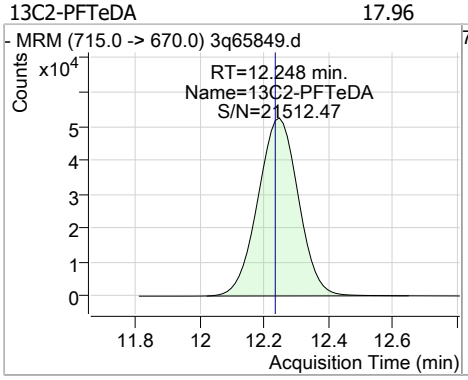


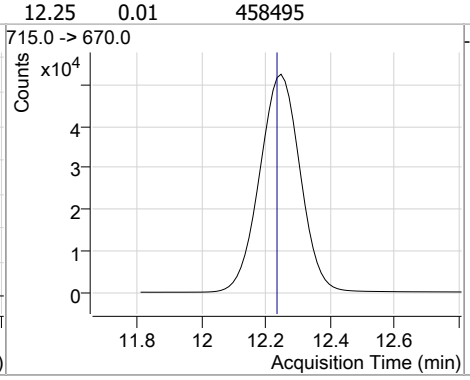


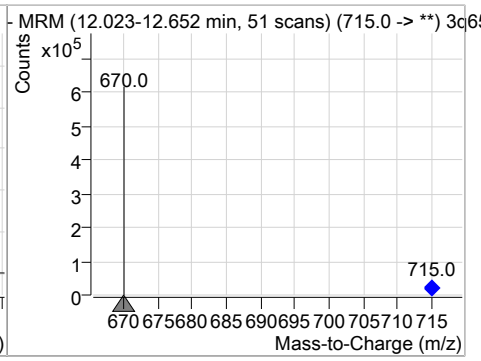


Perfluorinated Compounds by LC/MS/MS

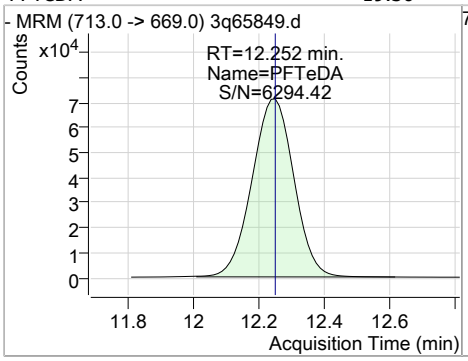
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.96	12.25	0.01	458495				

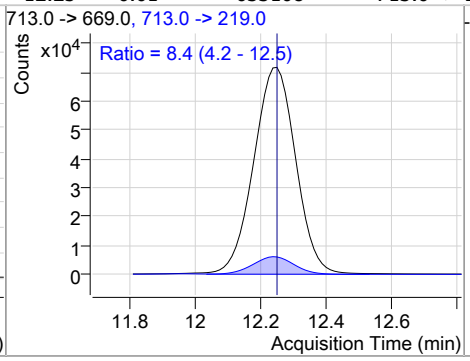


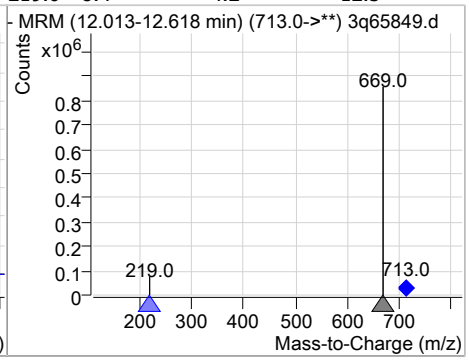




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.36	12.25	0.01	633108	713.0 -> 219.0	8.4	4.2	12.5







Manual Integration Approval Summary

Sample Number: S3Q900-CC900
Lab FileID: 3Q65849.D
Injection Time: 09/16/22 01:58
Method: EPA 537M BY ID
Analyst approved: 09/18/22 14:26 Martha Valls
Supervisor approved: 09/19/22 13:20 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		6.82	Split peak
MeFOSAA	2355-31-9		8.00	Split peak
EtFOSAA	2991-50-6		8.09	Split peak
Perfluorooctanesulfonic acid	1763-23-1		8.11	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS5Q
MS Model	G6470B
MS Instrument Serial	SG2221G211
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	12 September 2022 11:33:14
File Path	D:\MassHunter\Tune\QQQ\G6470B\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.27E+0 [R] (Torr); 4.26E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.90	-0.09	Pass	0.70	0.76	0.06	Pass	144902
302.00	301.96	-0.04	Pass	0.70	0.76	0.06	Pass	123465
601.98	601.95	-0.03	Pass	0.70	0.78	0.08	Pass	289123
1033.99	1033.91	-0.08	Pass	0.70	0.83	0.13	Pass	62789
1633.95	1633.74	-0.21	Adjust	0.70	0.75	0.05	Pass	544615
2233.91	2233.63	-0.28	Pass	0.70	0.63	-0.07	Pass	70074

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.07	0.07	Pass	0.70	0.62	-0.08	Pass	24646
112.99	112.98	-0.01	Pass	0.70	0.71	0.01	Pass	82057
302.00	301.99	-0.01	Pass	0.70	0.72	0.02	Pass	67895
601.98	601.93	-0.05	Pass	0.70	0.73	0.03	Pass	116382
1033.99	1033.95	-0.04	Pass	0.70	0.75	0.05	Pass	134392
1633.95	1633.91	-0.04	Pass	0.70	0.74	0.04	Pass	254453
2233.91	2233.81	-0.10	Pass	0.70	0.76	0.06	Pass	139318

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	1.20	1.32	0.12	Pass	175770
302.00	301.95	-0.05	Pass	1.20	1.57	0.37	Pass	155247
601.98	601.88	-0.10	Pass	1.20	1.62	0.42	Pass	405206
1033.99	1033.87	-0.12	Pass	1.20	1.14	-0.06	Pass	291809
1633.95	1633.67	-0.28	Pass	1.20	1.63	0.43	Pass	1742639
2233.91	2233.87	-0.04	Pass	1.20	1.22	0.02	Pass	1203610

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	1.20	1.19	-0.01	Pass	34383
112.99	112.96	-0.03	Pass	1.20	1.25	0.05	Pass	130419
302.00	301.95	-0.05	Pass	1.20	1.38	0.18	Pass	110644
601.98	601.81	-0.17	Pass	1.20	1.51	0.31	Pass	249497
1033.99	1033.54	-0.45	Pass	1.20	1.54	0.34	Pass	436294
1633.95	1633.53	-0.42	Pass	1.20	1.56	0.36	Pass	1046351
2233.91	2233.48	-0.43	Pass	1.20	1.54	0.34	Pass	695298

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.92	-0.07	Pass	2.50	2.57	0.07	Pass	209641
302.00	301.94	-0.06	Pass	2.50	2.83	0.33	Pass	183914
601.98	601.92	-0.06	Pass	2.50	2.95	0.45	Pass	491571
1033.99	1033.67	-0.32	Pass	2.50	2.08	-0.42	Pass	798678
1633.95	1633.74	-0.21	Pass	2.50	2.81	0.31	Pass	3127333
2233.91	2233.63	-0.28	Pass	2.50	2.45	-0.05	Pass	2959077

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.07	0.07	Pass	2.50	2.32	-0.18	Pass	44761
112.99	112.95	-0.04	Pass	2.50	2.41	-0.09	Pass	179416
302.00	301.89	-0.11	Pass	2.50	2.44	-0.06	Pass	143064
601.98	601.75	-0.23	Pass	2.50	2.51	0.01	Pass	347814
1033.99	1033.77	-0.22	Pass	2.50	2.41	-0.09	Pass	721238
1633.95	1633.59	-0.36	Pass	2.50	2.35	-0.15	Pass	1916744
2233.91	2233.40	-0.51	Pass	2.50	2.26	-0.24	Pass	1386230

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4557.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:40:58 AM
Sample Name : ic71-0.5
Vial : P1-A2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

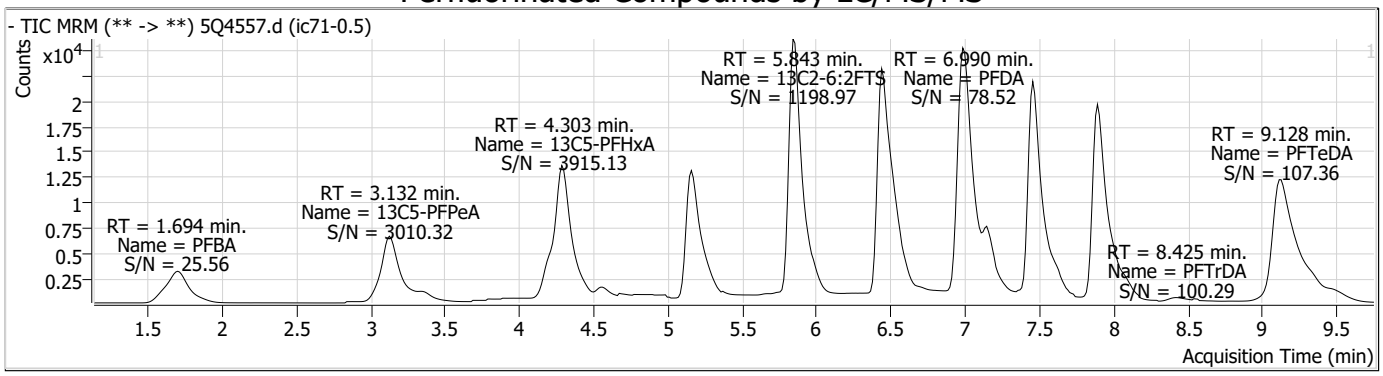
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	34001	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	55563	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	83599	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	77902	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	116029	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	125983	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	103233	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	132975	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	138628	20.00	µg/L	0.012
M2-PFTeDA	9.124	715.0 -> 670.0	134716	20.00	µg/L	0.087
M8-FOSA	6.530	506.0 -> 78.0	21347	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6295	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6436	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12270	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	25978	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	41026	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	41053	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	19169	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6538	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	5593	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	21167	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	25978	17.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
13C2-6:2FTS	5.843	429.0 -> 409.0	41026	18.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-8:2FTS	7.013	529.0 -> 509.0	41053	18.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%		
13C2-PFDoDA	7.905	615.0 -> 570.0	138628	19.13	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C2-PFTeDA	9.124	715.0 -> 670.0	134716	17.85	µg/L	0.087
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C3-PFBS	3.362	302.0 -> 99.0	6295	19.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	6436	18.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C4-PFBA	1.700	217.0 -> 172.0	34001	19.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%		
13C4-PFHpA	5.163	367.0 -> 322.0	77902	19.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C5-PFHxA	4.303	318.0 -> 273.0	83599	19.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C5-PFPeA	3.132	268.0 -> 223.0	55563	19.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C6-PFDA	6.989	519.0 -> 474.0	103233	19.18	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

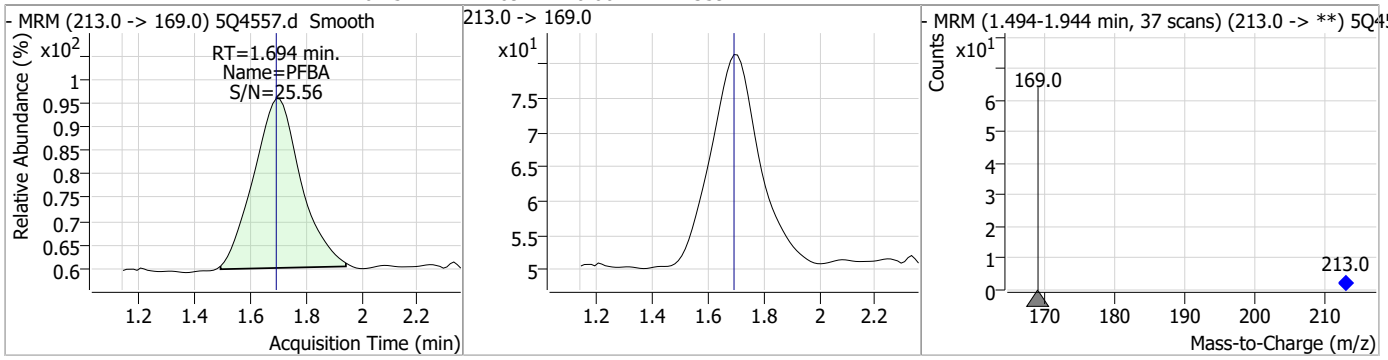
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C7-PFUnDA	7.471	570.0 -> 525.0	132975	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
13C8-FOSA	6.530	506.0 -> 78.0	21347	18.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-PFOA	5.857	421.0 -> 376.0	116029	19.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C8-PFOS	6.440	507.0 -> 99.0	12270	18.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C9-PFNA	6.455	472.0 -> 427.0	125983	19.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19169	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6538	19.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	5593	18.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
d5-EtFOSAA	7.170	589.0 -> 419.0	21167	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	790	0.54	µg/L		93
6:2FTS	5.843	427.0 -> 407.0	1113	0.51	µg/L		100
8:2FTS	7.013	527.0 -> 507.0	1189	0.54	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	373	0.50	µg/L		98
FOSA	6.531	498.0 -> 78.0	531	0.48	µg/L		98
MeFOSAA	7.010	570.0 -> 419.0	437	0.50	µg/L		96
PFBA	1.694	213.0 -> 169.0	359	0.45	µg/L		100
PFBS	3.354	299.0 -> 80.0	438	0.46	µg/L		100
PFDA	6.990	513.0 -> 469.0	3010	0.47	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	3198	0.47	µg/L		98
PFDS	7.419	599.0 -> 80.0	412	0.46	µg/L		97
PFHpA	5.164	363.0 -> 319.0	2502	0.49	µg/L		98
PFHpS	5.855	449.0 -> 80.0	436	0.47	µg/L		87
PFHxA	4.304	313.0 -> 269.0	1973	0.48	µg/L		99
PFHxS	5.195	399.0 -> 80.0	423	0.44	µg/L		100
PFNA	6.456	463.0 -> 419.0	2531	0.45	µg/L		100
PFNS	6.962	549.0 -> 80.0	423	0.47	µg/L		94
PFOA	5.858	413.0 -> 369.0	3298	0.47	µg/L		95
PFOS	6.429	499.0 -> 80.0	659	0.61	µg/L	m	71
PFPeA	3.134	263.0 -> 219.0	1342	0.49	µg/L		100
PFPeS	4.410	349.0 -> 80.0	319	0.43	µg/L		90
PFTeDA	9.128	713.0 -> 669.0	3714	0.53	µg/L		100
PFTrDA	8.425	663.0 -> 619.0	3670	0.45	µg/L		93
PFUnDA	7.460	563.0 -> 519.0	3230	0.49	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	1569	0.46	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	1579	0.44	µg/L		99
ADONA	5.261	377.0 -> 251.0	3158	0.48	µg/L		98
HFPO-DA	4.574	329.0 -> 169.0	527	0.48	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	151	0.50	µg/L		94
4-PFECHS	5.753	461.0 -> 381.0	1009	0.48	µg/L		97
FBSA	4.356	298.0 -> 78.0	699	0.50	µg/L		93
FHxSA	5.674	398.0 -> 78.0	646	0.55	µg/L		96

 # = Qualifier out of range, m = manually integrated, + = Area summed

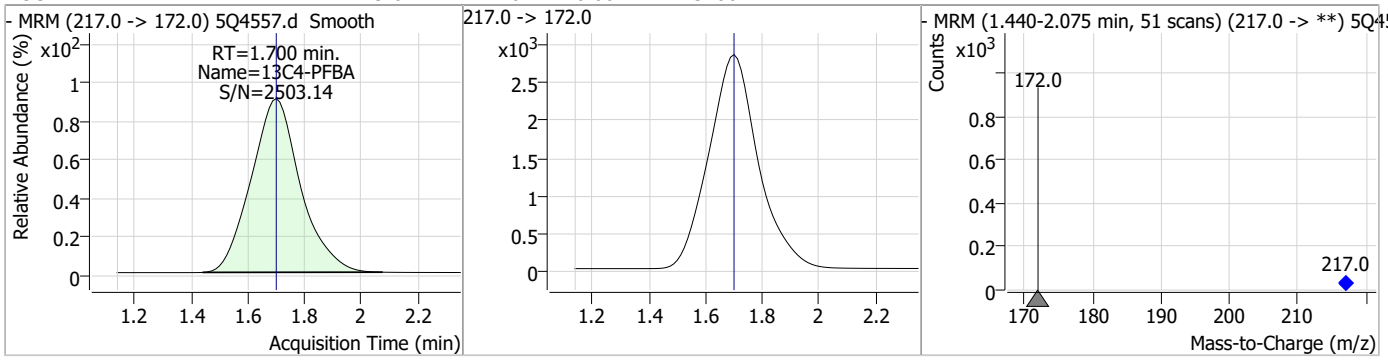
Perfluorinated Compounds by LC/MS/MS



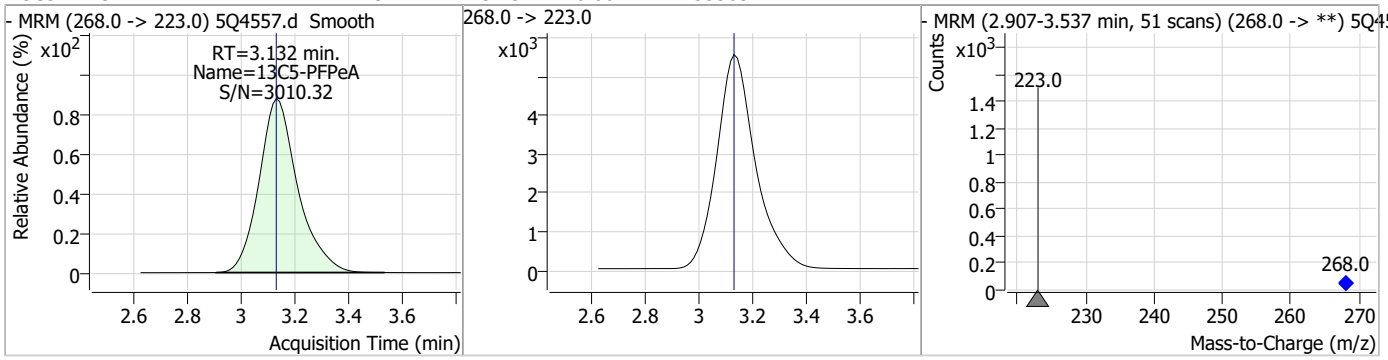
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.45	1.69	0.00	359				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.02	1.70	0.00	34001				

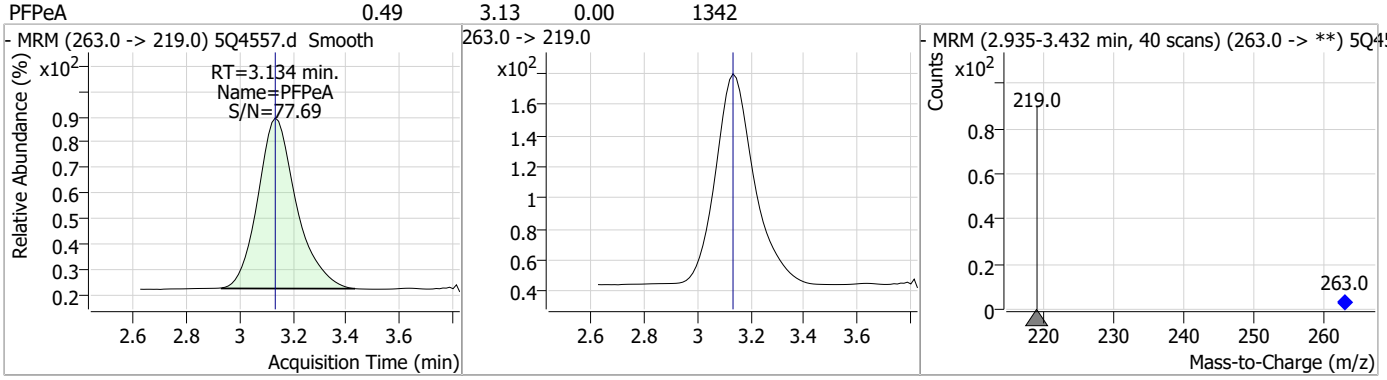


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.12	3.13	0.00	55563				

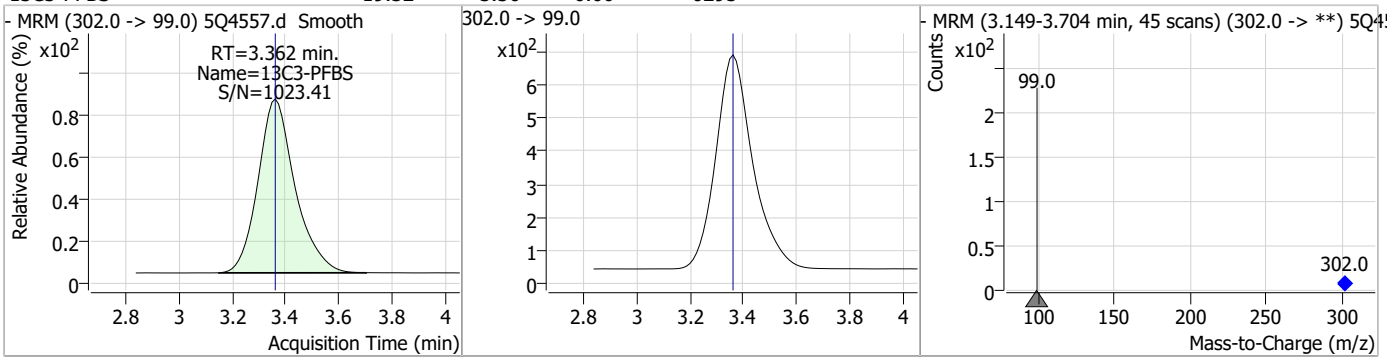


Perfluorinated Compounds by LC/MS/MS

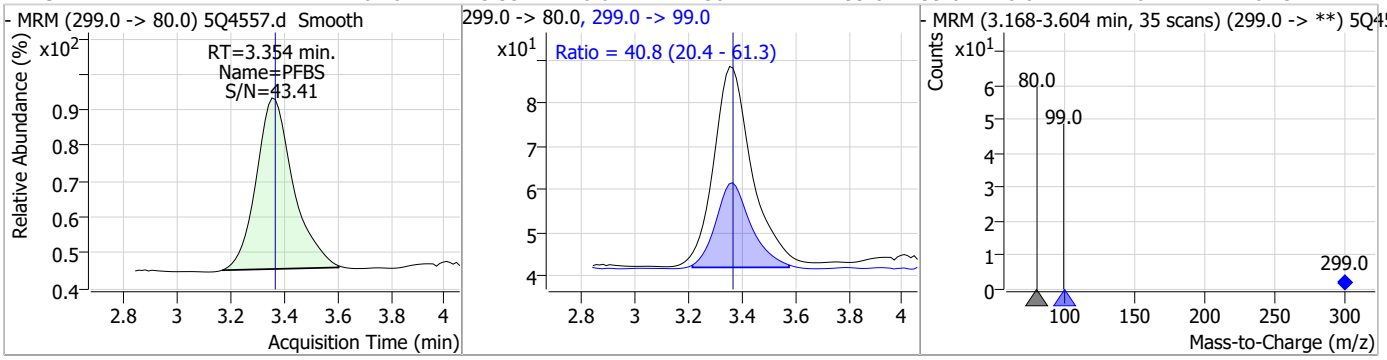
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.49	3.13	0.00	1342				



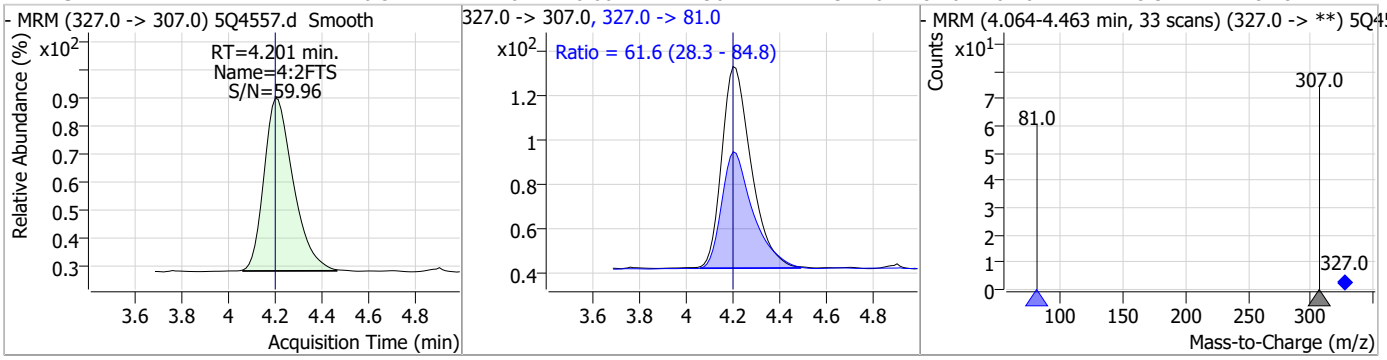
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.32	3.36	0.00	6295				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.46	3.35	-0.01	438	299.0 -> 99.0	40.8	20.4	61.3

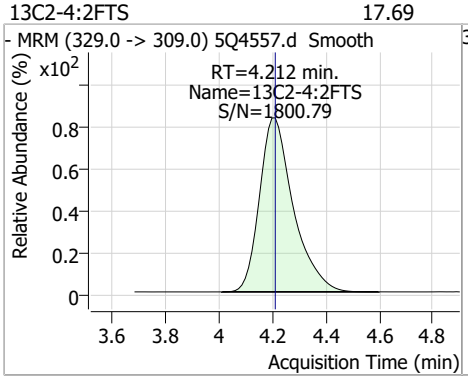


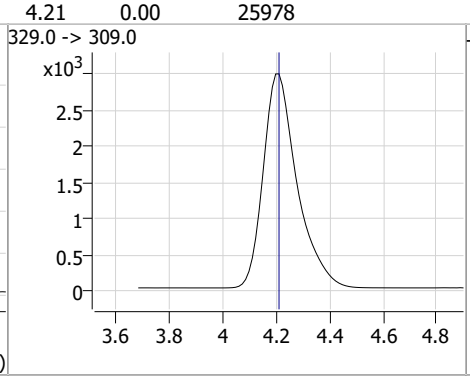
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.54	4.20	0.00	790	327.0 -> 81.0	61.6	28.3	84.8

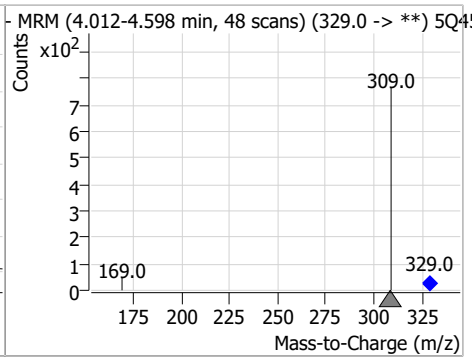


Perfluorinated Compounds by LC/MS/MS

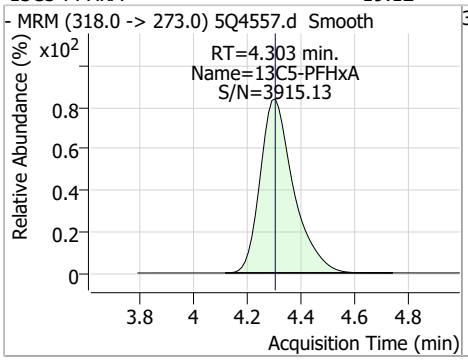
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.69	4.21	0.00	25978				

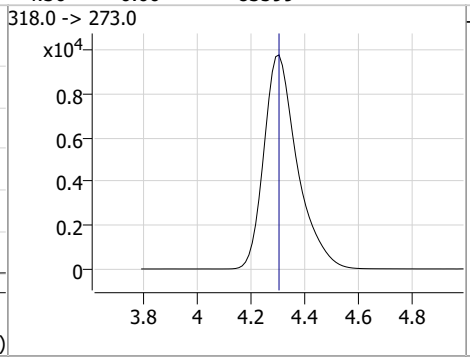


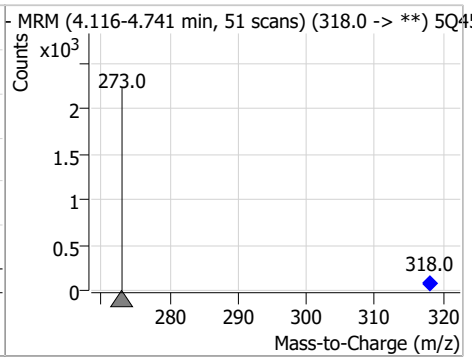




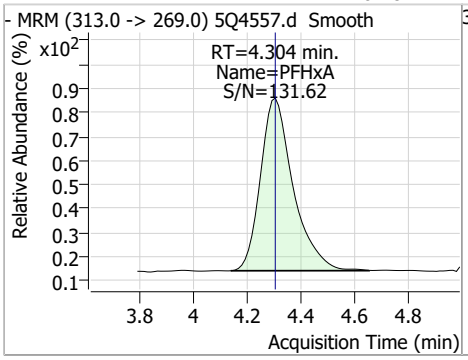
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.12	4.30	0.00	83599				

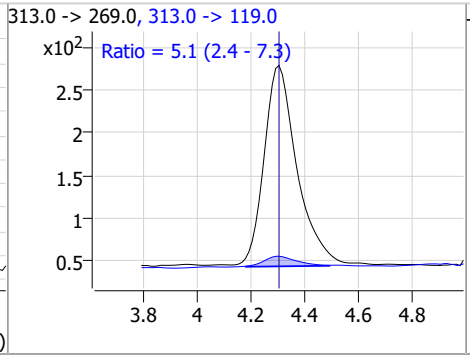


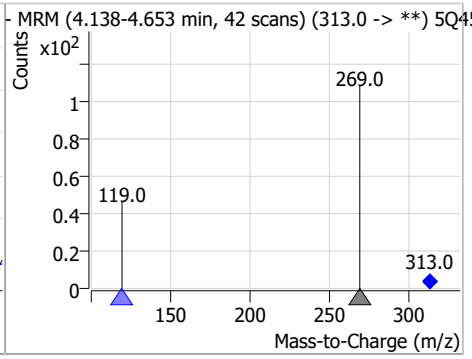




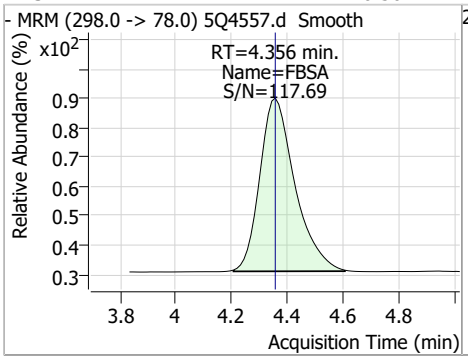
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.48	4.30	0.00	1973	313.0 -> 119.0	5.1	2.4	7.3

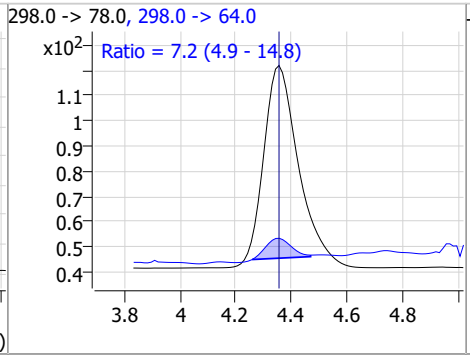


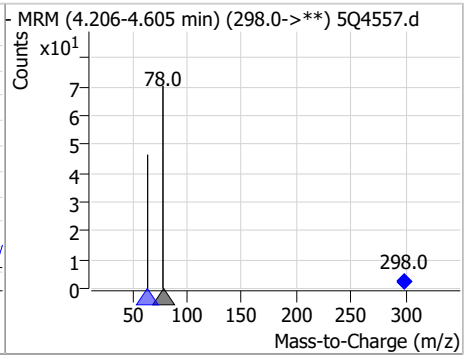




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.50	4.36	0.00	699	298.0 -> 64.0	7.2	4.9	14.8

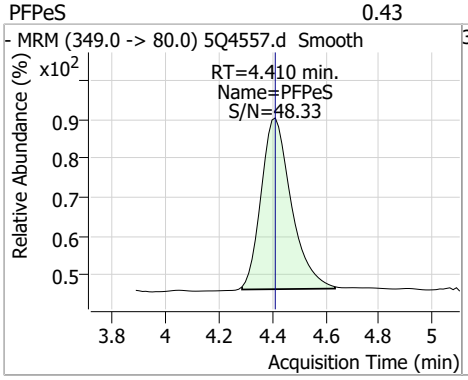


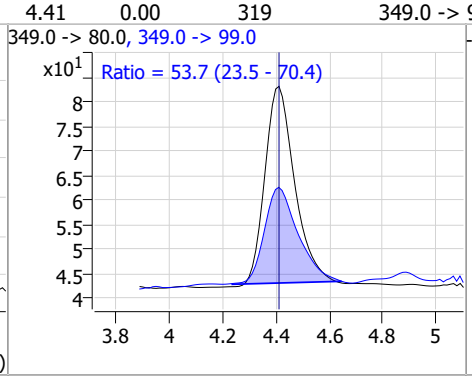


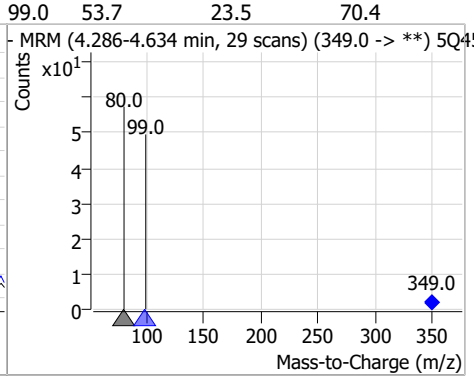


Perfluorinated Compounds by LC/MS/MS

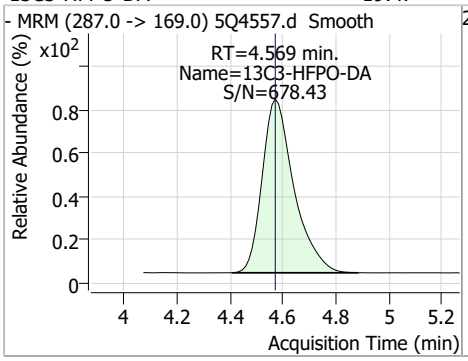
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.43	4.41	0.00	319	349.0 -> 99.0	53.7	23.5	70.4

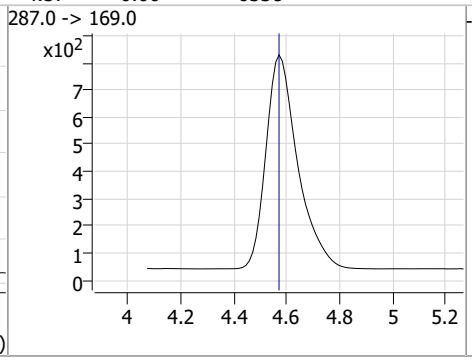


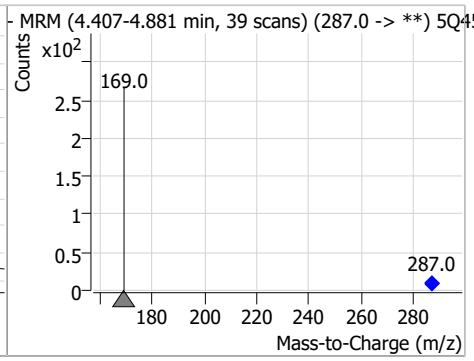




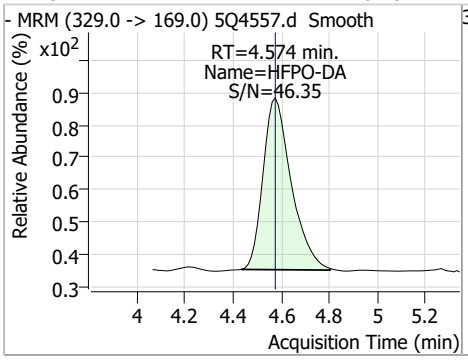
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.47	4.57	0.00	6538				

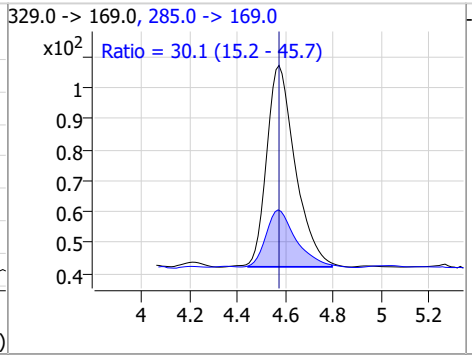


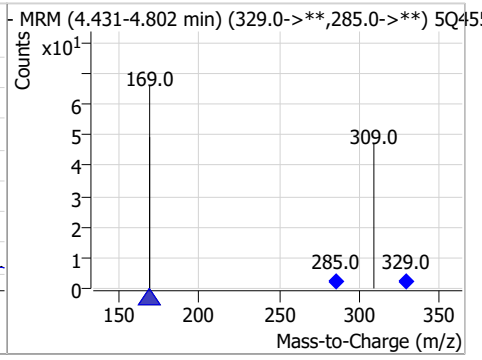




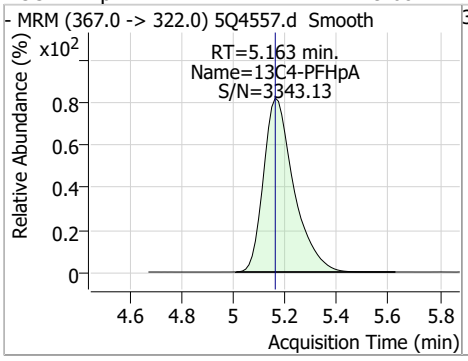
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.48	4.57	0.00	527	285.0 -> 169.0	30.1	15.2	45.7

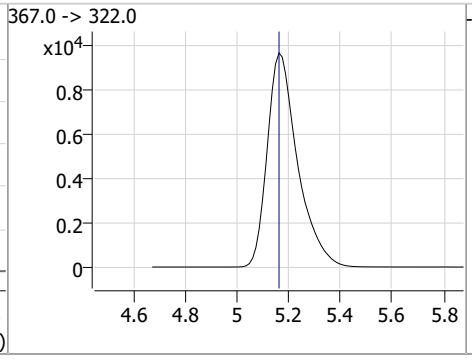


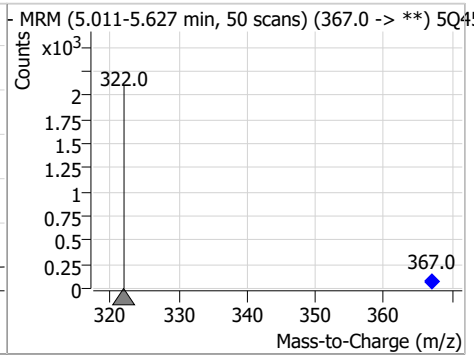




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.08	5.16	0.00	77902				

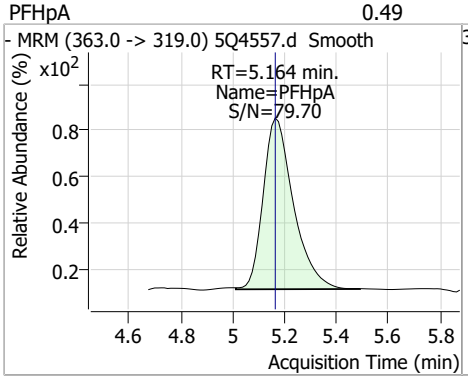


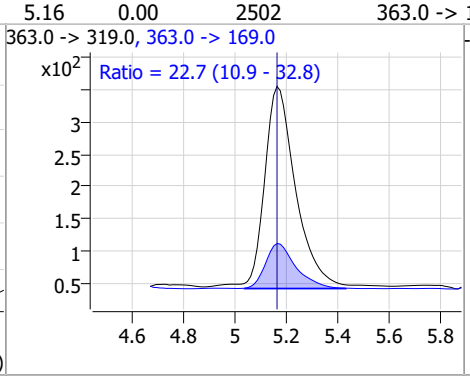


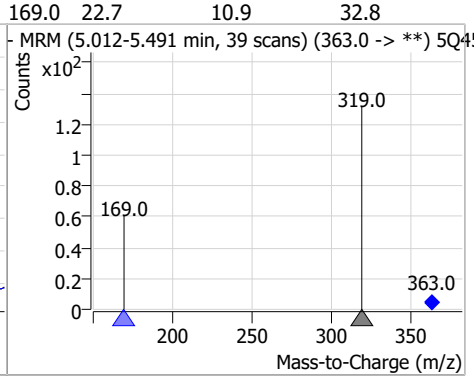


Perfluorinated Compounds by LC/MS/MS

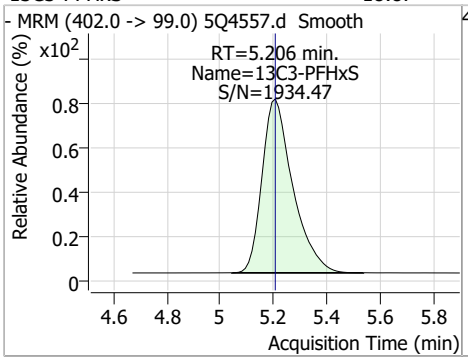
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.49	5.16	0.00	2502	363.0 -> 169.0	22.7	10.9	32.8

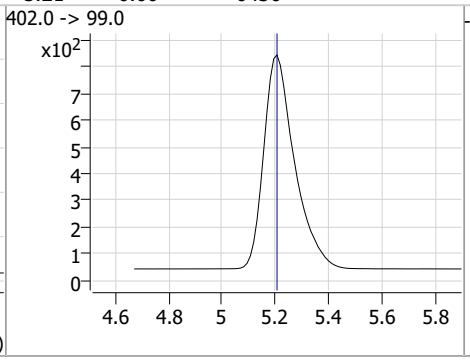


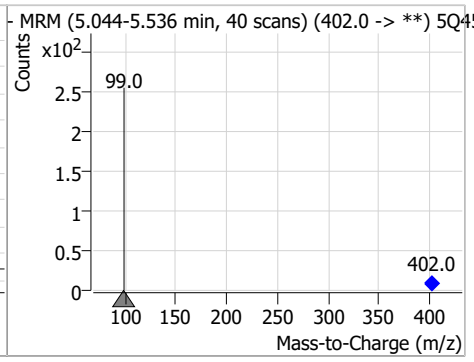




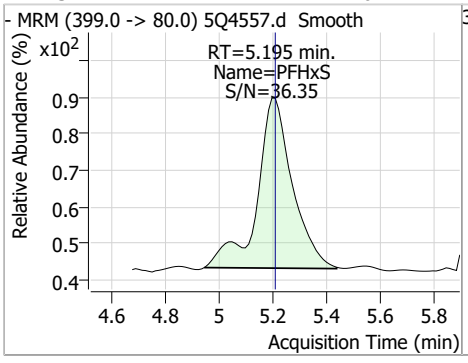
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.87	5.21	0.00	6436				

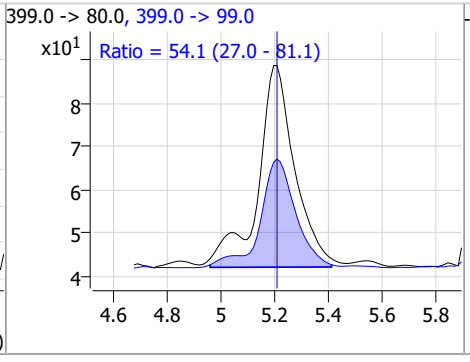


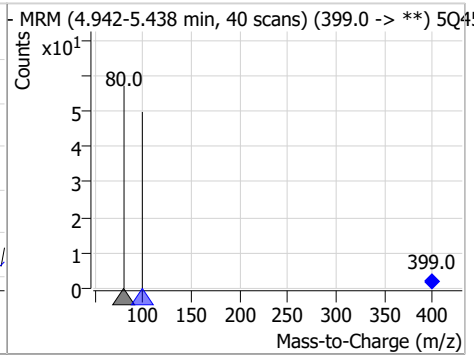




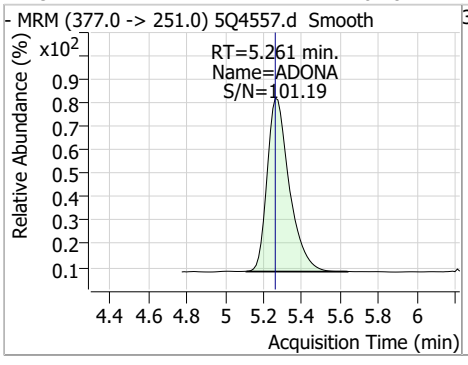
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.44	5.20	-0.01	423	399.0 -> 99.0	54.1	27.0	81.1

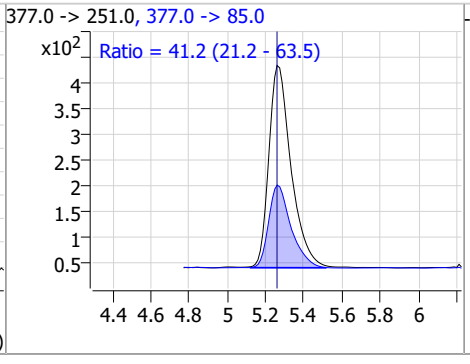


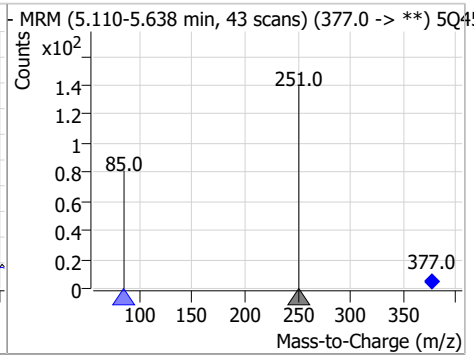




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.48	5.26	0.00	3158	377.0 -> 85.0	41.2	21.2	63.5

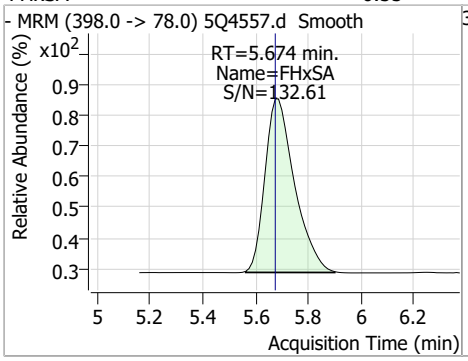


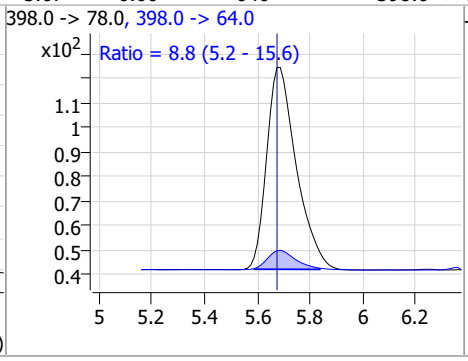


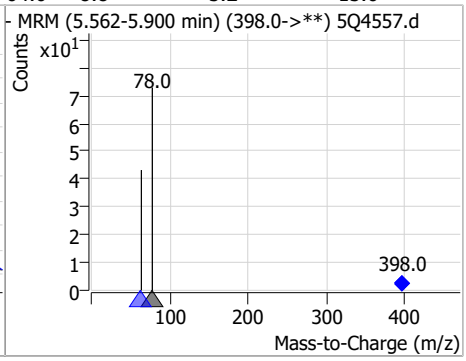


Perfluorinated Compounds by LC/MS/MS

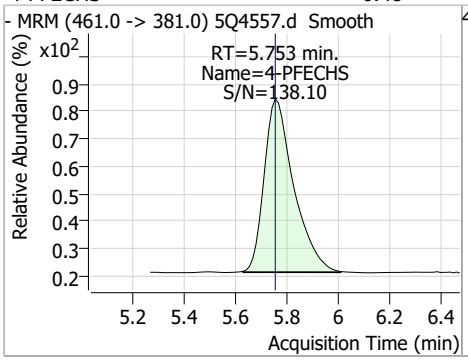
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.55	5.67	0.00	646	398.0 -> 64.0	8.8	5.2	15.6

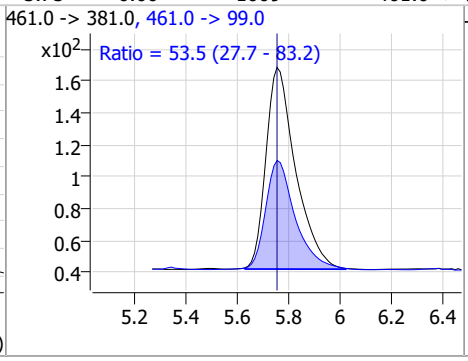


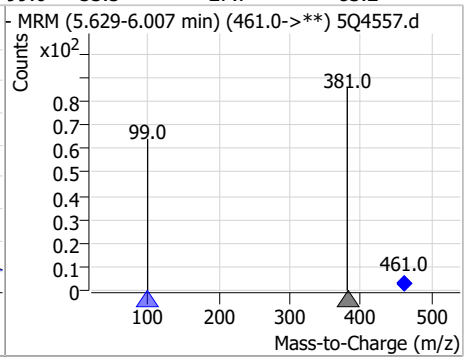




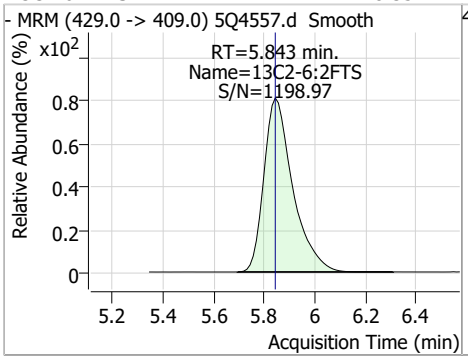
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.48	5.75	0.00	1009	461.0 -> 99.0	53.5	27.7	83.2

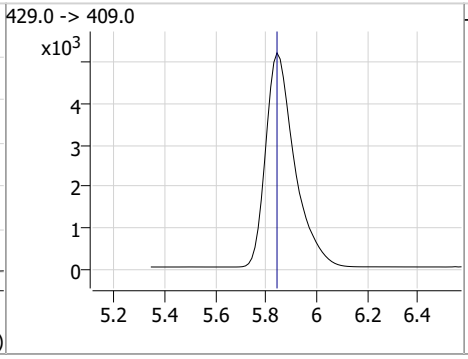


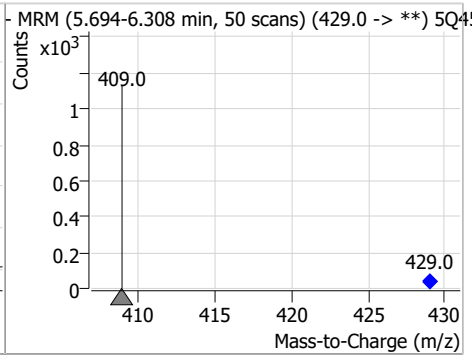




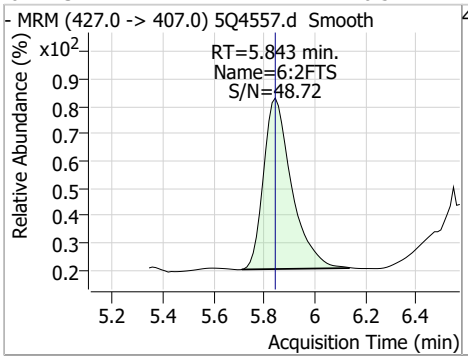
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.35	5.84	0.00	41026				

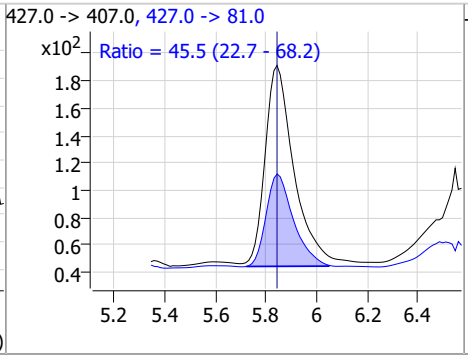


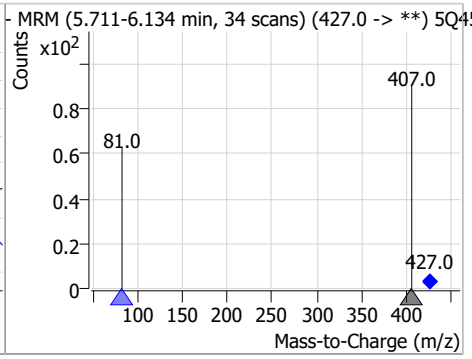




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.51	5.84	0.00	1113	427.0 -> 81.0	45.5	22.7	68.2

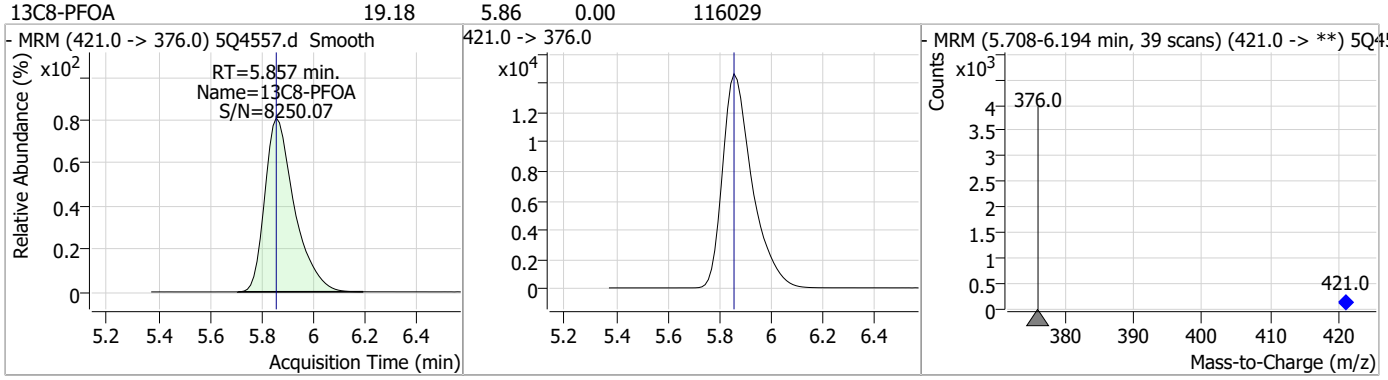




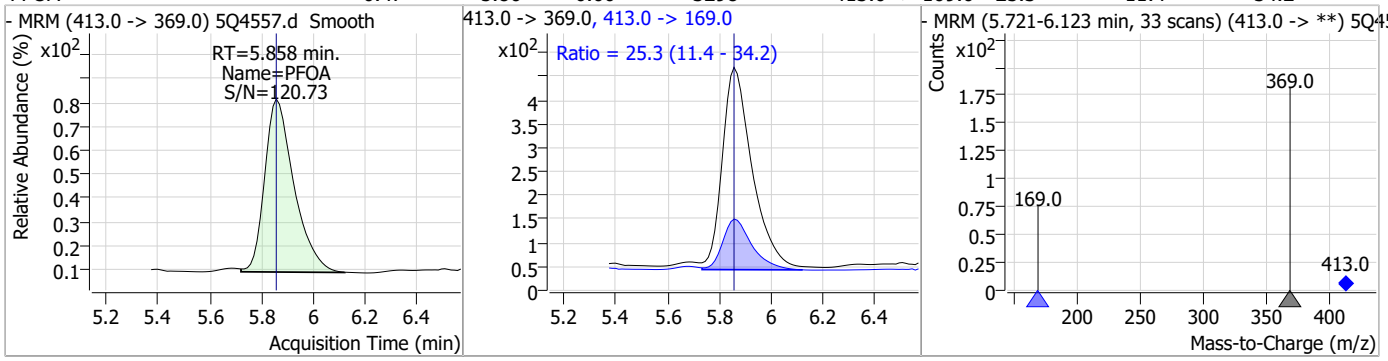


Perfluorinated Compounds by LC/MS/MS

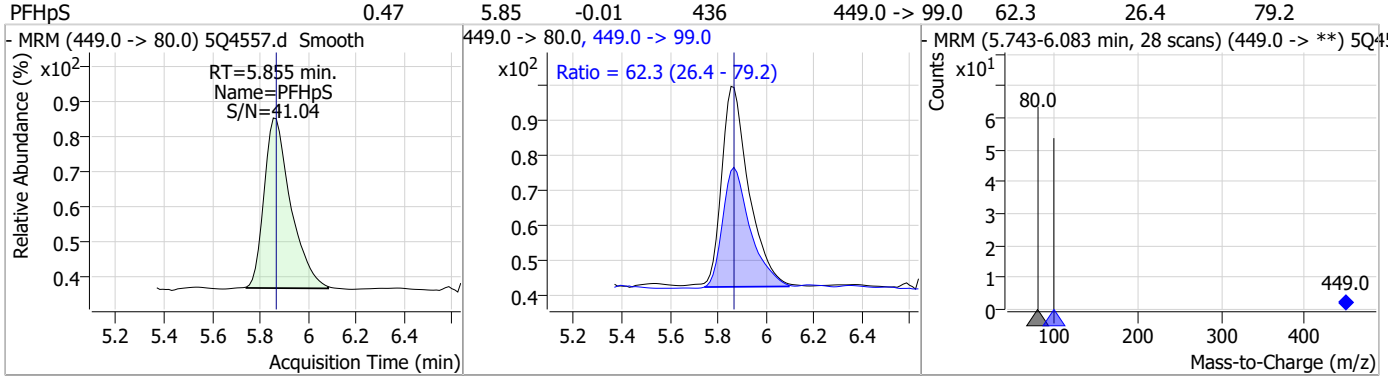
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.18	5.86	0.00	116029				



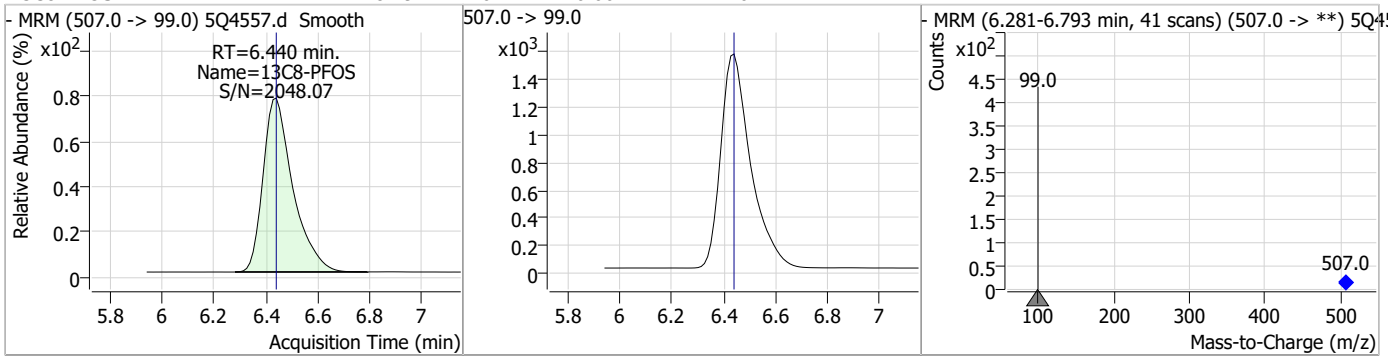
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.47	5.86	0.00	3298	413.0 -> 169.0	25.3	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.47	5.85	-0.01	436	449.0 -> 99.0	62.3	26.4	79.2

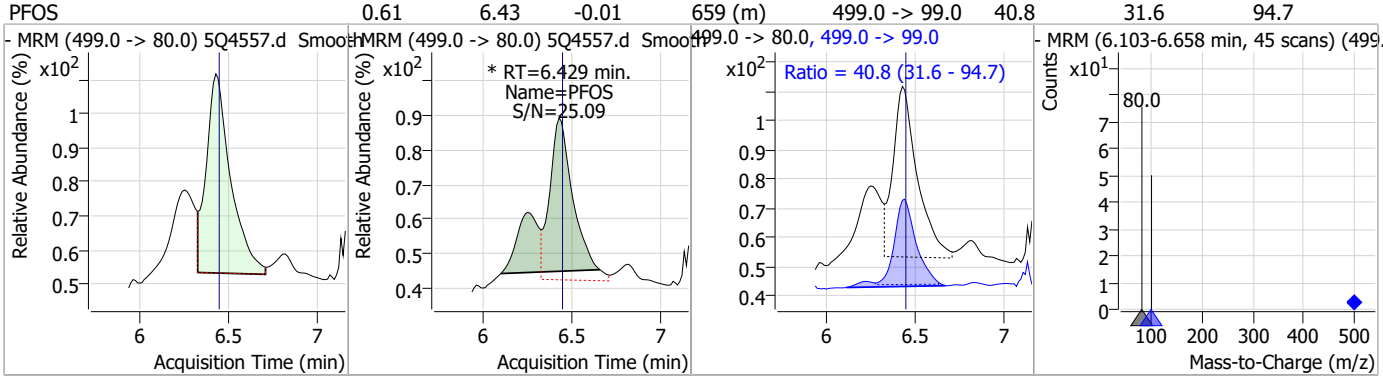


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.79	6.44	0.00	12270				

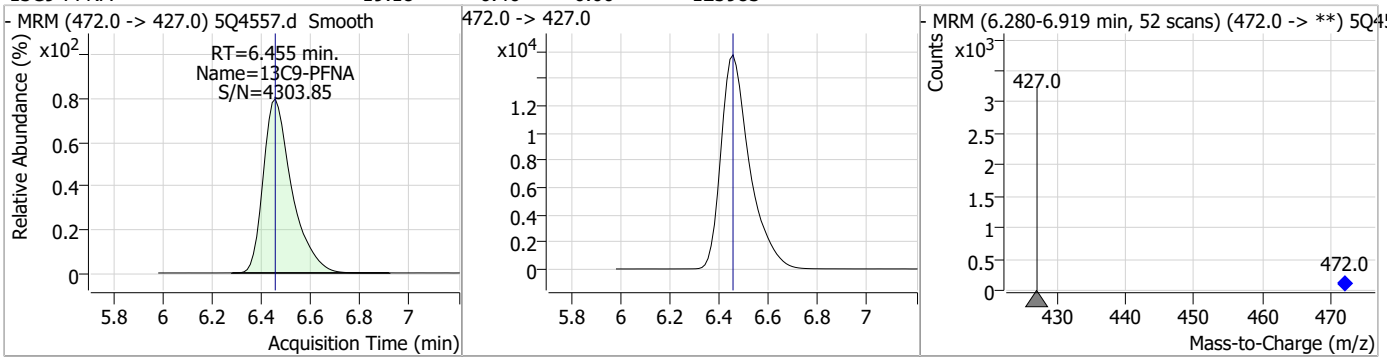


Perfluorinated Compounds by LC/MS/MS

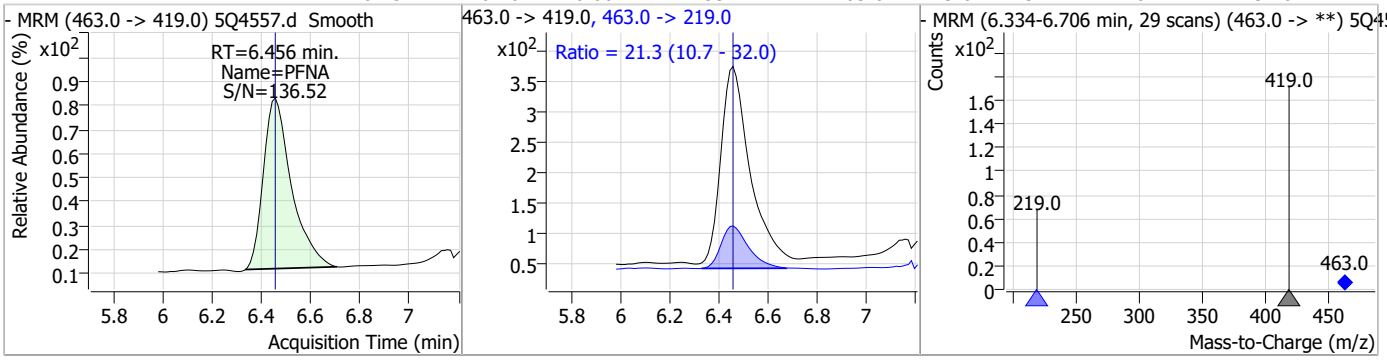
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.61	6.43	-0.01	659 (m)	499.0 -> 99.0	40.8	31.6	94.7



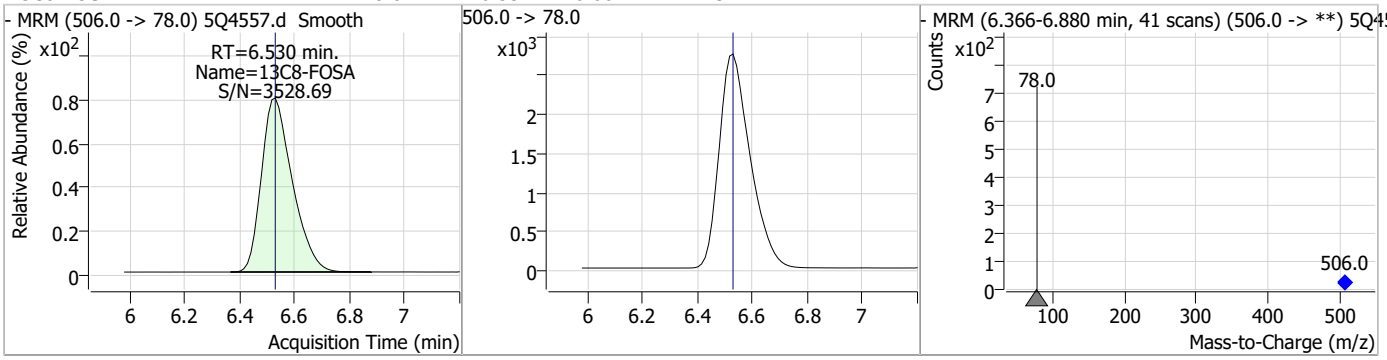
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.18	6.46	0.00	125983				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.45	6.46	0.00	2531	463.0 -> 219.0	21.3	10.7	32.0

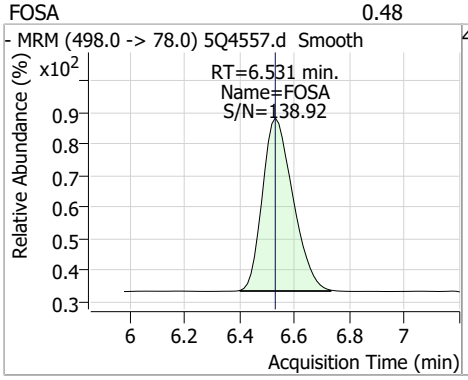


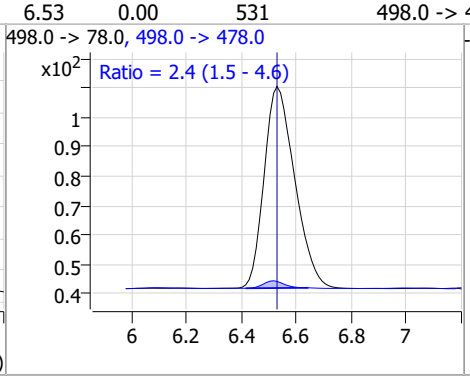
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.81	6.53	0.00	21347				

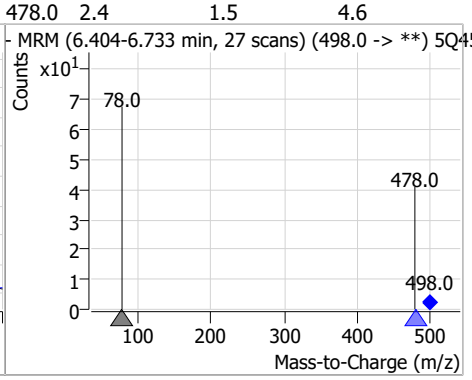


Perfluorinated Compounds by LC/MS/MS

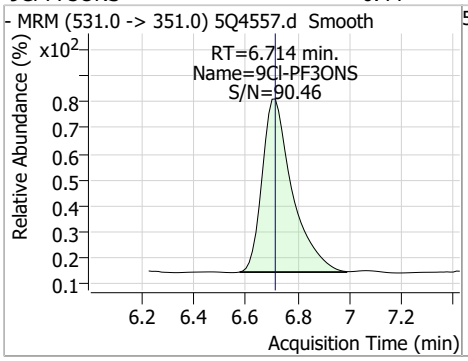
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.48	6.53	0.00	531	498.0 -> 478.0	2.4	1.5	4.6

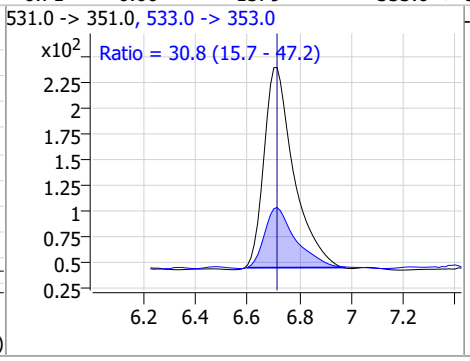


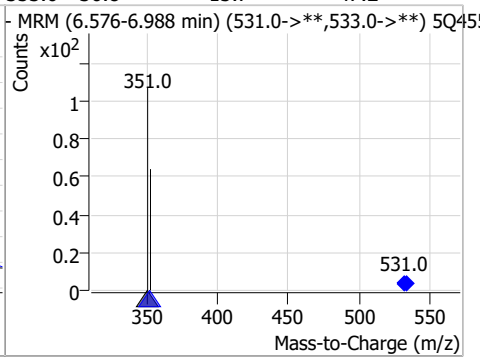




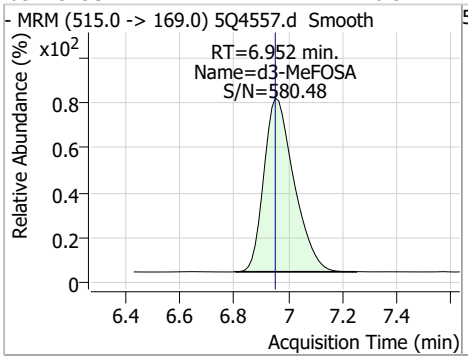
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.44	6.71	0.00	1579	533.0 -> 353.0	30.8	15.7	47.2

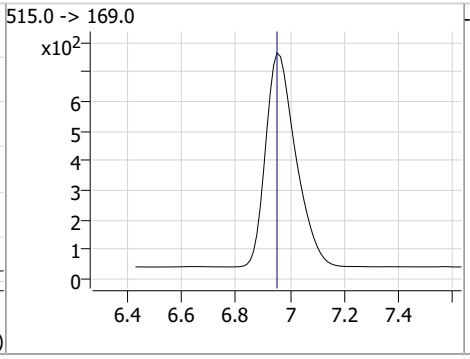


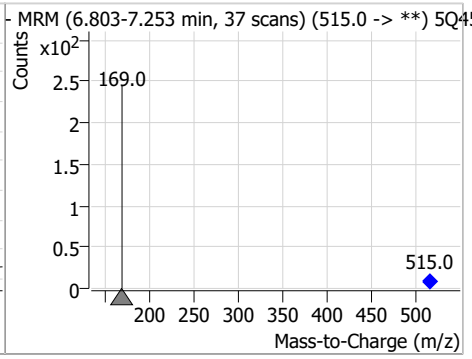




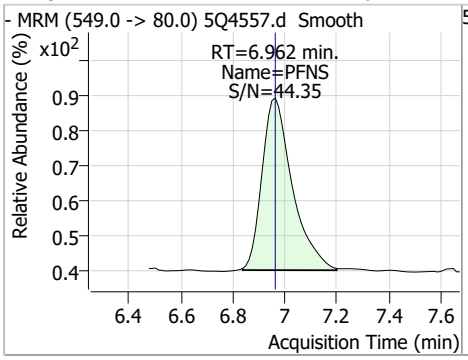
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.37	6.95	0.00	5593				

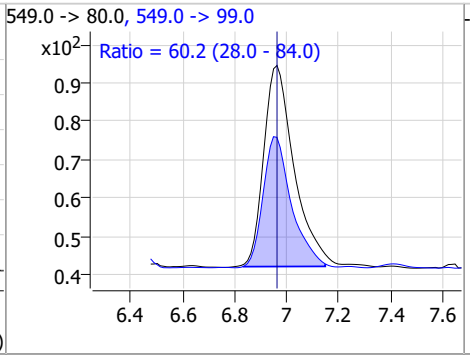


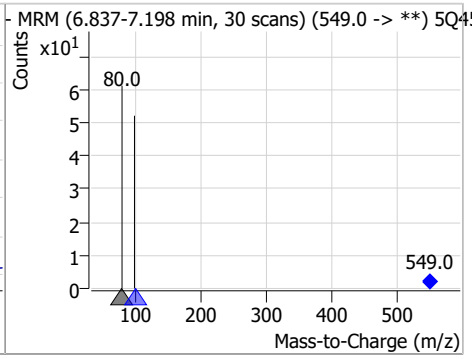




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.47	6.96	0.00	423	549.0 -> 99.0	60.2	28.0	84.0

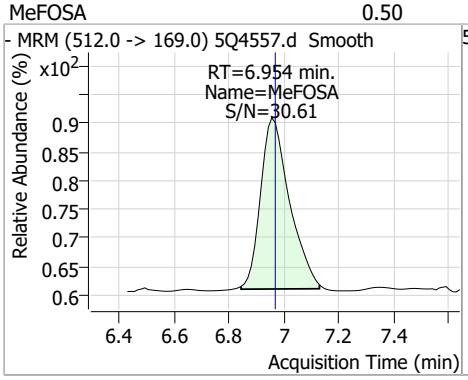


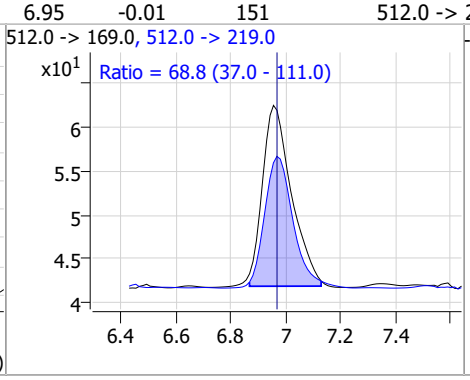


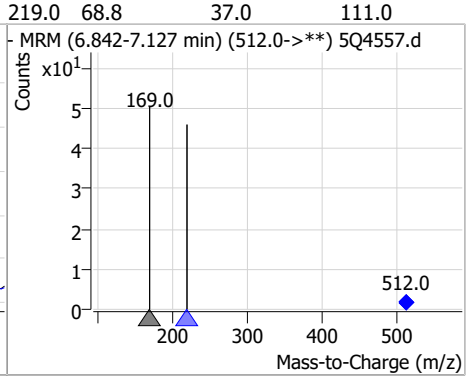


Perfluorinated Compounds by LC/MS/MS

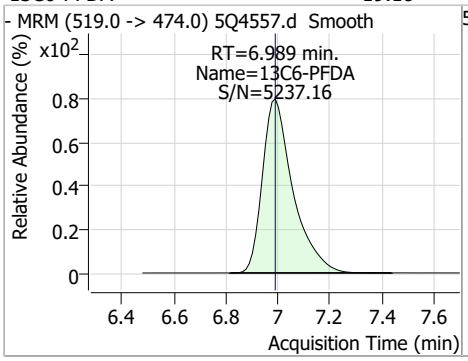
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.50	6.95	-0.01	151	512.0 -> 219.0	68.8	37.0	111.0

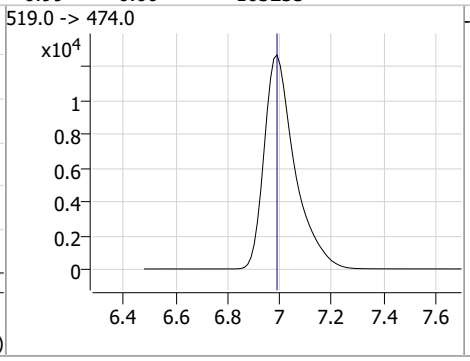


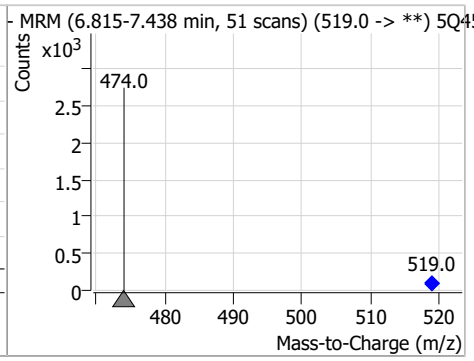




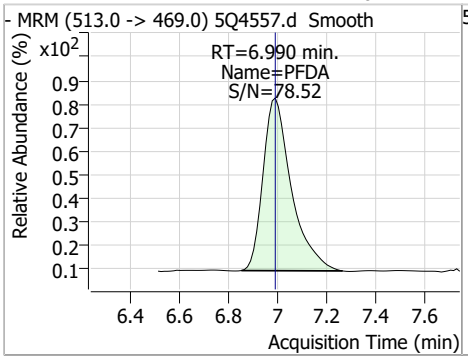
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.18	6.99	0.00	103233				

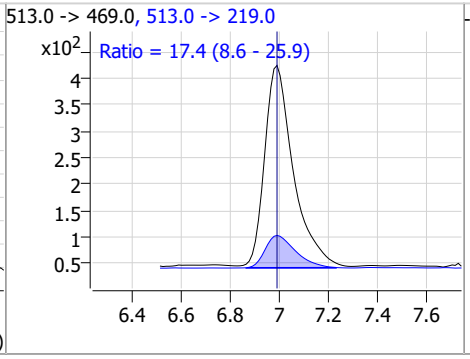


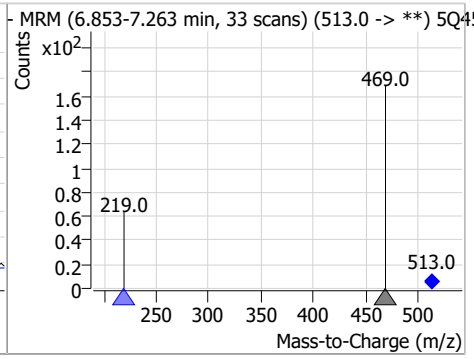




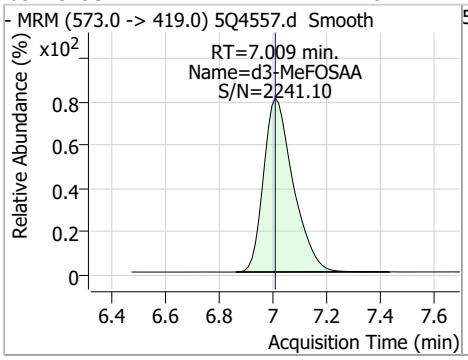
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.47	6.99	0.00	3010	513.0 -> 219.0	17.4	8.6	25.9

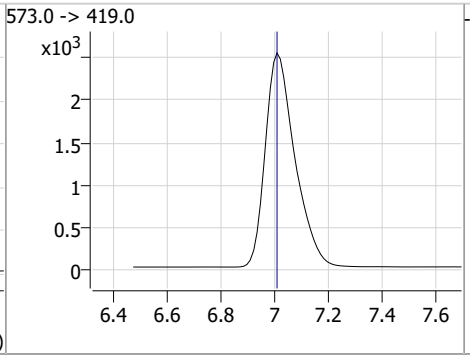


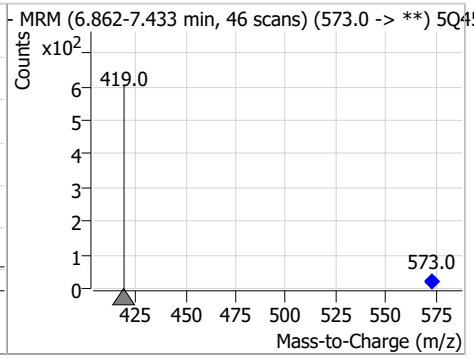




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.72	7.01	0.00	19169				

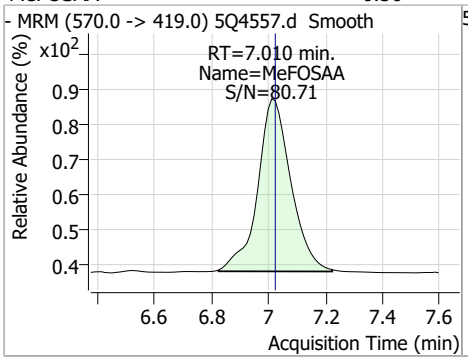


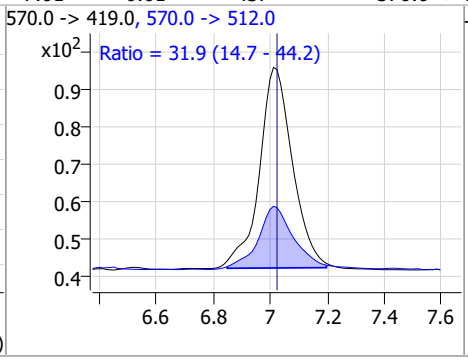


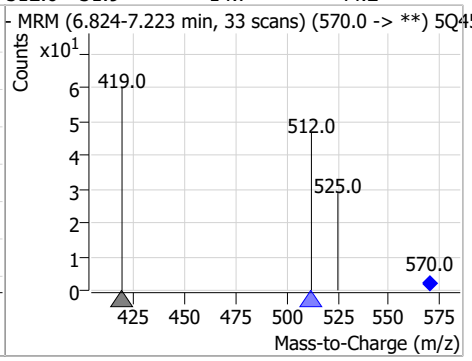


Perfluorinated Compounds by LC/MS/MS

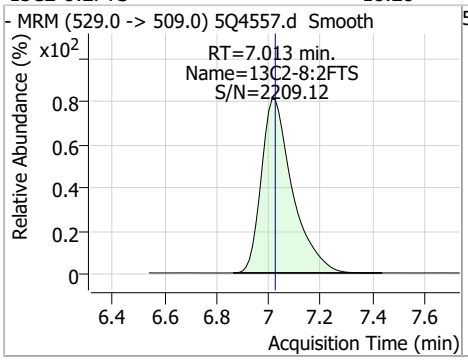
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.50	7.01	-0.01	437	570.0 -> 512.0	31.9	14.7	44.2

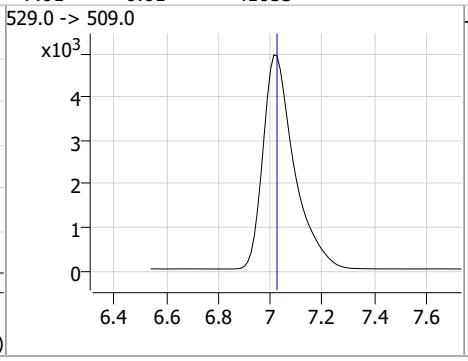


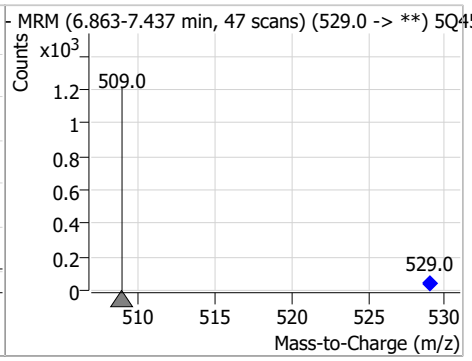




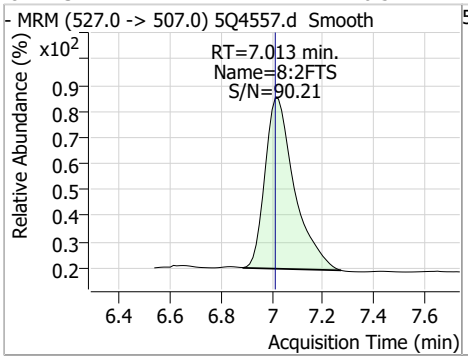
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.28	7.01	-0.01	41053				

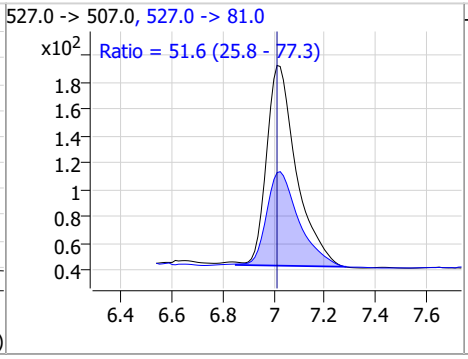


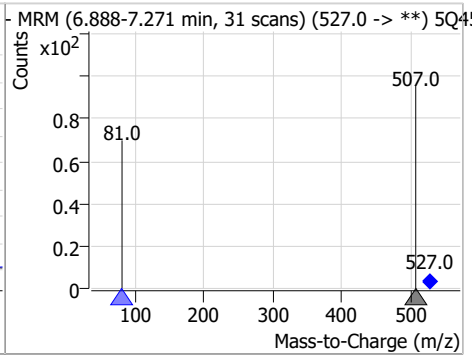




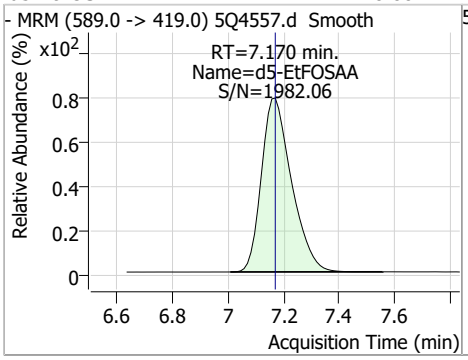
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.54	7.01	-0.01	1189	527.0 -> 81.0	51.6	25.8	77.3

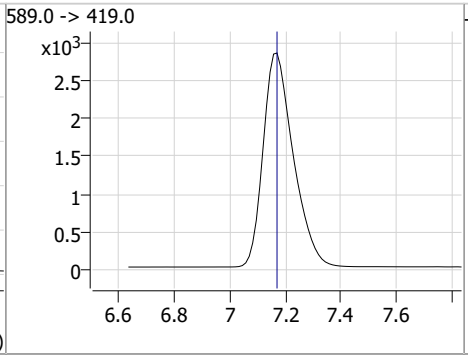


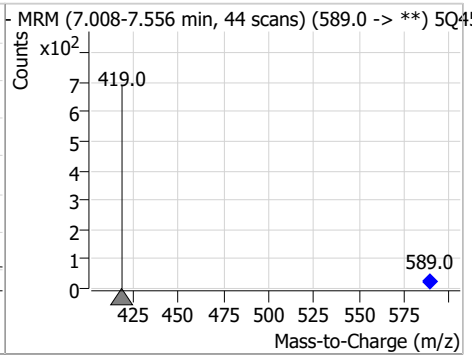




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.88	7.17	0.00	21167				

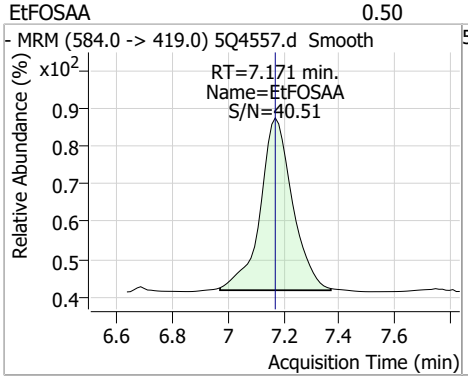


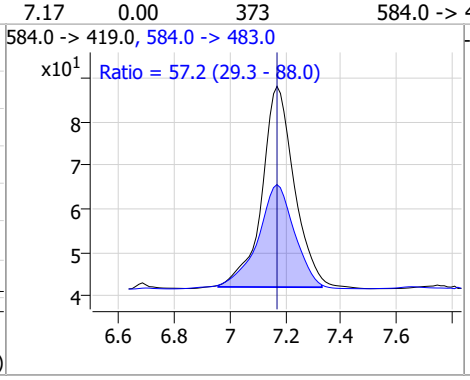


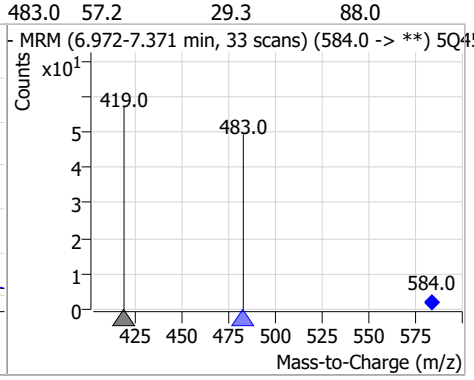


Perfluorinated Compounds by LC/MS/MS

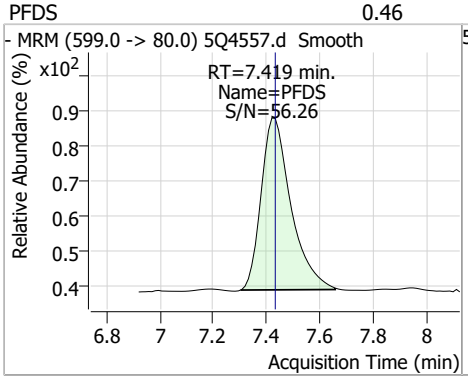
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.50	7.17	0.00	373	584.0 -> 483.0	57.2	29.3	88.0

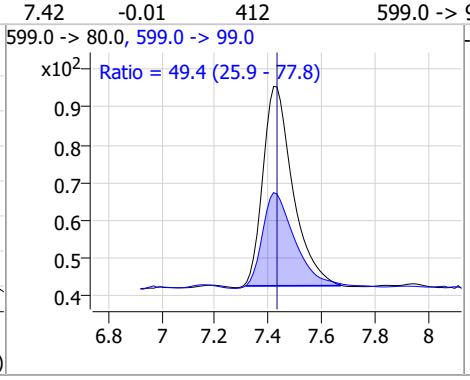


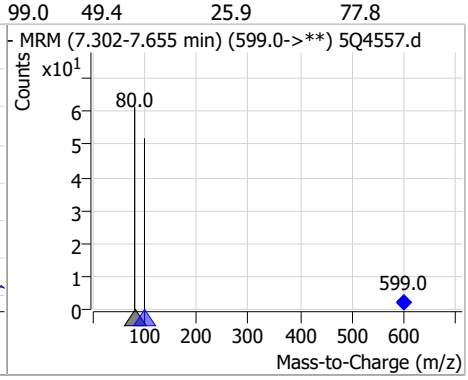




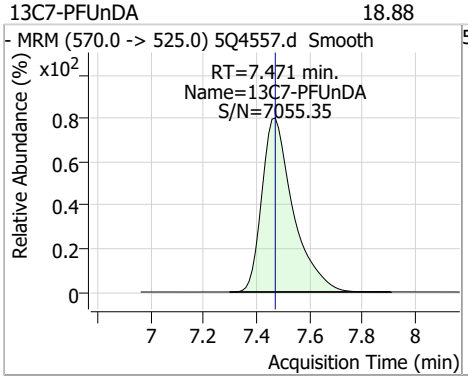
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.46	7.42	-0.01	412	599.0 -> 99.0	49.4	25.9	77.8

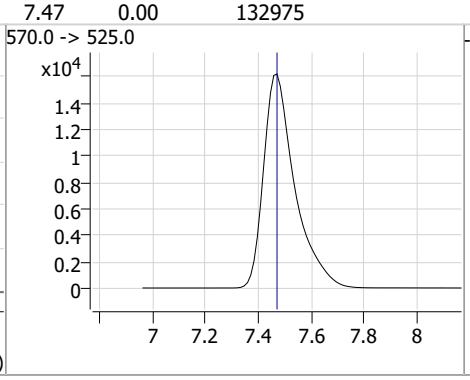


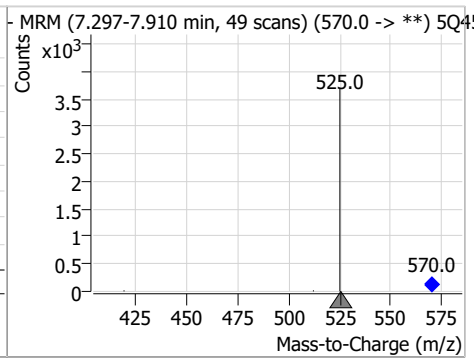




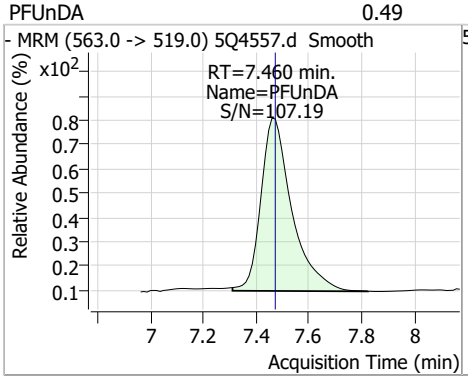
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.88	7.47	0.00	132975				

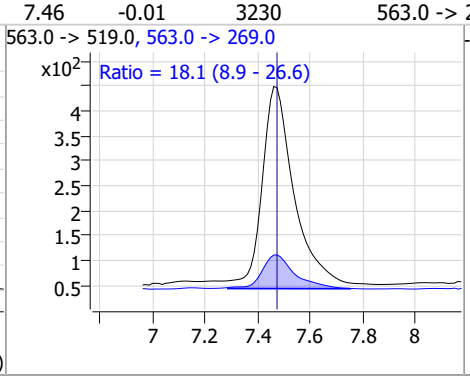


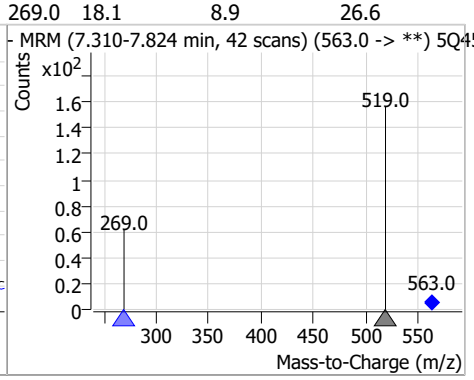




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.49	7.46	-0.01	3230	563.0 -> 269.0	18.1	8.9	26.6

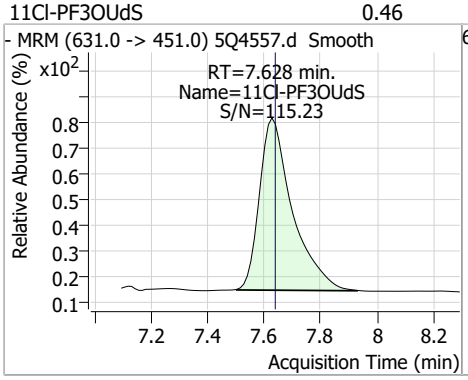


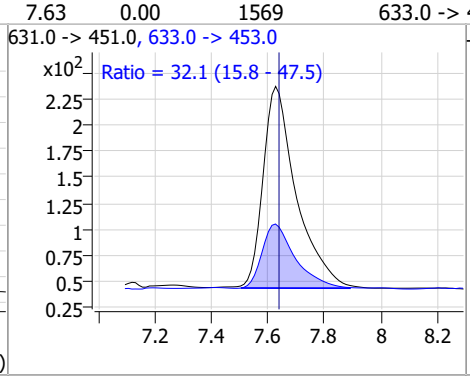


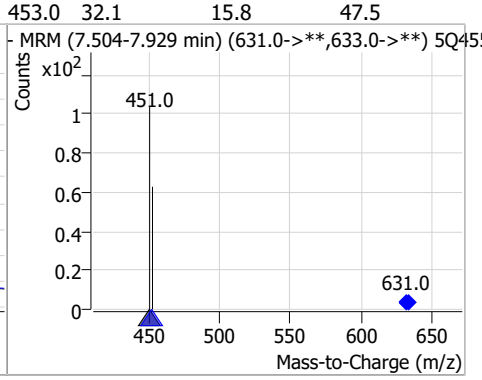


Perfluorinated Compounds by LC/MS/MS

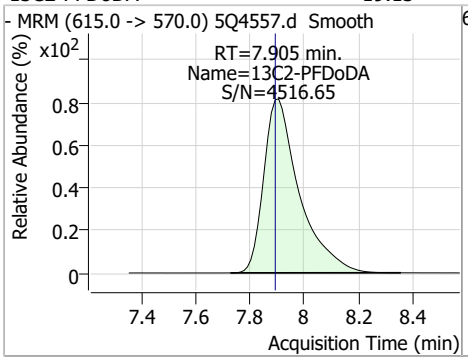
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.46	7.63	0.00	1569	633.0 -> 453.0	32.1	15.8	47.5

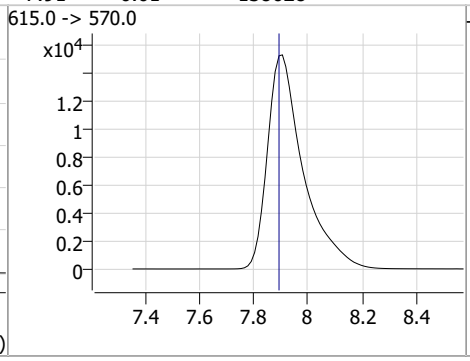


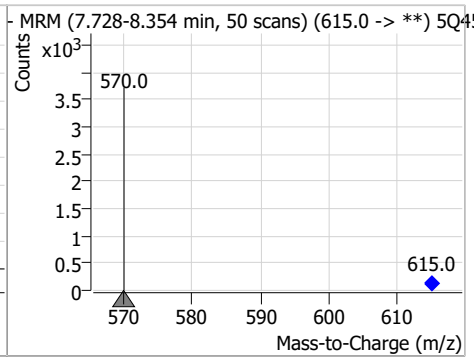




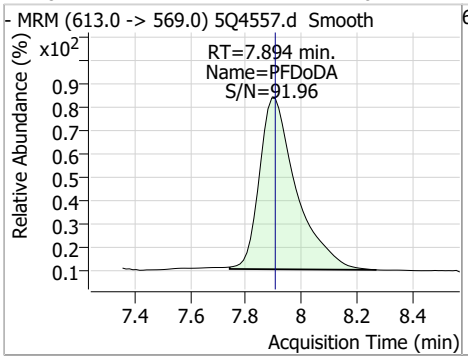
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.13	7.91	0.01	138628				

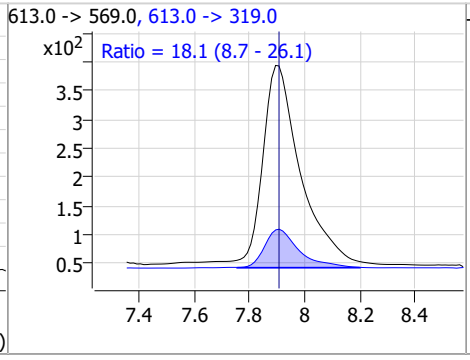


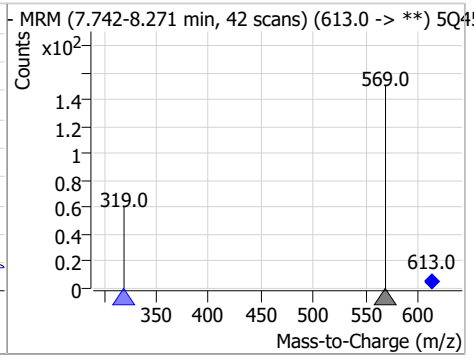




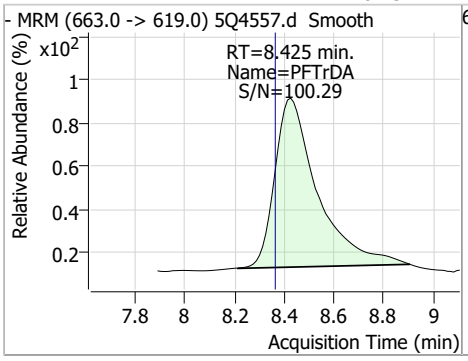
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.47	7.89	0.00	3198	613.0 -> 319.0	18.1	8.7	26.1

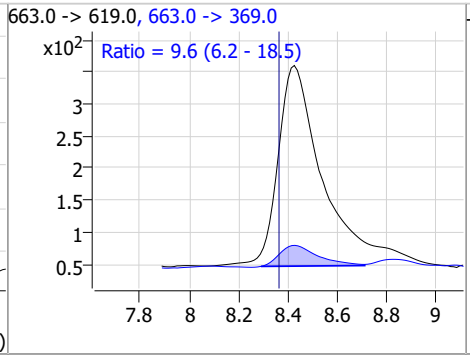


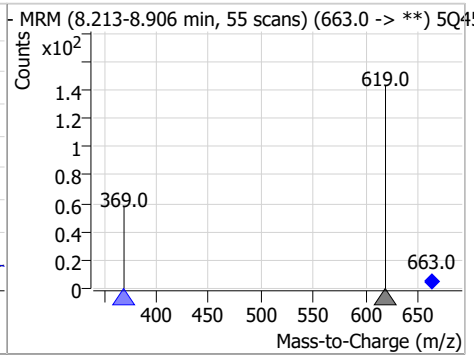




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.45	8.43	0.07	3670	663.0 -> 369.0	9.6	6.2	18.5

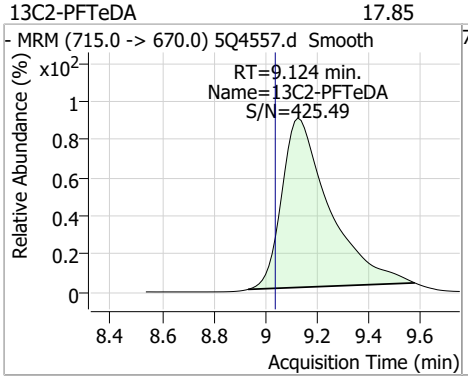


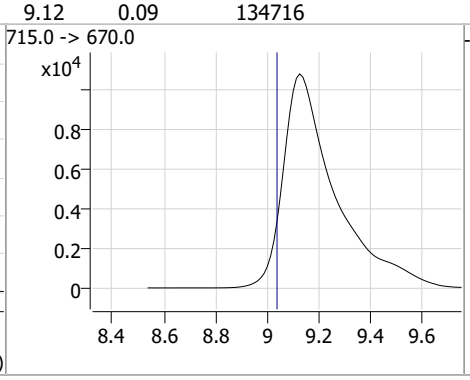


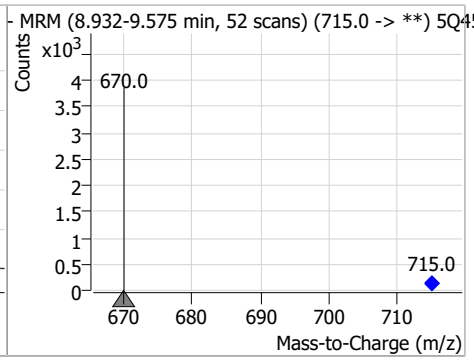


Perfluorinated Compounds by LC/MS/MS

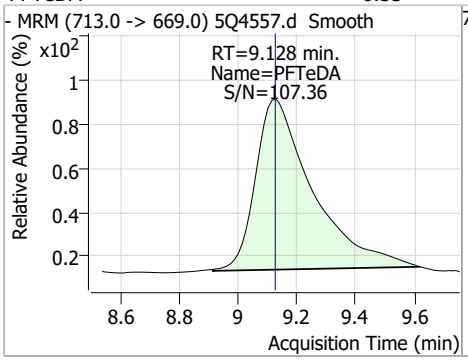
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.85	9.12	0.09	134716				

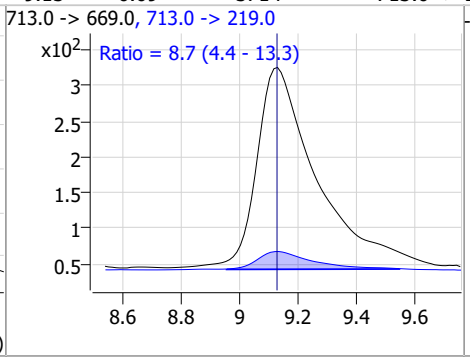


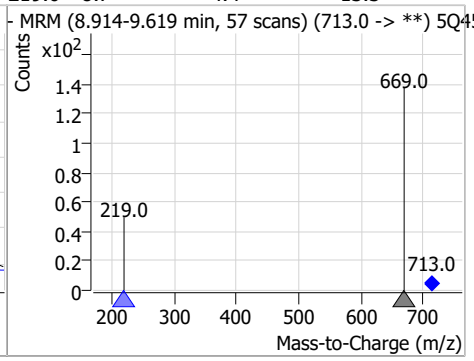




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.53	9.13	0.09	3714	713.0 -> 219.0	8.7	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4557.D
Injection Time: 09/14/22 10:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4558.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:56:18 AM
Sample Name : ic71-1.0
Vial : P1-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

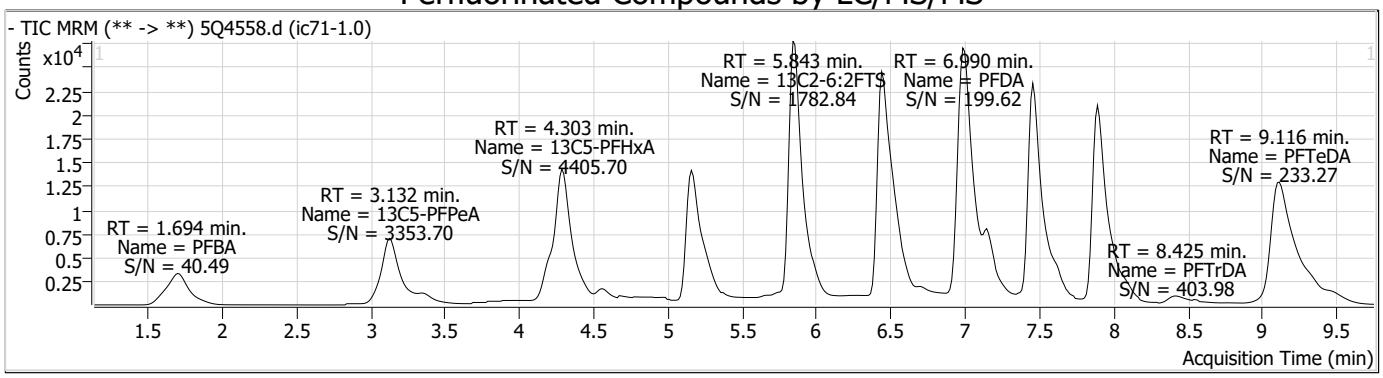
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35181	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57267	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	85771	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	80698	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	119924	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	131064	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	106884	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	137883	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	143699	20.00	µg/L	0.012
M2-PFTeDA	9.112	715.0 -> 670.0	141280	20.00	µg/L	0.075
M8-FOSA	6.530	506.0 -> 78.0	22236	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6449	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6701	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12761	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	26921	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	41875	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	42858	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	19774	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6647	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	5867	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	21827	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	26921	18.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	41875	18.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-8:2FTS	7.013	529.0 -> 509.0	42858	19.08	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C2-PFDoDA	7.905	615.0 -> 570.0	143699	19.83	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C2-PFTeDA	9.112	715.0 -> 670.0	141280	18.72	µg/L	0.075
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C3-PFBS	3.362	302.0 -> 99.0	6449	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-PFHxS	5.206	402.0 -> 99.0	6701	19.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C4-PFBA	1.700	217.0 -> 172.0	35181	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFHpA	5.163	367.0 -> 322.0	80698	19.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C5-PFHxA	4.303	318.0 -> 273.0	85771	19.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C5-PFPeA	3.132	268.0 -> 223.0	57267	19.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C6-PFDA	6.989	519.0 -> 474.0	106884	19.86	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

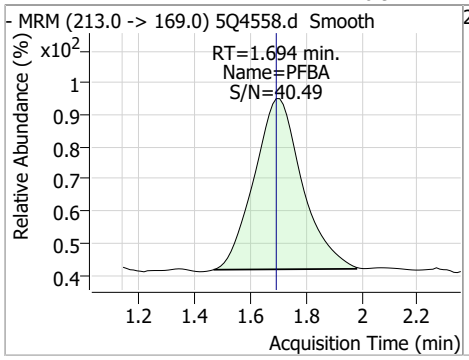
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%			
13C7-PFUnDA	7.471	570.0 -> 525.0	137883	19.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C8-FOSA	6.530	506.0 -> 78.0	22236	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
13C8-PFOA	5.857	421.0 -> 376.0	119924	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOS	6.440	507.0 -> 99.0	12761	19.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C9-PFNA	6.455	472.0 -> 427.0	131064	19.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19774	20.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6647	19.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	5867	19.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	21827	19.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	1554	1.03	µg/L		96
6:2FTS	5.843	427.0 -> 407.0	2332	1.05	µg/L		99
8:2FTS	7.013	527.0 -> 507.0	2306	1.01	µg/L		94
EtFOSAA	7.171	584.0 -> 419.0	719	0.93	µg/L		99
FOSA	6.531	498.0 -> 78.0	1086	0.95	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	842	0.93	µg/L		96
PFBA	1.694	213.0 -> 169.0	778	0.94	µg/L		100
PFBS	3.367	299.0 -> 80.0	904	0.93	µg/L		100
PFDA	6.990	513.0 -> 469.0	6349	0.97	µg/L		99
PFDoDA	7.894	613.0 -> 569.0	6698	0.95	µg/L		100
PFDS	7.419	599.0 -> 80.0	800	0.86	µg/L		96
PFHpA	5.164	363.0 -> 319.0	5192	0.98	µg/L		100
PFHpS	5.867	449.0 -> 80.0	938	0.98	µg/L		100
PFHxA	4.304	313.0 -> 269.0	3897	0.93	µg/L		99
PFHxS	5.208	399.0 -> 80.0	916	0.92	µg/L		99
PFNA	6.456	463.0 -> 419.0	5319	0.91	µg/L		99
PFNS	6.949	549.0 -> 80.0	950	1.01	µg/L		99
PFOA	5.858	413.0 -> 369.0	6560	0.90	µg/L		96
PFOS	6.442	499.0 -> 80.0	1323	1.18	µg/L	m	71
PFPeA	3.134	263.0 -> 219.0	2724	0.96	µg/L		100
PFPeS	4.410	349.0 -> 80.0	684	0.91	µg/L		97
PFTeDA	9.116	713.0 -> 669.0	7269	0.99	µg/L		99
PFTrDA	8.425	663.0 -> 619.0	8334	0.99	µg/L		95
PFUnDA	7.472	563.0 -> 519.0	6584	0.96	µg/L		100
11Cl-PF3OUdS	7.628	631.0 -> 451.0	3265	0.91	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	3312	0.90	µg/L		100
ADONA	5.261	377.0 -> 251.0	6470	0.94	µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	1094	0.98	µg/L		96
MeFOSA	6.954	512.0 -> 169.0	314	0.99	µg/L		98
4-PFECHS	5.753	461.0 -> 381.0	1984	0.92	µg/L		98
FBSA	4.356	298.0 -> 78.0	1388	0.98	µg/L		99
FHxSA	5.687	398.0 -> 78.0	1242	1.02	µg/L		98

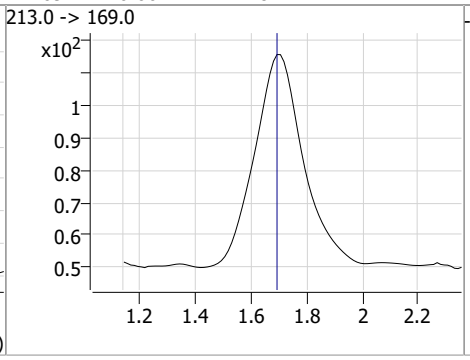
 # = Qualifier out of range, m = manually integrated, + = Area summed

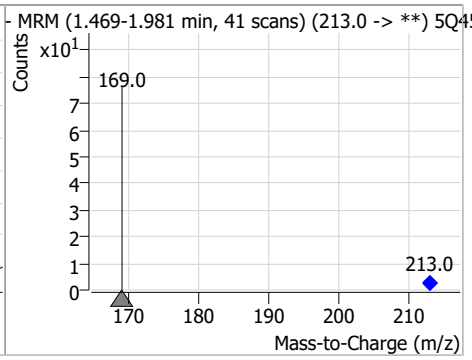
Perfluorinated Compounds by LC/MS/MS



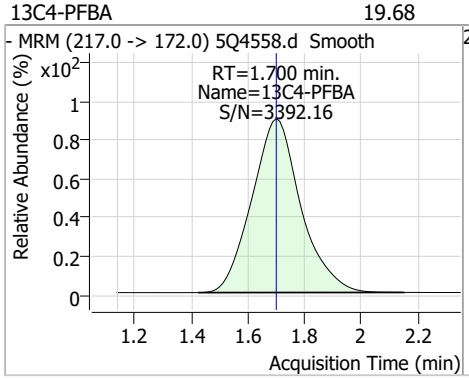
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.94	1.69	0.00	778				

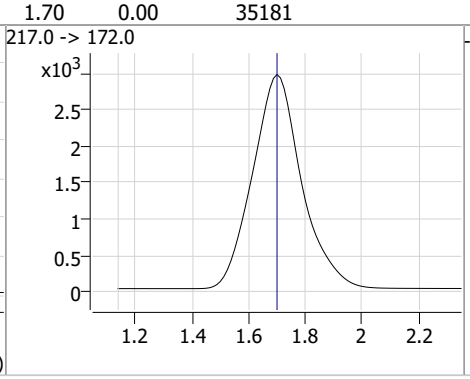


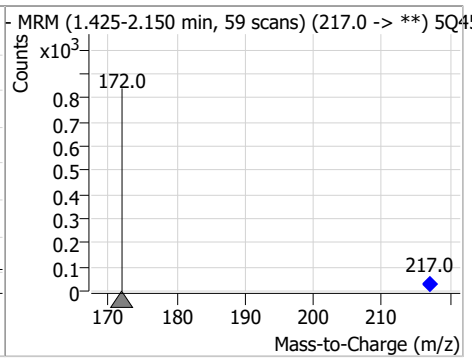




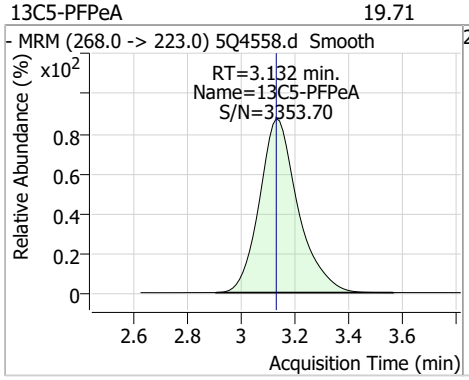
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.68	1.70	0.00	35181				

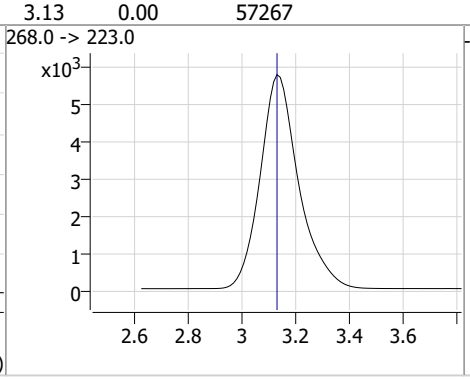


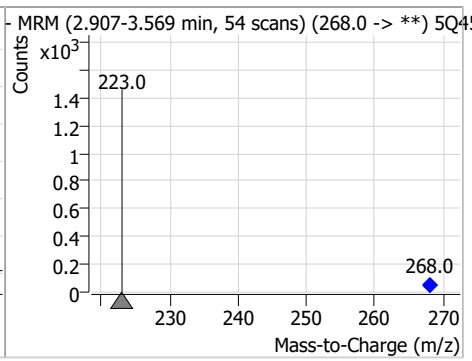




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.71	3.13	0.00	57267				

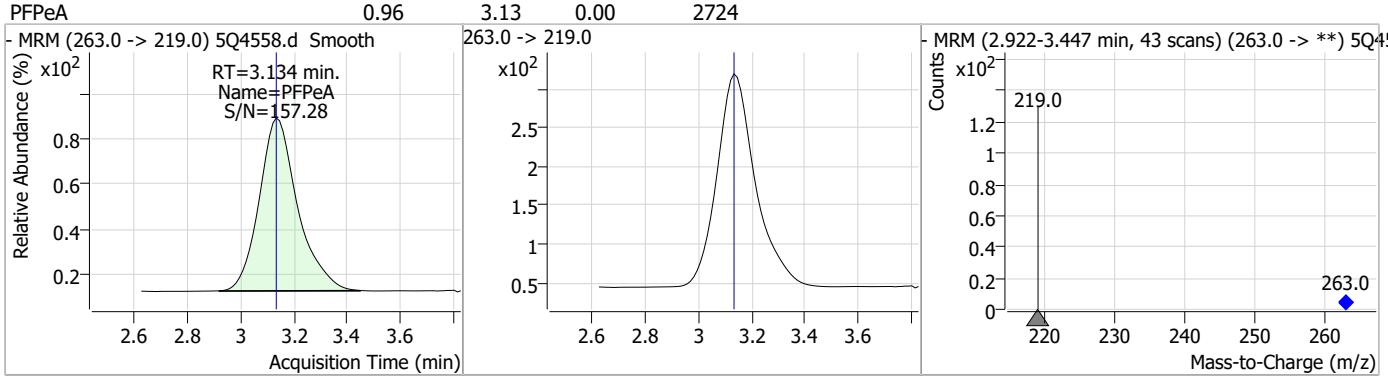




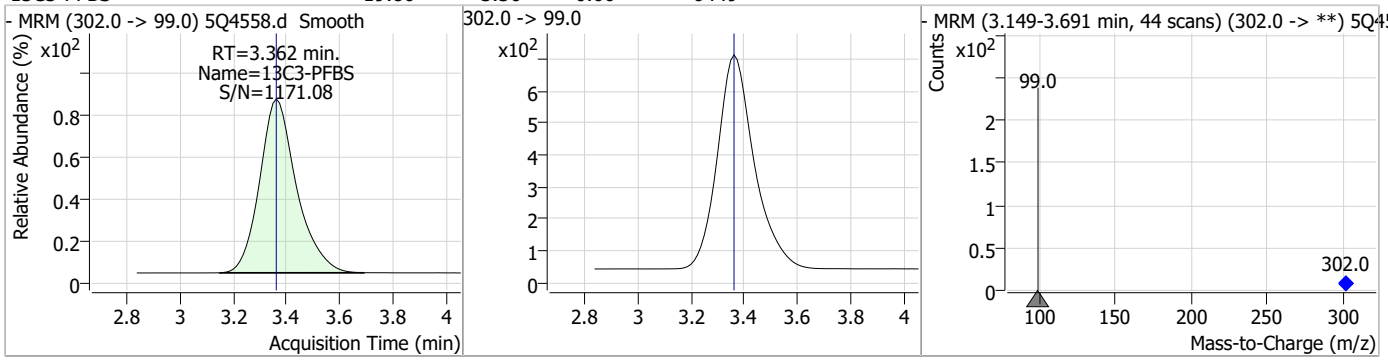


Perfluorinated Compounds by LC/MS/MS

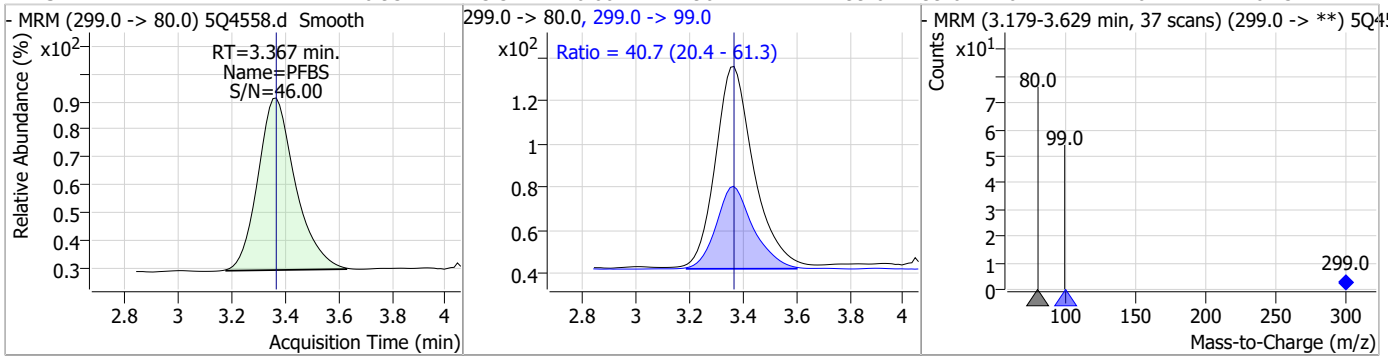
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.96	3.13	0.00	2724				



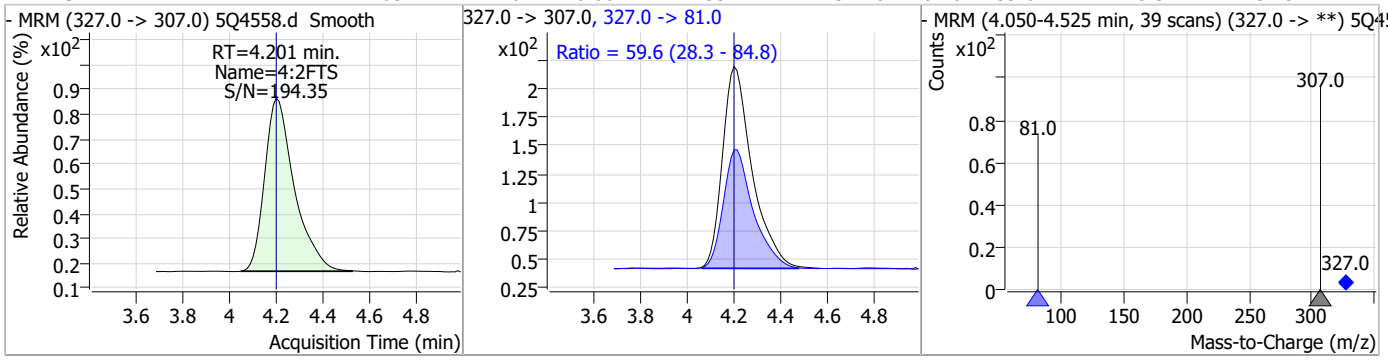
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.80	3.36	0.00	6449				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.93	3.37	0.00	904	299.0 -> 99.0	40.7	20.4	61.3

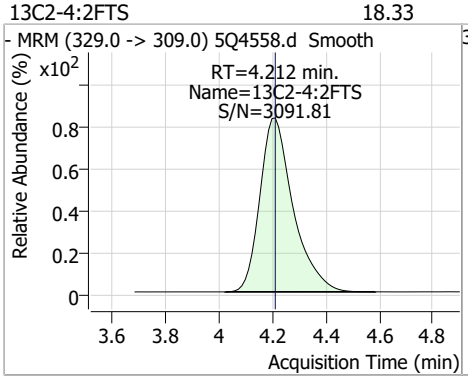


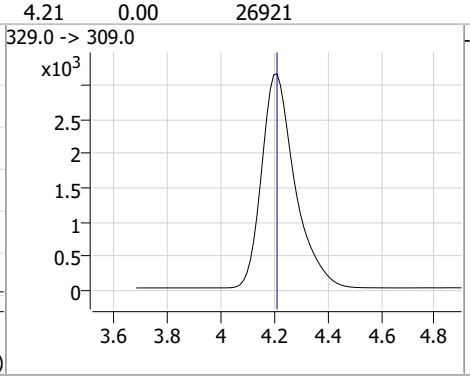
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.03	4.20	0.00	1554	327.0 -> 81.0	59.6	28.3	84.8

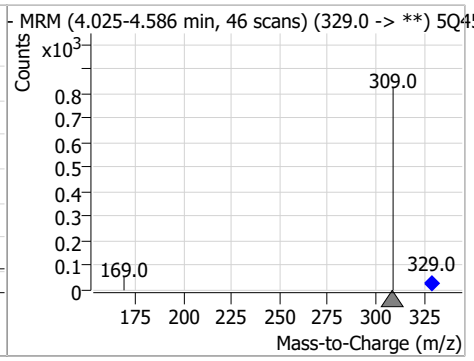


Perfluorinated Compounds by LC/MS/MS

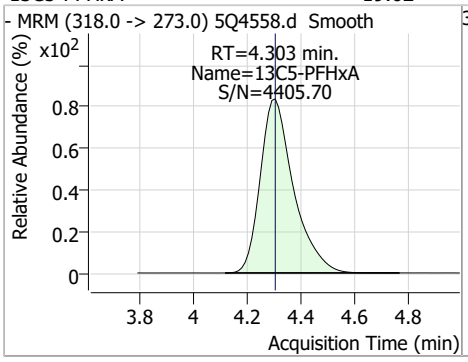
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.33	4.21	0.00	26921				

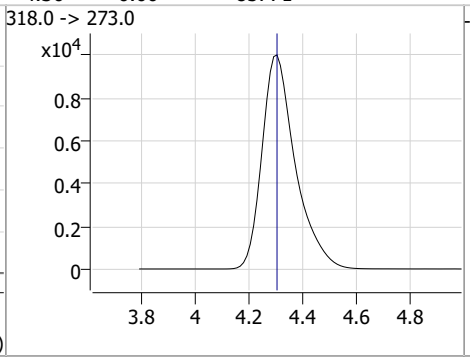


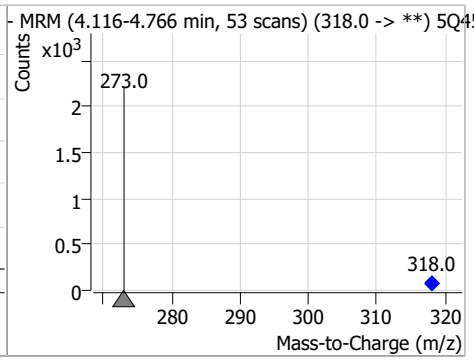




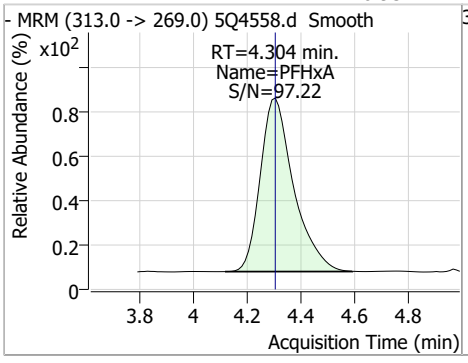
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.62	4.30	0.00	85771				

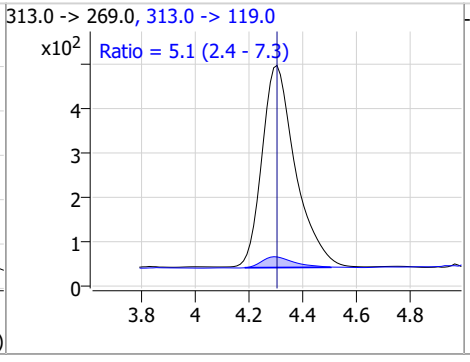


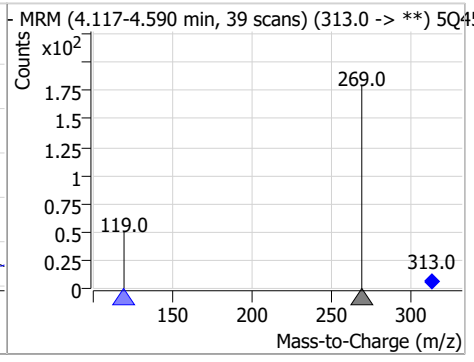




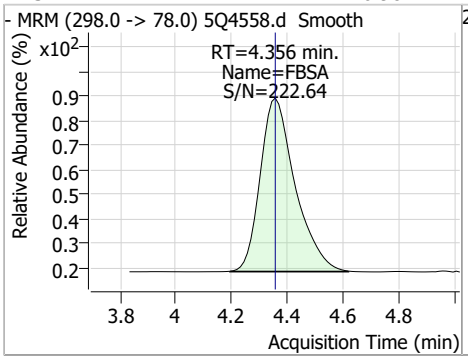
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.93	4.30	0.00	3897	313.0 -> 119.0	5.1	2.4	7.3

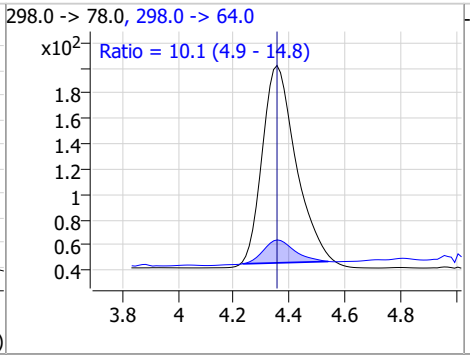


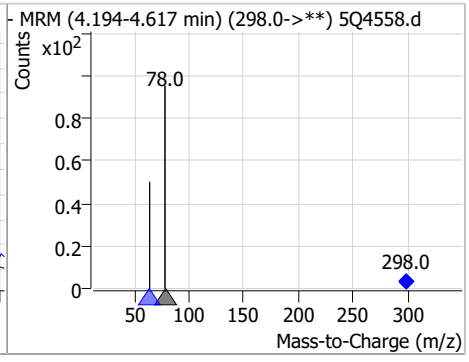




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.98	4.36	0.00	1388	298.0 -> 64.0	10.1	4.9	14.8

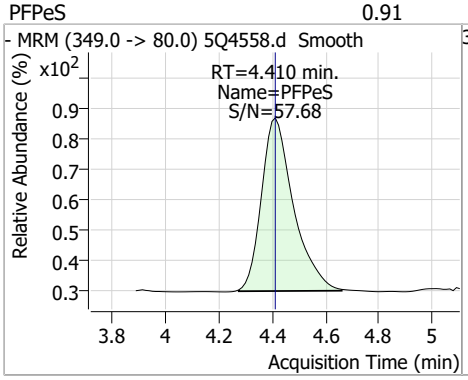


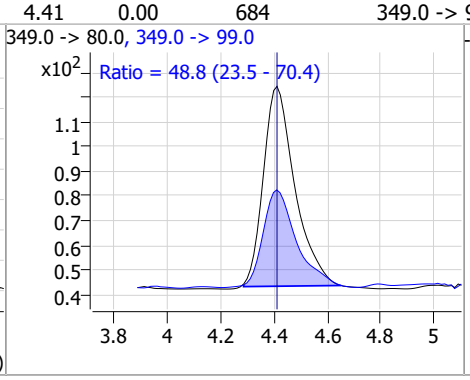


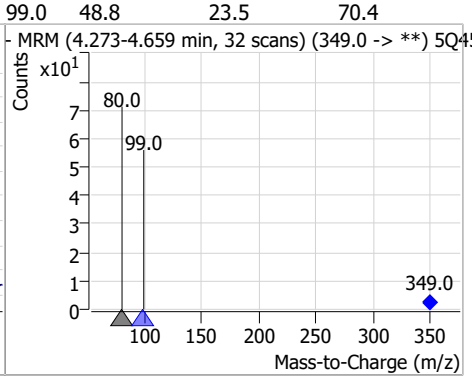


Perfluorinated Compounds by LC/MS/MS

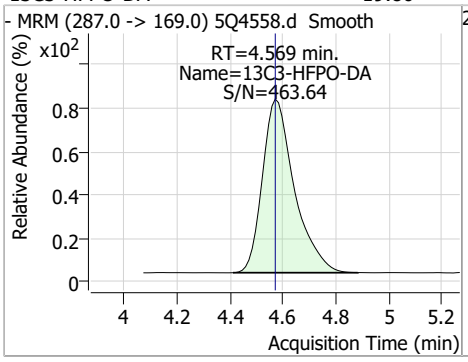
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	4.41	0.00	684	349.0 -> 99.0	48.8	23.5	70.4

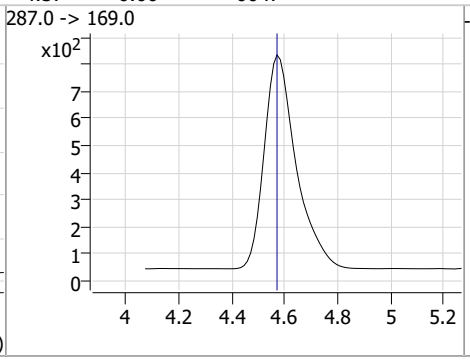


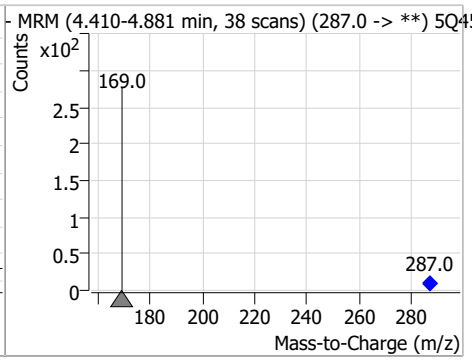




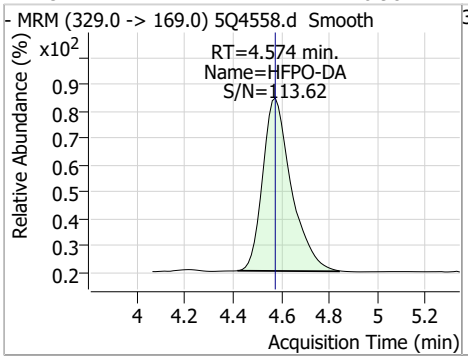
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.80	4.57	0.00	6647				

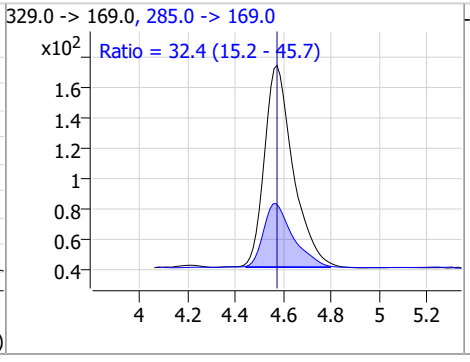


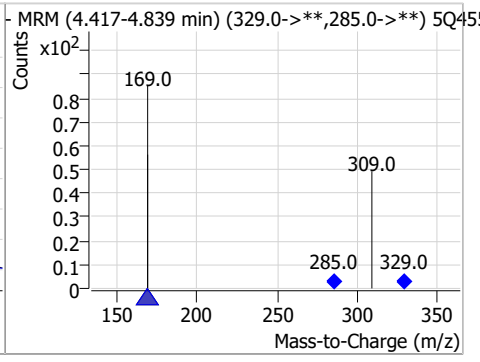




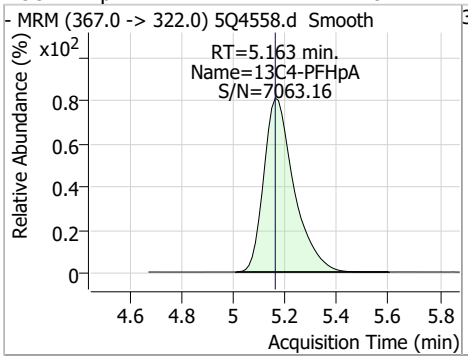
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.98	4.57	0.00	1094	285.0 -> 169.0	32.4	15.2	45.7

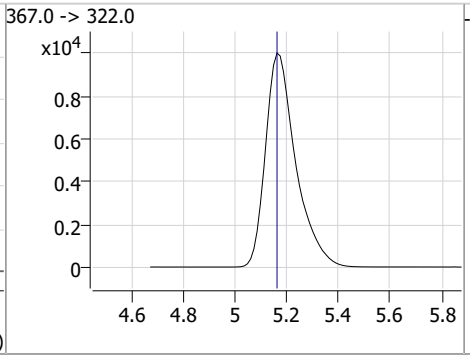


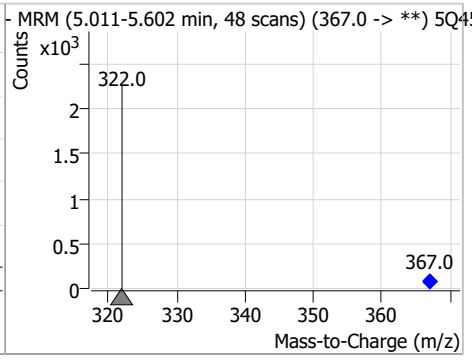




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.77	5.16	0.00	80698				

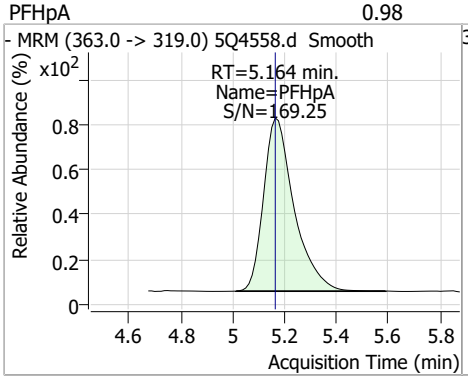


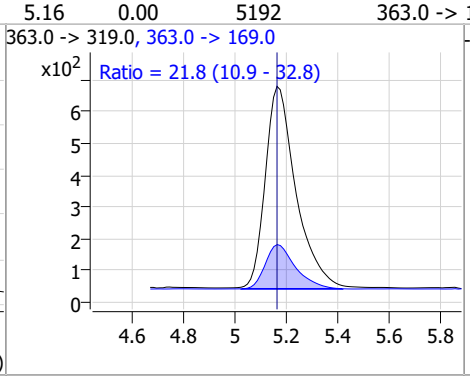


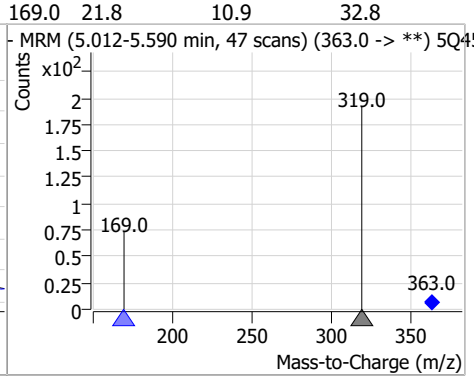


Perfluorinated Compounds by LC/MS/MS

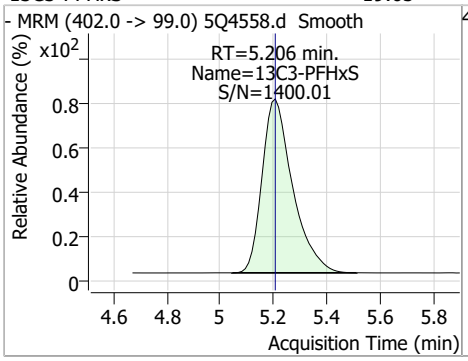
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.98	5.16	0.00	5192	363.0 -> 169.0	21.8	10.9	32.8

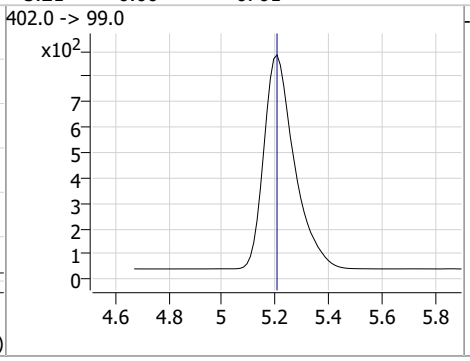


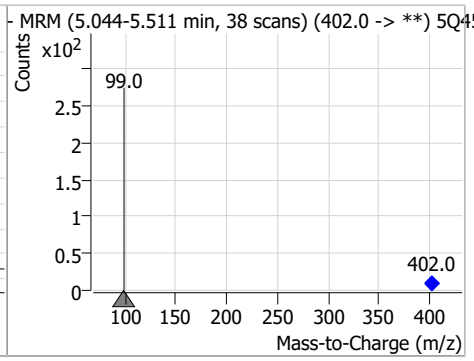




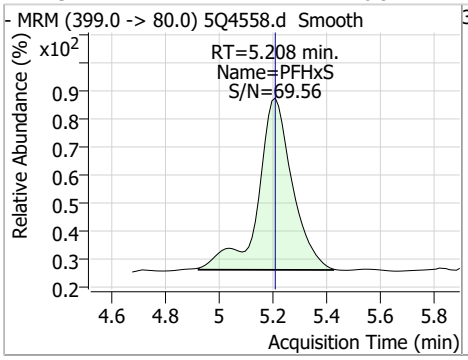
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.65	5.21	0.00	6701				

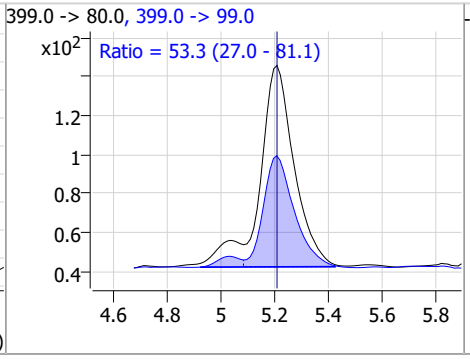


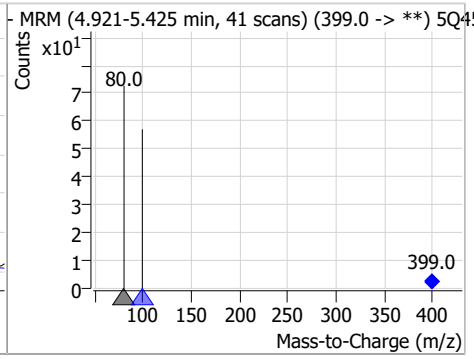




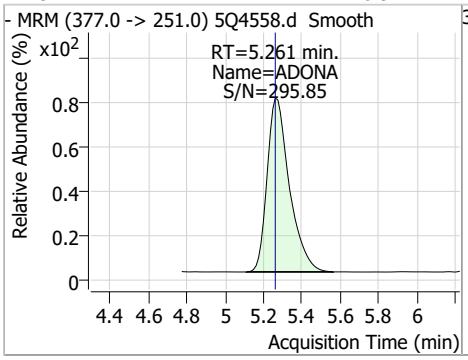
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.92	5.21	0.00	916	399.0 -> 99.0	53.3	27.0	81.1

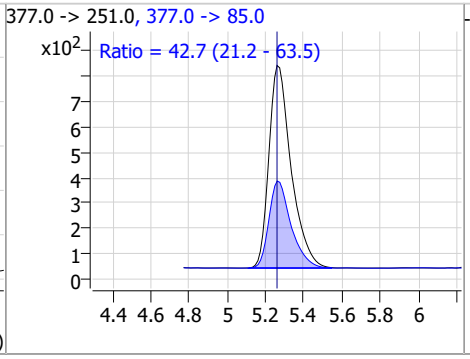


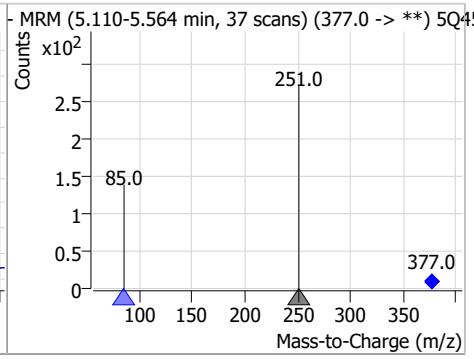




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.94	5.26	0.00	6470	377.0 -> 85.0	42.7	21.2	63.5

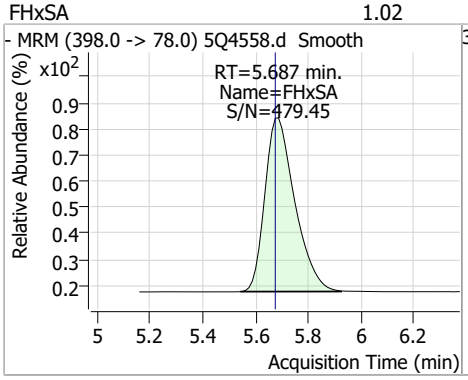


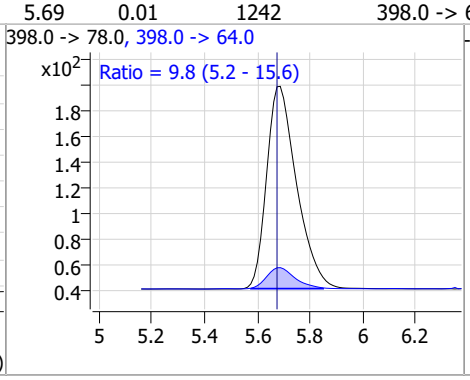


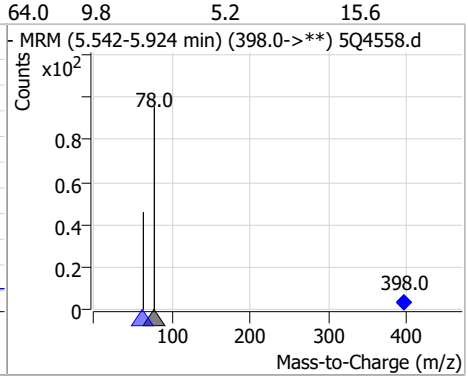


Perfluorinated Compounds by LC/MS/MS

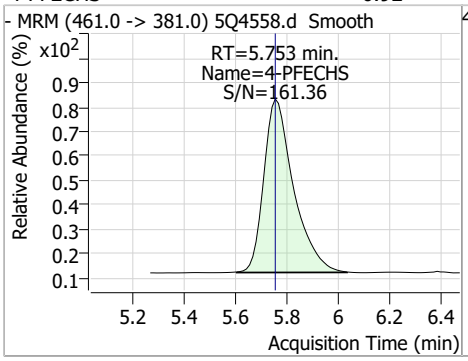
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.02	5.69	0.01	1242	398.0 -> 64.0	9.8	5.2	15.6

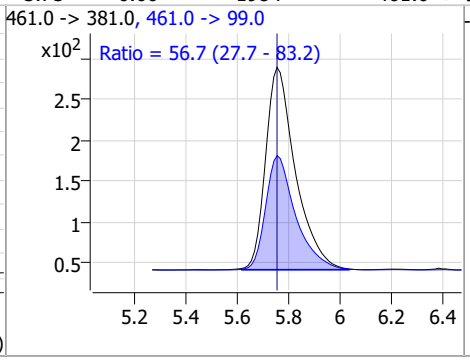


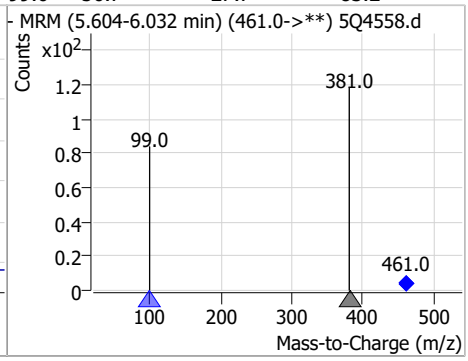




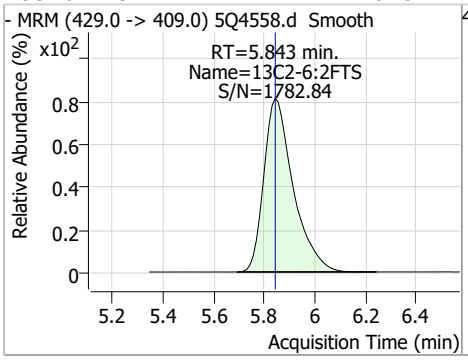
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.92	5.75	0.00	1984	461.0 -> 99.0	56.7	27.7	83.2

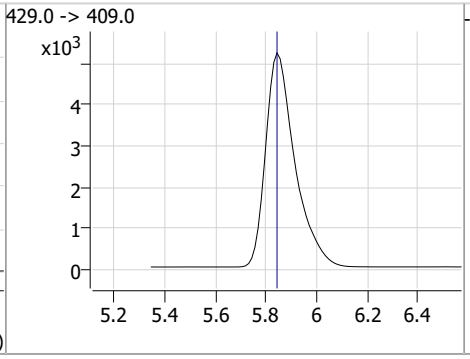


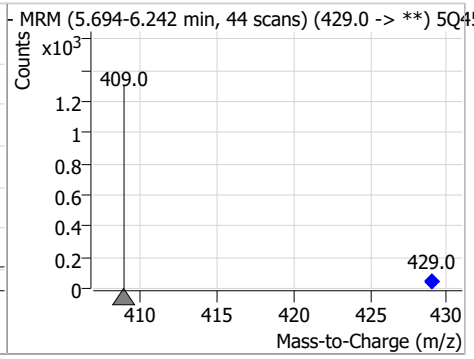




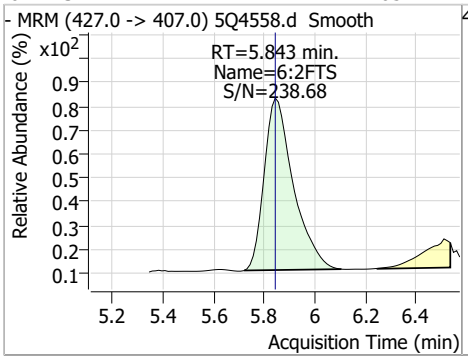
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.73	5.84	0.00	41875				

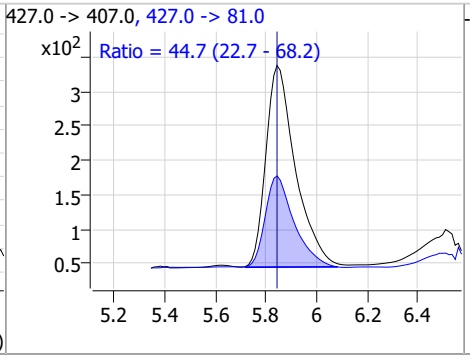


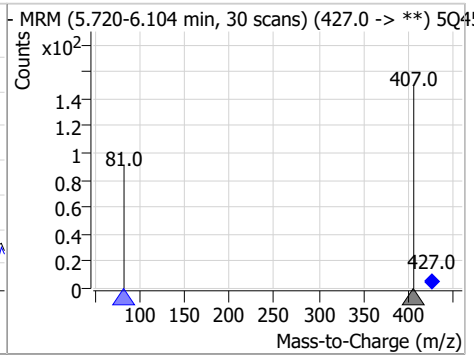




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.84	0.00	2332	427.0 -> 81.0	44.7	22.7	68.2

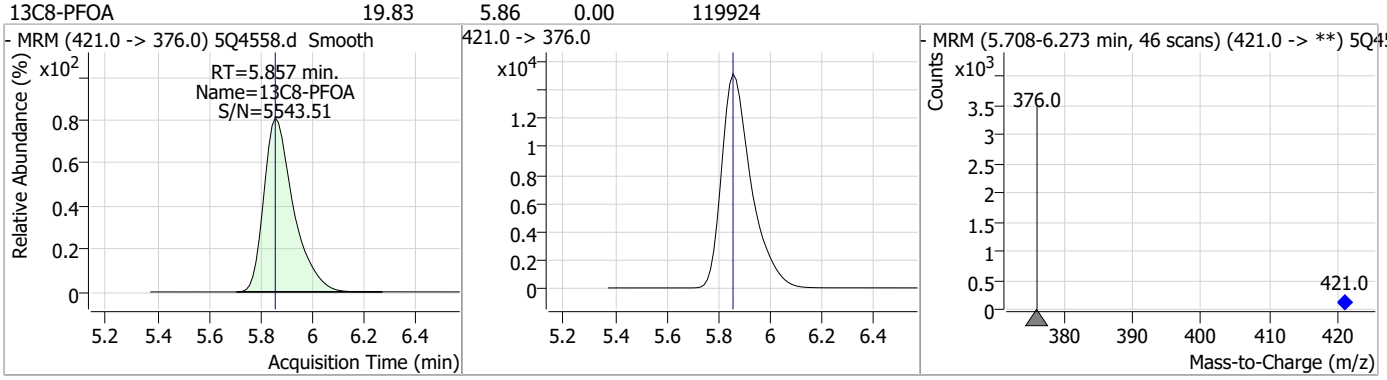




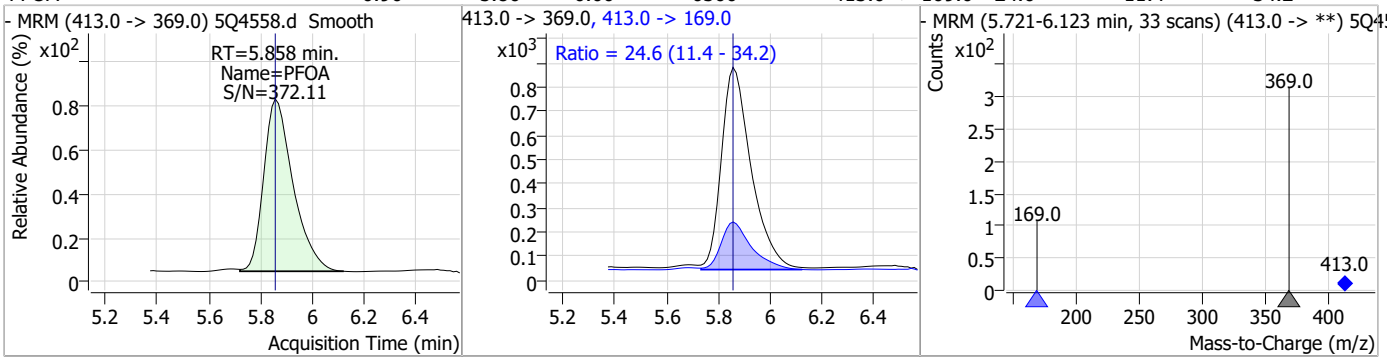


Perfluorinated Compounds by LC/MS/MS

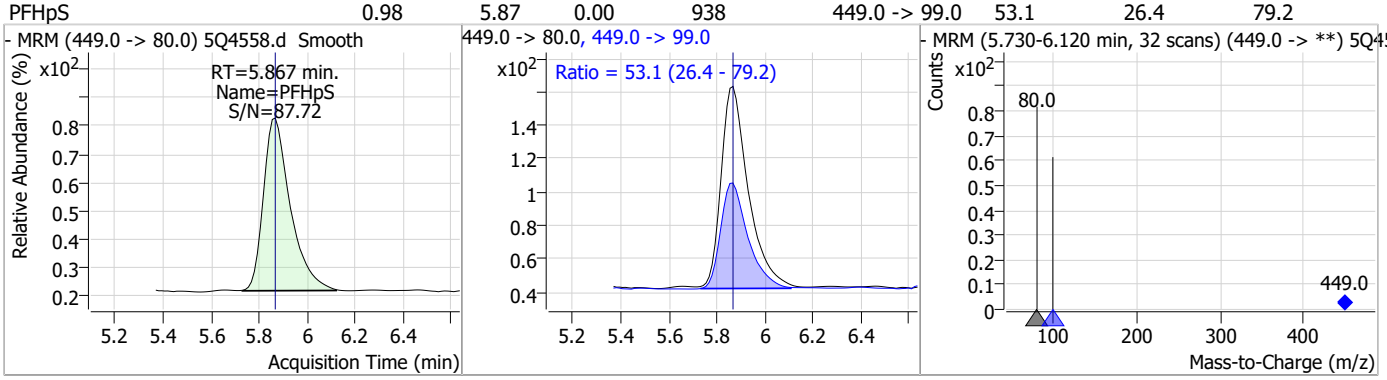
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.83	5.86	0.00	119924				



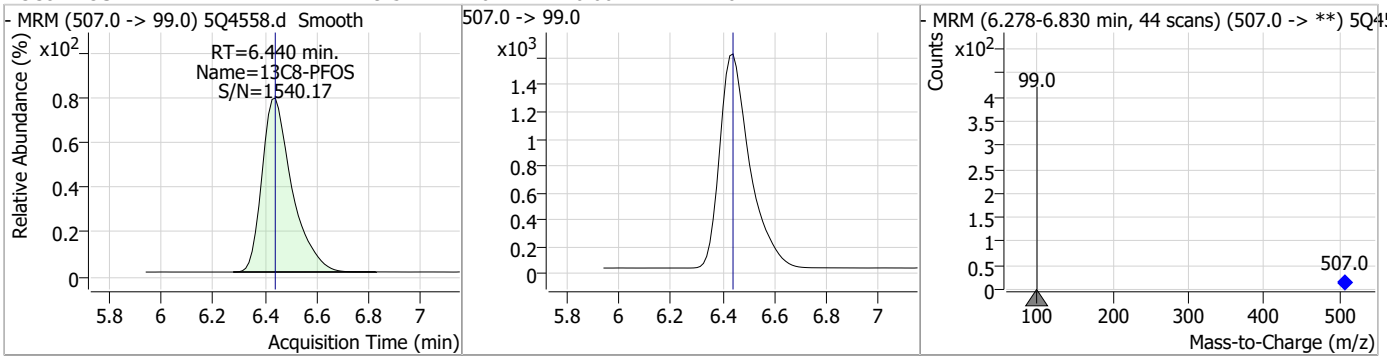
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.90	5.86	0.00	6560	413.0 -> 169.0	24.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.98	5.87	0.00	938	449.0 -> 99.0	53.1	26.4	79.2

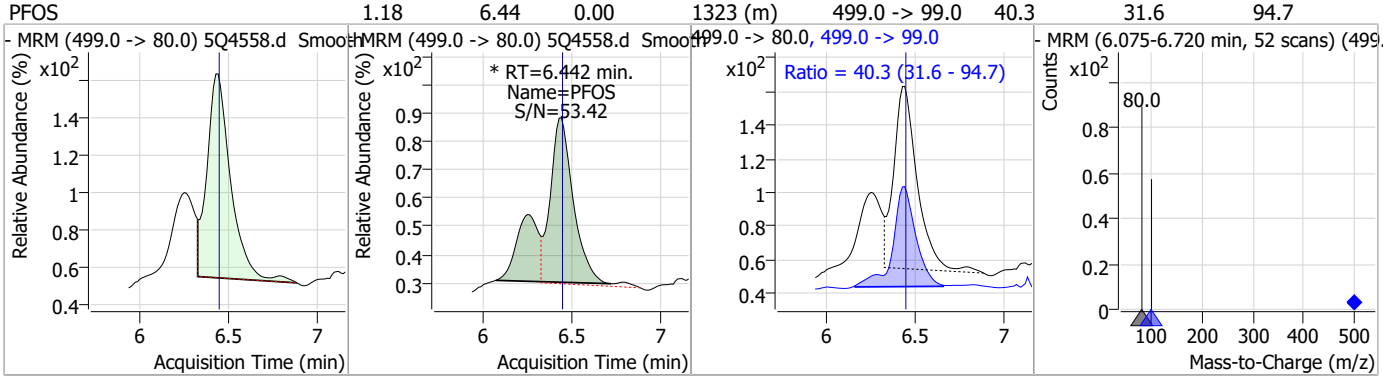


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.54	6.44	0.00	12761				

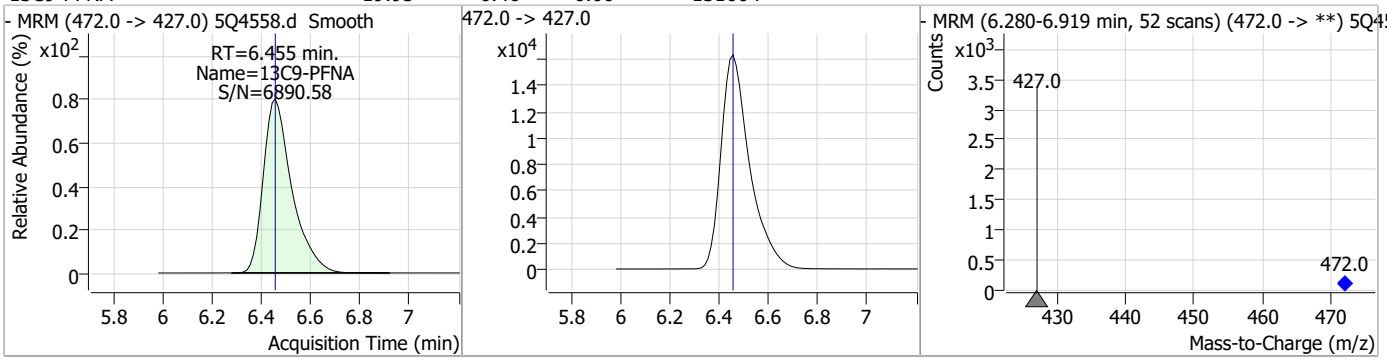


Perfluorinated Compounds by LC/MS/MS

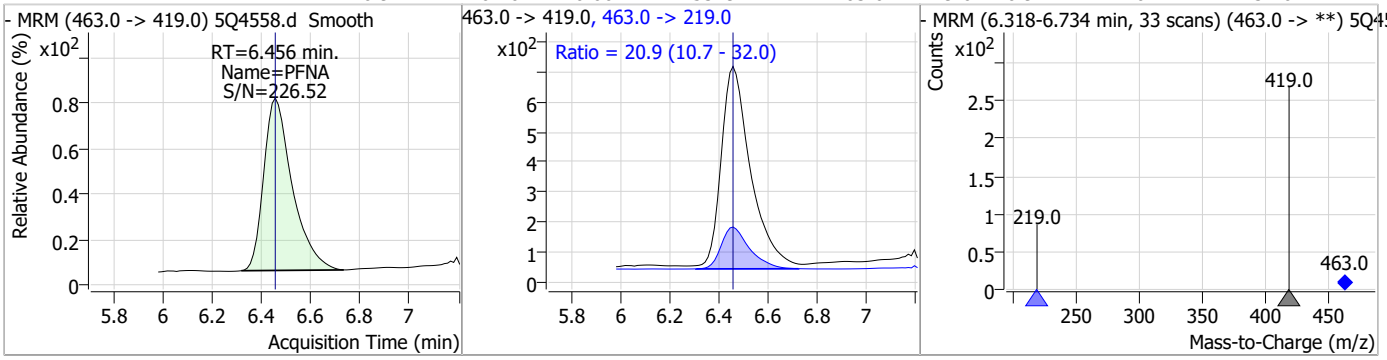
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.18	6.44	0.00	1323 (m)	499.0 -> 99.0	40.3	31.6	94.7



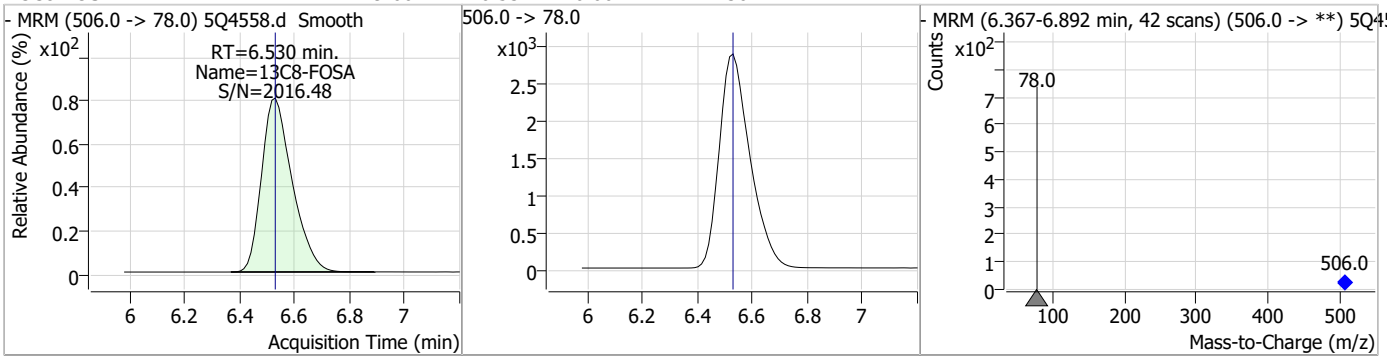
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.95	6.46	0.00	131064				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	6.46	0.00	5319	463.0 -> 219.0	20.9	10.7	32.0

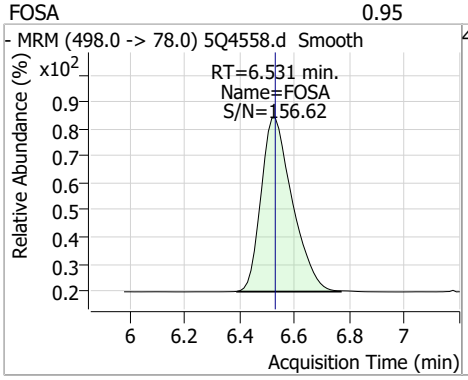


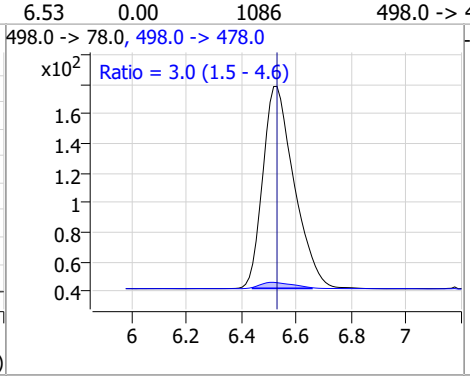
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.60	6.53	0.00	22236				

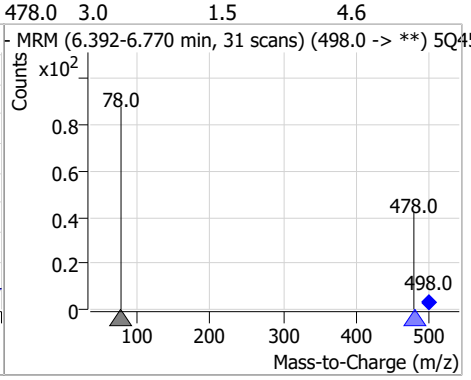


Perfluorinated Compounds by LC/MS/MS

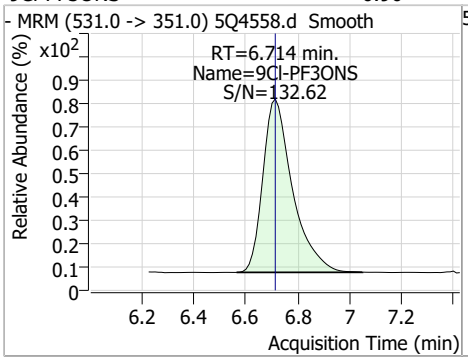
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.95	6.53	0.00	1086	498.0 -> 478.0	3.0	1.5	4.6

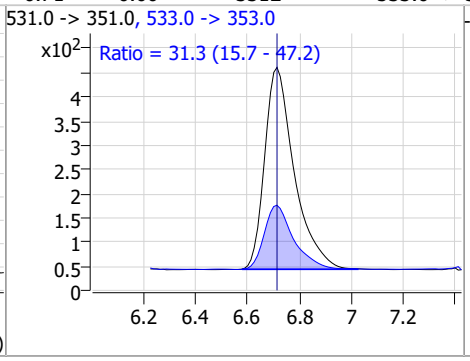


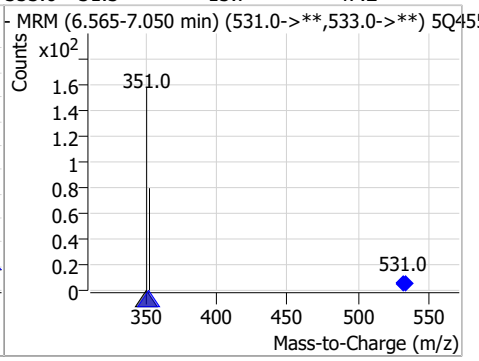




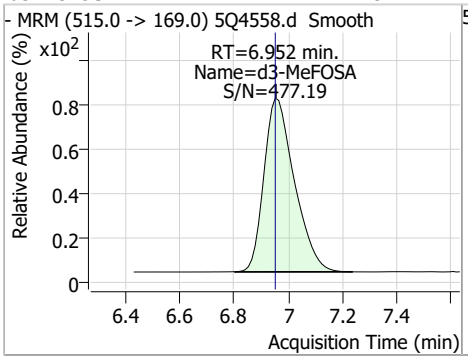
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.90	6.71	0.00	3312	533.0 -> 353.0	31.3	15.7	47.2

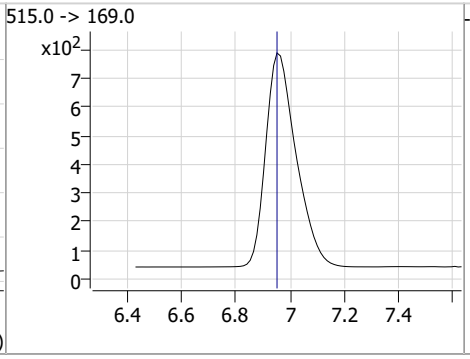


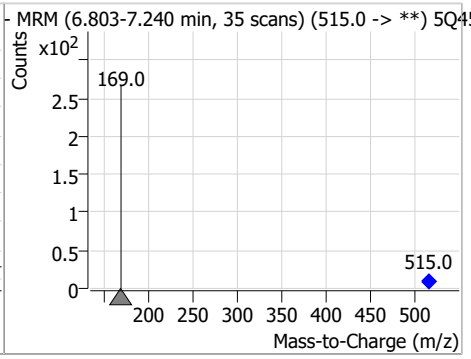




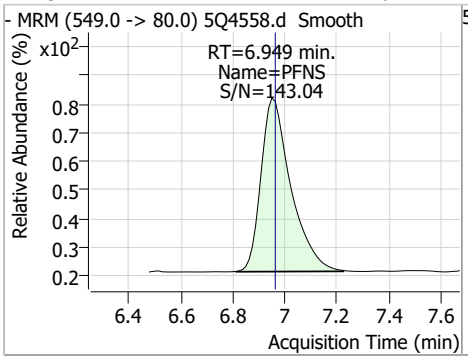
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.27	6.95	0.00	5867				

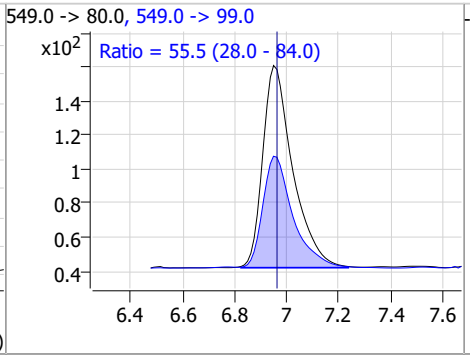


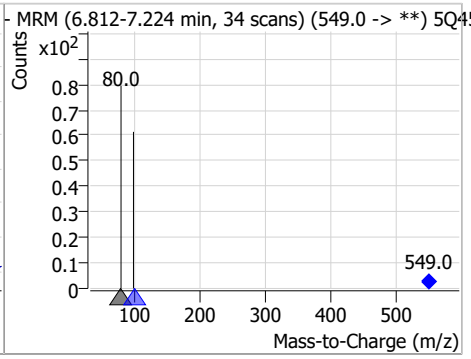




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.01	6.95	-0.01	950	549.0 -> 99.0	55.5	28.0	84.0

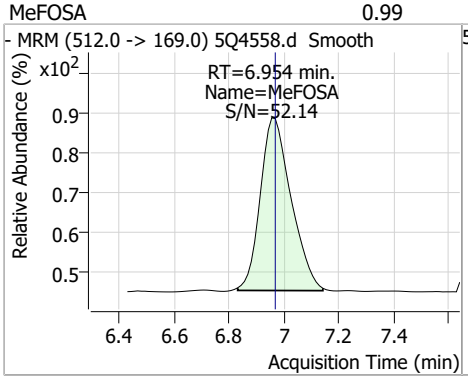


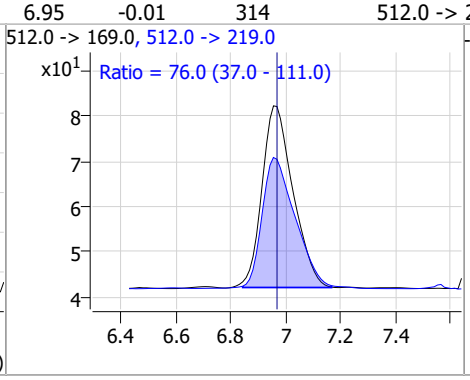


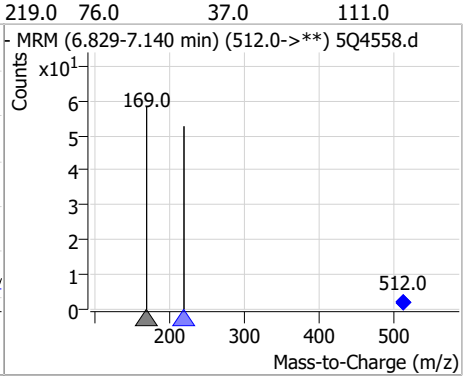


Perfluorinated Compounds by LC/MS/MS

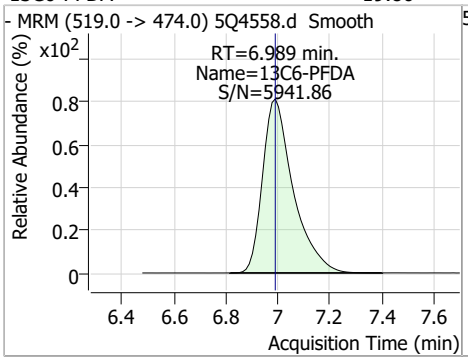
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.99	6.95	-0.01	314	512.0 -> 219.0	76.0	37.0	111.0

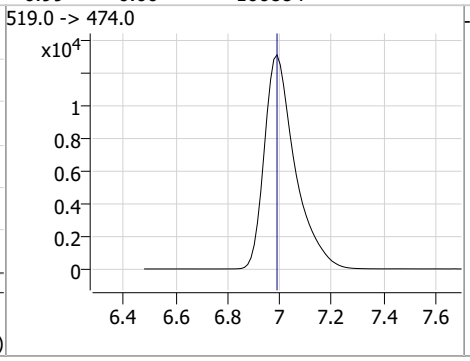


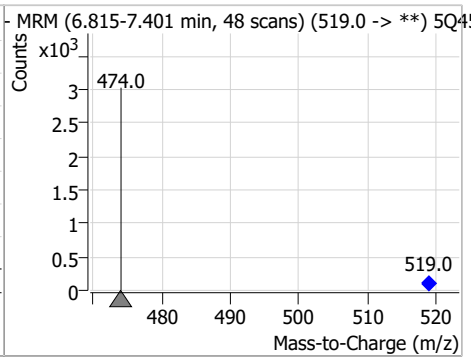




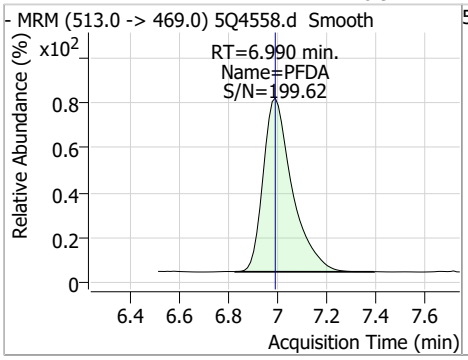
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.86	6.99	0.00	106884				

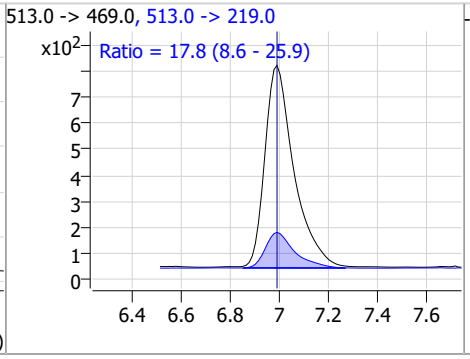


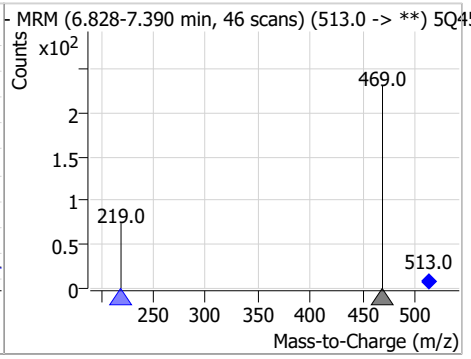




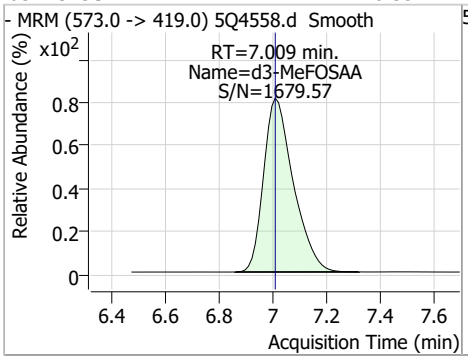
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.97	6.99	0.00	6349	513.0 -> 219.0	17.8	8.6	25.9

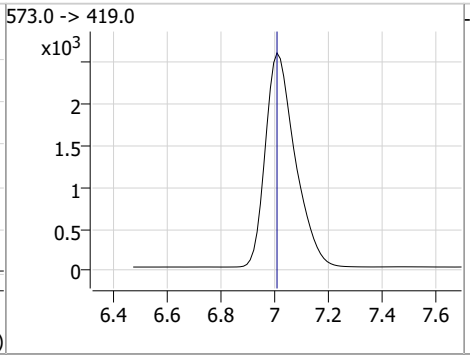


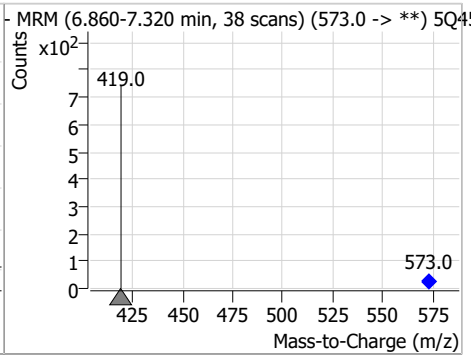




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.35	7.01	0.00	19774				

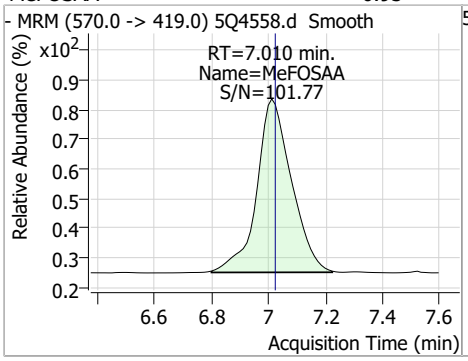


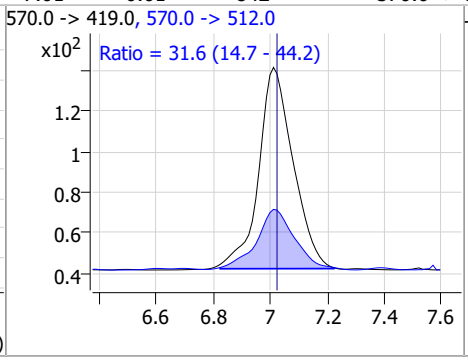


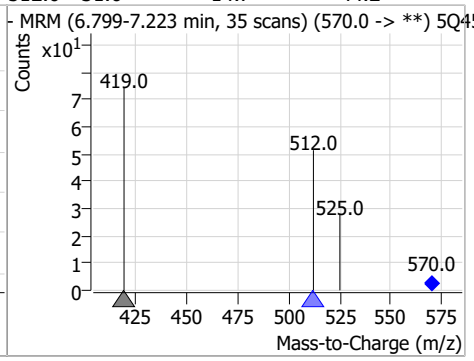


Perfluorinated Compounds by LC/MS/MS

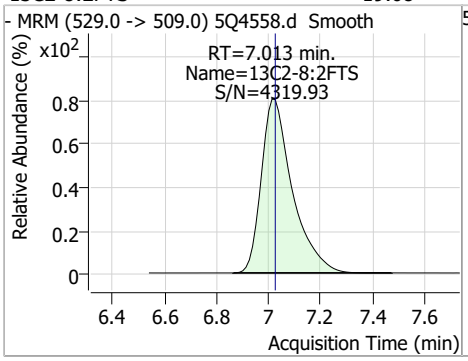
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.93	7.01	-0.01	842	570.0 -> 512.0	31.6	14.7	44.2

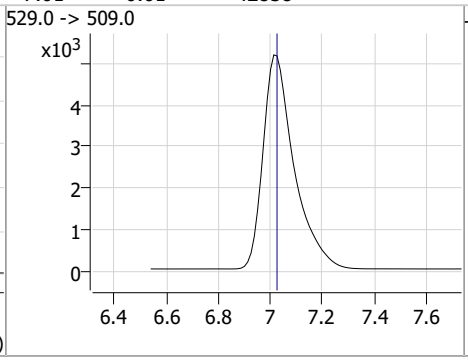


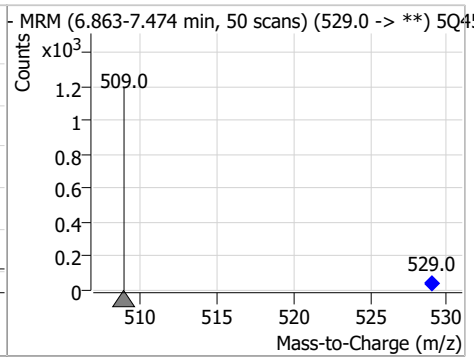




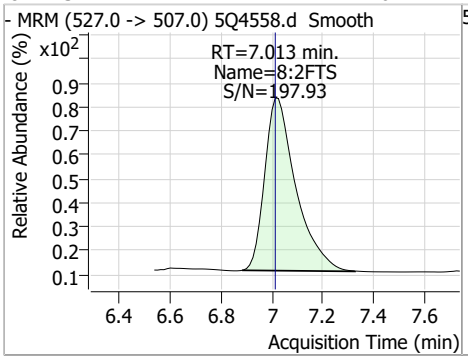
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.08	7.01	-0.01	42858				

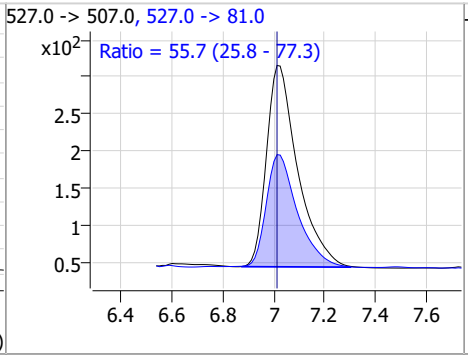


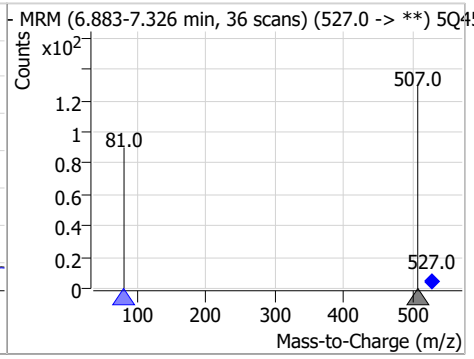




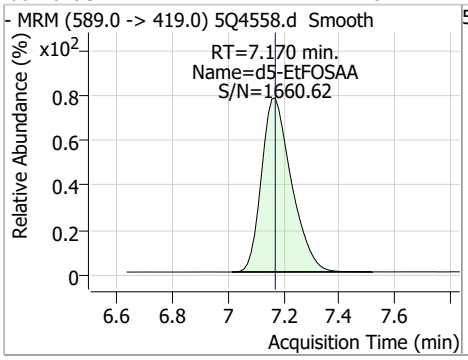
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.01	7.01	-0.01	2306	527.0 -> 81.0	55.7	25.8	77.3

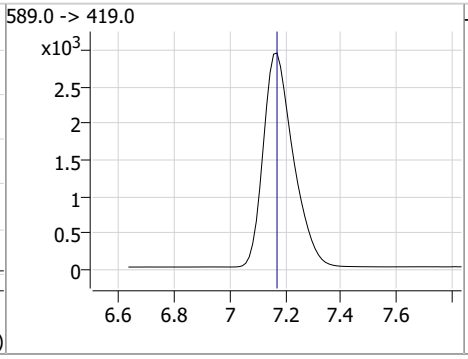


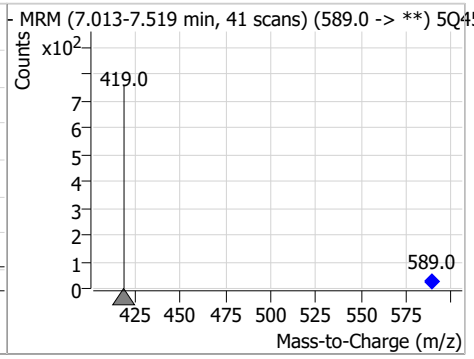




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.47	7.17	0.00	21827				

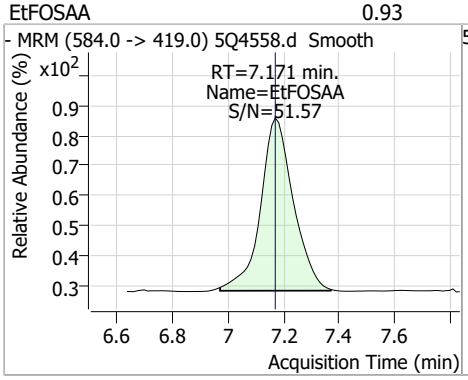


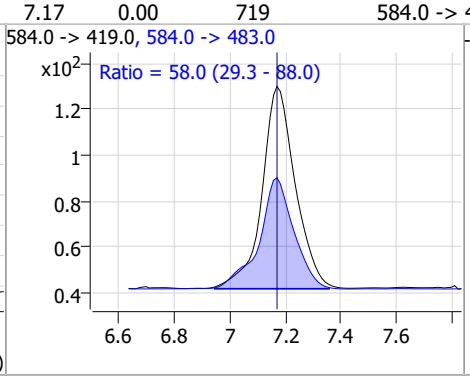


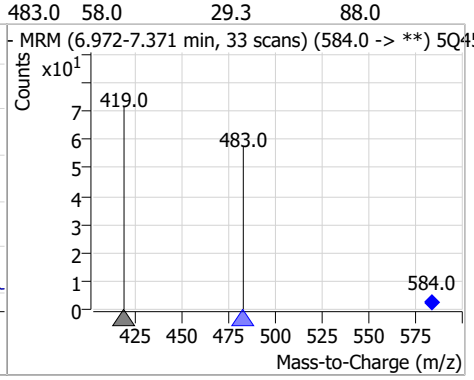


Perfluorinated Compounds by LC/MS/MS

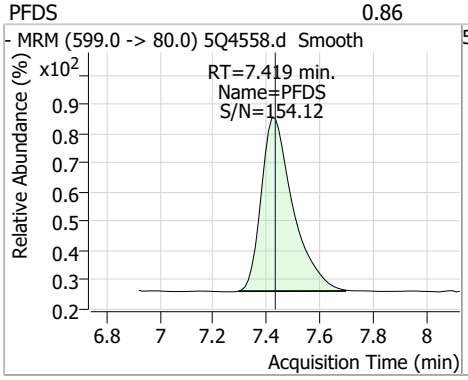
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.93	7.17	0.00	719	584.0 -> 483.0	58.0	29.3	88.0

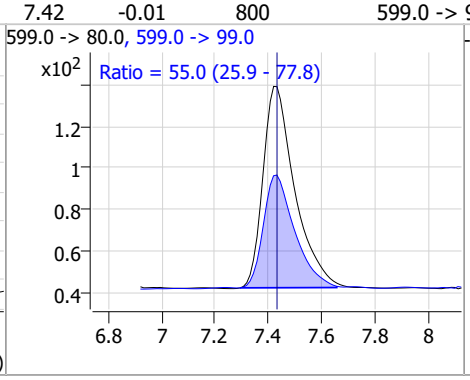


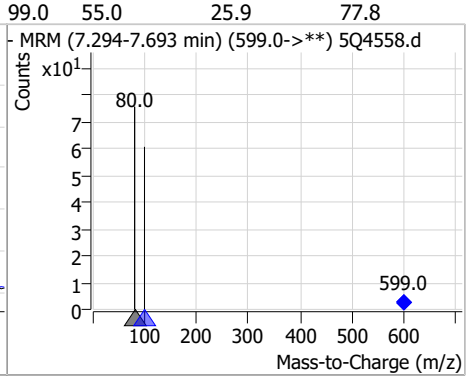




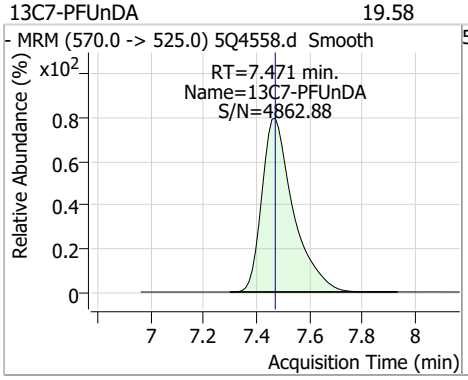
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.86	7.42	-0.01	800	599.0 -> 99.0	55.0	25.9	77.8

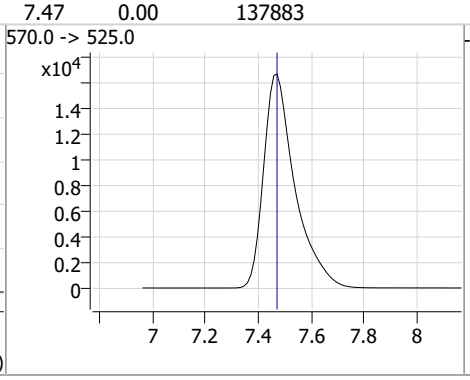


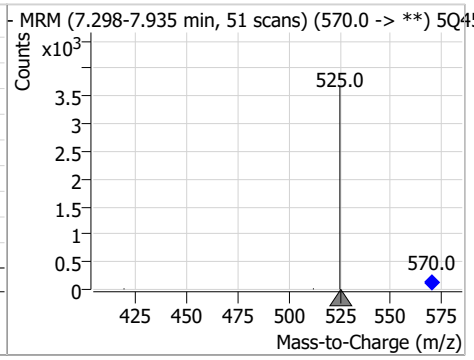




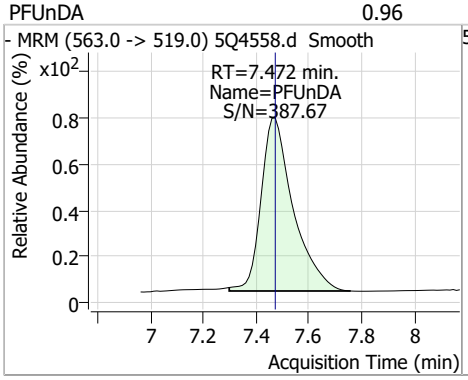
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.58	7.47	0.00	137883				

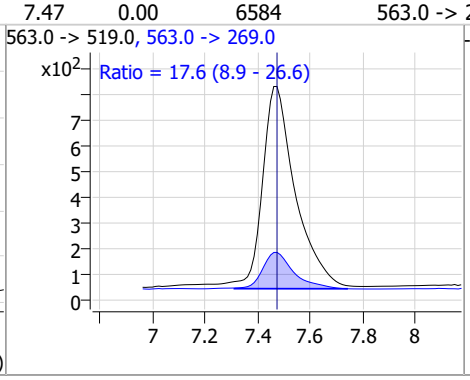


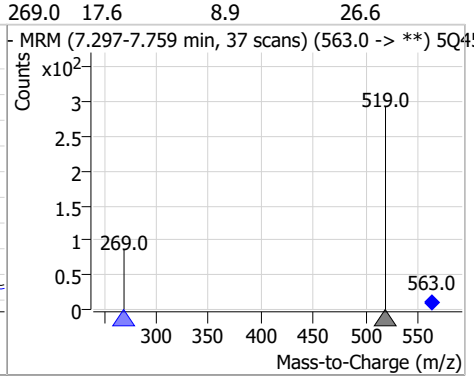




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.96	7.47	0.00	6584	563.0 -> 269.0	17.6	8.9	26.6

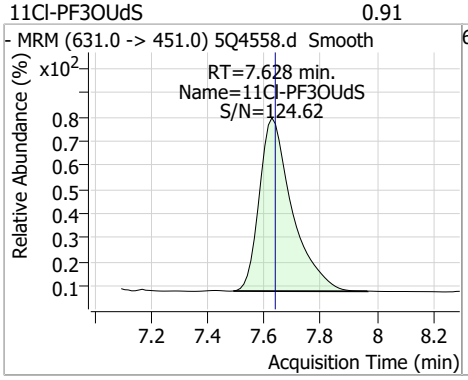


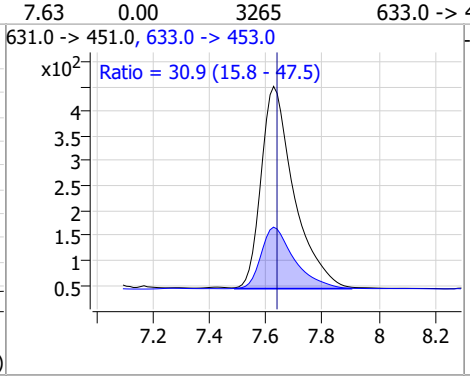


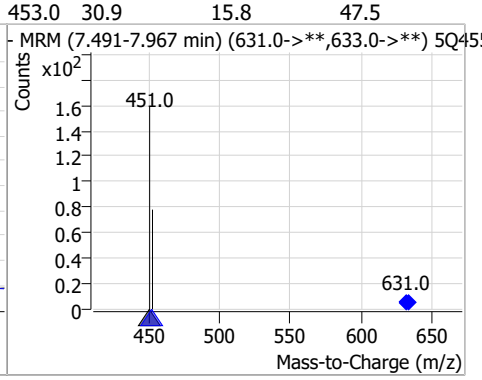


Perfluorinated Compounds by LC/MS/MS

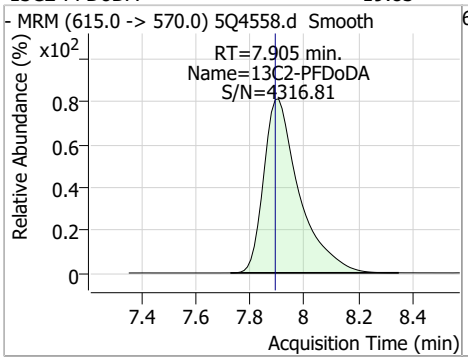
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.91	7.63	0.00	3265	633.0 -> 453.0	30.9	15.8	47.5

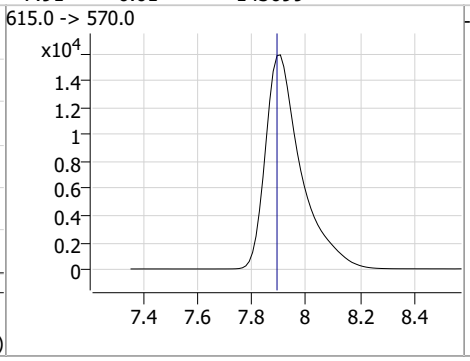


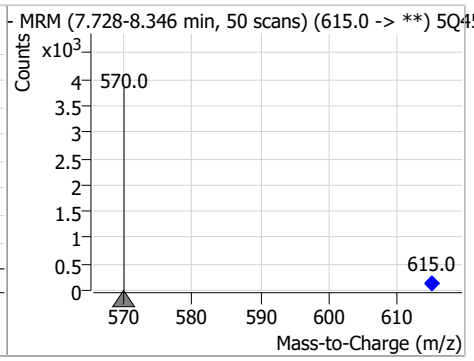




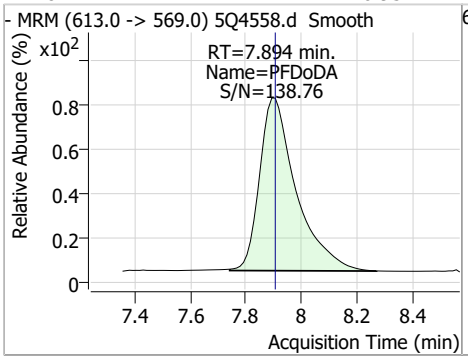
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.83	7.91	0.01	143699				

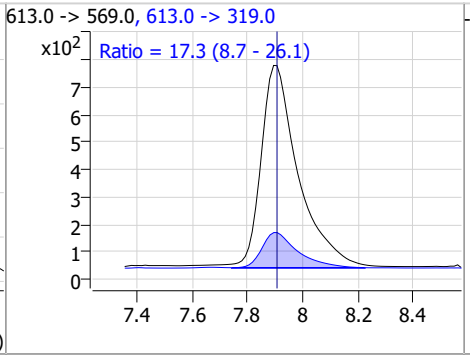


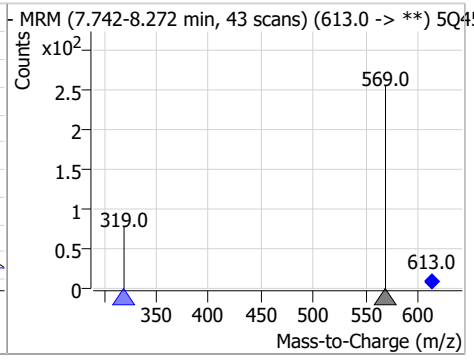




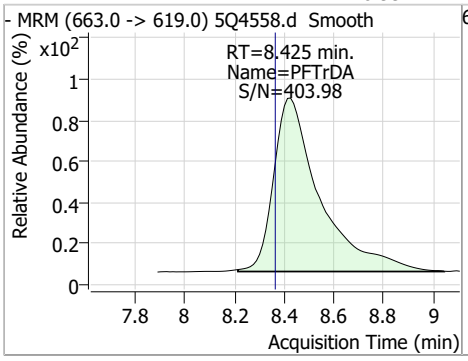
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.95	7.89	0.00	6698	613.0 -> 319.0	17.3	8.7	26.1

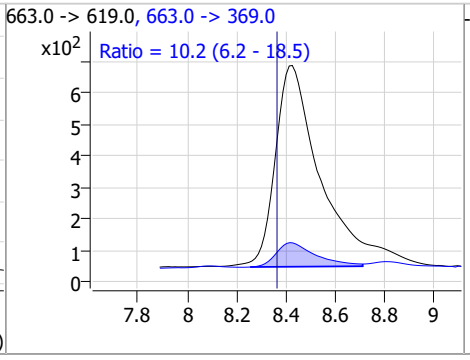


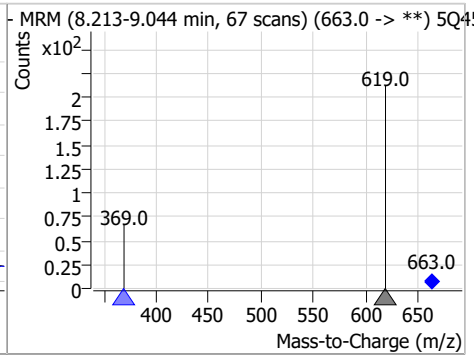




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.99	8.43	0.07	8334	663.0 -> 369.0	10.2	6.2	18.5

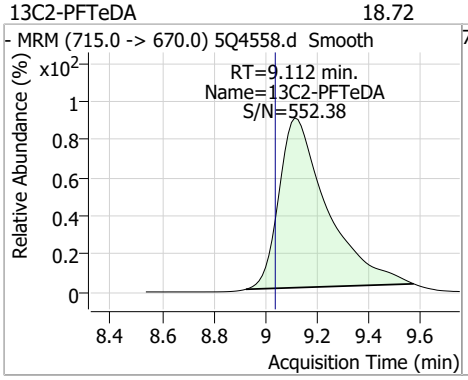


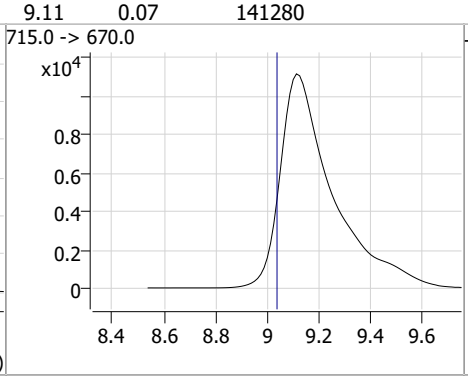


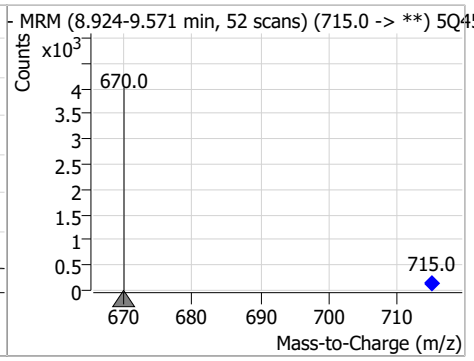


Perfluorinated Compounds by LC/MS/MS

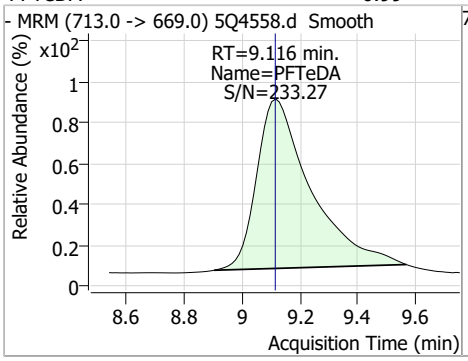
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.72	9.11	0.07	141280				

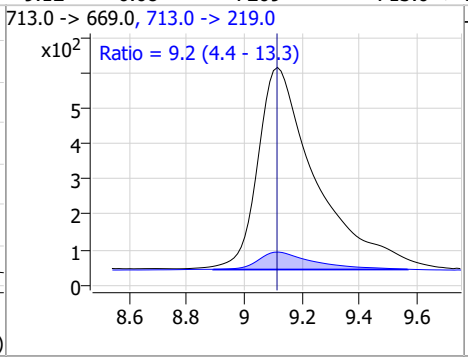


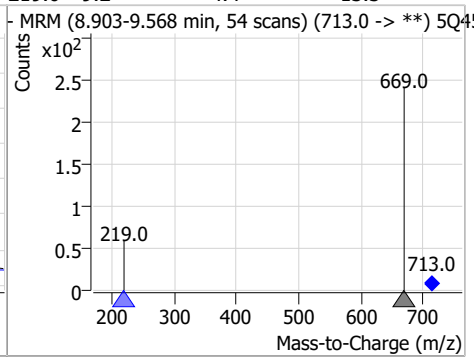




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.99	9.12	0.08	7269	713.0 -> 219.0	9.2	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4558.D
Injection Time: 09/14/22 10:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4559.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:11:39 AM
Sample Name : ic71-2
Vial : P1-A4
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

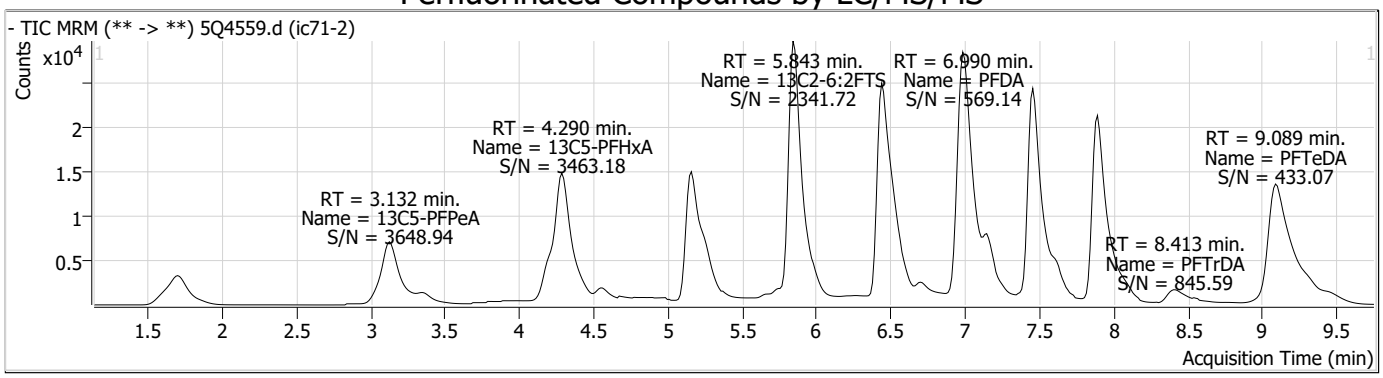
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	34563	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	56332	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	84565	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	79148	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	118347	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	126817	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	105446	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	137710	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	138822	20.00	µg/L	0.000
M2-PFTeDA	9.099	715.0 -> 670.0	154292	20.00	µg/L	0.062
M8-FOSA	6.517	506.0 -> 78.0	21559	20.00	µg/L	-0.012
M3-PFBS	3.362	302.0 -> 99.0	6341	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6674	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	12601	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	26768	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	41352	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	41695	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	19092	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6636	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	5778	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	21282	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	26768	18.23	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%		
13C2-6:2FTS	5.843	429.0 -> 409.0	41352	18.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-8:2FTS	7.013	529.0 -> 509.0	41695	18.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-PFDoDA	7.893	615.0 -> 570.0	138822	19.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-PFTeDA	9.099	715.0 -> 670.0	154292	20.45	µg/L	0.062
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-PFBS	3.362	302.0 -> 99.0	6341	19.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C3-PFHxS	5.206	402.0 -> 99.0	6674	19.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C4-PFBA	1.700	217.0 -> 172.0	34563	19.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	79148	19.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	84565	19.34	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C5-PFPeA	3.132	268.0 -> 223.0	56332	19.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C6-PFDA	6.989	519.0 -> 474.0	105446	19.59	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

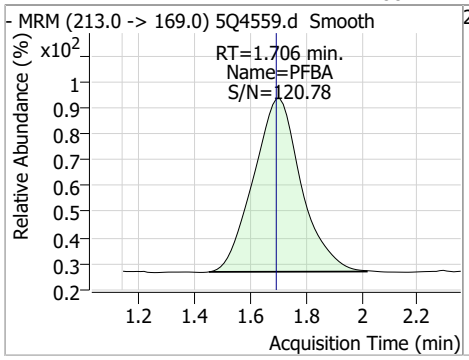
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
13C7-PFUnDA	7.471	570.0 -> 525.0	137710	19.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%			
13C8-FOSA	6.517	506.0 -> 78.0	21559	19.00	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%			
13C8-PFOA	5.857	421.0 -> 376.0	118347	19.57	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%			
13C8-PFOS	6.428	507.0 -> 99.0	12601	19.30	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C9-PFNA	6.455	472.0 -> 427.0	126817	19.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19092	19.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6636	19.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%			
d3-MeFOSA	6.952	515.0 -> 169.0	5778	18.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	21282	18.98	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	3059	2.04	µg/L		98
6:2FTS	5.843	427.0 -> 407.0	4412	2.01	µg/L		99
8:2FTS	7.013	527.0 -> 507.0	4617	2.08	µg/L		95
EtFOSAA	7.171	584.0 -> 419.0	1419	1.88	µg/L		98
FOSA	6.519	498.0 -> 78.0	2136	1.93	µg/L		98
MeFOSAA	7.010	570.0 -> 419.0	1657	1.89	µg/L		98
PFBA	1.706	213.0 -> 169.0	1529	1.88	µg/L		100
PFBS	3.354	299.0 -> 80.0	1785	1.87	µg/L		99
PFDA	6.990	513.0 -> 469.0	12016	1.86	µg/L		99
PFDoDA	7.894	613.0 -> 569.0	12929	1.90	µg/L		100
PFDS	7.419	599.0 -> 80.0	1607	1.73	µg/L		92
PFHpA	5.164	363.0 -> 319.0	10018	1.93	µg/L		99
PFHpS	5.855	449.0 -> 80.0	1857	1.96	µg/L		99
PFHxA	4.291	313.0 -> 269.0	7790	1.89	µg/L		99
PFHxS	5.195	399.0 -> 80.0	1828	1.84	µg/L	m	99
PFNA	6.456	463.0 -> 419.0	10592	1.86	µg/L		98
PFNS	6.949	549.0 -> 80.0	1856	2.00	µg/L		97
PFOA	5.858	413.0 -> 369.0	13343	1.86	µg/L		99
PFOS	6.429	499.0 -> 80.0	2342	2.11	µg/L	m	78
PFPeA	3.134	263.0 -> 219.0	5263	1.89	µg/L		100
PFPeS	4.410	349.0 -> 80.0	1365	1.84	µg/L		99
PFTeDA	9.089	713.0 -> 669.0	13732	1.71	µg/L		99
PFTrDA	8.413	663.0 -> 619.0	16129	1.98	µg/L		98
PFUnDA	7.460	563.0 -> 519.0	12529	1.82	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	6377	1.85	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	6292	1.73	µg/L		99
ADONA	5.261	377.0 -> 251.0	12620	1.84	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	2154	1.92	µg/L		100
MeFOSA	6.954	512.0 -> 169.0	545	1.75	µg/L		91
4-PFECHS	5.753	461.0 -> 381.0	3868	1.82	µg/L		96
FBSA	4.356	298.0 -> 78.0	2827	2.02	µg/L		100
FHxSA	5.674	398.0 -> 78.0	2330	1.94	µg/L		100

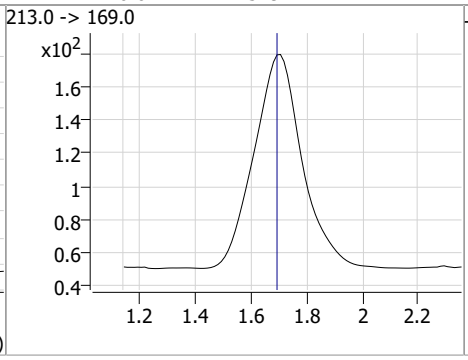
 # = Qualifier out of range, m = manually integrated, + = Area summed

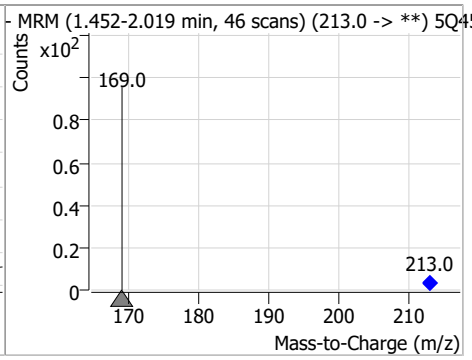
Perfluorinated Compounds by LC/MS/MS



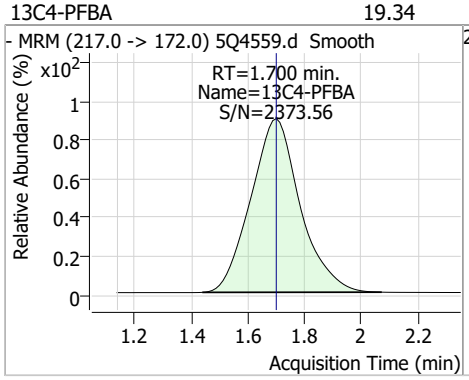
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.88	1.71	0.01	1529				

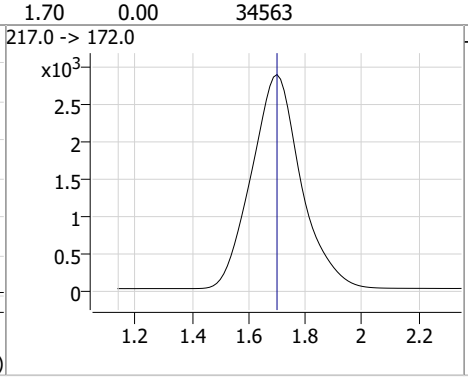


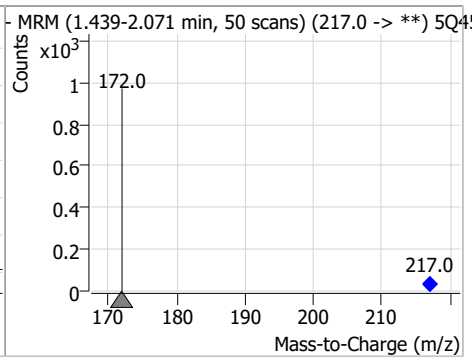




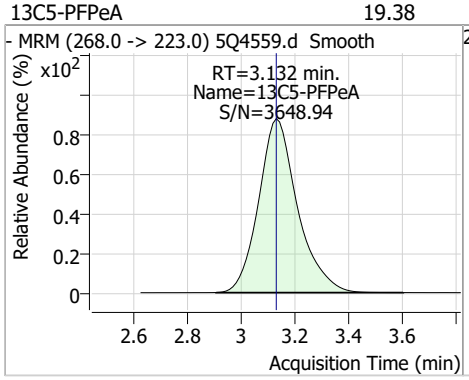
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.34	1.70	0.00	34563				

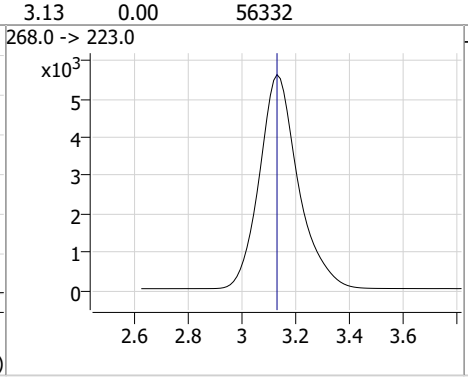


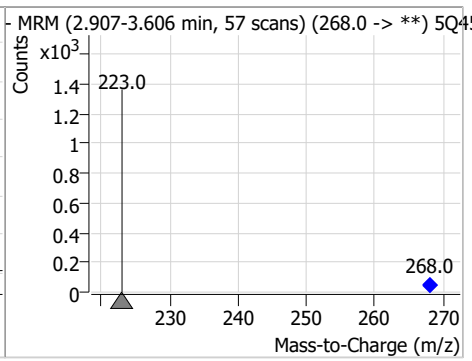




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.38	3.13	0.00	56332				

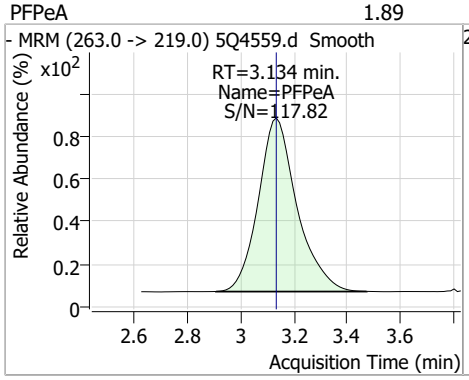


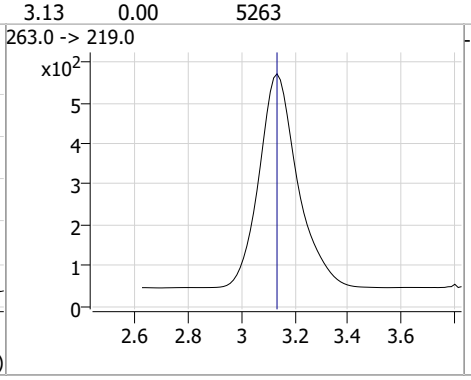


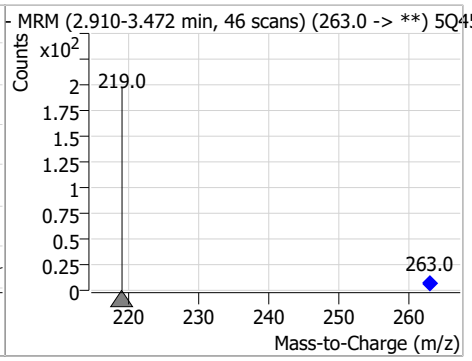


Perfluorinated Compounds by LC/MS/MS

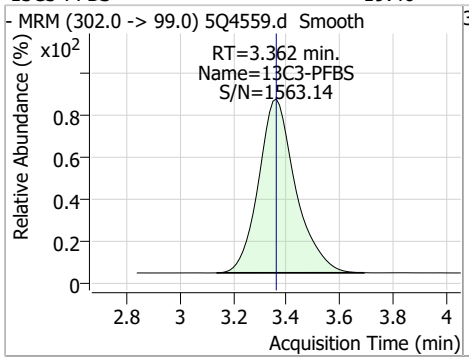
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.89	3.13	0.00	5263				

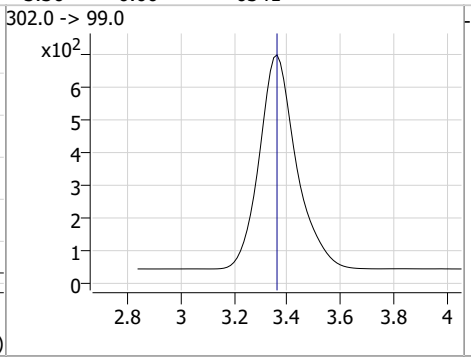


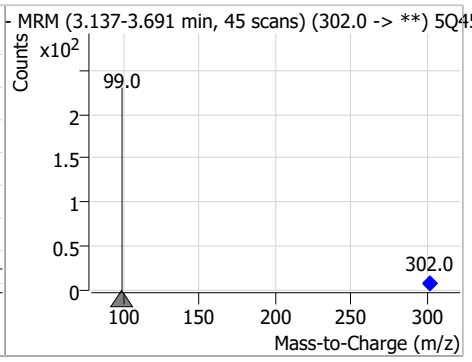




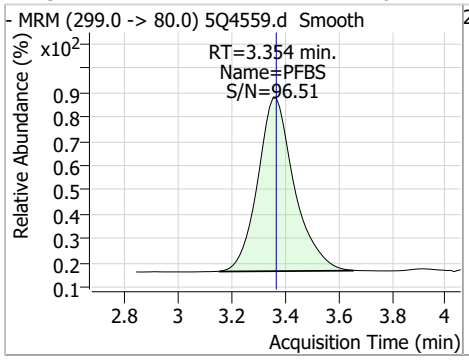
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.46	3.36	0.00	6341				

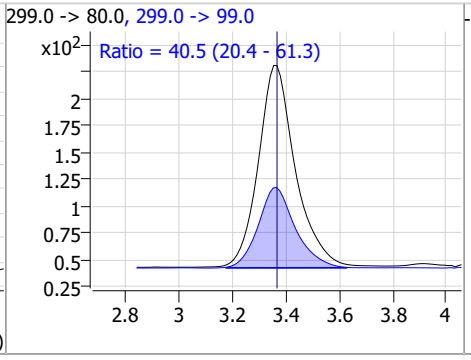


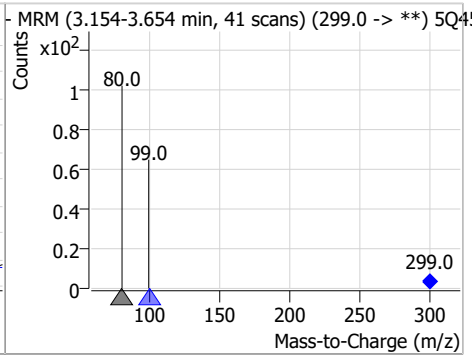




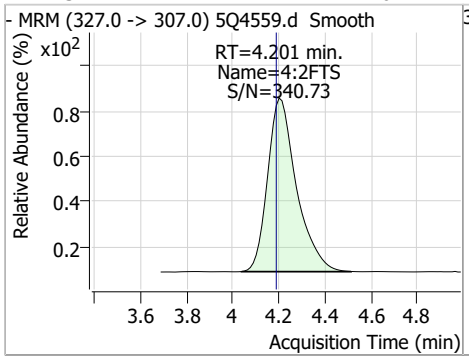
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.87	3.35	-0.01	1785	299.0 -> 99.0	40.5	20.4	61.3

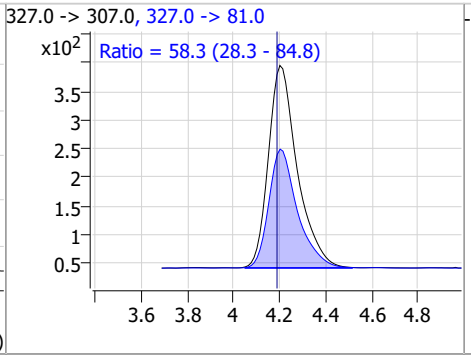


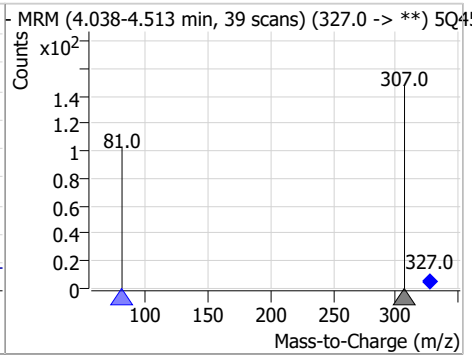




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.04	4.20	0.00	3059	327.0 -> 81.0	58.3	28.3	84.8

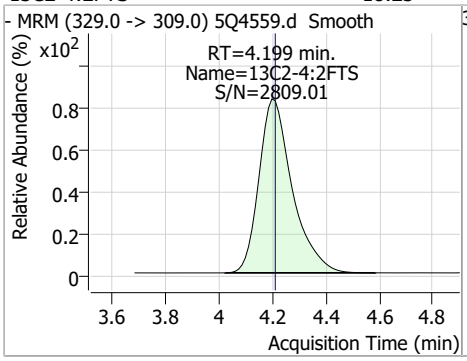


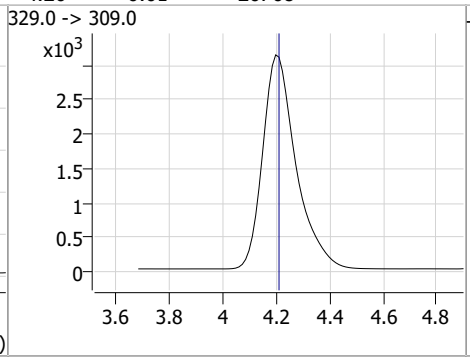


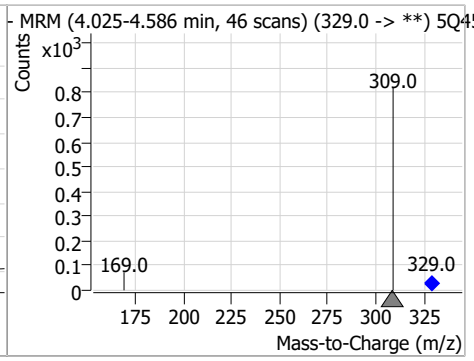


Perfluorinated Compounds by LC/MS/MS

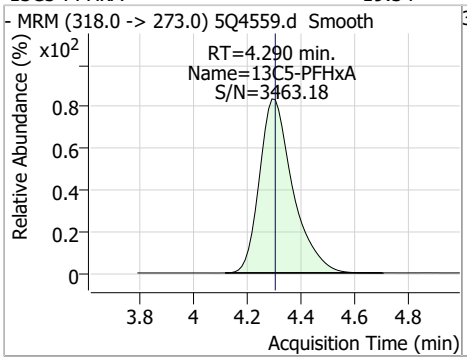
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.23	4.20	-0.01	26768				

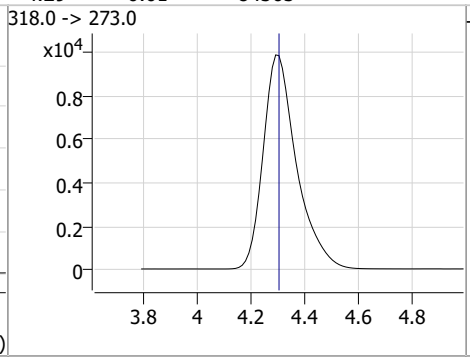


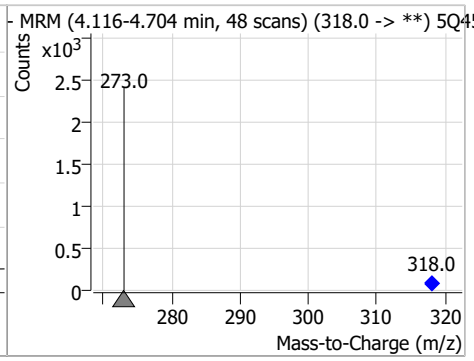




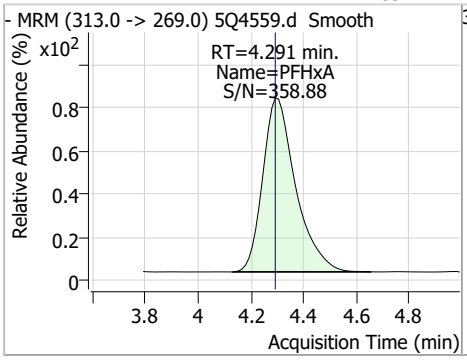
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.34	4.29	-0.01	84565				

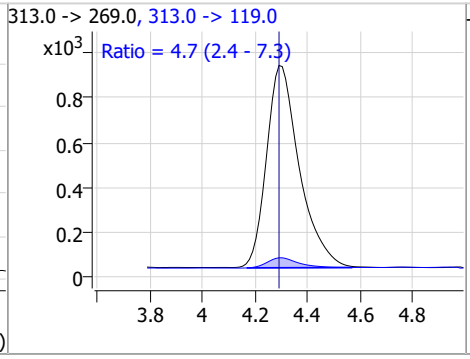


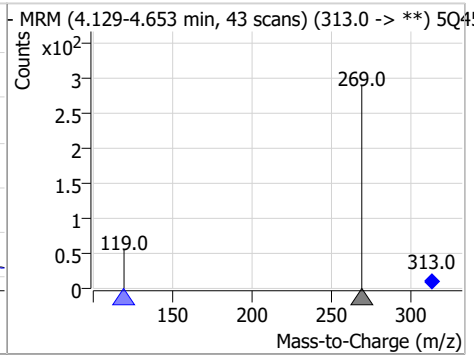




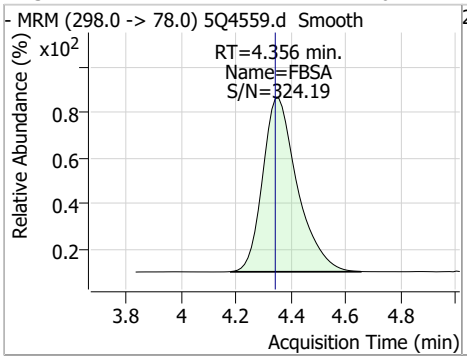
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.89	4.29	-0.01	7790	313.0 -> 119.0	4.7	2.4	7.3

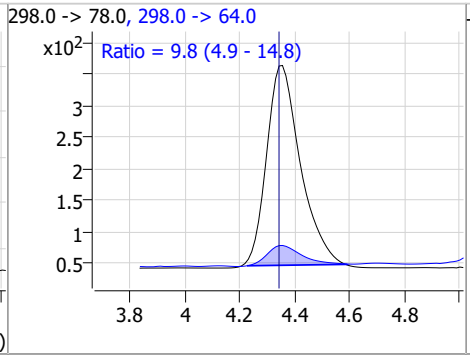


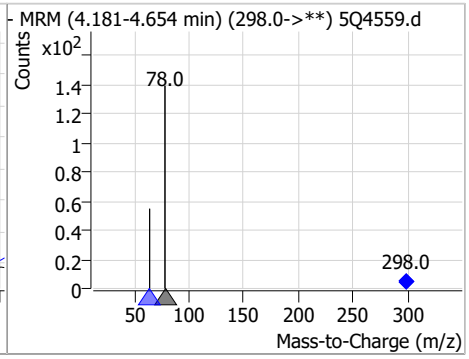




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	2.02	4.36	0.00	2827	298.0 -> 64.0	9.8	4.9	14.8

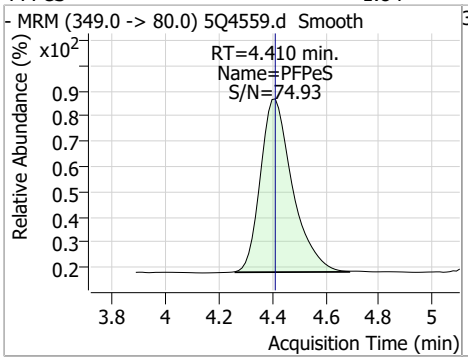


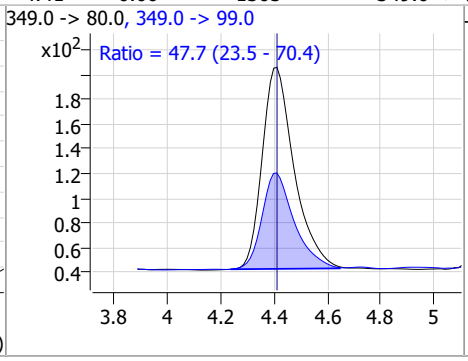


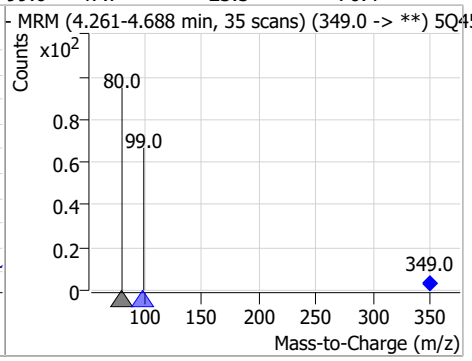


Perfluorinated Compounds by LC/MS/MS

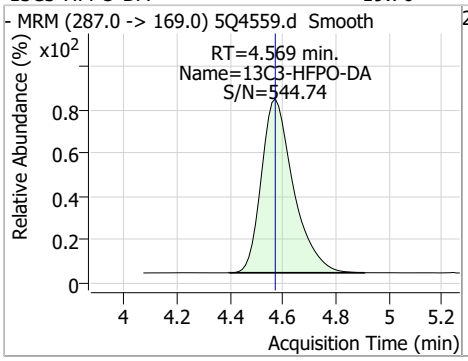
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.84	4.41	0.00	1365	349.0 -> 99.0	47.7	23.5	70.4

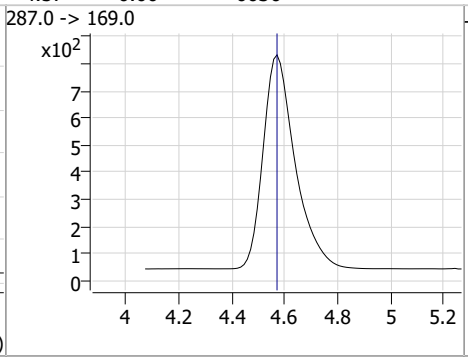


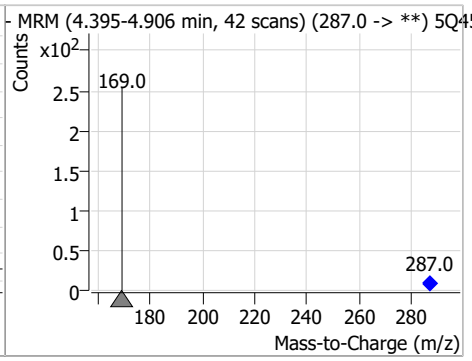




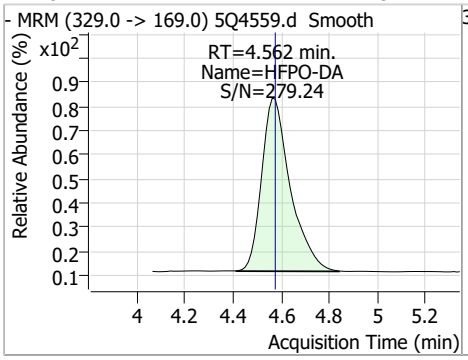
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.76	4.57	0.00	6636				

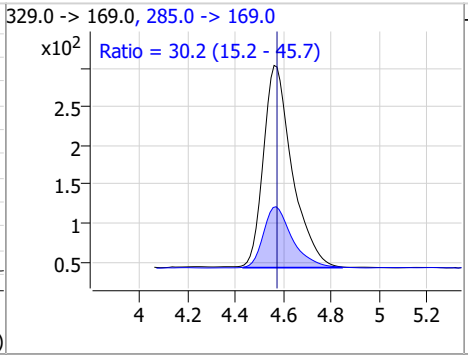


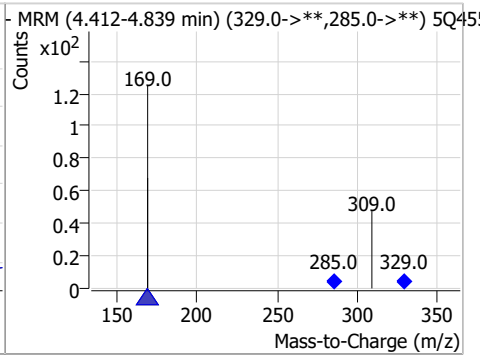




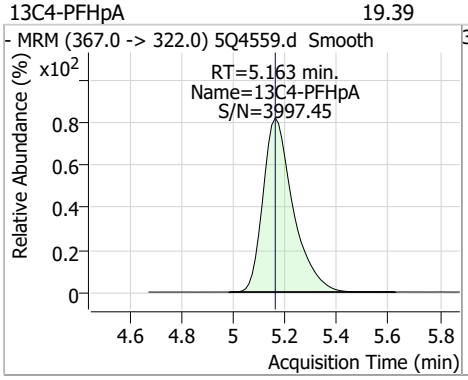
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.92	4.56	-0.01	2154	285.0 -> 169.0	30.2	15.2	45.7

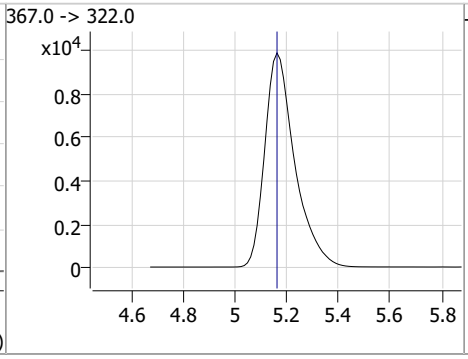


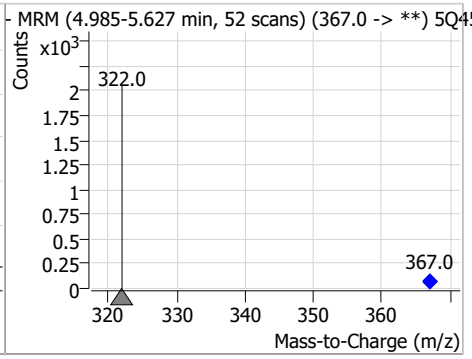




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.39	5.16	0.00	79148				

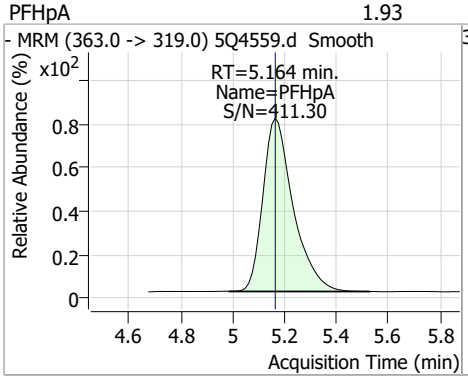


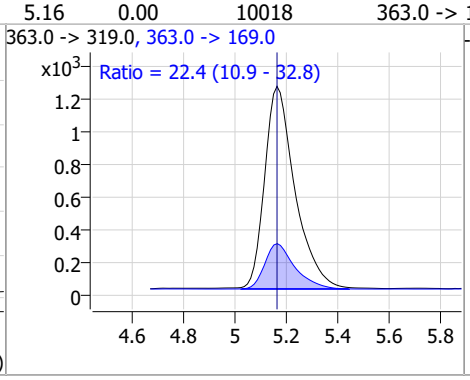


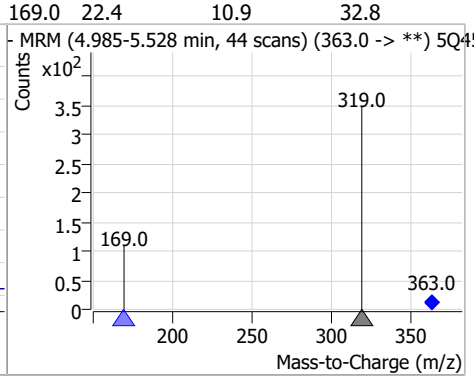


Perfluorinated Compounds by LC/MS/MS

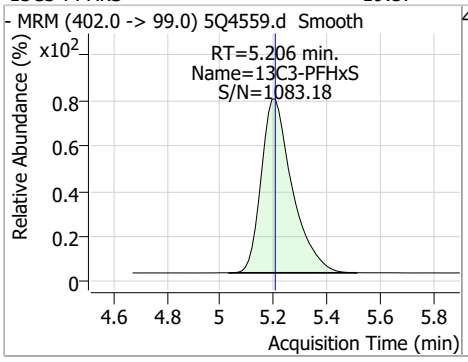
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.93	5.16	0.00	10018	363.0 -> 169.0	22.4	10.9	32.8

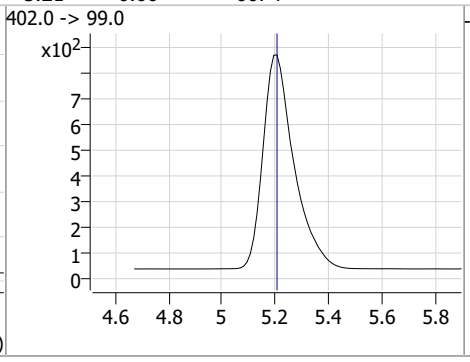


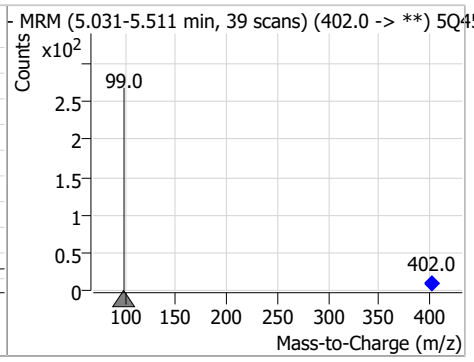




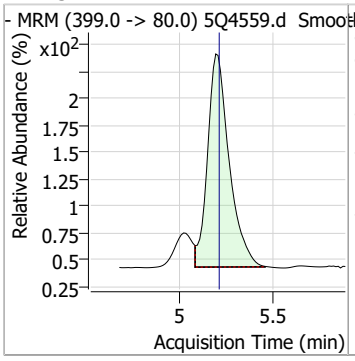
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.57	5.21	0.00	6674				

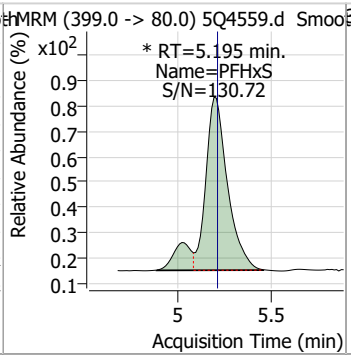


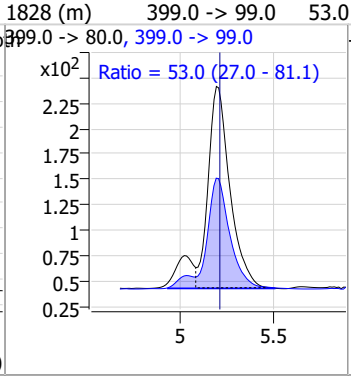


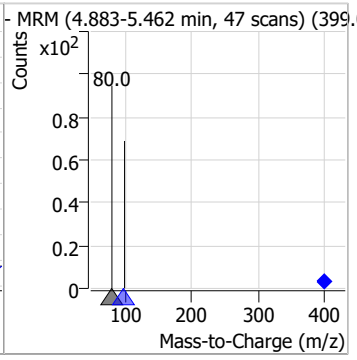


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.84	5.20	-0.01	1828 (m)	399.0 -> 99.0	53.0	27.0	81.1

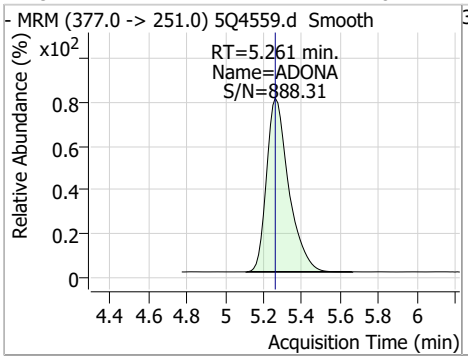


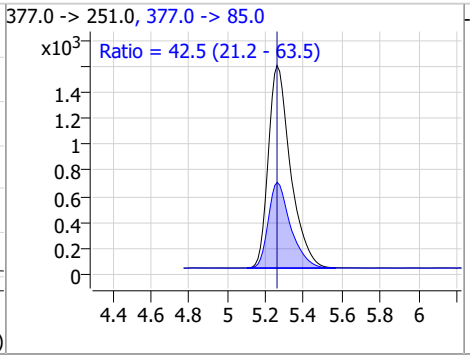


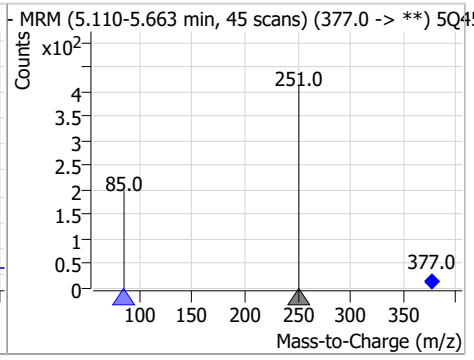




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.84	5.26	0.00	12620	377.0 -> 85.0	42.5	21.2	63.5

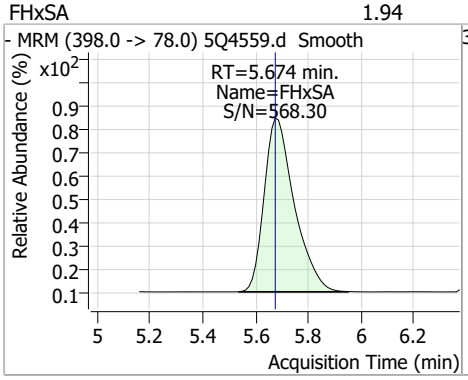


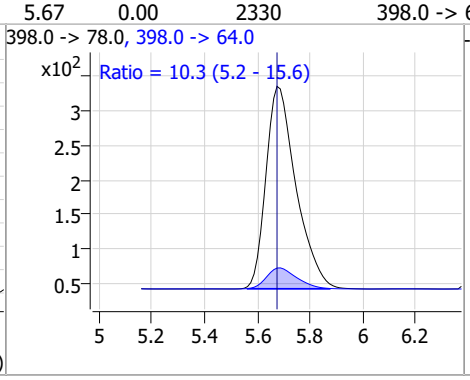


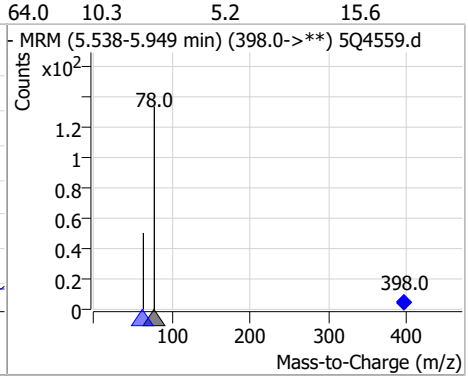


Perfluorinated Compounds by LC/MS/MS

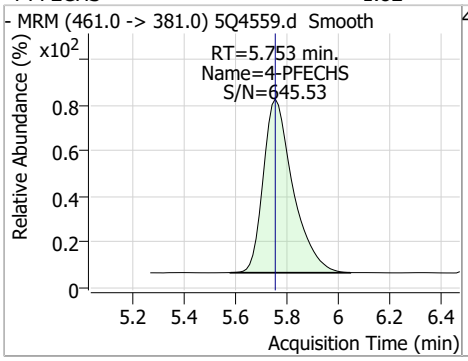
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.94	5.67	0.00	2330	398.0 -> 64.0	10.3	5.2	15.6

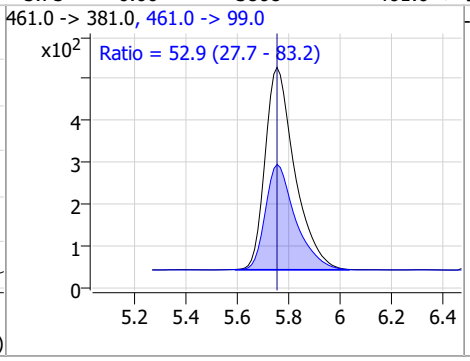


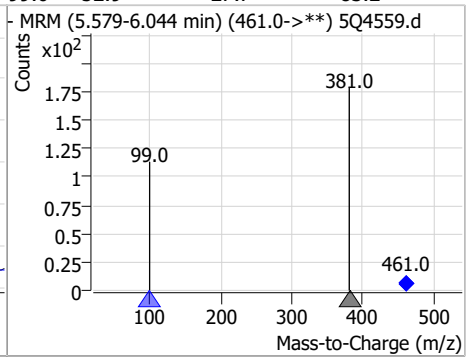




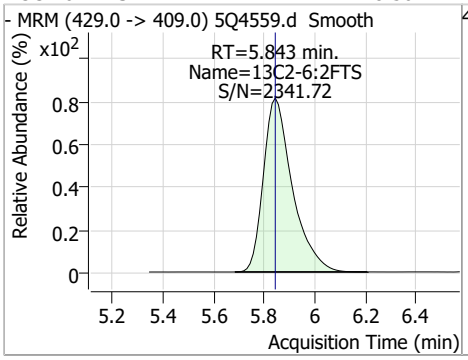
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.82	5.75	0.00	3868	461.0 -> 99.0	52.9	27.7	83.2

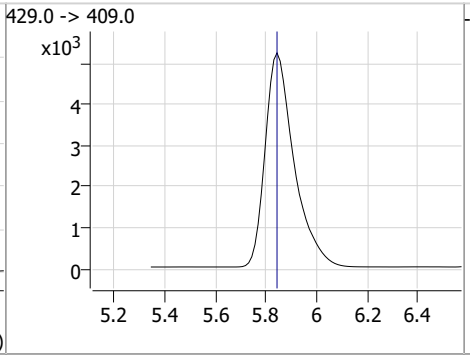


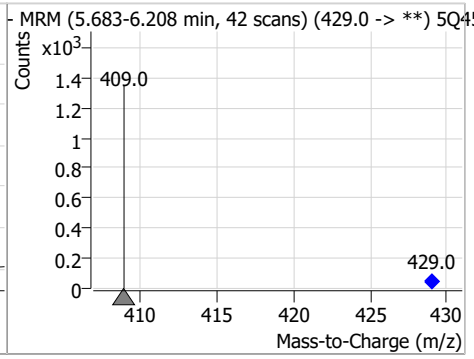




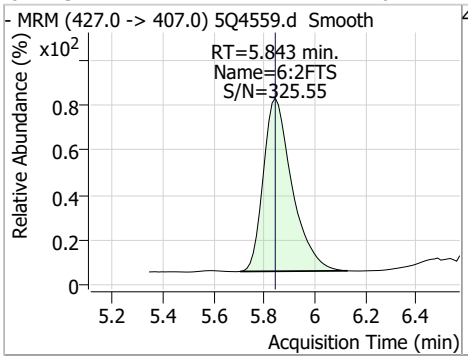
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.50	5.84	0.00	41352				

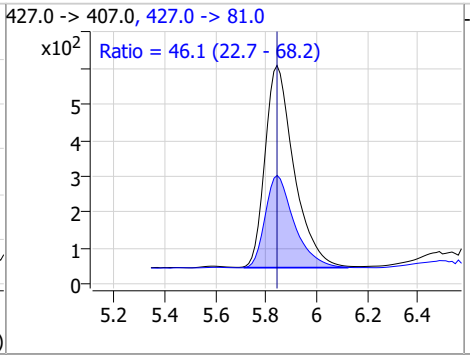


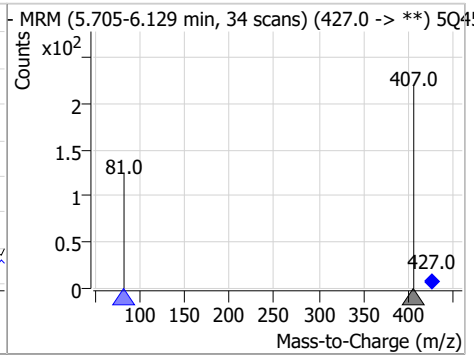




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.01	5.84	0.00	4412	427.0 -> 81.0	46.1	22.7	68.2

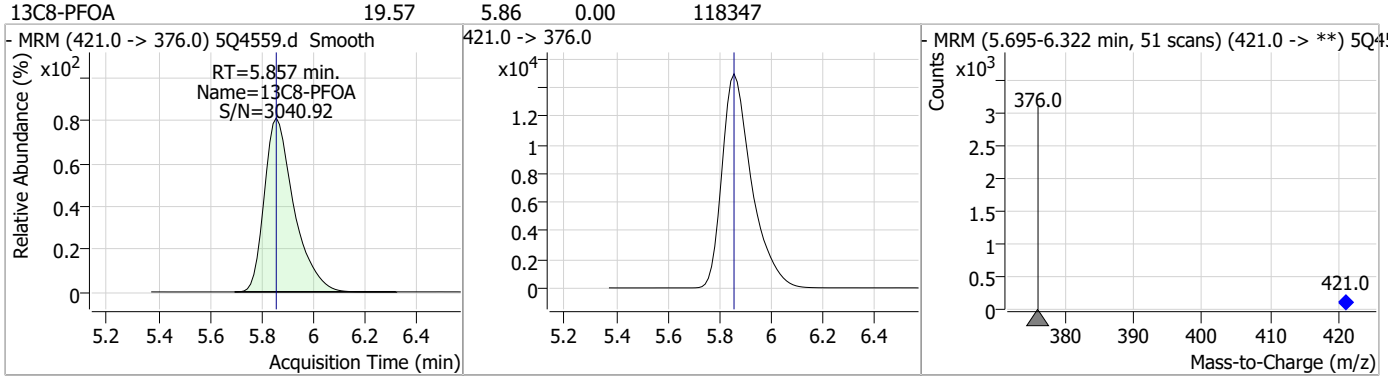




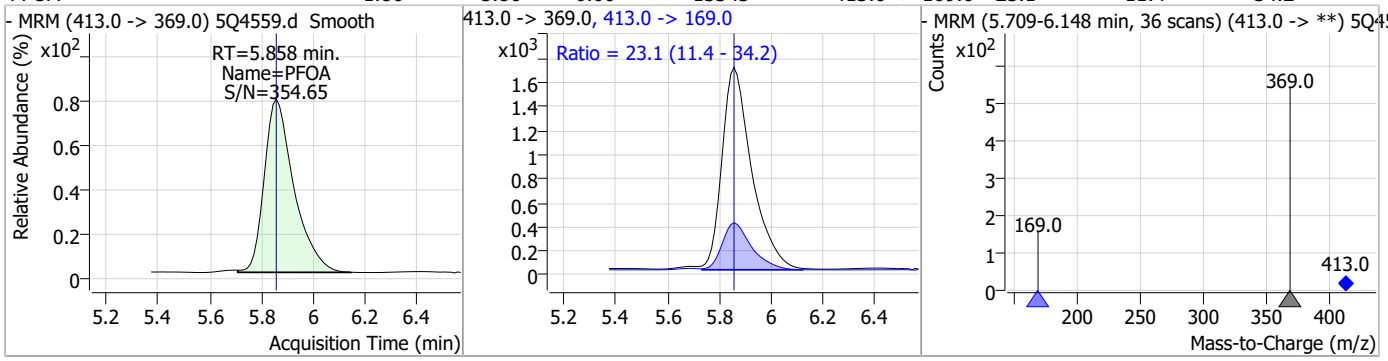


Perfluorinated Compounds by LC/MS/MS

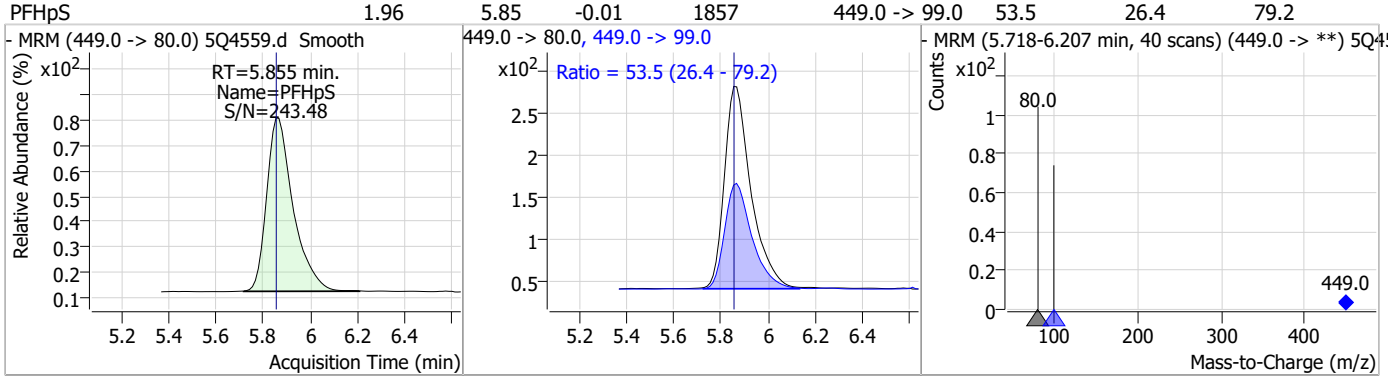
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.57	5.86	0.00	118347				



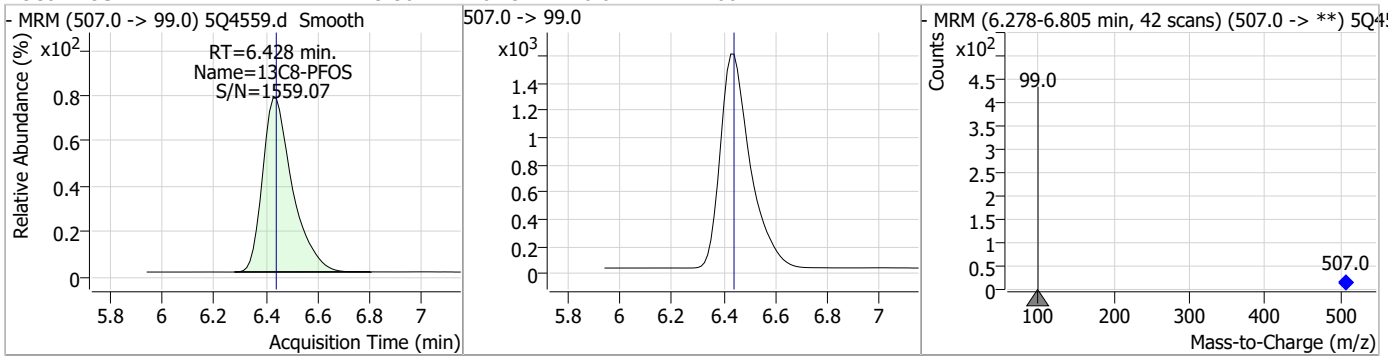
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.86	5.86	0.00	13343	413.0 -> 169.0	23.1	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.96	5.85	-0.01	1857	449.0 -> 99.0	53.5	26.4	79.2

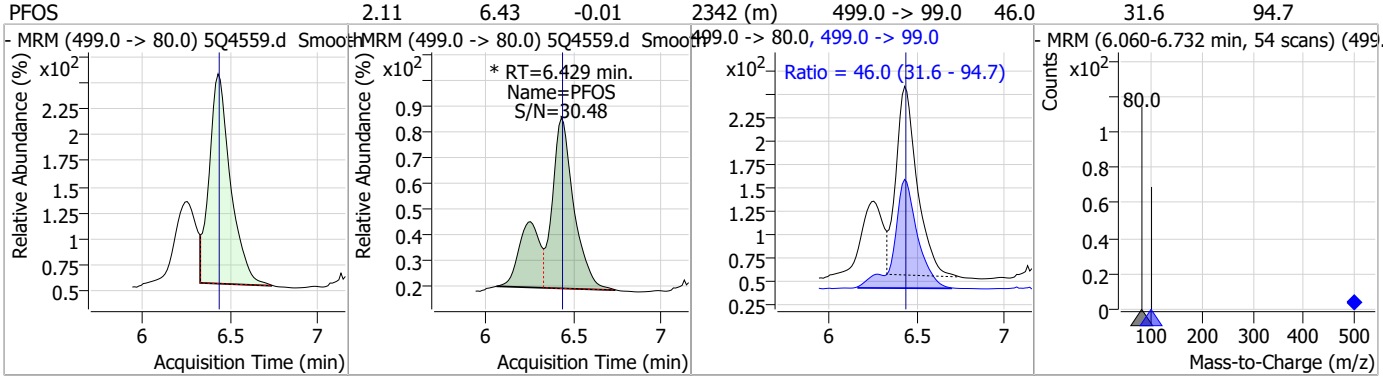


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.30	6.43	-0.01	12601				

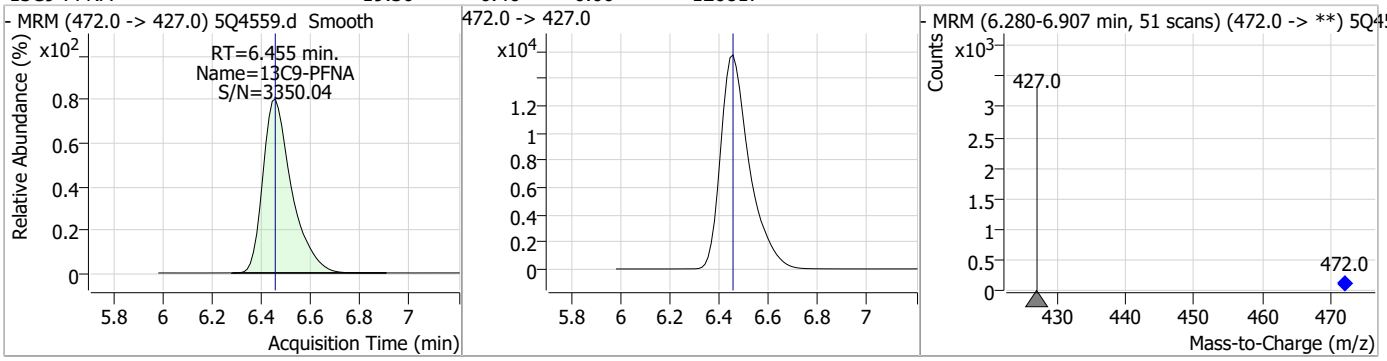


Perfluorinated Compounds by LC/MS/MS

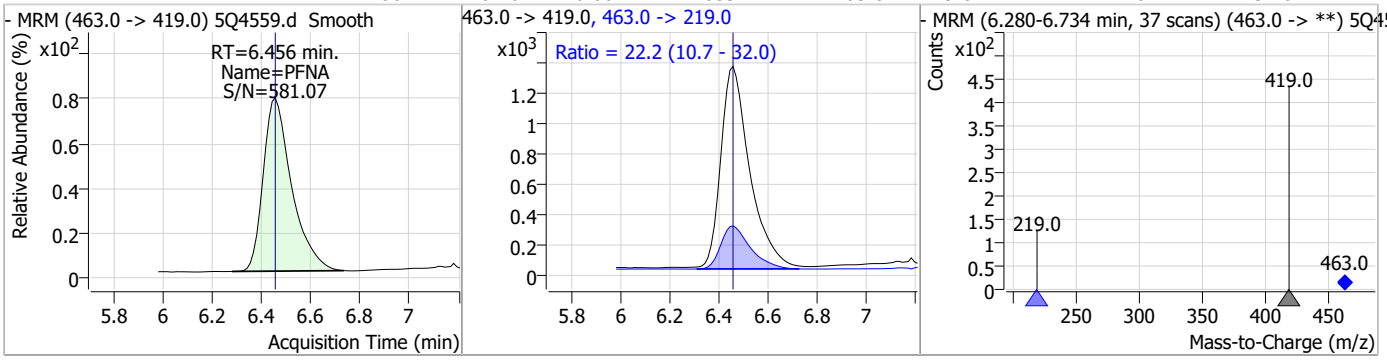
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	2.11	6.43	-0.01	2342 (m)	499.0 -> 99.0	46.0	31.6	94.7



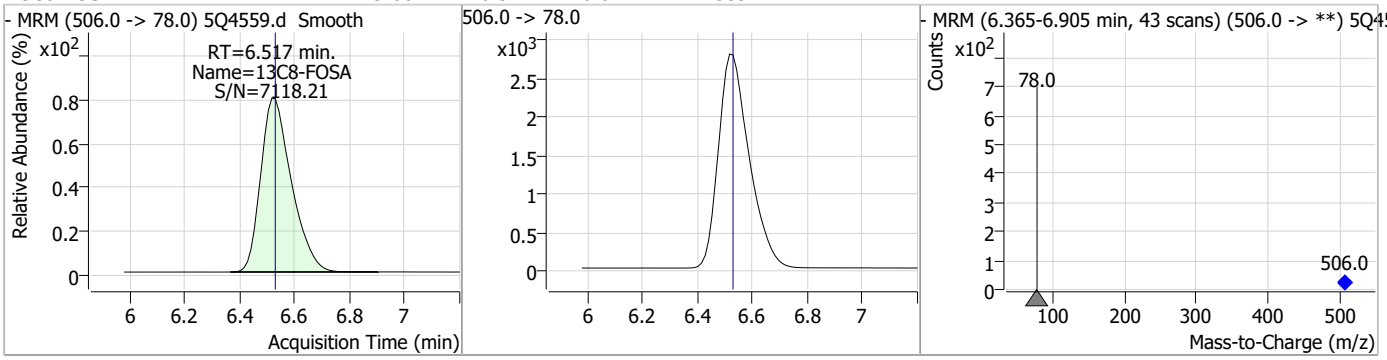
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.30	6.46	0.00	126817				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.86	6.46	0.00	10592	463.0 -> 219.0	22.2	10.7	32.0

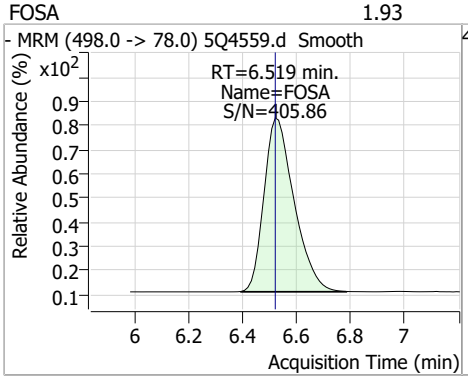


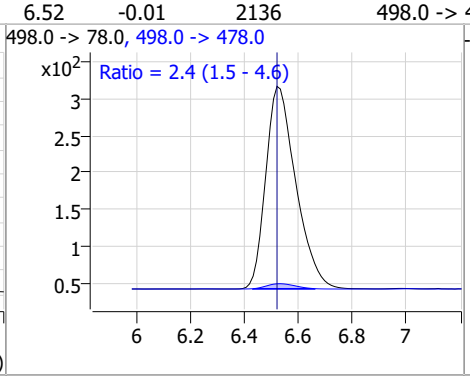
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.00	6.52	-0.01	21559				

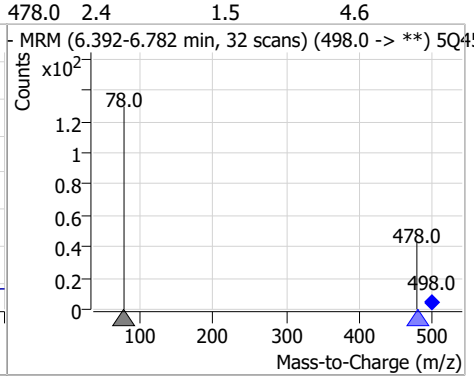


Perfluorinated Compounds by LC/MS/MS

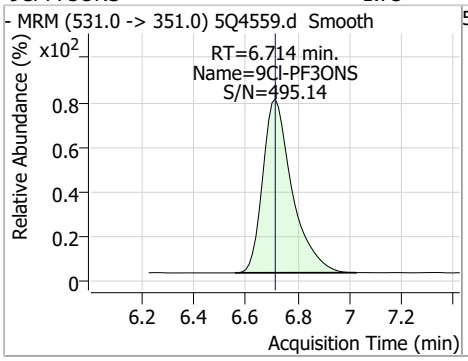
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.93	6.52	-0.01	2136	498.0 -> 478.0	2.4	1.5	4.6

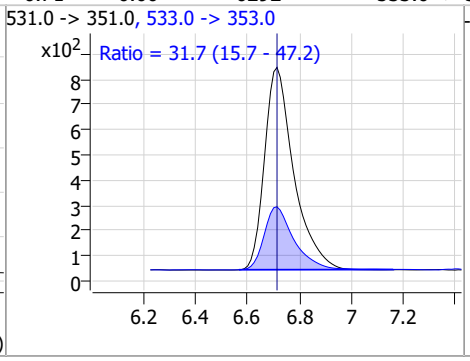


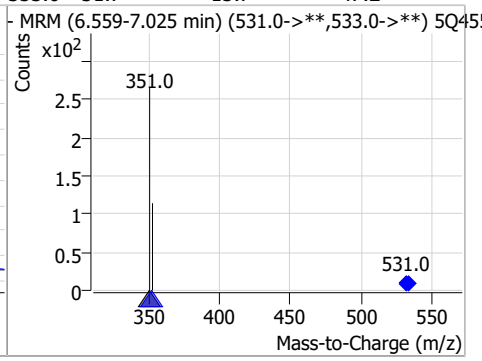




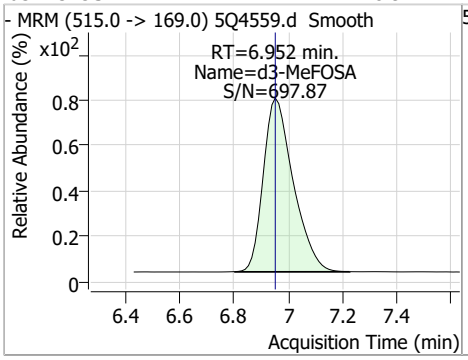
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.73	6.71	0.00	6292	533.0 -> 353.0	31.7	15.7	47.2

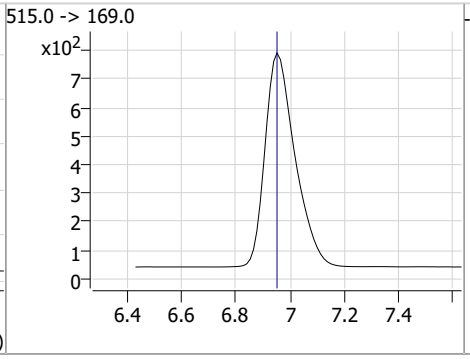


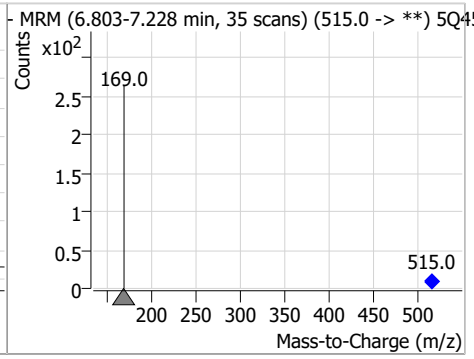




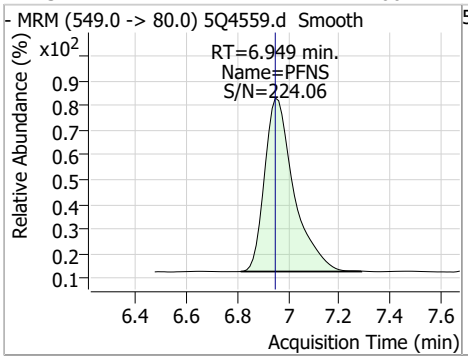
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.97	6.95	0.00	5778				

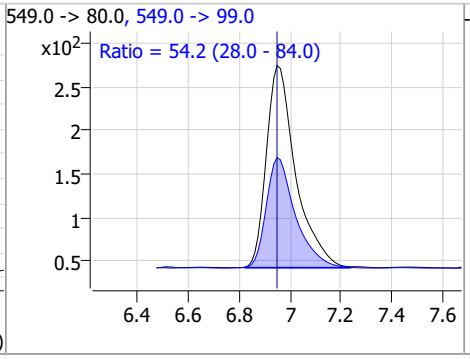


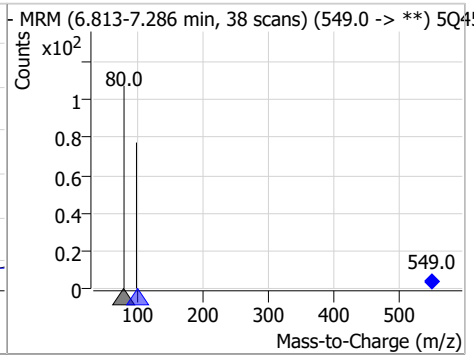




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	2.00	6.95	-0.01	1856	549.0 -> 99.0	54.2	28.0	84.0

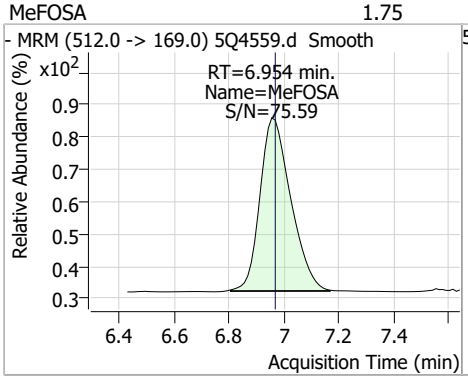


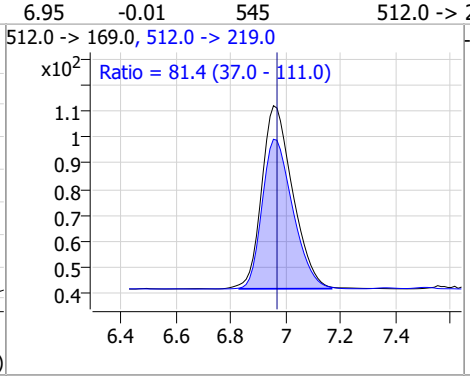


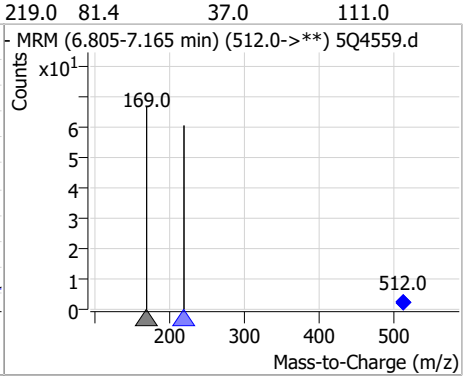


Perfluorinated Compounds by LC/MS/MS

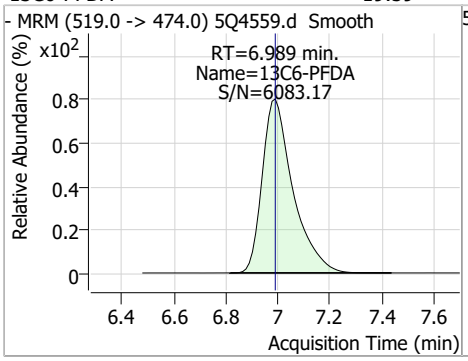
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.75	6.95	-0.01	545	512.0 -> 219.0	81.4	37.0	111.0

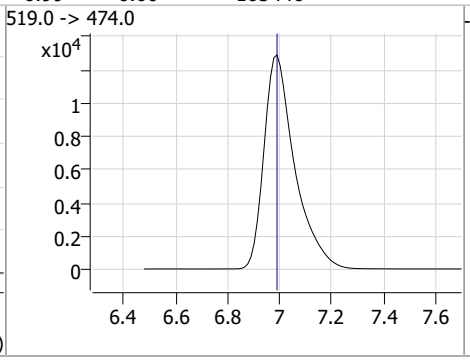


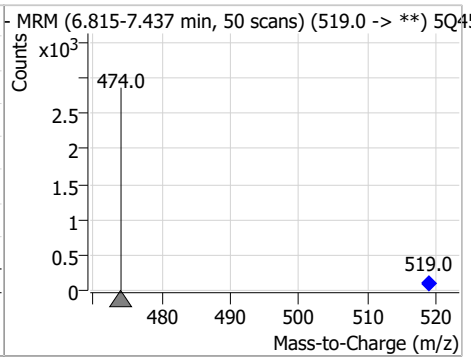




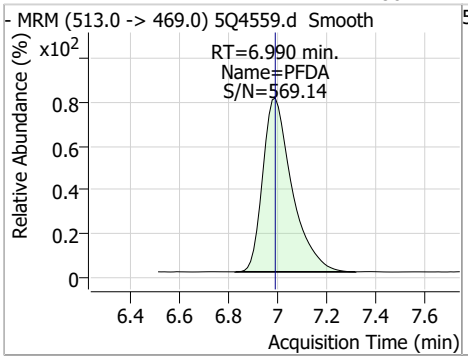
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.59	6.99	0.00	105446				

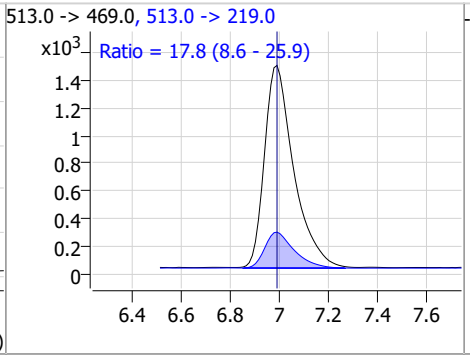


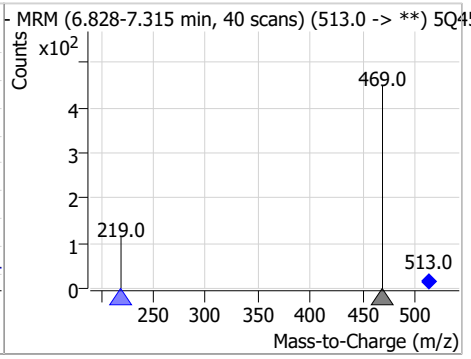




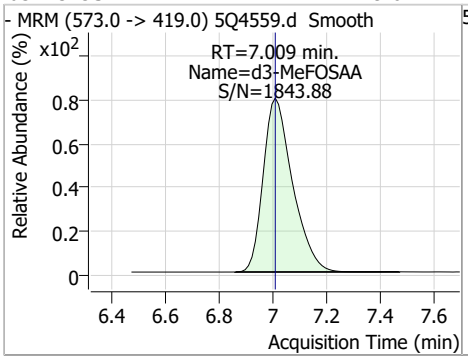
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.86	6.99	0.00	12016	513.0 -> 219.0	17.8	8.6	25.9

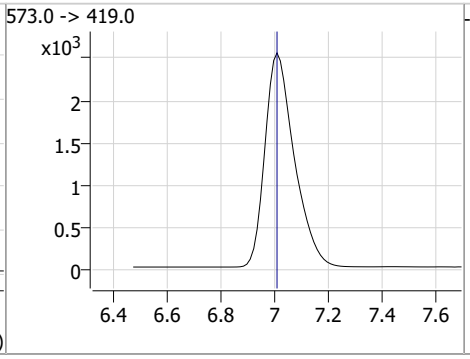


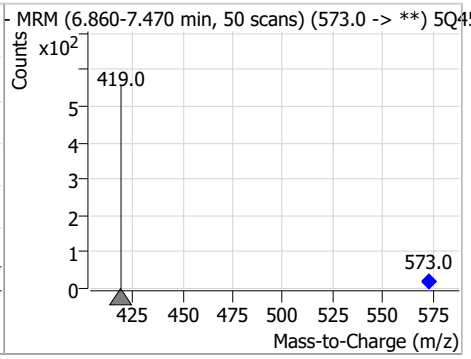




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.64	7.01	0.00	19092				

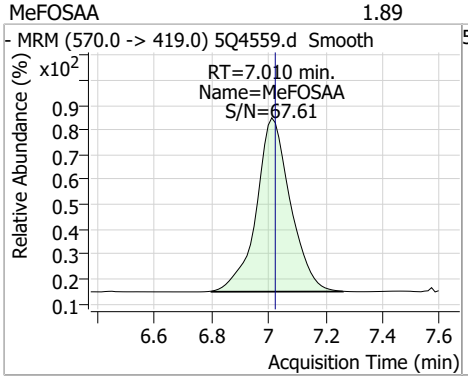


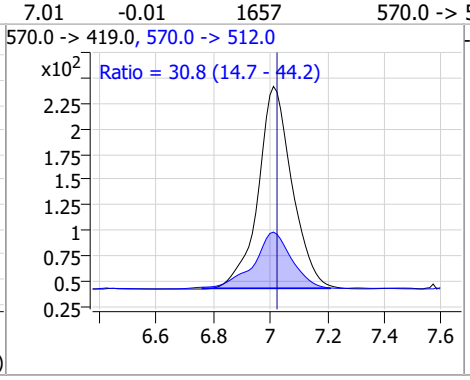


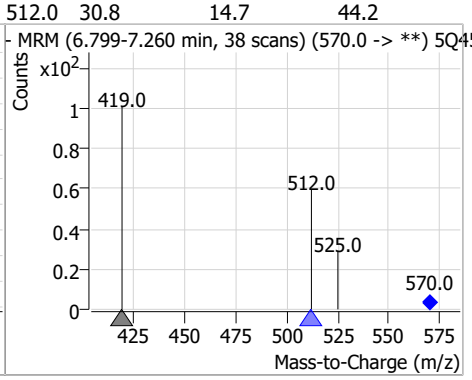


Perfluorinated Compounds by LC/MS/MS

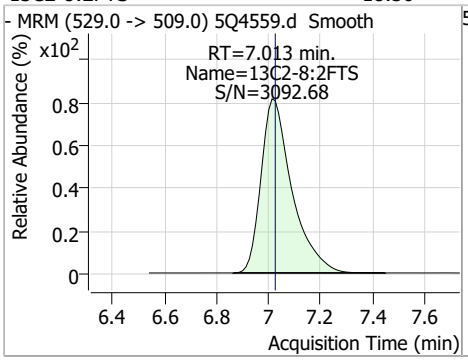
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.89	7.01	-0.01	1657	570.0 -> 512.0	30.8	14.7	44.2

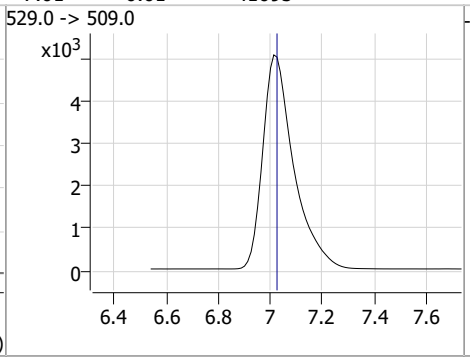


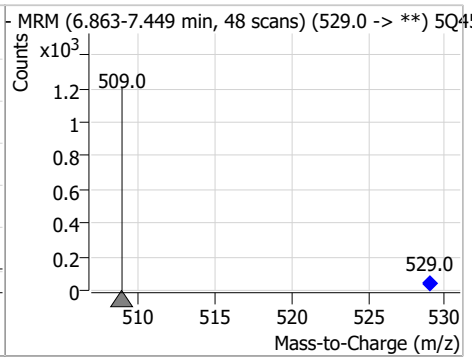




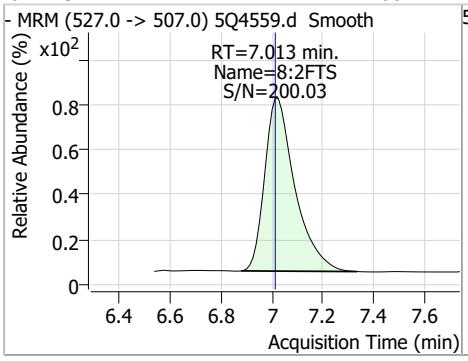
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.56	7.01	-0.01	41695				

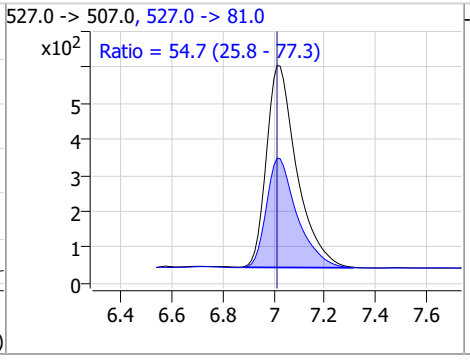


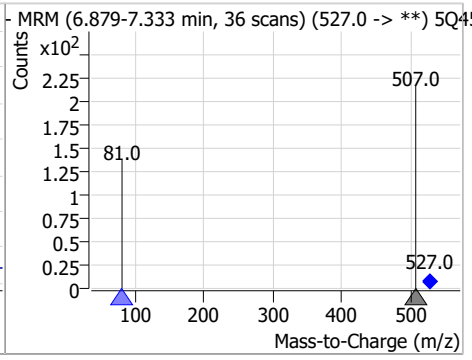




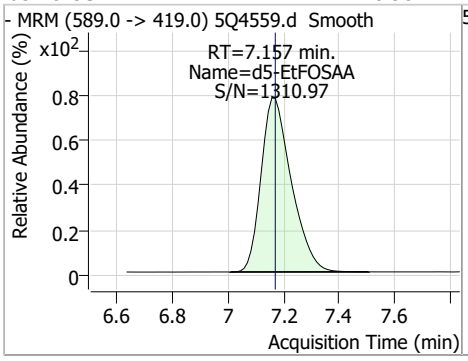
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.08	7.01	-0.01	4617	527.0 -> 81.0	54.7	25.8	77.3

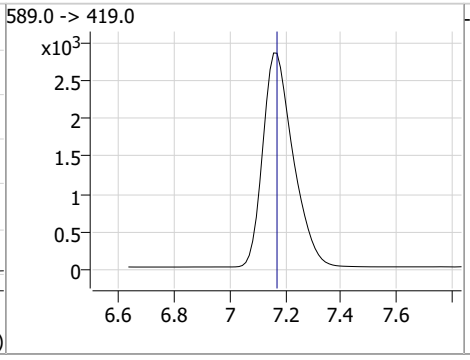


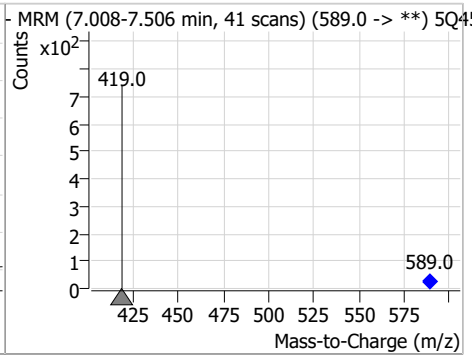




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.98	7.16	-0.01	21282				

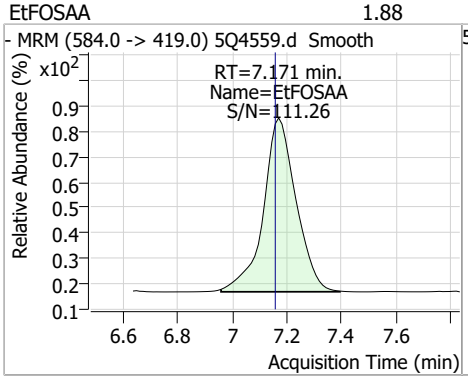


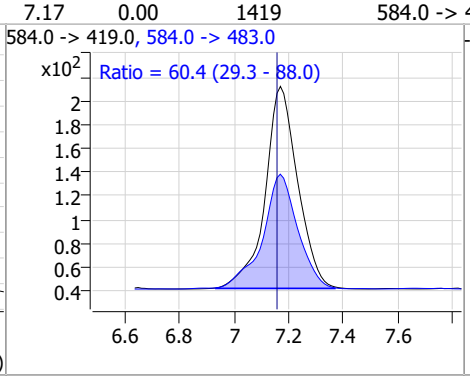


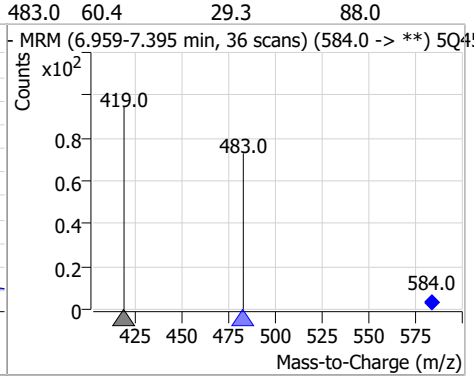


Perfluorinated Compounds by LC/MS/MS

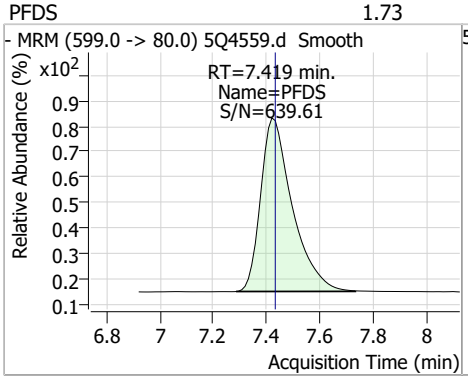
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.88	7.17	0.00	1419	584.0 -> 483.0	60.4	29.3	88.0

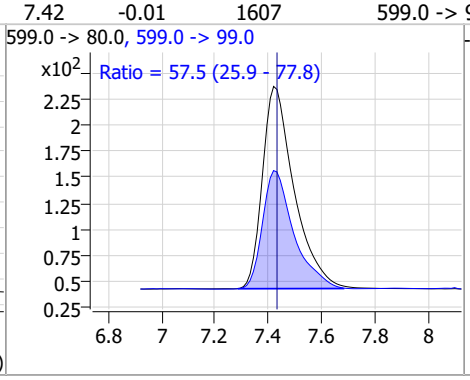


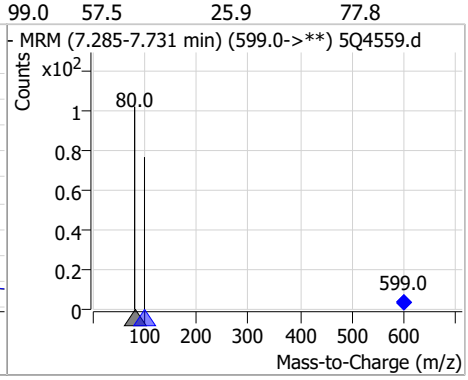




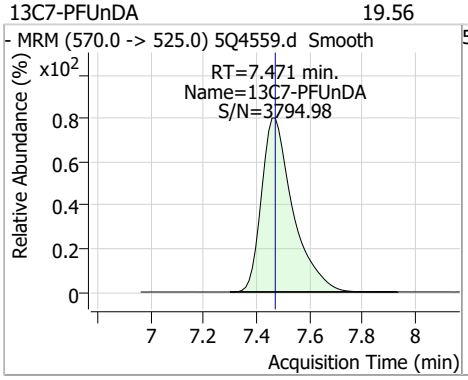
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.73	7.42	-0.01	1607	599.0 -> 99.0	57.5	25.9	77.8

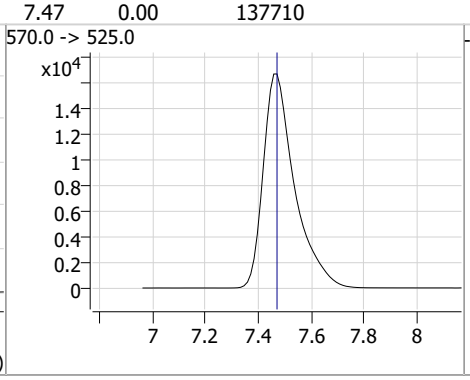


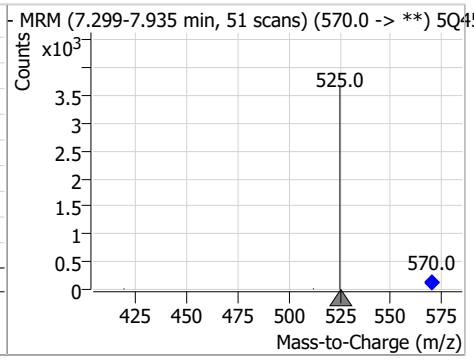




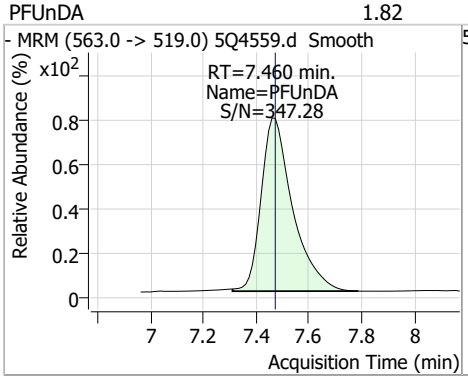
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.56	7.47	0.00	137710				

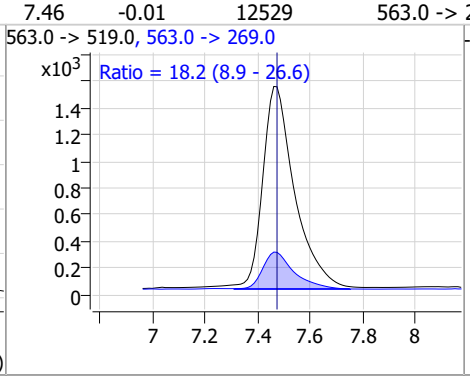


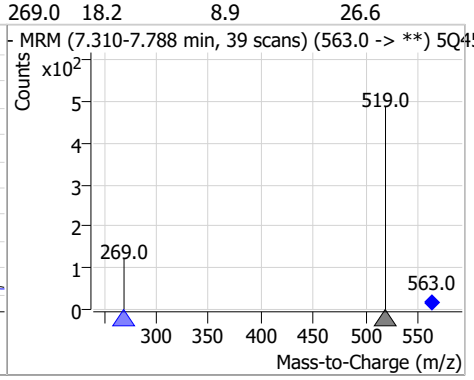




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.82	7.46	-0.01	12529	563.0 -> 269.0	18.2	8.9	26.6

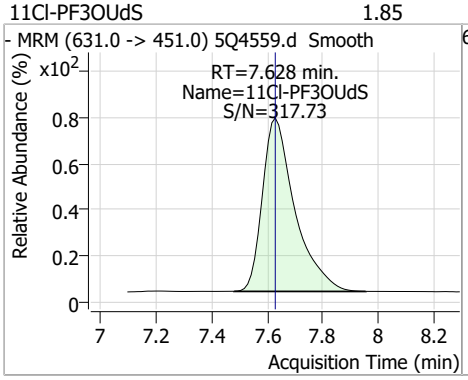


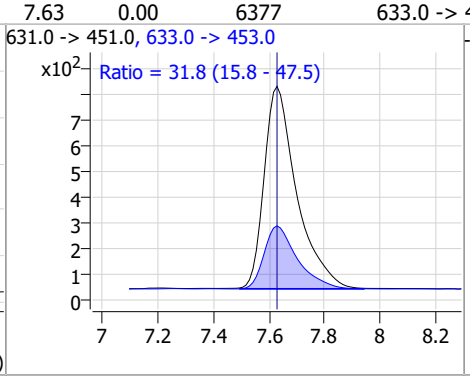


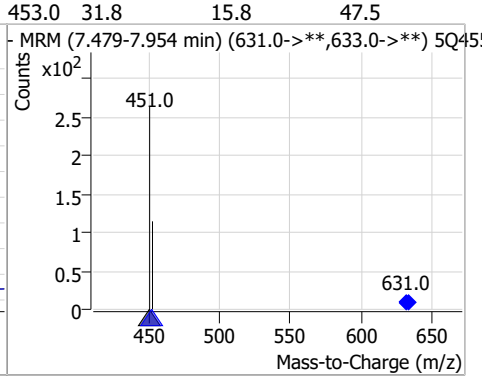


Perfluorinated Compounds by LC/MS/MS

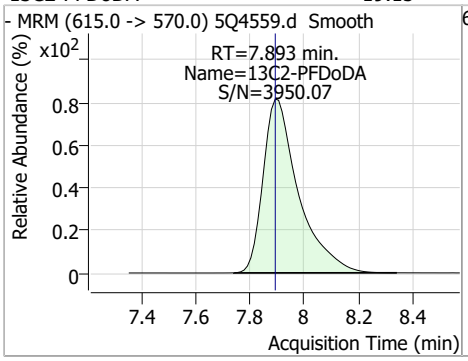
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.85	7.63	0.00	6377	633.0 -> 453.0	31.8	15.8	47.5

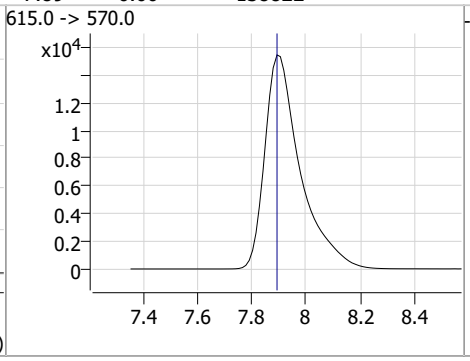


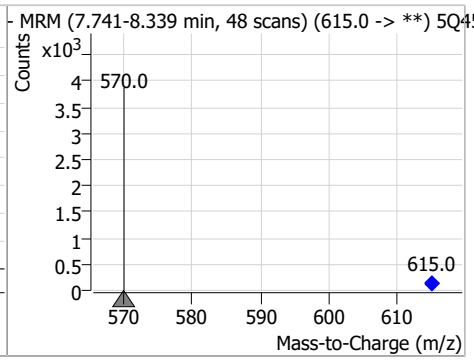




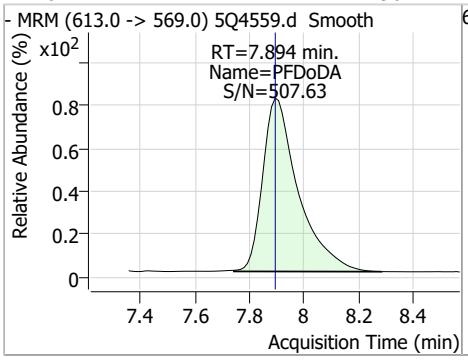
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.15	7.89	0.00	138822				

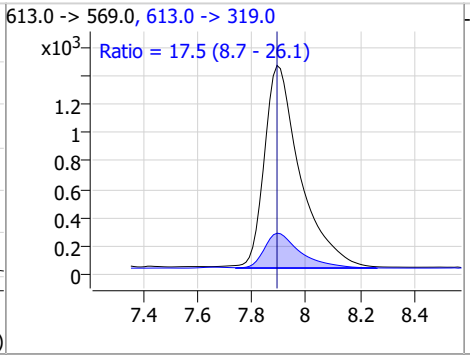


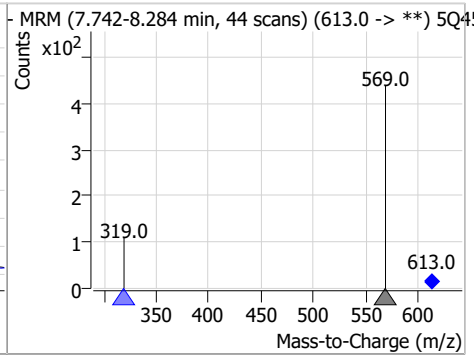




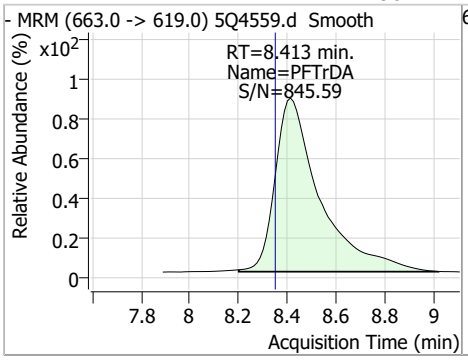
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.90	7.89	0.00	12929	613.0 -> 319.0	17.5	8.7	26.1

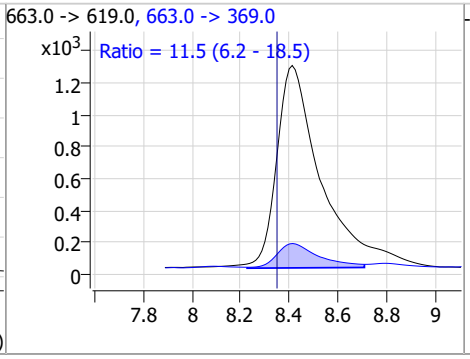


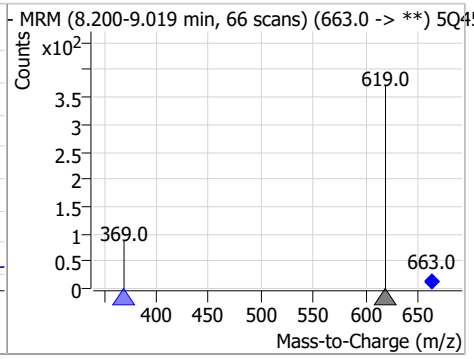




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.98	8.41	0.06	16129	663.0 -> 369.0	11.5	6.2	18.5

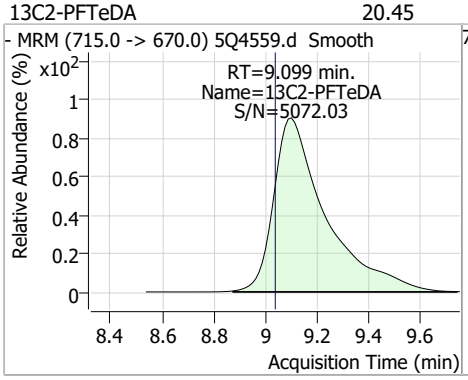


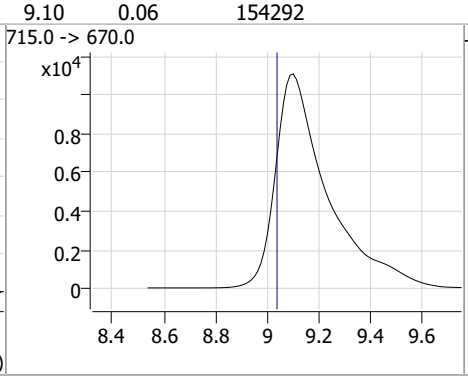


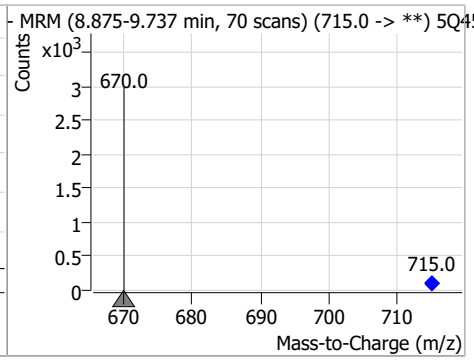


Perfluorinated Compounds by LC/MS/MS

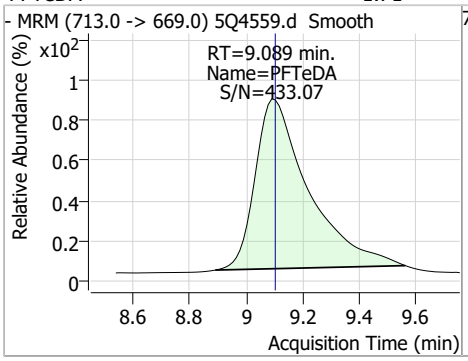
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.45	9.10	0.06	154292				

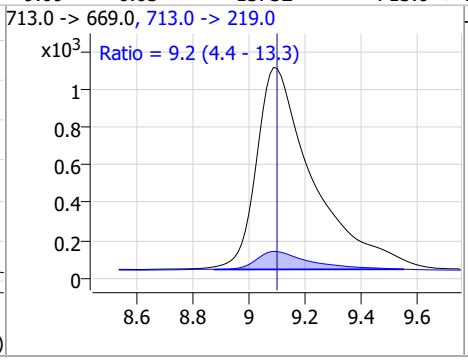


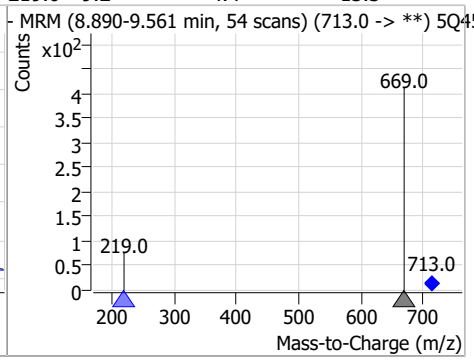




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.71	9.09	0.05	13732	713.0 -> 219.0	9.2	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4559.D
Injection Time: 09/14/22 11:11
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4560.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:26:59 AM
Sample Name : ic71-5
Vial : P1-A5
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

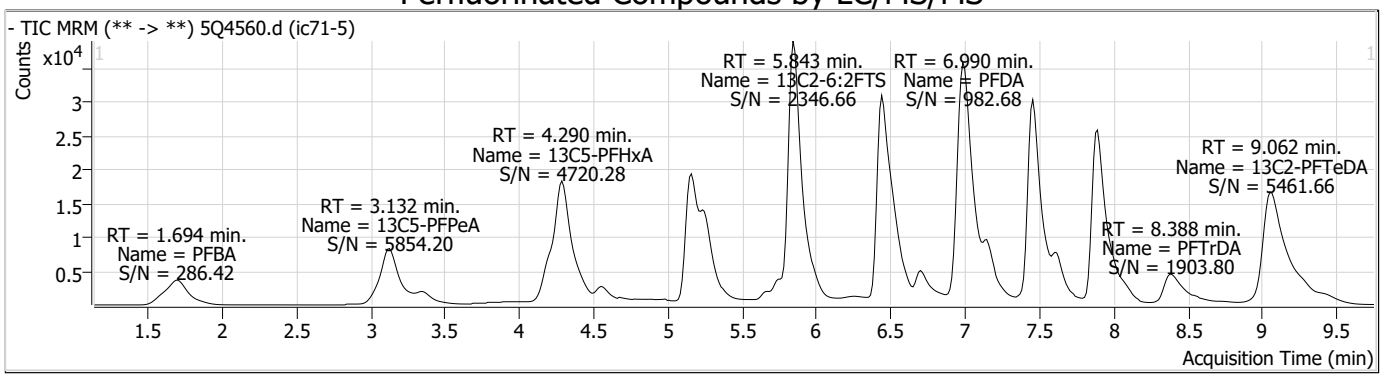
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	37234	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	60302	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	91336	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	84808	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	127279	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	135575	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	112008	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	146002	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	147066	20.00	µg/L	0.000
M2-PFTeDA	9.062	715.0 -> 670.0	162209	20.00	µg/L	0.025
M8-FOSA	6.517	506.0 -> 78.0	23652	20.00	µg/L	-0.012
M3-PFBS	3.362	302.0 -> 99.0	6782	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	7219	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	13652	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	28867	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43997	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	44435	20.00	µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	19817	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6953	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6320	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	22803	20.00	µg/L	-0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	28867	19.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43997	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C2-8:2FTS	7.013	529.0 -> 509.0	44435	19.78	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-PFDoDA	7.893	615.0 -> 570.0	147066	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFTeDA	9.062	715.0 -> 670.0	162209	21.50	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C3-PFBS	3.362	302.0 -> 99.0	6782	20.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	7219	21.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C4-PFBA	1.700	217.0 -> 172.0	37234	20.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
13C4-PFHpA	5.163	367.0 -> 322.0	84808	20.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	91336	20.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C5-PFPeA	3.132	268.0 -> 223.0	60302	20.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C6-PFDA	6.989	519.0 -> 474.0	112008	20.81	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

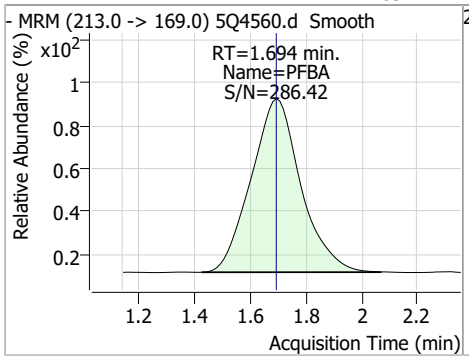
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C7-PFUnDA	7.459	570.0 -> 525.0	146002	20.73	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
13C8-FOSA	6.517	506.0 -> 78.0	23652	20.84	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C8-PFOA	5.857	421.0 -> 376.0	127279	21.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%			
13C8-PFOS	6.428	507.0 -> 99.0	13652	20.91	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%			
13C9-PFNA	6.455	472.0 -> 427.0	135575	20.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19817	20.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6953	20.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	6320	20.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
d5-EtFOSAA	7.157	589.0 -> 419.0	22803	20.34	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
Target Compounds							QValue
4:2FTS	4.201	327.0 -> 307.0	8455	5.23	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	12276	5.26	µg/L		100
8:2FTS	7.013	527.0 -> 507.0	12210	5.16	µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	3795	4.70	µg/L		98
FOSA	6.519	498.0 -> 78.0	5940	4.88	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	4341	4.78	µg/L		98
PFBA	1.694	213.0 -> 169.0	4286	4.89	µg/L		100
PFBS	3.354	299.0 -> 80.0	4998	4.91	µg/L		99
PFDA	6.990	513.0 -> 469.0	32883	4.78	µg/L		99
PFDoDA	7.894	613.0 -> 569.0	35307	4.89	µg/L		100
PFDS	7.419	599.0 -> 80.0	4635	4.71	µg/L		99
PFHpA	5.164	363.0 -> 319.0	28066	5.04	µg/L		100
PFHpS	5.855	449.0 -> 80.0	5066	4.94	µg/L		98
PFHxA	4.291	313.0 -> 269.0	21694	4.86	µg/L		100
PFHxS	5.195	399.0 -> 80.0	5155	4.81	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	29366	4.83	µg/L		98
PFNS	6.949	549.0 -> 80.0	5013	4.97	µg/L		98
PFOA	5.858	413.0 -> 369.0	37163	4.82	µg/L		100
PFOS	6.429	499.0 -> 80.0	5960	4.96	µg/L	m	84
PFPeA	3.134	263.0 -> 219.0	14439	4.85	µg/L		100
PFPeS	4.410	349.0 -> 80.0	3862	4.87	µg/L		98
PFTeDA	9.064	713.0 -> 669.0	37653	4.46	µg/L		99
PFTrDA	8.388	663.0 -> 619.0	43654	5.06	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	34163	4.68	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	17594	4.82	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	18113	4.68	µg/L		100
ADONA	5.261	377.0 -> 251.0	35200	4.74	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	5831	4.97	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	1760	5.17	µg/L		99
4-PFECHS	5.753	461.0 -> 381.0	10819	4.72	µg/L		99
FBSA	4.343	298.0 -> 78.0	7774	5.13	µg/L		100
FHxSA	5.674	398.0 -> 78.0	6342	4.90	µg/L		99

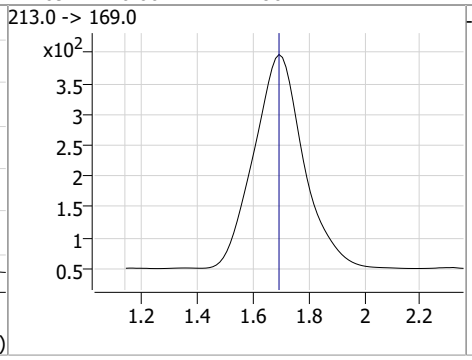
 # = Qualifier out of range, m = manually integrated, + = Area summed

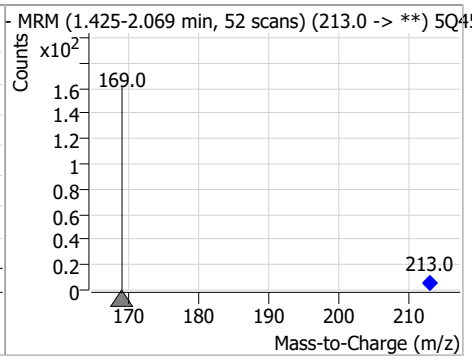
Perfluorinated Compounds by LC/MS/MS



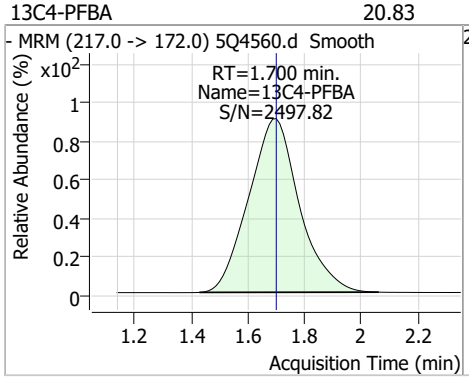
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.89	1.69	0.00	4286				

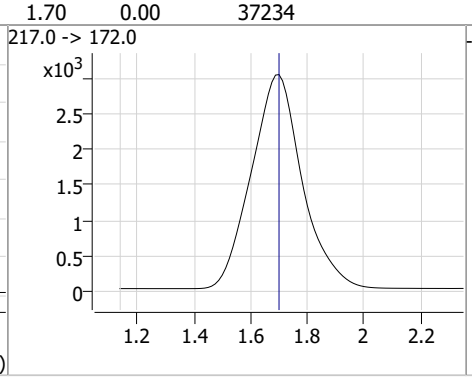


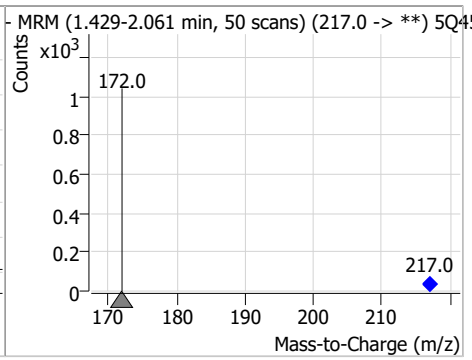




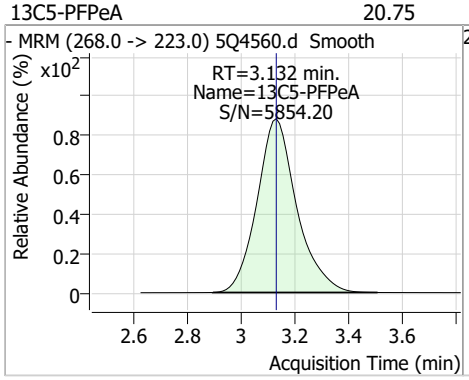
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.83	1.70	0.00	37234				

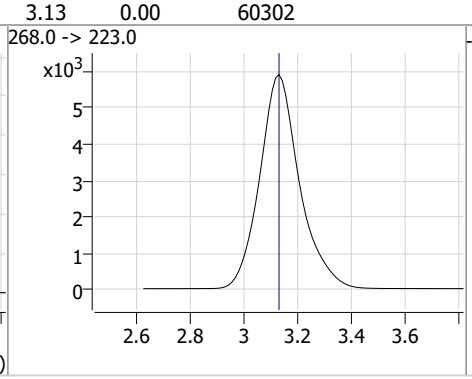


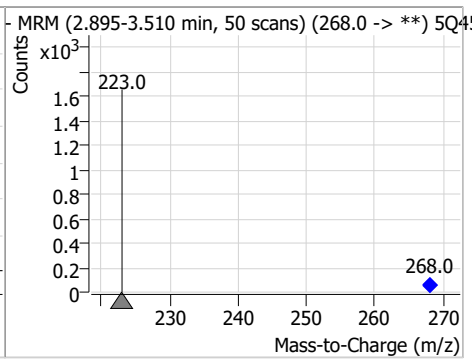




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.75	3.13	0.00	60302				

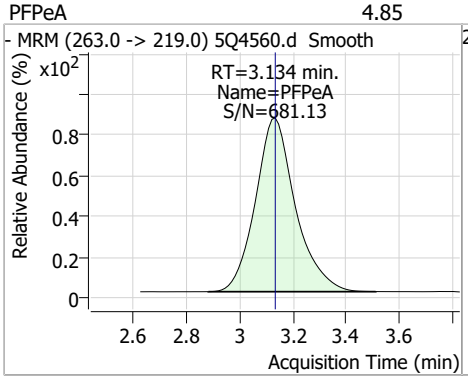


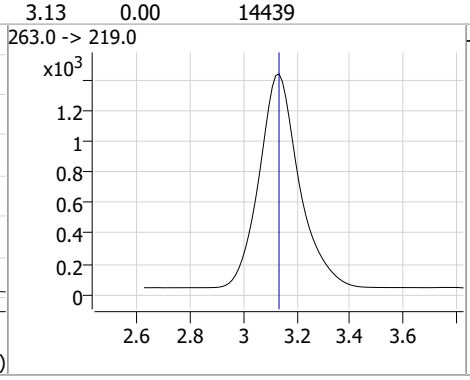


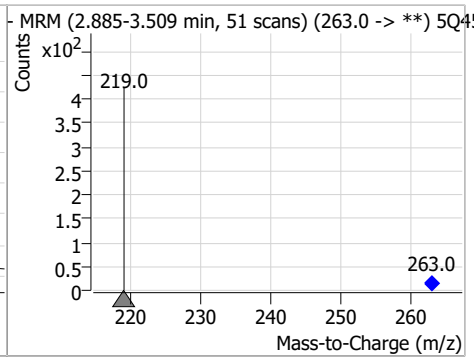


Perfluorinated Compounds by LC/MS/MS

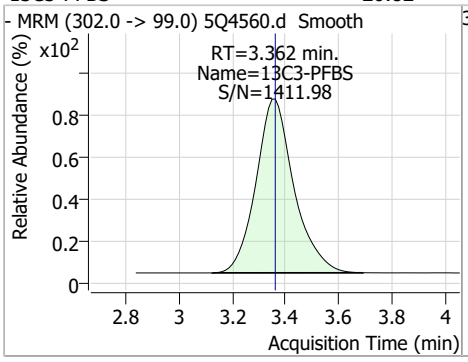
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.85	3.13	0.00	14439				

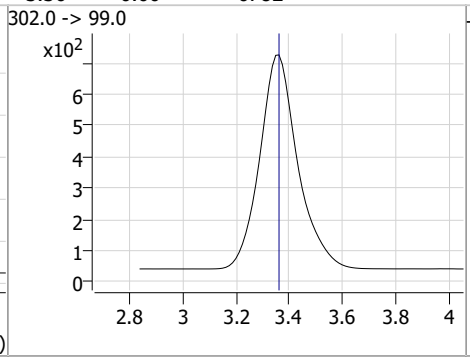


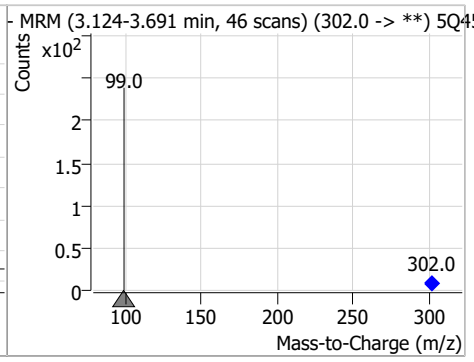




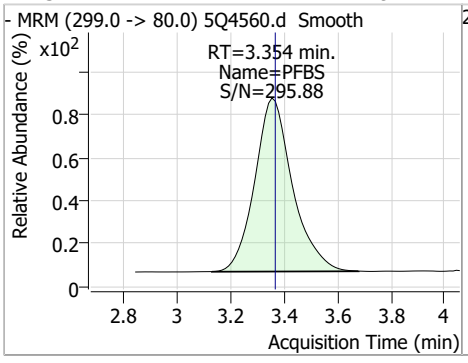
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.82	3.36	0.00	6782				

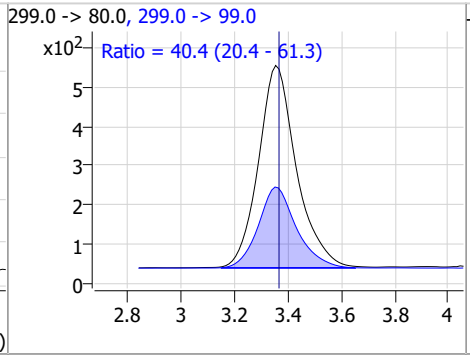


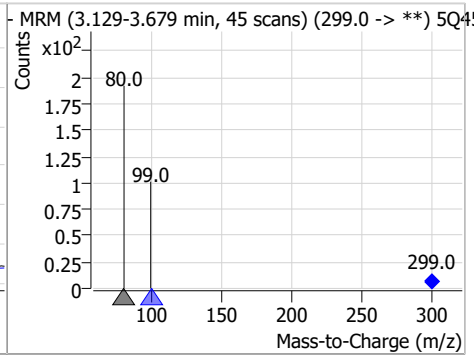




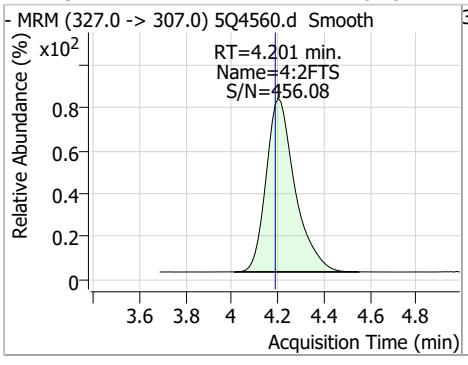
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.91	3.35	-0.01	4998	299.0 -> 99.0	40.4	20.4	61.3

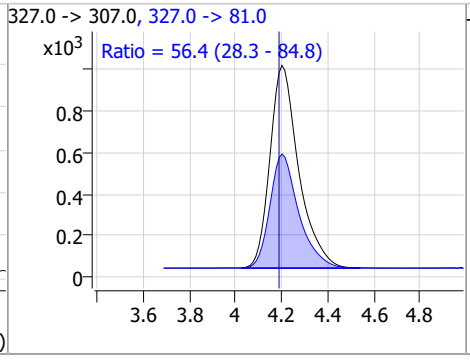


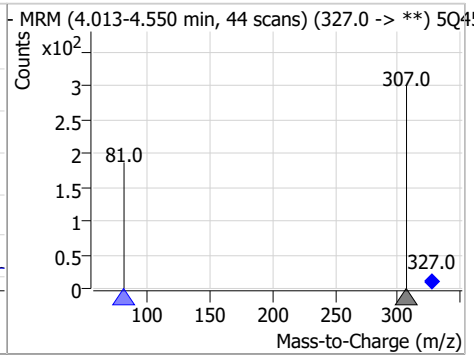




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.23	4.20	0.00	8455	327.0 -> 81.0	56.4	28.3	84.8

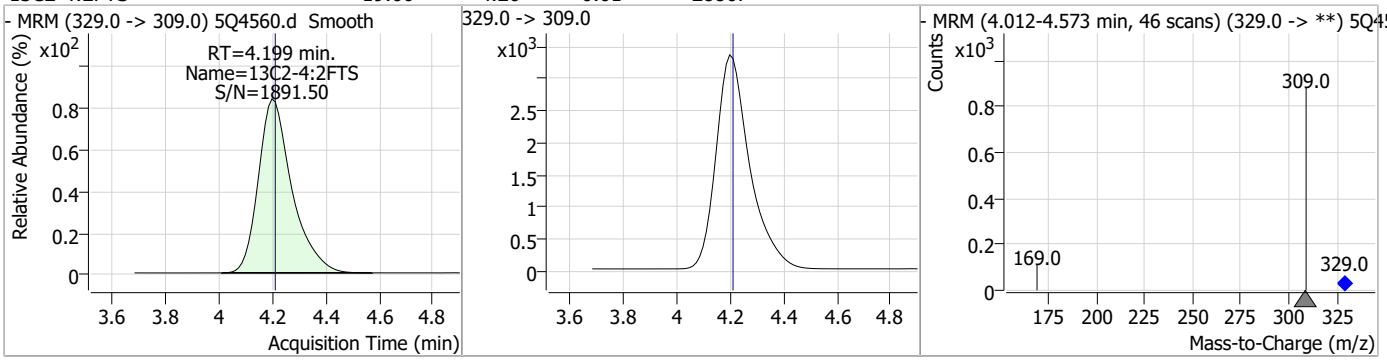




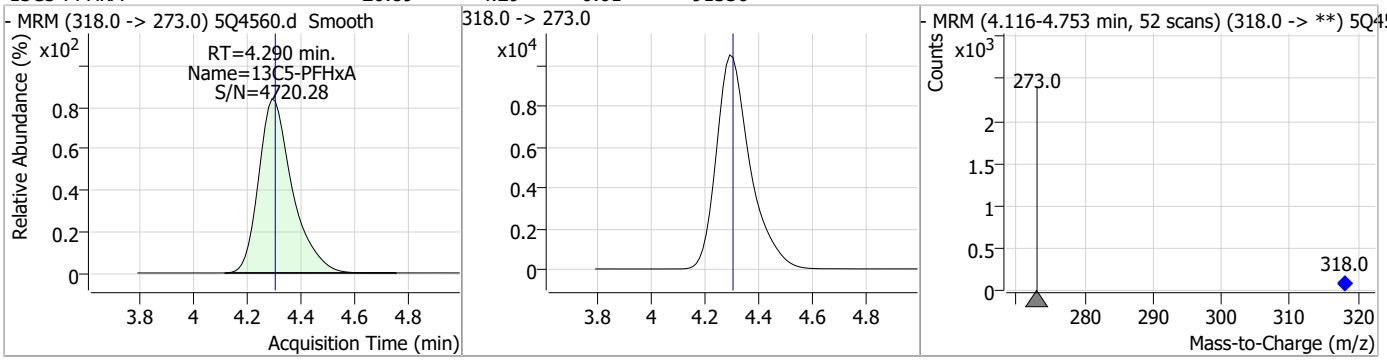


Perfluorinated Compounds by LC/MS/MS

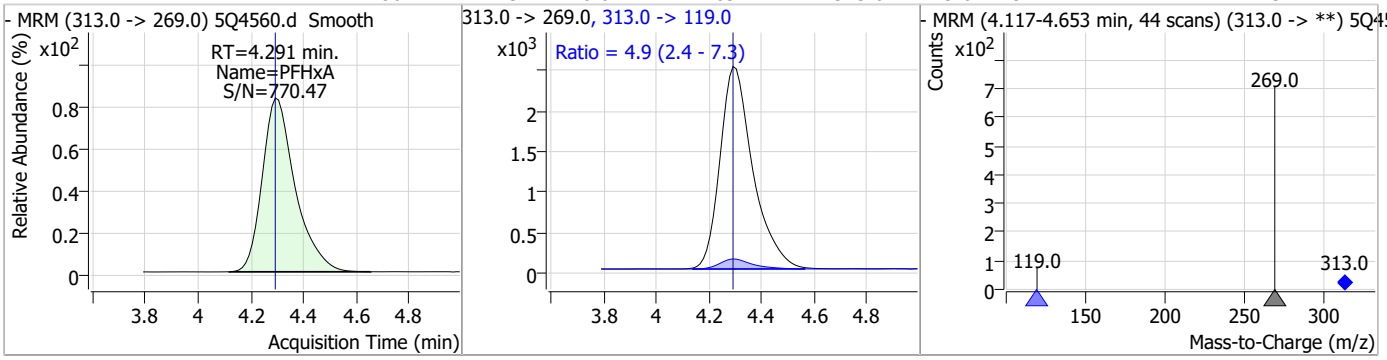
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.66	4.20	-0.01	28867				



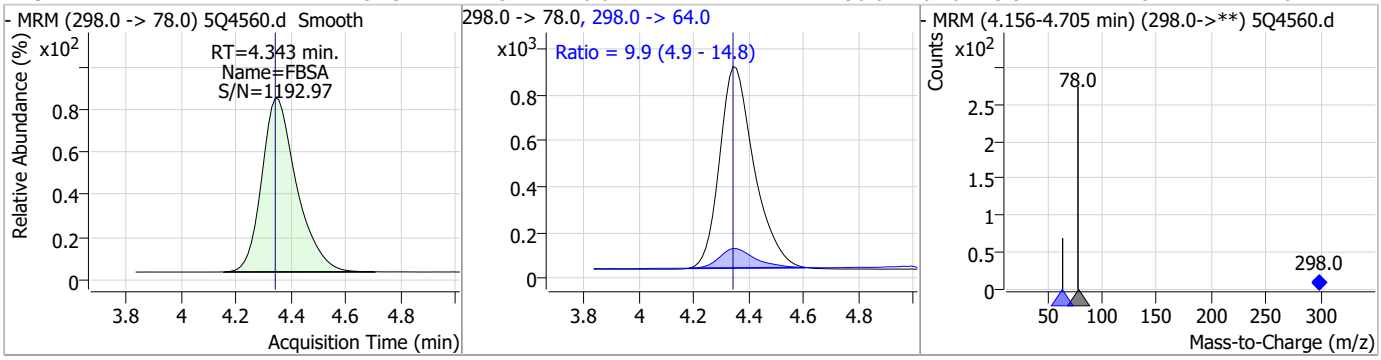
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.89	4.29	-0.01	91336				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.86	4.29	-0.01	21694	313.0 -> 119.0	4.9	2.4	7.3

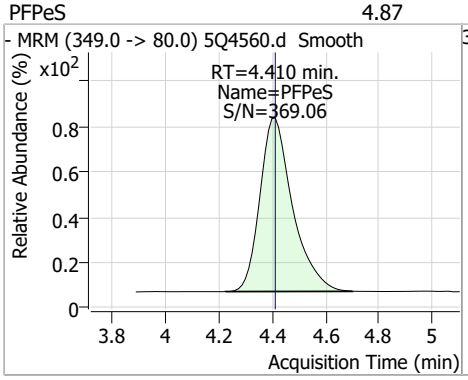


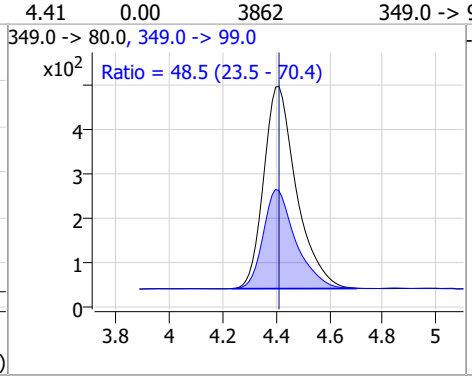
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	5.13	4.34	-0.01	7774	298.0 -> 64.0	9.9	4.9	14.8

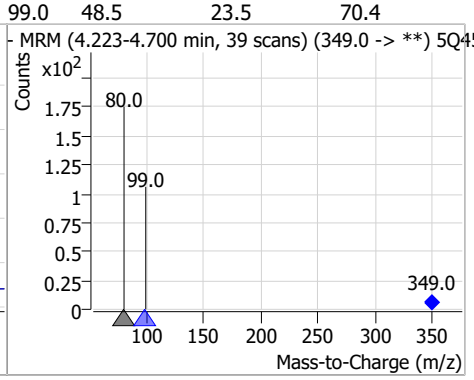


Perfluorinated Compounds by LC/MS/MS

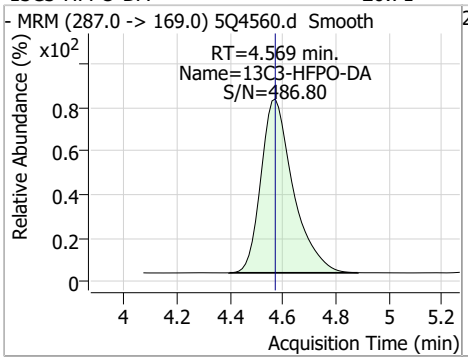
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.87	4.41	0.00	3862	349.0 -> 99.0	48.5	23.5	70.4

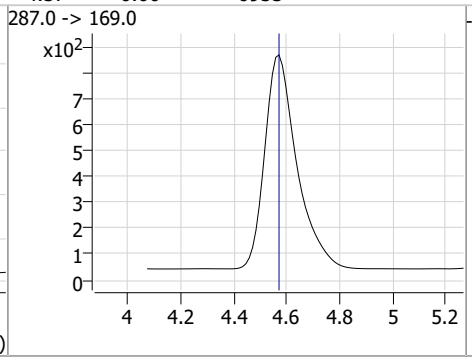


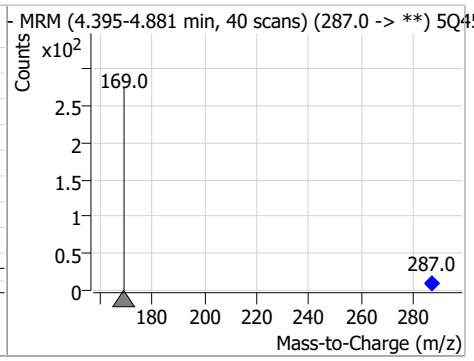




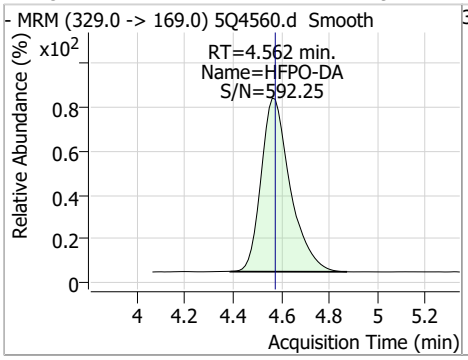
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.71	4.57	0.00	6953				

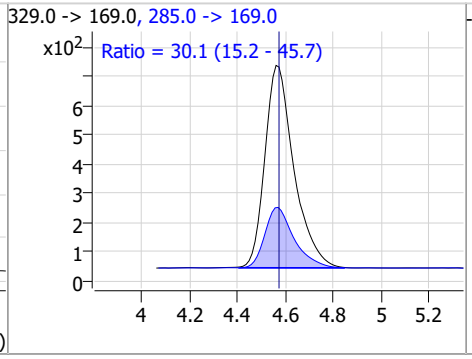


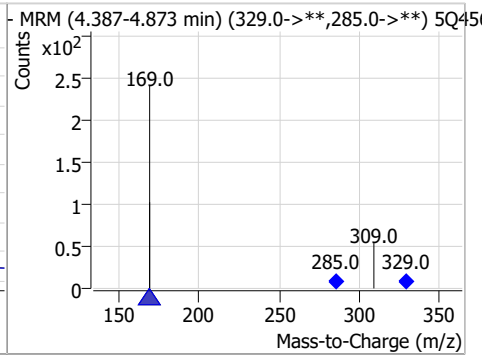




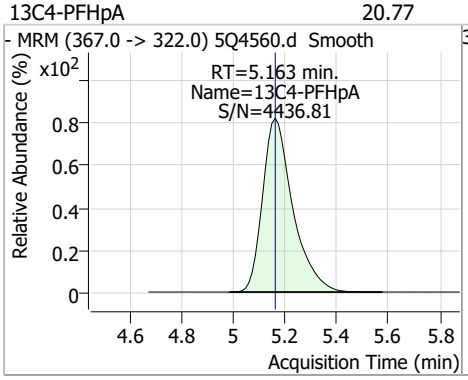
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.97	4.56	-0.01	5831	285.0 -> 169.0	30.1	15.2	45.7

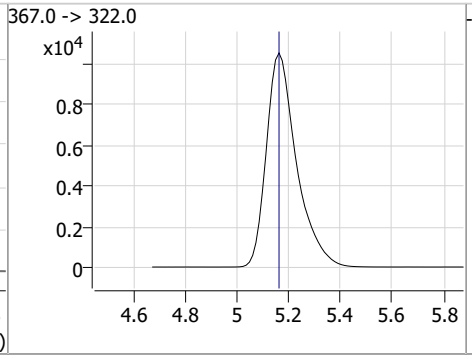


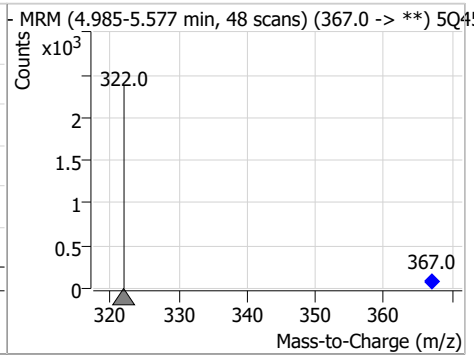




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.77	5.16	0.00	84808				

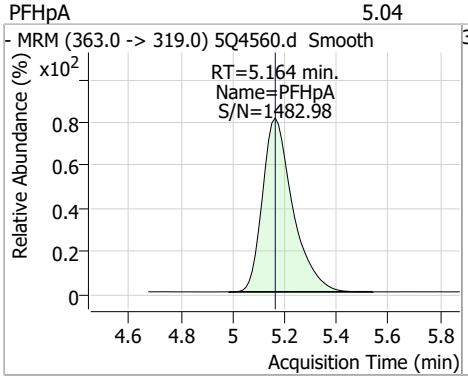


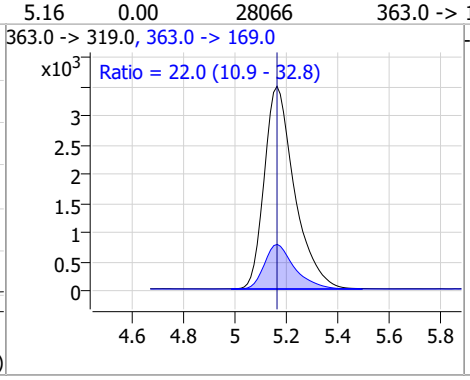


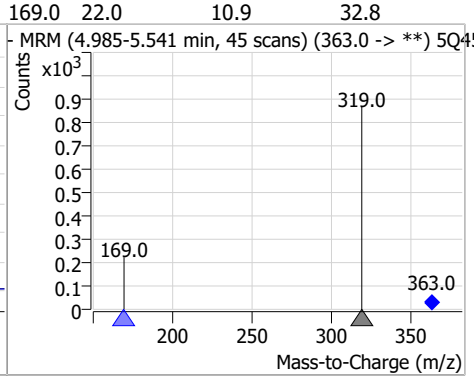


Perfluorinated Compounds by LC/MS/MS

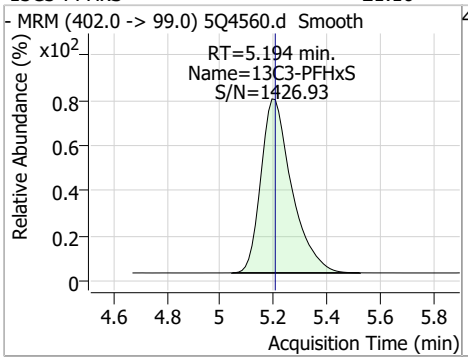
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	5.04	5.16	0.00	28066	363.0 -> 169.0	22.0	10.9	32.8

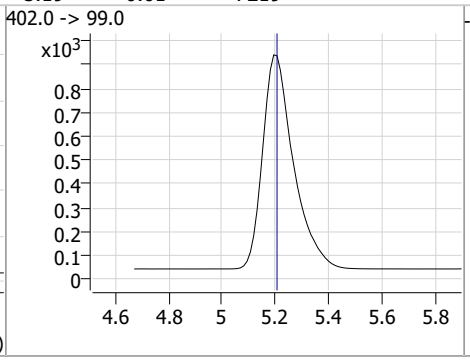


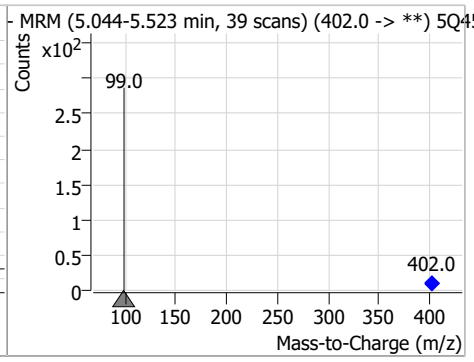




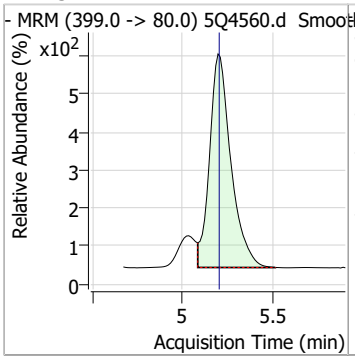
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.16	5.19	-0.01	7219				

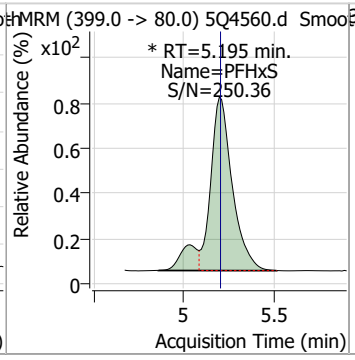


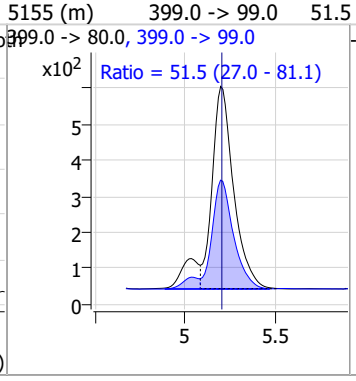


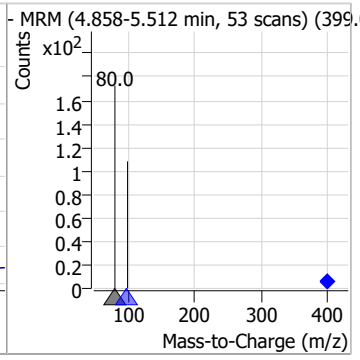


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.81	5.20	-0.01	5155 (m)	399.0 -> 99.0	51.5	27.0	81.1

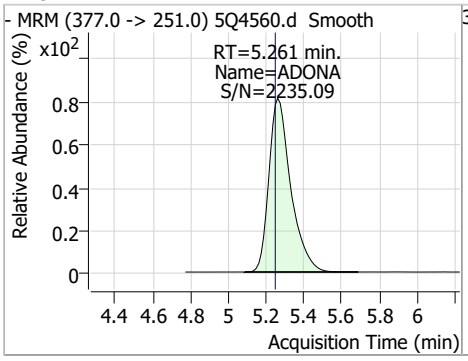


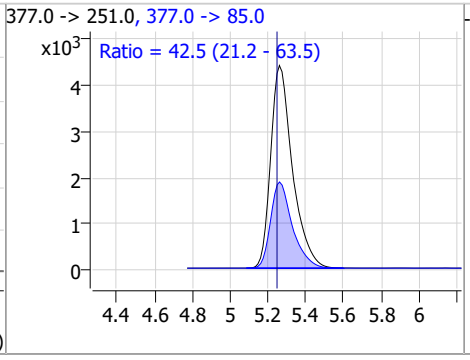


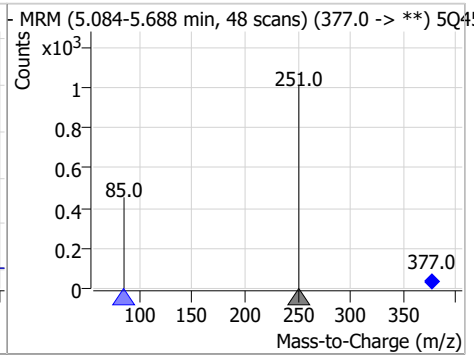




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.74	5.26	0.00	35200	377.0 -> 85.0	42.5	21.2	63.5

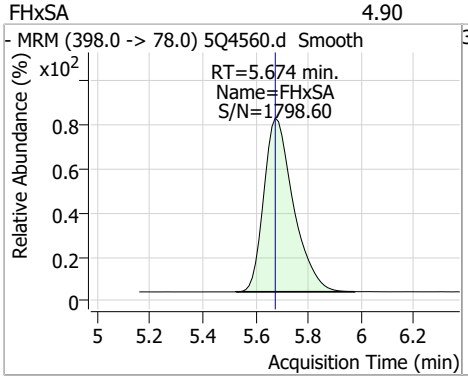


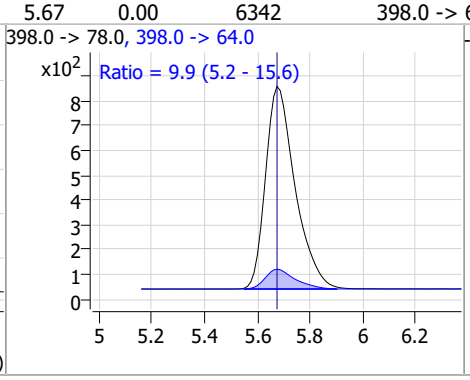


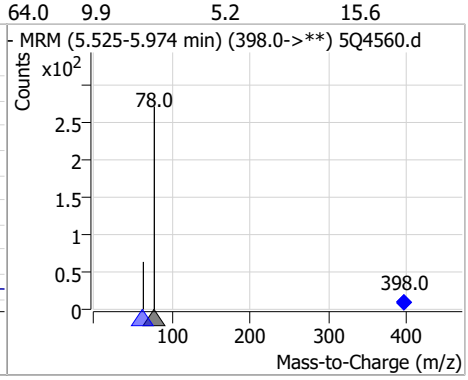


Perfluorinated Compounds by LC/MS/MS

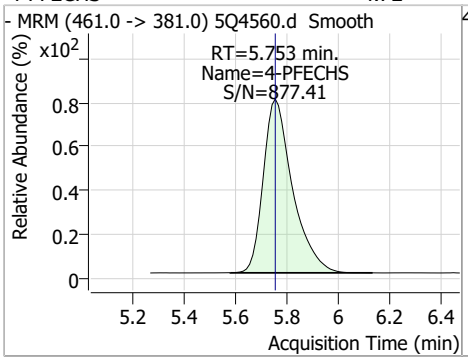
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.90	5.67	0.00	6342	398.0 -> 64.0	9.9	5.2	15.6

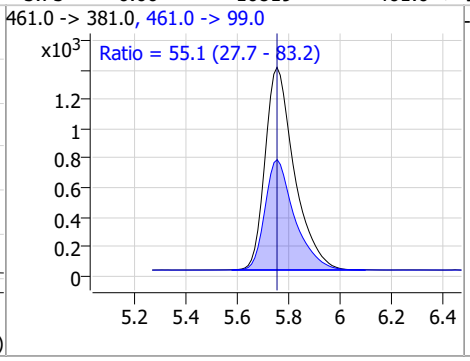


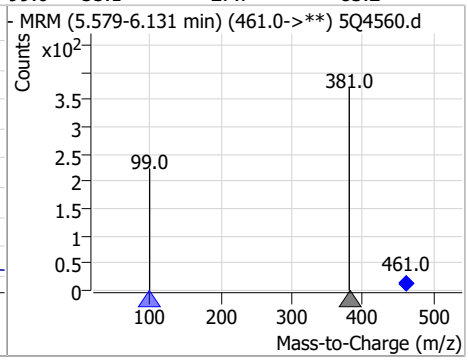




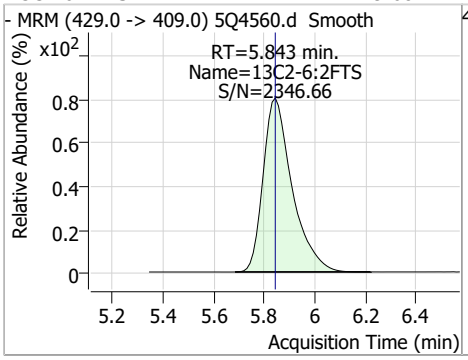
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.72	5.75	0.00	10819	461.0 -> 99.0	55.1	27.7	83.2

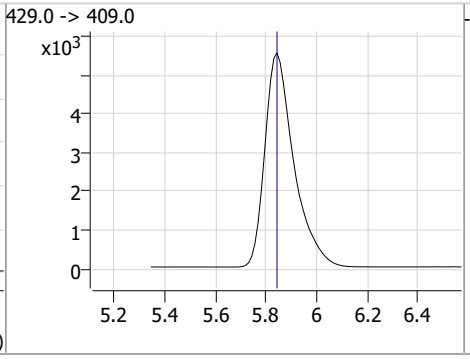


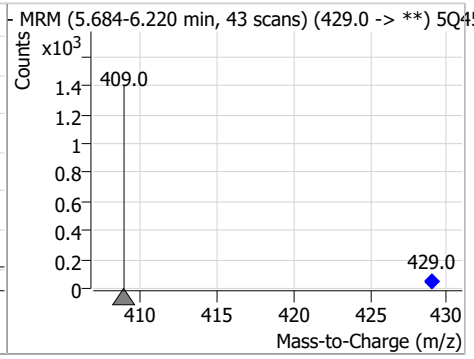




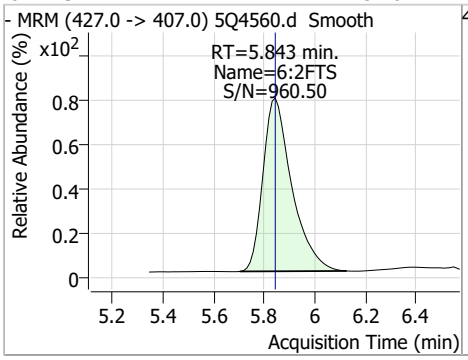
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.68	5.84	0.00	43997				

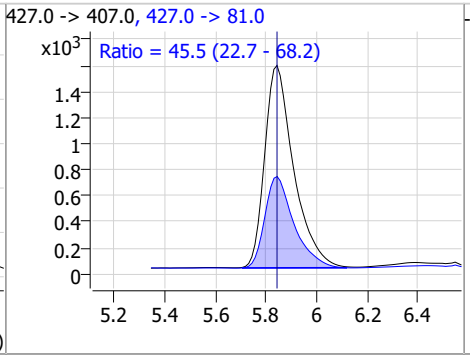


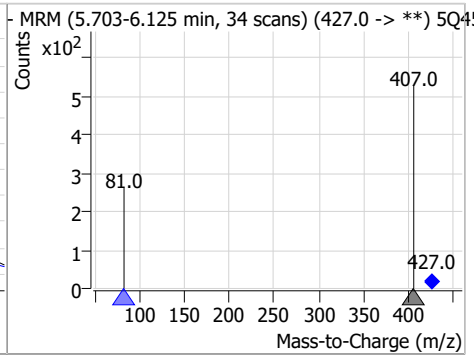




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.26	5.84	0.00	12276	427.0 -> 81.0	45.5	22.7	68.2

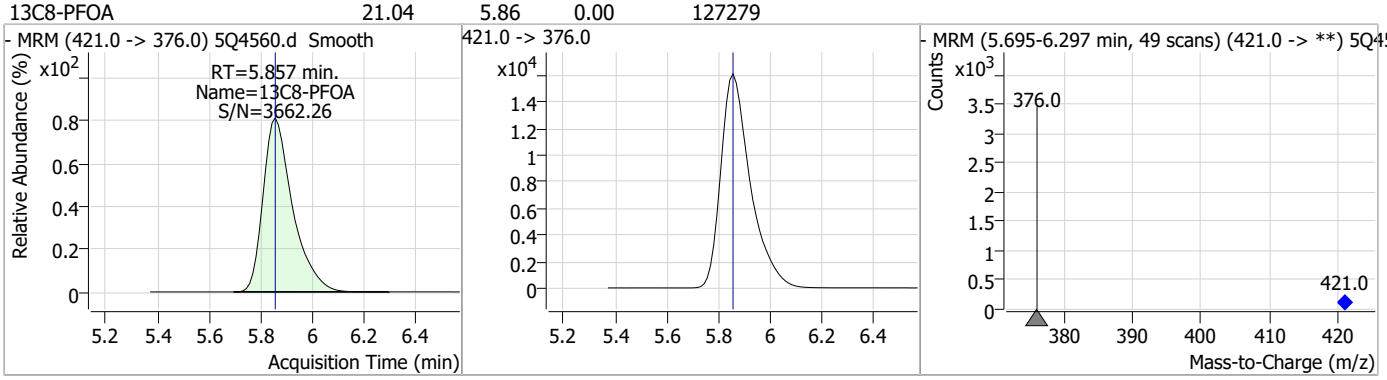




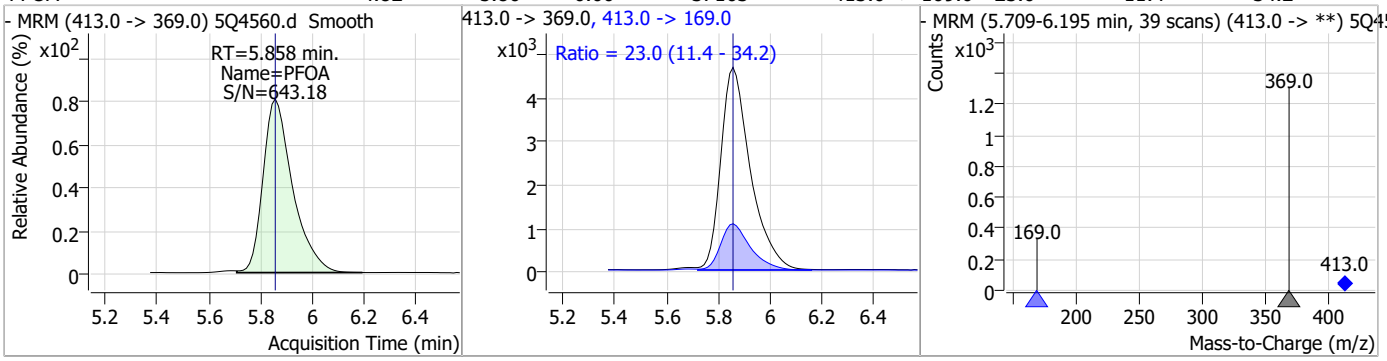


Perfluorinated Compounds by LC/MS/MS

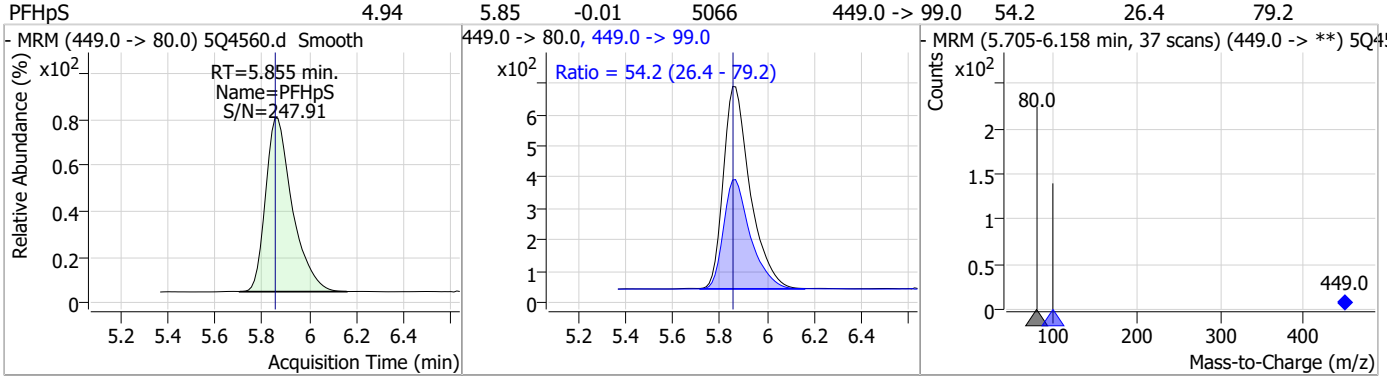
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.04	5.86	0.00	127279				



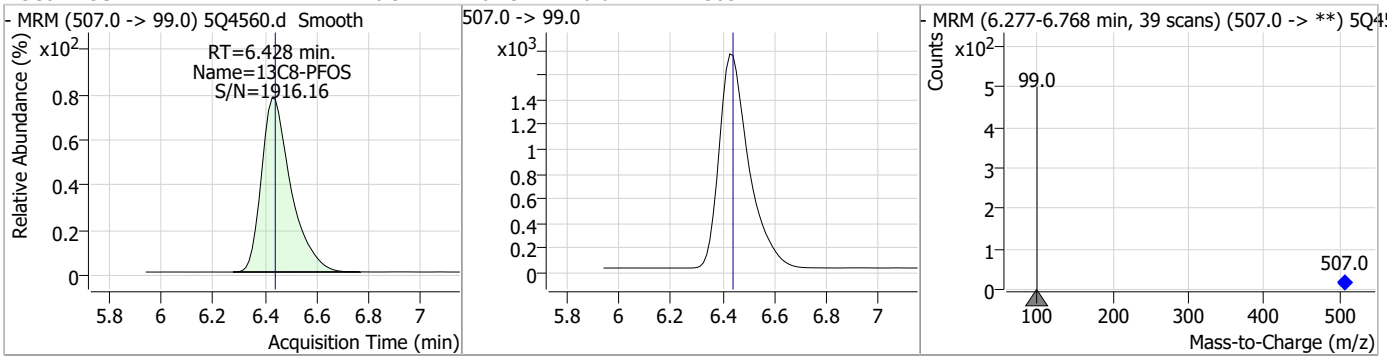
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.82	5.86	0.00	37163	413.0 -> 169.0	23.0	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.94	5.85	-0.01	5066	449.0 -> 99.0	54.2	26.4	79.2

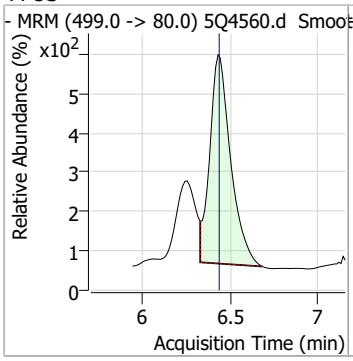


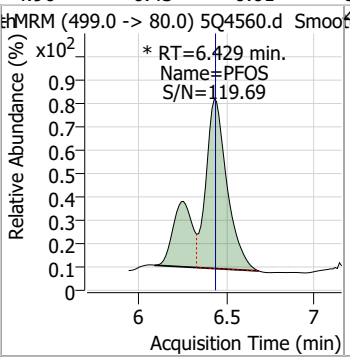
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.91	6.43	-0.01	13652				

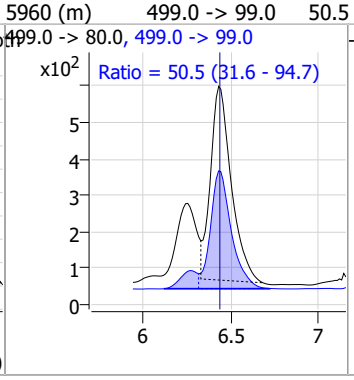


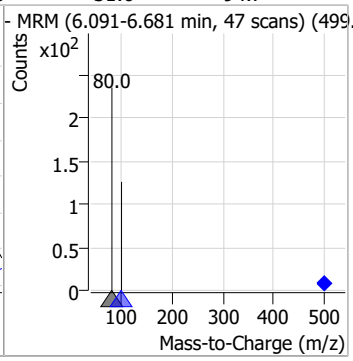
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.96	6.43	-0.01	5960 (m)	499.0 -> 99.0	50.5	31.6	94.7

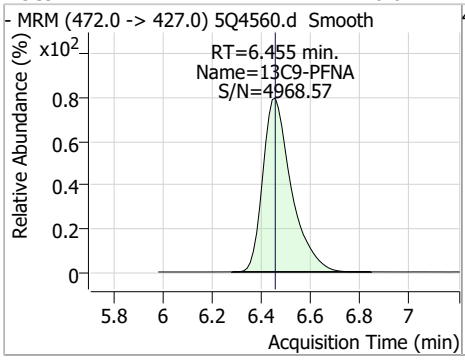


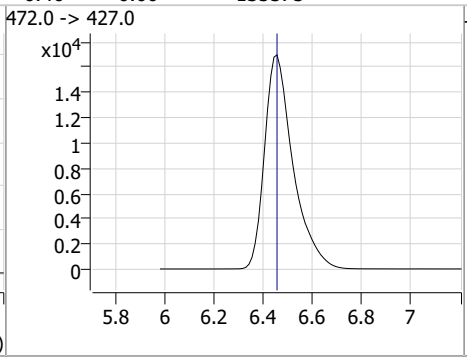


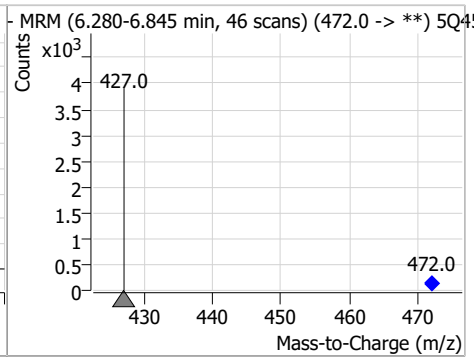




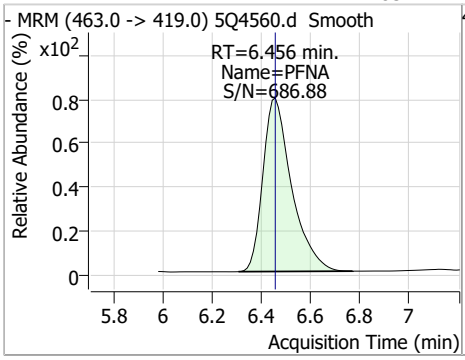
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.64	6.46	0.00	135575				

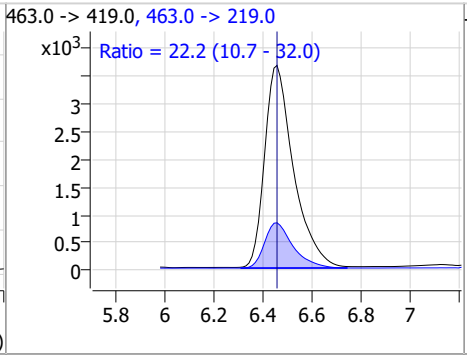


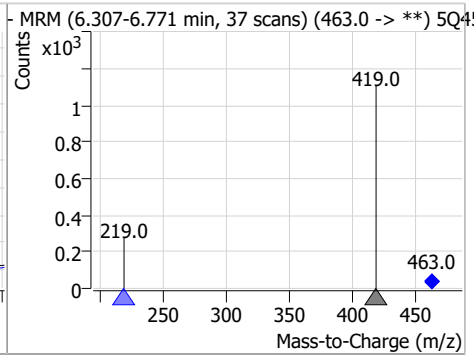




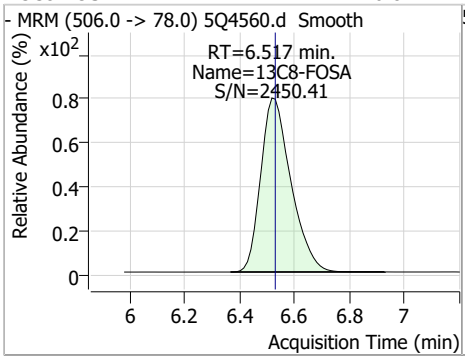
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.83	6.46	0.00	29366	463.0 -> 219.0	22.2	10.7	32.0

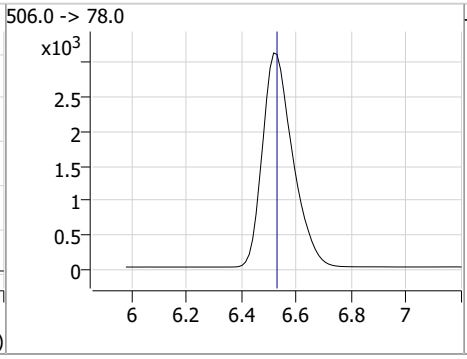


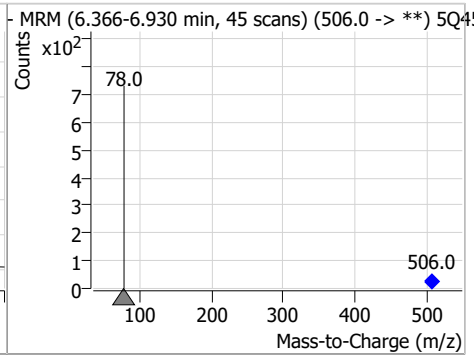




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.84	6.52	-0.01	23652				

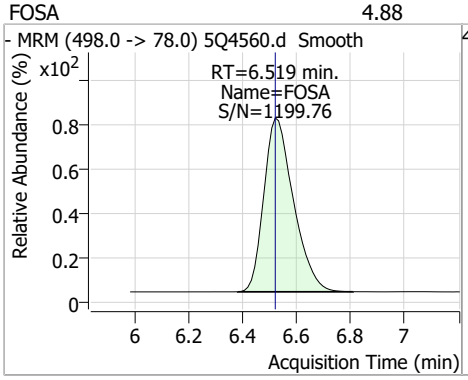


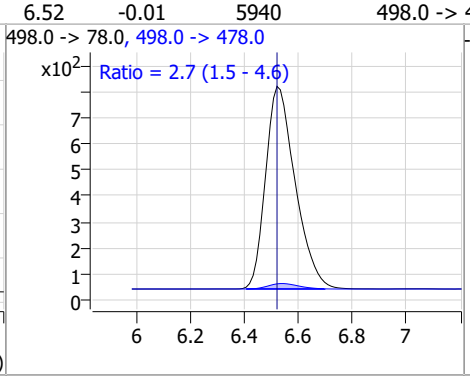


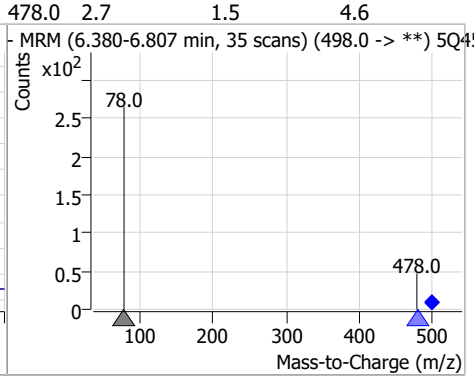


Perfluorinated Compounds by LC/MS/MS

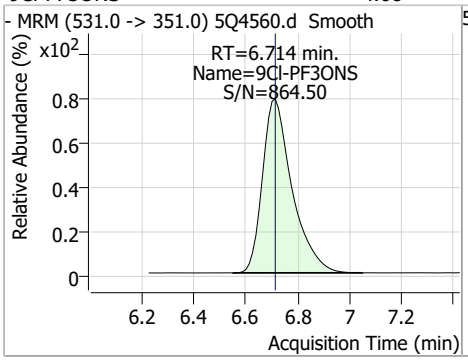
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	4.88	6.52	-0.01	5940	498.0 -> 478.0	2.7	1.5	4.6

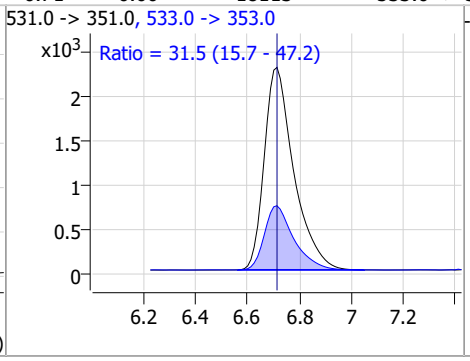


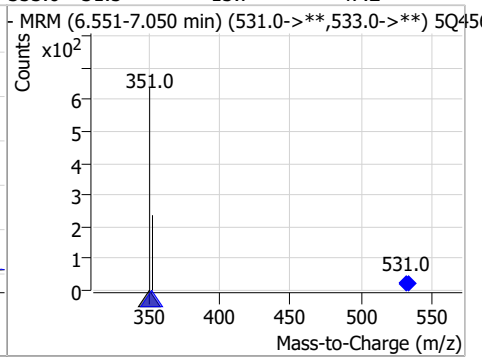




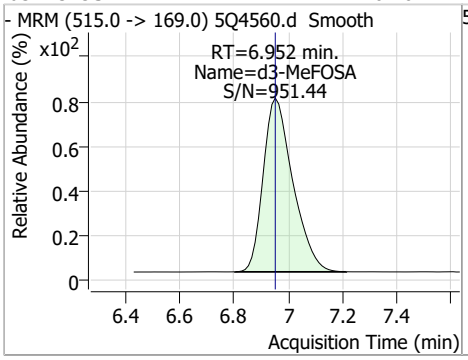
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.68	6.71	0.00	18113	533.0 -> 353.0	31.5	15.7	47.2

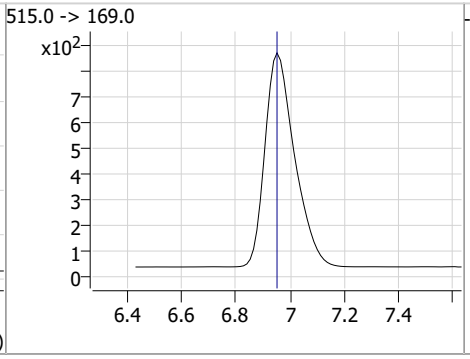


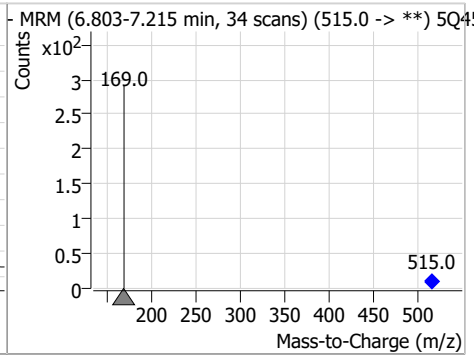




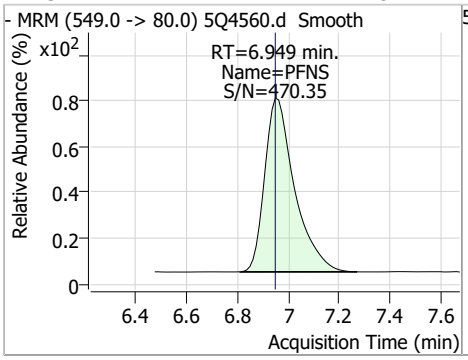
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.76	6.95	0.00	6320				

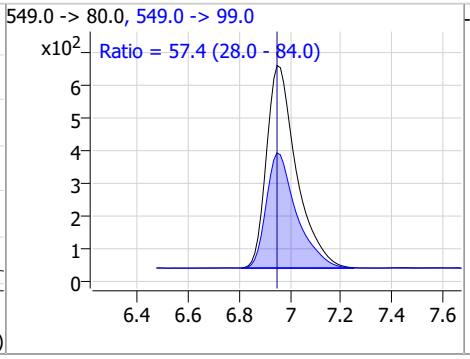


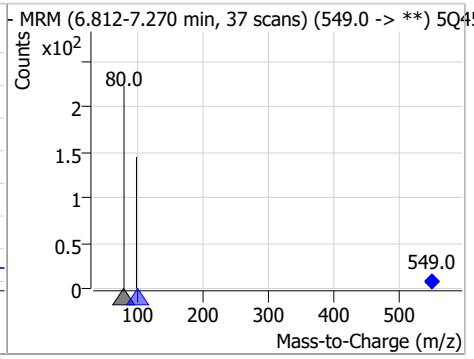




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.97	6.95	-0.01	5013	549.0 -> 99.0	57.4	28.0	84.0

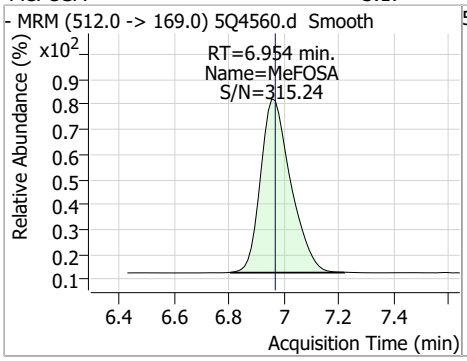


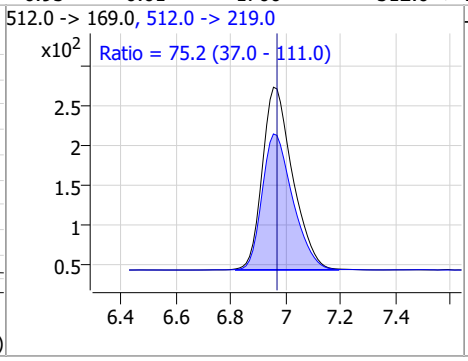


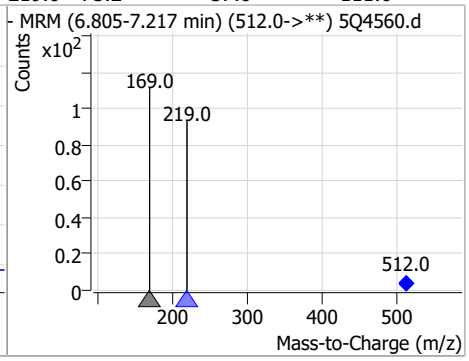


Perfluorinated Compounds by LC/MS/MS

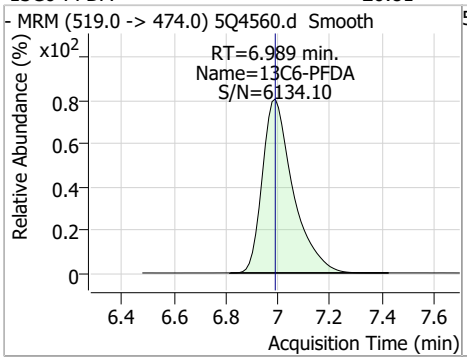
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.17	6.95	-0.01	1760	512.0 -> 219.0	75.2	37.0	111.0

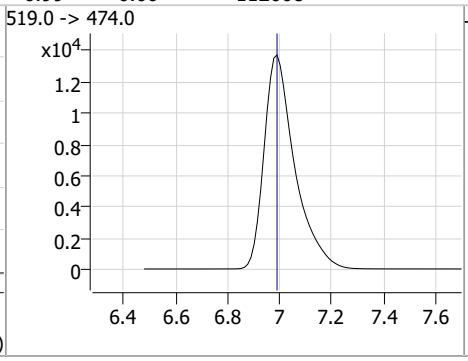


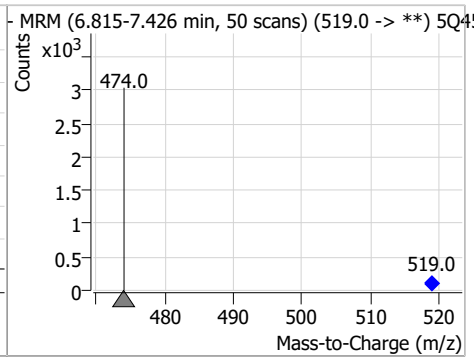




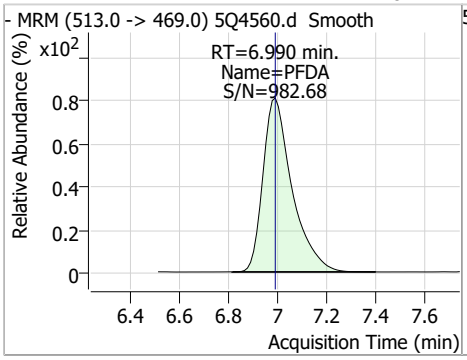
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.81	6.99	0.00	112008				

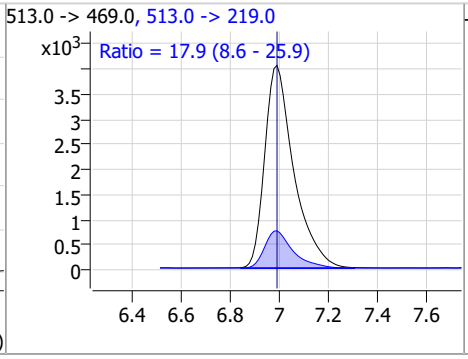


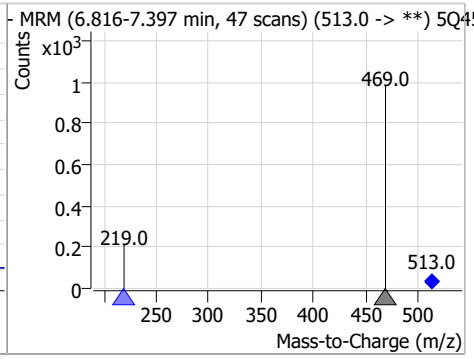




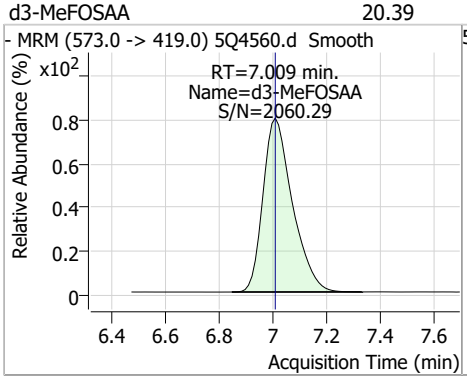
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.78	6.99	0.00	32883	513.0 -> 219.0	17.9	8.6	25.9

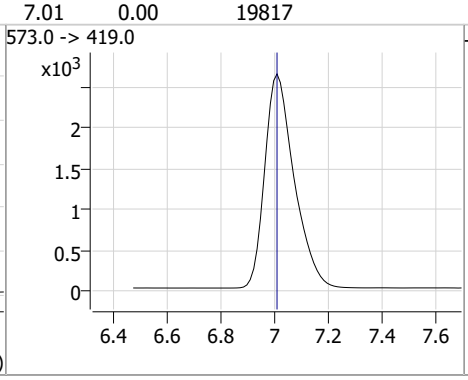


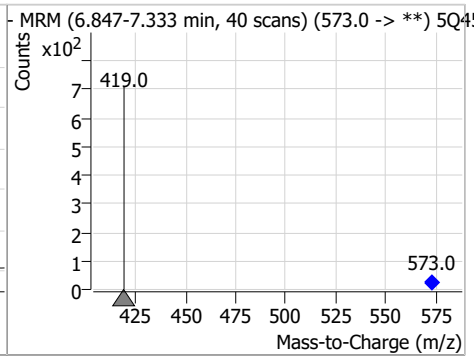




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.39	7.01	0.00	19817				

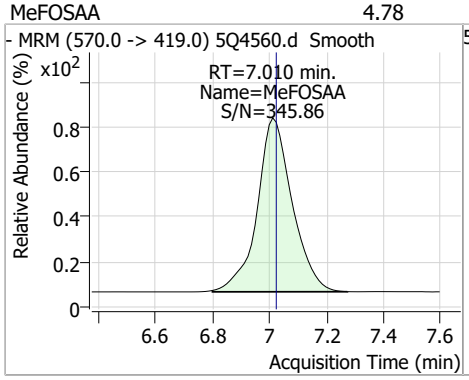


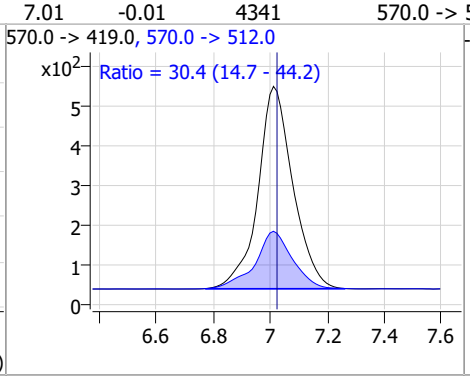


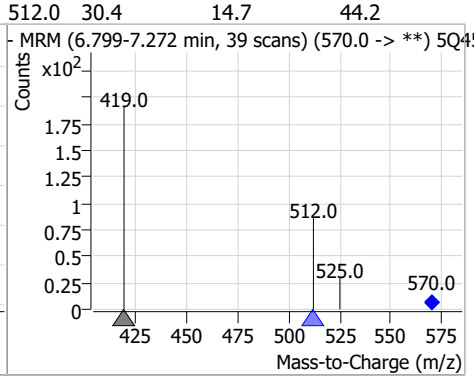


Perfluorinated Compounds by LC/MS/MS

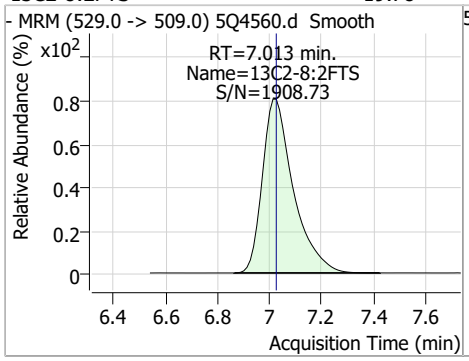
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	4.78	7.01	-0.01	4341	570.0 -> 512.0	30.4	14.7	44.2

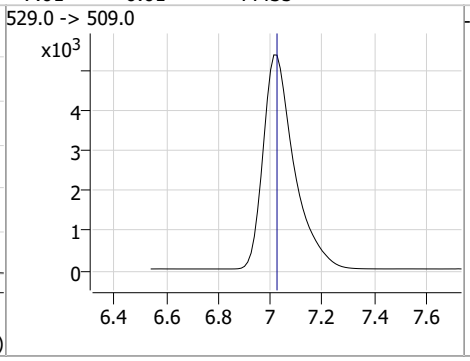


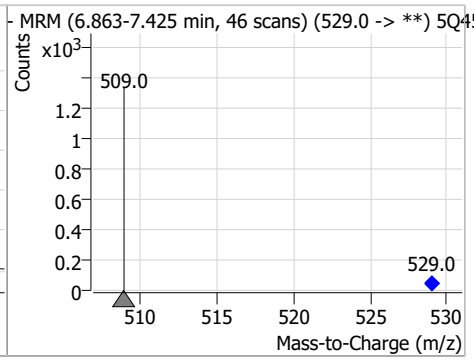




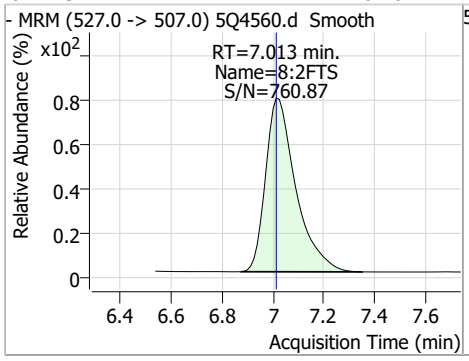
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.78	7.01	-0.01	44435				

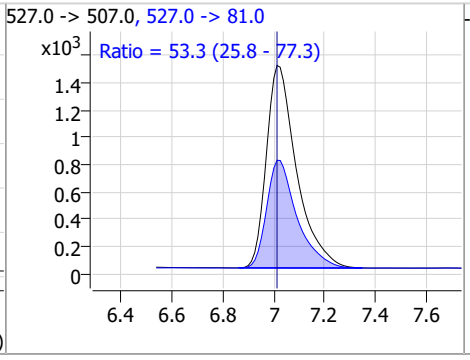


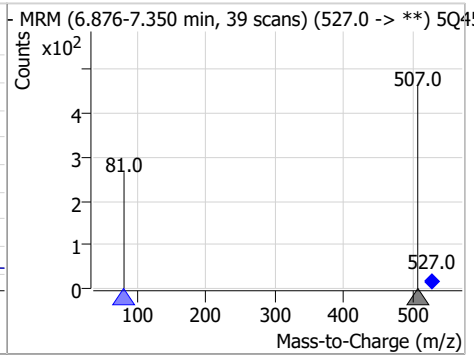




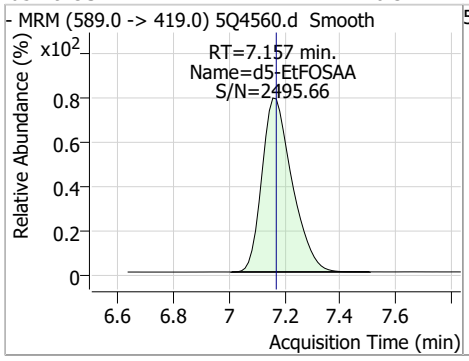
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.16	7.01	-0.01	12210	527.0 -> 81.0	53.3	25.8	77.3

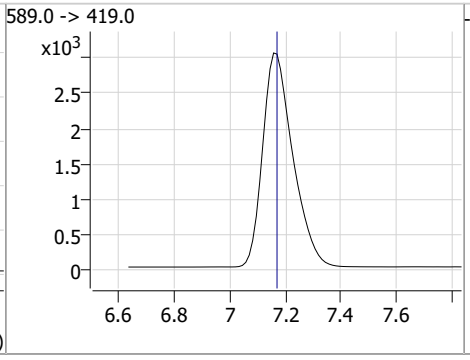


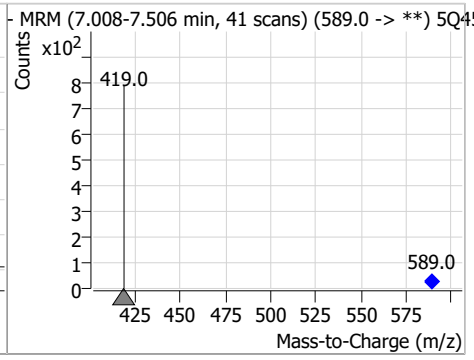




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.34	7.16	-0.01	22803				

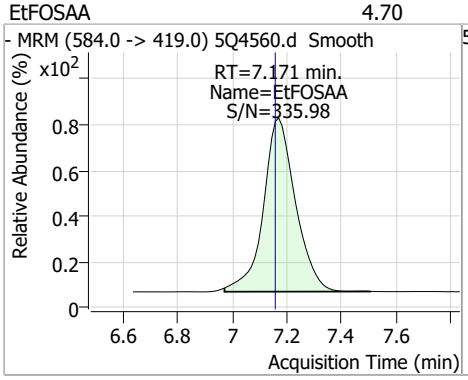


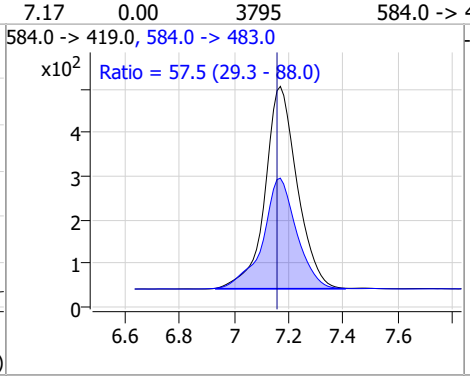


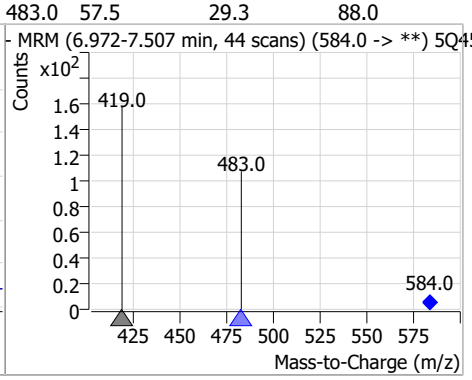


Perfluorinated Compounds by LC/MS/MS

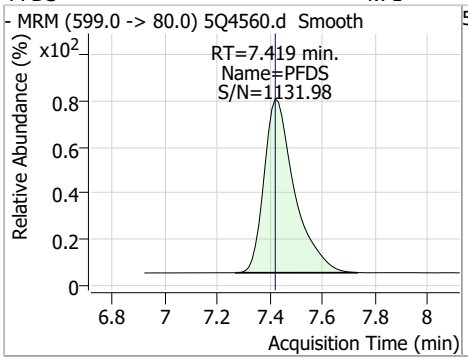
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.70	7.17	0.00	3795	584.0 -> 483.0	57.5	29.3	88.0

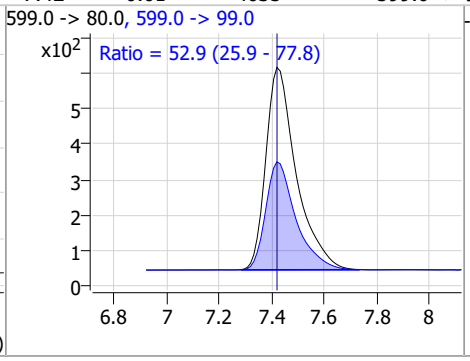


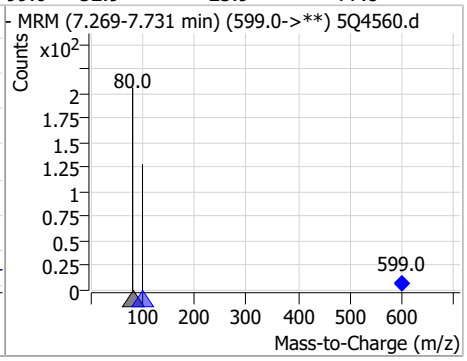




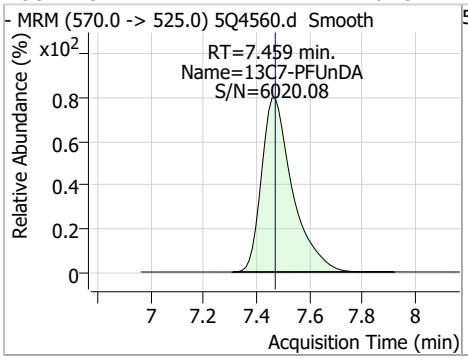
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.71	7.42	-0.01	4635	599.0 -> 99.0	52.9	25.9	77.8

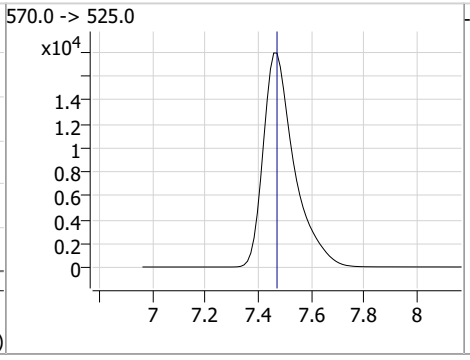


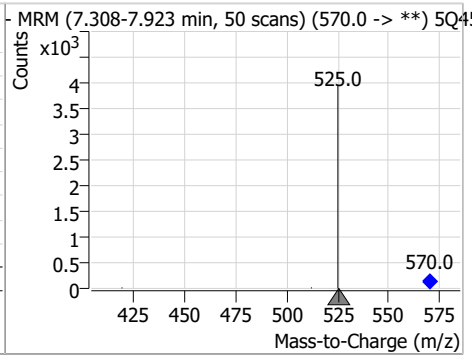




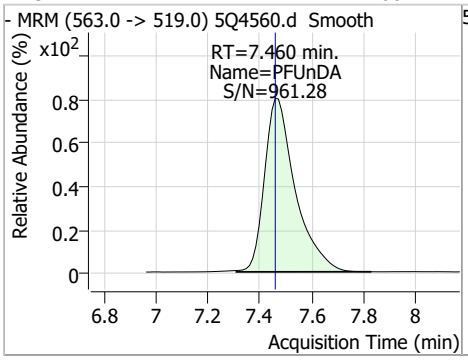
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.73	7.46	-0.01	146002				

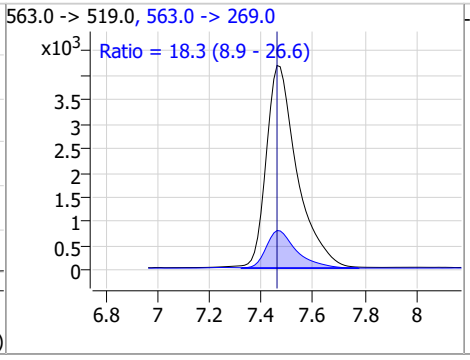


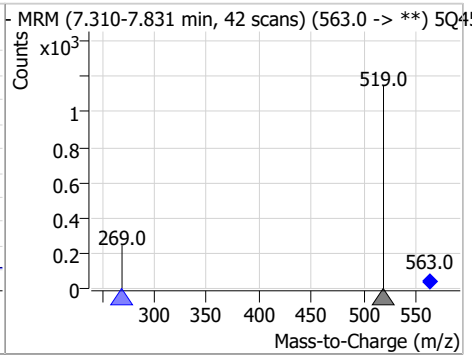




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.68	7.46	-0.01	34163	563.0 -> 269.0	18.3	8.9	26.6

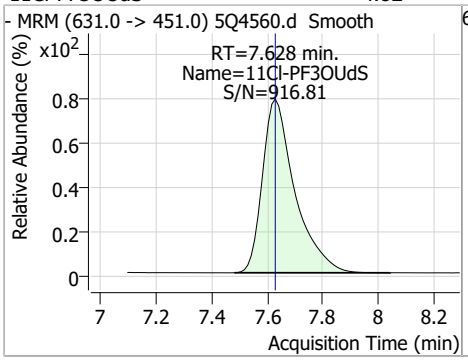


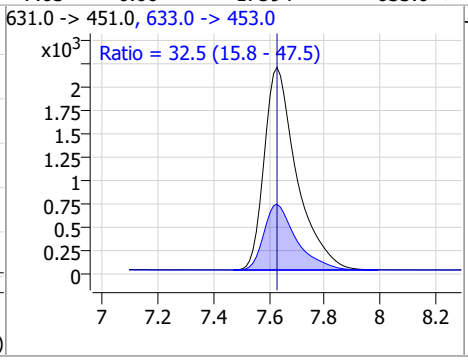


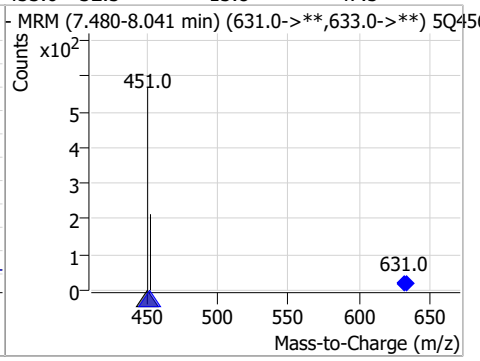


Perfluorinated Compounds by LC/MS/MS

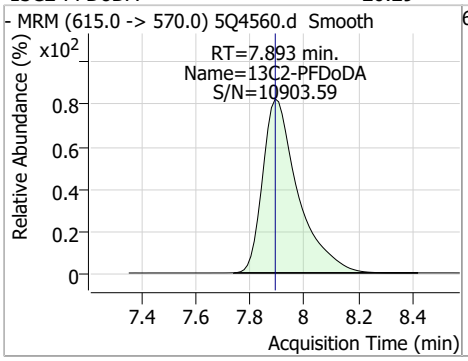
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.82	7.63	0.00	17594	633.0 -> 453.0	32.5	15.8	47.5

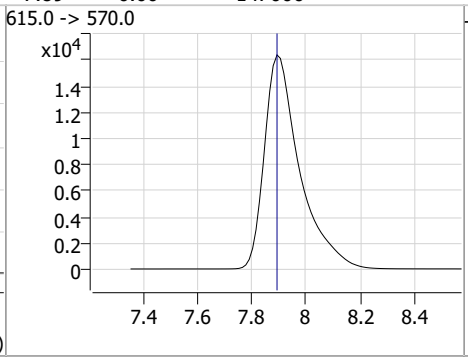


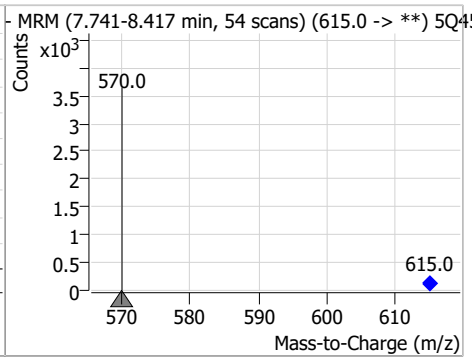




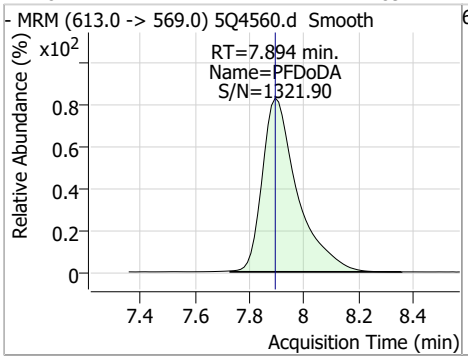
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.29	7.89	0.00	147066				

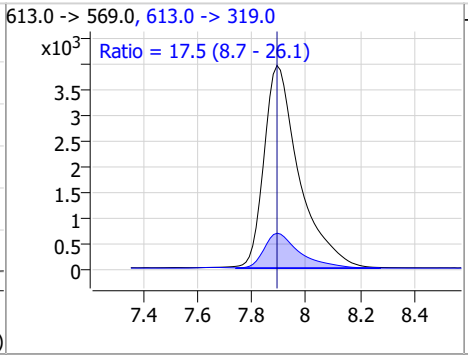


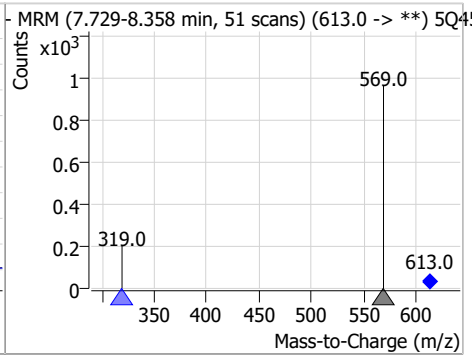




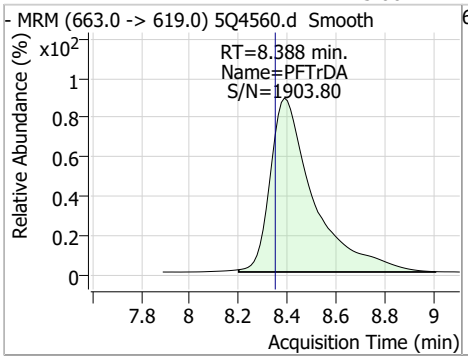
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.89	7.89	0.00	35307	613.0 -> 319.0	17.5	8.7	26.1

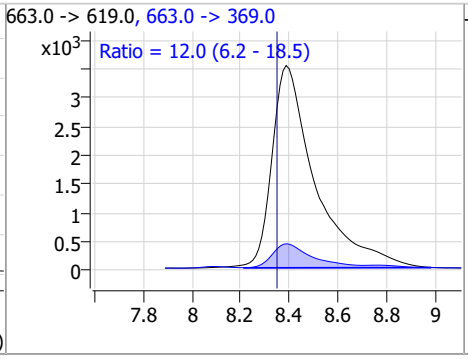


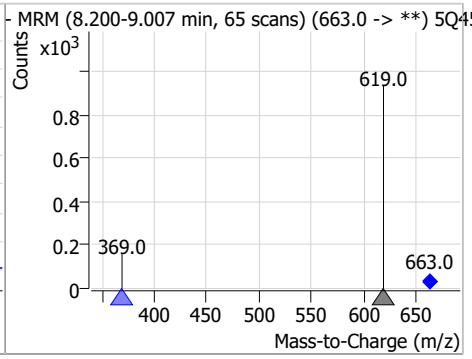




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	5.06	8.39	0.04	43654	663.0 -> 369.0	12.0	6.2	18.5

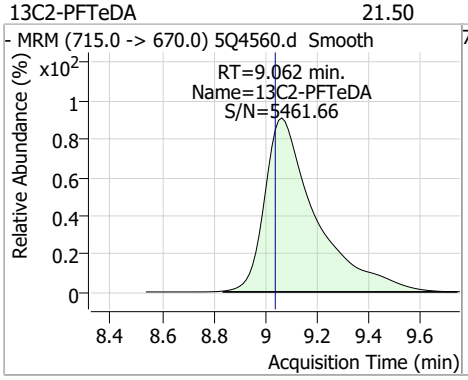


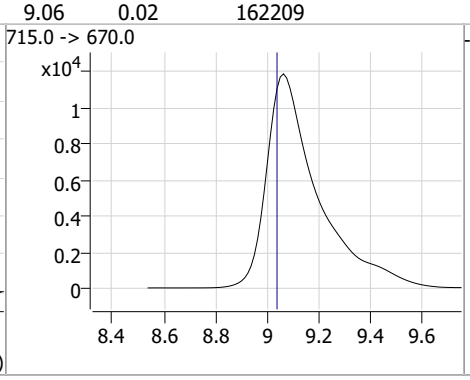


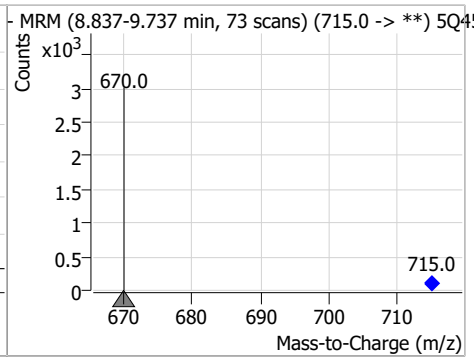


Perfluorinated Compounds by LC/MS/MS

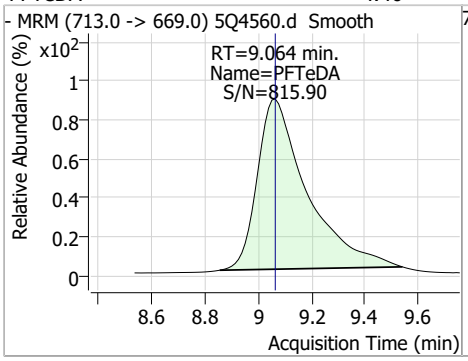
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.50	9.06	0.02	162209				

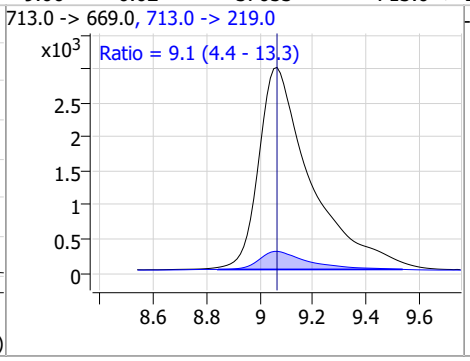


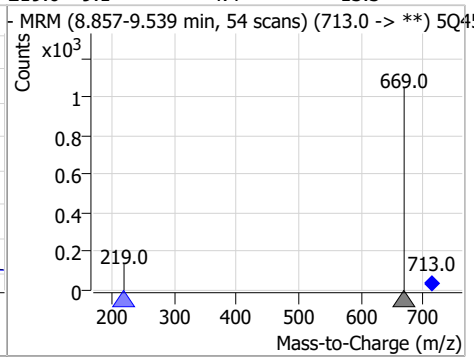




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.46	9.06	0.02	37653	713.0 -> 219.0	9.1	4.4	13.3







7.7.36

7

Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4560.D
Injection Time: 09/14/22 11:26
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4561.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:42:19 AM
Sample Name : ic71-10
Vial : P1-A6
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

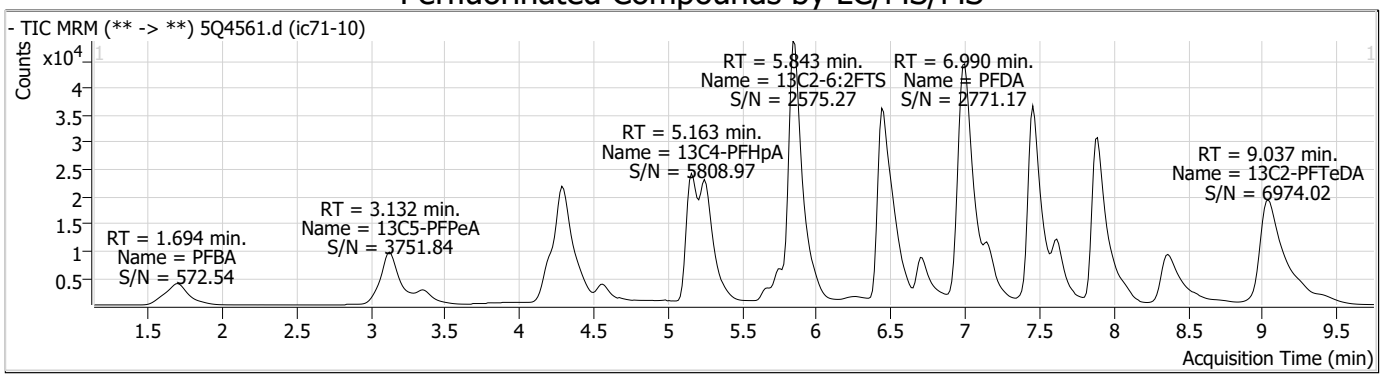
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35489	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57364	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	87297	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	80740	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	119405	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	129227	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	107351	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	141179	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	141708	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	153914	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	22882	20.00	µg/L	-0.012
M3-PFBS	3.362	302.0 -> 99.0	6423	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6808	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12881	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28331	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	42362	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	42743	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	19249	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6536	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6210	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22057	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	28331	19.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	42362	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-8:2FTS	7.025	529.0 -> 509.0	42743	19.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-PFDoDA	7.893	615.0 -> 570.0	141708	19.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFTeDA	9.037	715.0 -> 670.0	153914	20.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C3-PFBS	3.362	302.0 -> 99.0	6423	19.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	6808	19.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C4-PFBA	1.700	217.0 -> 172.0	35489	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C4-PFHpA	5.163	367.0 -> 322.0	80740	19.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C5-PFHxA	4.303	318.0 -> 273.0	87297	19.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFPeA	3.132	268.0 -> 223.0	57364	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C6-PFDA	6.989	519.0 -> 474.0	107351	19.94	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

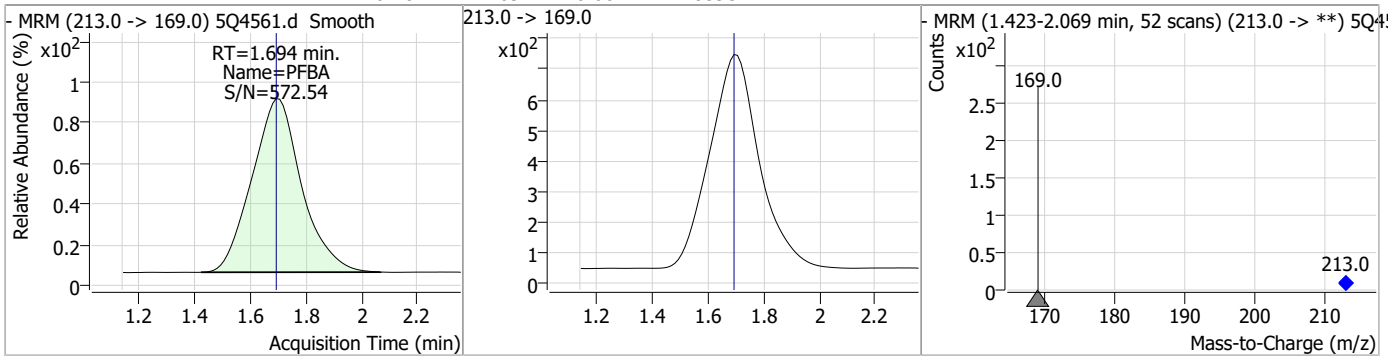
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
13C7-PFUnDA	7.471	570.0 -> 525.0	141179	20.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C8-FOSA	6.517	506.0 -> 78.0	22882	20.17	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
13C8-PFOA	5.857	421.0 -> 376.0	119405	19.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-PFOS	6.440	507.0 -> 99.0	12881	19.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
13C9-PFNA	6.455	472.0 -> 427.0	129227	19.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19249	19.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6536	19.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	6210	20.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22057	19.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	16772	10.57	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	23988	10.68	µg/L		100
8:2FTS	7.026	527.0 -> 507.0	24337	10.68	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	7849	10.06	µg/L		99
FOSA	6.519	498.0 -> 78.0	11797	10.02	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	8916	10.11	µg/L		100
PFBA	1.694	213.0 -> 169.0	8595	10.28	µg/L		100
PFBS	3.354	299.0 -> 80.0	9901	10.26	µg/L		100
PFDA	6.990	513.0 -> 469.0	65809	9.98	µg/L		98
PFDoDA	7.894	613.0 -> 569.0	71583	10.30	µg/L		100
PFDS	7.419	599.0 -> 80.0	9478	9.95	µg/L		99
PFHpA	5.164	363.0 -> 319.0	55029	10.37	µg/L		100
PFHpS	5.867	449.0 -> 80.0	10323	10.66	µg/L		99
PFHxA	4.304	313.0 -> 269.0	42679	10.01	µg/L		100
PFHxS	5.208	399.0 -> 80.0	10240	10.13	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	57713	9.97	µg/L		99
PFNS	6.962	549.0 -> 80.0	9950	10.46	µg/L		97
PFOA	5.858	413.0 -> 369.0	72754	10.05	µg/L		99
PFOS	6.442	499.0 -> 80.0	11737	10.35	µg/L	m	86
PFPeA	3.134	263.0 -> 219.0	28813	10.16	µg/L		100
PFPeS	4.410	349.0 -> 80.0	7588	10.11	µg/L		100
PFTeDA	9.039	713.0 -> 669.0	75144	9.38	µg/L		100
PFTrDA	8.363	663.0 -> 619.0	83905	10.10	µg/L		100
PFUnDA	7.472	563.0 -> 519.0	69241	9.82	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	35560	10.10	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	35637	9.61	µg/L		99
ADONA	5.261	377.0 -> 251.0	70105	10.02	µg/L		99
HFPO-DA	4.574	329.0 -> 169.0	11710	10.62	µg/L		98
MeFOSA	6.954	512.0 -> 169.0	3558	10.64	µg/L		97
4-PFECHS	5.753	461.0 -> 381.0	21337	9.93	µg/L		100
FBSA	4.356	298.0 -> 78.0	15137	10.46	µg/L		100
FHxSA	5.674	398.0 -> 78.0	12331	10.15	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

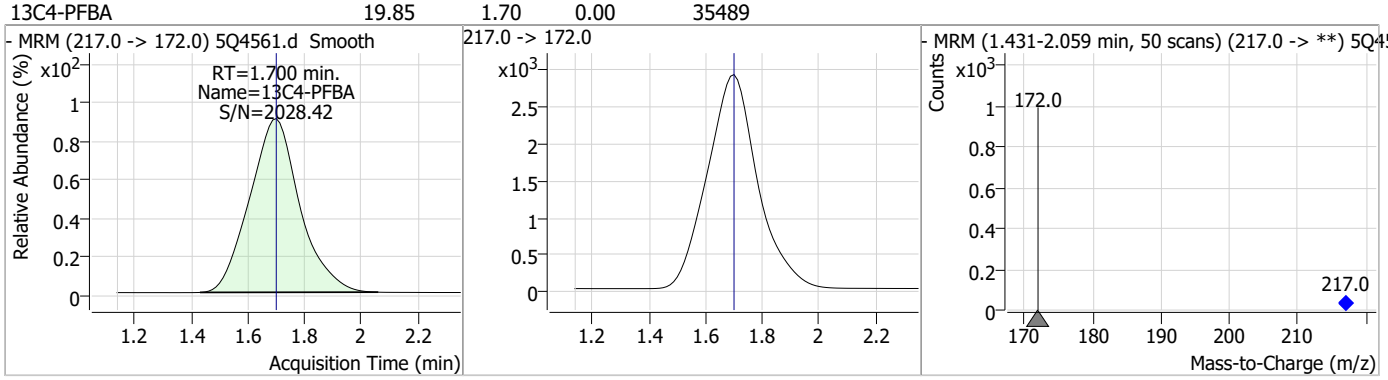
Perfluorinated Compounds by LC/MS/MS



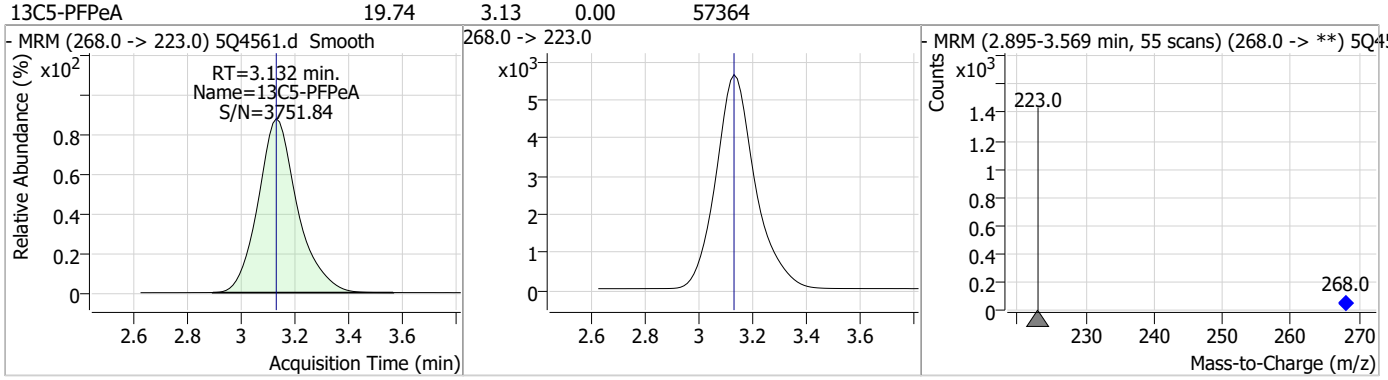
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.28	1.69	0.00	8595				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.85	1.70	0.00	35489				

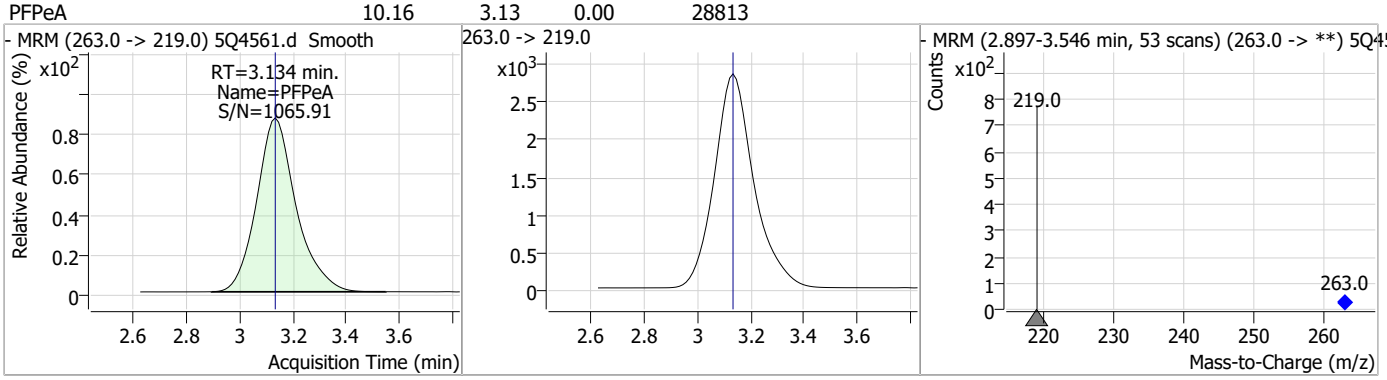


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.74	3.13	0.00	57364				

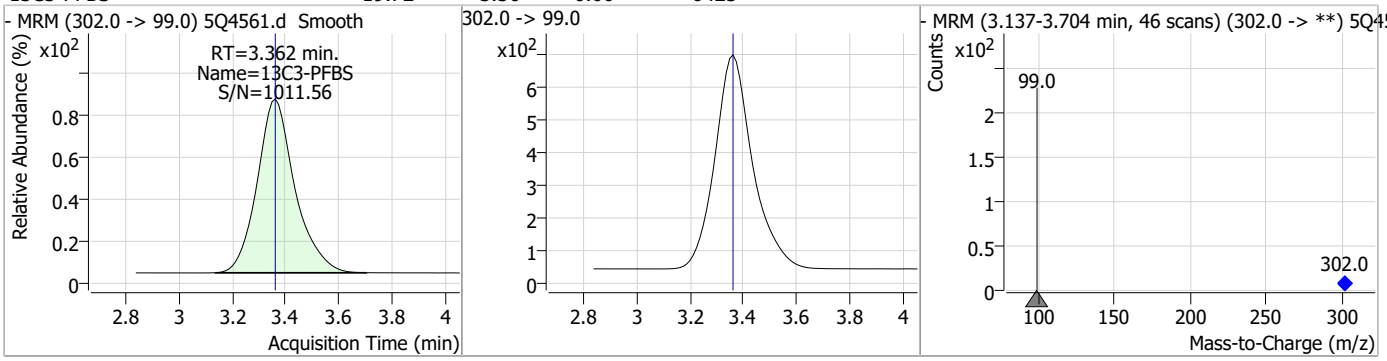


Perfluorinated Compounds by LC/MS/MS

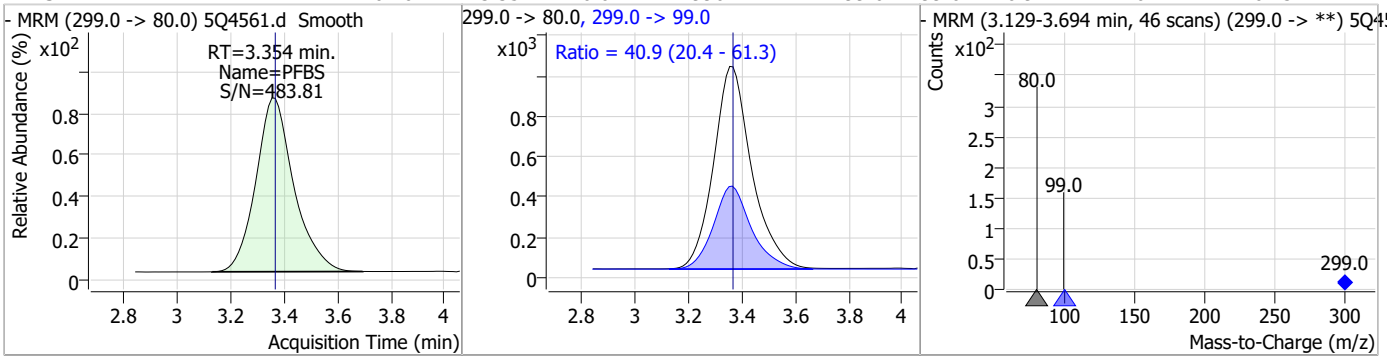
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.16	3.13	0.00	28813				



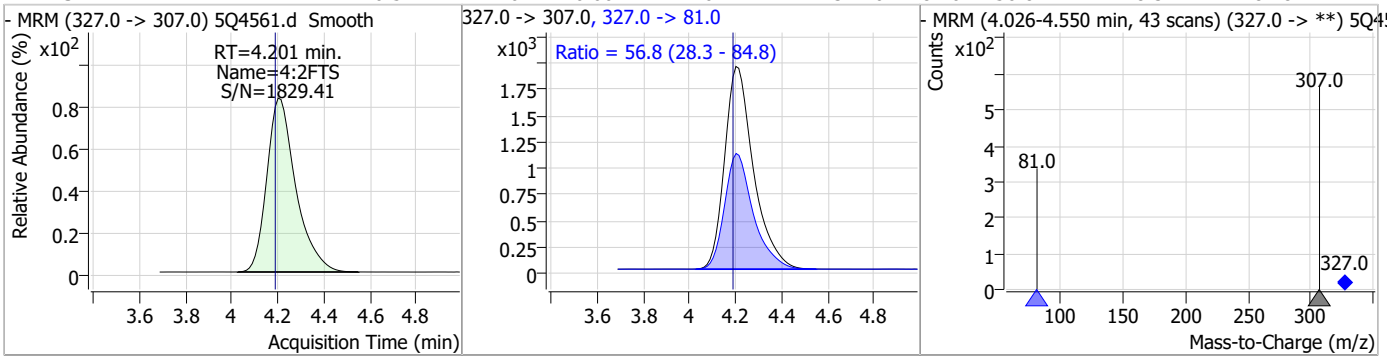
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.72	3.36	0.00	6423				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.26	3.35	-0.01	9901	299.0 -> 99.0	40.9	20.4	61.3

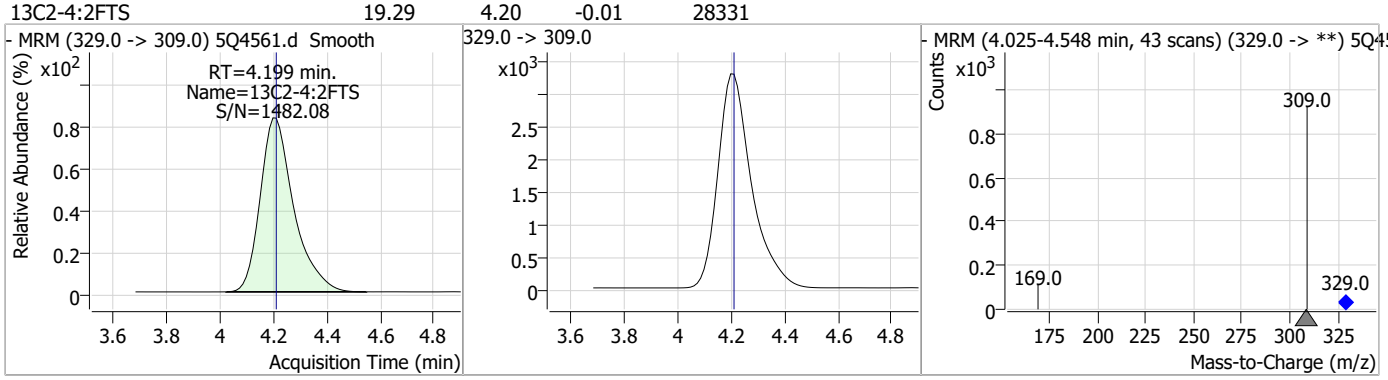


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.57	4.20	0.00	16772	327.0 -> 81.0	56.8	28.3	84.8

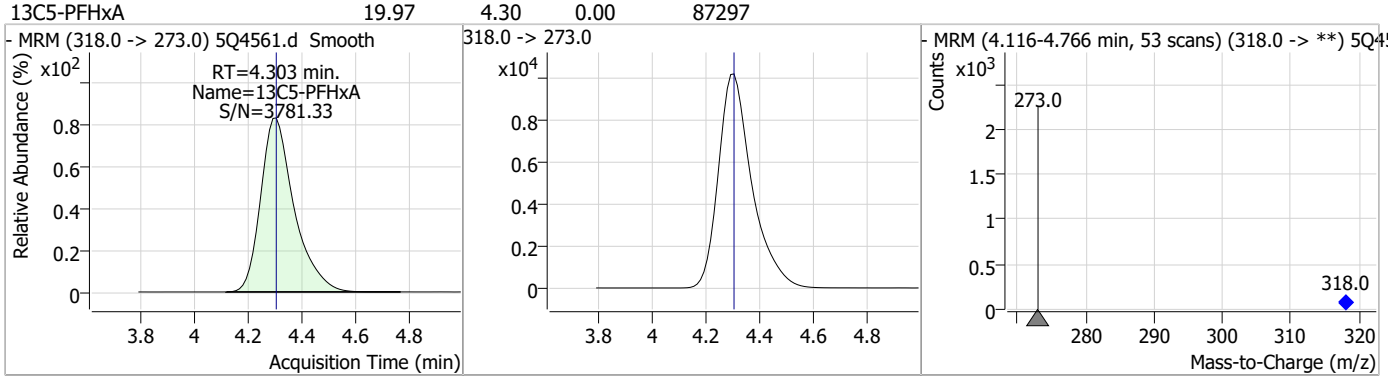


Perfluorinated Compounds by LC/MS/MS

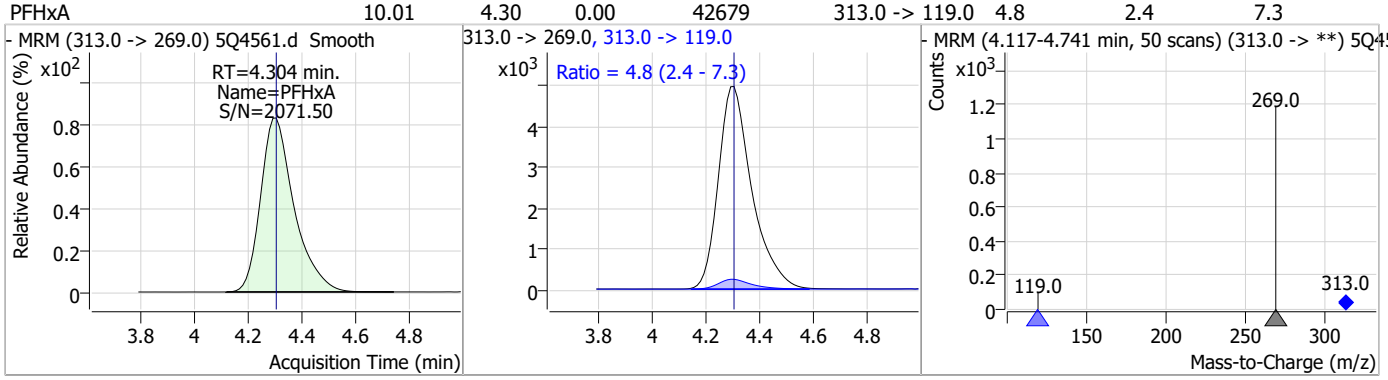
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.29	4.20	-0.01	28331				



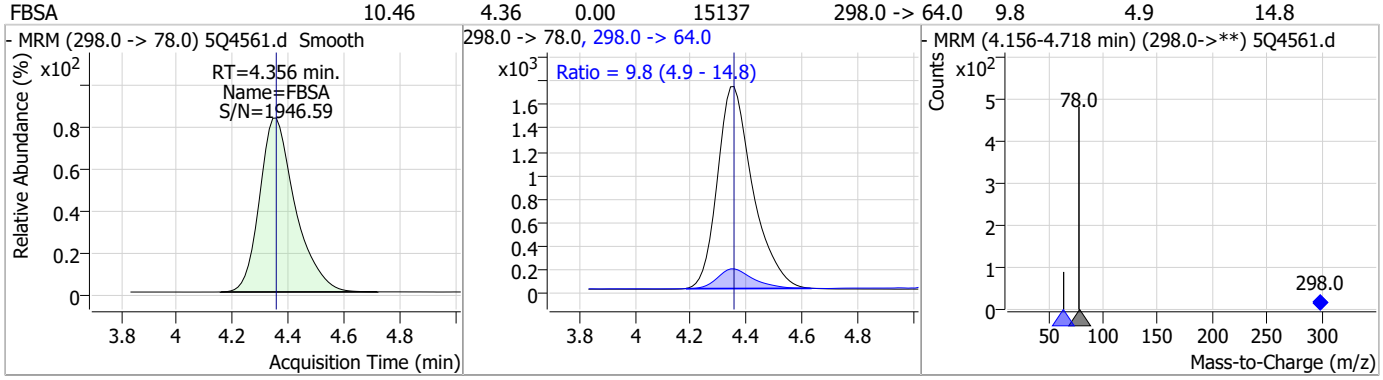
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.97	4.30	0.00	87297				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	10.01	4.30	0.00	42679	313.0 -> 119.0	4.8	2.4	7.3

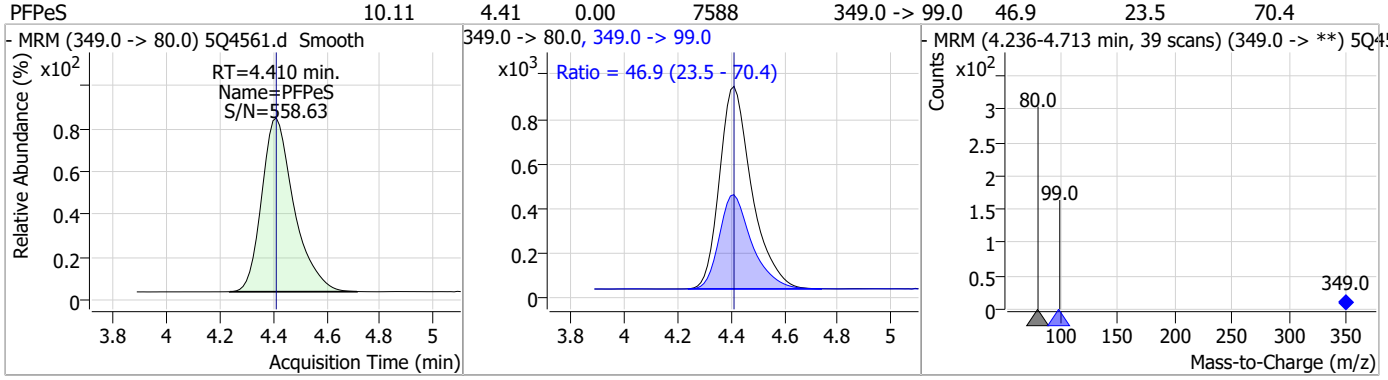


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.46	4.36	0.00	15137	298.0 -> 64.0	9.8	4.9	14.8

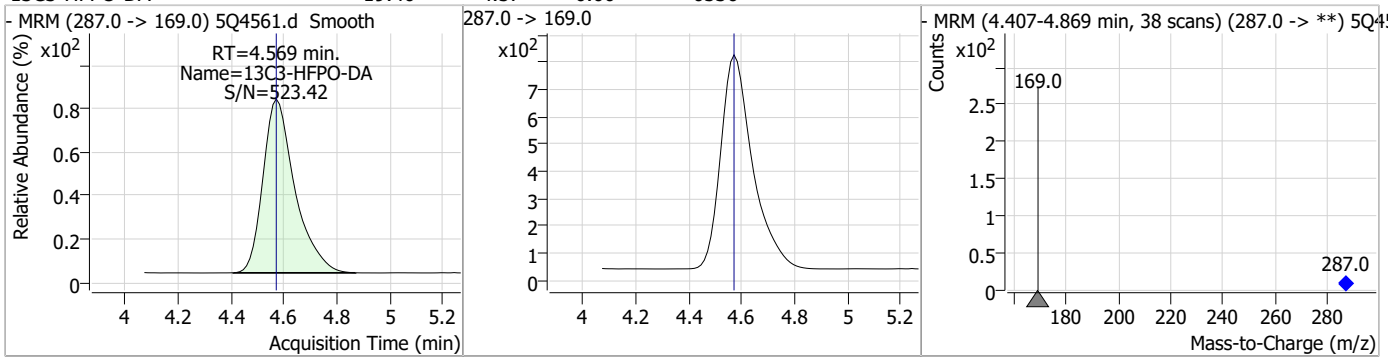


Perfluorinated Compounds by LC/MS/MS

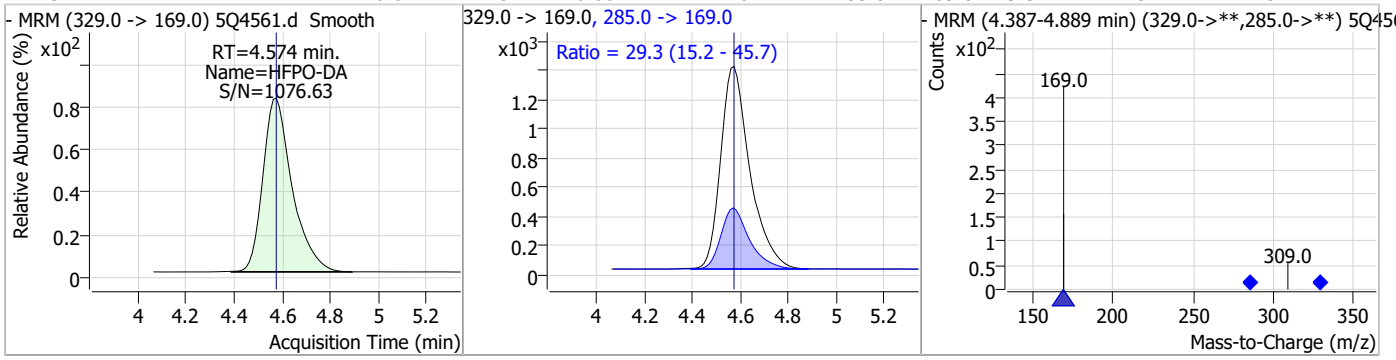
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.11	4.41	0.00	7588	349.0 -> 99.0	46.9	23.5	70.4



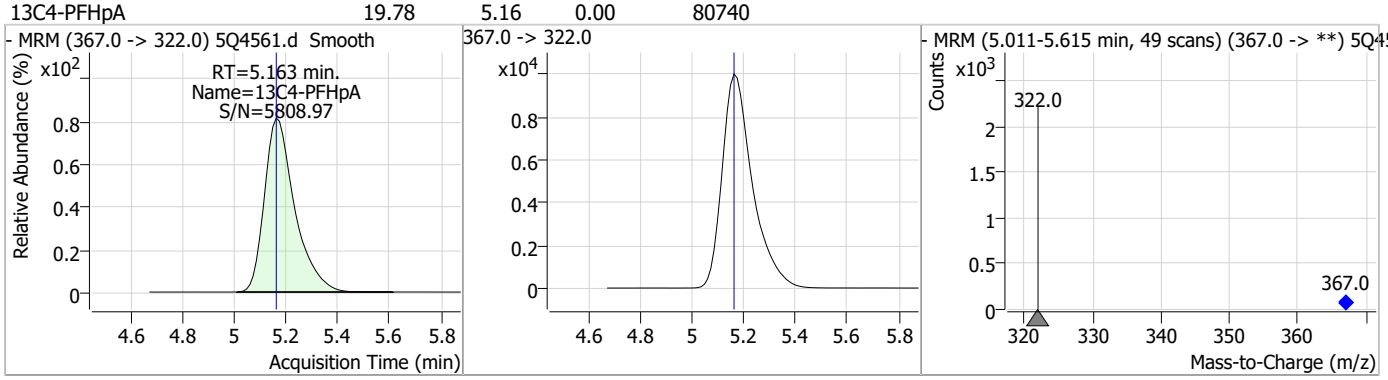
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.46	4.57	0.00	6536				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.62	4.57	0.00	11710	285.0 -> 169.0	29.3	15.2	45.7

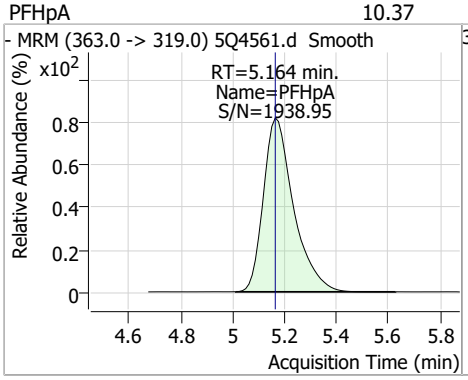


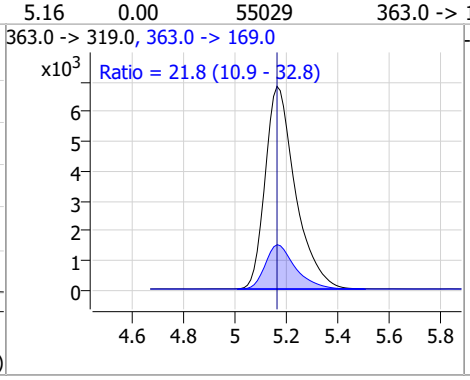
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.78	5.16	0.00	80740				

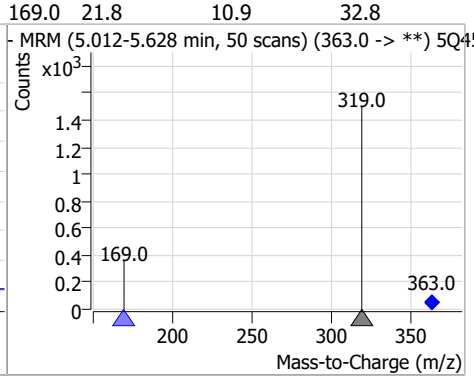


Perfluorinated Compounds by LC/MS/MS

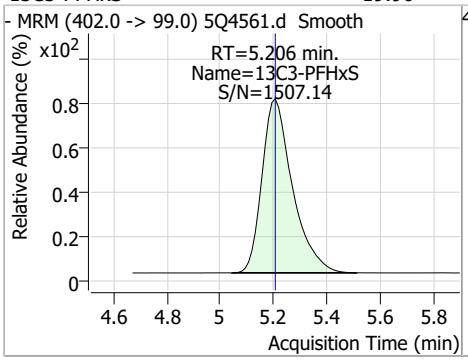
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.37	5.16	0.00	55029	363.0 -> 169.0	21.8	10.9	32.8

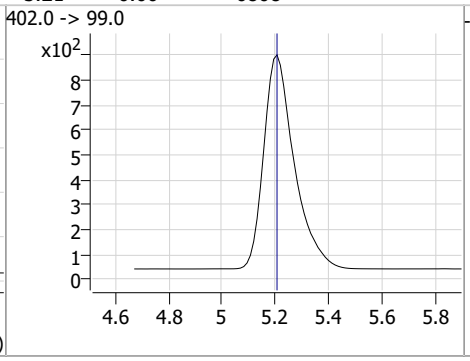


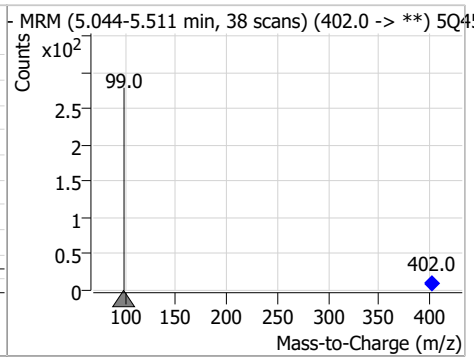




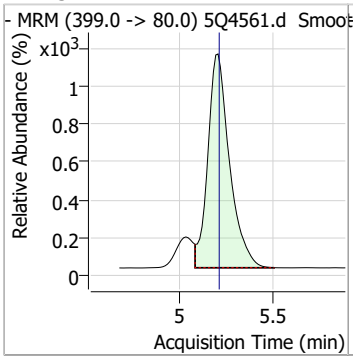
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.96	5.21	0.00	6808				

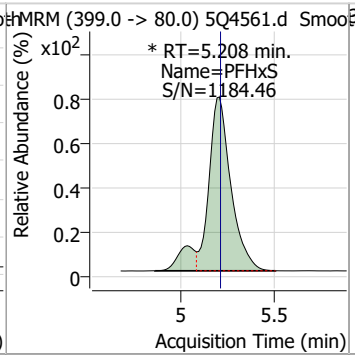


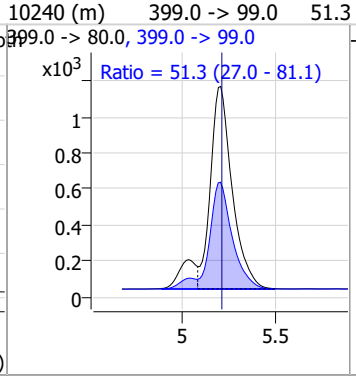


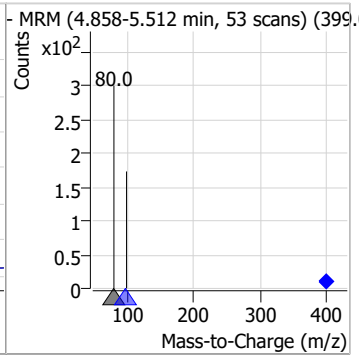


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.13	5.21	0.00	10240 (m)	399.0 -> 99.0	51.3	27.0	81.1

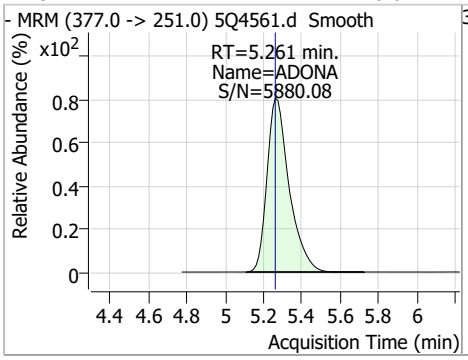


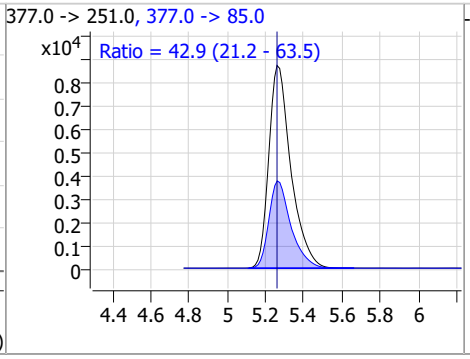


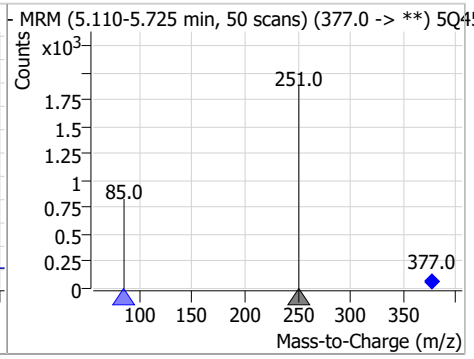




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.02	5.26	0.00	70105	377.0 -> 85.0	42.9	21.2	63.5

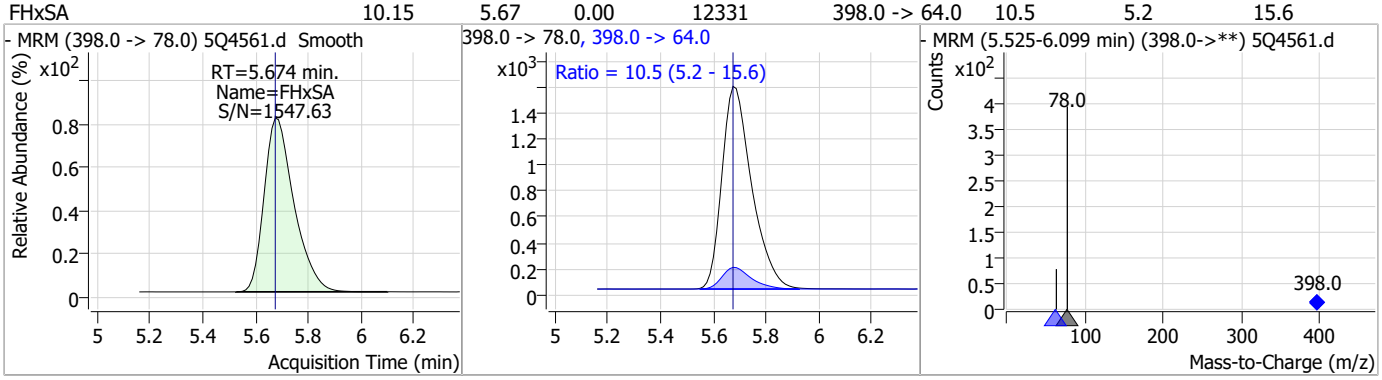




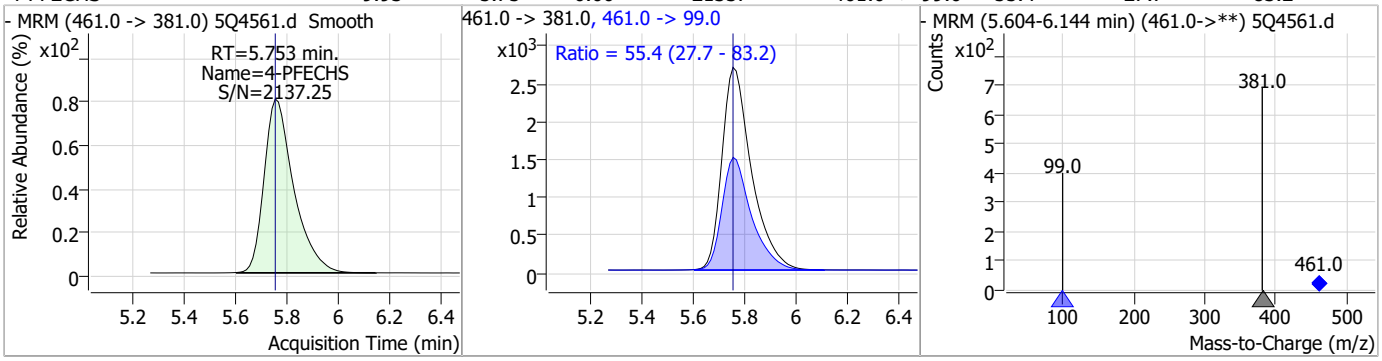


Perfluorinated Compounds by LC/MS/MS

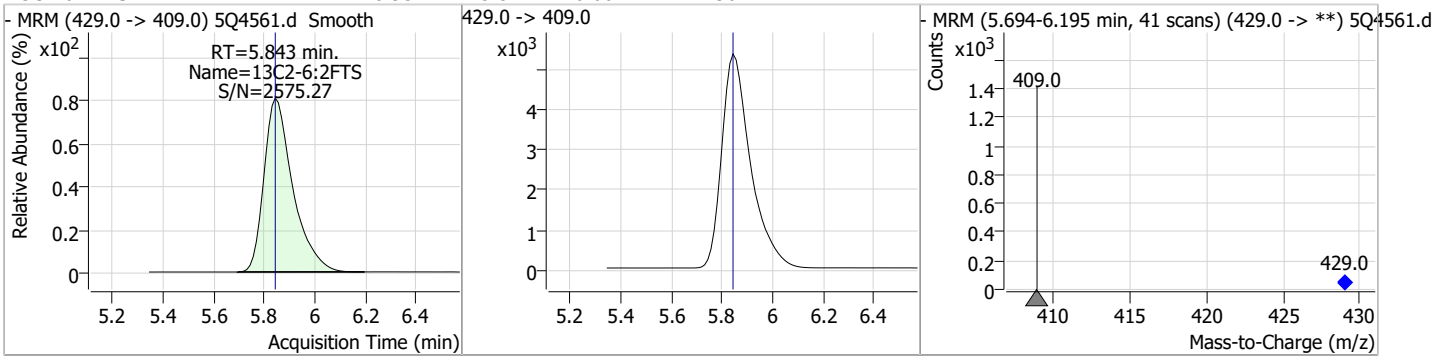
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	10.15	5.67	0.00	12331	398.0 -> 64.0	10.5	5.2	15.6



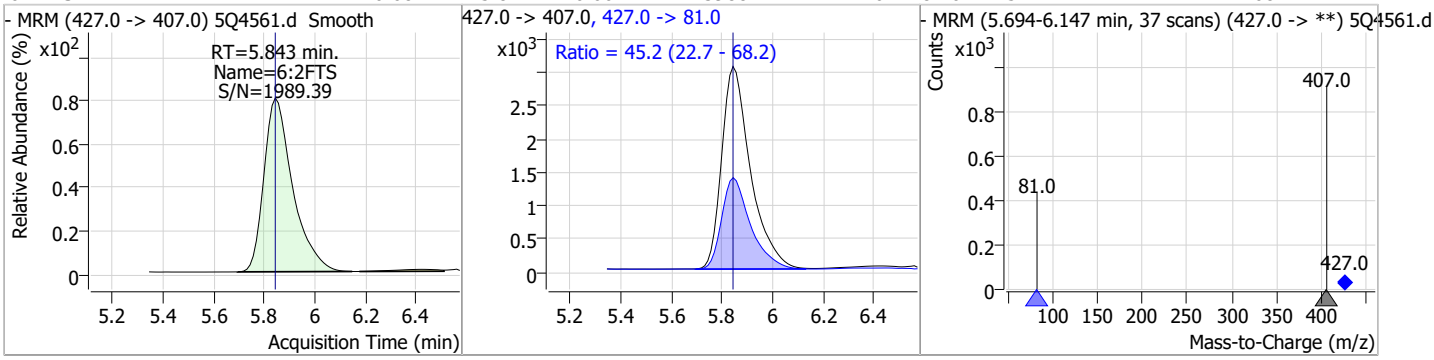
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.93	5.75	0.00	21337	461.0 -> 99.0	55.4	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.95	5.84	0.00	42362				

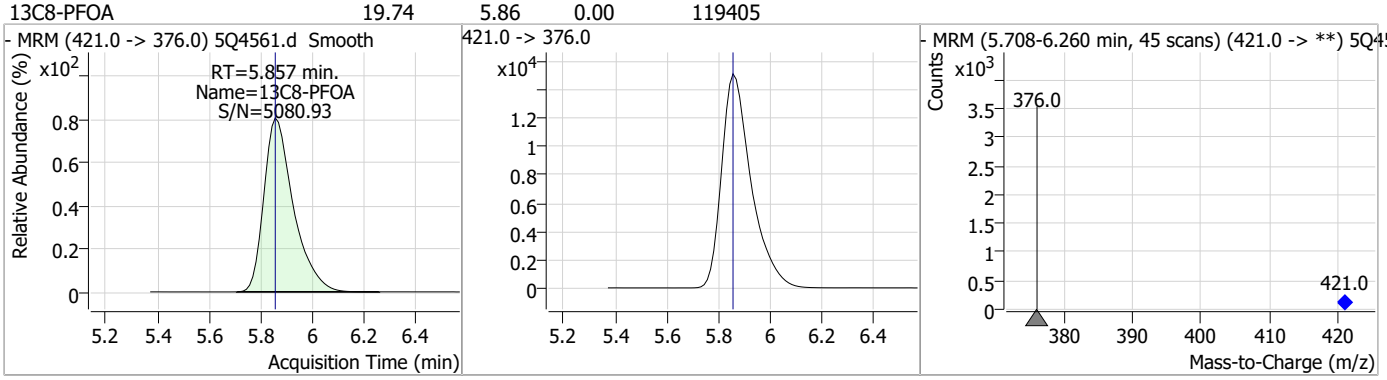


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.68	5.84	0.00	23988	427.0 -> 81.0	45.2	22.7	68.2

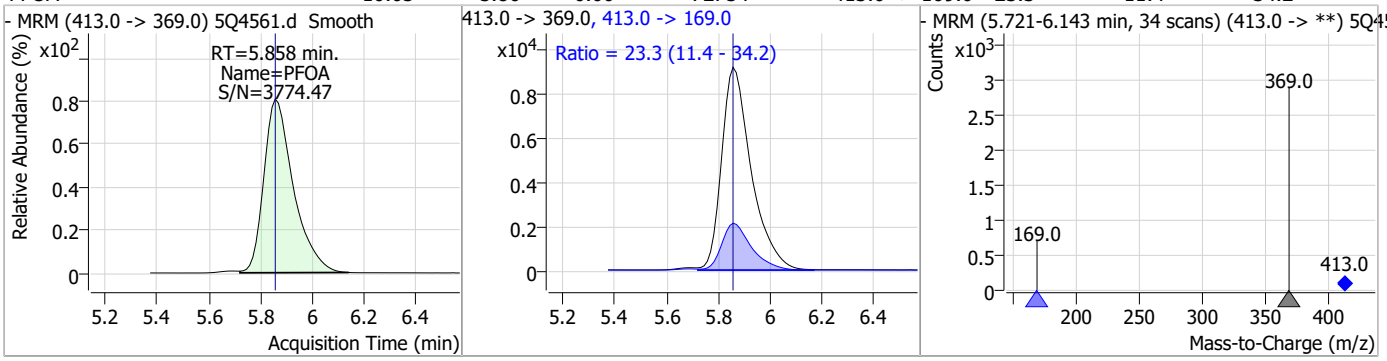


Perfluorinated Compounds by LC/MS/MS

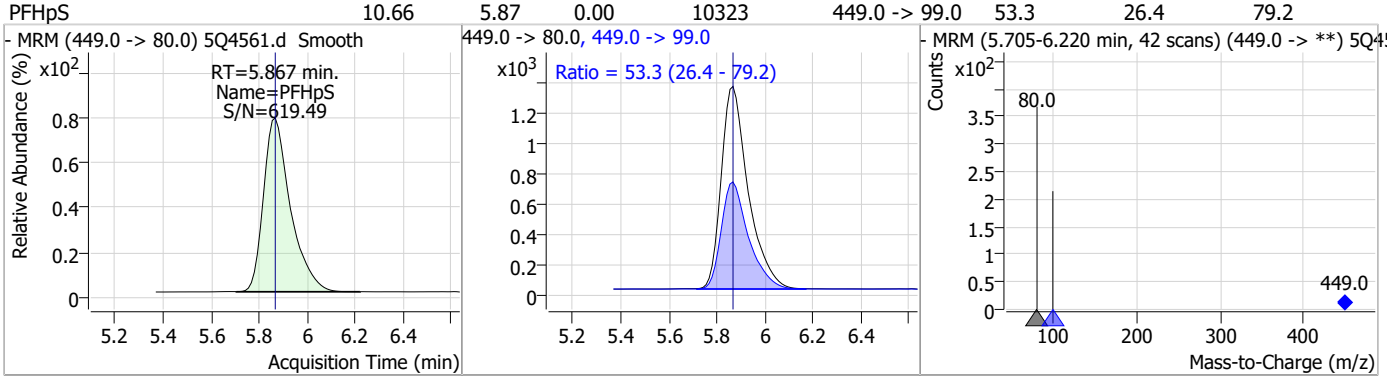
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.74	5.86	0.00	119405				



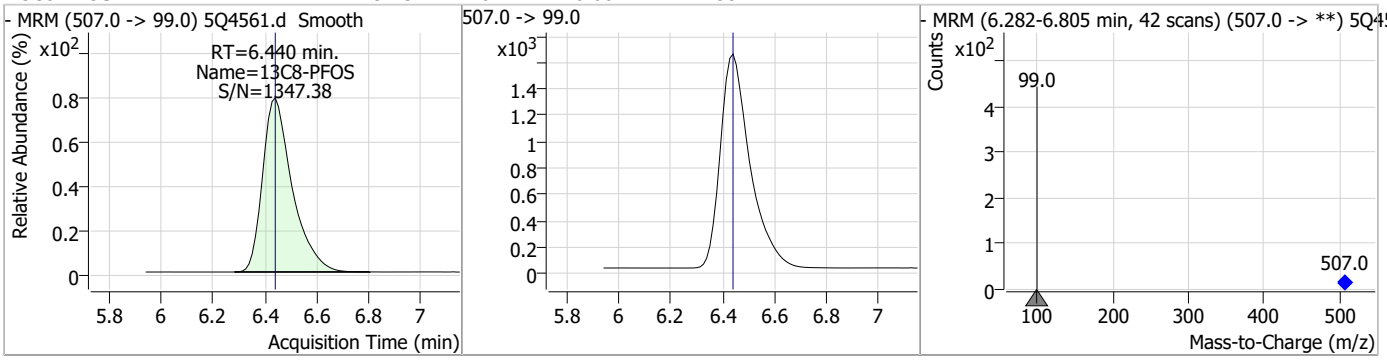
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.05	5.86	0.00	72754	413.0 -> 169.0	23.3	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.66	5.87	0.00	10323	449.0 -> 99.0	53.3	26.4	79.2

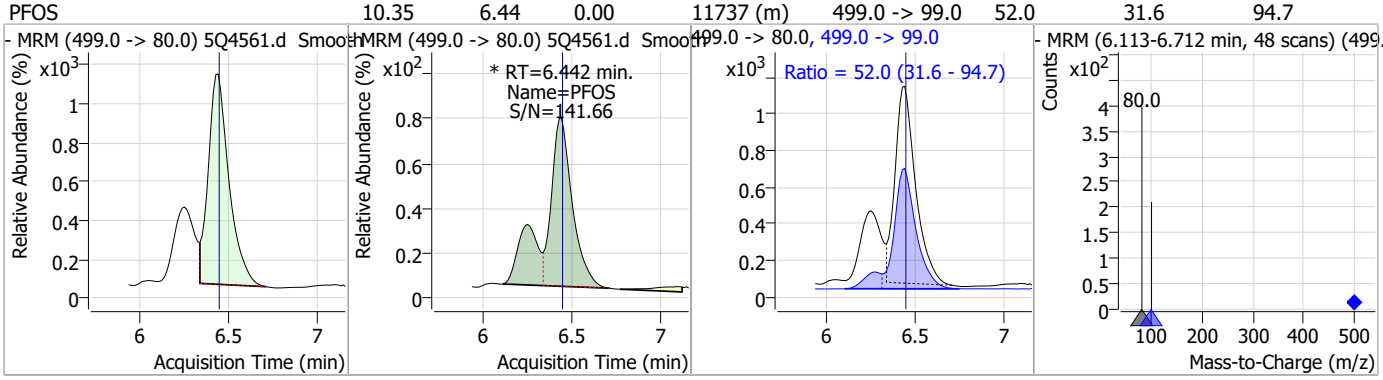


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.73	6.44	0.00	12881				

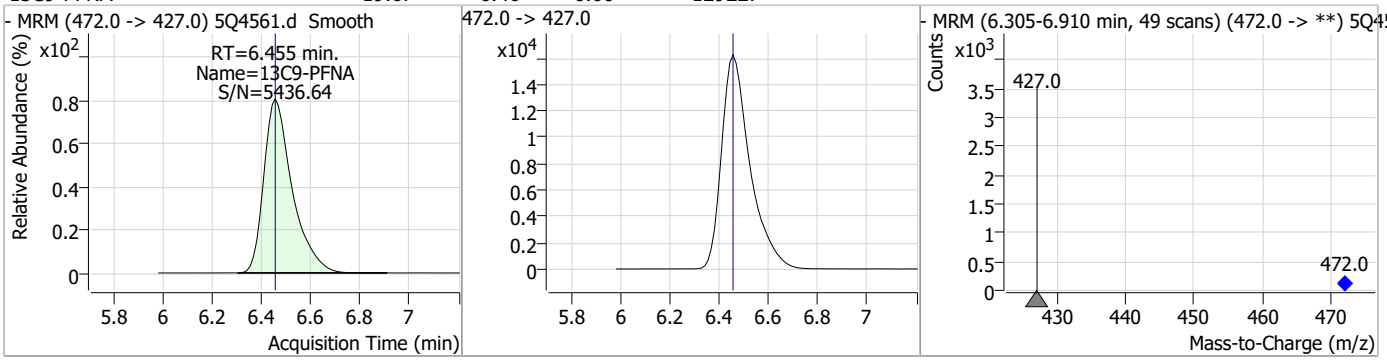


Perfluorinated Compounds by LC/MS/MS

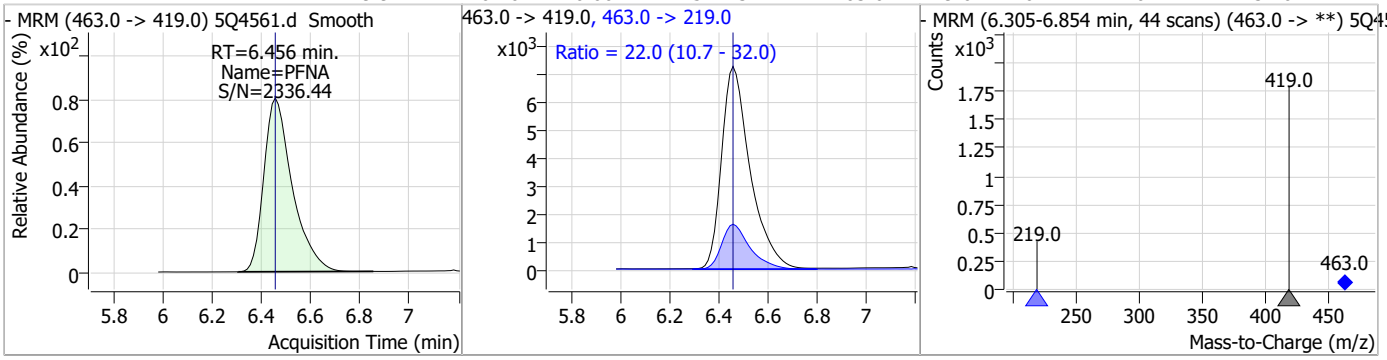
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.35	6.44	0.00	11737 (m)	499.0 -> 99.0	52.0	31.6	94.7



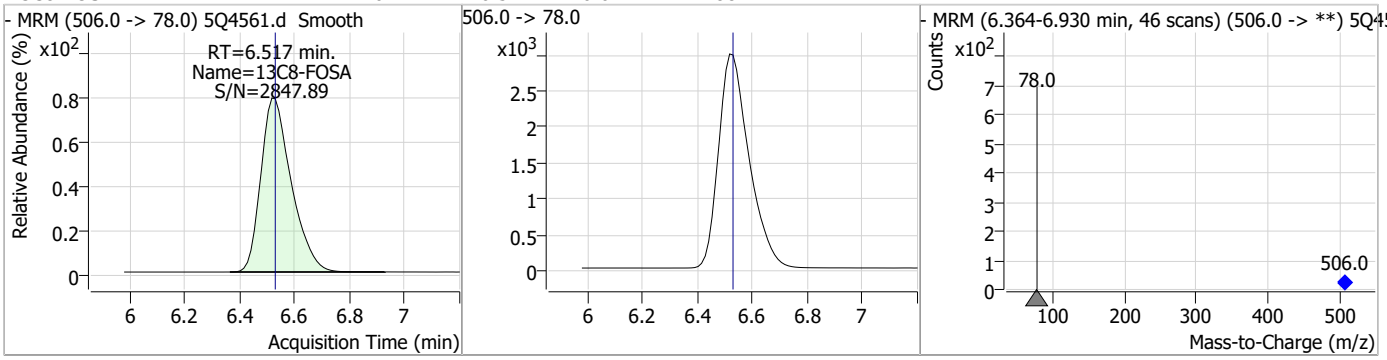
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.67	6.46	0.00	129227				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.97	6.46	0.00	57713	463.0 -> 219.0	22.0	10.7	32.0

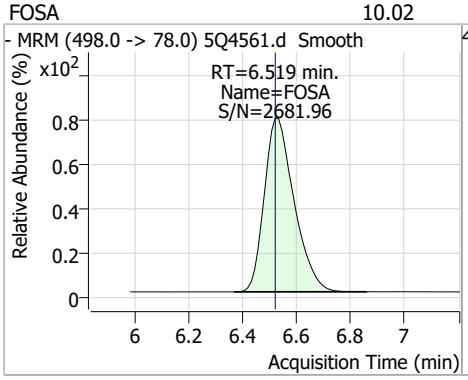


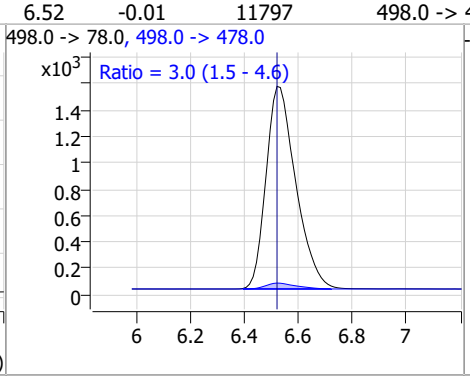
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.17	6.52	-0.01	22882				

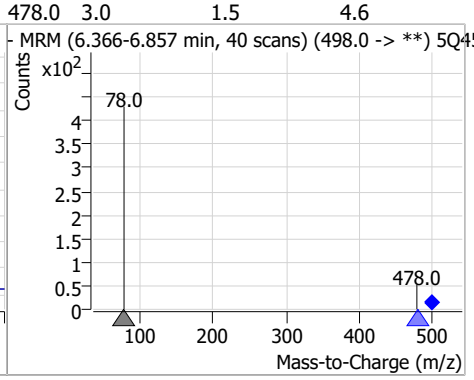


Perfluorinated Compounds by LC/MS/MS

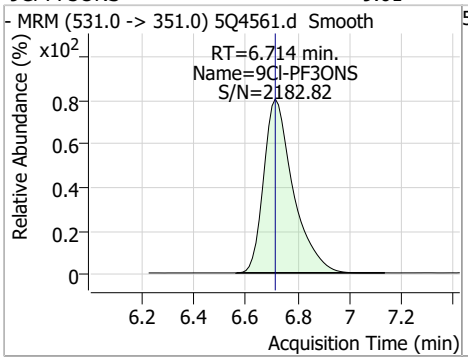
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.02	6.52	-0.01	11797	498.0 -> 478.0	3.0	1.5	4.6

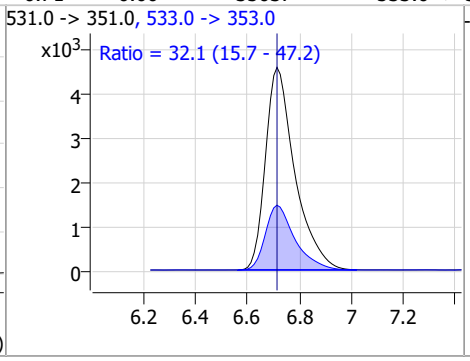


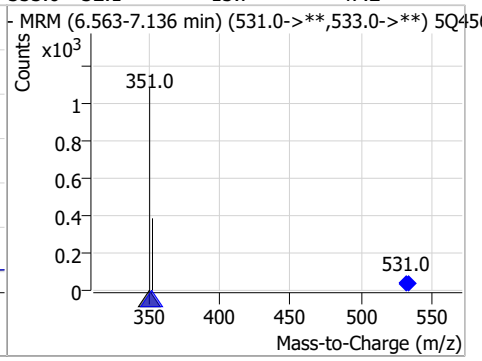




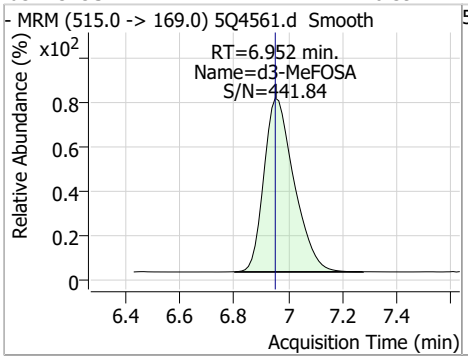
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	9.61	6.71	0.00	35637	533.0 -> 353.0	32.1	15.7	47.2

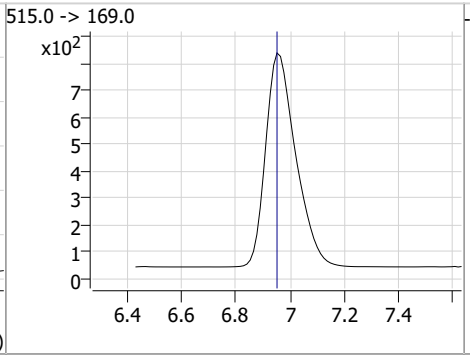


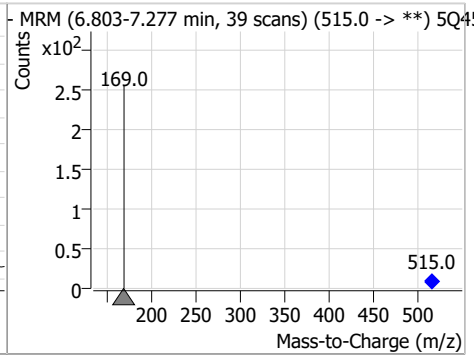




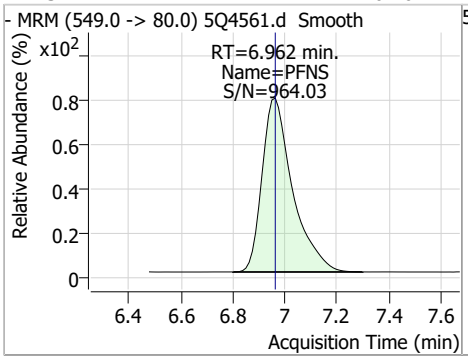
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.39	6.95	0.00	6210				

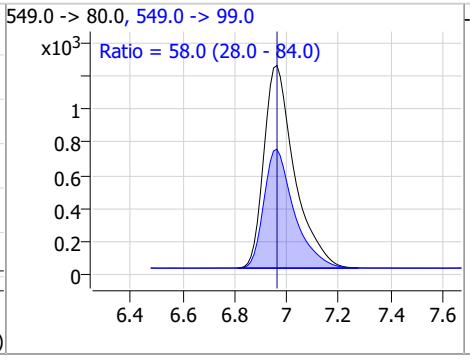


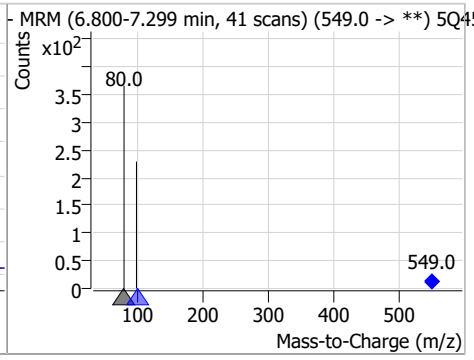




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.46	6.96	0.00	9950	549.0 -> 99.0	58.0	28.0	84.0

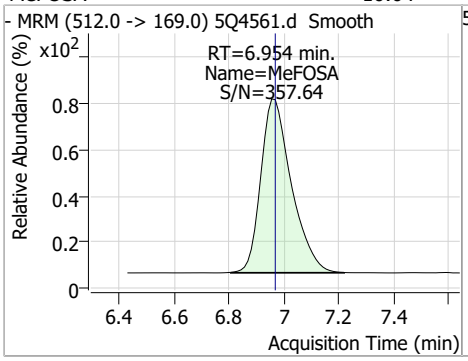


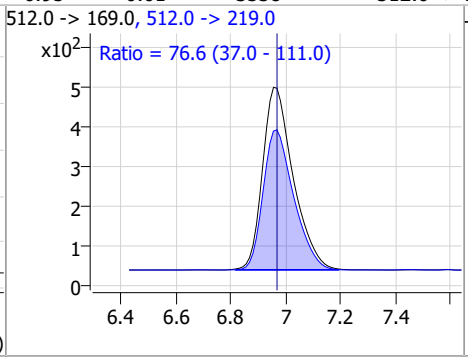


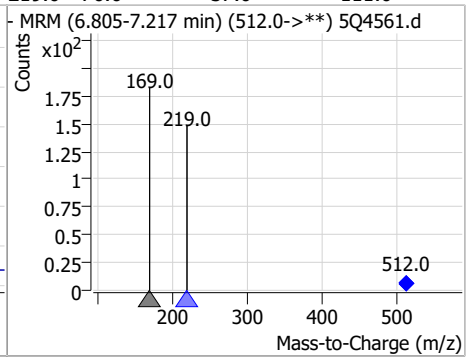


Perfluorinated Compounds by LC/MS/MS

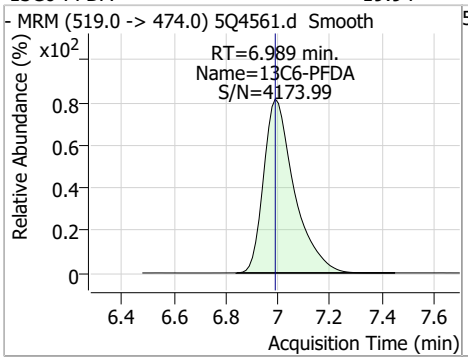
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.64	6.95	-0.01	3558	512.0 -> 219.0	76.6	37.0	111.0

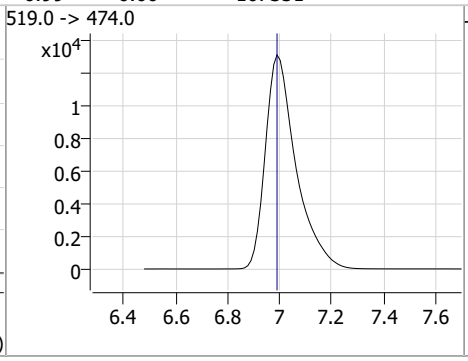


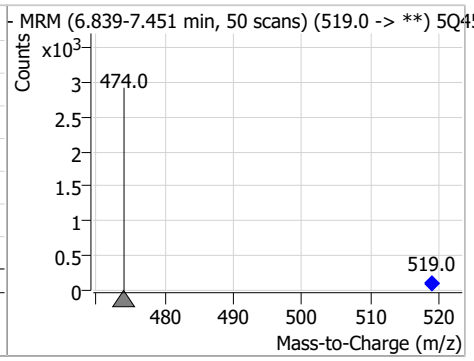




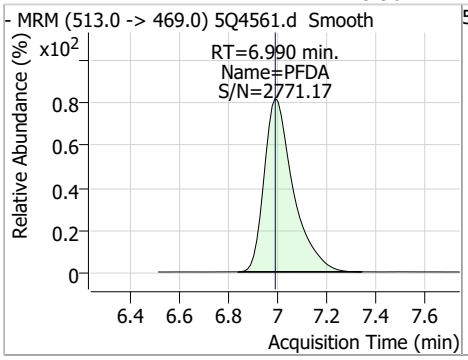
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.94	6.99	0.00	107351				

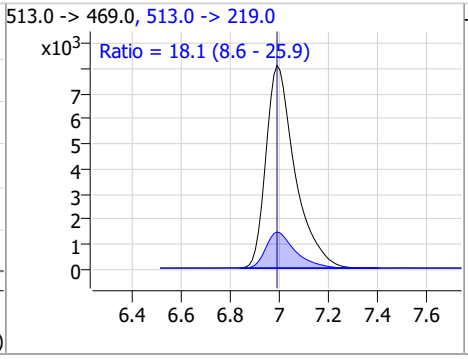


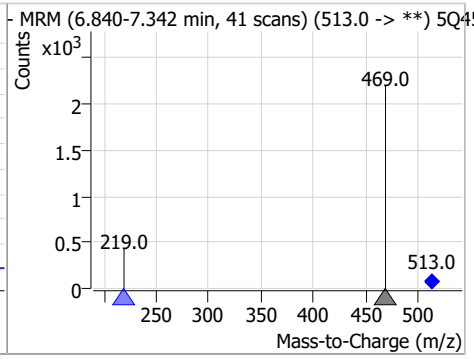




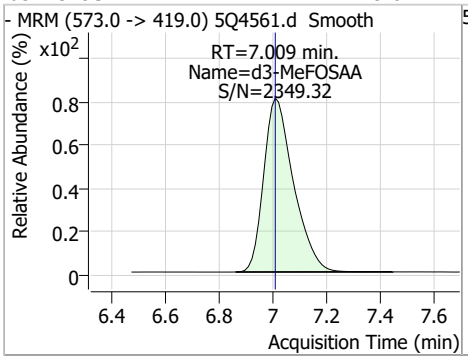
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	9.98	6.99	0.00	65809	513.0 -> 219.0	18.1	8.6	25.9

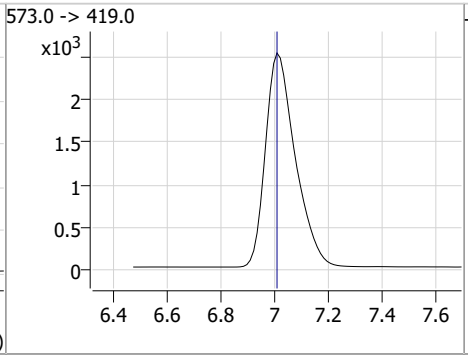


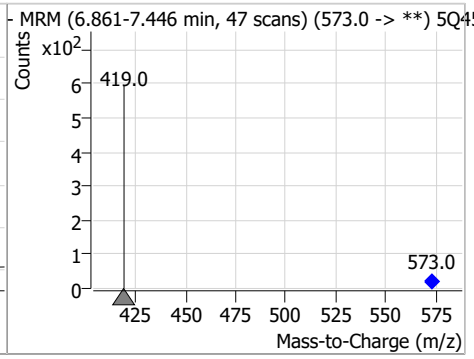




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.81	7.01	0.00	19249				

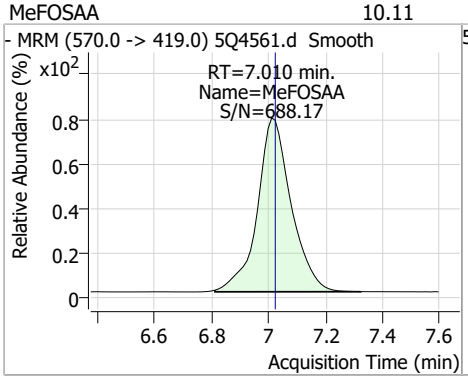


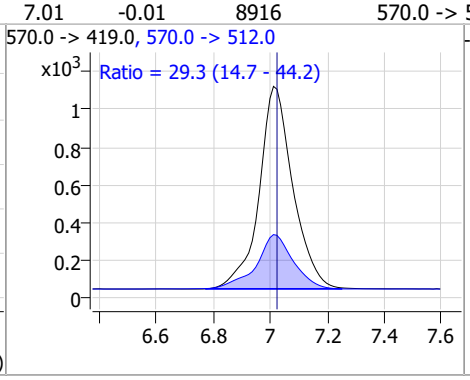


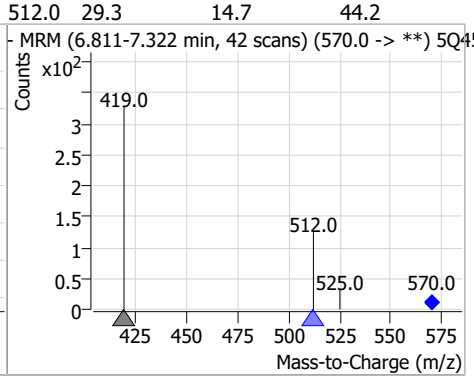


Perfluorinated Compounds by LC/MS/MS

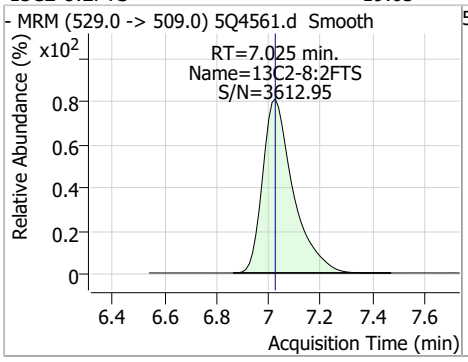
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.11	7.01	-0.01	8916	570.0 -> 512.0	29.3	14.7	44.2

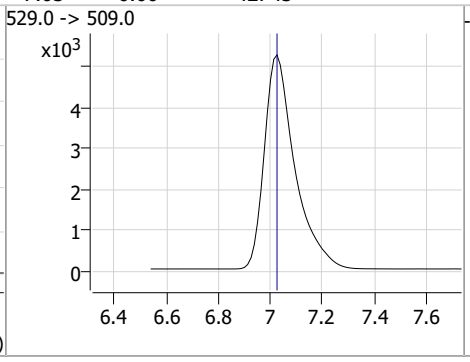


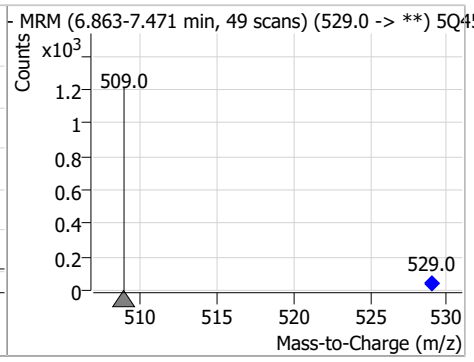




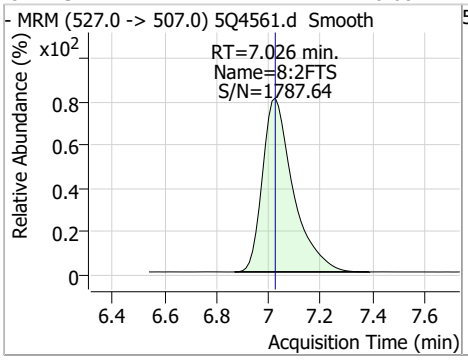
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.03	7.03	0.00	42743				

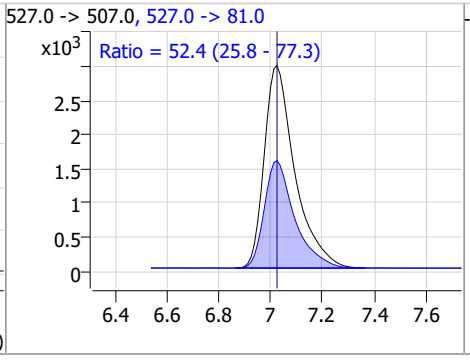


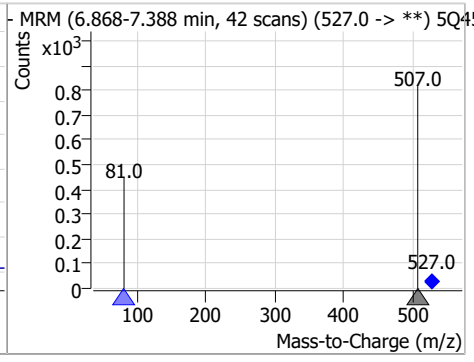




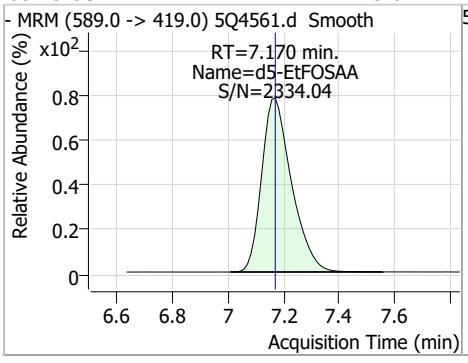
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.68	7.03	0.00	24337	527.0 -> 81.0	52.4	25.8	77.3

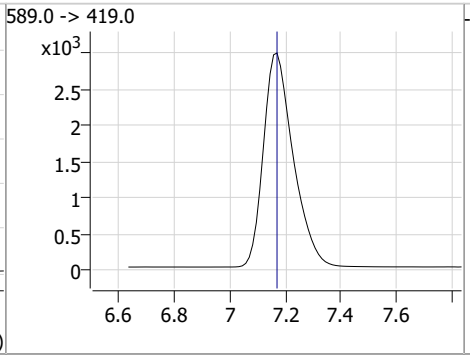


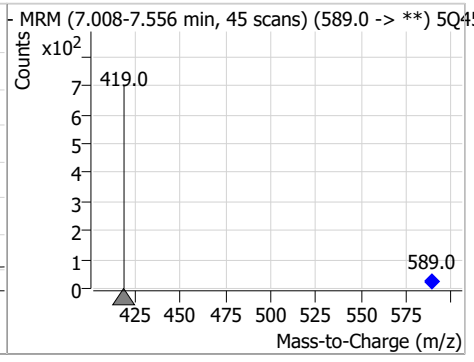




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.67	7.17	0.00	22057				

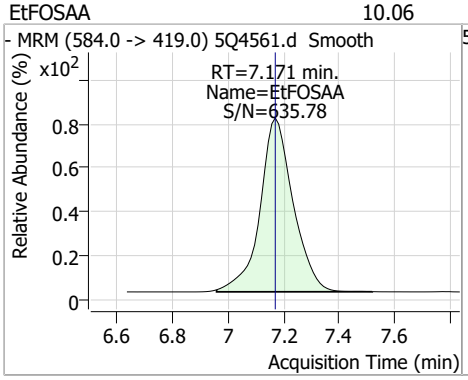


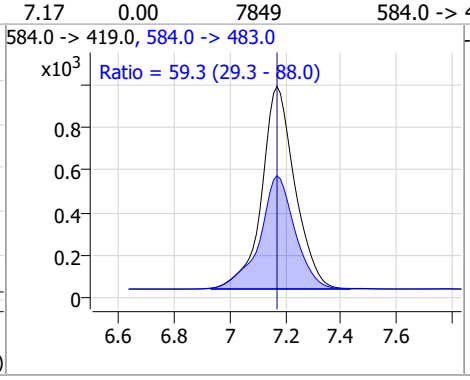


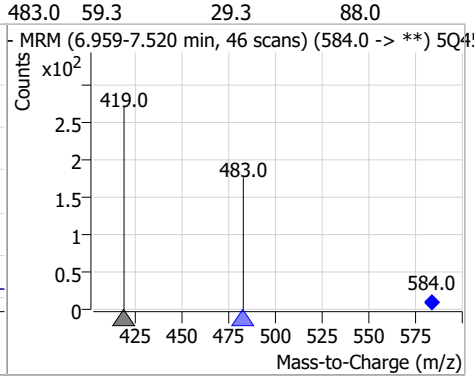


Perfluorinated Compounds by LC/MS/MS

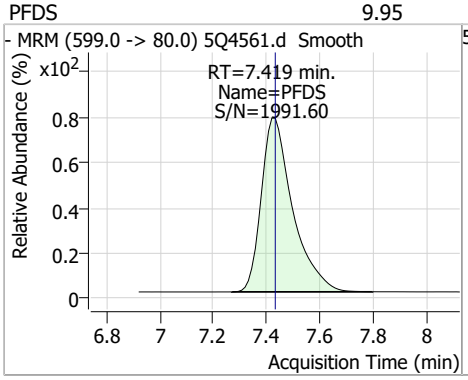
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.06	7.17	0.00	7849	584.0 -> 483.0	59.3	29.3	88.0

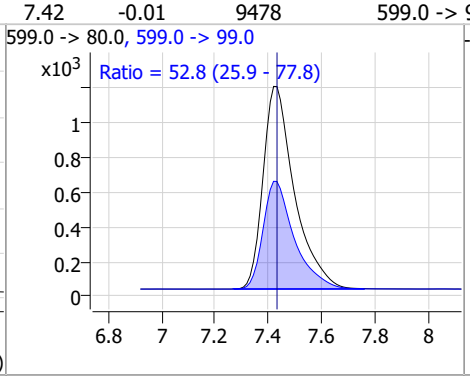


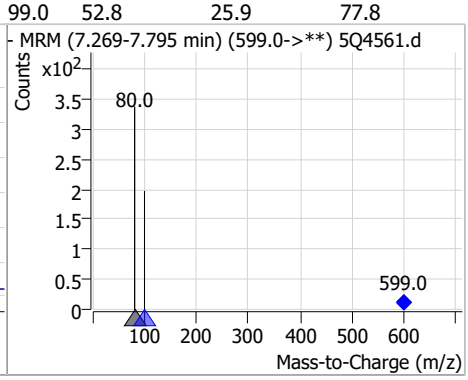




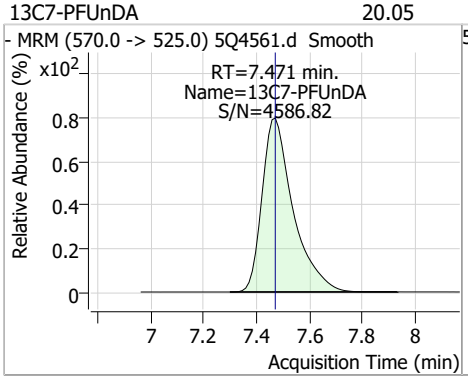
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.95	7.42	-0.01	9478	599.0 -> 99.0	52.8	25.9	77.8

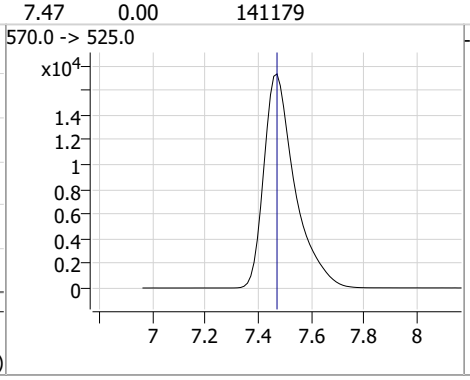


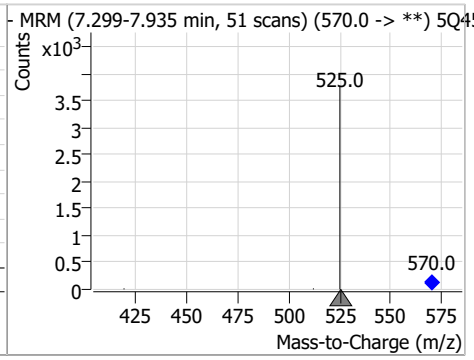




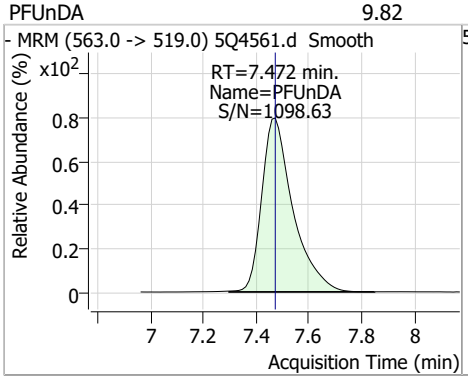
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.05	7.47	0.00	141179				

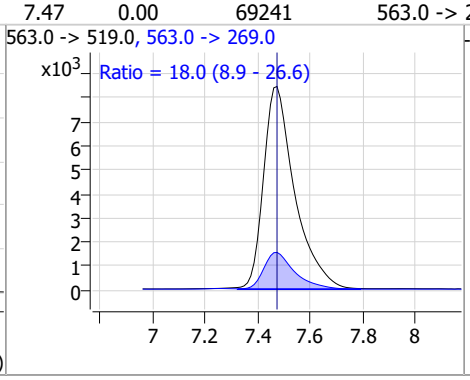


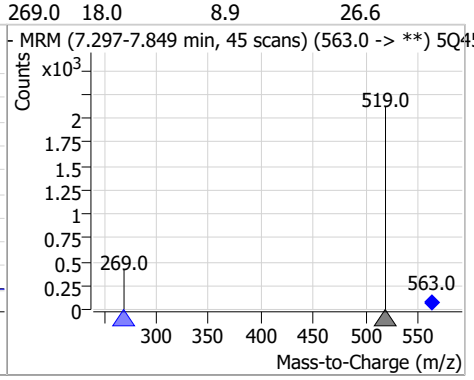




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.82	7.47	0.00	69241	563.0 -> 269.0	18.0	8.9	26.6

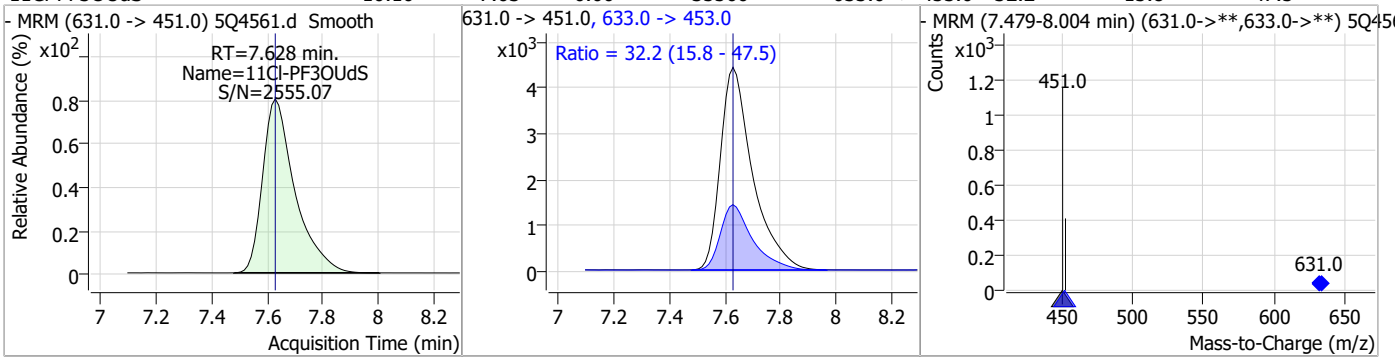




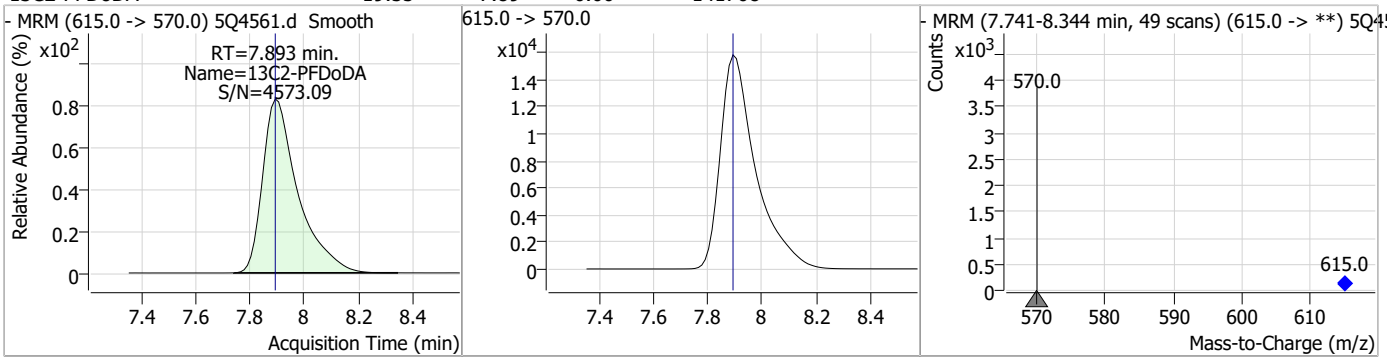


Perfluorinated Compounds by LC/MS/MS

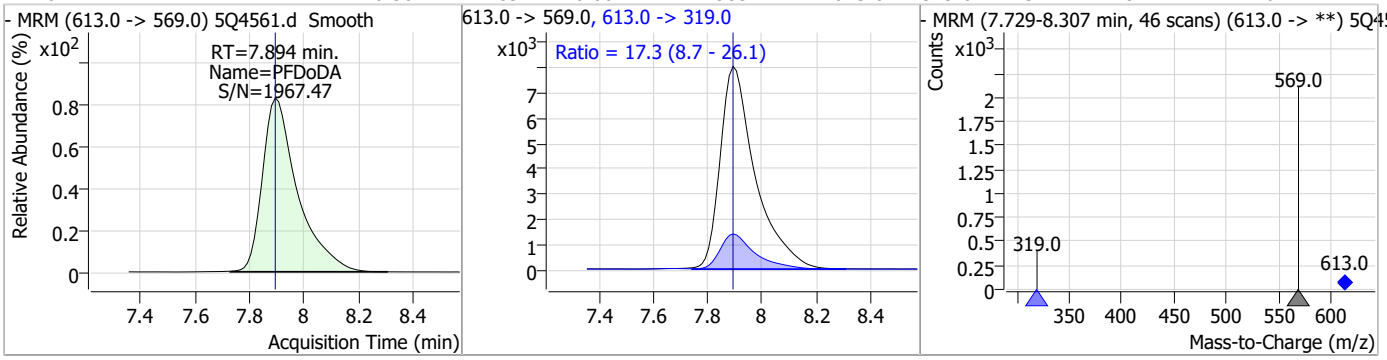
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	10.10	7.63	0.00	35560	633.0 -> 453.0	32.2	15.8	47.5



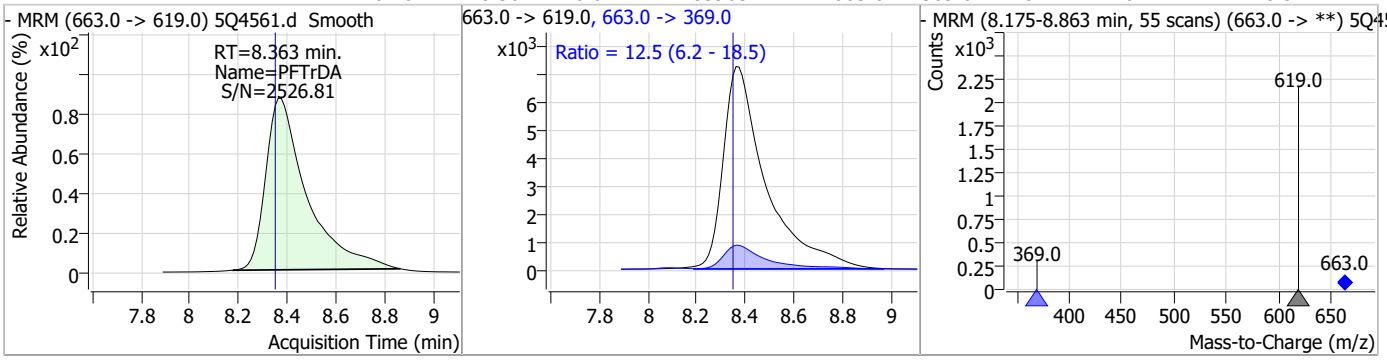
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.55	7.89	0.00	141708				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.30	7.89	0.00	71583	613.0 -> 319.0	17.3	8.7	26.1

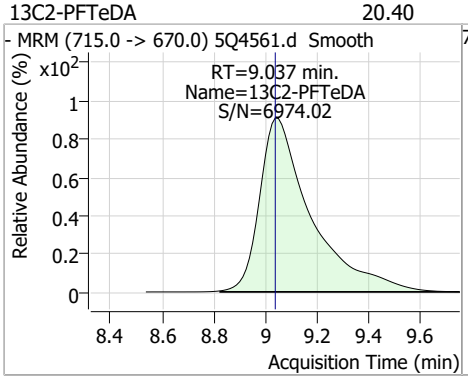


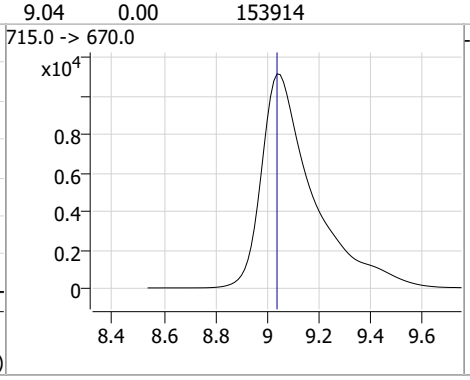
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.10	8.36	0.01	83905	663.0 -> 369.0	12.5	6.2	18.5

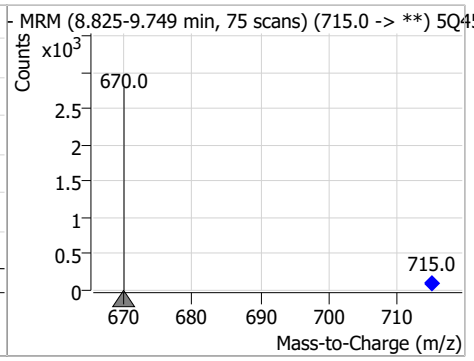


Perfluorinated Compounds by LC/MS/MS

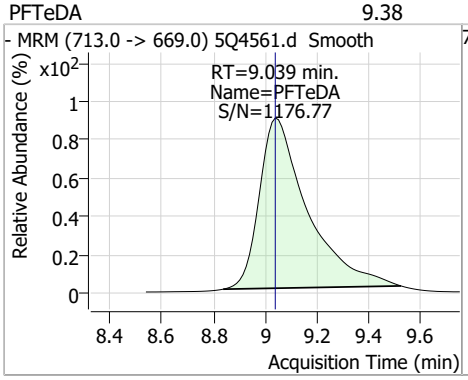
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.40	9.04	0.00	153914				

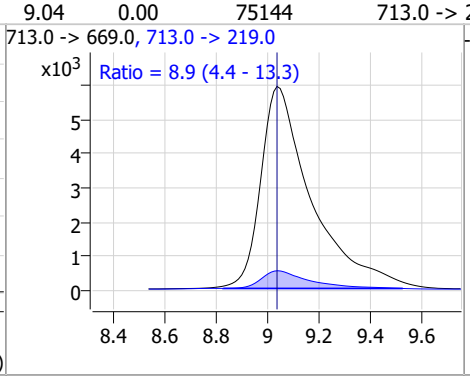


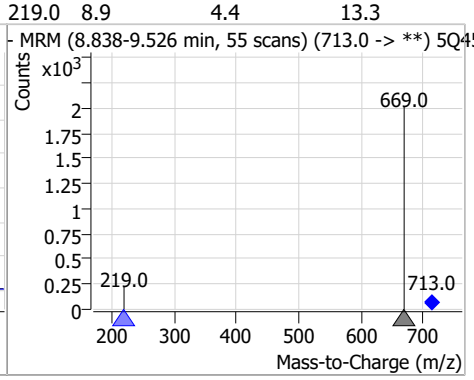




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.38	9.04	0.00	75144	713.0 -> 219.0	8.9	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4561.D
Injection Time: 09/14/22 11:42
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

5Q4562.D

Manual Integrations APPROVED (compounds with "m" flag)

Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4562.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:57:41 AM
Sample Name : icc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

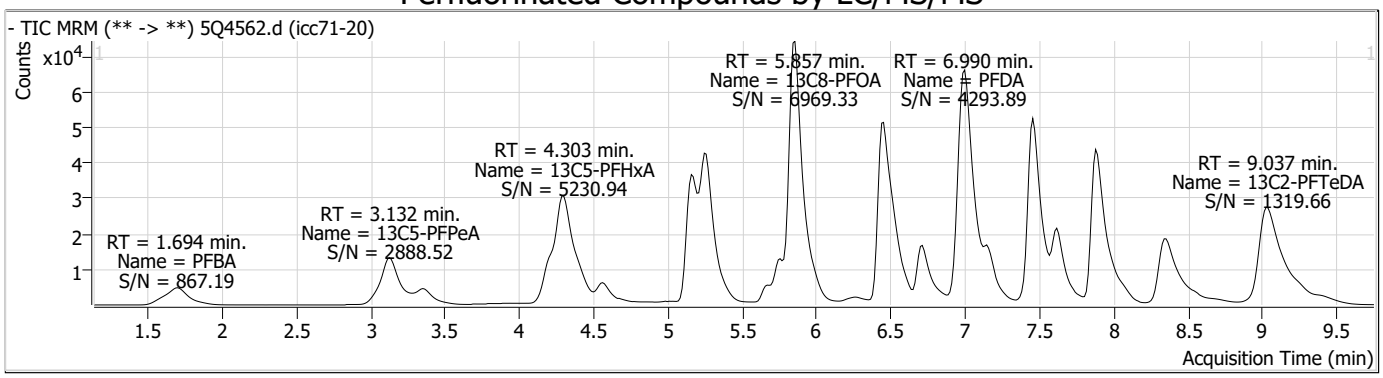
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	37818	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	61279	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	92102	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	86257	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	127736	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	137771	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	114136	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	149676	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	150190	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	149573	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	24293	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6879	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	7137	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13800	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	30299	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	46605	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	46064	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	20589	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6943	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6639	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	24527	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	30299	20.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-6:2FTS	5.843	429.0 -> 409.0	46605	20.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-8:2FTS	7.025	529.0 -> 509.0	46064	20.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	150190	20.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-PFTeDA	9.037	715.0 -> 670.0	149573	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFBS	3.362	302.0 -> 99.0	6879	21.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	7137	20.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFBA	1.700	217.0 -> 172.0	37818	21.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C4-PFHpA	5.163	367.0 -> 322.0	86257	21.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C5-PFHxA	4.303	318.0 -> 273.0	92102	21.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C5-PFPeA	3.132	268.0 -> 223.0	61279	21.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C6-PFDA	6.989	519.0 -> 474.0	114136	21.20	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

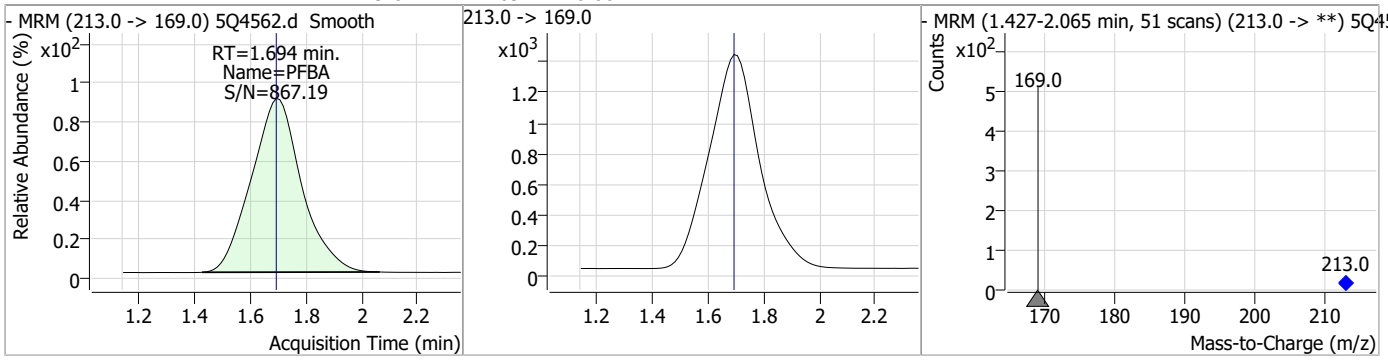
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%			
13C7-PFUnDA	7.471	570.0 -> 525.0	149676	21.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%			
13C8-FOSA	6.530	506.0 -> 78.0	24293	21.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%			
13C8-PFOA	5.857	421.0 -> 376.0	127736	21.12	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
13C8-PFOS	6.440	507.0 -> 99.0	13800	21.14	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
13C9-PFNA	6.455	472.0 -> 427.0	137771	20.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	20589	21.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.9%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6943	20.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	6639	21.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	24527	21.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%			
Target Compounds							QValue
4:2FTS	4.201	327.0 -> 307.0	34050	20.07	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	49706	20.11	µg/L		100
8:2FTS	7.026	527.0 -> 507.0	49953	20.35	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	16727	19.28	µg/L		100
FOSA	6.531	498.0 -> 78.0	24168	19.33	µg/L		100
MeFOSAA	7.023	570.0 -> 419.0	18555	19.68	µg/L		100
PFBA	1.694	213.0 -> 169.0	17472	19.61	µg/L		100
PFBS	3.367	299.0 -> 80.0	20171	19.52	µg/L		100
PFDA	6.990	513.0 -> 469.0	139222	19.86	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	144539	19.62	µg/L		100
PFDS	7.431	599.0 -> 80.0	19375	19.19	µg/L		100
PFHpA	5.164	363.0 -> 319.0	113383	20.01	µg/L		100
PFHpS	5.867	449.0 -> 80.0	21103	20.34	µg/L		100
PFHxA	4.304	313.0 -> 269.0	88204	19.60	µg/L		100
PFHxS	5.208	399.0 -> 80.0	20887	19.71	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	122117	19.78	µg/L		100
PFNS	6.962	549.0 -> 80.0	20529	20.15	µg/L		100
PFOA	5.858	413.0 -> 369.0	151239	19.53	µg/L		100
PFOS	6.442	499.0 -> 80.0	24336	20.02	µg/L	m	86
PFPeA	3.134	263.0 -> 219.0	58975	19.47	µg/L		100
PFPeS	4.410	349.0 -> 80.0	15607	19.42	µg/L		100
PFTeDA	9.039	713.0 -> 669.0	155019	19.91	µg/L		100
PFTrDA	8.350	663.0 -> 619.0	167556	19.03	µg/L		100
PFUnDA	7.472	563.0 -> 519.0	143767	19.23	µg/L		100
11Cl-PF3OUdS	7.628	631.0 -> 451.0	74076	19.85	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	74375	18.86	µg/L		100
ADONA	5.261	377.0 -> 251.0	144274	19.67	µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	23313	19.90	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	7272	20.34	µg/L		100
4-PFECHS	5.753	461.0 -> 381.0	43815	19.06	µg/L		100
FBSA	4.356	298.0 -> 78.0	30325	19.85	µg/L		100
FHxSA	5.674	398.0 -> 78.0	25137	19.35	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

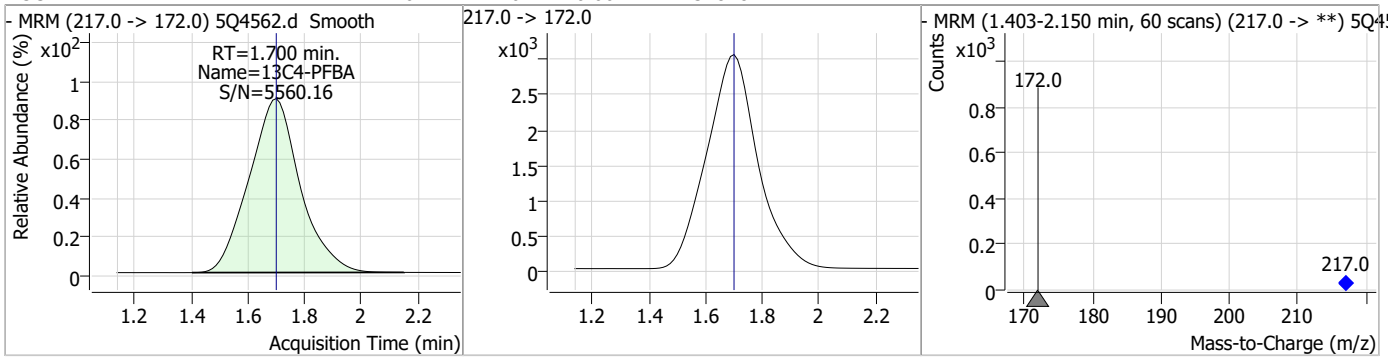
Perfluorinated Compounds by LC/MS/MS



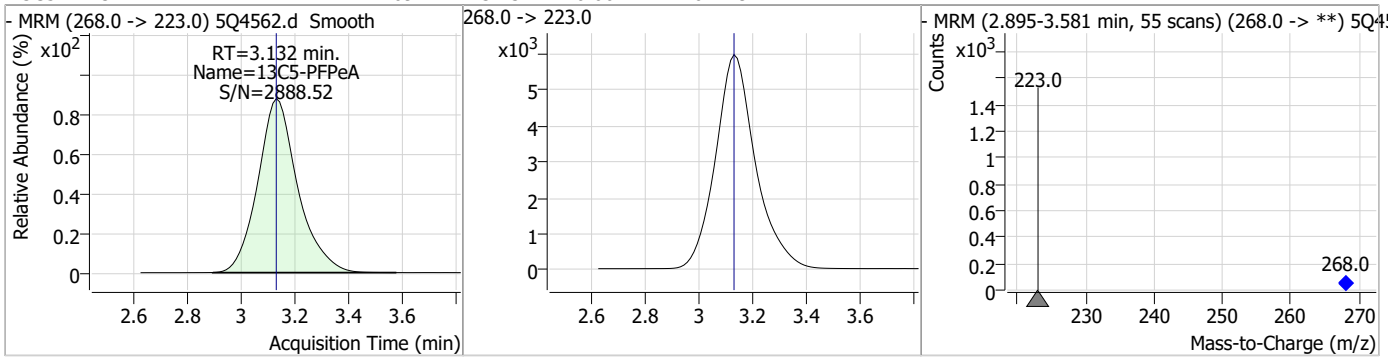
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.61	1.69	0.00	17472				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.16	1.70	0.00	37818				

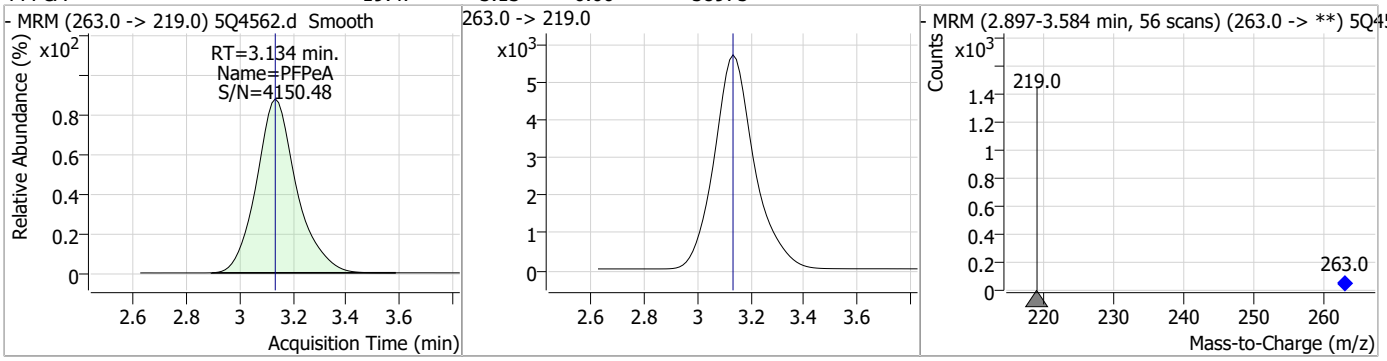


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.09	3.13	0.00	61279				

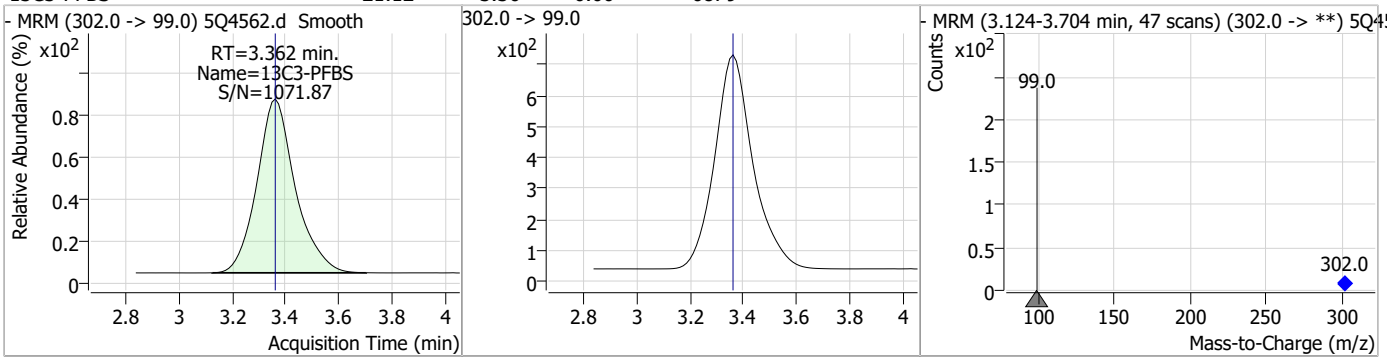


Perfluorinated Compounds by LC/MS/MS

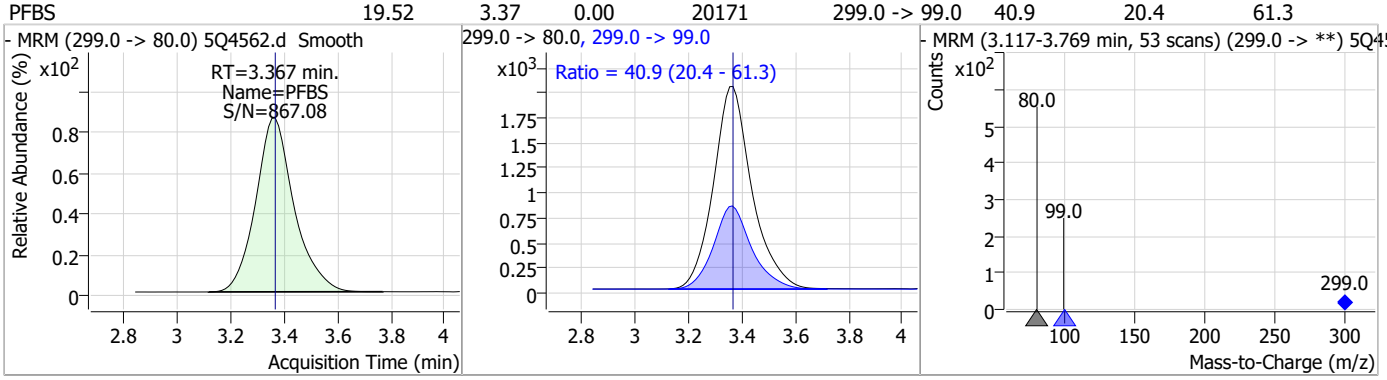
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.47	3.13	0.00	58975				



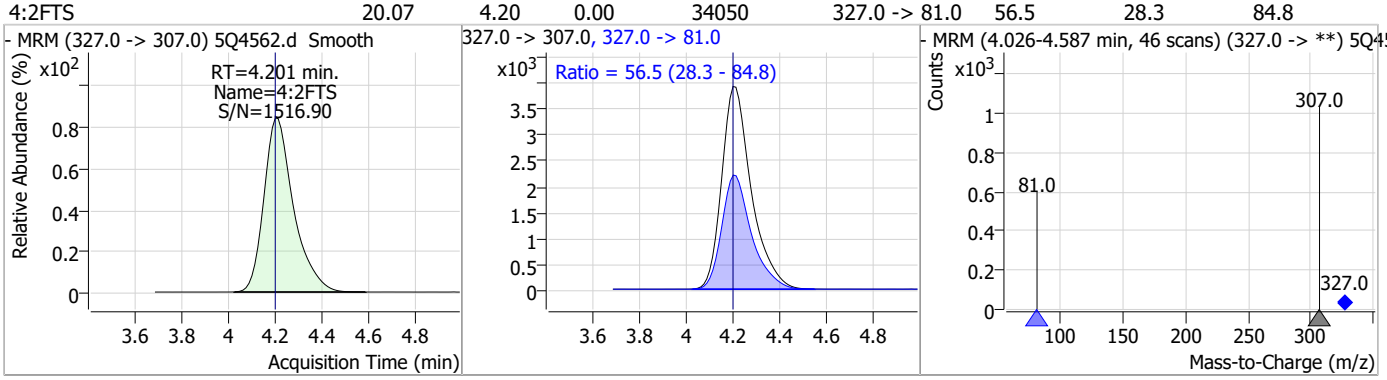
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.12	3.36	0.00	6879				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.52	3.37	0.00	20171	299.0 -> 99.0	40.9	20.4	61.3

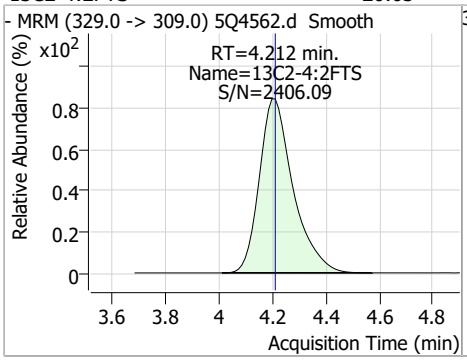


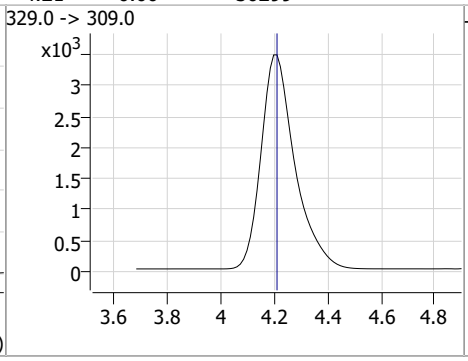
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.07	4.20	0.00	34050	327.0 -> 81.0	56.5	28.3	84.8

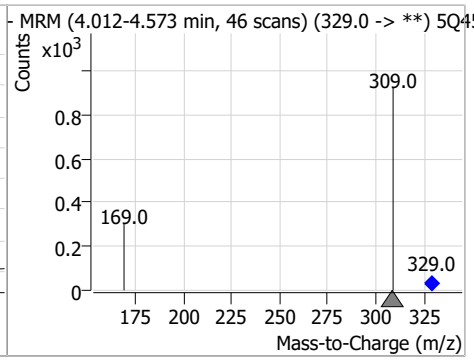


Perfluorinated Compounds by LC/MS/MS

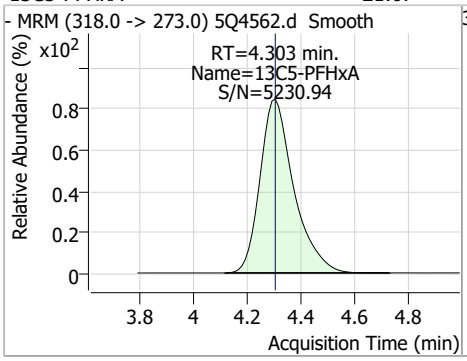
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.63	4.21	0.00	30299				

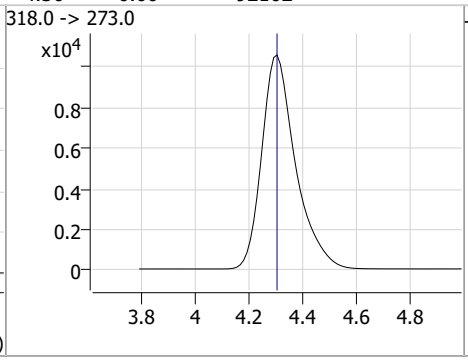


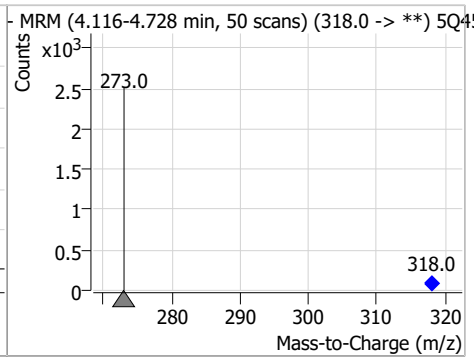




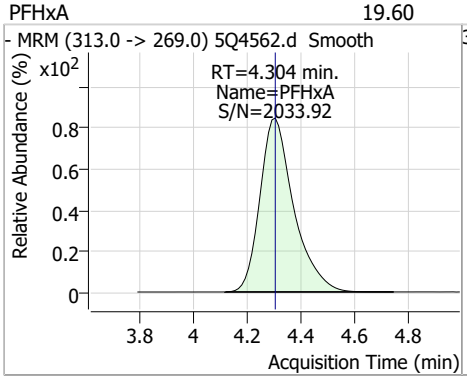
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.07	4.30	0.00	92102				

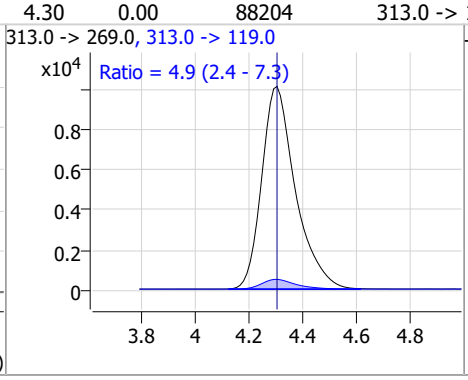


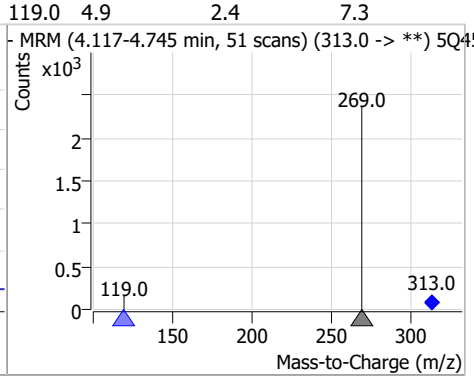




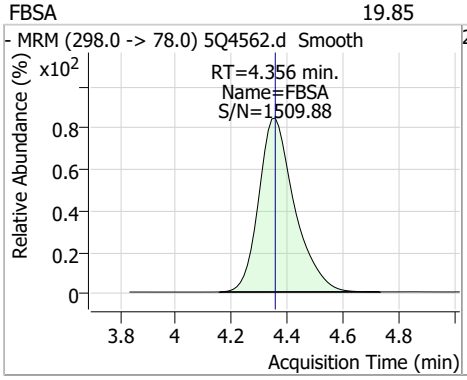
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.60	4.30	0.00	88204	313.0 -> 119.0	4.9	2.4	7.3

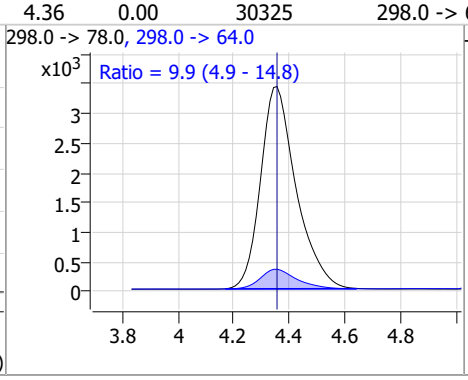


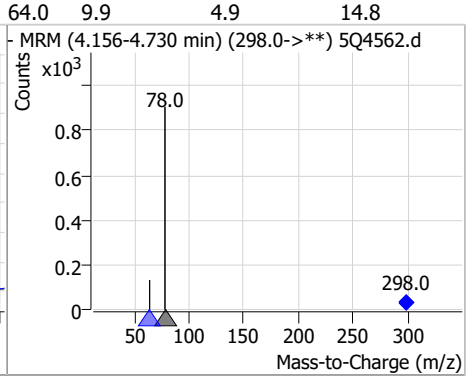




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.85	4.36	0.00	30325	298.0 -> 64.0	9.9	4.9	14.8

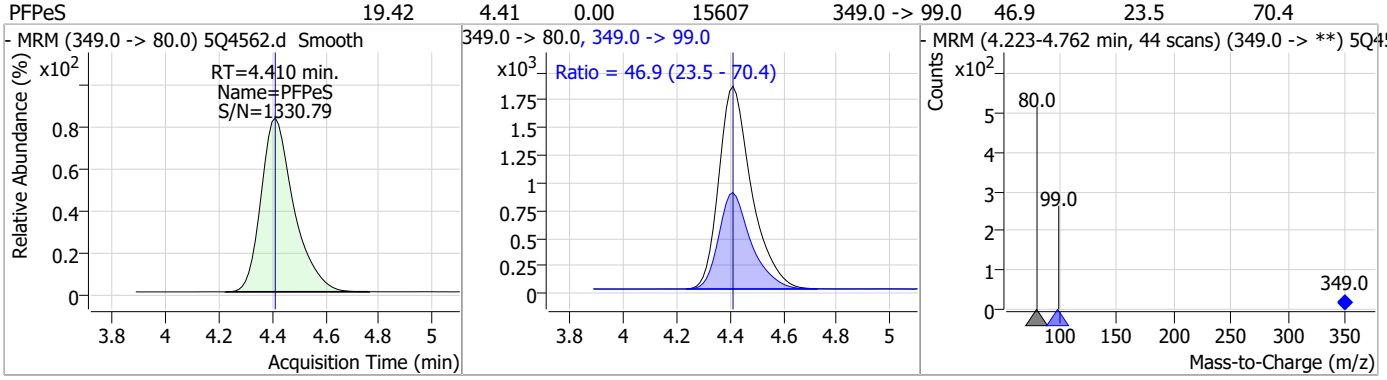




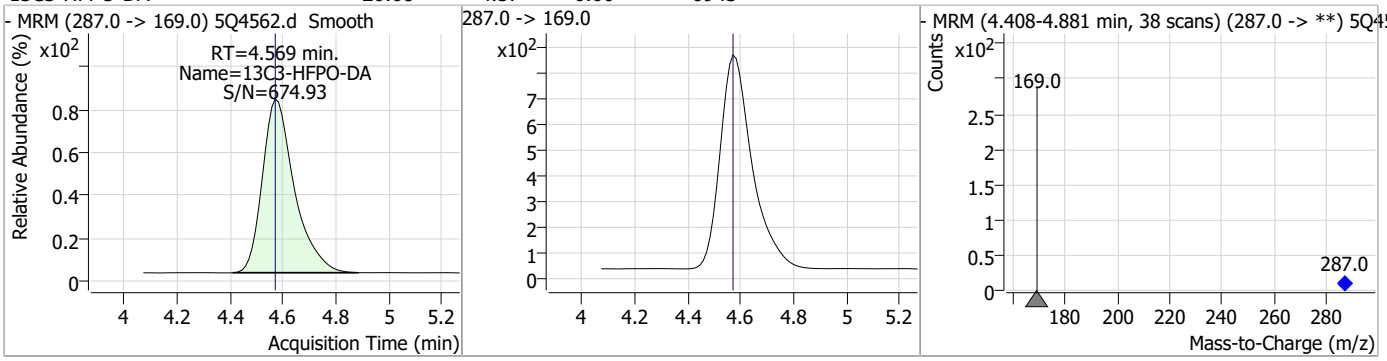


Perfluorinated Compounds by LC/MS/MS

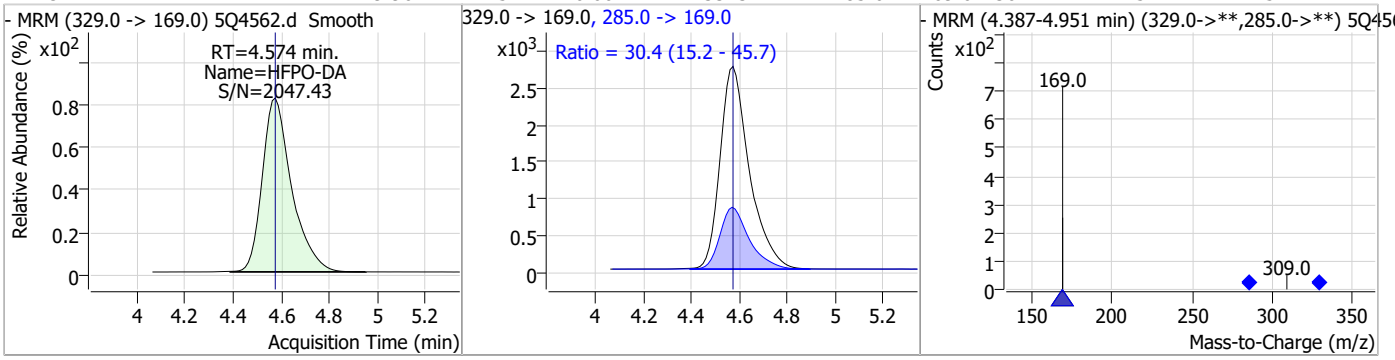
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.42	4.41	0.00	15607	349.0 -> 99.0	46.9	23.5	70.4



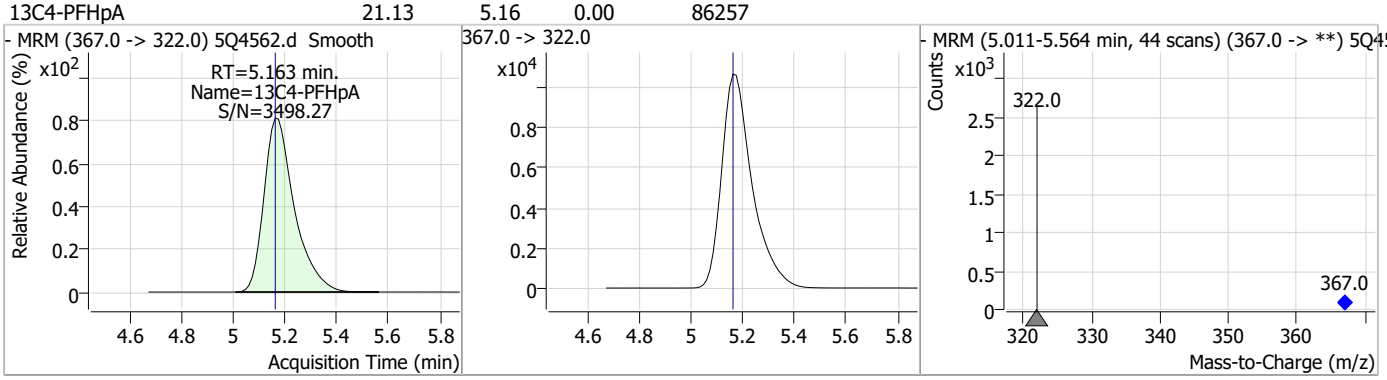
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.68	4.57	0.00	6943				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.90	4.57	0.00	23313	285.0 -> 169.0	30.4	15.2	45.7

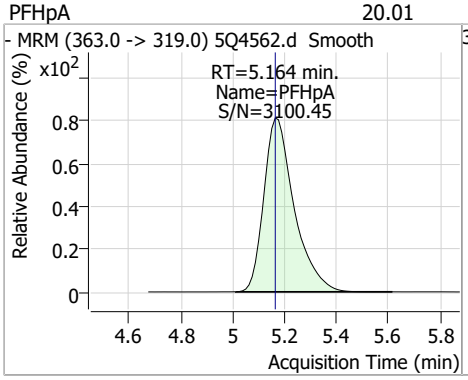


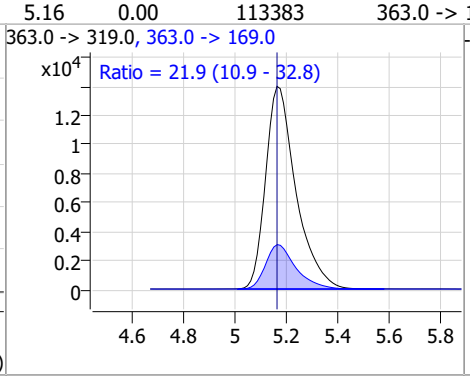
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.13	5.16	0.00	86257				

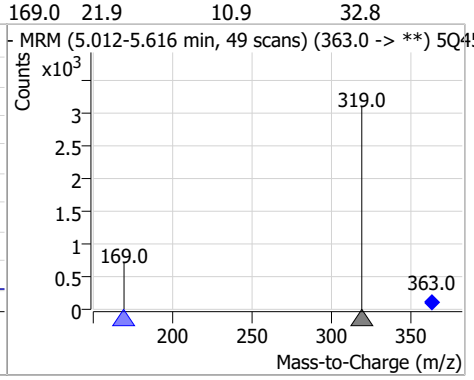


Perfluorinated Compounds by LC/MS/MS

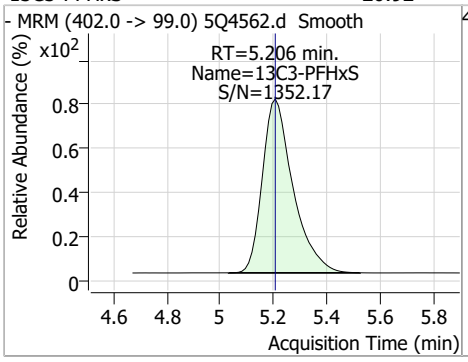
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.01	5.16	0.00	113383	363.0 -> 169.0	21.9	10.9	32.8

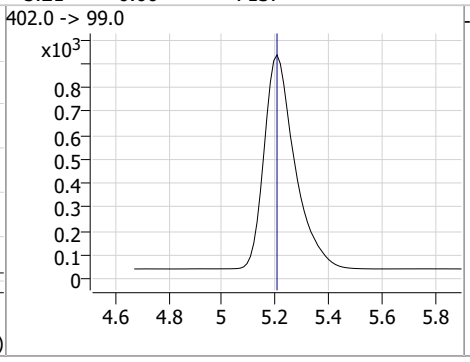


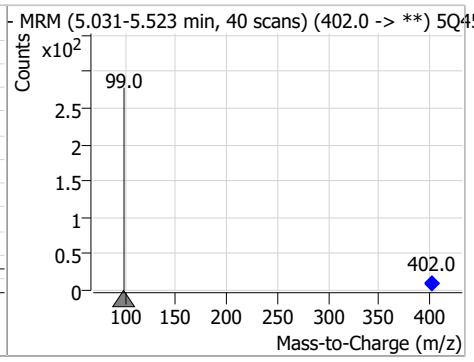




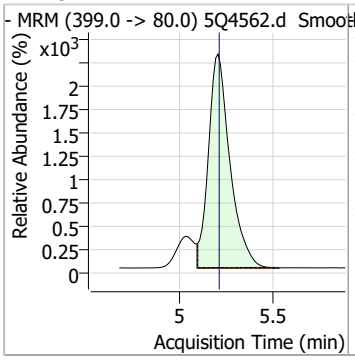
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.92	5.21	0.00	7137				

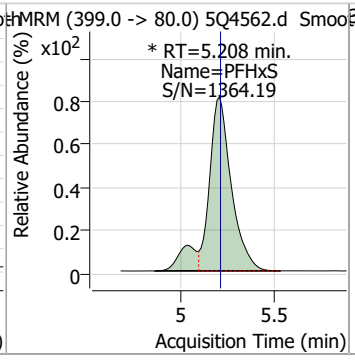


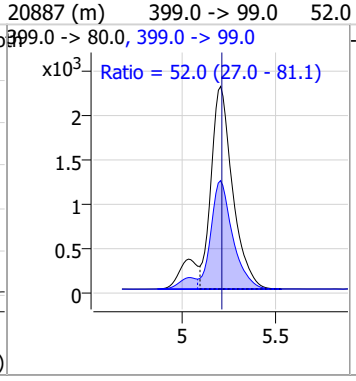


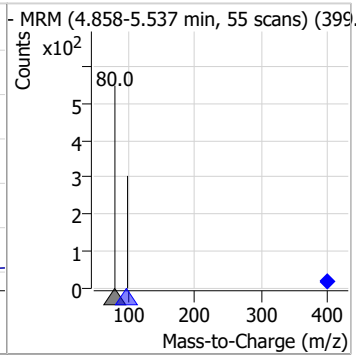


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.71	5.21	0.00	20887 (m)	399.0 -> 99.0	52.0	27.0	81.1

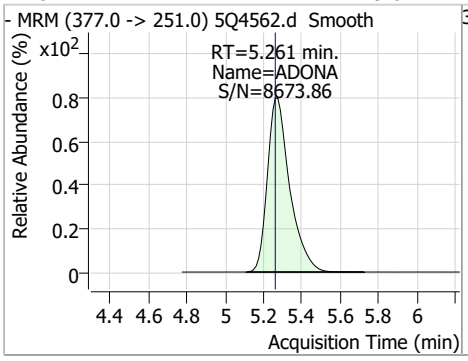


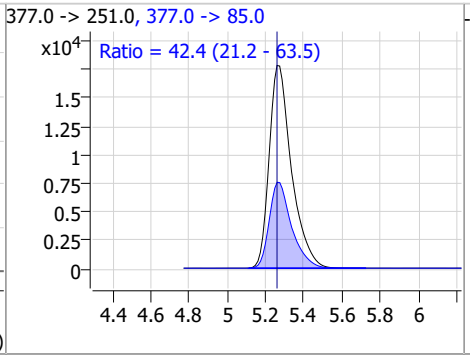


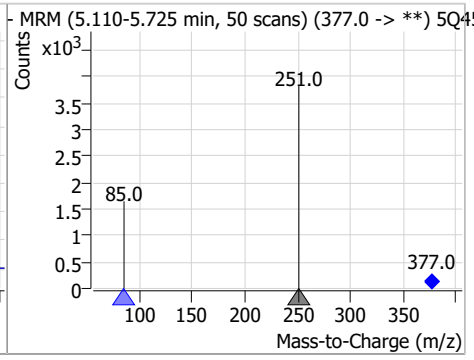




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.67	5.26	0.00	144274	377.0 -> 85.0	42.4	21.2	63.5

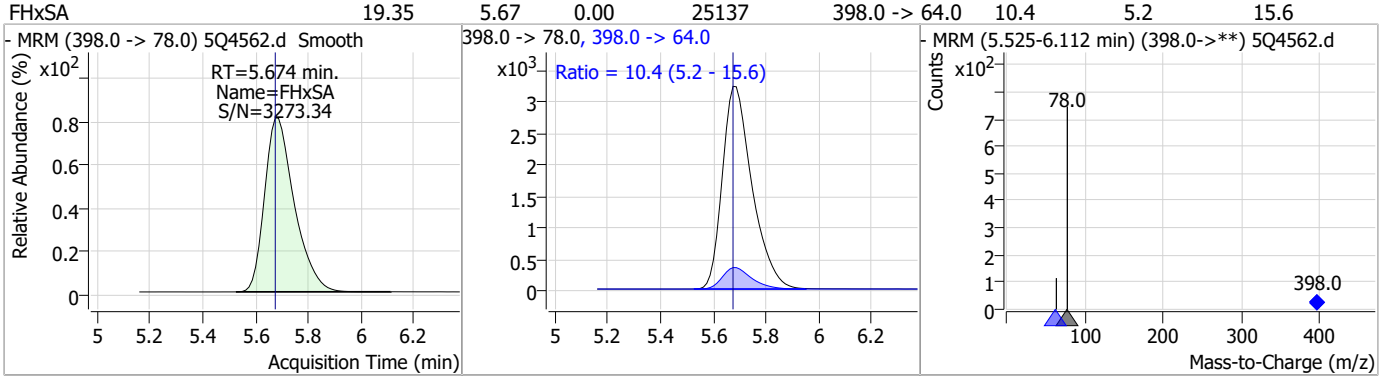




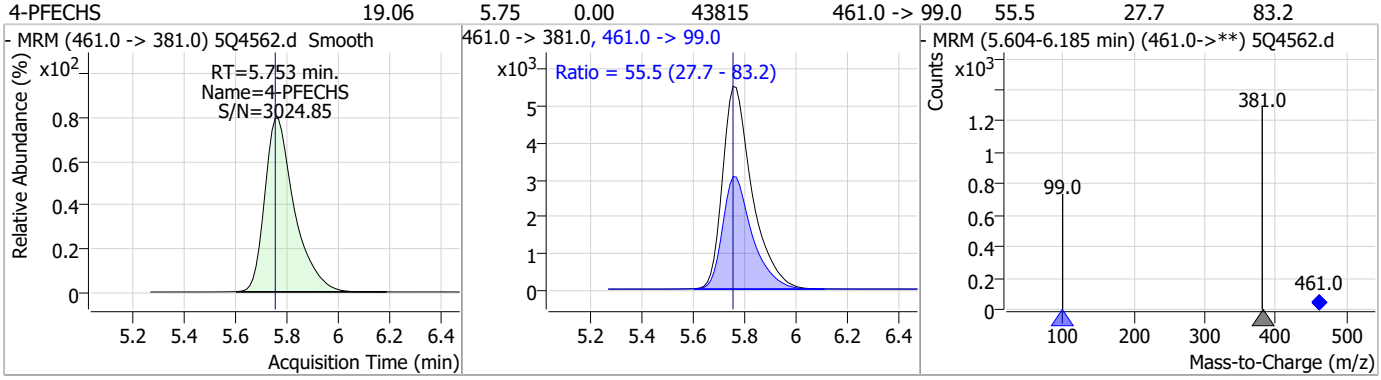


Perfluorinated Compounds by LC/MS/MS

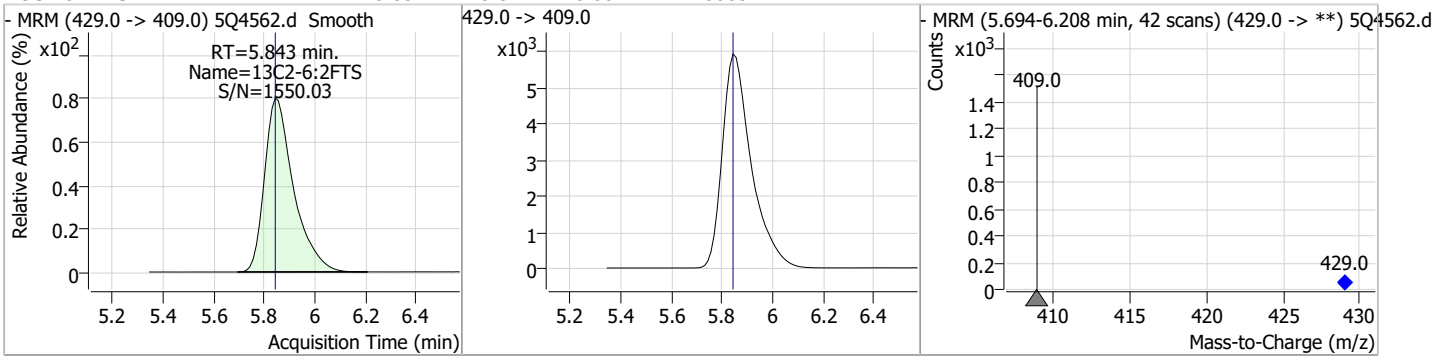
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.35	5.67	0.00	25137	398.0 -> 64.0	10.4	5.2	15.6



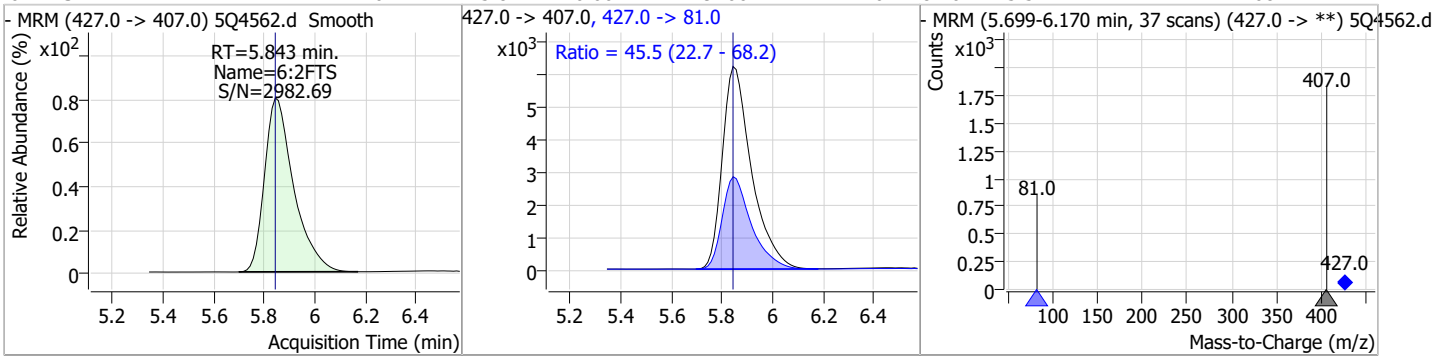
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.06	5.75	0.00	43815	461.0 -> 99.0	55.5	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.85	5.84	0.00	46605				

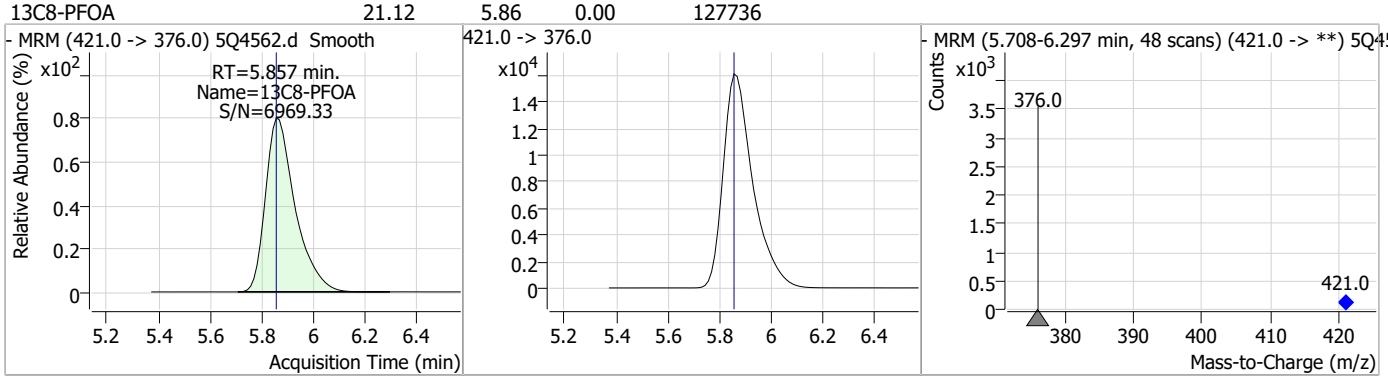


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.11	5.84	0.00	49706	427.0 -> 81.0	45.5	22.7	68.2

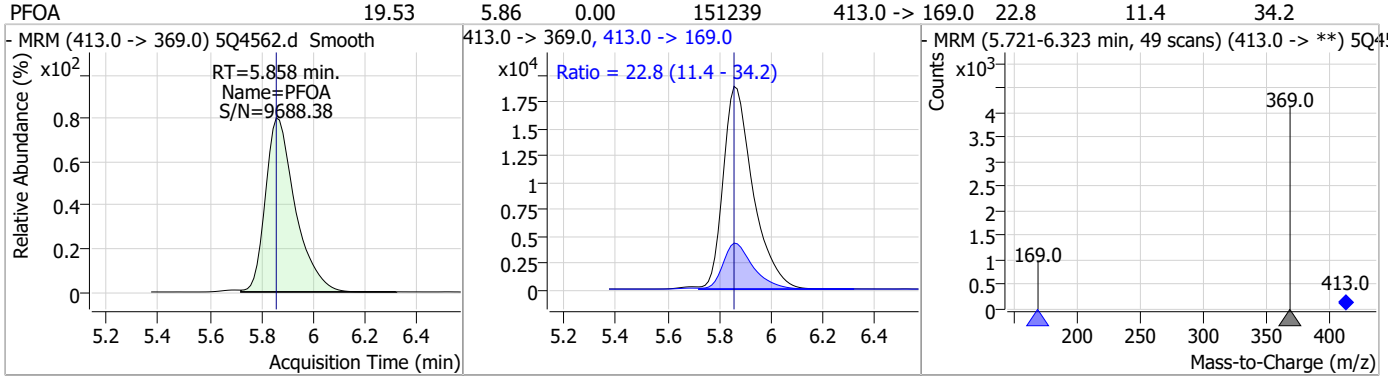


Perfluorinated Compounds by LC/MS/MS

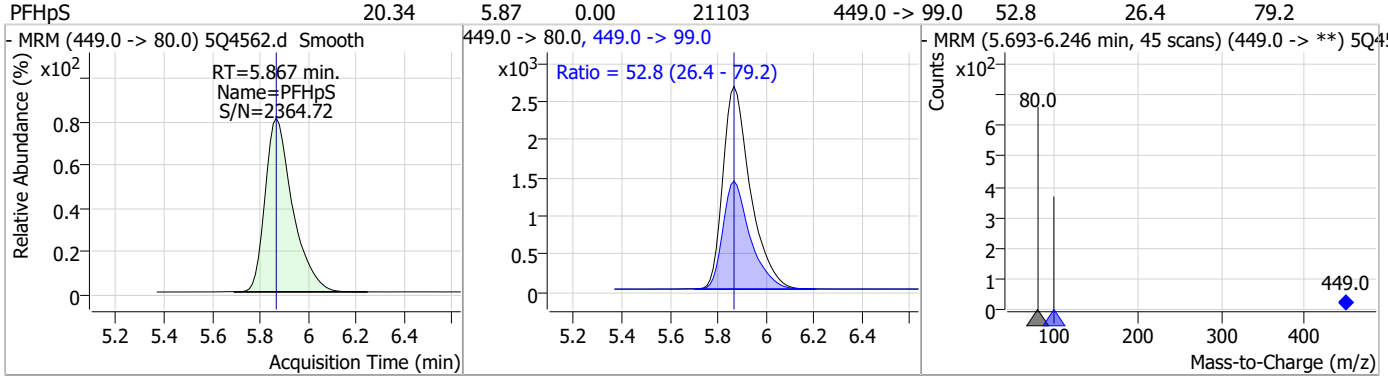
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.12	5.86	0.00	127736				



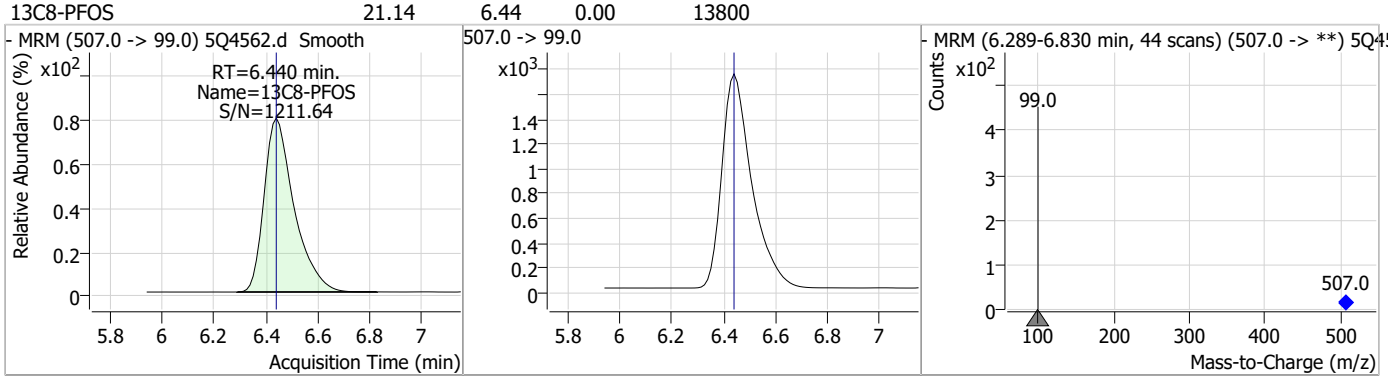
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.53	5.86	0.00	151239	413.0 -> 169.0	22.8	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.34	5.87	0.00	21103	449.0 -> 99.0	52.8	26.4	79.2

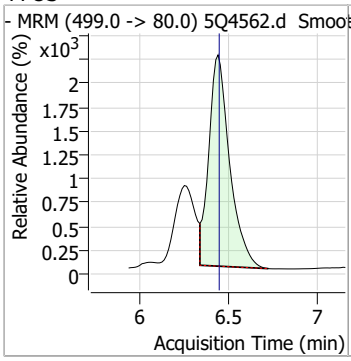


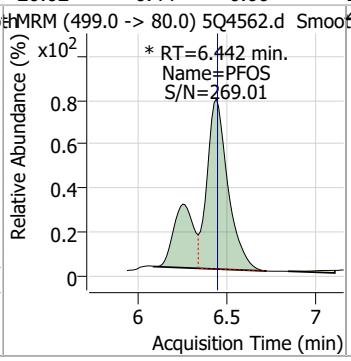
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.14	6.44	0.00	13800				

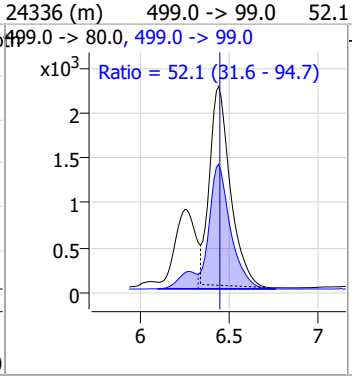


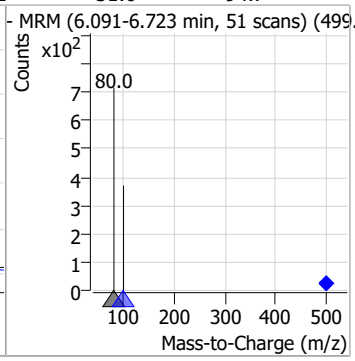
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.02	6.44	0.00	24336 (m)	499.0 -> 99.0	52.1	31.6	94.7

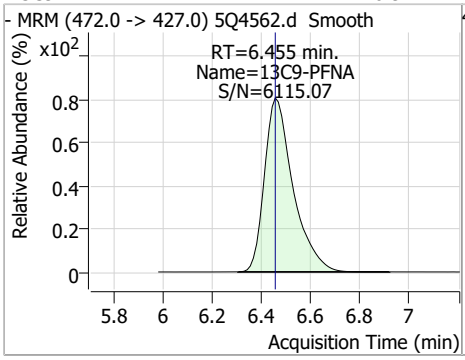


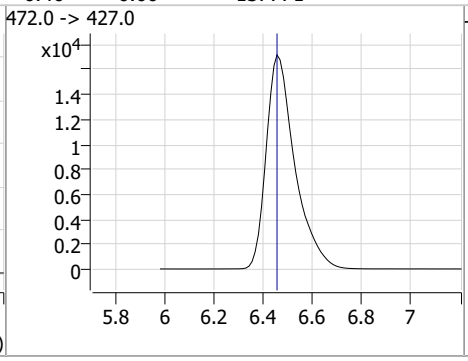


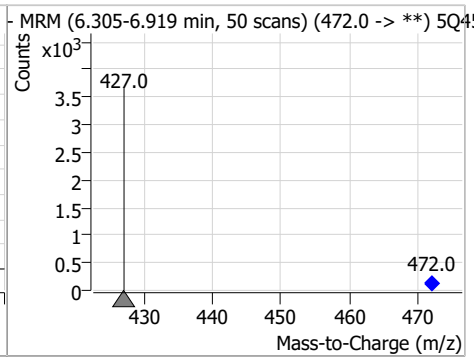




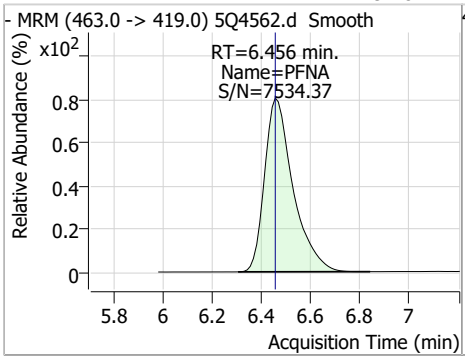
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.97	6.46	0.00	137771				

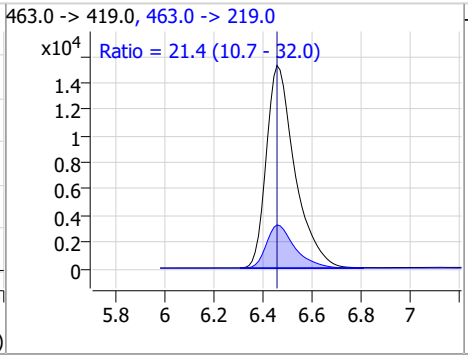


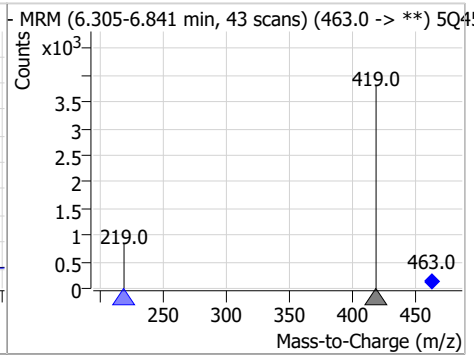




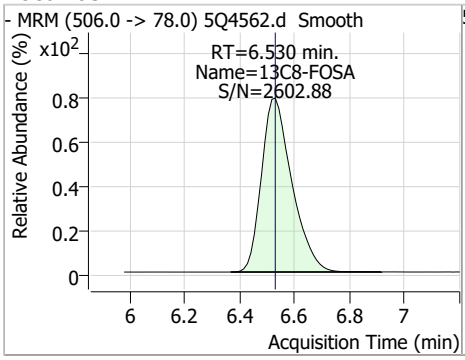
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.78	6.46	0.00	122117	463.0 -> 219.0	21.4	10.7	32.0

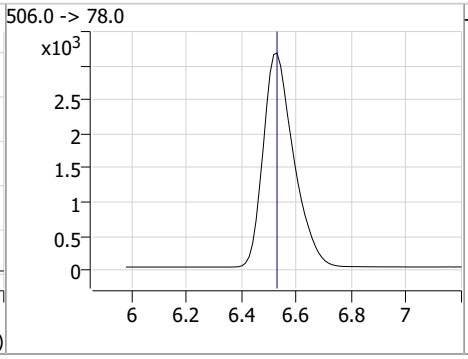


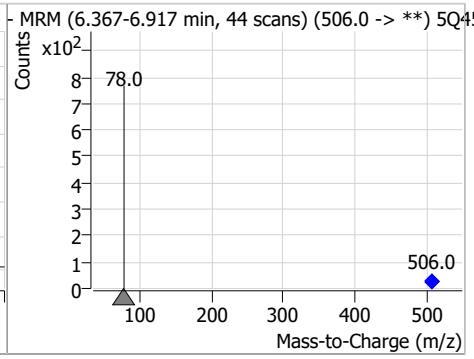




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.41	6.53	0.00	24293				

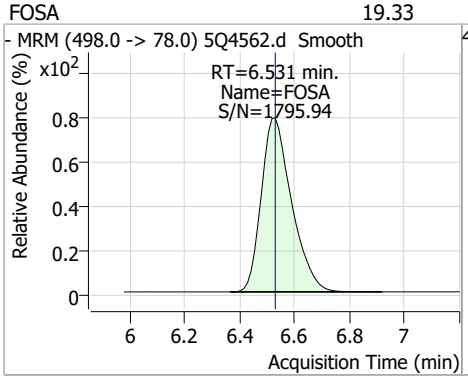


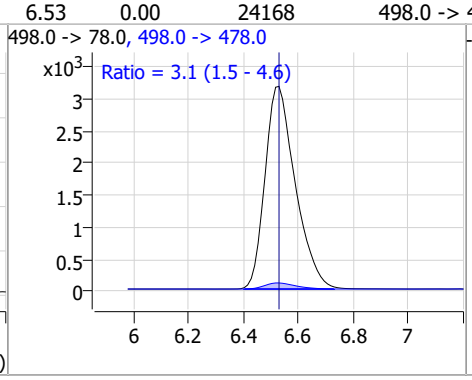


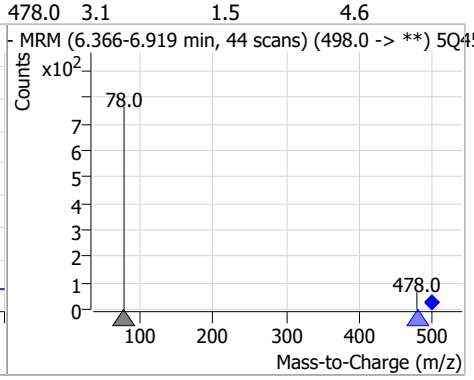


Perfluorinated Compounds by LC/MS/MS

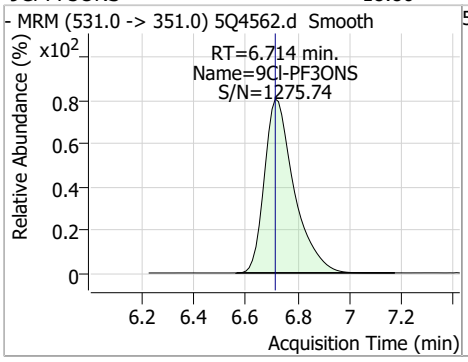
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.33	6.53	0.00	24168	498.0 -> 478.0	3.1	1.5	4.6

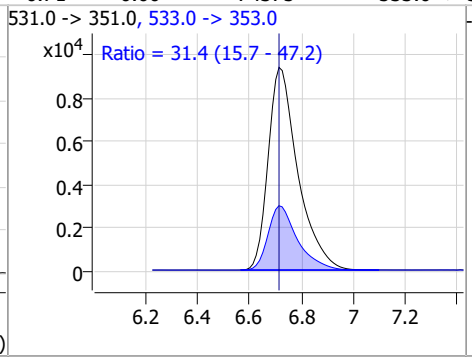


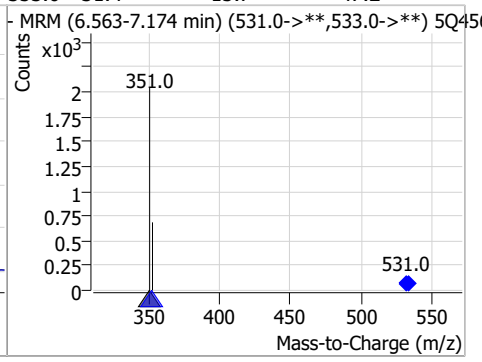




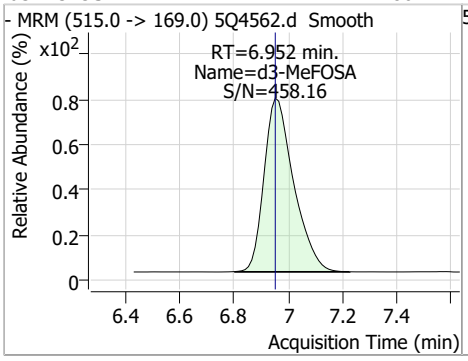
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.86	6.71	0.00	74375	533.0 -> 353.0	31.4	15.7	47.2

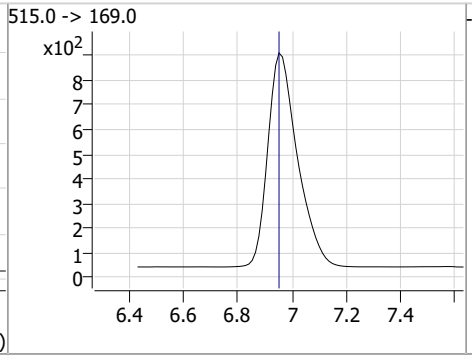


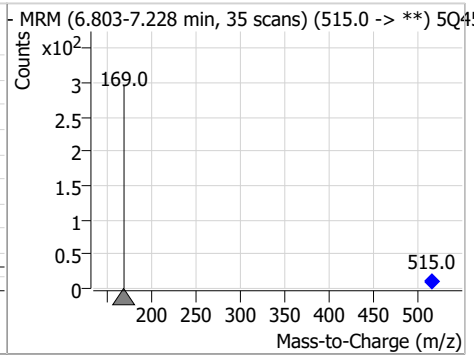




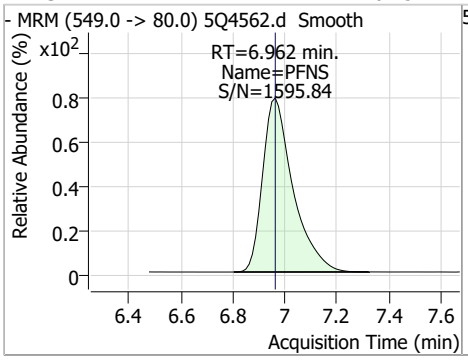
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.80	6.95	0.00	6639				

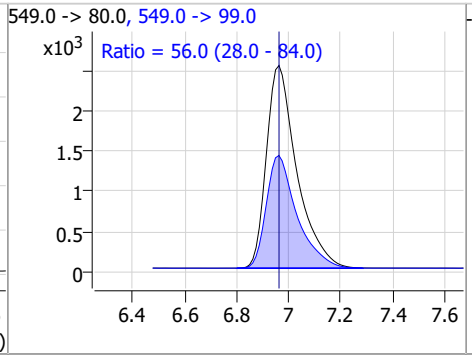


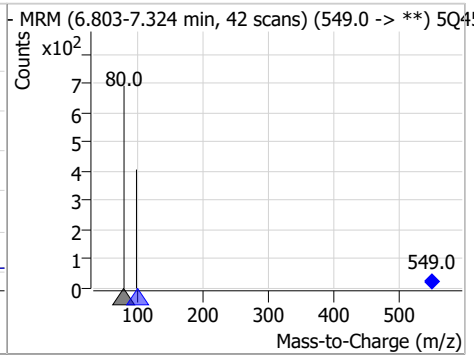




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.15	6.96	0.00	20529	549.0 -> 99.0	56.0	28.0	84.0

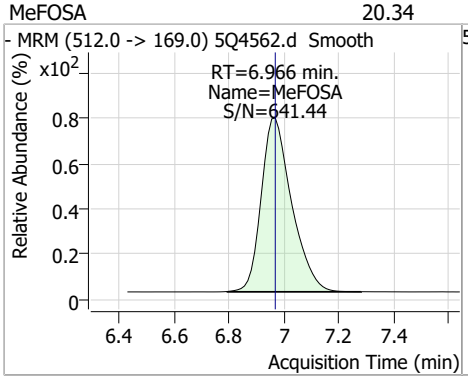


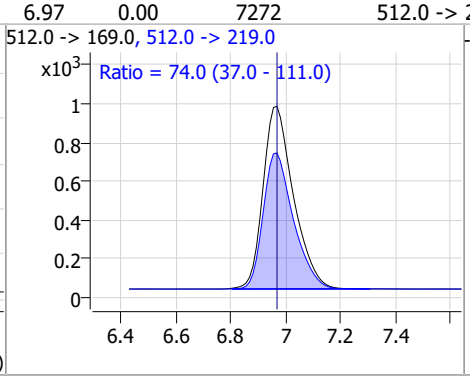


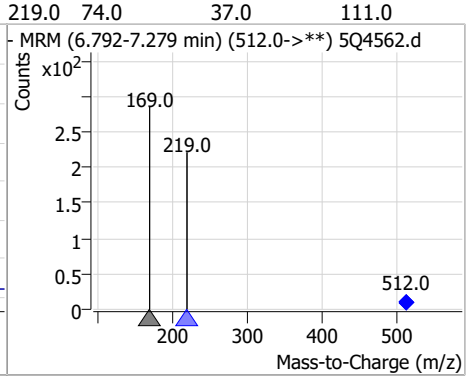


Perfluorinated Compounds by LC/MS/MS

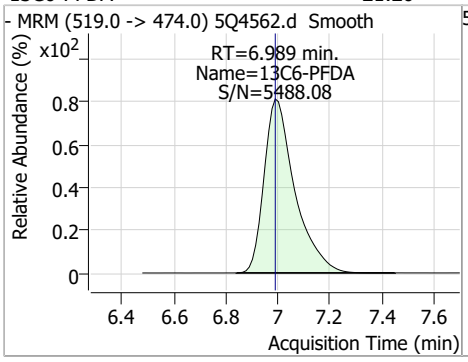
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.34	6.97	0.00	7272	512.0 -> 219.0	74.0	37.0	111.0

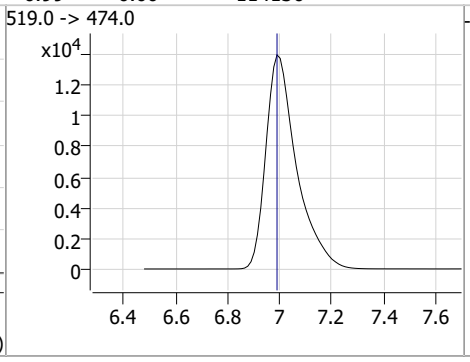


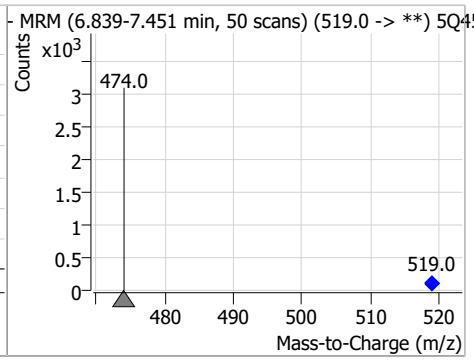




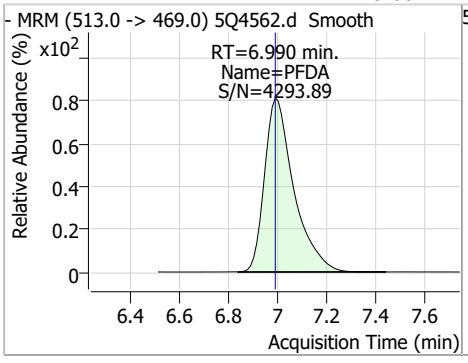
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.20	6.99	0.00	114136				

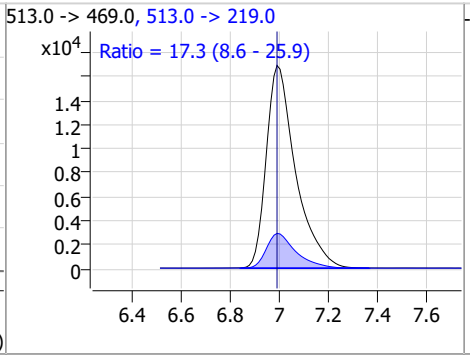


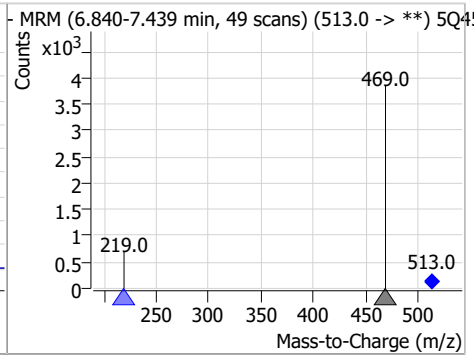




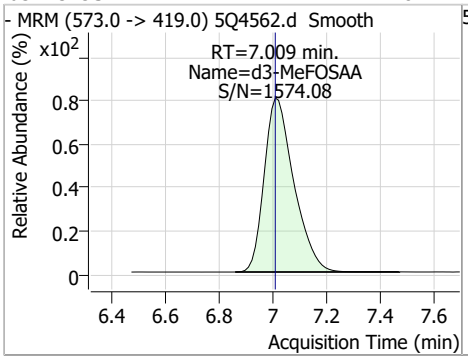
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.86	6.99	0.00	139222	513.0 -> 219.0	17.3	8.6	25.9

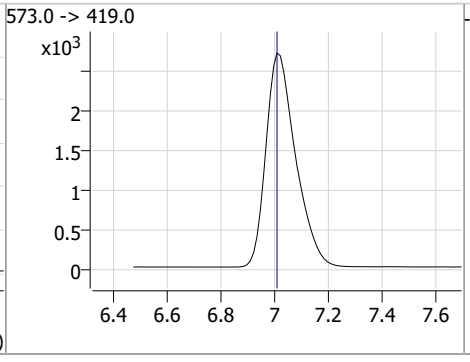


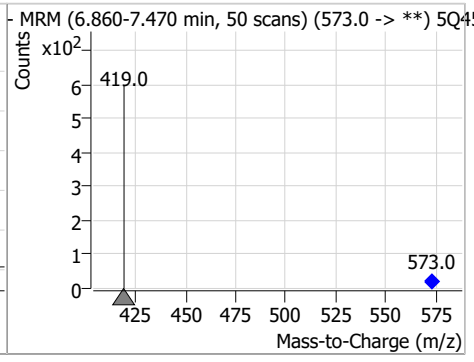




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.18	7.01	0.00	20589				

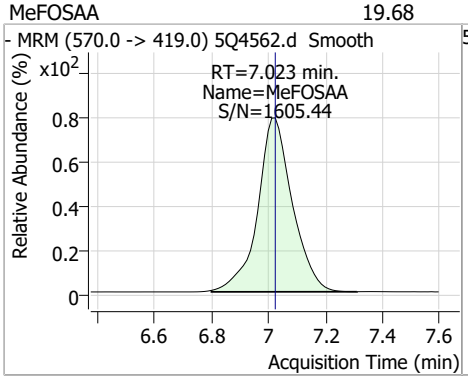


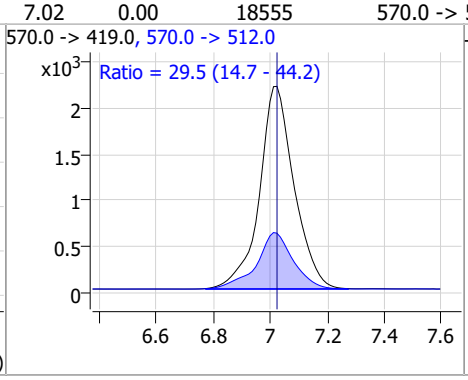


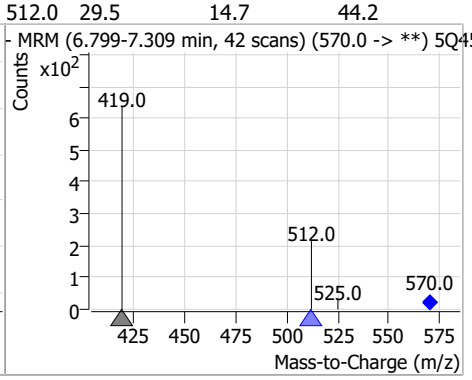


Perfluorinated Compounds by LC/MS/MS

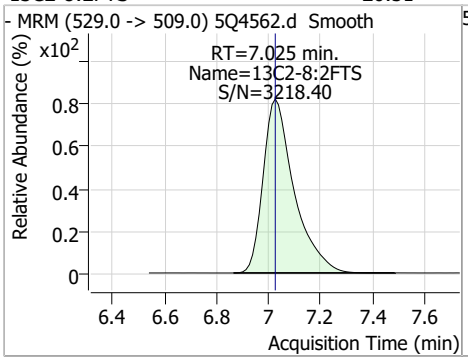
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.68	7.02	0.00	18555	570.0 -> 512.0	29.5	14.7	44.2

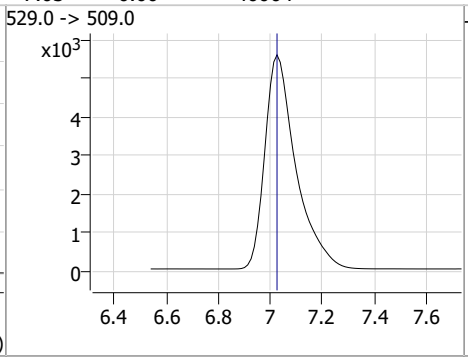


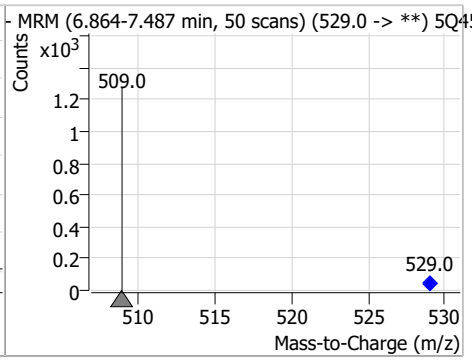




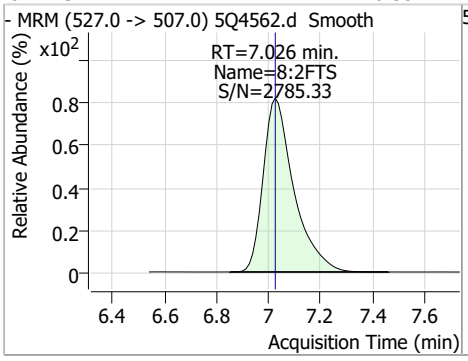
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.51	7.03	0.00	46064				

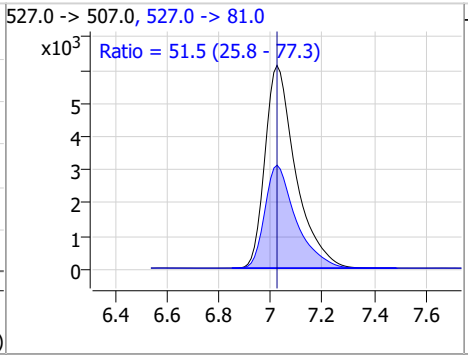


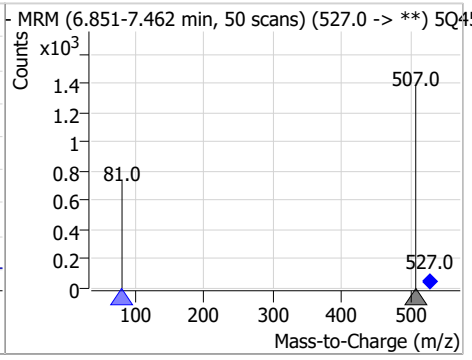




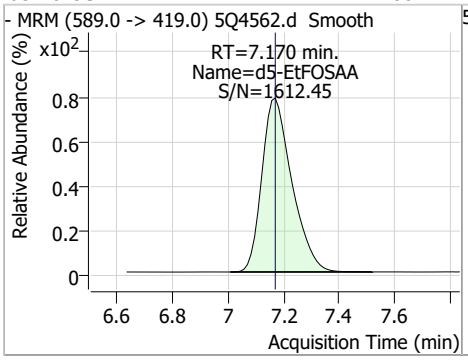
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.35	7.03	0.00	49953	527.0 -> 81.0	51.5	25.8	77.3

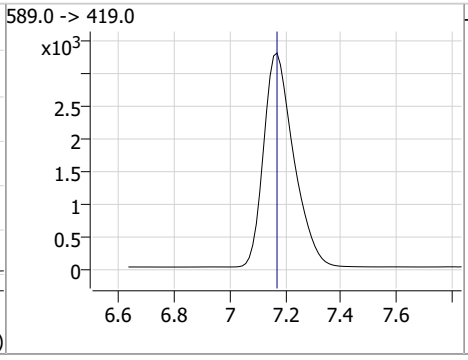


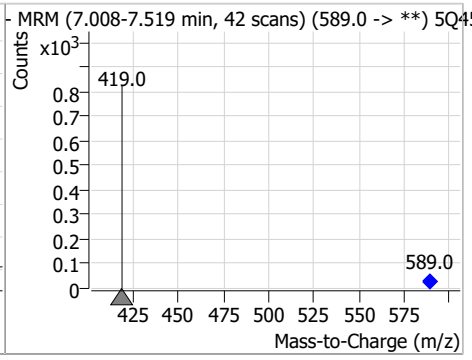




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.88	7.17	0.00	24527				

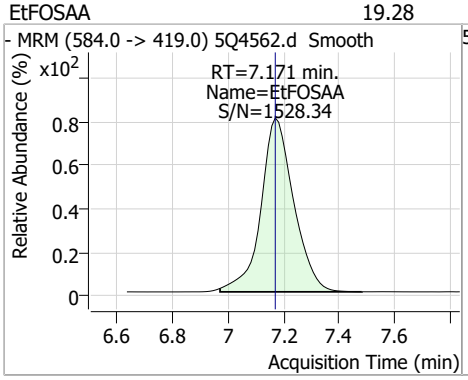


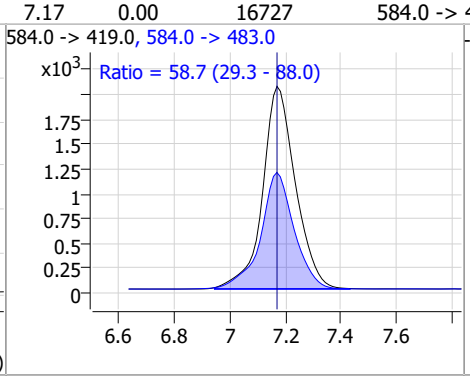


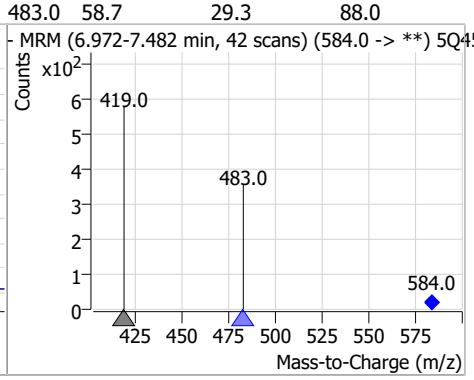


Perfluorinated Compounds by LC/MS/MS

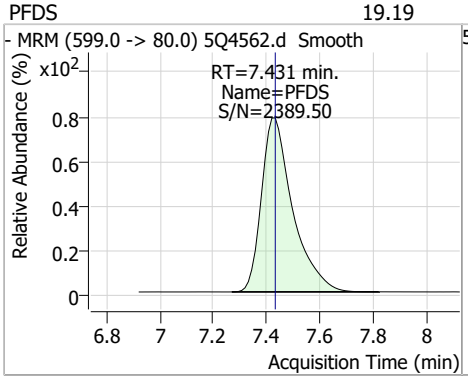
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.28	7.17	0.00	16727	584.0 -> 483.0	58.7	29.3	88.0

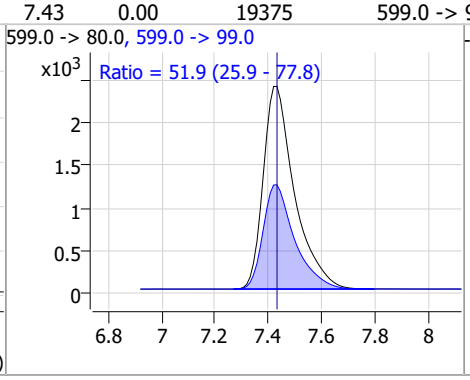


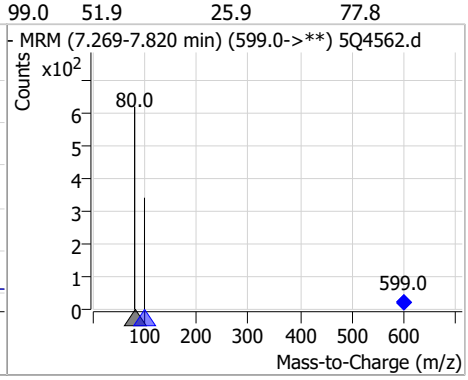




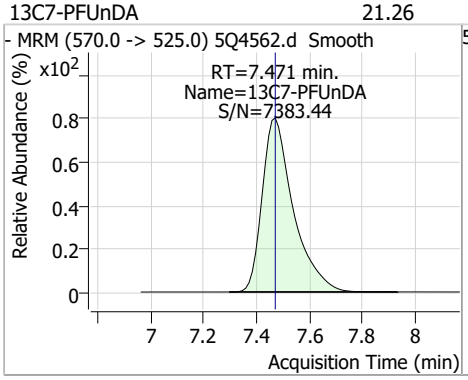
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.19	7.43	0.00	19375	599.0 -> 99.0	51.9	25.9	77.8

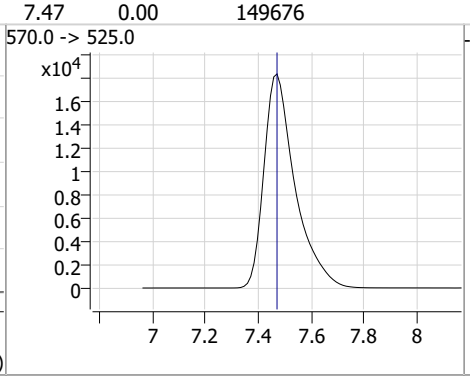


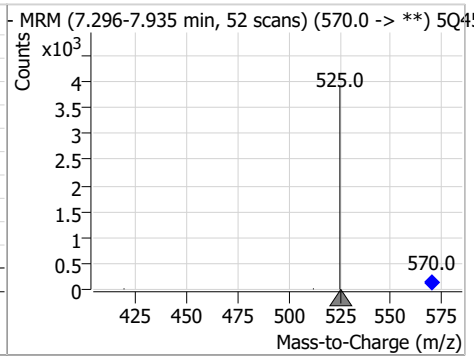




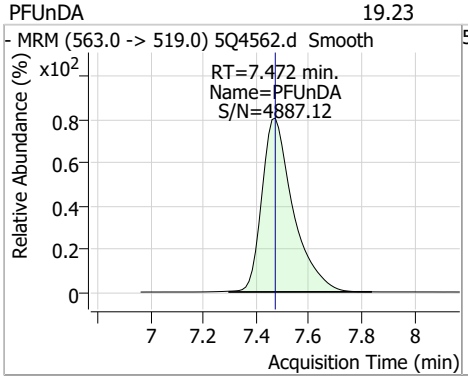
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.26	7.47	0.00	149676				

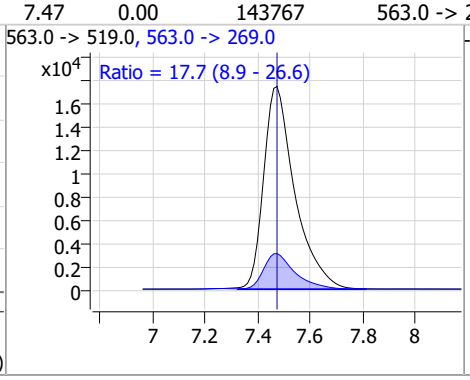


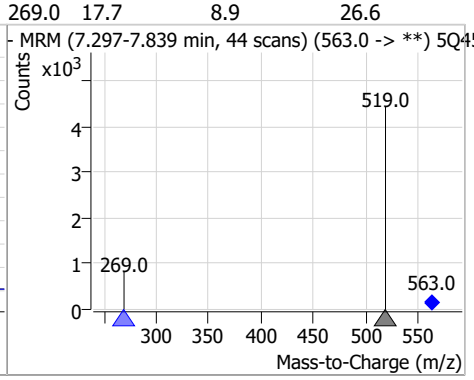




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.23	7.47	0.00	143767	563.0 -> 269.0	17.7	8.9	26.6

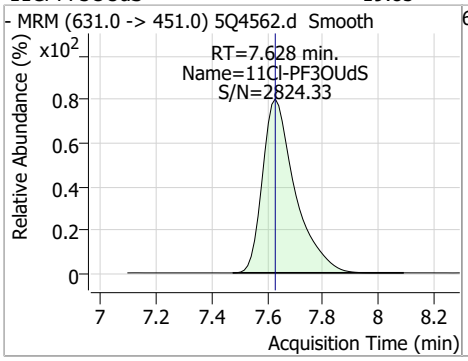


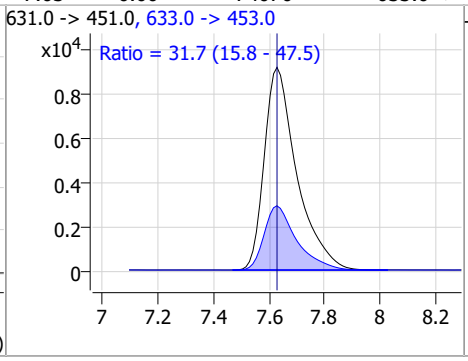


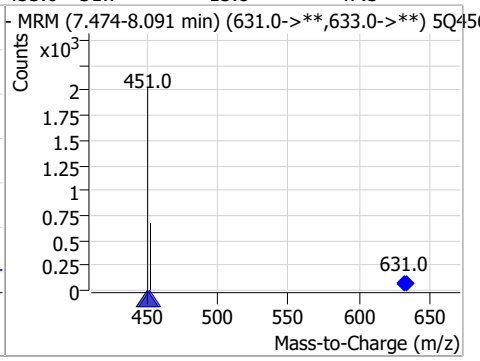


Perfluorinated Compounds by LC/MS/MS

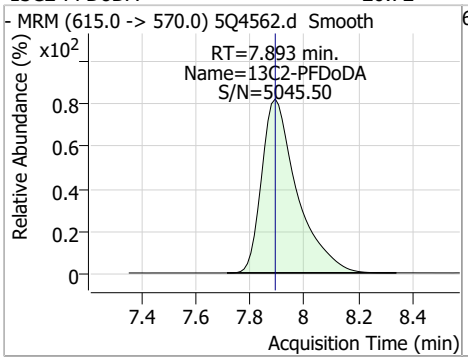
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.85	7.63	0.00	74076	633.0 -> 453.0	31.7	15.8	47.5

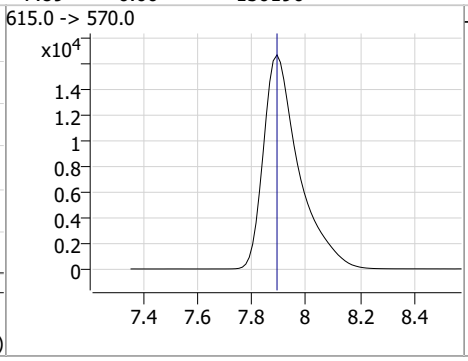


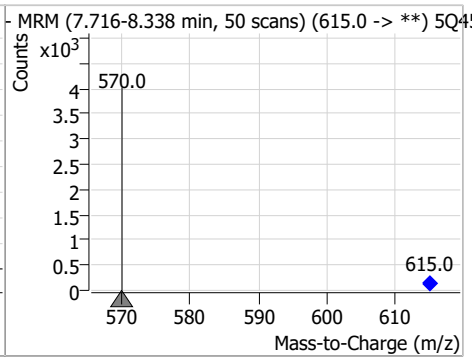




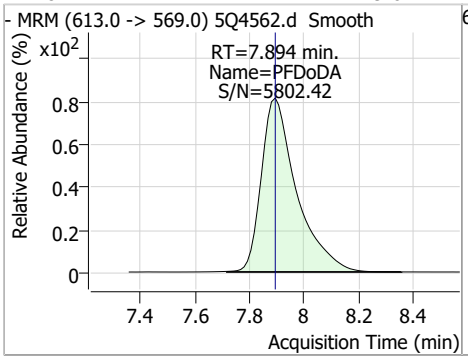
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.72	7.89	0.00	150190				

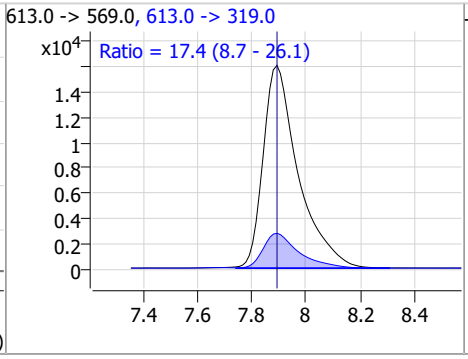


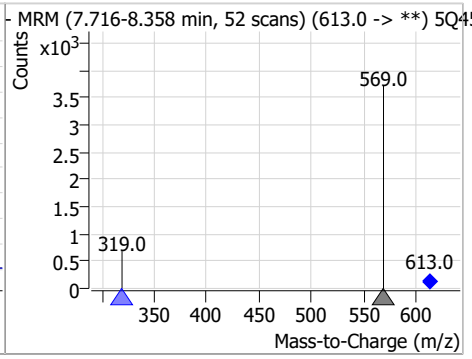




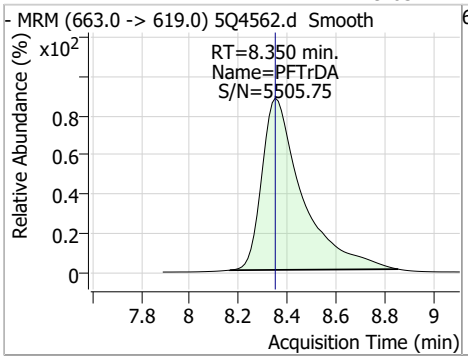
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.62	7.89	0.00	144539	613.0 -> 319.0	17.4	8.7	26.1

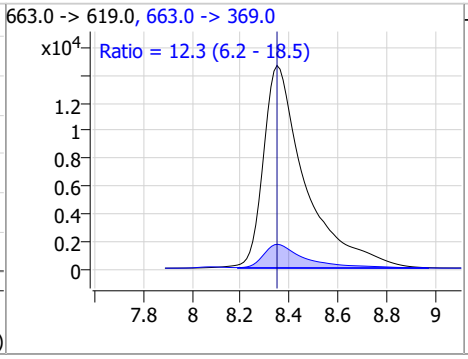


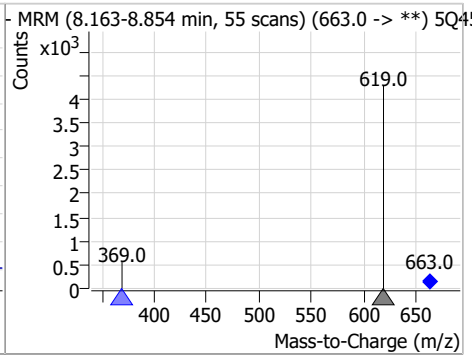




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.03	8.35	0.00	167556	663.0 -> 369.0	12.3	6.2	18.5

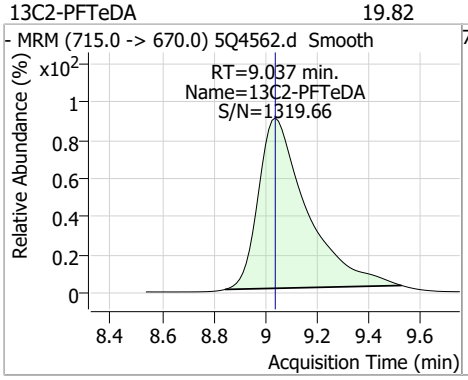


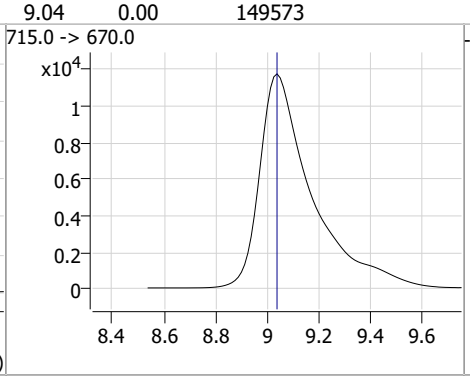


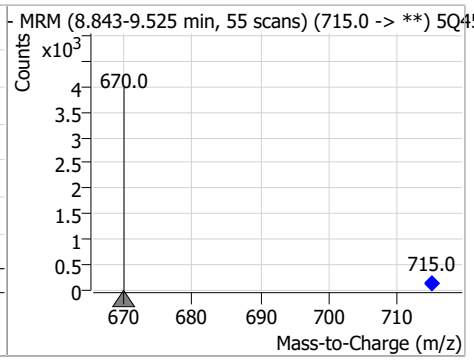


Perfluorinated Compounds by LC/MS/MS

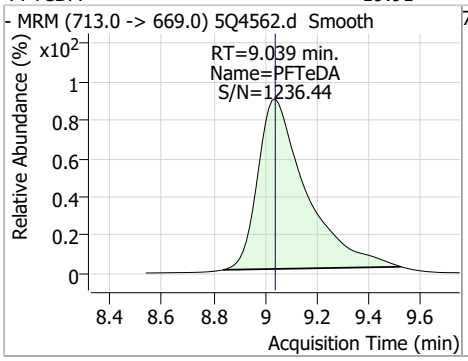
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.82	9.04	0.00	149573				

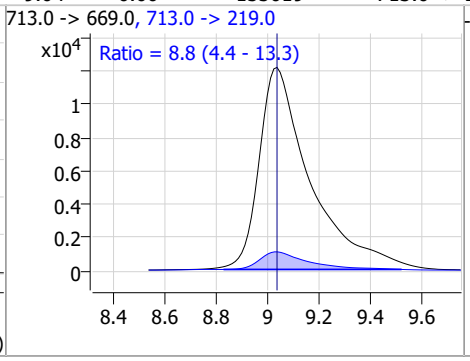


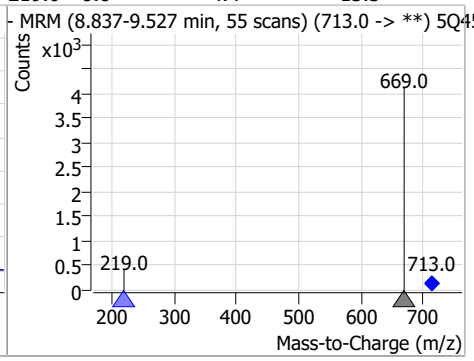




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.91	9.04	0.00	155019	713.0 -> 219.0	8.8	4.4	13.3







7.7.38

7

Manual Integration Approval Summary

Sample Number: S5Q71-ICC71
Lab FileID: 5Q4562.D
Injection Time: 09/14/22 11:57
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger 09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4563.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:13:02 PM
Sample Name : ic71-50
Vial : P1-A8
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

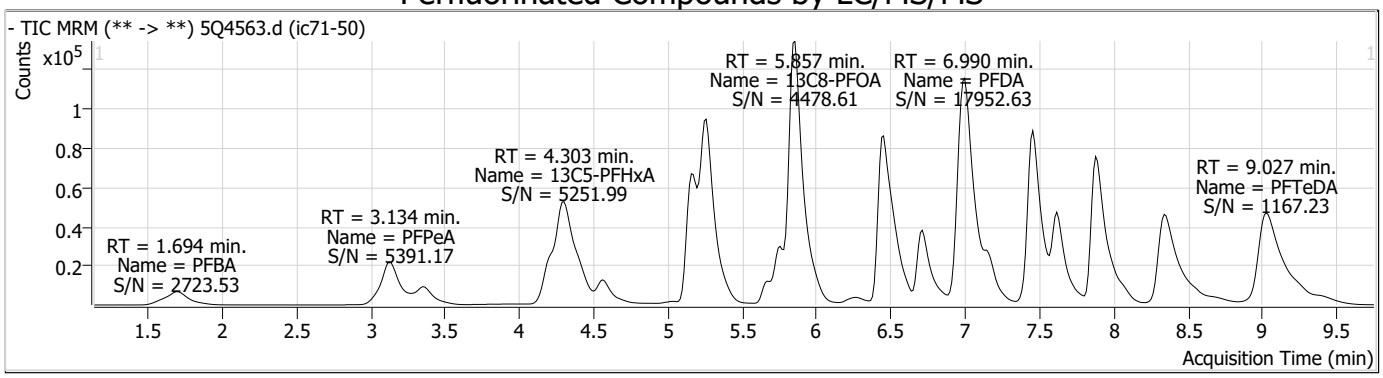
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	35526	20.00 µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57941	20.00 µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	86349	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	81362	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	118581	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	132378	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	107494	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	141271	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	146282	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	158772	20.00 µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	22706	20.00 µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6457	20.00 µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6746	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13124	20.00 µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	31305	20.00 µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	47147	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	46379	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	19179	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6606	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6398	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22940	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.212	329.0 -> 309.0	31305	21.32 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%	
13C2-6:2FTS	5.843	429.0 -> 409.0	47147	21.09 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%	
13C2-8:2FTS	7.025	529.0 -> 509.0	46379	20.65 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%	
13C2-PFDoDA	7.893	615.0 -> 570.0	146282	20.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%	
13C2-PFTeDA	9.037	715.0 -> 670.0	158772	21.04 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%	
13C3-PFBS	3.362	302.0 -> 99.0	6457	19.82 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C3-PFHxS	5.206	402.0 -> 99.0	6746	19.78 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFBA	1.700	217.0 -> 172.0	35526	19.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%	
13C4-PFHpA	5.163	367.0 -> 322.0	81362	19.93 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFHxA	4.303	318.0 -> 273.0	86349	19.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%	
13C5-PFPeA	3.132	268.0 -> 223.0	57941	19.94 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C6-PFDA	6.989	519.0 -> 474.0	107494	19.97 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

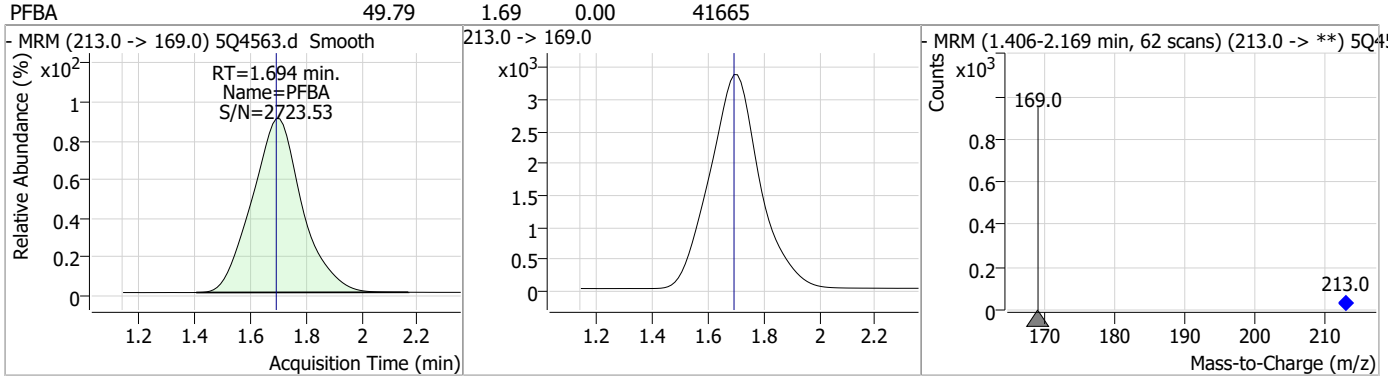
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C7-PFUnDA	7.471	570.0 -> 525.0	141271	20.06 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-FOSA	6.530	506.0 -> 78.0	22706	20.01 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C8-PFOA	5.857	421.0 -> 376.0	118581	19.61 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C8-PFOS	6.440	507.0 -> 99.0	13124	20.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C9-PFNA	6.455	472.0 -> 427.0	132378	20.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
d3-MeFOSAA	7.009	573.0 -> 419.0	19179	19.73 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	6606	19.67 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
d3-MeFOSA	6.952	515.0 -> 169.0	6398	21.01 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
d5-EtFOSAA	7.170	589.0 -> 419.0	22940	20.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
Target Compounds						**QValue**
4:2FTS	4.214	327.0 -> 307.0	81437	46.47 µg/L		100
6:2FTS	5.843	427.0 -> 407.0	118038	47.21 µg/L		99
8:2FTS	7.026	527.0 -> 507.0	115816	46.85 µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	40005	49.29 µg/L		99
FOSA	6.531	498.0 -> 78.0	58817	50.34 µg/L		100
MeFOSAA	7.023	570.0 -> 419.0	43563	49.59 µg/L		99
PFBA	1.694	213.0 -> 169.0	41665	49.79 µg/L		100
PFBS	3.367	299.0 -> 80.0	47847	49.33 µg/L		100
PFDA	6.990	513.0 -> 469.0	324161	49.09 µg/L		99
PFDoDA	7.894	613.0 -> 569.0	355706	49.57 µg/L		100
PFDS	7.419	599.0 -> 80.0	46224	48.50 µg/L		100
PFHpA	5.164	363.0 -> 319.0	269966	50.51 µg/L		100
PFHpS	5.867	449.0 -> 80.0	49547	50.22 µg/L		99
PFHxA	4.304	313.0 -> 269.0	209549	49.67 µg/L		100
PFHxS	5.208	399.0 -> 80.0	49985	49.89 µg/L	m	97
PFNA	6.456	463.0 -> 419.0	290563	48.99 µg/L		100
PFNS	6.962	549.0 -> 80.0	48828	50.40 µg/L		100
PFOA	5.858	413.0 -> 369.0	357567	49.73 µg/L		100
PFOS	6.442	499.0 -> 80.0	57518	49.76 µg/L	m	86
PFPeA	3.134	263.0 -> 219.0	141486	49.41 µg/L		100
PFPeS	4.410	349.0 -> 80.0	36895	48.90 µg/L		99
PFTeDA	9.027	713.0 -> 669.0	377933	45.73 µg/L		100
PFTrDA	8.350	663.0 -> 619.0	419276	48.89 µg/L		100
PFUnDA	7.472	563.0 -> 519.0	340959	48.32 µg/L		100
11Cl-PF3OUdS	7.628	631.0 -> 451.0	180575	49.68 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	177976	47.91 µg/L		100
ADONA	5.275	377.0 -> 251.0	344948	49.74 µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	55875	50.13 µg/L		100
MeFOSA	6.966	512.0 -> 169.0	17034	49.44 µg/L		97
4-PFECHS	5.753	461.0 -> 381.0	105932	49.64 µg/L		99
FBSA	4.356	298.0 -> 78.0	72157	50.39 µg/L		100
FHxSA	5.687	398.0 -> 78.0	60282	49.98 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

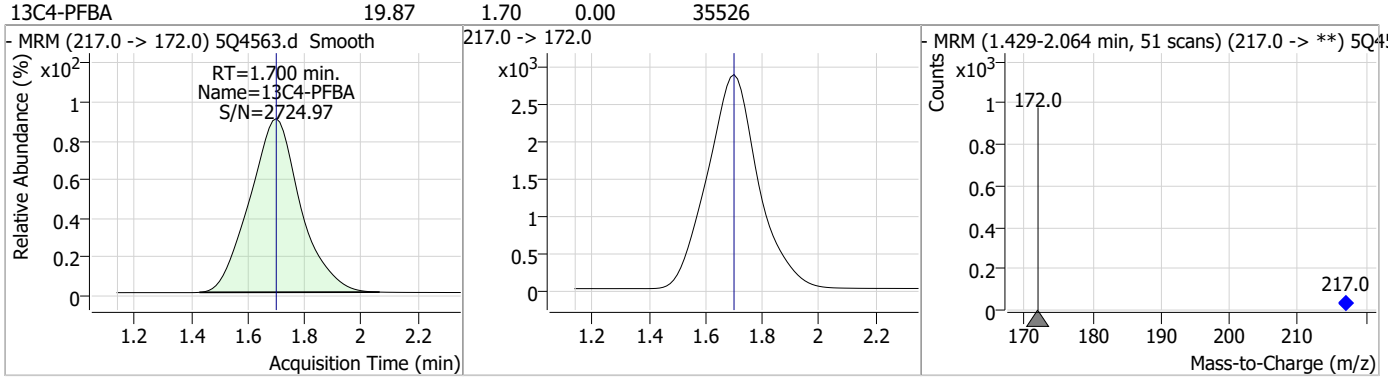
Perfluorinated Compounds by LC/MS/MS



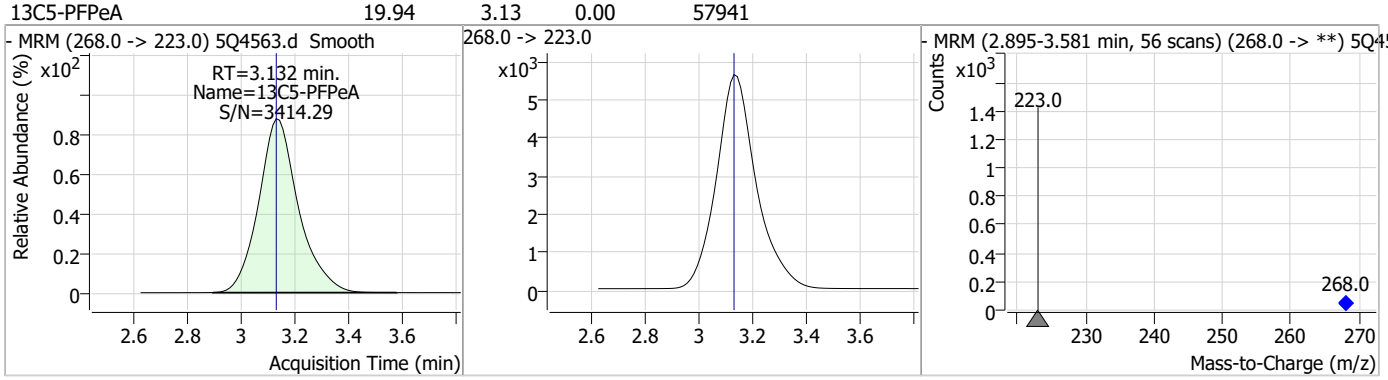
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.79	1.69	0.00	41665				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.87	1.70	0.00	35526				

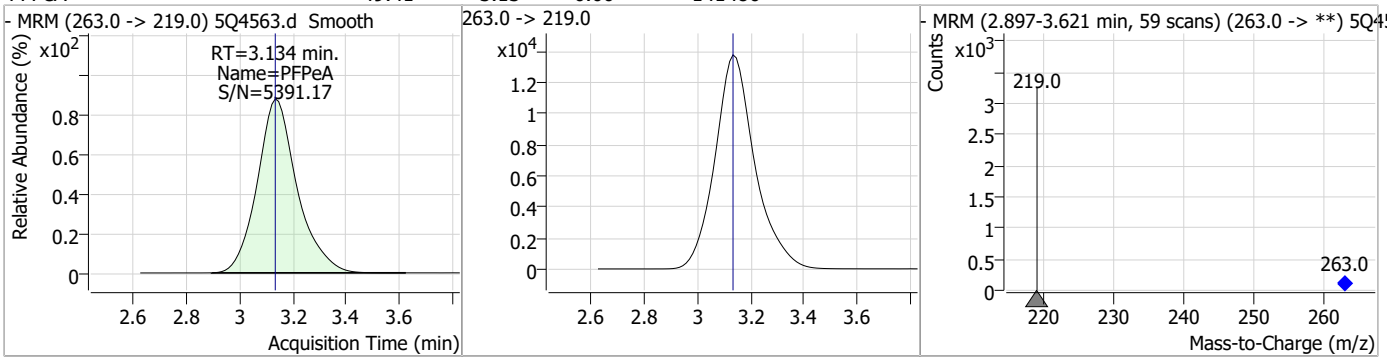


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.94	3.13	0.00	57941				

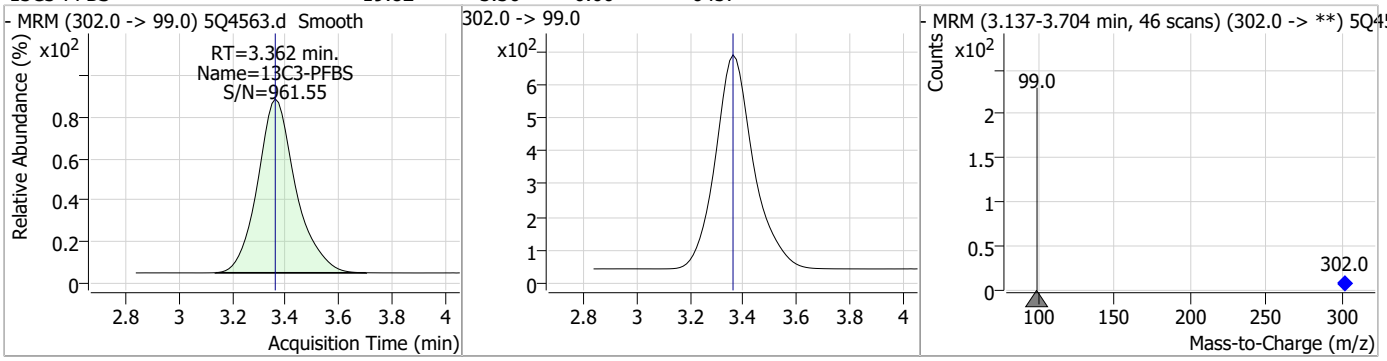


Perfluorinated Compounds by LC/MS/MS

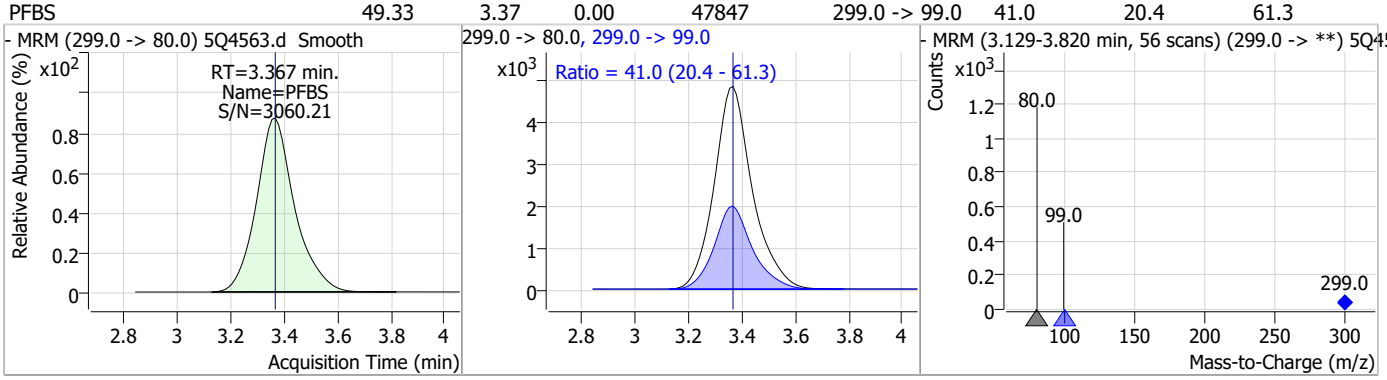
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.41	3.13	0.00	141486				



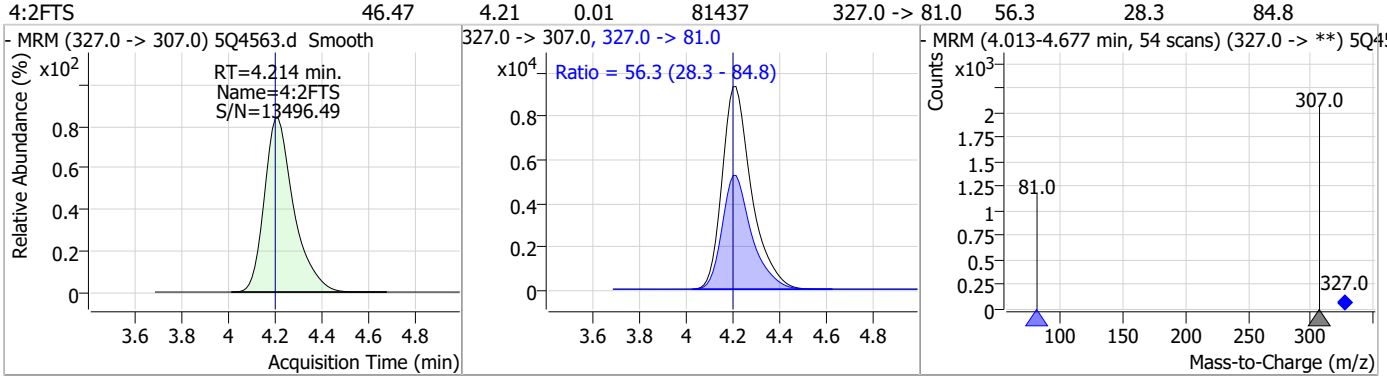
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.82	3.36	0.00	6457				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	49.33	3.37	0.00	47847	299.0 -> 99.0	41.0	20.4	61.3

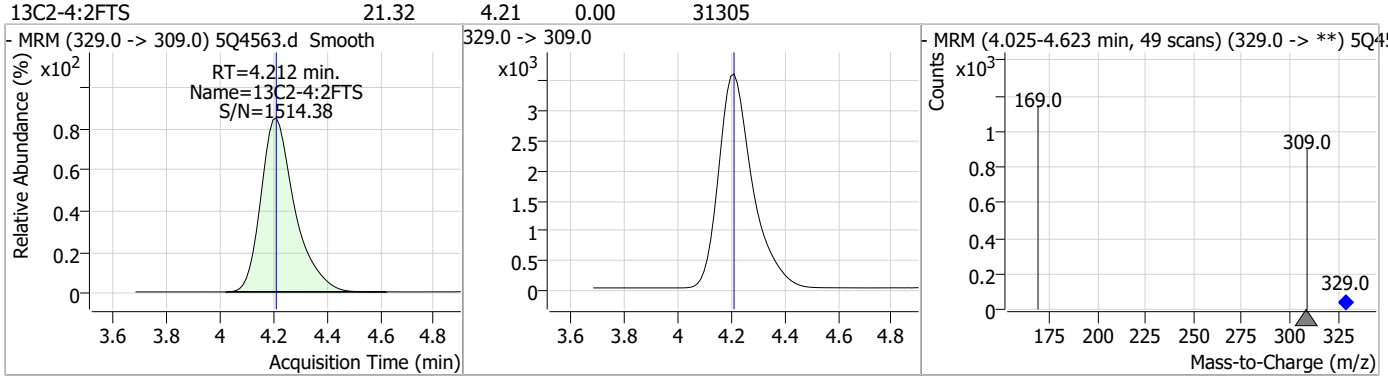


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	46.47	4.21	0.01	81437	327.0 -> 81.0	56.3	28.3	84.8

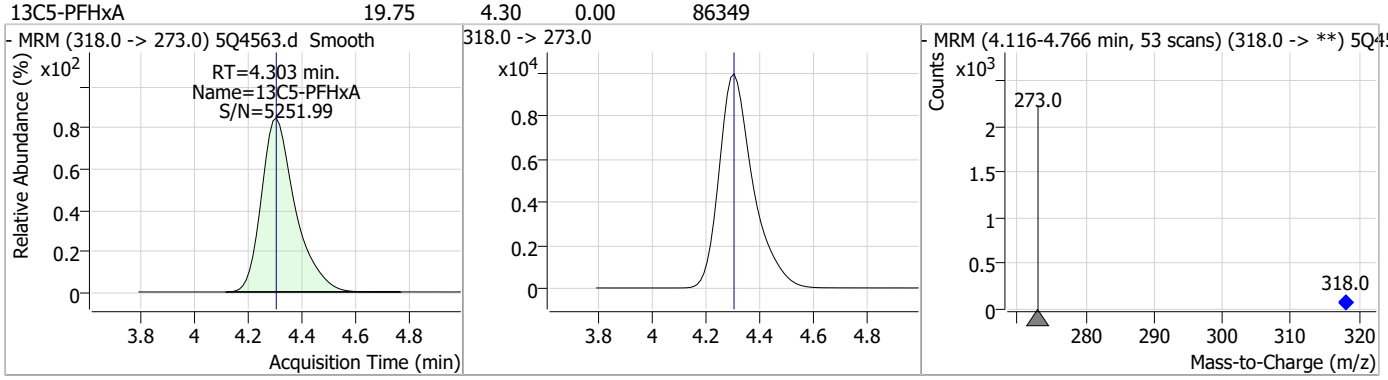


Perfluorinated Compounds by LC/MS/MS

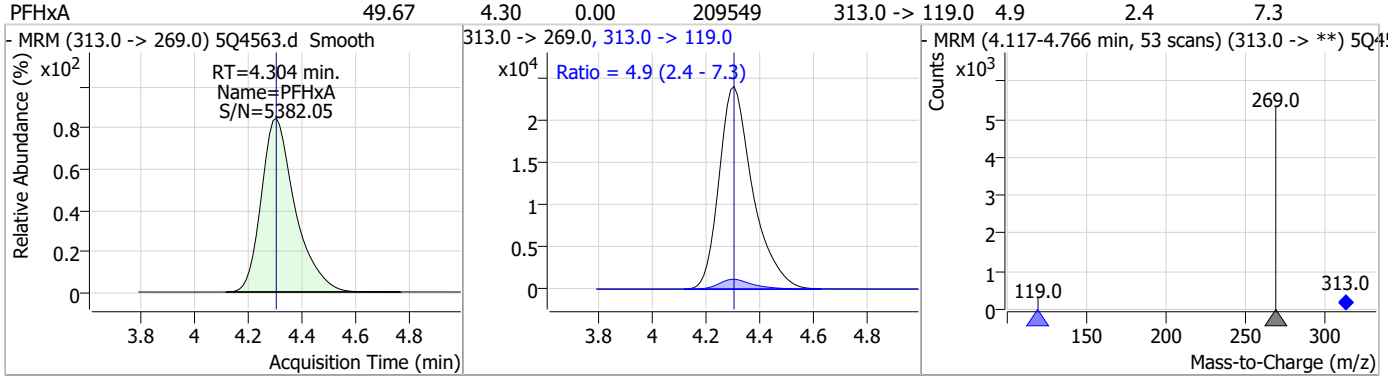
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.32	4.21	0.00	31305				



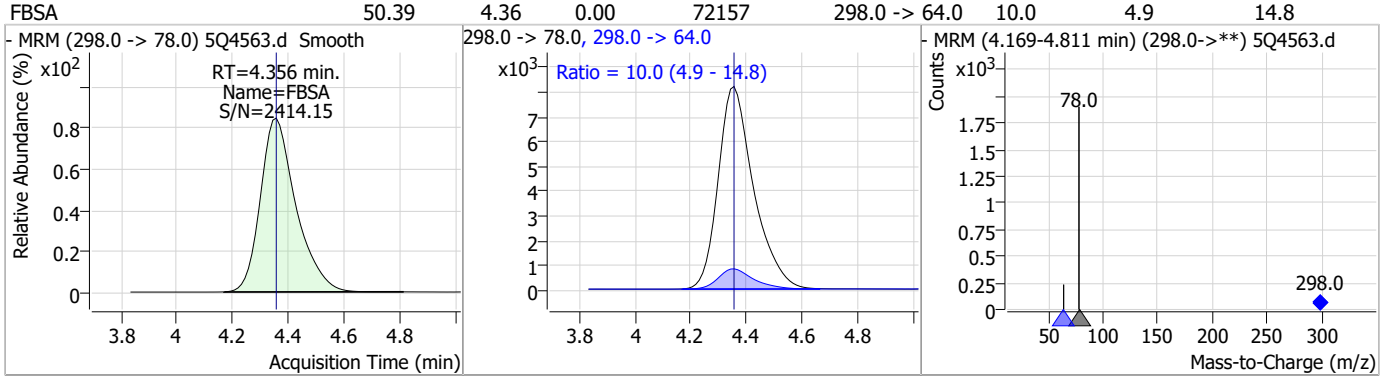
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.75	4.30	0.00	86349				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.67	4.30	0.00	209549	313.0 -> 119.0	4.9	2.4	7.3

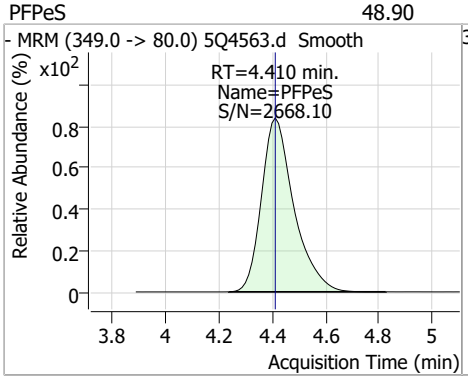


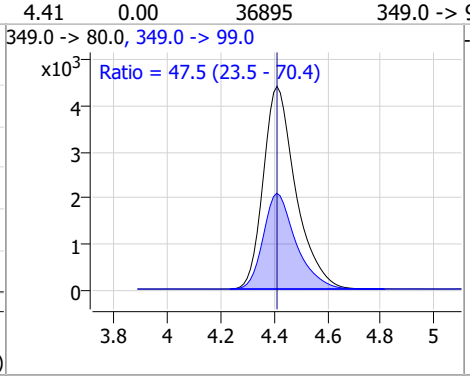
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	50.39	4.36	0.00	72157	298.0 -> 64.0	10.0	4.9	14.8

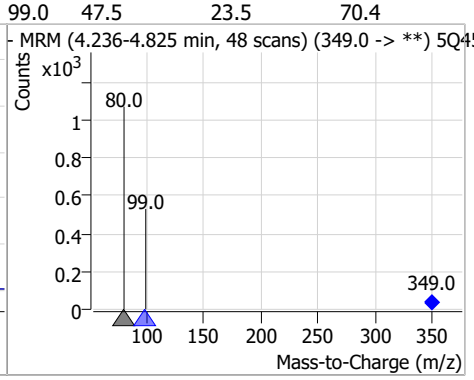


Perfluorinated Compounds by LC/MS/MS

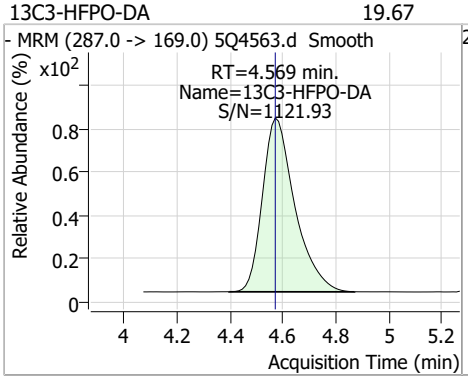
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	48.90	4.41	0.00	36895	349.0 -> 99.0	47.5	23.5	70.4

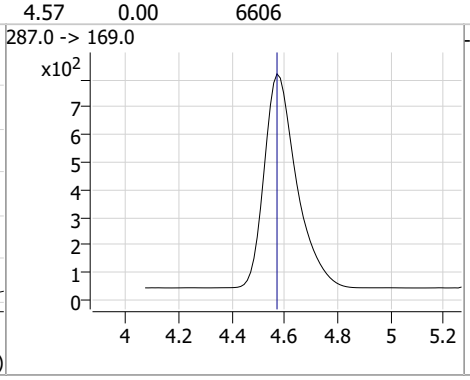


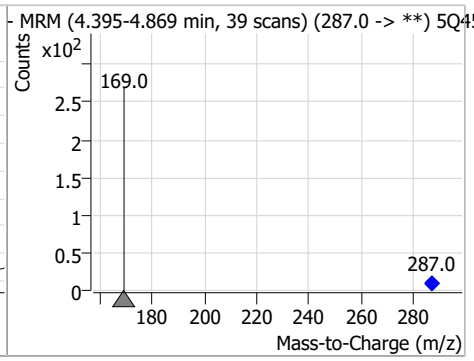




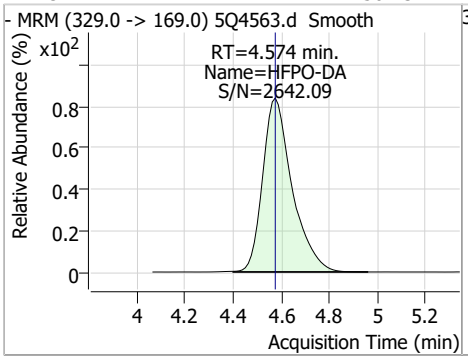
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.67	4.57	0.00	6606				

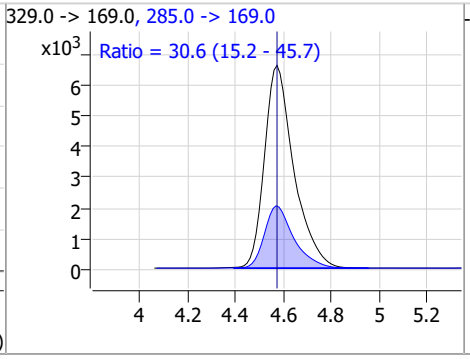


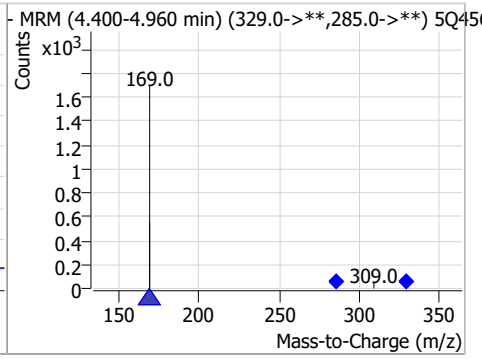




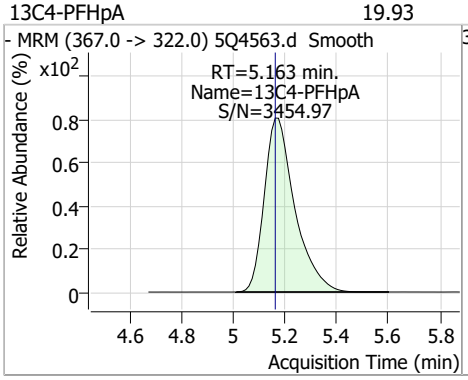
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.13	4.57	0.00	55875	285.0 -> 169.0	30.6	15.2	45.7

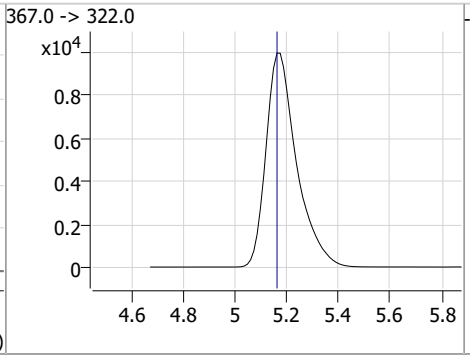


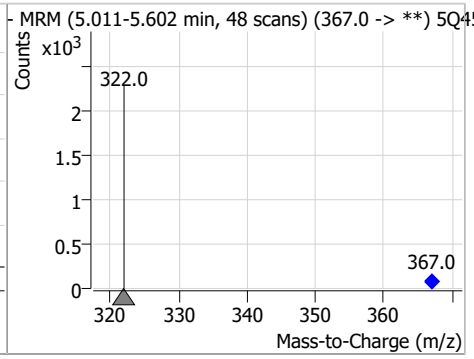




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.93	5.16	0.00	81362				

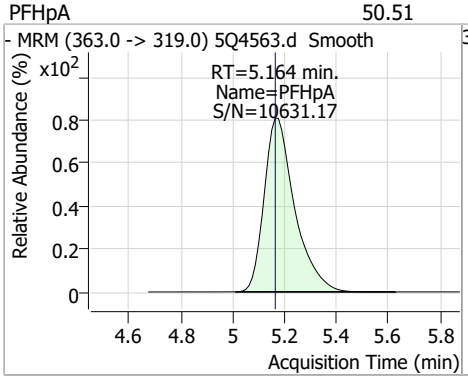


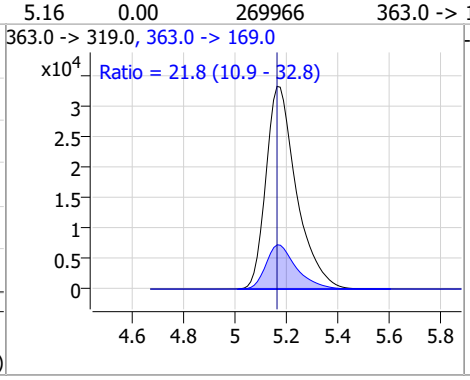


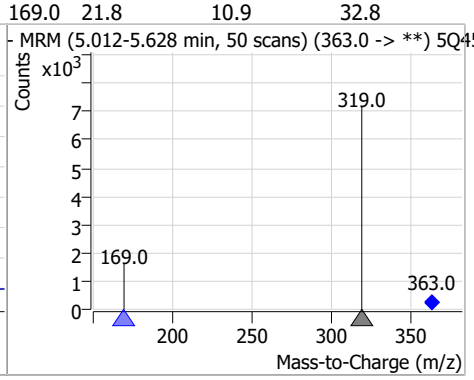


Perfluorinated Compounds by LC/MS/MS

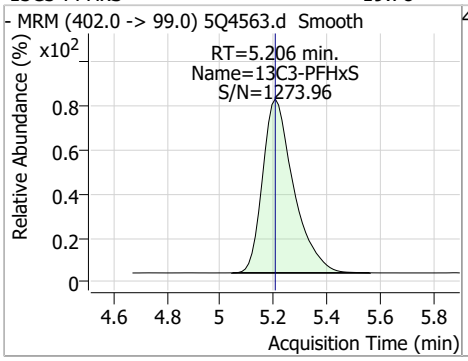
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	50.51	5.16	0.00	269966	363.0 -> 169.0	21.8	10.9	32.8

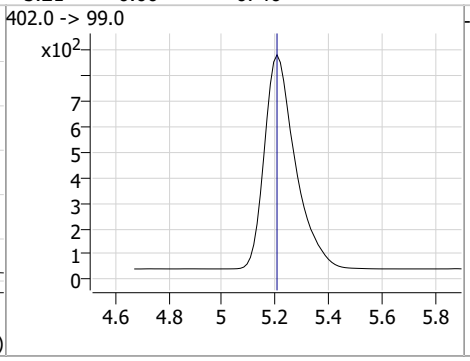


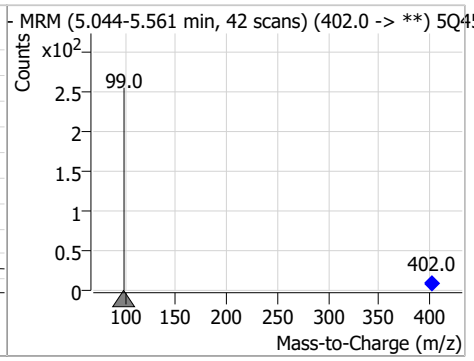




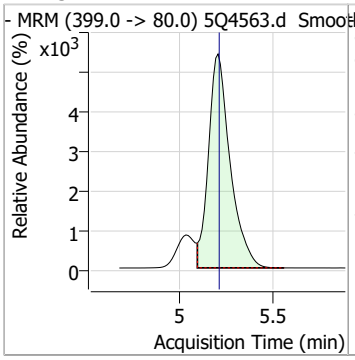
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.78	5.21	0.00	6746				

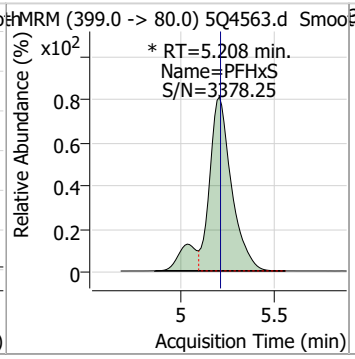


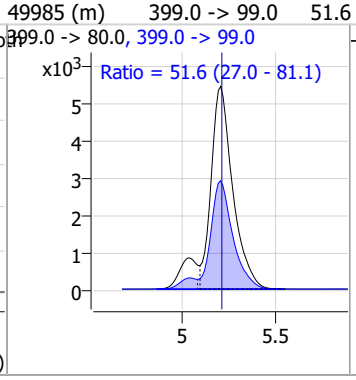


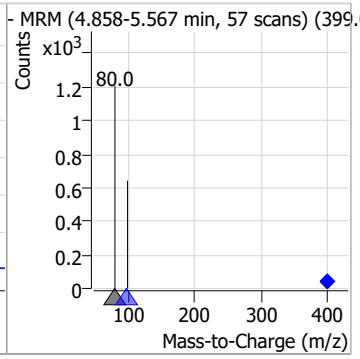


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.89	5.21	0.00	49985 (m)	399.0 -> 99.0	51.6	27.0	81.1

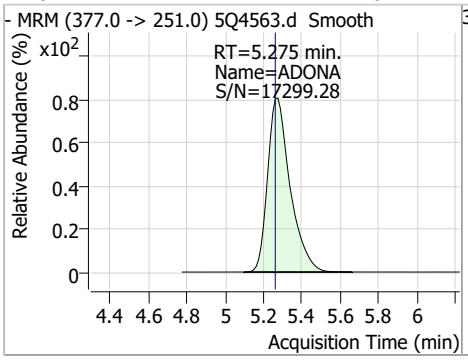


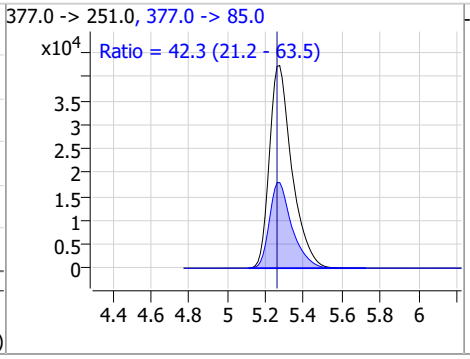


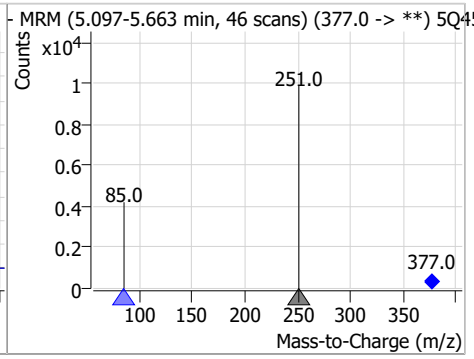




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.74	5.27	0.01	344948	377.0 -> 85.0	42.3	21.2	63.5

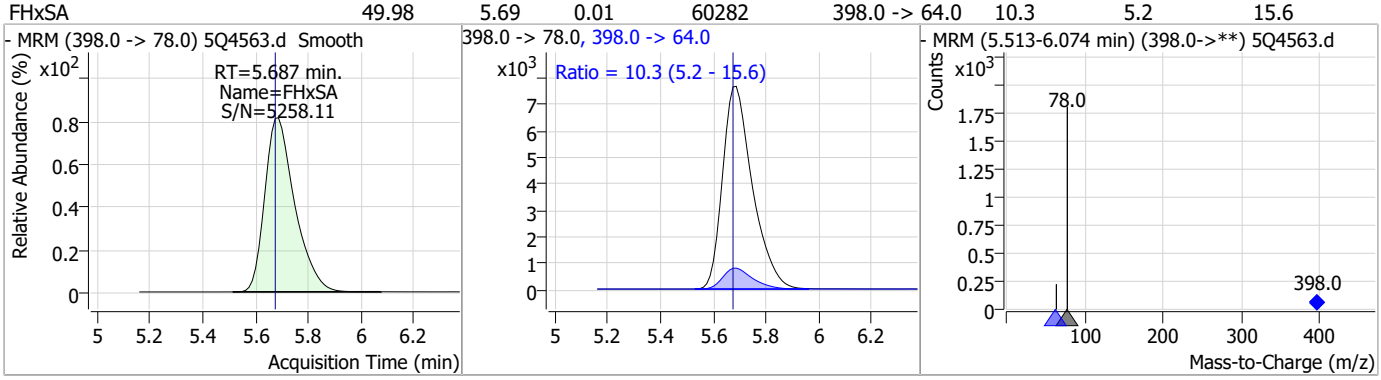




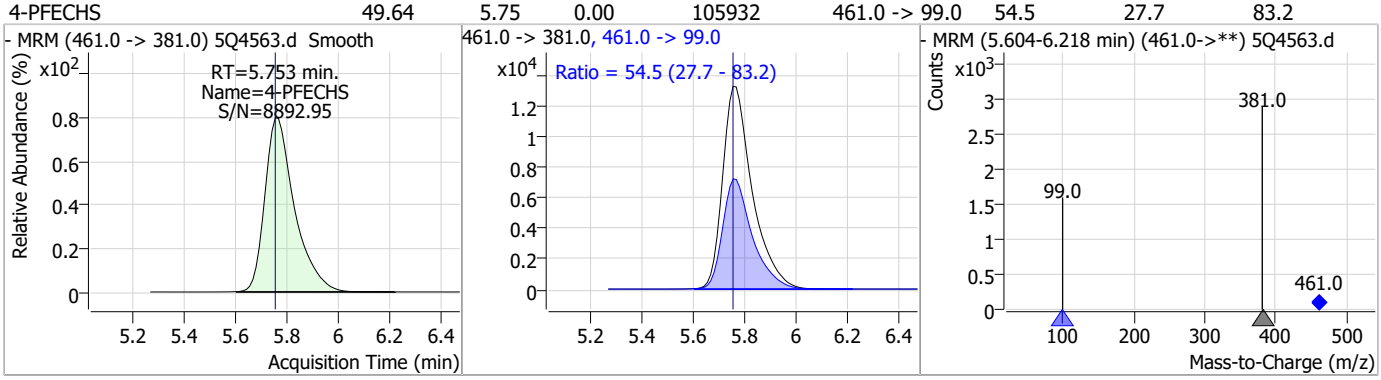


Perfluorinated Compounds by LC/MS/MS

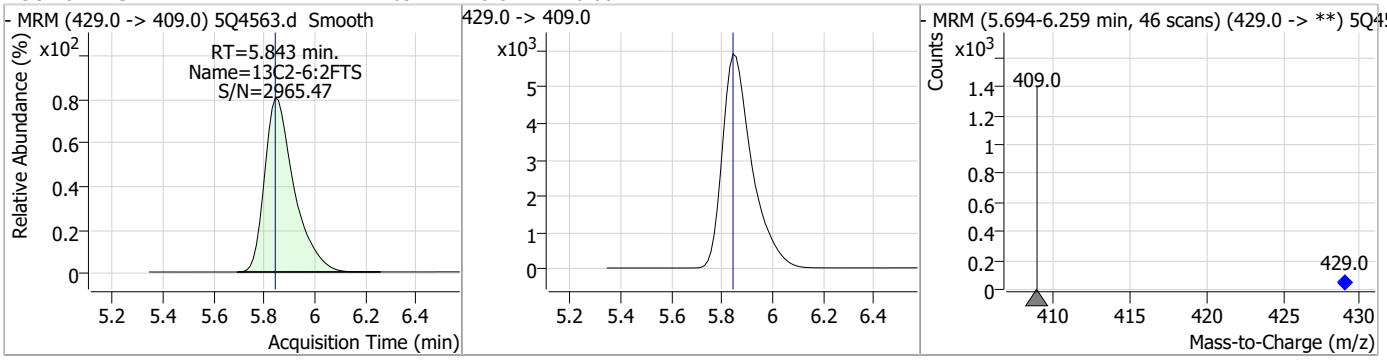
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	49.98	5.69	0.01	60282	398.0 -> 64.0	10.3	5.2	15.6



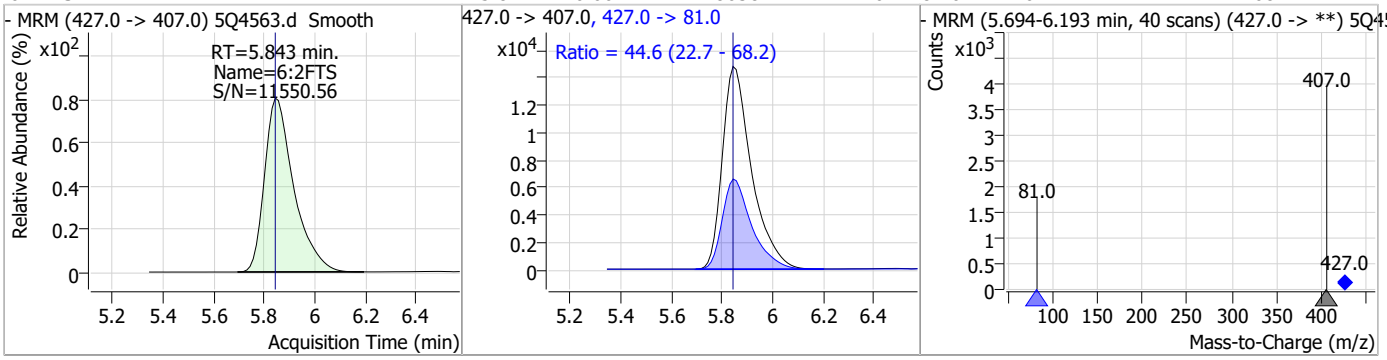
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	49.64	5.75	0.00	105932	461.0 -> 99.0	54.5	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.09	5.84	0.00	47147				

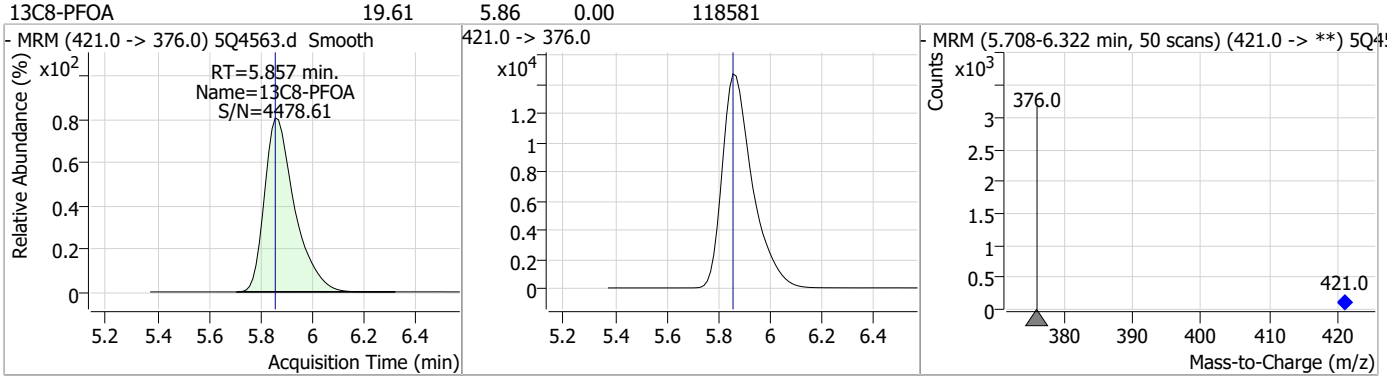


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	47.21	5.84	0.00	118038	427.0 -> 81.0	44.6	22.7	68.2

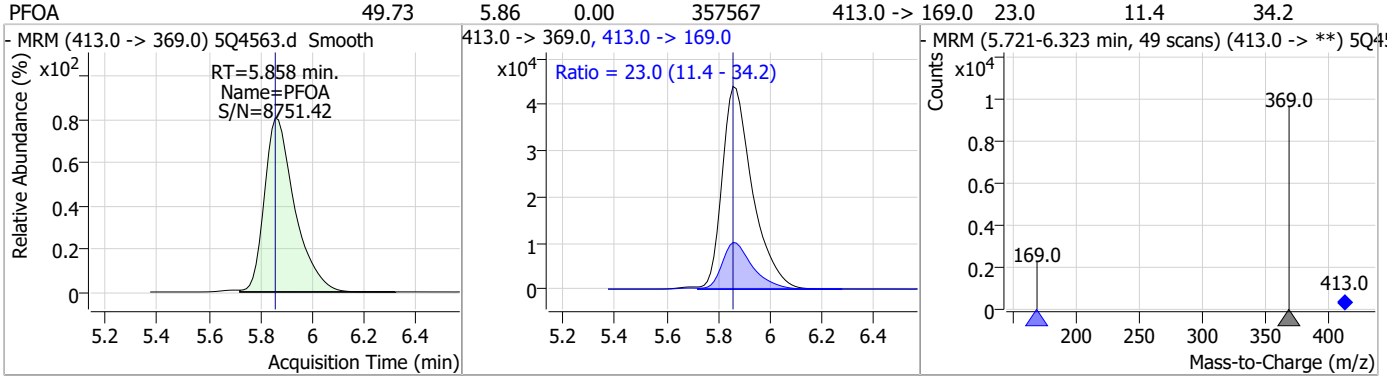


Perfluorinated Compounds by LC/MS/MS

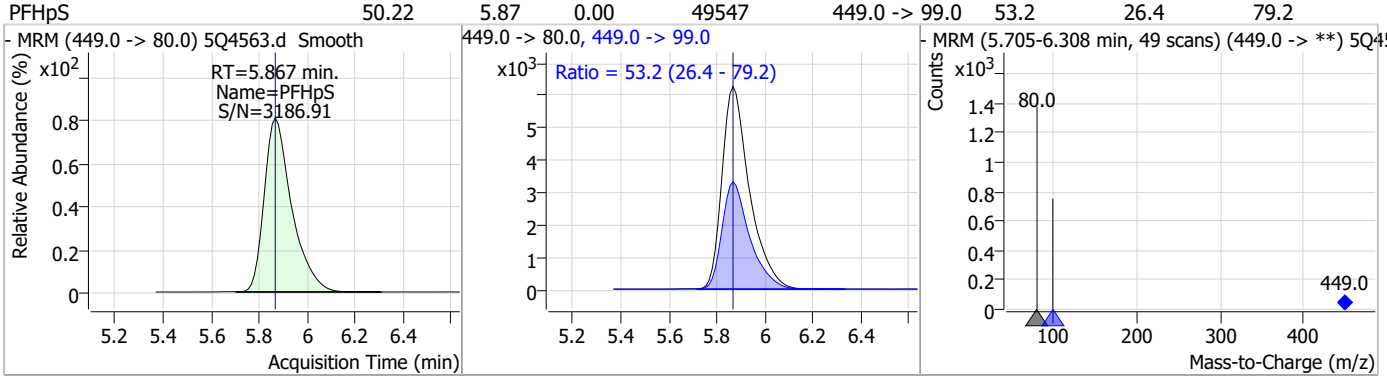
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.61	5.86	0.00	118581				



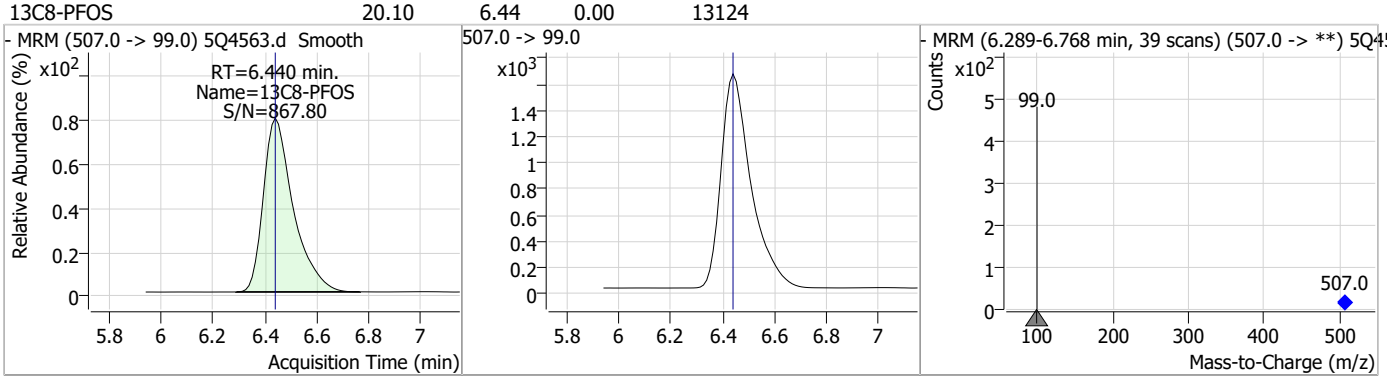
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.73	5.86	0.00	357567	413.0 -> 169.0	23.0	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	50.22	5.87	0.00	49547	449.0 -> 99.0	53.2	26.4	79.2

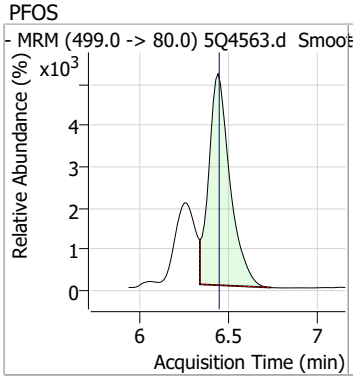


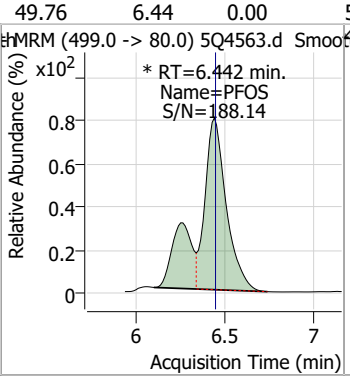
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.10	6.44	0.00	13124				

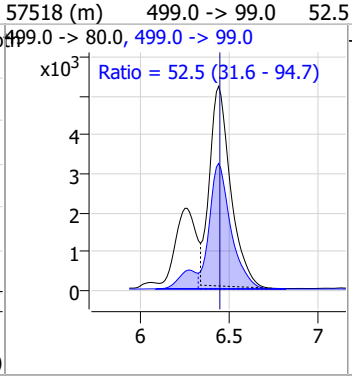


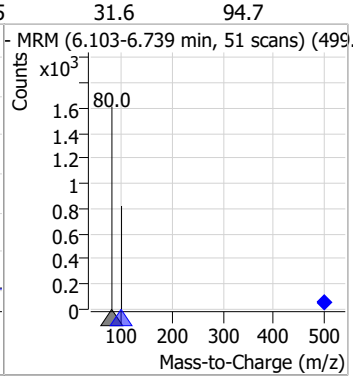
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	49.76	6.44	0.00	57518 (m)	499.0 -> 99.0	52.5	31.6	94.7

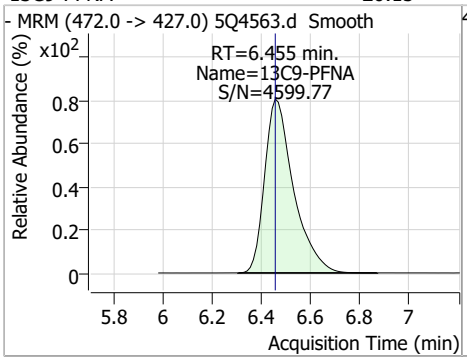


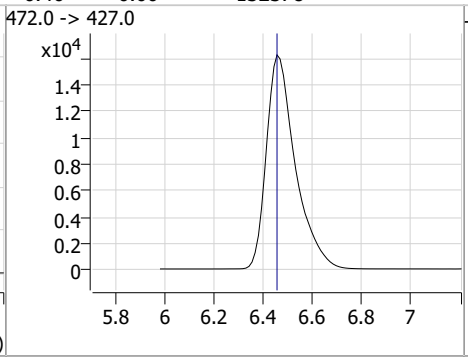


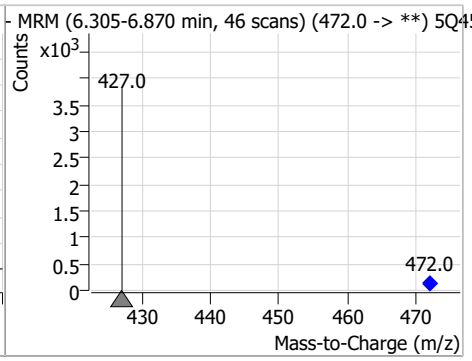




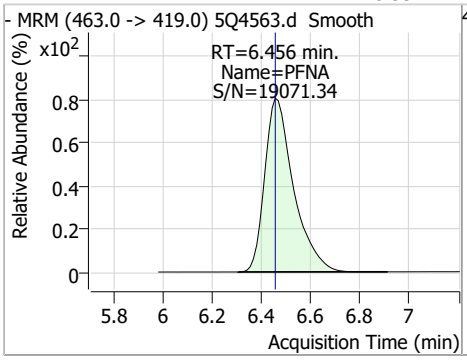
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.15	6.46	0.00	132378				

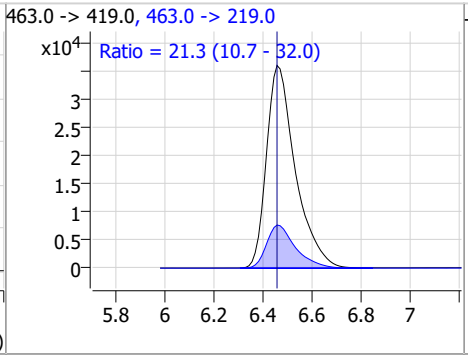


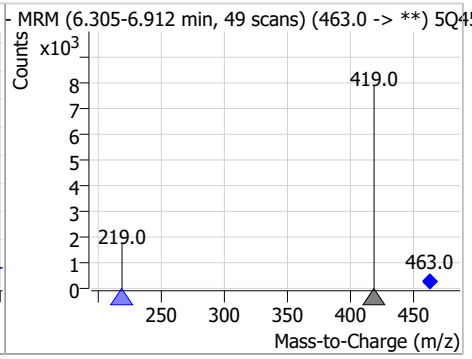




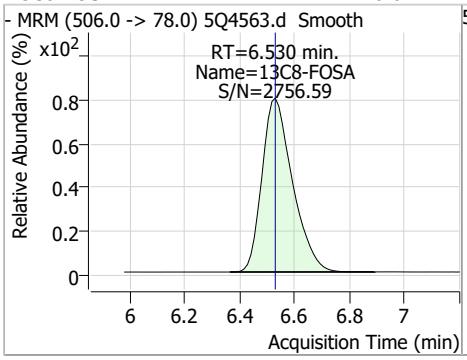
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	48.99	6.46	0.00	290563	463.0 -> 219.0	21.3	10.7	32.0

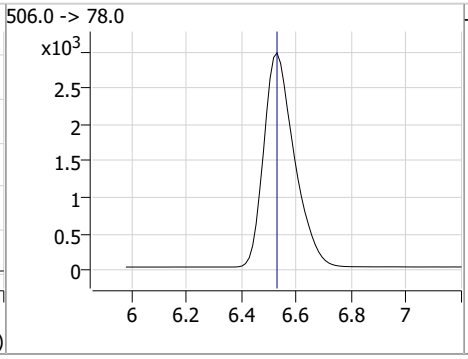


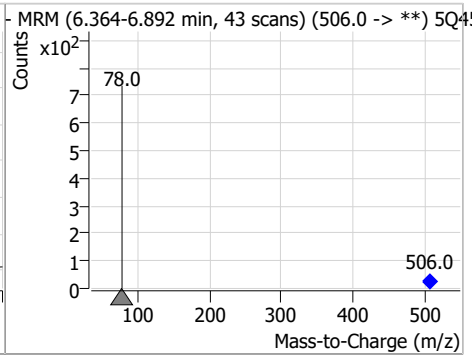




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.01	6.53	0.00	22706				

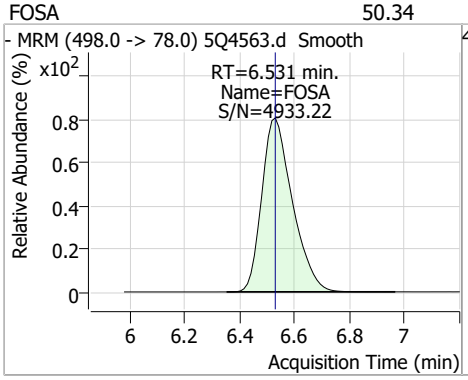


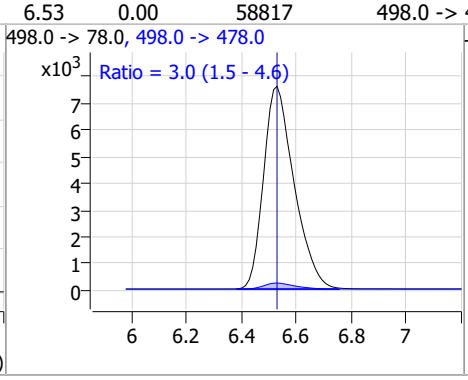


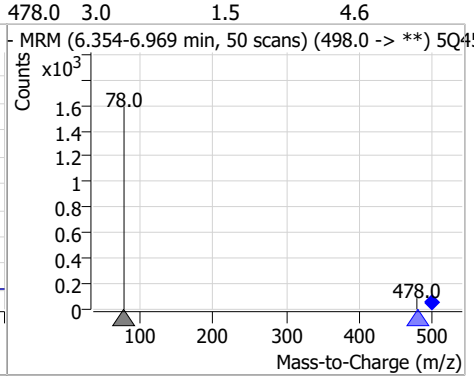


Perfluorinated Compounds by LC/MS/MS

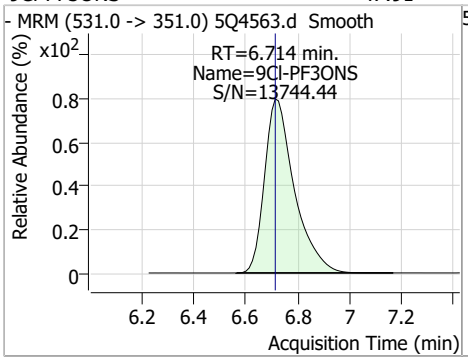
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	50.34	6.53	0.00	58817	498.0 -> 478.0	3.0	1.5	4.6

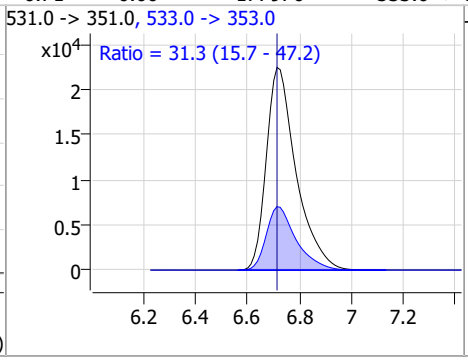


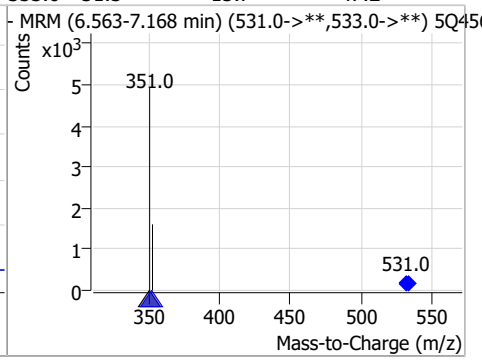




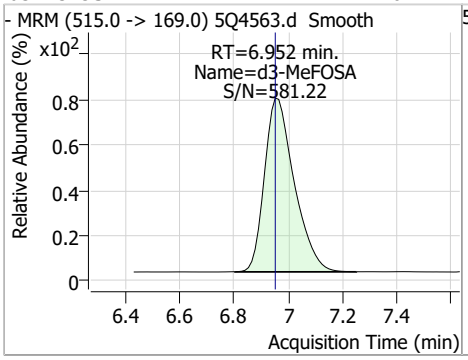
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	47.91	6.71	0.00	177976	533.0 -> 353.0	31.3	15.7	47.2

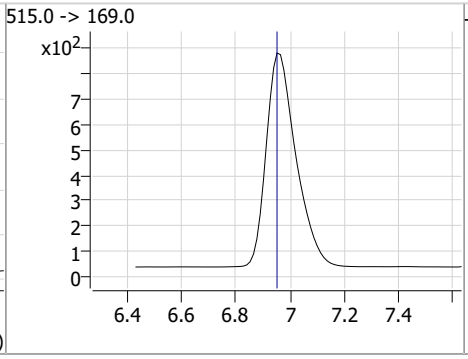


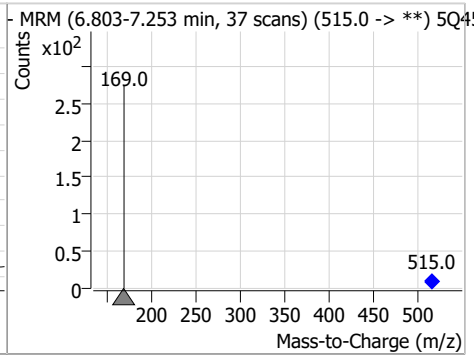




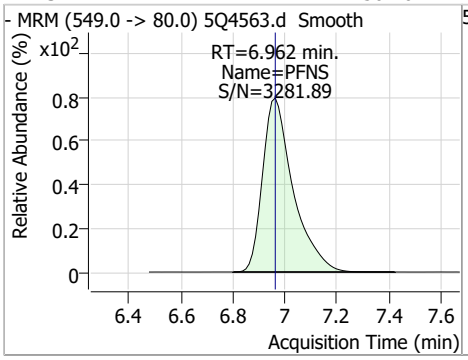
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.01	6.95	0.00	6398				

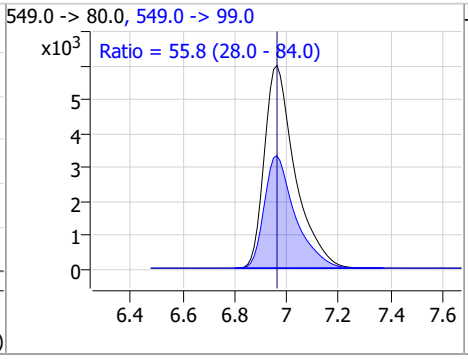


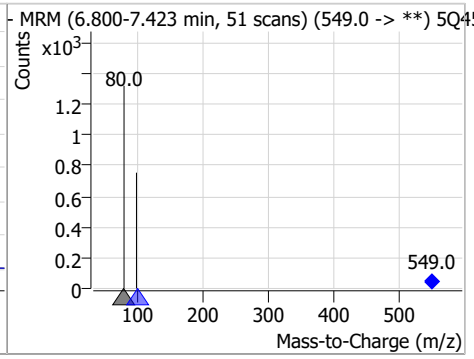




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	50.40	6.96	0.00	48828	549.0 -> 99.0	55.8	28.0	84.0

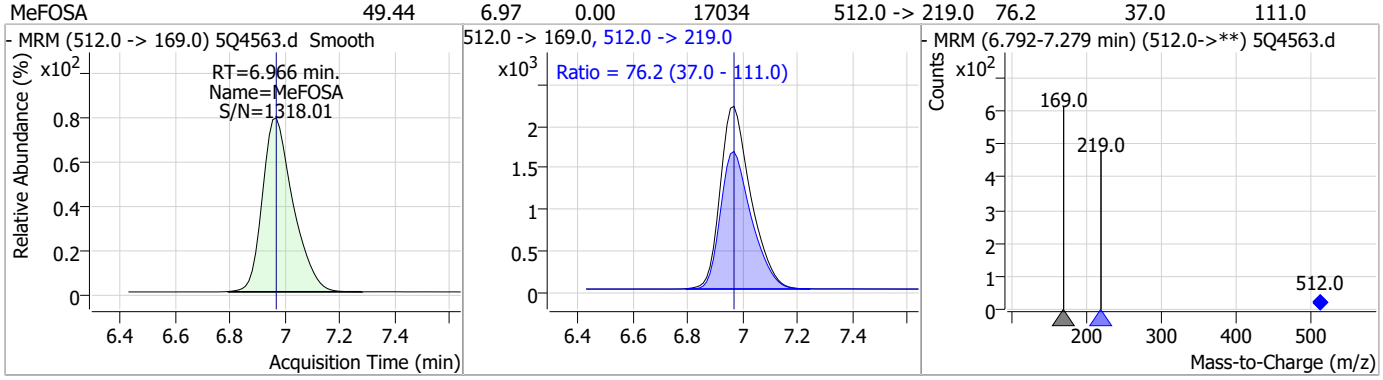




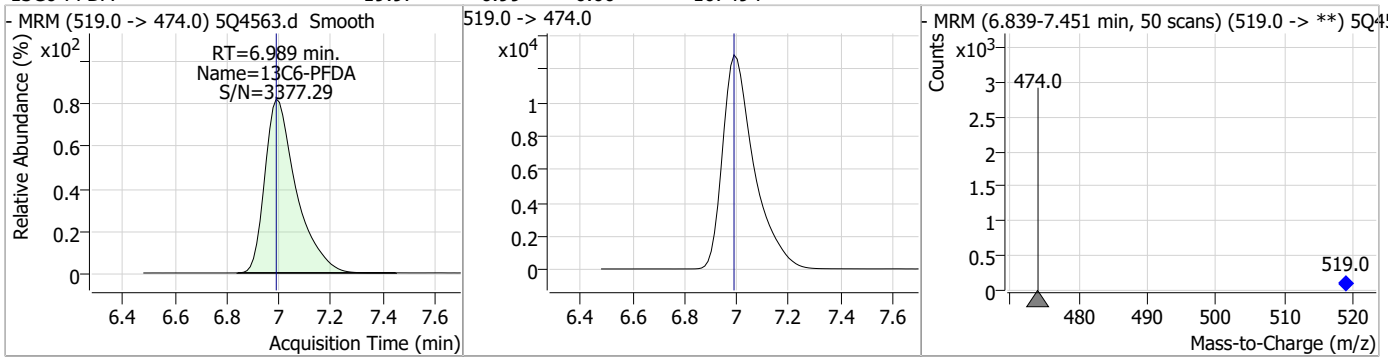


Perfluorinated Compounds by LC/MS/MS

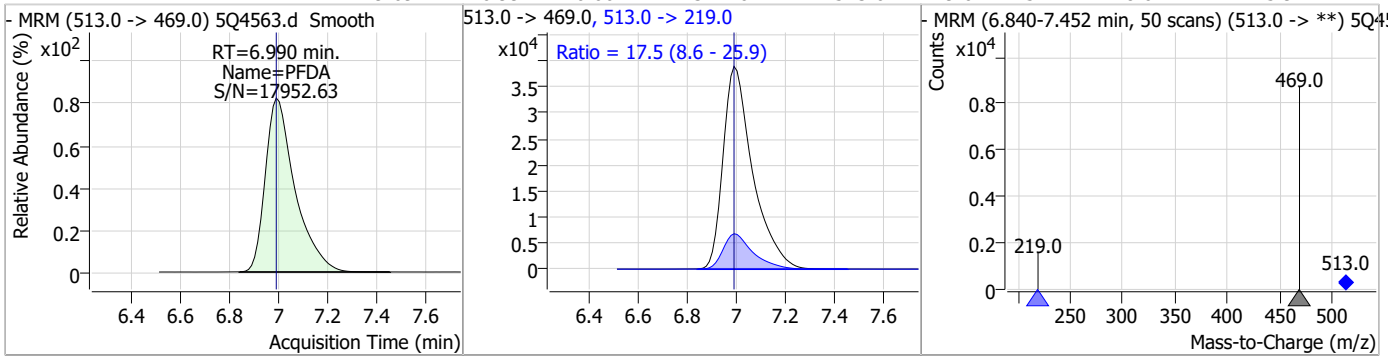
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.44	6.97	0.00	17034	512.0 -> 219.0	76.2	37.0	111.0



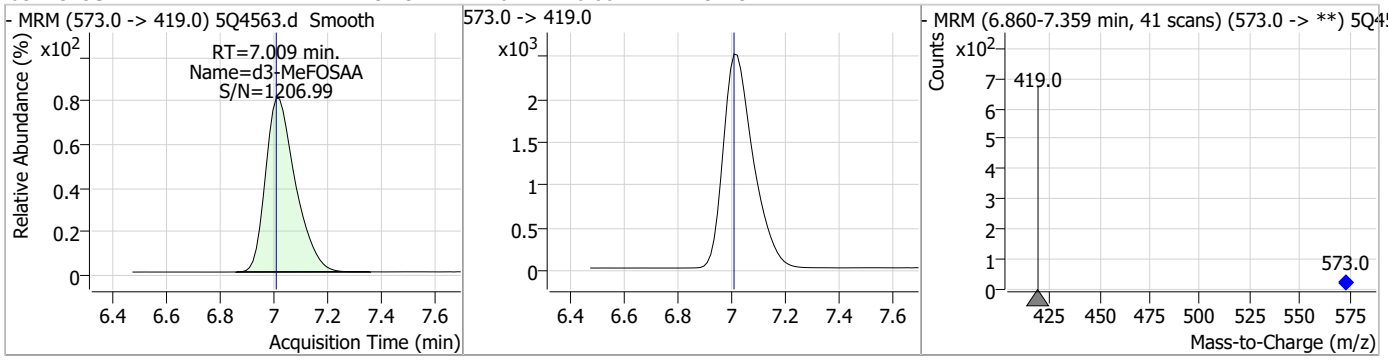
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.97	6.99	0.00	107494				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.09	6.99	0.00	324161	513.0 -> 219.0	17.5	8.6	25.9

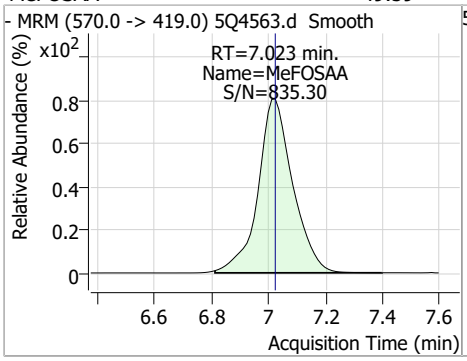


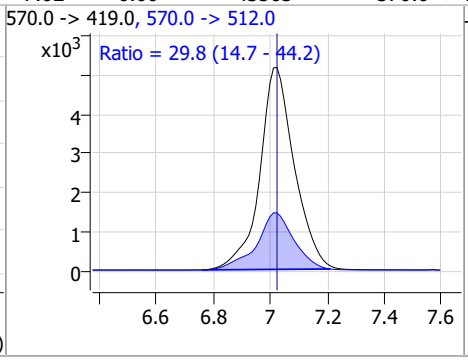
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.73	7.01	0.00	19179				

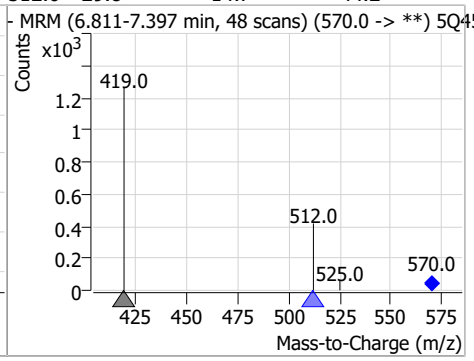


Perfluorinated Compounds by LC/MS/MS

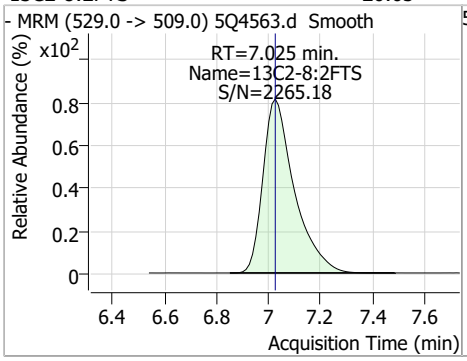
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	49.59	7.02	0.00	43563	570.0 -> 512.0	29.8	14.7	44.2

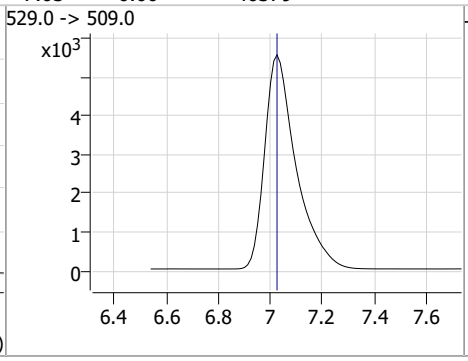


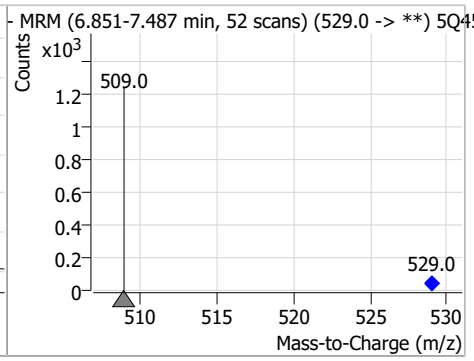




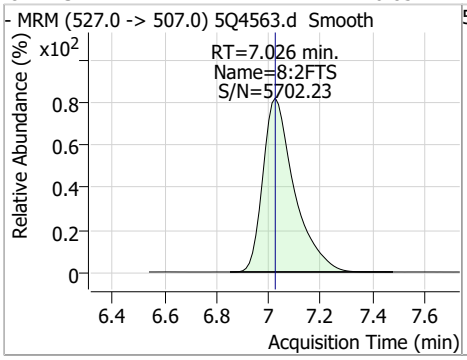
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.65	7.03	0.00	46379				

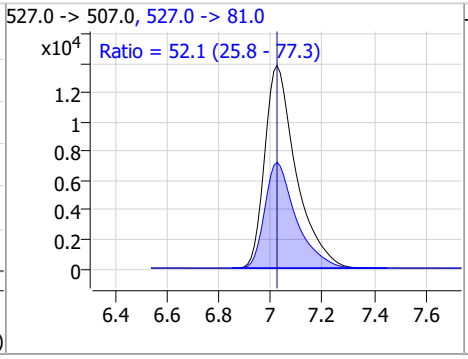


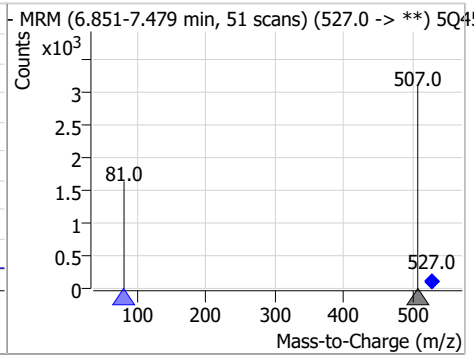




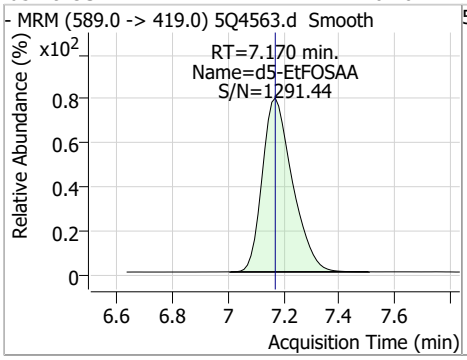
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	46.85	7.03	0.00	115816	527.0 -> 81.0	52.1	25.8	77.3

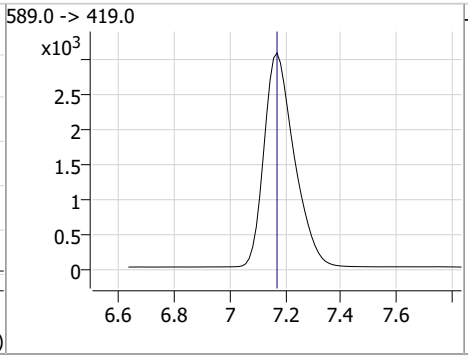


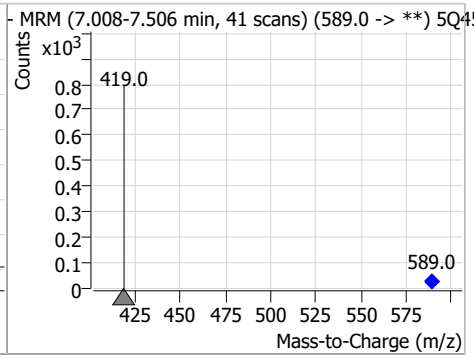




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.46	7.17	0.00	22940				

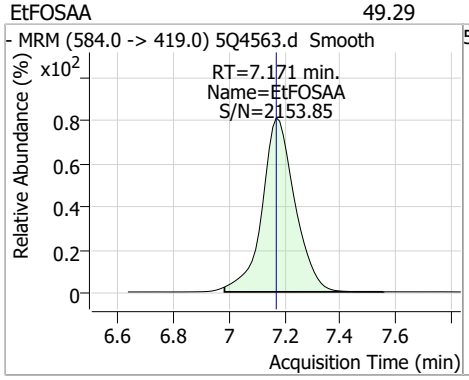


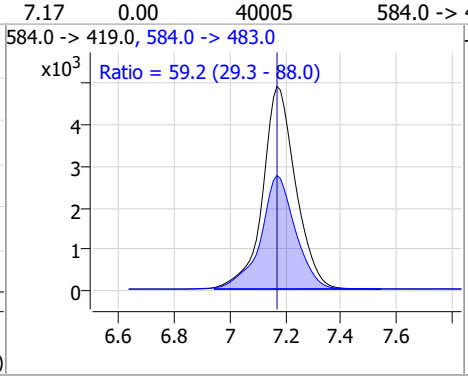


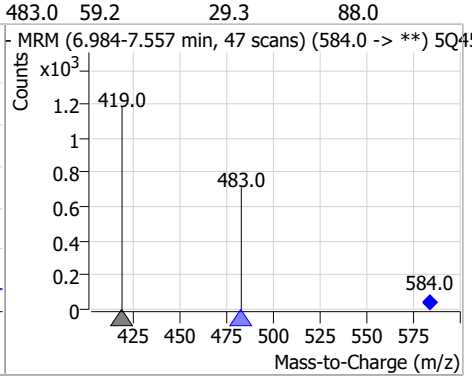


Perfluorinated Compounds by LC/MS/MS

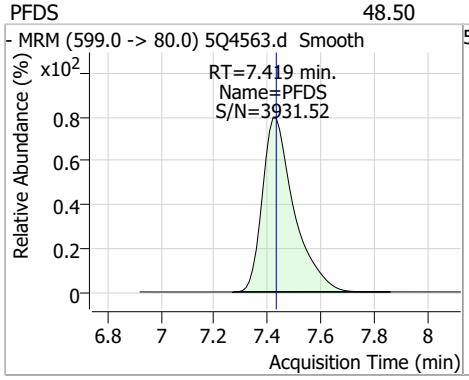
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	49.29	7.17	0.00	40005	584.0 -> 483.0	59.2	29.3	88.0

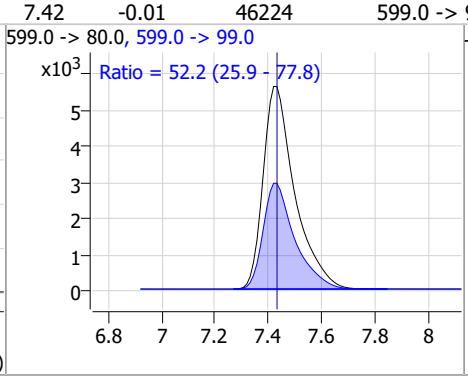


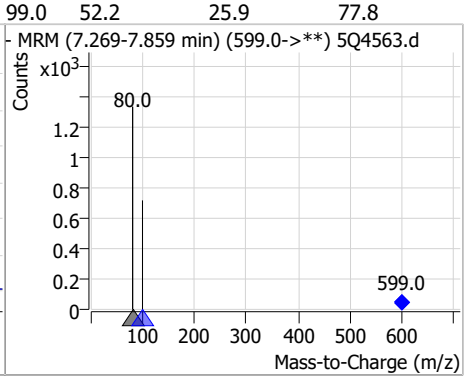




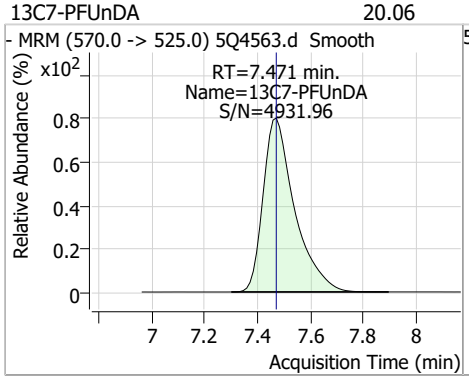
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	48.50	7.42	-0.01	46224	599.0 -> 99.0	52.2	25.9	77.8

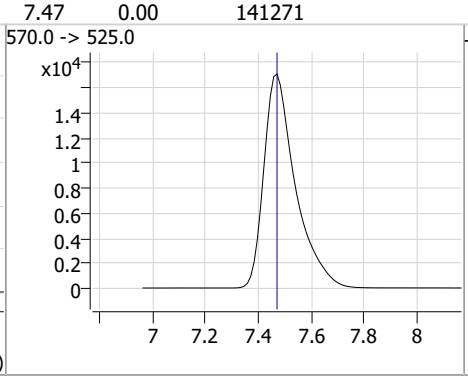


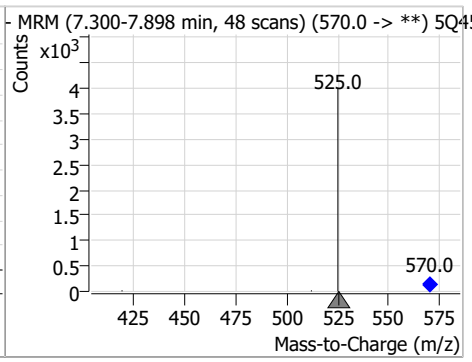




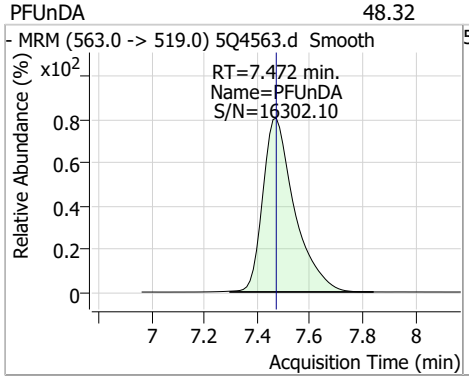
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.06	7.47	0.00	141271				

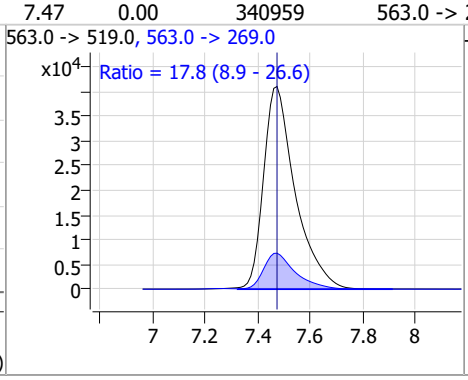


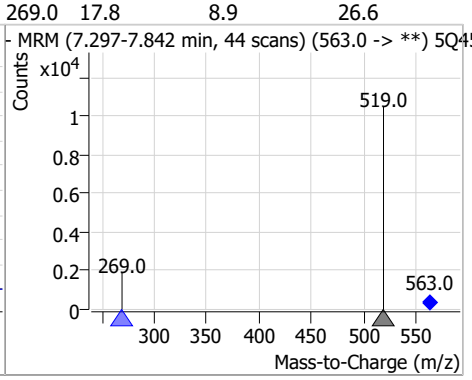




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	48.32	7.47	0.00	340959	563.0 -> 269.0	17.8	8.9	26.6

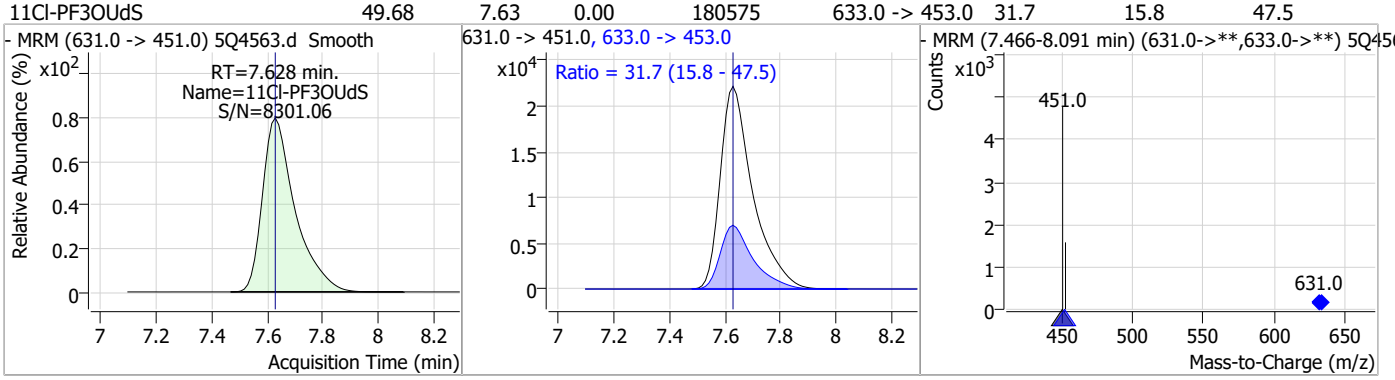




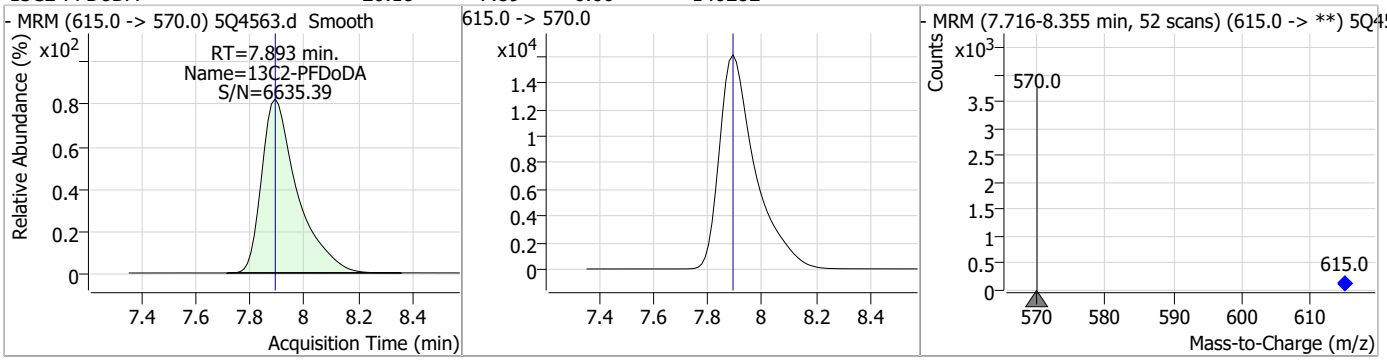


Perfluorinated Compounds by LC/MS/MS

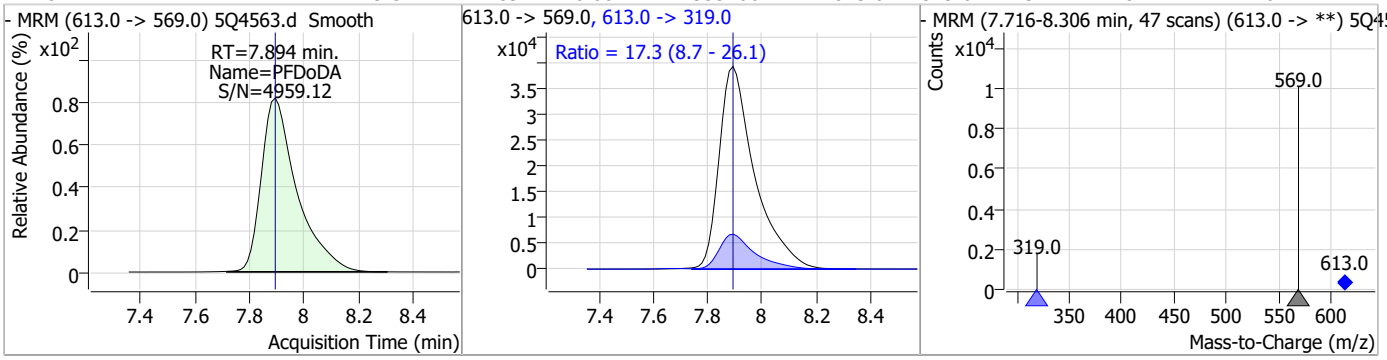
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.68	7.63	0.00	180575	633.0 -> 453.0	31.7	15.8	47.5



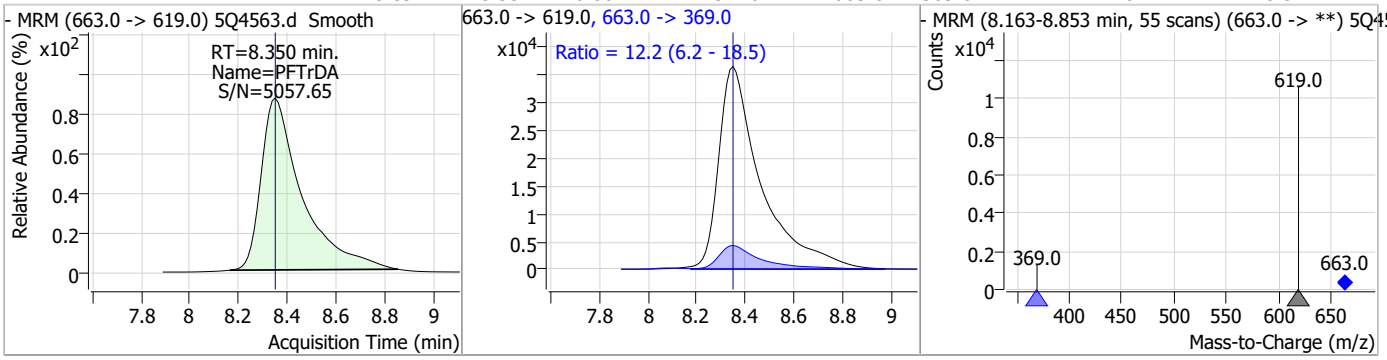
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.18	7.89	0.00	146282				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	49.57	7.89	0.00	355706	613.0 -> 319.0	17.3	8.7	26.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	48.89	8.35	0.00	419276	663.0 -> 369.0	12.2	6.2	18.5

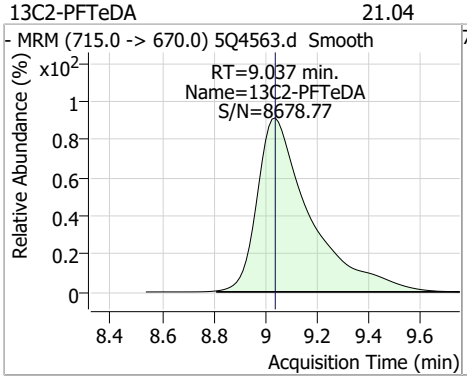


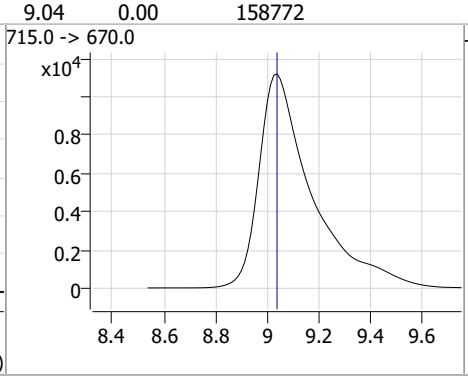
7.7.39

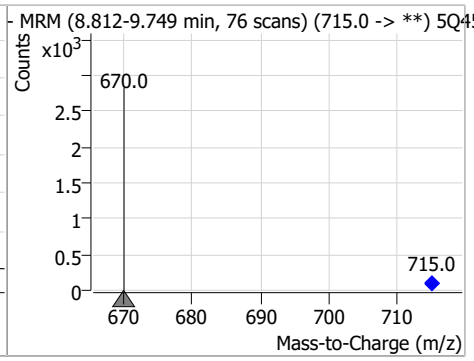
7

Perfluorinated Compounds by LC/MS/MS

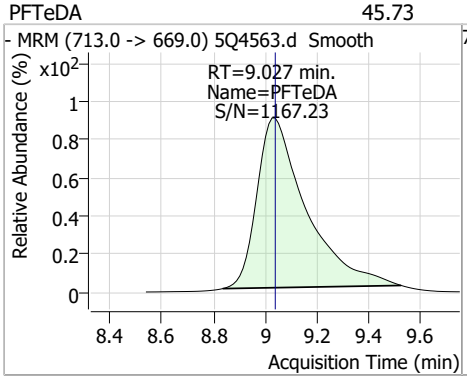
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.04	9.04	0.00	158772				

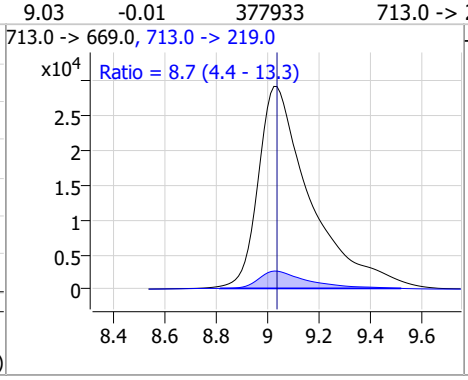


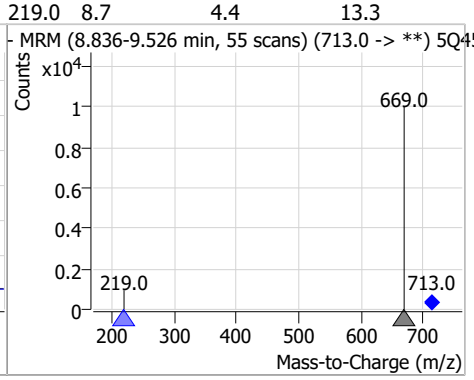




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	45.73	9.03	-0.01	377933	713.0 -> 219.0	8.7	4.4	13.3







7.7.39

7

Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4563.D
Injection Time: 09/14/22 12:13
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4564.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:28:24 PM
Sample Name : ic71-100
Vial : P1-A9
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

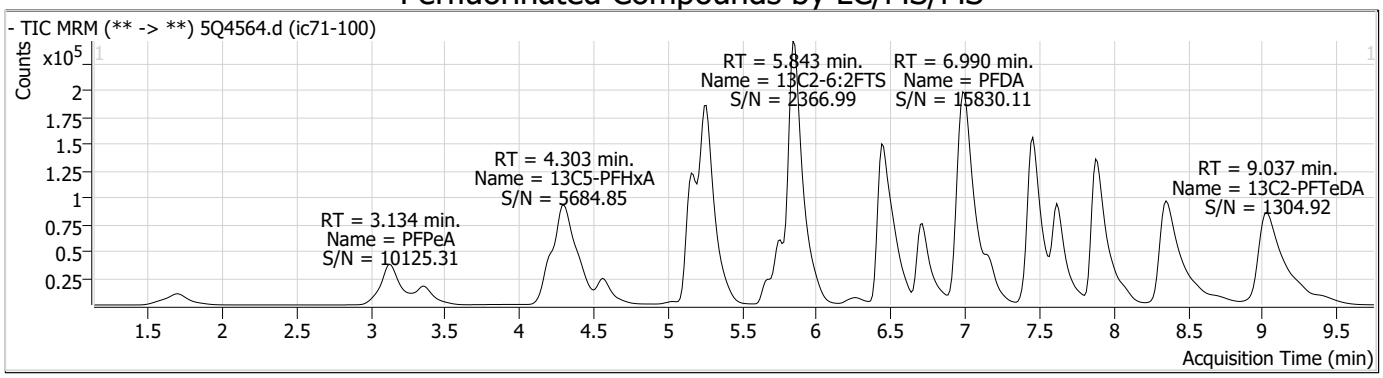
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	36197	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	58936	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	88517	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	82279	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	120397	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	132262	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	104734	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	139920	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	153206	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	152593	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	22874	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6495	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6850	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13383	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	36516	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	53363	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	54131	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	18635	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6869	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	5917	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22778	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	36516	24.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		
13C2-6:2FTS	5.843	429.0 -> 409.0	53363	23.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.3%		
13C2-8:2FTS	7.025	529.0 -> 509.0	54131	24.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	153206	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C2-PFTeDA	9.037	715.0 -> 670.0	152593	20.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C3-PFBS	3.362	302.0 -> 99.0	6495	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C3-PFHxS	5.206	402.0 -> 99.0	6850	20.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C4-PFBA	1.700	217.0 -> 172.0	36197	20.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C4-PFHpA	5.163	367.0 -> 322.0	82279	20.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C5-PFHxA	4.303	318.0 -> 273.0	88517	20.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	58936	20.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C6-PFDA	6.989	519.0 -> 474.0	104734	19.46	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

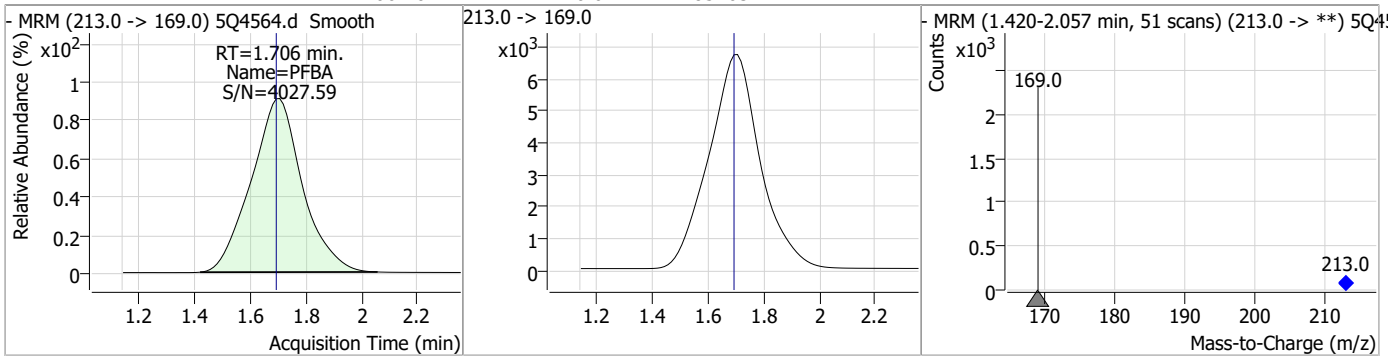
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C7-PFUnDA	7.471	570.0 -> 525.0	139920	19.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C8-FOSA	6.530	506.0 -> 78.0	22874	20.16 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%		
13C8-PFOA	5.857	421.0 -> 376.0	120397	19.91 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C8-PFOS	6.440	507.0 -> 99.0	13383	20.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C9-PFNA	6.455	472.0 -> 427.0	132262	20.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d3-MeFOSAA	7.009	573.0 -> 419.0	18635	19.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	6869	20.46 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
d3-MeFOSA	6.952	515.0 -> 169.0	5917	19.43 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
d5-EtFOSAA	7.170	589.0 -> 419.0	22778	20.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
Target Compounds						**QValue**
4:2FTS	4.214	327.0 -> 307.0	168520	82.43 µg/L		99
6:2FTS	5.843	427.0 -> 407.0	241087	85.18 µg/L		98
8:2FTS	7.026	527.0 -> 507.0	233923	81.08 µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	80996	100.51 µg/L		99
FOSA	6.531	498.0 -> 78.0	117659	99.97 µg/L		100
MeFOSAA	7.023	570.0 -> 419.0	85577	100.27 µg/L		98
PFBA	1.706	213.0 -> 169.0	85403	100.16 µg/L		100
PFBS	3.367	299.0 -> 80.0	97960	100.41 µg/L		100
PFDA	6.990	513.0 -> 469.0	646572	100.50 µg/L		100
PFDoDA	7.894	613.0 -> 569.0	753485	100.27 µg/L		99
PFDS	7.419	599.0 -> 80.0	95286	100.94 µg/L		99
PFHpA	5.164	363.0 -> 319.0	553410	102.38 µg/L		100
PFHpS	5.867	449.0 -> 80.0	100376	99.76 µg/L		99
PFHxA	4.304	313.0 -> 269.0	433590	100.26 µg/L		100
PFHxS	5.208	399.0 -> 80.0	101844	100.11 µg/L	m	97
PFNA	6.456	463.0 -> 419.0	595891	100.56 µg/L		100
PFNS	6.949	549.0 -> 80.0	98510	99.72 µg/L		100
PFOA	5.858	413.0 -> 369.0	731802	100.24 µg/L		100
PFOS	6.442	499.0 -> 80.0	117950	100.08 µg/L	m	85
PFPeA	3.134	263.0 -> 219.0	292393	100.39 µg/L		100
PFPeS	4.410	349.0 -> 80.0	76395	100.67 µg/L		99
PFTeDA	9.039	713.0 -> 669.0	812050	102.25 µg/L		100
PFTrDA	8.363	663.0 -> 619.0	904896	100.74 µg/L		99
PFUnDA	7.472	563.0 -> 519.0	706113	101.03 µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	381378	100.19 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	366753	101.33 µg/L		100
ADONA	5.261	377.0 -> 251.0	705606	100.21 µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	115770	99.89 µg/L		99
MeFOSA	6.966	512.0 -> 169.0	31914	100.15 µg/L		95
4-PFECHS	5.753	461.0 -> 381.0	217522	100.39 µg/L		98
FBSA	4.356	298.0 -> 78.0	146479	99.78 µg/L		100
FHxSA	5.687	398.0 -> 78.0	122626	100.13 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

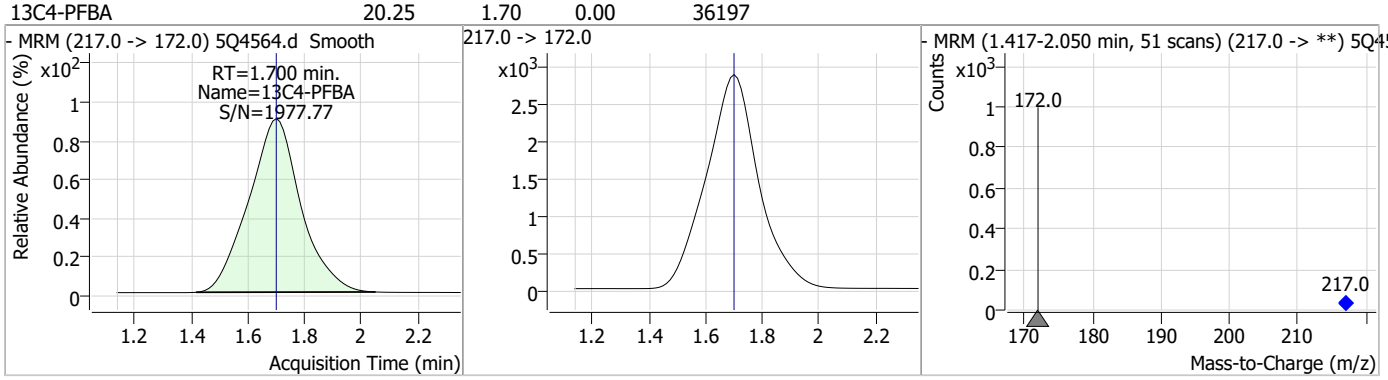
Perfluorinated Compounds by LC/MS/MS



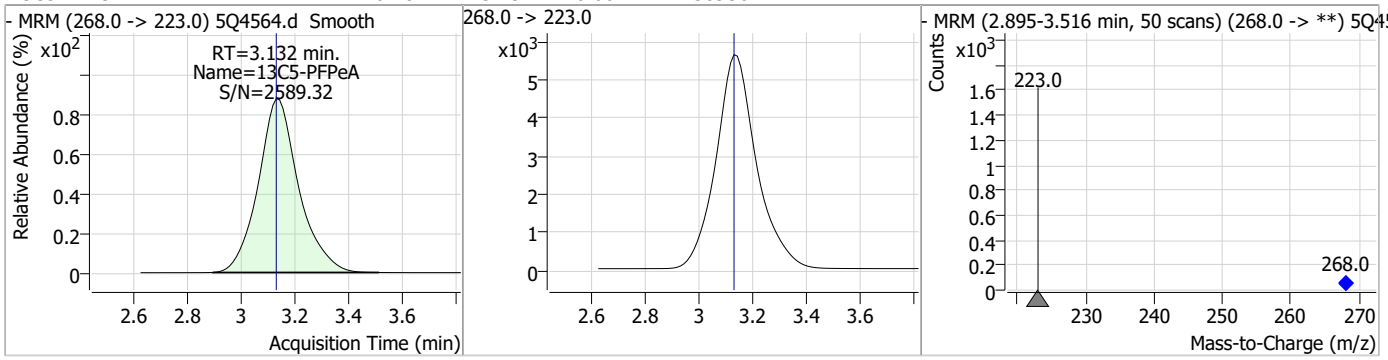
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.16	1.71	0.01	85403				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.25	1.70	0.00	36197				

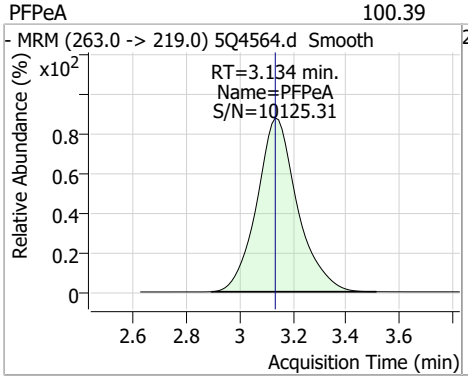


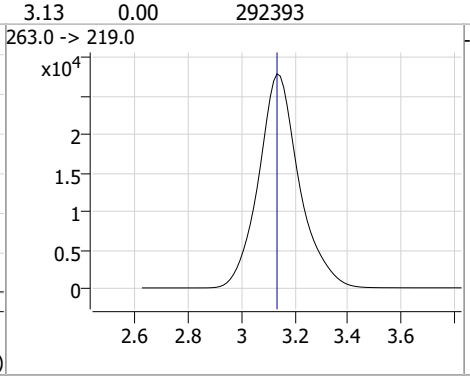
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.28	3.13	0.00	58936				

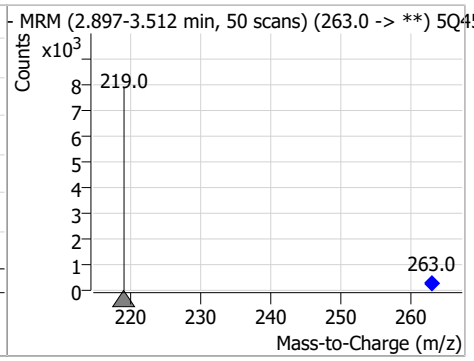


Perfluorinated Compounds by LC/MS/MS

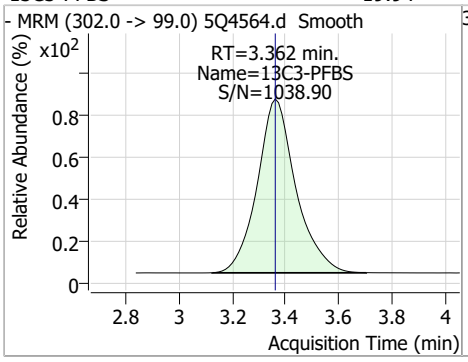
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.39	3.13	0.00	292393				

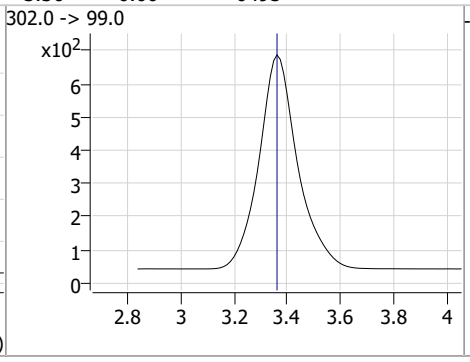


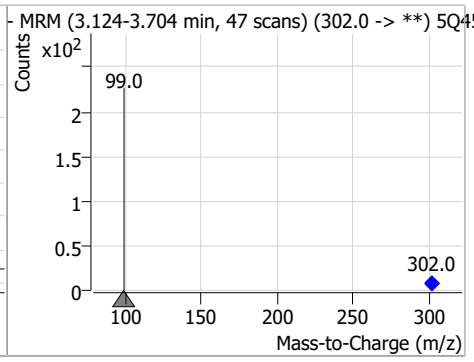




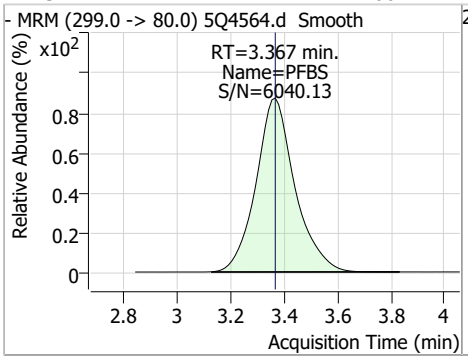
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.94	3.36	0.00	6495				

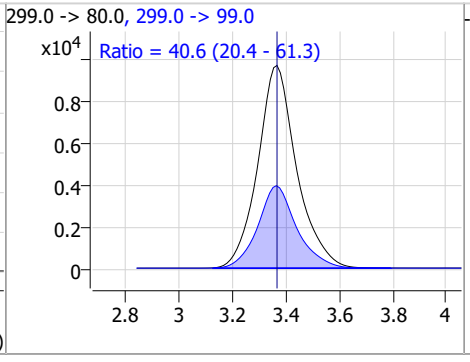


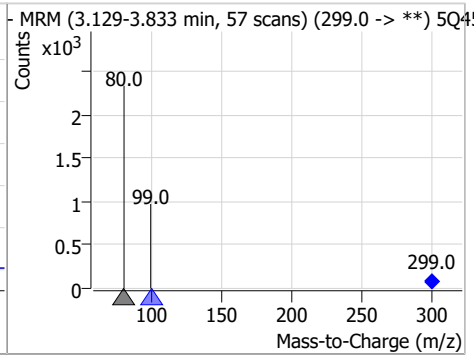




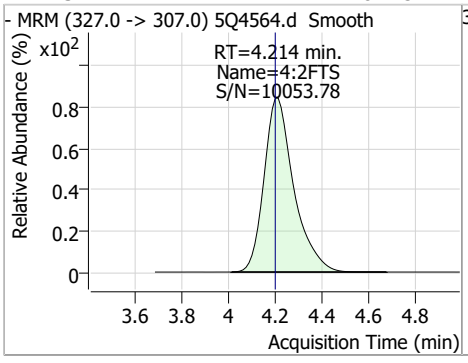
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.41	3.37	0.00	97960	299.0 -> 99.0	40.6	20.4	61.3

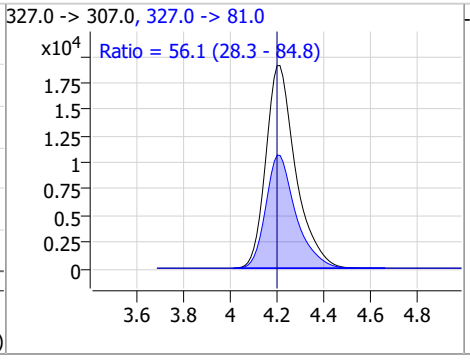


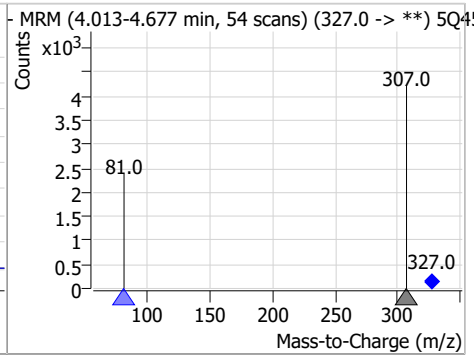




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	82.43	4.21	0.01	168520	327.0 -> 81.0	56.1	28.3	84.8

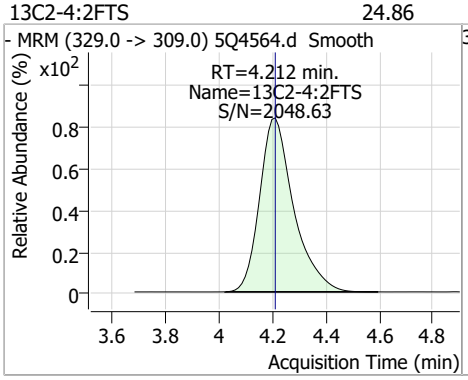


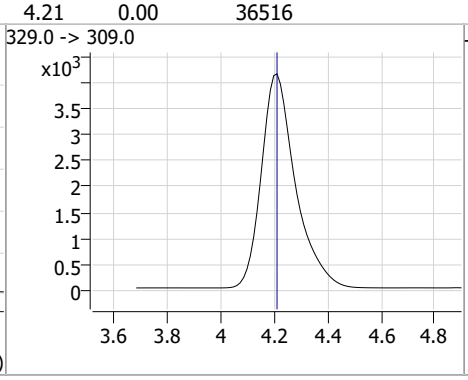


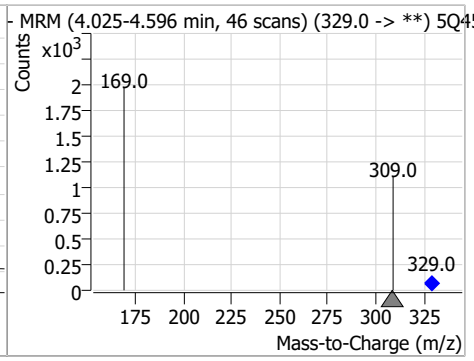


Perfluorinated Compounds by LC/MS/MS

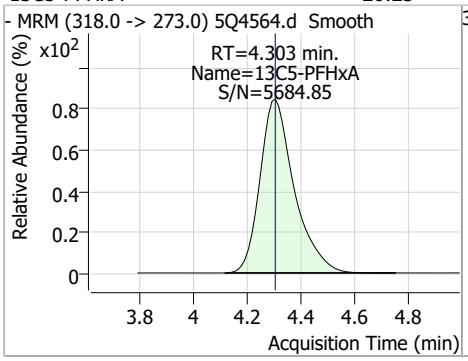
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	24.86	4.21	0.00	36516				

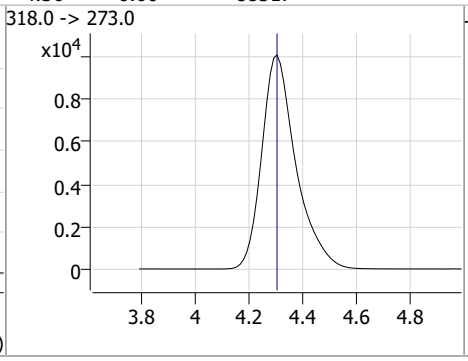


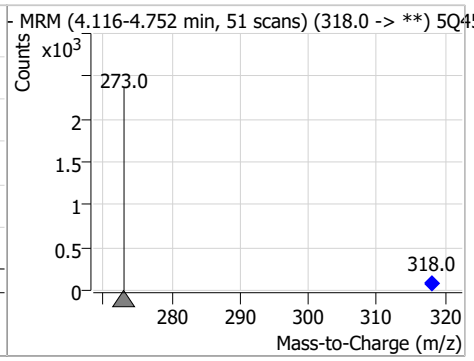




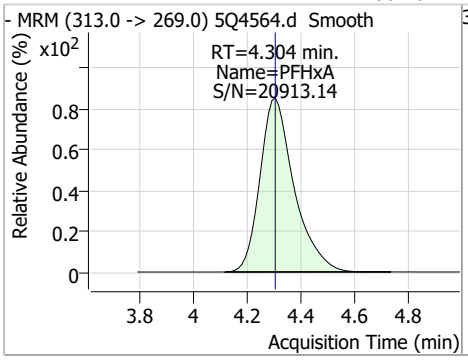
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.25	4.30	0.00	88517				

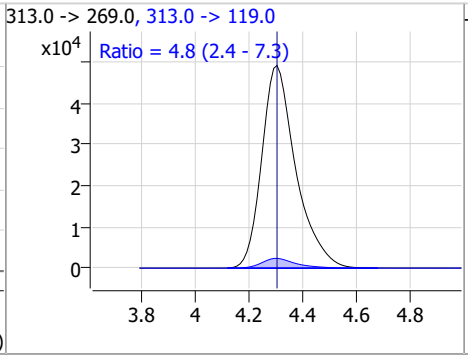


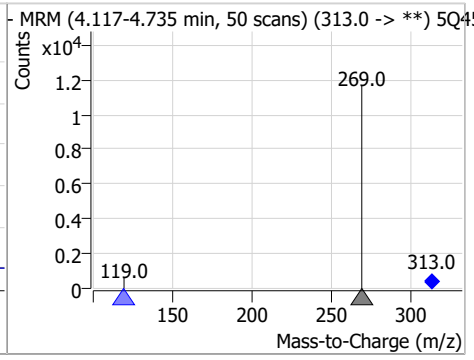




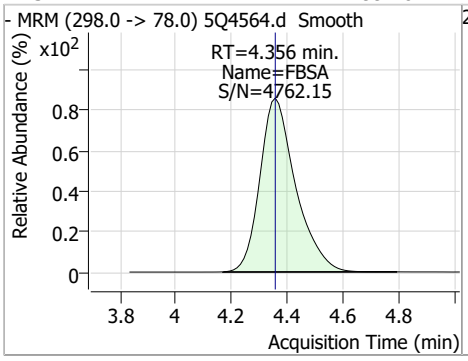
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.26	4.30	0.00	433590	313.0 -> 119.0	4.8	2.4	7.3

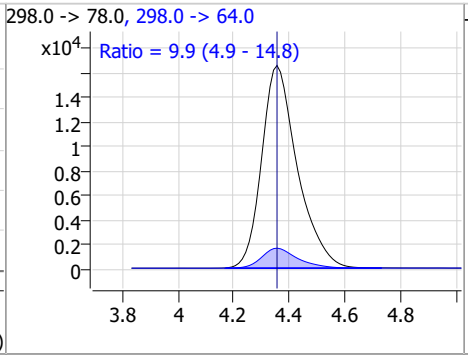


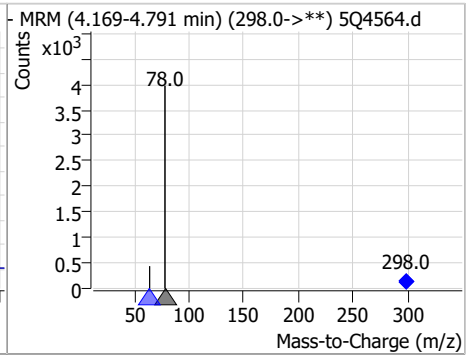




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	99.78	4.36	0.00	146479	298.0 -> 64.0	9.9	4.9	14.8

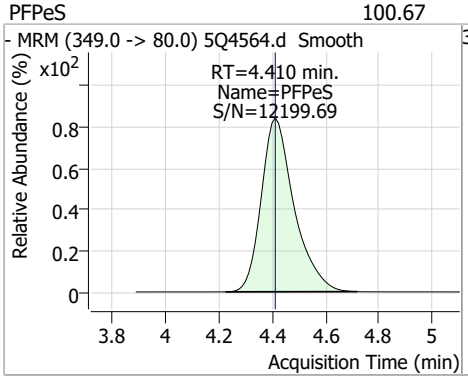


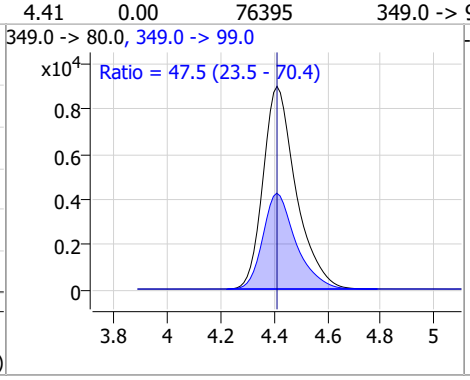


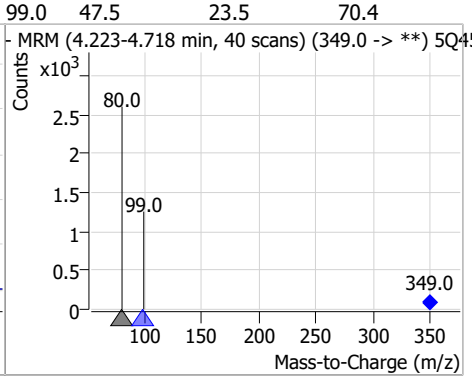


Perfluorinated Compounds by LC/MS/MS

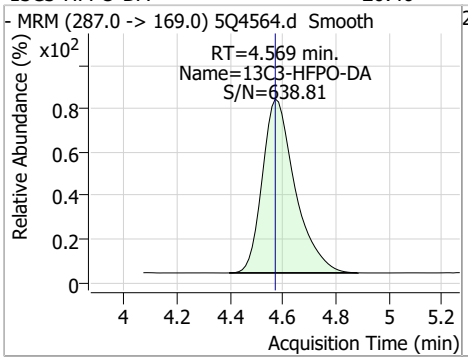
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.67	4.41	0.00	76395	349.0 -> 99.0	47.5	23.5	70.4

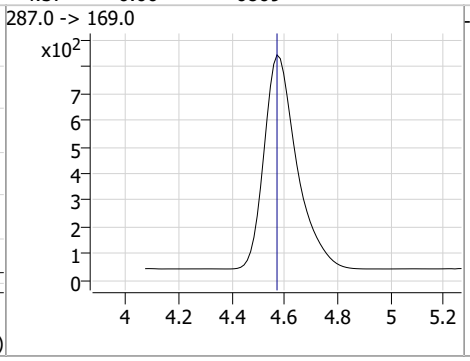


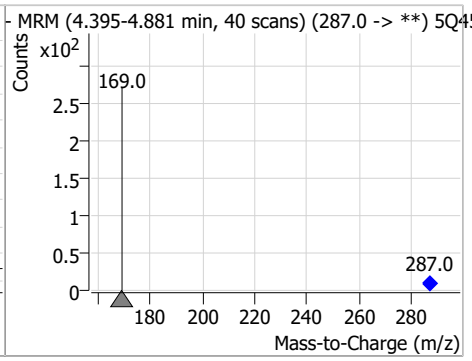




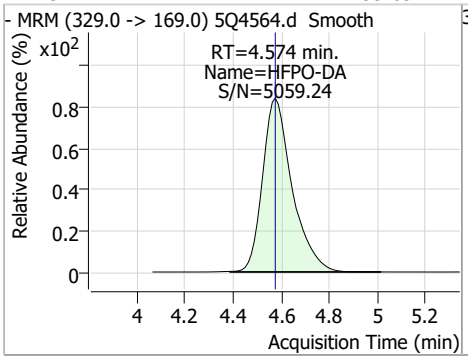
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.46	4.57	0.00	6869				

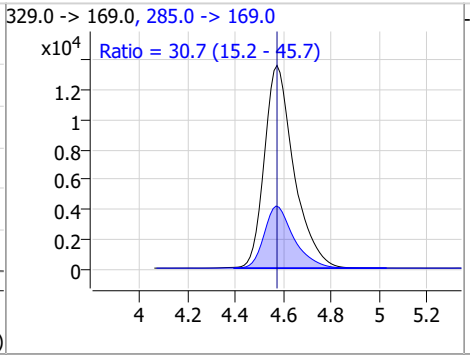


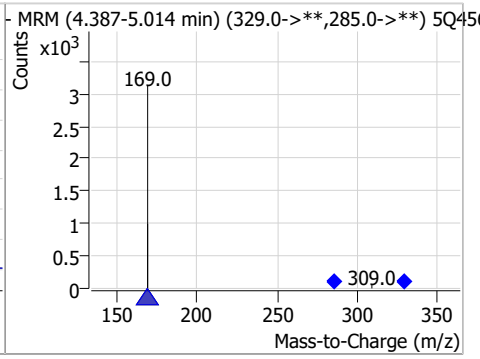




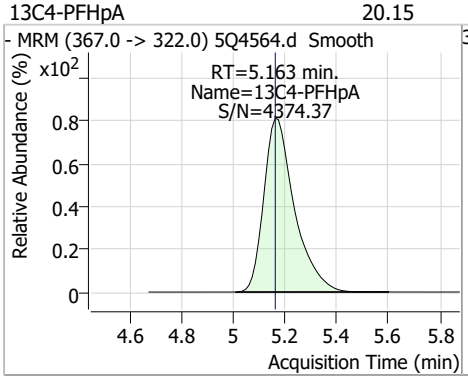
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.89	4.57	0.00	115770	285.0 -> 169.0	30.7	15.2	45.7

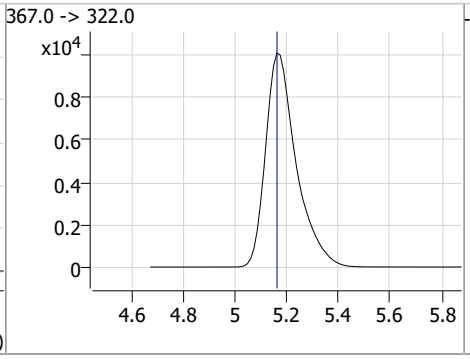


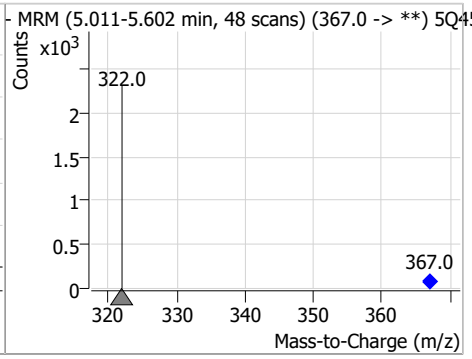




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.15	5.16	0.00	82279				

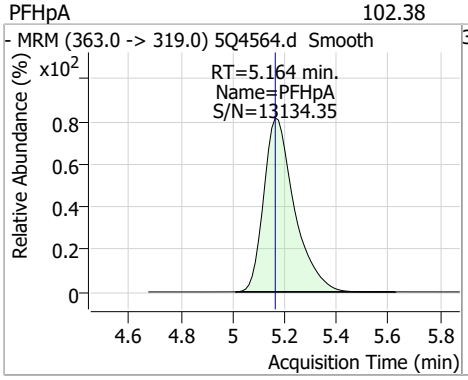


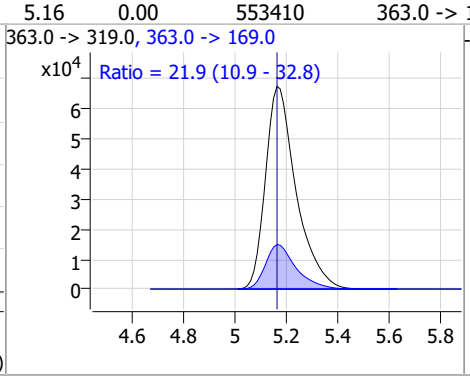


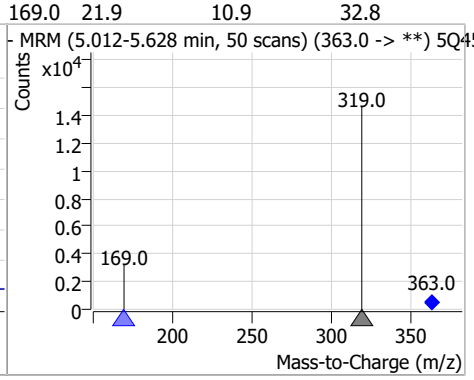


Perfluorinated Compounds by LC/MS/MS

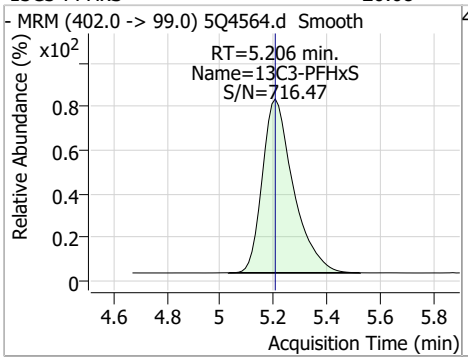
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	102.38	5.16	0.00	553410	363.0 -> 169.0	21.9	10.9	32.8

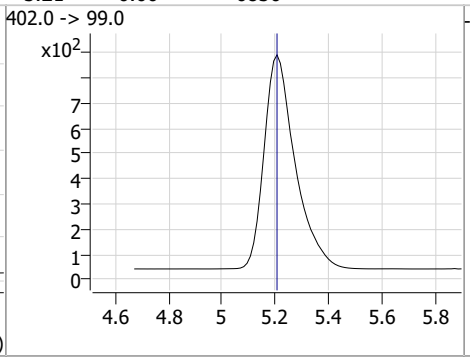


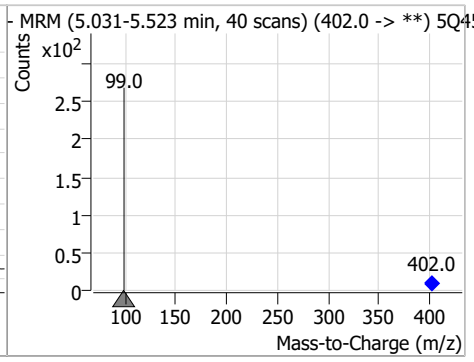




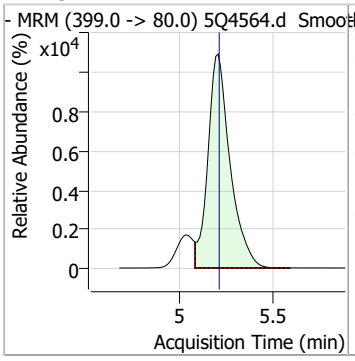
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.08	5.21	0.00	6850				

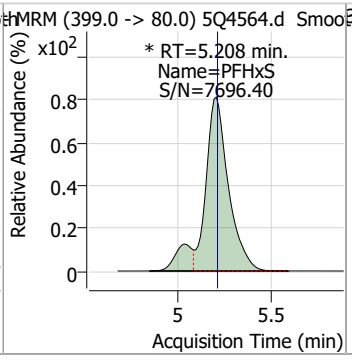


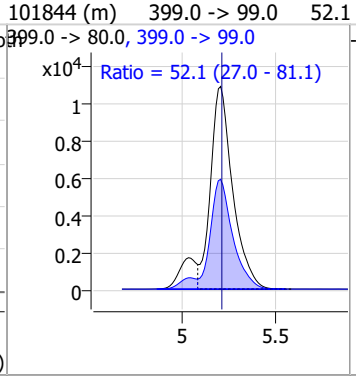


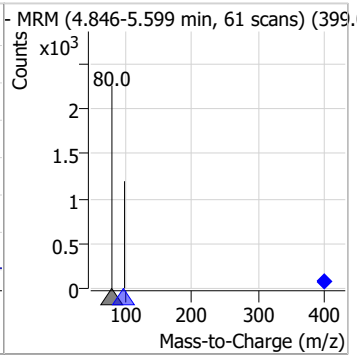


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.11	5.21	0.00	101844 (m)	399.0 -> 99.0	52.1	27.0	81.1

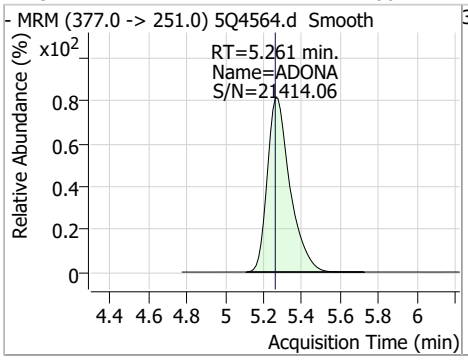


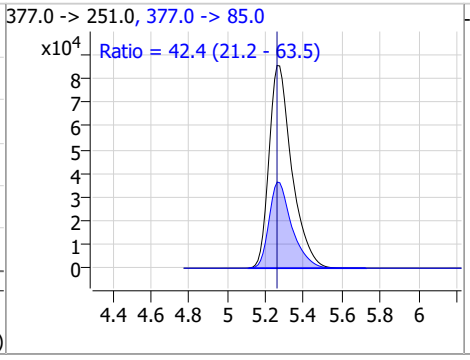


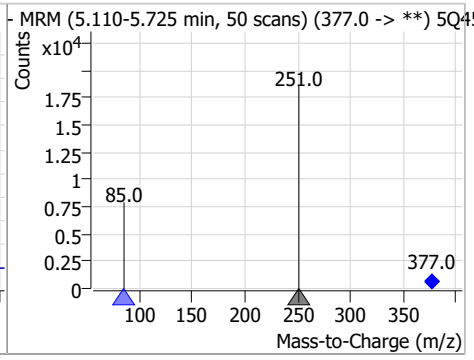




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	100.21	5.26	0.00	705606	377.0 -> 85.0	42.4	21.2	63.5

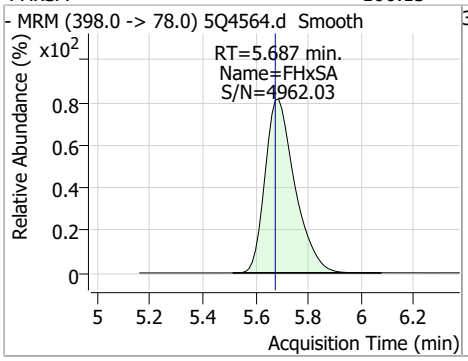


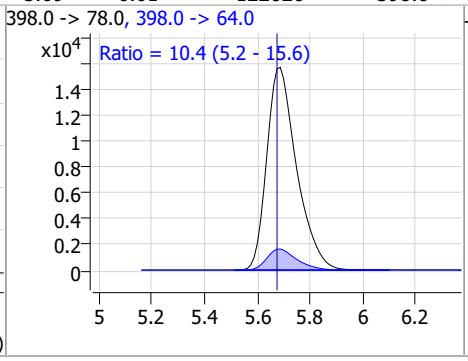


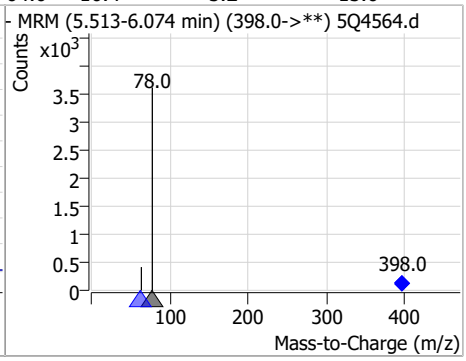


Perfluorinated Compounds by LC/MS/MS

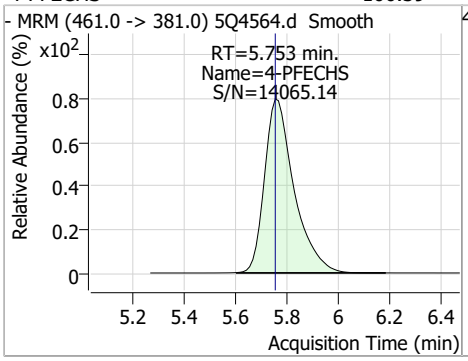
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	100.13	5.69	0.01	122626	398.0 -> 64.0	10.4	5.2	15.6

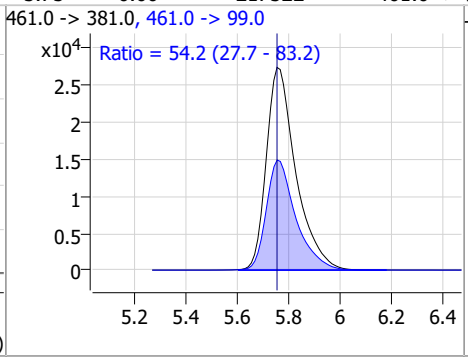


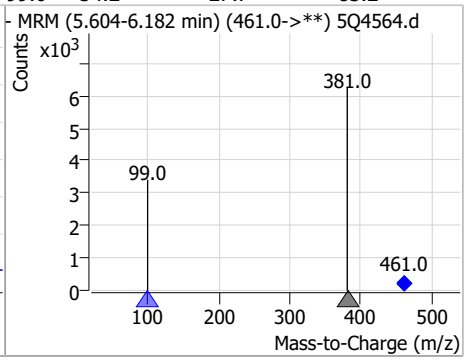




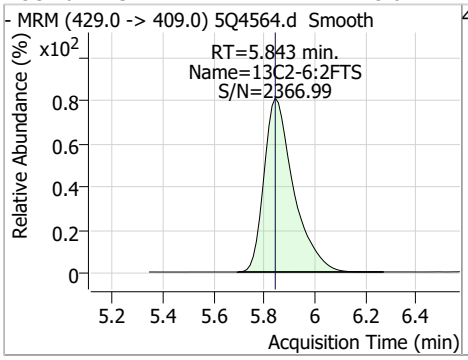
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	100.39	5.75	0.00	217522	461.0 -> 99.0	54.2	27.7	83.2

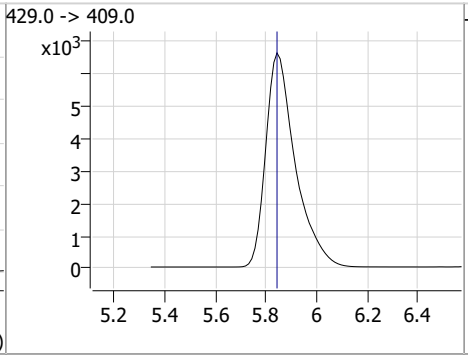


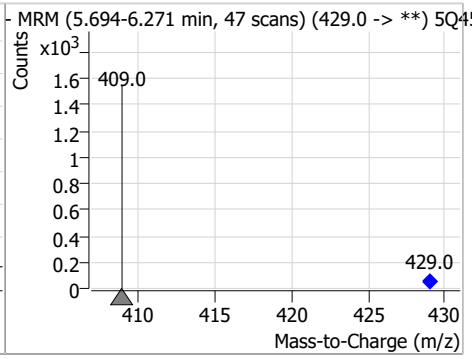




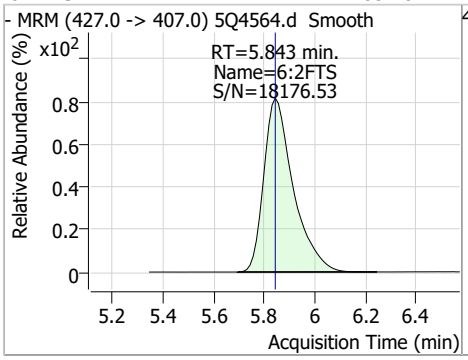
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	23.87	5.84	0.00	53363				

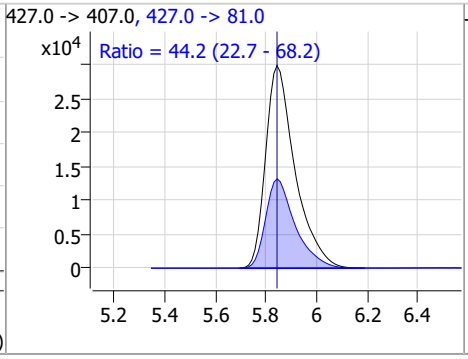


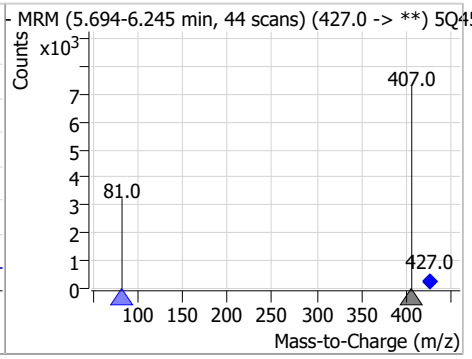




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	85.18	5.84	0.00	241087	427.0 -> 81.0	44.2	22.7	68.2

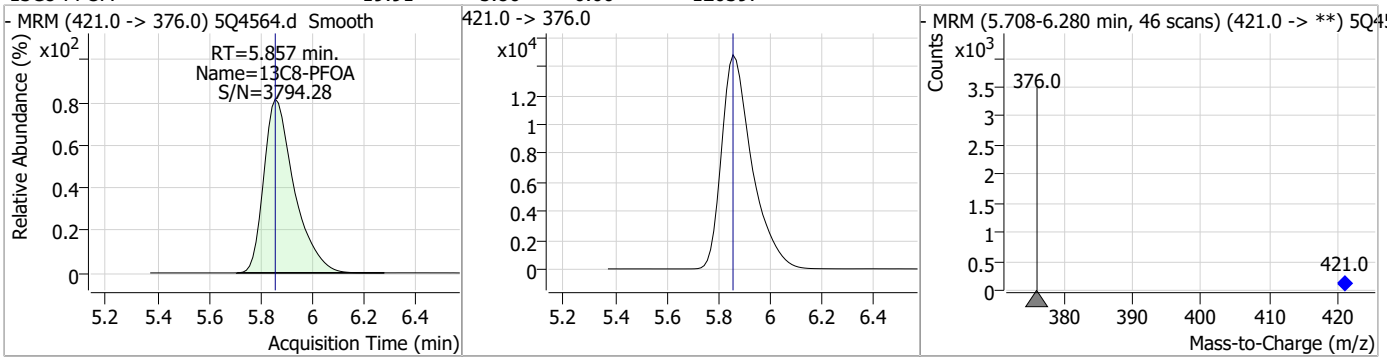




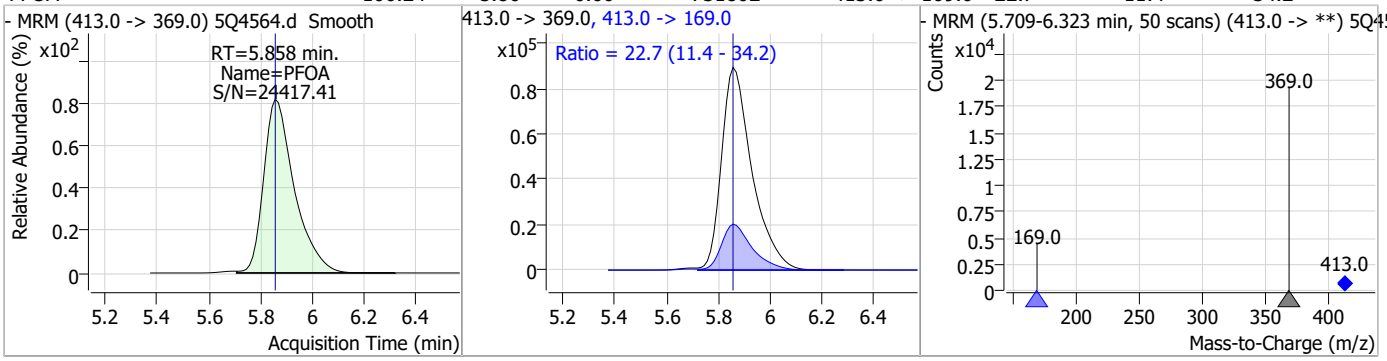


Perfluorinated Compounds by LC/MS/MS

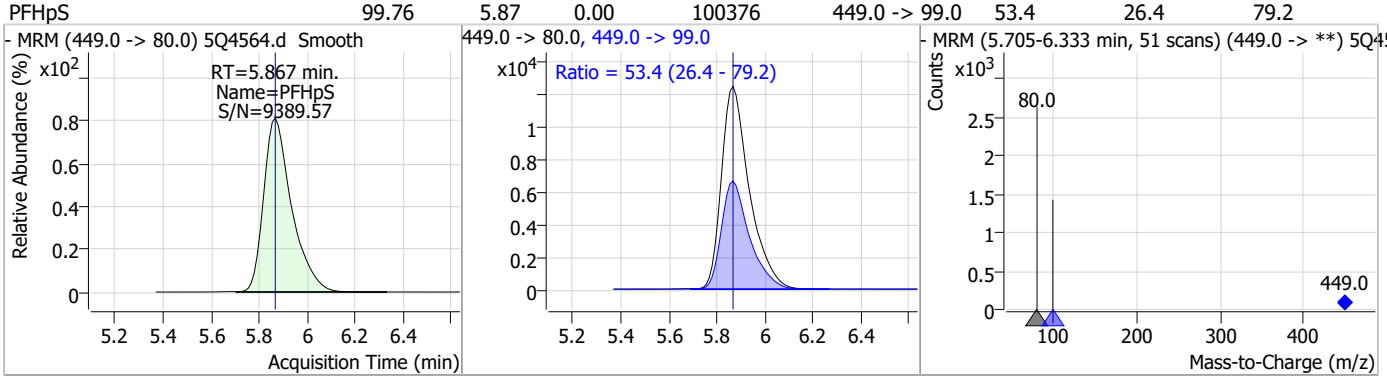
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.91	5.86	0.00	120397				



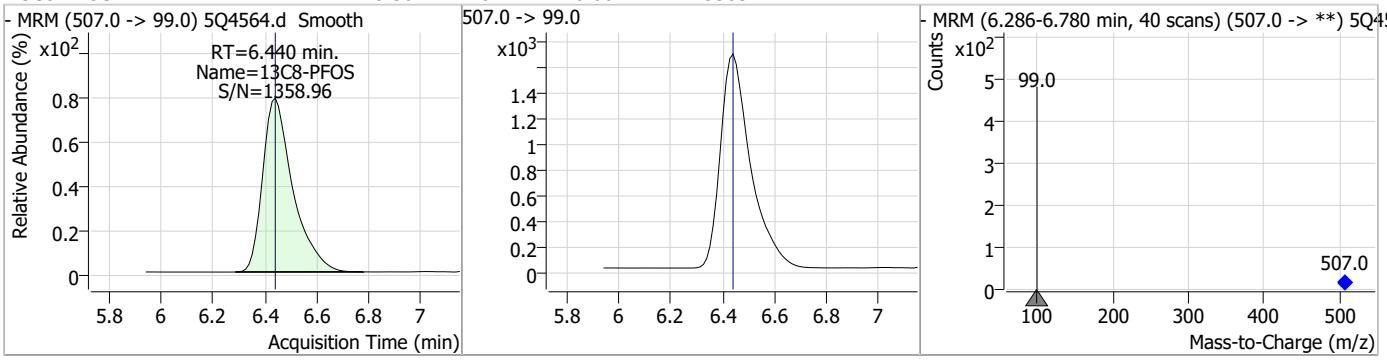
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.24	5.86	0.00	731802	413.0 -> 169.0	22.7	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.76	5.87	0.00	100376	449.0 -> 99.0	53.4	26.4	79.2

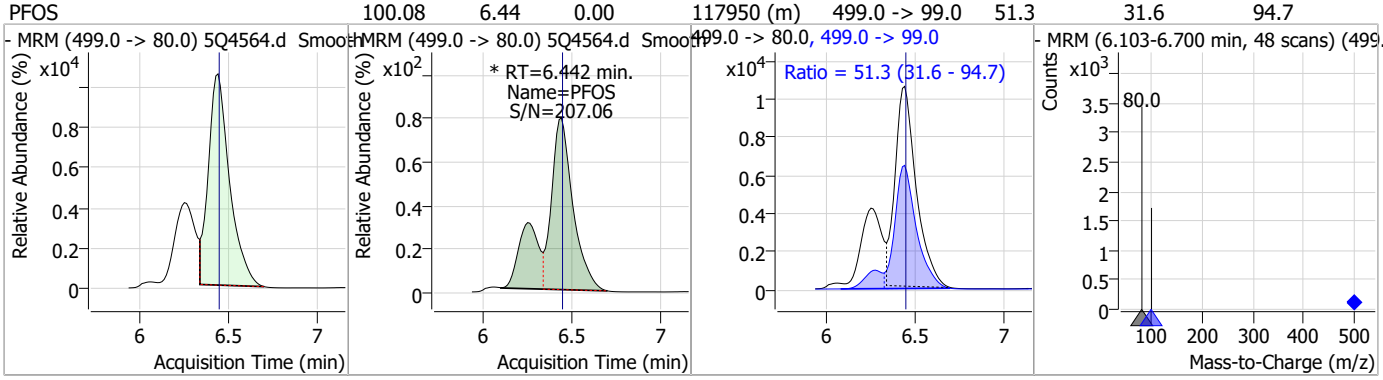


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.50	6.44	0.00	13383				

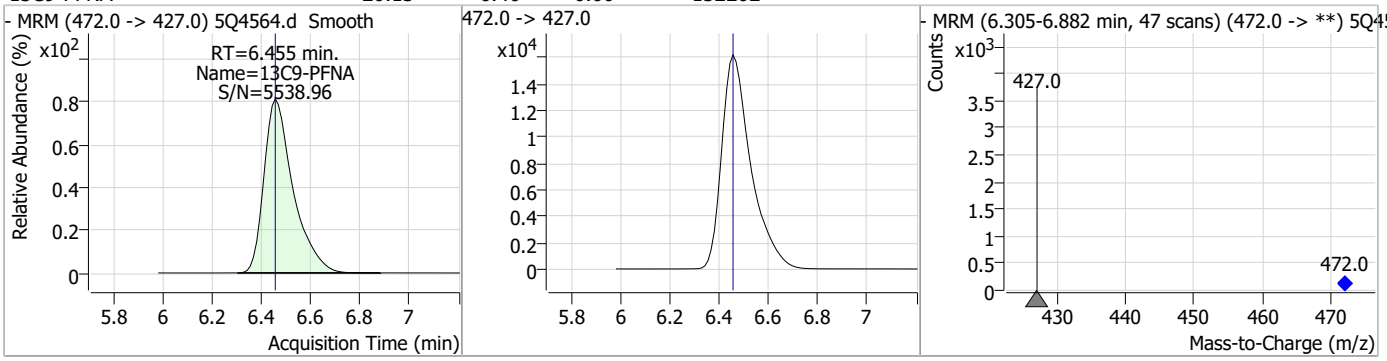


Perfluorinated Compounds by LC/MS/MS

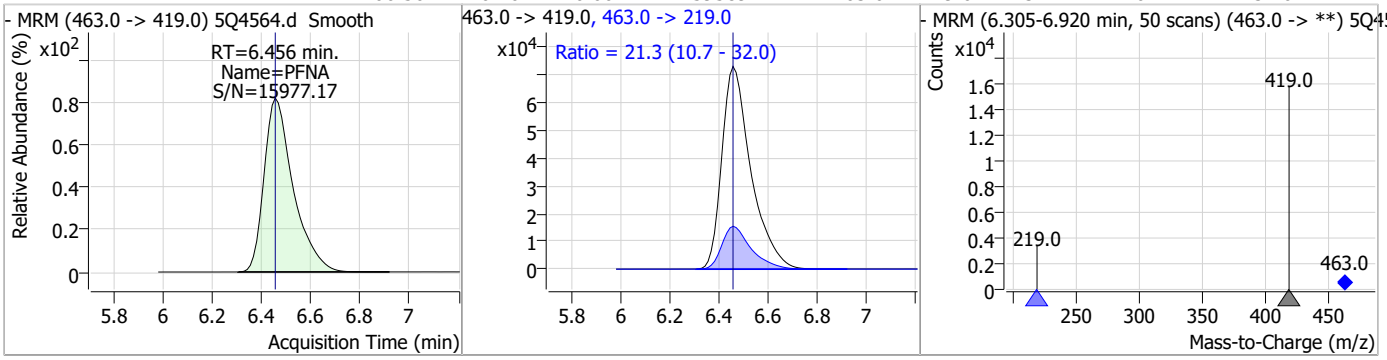
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.08	6.44	0.00	117950 (m)	499.0 -> 99.0	51.3	31.6	94.7



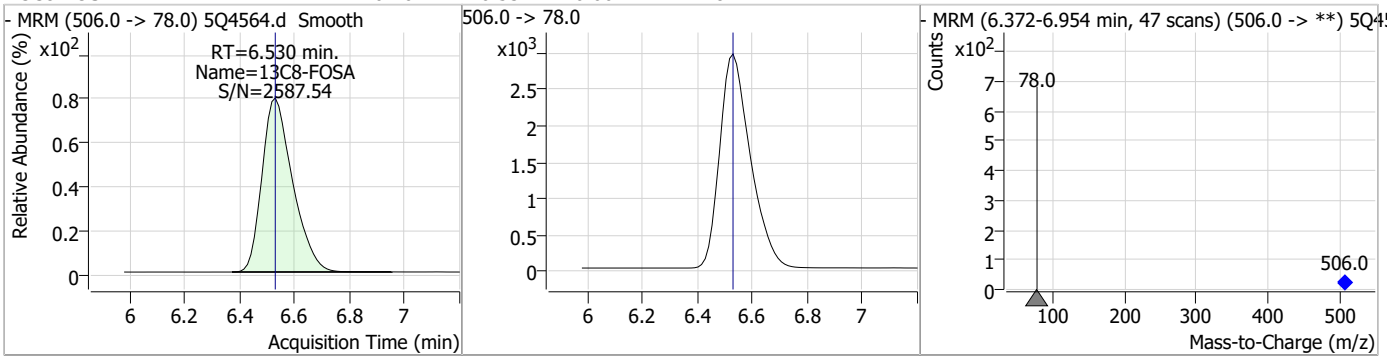
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.13	6.46	0.00	132262				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.56	6.46	0.00	595891	463.0 -> 219.0	21.3	10.7	32.0

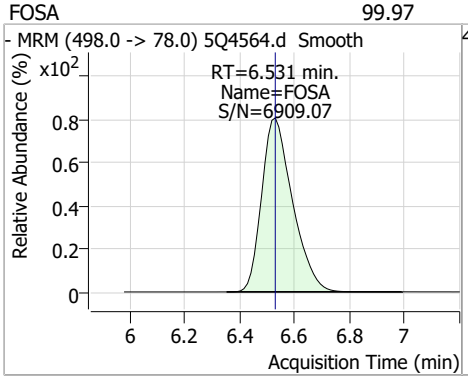


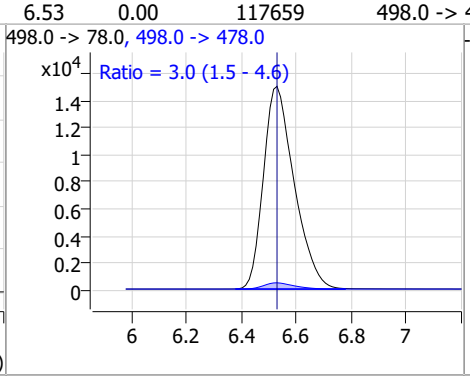
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.16	6.53	0.00	22874				

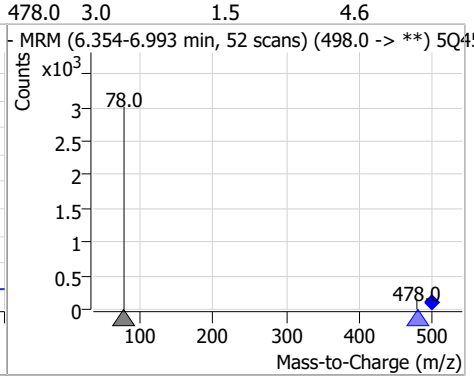


Perfluorinated Compounds by LC/MS/MS

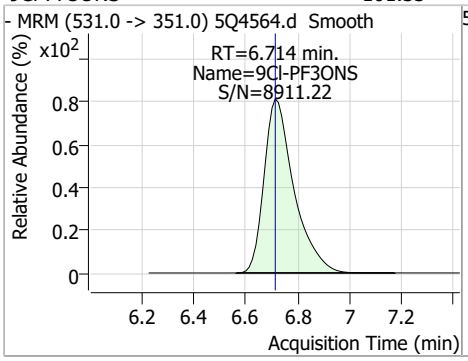
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	99.97	6.53	0.00	117659	498.0 -> 478.0	3.0	1.5	4.6

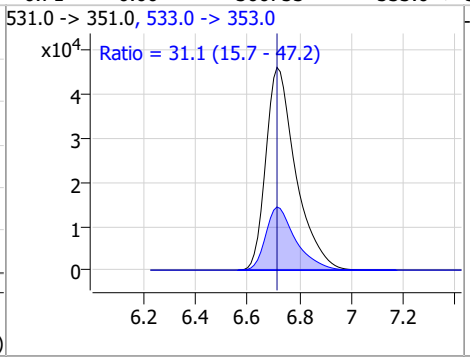


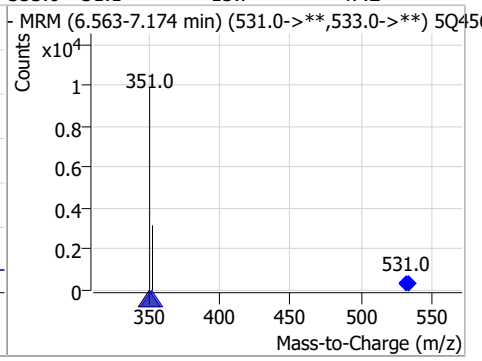




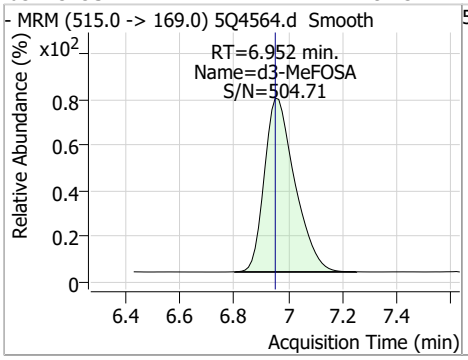
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	101.33	6.71	0.00	366753	533.0 -> 353.0	31.1	15.7	47.2

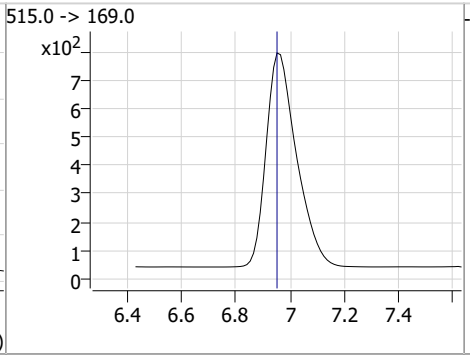


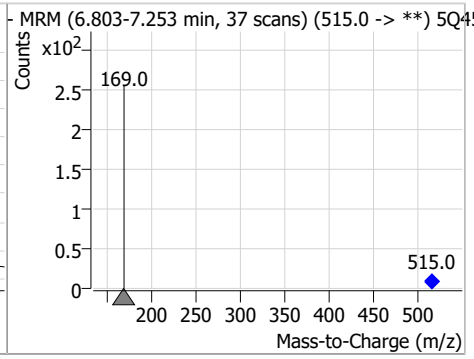




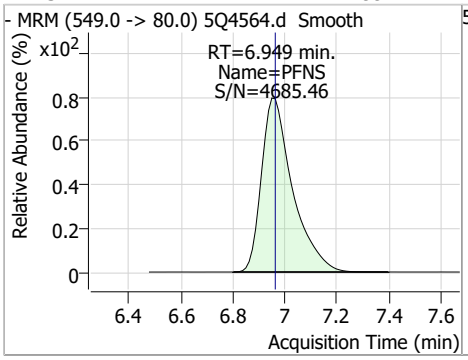
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.43	6.95	0.00	5917				

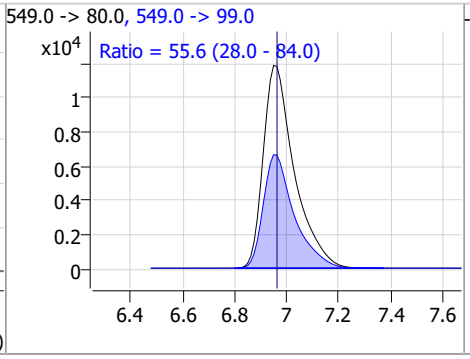


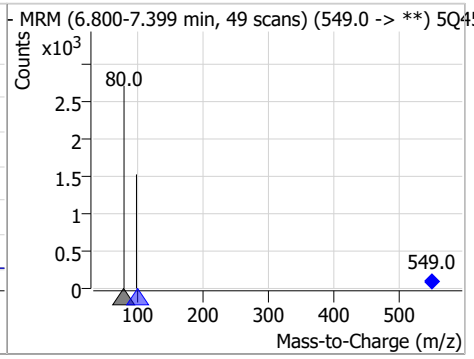




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	99.72	6.95	-0.01	98510	549.0 -> 99.0	55.6	28.0	84.0

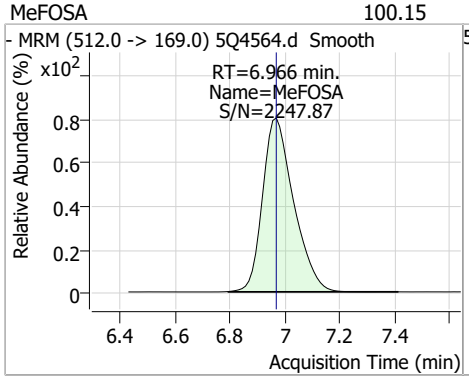


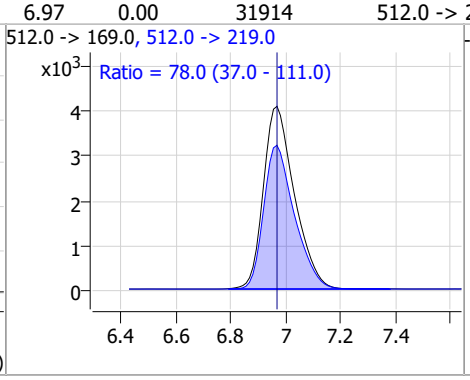


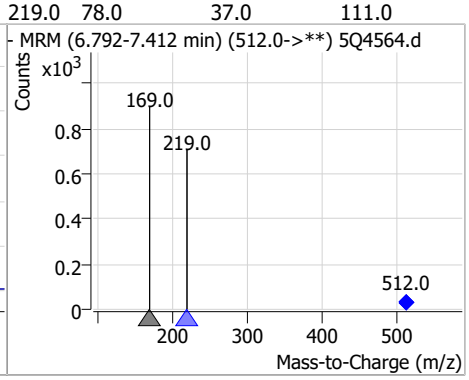


Perfluorinated Compounds by LC/MS/MS

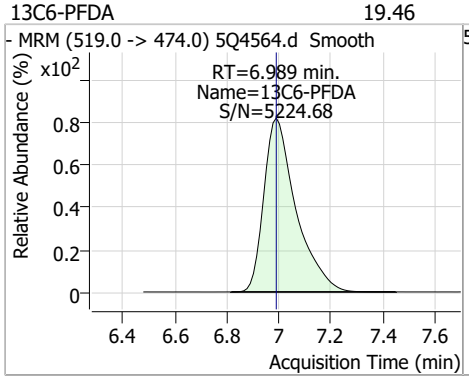
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	100.15	6.97	0.00	31914	512.0 -> 219.0	78.0	37.0	111.0

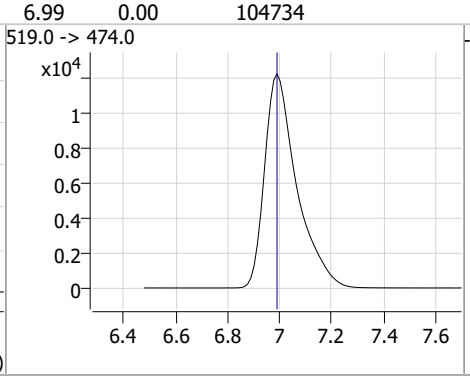


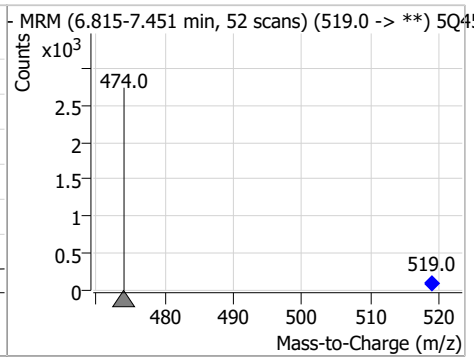




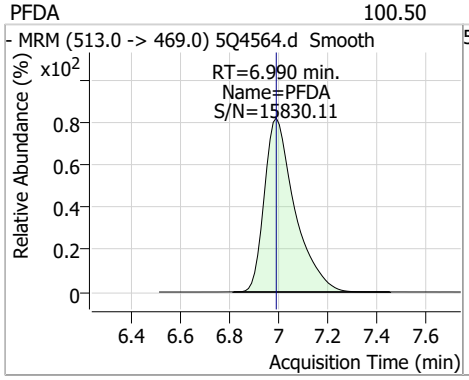
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.46	6.99	0.00	104734				

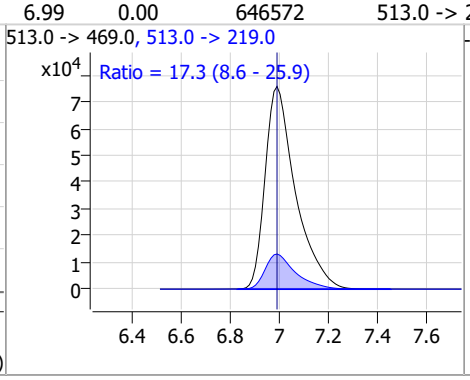


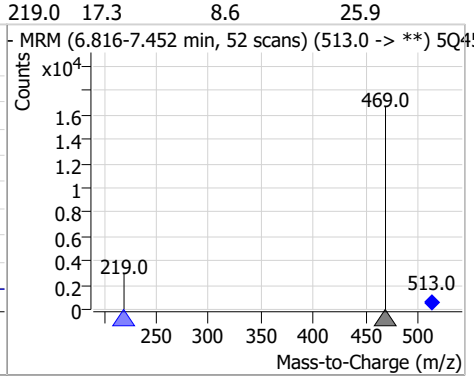




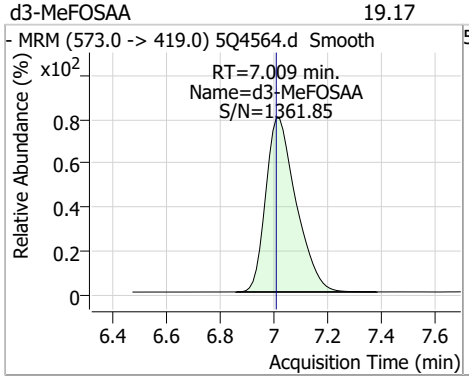
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.50	6.99	0.00	646572	513.0 -> 219.0	17.3	8.6	25.9

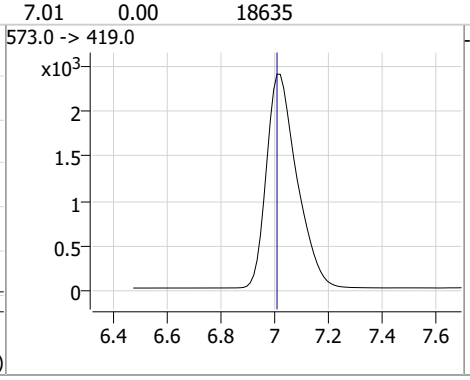


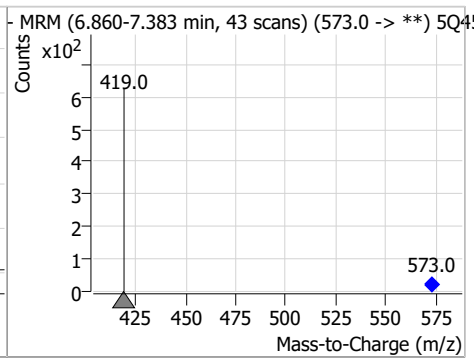




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.17	7.01	0.00	18635				

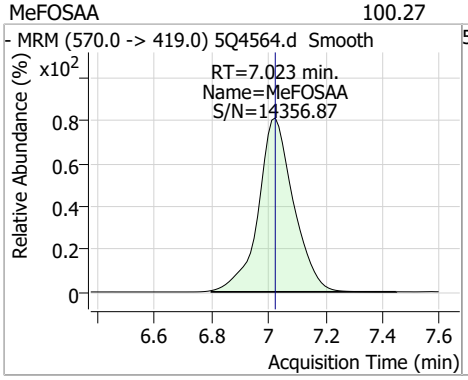


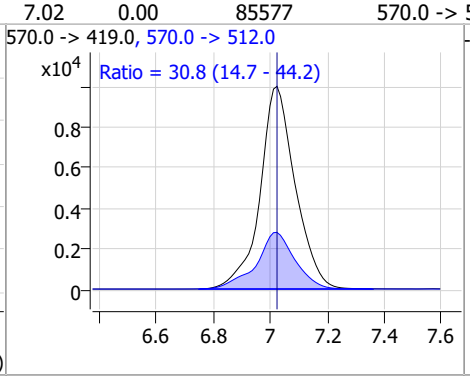


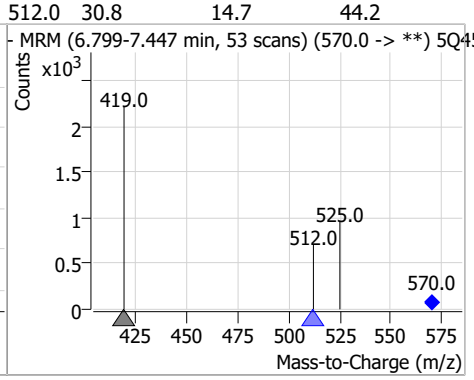


Perfluorinated Compounds by LC/MS/MS

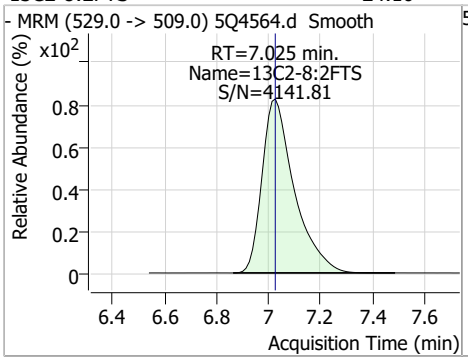
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.27	7.02	0.00	85577	570.0 -> 512.0	30.8	14.7	44.2

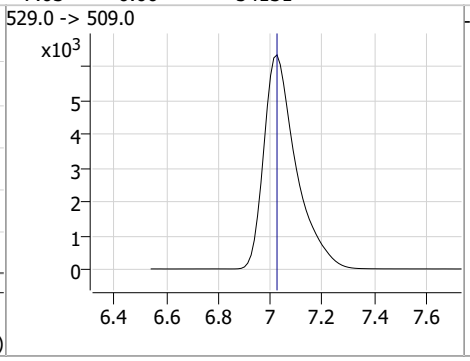


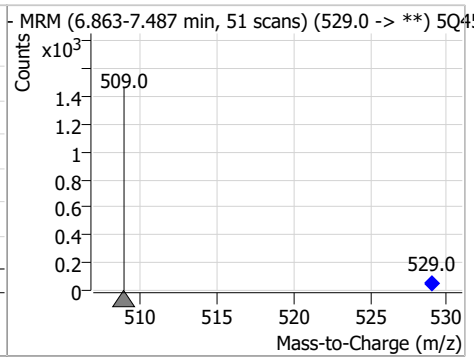




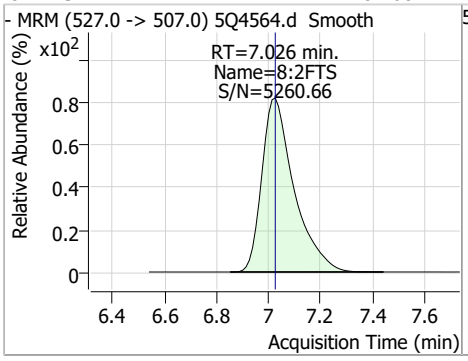
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.10	7.03	0.00	54131				

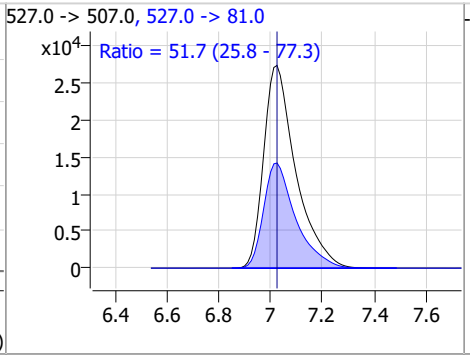


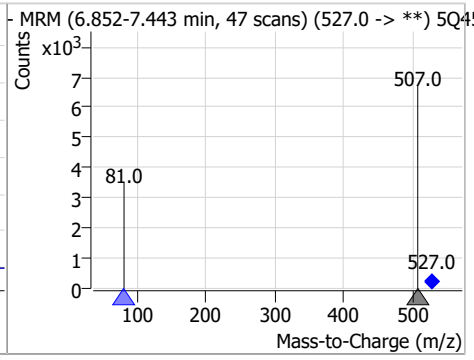




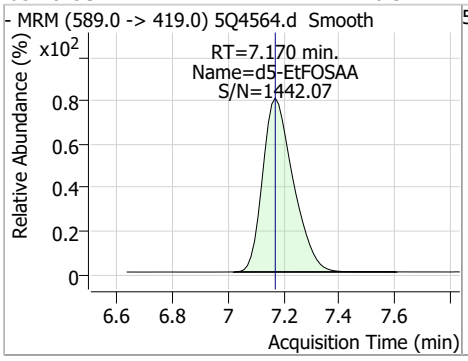
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	81.08	7.03	0.00	233923	527.0 -> 81.0	51.7	25.8	77.3

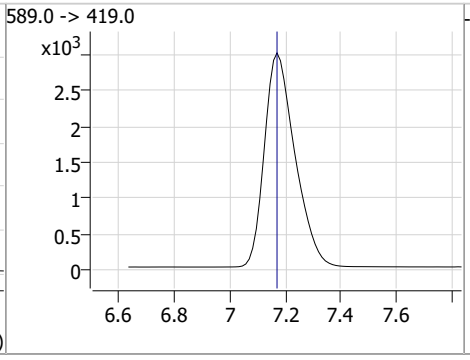


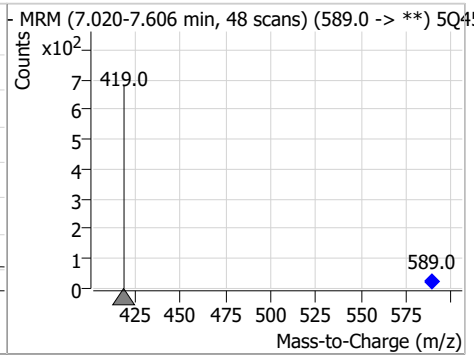




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.32	7.17	0.00	22778				

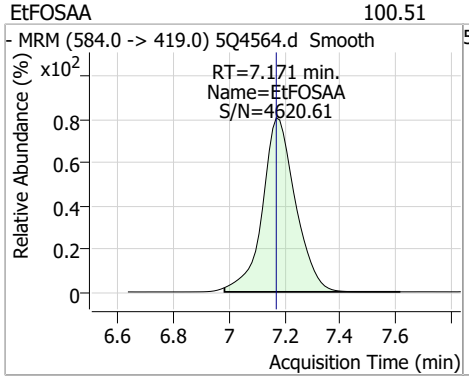


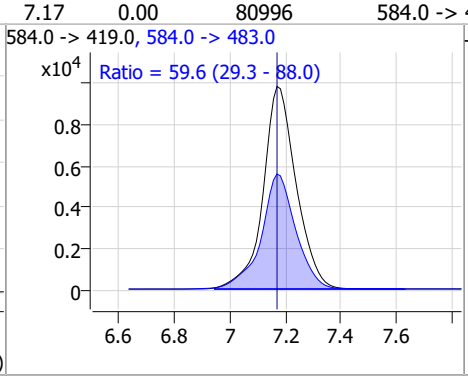


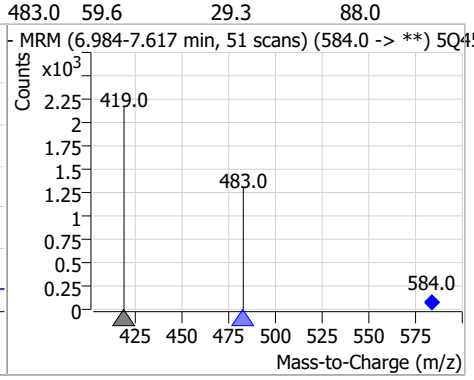


Perfluorinated Compounds by LC/MS/MS

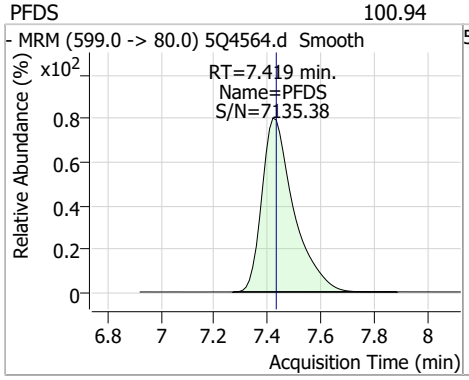
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	100.51	7.17	0.00	80996	584.0 -> 483.0	59.6	29.3	88.0

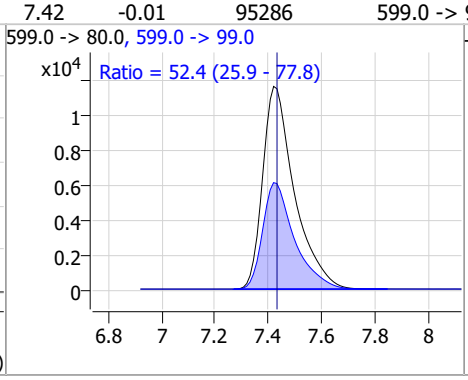


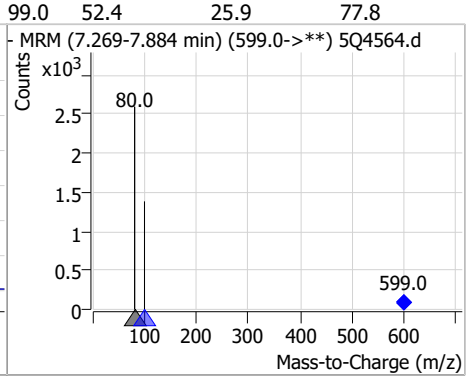




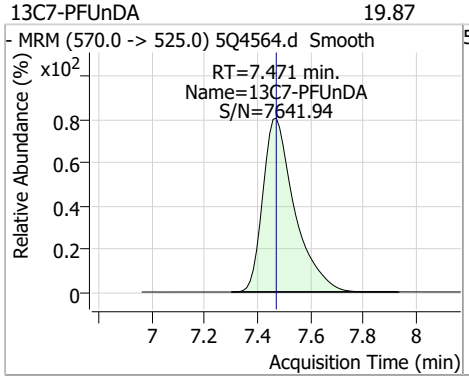
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	100.94	7.42	-0.01	95286	599.0 -> 99.0	52.4	25.9	77.8

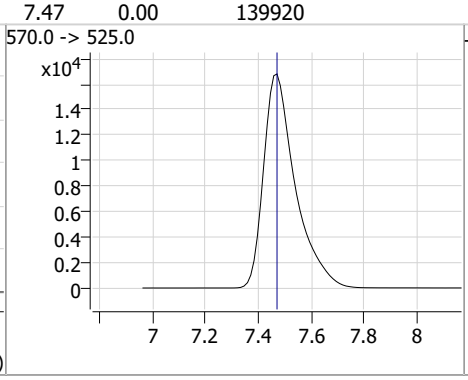


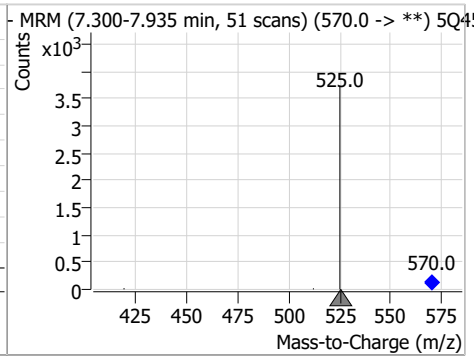




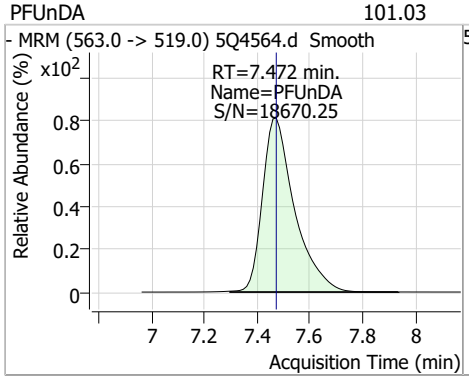
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.87	7.47	0.00	139920				

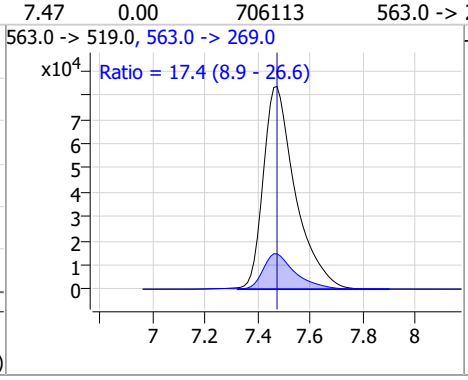


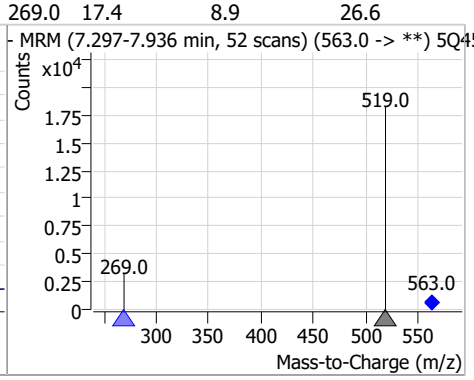




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	101.03	7.47	0.00	706113	563.0 -> 269.0	17.4	8.9	26.6

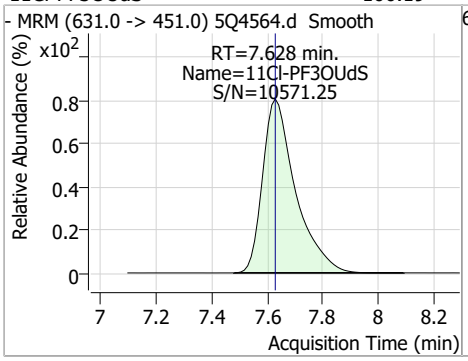


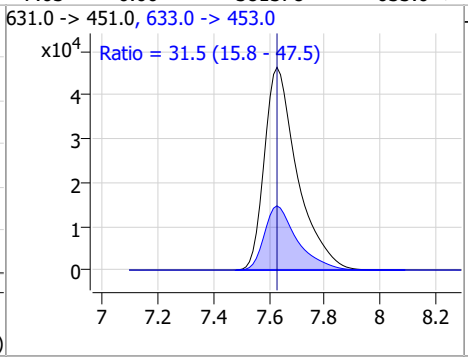


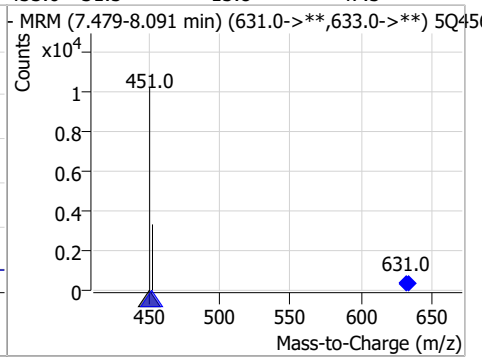


Perfluorinated Compounds by LC/MS/MS

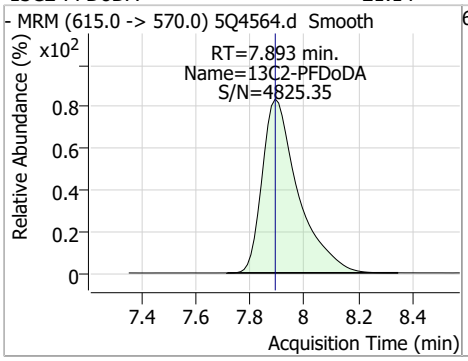
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.19	7.63	0.00	381378	633.0 -> 453.0	31.5	15.8	47.5

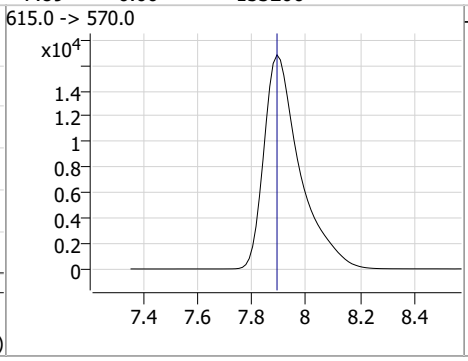


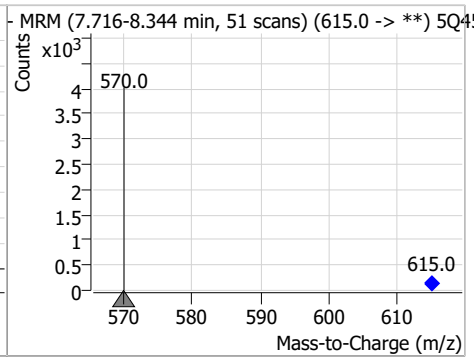




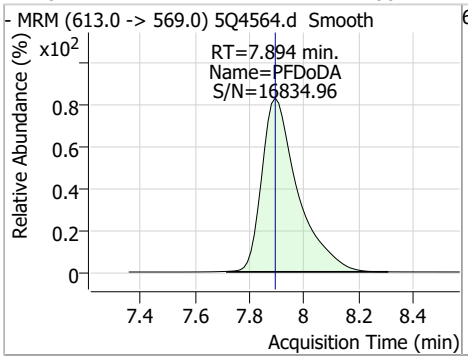
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.14	7.89	0.00	153206				

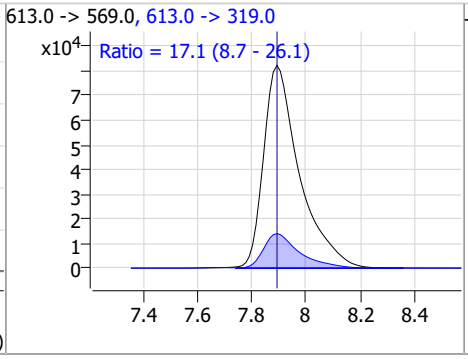


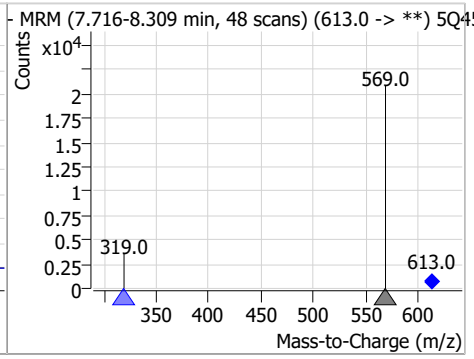




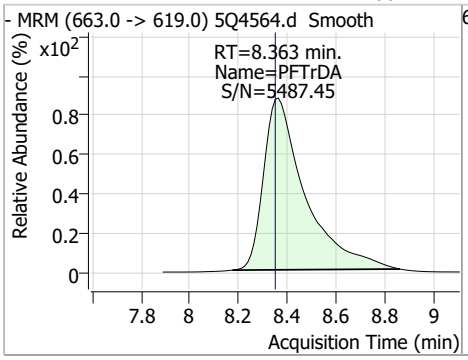
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.27	7.89	0.00	753485	613.0 -> 319.0	17.1	8.7	26.1

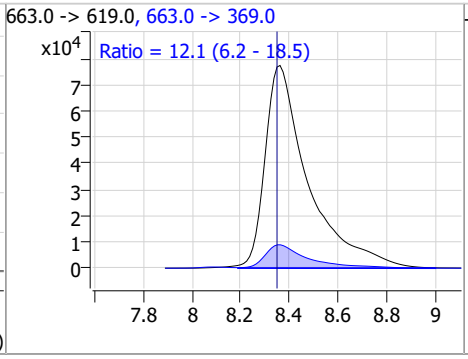


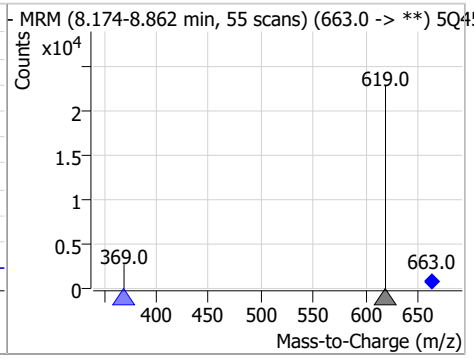




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.74	8.36	0.01	904896	663.0 -> 369.0	12.1	6.2	18.5

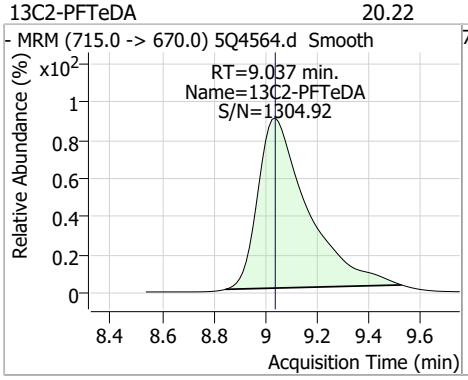


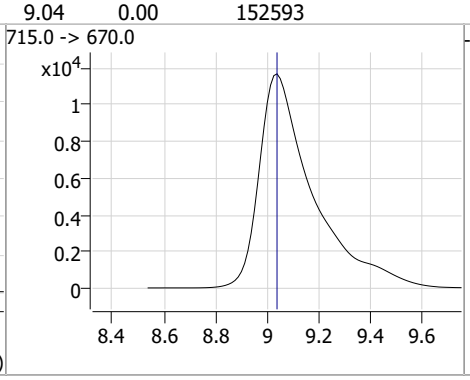


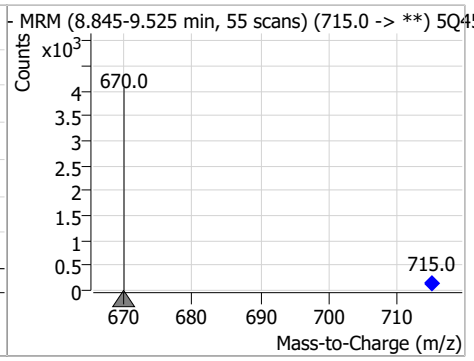


Perfluorinated Compounds by LC/MS/MS

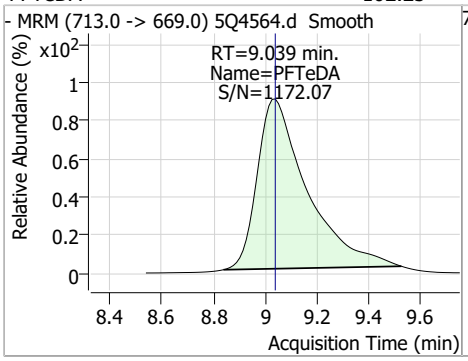
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.22	9.04	0.00	152593				

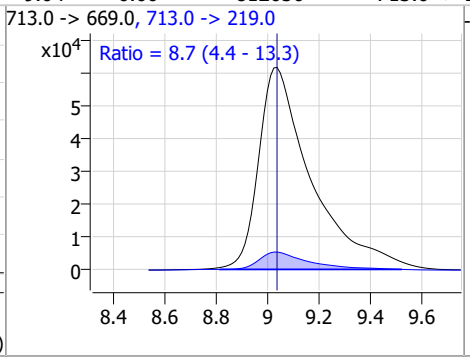


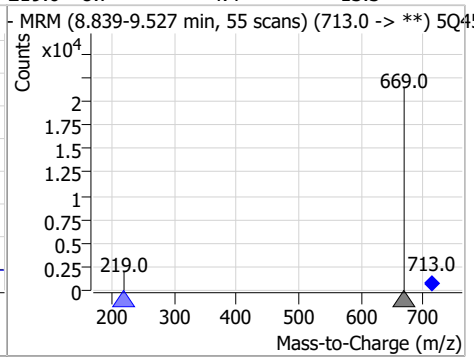




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	102.25	9.04	0.00	812050	713.0 -> 219.0	8.7	4.4	13.3







7.7.40

7

Manual Integration Approval Summary

Sample Number: S5Q71-IC71
Lab FileID: 5Q4564.D
Injection Time: 09/14/22 12:28
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4566.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:59:04 PM
Sample Name : icv71-20
Vial : P1-B1
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

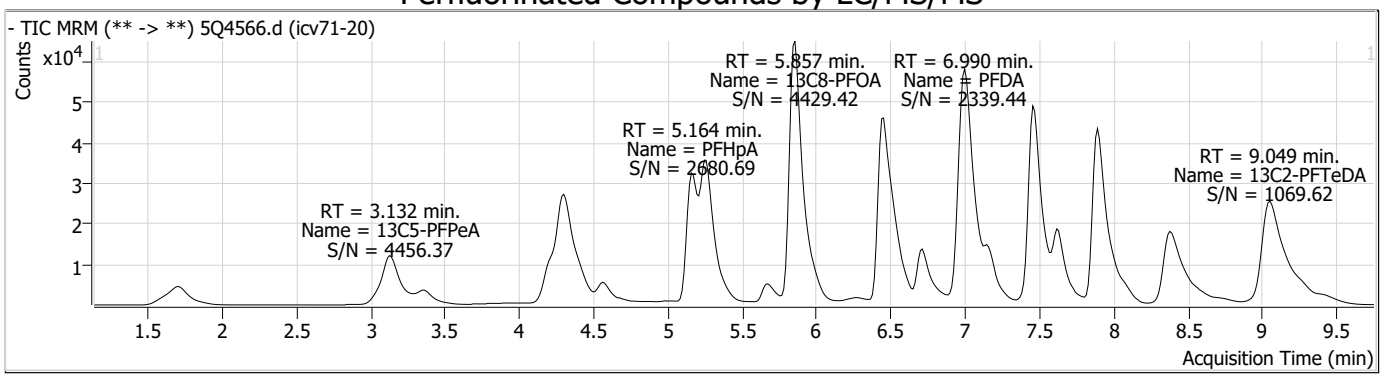
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35635	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57776	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	87582	20.00	µg/L	0.000
M4-PFHpA	5.175	367.0 -> 322.0	81739	20.00	µg/L	0.012
M8-PFOA	5.857	421.0 -> 376.0	121042	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	131121	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	108838	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	142483	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	150059	20.00	µg/L	0.012
M2-PFTeDA	9.049	715.0 -> 670.0	148217	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	22891	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6508	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6851	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13144	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	28931	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	44542	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	45181	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	20056	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6577	20.00	µg/L	0.000
M3-MeFOSA	6.965	515.0 -> 169.0	6129	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	22648	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	28931	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	44542	19.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	45181	20.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFDoDA	7.905	615.0 -> 570.0	150059	20.70	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFTeDA	9.049	715.0 -> 670.0	148217	19.64	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C3-PFBS	3.362	302.0 -> 99.0	6508	19.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C3-PFHxS	5.206	402.0 -> 99.0	6851	20.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C4-PFBA	1.700	217.0 -> 172.0	35635	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	5.175	367.0 -> 322.0	81739	20.02	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C5-PFHxA	4.303	318.0 -> 273.0	87582	20.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	57776	19.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C6-PFDA	6.989	519.0 -> 474.0	108838	20.22	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

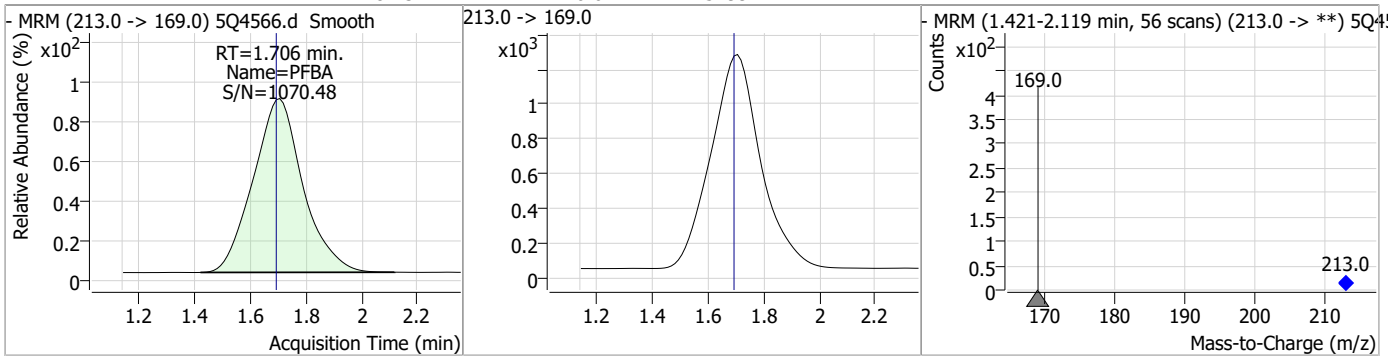
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C7-PFUnDA	7.471	570.0 -> 525.0	142483	20.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%			
13C8-FOSA	6.530	506.0 -> 78.0	22891	20.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C8-PFOA	5.857	421.0 -> 376.0	121042	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C8-PFOS	6.440	507.0 -> 99.0	13144	20.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C9-PFNA	6.455	472.0 -> 427.0	131121	19.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	20056	20.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6577	19.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
d3-MeFOSA	6.965	515.0 -> 169.0	6129	20.13	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22648	20.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%			
Target Compounds							**QValue**
4:2FTS	4.214	327.0 -> 307.0	26192	16.17	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	41061	17.38	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	42524	17.66	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	14722	18.37	µg/L		99
FOSA	6.531	498.0 -> 78.0	21135	17.94	µg/L		99
MeFOSAA	7.023	570.0 -> 419.0	16511	17.97	µg/L		100
PFBA	1.706	213.0 -> 169.0	15299	18.23	µg/L		100
PFBS	3.367	299.0 -> 80.0	14686	15.02	µg/L		100
PFDA	6.990	513.0 -> 469.0	117550	17.58	µg/L		100
PFDoDA	7.906	613.0 -> 569.0	142871	19.41	µg/L		99
PFDS	7.431	599.0 -> 80.0	16254	16.91	µg/L		98
PFHpA	5.164	363.0 -> 319.0	97035	18.07	µg/L		99
PFHpS	5.867	449.0 -> 80.0	17204	17.41	µg/L		100
PFHxA	4.304	313.0 -> 269.0	71541	16.72	µg/L		100
PFHxS	5.208	399.0 -> 80.0	15434	15.17	µg/L	m	98
PFNA	6.456	463.0 -> 419.0	101886	17.34	µg/L		100
PFNS	6.962	549.0 -> 80.0	16481	16.99	µg/L		99
PFOA	5.858	413.0 -> 369.0	137233	18.70	µg/L		100
PFOS	6.442	499.0 -> 80.0	21442	18.52	µg/L	m	87
PFPeA	3.134	263.0 -> 219.0	50526	17.70	µg/L		100
PFPeS	4.410	349.0 -> 80.0	12330	16.22	µg/L		99
PFTeDA	9.052	713.0 -> 669.0	134119	17.39	µg/L		97
PFTrDA	8.388	663.0 -> 619.0	168766	19.18	µg/L		100
PFUnDA	7.472	563.0 -> 519.0	134461	18.89	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	62170	16.68	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	60033	15.96	µg/L		100
ADONA	5.275	377.0 -> 251.0	118775	16.87	µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	20089	18.10	µg/L		100
MeFOSA	7.028	512.0 -> 169.0	0		µg/L	m	1
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.356	298.0 -> 78.0	29474	20.29	µg/L		100
FHxSA	5.687	398.0 -> 78.0	25658	20.84	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

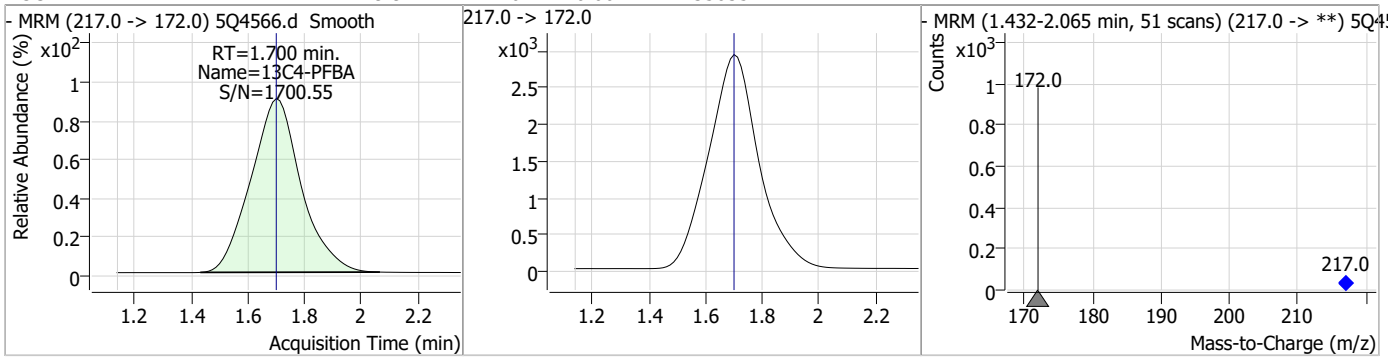
Perfluorinated Compounds by LC/MS/MS



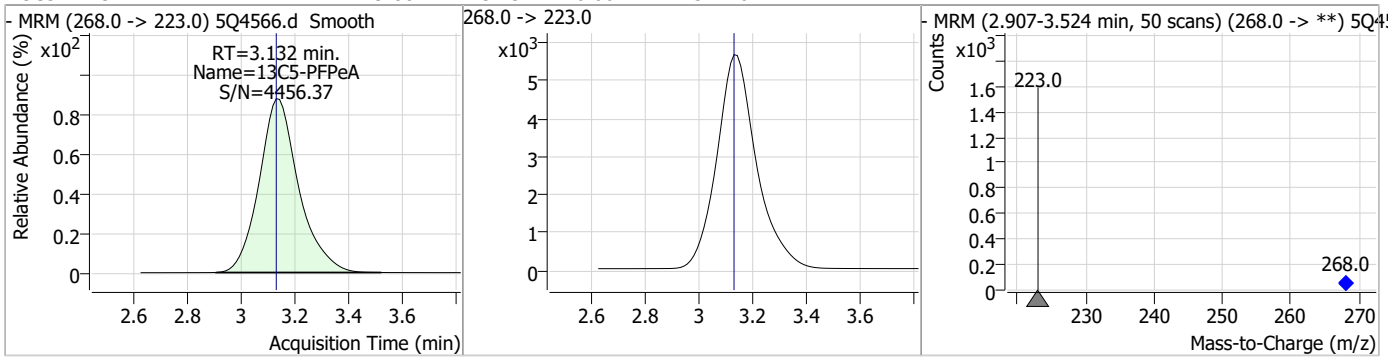
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.23	1.71	0.01	15299				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.94	1.70	0.00	35635				

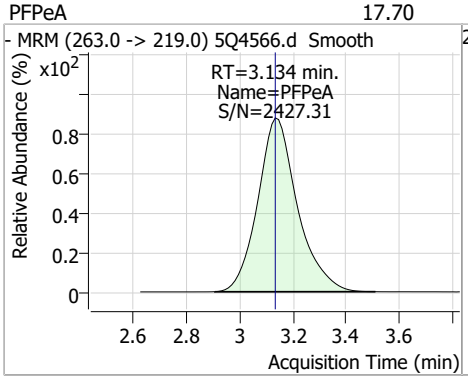


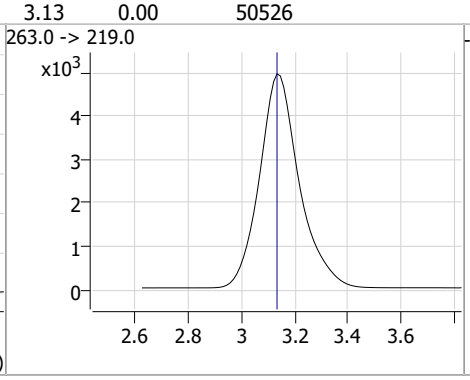
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.88	3.13	0.00	57776				

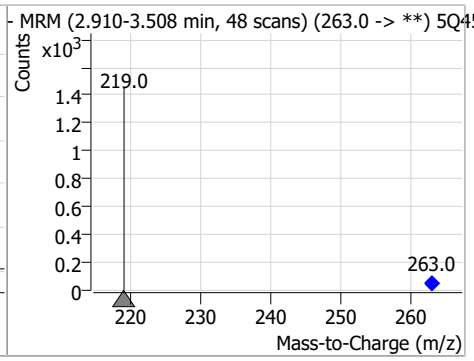


Perfluorinated Compounds by LC/MS/MS

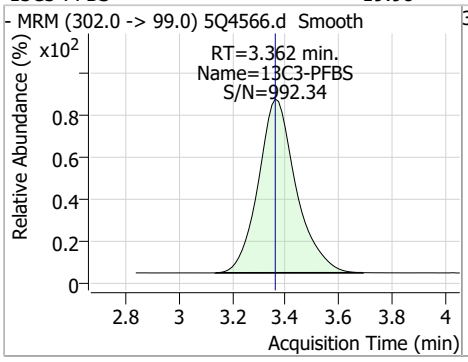
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	17.70	3.13	0.00	50526				

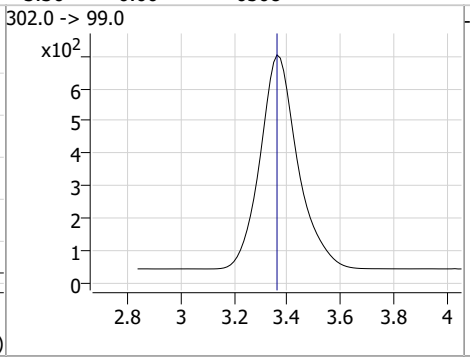


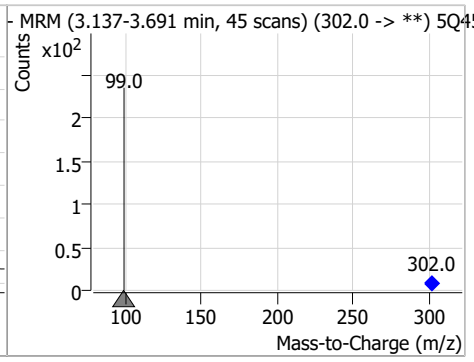




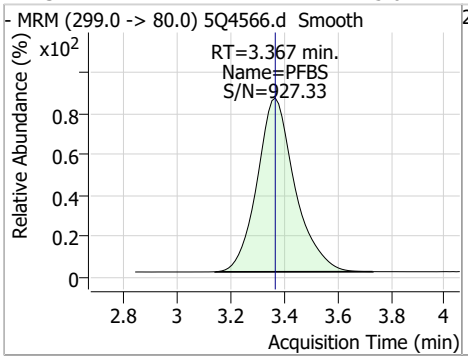
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.98	3.36	0.00	6508				

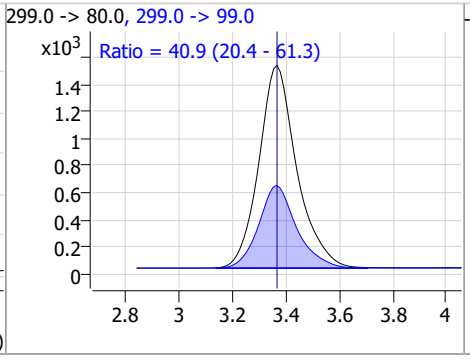


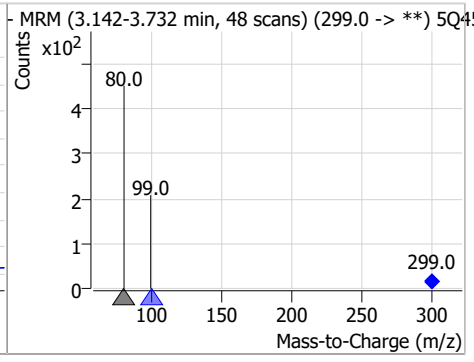




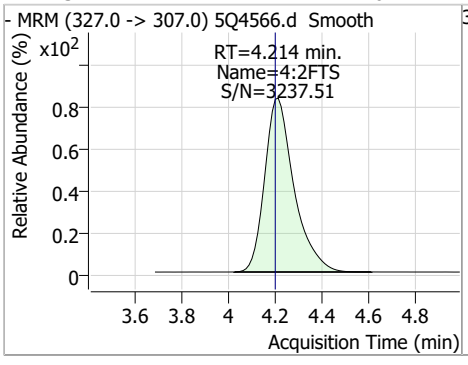
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	15.02	3.37	0.00	14686	299.0 -> 99.0	40.9	20.4	61.3

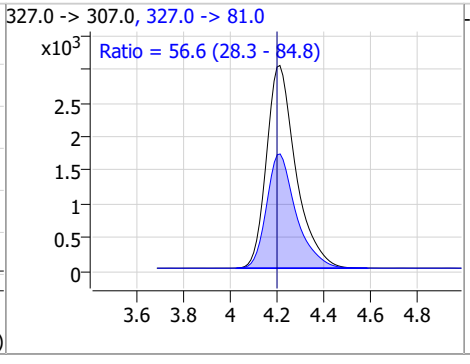


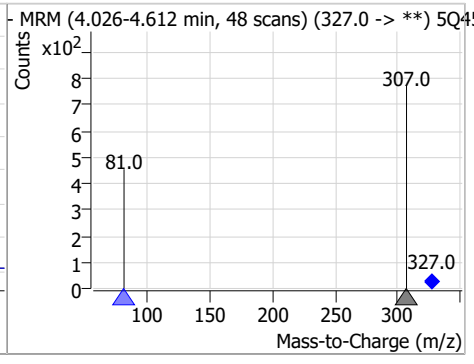




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	16.17	4.21	0.01	26192	327.0 -> 81.0	56.6	28.3	84.8

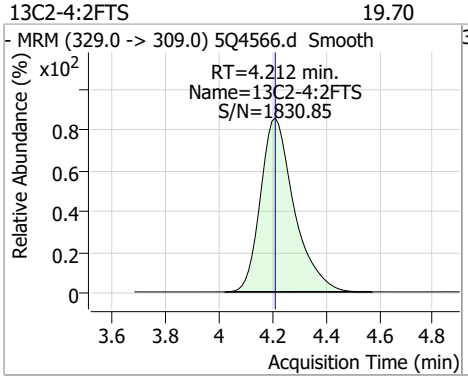


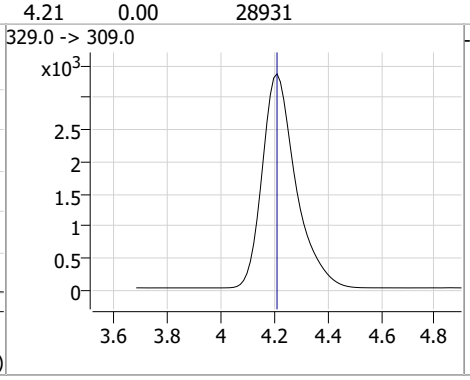


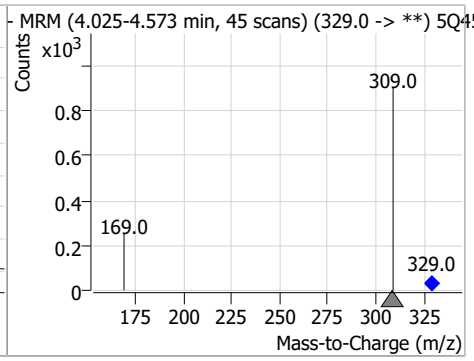


Perfluorinated Compounds by LC/MS/MS

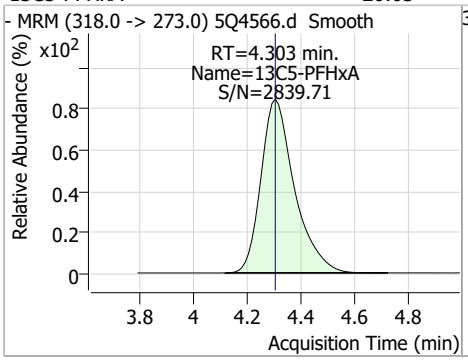
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.70	4.21	0.00	28931				

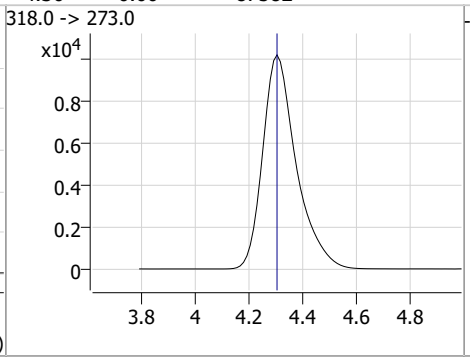


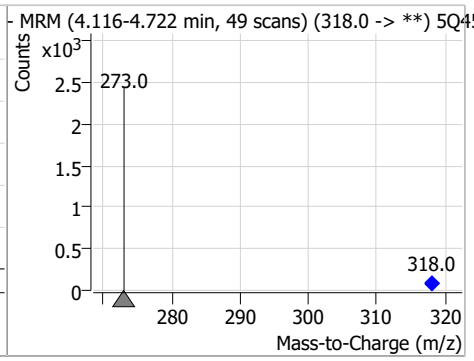




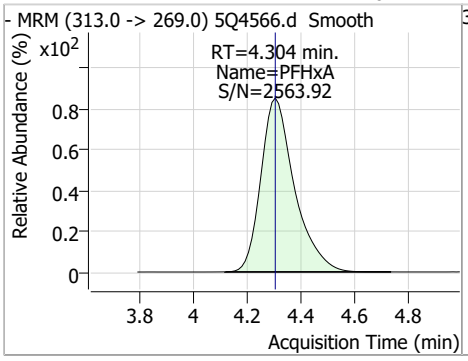
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.03	4.30	0.00	87582				

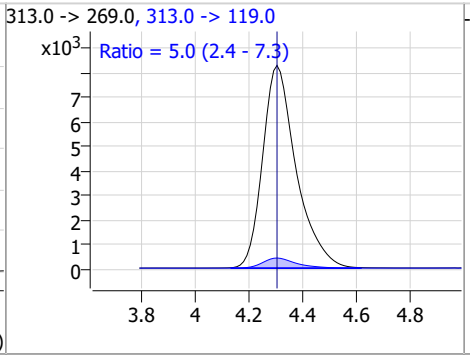


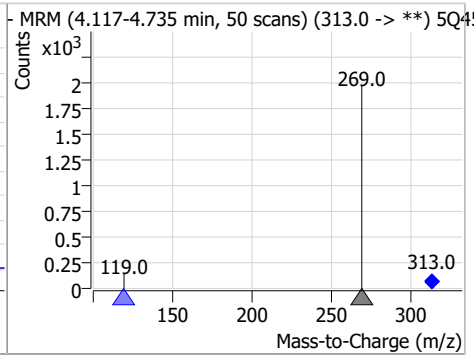




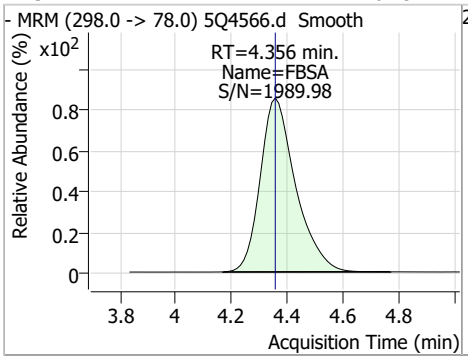
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.72	4.30	0.00	71541	313.0 -> 119.0	5.0	2.4	7.3

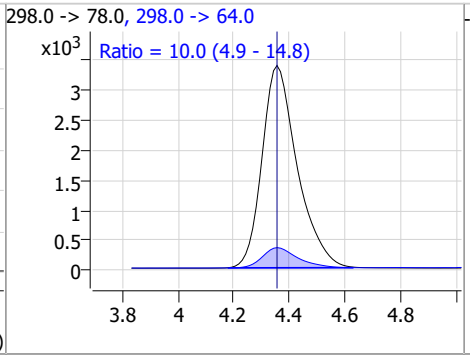


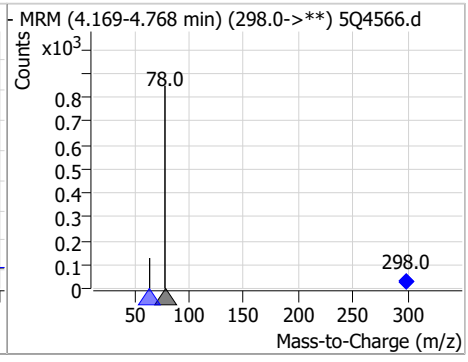




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.29	4.36	0.00	29474	298.0 -> 64.0	10.0	4.9	14.8

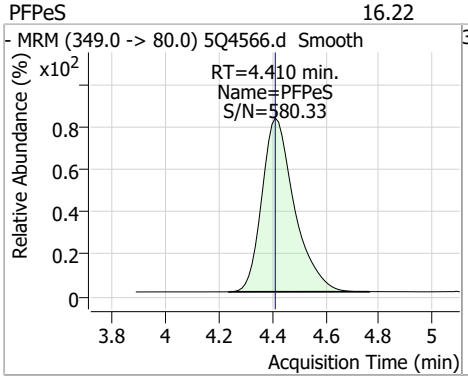


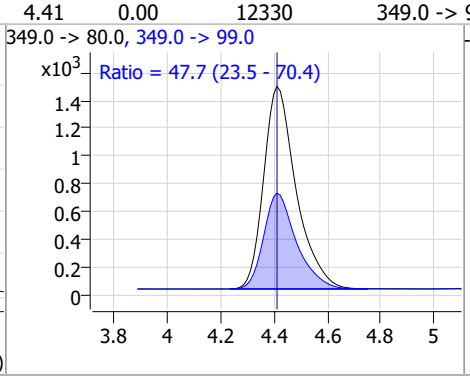


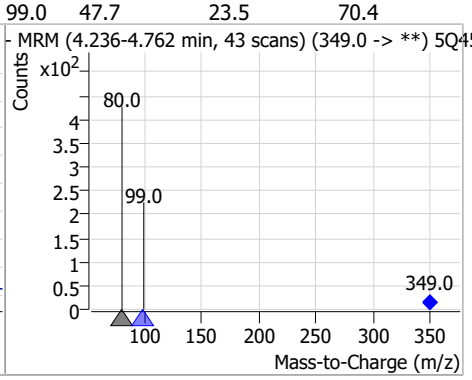


Perfluorinated Compounds by LC/MS/MS

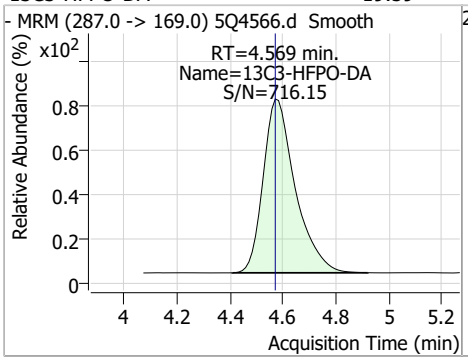
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.22	4.41	0.00	12330	349.0 -> 99.0	47.7	23.5	70.4

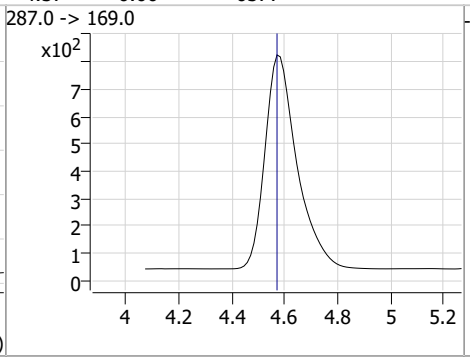


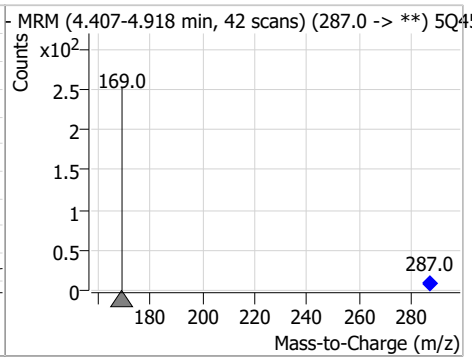




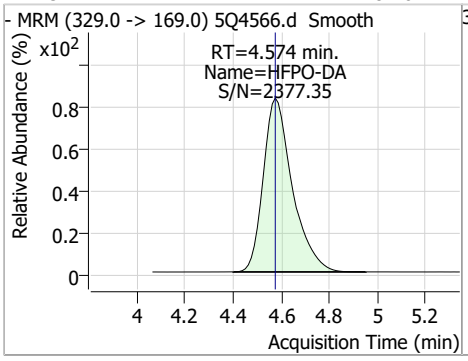
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.59	4.57	0.00	6577				

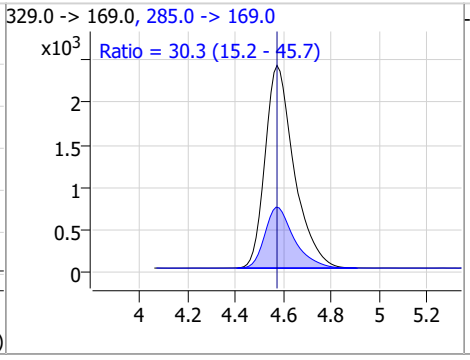


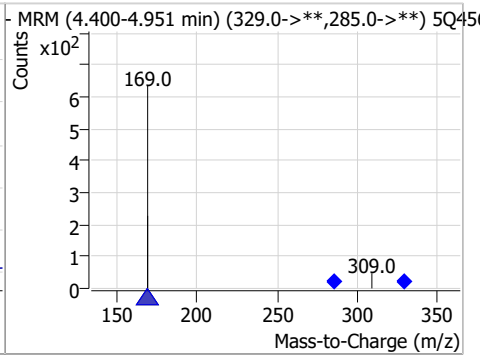




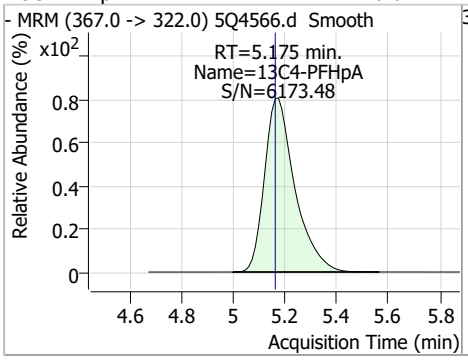
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.10	4.57	0.00	20089	285.0 -> 169.0	30.3	15.2	45.7

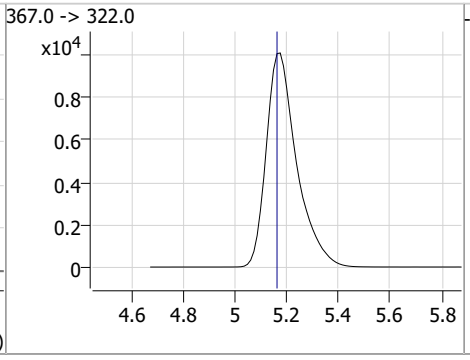


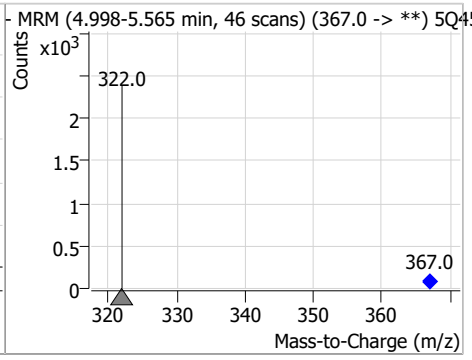




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.02	5.18	0.01	81739				

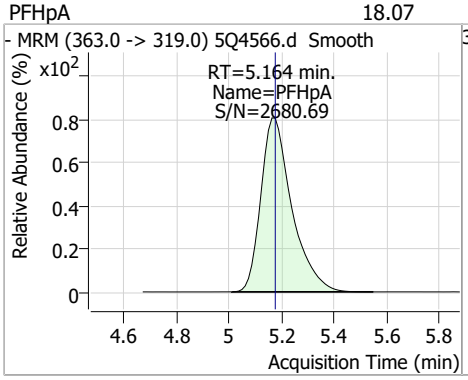


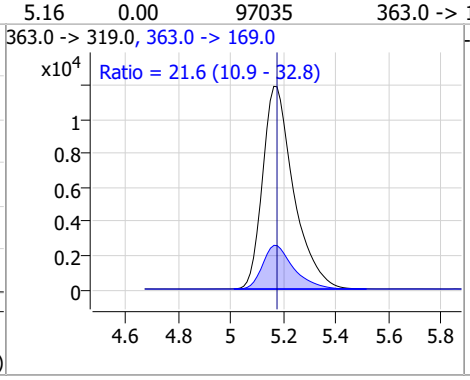


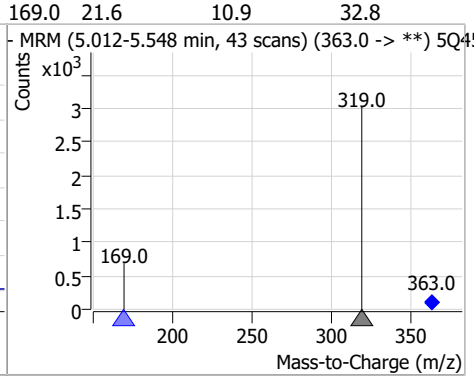


Perfluorinated Compounds by LC/MS/MS

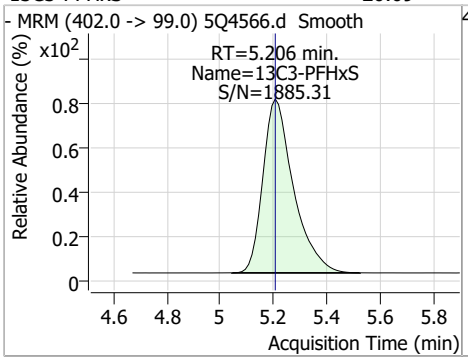
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	18.07	5.16	0.00	97035	363.0 -> 169.0	21.6	10.9	32.8

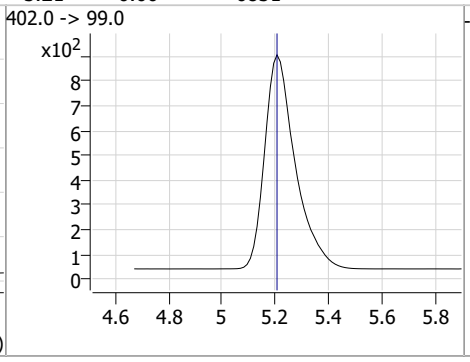


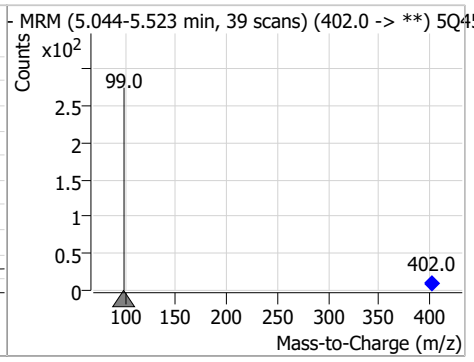




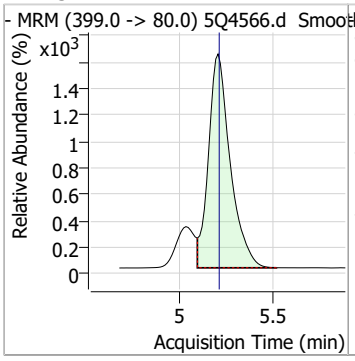
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.09	5.21	0.00	6851				

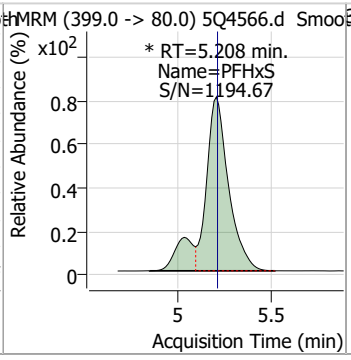


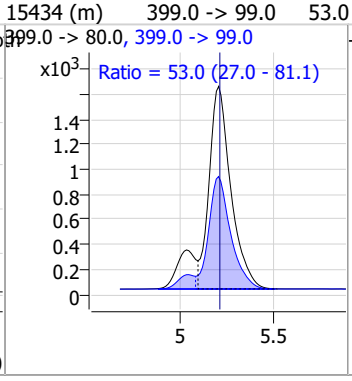


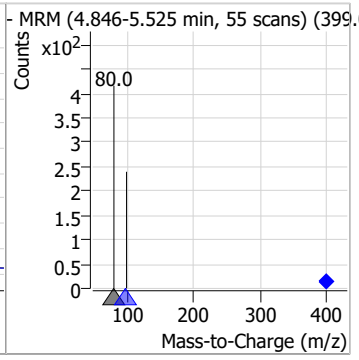


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.17	5.21	0.00	15434 (m)	399.0 -> 99.0	53.0	27.0	81.1

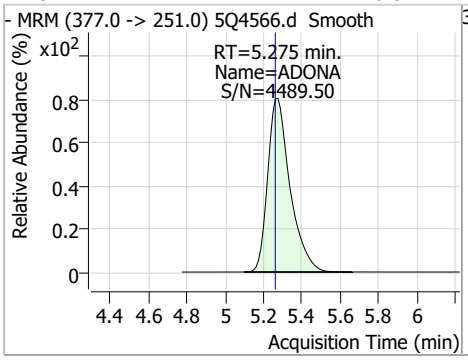


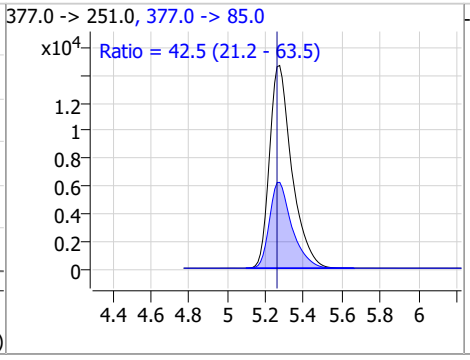


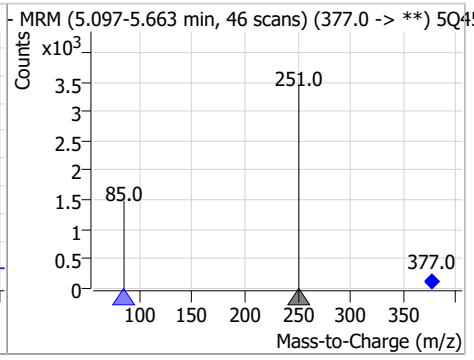




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.87	5.27	0.01	118775	377.0 -> 85.0	42.5	21.2	63.5

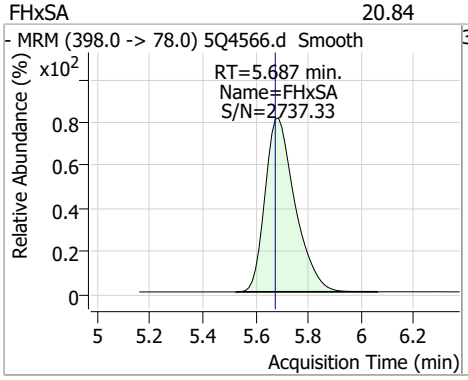


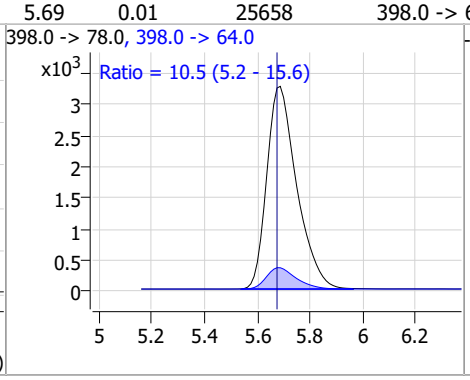


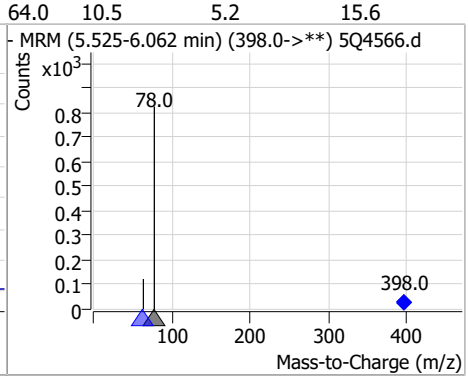


Perfluorinated Compounds by LC/MS/MS

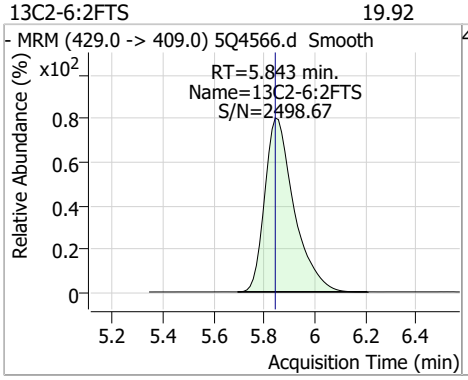
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.84	5.69	0.01	25658	398.0 -> 64.0	10.5	5.2	15.6

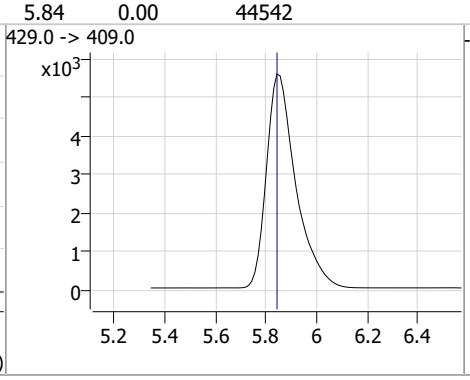


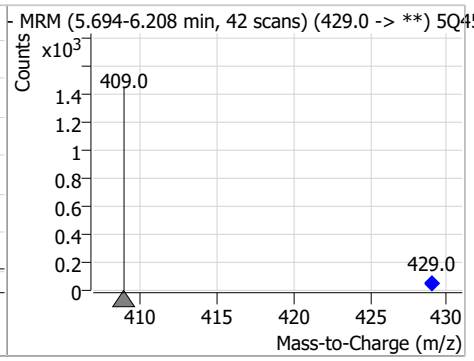




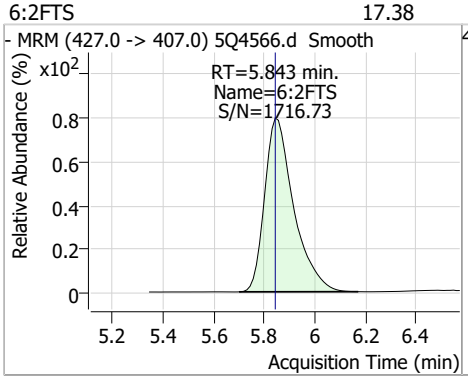
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.92	5.84	0.00	44542				

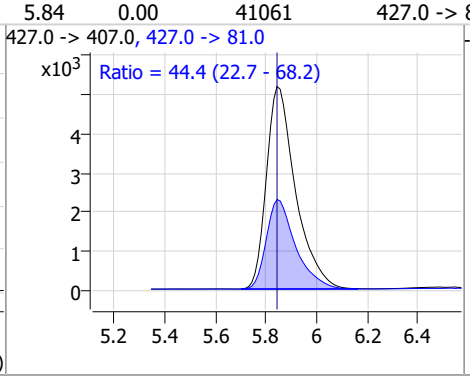


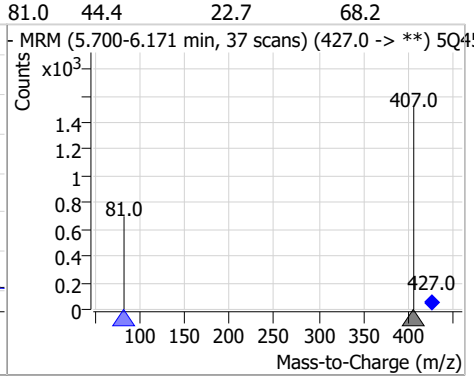




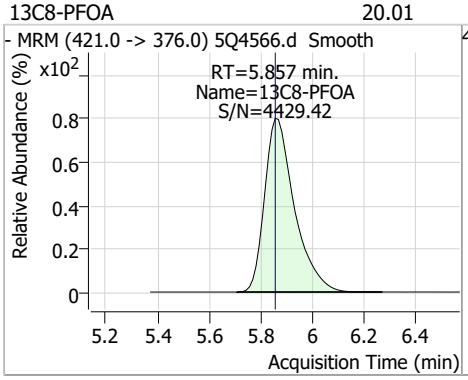
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.38	5.84	0.00	41061	427.0 -> 81.0	44.4	22.7	68.2

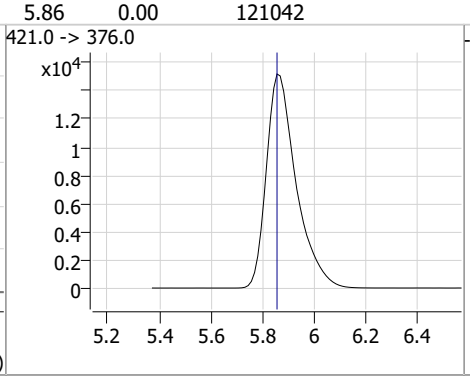


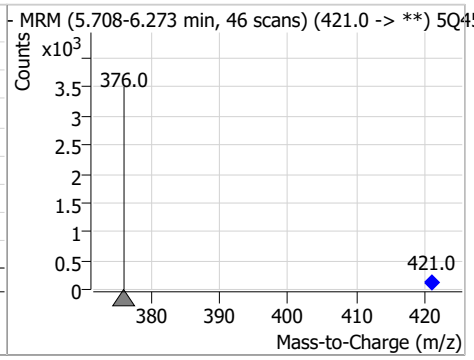




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.01	5.86	0.00	121042				

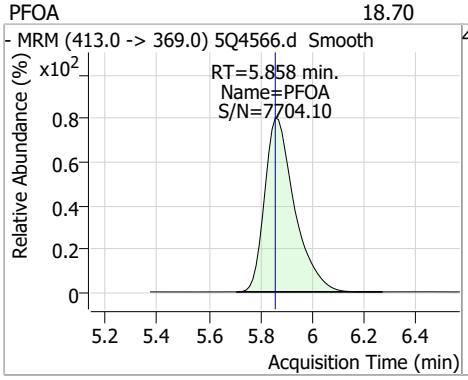


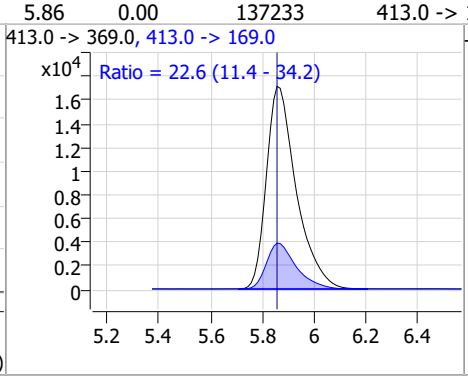


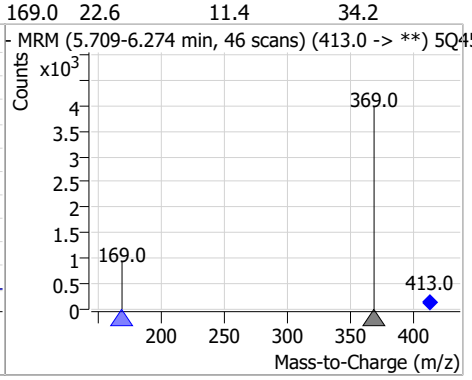


Perfluorinated Compounds by LC/MS/MS

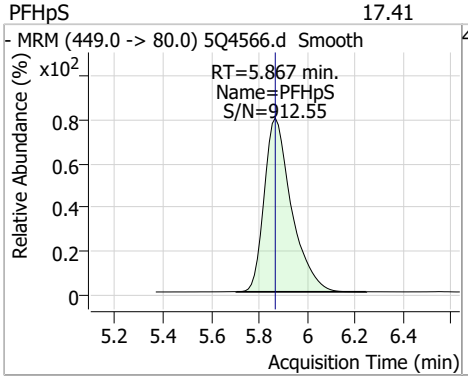
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.70	5.86	0.00	137233	413.0 -> 169.0	22.6	11.4	34.2

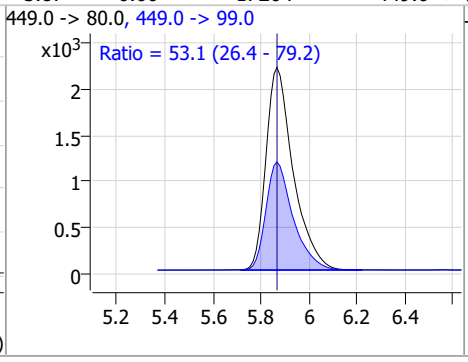


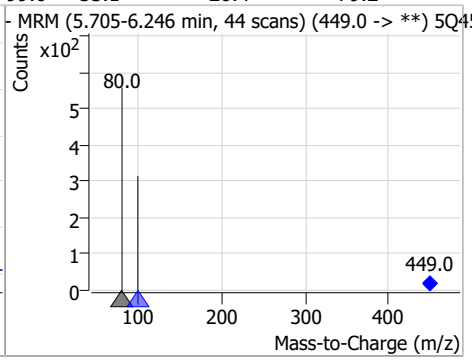




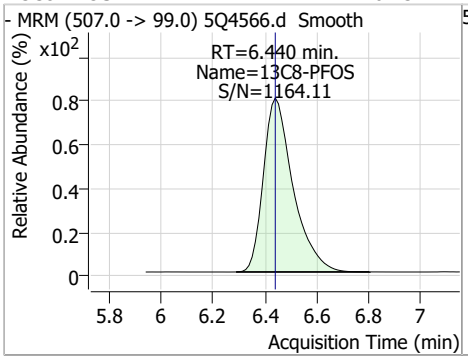
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.41	5.87	0.00	17204	449.0 -> 99.0	53.1	26.4	79.2

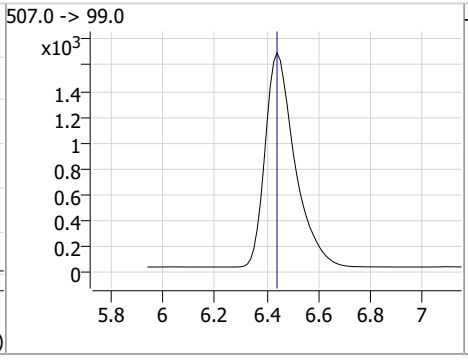


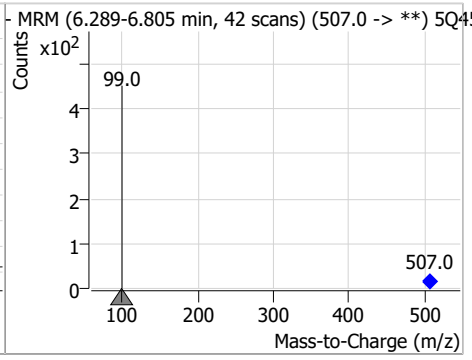




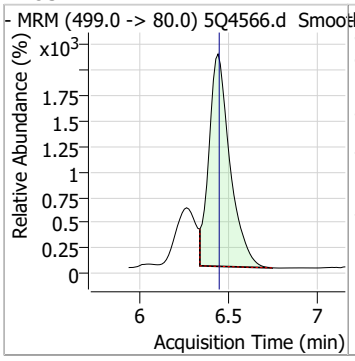
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.13	6.44	0.00	13144				

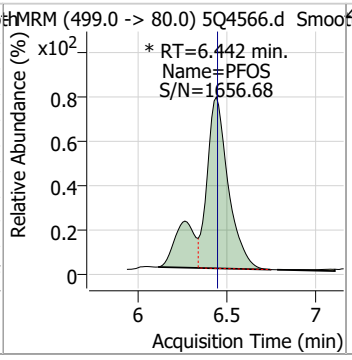


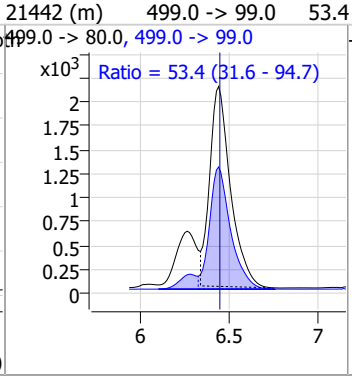


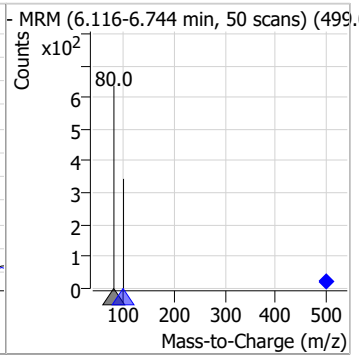


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.52	6.44	0.00	21442 (m)	499.0 -> 99.0	53.4	31.6	94.7



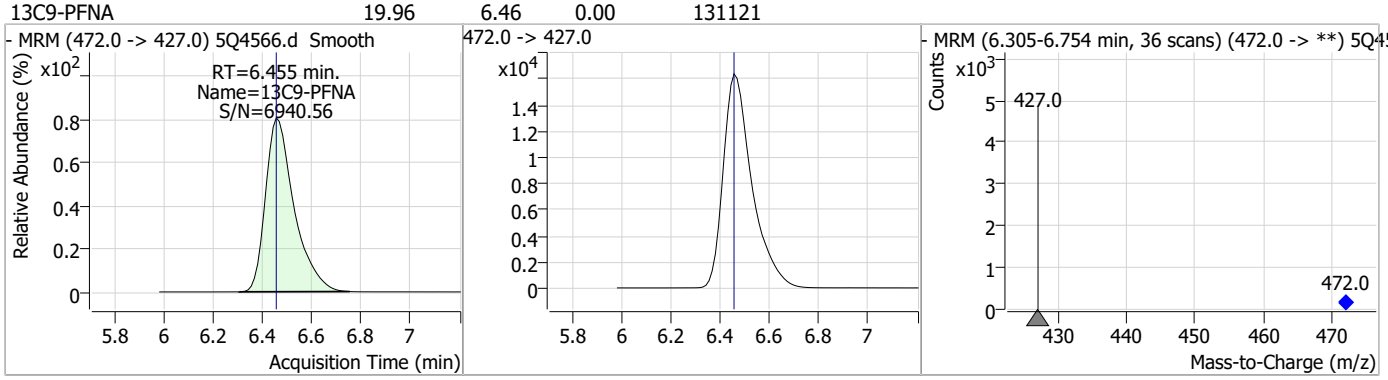




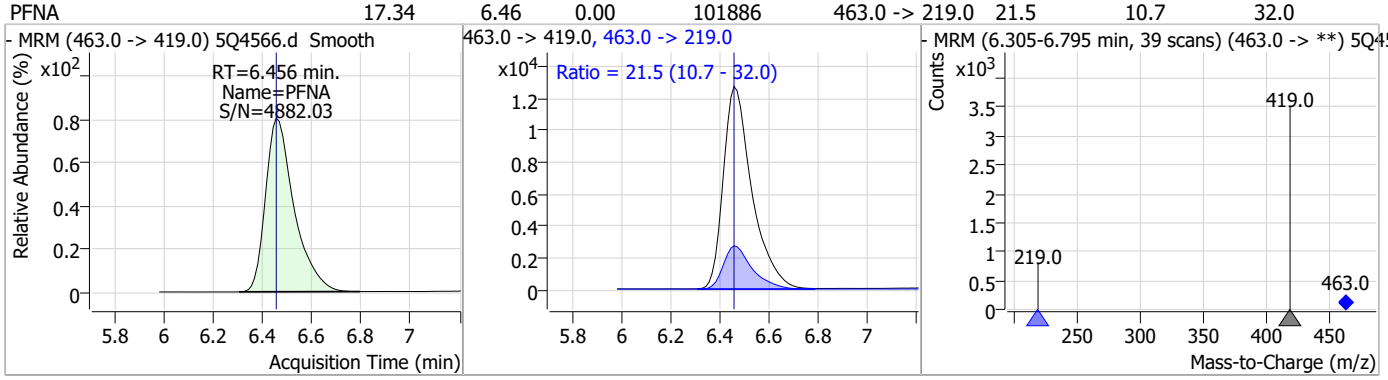


Perfluorinated Compounds by LC/MS/MS

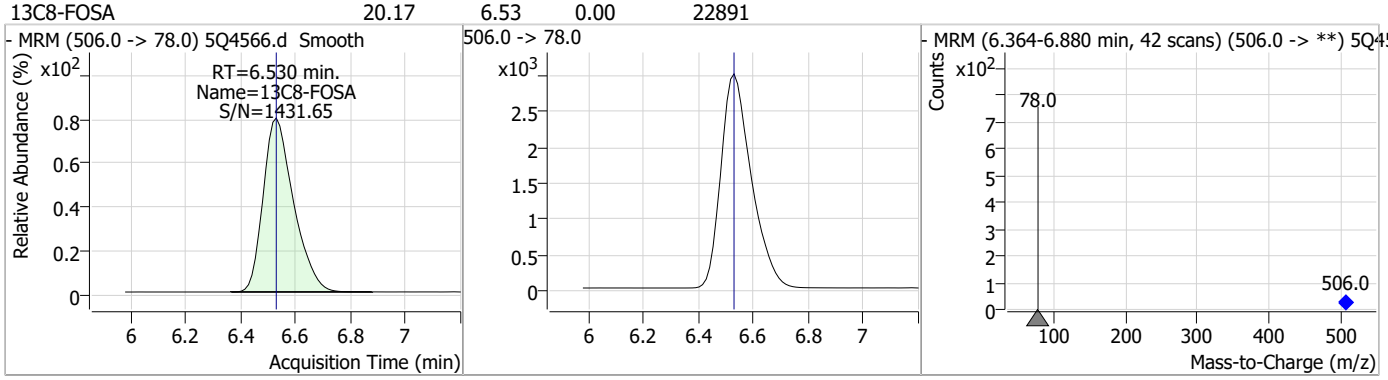
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.96	6.46	0.00	131121				



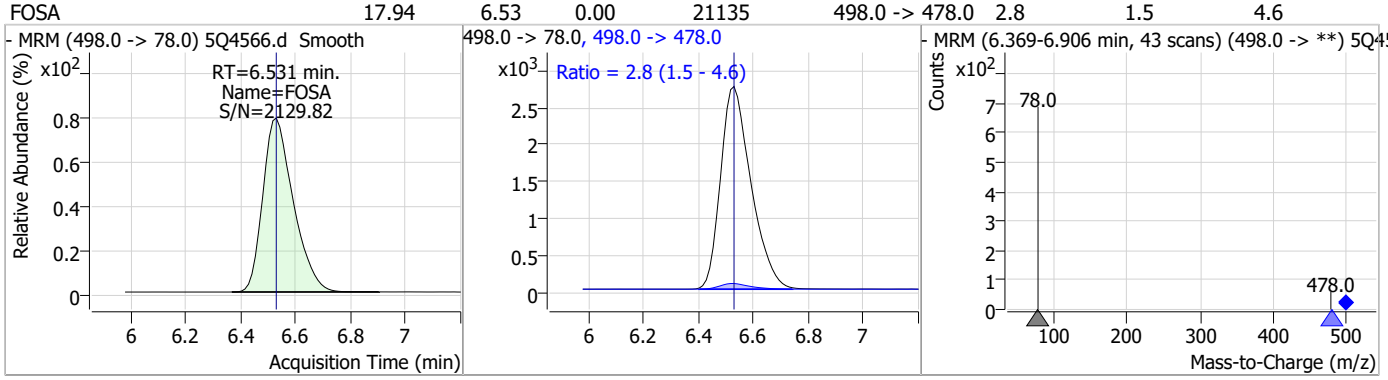
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.34	6.46	0.00	101886	463.0 -> 219.0	21.5	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.17	6.53	0.00	22891				

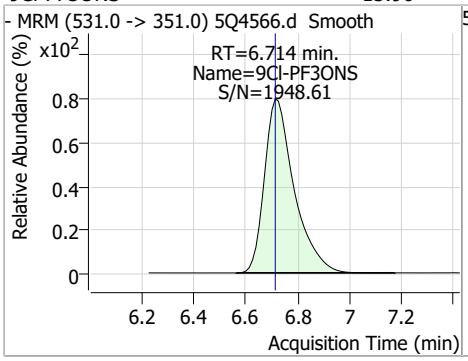


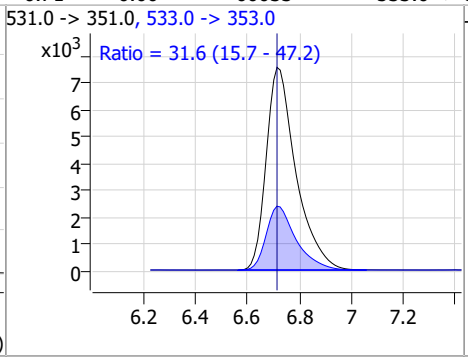
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.94	6.53	0.00	21135	498.0 -> 478.0	2.8	1.5	4.6

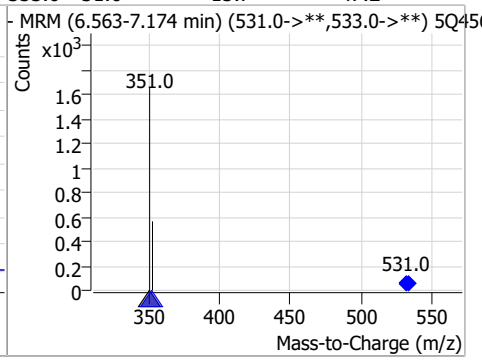


Perfluorinated Compounds by LC/MS/MS

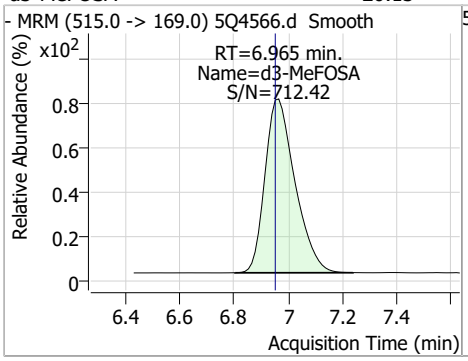
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.96	6.71	0.00	60033	533.0 -> 353.0	31.6	15.7	47.2

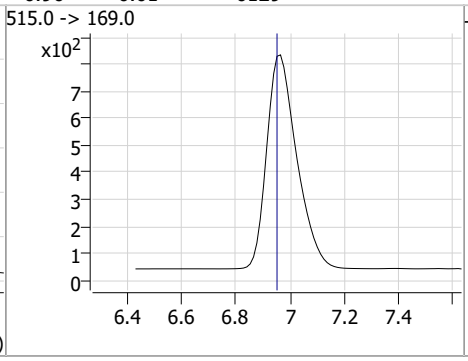


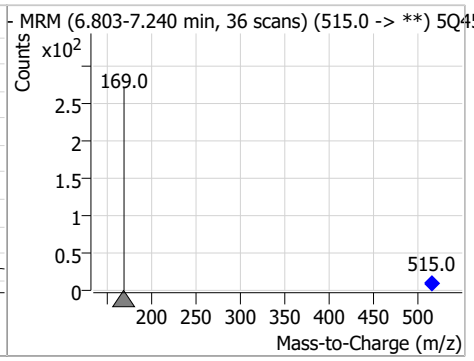




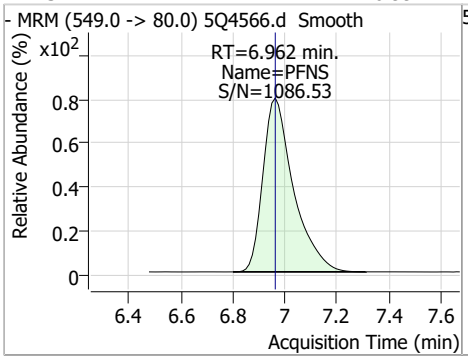
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.13	6.96	0.01	6129				

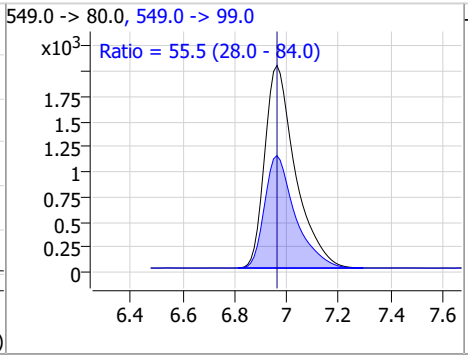


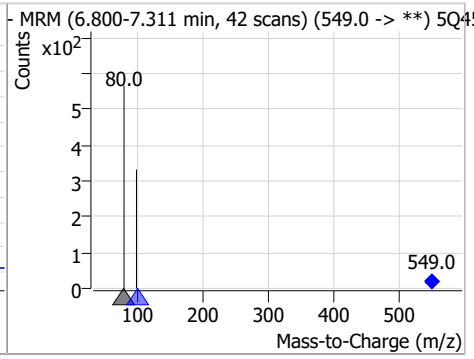




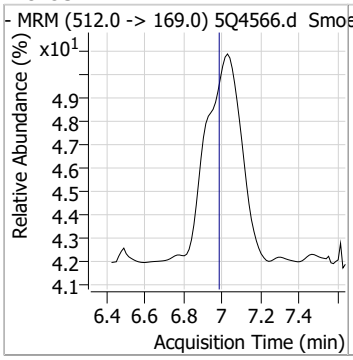
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.99	6.96	0.00	16481	549.0 -> 99.0	55.5	28.0	84.0

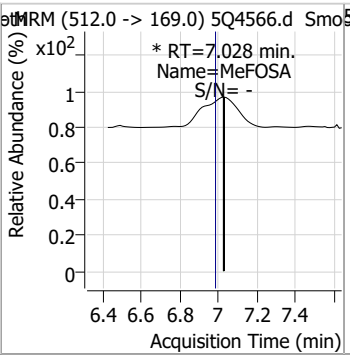


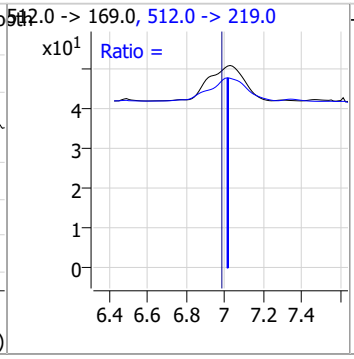


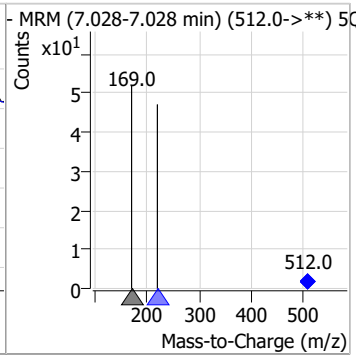


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	512.0 -> 219.0		37.0	111.0



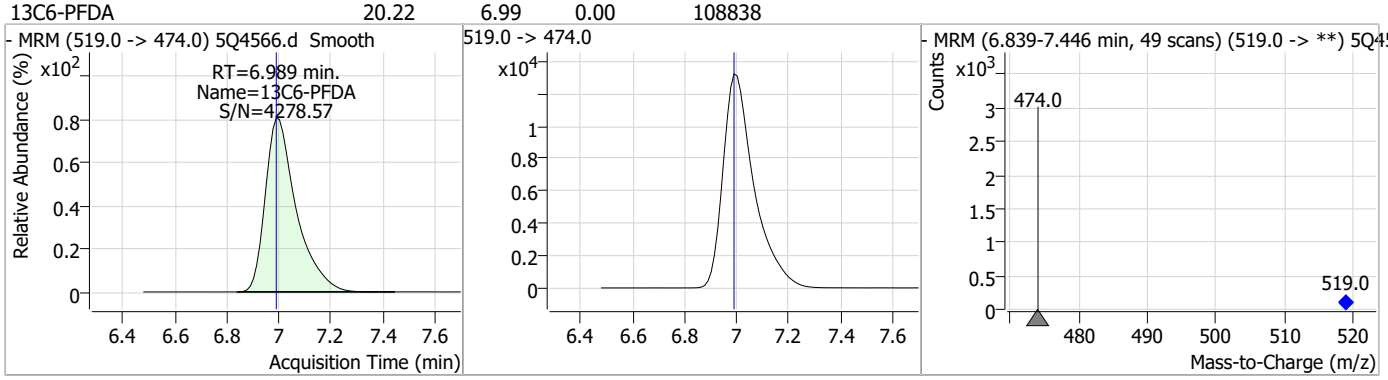




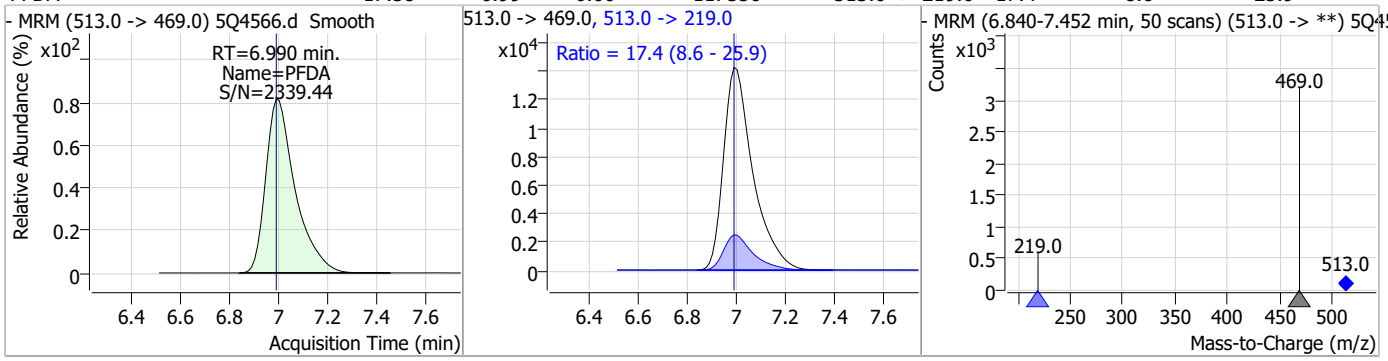


Perfluorinated Compounds by LC/MS/MS

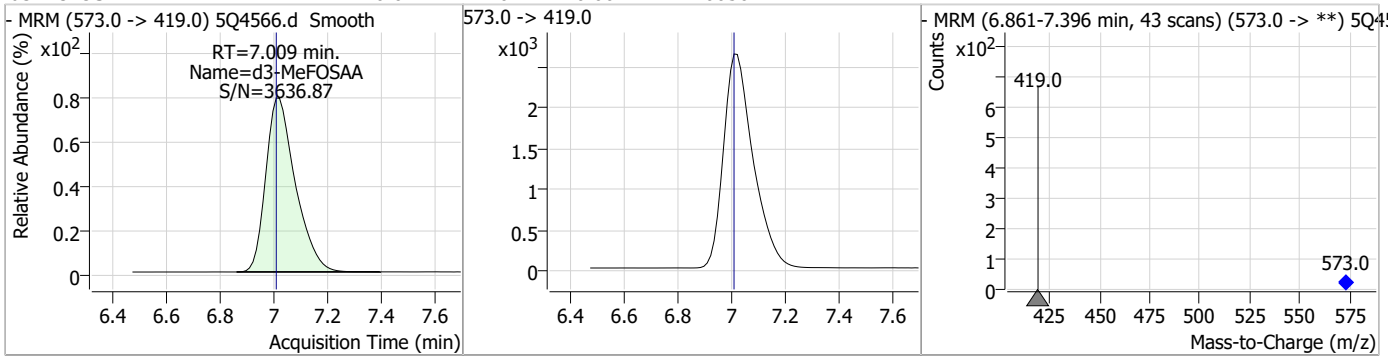
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.22	6.99	0.00	108838				



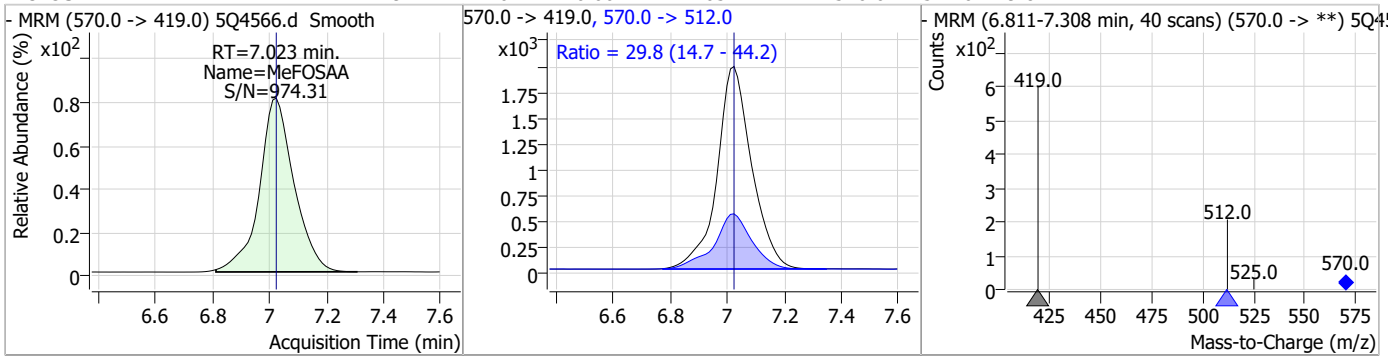
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.58	6.99	0.00	117550	513.0 -> 219.0	17.4	8.6	25.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.64	7.01	0.00	20056				

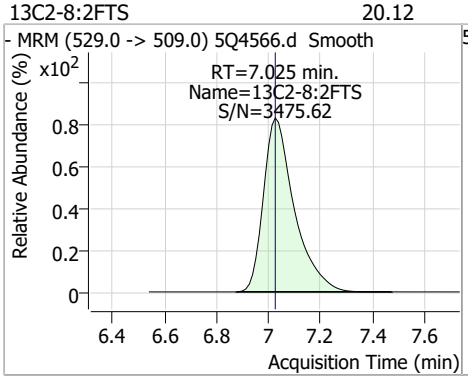


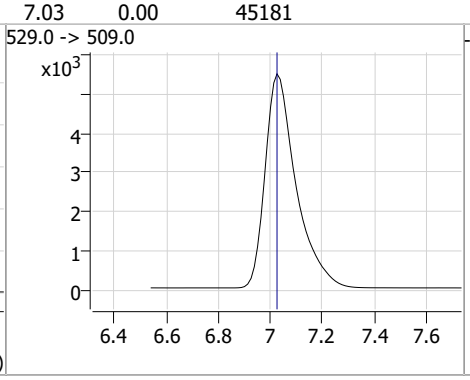
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.97	7.02	0.00	16511	570.0 -> 512.0	29.8	14.7	44.2

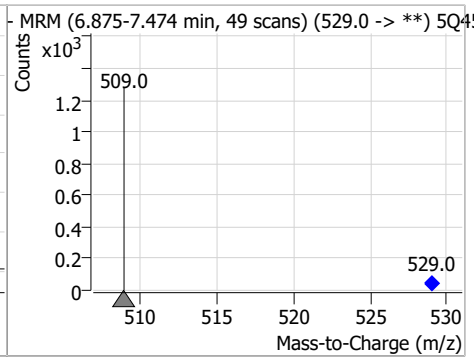


Perfluorinated Compounds by LC/MS/MS

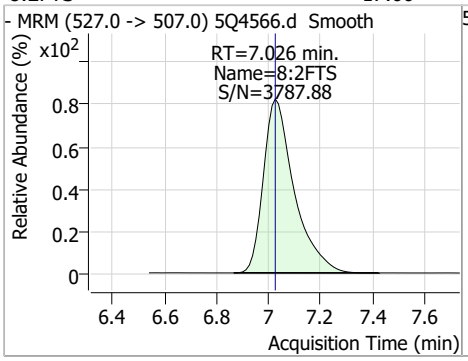
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.12	7.03	0.00	45181				

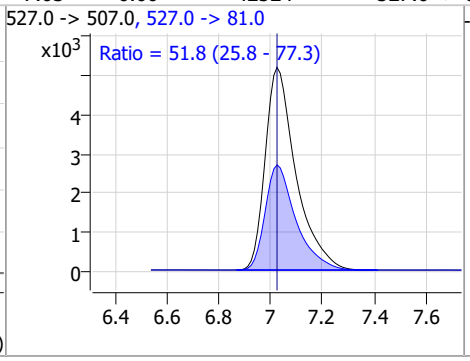


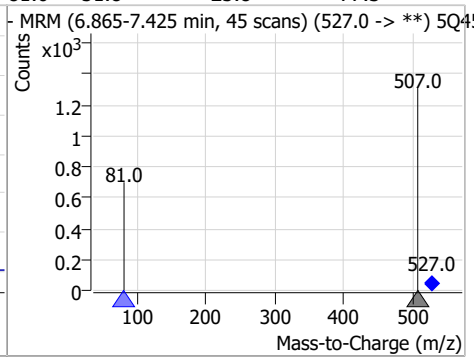




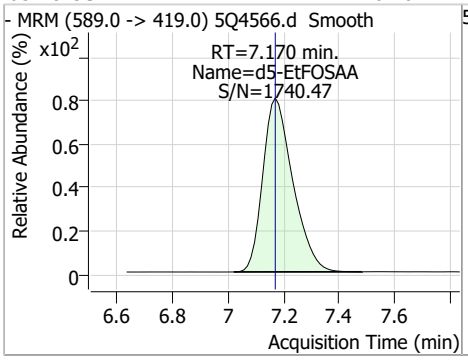
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	17.66	7.03	0.00	42524	527.0 -> 81.0	51.8	25.8	77.3

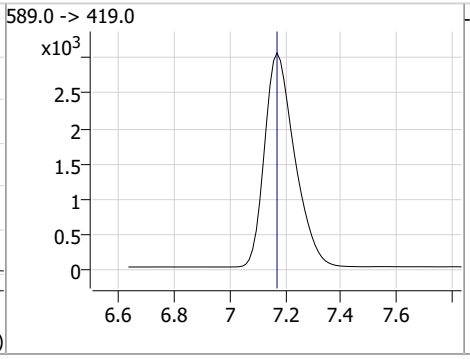


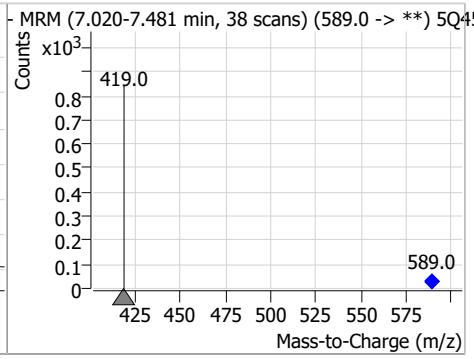




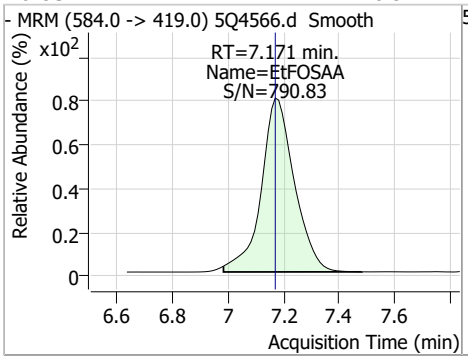
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.20	7.17	0.00	22648				

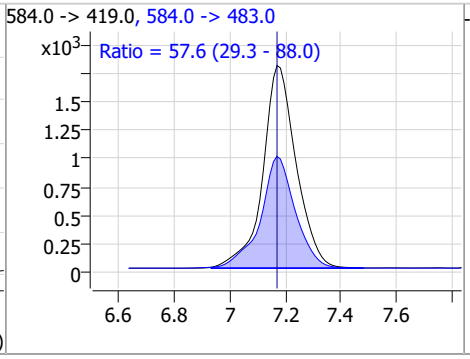


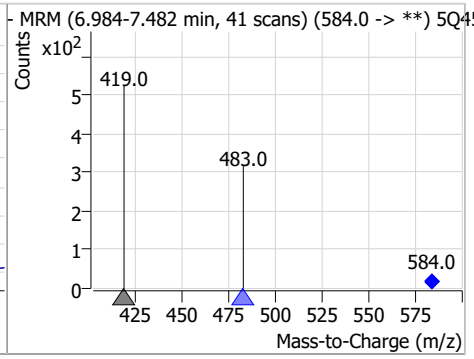




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.37	7.17	0.00	14722	584.0 -> 483.0	57.6	29.3	88.0

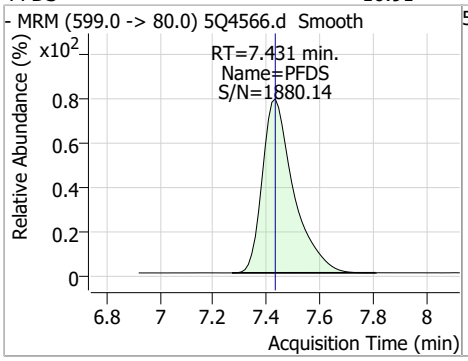


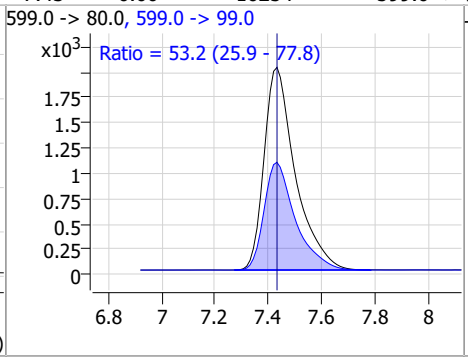


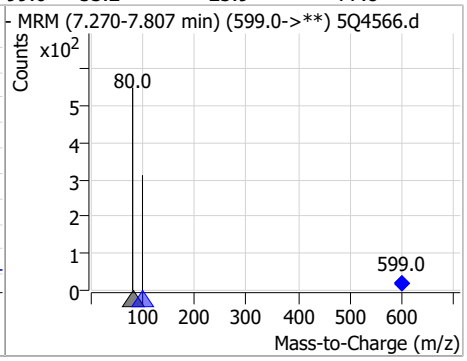


Perfluorinated Compounds by LC/MS/MS

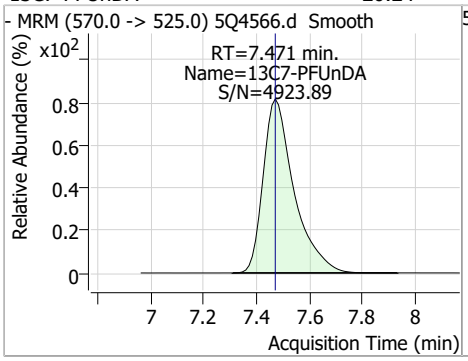
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.91	7.43	0.00	16254	599.0 -> 99.0	53.2	25.9	77.8

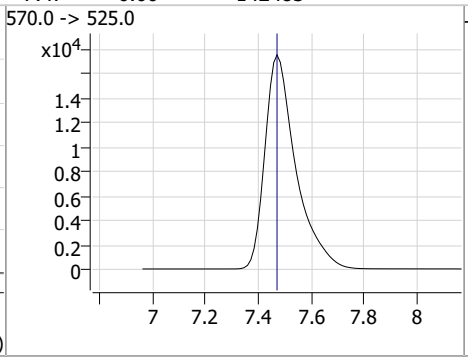


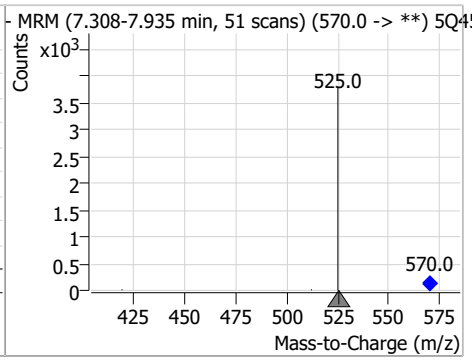




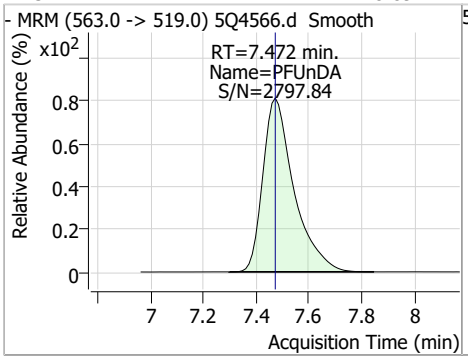
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.24	7.47	0.00	142483				

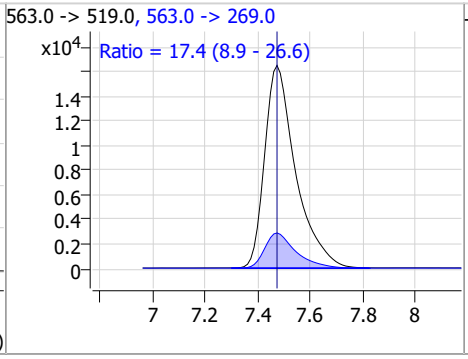


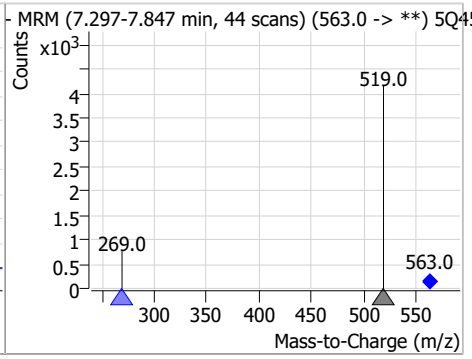




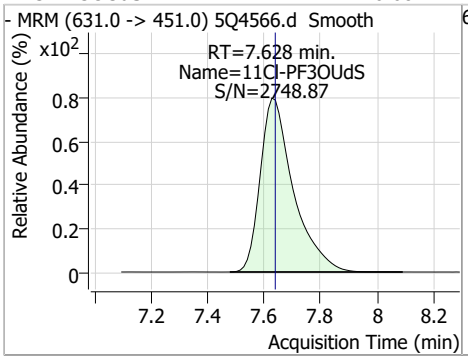
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.89	7.47	0.00	134461	563.0 -> 269.0	17.4	8.9	26.6

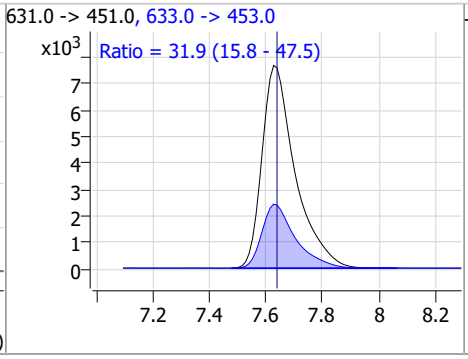


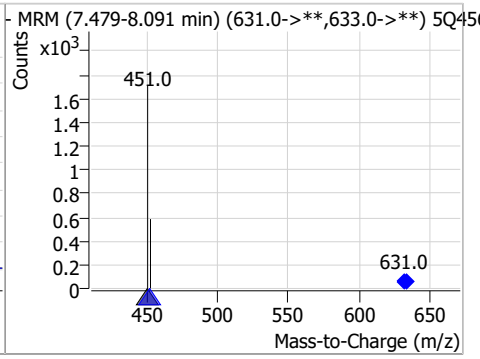




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	16.68	7.63	0.00	62170	633.0 -> 453.0	31.9	15.8	47.5

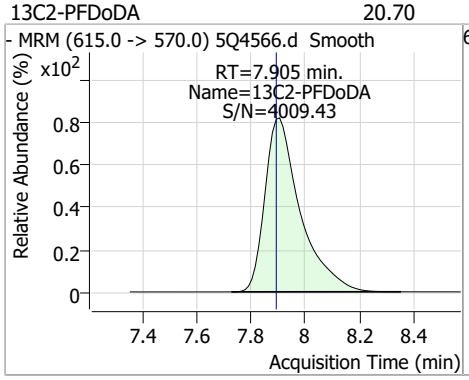


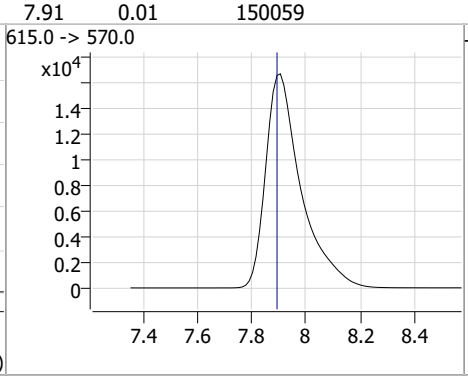


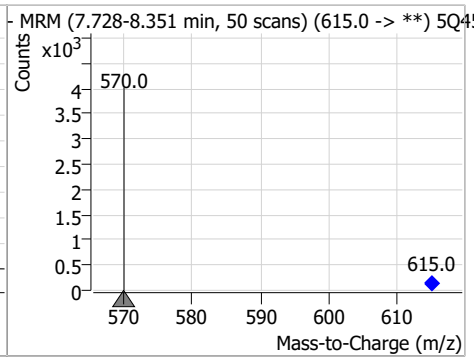


Perfluorinated Compounds by LC/MS/MS

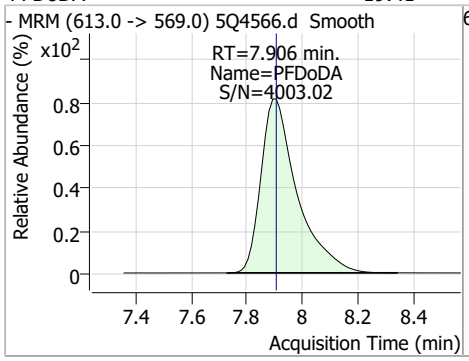
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.70	7.91	0.01	150059				

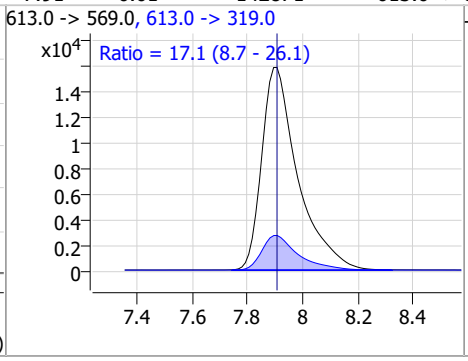


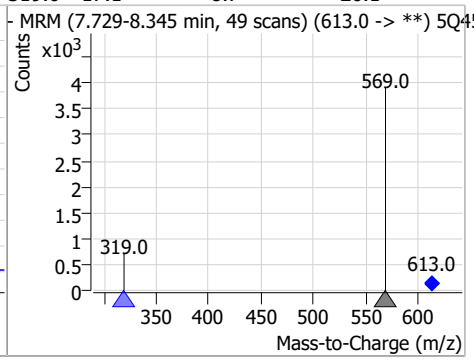




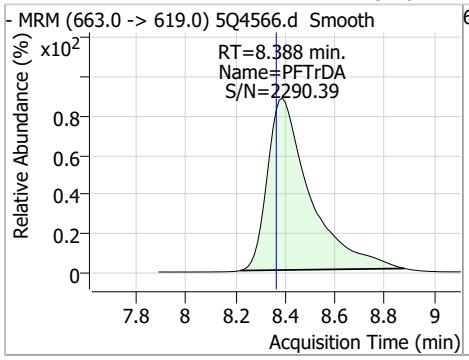
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.41	7.91	0.01	142871	613.0 -> 319.0	17.1	8.7	26.1

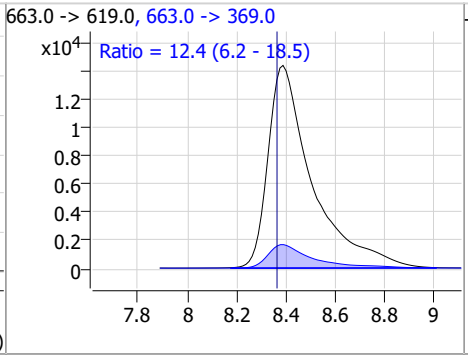


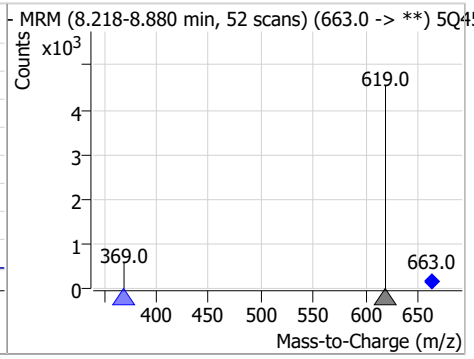




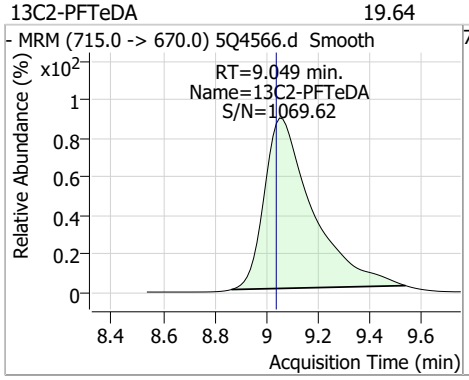
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.18	8.39	0.04	168766	663.0 -> 369.0	12.4	6.2	18.5

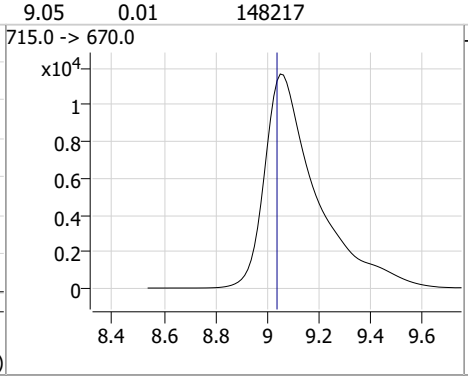


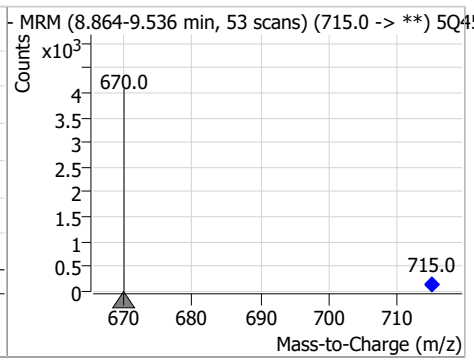




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.64	9.05	0.01	148217				

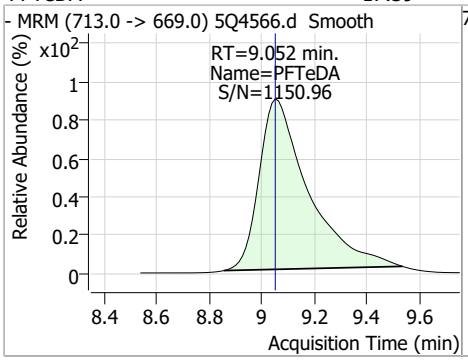


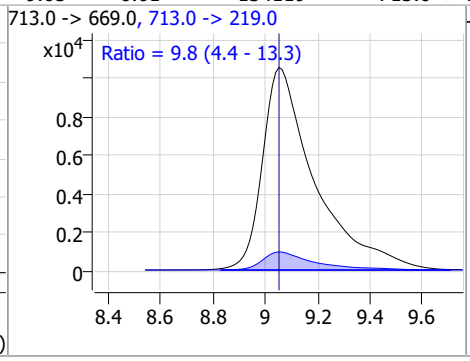


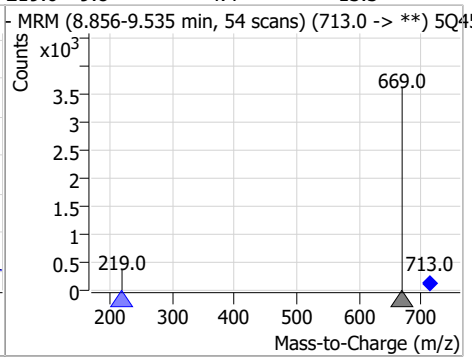


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.39	9.05	0.01	134119	713.0 -> 219.0	9.8	4.4	13.3







7.7.41

7

Manual Integration Approval Summary

Sample Number: S5Q71-ICV71
Lab FileID: 5Q4566.D
Injection Time: 09/14/22 12:59
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4567.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:14:27 PM
Sample Name : icv71-20
Vial : P1-B2
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

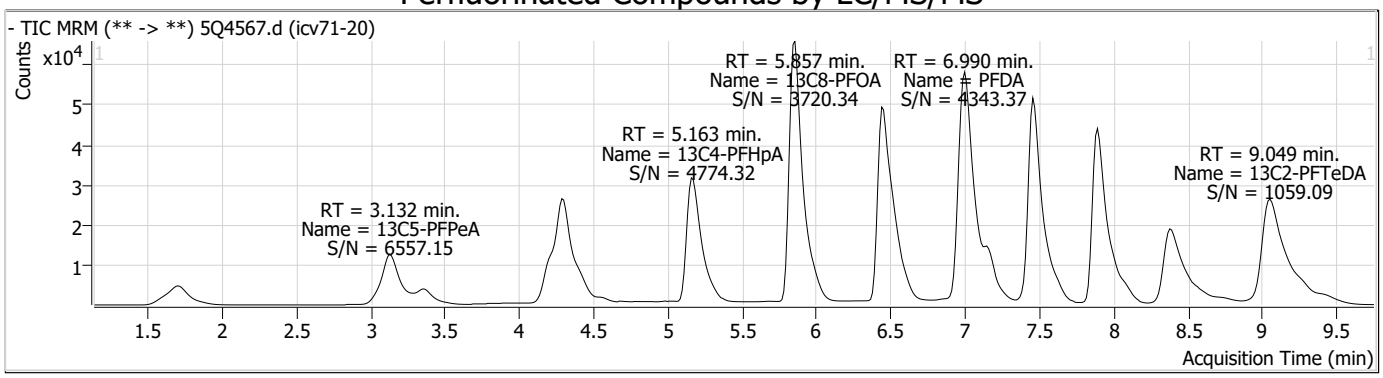
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	37722	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	60729	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	91732	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	86564	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	127130	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	140512	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	115692	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	150265	20.00	µg/L	0.000
M2-PFDoDA	7.905	615.0 -> 570.0	158110	20.00	µg/L	0.012
M2-PFTeDA	9.049	715.0 -> 670.0	157620	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	24020	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6882	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	7193	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13796	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	30470	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	46413	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	46950	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	21280	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6780	20.00	µg/L	0.000
M3-MeFOSA	6.965	515.0 -> 169.0	6657	20.00	µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	23912	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	30470	20.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	46413	20.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C2-8:2FTS	7.025	529.0 -> 509.0	46950	20.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C2-PFDoDA	7.905	615.0 -> 570.0	158110	21.82	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.1%		
13C2-PFTeDA	9.049	715.0 -> 670.0	157620	20.89	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-PFBS	3.362	302.0 -> 99.0	6882	21.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	7193	21.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C4-PFBA	1.700	217.0 -> 172.0	37722	21.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	86564	21.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C5-PFHxA	4.303	318.0 -> 273.0	91732	20.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C5-PFPeA	3.132	268.0 -> 223.0	60729	20.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C6-PFDA	6.989	519.0 -> 474.0	115692	21.49	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

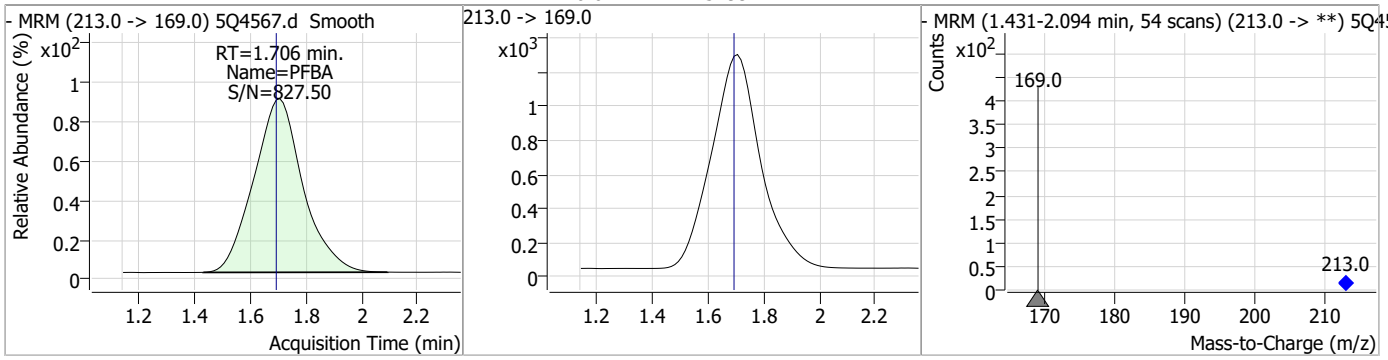
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%			
13C7-PFUnDA	7.471	570.0 -> 525.0	150265	21.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%			
13C8-FOSA	6.530	506.0 -> 78.0	24020	21.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%			
13C8-PFOA	5.857	421.0 -> 376.0	127130	21.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%			
13C8-PFOS	6.440	507.0 -> 99.0	13796	21.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
13C9-PFNA	6.455	472.0 -> 427.0	140512	21.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	21280	21.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6780	20.19	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
d3-MeFOSA	6.965	515.0 -> 169.0	6657	21.86	µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	23912	21.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.6%			
Target Compounds							**QValue**
4:2FTS	4.214	327.0 -> 307.0	28959	16.98	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	42474	17.25	µg/L		99
8:2FTS	7.026	527.0 -> 507.0	44446	17.76	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	13032	15.40	µg/L		97
FOSA	6.531	498.0 -> 78.0	21059	17.04	µg/L		99
MeFOSAA	7.023	570.0 -> 419.0	15165	15.56	µg/L		97
PFBA	1.706	213.0 -> 169.0	15299	17.22	µg/L		100
PFBS	3.367	299.0 -> 80.0	16270	15.74	µg/L		100
PFDA	6.990	513.0 -> 469.0	117384	16.52	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	142523	18.38	µg/L		100
PFDS	7.431	599.0 -> 80.0	17303	17.07	µg/L		99
PFHpA	5.164	363.0 -> 319.0	87643	15.41	µg/L		100
PFHpS	5.867	449.0 -> 80.0	18510	17.85	µg/L		100
PFHxA	4.304	313.0 -> 269.0	71692	16.00	µg/L		100
PFHxS	5.208	399.0 -> 80.0	17879	16.74	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	104826	16.65	µg/L		100
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.858	413.0 -> 369.0	134133	17.40	µg/L		100
PFOS	6.442	499.0 -> 80.0	21892	18.02	µg/L		98
PFPeA	3.134	263.0 -> 219.0	50595	16.86	µg/L		100
PFPeS	4.410	349.0 -> 80.0	13692	17.03	µg/L		100
PFTeDA	9.052	713.0 -> 669.0	135842	16.56	µg/L		98
PFTrDA	8.388	663.0 -> 619.0	187785	20.26	µg/L		98
PFUnDA	7.472	563.0 -> 519.0	142206	18.95	µg/L		99
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	6.966	512.0 -> 169.0	6261	17.46	µg/L		100
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	-	398.0 -> 78.0	-	N.D.			

 # = Qualifier out of range, m = manually integrated, + = Area summed

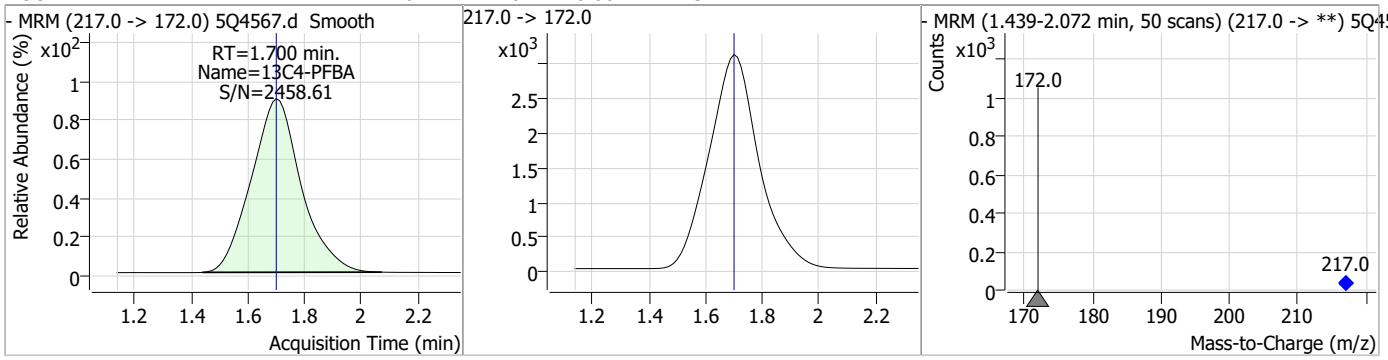
Perfluorinated Compounds by LC/MS/MS



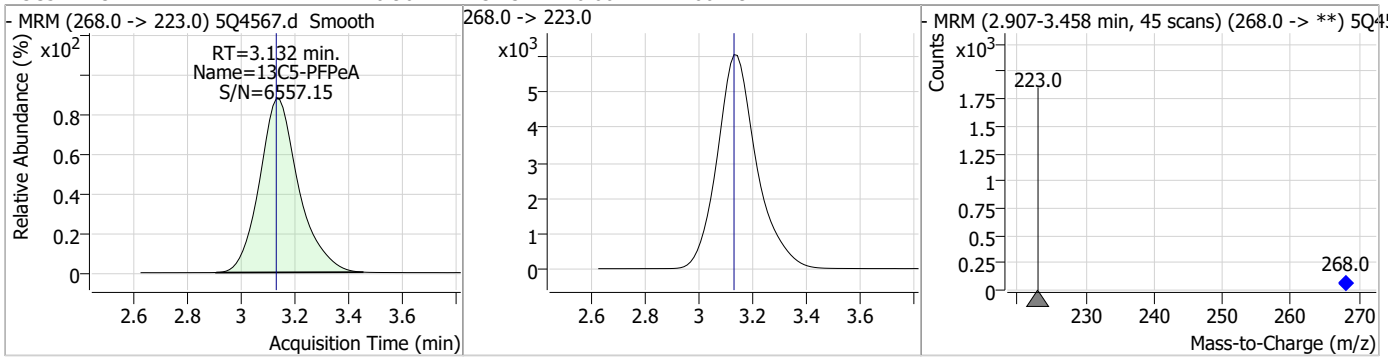
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.22	1.71	0.01	15299				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.10	1.70	0.00	37722				

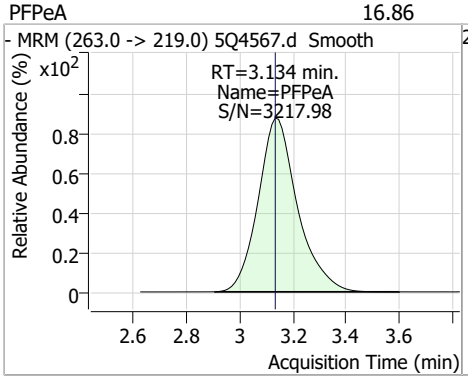


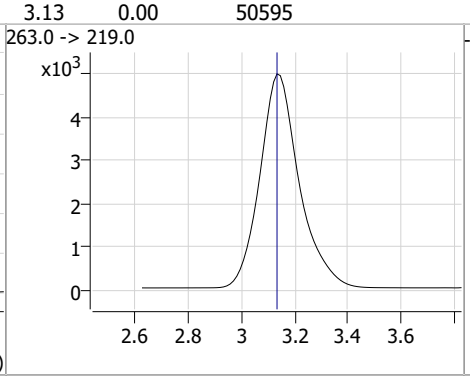
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.90	3.13	0.00	60729				

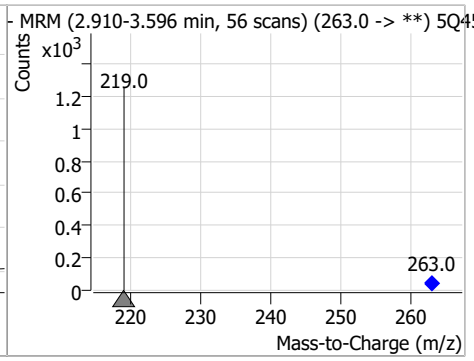


Perfluorinated Compounds by LC/MS/MS

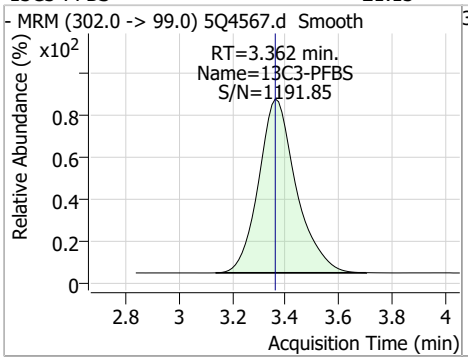
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.86	3.13	0.00	50595				

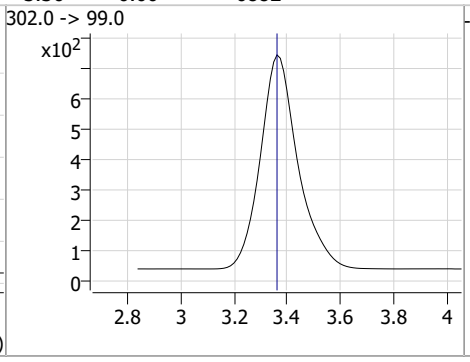


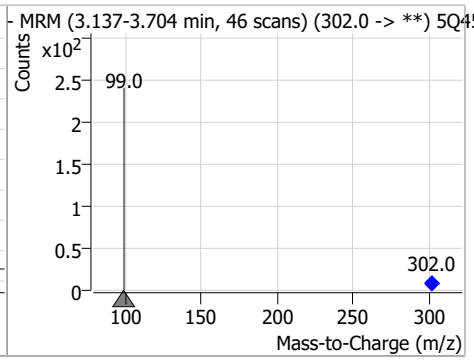




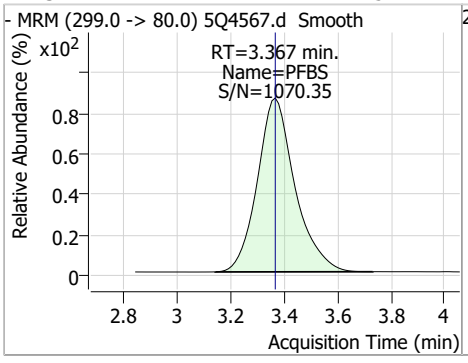
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.13	3.36	0.00	6882				

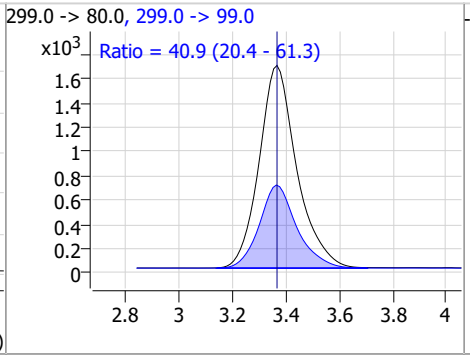


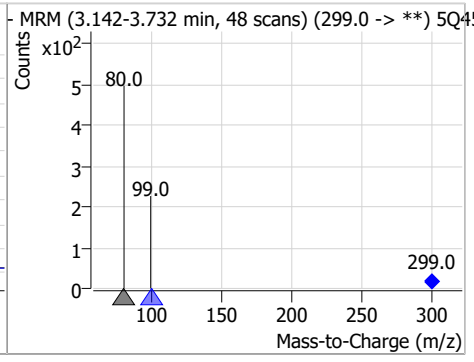




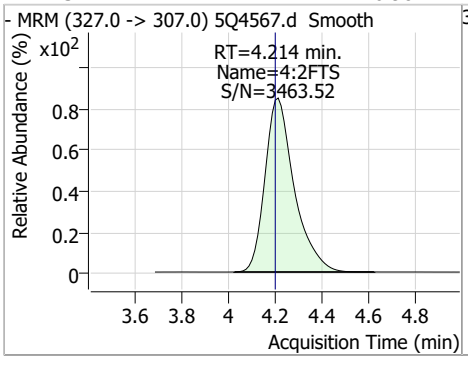
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	15.74	3.37	0.00	16270	299.0 -> 99.0	40.9	20.4	61.3

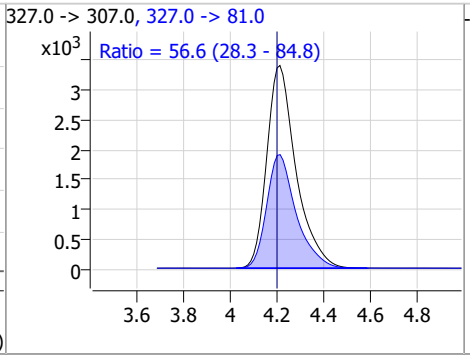


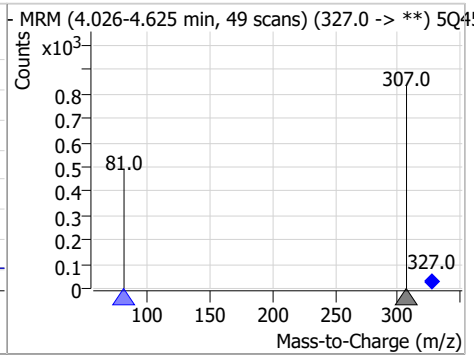




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	16.98	4.21	0.01	28959	327.0 -> 81.0	56.6	28.3	84.8

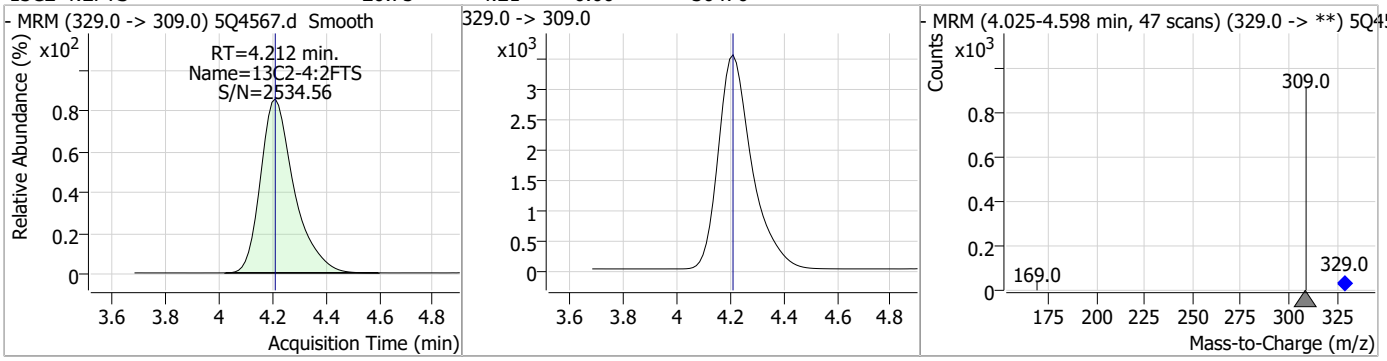




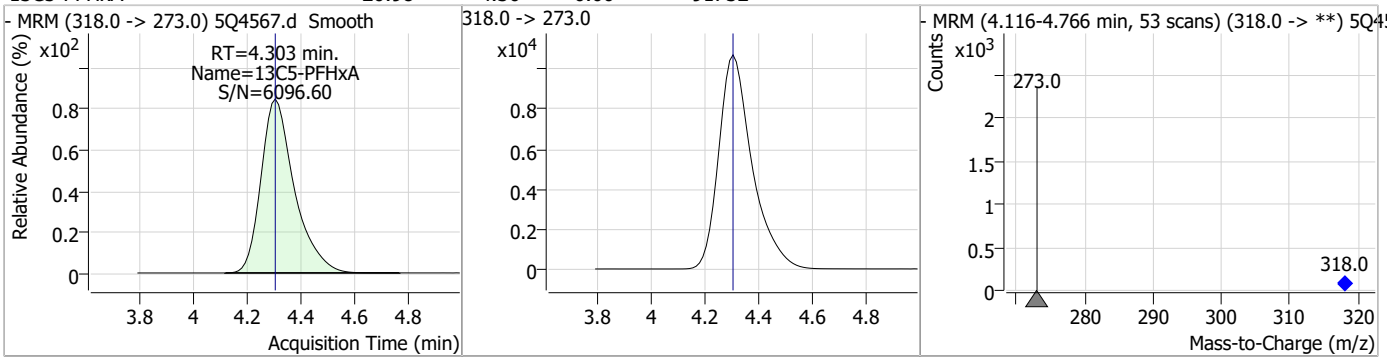


Perfluorinated Compounds by LC/MS/MS

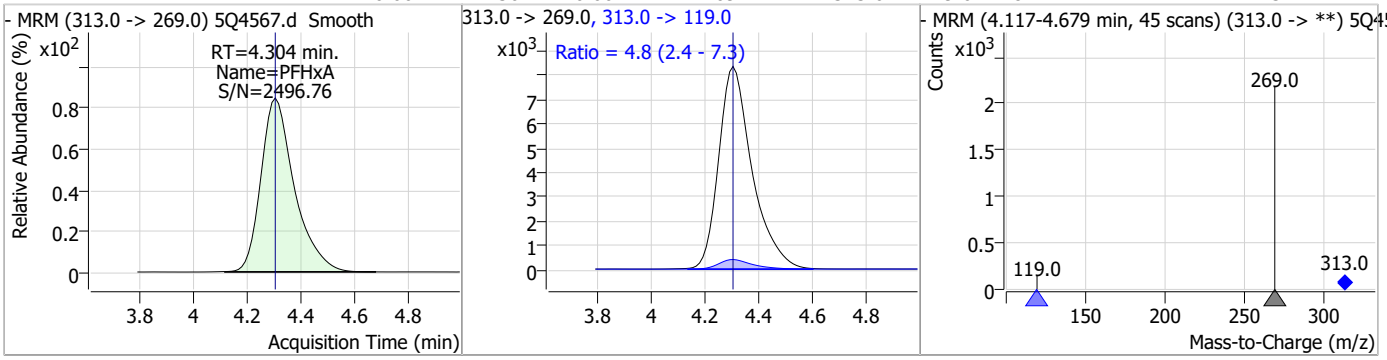
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.75	4.21	0.00	30470				



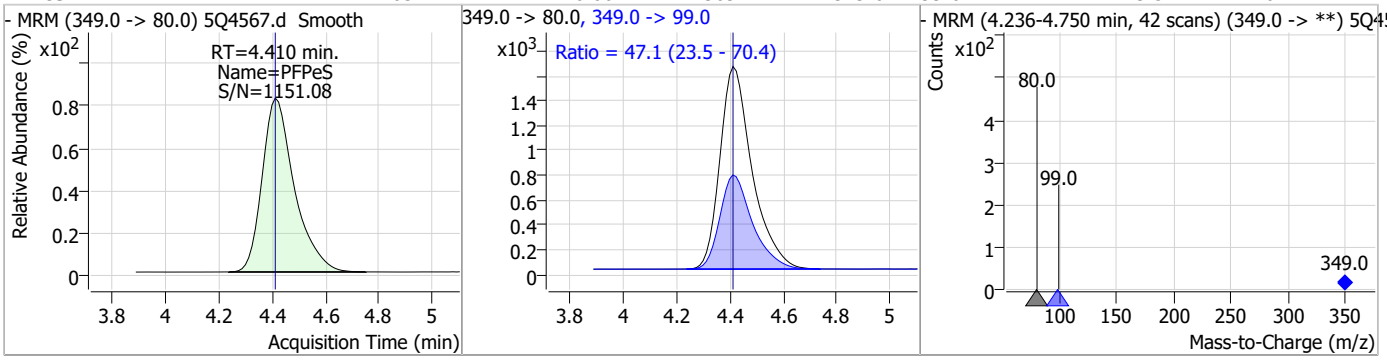
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.98	4.30	0.00	91732				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.00	4.30	0.00	71692	313.0 -> 119.0	4.8	2.4	7.3

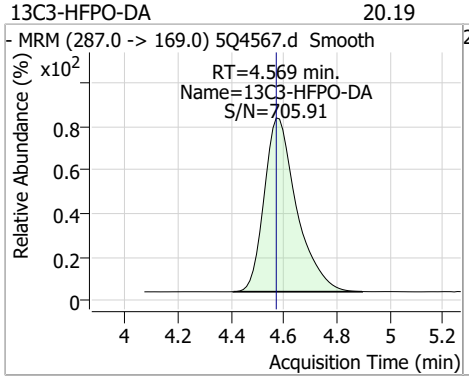


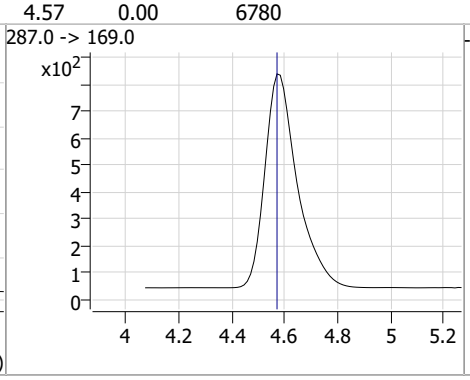
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.03	4.41	0.00	13692	349.0 -> 99.0	47.1	23.5	70.4

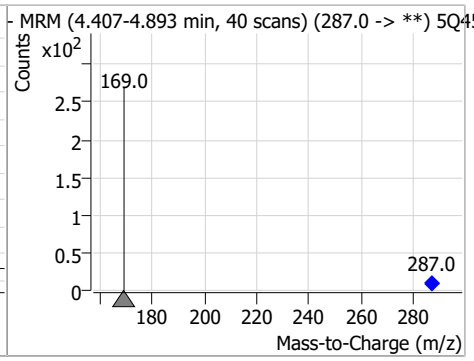


Perfluorinated Compounds by LC/MS/MS

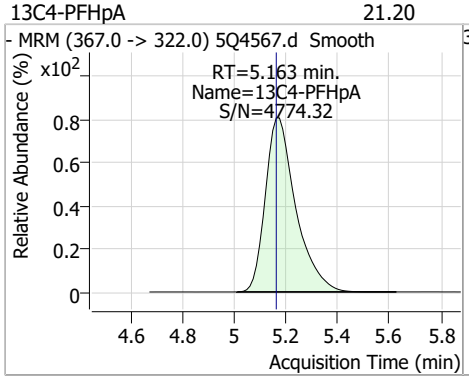
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.19	4.57	0.00	6780				

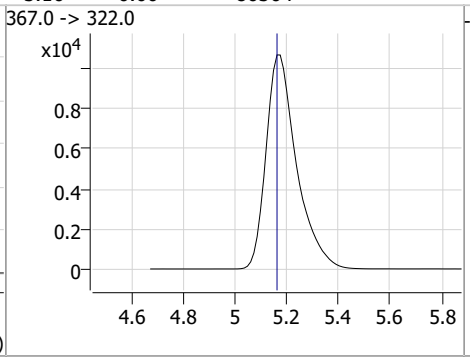


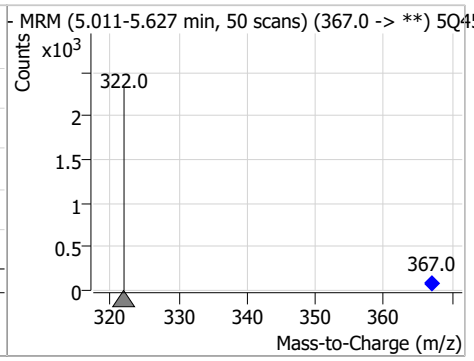




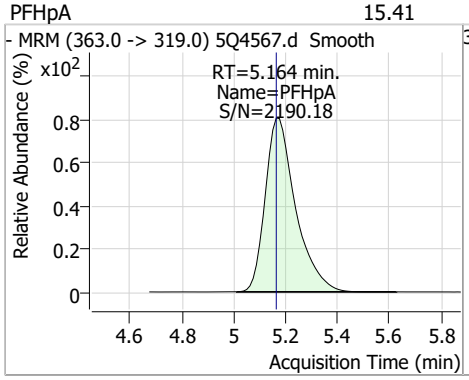
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.20	5.16	0.00	86564				

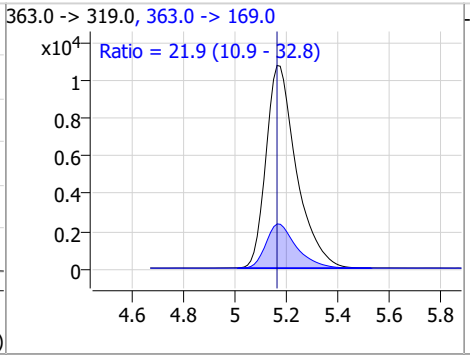


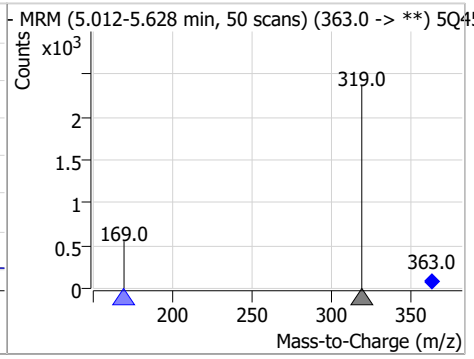




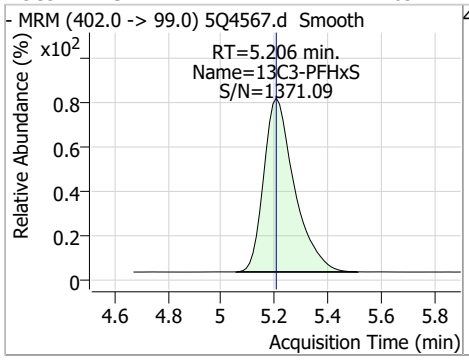
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	15.41	5.16	0.00	87643	363.0 -> 169.0	21.9	10.9	32.8

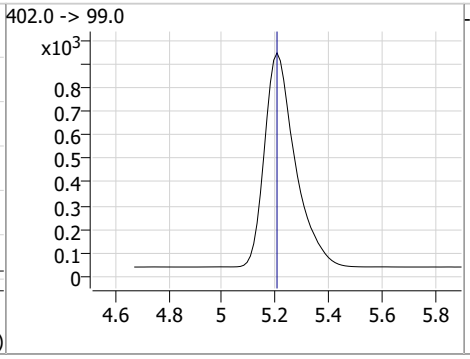


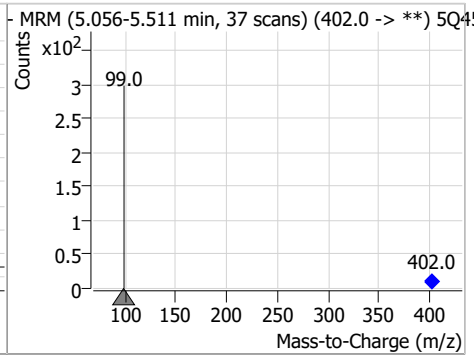




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.09	5.21	0.00	7193				

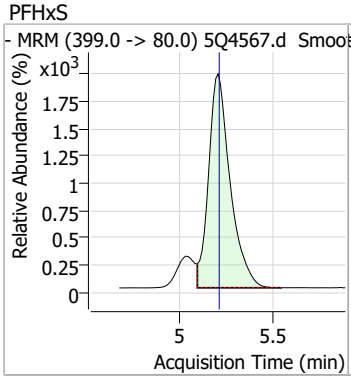


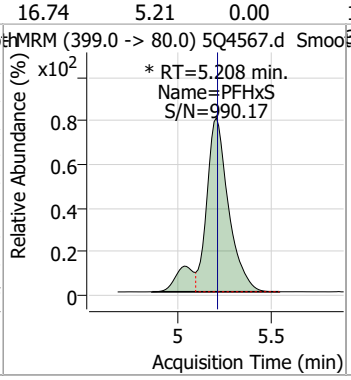


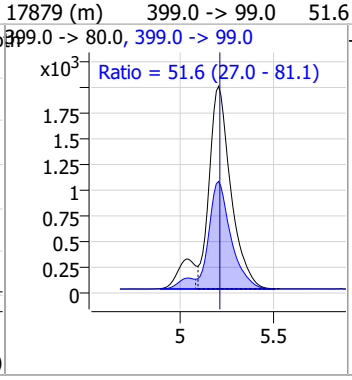


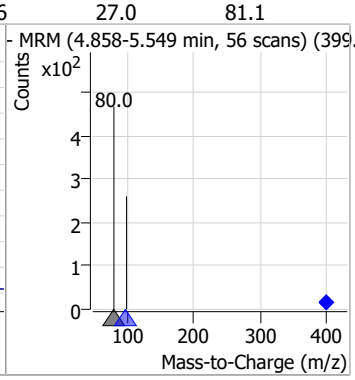
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.74	5.21	0.00	17879 (m)	399.0 -> 99.0	51.6	27.0	81.1

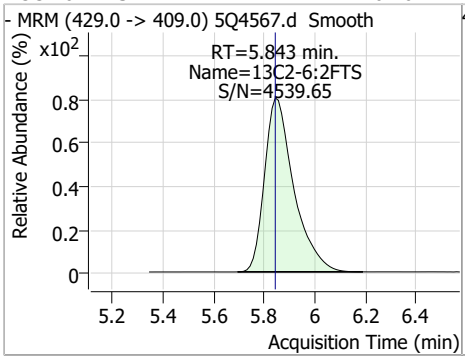


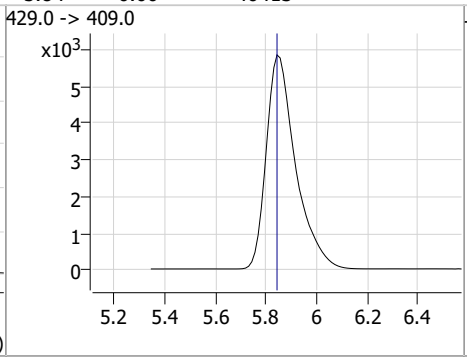


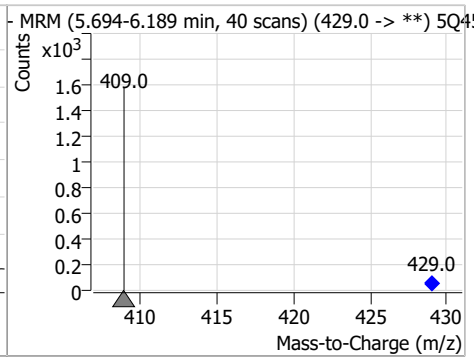




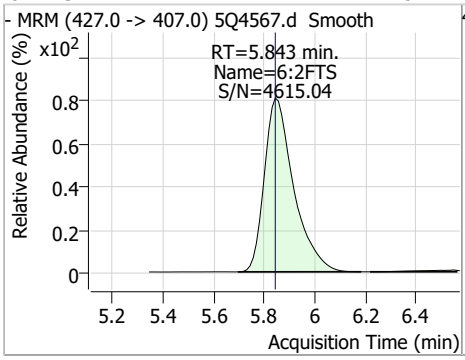
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.76	5.84	0.00	46413				

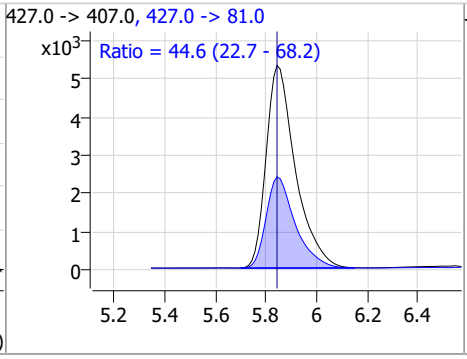


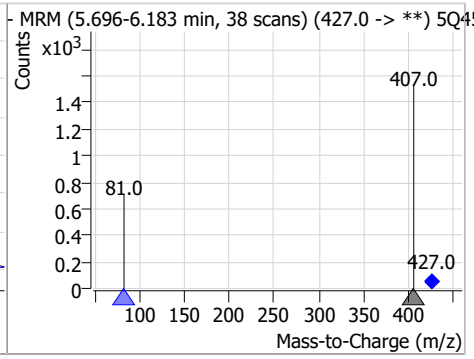




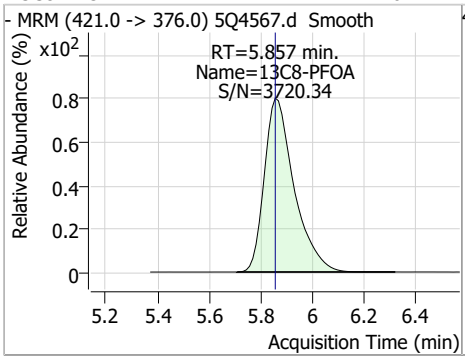
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.25	5.84	0.00	42474	427.0 -> 81.0	44.6	22.7	68.2

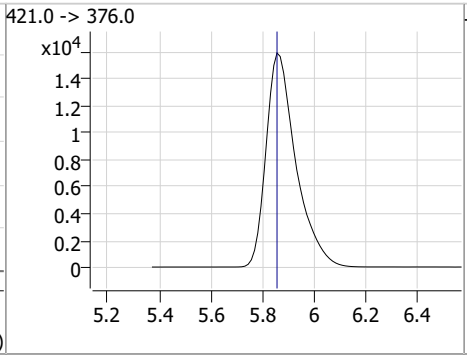


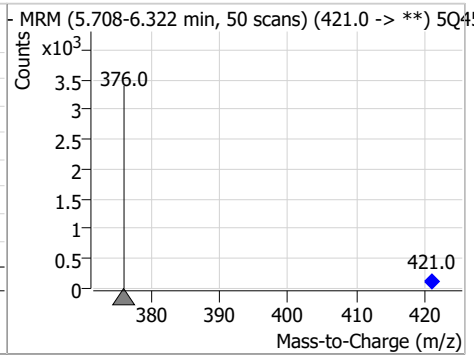




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.02	5.86	0.00	127130				

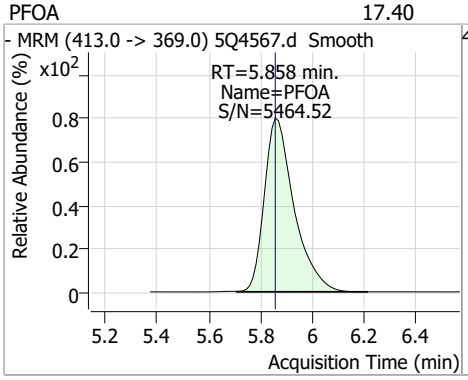


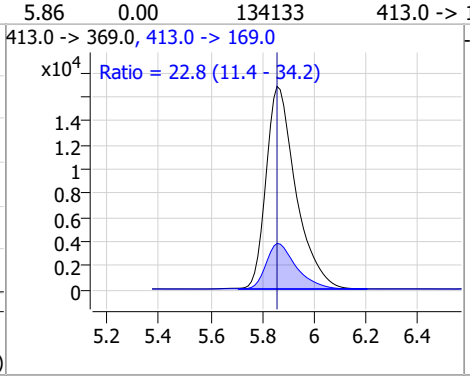


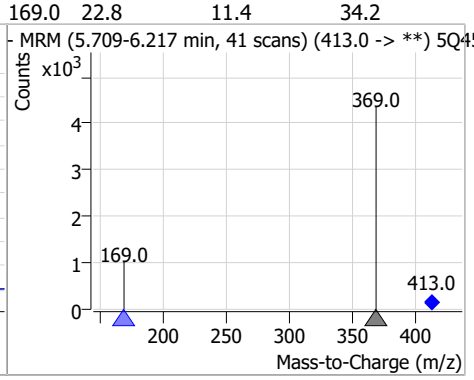


Perfluorinated Compounds by LC/MS/MS

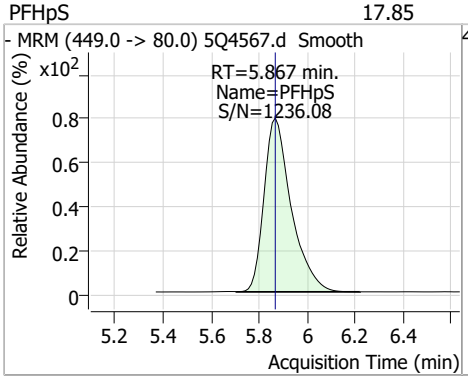
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.40	5.86	0.00	134133	413.0 -> 169.0	22.8	11.4	34.2

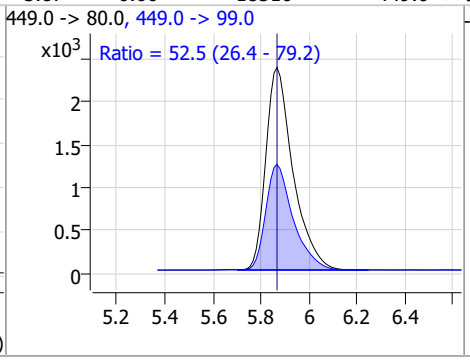


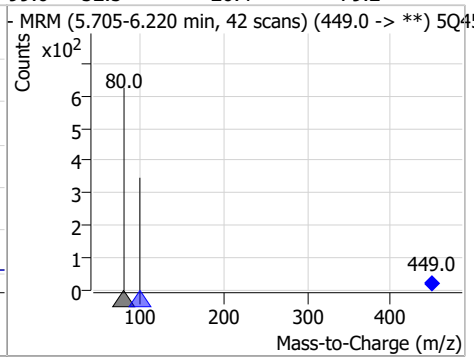




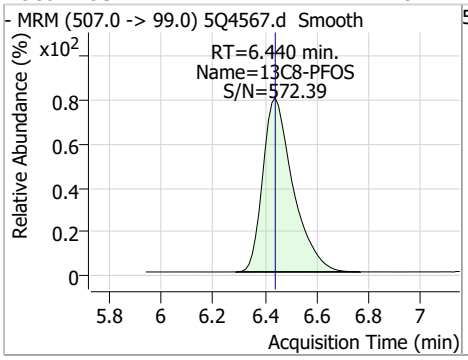
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.85	5.87	0.00	18510	449.0 -> 99.0	52.5	26.4	79.2

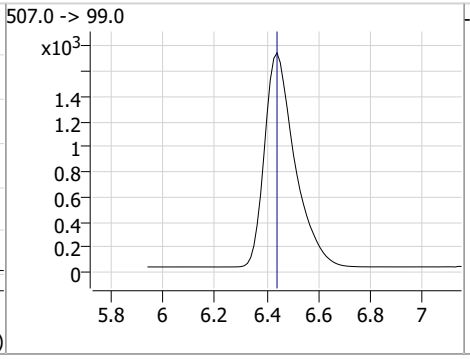


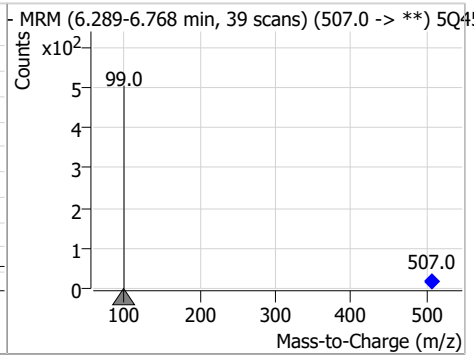




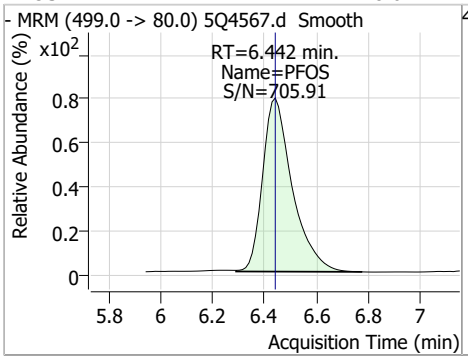
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.13	6.44	0.00	13796				

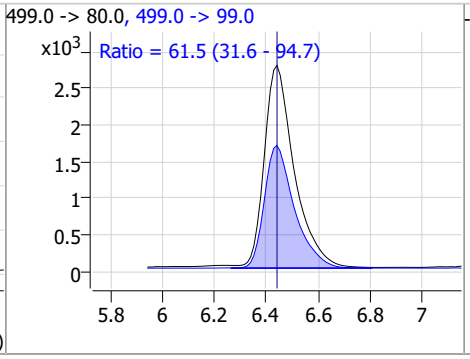


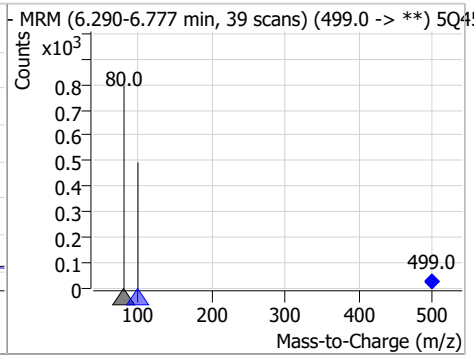




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.02	6.44	0.00	21892	499.0 -> 99.0	61.5	31.6	94.7

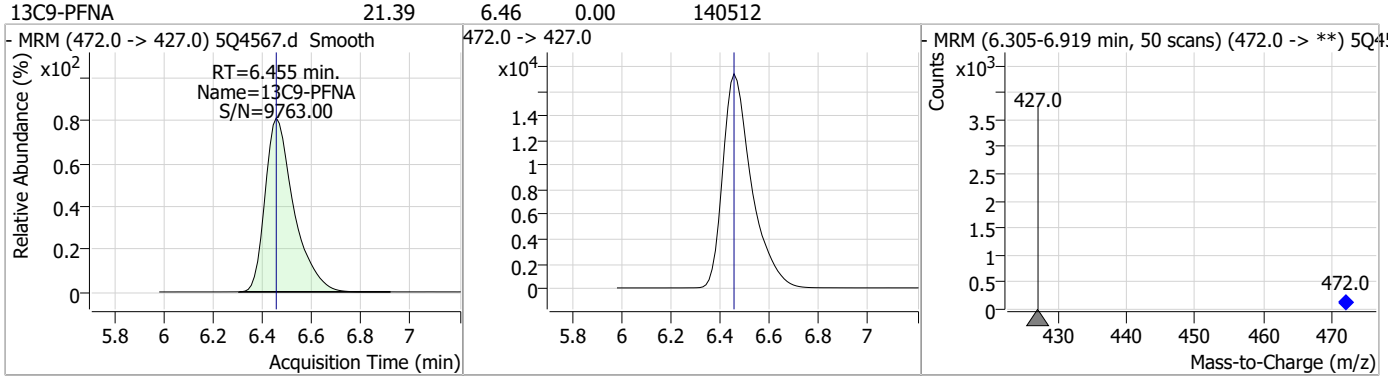




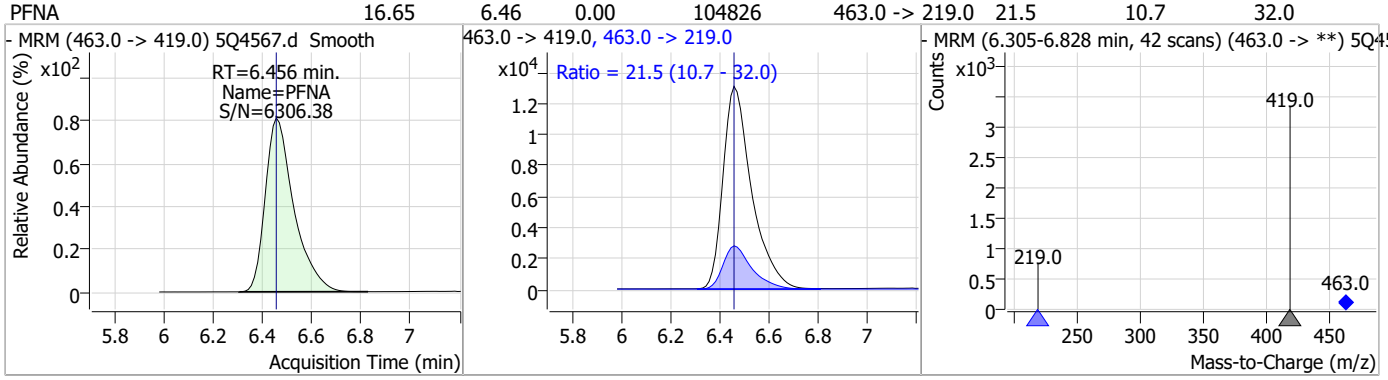


Perfluorinated Compounds by LC/MS/MS

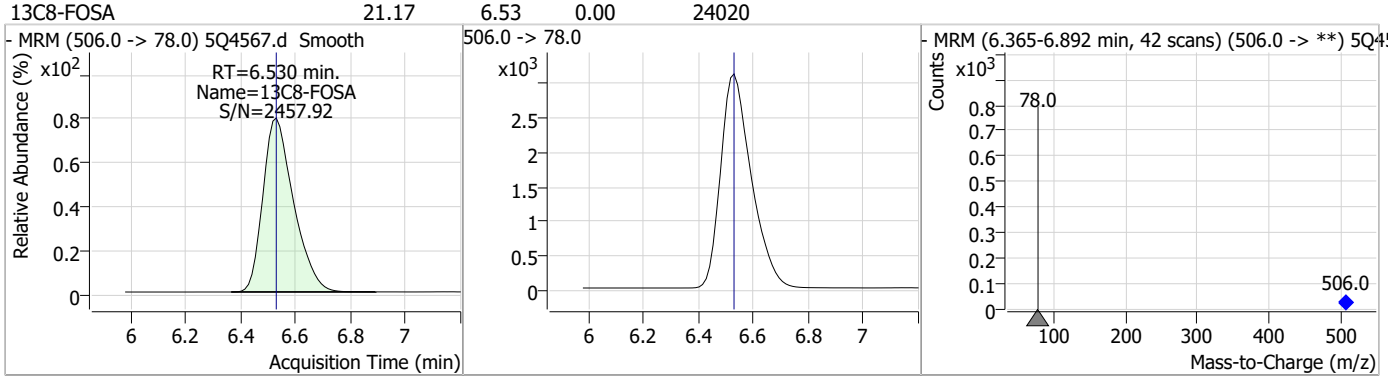
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.39	6.46	0.00	140512				



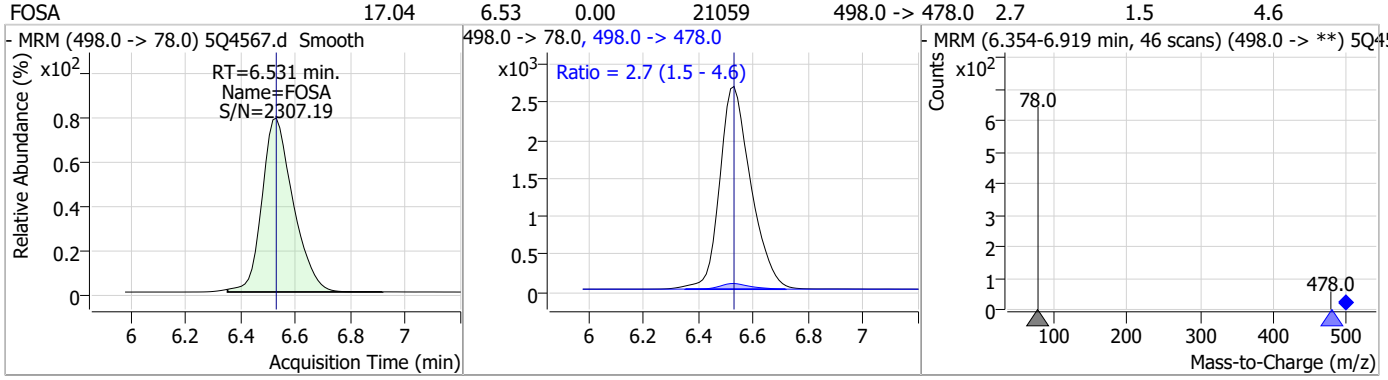
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	16.65	6.46	0.00	104826	463.0 -> 219.0	21.5	10.7	32.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.17	6.53	0.00	24020				

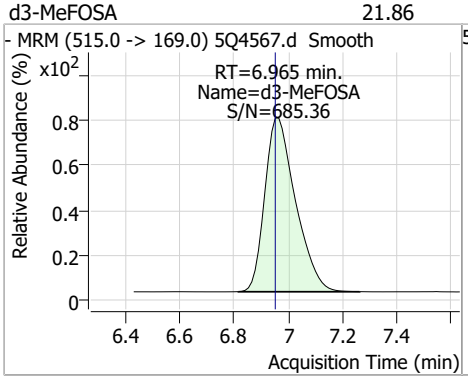


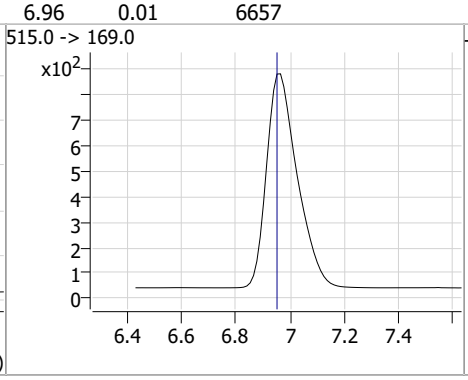
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.04	6.53	0.00	21059	498.0 -> 478.0	2.7	1.5	4.6

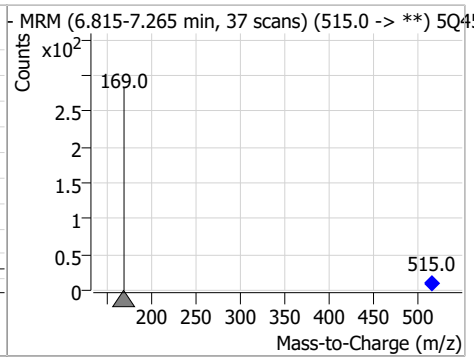


Perfluorinated Compounds by LC/MS/MS

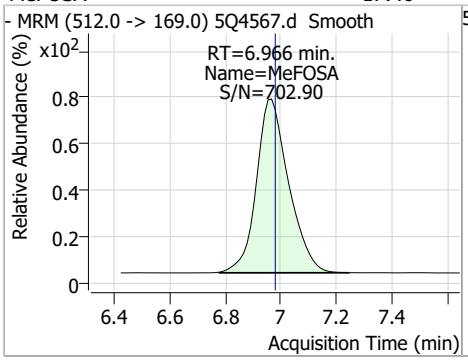
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.86	6.96	0.01	6657				

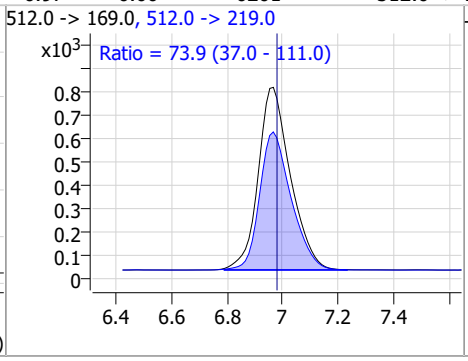


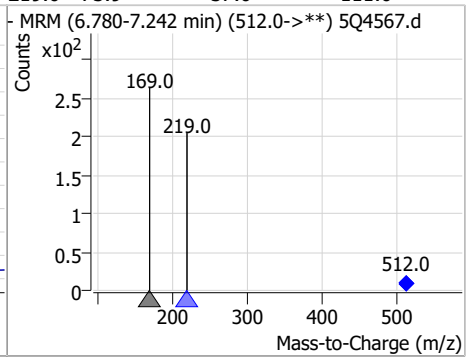




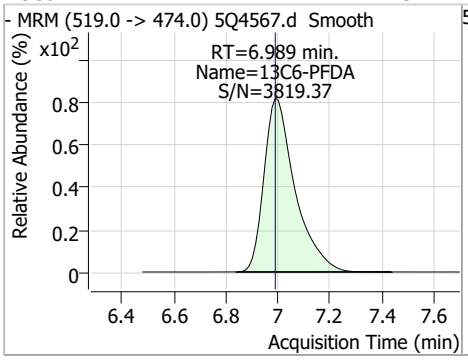
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.46	6.97	0.00	6261	512.0 -> 219.0	73.9	37.0	111.0

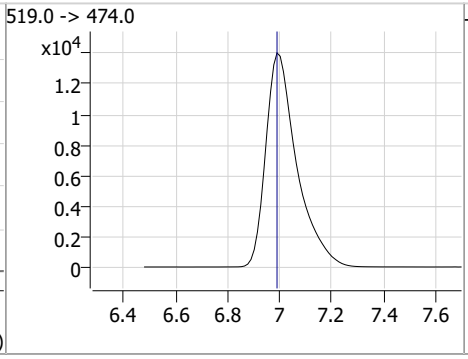


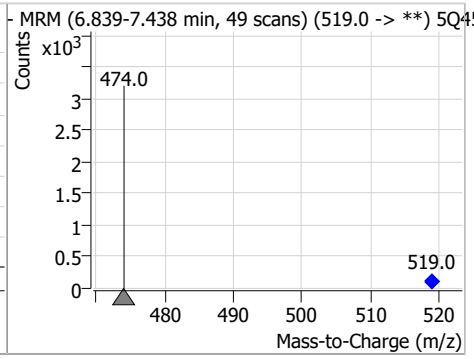




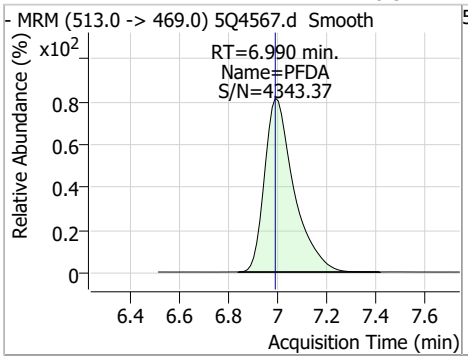
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.49	6.99	0.00	115692				

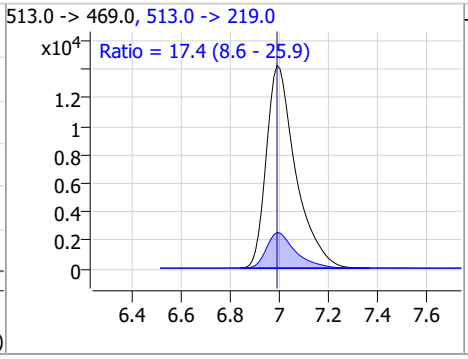


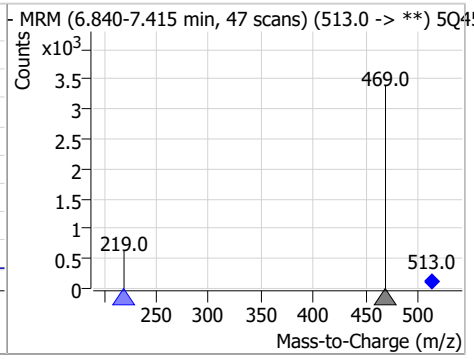




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.52	6.99	0.00	117384	513.0 -> 219.0	17.4	8.6	25.9

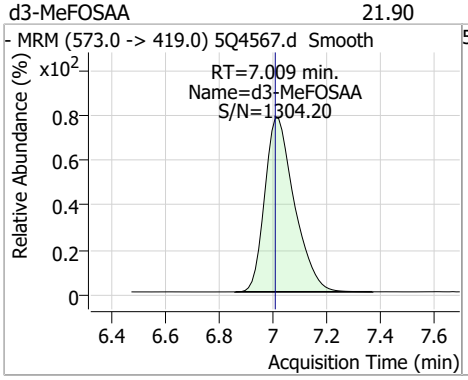


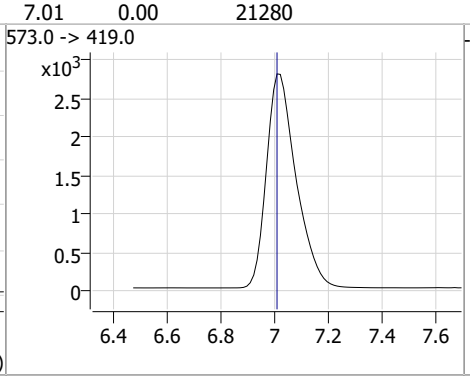


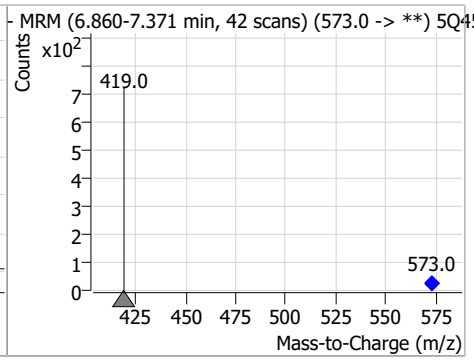


Perfluorinated Compounds by LC/MS/MS

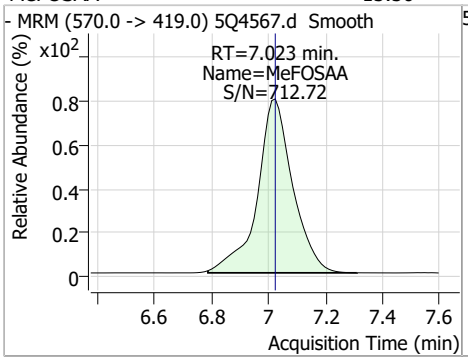
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.90	7.01	0.00	21280				

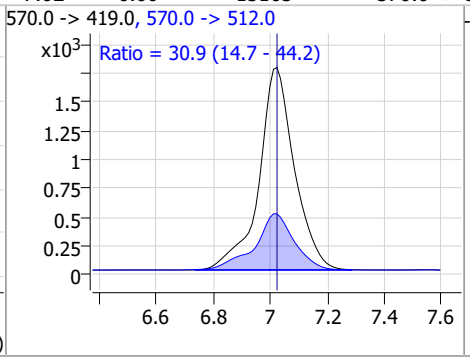


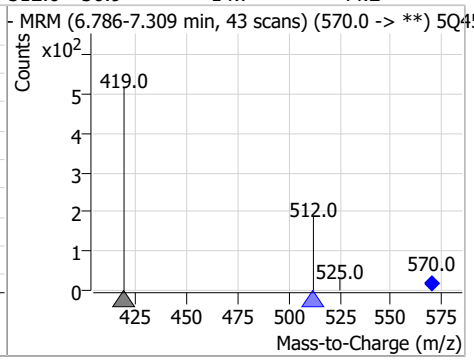




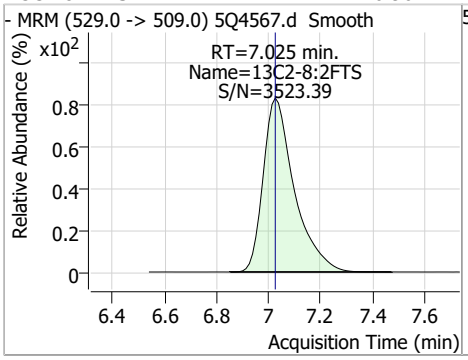
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	15.56	7.02	0.00	15165	570.0 -> 512.0	30.9	14.7	44.2

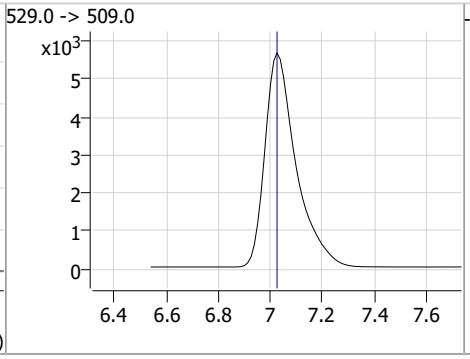


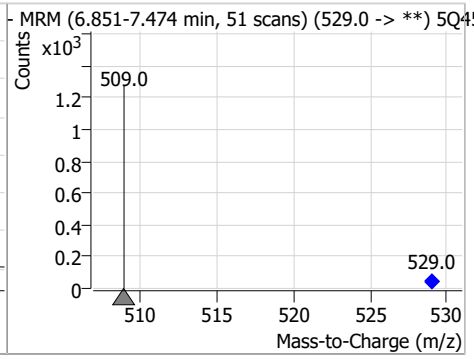




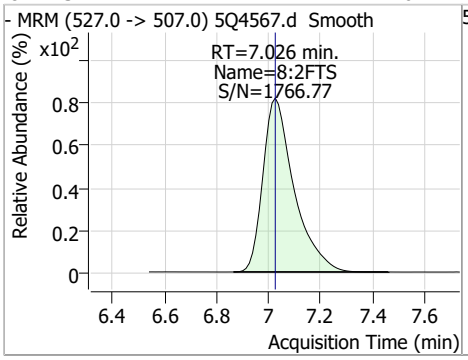
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.90	7.03	0.00	46950				

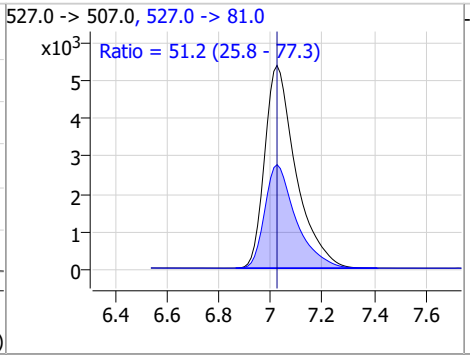


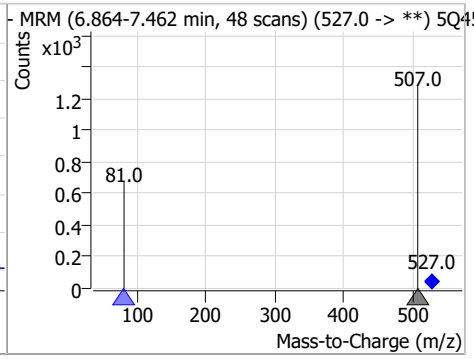




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	17.76	7.03	0.00	44446	527.0 -> 81.0	51.2	25.8	77.3

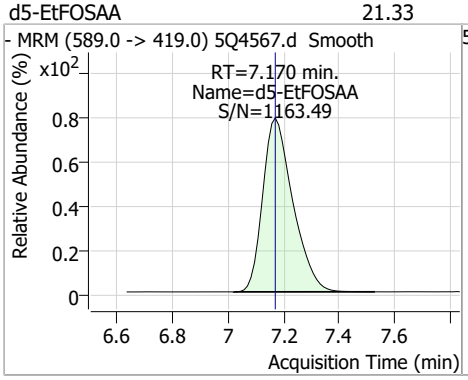


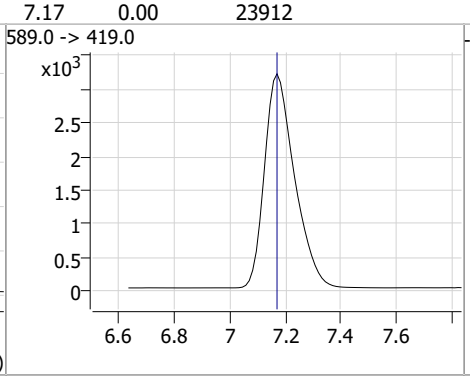


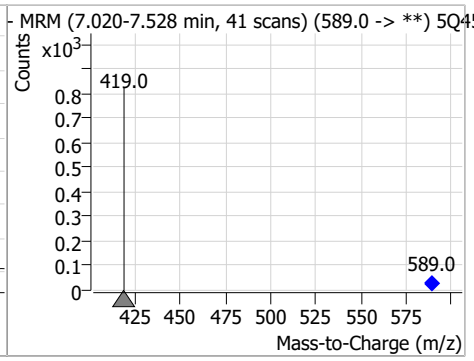


Perfluorinated Compounds by LC/MS/MS

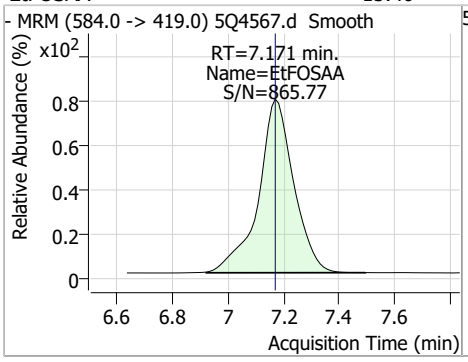
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.33	7.17	0.00	23912				

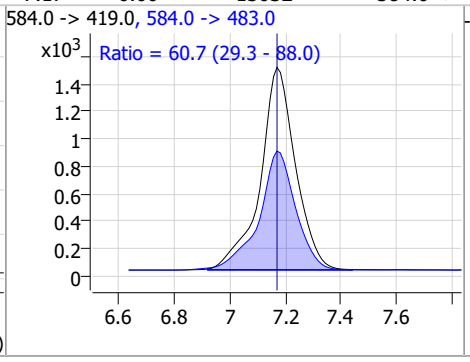


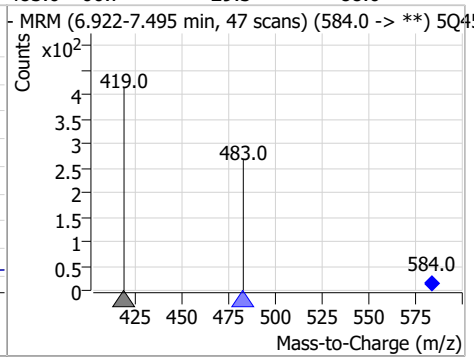




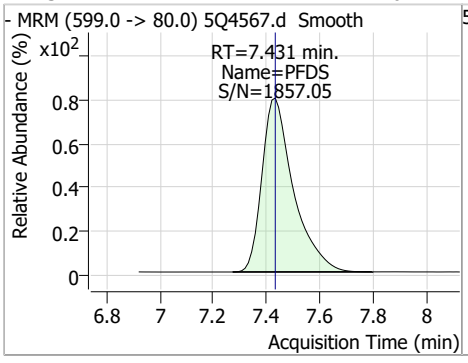
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.40	7.17	0.00	13032	584.0 -> 483.0	60.7	29.3	88.0

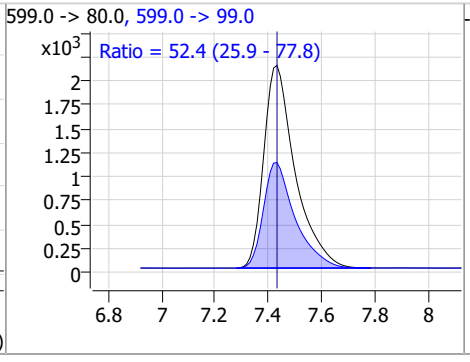


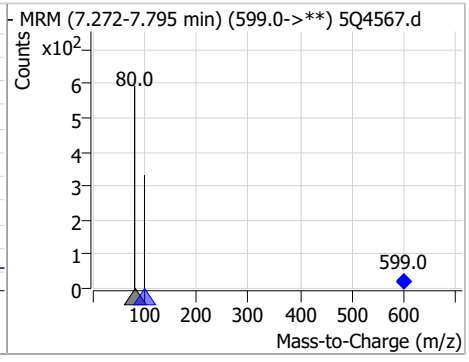




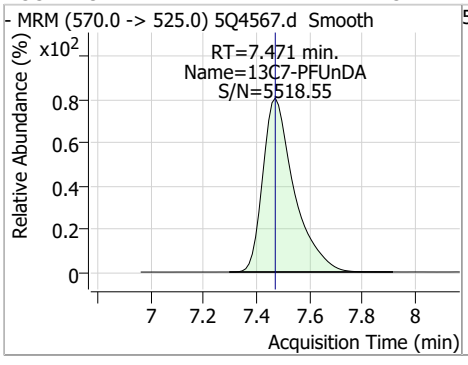
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.07	7.43	0.00	17303	599.0 -> 99.0	52.4	25.9	77.8

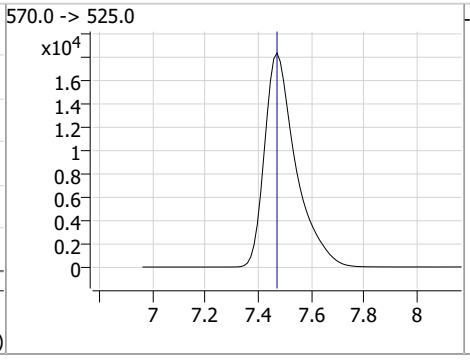


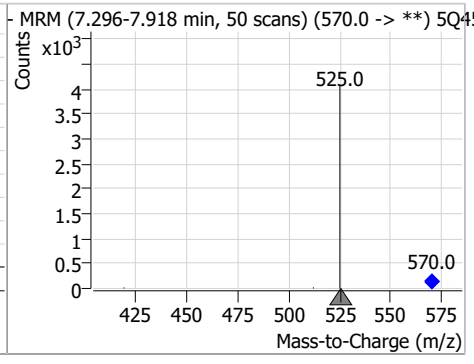




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.34	7.47	0.00	150265				

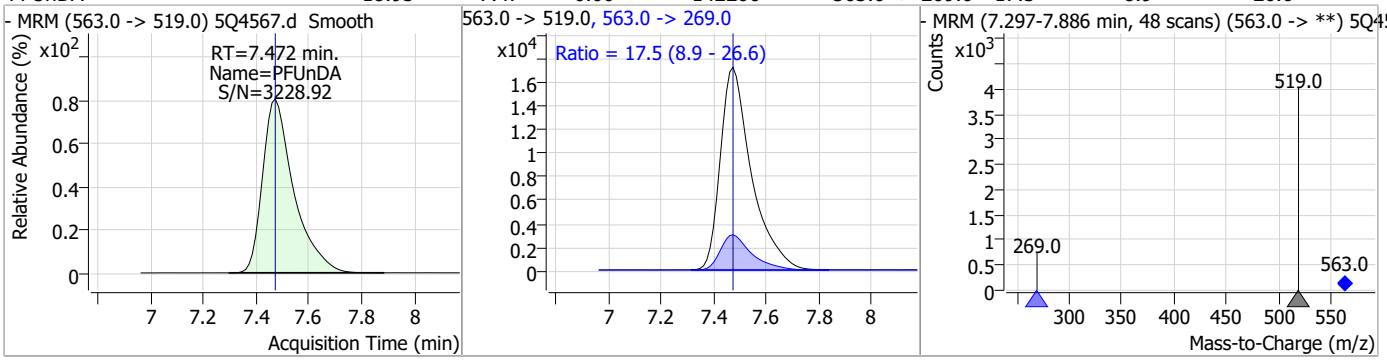




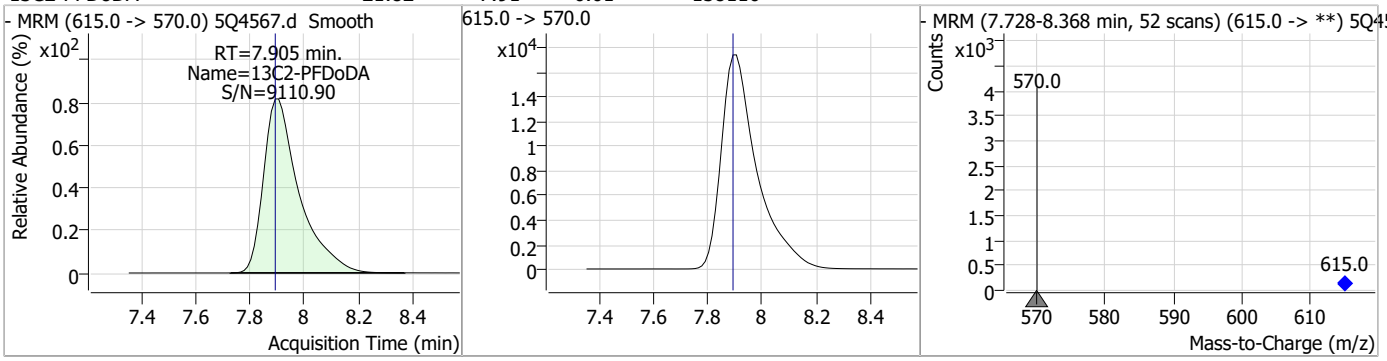


Perfluorinated Compounds by LC/MS/MS

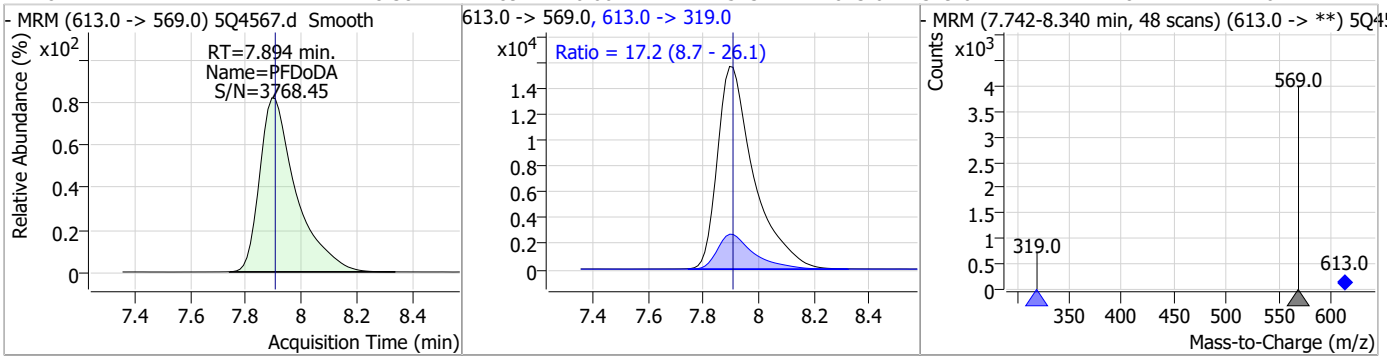
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.95	7.47	0.00	142206	563.0 -> 269.0	17.5	8.9	26.6



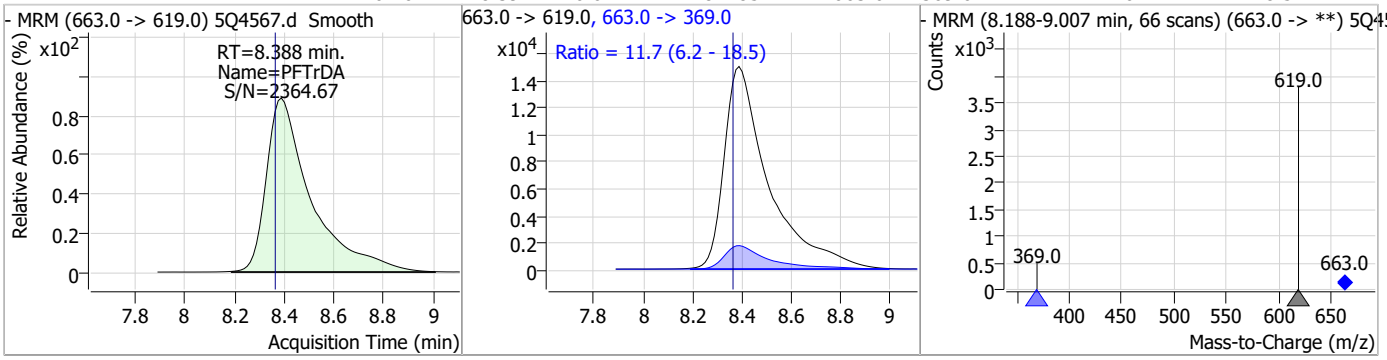
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.82	7.91	0.01	158110				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.38	7.89	0.00	142523	613.0 -> 319.0	17.2	8.7	26.1

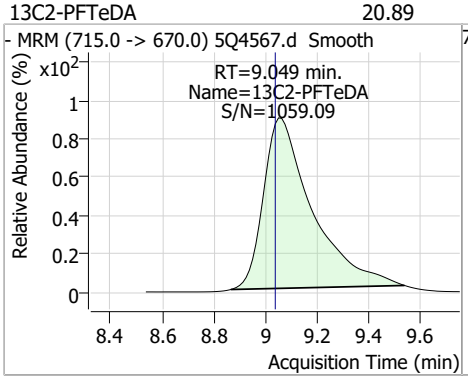


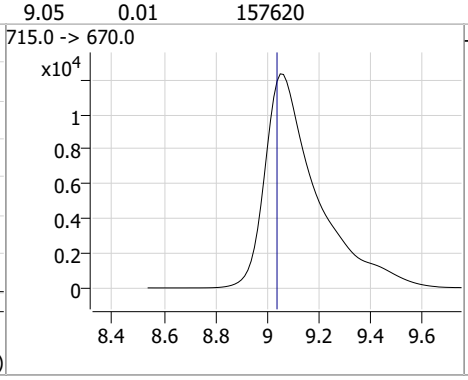
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.26	8.39	0.04	187785	663.0 -> 369.0	11.7	6.2	18.5

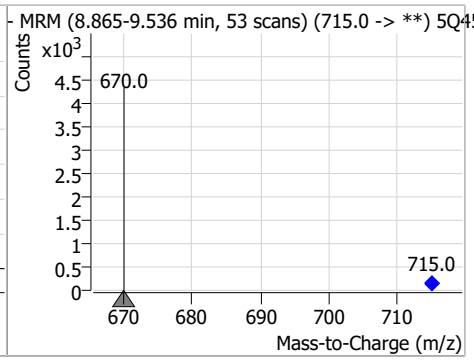


Perfluorinated Compounds by LC/MS/MS

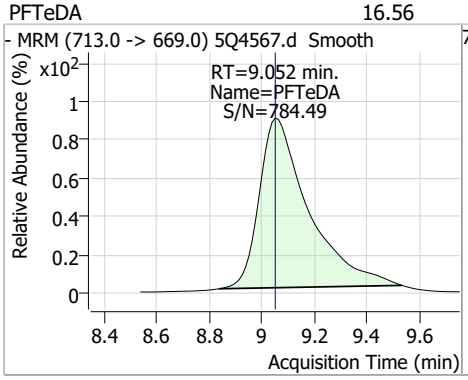
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.89	9.05	0.01	157620				

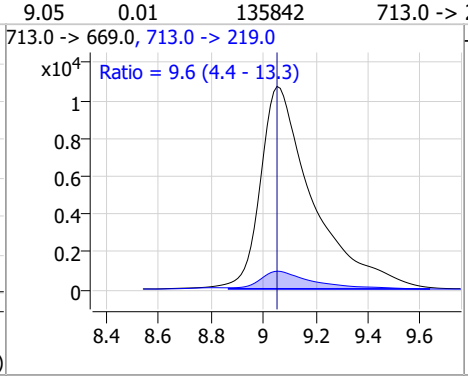


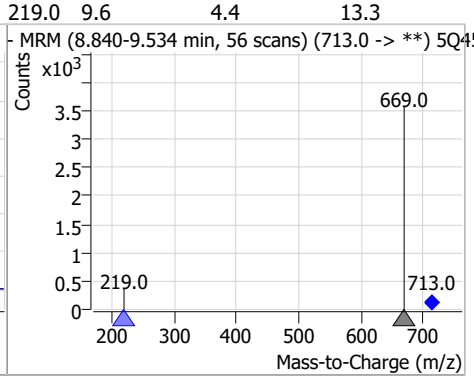




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.56	9.05	0.01	135842	713.0 -> 219.0	9.6	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-ICV71
Lab FileID: 5Q4567.D
Injection Time: 09/14/22 13:14
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4569.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:45:07 PM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

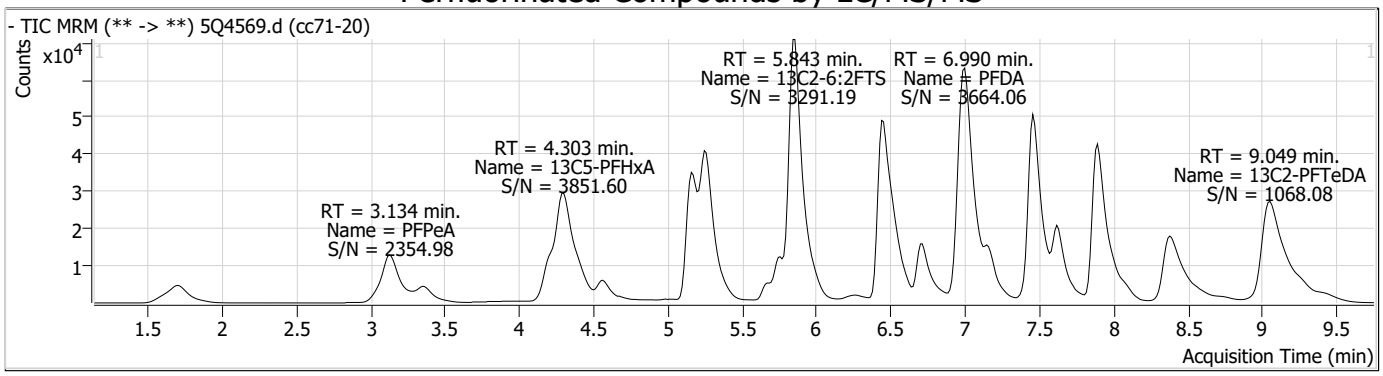
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	36054	20.00 µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	58569	20.00 µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	87990	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	81984	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	121510	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	133584	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	109482	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	143615	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	147566	20.00 µg/L	0.000
M2-PFTeDA	9.049	715.0 -> 670.0	148262	20.00 µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	22934	20.00 µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6608	20.00 µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6837	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13177	20.00 µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	29497	20.00 µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	45212	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	45354	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	19737	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6679	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6167	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22983	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.212	329.0 -> 309.0	29497	20.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C2-6:2FTS	5.843	429.0 -> 409.0	45212	20.22 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C2-8:2FTS	7.025	529.0 -> 509.0	45354	20.19 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C2-PFDoDA	7.893	615.0 -> 570.0	147566	20.36 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C2-PFTeDA	9.049	715.0 -> 670.0	148262	19.65 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C3-PFBS	3.362	302.0 -> 99.0	6608	20.28 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C3-PFHxS	5.206	402.0 -> 99.0	6837	20.04 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFBA	1.700	217.0 -> 172.0	36054	20.17 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C4-PFHpA	5.163	367.0 -> 322.0	81984	20.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFHxA	4.303	318.0 -> 273.0	87990	20.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFPeA	3.132	268.0 -> 223.0	58569	20.15 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%	
13C6-PFDA	6.989	519.0 -> 474.0	109482	20.34 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

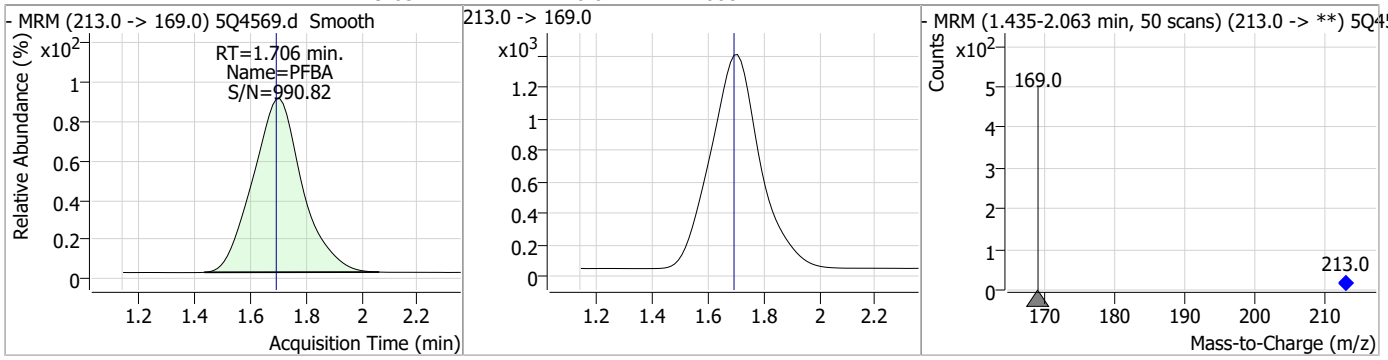
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
13C7-PFUnDA	7.471	570.0 -> 525.0	143615	20.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C8-FOSA	6.530	506.0 -> 78.0	22934	20.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%			
13C8-PFOA	5.857	421.0 -> 376.0	121510	20.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%			
13C8-PFOS	6.440	507.0 -> 99.0	13177	20.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%			
13C9-PFNA	6.455	472.0 -> 427.0	133584	20.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	19737	20.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6679	19.89	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	6167	20.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22983	20.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%			
Target Compounds							**QValue**
4:2FTS	4.214	327.0 -> 307.0	32792	19.86	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	48866	20.38	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	48005	19.86	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	15974	19.65	µg/L		100
FOSA	6.531	498.0 -> 78.0	23297	19.74	µg/L		100
MeFOSAA	7.023	570.0 -> 419.0	17739	19.62	µg/L		97
PFBA	1.706	213.0 -> 169.0	16684	19.65	µg/L		100
PFBS	3.367	299.0 -> 80.0	19316	19.46	µg/L		100
PFDA	6.990	513.0 -> 469.0	131757	19.59	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	143380	19.81	µg/L		99
PFDS	7.431	599.0 -> 80.0	18321	18.91	µg/L		97
PFHpA	5.164	363.0 -> 319.0	108505	20.15	µg/L		99
PFHpS	5.867	449.0 -> 80.0	19739	19.92	µg/L		100
PFHxA	4.304	313.0 -> 269.0	84089	19.56	µg/L		100
PFHxS	5.208	399.0 -> 80.0	20002	19.70	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	115669	19.33	µg/L		100
PFNS	6.962	549.0 -> 80.0	19340	19.88	µg/L		100
PFOA	5.858	413.0 -> 369.0	145091	19.69	µg/L		100
PFOS	6.442	499.0 -> 80.0	22845	19.68	µg/L	m	85
PFPeA	3.134	263.0 -> 219.0	56787	19.62	µg/L		100
PFPeS	4.410	349.0 -> 80.0	14894	19.29	µg/L		99
PFTeDA	9.052	713.0 -> 669.0	154913	20.07	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	168029	19.42	µg/L		100
PFUnDA	7.472	563.0 -> 519.0	138566	19.32	µg/L		100
11Cl-PF3OUdS	7.628	631.0 -> 451.0	71363	19.46	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	70766	18.70	µg/L		99
ADONA	5.261	377.0 -> 251.0	137738	19.60	µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	22435	19.91	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	6889	20.74	µg/L		98
4-PFECHS	5.753	461.0 -> 381.0	41939	19.18	µg/L		99
FBSA	4.356	298.0 -> 78.0	29685	20.34	µg/L		100
FHxSA	5.687	398.0 -> 78.0	24096	19.50	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

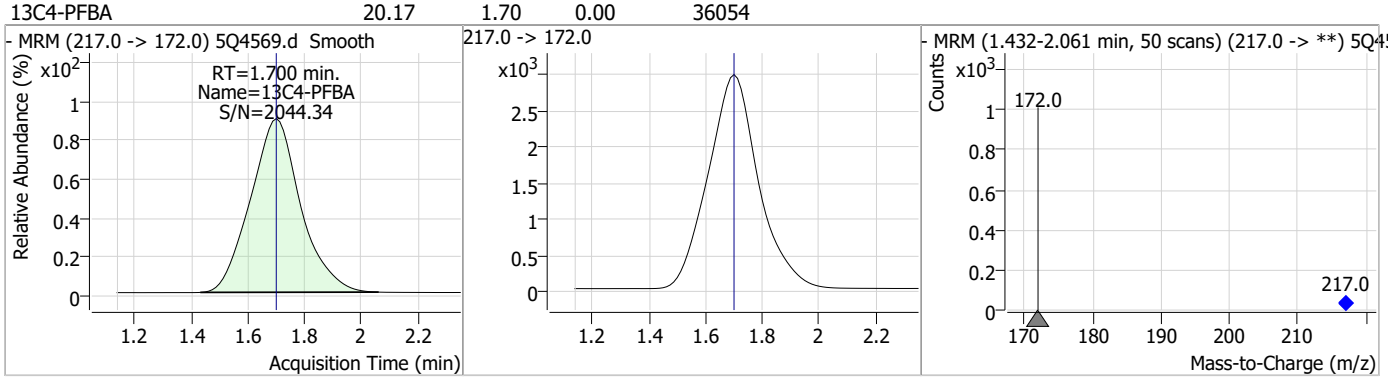
Perfluorinated Compounds by LC/MS/MS



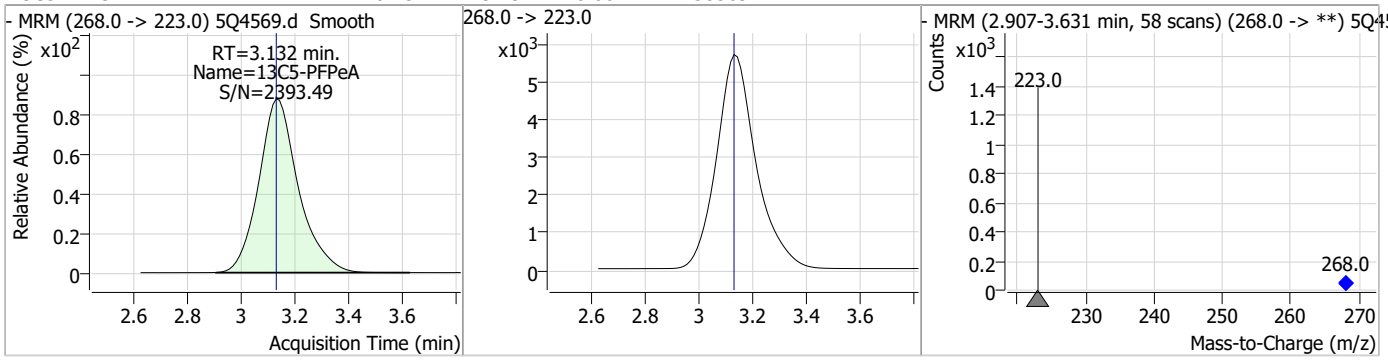
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	1.71	0.01	16684				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.17	1.70	0.00	36054				

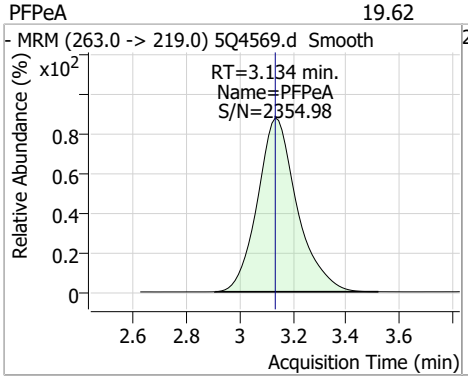


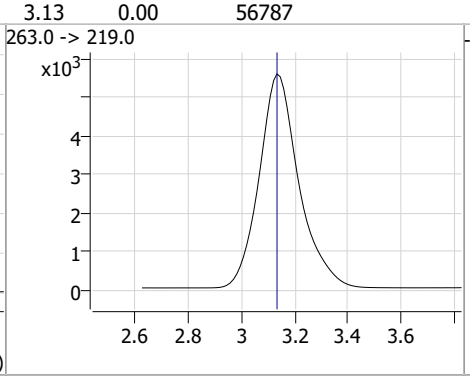
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.15	3.13	0.00	58569				

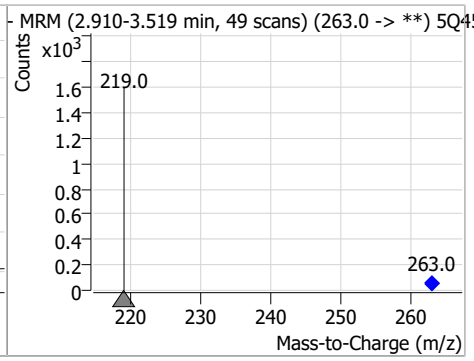


Perfluorinated Compounds by LC/MS/MS

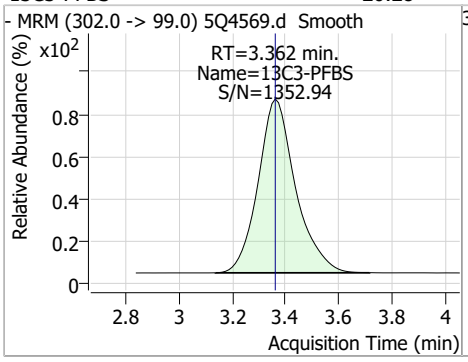
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.62	3.13	0.00	56787				

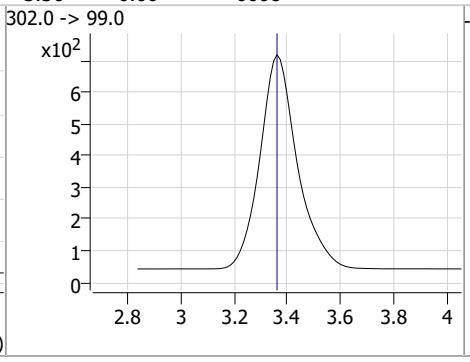


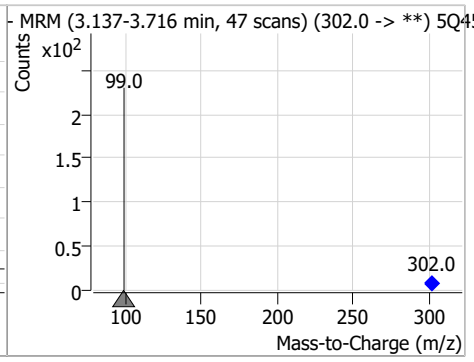




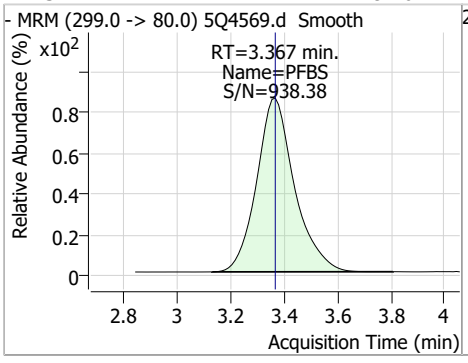
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.28	3.36	0.00	6608				

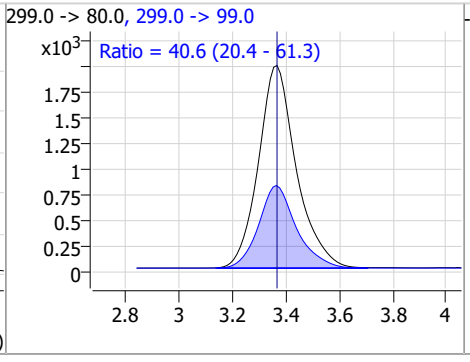


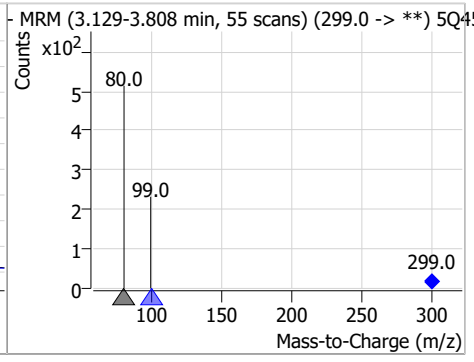




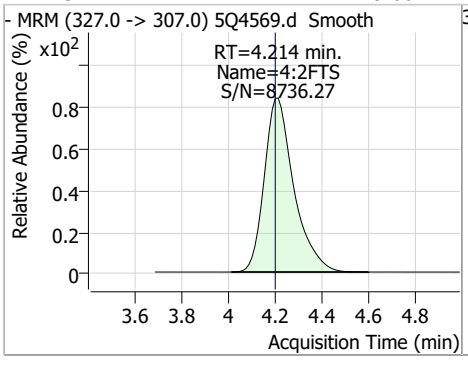
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.46	3.37	0.00	19316	299.0 -> 99.0	40.6	20.4	61.3

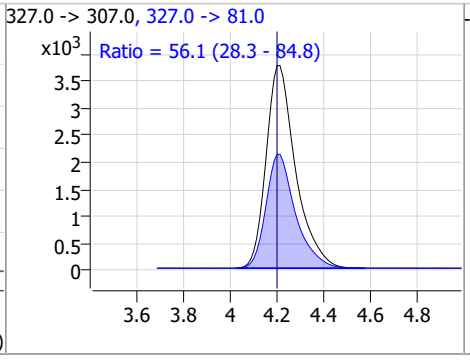


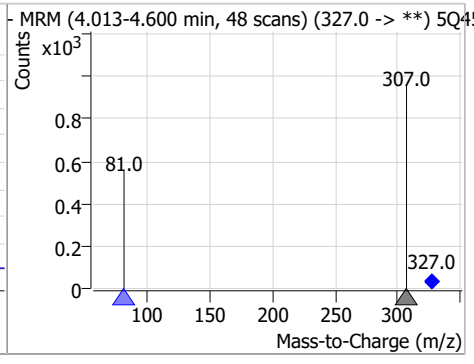




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.86	4.21	0.01	32792	327.0 -> 81.0	56.1	28.3	84.8

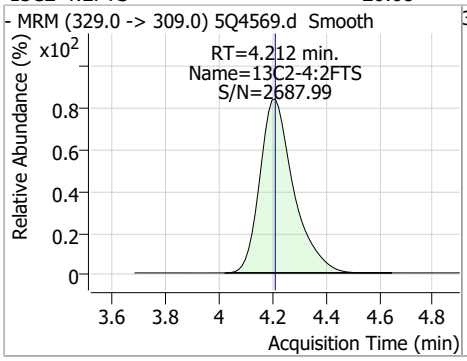


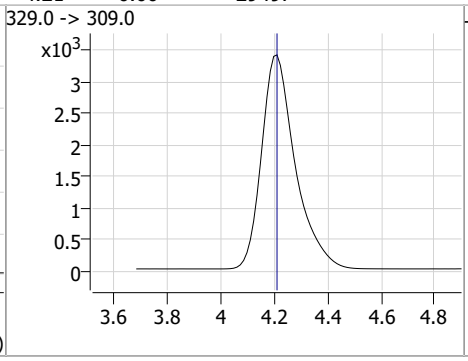


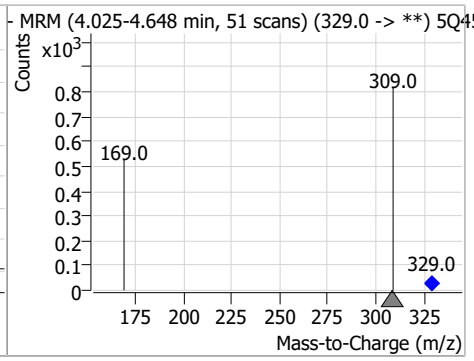


Perfluorinated Compounds by LC/MS/MS

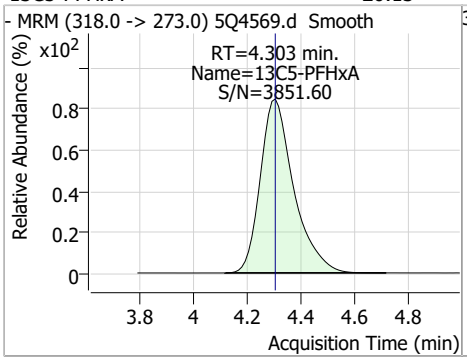
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.08	4.21	0.00	29497				

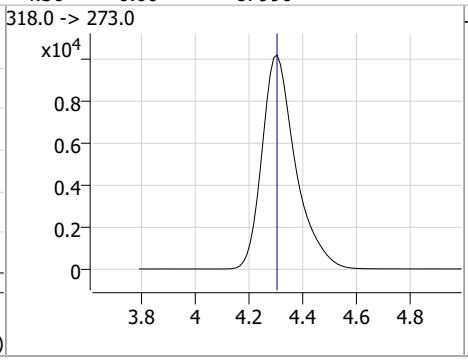


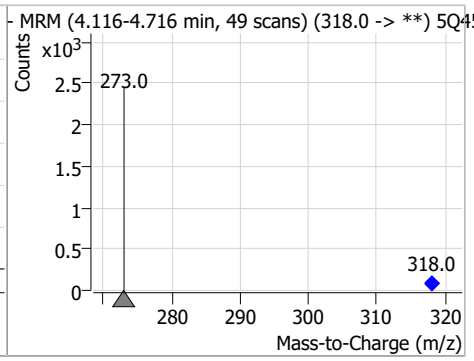




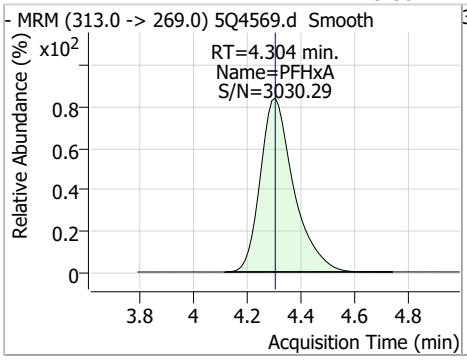
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.13	4.30	0.00	87990				

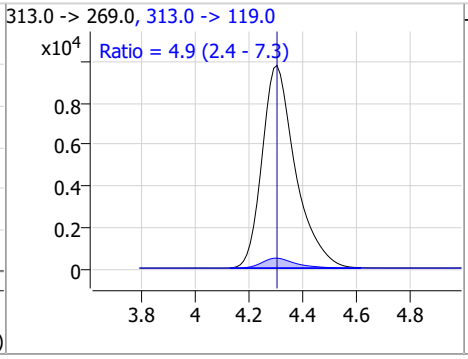


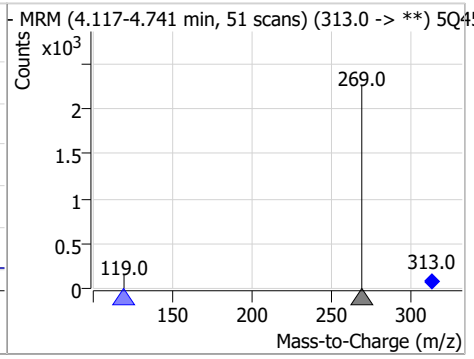




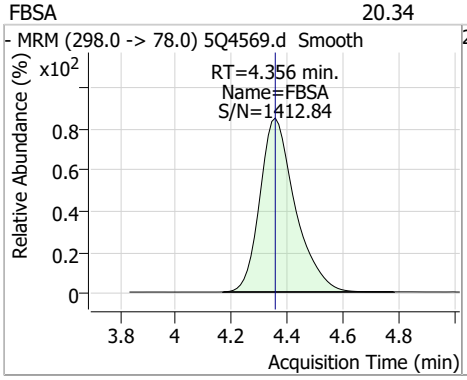
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.56	4.30	0.00	84089	313.0 -> 119.0	4.9	2.4	7.3

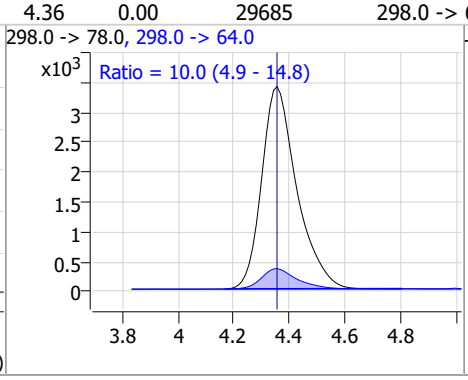


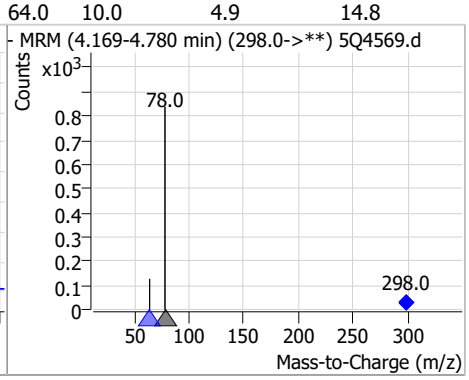




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.34	4.36	0.00	29685	298.0 -> 64.0	10.0	4.9	14.8

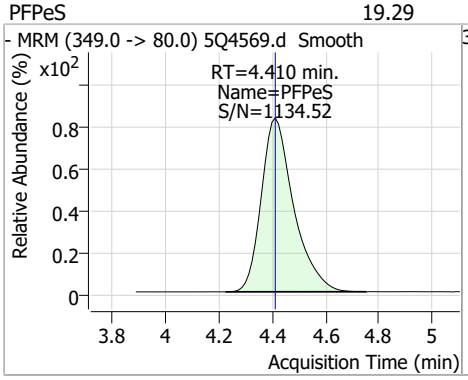


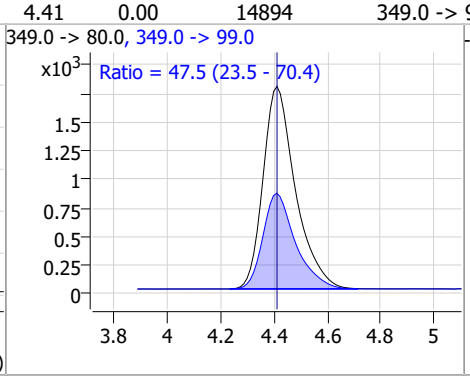


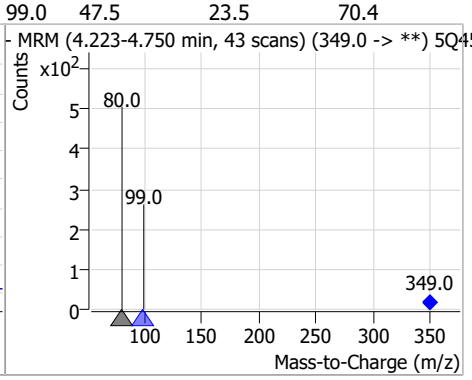


Perfluorinated Compounds by LC/MS/MS

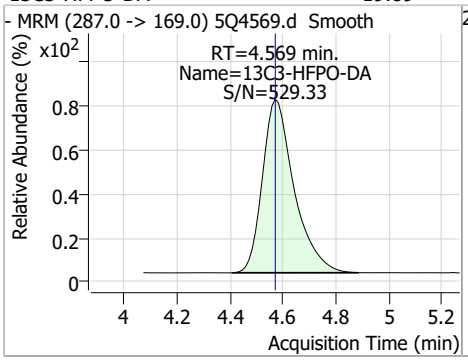
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.29	4.41	0.00	14894	349.0 -> 99.0	47.5	23.5	70.4

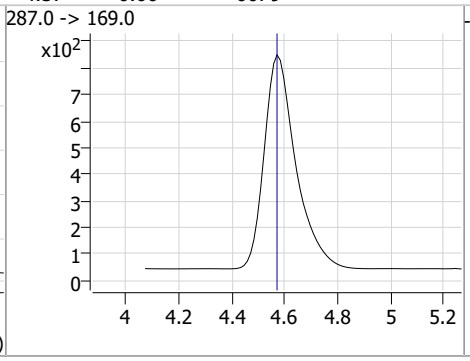


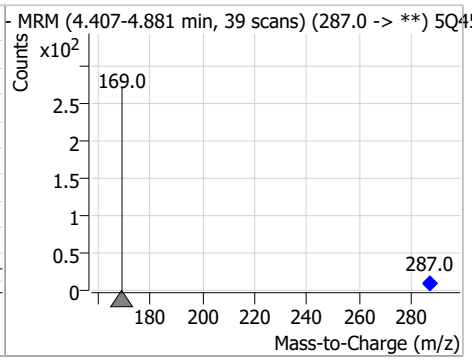




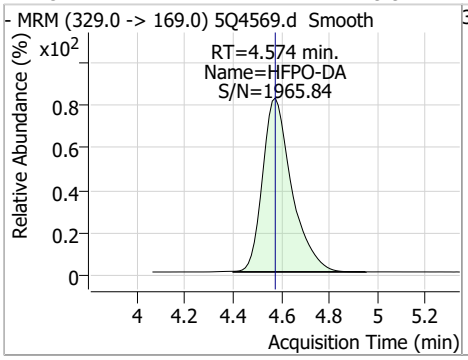
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.89	4.57	0.00	6679				

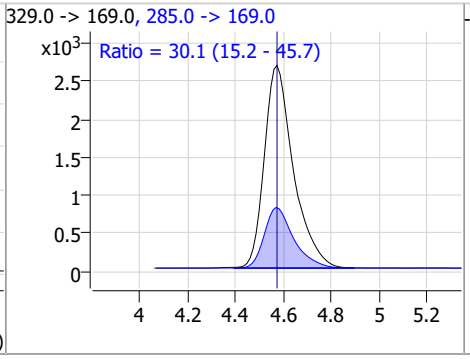


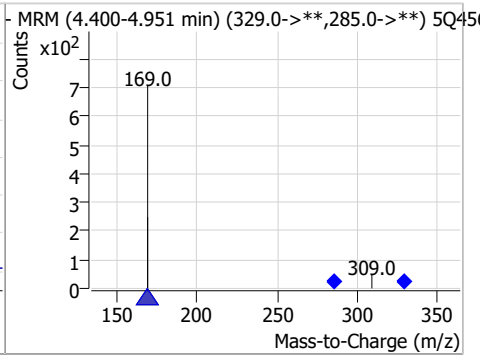




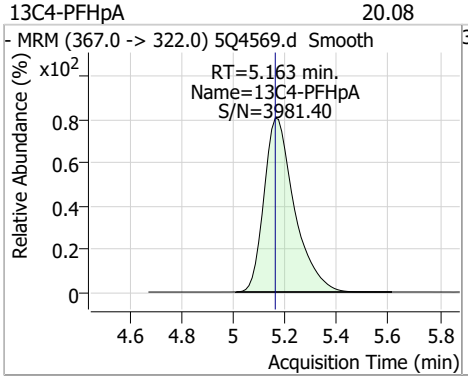
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.91	4.57	0.00	22435	285.0 -> 169.0	30.1	15.2	45.7

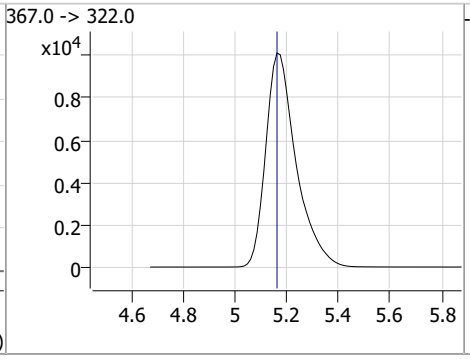


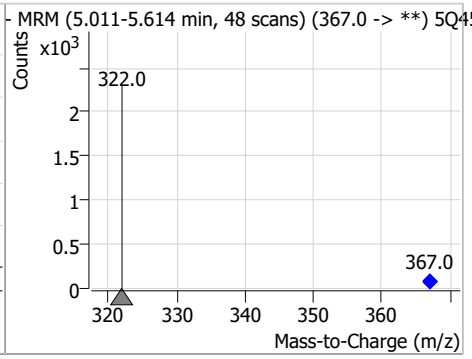




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.08	5.16	0.00	81984				

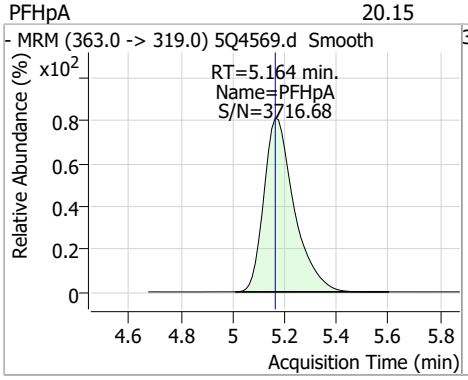


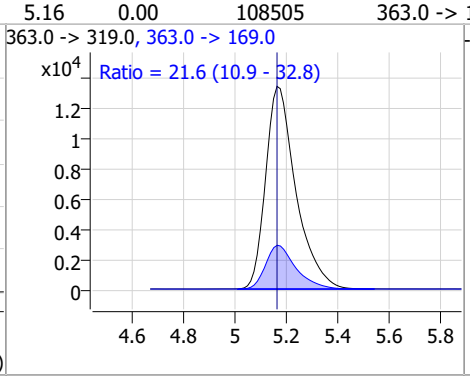


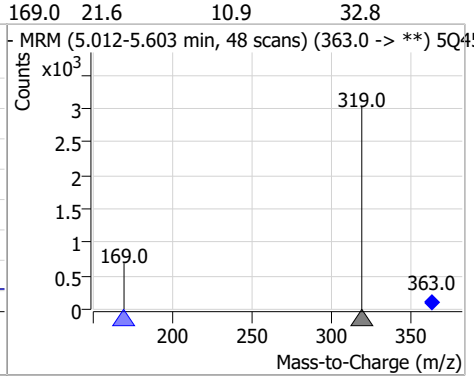


Perfluorinated Compounds by LC/MS/MS

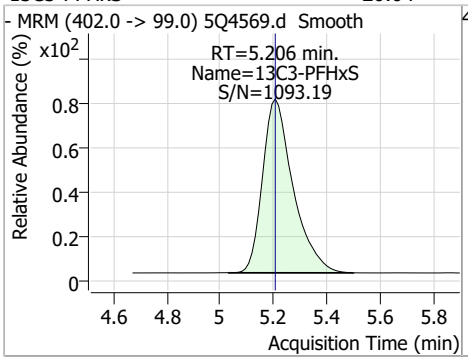
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.15	5.16	0.00	108505	363.0 -> 169.0	21.6	10.9	32.8

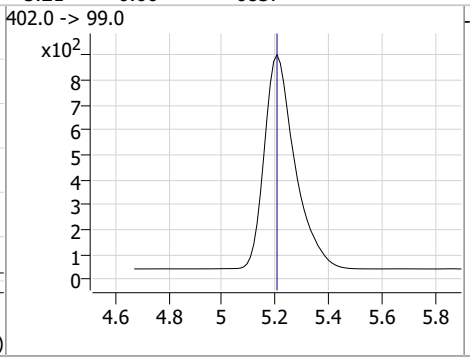


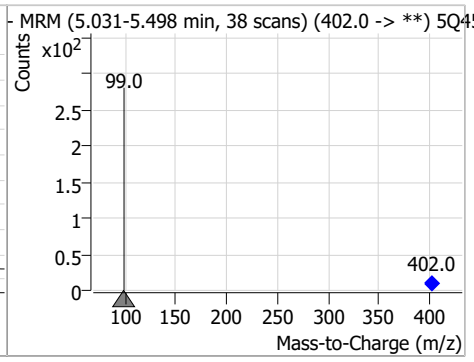




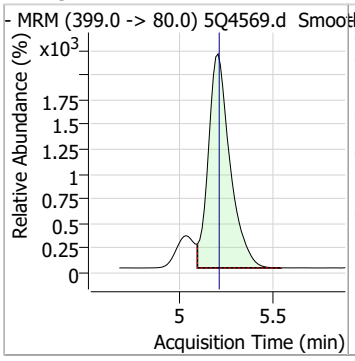
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.04	5.21	0.00	6837				

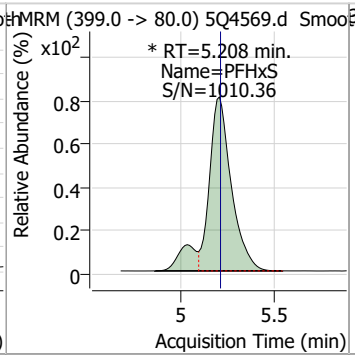


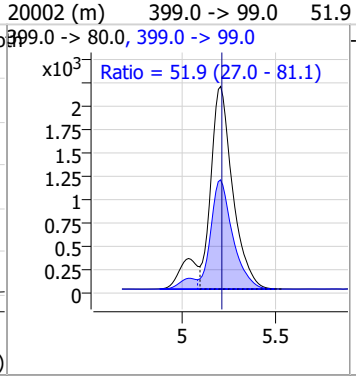


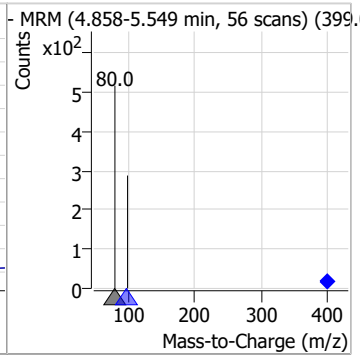


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.70	5.21	0.00	20002 (m)	399.0 -> 99.0	51.9	27.0	81.1

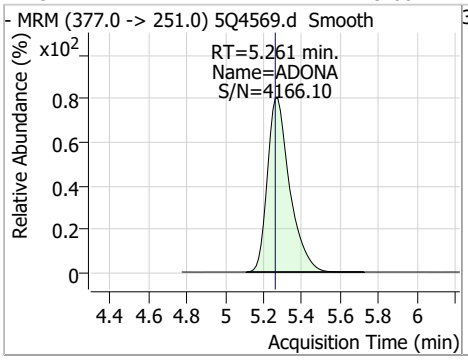


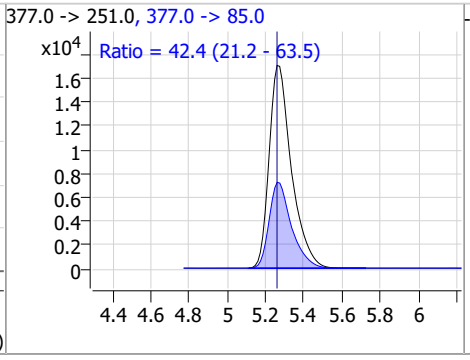


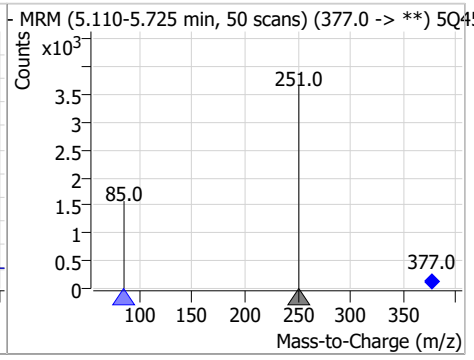




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.60	5.26	0.00	137738	377.0 -> 85.0	42.4	21.2	63.5

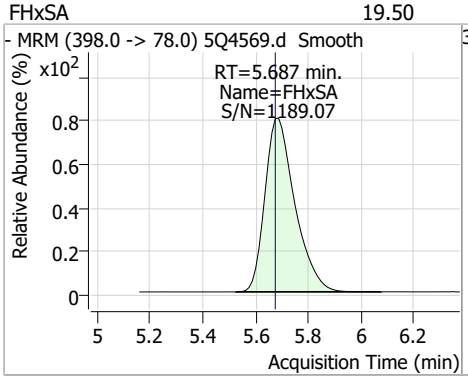


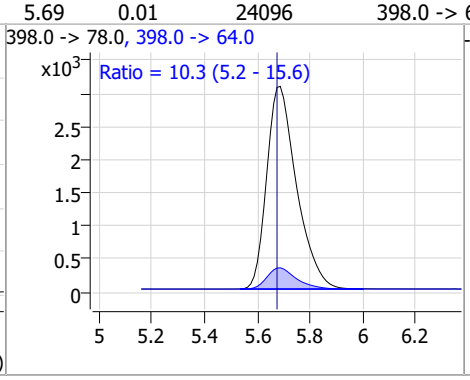


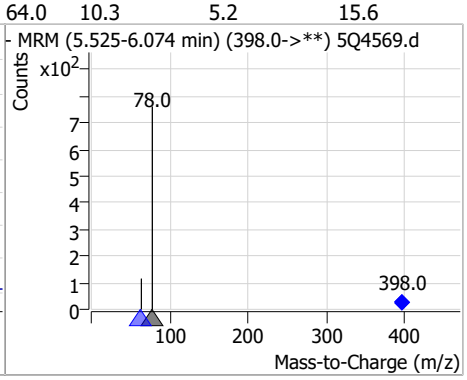


Perfluorinated Compounds by LC/MS/MS

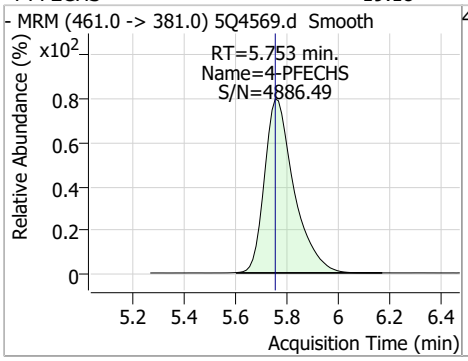
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.50	5.69	0.01	24096	398.0 -> 64.0	10.3	5.2	15.6

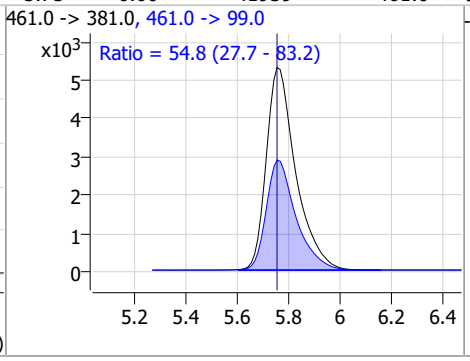


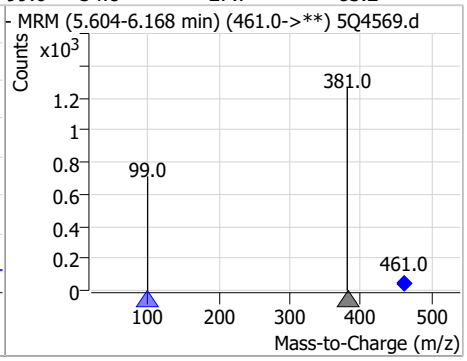




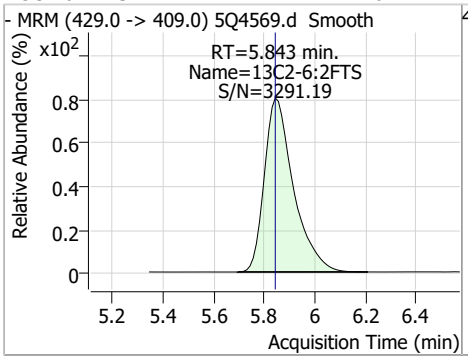
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.18	5.75	0.00	41939	461.0 -> 99.0	54.8	27.7	83.2

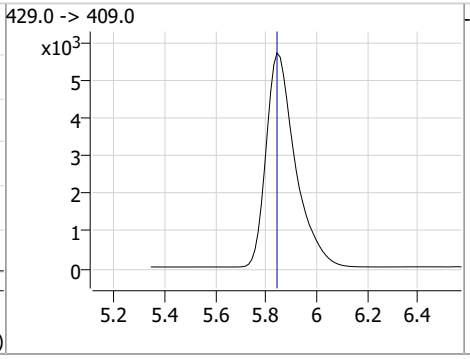


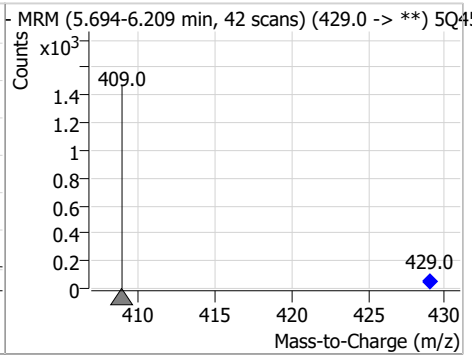




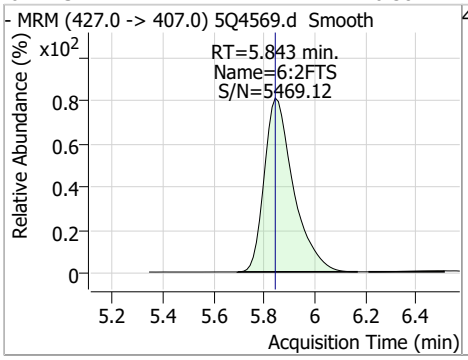
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.22	5.84	0.00	45212				

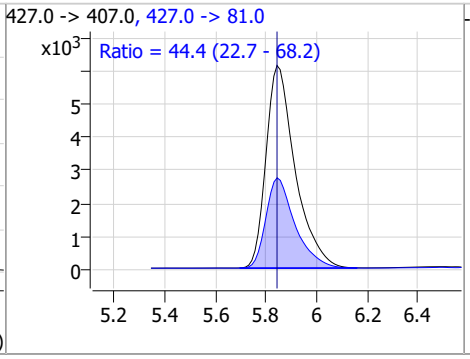


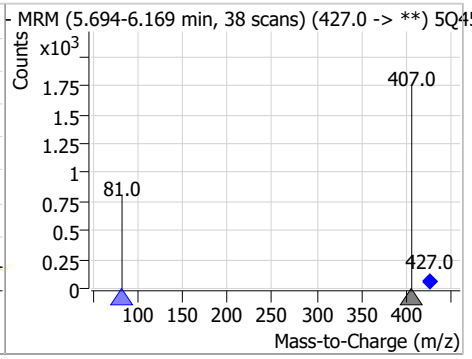




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.38	5.84	0.00	48866	427.0 -> 81.0	44.4	22.7	68.2

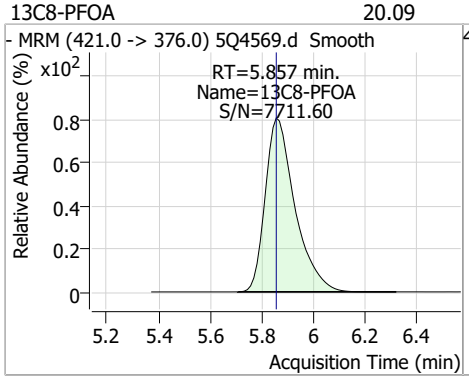


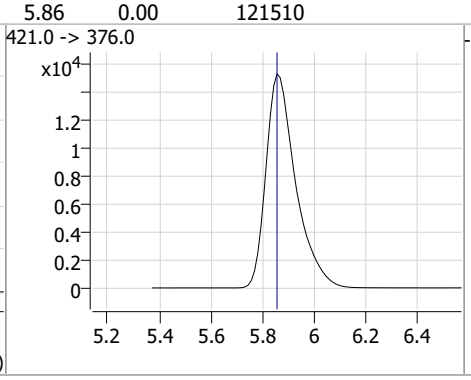


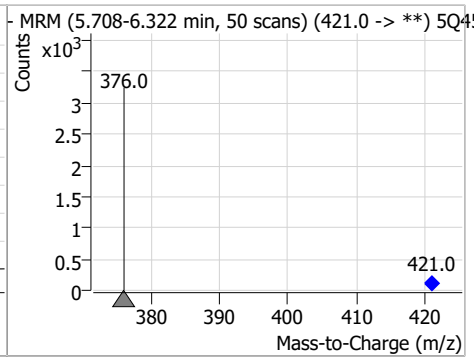


Perfluorinated Compounds by LC/MS/MS

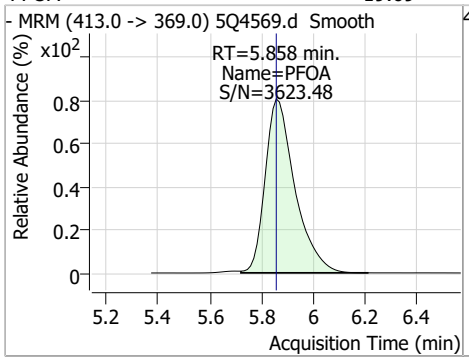
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.09	5.86	0.00	121510				

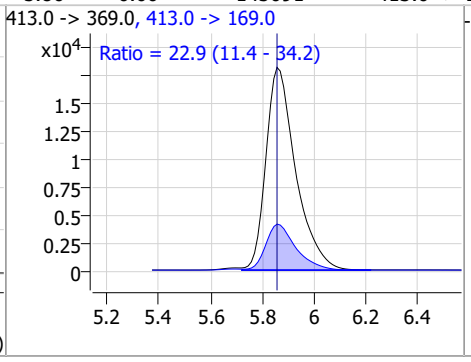


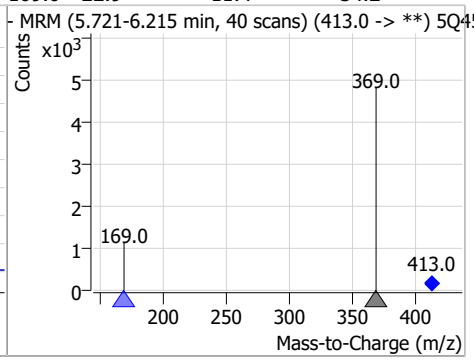




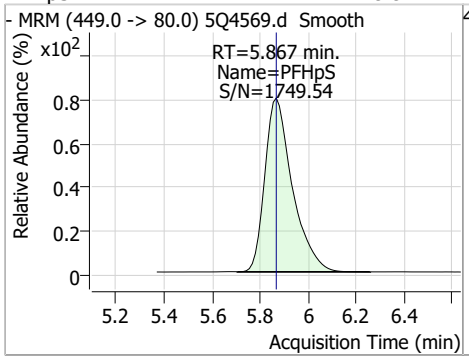
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.69	5.86	0.00	145091	413.0 -> 169.0	22.9	11.4	34.2

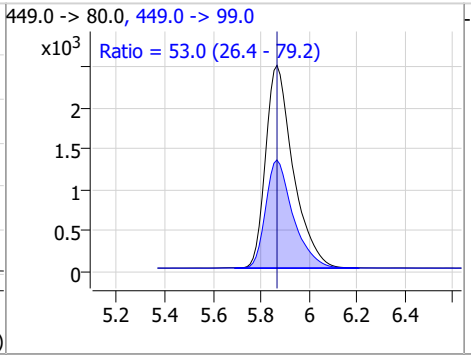


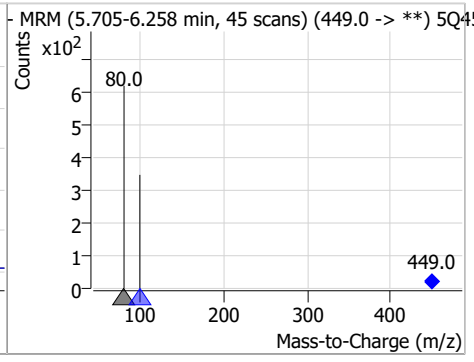




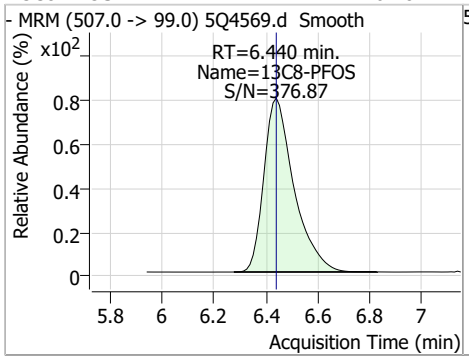
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.92	5.87	0.00	19739	449.0 -> 99.0	53.0	26.4	79.2

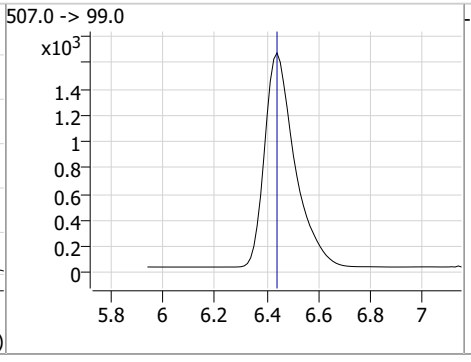


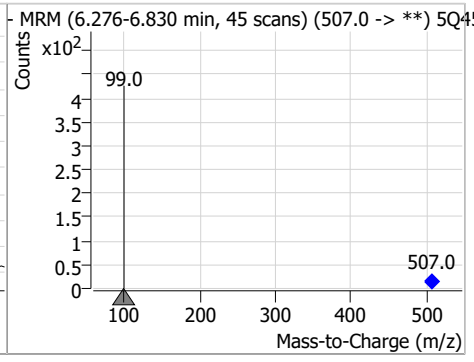




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.18	6.44	0.00	13177				

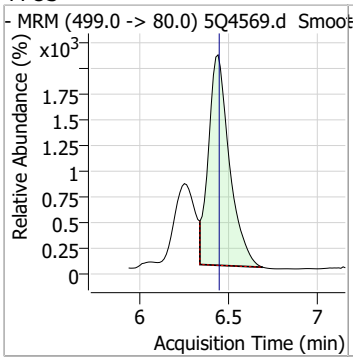


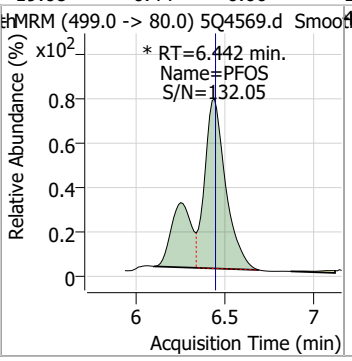


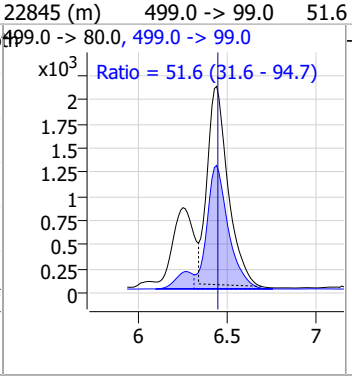


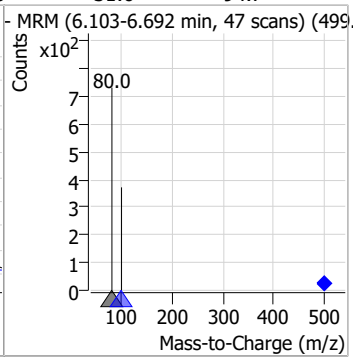
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.68	6.44	0.00	22845 (m)	499.0 -> 99.0	51.6	31.6	94.7

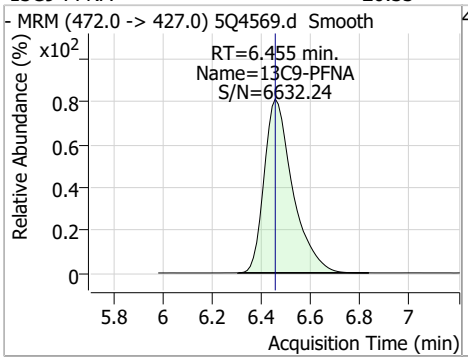


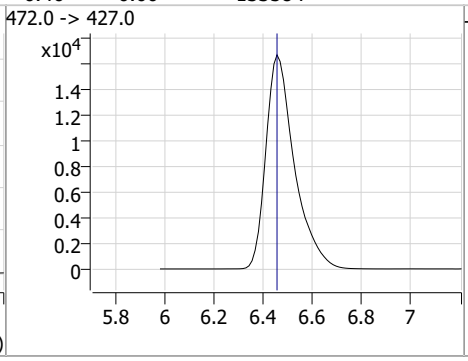


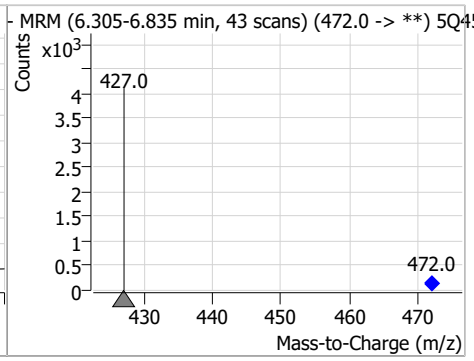




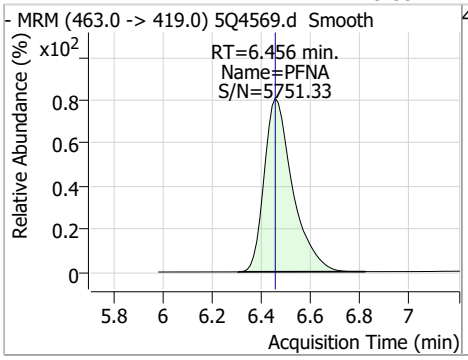
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.33	6.46	0.00	133584				

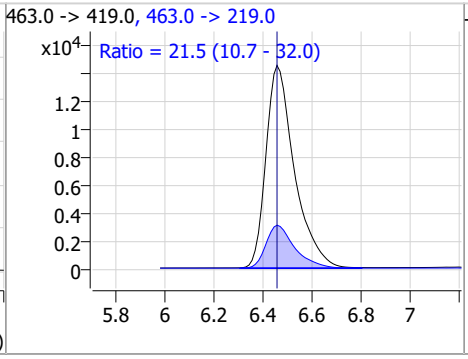


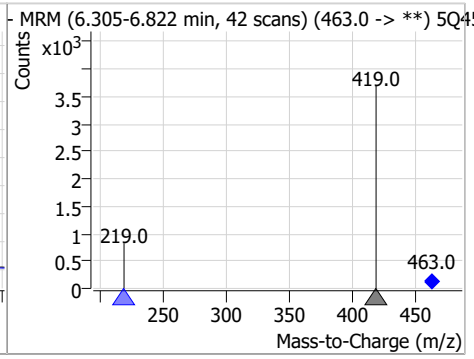




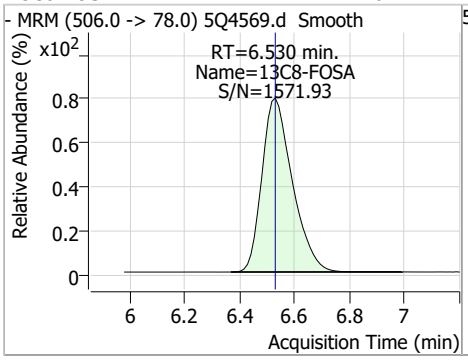
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.33	6.46	0.00	115669	463.0 -> 219.0	21.5	10.7	32.0

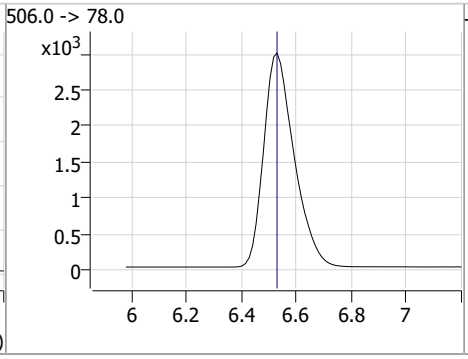


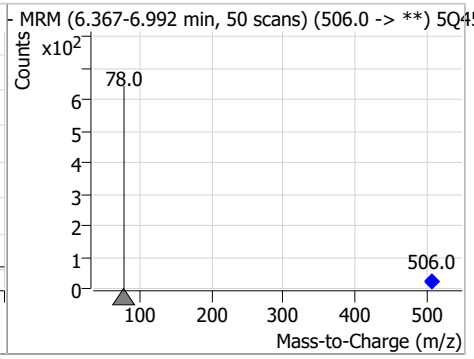




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.21	6.53	0.00	22934				

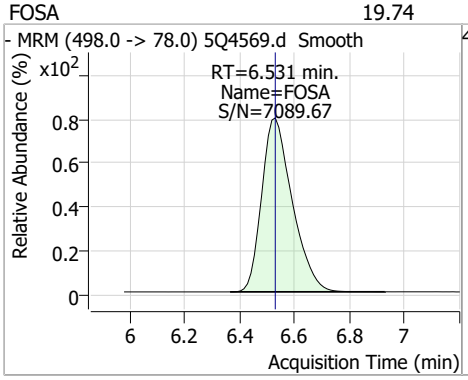


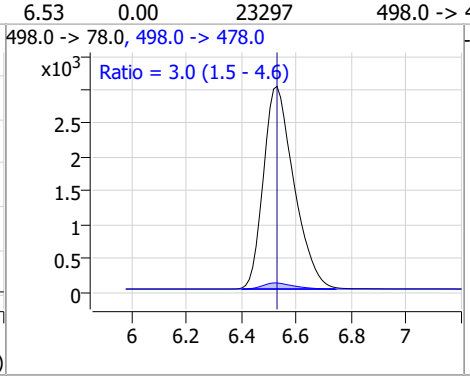


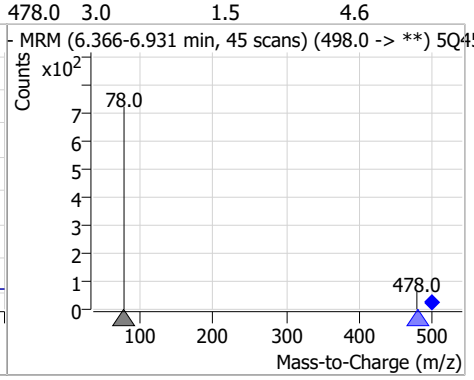


Perfluorinated Compounds by LC/MS/MS

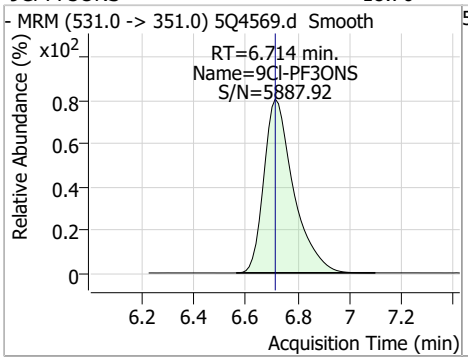
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.74	6.53	0.00	23297	498.0 -> 478.0	3.0	1.5	4.6

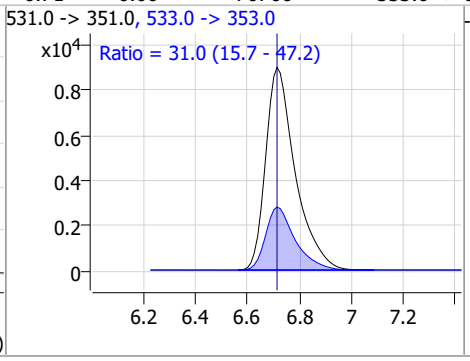


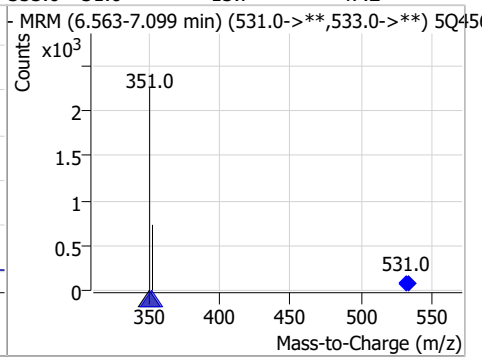




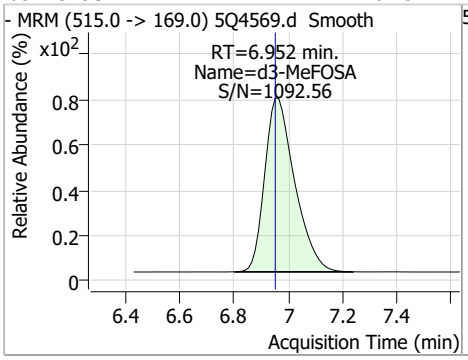
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.70	6.71	0.00	70766	533.0 -> 353.0	31.0	15.7	47.2

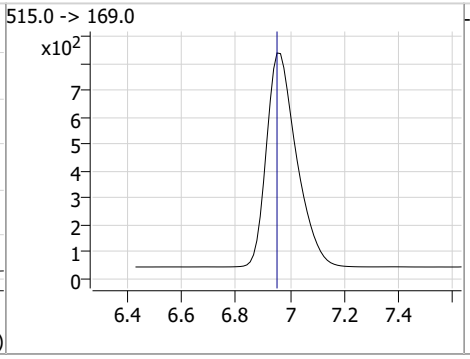


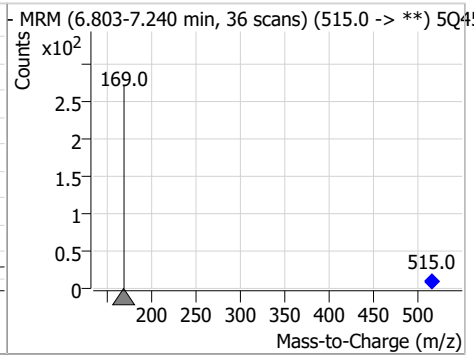




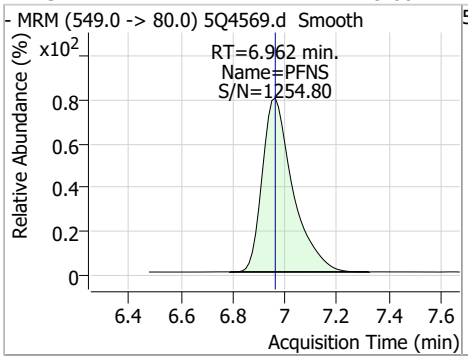
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.25	6.95	0.00	6167				

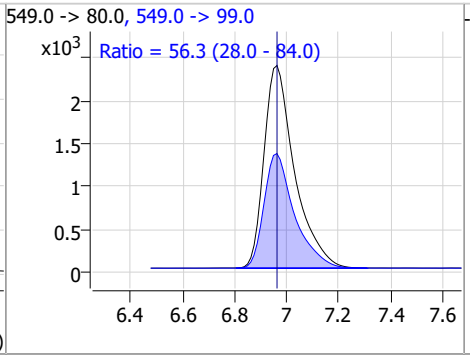


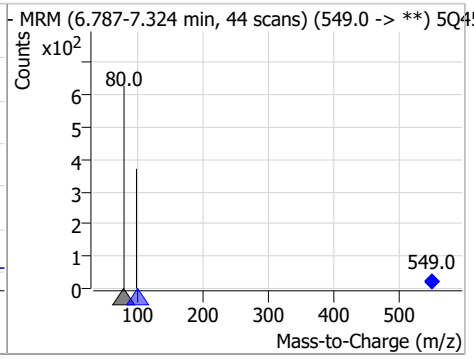




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.88	6.96	0.00	19340	549.0 -> 99.0	56.3	28.0	84.0

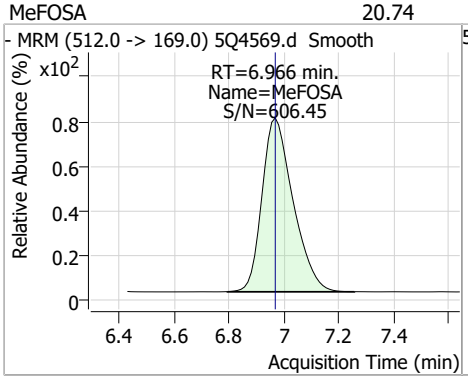


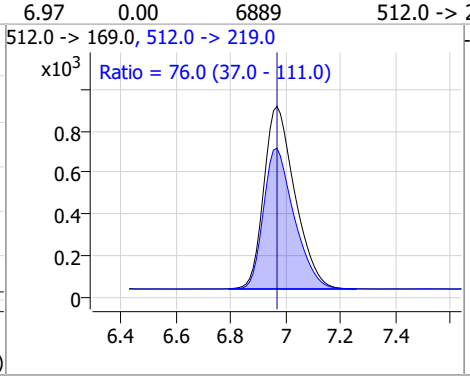


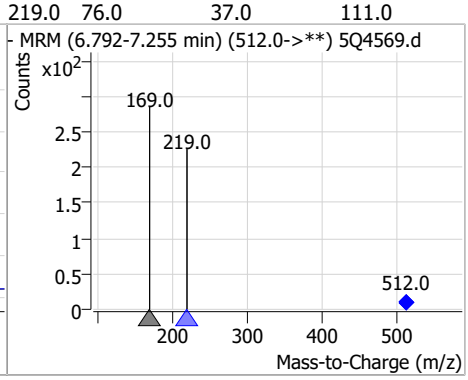


Perfluorinated Compounds by LC/MS/MS

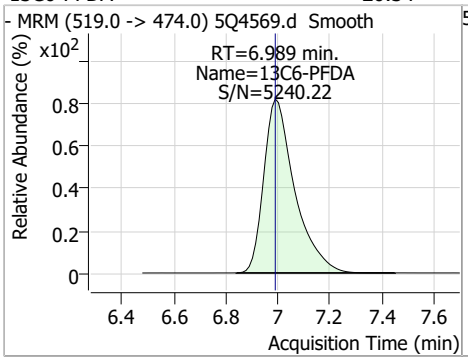
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.74	6.97	0.00	6889	512.0 -> 219.0	76.0	37.0	111.0

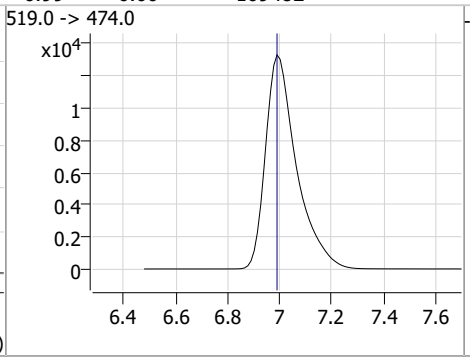


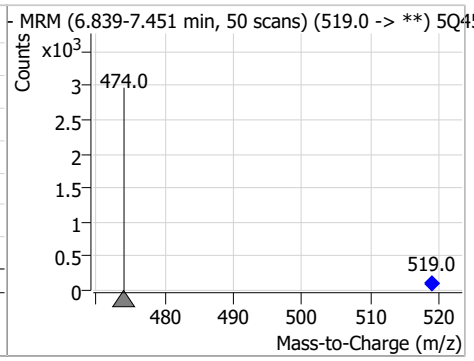




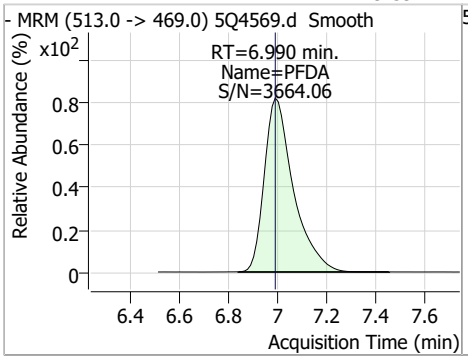
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.34	6.99	0.00	109482				

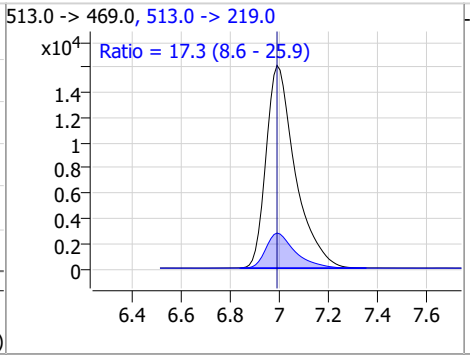


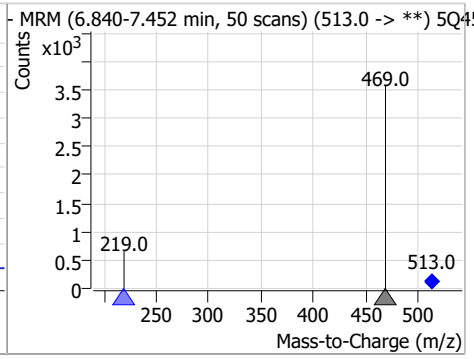




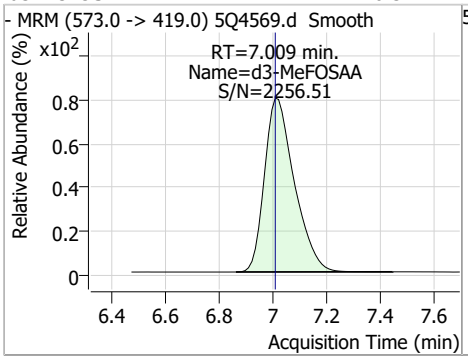
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.59	6.99	0.00	131757	513.0 -> 219.0	17.3	8.6	25.9

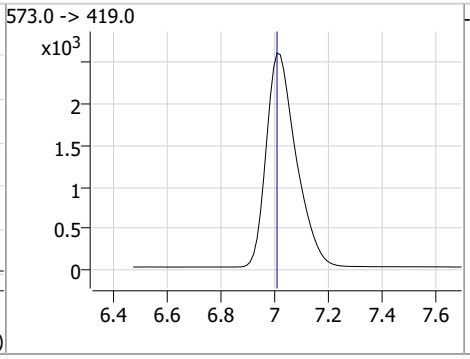


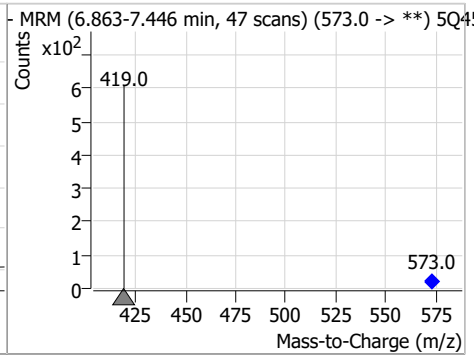




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.31	7.01	0.00	19737				

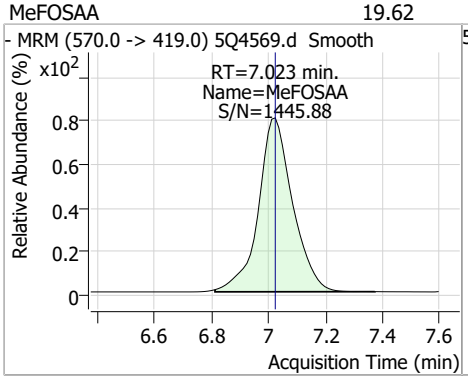


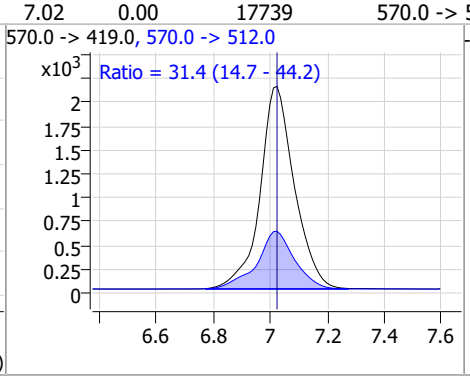


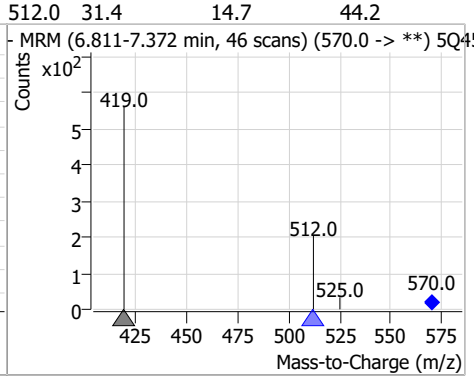


Perfluorinated Compounds by LC/MS/MS

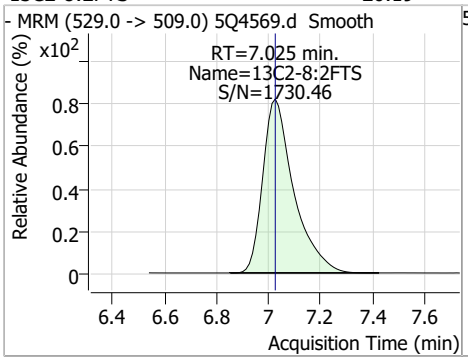
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.62	7.02	0.00	17739	570.0 -> 512.0	31.4	14.7	44.2

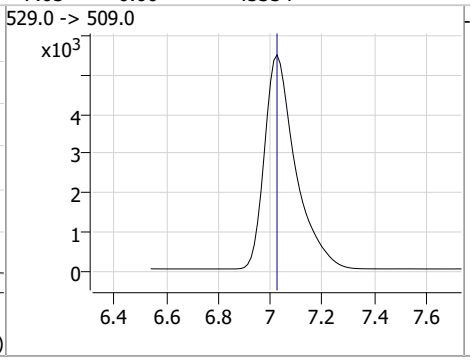


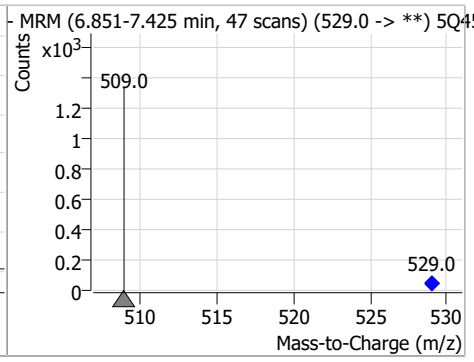




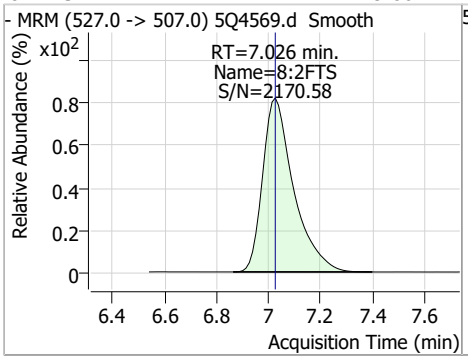
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.19	7.03	0.00	45354				

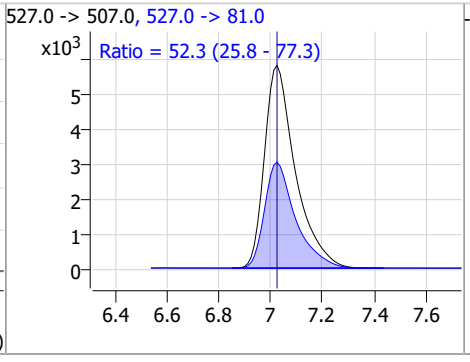


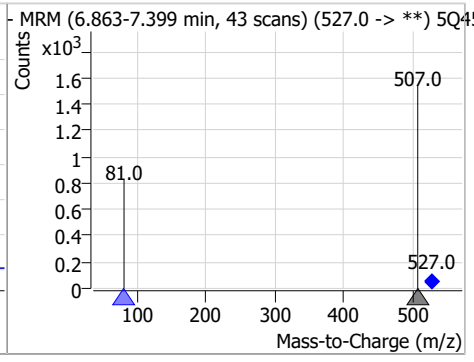




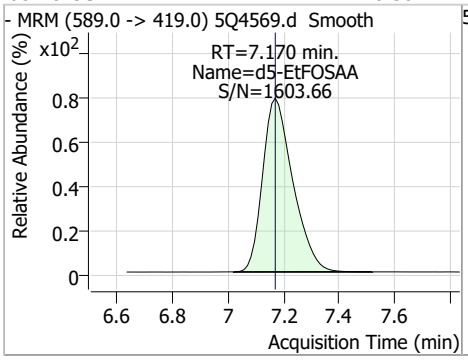
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.86	7.03	0.00	48005	527.0 -> 81.0	52.3	25.8	77.3

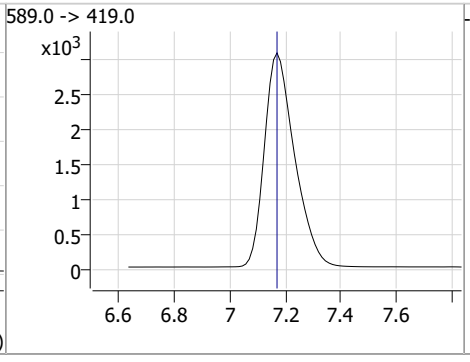


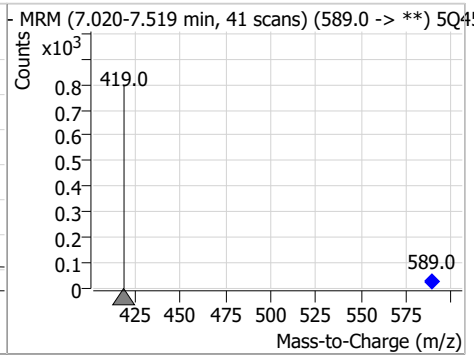




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.50	7.17	0.00	22983				

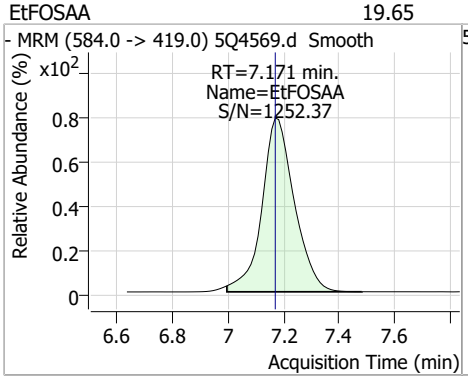


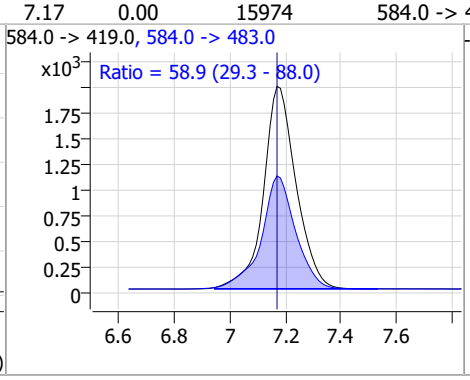


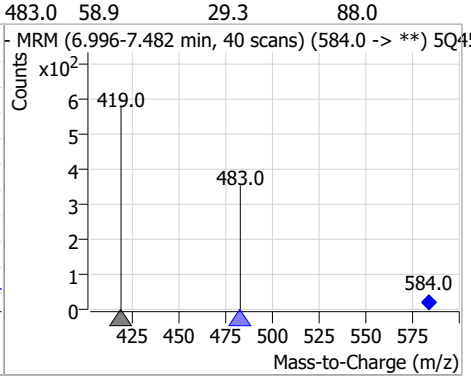


Perfluorinated Compounds by LC/MS/MS

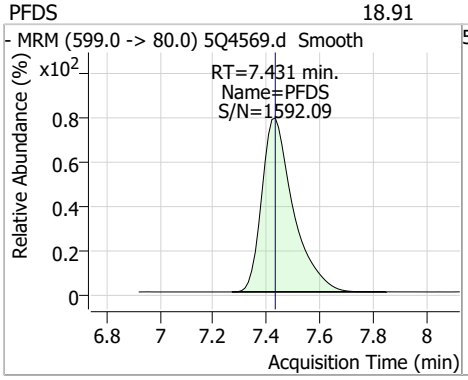
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.65	7.17	0.00	15974	584.0 -> 483.0	58.9	29.3	88.0

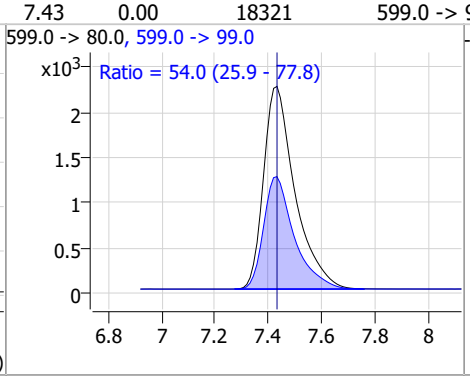


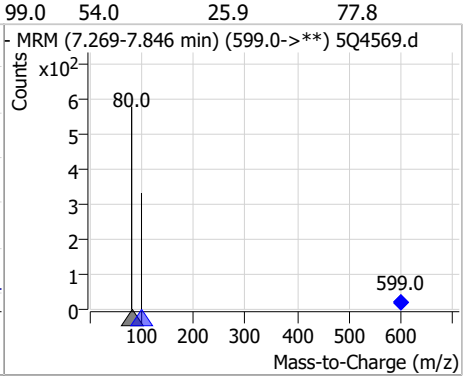




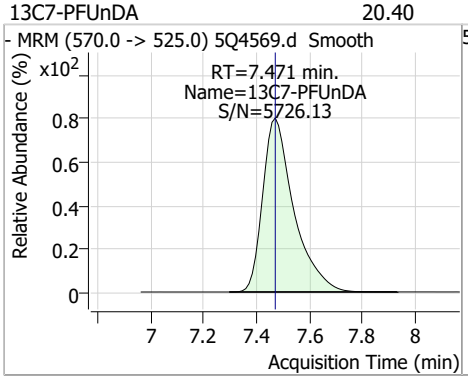
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.91	7.43	0.00	18321	599.0 -> 99.0	54.0	25.9	77.8

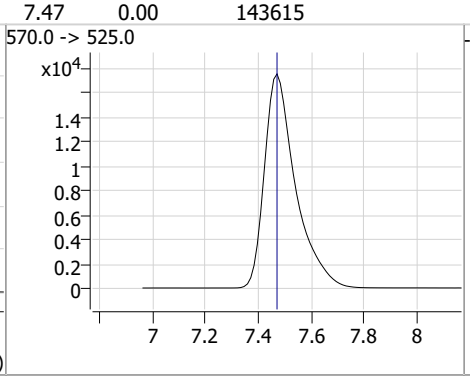


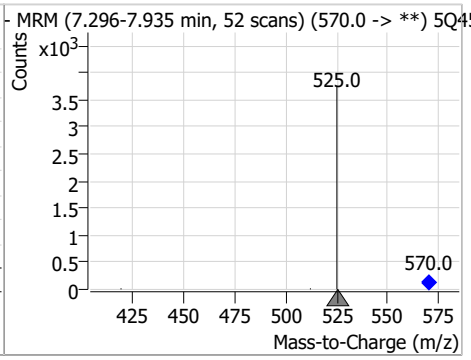




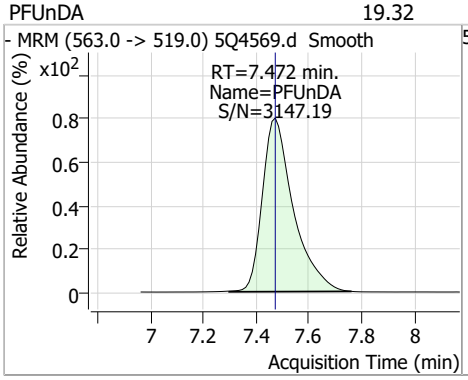
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.40	7.47	0.00	143615				

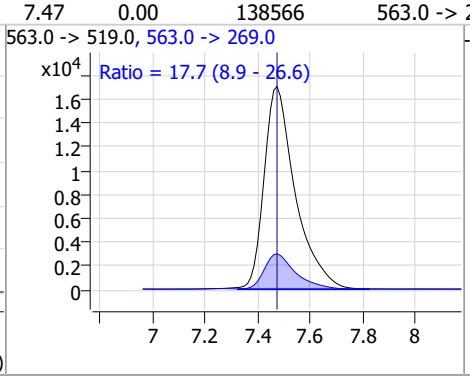


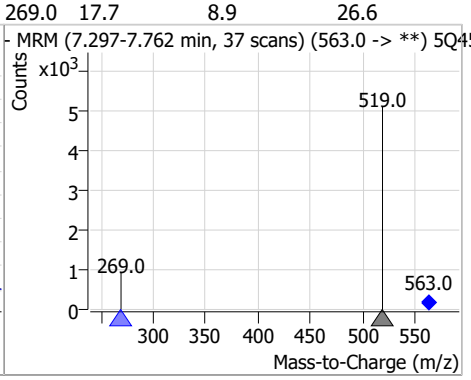




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.32	7.47	0.00	138566	563.0 -> 269.0	17.7	8.9	26.6

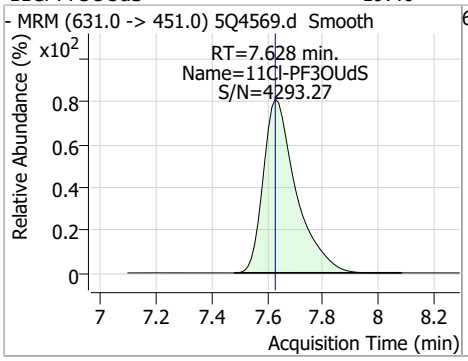


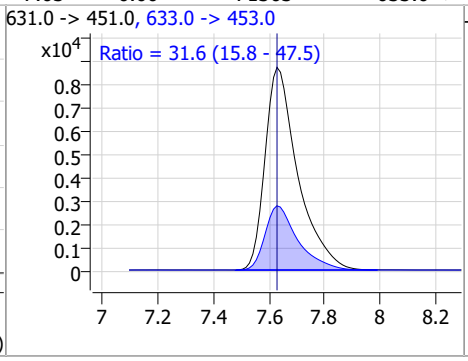


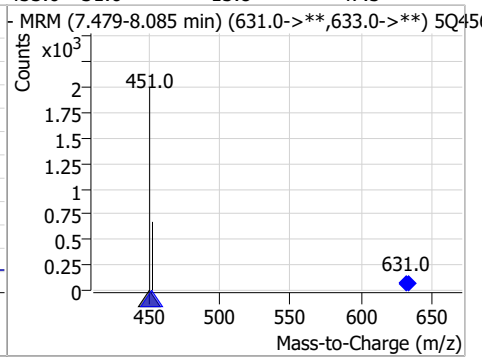


Perfluorinated Compounds by LC/MS/MS

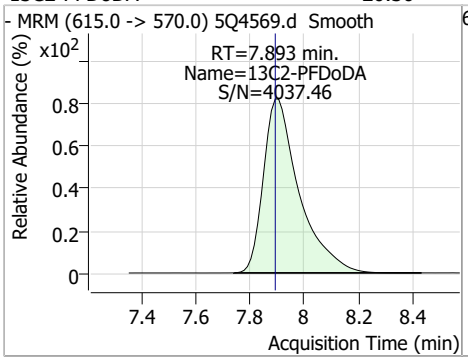
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.46	7.63	0.00	71363	633.0 -> 453.0	31.6	15.8	47.5

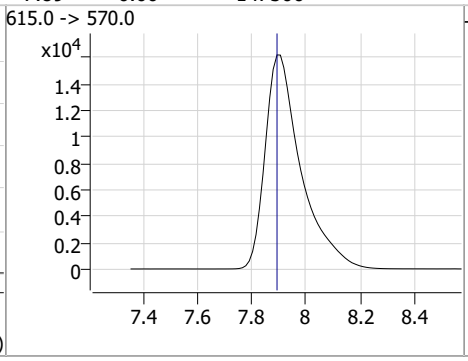


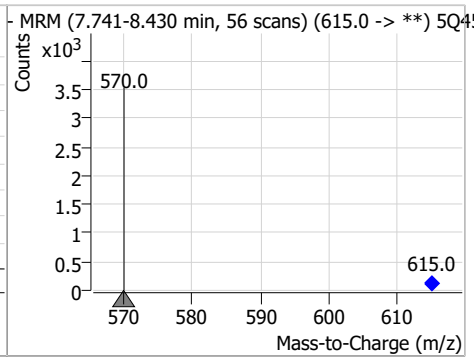




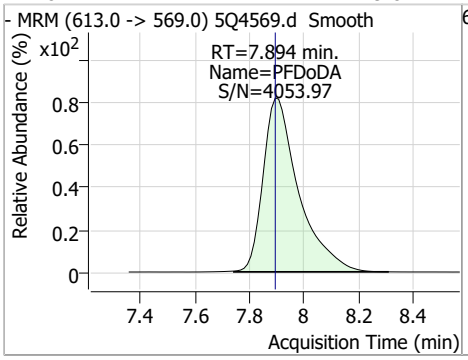
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.36	7.89	0.00	147566				

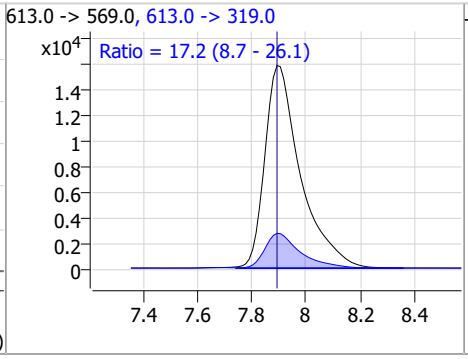


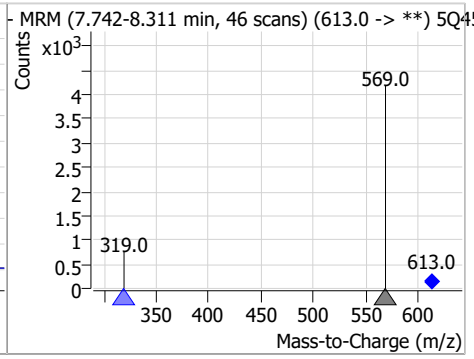




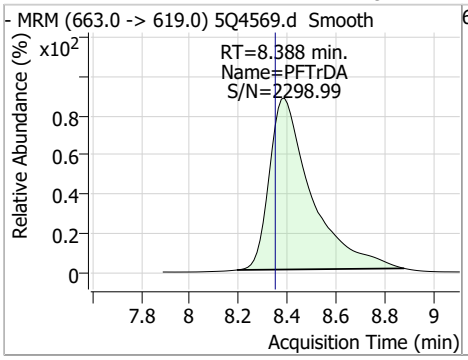
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.81	7.89	0.00	143380	613.0 -> 319.0	17.2	8.7	26.1

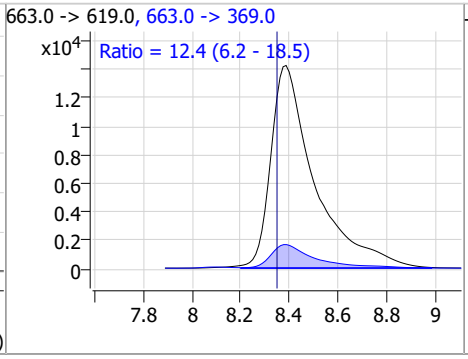


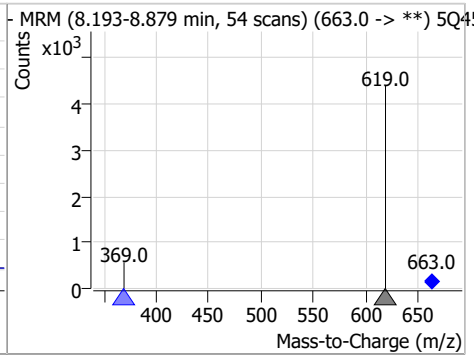




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.42	8.39	0.04	168029	663.0 -> 369.0	12.4	6.2	18.5

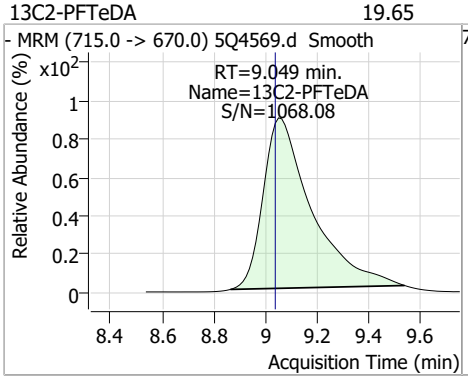


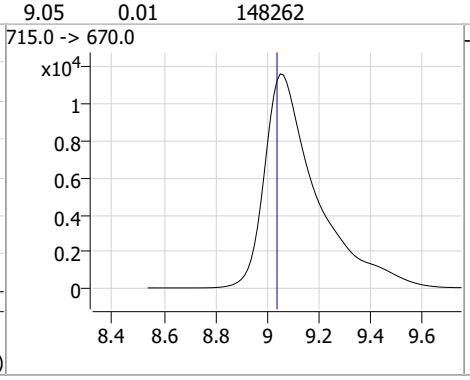


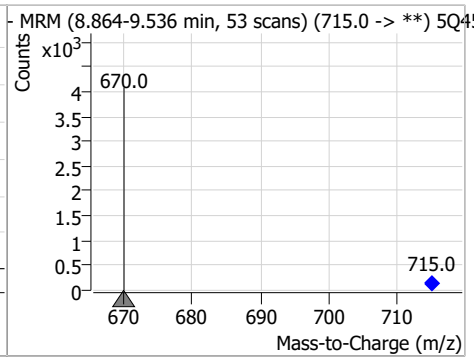


Perfluorinated Compounds by LC/MS/MS

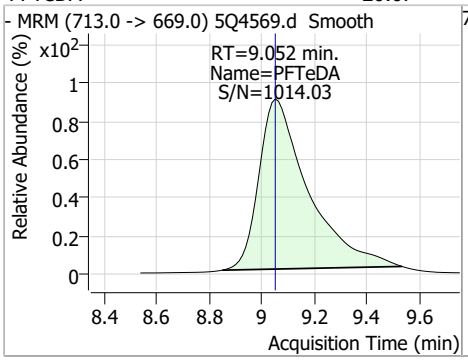
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.65	9.05	0.01	148262				

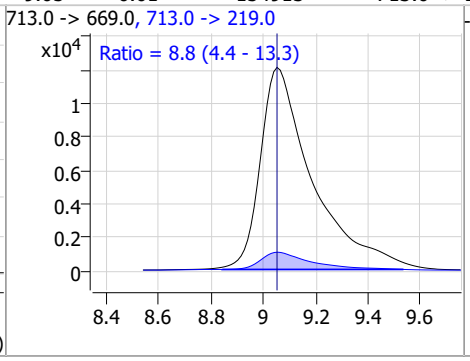


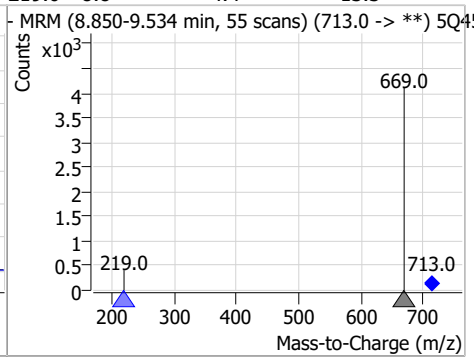




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.07	9.05	0.01	154913	713.0 -> 219.0	8.8	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4569.D
Injection Time: 09/14/22 13:45
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4570.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 2:00:27 PM
Sample Name : cc71-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

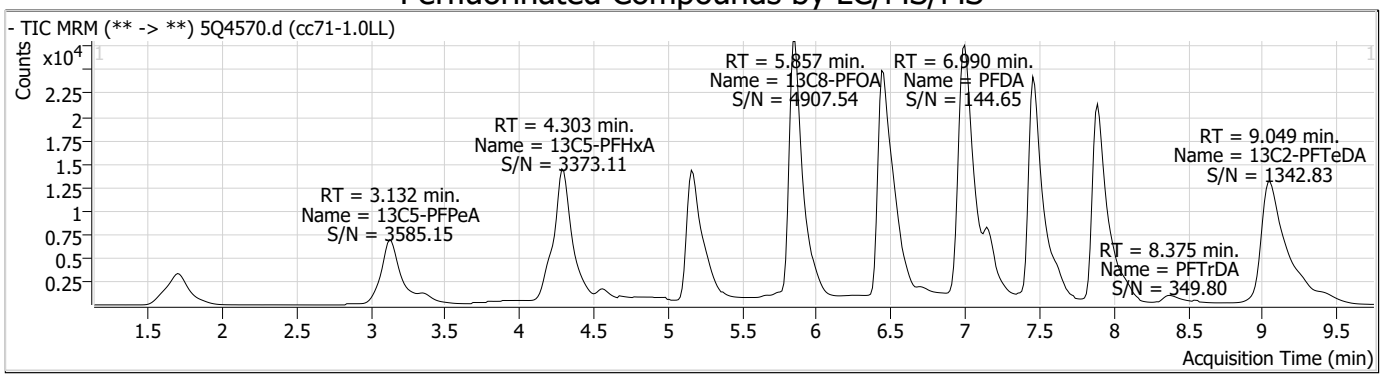
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35958	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57708	20.00	µg/L	0.000
M5-PFHxA	4.303	318.0 -> 273.0	86728	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	81392	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	121038	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	132369	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	110268	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	143185	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	146510	20.00	µg/L	0.000
M2-PFTeDA	9.049	715.0 -> 670.0	143716	20.00	µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	22676	20.00	µg/L	0.000
M3-PFBS	3.362	302.0 -> 99.0	6579	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	6951	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12915	20.00	µg/L	0.000
M2-4:2FTS	4.212	329.0 -> 309.0	27250	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	43003	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	42218	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	20196	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6583	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6439	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22731	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.212	329.0 -> 309.0	27250	18.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43003	19.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C2-8:2FTS	7.025	529.0 -> 509.0	42218	18.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%		
13C2-PFDoDA	7.893	615.0 -> 570.0	146510	20.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-PFTeDA	9.049	715.0 -> 670.0	143716	19.05	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C3-PFBS	3.362	302.0 -> 99.0	6579	20.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C3-PFHxS	5.206	402.0 -> 99.0	6951	20.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C4-PFBA	1.700	217.0 -> 172.0	35958	20.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	81392	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFHxA	4.303	318.0 -> 273.0	86728	19.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	57708	19.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C6-PFDA	6.989	519.0 -> 474.0	110268	20.48	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

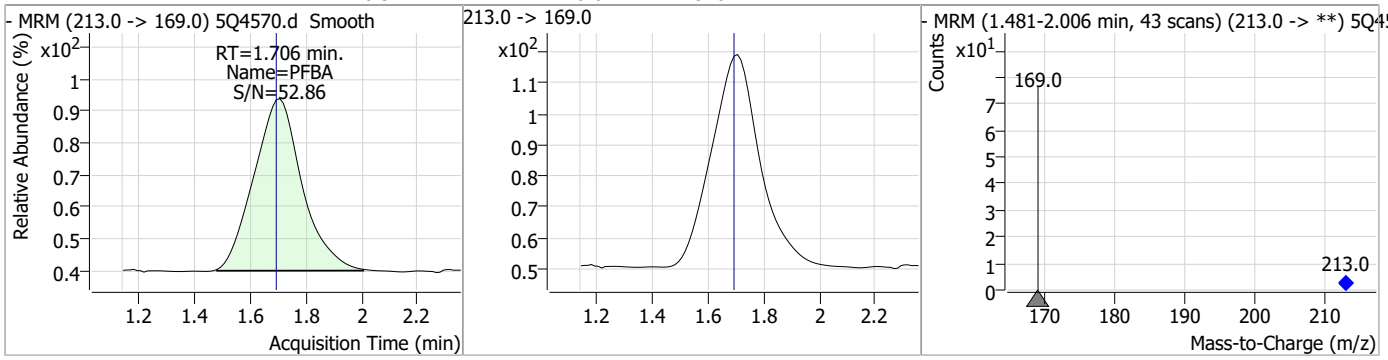
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
13C7-PFUnDA	7.471	570.0 -> 525.0	143185	20.33	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
13C8-FOSA	6.530	506.0 -> 78.0	22676	19.98	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C8-PFOA	5.857	421.0 -> 376.0	121038	20.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C8-PFOS	6.440	507.0 -> 99.0	12915	19.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%			
13C9-PFNA	6.455	472.0 -> 427.0	132369	20.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	20196	20.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6583	19.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	6439	21.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22731	20.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
Target Compounds							**QValue**
4:2FTS	4.214	327.0 -> 307.0	1557	1.02	µg/L		93
6:2FTS	5.843	427.0 -> 407.0	2351	1.03	µg/L		94
8:2FTS	7.026	527.0 -> 507.0	2274	1.01	µg/L		93
EtFOSAA	7.171	584.0 -> 419.0	790	0.98	µg/L		97
FOSA	6.531	498.0 -> 78.0	1206	1.03	µg/L		98
MeFOSAA	7.023	570.0 -> 419.0	889	0.96	µg/L		99
PFBA	1.706	213.0 -> 169.0	820	0.97	µg/L		100
PFBS	3.367	299.0 -> 80.0	932	0.94	µg/L		100
PFDA	6.990	513.0 -> 469.0	6705	0.99	µg/L		98
PFDoDA	7.894	613.0 -> 569.0	6931	0.96	µg/L		99
PFDS	7.431	599.0 -> 80.0	807	0.84	µg/L		96
PFHpA	5.164	363.0 -> 319.0	5128	0.96	µg/L		98
PFHpS	5.867	449.0 -> 80.0	949	0.98	µg/L		99
PFHxA	4.304	313.0 -> 269.0	4051	0.96	µg/L		99
PFHxS	5.208	399.0 -> 80.0	954	0.92	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	5527	0.93	µg/L		99
PFNS	6.962	549.0 -> 80.0	908	0.95	µg/L		98
PFOA	5.858	413.0 -> 369.0	6951	0.95	µg/L		100
PFOS	6.442	499.0 -> 80.0	1124	0.99	µg/L	m	88
PFPeA	3.134	263.0 -> 219.0	2776	0.97	µg/L		100
PFPeS	4.410	349.0 -> 80.0	721	0.94	µg/L		93
PFTeDA	9.052	713.0 -> 669.0	7991	1.07	µg/L		99
PFTrDA	8.375	663.0 -> 619.0	8528	0.99	µg/L		95
PFUnDA	7.472	563.0 -> 519.0	6701	0.94	µg/L		98
11Cl-PF3OUdS	7.628	631.0 -> 451.0	3275	0.90	µg/L		98
9Cl-PF3ONS	6.714	531.0 -> 351.0	3341	0.88	µg/L		99
ADONA	5.275	377.0 -> 251.0	6596	0.92	µg/L		99
HFPO-DA	4.574	329.0 -> 169.0	1033	0.93	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	342	0.99	µg/L		94
4-PFECHS	5.753	461.0 -> 381.0	2136	0.98	µg/L		92
FBSA	4.356	298.0 -> 78.0	1436	1.00	µg/L		100
FHxSA	5.687	398.0 -> 78.0	1261	1.02	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

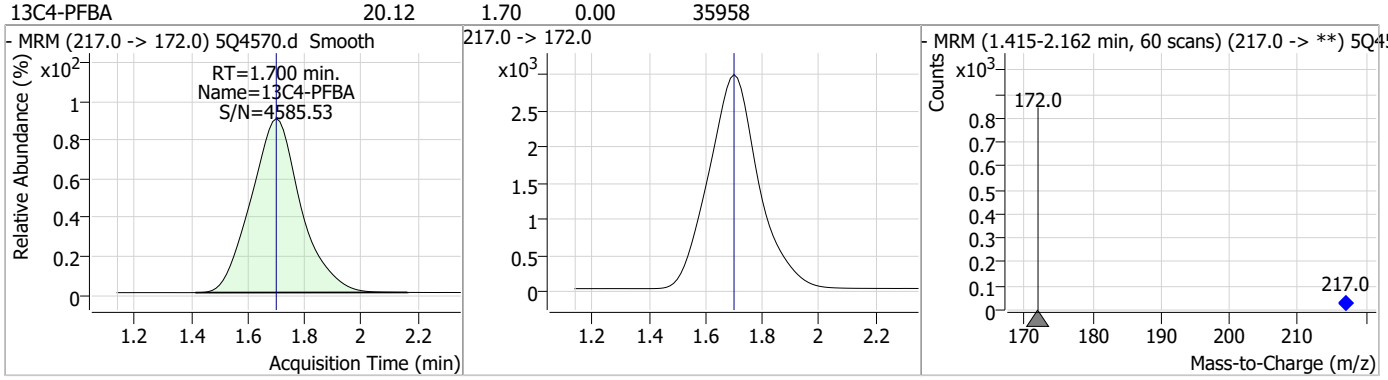
Perfluorinated Compounds by LC/MS/MS



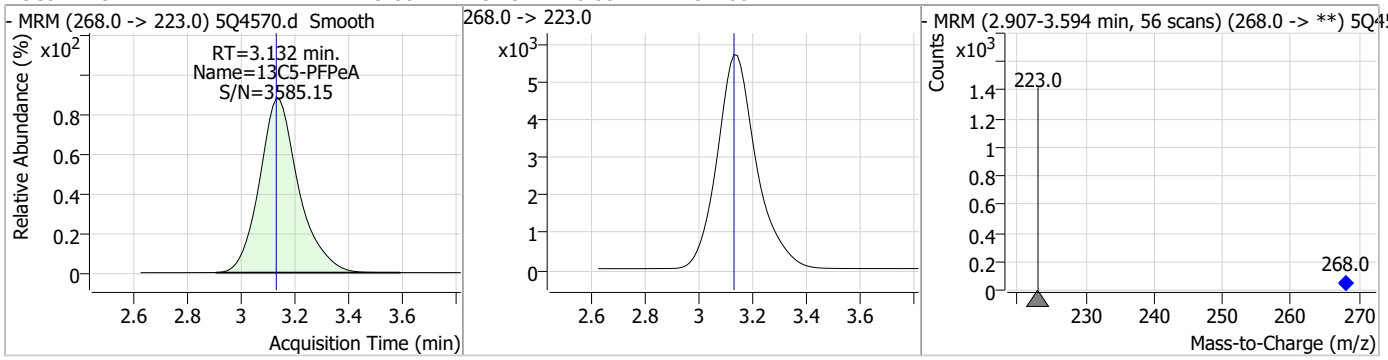
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.97	1.71	0.01	820				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.12	1.70	0.00	35958				

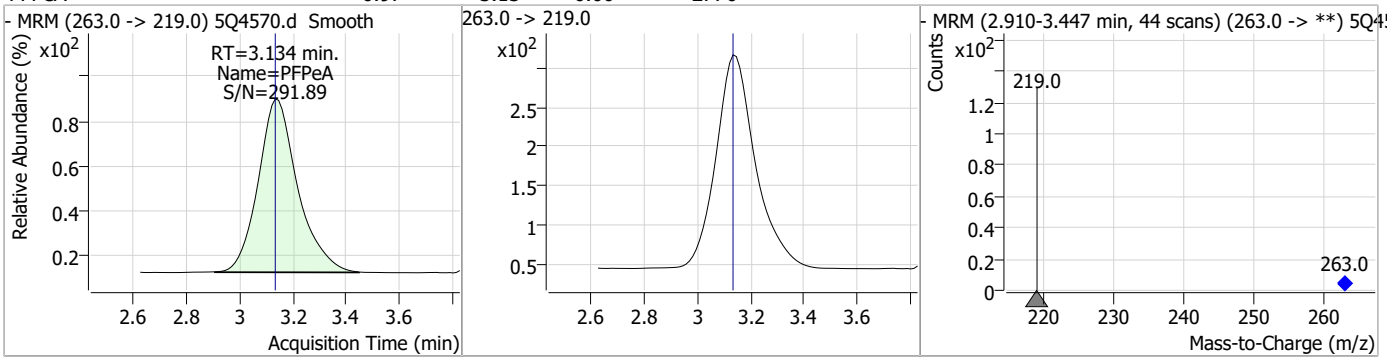


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.86	3.13	0.00	57708				

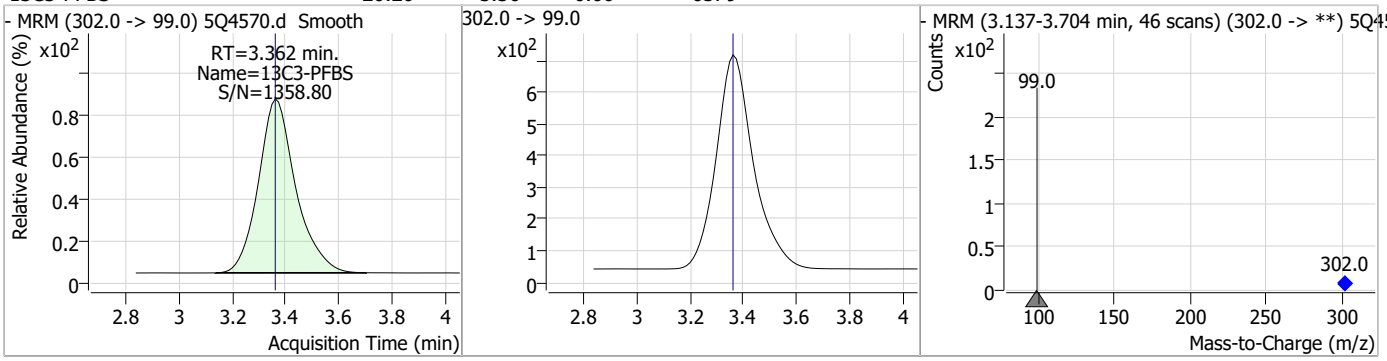


Perfluorinated Compounds by LC/MS/MS

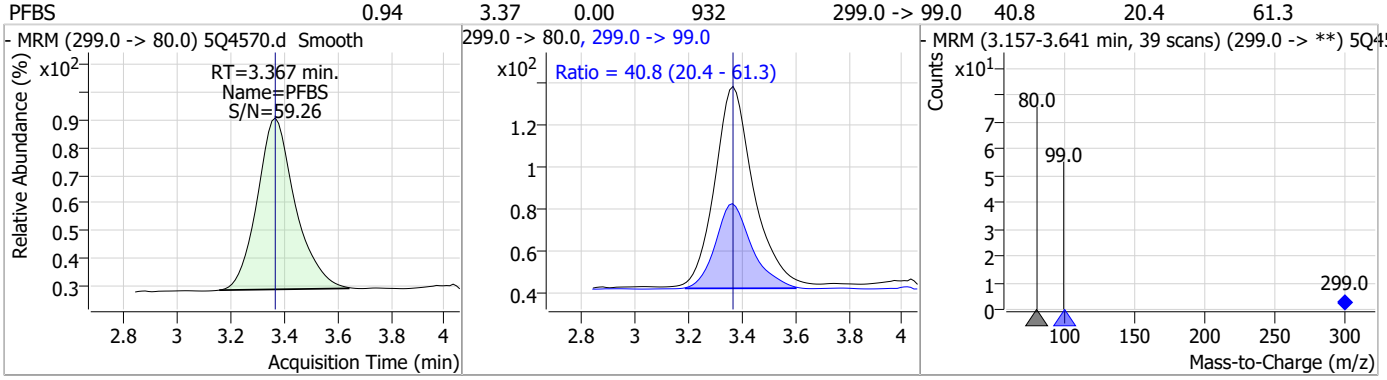
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.97	3.13	0.00	2776				



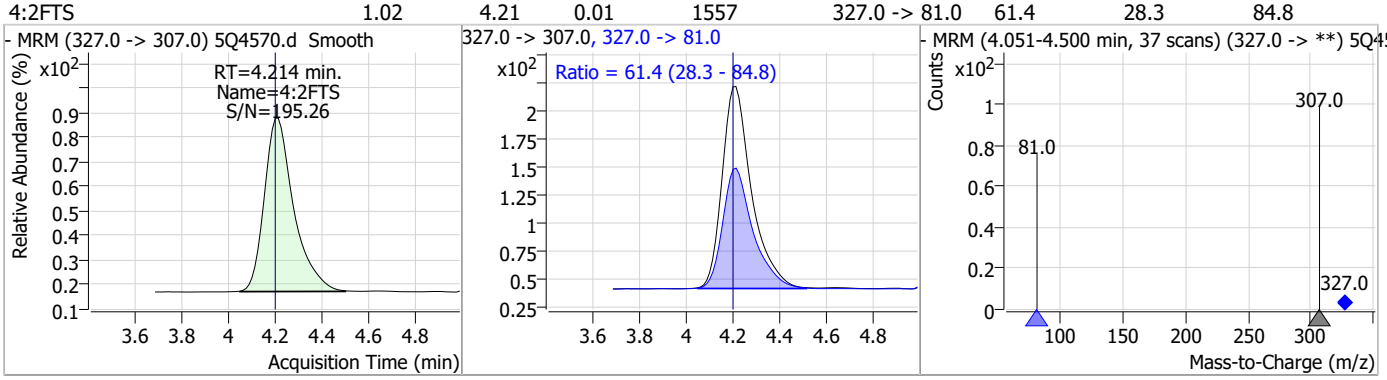
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.20	3.36	0.00	6579				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.94	3.37	0.00	932	299.0 -> 99.0	40.8	20.4	61.3

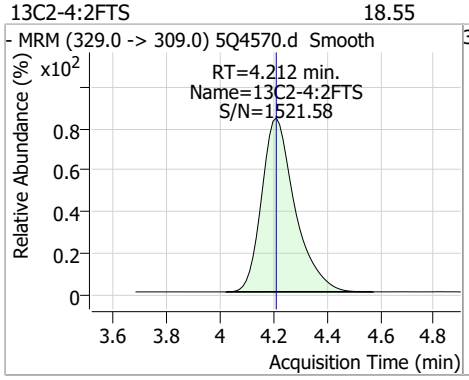


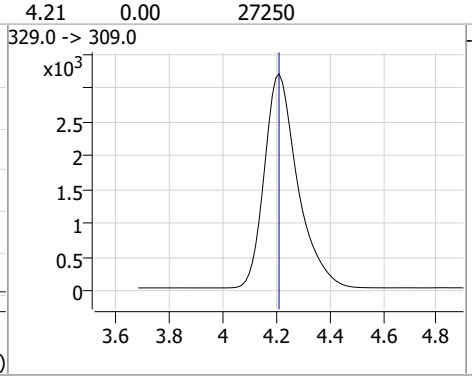
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.02	4.21	0.01	1557	327.0 -> 81.0	61.4	28.3	84.8

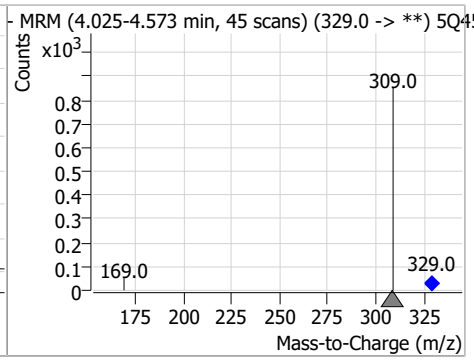


Perfluorinated Compounds by LC/MS/MS

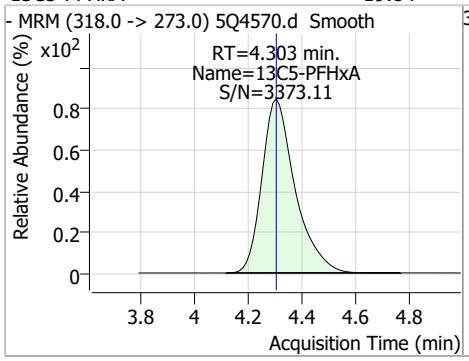
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.55	4.21	0.00	27250				

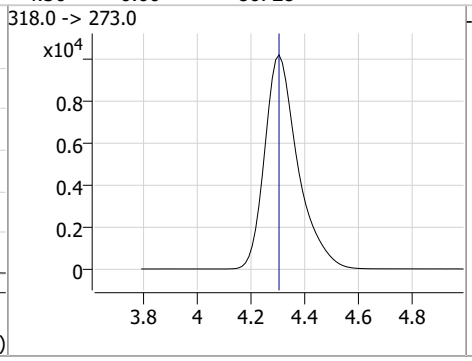


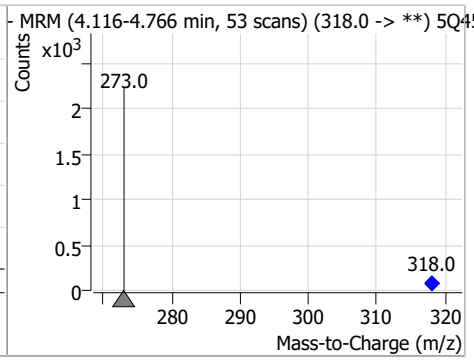




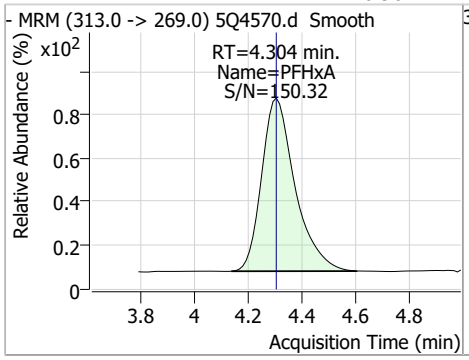
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.84	4.30	0.00	86728				

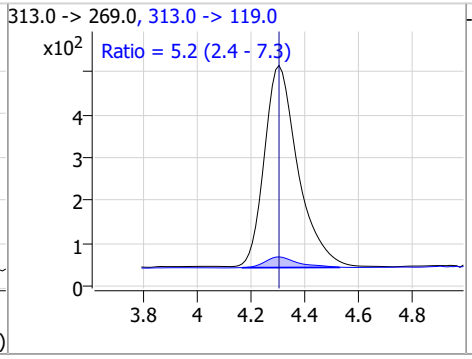


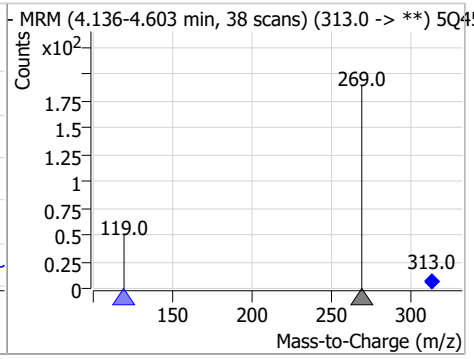




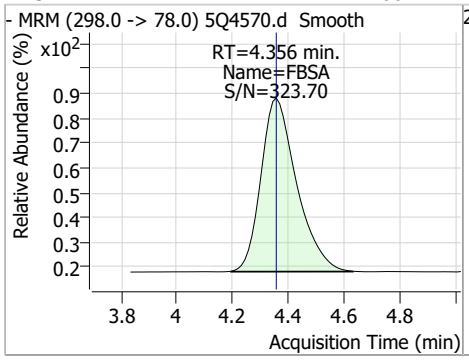
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.96	4.30	0.00	4051	313.0 -> 119.0	5.2	2.4	7.3

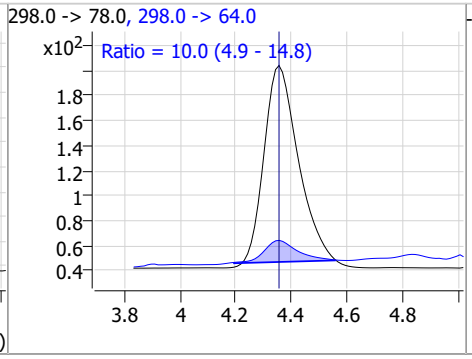


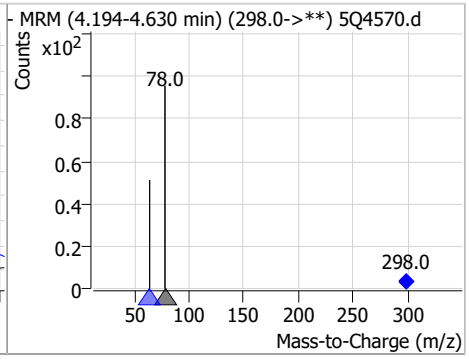




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.00	4.36	0.00	1436	298.0 -> 64.0	10.0	4.9	14.8

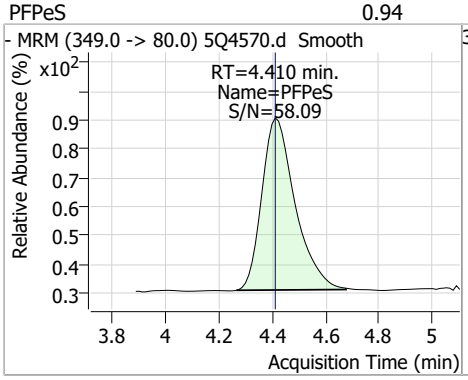


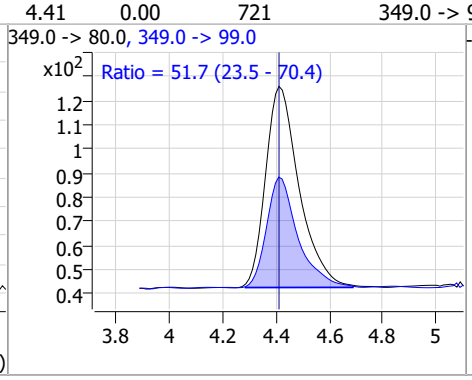


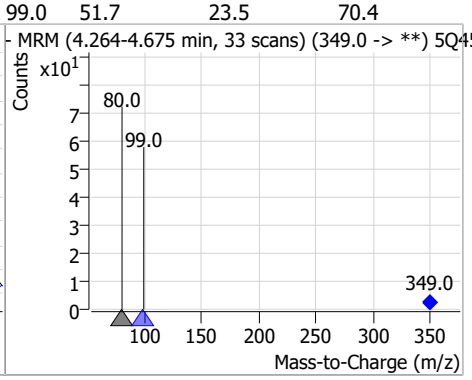


Perfluorinated Compounds by LC/MS/MS

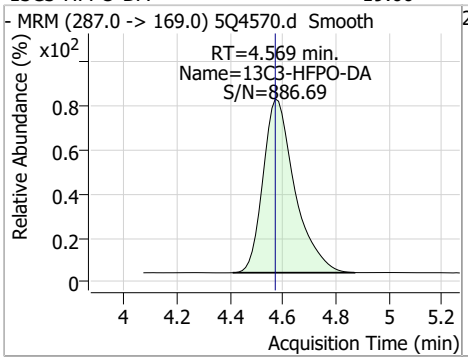
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.94	4.41	0.00	721	349.0 -> 99.0	51.7	23.5	70.4

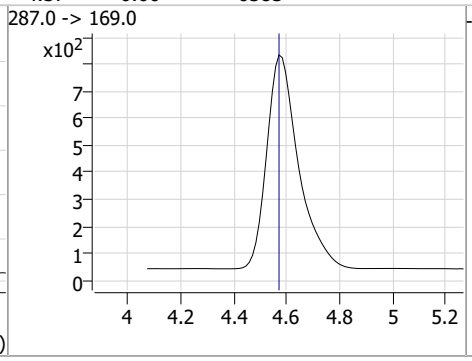


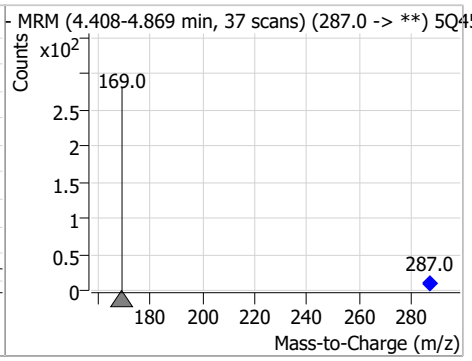




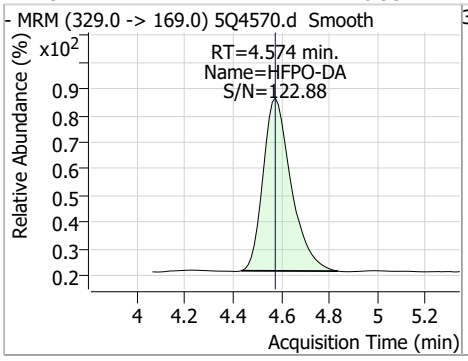
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.60	4.57	0.00	6583				

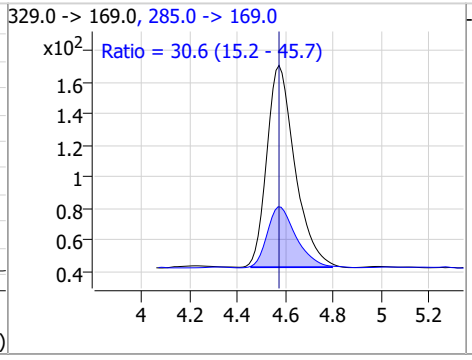


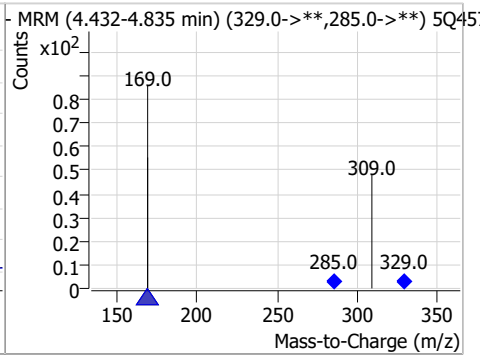




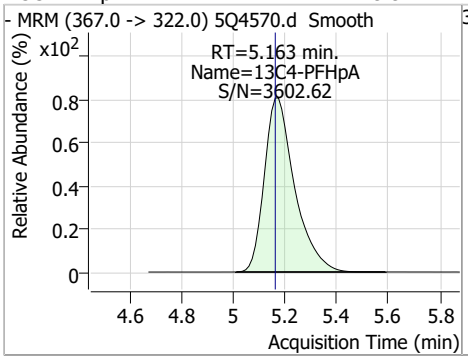
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.93	4.57	0.00	1033	285.0 -> 169.0	30.6	15.2	45.7

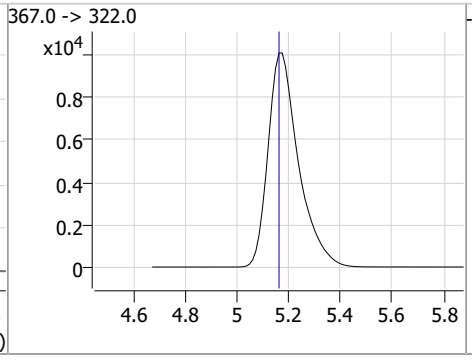


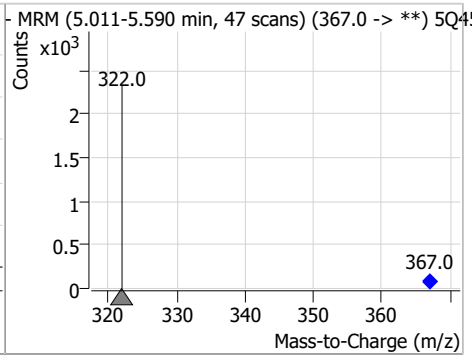




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.94	5.16	0.00	81392				

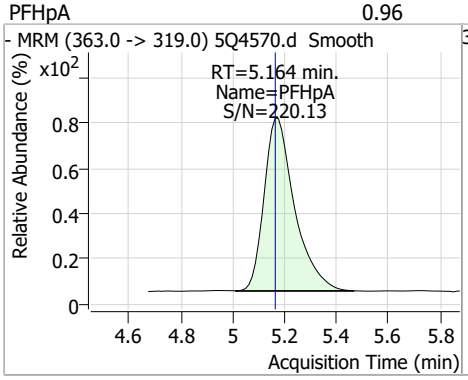


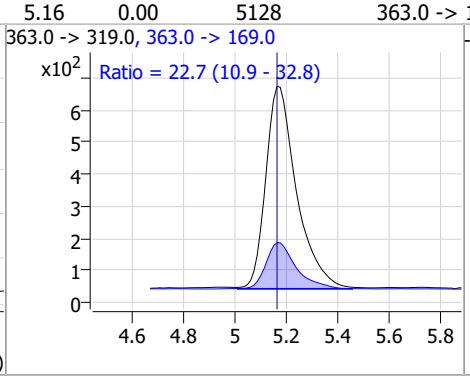


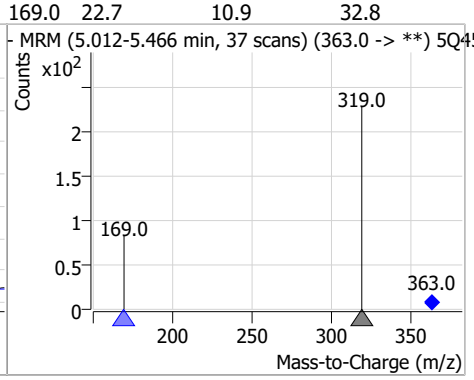


Perfluorinated Compounds by LC/MS/MS

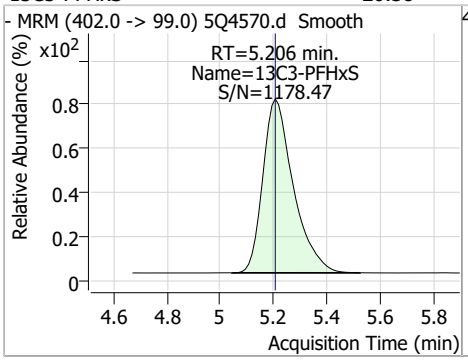
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.96	5.16	0.00	5128	363.0 -> 169.0	22.7	10.9	32.8

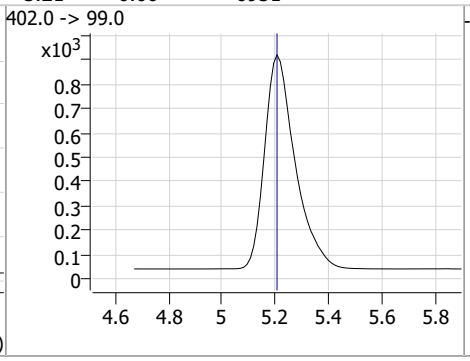


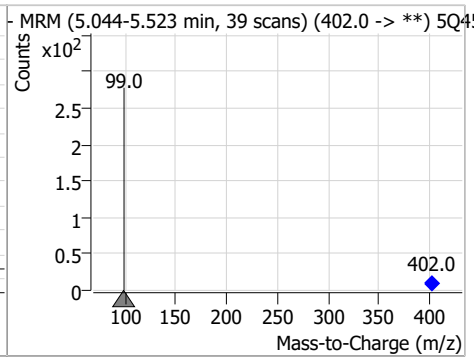




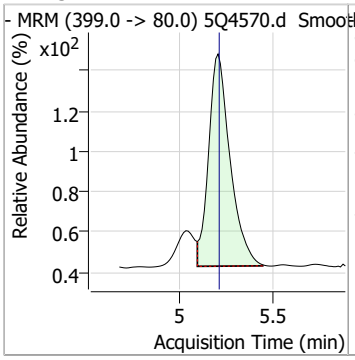
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.38	5.21	0.00	6951				

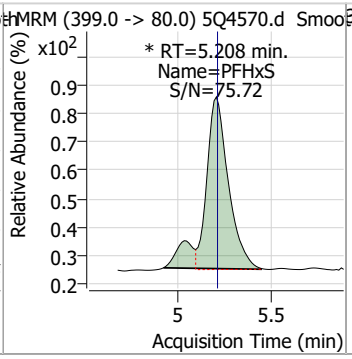


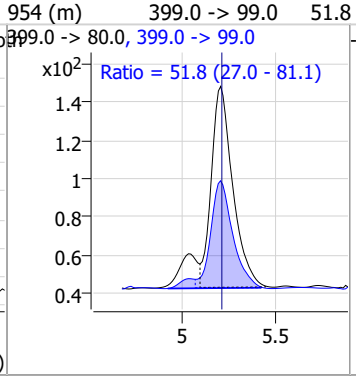


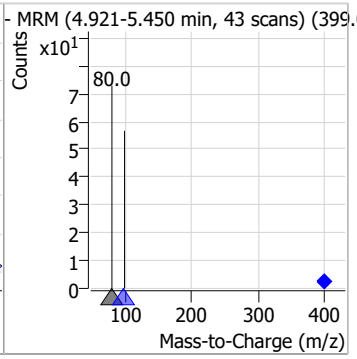


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.92	5.21	0.00	954 (m)	399.0 -> 99.0	51.8	27.0	81.1

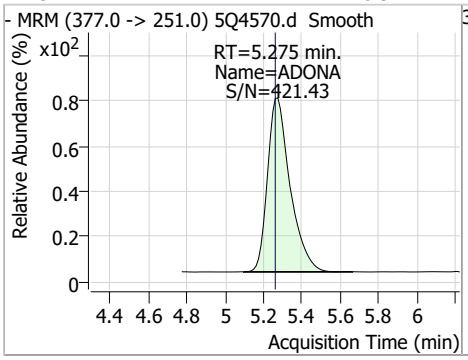


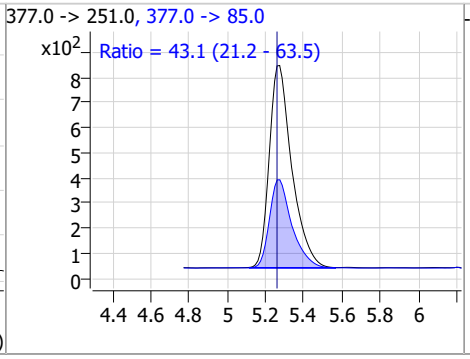


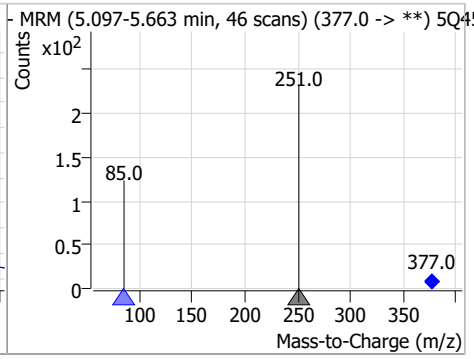




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.92	5.27	0.01	6596	377.0 -> 85.0	43.1	21.2	63.5

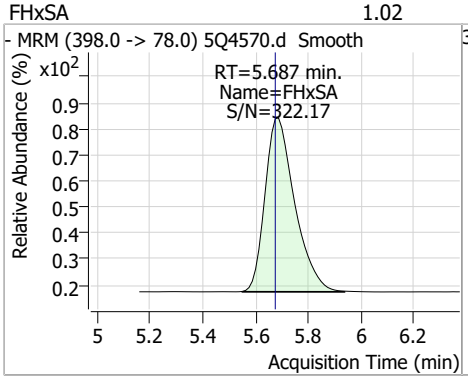


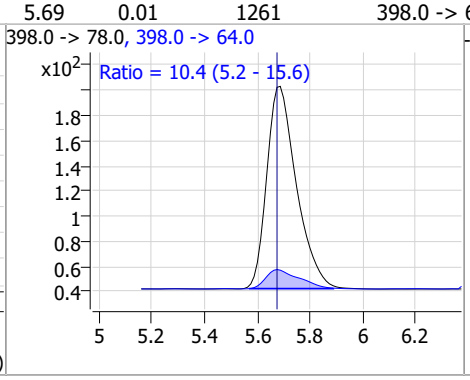


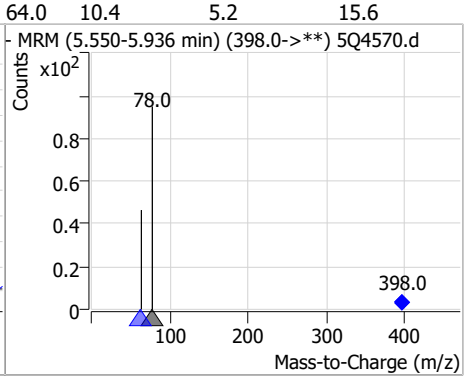


Perfluorinated Compounds by LC/MS/MS

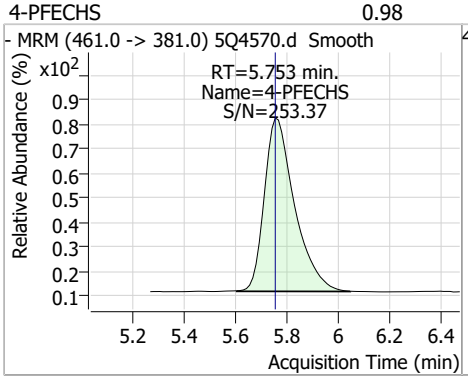
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.02	5.69	0.01	1261	398.0 -> 64.0	10.4	5.2	15.6

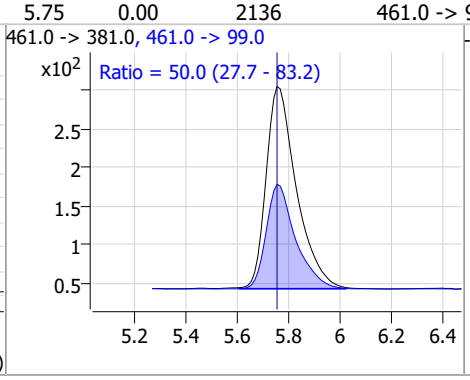


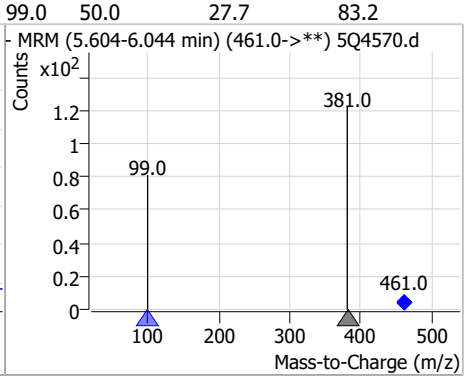




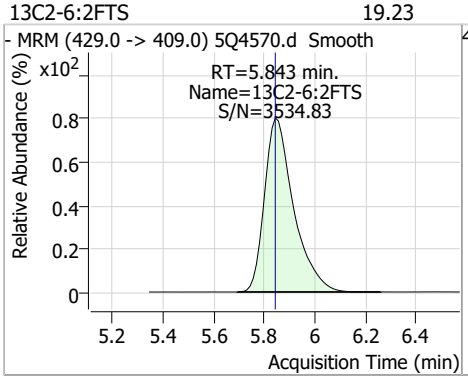
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.98	5.75	0.00	2136	461.0 -> 99.0	50.0	27.7	83.2

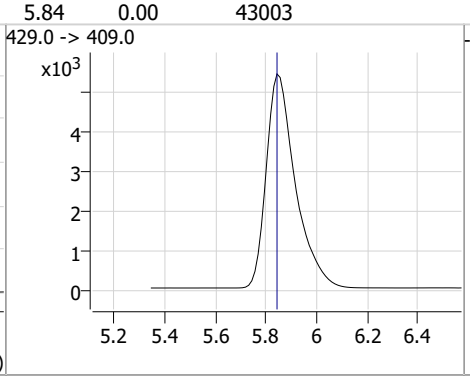


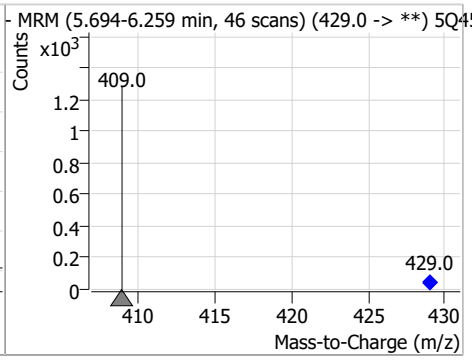




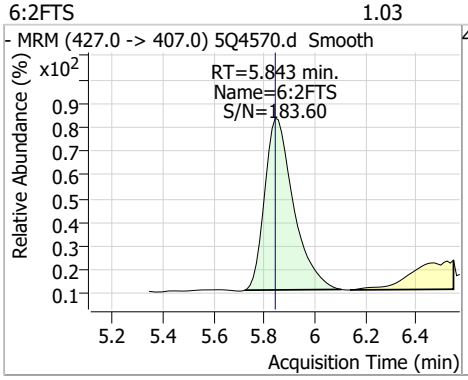
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.23	5.84	0.00	43003				

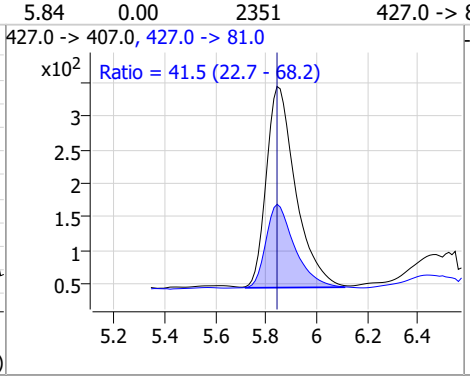


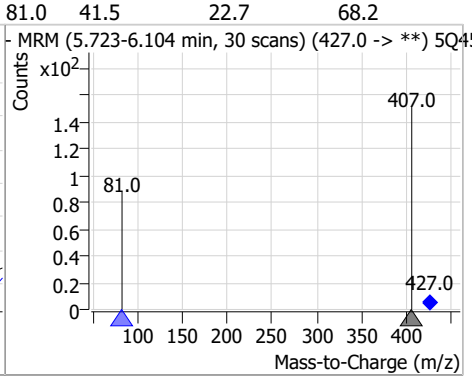




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.03	5.84	0.00	2351	427.0 -> 81.0	41.5	22.7	68.2

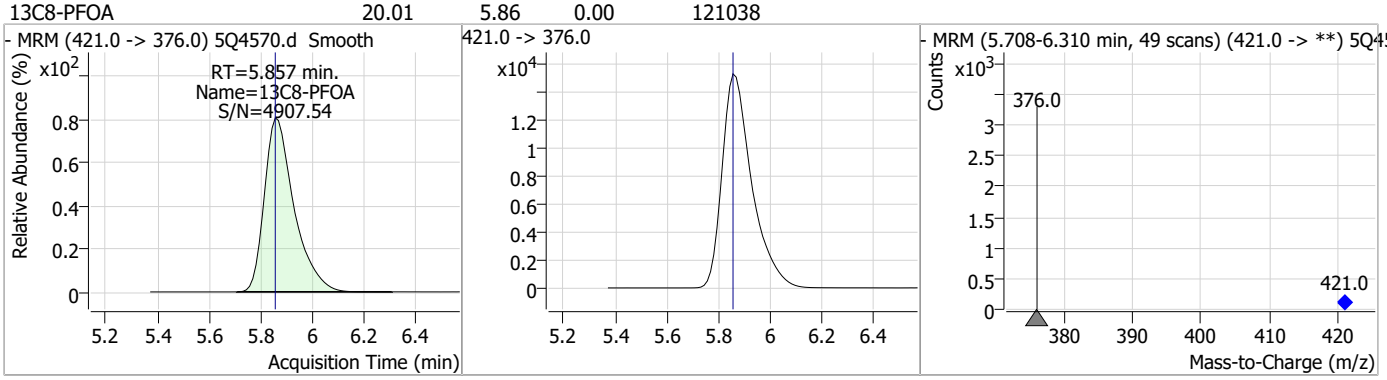




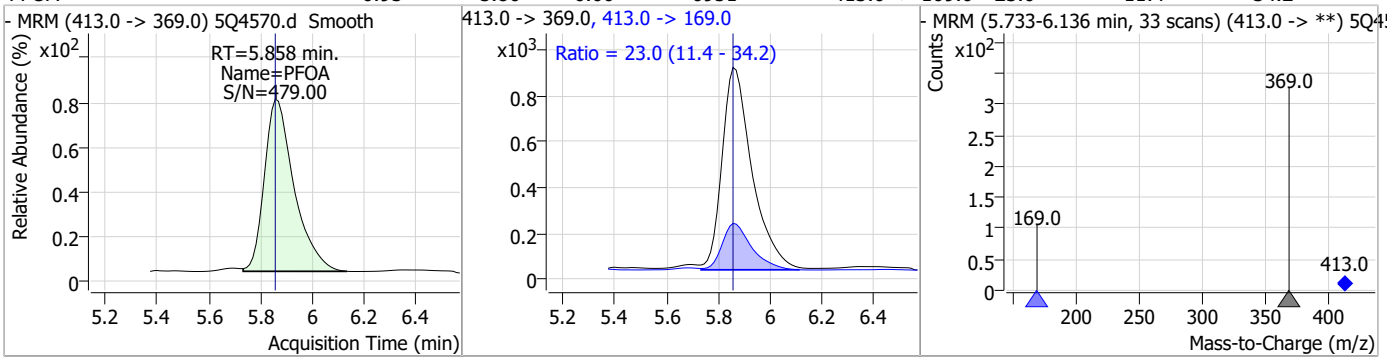


Perfluorinated Compounds by LC/MS/MS

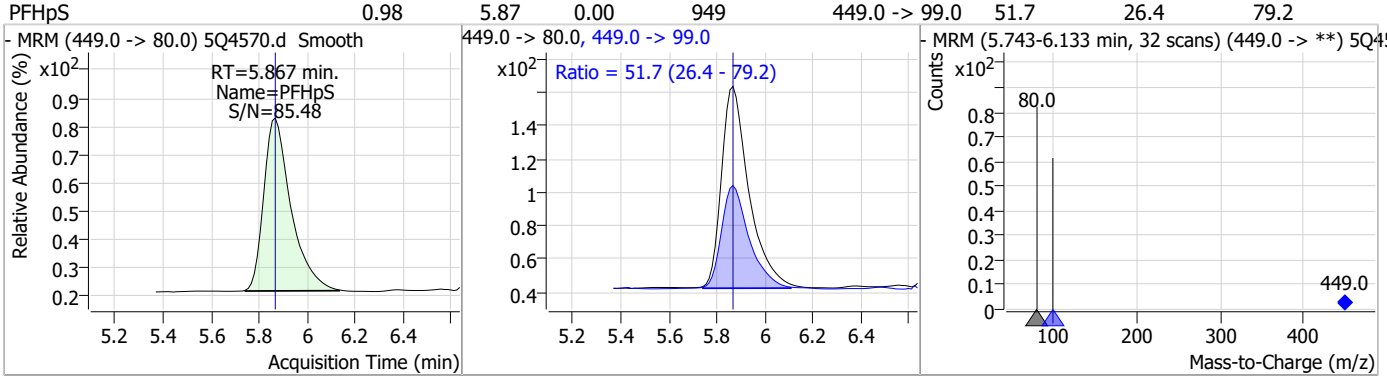
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.01	5.86	0.00	121038				



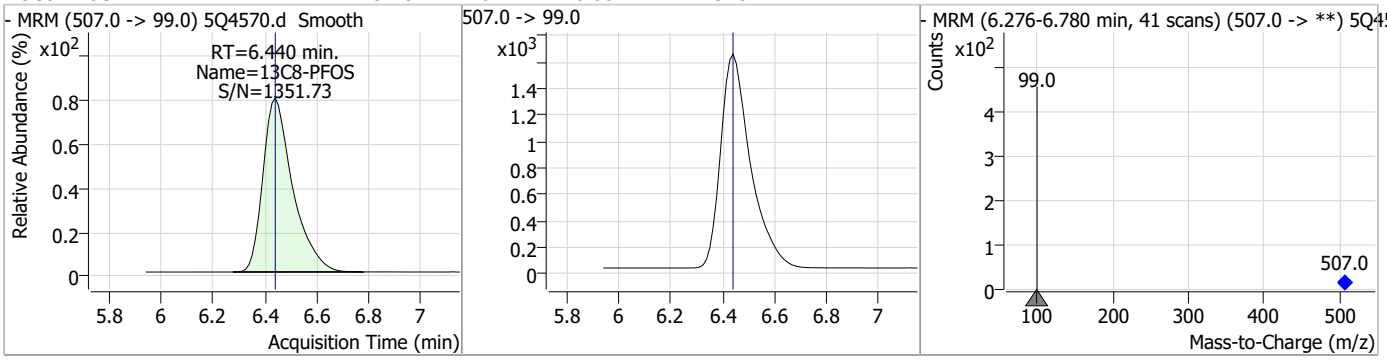
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	5.86	0.00	6951	413.0 -> 169.0	23.0	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.98	5.87	0.00	949	449.0 -> 99.0	51.7	26.4	79.2

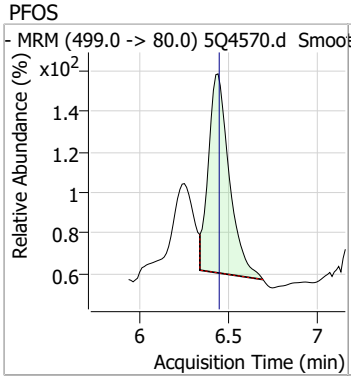


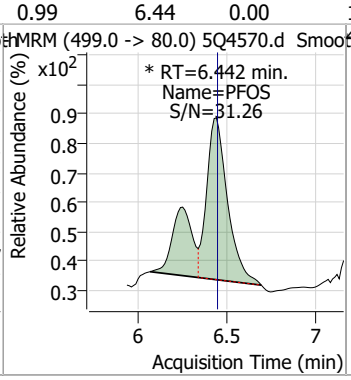
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.78	6.44	0.00	12915				

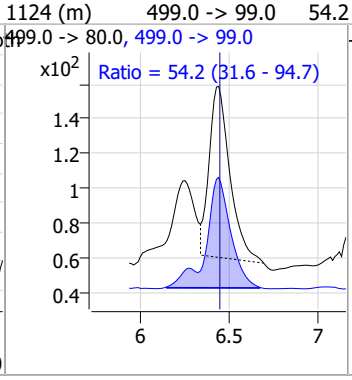


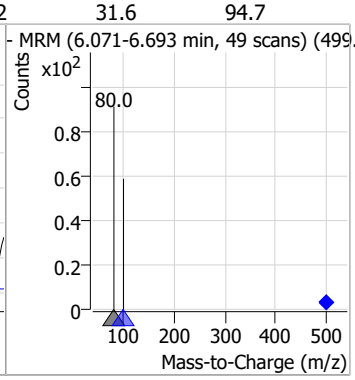
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.99	6.44	0.00	1124 (m)	499.0 -> 99.0	54.2	31.6	94.7

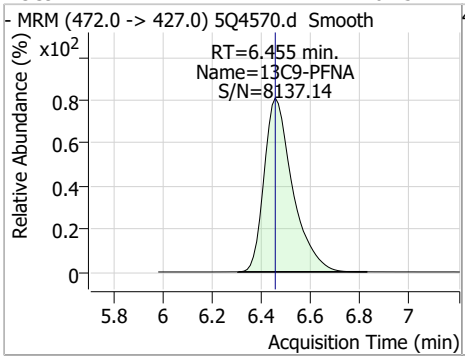


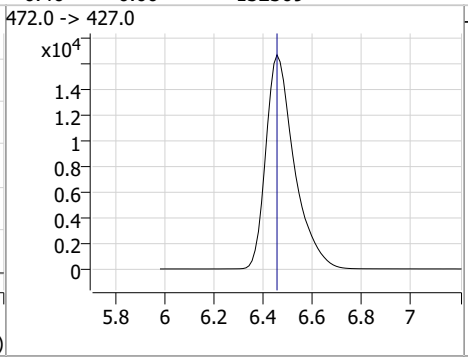


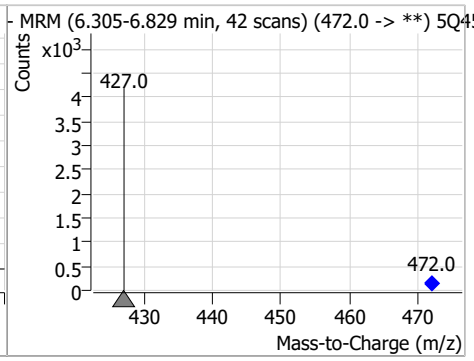




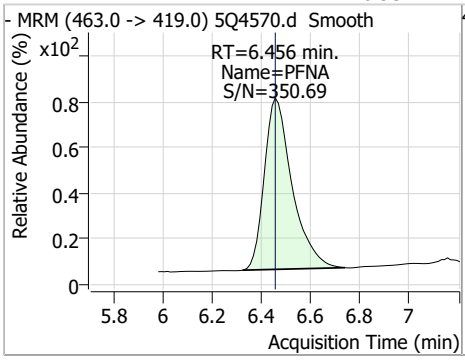
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.15	6.46	0.00	132369				

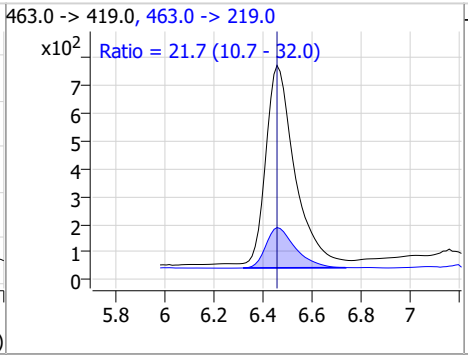


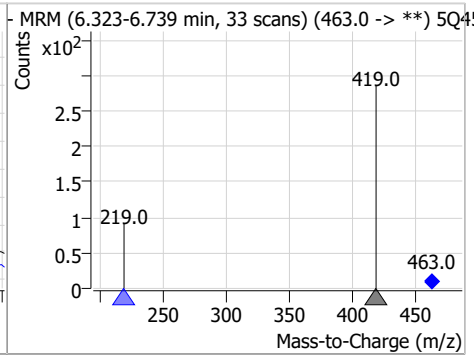




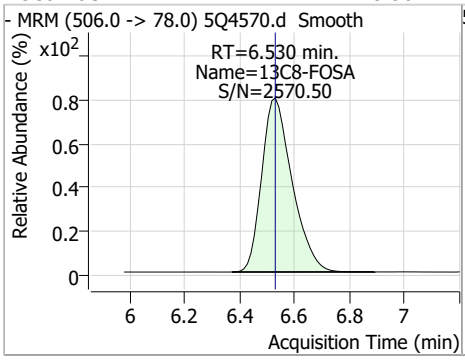
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	6.46	0.00	5527	463.0 -> 219.0	21.7	10.7	32.0

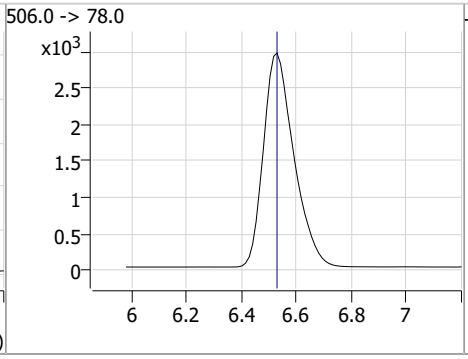


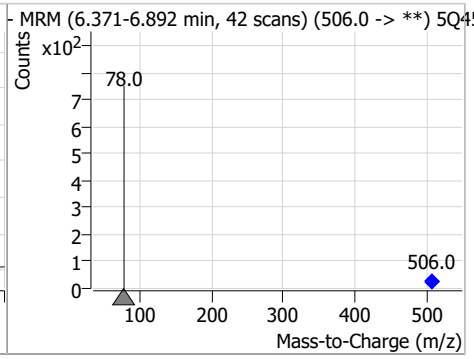




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.98	6.53	0.00	22676				

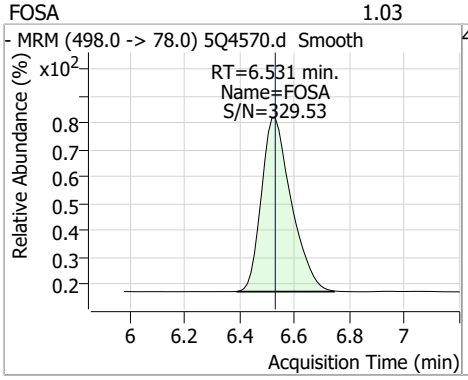


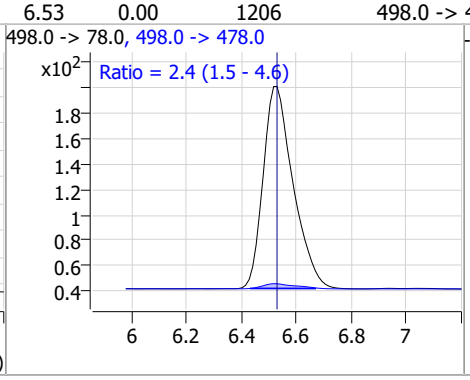


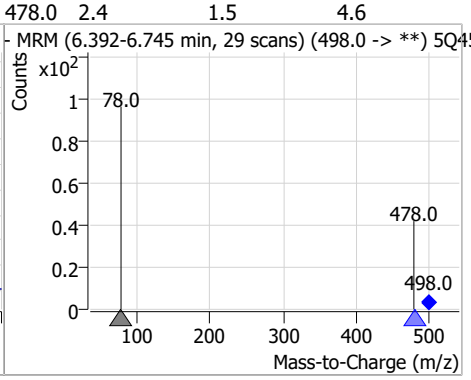


Perfluorinated Compounds by LC/MS/MS

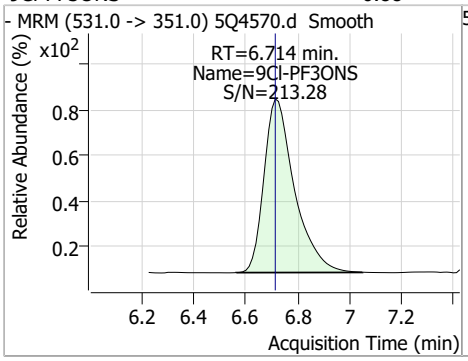
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.03	6.53	0.00	1206	498.0 -> 478.0	2.4	1.5	4.6

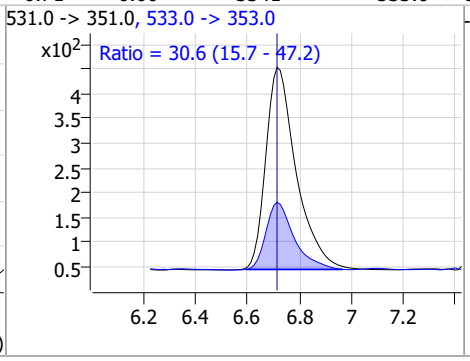


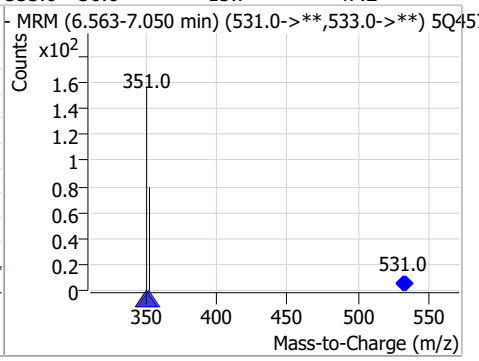




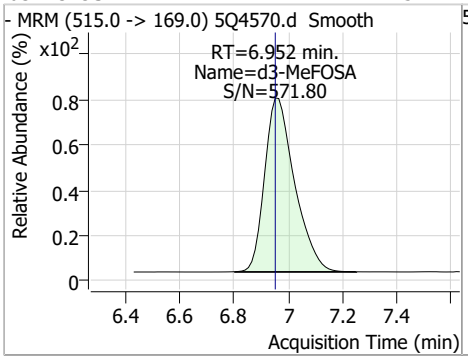
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.88	6.71	0.00	3341	533.0 -> 353.0	30.6	15.7	47.2

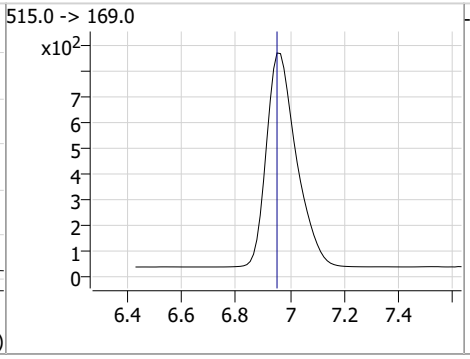


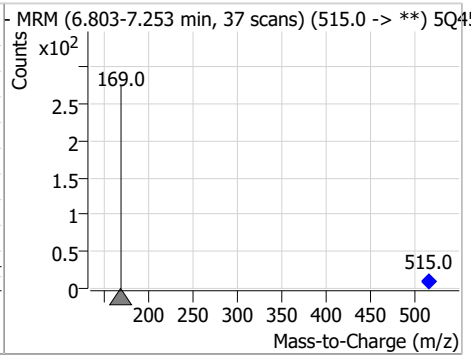




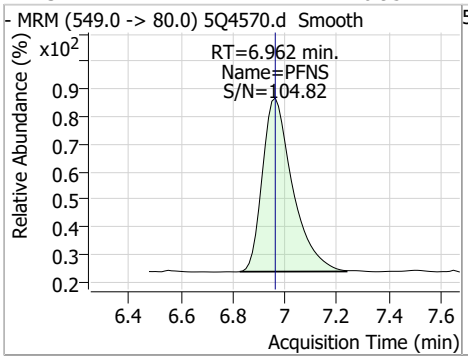
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.15	6.95	0.00	6439				

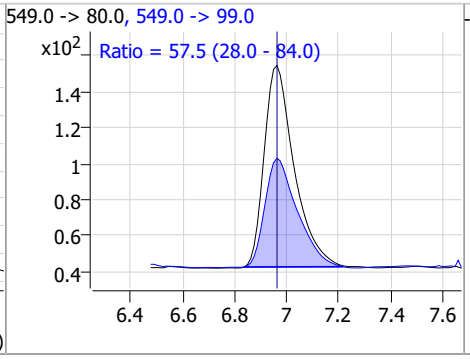


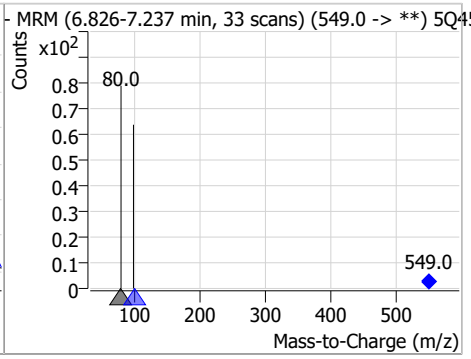




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.95	6.96	0.00	908	549.0 -> 99.0	57.5	28.0	84.0

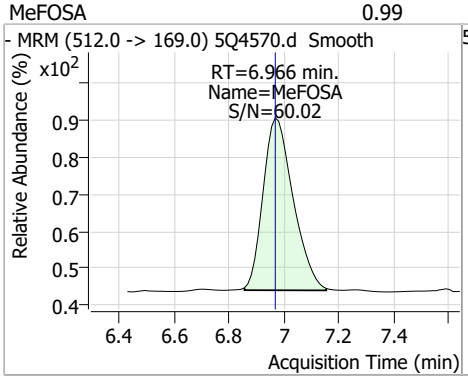


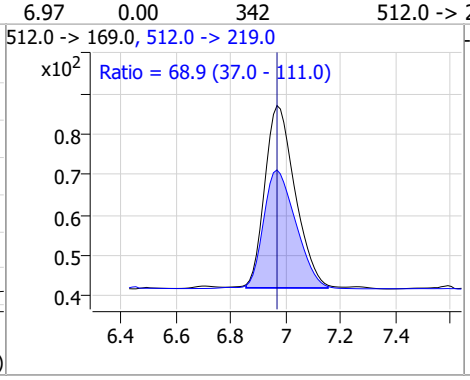


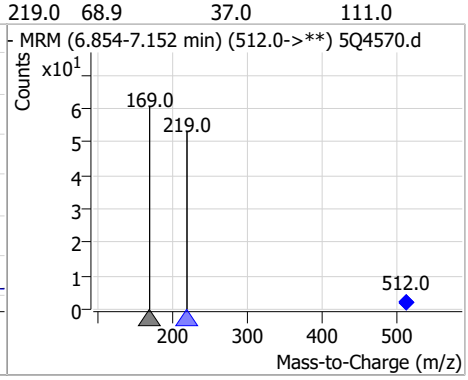


Perfluorinated Compounds by LC/MS/MS

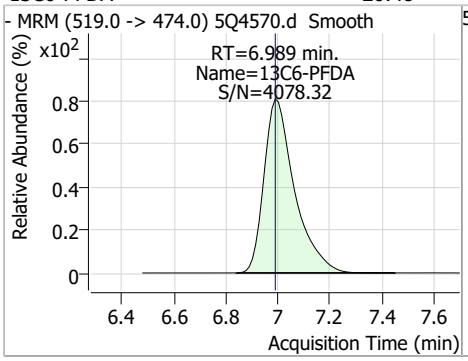
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.99	6.97	0.00	342	512.0 -> 219.0	68.9	37.0	111.0

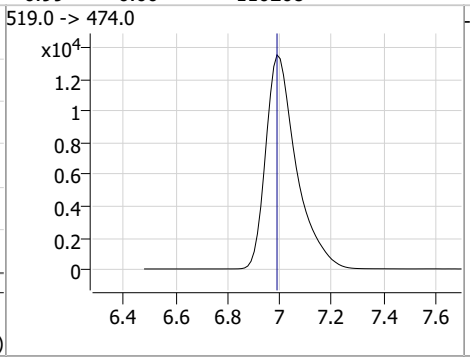


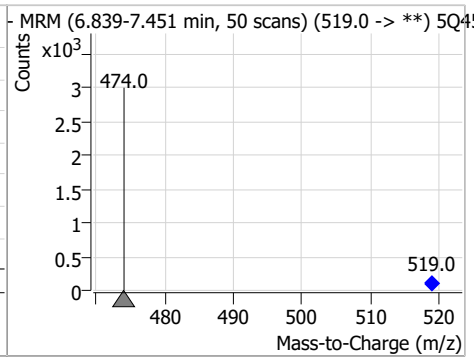




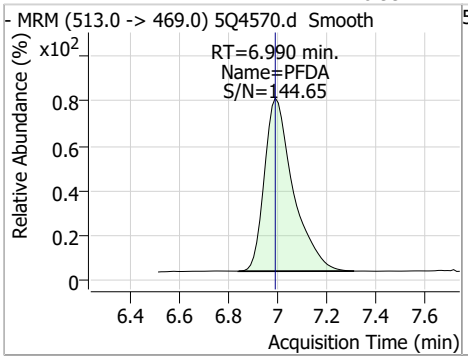
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.48	6.99	0.00	110268				

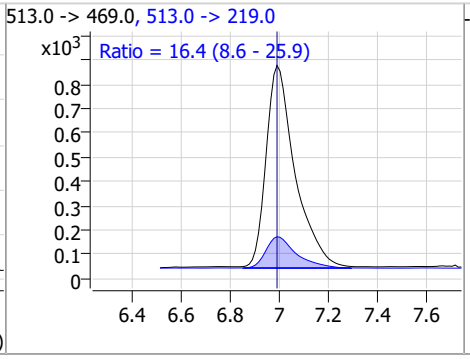


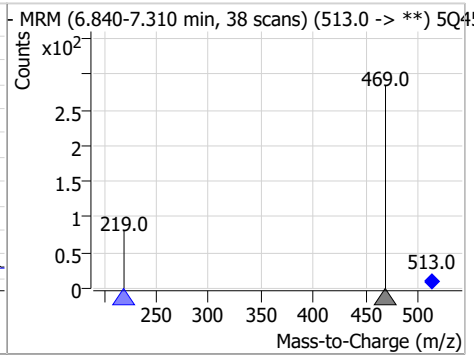




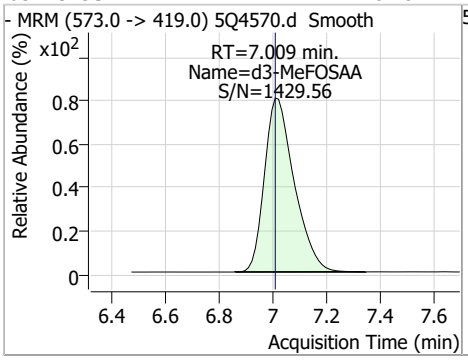
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.99	6.99	0.00	6705	513.0 -> 219.0	16.4	8.6	25.9

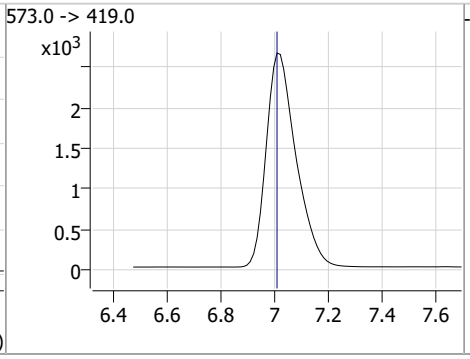


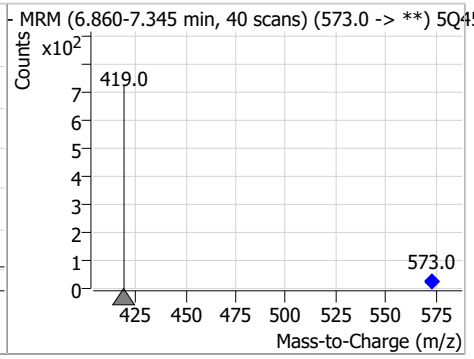




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.78	7.01	0.00	20196				

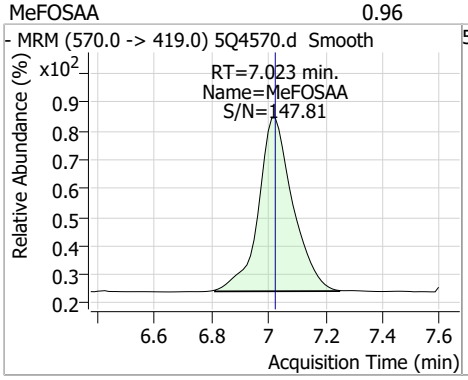


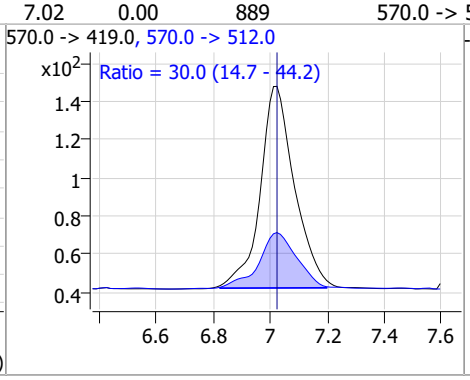


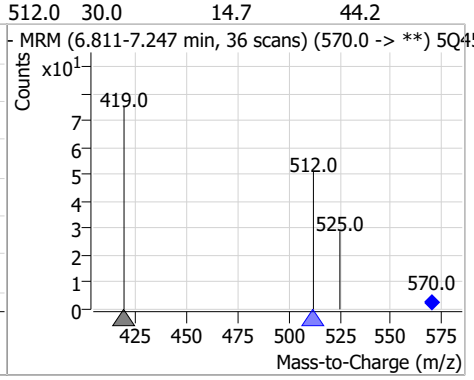


Perfluorinated Compounds by LC/MS/MS

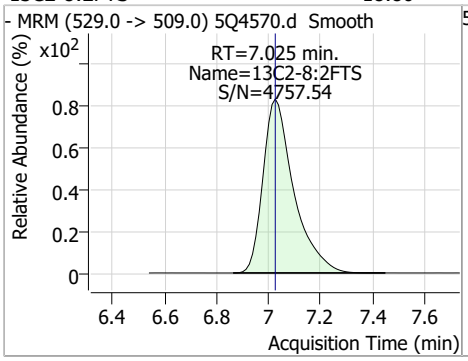
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.96	7.02	0.00	889	570.0 -> 512.0	30.0	14.7	44.2

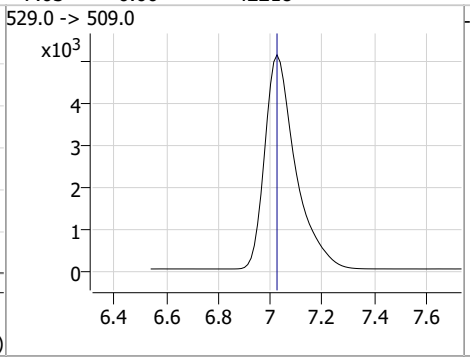


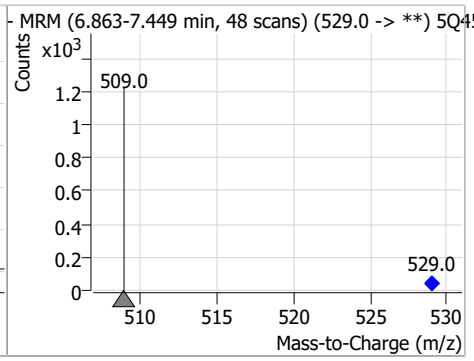




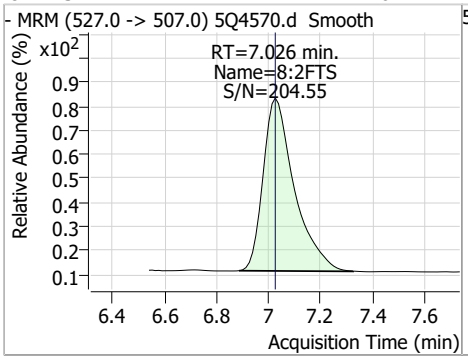
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.80	7.03	0.00	42218				

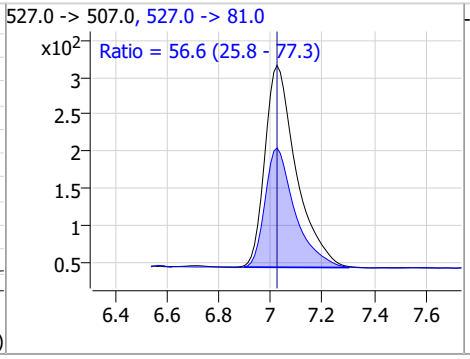


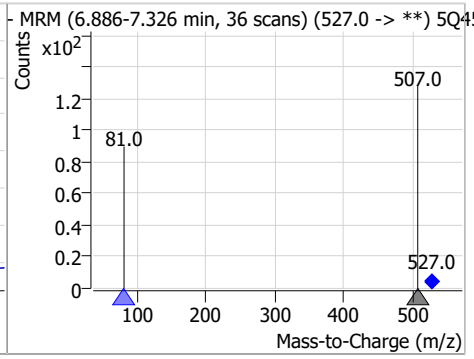




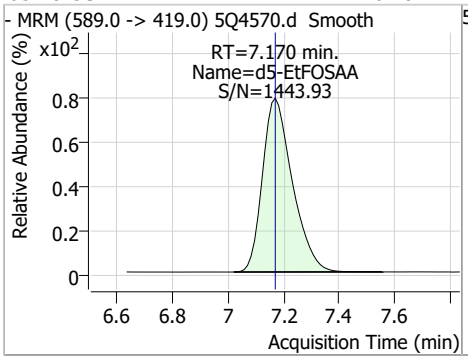
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.01	7.03	0.00	2274	527.0 -> 81.0	56.6	25.8	77.3

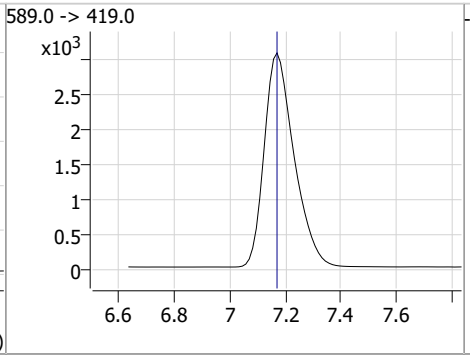


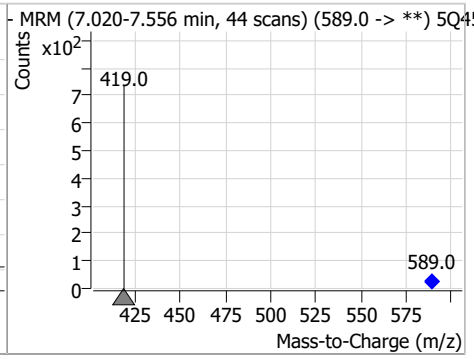




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.28	7.17	0.00	22731				

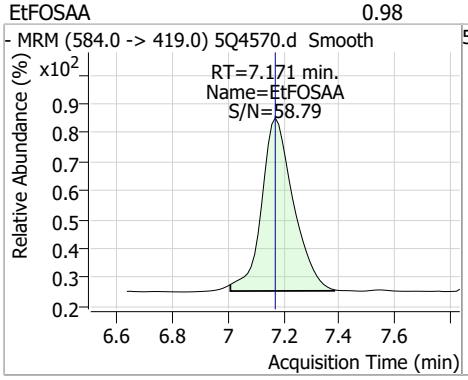


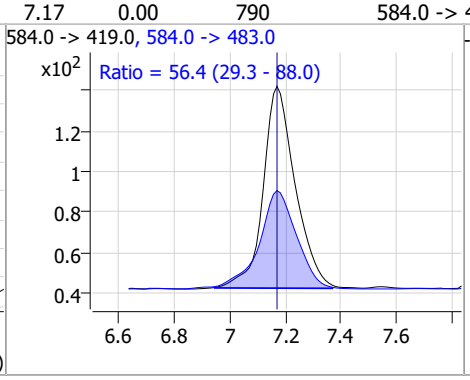


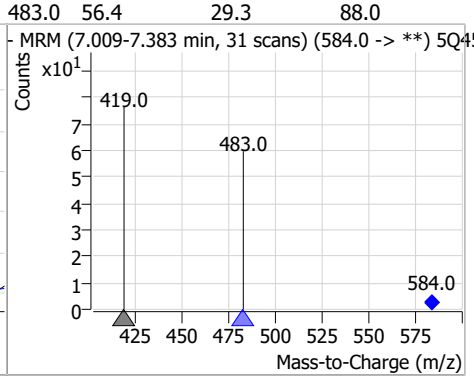


Perfluorinated Compounds by LC/MS/MS

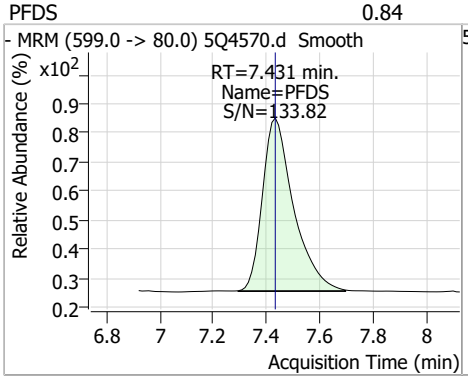
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.98	7.17	0.00	790	584.0 -> 483.0	56.4	29.3	88.0

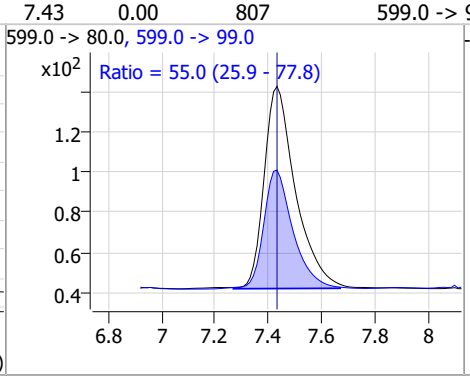


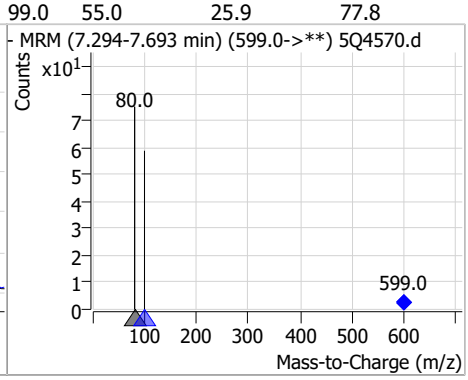




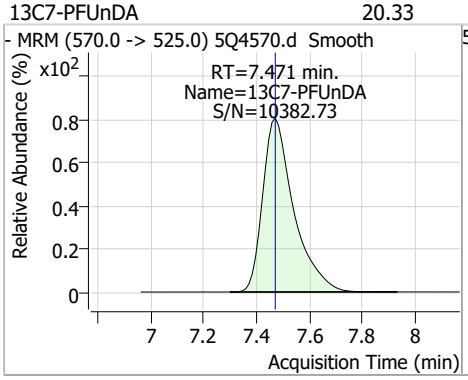
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.84	7.43	0.00	807	599.0 -> 99.0	55.0	25.9	77.8

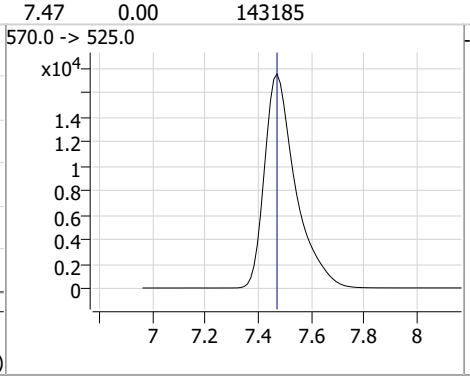


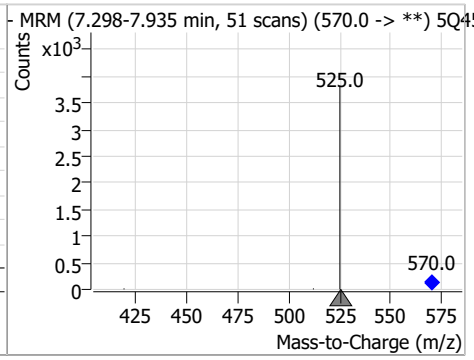




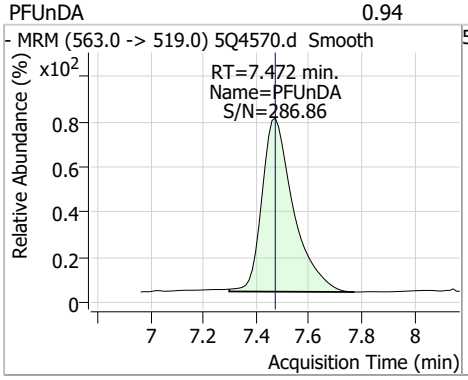
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.33	7.47	0.00	143185				

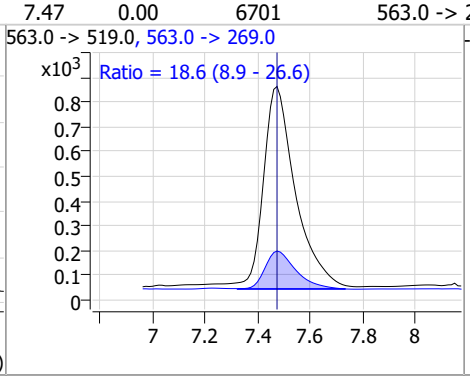


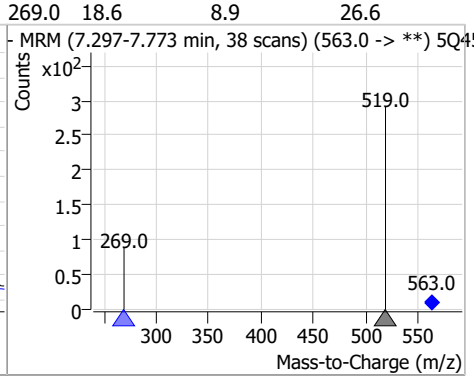




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.94	7.47	0.00	6701	563.0 -> 269.0	18.6	8.9	26.6

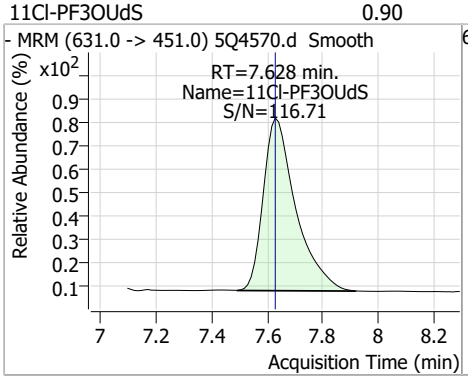


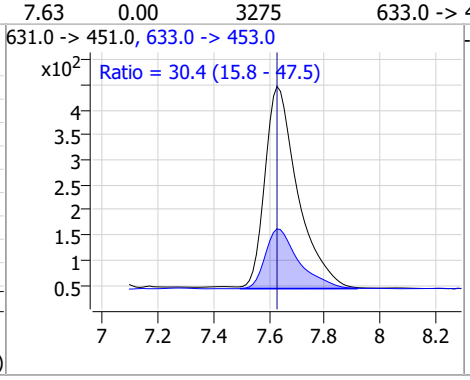


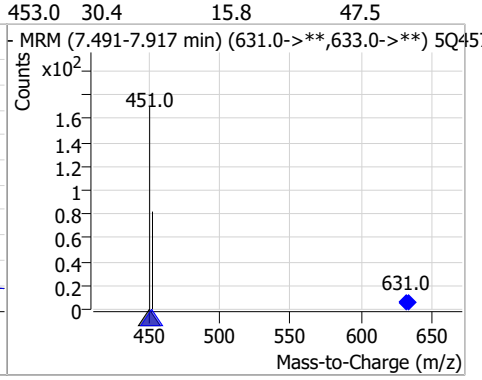


Perfluorinated Compounds by LC/MS/MS

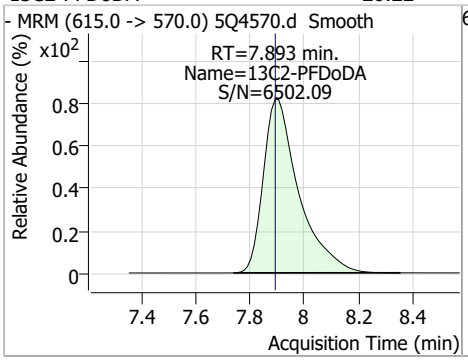
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.90	7.63	0.00	3275	633.0 -> 453.0	30.4	15.8	47.5

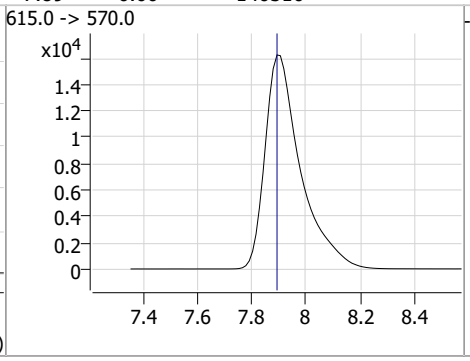


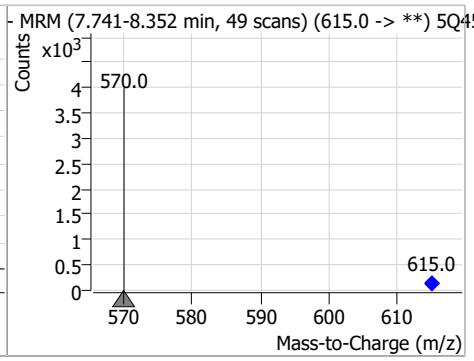




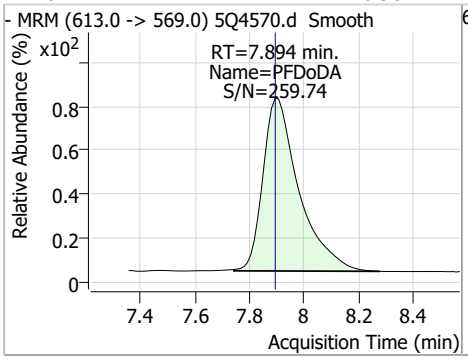
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.22	7.89	0.00	146510				

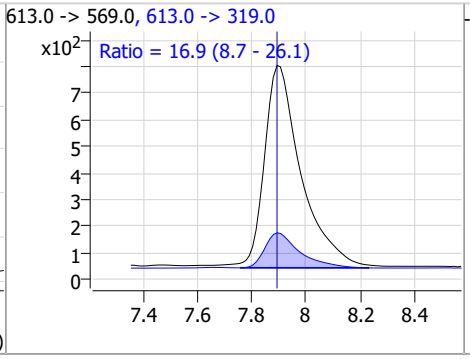


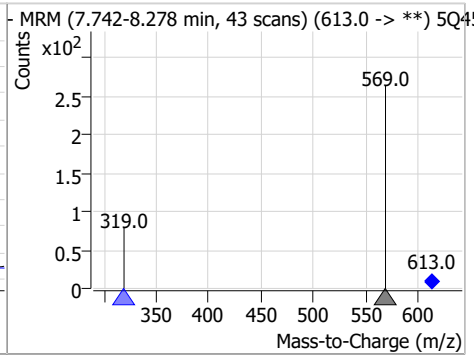




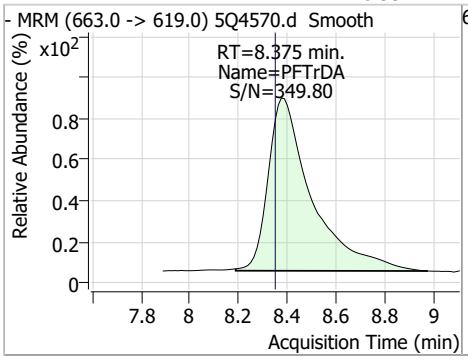
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.96	7.89	0.00	6931	613.0 -> 319.0	16.9	8.7	26.1

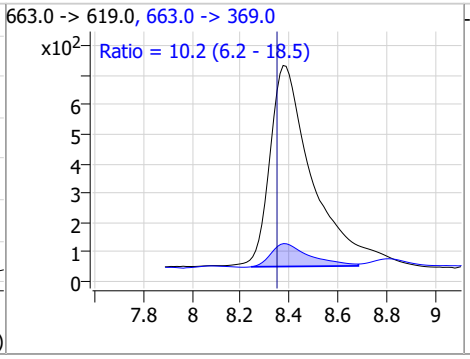


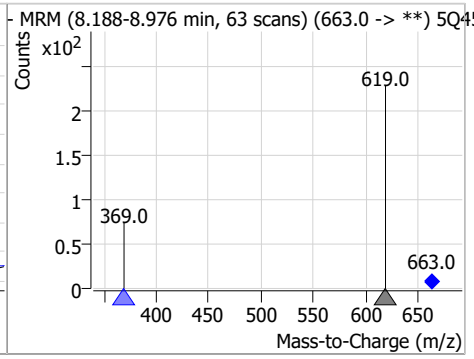




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.99	8.38	0.02	8528	663.0 -> 369.0	10.2	6.2	18.5

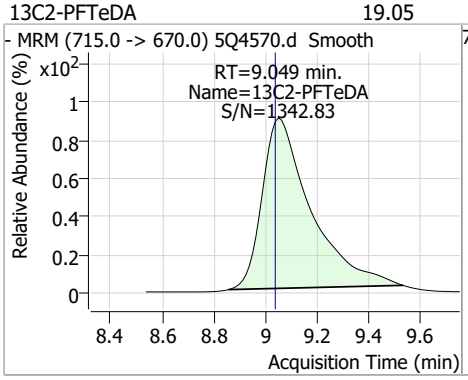


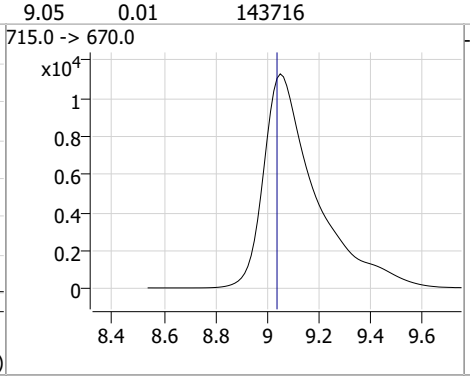


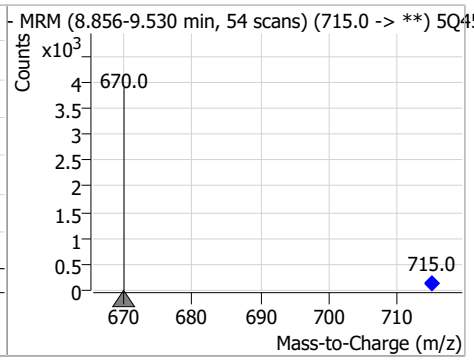


Perfluorinated Compounds by LC/MS/MS

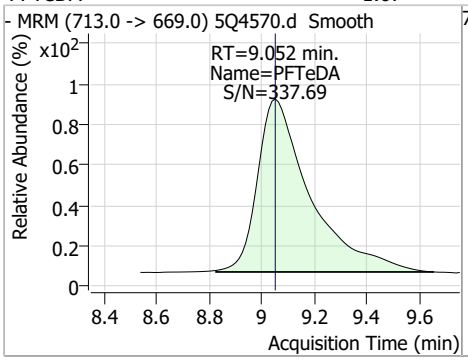
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.05	9.05	0.01	143716				

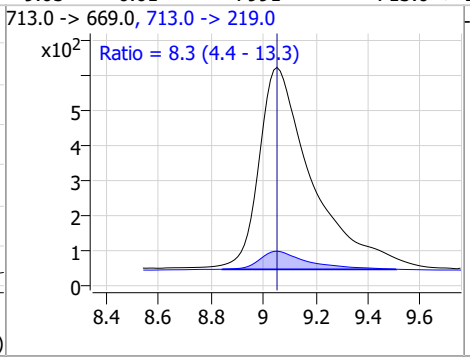


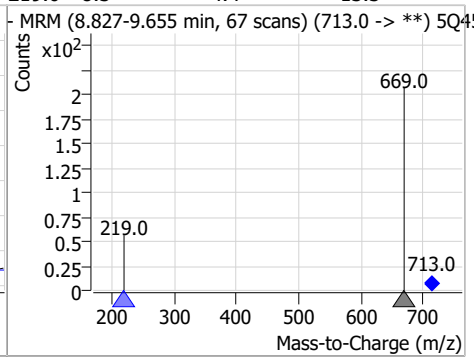




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.07	9.05	0.01	7991	713.0 -> 219.0	8.3	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4570.D
Injection Time: 09/14/22 14:00
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.21	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4598.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 9:09:59 PM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

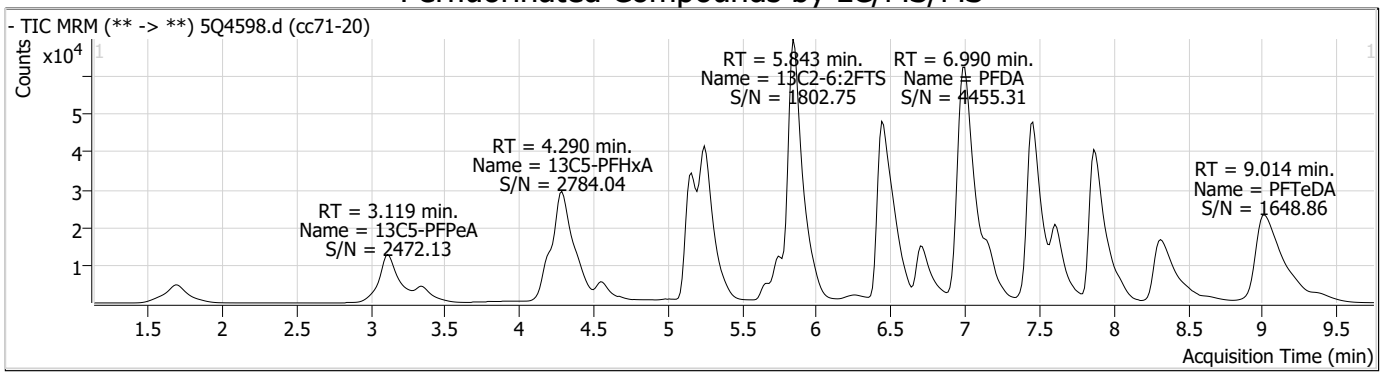
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	37210	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	59114	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	89238	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	83261	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	123662	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	135913	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	113593	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	143266	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	147669	20.00 µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	153164	20.00 µg/L	-0.012
M8-FOSA	6.530	506.0 -> 78.0	23855	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6645	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6945	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	13303	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	29512	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	45376	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	44718	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	22240	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6088	20.00 µg/L	0.000
M3-MeFOSA	6.965	515.0 -> 169.0	6666	20.00 µg/L	0.013
M5-EtFOSAA	7.170	589.0 -> 419.0	25016	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	29512	20.09 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C2-6:2FTS	5.843	429.0 -> 409.0	45376	20.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C2-8:2FTS	7.025	529.0 -> 509.0	44718	19.91 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C2-PFDoDA	7.879	615.0 -> 570.0	147669	20.38 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C2-PFTeDA	9.024	715.0 -> 670.0	153164	20.30 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFBS	3.349	302.0 -> 99.0	6645	20.40 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C3-PFHxS	5.194	402.0 -> 99.0	6945	20.36 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C4-PFBA	1.687	217.0 -> 172.0	37210	20.82 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C4-PFHpA	5.163	367.0 -> 322.0	83261	20.39 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C5-PFHxA	4.290	318.0 -> 273.0	89238	20.41 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFPeA	3.119	268.0 -> 223.0	59114	20.34 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C6-PFDA	6.989	519.0 -> 474.0	113593	21.10 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

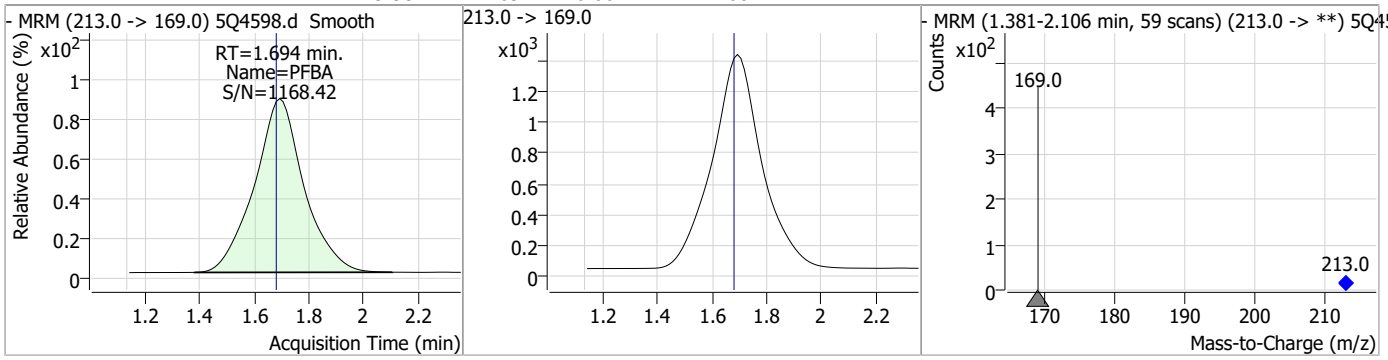
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C7-PFUnDA	7.459	570.0 -> 525.0	143266	20.35 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C8-FOSA	6.530	506.0 -> 78.0	23855	21.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C8-PFOA	5.857	421.0 -> 376.0	123662	20.45 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C8-PFOS	6.440	507.0 -> 99.0	13303	20.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C9-PFNA	6.455	472.0 -> 427.0	135913	20.69 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
d3-MeFOSAA	7.009	573.0 -> 419.0	22240	22.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	6088	18.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%		
d3-MeFOSA	6.965	515.0 -> 169.0	6666	21.89 µg/L		0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
d5-EtFOSAA	7.170	589.0 -> 419.0	25016	22.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.6%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	33114	20.04 µg/L		100
6:2FTS	5.843	427.0 -> 407.0	49449	20.55 µg/L		98
8:2FTS	7.026	527.0 -> 507.0	48269	20.25 µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	17457	19.72 µg/L		98
FOSA	6.519	498.0 -> 78.0	24636	20.07 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	19701	19.34 µg/L		99
PFBA	1.694	213.0 -> 169.0	17468	19.93 µg/L		100
PFBS	3.354	299.0 -> 80.0	19625	19.66 µg/L		100
PFDA	6.990	513.0 -> 469.0	137759	19.74 µg/L		100
PFDoDA	7.880	613.0 -> 569.0	143539	19.82 µg/L		99
PFDS	7.419	599.0 -> 80.0	18668	19.31 µg/L		98
PFHpA	5.164	363.0 -> 319.0	109672	20.05 µg/L		100
PFHpS	5.867	449.0 -> 80.0	20160	20.16 µg/L		98
PFHxA	4.291	313.0 -> 269.0	84831	19.46 µg/L		100
PFHxS	5.195	399.0 -> 80.0	20502	19.88 µg/L	m	96
PFNA	6.456	463.0 -> 419.0	119128	19.56 µg/L		100
PFNS	6.962	549.0 -> 80.0	19697	20.06 µg/L		99
PFOA	5.858	413.0 -> 369.0	146512	19.54 µg/L		100
PFOS	6.442	499.0 -> 80.0	23418	19.99 µg/L	m	85
PFPeA	3.122	263.0 -> 219.0	57816	19.79 µg/L		100
PFPeS	4.398	349.0 -> 80.0	15130	19.49 µg/L		99
PFTeDA	9.014	713.0 -> 669.0	145053	18.20 µg/L		100
PFTrDA	8.325	663.0 -> 619.0	160155	18.50 µg/L		99
PFUnDA	7.460	563.0 -> 519.0	143404	20.04 µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	72779	19.84 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	71289	18.16 µg/L		99
ADONA	5.261	377.0 -> 251.0	139407	19.53 µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	20618	20.07 µg/L		100
MeFOSA	6.966	512.0 -> 169.0	7137	19.88 µg/L		93
4-PFECHS	5.753	461.0 -> 381.0	42972	19.31 µg/L		98
FBSA	4.343	298.0 -> 78.0	30090	20.33 µg/L		100
FHxSA	5.674	398.0 -> 78.0	24599	19.56 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

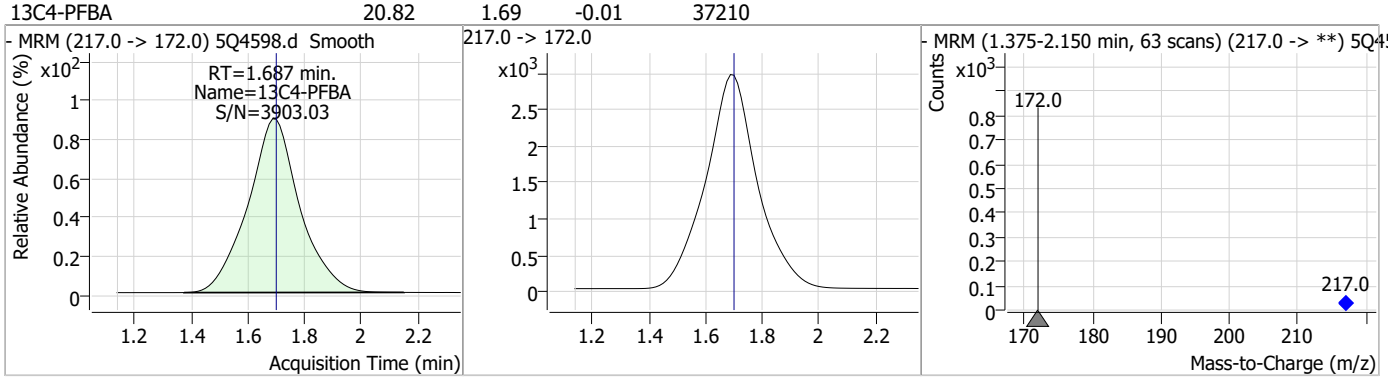
Perfluorinated Compounds by LC/MS/MS



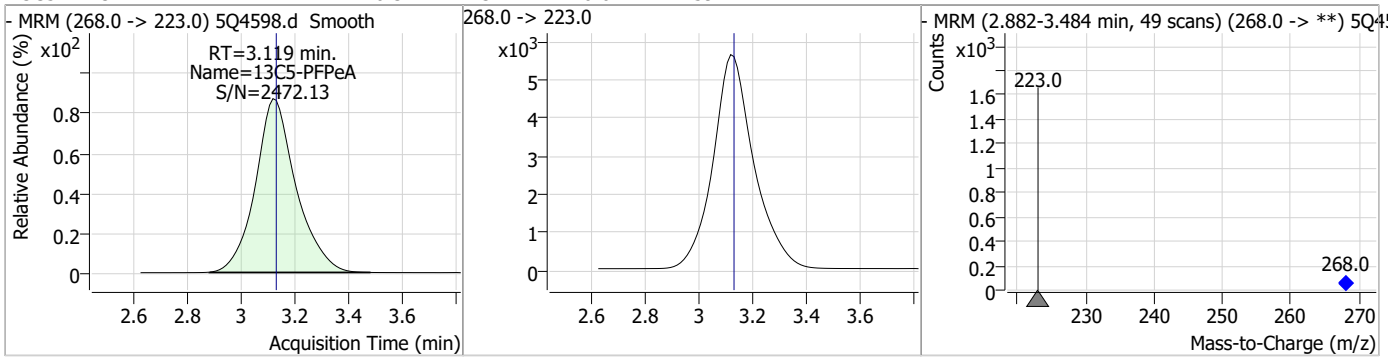
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.93	1.69	0.00	17468				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.82	1.69	-0.01	37210				

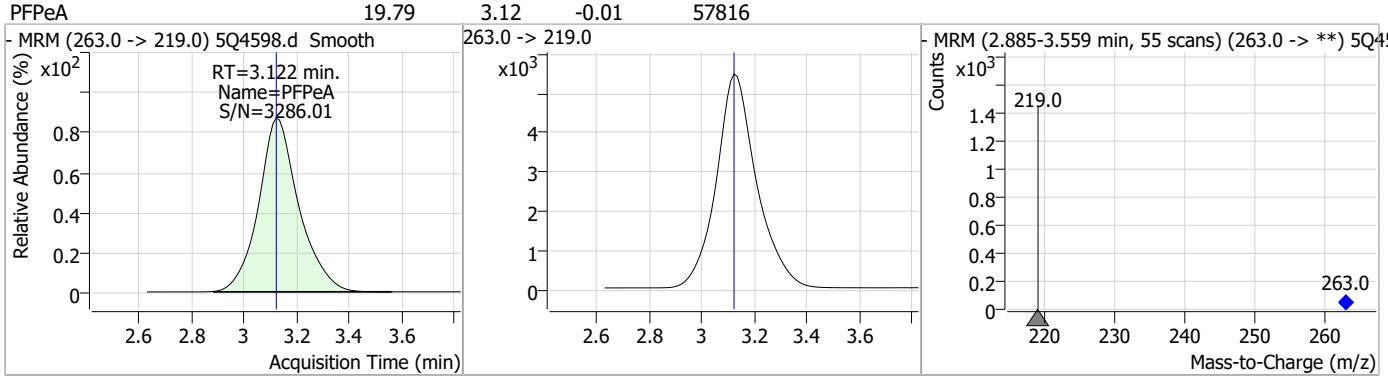


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.34	3.12	-0.01	59114				

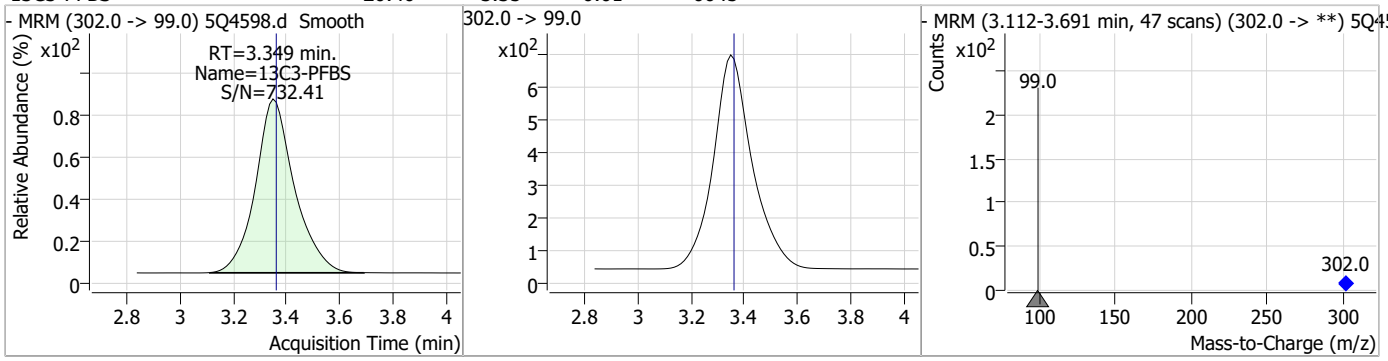


Perfluorinated Compounds by LC/MS/MS

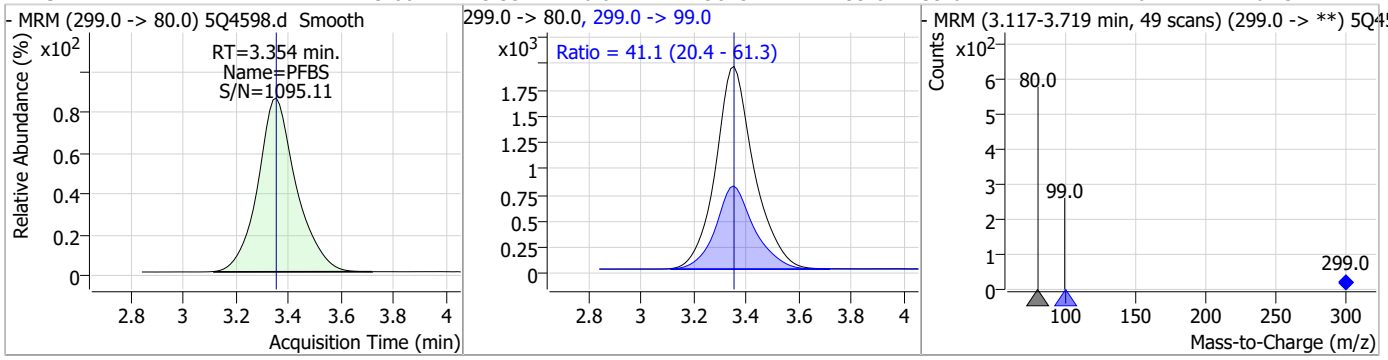
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.79	3.12	-0.01	57816				



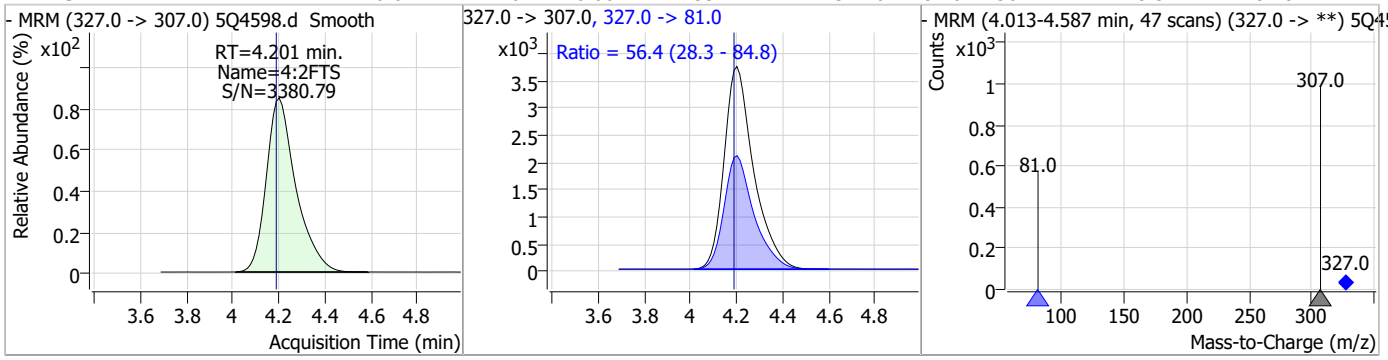
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.40	3.35	-0.01	6645				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.66	3.35	-0.01	19625	299.0 -> 99.0	41.1	20.4	61.3

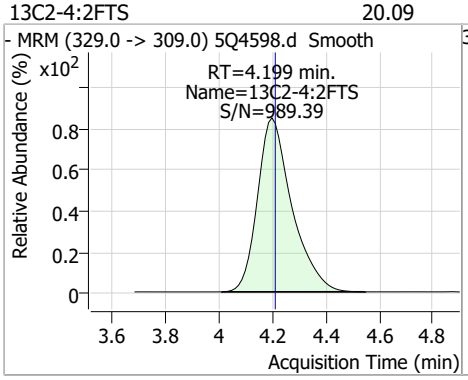


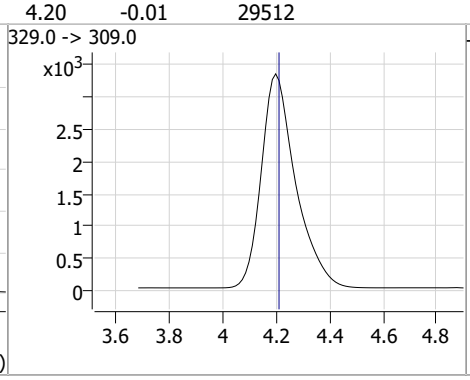
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.04	4.20	0.00	33114	327.0 -> 81.0	56.4	28.3	84.8

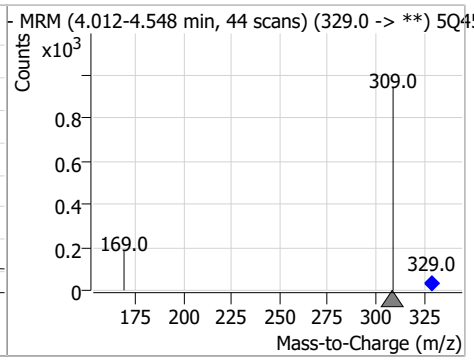


Perfluorinated Compounds by LC/MS/MS

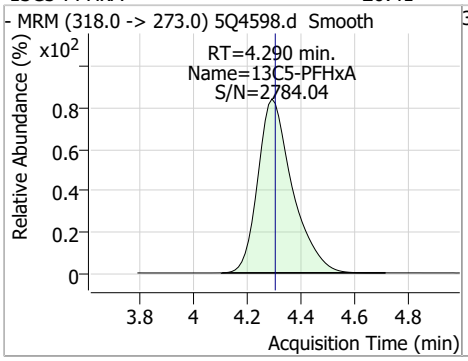
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.09	4.20	-0.01	29512				

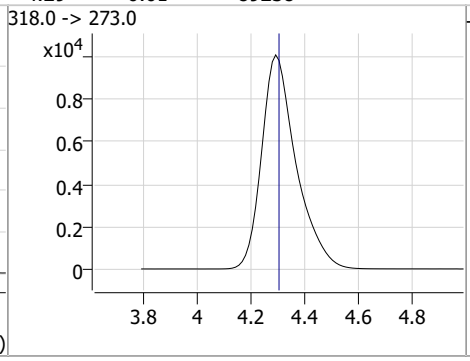


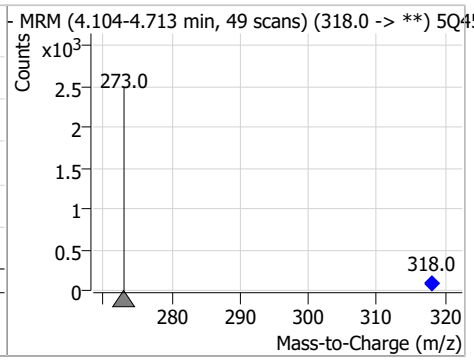




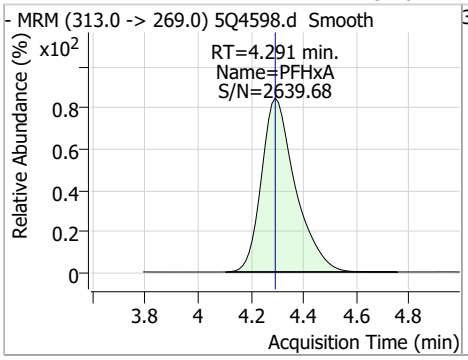
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.41	4.29	-0.01	89238				

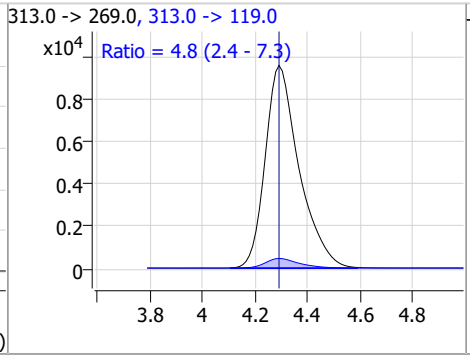


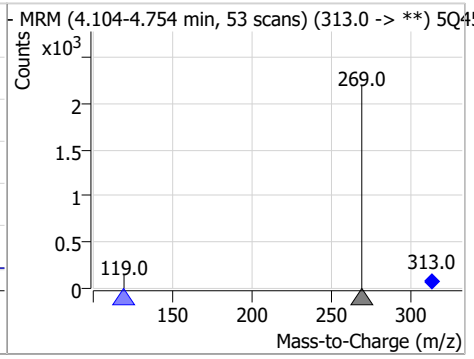




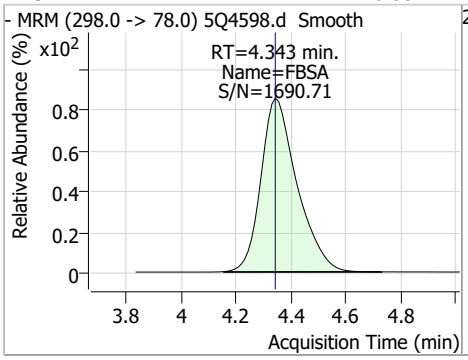
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.46	4.29	-0.01	84831	313.0 -> 119.0	4.8	2.4	7.3

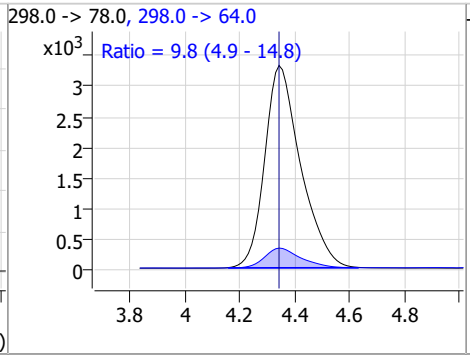


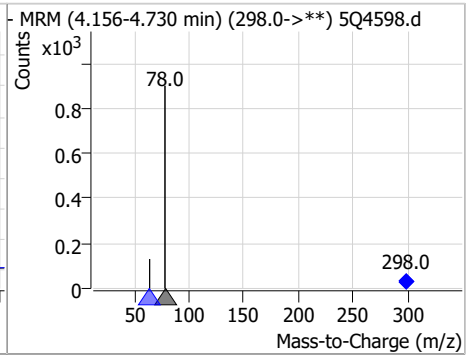




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.33	4.34	-0.01	30090	298.0 -> 64.0	9.8	4.9	14.8

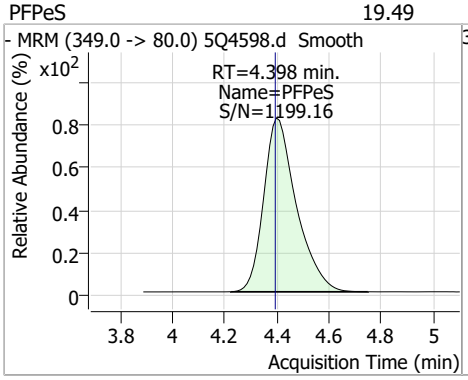


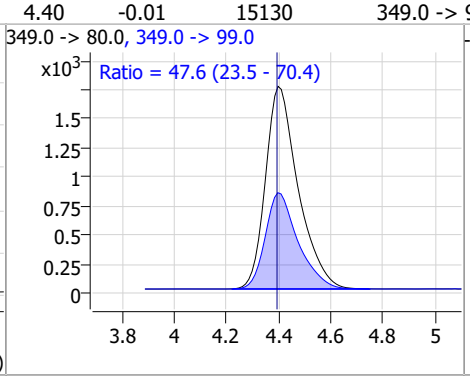


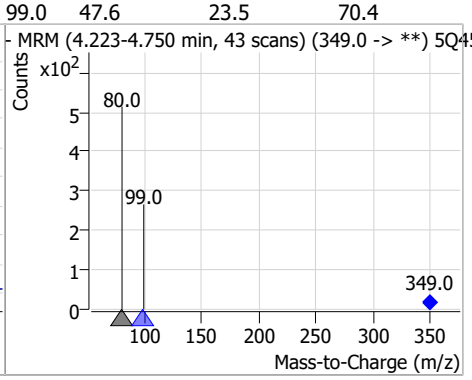


Perfluorinated Compounds by LC/MS/MS

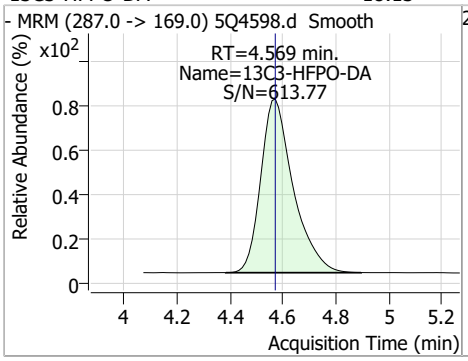
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.49	4.40	-0.01	15130	349.0 -> 99.0	47.6	23.5	70.4

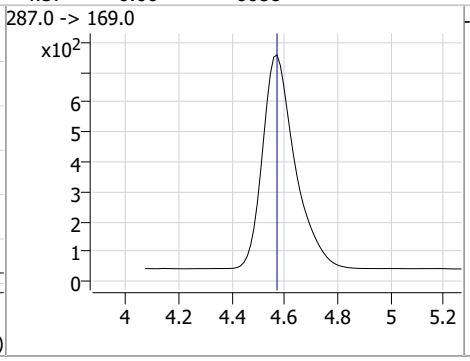


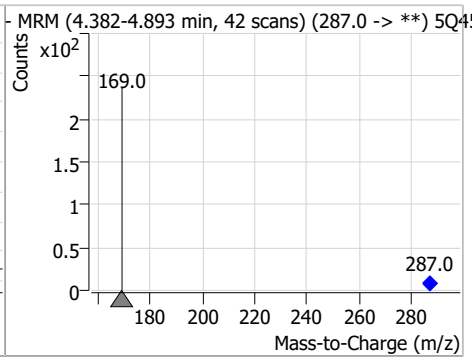




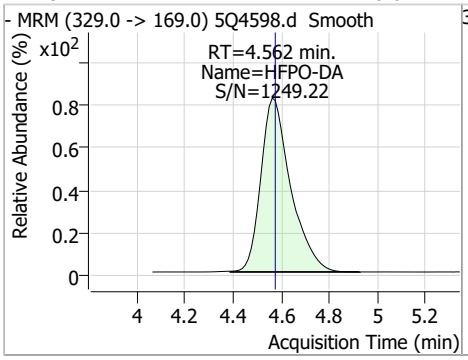
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.13	4.57	0.00	6088				

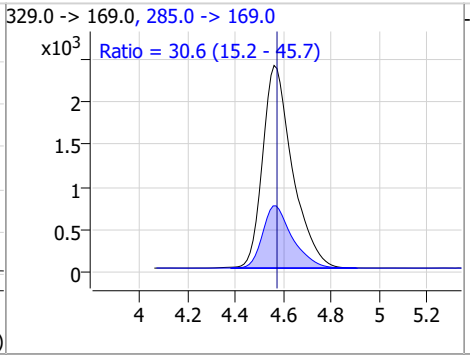


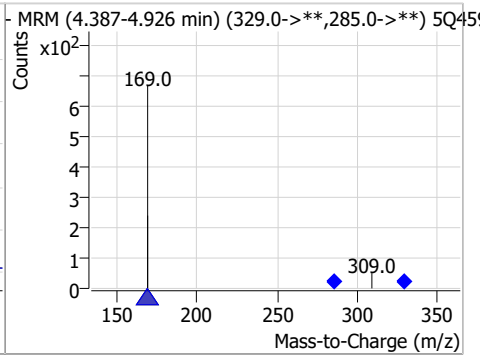




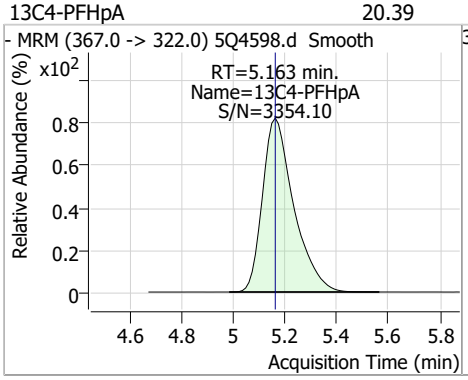
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.07	4.56	-0.01	20618	285.0 -> 169.0	30.6	15.2	45.7

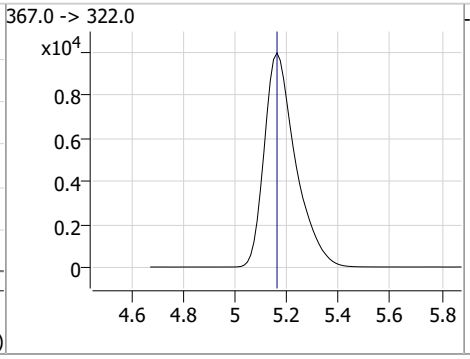


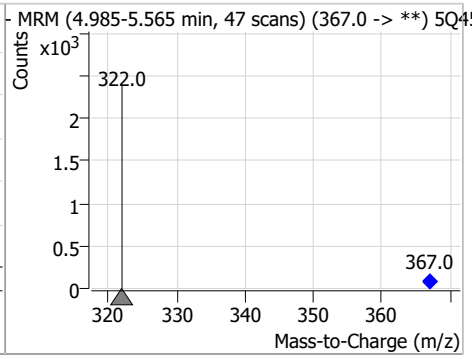




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.39	5.16	0.00	83261				

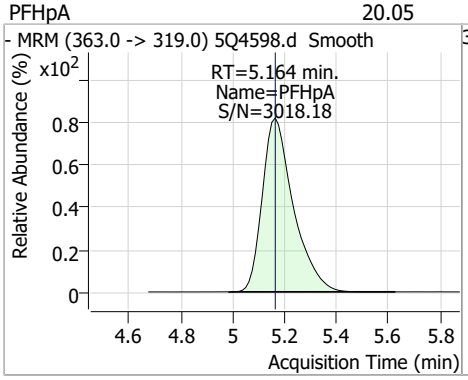


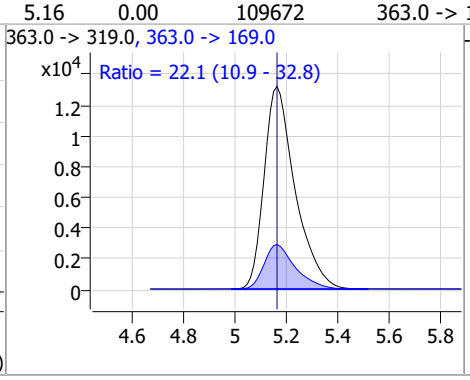


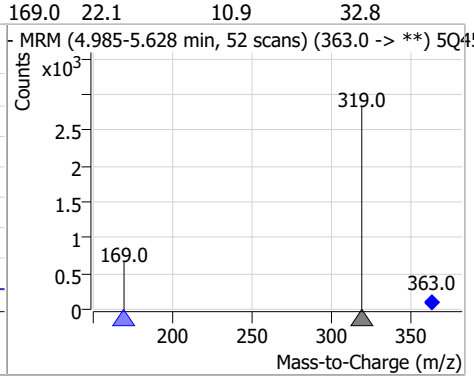


Perfluorinated Compounds by LC/MS/MS

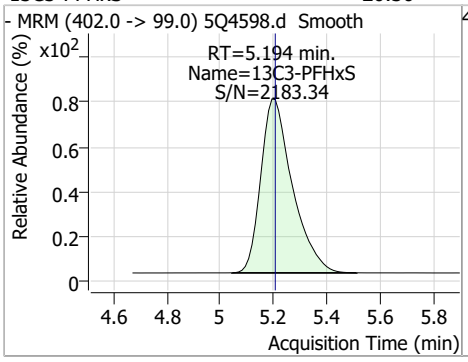
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.05	5.16	0.00	109672	363.0 -> 169.0	22.1	10.9	32.8

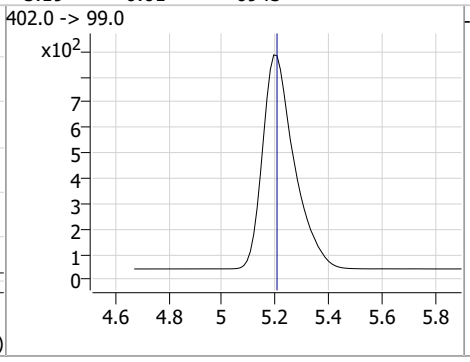


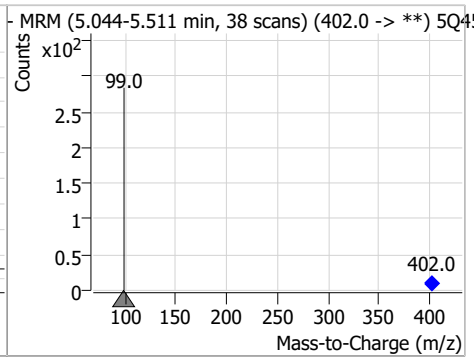




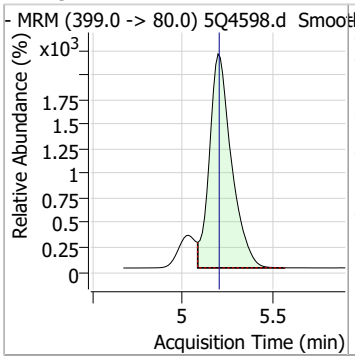
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.36	5.19	-0.01	6945				

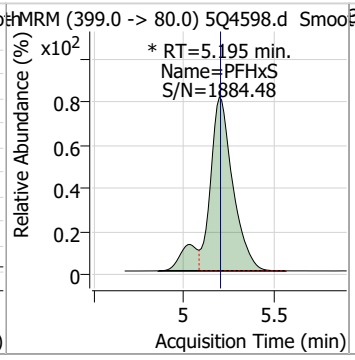


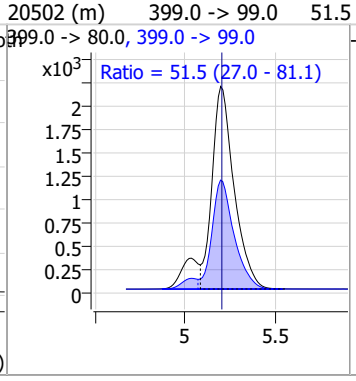


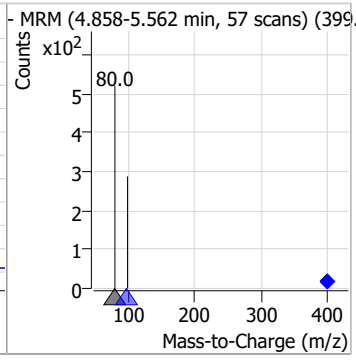


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.88	5.20	-0.01	20502 (m)	399.0 -> 99.0	51.5	27.0	81.1

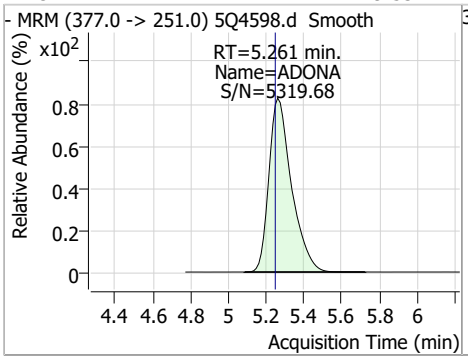


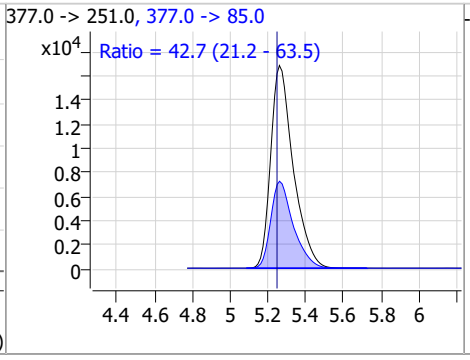


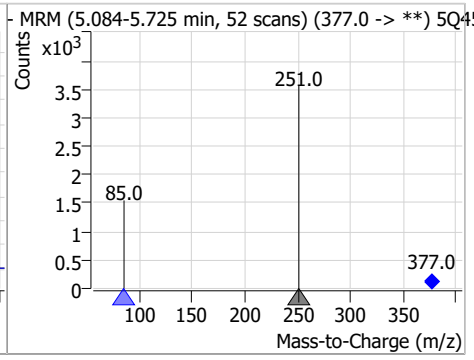




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.53	5.26	0.00	139407	377.0 -> 85.0	42.7	21.2	63.5

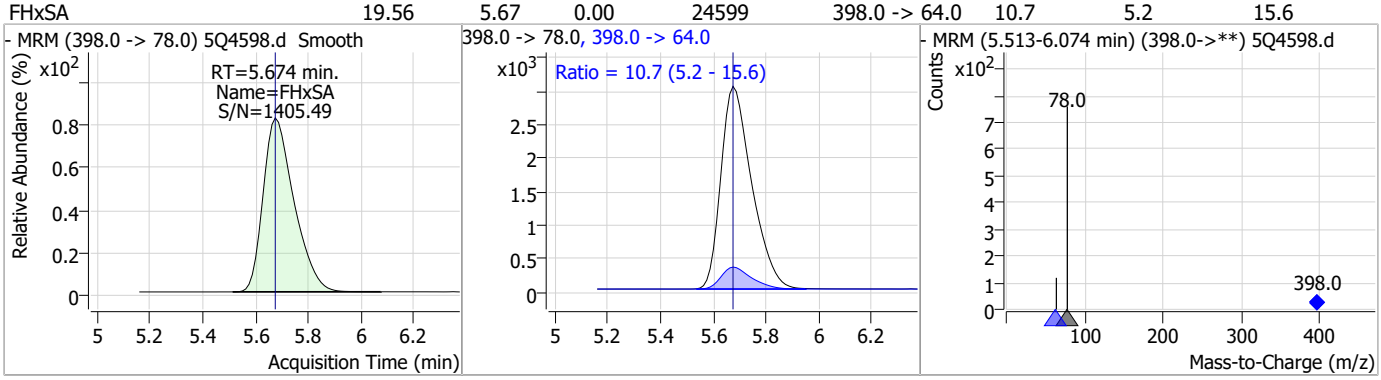




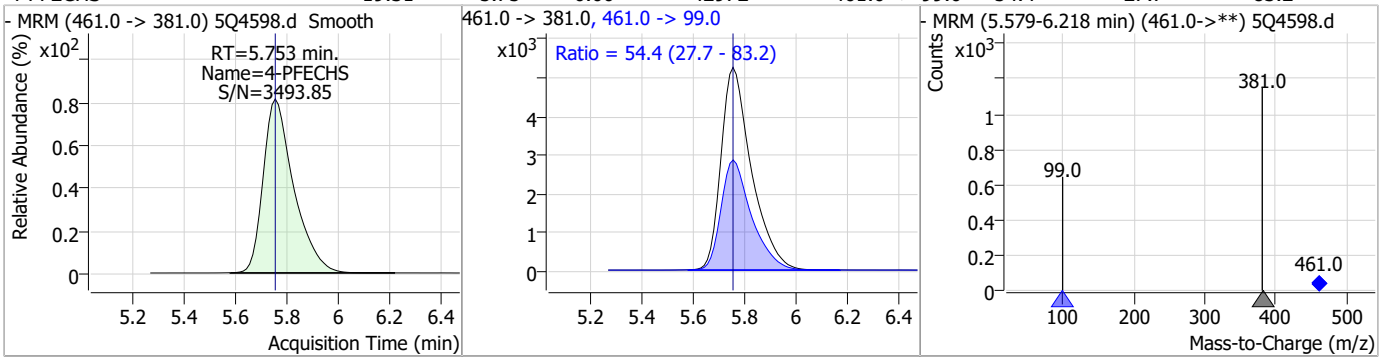


Perfluorinated Compounds by LC/MS/MS

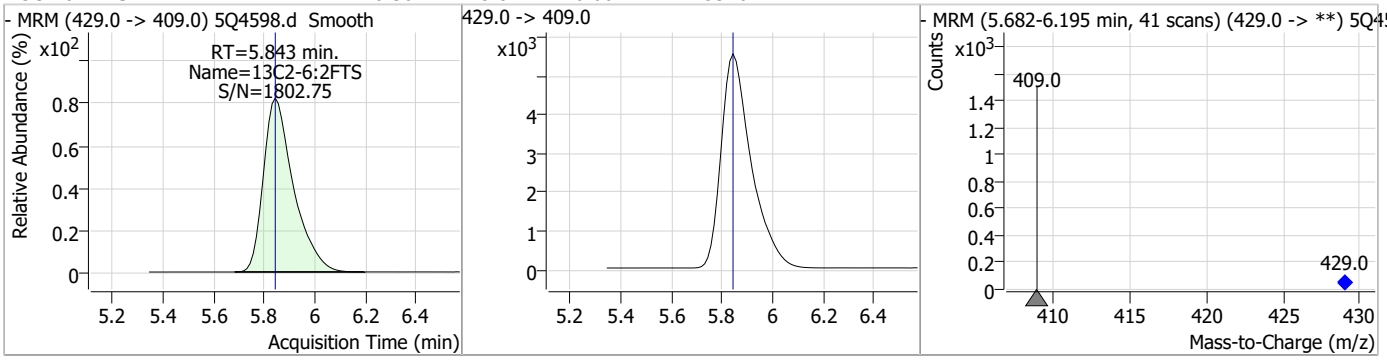
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.56	5.67	0.00	24599	398.0 -> 64.0	10.7	5.2	15.6



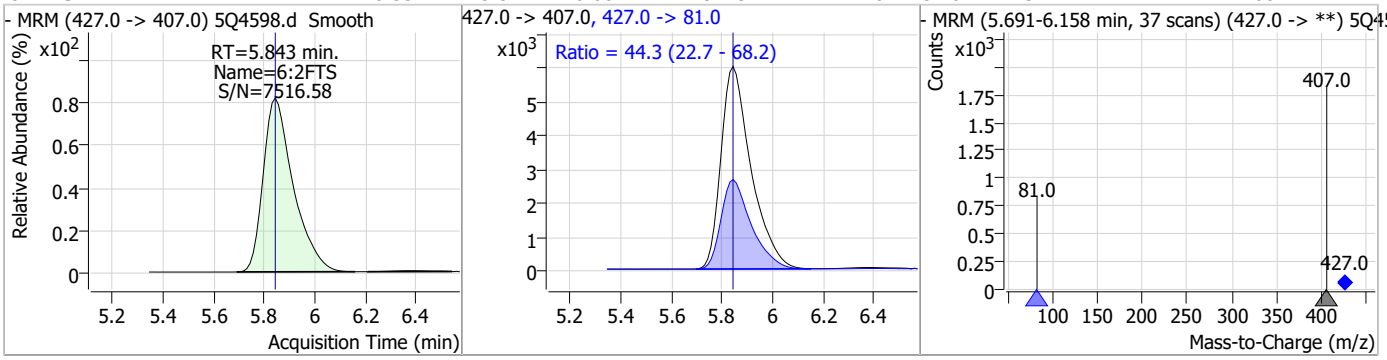
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.31	5.75	0.00	42972	461.0 -> 99.0	54.4	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.30	5.84	0.00	45376				

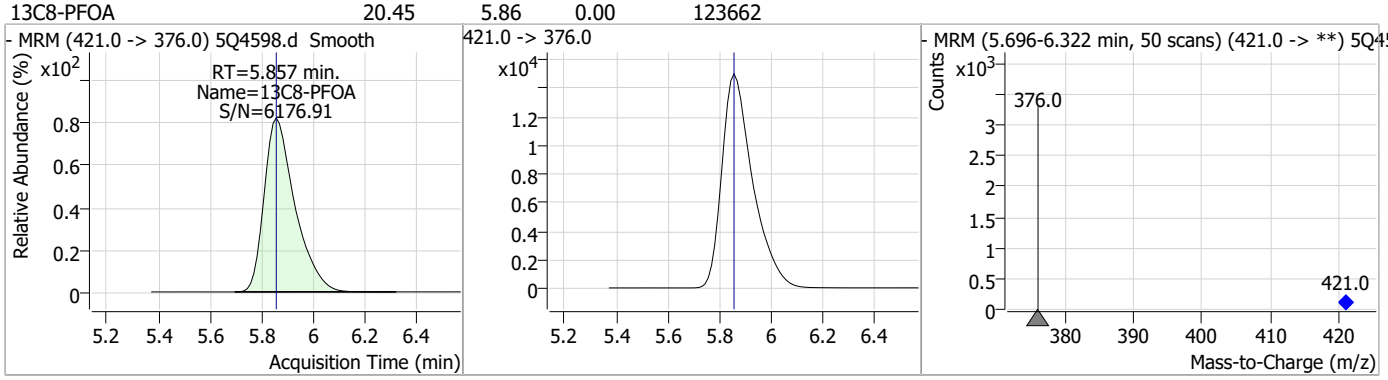


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.55	5.84	0.00	49449	427.0 -> 81.0	44.3	22.7	68.2

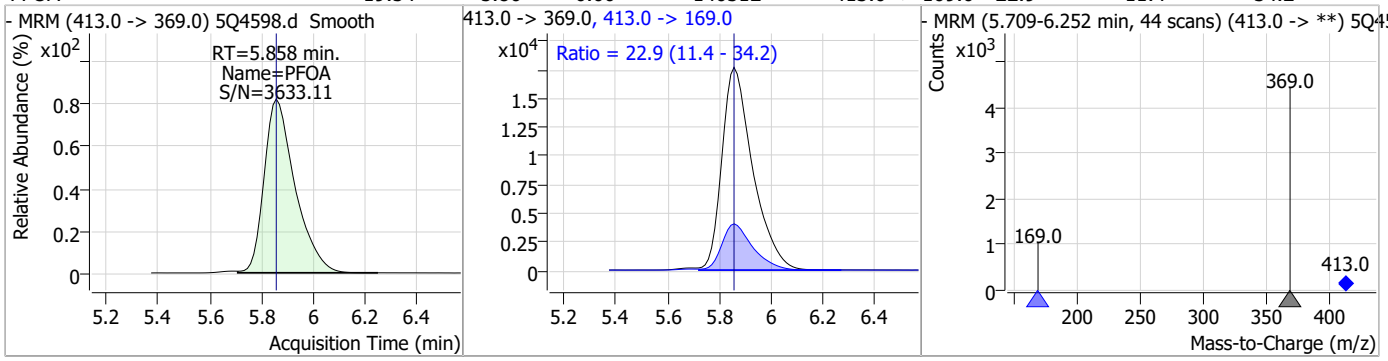


Perfluorinated Compounds by LC/MS/MS

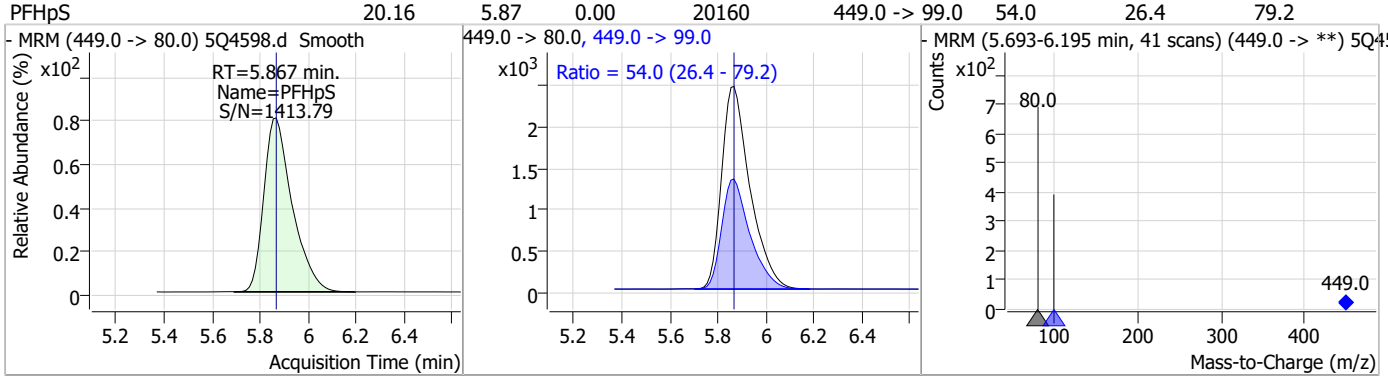
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.45	5.86	0.00	123662				



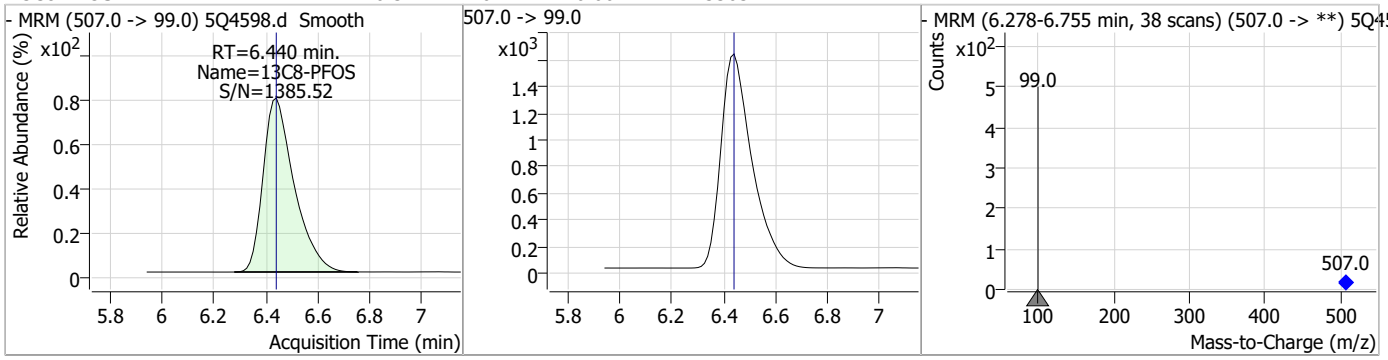
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.54	5.86	0.00	146512	413.0 -> 169.0	22.9	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.16	5.87	0.00	20160	449.0 -> 99.0	54.0	26.4	79.2

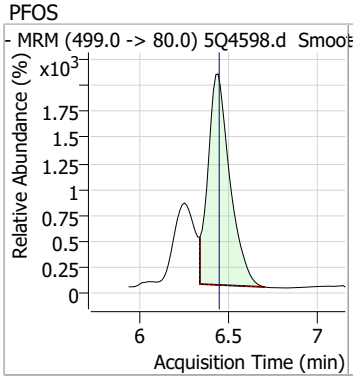


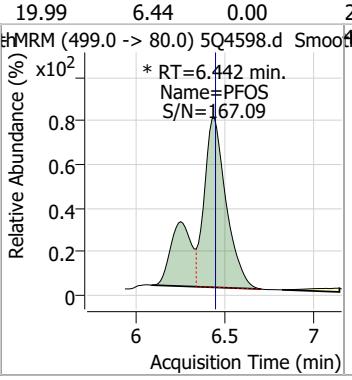
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.37	6.44	0.00	13303				

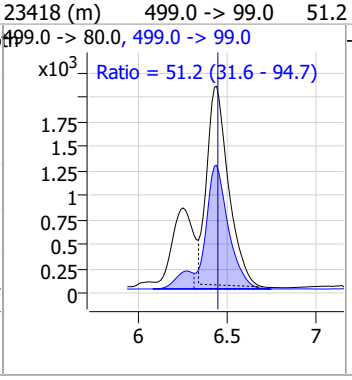


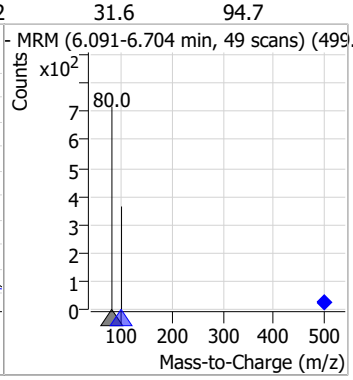
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.99	6.44	0.00	23418 (m)	499.0 -> 99.0	51.2	31.6	94.7

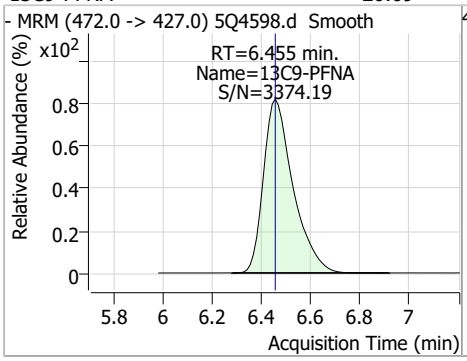


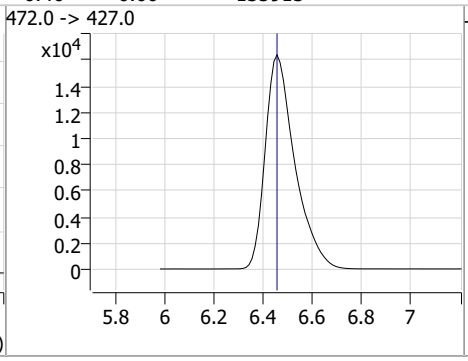


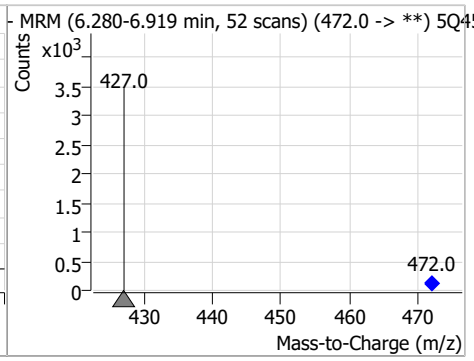




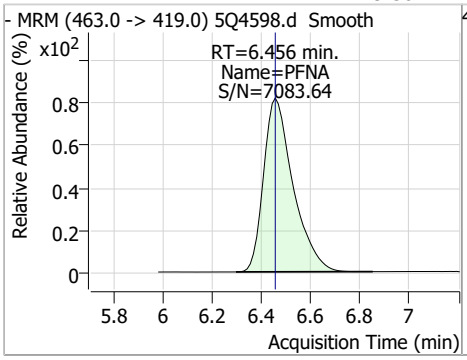
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.69	6.46	0.00	135913				

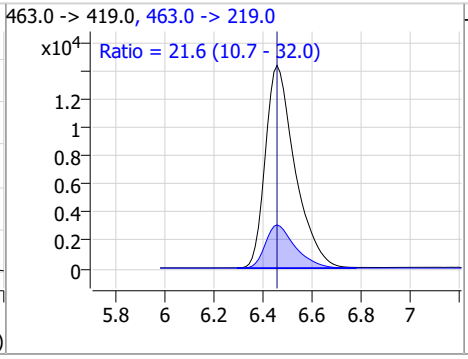


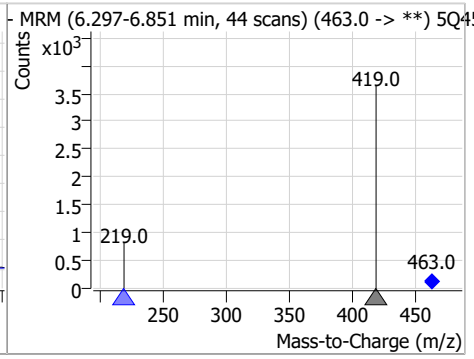




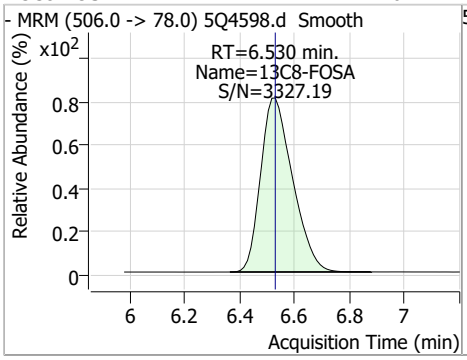
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.56	6.46	0.00	119128	463.0 -> 219.0	21.6	10.7	32.0

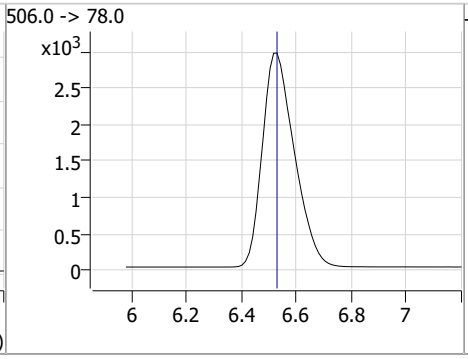


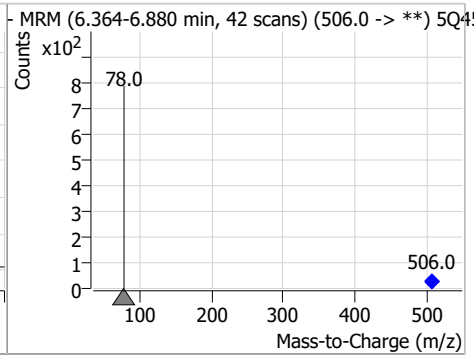




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.02	6.53	0.00	23855				

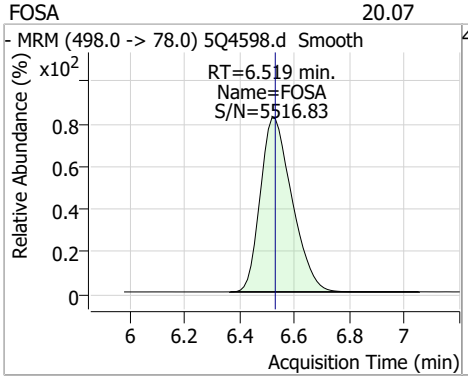


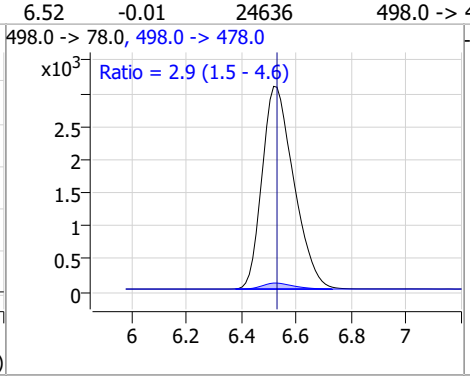


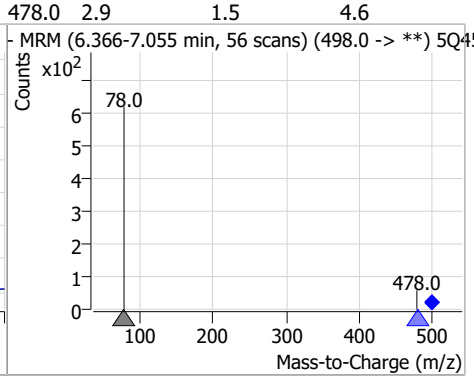


Perfluorinated Compounds by LC/MS/MS

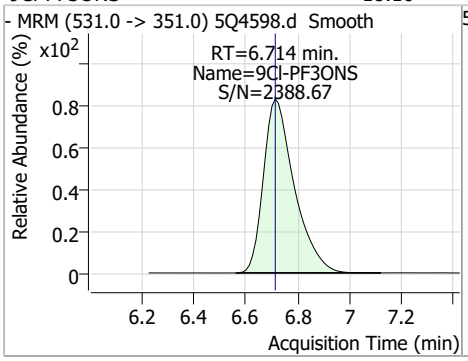
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.07	6.52	-0.01	24636	498.0 -> 478.0	2.9	1.5	4.6

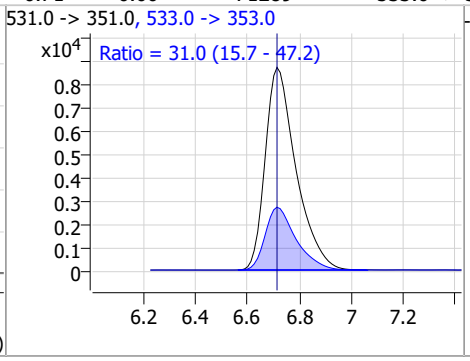


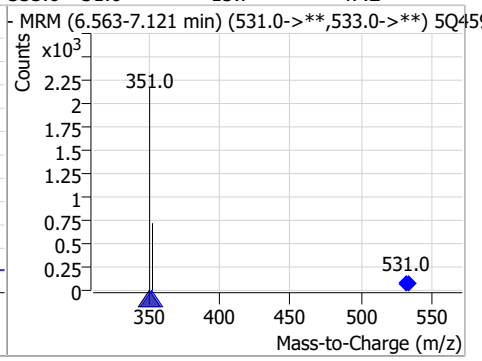




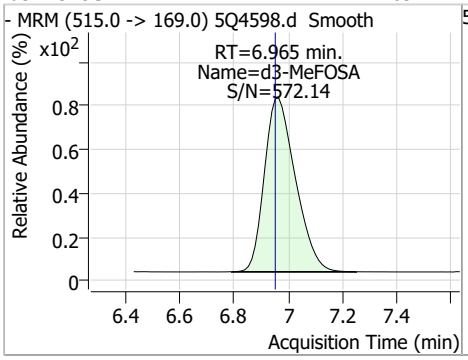
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.16	6.71	0.00	71289	533.0 -> 353.0	31.0	15.7	47.2

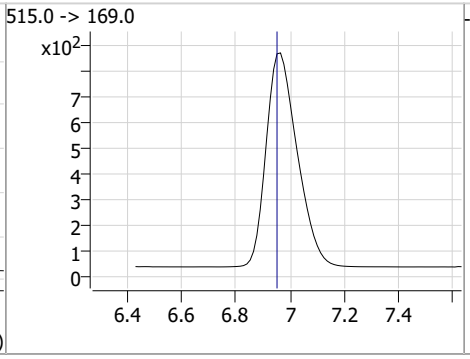


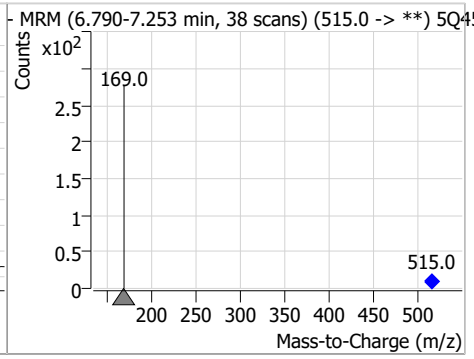




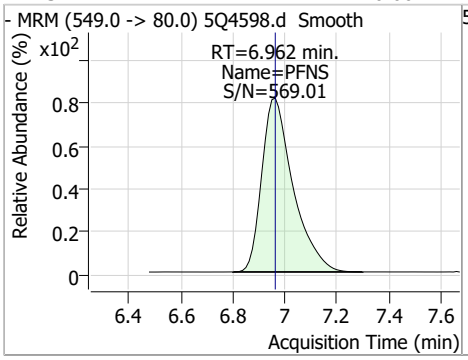
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.89	6.96	0.01	6666				

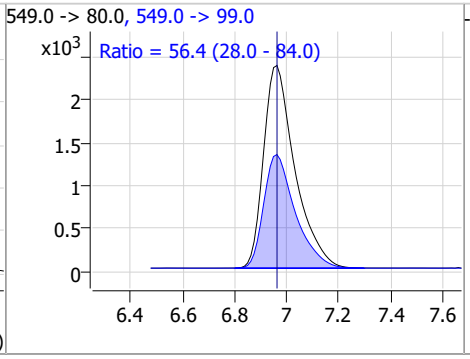


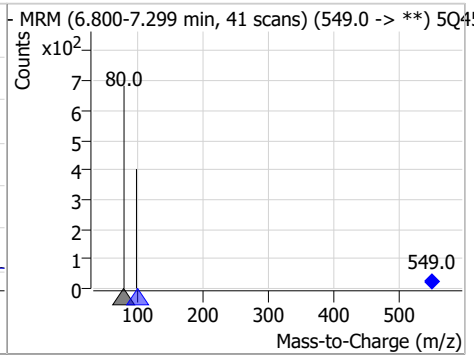




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.06	6.96	0.00	19697	549.0 -> 99.0	56.4	28.0	84.0

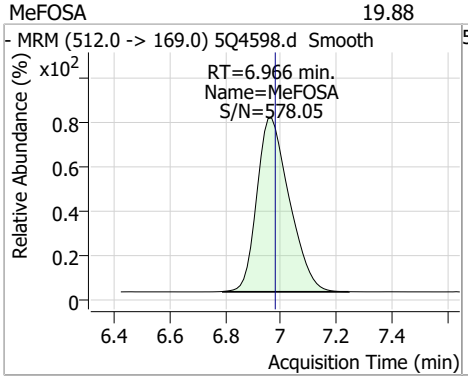


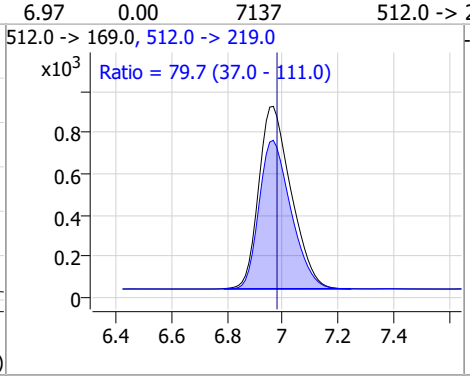


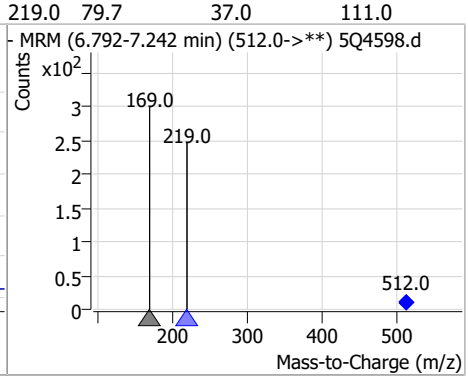


Perfluorinated Compounds by LC/MS/MS

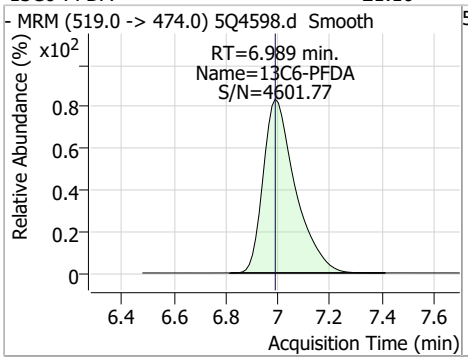
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.88	6.97	0.00	7137	512.0 -> 219.0	79.7	37.0	111.0

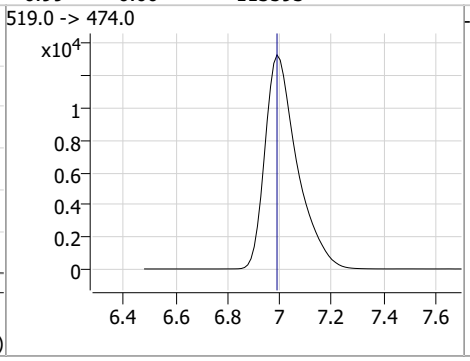


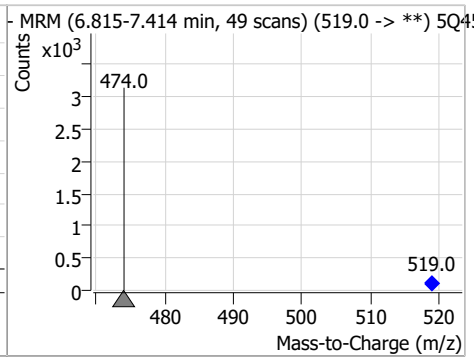




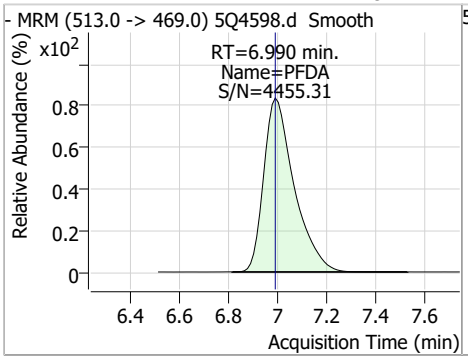
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.10	6.99	0.00	113593				

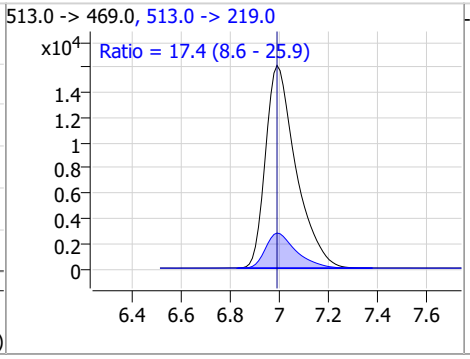


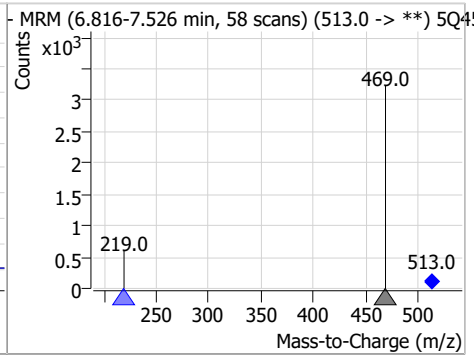




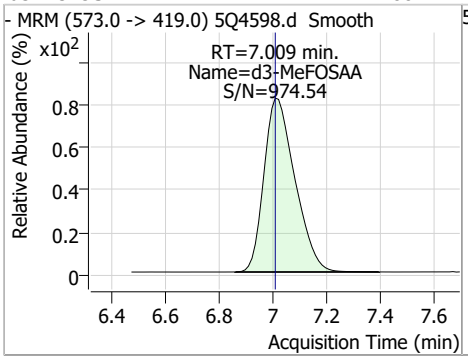
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.74	6.99	0.00	137759	513.0 -> 219.0	17.4	8.6	25.9

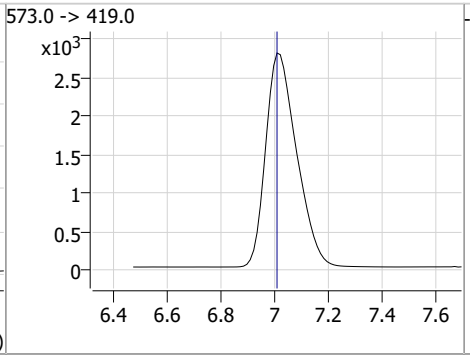


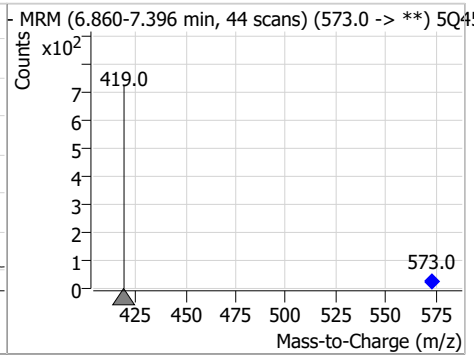




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.88	7.01	0.00	22240				

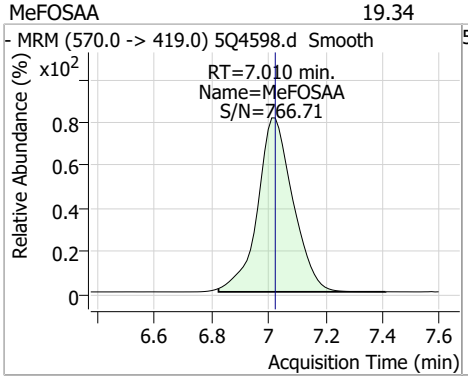


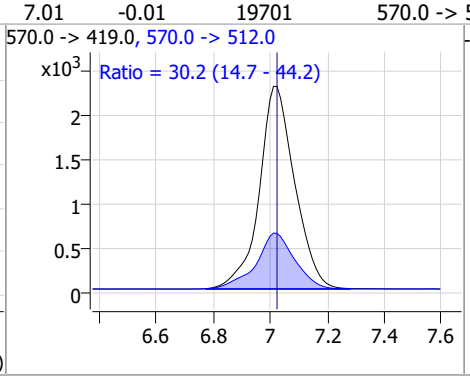


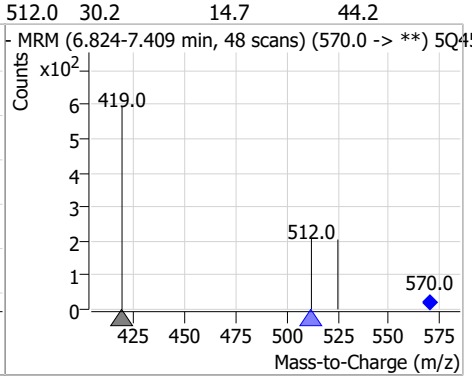


Perfluorinated Compounds by LC/MS/MS

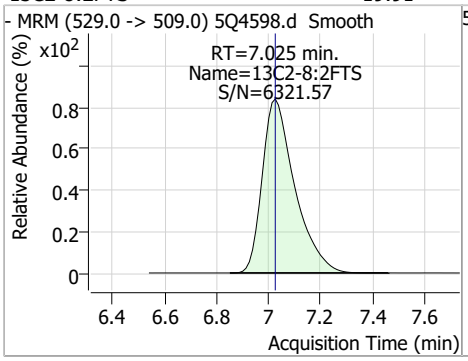
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.34	7.01	-0.01	19701	570.0 -> 512.0	30.2	14.7	44.2

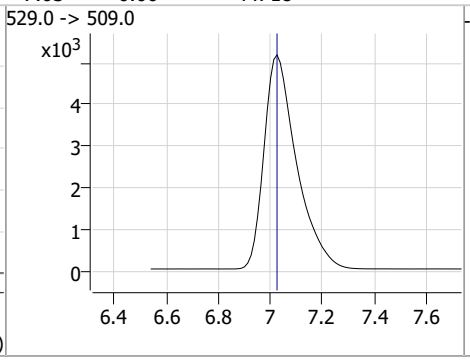


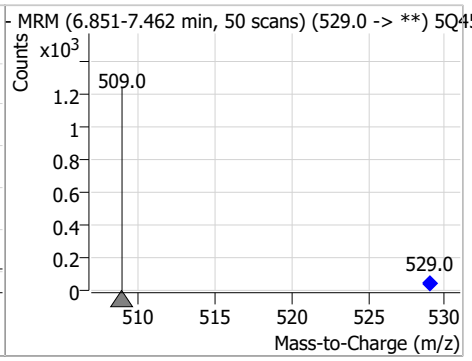




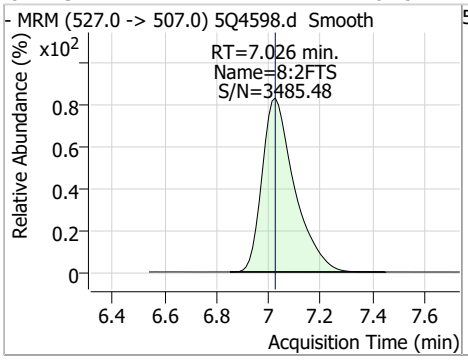
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.91	7.03	0.00	44718				

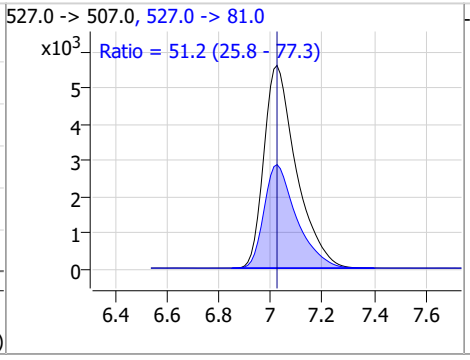


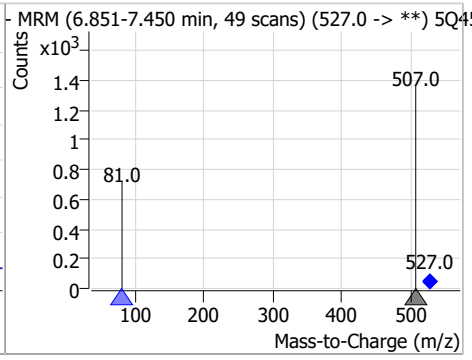




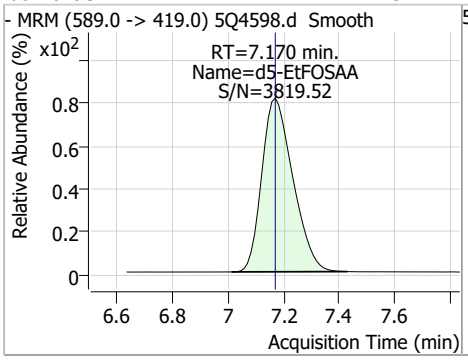
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.25	7.03	0.00	48269	527.0 -> 81.0	51.2	25.8	77.3

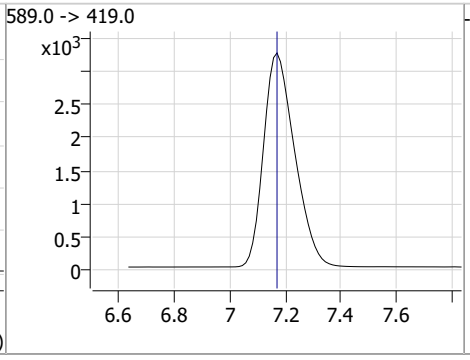


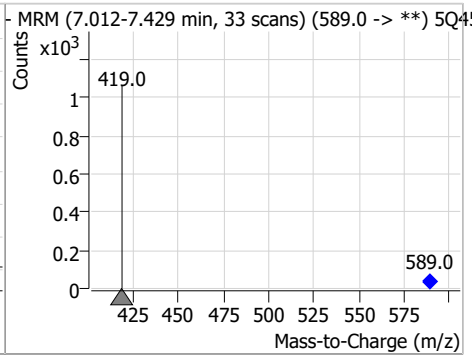




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.31	7.17	0.00	25016				

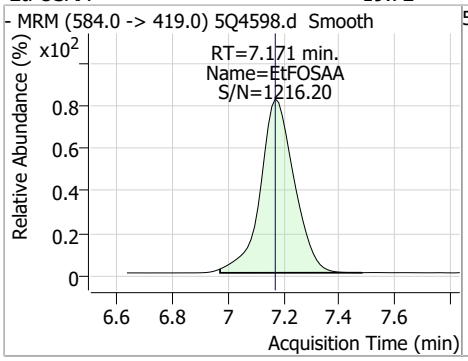


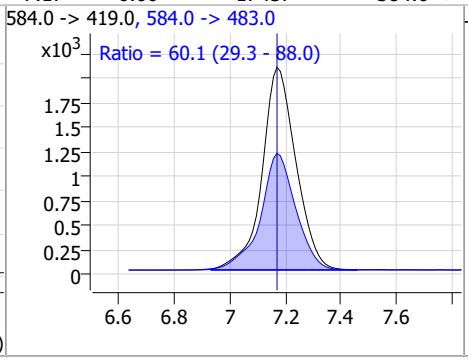


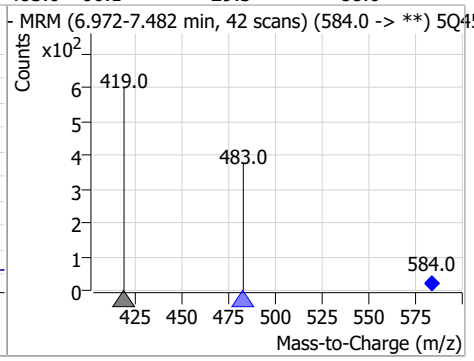


Perfluorinated Compounds by LC/MS/MS

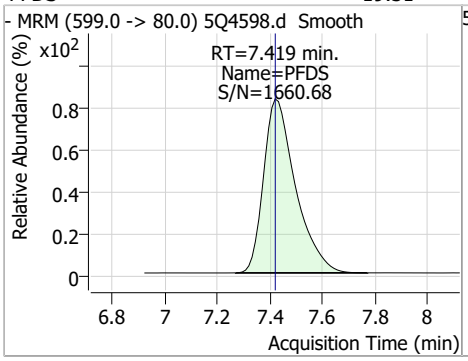
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.72	7.17	0.00	17457	584.0 -> 483.0	60.1	29.3	88.0

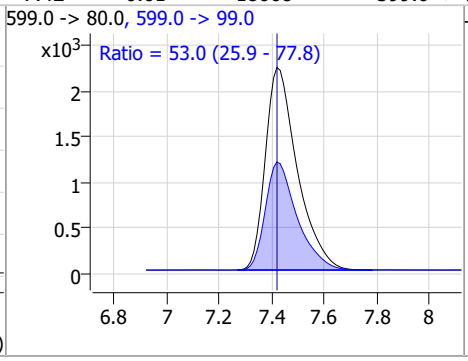


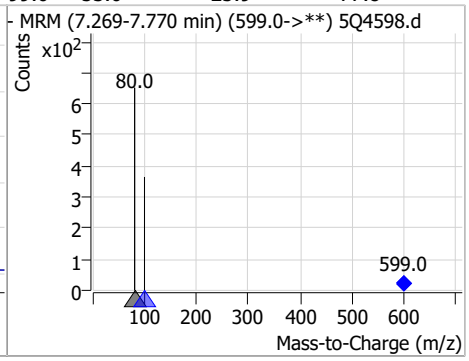




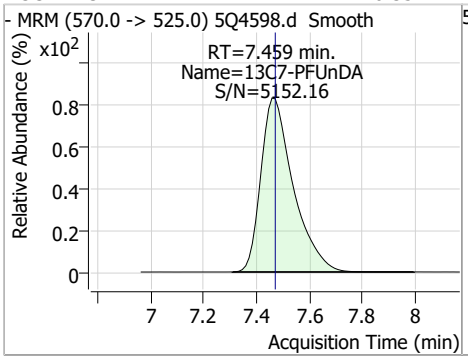
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.31	7.42	-0.01	18668	599.0 -> 99.0	53.0	25.9	77.8

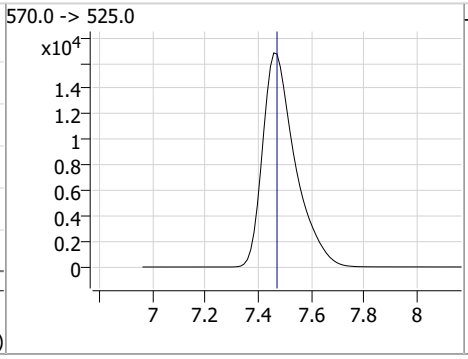


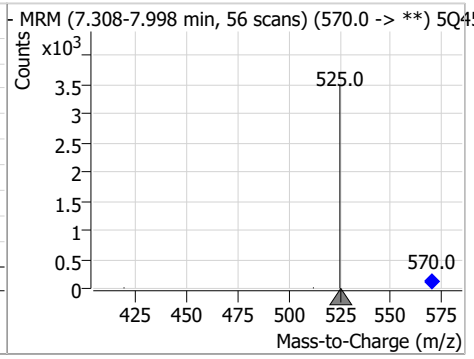




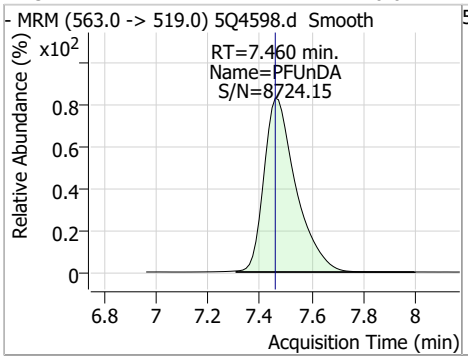
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.35	7.46	-0.01	143266				

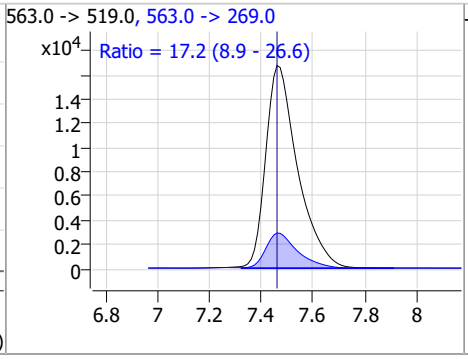


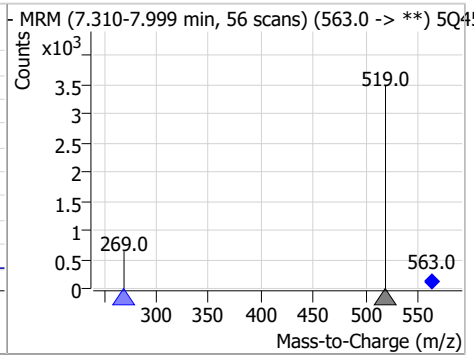




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.04	7.46	-0.01	143404	563.0 -> 269.0	17.2	8.9	26.6

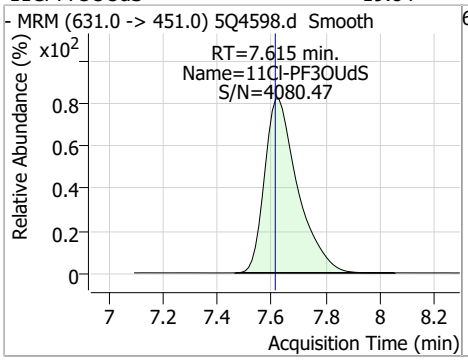


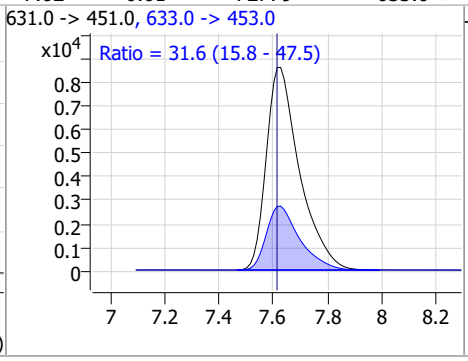


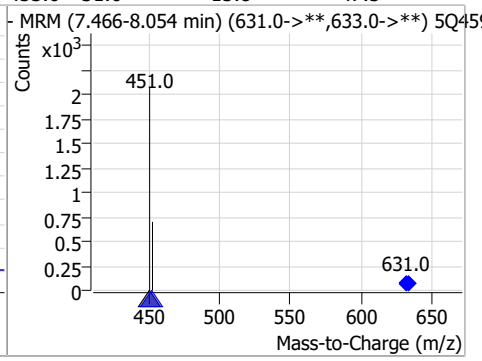


Perfluorinated Compounds by LC/MS/MS

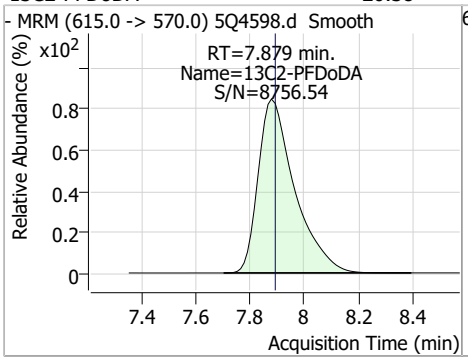
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.84	7.62	-0.01	72779	633.0 -> 453.0	31.6	15.8	47.5

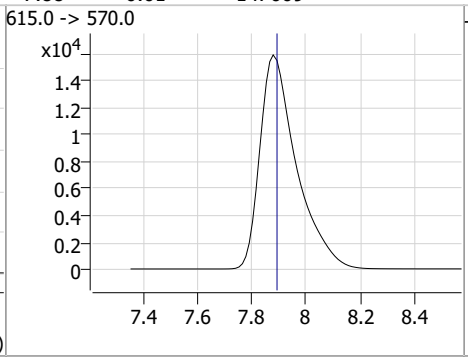


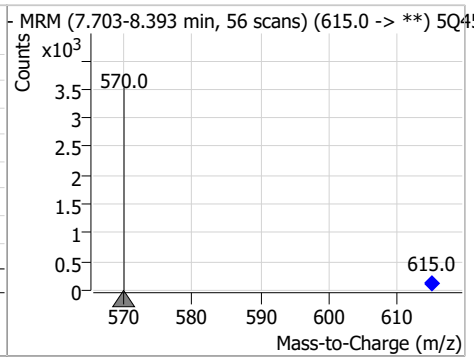




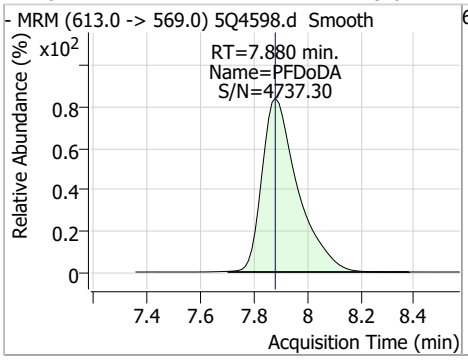
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.38	7.88	-0.01	147669				

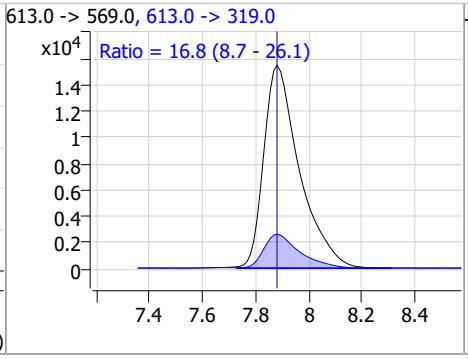


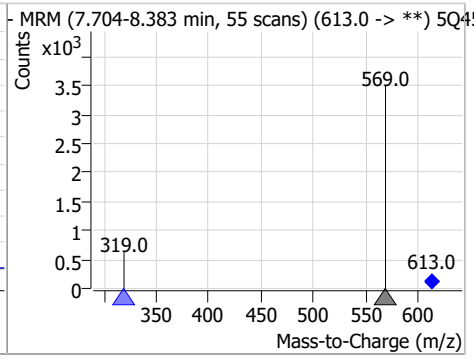




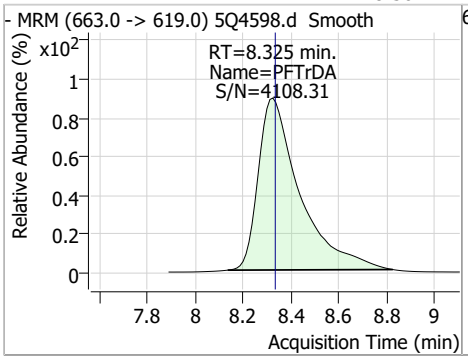
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.82	7.88	-0.01	143539	613.0 -> 319.0	16.8	8.7	26.1

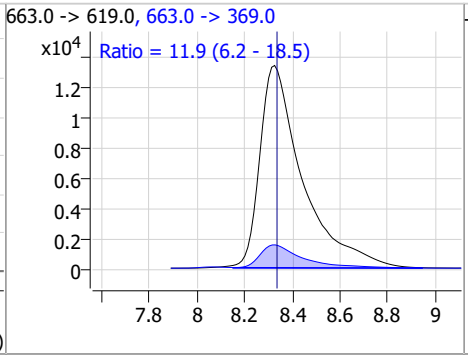


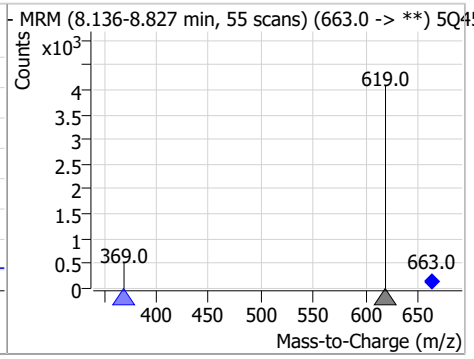




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.50	8.33	-0.02	160155	663.0 -> 369.0	11.9	6.2	18.5

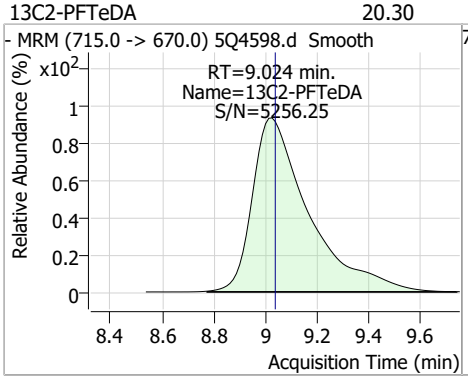


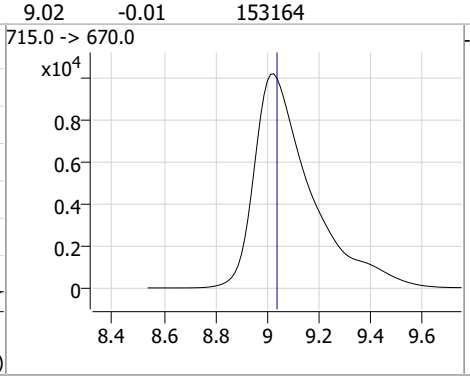


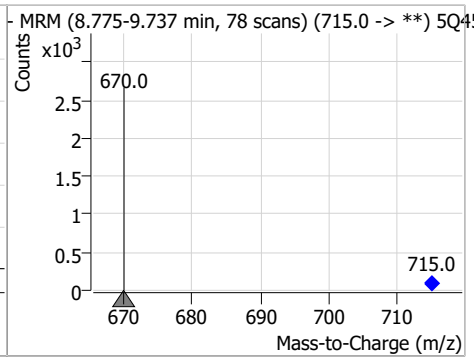


Perfluorinated Compounds by LC/MS/MS

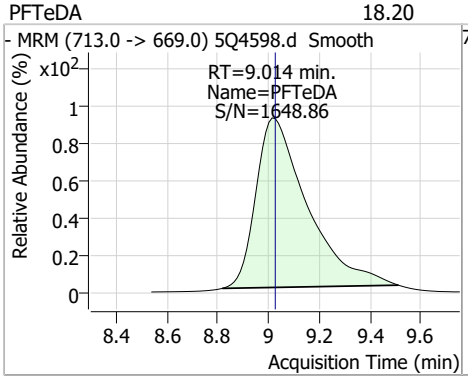
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.30	9.02	-0.01	153164				

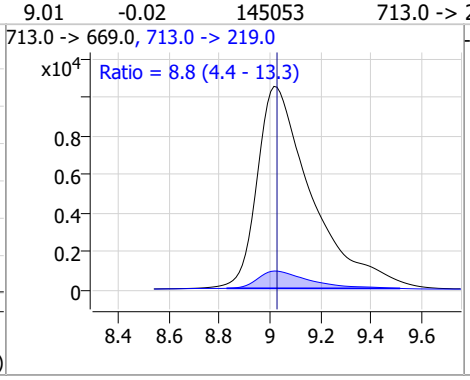


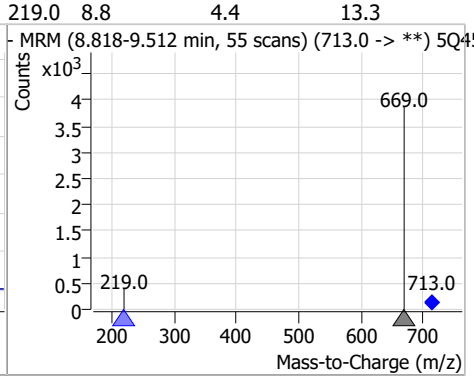




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.20	9.01	-0.02	145053	713.0 -> 219.0	8.8	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4598.D
Injection Time: 09/14/22 21:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4600.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 9:40:40 PM
Sample Name : cc71-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

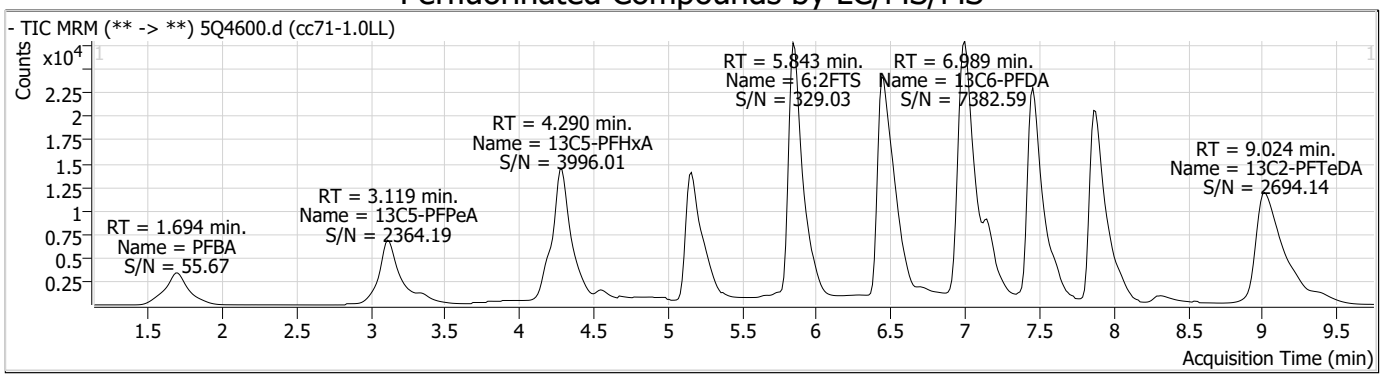
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	37338	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	59082	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	89563	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	83231	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	125235	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	136834	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	115467	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	144868	20.00	µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	151144	20.00	µg/L	-0.014
M2-PFTeDA	9.024	715.0 -> 670.0	156103	20.00	µg/L	-0.012
M8-FOSA	6.530	506.0 -> 78.0	24580	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6698	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	7038	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13261	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28117	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43639	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	43357	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	24081	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6103	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6957	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	26896	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	28117	19.15	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43639	19.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C2-8:2FTS	7.025	529.0 -> 509.0	43357	19.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	151144	20.85	µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C2-PFTeDA	9.024	715.0 -> 670.0	156103	20.69	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFBS	3.349	302.0 -> 99.0	6698	20.56	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFHxS	5.206	402.0 -> 99.0	7038	20.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C4-PFBA	1.700	217.0 -> 172.0	37338	20.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C4-PFHpA	5.163	367.0 -> 322.0	83231	20.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	89563	20.49	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	3.119	268.0 -> 223.0	59082	20.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
13C6-PFDA	6.989	519.0 -> 474.0	115467	21.45	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

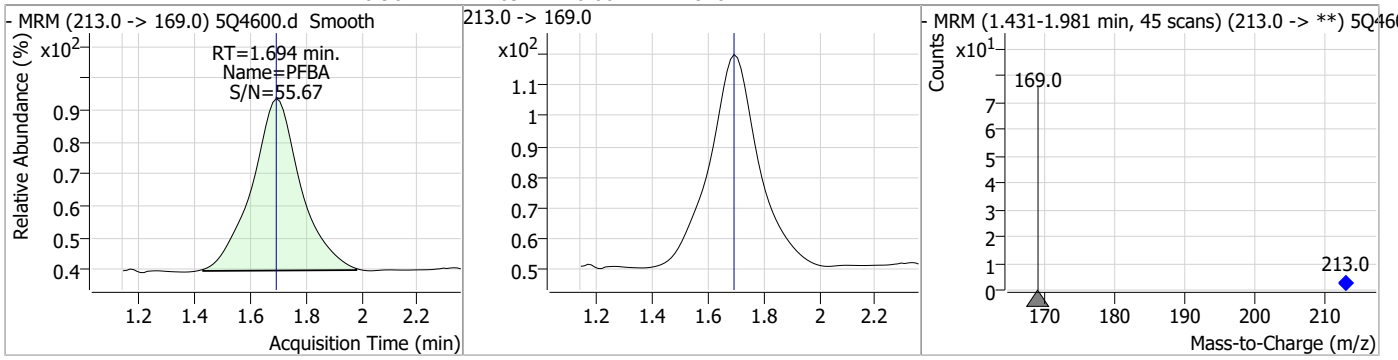
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C7-PFUnDA	7.459	570.0 -> 525.0	144868	20.57 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C8-FOSA	6.530	506.0 -> 78.0	24580	21.66 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C8-PFOA	5.857	421.0 -> 376.0	125235	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-PFOS	6.440	507.0 -> 99.0	13261	20.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C9-PFNA	6.455	472.0 -> 427.0	136834	20.83 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%		
d3-MeFOSAA	7.009	573.0 -> 419.0	24081	24.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.9%		
13C3-HFPO-DA	4.569	287.0 -> 169.0	6103	18.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
d3-MeFOSA	6.952	515.0 -> 169.0	6957	22.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.2%		
d5-EtFOSAA	7.170	589.0 -> 419.0	26896	23.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.9%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	1532	0.97 µg/L		90
6:2FTS	5.843	427.0 -> 407.0	2421	1.05 µg/L		95
8:2FTS	7.026	527.0 -> 507.0	2250	0.97 µg/L		92
EtFOSAA	7.171	584.0 -> 419.0	881	0.93 µg/L		98
FOSA	6.519	498.0 -> 78.0	1145	0.91 µg/L		91
MeFOSAA	7.010	570.0 -> 419.0	1116	1.01 µg/L		98
PFBA	1.694	213.0 -> 169.0	840	0.96 µg/L		100
PFBS	3.354	299.0 -> 80.0	955	0.95 µg/L		99
PFDA	6.990	513.0 -> 469.0	6770	0.95 µg/L		99
PFDoDA	7.880	613.0 -> 569.0	7146	0.96 µg/L		99
PFDS	7.419	599.0 -> 80.0	903	0.92 µg/L		97
PFHpA	5.164	363.0 -> 319.0	5337	0.98 µg/L		99
PFHpS	5.855	449.0 -> 80.0	954	0.96 µg/L		99
PFHxA	4.291	313.0 -> 269.0	4119	0.94 µg/L		100
PFHxS	5.195	399.0 -> 80.0	971	0.93 µg/L		94
PFNA	6.456	463.0 -> 419.0	5715	0.93 µg/L		99
PFNS	6.962	549.0 -> 80.0	876	0.89 µg/L		93
PFOA	5.858	413.0 -> 369.0	7248	0.95 µg/L		99
PFOS	6.442	499.0 -> 80.0	988	0.85 µg/L	m	93
PFPeA	3.122	263.0 -> 219.0	2780	0.95 µg/L		100
PFPeS	4.398	349.0 -> 80.0	758	0.97 µg/L		98
PFTeDA	9.027	713.0 -> 669.0	7980	0.98 µg/L		99
PFTrDA	8.325	663.0 -> 619.0	7881	0.89 µg/L		96
PFUnDA	7.460	563.0 -> 519.0	5917	0.82 µg/L		92
11Cl-PF3OUdS	7.628	631.0 -> 451.0	3442	0.92 µg/L		96
9Cl-PF3ONS	6.714	531.0 -> 351.0	3393	0.85 µg/L		99
ADONA	5.261	377.0 -> 251.0	6711	0.93 µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	952	0.92 µg/L		97
MeFOSA	6.966	512.0 -> 169.0	379	1.01 µg/L		88
4-PFECHS	5.753	461.0 -> 381.0	2100	0.93 µg/L		97
FBSA	4.343	298.0 -> 78.0	1506	1.01 µg/L		97
FHxSA	5.674	398.0 -> 78.0	1267	0.99 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

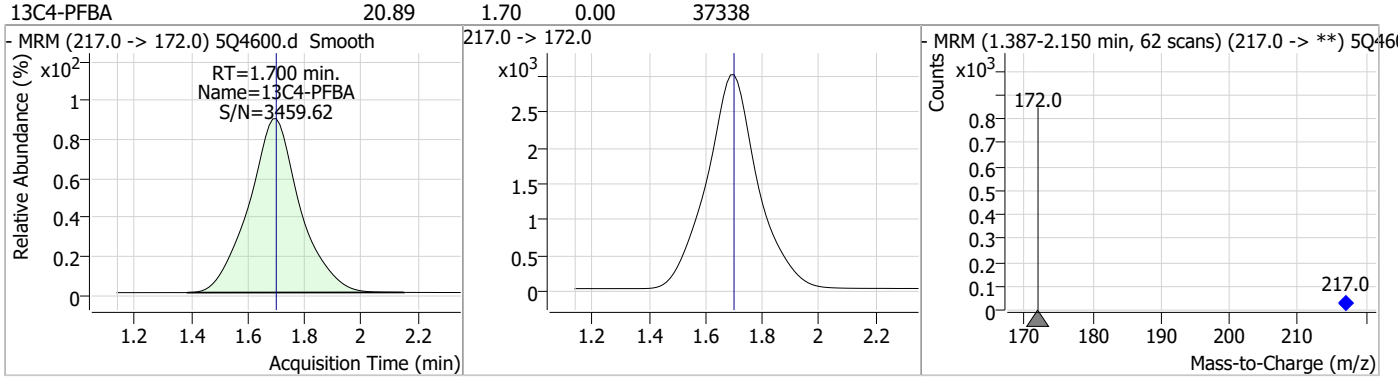
Perfluorinated Compounds by LC/MS/MS



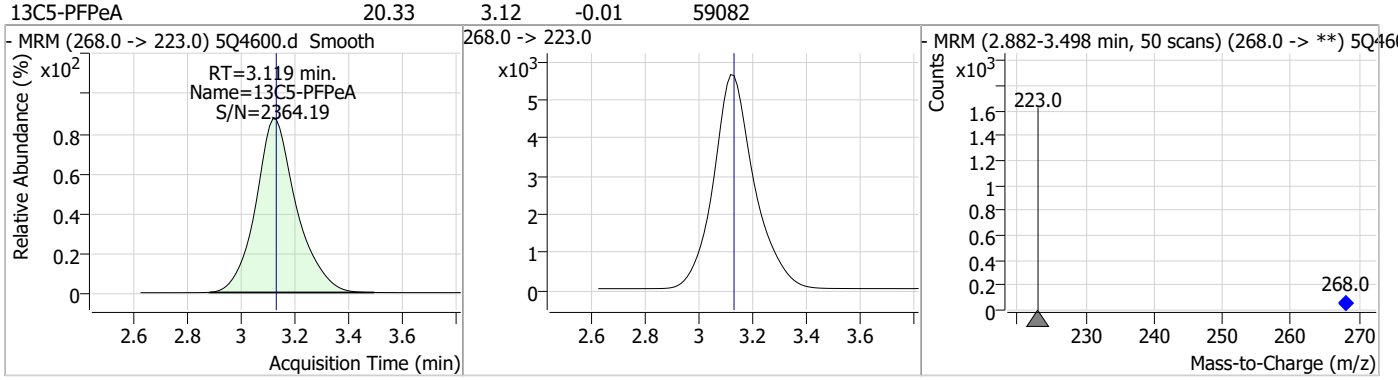
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.96	1.69	0.00	840				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.89	1.70	0.00	37338				

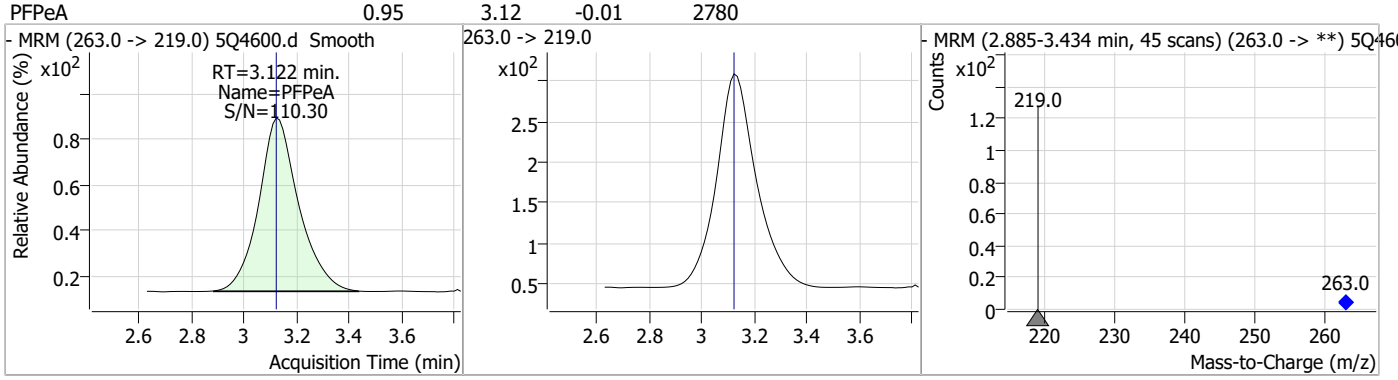


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.33	3.12	-0.01	59082				

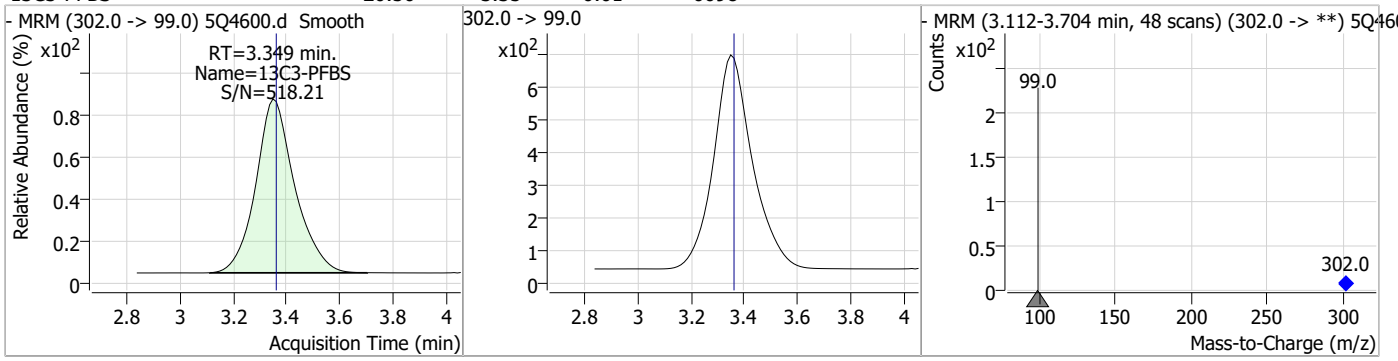


Perfluorinated Compounds by LC/MS/MS

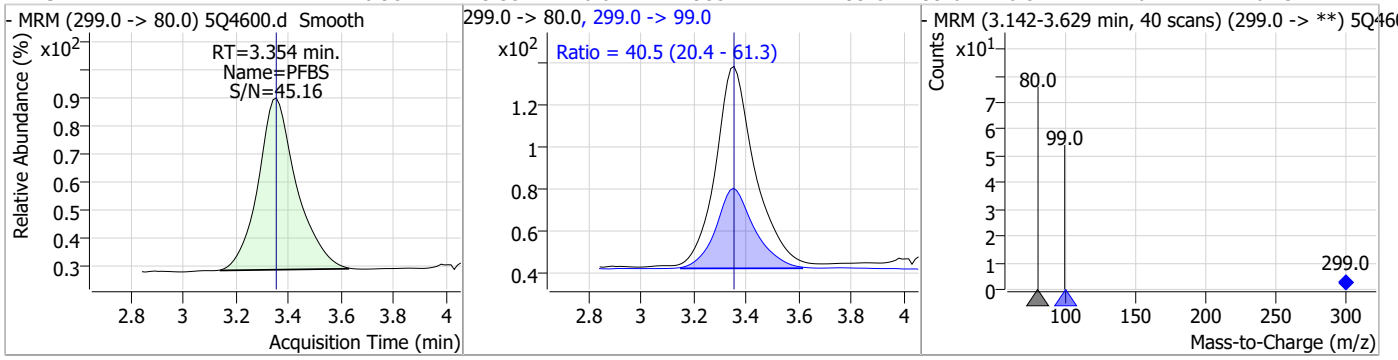
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.95	3.12	-0.01	2780				



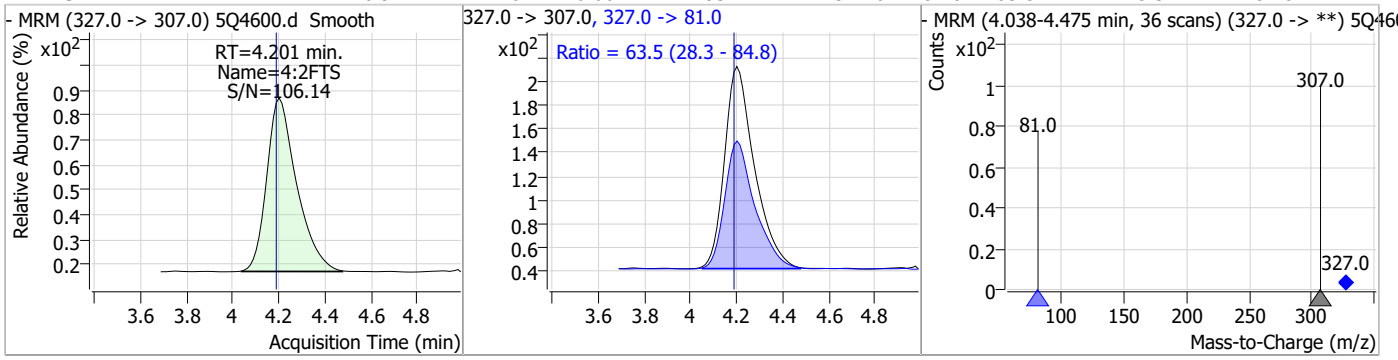
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.56	3.35	-0.01	6698				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.95	3.35	-0.01	955	299.0 -> 99.0	40.5	20.4	61.3

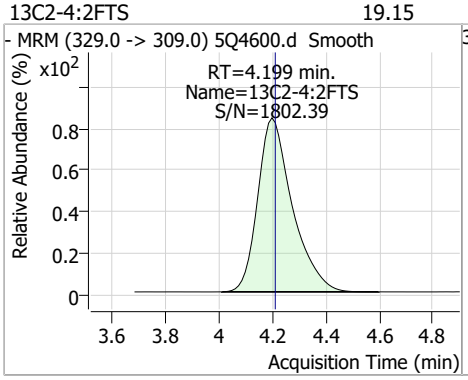


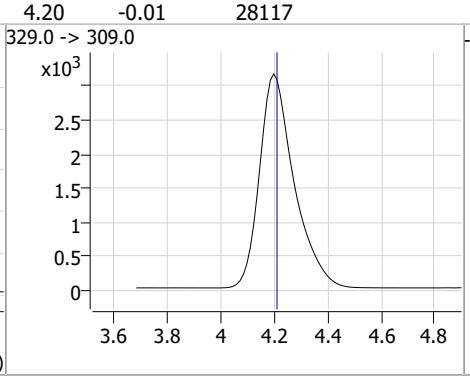
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.97	4.20	0.00	1532	327.0 -> 81.0	63.5	28.3	84.8

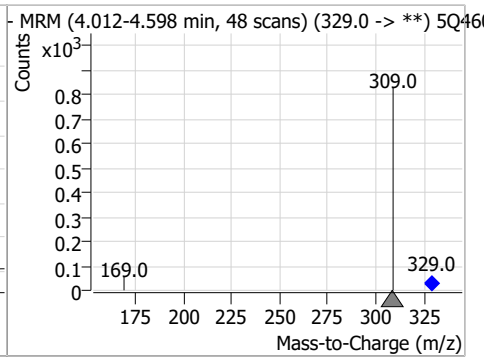


Perfluorinated Compounds by LC/MS/MS

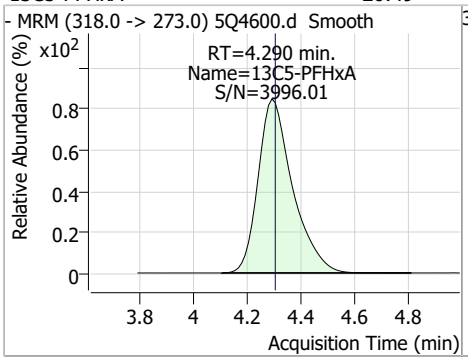
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.15	4.20	-0.01	28117				

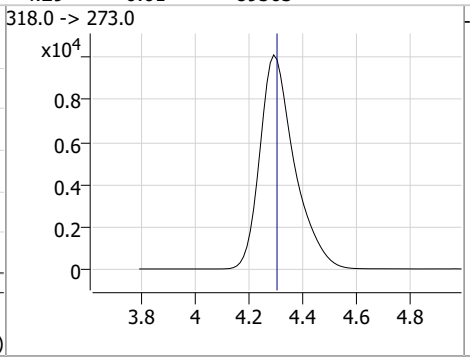


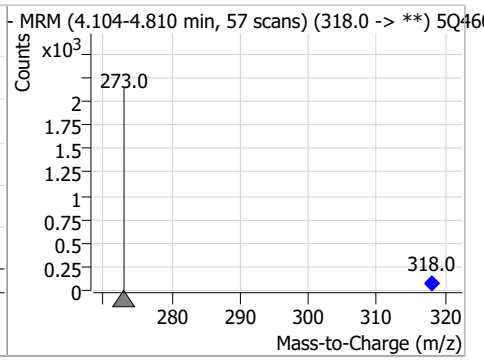




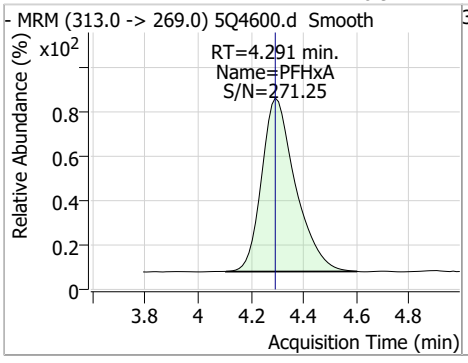
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.49	4.29	-0.01	89563				

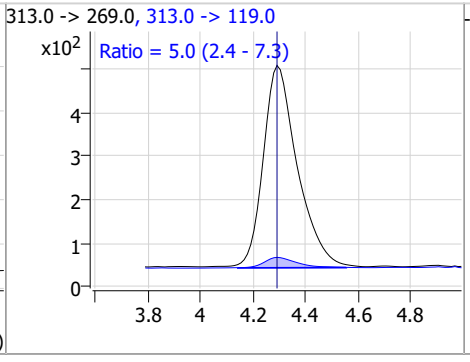


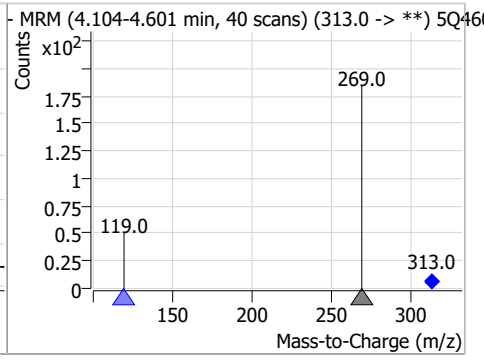




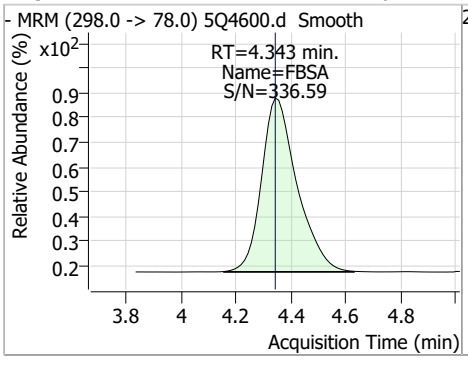
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.94	4.29	-0.01	4119	313.0 -> 119.0	5.0	2.4	7.3

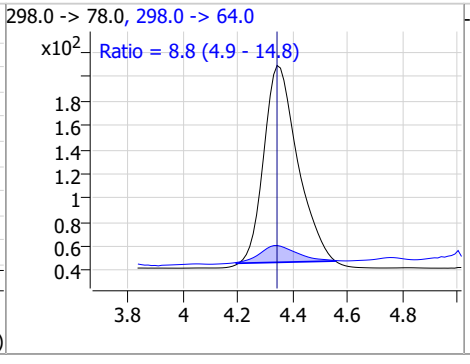


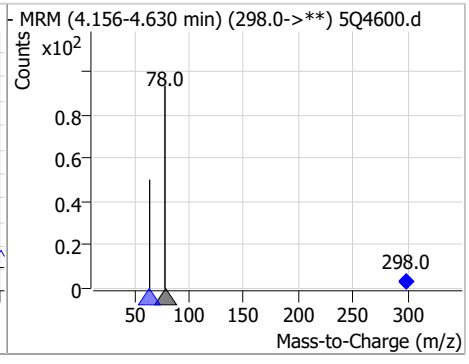




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.01	4.34	-0.01	1506	298.0 -> 64.0	8.8	4.9	14.8

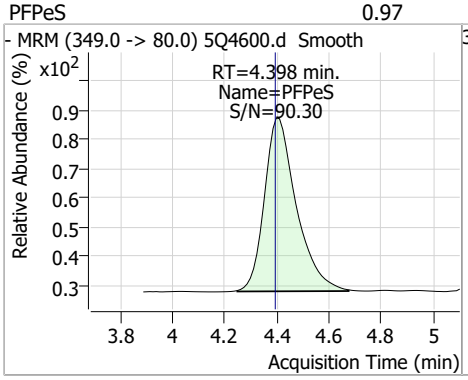


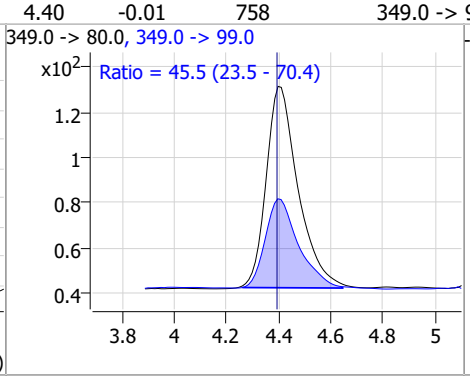


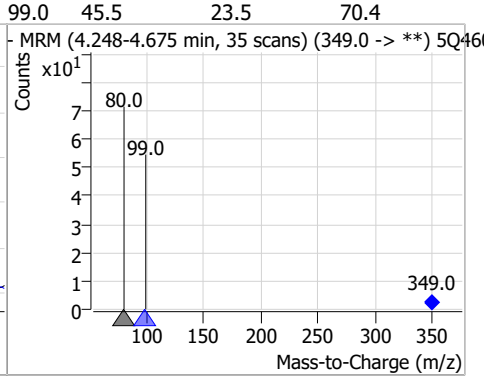


Perfluorinated Compounds by LC/MS/MS

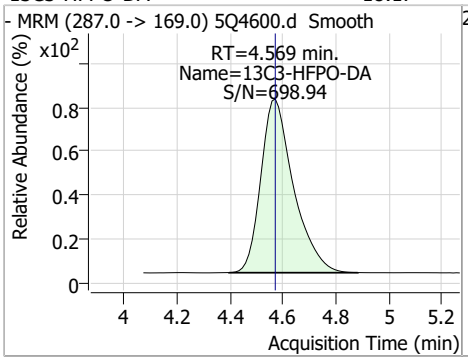
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.97	4.40	-0.01	758	349.0 -> 99.0	45.5	23.5	70.4

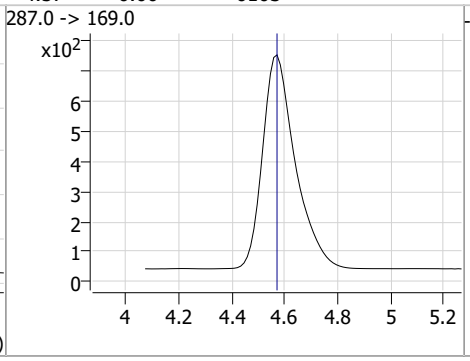


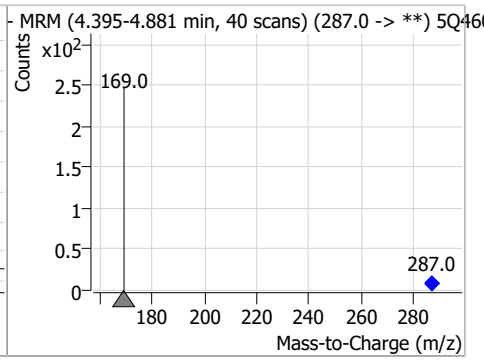




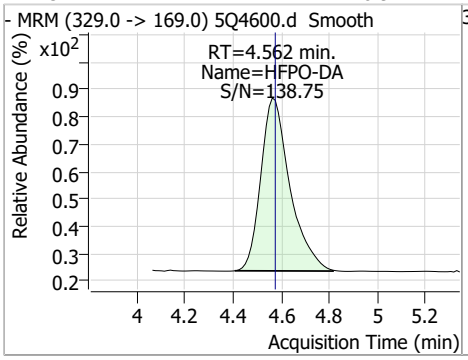
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.17	4.57	0.00	6103				

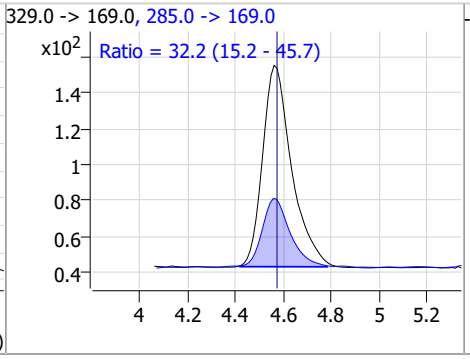


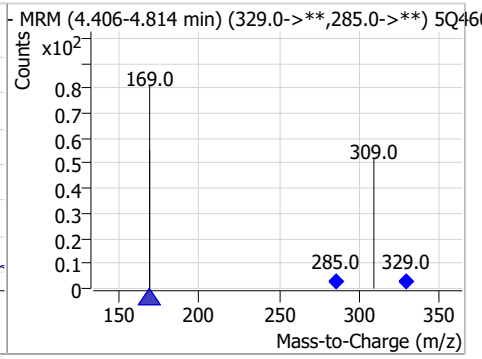




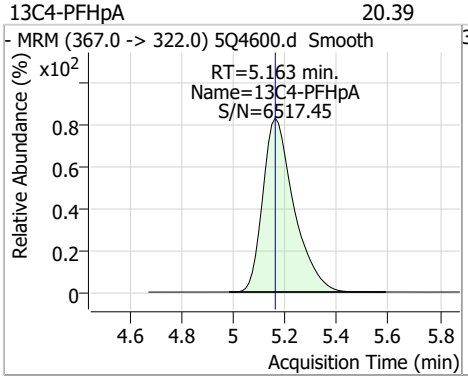
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.92	4.56	-0.01	952	285.0 -> 169.0	32.2	15.2	45.7

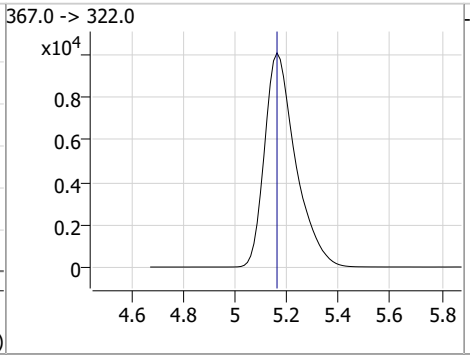


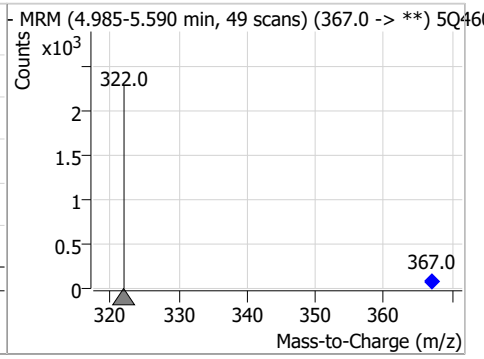




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.39	5.16	0.00	83231				

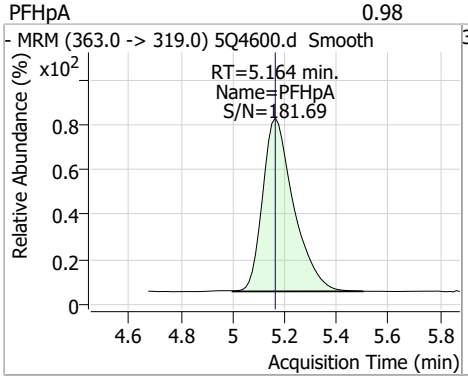


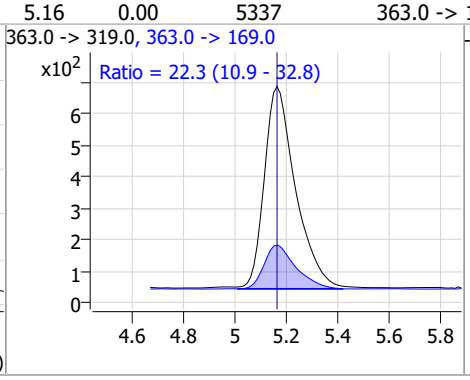


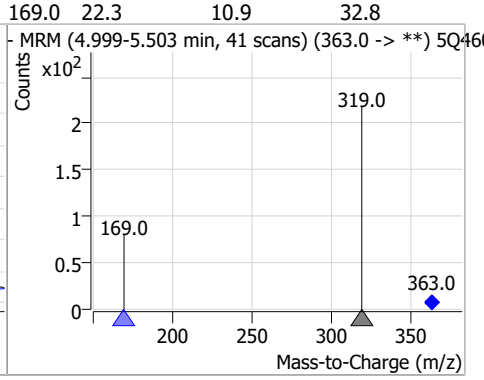


Perfluorinated Compounds by LC/MS/MS

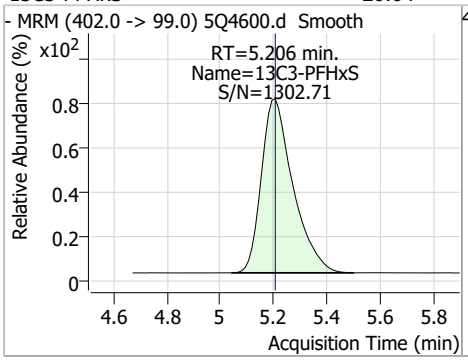
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.98	5.16	0.00	5337	363.0 -> 169.0	22.3	10.9	32.8

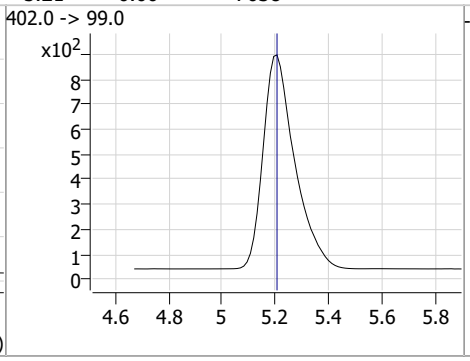


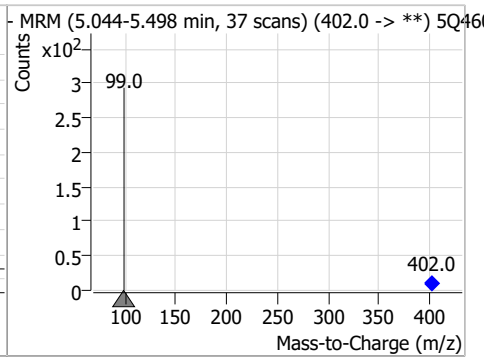




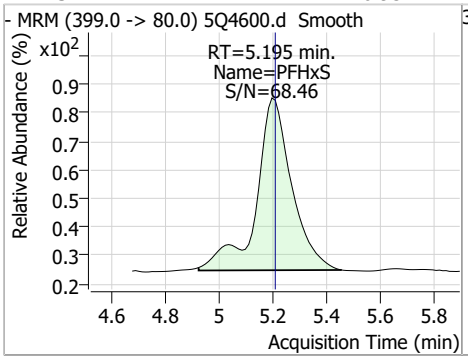
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.64	5.21	0.00	7038				

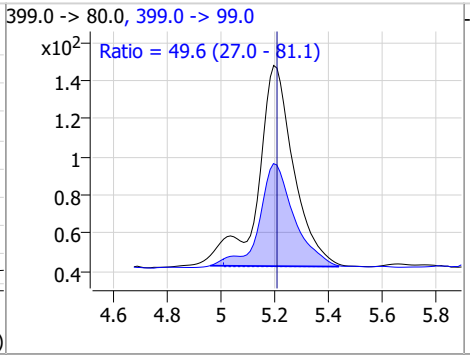


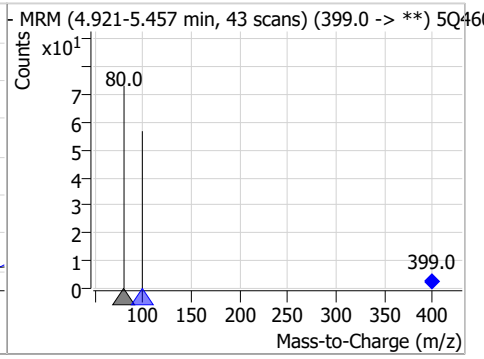




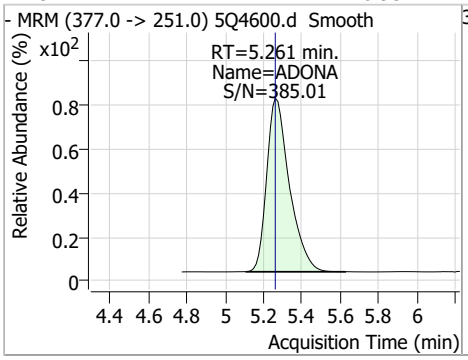
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	5.20	-0.01	971	399.0 -> 99.0	49.6	27.0	81.1

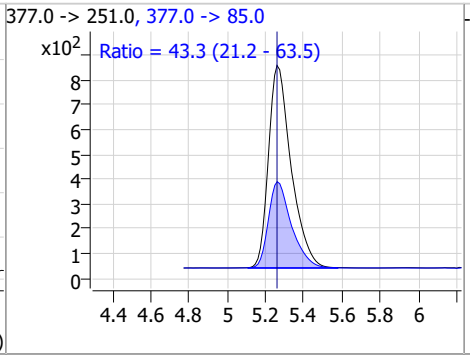


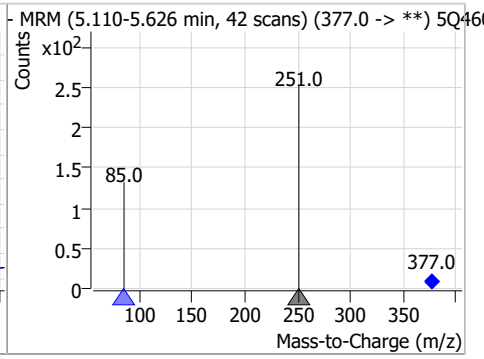




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.93	5.26	0.00	6711	377.0 -> 85.0	43.3	21.2	63.5

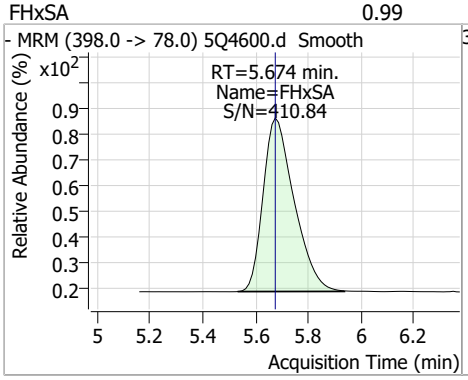


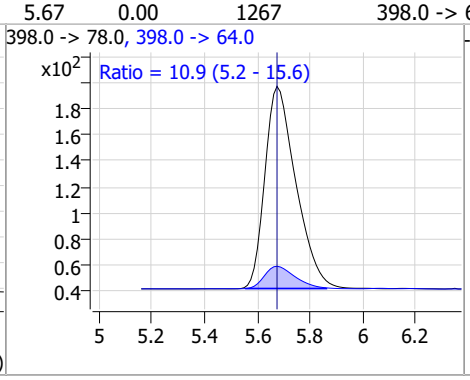


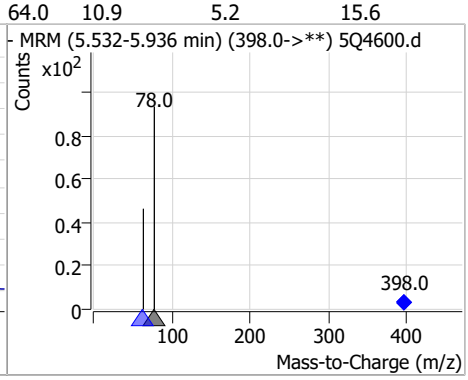


Perfluorinated Compounds by LC/MS/MS

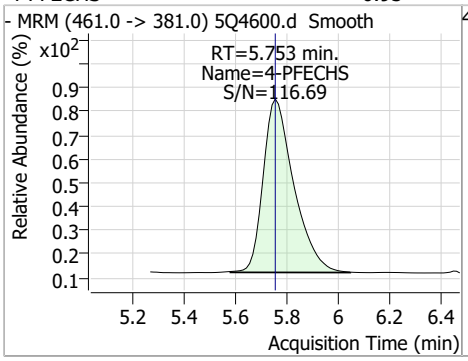
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.99	5.67	0.00	1267	398.0 -> 64.0	10.9	5.2	15.6

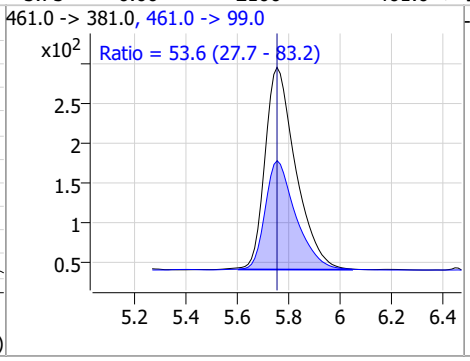


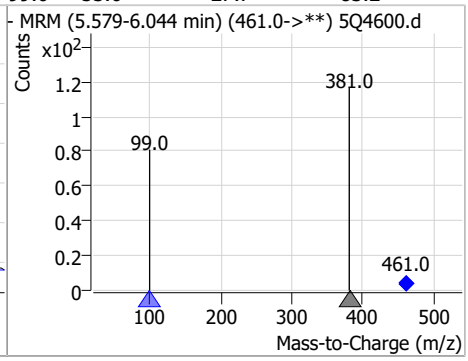




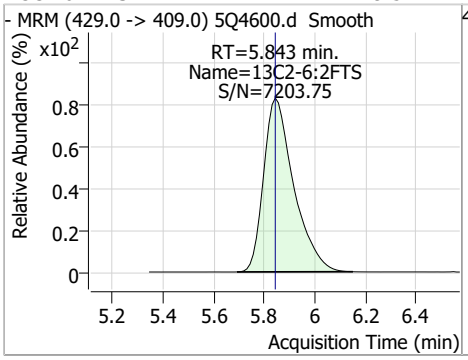
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.93	5.75	0.00	2100	461.0 -> 99.0	53.6	27.7	83.2

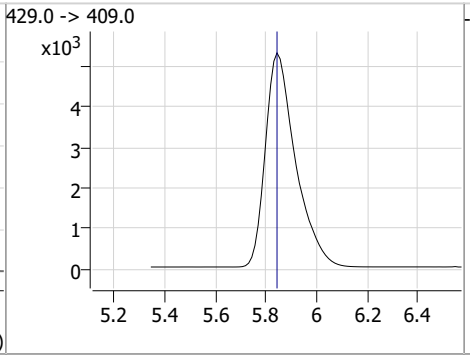


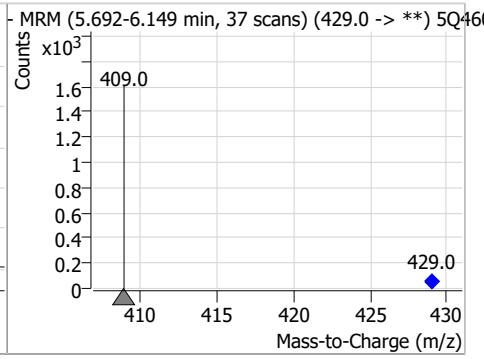




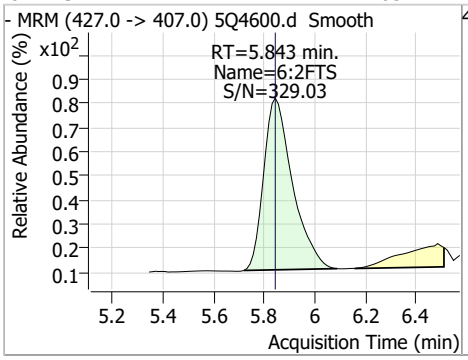
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.52	5.84	0.00	43639				

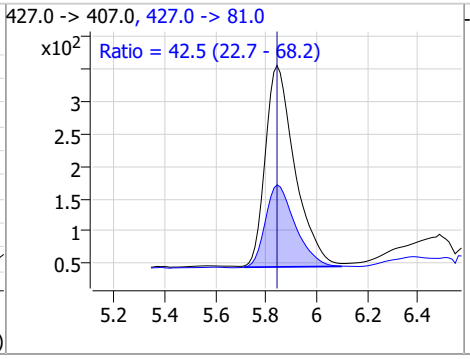


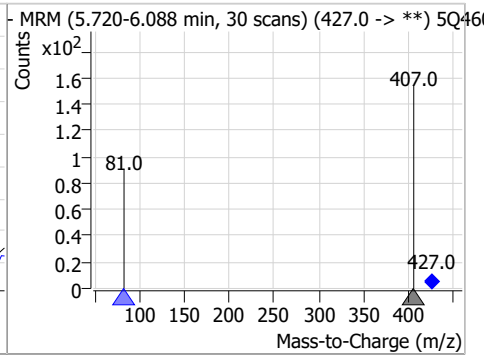




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.84	0.00	2421	427.0 -> 81.0	42.5	22.7	68.2

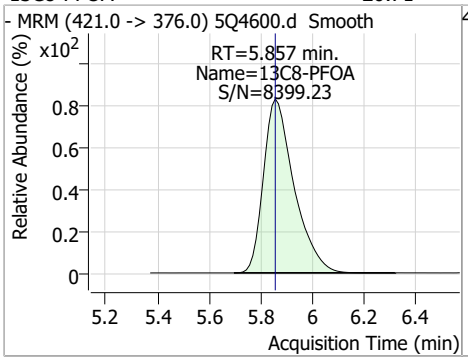


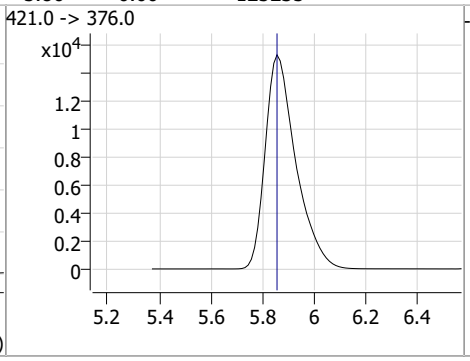


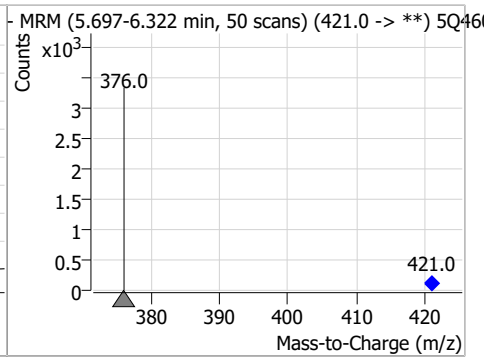


Perfluorinated Compounds by LC/MS/MS

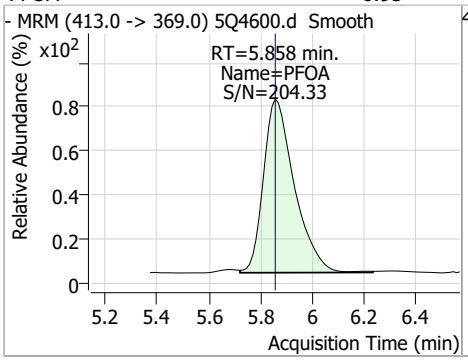
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.71	5.86	0.00	125235				

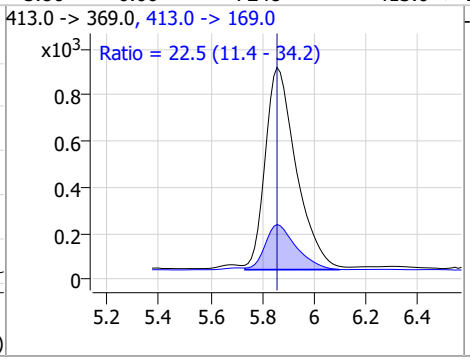


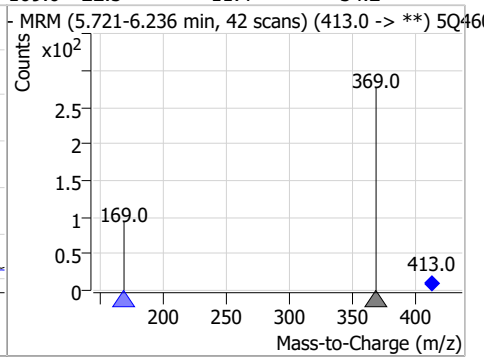




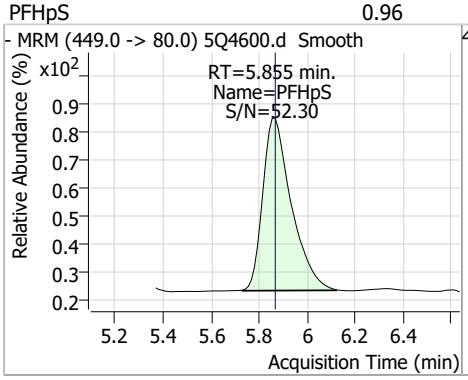
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	5.86	0.00	7248	413.0 -> 169.0	22.5	11.4	34.2

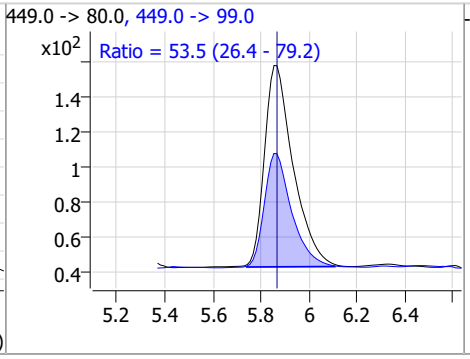


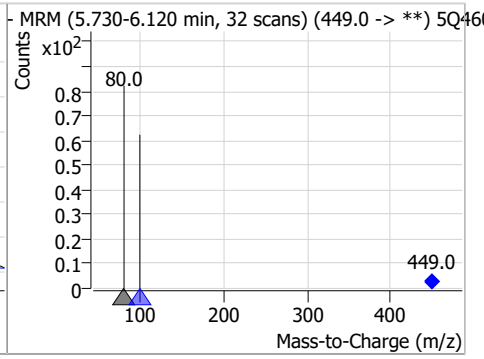




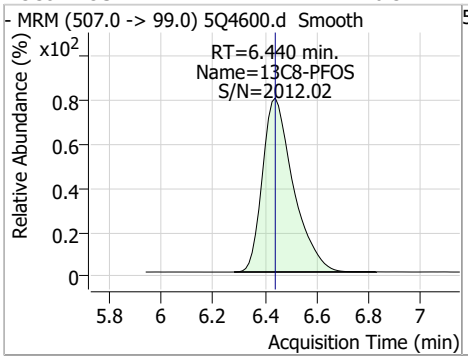
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.96	5.85	-0.01	954	449.0 -> 99.0	53.5	26.4	79.2

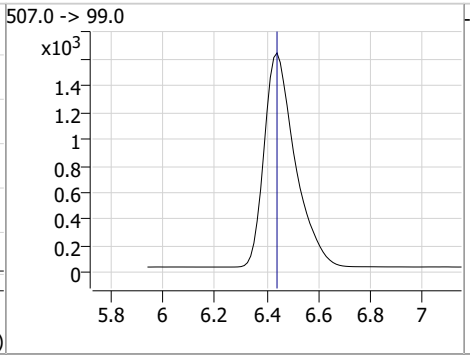


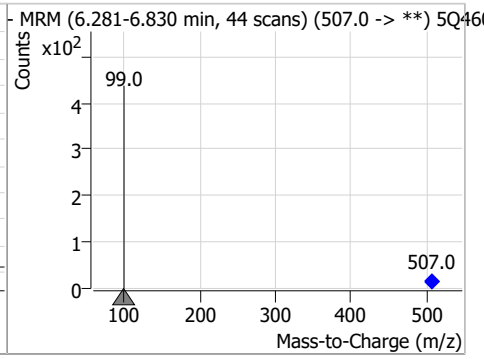




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.31	6.44	0.00	13261				

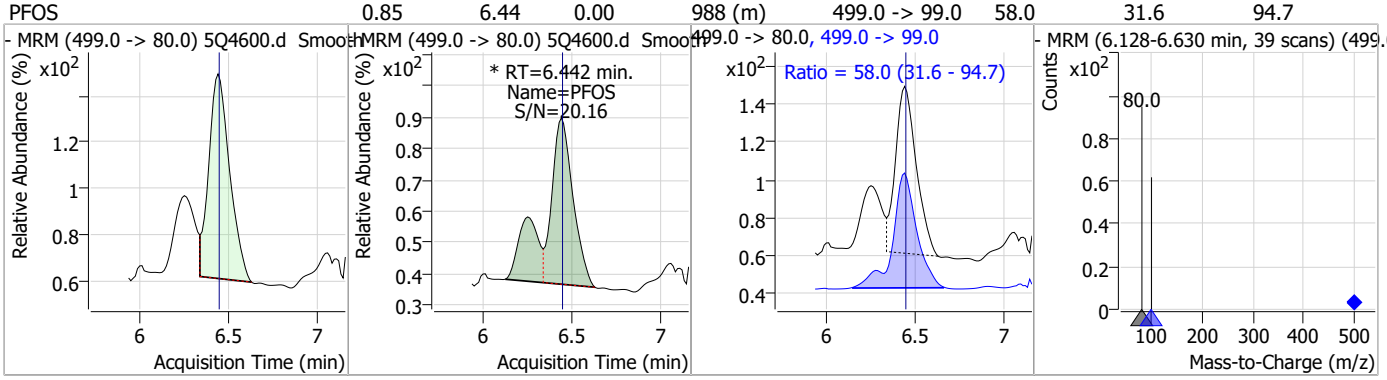




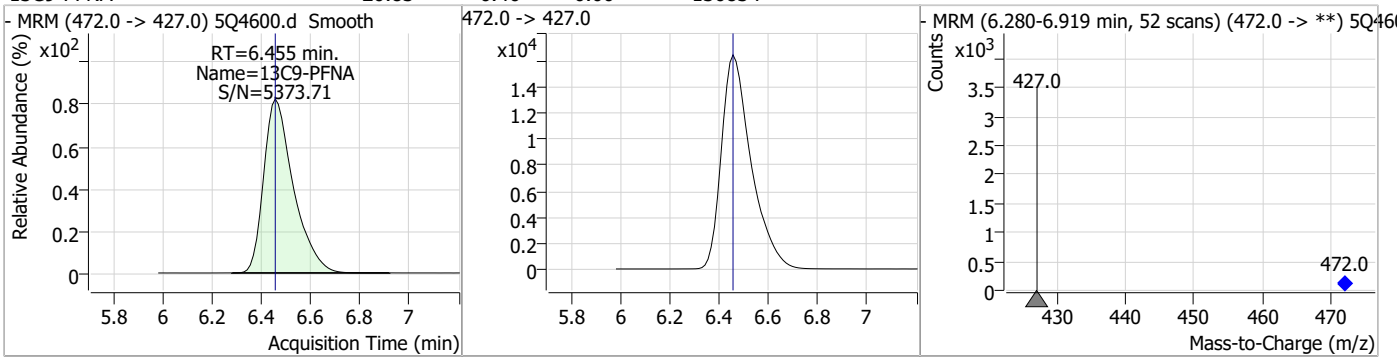


Perfluorinated Compounds by LC/MS/MS

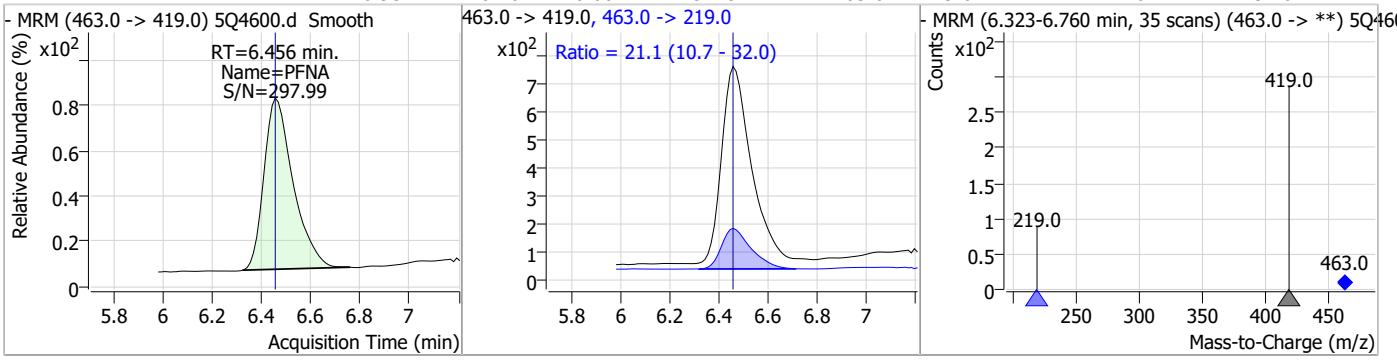
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.85	6.44	0.00	988 (m)	499.0 -> 99.0	58.0	31.6	94.7



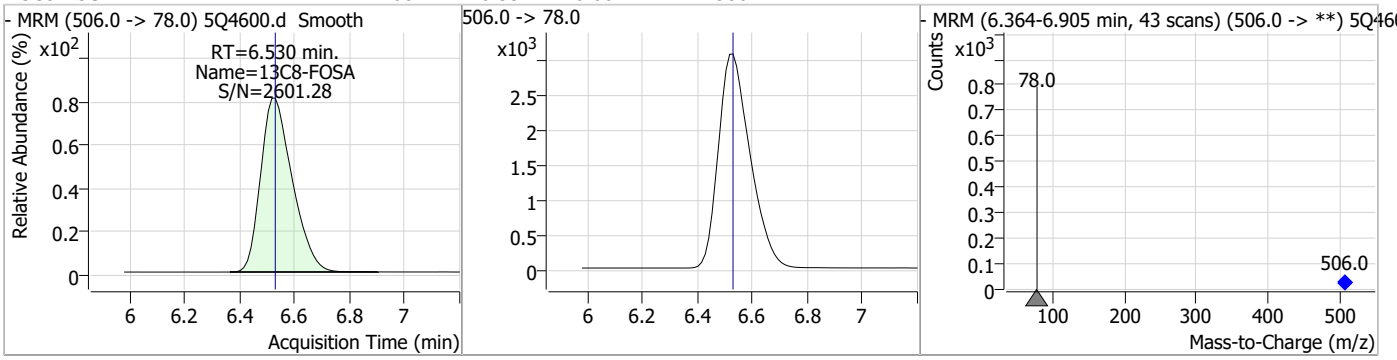
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.83	6.46	0.00	136834				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	6.46	0.00	5715	463.0 -> 219.0	21.1	10.7	32.0

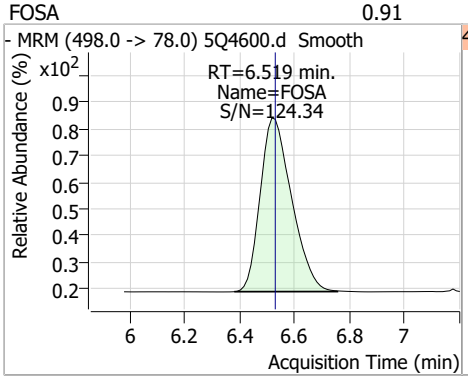


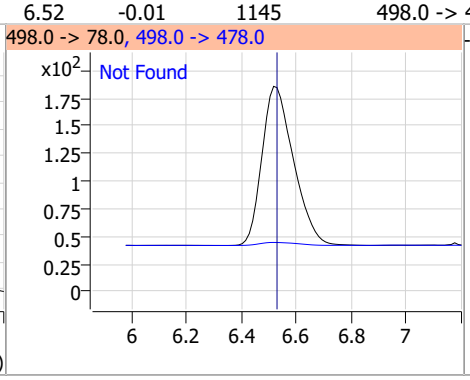
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.66	6.53	0.00	24580				

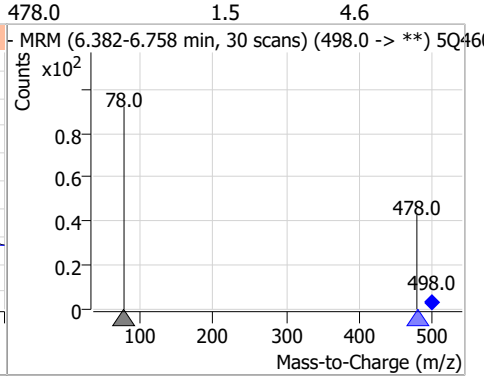


Perfluorinated Compounds by LC/MS/MS

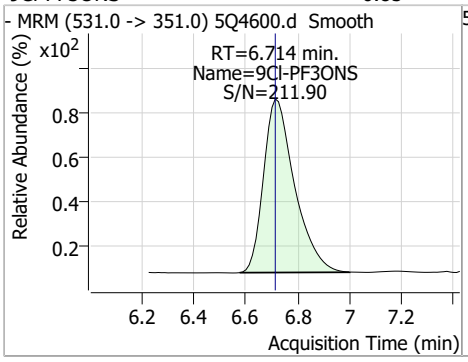
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.91	6.52	-0.01	1145	498.0 -> 478.0		1.5	4.6

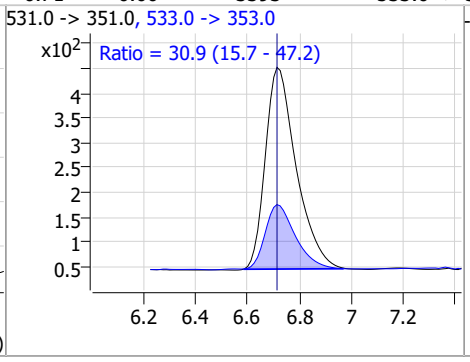


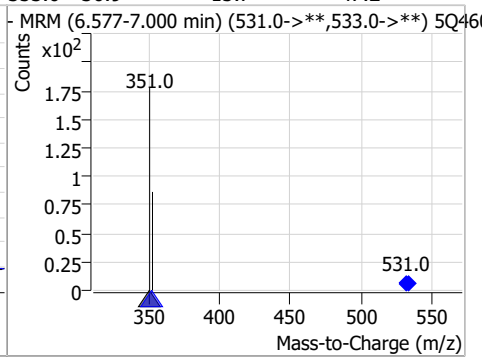




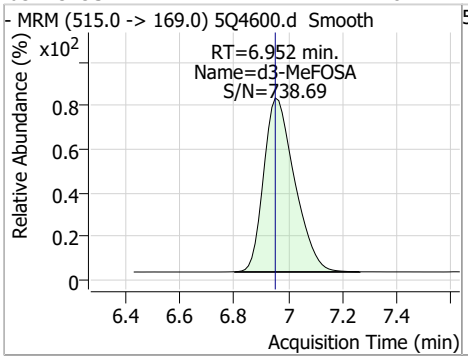
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.85	6.71	0.00	3393	533.0 -> 353.0	30.9	15.7	47.2

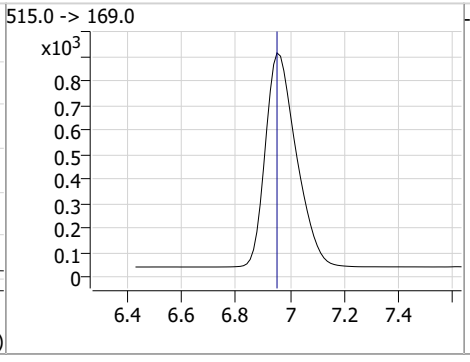


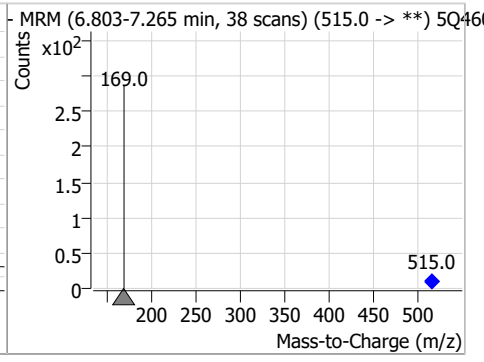




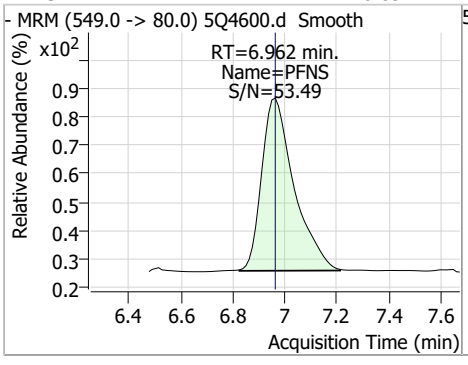
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.84	6.95	0.00	6957				

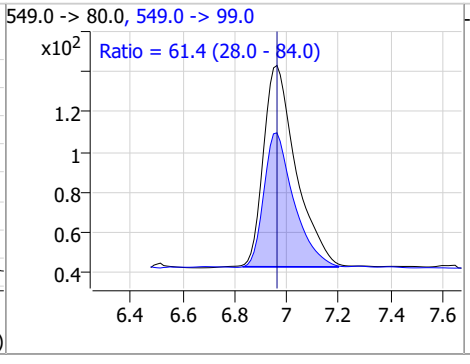


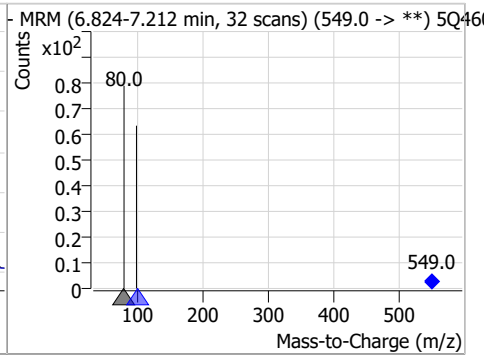




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.89	6.96	0.00	876	549.0 -> 99.0	61.4	28.0	84.0

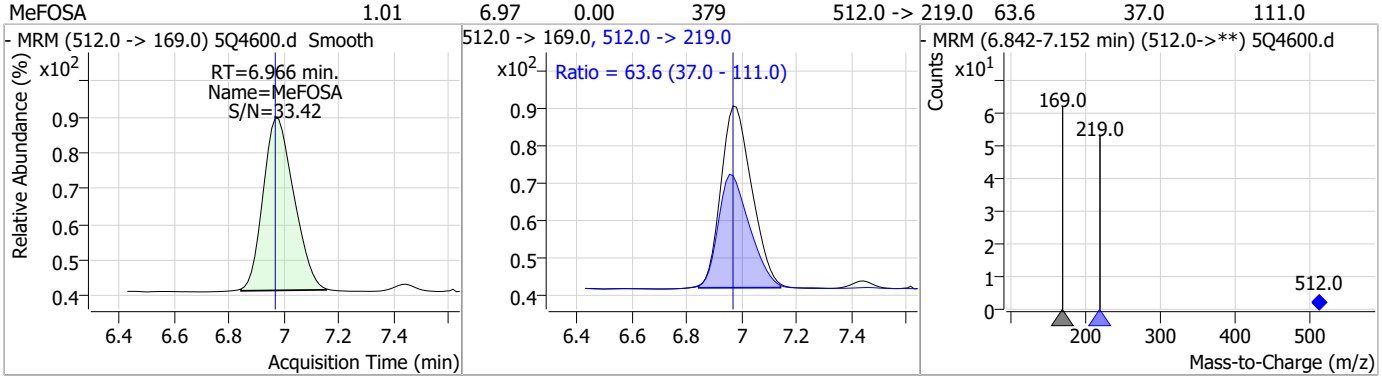




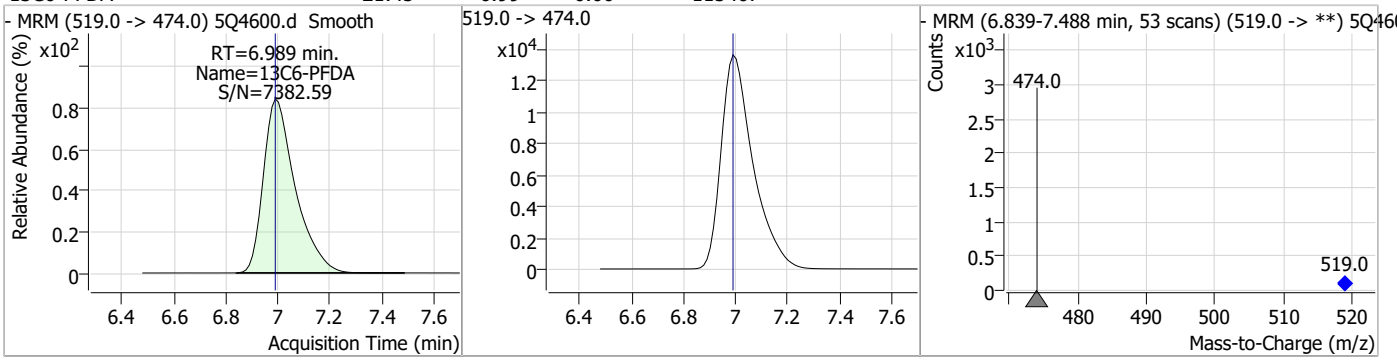


Perfluorinated Compounds by LC/MS/MS

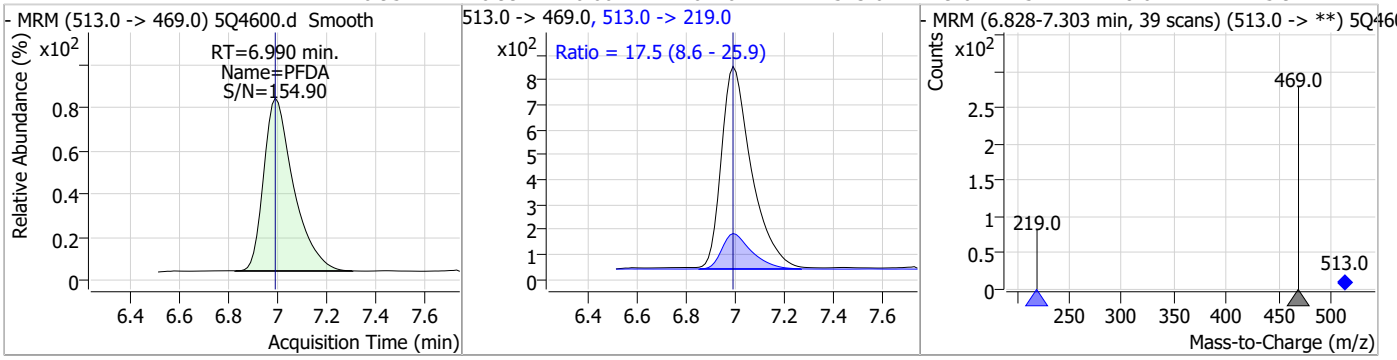
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.01	6.97	0.00	379	512.0 -> 219.0	63.6	37.0	111.0



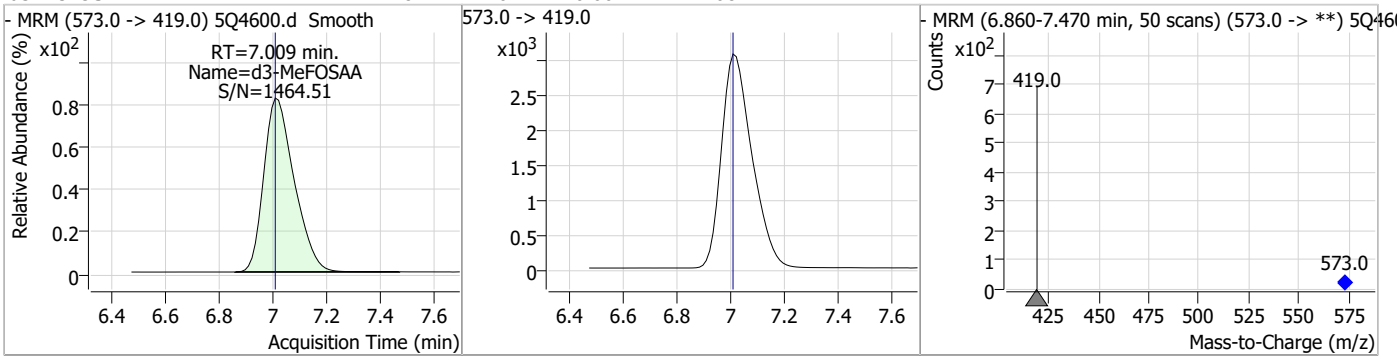
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.45	6.99	0.00	115467				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	6.99	0.00	6770	513.0 -> 219.0	17.5	8.6	25.9

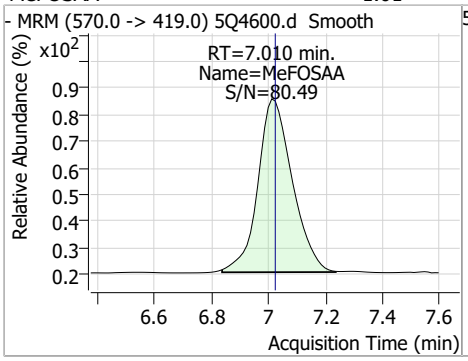


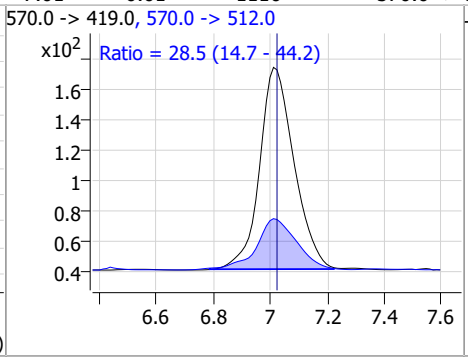
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.78	7.01	0.00	24081				

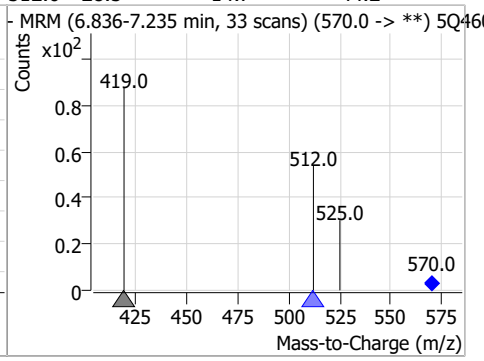


Perfluorinated Compounds by LC/MS/MS

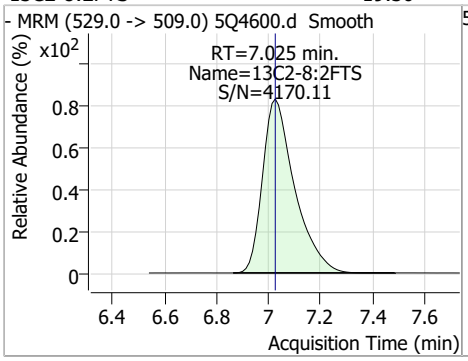
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.01	7.01	-0.01	1116	570.0 -> 512.0	28.5	14.7	44.2

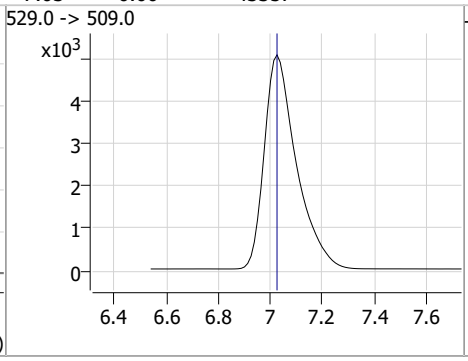


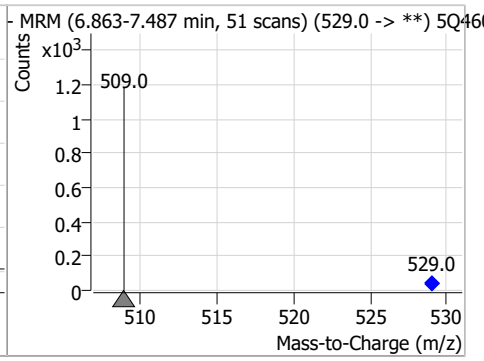




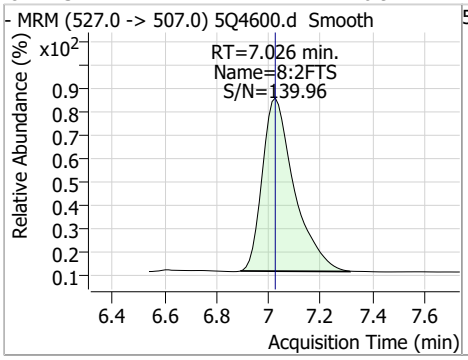
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.30	7.03	0.00	43357				

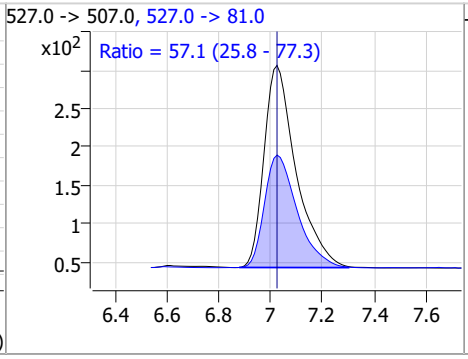


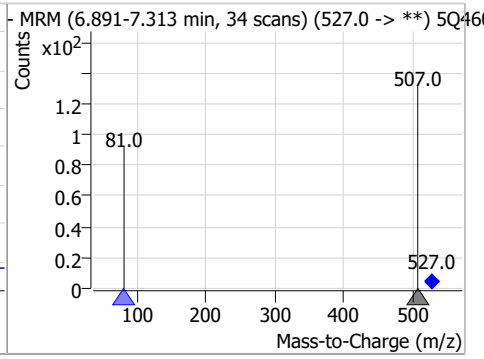




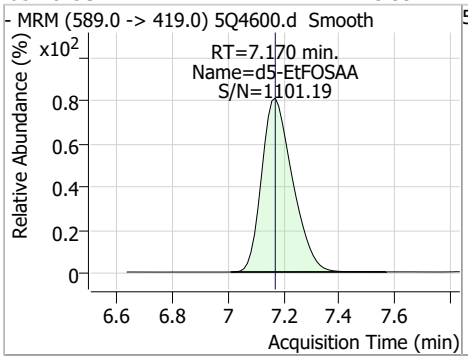
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.97	7.03	0.00	2250	527.0 -> 81.0	57.1	25.8	77.3

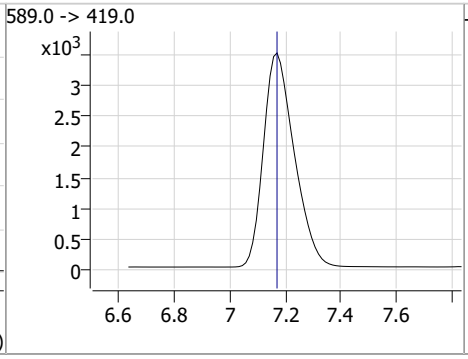


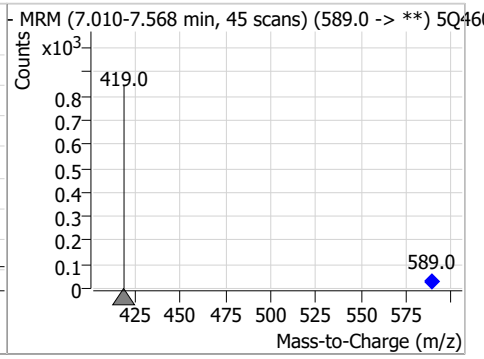




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.99	7.17	0.00	26896				

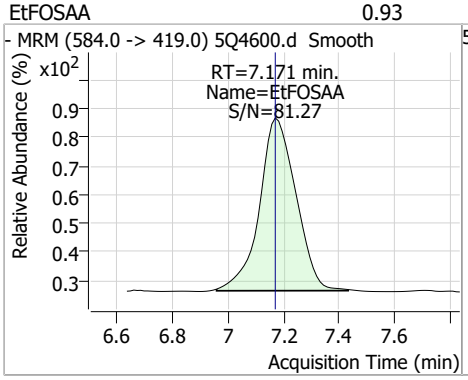


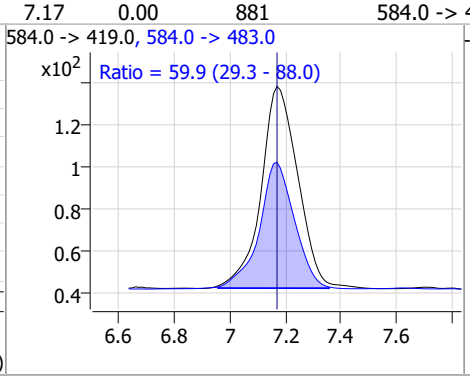


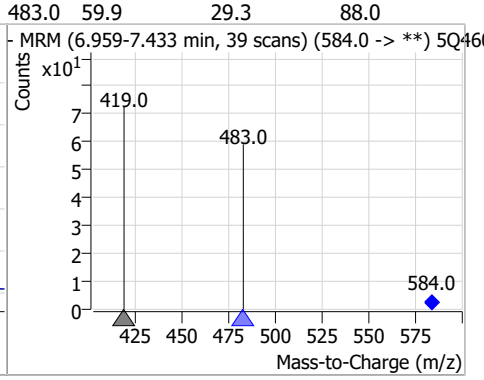


Perfluorinated Compounds by LC/MS/MS

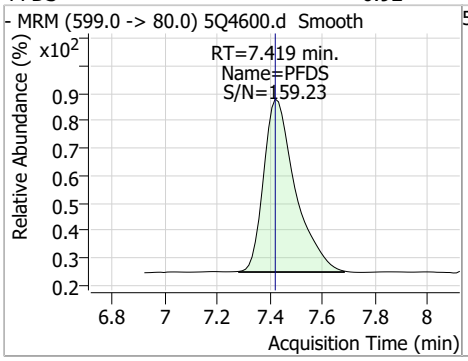
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.93	7.17	0.00	881	584.0 -> 483.0	59.9	29.3	88.0

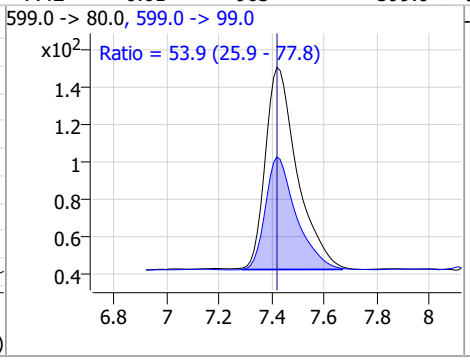


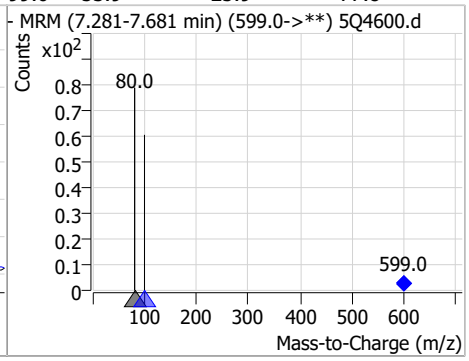




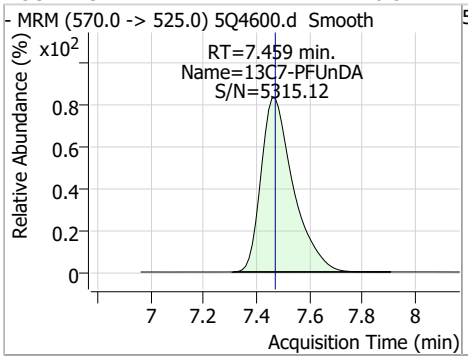
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.92	7.42	-0.01	903	599.0 -> 99.0	53.9	25.9	77.8

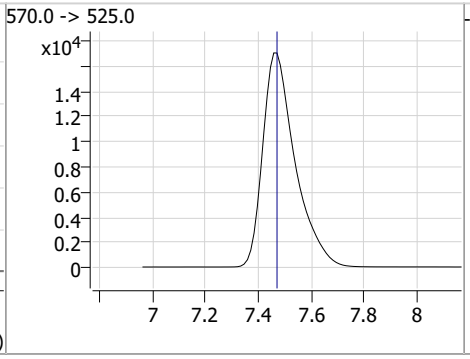


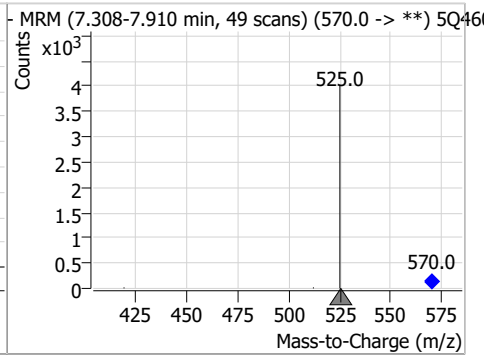




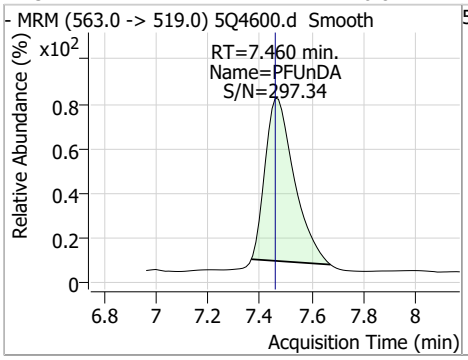
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.57	7.46	-0.01	144868				

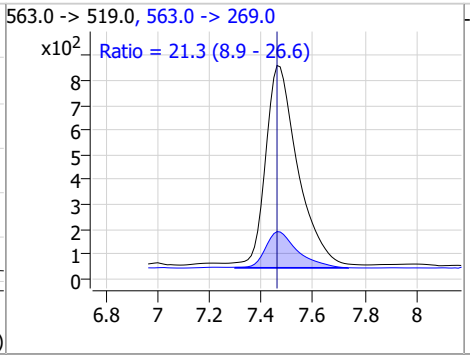


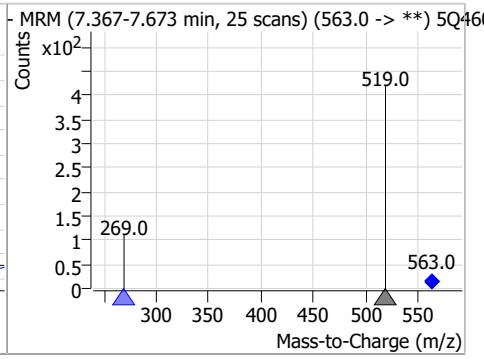




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.82	7.46	-0.01	5917	563.0 -> 269.0	21.3	8.9	26.6

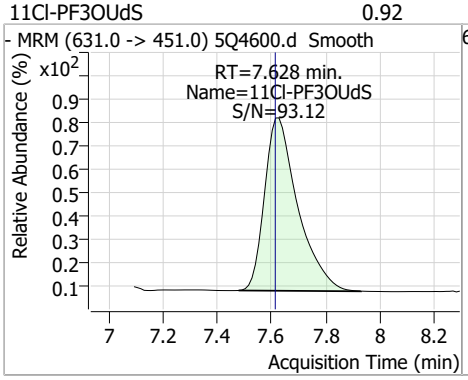


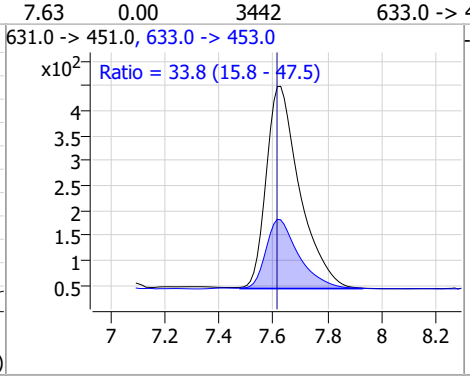


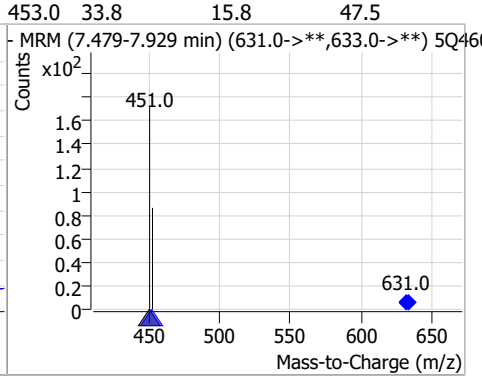


Perfluorinated Compounds by LC/MS/MS

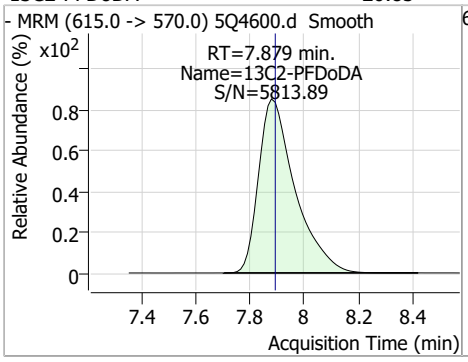
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	7.63	0.00	3442	633.0 -> 453.0	33.8	15.8	47.5

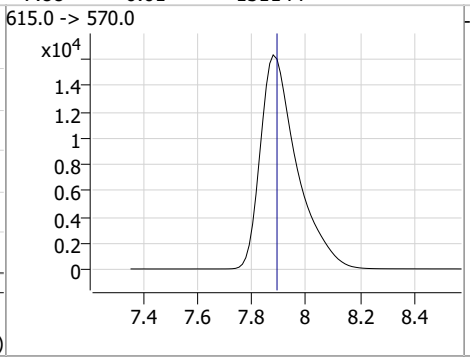


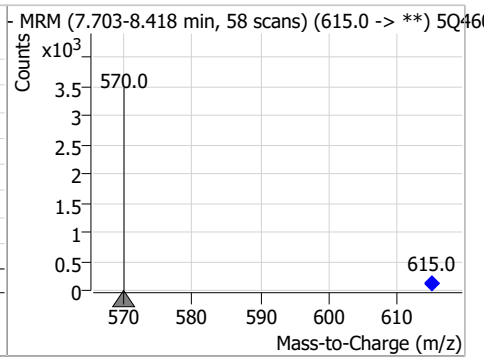




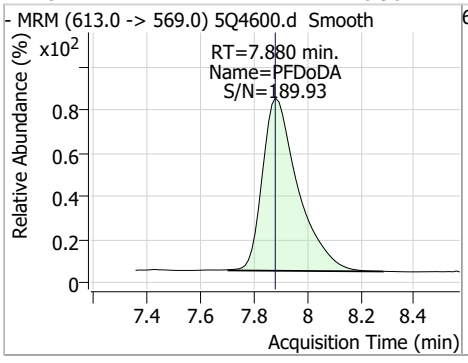
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.85	7.88	-0.01	151144				

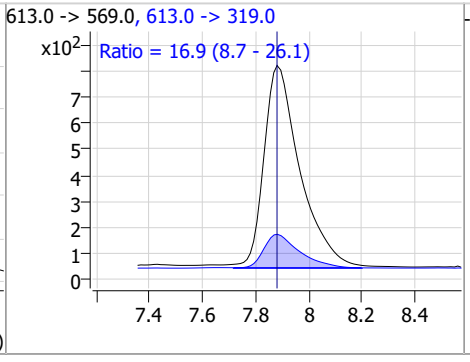


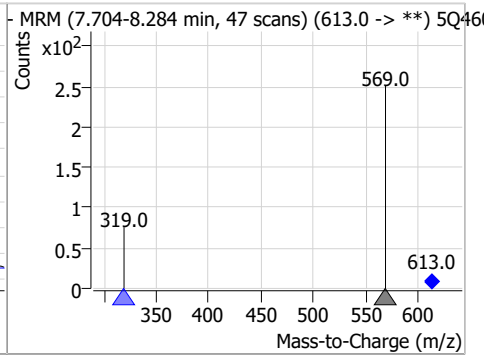




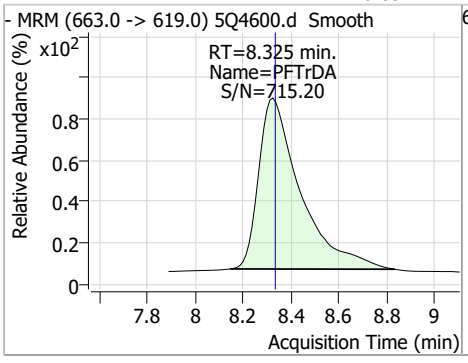
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.96	7.88	-0.01	7146	613.0 -> 319.0	16.9	8.7	26.1

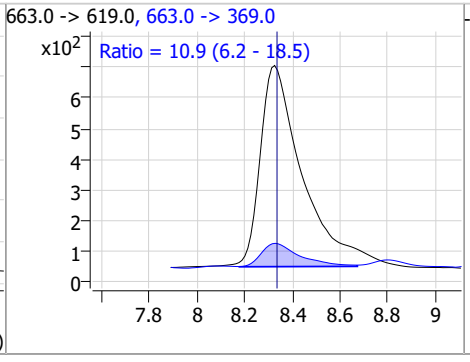


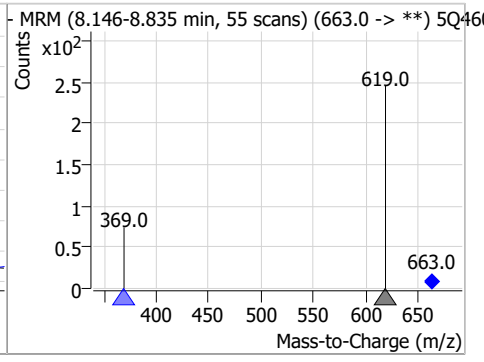




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.89	8.33	-0.02	7881	663.0 -> 369.0	10.9	6.2	18.5

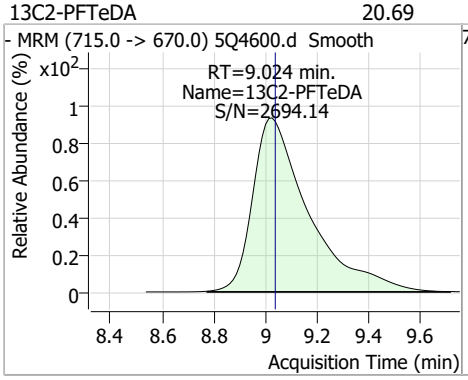


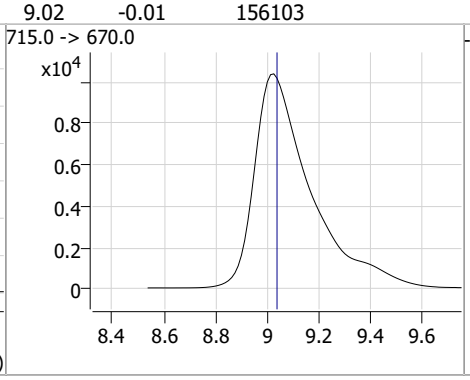


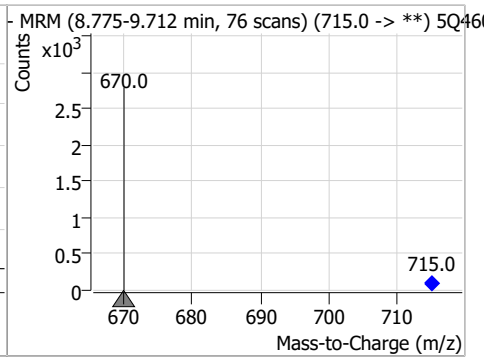


Perfluorinated Compounds by LC/MS/MS

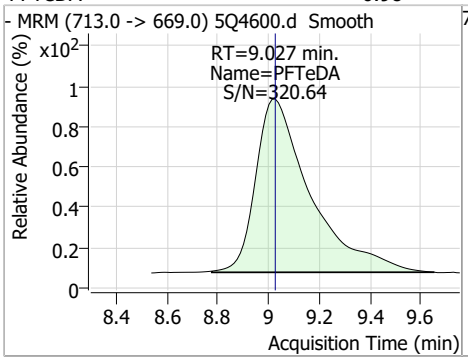
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.69	9.02	-0.01	156103				

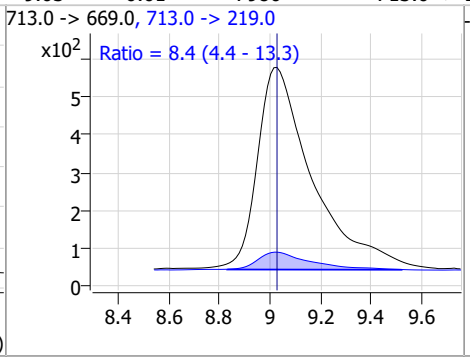


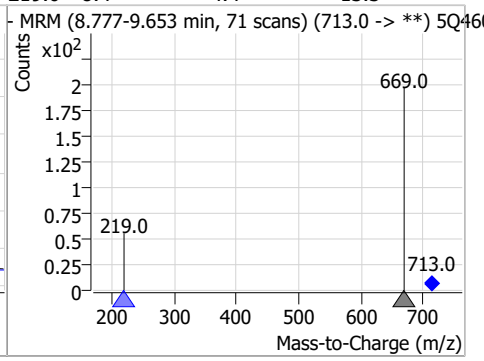




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.98	9.03	-0.01	7980	713.0 -> 219.0	8.4	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4600.D
Injection Time: 09/14/22 21:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4611.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:29:29 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

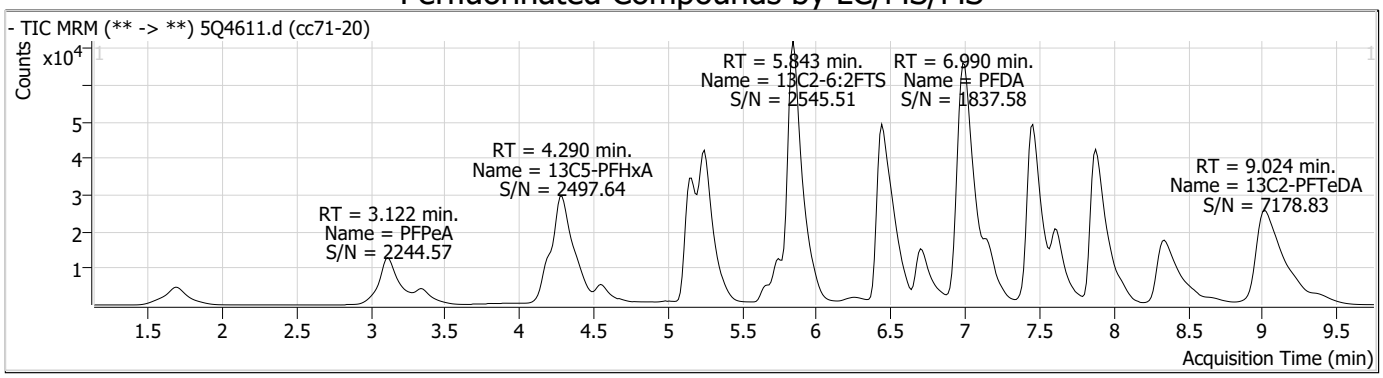
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	37919	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	60167	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	90297	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	84781	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	127932	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	140864	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	117267	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	149634	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	158567	20.00 µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	167670	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	24353	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6741	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	7089	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	13511	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	30141	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	47777	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	48982	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	26085	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6254	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6628	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	28261	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	30141	20.52 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C2-6:2FTS	5.843	429.0 -> 409.0	47777	21.37 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%	
13C2-8:2FTS	7.025	529.0 -> 509.0	48982	21.81 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%	
13C2-PFDoDA	7.893	615.0 -> 570.0	158567	21.88 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%	
13C2-PFTeDA	9.024	715.0 -> 670.0	167670	22.22 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%	
13C3-PFBS	3.349	302.0 -> 99.0	6741	20.69 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	7089	20.79 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C4-PFBA	1.687	217.0 -> 172.0	37919	21.21 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C4-PFHpA	5.163	367.0 -> 322.0	84781	20.77 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%	
13C5-PFHxA	4.290	318.0 -> 273.0	90297	20.65 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFPeA	3.119	268.0 -> 223.0	60167	20.70 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C6-PFDA	6.989	519.0 -> 474.0	117267	21.78 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

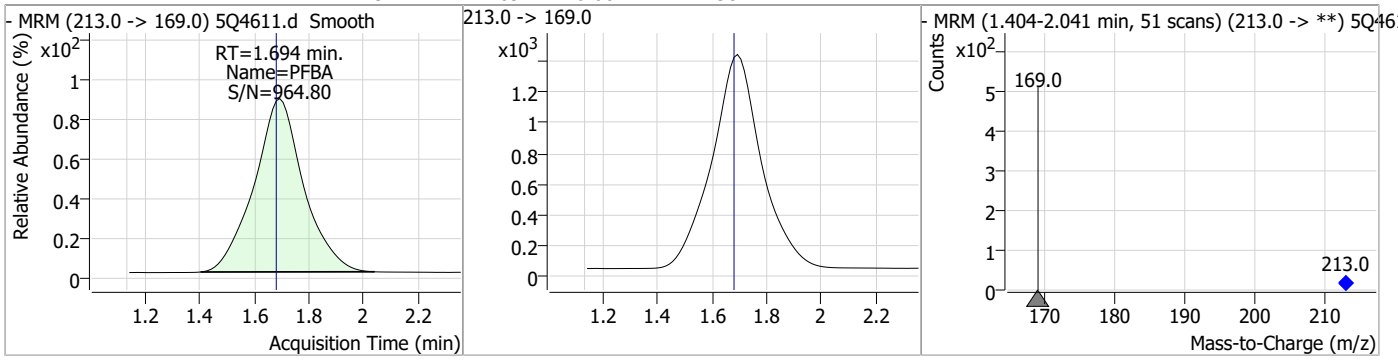
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C7-PFUnDA	7.459	570.0 -> 525.0	149634	21.25 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
13C8-FOSA	6.517	506.0 -> 78.0	24353	21.46 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C8-PFOA	5.857	421.0 -> 376.0	127932	21.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	6.428	507.0 -> 99.0	13511	20.69 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C9-PFNA	6.455	472.0 -> 427.0	140864	21.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
d3-MeFOSAA	7.009	573.0 -> 419.0	26085	26.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 134.2%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	6254	18.62 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
d3-MeFOSA	6.952	515.0 -> 169.0	6628	21.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
d5-EtFOSAA	7.170	589.0 -> 419.0	28261	25.21 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.0%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	33908	20.09 µg/L		100
6:2FTS	5.843	427.0 -> 407.0	51610	20.37 µg/L		98
8:2FTS	7.026	527.0 -> 507.0	52424	20.08 µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	22019	22.02 µg/L		100
FOSA	6.519	498.0 -> 78.0	24509	19.56 µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	23099	19.34 µg/L		96
PFBA	1.694	213.0 -> 169.0	17387	19.47 µg/L		100
PFBS	3.354	299.0 -> 80.0	19946	19.70 µg/L		100
PFDA	6.990	513.0 -> 469.0	144013	19.99 µg/L		99
PFDoDA	7.894	613.0 -> 569.0	153002	19.67 µg/L		98
PFDS	7.419	599.0 -> 80.0	19075	18.89 µg/L		99
PFHpA	5.164	363.0 -> 319.0	112206	20.15 µg/L		99
PFHpS	5.855	449.0 -> 80.0	20492	20.17 µg/L		99
PFHxA	4.291	313.0 -> 269.0	86360	19.57 µg/L		100
PFHxS	5.195	399.0 -> 80.0	20555	19.52 µg/L	m	98
PFNA	6.456	463.0 -> 419.0	122693	19.44 µg/L		100
PFNS	6.949	549.0 -> 80.0	20005	20.06 µg/L		100
PFOA	5.858	413.0 -> 369.0	152409	19.65 µg/L		100
PFOS	6.429	499.0 -> 80.0	23249	19.54 µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	58611	19.71 µg/L		100
PFPeS	4.398	349.0 -> 80.0	15469	19.64 µg/L		100
PFTeDA	9.027	713.0 -> 669.0	164115	18.81 µg/L		99
PFTrDA	8.338	663.0 -> 619.0	175834	18.91 µg/L		97
PFUnDA	7.460	563.0 -> 519.0	149205	19.96 µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	74096	18.81 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	72384	17.86 µg/L		99
ADONA	5.261	377.0 -> 251.0	142994	19.62 µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20737	19.65 µg/L		98
MeFOSA	6.966	512.0 -> 169.0	7101	19.90 µg/L		97
4-PFECHS	5.753	461.0 -> 381.0	43692	18.98 µg/L		97
FBSA	4.343	298.0 -> 78.0	30704	20.50 µg/L		100
FHxSA	5.674	398.0 -> 78.0	25775	19.81 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

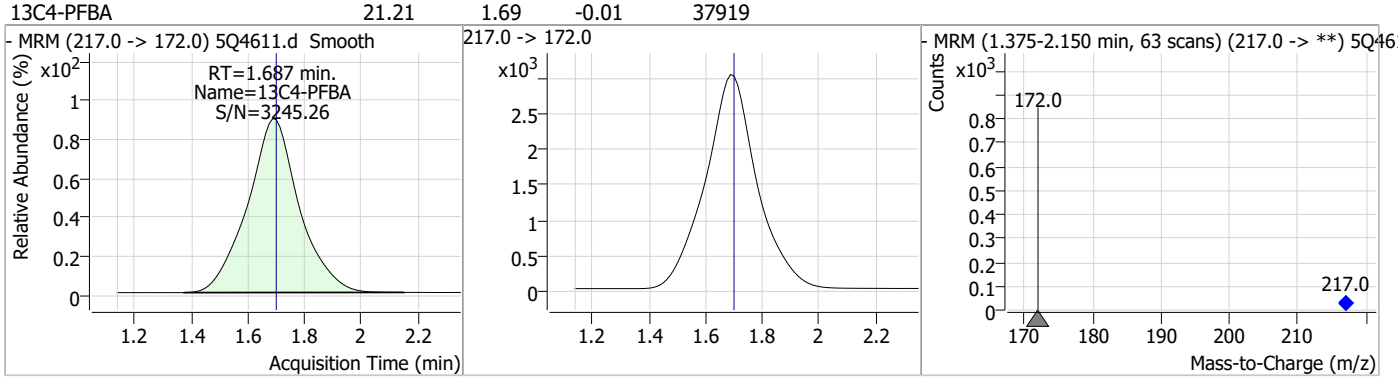
Perfluorinated Compounds by LC/MS/MS



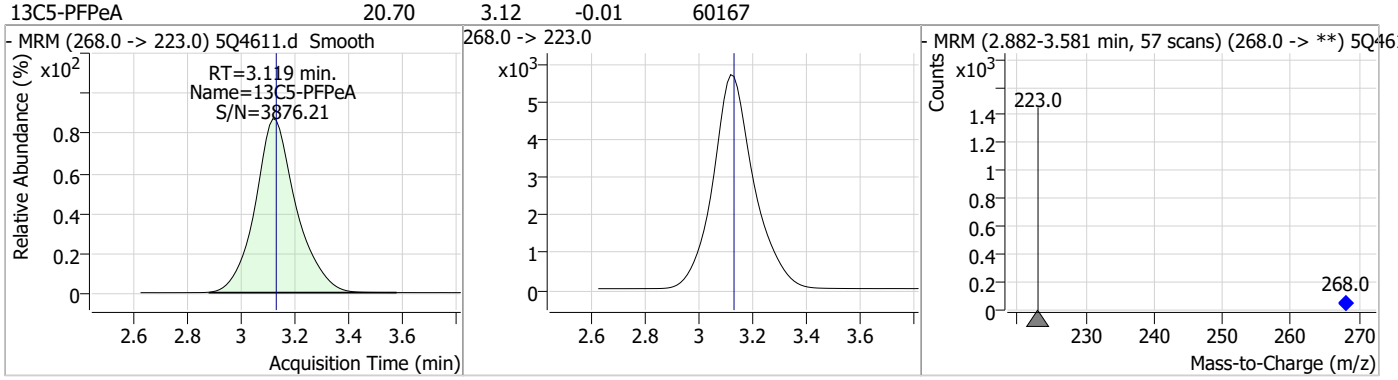
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.47	1.69	0.00	17387				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.21	1.69	-0.01	37919				

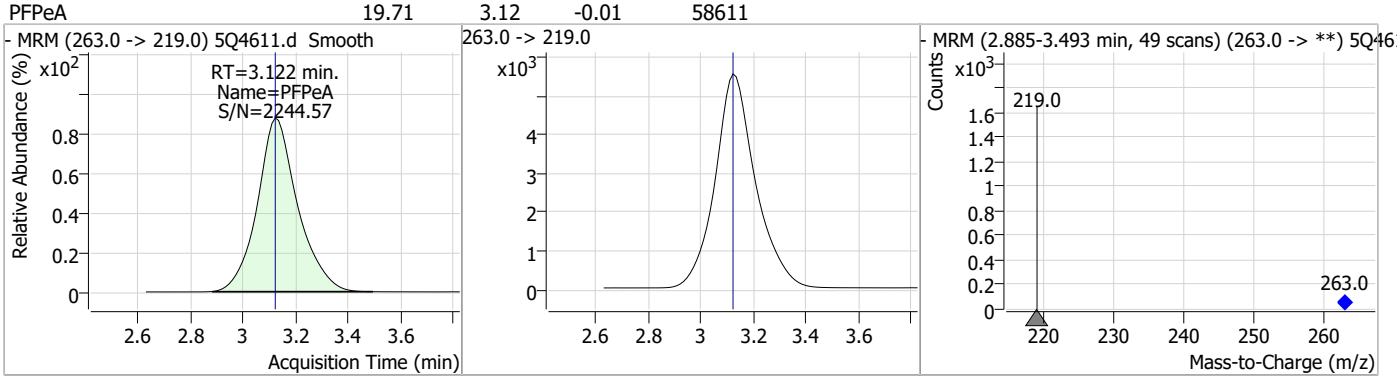


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.70	3.12	-0.01	60167				

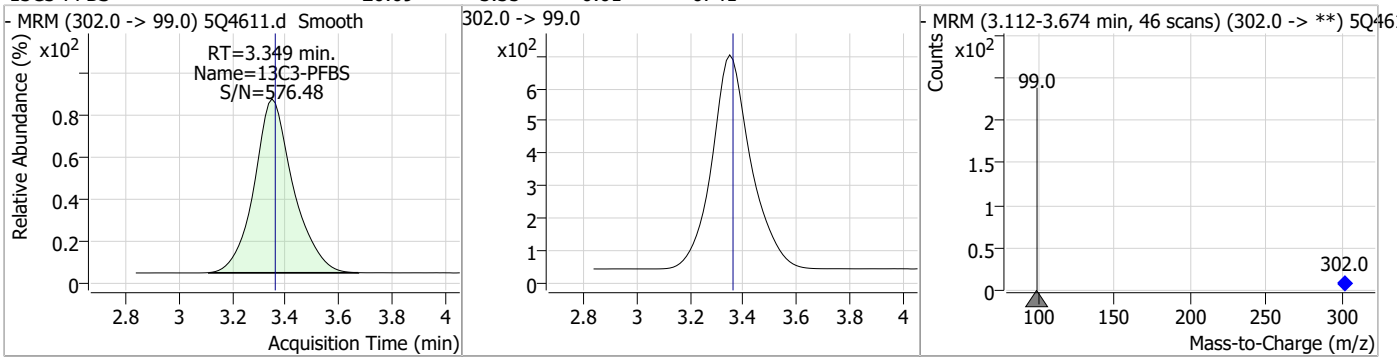


Perfluorinated Compounds by LC/MS/MS

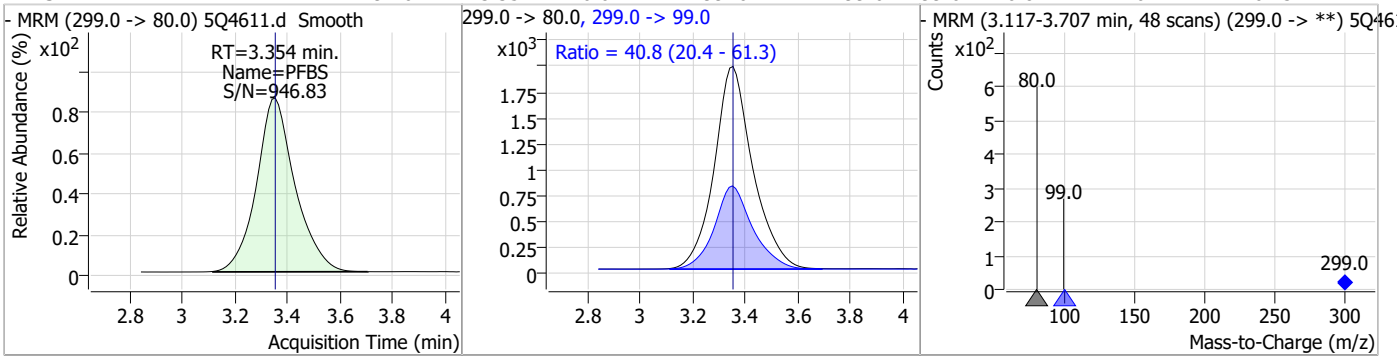
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.71	3.12	-0.01	58611				



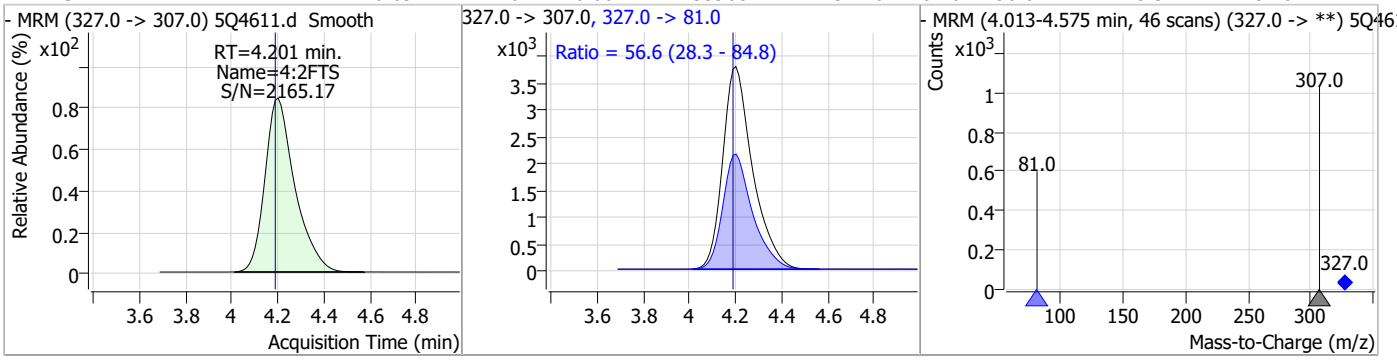
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.69	3.35	-0.01	6741				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.70	3.35	-0.01	19946	299.0 -> 99.0	40.8	20.4	61.3

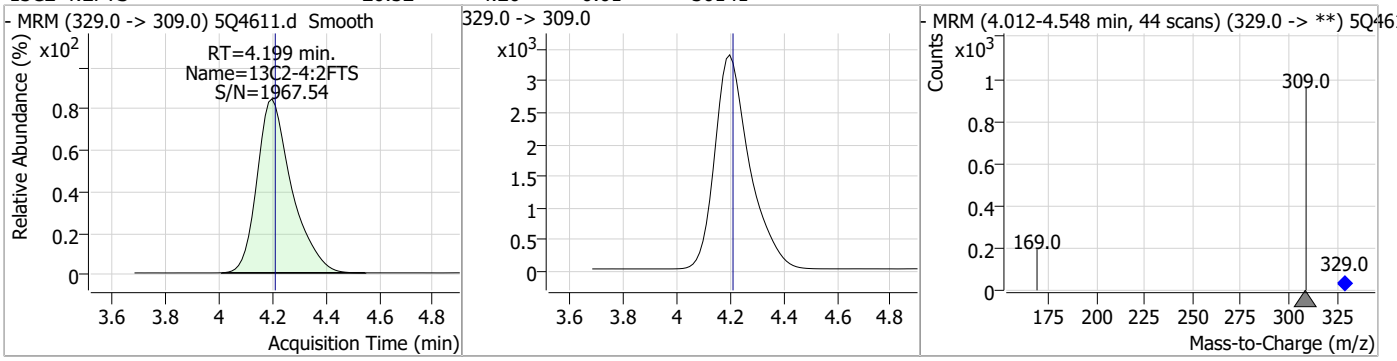


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.09	4.20	0.00	33908	327.0 -> 81.0	56.6	28.3	84.8

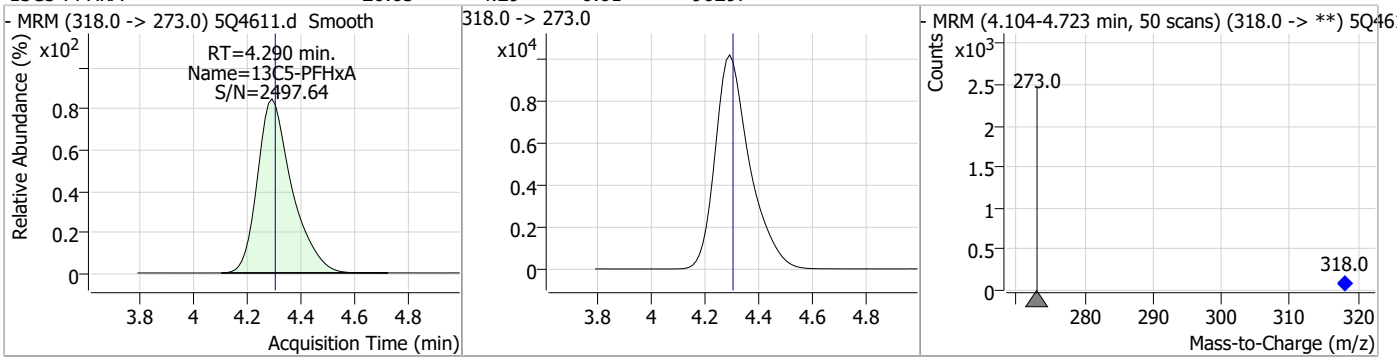


Perfluorinated Compounds by LC/MS/MS

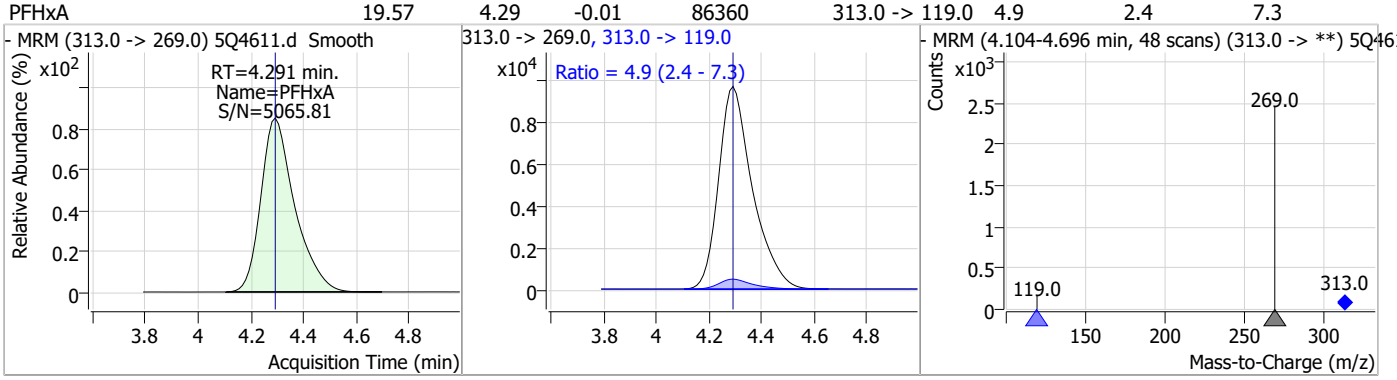
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.52	4.20	-0.01	30141				



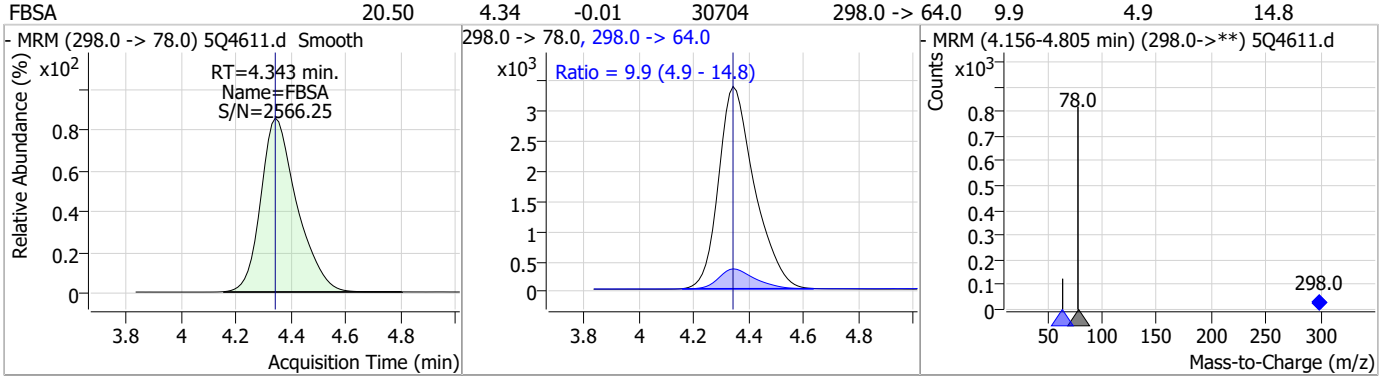
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.65	4.29	-0.01	90297				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.57	4.29	-0.01	86360	313.0 -> 119.0	4.9	2.4	7.3

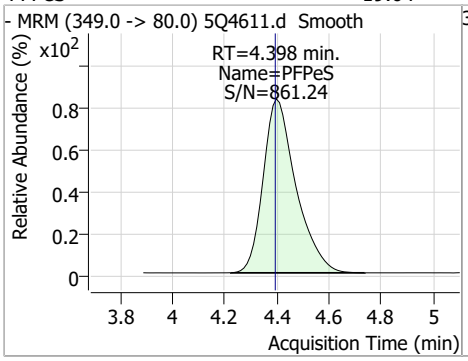


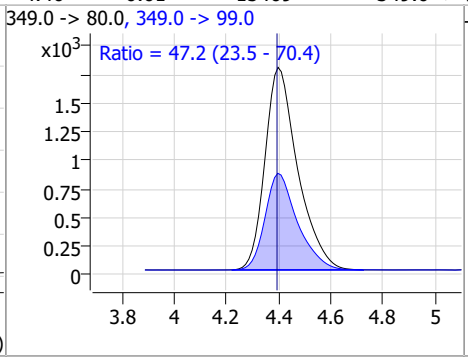
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.50	4.34	-0.01	30704	298.0 -> 64.0	9.9	4.9	14.8

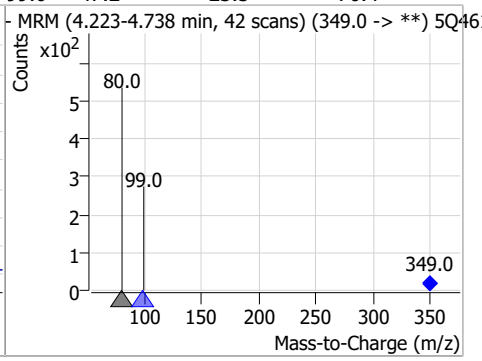


Perfluorinated Compounds by LC/MS/MS

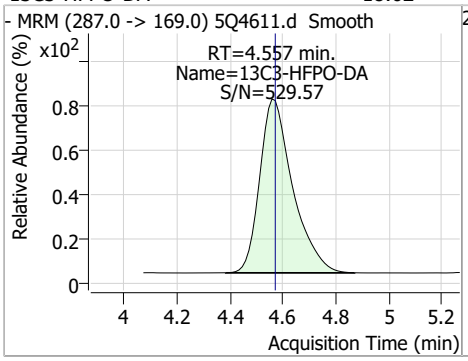
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.64	4.40	-0.01	15469	349.0 -> 99.0	47.2	23.5	70.4

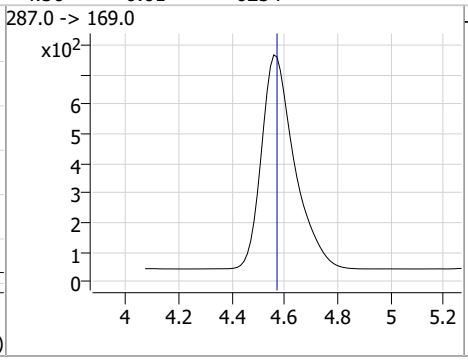


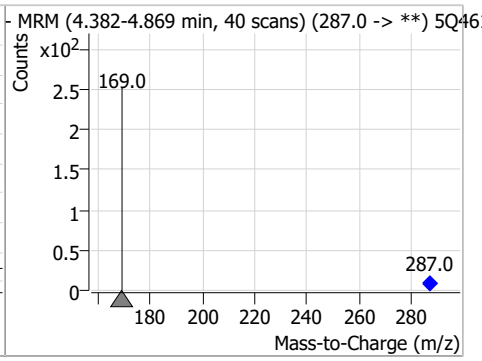




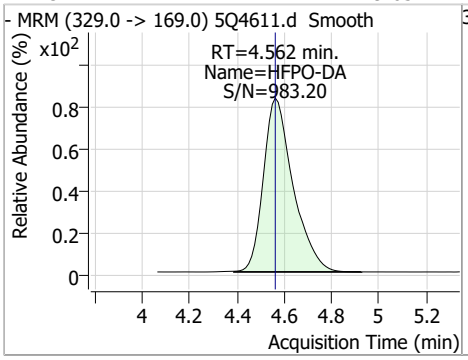
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.62	4.56	-0.01	6254				

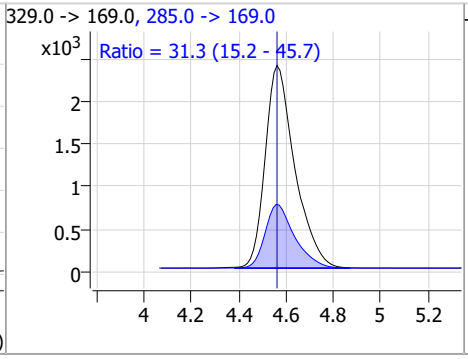


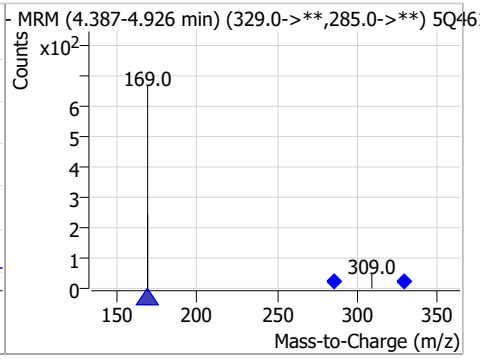




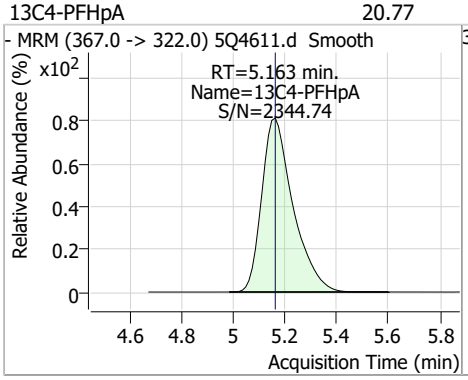
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.65	4.56	-0.01	20737	285.0 -> 169.0	31.3	15.2	45.7

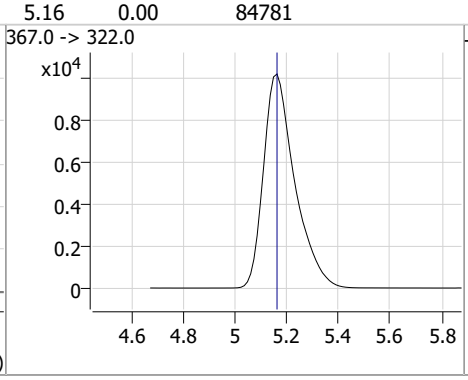


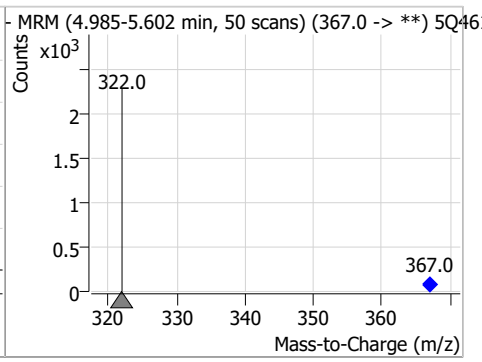




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.77	5.16	0.00	84781				

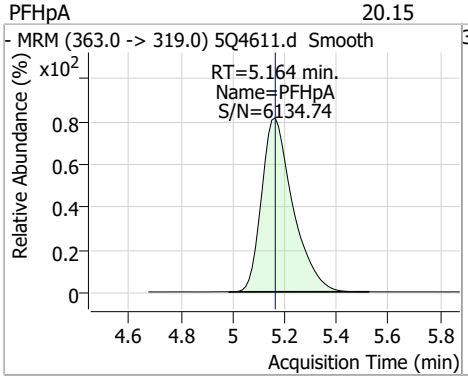


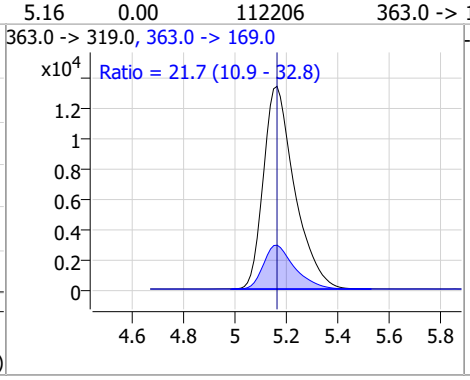


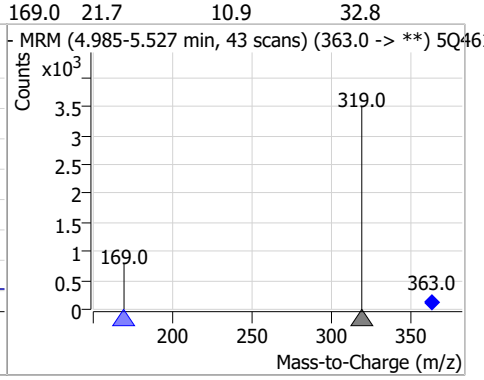


Perfluorinated Compounds by LC/MS/MS

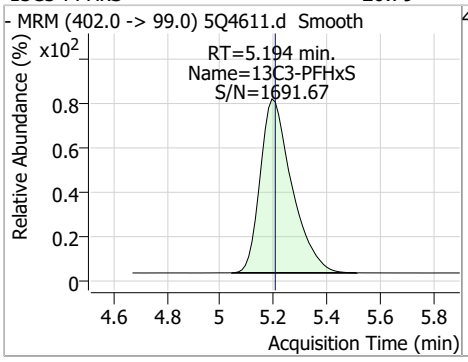
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.15	5.16	0.00	112206	363.0 -> 169.0	21.7	10.9	32.8

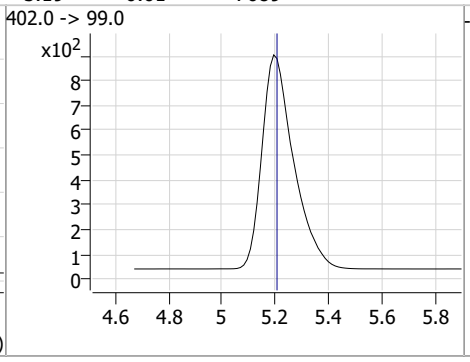


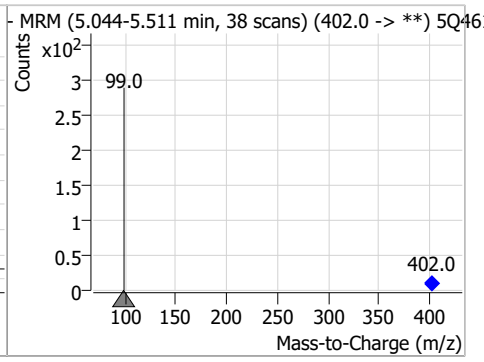




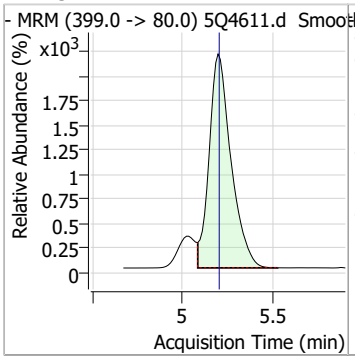
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.79	5.19	-0.01	7089				

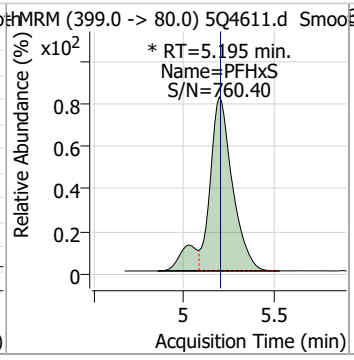


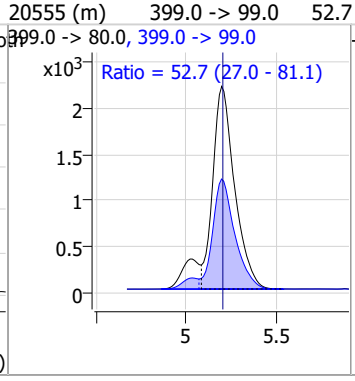


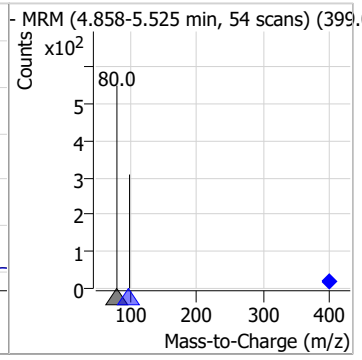


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.52	5.20	-0.01	20555 (m)	399.0 -> 99.0	52.7	27.0	81.1

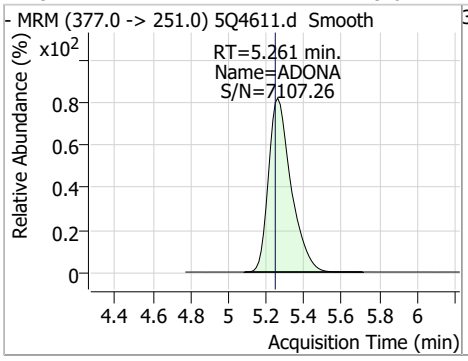


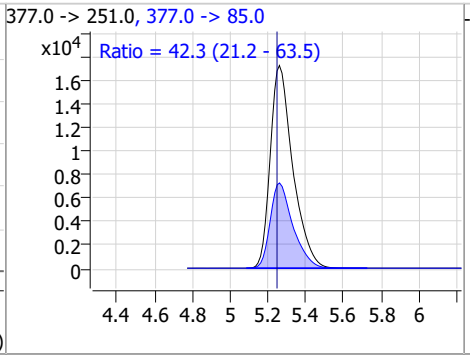


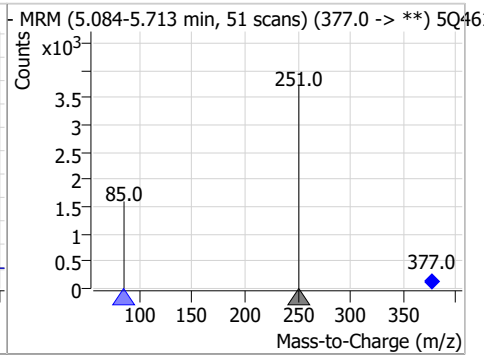




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.62	5.26	0.00	142994	377.0 -> 85.0	42.3	21.2	63.5

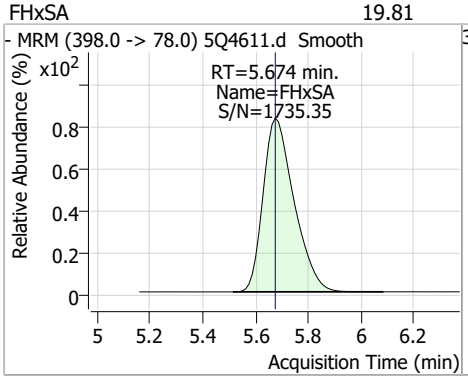


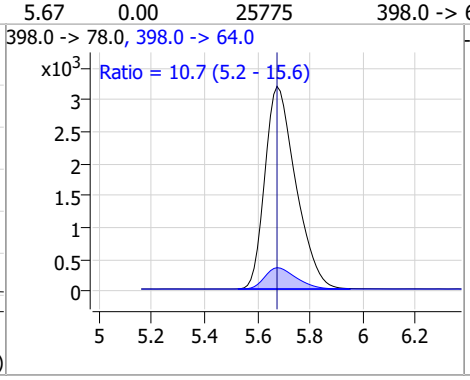


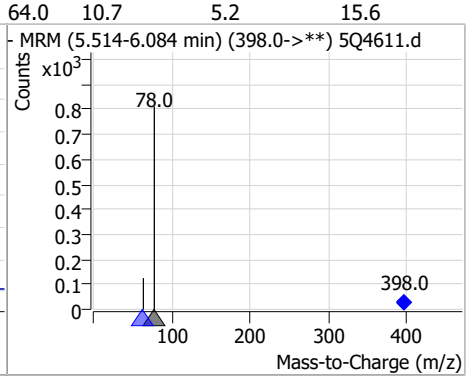


Perfluorinated Compounds by LC/MS/MS

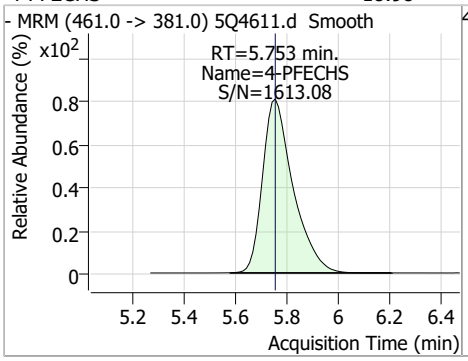
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.81	5.67	0.00	25775	398.0 -> 64.0	10.7	5.2	15.6

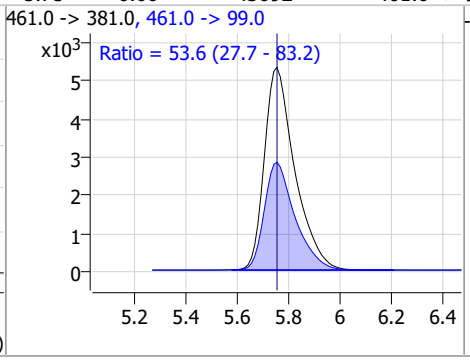


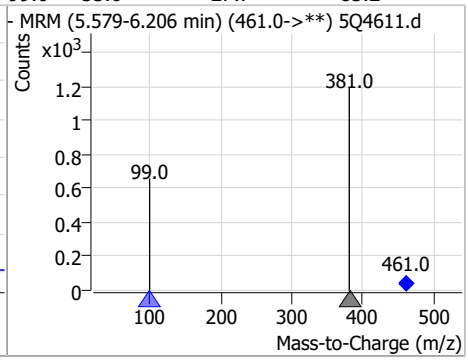




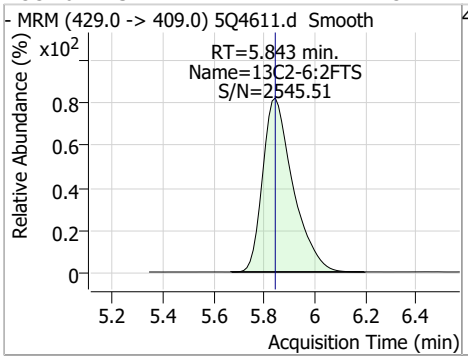
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.98	5.75	0.00	43692	461.0 -> 99.0	53.6	27.7	83.2

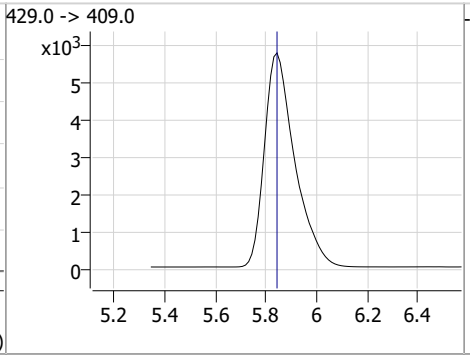


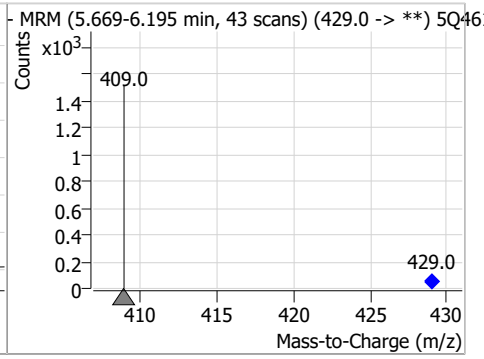




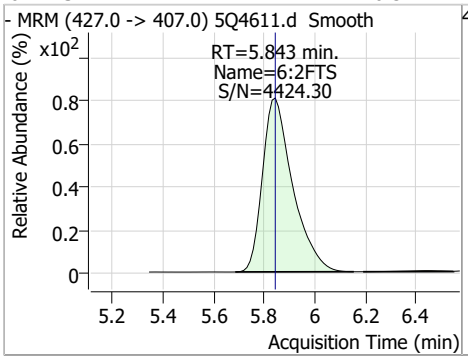
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.37	5.84	0.00	47777				

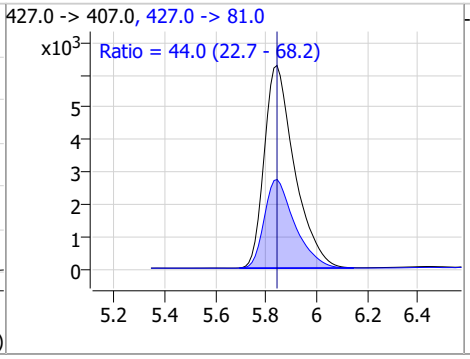


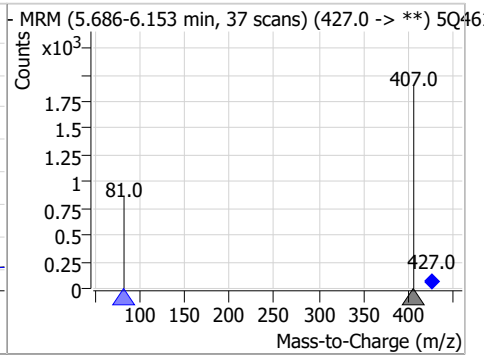




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.37	5.84	0.00	51610	427.0 -> 81.0	44.0	22.7	68.2

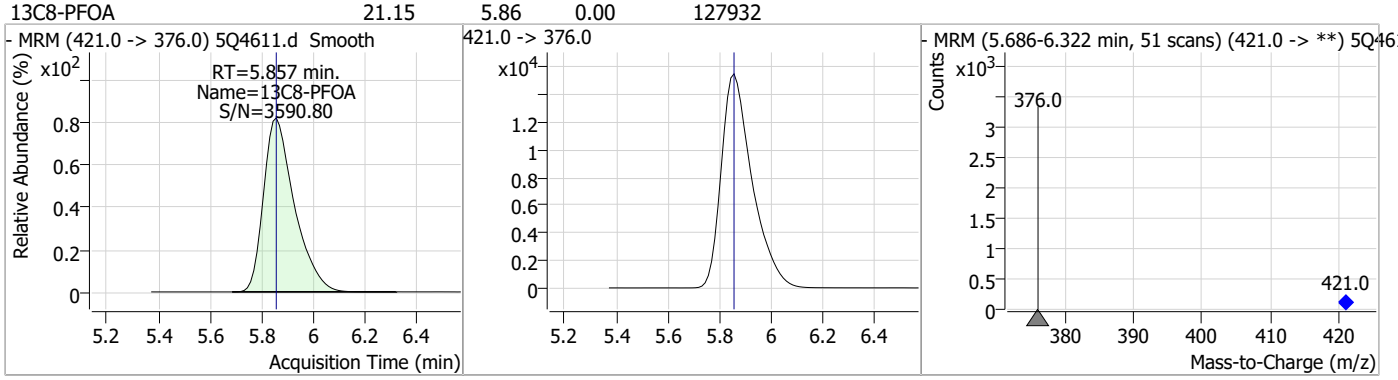




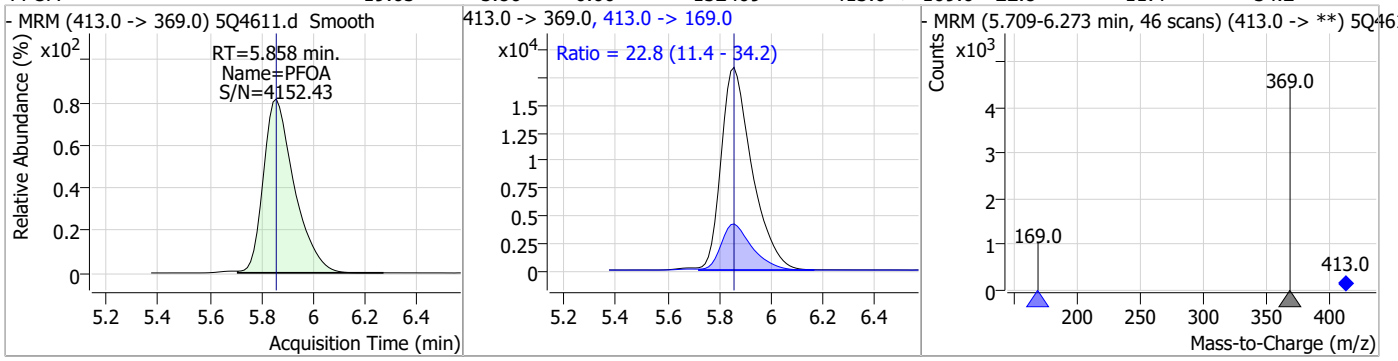


Perfluorinated Compounds by LC/MS/MS

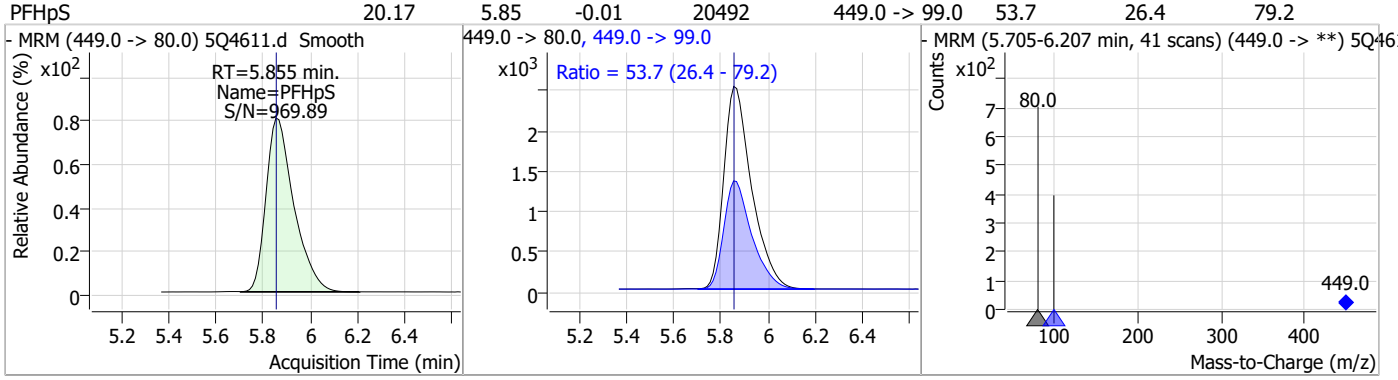
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.15	5.86	0.00	127932				



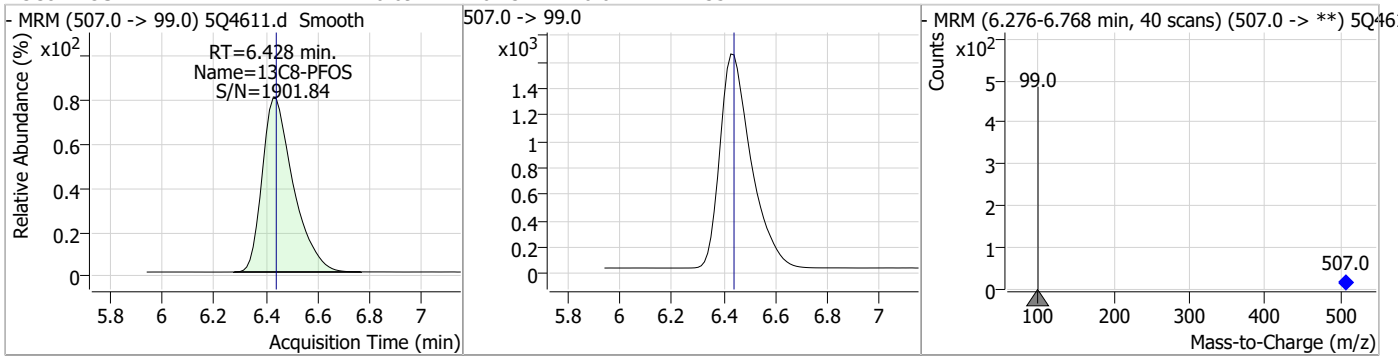
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.65	5.86	0.00	152409	413.0 -> 169.0	22.8	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.17	5.85	-0.01	20492	449.0 -> 99.0	53.7	26.4	79.2

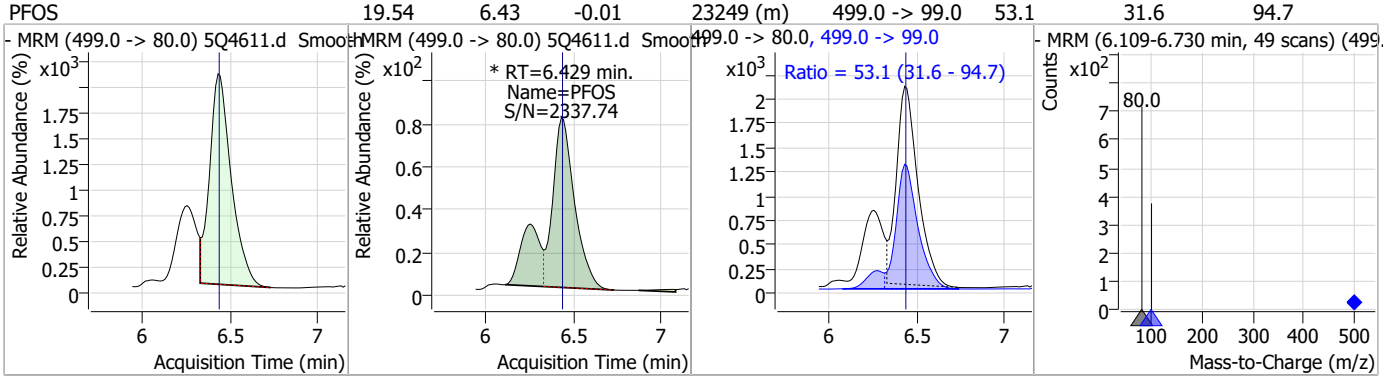


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.69	6.43	-0.01	13511				

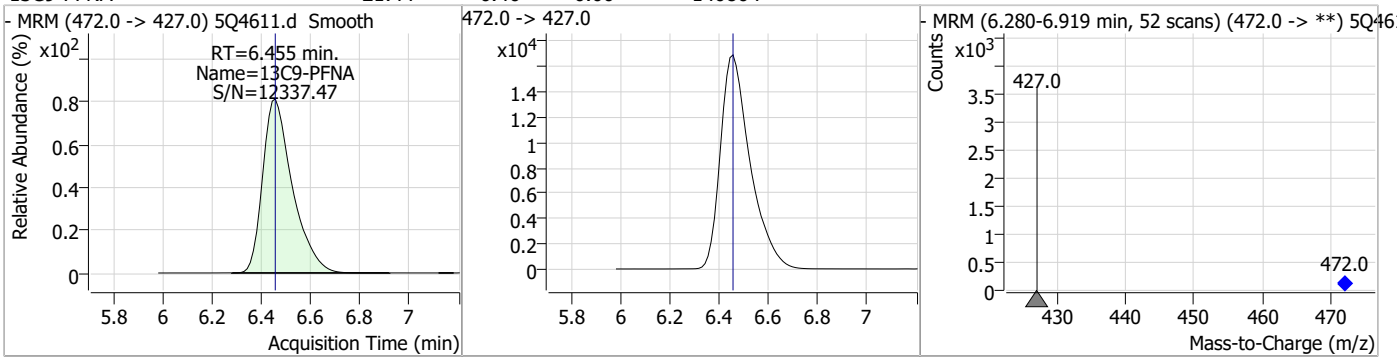


Perfluorinated Compounds by LC/MS/MS

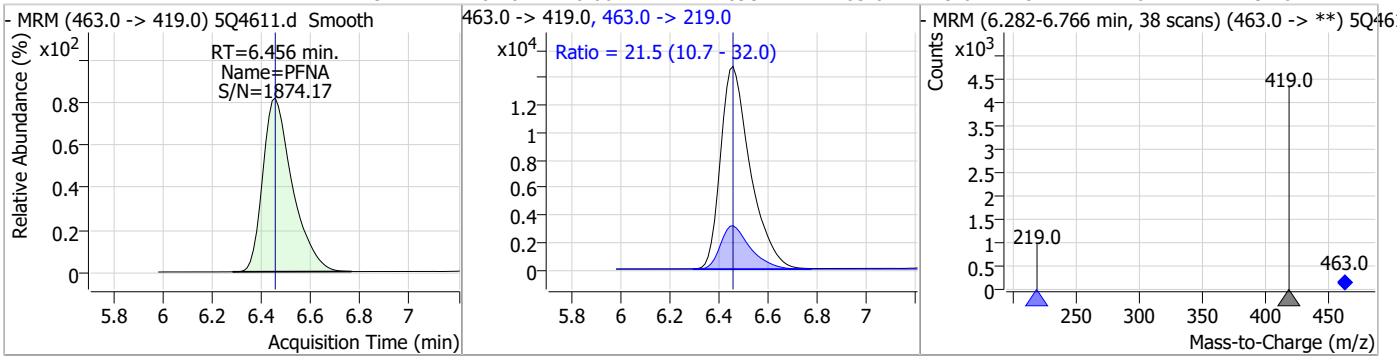
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.54	6.43	-0.01	23249 (m)	499.0 -> 99.0	53.1	31.6	94.7



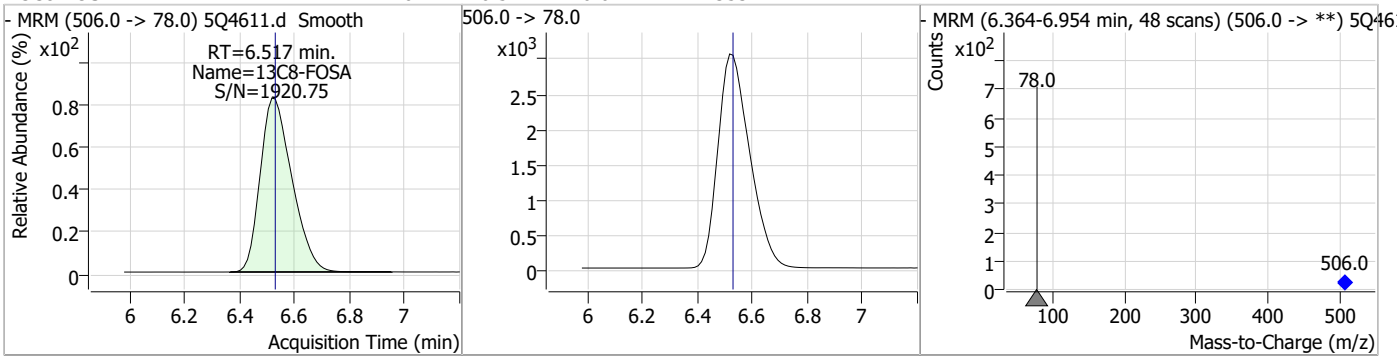
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.44	6.46	0.00	140864				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.44	6.46	0.00	122693	463.0 -> 219.0	21.5	10.7	32.0

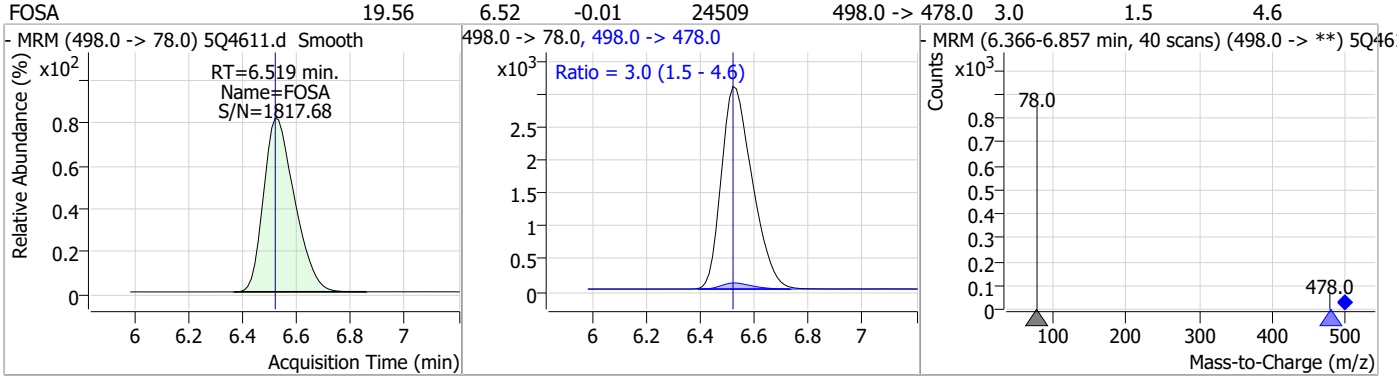


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.46	6.52	-0.01	24353				

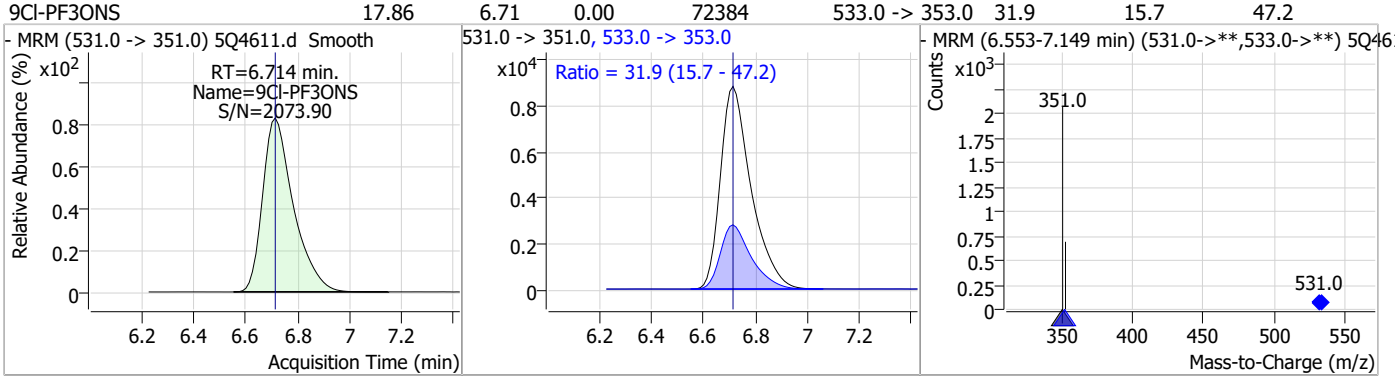


Perfluorinated Compounds by LC/MS/MS

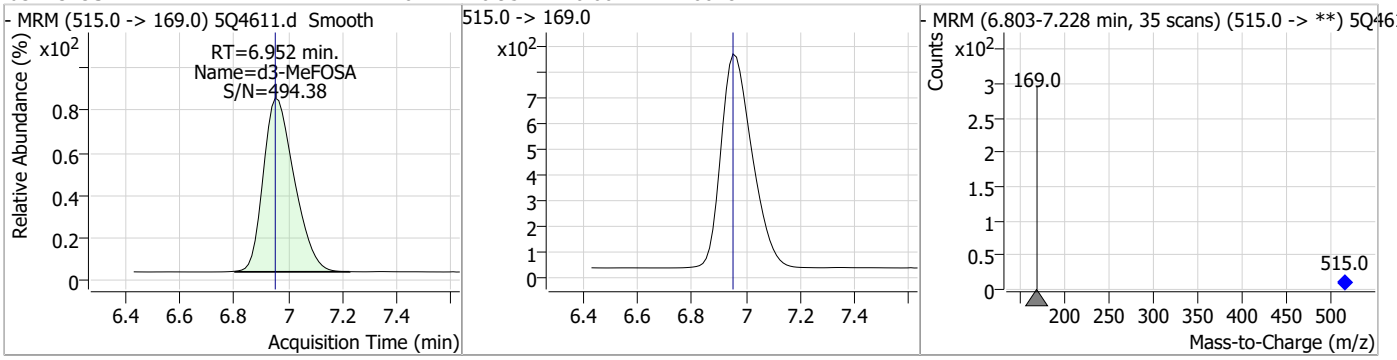
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.56	6.52	-0.01	24509	498.0 -> 478.0	3.0	1.5	4.6



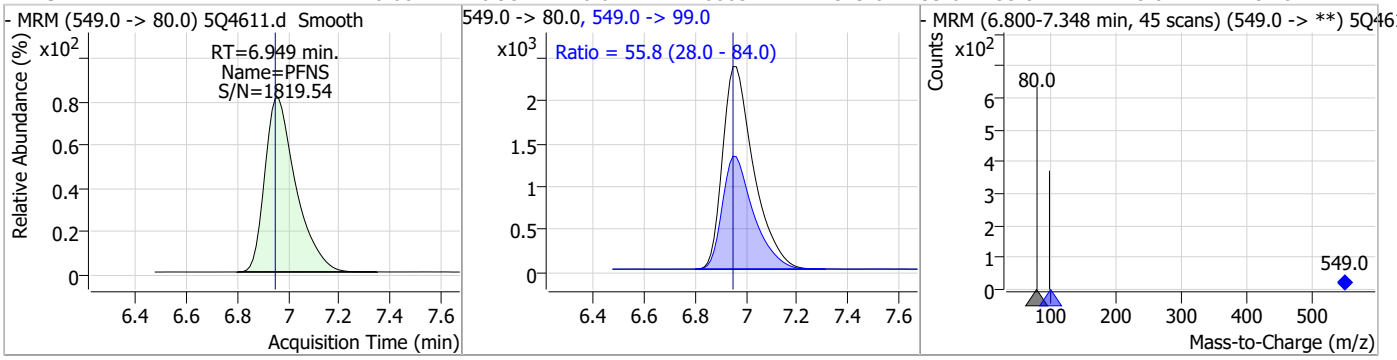
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.86	6.71	0.00	72384	533.0 -> 353.0	31.9	15.7	47.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.76	6.95	0.00	6628				

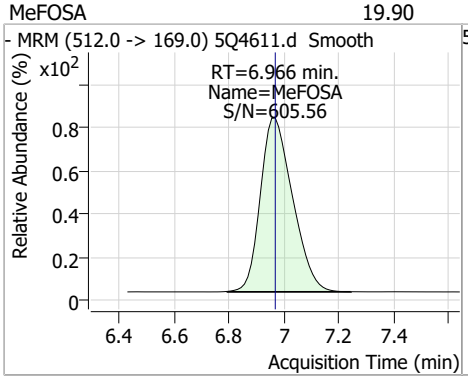


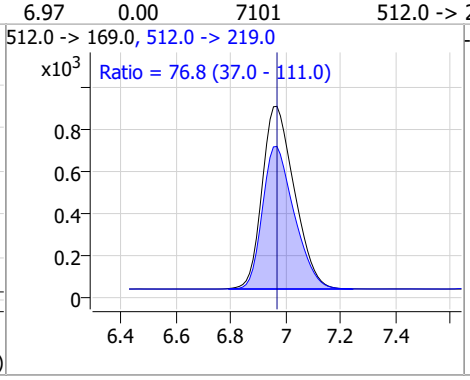
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.06	6.95	-0.01	20005	549.0 -> 99.0	55.8	28.0	84.0

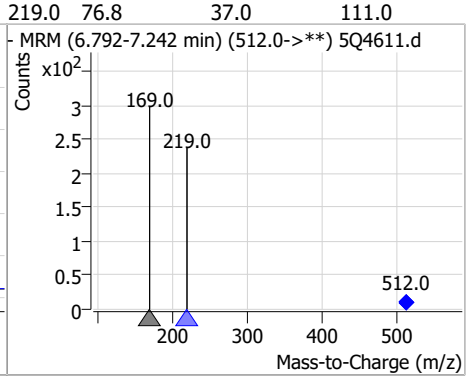


Perfluorinated Compounds by LC/MS/MS

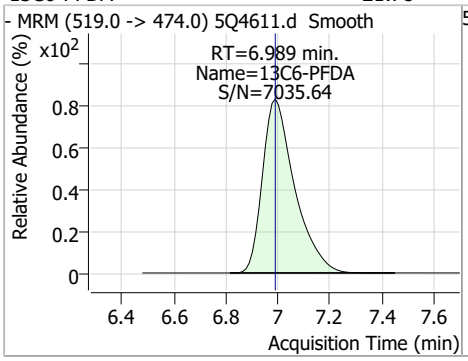
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.90	6.97	0.00	7101	512.0 -> 219.0	76.8	37.0	111.0

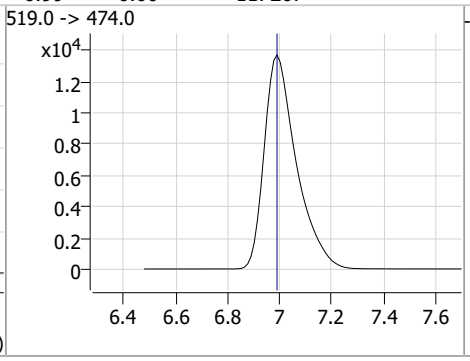


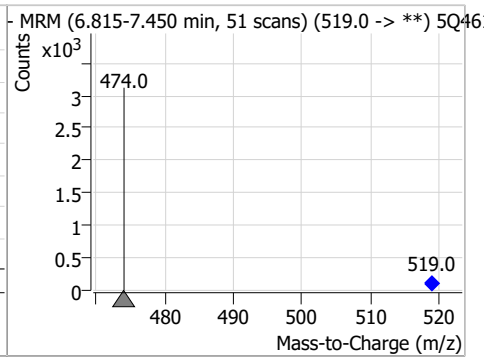




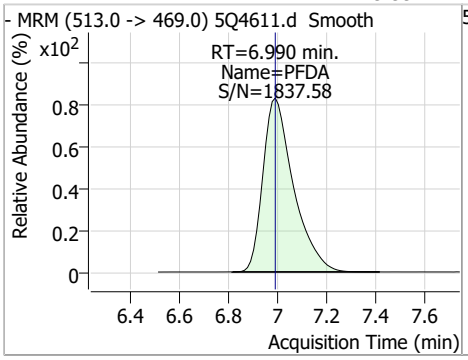
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.78	6.99	0.00	117267				

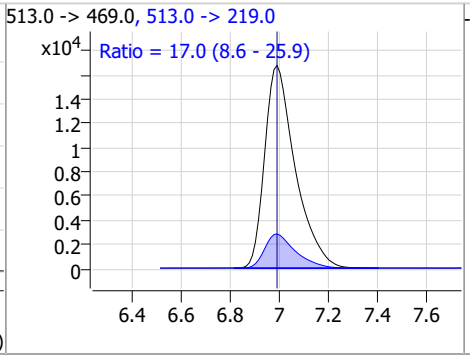


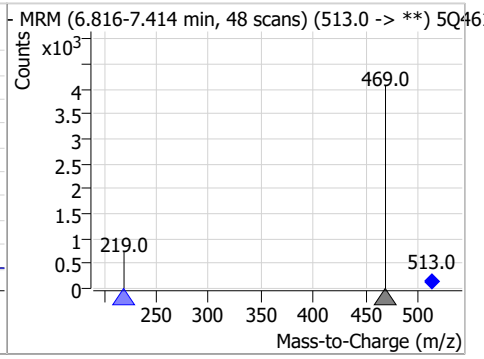




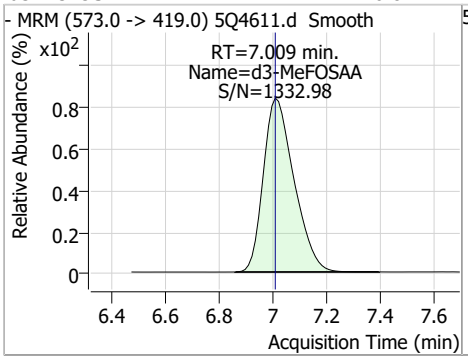
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.99	6.99	0.00	144013	513.0 -> 219.0	17.0	8.6	25.9

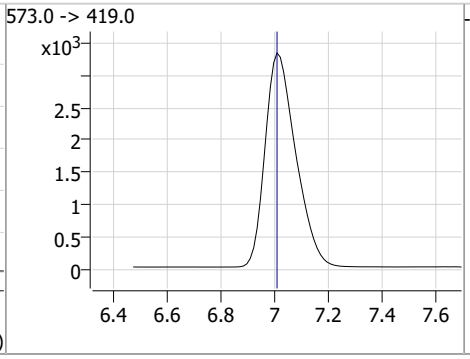


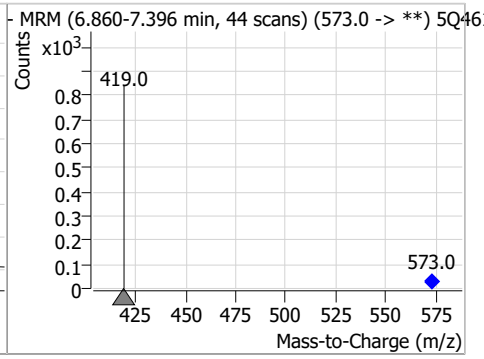




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	26.84	7.01	0.00	26085				

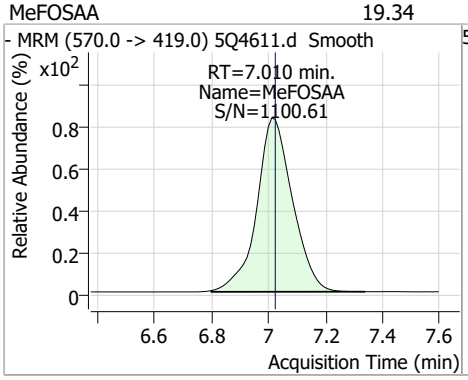


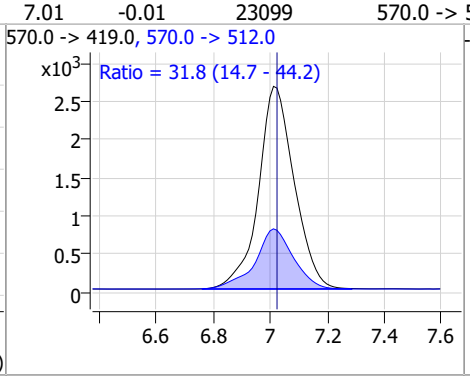


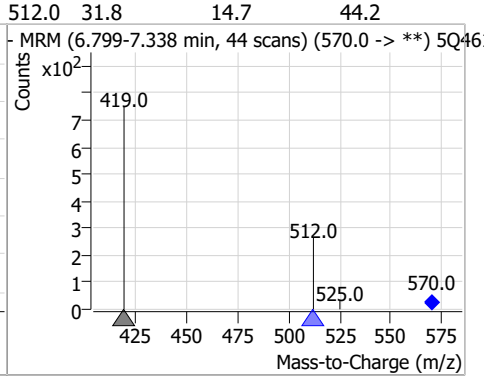


Perfluorinated Compounds by LC/MS/MS

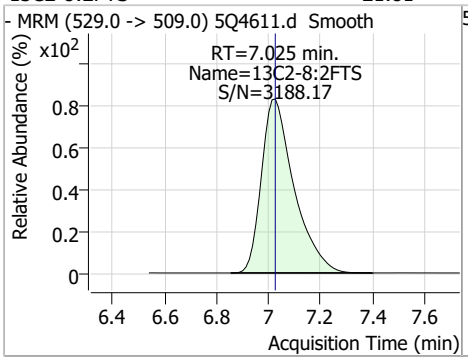
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.34	7.01	-0.01	23099	570.0 -> 512.0	31.8	14.7	44.2

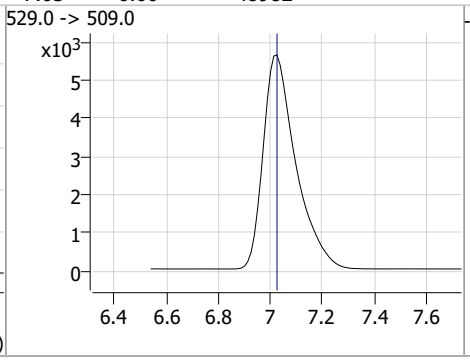


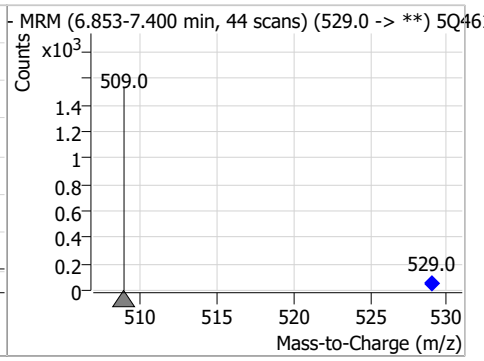




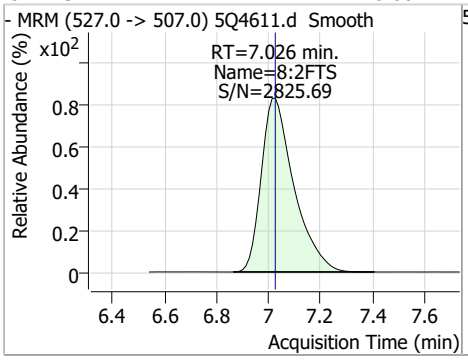
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.81	7.03	0.00	48982				

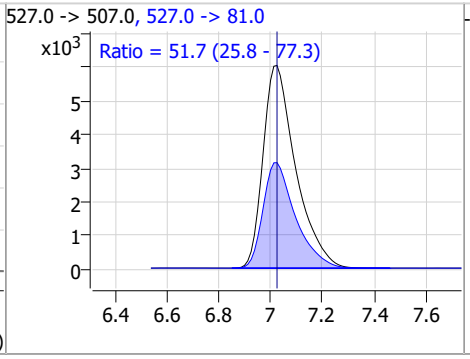


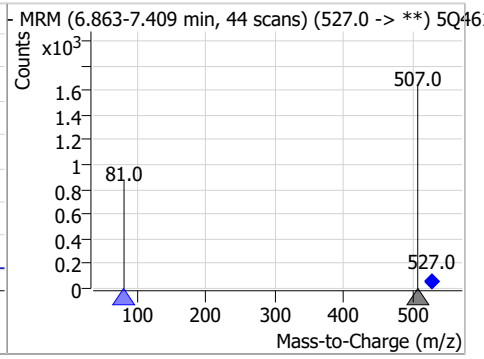




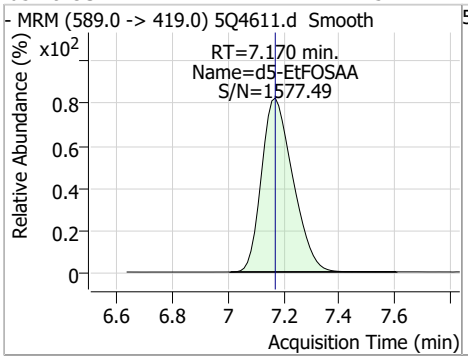
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.08	7.03	0.00	52424	527.0 -> 81.0	51.7	25.8	77.3

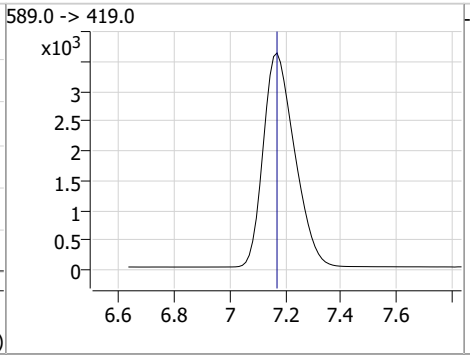


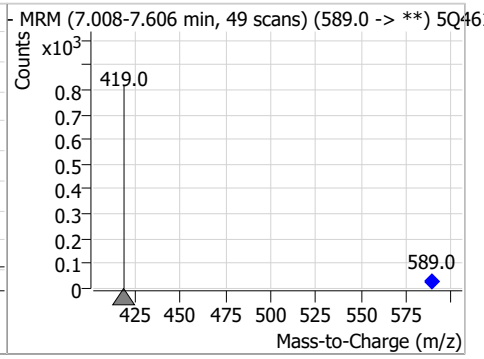




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	25.21	7.17	0.00	28261				

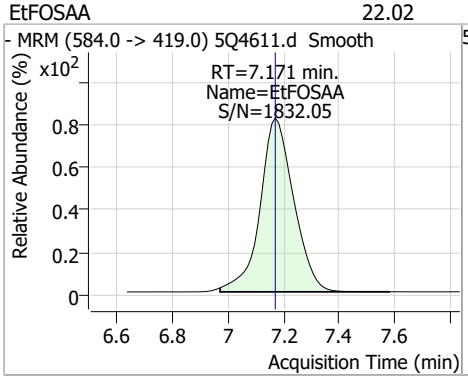


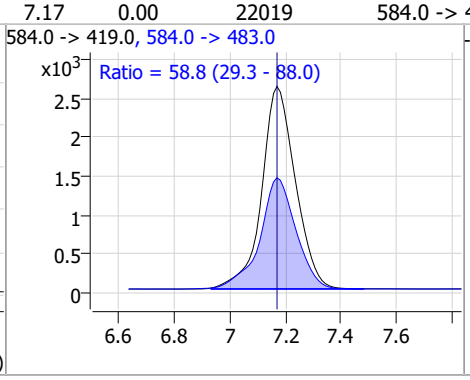


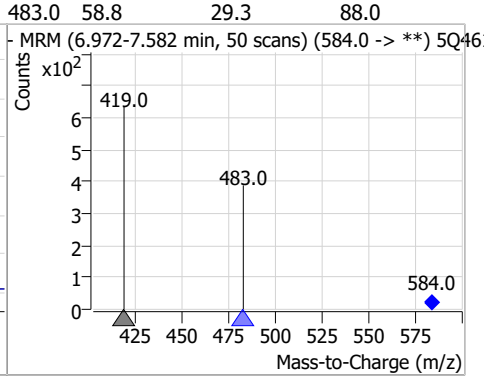


Perfluorinated Compounds by LC/MS/MS

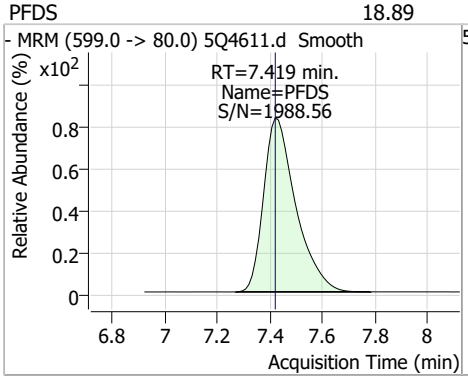
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.02	7.17	0.00	22019	584.0 -> 483.0	58.8	29.3	88.0

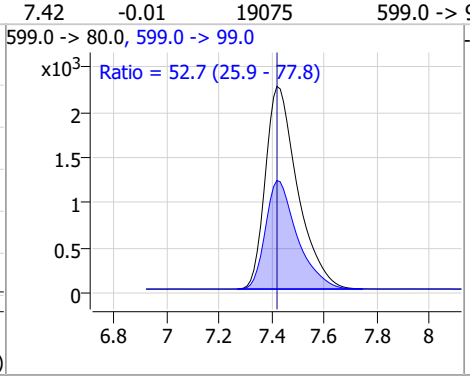


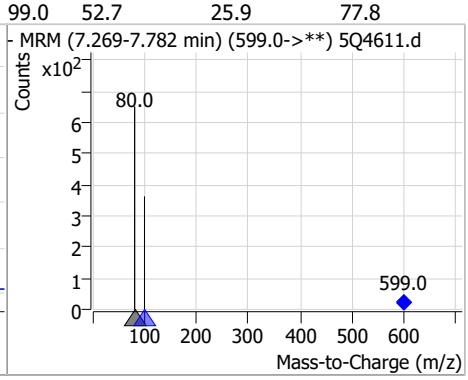




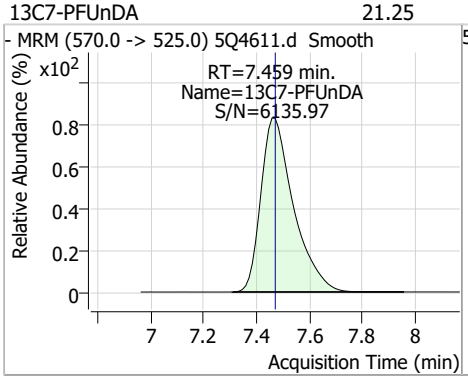
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.89	7.42	-0.01	19075	599.0 -> 99.0	52.7	25.9	77.8

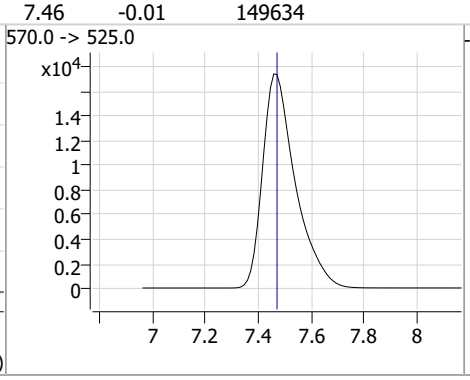


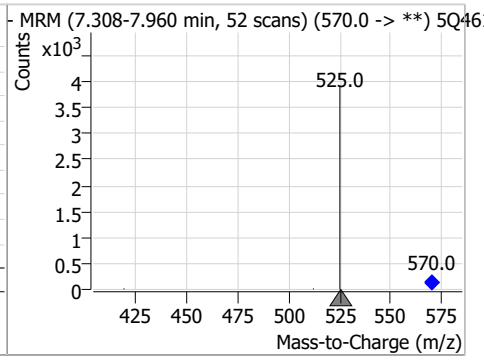




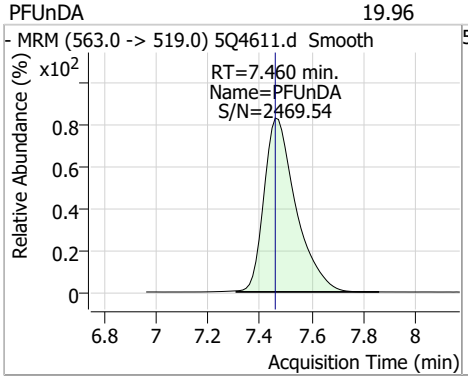
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.25	7.46	-0.01	149634				

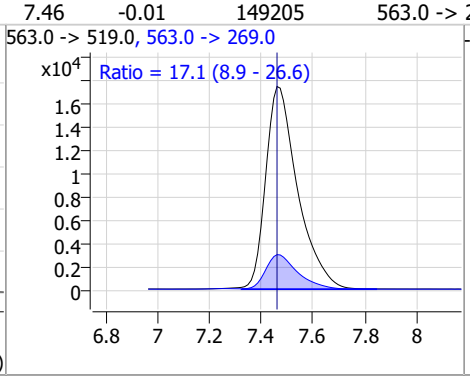


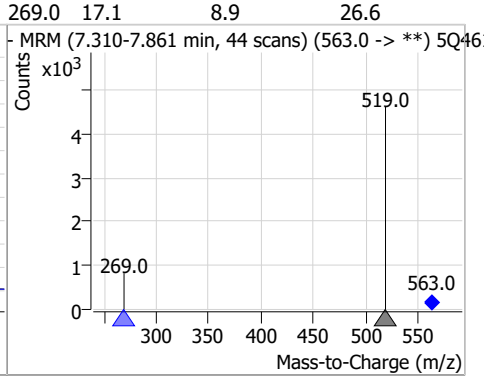




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.96	7.46	-0.01	149205	563.0 -> 269.0	17.1	8.9	26.6

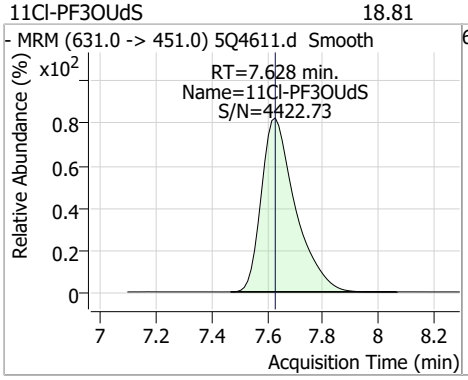


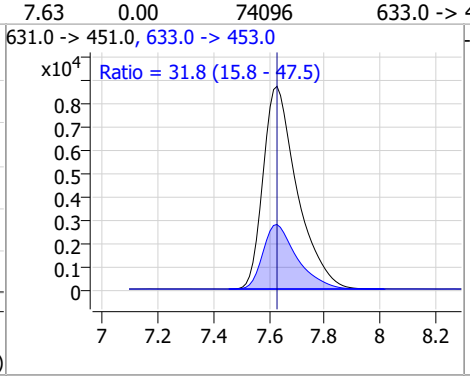


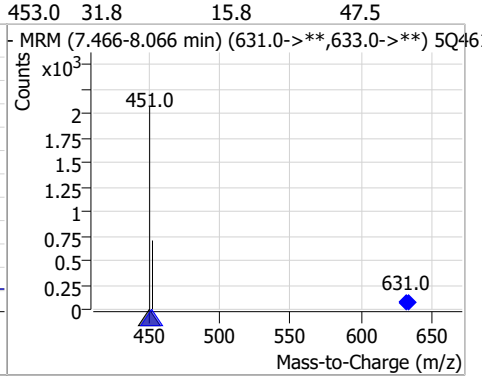


Perfluorinated Compounds by LC/MS/MS

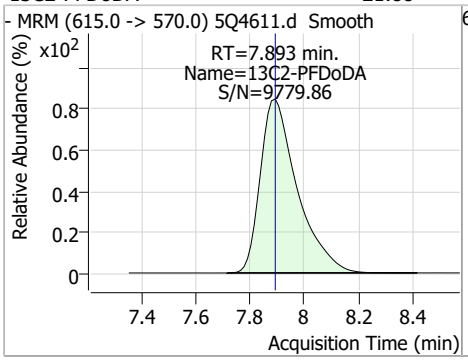
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.81	7.63	0.00	74096	633.0 -> 453.0	31.8	15.8	47.5

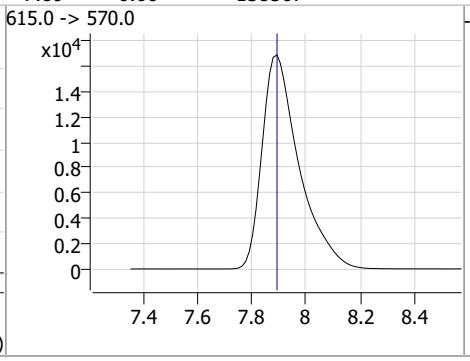


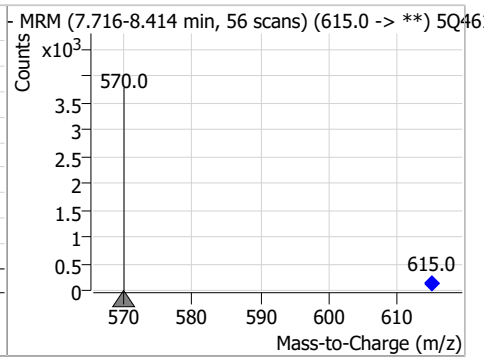




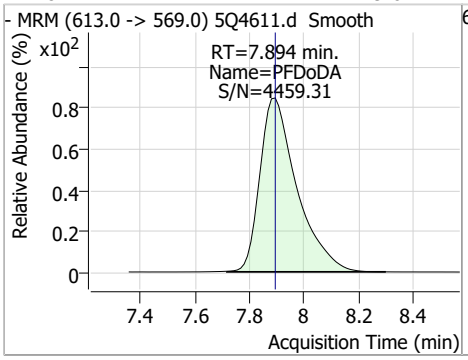
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.88	7.89	0.00	158567				

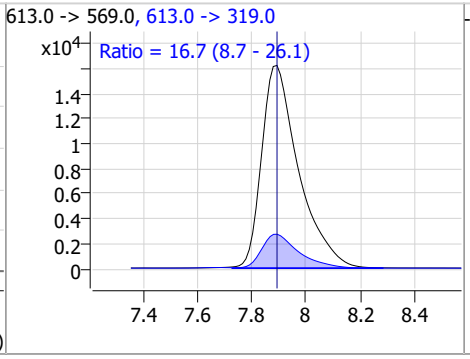


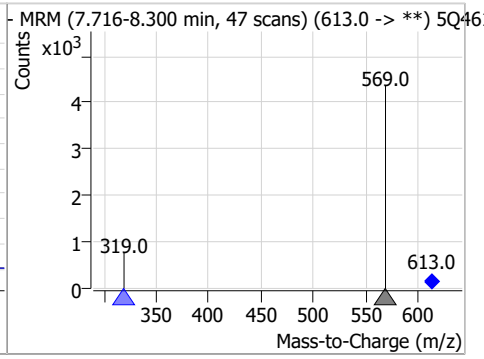




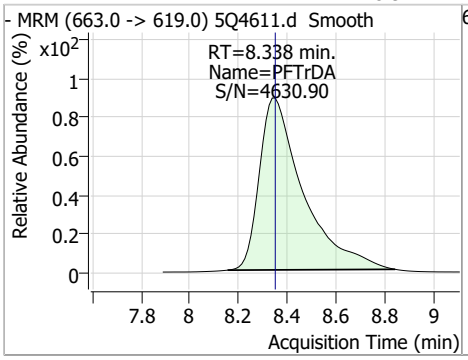
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.67	7.89	0.00	153002	613.0 -> 319.0	16.7	8.7	26.1

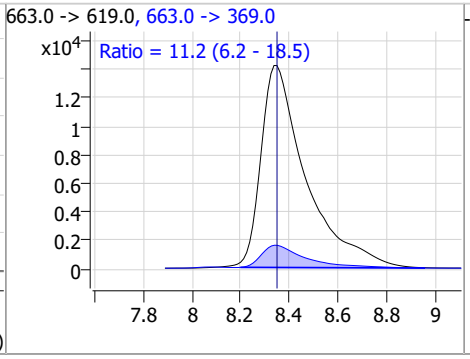


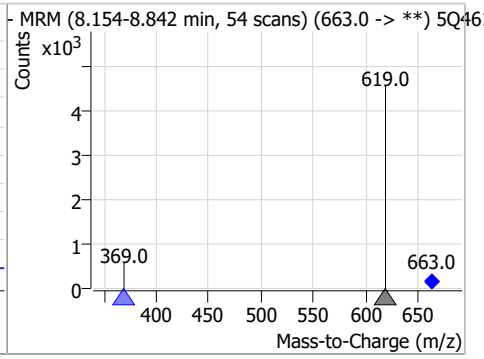




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.91	8.34	-0.01	175834	663.0 -> 369.0	11.2	6.2	18.5

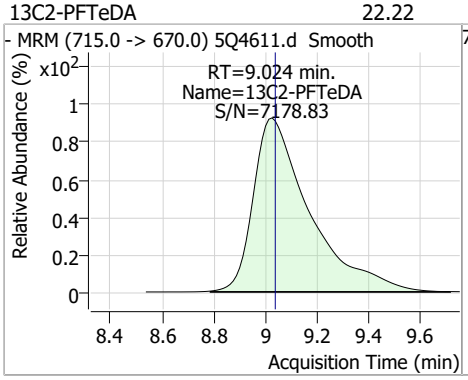


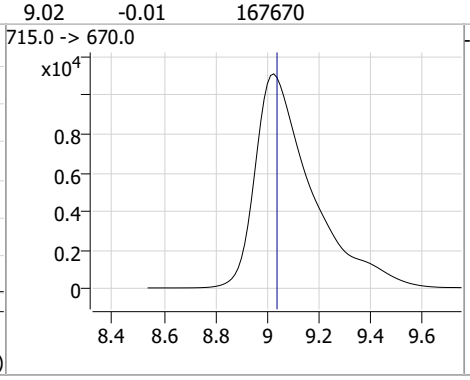


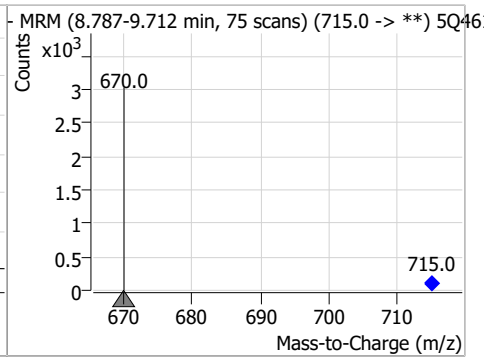


Perfluorinated Compounds by LC/MS/MS

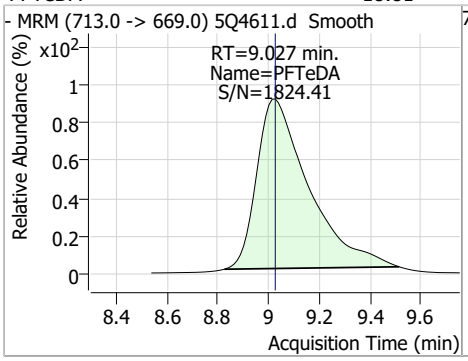
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	22.22	9.02	-0.01	167670				

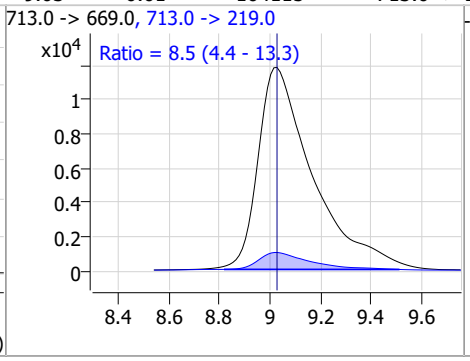


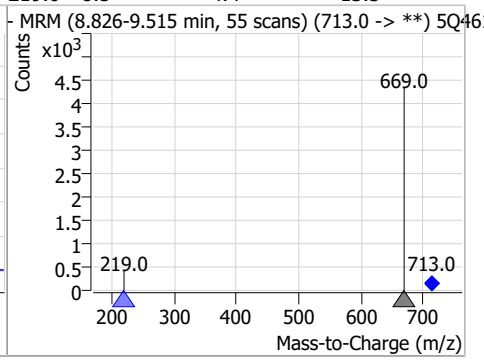




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.81	9.03	-0.01	164115	713.0 -> 219.0	8.5	4.4	13.3







7.7.47

7

Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4611.D
Injection Time: 09/15/22 00:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4623.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 3:33:37 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

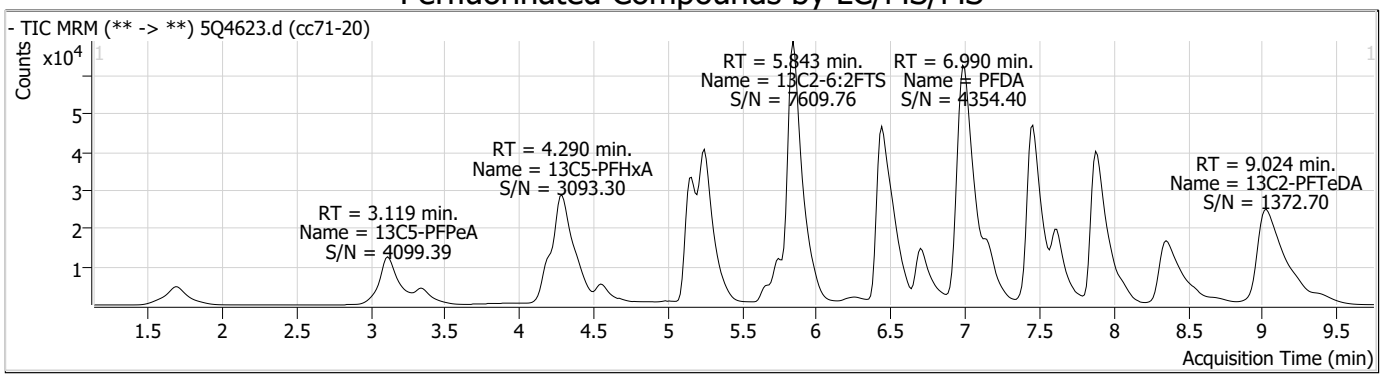
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	36150	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	57714	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	87149	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	81995	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	122449	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	134501	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	112508	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	143714	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	151056	20.00 µg/L	0.000
M2-PFTeDA	9.024	715.0 -> 670.0	148786	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	22686	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6517	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6869	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	12751	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	29432	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	45884	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	47059	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	24239	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5935	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6189	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	27003	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	29432	20.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C2-6:2FTS	5.843	429.0 -> 409.0	45884	20.52 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%	
13C2-8:2FTS	7.025	529.0 -> 509.0	47059	20.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C2-PFDoDA	7.893	615.0 -> 570.0	151056	20.84 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C2-PFTeDA	9.024	715.0 -> 670.0	148786	19.72 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C3-PFBS	3.349	302.0 -> 99.0	6517	20.01 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C3-PFHxS	5.194	402.0 -> 99.0	6869	20.14 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFBA	1.687	217.0 -> 172.0	36150	20.22 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C4-PFHpA	5.163	367.0 -> 322.0	81995	20.08 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C5-PFHxA	4.290	318.0 -> 273.0	87149	19.93 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%	
13C5-PFPeA	3.119	268.0 -> 223.0	57714	19.86 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C6-PFDA	6.989	519.0 -> 474.0	112508	20.90 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

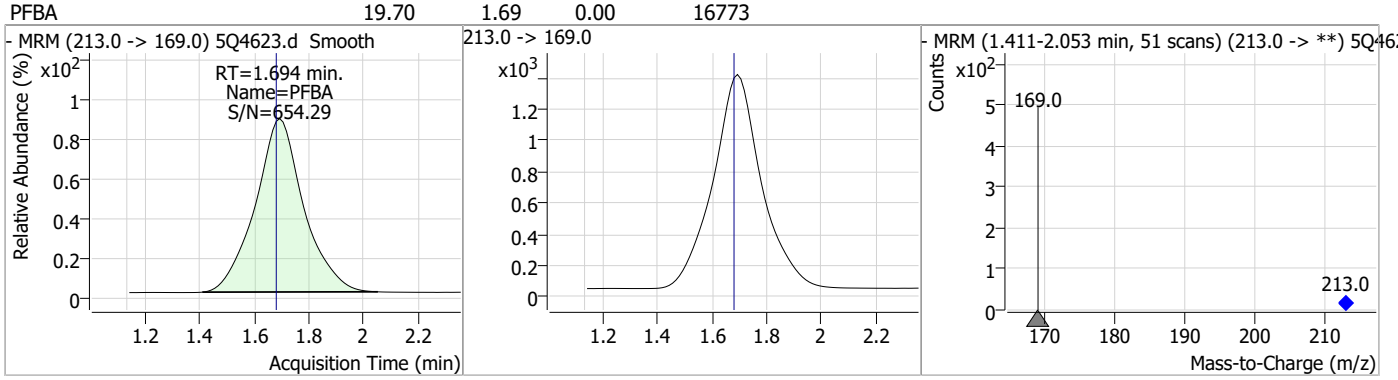
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C7-PFUnDA	7.459	570.0 -> 525.0	143714	20.41 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C8-FOSA	6.517	506.0 -> 78.0	22686	19.99 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-PFOA	5.857	421.0 -> 376.0	122449	20.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C8-PFOS	6.428	507.0 -> 99.0	12751	19.53 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C9-PFNA	6.455	472.0 -> 427.0	134501	20.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
d3-MeFOSAA	7.009	573.0 -> 419.0	24239	24.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.7%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	5935	17.67 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.4%		
d3-MeFOSA	6.952	515.0 -> 169.0	6189	20.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d5-EtFOSAA	7.170	589.0 -> 419.0	27003	24.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.4%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	32663	19.82 µg/L		100
6:2FTS	5.843	427.0 -> 407.0	50271	20.66 µg/L		97
8:2FTS	7.013	527.0 -> 507.0	50259	20.04 µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	20726	21.70 µg/L		99
FOSA	6.519	498.0 -> 78.0	23388	20.04 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	22103	19.91 µg/L		97
PFBA	1.694	213.0 -> 169.0	16773	19.70 µg/L		100
PFBS	3.354	299.0 -> 80.0	19138	19.55 µg/L		100
PFDA	6.990	513.0 -> 469.0	135953	19.67 µg/L		99
PFDoDA	7.894	613.0 -> 569.0	146023	19.71 µg/L		99
PFDS	7.419	599.0 -> 80.0	18154	18.72 µg/L		99
PFHpA	5.164	363.0 -> 319.0	107890	20.03 µg/L		100
PFHpS	5.855	449.0 -> 80.0	19548	20.39 µg/L		100
PFHxA	4.291	313.0 -> 269.0	83526	19.62 µg/L		100
PFHxS	5.195	399.0 -> 80.0	19866	19.47 µg/L	m	96
PFNA	6.456	463.0 -> 419.0	118847	19.72 µg/L		99
PFNS	6.949	549.0 -> 80.0	18884	20.06 µg/L		99
PFOA	5.858	413.0 -> 369.0	146390	19.72 µg/L		100
PFOS	6.429	499.0 -> 80.0	22408	19.95 µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	56191	19.70 µg/L		100
PFPeS	4.398	349.0 -> 80.0	14839	19.49 µg/L		99
PFTeDA	9.027	713.0 -> 669.0	158700	20.49 µg/L		99
PFTrDA	8.363	663.0 -> 619.0	169039	19.09 µg/L		99
PFUnDA	7.460	563.0 -> 519.0	142497	19.85 µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	70664	18.83 µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	69484	17.87 µg/L		99
ADONA	5.261	377.0 -> 251.0	136867	19.38 µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20257	20.23 µg/L		100
MeFOSA	6.966	512.0 -> 169.0	6783	20.35 µg/L		100
4-PFECHS	5.753	461.0 -> 381.0	42067	19.09 µg/L		98
FBSA	4.343	298.0 -> 78.0	29513	20.42 µg/L		100
FHxSA	5.674	398.0 -> 78.0	24309	19.52 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

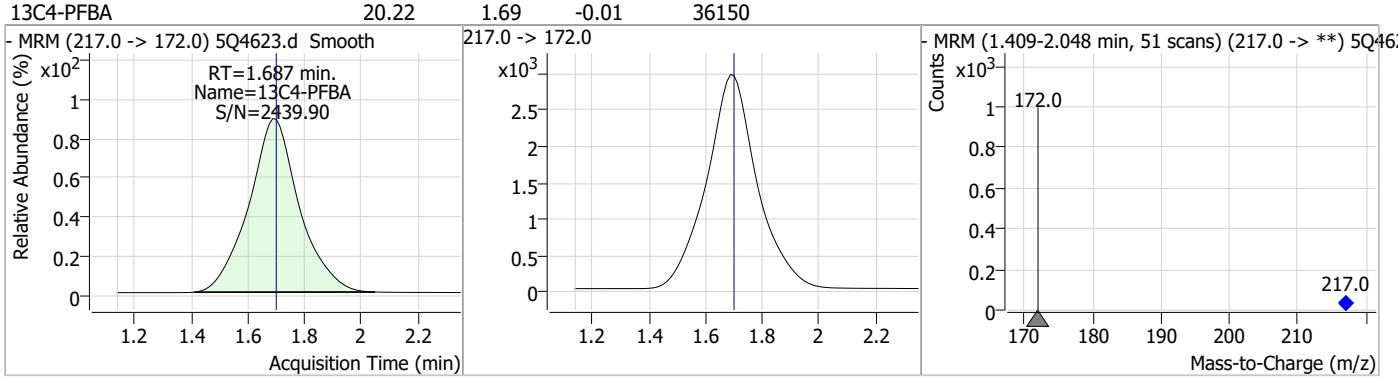
Perfluorinated Compounds by LC/MS/MS



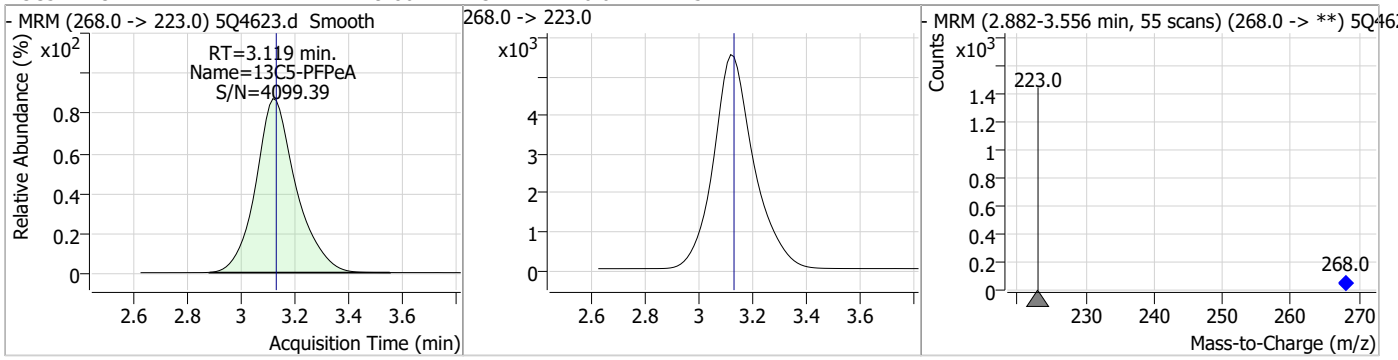
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.70	1.69	0.00	16773				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.22	1.69	-0.01	36150				

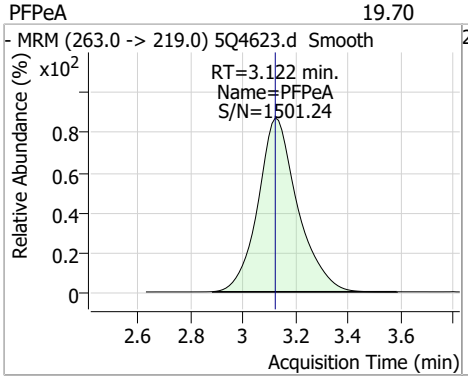


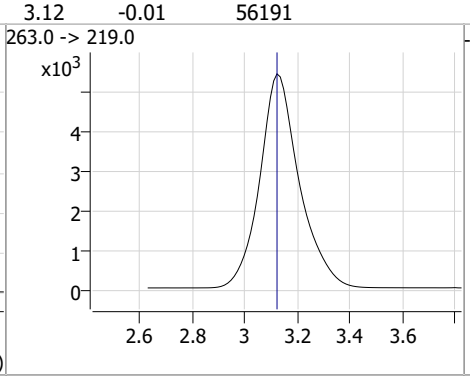
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.86	3.12	-0.01	57714				

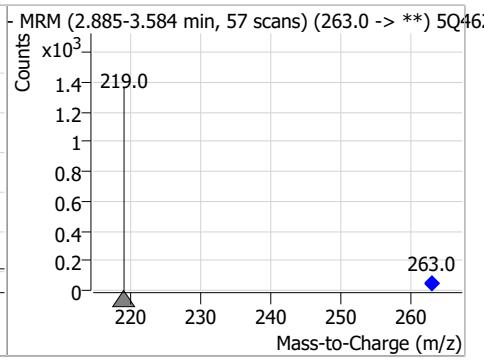


Perfluorinated Compounds by LC/MS/MS

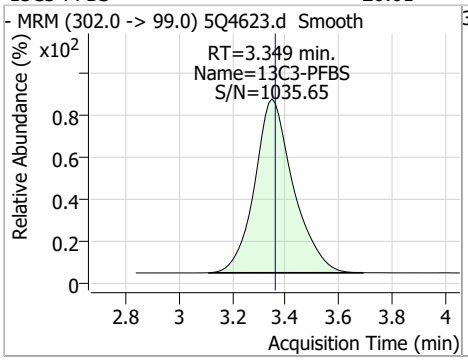
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.70	3.12	-0.01	56191				

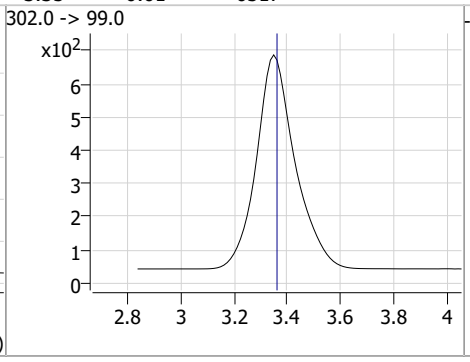


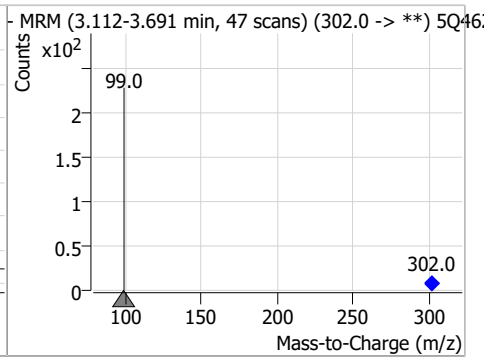




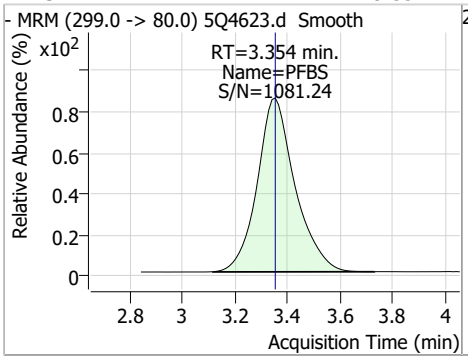
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.01	3.35	-0.01	6517				

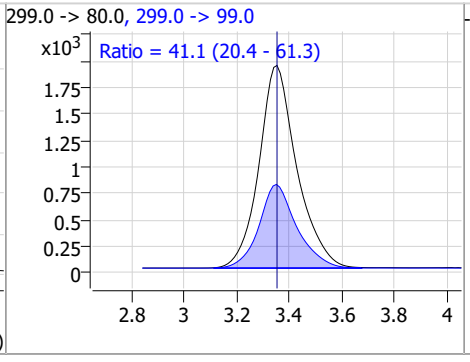


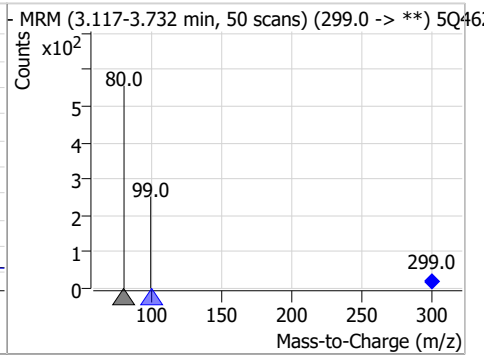




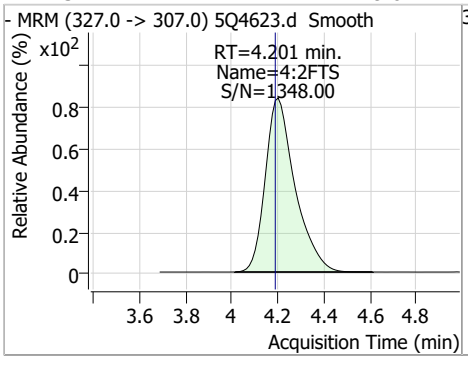
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.55	3.35	-0.01	19138	299.0 -> 99.0	41.1	20.4	61.3

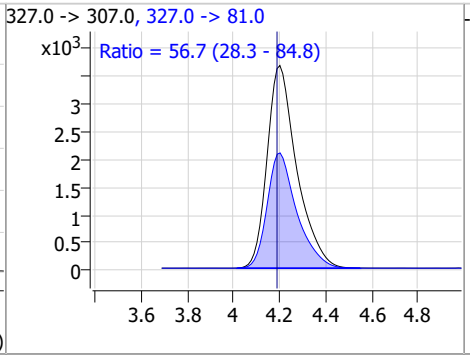


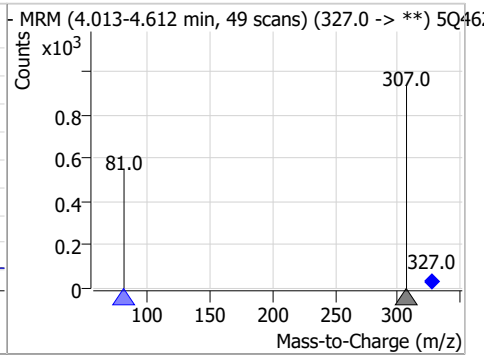




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.82	4.20	0.00	32663	327.0 -> 81.0	56.7	28.3	84.8

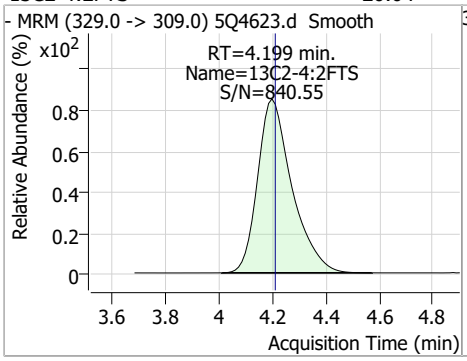


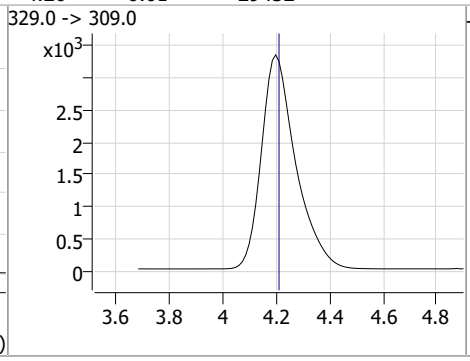


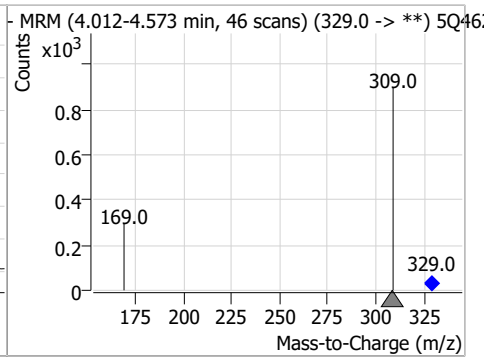


Perfluorinated Compounds by LC/MS/MS

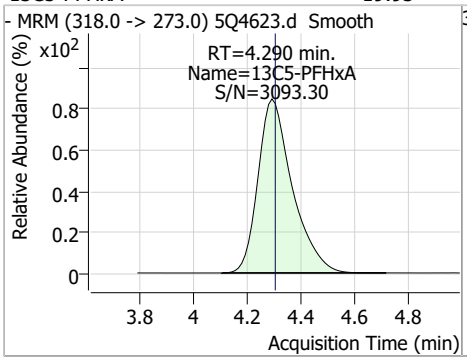
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.04	4.20	-0.01	29432				

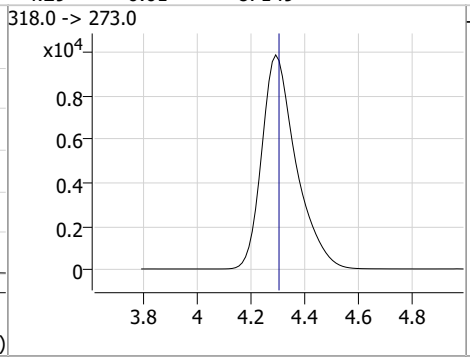


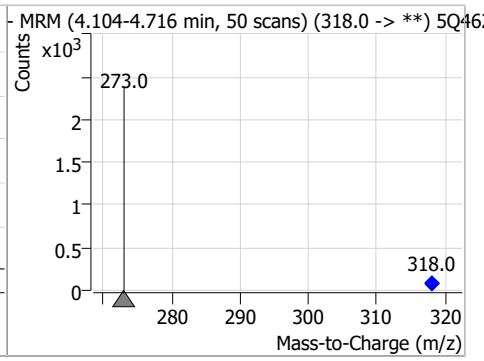




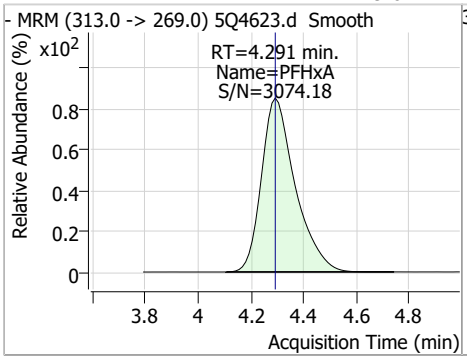
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.93	4.29	-0.01	87149				

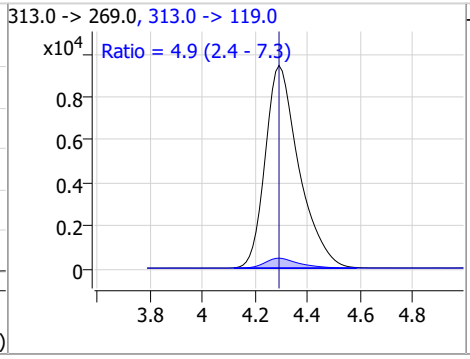


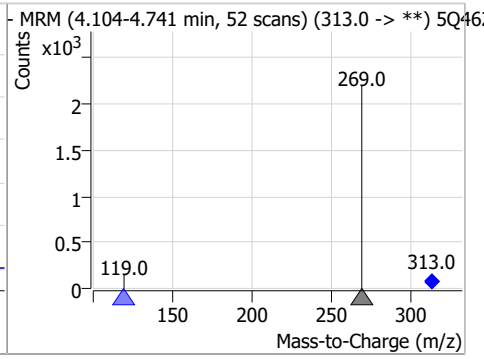




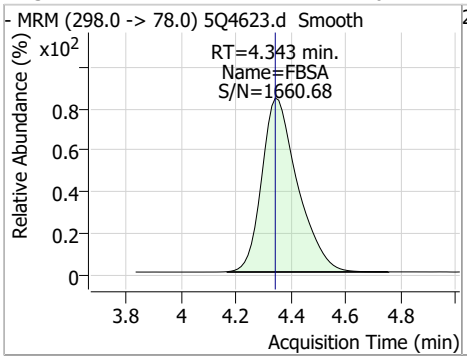
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.62	4.29	-0.01	83526	313.0 -> 119.0	4.9	2.4	7.3

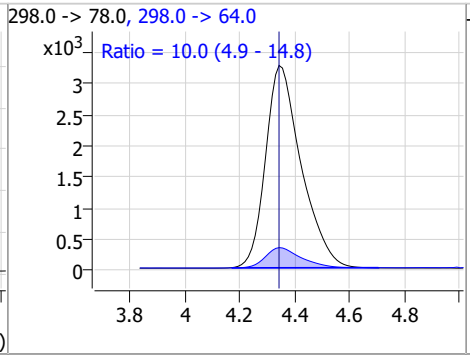


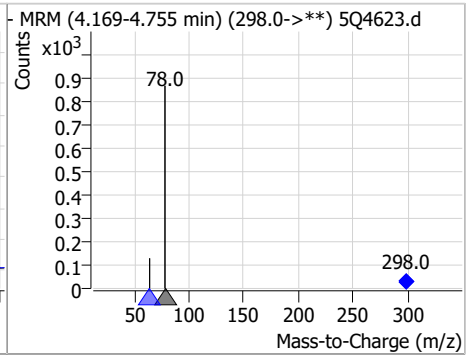




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.42	4.34	-0.01	29513	298.0 -> 64.0	10.0	4.9	14.8

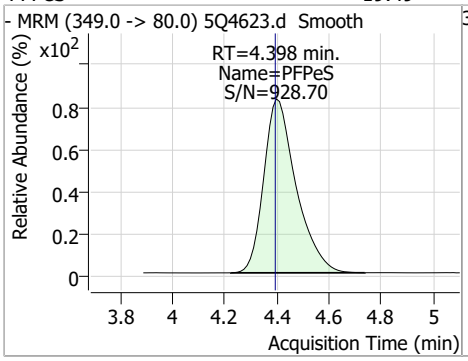


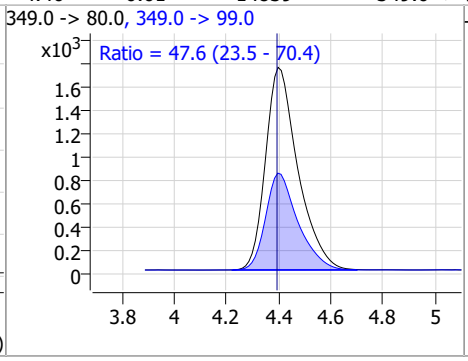


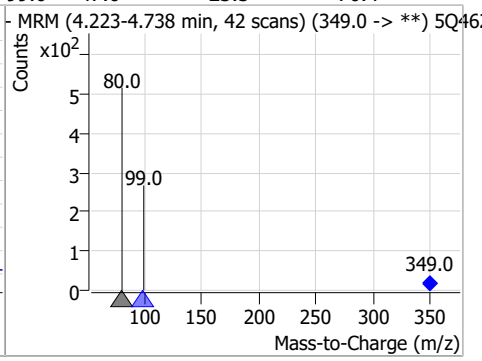


Perfluorinated Compounds by LC/MS/MS

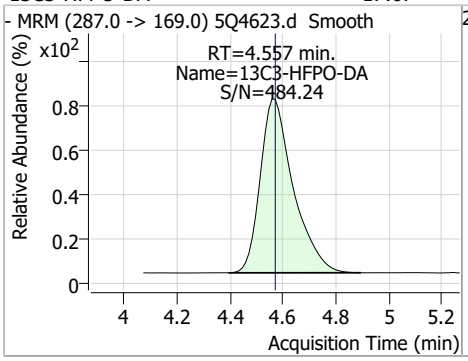
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.49	4.40	-0.01	14839	349.0 -> 99.0	47.6	23.5	70.4

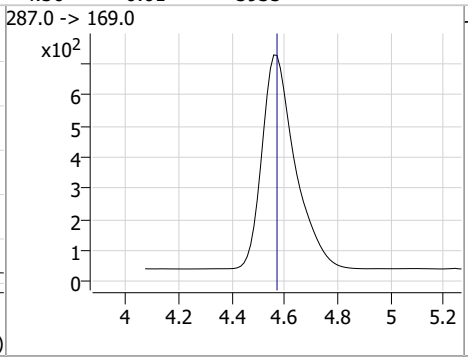


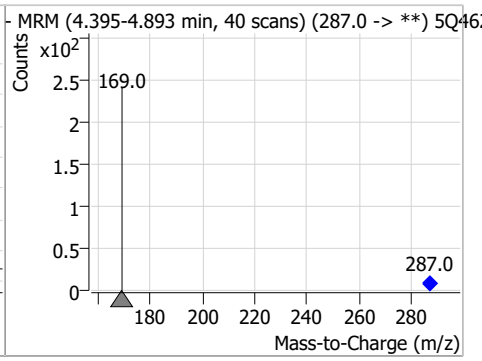




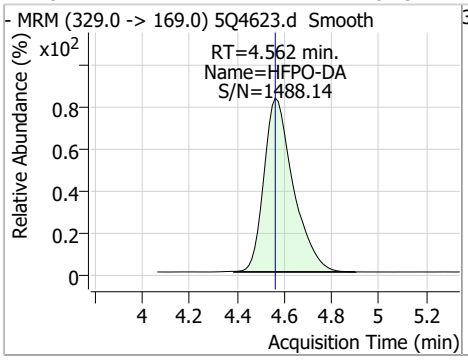
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.67	4.56	-0.01	5935				

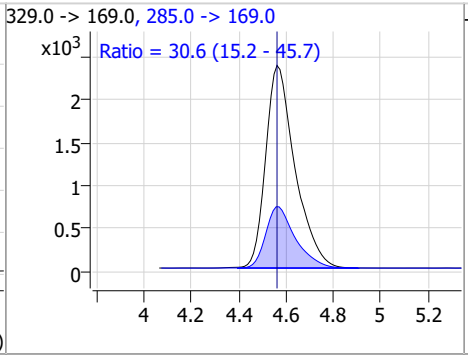


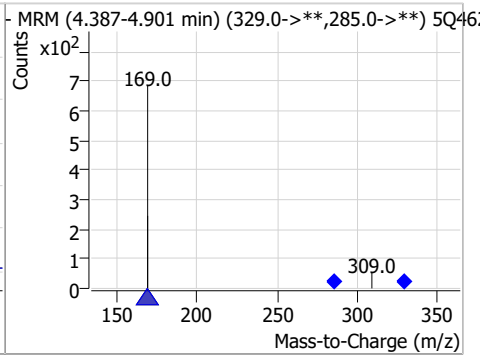




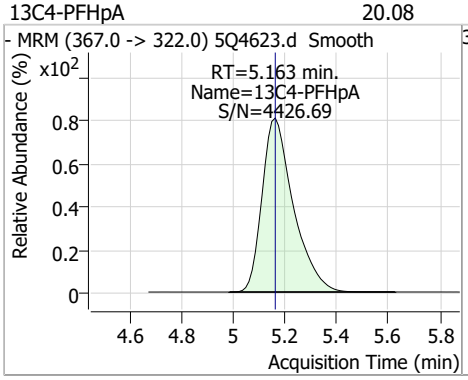
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.23	4.56	-0.01	20257	285.0 -> 169.0	30.6	15.2	45.7

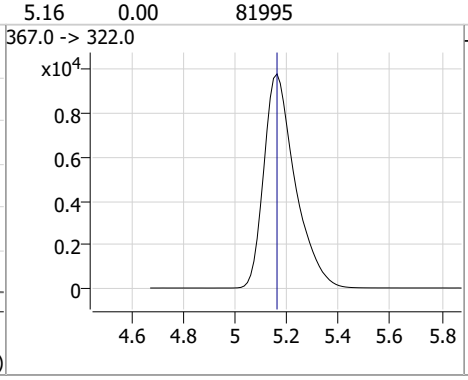


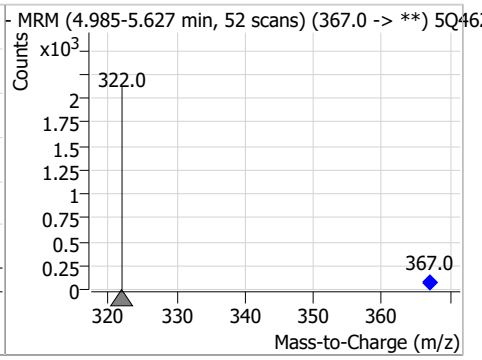




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.08	5.16	0.00	81995				

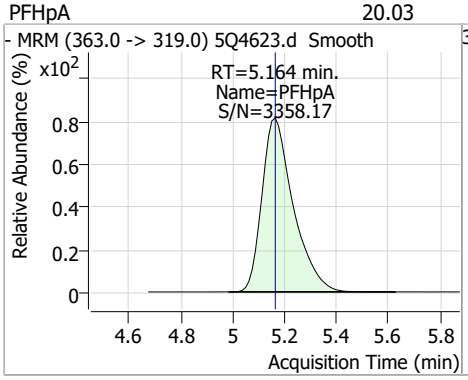


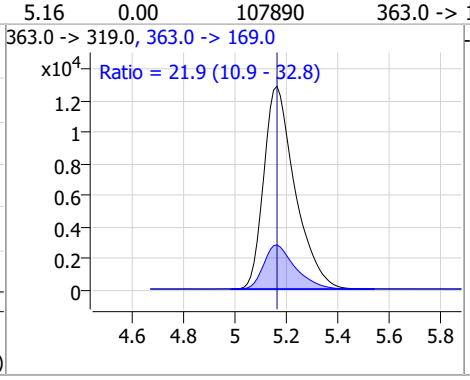


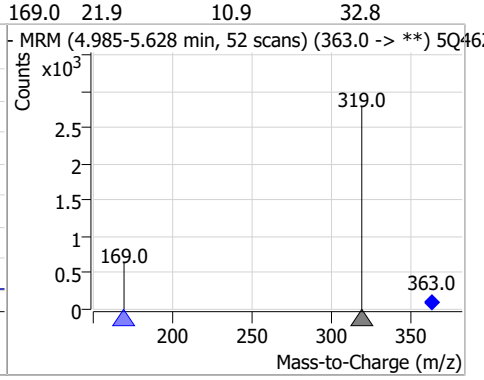


Perfluorinated Compounds by LC/MS/MS

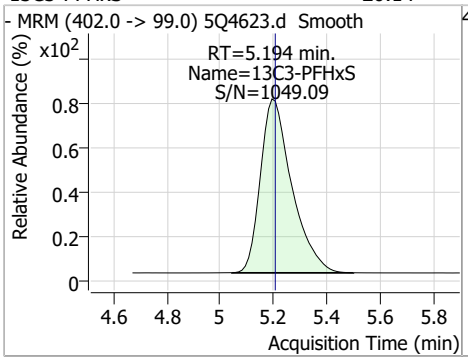
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.03	5.16	0.00	107890	363.0 -> 169.0	21.9	10.9	32.8

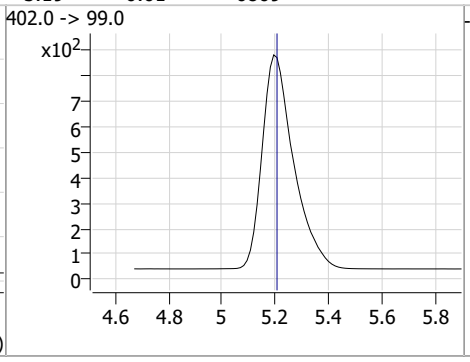


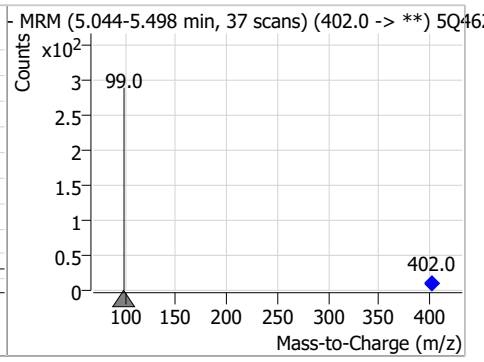




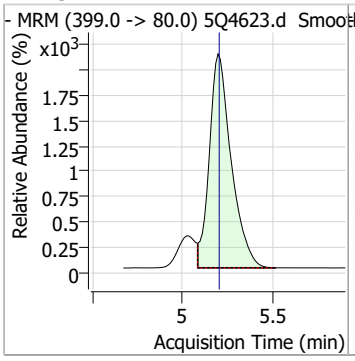
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.14	5.19	-0.01	6869				

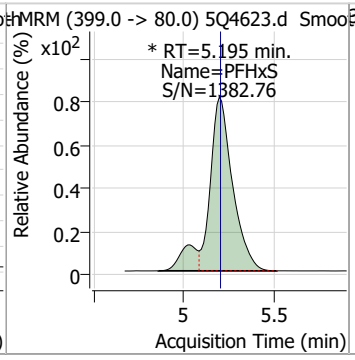


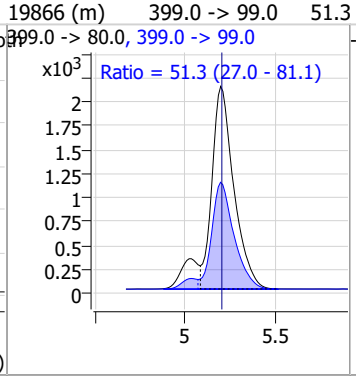


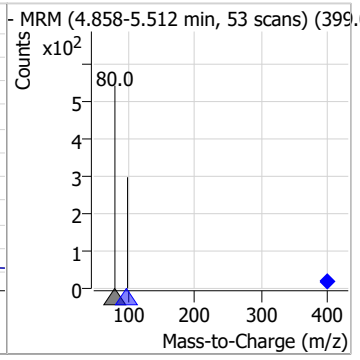


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.47	5.20	-0.01	19866 (m)	399.0 -> 99.0	51.3	27.0	81.1

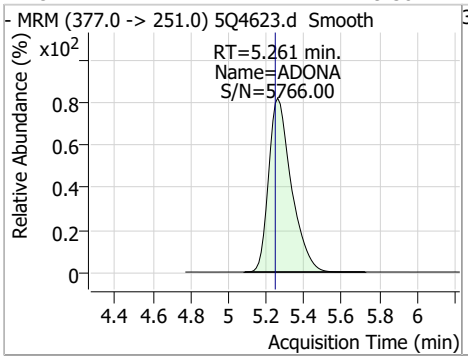


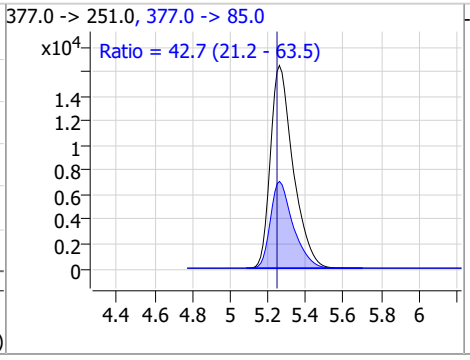


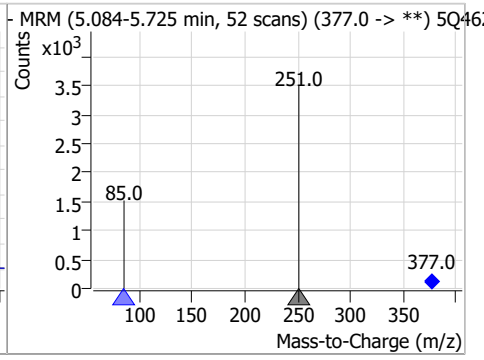




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.38	5.26	0.00	136867	377.0 -> 85.0	42.7	21.2	63.5

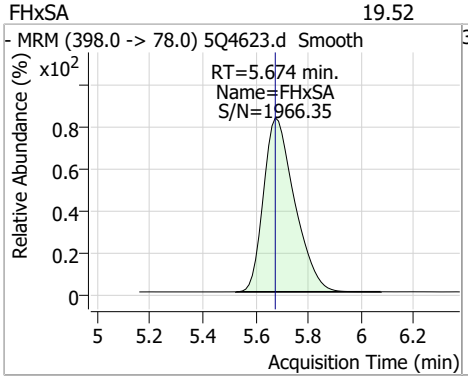


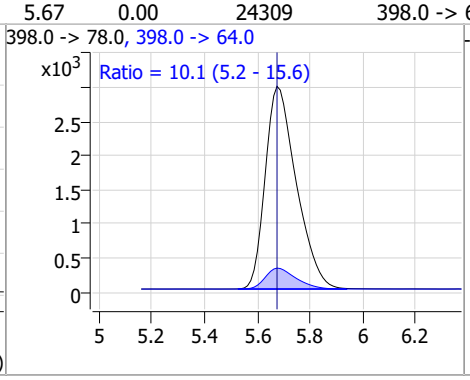


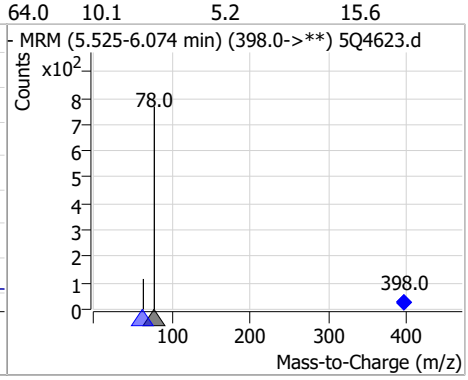


Perfluorinated Compounds by LC/MS/MS

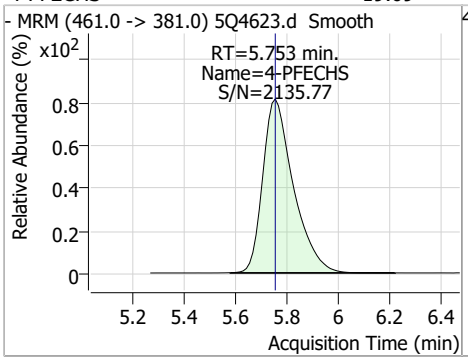
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.52	5.67	0.00	24309	398.0 -> 64.0	10.1	5.2	15.6

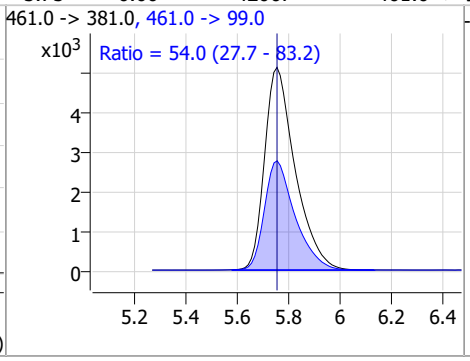


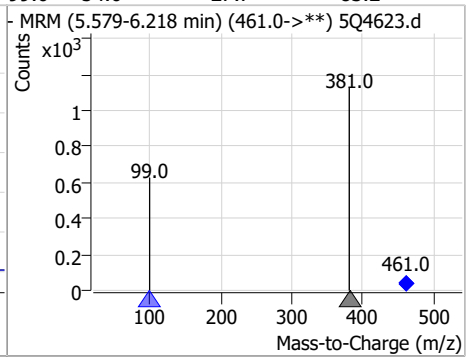




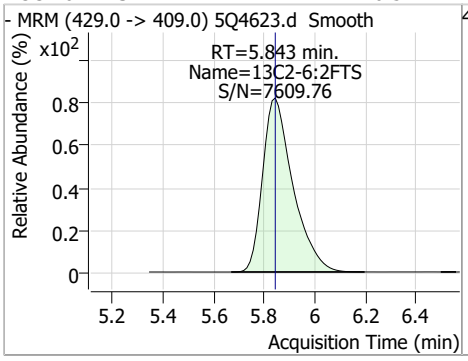
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.09	5.75	0.00	42067	461.0 -> 99.0	54.0	27.7	83.2

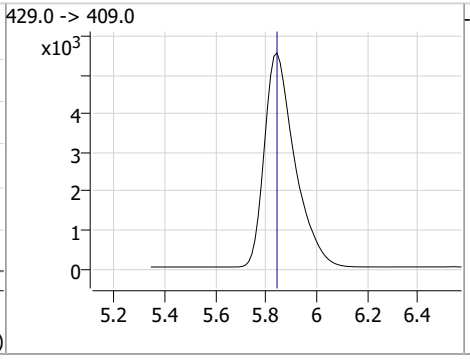


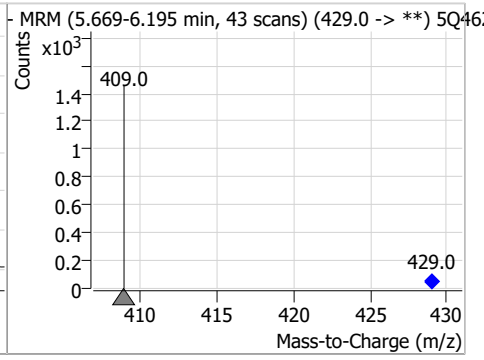




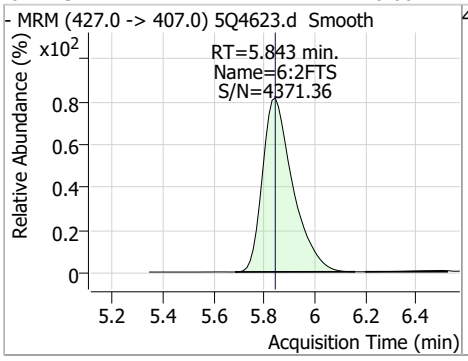
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.52	5.84	0.00	45884				

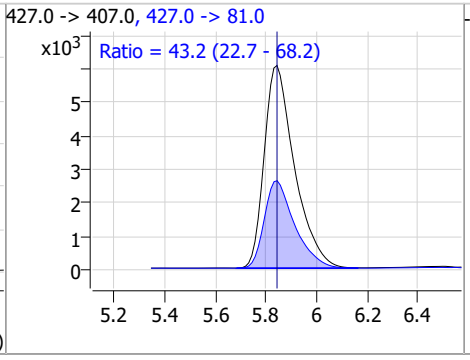


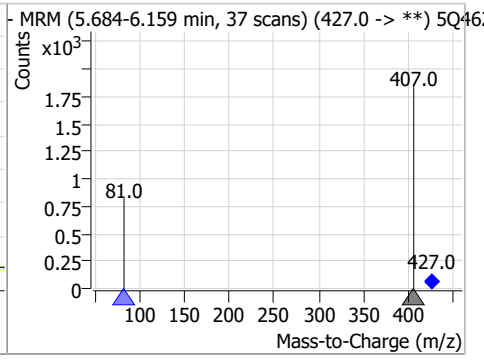




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.66	5.84	0.00	50271	427.0 -> 81.0	43.2	22.7	68.2

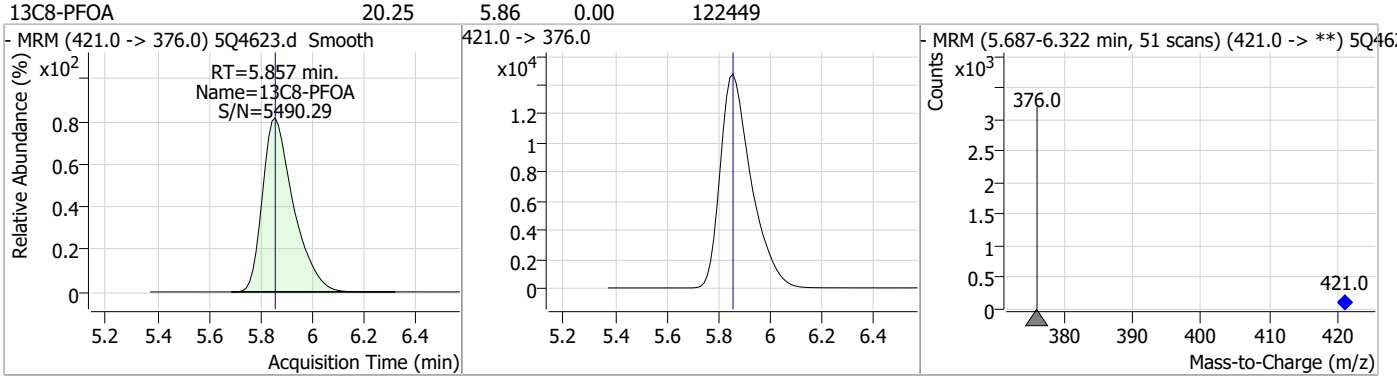




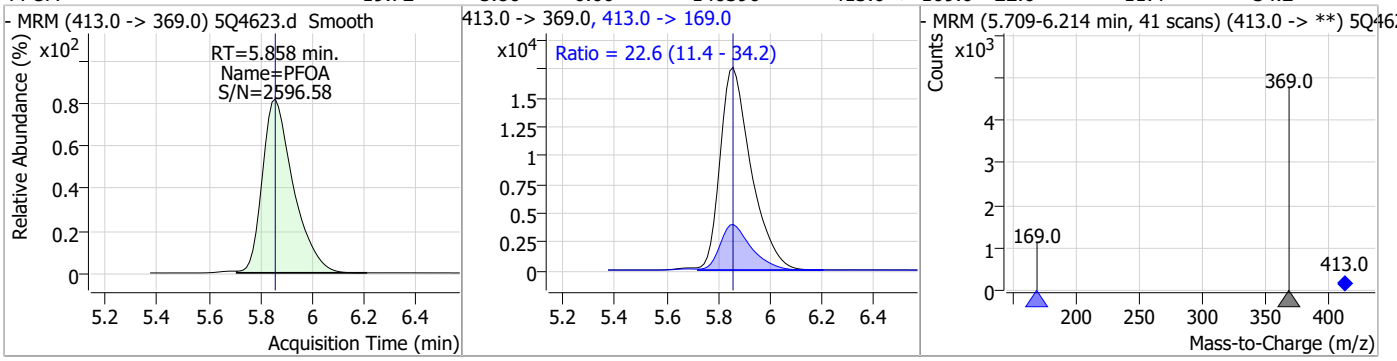


Perfluorinated Compounds by LC/MS/MS

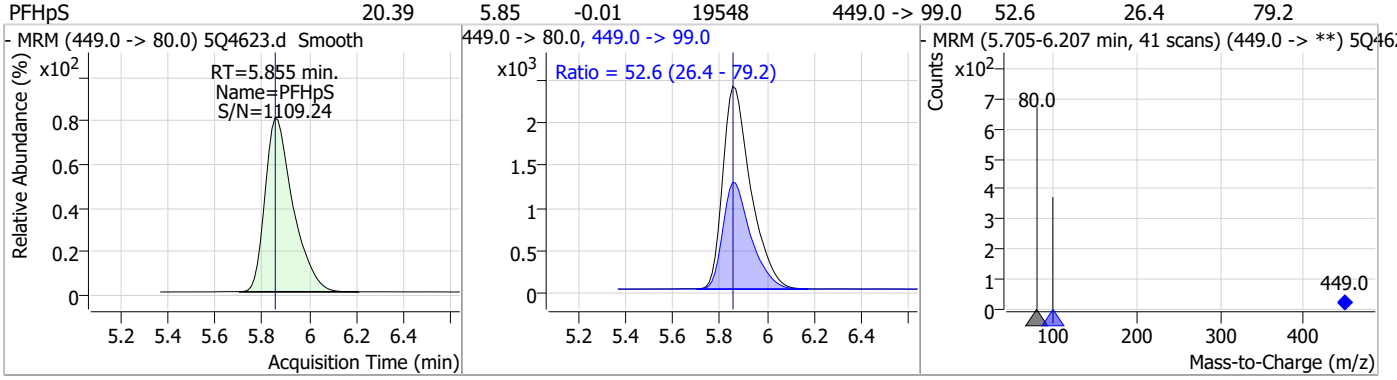
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.25	5.86	0.00	122449				



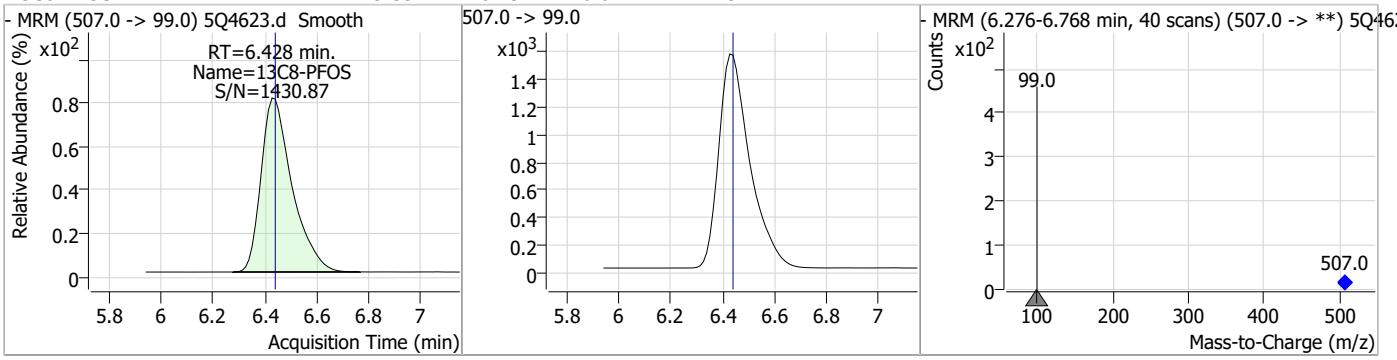
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.72	5.86	0.00	146390	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.39	5.85	-0.01	19548	449.0 -> 99.0	52.6	26.4	79.2

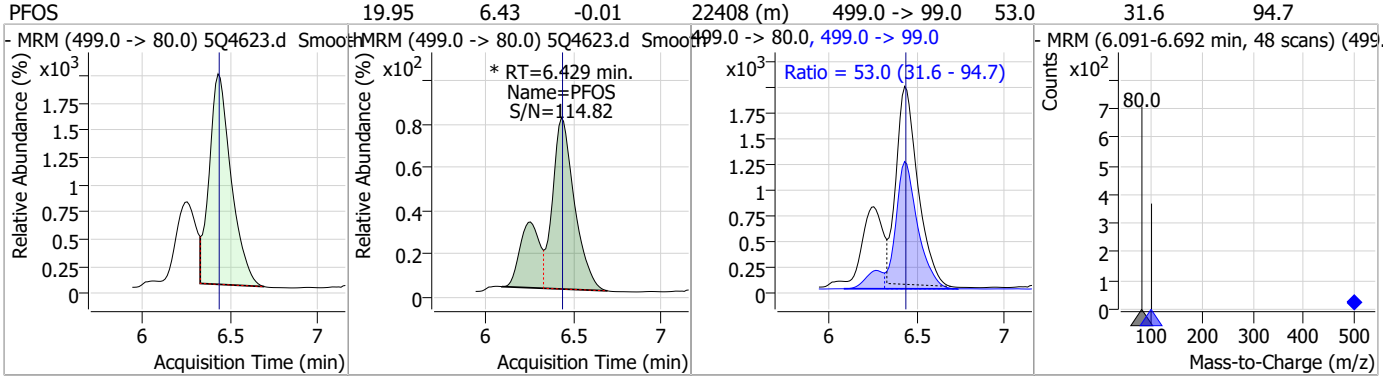


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.53	6.43	-0.01	12751				

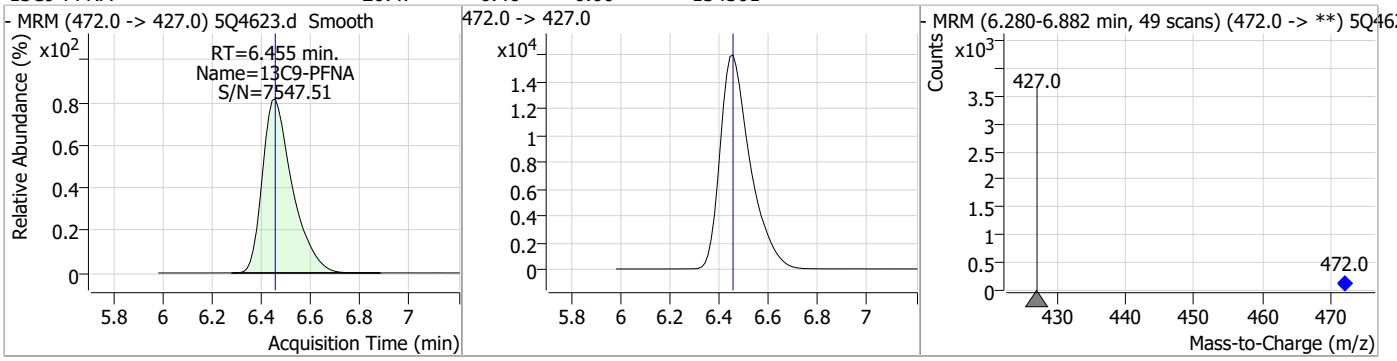


Perfluorinated Compounds by LC/MS/MS

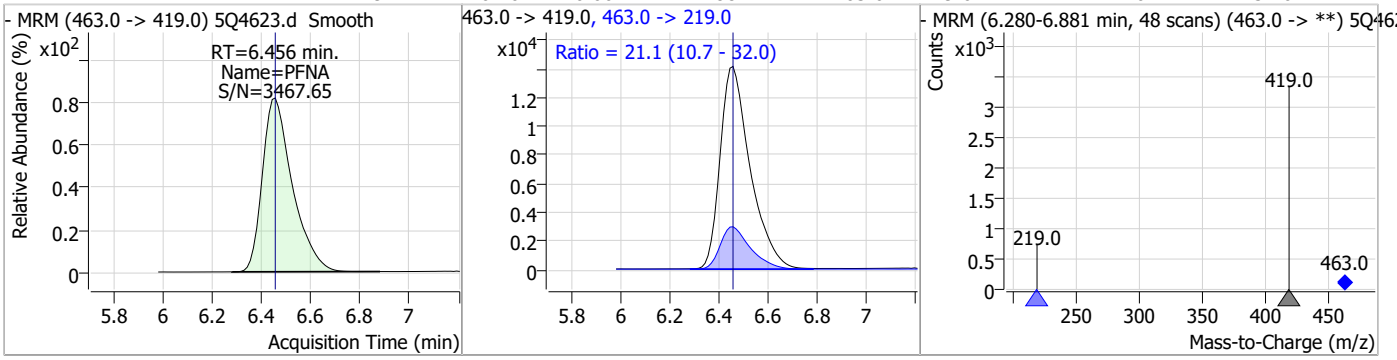
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.95	6.43	-0.01	22408 (m)	499.0 -> 99.0	53.0	31.6	94.7



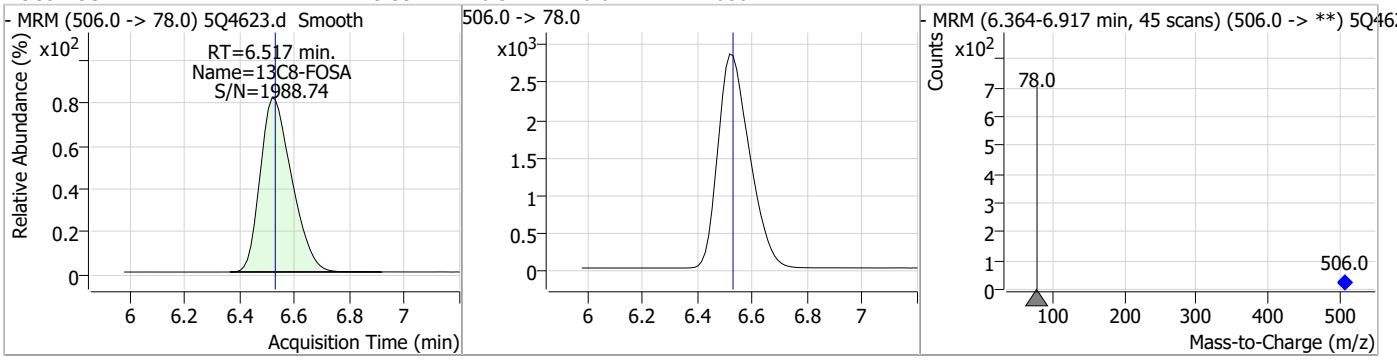
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.47	6.46	0.00	134501				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.72	6.46	0.00	118847	463.0 -> 219.0	21.1	10.7	32.0

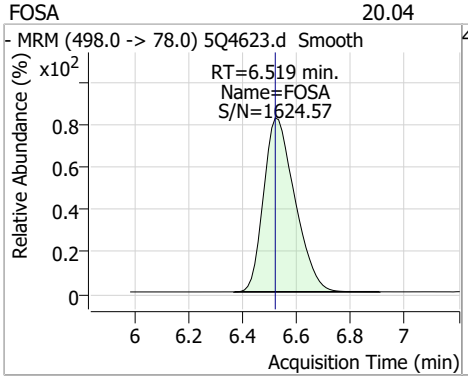


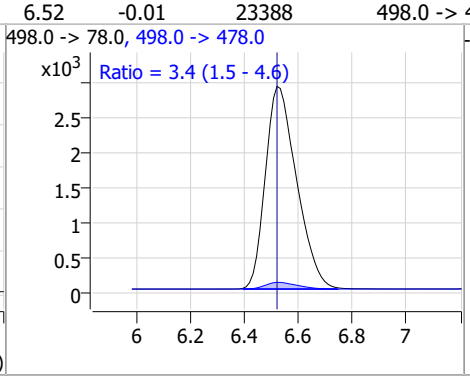
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.99	6.52	-0.01	22686				

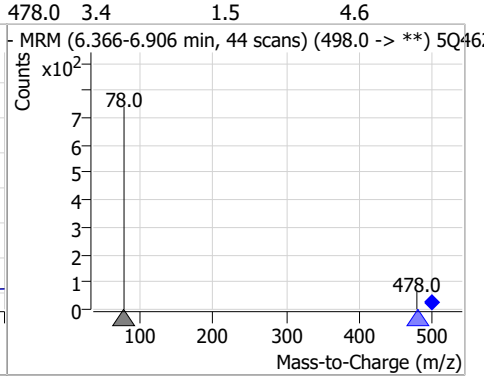


Perfluorinated Compounds by LC/MS/MS

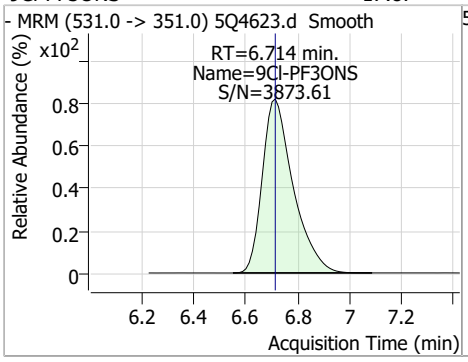
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.04	6.52	-0.01	23388	498.0 -> 478.0	3.4	1.5	4.6

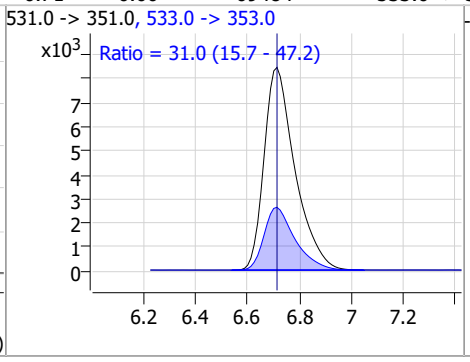


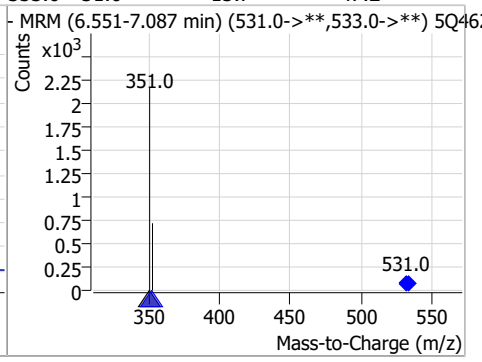




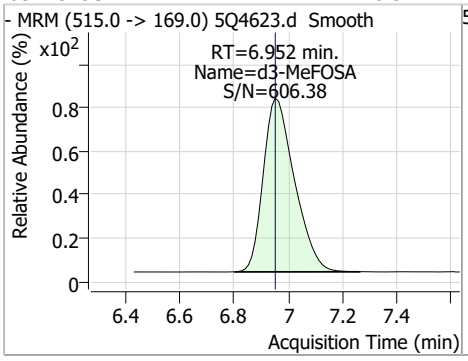
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.87	6.71	0.00	69484	533.0 -> 353.0	31.0	15.7	47.2

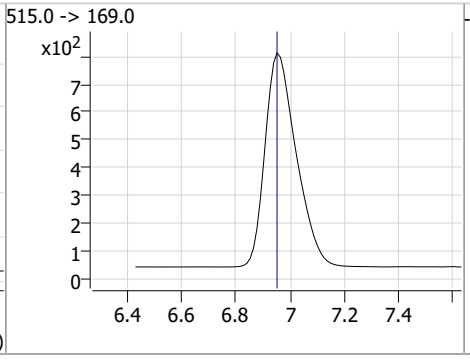


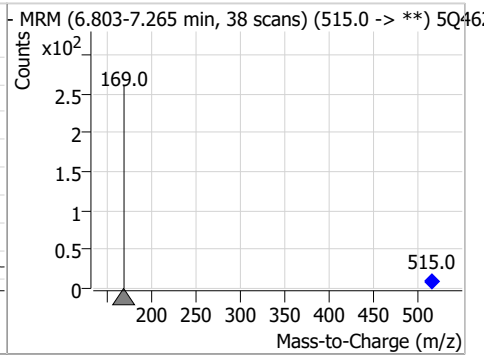




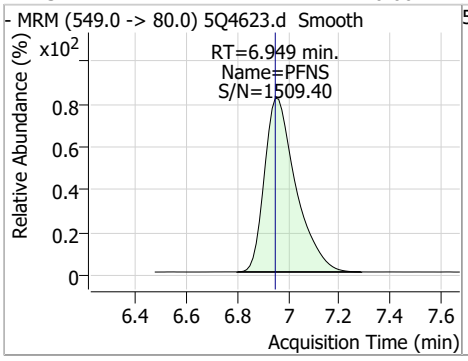
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.32	6.95	0.00	6189				

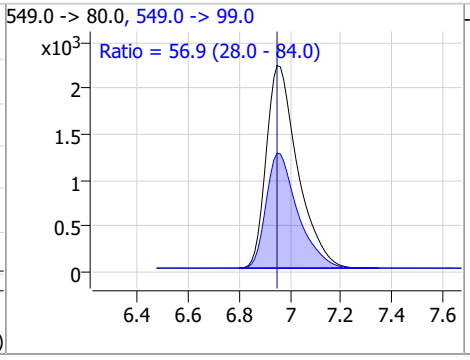


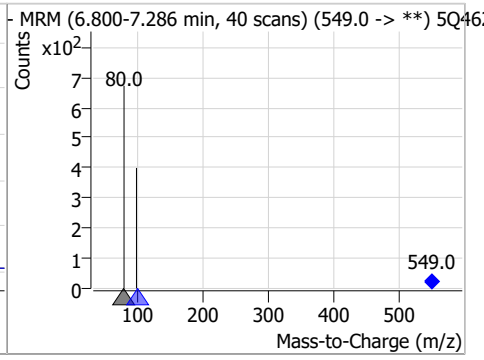




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.06	6.95	-0.01	18884	549.0 -> 99.0	56.9	28.0	84.0

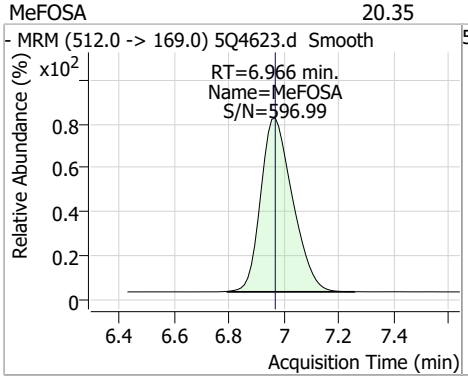


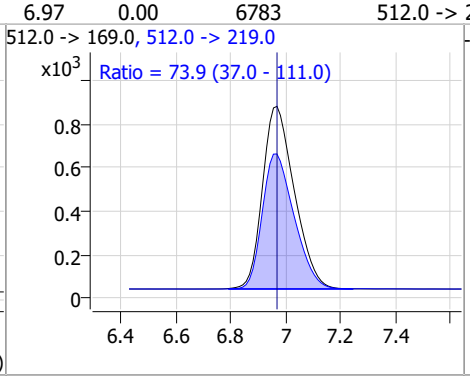


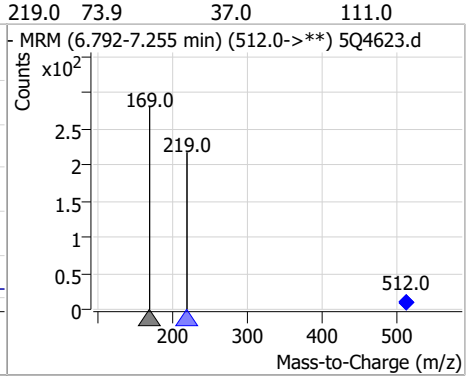


Perfluorinated Compounds by LC/MS/MS

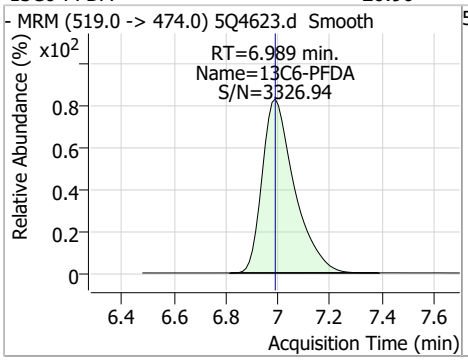
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.35	6.97	0.00	6783	512.0 -> 219.0	73.9	37.0	111.0

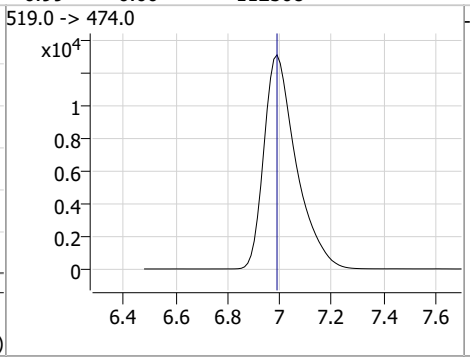


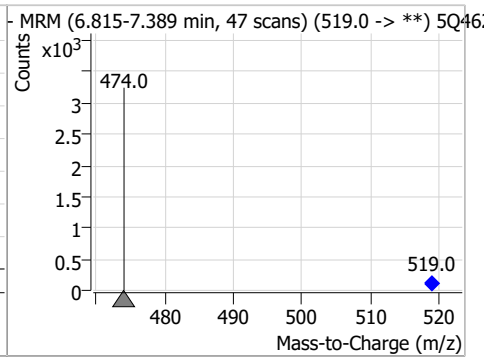




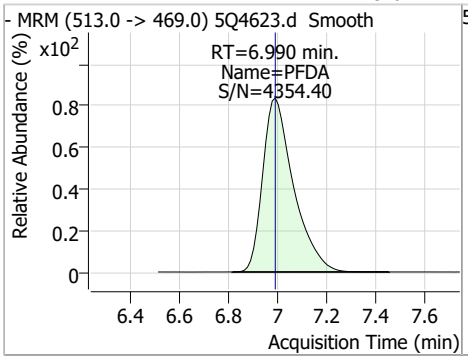
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.90	6.99	0.00	112508				

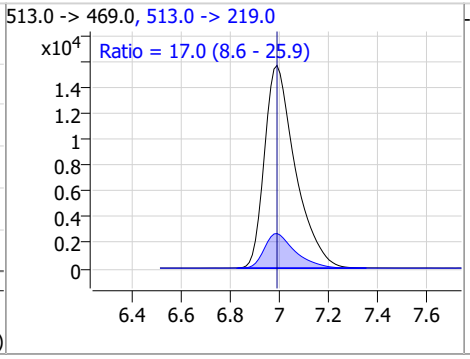


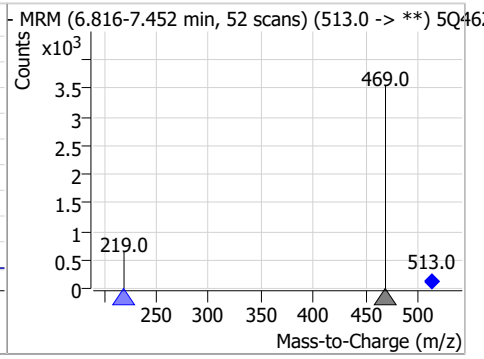




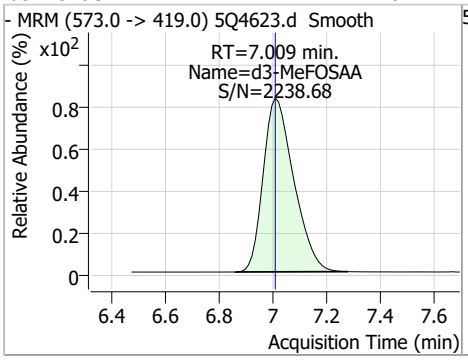
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.67	6.99	0.00	135953	513.0 -> 219.0	17.0	8.6	25.9

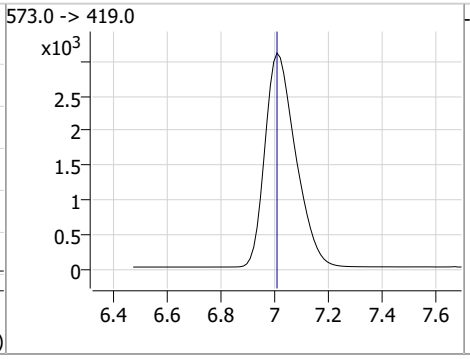


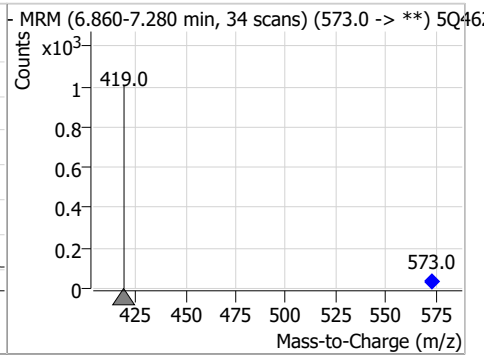




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.94	7.01	0.00	24239				

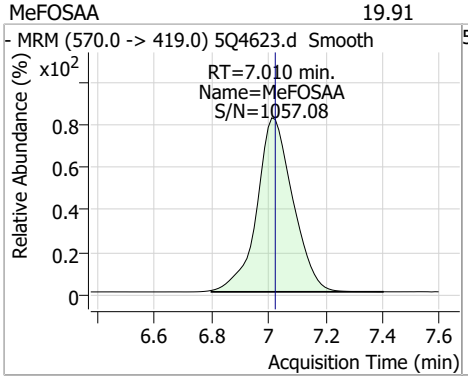


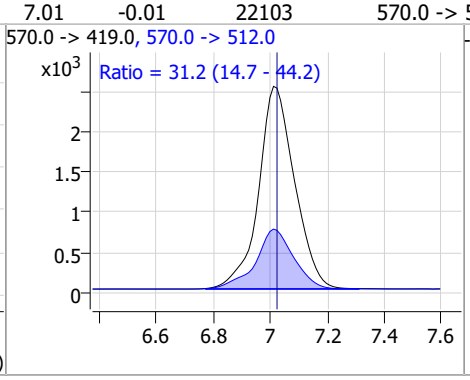


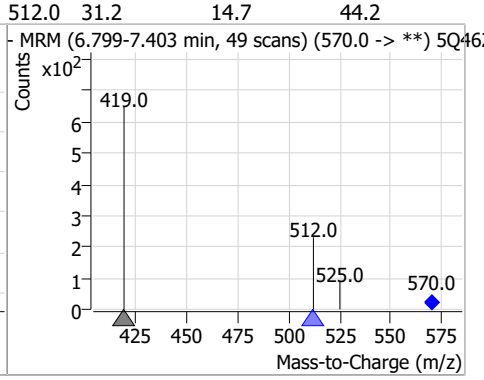


Perfluorinated Compounds by LC/MS/MS

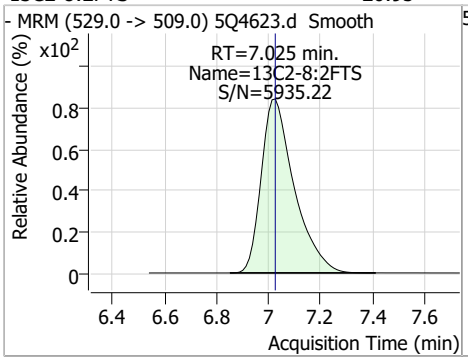
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.91	7.01	-0.01	22103	570.0 -> 512.0	31.2	14.7	44.2

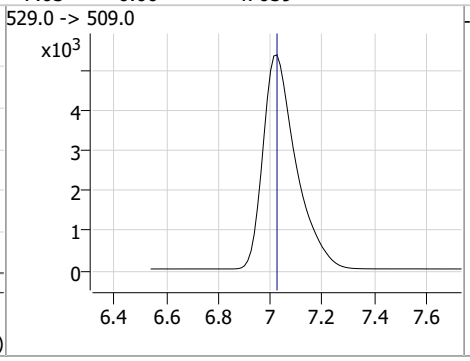


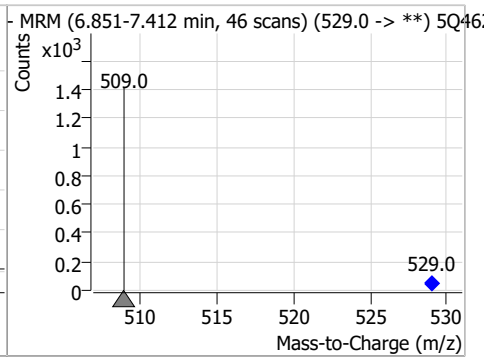




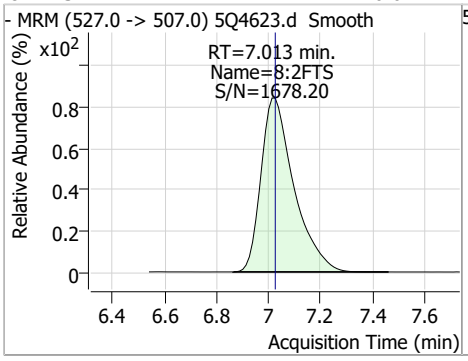
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.95	7.03	0.00	47059				

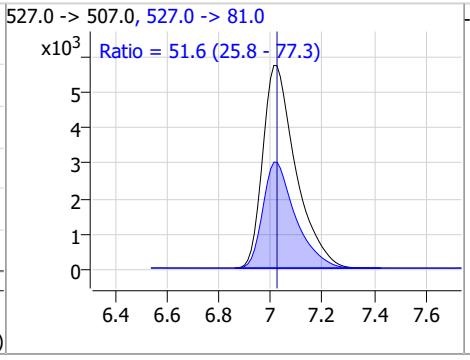


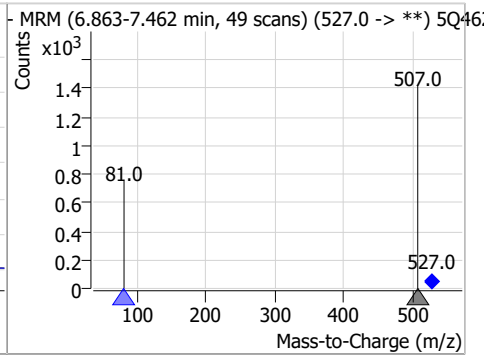




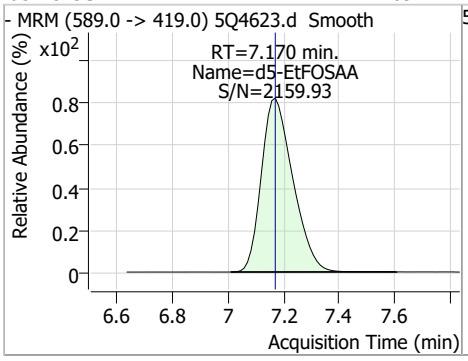
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.04	7.01	-0.01	50259	527.0 -> 81.0	51.6	25.8	77.3

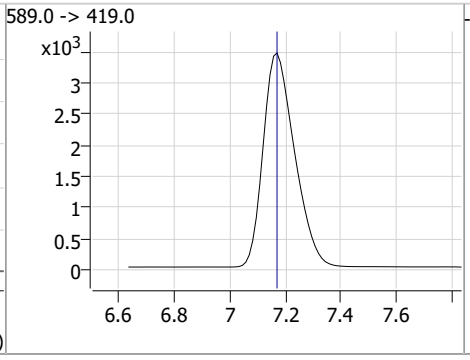


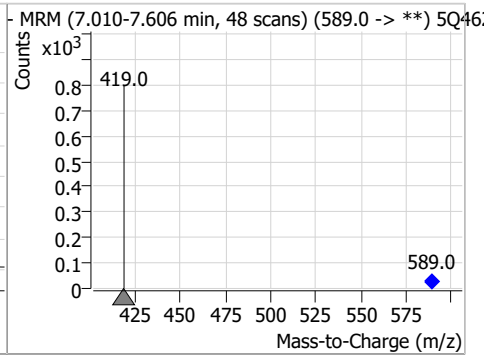




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	24.09	7.17	0.00	27003				

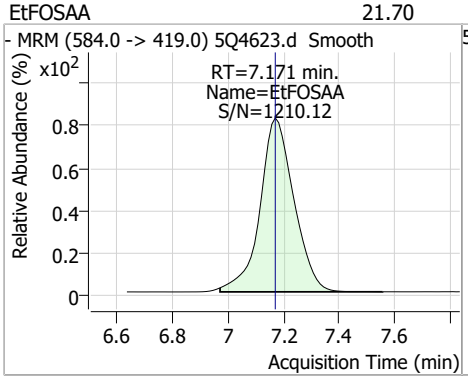


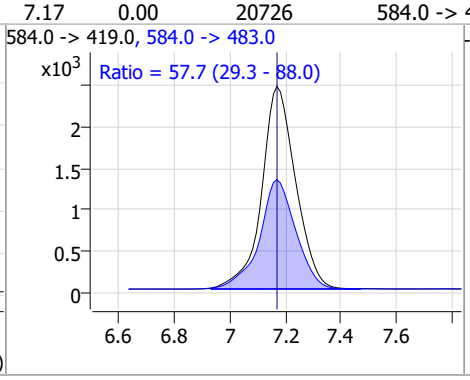


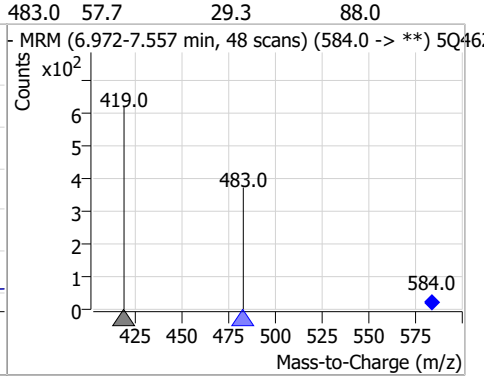


Perfluorinated Compounds by LC/MS/MS

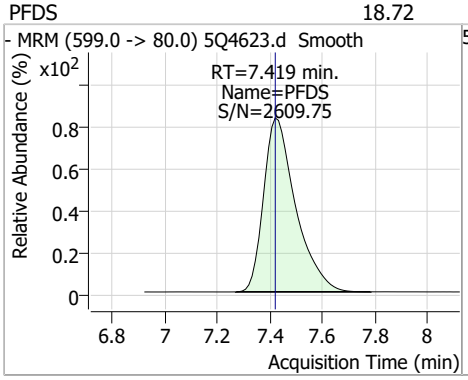
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.70	7.17	0.00	20726	584.0 -> 483.0	57.7	29.3	88.0

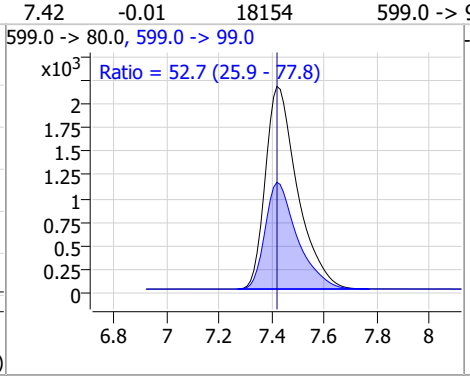


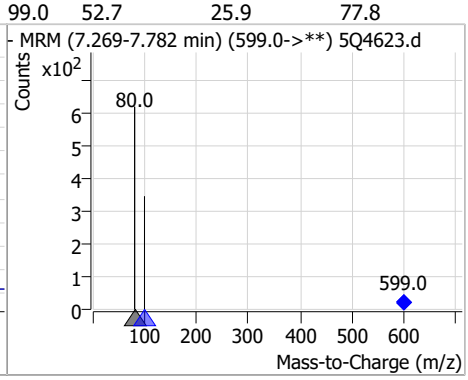




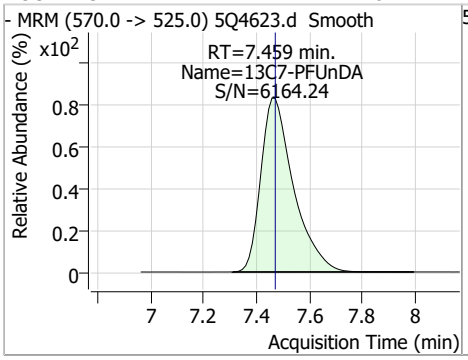
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.72	7.42	-0.01	18154	599.0 -> 99.0	52.7	25.9	77.8

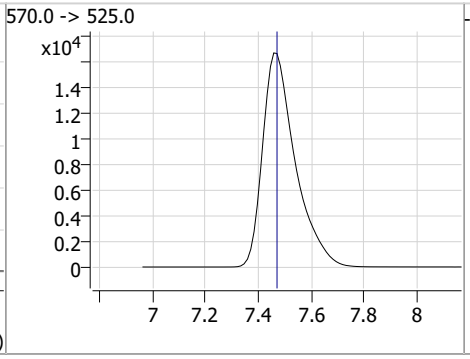


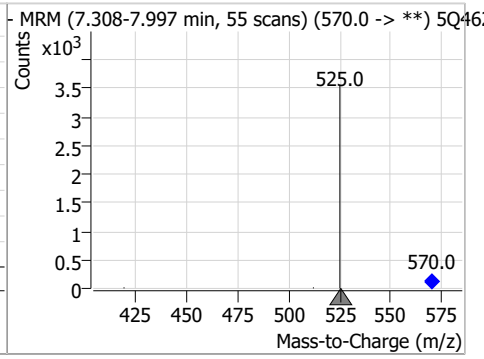




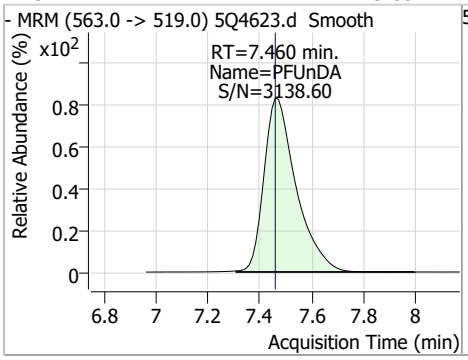
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.41	7.46	-0.01	143714				

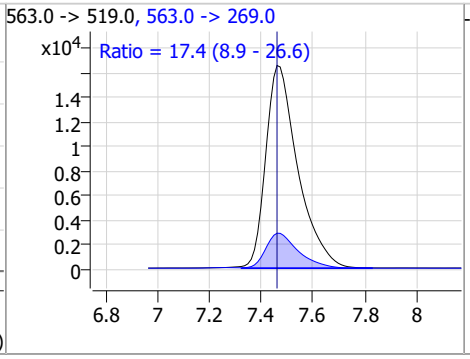


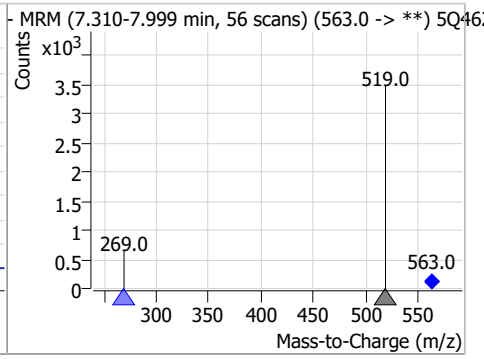




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.85	7.46	-0.01	142497	563.0 -> 269.0	17.4	8.9	26.6

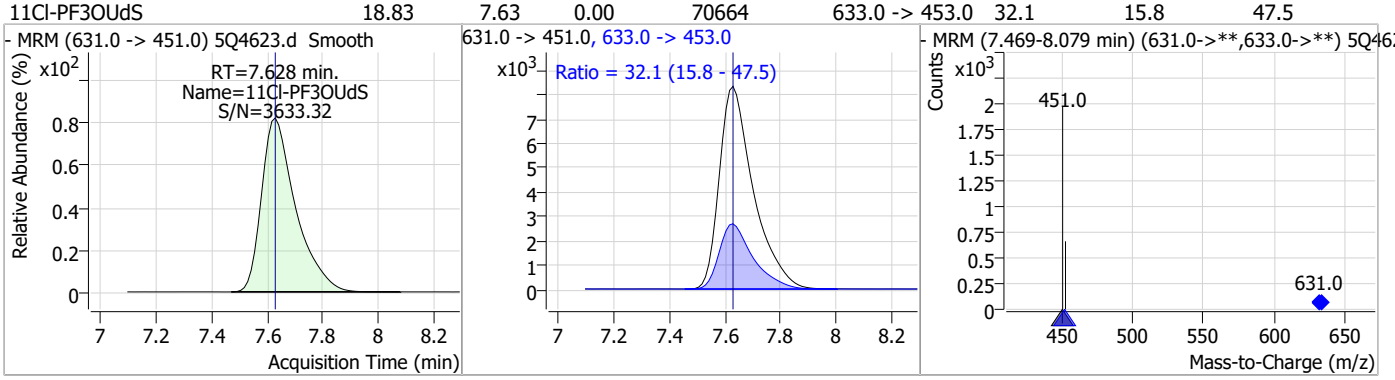




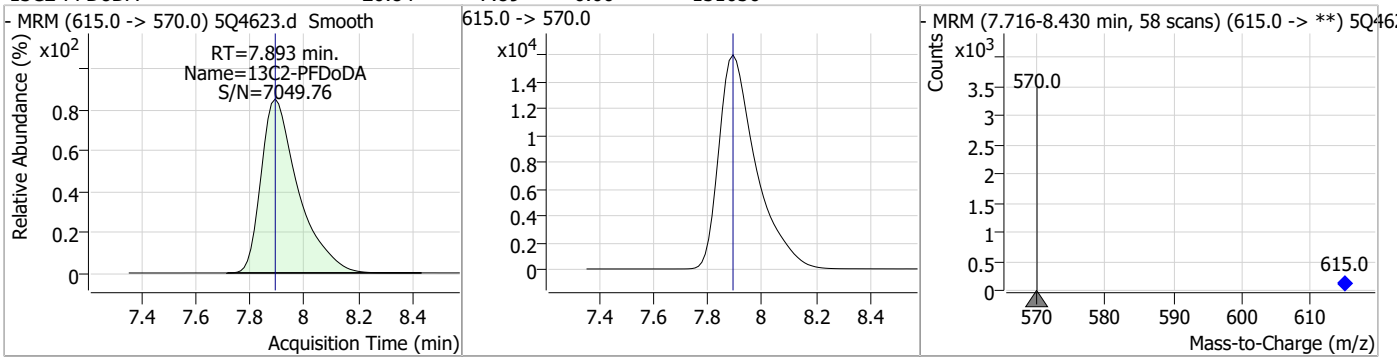


Perfluorinated Compounds by LC/MS/MS

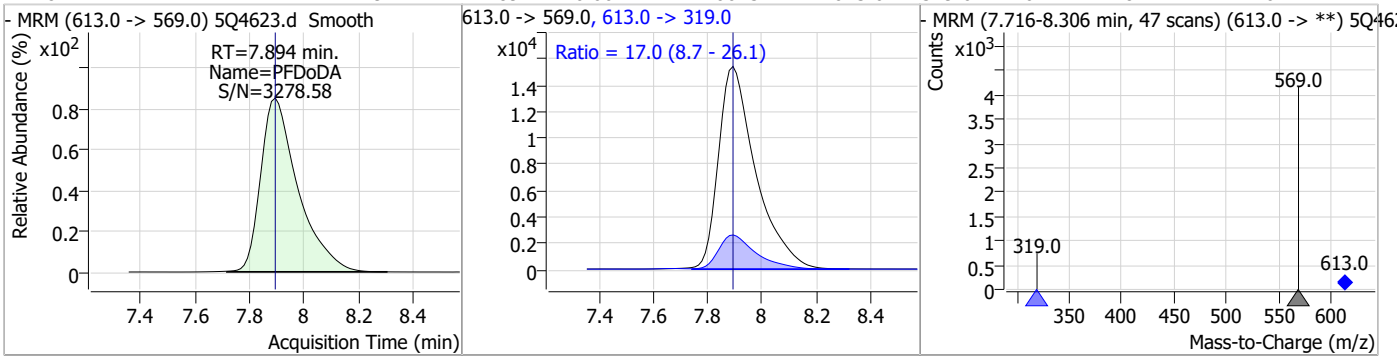
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.83	7.63	0.00	70664	633.0 -> 453.0	32.1	15.8	47.5



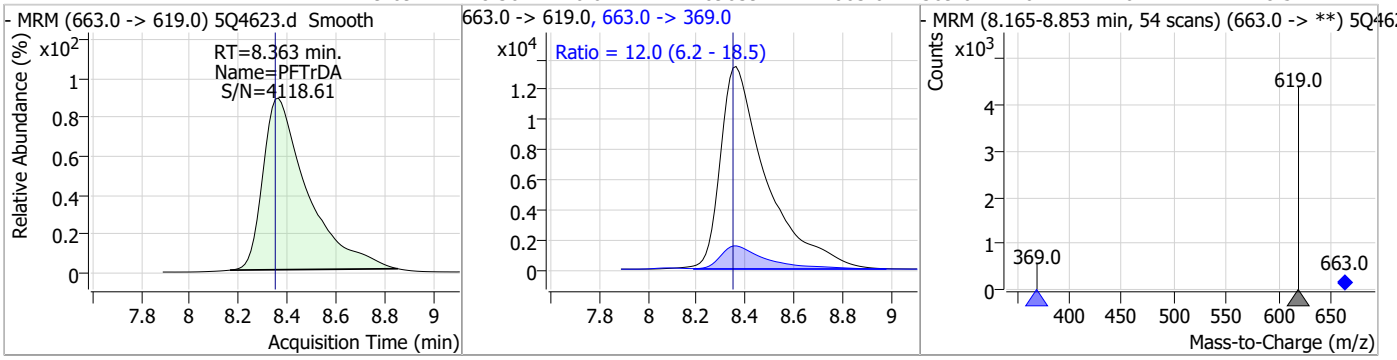
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.84	7.89	0.00	151056				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.71	7.89	0.00	146023	613.0 -> 319.0	17.0	8.7	26.1

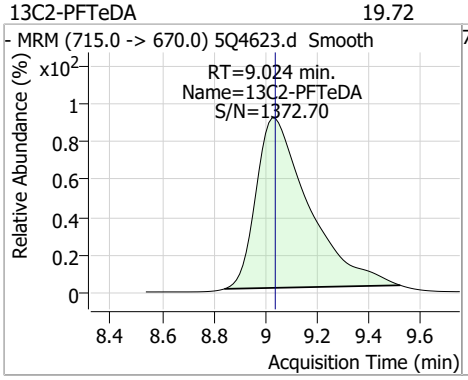


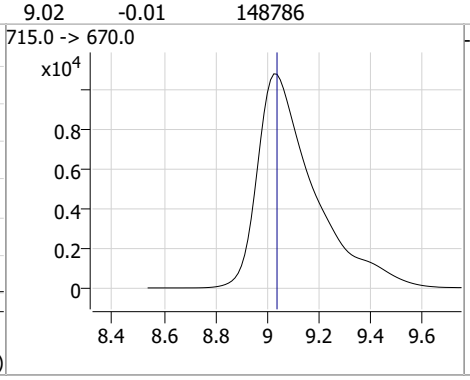
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.09	8.36	0.01	169039	663.0 -> 369.0	12.0	6.2	18.5

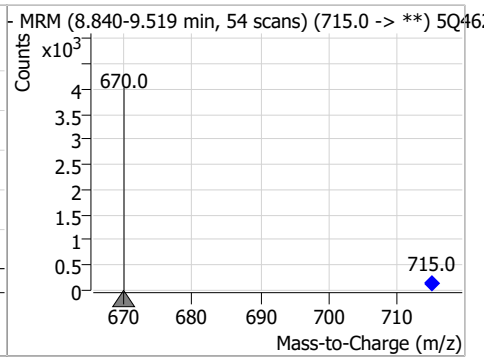


Perfluorinated Compounds by LC/MS/MS

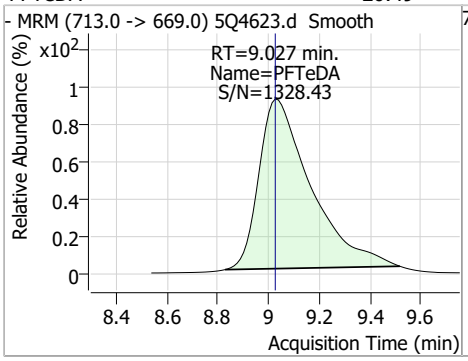
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.72	9.02	-0.01	148786				

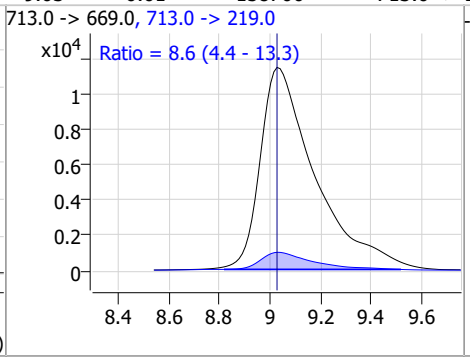


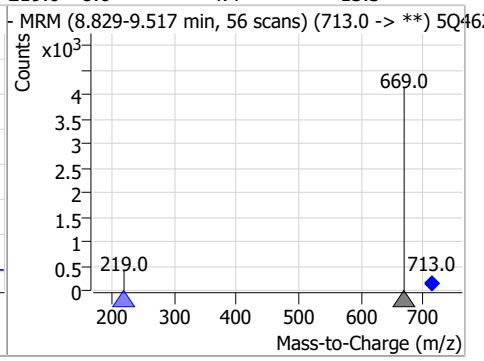




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.49	9.03	-0.01	158700	713.0 -> 219.0	8.6	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4623.D
Injection Time: 09/15/22 03:33
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4627.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:35:03 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

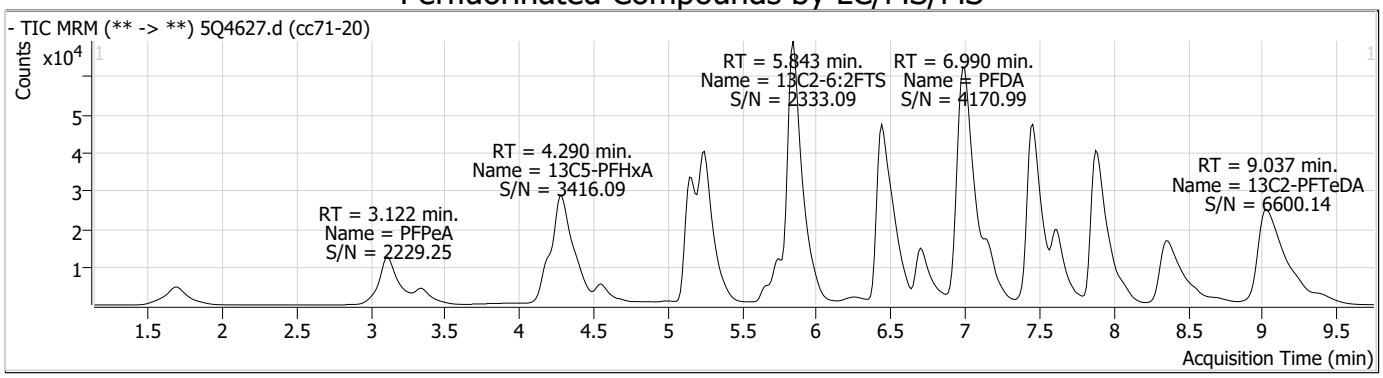
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	35953	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	57553	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	87066	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	81457	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	122867	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	135666	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	112234	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	143992	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	152234	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	163242	20.00 µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	22768	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6511	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6833	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	13049	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	29111	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	46478	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	47398	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	24382	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5996	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6181	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	27230	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	29111	19.82 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%	
13C2-6:2FTS	5.843	429.0 -> 409.0	46478	20.79 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%	
13C2-8:2FTS	7.025	529.0 -> 509.0	47398	21.10 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C2-PFDoDA	7.893	615.0 -> 570.0	152234	21.01 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%	
13C2-PFTeDA	9.037	715.0 -> 670.0	163242	21.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%	
13C3-PFBS	3.349	302.0 -> 99.0	6511	19.99 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%	
13C3-PFHxS	5.194	402.0 -> 99.0	6833	20.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%	
13C4-PFBA	1.687	217.0 -> 172.0	35953	20.11 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C4-PFHpA	5.163	367.0 -> 322.0	81457	19.95 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C5-PFHxA	4.290	318.0 -> 273.0	87066	19.91 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	3.119	268.0 -> 223.0	57553	19.80 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	6.989	519.0 -> 474.0	112234	20.85 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

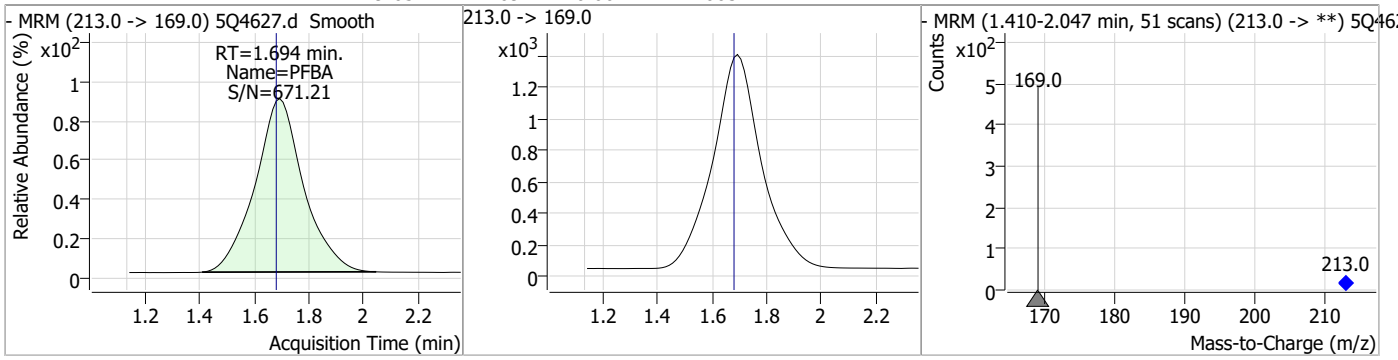
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C7-PFUnDA	7.459	570.0 -> 525.0	143992	20.45	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
13C8-FOSA	6.530	506.0 -> 78.0	22768	20.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%			
13C8-PFOA	5.857	421.0 -> 376.0	122867	20.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
13C8-PFOS	6.428	507.0 -> 99.0	13049	19.98	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%			
13C9-PFNA	6.455	472.0 -> 427.0	135666	20.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	24382	25.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	5996	17.86	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	6181	20.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	27230	24.29	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.4%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	32652	20.04	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	49621	20.13	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	49676	19.66	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	20566	21.35	µg/L		98
FOSA	6.531	498.0 -> 78.0	23063	19.69	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	21895	19.61	µg/L		97
PFBA	1.694	213.0 -> 169.0	16637	19.65	µg/L		100
PFBS	3.354	299.0 -> 80.0	19119	19.55	µg/L		99
PFDA	6.990	513.0 -> 469.0	136284	19.77	µg/L		99
PFDoDA	7.894	613.0 -> 569.0	146439	19.61	µg/L		99
PFDS	7.419	599.0 -> 80.0	18255	18.79	µg/L		99
PFHpA	5.164	363.0 -> 319.0	108059	20.19	µg/L		100
PFHpS	5.855	449.0 -> 80.0	19419	19.79	µg/L		97
PFHxA	4.291	313.0 -> 269.0	82965	19.50	µg/L		100
PFHxS	5.195	399.0 -> 80.0	19636	19.35	µg/L	m	98
PFNA	6.456	463.0 -> 419.0	119139	19.60	µg/L		100
PFNS	6.949	549.0 -> 80.0	18916	19.64	µg/L		100
PFOA	5.858	413.0 -> 369.0	145946	19.59	µg/L		100
PFOS	6.429	499.0 -> 80.0	22570	19.64	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	56130	19.74	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14580	19.16	µg/L		98
PFTeDA	9.039	713.0 -> 669.0	159276	18.75	µg/L		99
PFTrDA	8.363	663.0 -> 619.0	179748	20.14	µg/L		98
PFUnDA	7.460	563.0 -> 519.0	143672	19.98	µg/L		98
11Cl-PF3OUdS	7.628	631.0 -> 451.0	71019	18.78	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	69716	17.98	µg/L		99
ADONA	5.261	377.0 -> 251.0	136128	19.38	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	20284	20.05	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	6785	20.38	µg/L		99
4-PFECHS	5.753	461.0 -> 381.0	41932	18.96	µg/L		98
FBSA	4.343	298.0 -> 78.0	29600	20.50	µg/L		100
FHxSA	5.674	398.0 -> 78.0	24009	19.21	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

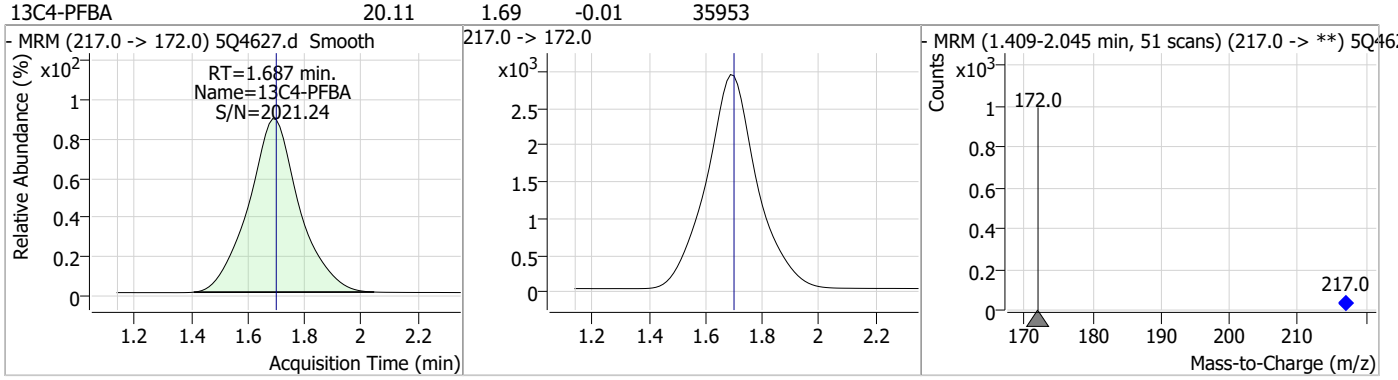
Perfluorinated Compounds by LC/MS/MS



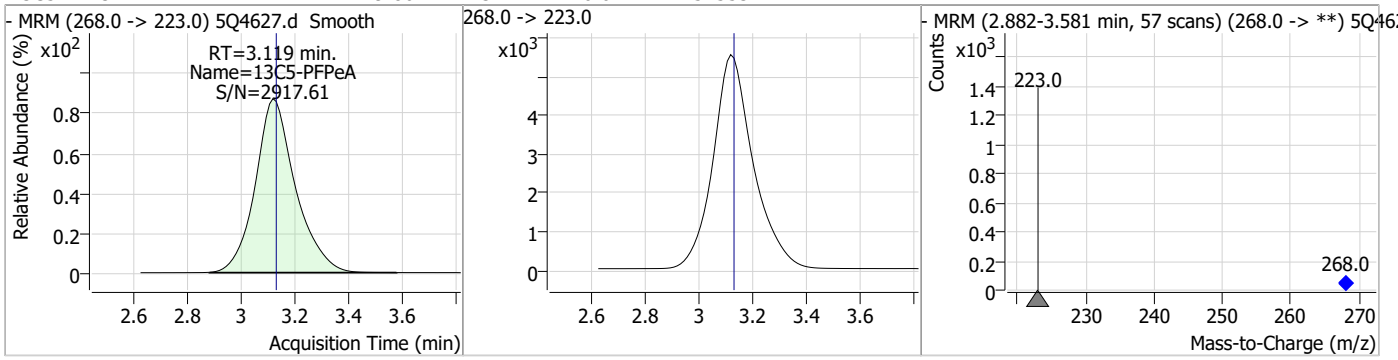
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	1.69	0.00	16637				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.11	1.69	-0.01	35953				

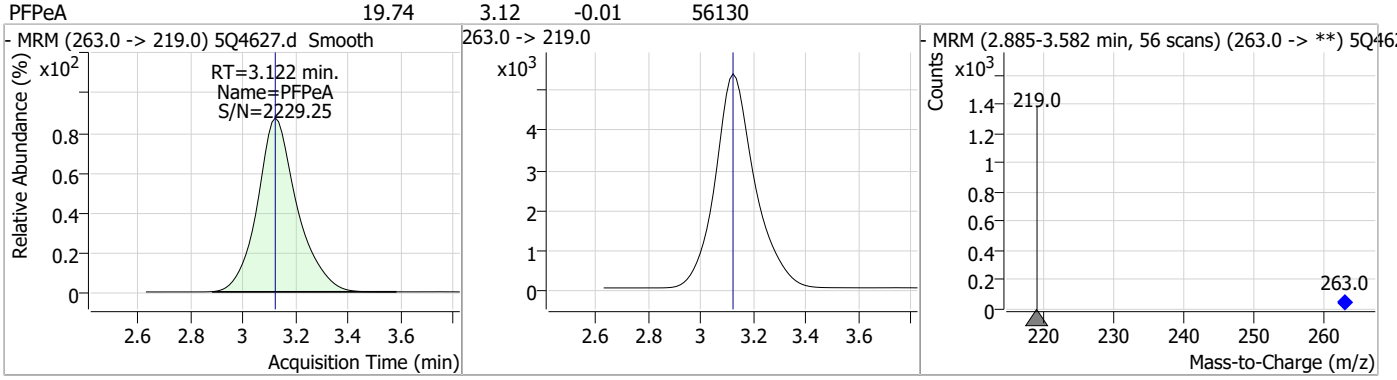


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.80	3.12	-0.01	57553				

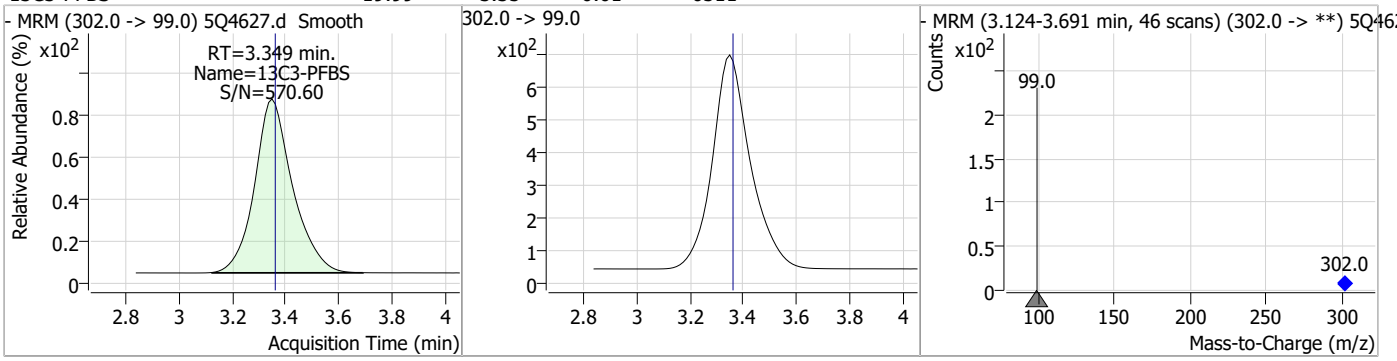


Perfluorinated Compounds by LC/MS/MS

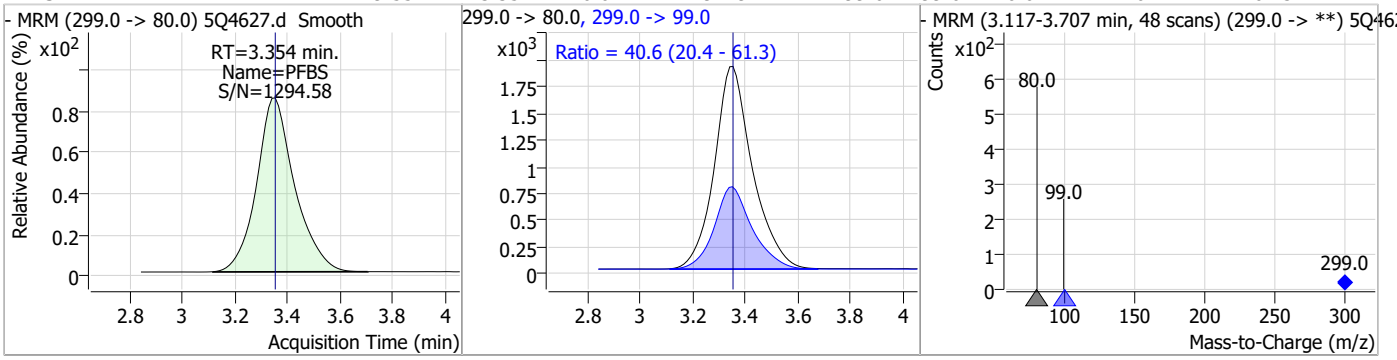
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.74	3.12	-0.01	56130				



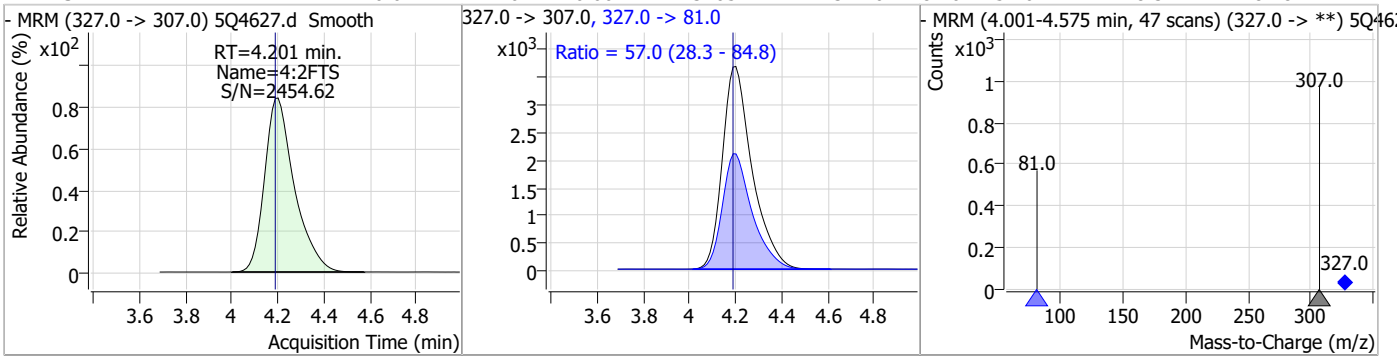
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.99	3.35	-0.01	6511				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.55	3.35	-0.01	19119	299.0 -> 99.0	40.6	20.4	61.3

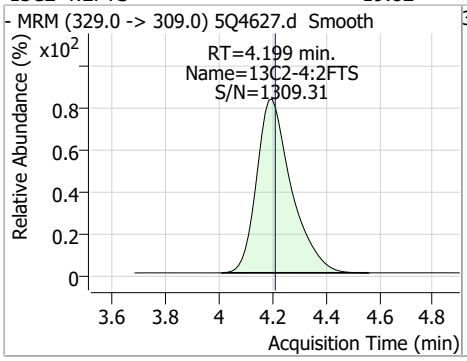


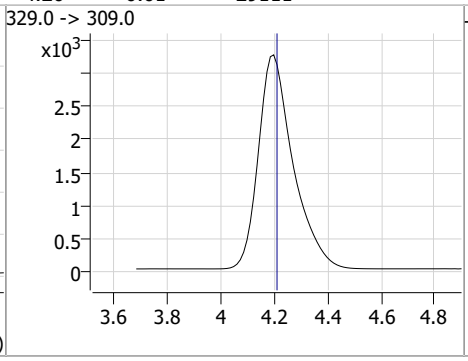
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.04	4.20	0.00	32652	327.0 -> 81.0	57.0	28.3	84.8

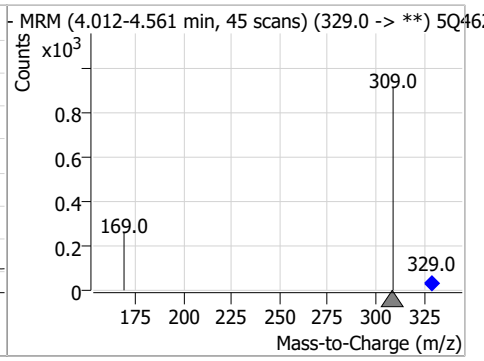


Perfluorinated Compounds by LC/MS/MS

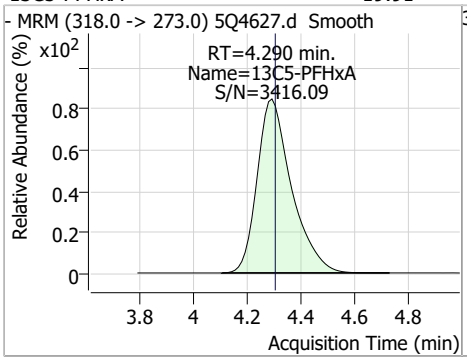
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.82	4.20	-0.01	29111				

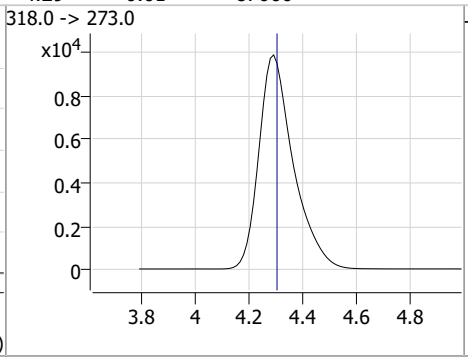


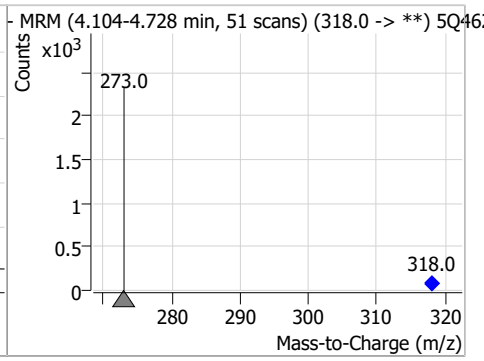




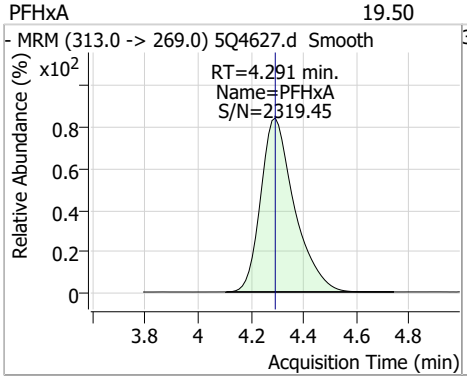
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.91	4.29	-0.01	87066				

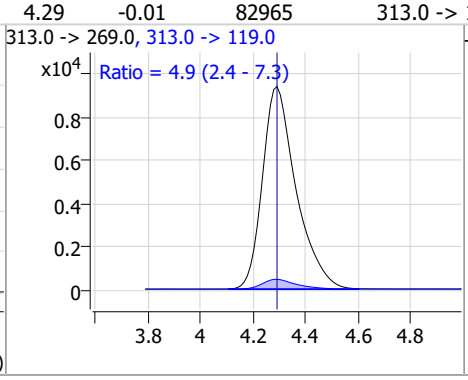


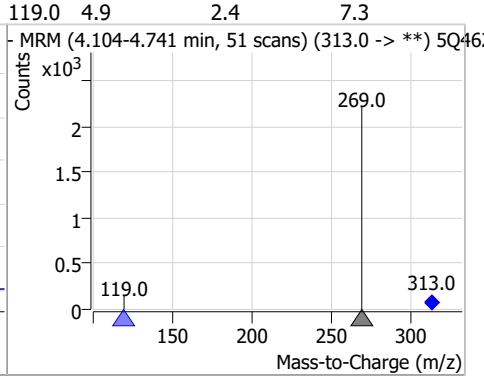




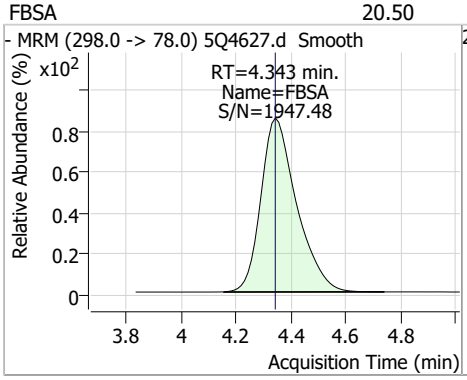
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.50	4.29	-0.01	82965	313.0 -> 119.0	4.9	2.4	7.3

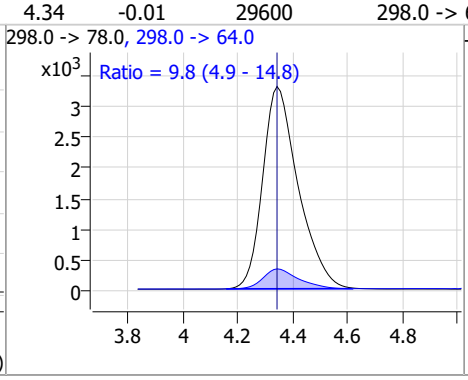


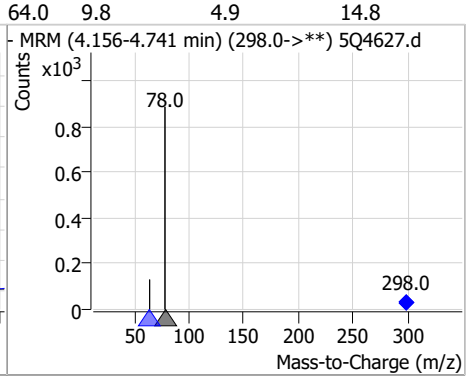




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.50	4.34	-0.01	29600	298.0 -> 64.0	9.8	4.9	14.8

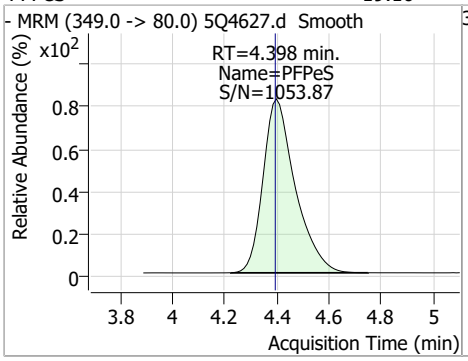


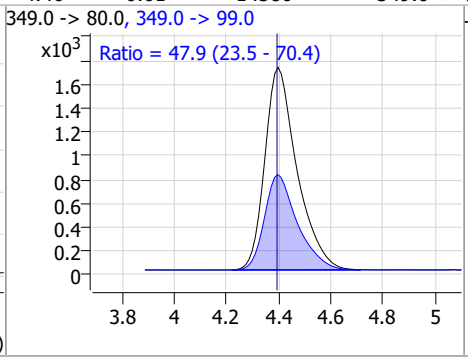


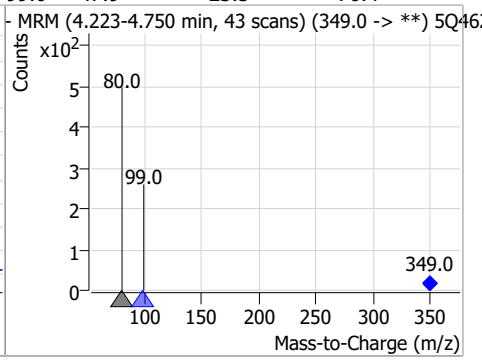


Perfluorinated Compounds by LC/MS/MS

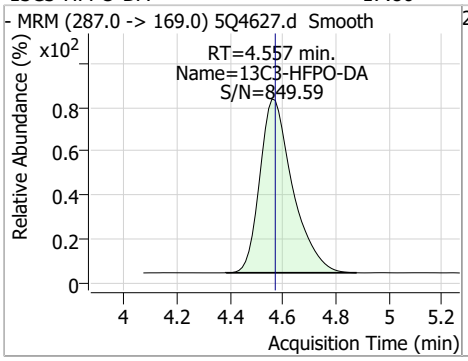
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.16	4.40	-0.01	14580	349.0 -> 99.0	47.9	23.5	70.4

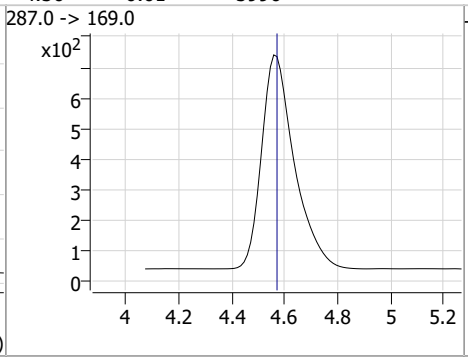


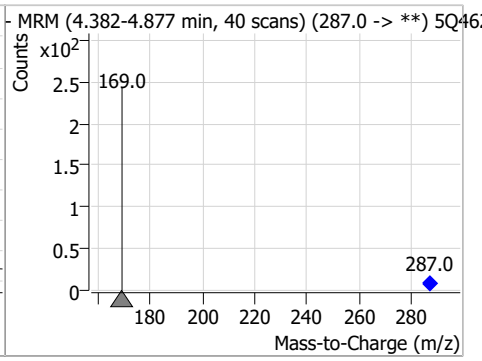




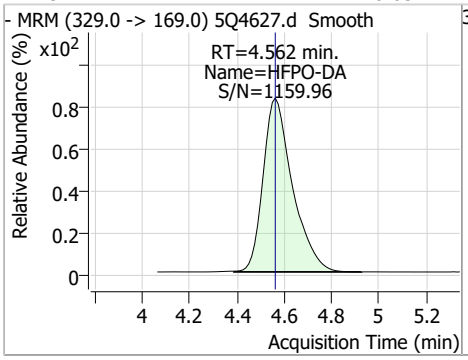
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.86	4.56	-0.01	5996				

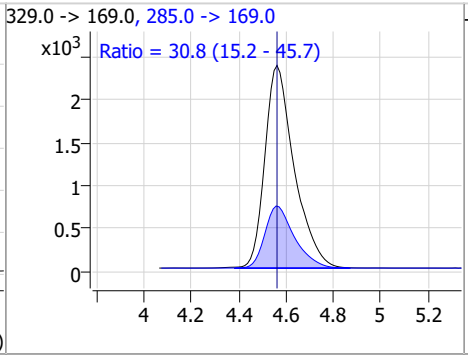


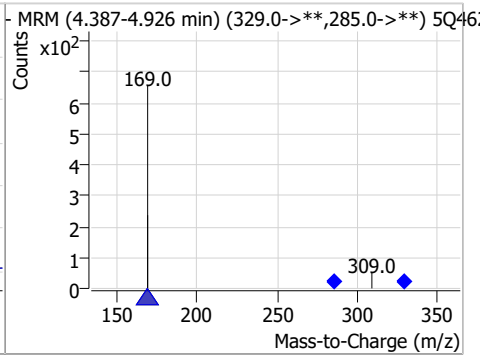




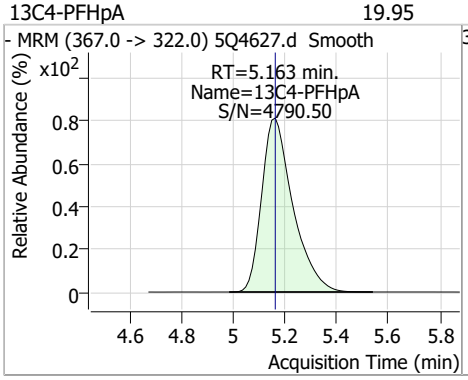
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.05	4.56	-0.01	20284	285.0 -> 169.0	30.8	15.2	45.7

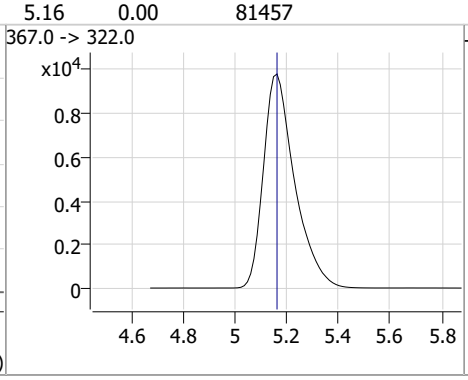


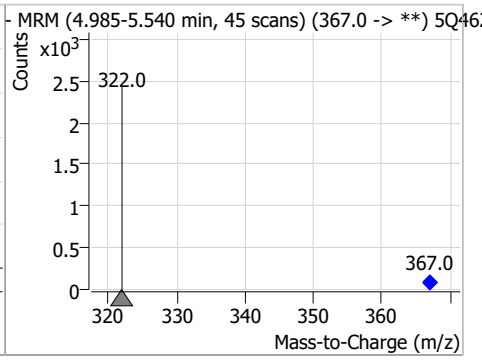




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.95	5.16	0.00	81457				

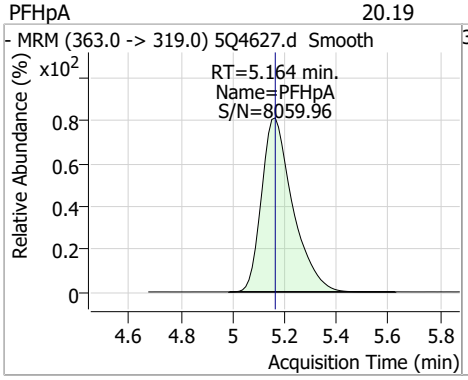


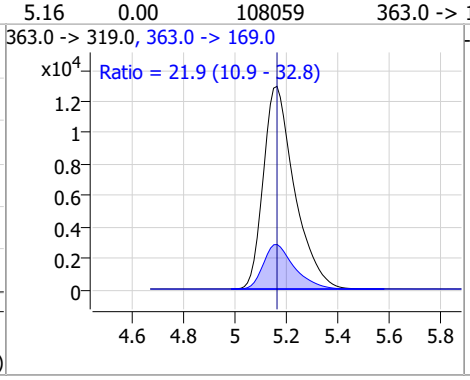


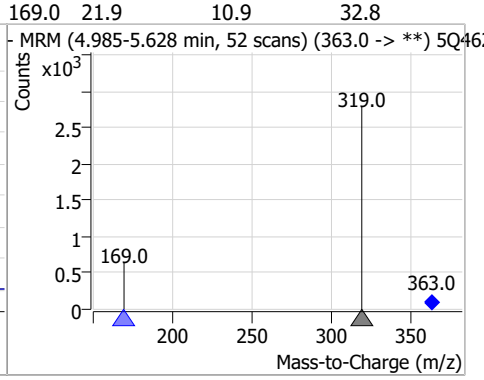


Perfluorinated Compounds by LC/MS/MS

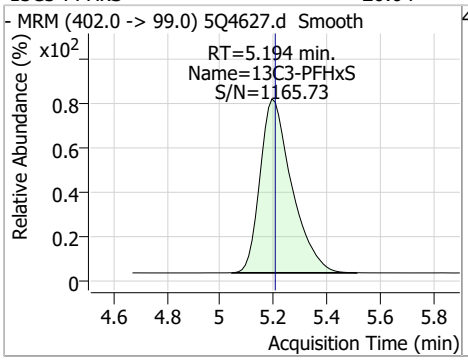
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.19	5.16	0.00	108059	363.0 -> 169.0	21.9	10.9	32.8

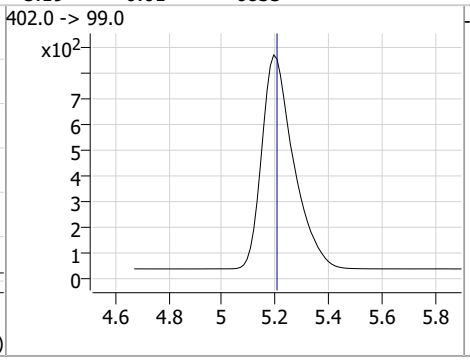


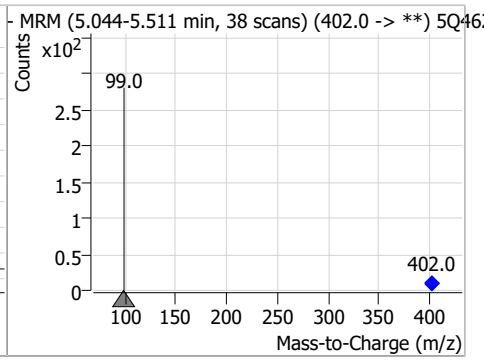




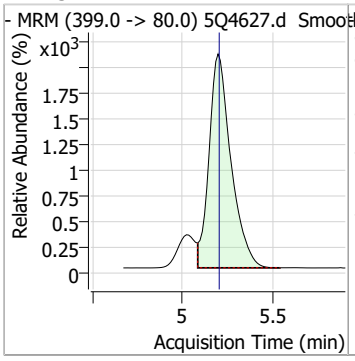
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.04	5.19	-0.01	6833				

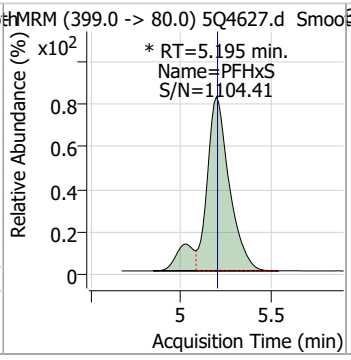


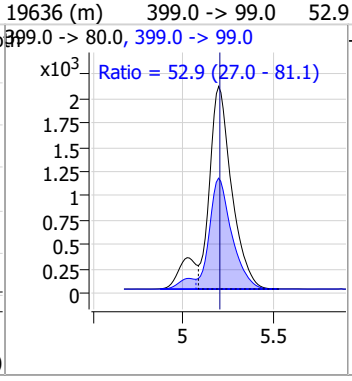


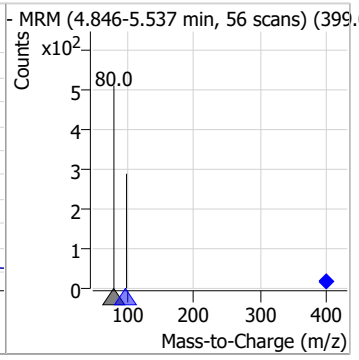


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.35	5.20	-0.01	19636 (m)	399.0 -> 99.0	52.9	27.0	81.1

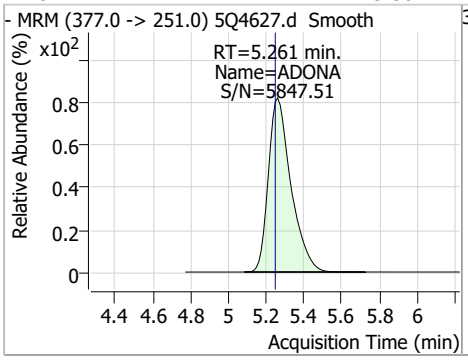


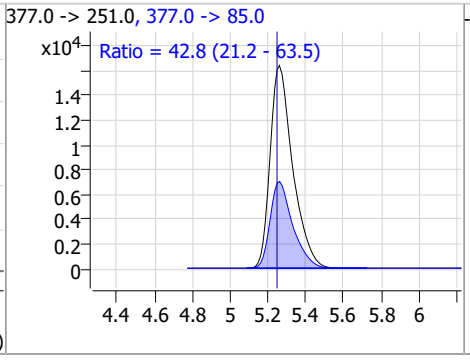


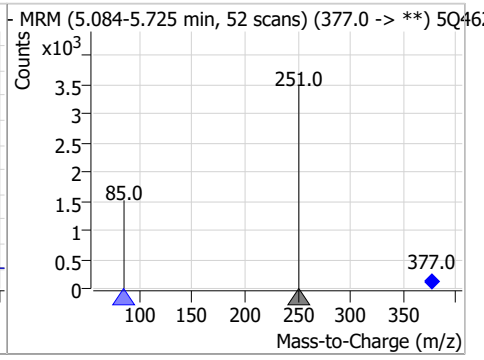




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.38	5.26	0.00	136128	377.0 -> 85.0	42.8	21.2	63.5

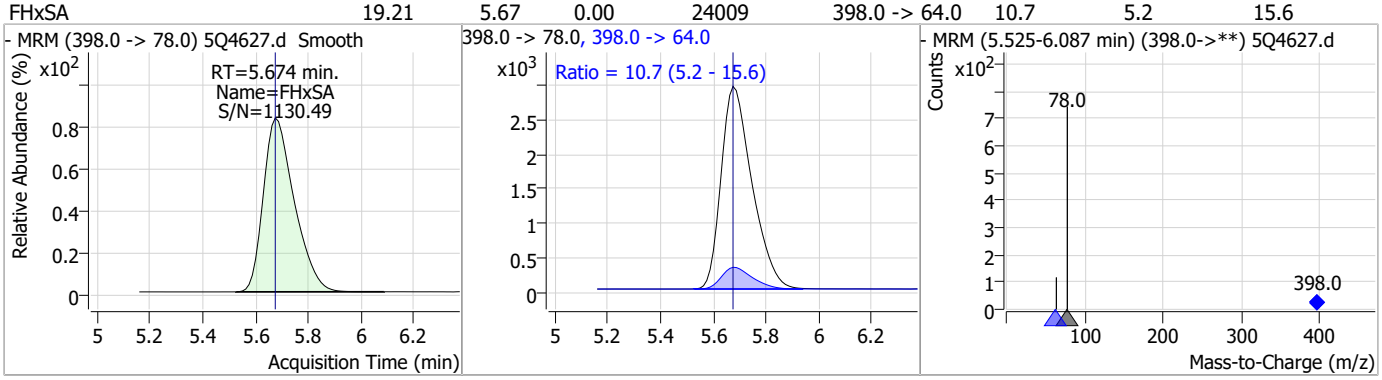




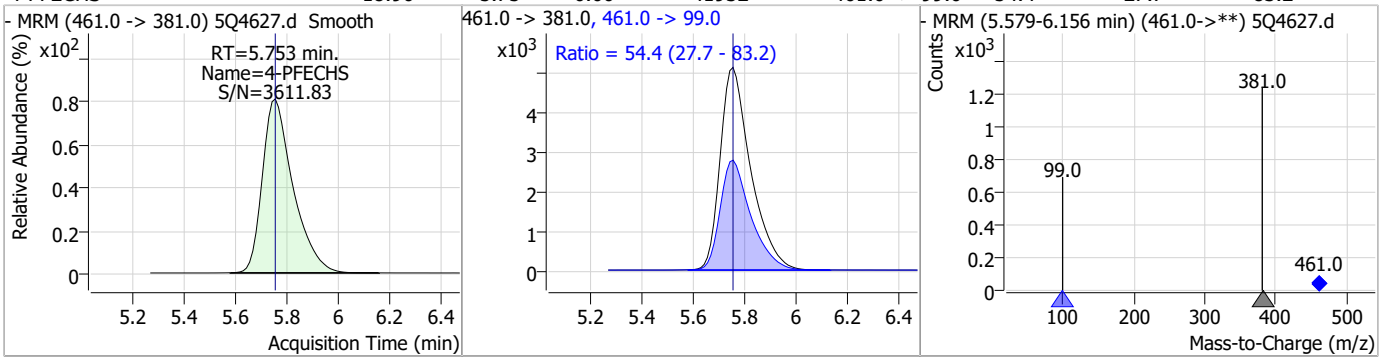


Perfluorinated Compounds by LC/MS/MS

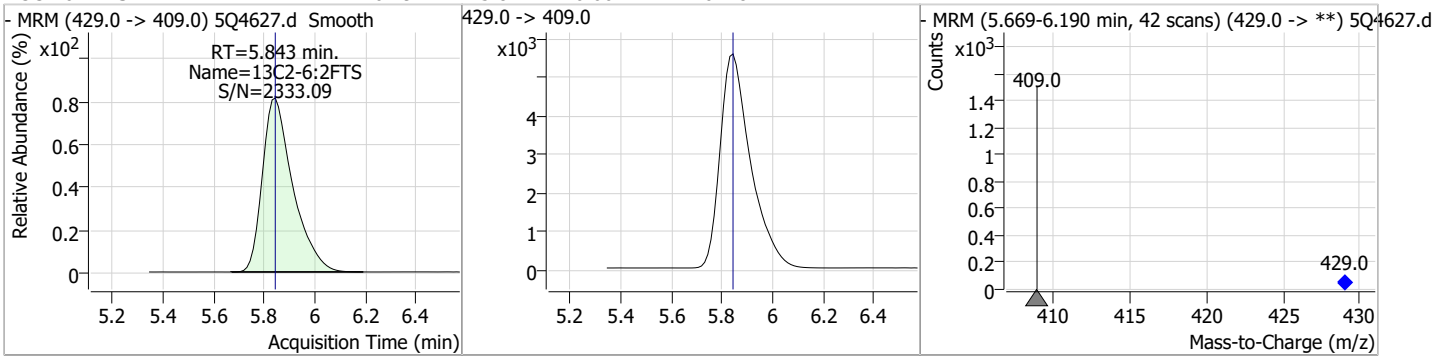
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.21	5.67	0.00	24009	398.0 -> 64.0	10.7	5.2	15.6



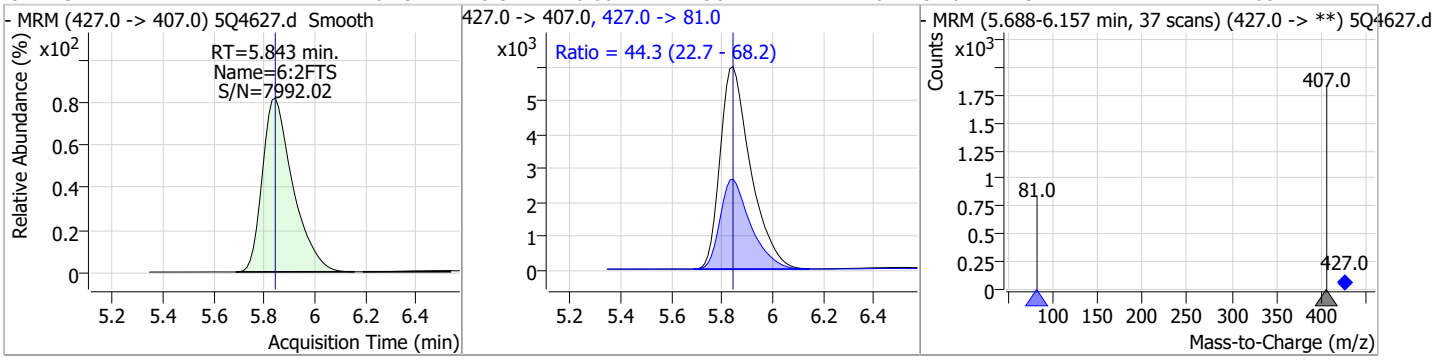
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.96	5.75	0.00	41932	461.0 -> 99.0	54.4	27.7	83.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.79	5.84	0.00	46478				

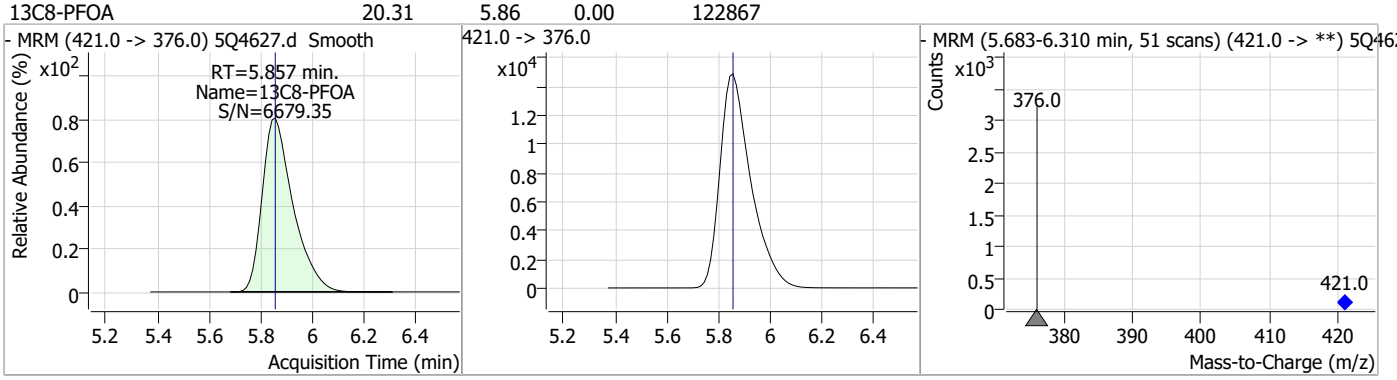


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.13	5.84	0.00	49621	427.0 -> 81.0	44.3	22.7	68.2

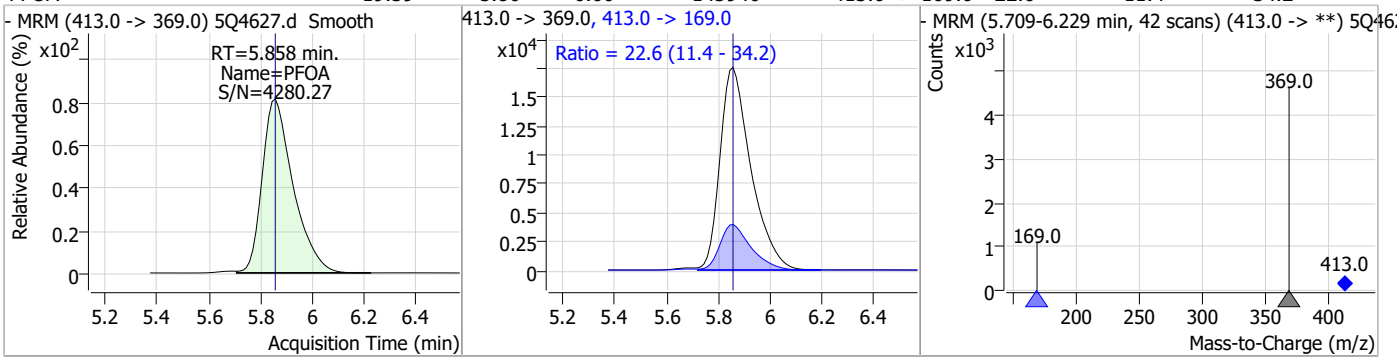


Perfluorinated Compounds by LC/MS/MS

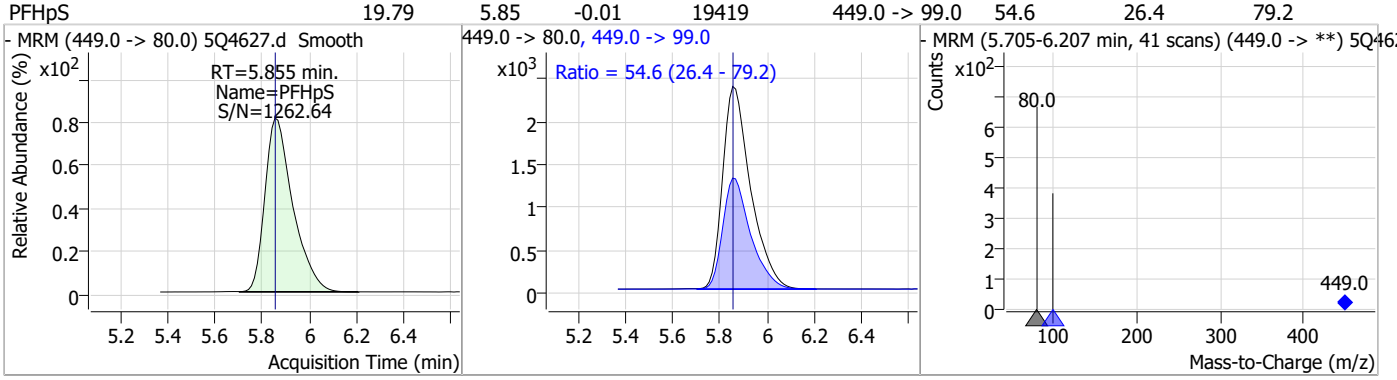
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.31	5.86	0.00	122867				



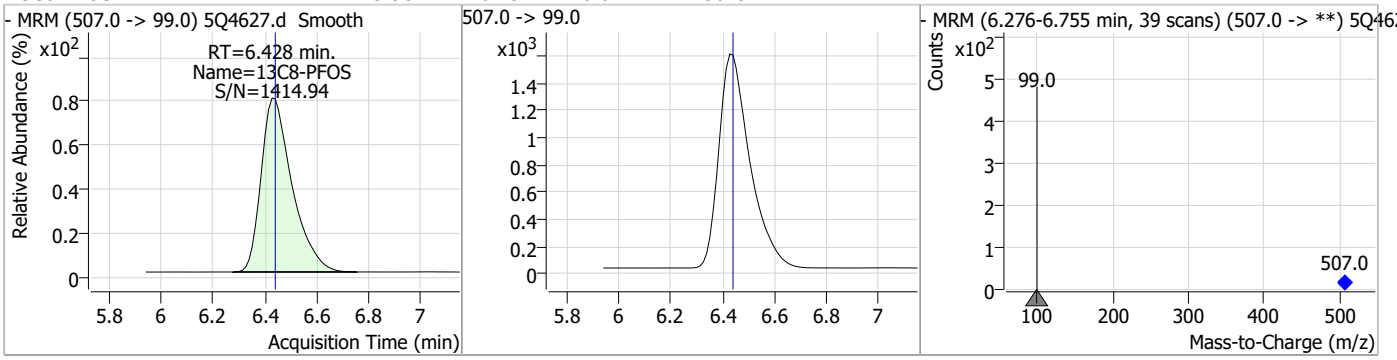
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.59	5.86	0.00	145946	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.79	5.85	-0.01	19419	449.0 -> 99.0	54.6	26.4	79.2

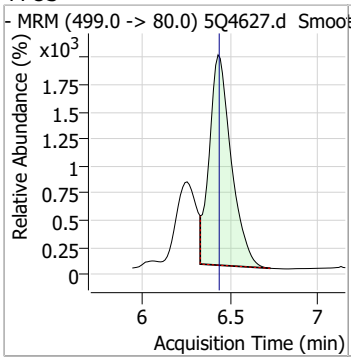


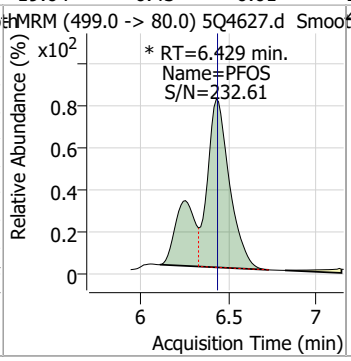
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.98	6.43	-0.01	13049				

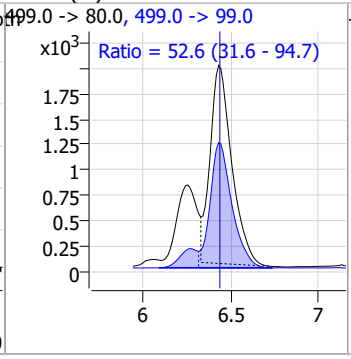


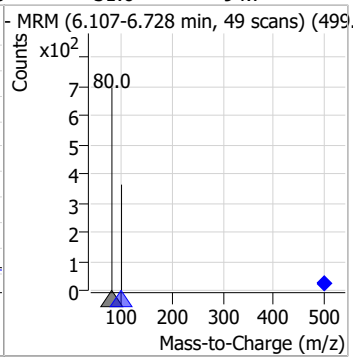
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.64	6.43	-0.01	22570 (m)	499.0 -> 99.0	52.6	31.6	94.7

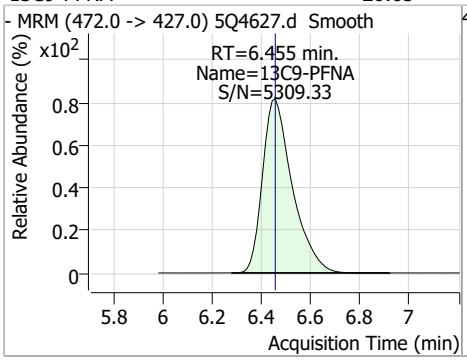


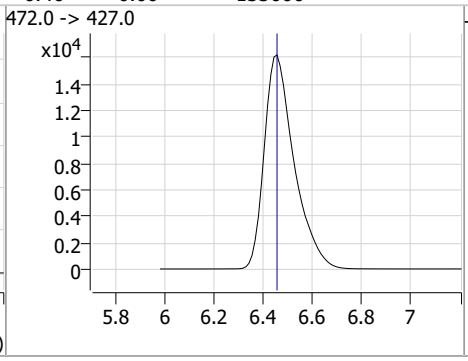


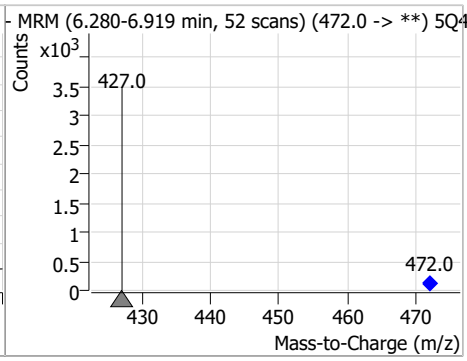




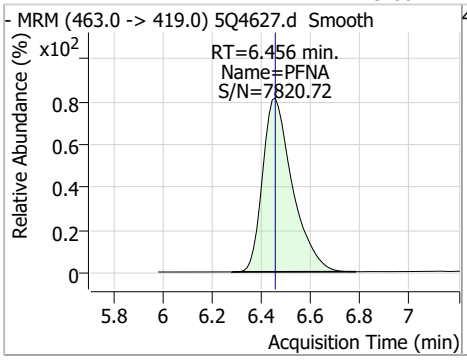
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.65	6.46	0.00	135666				

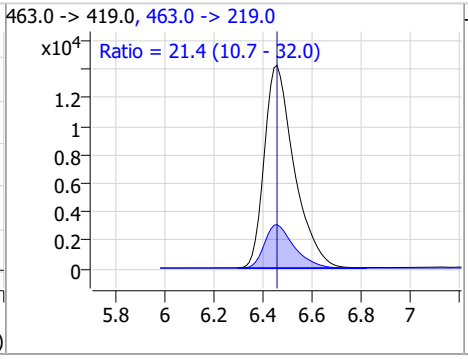


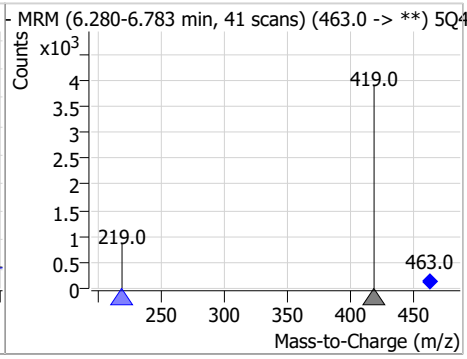




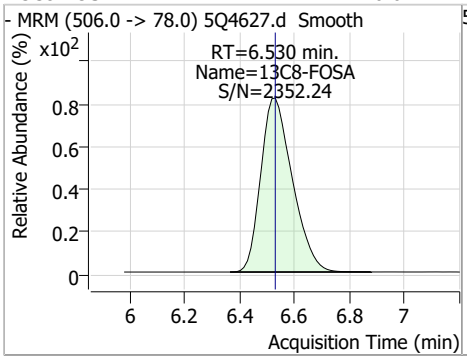
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.60	6.46	0.00	119139	463.0 -> 219.0	21.4	10.7	32.0

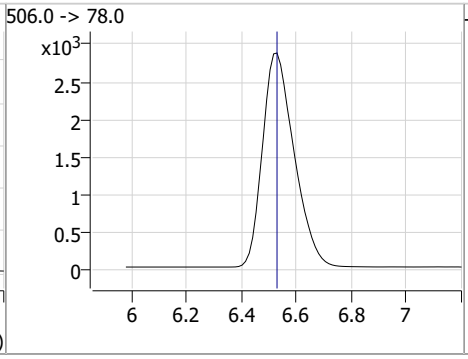


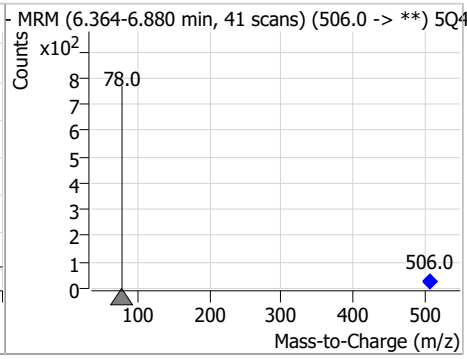




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.07	6.53	0.00	22768				

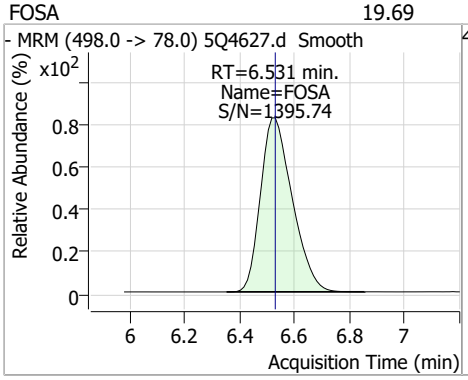


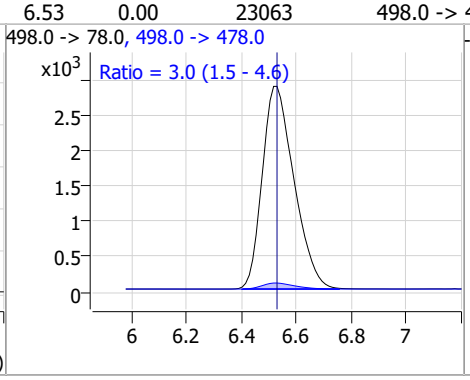


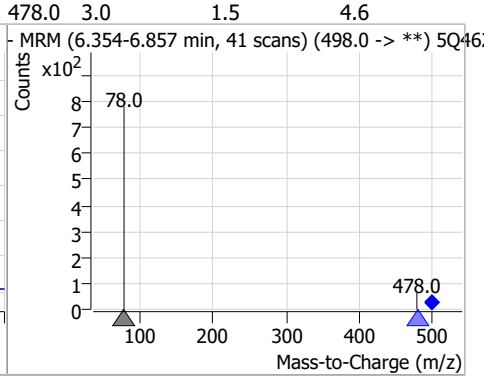


Perfluorinated Compounds by LC/MS/MS

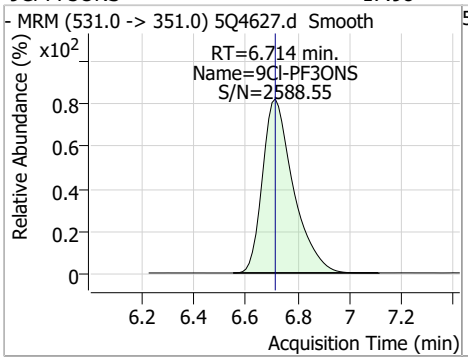
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.69	6.53	0.00	23063	498.0 -> 478.0	3.0	1.5	4.6

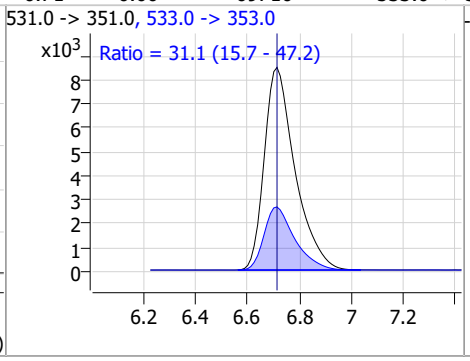


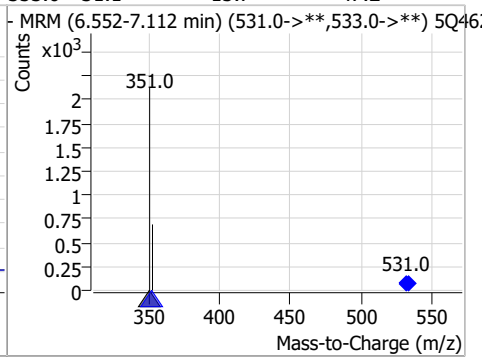




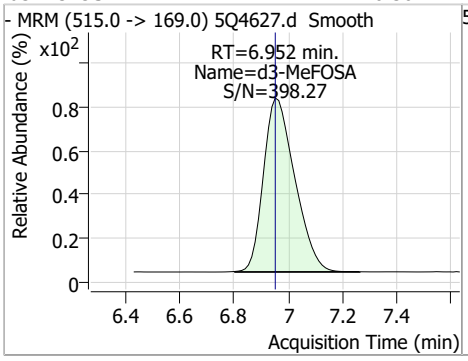
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	17.98	6.71	0.00	69716	533.0 -> 353.0	31.1	15.7	47.2

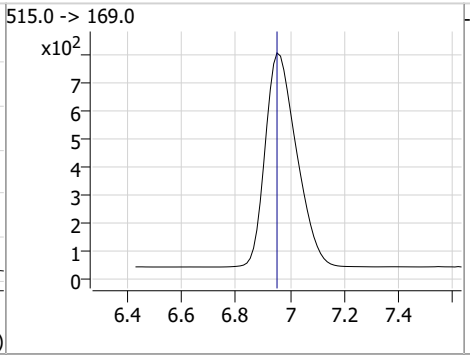


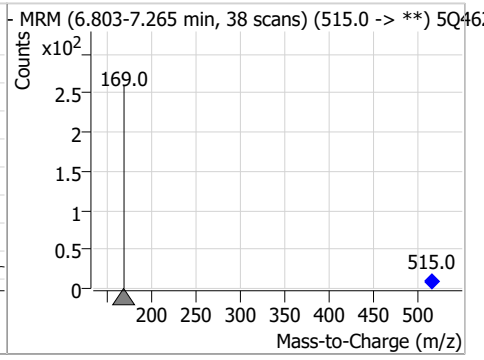




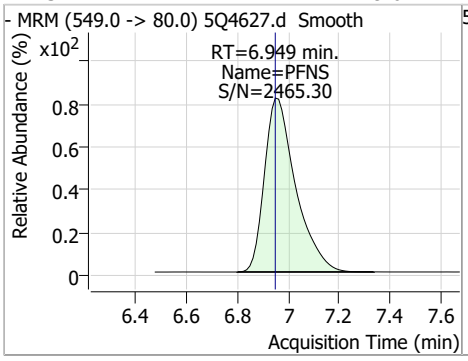
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.30	6.95	0.00	6181				

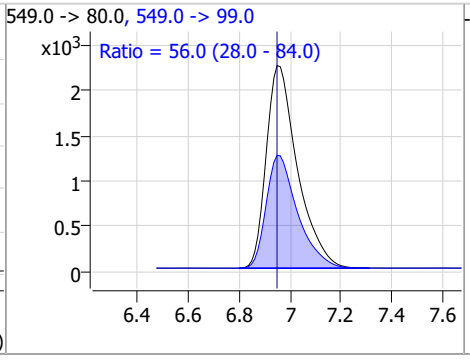


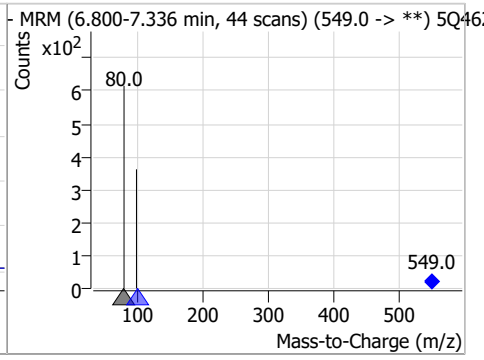




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.64	6.95	-0.01	18916	549.0 -> 99.0	56.0	28.0	84.0

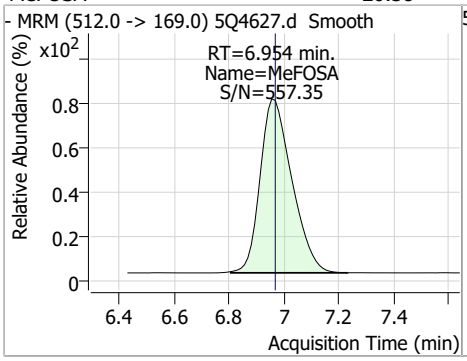


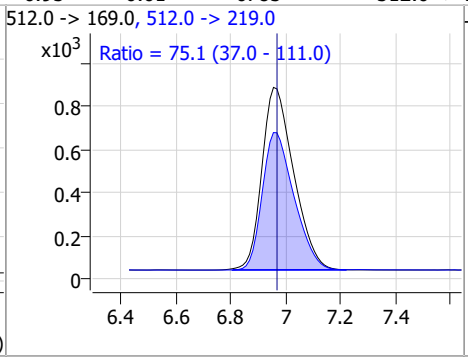


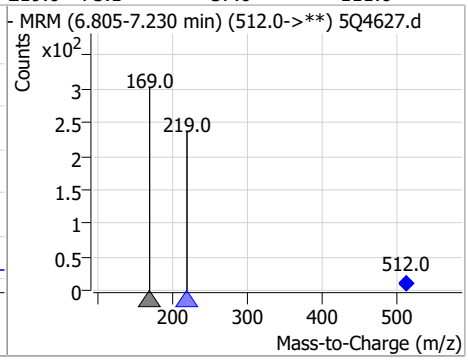


Perfluorinated Compounds by LC/MS/MS

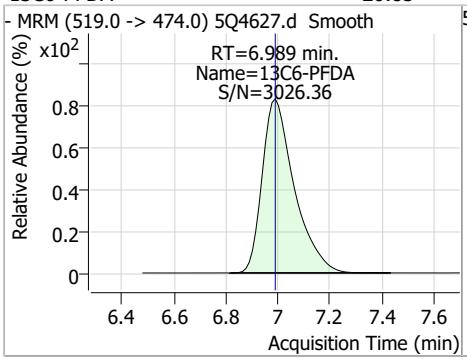
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.38	6.95	-0.01	6785	512.0 -> 219.0	75.1	37.0	111.0

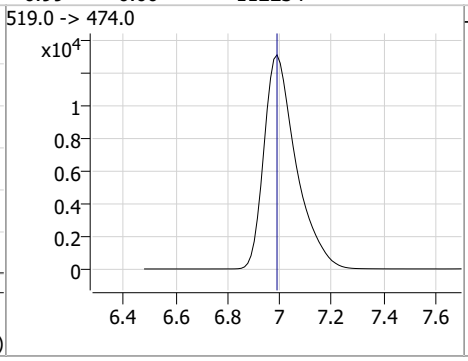


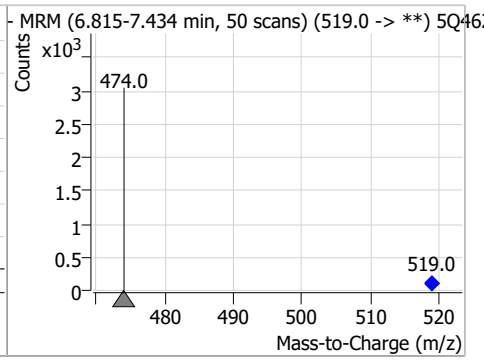




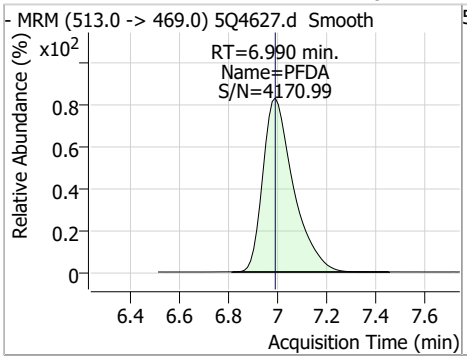
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.85	6.99	0.00	112234				

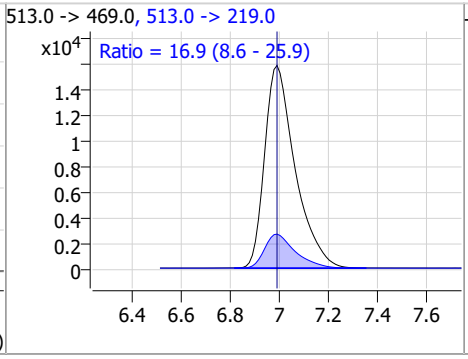


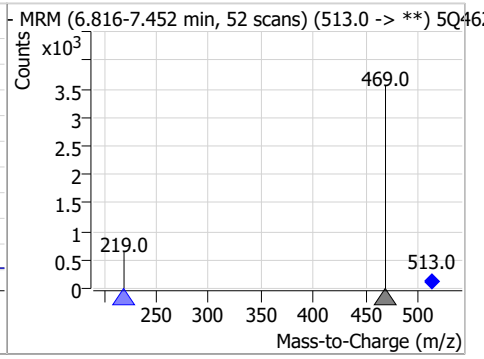




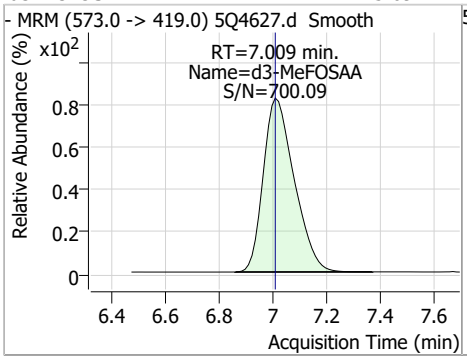
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.77	6.99	0.00	136284	513.0 -> 219.0	16.9	8.6	25.9

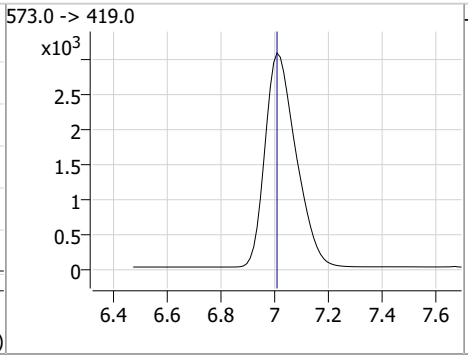


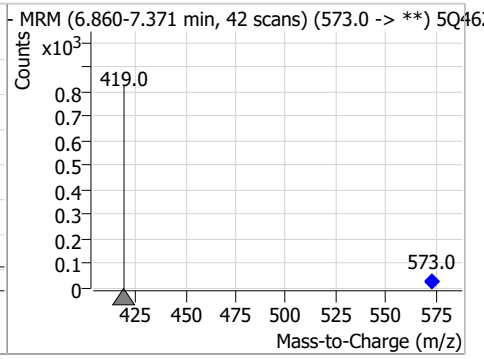




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	25.09	7.01	0.00	24382				

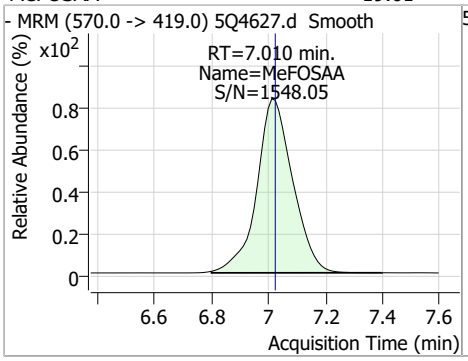


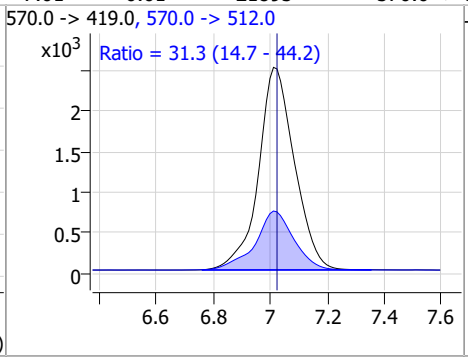


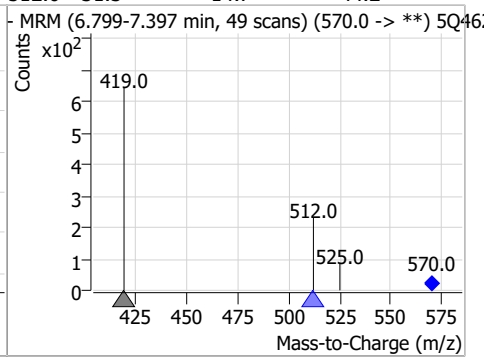


Perfluorinated Compounds by LC/MS/MS

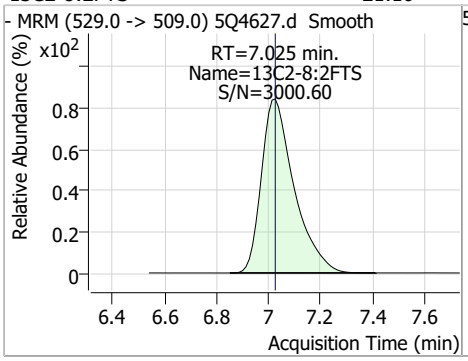
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.61	7.01	-0.01	21895	570.0 -> 512.0	31.3	14.7	44.2

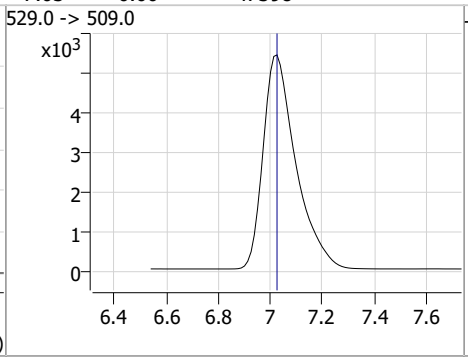


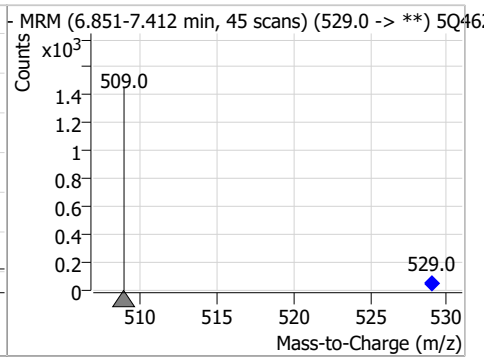




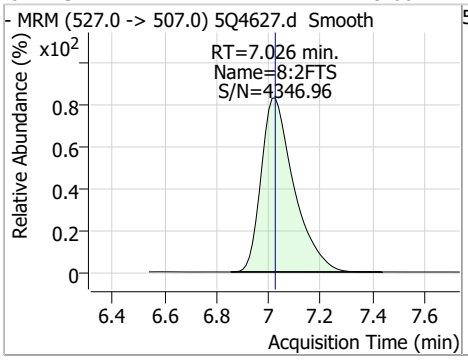
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.10	7.03	0.00	47398				

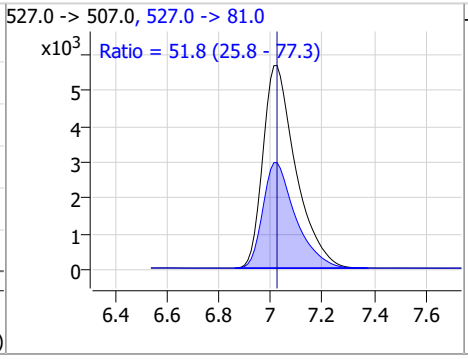


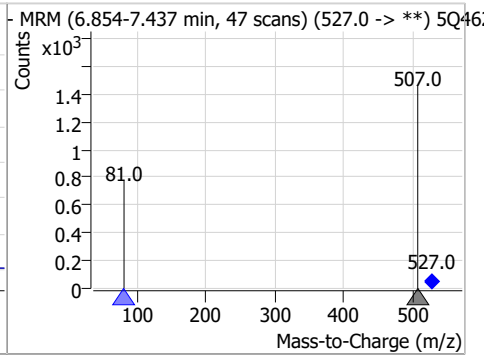




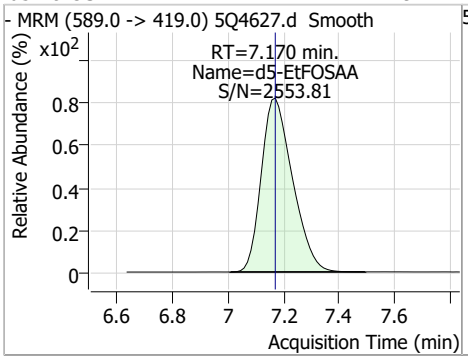
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.66	7.03	0.00	49676	527.0 -> 81.0	51.8	25.8	77.3

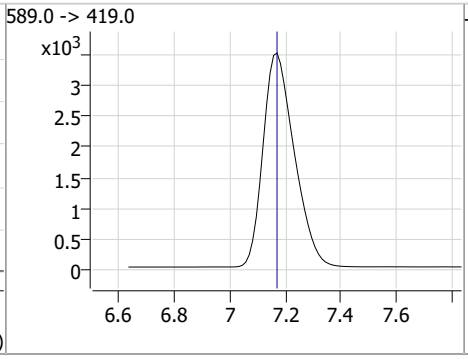


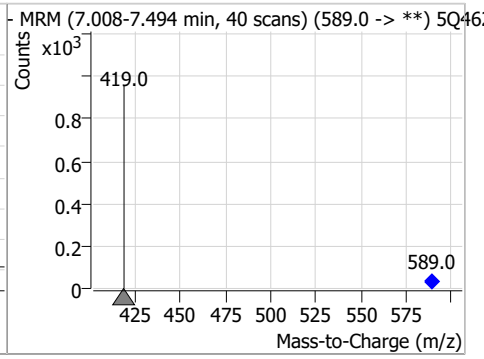




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	24.29	7.17	0.00	27230				

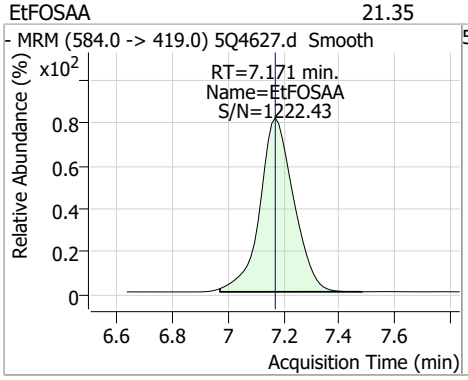


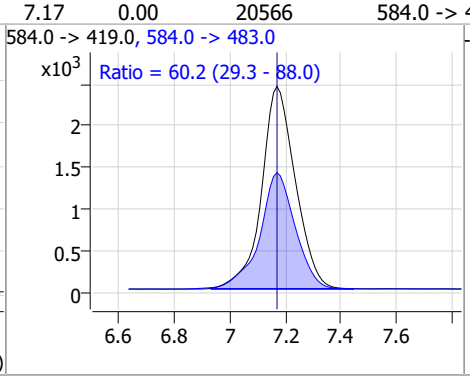


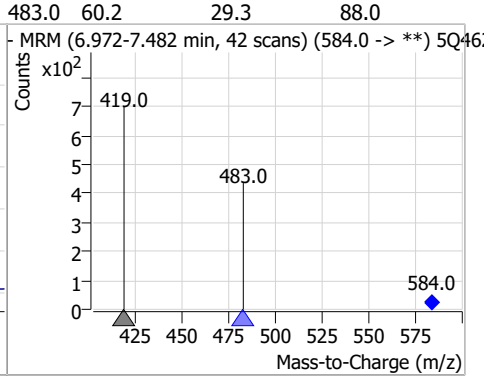


Perfluorinated Compounds by LC/MS/MS

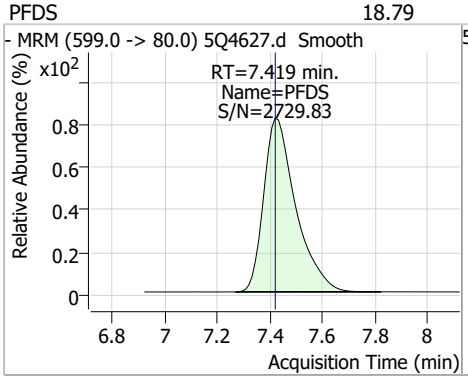
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.35	7.17	0.00	20566	584.0 -> 483.0	60.2	29.3	88.0

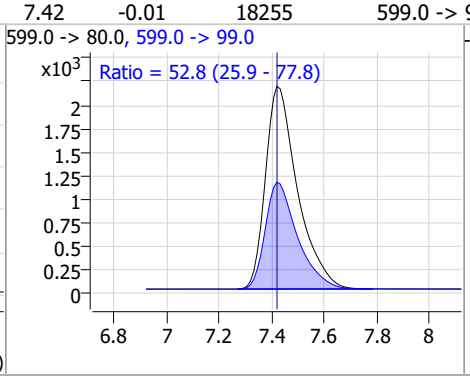


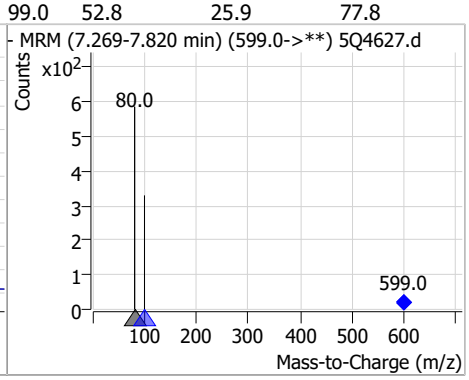




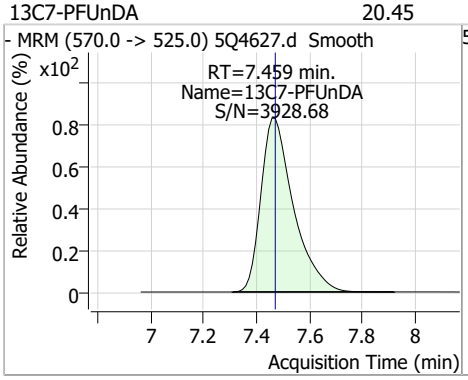
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.79	7.42	-0.01	18255	599.0 -> 99.0	52.8	25.9	77.8

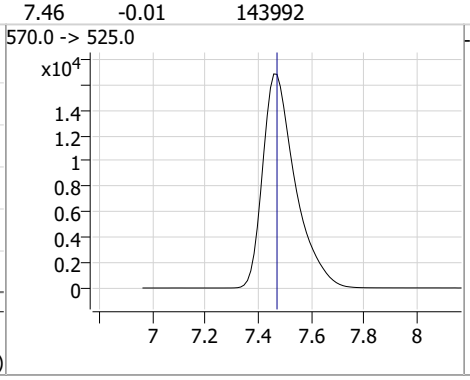


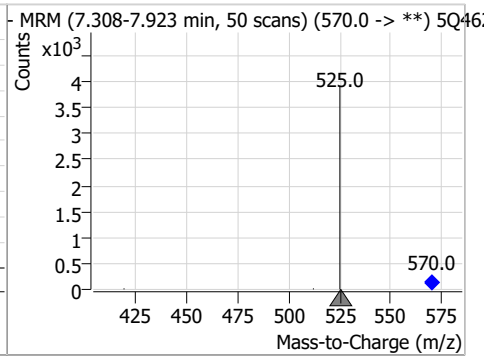




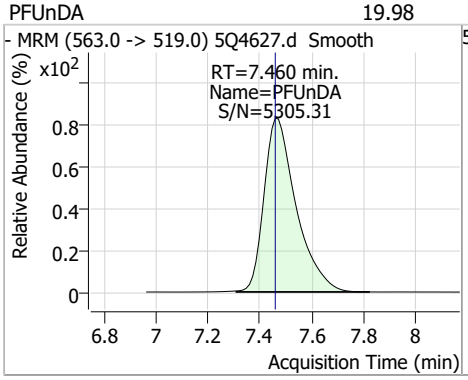
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.45	7.46	-0.01	143992				

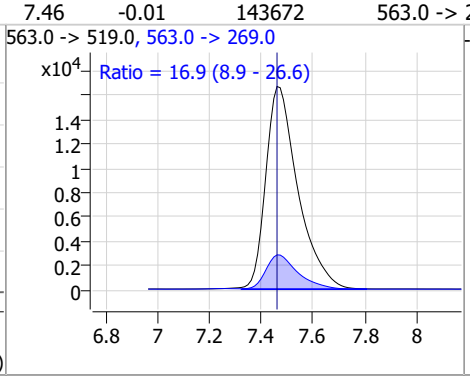


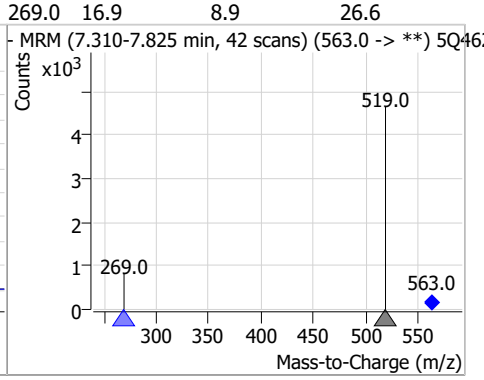




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.98	7.46	-0.01	143672	563.0 -> 269.0	16.9	8.9	26.6

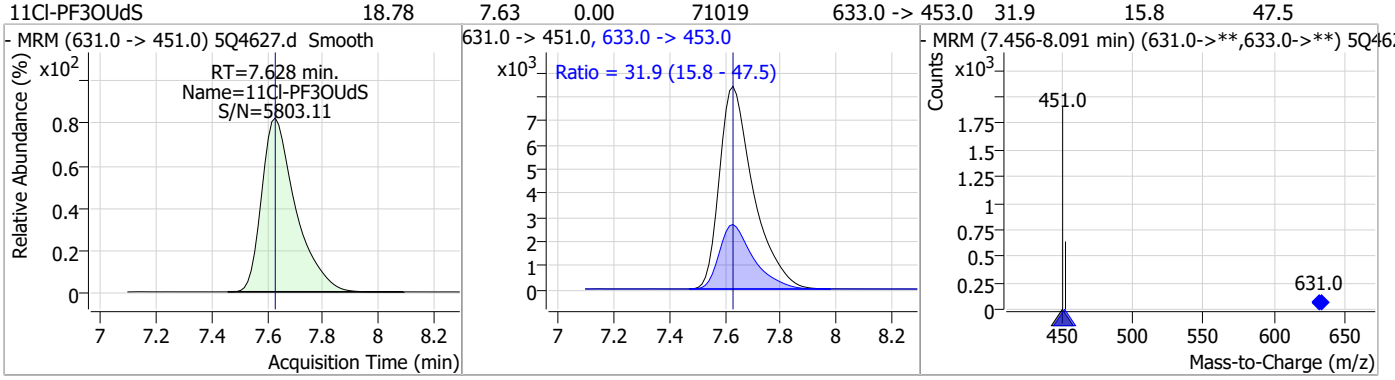




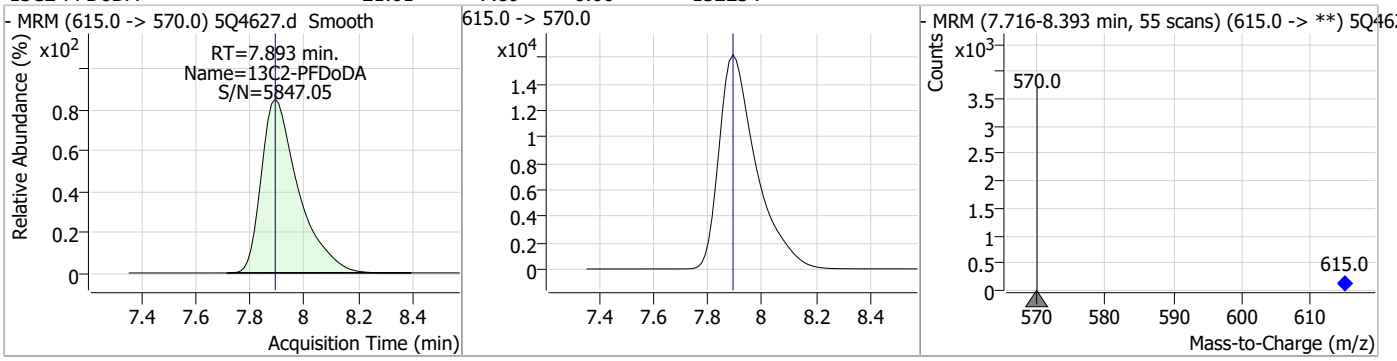


Perfluorinated Compounds by LC/MS/MS

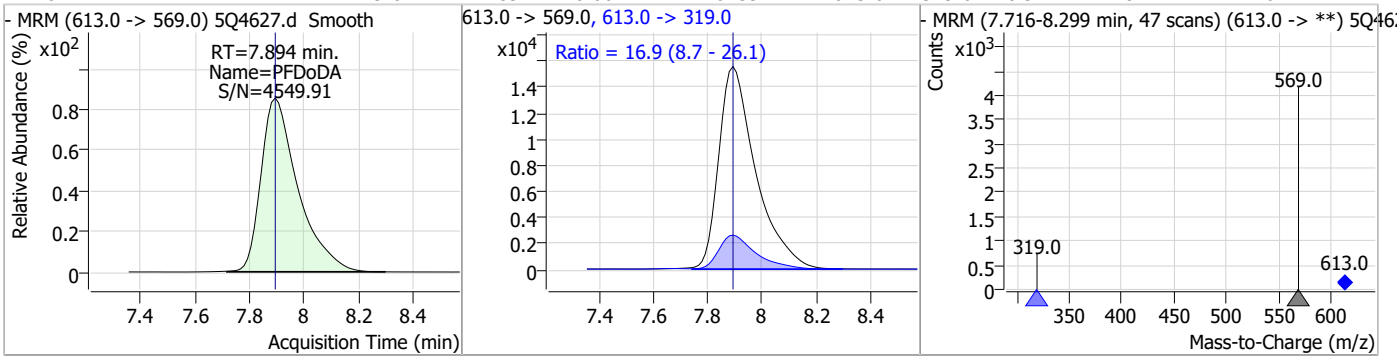
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.78	7.63	0.00	71019	633.0 -> 453.0	31.9	15.8	47.5



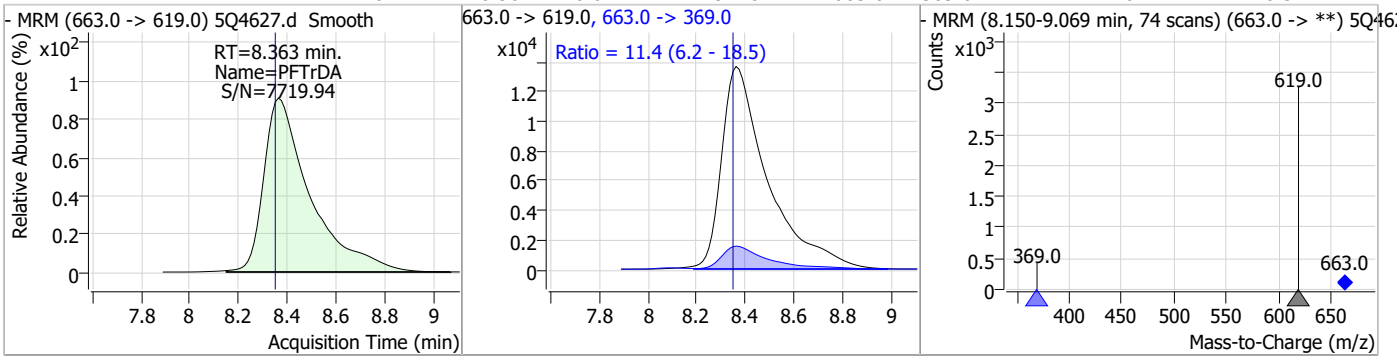
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.01	7.89	0.00	152234				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.61	7.89	0.00	146439	613.0 -> 319.0	16.9	8.7	26.1

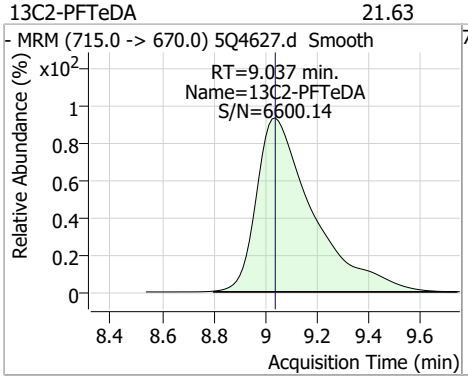


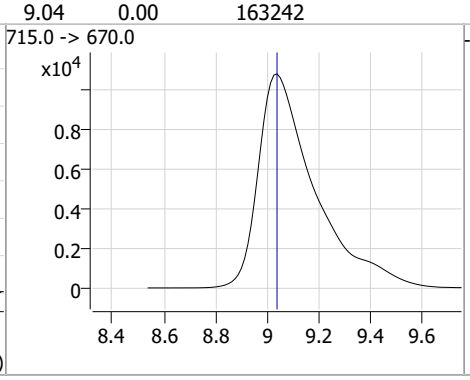
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.14	8.36	0.01	179748	663.0 -> 369.0	11.4	6.2	18.5

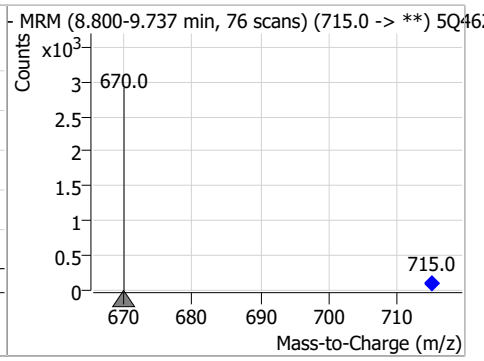


Perfluorinated Compounds by LC/MS/MS

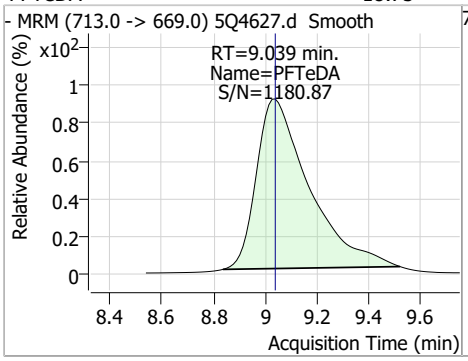
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.63	9.04	0.00	163242				

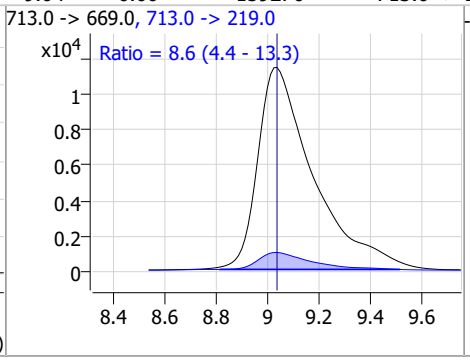


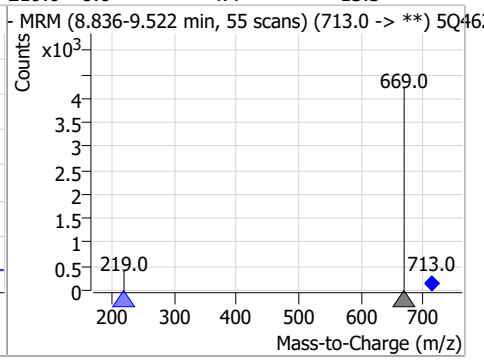




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.75	9.04	0.00	159276	713.0 -> 219.0	8.6	4.4	13.3







7.7.49

7

Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4627.D
Injection Time: 09/15/22 04:35
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4629.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:05:45 AM
Sample Name : cc71-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

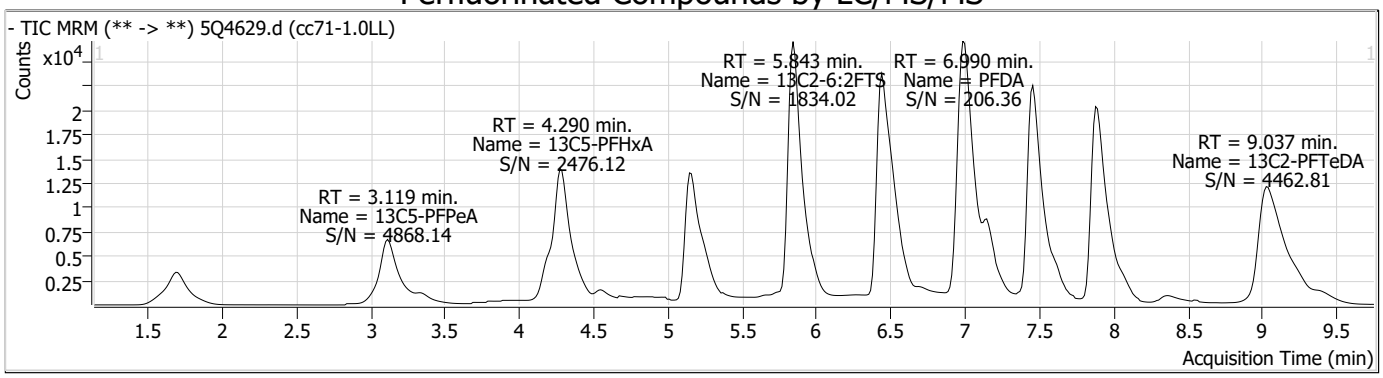
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	36067	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	56196	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	85776	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	80331	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	120924	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	133621	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	110044	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	142324	20.00	µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	151099	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	158757	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	22752	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6431	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6717	20.00	µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	12746	20.00	µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	27206	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43054	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	44687	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	24523	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	5861	20.00	µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6289	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	26576	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	27206	18.52	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43054	19.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%		
13C2-8:2FTS	7.025	529.0 -> 509.0	44687	19.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	151099	20.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-PFTeDA	9.037	715.0 -> 670.0	158757	21.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C3-PFBS	3.349	302.0 -> 99.0	6431	19.74	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C3-PFHxS	5.194	402.0 -> 99.0	6717	19.69	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C4-PFBA	1.687	217.0 -> 172.0	36067	20.18	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	5.163	367.0 -> 322.0	80331	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C5-PFHxA	4.290	318.0 -> 273.0	85776	19.62	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C5-PFPeA	3.119	268.0 -> 223.0	56196	19.34	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C6-PFDA	6.989	519.0 -> 474.0	110044	20.44	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

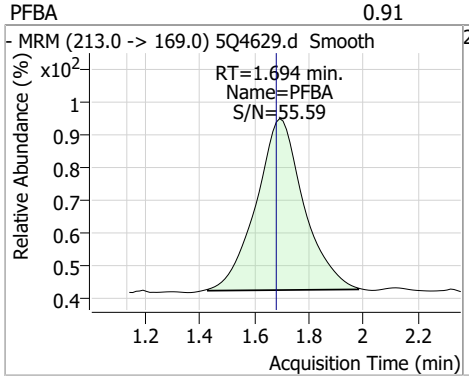
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C7-PFUnDA	7.459	570.0 -> 525.0	142324	20.21 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C8-FOSA	6.517	506.0 -> 78.0	22752	20.05 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C8-PFOA	5.857	421.0 -> 376.0	120924	19.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C8-PFOS	6.428	507.0 -> 99.0	12746	19.52 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C9-PFNA	6.455	472.0 -> 427.0	133621	20.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
d3-MeFOSAA	7.009	573.0 -> 419.0	24523	25.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.2%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	5861	17.45 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
d3-MeFOSA	6.952	515.0 -> 169.0	6289	20.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
d5-EtFOSAA	7.170	589.0 -> 419.0	26576	23.70 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.5%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	1532	1.01 µg/L		97
6:2FTS	5.843	427.0 -> 407.0	2339	1.02 µg/L		92
8:2FTS	7.026	527.0 -> 507.0	2481	1.04 µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	971	1.03 µg/L		97
FOSA	6.519	498.0 -> 78.0	1086	0.93 µg/L		98
MeFOSAA	7.023	570.0 -> 419.0	1127	1.00 µg/L		98
PFBA	1.694	213.0 -> 169.0	771	0.91 µg/L		100
PFBS	3.354	299.0 -> 80.0	904	0.94 µg/L		98
PFDA	6.990	513.0 -> 469.0	6391	0.95 µg/L		97
PFDoDA	7.894	613.0 -> 569.0	7186	0.97 µg/L		100
PFDS	7.419	599.0 -> 80.0	881	0.92 µg/L		97
PFHpA	5.164	363.0 -> 319.0	5196	0.98 µg/L		100
PFHpS	5.867	449.0 -> 80.0	959	1.00 µg/L		100
PFHxA	4.291	313.0 -> 269.0	3991	0.95 µg/L		99
PFHxS	5.195	399.0 -> 80.0	948	0.95 µg/L		94
PFNA	6.456	463.0 -> 419.0	5627	0.94 µg/L		100
PFNS	6.962	549.0 -> 80.0	944	1.00 µg/L		95
PFOA	5.858	413.0 -> 369.0	6817	0.93 µg/L		99
PFOS	6.429	499.0 -> 80.0	1073	0.96 µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	2752	0.99 µg/L		100
PFPeS	4.398	349.0 -> 80.0	687	0.91 µg/L		95
PFTeDA	9.039	713.0 -> 669.0	8202	0.99 µg/L		97
PFTrDA	8.363	663.0 -> 619.0	8641	0.98 µg/L	#	79
PFUnDA	7.460	563.0 -> 519.0	6760	0.95 µg/L		100
11Cl-PF3OUdS	7.628	631.0 -> 451.0	3386	0.90 µg/L		98
9Cl-PF3ONS	6.714	531.0 -> 351.0	3145	0.83 µg/L		99
ADONA	5.261	377.0 -> 251.0	6436	0.93 µg/L		98
HFPO-DA	4.562	329.0 -> 169.0	942	0.95 µg/L		97
MeFOSA	6.954	512.0 -> 169.0	270	0.80 µg/L		89
4-PFECHS	5.753	461.0 -> 381.0	2086	0.96 µg/L		94
FBSA	4.343	298.0 -> 78.0	1430	1.01 µg/L		95
FHxSA	5.674	398.0 -> 78.0	1239	1.01 µg/L		99

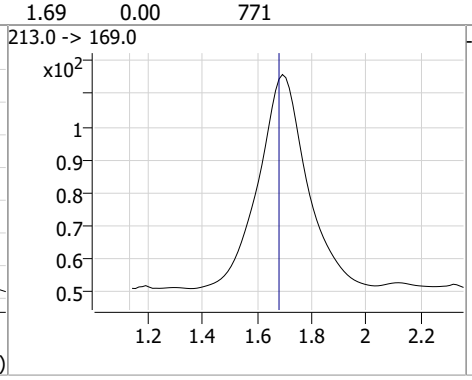
 # = Qualifier out of range, m = manually integrated, + = Area summed

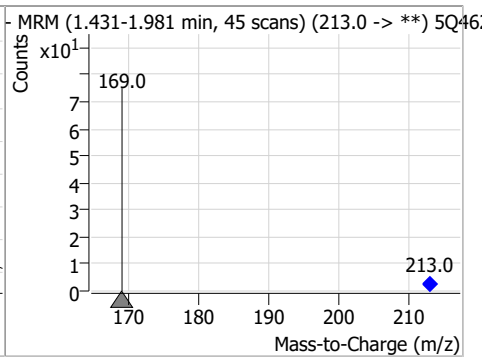
Perfluorinated Compounds by LC/MS/MS



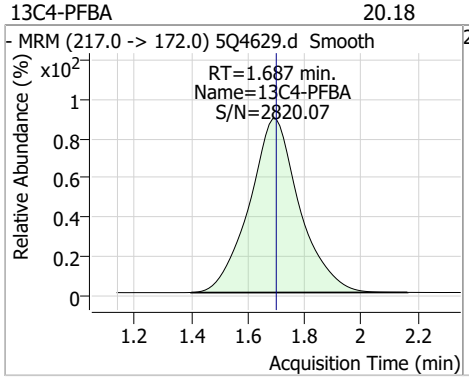
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.91	1.69	0.00	771				

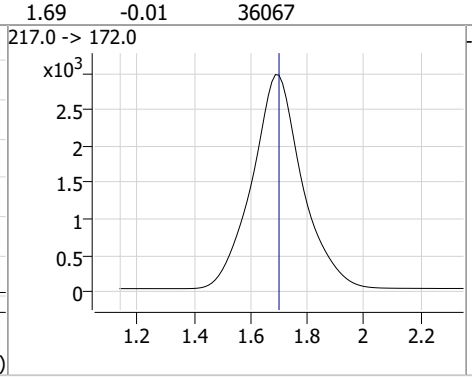


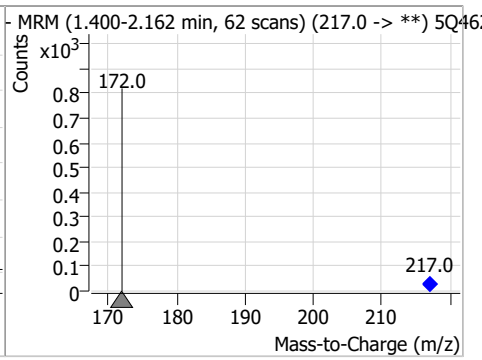




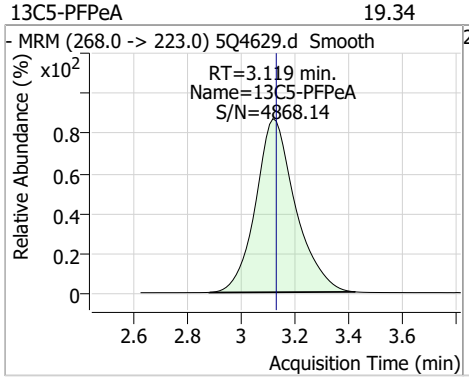
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.18	1.69	-0.01	36067				

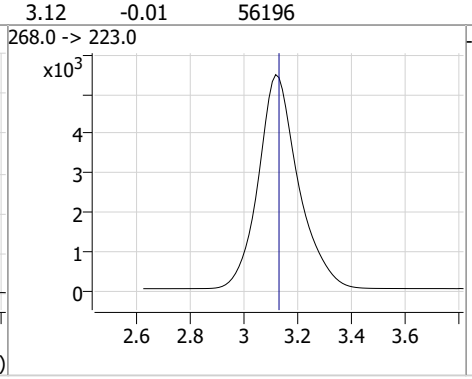


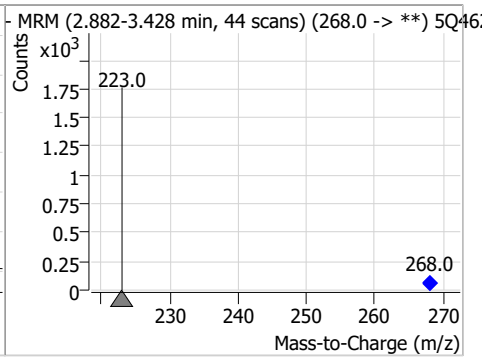




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.34	3.12	-0.01	56196				

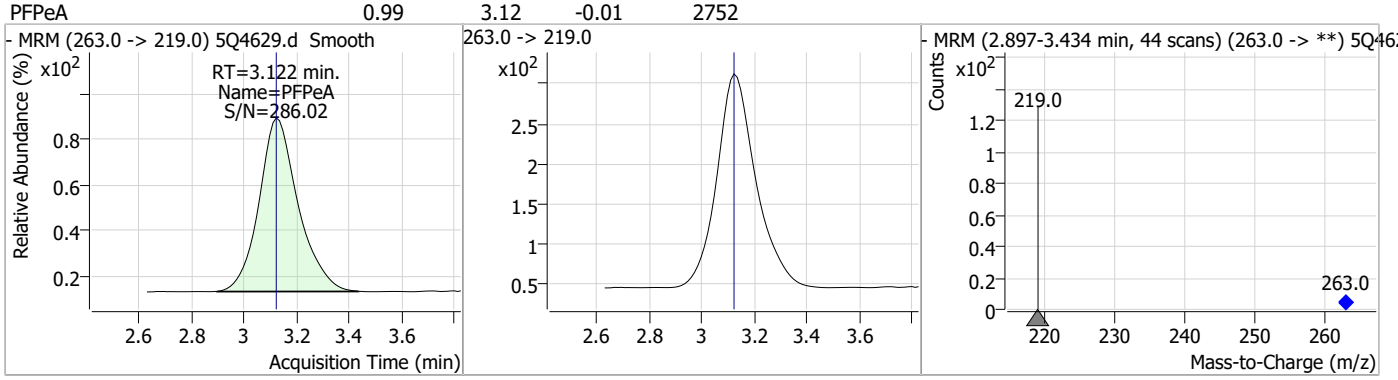




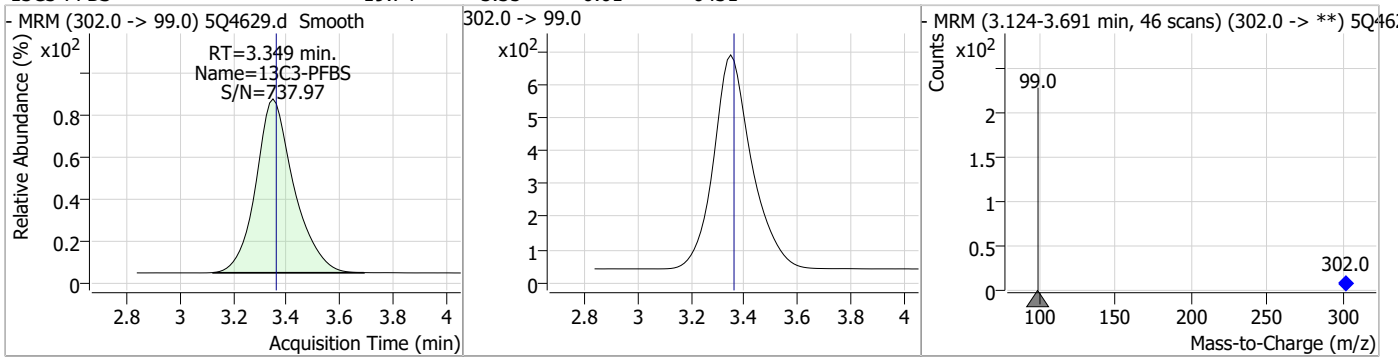


Perfluorinated Compounds by LC/MS/MS

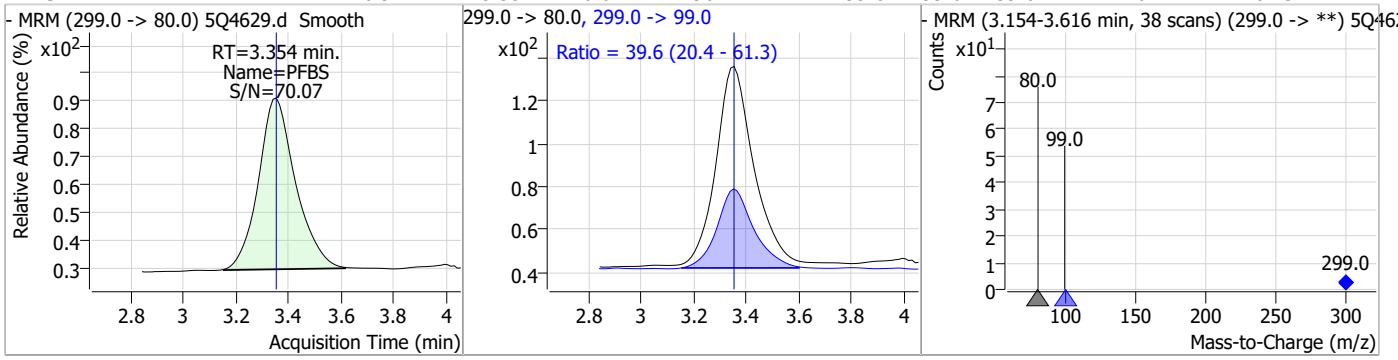
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.99	3.12	-0.01	2752				



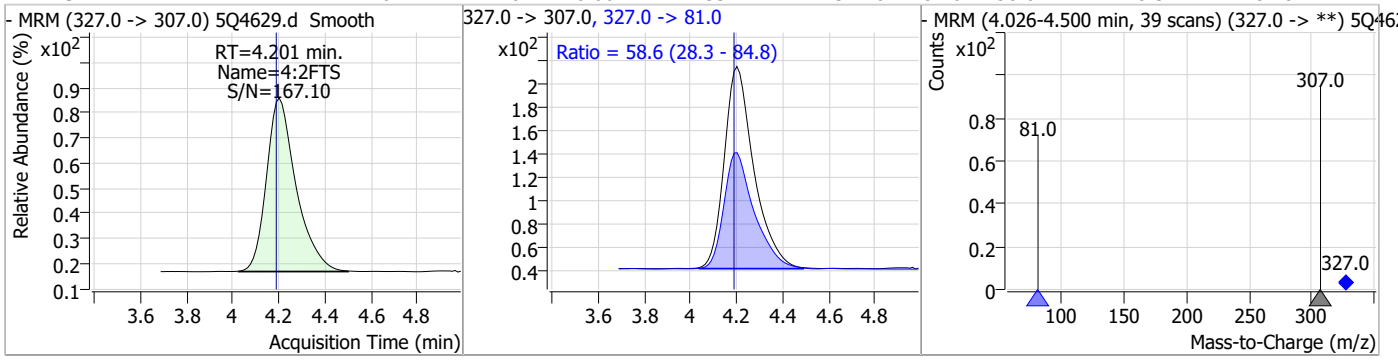
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.74	3.35	-0.01	6431				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.94	3.35	-0.01	904	299.0 -> 99.0	39.6	20.4	61.3

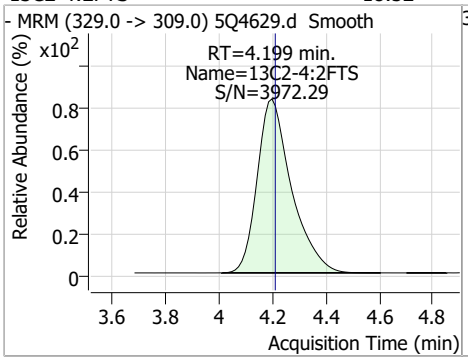


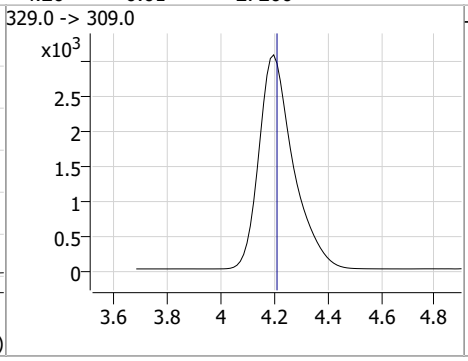
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.01	4.20	0.00	1532	327.0 -> 81.0	58.6	28.3	84.8

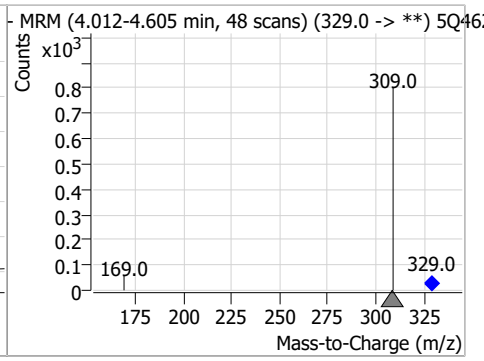


Perfluorinated Compounds by LC/MS/MS

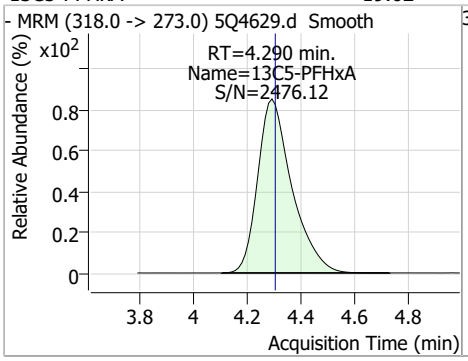
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.52	4.20	-0.01	27206				

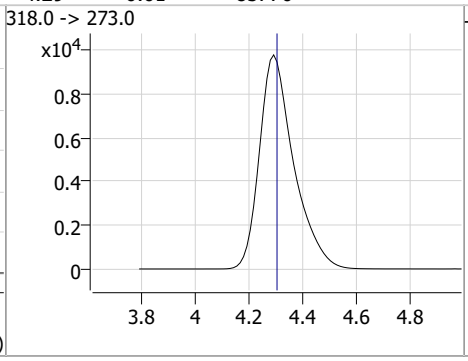


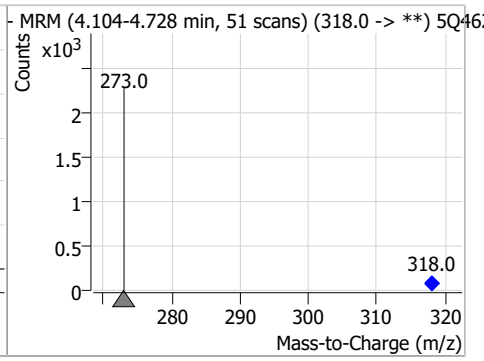




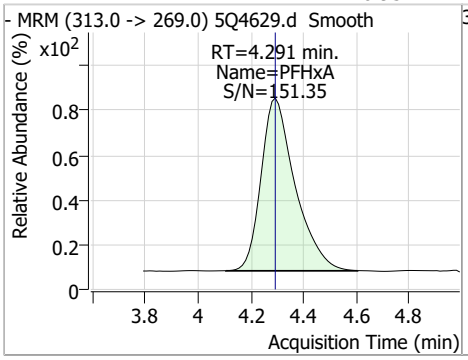
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.62	4.29	-0.01	85776				

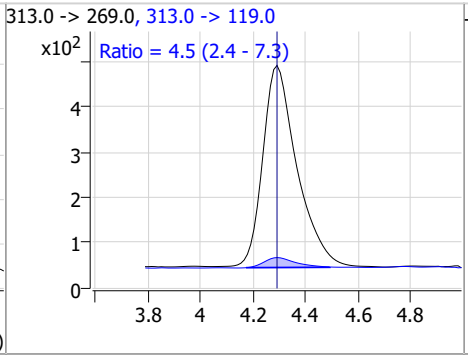


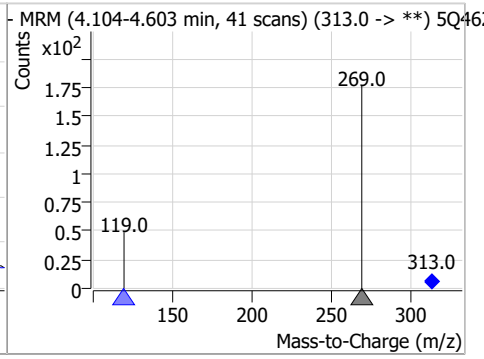




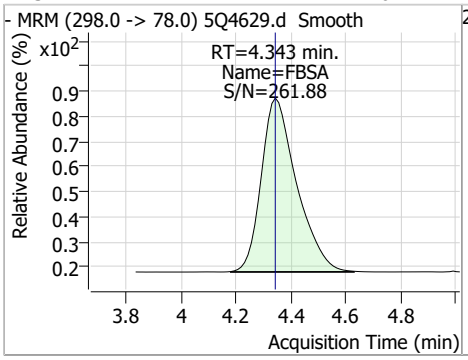
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.95	4.29	-0.01	3991	313.0 -> 119.0	4.5	2.4	7.3

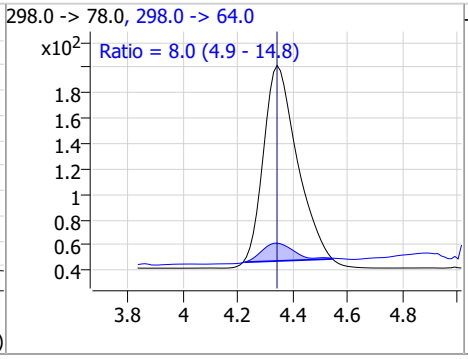


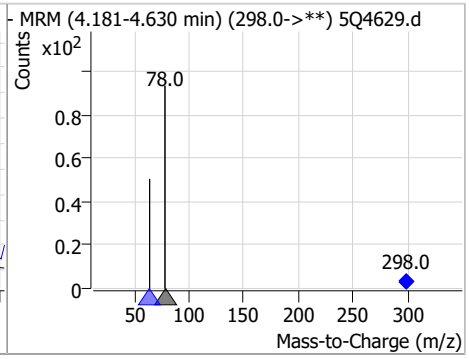




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.01	4.34	-0.01	1430	298.0 -> 64.0	8.0	4.9	14.8

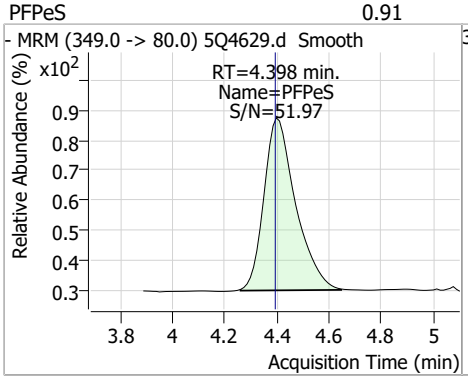


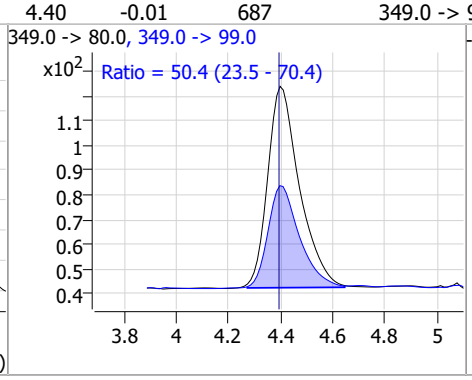


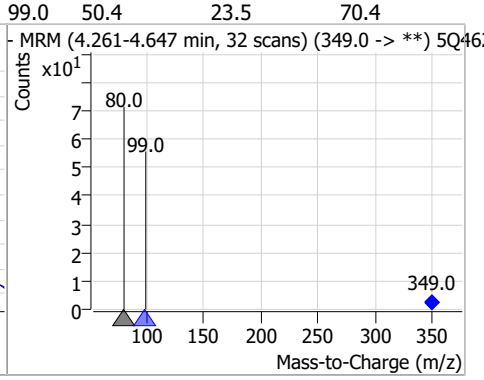


Perfluorinated Compounds by LC/MS/MS

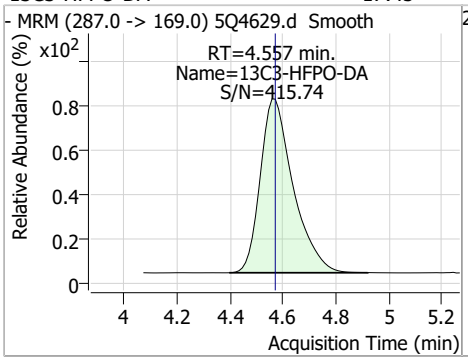
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	4.40	-0.01	687	349.0 -> 99.0	50.4	23.5	70.4

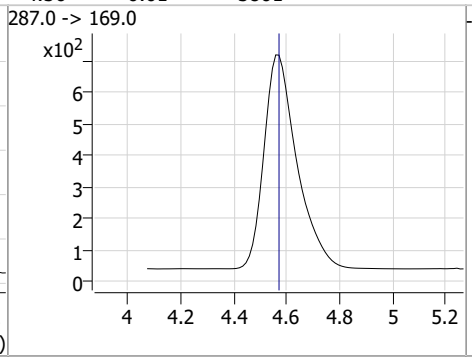


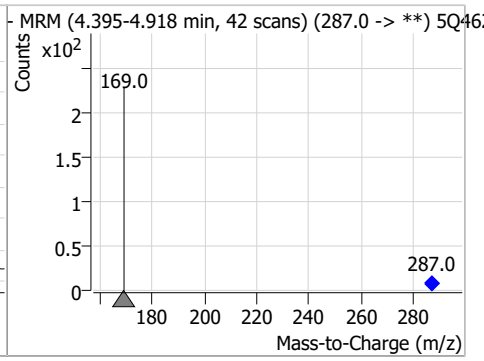




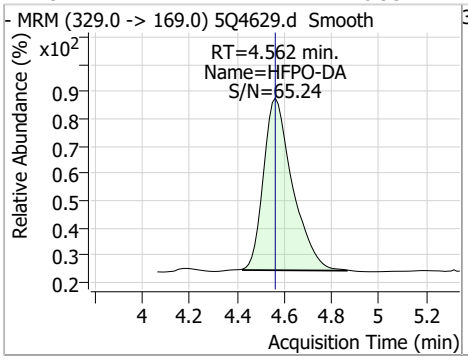
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.45	4.56	-0.01	5861				

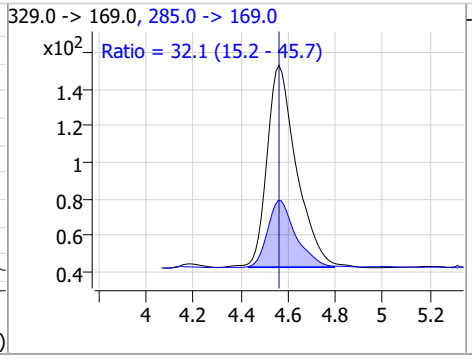


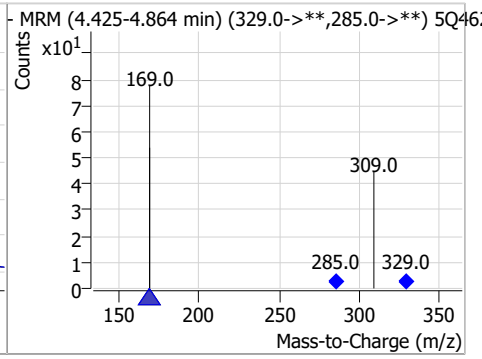




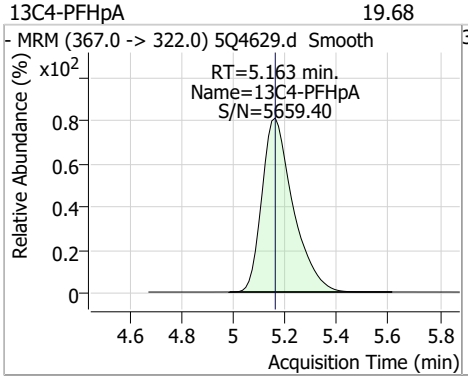
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.95	4.56	-0.01	942	285.0 -> 169.0	32.1	15.2	45.7

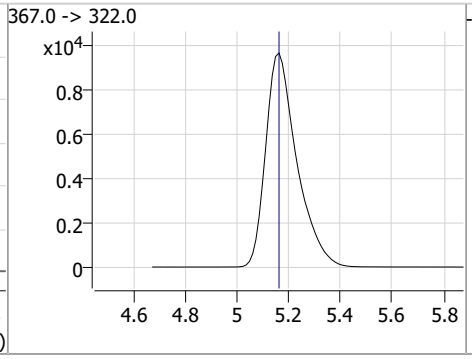


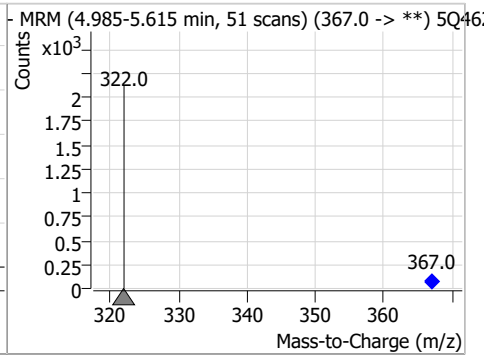




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.68	5.16	0.00	80331				

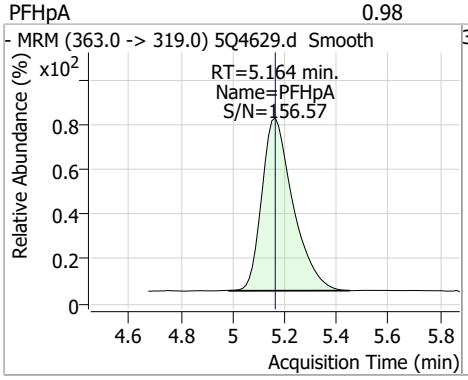


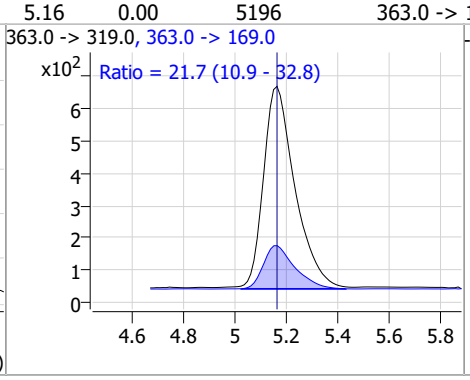


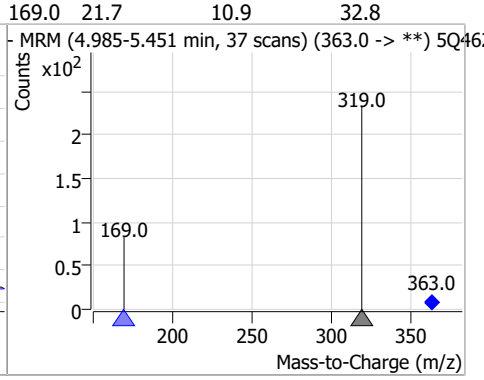


Perfluorinated Compounds by LC/MS/MS

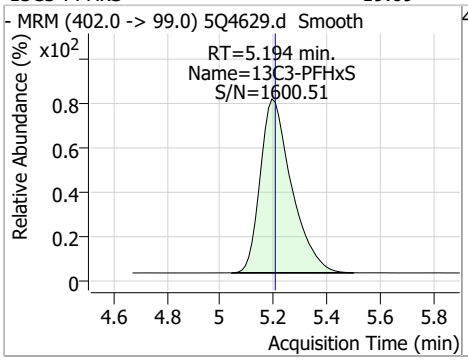
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.98	5.16	0.00	5196	363.0 -> 169.0	21.7	10.9	32.8

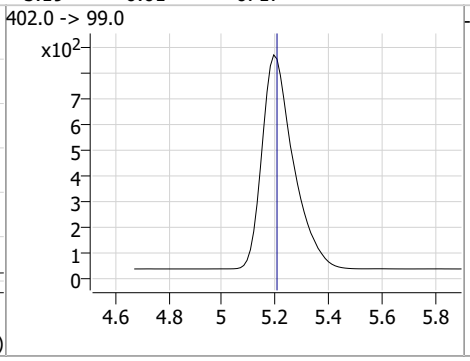


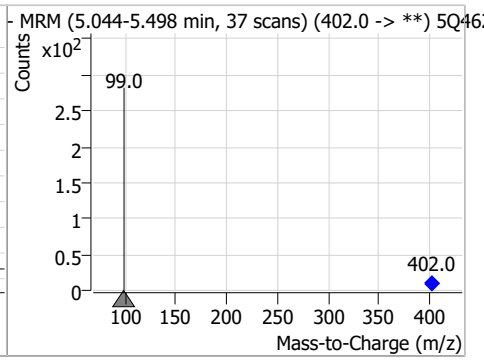




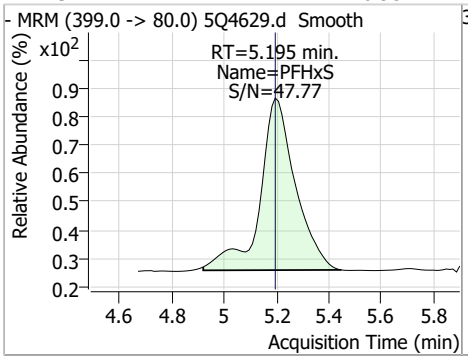
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.69	5.19	-0.01	6717				

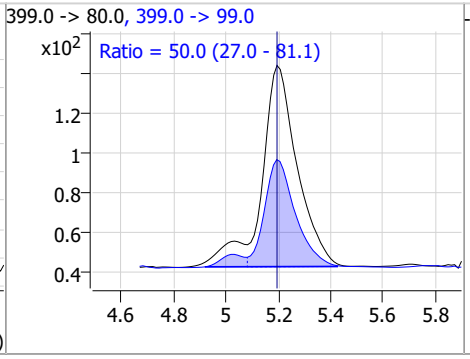


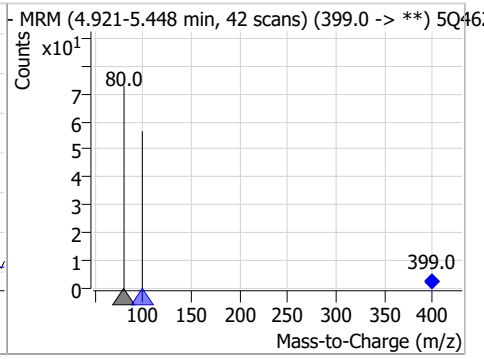




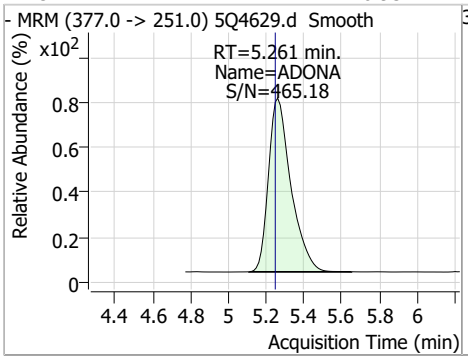
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.95	5.20	-0.01	948	399.0 -> 99.0	50.0	27.0	81.1

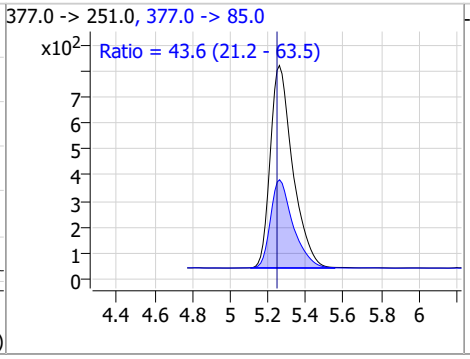


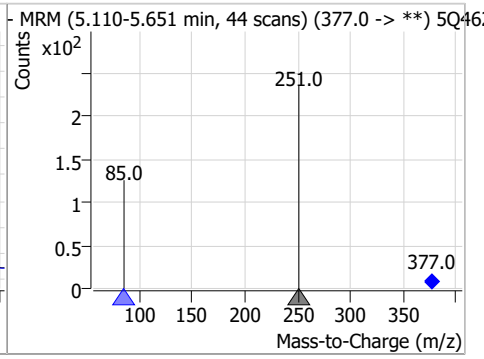




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.93	5.26	0.00	6436	377.0 -> 85.0	43.6	21.2	63.5

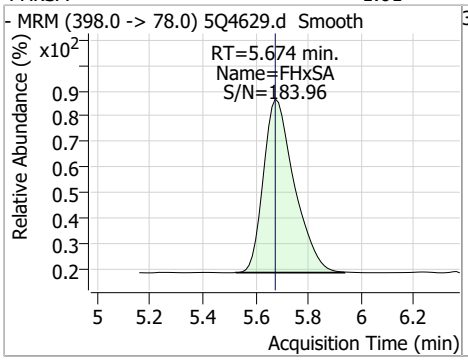


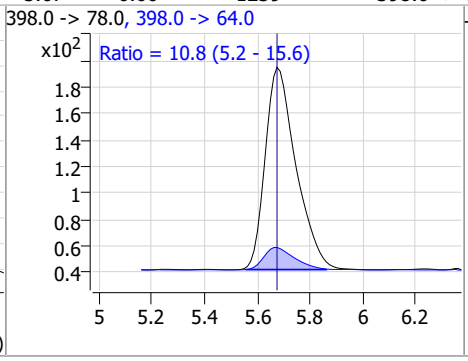


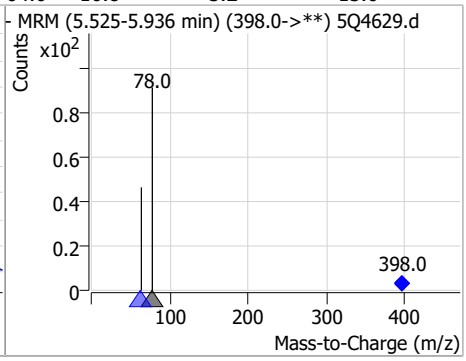


Perfluorinated Compounds by LC/MS/MS

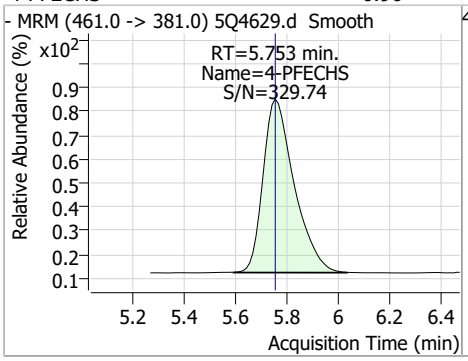
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.01	5.67	0.00	1239	398.0 -> 64.0	10.8	5.2	15.6

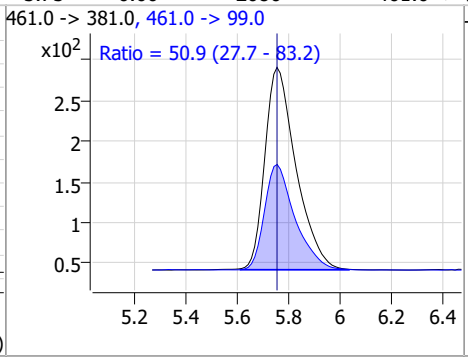


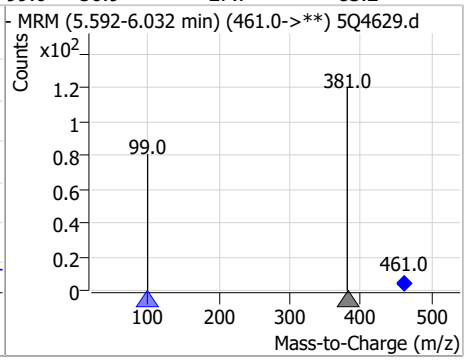




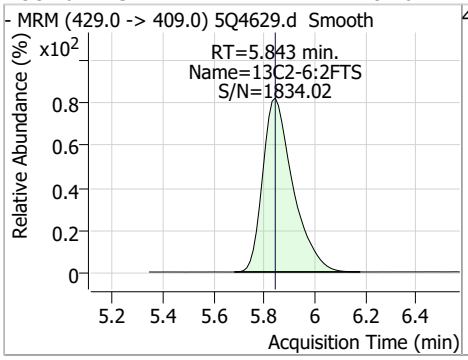
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.96	5.75	0.00	2086	461.0 -> 99.0	50.9	27.7	83.2

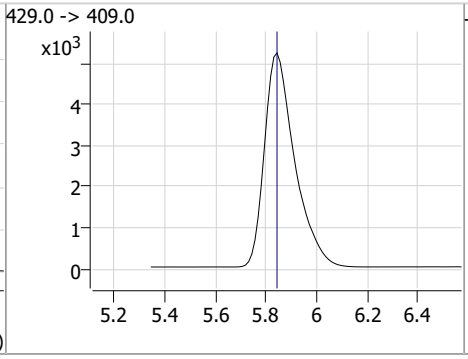


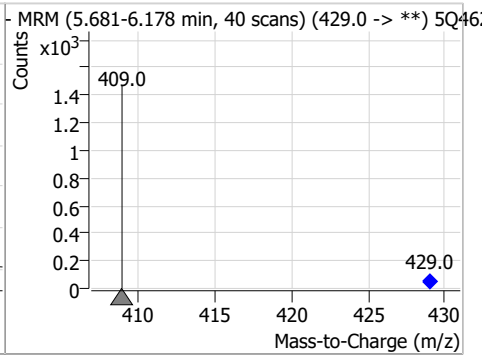




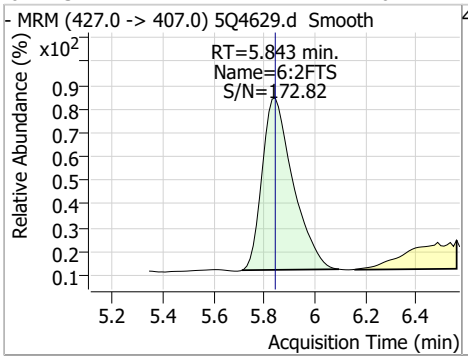
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.26	5.84	0.00	43054				

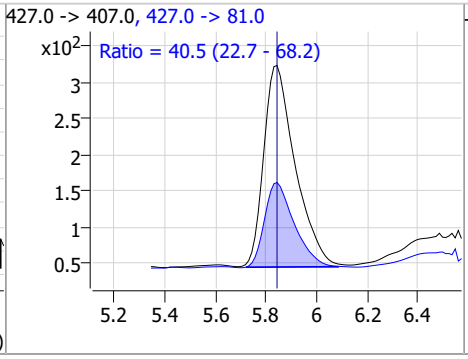


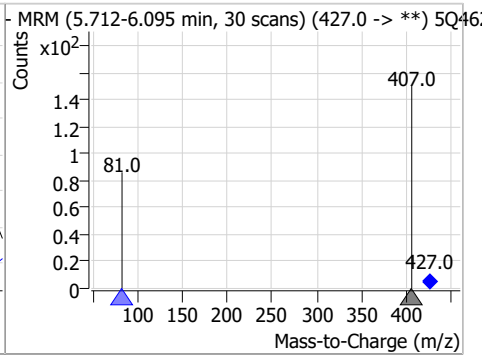




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.02	5.84	0.00	2339	427.0 -> 81.0	40.5	22.7	68.2

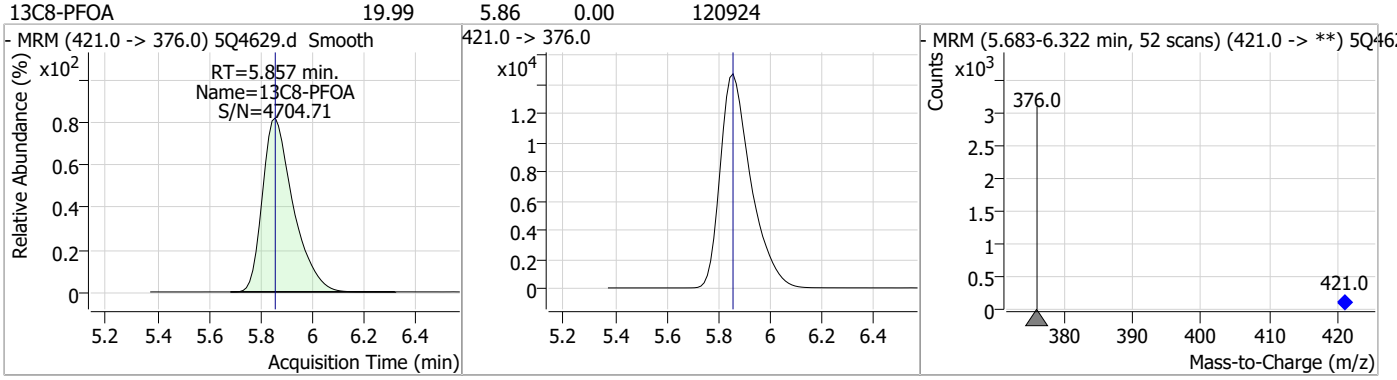




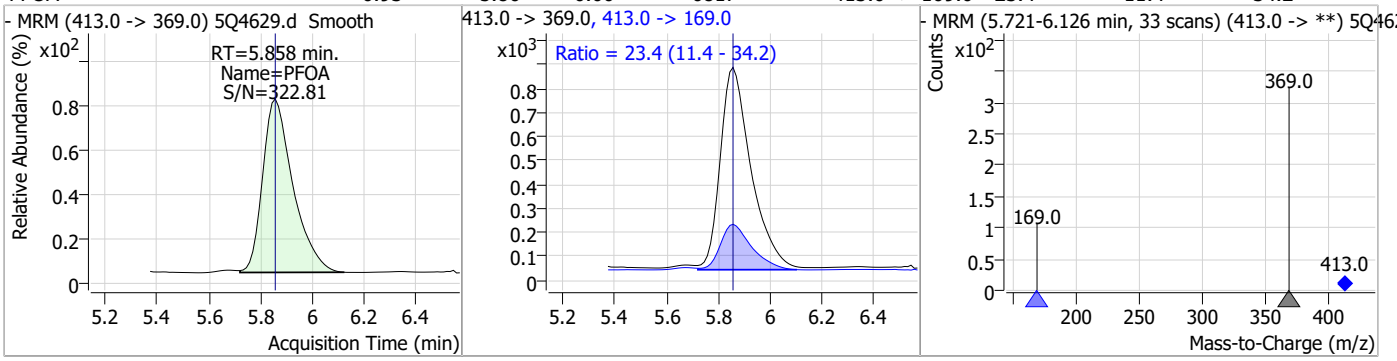


Perfluorinated Compounds by LC/MS/MS

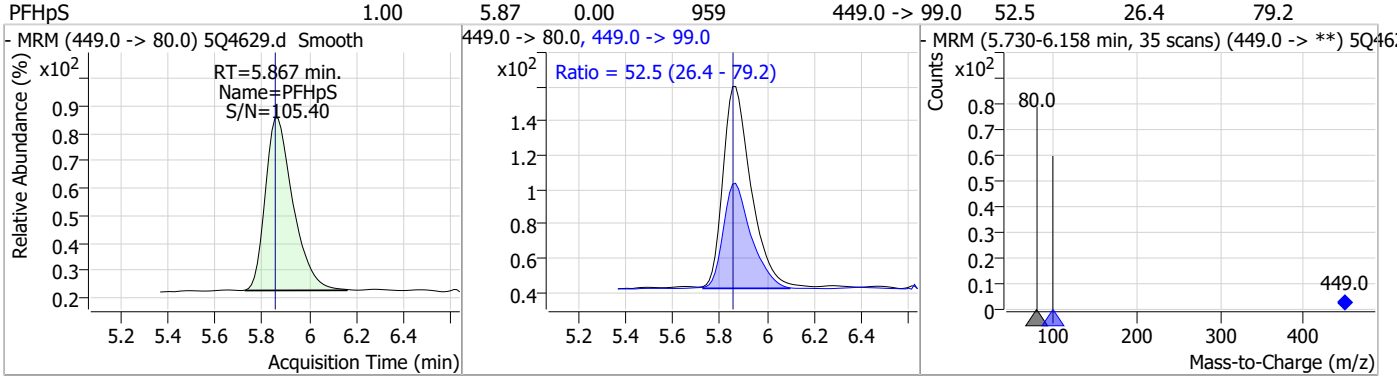
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.99	5.86	0.00	120924				



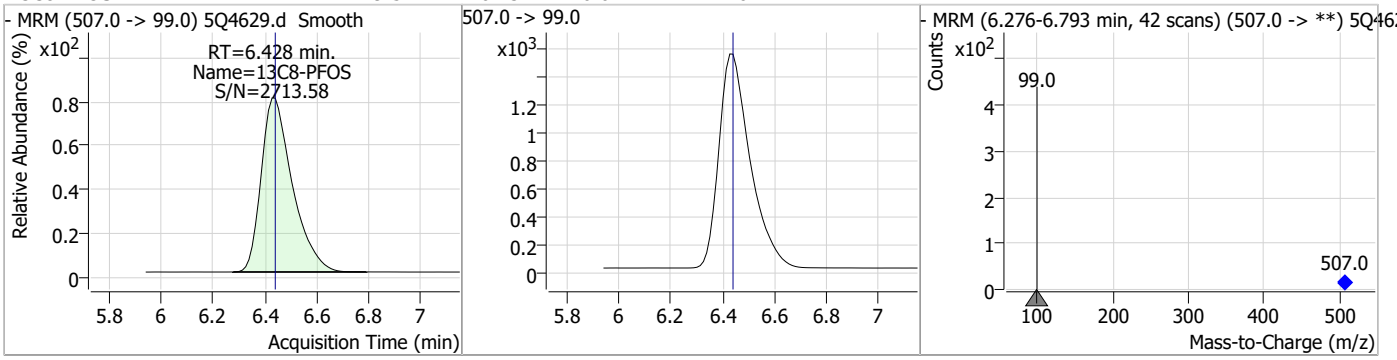
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.93	5.86	0.00	6817	413.0 -> 169.0	23.4	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.00	5.87	0.00	959	449.0 -> 99.0	52.5	26.4	79.2

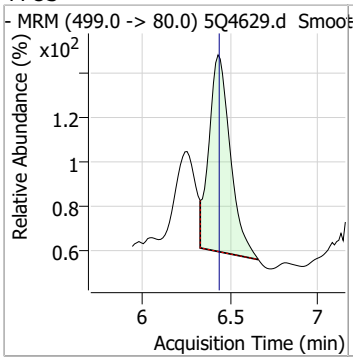


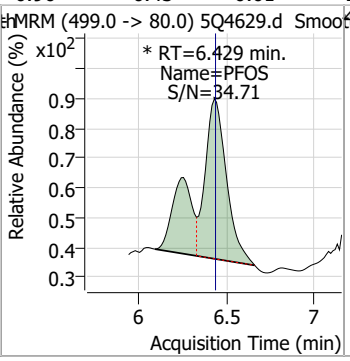
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.52	6.43	-0.01	12746				

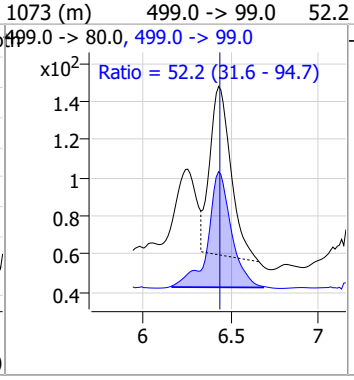


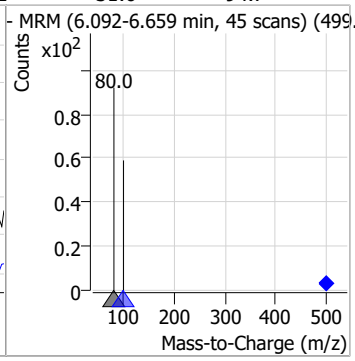
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.96	6.43	-0.01	1073 (m)	499.0 -> 99.0	52.2	31.6	94.7

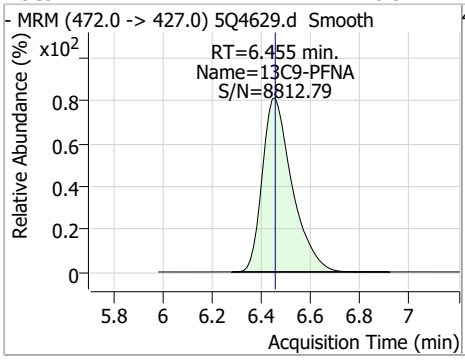


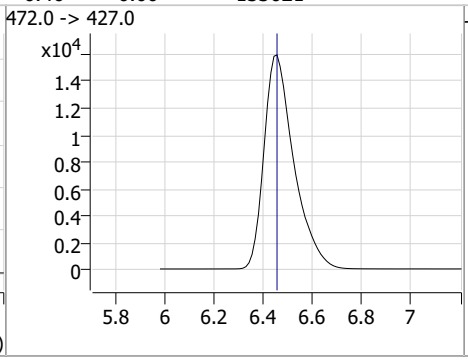


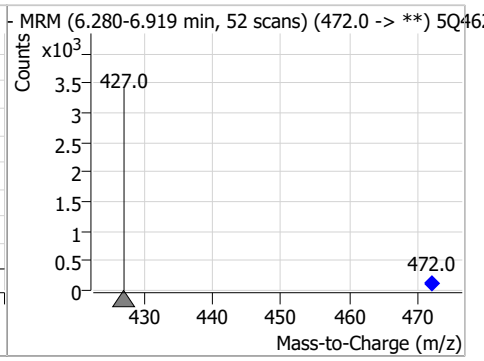




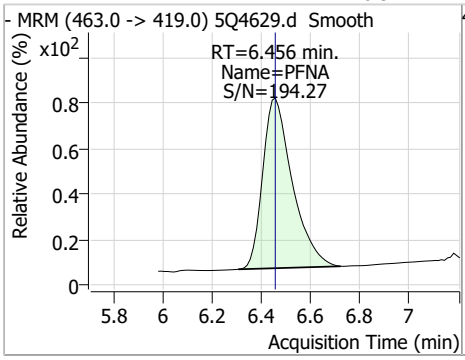
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.34	6.46	0.00	133621				

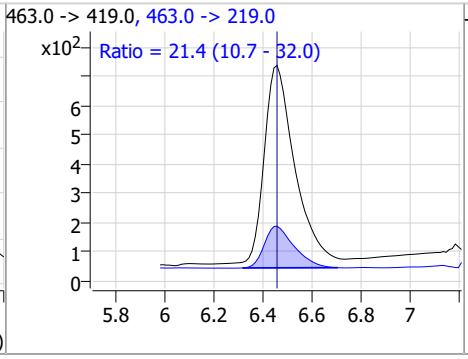


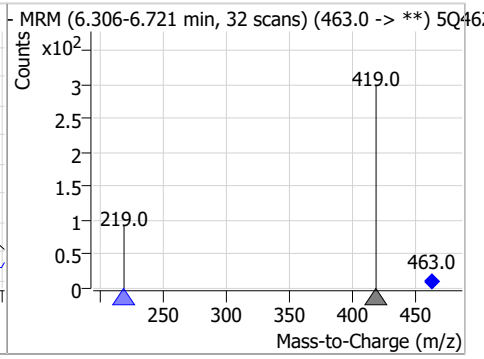




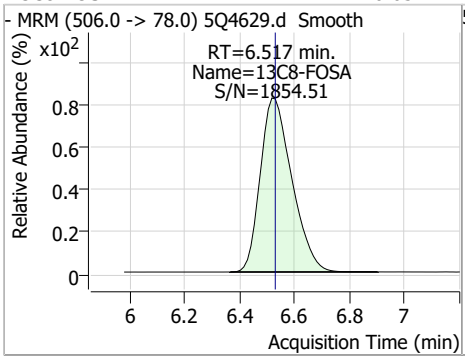
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.94	6.46	0.00	5627	463.0 -> 219.0	21.4	10.7	32.0

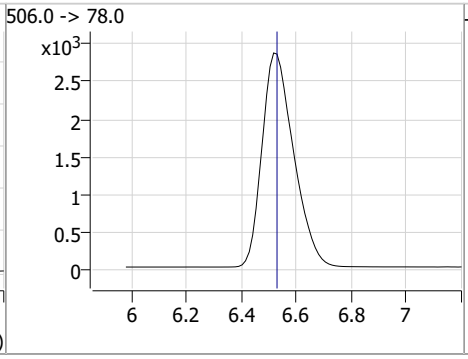


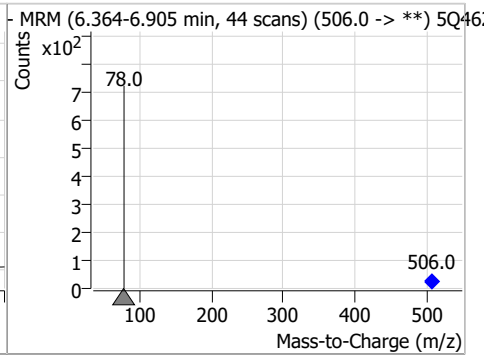




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.05	6.52	-0.01	22752				

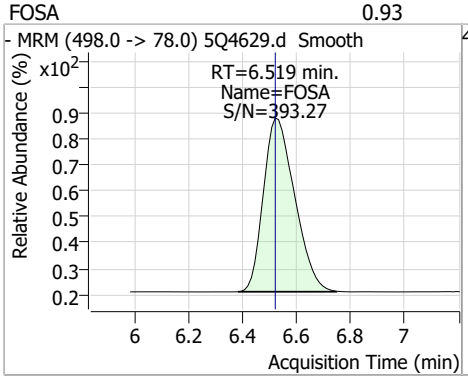


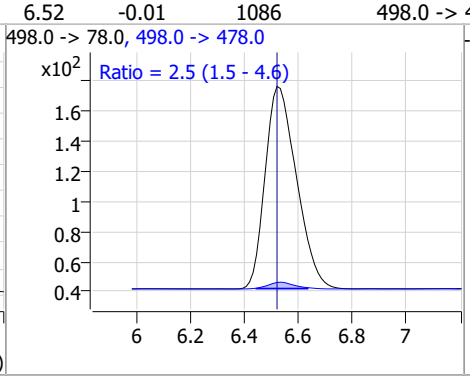


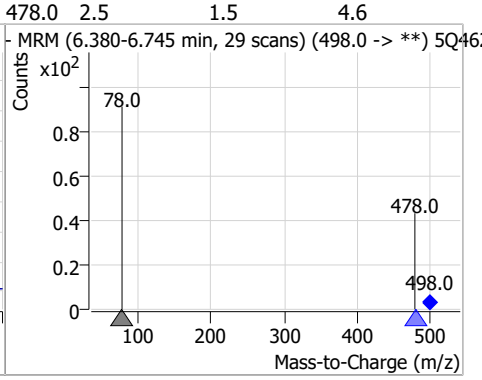


Perfluorinated Compounds by LC/MS/MS

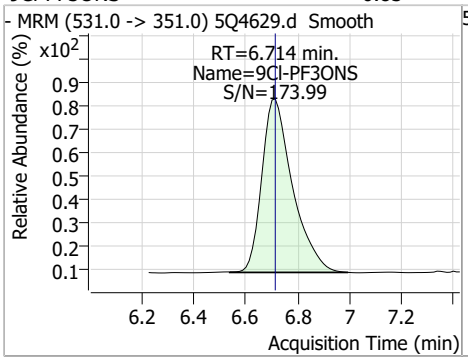
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.93	6.52	-0.01	1086	498.0 -> 478.0	2.5	1.5	4.6

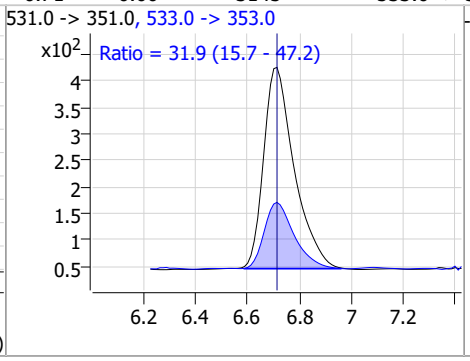


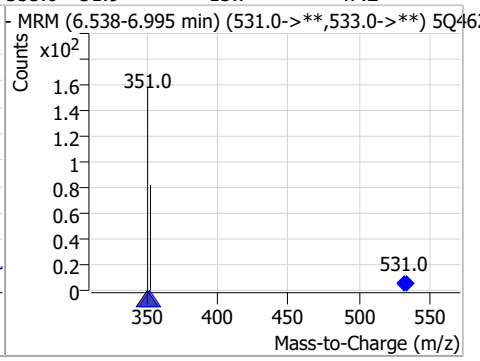




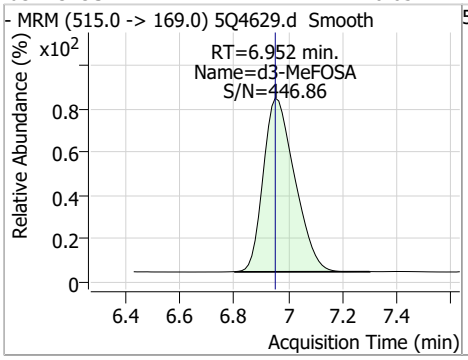
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.83	6.71	0.00	3145	533.0 -> 353.0	31.9	15.7	47.2

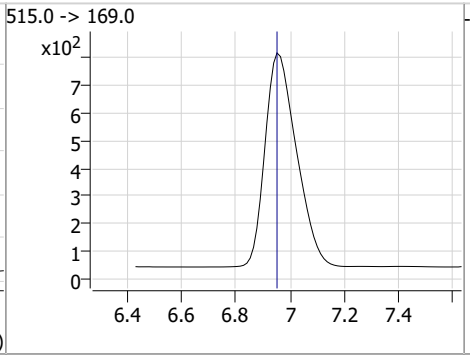


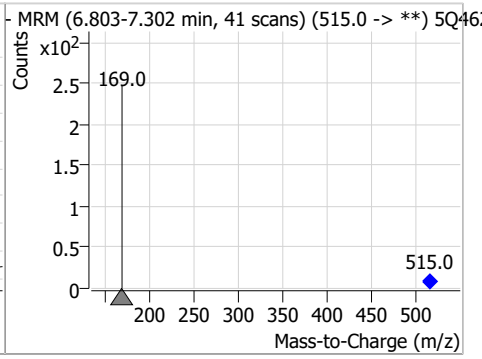




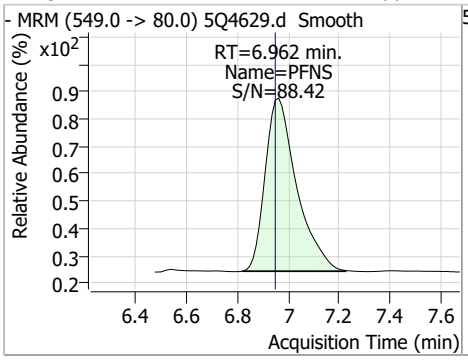
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.65	6.95	0.00	6289				

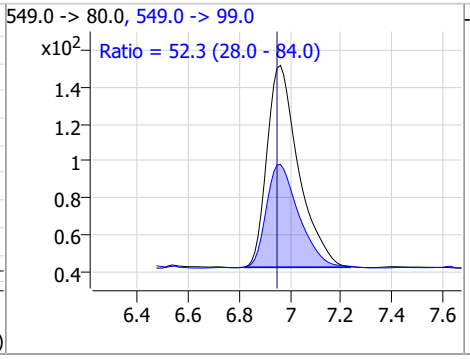


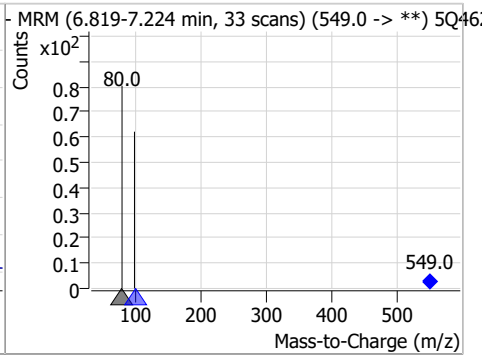




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.00	6.96	0.00	944	549.0 -> 99.0	52.3	28.0	84.0

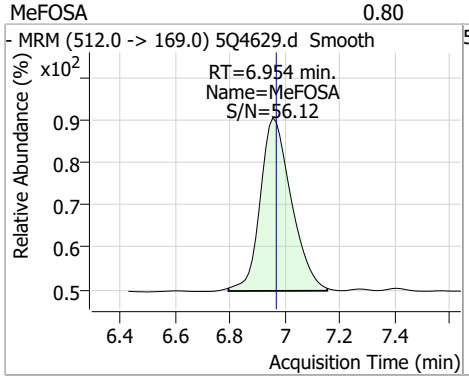


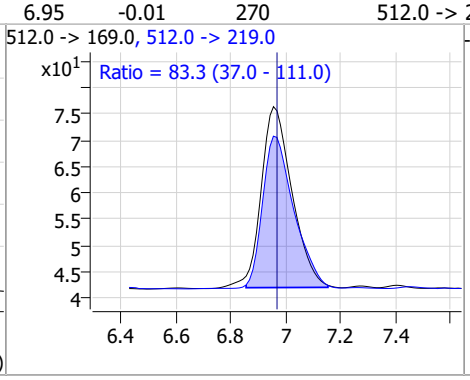


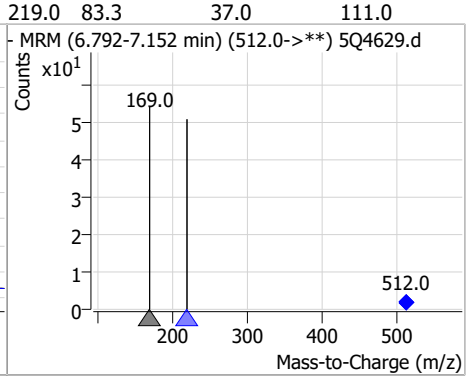


Perfluorinated Compounds by LC/MS/MS

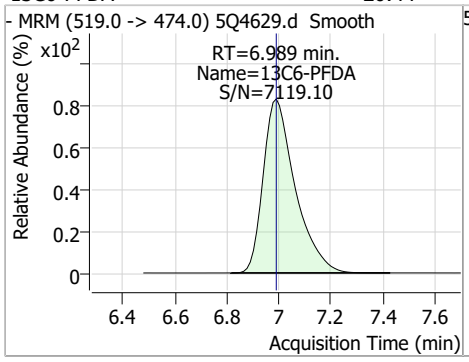
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.80	6.95	-0.01	270	512.0 -> 219.0	83.3	37.0	111.0

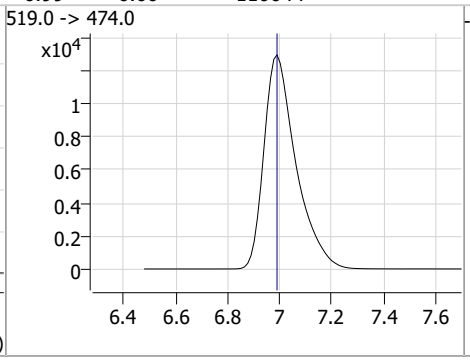


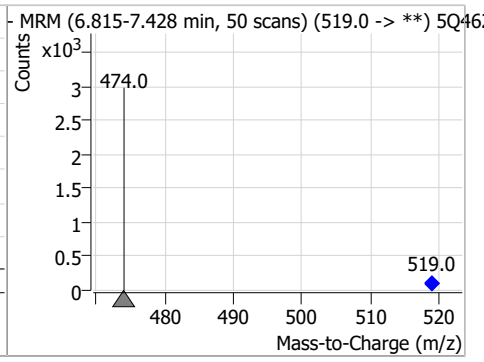




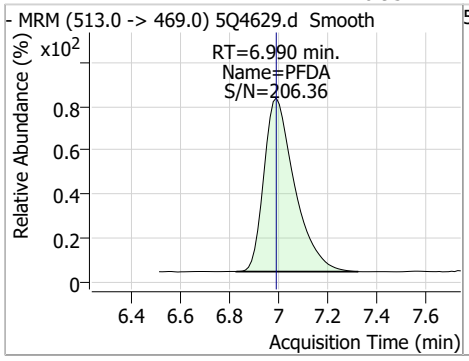
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.44	6.99	0.00	110044				

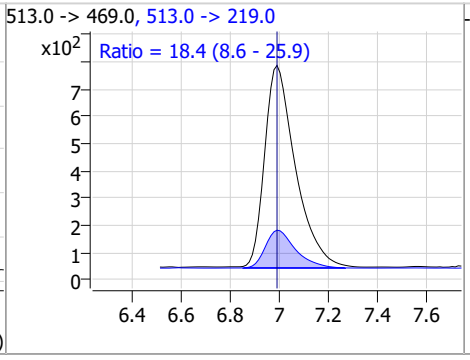


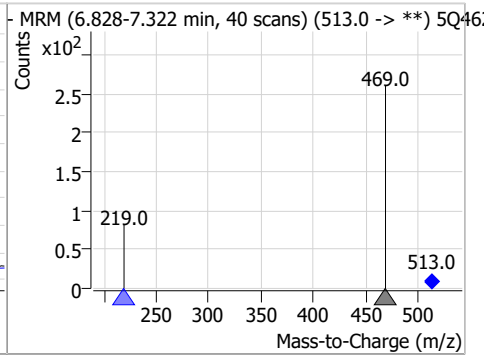




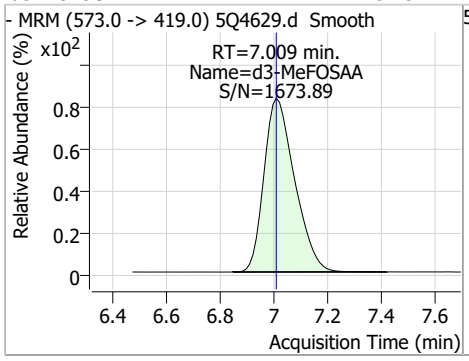
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	6.99	0.00	6391	513.0 -> 219.0	18.4	8.6	25.9

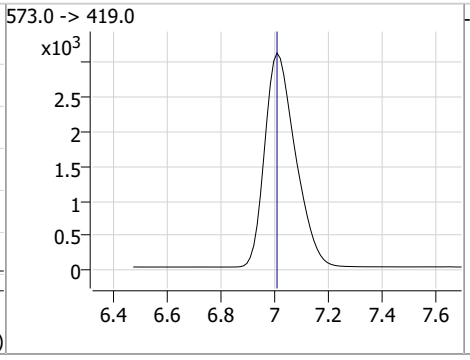


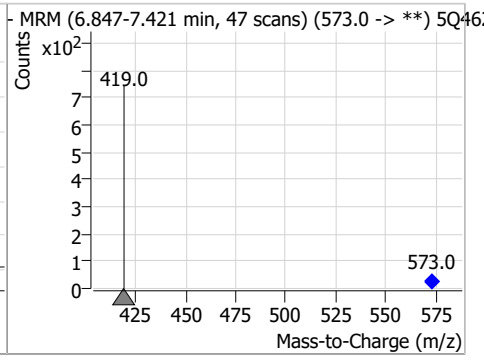




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	25.23	7.01	0.00	24523				

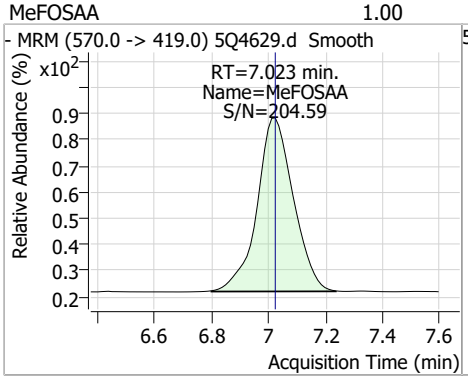


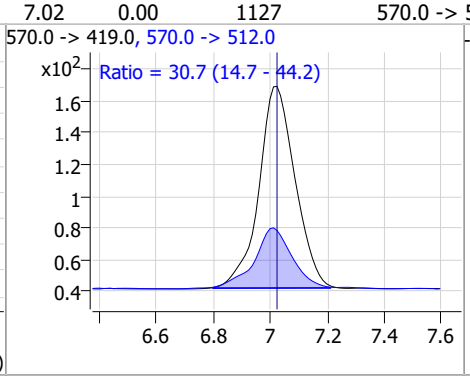


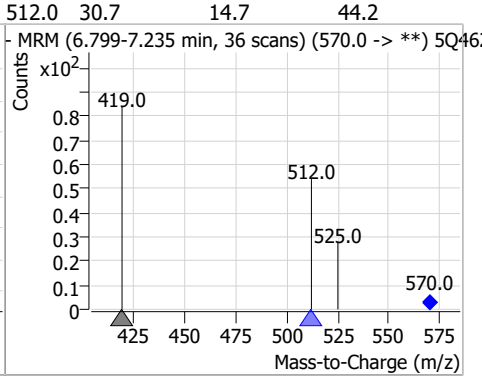


Perfluorinated Compounds by LC/MS/MS

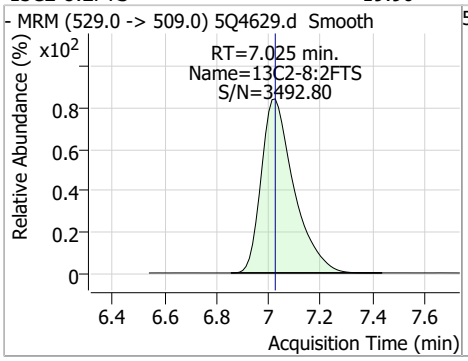
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.00	7.02	0.00	1127	570.0 -> 512.0	30.7	14.7	44.2

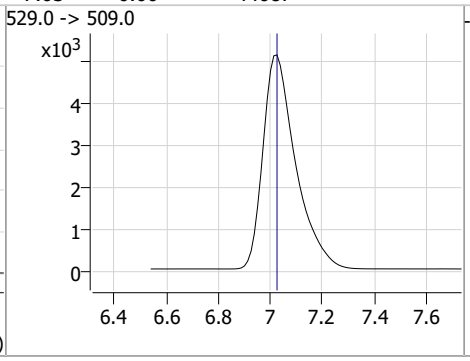


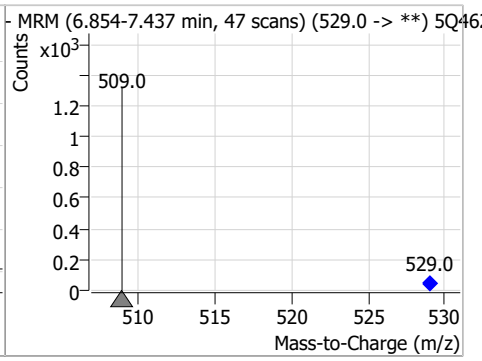




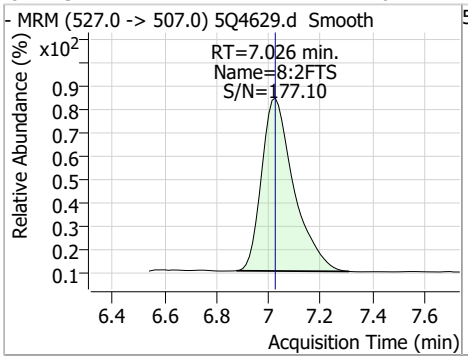
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.90	7.03	0.00	44687				

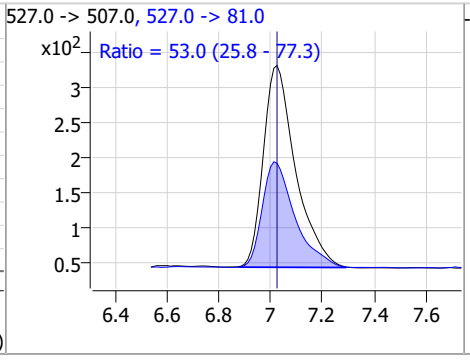


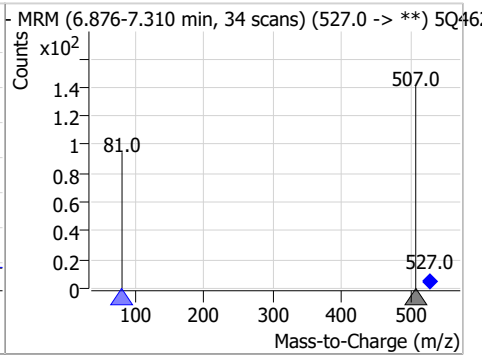




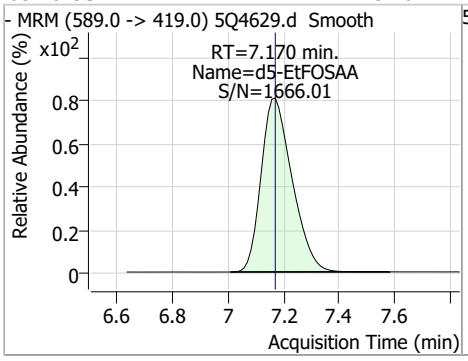
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	7.03	0.00	2481	527.0 -> 81.0	53.0	25.8	77.3

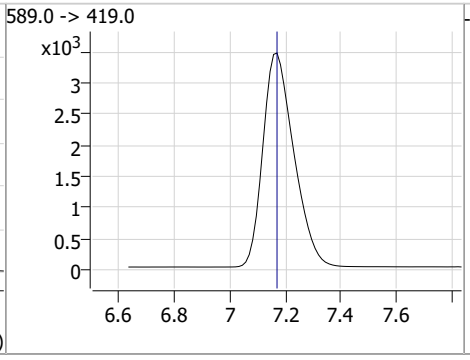


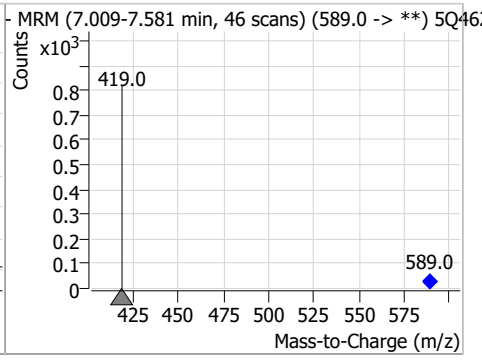




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.70	7.17	0.00	26576				

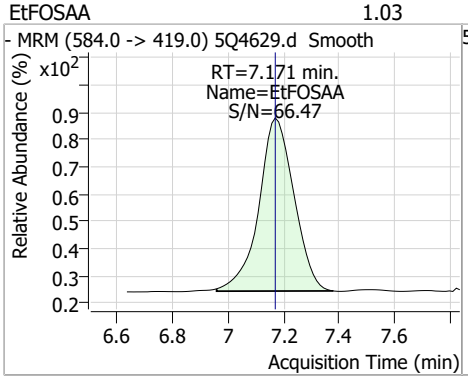


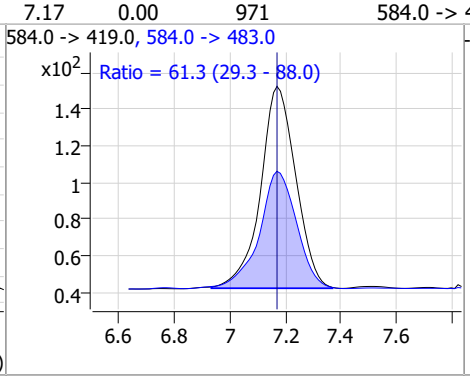


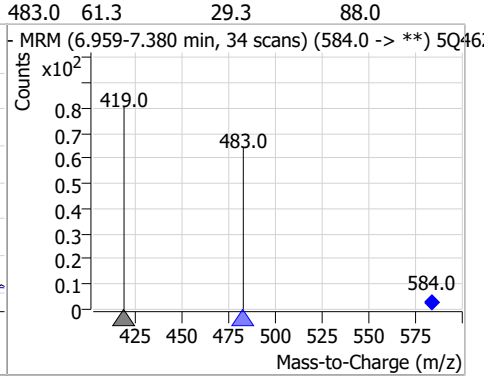


Perfluorinated Compounds by LC/MS/MS

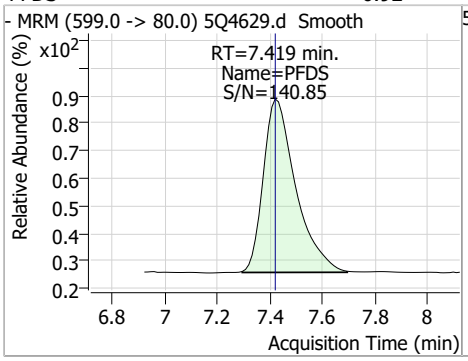
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.03	7.17	0.00	971	584.0 -> 483.0	61.3	29.3	88.0

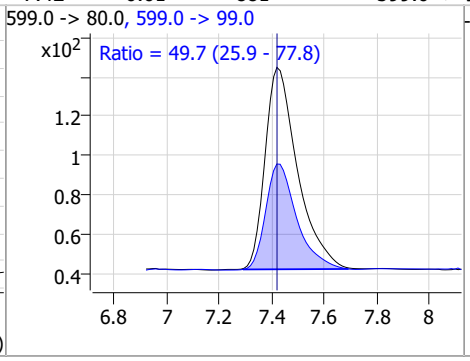


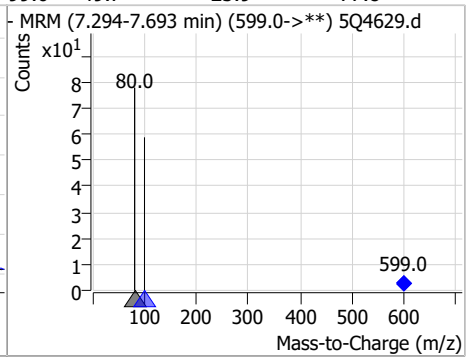




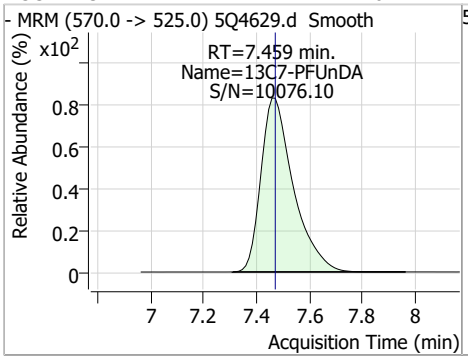
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.92	7.42	-0.01	881	599.0 -> 99.0	49.7	25.9	77.8

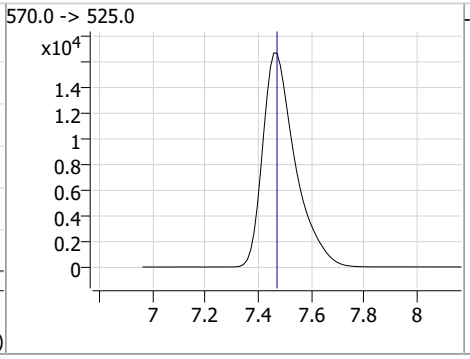


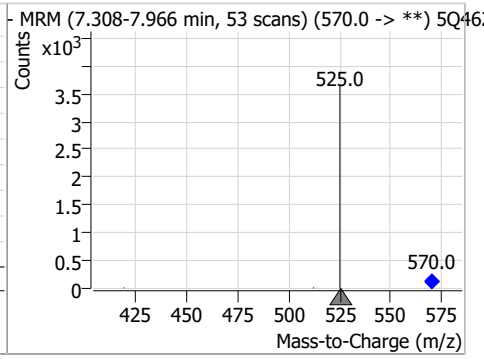




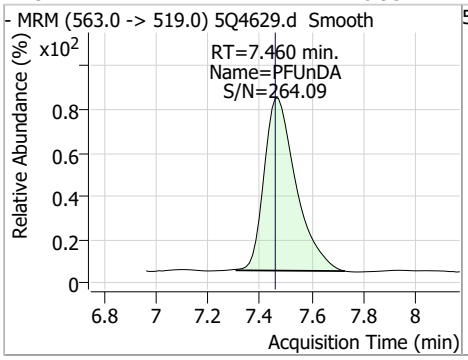
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.21	7.46	-0.01	142324				

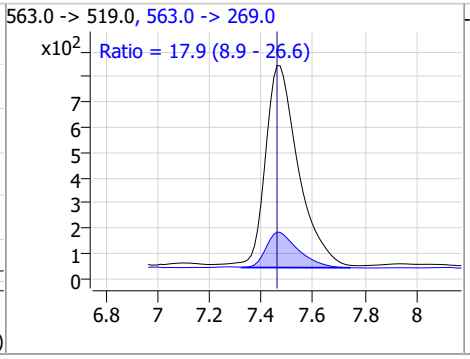


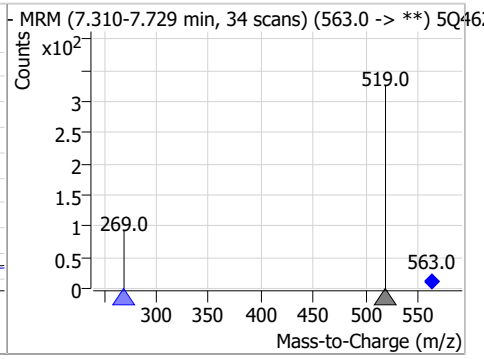




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.95	7.46	-0.01	6760	563.0 -> 269.0	17.9	8.9	26.6

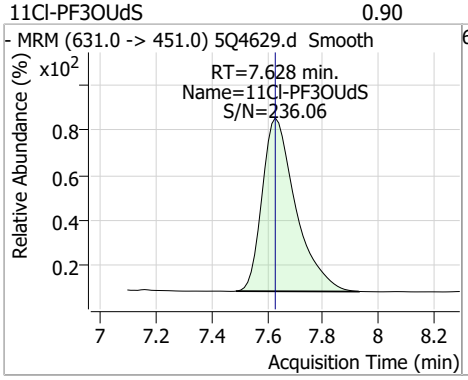


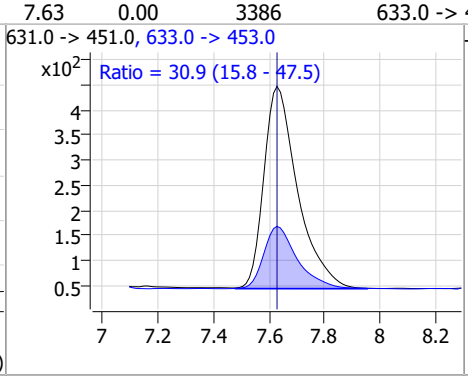


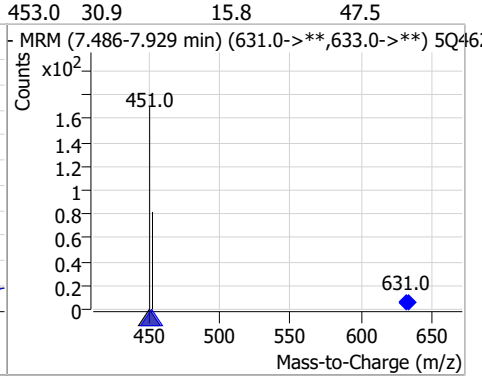


Perfluorinated Compounds by LC/MS/MS

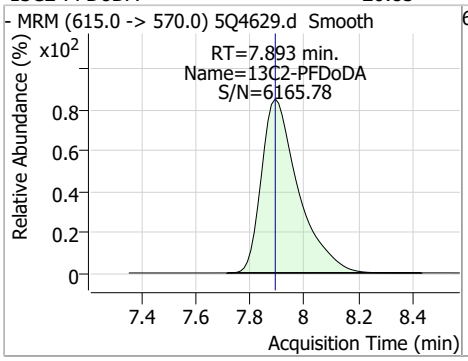
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.90	7.63	0.00	3386	633.0 -> 453.0	30.9	15.8	47.5

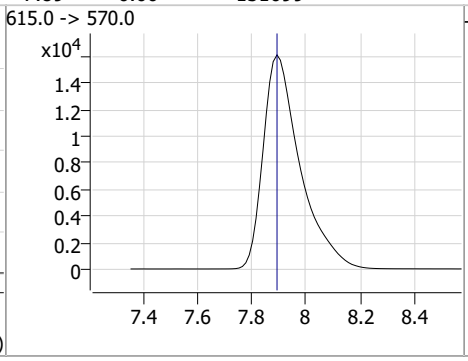


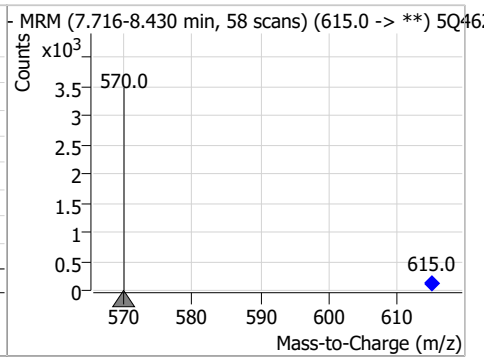




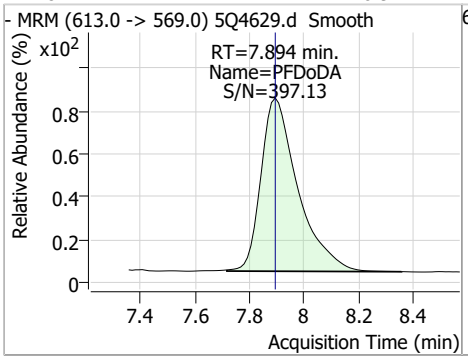
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.85	7.89	0.00	151099				

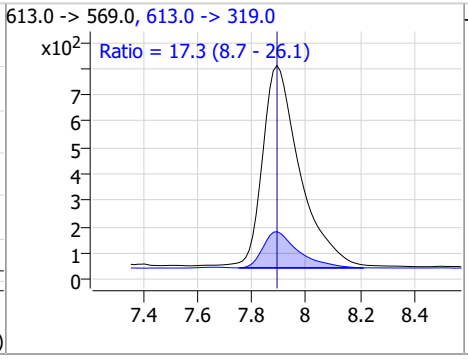


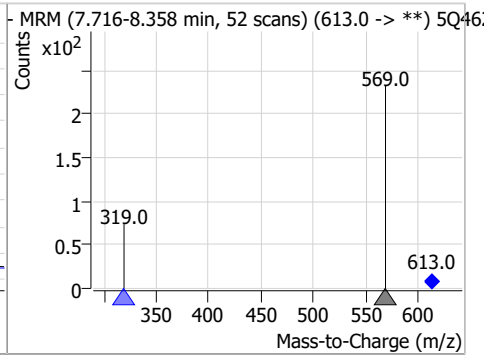




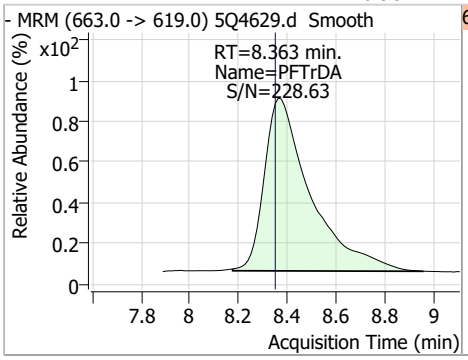
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.97	7.89	0.00	7186	613.0 -> 319.0	17.3	8.7	26.1

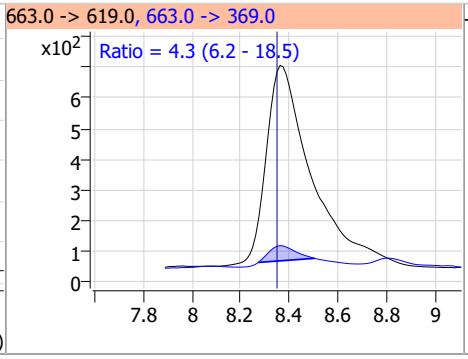


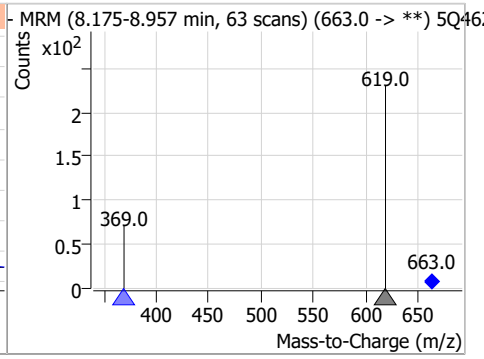




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.98	8.36	0.01	8641	663.0 -> 369.0	4.3	6.2	18.5

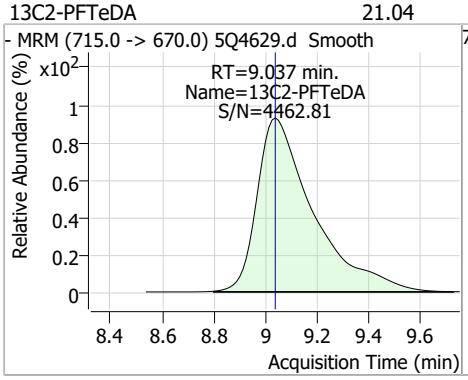


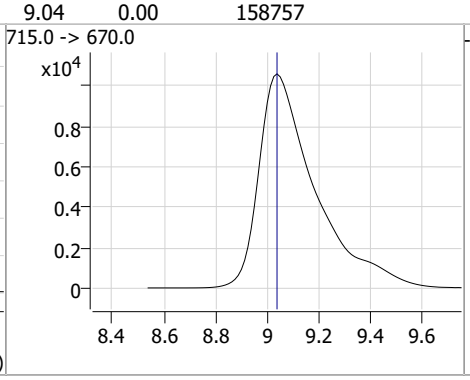


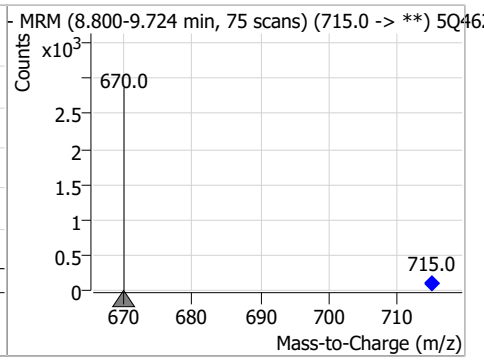


Perfluorinated Compounds by LC/MS/MS

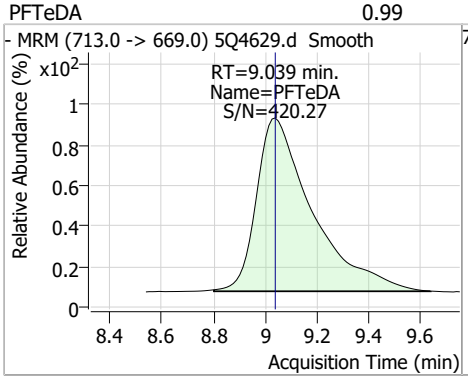
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.04	9.04	0.00	158757				

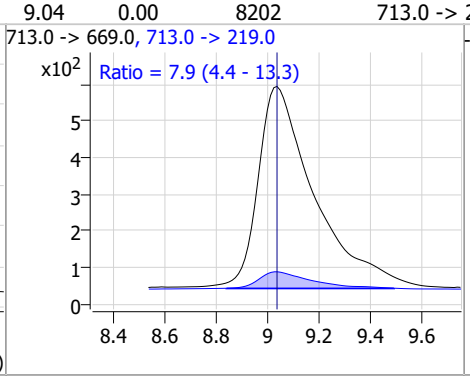


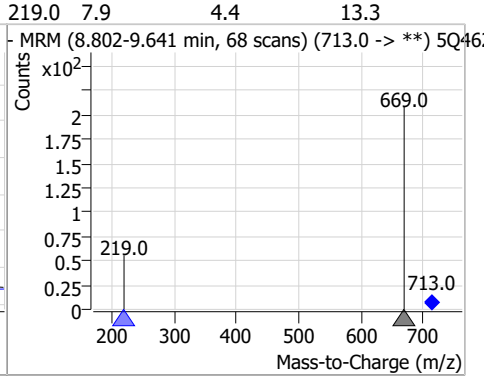




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.99	9.04	0.00	8202	713.0 -> 219.0	7.9	4.4	13.3







7.7.50

Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4629.D
Injection Time: 09/15/22 05:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4640.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:54:30 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

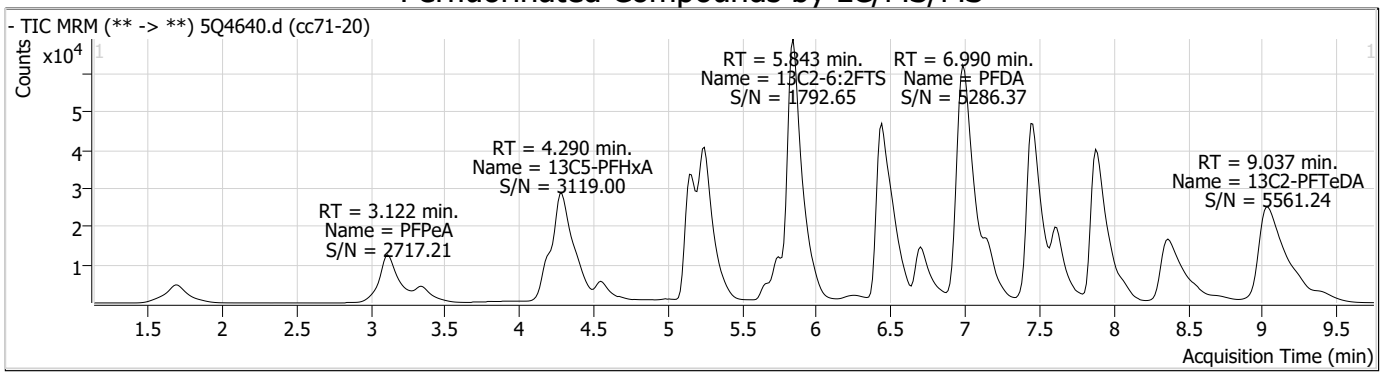
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	35784	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	57561	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	87074	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	82106	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	122618	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	135166	20.00 µg/L	-0.012
M6-PFDA	6.989	519.0 -> 474.0	110506	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	143677	20.00 µg/L	-0.012
M2-PFDoDA	7.893	615.0 -> 570.0	150915	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	163522	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	22788	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6545	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6784	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	13142	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	29328	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	46284	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	47511	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	23707	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6147	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6004	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	26053	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	29328	19.97 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%	
13C2-6:2FTS	5.843	429.0 -> 409.0	46284	20.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C2-8:2FTS	7.013	529.0 -> 509.0	47511	21.15 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%	
13C2-PFDoDA	7.893	615.0 -> 570.0	150915	20.82 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C2-PFTeDA	9.037	715.0 -> 670.0	163522	21.67 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%	
13C3-PFBS	3.349	302.0 -> 99.0	6545	20.09 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	6784	19.89 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C4-PFBA	1.687	217.0 -> 172.0	35784	20.02 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C4-PFHpA	5.163	367.0 -> 322.0	82106	20.11 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C5-PFHxA	4.290	318.0 -> 273.0	87074	19.92 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%	
13C5-PFPeA	3.119	268.0 -> 223.0	57561	19.81 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C6-PFDA	6.989	519.0 -> 474.0	110506	20.53 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

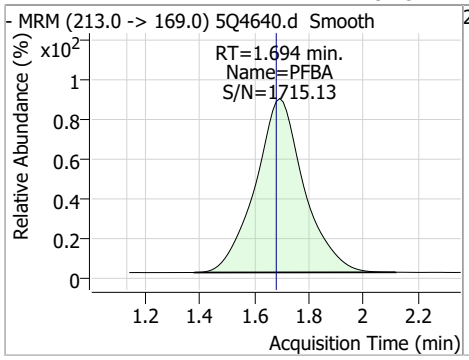
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%			
13C7-PFUnDA	7.459	570.0 -> 525.0	143677	20.40	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%			
13C8-FOSA	6.517	506.0 -> 78.0	22788	20.08	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-PFOA	5.857	421.0 -> 376.0	122618	20.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%			
13C8-PFOS	6.428	507.0 -> 99.0	13142	20.13	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%			
13C9-PFNA	6.443	472.0 -> 427.0	135166	20.58	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	23707	24.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	6147	18.31	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	6004	19.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	26053	23.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.2%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	33010	20.10	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	50086	20.40	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	50654	20.00	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	19848	21.53	µg/L		97
FOSA	6.519	498.0 -> 78.0	23117	19.72	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	21485	19.79	µg/L		97
PFBA	1.694	213.0 -> 169.0	16646	19.75	µg/L		100
PFBS	3.354	299.0 -> 80.0	19048	19.38	µg/L		99
PFDA	6.990	513.0 -> 469.0	134247	19.78	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	146244	19.76	µg/L		98
PFDS	7.419	599.0 -> 80.0	18001	18.57	µg/L		99
PFHpA	5.164	363.0 -> 319.0	108517	20.12	µg/L		99
PFHpS	5.855	449.0 -> 80.0	19728	19.97	µg/L		99
PFHxA	4.291	313.0 -> 269.0	82934	19.49	µg/L		100
PFHxS	5.195	399.0 -> 80.0	19815	19.67	µg/L	m	97
PFNA	6.444	463.0 -> 419.0	117674	19.43	µg/L		100
PFNS	6.949	549.0 -> 80.0	18829	19.41	µg/L		100
PFOA	5.858	413.0 -> 369.0	145758	19.60	µg/L		100
PFOS	6.429	499.0 -> 80.0	22289	19.26	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	56106	19.72	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14522	18.99	µg/L		98
PFTeDA	9.039	713.0 -> 669.0	159052	18.69	µg/L		99
PFTrDA	8.375	663.0 -> 619.0	169683	19.18	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	142862	19.91	µg/L		98
11Cl-PF3OUdS	7.628	631.0 -> 451.0	71162	18.98	µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	69207	18.12	µg/L		100
ADONA	5.261	377.0 -> 251.0	137456	19.71	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20861	20.11	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	6300	19.48	µg/L		90
4-PFECHS	5.753	461.0 -> 381.0	41333	18.73	µg/L		99
FBSA	4.343	298.0 -> 78.0	29168	20.20	µg/L		100
FHxSA	5.674	398.0 -> 78.0	24012	19.25	µg/L		99

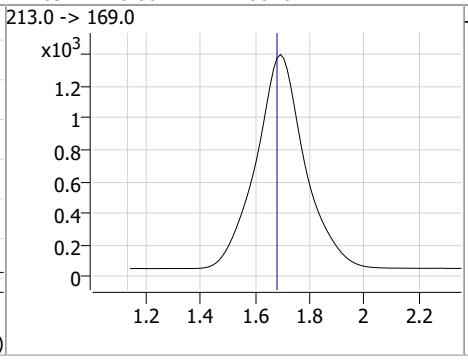
 # = Qualifier out of range, m = manually integrated, + = Area summed

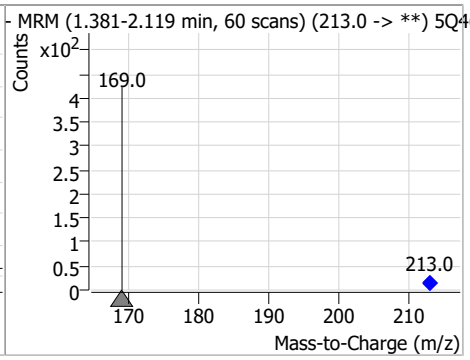
Perfluorinated Compounds by LC/MS/MS



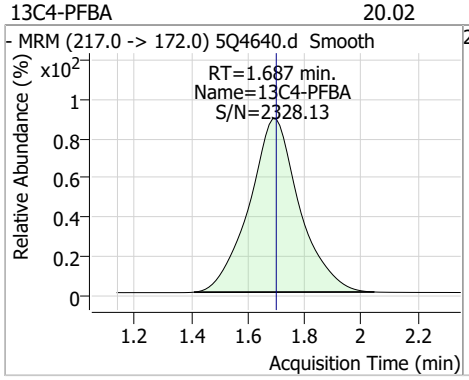
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.75	1.69	0.00	16646				

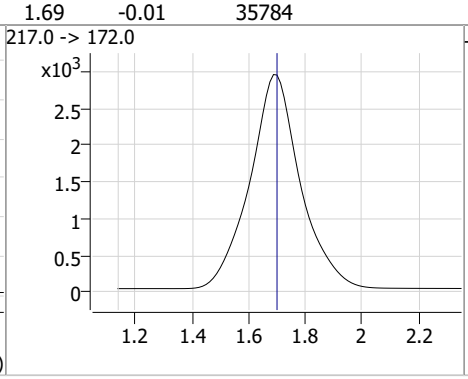


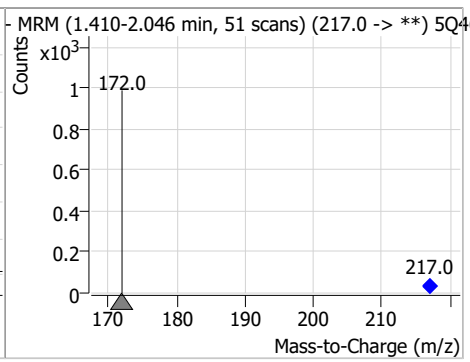




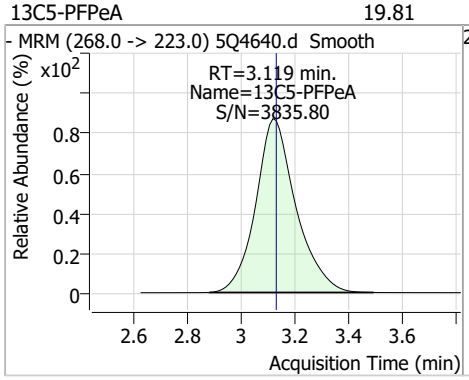
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.02	1.69	-0.01	35784				

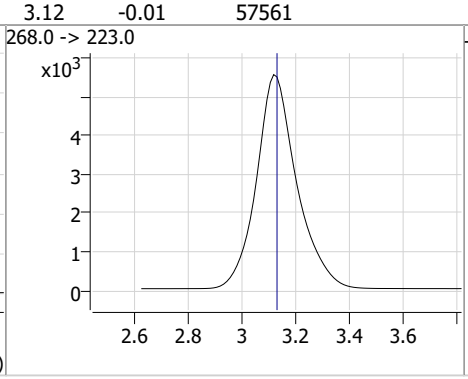


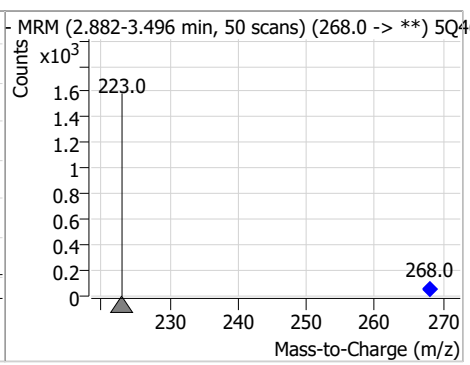




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.81	3.12	-0.01	57561				

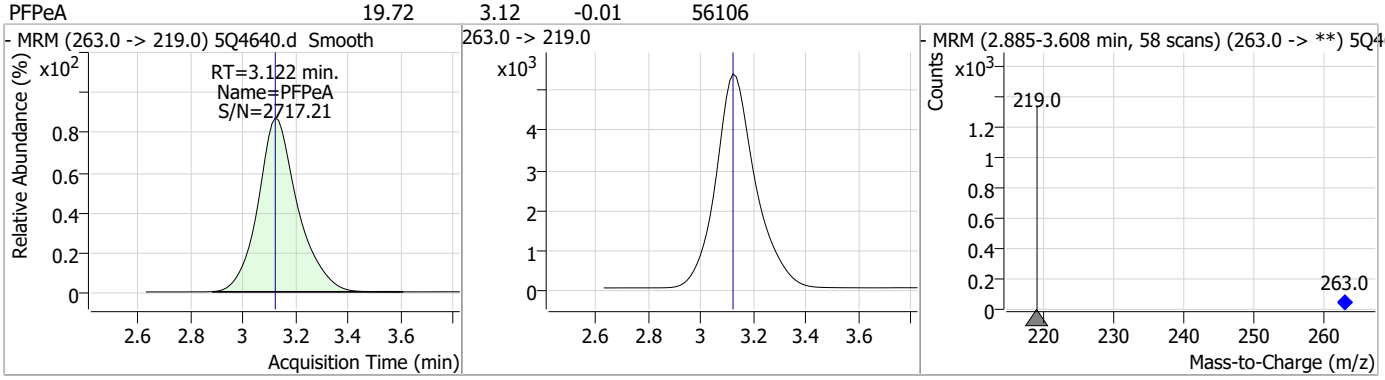




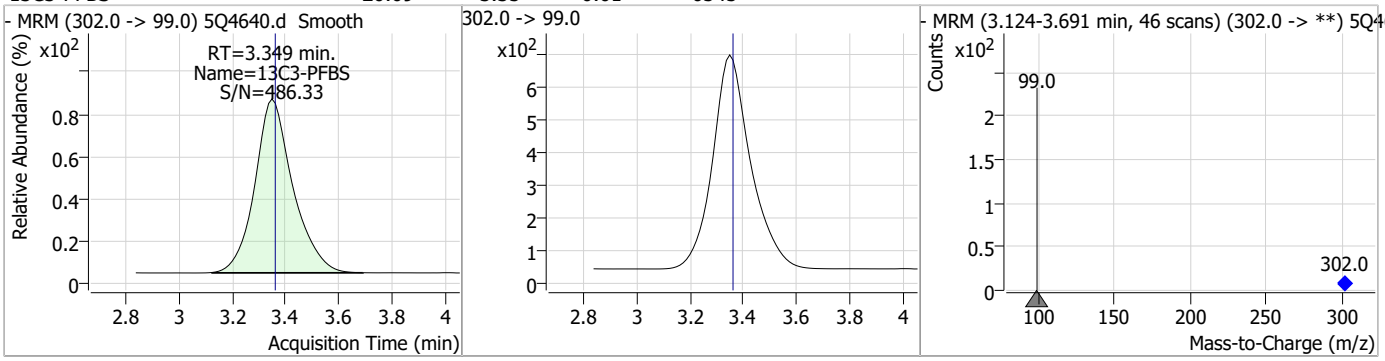


Perfluorinated Compounds by LC/MS/MS

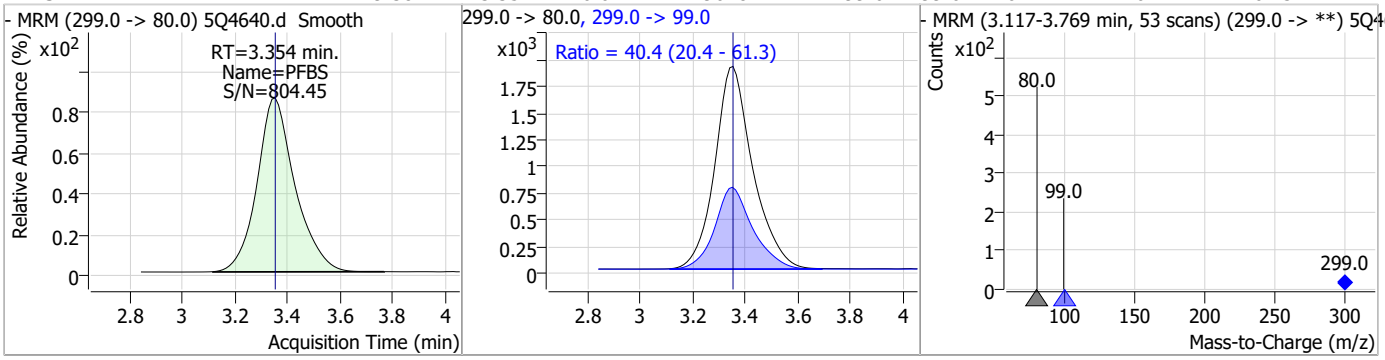
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.72	3.12	-0.01	56106				



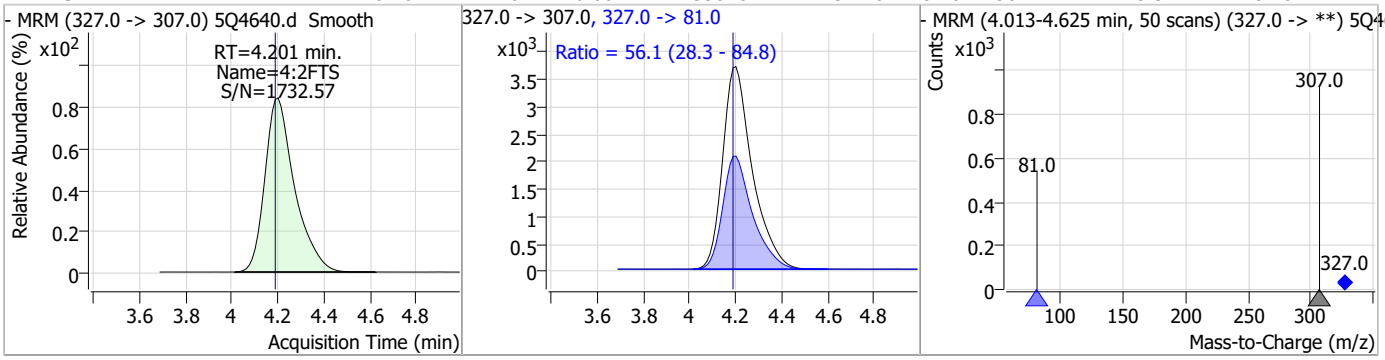
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.09	3.35	-0.01	6545				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.38	3.35	-0.01	19048	299.0 -> 99.0	40.4	20.4	61.3

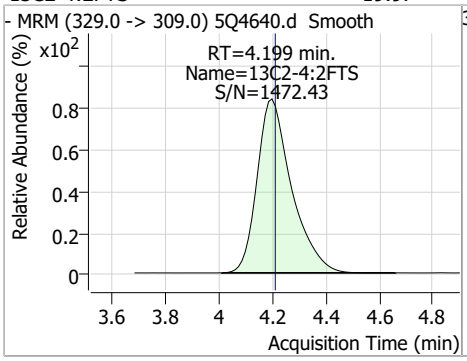


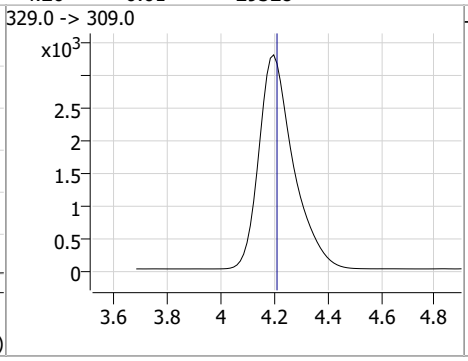
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.10	4.20	0.00	33010	327.0 -> 81.0	56.1	28.3	84.8

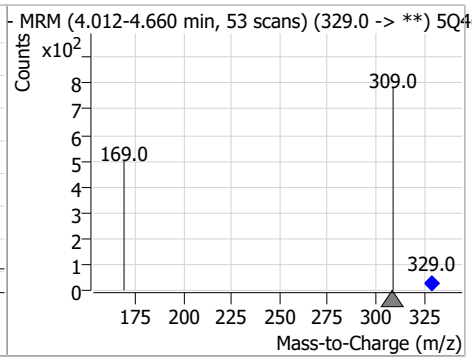


Perfluorinated Compounds by LC/MS/MS

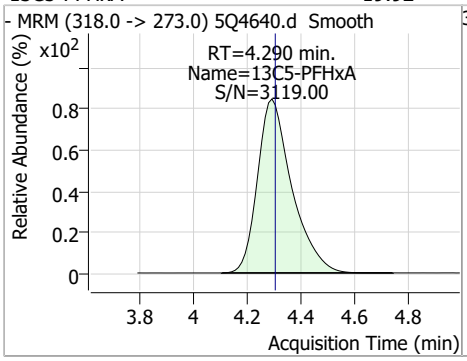
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.97	4.20	-0.01	29328				

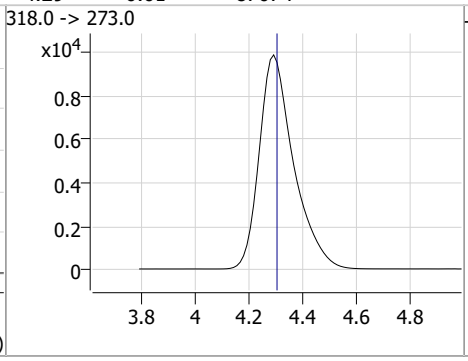


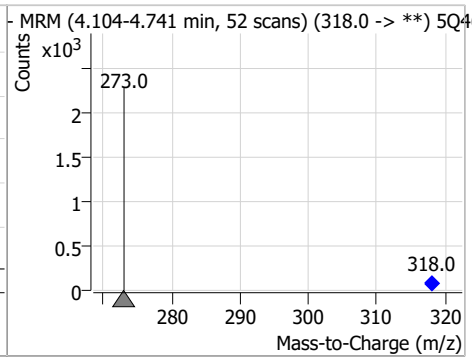




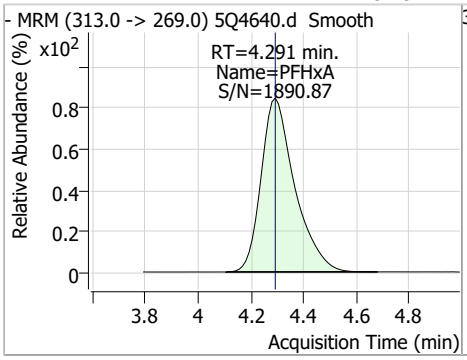
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.92	4.29	-0.01	87074				

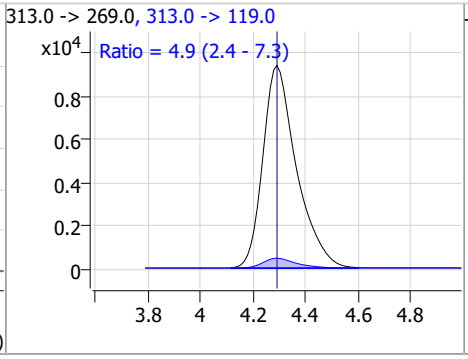


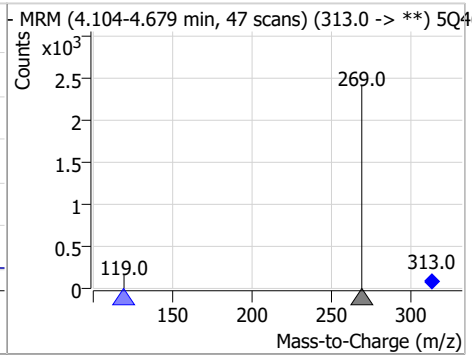




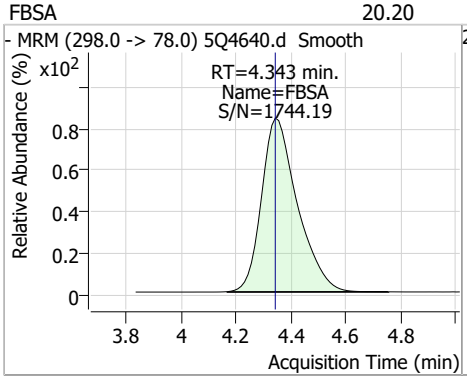
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.49	4.29	-0.01	82934	313.0 -> 119.0	4.9	2.4	7.3

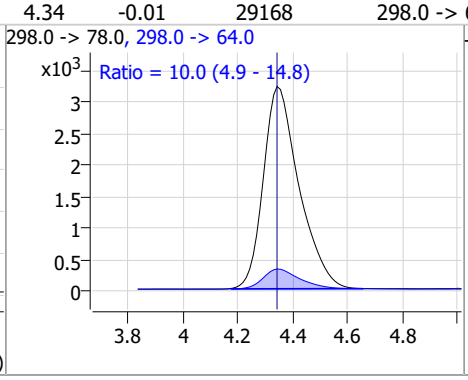


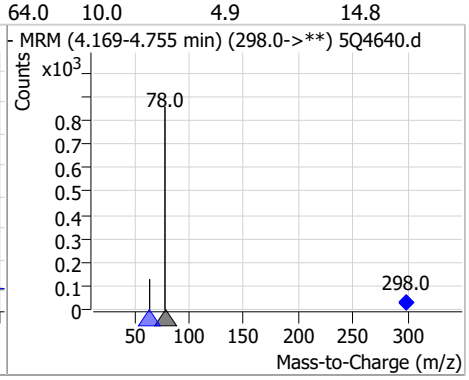




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.20	4.34	-0.01	29168	298.0 -> 64.0	10.0	4.9	14.8

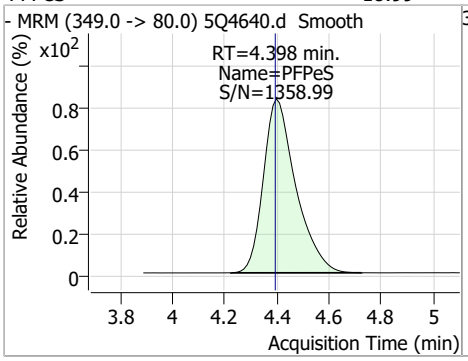


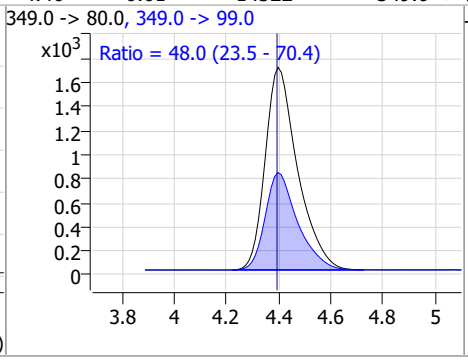


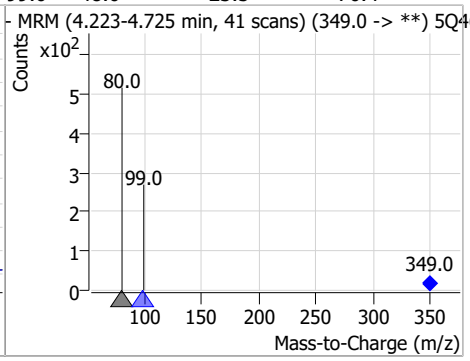


Perfluorinated Compounds by LC/MS/MS

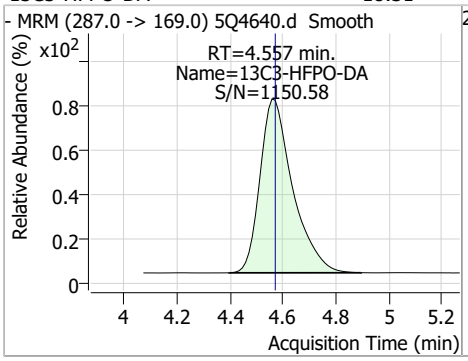
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.99	4.40	-0.01	14522	349.0 -> 99.0	48.0	23.5	70.4

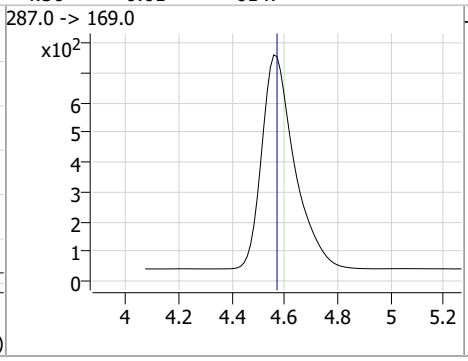


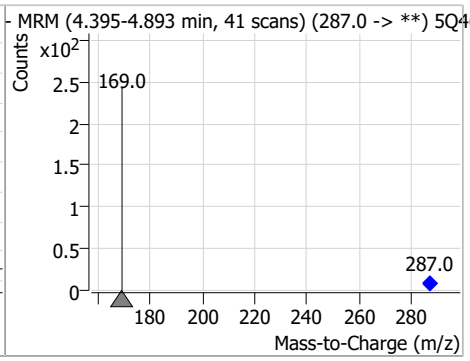




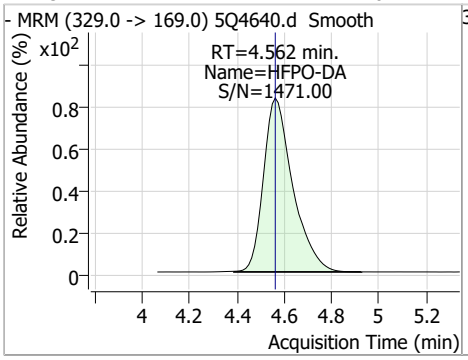
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.31	4.56	-0.01	6147				

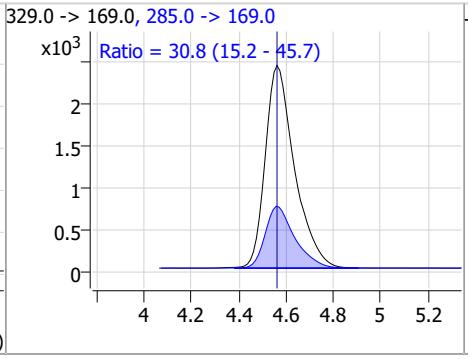


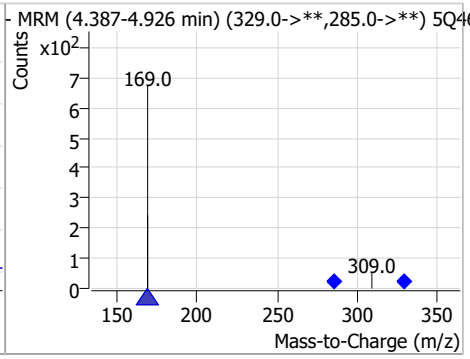




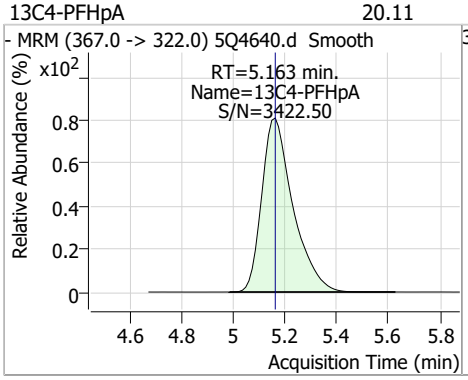
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.11	4.56	-0.01	20861	285.0 -> 169.0	30.8	15.2	45.7

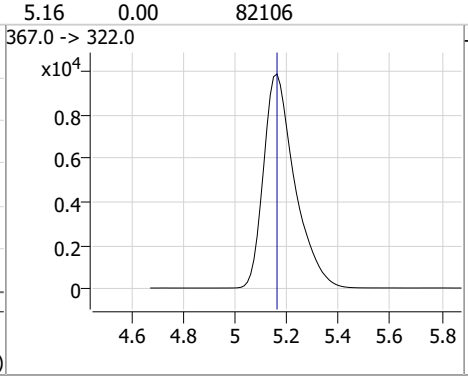


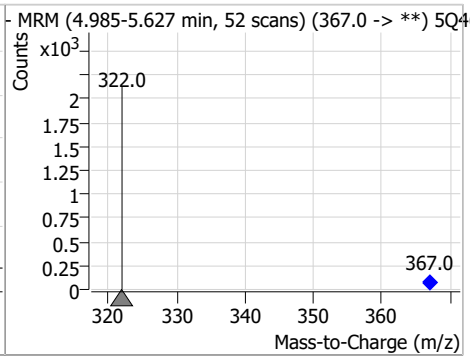




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.11	5.16	0.00	82106				

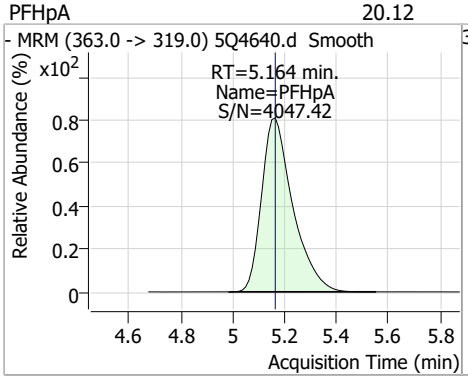


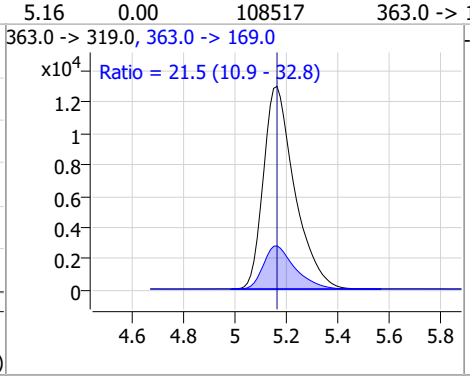


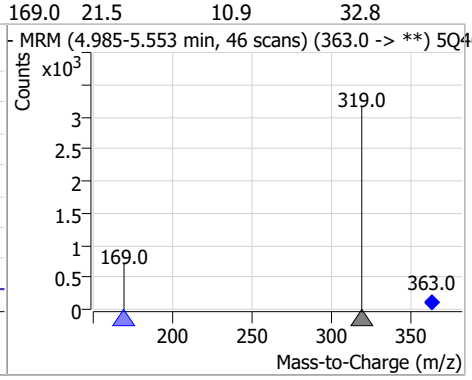


Perfluorinated Compounds by LC/MS/MS

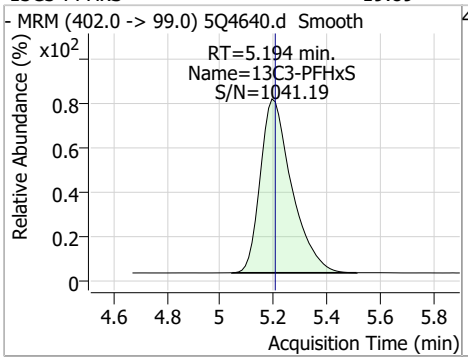
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.12	5.16	0.00	108517	363.0 -> 169.0	21.5	10.9	32.8

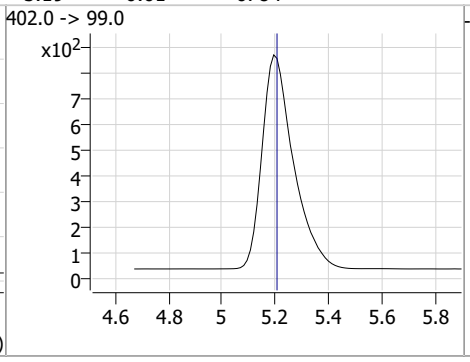


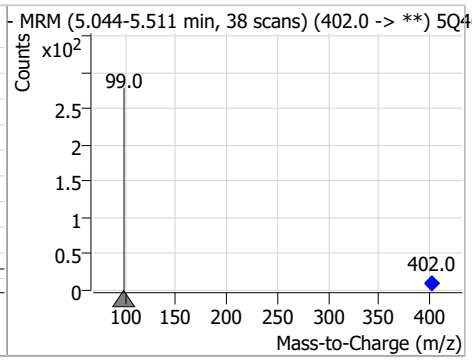




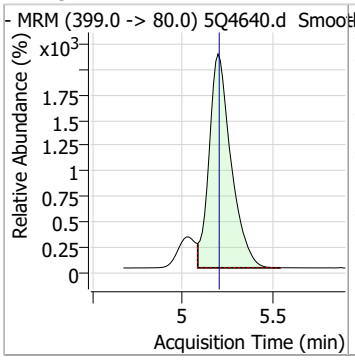
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.89	5.19	-0.01	6784				

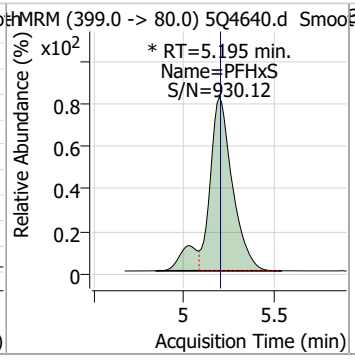


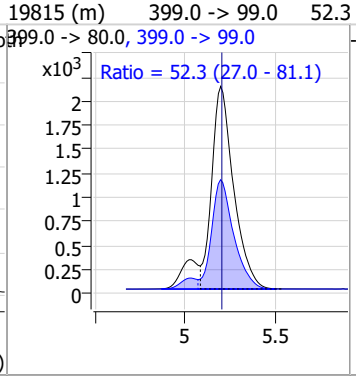


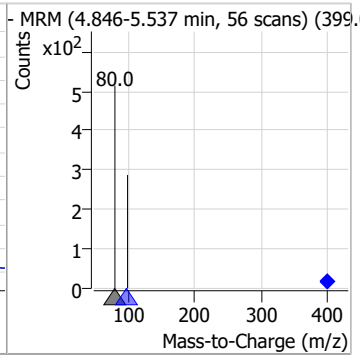


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.67	5.20	-0.01	19815 (m)	399.0 -> 99.0	52.3	27.0	81.1

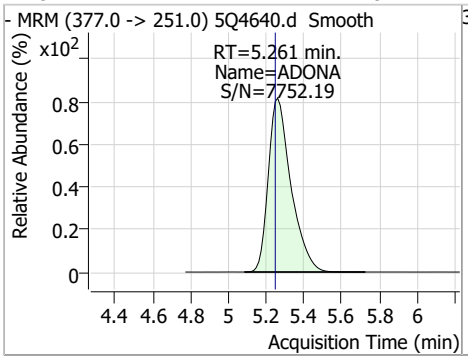


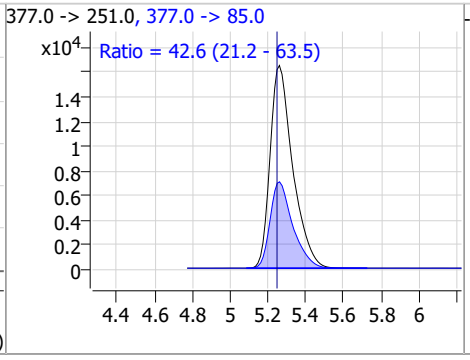


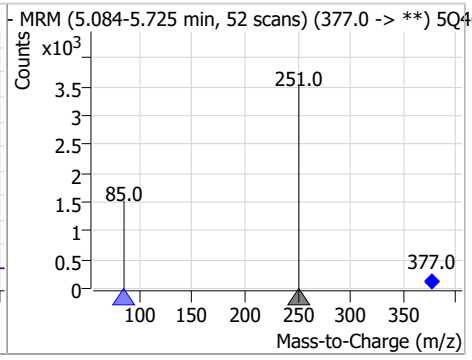




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.71	5.26	0.00	137456	377.0 -> 85.0	42.6	21.2	63.5

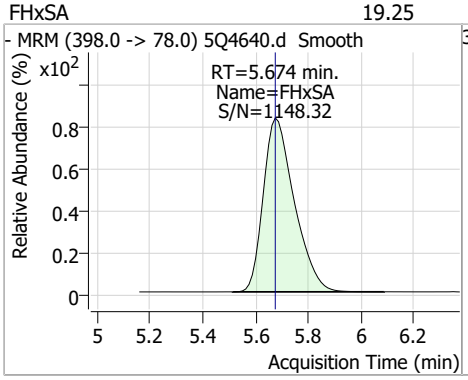


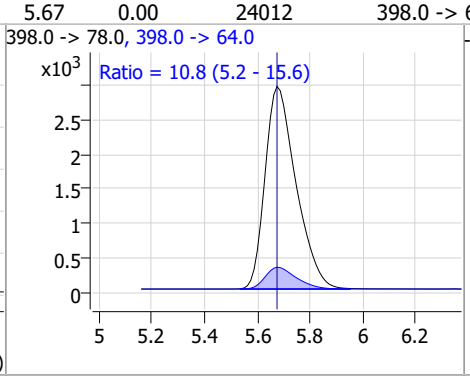


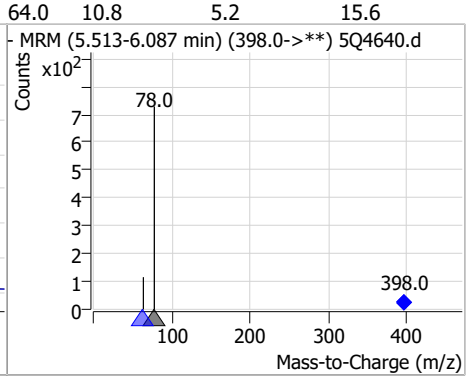


Perfluorinated Compounds by LC/MS/MS

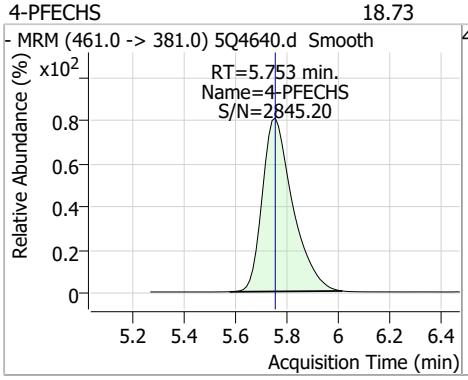
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.25	5.67	0.00	24012	398.0 -> 64.0	10.8	5.2	15.6

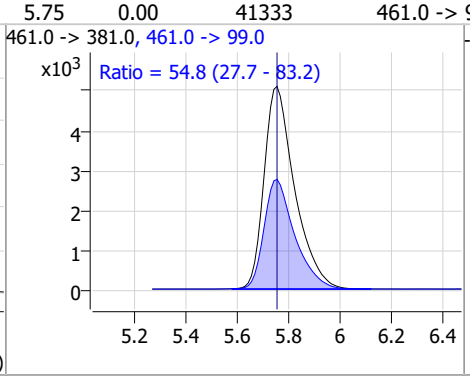


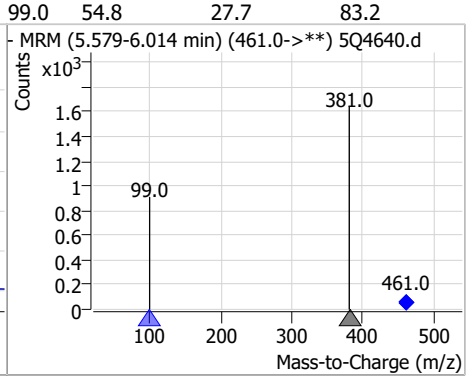




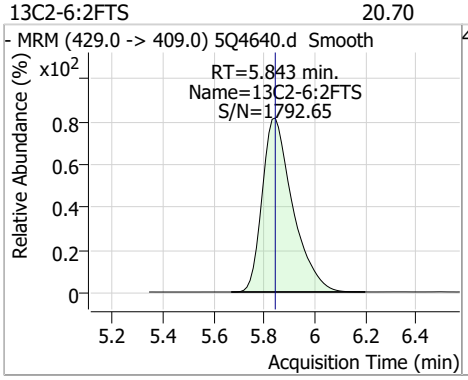
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.73	5.75	0.00	41333	461.0 -> 99.0	54.8	27.7	83.2

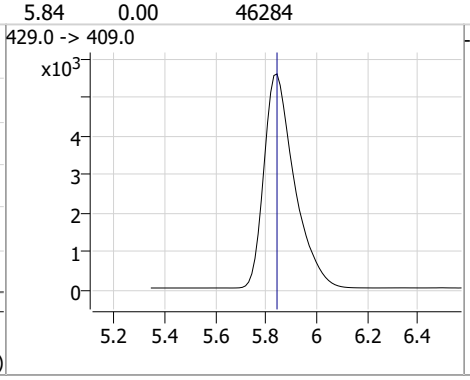


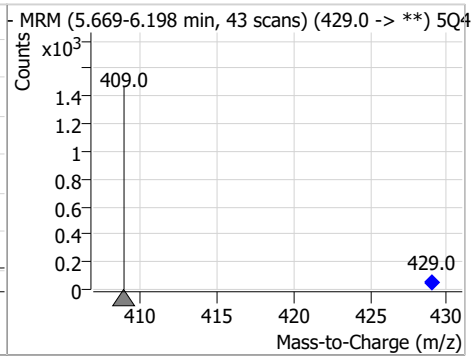




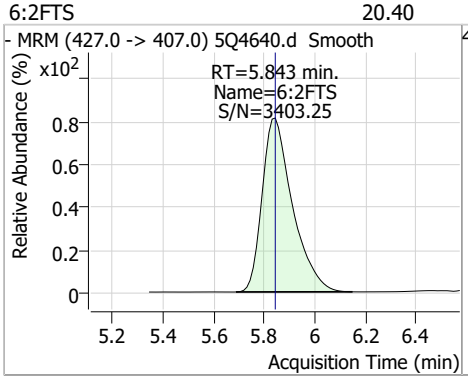
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.70	5.84	0.00	46284				

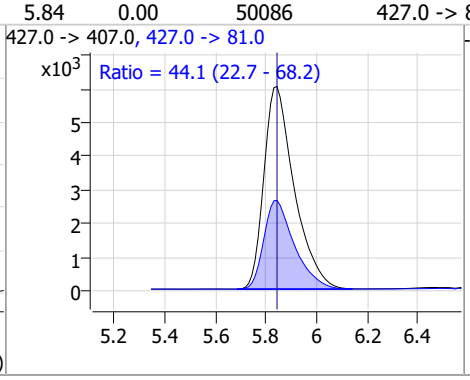


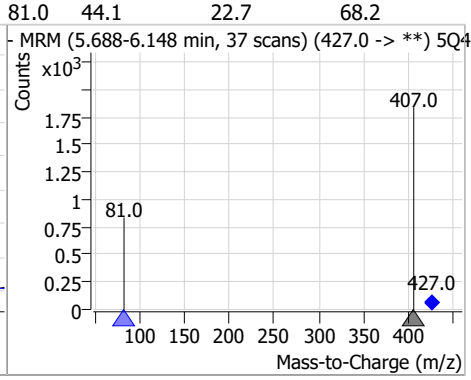




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.40	5.84	0.00	50086	427.0 -> 81.0	44.1	22.7	68.2

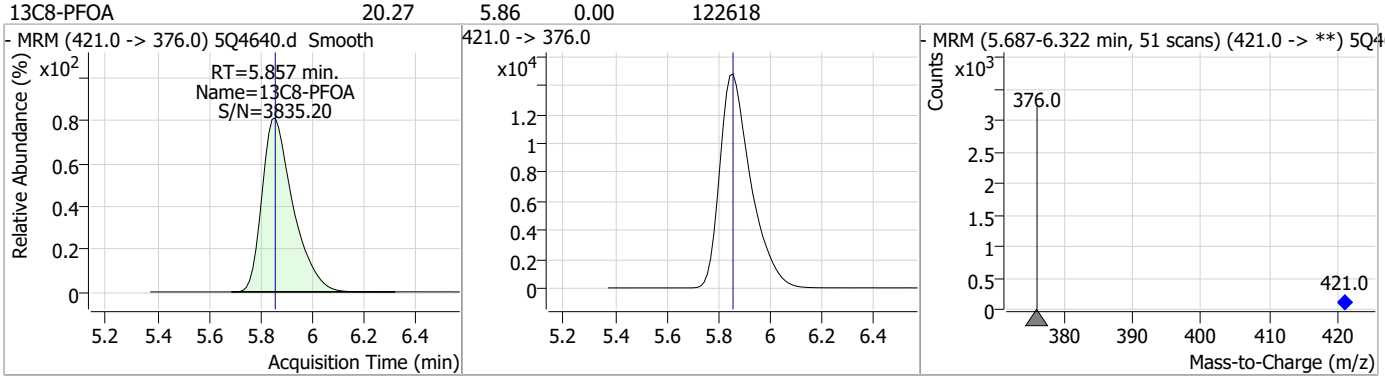




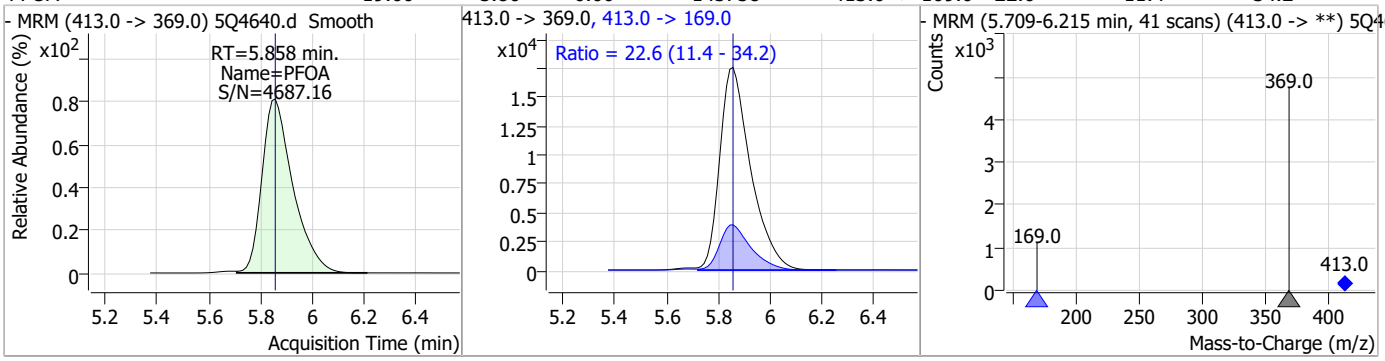


Perfluorinated Compounds by LC/MS/MS

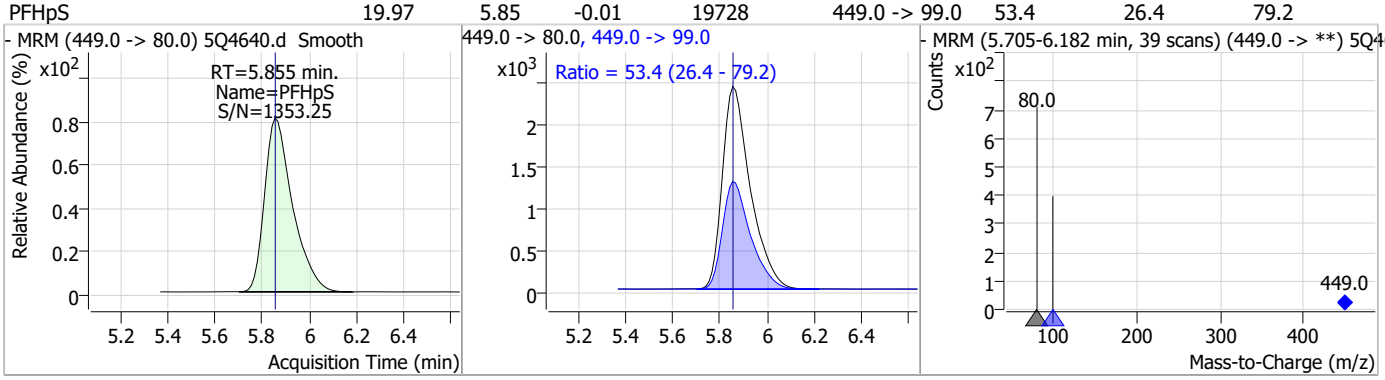
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.27	5.86	0.00	122618				



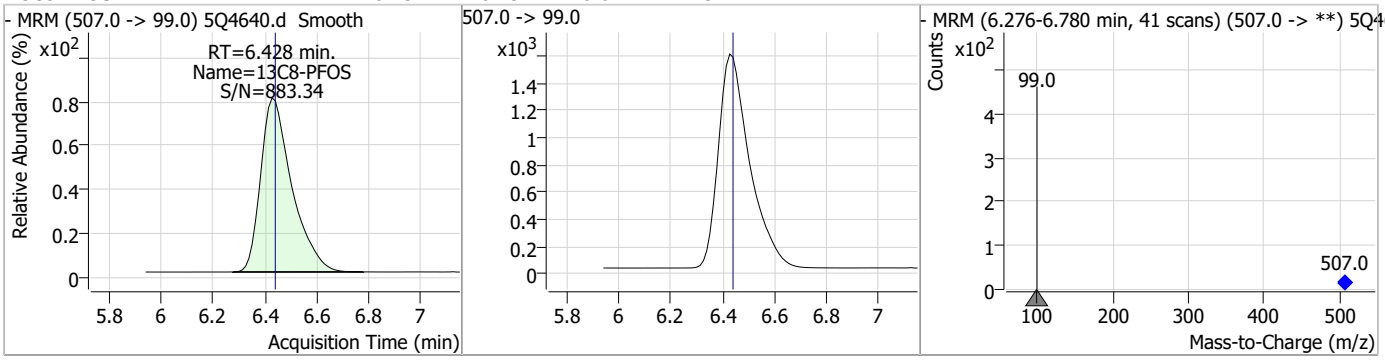
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.60	5.86	0.00	145758	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.97	5.85	-0.01	19728	449.0 -> 99.0	53.4	26.4	79.2

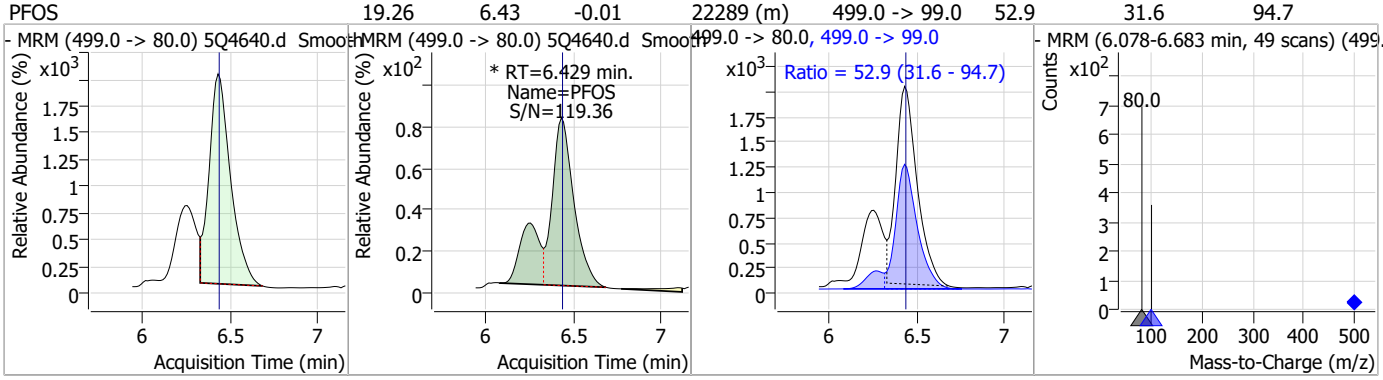


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.13	6.43	-0.01	13142				

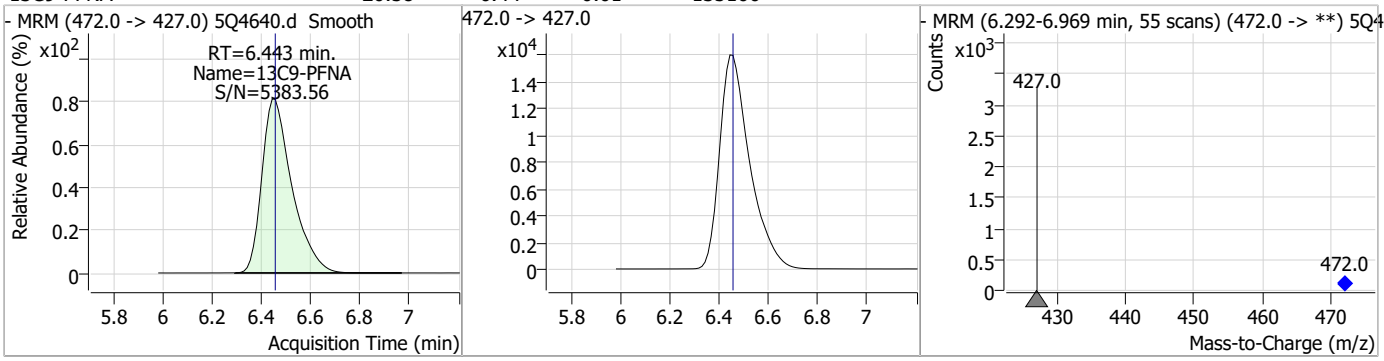


Perfluorinated Compounds by LC/MS/MS

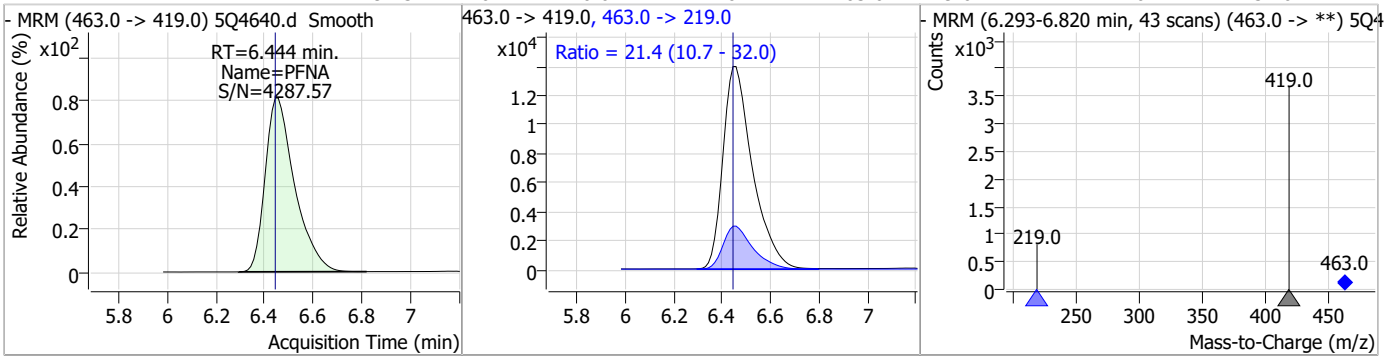
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.26	6.43	-0.01	22289 (m)	499.0 -> 99.0	52.9	31.6	94.7



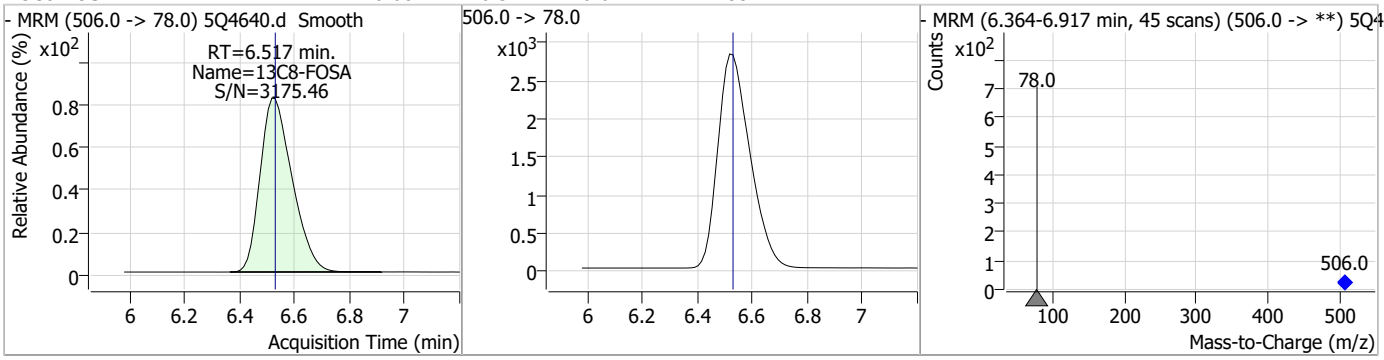
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.58	6.44	-0.01	135166				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.43	6.44	-0.01	117674	463.0 -> 219.0	21.4	10.7	32.0

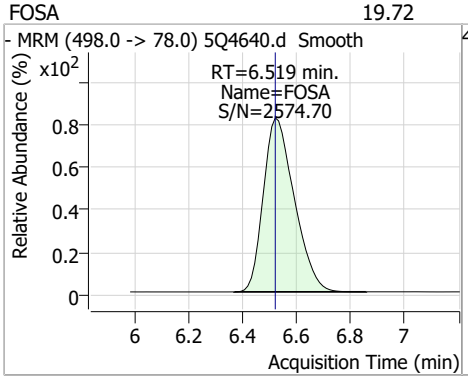


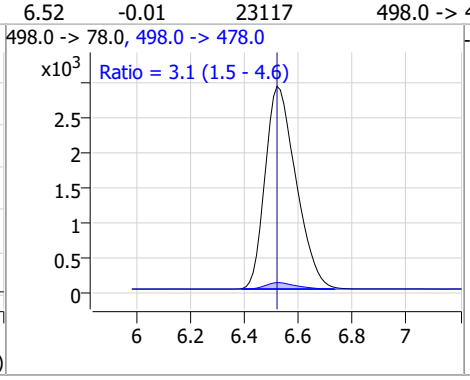
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.08	6.52	-0.01	22788				

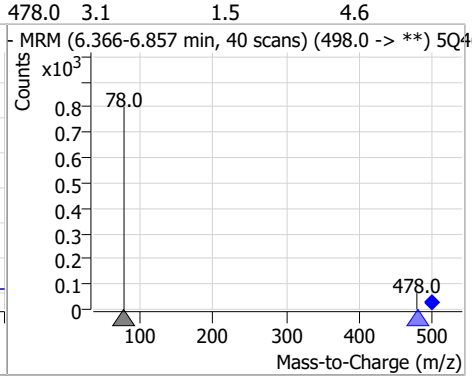


Perfluorinated Compounds by LC/MS/MS

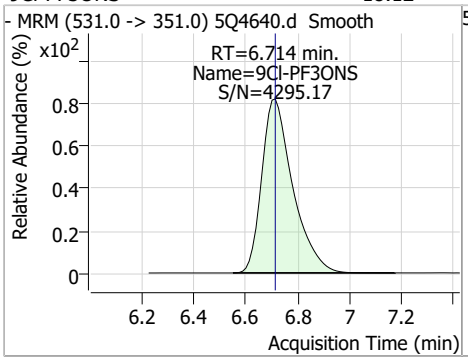
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.72	6.52	-0.01	23117	498.0 -> 478.0	3.1	1.5	4.6

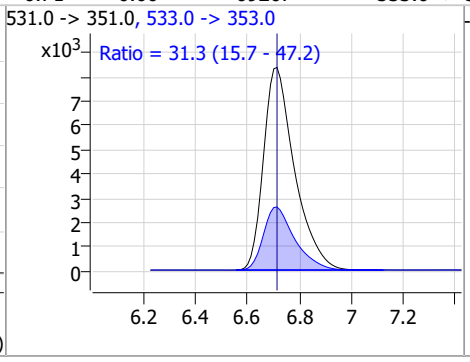


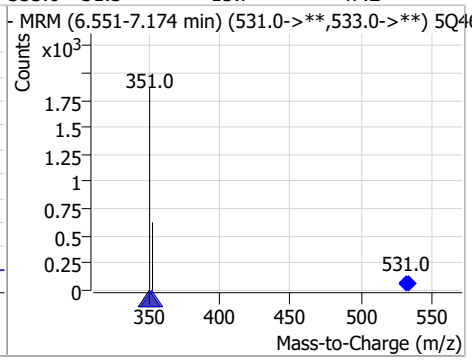




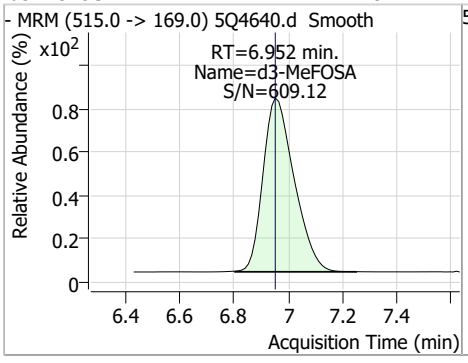
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.12	6.71	0.00	69207	533.0 -> 353.0	31.3	15.7	47.2

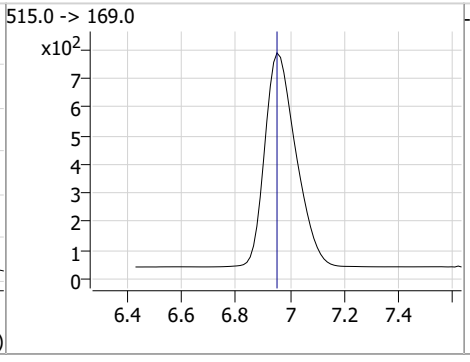


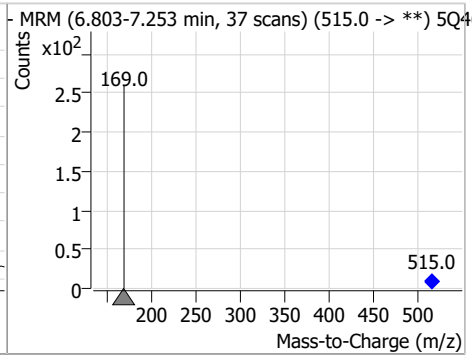




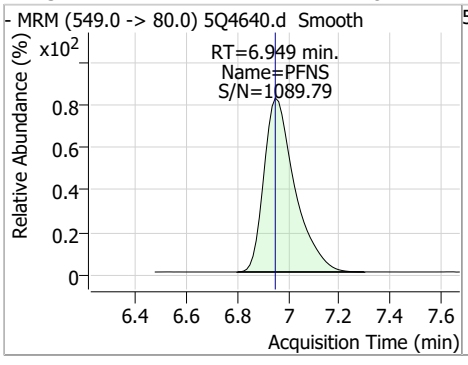
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.72	6.95	0.00	6004				

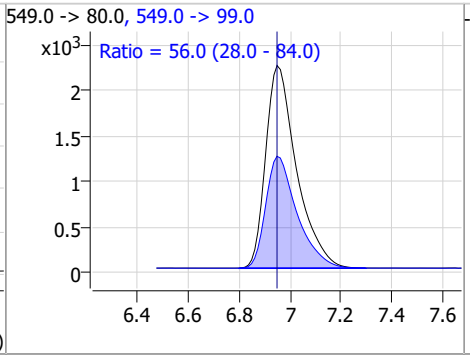


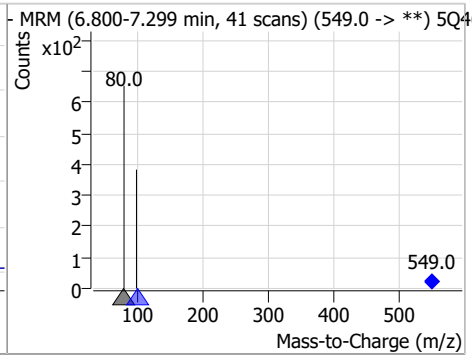




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.41	6.95	-0.01	18829	549.0 -> 99.0	56.0	28.0	84.0

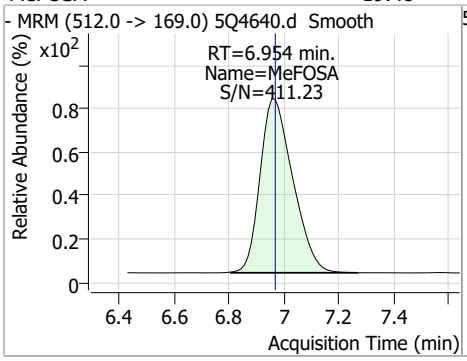


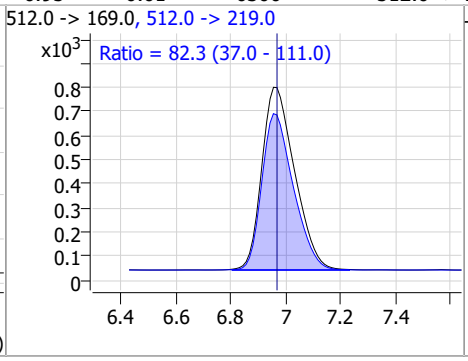


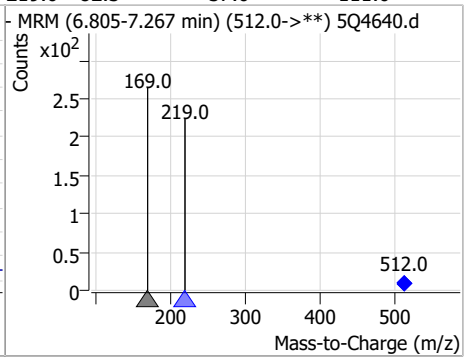


Perfluorinated Compounds by LC/MS/MS

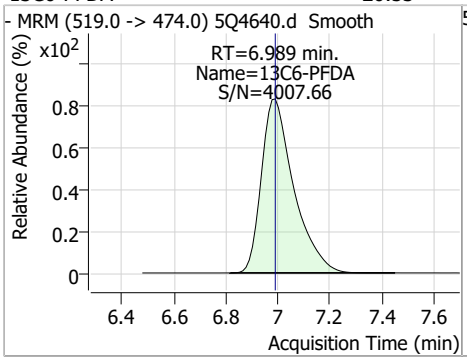
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.48	6.95	-0.01	6300	512.0 -> 219.0	82.3	37.0	111.0

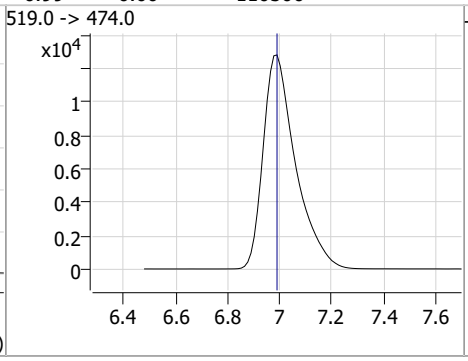


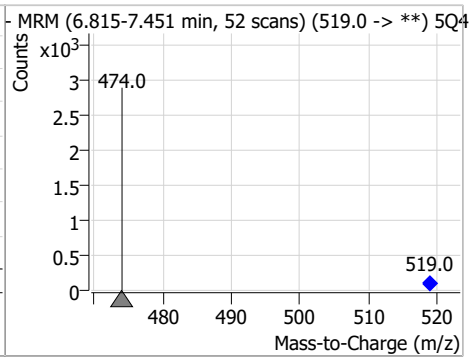




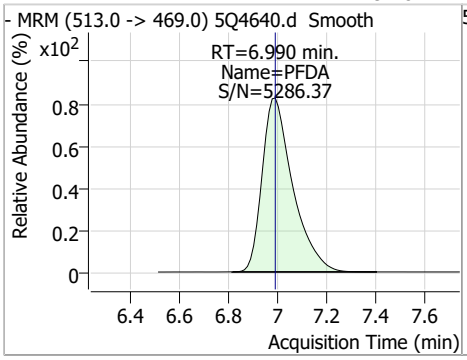
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.53	6.99	0.00	110506				

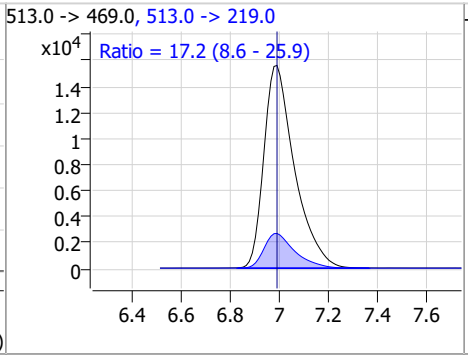


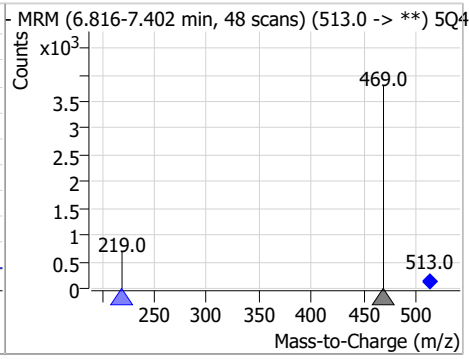




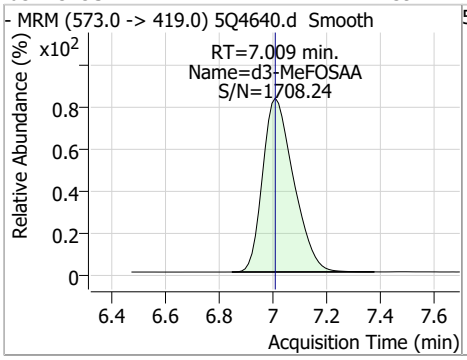
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.78	6.99	0.00	134247	513.0 -> 219.0	17.2	8.6	25.9

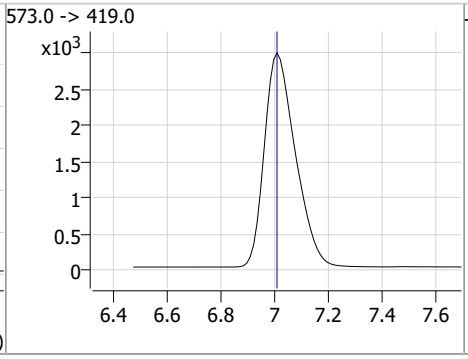


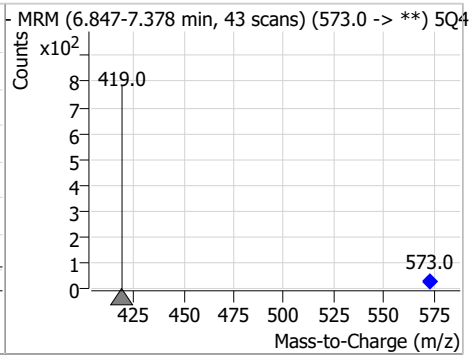




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.39	7.01	0.00	23707				

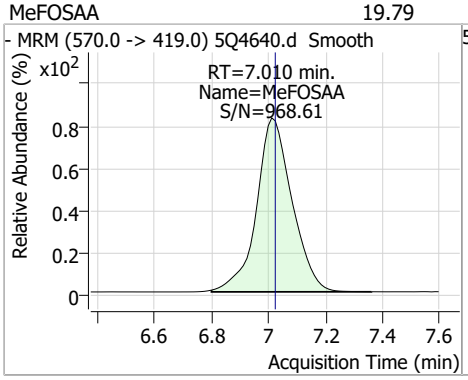


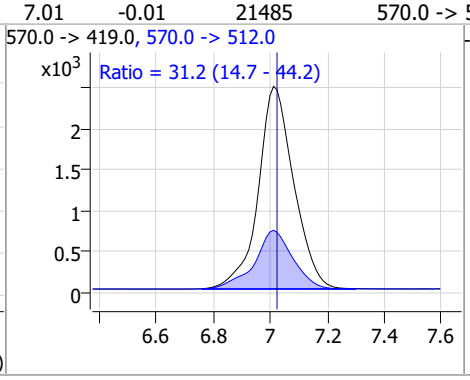


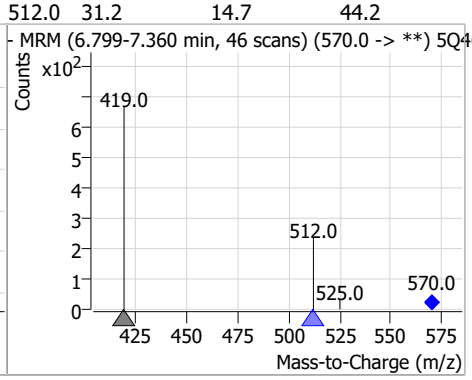


Perfluorinated Compounds by LC/MS/MS

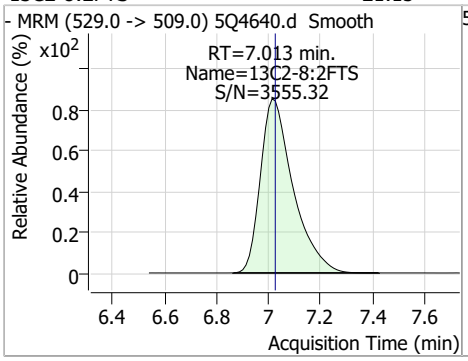
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.79	7.01	-0.01	21485	570.0 -> 512.0	31.2	14.7	44.2

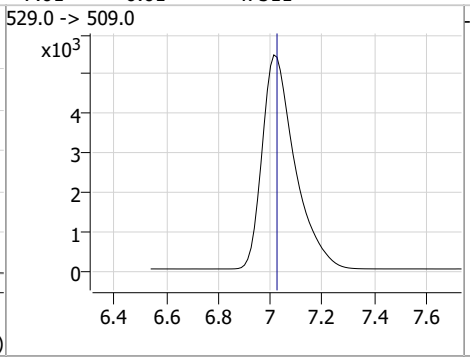


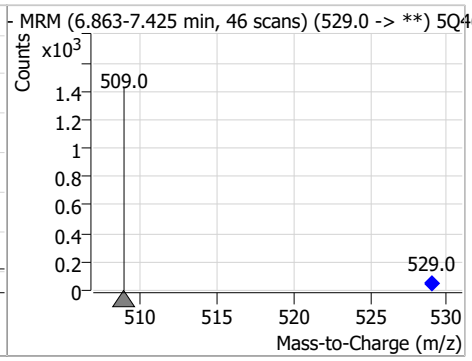




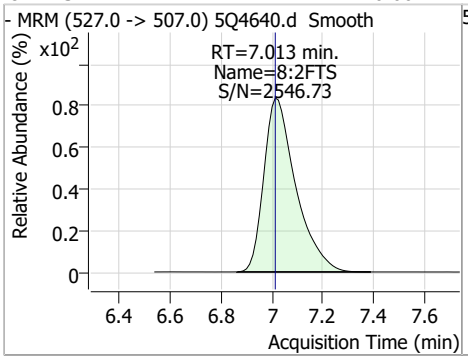
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.15	7.01	-0.01	47511				

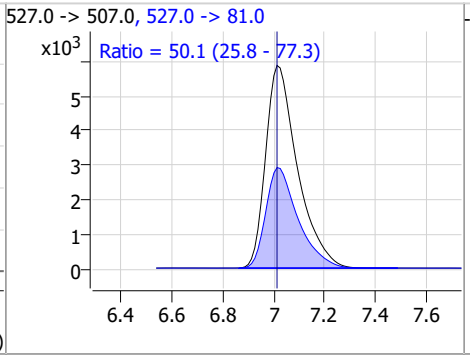


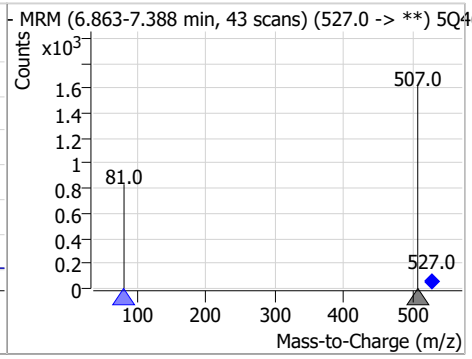




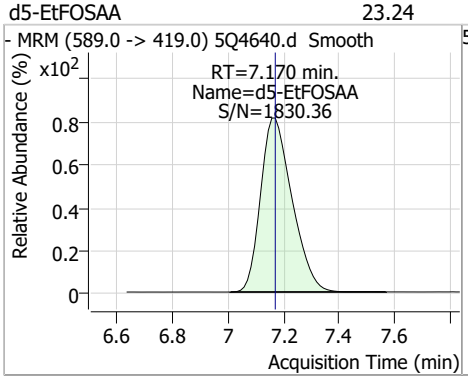
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.00	7.01	-0.01	50654	527.0 -> 81.0	50.1	25.8	77.3

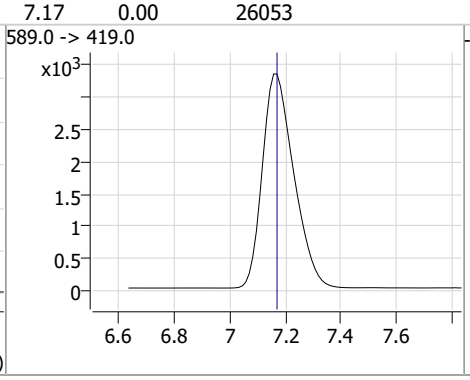


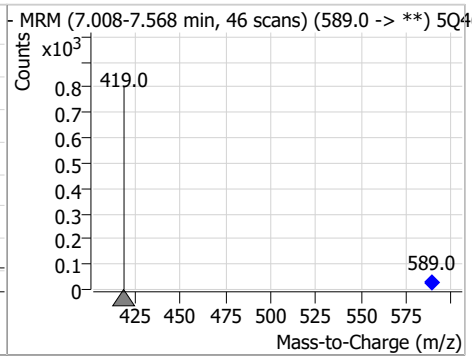




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.24	7.17	0.00	26053				

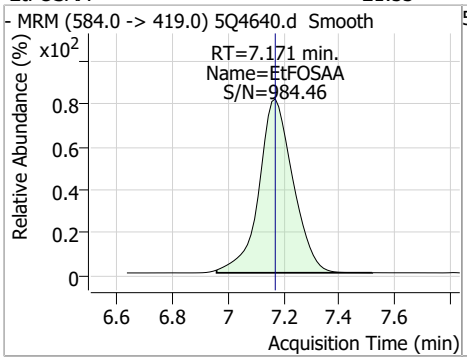


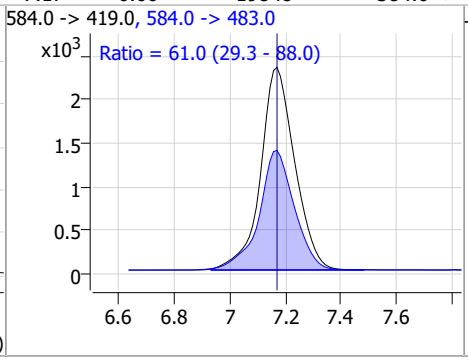


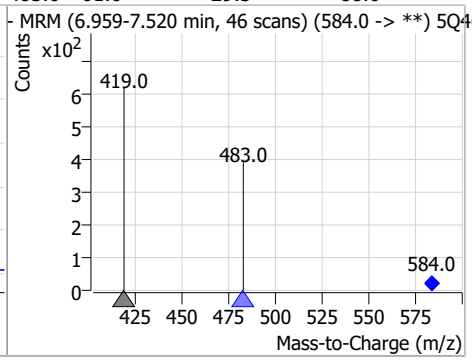


Perfluorinated Compounds by LC/MS/MS

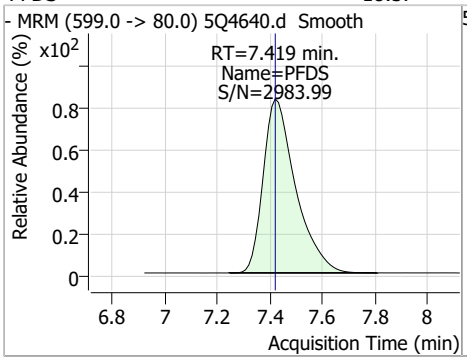
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	21.53	7.17	0.00	19848	584.0 -> 483.0	61.0	29.3	88.0

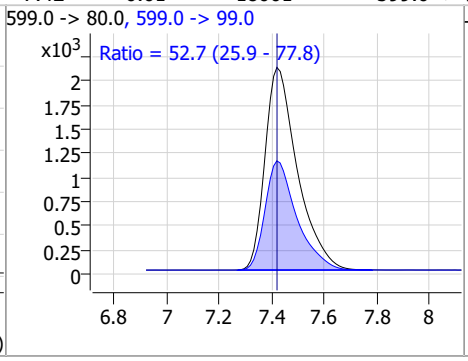


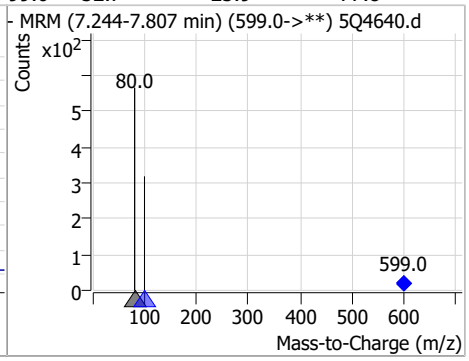




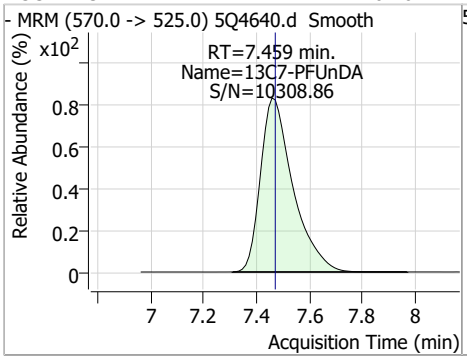
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.57	7.42	-0.01	18001	599.0 -> 99.0	52.7	25.9	77.8

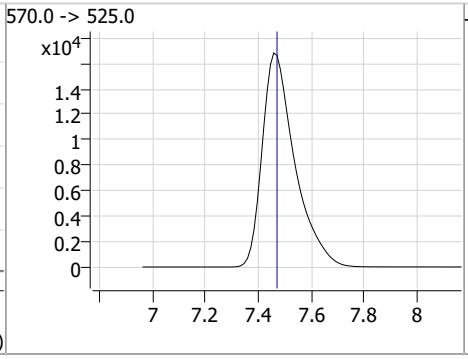


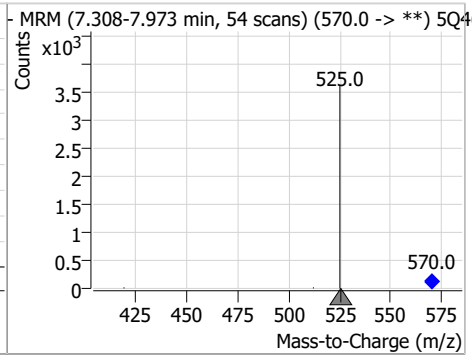




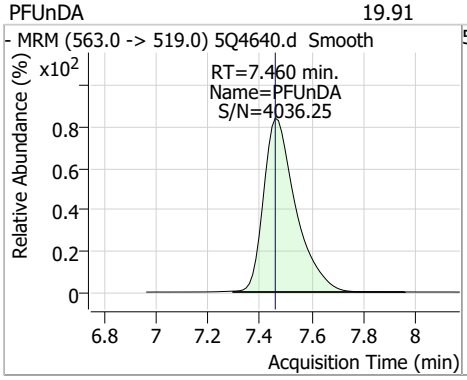
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.40	7.46	-0.01	143677				

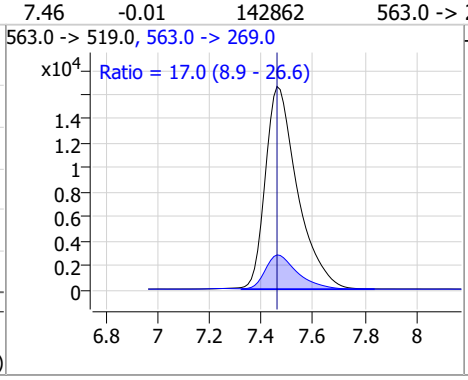


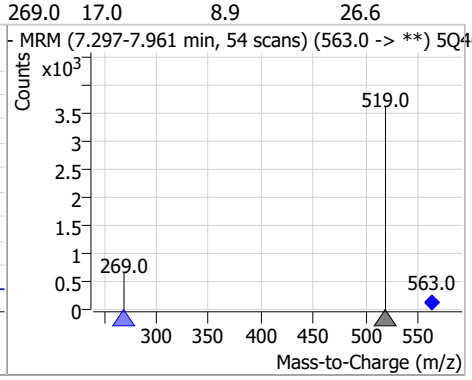




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.91	7.46	-0.01	142862	563.0 -> 269.0	17.0	8.9	26.6

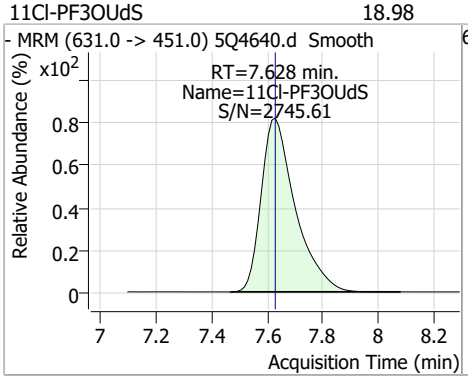


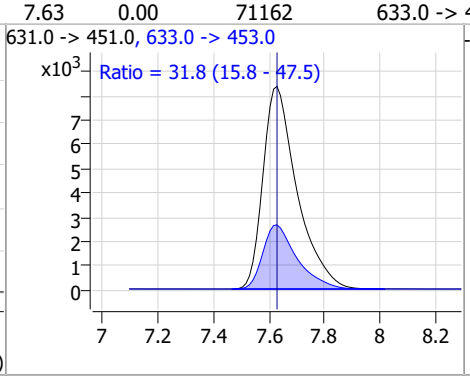


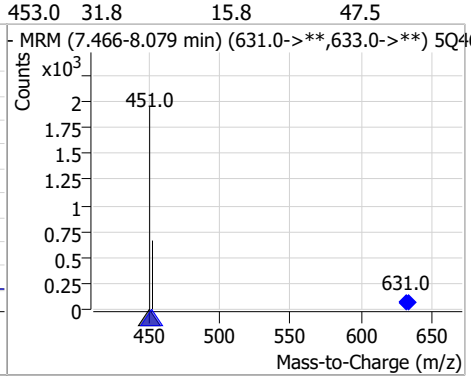


Perfluorinated Compounds by LC/MS/MS

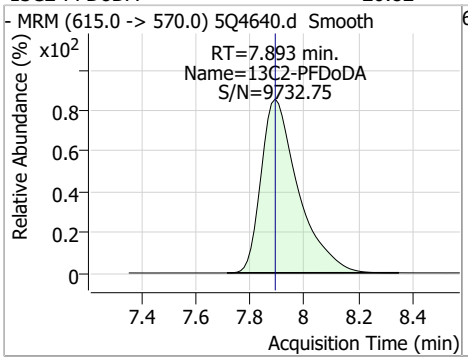
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.98	7.63	0.00	71162	633.0 -> 453.0	31.8	15.8	47.5

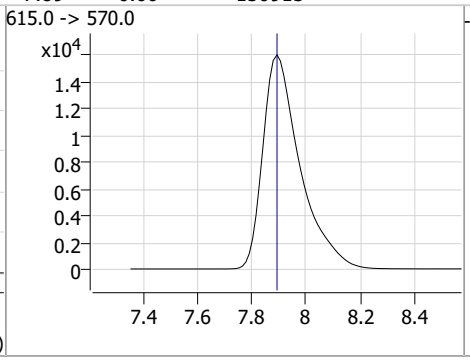


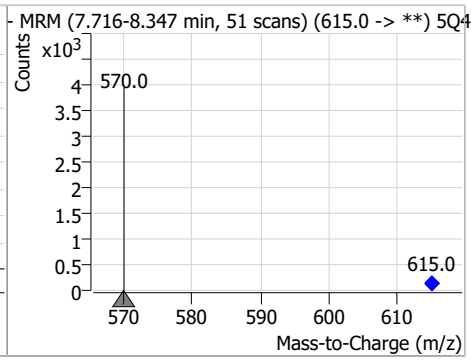




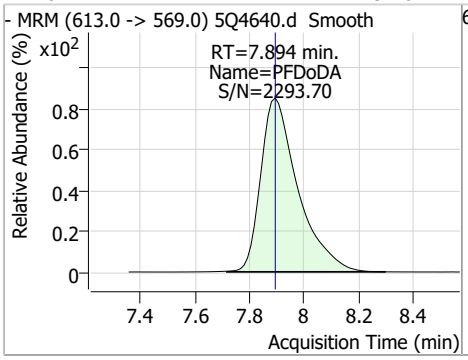
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.82	7.89	0.00	150915				

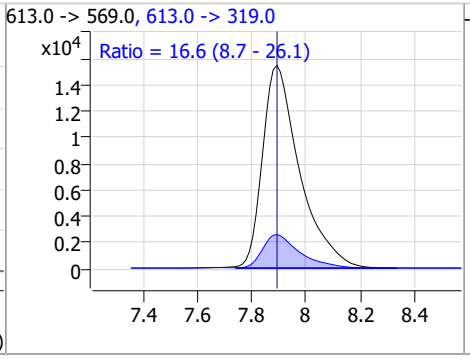


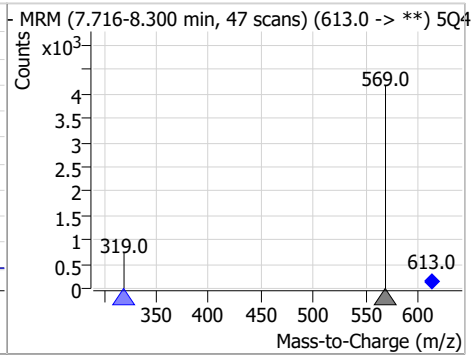




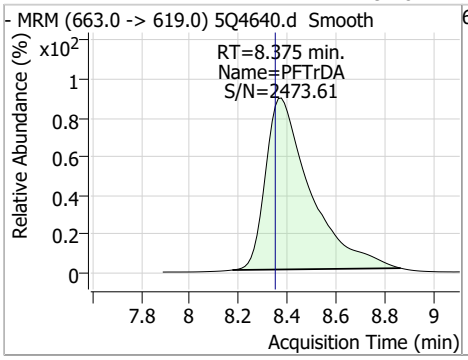
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.76	7.89	0.00	146244	613.0 -> 319.0	16.6	8.7	26.1

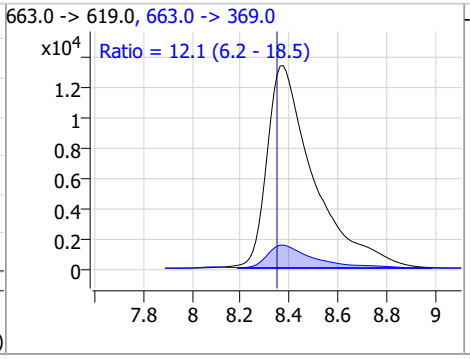


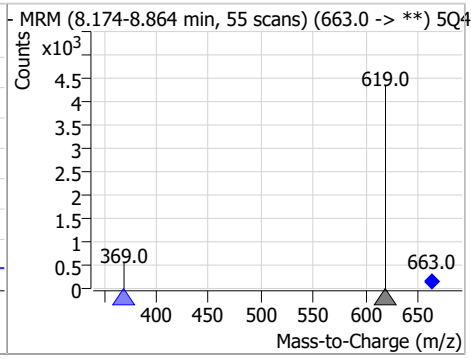




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.18	8.38	0.02	169683	663.0 -> 369.0	12.1	6.2	18.5

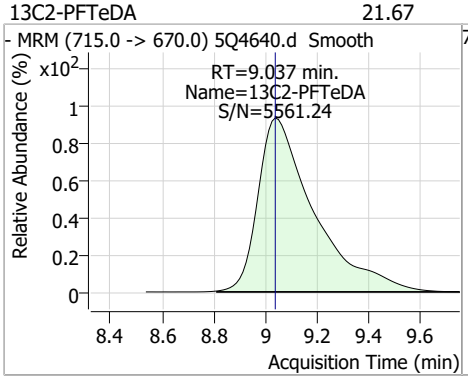


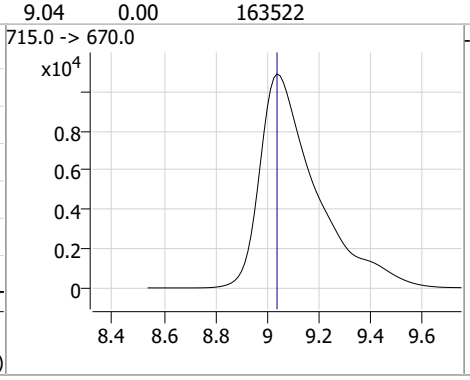


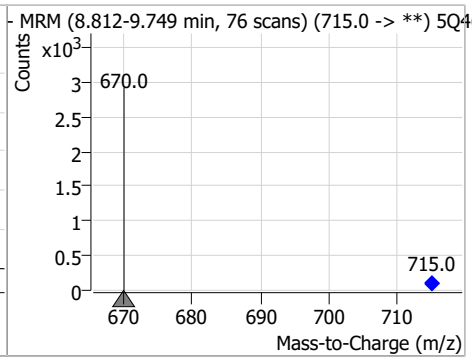


Perfluorinated Compounds by LC/MS/MS

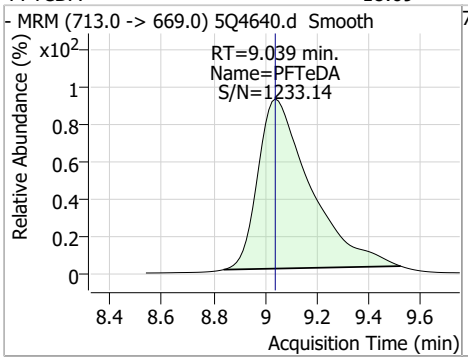
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.67	9.04	0.00	163522				

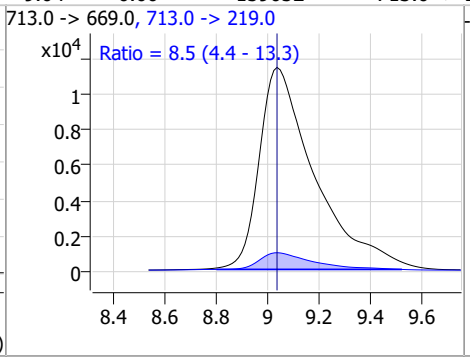


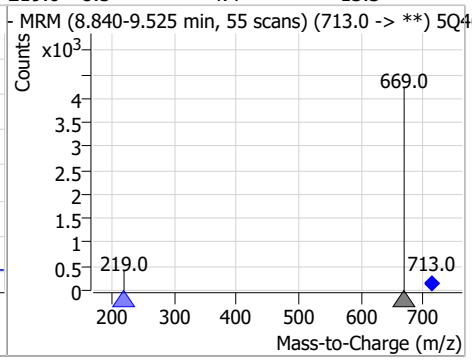




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.69	9.04	0.00	159052	713.0 -> 219.0	8.5	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4640.D
Injection Time: 09/15/22 07:54
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4652.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 10:58:40 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

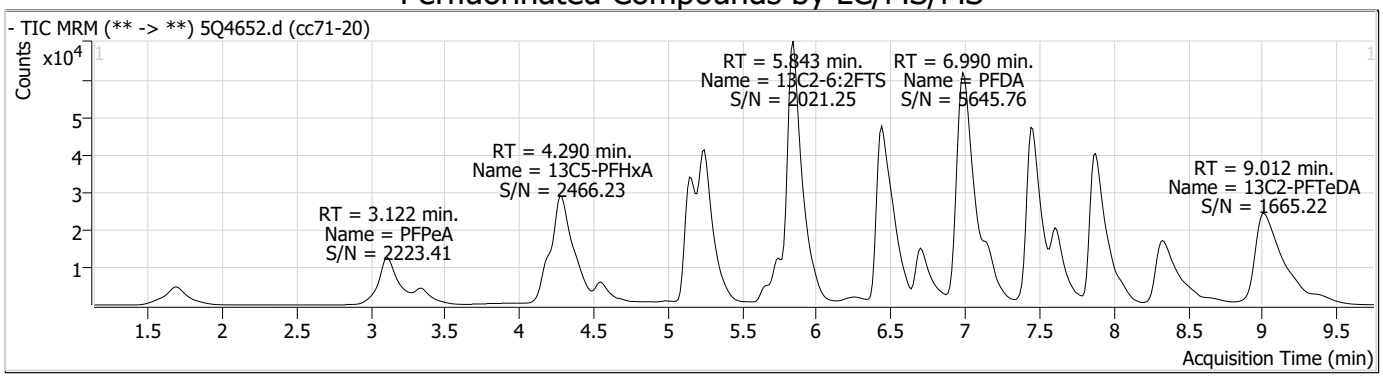
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	37030	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	59062	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	88595	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	83181	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	124604	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	137519	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	111276	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	142833	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	150769	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	144933	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	23268	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6636	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	7053	20.00 µg/L	-0.012
M8-PFOS	6.428	507.0 -> 99.0	13357	20.00 µg/L	-0.012
M2-4:2FTS	4.199	329.0 -> 309.0	29394	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	46285	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	45564	20.00 µg/L	-0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	22710	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6718	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6366	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	25846	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	29394	20.01 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%	
13C2-6:2FTS	5.843	429.0 -> 409.0	46285	20.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%	
13C2-8:2FTS	7.013	529.0 -> 509.0	45564	20.29 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%	
13C2-PFDoDA	7.879	615.0 -> 570.0	150769	20.80 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%	
13C2-PFTeDA	9.012	715.0 -> 670.0	144933	19.21 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C3-PFBS	3.349	302.0 -> 99.0	6636	20.37 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C3-PFHxS	5.194	402.0 -> 99.0	7053	20.68 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	1.687	217.0 -> 172.0	37030	20.72 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFHpA	5.163	367.0 -> 322.0	83181	20.38 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%	
13C5-PFHxA	4.290	318.0 -> 273.0	88595	20.26 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C5-PFPeA	3.119	268.0 -> 223.0	59062	20.32 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%	
13C6-PFDA	6.989	519.0 -> 474.0	111276	20.67 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

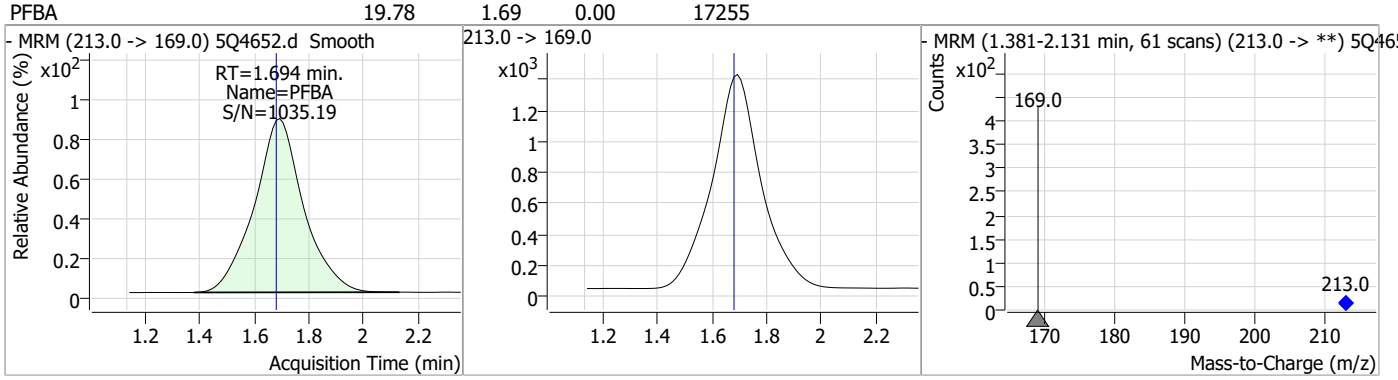
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C7-PFUnDA	7.459	570.0 -> 525.0	142833	20.28 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C8-FOSA	6.517	506.0 -> 78.0	23268	20.51 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C8-PFOA	5.857	421.0 -> 376.0	124604	20.60 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C8-PFOS	6.428	507.0 -> 99.0	13357	20.46 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C9-PFNA	6.455	472.0 -> 427.0	137519	20.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
d3-MeFOSAA	7.009	573.0 -> 419.0	22710	23.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.8%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	6718	20.01 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
d3-MeFOSA	6.952	515.0 -> 169.0	6366	20.91 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
d5-EtFOSAA	7.170	589.0 -> 419.0	25846	23.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.3%		
Target Compounds						**QValue**
4:2FTS	4.189	327.0 -> 307.0	32917	20.00 µg/L		99
6:2FTS	5.843	427.0 -> 407.0	49840	20.30 µg/L		98
8:2FTS	7.013	527.0 -> 507.0	49143	20.24 µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	18042	19.73 µg/L		98
FOSA	6.519	498.0 -> 78.0	23949	20.00 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	20054	19.28 µg/L		97
PFBA	1.694	213.0 -> 169.0	17255	19.78 µg/L		100
PFBS	3.342	299.0 -> 80.0	19623	19.69 µg/L		100
PFDA	6.990	513.0 -> 469.0	137053	20.05 µg/L		99
PFDoDA	7.880	613.0 -> 569.0	145877	19.73 µg/L		98
PFDS	7.419	599.0 -> 80.0	18434	19.13 µg/L		98
PFHpA	5.164	363.0 -> 319.0	110244	20.17 µg/L		100
PFHpS	5.855	449.0 -> 80.0	20339	20.25 µg/L		99
PFHxA	4.291	313.0 -> 269.0	84722	19.57 µg/L		100
PFHxS	5.195	399.0 -> 80.0	20380	19.46 µg/L	m	97
PFNA	6.456	463.0 -> 419.0	118937	19.30 µg/L		100
PFNS	6.949	549.0 -> 80.0	19766	20.05 µg/L		99
PFOA	5.858	413.0 -> 369.0	149401	19.77 µg/L		99
PFOS	6.429	499.0 -> 80.0	23409	19.90 µg/L	m	84
PFPeA	3.122	263.0 -> 219.0	57041	19.54 µg/L		100
PFPeS	4.398	349.0 -> 80.0	14989	19.33 µg/L		99
PFTeDA	9.014	713.0 -> 669.0	153934	20.41 µg/L		99
PFTrDA	8.338	663.0 -> 619.0	176342	19.95 µg/L		95
PFUnDA	7.460	563.0 -> 519.0	143603	20.13 µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	73583	19.64 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	71296	18.54 µg/L		100
ADONA	5.261	377.0 -> 251.0	139772	19.28 µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	23133	20.41 µg/L		99
MeFOSA	6.954	512.0 -> 169.0	7020	20.47 µg/L		97
4-PFECHS	5.753	461.0 -> 381.0	43298	19.31 µg/L		98
FBSA	4.343	298.0 -> 78.0	29898	20.35 µg/L		100
FHxSA	5.674	398.0 -> 78.0	24568	19.38 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

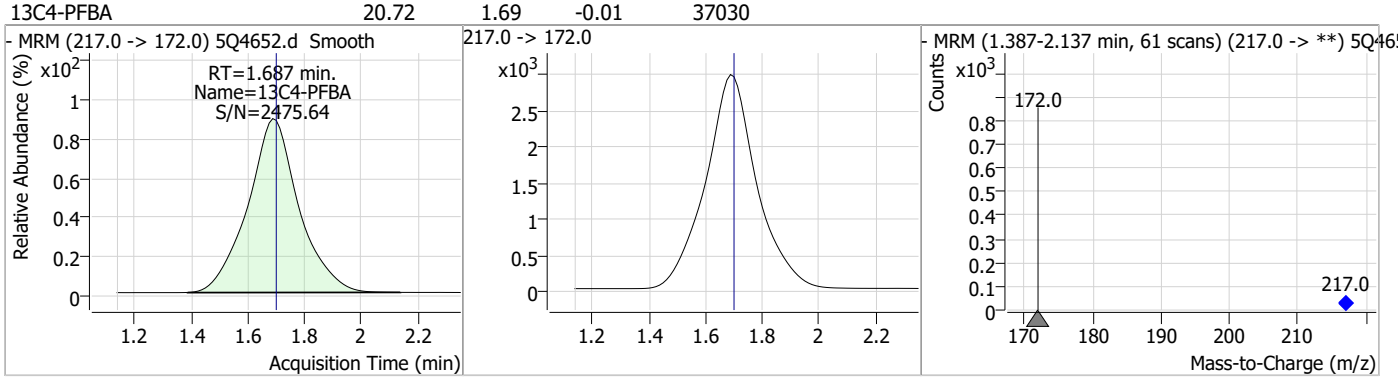
Perfluorinated Compounds by LC/MS/MS



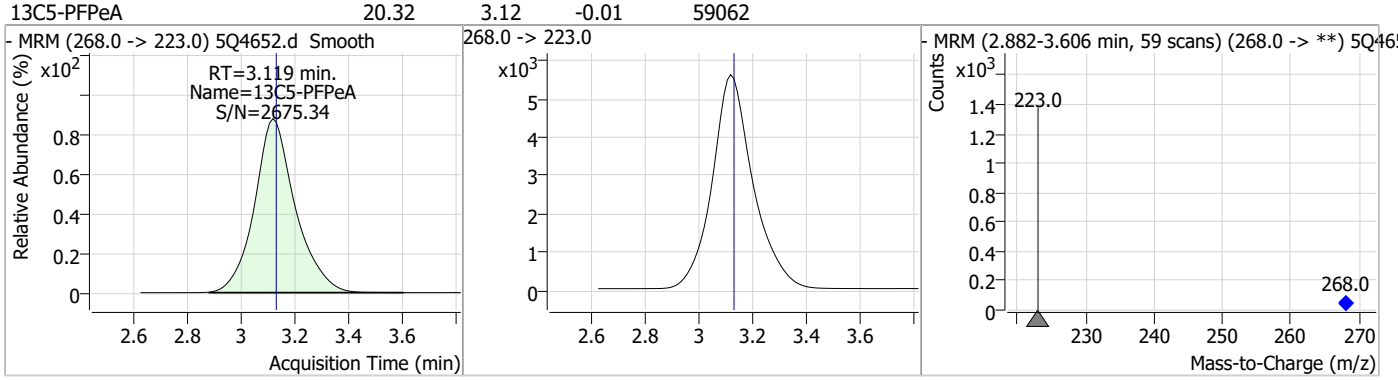
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.78	1.69	0.00	17255				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.72	1.69	-0.01	37030				

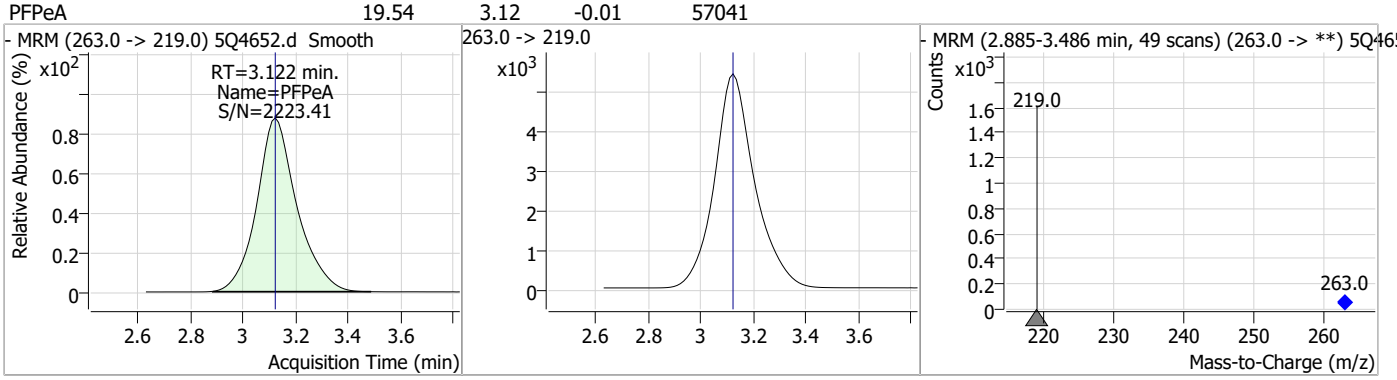


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.32	3.12	-0.01	59062				

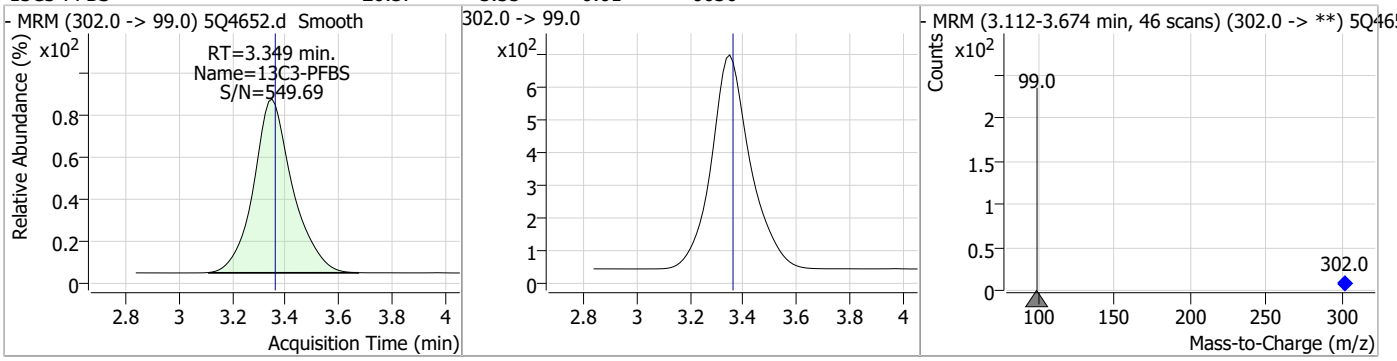


Perfluorinated Compounds by LC/MS/MS

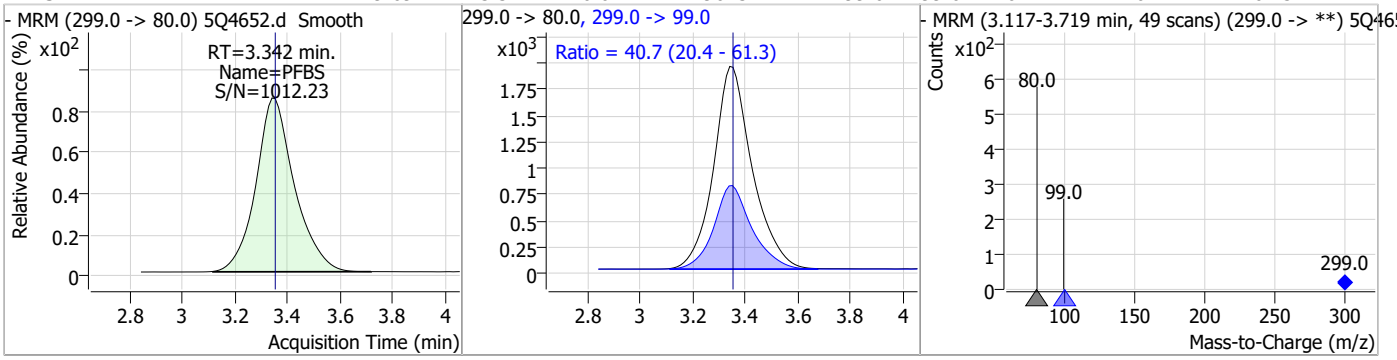
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.54	3.12	-0.01	57041				



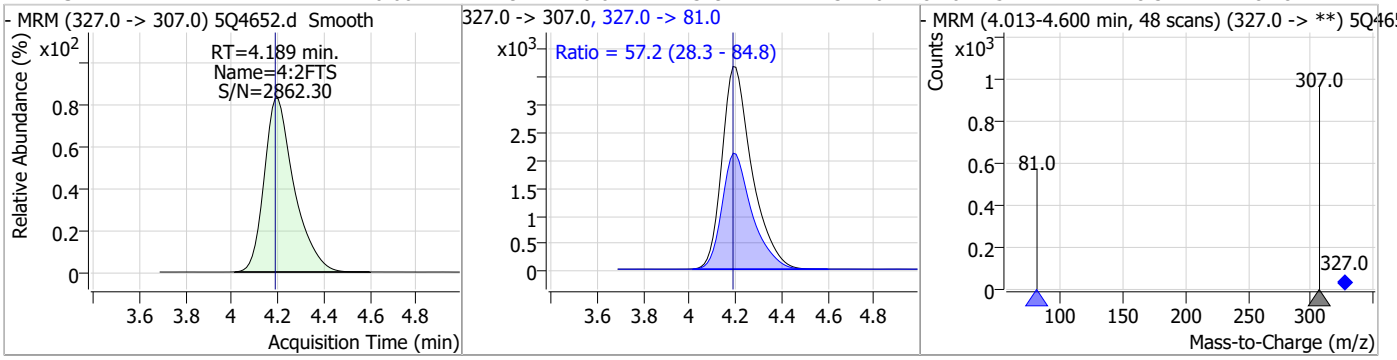
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.37	3.35	-0.01	6636				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.69	3.34	-0.02	19623	299.0 -> 99.0	40.7	20.4	61.3

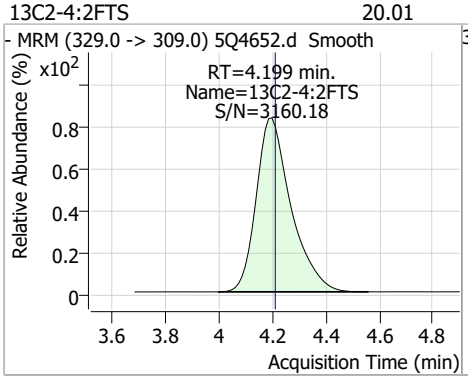


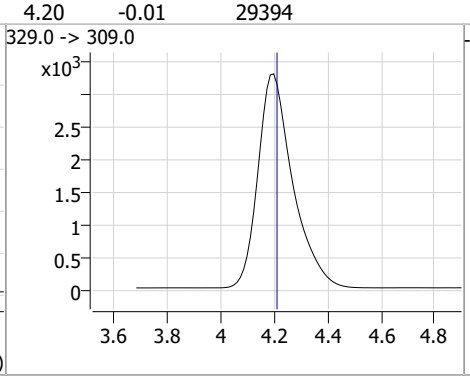
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.00	4.19	-0.01	32917	327.0 -> 81.0	57.2	28.3	84.8

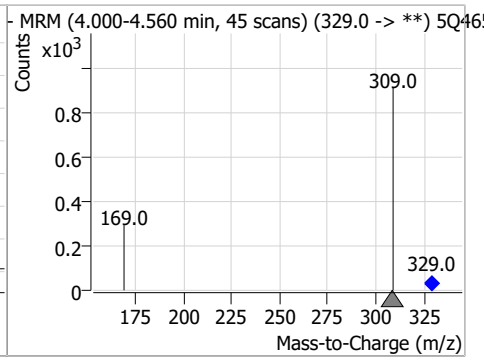


Perfluorinated Compounds by LC/MS/MS

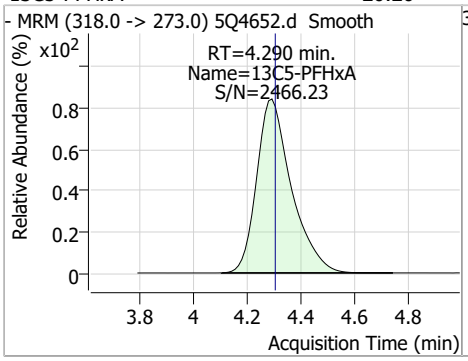
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.01	4.20	-0.01	29394				

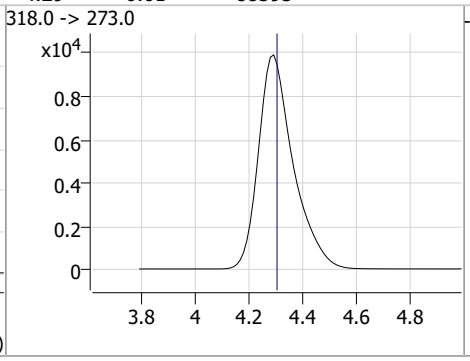


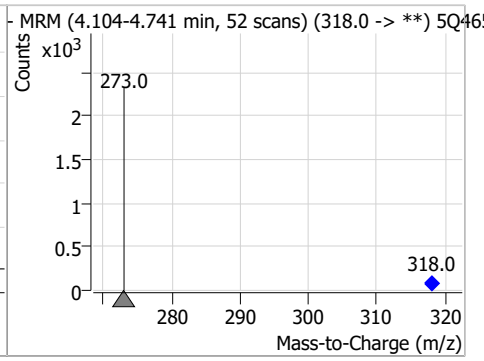




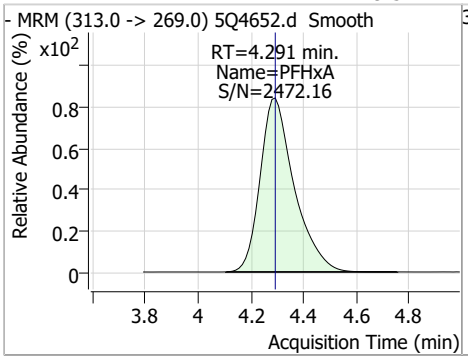
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.26	4.29	-0.01	88595				

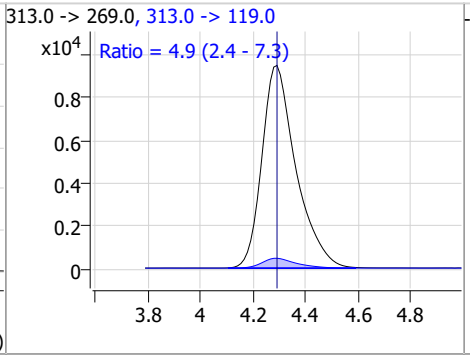


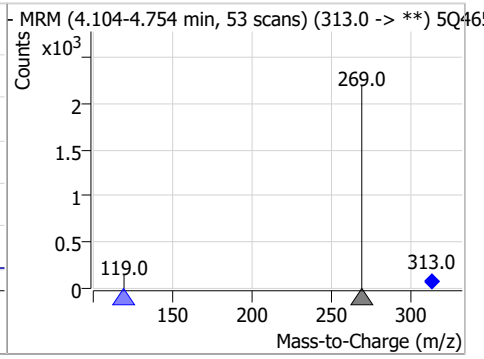




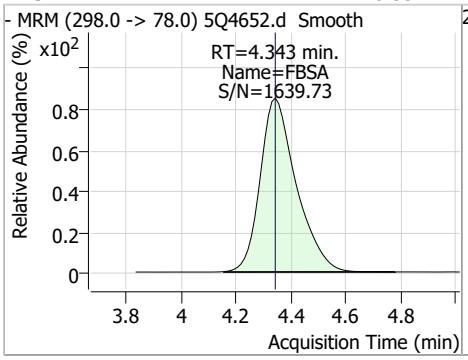
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.57	4.29	-0.01	84722	313.0 -> 119.0	4.9	2.4	7.3

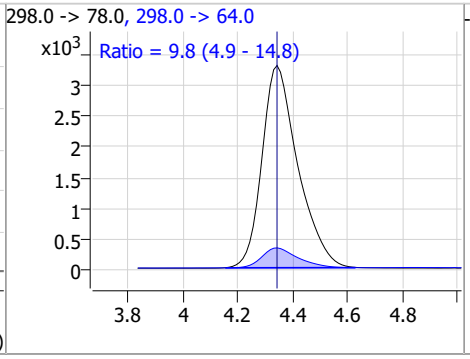


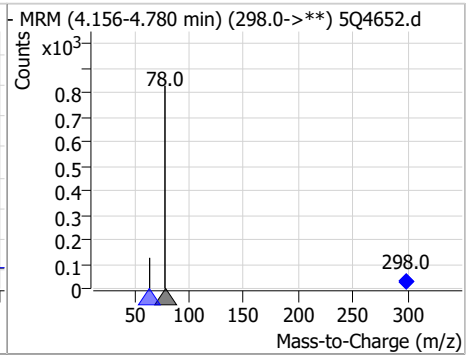




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.35	4.34	-0.01	29898	298.0 -> 64.0	9.8	4.9	14.8

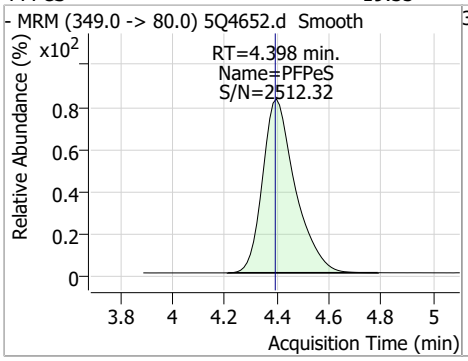


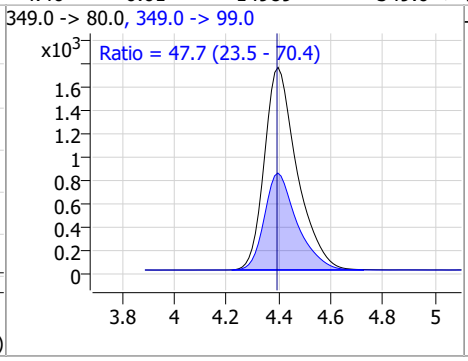


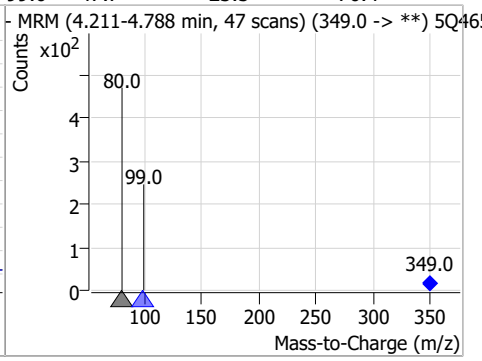


Perfluorinated Compounds by LC/MS/MS

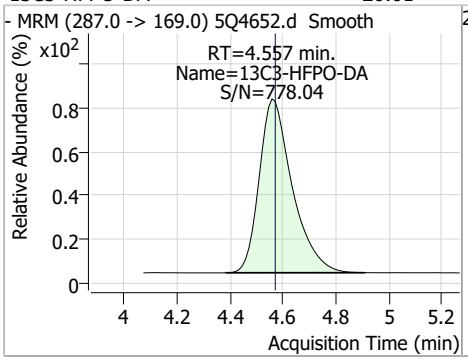
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.33	4.40	-0.01	14989	349.0 -> 99.0	47.7	23.5	70.4

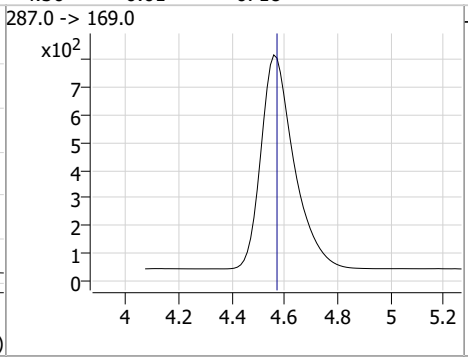


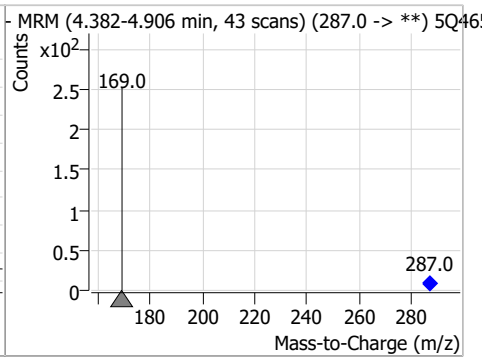




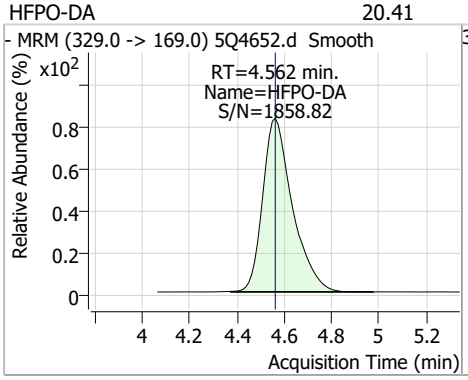
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.01	4.56	-0.01	6718				

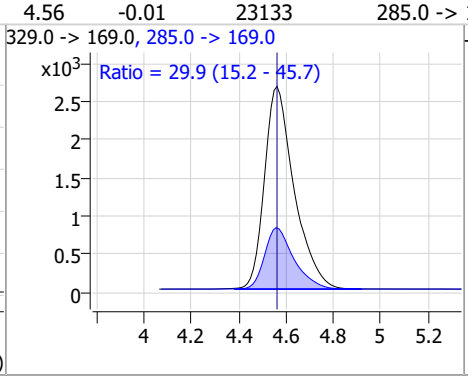


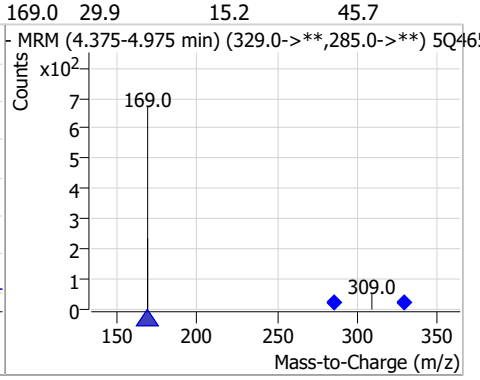




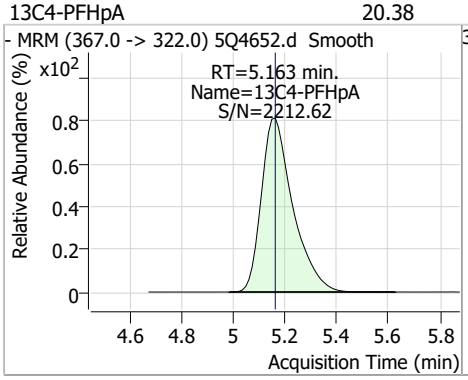
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.41	4.56	-0.01	23133	285.0 -> 169.0	29.9	15.2	45.7

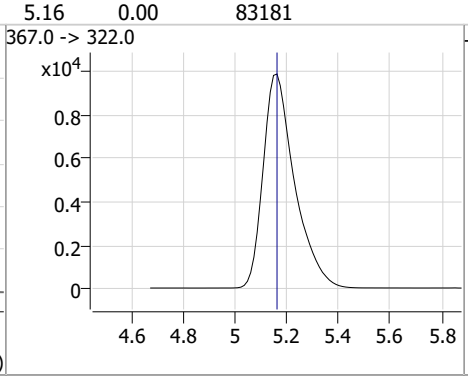


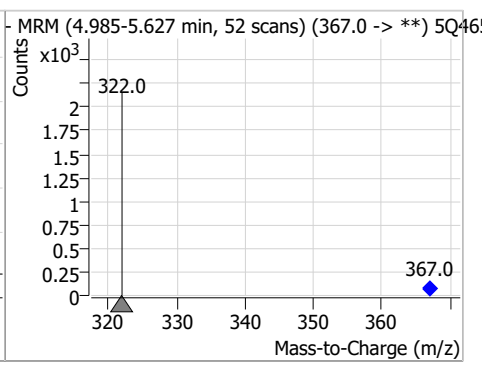




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.38	5.16	0.00	83181				

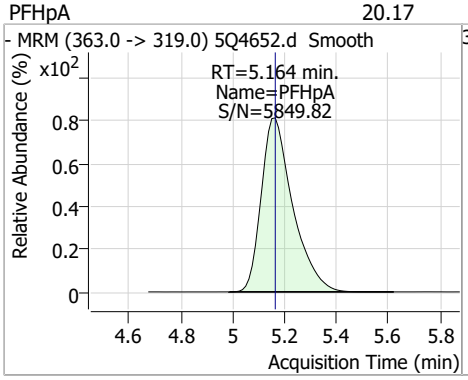


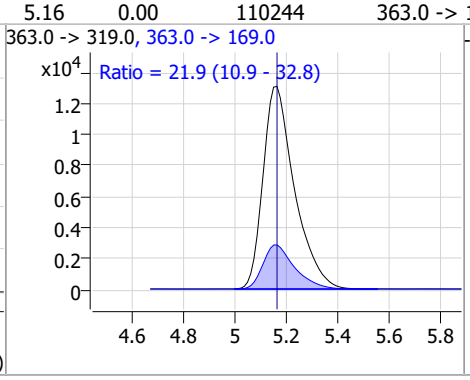


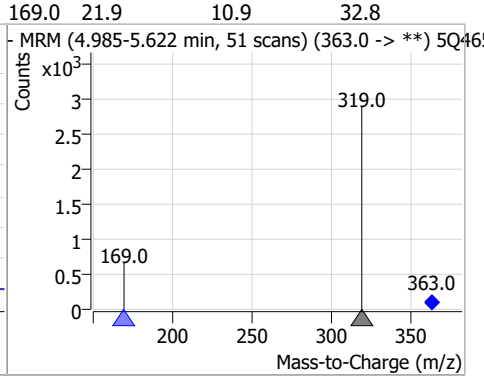


Perfluorinated Compounds by LC/MS/MS

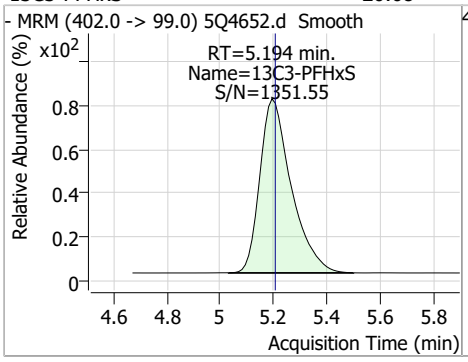
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.17	5.16	0.00	110244	363.0 -> 169.0	21.9	10.9	32.8

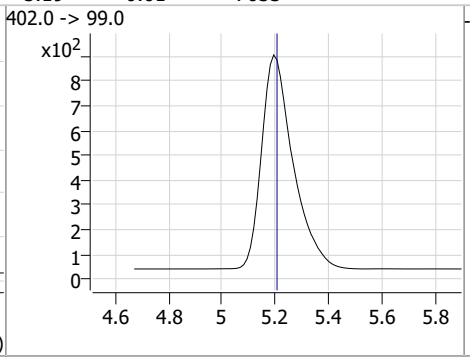


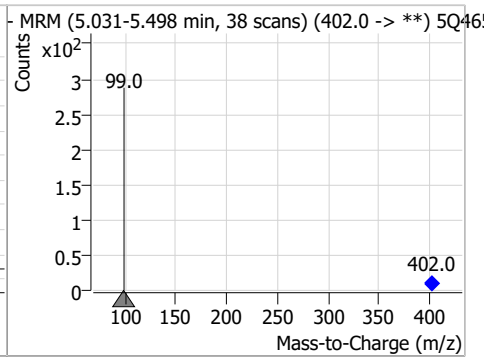




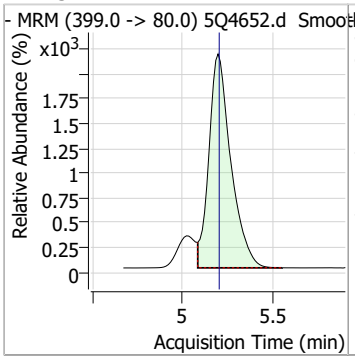
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.68	5.19	-0.01	7053				

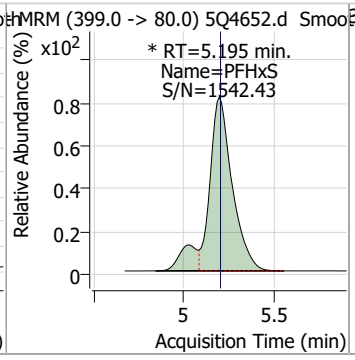


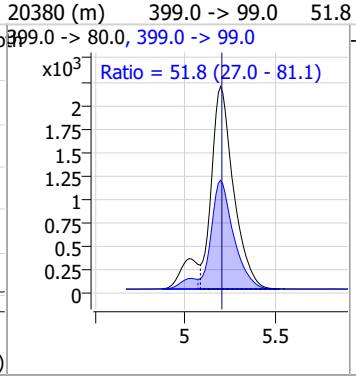


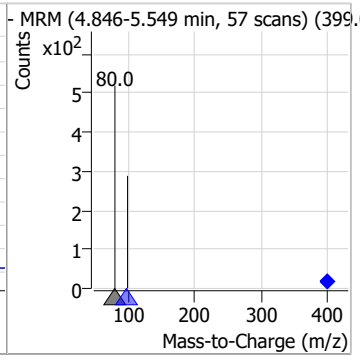


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.46	5.20	-0.01	20380 (m)	399.0 -> 99.0	51.8	27.0	81.1

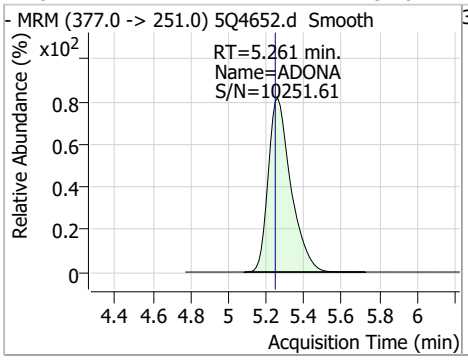


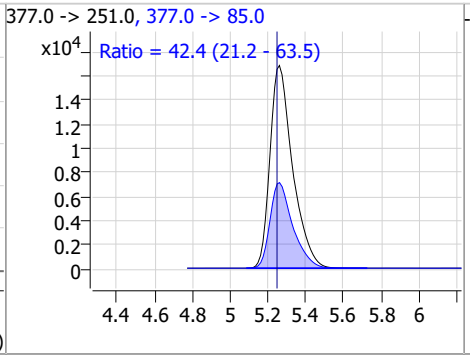


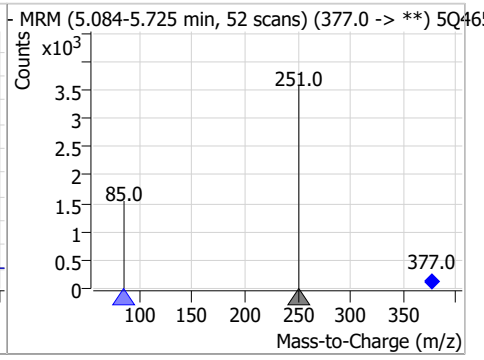




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.28	5.26	0.00	139772	377.0 -> 85.0	42.4	21.2	63.5

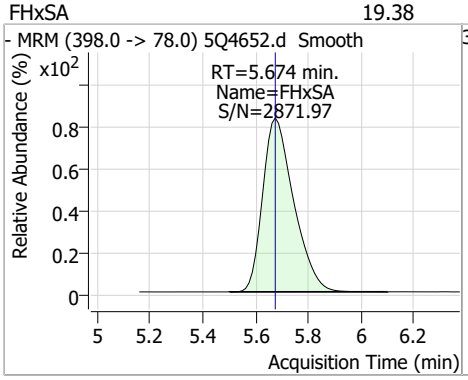


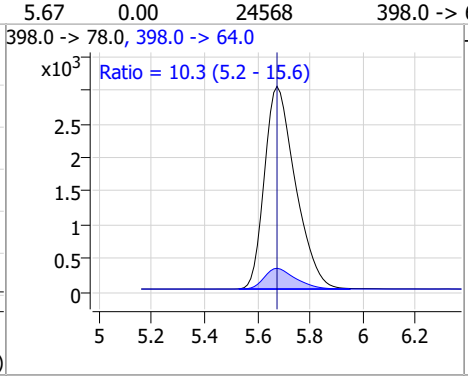


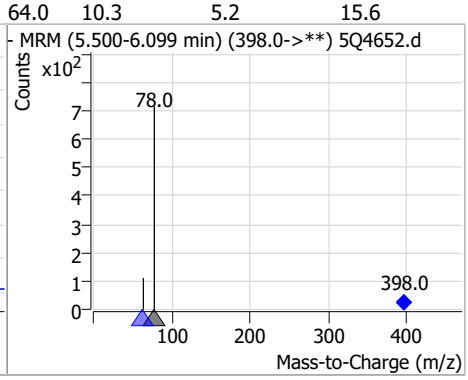


Perfluorinated Compounds by LC/MS/MS

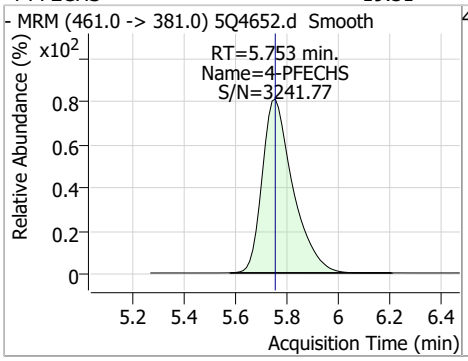
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.38	5.67	0.00	24568	398.0 -> 64.0	10.3	5.2	15.6

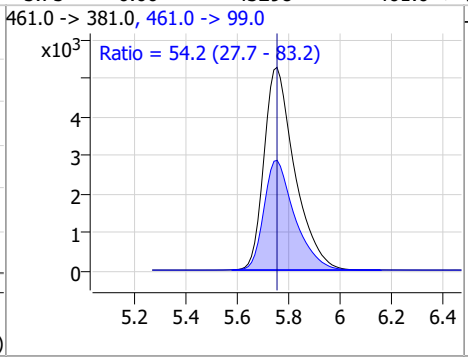


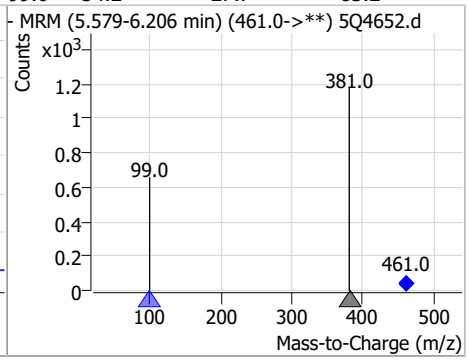




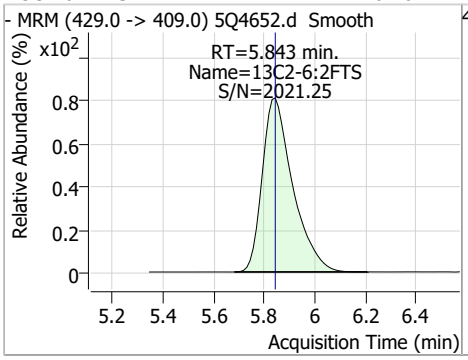
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.31	5.75	0.00	43298	461.0 -> 99.0	54.2	27.7	83.2

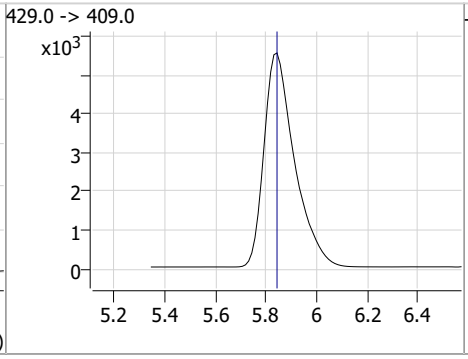


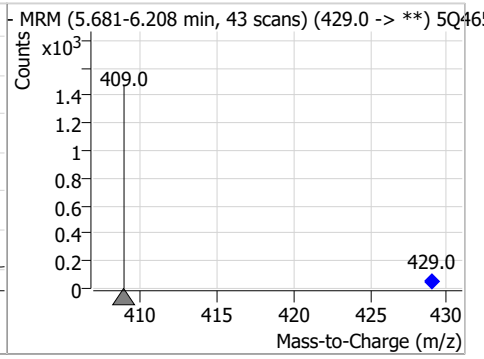




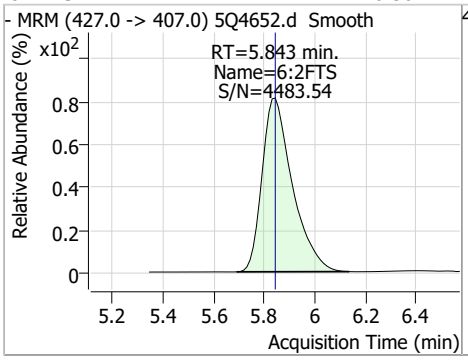
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.70	5.84	0.00	46285				

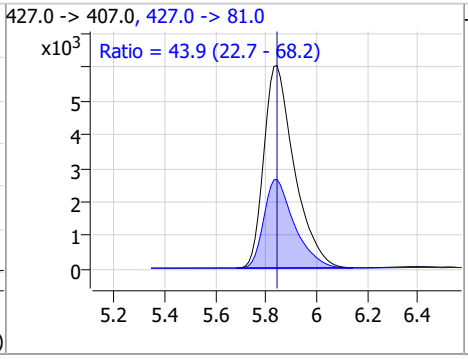


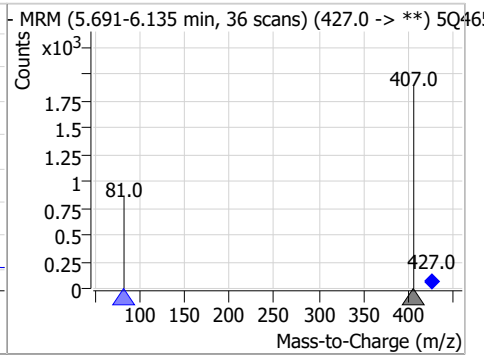




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.30	5.84	0.00	49840	427.0 -> 81.0	43.9	22.7	68.2

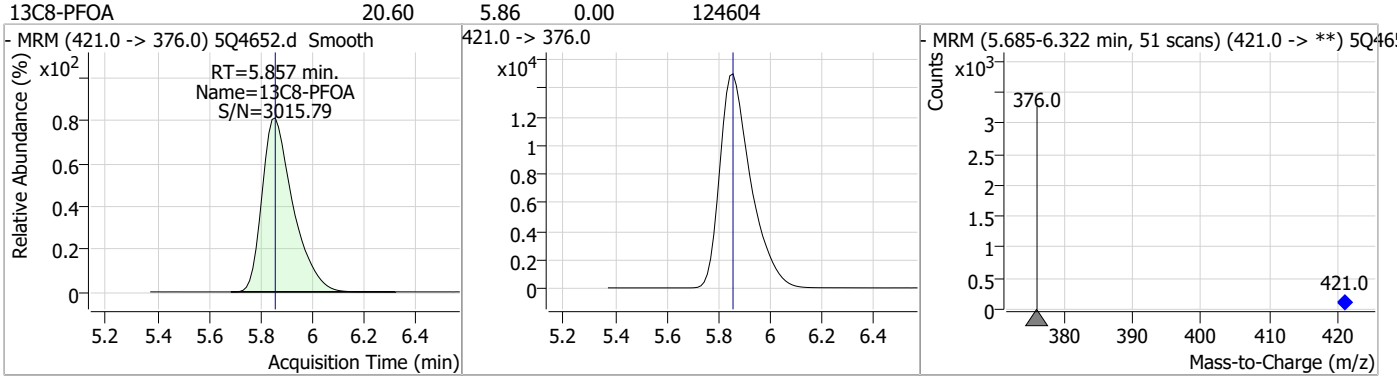




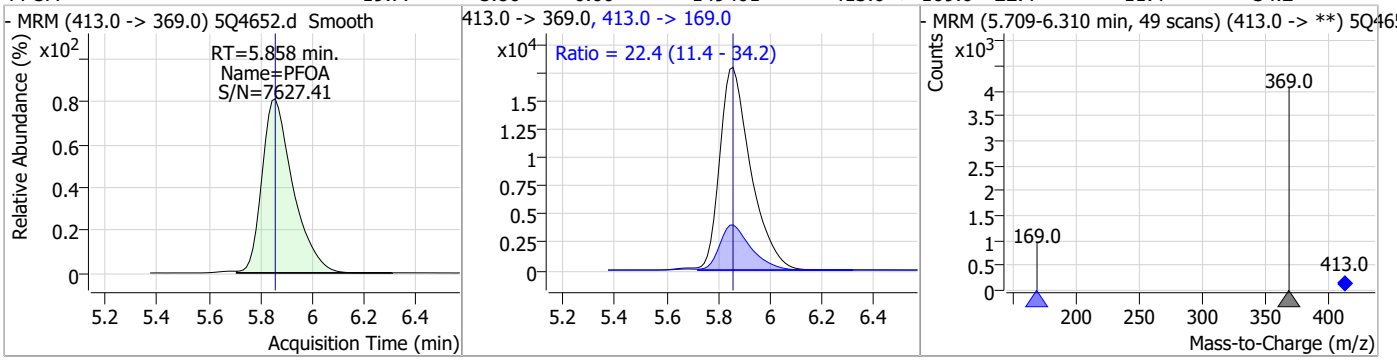


Perfluorinated Compounds by LC/MS/MS

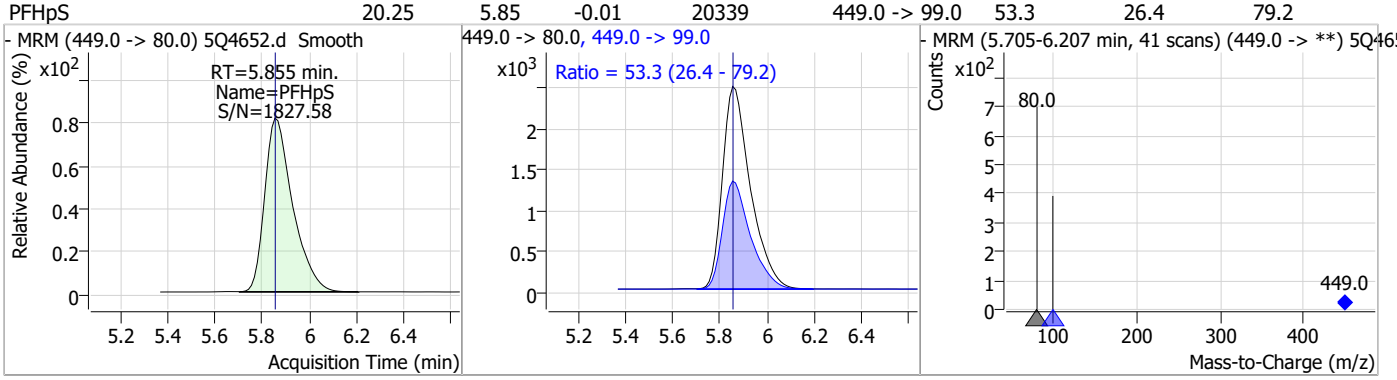
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.60	5.86	0.00	124604				



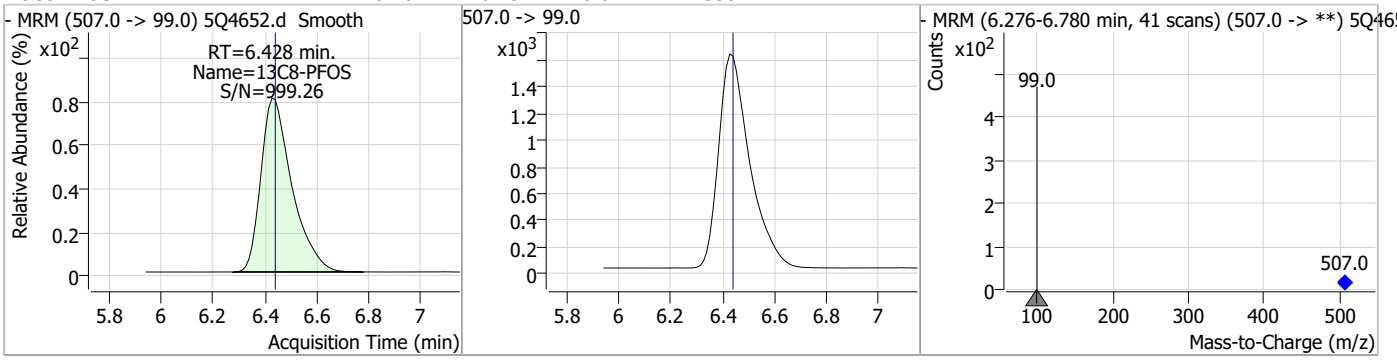
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.77	5.86	0.00	149401	413.0 -> 169.0	22.4	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.25	5.85	-0.01	20339	449.0 -> 99.0	53.3	26.4	79.2

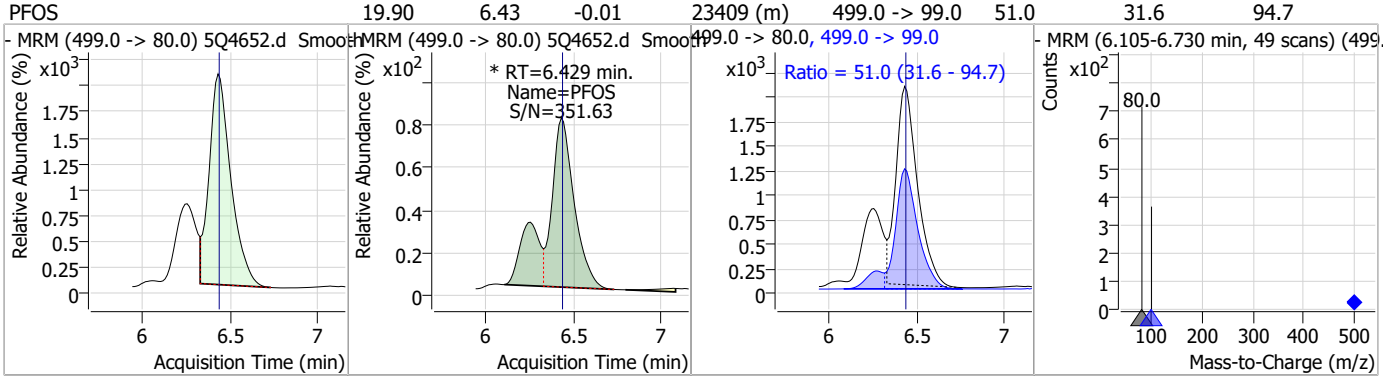


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.46	6.43	-0.01	13357				

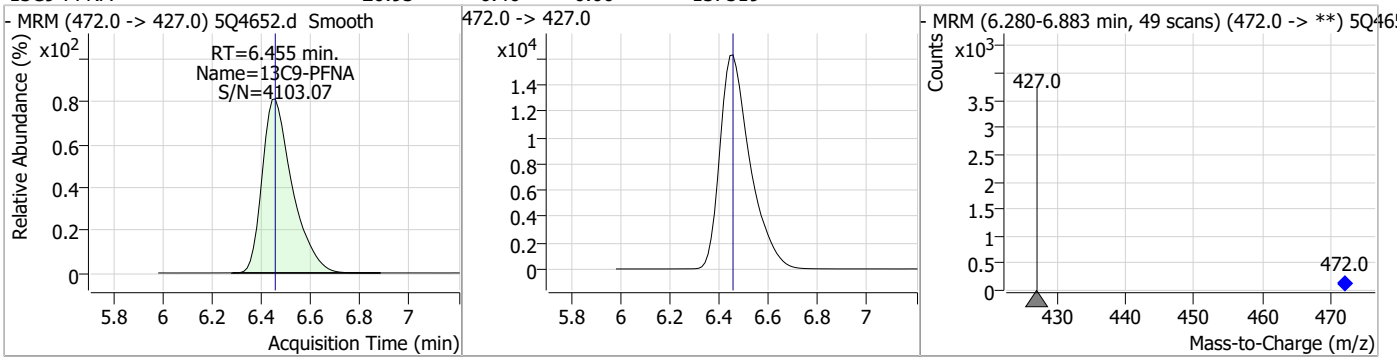


Perfluorinated Compounds by LC/MS/MS

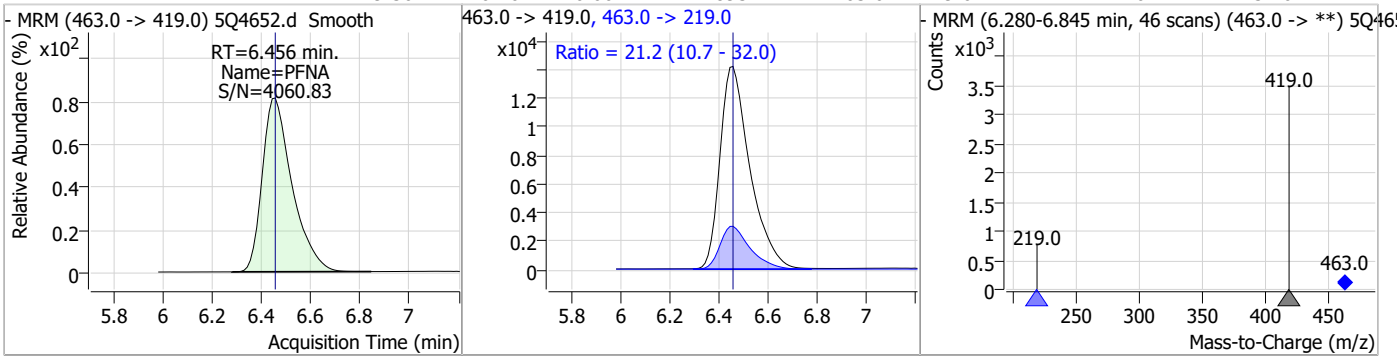
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.90	6.43	-0.01	23409 (m)	499.0 -> 99.0	51.0	31.6	94.7



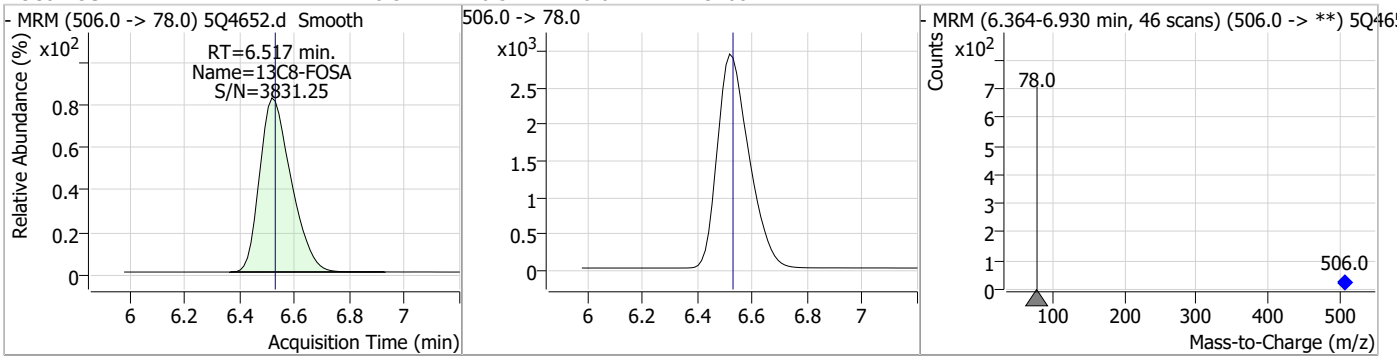
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.93	6.46	0.00	137519				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.30	6.46	0.00	118937	463.0 -> 219.0	21.2	10.7	32.0

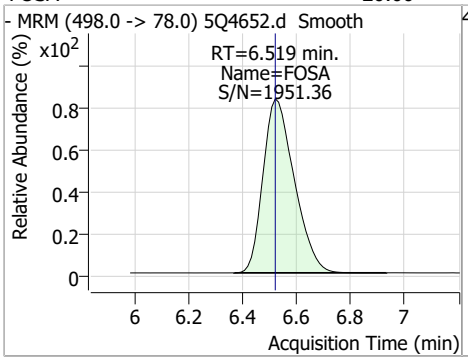


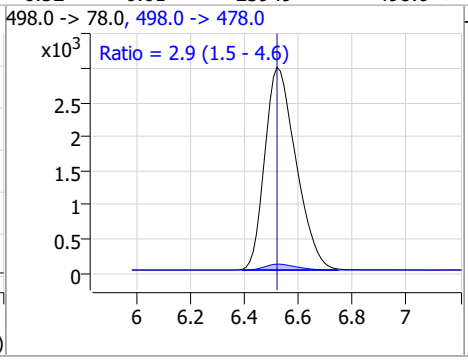
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.51	6.52	-0.01	23268				

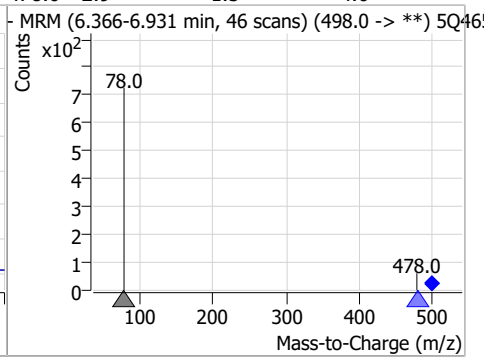


Perfluorinated Compounds by LC/MS/MS

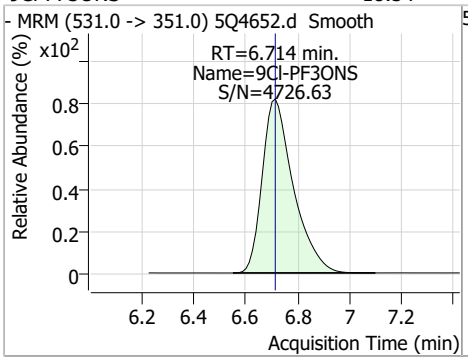
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.00	6.52	-0.01	23949	498.0 -> 478.0	2.9	1.5	4.6

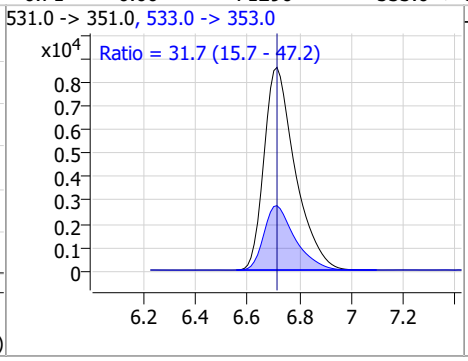


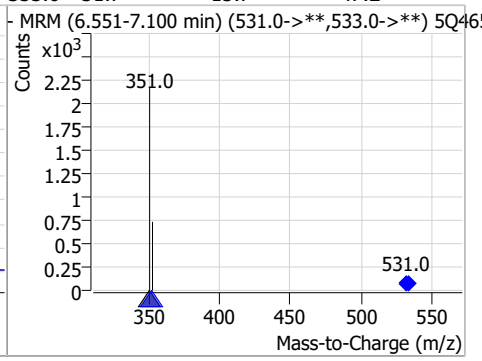




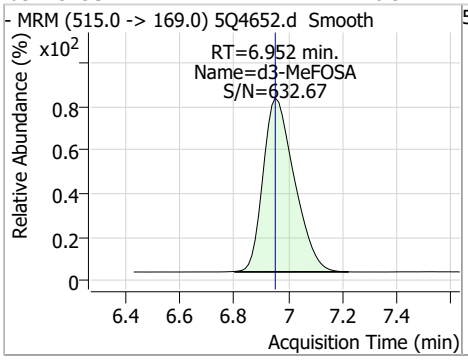
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.54	6.71	0.00	71296	533.0 -> 353.0	31.7	15.7	47.2

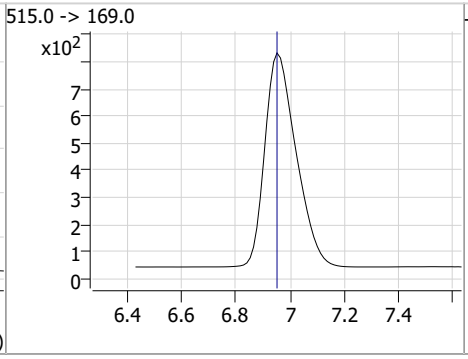


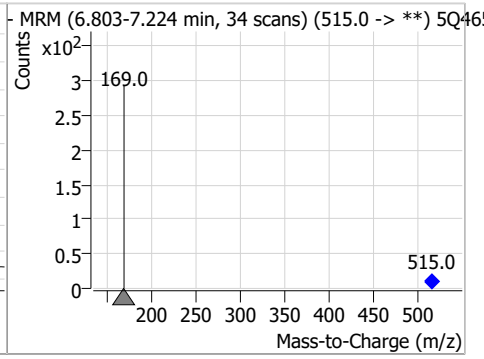




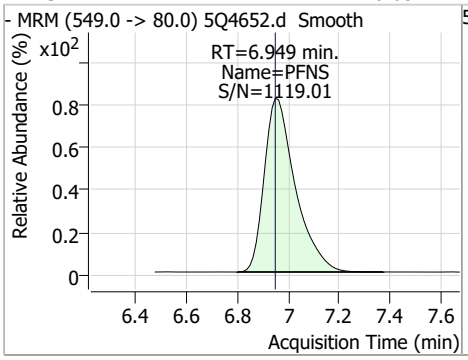
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.91	6.95	0.00	6366				

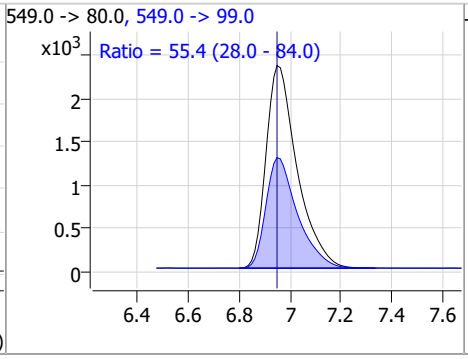


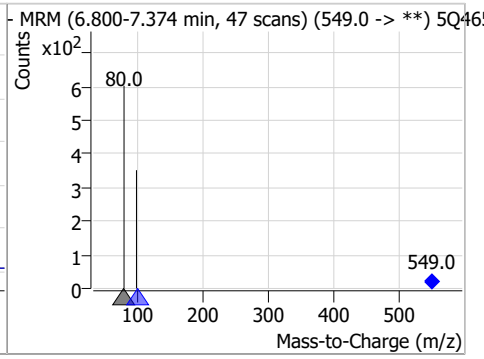




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.05	6.95	-0.01	19766	549.0 -> 99.0	55.4	28.0	84.0

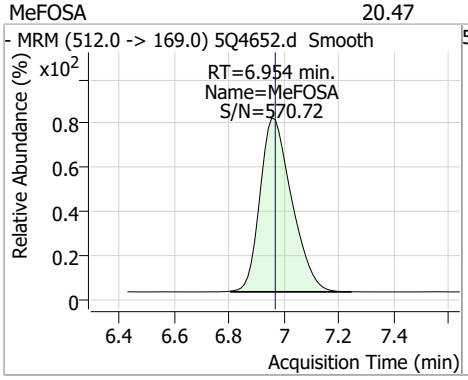


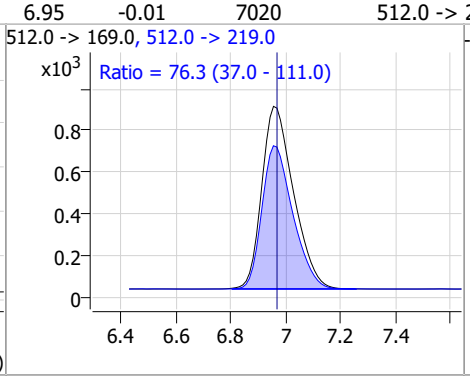


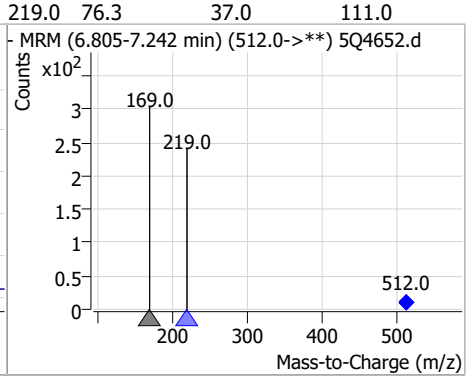


Perfluorinated Compounds by LC/MS/MS

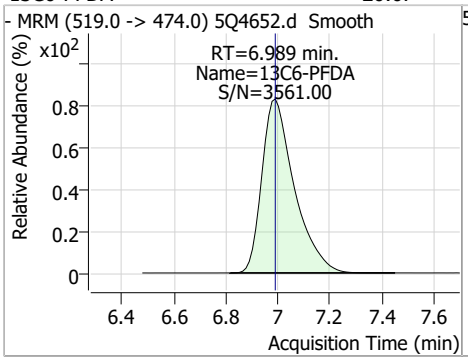
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.47	6.95	-0.01	7020	512.0 -> 219.0	76.3	37.0	111.0

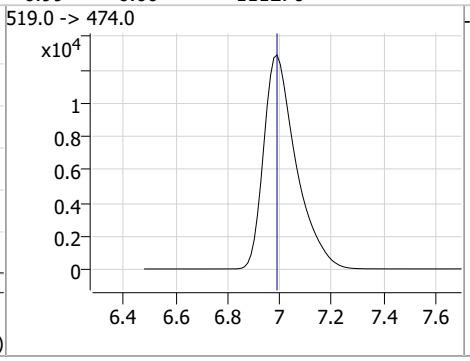


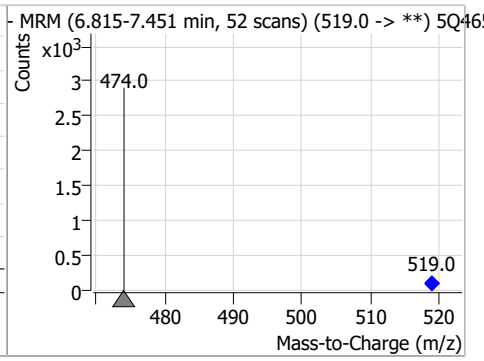




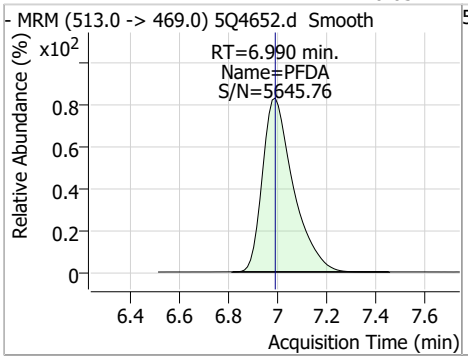
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.67	6.99	0.00	111276				

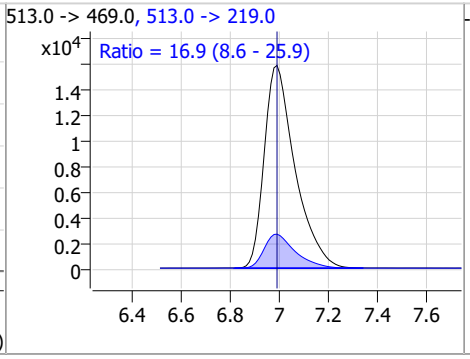


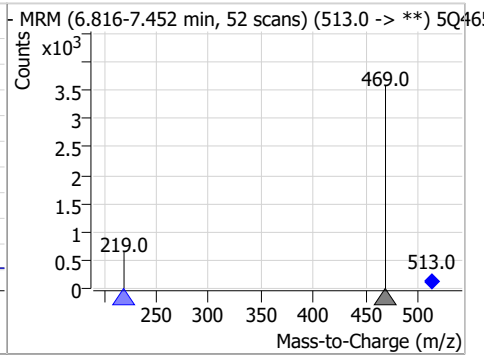




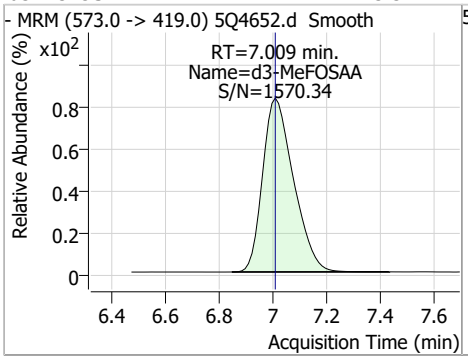
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.05	6.99	0.00	137053	513.0 -> 219.0	16.9	8.6	25.9

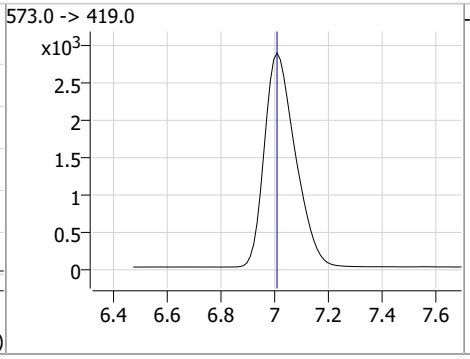


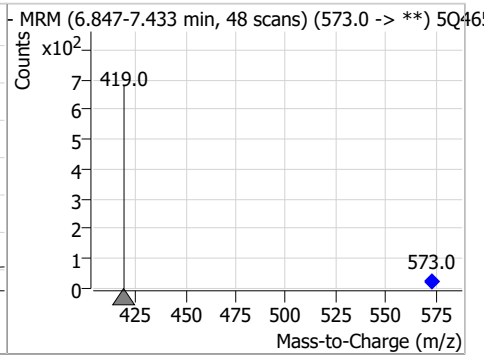




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.37	7.01	0.00	22710				

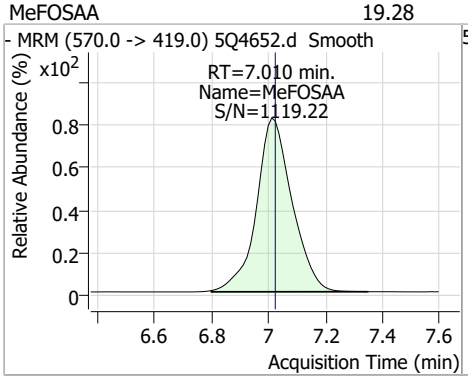


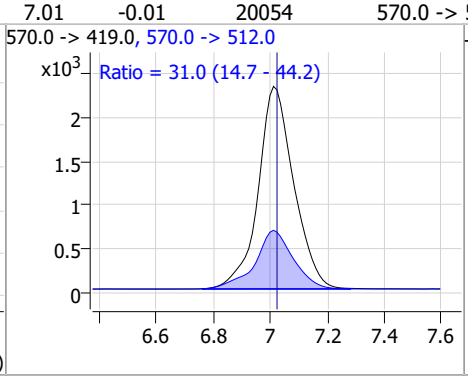


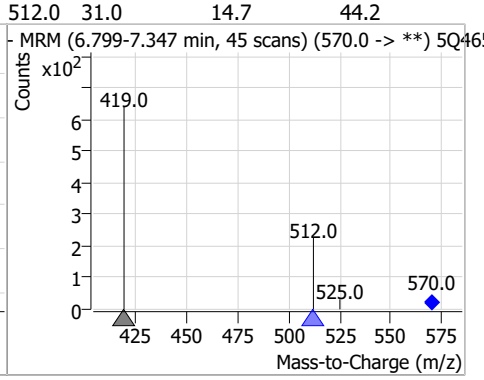


Perfluorinated Compounds by LC/MS/MS

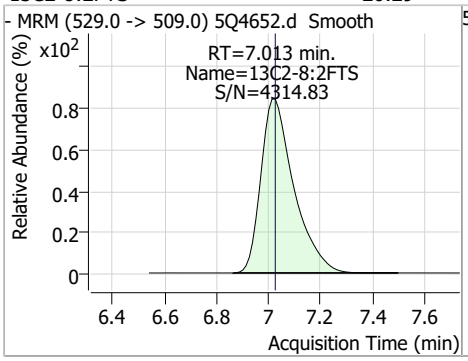
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.28	7.01	-0.01	20054	570.0 -> 512.0	31.0	14.7	44.2

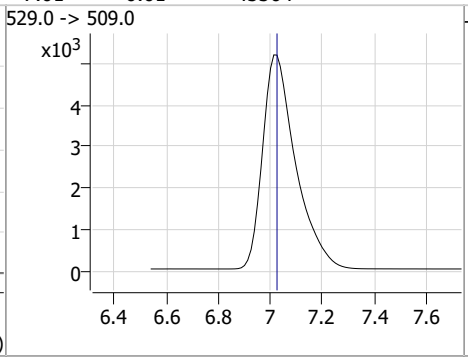


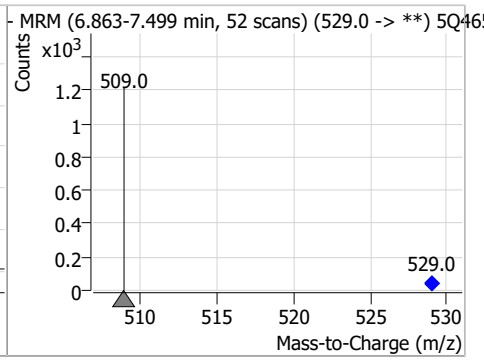




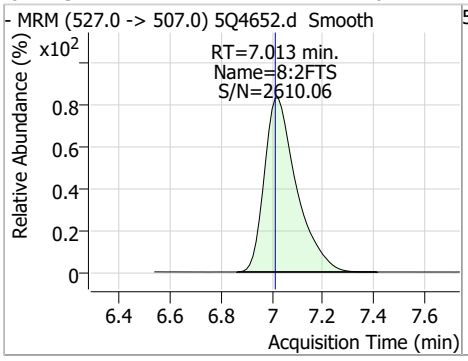
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.29	7.01	-0.01	45564				

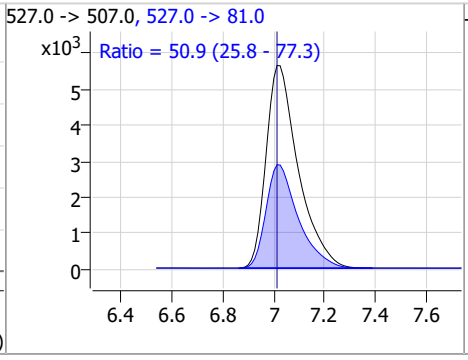


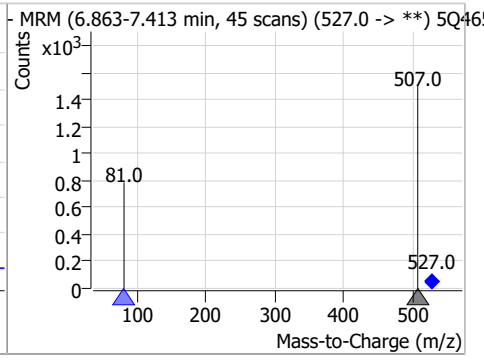




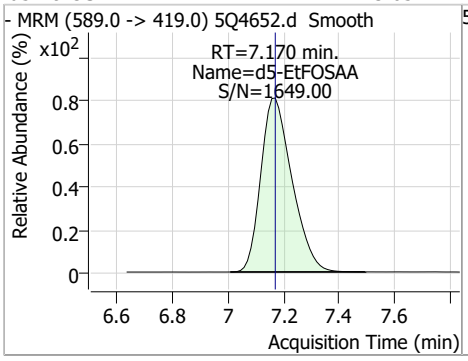
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.24	7.01	-0.01	49143	527.0 -> 81.0	50.9	25.8	77.3

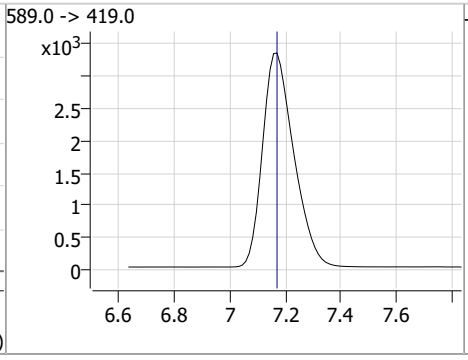


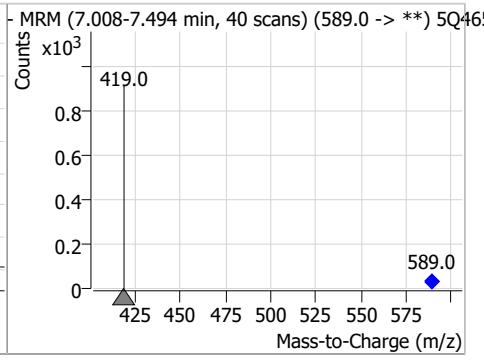




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.05	7.17	0.00	25846				

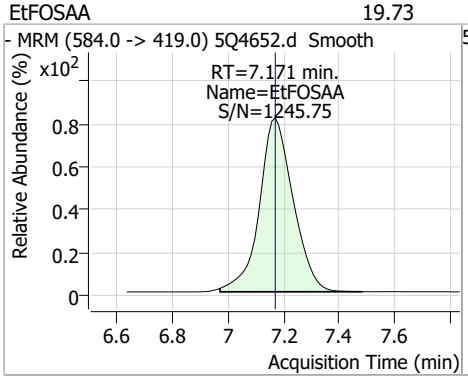


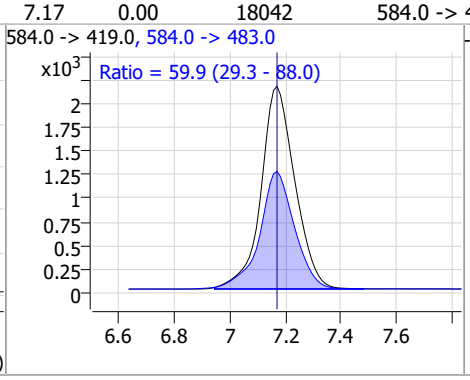


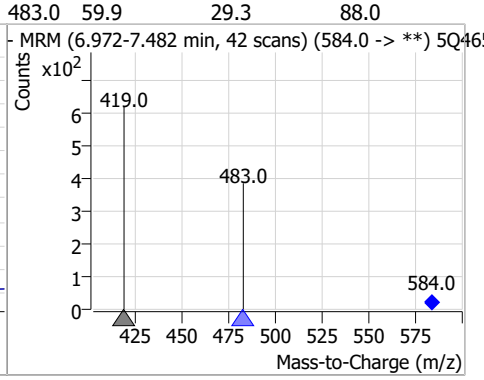


Perfluorinated Compounds by LC/MS/MS

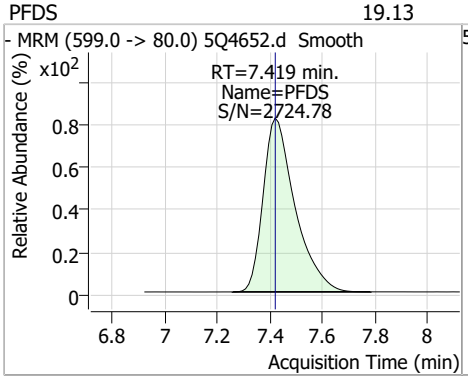
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.73	7.17	0.00	18042	584.0 -> 483.0	59.9	29.3	88.0

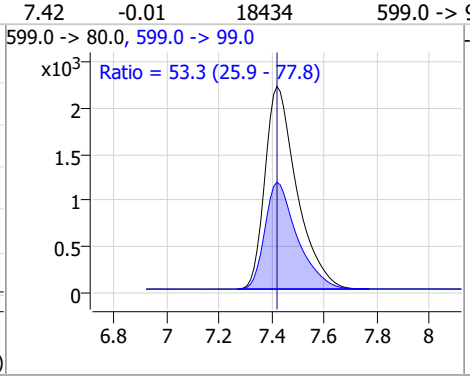


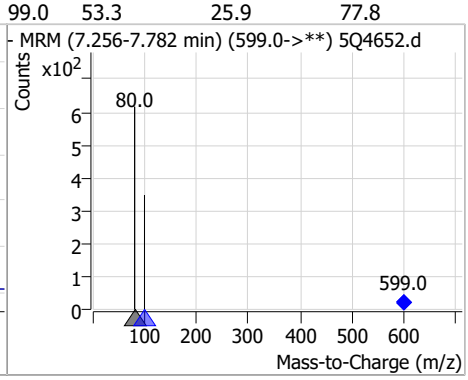




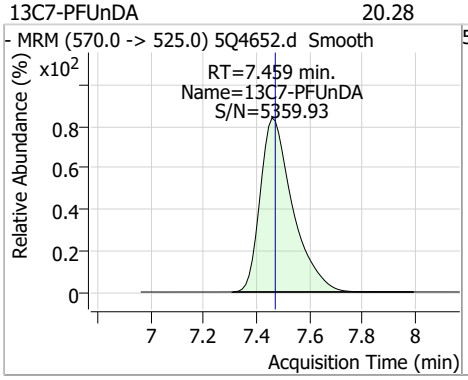
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.13	7.42	-0.01	18434	599.0 -> 99.0	53.3	25.9	77.8

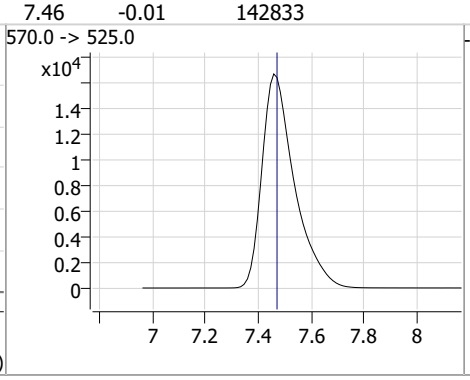


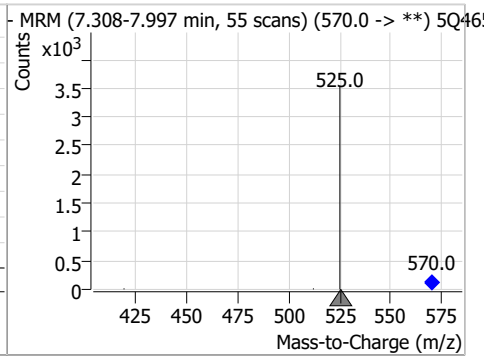




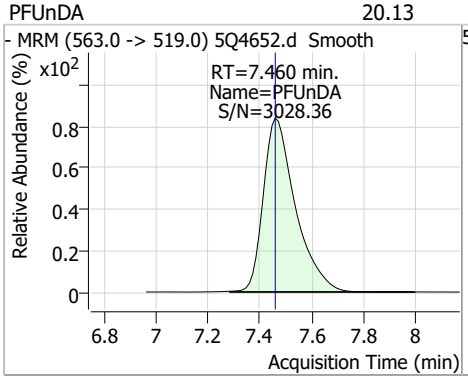
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.28	7.46	-0.01	142833				

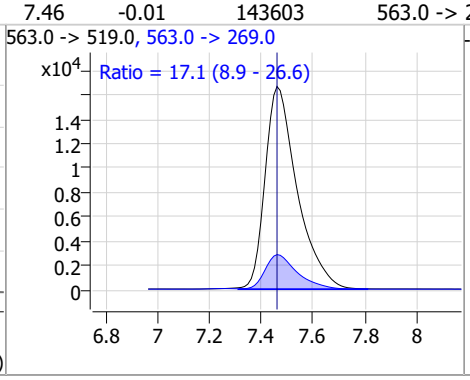


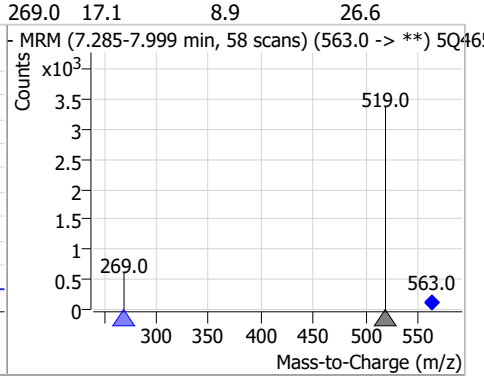




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.13	7.46	-0.01	143603	563.0 -> 269.0	17.1	8.9	26.6

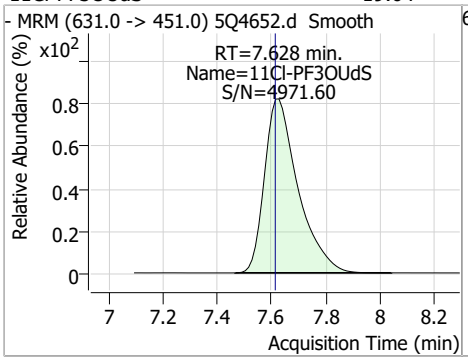


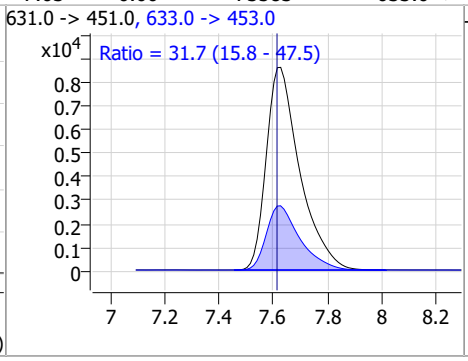


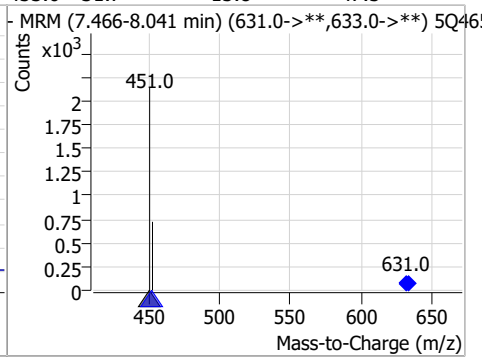


Perfluorinated Compounds by LC/MS/MS

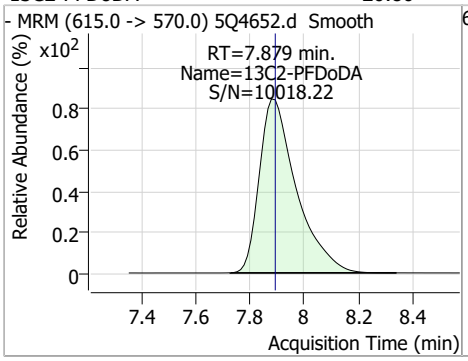
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.64	7.63	0.00	73583	633.0 -> 453.0	31.7	15.8	47.5

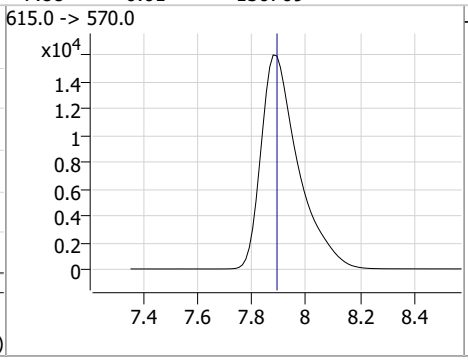


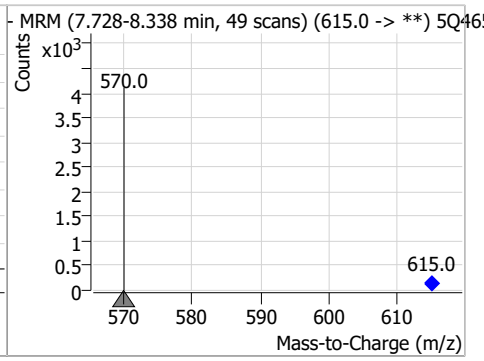




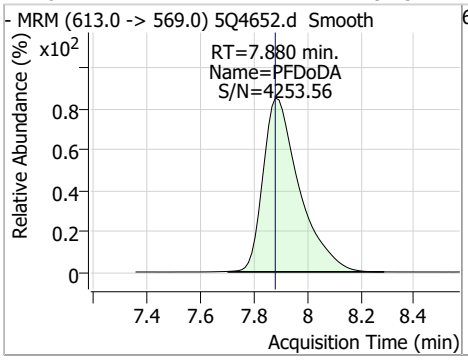
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.80	7.88	-0.01	150769				

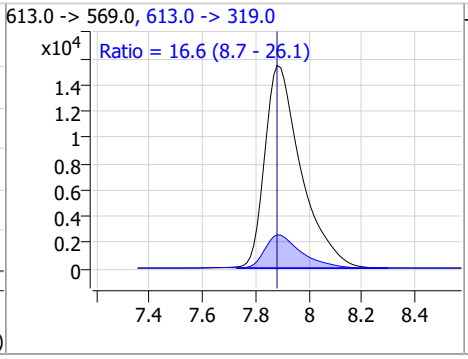


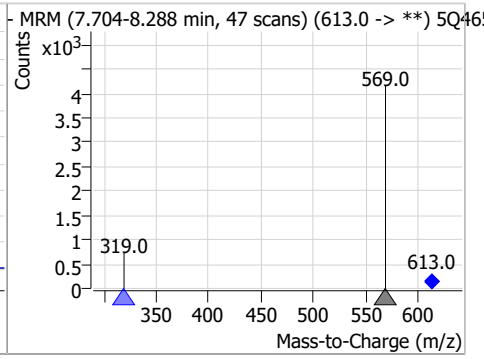




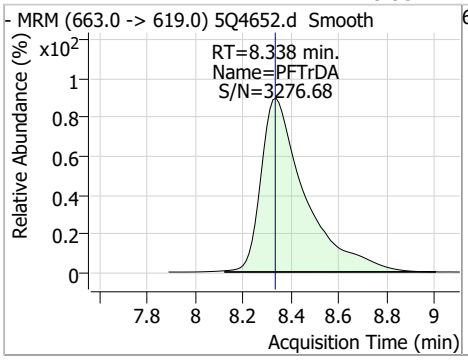
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.73	7.88	-0.01	145877	613.0 -> 319.0	16.6	8.7	26.1

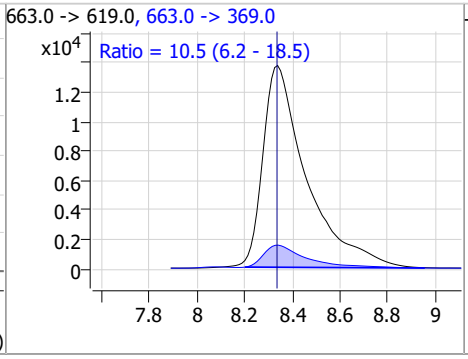


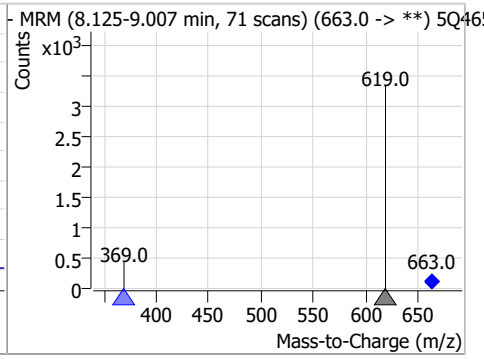




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.95	8.34	-0.01	176342	663.0 -> 369.0	10.5	6.2	18.5

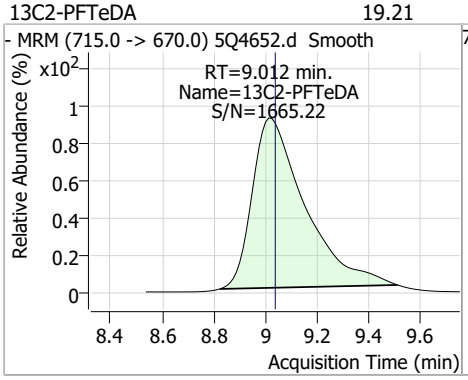


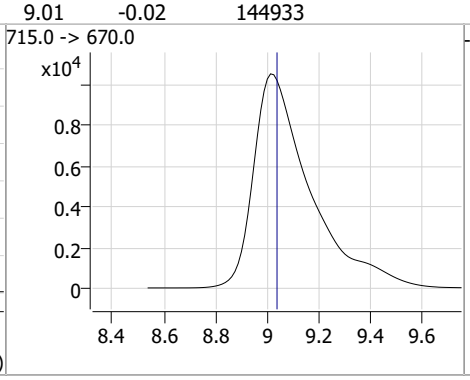


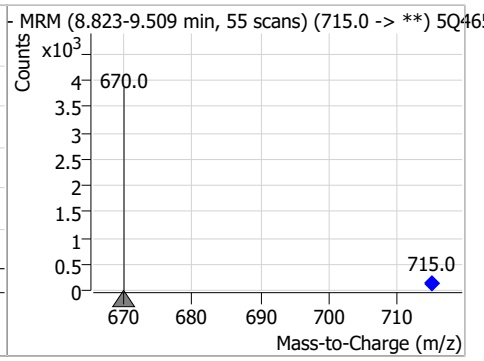


Perfluorinated Compounds by LC/MS/MS

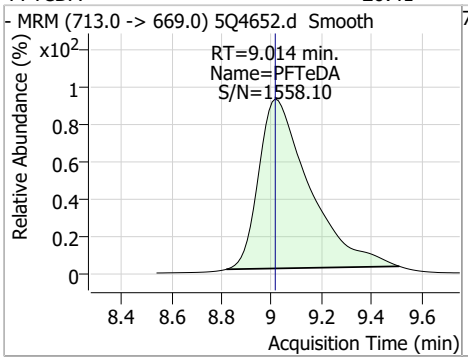
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.21	9.01	-0.02	144933				

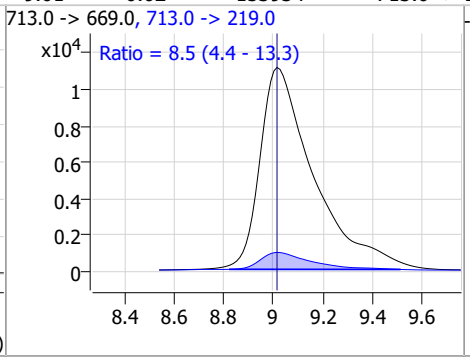


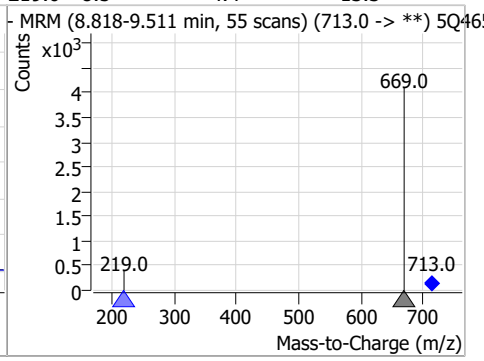




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.41	9.01	-0.02	153934	713.0 -> 219.0	8.5	4.4	13.3







7.7.52

Manual Integration Approval Summary

Sample Number: S5Q71-CC71
Lab FileID: 5Q4652.D
Injection Time: 09/15/22 10:58
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Mike Eger
09/15/22 19:34

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4658.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:30:47 PM
Sample Name : ecc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q71.batch.bin
Sample Information : OP92656,S5Q71,250,,,1.0,1,water

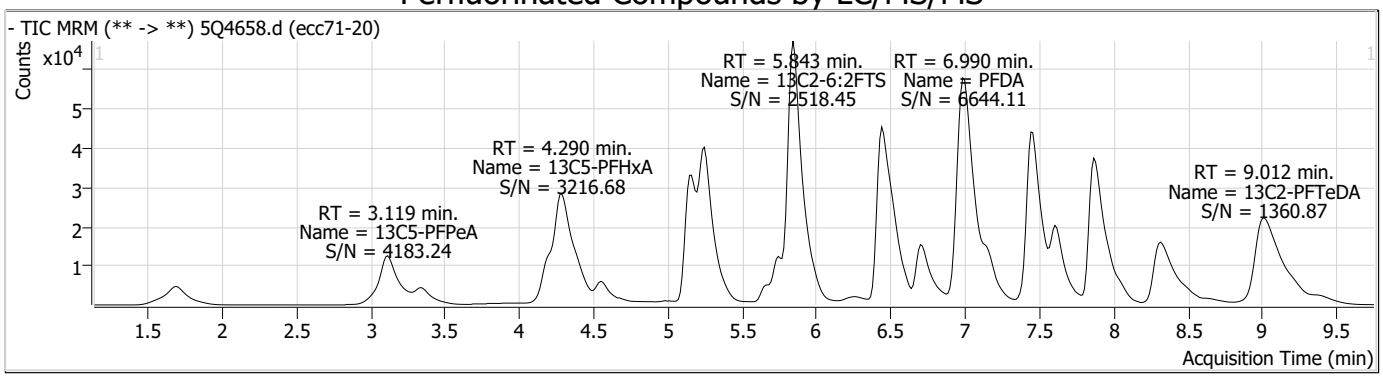
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	36217	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	58347	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	86787	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	81105	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	118075	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	128226	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	104442	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	132421	20.00 µg/L	-0.012
M2-PFDoDA	7.879	615.0 -> 570.0	139128	20.00 µg/L	-0.014
M2-PFTeDA	9.012	715.0 -> 670.0	131573	20.00 µg/L	-0.025
M8-FOSA	6.517	506.0 -> 78.0	23041	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6614	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6985	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	13549	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28490	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43916	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	43076	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	18593	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6800	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6563	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	22775	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	28490	19.40 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%	
13C2-6:2FTS	5.843	429.0 -> 409.0	43916	19.64 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%	
13C2-8:2FTS	7.025	529.0 -> 509.0	43076	19.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%	
13C2-PFDoDA	7.879	615.0 -> 570.0	139128	19.20 µg/L	-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%	
13C2-PFTeDA	9.012	715.0 -> 670.0	131573	17.44 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.2%	
13C3-PFBS	3.349	302.0 -> 99.0	6614	20.30 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	6985	20.48 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%	
13C4-PFBA	1.687	217.0 -> 172.0	36217	20.26 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%	
13C4-PFHpA	5.163	367.0 -> 322.0	81105	19.87 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFHxA	4.290	318.0 -> 273.0	86787	19.85 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%	
13C5-PFPeA	3.119	268.0 -> 223.0	58347	20.08 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%	
13C6-PFDA	6.989	519.0 -> 474.0	104442	19.40 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

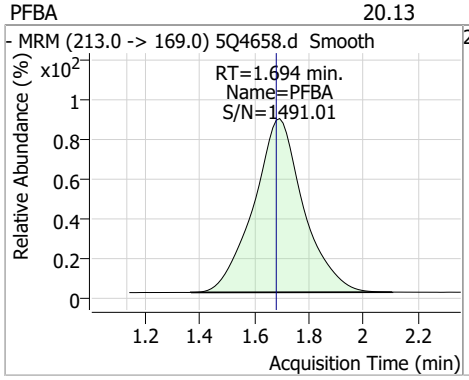
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
13C7-PFUnDA	7.459	570.0 -> 525.0	132421	18.81	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C8-FOSA	6.517	506.0 -> 78.0	23041	20.31	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
13C8-PFOA	5.857	421.0 -> 376.0	118075	19.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C8-PFOS	6.440	507.0 -> 99.0	13549	20.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%			
13C9-PFNA	6.455	472.0 -> 427.0	128226	19.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	18593	19.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	6800	20.25	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	6563	21.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%			
d5-EtFOSAA	7.170	589.0 -> 419.0	22775	20.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	32322	20.27	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	47430	20.36	µg/L		97
8:2FTS	7.026	527.0 -> 507.0	46136	20.10	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	14250	17.69	µg/L		100
FOSA	6.519	498.0 -> 78.0	23593	19.90	µg/L		98
MeFOSAA	7.010	570.0 -> 419.0	16176	19.00	µg/L		97
PFBA	1.694	213.0 -> 169.0	17174	20.13	µg/L		100
PFBS	3.354	299.0 -> 80.0	19577	19.71	µg/L		100
PFDA	6.990	513.0 -> 469.0	129773	20.23	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	135332	19.83	µg/L		98
PFDS	7.419	599.0 -> 80.0	18394	20.59	µg/L		98
PFHpA	5.164	363.0 -> 319.0	106764	20.04	µg/L		100
PFHpS	5.855	449.0 -> 80.0	20159	19.79	µg/L		99
PFHxA	4.291	313.0 -> 269.0	82999	19.57	µg/L		100
PFHxS	5.195	399.0 -> 80.0	20383	19.65	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	112460	19.58	µg/L		100
PFNS	6.949	549.0 -> 80.0	19528	19.53	µg/L		99
PFOA	5.858	413.0 -> 369.0	142756	19.94	µg/L		99
PFOS	6.429	499.0 -> 80.0	22955	19.24	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	57079	19.80	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14988	19.39	µg/L		98
PFTeDA	9.014	713.0 -> 669.0	139733	20.40	µg/L		99
PFTrDA	8.325	663.0 -> 619.0	154630	18.96	µg/L		97
PFUnDA	7.460	563.0 -> 519.0	134540	20.34	µg/L		98
11Cl-PF3OUdS	7.615	631.0 -> 451.0	73850	21.36	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	73010	20.23	µg/L		100
ADONA	5.261	377.0 -> 251.0	135277	18.84	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	22488	19.60	µg/L		99
MeFOSA	6.966	512.0 -> 169.0	7175	20.30	µg/L		100
4-PFECHS	5.753	461.0 -> 381.0	43237	20.35	µg/L		99
FBSA	4.343	298.0 -> 78.0	29053	20.19	µg/L		100
FHxSA	5.674	398.0 -> 78.0	23779	19.80	µg/L		100

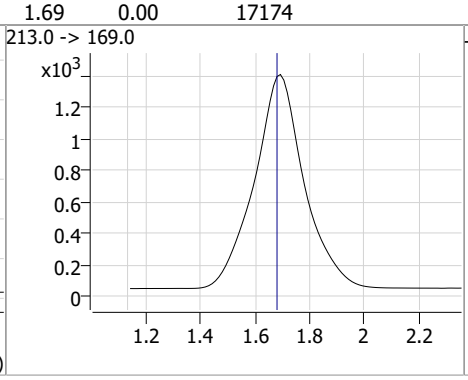
 # = Qualifier out of range, m = manually integrated, + = Area summed

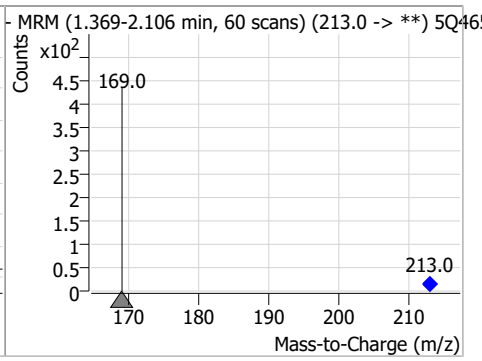
Perfluorinated Compounds by LC/MS/MS



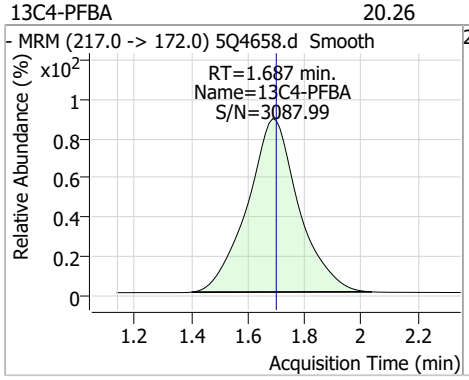
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.13	1.69	0.00	17174				

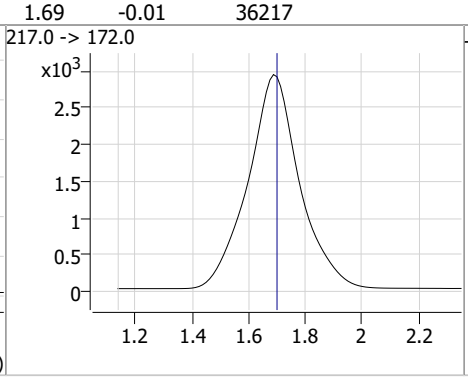


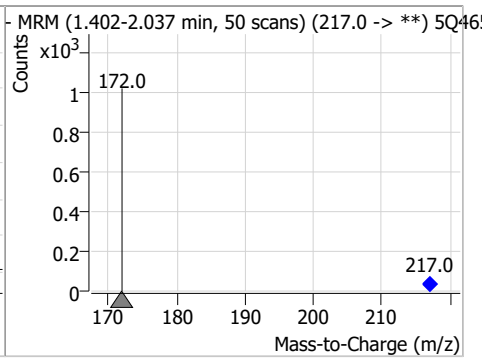




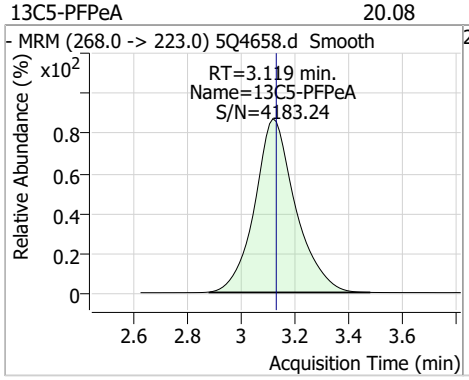
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.26	1.69	-0.01	36217				

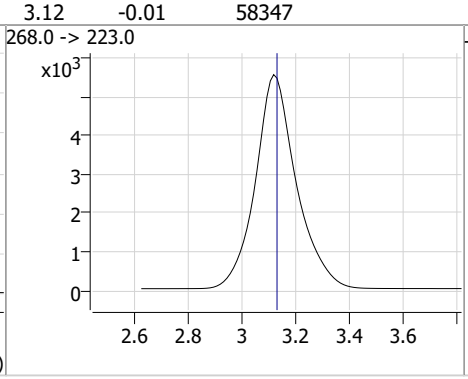


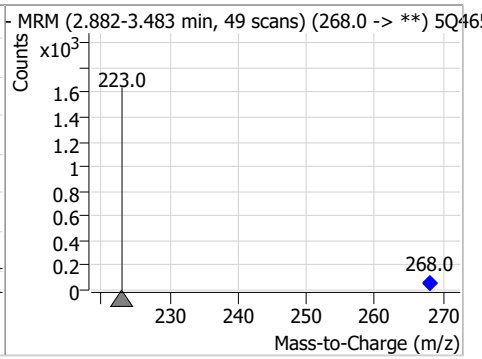




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.08	3.12	-0.01	58347				

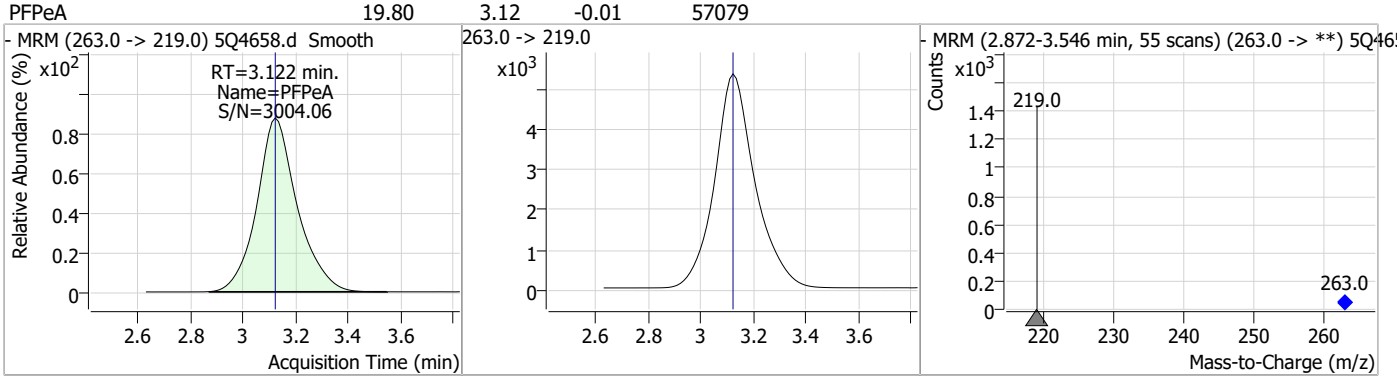




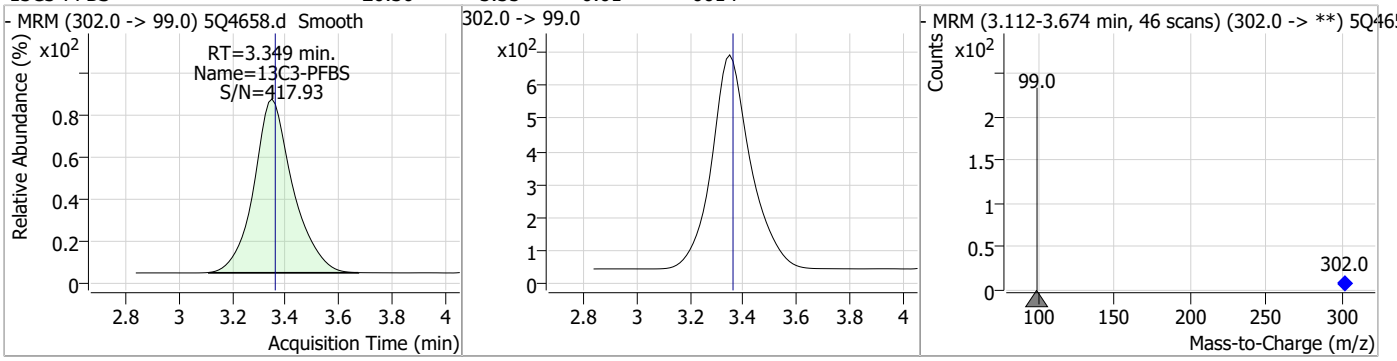


Perfluorinated Compounds by LC/MS/MS

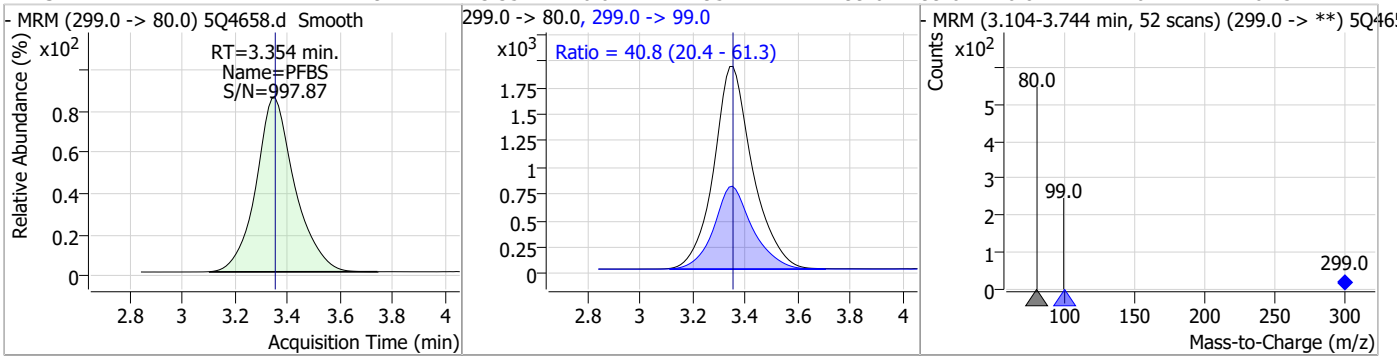
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.80	3.12	-0.01	57079				



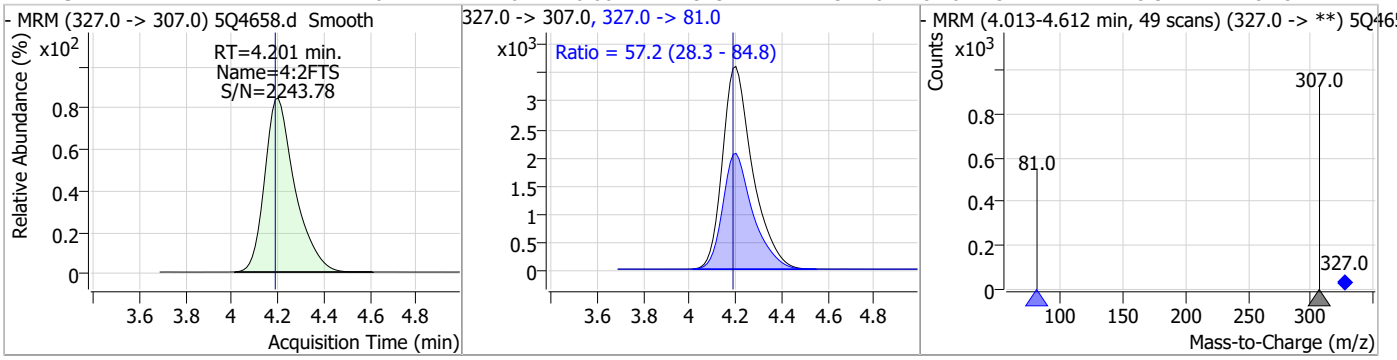
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.30	3.35	-0.01	6614				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.71	3.35	-0.01	19577	299.0 -> 99.0	40.8	20.4	61.3

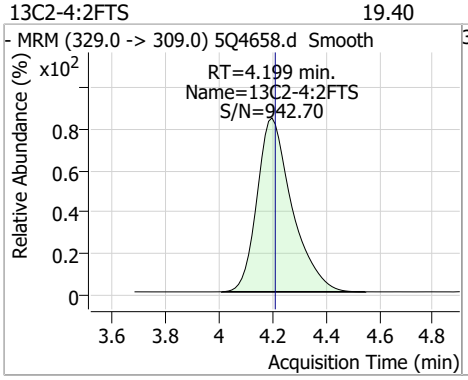


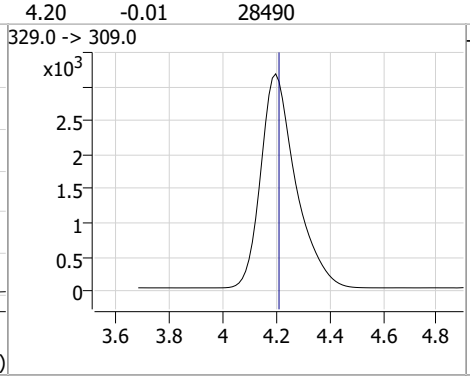
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.27	4.20	0.00	32322	327.0 -> 81.0	57.2	28.3	84.8

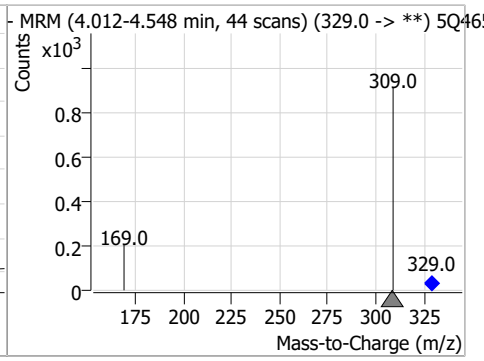


Perfluorinated Compounds by LC/MS/MS

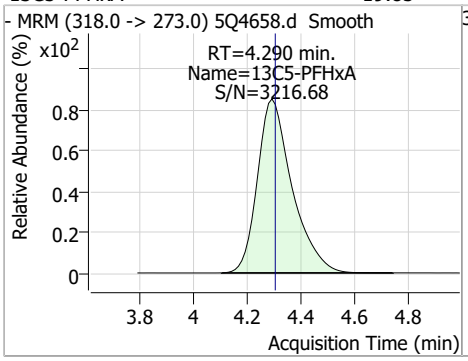
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.40	4.20	-0.01	28490				

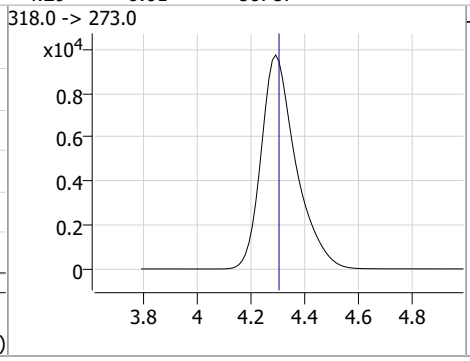


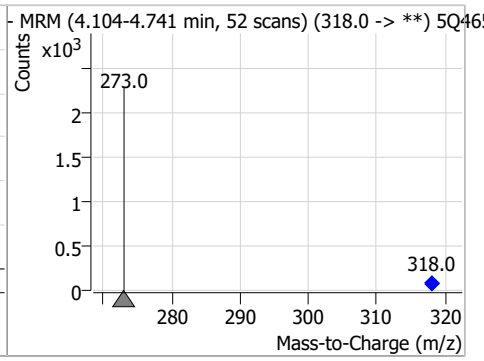




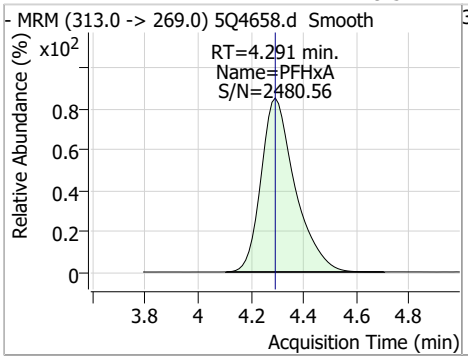
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.85	4.29	-0.01	86787				

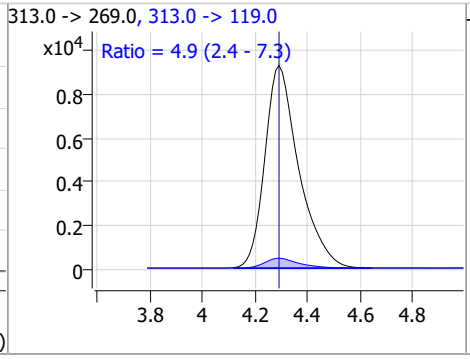


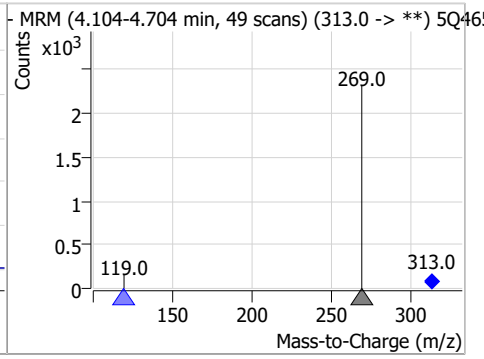




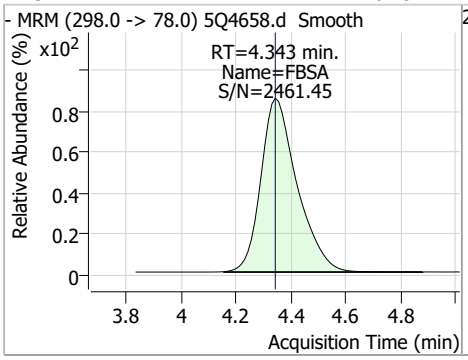
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.57	4.29	-0.01	82999	313.0 -> 119.0	4.9	2.4	7.3

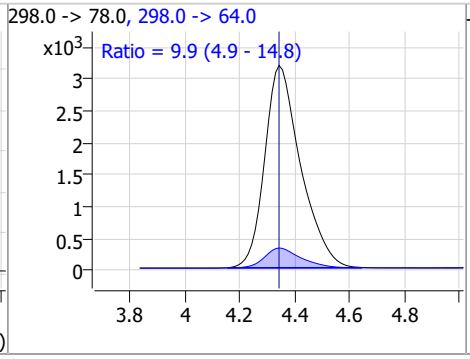


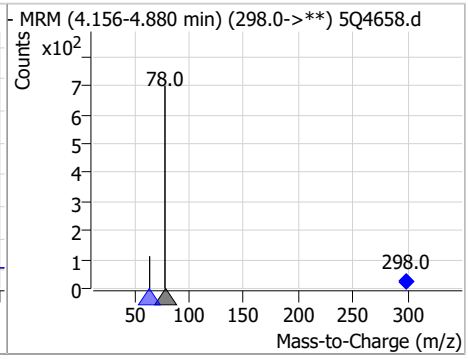




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.19	4.34	-0.01	29053	298.0 -> 64.0	9.9	4.9	14.8

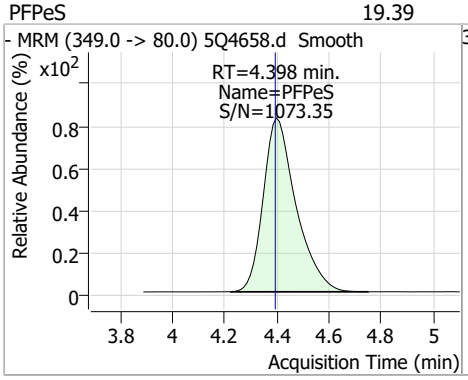


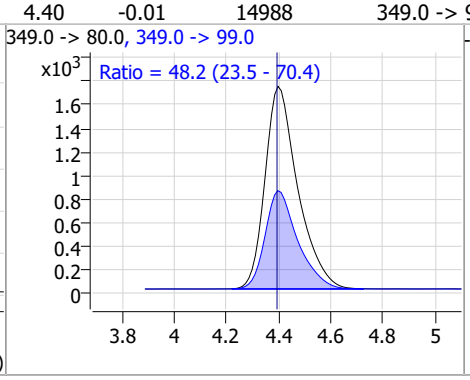


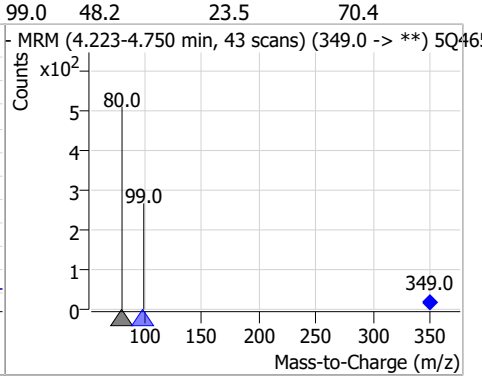


Perfluorinated Compounds by LC/MS/MS

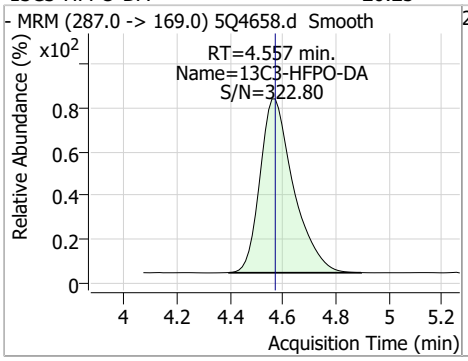
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.39	4.40	-0.01	14988	349.0 -> 99.0	48.2	23.5	70.4

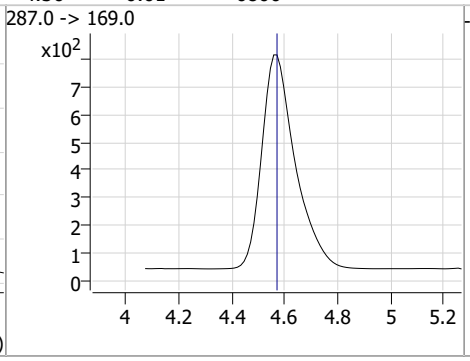


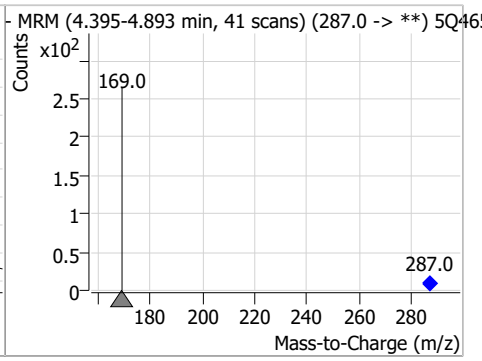




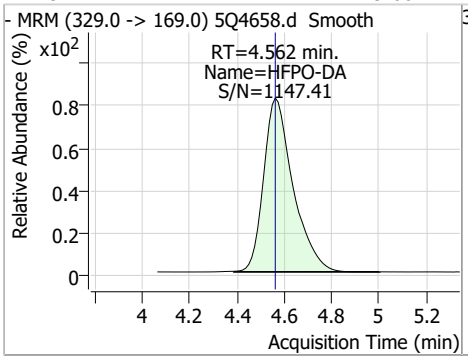
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.25	4.56	-0.01	6800				

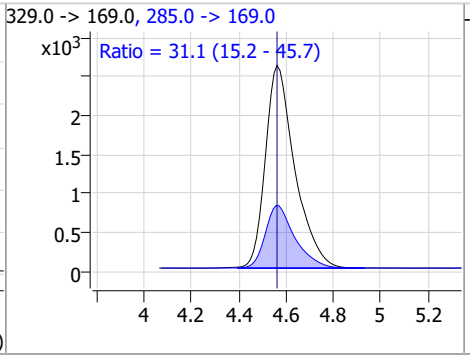


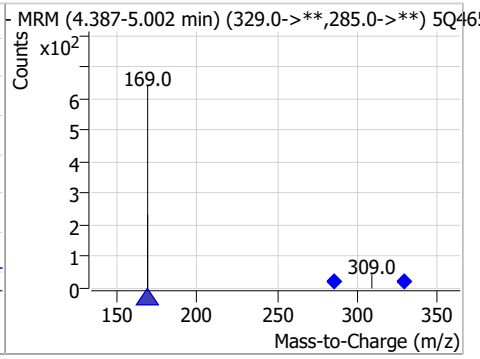




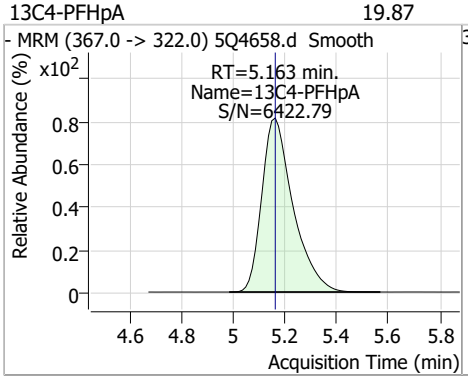
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.60	4.56	-0.01	22488	285.0 -> 169.0	31.1	15.2	45.7

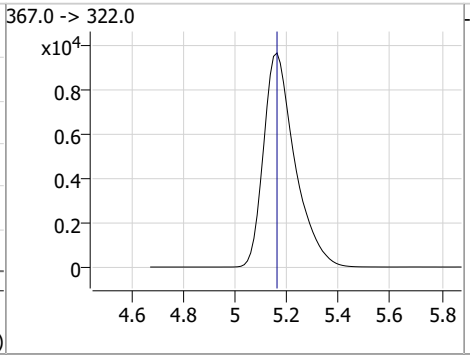


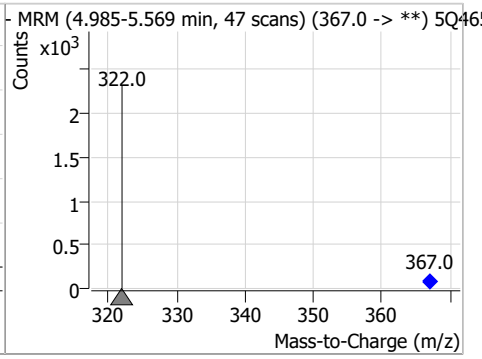




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.87	5.16	0.00	81105				

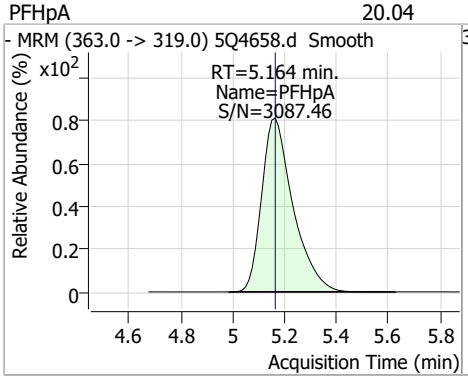


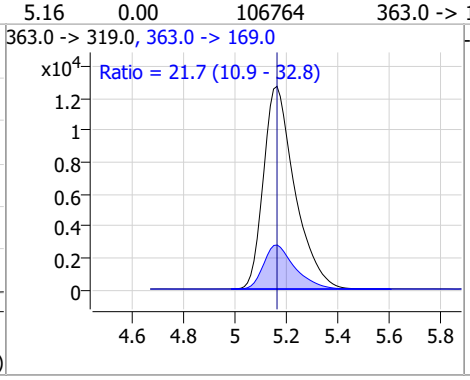


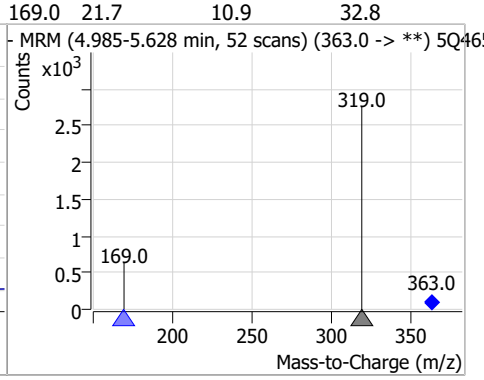


Perfluorinated Compounds by LC/MS/MS

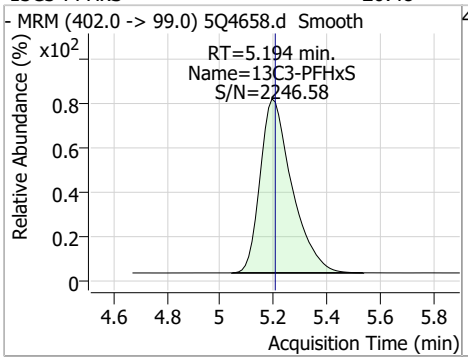
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.04	5.16	0.00	106764	363.0 -> 169.0	21.7	10.9	32.8

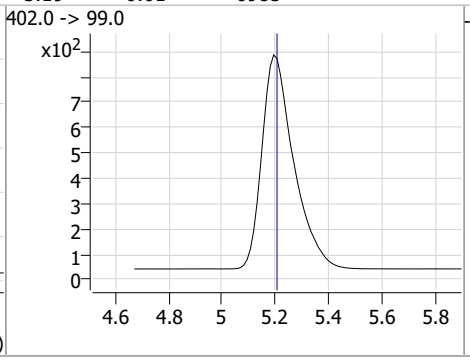


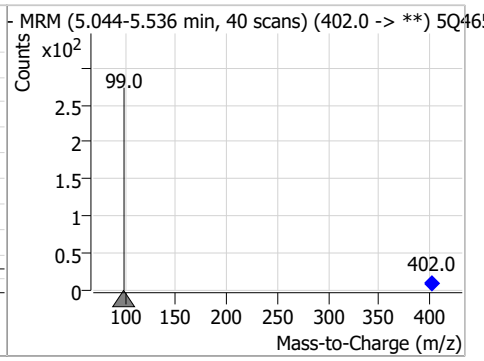




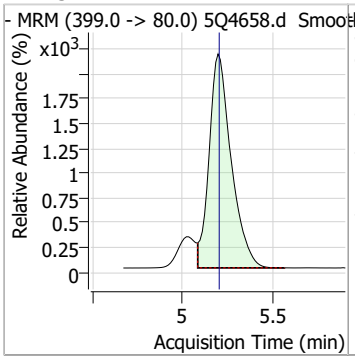
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.48	5.19	-0.01	6985				

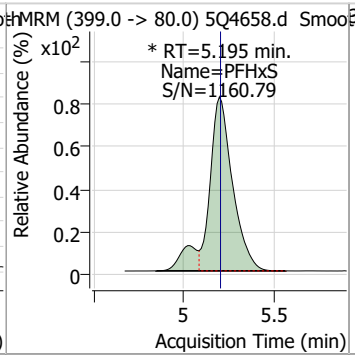


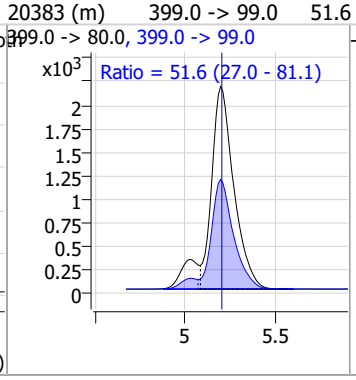


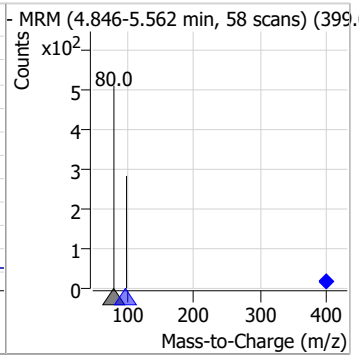


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.65	5.20	-0.01	20383 (m)	399.0 -> 99.0	51.6	27.0	81.1

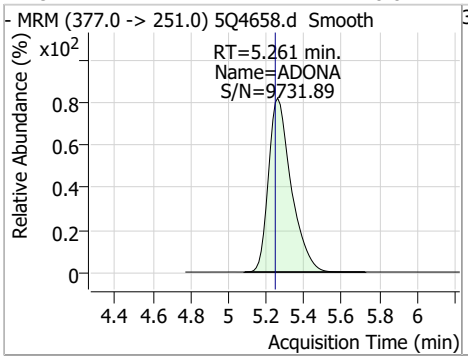


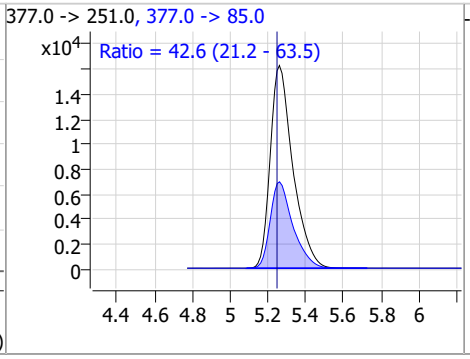


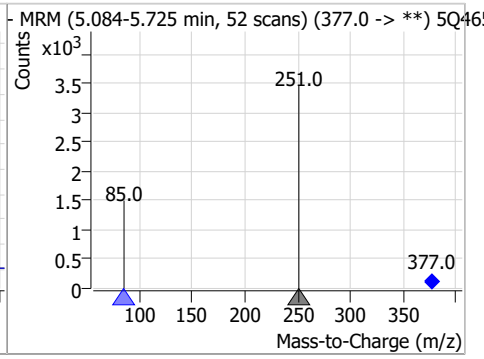




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	18.84	5.26	0.00	135277	377.0 -> 85.0	42.6	21.2	63.5

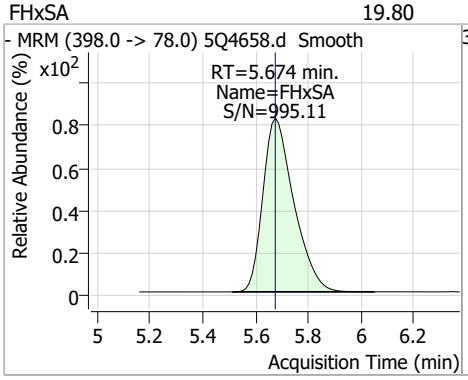


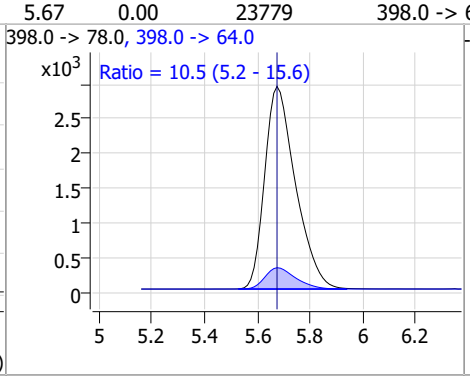


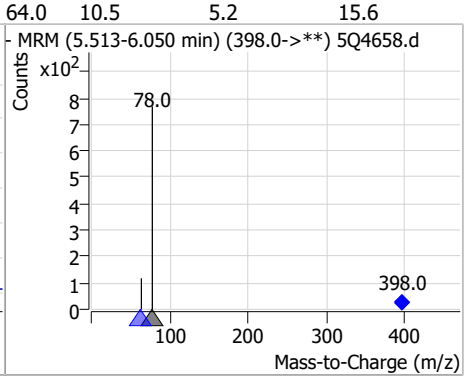


Perfluorinated Compounds by LC/MS/MS

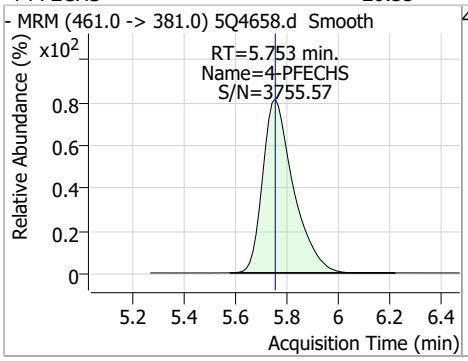
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.80	5.67	0.00	23779	398.0 -> 64.0	10.5	5.2	15.6

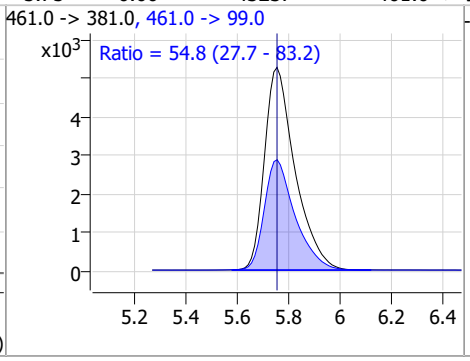


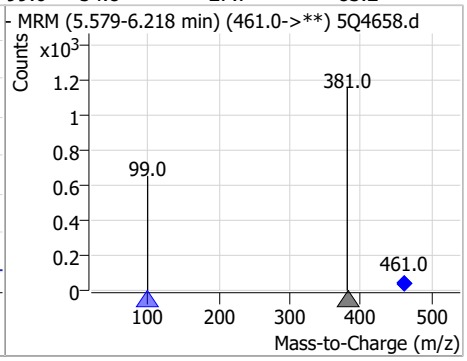




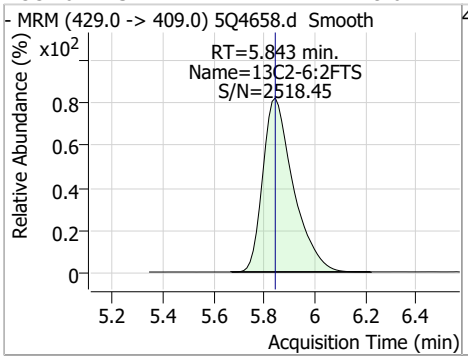
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.35	5.75	0.00	43237	461.0 -> 99.0	54.8	27.7	83.2

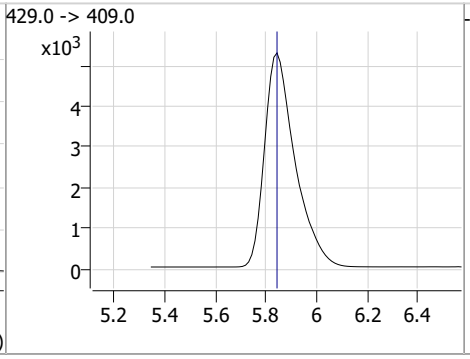


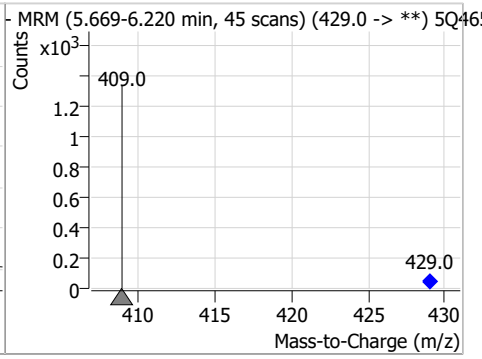




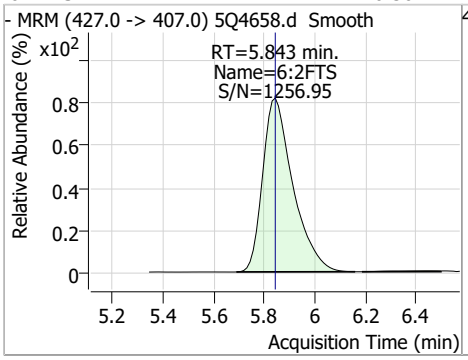
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.64	5.84	0.00	43916				

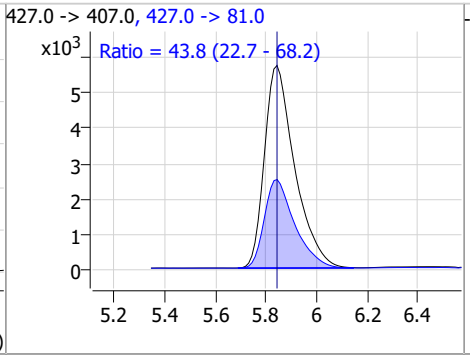


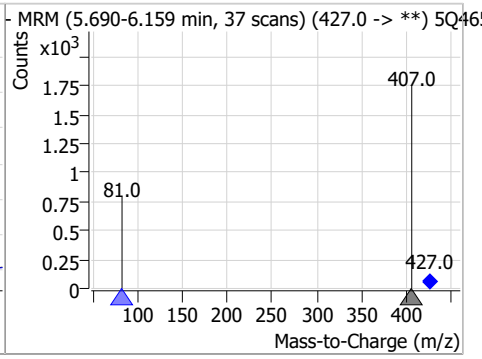




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.36	5.84	0.00	47430	427.0 -> 81.0	43.8	22.7	68.2

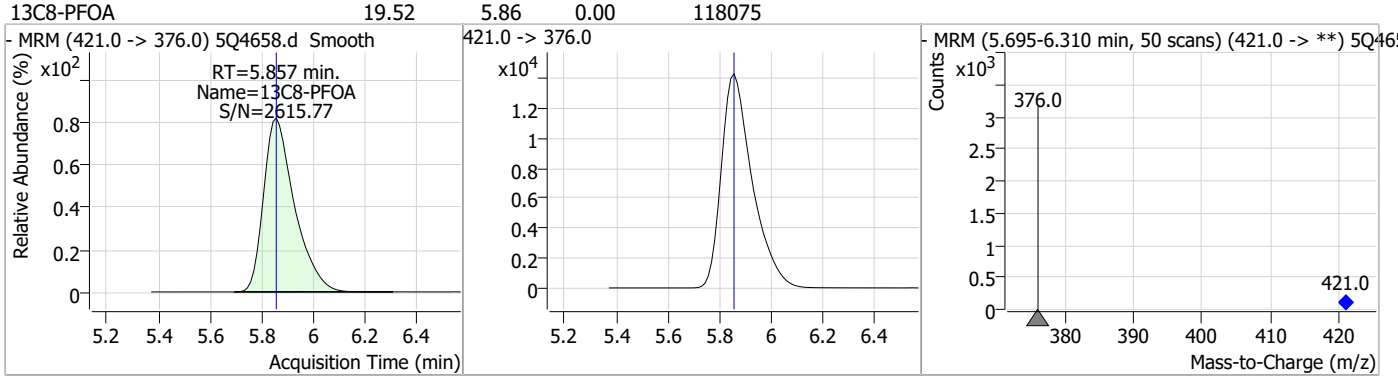




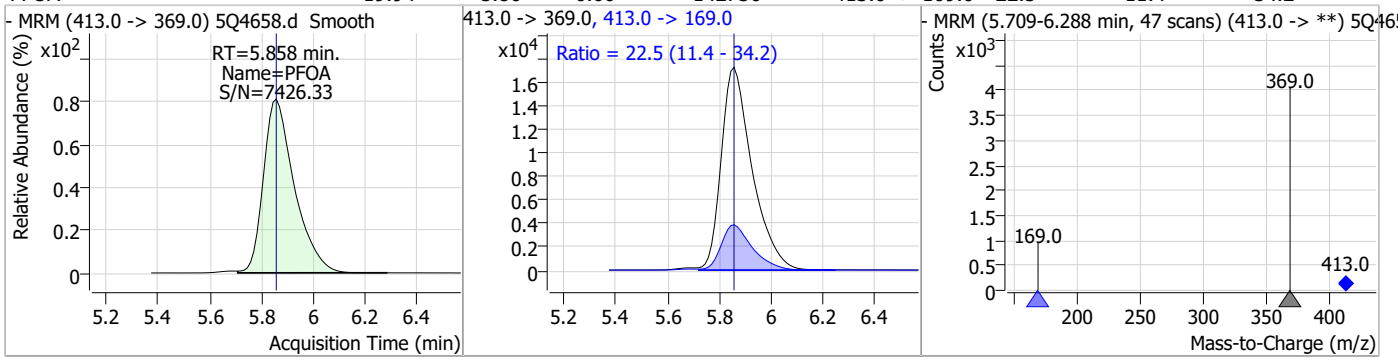


Perfluorinated Compounds by LC/MS/MS

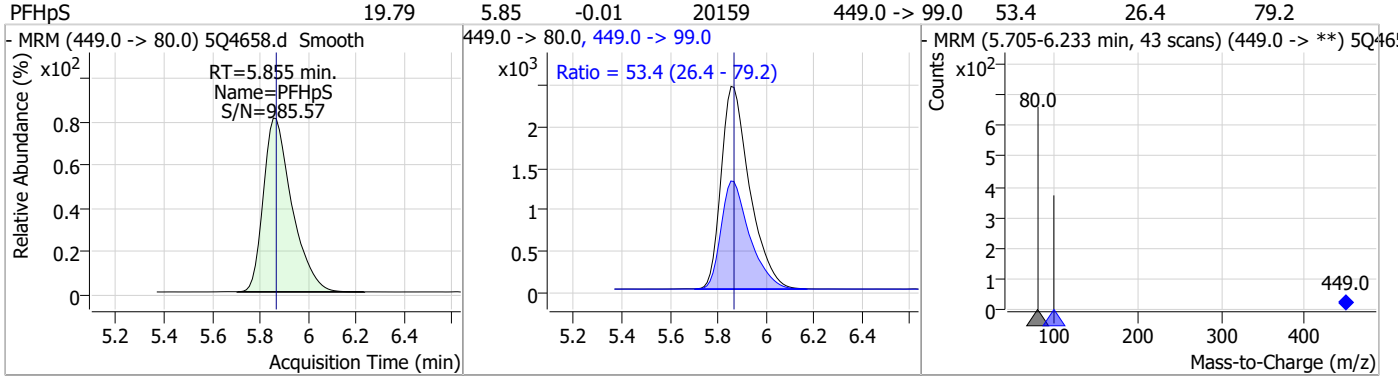
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.52	5.86	0.00	118075				



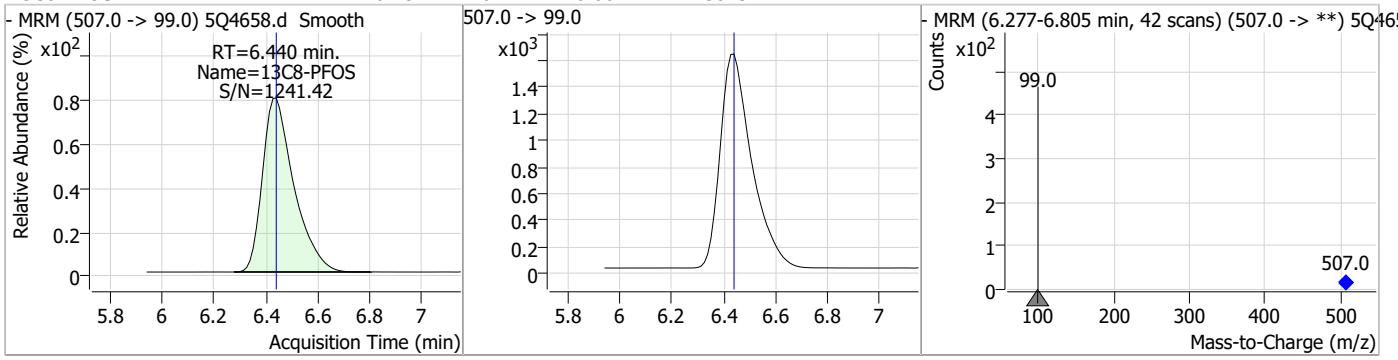
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.94	5.86	0.00	142756	413.0 -> 169.0	22.5	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.79	5.85	-0.01	20159	449.0 -> 99.0	53.4	26.4	79.2

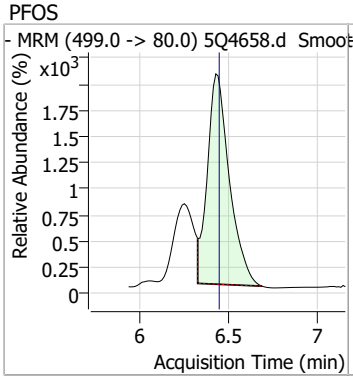


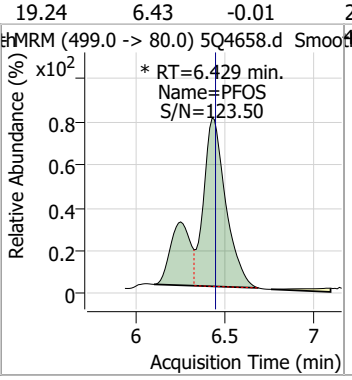
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.75	6.44	0.00	13549				

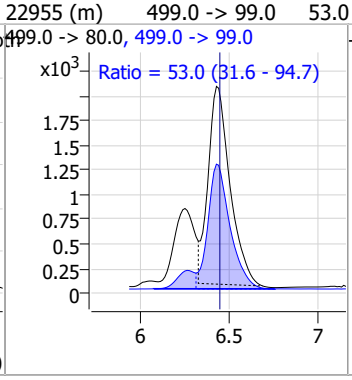


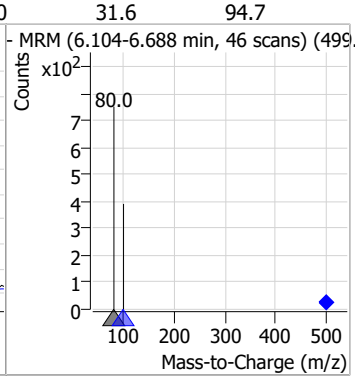
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.24	6.43	-0.01	22955 (m)	499.0 -> 99.0	53.0	31.6	94.7

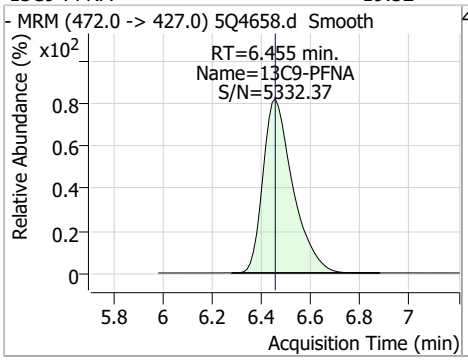


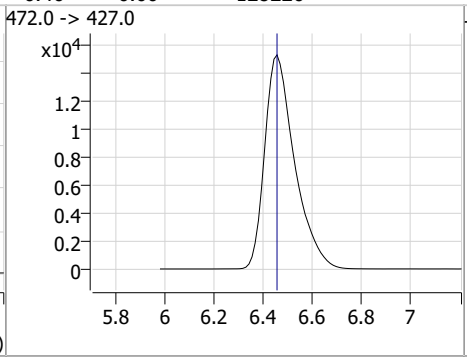


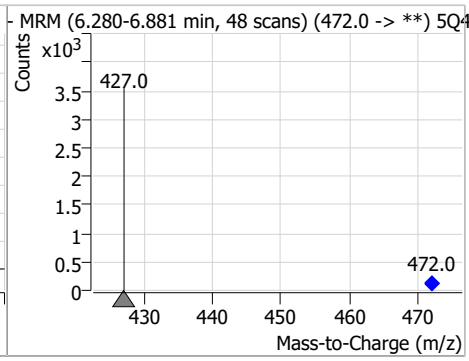




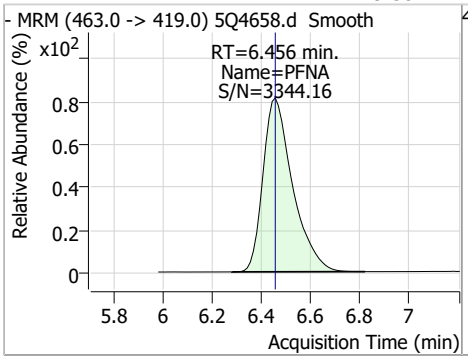
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.52	6.46	0.00	128226				

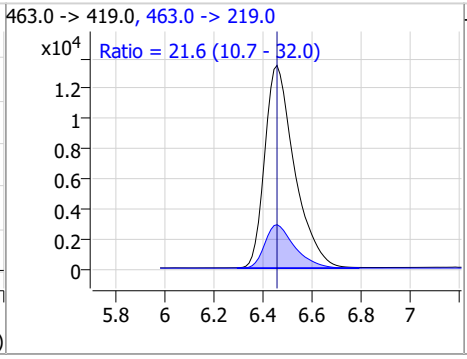


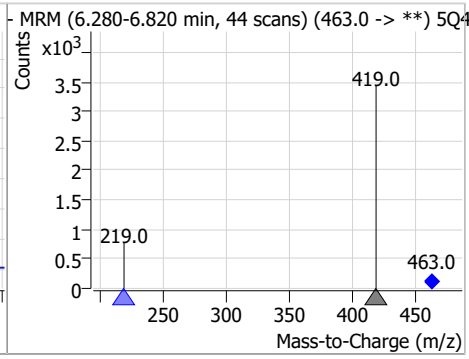




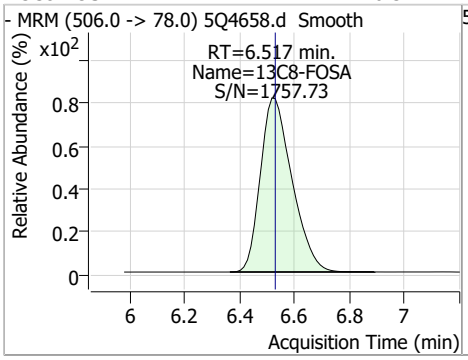
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.58	6.46	0.00	112460	463.0 -> 219.0	21.6	10.7	32.0

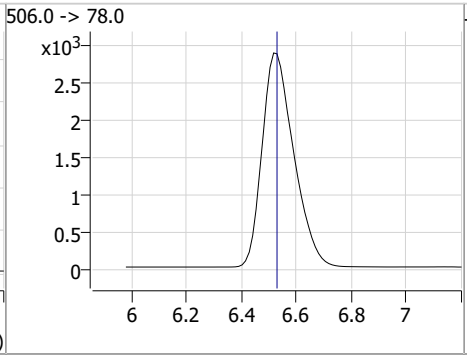


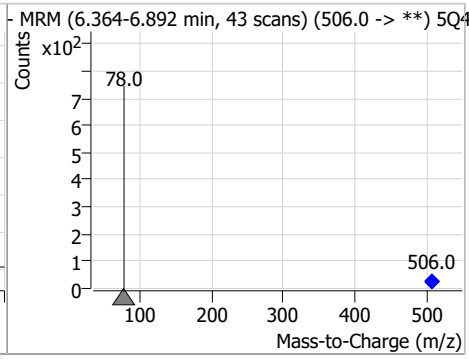




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.31	6.52	-0.01	23041				

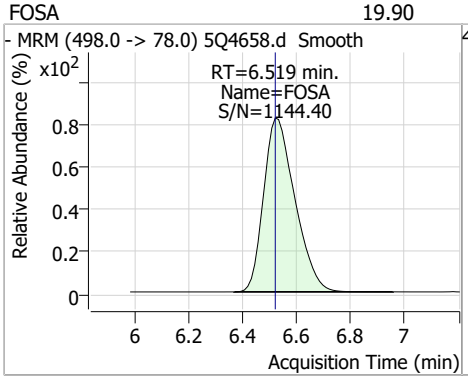


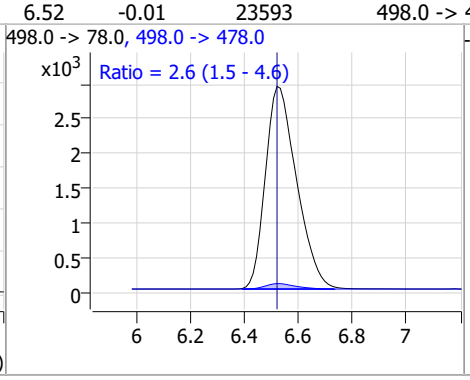


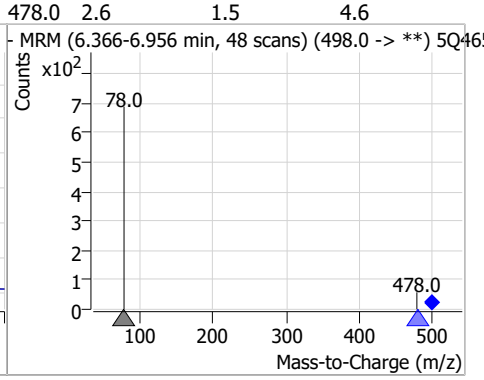


Perfluorinated Compounds by LC/MS/MS

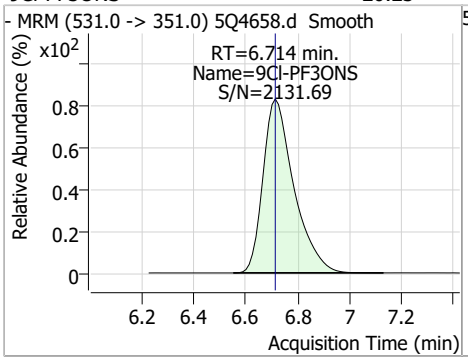
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.90	6.52	-0.01	23593	498.0 -> 478.0	2.6	1.5	4.6

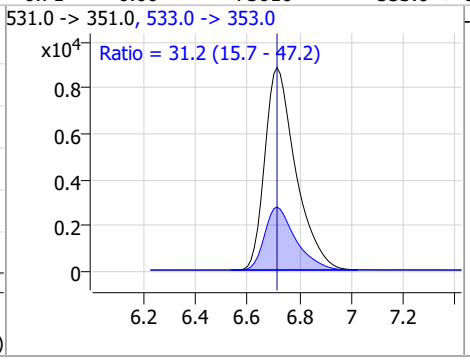


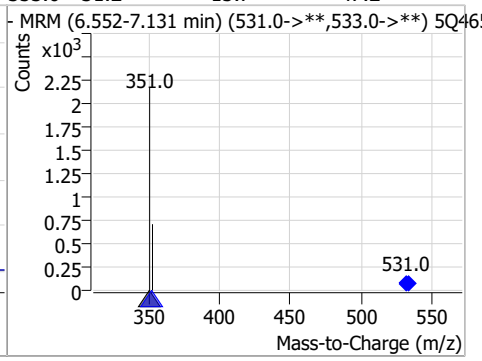




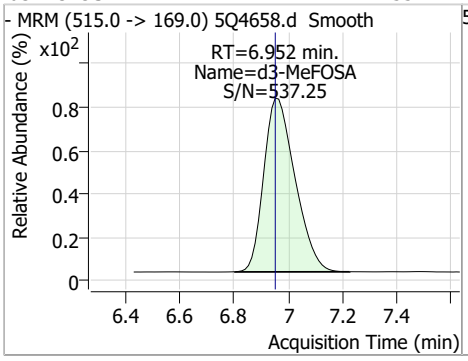
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.23	6.71	0.00	73010	533.0 -> 353.0	31.2	15.7	47.2

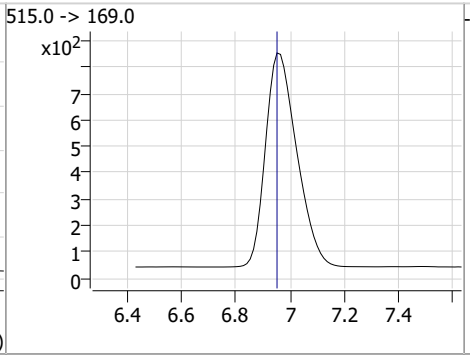


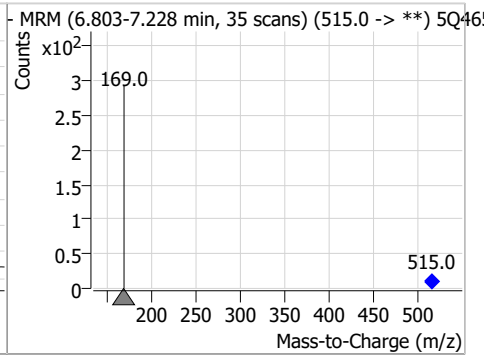




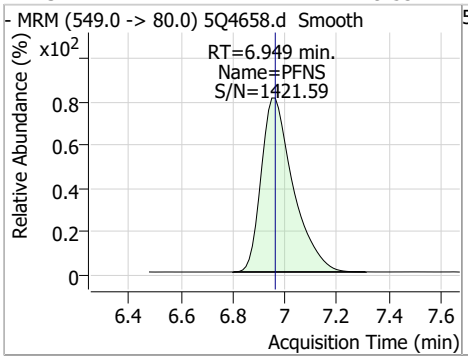
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.55	6.95	0.00	6563				

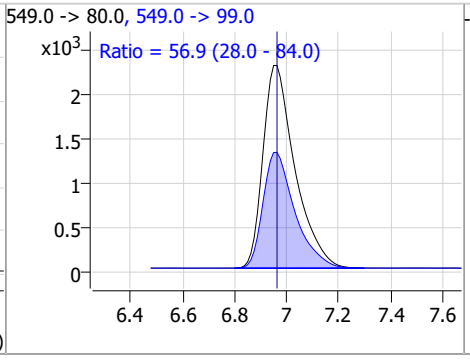


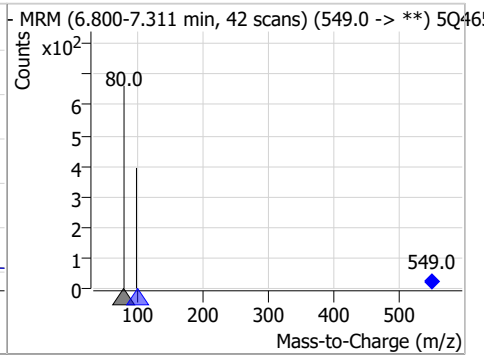




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.53	6.95	-0.01	19528	549.0 -> 99.0	56.9	28.0	84.0

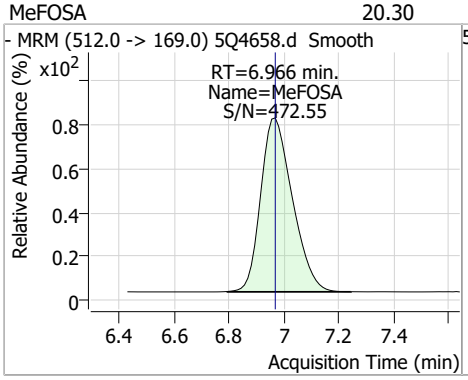


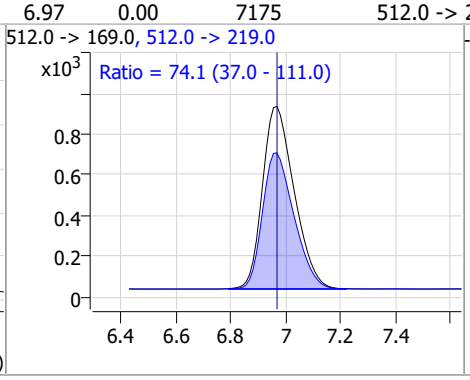


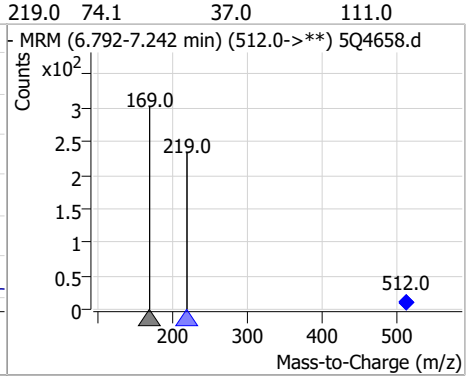


Perfluorinated Compounds by LC/MS/MS

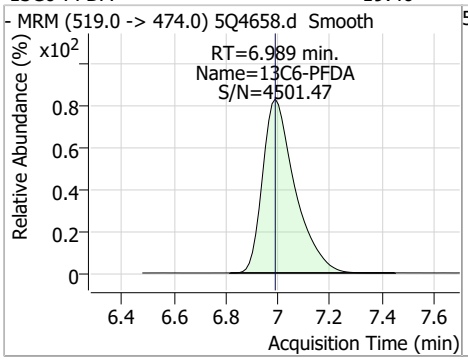
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.30	6.97	0.00	7175	512.0 -> 219.0	74.1	37.0	111.0

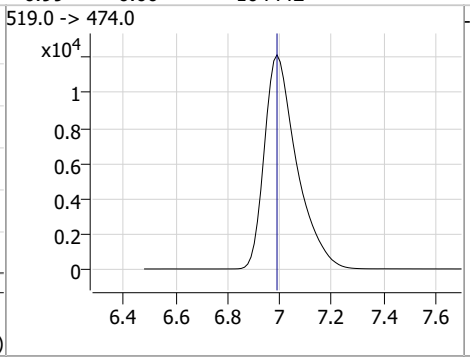


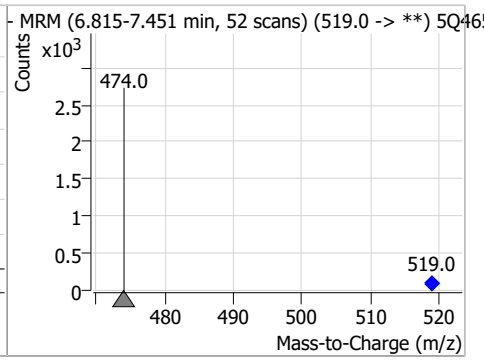




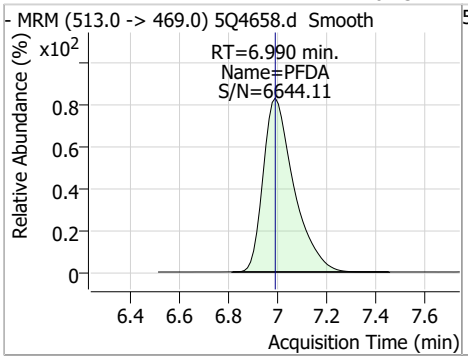
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.40	6.99	0.00	104442				

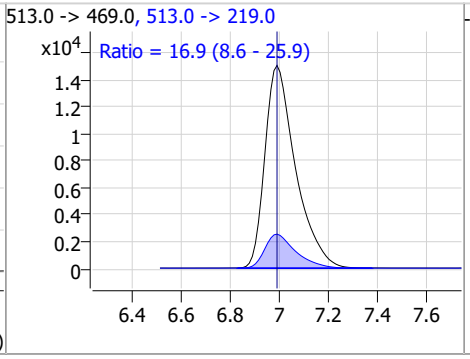


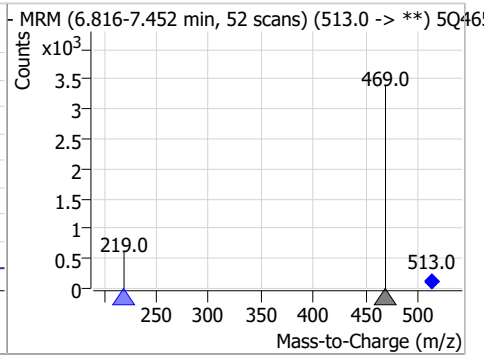




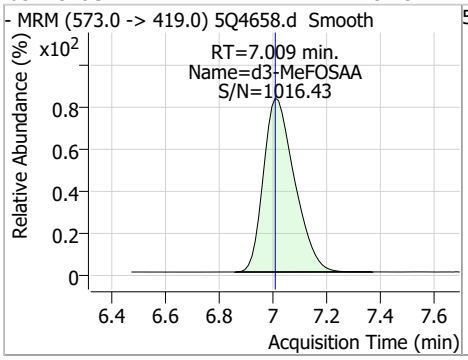
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.23	6.99	0.00	129773	513.0 -> 219.0	16.9	8.6	25.9

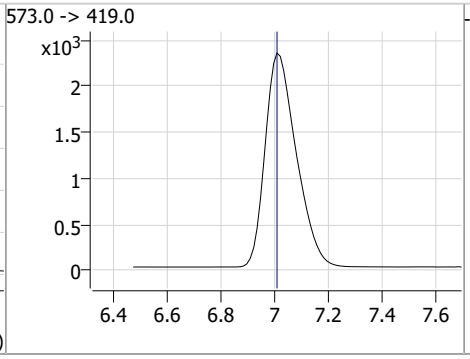


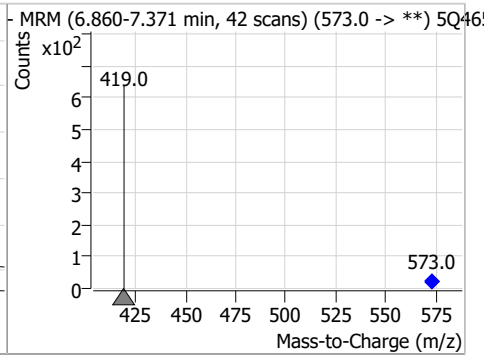




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.13	7.01	0.00	18593				

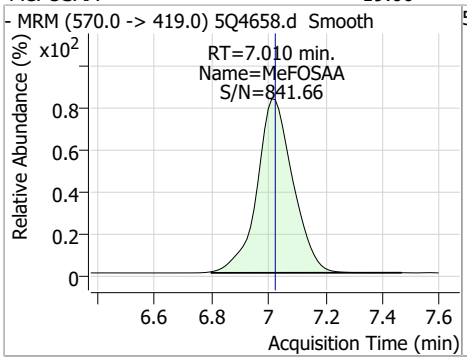


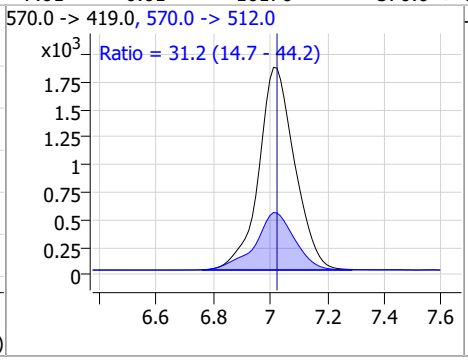


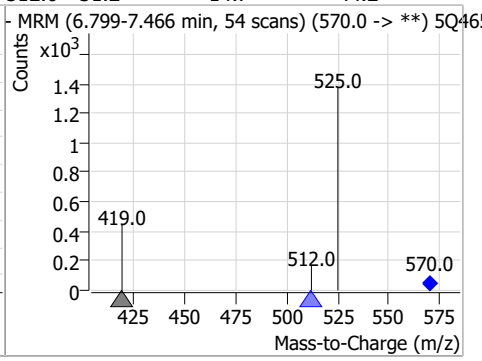


Perfluorinated Compounds by LC/MS/MS

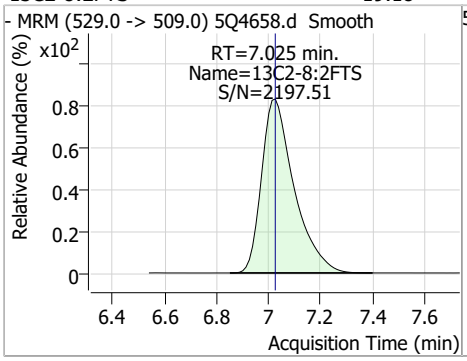
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.00	7.01	-0.01	16176	570.0 -> 512.0	31.2	14.7	44.2

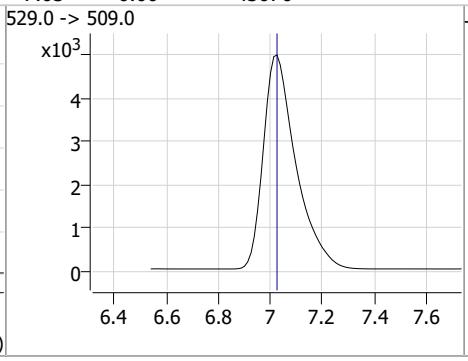


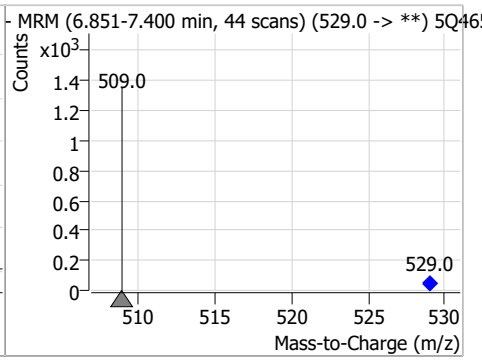




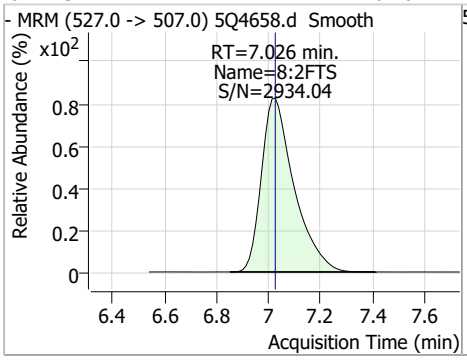
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.18	7.03	0.00	43076				

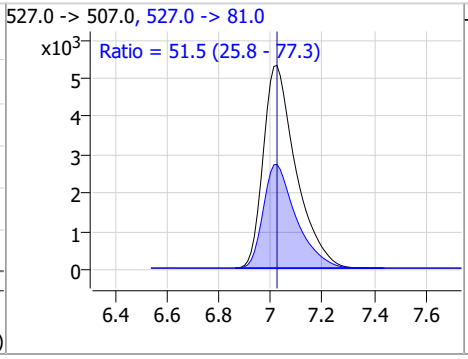


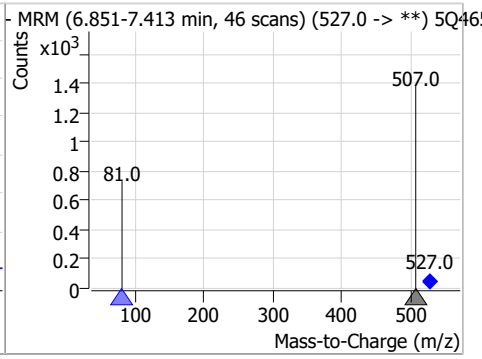




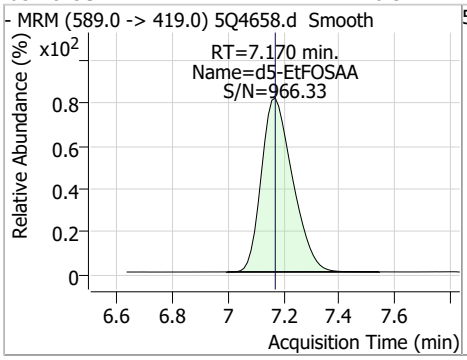
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.10	7.03	0.00	46136	527.0 -> 81.0	51.5	25.8	77.3

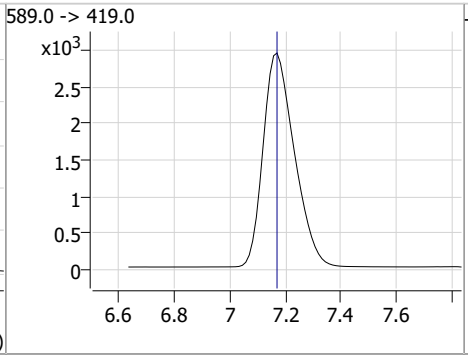


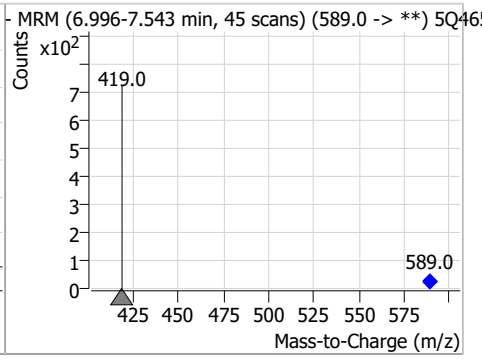




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.31	7.17	0.00	22775				

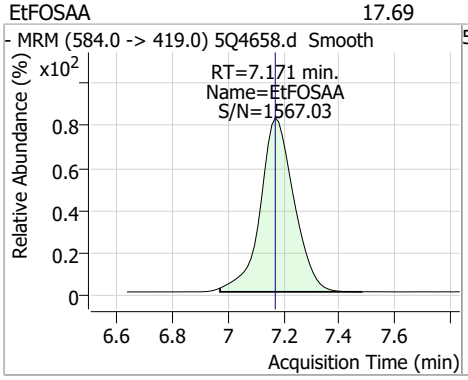


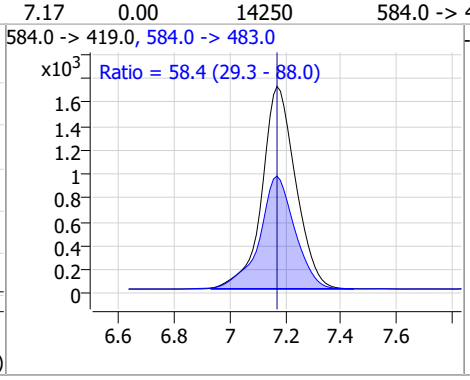


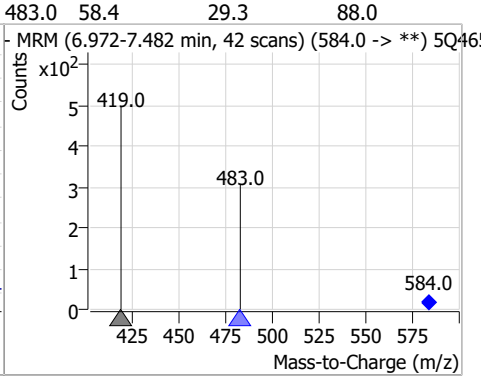


Perfluorinated Compounds by LC/MS/MS

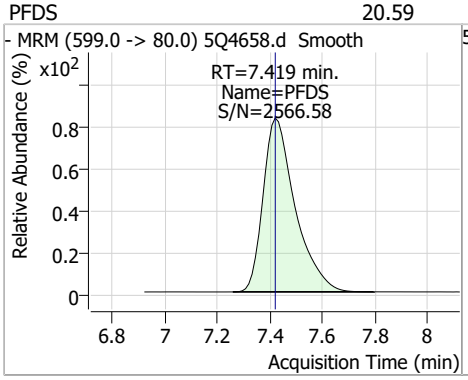
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.69	7.17	0.00	14250	584.0 -> 483.0	58.4	29.3	88.0

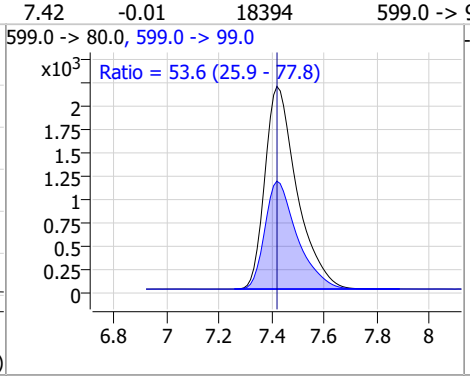


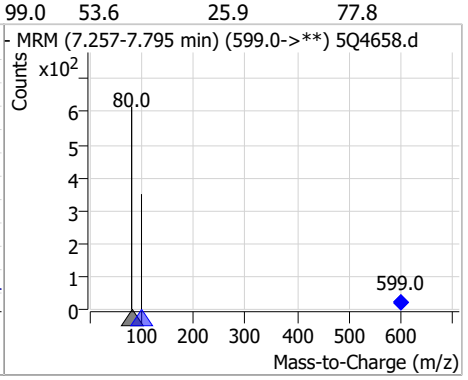




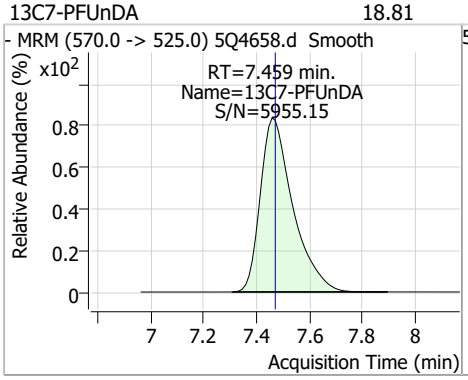
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.59	7.42	-0.01	18394	599.0 -> 99.0	53.6	25.9	77.8

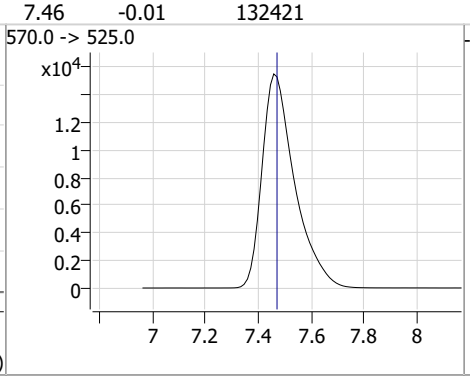


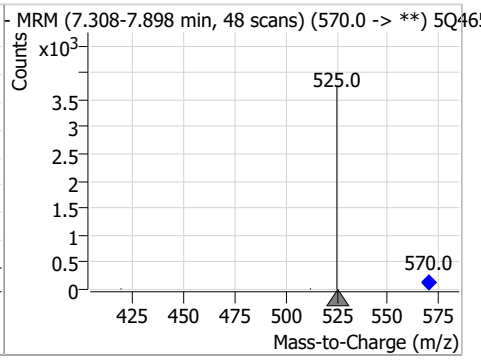




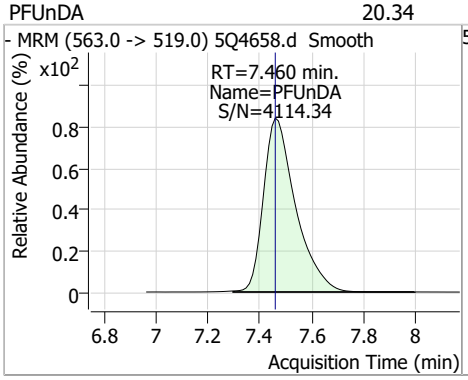
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.81	7.46	-0.01	132421				

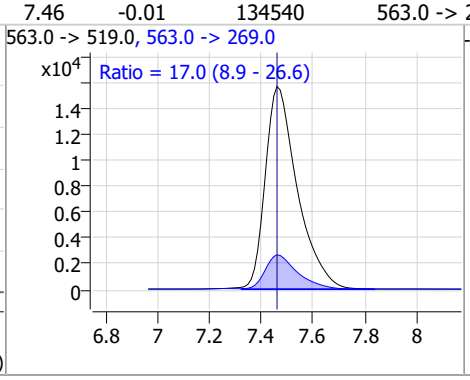


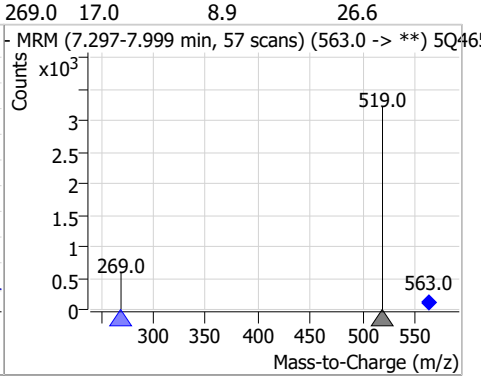




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.34	7.46	-0.01	134540	563.0 -> 269.0	17.0	8.9	26.6

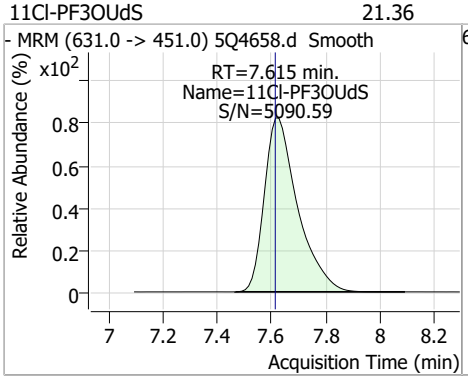


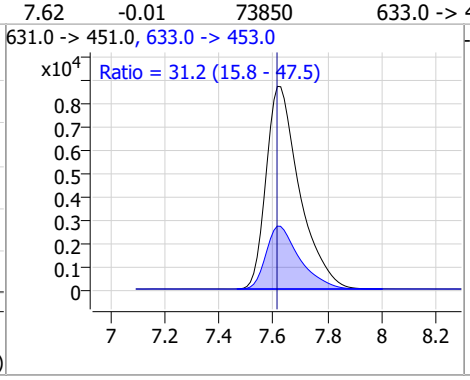


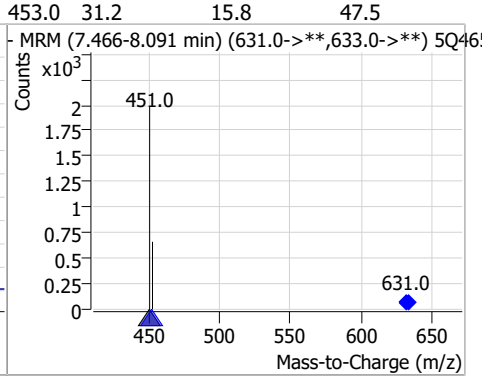


Perfluorinated Compounds by LC/MS/MS

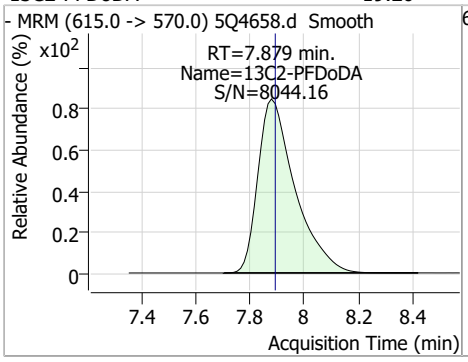
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	21.36	7.62	-0.01	73850	633.0 -> 453.0	31.2	15.8	47.5

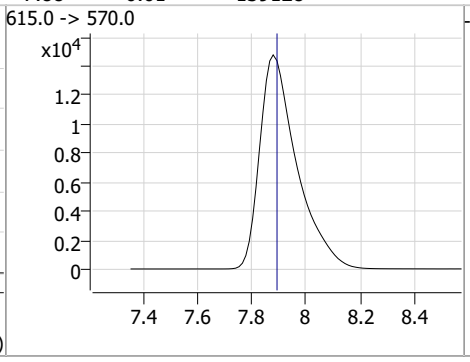


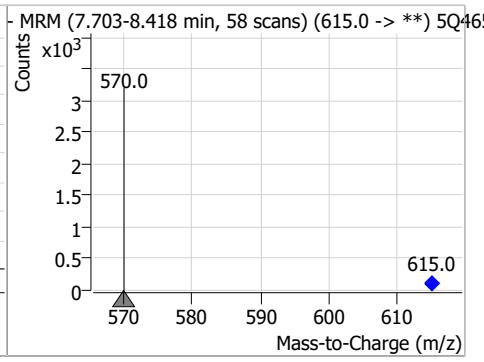




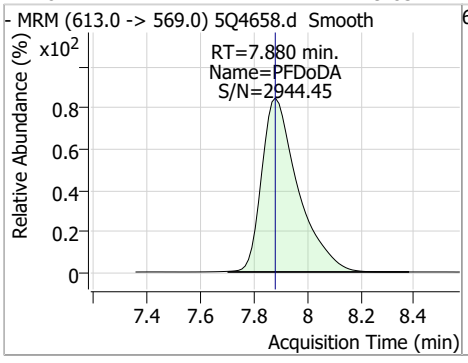
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.20	7.88	-0.01	139128				

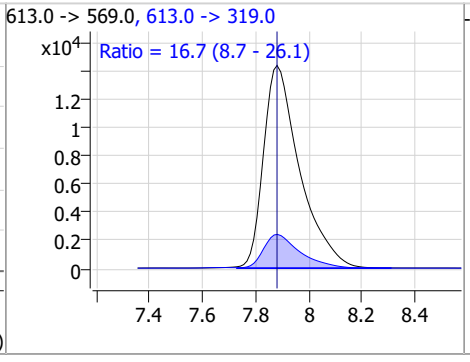


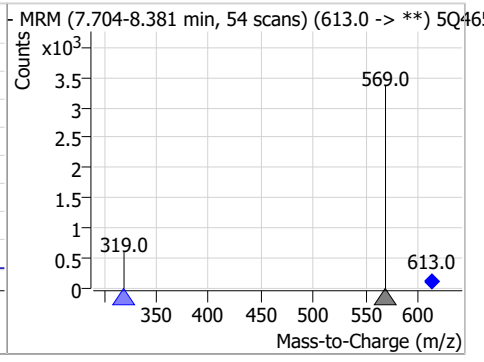




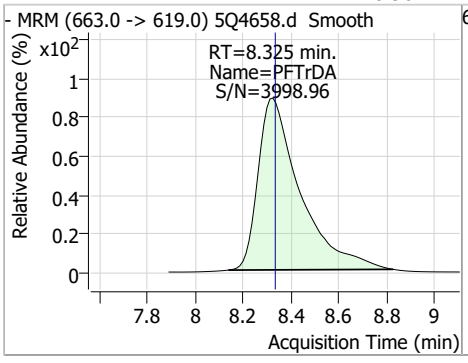
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.83	7.88	-0.01	135332	613.0 -> 319.0	16.7	8.7	26.1

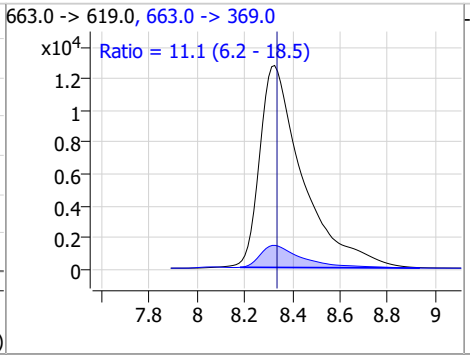


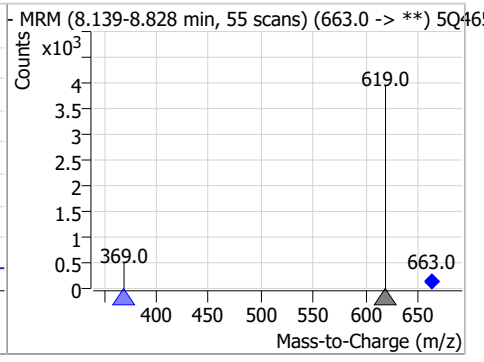




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.96	8.33	-0.02	154630	663.0 -> 369.0	11.1	6.2	18.5

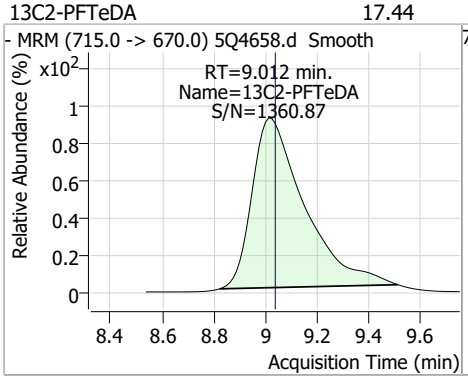


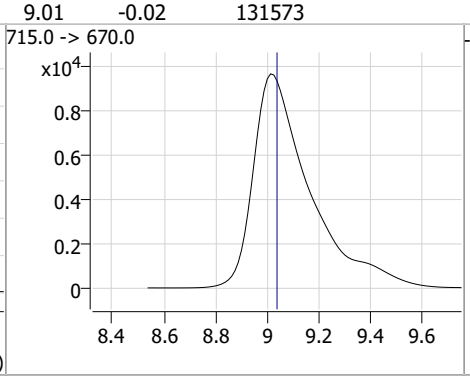


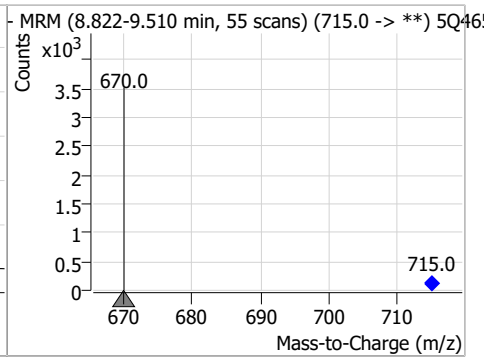


Perfluorinated Compounds by LC/MS/MS

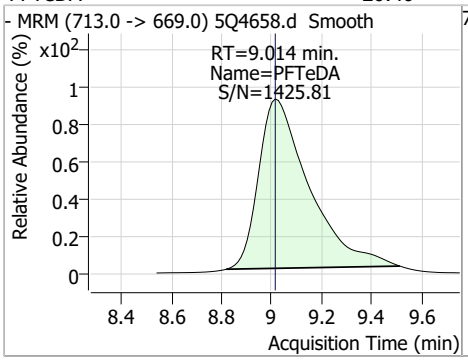
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.44	9.01	-0.02	131573				

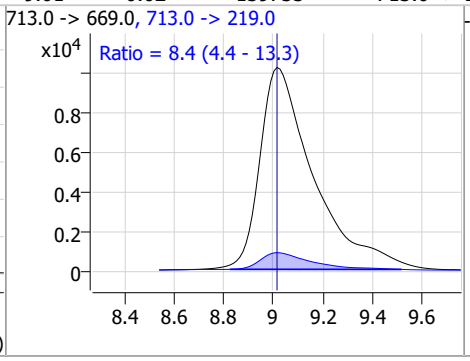


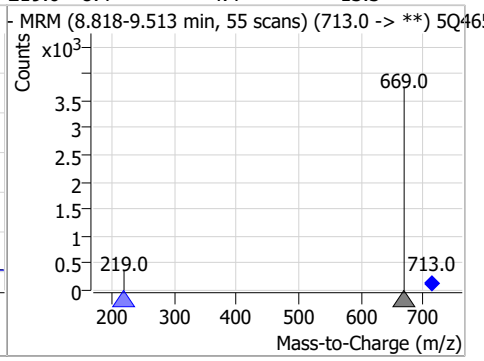




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.40	9.01	-0.02	139733	713.0 -> 219.0	8.4	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q71-ECC71
Lab FileID: 5Q4658.D
Injection Time: 09/15/22 12:30
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:41 Anna Ludwig
Supervisor approved: 09/15/22 19:34 Mike Eger

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4668.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 5:09:01 PM
Sample Name : cc71-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

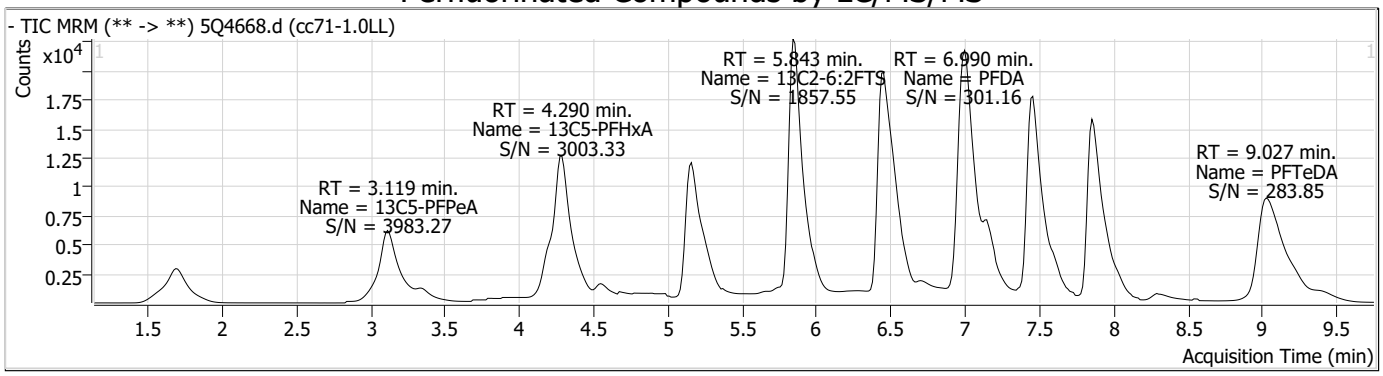
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	32844	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	54562	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	78255	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	70801	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	99290	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	108123	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	89497	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	111108	20.00 µg/L	-0.012
M2-PFDoDA	7.866	615.0 -> 570.0	113071	20.00 µg/L	-0.027
M2-PFTeDA	9.037	715.0 -> 670.0	108107	20.00 µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	21419	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6976	20.00 µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	7018	20.00 µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	13494	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	25021	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	37440	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	35764	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	13974	20.00 µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6617	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6253	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	19622	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	25021	17.04 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.2%	
13C2-6:2FTS	5.843	429.0 -> 409.0	37440	16.75 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.7%	
13C2-8:2FTS	7.025	529.0 -> 509.0	35764	15.92 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 79.6%	
13C2-PFDoDA	7.866	615.0 -> 570.0	113071	15.60 µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.0%	
13C2-PFTeDA	9.037	715.0 -> 670.0	108107	14.33 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.6%	
13C3-PFBS	3.349	302.0 -> 99.0	6976	21.41 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%	
13C3-PFHxS	5.206	402.0 -> 99.0	7018	20.58 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%	
13C4-PFBA	1.687	217.0 -> 172.0	32844	18.37 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%	
13C4-PFHpA	5.163	367.0 -> 322.0	70801	17.34 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	78255	17.90 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%	
13C5-PFPeA	3.119	268.0 -> 223.0	54562	18.77 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C6-PFDA	6.989	519.0 -> 474.0	89497	16.63 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

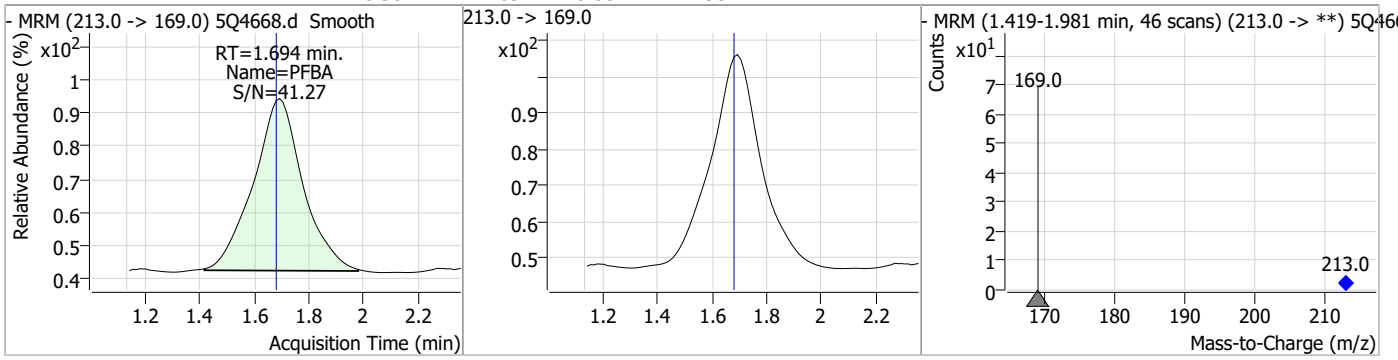
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.1%			
13C7-PFUnDA	7.459	570.0 -> 525.0	111108	15.78	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
13C8-FOSA	6.530	506.0 -> 78.0	21419	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
13C8-PFOA	5.857	421.0 -> 376.0	99290	16.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.1%			
13C8-PFOS	6.440	507.0 -> 99.0	13494	20.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%			
13C9-PFNA	6.455	472.0 -> 427.0	108123	16.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	13974	14.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 71.9%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6617	19.71	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	6253	20.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
d5-EtFOSAA	7.170	589.0 -> 419.0	19622	17.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.5%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	1368	0.98	µg/L		92
6:2FTS	5.843	427.0 -> 407.0	2008	1.01	µg/L		96
8:2FTS	7.026	527.0 -> 507.0	2039	1.07	µg/L		94
EtFOSAA	7.171	584.0 -> 419.0	411	0.59	µg/L	m	84
FOSA	6.519	498.0 -> 78.0	1066	0.97	µg/L		91
MeFOSAA	7.010	570.0 -> 419.0	547	0.85	µg/L		93
PFBA	1.694	213.0 -> 169.0	738	0.95	µg/L		100
PFBS	3.354	299.0 -> 80.0	996	0.95	µg/L		100
PFDA	6.990	513.0 -> 469.0	5435	0.99	µg/L		99
PFDoDA	7.867	613.0 -> 569.0	5440	0.98	µg/L		97
PFDS	7.419	599.0 -> 80.0	921	1.23	µg/L		97
PFHpA	5.164	363.0 -> 319.0	4488	0.96	µg/L		99
PFHpS	5.867	449.0 -> 80.0	969	0.96	µg/L		100
PFHxA	4.291	313.0 -> 269.0	3704	0.97	µg/L		100
PFHxS	5.195	399.0 -> 80.0	992	0.95	µg/L		96
PFNA	6.456	463.0 -> 419.0	4485	0.93	µg/L		96
PFNS	6.962	549.0 -> 80.0	959	0.96	µg/L		97
PFOA	5.858	413.0 -> 369.0	5789	0.96	µg/L		99
PFOS	6.442	499.0 -> 80.0	1125	0.95	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	2617	0.97	µg/L		100
PFPeS	4.398	349.0 -> 80.0	730	0.90	µg/L		99
PFTeDA	9.027	713.0 -> 669.0	5637	1.00	µg/L		100
PFTrDA	8.313	663.0 -> 619.0	5948	0.90	µg/L	#	73
PFUnDA	7.460	563.0 -> 519.0	5498	0.99	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	3380	1.20	µg/L		98
9Cl-PF3ONS	6.714	531.0 -> 351.0	3544	1.15	µg/L		97
ADONA	5.261	377.0 -> 251.0	5576	0.77	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	1023	0.92	µg/L		93
MeFOSA	6.966	512.0 -> 169.0	360	1.07	µg/L		94
4-PFECHS	5.753	461.0 -> 381.0	2102	1.18	µg/L		96
FBSA	4.343	298.0 -> 78.0	1276	0.98	µg/L		99
FHxSA	5.674	398.0 -> 78.0	1139	1.13	µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

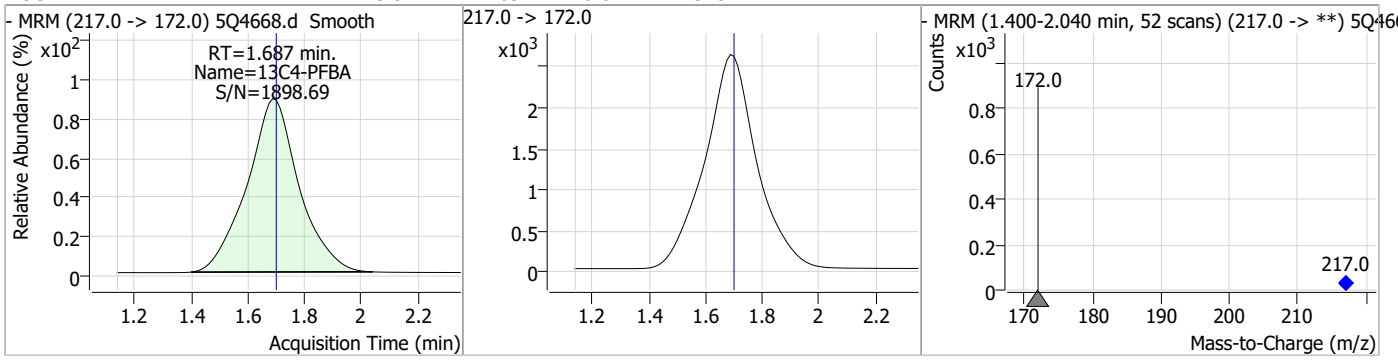
Perfluorinated Compounds by LC/MS/MS



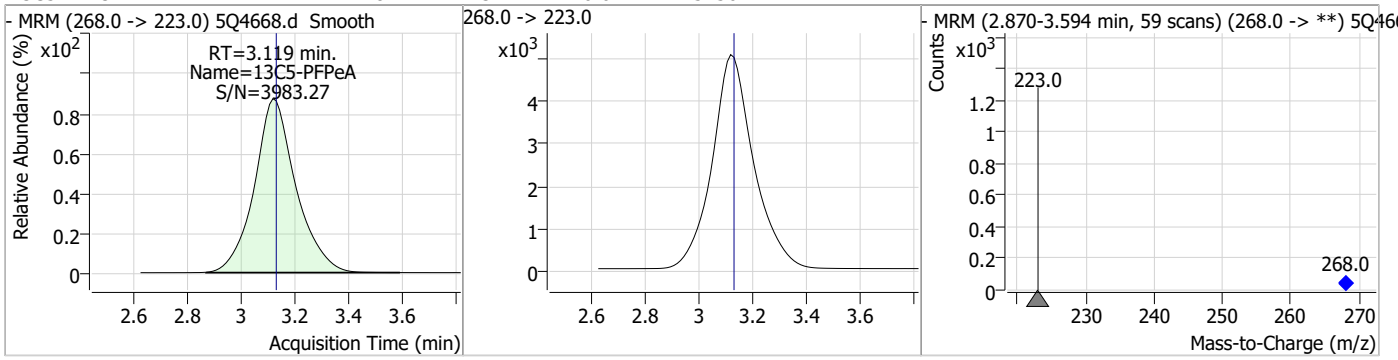
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.95	1.69	0.00	738				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.37	1.69	-0.01	32844				

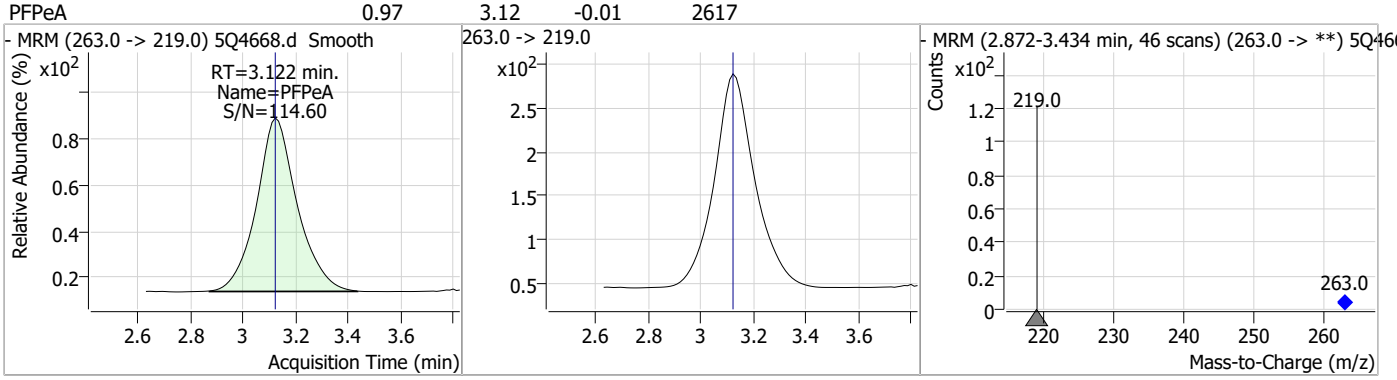


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.77	3.12	-0.01	54562				

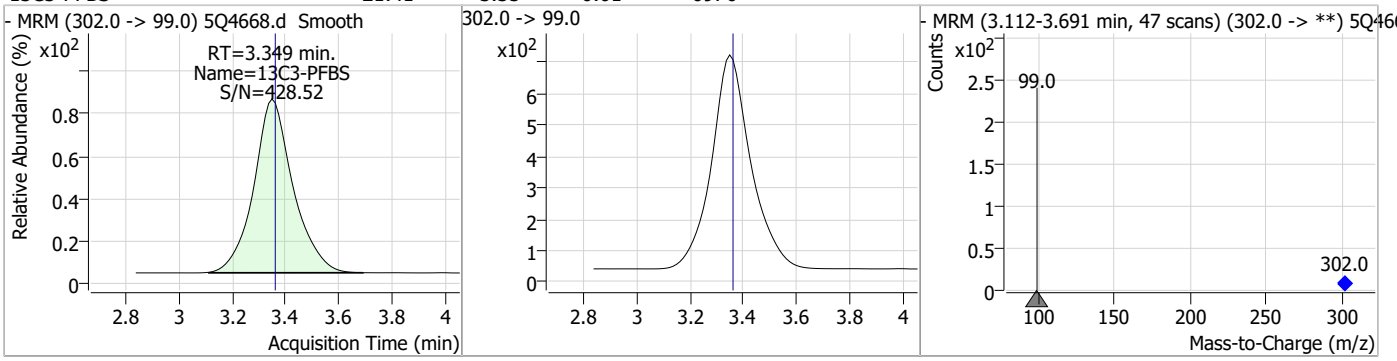


Perfluorinated Compounds by LC/MS/MS

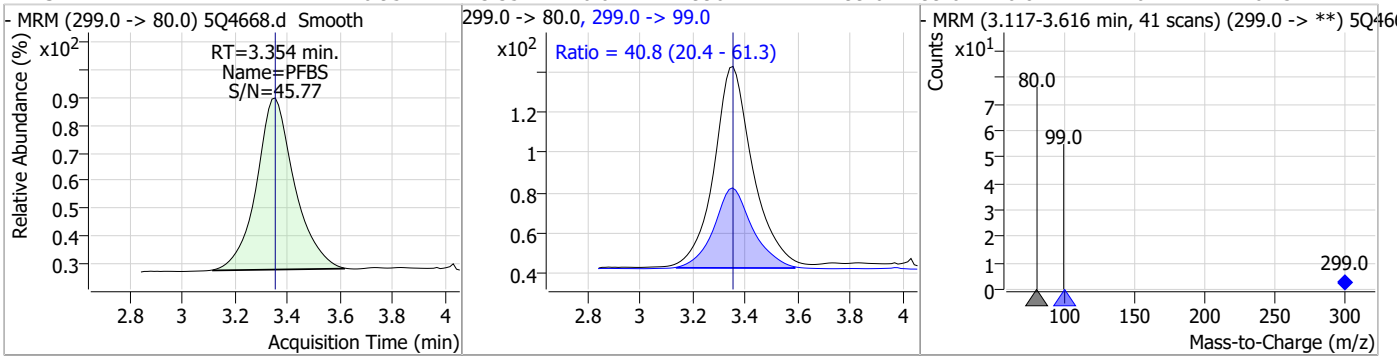
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.97	3.12	-0.01	2617				



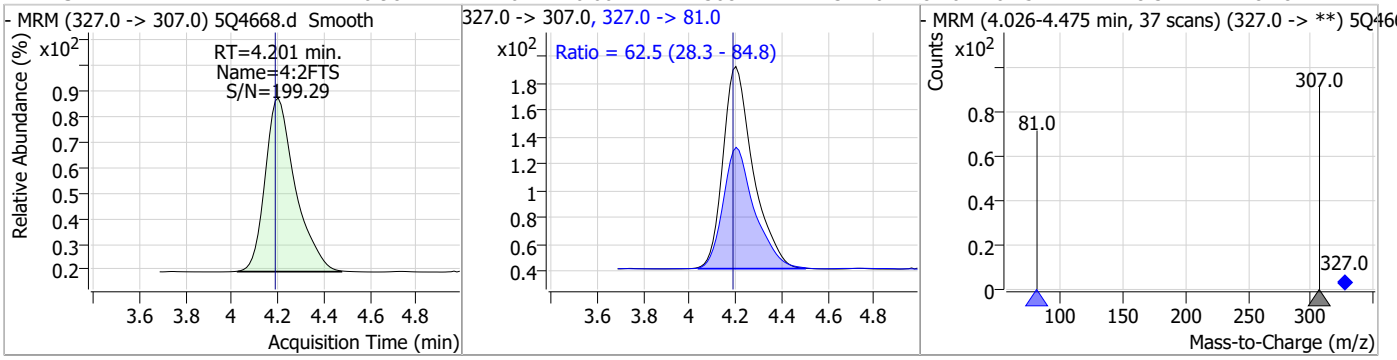
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.41	3.35	-0.01	6976				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.95	3.35	-0.01	996	299.0 -> 99.0	40.8	20.4	61.3

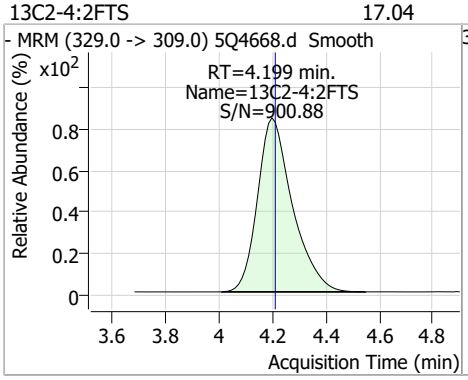


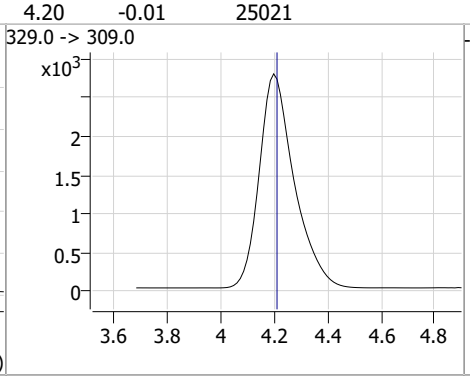
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.98	4.20	0.00	1368	327.0 -> 81.0	62.5	28.3	84.8

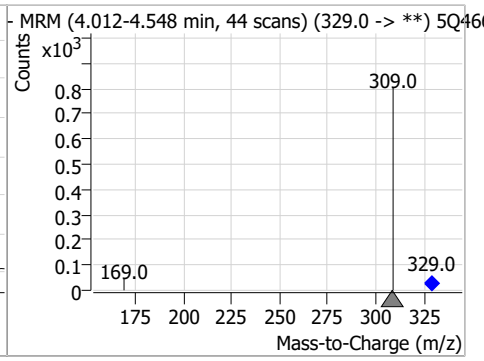


Perfluorinated Compounds by LC/MS/MS

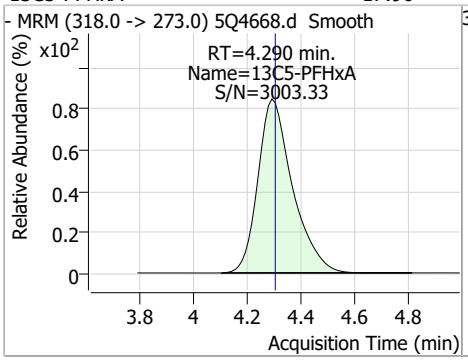
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.04	4.20	-0.01	25021				

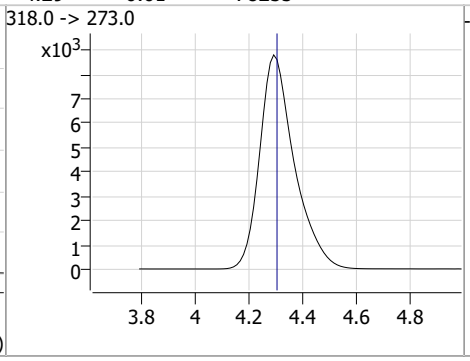


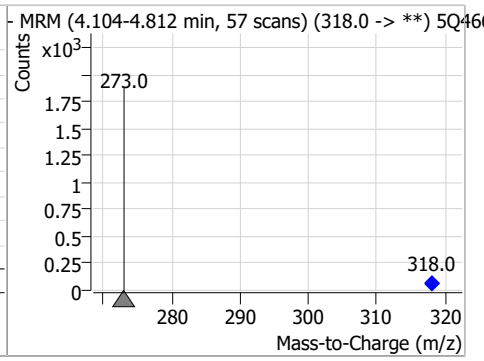




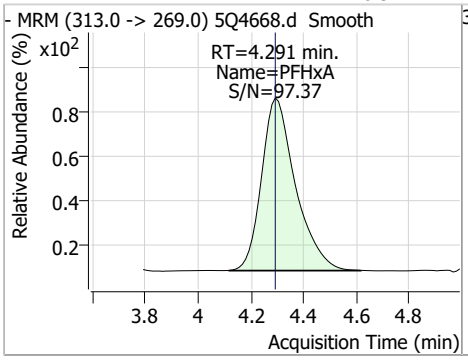
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.90	4.29	-0.01	78255				

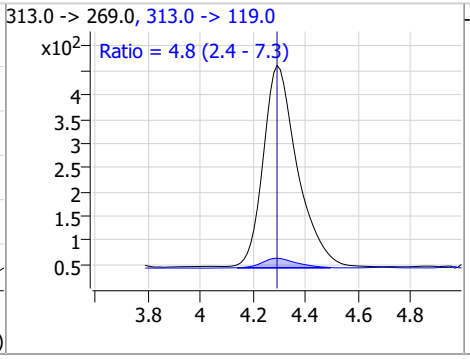


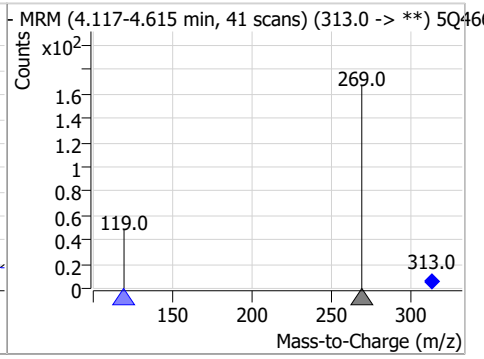




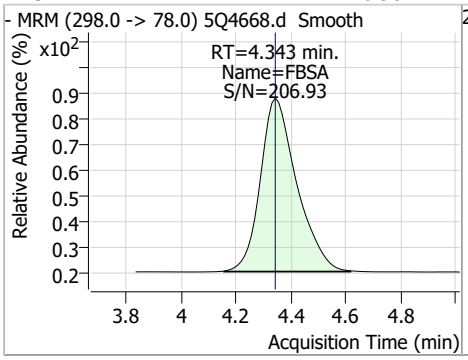
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.97	4.29	-0.01	3704	313.0 -> 119.0	4.8	2.4	7.3

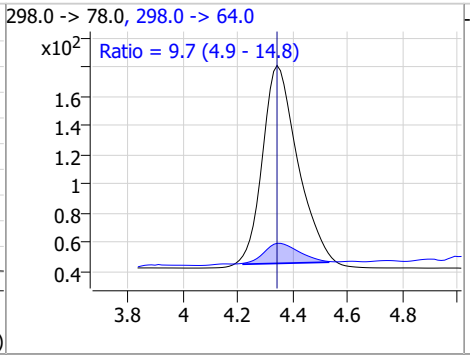


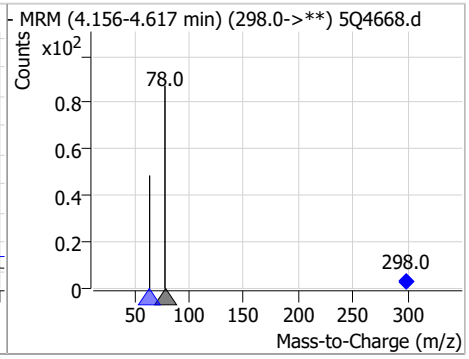




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.98	4.34	-0.01	1276	298.0 -> 64.0	9.7	4.9	14.8

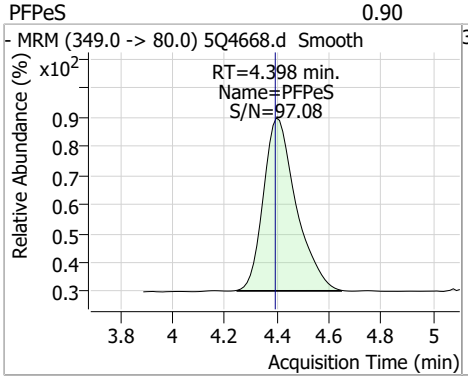


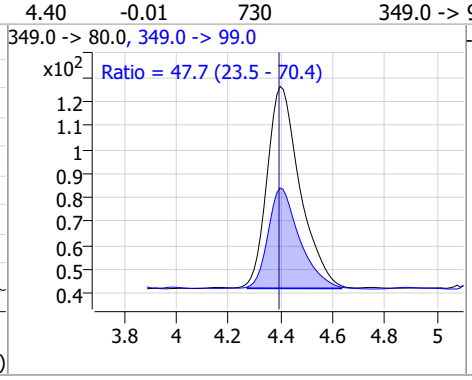


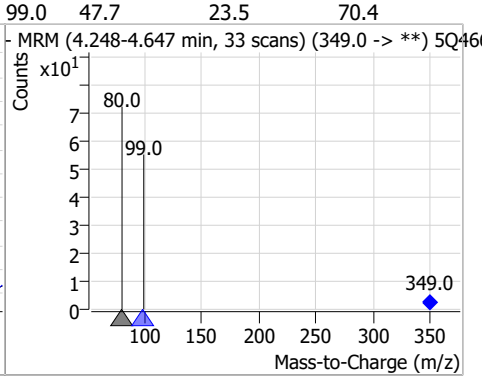


Perfluorinated Compounds by LC/MS/MS

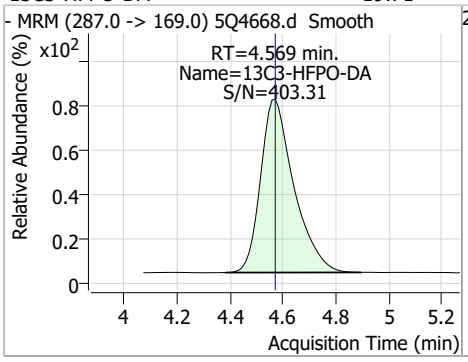
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.90	4.40	-0.01	730	349.0 -> 99.0	47.7	23.5	70.4

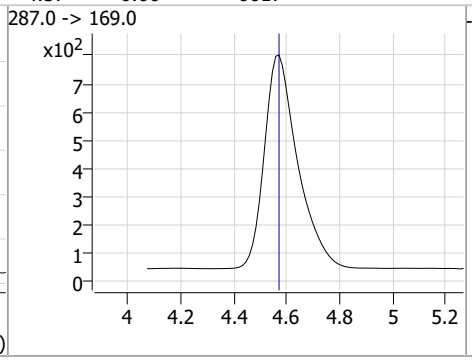


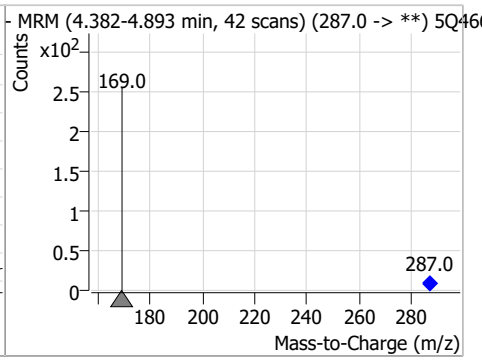




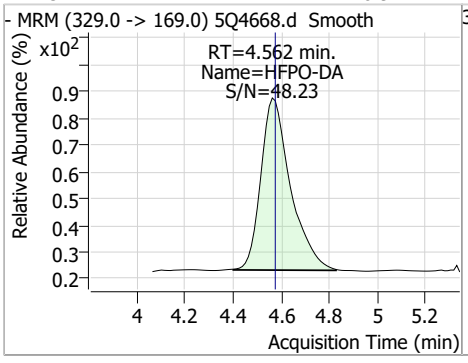
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.71	4.57	0.00	6617				

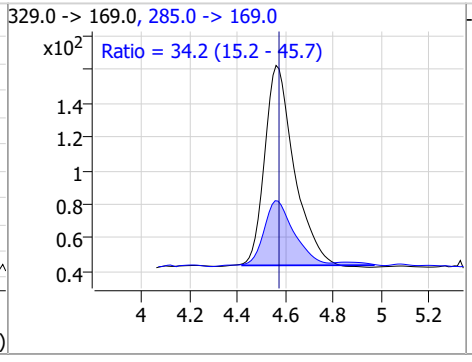


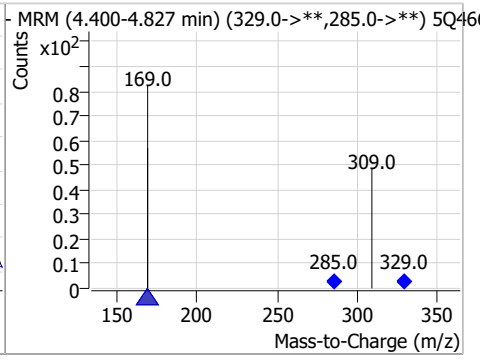




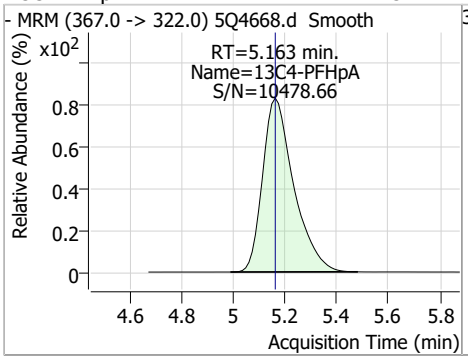
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.92	4.56	-0.01	1023	285.0 -> 169.0	34.2	15.2	45.7

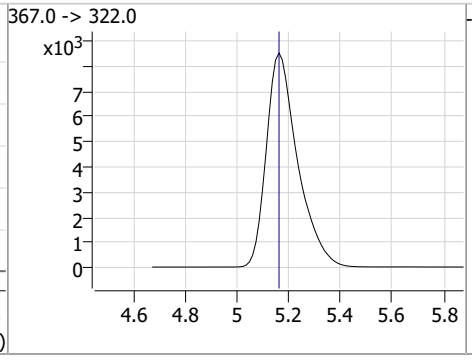


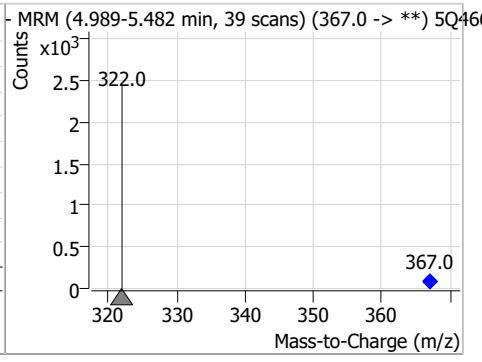




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.34	5.16	0.00	70801				

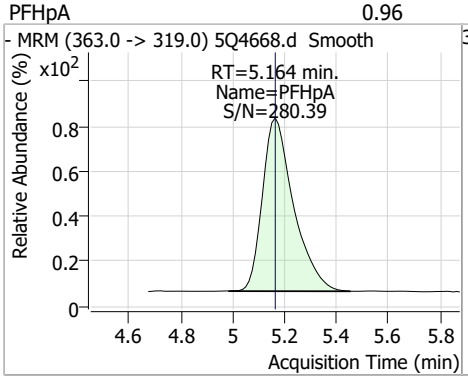


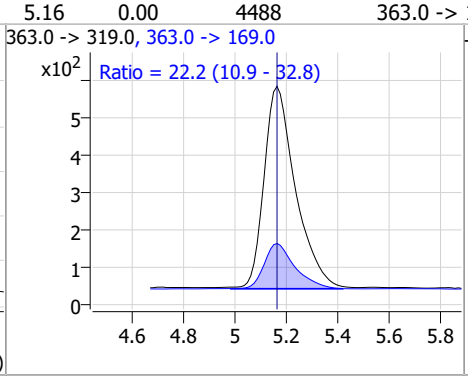


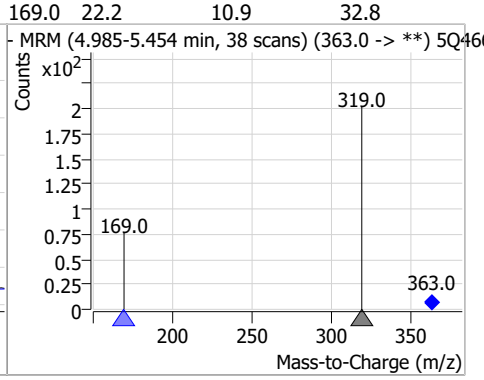


Perfluorinated Compounds by LC/MS/MS

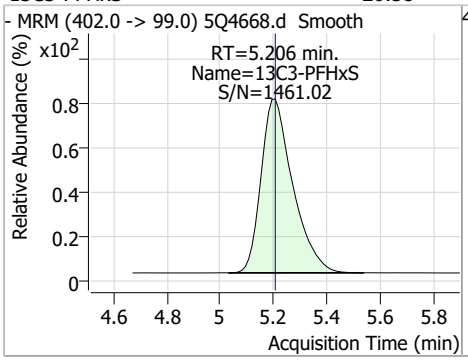
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.96	5.16	0.00	4488	363.0 -> 169.0	22.2	10.9	32.8

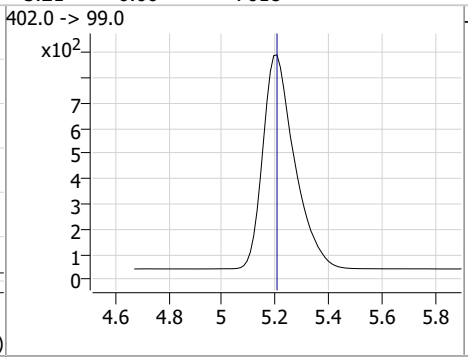


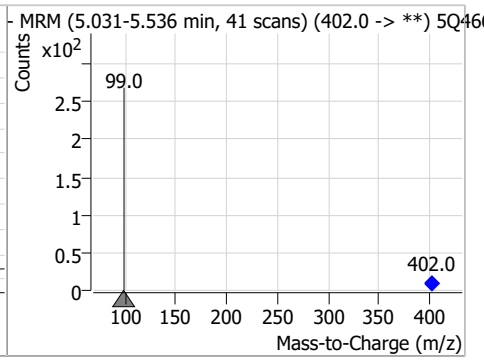




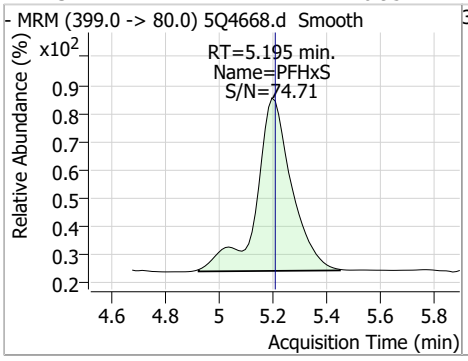
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.58	5.21	0.00	7018				

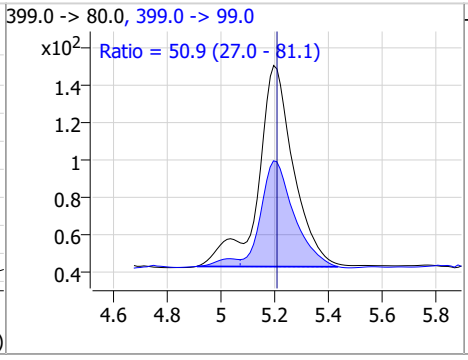


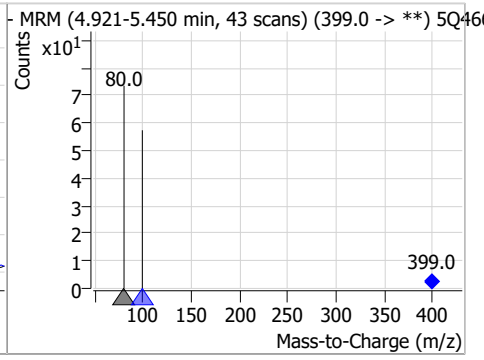




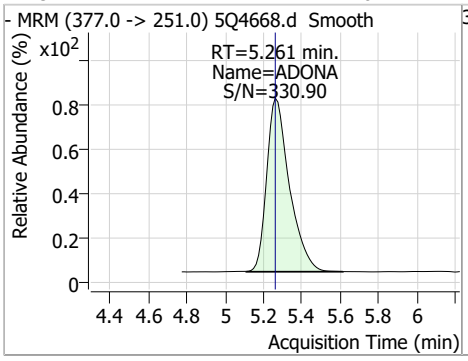
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.95	5.20	-0.01	992	399.0 -> 99.0	50.9	27.0	81.1

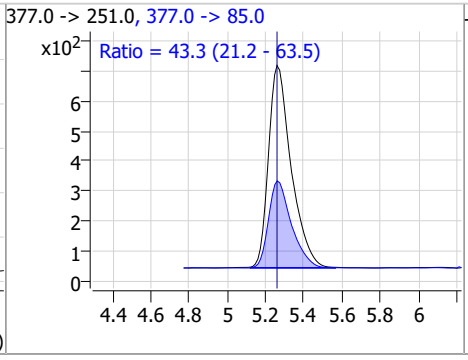


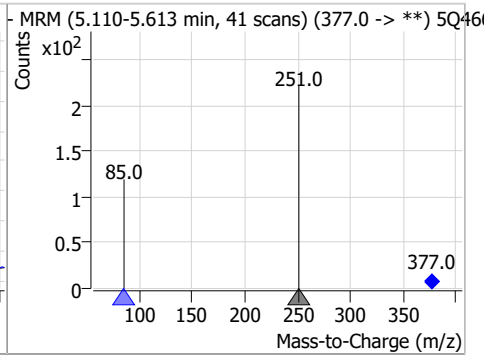




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.77	5.26	0.00	5576	377.0 -> 85.0	43.3	21.2	63.5

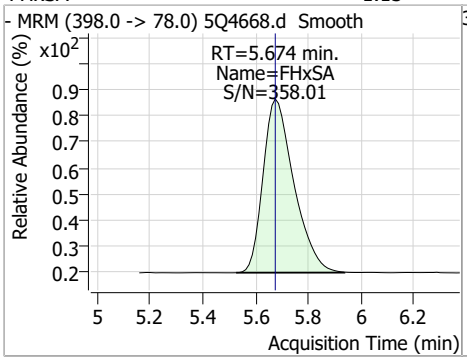


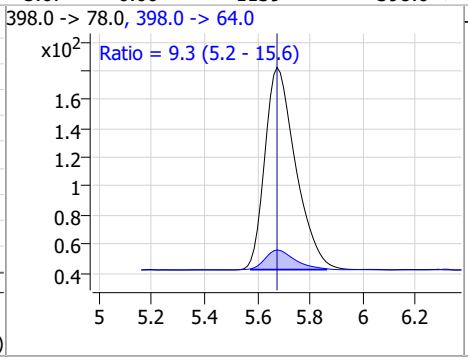


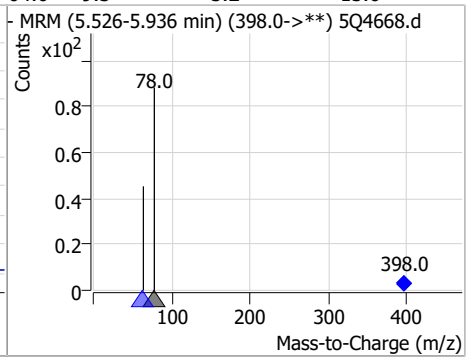


Perfluorinated Compounds by LC/MS/MS

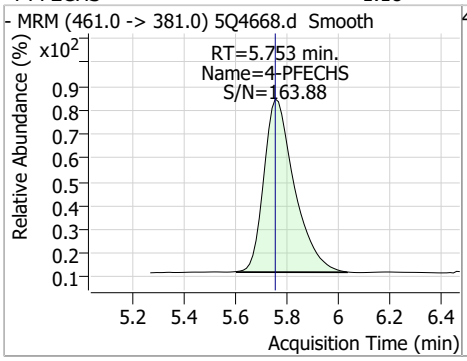
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.13	5.67	0.00	1139	398.0 -> 64.0	9.3	5.2	15.6

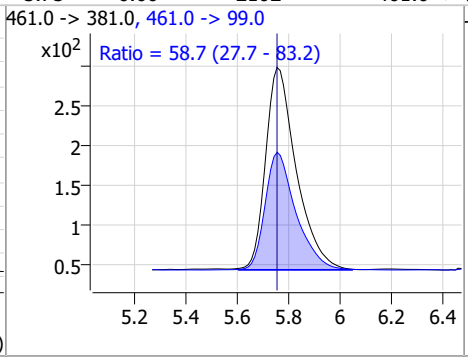


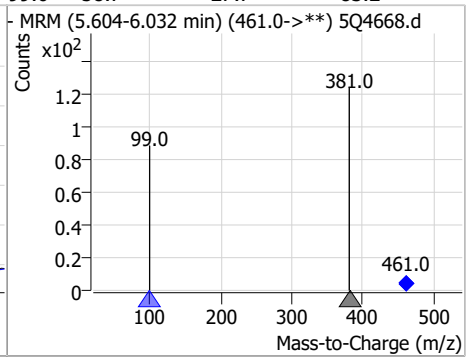




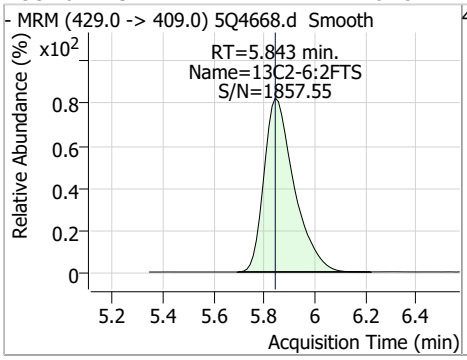
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.18	5.75	0.00	2102	461.0 -> 99.0	58.7	27.7	83.2

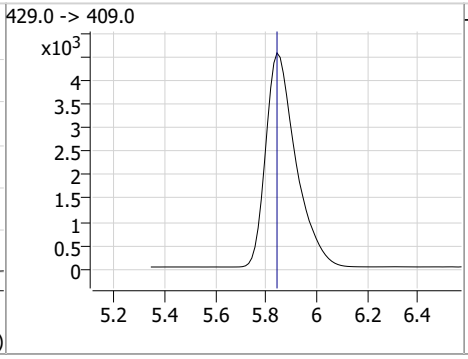


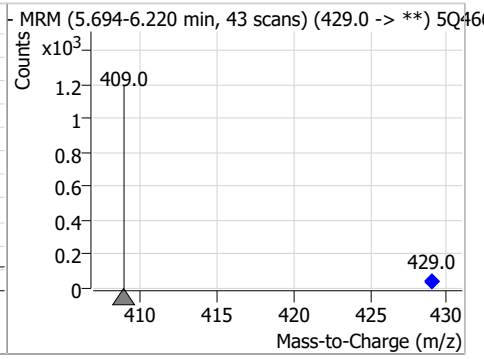




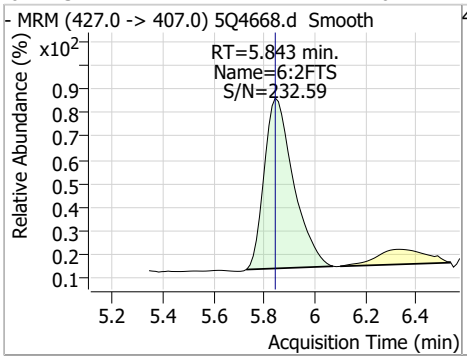
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	16.75	5.84	0.00	37440				

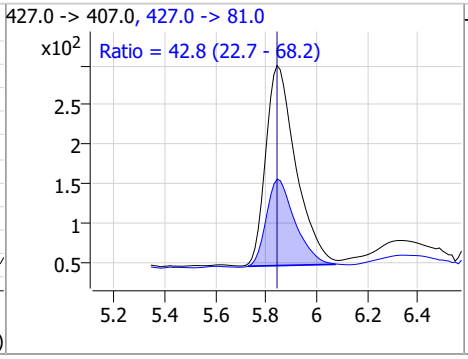


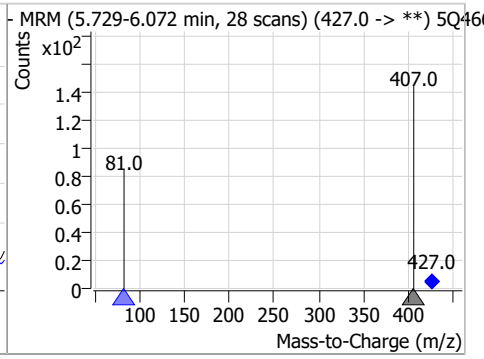




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.01	5.84	0.00	2008	427.0 -> 81.0	42.8	22.7	68.2

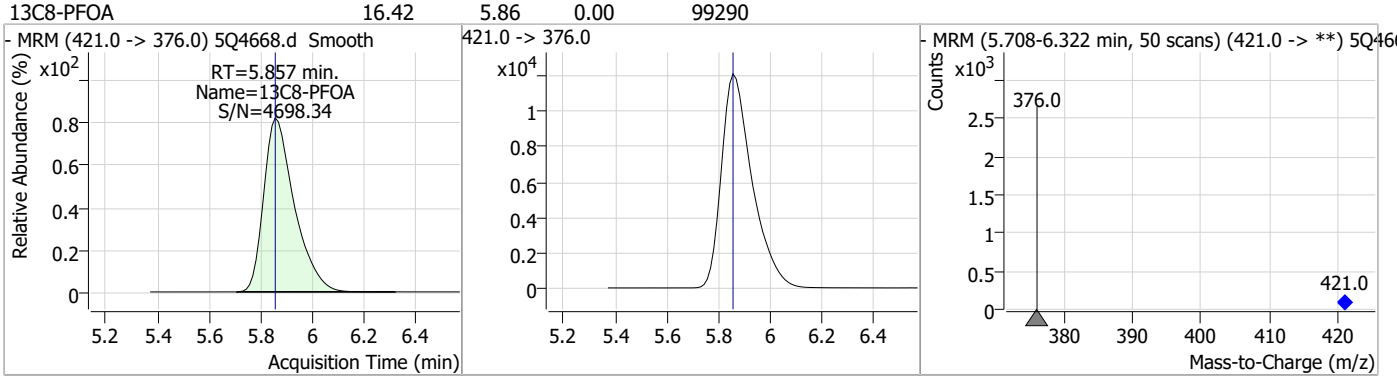




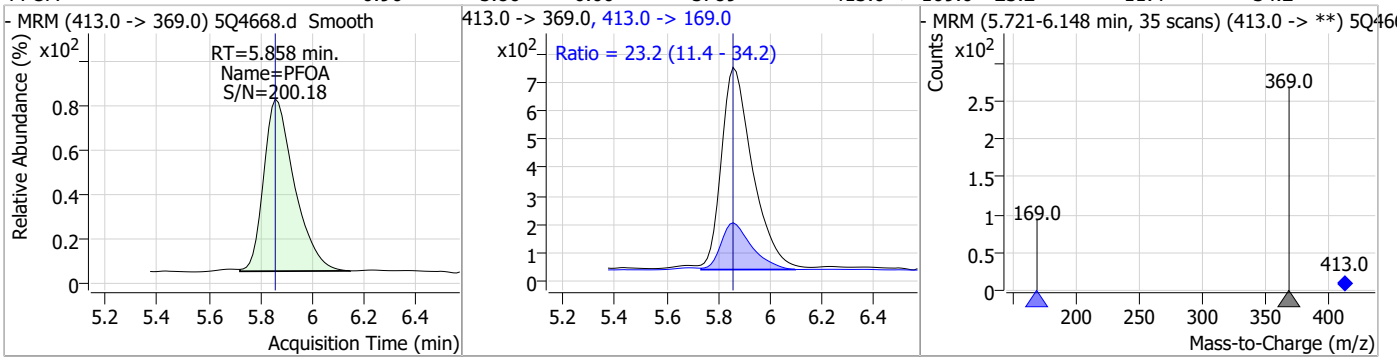


Perfluorinated Compounds by LC/MS/MS

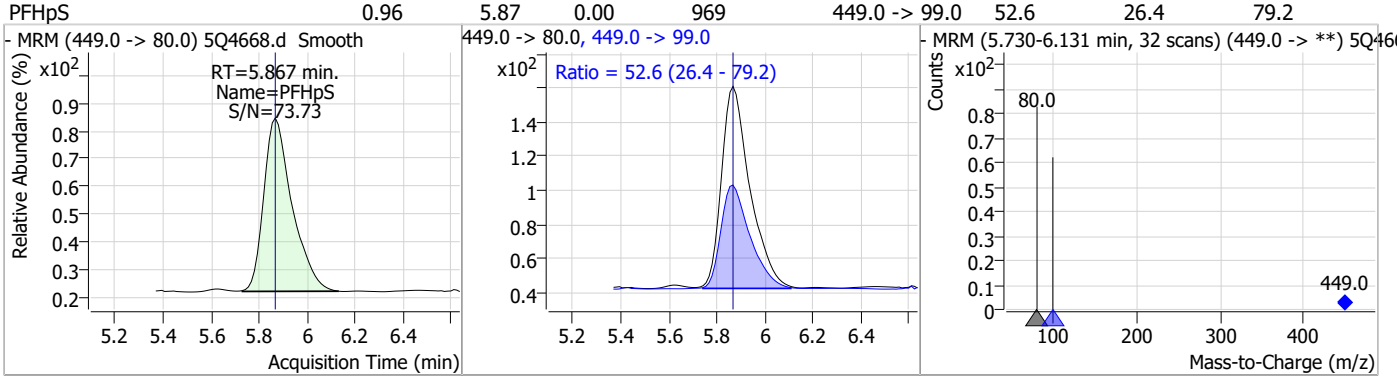
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	16.42	5.86	0.00	99290				



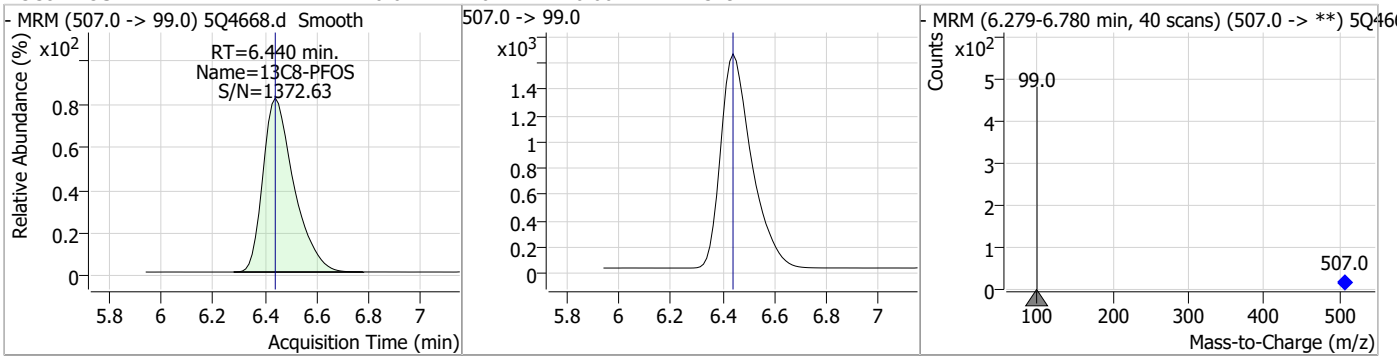
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.96	5.86	0.00	5789	413.0 -> 169.0	23.2	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.96	5.87	0.00	969	449.0 -> 99.0	52.6	26.4	79.2

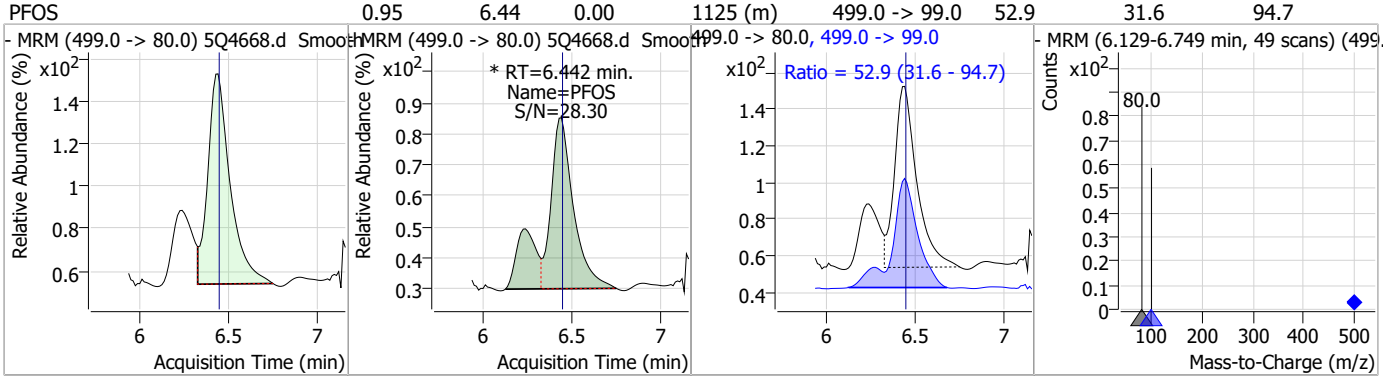


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.67	6.44	0.00	13494				

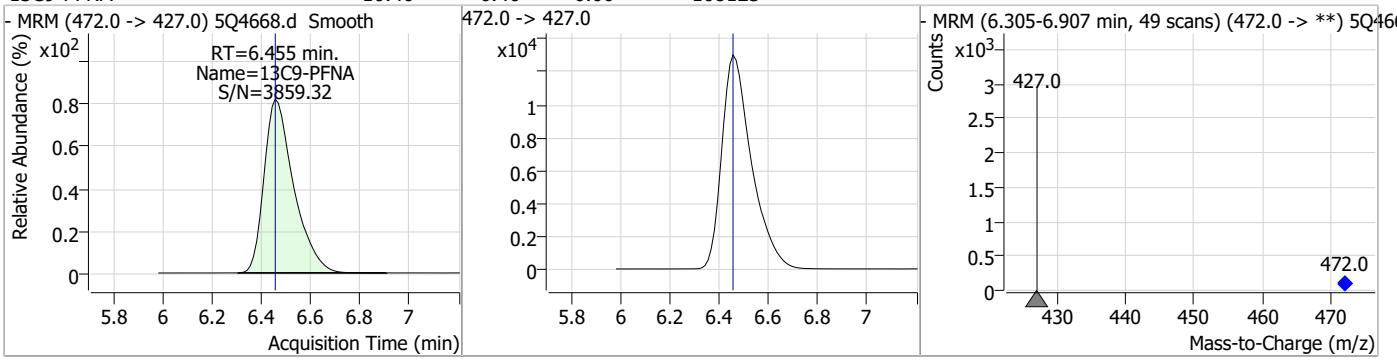


Perfluorinated Compounds by LC/MS/MS

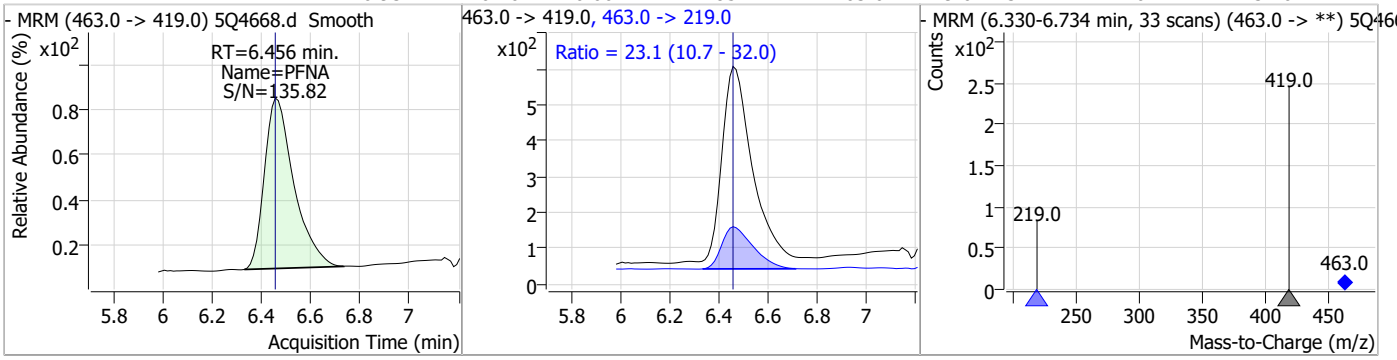
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.95	6.44	0.00	1125 (m)	499.0 -> 99.0	52.9	31.6	94.7



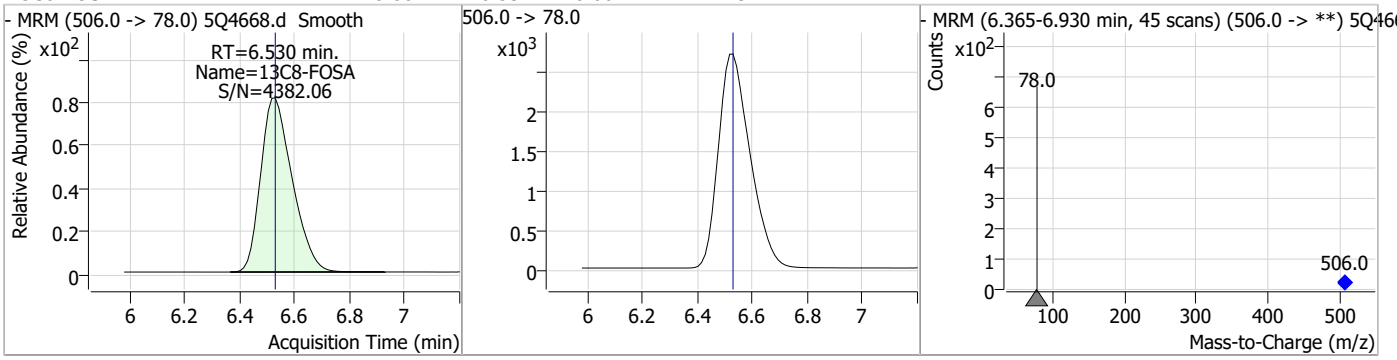
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	16.46	6.46	0.00	108123				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.93	6.46	0.00	4485	463.0 -> 219.0	23.1	10.7	32.0

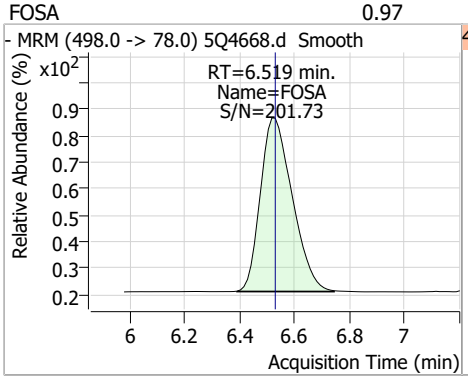


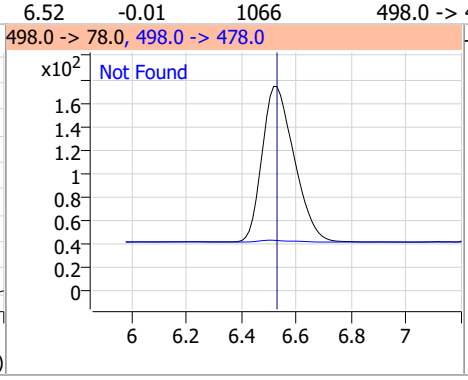
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.88	6.53	0.00	21419				

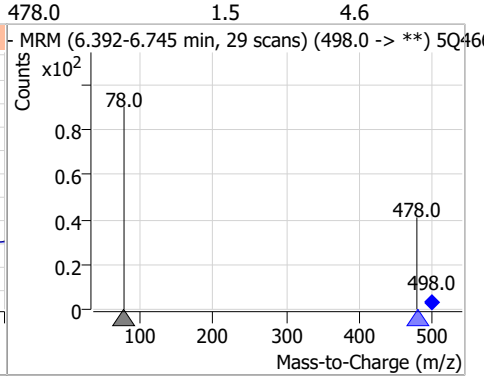


Perfluorinated Compounds by LC/MS/MS

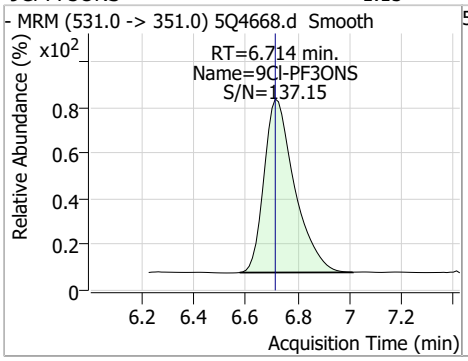
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.97	6.52	-0.01	1066	498.0 -> 478.0		1.5	4.6

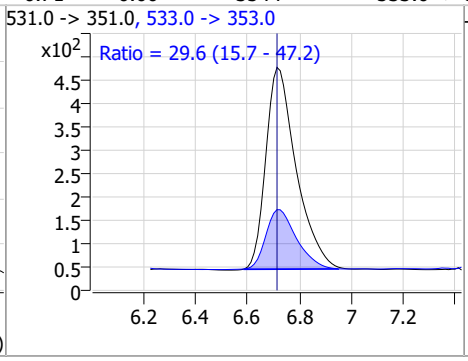


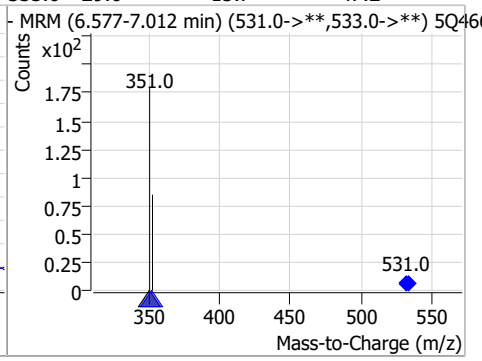




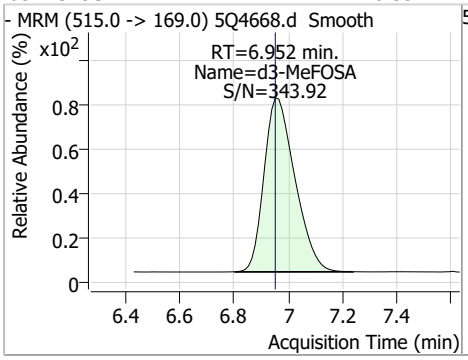
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.15	6.71	0.00	3544	533.0 -> 353.0	29.6	15.7	47.2

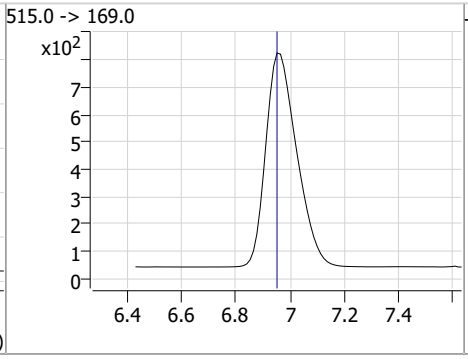


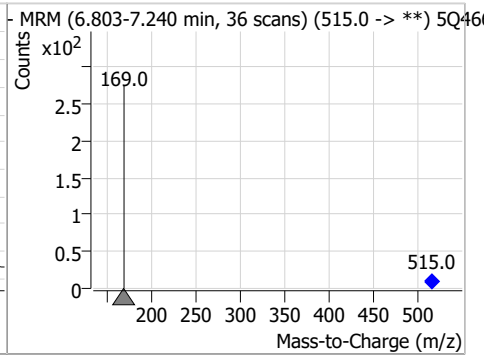




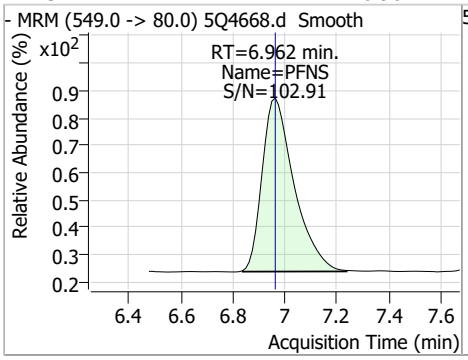
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.53	6.95	0.00	6253				

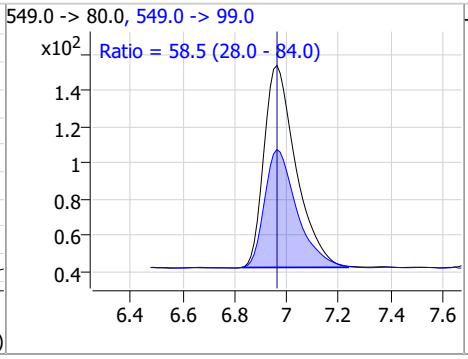


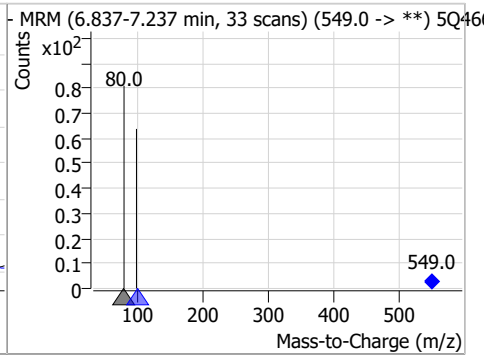




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.96	6.96	0.00	959	549.0 -> 99.0	58.5	28.0	84.0

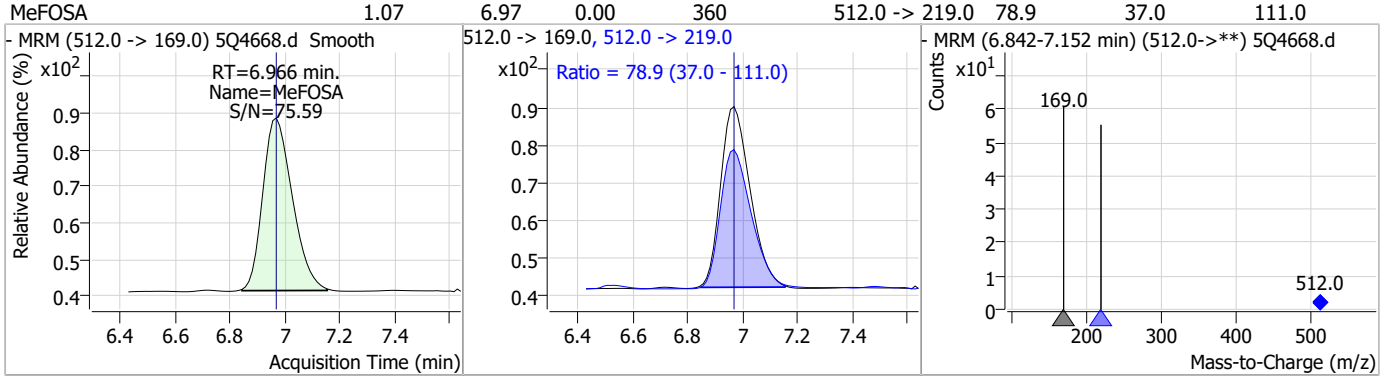




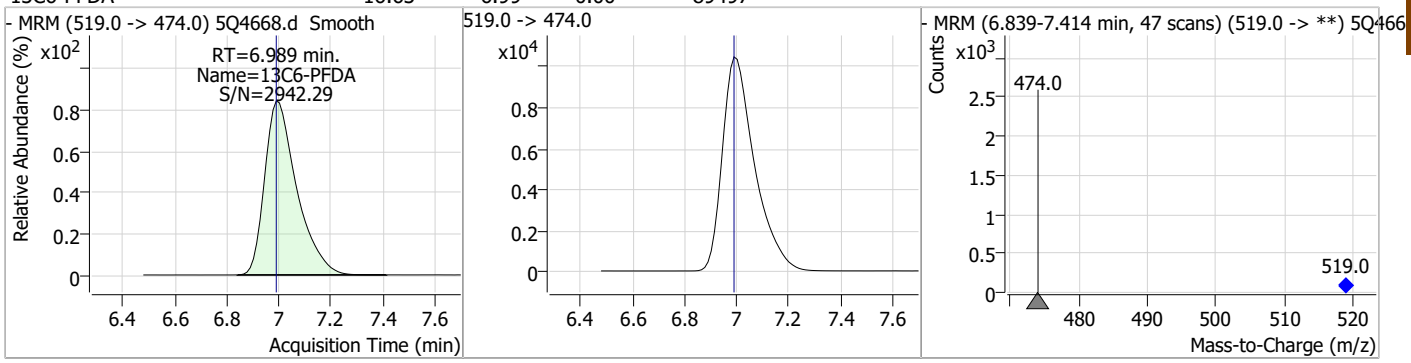


Perfluorinated Compounds by LC/MS/MS

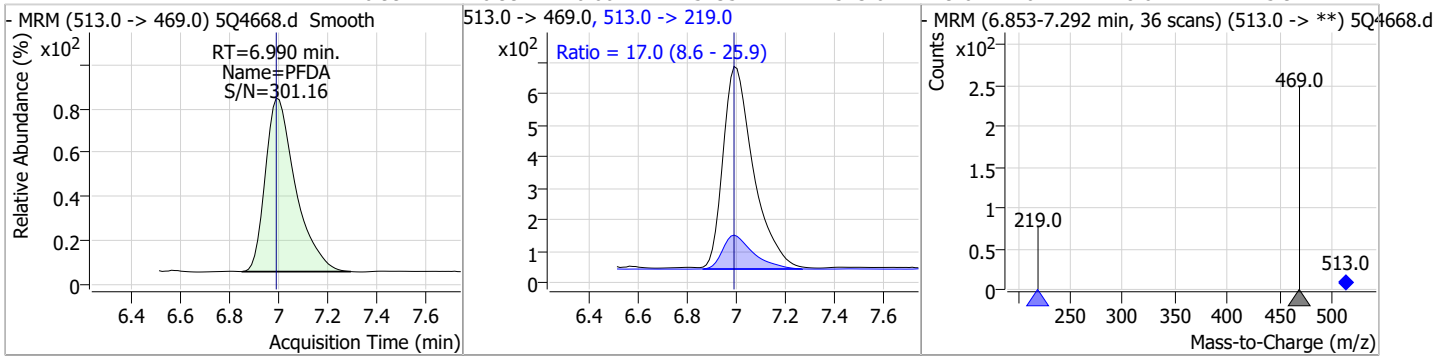
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.07	6.97	0.00	360	512.0 -> 219.0	78.9	37.0	111.0



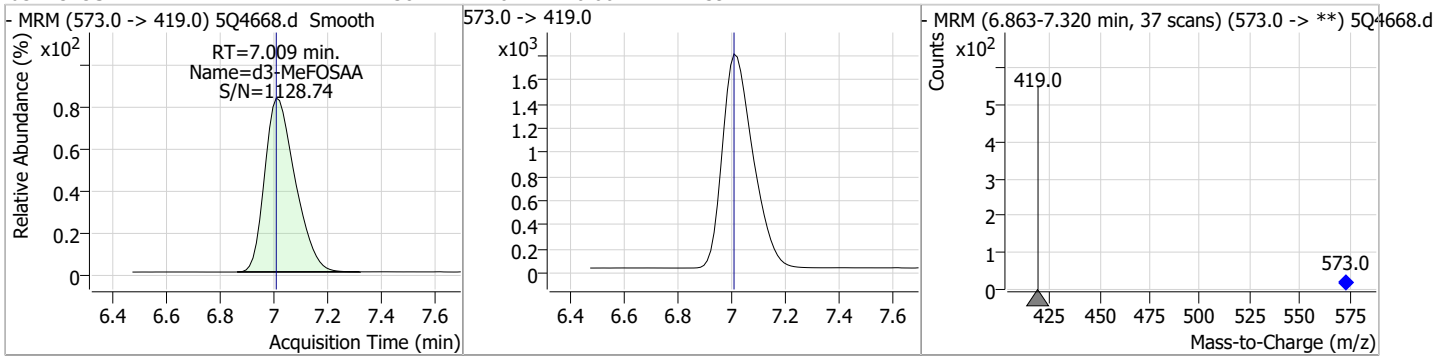
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	16.63	6.99	0.00	89497				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.99	6.99	0.00	5435	513.0 -> 219.0	17.0	8.6	25.9

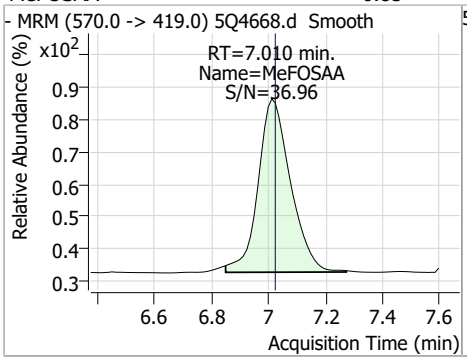


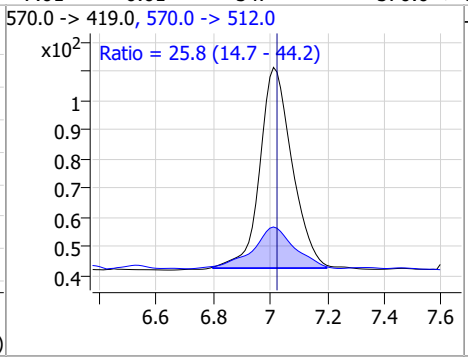
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.38	7.01	0.00	13974				

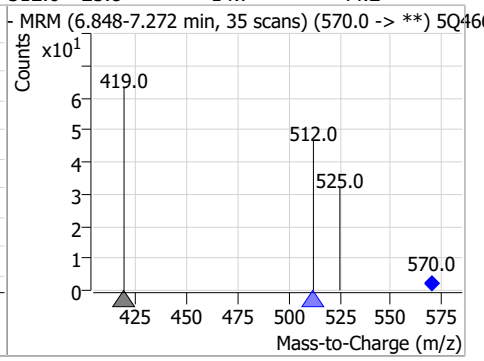


Perfluorinated Compounds by LC/MS/MS

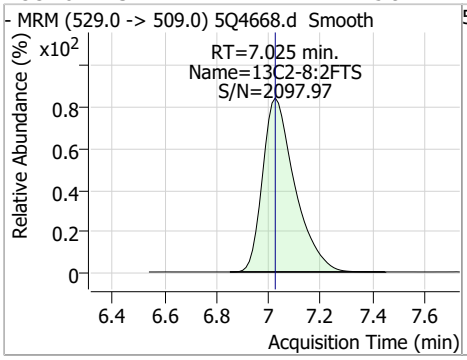
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.85	7.01	-0.01	547	570.0 -> 512.0	25.8	14.7	44.2

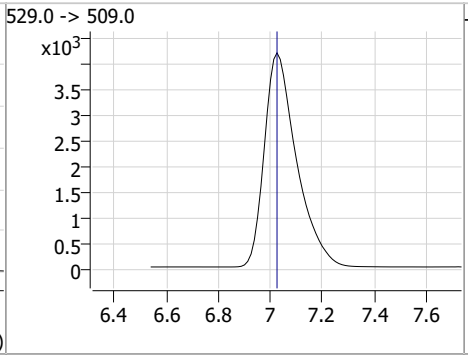


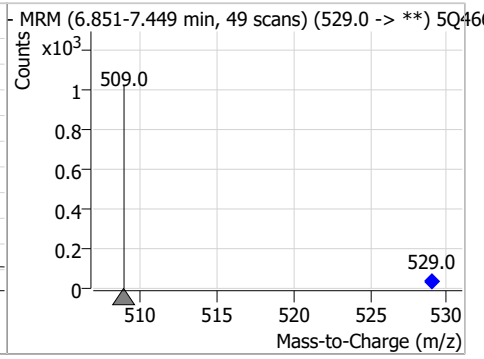




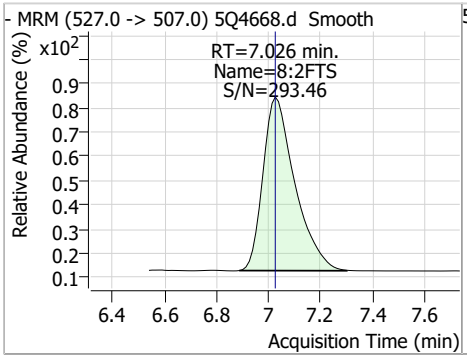
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	15.92	7.03	0.00	35764				

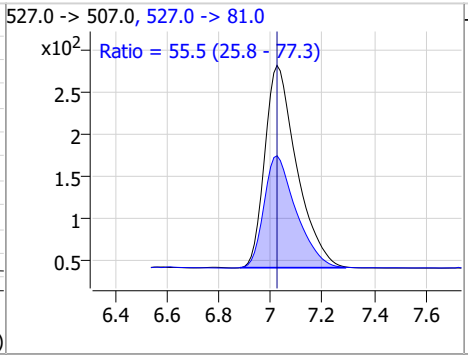


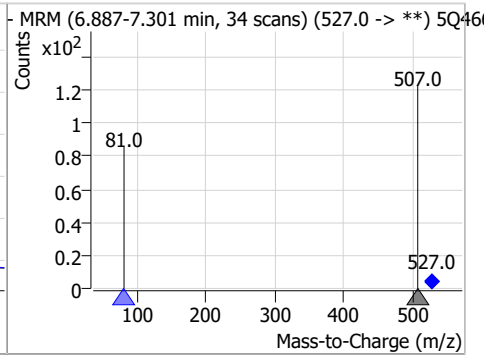




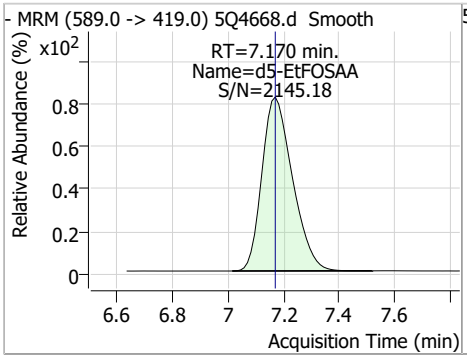
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.07	7.03	0.00	2039	527.0 -> 81.0	55.5	25.8	77.3

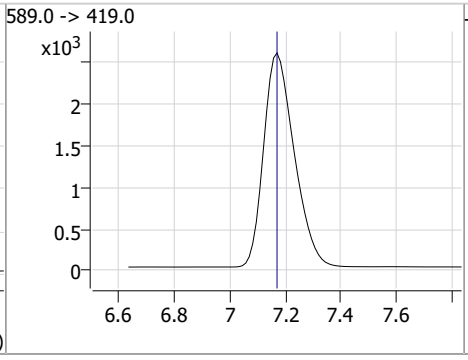


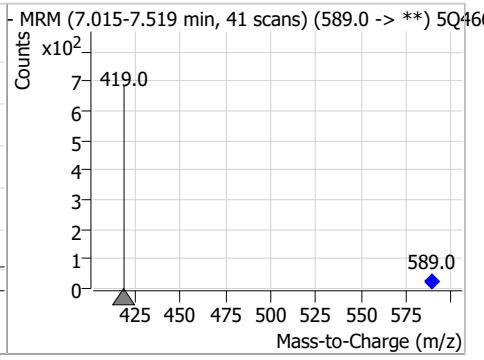




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.50	7.17	0.00	19622				

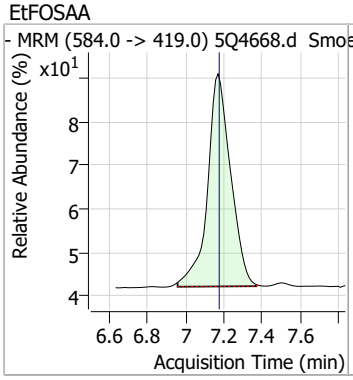


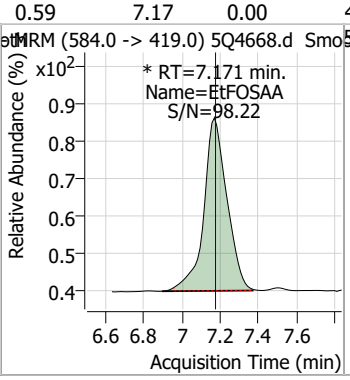


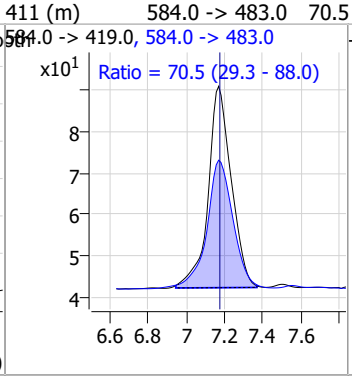


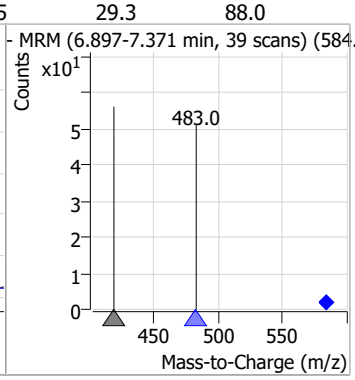
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.59	7.17	0.00	411 (m)	584.0 -> 483.0	70.5	29.3	88.0

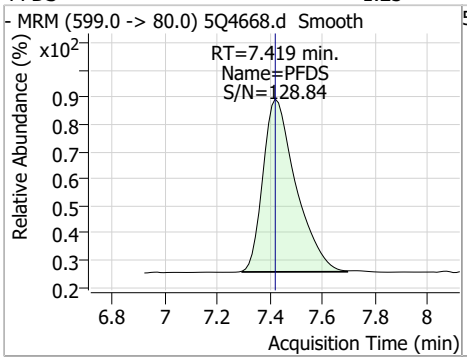


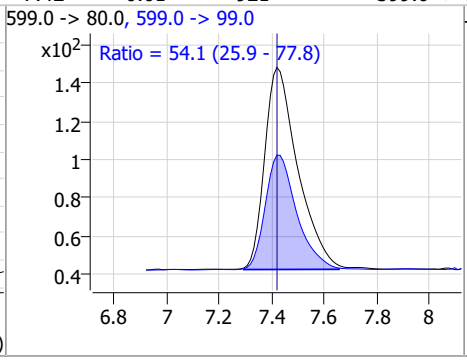


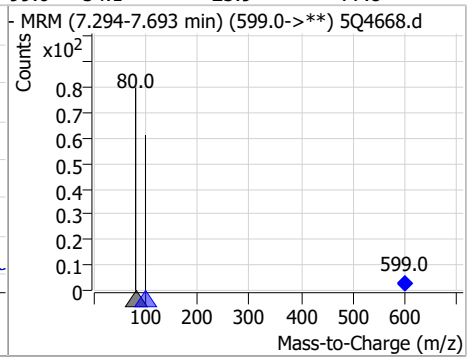




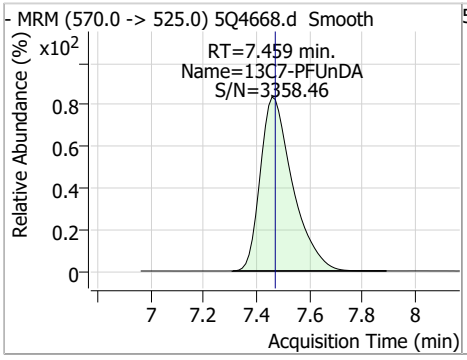
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.23	7.42	-0.01	921	599.0 -> 99.0	54.1	25.9	77.8

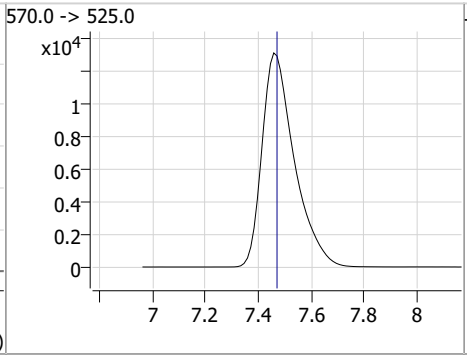


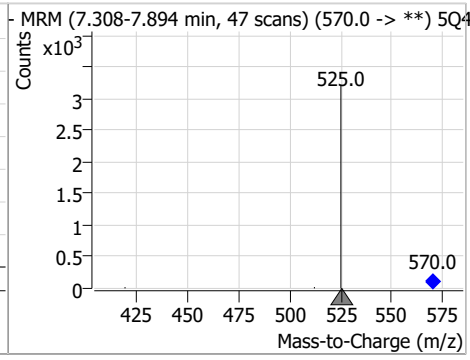




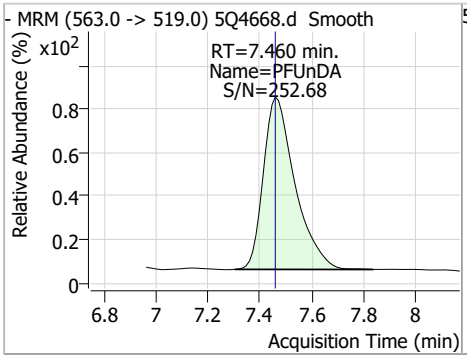
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	15.78	7.46	-0.01	111108				

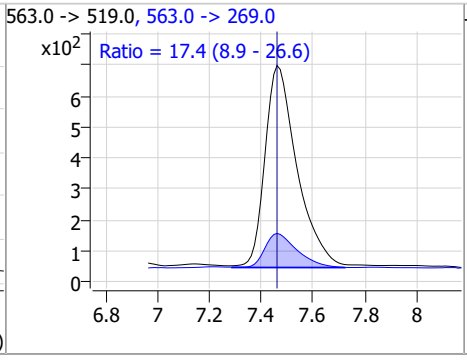


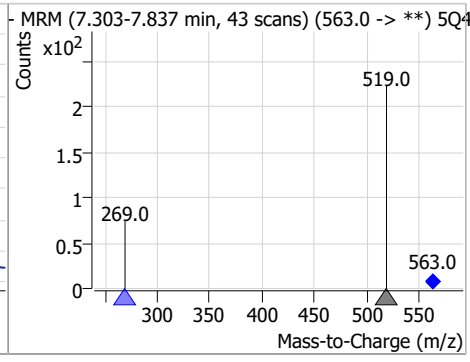




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.99	7.46	-0.01	5498	563.0 -> 269.0	17.4	8.9	26.6

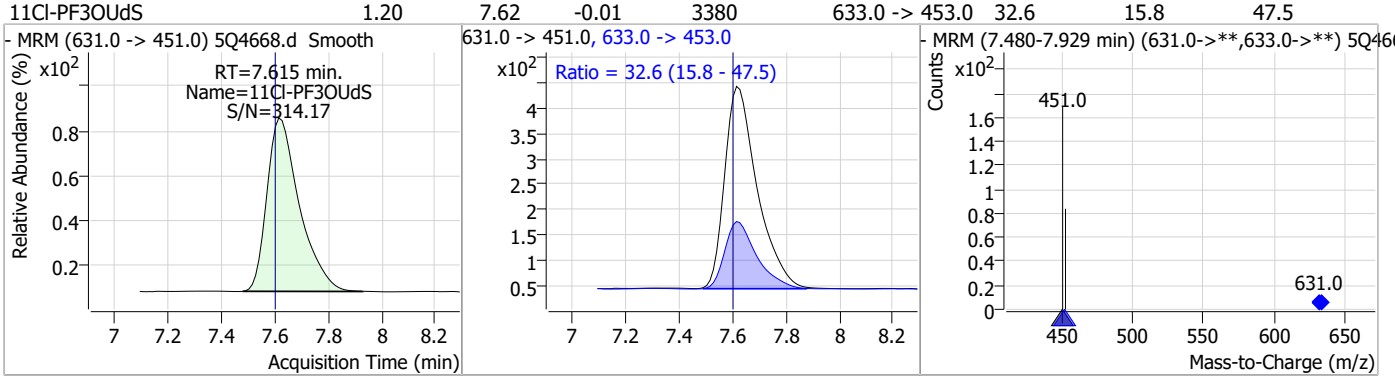




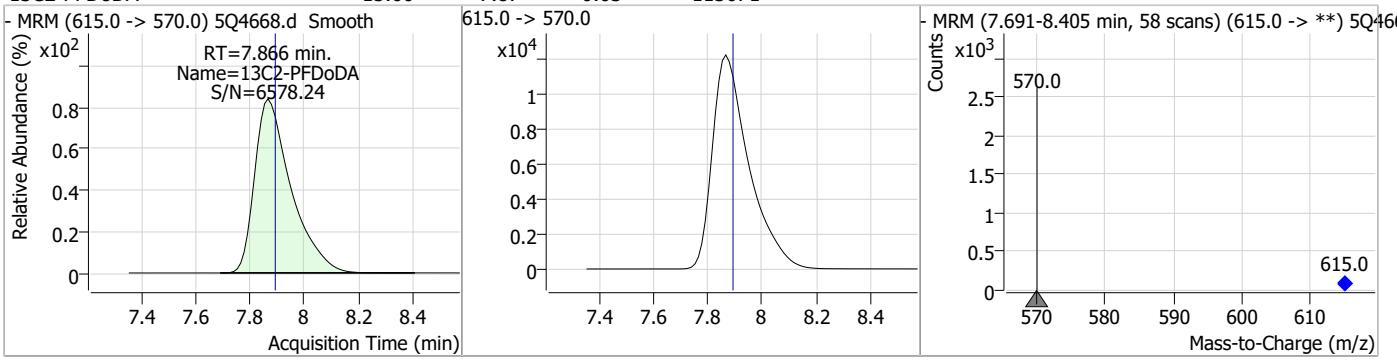


Perfluorinated Compounds by LC/MS/MS

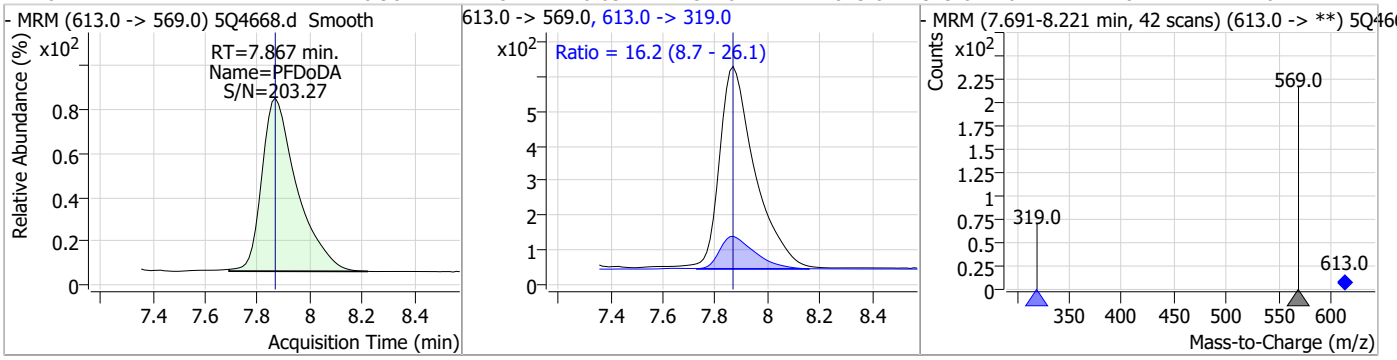
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.20	7.62	-0.01	3380	633.0 -> 453.0	32.6	15.8	47.5



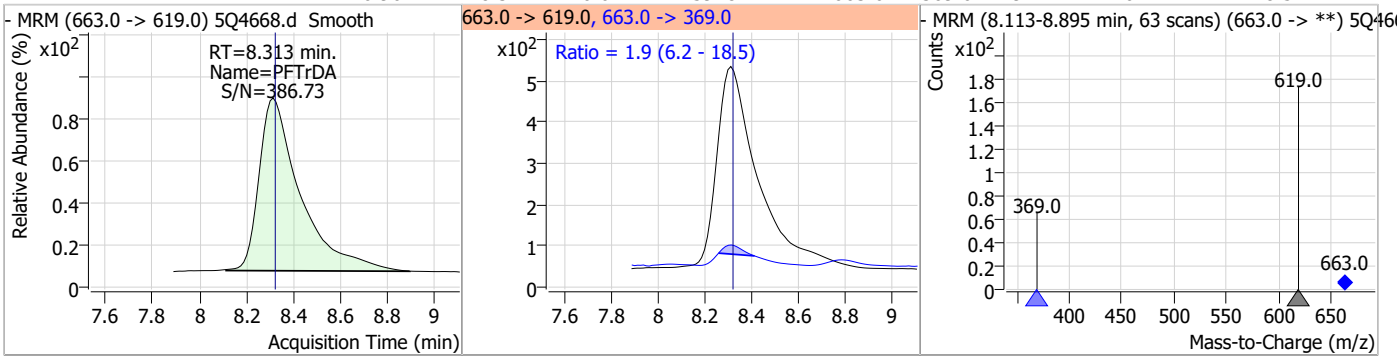
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	15.60	7.87	-0.03	113071				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.98	7.87	-0.03	5440	613.0 -> 319.0	16.2	8.7	26.1

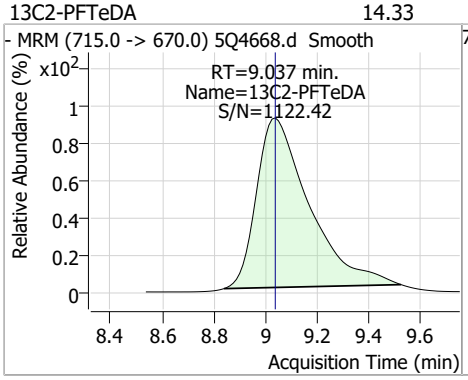


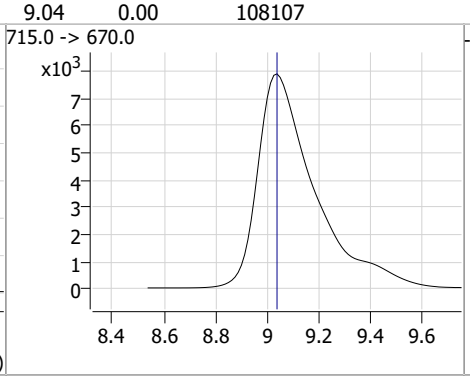
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.90	8.31	-0.04	5948	663.0 -> 369.0	1.9	6.2	18.5

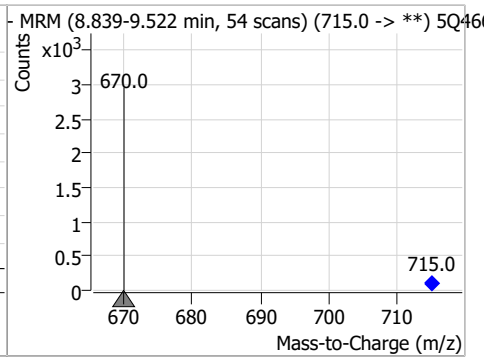


Perfluorinated Compounds by LC/MS/MS

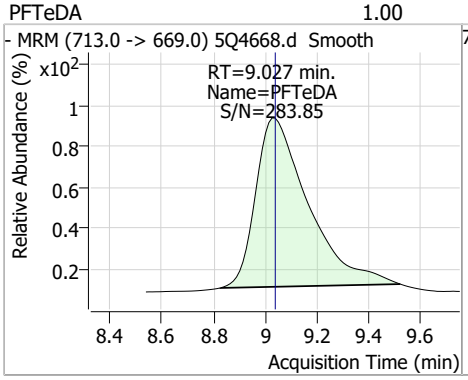
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	14.33	9.04	0.00	108107				

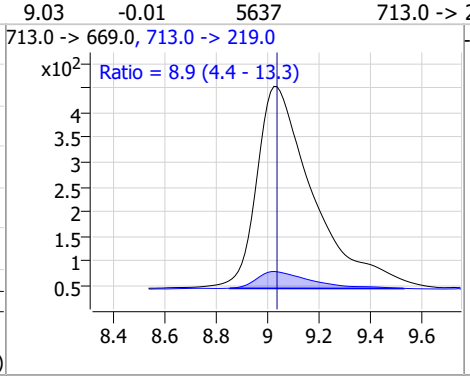


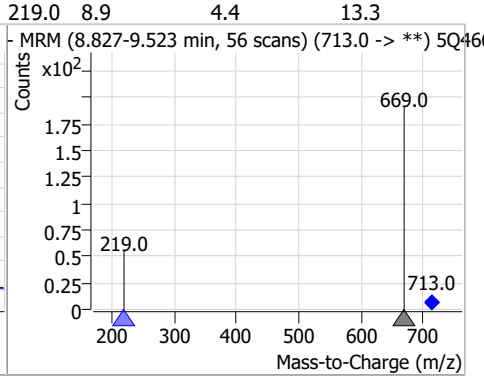




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.00	9.03	-0.01	5637	713.0 -> 219.0	8.9	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q72-CC71
Lab FileID: 5Q4668.D
Injection Time: 09/15/22 17:09
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak
EtFOSAA	2991-50-6		7.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4678.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:55:42 PM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

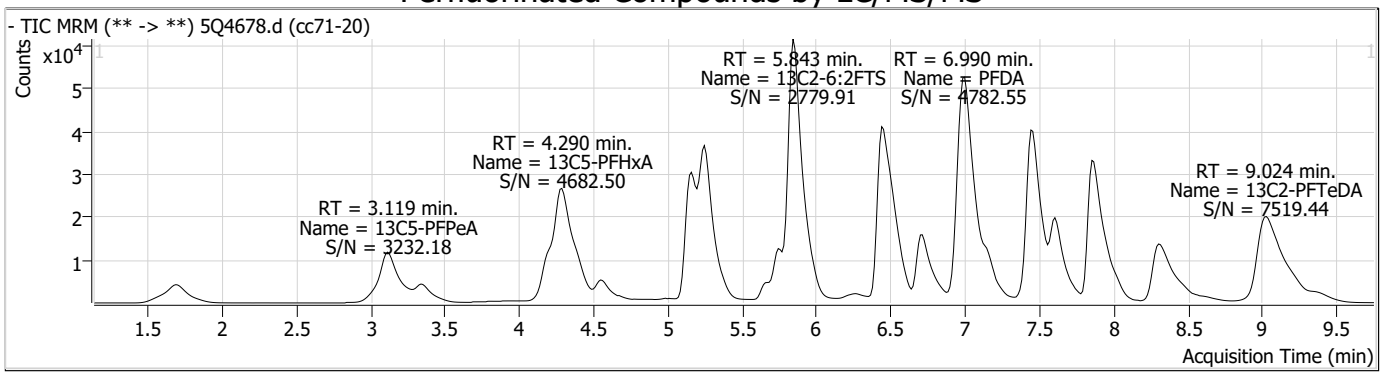
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	33448	20.00	µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	55751	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	80382	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	73065	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	103281	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	112730	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	92036	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	116266	20.00	µg/L	-0.012
M2-PFDoDA	7.866	615.0 -> 570.0	121512	20.00	µg/L	-0.027
M2-PFTeDA	9.024	715.0 -> 670.0	128787	20.00	µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	22139	20.00	µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6841	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	7051	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	13659	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	27029	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	40150	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	39927	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	14139	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6395	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6187	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	20351	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	27029	18.40	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-6:2FTS	5.843	429.0 -> 409.0	40150	17.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%		
13C2-8:2FTS	7.025	529.0 -> 509.0	39927	17.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C2-PFDoDA	7.866	615.0 -> 570.0	121512	16.77	µg/L	-0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 83.8%		
13C2-PFTeDA	9.024	715.0 -> 670.0	128787	17.07	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.3%		
13C3-PFBS	3.349	302.0 -> 99.0	6841	21.00	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C3-PFHxS	5.194	402.0 -> 99.0	7051	20.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C4-PFBA	1.687	217.0 -> 172.0	33448	18.71	µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	73065	17.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C5-PFHxA	4.290	318.0 -> 273.0	80382	18.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFPeA	3.119	268.0 -> 223.0	55751	19.18	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C6-PFDA	6.989	519.0 -> 474.0	92036	17.10	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

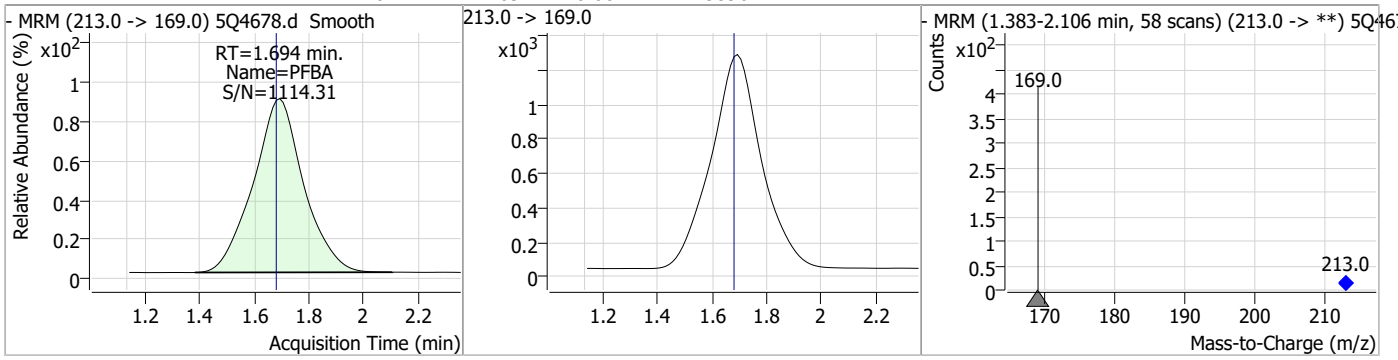
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.5%			
13C7-PFUnDA	7.459	570.0 -> 525.0	116266	16.51	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 82.6%			
13C8-FOSA	6.517	506.0 -> 78.0	22139	19.51	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
13C8-PFOA	5.857	421.0 -> 376.0	103281	17.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.4%			
13C8-PFOS	6.440	507.0 -> 99.0	13659	20.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%			
13C9-PFNA	6.455	472.0 -> 427.0	112730	17.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	14139	14.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 72.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6395	19.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	6187	20.32	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	20351	18.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	30293	20.02	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	43798	20.57	µg/L		97
8:2FTS	7.026	527.0 -> 507.0	43235	20.32	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	10238	14.22	µg/L		98
FOSA	6.519	498.0 -> 78.0	22534	19.78	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	12138	18.74	µg/L		99
PFBA	1.694	213.0 -> 169.0	15890	20.17	µg/L		100
PFBS	3.354	299.0 -> 80.0	20346	19.80	µg/L		100
PFDA	6.990	513.0 -> 469.0	114591	20.27	µg/L		100
PFDoDA	7.867	613.0 -> 569.0	116844	19.60	µg/L		98
PFDS	7.419	599.0 -> 80.0	19023	24.25	µg/L		100
PFHpA	5.164	363.0 -> 319.0	95653	19.93	µg/L		100
PFHpS	5.867	449.0 -> 80.0	20806	20.26	µg/L		100
PFHxA	4.291	313.0 -> 269.0	76989	19.60	µg/L		100
PFHxS	5.195	399.0 -> 80.0	20385	19.47	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	99274	19.66	µg/L		99
PFNS	6.962	549.0 -> 80.0	20395	20.23	µg/L		100
PFOA	5.858	413.0 -> 369.0	124676	19.91	µg/L		100
PFOS	6.442	499.0 -> 80.0	23820	19.80	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	53923	19.57	µg/L		100
PFPeS	4.398	349.0 -> 80.0	15505	19.40	µg/L		99
PFTeDA	9.027	713.0 -> 669.0	127509	19.02	µg/L		99
PFTrDA	8.313	663.0 -> 619.0	135411	19.01	µg/L		97
PFUnDA	7.460	563.0 -> 519.0	121452	20.91	µg/L		98
11Cl-PF3OUdS	7.615	631.0 -> 451.0	74403	24.64	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	75267	23.67	µg/L		100
ADONA	5.261	377.0 -> 251.0	120143	16.58	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	19773	18.33	µg/L		96
MeFOSA	6.966	512.0 -> 169.0	6785	20.36	µg/L		94
4-PFECHS	5.753	461.0 -> 381.0	44215	23.79	µg/L		99
FBSA	4.343	298.0 -> 78.0	26985	20.24	µg/L		99
FHxSA	5.674	398.0 -> 78.0	22017	20.96	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

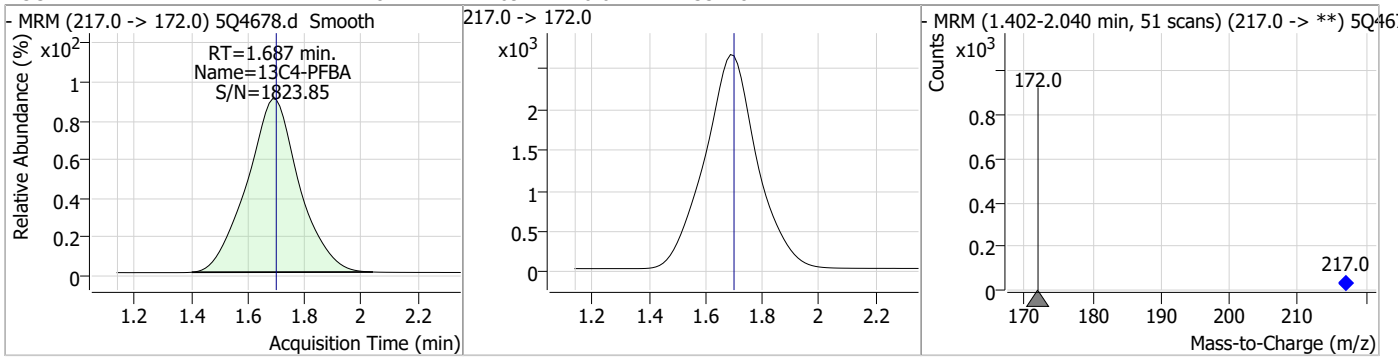
Perfluorinated Compounds by LC/MS/MS



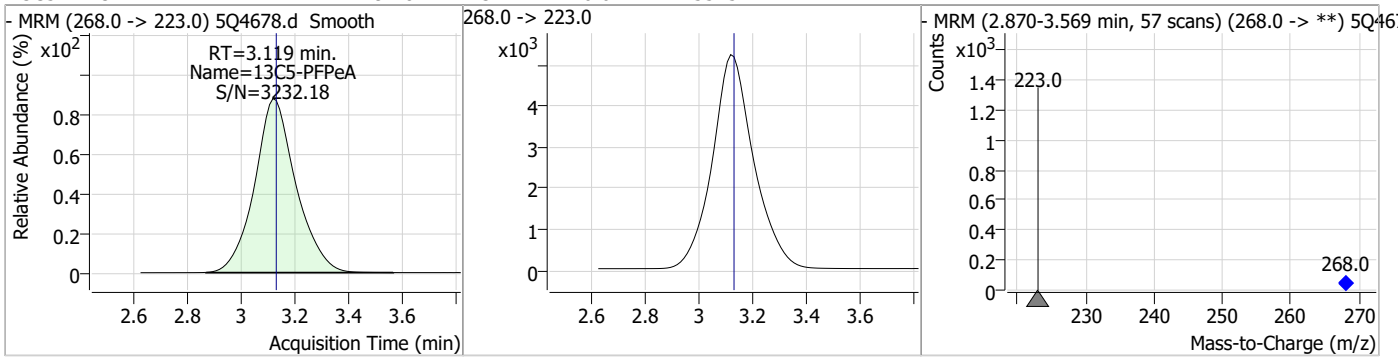
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.17	1.69	0.00	15890				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.71	1.69	-0.01	33448				

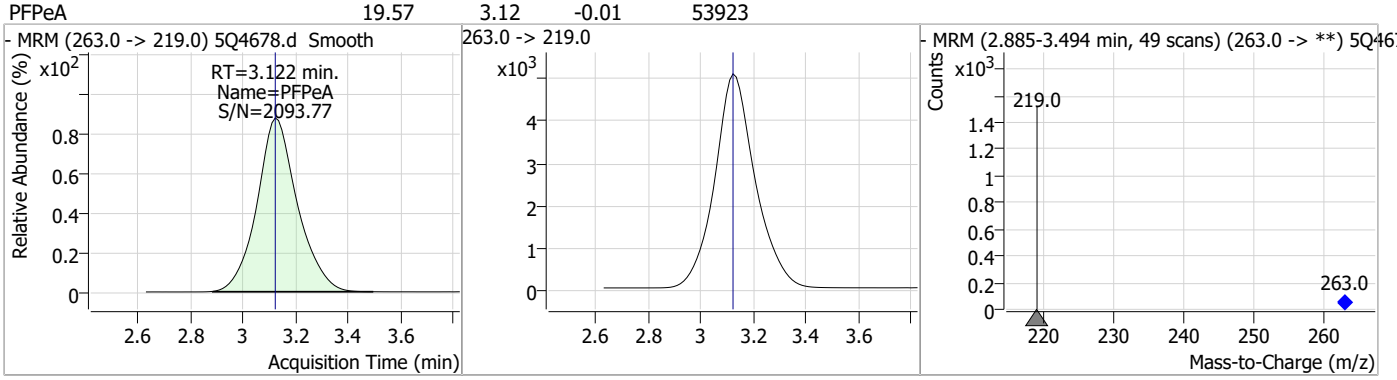


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.18	3.12	-0.01	55751				

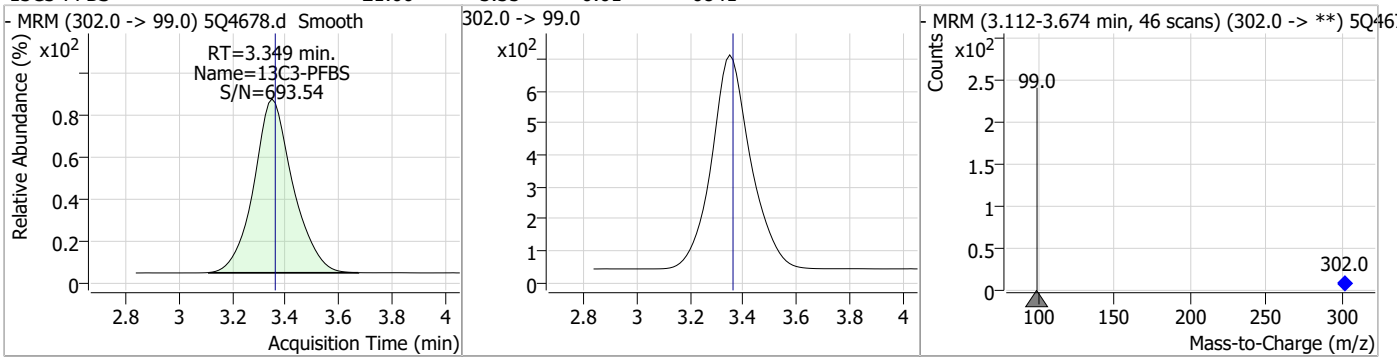


Perfluorinated Compounds by LC/MS/MS

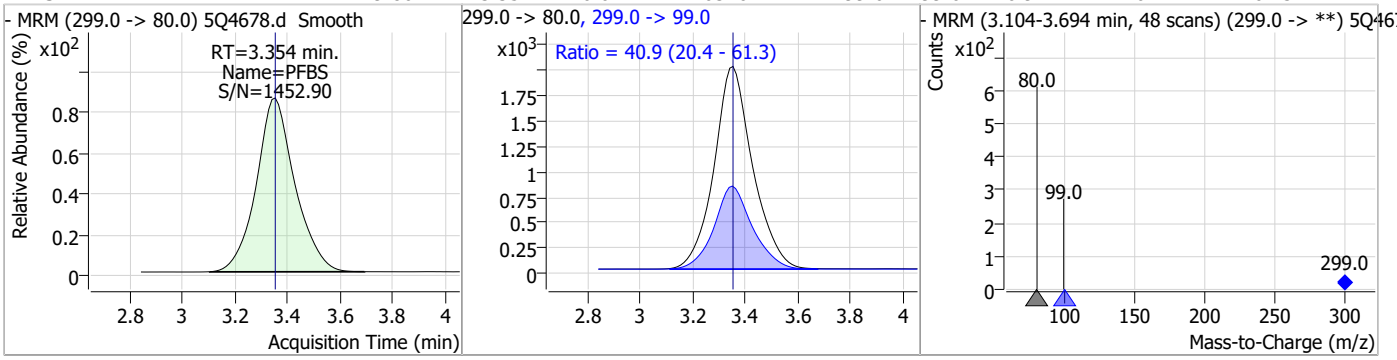
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.57	3.12	-0.01	53923				



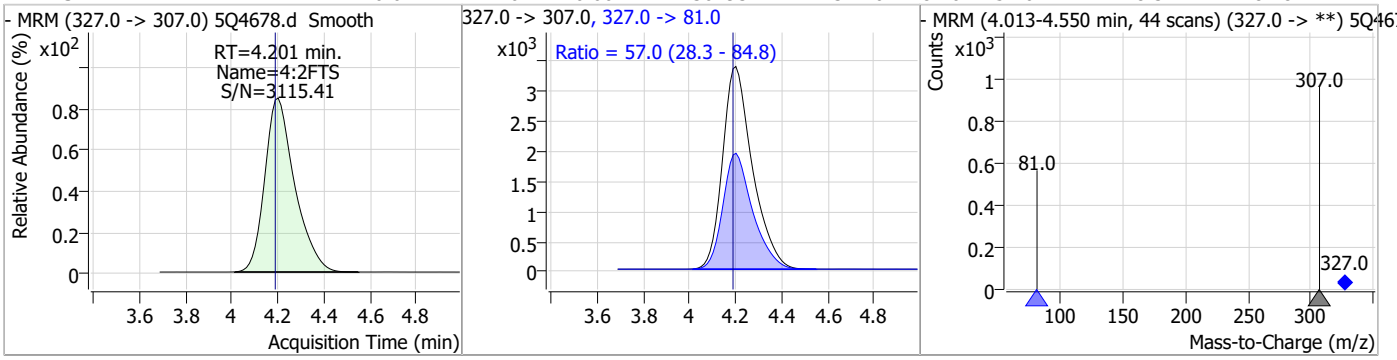
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.00	3.35	-0.01	6841				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.80	3.35	-0.01	20346	299.0 -> 99.0	40.9	20.4	61.3

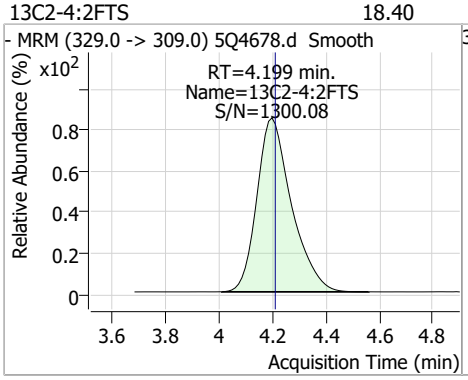


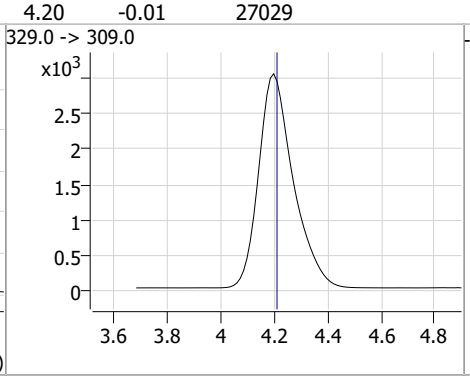
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.02	4.20	0.00	30293	327.0 -> 81.0	57.0	28.3	84.8

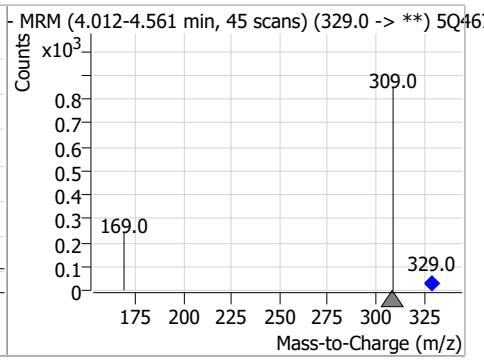


Perfluorinated Compounds by LC/MS/MS

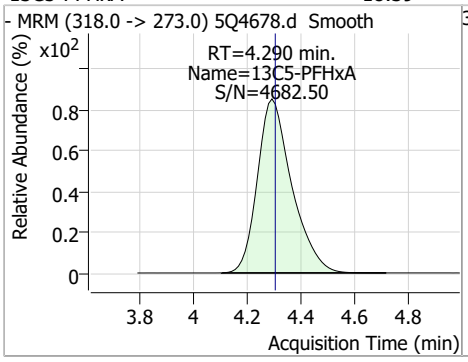
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.40	4.20	-0.01	27029				

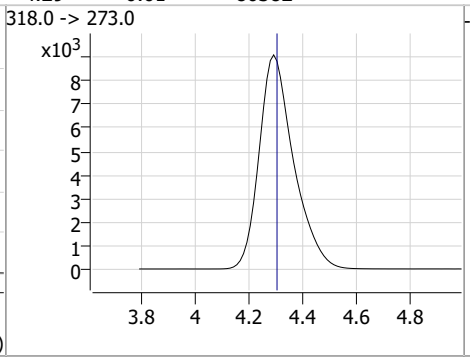


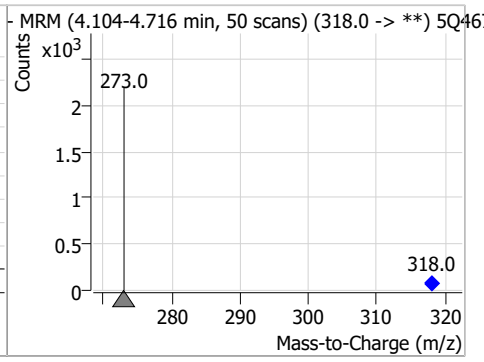




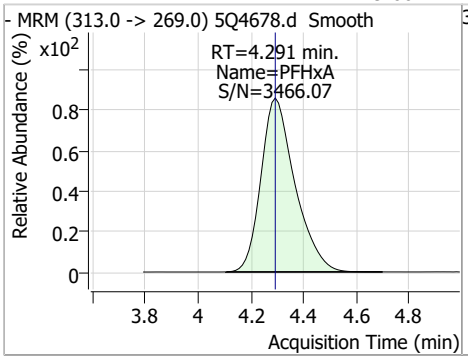
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.39	4.29	-0.01	80382				

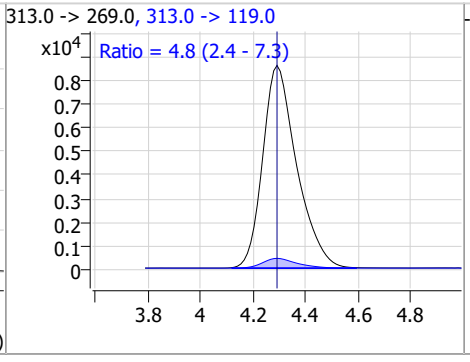


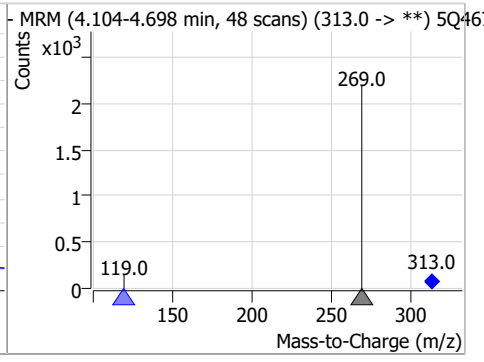




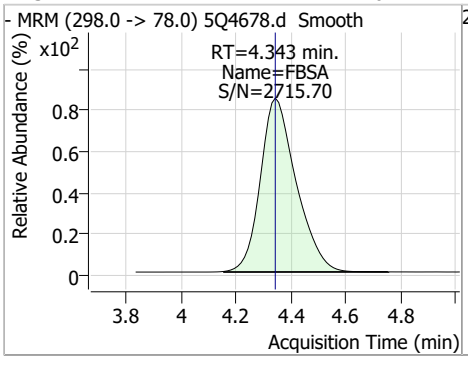
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.60	4.29	-0.01	76989	313.0 -> 119.0	4.8	2.4	7.3

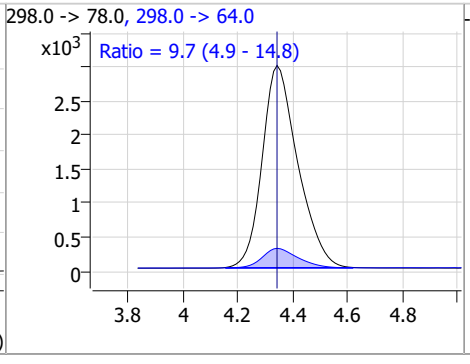


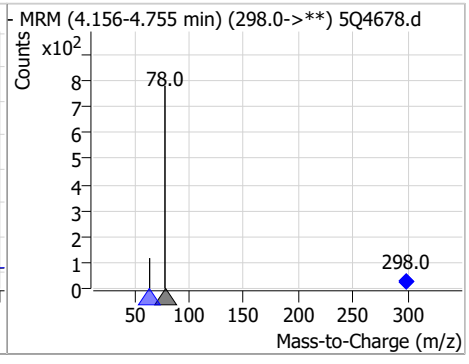




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.24	4.34	-0.01	26985	298.0 -> 64.0	9.7	4.9	14.8

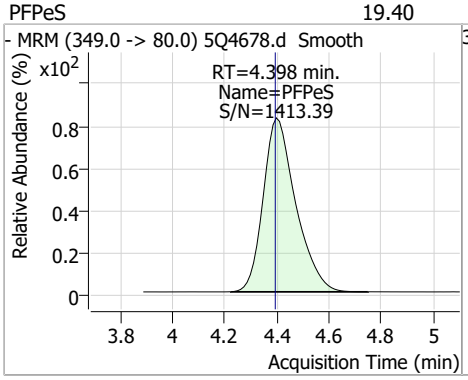


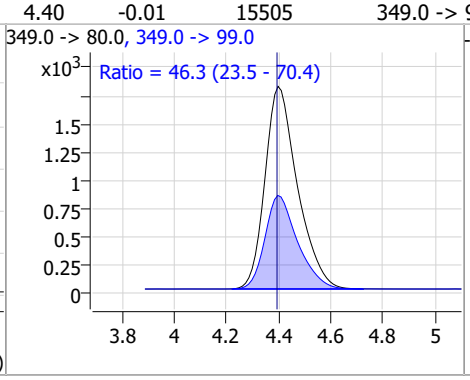


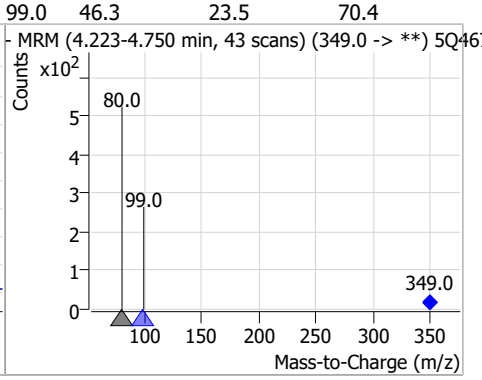


Perfluorinated Compounds by LC/MS/MS

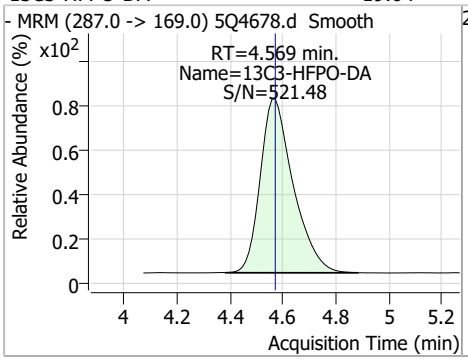
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.40	4.40	-0.01	15505	349.0 -> 99.0	46.3	23.5	70.4

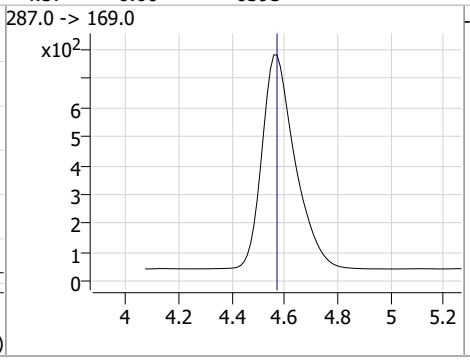


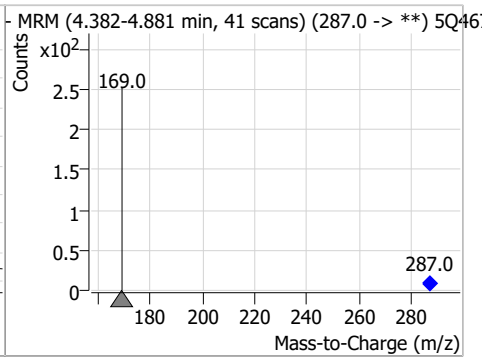




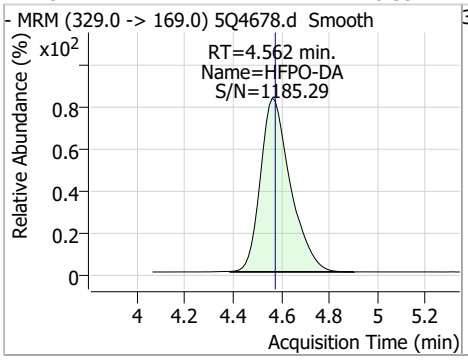
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.04	4.57	0.00	6395				

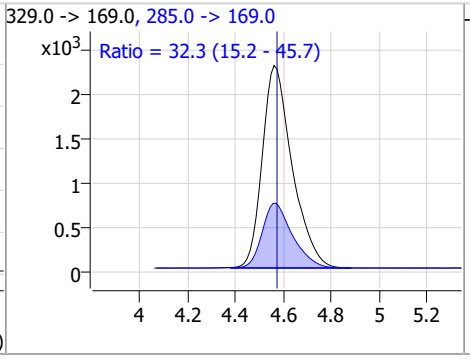


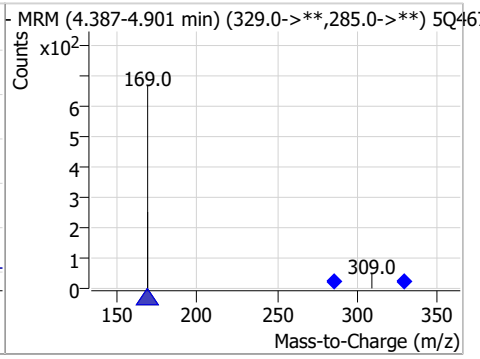




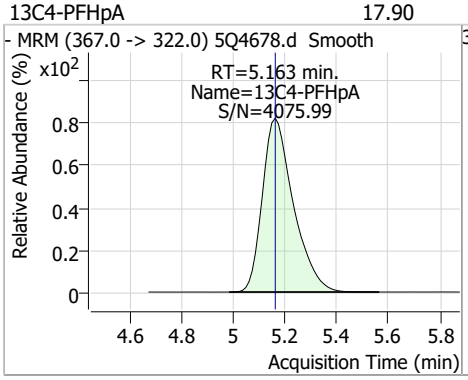
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	18.33	4.56	-0.01	19773	285.0 -> 169.0	32.3	15.2	45.7

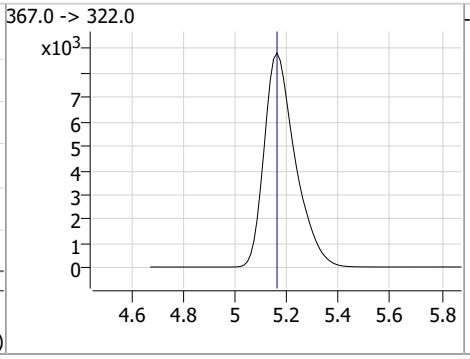


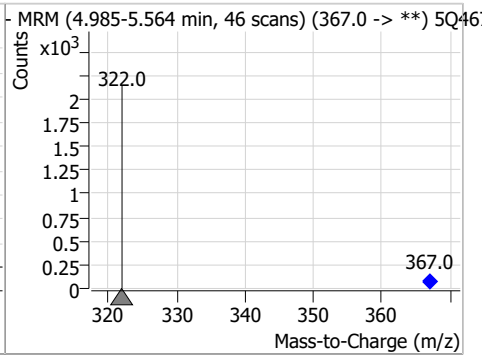




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.90	5.16	0.00	73065				

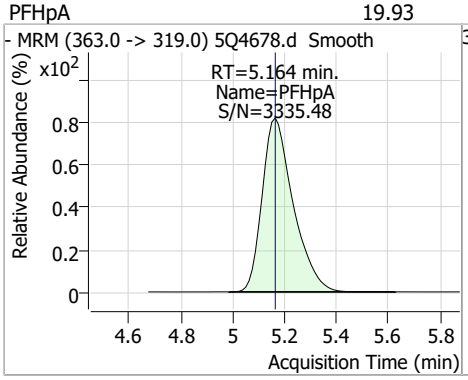


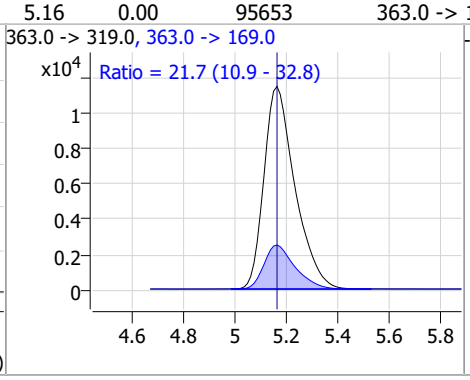


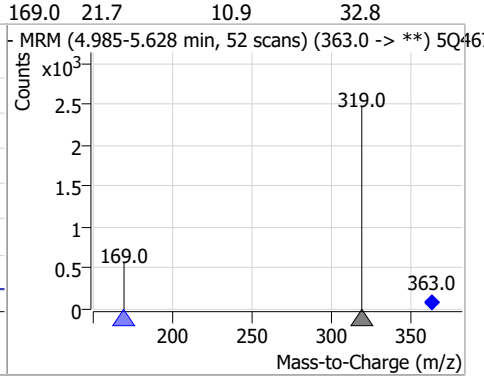


Perfluorinated Compounds by LC/MS/MS

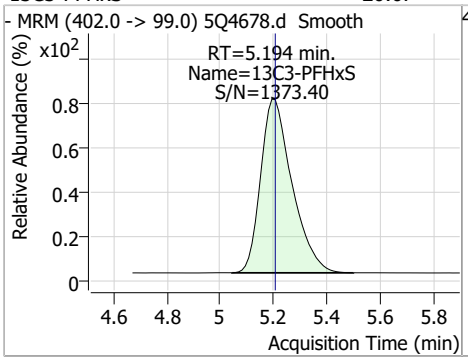
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.93	5.16	0.00	95653	363.0 -> 169.0	21.7	10.9	32.8

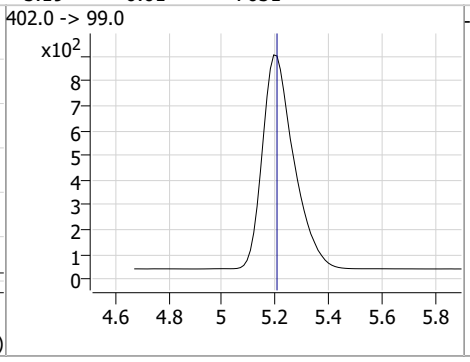


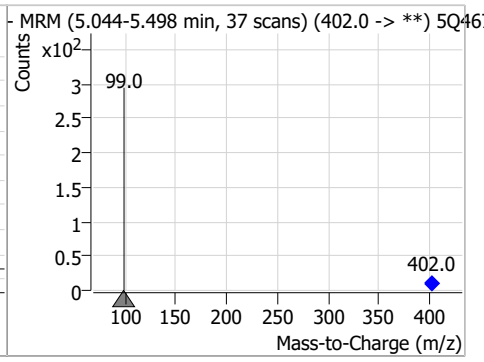




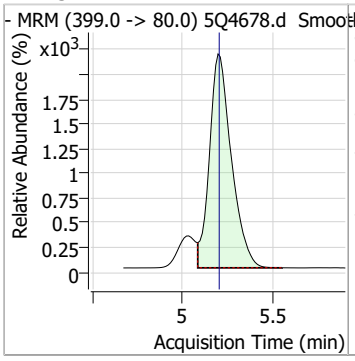
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.67	5.19	-0.01	7051				

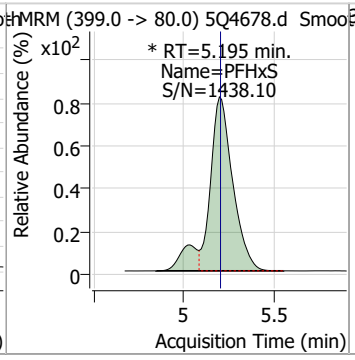


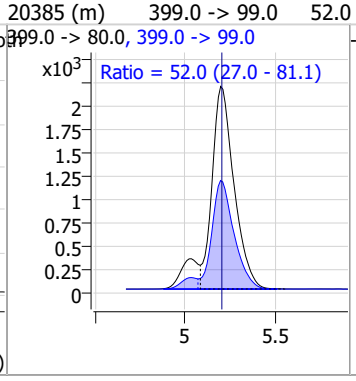


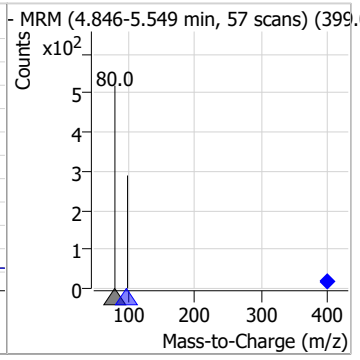


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.47	5.20	-0.01	20385 (m)	399.0 -> 99.0	52.0	27.0	81.1

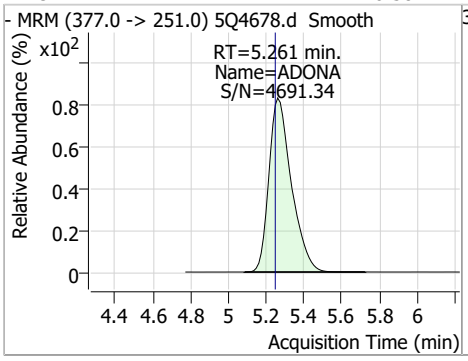


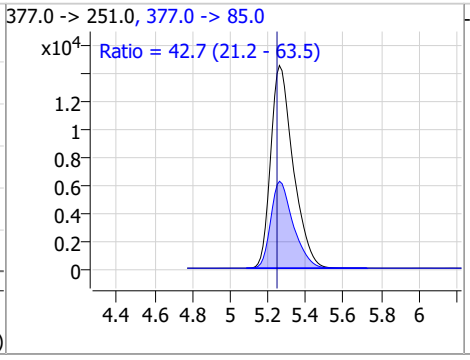


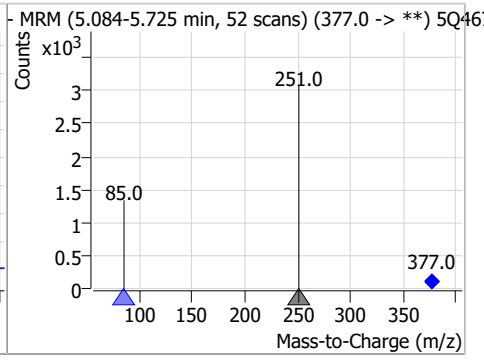




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.58	5.26	0.00	120143	377.0 -> 85.0	42.7	21.2	63.5

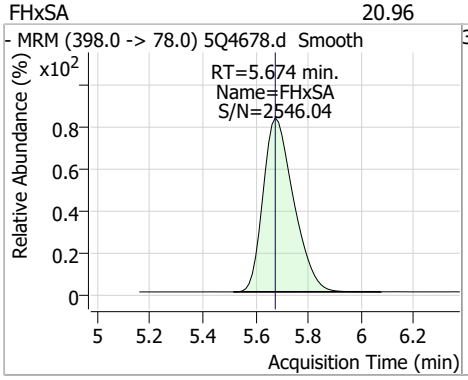


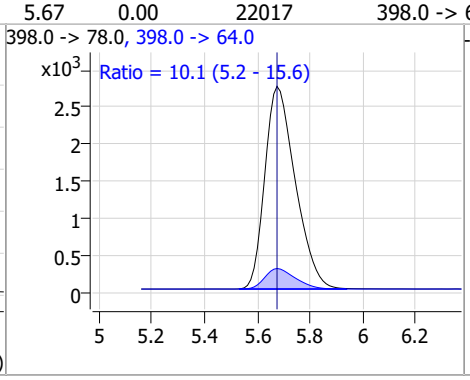


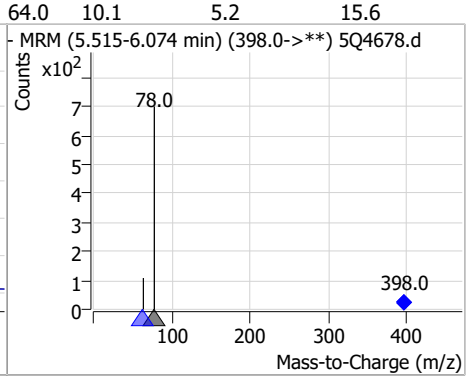


Perfluorinated Compounds by LC/MS/MS

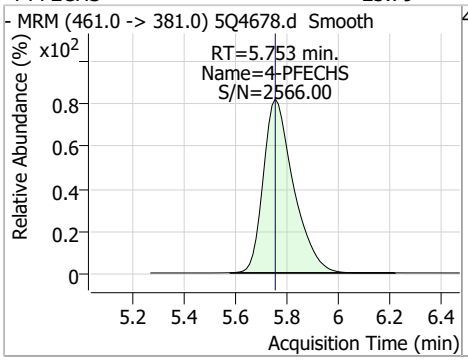
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.96	5.67	0.00	22017	398.0 -> 64.0	10.1	5.2	15.6

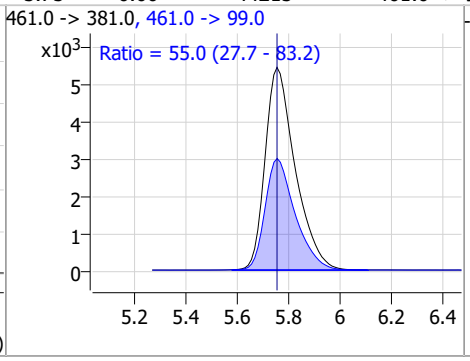


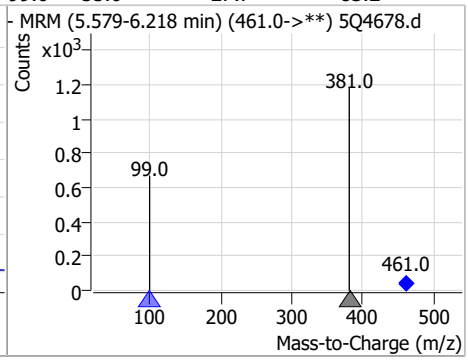




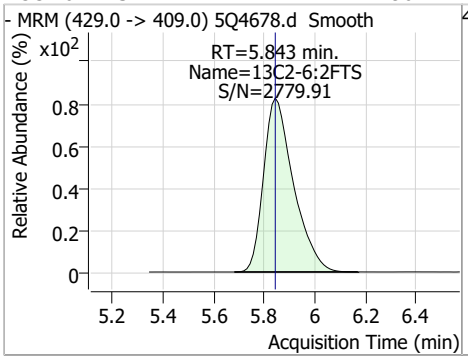
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	23.79	5.75	0.00	44215	461.0 -> 99.0	55.0	27.7	83.2

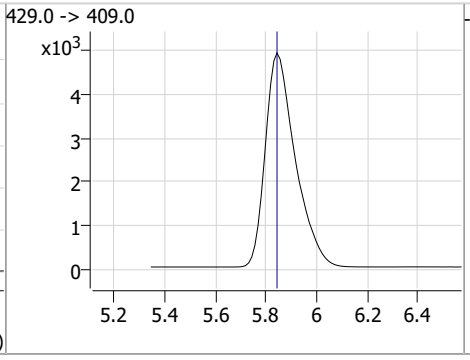


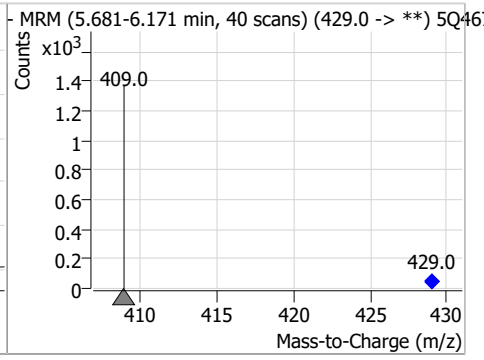




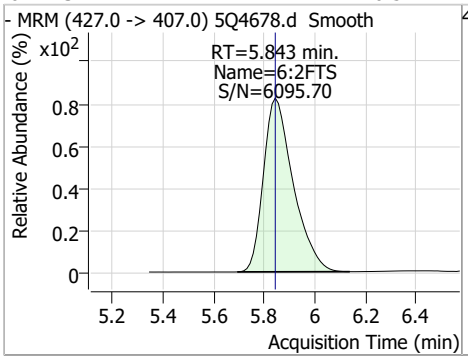
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.96	5.84	0.00	40150				

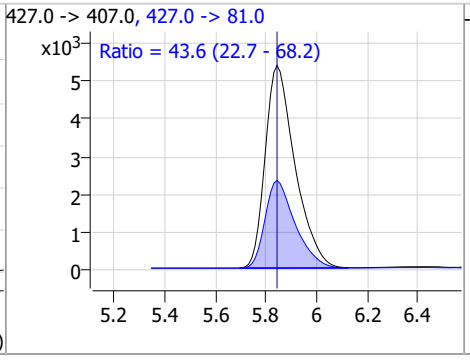


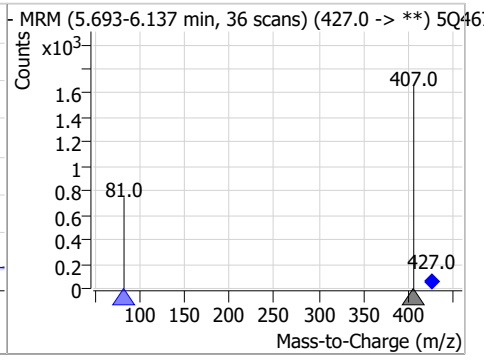




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.57	5.84	0.00	43798	427.0 -> 81.0	43.6	22.7	68.2

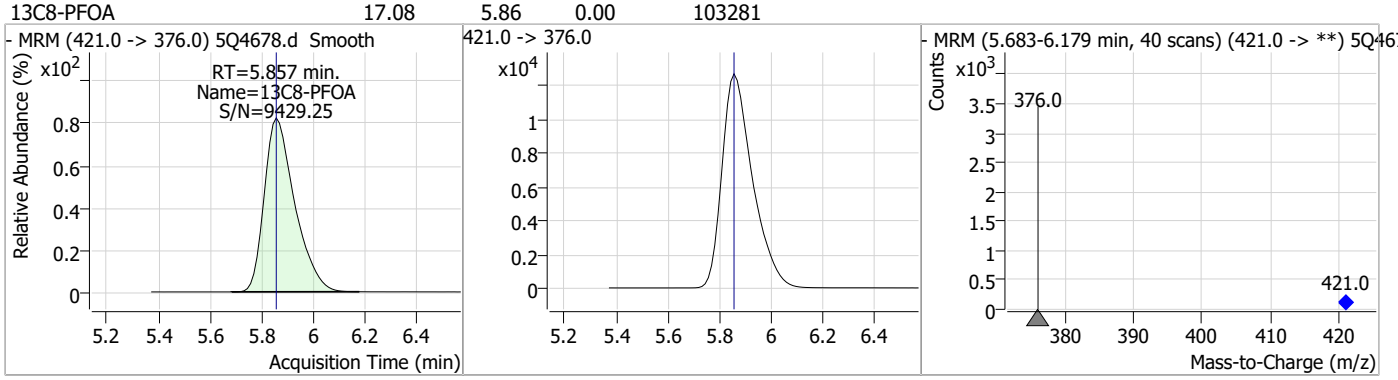




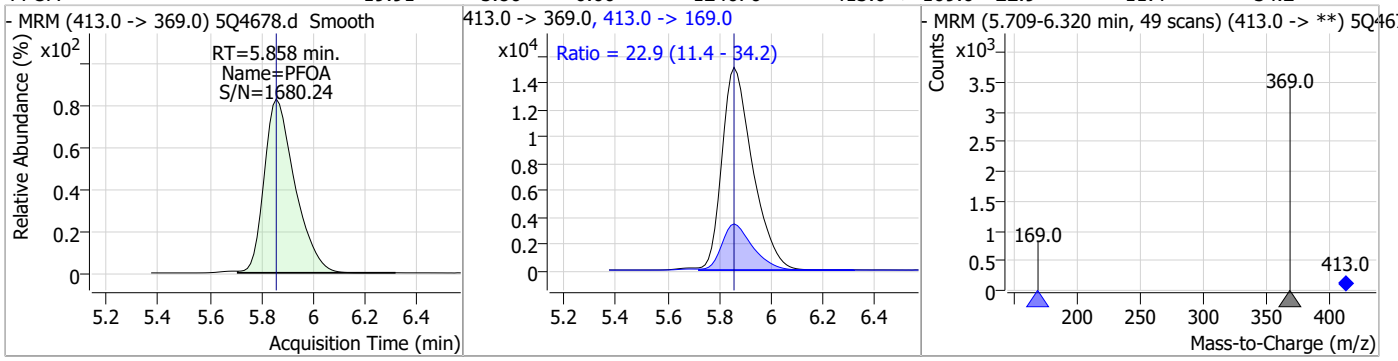


Perfluorinated Compounds by LC/MS/MS

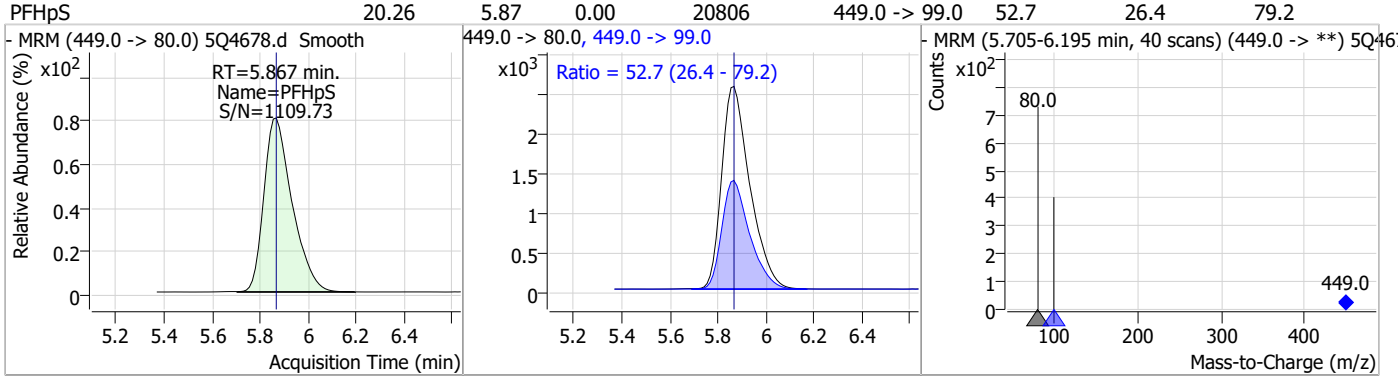
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.08	5.86	0.00	103281				



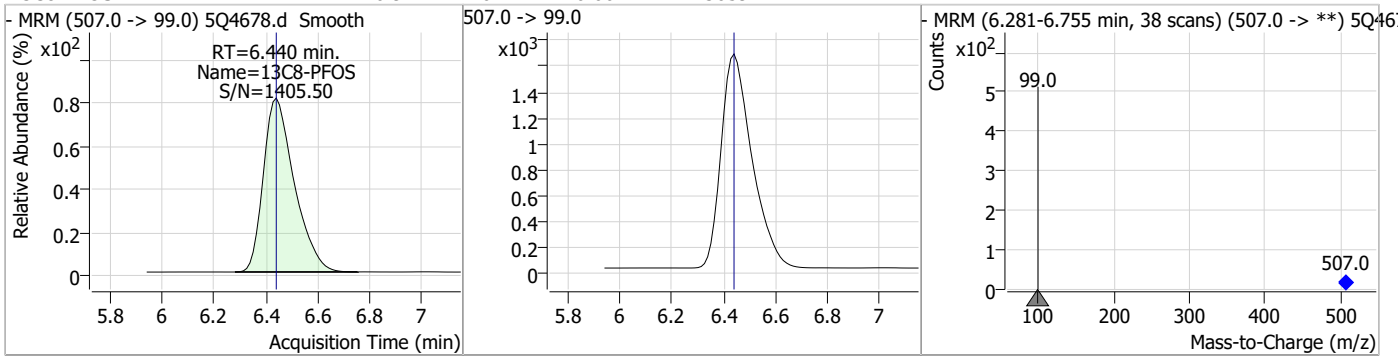
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.91	5.86	0.00	124676	413.0 -> 169.0	22.9	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.26	5.87	0.00	20806	449.0 -> 99.0	52.7	26.4	79.2

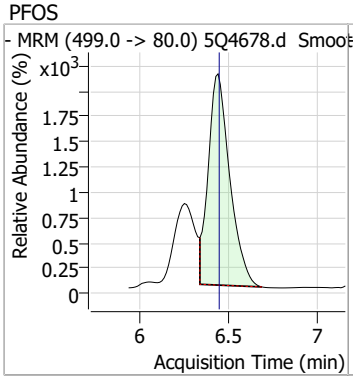


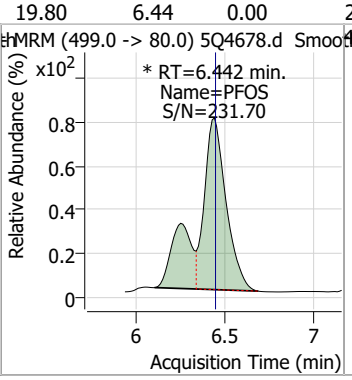
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.92	6.44	0.00	13659				

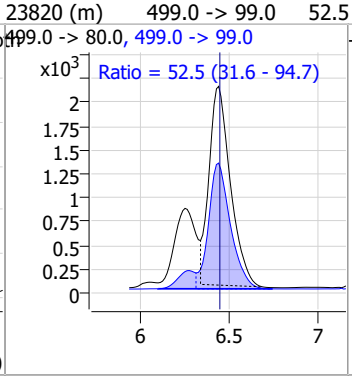


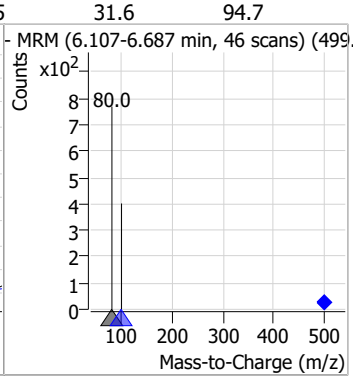
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.80	6.44	0.00	23820 (m)	499.0 -> 99.0	52.5	31.6	94.7

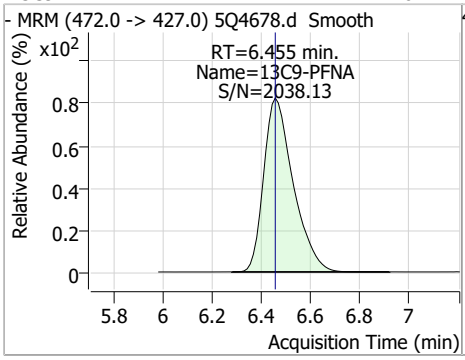


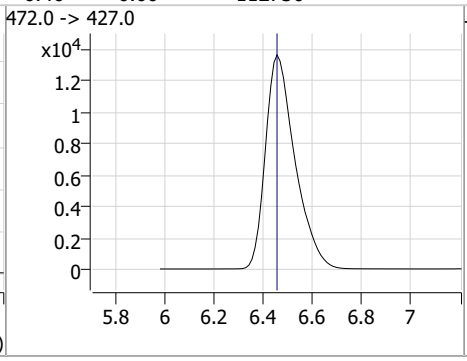


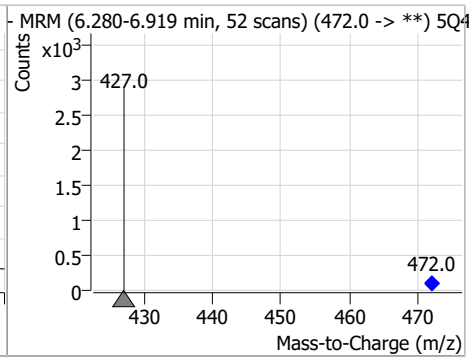




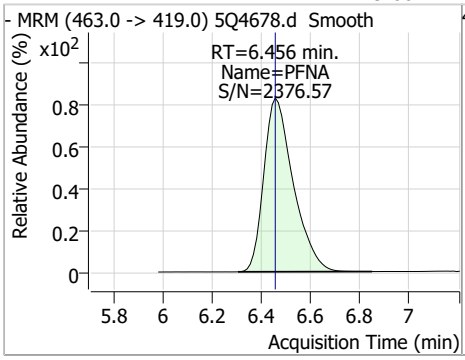
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.16	6.46	0.00	112730				

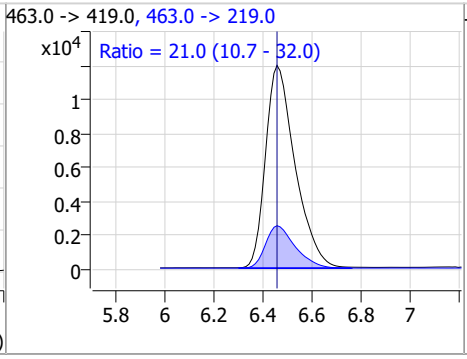


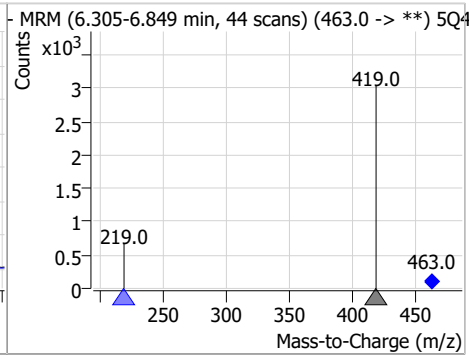




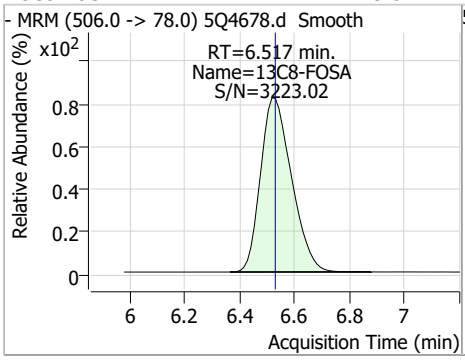
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.66	6.46	0.00	99274	463.0 -> 219.0	21.0	10.7	32.0

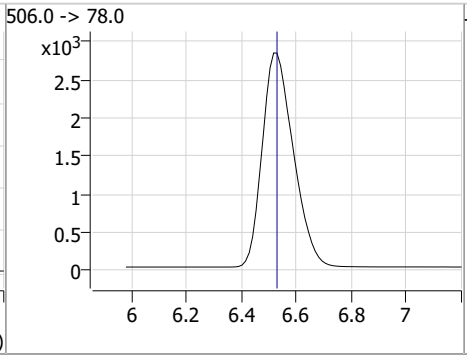


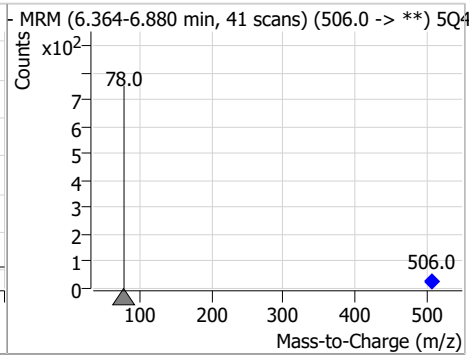




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.51	6.52	-0.01	22139				

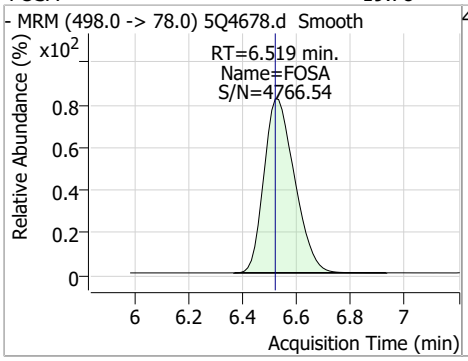


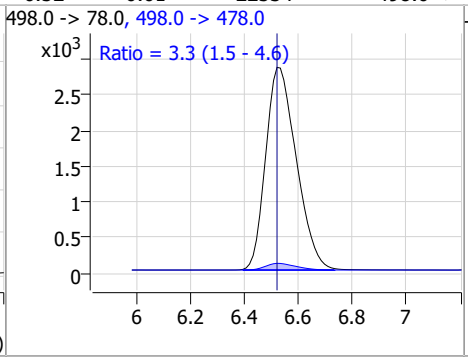


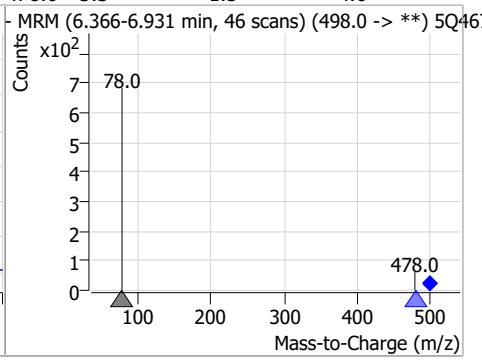


Perfluorinated Compounds by LC/MS/MS

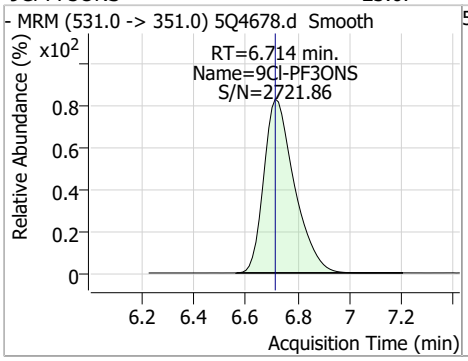
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.78	6.52	-0.01	22534	498.0 -> 478.0	3.3	1.5	4.6

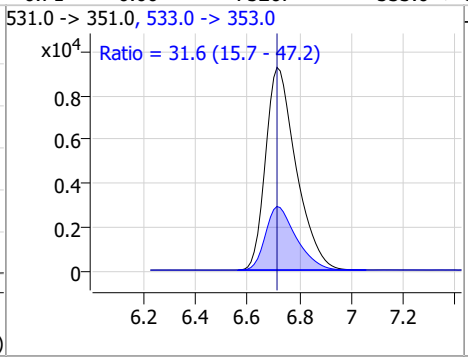


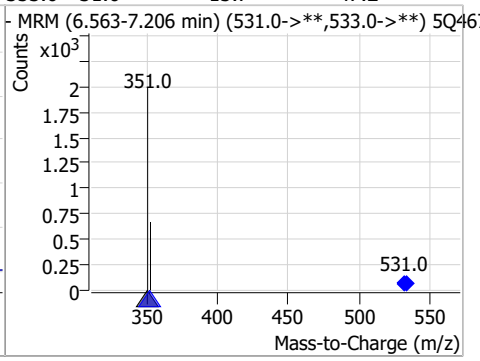




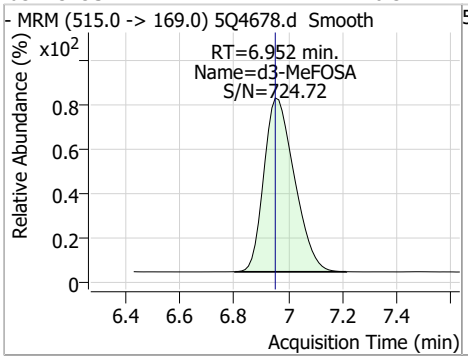
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	23.67	6.71	0.00	75267	533.0 -> 353.0	31.6	15.7	47.2

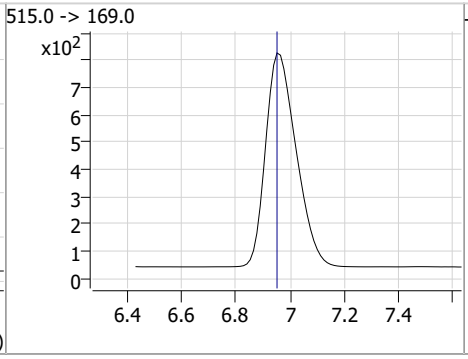


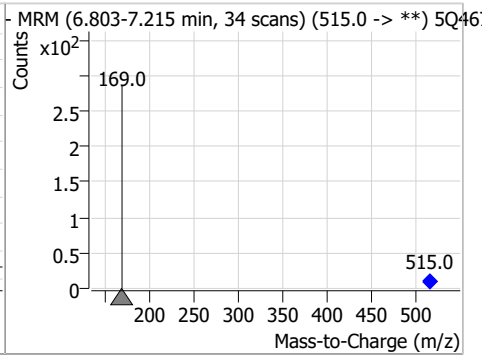




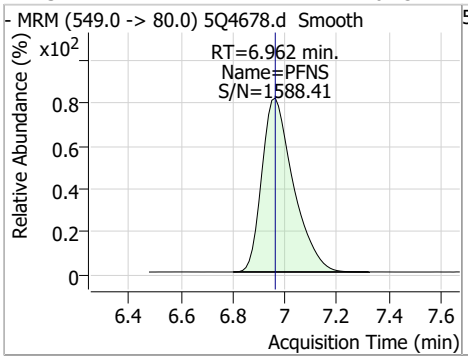
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.32	6.95	0.00	6187				

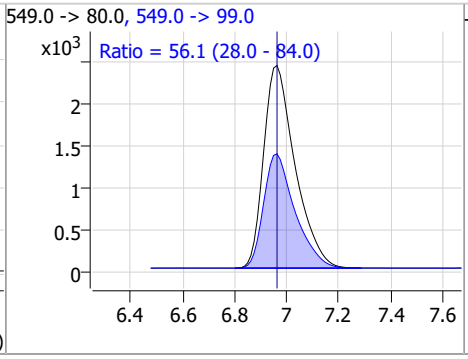


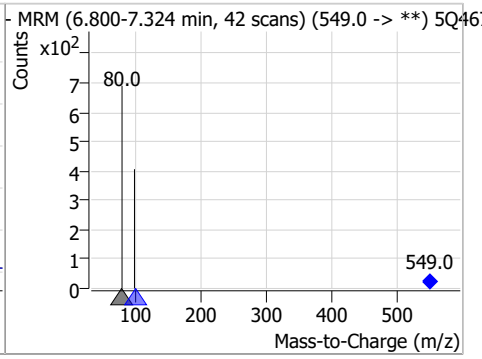




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.23	6.96	0.00	20395	549.0 -> 99.0	56.1	28.0	84.0

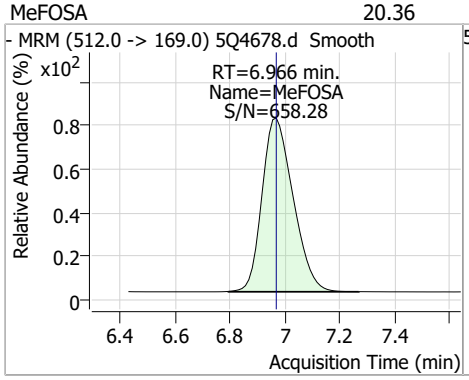


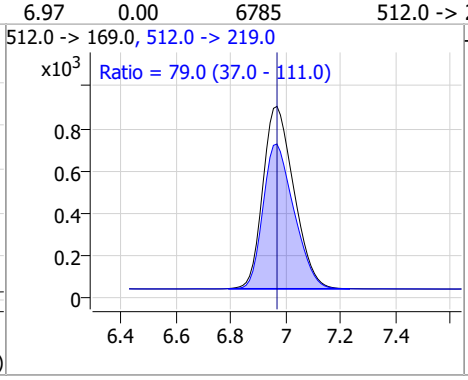


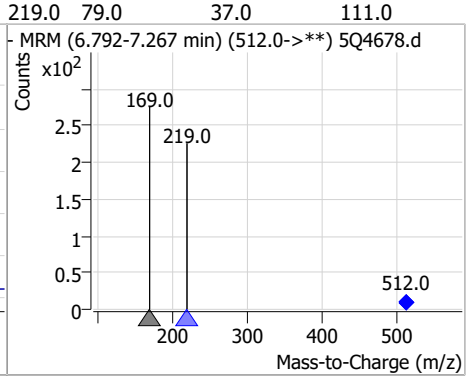


Perfluorinated Compounds by LC/MS/MS

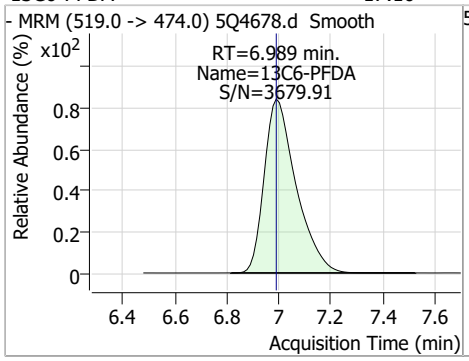
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.36	6.97	0.00	6785	512.0 -> 219.0	79.0	37.0	111.0

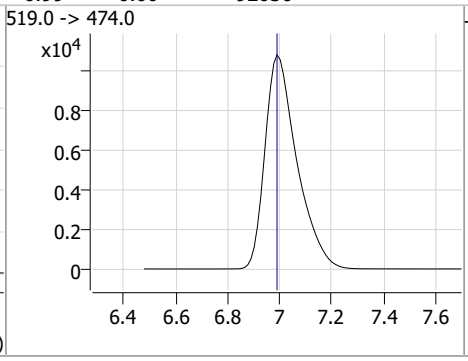


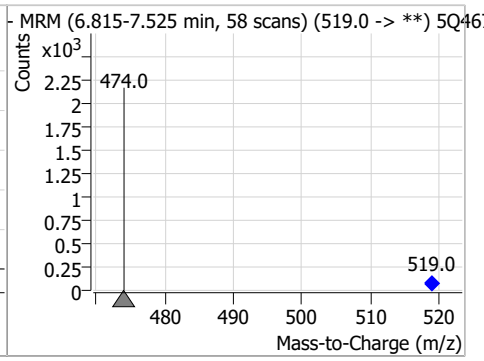




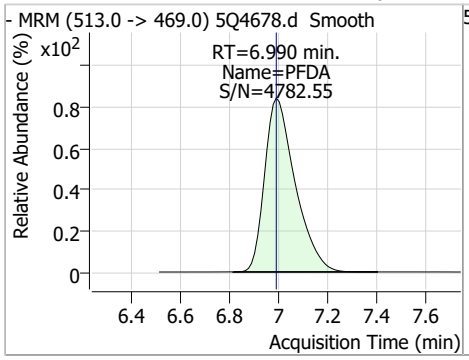
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.10	6.99	0.00	92036				

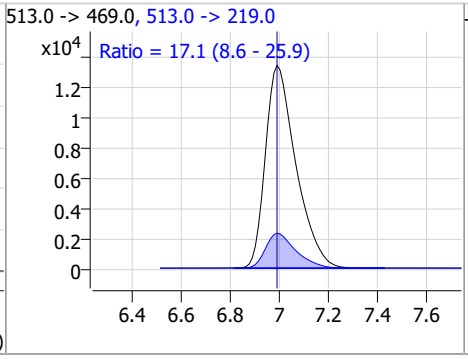


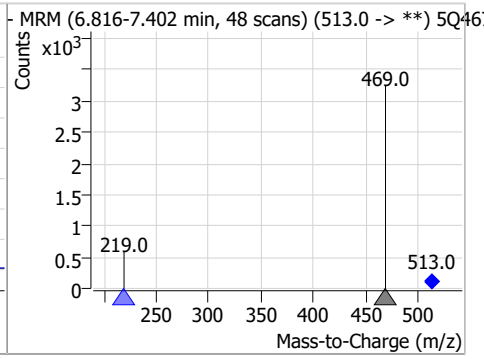




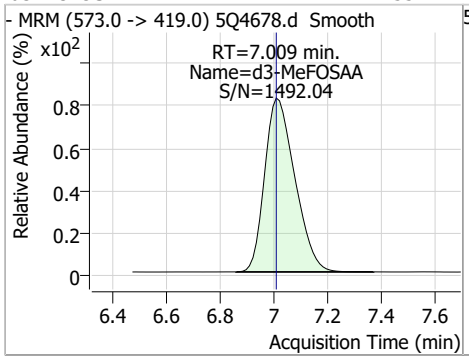
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.27	6.99	0.00	114591	513.0 -> 219.0	17.1	8.6	25.9

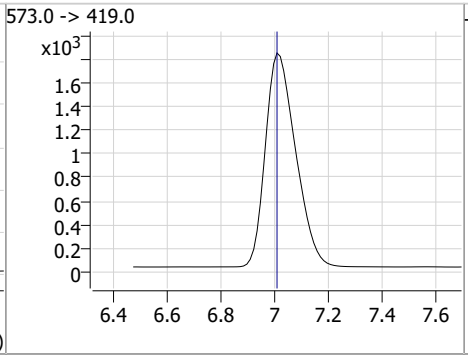


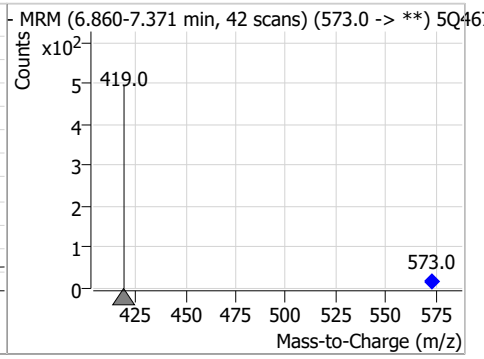




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	14.55	7.01	0.00	14139				

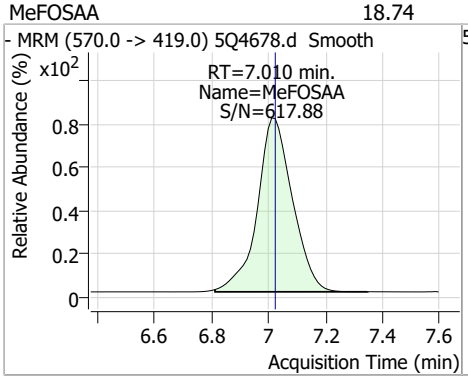


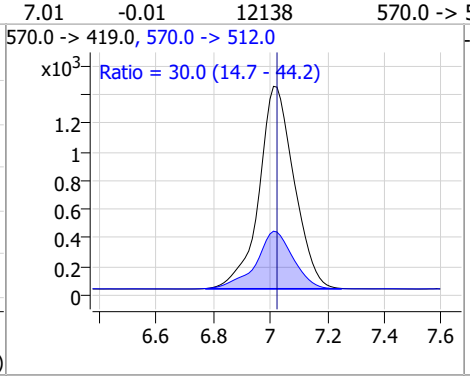


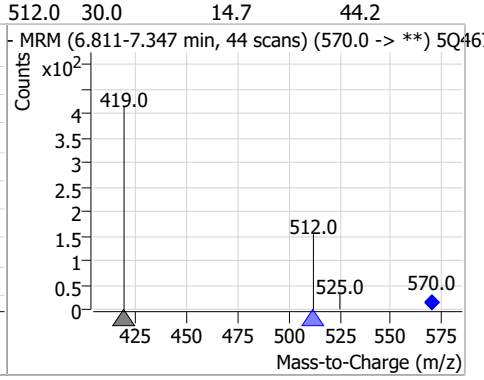


Perfluorinated Compounds by LC/MS/MS

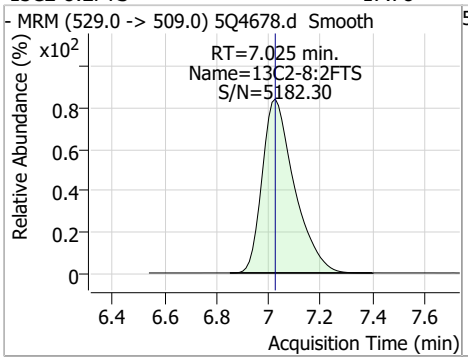
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.74	7.01	-0.01	12138	570.0 -> 512.0	30.0	14.7	44.2

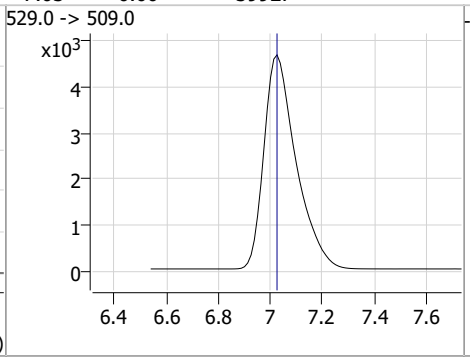


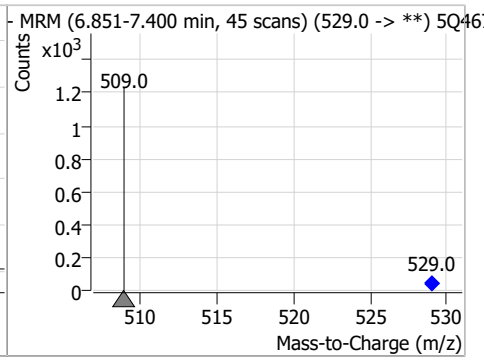




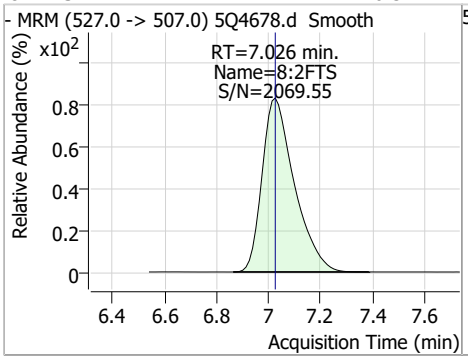
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.78	7.03	0.00	39927				

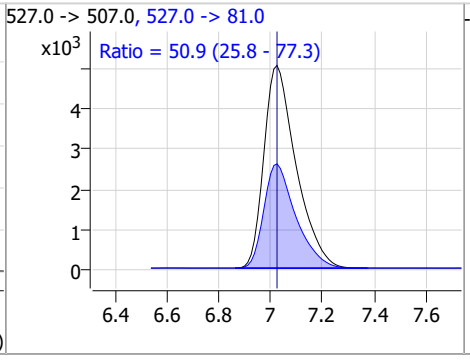


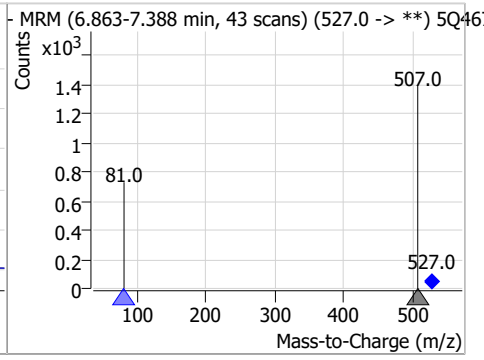




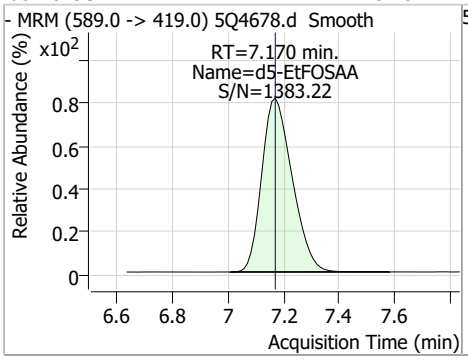
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.32	7.03	0.00	43235	527.0 -> 81.0	50.9	25.8	77.3

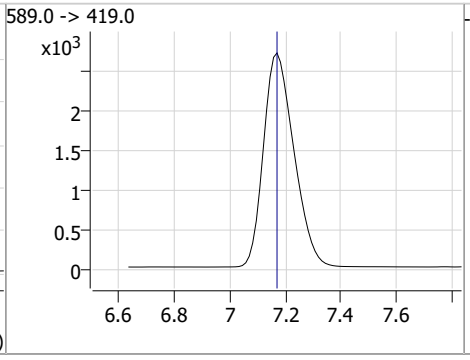


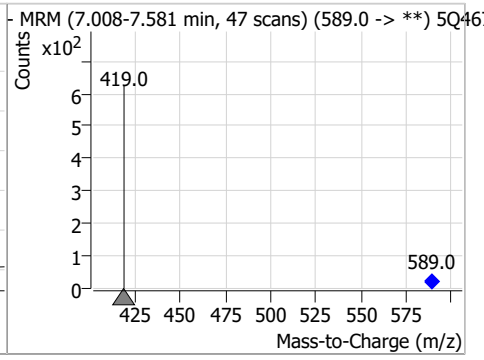




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.15	7.17	0.00	20351				

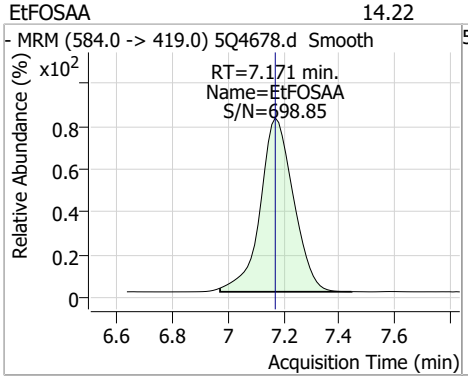


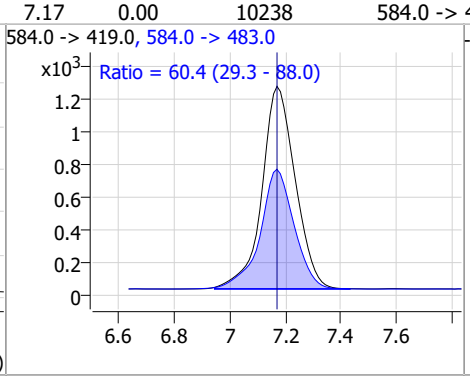


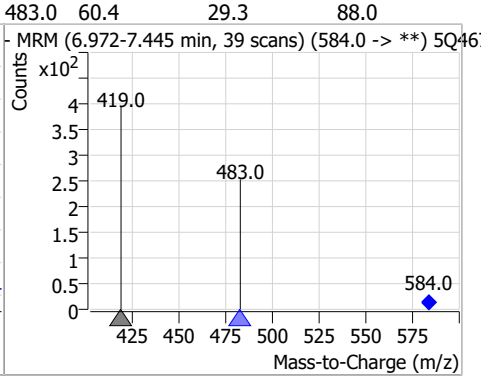


Perfluorinated Compounds by LC/MS/MS

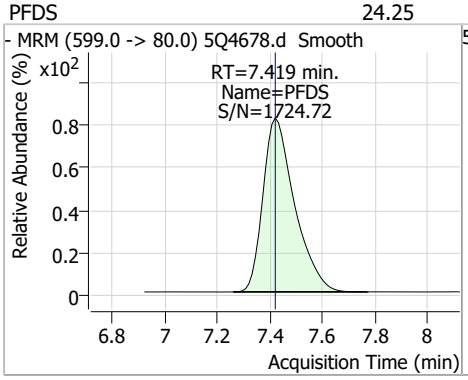
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.22	7.17	0.00	10238	584.0 -> 483.0	60.4	29.3	88.0

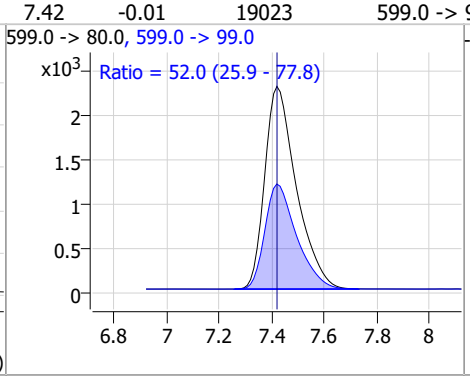


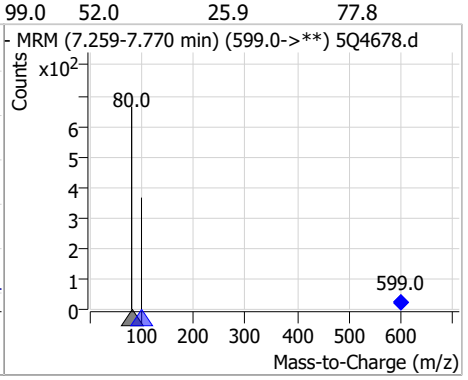




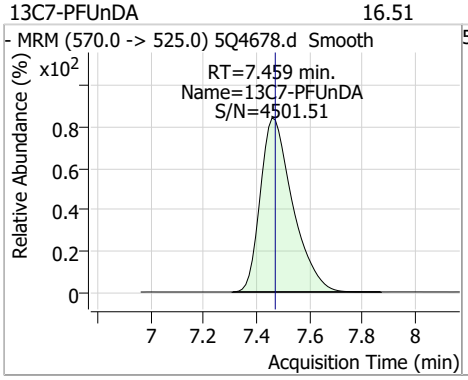
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	24.25	7.42	-0.01	19023	599.0 -> 99.0	52.0	25.9	77.8

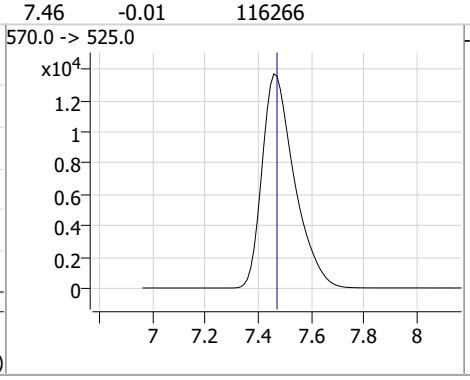


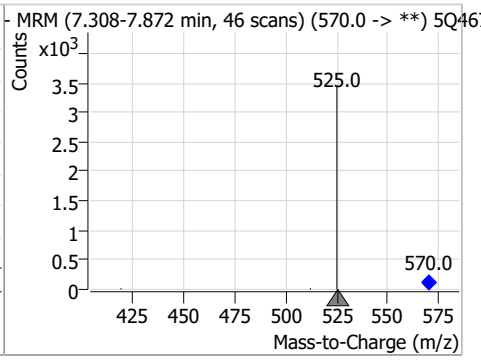




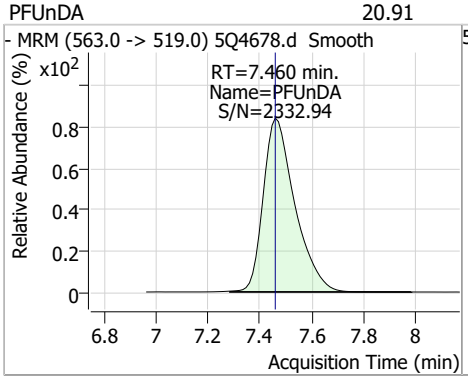
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	16.51	7.46	-0.01	116266				

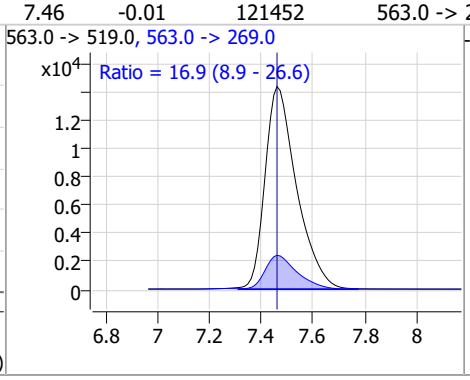


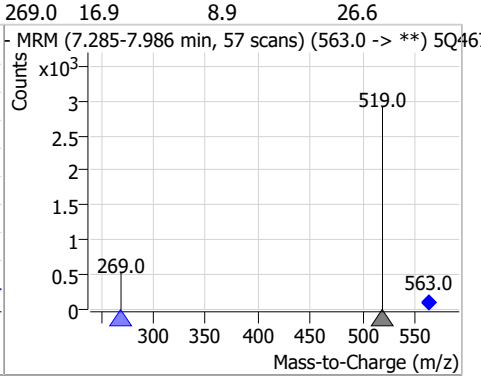




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.91	7.46	-0.01	121452	563.0 -> 269.0	16.9	8.9	26.6

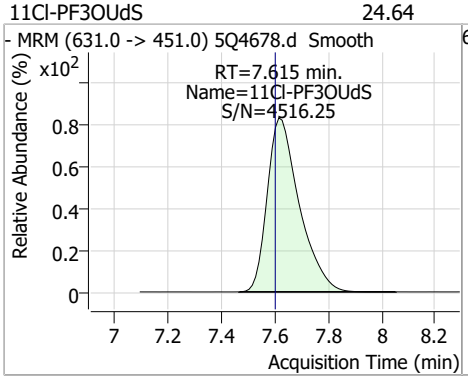


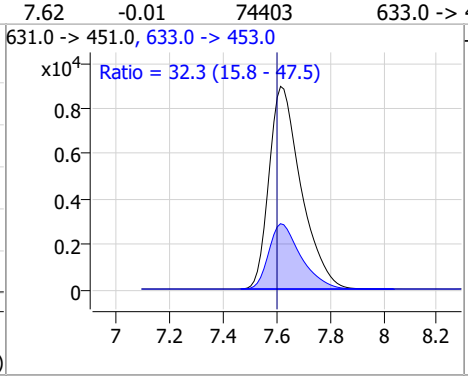


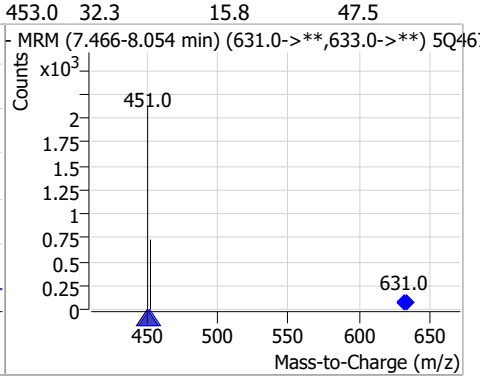


Perfluorinated Compounds by LC/MS/MS

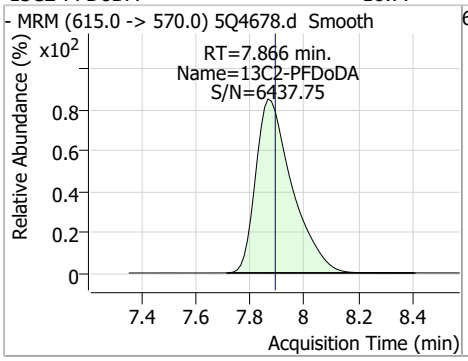
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	24.64	7.62	-0.01	74403	633.0 -> 453.0	32.3	15.8	47.5

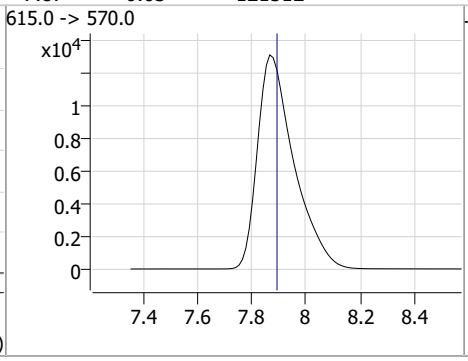


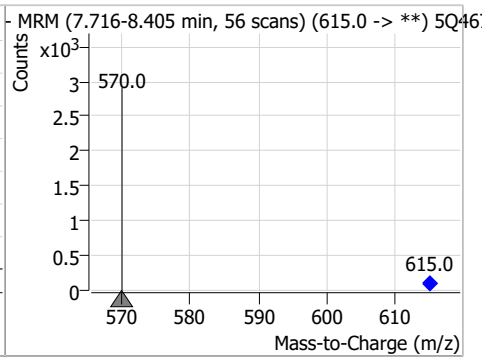




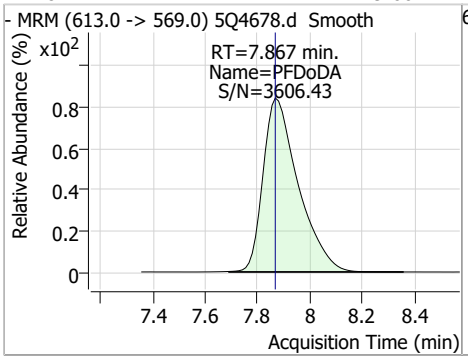
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	16.77	7.87	-0.03	121512				

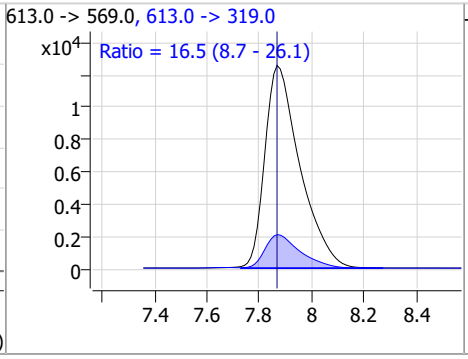


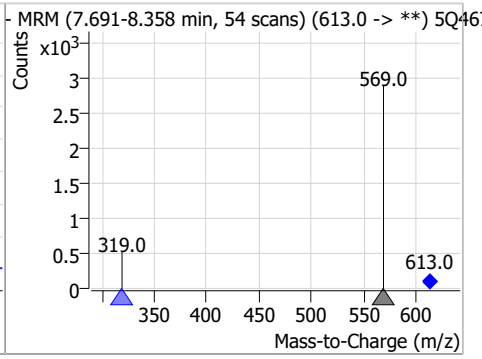




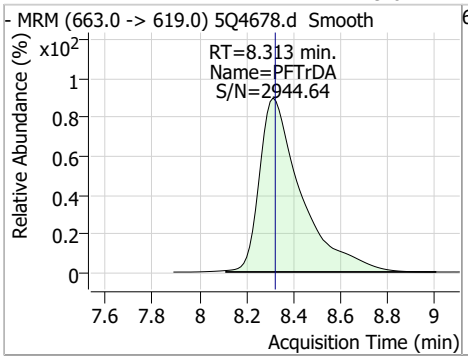
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.60	7.87	-0.03	116844	613.0 -> 319.0	16.5	8.7	26.1

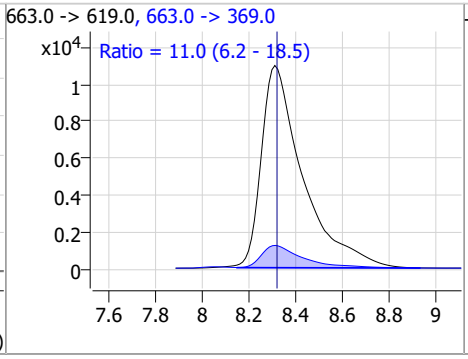


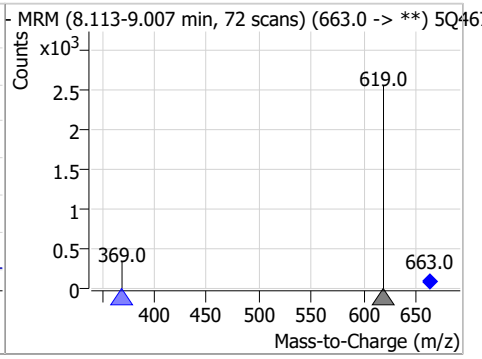




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.01	8.31	-0.04	135411	663.0 -> 369.0	11.0	6.2	18.5

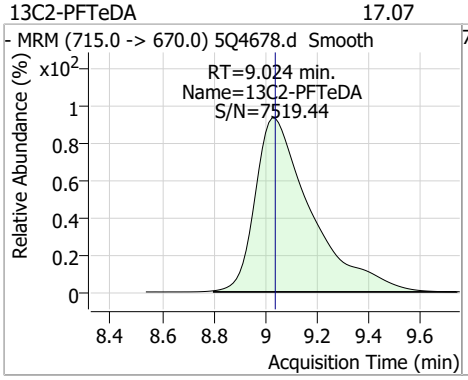


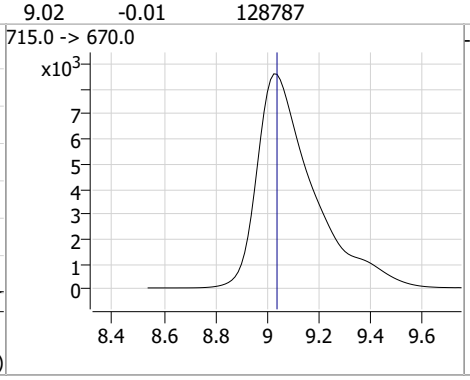


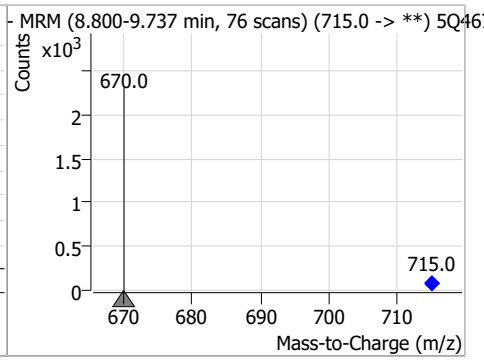


Perfluorinated Compounds by LC/MS/MS

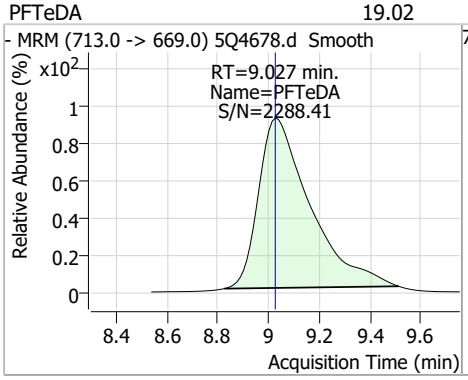
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.07	9.02	-0.01	128787				

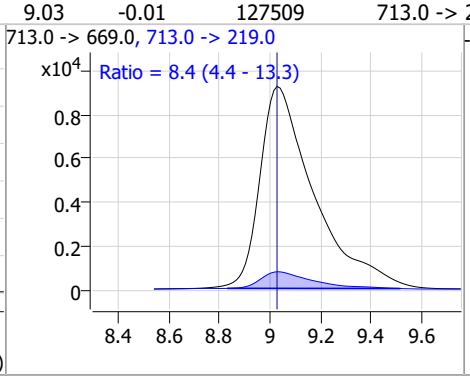


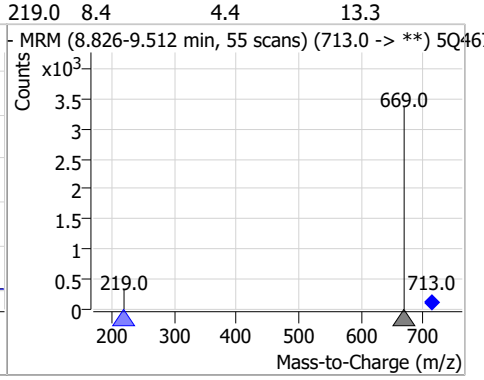




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.02	9.03	-0.01	127509	713.0 -> 219.0	8.4	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q72-CC71
Lab FileID: 5Q4678.D
Injection Time: 09/15/22 19:55
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4710.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 3:51:25 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

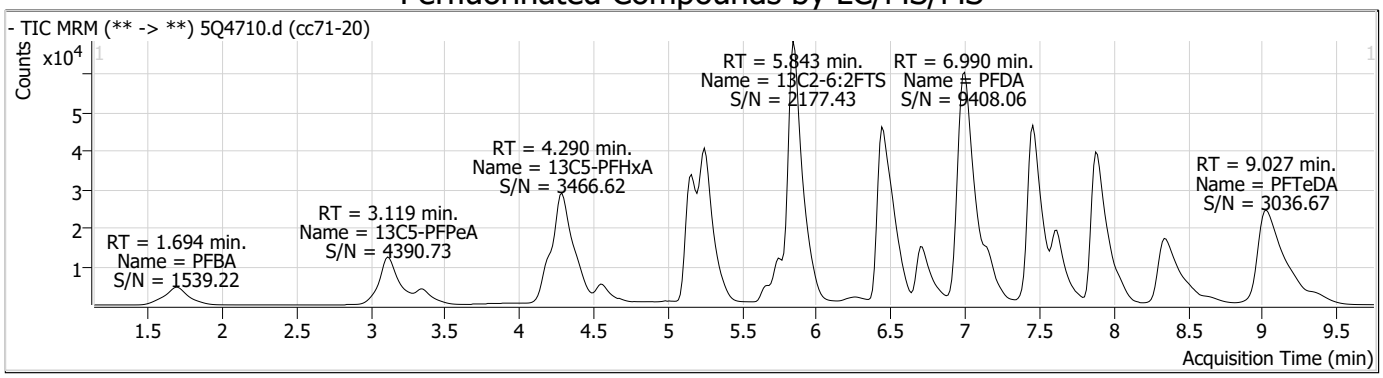
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35743	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	57144	20.00	µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	86857	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	80865	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	118641	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	127928	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	105774	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	135922	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	145556	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	154456	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	22604	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6486	20.00	µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6754	20.00	µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	12951	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28588	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	43674	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	44741	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	20107	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	6113	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	5943	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	23796	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	28588	19.47	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-6:2FTS	5.843	429.0 -> 409.0	43674	19.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C2-8:2FTS	7.025	529.0 -> 509.0	44741	19.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C2-PFDoDA	7.893	615.0 -> 570.0	145556	20.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-PFTeDA	9.037	715.0 -> 670.0	154456	20.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFBS	3.349	302.0 -> 99.0	6486	19.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
13C3-PFHxS	5.194	402.0 -> 99.0	6754	19.80	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFBA	1.700	217.0 -> 172.0	35743	20.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C4-PFHpA	5.163	367.0 -> 322.0	80865	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	86857	19.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
13C5-PFPeA	3.119	268.0 -> 223.0	57144	19.66	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C6-PFDA	6.989	519.0 -> 474.0	105774	19.65	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

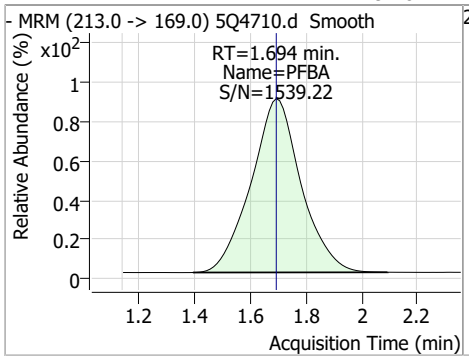
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
13C7-PFUnDA	7.471	570.0 -> 525.0	135922	19.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C8-FOSA	6.530	506.0 -> 78.0	22604	19.92	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%			
13C8-PFOA	5.857	421.0 -> 376.0	118641	19.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
13C8-PFOS	6.440	507.0 -> 99.0	12951	19.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C9-PFNA	6.455	472.0 -> 427.0	127928	19.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	20107	20.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	6113	18.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	5943	19.52	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%			
d5-EtFOSAA	7.170	589.0 -> 419.0	23796	21.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	31796	19.87	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	47664	20.58	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	47637	19.98	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	16103	19.13	µg/L		97
FOSA	6.519	498.0 -> 78.0	22606	19.44	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	17607	19.12	µg/L		98
PFBA	1.694	213.0 -> 169.0	16650	19.78	µg/L		100
PFBS	3.354	299.0 -> 80.0	19022	19.52	µg/L		100
PFDA	6.990	513.0 -> 469.0	130616	20.10	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	139697	19.57	µg/L		98
PFDS	7.431	599.0 -> 80.0	18353	20.01	µg/L		99
PFHpA	5.164	363.0 -> 319.0	106607	20.07	µg/L		99
PFHpS	5.867	449.0 -> 80.0	19585	20.11	µg/L		99
PFHxA	4.291	313.0 -> 269.0	82368	19.41	µg/L		100
PFHxS	5.195	399.0 -> 80.0	19866	19.81	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	112931	19.70	µg/L		100
PFNS	6.962	549.0 -> 80.0	19322	20.21	µg/L		99
PFOA	5.858	413.0 -> 369.0	142487	19.81	µg/L		100
PFOS	6.442	499.0 -> 80.0	22522	19.75	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	56030	19.84	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14703	19.40	µg/L		98
PFTeDA	9.027	713.0 -> 669.0	154210	19.18	µg/L		99
PFTrDA	8.350	663.0 -> 619.0	169213	19.83	µg/L		99
PFUnDA	7.472	563.0 -> 519.0	137955	20.32	µg/L		98
11Cl-PF3OUdS	7.628	631.0 -> 451.0	71248	19.70	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	70505	19.29	µg/L		100
ADONA	5.261	377.0 -> 251.0	134624	19.39	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20287	19.67	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	6659	20.81	µg/L		94
4-PFECHS	5.753	461.0 -> 381.0	41628	19.50	µg/L		99
FBSA	4.343	298.0 -> 78.0	28760	19.97	µg/L		100
FHxSA	5.674	398.0 -> 78.0	23427	19.41	µg/L		99

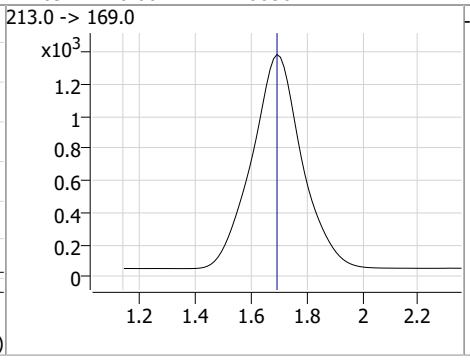
 # = Qualifier out of range, m = manually integrated, + = Area summed

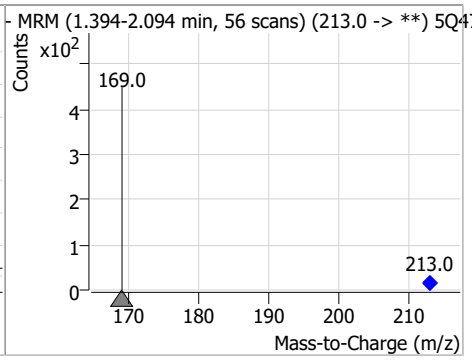
Perfluorinated Compounds by LC/MS/MS



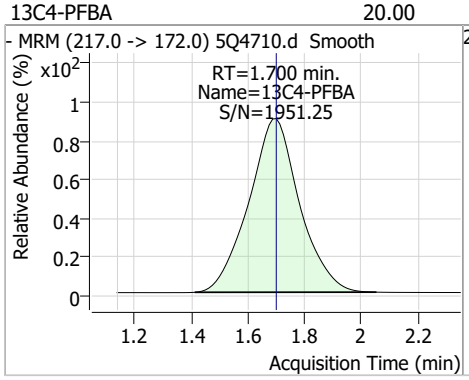
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.78	1.69	0.00	16650				

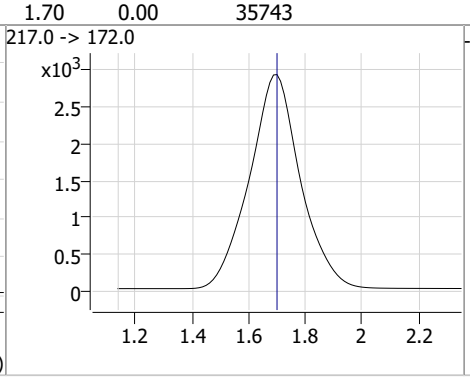


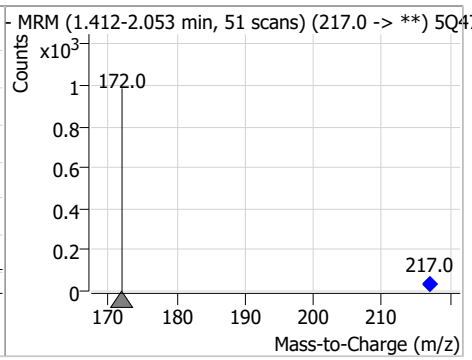




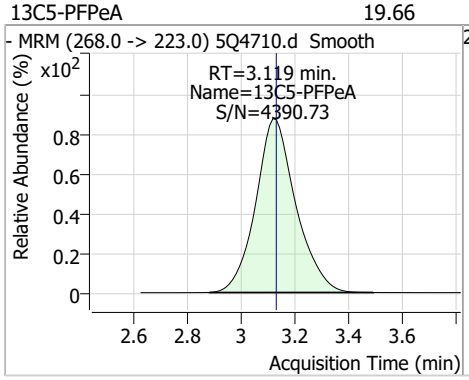
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.00	1.70	0.00	35743				

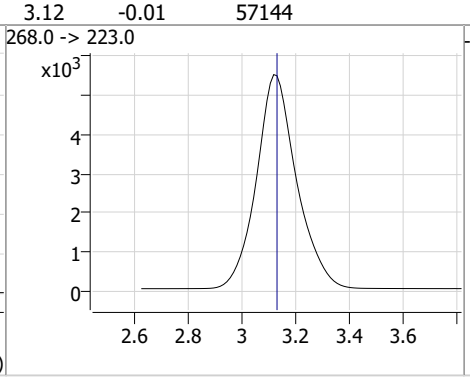


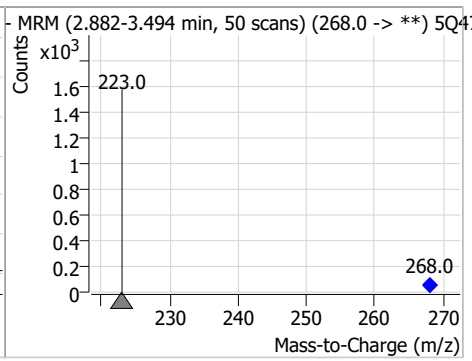




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.66	3.12	-0.01	57144				

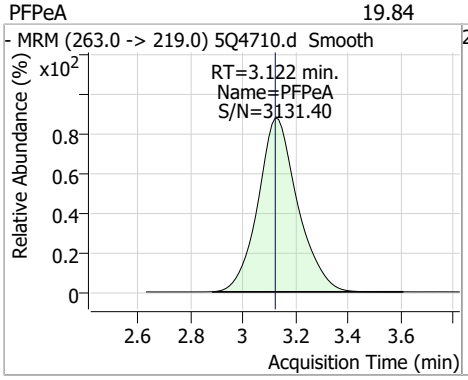


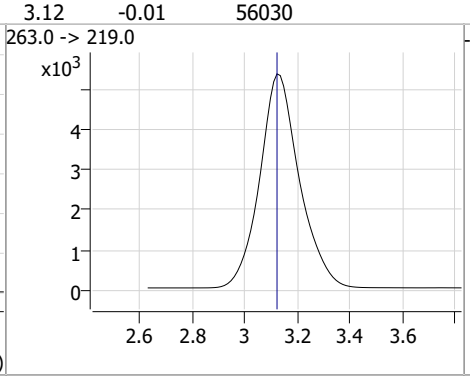


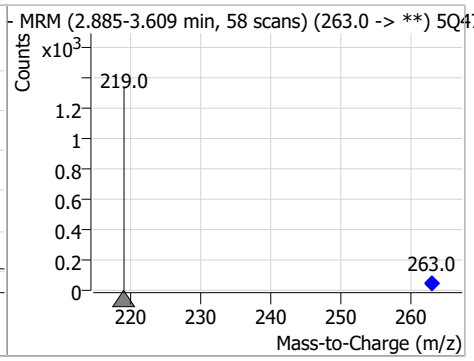


Perfluorinated Compounds by LC/MS/MS

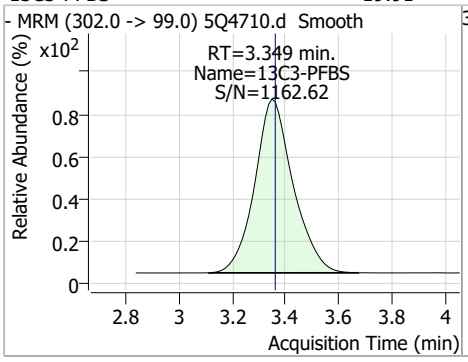
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.84	3.12	-0.01	56030				

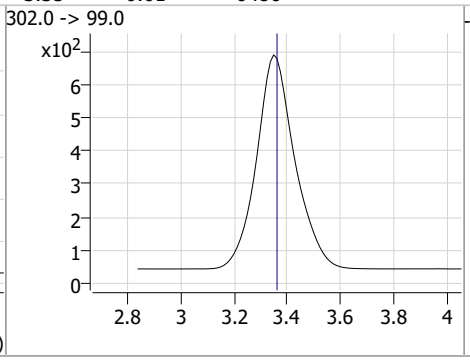


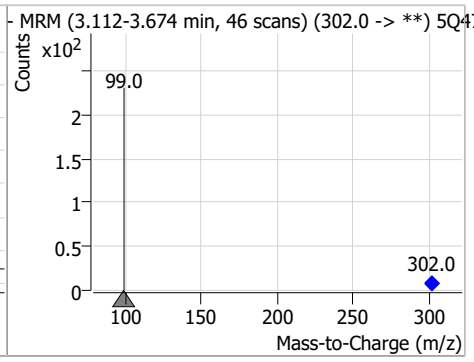




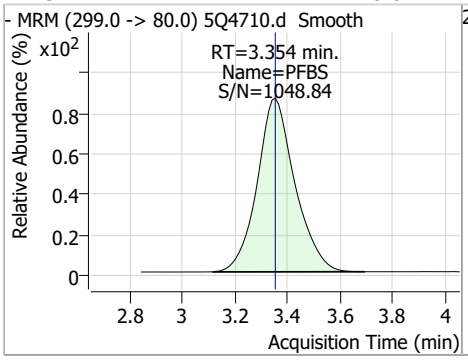
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.91	3.35	-0.01	6486				

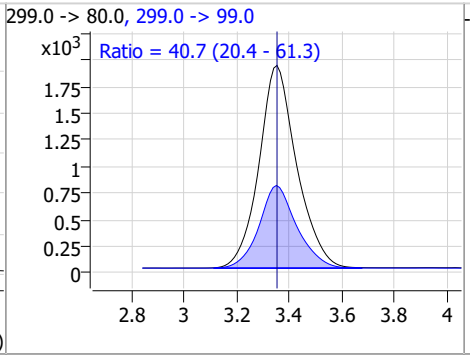


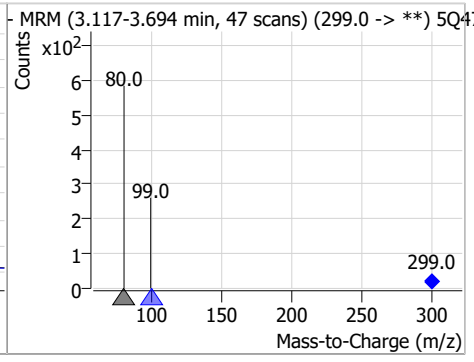




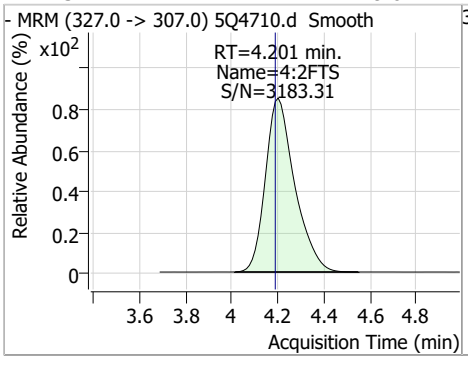
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.52	3.35	-0.01	19022	299.0 -> 99.0	40.7	20.4	61.3

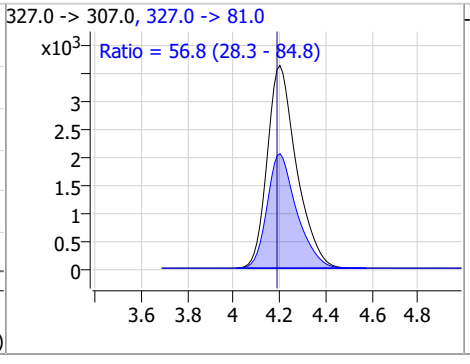


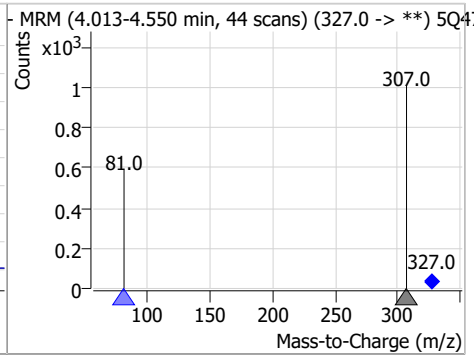




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	19.87	4.20	0.00	31796	327.0 -> 81.0	56.8	28.3	84.8

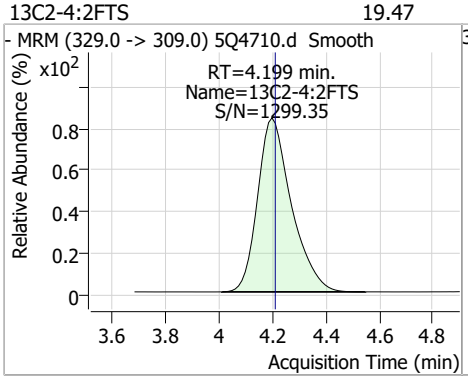


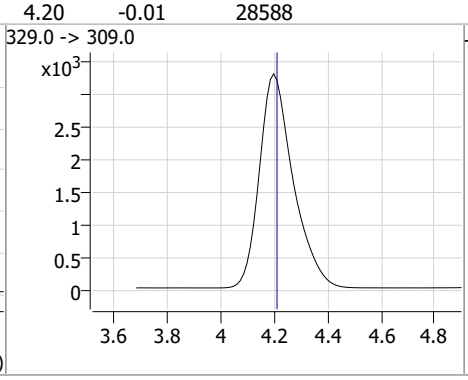


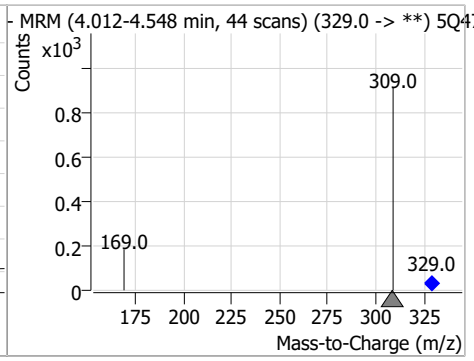


Perfluorinated Compounds by LC/MS/MS

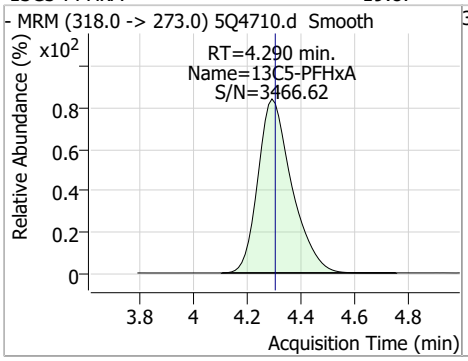
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.47	4.20	-0.01	28588				

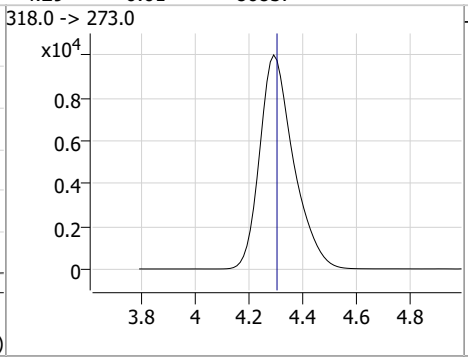


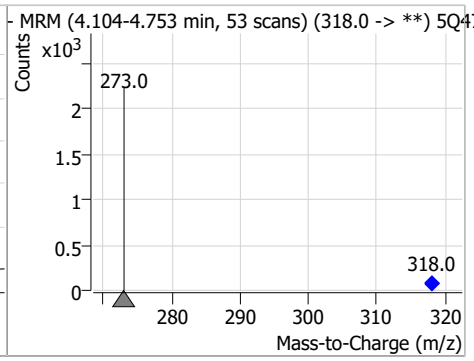




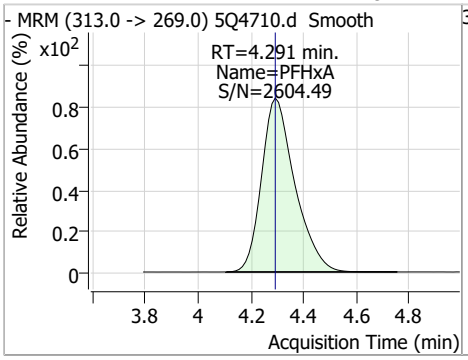
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.87	4.29	-0.01	86857				

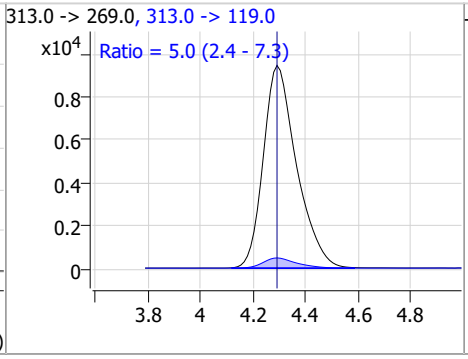


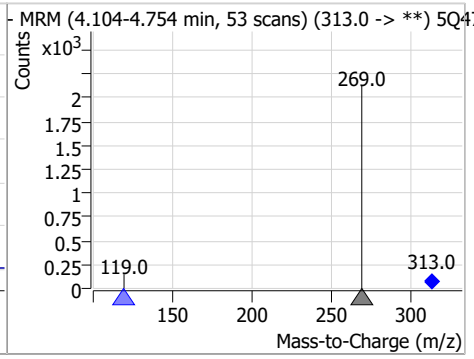




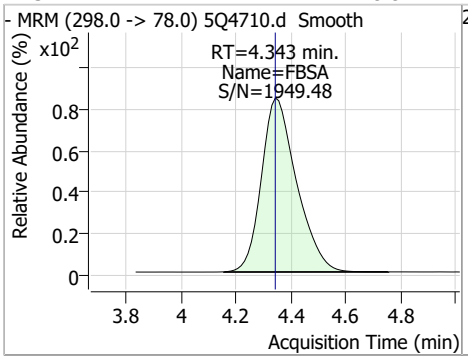
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.41	4.29	-0.01	82368	313.0 -> 119.0	5.0	2.4	7.3

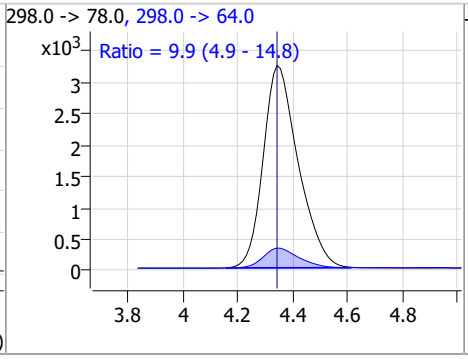


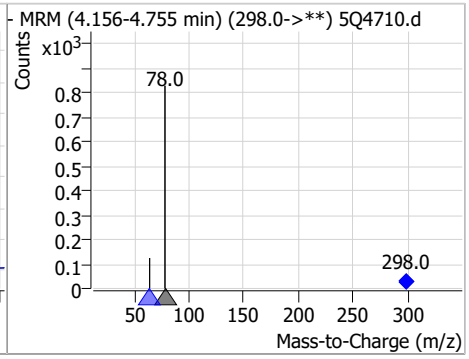




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.97	4.34	-0.01	28760	298.0 -> 64.0	9.9	4.9	14.8

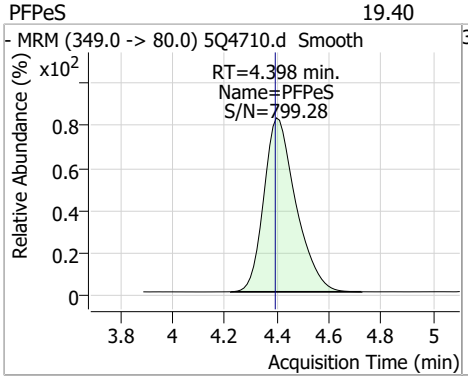


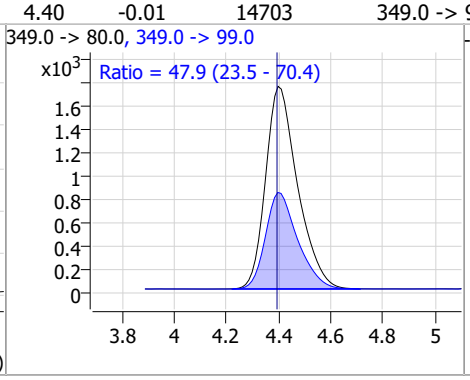


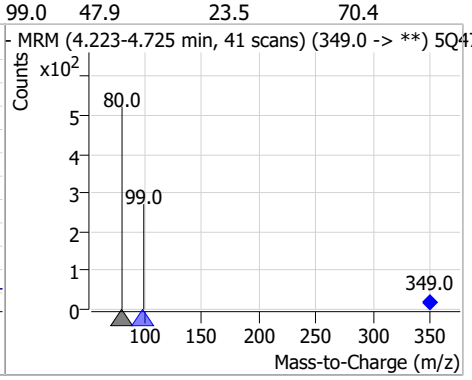


Perfluorinated Compounds by LC/MS/MS

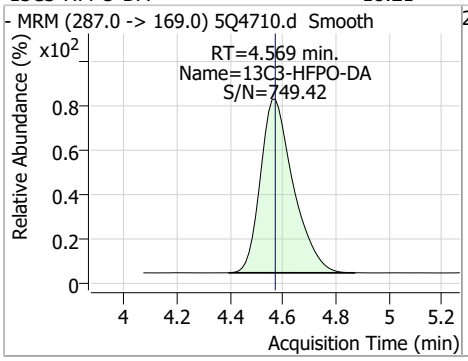
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.40	4.40	-0.01	14703	349.0 -> 99.0	47.9	23.5	70.4

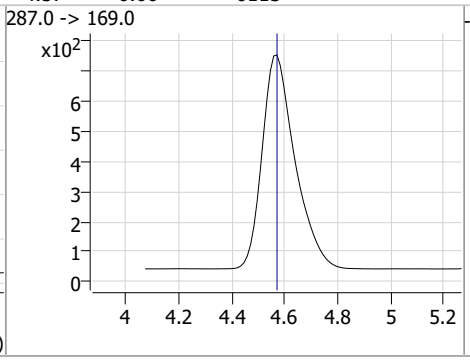


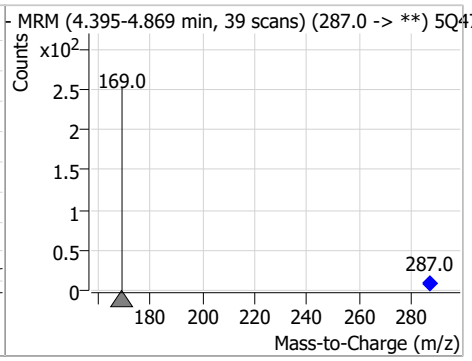




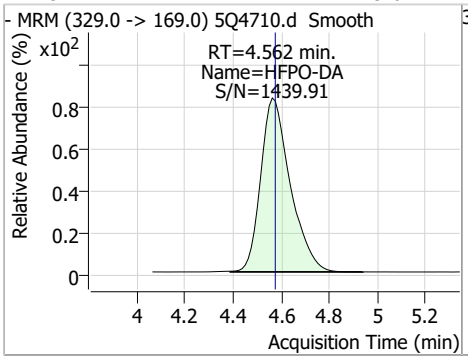
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.21	4.57	0.00	6113				

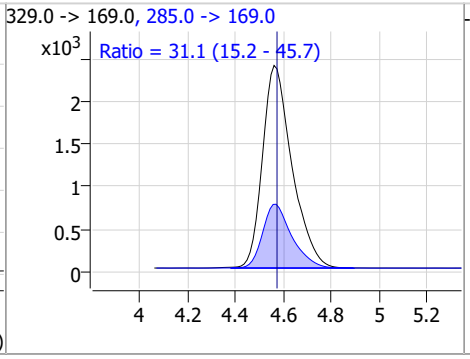


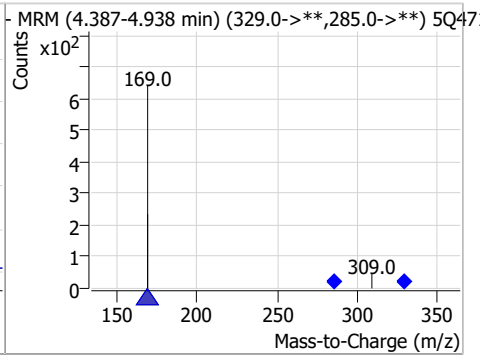




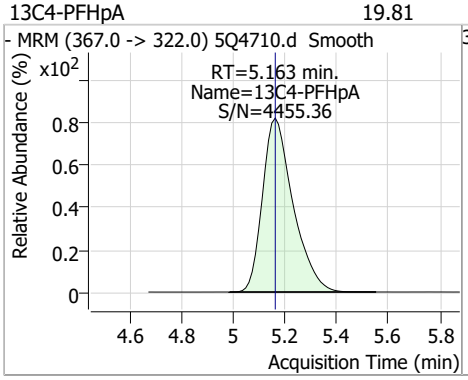
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.67	4.56	-0.01	20287	285.0 -> 169.0	31.1	15.2	45.7

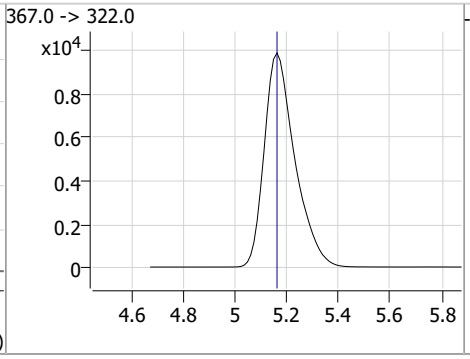


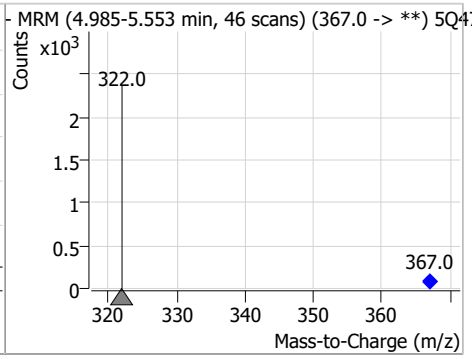




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.81	5.16	0.00	80865				

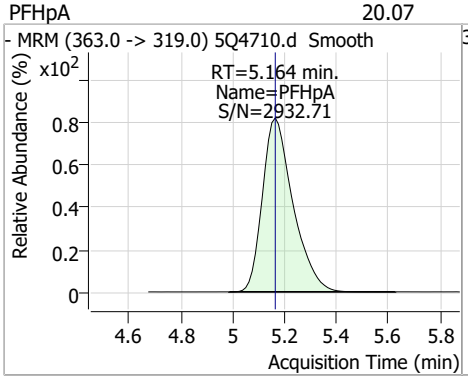


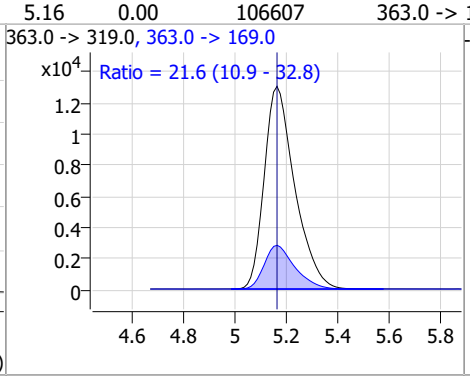


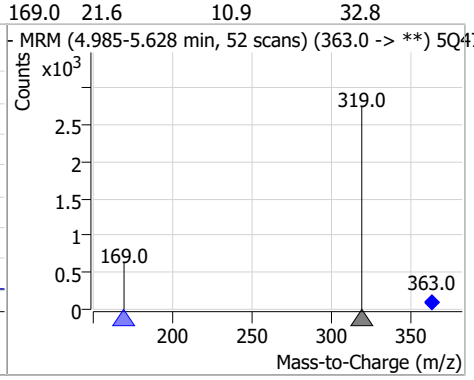


Perfluorinated Compounds by LC/MS/MS

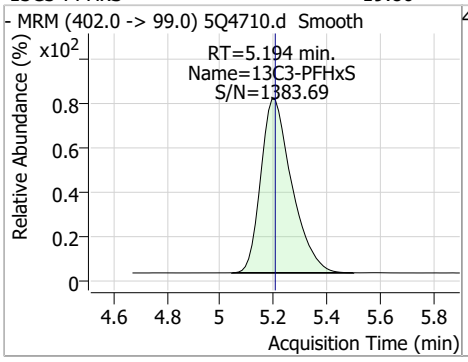
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.07	5.16	0.00	106607	363.0 -> 169.0	21.6	10.9	32.8

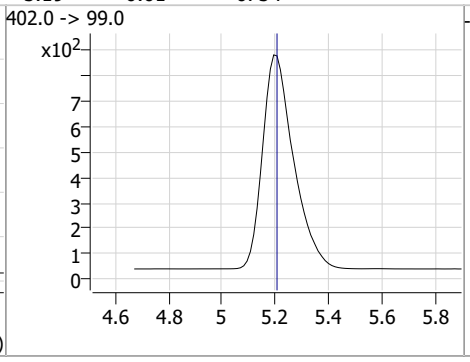


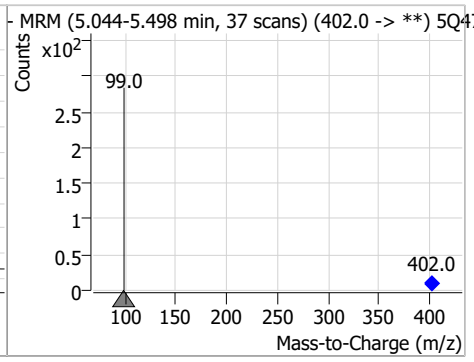




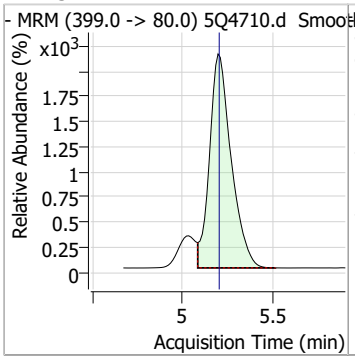
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.80	5.19	-0.01	6754				

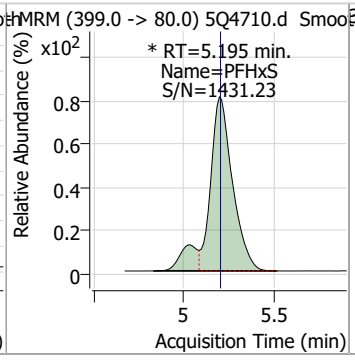


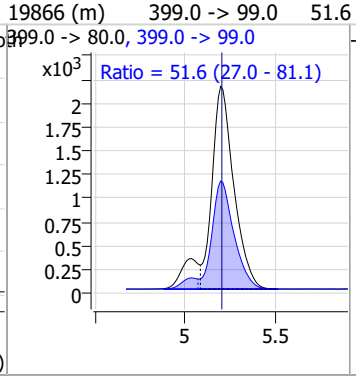


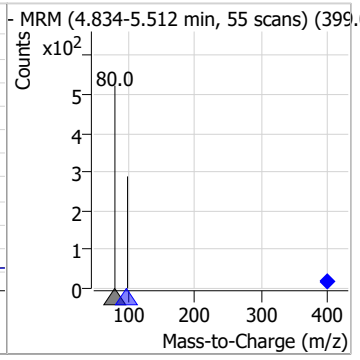


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.81	5.20	-0.01	19866 (m)	399.0 -> 99.0	51.6	27.0	81.1

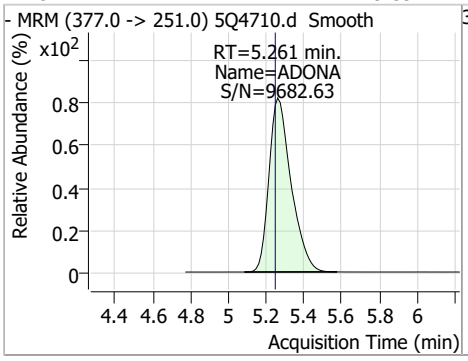


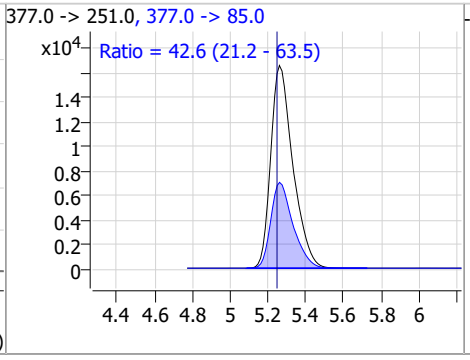


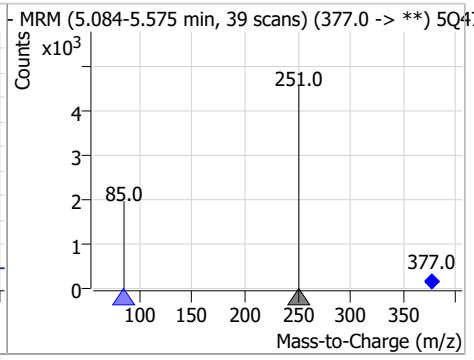




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.39	5.26	0.00	134624	377.0 -> 85.0	42.6	21.2	63.5

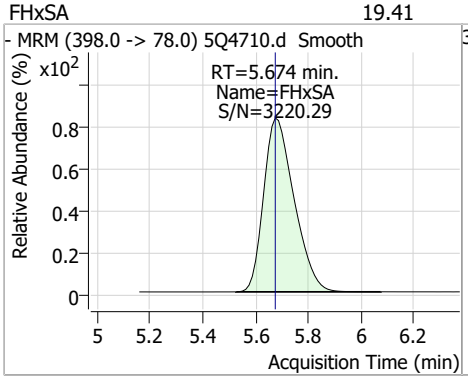


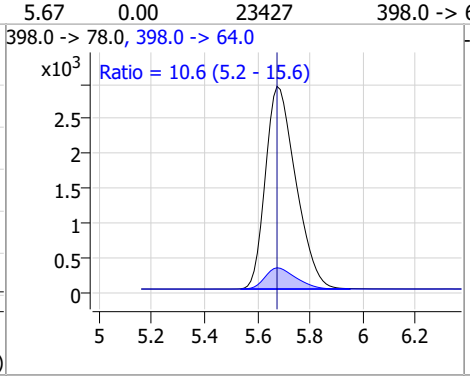


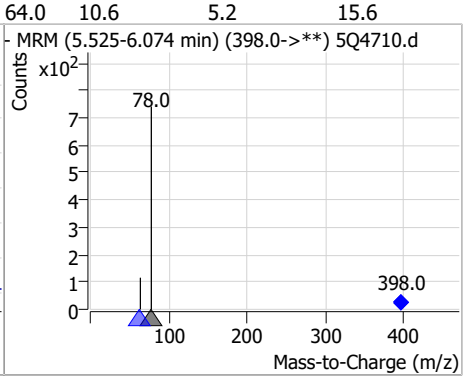


Perfluorinated Compounds by LC/MS/MS

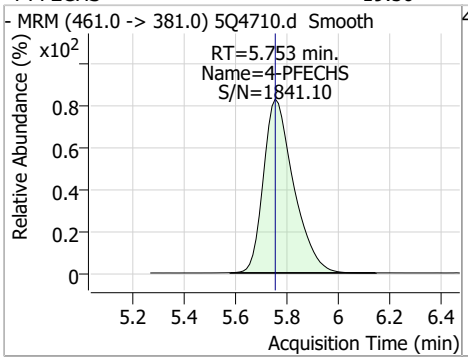
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.41	5.67	0.00	23427	398.0 -> 64.0	10.6	5.2	15.6

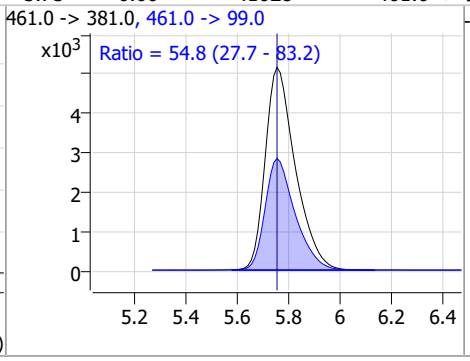


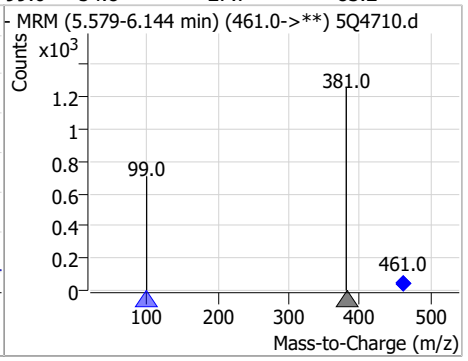




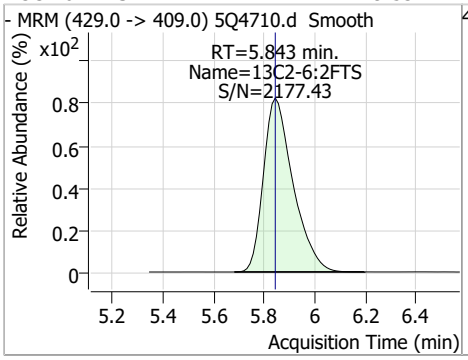
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.50	5.75	0.00	41628	461.0 -> 99.0	54.8	27.7	83.2

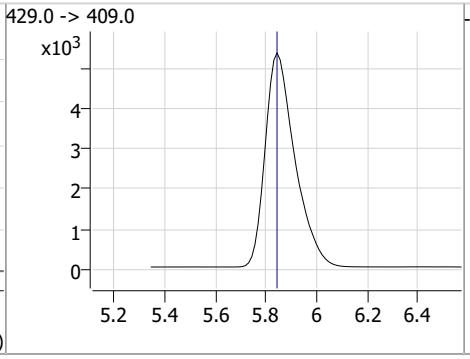


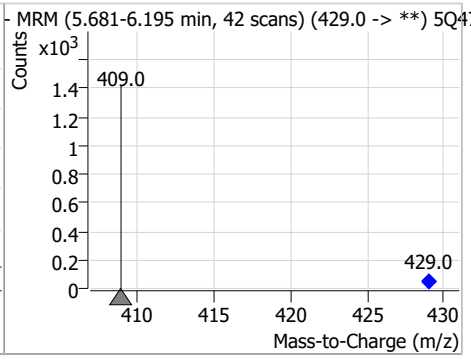




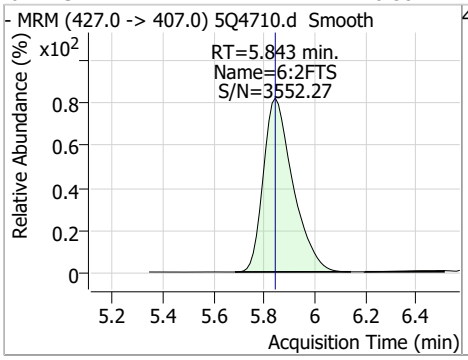
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.53	5.84	0.00	43674				

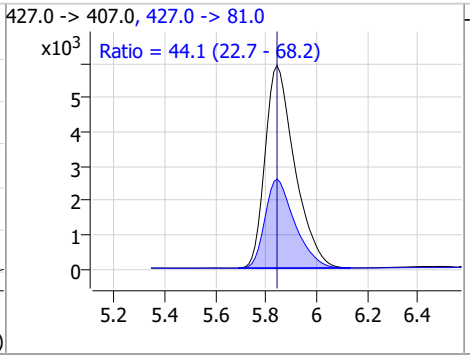


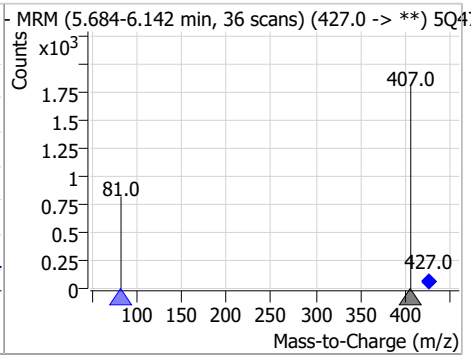




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.58	5.84	0.00	47664	427.0 -> 81.0	44.1	22.7	68.2

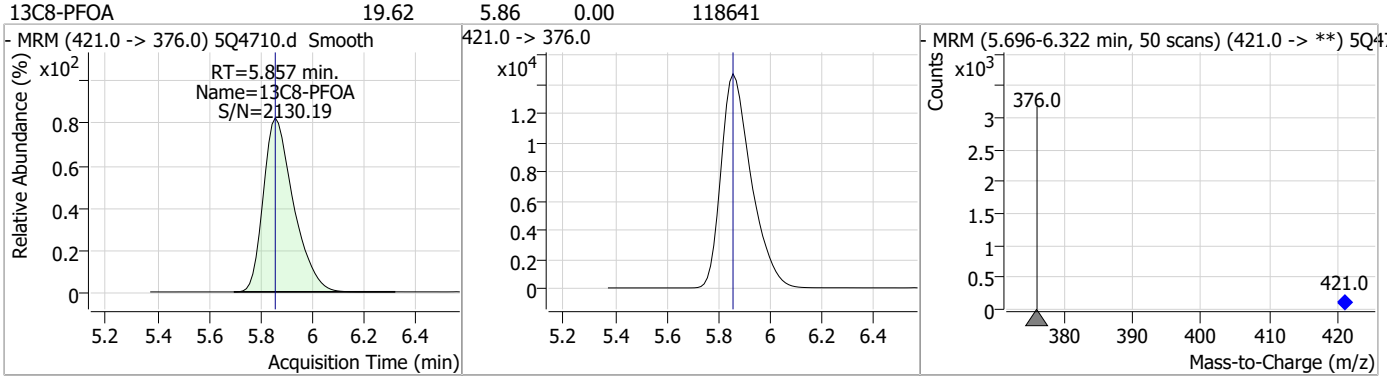




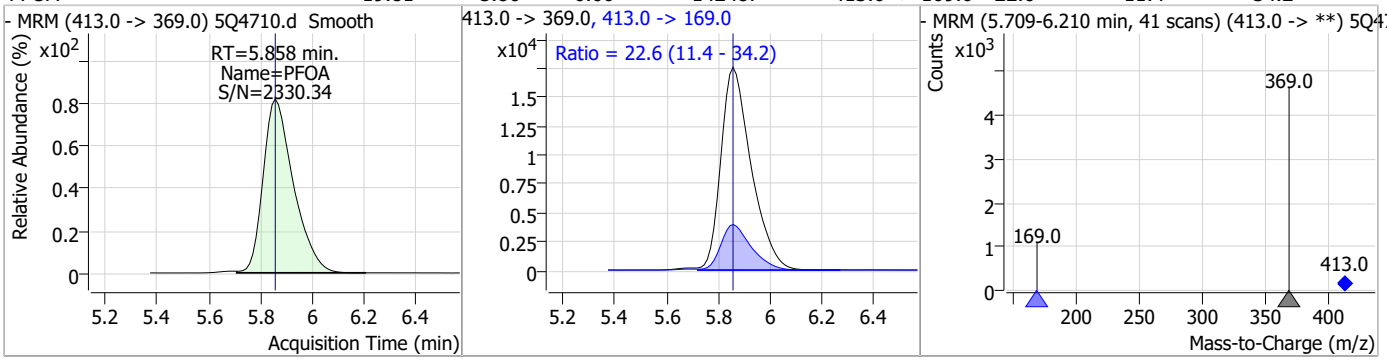


Perfluorinated Compounds by LC/MS/MS

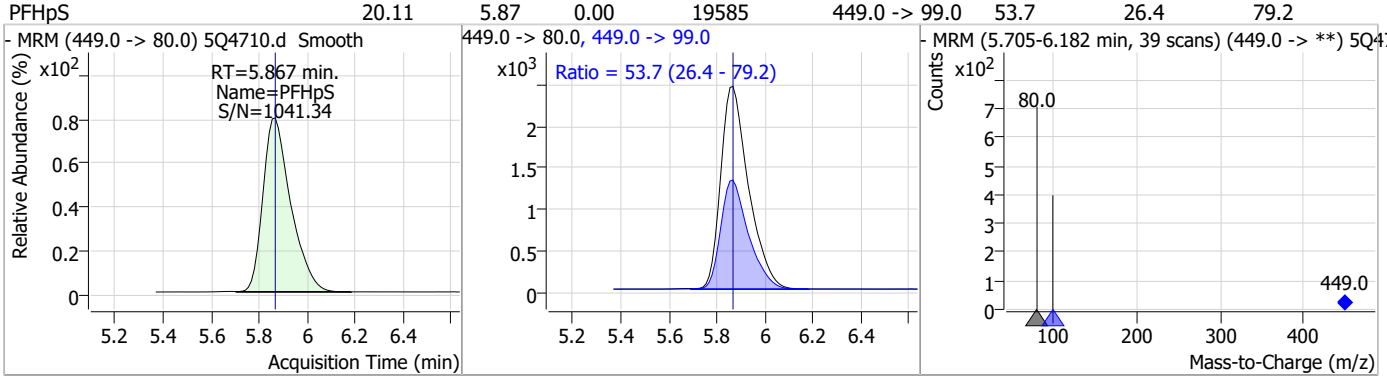
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.62	5.86	0.00	118641				



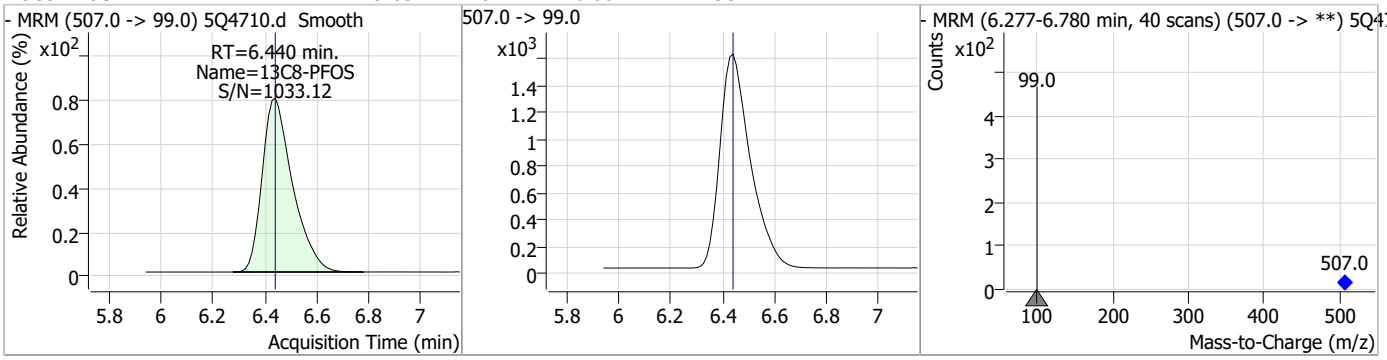
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.81	5.86	0.00	142487	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.11	5.87	0.00	19585	449.0 -> 99.0	53.7	26.4	79.2

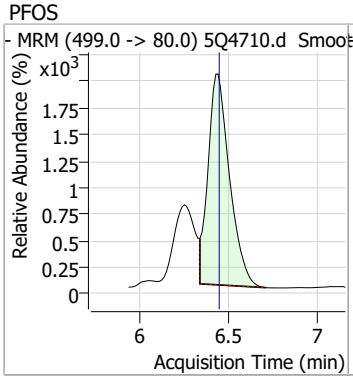


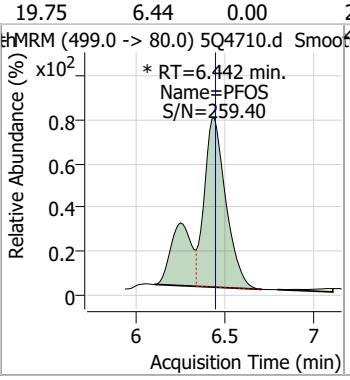
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.83	6.44	0.00	12951				

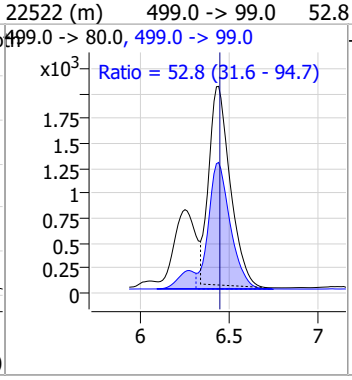


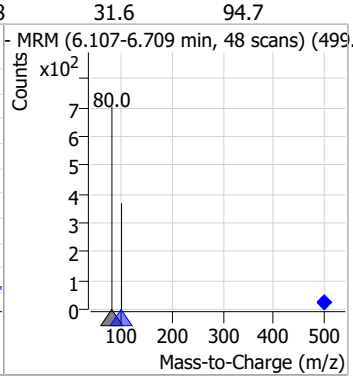
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.75	6.44	0.00	22522 (m)	499.0 -> 99.0	52.8	31.6	94.7

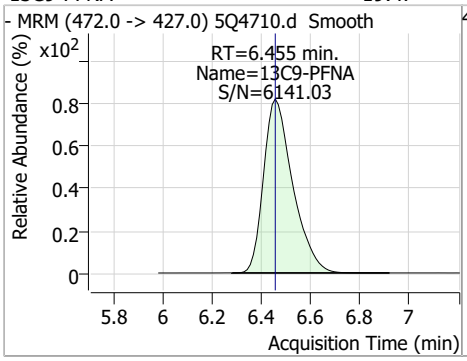


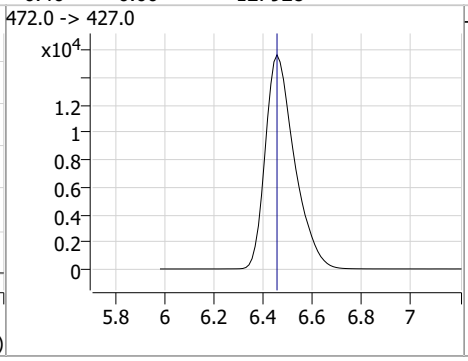


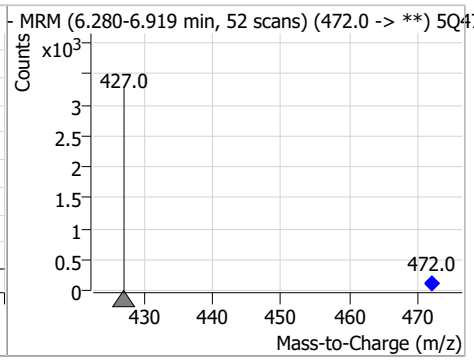




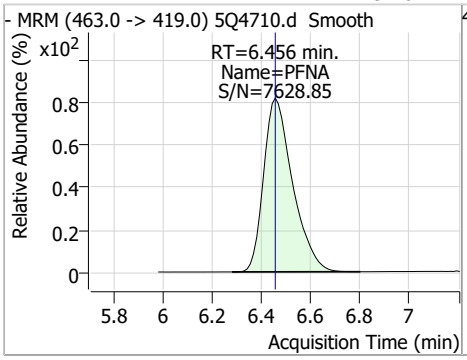
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.47	6.46	0.00	127928				

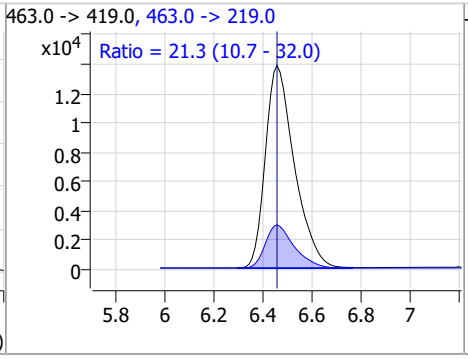


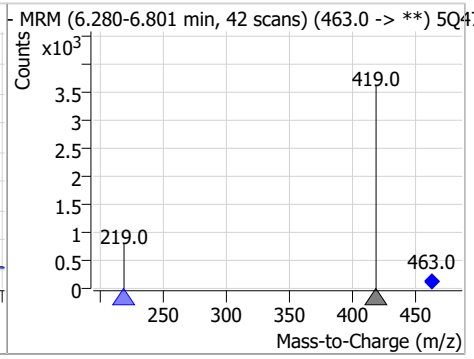




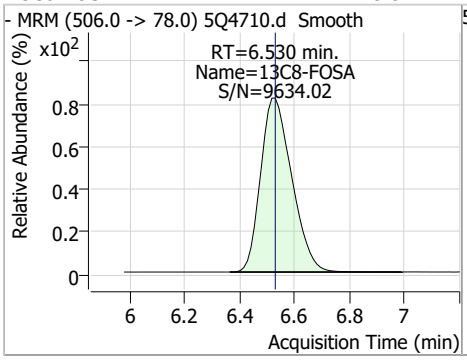
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.70	6.46	0.00	112931	463.0 -> 219.0	21.3	10.7	32.0

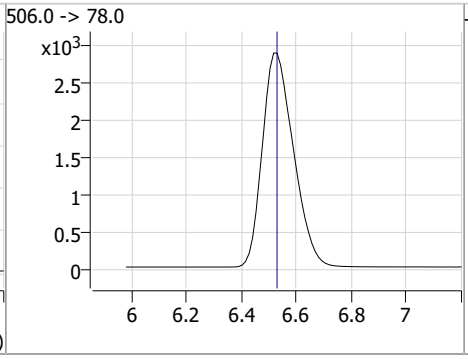


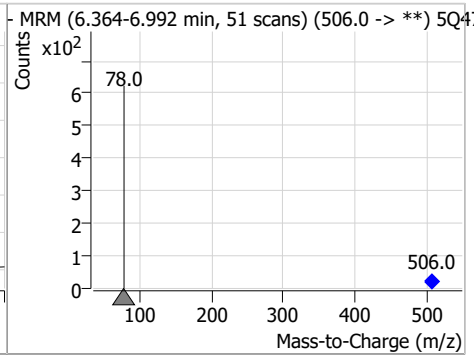




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.92	6.53	0.00	22604				

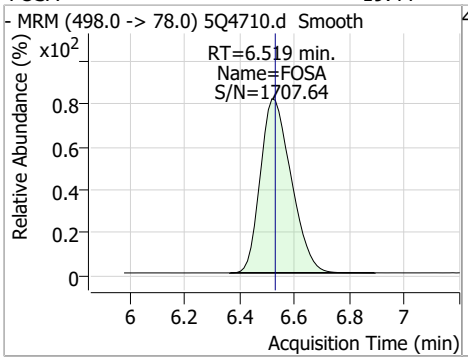


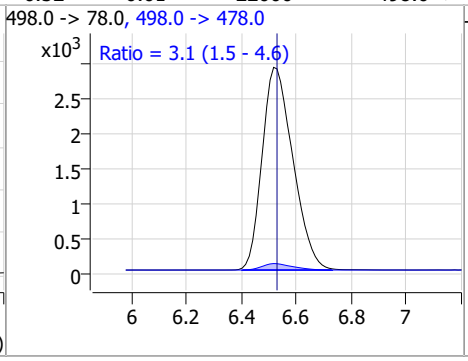


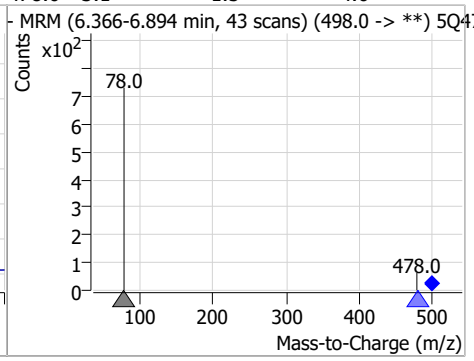


Perfluorinated Compounds by LC/MS/MS

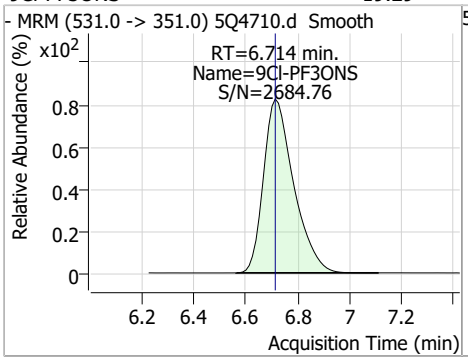
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.44	6.52	-0.01	22606	498.0 -> 478.0	3.1	1.5	4.6

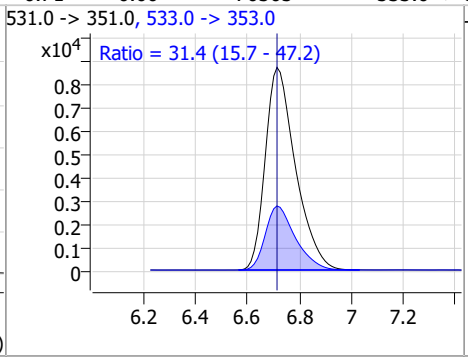


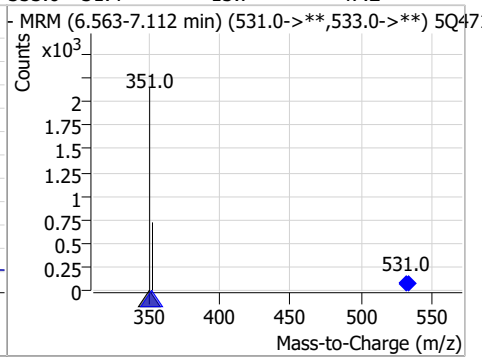




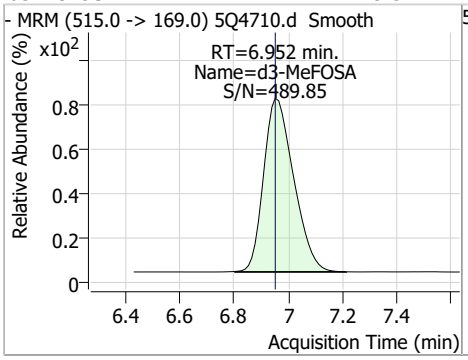
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.29	6.71	0.00	70505	533.0 -> 353.0	31.4	15.7	47.2

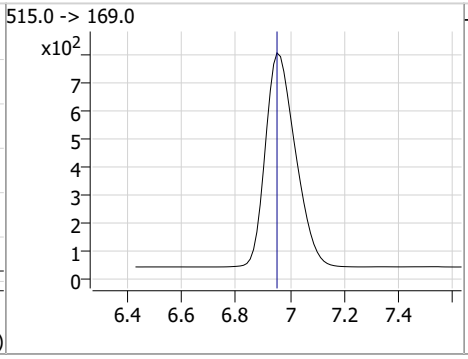


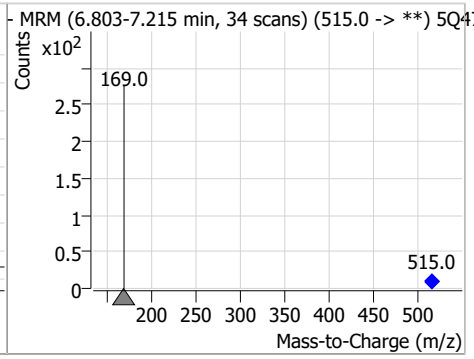




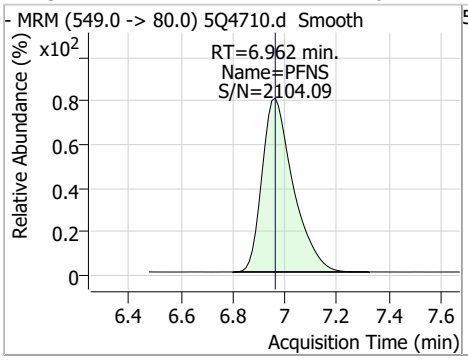
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.52	6.95	0.00	5943				

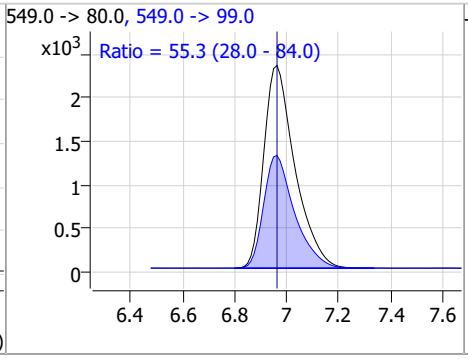


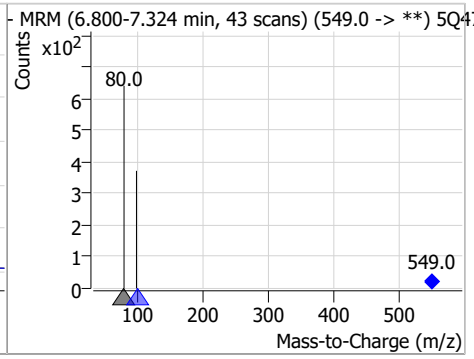




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.21	6.96	0.00	19322	549.0 -> 99.0	55.3	28.0	84.0

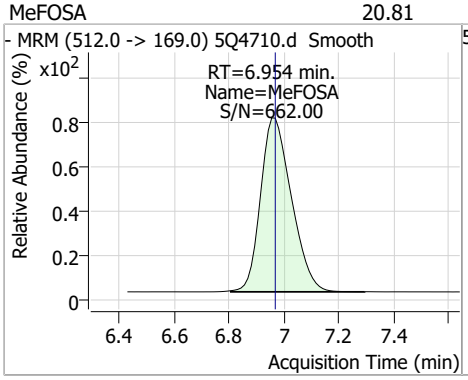


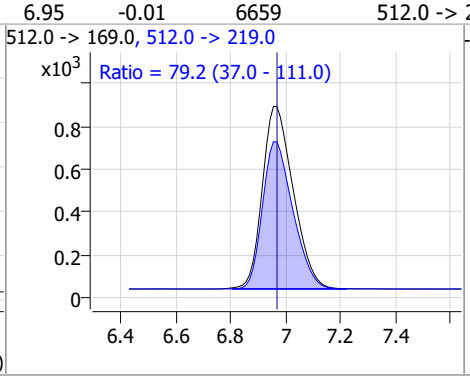


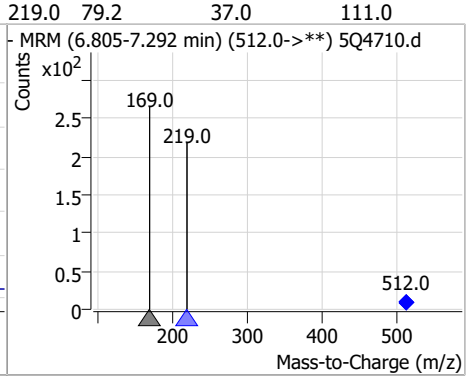


Perfluorinated Compounds by LC/MS/MS

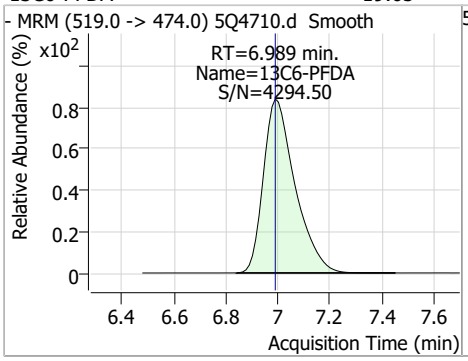
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.81	6.95	-0.01	6659	512.0 -> 219.0	79.2	37.0	111.0

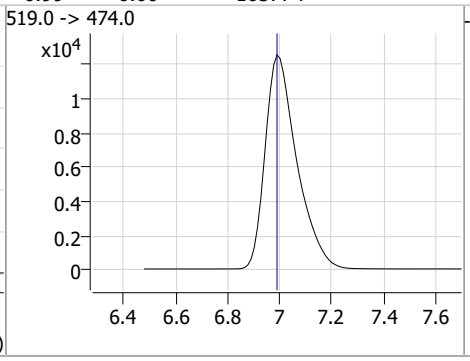


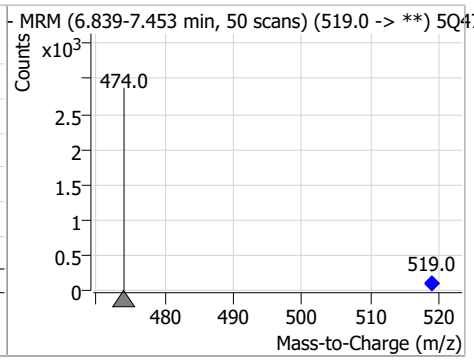




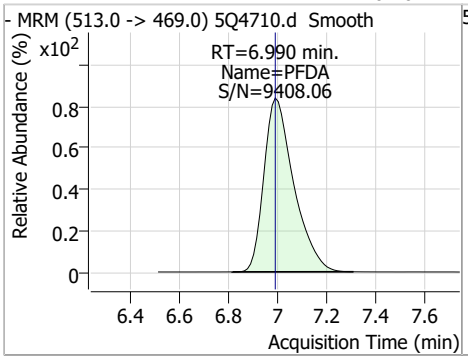
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.65	6.99	0.00	105774				

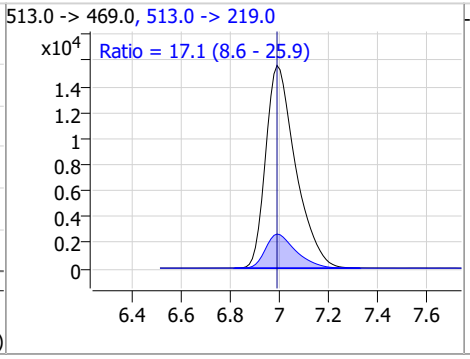


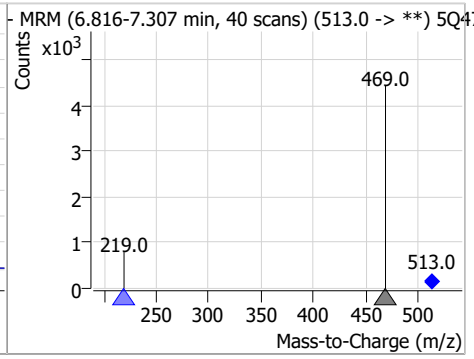




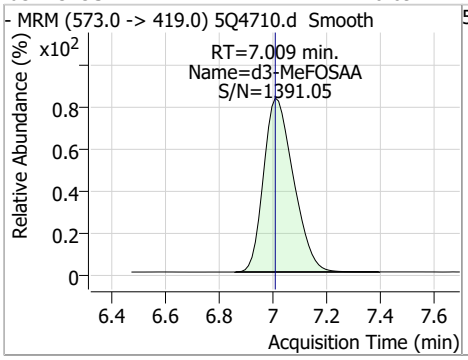
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.10	6.99	0.00	130616	513.0 -> 219.0	17.1	8.6	25.9

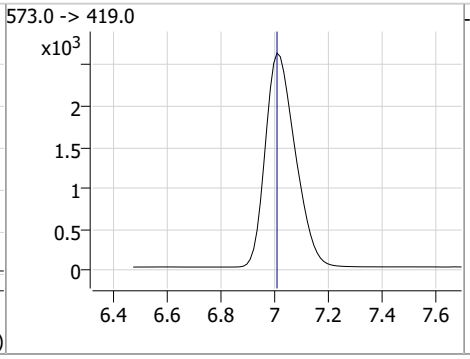


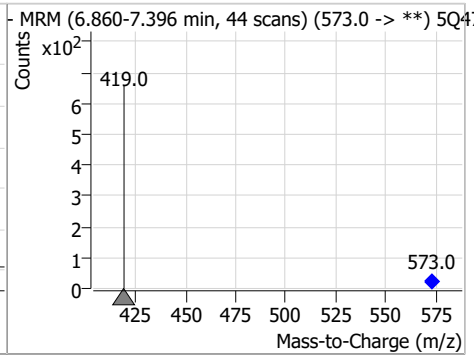




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.69	7.01	0.00	20107				

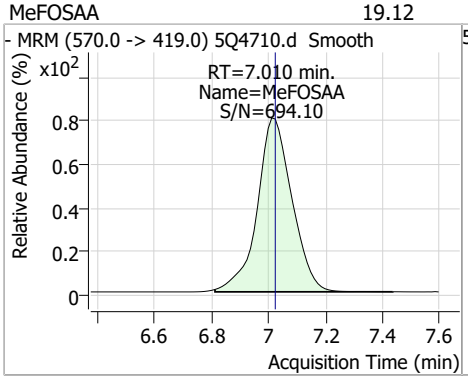


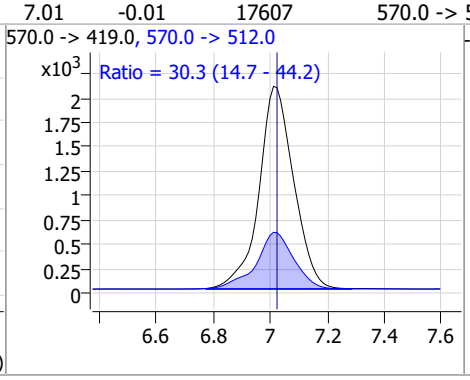


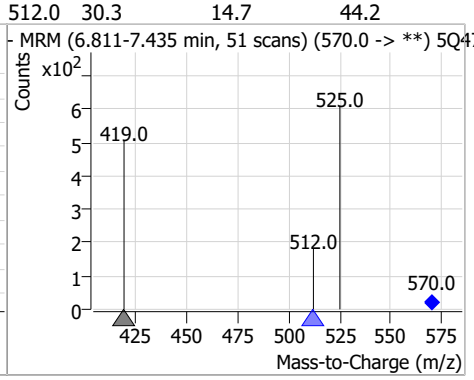


Perfluorinated Compounds by LC/MS/MS

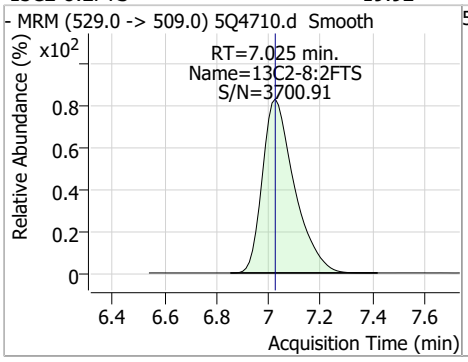
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.12	7.01	-0.01	17607	570.0 -> 512.0	30.3	14.7	44.2

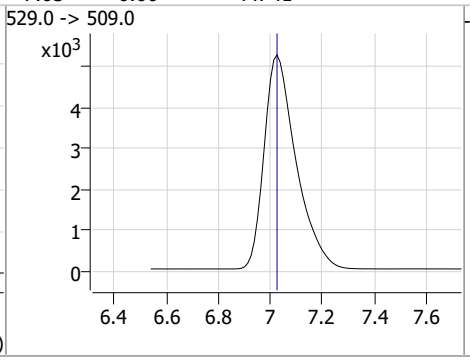


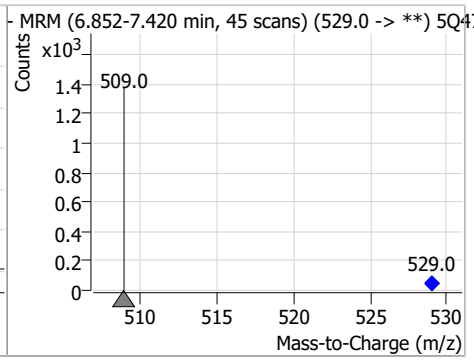




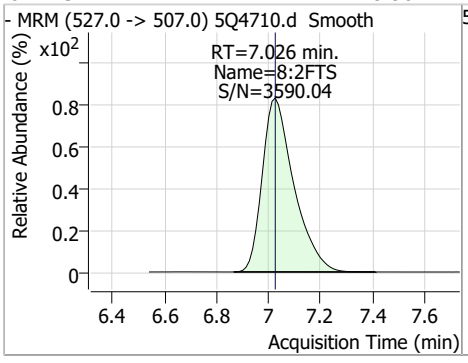
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.92	7.03	0.00	44741				

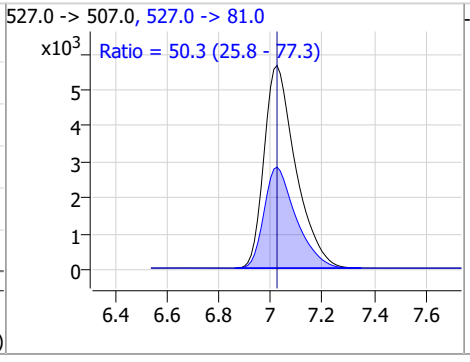


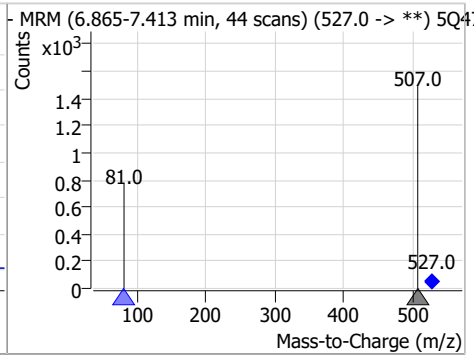




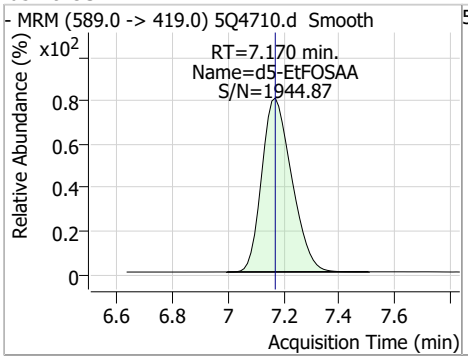
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	19.98	7.03	0.00	47637	527.0 -> 81.0	50.3	25.8	77.3

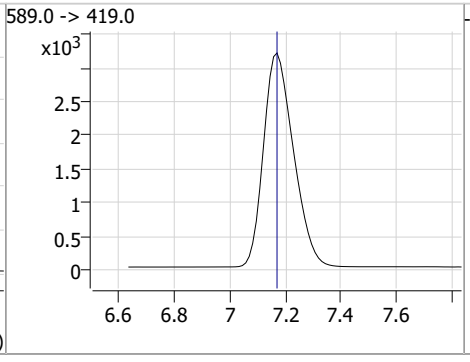


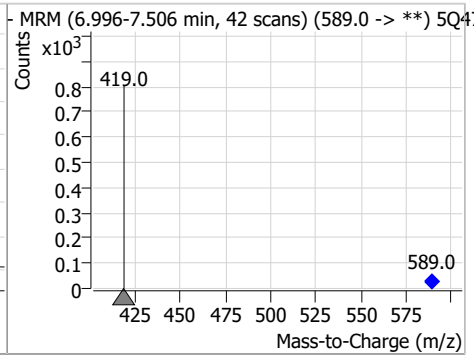




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.22	7.17	0.00	23796				

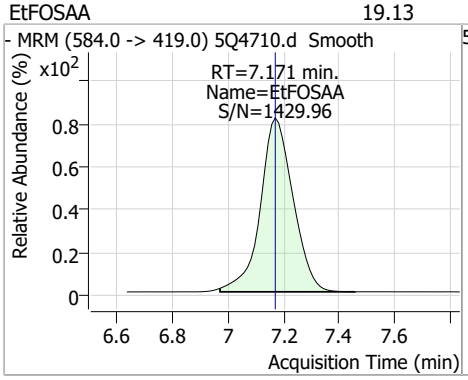


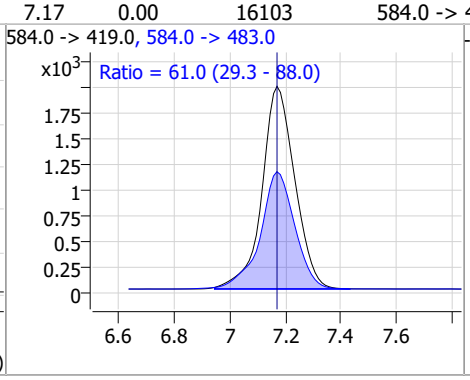


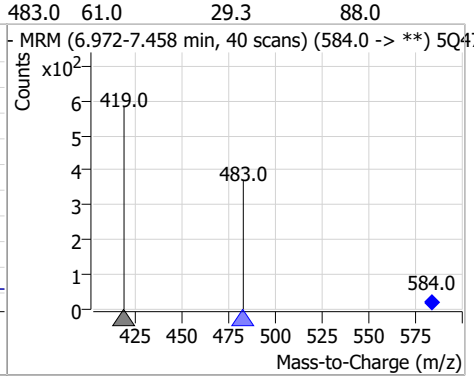


Perfluorinated Compounds by LC/MS/MS

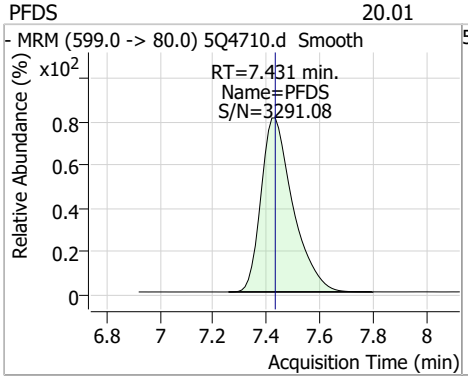
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.13	7.17	0.00	16103	584.0 -> 483.0	61.0	29.3	88.0

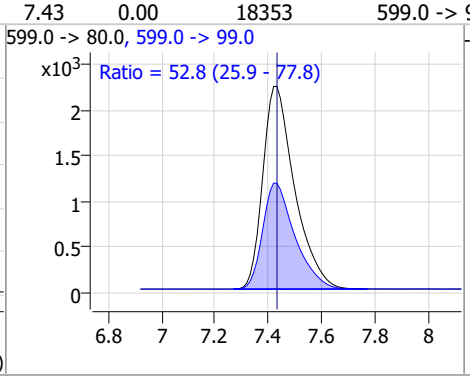


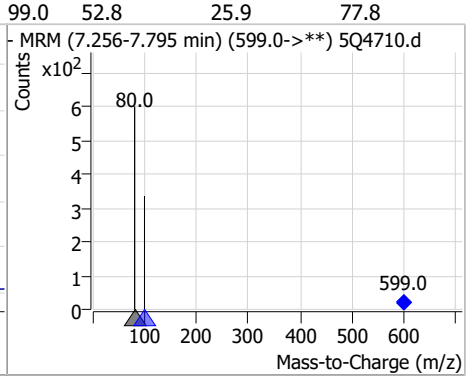




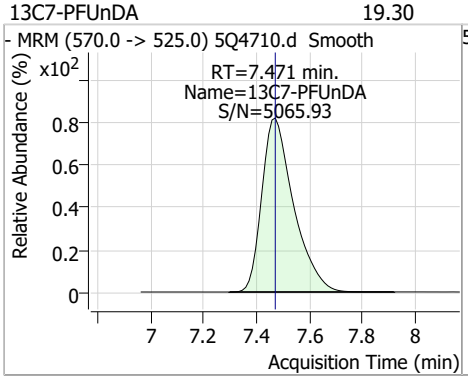
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.01	7.43	0.00	18353	599.0 -> 99.0	52.8	25.9	77.8

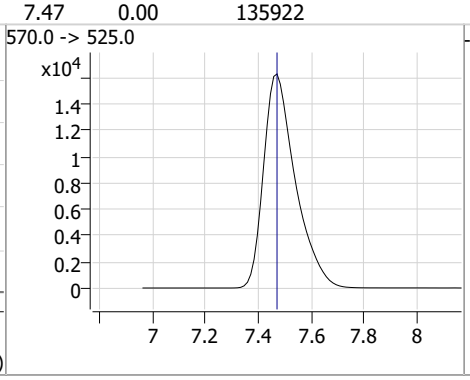


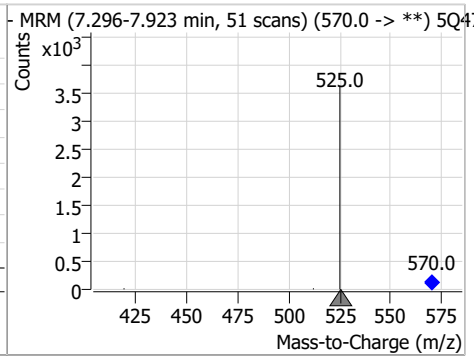




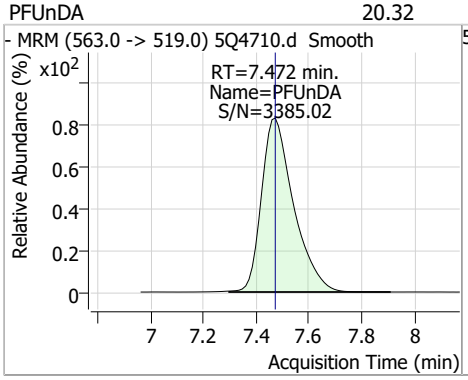
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.30	7.47	0.00	135922				

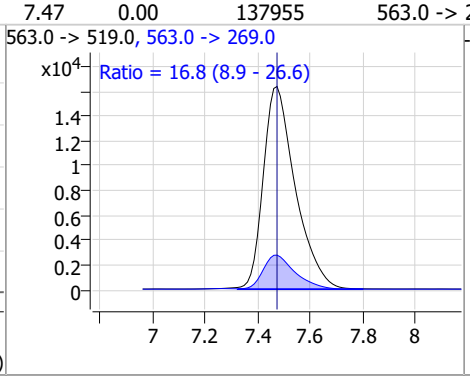


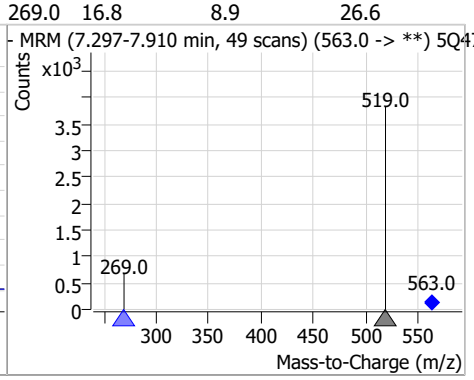




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.32	7.47	0.00	137955	563.0 -> 269.0	16.8	8.9	26.6

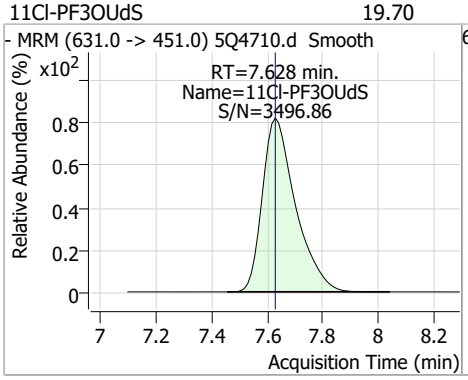


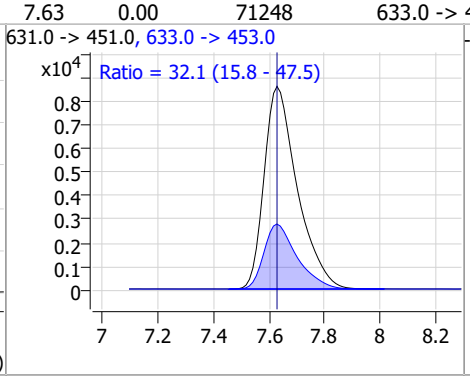


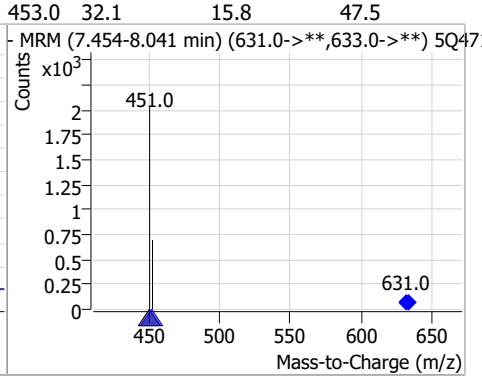


Perfluorinated Compounds by LC/MS/MS

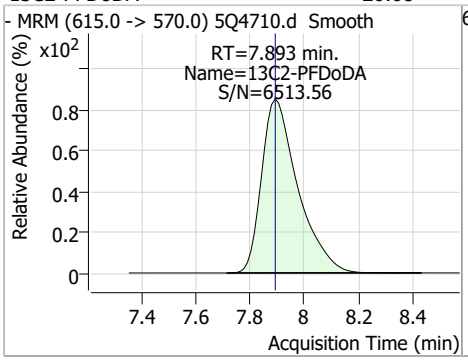
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.70	7.63	0.00	71248	633.0 -> 453.0	32.1	15.8	47.5

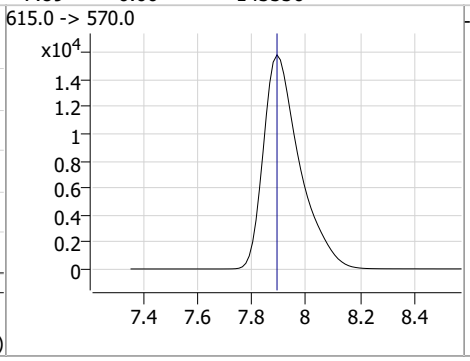


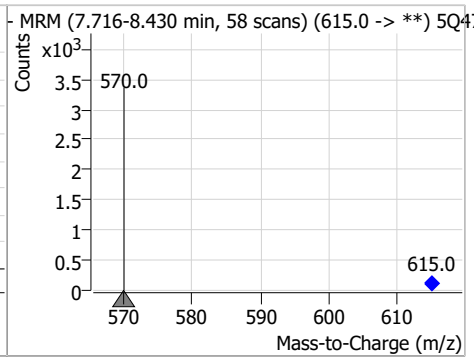




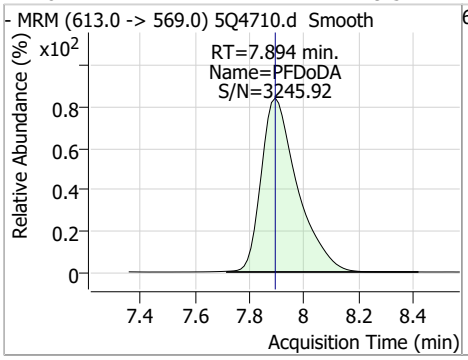
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.08	7.89	0.00	145556				

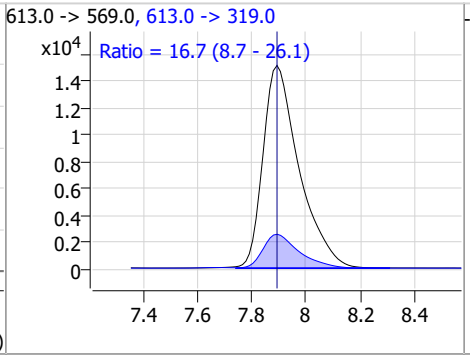


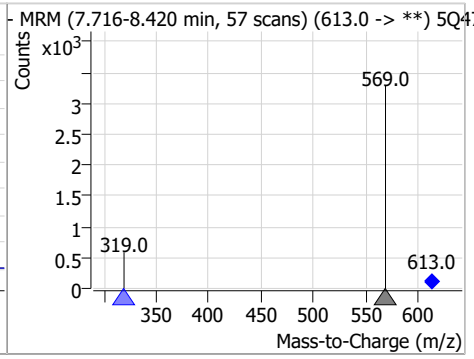




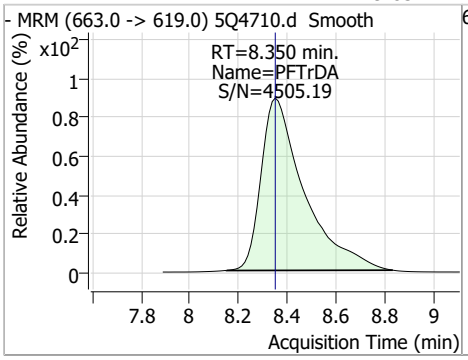
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.57	7.89	0.00	139697	613.0 -> 319.0	16.7	8.7	26.1

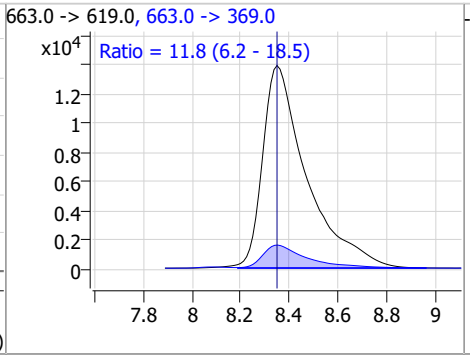


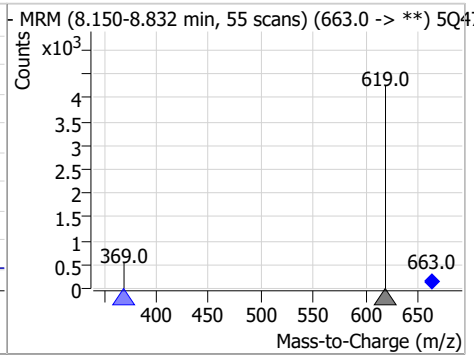




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.83	8.35	0.00	169213	663.0 -> 369.0	11.8	6.2	18.5

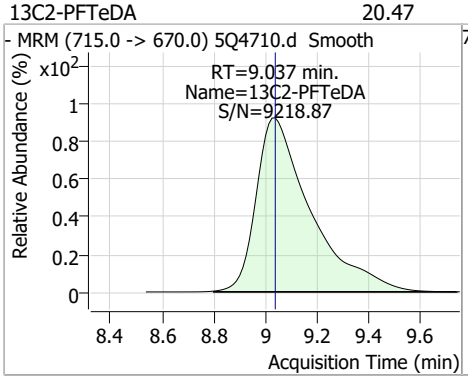


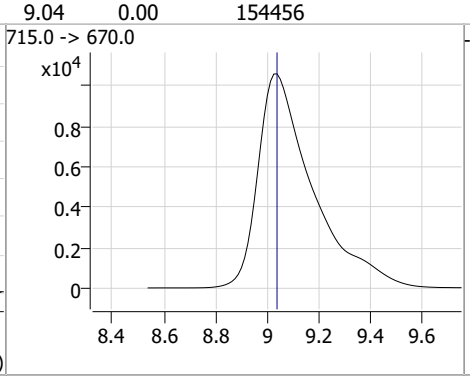


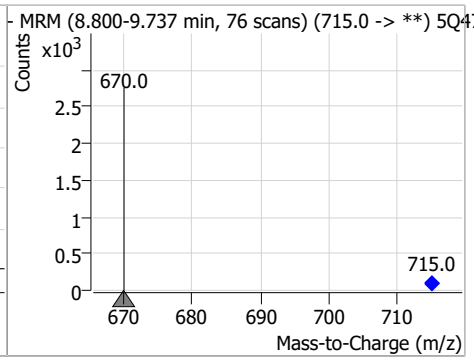


Perfluorinated Compounds by LC/MS/MS

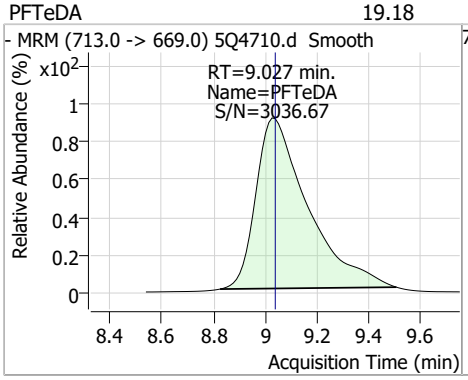
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.47	9.04	0.00	154456				

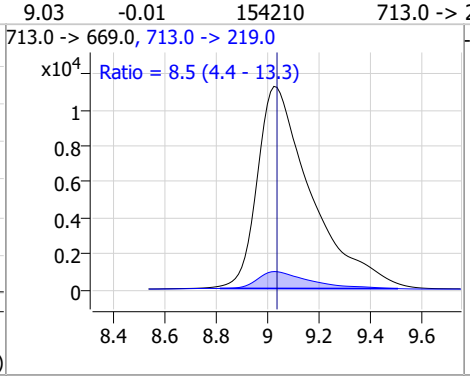


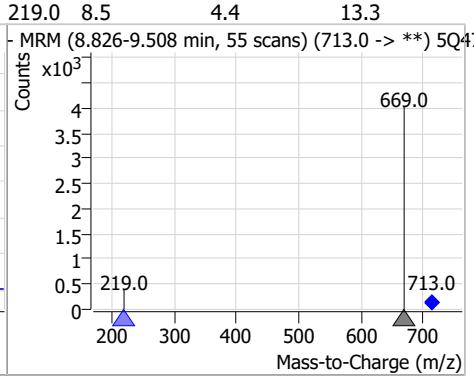




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.18	9.03	-0.01	154210	713.0 -> 219.0	8.5	4.4	13.3







7.7.56

7

Manual Integration Approval Summary

Sample Number: S5Q72-CC71
Lab FileID: 5Q4710.D
Injection Time: 09/16/22 03:51
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4722.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 6:55:29 AM
Sample Name : cc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

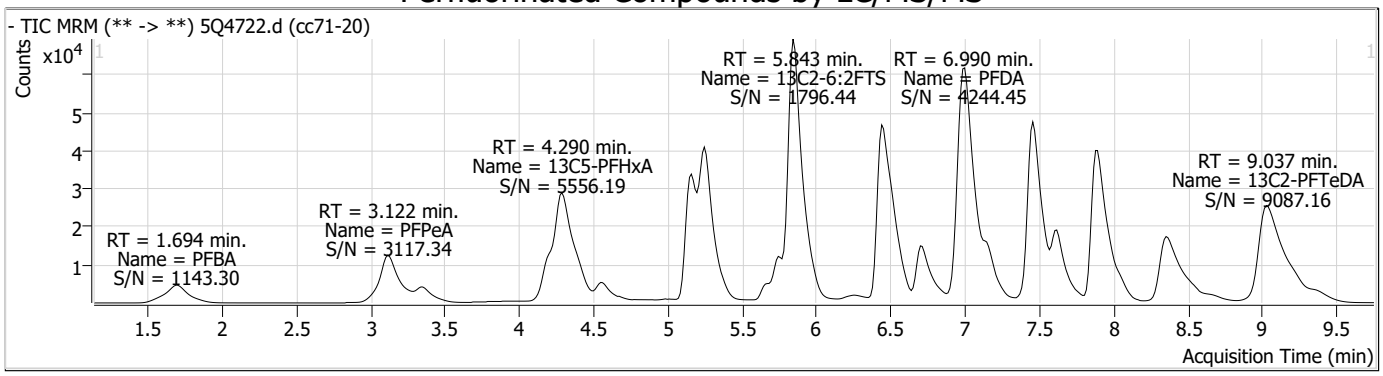
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	35658	20.00	µg/L	0.000
M5-PFPeA	3.132	268.0 -> 223.0	57322	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	86759	20.00	µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	80965	20.00	µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	119443	20.00	µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	130755	20.00	µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	107912	20.00	µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	139726	20.00	µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	147868	20.00	µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	158678	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	22736	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	6447	20.00	µg/L	-0.012
M3-PFHxS	5.206	402.0 -> 99.0	6712	20.00	µg/L	0.000
M8-PFOS	6.440	507.0 -> 99.0	12812	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28803	20.00	µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	45237	20.00	µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	45133	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	22318	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	5975	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	6062	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	25004	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	28803	19.61	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%		
13C2-6:2FTS	5.843	429.0 -> 409.0	45237	20.23	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.2%		
13C2-8:2FTS	7.025	529.0 -> 509.0	45133	20.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFDoDA	7.893	615.0 -> 570.0	147868	20.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-PFTeDA	9.037	715.0 -> 670.0	158678	21.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-PFBS	3.349	302.0 -> 99.0	6447	19.79	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-PFHxS	5.206	402.0 -> 99.0	6712	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C4-PFBA	1.700	217.0 -> 172.0	35658	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	80965	19.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	86759	19.84	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFPeA	3.132	268.0 -> 223.0	57322	19.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C6-PFDA	6.989	519.0 -> 474.0	107912	20.05	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

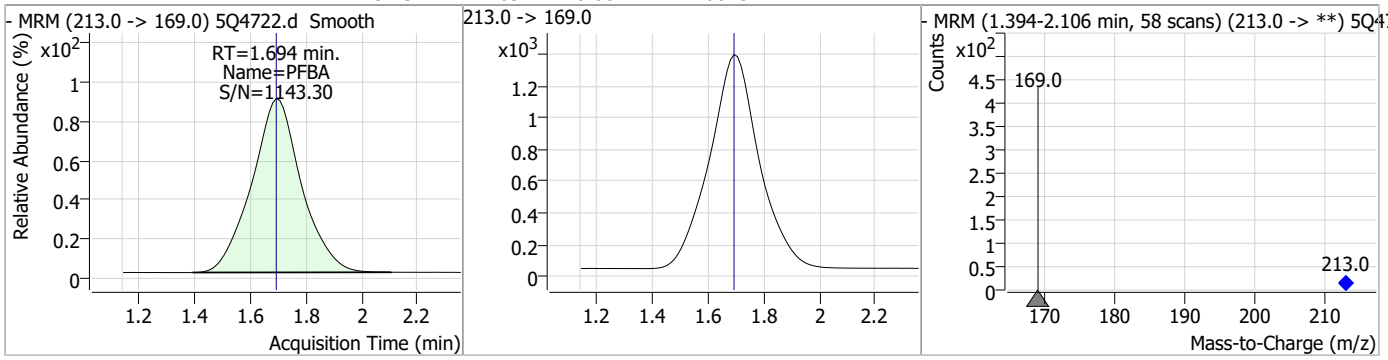
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
13C7-PFUnDA	7.471	570.0 -> 525.0	139726	19.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C8-FOSA	6.530	506.0 -> 78.0	22736	20.04	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%			
13C8-PFOA	5.857	421.0 -> 376.0	119443	19.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-PFOS	6.440	507.0 -> 99.0	12812	19.62	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.1%			
13C9-PFNA	6.455	472.0 -> 427.0	130755	19.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	22318	22.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.8%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	5975	17.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	6062	19.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
d5-EtFOSAA	7.170	589.0 -> 419.0	25004	22.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%			
Target Compounds							QValue
4:2FTS	4.201	327.0 -> 307.0	32304	20.03	µg/L		100
6:2FTS	5.843	427.0 -> 407.0	48737	20.31	µg/L		97
8:2FTS	7.026	527.0 -> 507.0	48295	20.08	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	18331	20.72	µg/L		98
FOSA	6.519	498.0 -> 78.0	22958	19.62	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	20467	20.02	µg/L		100
PFBA	1.694	213.0 -> 169.0	16625	19.79	µg/L		100
PFBS	3.354	299.0 -> 80.0	18998	19.62	µg/L		100
PFDA	6.990	513.0 -> 469.0	132203	19.94	µg/L		100
PFDoDA	7.894	613.0 -> 569.0	142513	19.65	µg/L		99
PFDS	7.419	599.0 -> 80.0	17884	18.97	µg/L		99
PFHpA	5.164	363.0 -> 319.0	106820	20.08	µg/L		100
PFHpS	5.867	449.0 -> 80.0	19448	20.19	µg/L		98
PFHxA	4.291	313.0 -> 269.0	82216	19.40	µg/L		100
PFHxS	5.195	399.0 -> 80.0	19651	19.71	µg/L	m	97
PFNA	6.456	463.0 -> 419.0	114001	19.46	µg/L		100
PFNS	6.962	549.0 -> 80.0	18887	19.97	µg/L		100
PFOA	5.858	413.0 -> 369.0	143260	19.78	µg/L		100
PFOS	6.442	499.0 -> 80.0	21956	19.46	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	55902	19.73	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14697	19.51	µg/L		99
PFTeDA	9.039	713.0 -> 669.0	159293	19.29	µg/L		99
PFTrDA	8.363	663.0 -> 619.0	171762	19.81	µg/L		99
PFUnDA	7.472	563.0 -> 519.0	139596	20.00	µg/L		98
11Cl-PF3OUdS	7.628	631.0 -> 451.0	69492	18.92	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	69445	18.62	µg/L		99
ADONA	5.261	377.0 -> 251.0	134974	19.56	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20299	20.14	µg/L		99
MeFOSA	6.966	512.0 -> 169.0	6646	20.36	µg/L		96
4-PFECHS	5.753	461.0 -> 381.0	41760	19.43	µg/L		97
FBSA	4.343	298.0 -> 78.0	28770	20.00	µg/L		100
FHxSA	5.674	398.0 -> 78.0	23550	19.38	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

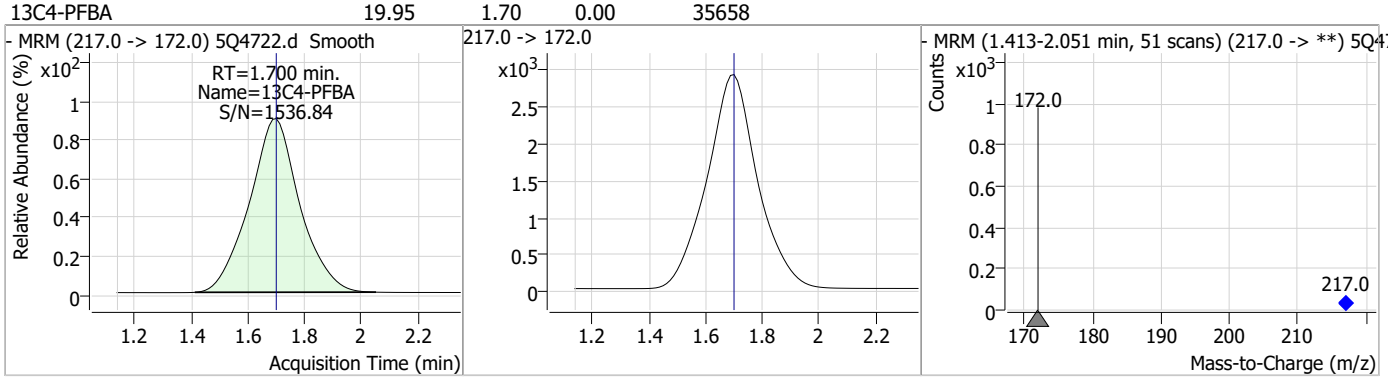
Perfluorinated Compounds by LC/MS/MS



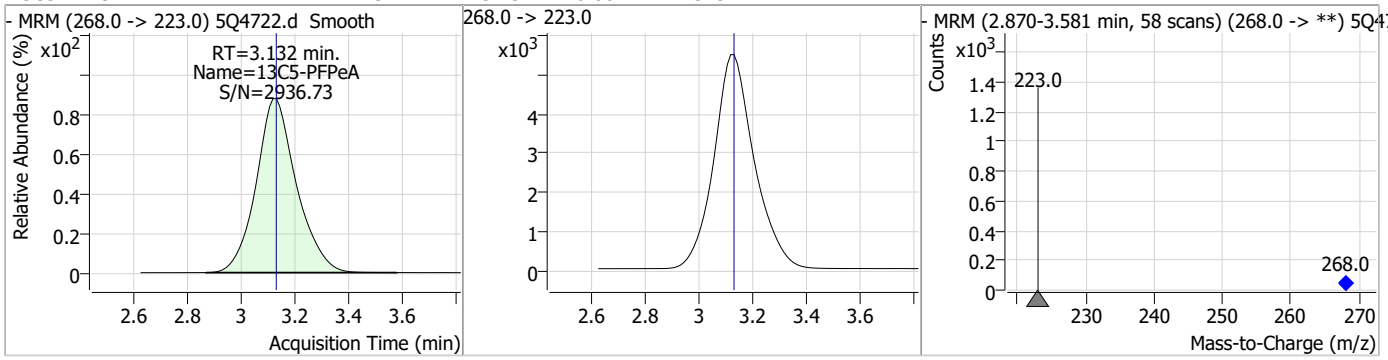
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.79	1.69	0.00	16625				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.95	1.70	0.00	35658				

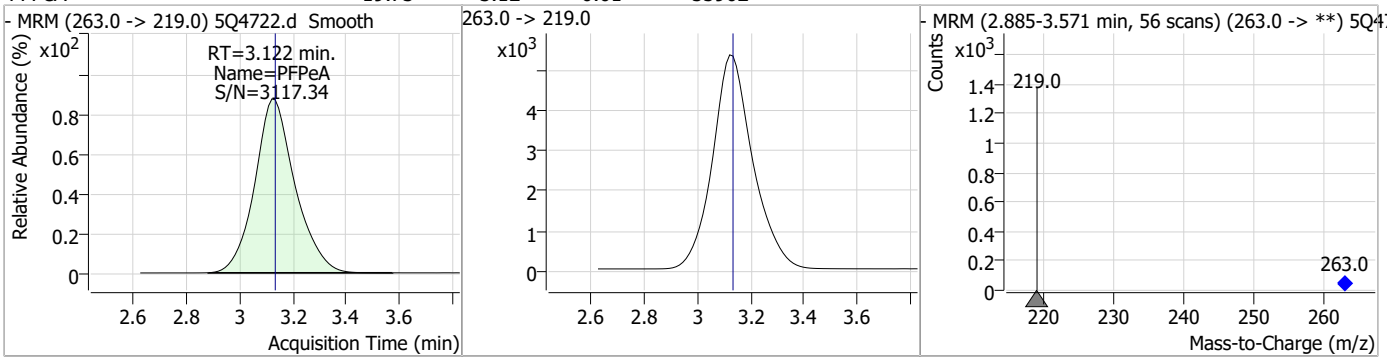


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.72	3.13	0.00	57322				

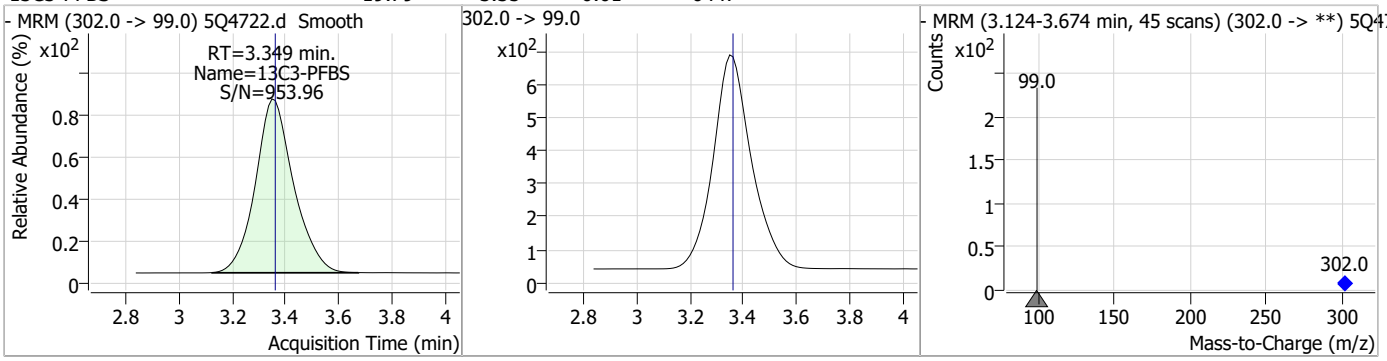


Perfluorinated Compounds by LC/MS/MS

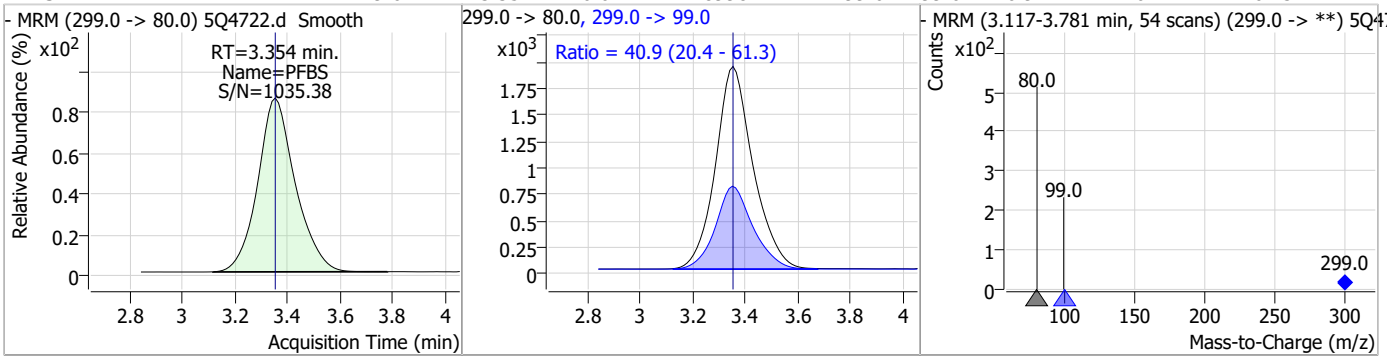
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.73	3.12	-0.01	55902				



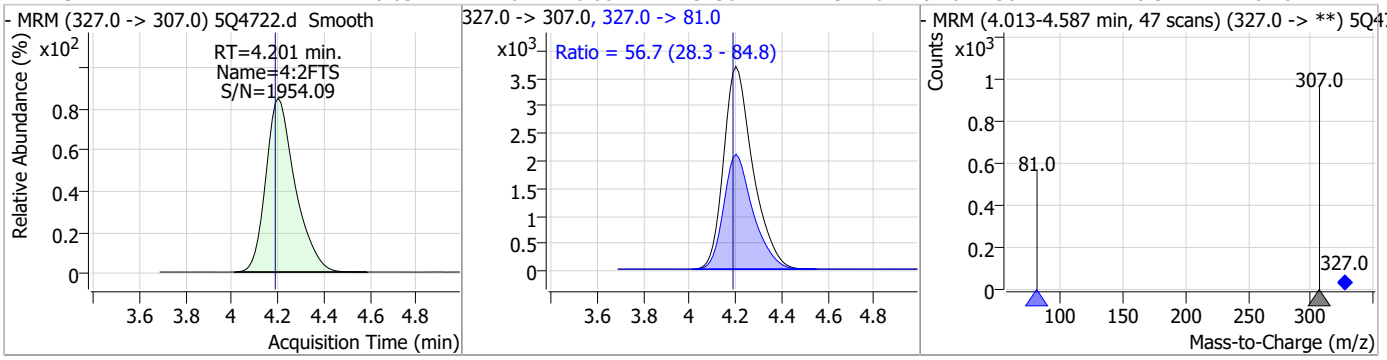
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.79	3.35	-0.01	6447				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.62	3.35	-0.01	18998	299.0 -> 99.0	40.9	20.4	61.3

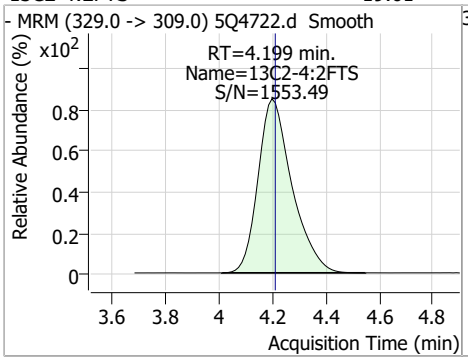


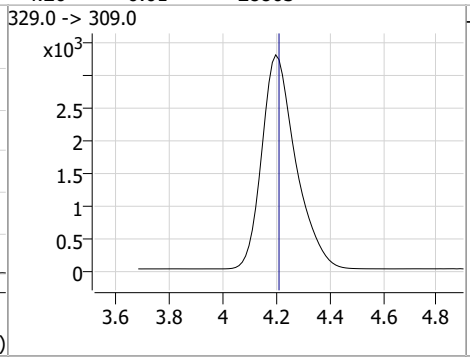
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.03	4.20	0.00	32304	327.0 -> 81.0	56.7	28.3	84.8

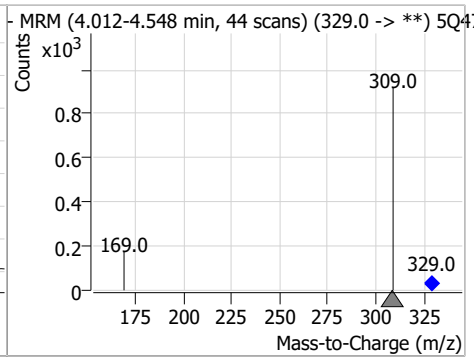


Perfluorinated Compounds by LC/MS/MS

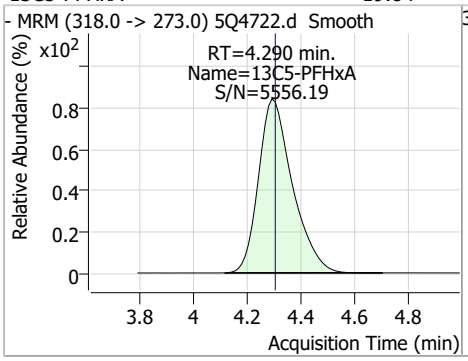
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.61	4.20	-0.01	28803				

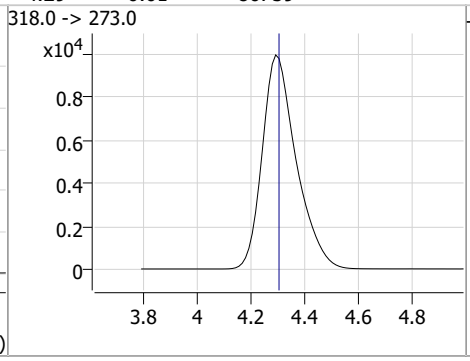


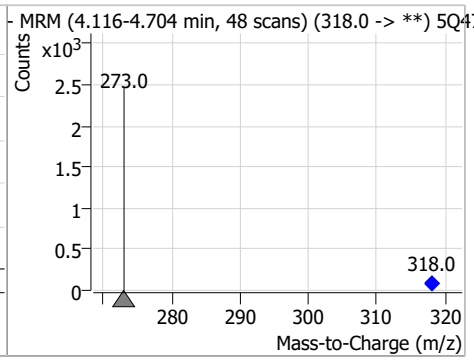




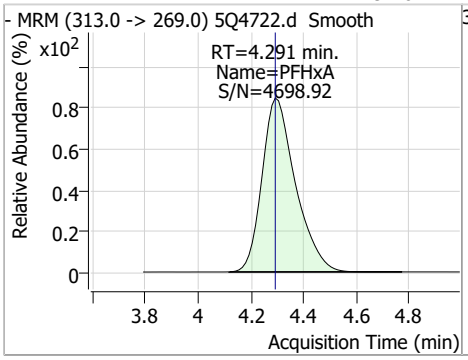
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.84	4.29	-0.01	86759				

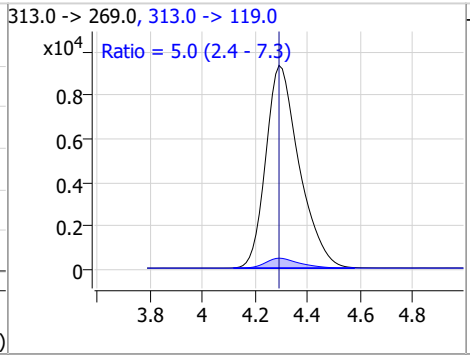


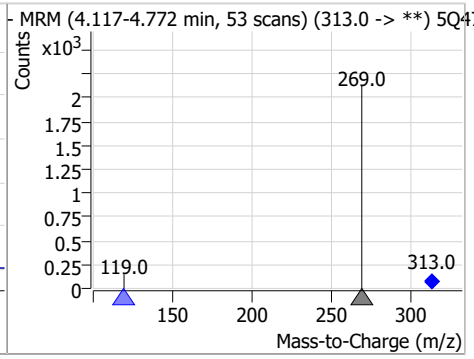




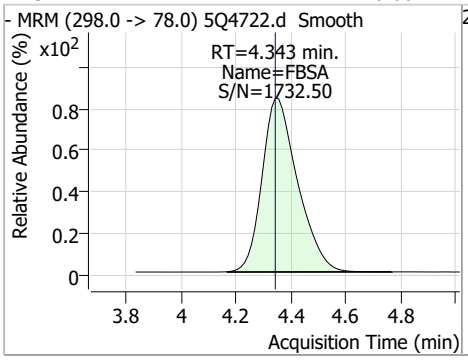
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.40	4.29	-0.01	82216	313.0 -> 119.0	5.0	2.4	7.3

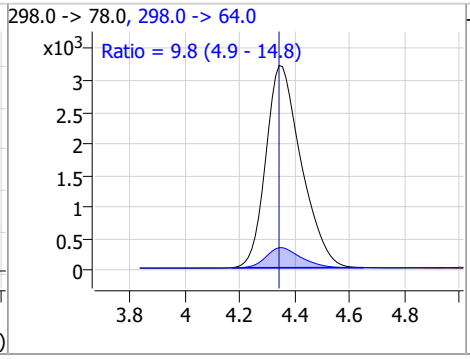


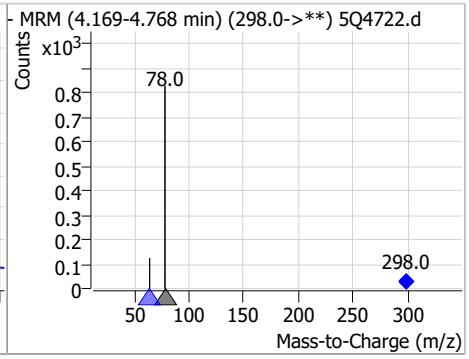




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.00	4.34	-0.01	28770	298.0 -> 64.0	9.8	4.9	14.8

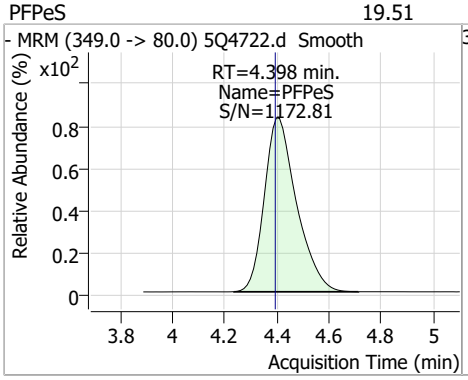


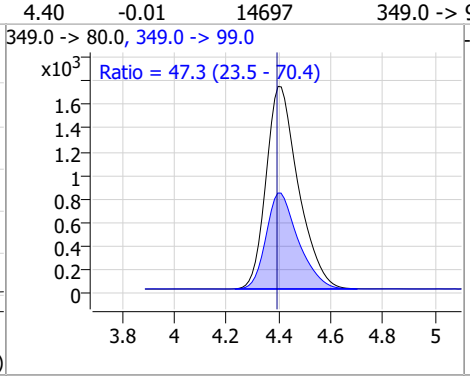


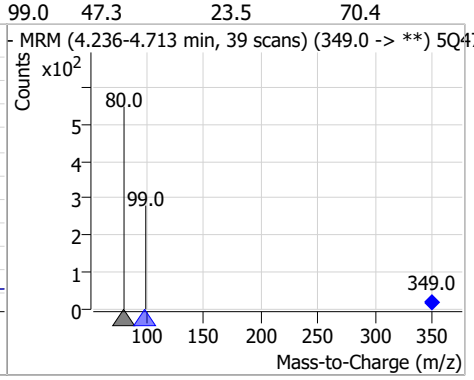


Perfluorinated Compounds by LC/MS/MS

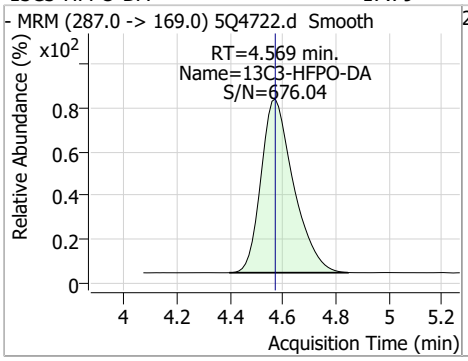
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.51	4.40	-0.01	14697	349.0 -> 99.0	47.3	23.5	70.4

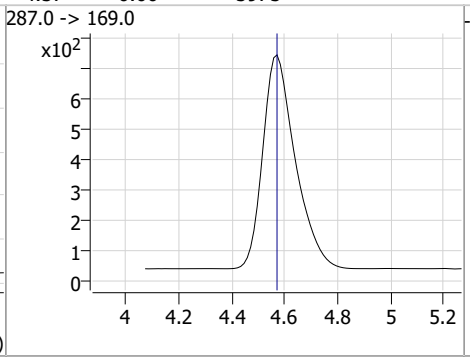


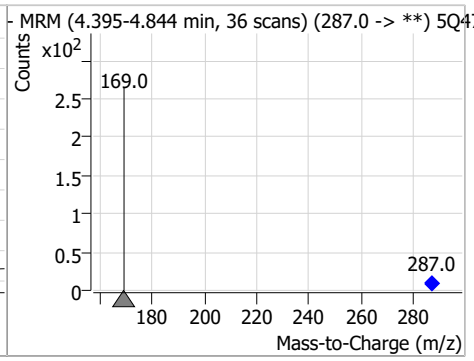




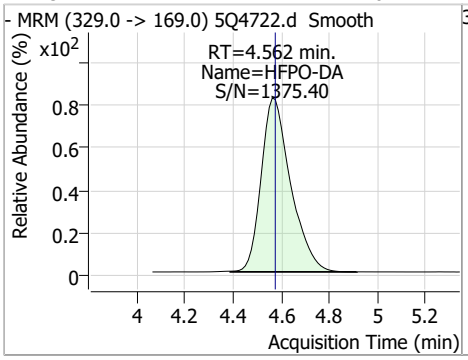
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.79	4.57	0.00	5975				

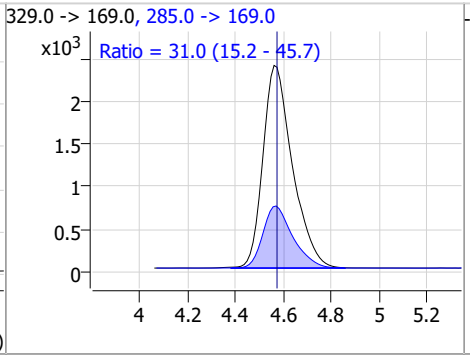


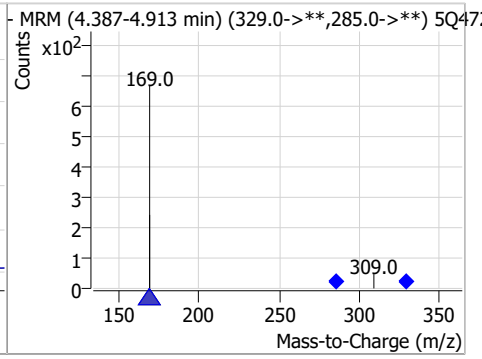




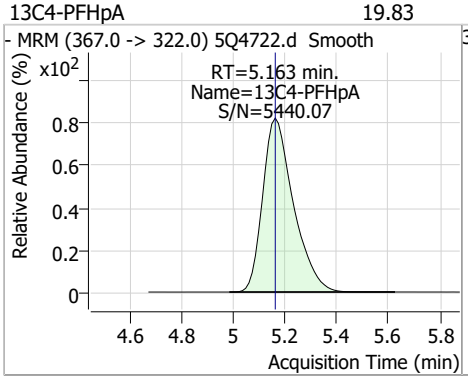
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.14	4.56	-0.01	20299	285.0 -> 169.0	31.0	15.2	45.7

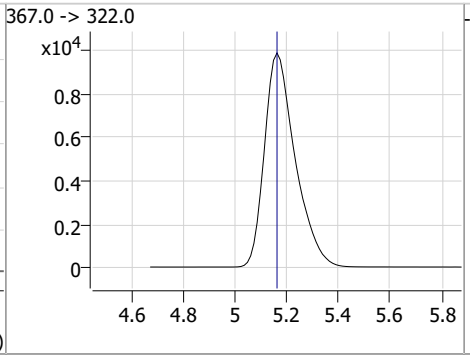


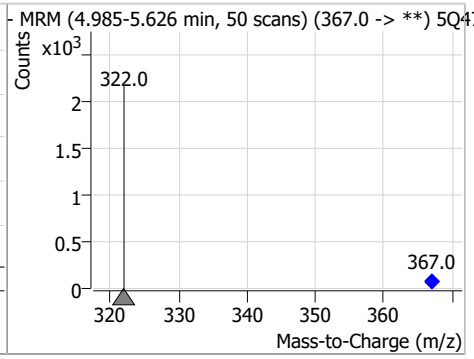




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.83	5.16	0.00	80965				

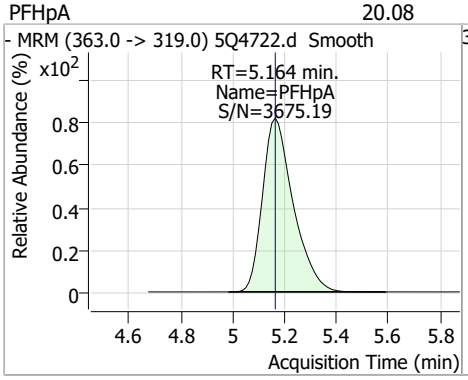


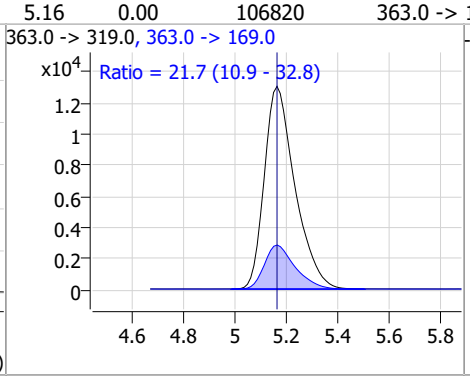


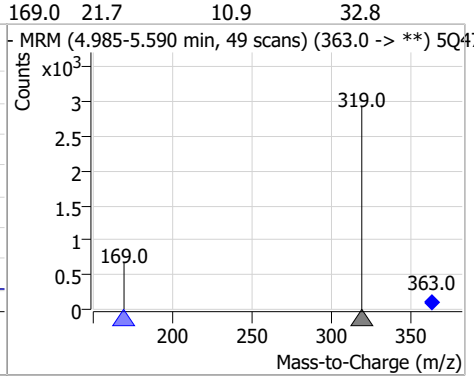


Perfluorinated Compounds by LC/MS/MS

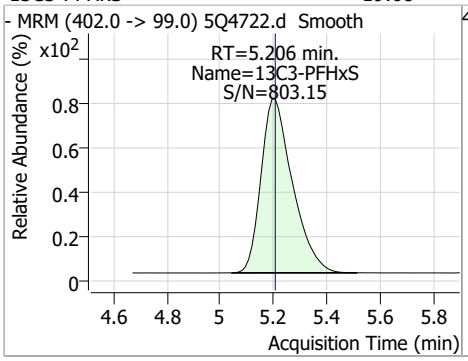
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.08	5.16	0.00	106820	363.0 -> 169.0	21.7	10.9	32.8

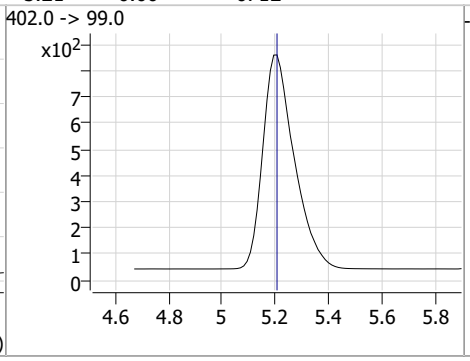


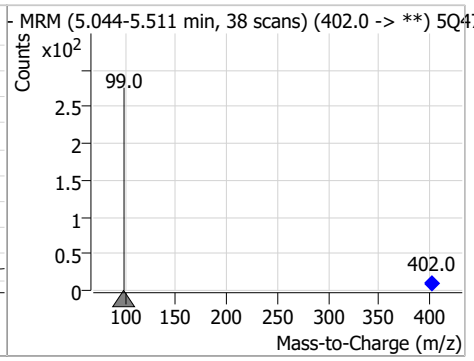




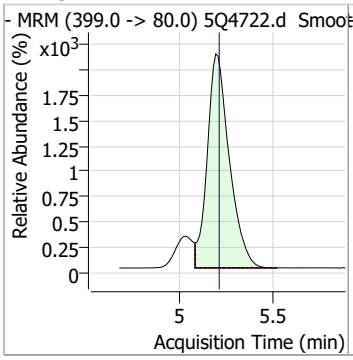
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.68	5.21	0.00	6712				

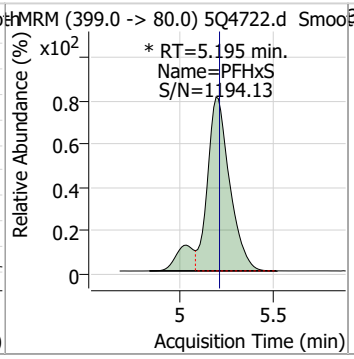


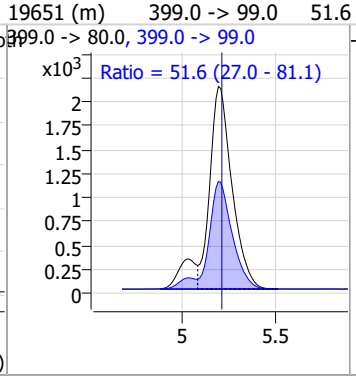


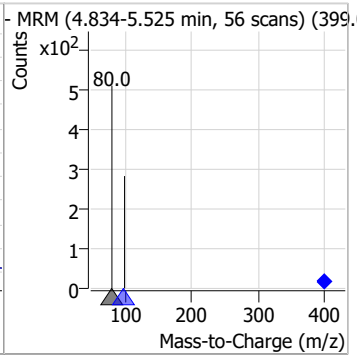


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.71	5.20	-0.01	19651 (m)	399.0 -> 99.0	51.6	27.0	81.1

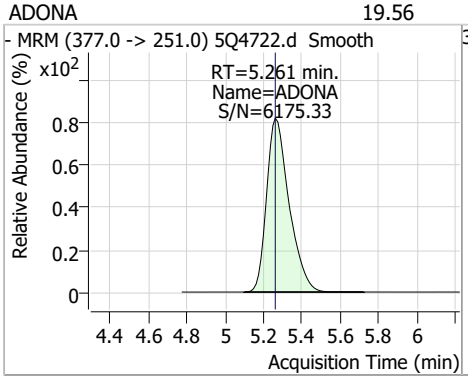


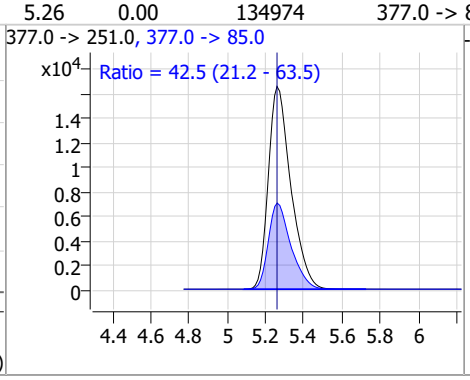


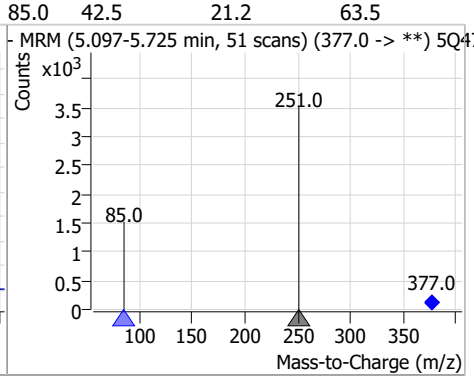




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.56	5.26	0.00	134974	377.0 -> 85.0	42.5	21.2	63.5

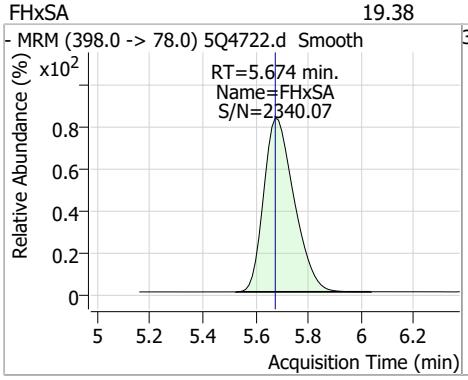


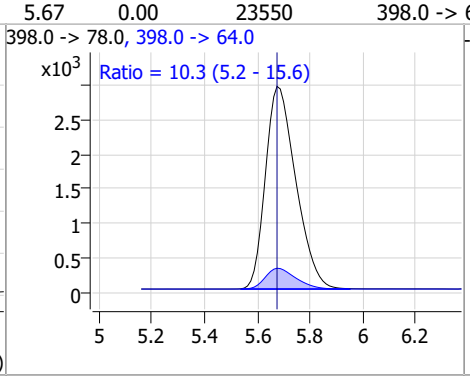


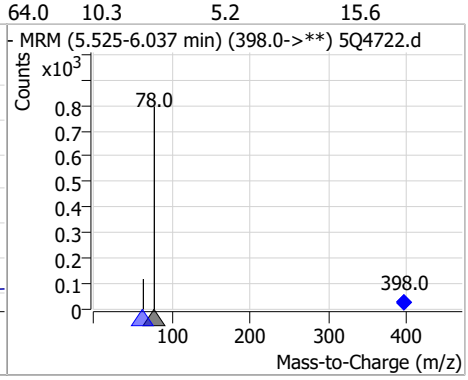


Perfluorinated Compounds by LC/MS/MS

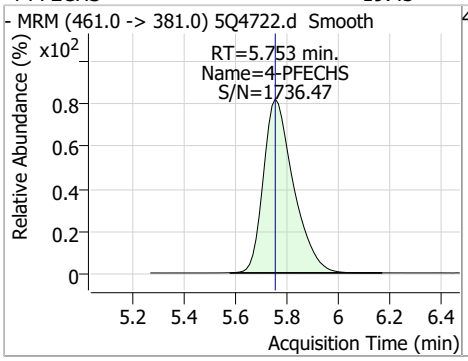
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.38	5.67	0.00	23550	398.0 -> 64.0	10.3	5.2	15.6

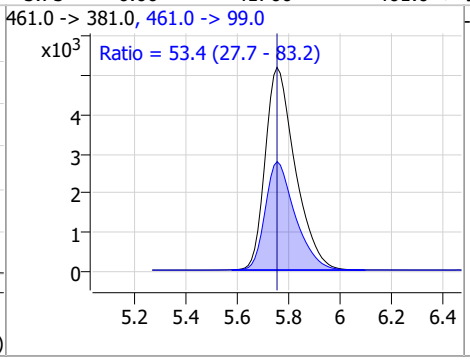


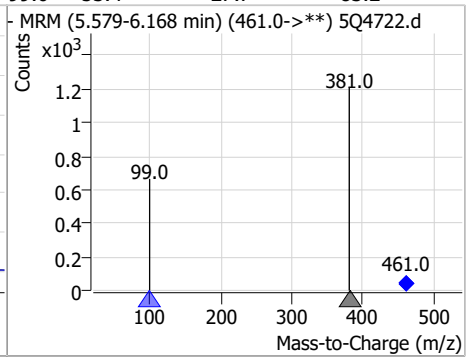




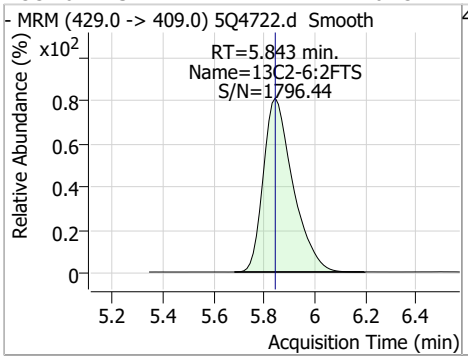
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.43	5.75	0.00	41760	461.0 -> 99.0	53.4	27.7	83.2

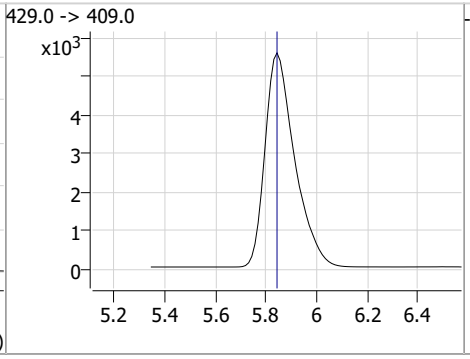


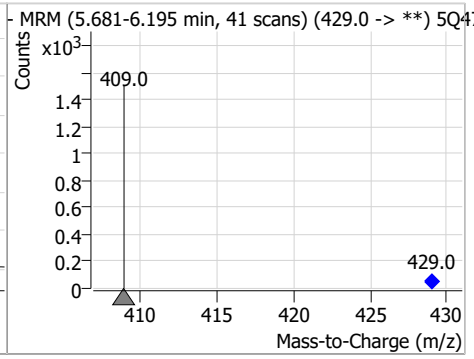




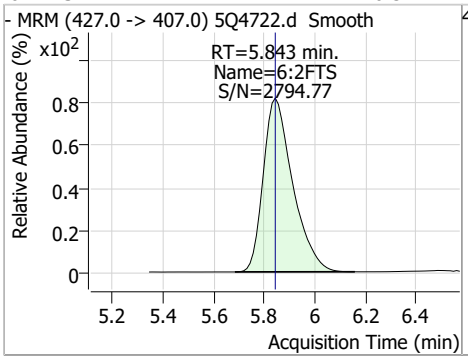
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.23	5.84	0.00	45237				

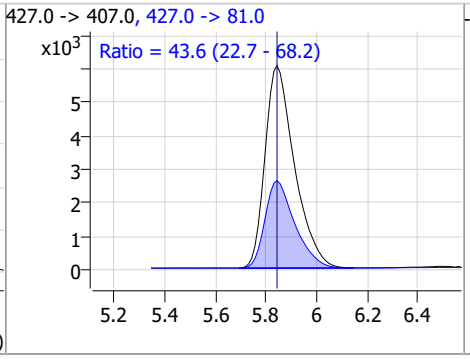


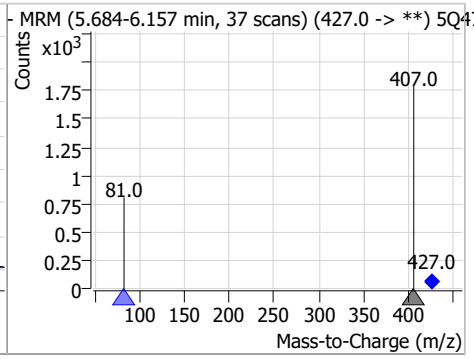




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.31	5.84	0.00	48737	427.0 -> 81.0	43.6	22.7	68.2

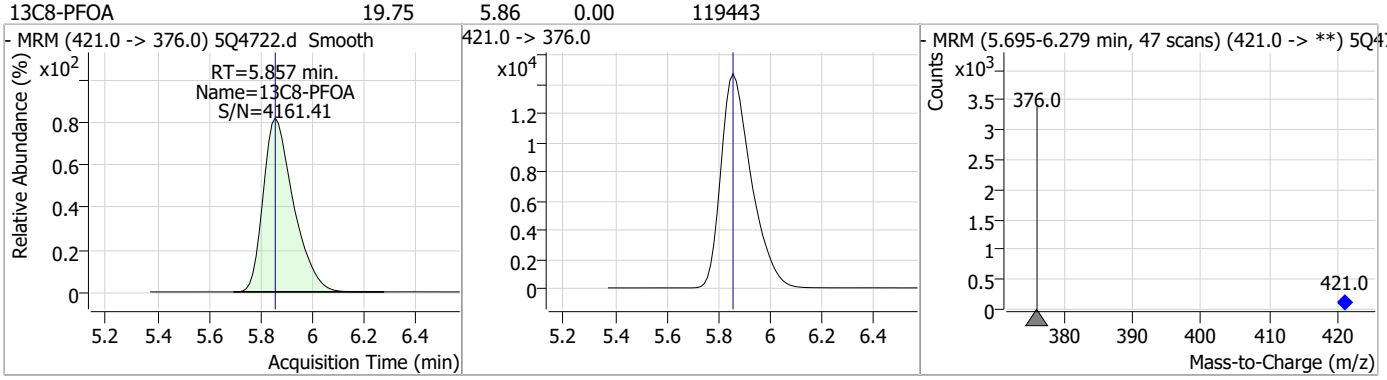




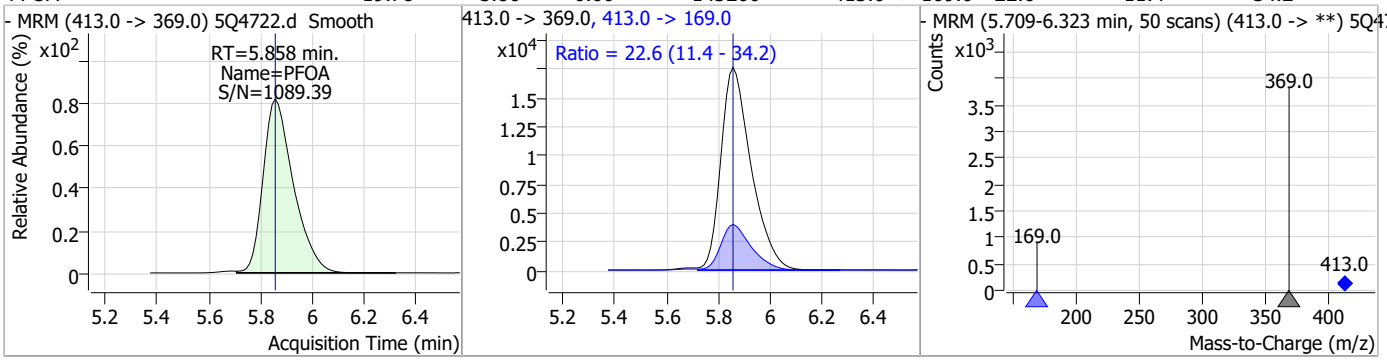


Perfluorinated Compounds by LC/MS/MS

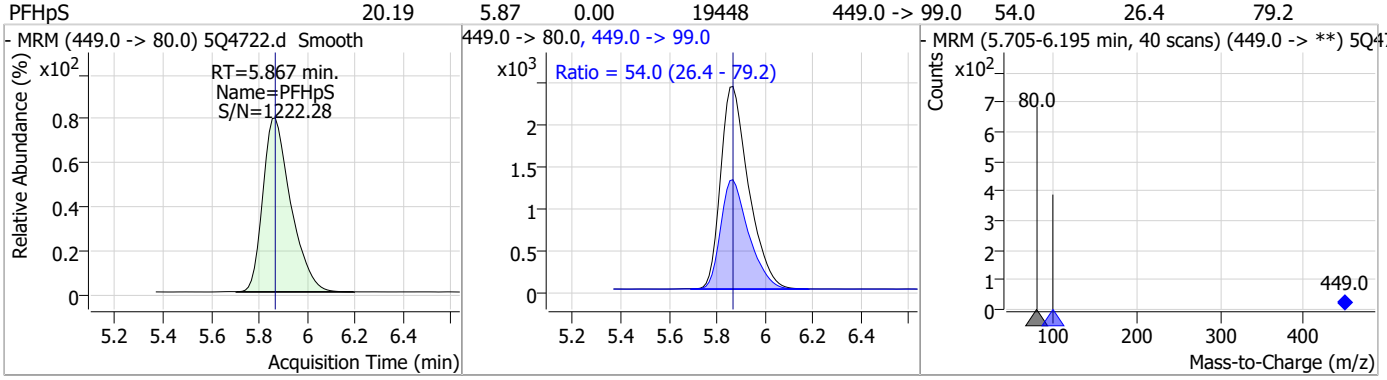
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.75	5.86	0.00	119443				



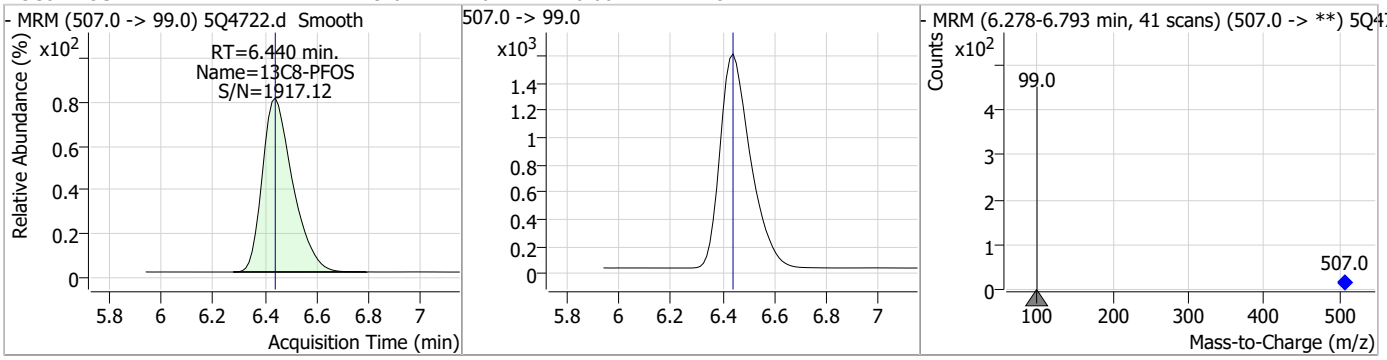
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.78	5.86	0.00	143260	413.0 -> 169.0	22.6	11.4	34.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.19	5.87	0.00	19448	449.0 -> 99.0	54.0	26.4	79.2

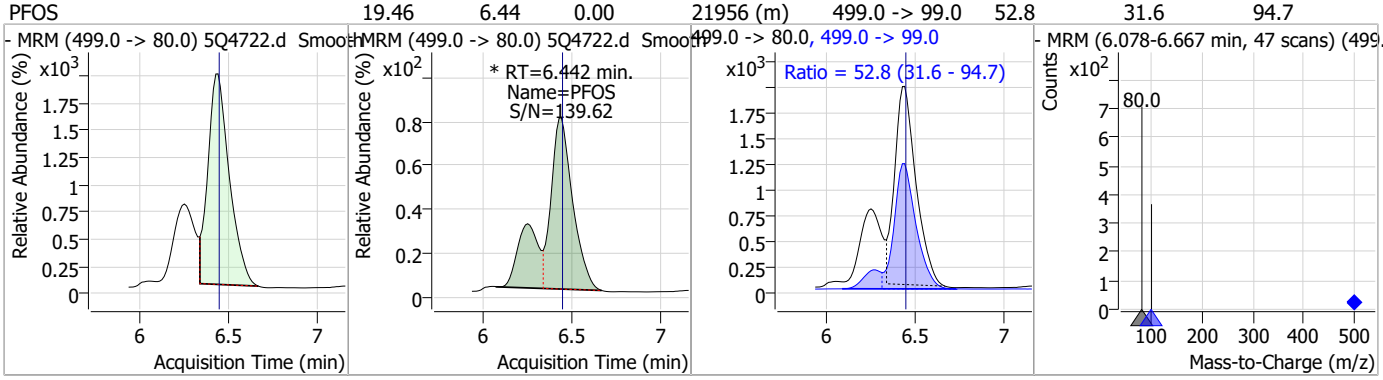


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.62	6.44	0.00	12812				

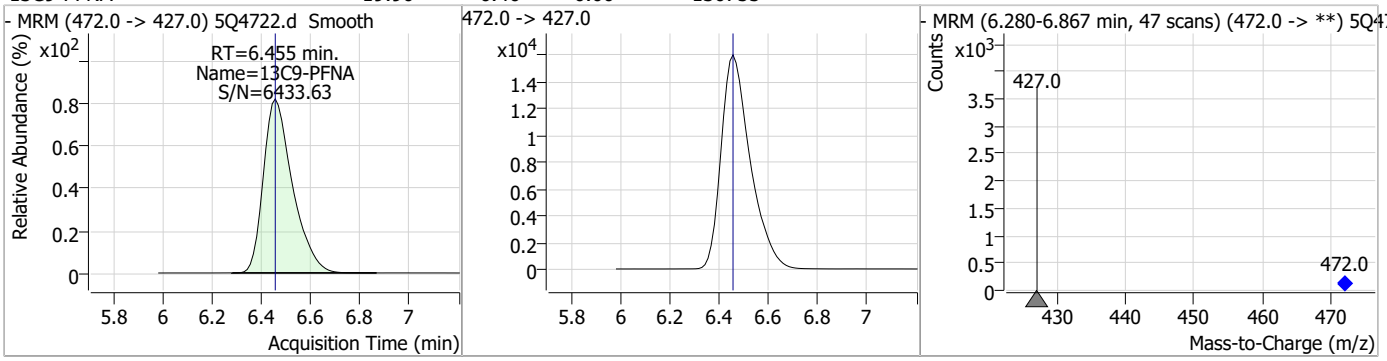


Perfluorinated Compounds by LC/MS/MS

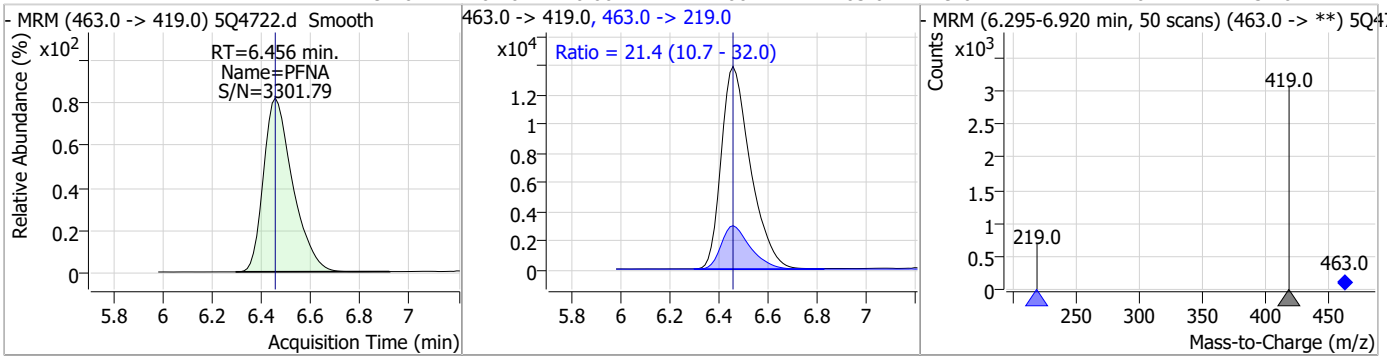
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.46	6.44	0.00	21956 (m)	499.0 -> 99.0	52.8	31.6	94.7



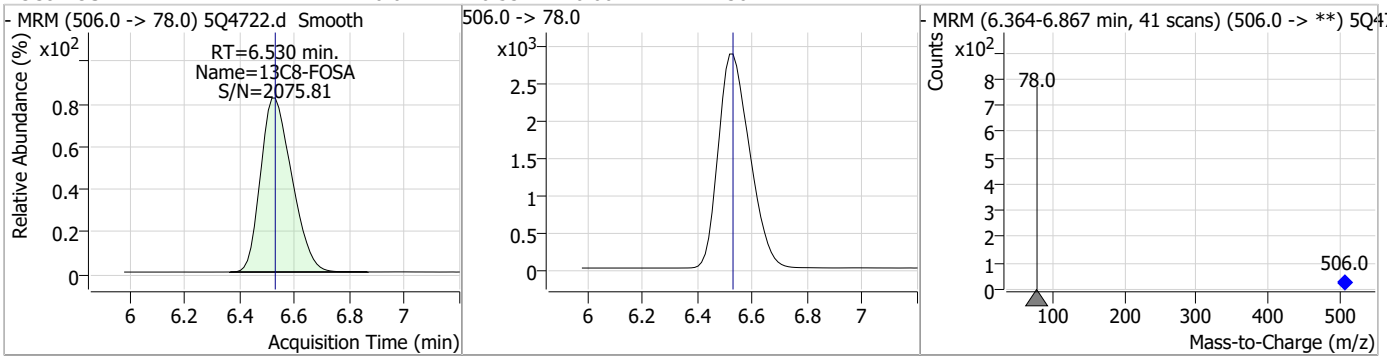
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.90	6.46	0.00	130755				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.46	6.46	0.00	114001	463.0 -> 219.0	21.4	10.7	32.0

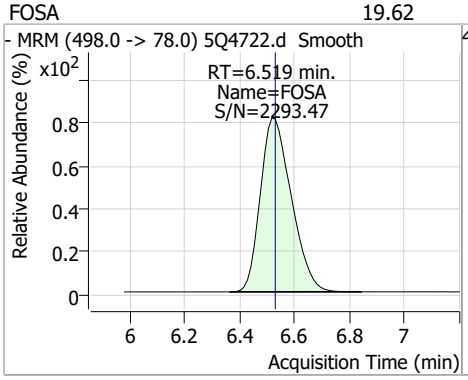


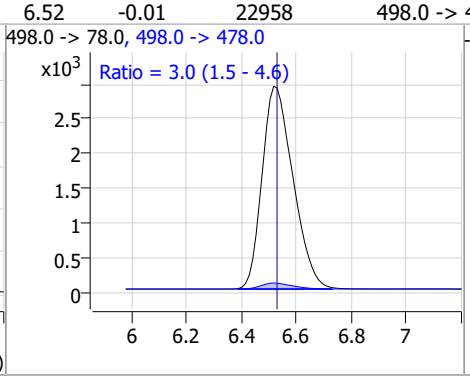
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.04	6.53	0.00	22736				

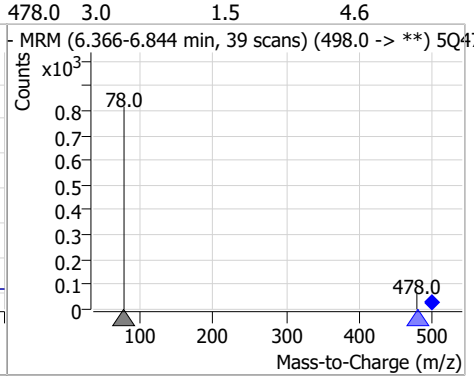


Perfluorinated Compounds by LC/MS/MS

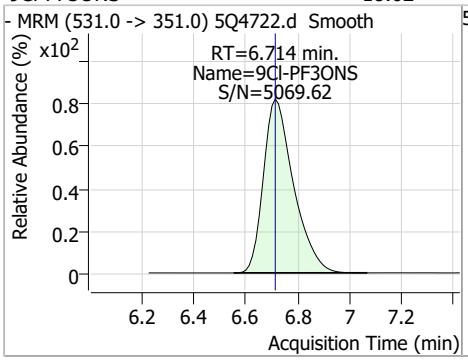
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.62	6.52	-0.01	22958	498.0 -> 478.0	3.0	1.5	4.6

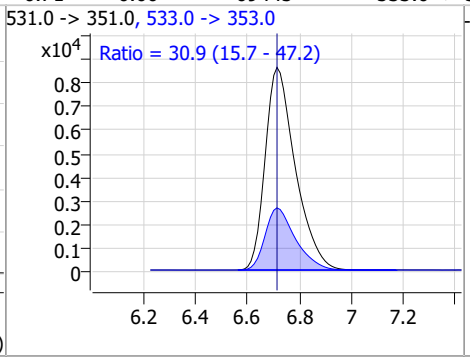


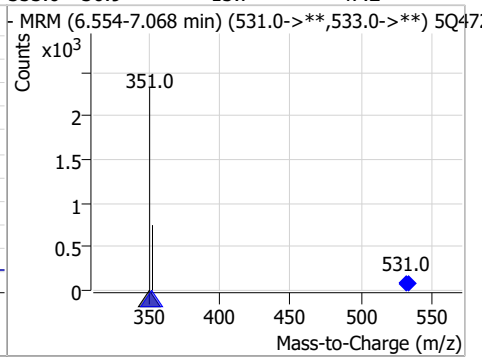




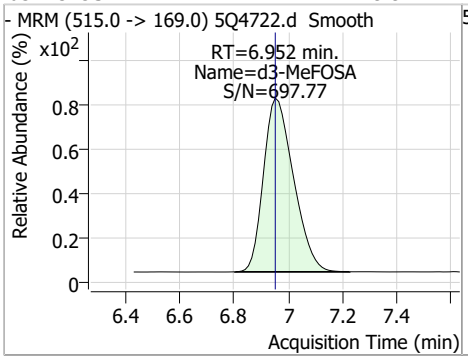
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.62	6.71	0.00	69445	533.0 -> 353.0	30.9	15.7	47.2

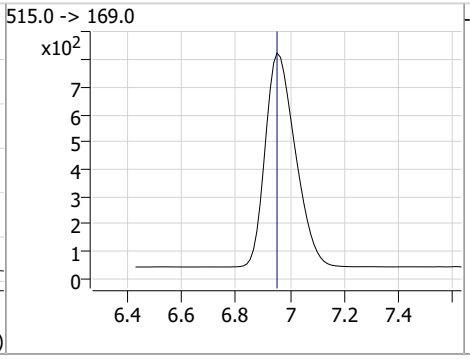


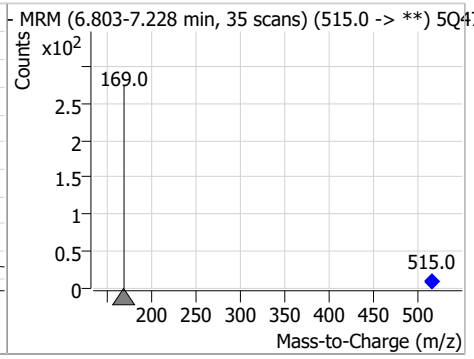




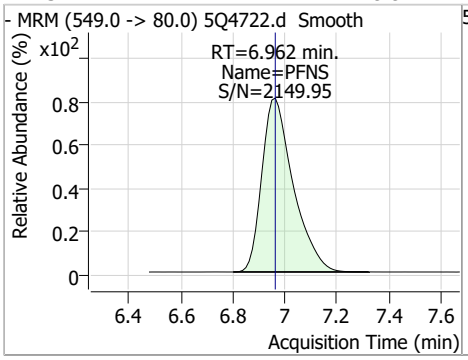
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.91	6.95	0.00	6062				

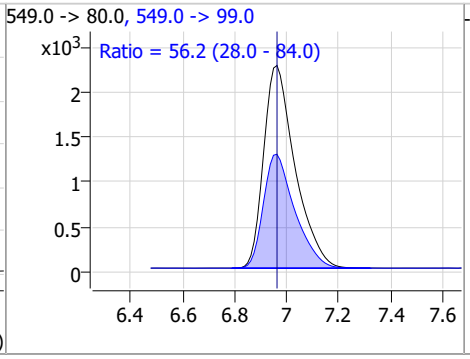


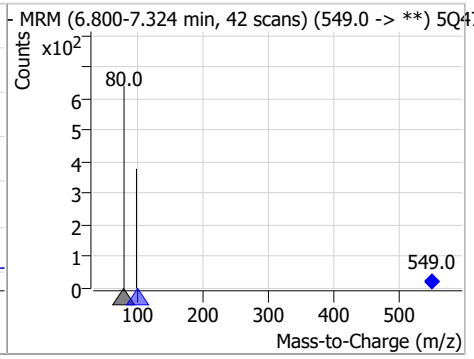




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.97	6.96	0.00	18887	549.0 -> 99.0	56.2	28.0	84.0

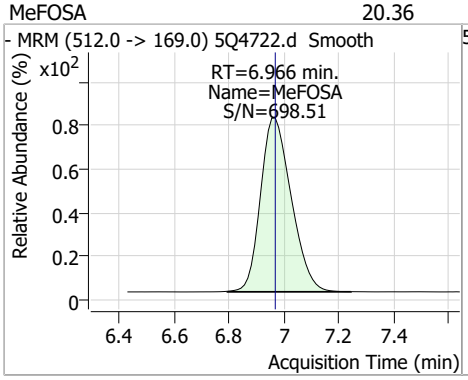


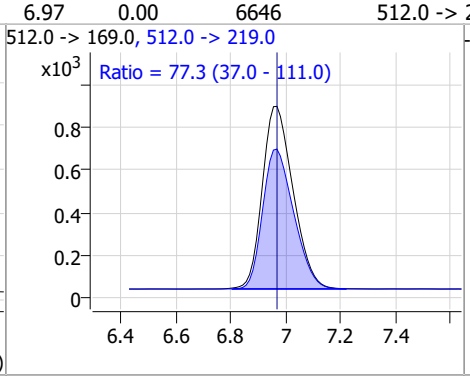


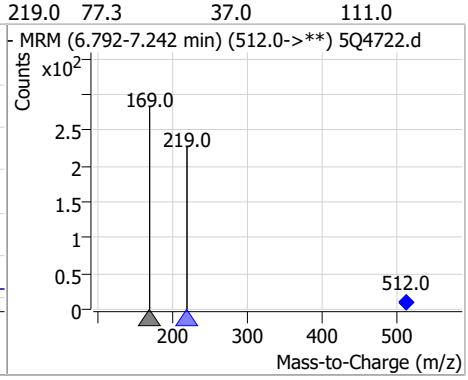


Perfluorinated Compounds by LC/MS/MS

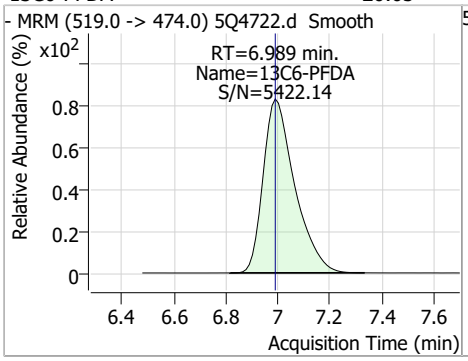
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.36	6.97	0.00	6646	512.0 -> 219.0	77.3	37.0	111.0

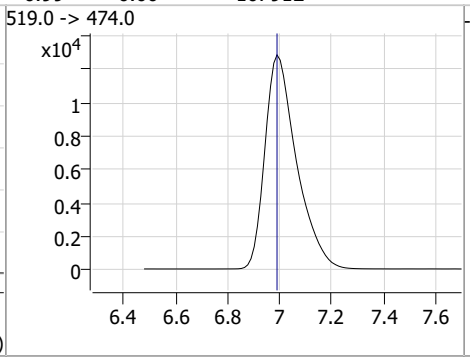


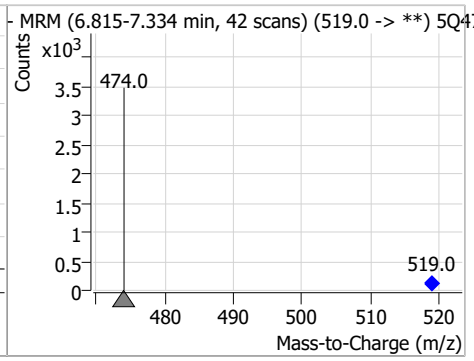




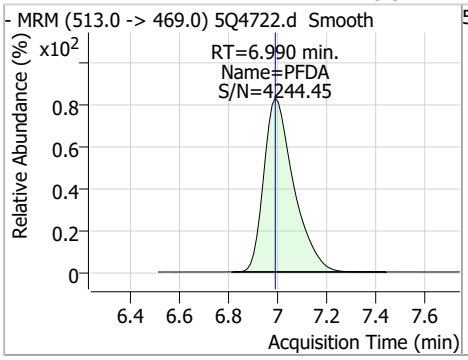
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.05	6.99	0.00	107912				

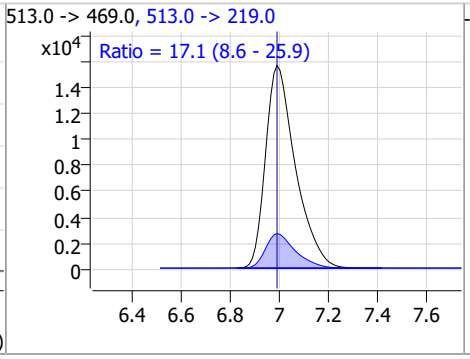


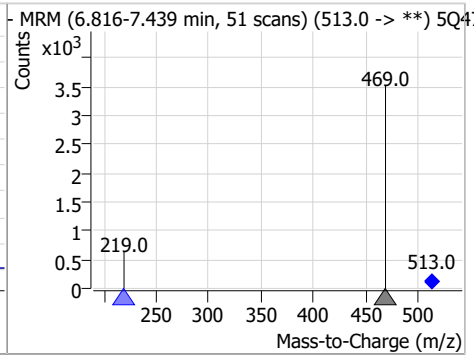




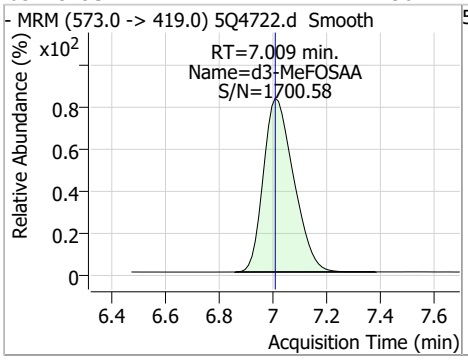
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.94	6.99	0.00	132203	513.0 -> 219.0	17.1	8.6	25.9

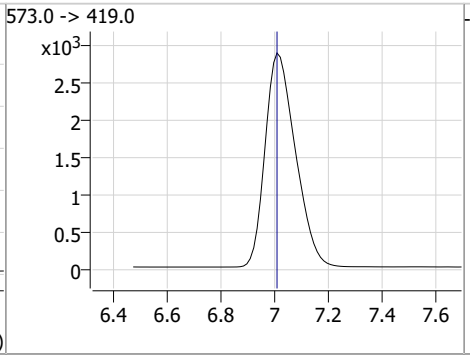


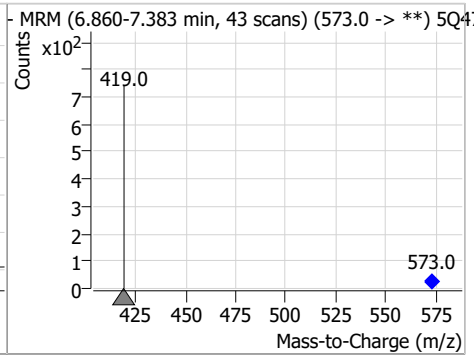




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.96	7.01	0.00	22318				

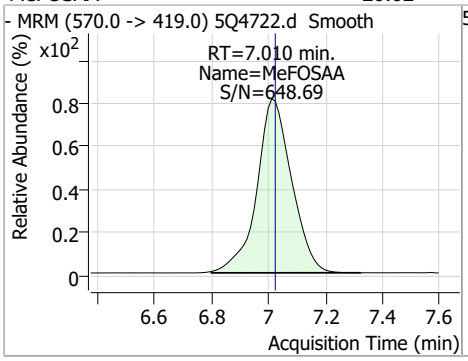


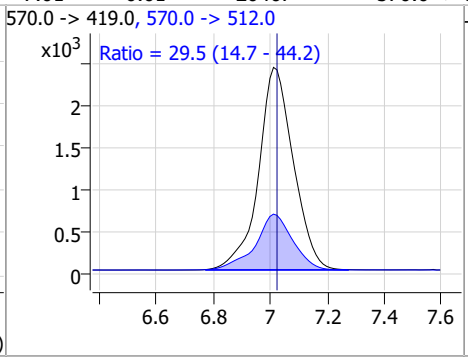


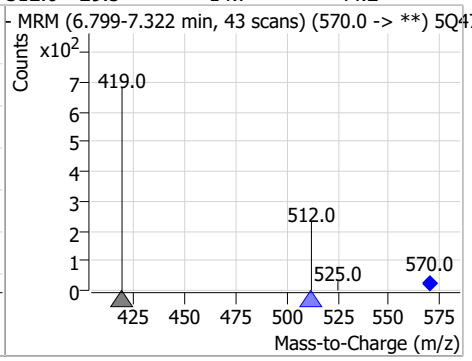


Perfluorinated Compounds by LC/MS/MS

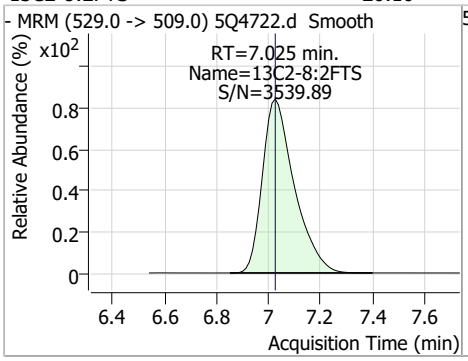
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.02	7.01	-0.01	20467	570.0 -> 512.0	29.5	14.7	44.2

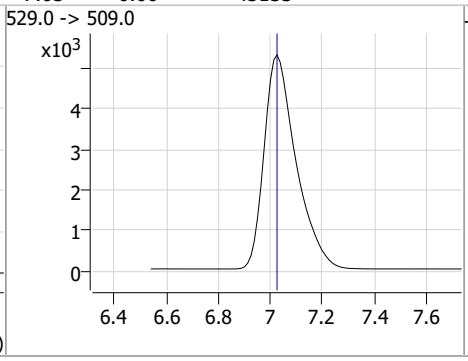


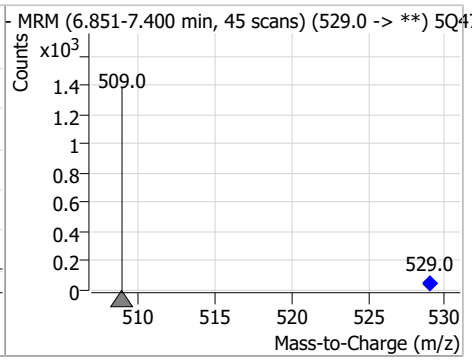




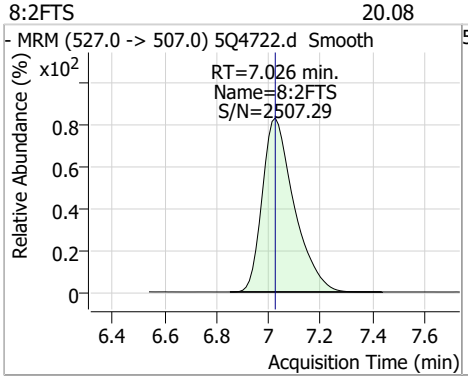
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.10	7.03	0.00	45133				

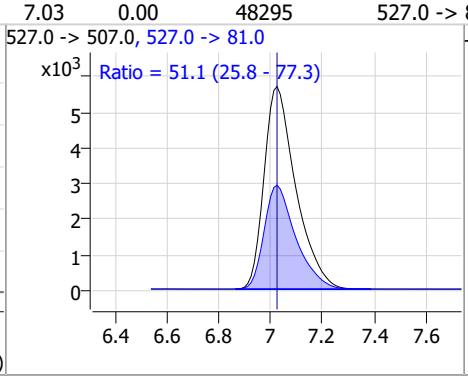


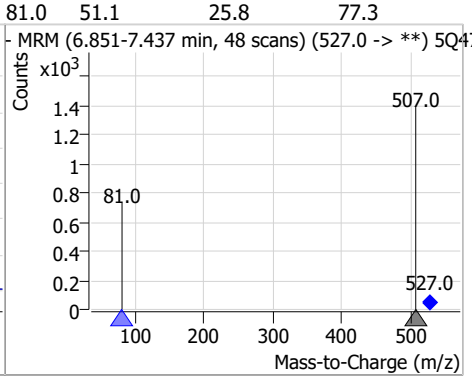




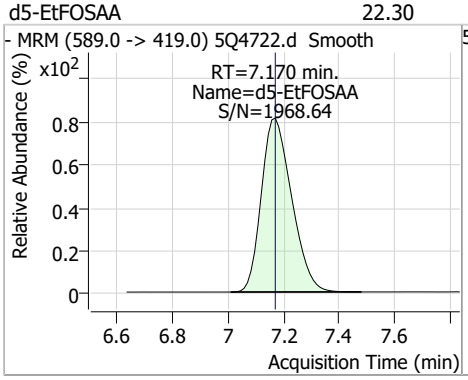
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.08	7.03	0.00	48295	527.0 -> 81.0	51.1	25.8	77.3

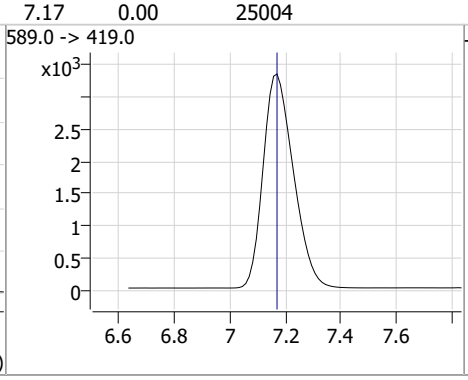


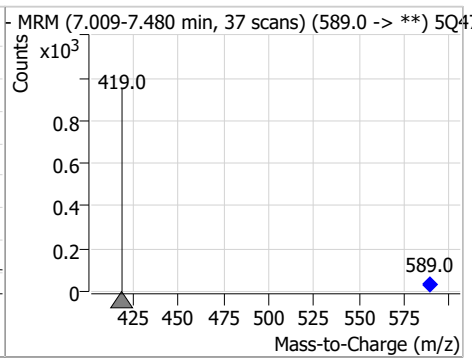




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.30	7.17	0.00	25004				

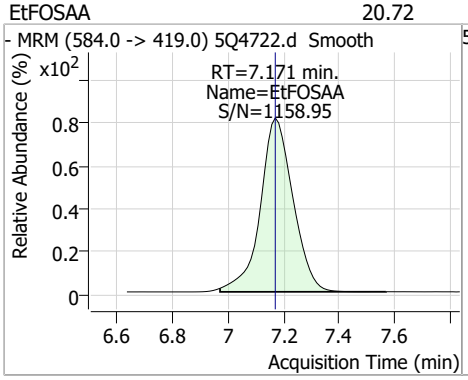


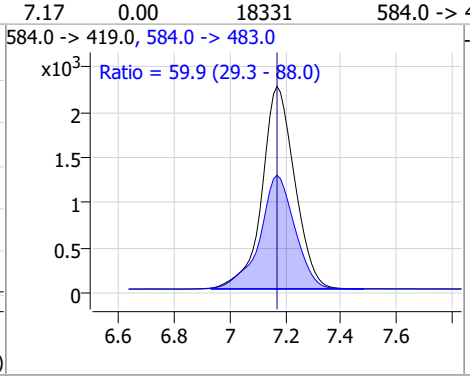


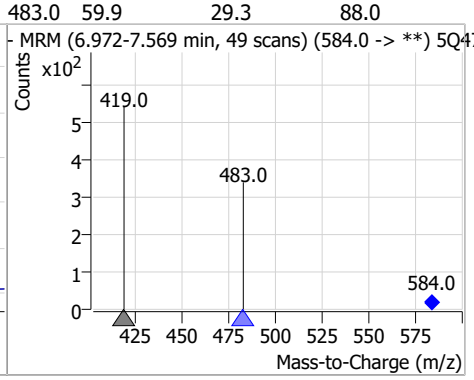


Perfluorinated Compounds by LC/MS/MS

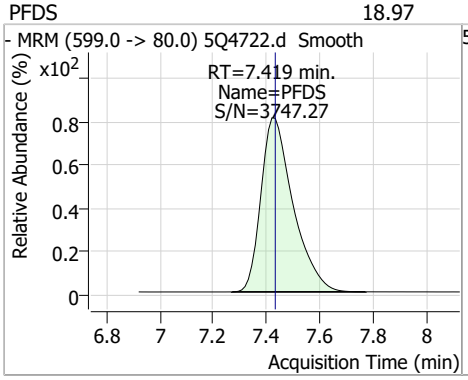
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.72	7.17	0.00	18331	584.0 -> 483.0	59.9	29.3	88.0

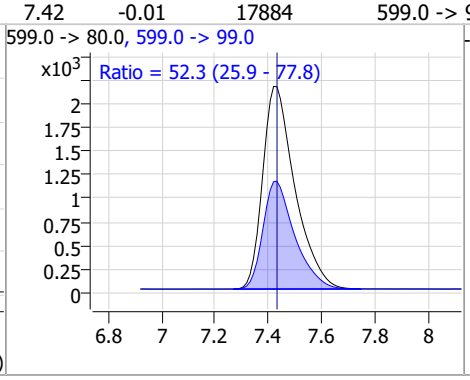


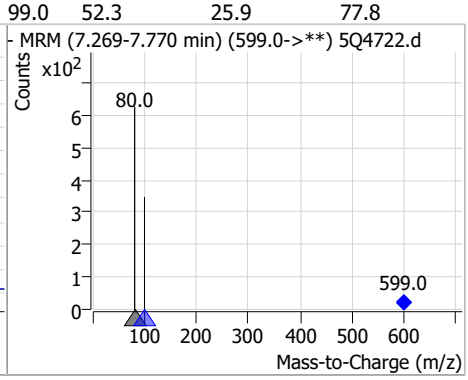




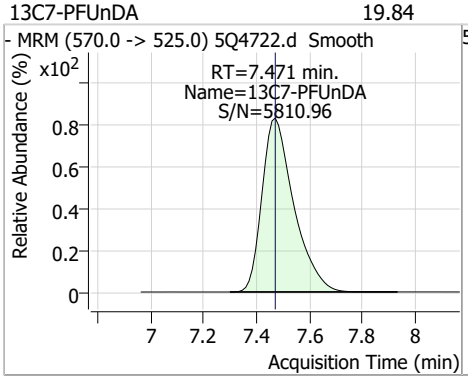
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.97	7.42	-0.01	17884	599.0 -> 99.0	52.3	25.9	77.8

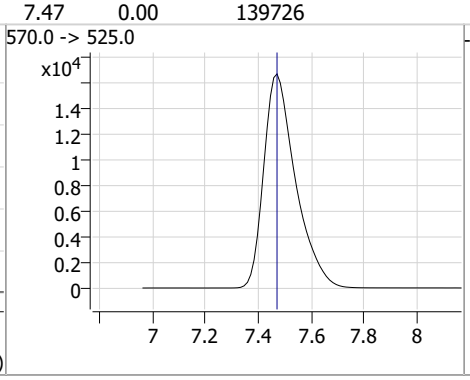


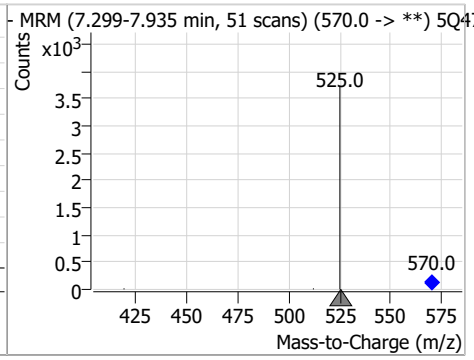




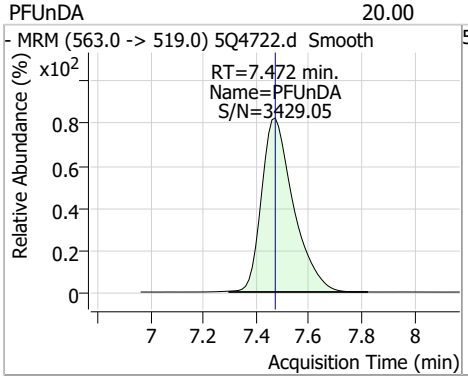
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.84	7.47	0.00	139726				

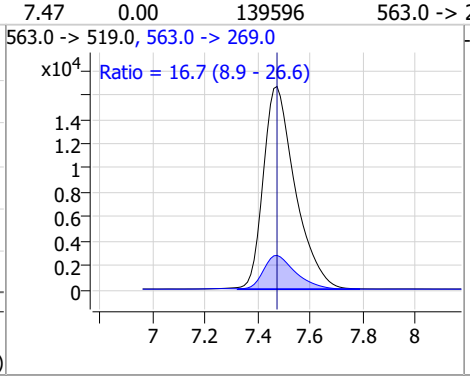


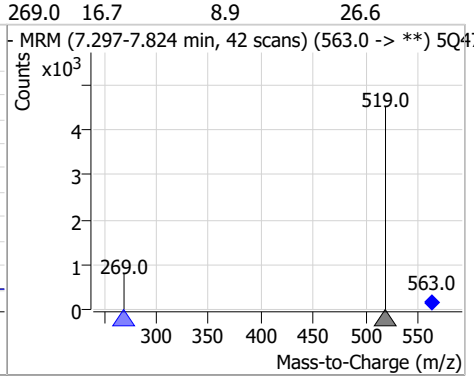




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.00	7.47	0.00	139596	563.0 -> 269.0	16.7	8.9	26.6

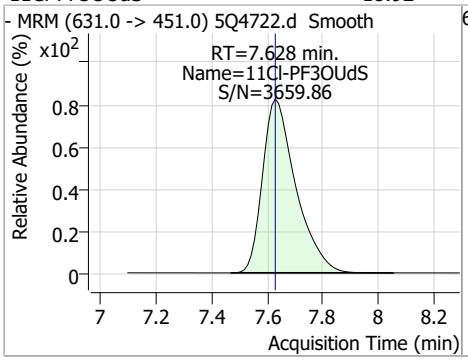


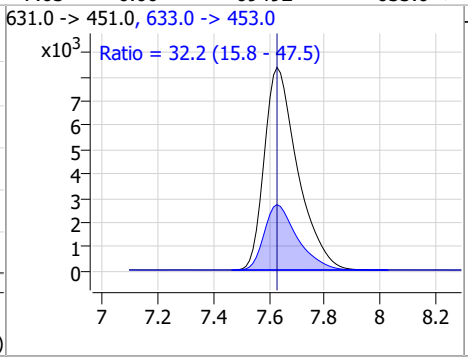


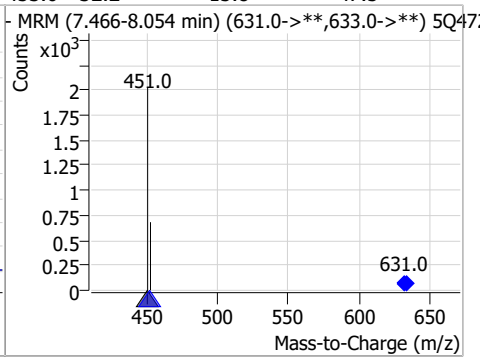


Perfluorinated Compounds by LC/MS/MS

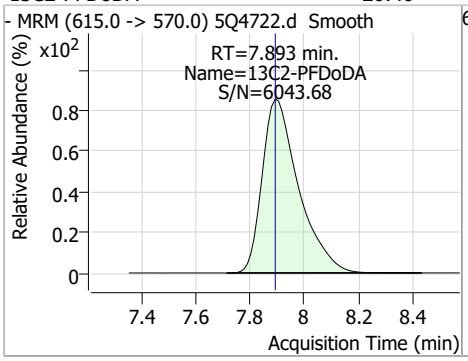
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.92	7.63	0.00	69492	633.0 -> 453.0	32.2	15.8	47.5

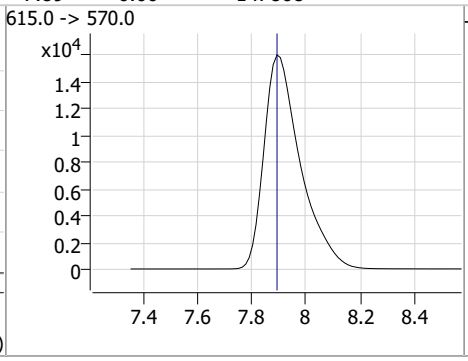


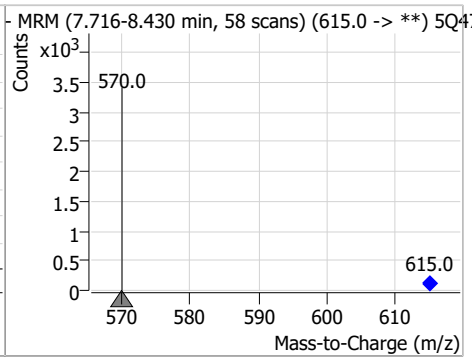




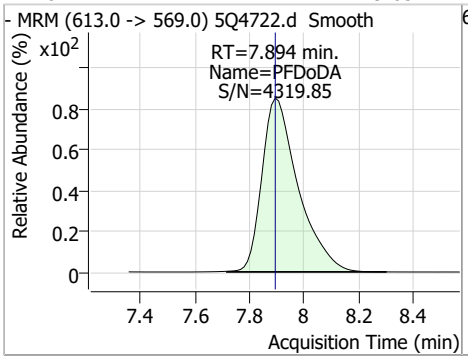
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.40	7.89	0.00	147868				

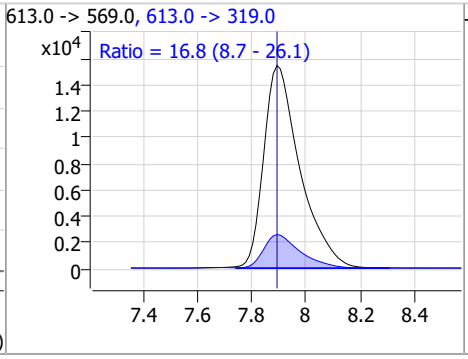


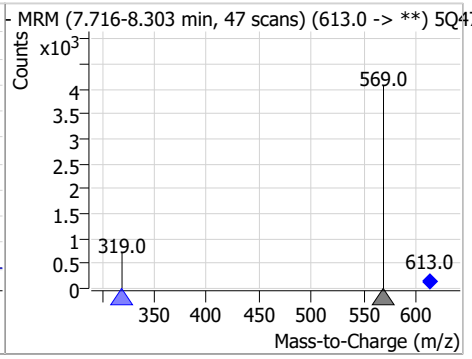




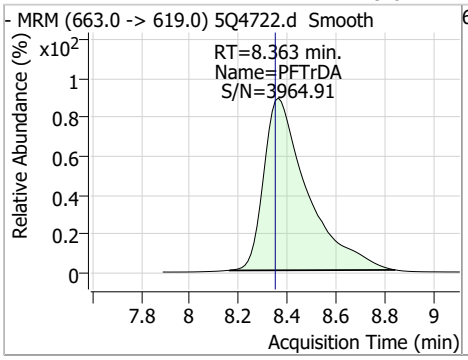
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.65	7.89	0.00	142513	613.0 -> 319.0	16.8	8.7	26.1

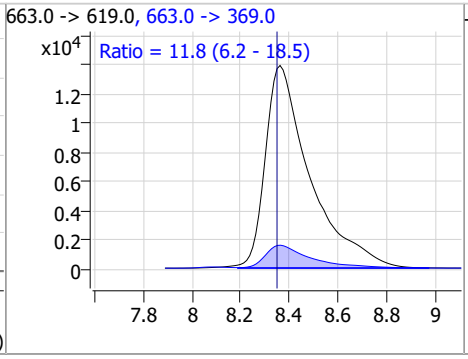


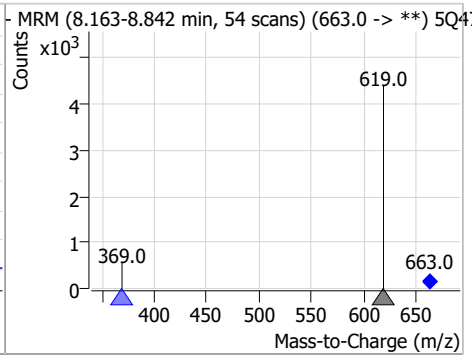




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.81	8.36	0.01	171762	663.0 -> 369.0	11.8	6.2	18.5

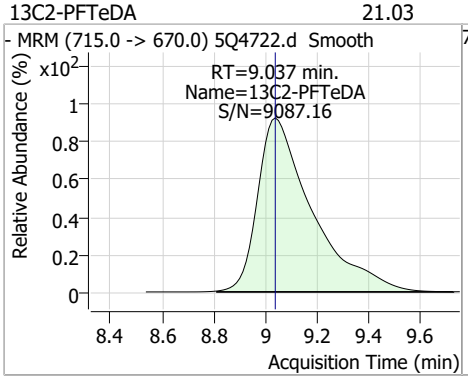


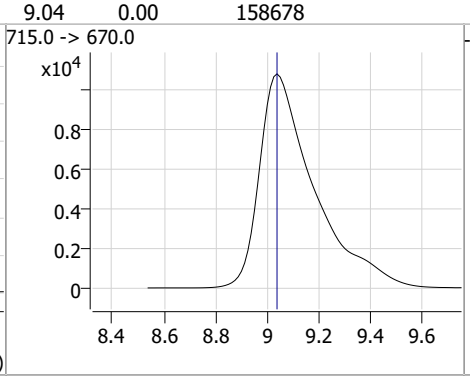


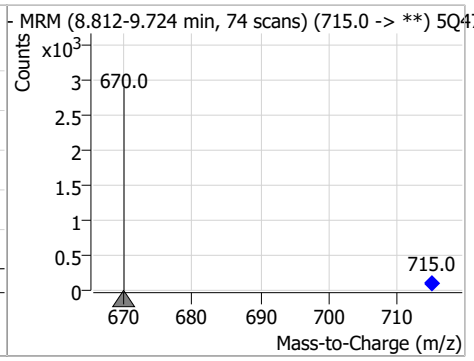


Perfluorinated Compounds by LC/MS/MS

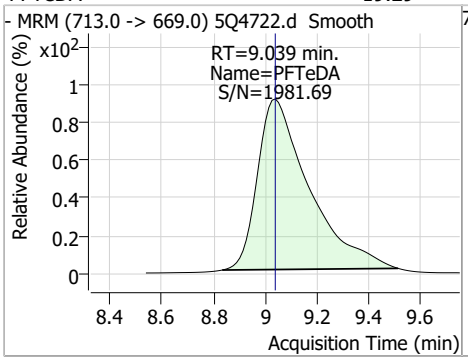
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.03	9.04	0.00	158678				

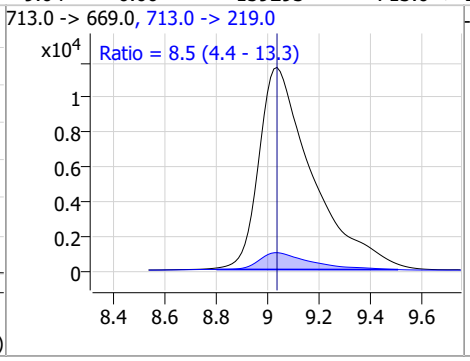


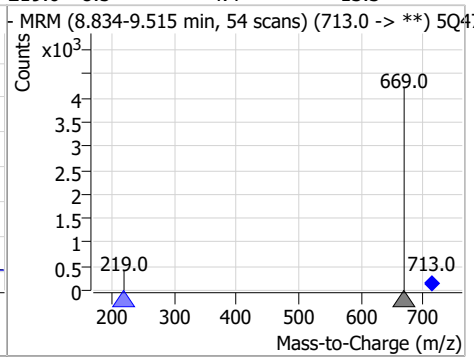




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.29	9.04	0.00	159293	713.0 -> 219.0	8.5	4.4	13.3







Manual Integration Approval Summary

Sample Number: S5Q72-CC71
Lab FileID: 5Q4722.D
Injection Time: 09/16/22 06:55
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 18:53

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4730.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 8:58:16 AM
Sample Name : ecc71-20
Vial : P1-A7
DA Method File : ID_091422_S5Q71.quantmethod.xml
Batch Name : s5q72.batch.bin
Sample Information : OP92656,S5Q72,250,,,1.0,1,water

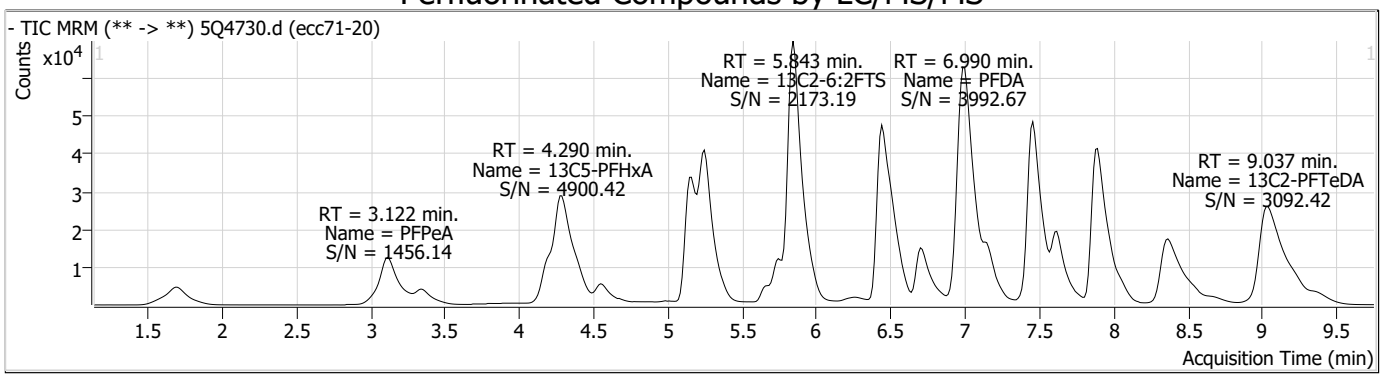
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	35992	20.00 µg/L	-0.013
M5-PFPeA	3.119	268.0 -> 223.0	57242	20.00 µg/L	-0.012
M5-PFHxA	4.290	318.0 -> 273.0	87041	20.00 µg/L	-0.012
M4-PFHpA	5.163	367.0 -> 322.0	81617	20.00 µg/L	0.000
M8-PFOA	5.857	421.0 -> 376.0	120876	20.00 µg/L	0.000
M9-PFNA	6.455	472.0 -> 427.0	133378	20.00 µg/L	0.000
M6-PFDA	6.989	519.0 -> 474.0	110123	20.00 µg/L	0.000
M7-PFUnDA	7.471	570.0 -> 525.0	142116	20.00 µg/L	0.000
M2-PFDoDA	7.893	615.0 -> 570.0	152314	20.00 µg/L	0.000
M2-PFTeDA	9.037	715.0 -> 670.0	151819	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	22729	20.00 µg/L	-0.012
M3-PFBS	3.349	302.0 -> 99.0	6447	20.00 µg/L	-0.012
M3-PFHxS	5.194	402.0 -> 99.0	6749	20.00 µg/L	-0.012
M8-PFOS	6.440	507.0 -> 99.0	12742	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	28948	20.00 µg/L	-0.012
M2-6:2FTS	5.843	429.0 -> 409.0	45851	20.00 µg/L	0.000
M2-8:2FTS	7.025	529.0 -> 509.0	46764	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	23653	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	6421	20.00 µg/L	-0.012
M3-MeFOSA	6.952	515.0 -> 169.0	6017	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	26778	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	28948	19.71 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%	
13C2-6:2FTS	5.843	429.0 -> 409.0	45851	20.51 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C2-8:2FTS	7.025	529.0 -> 509.0	46764	20.82 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.1%	
13C2-PFDoDA	7.893	615.0 -> 570.0	152314	21.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%	
13C2-PFTeDA	9.037	715.0 -> 670.0	151819	20.12 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%	
13C3-PFBS	3.349	302.0 -> 99.0	6447	19.79 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%	
13C3-PFHxS	5.194	402.0 -> 99.0	6749	19.79 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%	
13C4-PFBA	1.687	217.0 -> 172.0	35992	20.13 µg/L	-0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%	
13C4-PFHpA	5.163	367.0 -> 322.0	81617	19.99 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%	
13C5-PFHxA	4.290	318.0 -> 273.0	87041	19.91 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%	
13C5-PFPeA	3.119	268.0 -> 223.0	57242	19.70 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%	
13C6-PFDA	6.989	519.0 -> 474.0	110123	20.46 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

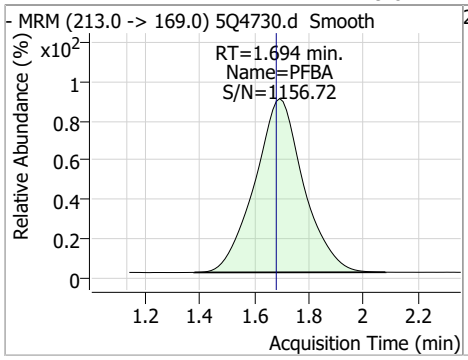
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C7-PFUnDA	7.471	570.0 -> 525.0	142116	20.18 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C8-FOSA	6.517	506.0 -> 78.0	22729	20.03 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C8-PFOA	5.857	421.0 -> 376.0	120876	19.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C8-PFOS	6.440	507.0 -> 99.0	12742	19.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.6%		
13C9-PFNA	6.455	472.0 -> 427.0	133378	20.30 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
d3-MeFOSAA	7.009	573.0 -> 419.0	23653	24.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.7%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	6421	19.12 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
d3-MeFOSA	6.952	515.0 -> 169.0	6017	19.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
d5-EtFOSAA	7.170	589.0 -> 419.0	26778	23.88 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.4%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	32633	20.14 µg/L		100
6:2FTS	5.843	427.0 -> 407.0	49443	20.33 µg/L		97
8:2FTS	7.026	527.0 -> 507.0	49978	20.05 µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	19511	20.60 µg/L		99
FOSA	6.519	498.0 -> 78.0	22881	19.56 µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	21795	20.12 µg/L		98
PFBA	1.694	213.0 -> 169.0	16800	19.82 µg/L		100
PFBS	3.354	299.0 -> 80.0	18903	19.52 µg/L		100
PFDA	6.990	513.0 -> 469.0	133938	19.80 µg/L		99
PFDoDA	7.894	613.0 -> 569.0	146823	19.65 µg/L		98
PFDS	7.431	599.0 -> 80.0	17816	18.58 µg/L		98
PFHpA	5.164	363.0 -> 319.0	107703	20.09 µg/L		100
PFHpS	5.855	449.0 -> 80.0	19480	20.33 µg/L		99
PFHxA	4.291	313.0 -> 269.0	82939	19.50 µg/L		100
PFHxS	5.195	399.0 -> 80.0	19585	19.54 µg/L	m	96
PFNA	6.456	463.0 -> 419.0	115261	19.29 µg/L		100
PFNS	6.949	549.0 -> 80.0	18774	19.96 µg/L		100
PFOA	5.858	413.0 -> 369.0	145546	19.86 µg/L		99
PFOS	6.429	499.0 -> 80.0	22419	19.98 µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	56323	19.91 µg/L		100
PFPeS	4.398	349.0 -> 80.0	14528	19.29 µg/L		99
PFTeDA	9.039	713.0 -> 669.0	161908	20.49 µg/L		99
PFTrDA	8.363	663.0 -> 619.0	174690	19.56 µg/L		99
PFUnDA	7.472	563.0 -> 519.0	141138	19.88 µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	71103	18.79 µg/L		100
9Cl-PF3ONS	6.714	531.0 -> 351.0	69320	18.22 µg/L		100
ADONA	5.261	377.0 -> 251.0	136377	19.66 µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	20893	19.29 µg/L		97
MeFOSA	6.966	512.0 -> 169.0	6323	19.51 µg/L		93
4-PFECHS	5.753	461.0 -> 381.0	41765	19.20 µg/L		98
FBSA	4.343	298.0 -> 78.0	29310	20.30 µg/L		100
FHxSA	5.674	398.0 -> 78.0	23586	19.18 µg/L		100

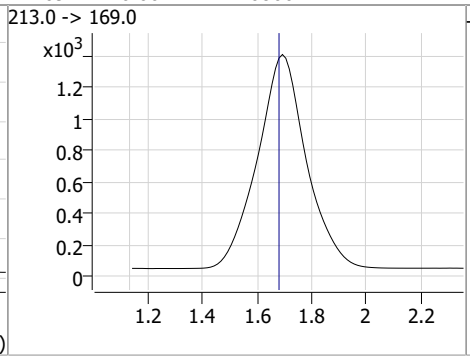
 # = Qualifier out of range, m = manually integrated, + = Area summed

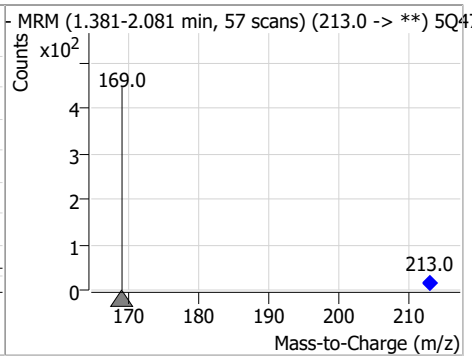
Perfluorinated Compounds by LC/MS/MS



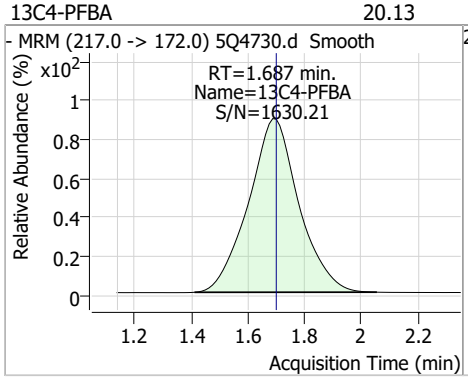
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.82	1.69	0.00	16800				

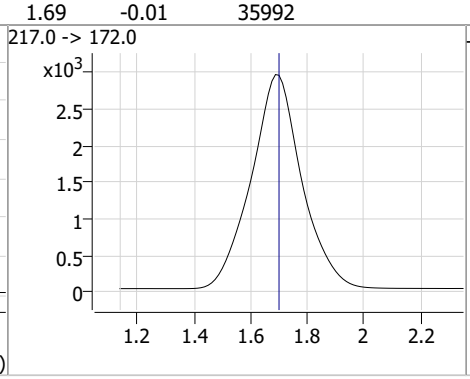


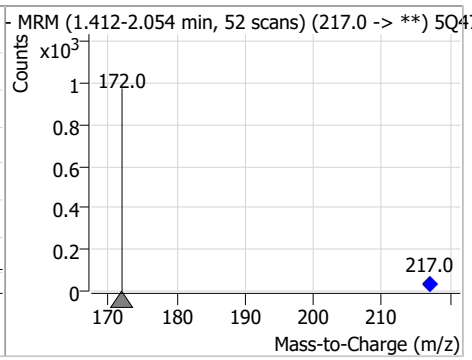




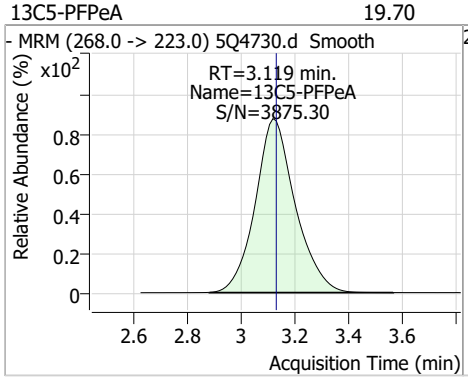
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.13	1.69	-0.01	35992				

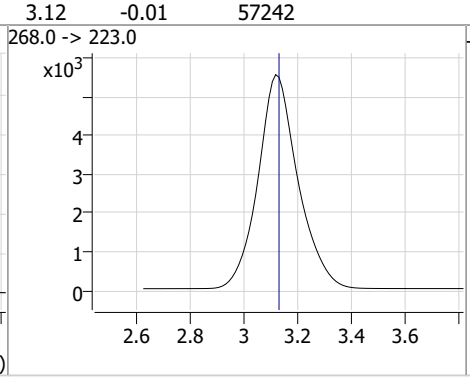


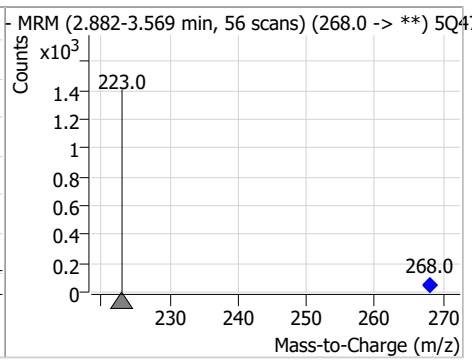




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.70	3.12	-0.01	57242				

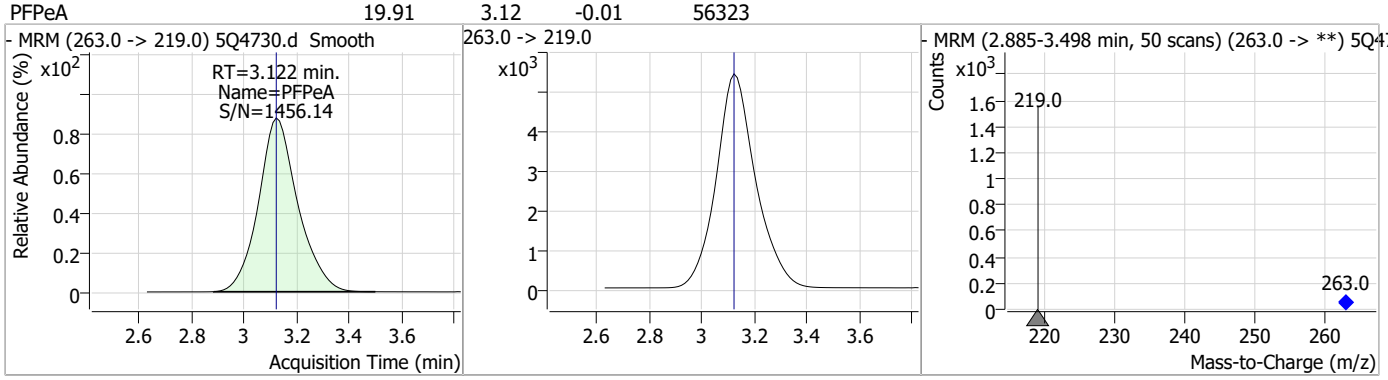




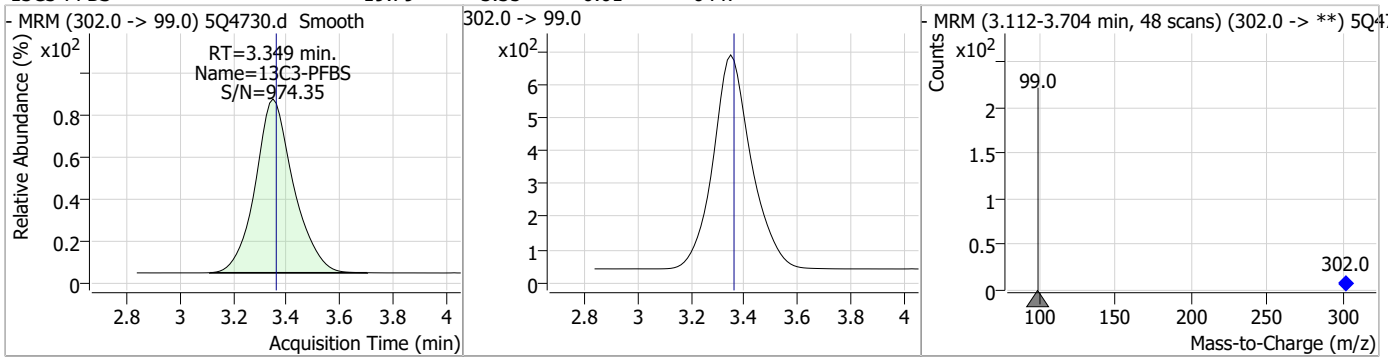


Perfluorinated Compounds by LC/MS/MS

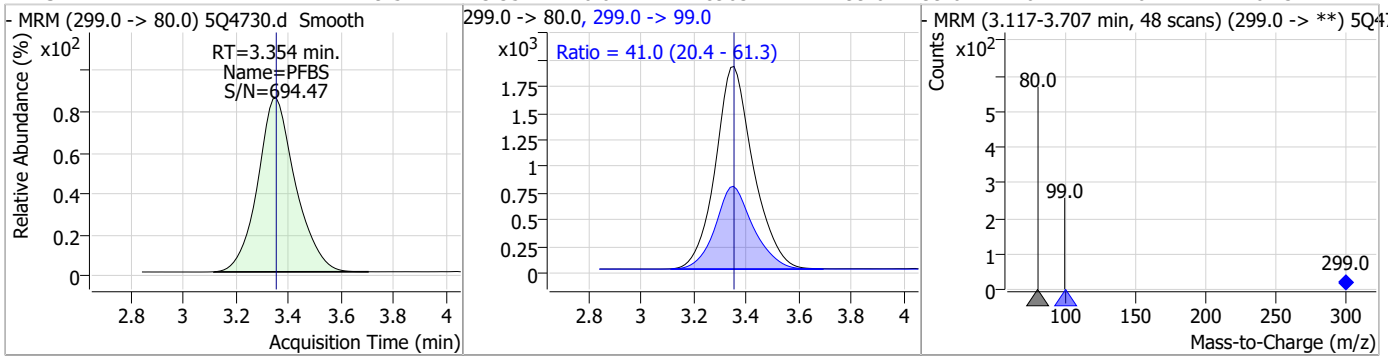
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.91	3.12	-0.01	56323				



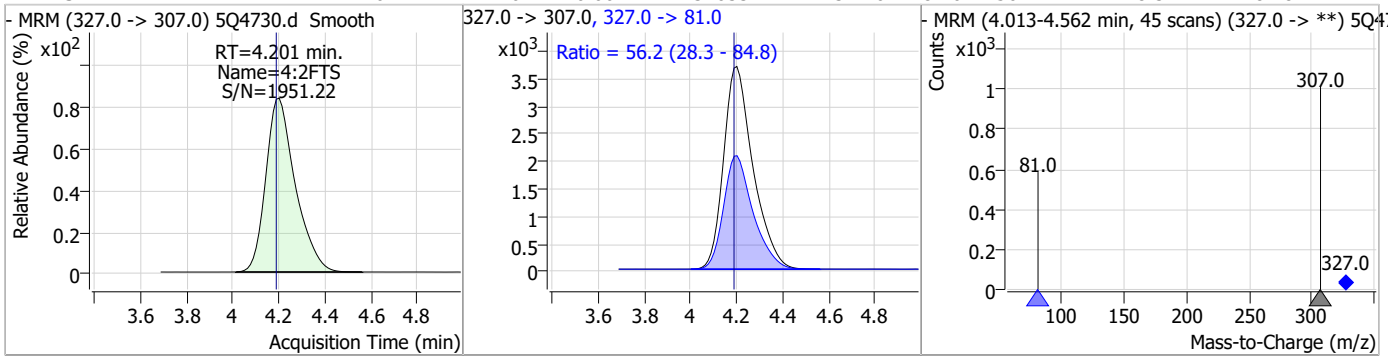
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.79	3.35	-0.01	6447				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.52	3.35	-0.01	18903	299.0 -> 99.0	41.0	20.4	61.3

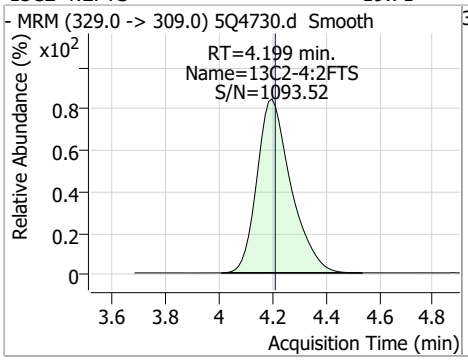


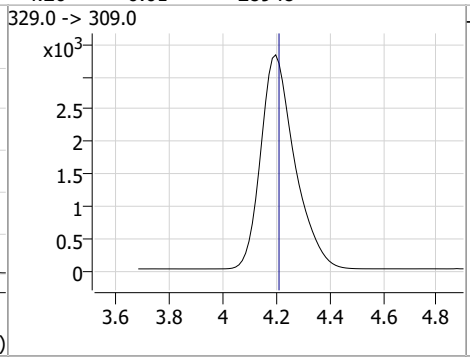
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.14	4.20	0.00	32633	327.0 -> 81.0	56.2	28.3	84.8

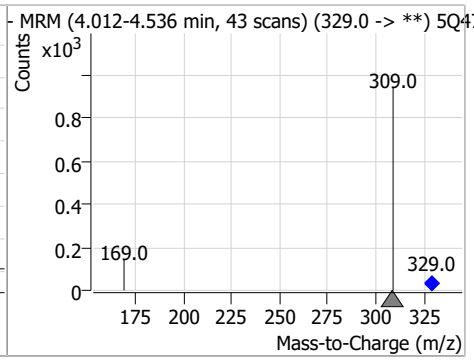


Perfluorinated Compounds by LC/MS/MS

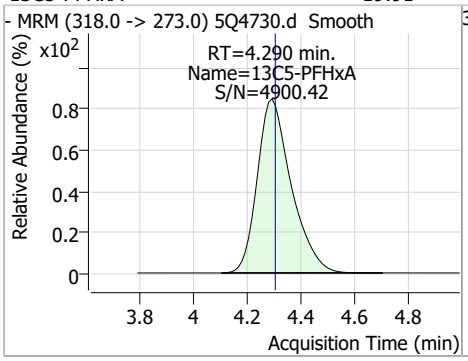
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.71	4.20	-0.01	28948				

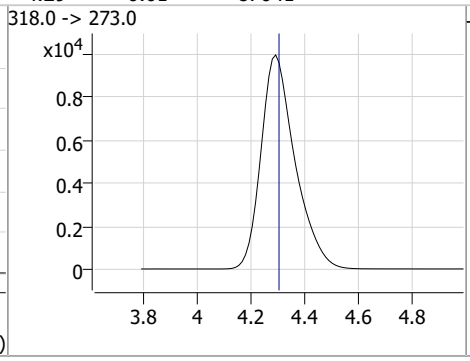


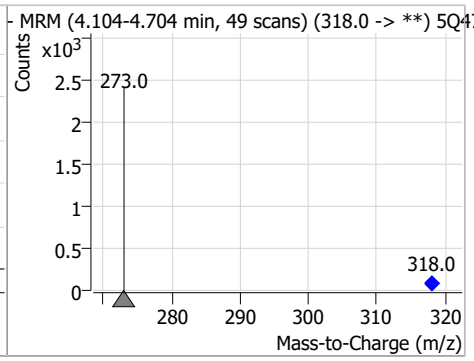




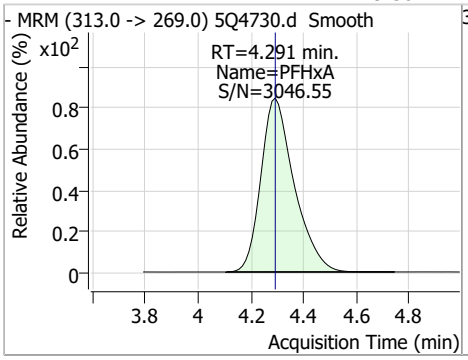
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.91	4.29	-0.01	87041				

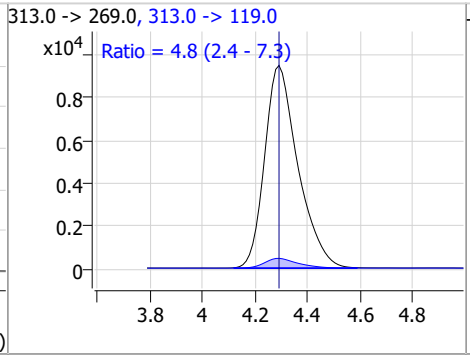


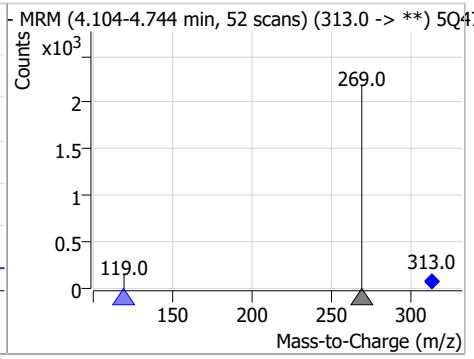




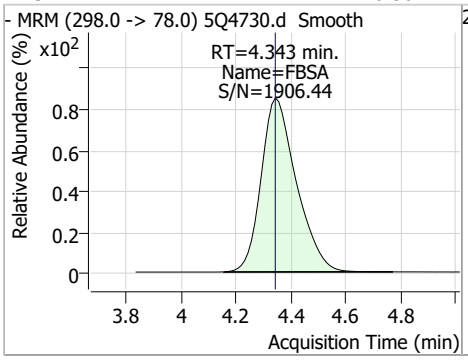
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.50	4.29	-0.01	82939	313.0 -> 119.0	4.8	2.4	7.3

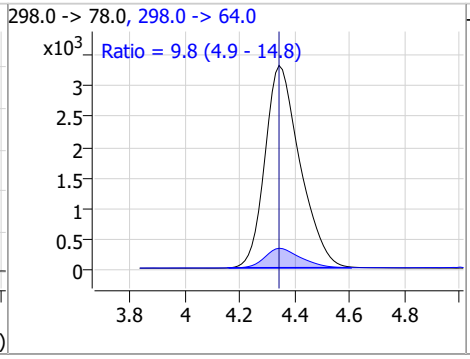


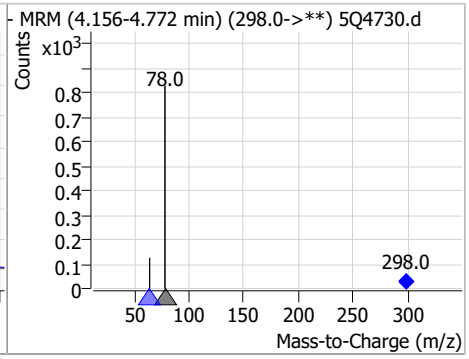




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.30	4.34	-0.01	29310	298.0 -> 64.0	9.8	4.9	14.8

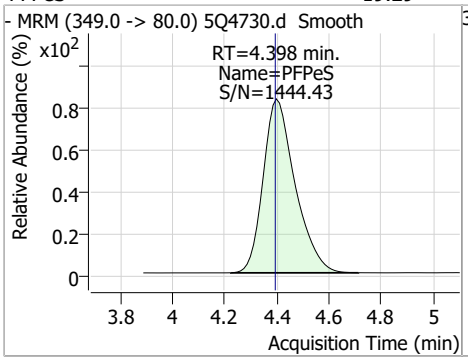


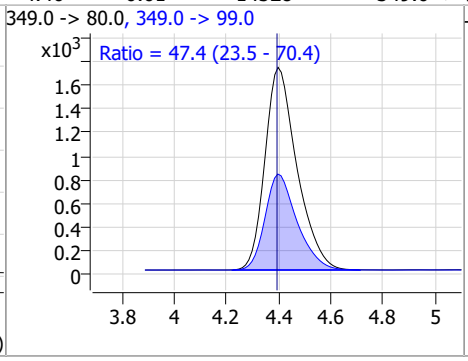


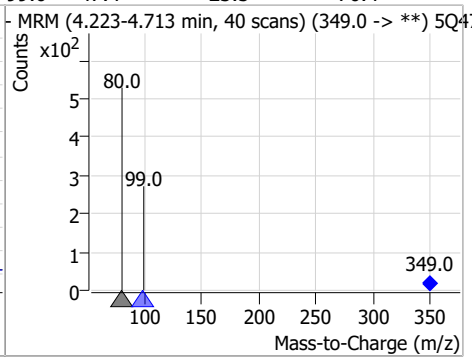


Perfluorinated Compounds by LC/MS/MS

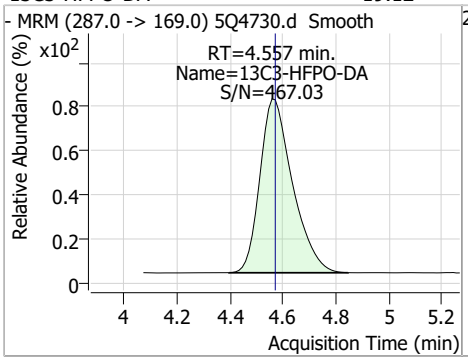
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.29	4.40	-0.01	14528	349.0 -> 99.0	47.4	23.5	70.4

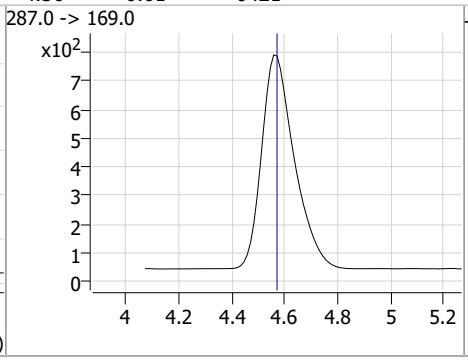


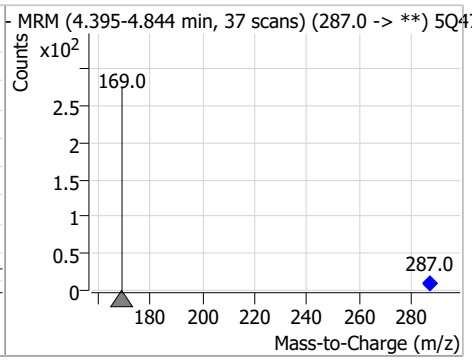




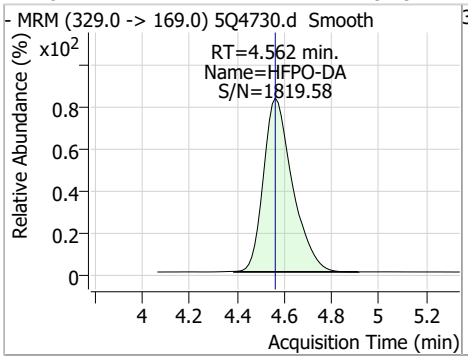
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.12	4.56	-0.01	6421				

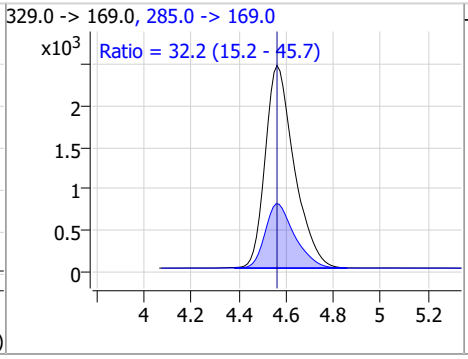


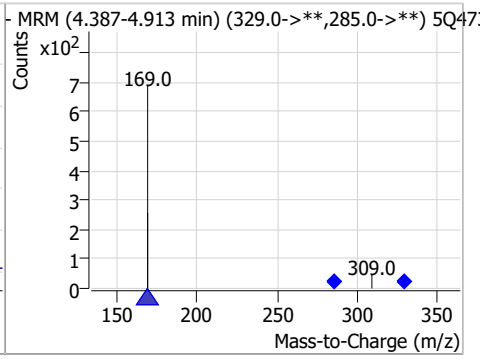




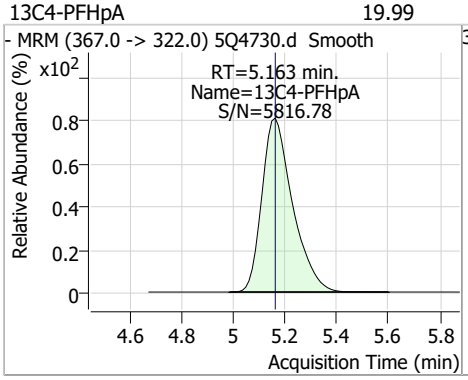
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.29	4.56	-0.01	20893	285.0 -> 169.0	32.2	15.2	45.7

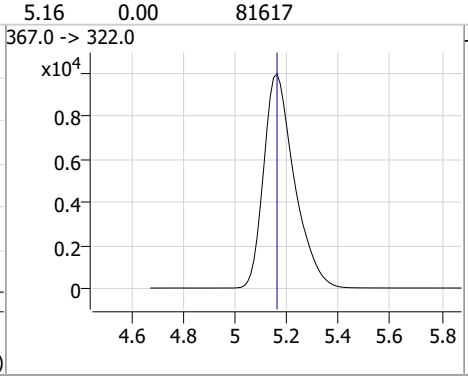


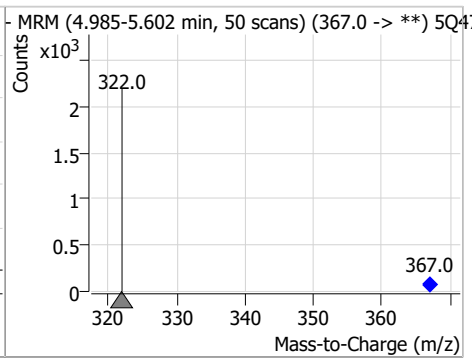




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.99	5.16	0.00	81617				

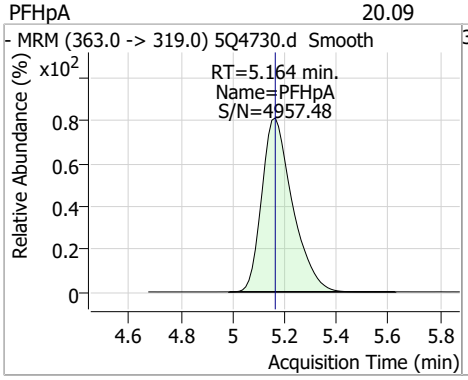


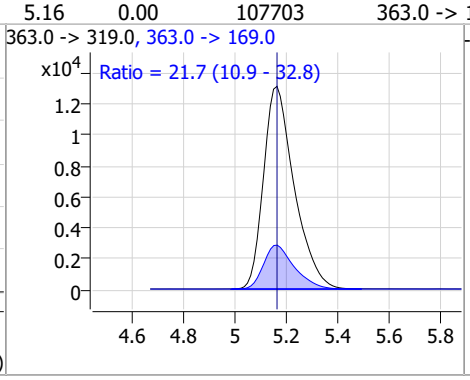


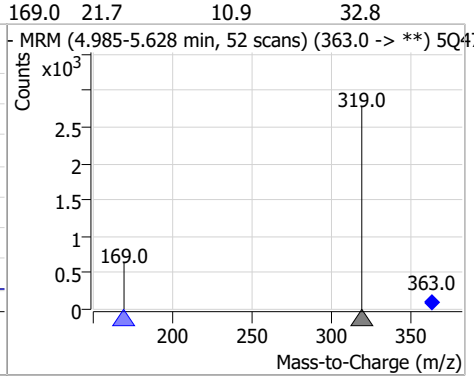


Perfluorinated Compounds by LC/MS/MS

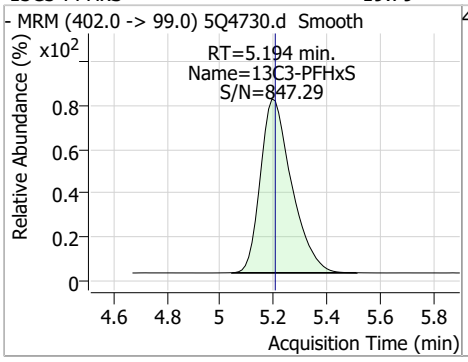
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.09	5.16	0.00	107703	363.0 -> 169.0	21.7	10.9	32.8

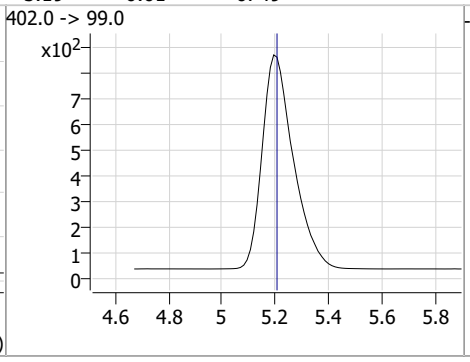


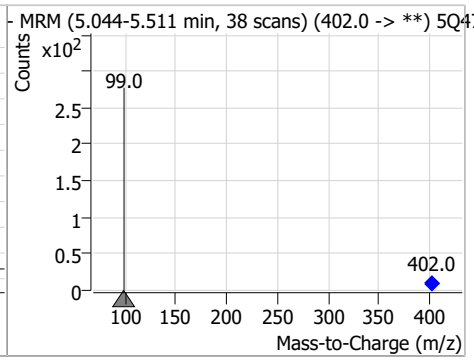




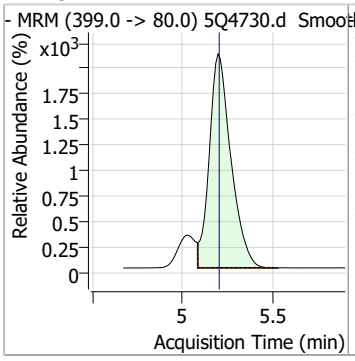
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.79	5.19	-0.01	6749				

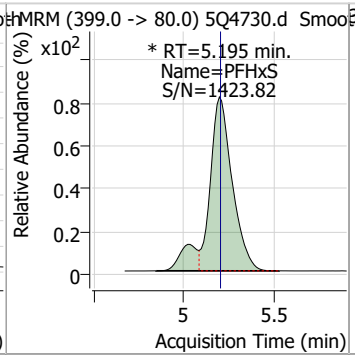


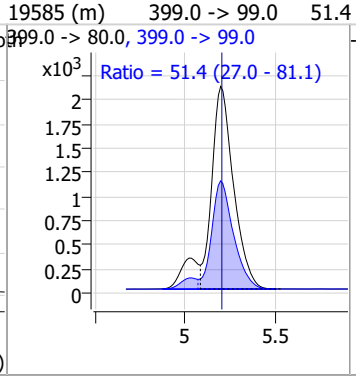


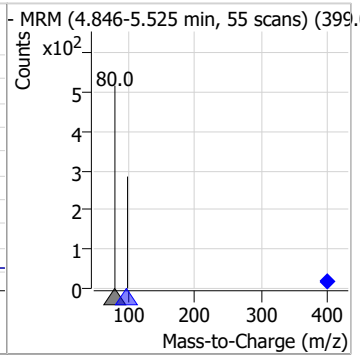


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.54	5.20	-0.01	19585 (m)	399.0 -> 99.0	51.4	27.0	81.1

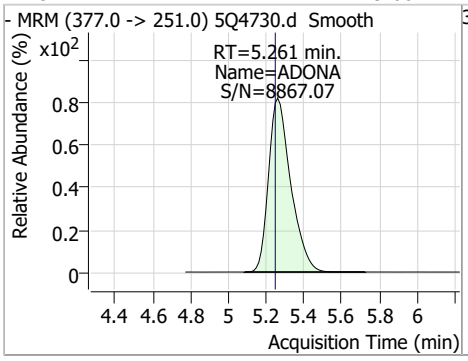


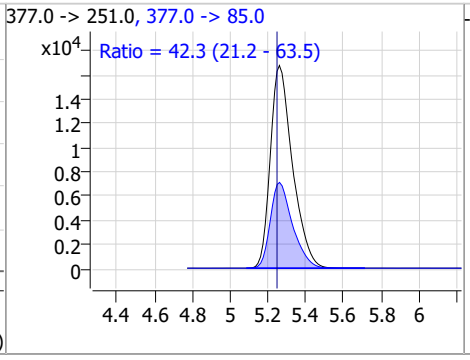


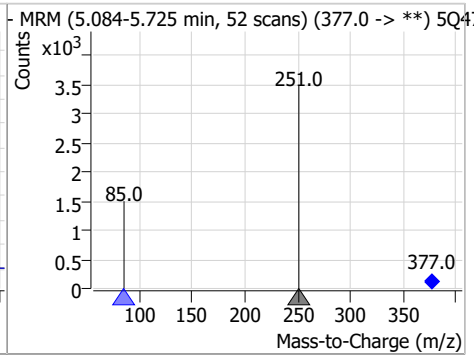




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.66	5.26	0.00	136377	377.0 -> 85.0	42.3	21.2	63.5

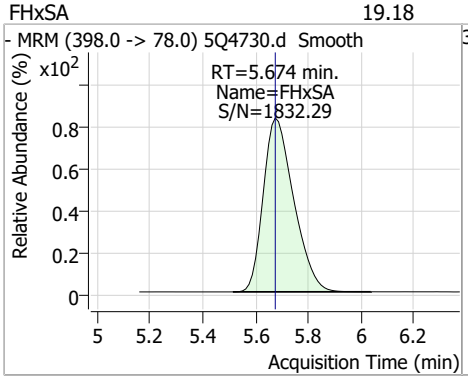


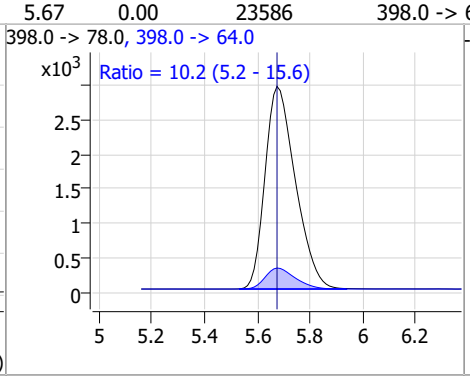


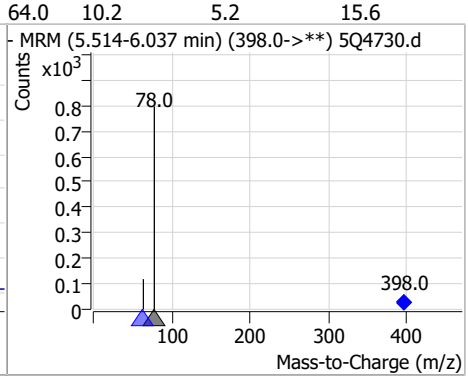


Perfluorinated Compounds by LC/MS/MS

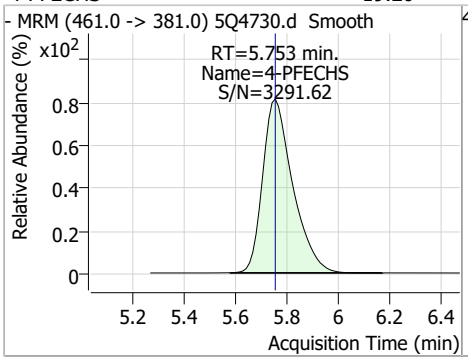
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.18	5.67	0.00	23586	398.0 -> 64.0	10.2	5.2	15.6

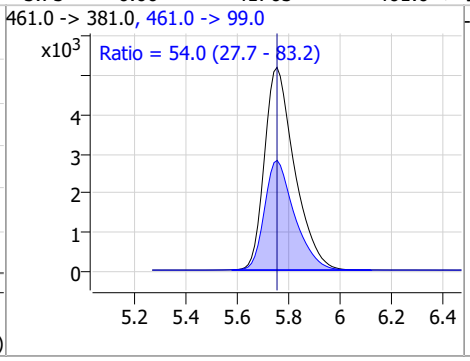


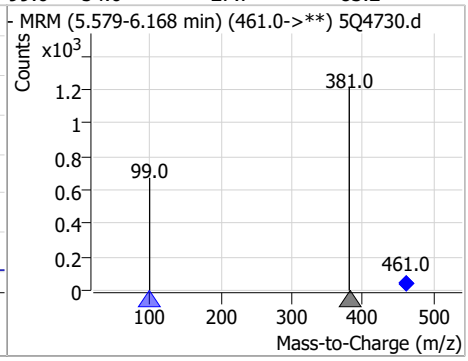




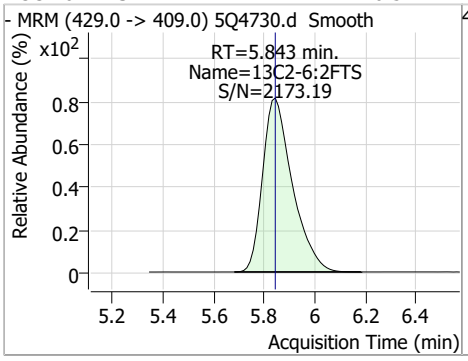
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.20	5.75	0.00	41765	461.0 -> 99.0	54.0	27.7	83.2

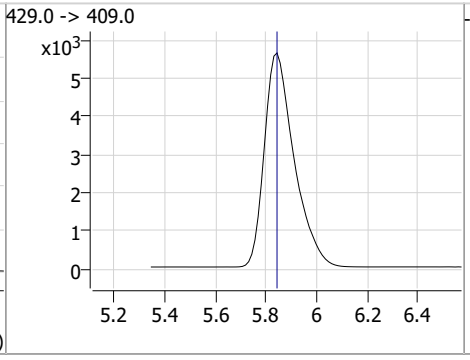


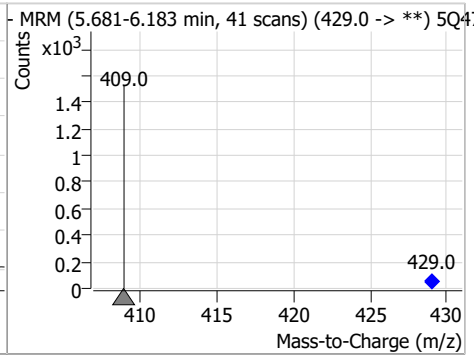




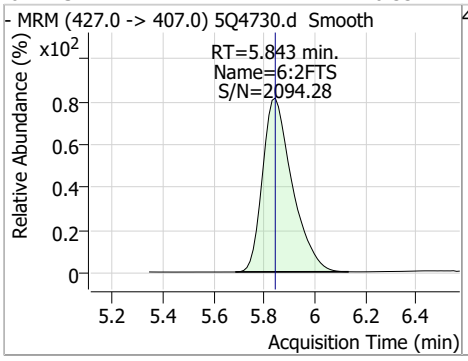
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.51	5.84	0.00	45851				

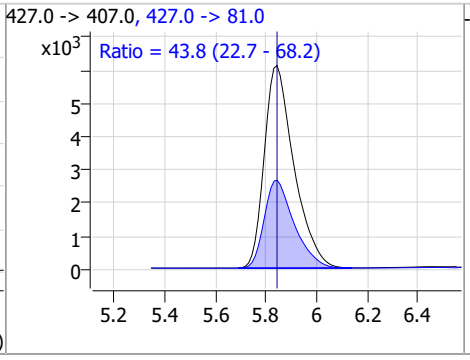


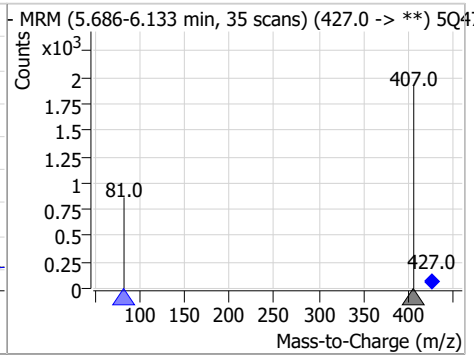




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.33	5.84	0.00	49443	427.0 -> 81.0	43.8	22.7	68.2

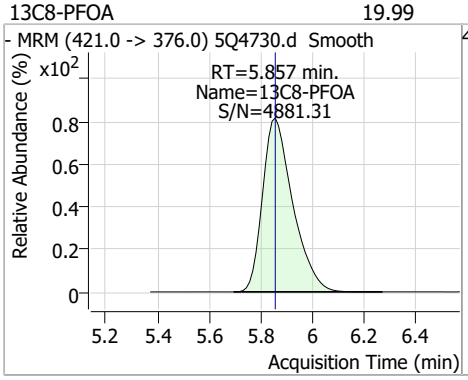


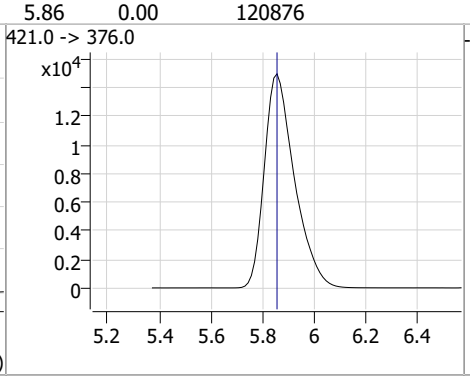


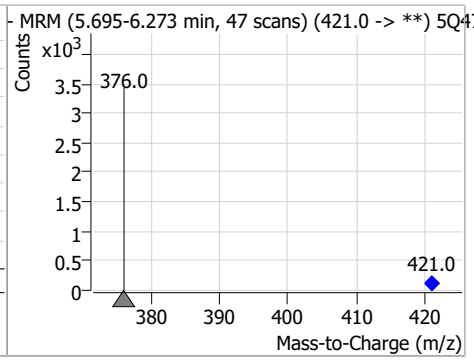


Perfluorinated Compounds by LC/MS/MS

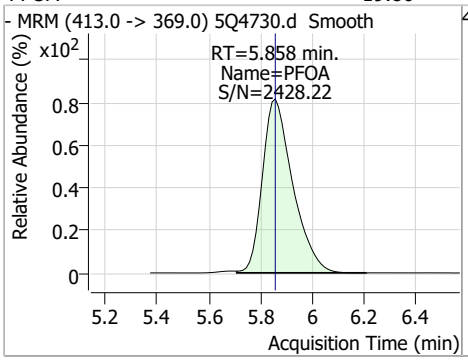
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.99	5.86	0.00	120876				

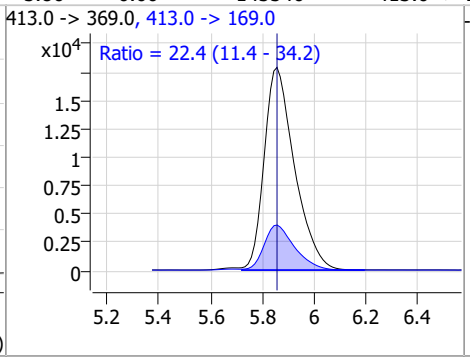


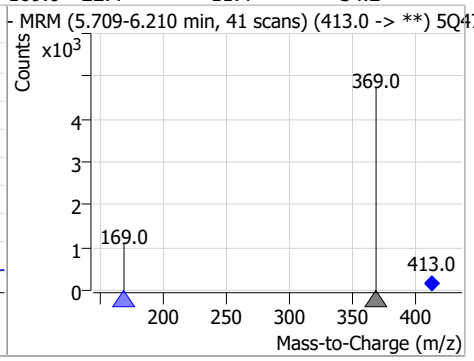




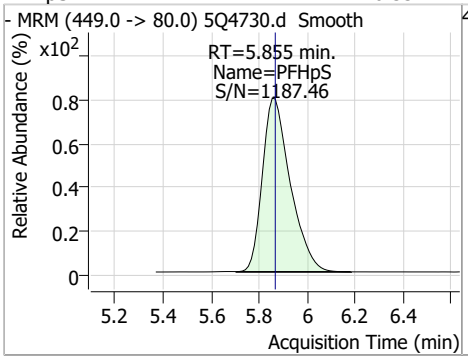
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.86	5.86	0.00	145546	413.0 -> 169.0	22.4	11.4	34.2

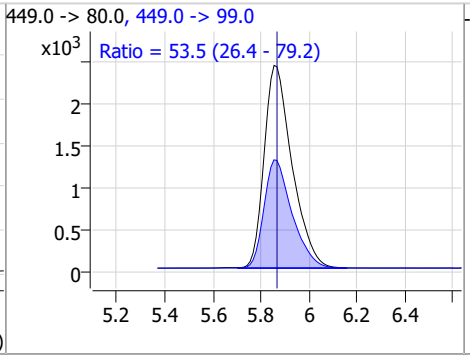


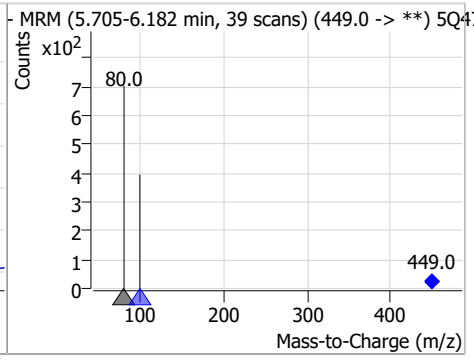




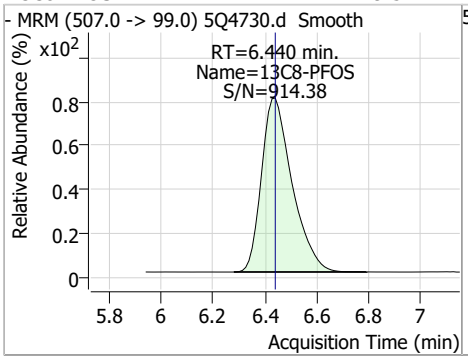
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.33	5.85	-0.01	19480	449.0 -> 99.0	53.5	26.4	79.2

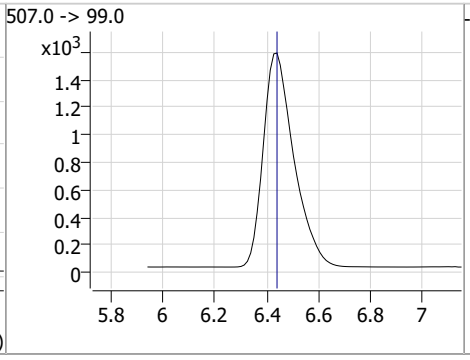


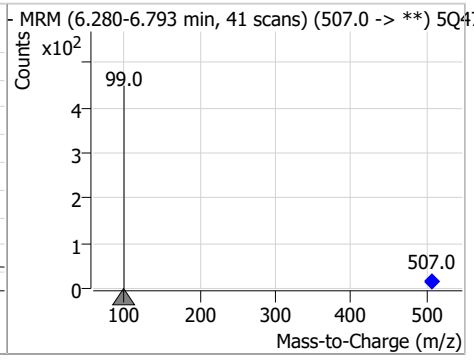




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.51	6.44	0.00	12742				

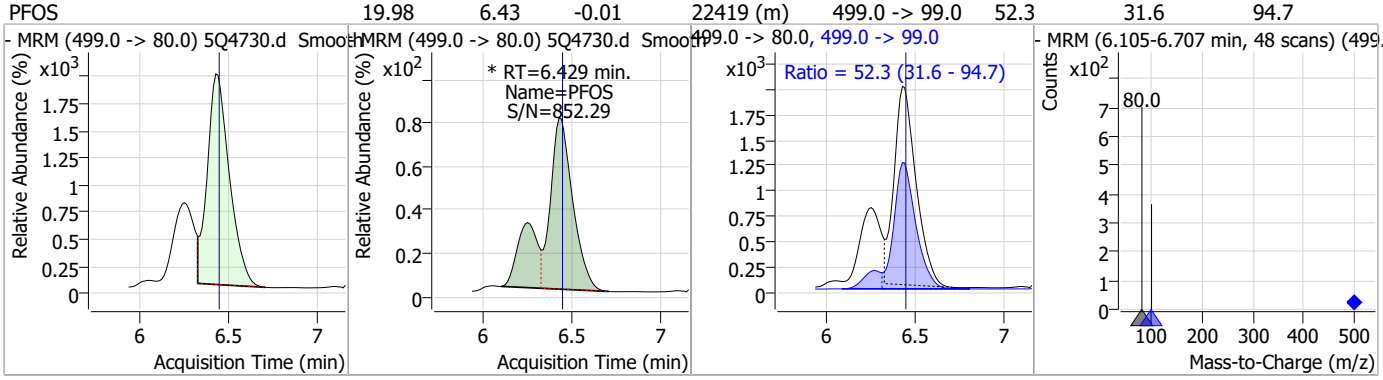




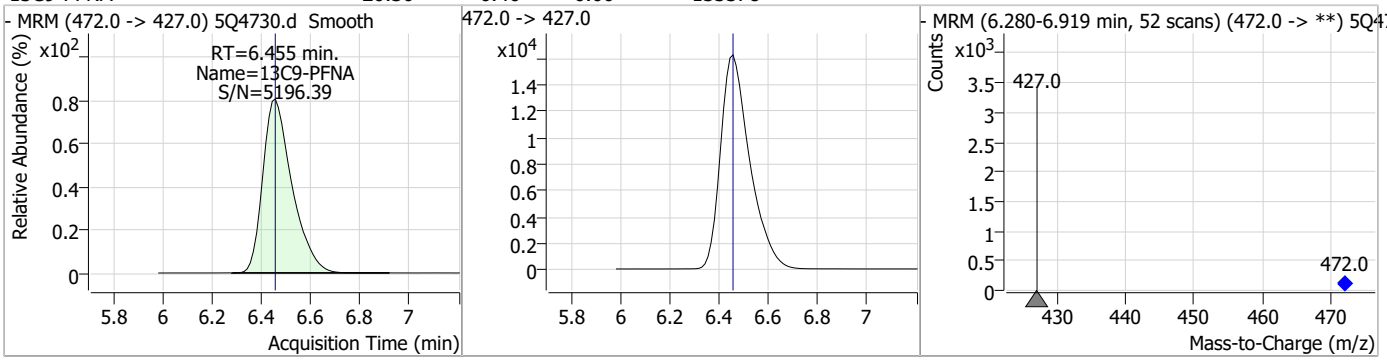


Perfluorinated Compounds by LC/MS/MS

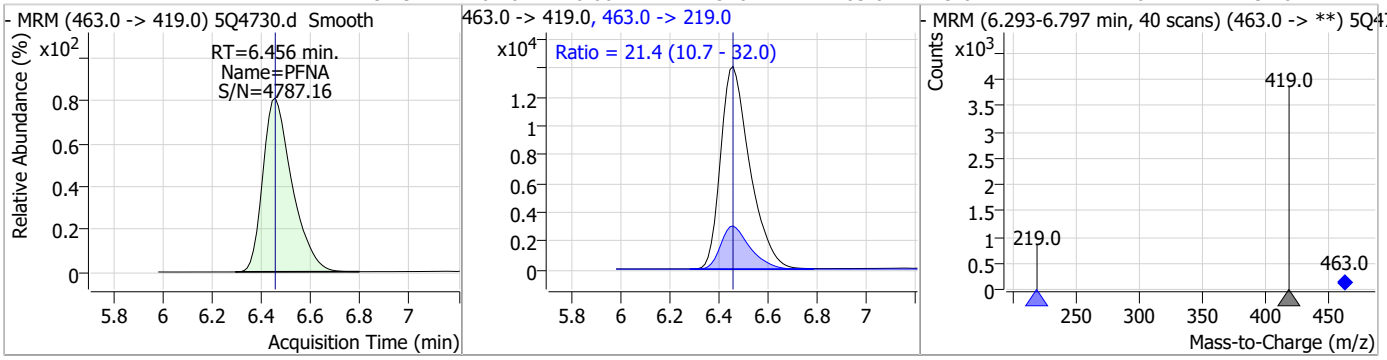
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.98	6.43	-0.01	22419 (m)	499.0 -> 99.0	52.3	31.6	94.7



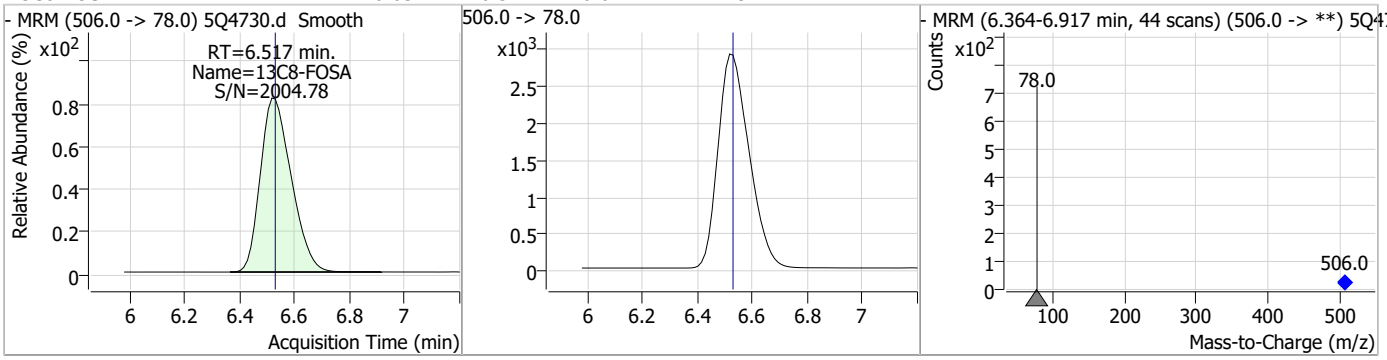
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.30	6.46	0.00	133378				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.29	6.46	0.00	115261	463.0 -> 219.0	21.4	10.7	32.0

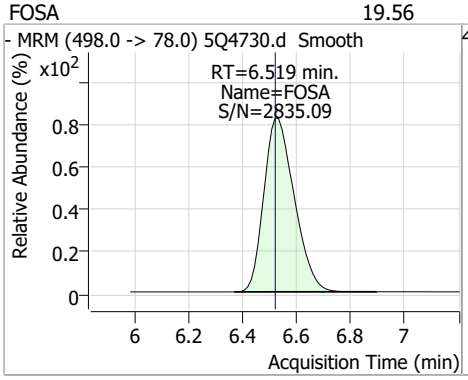


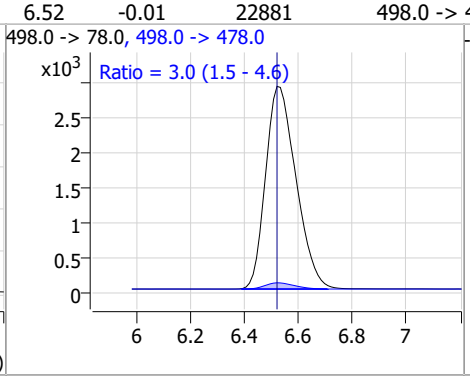
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.03	6.52	-0.01	22729				

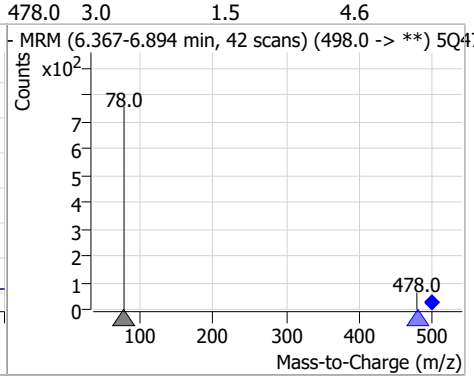


Perfluorinated Compounds by LC/MS/MS

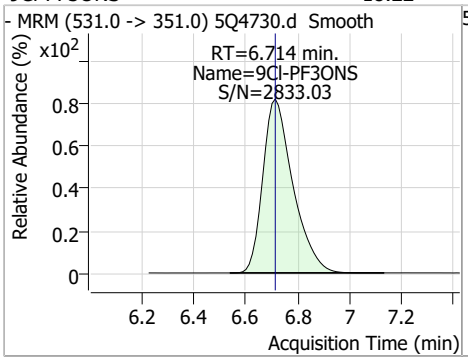
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.56	6.52	-0.01	22881	498.0 -> 478.0	3.0	1.5	4.6

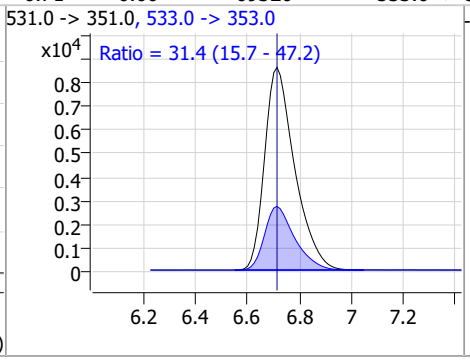


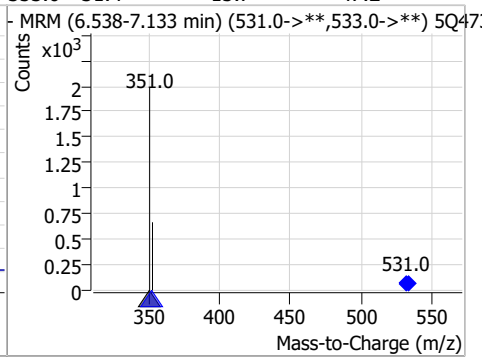




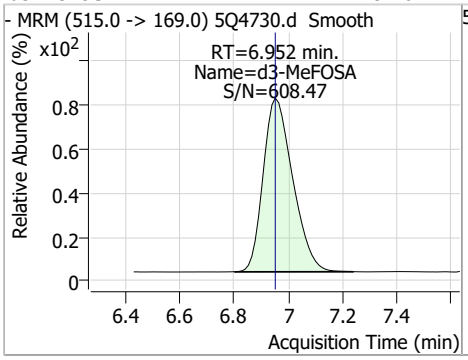
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.22	6.71	0.00	69320	533.0 -> 353.0	31.4	15.7	47.2

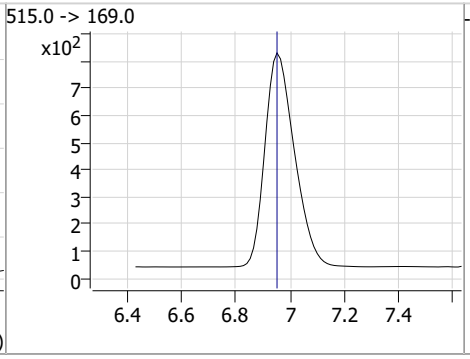


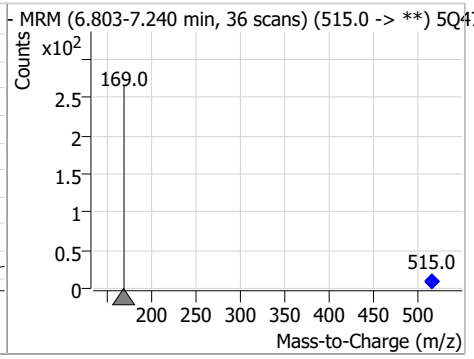




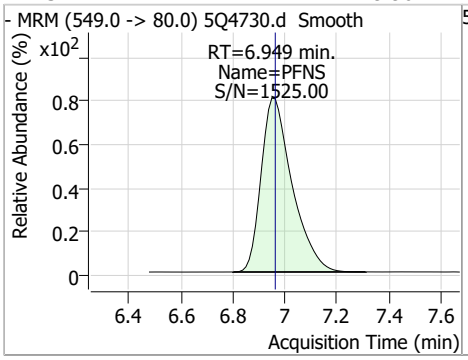
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.76	6.95	0.00	6017				

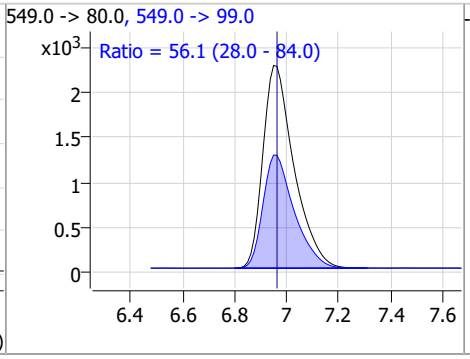


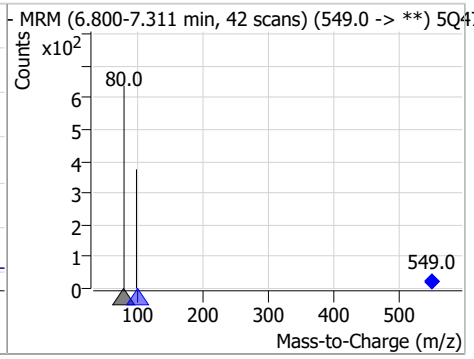




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.96	6.95	-0.01	18774	549.0 -> 99.0	56.1	28.0	84.0

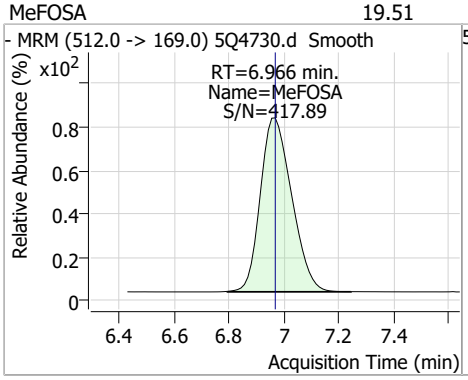


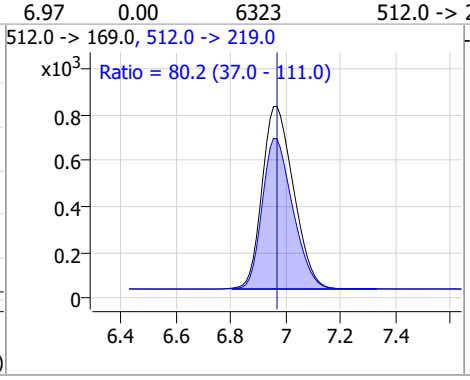


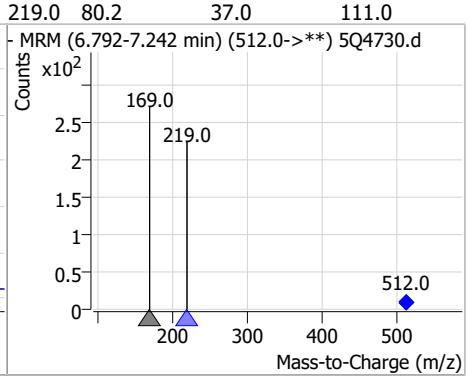


Perfluorinated Compounds by LC/MS/MS

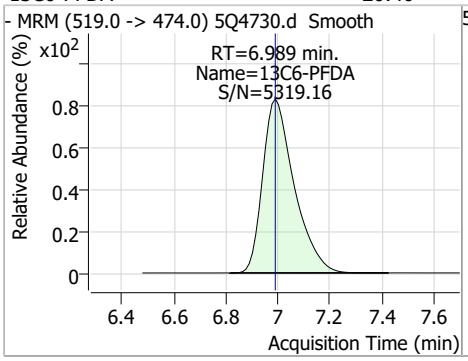
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.51	6.97	0.00	6323	512.0 -> 219.0	80.2	37.0	111.0

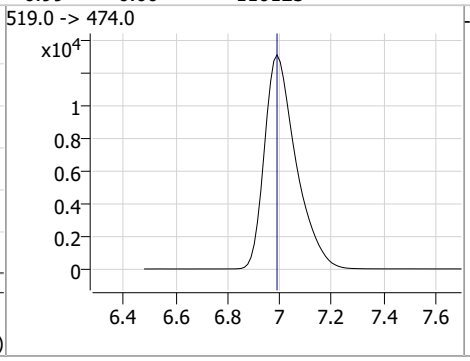


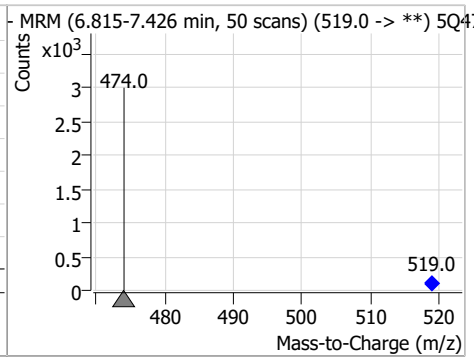




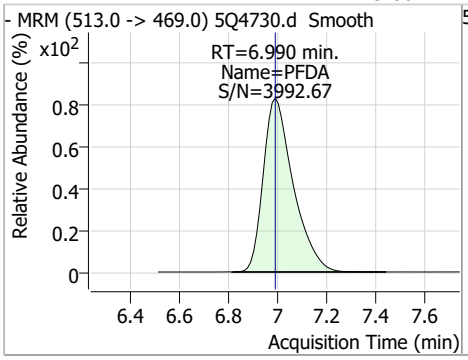
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.46	6.99	0.00	110123				

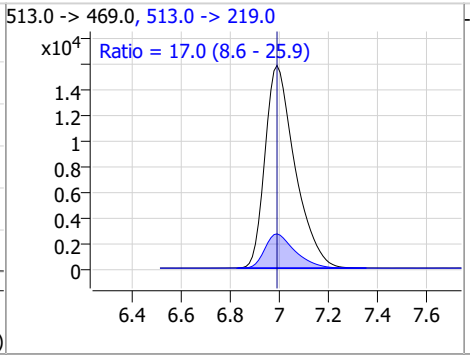


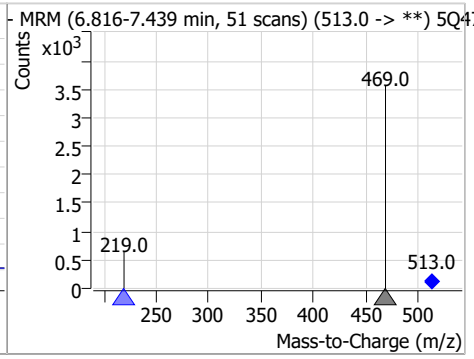




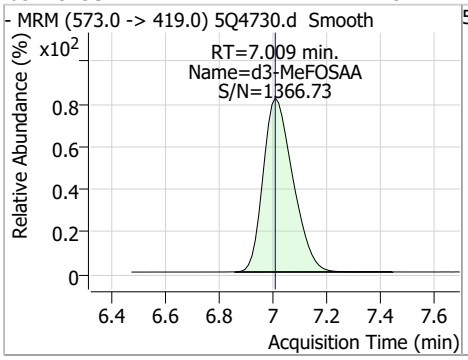
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.80	6.99	0.00	133938	513.0 -> 219.0	17.0	8.6	25.9

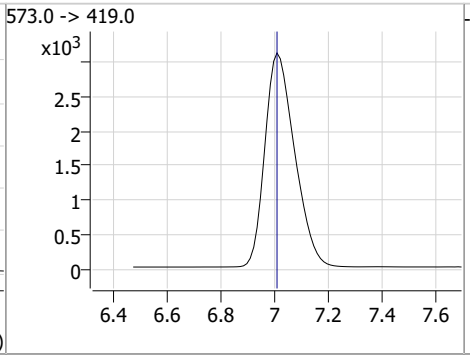


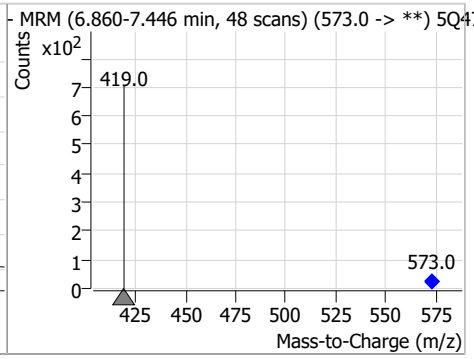




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.34	7.01	0.00	23653				

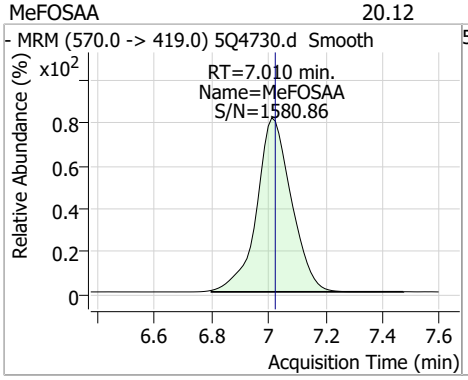


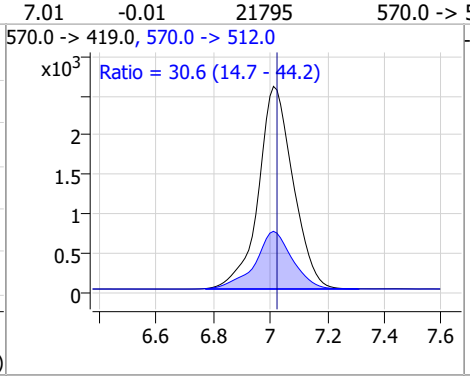


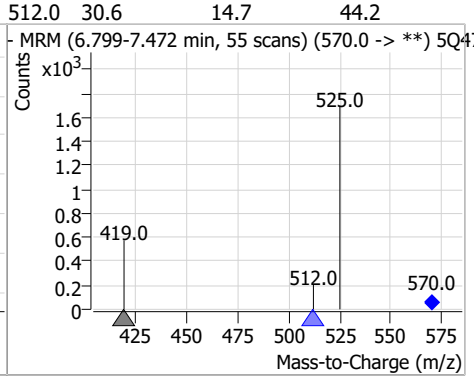


Perfluorinated Compounds by LC/MS/MS

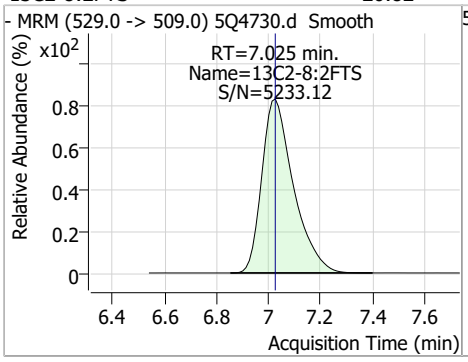
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.12	7.01	-0.01	21795	570.0 -> 512.0	30.6	14.7	44.2

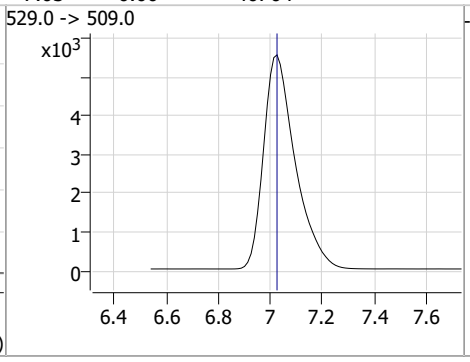


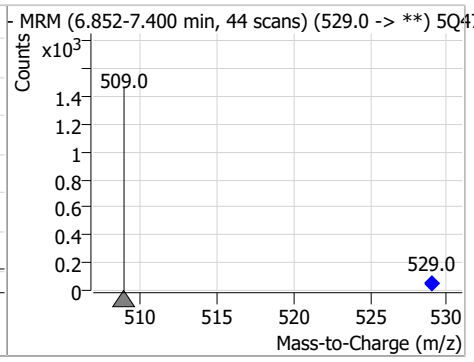




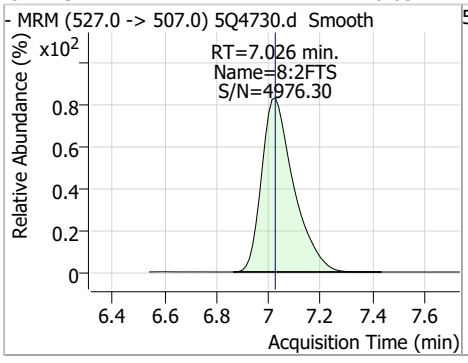
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.82	7.03	0.00	46764				

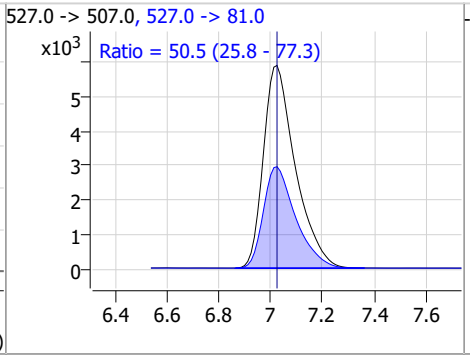


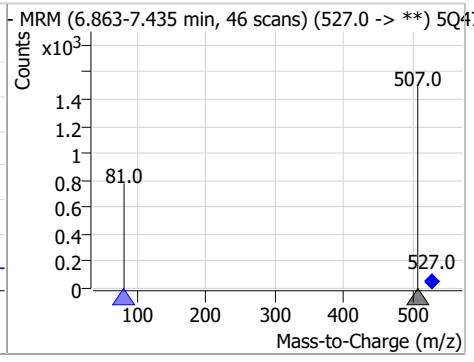




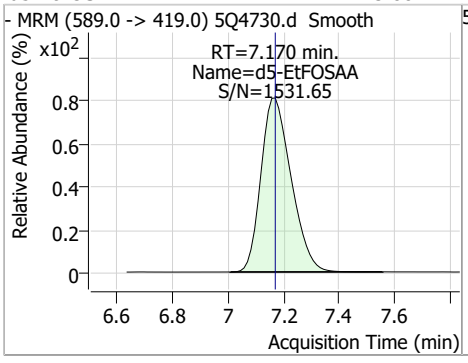
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.05	7.03	0.00	49978	527.0 -> 81.0	50.5	25.8	77.3

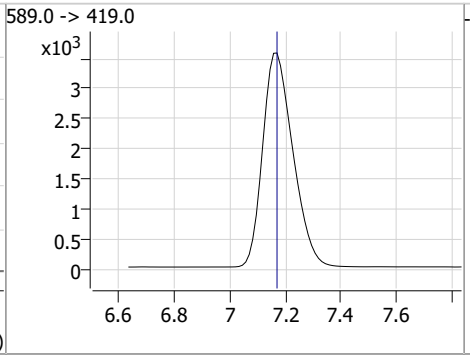


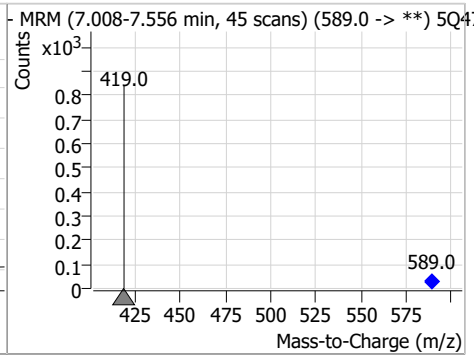




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.88	7.17	0.00	26778				

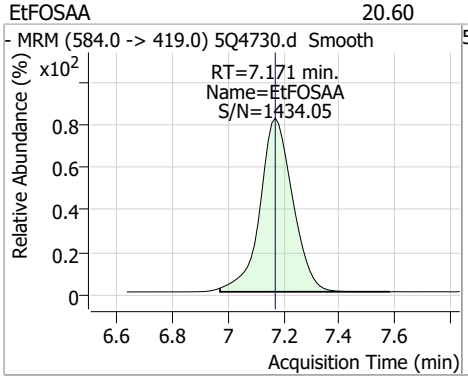


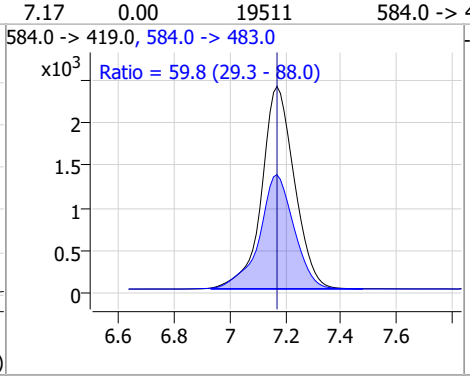


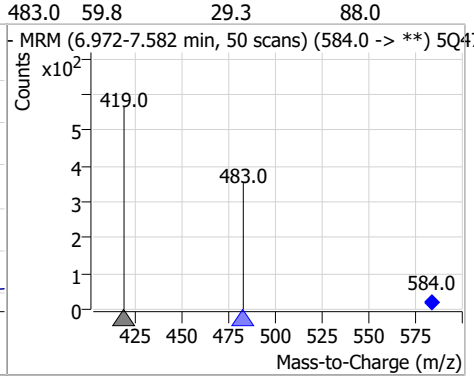


Perfluorinated Compounds by LC/MS/MS

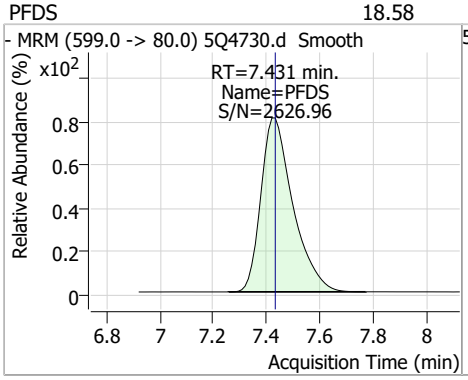
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.60	7.17	0.00	19511	584.0 -> 483.0	59.8	29.3	88.0

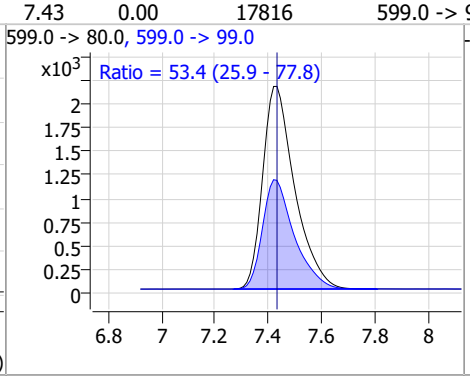


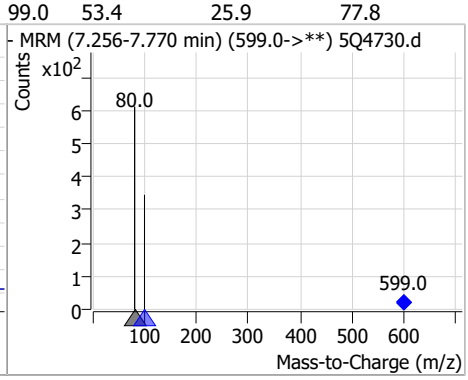




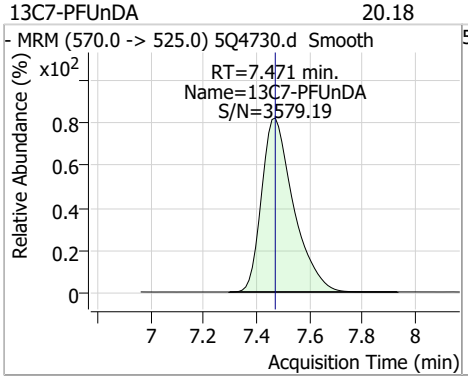
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.58	7.43	0.00	17816	599.0 -> 99.0	53.4	25.9	77.8

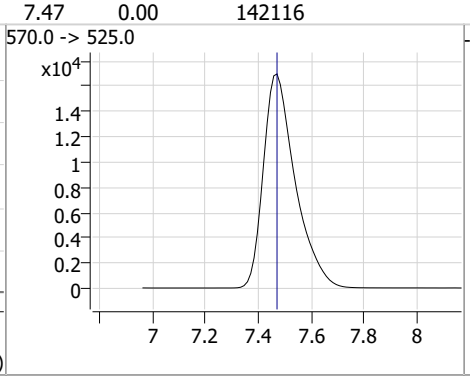


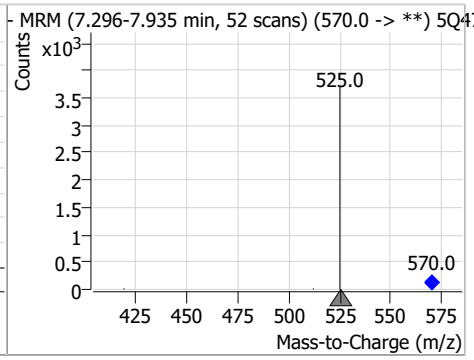




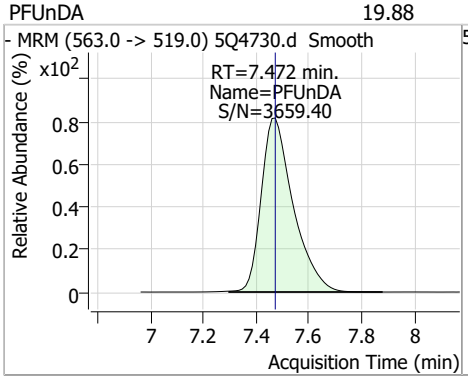
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.18	7.47	0.00	142116				

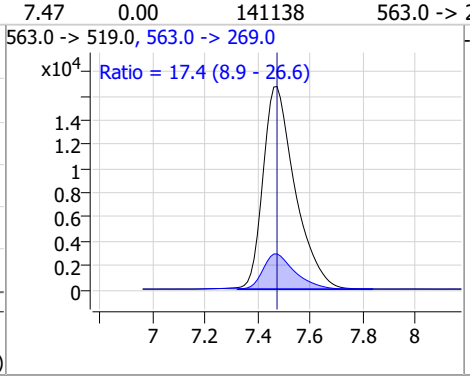


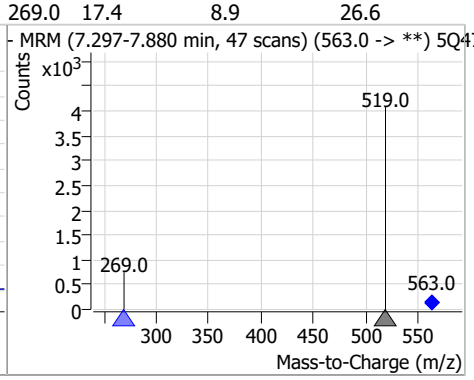




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.88	7.47	0.00	141138	563.0 -> 269.0	17.4	8.9	26.6

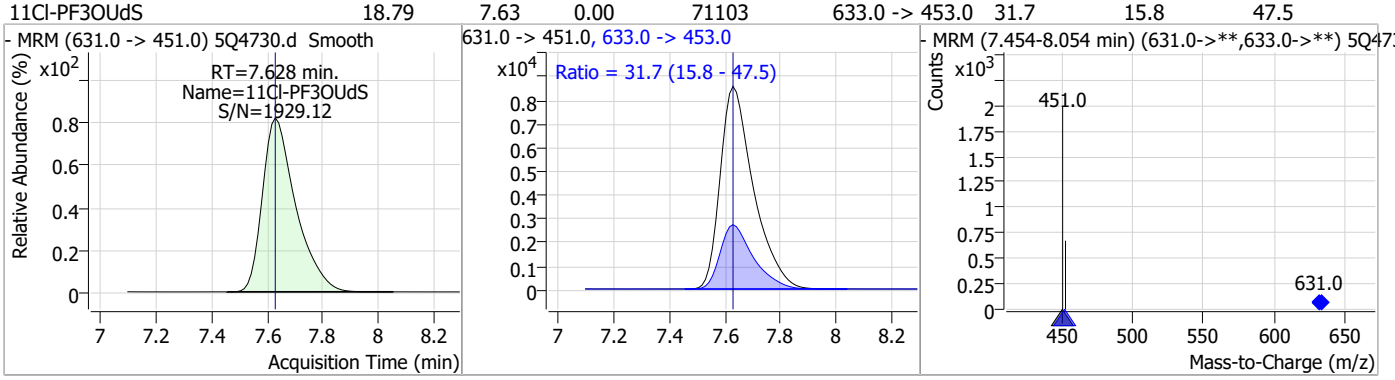




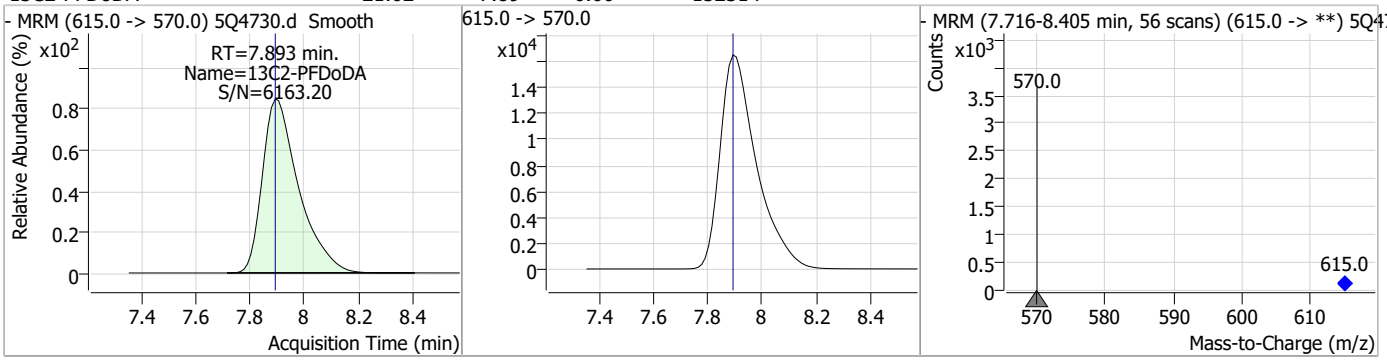


Perfluorinated Compounds by LC/MS/MS

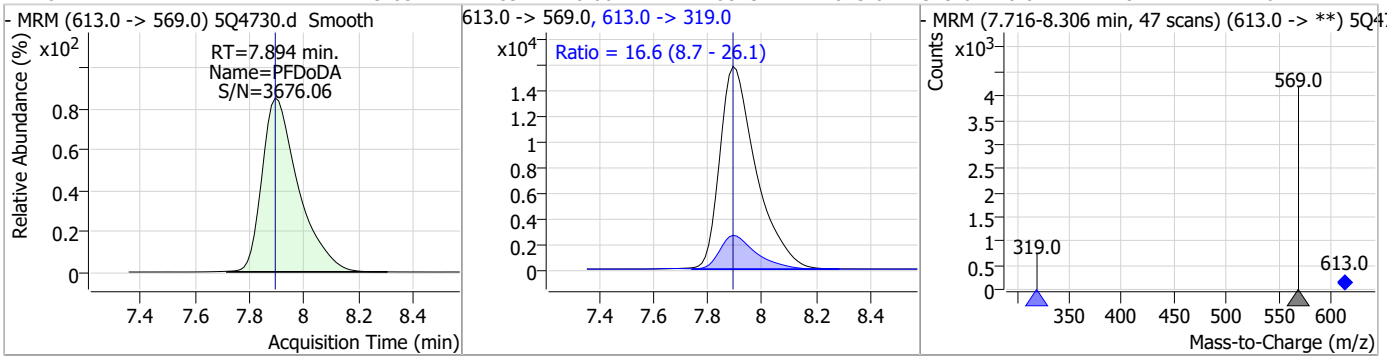
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.79	7.63	0.00	71103	633.0 -> 453.0	31.7	15.8	47.5



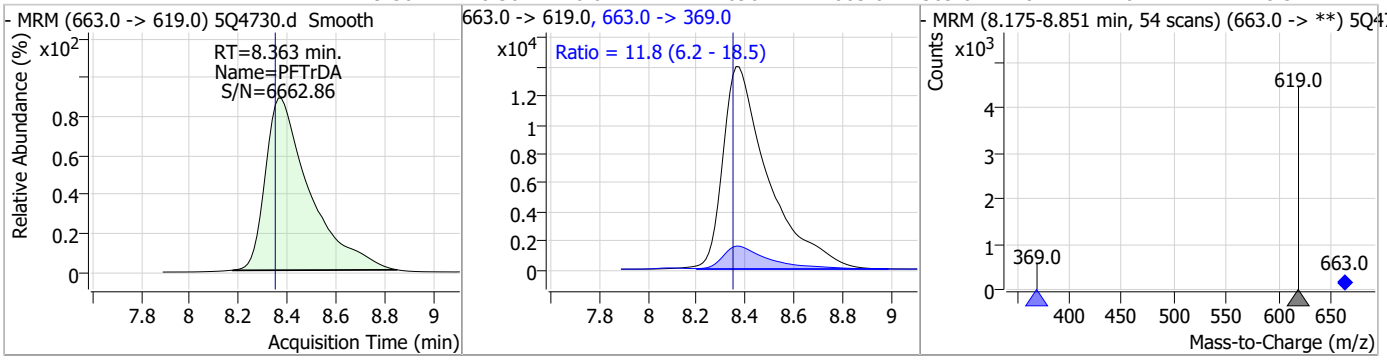
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.02	7.89	0.00	152314				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.65	7.89	0.00	146823	613.0 -> 319.0	16.6	8.7	26.1

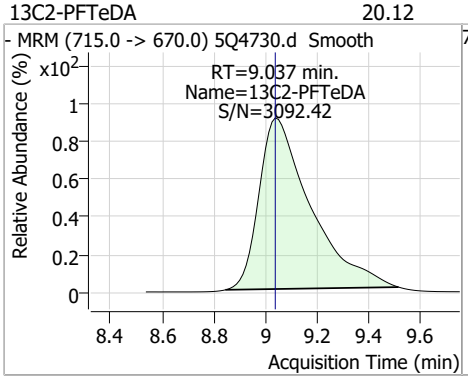


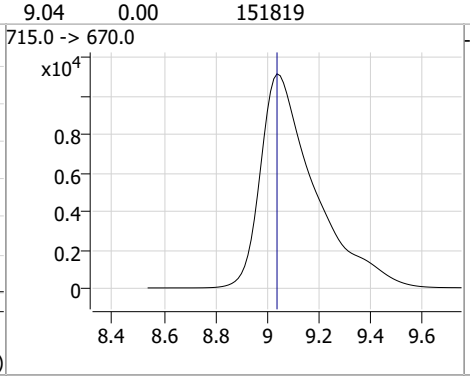
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.56	8.36	0.01	174690	663.0 -> 369.0	11.8	6.2	18.5

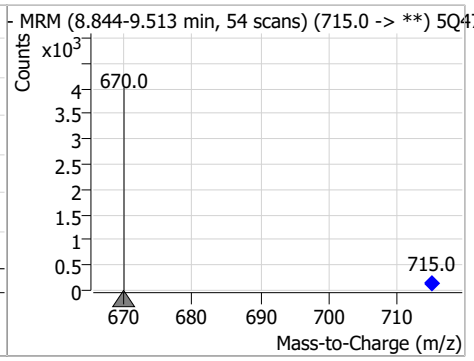


Perfluorinated Compounds by LC/MS/MS

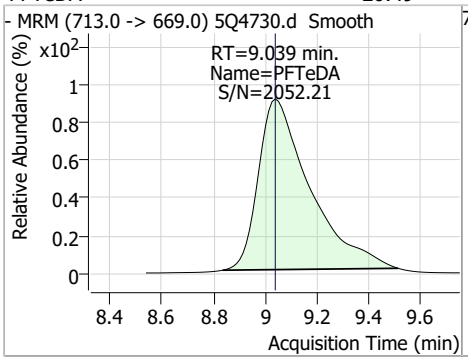
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.12	9.04	0.00	151819				

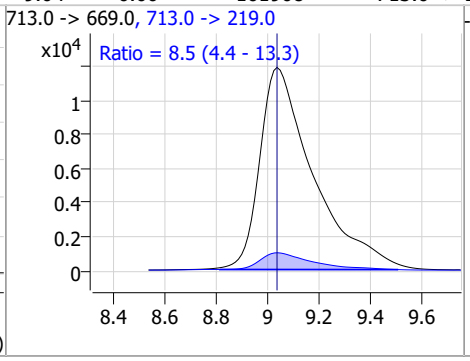


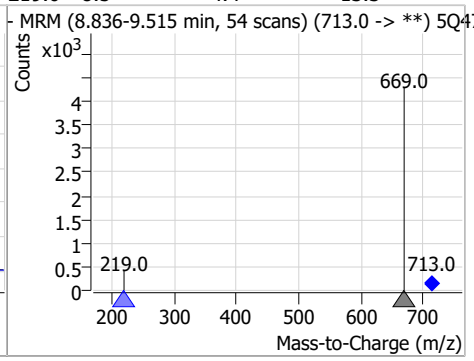




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.49	9.04	0.00	161908	713.0 -> 219.0	8.5	4.4	13.3







7.7.58

Manual Integration Approval Summary

Sample Number: S5Q72-ECC71
Lab FileID: 5Q4730.D
Injection Time: 09/16/22 08:58
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 13:43 Anna Ludwig
Supervisor approved: 09/16/22 18:53 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS5Q
MS Model	G6470B
MS Instrument Serial	SG2221G211
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	16 September 2022 09:30:51
File Path	D:\MassHunter\Tune\QQQ\G6470B\atunes.TUNE.XML
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.29E+0 [R] (Torr); 4.29E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	300
Gas Flow (l/min)	8
Nebulizer (psi)	15
Capillary (V)	3500
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	0.70	0.67	-0.03	Pass	286439
302.00	302.01	0.01	Pass	0.70	0.70	0.00	Pass	264568
601.98	601.98	0.00	Pass	0.70	0.71	0.01	Pass	708343
1033.99	1033.99	0.00	Pass	0.70	0.68	-0.02	Pass	166068
1633.95	1633.96	0.01	Pass	0.70	0.82	0.12	Pass	2135732
2233.91	2233.91	0.00	Pass	0.70	0.69	-0.01	Pass	657850

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	0.70	0.62	-0.08	Pass	56324
112.99	112.99	0.00	Pass	0.70	0.69	-0.01	Pass	194801
302.00	301.99	-0.01	Pass	0.70	0.72	0.02	Pass	170804
601.98	601.96	-0.02	Pass	0.70	0.71	0.01	Pass	274909
1033.99	1033.99	0.00	Pass	0.70	0.71	0.01	Pass	290413
1633.95	1633.92	-0.03	Pass	0.70	0.72	0.02	Pass	513321
2233.91	2233.89	-0.02	Pass	0.70	0.71	0.01	Pass	305419

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	1.20	1.19	-0.01	Pass	344707
302.00	302.01	0.01	Pass	1.20	1.44	0.24	Pass	332691
601.98	601.97	-0.01	Pass	1.20	1.46	0.26	Pass	1024315
1033.99	1033.95	-0.04	Pass	1.20	1.07	-0.13	Pass	696179
1633.95	1633.88	-0.07	Pass	1.20	1.50	0.30	Pass	4413000
2233.91	2233.80	-0.11	Pass	1.20	1.34	0.14	Pass	3012089

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	1.20	1.14	-0.06	Pass	73841
112.99	112.97	-0.02	Pass	1.20	1.22	0.02	Pass	274408
302.00	302.00	0.00	Pass	1.20	1.28	0.08	Pass	251943
601.98	601.96	-0.02	Pass	1.20	1.38	0.18	Pass	591064
1033.99	1033.97	-0.02	Pass	1.20	1.36	0.16	Pass	869515
1633.95	1633.91	-0.04	Pass	1.20	1.33	0.13	Pass	1855253
2233.91	2233.98	0.07	Pass	1.20	1.22	0.02	Pass	1004549

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.97	-0.02	Pass	2.50	2.52	0.02	Pass	408881
302.00	301.96	-0.04	Pass	2.50	2.75	0.25	Pass	412023
601.98	601.98	0.00	Pass	2.50	2.77	0.27	Pass	1404174
1033.99	1033.97	-0.02	Pass	2.50	1.99	-0.51	Pass	2018265
1633.95	1633.94	-0.01	Pass	2.50	2.75	0.25	Pass	7578237
2233.91	2233.77	-0.14	Pass	2.50	2.49	-0.01	Pass	6660756

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.03	0.03	Pass	2.50	2.41	-0.09	Pass	96838
112.99	112.99	0.00	Pass	2.50	2.51	0.01	Pass	379980
302.00	302.00	0.00	Pass	2.50	2.56	0.06	Pass	351002
601.98	601.98	0.00	Pass	2.50	2.59	0.09	Pass	997223
1033.99	1033.97	-0.02	Pass	2.50	2.53	0.03	Pass	1872149
1633.95	1633.93	-0.02	Pass	2.50	2.51	0.01	Pass	5248624
2233.91	2233.89	-0.02	Pass	2.50	2.41	-0.09	Pass	3853781

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4815.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 12:17:23 PM
Sample Name : ic73-0.5
Vial : P1-A2
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

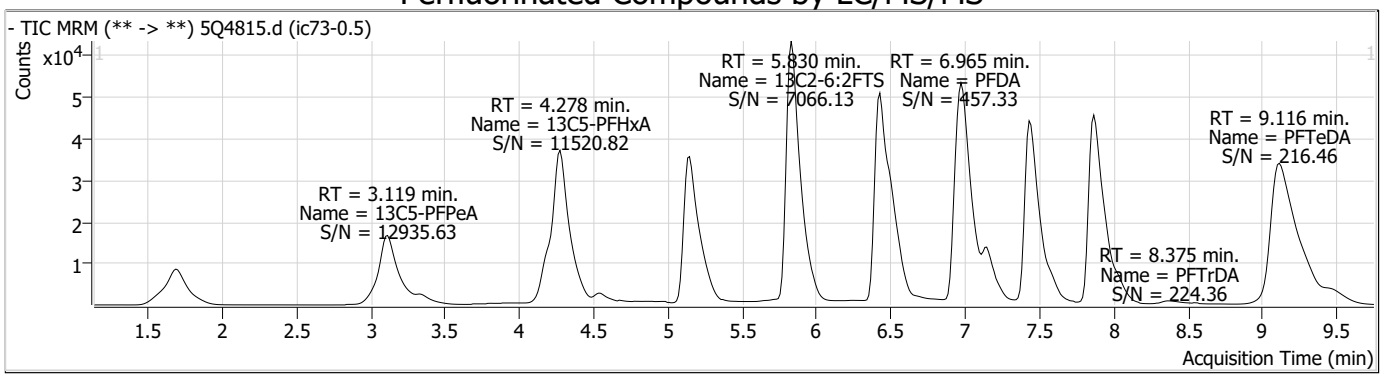
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	94596	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	148893	20.00 µg/L	0.000
M5-PFHxA	4.278	318.0 -> 273.0	240936	20.00 µg/L	-0.012
M4-PFHpA	5.149	367.0 -> 322.0	226017	20.00 µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	302144	20.00 µg/L	0.000
M9-PFNA	6.431	472.0 -> 427.0	301255	20.00 µg/L	-0.012
M6-PFDA	6.965	519.0 -> 474.0	235385	20.00 µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	291950	20.00 µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	343729	20.00 µg/L	0.000
M2-PFTeDA	9.112	715.0 -> 670.0	456299	20.00 µg/L	-0.012
M8-FOSA	6.517	506.0 -> 78.0	59093	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	16837	20.00 µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	17380	20.00 µg/L	0.000
M8-PFOS	6.414	507.0 -> 99.0	28915	20.00 µg/L	-0.014
M2-4:2FTS	4.187	329.0 -> 309.0	74161	20.00 µg/L	-0.012
M2-6:2FTS	5.830	429.0 -> 409.0	103966	20.00 µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	94617	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	45010	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	14874	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	13255	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	53646	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.187	329.0 -> 309.0	74161	23.65 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 118.2%	
13C2-6:2FTS	5.830	429.0 -> 409.0	103966	24.25 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%	
13C2-8:2FTS	7.000	529.0 -> 509.0	94617	24.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 123.1%	
13C2-PFDoDA	7.879	615.0 -> 570.0	343729	25.49 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.5%	
13C2-PFTeDA	9.112	715.0 -> 670.0	456299	26.78 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 133.9%	
13C3-PFBS	3.349	302.0 -> 99.0	16837	25.18 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.9%	
13C3-PFHxS	5.194	402.0 -> 99.0	17380	25.36 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.8%	
13C4-PFBA	1.687	217.0 -> 172.0	94596	25.65 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.2%	
13C4-PFHpA	5.149	367.0 -> 322.0	226017	25.70 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.5%	
13C5-PFHxA	4.278	318.0 -> 273.0	240936	25.48 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.4%	
13C5-PFPeA	3.119	268.0 -> 223.0	148893	25.21 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.1%	
13C6-PFDA	6.965	519.0 -> 474.0	235385	25.34 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

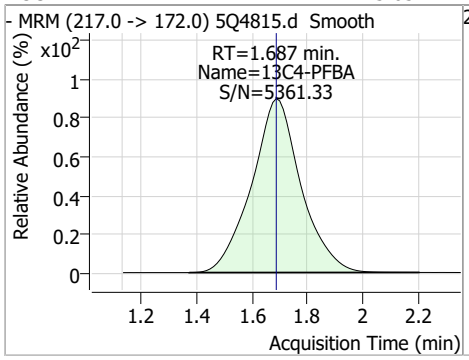
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.7%		
13C7-PFUnDA	7.446	570.0 -> 525.0	291950	25.19 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 126.0%		
13C8-FOSA	6.517	506.0 -> 78.0	59093	25.14 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.7%		
13C8-PFOA	5.845	421.0 -> 376.0	302144	25.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 128.3%		
13C8-PFOS	6.414	507.0 -> 99.0	28915	25.10 µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 125.5%		
13C9-PFNA	6.431	472.0 -> 427.0	301255	25.56 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.8%		
d3-MeFOSAA	7.009	573.0 -> 419.0	45010	26.24 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 131.2%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	14874	25.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 129.8%		
d3-MeFOSA	6.952	515.0 -> 169.0	13255	23.57 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.8%		
d5-EtFOSAA	7.157	589.0 -> 419.0	53646	25.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 127.2%		
Target Compounds						**QValue**
4:2FTS	4.189	327.0 -> 307.0	1699	0.42 µg/L		90
6:2FTS	5.831	427.0 -> 407.0	2273	0.42 µg/L		98
8:2FTS	7.001	527.0 -> 507.0	2069	0.43 µg/L		96
EtFOSAA	7.171	584.0 -> 419.0	589	0.35 µg/L		78
FOSA	6.519	498.0 -> 78.0	1080	0.36 µg/L	#	94
MeFOSAA	7.023	570.0 -> 419.0	774	0.41 µg/L		92
PFBA	1.694	213.0 -> 169.0	677	0.36 µg/L		100
PFBS	3.342	299.0 -> 80.0	937	0.37 µg/L		100
PFDA	6.965	513.0 -> 469.0	5460	0.37 µg/L		98
PFDoDA	7.880	613.0 -> 569.0	6315	0.37 µg/L		99
PFDS	7.406	599.0 -> 80.0	809	0.37 µg/L		94
PFHpA	5.150	363.0 -> 319.0	5561	0.36 µg/L		99
PFHpS	5.842	449.0 -> 80.0	830	0.35 µg/L		91
PFHxA	4.279	313.0 -> 269.0	4467	0.37 µg/L		100
PFHxS	5.183	399.0 -> 80.0	964	0.38 µg/L		93
PFNA	6.431	463.0 -> 419.0	4897	0.36 µg/L		99
PFNS	6.937	549.0 -> 80.0	769	0.36 µg/L		96
PFOA	5.845	413.0 -> 369.0	6877	0.37 µg/L		99
PFOS	6.416	499.0 -> 80.0	1159	0.45 µg/L	m	85
PFPeA	3.122	263.0 -> 219.0	2764	0.39 µg/L		100
PFPeS	4.398	349.0 -> 80.0	752	0.37 µg/L		99
PFTeDA	9.116	713.0 -> 669.0	9402	0.38 µg/L		98
PFTrDA	8.375	663.0 -> 619.0	8326	0.36 µg/L		96
PFUnDA	7.448	563.0 -> 519.0	5349	0.36 µg/L		92
11Cl-PF3OUdS	7.603	631.0 -> 451.0	3483	0.35 µg/L		98
9Cl-PF3ONS	6.689	531.0 -> 351.0	3096	0.37 µg/L		96
ADONA	5.248	377.0 -> 251.0	6813	0.36 µg/L		98
HFPO-DA	4.549	329.0 -> 169.0	993	0.38 µg/L		100
MeFOSA	6.954	512.0 -> 169.0	330	0.47 µg/L		94
4-PFECHS	5.741	461.0 -> 381.0	1881	0.37 µg/L		99
FBSA	4.343	298.0 -> 78.0	1619	0.39 µg/L		99
FHxSA	5.674	398.0 -> 78.0	1313	0.37 µg/L		96

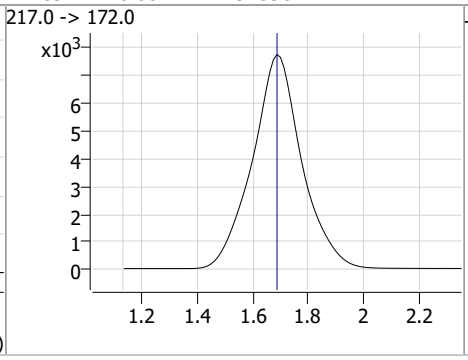
 # = Qualifier out of range, m = manually integrated, + = Area summed

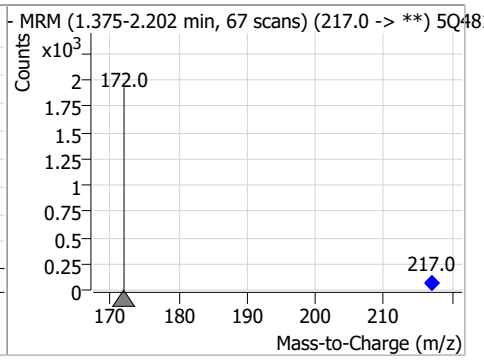
Perfluorinated Compounds by LC/MS/MS



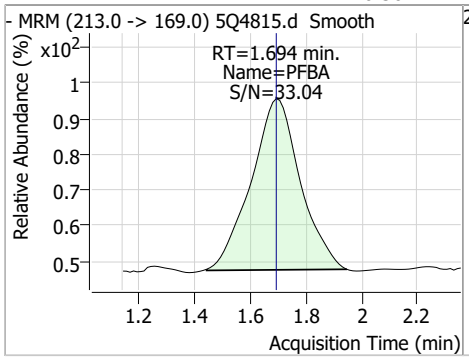
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	25.65	1.69	0.00	94596				

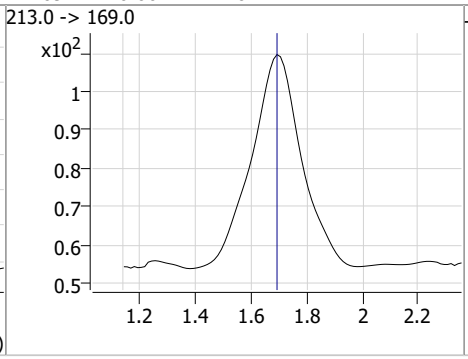


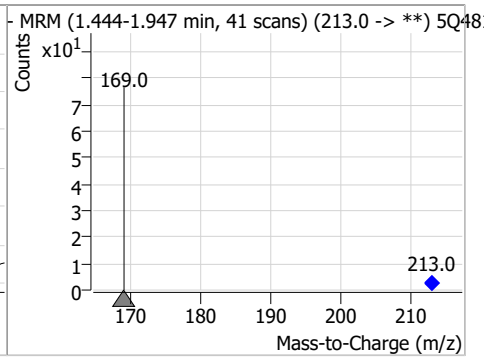




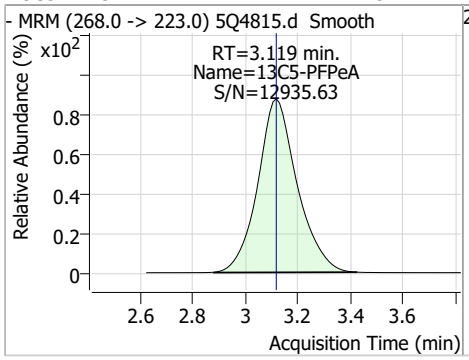
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.36	1.69	0.00	677				

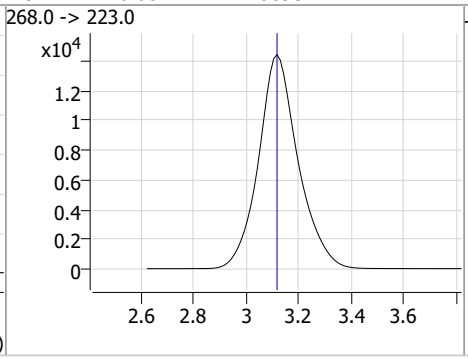


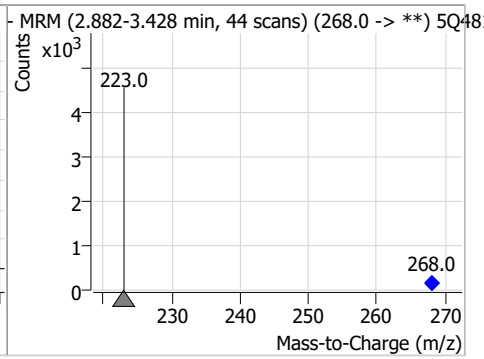




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	25.21	3.12	0.00	148893				

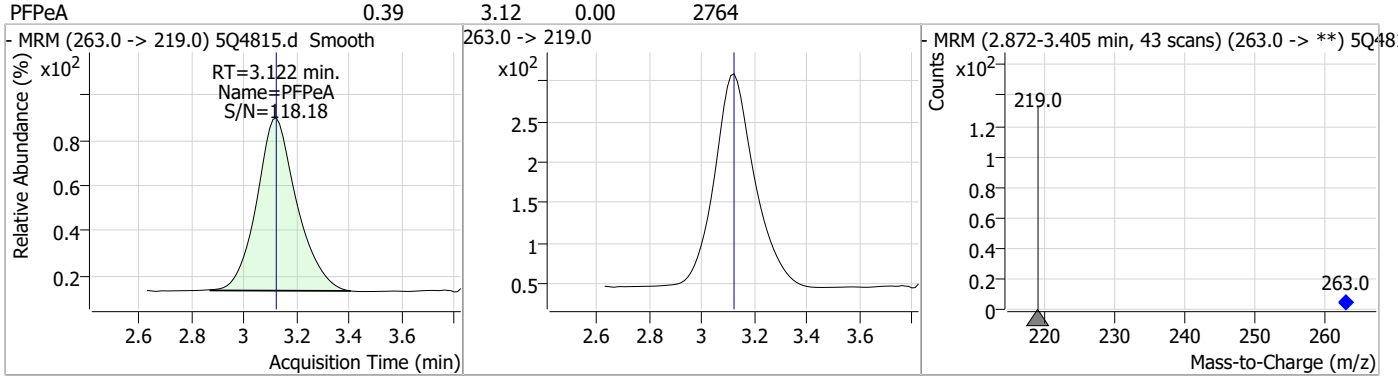




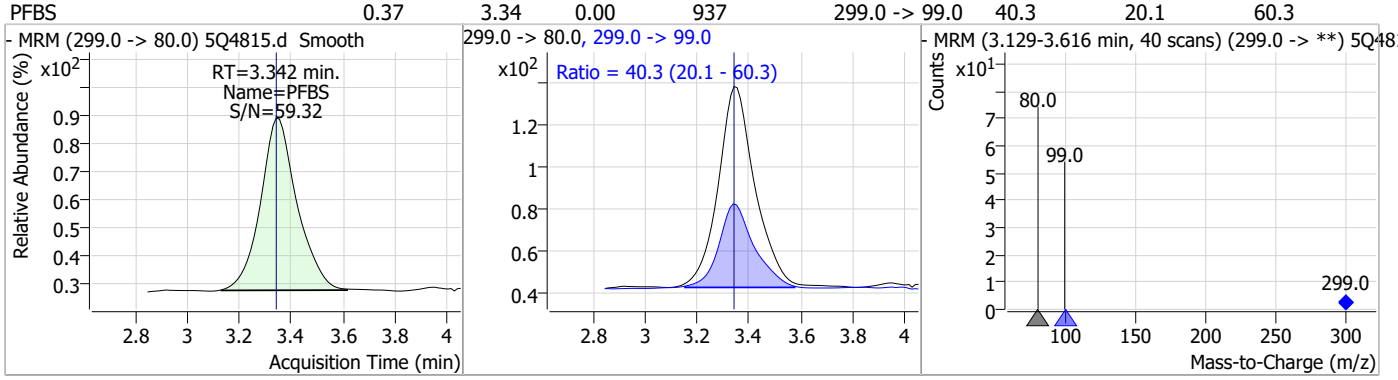


Perfluorinated Compounds by LC/MS/MS

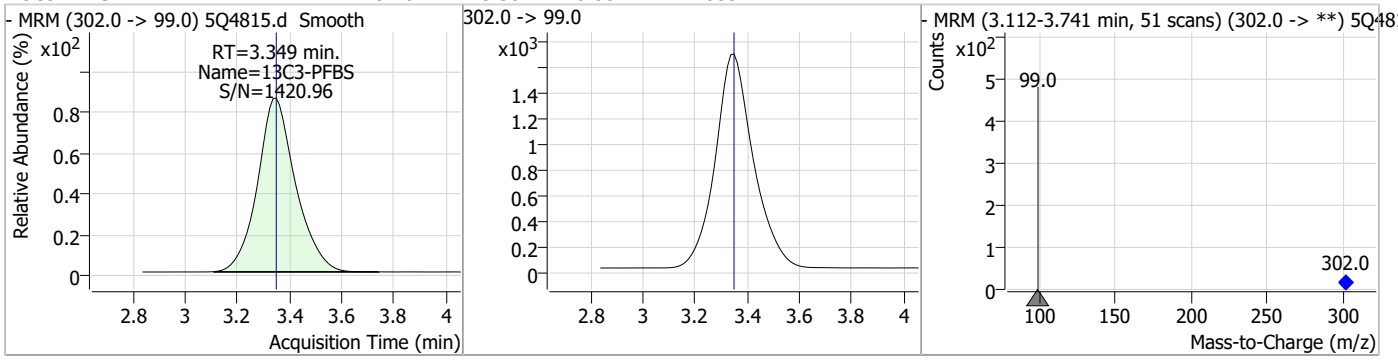
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.39	3.12	0.00	2764				



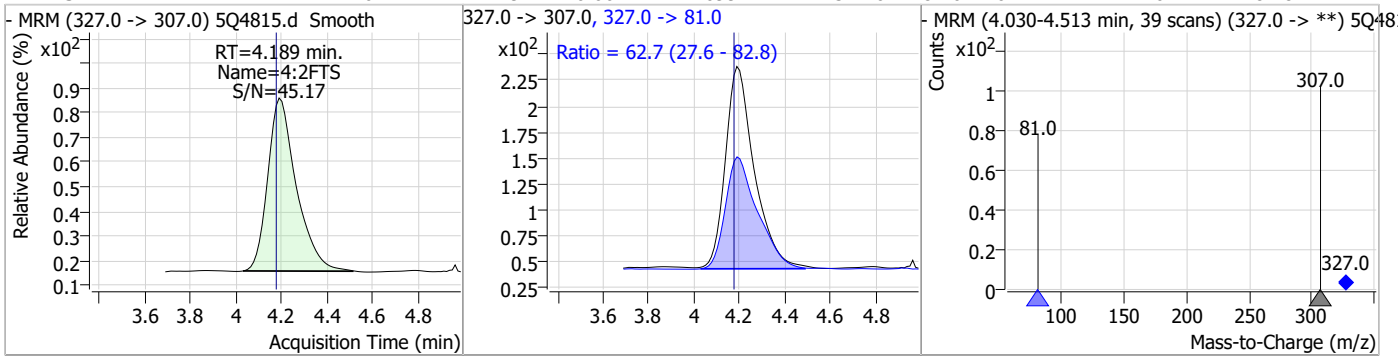
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.37	3.34	0.00	937	299.0 -> 99.0	40.3	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	25.18	3.35	0.00	16837				

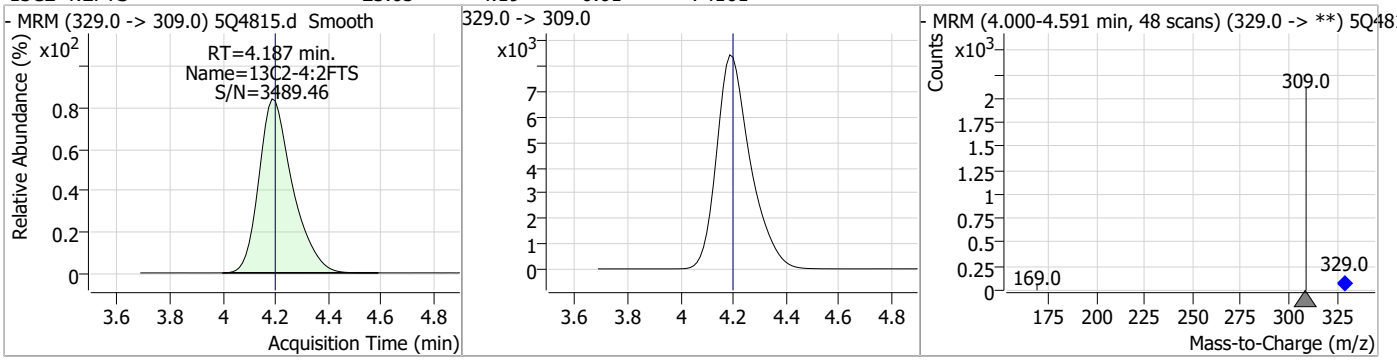


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.42	4.19	0.00	1699	327.0 -> 81.0	62.7	27.6	82.8

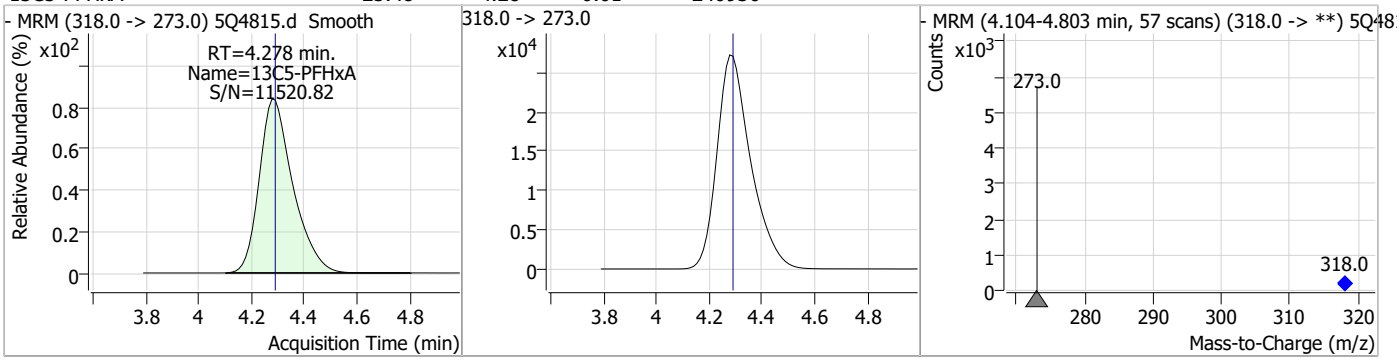


Perfluorinated Compounds by LC/MS/MS

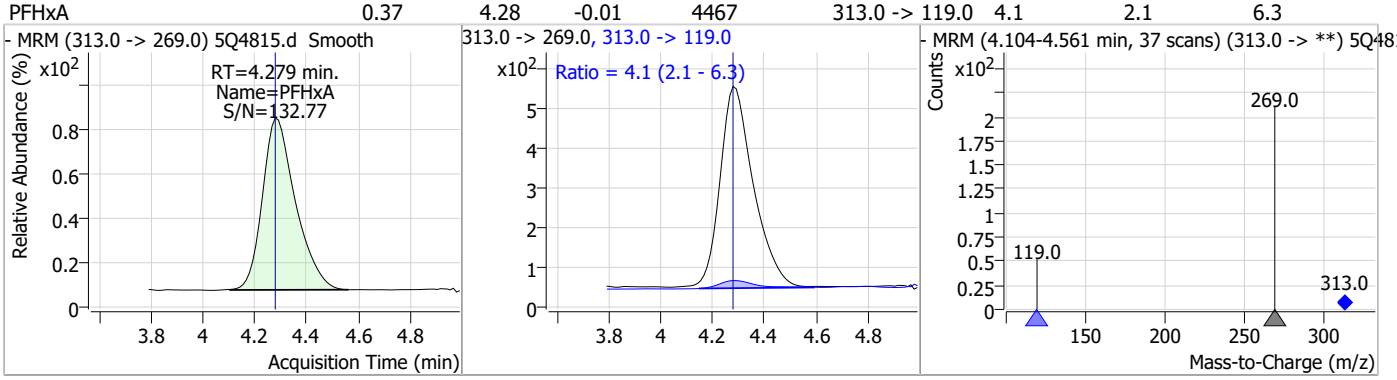
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	23.65	4.19	-0.01	74161				



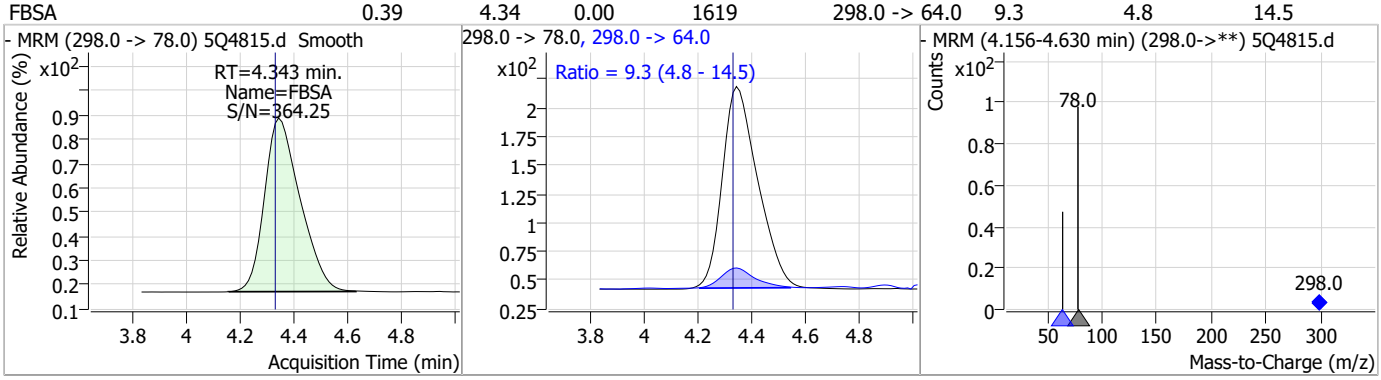
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	25.48	4.28	-0.01	240936				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.37	4.28	-0.01	4467	313.0 -> 119.0	4.1	2.1	6.3

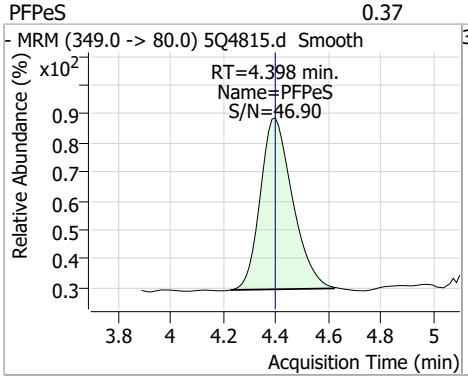


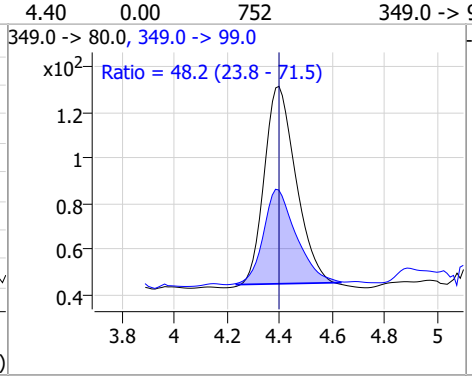
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.39	4.34	0.00	1619	298.0 -> 64.0	9.3	4.8	14.5

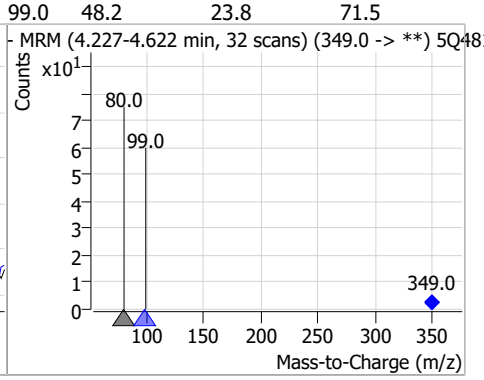


Perfluorinated Compounds by LC/MS/MS

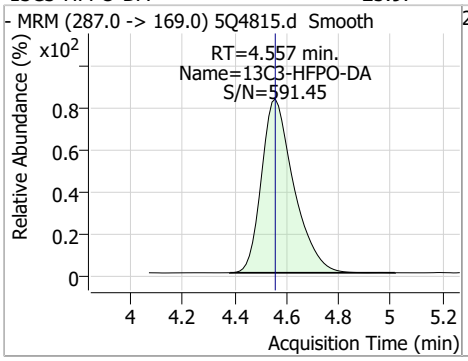
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.37	4.40	0.00	752	349.0 -> 99.0	48.2	23.8	71.5

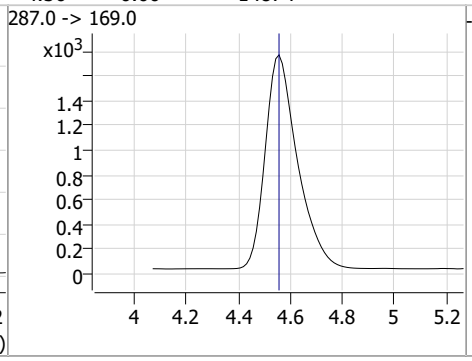


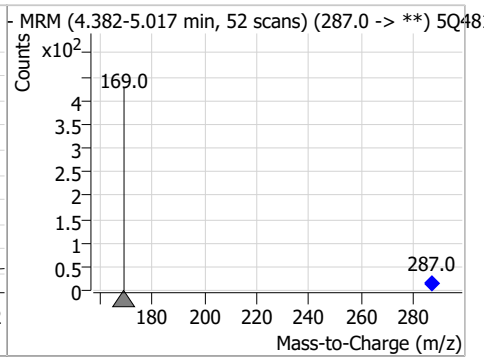




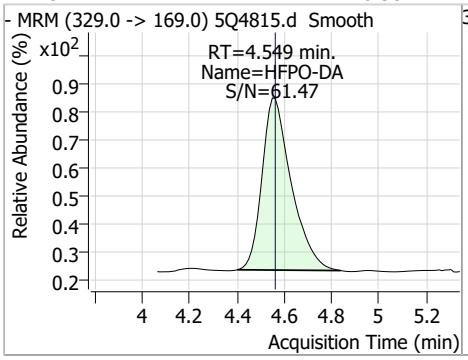
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	25.97	4.56	0.00	14874				

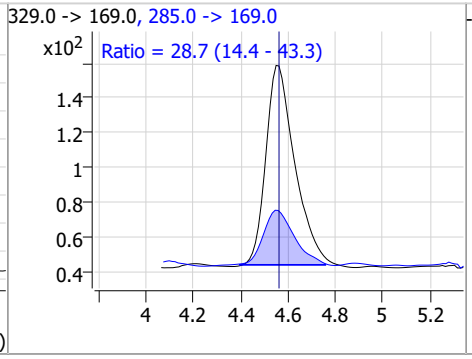


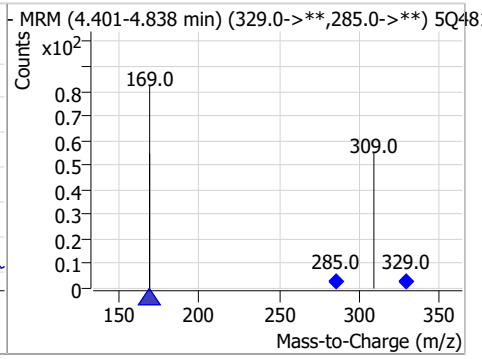




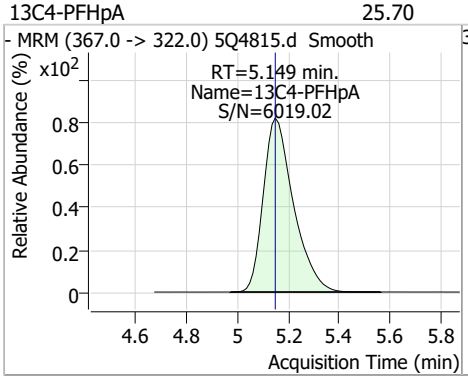
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.38	4.55	-0.01	993	285.0 -> 169.0	28.7	14.4	43.3

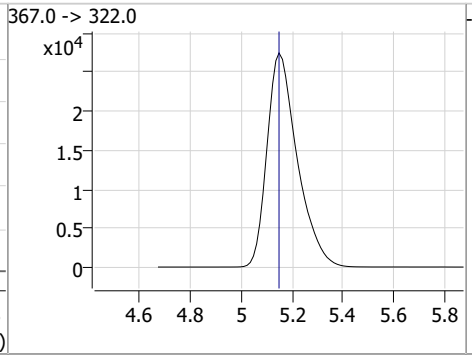


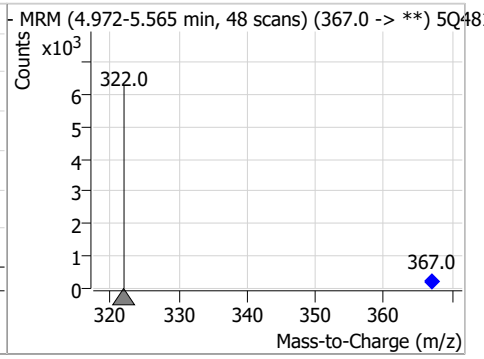




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	25.70	5.15	0.00	226017				

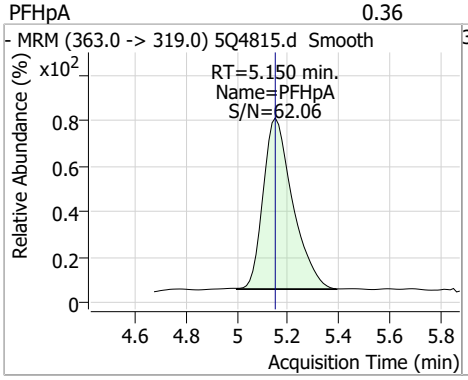


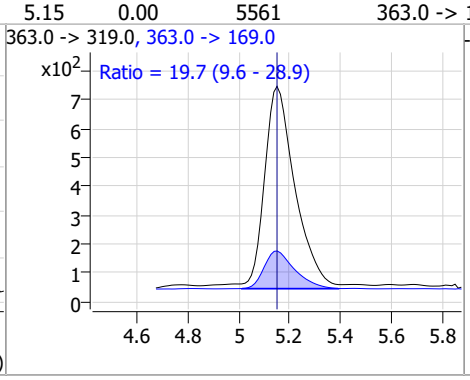


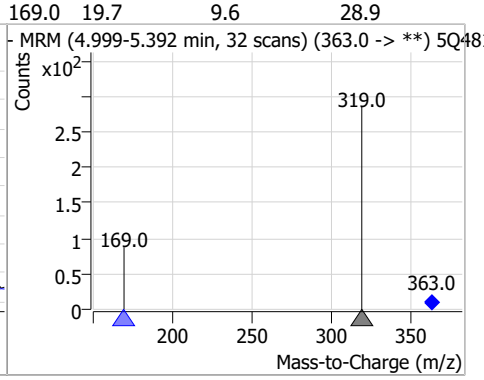


Perfluorinated Compounds by LC/MS/MS

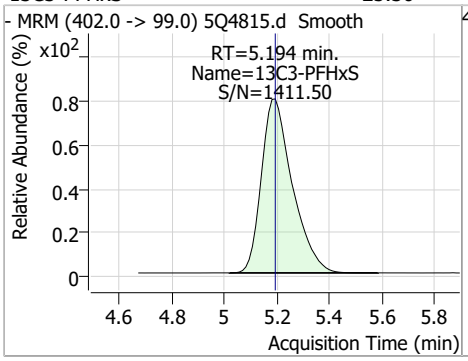
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.36	5.15	0.00	5561	363.0 -> 169.0	19.7	9.6	28.9

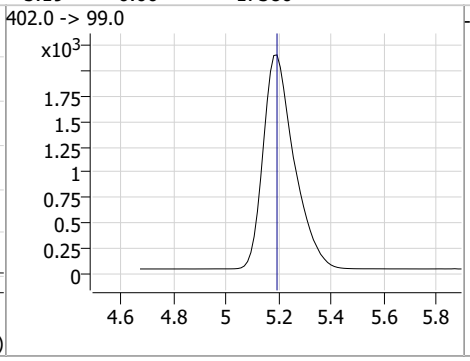


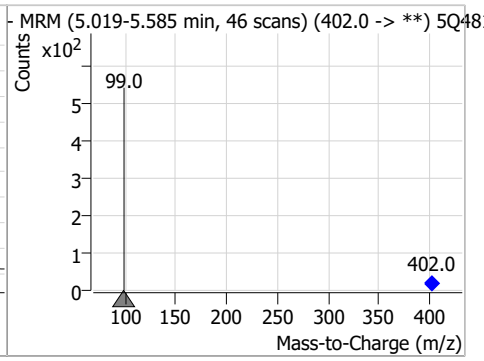




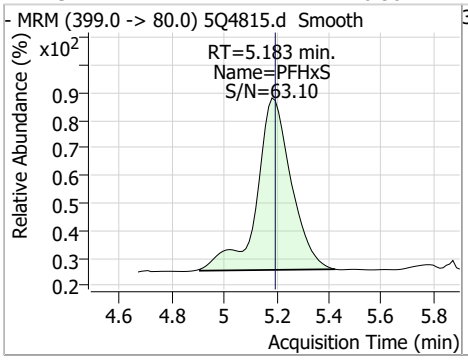
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	25.36	5.19	0.00	17380				

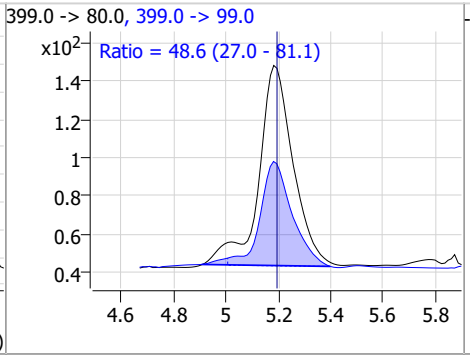


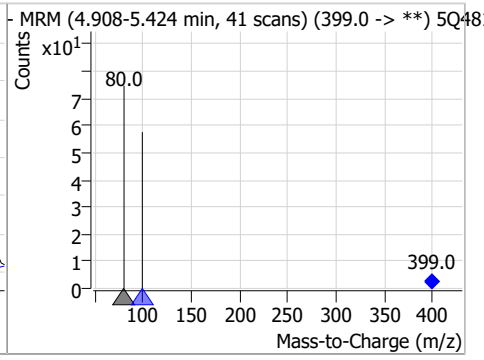




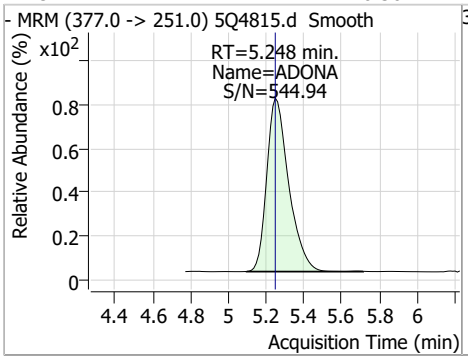
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.38	5.18	-0.01	964	399.0 -> 99.0	48.6	27.0	81.1

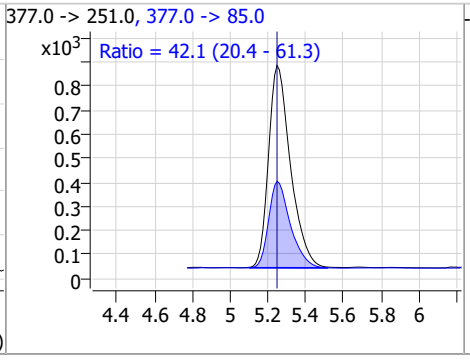


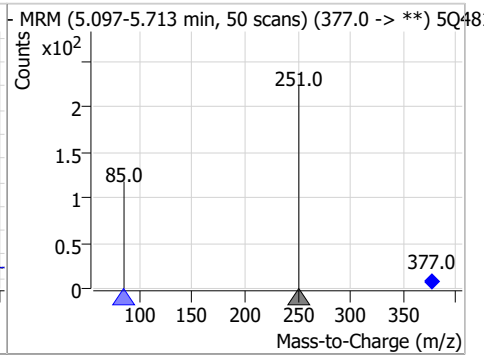




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.36	5.25	0.00	6813	377.0 -> 85.0	42.1	20.4	61.3

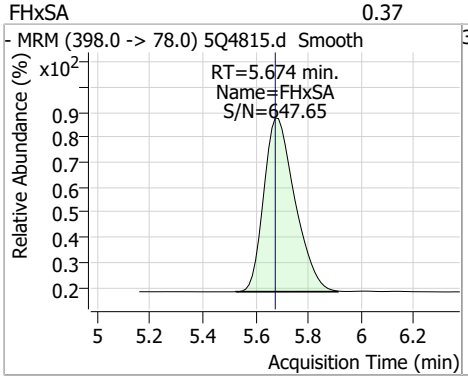


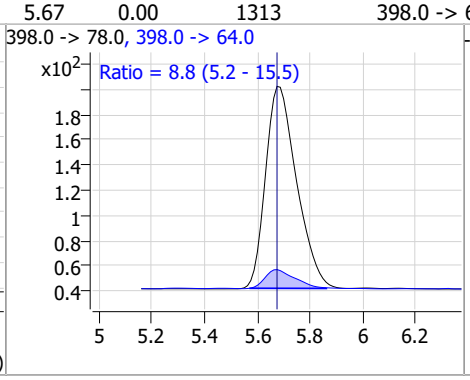


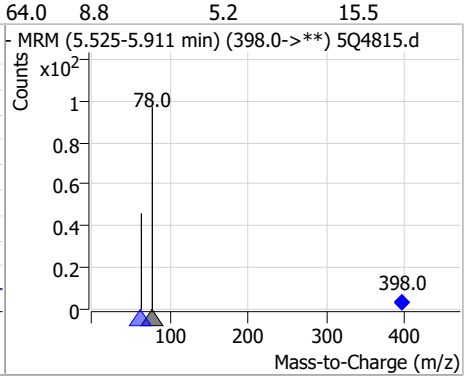


Perfluorinated Compounds by LC/MS/MS

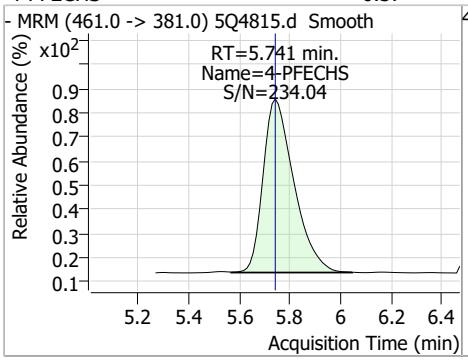
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.37	5.67	0.00	1313	398.0 -> 64.0	8.8	5.2	15.5

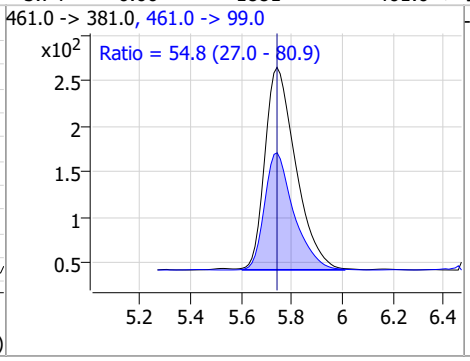


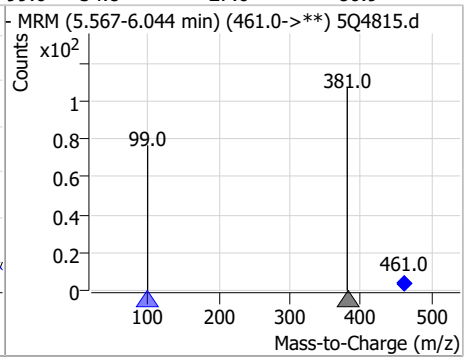




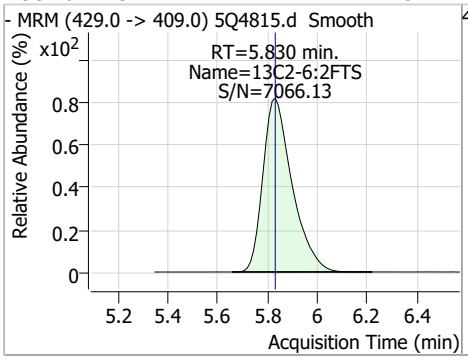
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.37	5.74	0.00	1881	461.0 -> 99.0	54.8	27.0	80.9

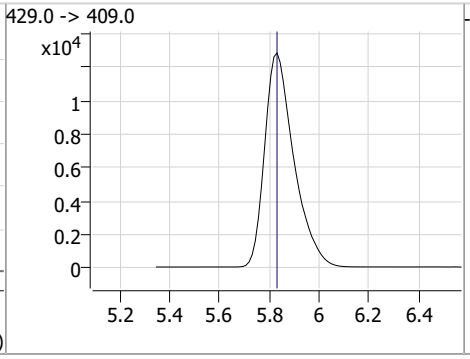


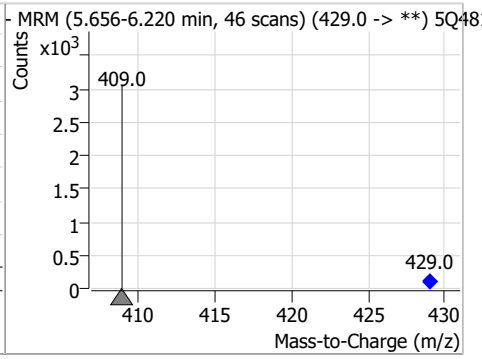




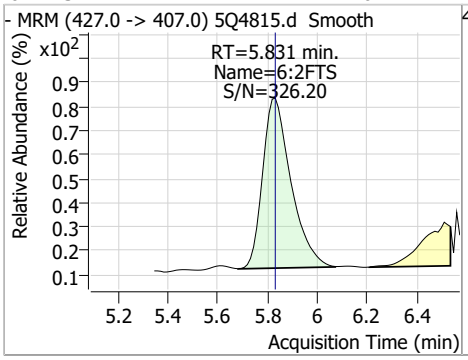
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	24.25	5.83	0.00	103966				

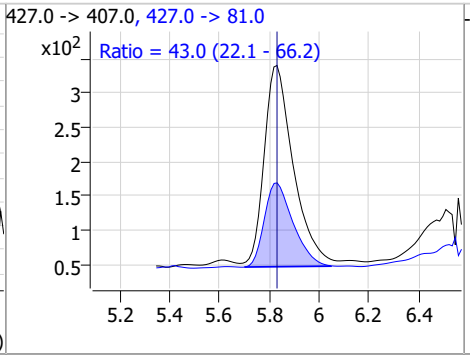


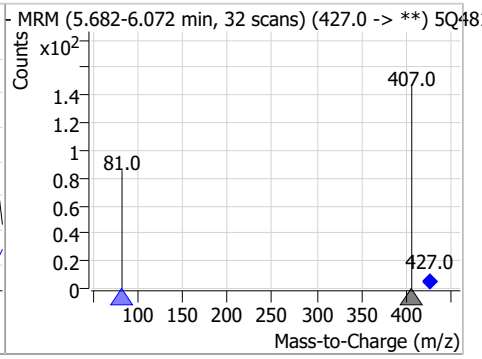




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.42	5.83	0.00	2273	427.0 -> 81.0	43.0	22.1	66.2

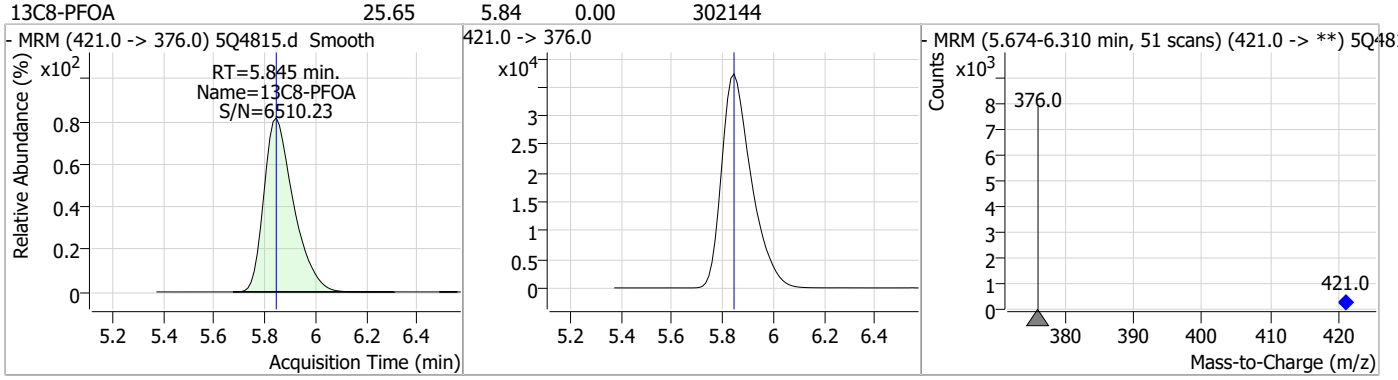




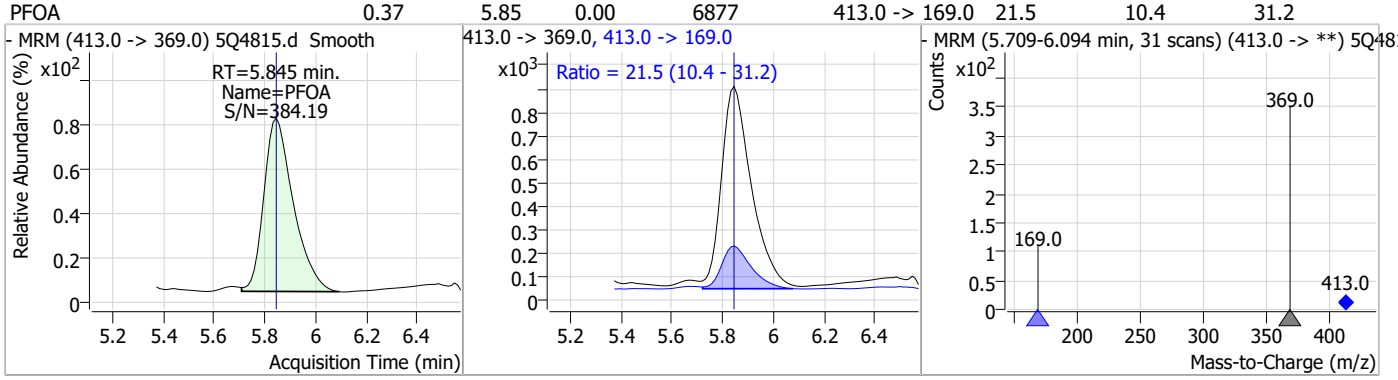


Perfluorinated Compounds by LC/MS/MS

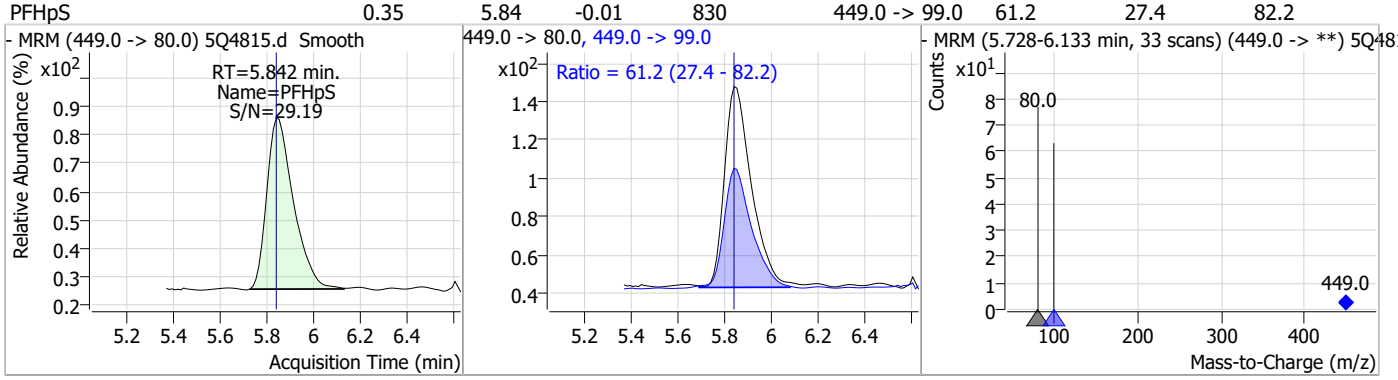
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	25.65	5.84	0.00	302144				



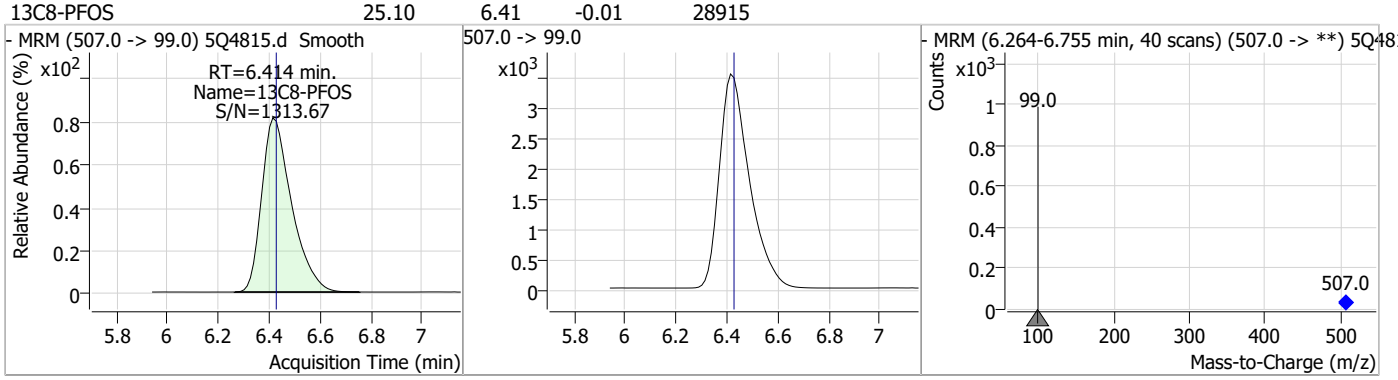
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.37	5.85	0.00	6877	413.0 -> 169.0	21.5	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.35	5.84	-0.01	830	449.0 -> 99.0	61.2	27.4	82.2

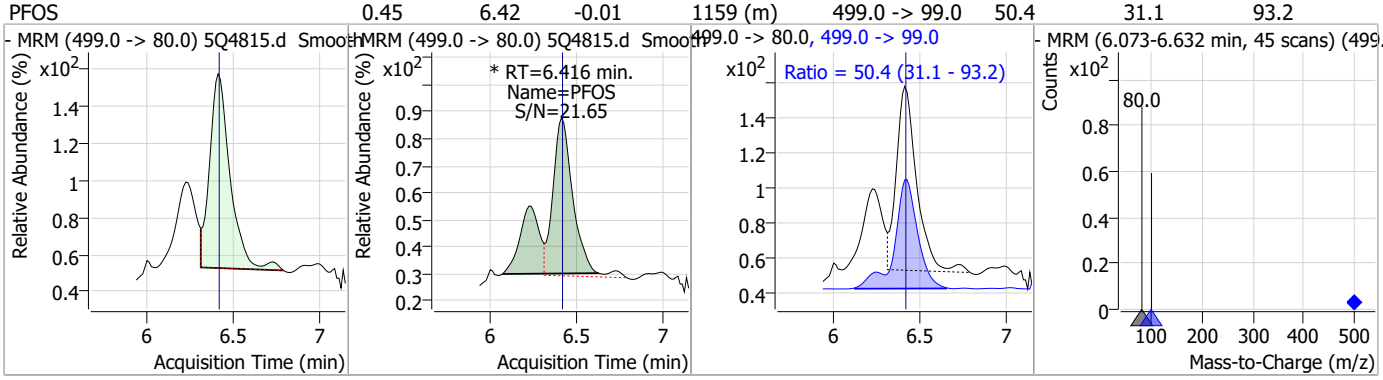


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	25.10	6.41	-0.01	28915				

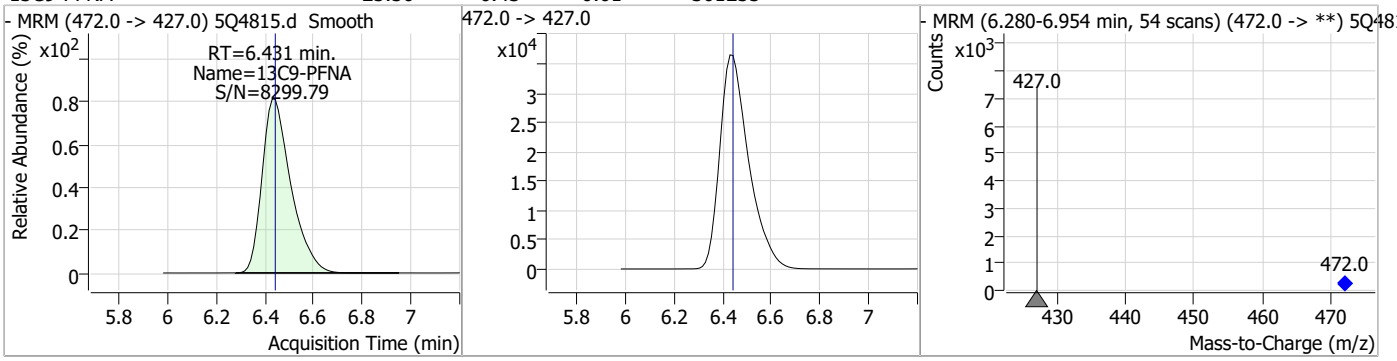


Perfluorinated Compounds by LC/MS/MS

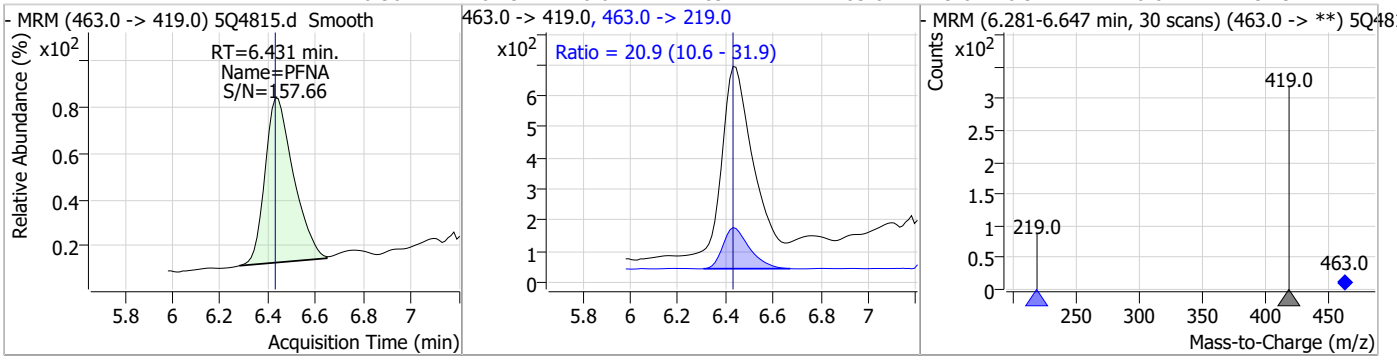
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.45	6.42	-0.01	1159 (m)	499.0 -> 99.0	50.4	31.1	93.2



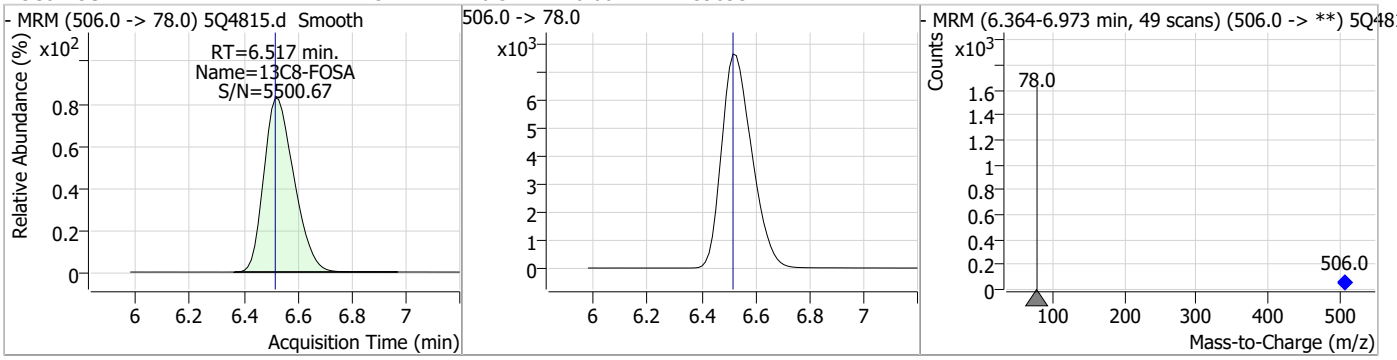
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	25.56	6.43	-0.01	301255				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.36	6.43	-0.01	4897	463.0 -> 219.0	20.9	10.6	31.9

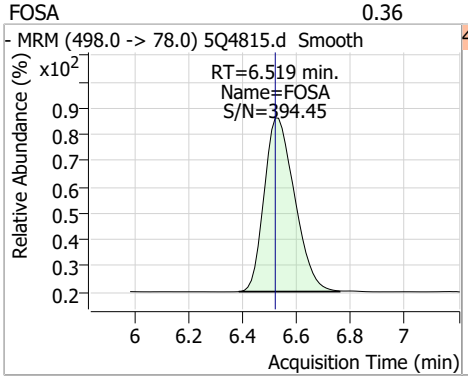


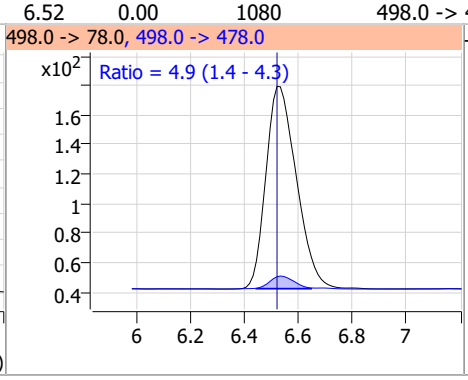
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	25.14	6.52	0.00	59093				

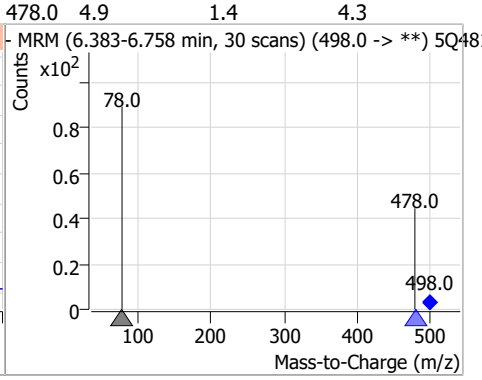


Perfluorinated Compounds by LC/MS/MS

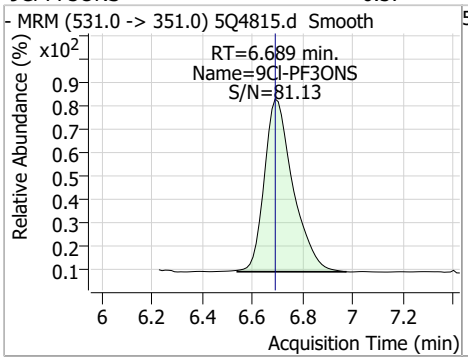
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.36	6.52	0.00	1080	498.0 -> 478.0	4.9	1.4	4.3

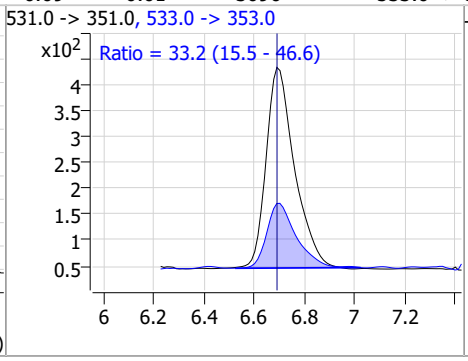


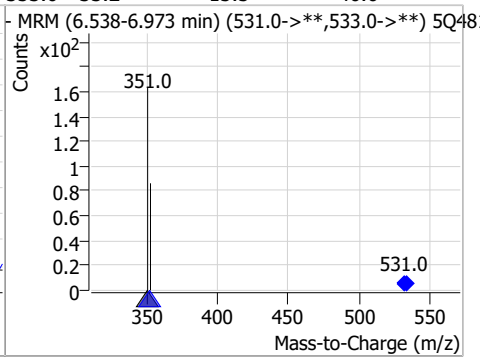




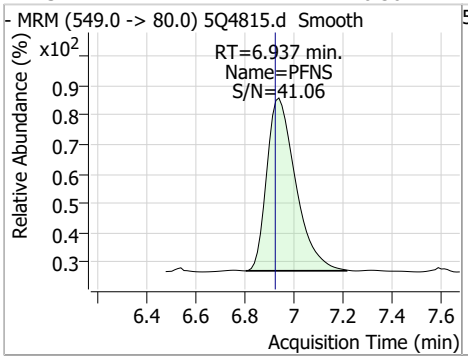
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.37	6.69	-0.01	3096	533.0 -> 353.0	33.2	15.5	46.6

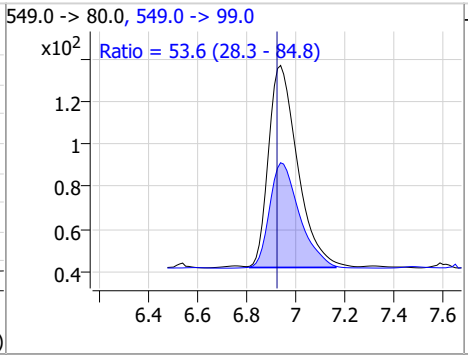


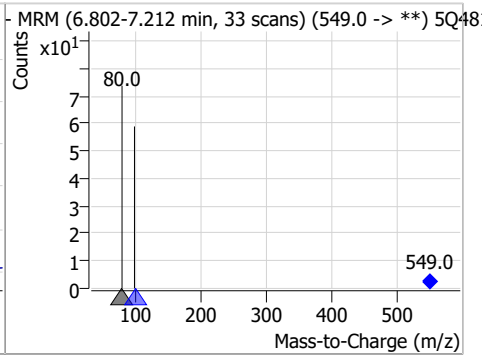




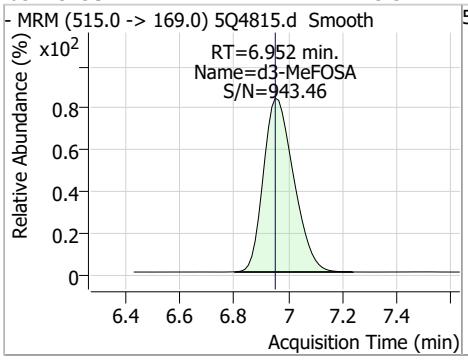
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.36	6.94	0.00	769	549.0 -> 99.0	53.6	28.3	84.8

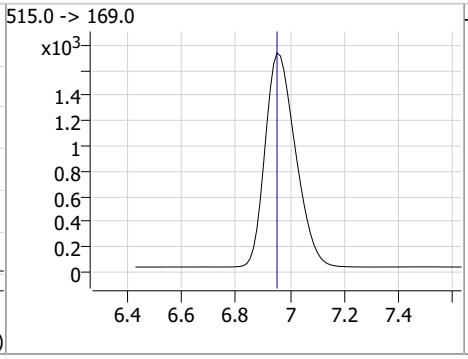


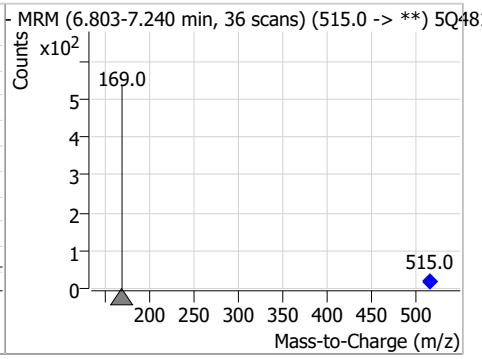




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	23.57	6.95	0.00	13255				

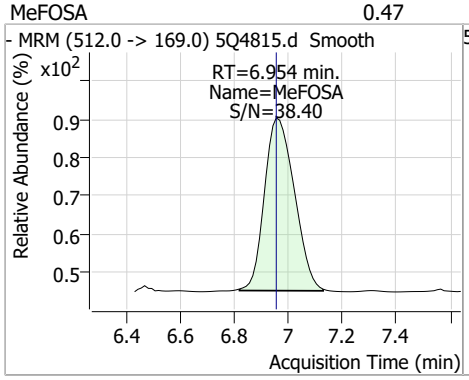


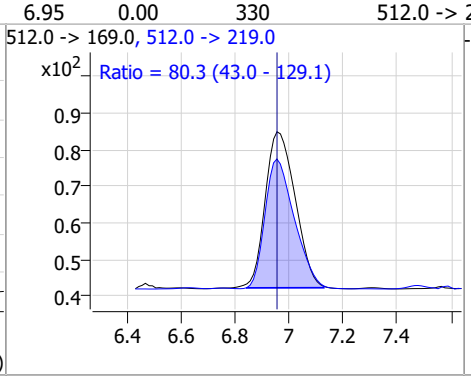


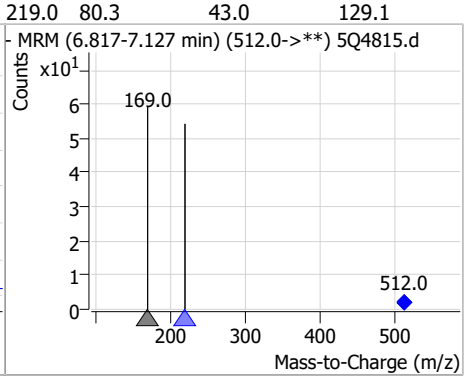


Perfluorinated Compounds by LC/MS/MS

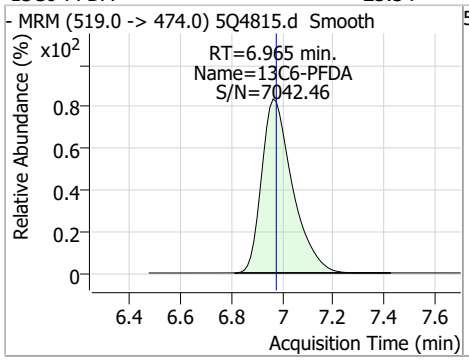
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.47	6.95	0.00	330	512.0 -> 219.0	80.3	43.0	129.1

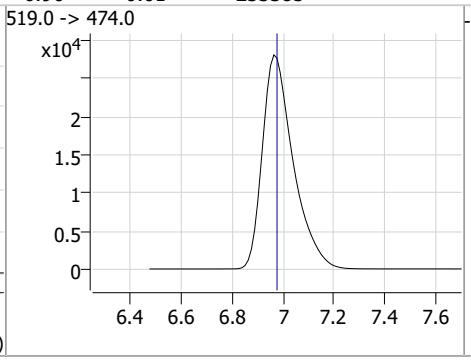


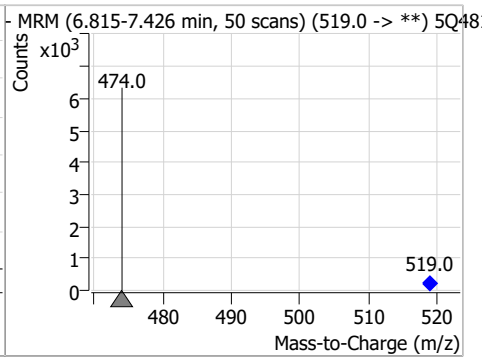




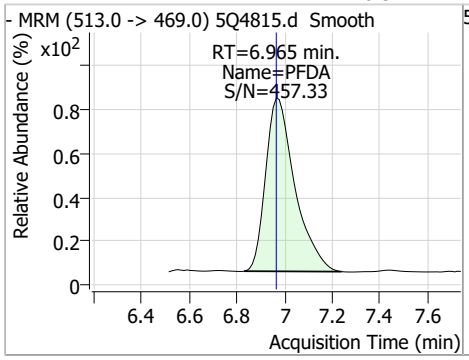
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	25.34	6.96	-0.01	235385				

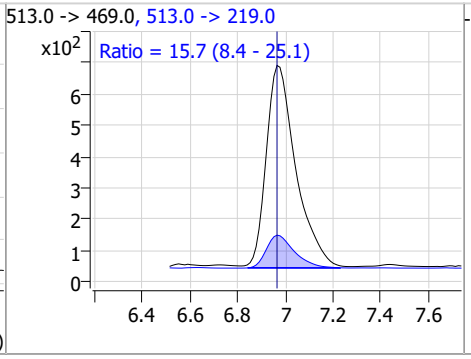


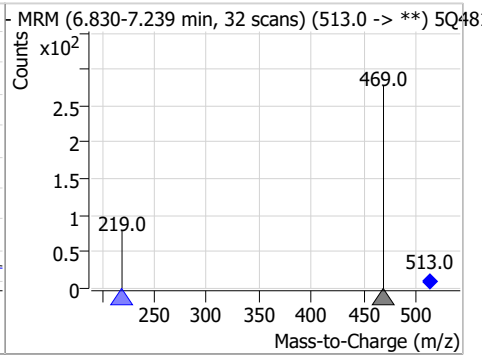




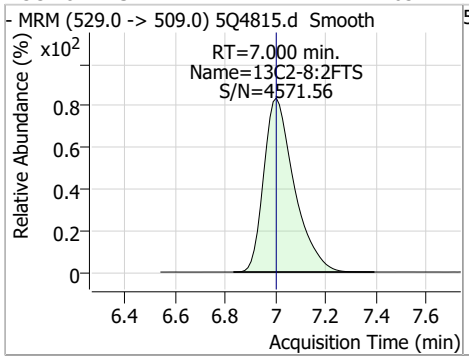
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.37	6.97	-0.01	5460	513.0 -> 219.0	15.7	8.4	25.1

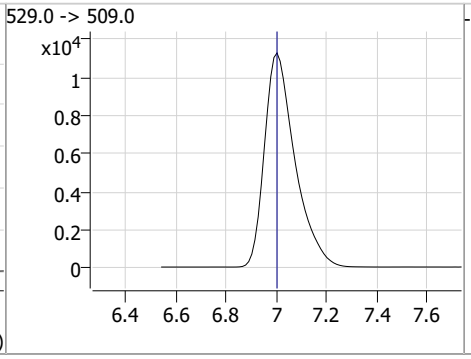


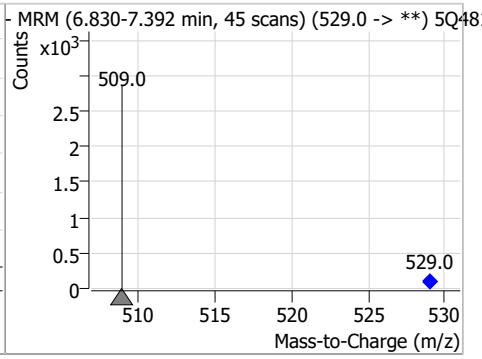




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	24.63	7.00	0.00	94617				

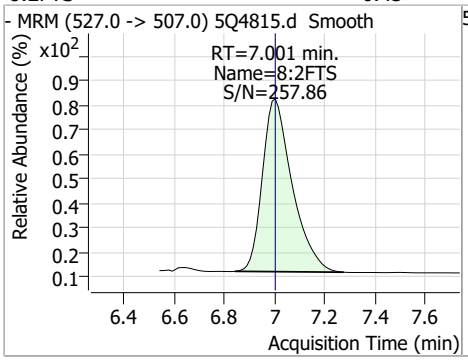


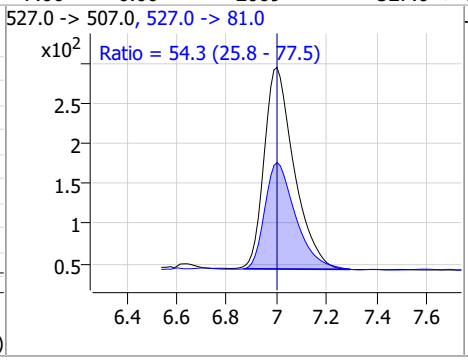


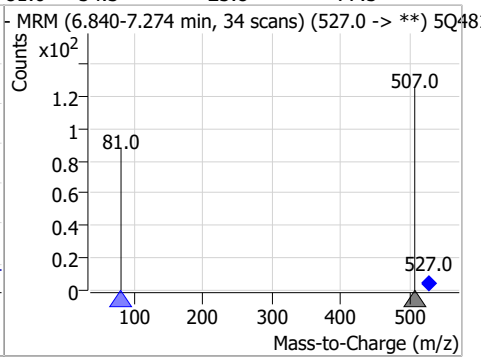


Perfluorinated Compounds by LC/MS/MS

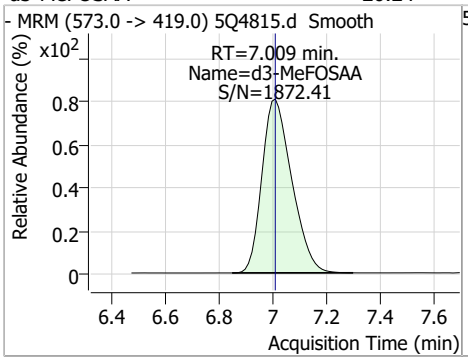
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.43	7.00	0.00	2069	527.0 -> 81.0	54.3	25.8	77.5

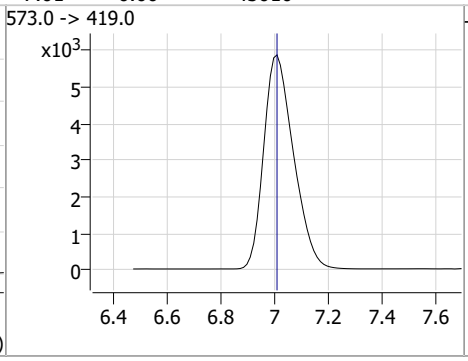


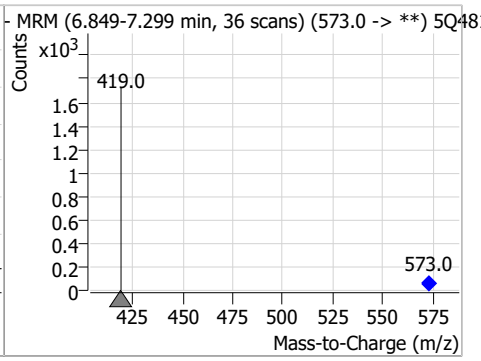




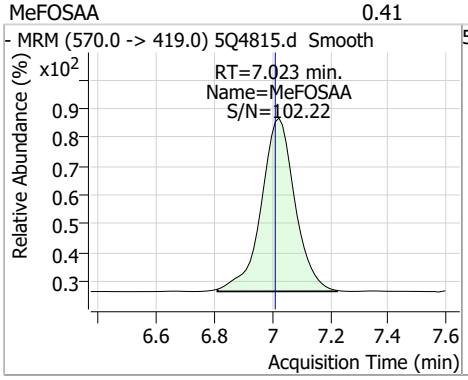
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	26.24	7.01	0.00	45010				

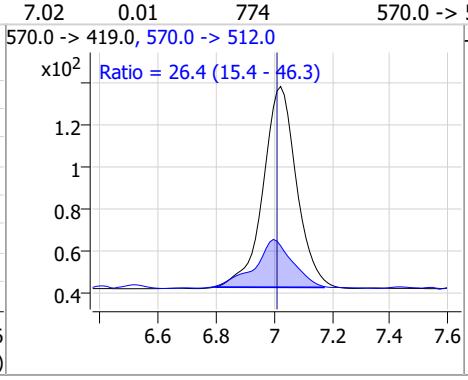


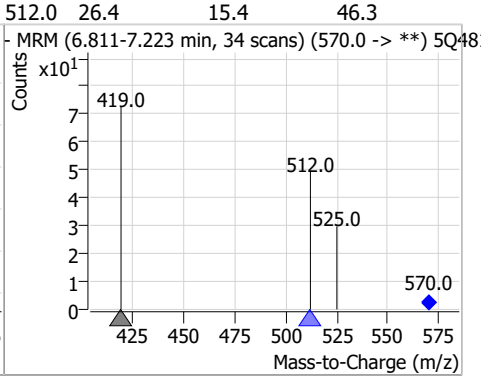




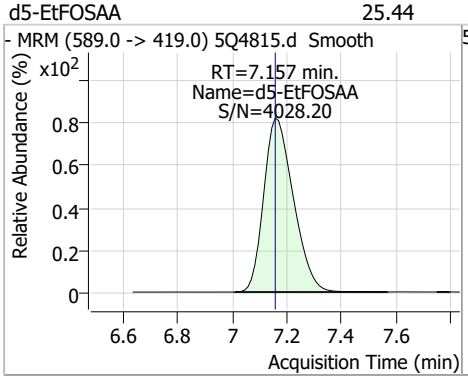
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.41	7.02	0.01	774	570.0 -> 512.0	26.4	15.4	46.3

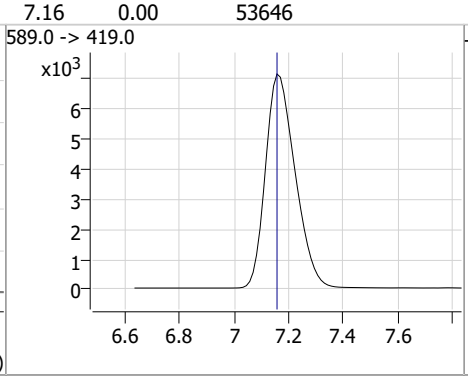


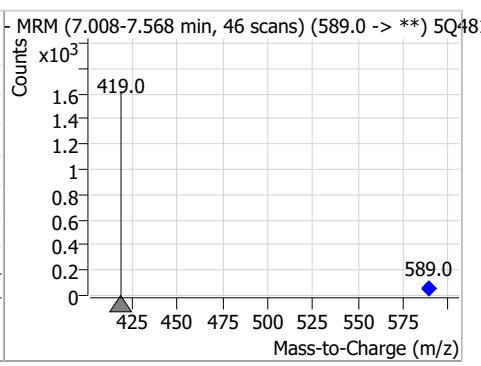




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	25.44	7.16	0.00	53646				

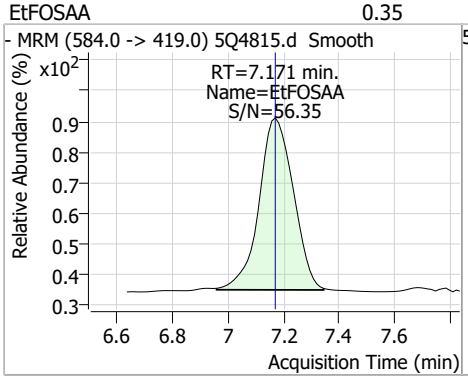


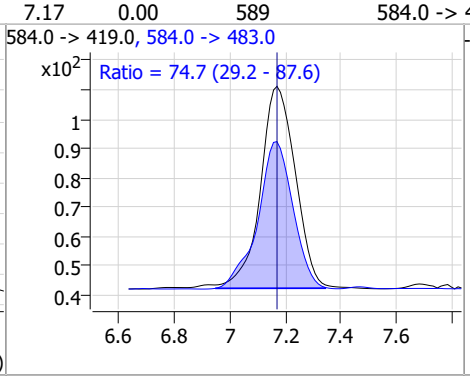


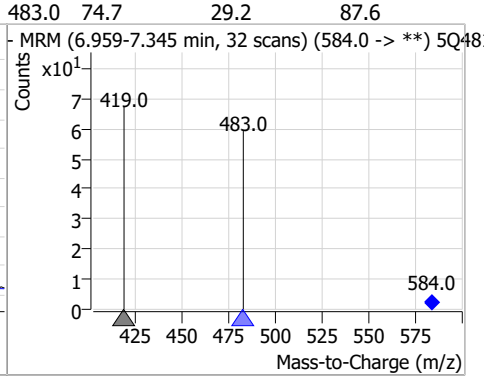


Perfluorinated Compounds by LC/MS/MS

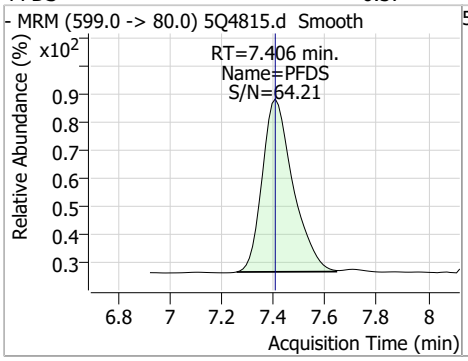
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.35	7.17	0.00	589	584.0 -> 483.0	74.7	29.2	87.6

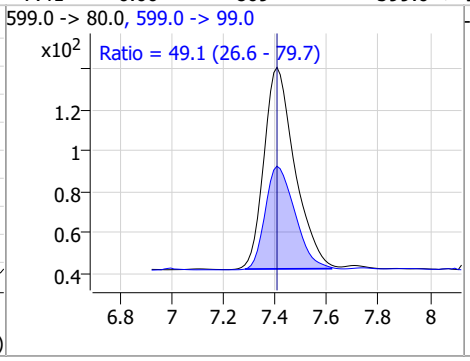


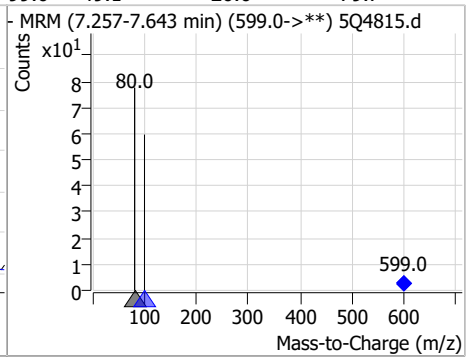




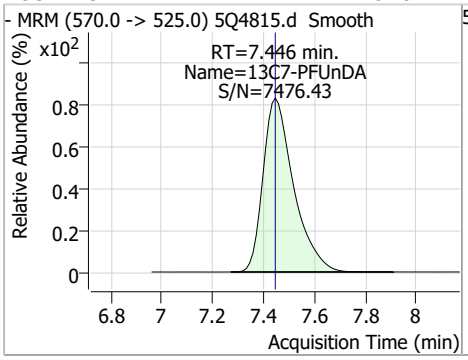
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.37	7.41	0.00	809	599.0 -> 99.0	49.1	26.6	79.7

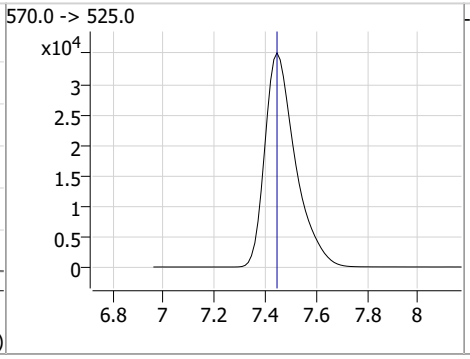


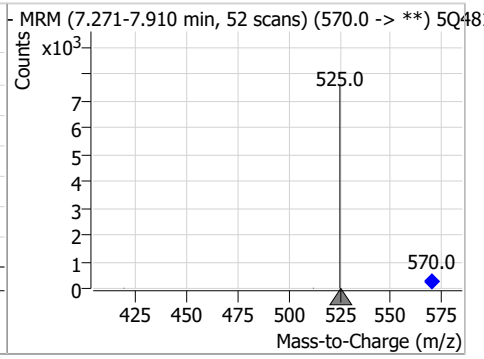




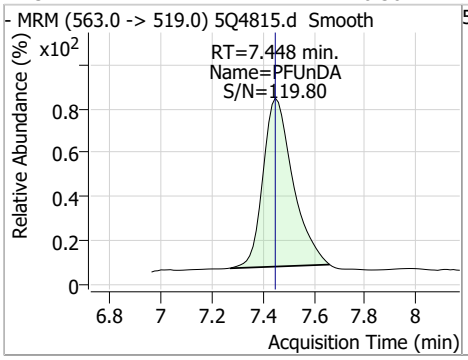
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	25.19	7.45	0.00	291950				

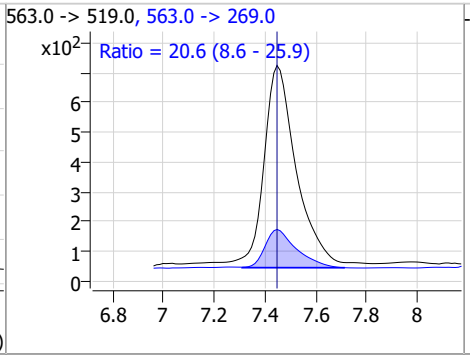


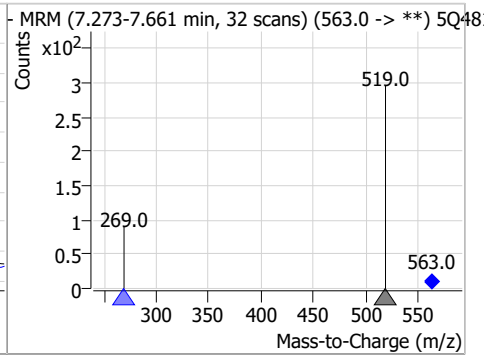




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.36	7.45	0.00	5349	563.0 -> 269.0	20.6	8.6	25.9

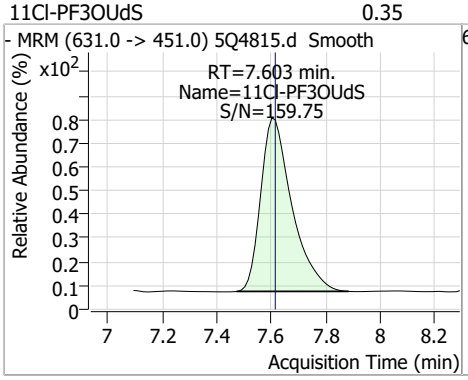


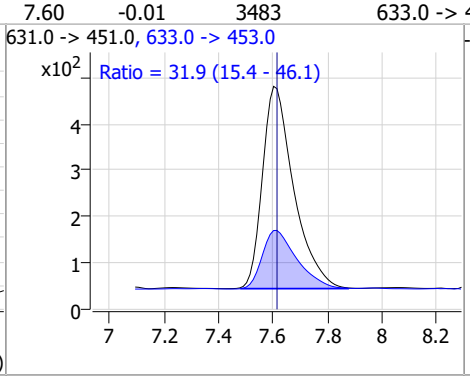


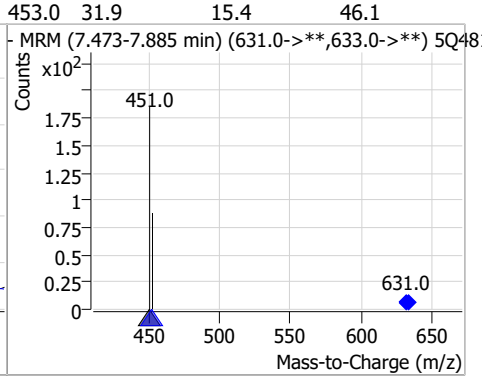


Perfluorinated Compounds by LC/MS/MS

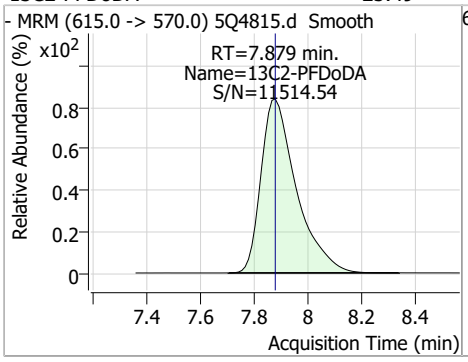
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.35	7.60	-0.01	3483	633.0 -> 453.0	31.9	15.4	46.1

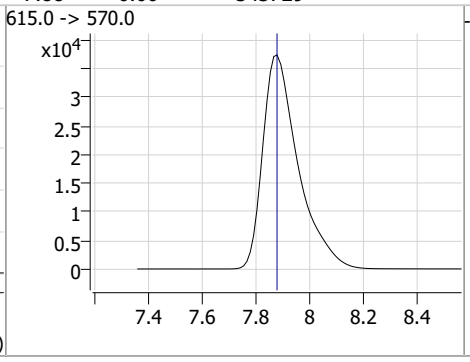


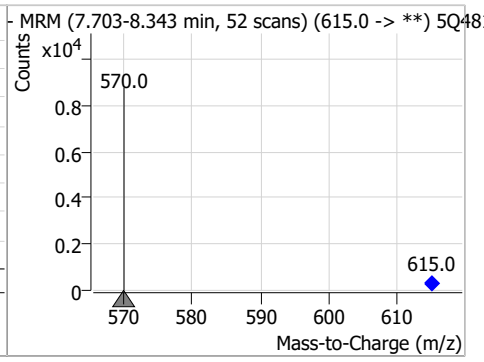




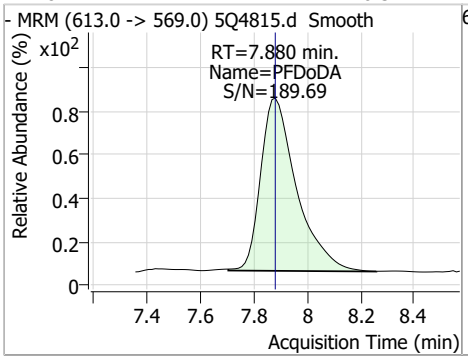
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	25.49	7.88	0.00	343729				

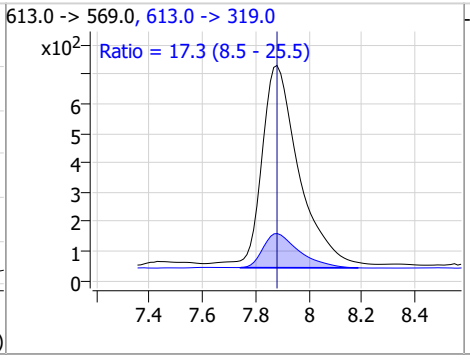


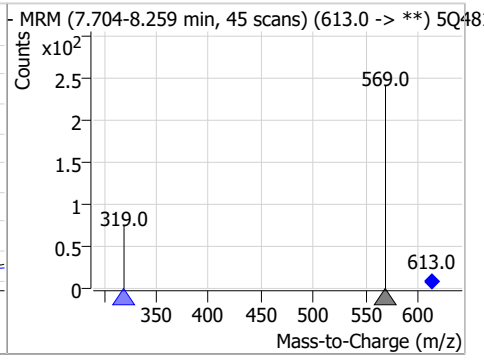




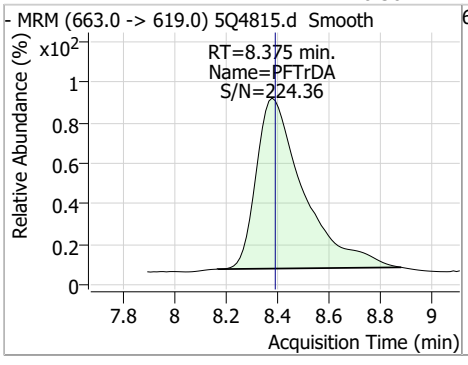
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.37	7.88	0.00	6315	613.0 -> 319.0	17.3	8.5	25.5

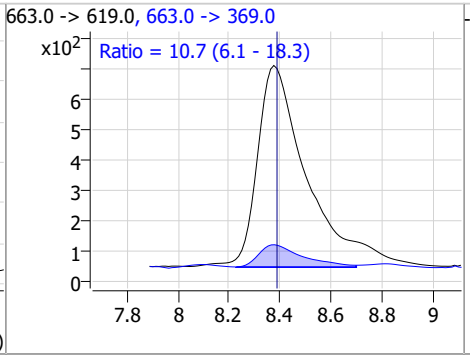


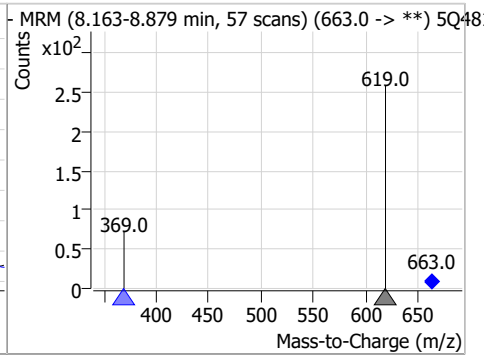




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.36	8.38	-0.01	8326	663.0 -> 369.0	10.7	6.1	18.3

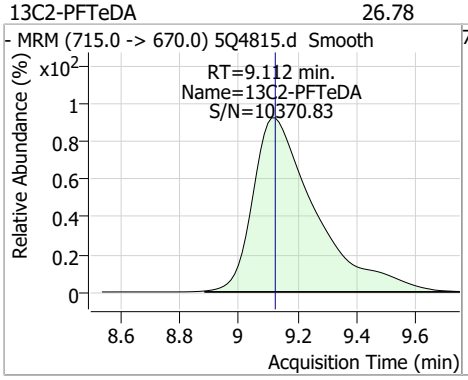


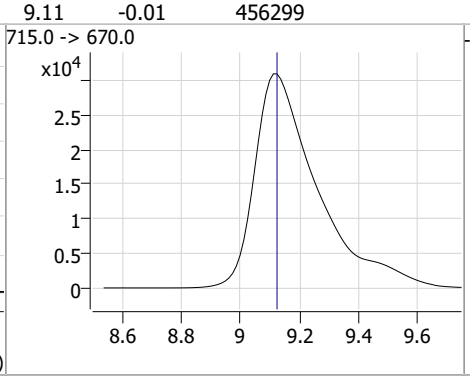


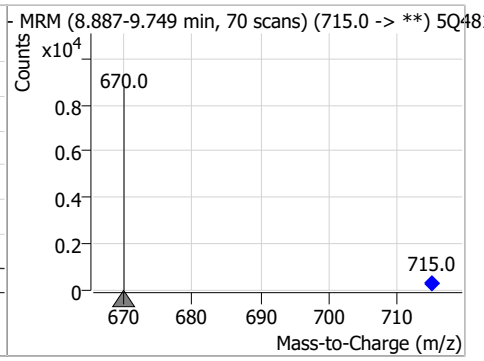


Perfluorinated Compounds by LC/MS/MS

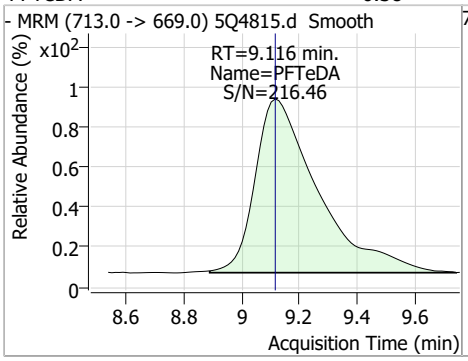
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	26.78	9.11	-0.01	456299				

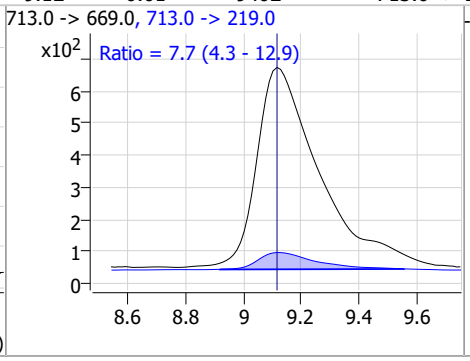


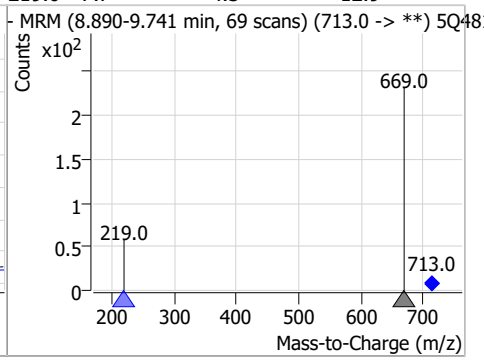




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.38	9.12	-0.01	9402	713.0 -> 219.0	7.7	4.3	12.9







7.7.60

Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4815.D
Injection Time: 09/17/22 12:17
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4816.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 12:32:43 PM
Sample Name : ic73-1
Vial : P1-A3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

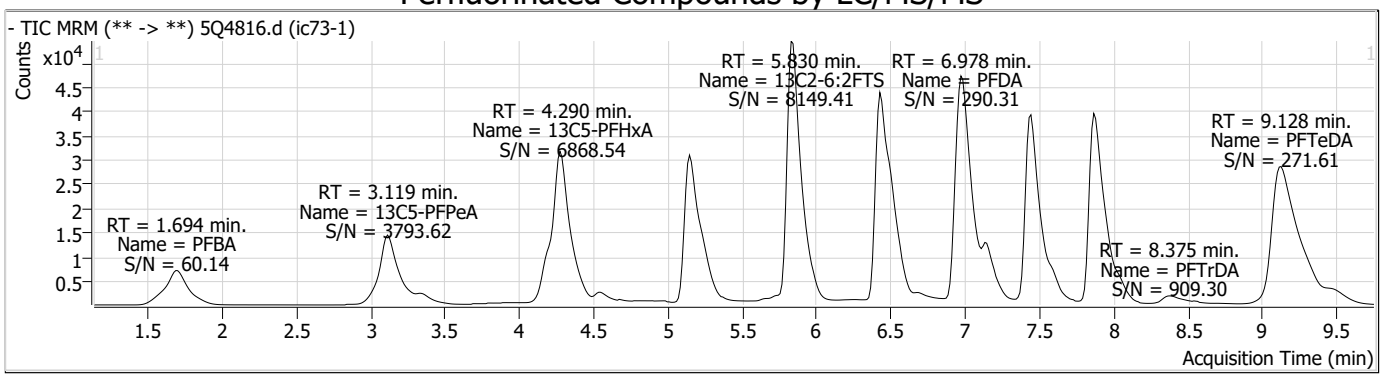
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	77123	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	123770	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	197529	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	185113	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	249282	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	248605	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	199398	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	248215	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	288403	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	373423	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	49462	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	14102	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	14225	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	24337	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	61163	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	85272	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	77205	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	38637	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	11991	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	12080	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	46191	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	61163	19.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C2-6:2FTS	5.830	429.0 -> 409.0	85272	19.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-8:2FTS	7.000	529.0 -> 509.0	77205	20.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	288403	21.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C2-PFTeDA	9.124	715.0 -> 670.0	373423	21.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C3-PFBS	3.349	302.0 -> 99.0	14102	21.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	14225	20.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C4-PFBA	1.700	217.0 -> 172.0	77123	20.91	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C4-PFHpA	5.149	367.0 -> 322.0	185113	21.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	197529	20.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C5-PFPeA	3.119	268.0 -> 223.0	123770	20.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C6-PFDA	6.977	519.0 -> 474.0	199398	21.47	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

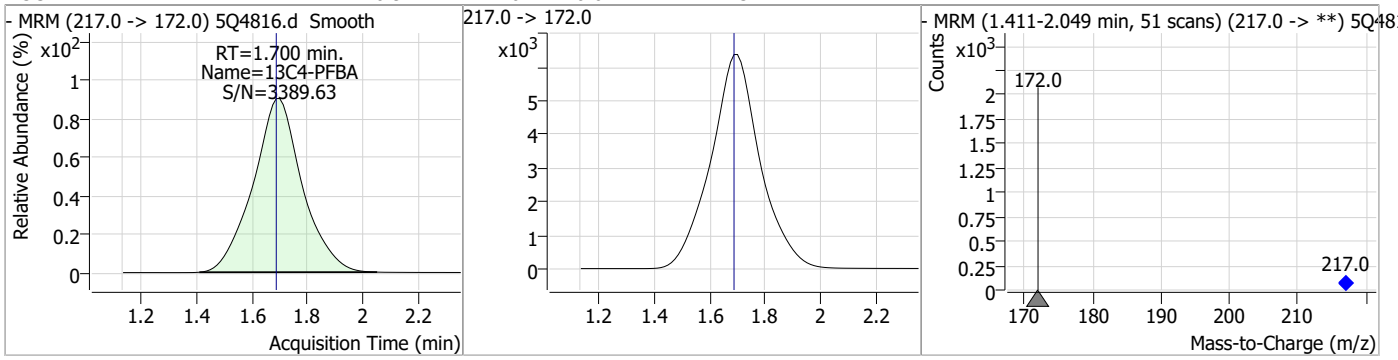
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C7-PFUnDA	7.446	570.0 -> 525.0	248215	21.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C8-FOSA	6.517	506.0 -> 78.0	49462	21.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C8-PFOA	5.845	421.0 -> 376.0	249282	21.16 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C8-PFOS	6.428	507.0 -> 99.0	24337	21.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C9-PFNA	6.443	472.0 -> 427.0	248605	21.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
d3-MeFOSAA	7.009	573.0 -> 419.0	38637	22.53 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.6%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	11991	20.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
d3-MeFOSA	6.952	515.0 -> 169.0	12080	21.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
d5-EtFOSAA	7.157	589.0 -> 419.0	46191	21.91 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
Target Compounds						**QValue**
4:2FTS	4.189	327.0 -> 307.0	3498	1.05 µg/L		95
6:2FTS	5.831	427.0 -> 407.0	4658	1.05 µg/L		97
8:2FTS	7.001	527.0 -> 507.0	4055	1.02 µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	1388	0.96 µg/L		95
FOSA	6.519	498.0 -> 78.0	2488	0.99 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	1755	1.08 µg/L		90
PFBA	1.694	213.0 -> 169.0	1436	0.94 µg/L		100
PFBS	3.354	299.0 -> 80.0	1994	0.94 µg/L		100
PFDA	6.978	513.0 -> 469.0	11795	0.95 µg/L		98
PFDoDA	7.880	613.0 -> 569.0	13516	0.95 µg/L		99
PFDS	7.406	599.0 -> 80.0	1754	0.95 µg/L		98
PFHpA	5.150	363.0 -> 319.0	11927	0.95 µg/L		100
PFHpS	5.855	449.0 -> 80.0	1774	0.90 µg/L		97
PFHxA	4.291	313.0 -> 269.0	9160	0.93 µg/L		100
PFHxS	5.195	399.0 -> 80.0	1924	0.93 µg/L	m	97
PFNA	6.444	463.0 -> 419.0	10282	0.91 µg/L		100
PFNS	6.937	549.0 -> 80.0	1789	0.99 µg/L		94
PFOA	5.845	413.0 -> 369.0	14265	0.94 µg/L		98
PFOS	6.416	499.0 -> 80.0	2181	1.00 µg/L	m	84
PFPeA	3.122	263.0 -> 219.0	5585	0.94 µg/L		100
PFPeS	4.398	349.0 -> 80.0	1441	0.85 µg/L		93
PFTeDA	9.128	713.0 -> 669.0	16882	0.84 µg/L		100
PFTrDA	8.375	663.0 -> 619.0	18687	0.96 µg/L		99
PFUnDA	7.448	563.0 -> 519.0	12376	0.97 µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	7334	0.88 µg/L		94
9Cl-PF3ONS	6.701	531.0 -> 351.0	6269	0.89 µg/L		99
ADONA	5.248	377.0 -> 251.0	14225	0.93 µg/L		97
HFPO-DA	4.562	329.0 -> 169.0	1956	0.92 µg/L		98
MeFOSA	6.954	512.0 -> 169.0	608	0.96 µg/L		99
4-PFECHS	5.741	461.0 -> 381.0	4016	0.96 µg/L		97
FBSA	4.343	298.0 -> 78.0	3362	0.99 µg/L		100
FHxSA	5.674	398.0 -> 78.0	2892	0.99 µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

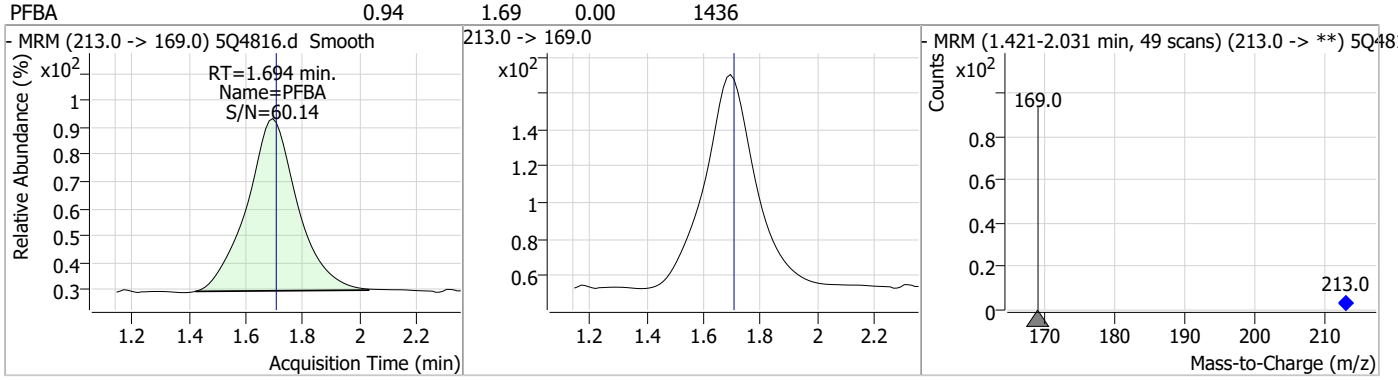
Perfluorinated Compounds by LC/MS/MS



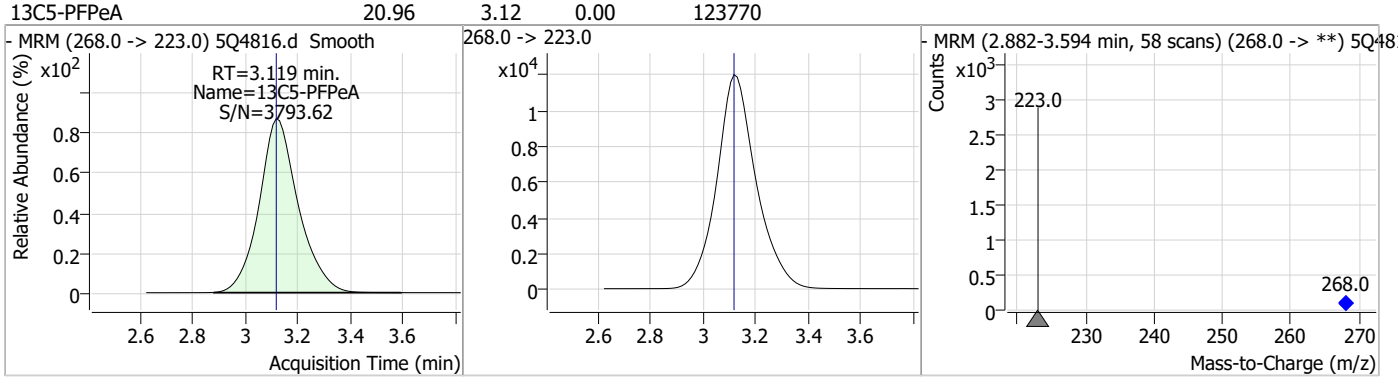
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.91	1.70	0.01	77123				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.94	1.69	0.00	1436				

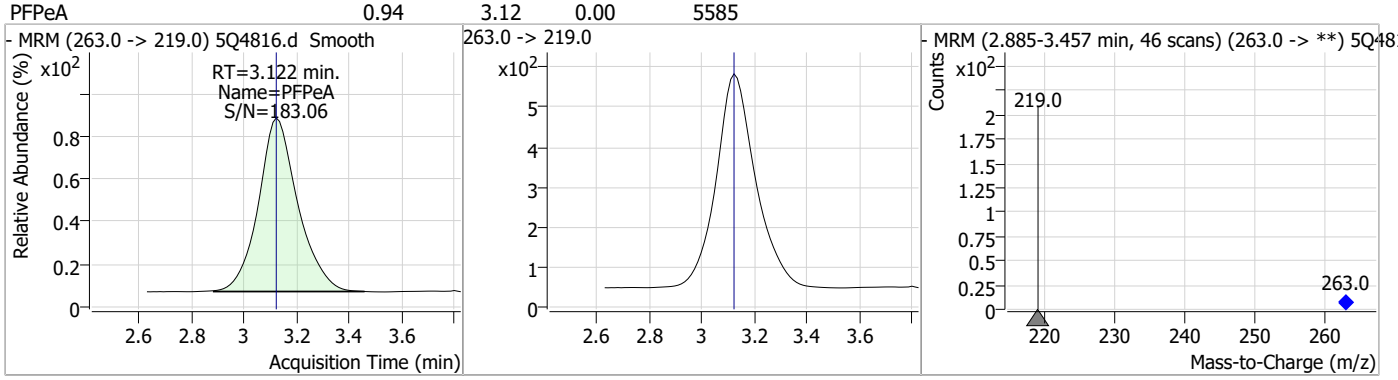


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.96	3.12	0.00	123770				

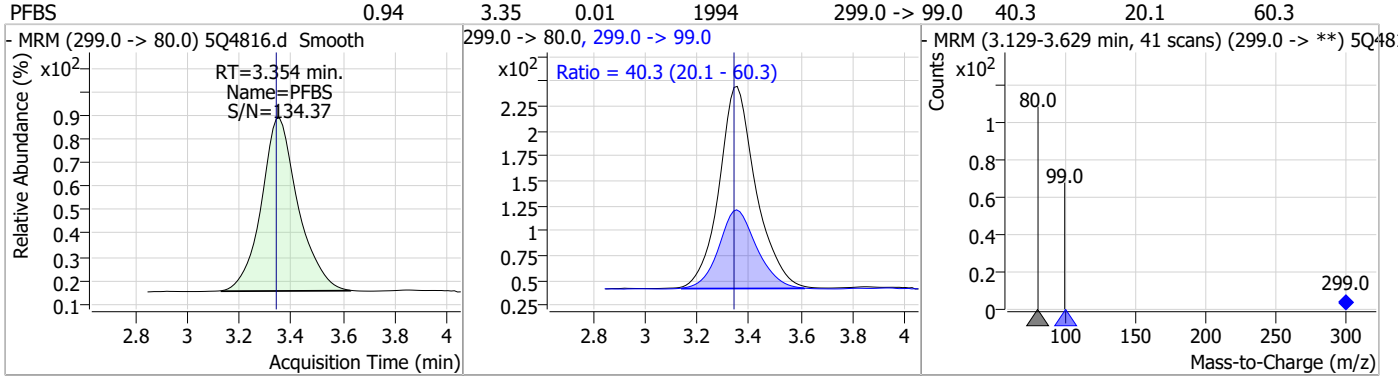


Perfluorinated Compounds by LC/MS/MS

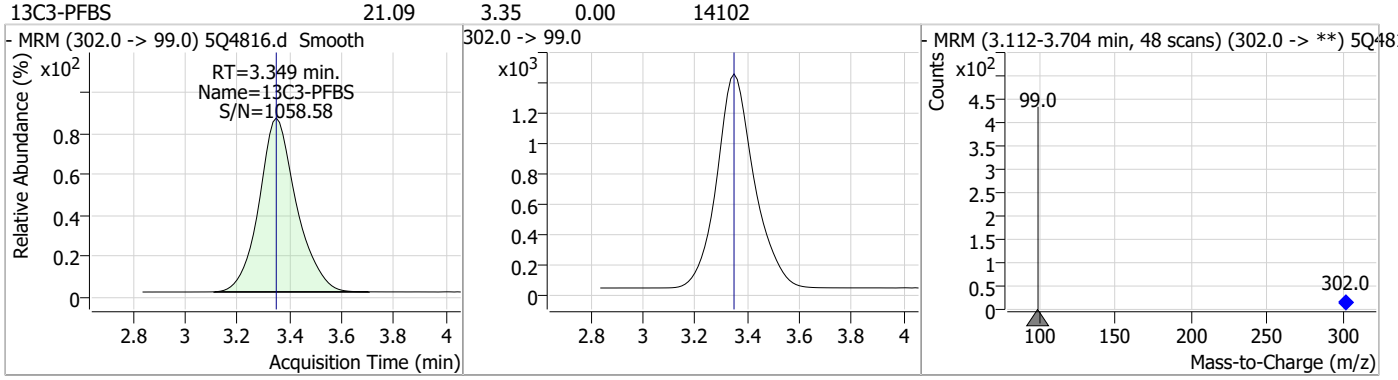
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.94	3.12	0.00	5585				



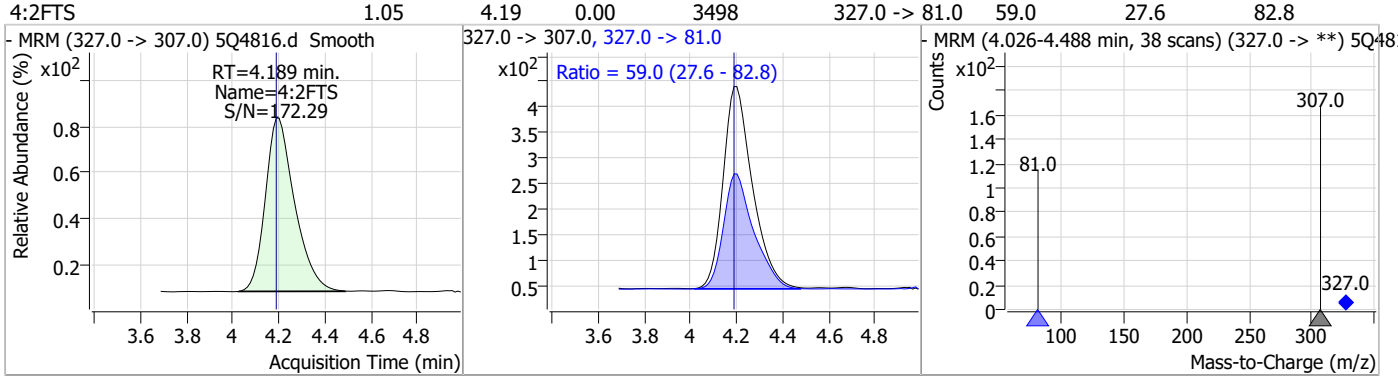
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.94	3.35	0.01	1994	299.0 -> 99.0	40.3	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.09	3.35	0.00	14102				

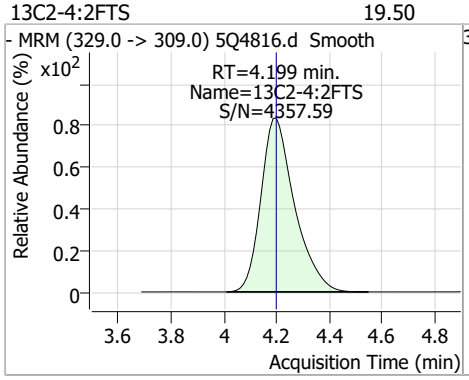


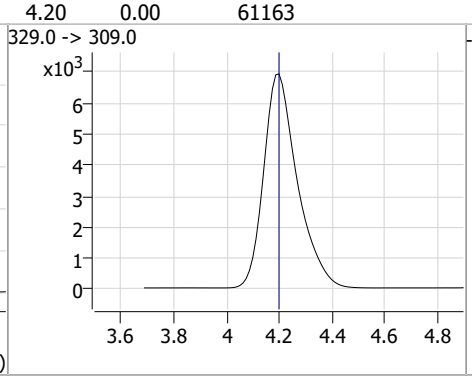
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	4.19	0.00	3498	327.0 -> 81.0	59.0	27.6	82.8

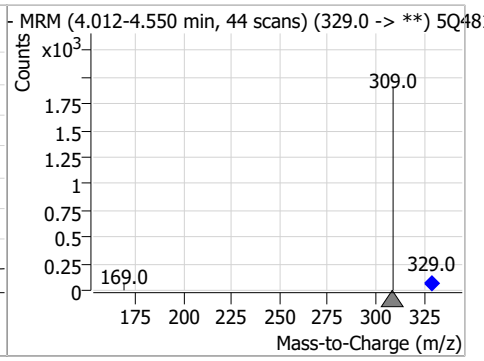


Perfluorinated Compounds by LC/MS/MS

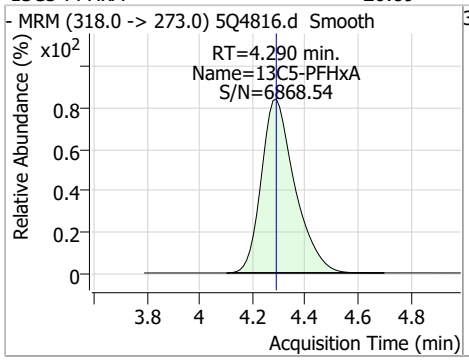
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.50	4.20	0.00	61163				

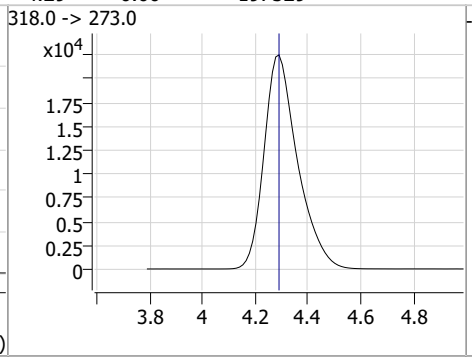


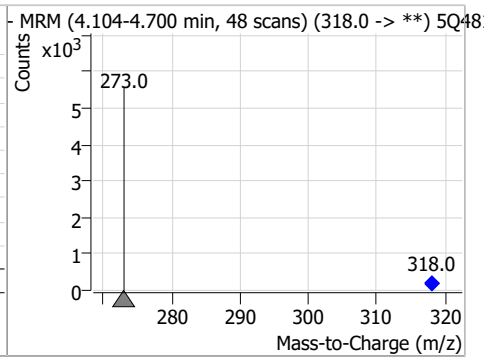




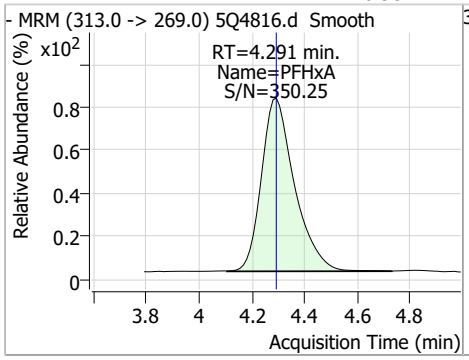
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.89	4.29	0.00	197529				

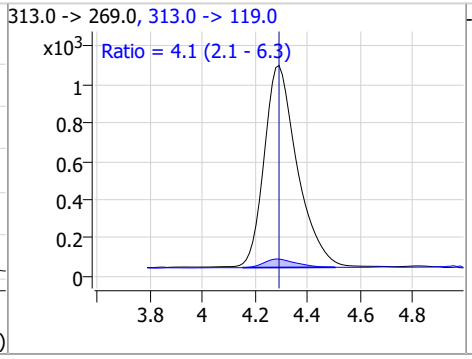


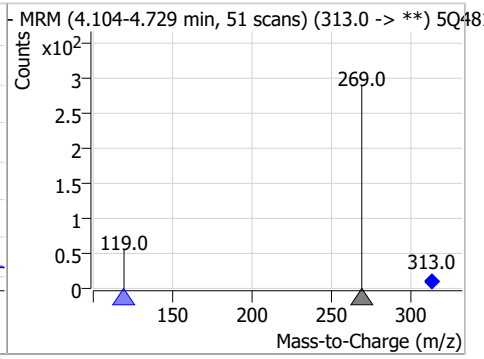




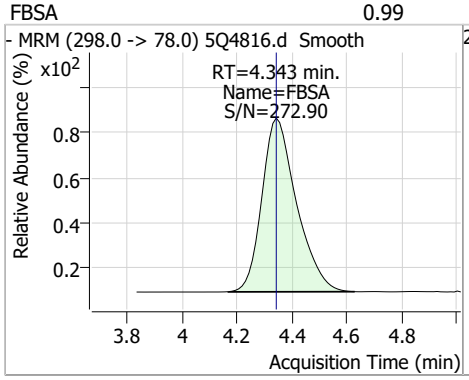
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.93	4.29	0.00	9160	313.0 -> 119.0	4.1	2.1	6.3

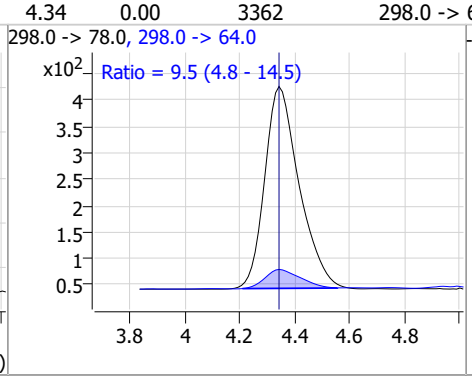


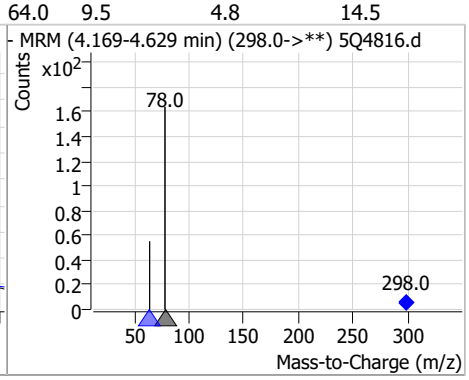




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.99	4.34	0.00	3362	298.0 -> 64.0	9.5	4.8	14.5

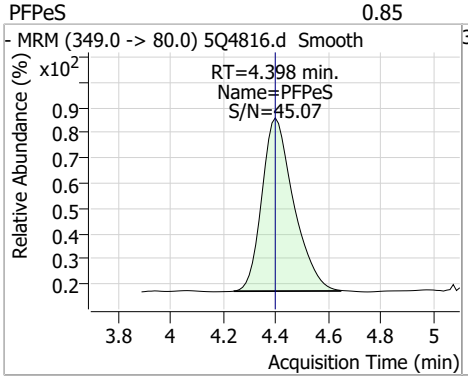


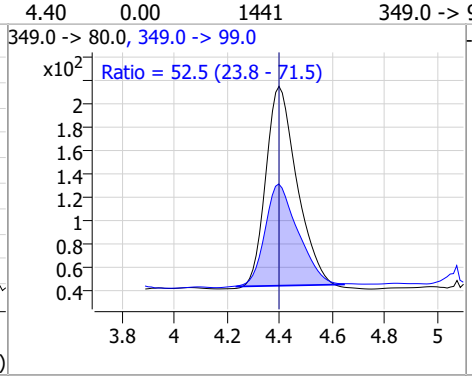


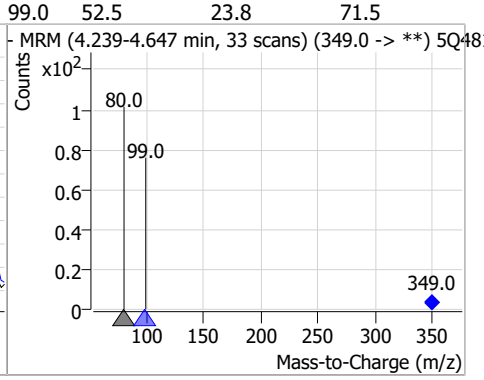


Perfluorinated Compounds by LC/MS/MS

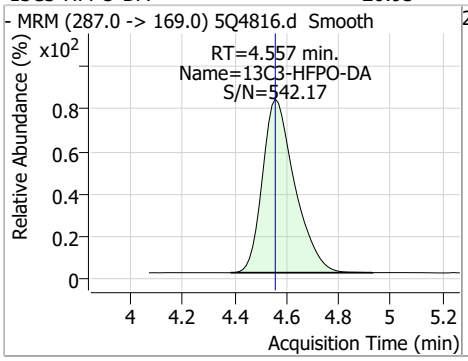
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.85	4.40	0.00	1441	349.0 -> 99.0	52.5	23.8	71.5

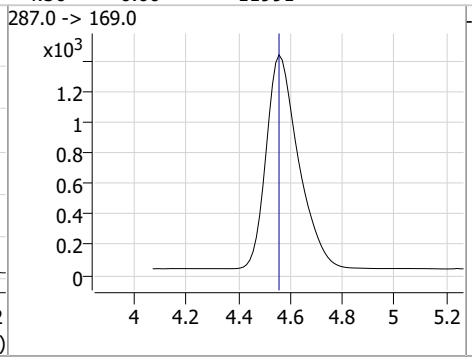


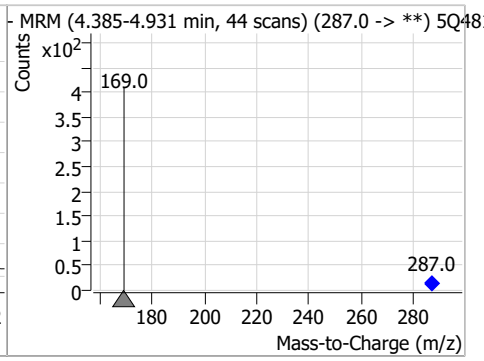




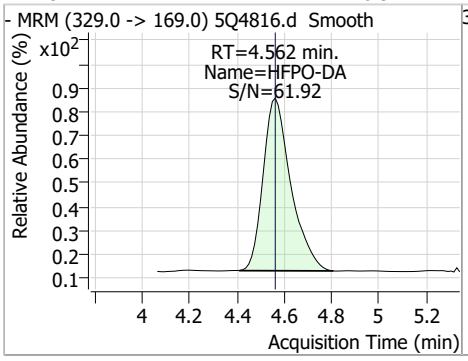
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.93	4.56	0.00	11991				

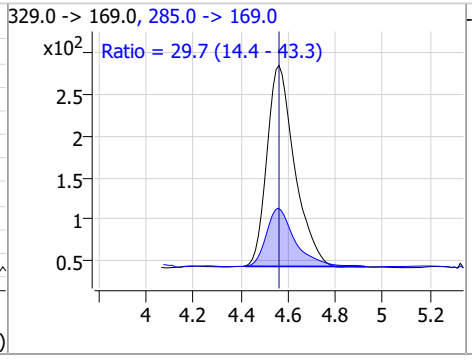


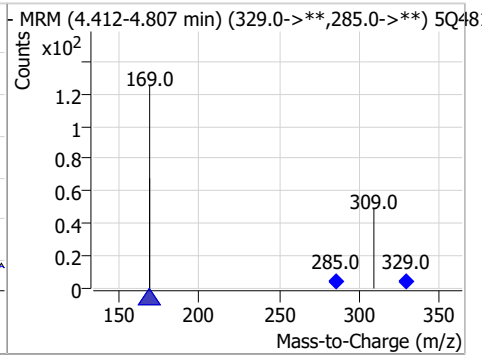




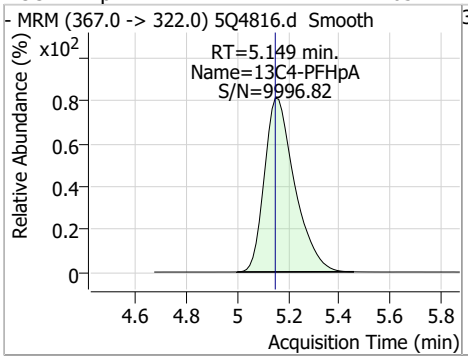
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.92	4.56	0.00	1956	285.0 -> 169.0	29.7	14.4	43.3

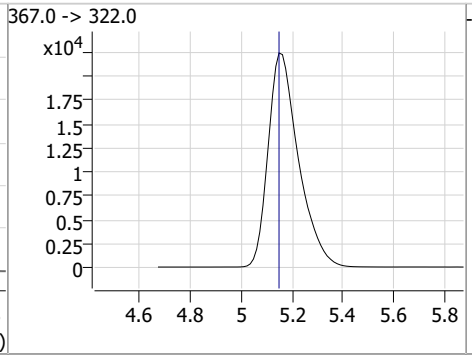


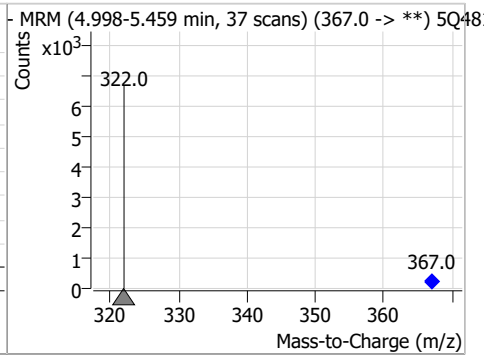




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.05	5.15	0.00	185113				

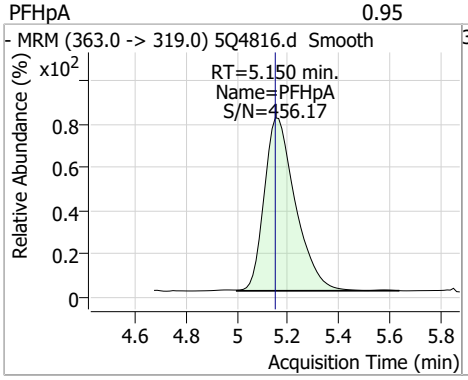


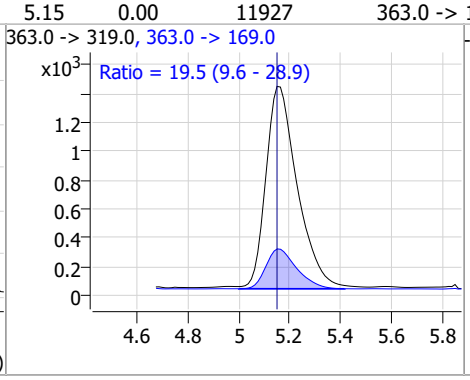


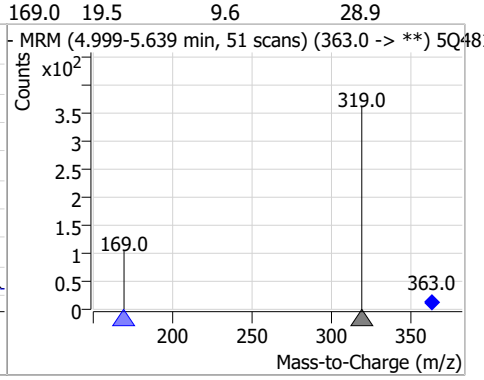


Perfluorinated Compounds by LC/MS/MS

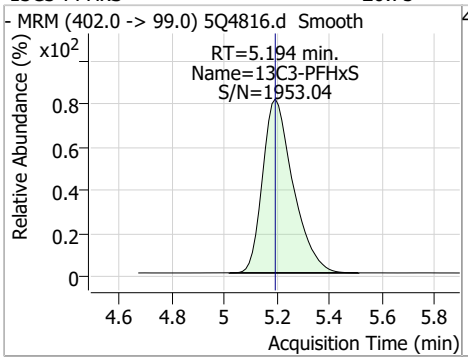
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	5.15	0.00	11927	363.0 -> 169.0	19.5	9.6	28.9

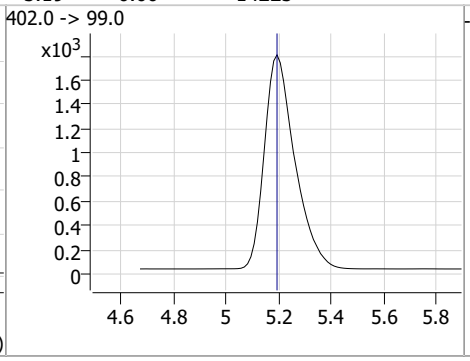


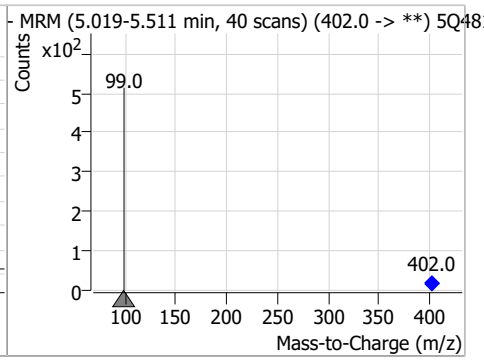




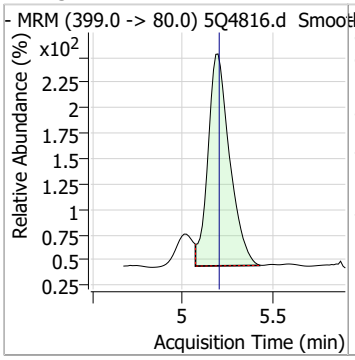
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.75	5.19	0.00	14225				

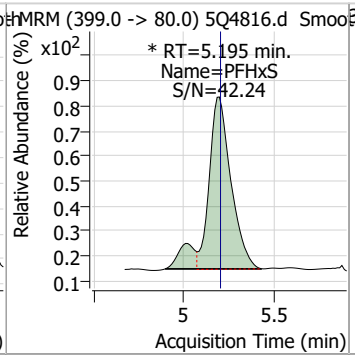


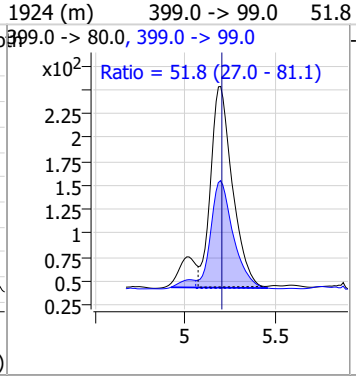


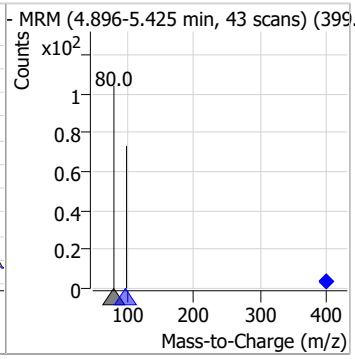


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	5.20	0.00	1924 (m)	399.0 -> 99.0	51.8	27.0	81.1

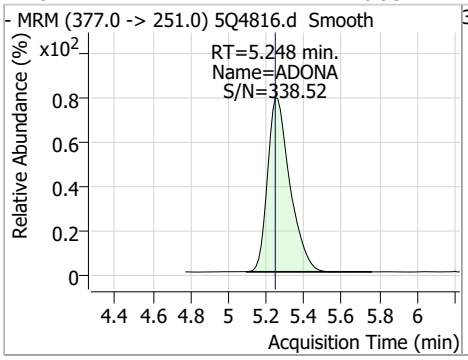


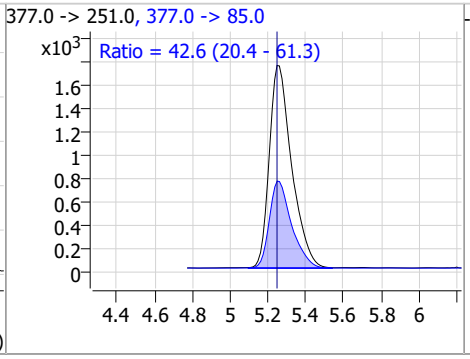


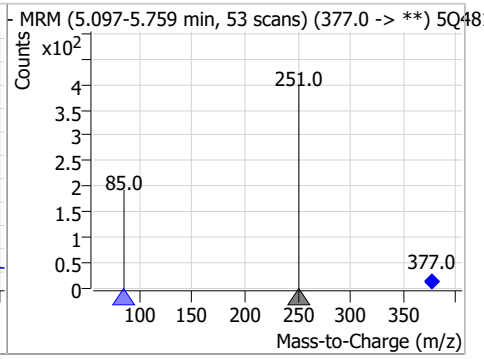




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.93	5.25	0.00	14225	377.0 -> 85.0	42.6	20.4	61.3

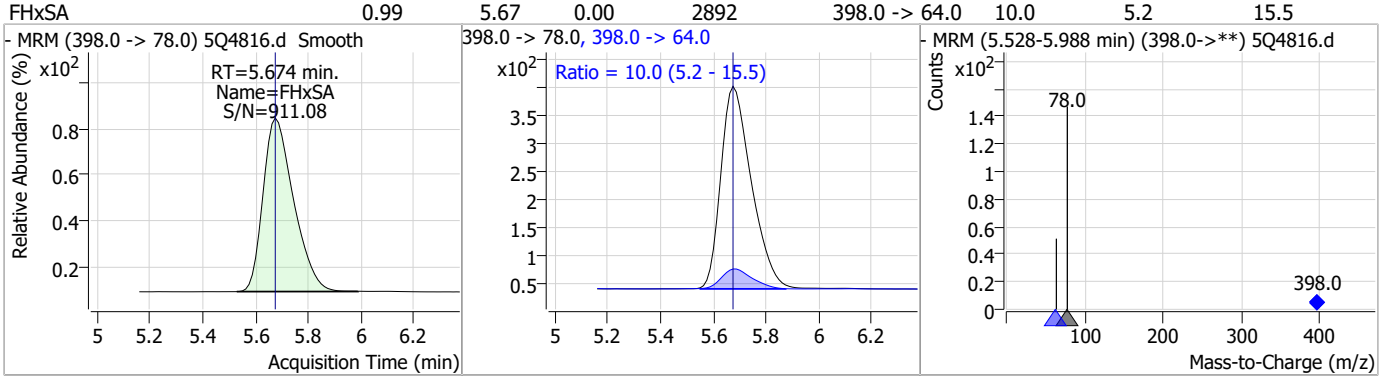




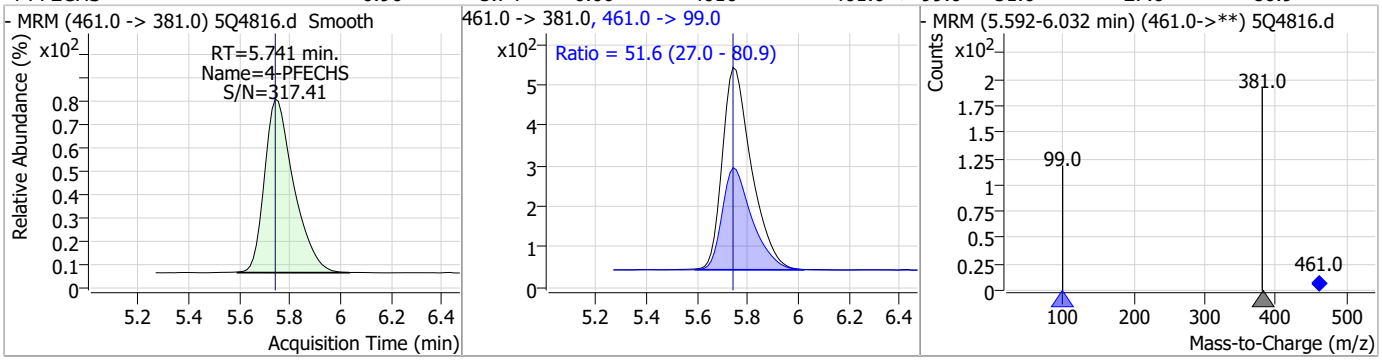


Perfluorinated Compounds by LC/MS/MS

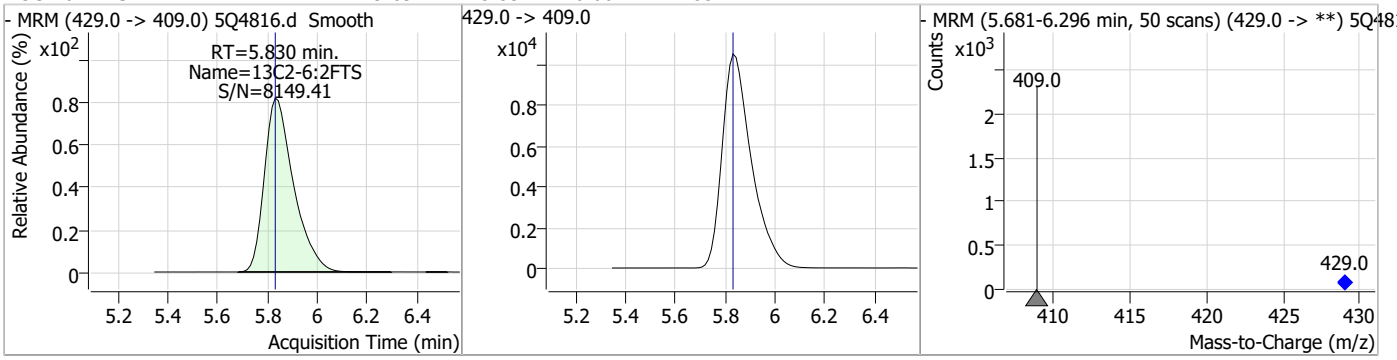
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.99	5.67	0.00	2892	398.0 -> 64.0	10.0	5.2	15.5



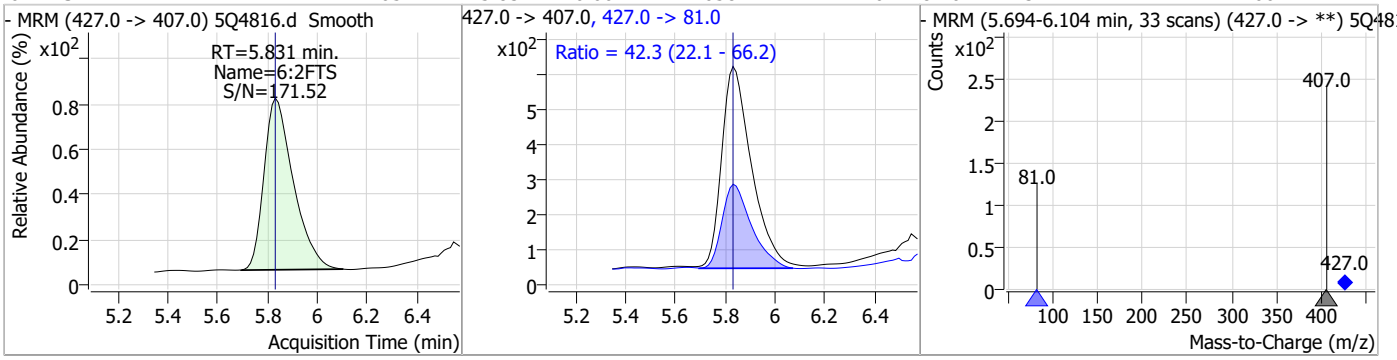
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.96	5.74	0.00	4016	461.0 -> 99.0	51.6	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.89	5.83	0.00	85272				

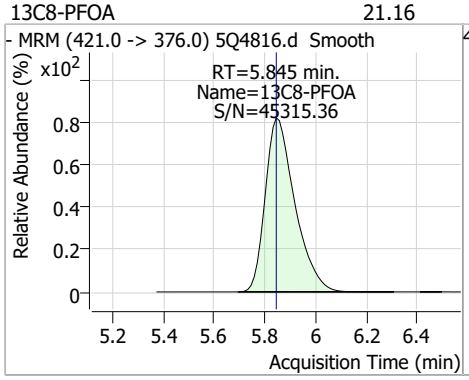


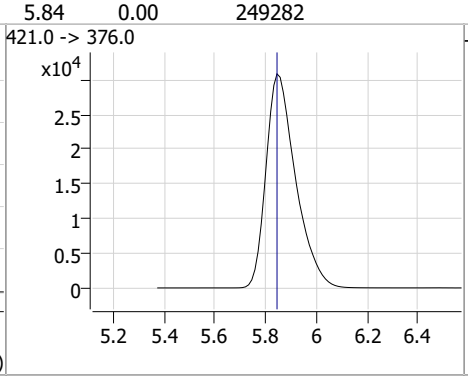
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.83	0.00	4658	427.0 -> 81.0	42.3	22.1	66.2

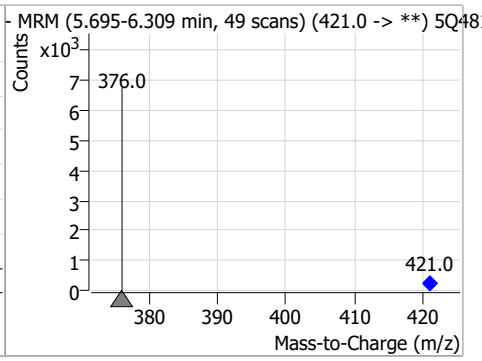


Perfluorinated Compounds by LC/MS/MS

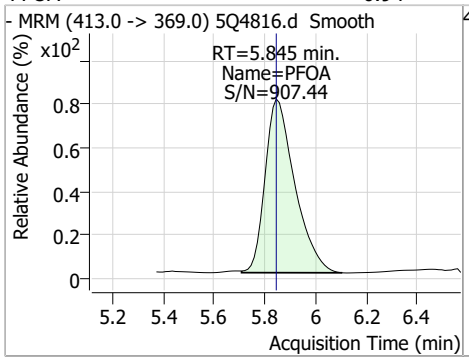
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.16	5.84	0.00	249282				

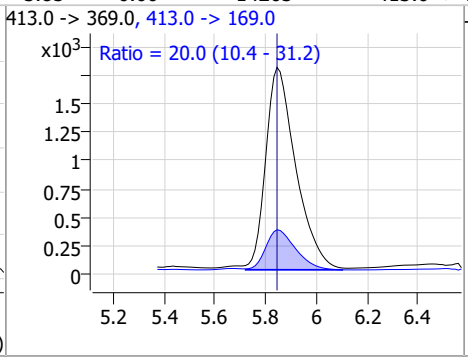


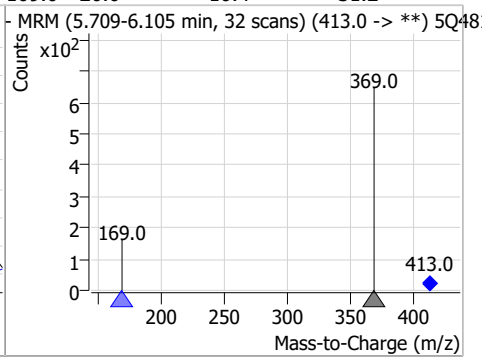




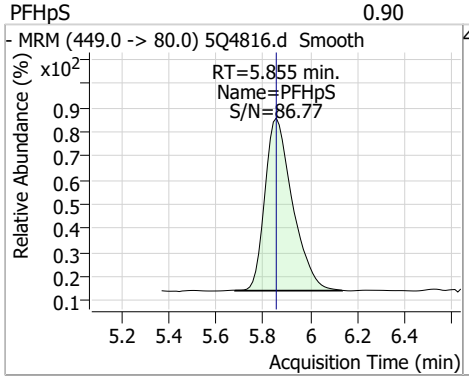
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.94	5.85	0.00	14265	413.0 -> 169.0	20.0	10.4	31.2

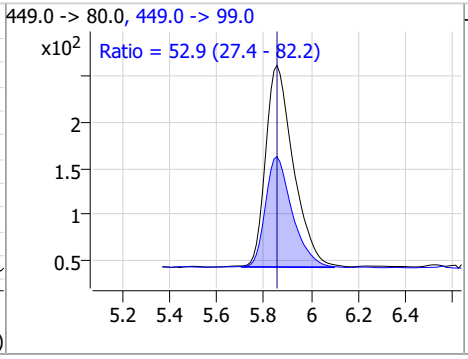


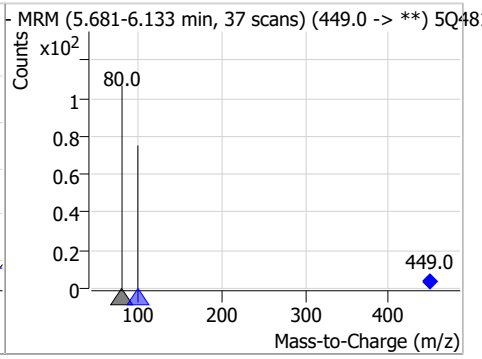




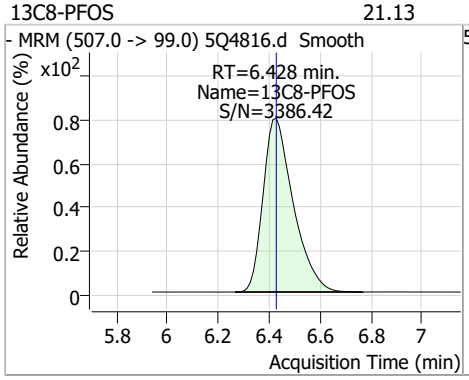
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.90	5.85	0.00	1774	449.0 -> 99.0	52.9	27.4	82.2

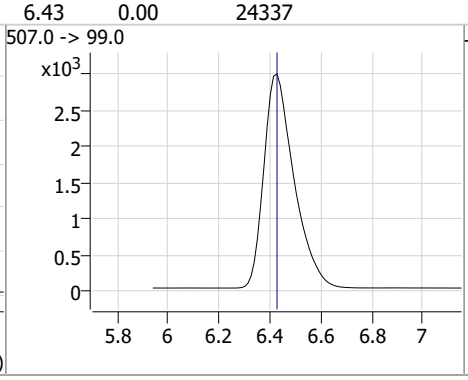


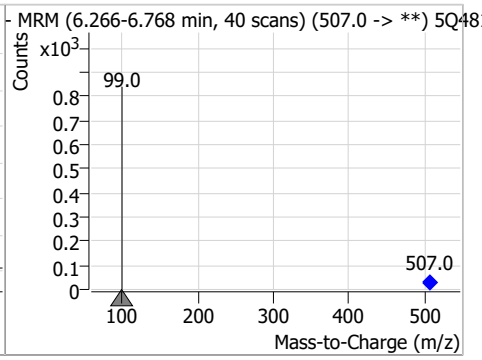




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.13	6.43	0.00	24337				

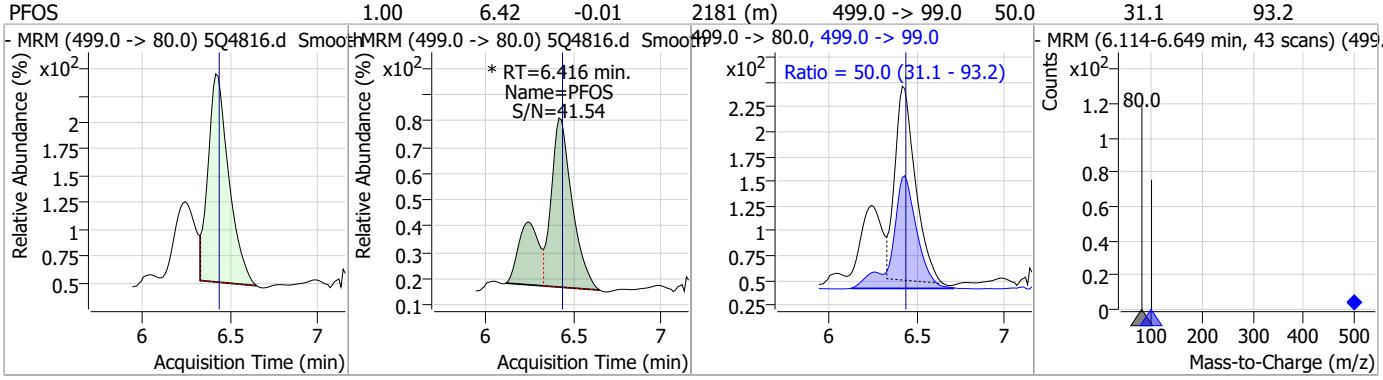




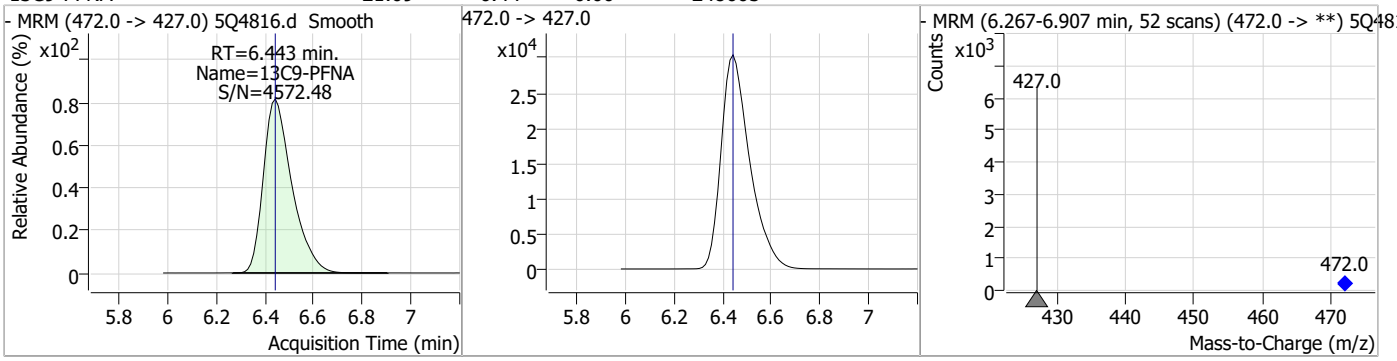


Perfluorinated Compounds by LC/MS/MS

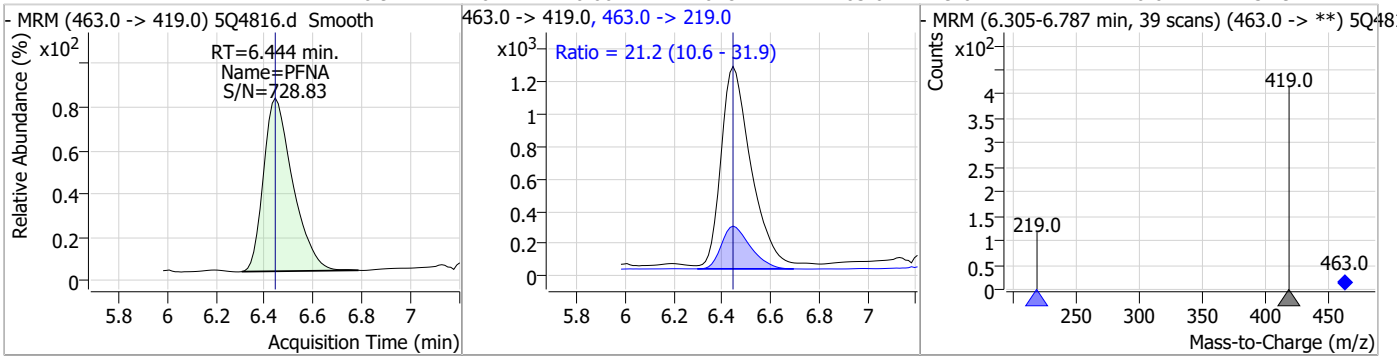
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	6.42	-0.01	2181 (m)	499.0 -> 99.0	50.0	31.1	93.2



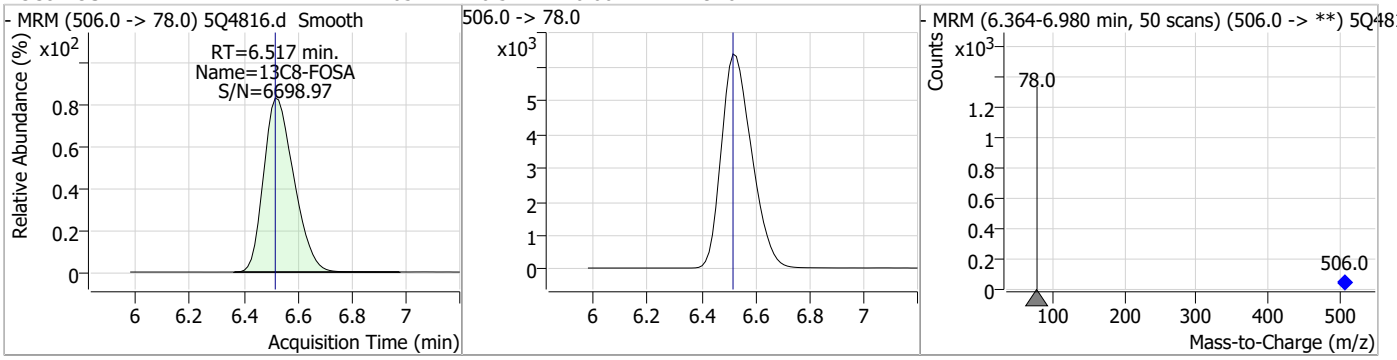
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.09	6.44	0.00	248605				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	6.44	0.00	10282	463.0 -> 219.0	21.2	10.6	31.9

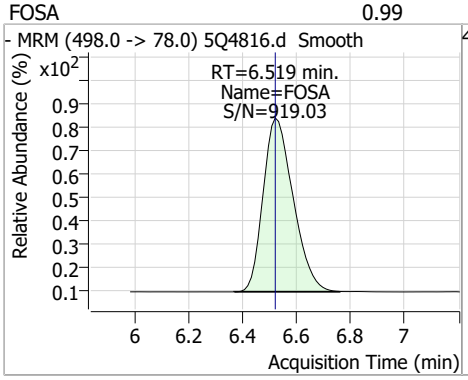


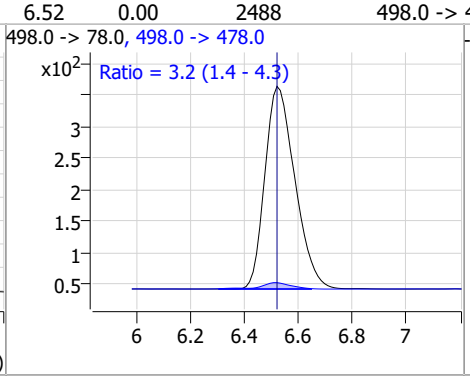
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.05	6.52	0.00	49462				

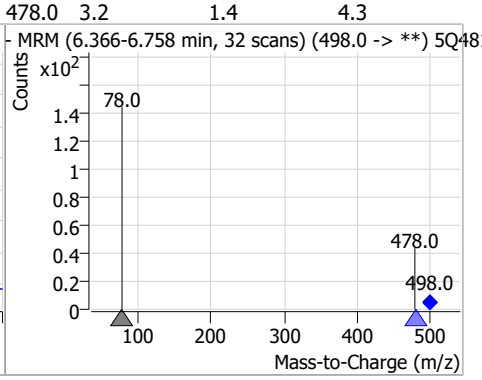


Perfluorinated Compounds by LC/MS/MS

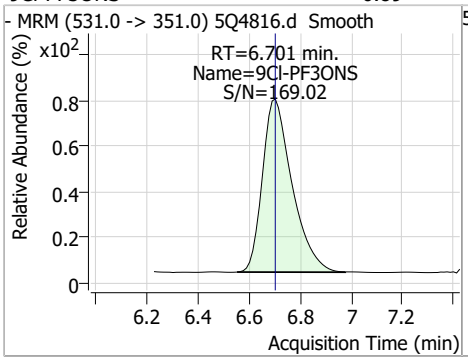
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.99	6.52	0.00	2488	498.0 -> 478.0	3.2	1.4	4.3

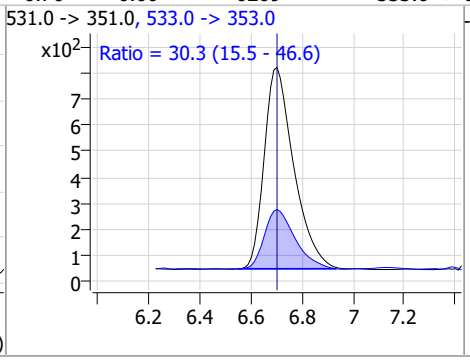


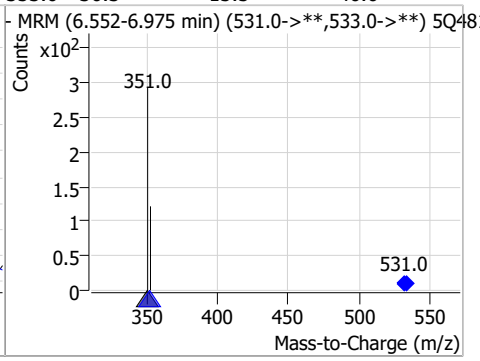




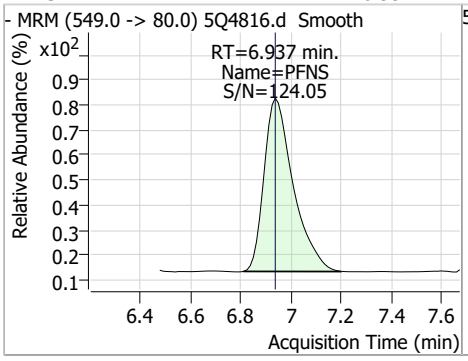
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.89	6.70	0.00	6269	533.0 -> 353.0	30.3	15.5	46.6

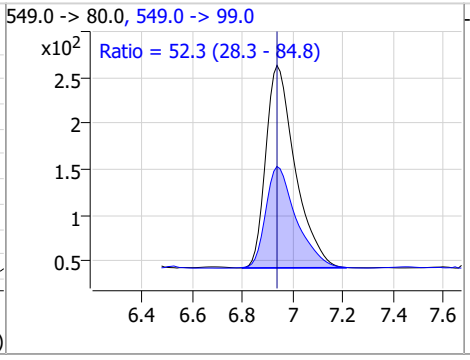


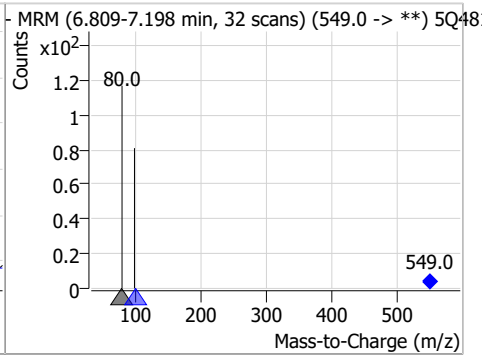




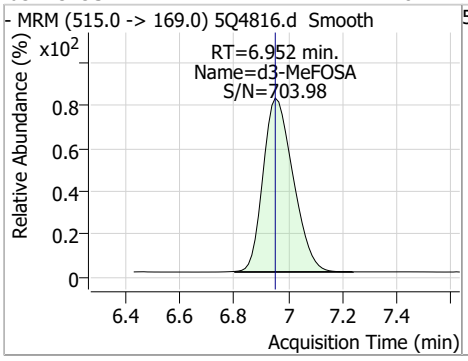
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.99	6.94	0.00	1789	549.0 -> 99.0	52.3	28.3	84.8

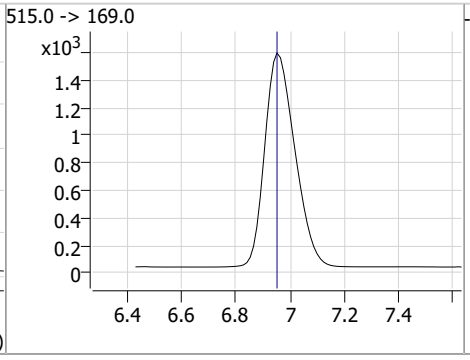


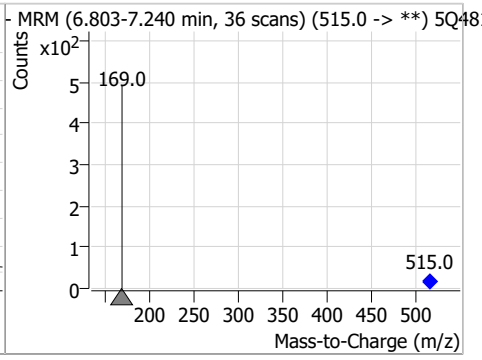




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.48	6.95	0.00	12080				

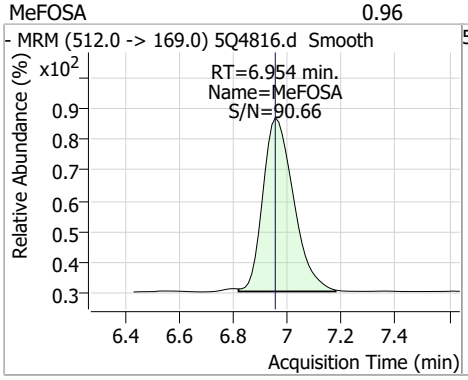


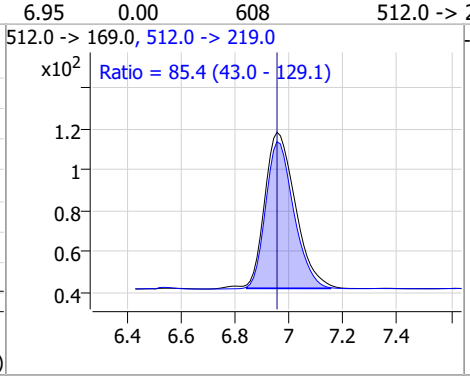


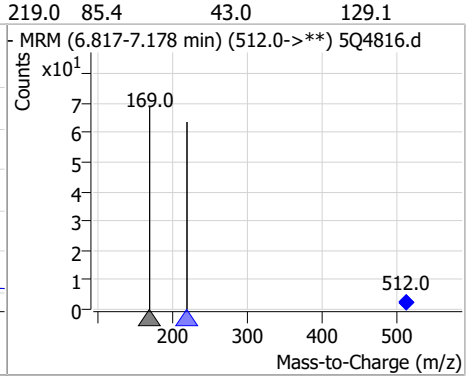


Perfluorinated Compounds by LC/MS/MS

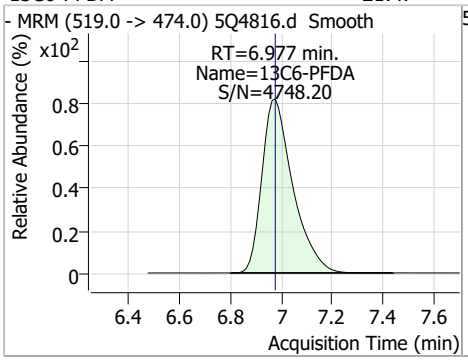
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.96	6.95	0.00	608	512.0 -> 219.0	85.4	43.0	129.1

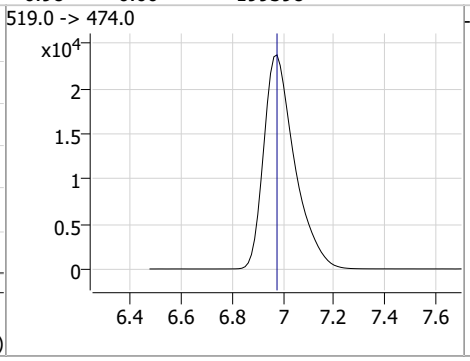


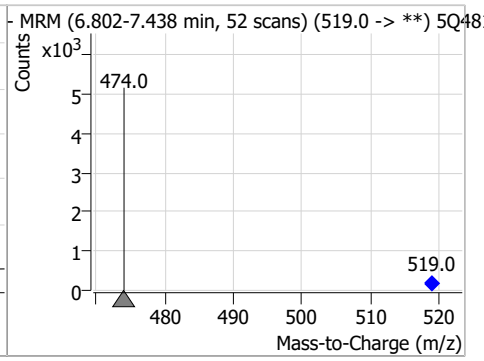




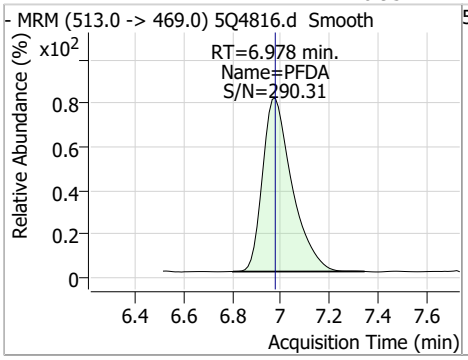
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.47	6.98	0.00	199398				

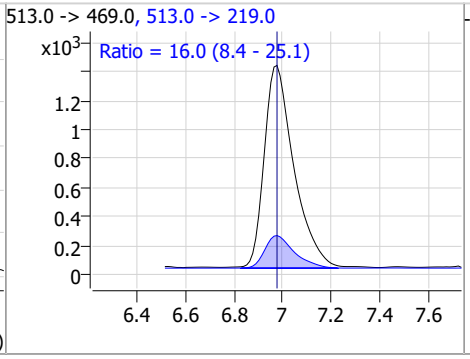


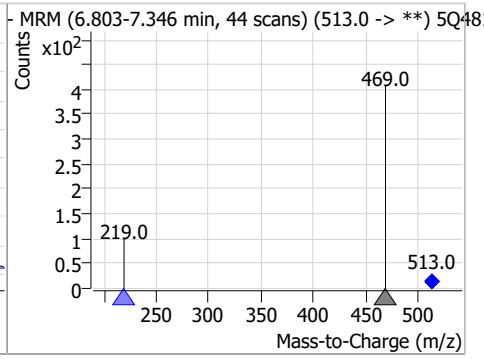




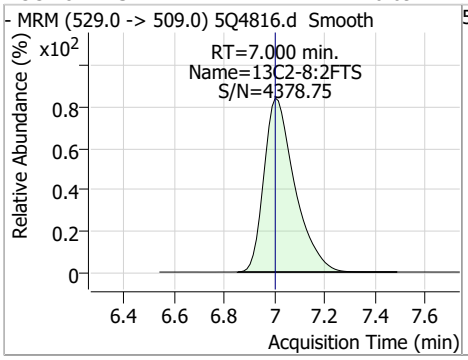
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	6.98	0.00	11795	513.0 -> 219.0	16.0	8.4	25.1

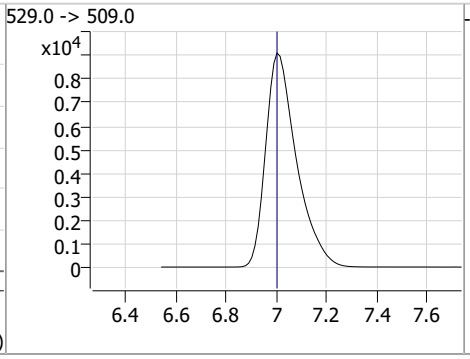


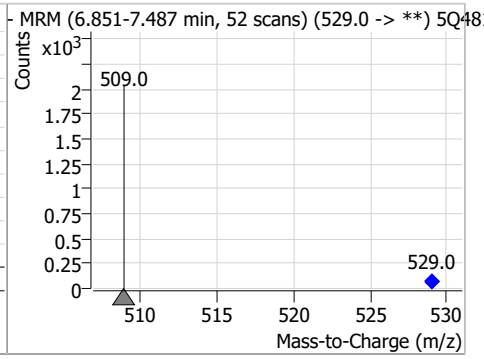




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.09	7.00	0.00	77205				

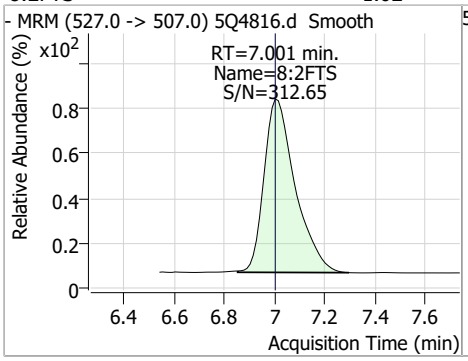


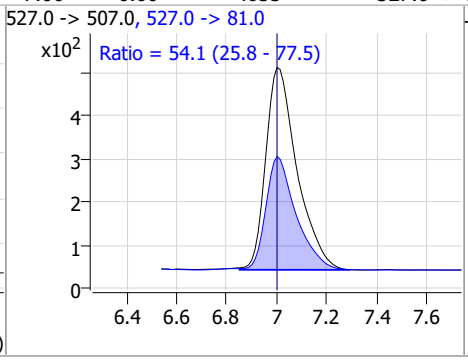


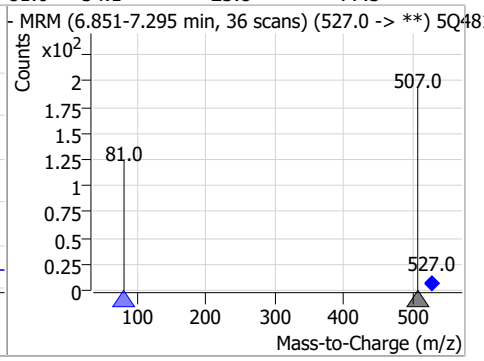


Perfluorinated Compounds by LC/MS/MS

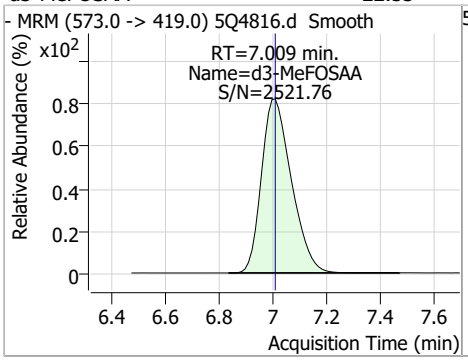
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.02	7.00	0.00	4055	527.0 -> 81.0	54.1	25.8	77.5

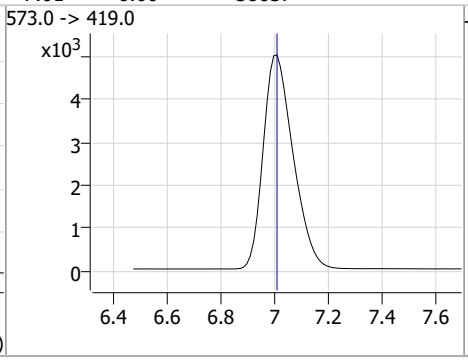


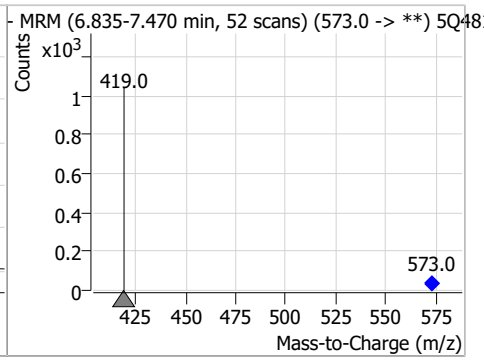




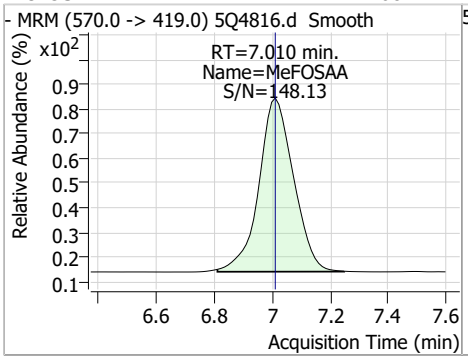
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.53	7.01	0.00	38637				

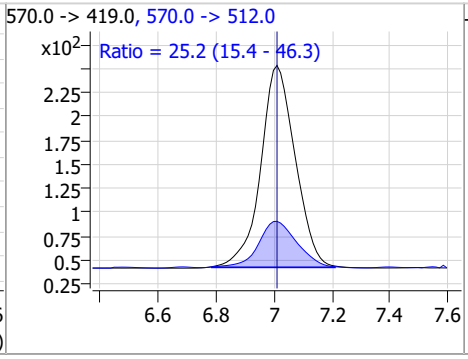


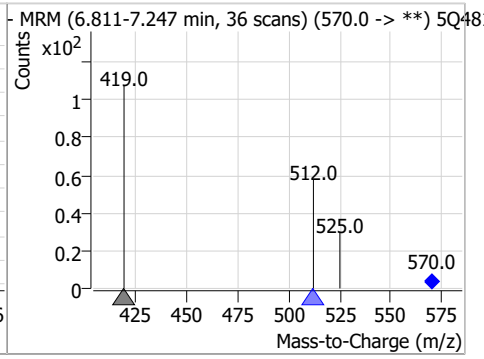




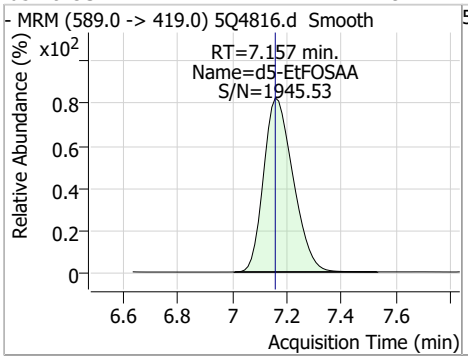
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.08	7.01	0.00	1755	570.0 -> 512.0	25.2	15.4	46.3

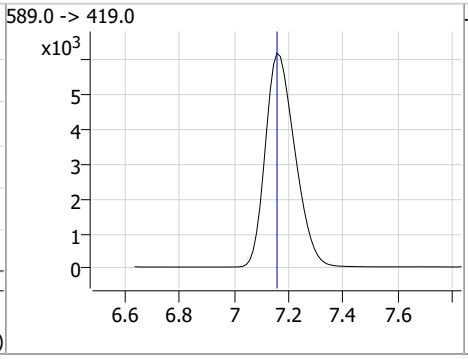


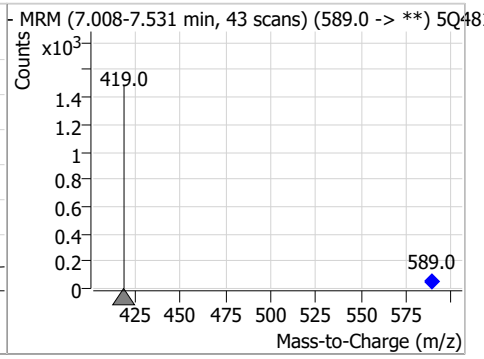




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.91	7.16	0.00	46191				

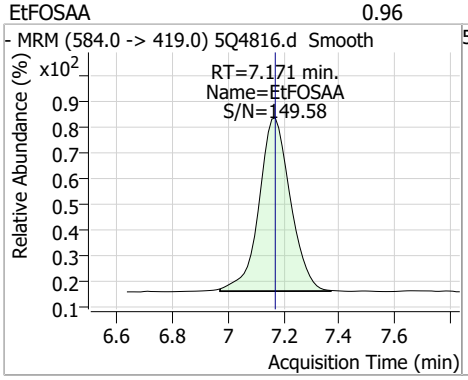


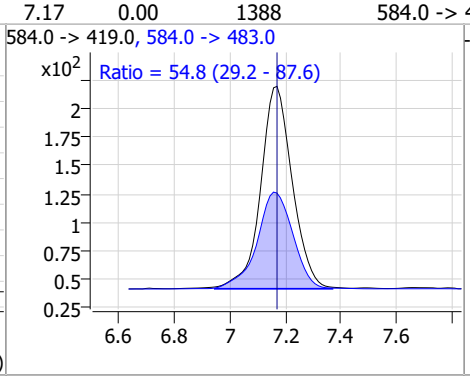


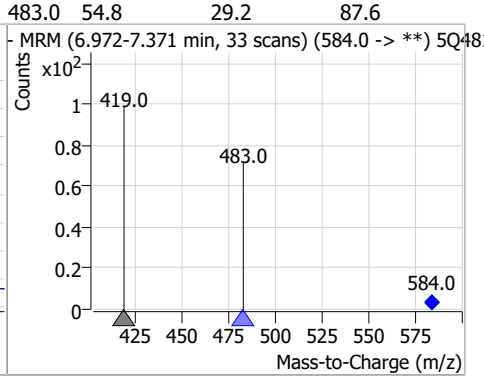


Perfluorinated Compounds by LC/MS/MS

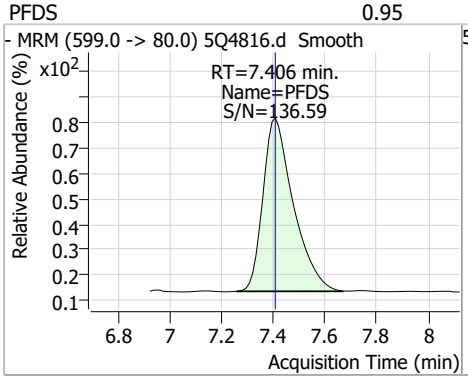
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.96	7.17	0.00	1388	584.0 -> 483.0	54.8	29.2	87.6

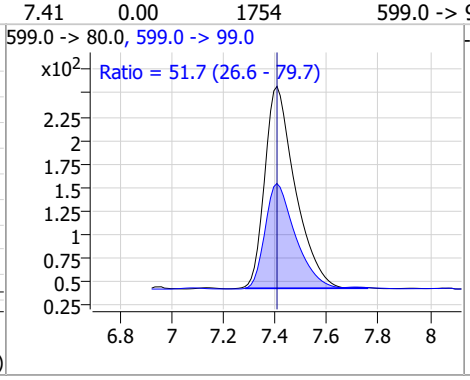


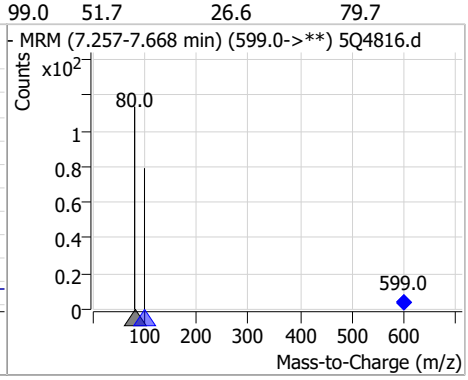




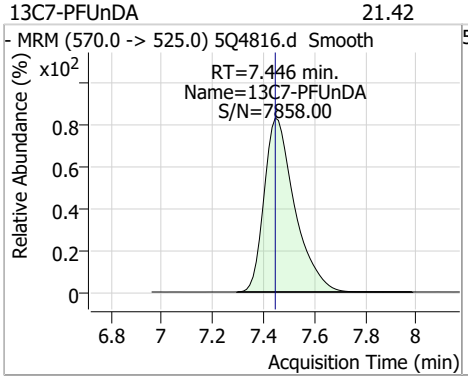
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.95	7.41	0.00	1754	599.0 -> 99.0	51.7	26.6	79.7

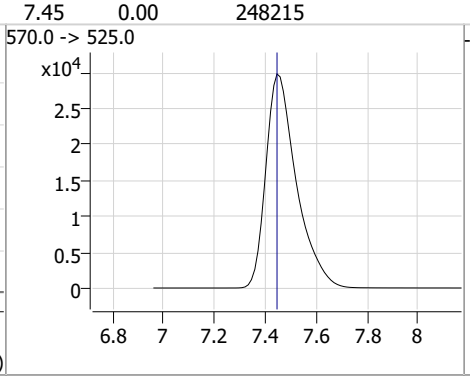


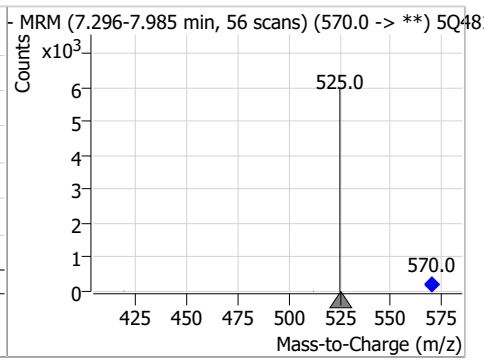




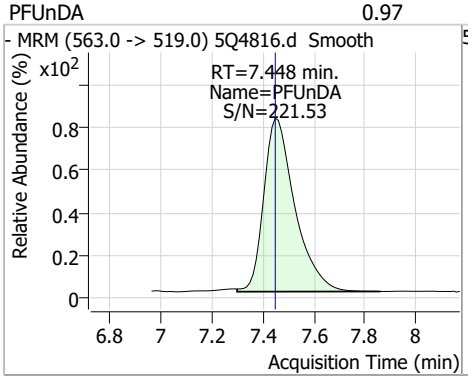
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.42	7.45	0.00	248215				

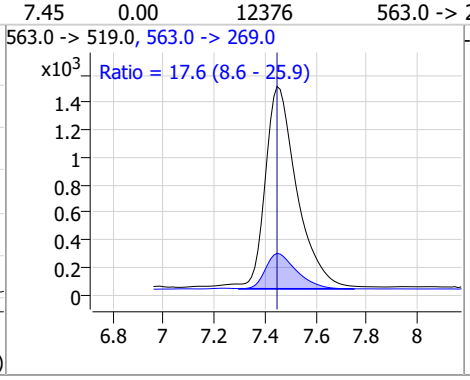


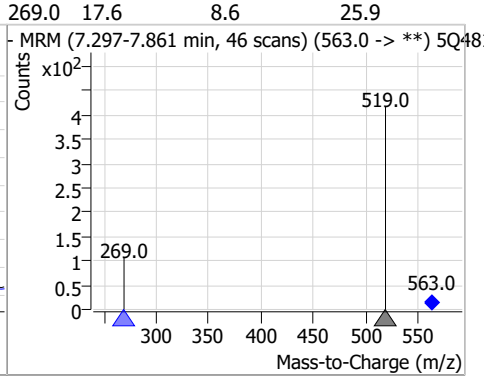




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.97	7.45	0.00	12376	563.0 -> 269.0	17.6	8.6	25.9

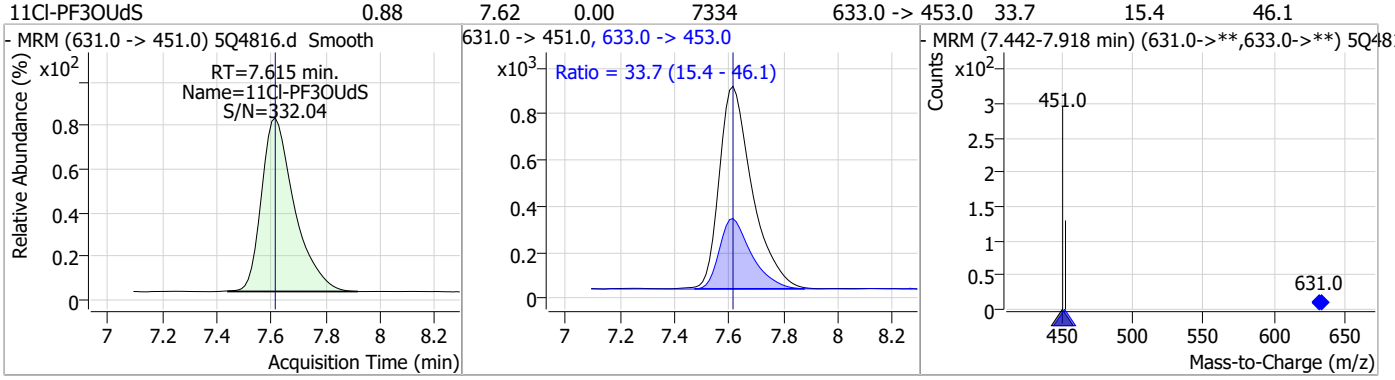




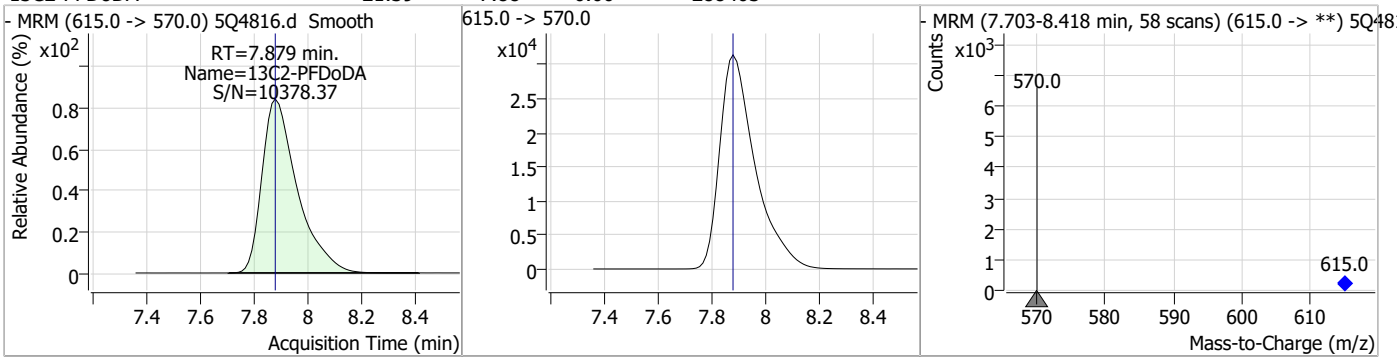


Perfluorinated Compounds by LC/MS/MS

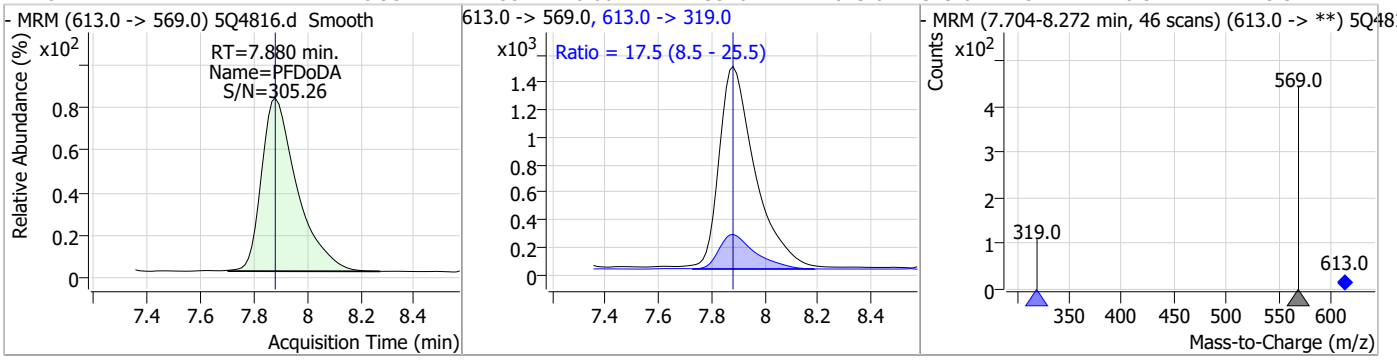
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.88	7.62	0.00	7334	633.0 -> 453.0	33.7	15.4	46.1



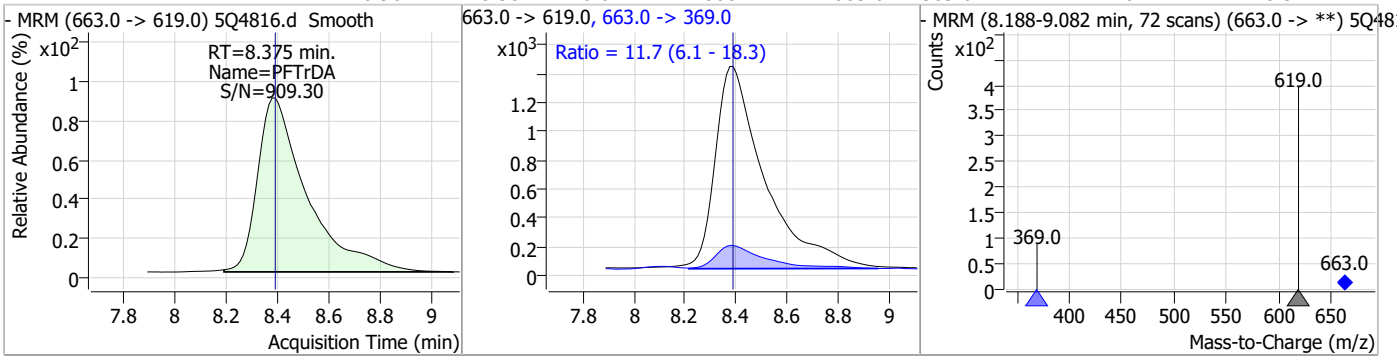
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.39	7.88	0.00	288403				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.95	7.88	0.00	13516	613.0 -> 319.0	17.5	8.5	25.5

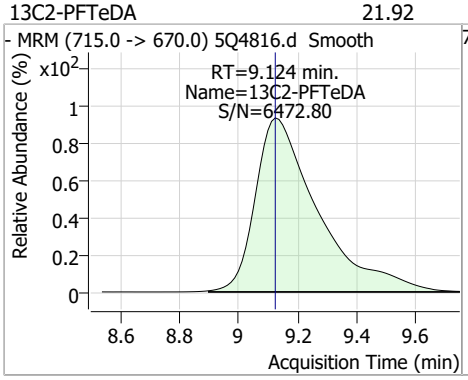


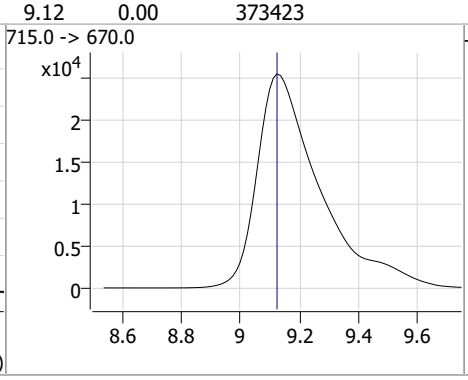
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.96	8.38	-0.01	18687	663.0 -> 369.0	11.7	6.1	18.3

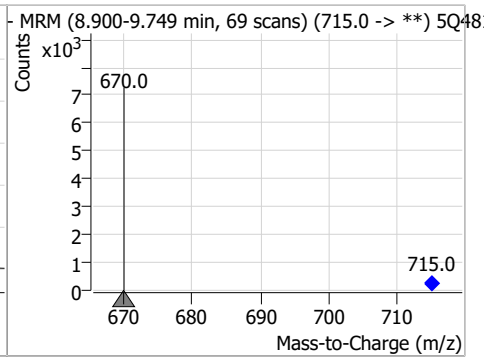


Perfluorinated Compounds by LC/MS/MS

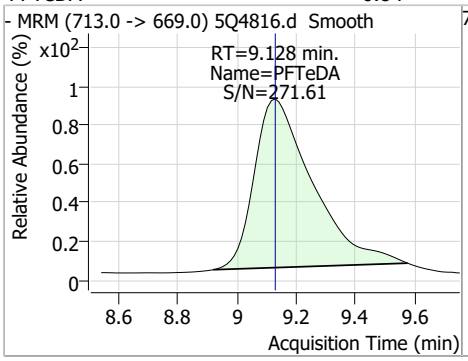
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.92	9.12	0.00	373423				

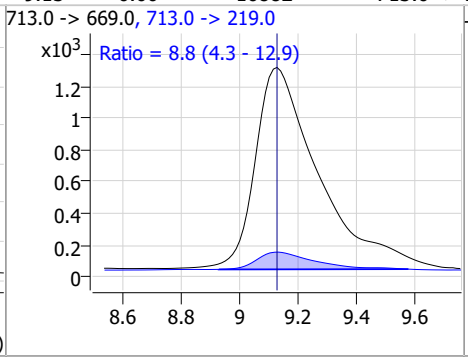


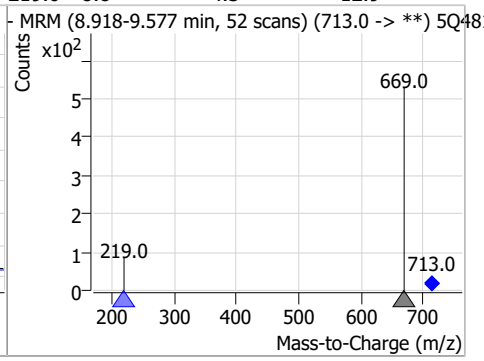




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.84	9.13	0.00	16882	713.0 -> 219.0	8.8	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4816.D
Injection Time: 09/17/22 12:32
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4817.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 12:48:03 PM
Sample Name : ic73-2
Vial : P1-A4
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

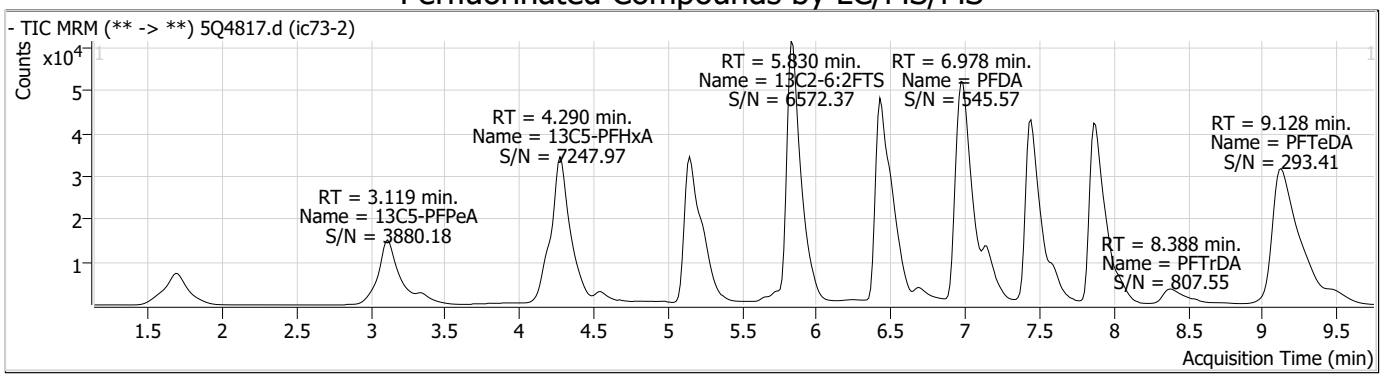
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	80720	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	128971	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	207491	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	193571	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	258376	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	259543	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	207489	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	260369	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	296368	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	366235	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	51575	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	14886	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	14709	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	25571	20.00	µg/L	0.000
M2-4:2FTS	4.187	329.0 -> 309.0	64145	20.00	µg/L	-0.012
M2-6:2FTS	5.830	429.0 -> 409.0	89165	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	81234	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	39929	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	12416	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	12642	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	47376	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.187	329.0 -> 309.0	64145	20.45	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C2-6:2FTS	5.830	429.0 -> 409.0	89165	20.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-8:2FTS	7.000	529.0 -> 509.0	81234	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C2-PFDoDA	7.879	615.0 -> 570.0	296368	21.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C2-PFTeDA	9.124	715.0 -> 670.0	366235	21.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C3-PFBS	3.349	302.0 -> 99.0	14886	22.26	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.3%		
13C3-PFHxS	5.194	402.0 -> 99.0	14709	21.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C4-PFBA	1.687	217.0 -> 172.0	80720	21.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.4%		
13C4-PFHpA	5.149	367.0 -> 322.0	193571	22.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C5-PFHxA	4.290	318.0 -> 273.0	207491	21.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C5-PFPeA	3.119	268.0 -> 223.0	128971	21.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.2%		
13C6-PFDA	6.977	519.0 -> 474.0	207489	22.34	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

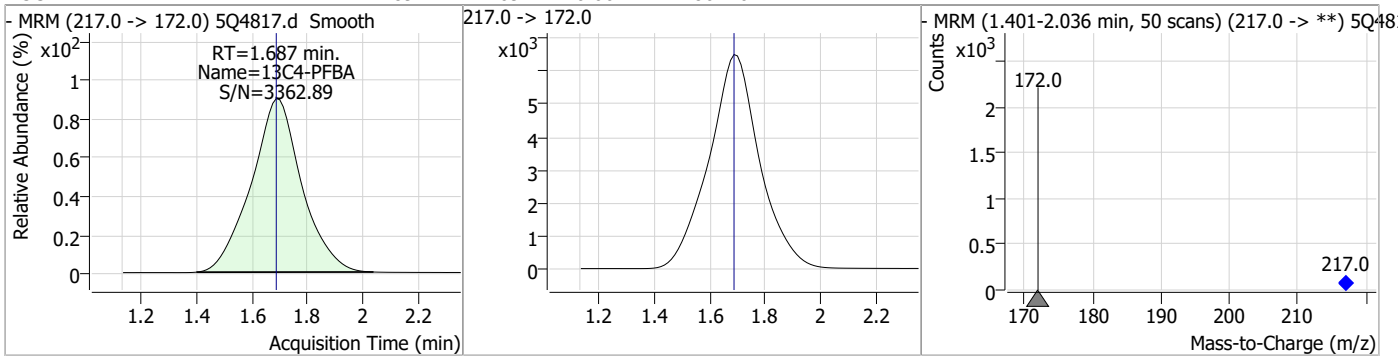
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%		
13C7-PFUnDA	7.446	570.0 -> 525.0	260369	22.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
13C8-FOSA	6.517	506.0 -> 78.0	51575	21.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C8-PFOA	5.845	421.0 -> 376.0	258376	21.94 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C8-PFOS	6.428	507.0 -> 99.0	25571	22.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.0%		
13C9-PFNA	6.443	472.0 -> 427.0	259543	22.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
d3-MeFOSAA	7.009	573.0 -> 419.0	39929	23.28 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.4%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	12416	21.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
d3-MeFOSA	6.952	515.0 -> 169.0	12642	22.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.4%		
d5-EtFOSAA	7.157	589.0 -> 419.0	47376	22.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
Target Compounds						**QValue**
4:2FTS	4.189	327.0 -> 307.0	7262	2.08 µg/L		96
6:2FTS	5.831	427.0 -> 407.0	9682	2.08 µg/L		98
8:2FTS	7.001	527.0 -> 507.0	8472	2.03 µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	2890	1.95 µg/L		97
FOSA	6.519	498.0 -> 78.0	4967	1.90 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	3169	1.89 µg/L		100
PFBA	1.694	213.0 -> 169.0	3027	1.88 µg/L		100
PFBS	3.354	299.0 -> 80.0	4184	1.87 µg/L		99
PFDA	6.978	513.0 -> 469.0	24184	1.87 µg/L		99
PFDoDA	7.880	613.0 -> 569.0	27020	1.84 µg/L		99
PFDS	7.406	599.0 -> 80.0	3715	1.91 µg/L		98
PFHpA	5.150	363.0 -> 319.0	23811	1.81 µg/L		98
PFHpS	5.855	449.0 -> 80.0	3809	1.84 µg/L		93
PFHxA	4.291	313.0 -> 269.0	18529	1.80 µg/L		100
PFHxS	5.195	399.0 -> 80.0	4078	1.91 µg/L	m	98
PFNA	6.444	463.0 -> 419.0	21531	1.82 µg/L		98
PFNS	6.949	549.0 -> 80.0	3606	1.89 µg/L		100
PFOA	5.845	413.0 -> 369.0	29179	1.86 µg/L		98
PFOS	6.416	499.0 -> 80.0	4212	1.84 µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	11694	1.89 µg/L		100
PFPeS	4.398	349.0 -> 80.0	3191	1.79 µg/L		100
PFTeDA	9.128	713.0 -> 669.0	34794	1.77 µg/L		99
PFTrDA	8.388	663.0 -> 619.0	36027	1.81 µg/L		100
PFUnDA	7.448	563.0 -> 519.0	25214	1.88 µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	15349	1.79 µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	13851	1.89 µg/L		100
ADONA	5.248	377.0 -> 251.0	29704	1.88 µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	4163	1.89 µg/L		99
MeFOSA	6.954	512.0 -> 169.0	1301	1.96 µg/L		96
4-PFECHS	5.741	461.0 -> 381.0	8432	1.94 µg/L		100
FBSA	4.343	298.0 -> 78.0	6983	1.95 µg/L		99
FHxSA	5.674	398.0 -> 78.0	5739	1.89 µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

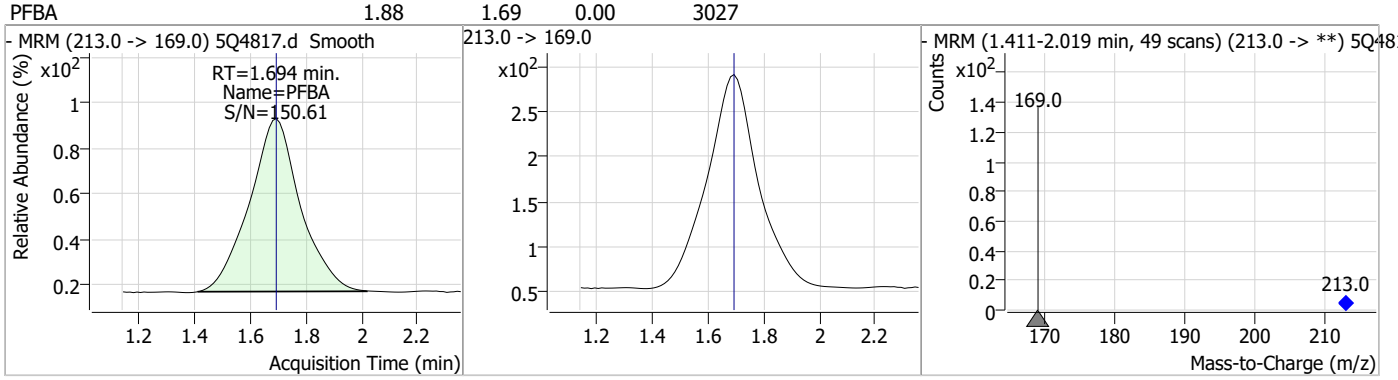
Perfluorinated Compounds by LC/MS/MS



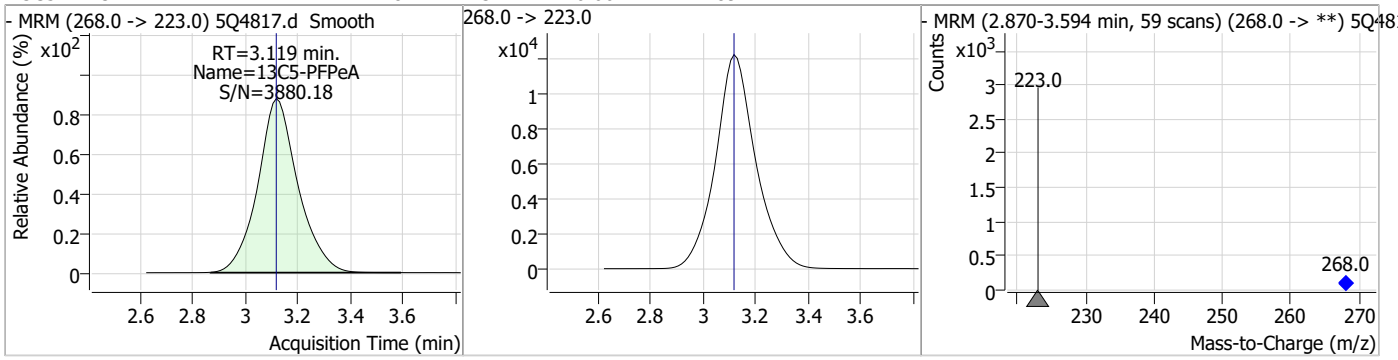
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.89	1.69	0.00	80720				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.88	1.69	0.00	3027				

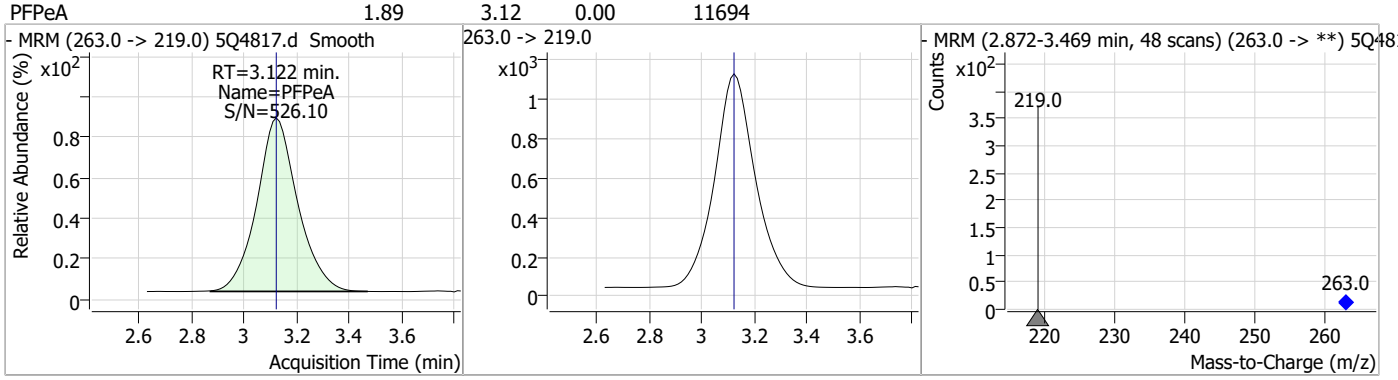


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.84	3.12	0.00	128971				

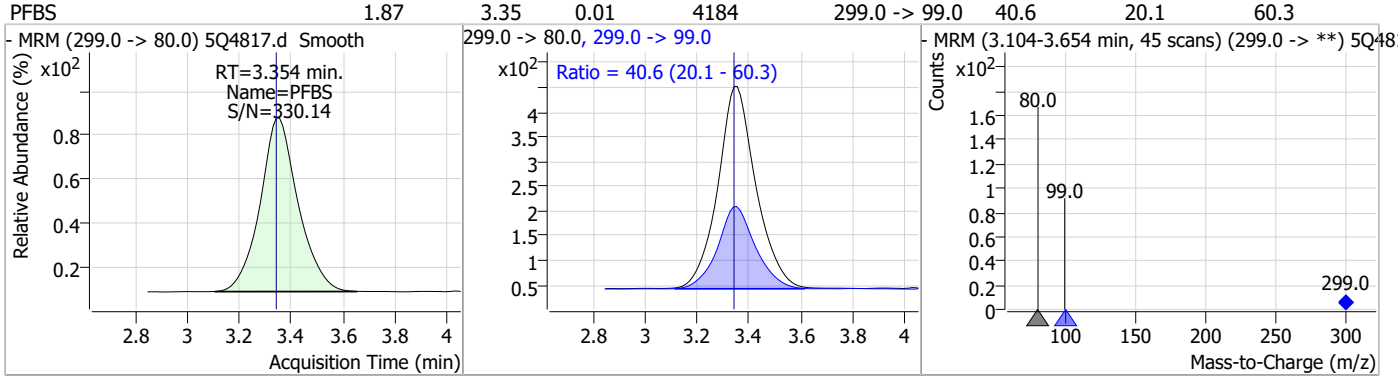


Perfluorinated Compounds by LC/MS/MS

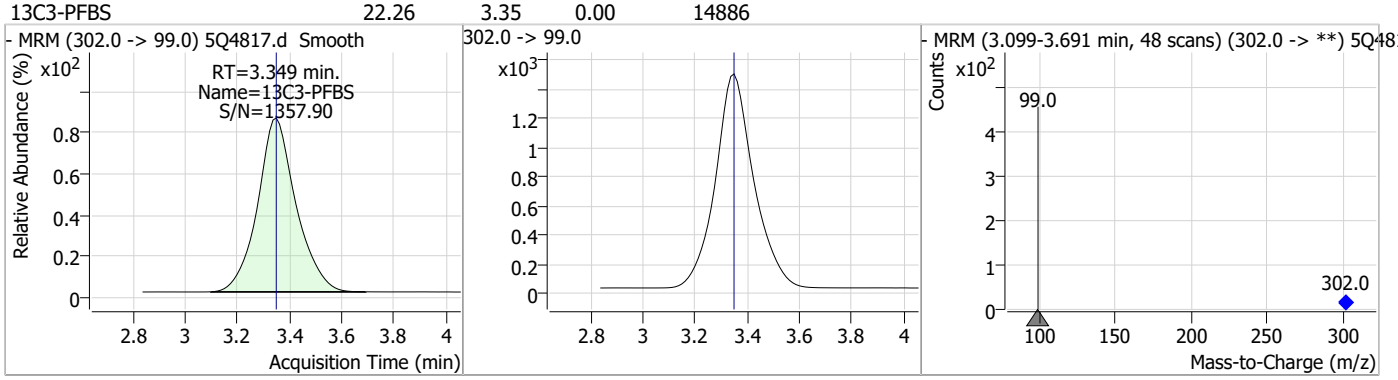
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.89	3.12	0.00	11694				



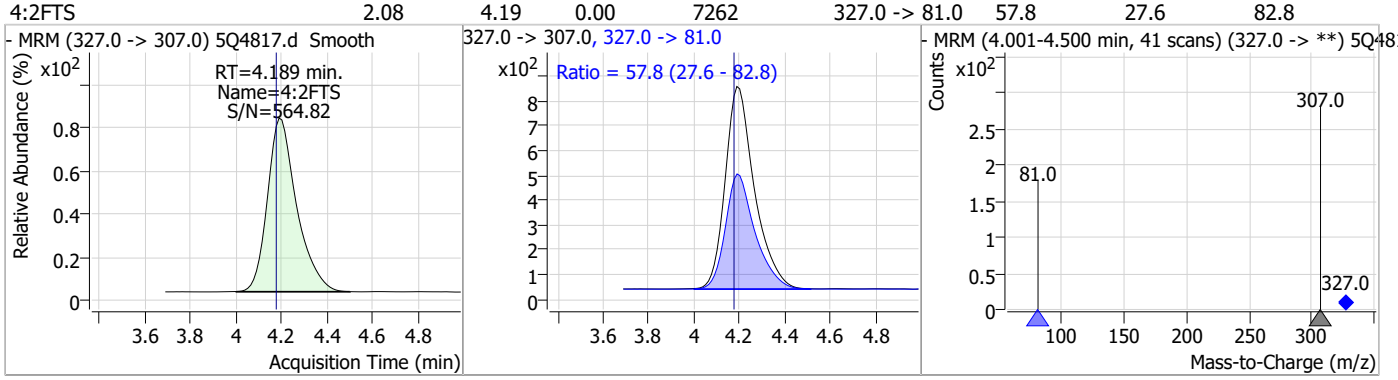
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.87	3.35	0.01	4184	299.0 -> 99.0	40.6	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	22.26	3.35	0.00	14886				

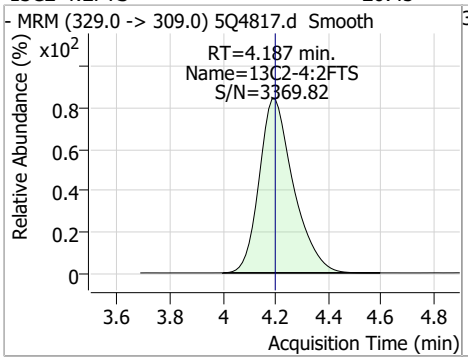


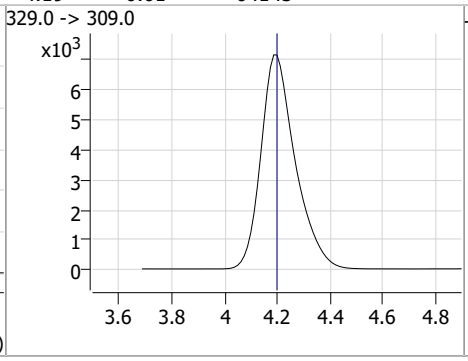
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.08	4.19	0.00	7262	327.0 -> 81.0	57.8	27.6	82.8

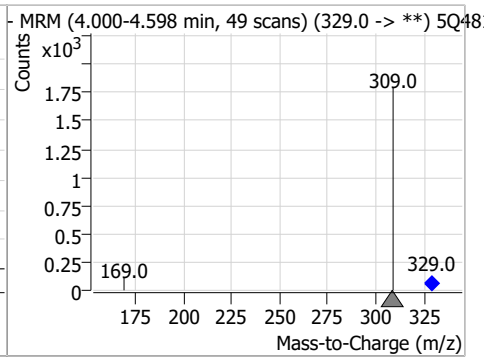


Perfluorinated Compounds by LC/MS/MS

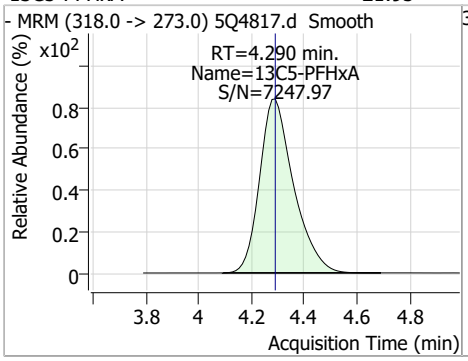
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.45	4.19	-0.01	64145				

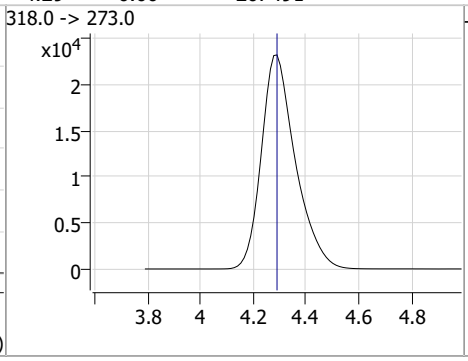


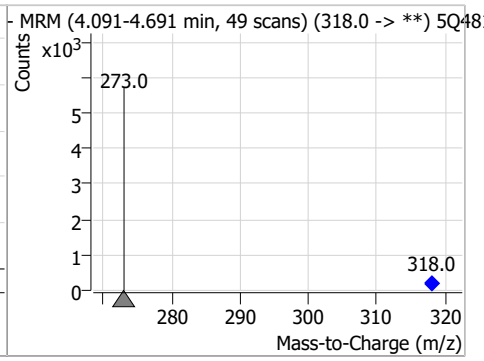




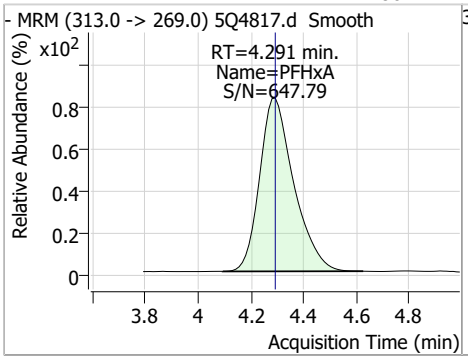
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.95	4.29	0.00	207491				

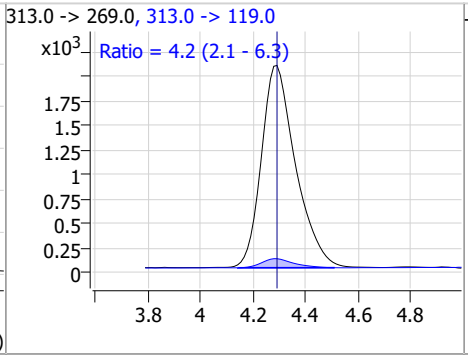


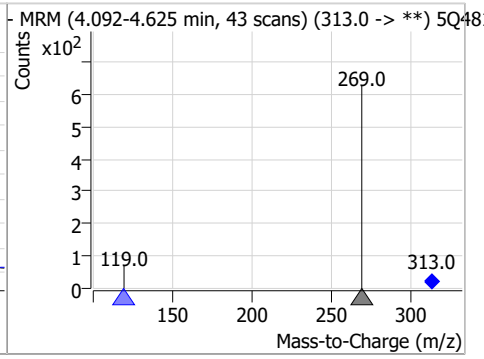




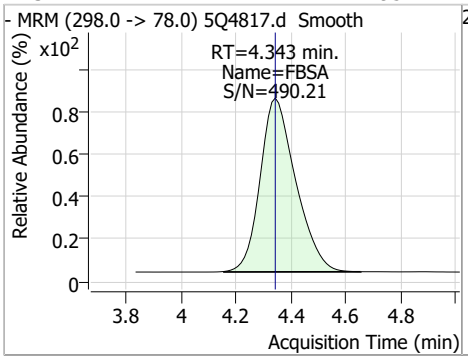
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.80	4.29	0.00	18529	313.0 -> 119.0	4.2	2.1	6.3

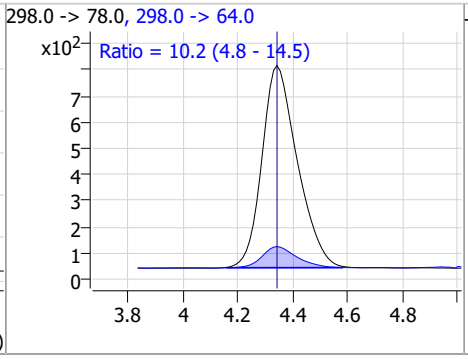


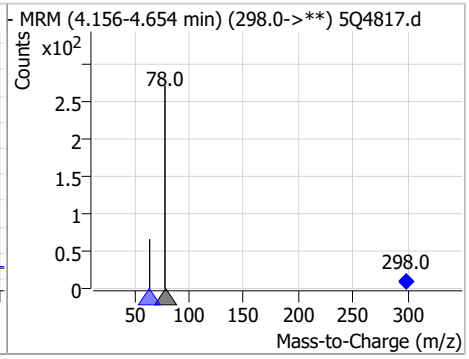




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.95	4.34	0.00	6983	298.0 -> 64.0	10.2	4.8	14.5

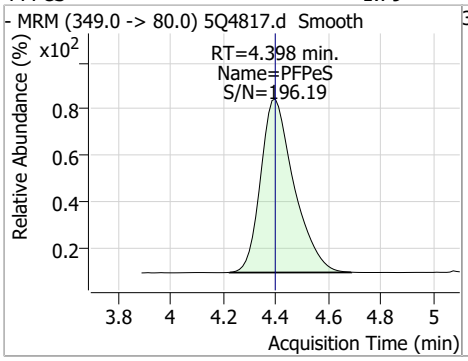


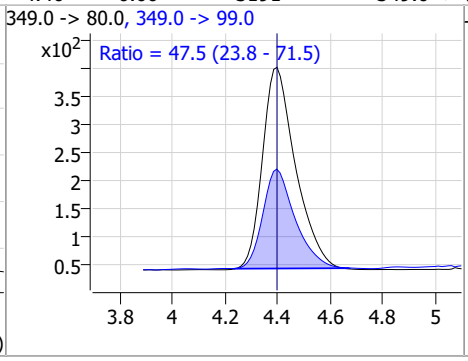


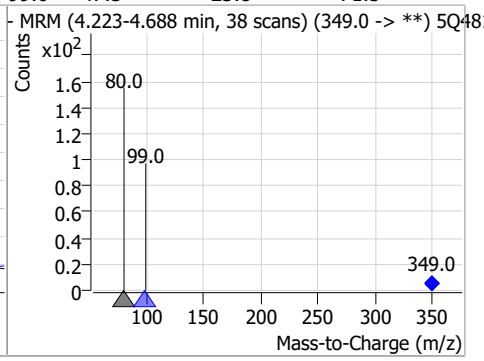


Perfluorinated Compounds by LC/MS/MS

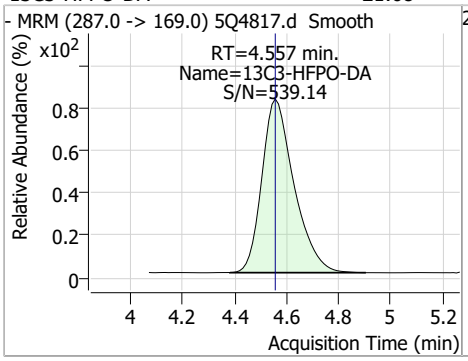
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.79	4.40	0.00	3191	349.0 -> 99.0	47.5	23.8	71.5

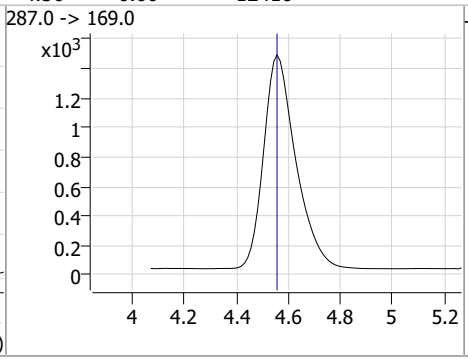


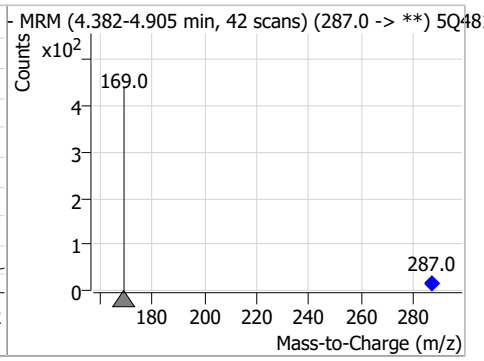




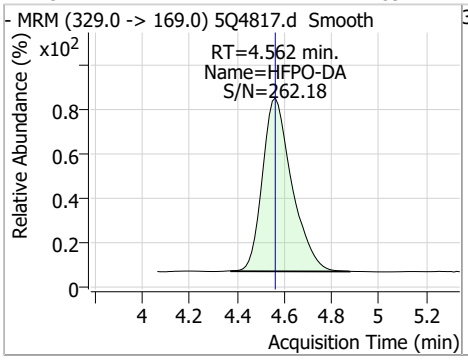
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.68	4.56	0.00	12416				

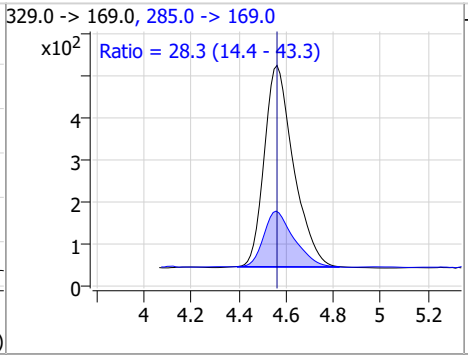


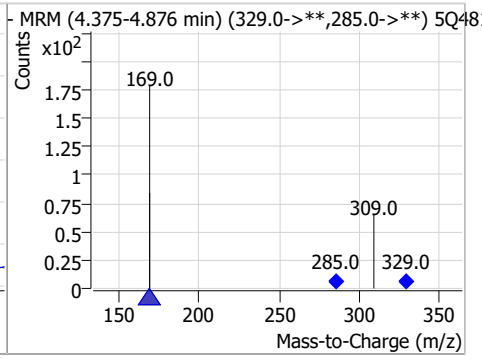




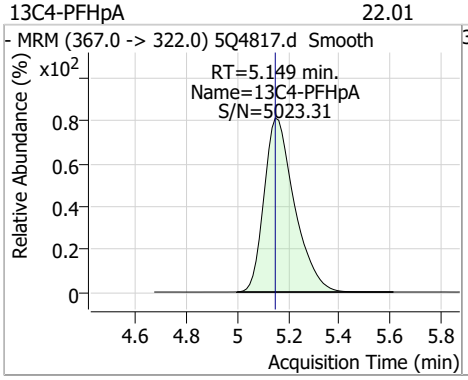
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.89	4.56	0.00	4163	285.0 -> 169.0	28.3	14.4	43.3

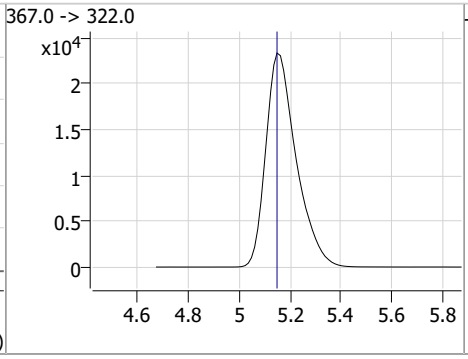


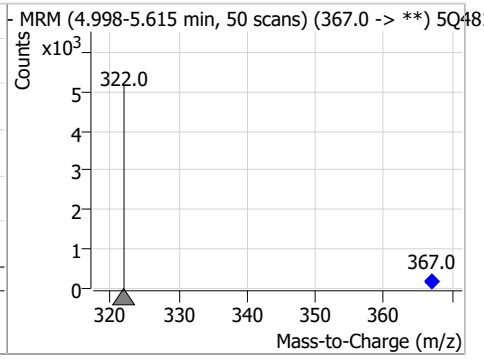




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.01	5.15	0.00	193571				

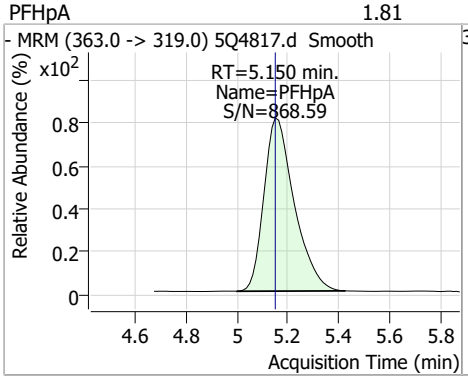


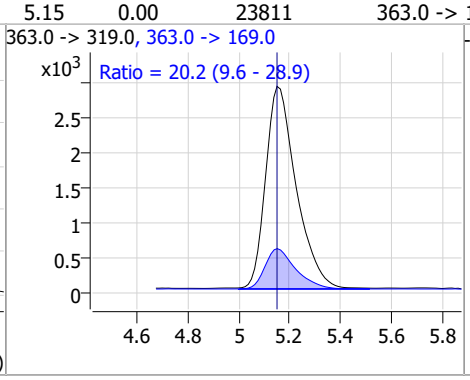


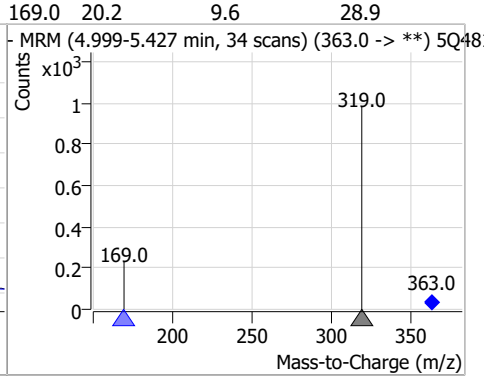


Perfluorinated Compounds by LC/MS/MS

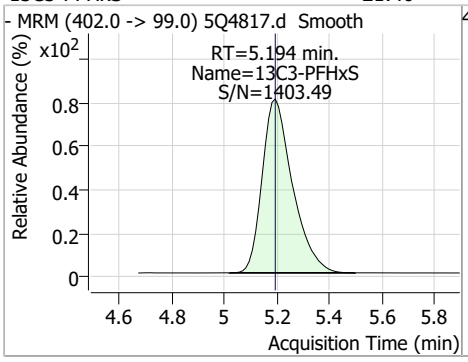
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.81	5.15	0.00	23811	363.0 -> 169.0	20.2	9.6	28.9

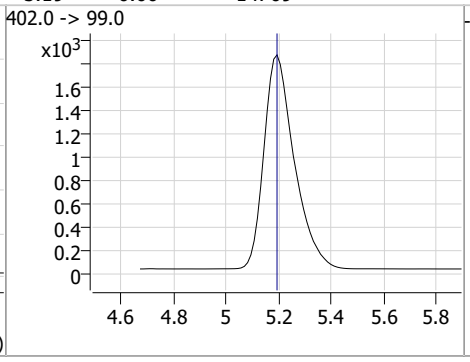


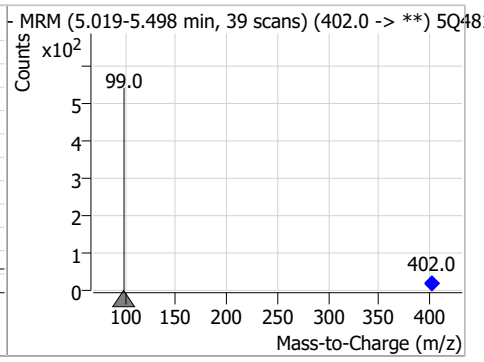




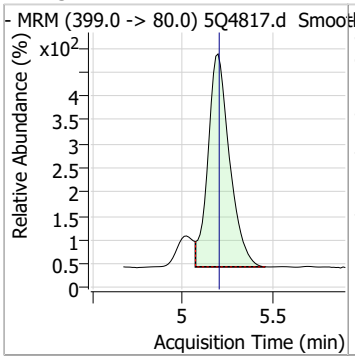
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.46	5.19	0.00	14709				

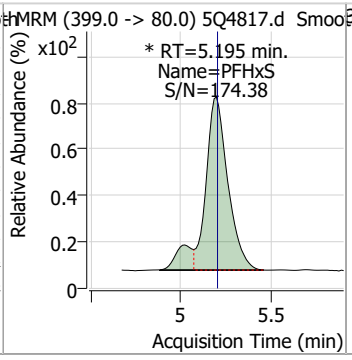


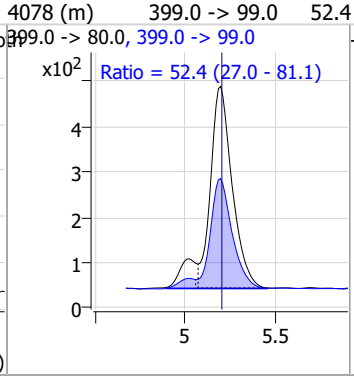


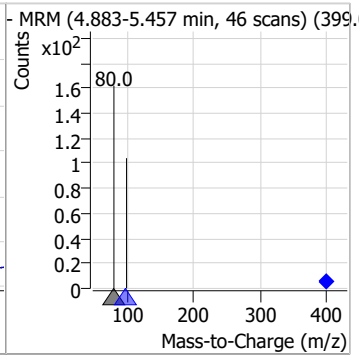


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.91	5.20	0.00	4078 (m)	399.0 -> 99.0	52.4	27.0	81.1

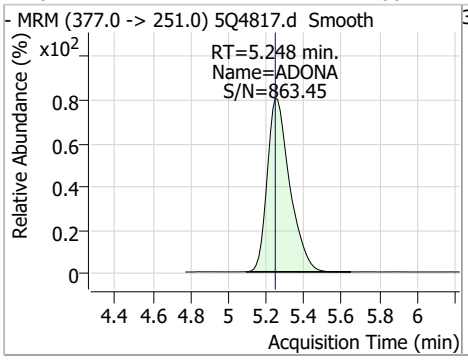


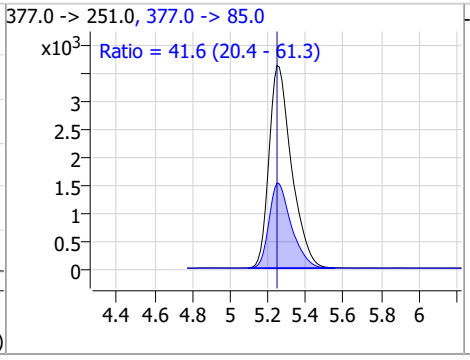


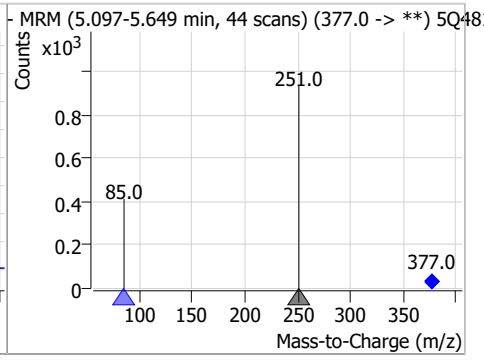




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.88	5.25	0.00	29704	377.0 -> 85.0	41.6	20.4	61.3

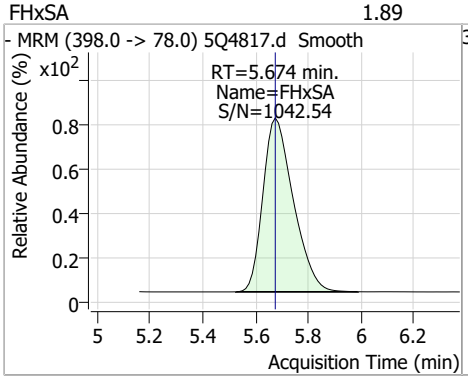


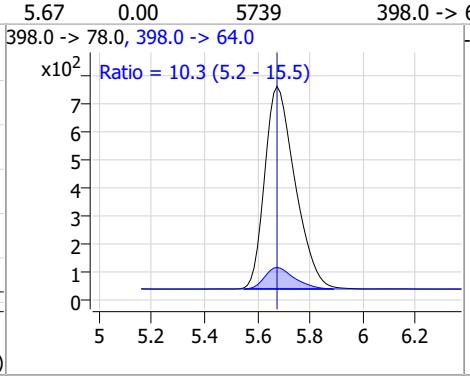


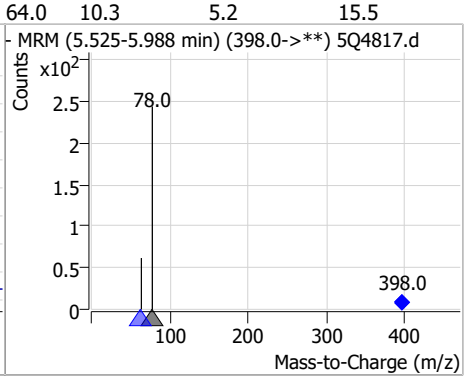


Perfluorinated Compounds by LC/MS/MS

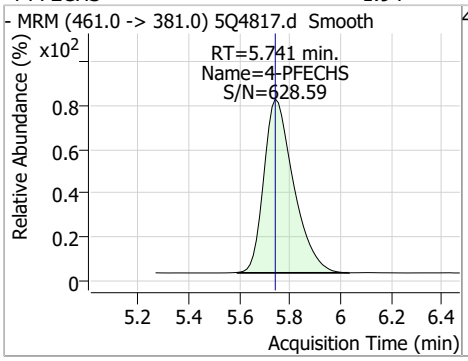
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.89	5.67	0.00	5739	398.0 -> 64.0	10.3	5.2	15.5

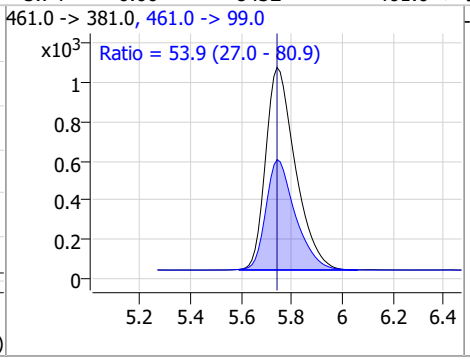


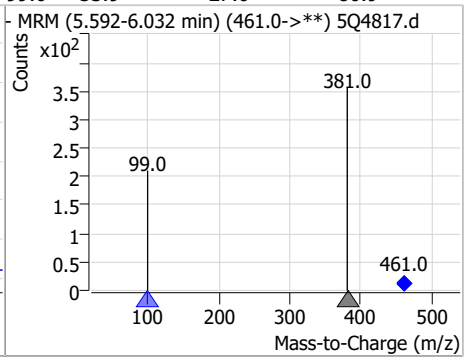




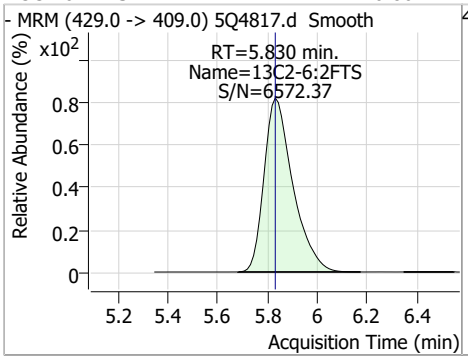
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.94	5.74	0.00	8432	461.0 -> 99.0	53.9	27.0	80.9

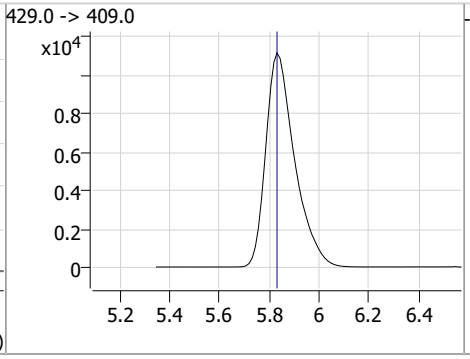


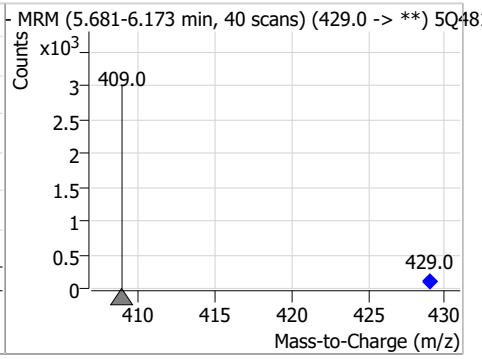




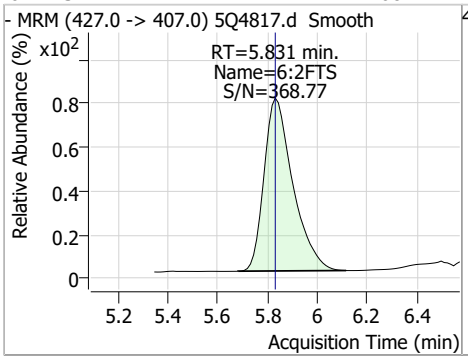
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.80	5.83	0.00	89165				

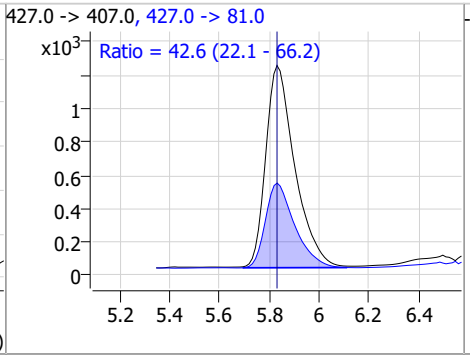


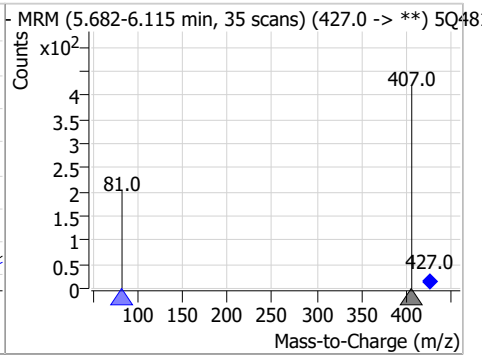




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.08	5.83	0.00	9682	427.0 -> 81.0	42.6	22.1	66.2

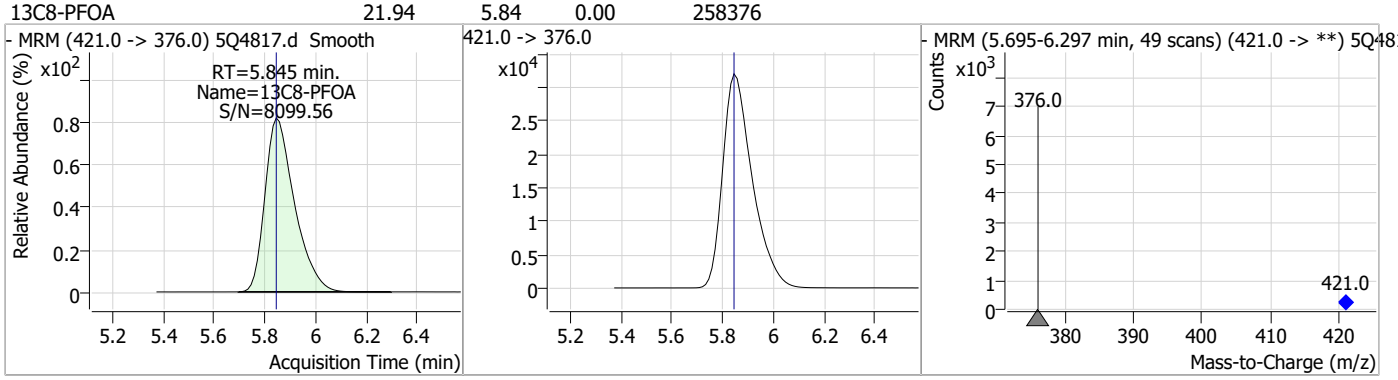




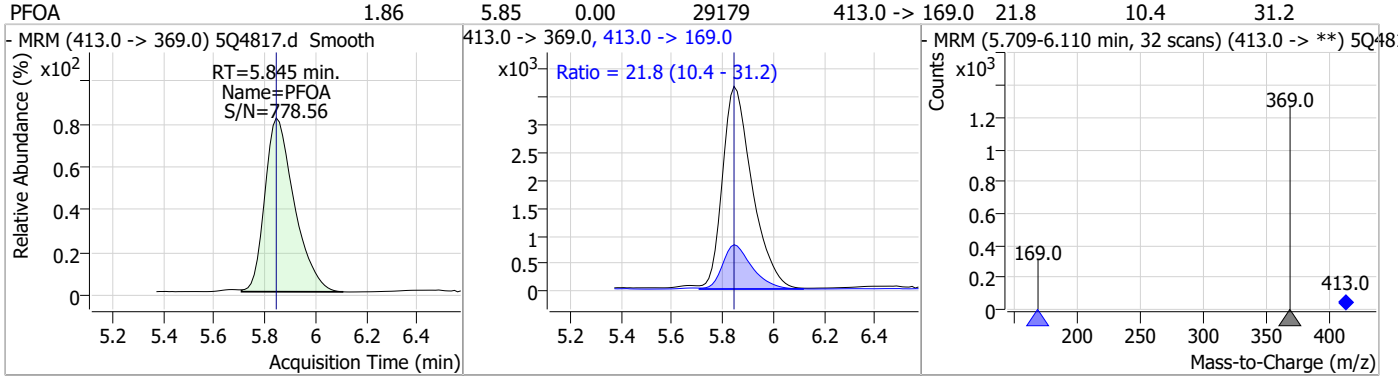


Perfluorinated Compounds by LC/MS/MS

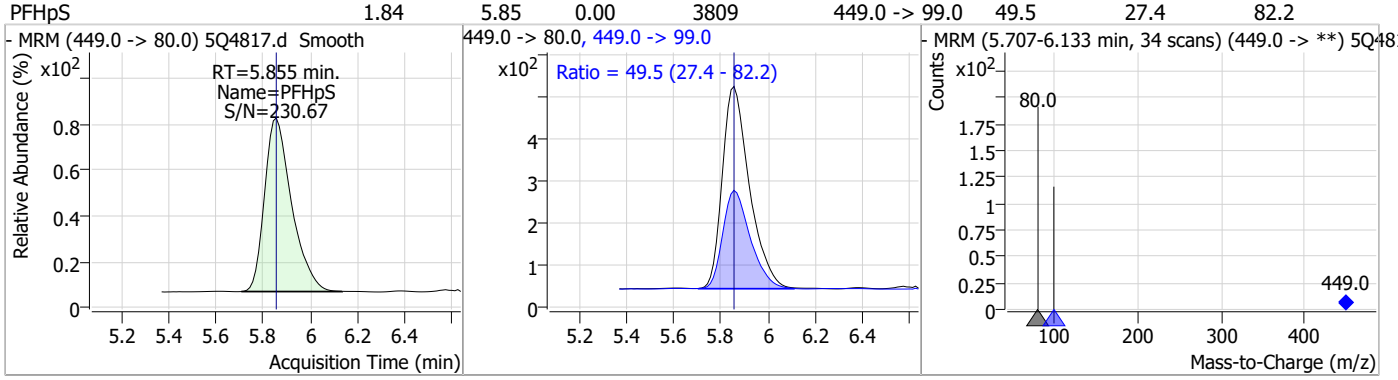
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.94	5.84	0.00	258376				



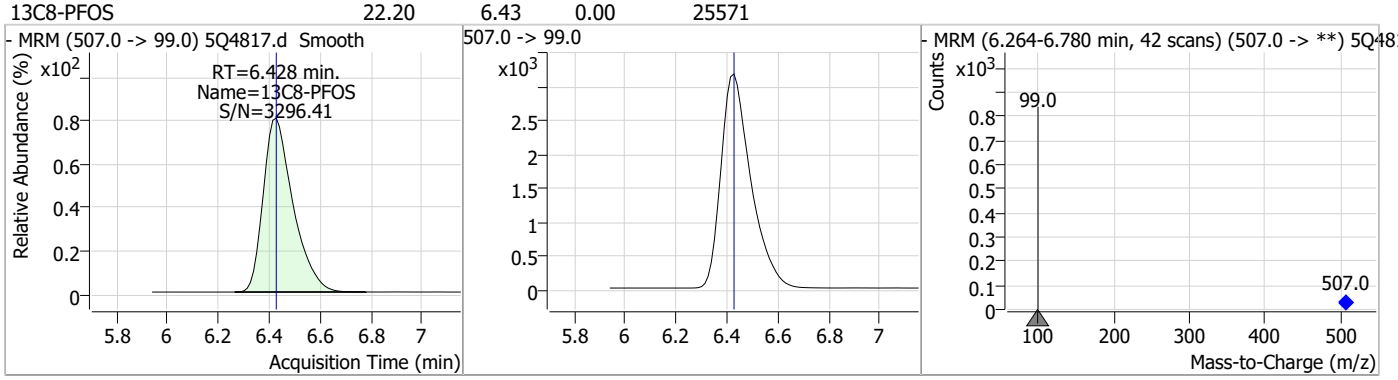
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.86	5.85	0.00	29179	413.0 -> 169.0	21.8	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.84	5.85	0.00	3809	449.0 -> 99.0	49.5	27.4	82.2

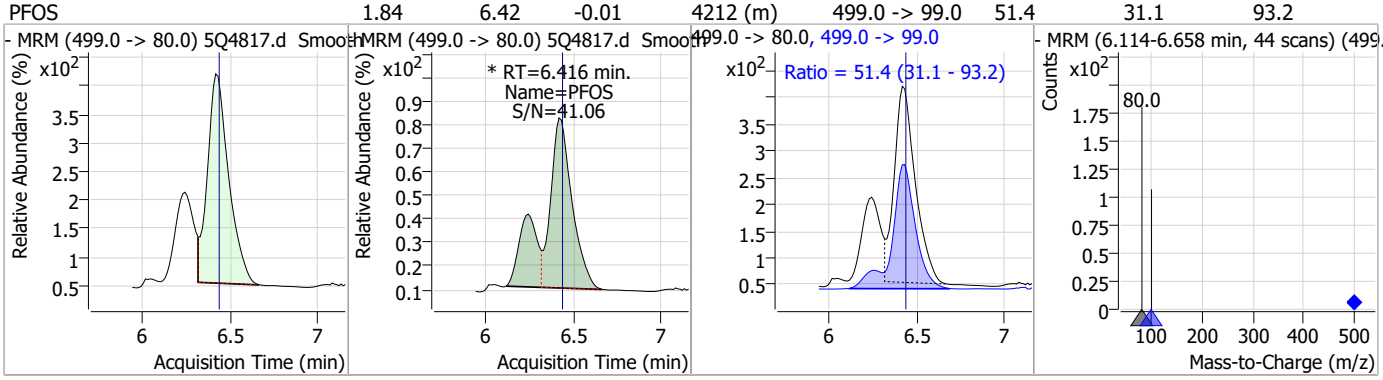


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.20	6.43	0.00	25571				

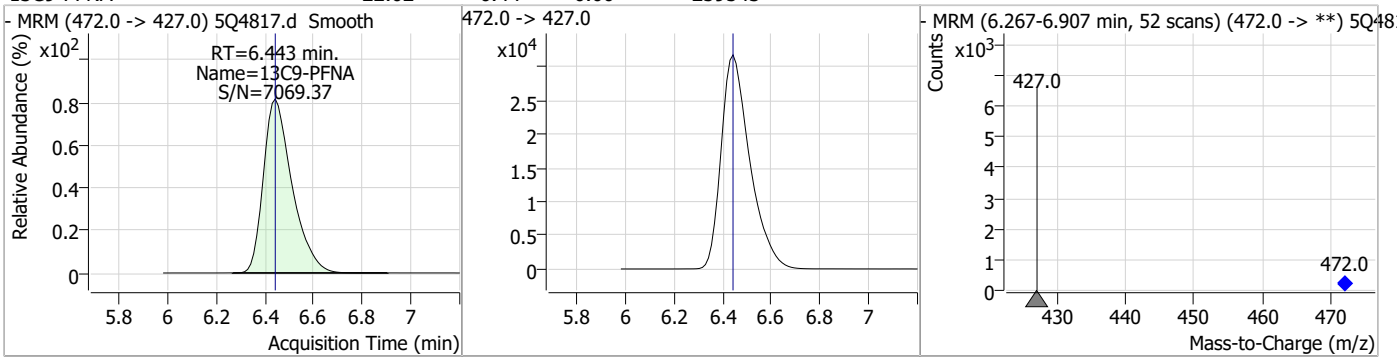


Perfluorinated Compounds by LC/MS/MS

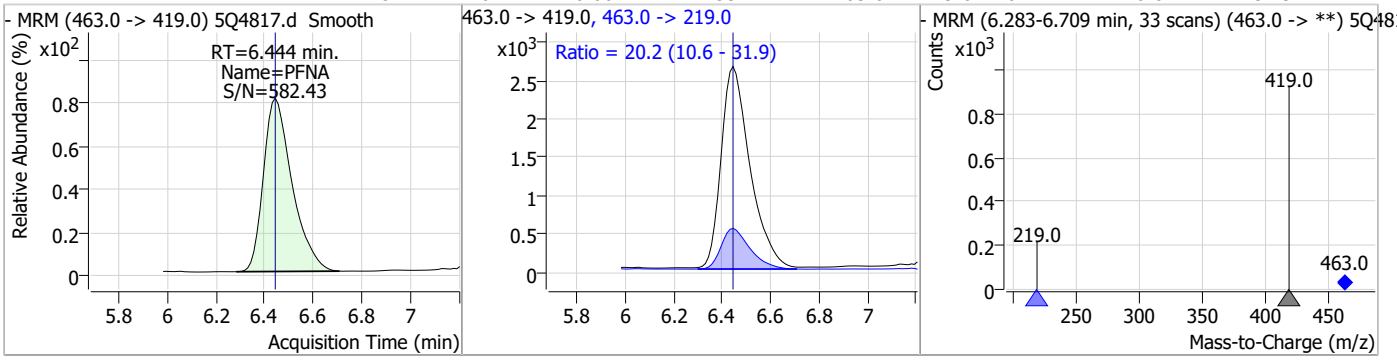
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.84	6.42	-0.01	4212 (m)	499.0 -> 99.0	51.4	31.1	93.2



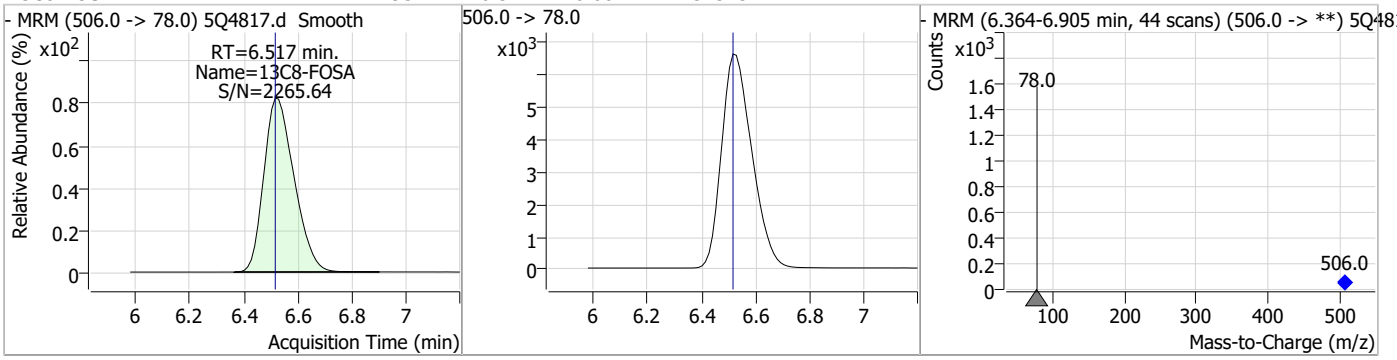
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.02	6.44	0.00	259543				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.82	6.44	0.00	21531	463.0 -> 219.0	20.2	10.6	31.9

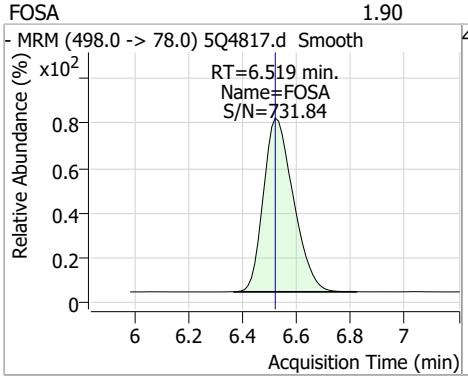


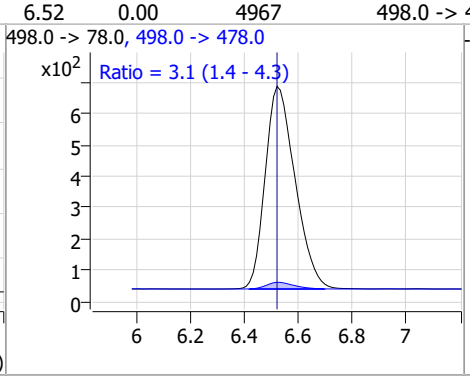
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.95	6.52	0.00	51575				

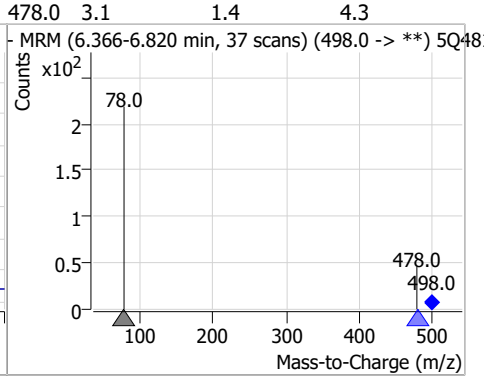


Perfluorinated Compounds by LC/MS/MS

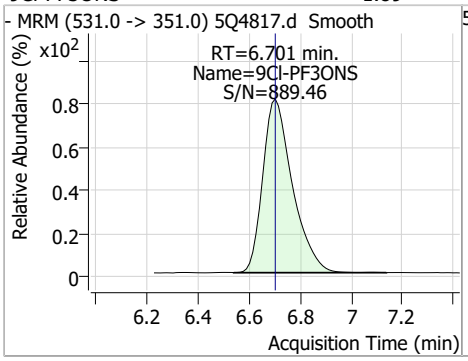
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.90	6.52	0.00	4967	498.0 -> 478.0	3.1	1.4	4.3

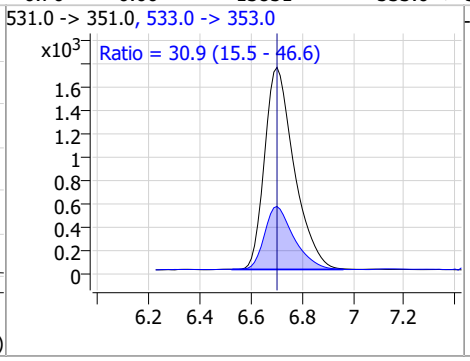


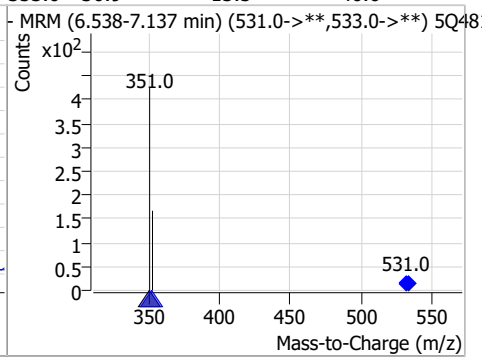




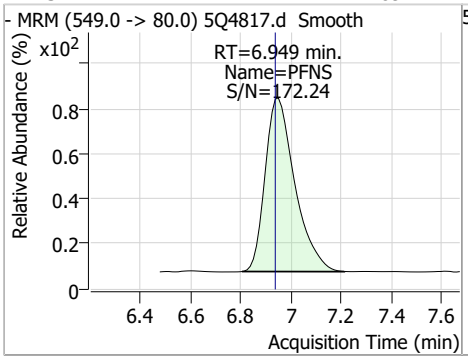
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.89	6.70	0.00	13851	533.0 -> 353.0	30.9	15.5	46.6

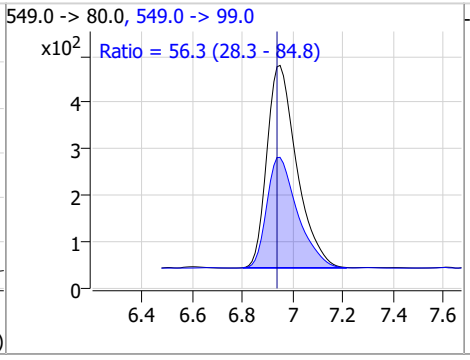


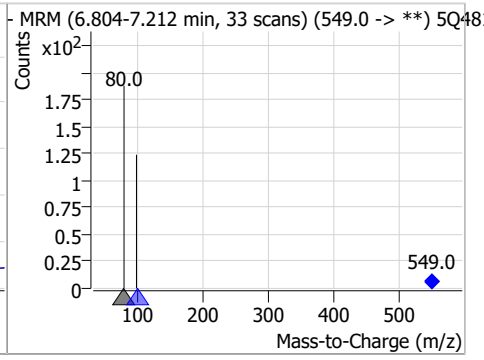




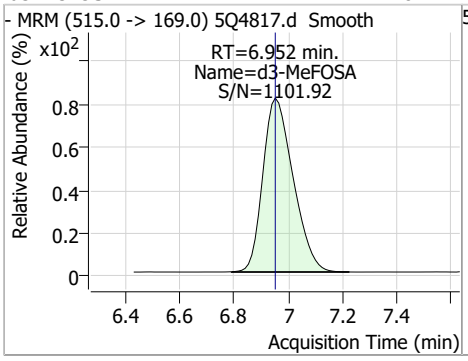
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.89	6.95	0.01	3606	549.0 -> 99.0	56.3	28.3	84.8

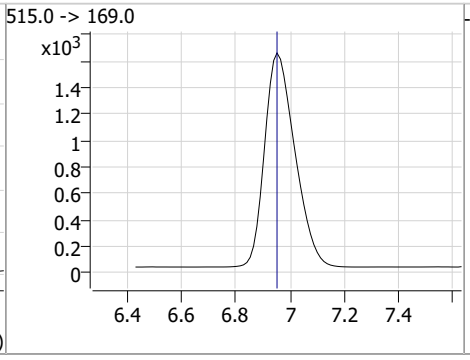


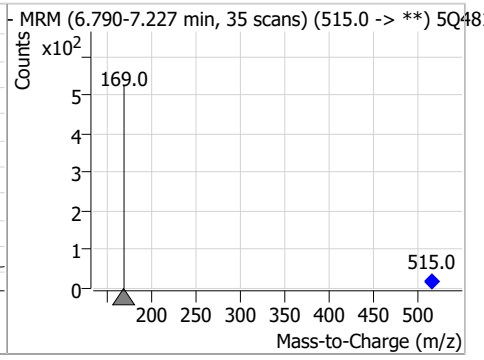




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.48	6.95	0.00	12642				

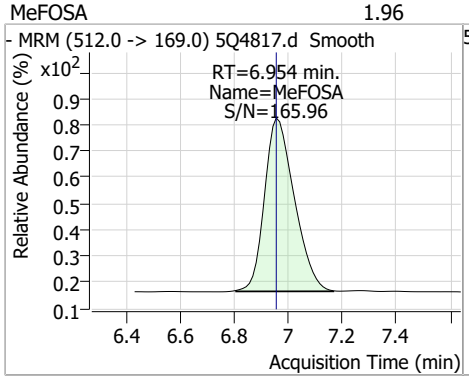


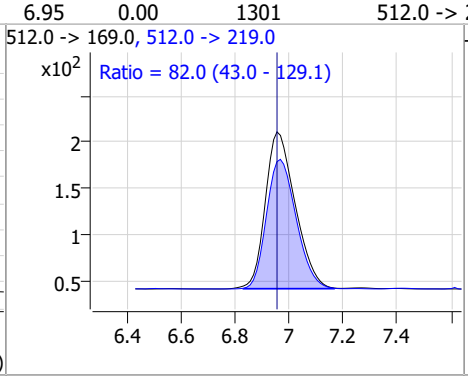


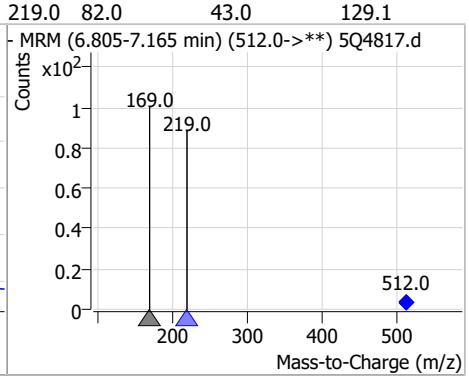


Perfluorinated Compounds by LC/MS/MS

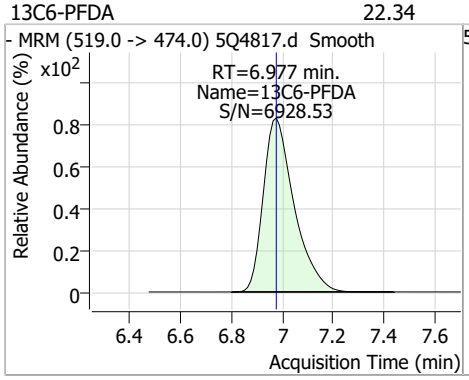
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.96	6.95	0.00	1301	512.0 -> 219.0	82.0	43.0	129.1

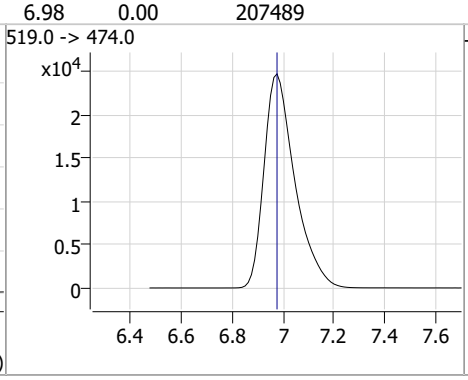


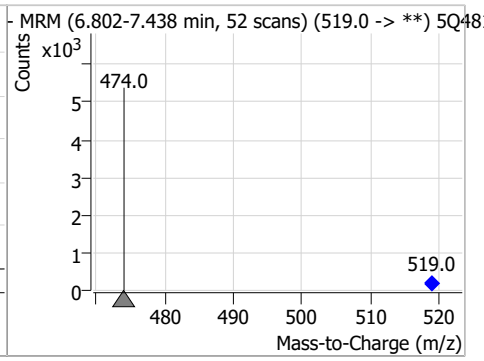




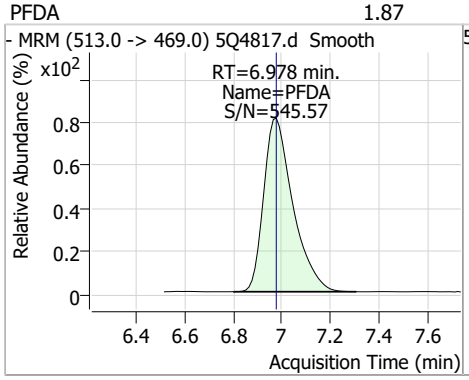
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.34	6.98	0.00	207489				

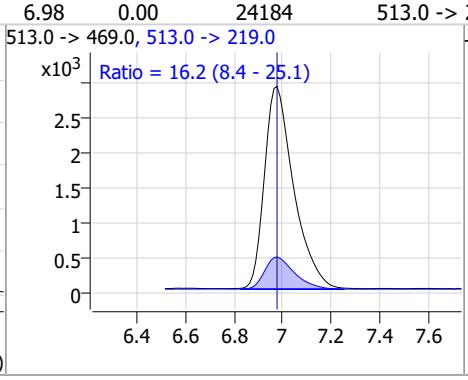


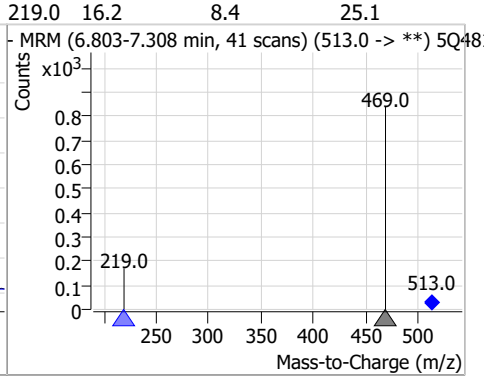




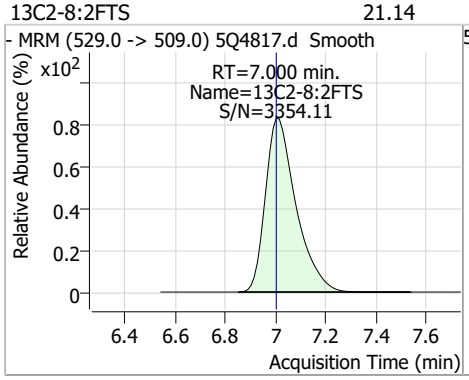
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.87	6.98	0.00	24184	513.0 -> 219.0	16.2	8.4	25.1

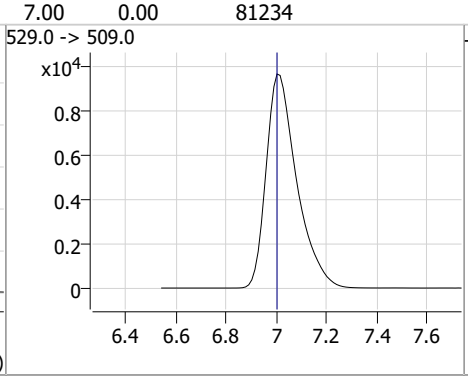


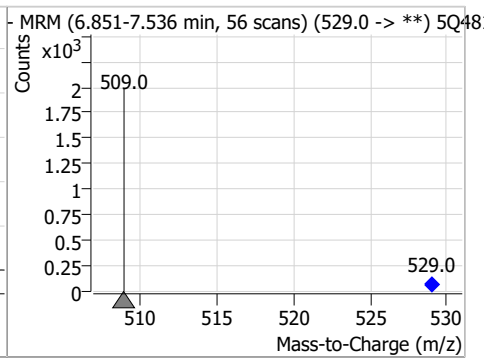




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.14	7.00	0.00	81234				

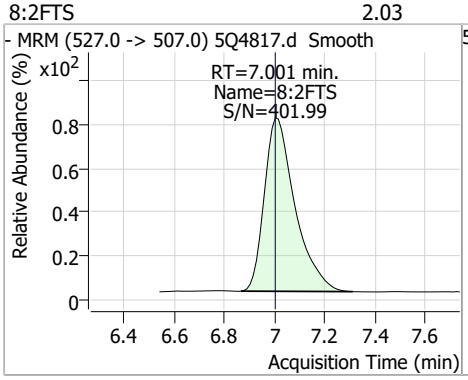


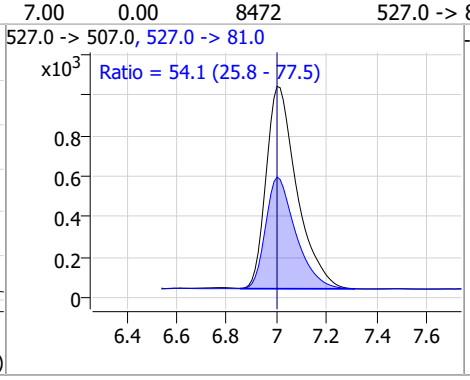


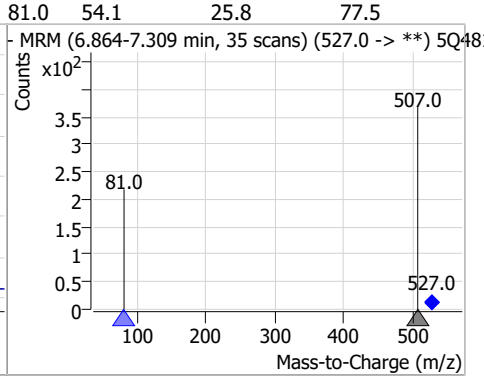


Perfluorinated Compounds by LC/MS/MS

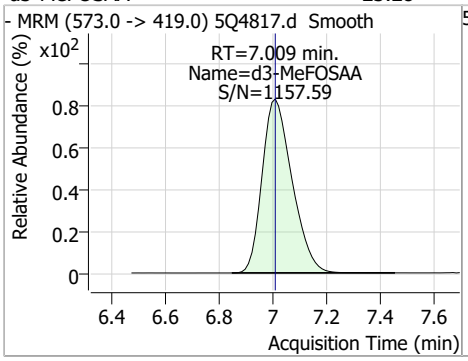
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	2.03	7.00	0.00	8472	527.0 -> 81.0	54.1	25.8	77.5

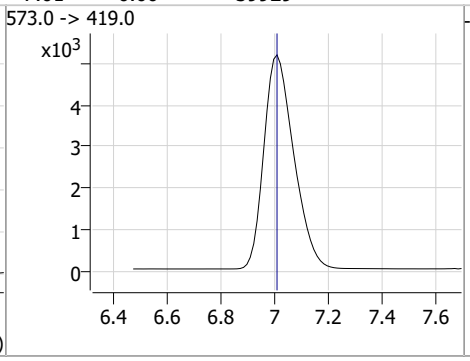


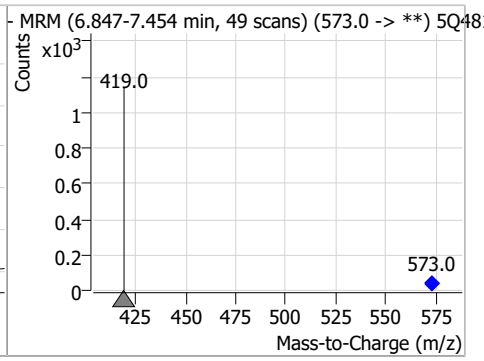




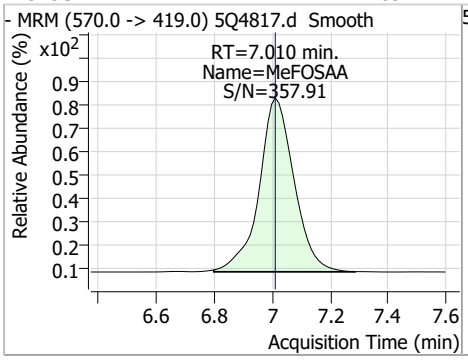
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.28	7.01	0.00	39929				

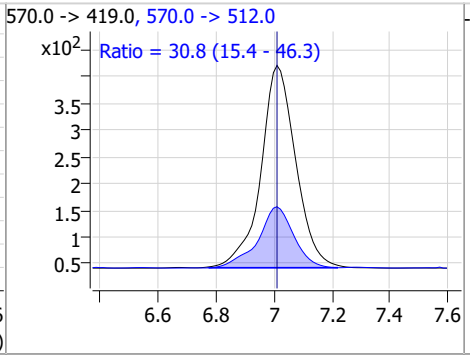


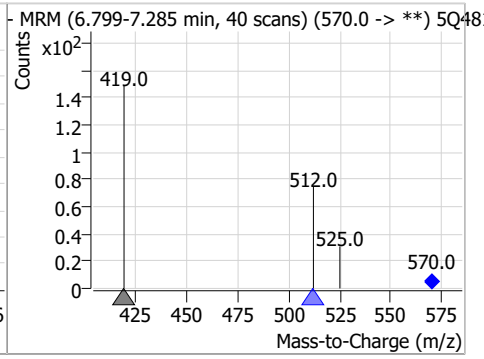




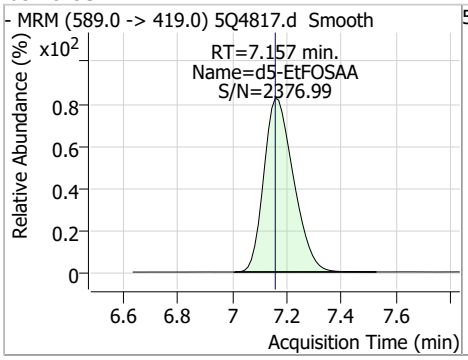
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.89	7.01	0.00	3169	570.0 -> 512.0	30.8	15.4	46.3

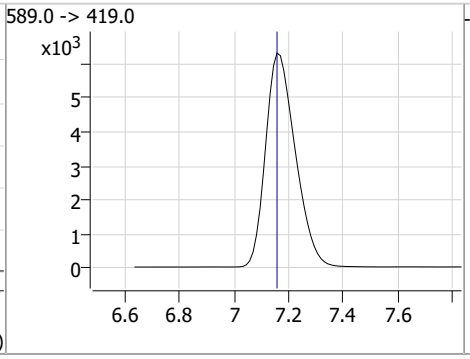


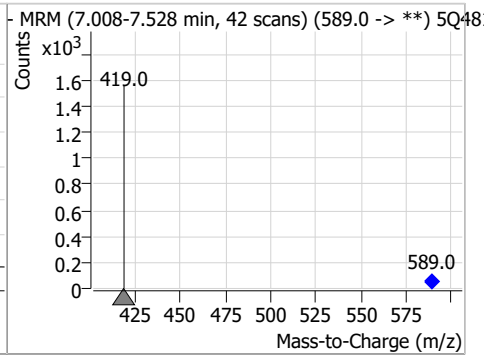




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.47	7.16	0.00	47376				

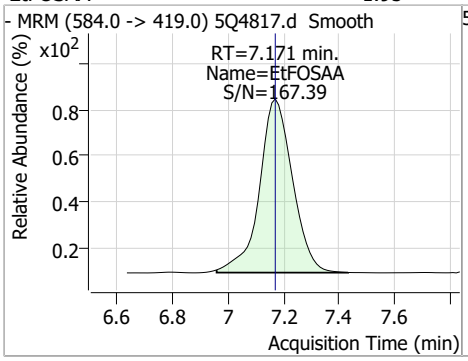


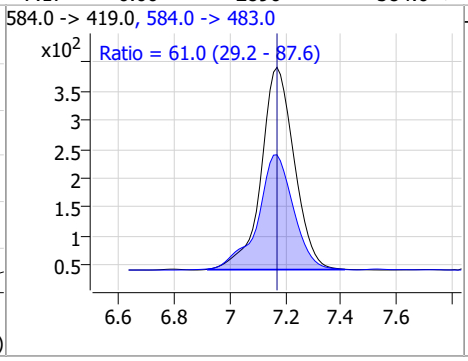


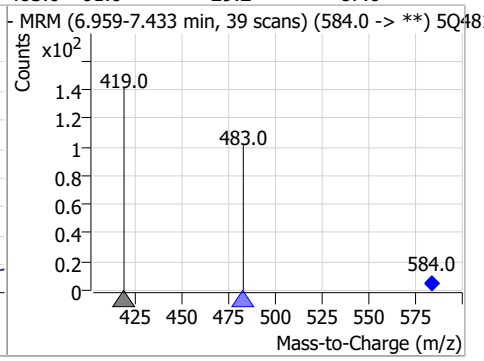


Perfluorinated Compounds by LC/MS/MS

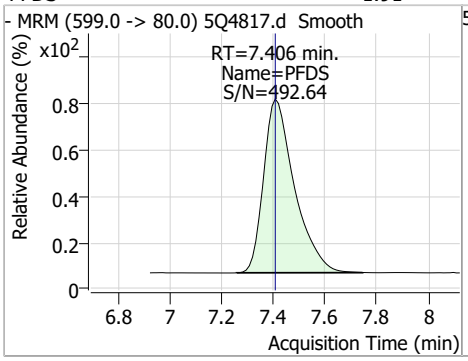
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.95	7.17	0.00	2890	584.0 -> 483.0	61.0	29.2	87.6

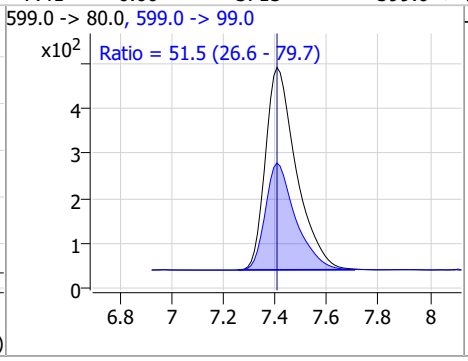


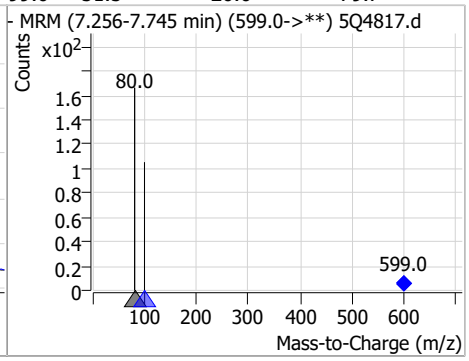




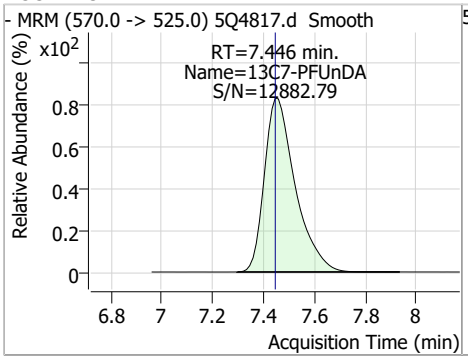
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.91	7.41	0.00	3715	599.0 -> 99.0	51.5	26.6	79.7

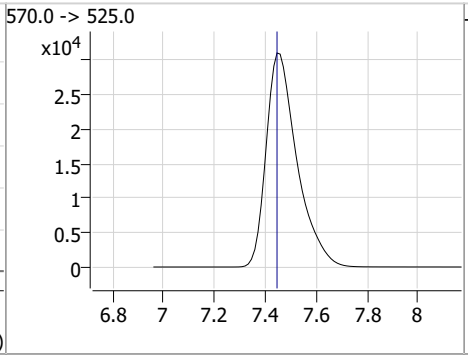


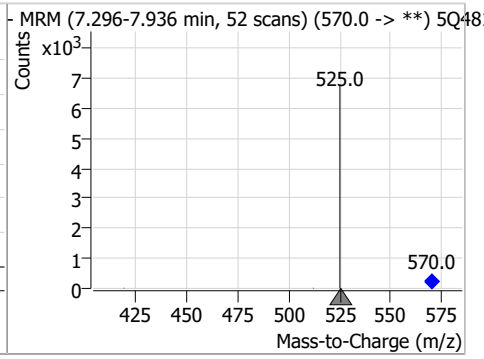




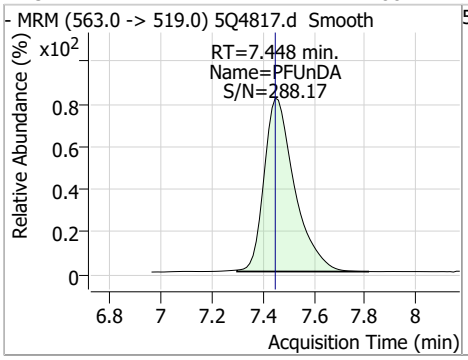
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.47	7.45	0.00	260369				

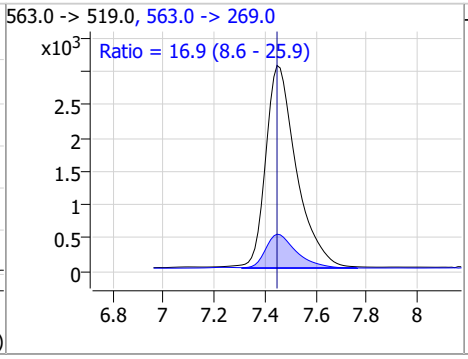


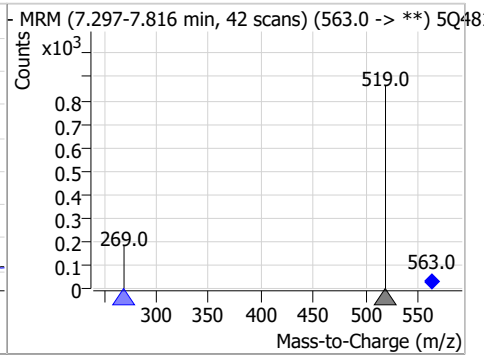




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.88	7.45	0.00	25214	563.0 -> 269.0	16.9	8.6	25.9

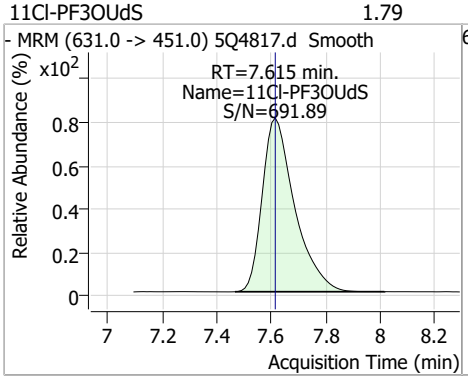


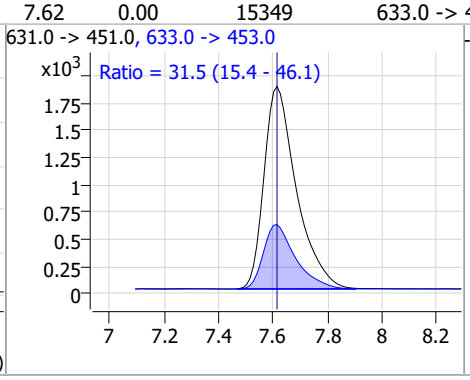


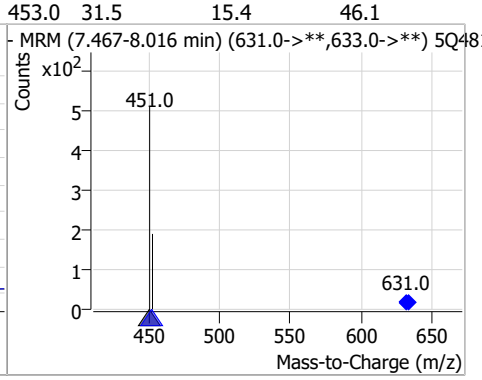


Perfluorinated Compounds by LC/MS/MS

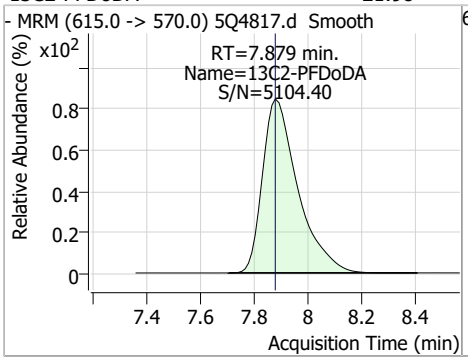
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.79	7.62	0.00	15349	633.0 -> 453.0	31.5	15.4	46.1

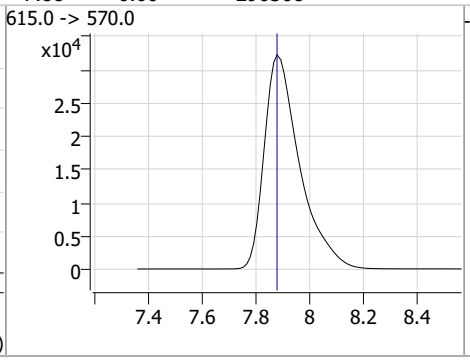


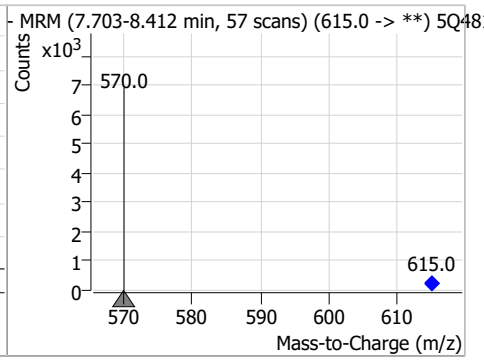




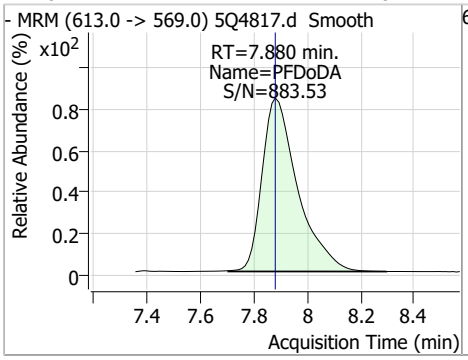
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.98	7.88	0.00	296368				

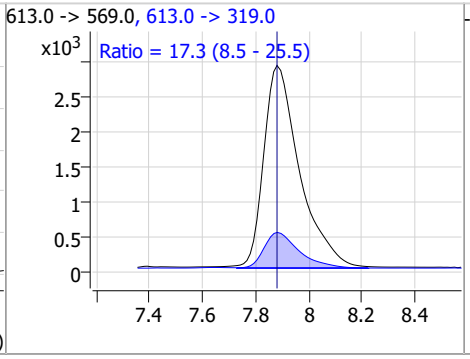


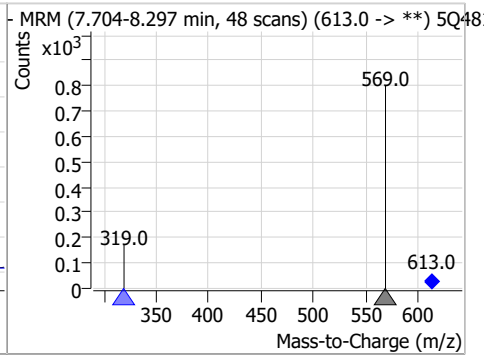




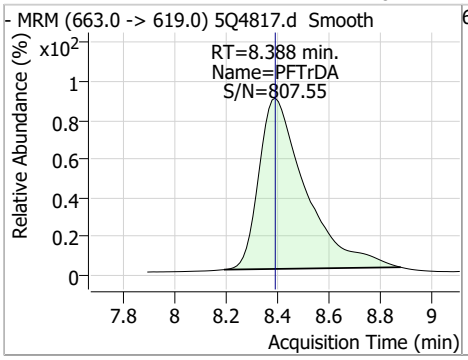
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.84	7.88	0.00	27020	613.0 -> 319.0	17.3	8.5	25.5

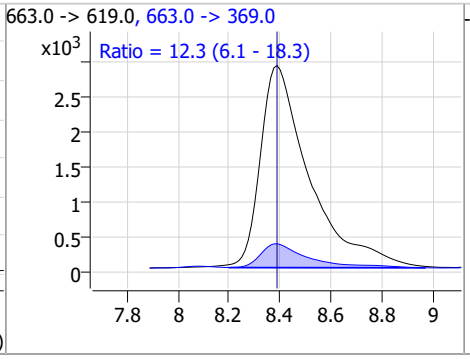


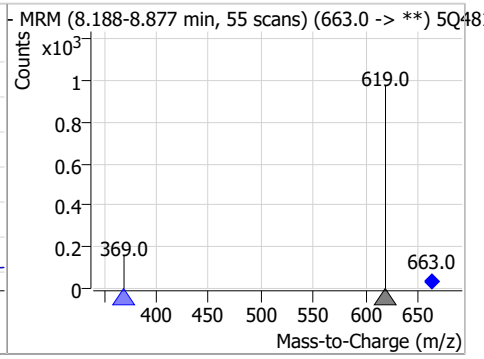




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.81	8.39	0.00	36027	663.0 -> 369.0	12.3	6.1	18.3

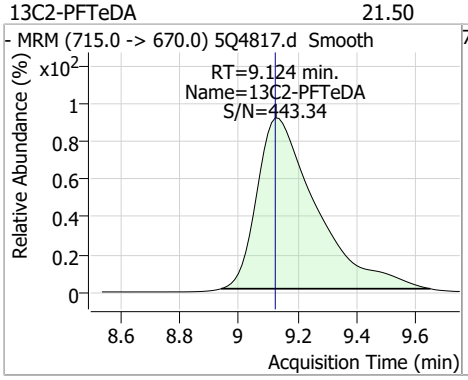


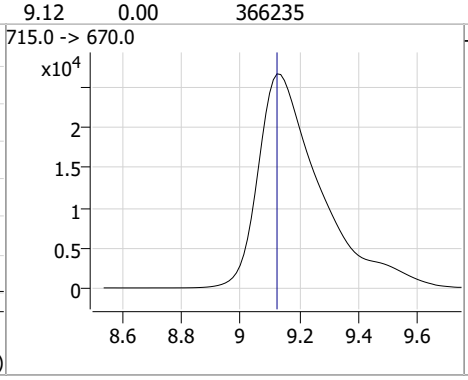


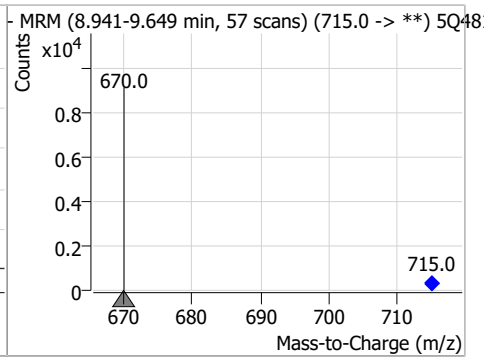


Perfluorinated Compounds by LC/MS/MS

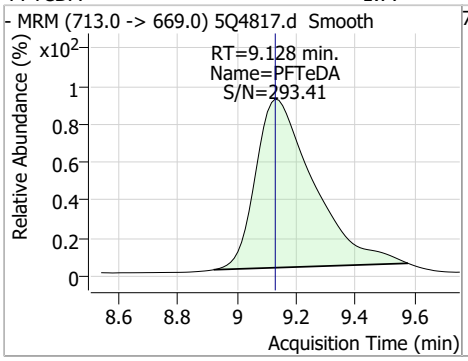
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.50	9.12	0.00	366235				

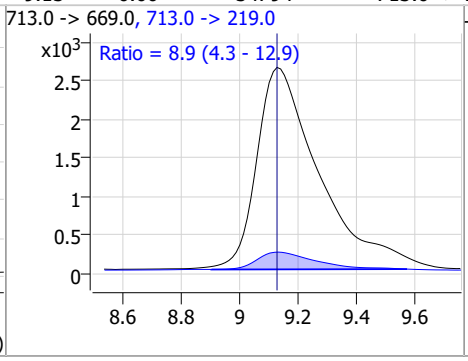


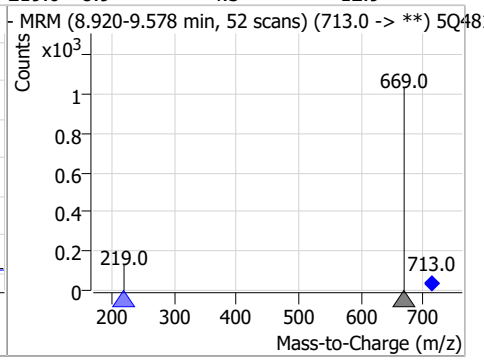




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.77	9.13	0.00	34794	713.0 -> 219.0	8.9	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4817.D
Injection Time: 09/17/22 12:48
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4818.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/17/2022 1:03:26 PM
Sample Name	:	ic73-5
Vial	:	P1-A5
DA Method File	:	ID_091722_S5Q73.quantmethod.xml
Batch Name	:	s5q73.batch.bin
Sample Information	:	OP92656,S5Q73,250,,,1.0,1,water

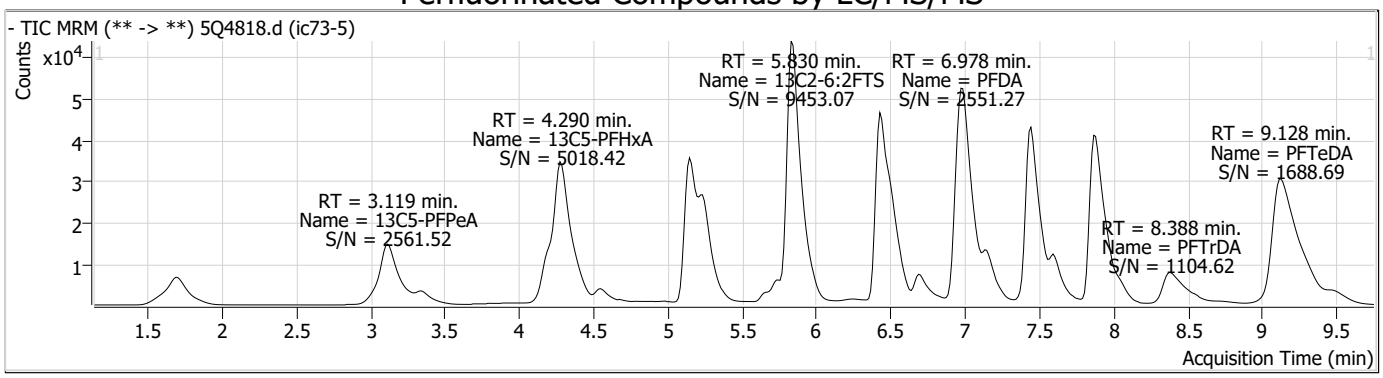
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	68317	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	109719	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	176427	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	162255	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	219983	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	218057	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	174783	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	218318	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	249436	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	329288	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	43728	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12431	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12762	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	21298	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	55699	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	76255	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	68014	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	32010	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10571	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10539	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	39629	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	55699	17.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
13C2-6:2FTS	5.830	429.0 -> 409.0	76255	17.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C2-8:2FTS	7.000	529.0 -> 509.0	68014	17.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	249436	18.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-PFTeDA	9.124	715.0 -> 670.0	329288	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C3-PFBS	3.349	302.0 -> 99.0	12431	18.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C3-PFHxS	5.194	402.0 -> 99.0	12762	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C4-PFBA	1.687	217.0 -> 172.0	68317	18.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C4-PFHpA	5.149	367.0 -> 322.0	162255	18.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	176427	18.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C5-PFPeA	3.119	268.0 -> 223.0	109719	18.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C6-PFDA	6.977	519.0 -> 474.0	174783	18.82	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

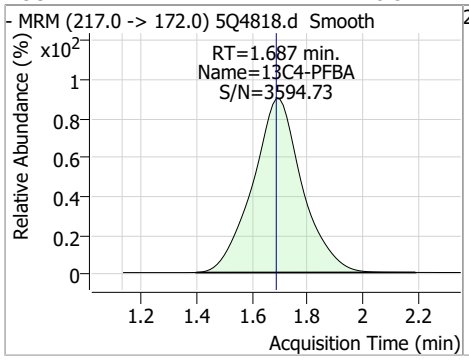
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C7-PFUnDA	7.446	570.0 -> 525.0	218318	18.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%			
13C8-FOSA	6.517	506.0 -> 78.0	43728	18.61	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
13C8-PFOA	5.845	421.0 -> 376.0	219983	18.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
13C8-PFOS	6.428	507.0 -> 99.0	21298	18.49	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%			
13C9-PFNA	6.443	472.0 -> 427.0	218057	18.50	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	32010	18.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10571	18.45	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	10539	18.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%			
d5-EtFOSAA	7.157	589.0 -> 419.0	39629	18.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	16291	5.39	µg/L		98
6:2FTS	5.831	427.0 -> 407.0	21606	5.44	µg/L		98
8:2FTS	7.001	527.0 -> 507.0	18677	5.35	µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	6217	5.02	µg/L		100
FOSA	6.519	498.0 -> 78.0	11176	5.03	µg/L		98
MeFOSAA	7.010	570.0 -> 419.0	7019	5.20	µg/L		100
PFBA	1.694	213.0 -> 169.0	6513	4.79	µg/L		100
PFBS	3.342	299.0 -> 80.0	9120	4.88	µg/L		99
PFDA	6.978	513.0 -> 469.0	51689	4.75	µg/L		98
PFDoDA	7.880	613.0 -> 569.0	59772	4.84	µg/L		99
PFDS	7.406	599.0 -> 80.0	7832	4.78	µg/L		99
PFHpA	5.150	363.0 -> 319.0	53860	4.87	µg/L		99
PFHpS	5.855	449.0 -> 80.0	8369	4.86	µg/L		98
PFHxA	4.291	313.0 -> 269.0	42168	4.82	µg/L		100
PFHxS	5.195	399.0 -> 80.0	9022	4.87	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	46594	4.69	µg/L		100
PFNS	6.937	549.0 -> 80.0	7965	5.01	µg/L		99
PFOA	5.845	413.0 -> 369.0	63549	4.75	µg/L		100
PFOS	6.429	499.0 -> 80.0	9245	4.84	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	25415	4.84	µg/L		100
PFPeS	4.398	349.0 -> 80.0	7230	4.85	µg/L		98
PFTeDA	9.128	713.0 -> 669.0	83912	4.75	µg/L		98
PFTrDA	8.388	663.0 -> 619.0	78512	4.68	µg/L		100
PFUnDA	7.448	563.0 -> 519.0	53922	4.80	µg/L		98
11Cl-PF3OUdS	7.615	631.0 -> 451.0	33372	4.63	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	30272	4.89	µg/L		100
ADONA	5.261	377.0 -> 251.0	67484	4.92	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	9353	4.99	µg/L		98
MeFOSA	6.954	512.0 -> 169.0	2858	5.17	µg/L		95
4-PFECHS	5.741	461.0 -> 381.0	18142	4.90	µg/L		100
FBSA	4.343	298.0 -> 78.0	15255	5.01	µg/L		99
FHxSA	5.674	398.0 -> 78.0	12635	4.89	µg/L		99

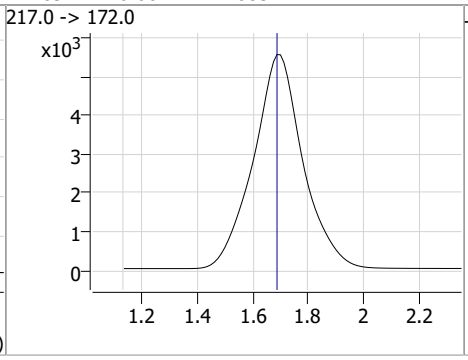
 # = Qualifier out of range, m = manually integrated, + = Area summed

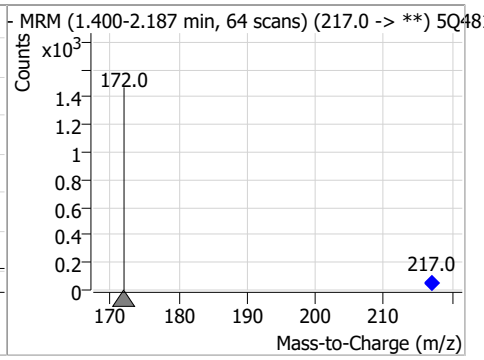
Perfluorinated Compounds by LC/MS/MS



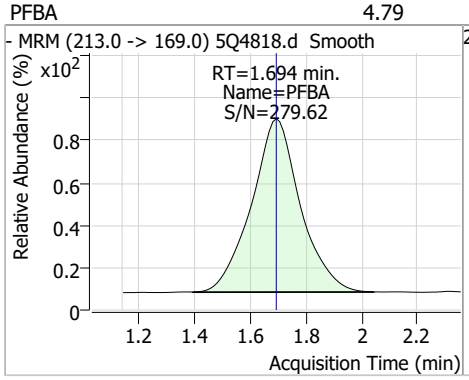
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.52	1.69	0.00	68317				

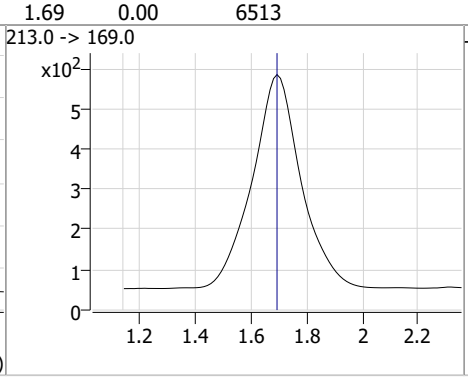


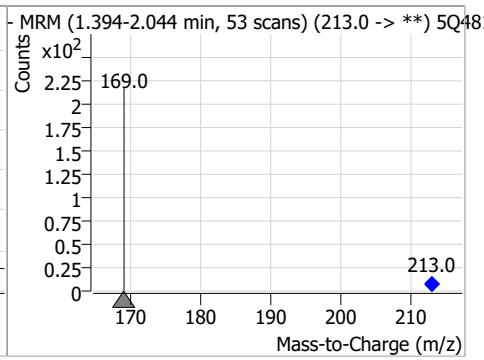




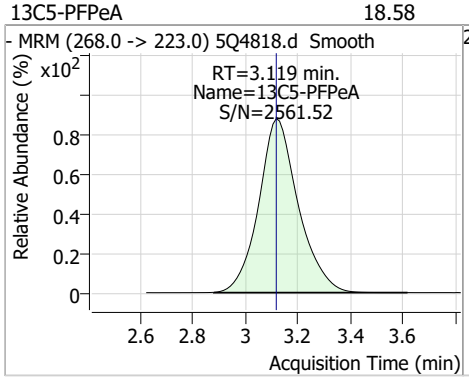
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.79	1.69	0.00	6513				

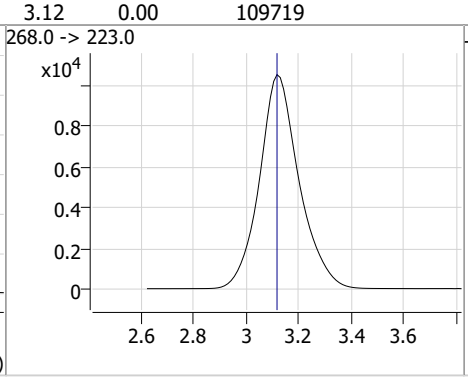


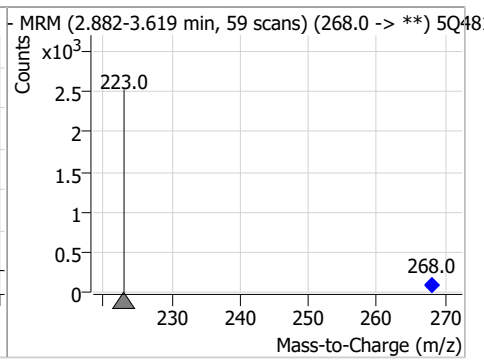




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.58	3.12	0.00	109719				

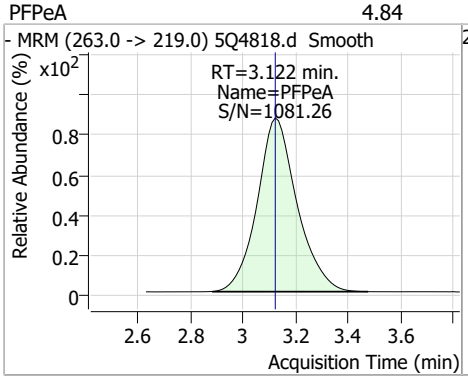


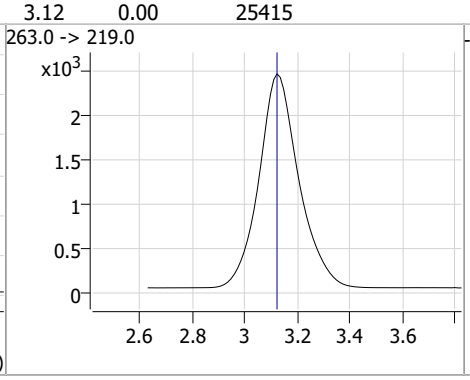


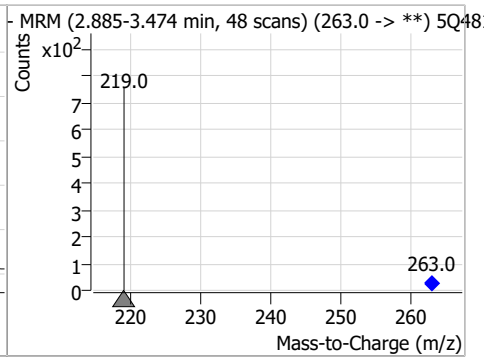


Perfluorinated Compounds by LC/MS/MS

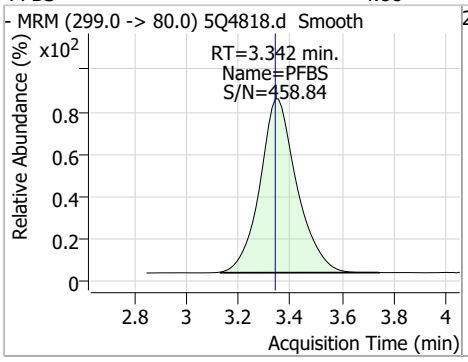
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.84	3.12	0.00	25415				

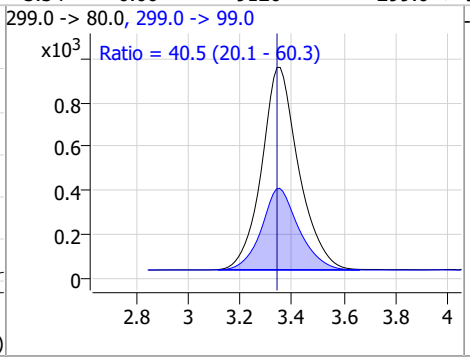


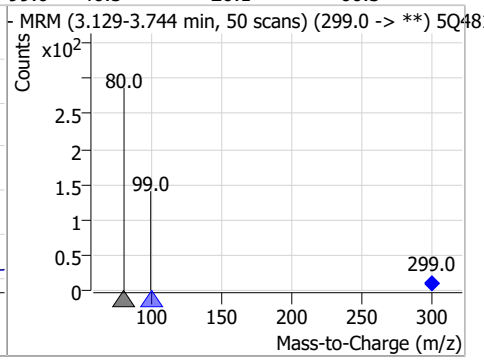




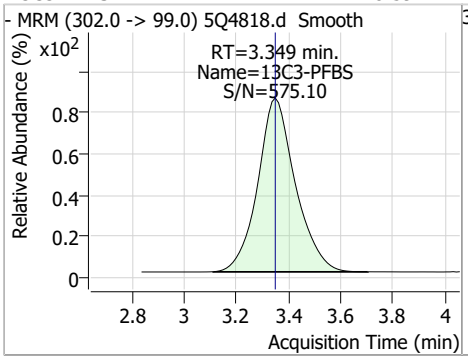
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.88	3.34	0.00	9120	299.0 -> 99.0	40.5	20.1	60.3

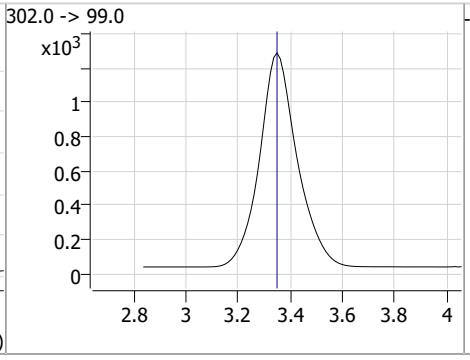


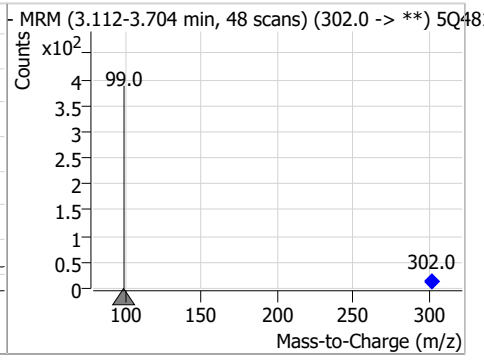




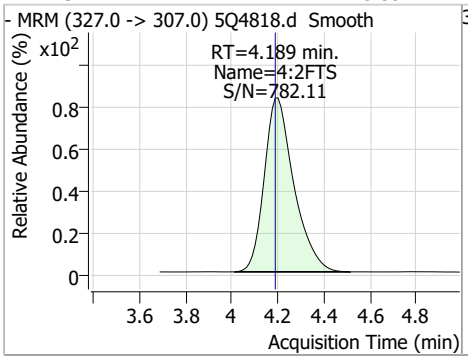
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.59	3.35	0.00	12431				

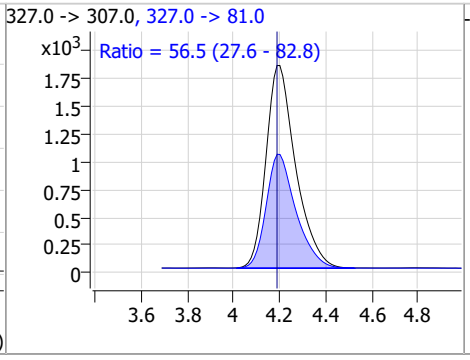


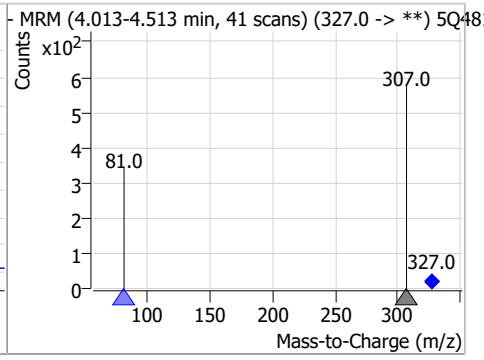




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.39	4.19	0.00	16291	327.0 -> 81.0	56.5	27.6	82.8

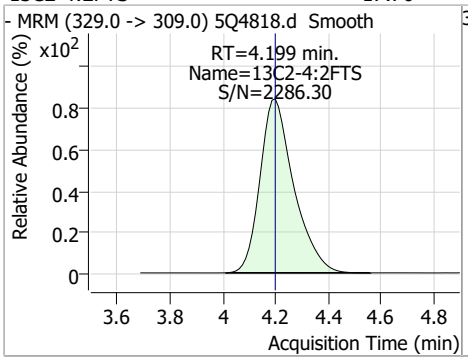


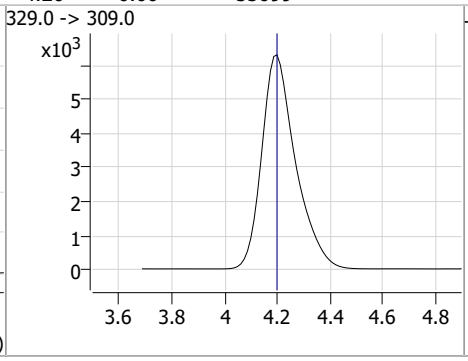


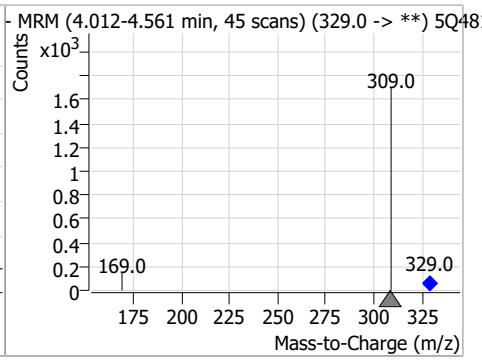


Perfluorinated Compounds by LC/MS/MS

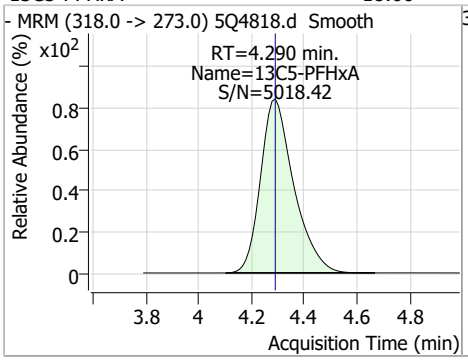
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.76	4.20	0.00	55699				

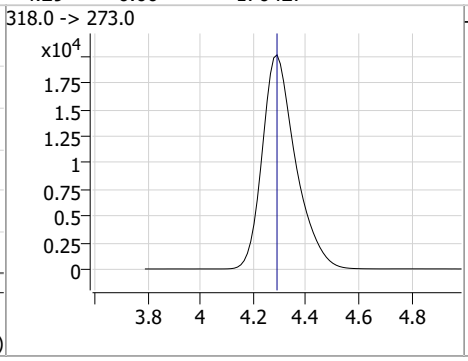


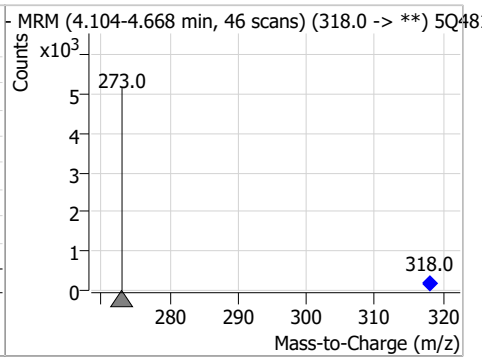




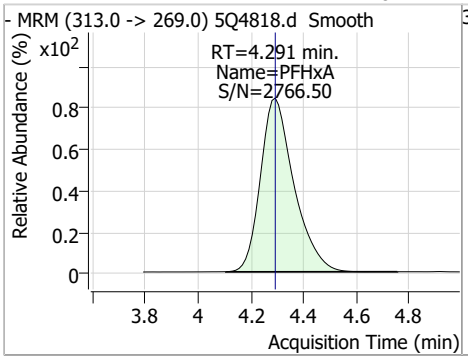
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.66	4.29	0.00	176427				

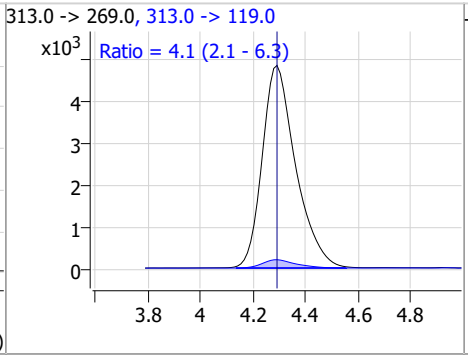


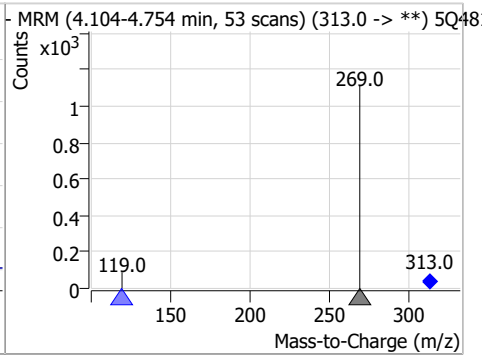




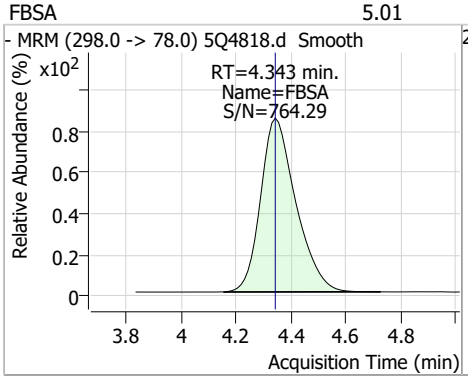
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.82	4.29	0.00	42168	313.0 -> 119.0	4.1	2.1	6.3

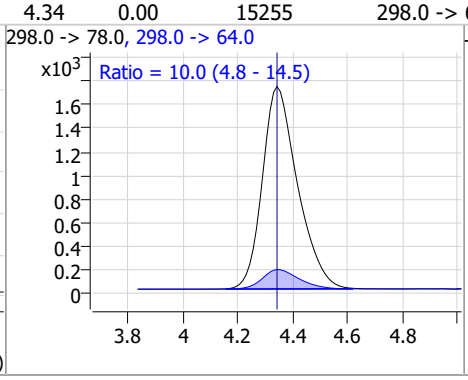


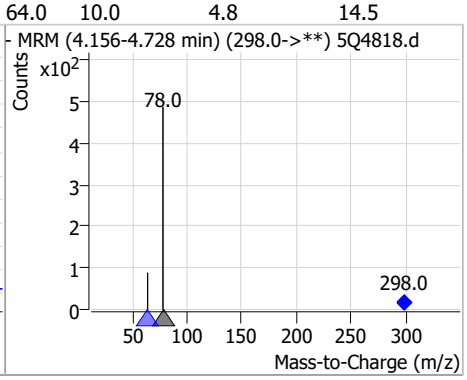




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	5.01	4.34	0.00	15255	298.0 -> 64.0	10.0	4.8	14.5

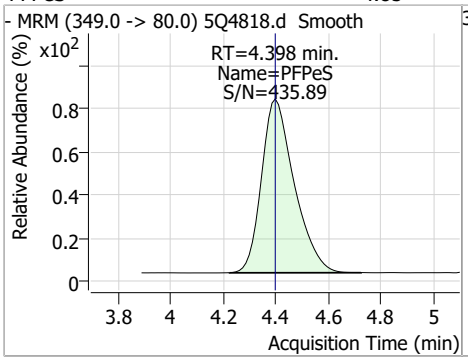


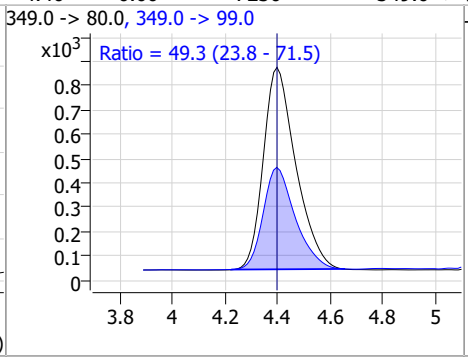


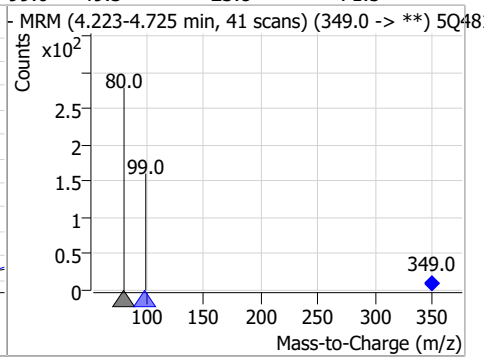


Perfluorinated Compounds by LC/MS/MS

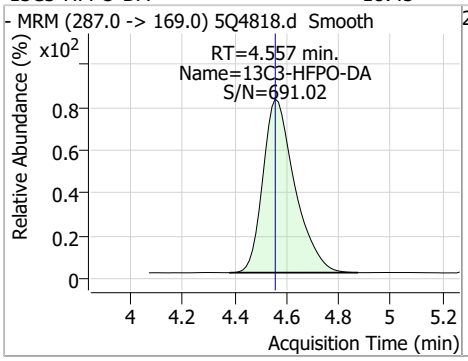
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.85	4.40	0.00	7230	349.0 -> 99.0	49.3	23.8	71.5

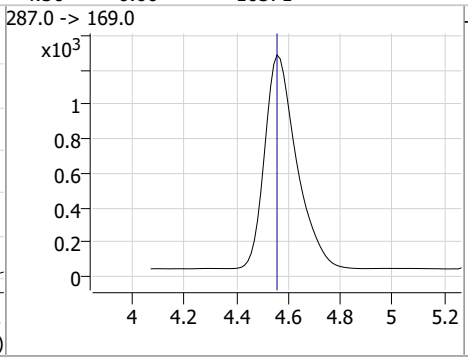


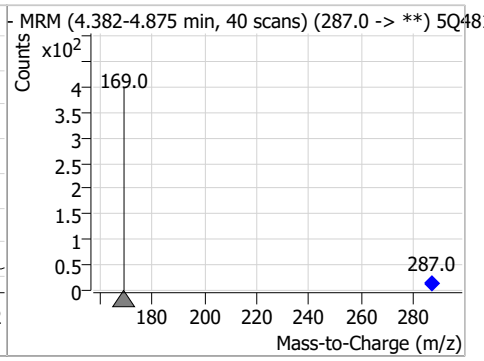




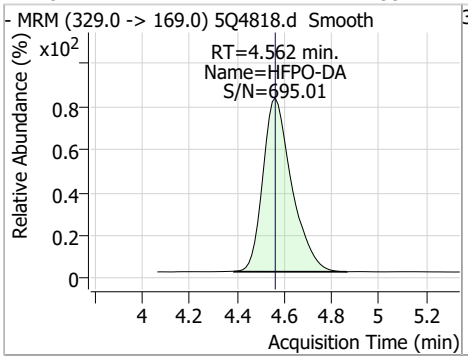
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.45	4.56	0.00	10571				

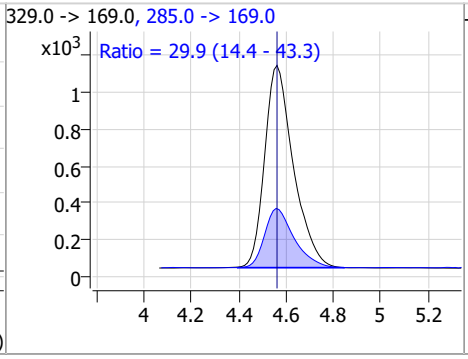


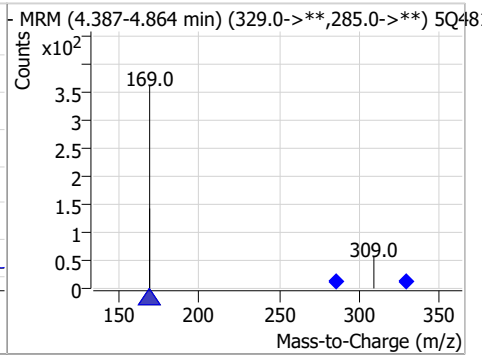




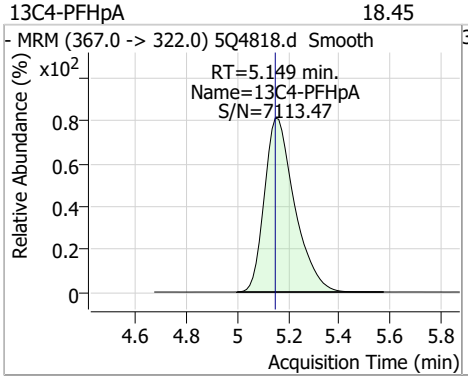
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	4.99	4.56	0.00	9353	285.0 -> 169.0	29.9	14.4	43.3

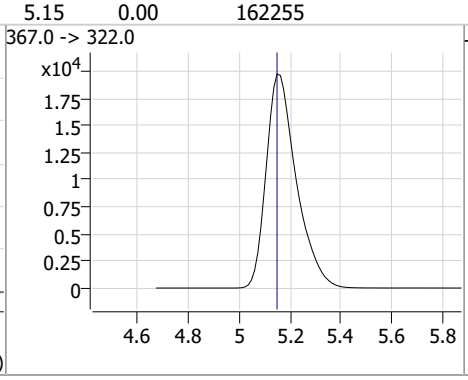


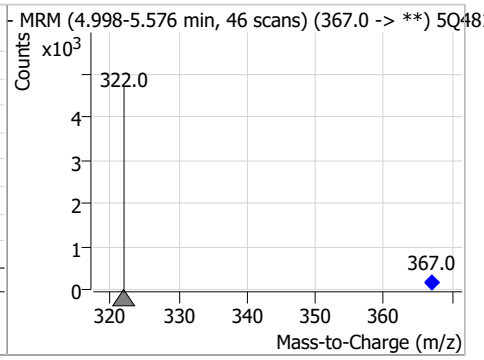




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.45	5.15	0.00	162255				

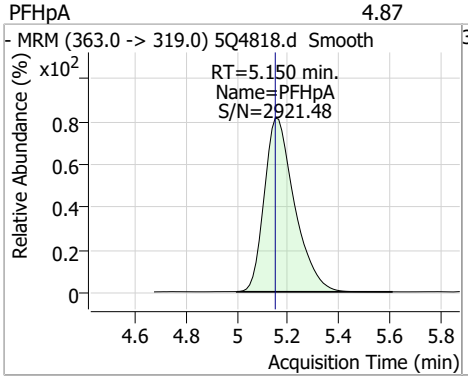


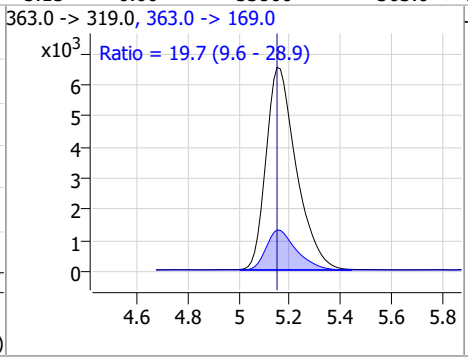


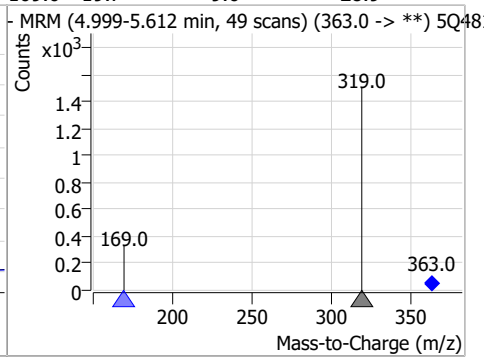


Perfluorinated Compounds by LC/MS/MS

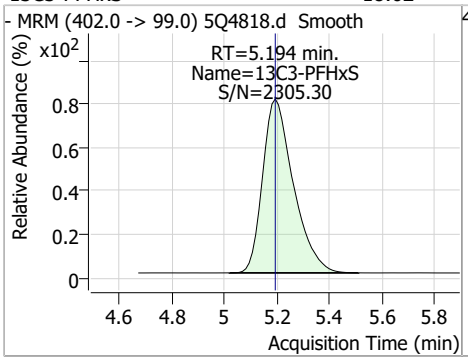
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.87	5.15	0.00	53860	363.0 -> 169.0	19.7	9.6	28.9

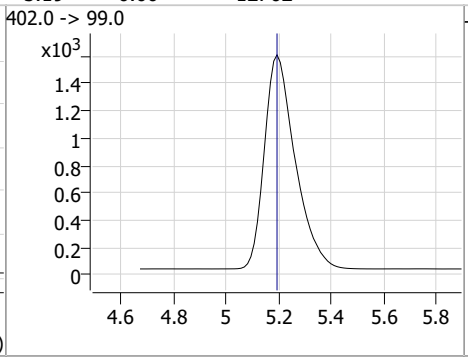


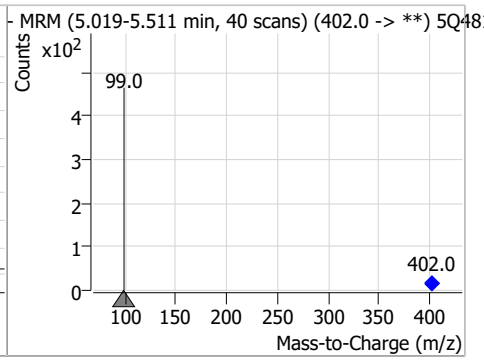




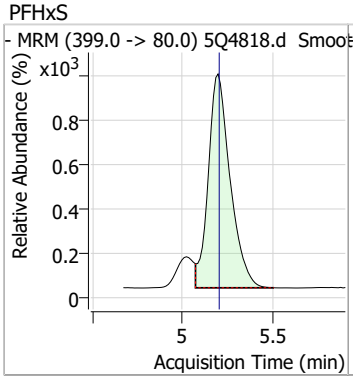
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.62	5.19	0.00	12762				

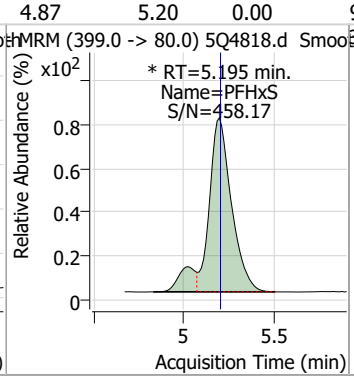


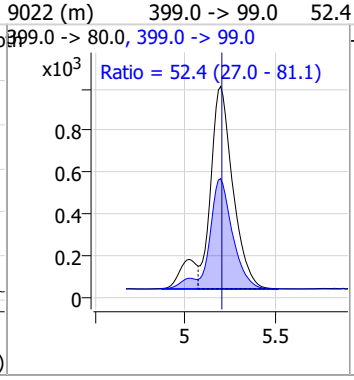


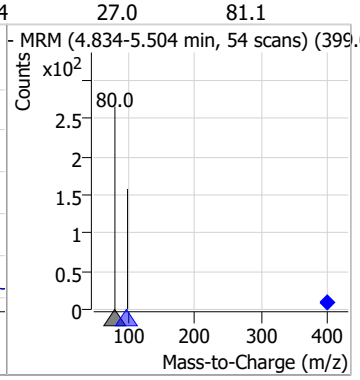


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.87	5.20	0.00	9022 (m)	399.0 -> 99.0	52.4	27.0	81.1

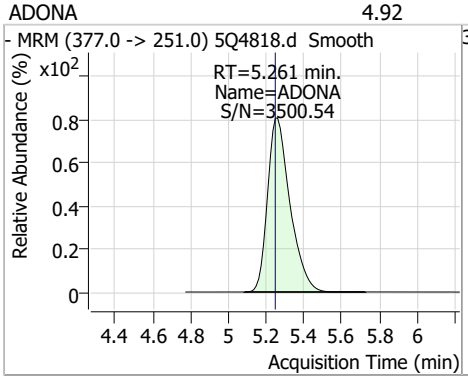


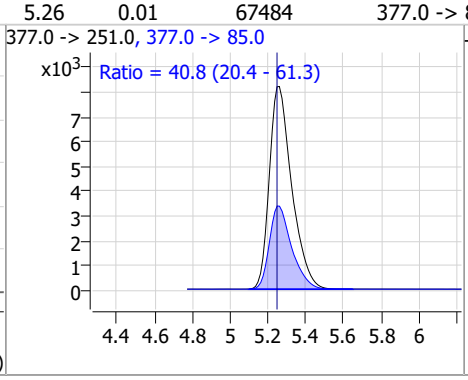


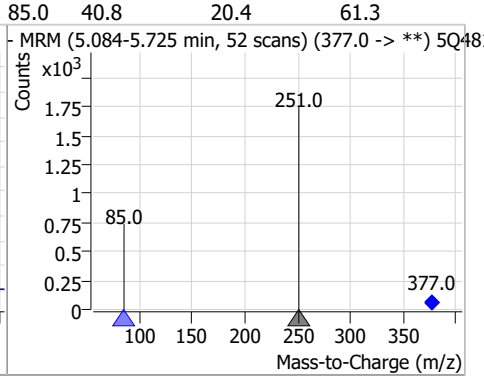




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	4.92	5.26	0.01	67484	377.0 -> 85.0	40.8	20.4	61.3

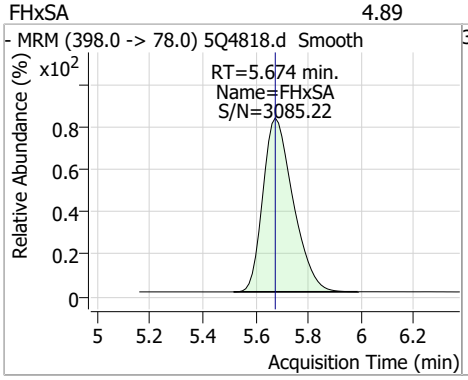


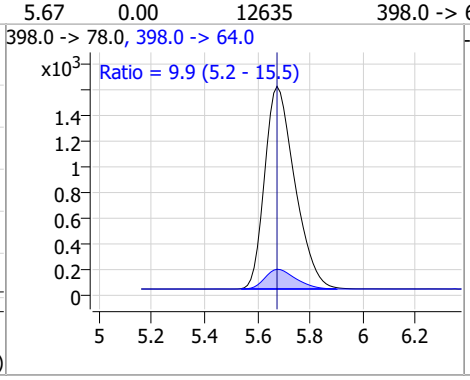


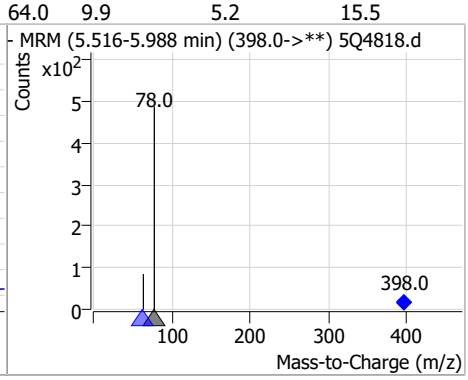


Perfluorinated Compounds by LC/MS/MS

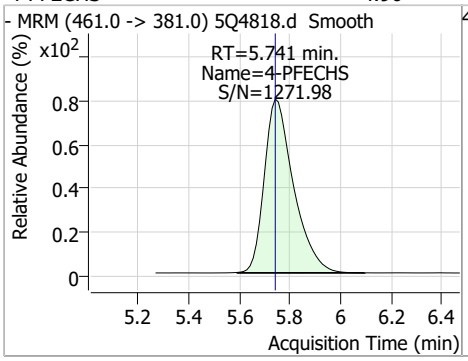
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.89	5.67	0.00	12635	398.0 -> 64.0	9.9	5.2	15.5

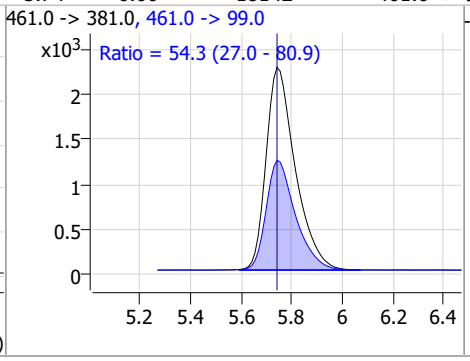


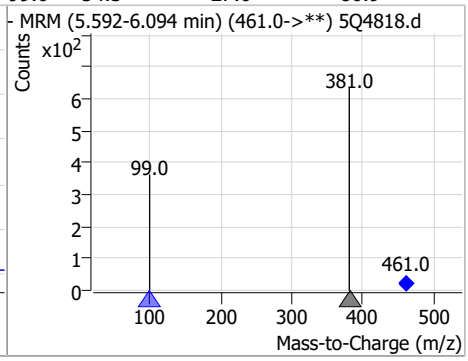




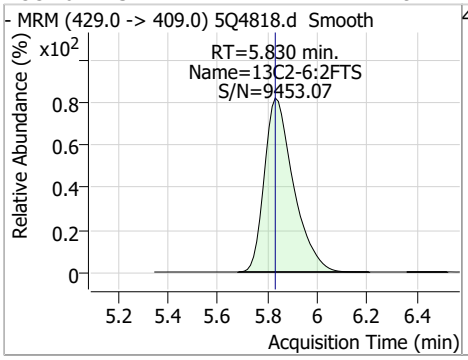
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.90	5.74	0.00	18142	461.0 -> 99.0	54.3	27.0	80.9

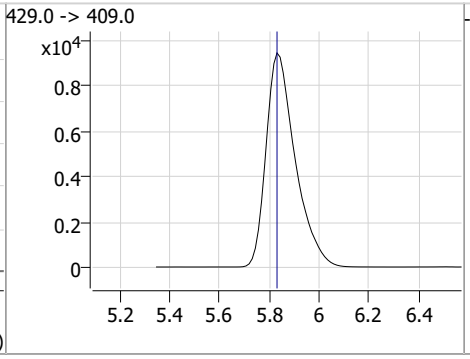


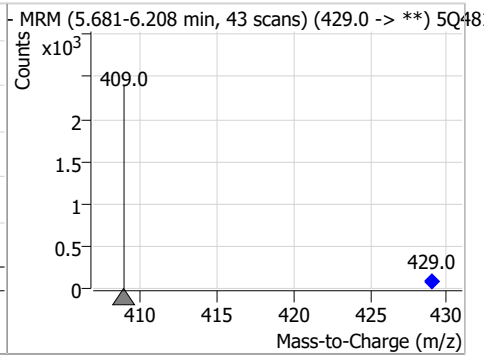




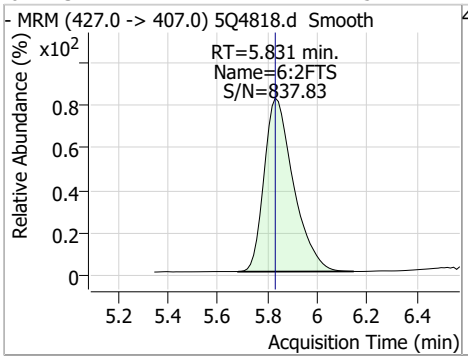
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.79	5.83	0.00	76255				

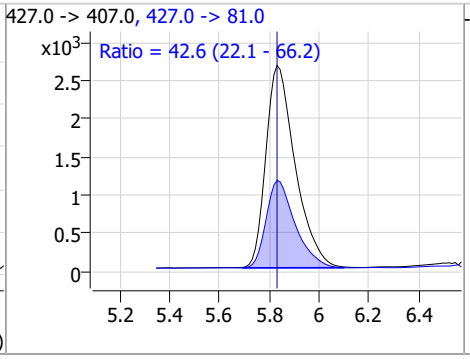


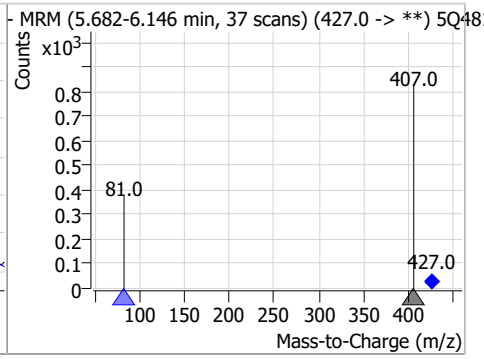




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.44	5.83	0.00	21606	427.0 -> 81.0	42.6	22.1	66.2

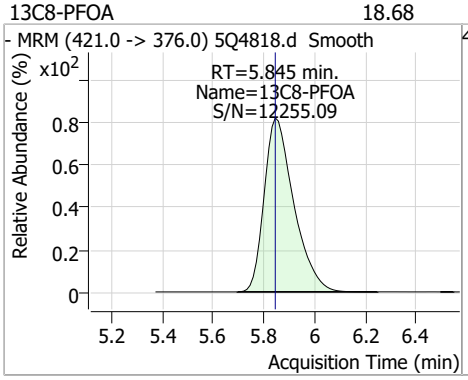


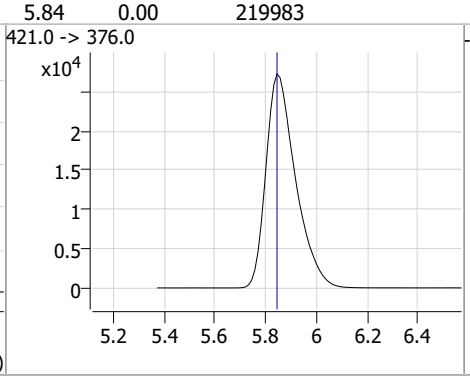


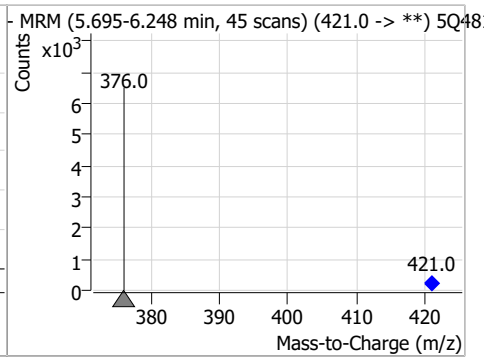


Perfluorinated Compounds by LC/MS/MS

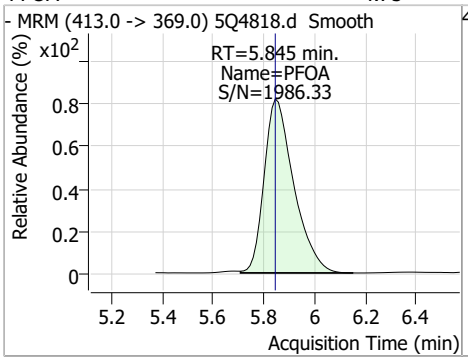
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.68	5.84	0.00	219983				

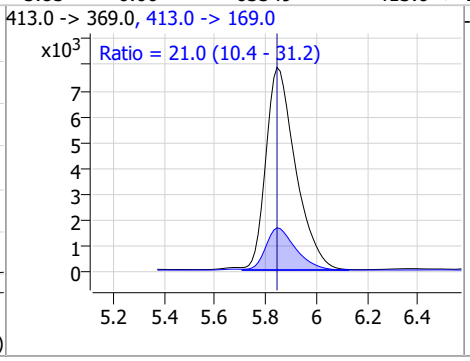


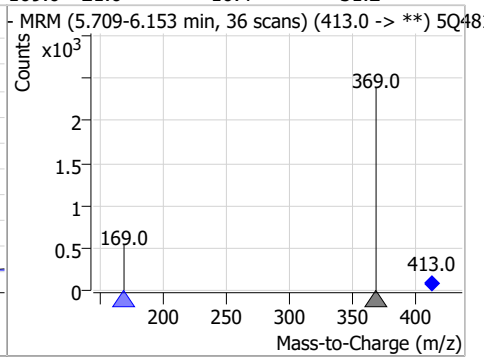




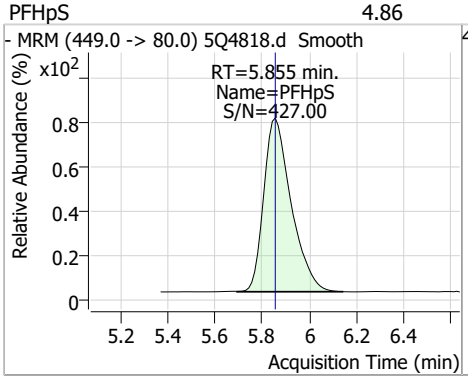
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.75	5.85	0.00	63549	413.0 -> 169.0	21.0	10.4	31.2

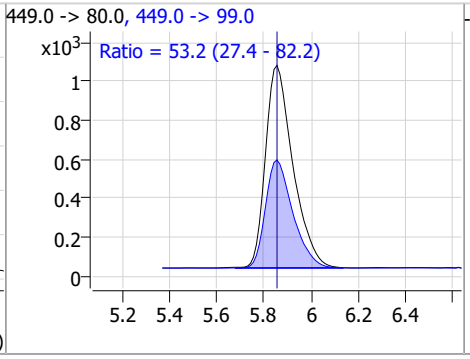


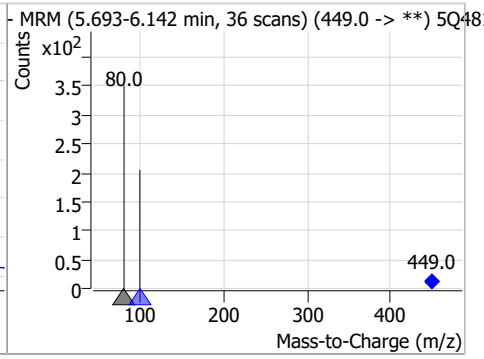




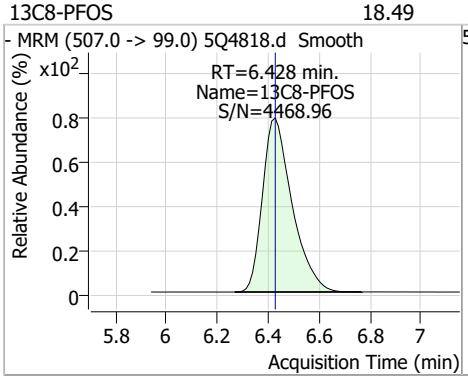
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	4.86	5.85	0.00	8369	449.0 -> 99.0	53.2	27.4	82.2

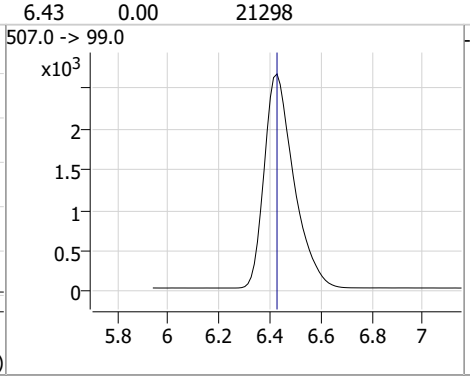


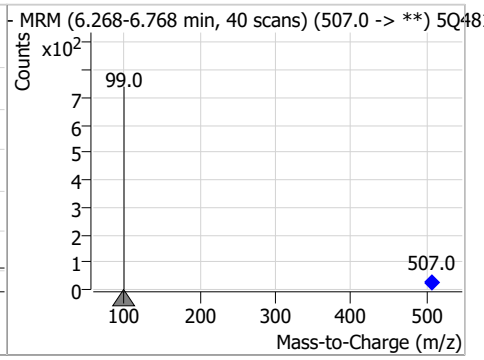




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.49	6.43	0.00	21298				

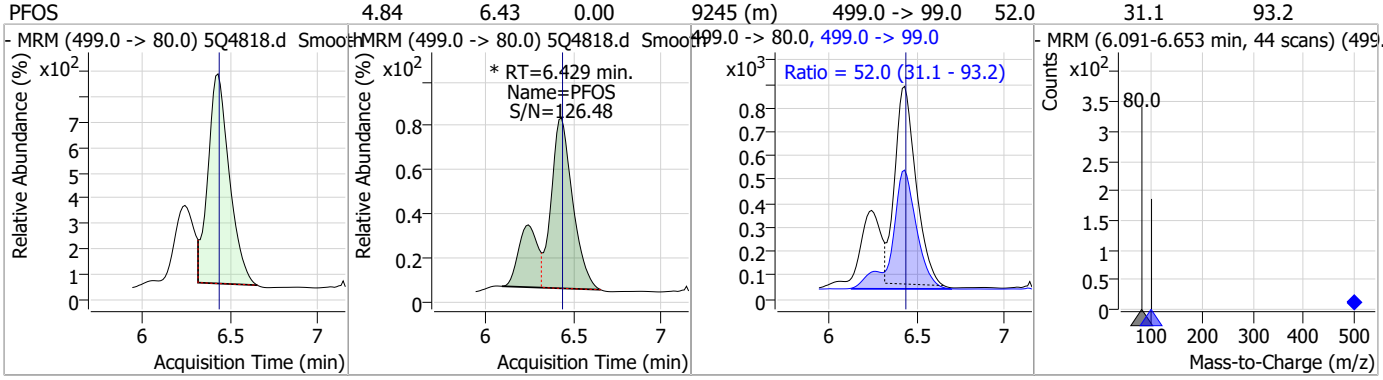




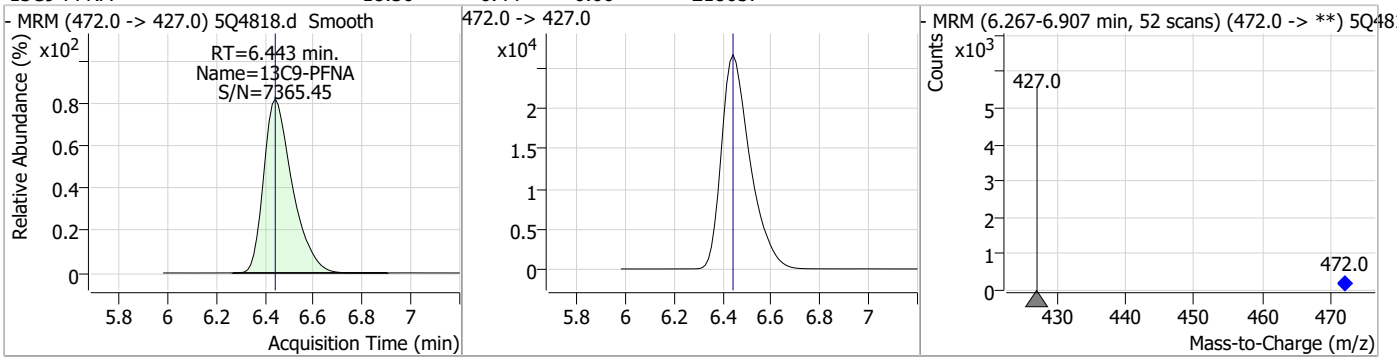


Perfluorinated Compounds by LC/MS/MS

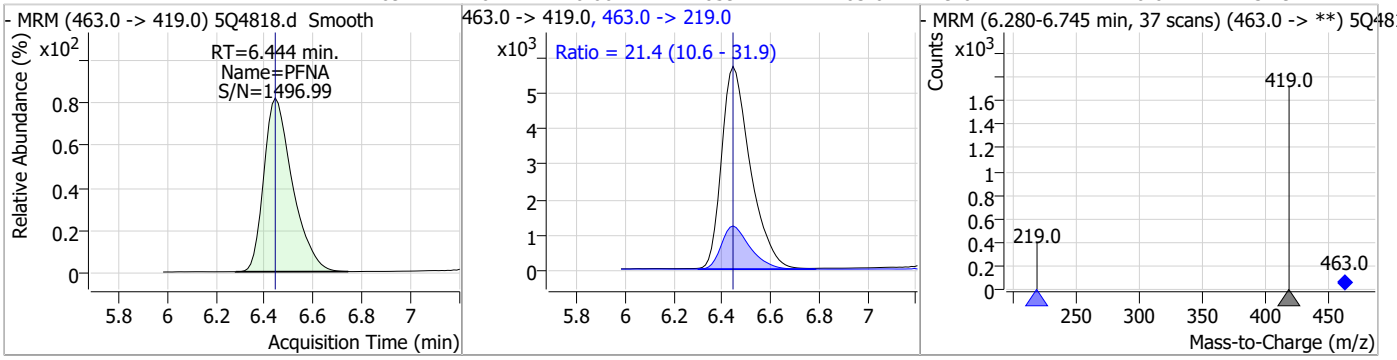
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.84	6.43	0.00	9245 (m)	499.0 -> 99.0	52.0	31.1	93.2



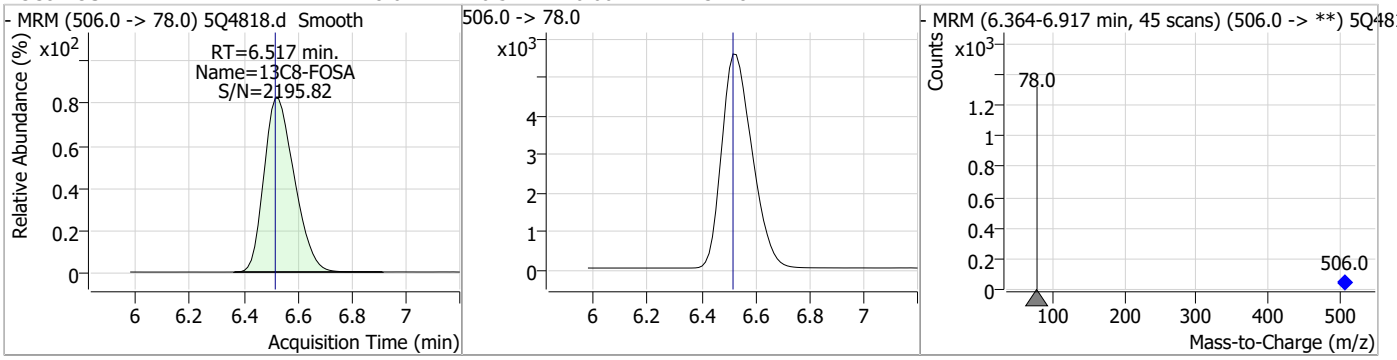
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.50	6.44	0.00	218057				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.69	6.44	0.00	46594	463.0 -> 219.0	21.4	10.6	31.9

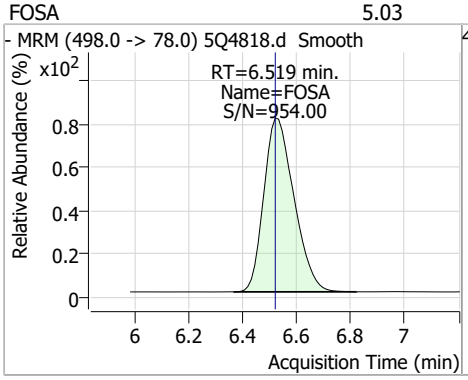


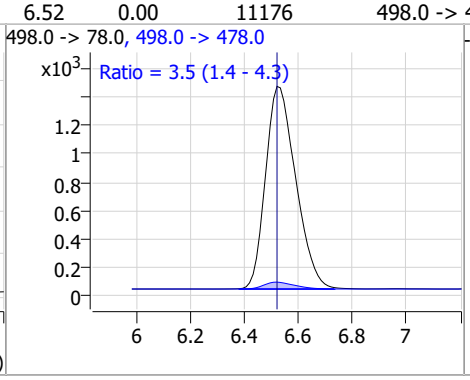
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.61	6.52	0.00	43728				

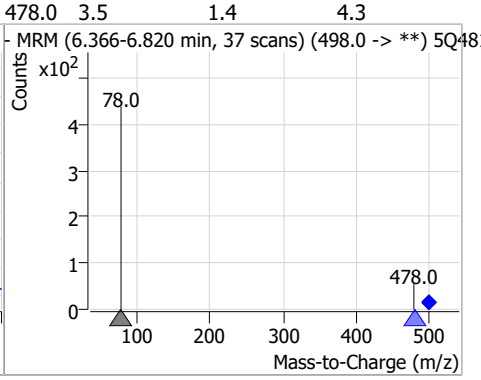


Perfluorinated Compounds by LC/MS/MS

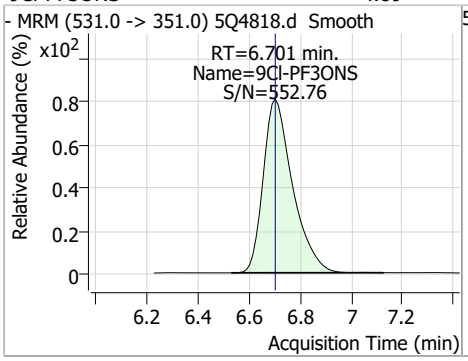
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.03	6.52	0.00	11176	498.0 -> 478.0	3.5	1.4	4.3

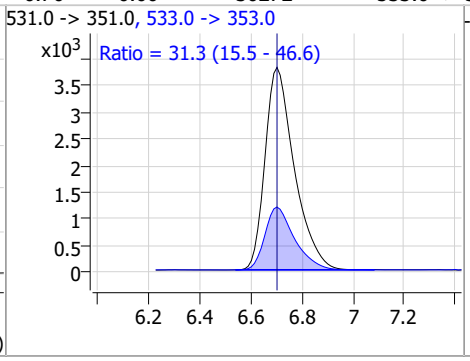


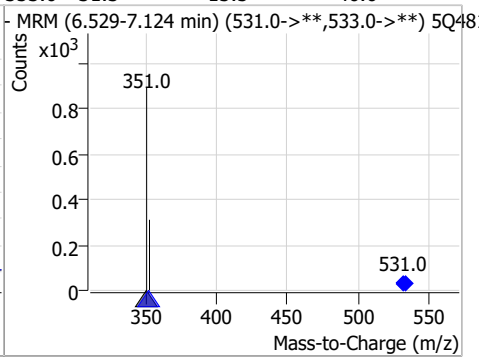




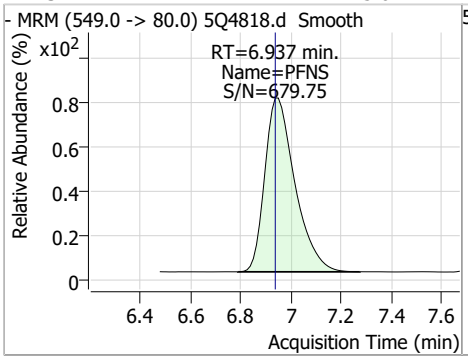
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.89	6.70	0.00	30272	533.0 -> 353.0	31.3	15.5	46.6

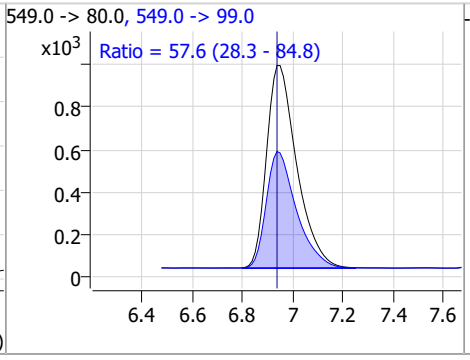


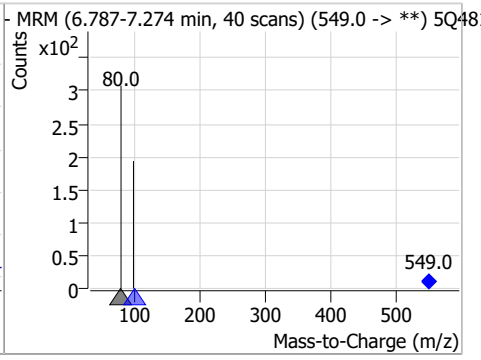




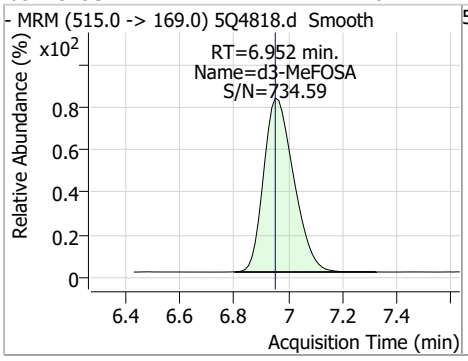
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	5.01	6.94	0.00	7965	549.0 -> 99.0	57.6	28.3	84.8

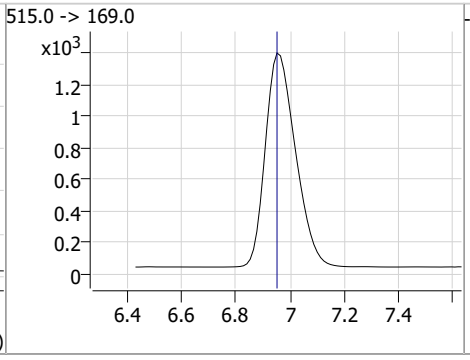


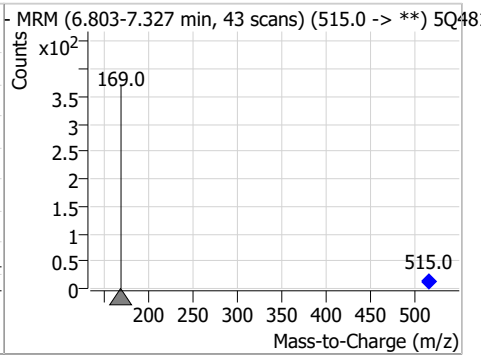




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.74	6.95	0.00	10539				

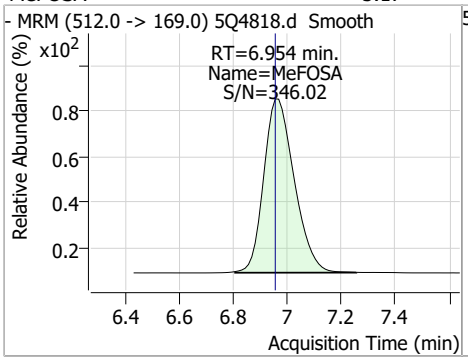


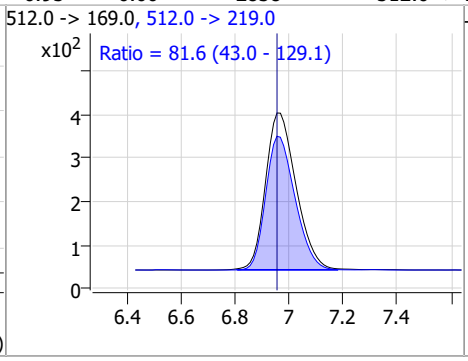


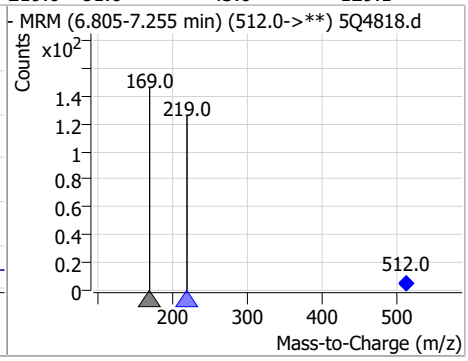


Perfluorinated Compounds by LC/MS/MS

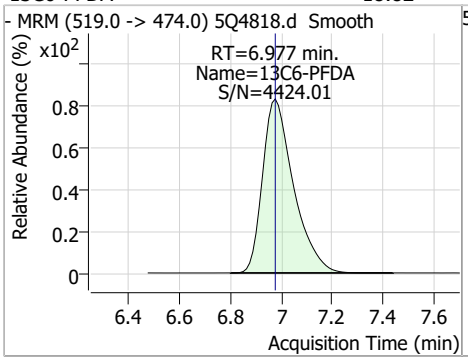
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.17	6.95	0.00	2858	512.0 -> 219.0	81.6	43.0	129.1

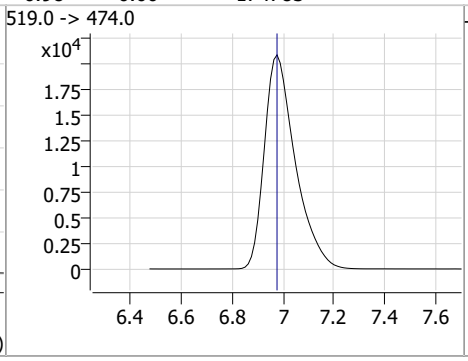


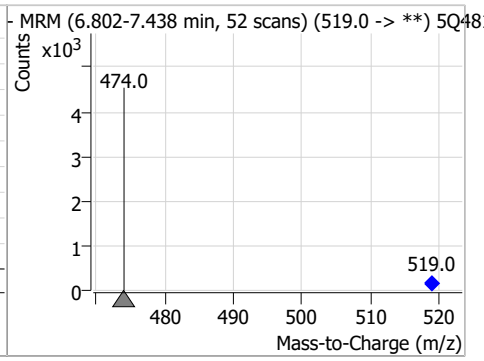




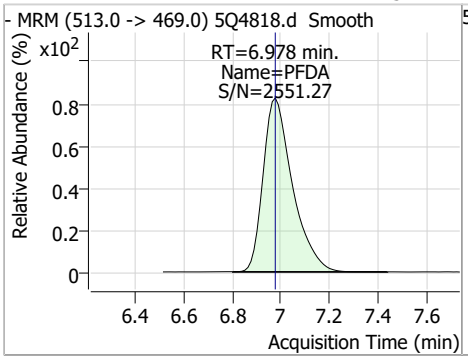
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.82	6.98	0.00	174783				

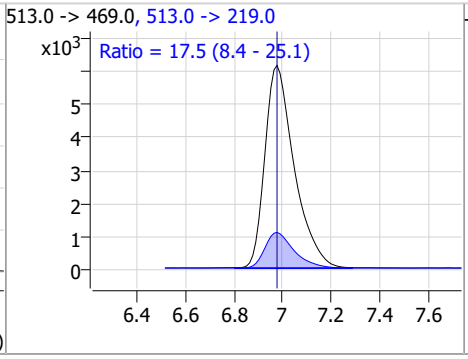


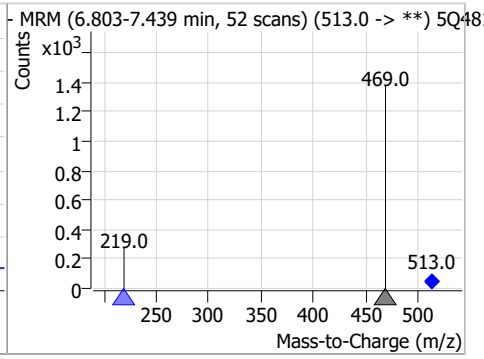




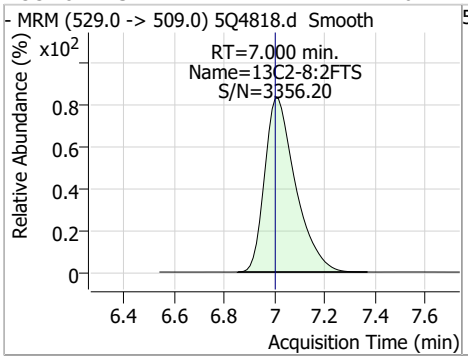
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.75	6.98	0.00	51689	513.0 -> 219.0	17.5	8.4	25.1

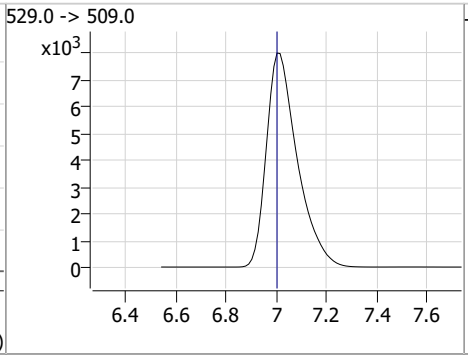


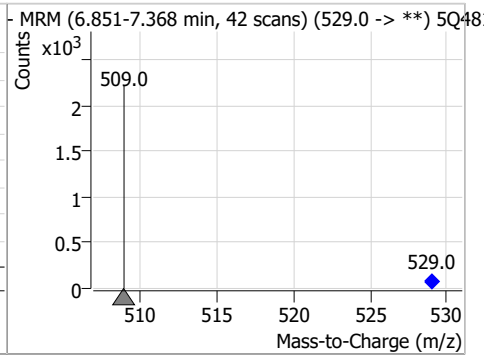




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.70	7.00	0.00	68014				

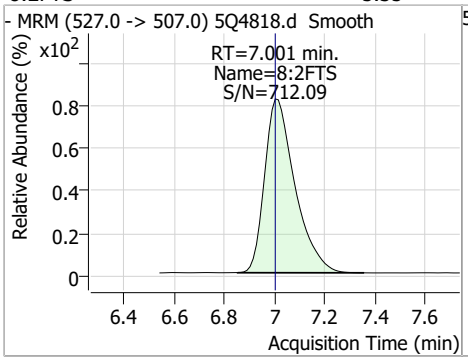


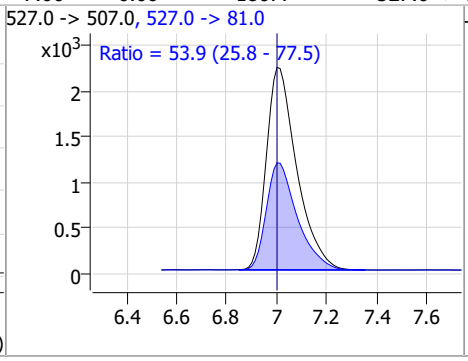


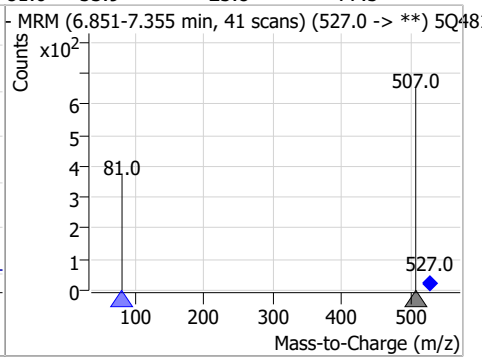


Perfluorinated Compounds by LC/MS/MS

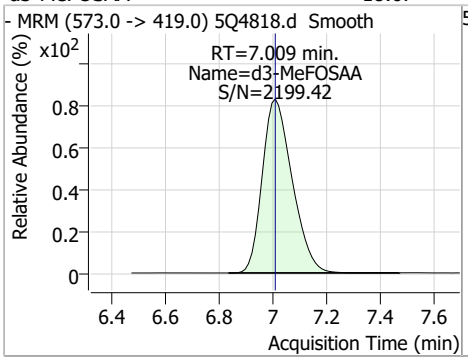
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.35	7.00	0.00	18677	527.0 -> 81.0	53.9	25.8	77.5

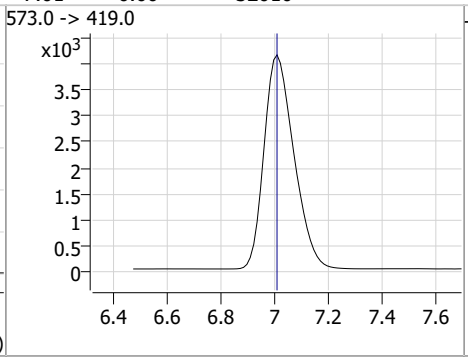


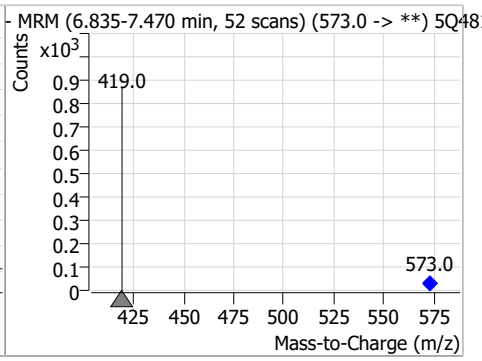




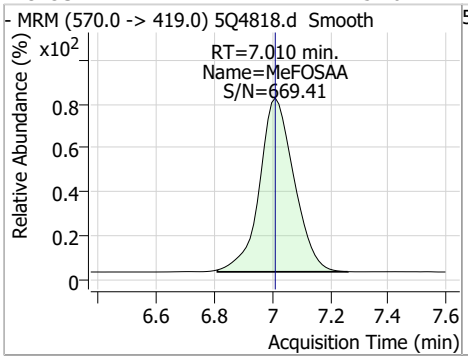
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.67	7.01	0.00	32010				

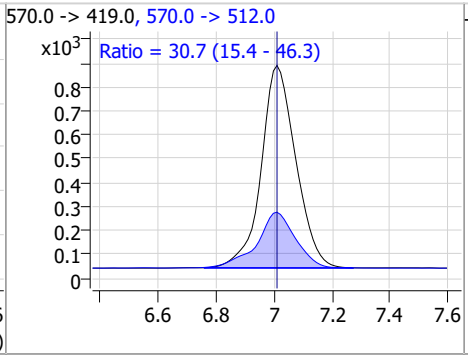


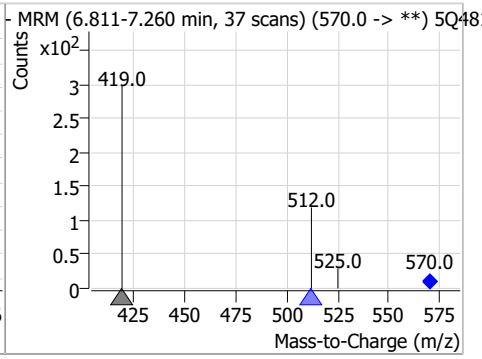




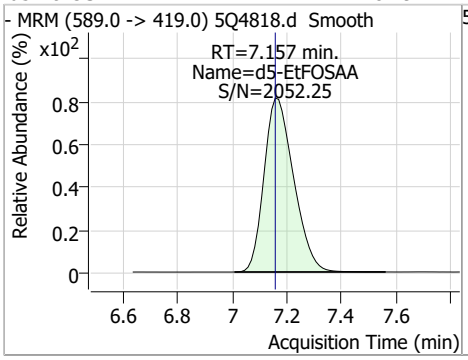
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.20	7.01	0.00	7019	570.0 -> 512.0	30.7	15.4	46.3

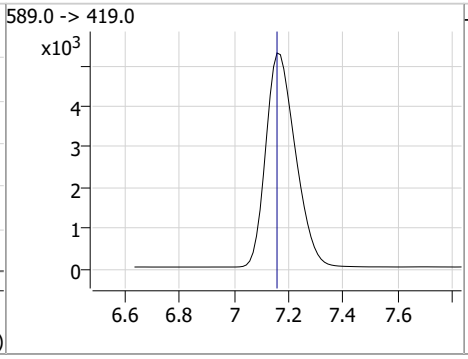


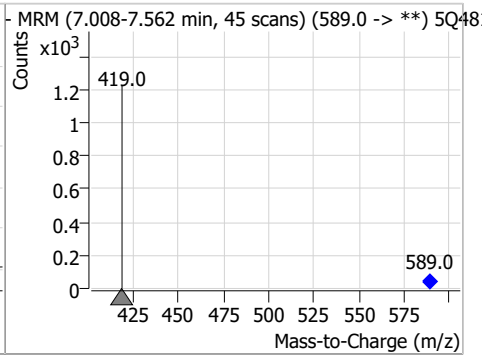




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.79	7.16	0.00	39629				

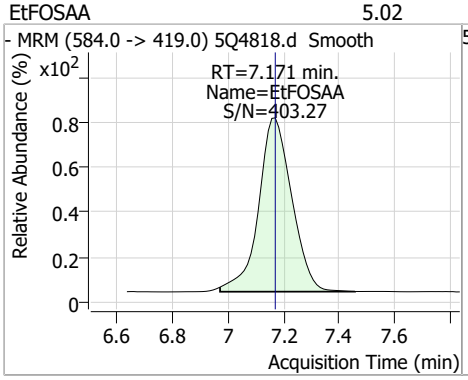


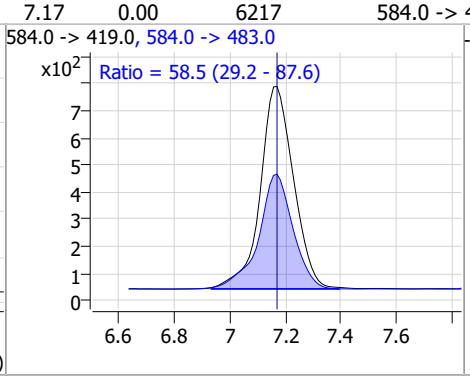


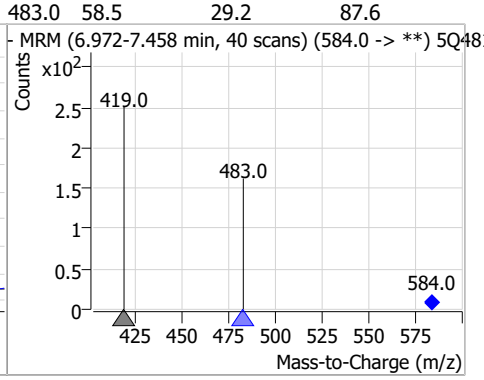


Perfluorinated Compounds by LC/MS/MS

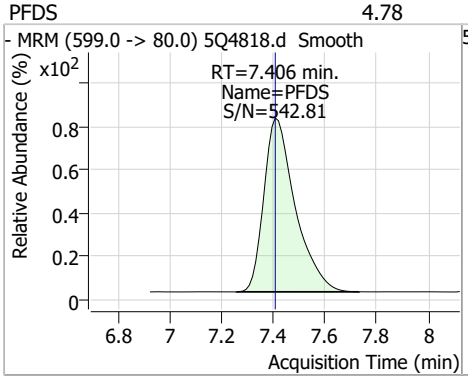
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	5.02	7.17	0.00	6217	584.0 -> 483.0	58.5	29.2	87.6

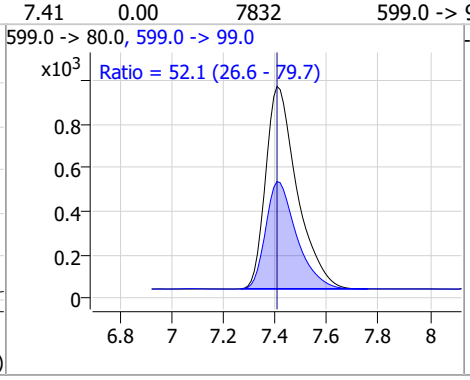


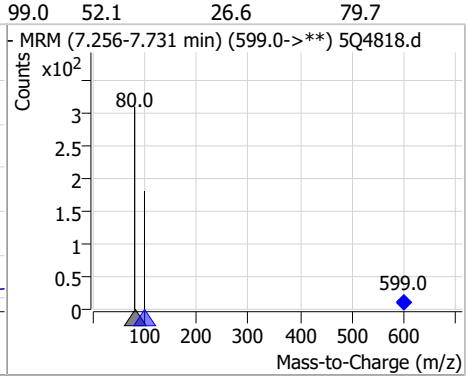




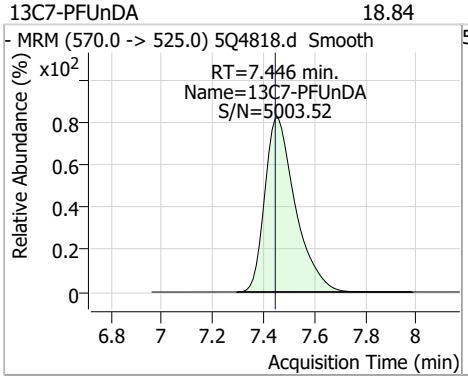
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	4.78	7.41	0.00	7832	599.0 -> 99.0	52.1	26.6	79.7

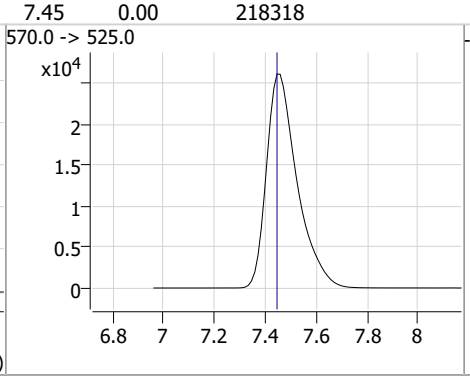


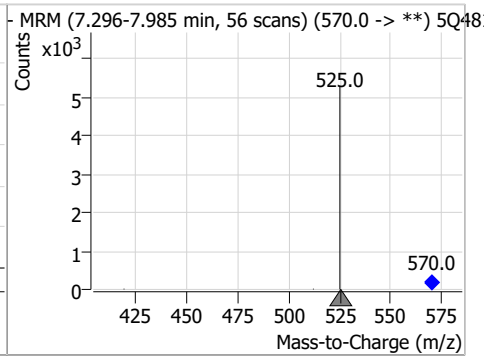




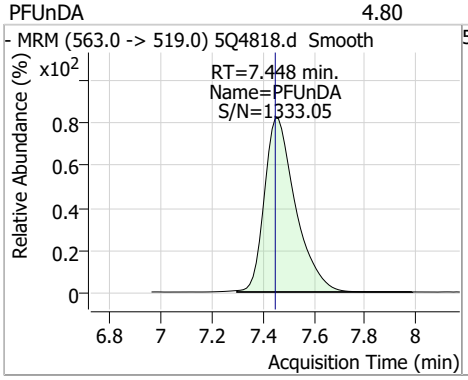
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.84	7.45	0.00	218318				

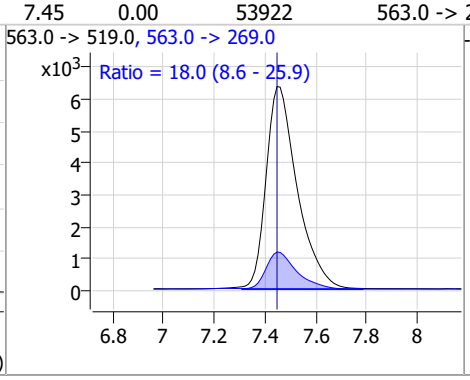


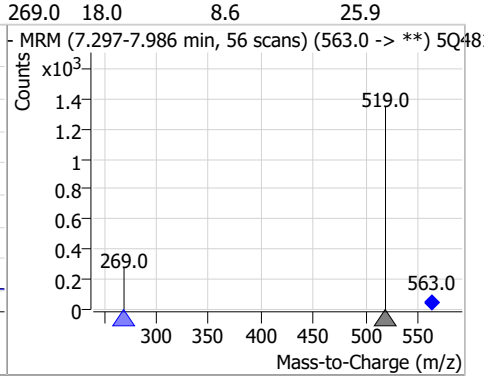




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.80	7.45	0.00	53922	563.0 -> 269.0	18.0	8.6	25.9

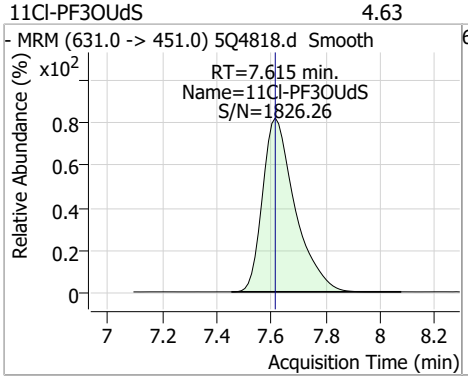


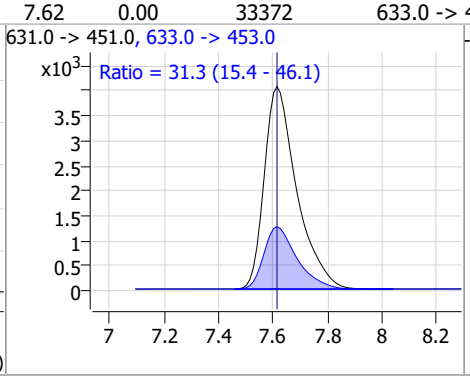


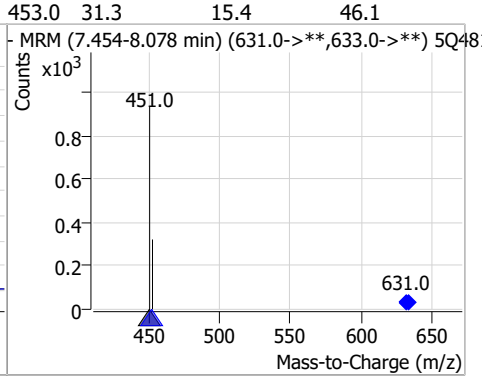


Perfluorinated Compounds by LC/MS/MS

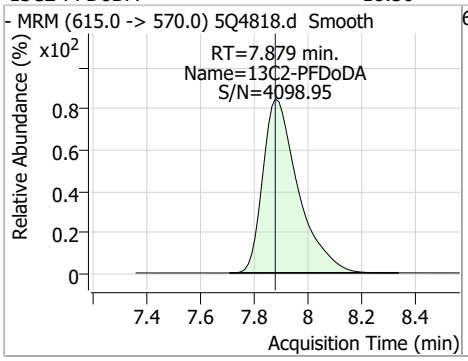
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.63	7.62	0.00	33372	633.0 -> 453.0	31.3	15.4	46.1

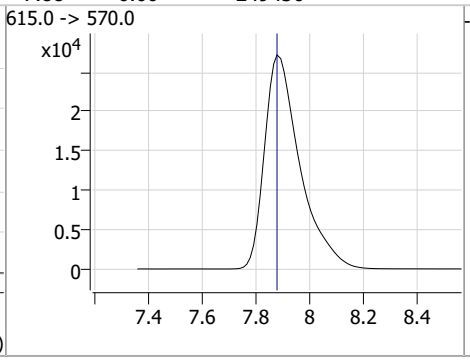


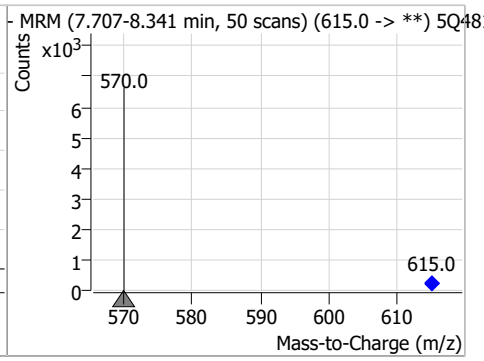




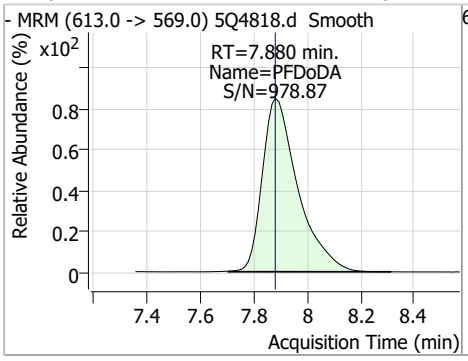
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.50	7.88	0.00	249436				

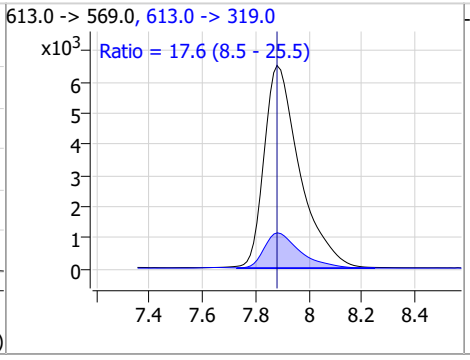


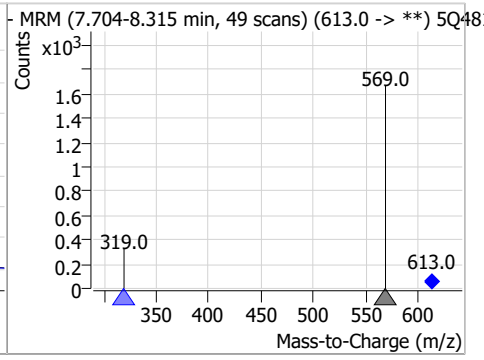




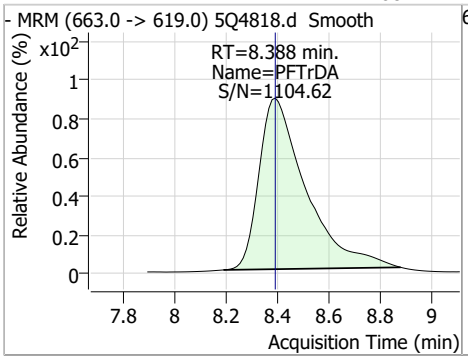
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.84	7.88	0.00	59772	613.0 -> 319.0	17.6	8.5	25.5

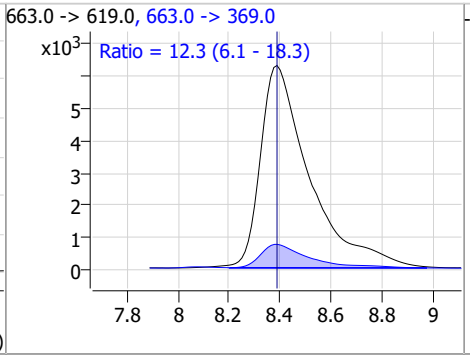


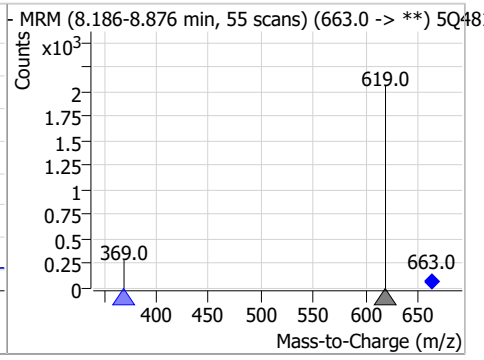




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.68	8.39	0.00	78512	663.0 -> 369.0	12.3	6.1	18.3

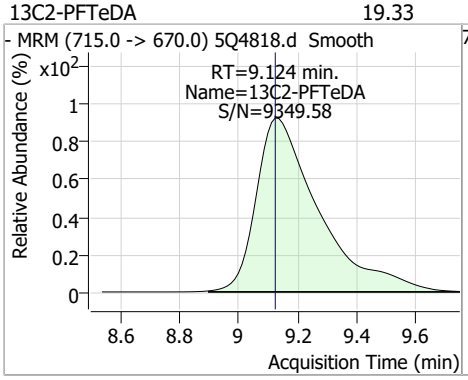


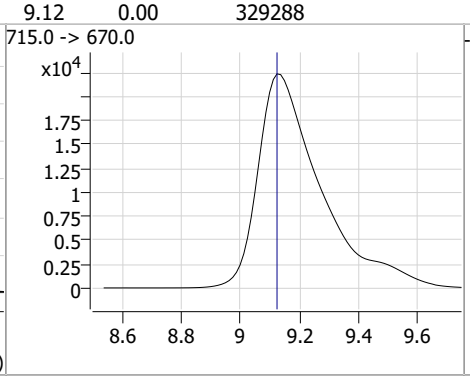


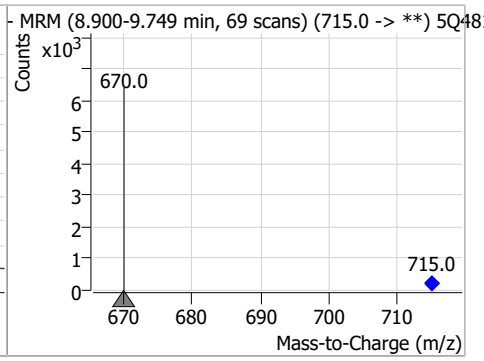


Perfluorinated Compounds by LC/MS/MS

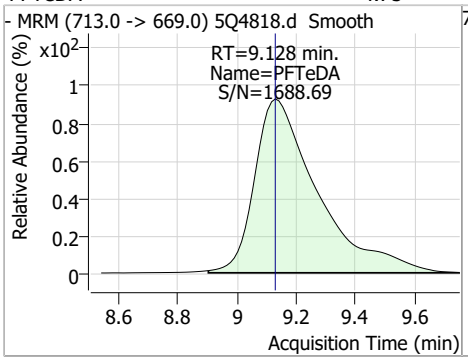
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.33	9.12	0.00	329288				

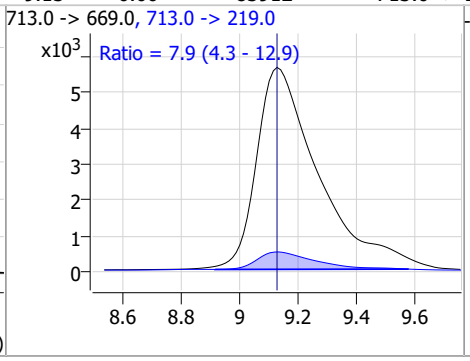


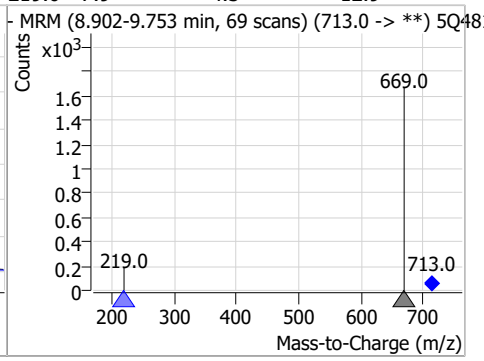




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.75	9.13	0.00	83912	713.0 -> 219.0	7.9	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4818.D
Injection Time: 09/17/22 13:03
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4819.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 1:18:46 PM
Sample Name : ic73-10
Vial : P1-A6
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

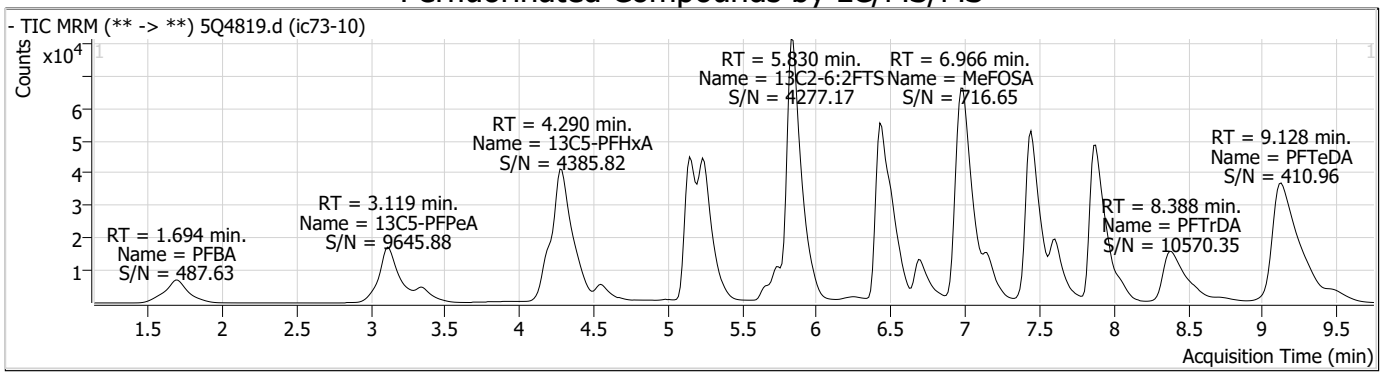
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	66036	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	105655	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	169332	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	156903	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	211402	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	210230	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	166553	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	209995	20.00	µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	239248	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	297906	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	42423	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	11947	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12367	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	20629	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	54516	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	74502	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	66093	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	30663	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10372	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10277	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	37874	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	54516	17.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C2-6:2FTS	5.830	429.0 -> 409.0	74502	17.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.9%		
13C2-8:2FTS	7.013	529.0 -> 509.0	66093	17.20	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%		
13C2-PFDoDA	7.879	615.0 -> 570.0	239248	17.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.7%		
13C2-PFTeDA	9.124	715.0 -> 670.0	297906	17.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.4%		
13C3-PFBS	3.349	302.0 -> 99.0	11947	17.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%		
13C3-PFHxS	5.194	402.0 -> 99.0	12367	18.04	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.2%		
13C4-PFBA	1.700	217.0 -> 172.0	66036	17.91	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	156903	17.84	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	169332	17.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C5-PFPeA	3.119	268.0 -> 223.0	105655	17.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C6-PFDA	6.977	519.0 -> 474.0	166553	17.93	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

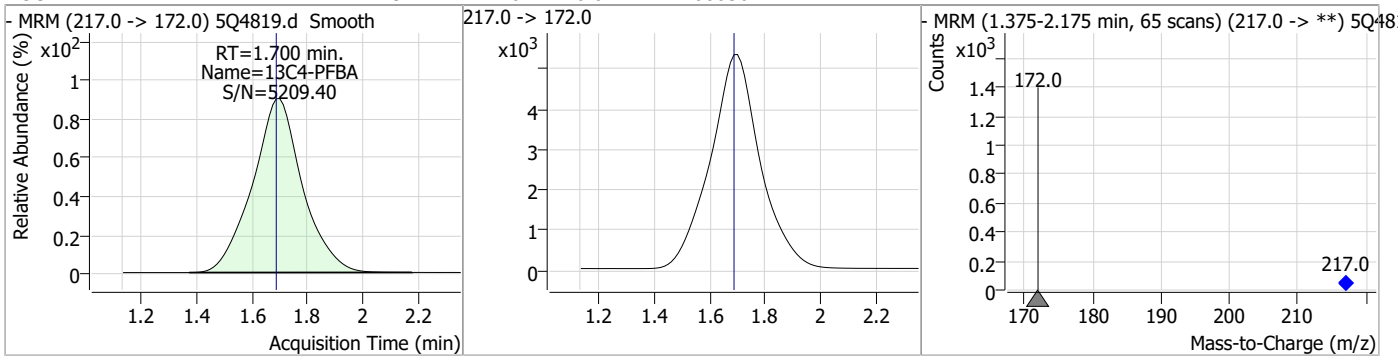
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	209995	18.12	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%			
13C8-FOSA	6.517	506.0 -> 78.0	42423	18.05	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%			
13C8-PFOA	5.845	421.0 -> 376.0	211402	17.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C8-PFOS	6.428	507.0 -> 99.0	20629	17.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%			
13C9-PFNA	6.443	472.0 -> 427.0	210230	17.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
d3-MeFOSAA	7.009	573.0 -> 419.0	30663	17.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.4%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10372	18.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	10277	18.27	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
d5-EtFOSAA	7.157	589.0 -> 419.0	37874	17.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	32408	10.94	µg/L		98
6:2FTS	5.831	427.0 -> 407.0	43237	11.14	µg/L		98
8:2FTS	7.001	527.0 -> 507.0	38100	11.22	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	12341	10.41	µg/L		100
FOSA	6.519	498.0 -> 78.0	22568	10.44	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	14179	10.89	µg/L		96
PFBA	1.694	213.0 -> 169.0	13164	10.02	µg/L		100
PFBS	3.354	299.0 -> 80.0	18415	10.25	µg/L		99
PFDA	6.978	513.0 -> 469.0	106849	10.31	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	120176	10.14	µg/L		99
PFDS	7.406	599.0 -> 80.0	16193	10.23	µg/L		99
PFHpA	5.150	363.0 -> 319.0	107791	10.08	µg/L		100
PFHpS	5.855	449.0 -> 80.0	16767	10.05	µg/L		98
PFHxA	4.291	313.0 -> 269.0	84360	10.04	µg/L		100
PFHxS	5.195	399.0 -> 80.0	18213	10.15	µg/L	m	96
PFNA	6.444	463.0 -> 419.0	95544	9.99	µg/L		100
PFNS	6.937	549.0 -> 80.0	16408	10.65	µg/L		99
PFOA	5.845	413.0 -> 369.0	128703	10.01	µg/L		100
PFOS	6.429	499.0 -> 80.0	18652	10.09	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	51185	10.12	µg/L		100
PFPeS	4.398	349.0 -> 80.0	14466	10.09	µg/L		99
PFTeDA	9.128	713.0 -> 669.0	152900	9.56	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	171394	10.65	µg/L		98
PFUnDA	7.460	563.0 -> 519.0	110734	10.22	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	68701	9.95	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	60475	10.18	µg/L		100
ADONA	5.261	377.0 -> 251.0	136110	10.23	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	18489	10.05	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	6042	11.21	µg/L		93
4-PFECHS	5.741	461.0 -> 381.0	36568	10.24	µg/L		98
FBSA	4.343	298.0 -> 78.0	30370	10.39	µg/L		100
FHxSA	5.674	398.0 -> 78.0	25082	10.10	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

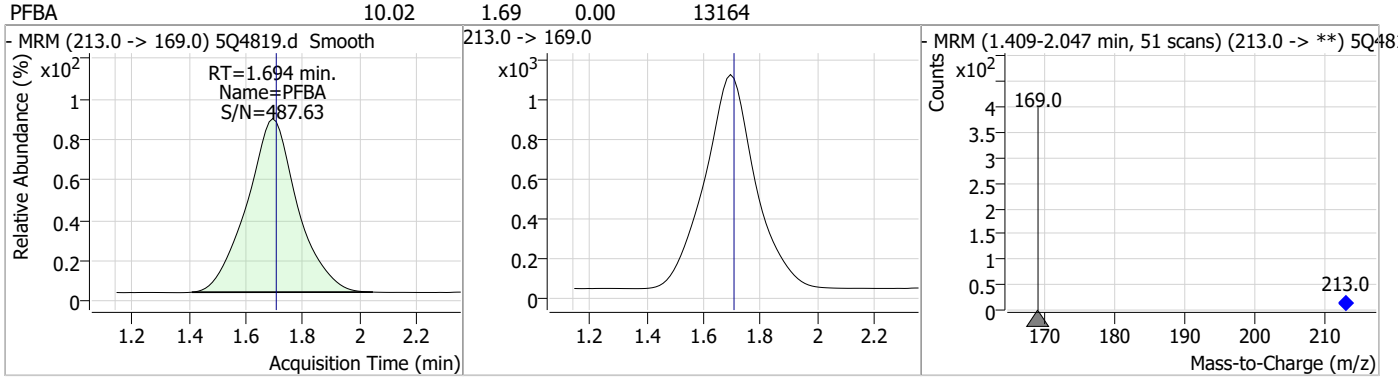
Perfluorinated Compounds by LC/MS/MS



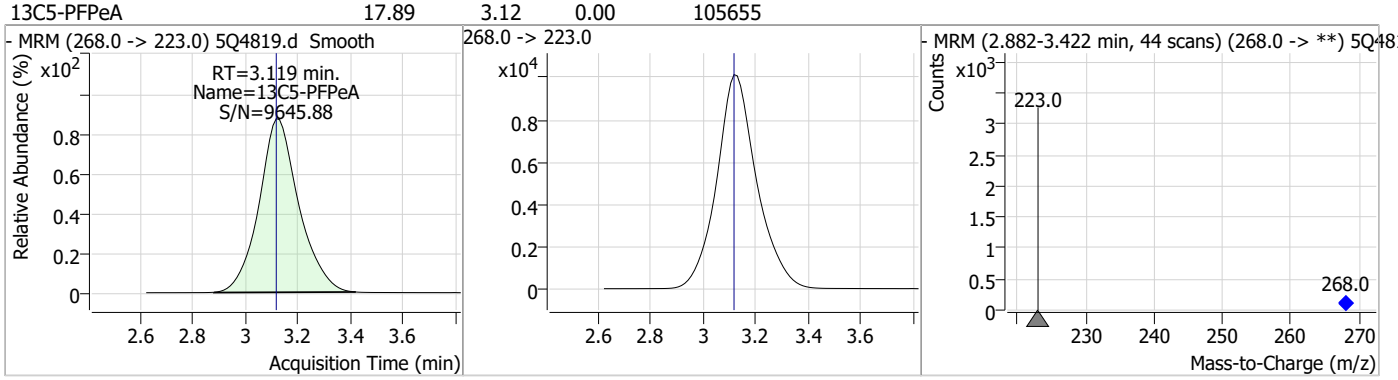
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	17.91	1.70	0.01	66036				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	10.02	1.69	0.00	13164				

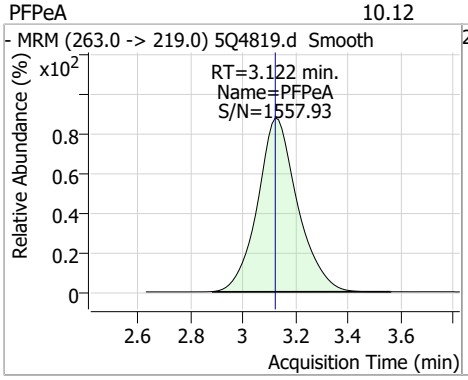


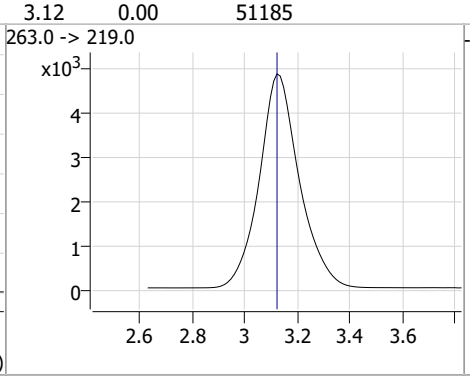
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	17.89	3.12	0.00	105655				

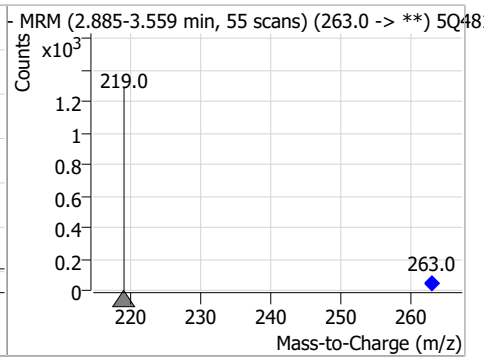


Perfluorinated Compounds by LC/MS/MS

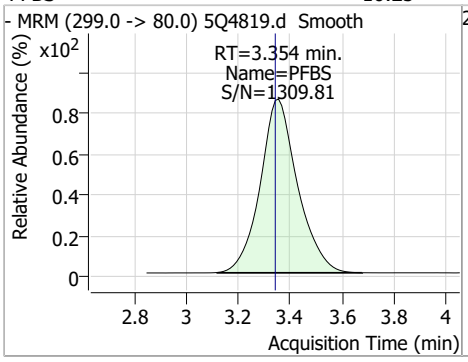
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	10.12	3.12	0.00	51185				

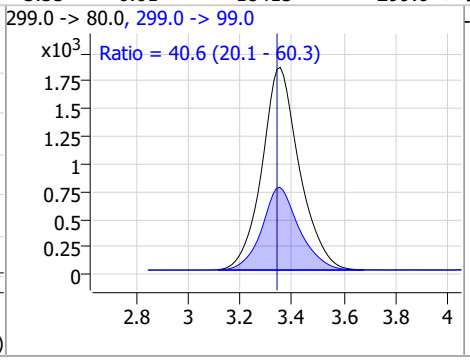


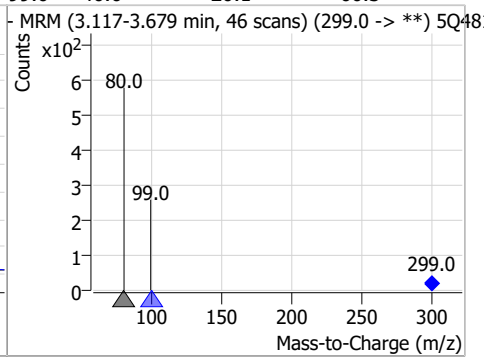




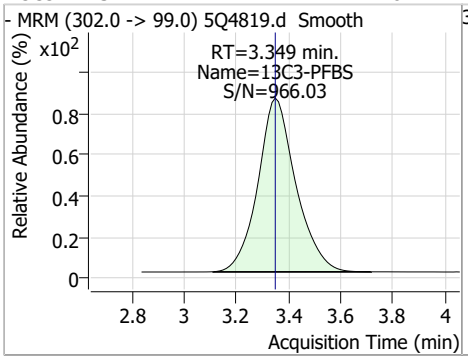
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	10.25	3.35	0.01	18415	299.0 -> 99.0	40.6	20.1	60.3

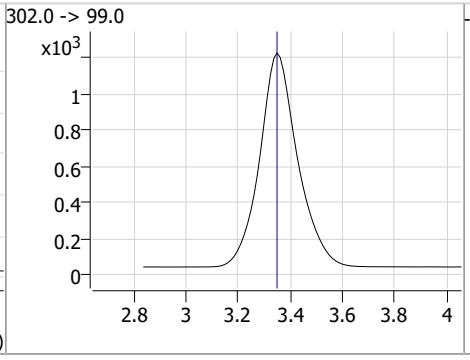


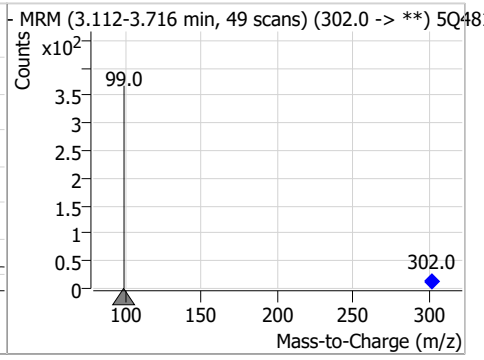




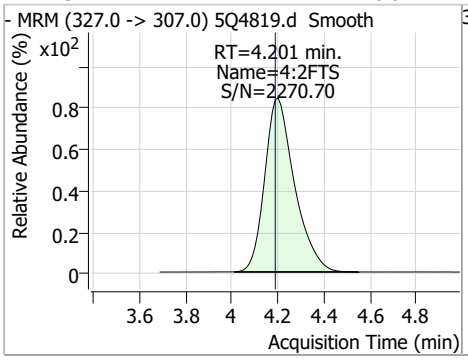
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	17.87	3.35	0.00	11947				

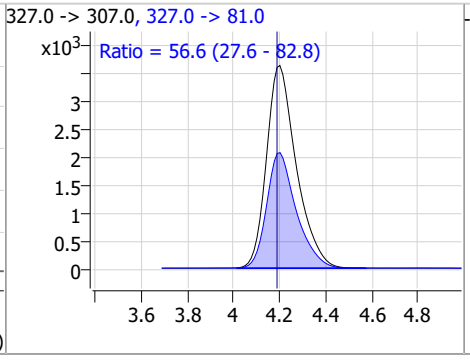


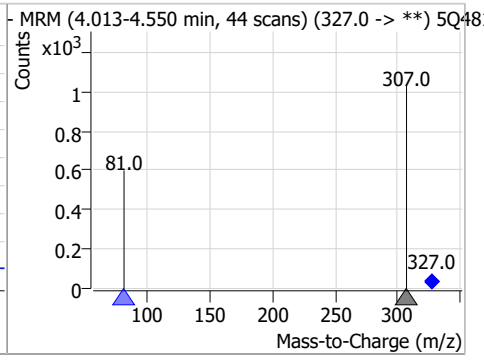




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.94	4.20	0.01	32408	327.0 -> 81.0	56.6	27.6	82.8

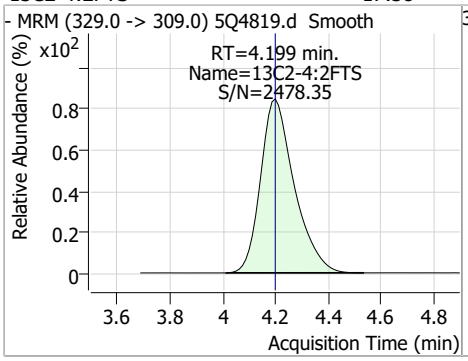


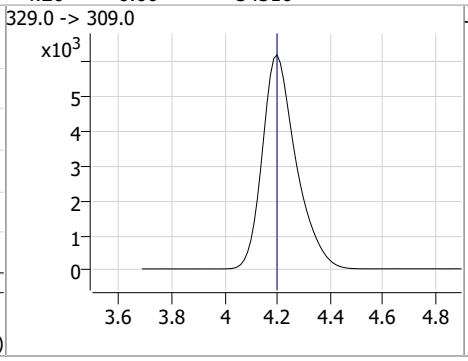


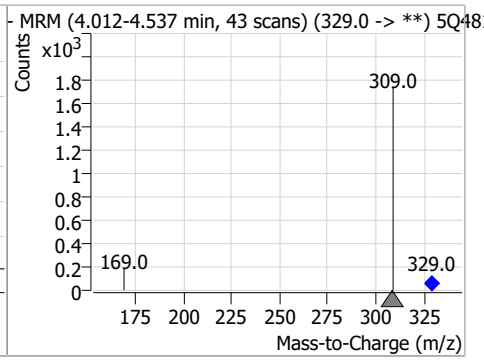


Perfluorinated Compounds by LC/MS/MS

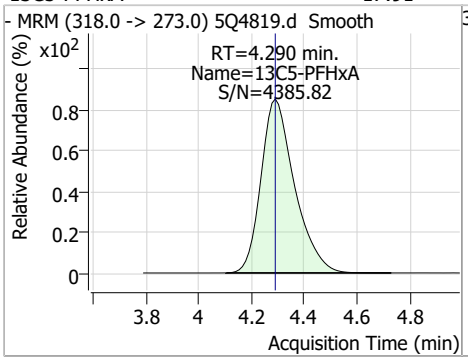
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.38	4.20	0.00	54516				

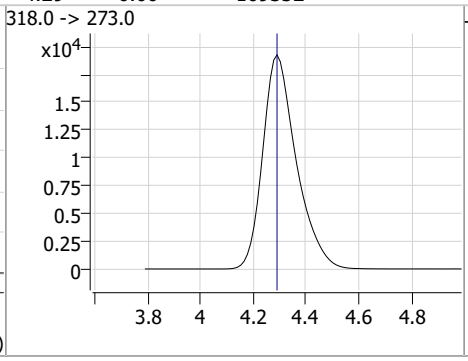


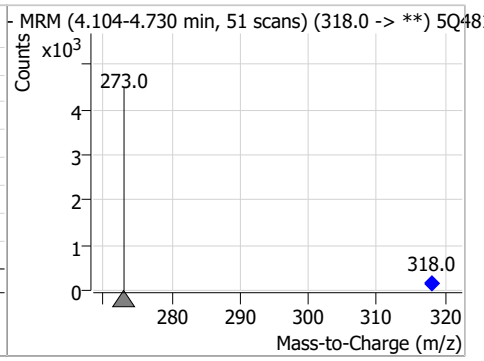




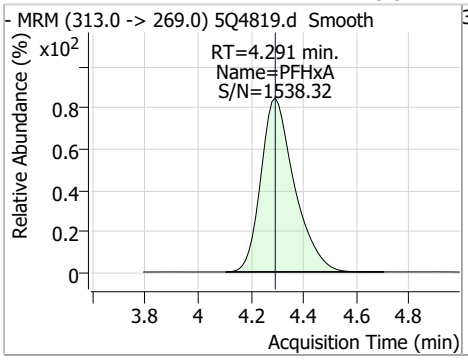
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	17.91	4.29	0.00	169332				

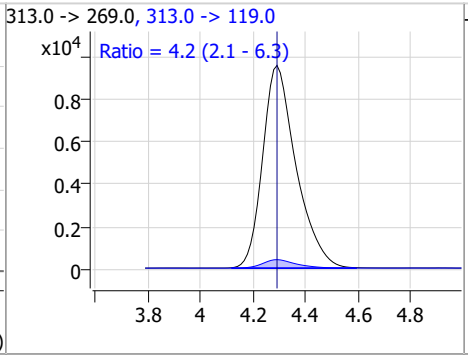


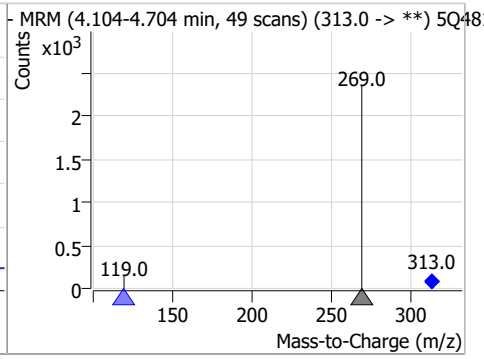




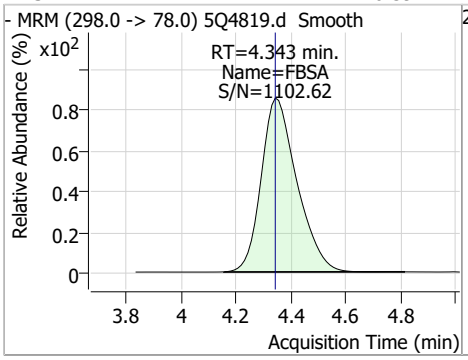
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	10.04	4.29	0.00	84360	313.0 -> 119.0	4.2	2.1	6.3

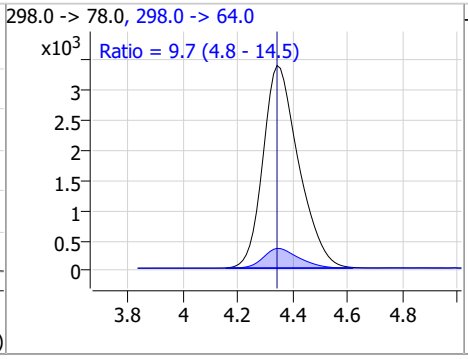


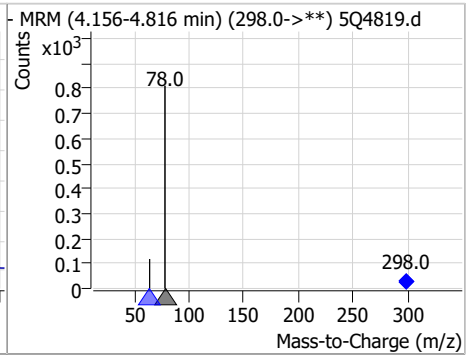




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.39	4.34	0.00	30370	298.0 -> 64.0	9.7	4.8	14.5

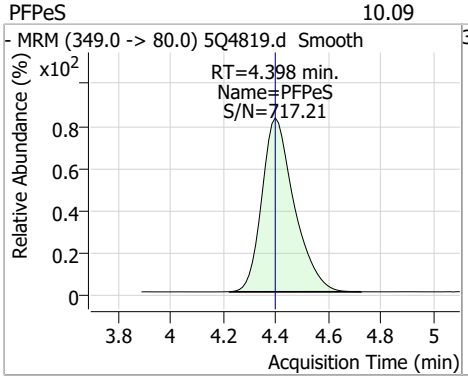


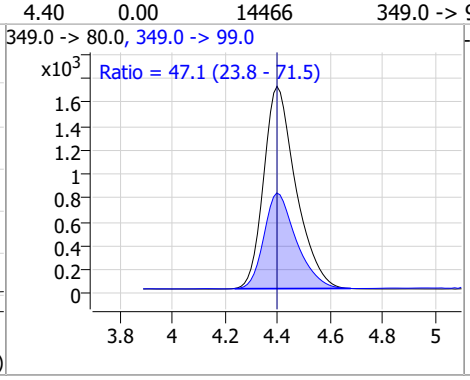


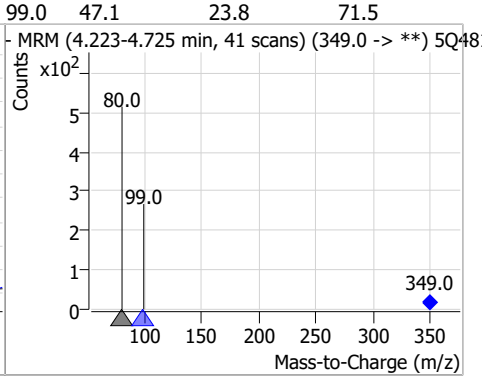


Perfluorinated Compounds by LC/MS/MS

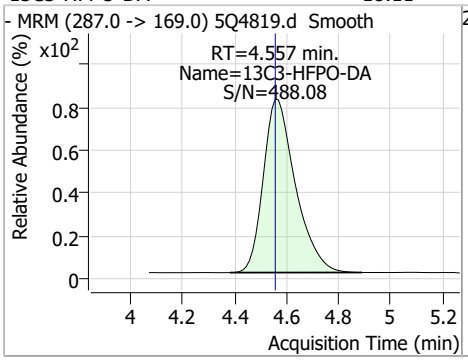
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	10.09	4.40	0.00	14466	349.0 -> 99.0	47.1	23.8	71.5

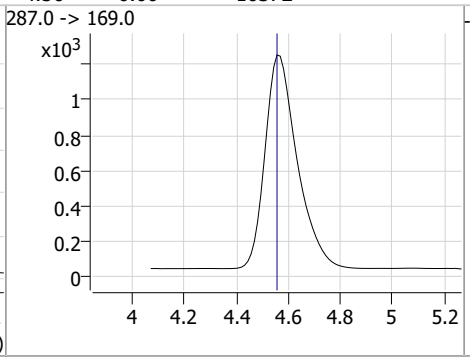


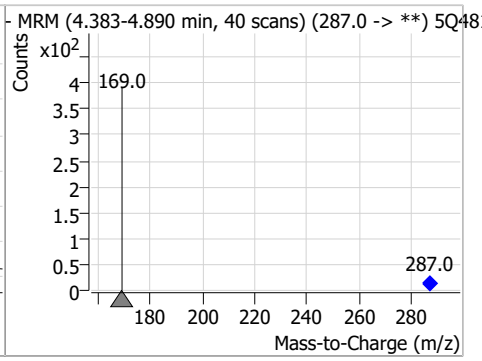




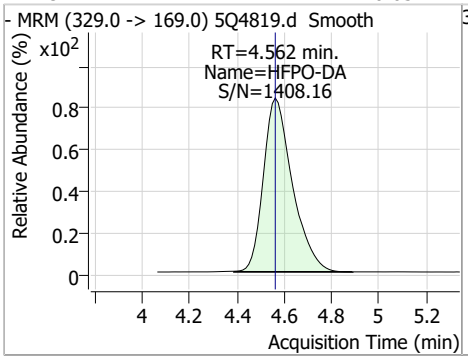
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.11	4.56	0.00	10372				

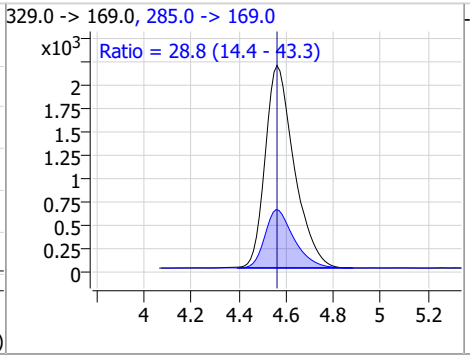


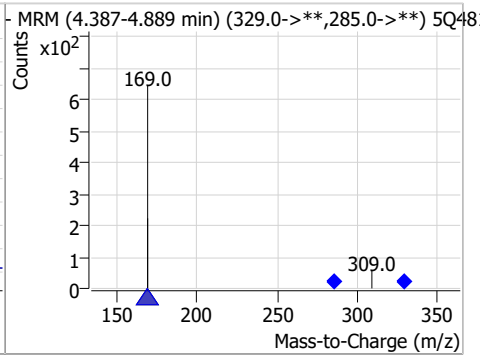




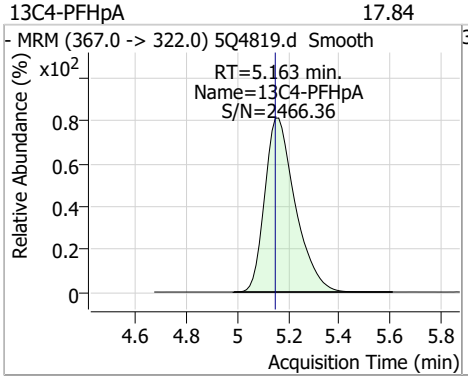
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.05	4.56	0.00	18489	285.0 -> 169.0	28.8	14.4	43.3

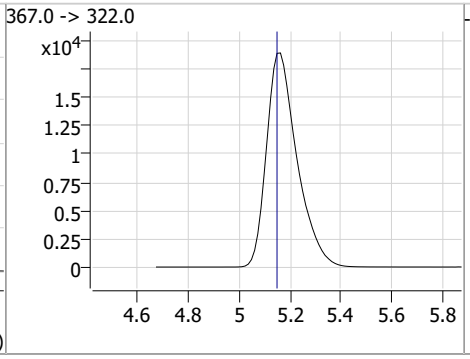


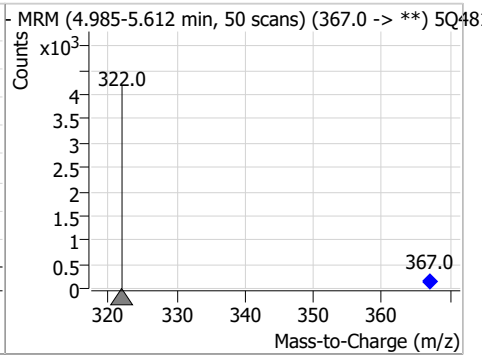




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	17.84	5.16	0.01	156903				

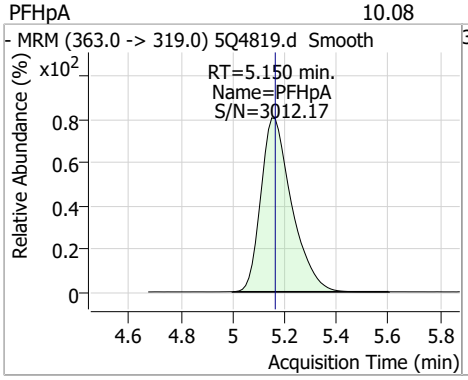


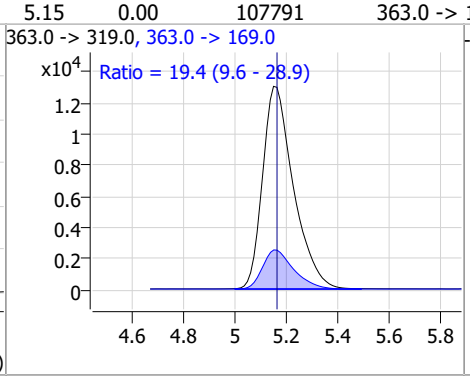


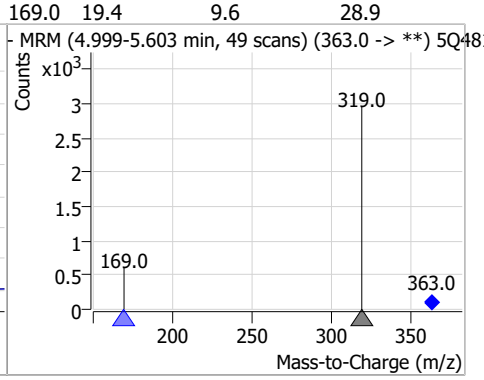


Perfluorinated Compounds by LC/MS/MS

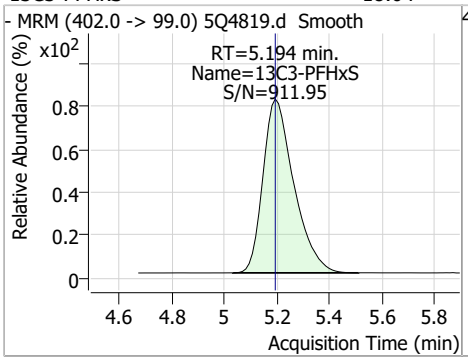
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	10.08	5.15	0.00	107791	363.0 -> 169.0	19.4	9.6	28.9

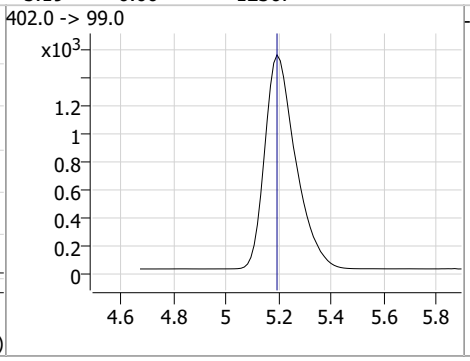


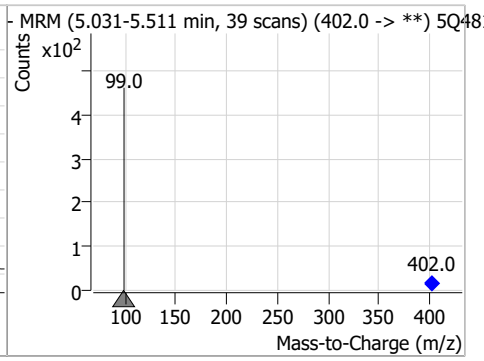




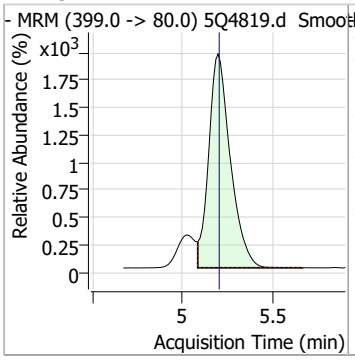
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.04	5.19	0.00	12367				

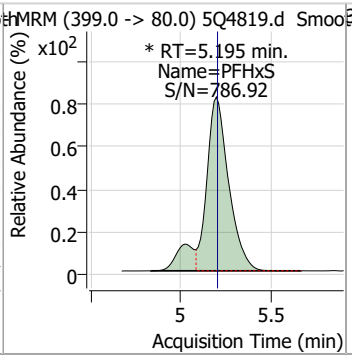


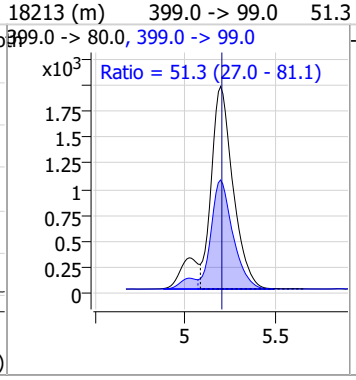


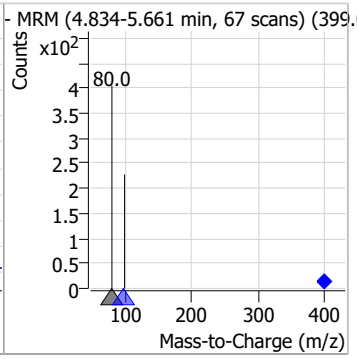


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	10.15	5.20	0.00	18213 (m)	399.0 -> 99.0	51.3	27.0	81.1

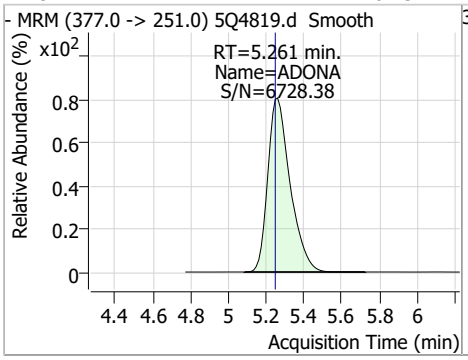


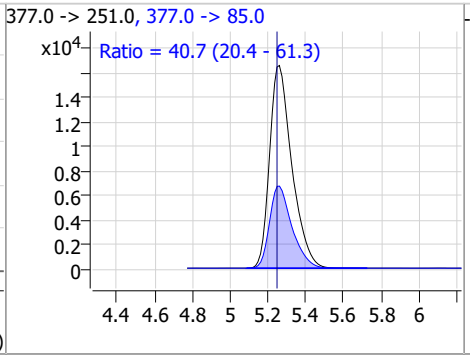


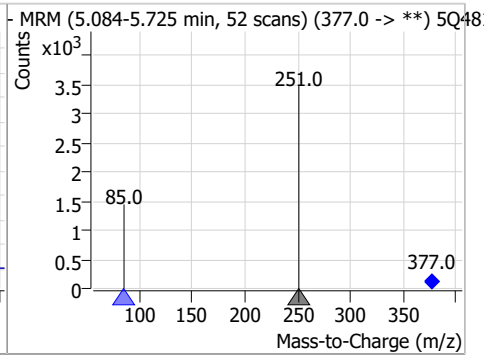




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	10.23	5.26	0.01	136110	377.0 -> 85.0	40.7	20.4	61.3





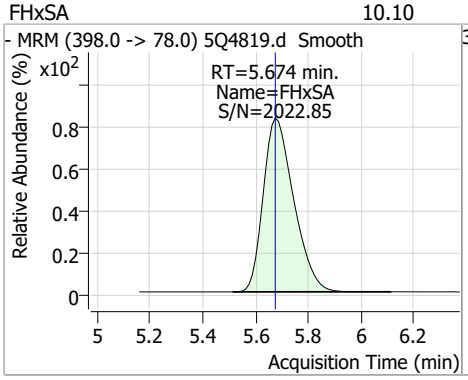


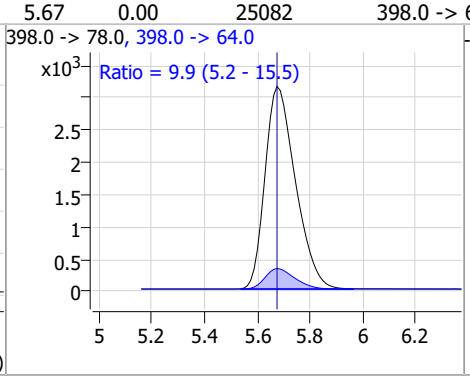
7.7.64

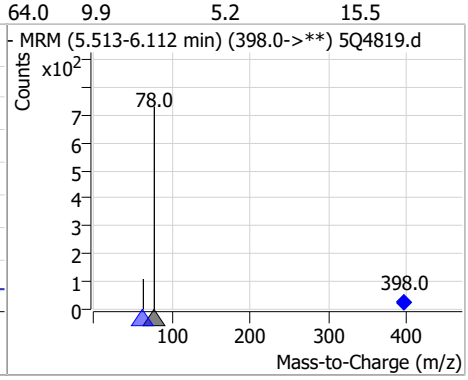
7

Perfluorinated Compounds by LC/MS/MS

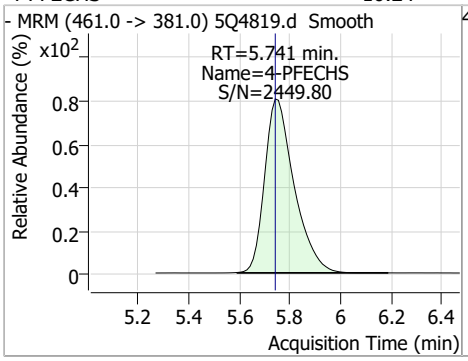
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	10.10	5.67	0.00	25082	398.0 -> 64.0	9.9	5.2	15.5

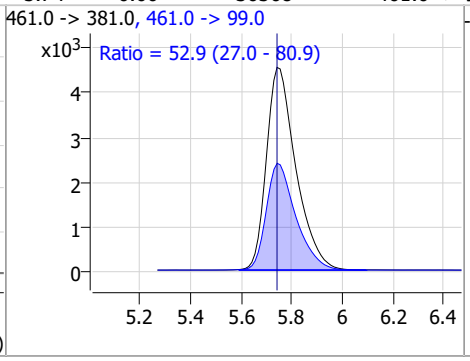


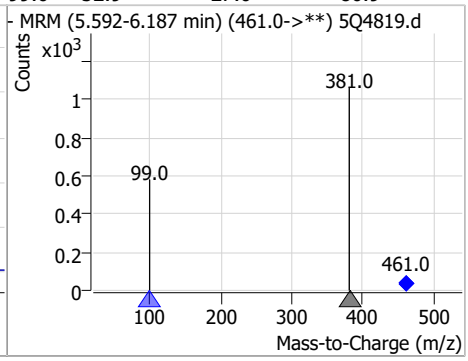




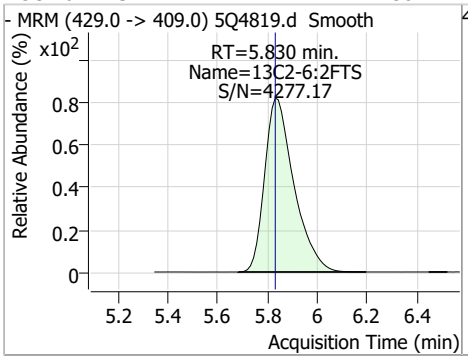
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	10.24	5.74	0.00	36568	461.0 -> 99.0	52.9	27.0	80.9

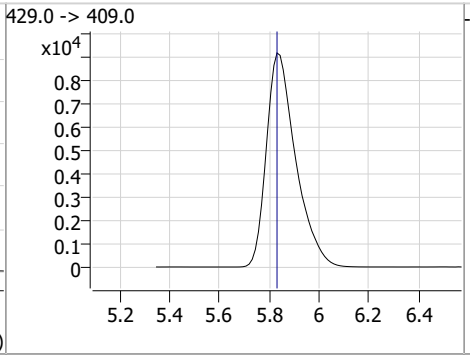


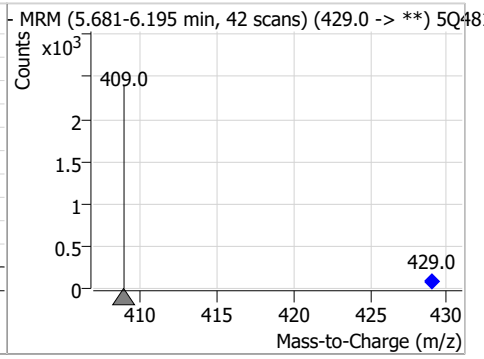




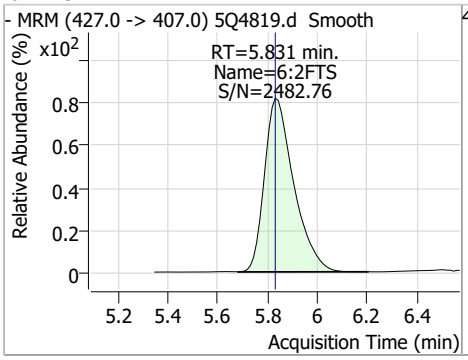
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.38	5.83	0.00	74502				

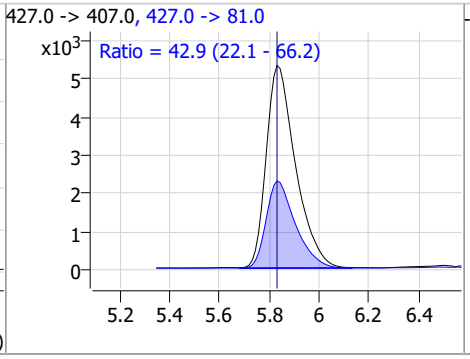


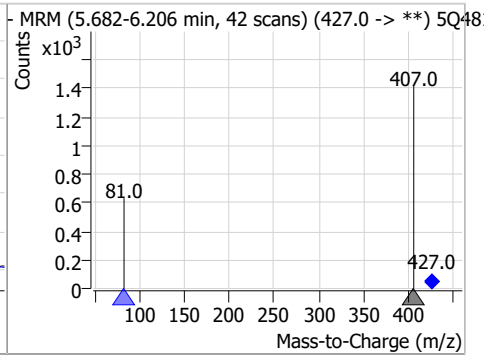




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	11.14	5.83	0.00	43237	427.0 -> 81.0	42.9	22.1	66.2

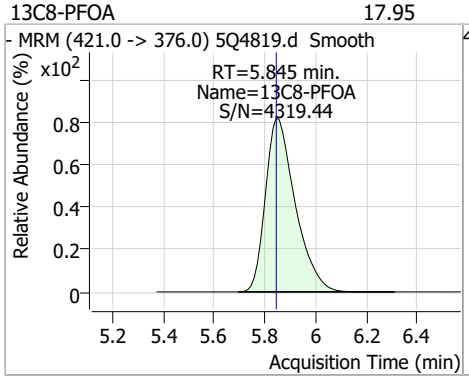


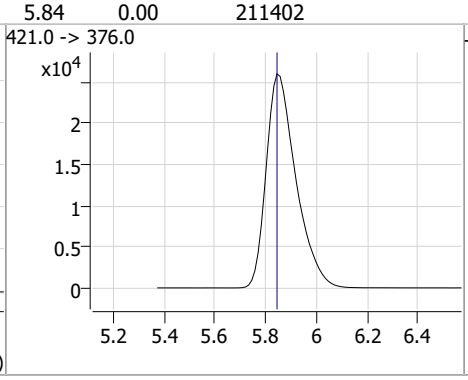


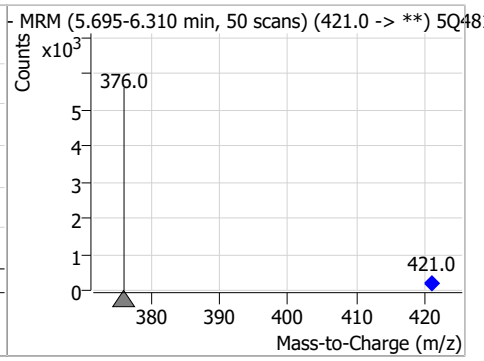


Perfluorinated Compounds by LC/MS/MS

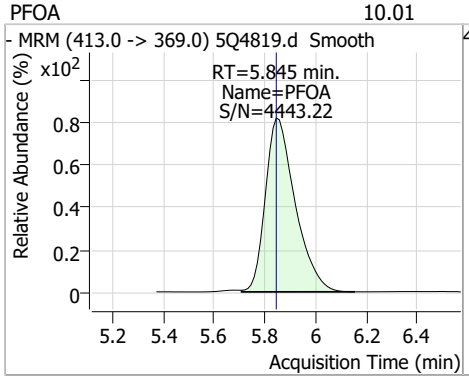
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.95	5.84	0.00	211402				

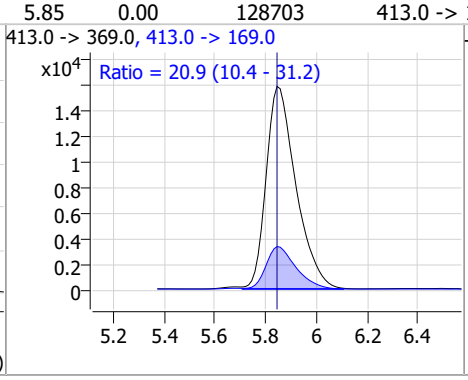


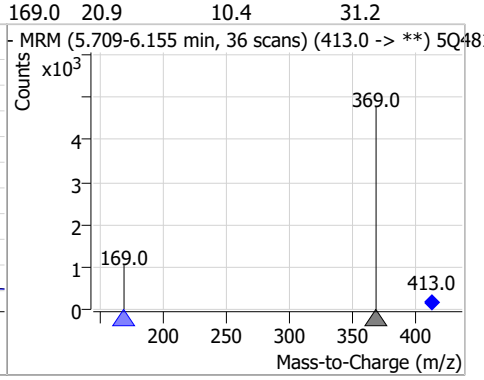




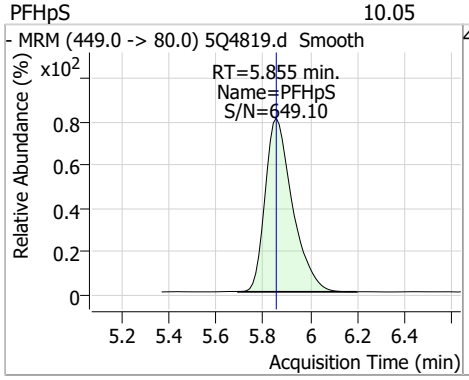
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	10.01	5.85	0.00	128703	413.0 -> 169.0	20.9	10.4	31.2

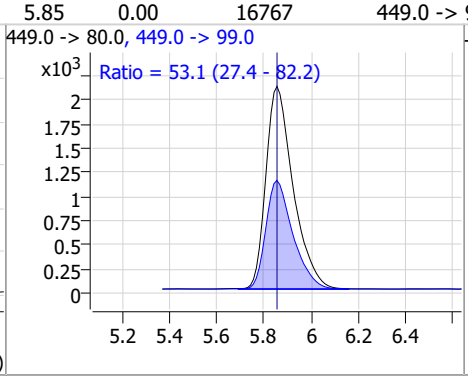


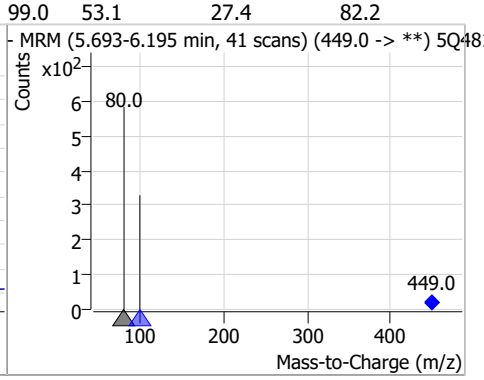




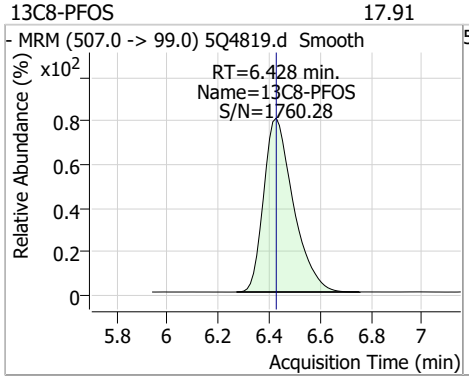
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.05	5.85	0.00	16767	449.0 -> 99.0	53.1	27.4	82.2

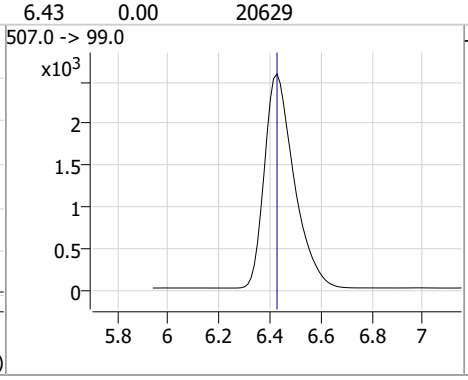


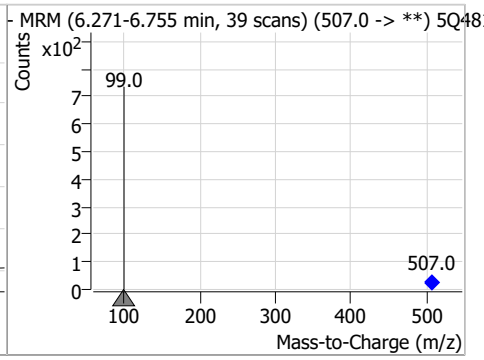




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	17.91	6.43	0.00	20629				

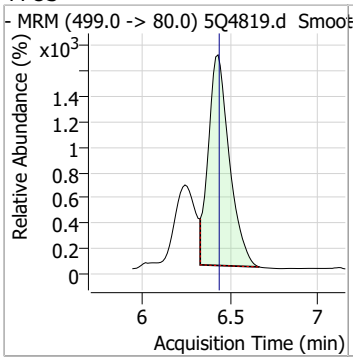


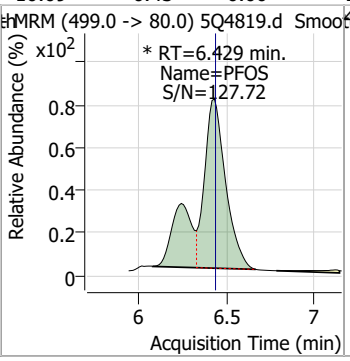


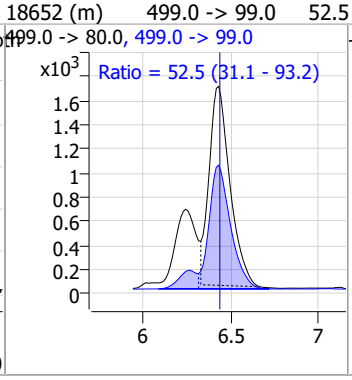


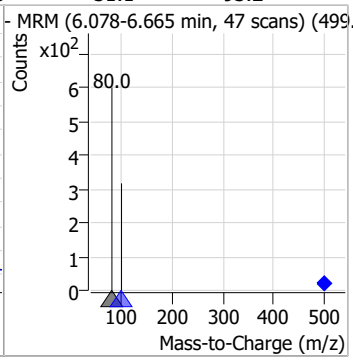
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	10.09	6.43	0.00	18652 (m)	499.0 -> 99.0	52.5	31.1	93.2

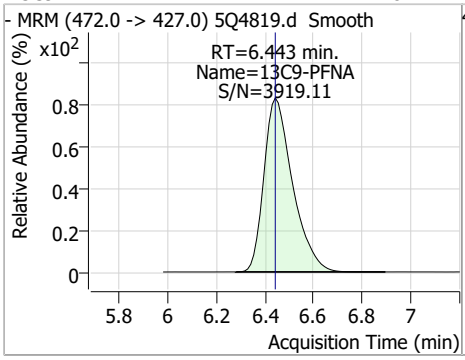


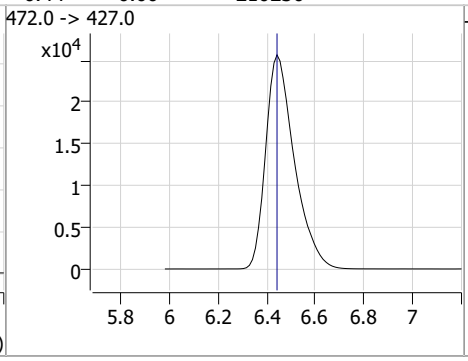


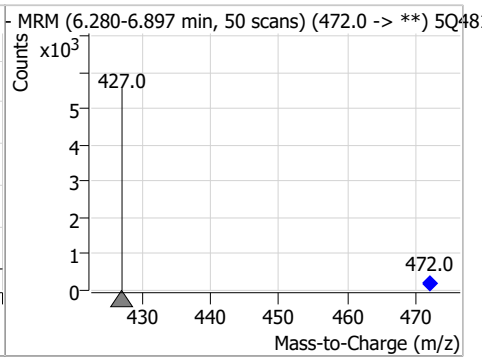




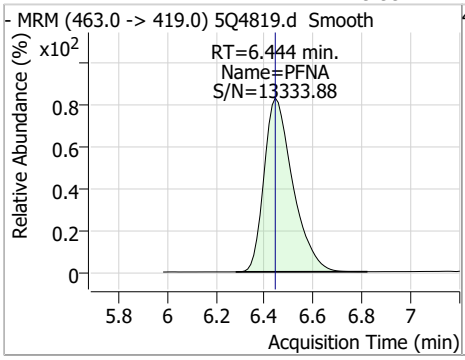
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.84	6.44	0.00	210230				

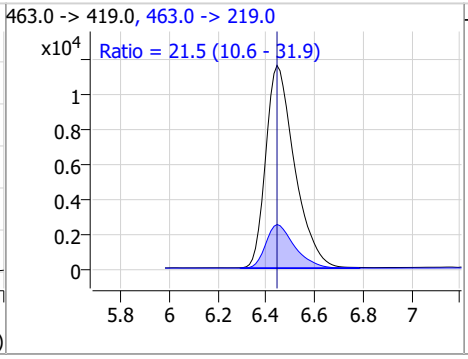


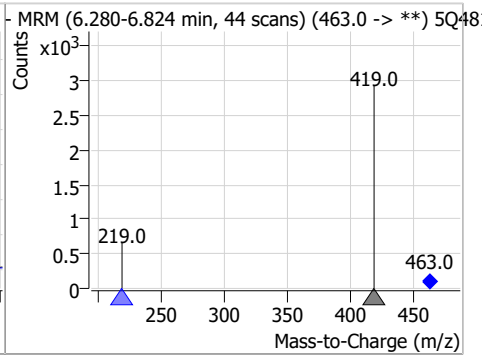




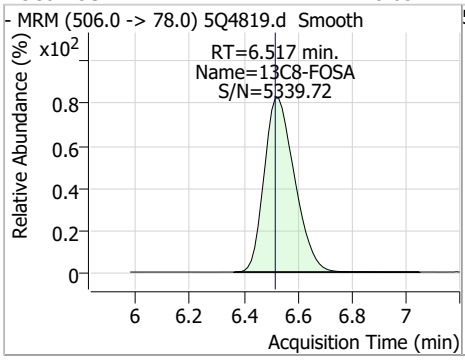
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	9.99	6.44	0.00	95544	463.0 -> 219.0	21.5	10.6	31.9

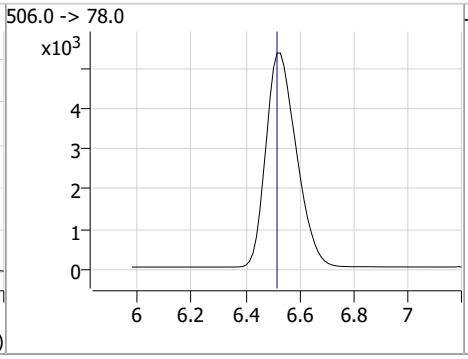


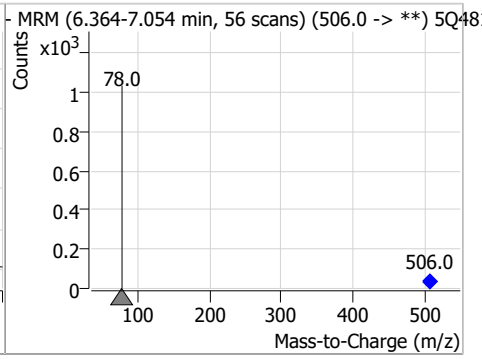




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.05	6.52	0.00	42423				

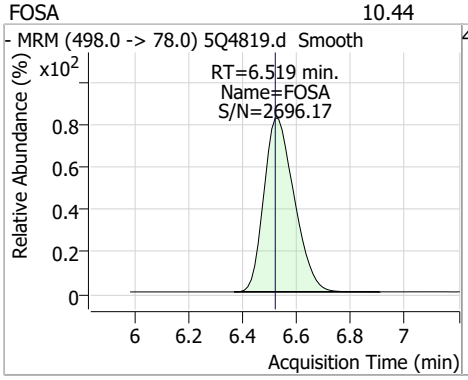


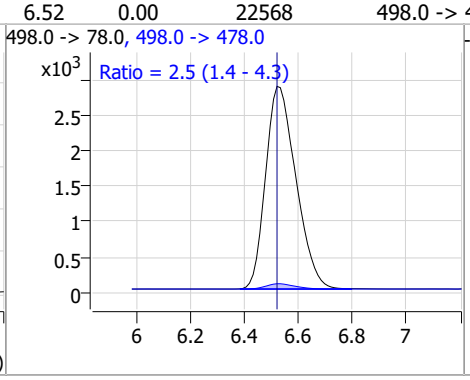


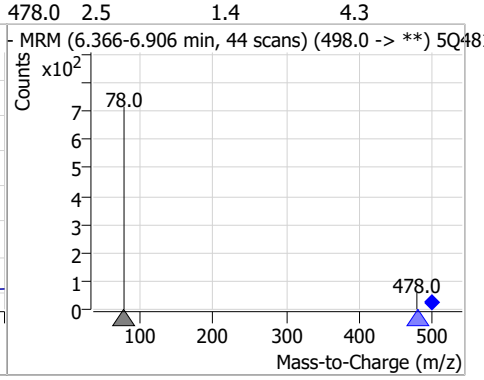


Perfluorinated Compounds by LC/MS/MS

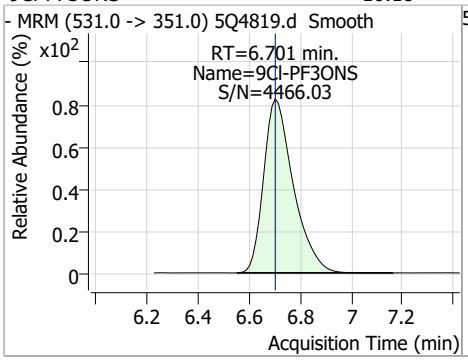
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	10.44	6.52	0.00	22568	498.0 -> 478.0	2.5	1.4	4.3

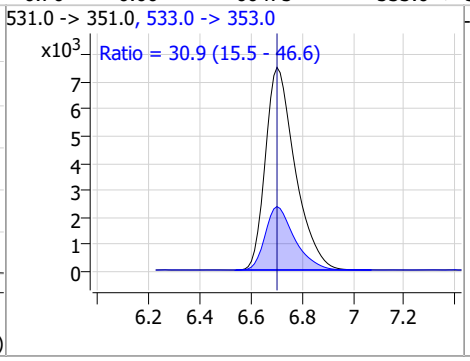


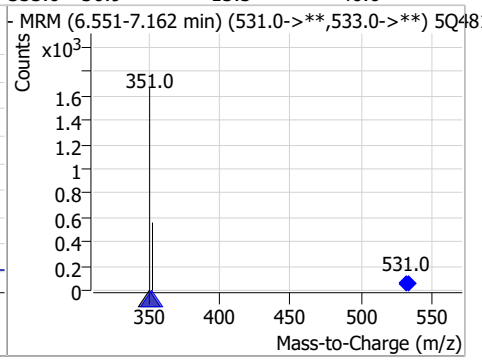




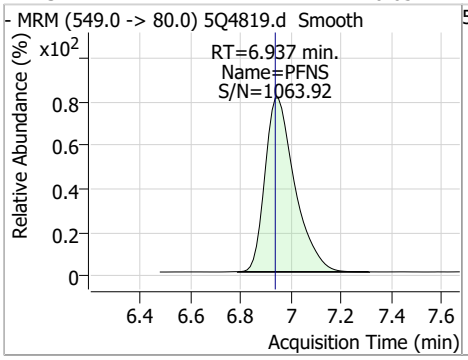
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	10.18	6.70	0.00	60475	533.0 -> 353.0	30.9	15.5	46.6

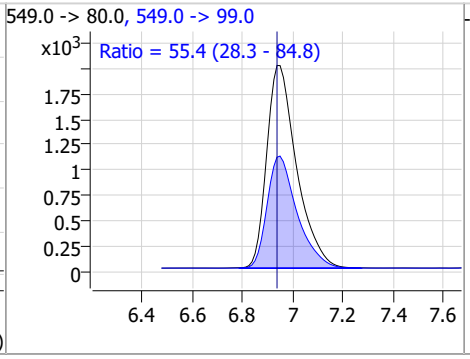


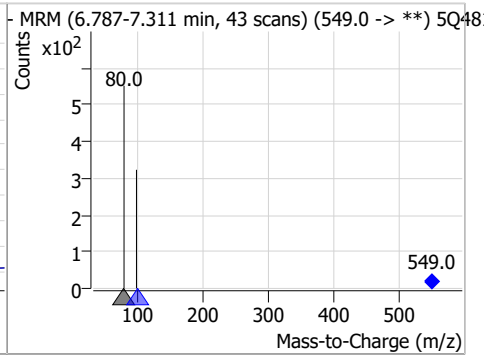




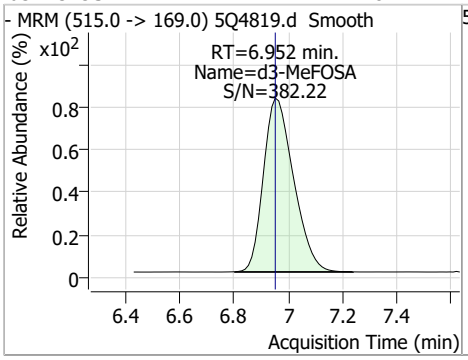
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	10.65	6.94	0.00	16408	549.0 -> 99.0	55.4	28.3	84.8

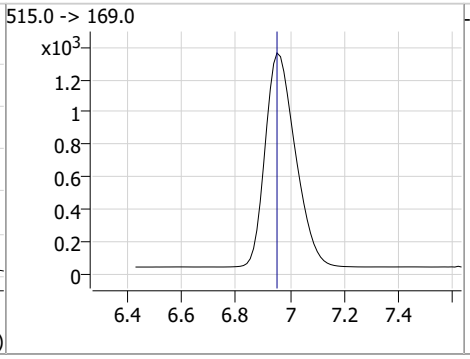


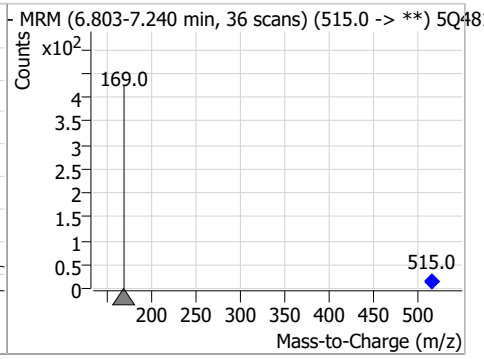




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.27	6.95	0.00	10277				

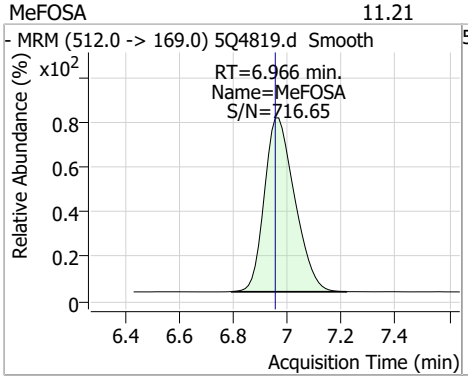


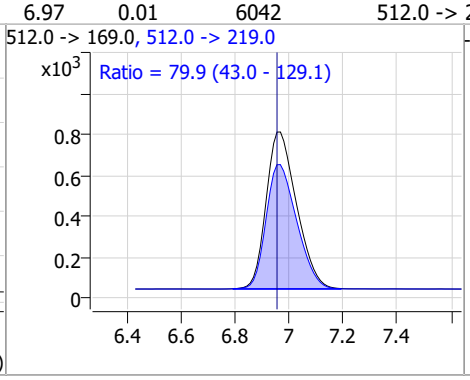


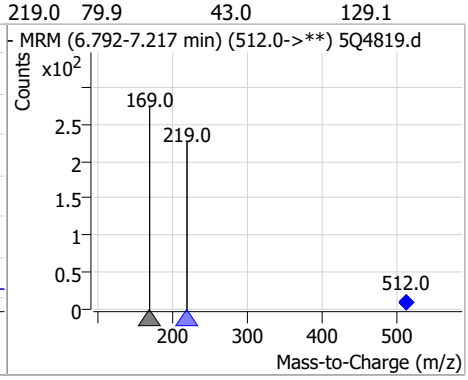


Perfluorinated Compounds by LC/MS/MS

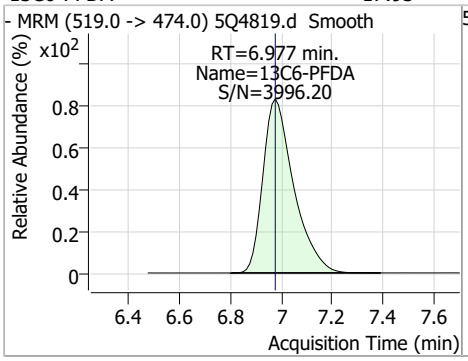
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	11.21	6.97	0.01	6042	512.0 -> 219.0	79.9	43.0	129.1

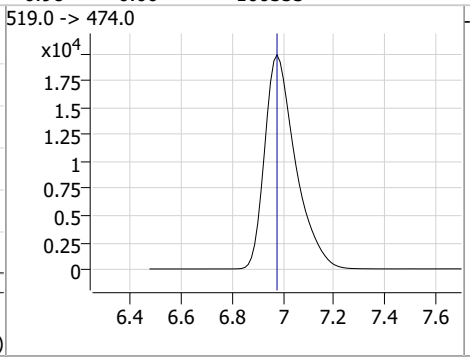


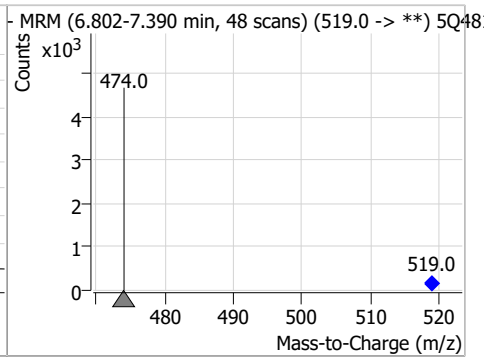




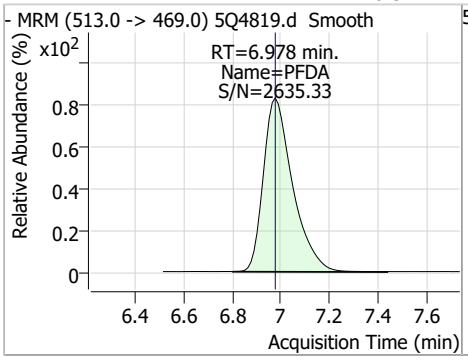
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.93	6.98	0.00	166553				

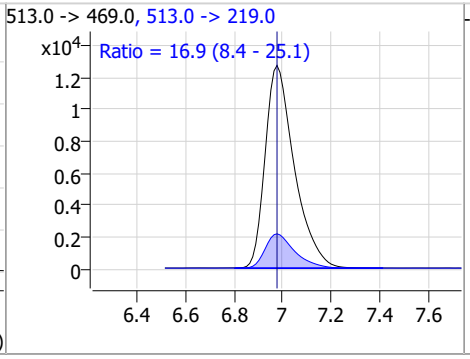


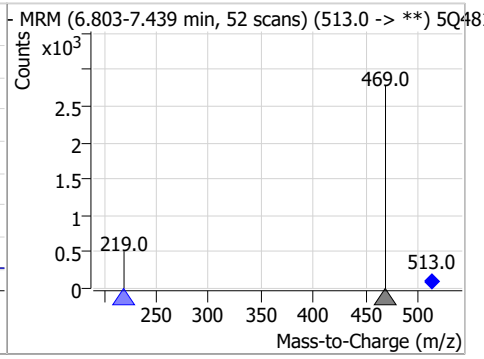




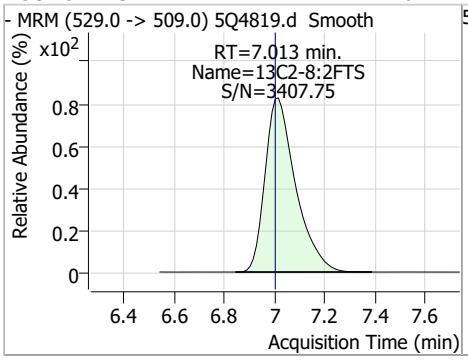
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	10.31	6.98	0.00	106849	513.0 -> 219.0	16.9	8.4	25.1

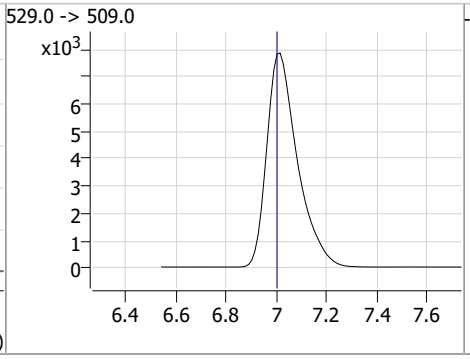


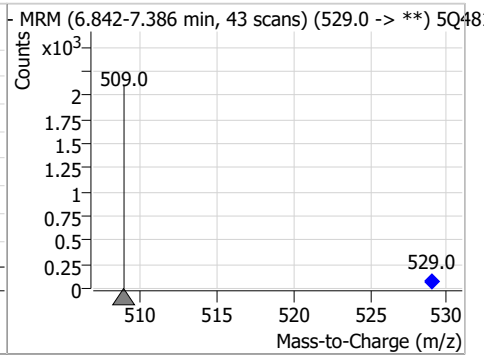




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.20	7.01	0.01	66093				

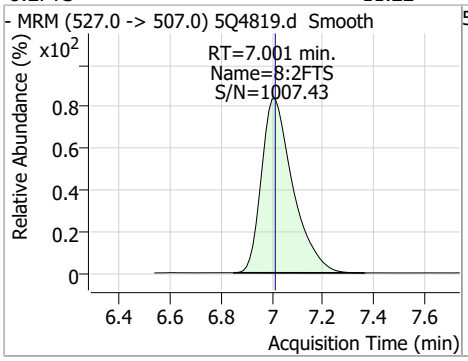


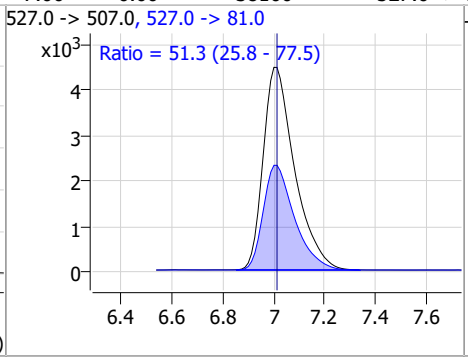


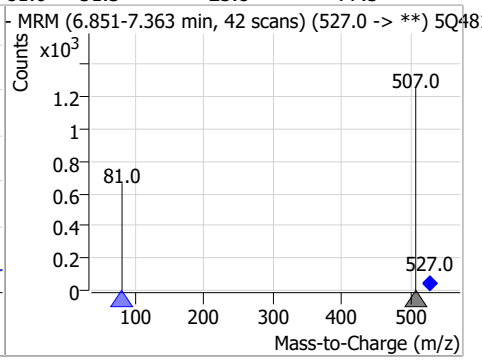


Perfluorinated Compounds by LC/MS/MS

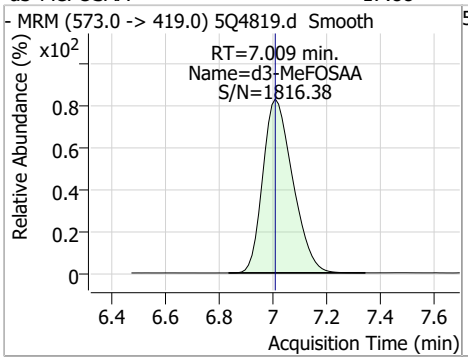
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	11.22	7.00	0.00	38100	527.0 -> 81.0	51.3	25.8	77.5

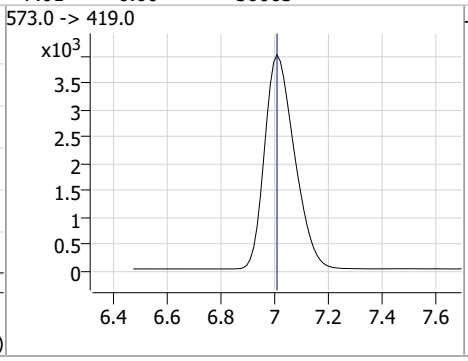


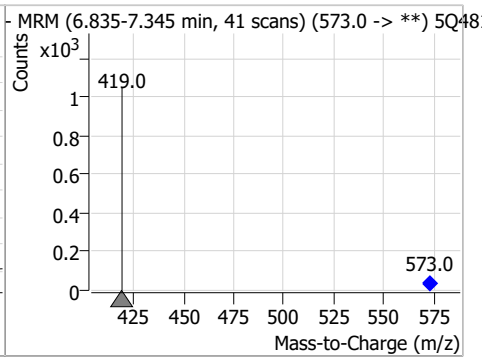




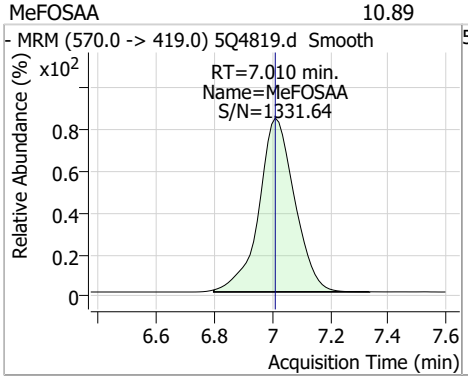
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.88	7.01	0.00	30663				

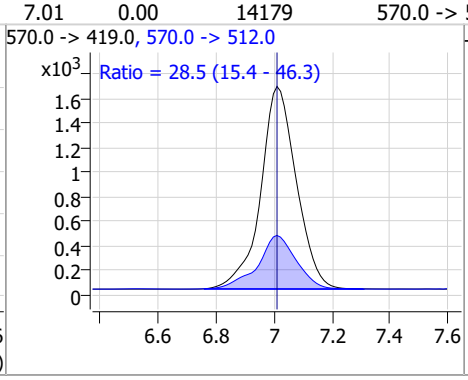


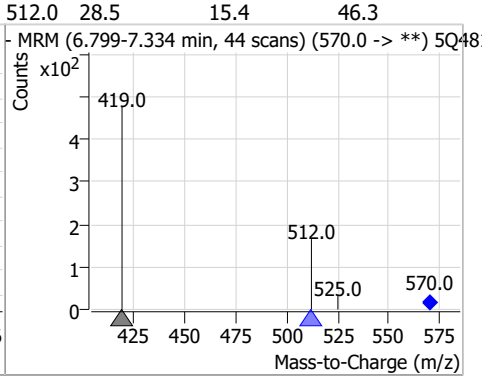




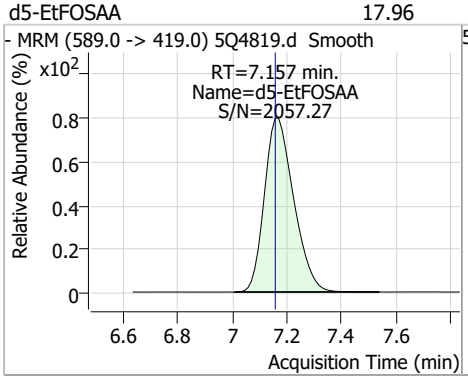
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.89	7.01	0.00	14179	570.0 -> 512.0	28.5	15.4	46.3

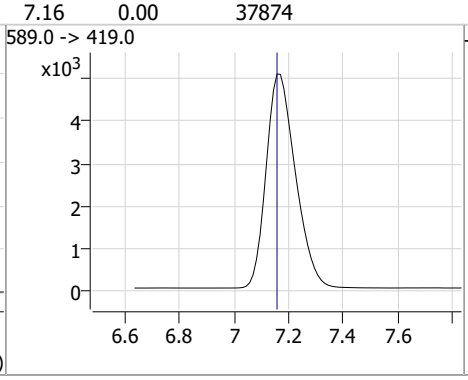


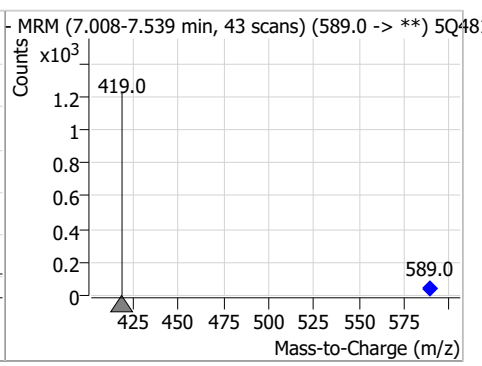




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.96	7.16	0.00	37874				

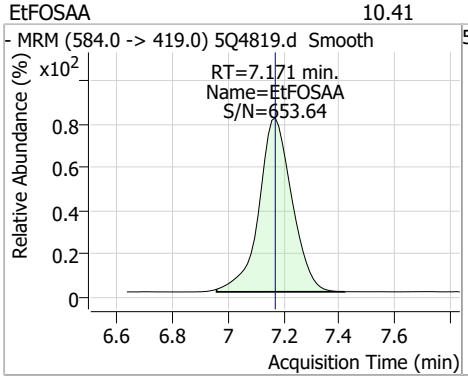


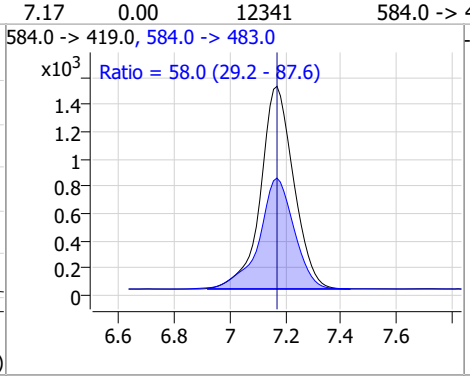


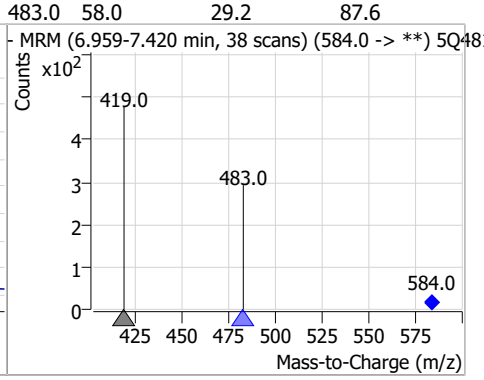


Perfluorinated Compounds by LC/MS/MS

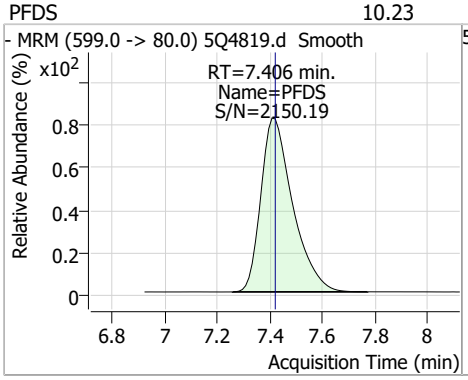
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	10.41	7.17	0.00	12341	584.0 -> 483.0	58.0	29.2	87.6

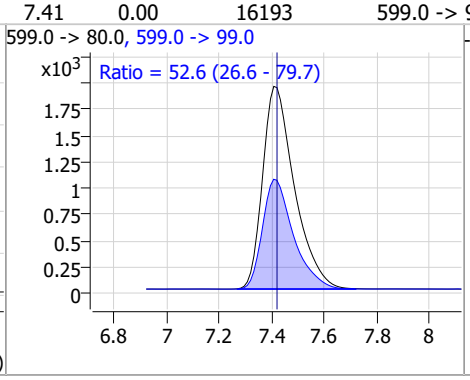


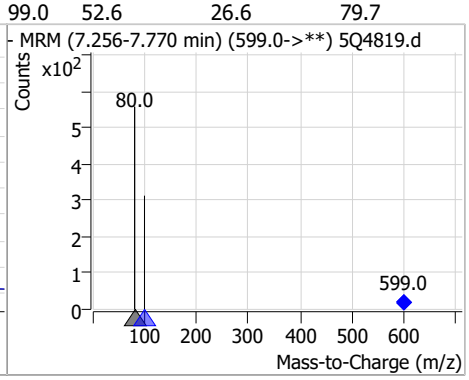




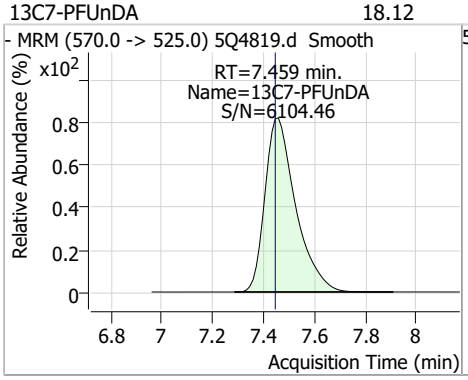
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	10.23	7.41	0.00	16193	599.0 -> 99.0	52.6	26.6	79.7

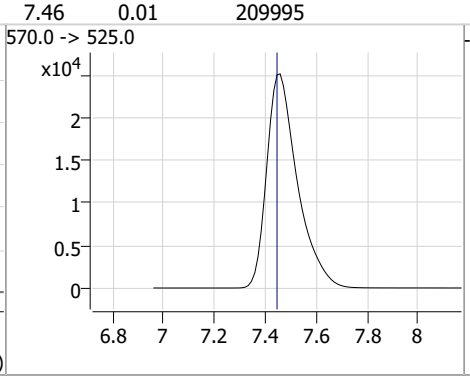


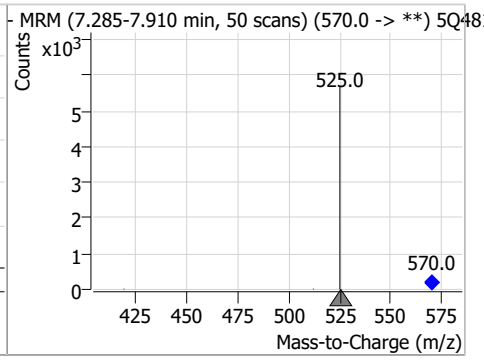




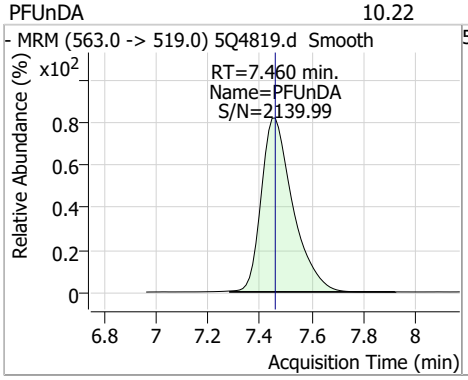
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.12	7.46	0.01	209995				

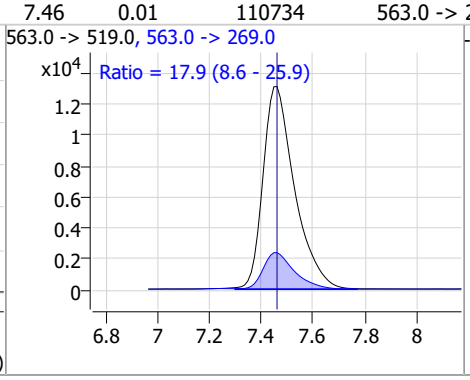


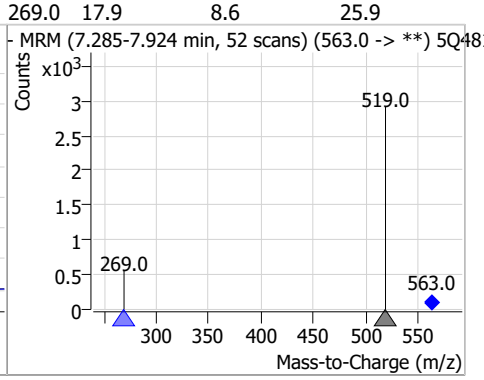




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	10.22	7.46	0.01	110734	563.0 -> 269.0	17.9	8.6	25.9

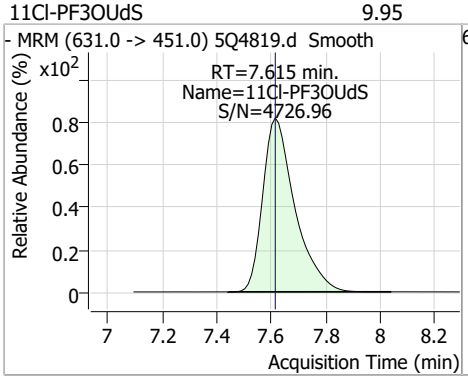


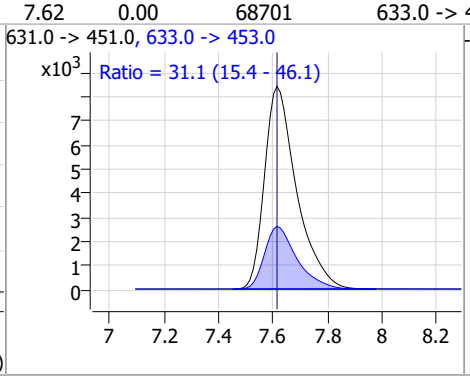


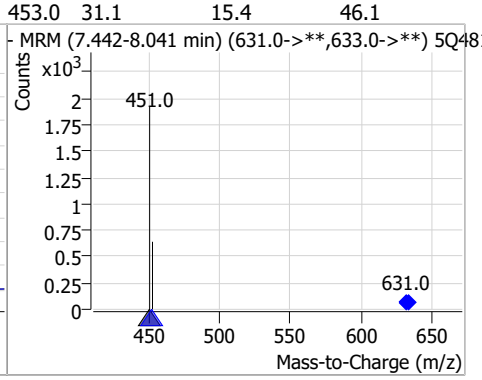


Perfluorinated Compounds by LC/MS/MS

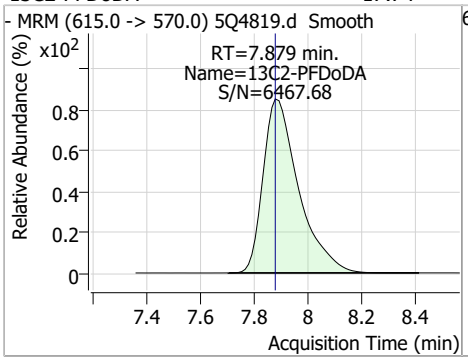
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.95	7.62	0.00	68701	633.0 -> 453.0	31.1	15.4	46.1

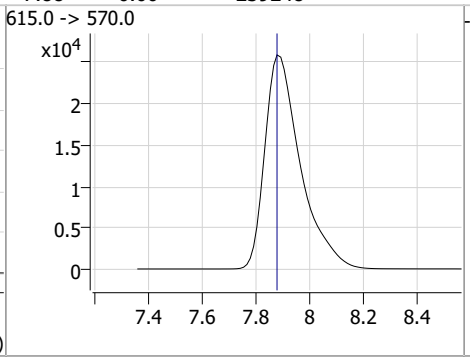


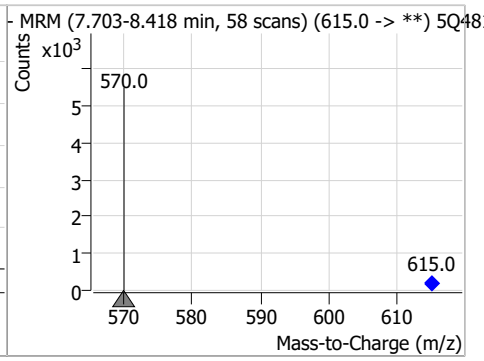




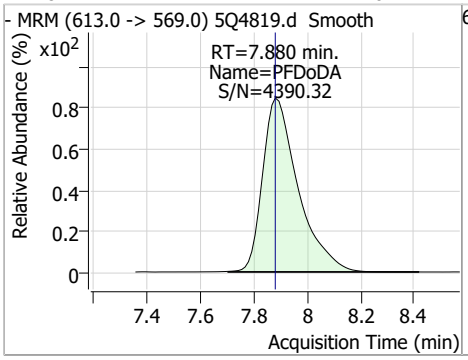
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.74	7.88	0.00	239248				

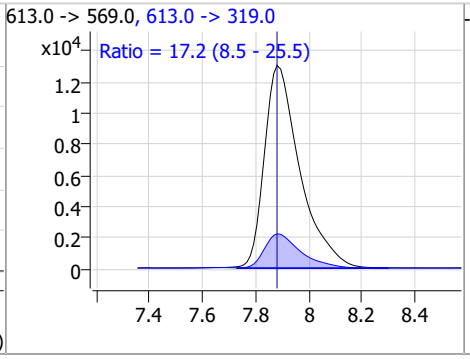


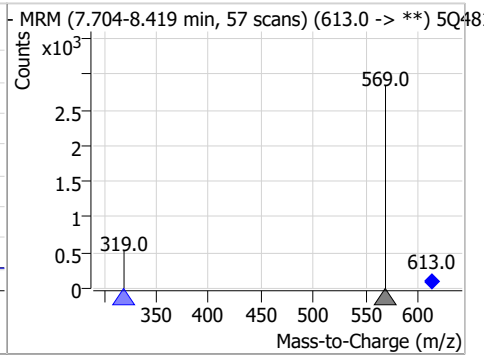




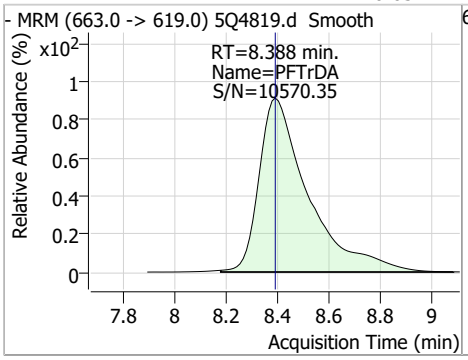
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	10.14	7.88	0.00	120176	613.0 -> 319.0	17.2	8.5	25.5

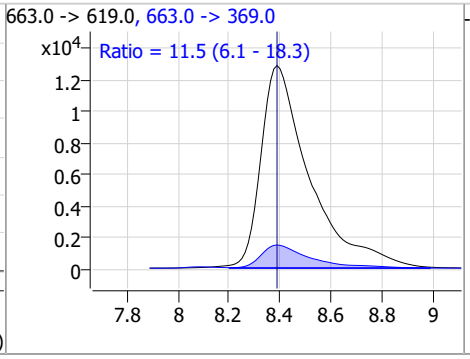


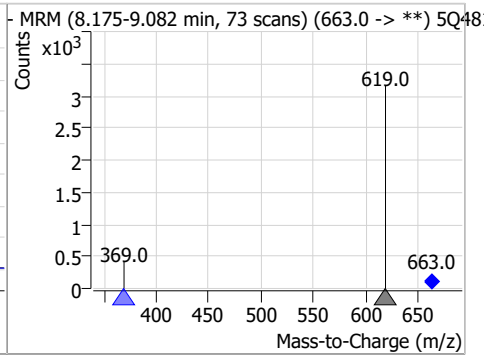




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	10.65	8.39	0.00	171394	663.0 -> 369.0	11.5	6.1	18.3

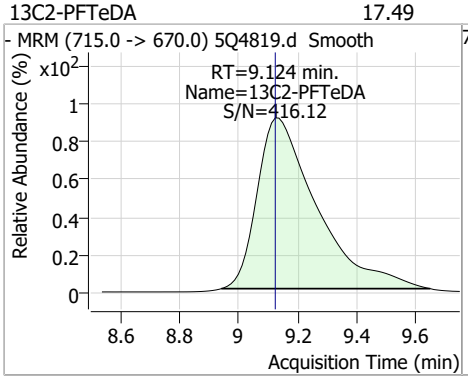


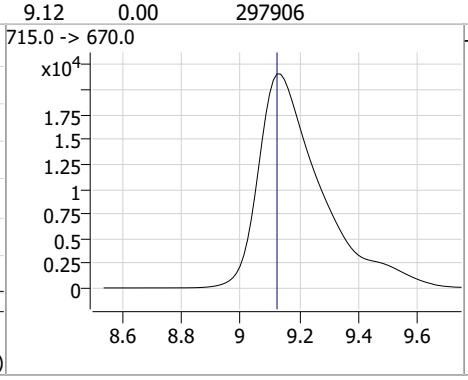


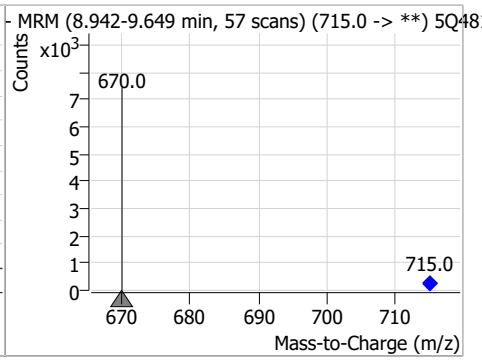


Perfluorinated Compounds by LC/MS/MS

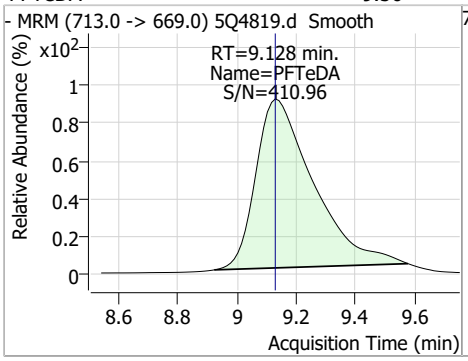
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.49	9.12	0.00	297906				

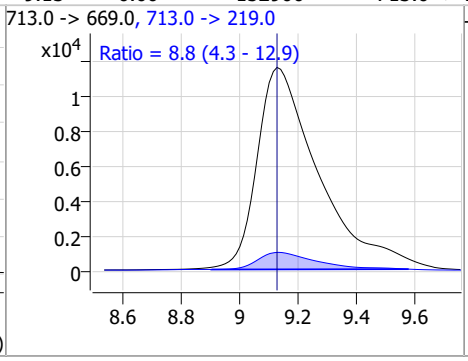


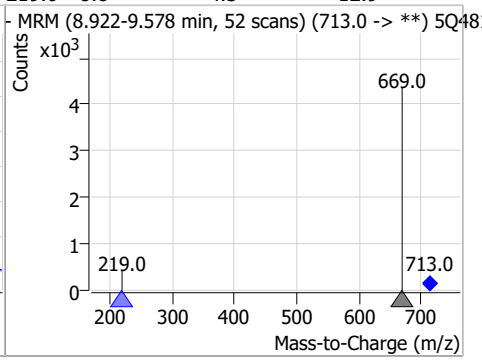




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.56	9.13	0.00	152900	713.0 -> 219.0	8.8	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4819.D
Injection Time: 09/17/22 13:18
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

5Q4820.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File	:	5Q4820.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/17/2022 1:34:07 PM
Sample Name	:	icc73-20
Vial	:	P1-A7
DA Method File	:	ID_091722_S5Q73.quantmethod.xml
Batch Name	:	s5q73.batch.bin
Sample Information	:	OP92656,S5Q73,250,,,1.0,1,water

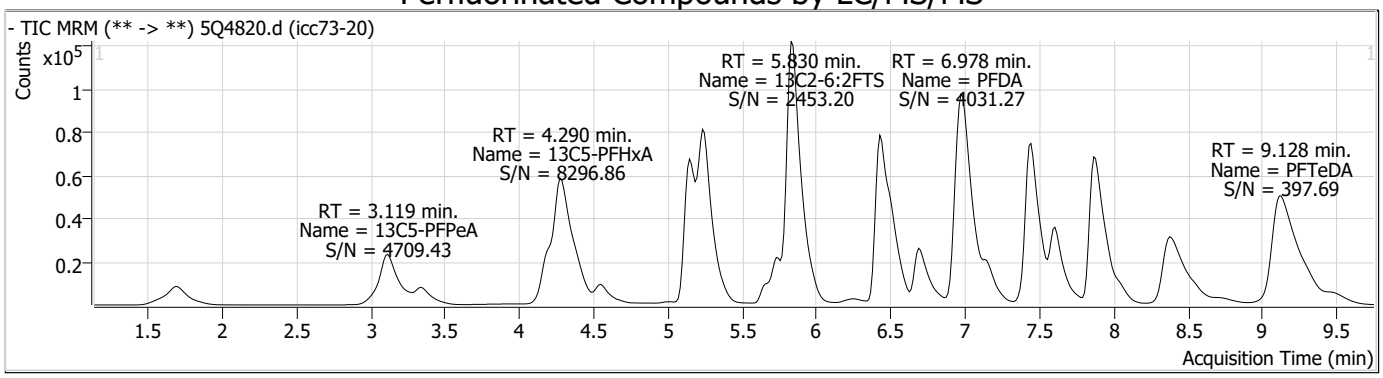
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	68544	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	110954	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	176751	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	164438	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	220455	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	222553	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	175204	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	216754	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	250805	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	324715	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	44223	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12500	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12794	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	21614	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	58251	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	79934	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	71498	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	31567	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10513	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10725	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	39476	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	58251	18.57	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-6:2FTS	5.830	429.0 -> 409.0	79934	18.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C2-8:2FTS	7.000	529.0 -> 509.0	71498	18.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C2-PFDoDA	7.879	615.0 -> 570.0	250805	18.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C2-PFTeDA	9.124	715.0 -> 670.0	324715	19.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C3-PFBS	3.349	302.0 -> 99.0	12500	18.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C3-PFHxS	5.194	402.0 -> 99.0	12794	18.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFBA	1.687	217.0 -> 172.0	68544	18.59	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C4-PFHpA	5.149	367.0 -> 322.0	164438	18.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C5-PFHxA	4.290	318.0 -> 273.0	176751	18.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C5-PFPeA	3.119	268.0 -> 223.0	110954	18.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C6-PFDA	6.977	519.0 -> 474.0	175204	18.86	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

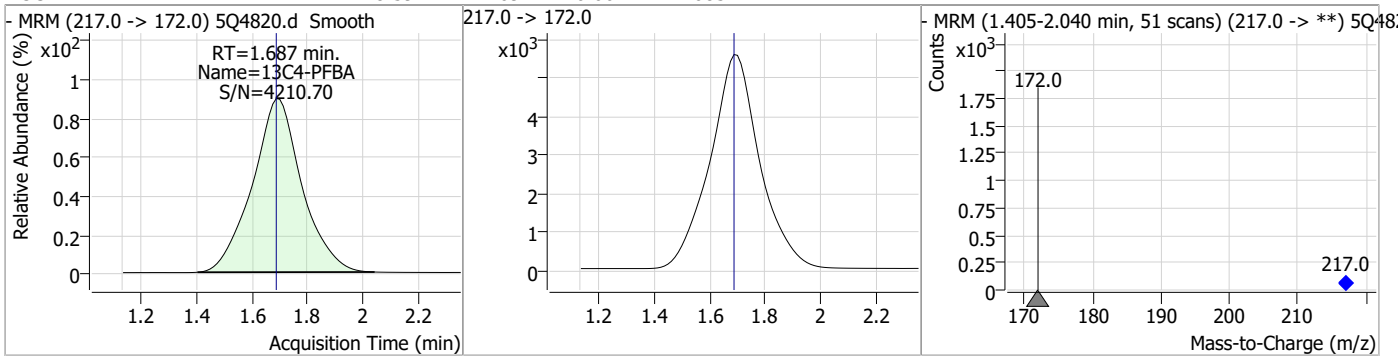
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C7-PFUnDA	7.446	570.0 -> 525.0	216754	18.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
13C8-FOSA	6.517	506.0 -> 78.0	44223	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-PFOA	5.845	421.0 -> 376.0	220455	18.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-PFOS	6.428	507.0 -> 99.0	21614	18.76	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%			
13C9-PFNA	6.443	472.0 -> 427.0	222553	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
d3-MeFOSAA	7.009	573.0 -> 419.0	31567	18.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10513	18.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
d3-MeFOSA	6.952	515.0 -> 169.0	10725	19.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
d5-EtFOSAA	7.157	589.0 -> 419.0	39476	18.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	66722	21.09	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	84620	20.32	µg/L		100
8:2FTS	7.001	527.0 -> 507.0	76896	20.94	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	23886	19.28	µg/L		100
FOSA	6.519	498.0 -> 78.0	44940	19.87	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	27541	20.31	µg/L		100
PFBA	1.694	213.0 -> 169.0	26797	19.65	µg/L		100
PFBS	3.342	299.0 -> 80.0	37167	19.77	µg/L		100
PFDA	6.978	513.0 -> 469.0	214615	19.68	µg/L		100
PFDoDA	7.880	613.0 -> 569.0	243130	19.57	µg/L		100
PFDS	7.406	599.0 -> 80.0	32646	19.81	µg/L		100
PFHpA	5.150	363.0 -> 319.0	218670	19.51	µg/L		100
PFHpS	5.855	449.0 -> 80.0	33777	19.31	µg/L		100
PFHxA	4.291	313.0 -> 269.0	171343	19.54	µg/L		100
PFHxS	5.195	399.0 -> 80.0	36506	19.67	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	193890	19.14	µg/L		100
PFNS	6.937	549.0 -> 80.0	32246	19.91	µg/L		100
PFOA	5.845	413.0 -> 369.0	259328	19.34	µg/L		100
PFOS	6.429	499.0 -> 80.0	38488	19.88	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	102790	19.35	µg/L		100
PFPeS	4.398	349.0 -> 80.0	28843	19.22	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	304317	17.45	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	322035	19.10	µg/L		100
PFUnDA	7.448	563.0 -> 519.0	222340	19.84	µg/L		100
11Cl-PF3OUdS	7.615	631.0 -> 451.0	140355	19.38	µg/L		100
9Cl-PF3ONS	6.701	531.0 -> 351.0	124914	19.79	µg/L		100
ADONA	5.248	377.0 -> 251.0	274835	19.97	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	37393	20.05	µg/L		100
MeFOSA	6.954	512.0 -> 169.0	11508	20.45	µg/L		100
4-PFECHS	5.741	461.0 -> 381.0	73646	19.65	µg/L		100
FBSA	4.343	298.0 -> 78.0	60448	19.81	µg/L		100
FHxSA	5.674	398.0 -> 78.0	50101	19.34	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

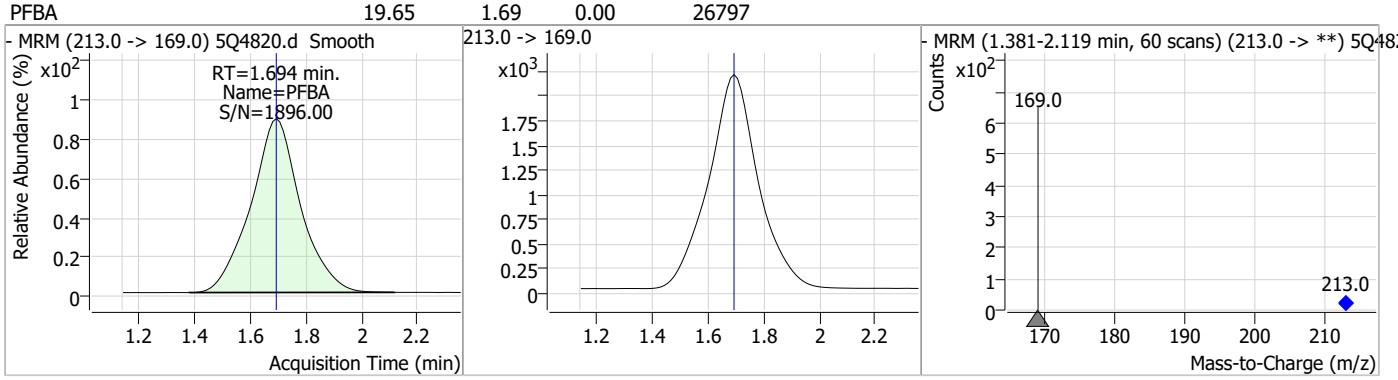
Perfluorinated Compounds by LC/MS/MS



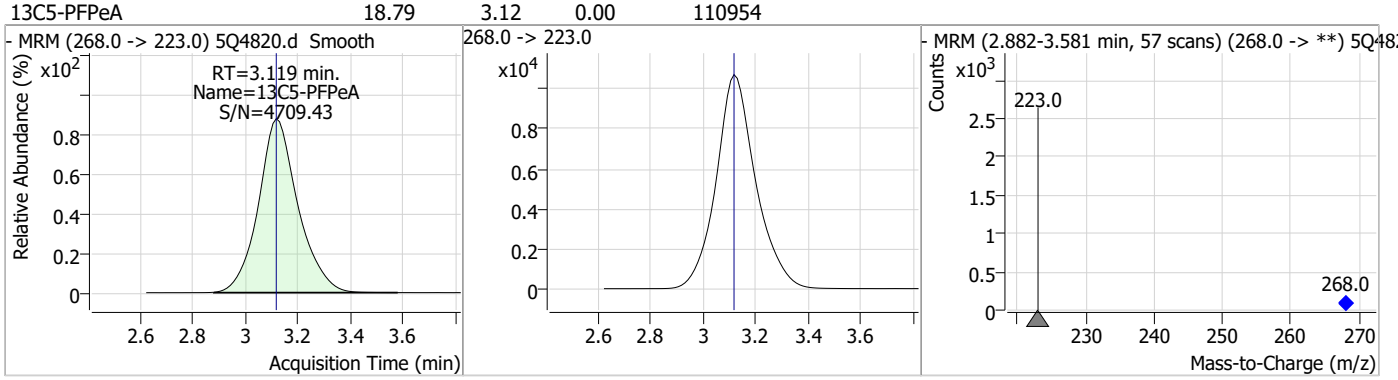
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.59	1.69	0.00	68544				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	1.69	0.00	26797				

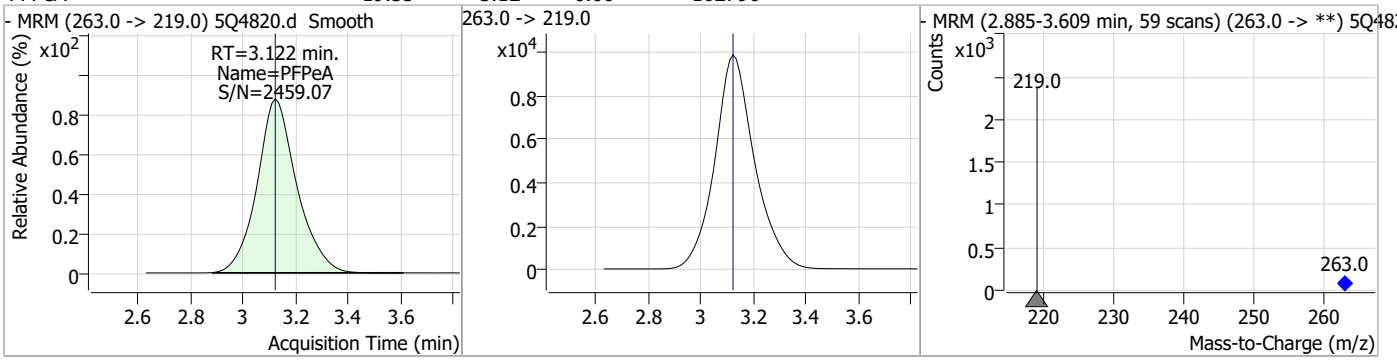


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.79	3.12	0.00	110954				

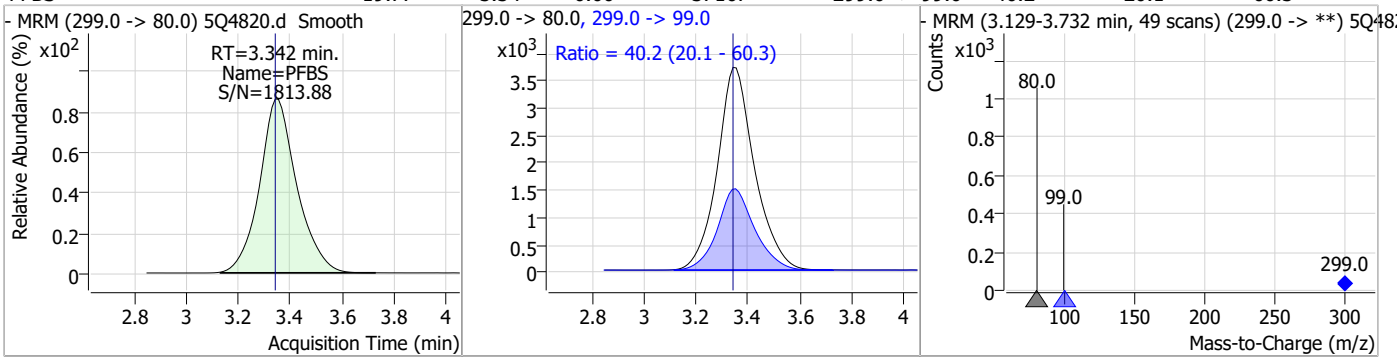


Perfluorinated Compounds by LC/MS/MS

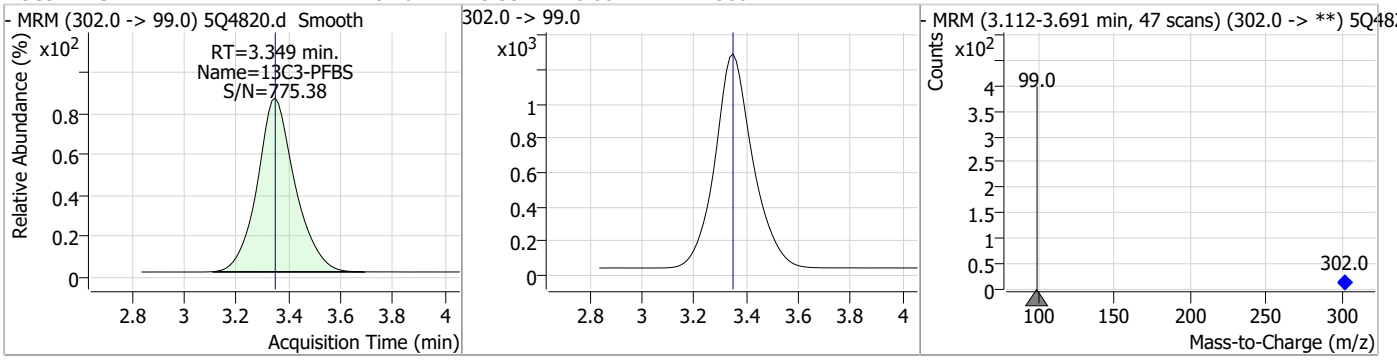
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.35	3.12	0.00	102790				



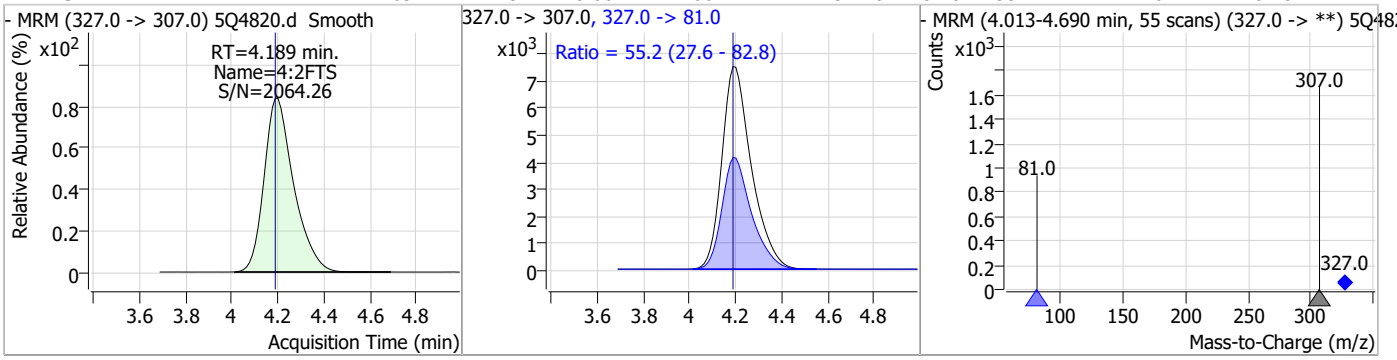
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.77	3.34	0.00	37167	299.0 -> 99.0	40.2	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.70	3.35	0.00	12500				

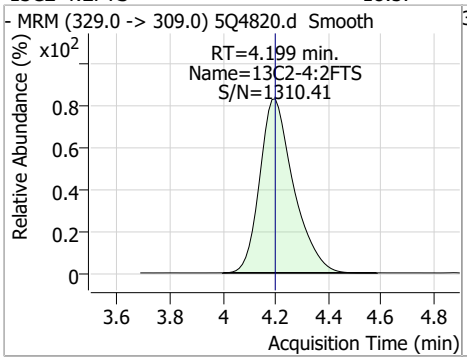


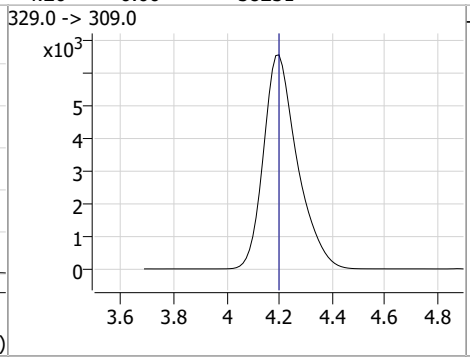
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.09	4.19	0.00	66722	327.0 -> 81.0	55.2	27.6	82.8

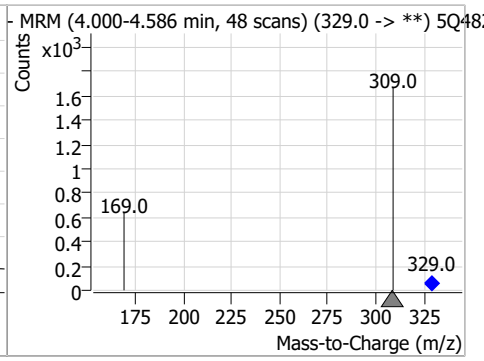


Perfluorinated Compounds by LC/MS/MS

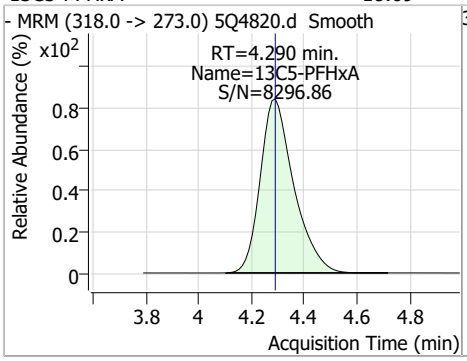
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.57	4.20	0.00	58251				

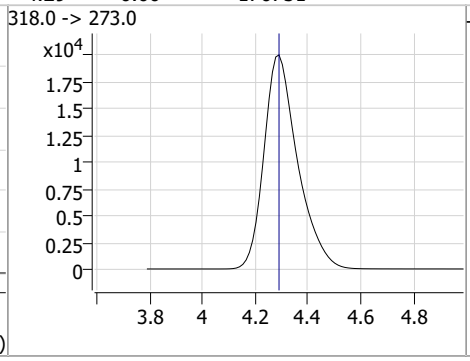


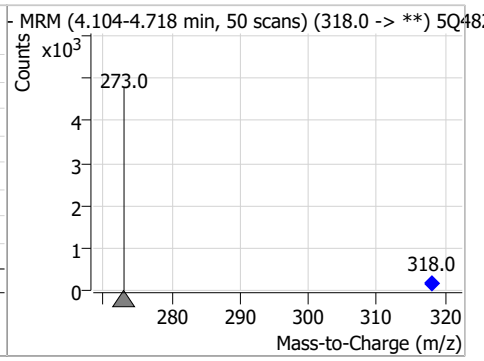




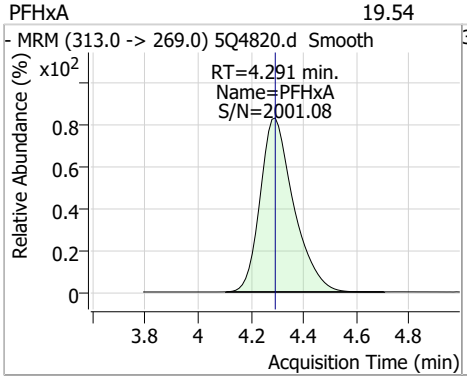
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.69	4.29	0.00	176751				

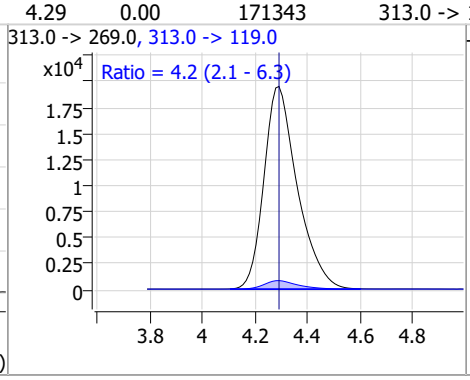


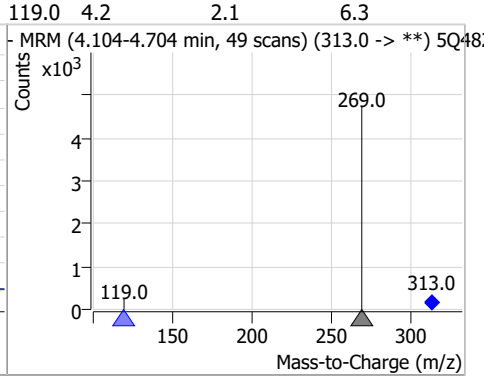




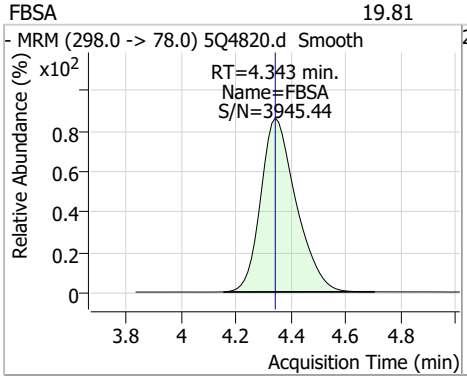
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.54	4.29	0.00	171343	313.0 -> 119.0	4.2	2.1	6.3

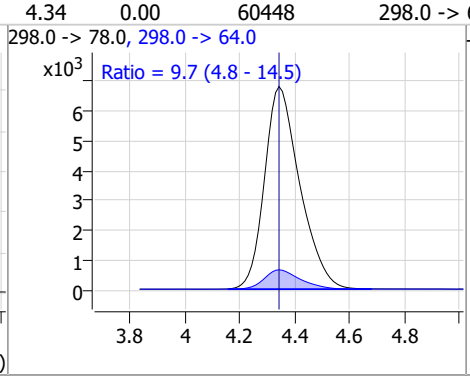


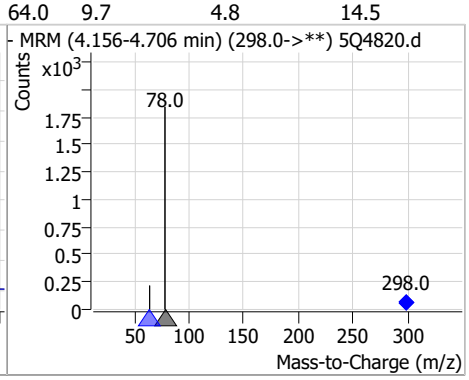




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.81	4.34	0.00	60448	298.0 -> 64.0	9.7	4.8	14.5

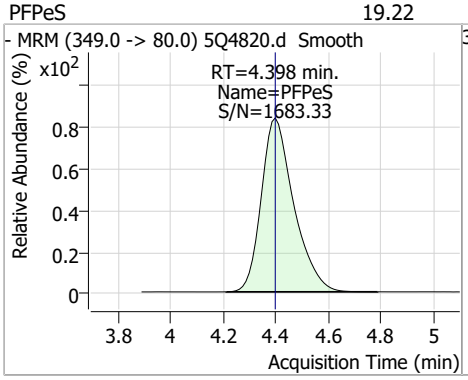


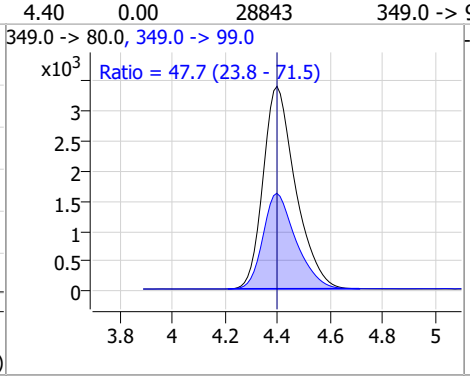


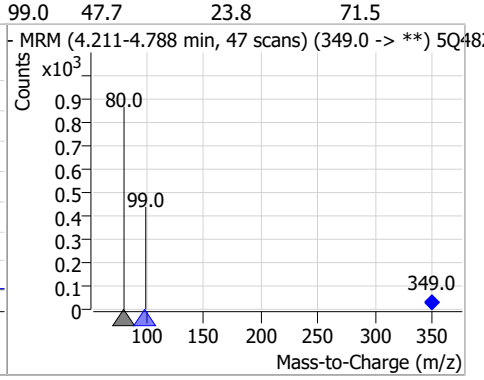


Perfluorinated Compounds by LC/MS/MS

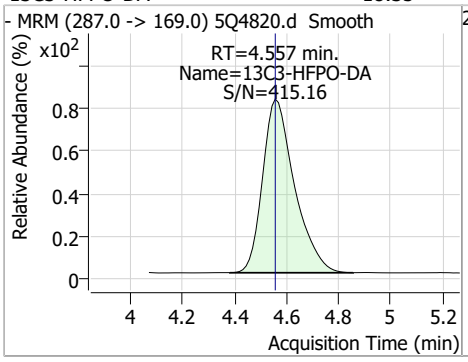
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.22	4.40	0.00	28843	349.0 -> 99.0	47.7	23.8	71.5

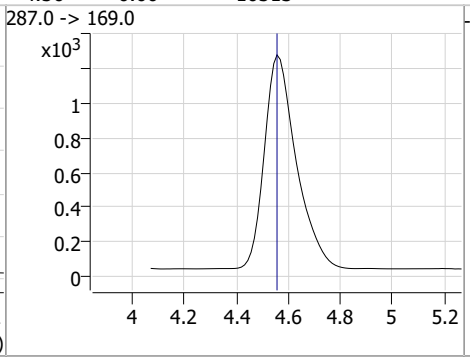


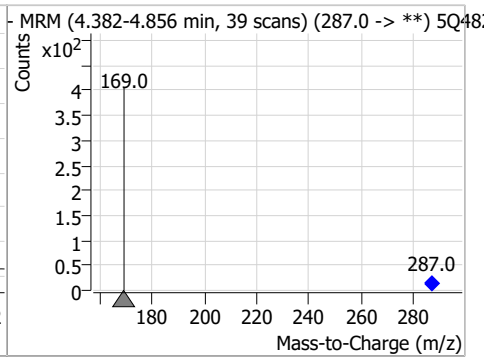




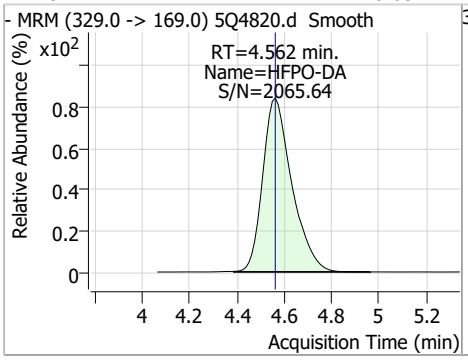
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.35	4.56	0.00	10513				

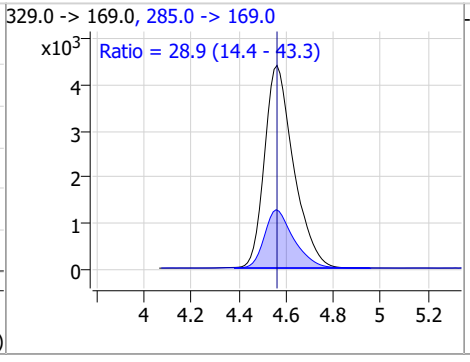


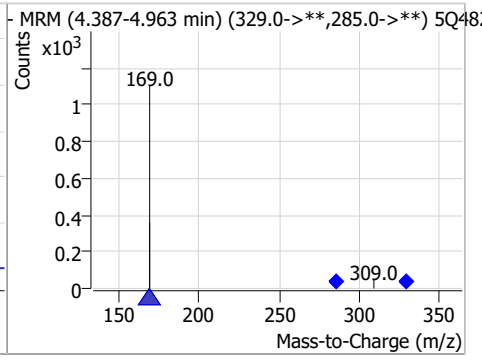




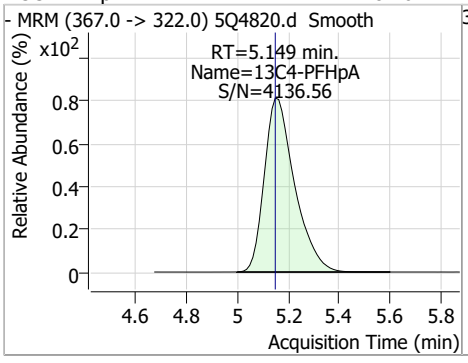
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.05	4.56	0.00	37393	285.0 -> 169.0	28.9	14.4	43.3

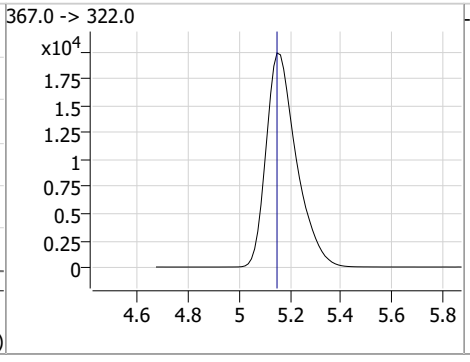


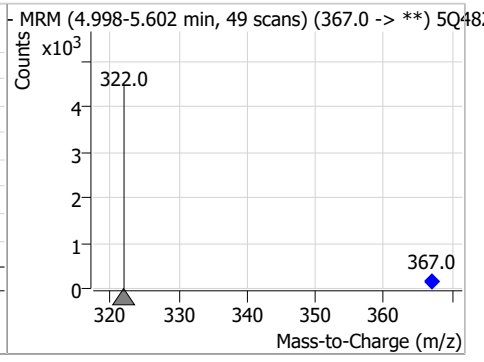




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.70	5.15	0.00	164438				

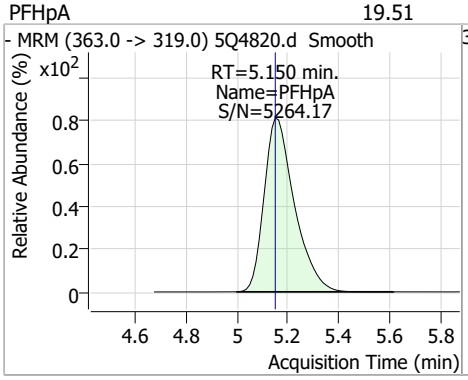


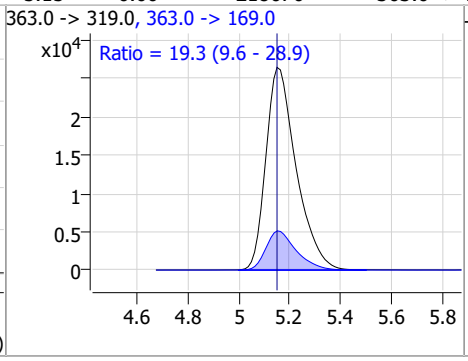


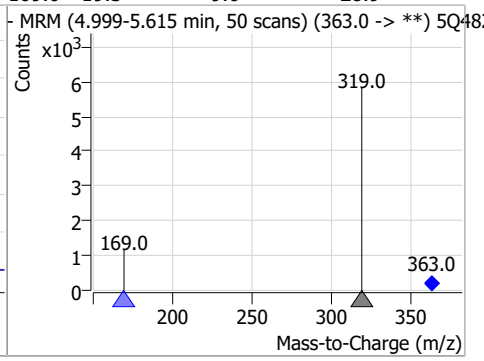


Perfluorinated Compounds by LC/MS/MS

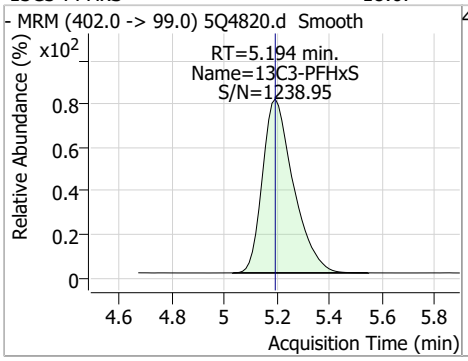
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.51	5.15	0.00	218670	363.0 -> 169.0	19.3	9.6	28.9

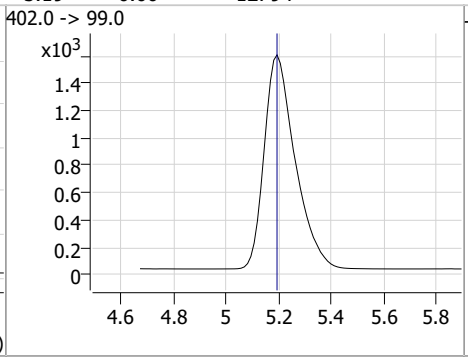


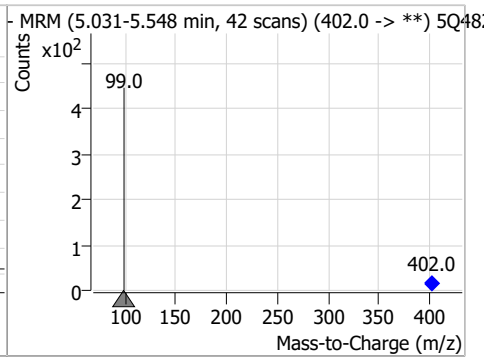




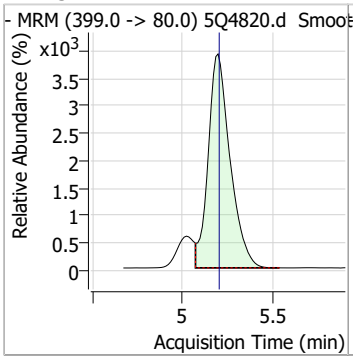
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.67	5.19	0.00	12794				

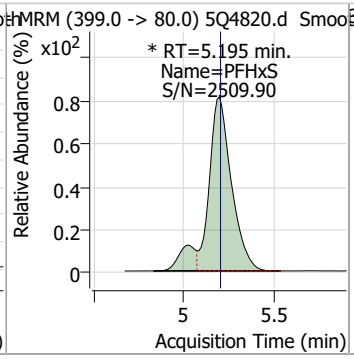


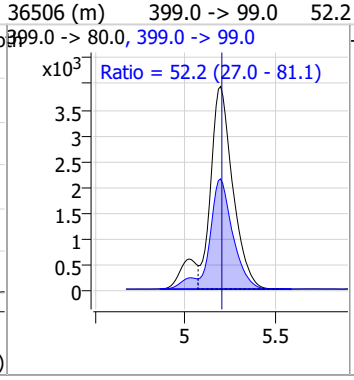


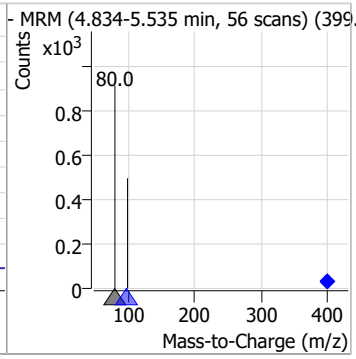


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.67	5.20	0.00	36506 (m)	399.0 -> 99.0	52.2	27.0	81.1

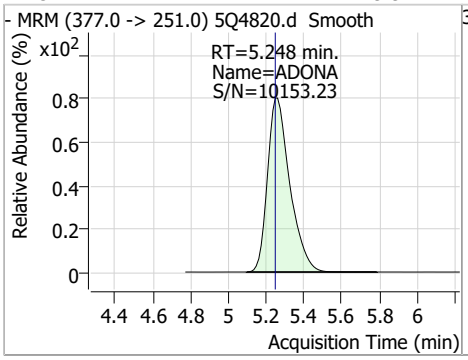


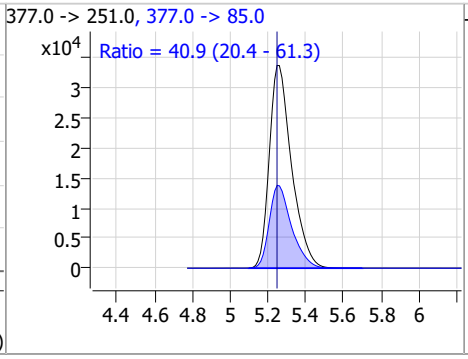


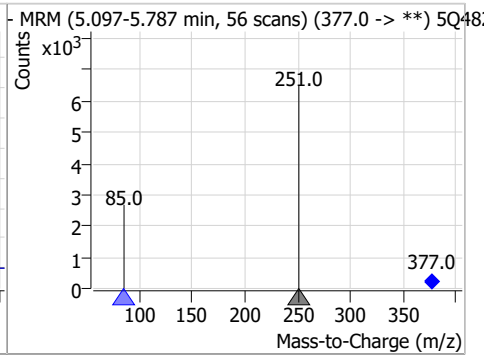




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.97	5.25	0.00	274835	377.0 -> 85.0	40.9	20.4	61.3

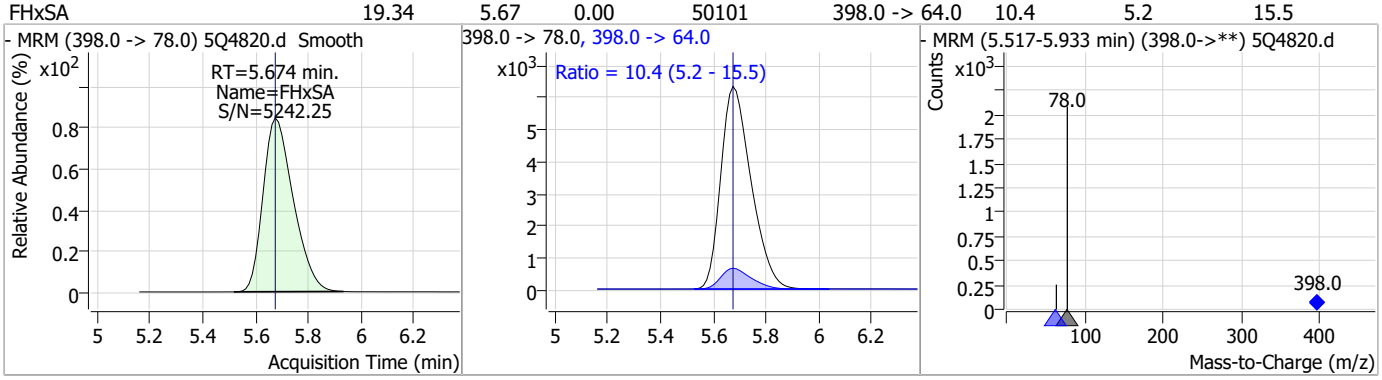




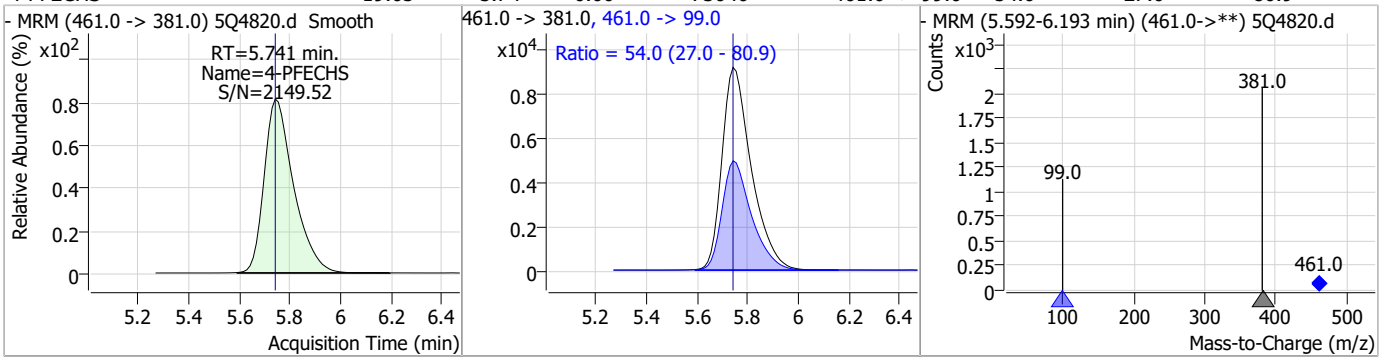


Perfluorinated Compounds by LC/MS/MS

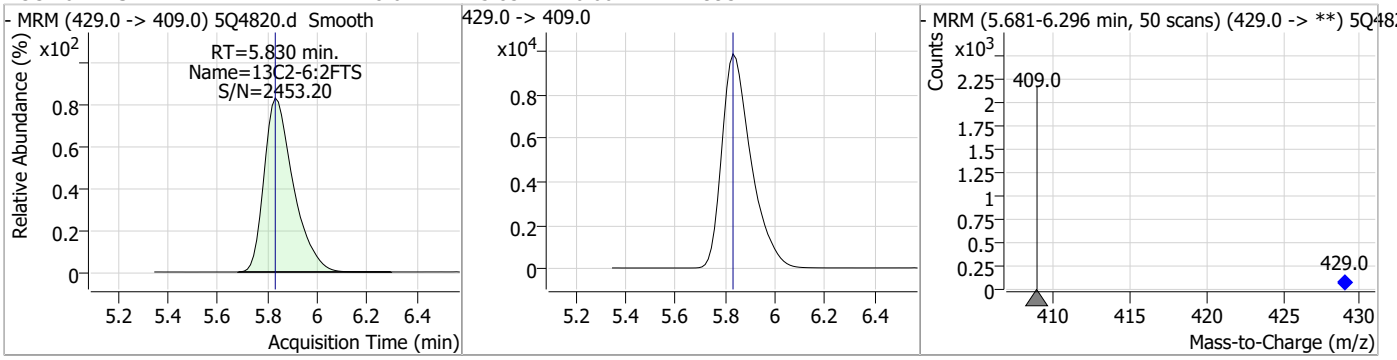
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.34	5.67	0.00	50101	398.0 -> 64.0	10.4	5.2	15.5



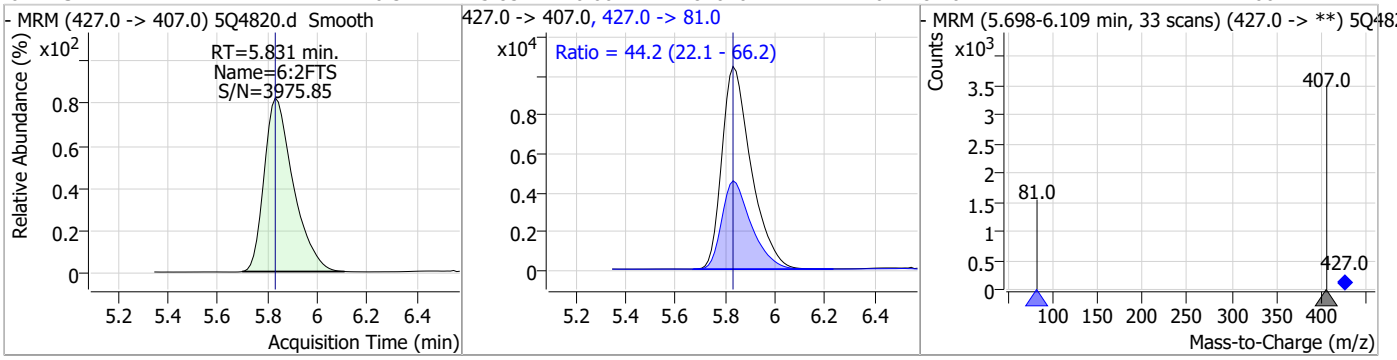
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.65	5.74	0.00	73646	461.0 -> 99.0	54.0	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.64	5.83	0.00	79934				

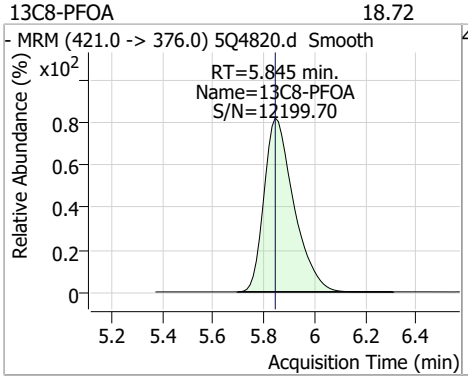


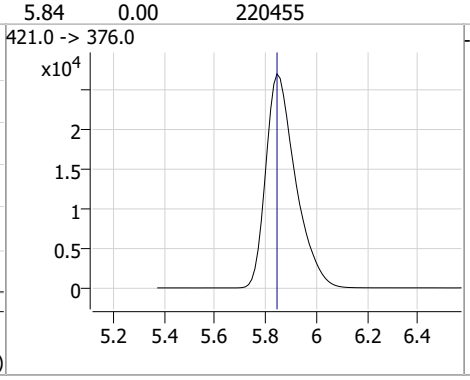
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.32	5.83	0.00	84620	427.0 -> 81.0	44.2	22.1	66.2

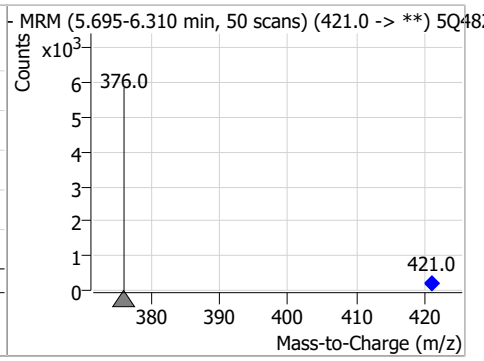


Perfluorinated Compounds by LC/MS/MS

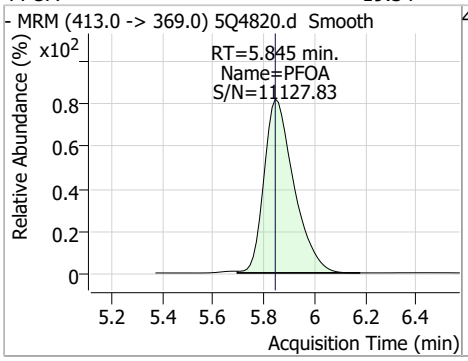
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.72	5.84	0.00	220455				

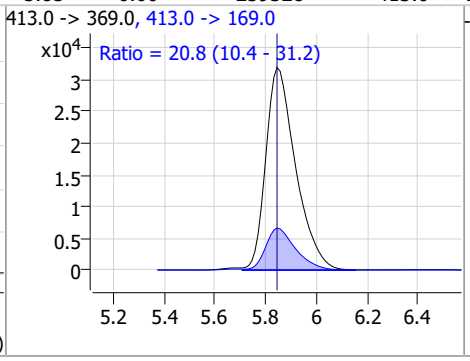


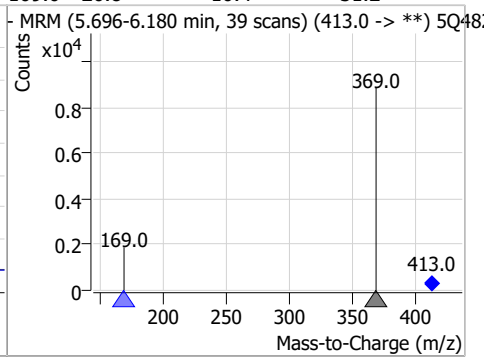




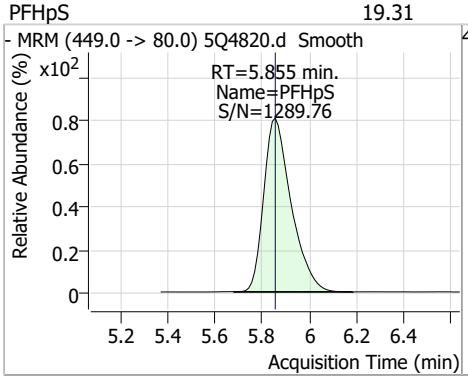
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.34	5.85	0.00	259328	413.0 -> 169.0	20.8	10.4	31.2

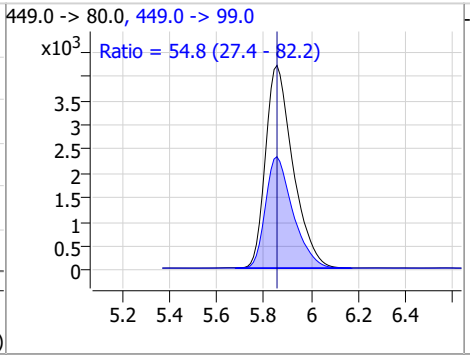


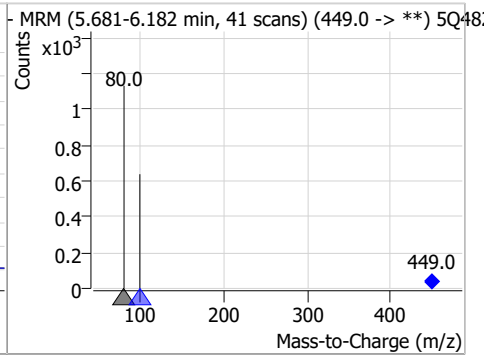




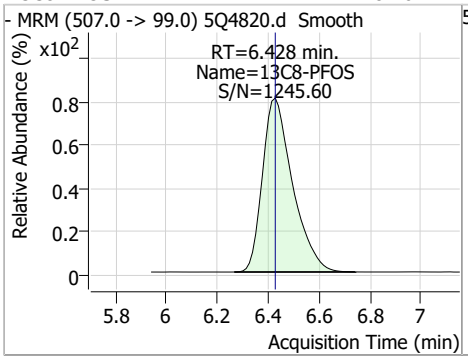
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.31	5.85	0.00	33777	449.0 -> 99.0	54.8	27.4	82.2

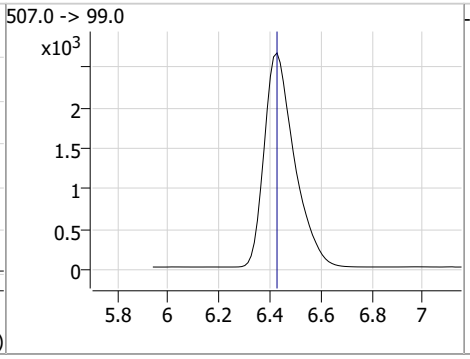


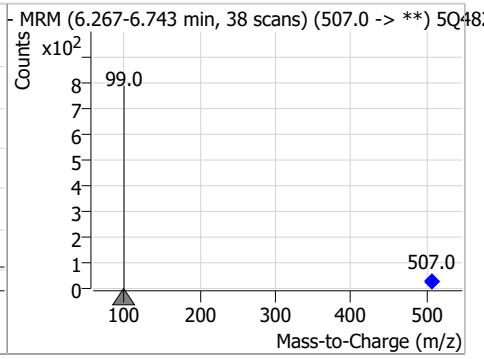




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.76	6.43	0.00	21614				

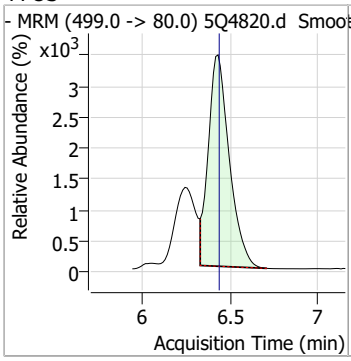


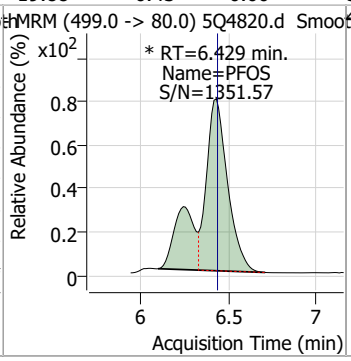


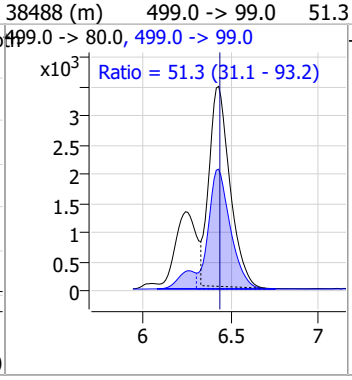


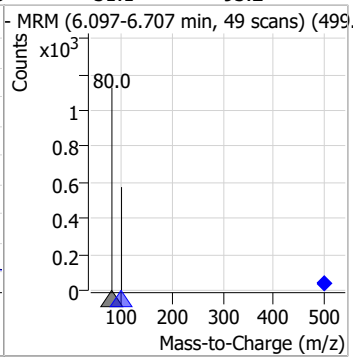
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.88	6.43	0.00	38488 (m)	499.0 -> 99.0	51.3	31.1	93.2

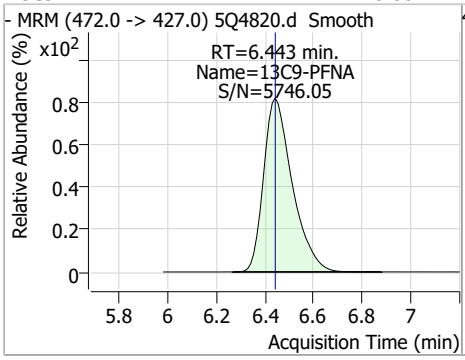


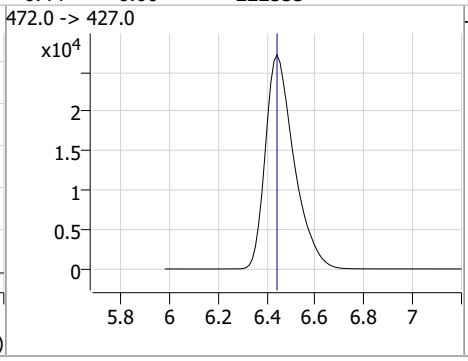


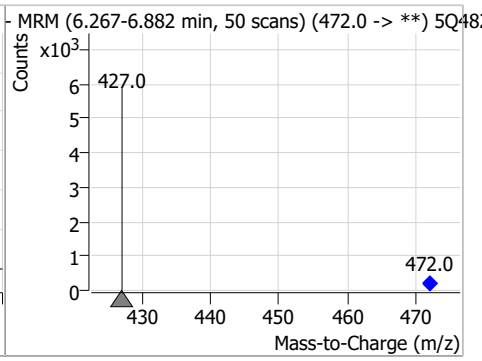




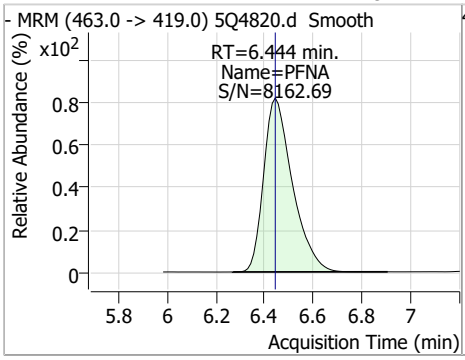
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.88	6.44	0.00	222553				

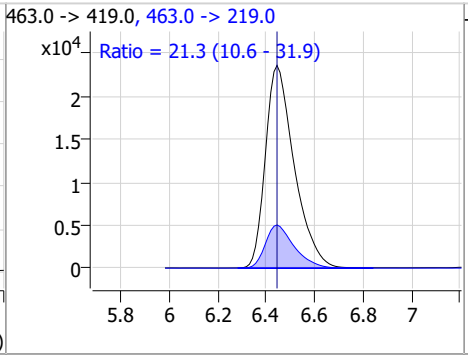


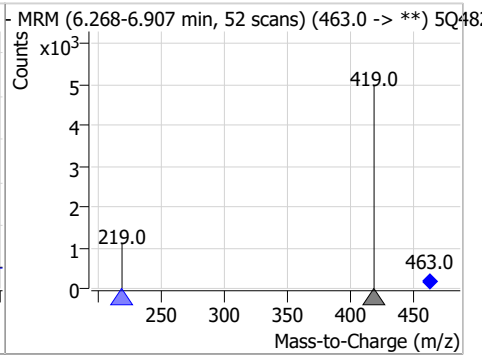




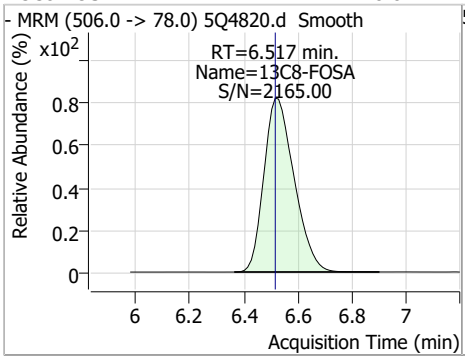
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.14	6.44	0.00	193890	463.0 -> 219.0	21.3	10.6	31.9

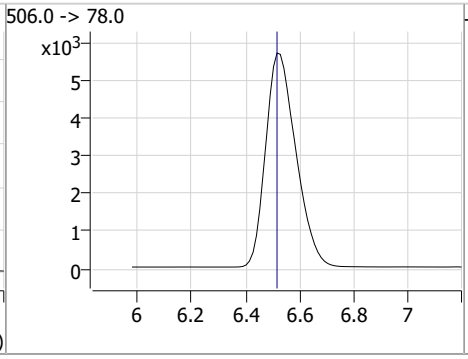


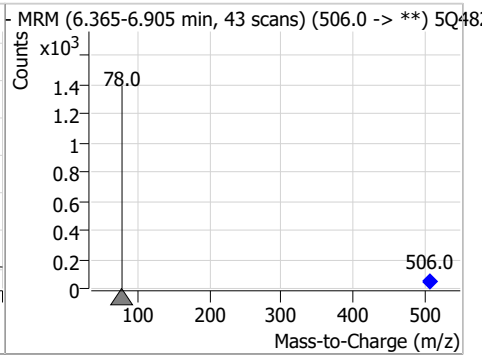




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.82	6.52	0.00	44223				

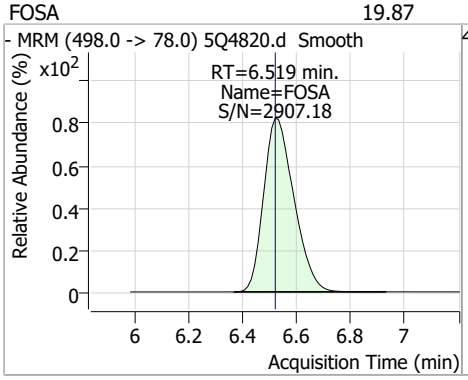


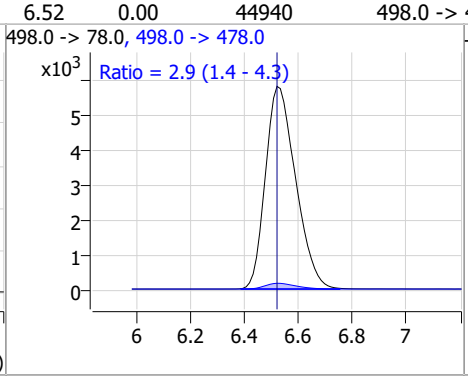


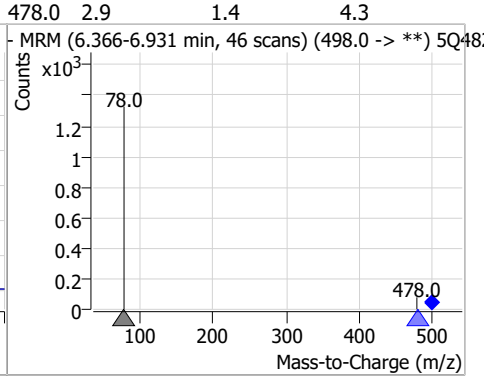


Perfluorinated Compounds by LC/MS/MS

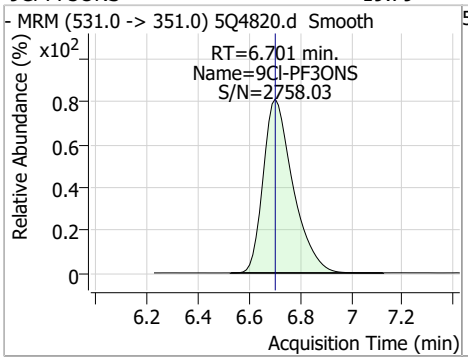
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.87	6.52	0.00	44940	498.0 -> 478.0	2.9	1.4	4.3

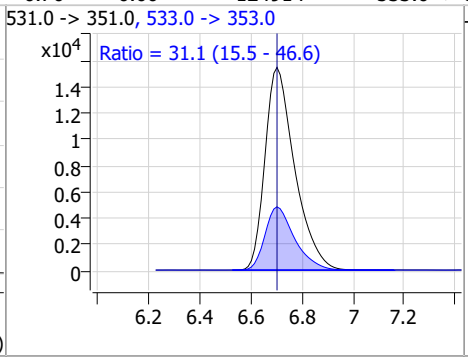


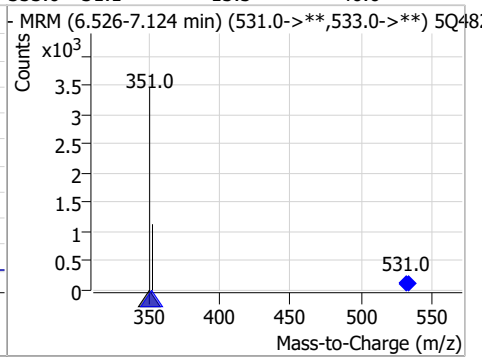




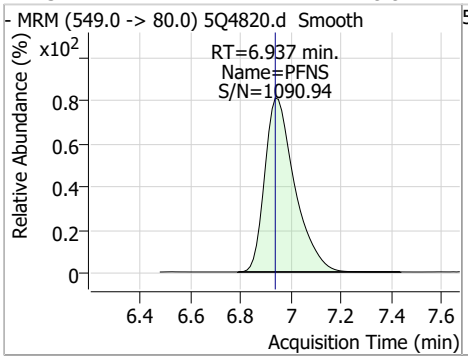
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.79	6.70	0.00	124914	533.0 -> 353.0	31.1	15.5	46.6

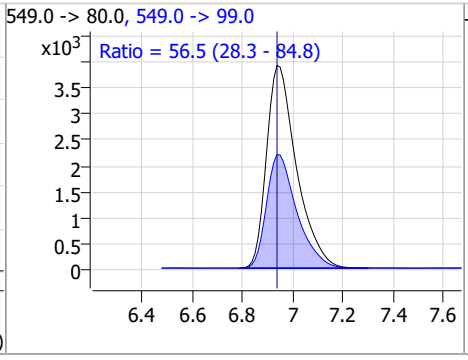


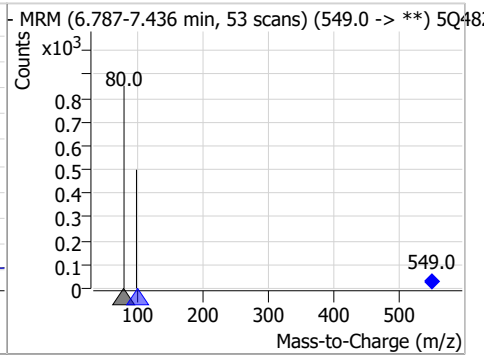




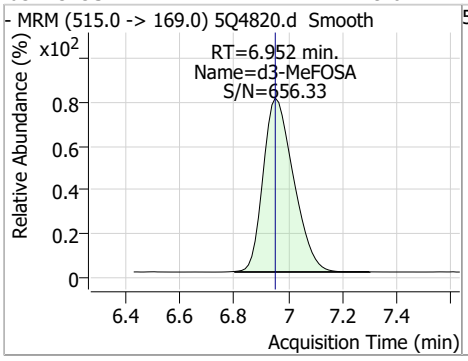
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.91	6.94	0.00	32246	549.0 -> 99.0	56.5	28.3	84.8

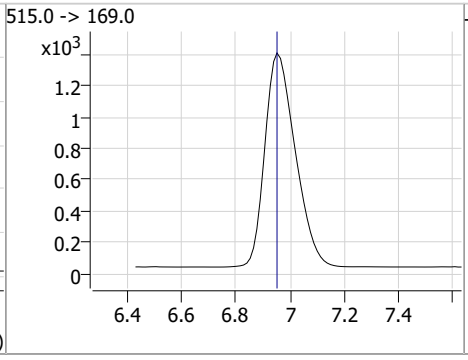


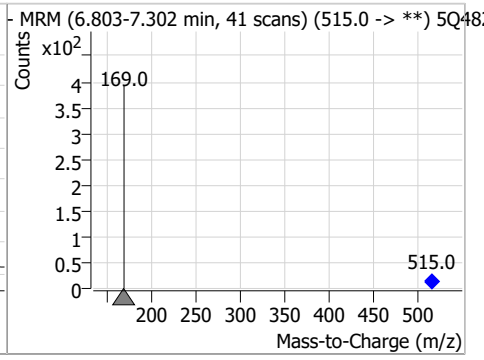




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.07	6.95	0.00	10725				

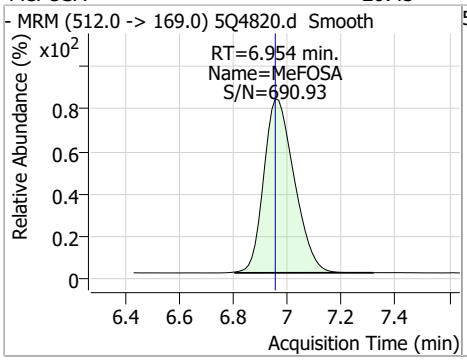


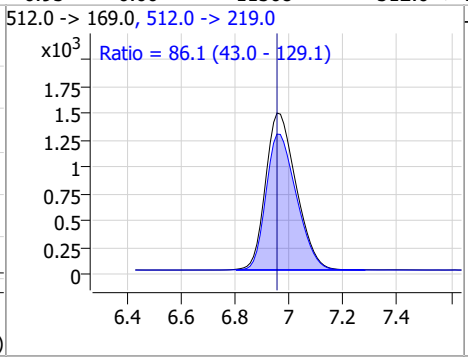


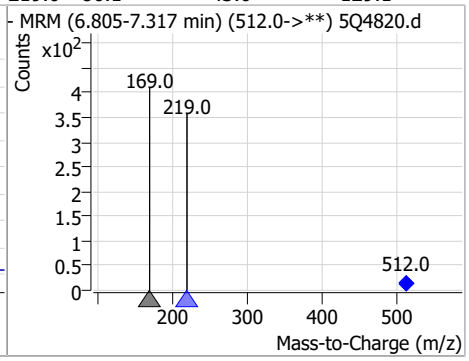


Perfluorinated Compounds by LC/MS/MS

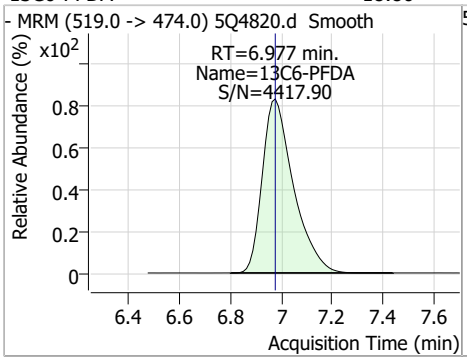
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.45	6.95	0.00	11508	512.0 -> 219.0	86.1	43.0	129.1

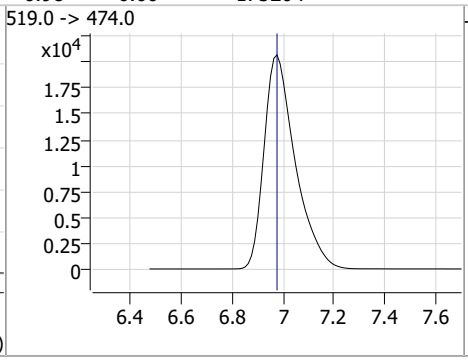


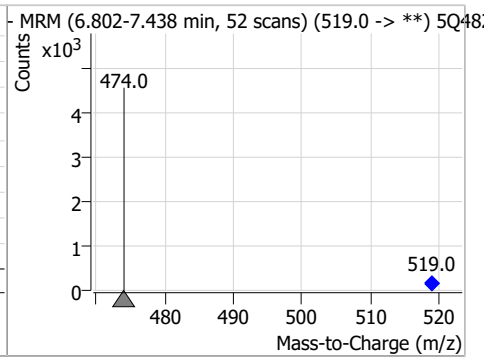




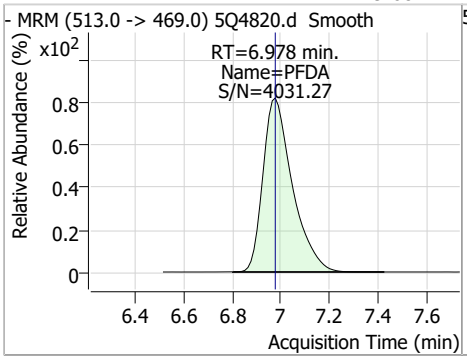
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.86	6.98	0.00	175204				

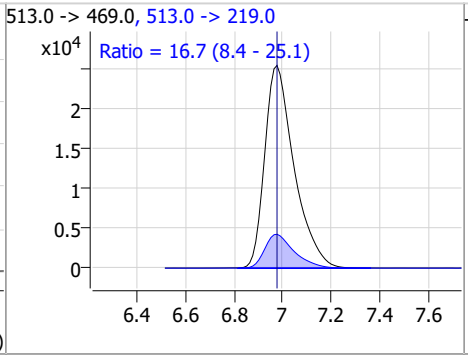


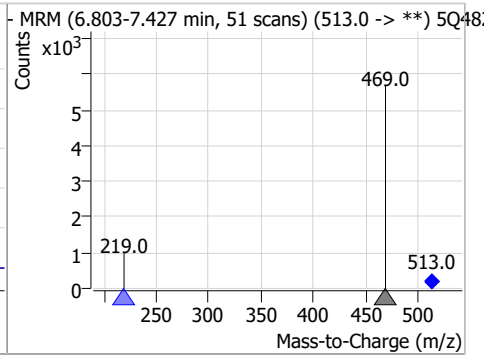




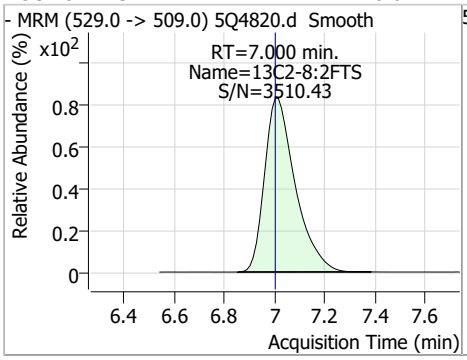
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.68	6.98	0.00	214615	513.0 -> 219.0	16.7	8.4	25.1

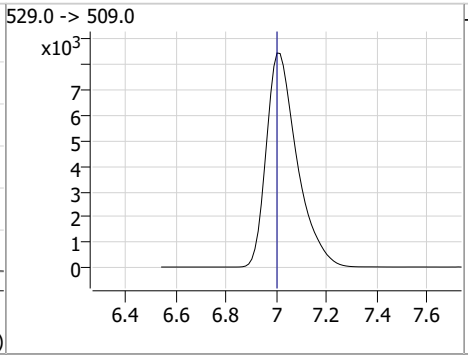


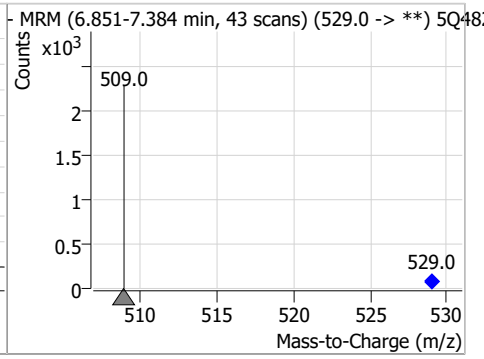




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.61	7.00	0.00	71498				

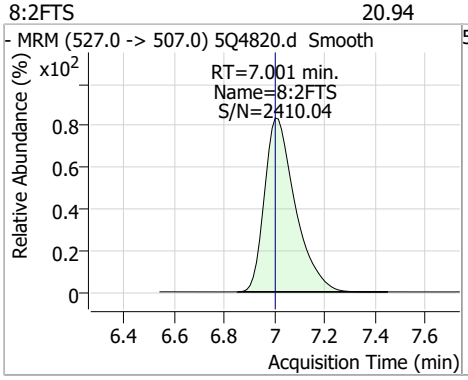


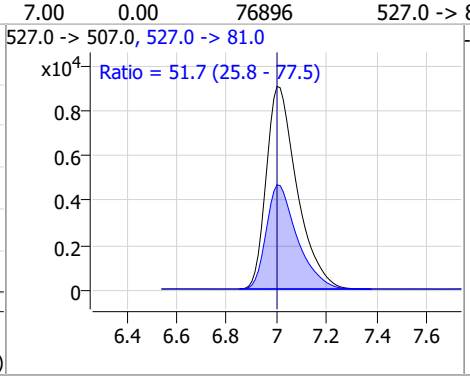


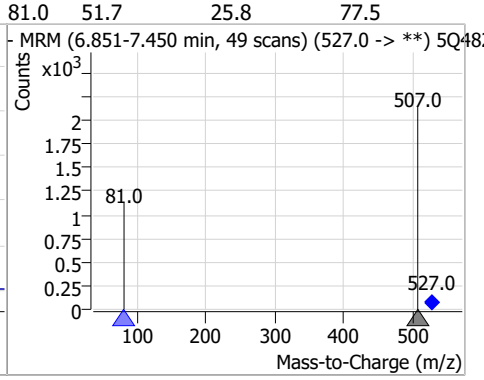


Perfluorinated Compounds by LC/MS/MS

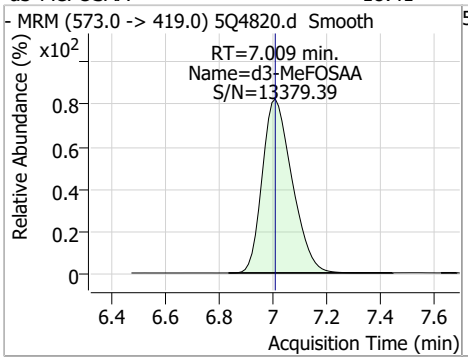
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.94	7.00	0.00	76896	527.0 -> 81.0	51.7	25.8	77.5

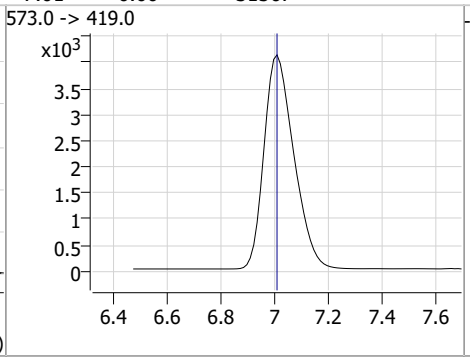


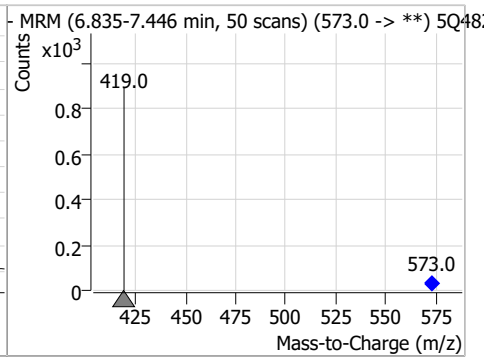




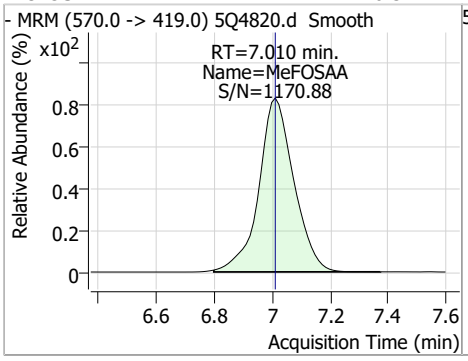
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.41	7.01	0.00	31567				

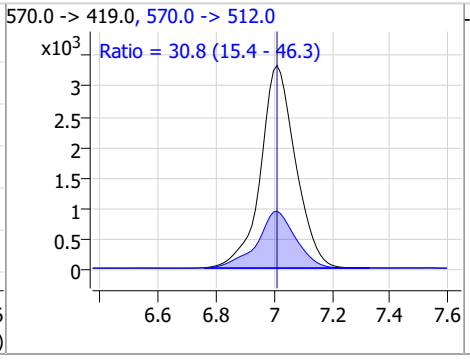


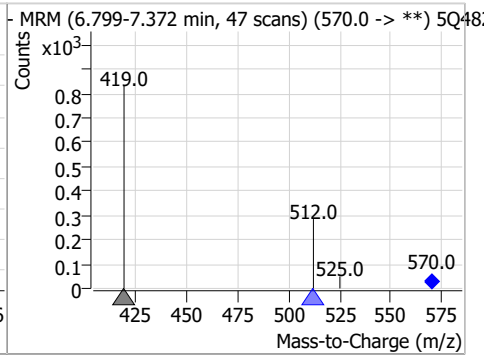




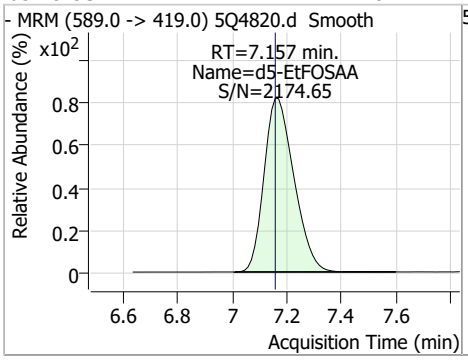
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.31	7.01	0.00	27541	570.0 -> 512.0	30.8	15.4	46.3

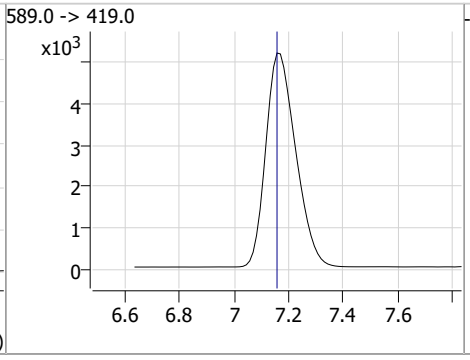


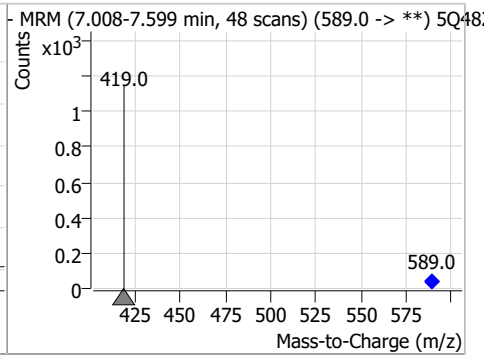




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.72	7.16	0.00	39476				

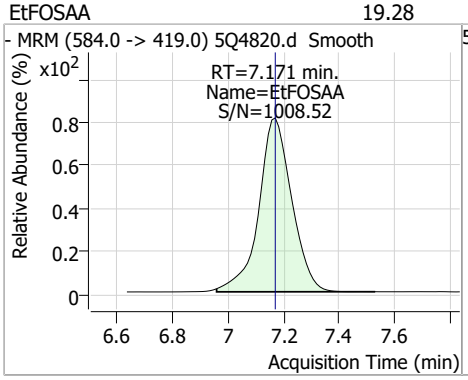


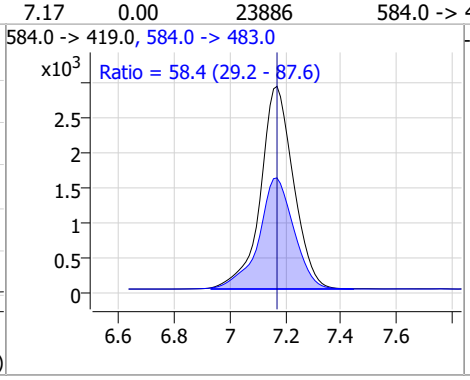


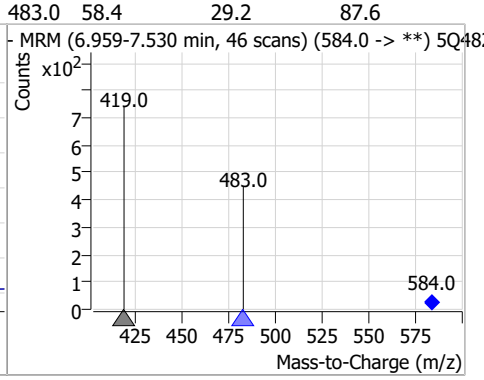


Perfluorinated Compounds by LC/MS/MS

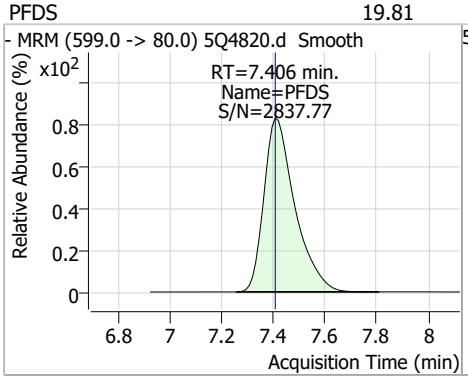
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.28	7.17	0.00	23886	584.0 -> 483.0	58.4	29.2	87.6

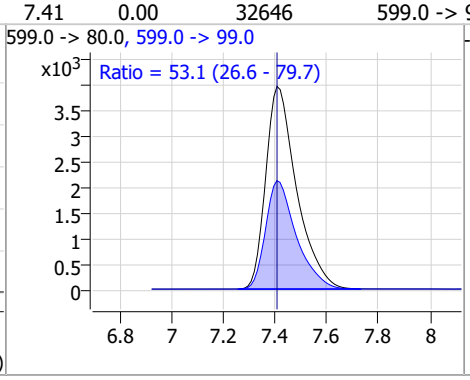


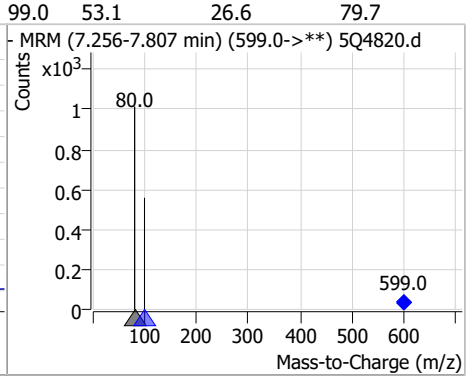




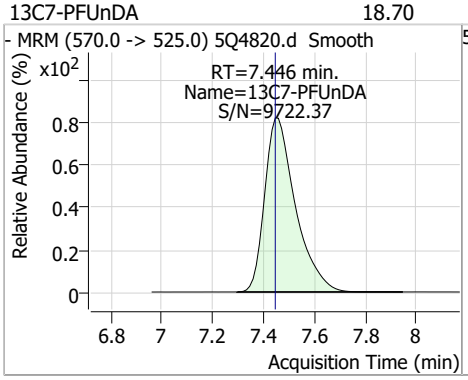
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.81	7.41	0.00	32646	599.0 -> 99.0	53.1	26.6	79.7

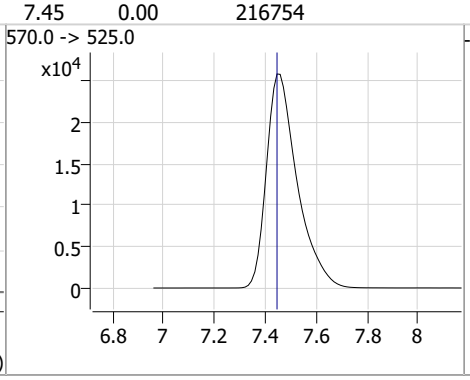


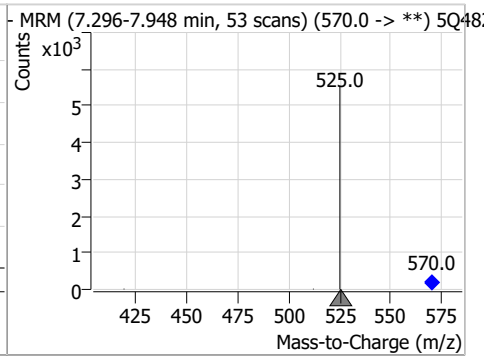




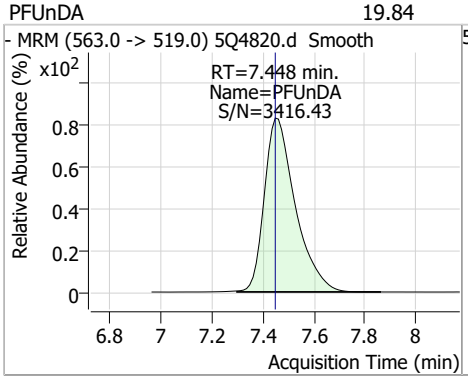
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.70	7.45	0.00	216754				

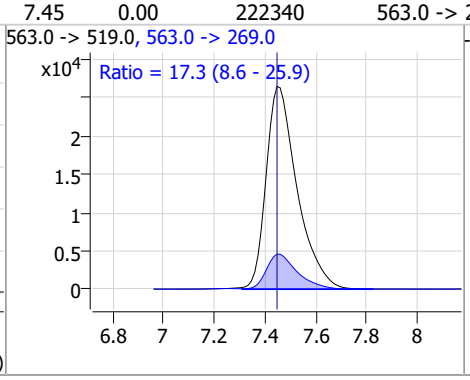


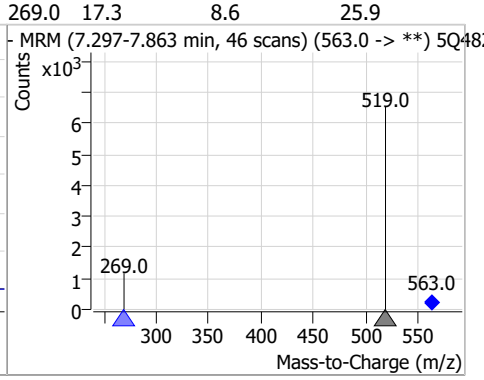




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.84	7.45	0.00	222340	563.0 -> 269.0	17.3	8.6	25.9

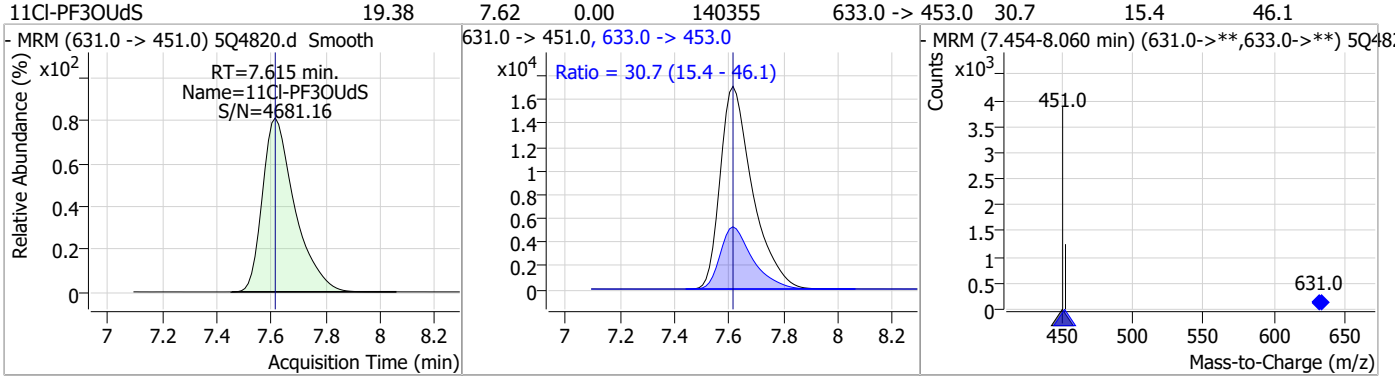




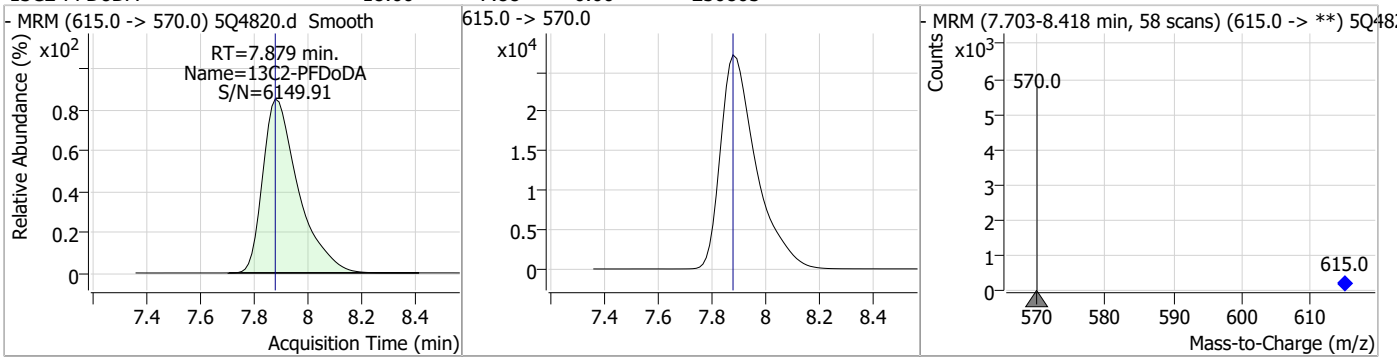


Perfluorinated Compounds by LC/MS/MS

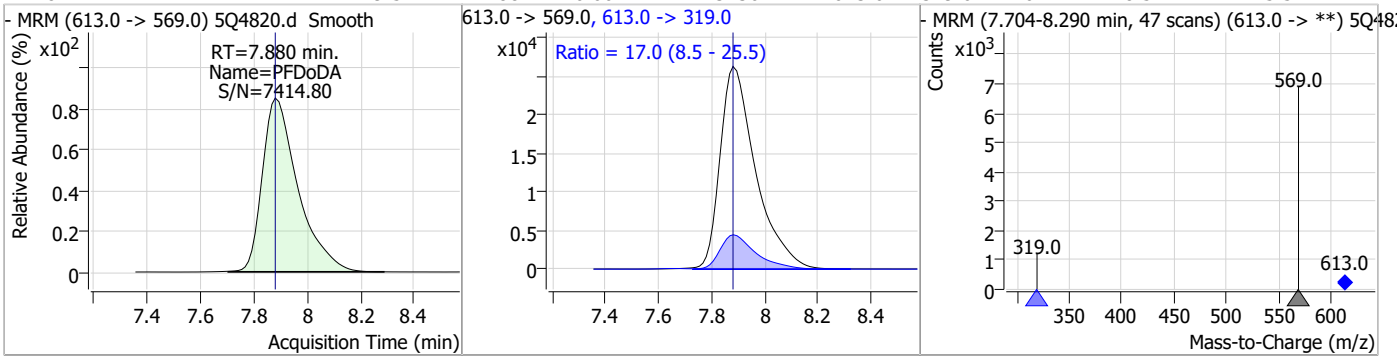
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.38	7.62	0.00	140355	633.0 -> 453.0	30.7	15.4	46.1



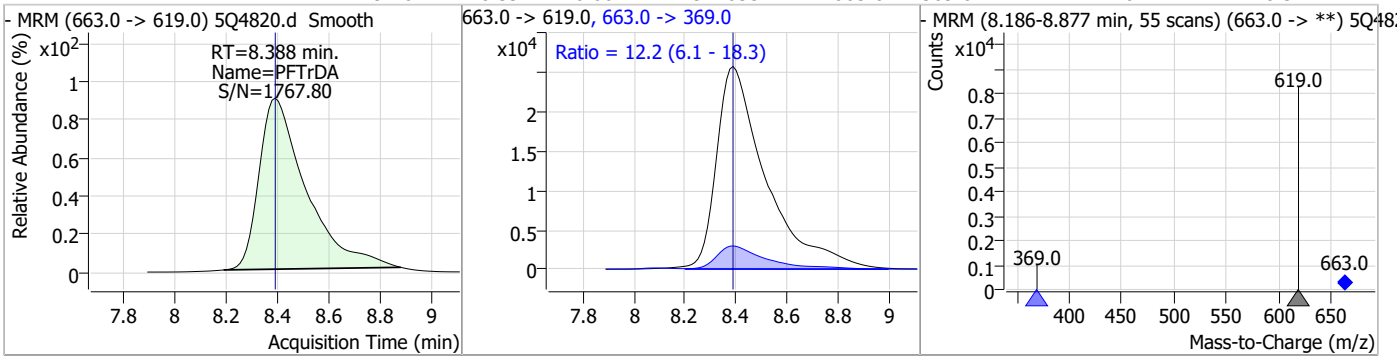
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.60	7.88	0.00	250805				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.57	7.88	0.00	243130	613.0 -> 319.0	17.0	8.5	25.5

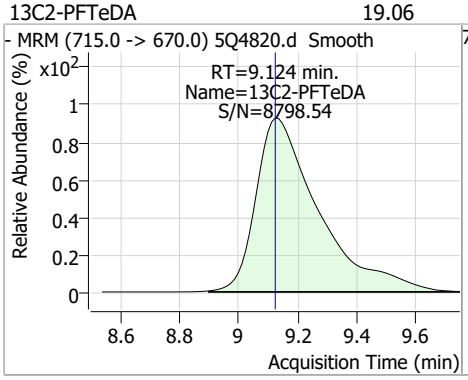


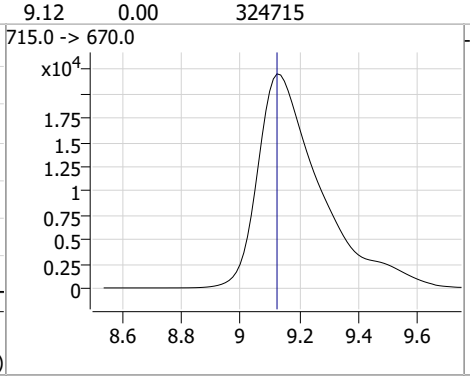
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.10	8.39	0.00	322035	663.0 -> 369.0	12.2	6.1	18.3

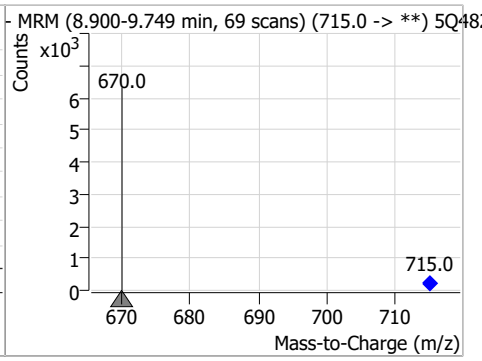


Perfluorinated Compounds by LC/MS/MS

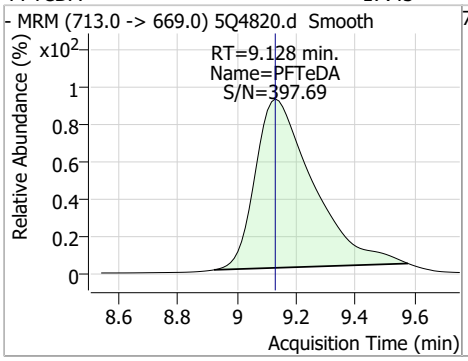
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.06	9.12	0.00	324715				

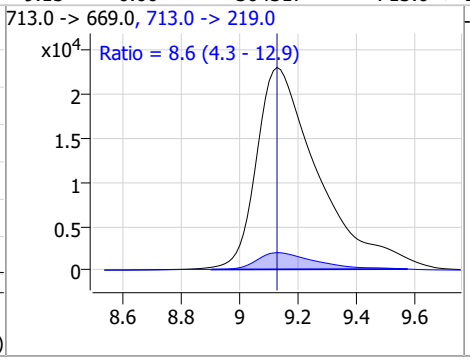


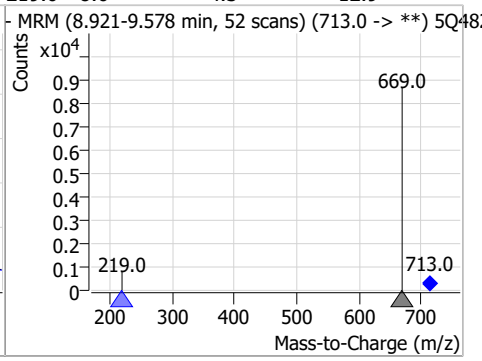




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.45	9.13	0.00	304317	713.0 -> 219.0	8.6	4.3	12.9







7.7.65

7

Manual Integration Approval Summary

Sample Number: S5Q73-ICC73
Lab FileID: 5Q4820.D
Injection Time: 09/17/22 13:34
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4821.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 1:49:28 PM
Sample Name : ic73-50
Vial : P1-A8
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

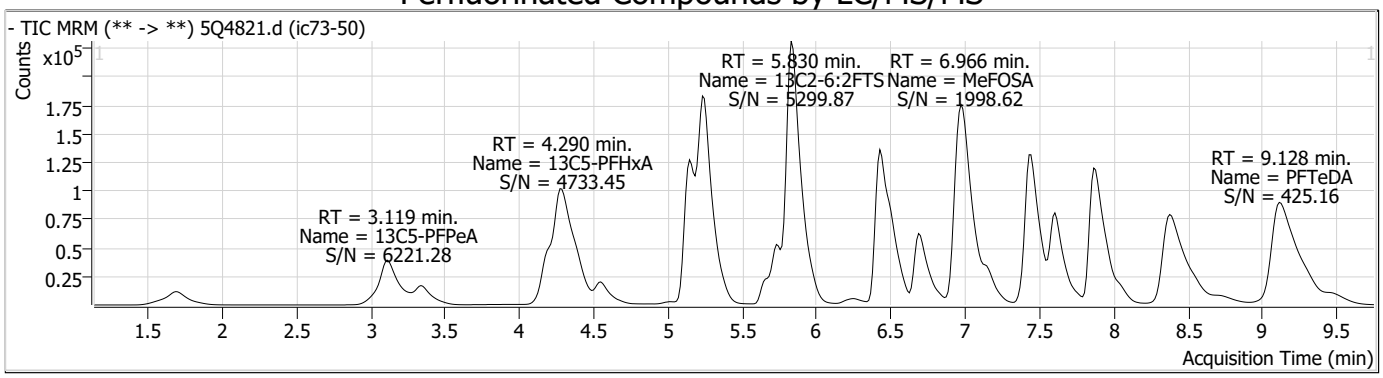
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	66413	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	107396	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	170888	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	158868	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	211546	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	211370	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	165515	20.00	µg/L	0.000
M7-PFUnDA	7.446	570.0 -> 525.0	206844	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	242929	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	286318	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	42705	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12042	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12604	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	20913	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	61785	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	82303	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	73189	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	29511	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10183	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10504	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	36619	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	61785	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-6:2FTS	5.830	429.0 -> 409.0	82303	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C2-8:2FTS	7.000	529.0 -> 509.0	73189	19.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-PFDoDA	7.879	615.0 -> 570.0	242929	18.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C2-PFTeDA	9.124	715.0 -> 670.0	286318	16.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 84.0%		
13C3-PFBS	3.349	302.0 -> 99.0	12042	18.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	12604	18.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C4-PFBA	1.687	217.0 -> 172.0	66413	18.01	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%		
13C4-PFHpA	5.149	367.0 -> 322.0	158868	18.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.3%		
13C5-PFHxA	4.290	318.0 -> 273.0	170888	18.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%		
13C5-PFPeA	3.119	268.0 -> 223.0	107396	18.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%		
13C6-PFDA	6.977	519.0 -> 474.0	165515	17.82	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

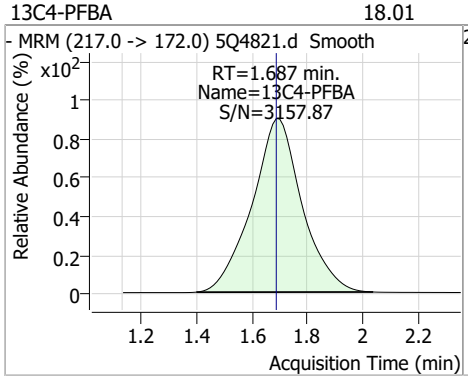
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%			
13C7-PFUnDA	7.446	570.0 -> 525.0	206844	17.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%			
13C8-FOSA	6.517	506.0 -> 78.0	42705	18.17	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%			
13C8-PFOA	5.845	421.0 -> 376.0	211546	17.96	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.8%			
13C8-PFOS	6.428	507.0 -> 99.0	20913	18.15	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
13C9-PFNA	6.443	472.0 -> 427.0	211370	17.93	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	29511	17.21	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.0%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10183	17.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	10504	18.68	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
d5-EtFOSAA	7.157	589.0 -> 419.0	36619	17.37	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.8%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	162944	48.56	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	210573	49.11	µg/L		98
8:2FTS	7.001	527.0 -> 507.0	185770	49.41	µg/L		100
EtFOSAA	7.171	584.0 -> 419.0	59239	51.06	µg/L		97
FOSA	6.519	498.0 -> 78.0	110383	49.94	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	64975	49.49	µg/L		99
PFBA	1.694	213.0 -> 169.0	65737	49.74	µg/L		100
PFBS	3.342	299.0 -> 80.0	90716	50.08	µg/L		100
PFDA	6.978	513.0 -> 469.0	514310	49.92	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	603729	50.17	µg/L		100
PFDS	7.406	599.0 -> 80.0	80997	50.09	µg/L		99
PFHpA	5.150	363.0 -> 319.0	536098	49.52	µg/L		100
PFHpS	5.855	449.0 -> 80.0	83730	49.48	µg/L		98
PFHxA	4.291	313.0 -> 269.0	418468	49.36	µg/L		100
PFHxS	5.195	399.0 -> 80.0	89850	49.15	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	478673	49.76	µg/L		99
PFNS	6.937	549.0 -> 80.0	78741	49.84	µg/L		99
PFOA	5.845	413.0 -> 369.0	635609	49.41	µg/L		100
PFOS	6.416	499.0 -> 80.0	93514	49.91	µg/L	m	87
PFPeA	3.122	263.0 -> 219.0	254091	49.41	µg/L		100
PFPeS	4.398	349.0 -> 80.0	71624	49.55	µg/L		99
PFTeDA	9.128	713.0 -> 669.0	762393	49.58	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	812423	49.73	µg/L		100
PFUnDA	7.448	563.0 -> 519.0	539912	50.07	µg/L		100
11Cl-PF3OUdS	7.615	631.0 -> 451.0	344455	49.11	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	308818	50.10	µg/L		100
ADONA	5.248	377.0 -> 251.0	672386	49.59	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	91561	50.69	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	27496	49.89	µg/L		98
4-PFECHS	5.741	461.0 -> 381.0	184300	50.16	µg/L		98
FBSA	4.343	298.0 -> 78.0	149007	50.52	µg/L		100
FHxSA	5.674	398.0 -> 78.0	122953	49.47	µg/L		99

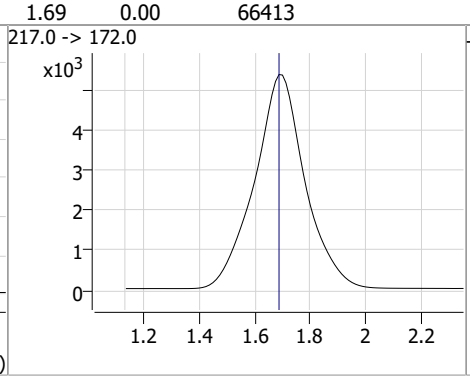
 # = Qualifier out of range, m = manually integrated, + = Area summed

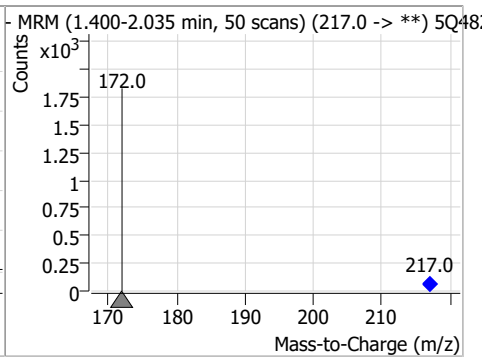
Perfluorinated Compounds by LC/MS/MS



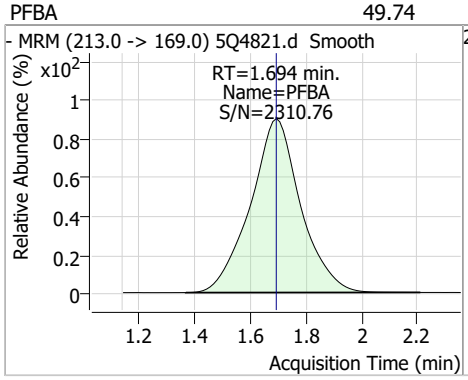
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.01	1.69	0.00	66413				

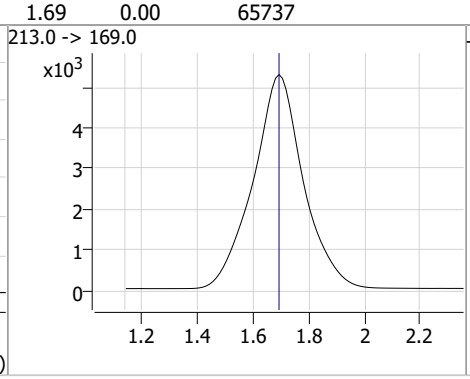


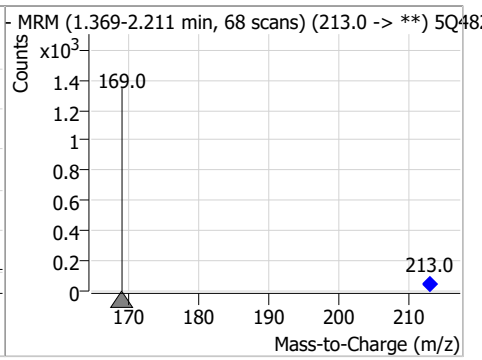




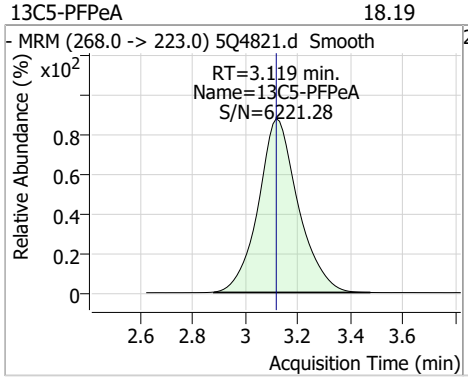
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	49.74	1.69	0.00	65737				

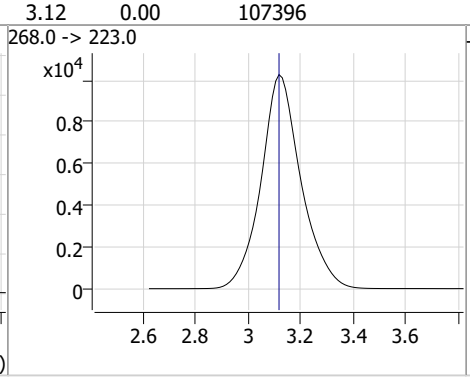


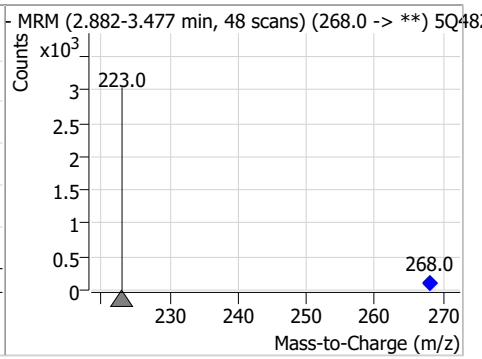




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.19	3.12	0.00	107396				

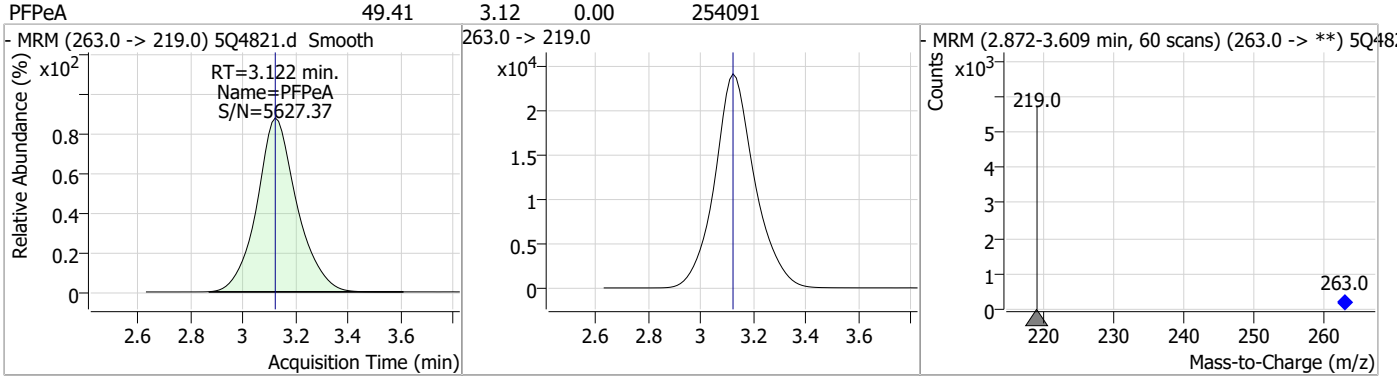




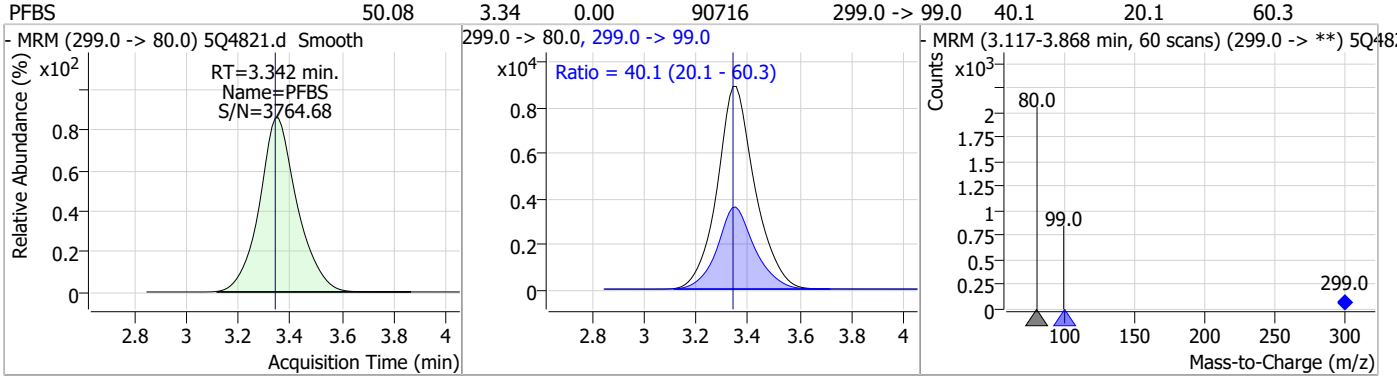


Perfluorinated Compounds by LC/MS/MS

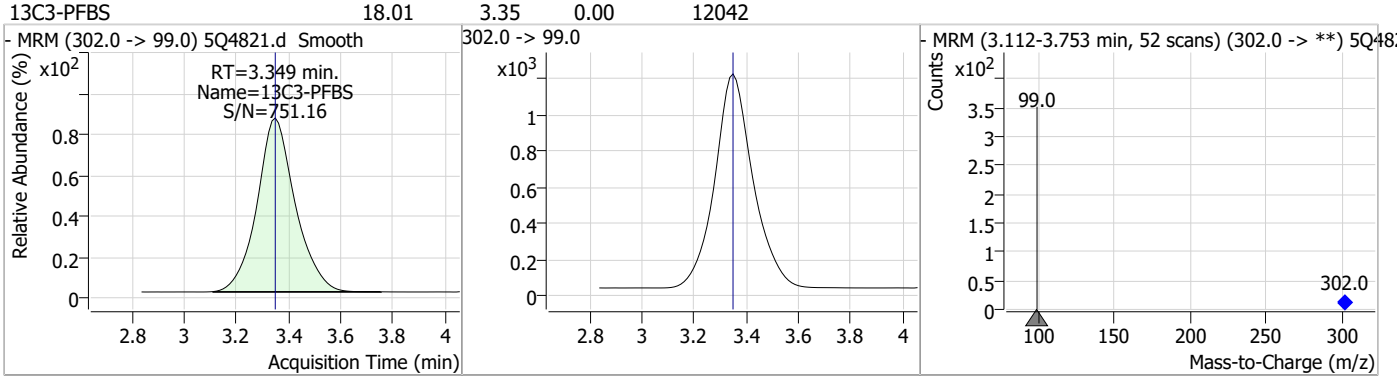
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	49.41	3.12	0.00	254091				



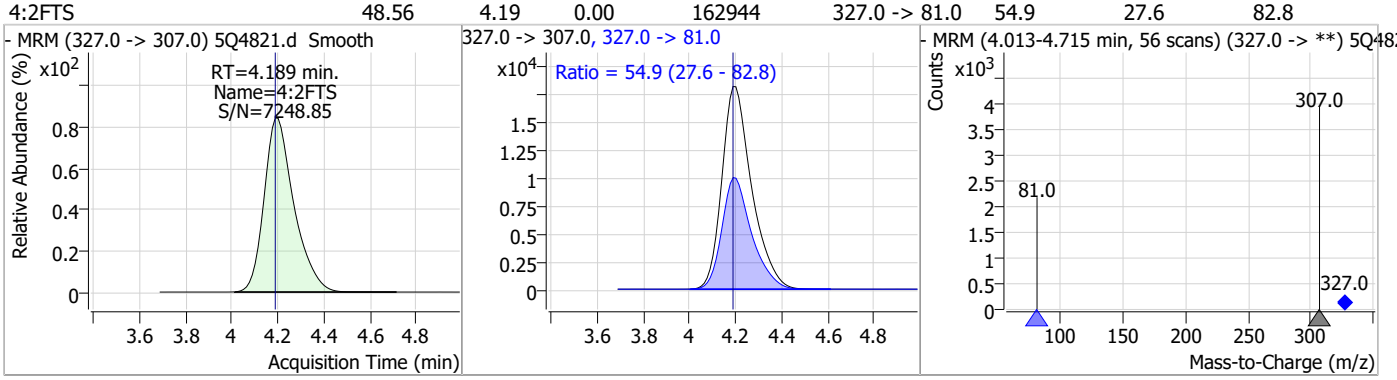
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	50.08	3.34	0.00	90716	299.0 -> 99.0	40.1	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.01	3.35	0.00	12042				

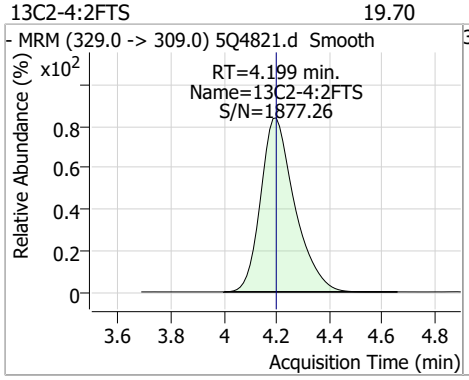


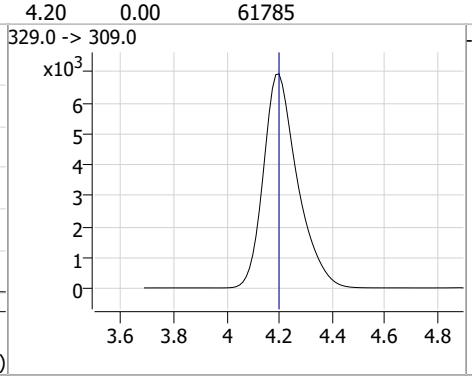
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	48.56	4.19	0.00	162944	327.0 -> 81.0	54.9	27.6	82.8

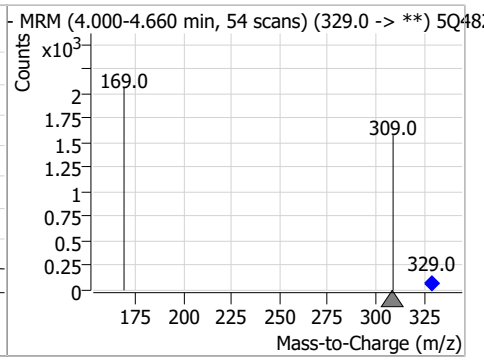


Perfluorinated Compounds by LC/MS/MS

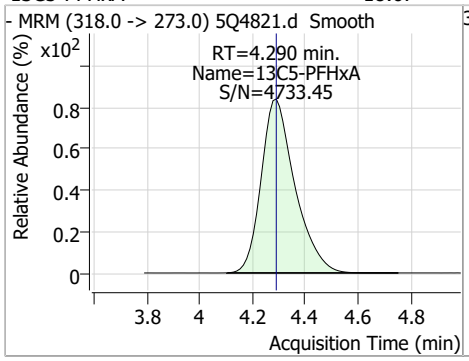
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.70	4.20	0.00	61785				

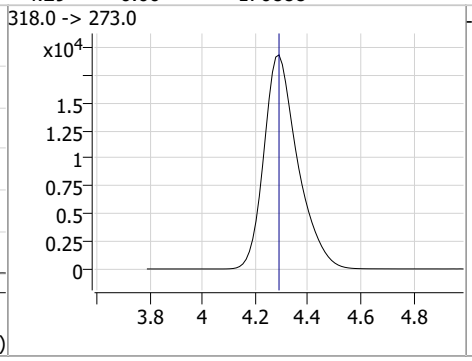


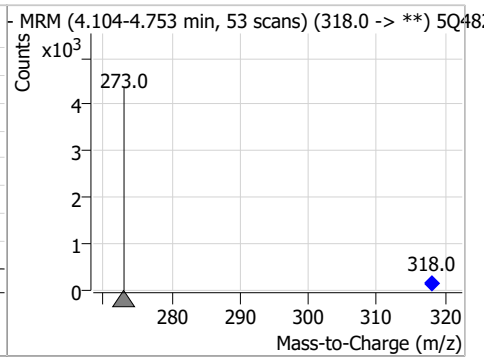




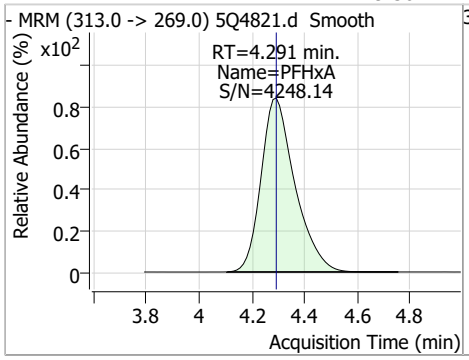
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.07	4.29	0.00	170888				

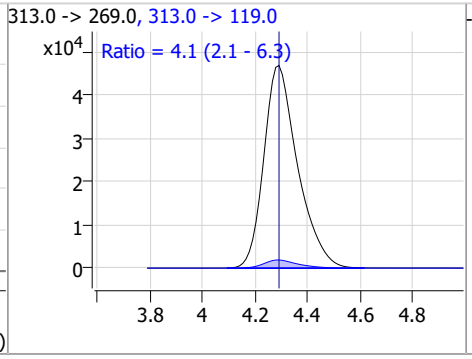


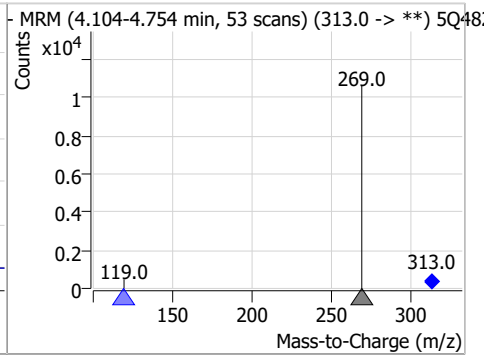




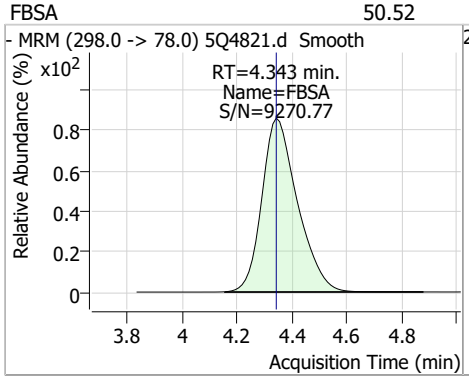
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	49.36	4.29	0.00	418468	313.0 -> 119.0	4.1	2.1	6.3

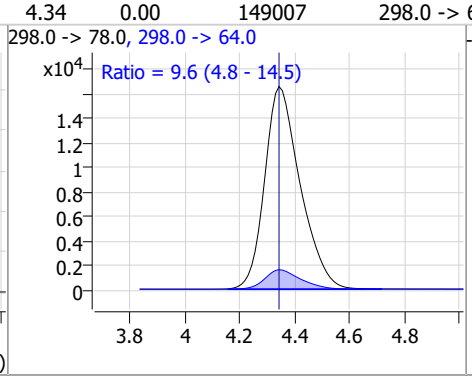


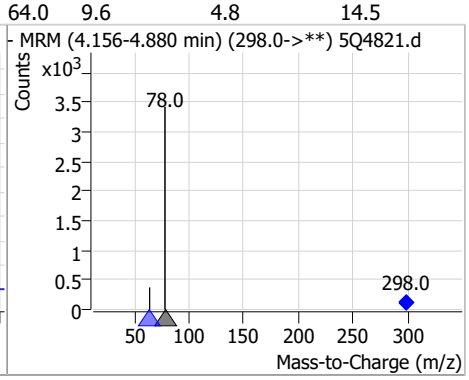




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	50.52	4.34	0.00	149007	298.0 -> 64.0	9.6	4.8	14.5

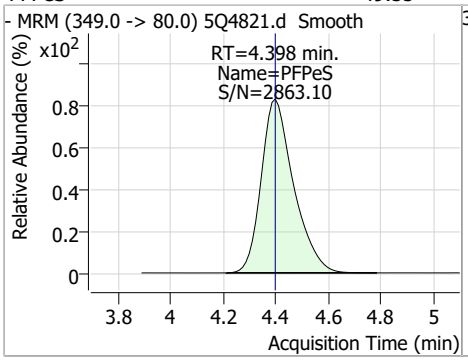


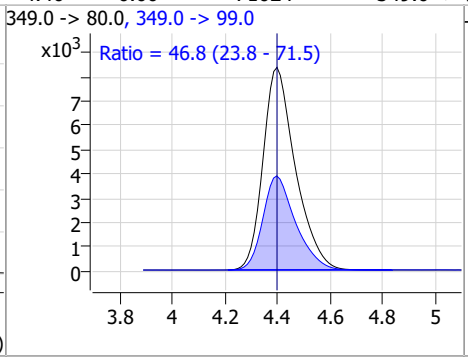


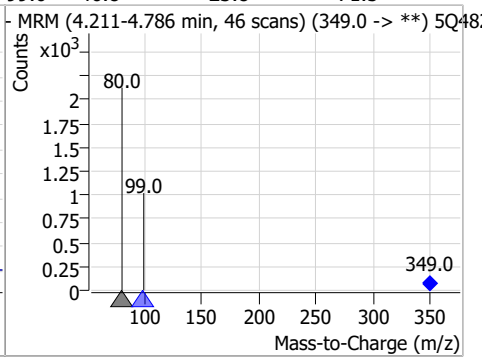


Perfluorinated Compounds by LC/MS/MS

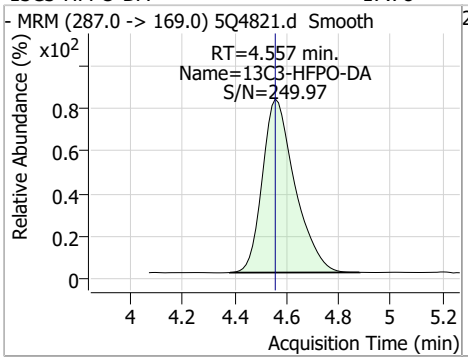
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	49.55	4.40	0.00	71624	349.0 -> 99.0	46.8	23.8	71.5

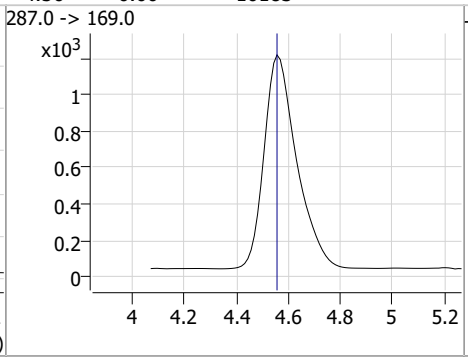


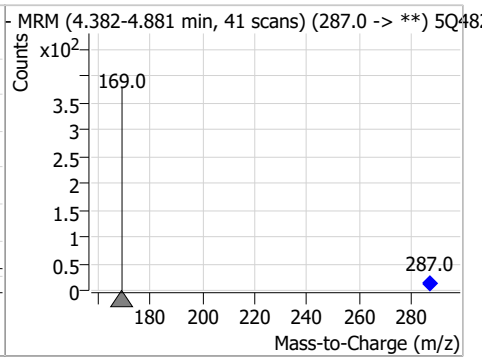




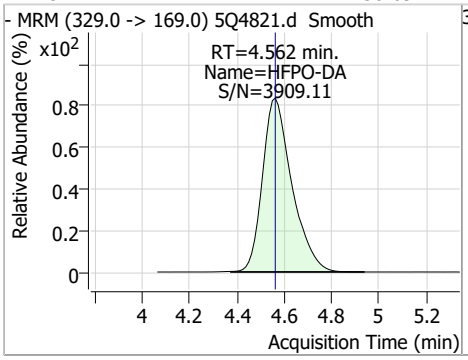
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.78	4.56	0.00	10183				

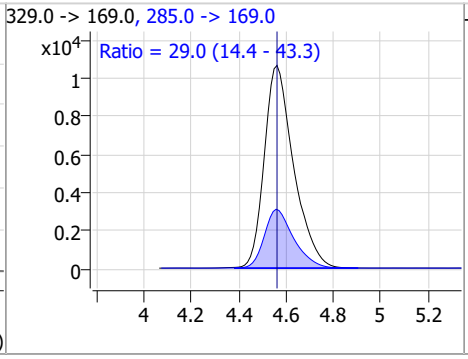


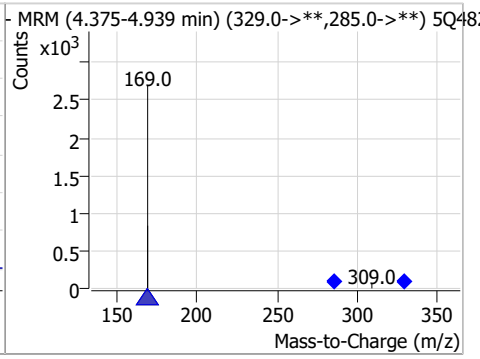




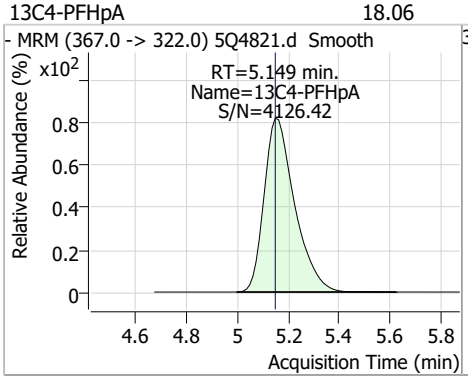
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	50.69	4.56	0.00	91561	285.0 -> 169.0	29.0	14.4	43.3

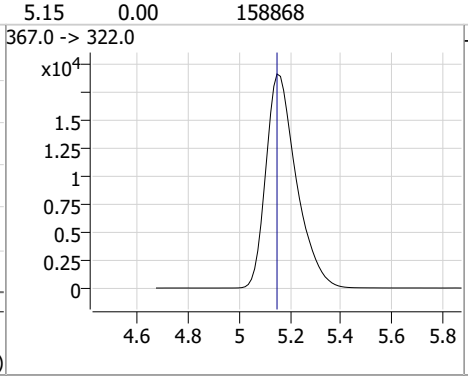


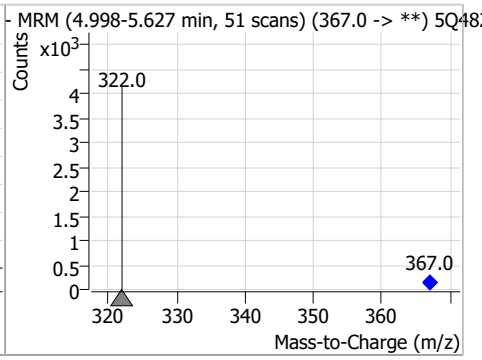




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.06	5.15	0.00	158868				

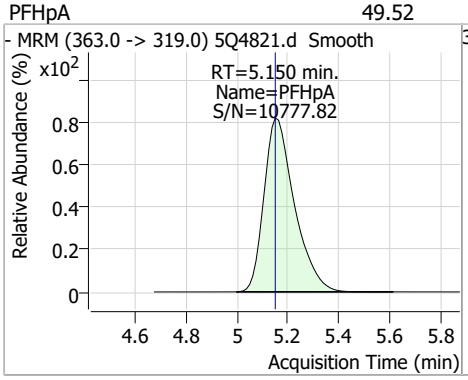


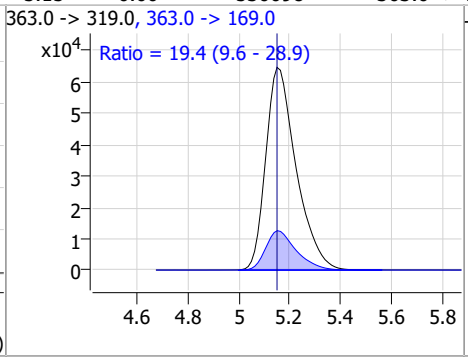


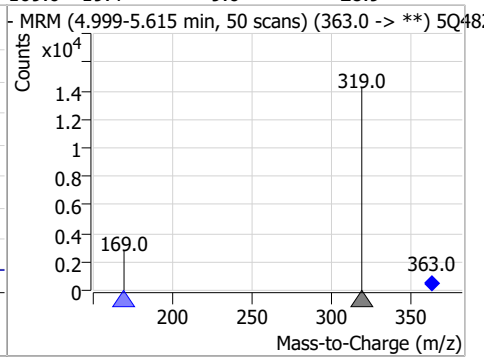


Perfluorinated Compounds by LC/MS/MS

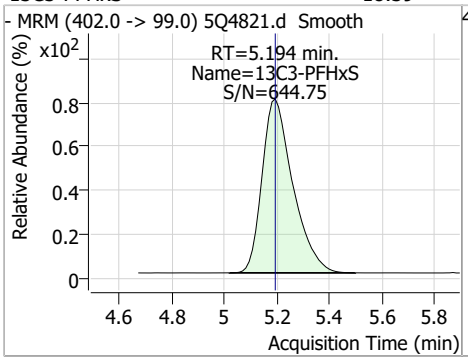
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	49.52	5.15	0.00	536098	363.0 -> 169.0	19.4	9.6	28.9

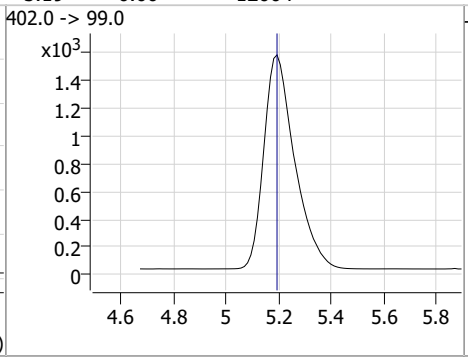


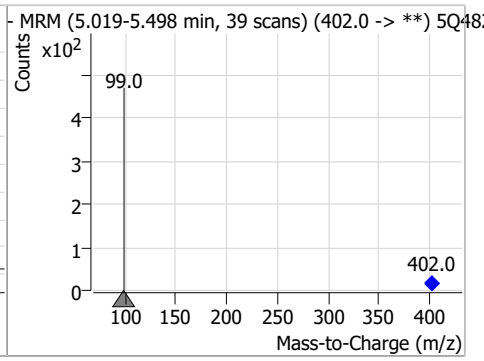




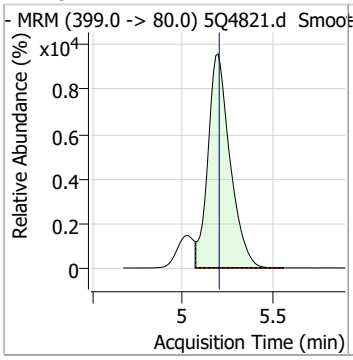
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.39	5.19	0.00	12604				

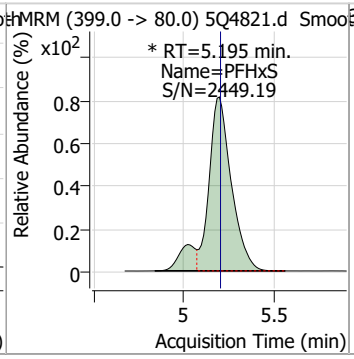


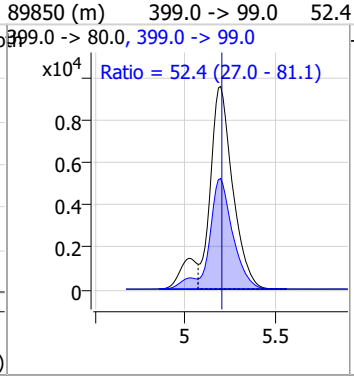


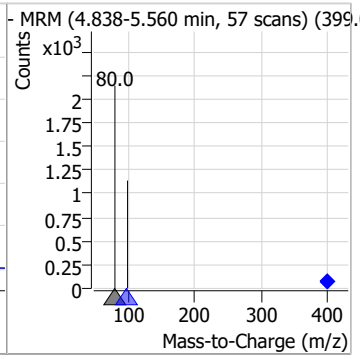


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.15	5.20	0.00	89850 (m)	399.0 -> 99.0	52.4	27.0	81.1

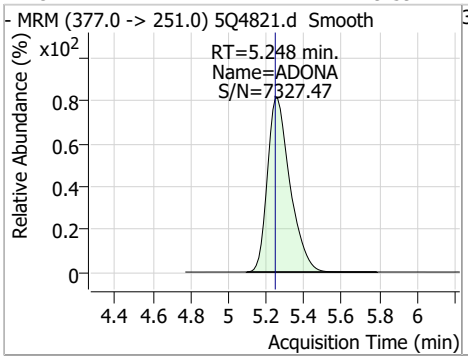


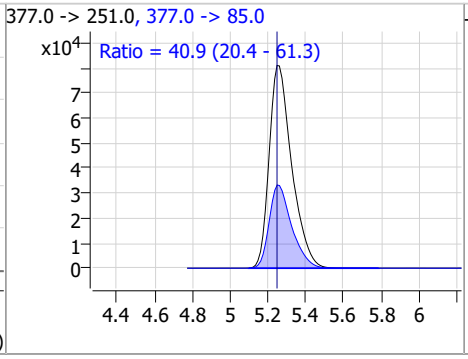


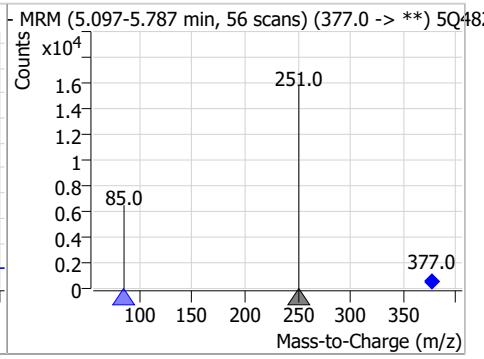




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.59	5.25	0.00	672386	377.0 -> 85.0	40.9	20.4	61.3

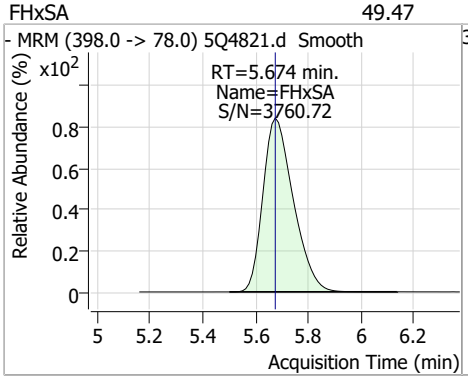


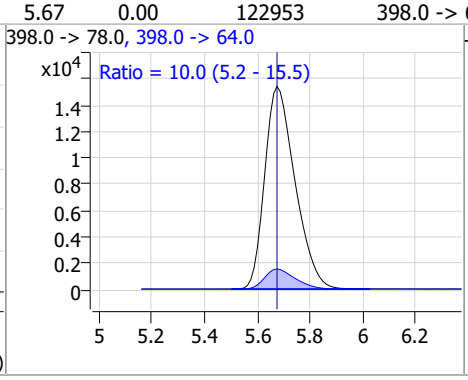


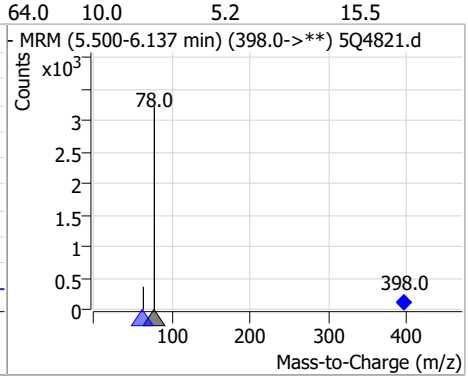


Perfluorinated Compounds by LC/MS/MS

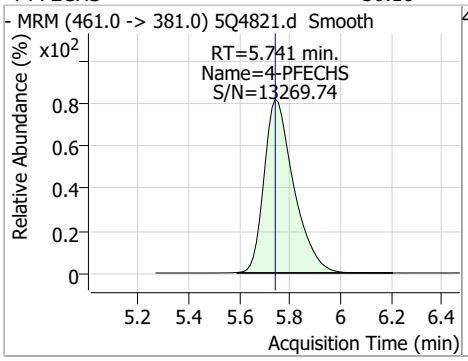
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	49.47	5.67	0.00	122953	398.0 -> 64.0	10.0	5.2	15.5

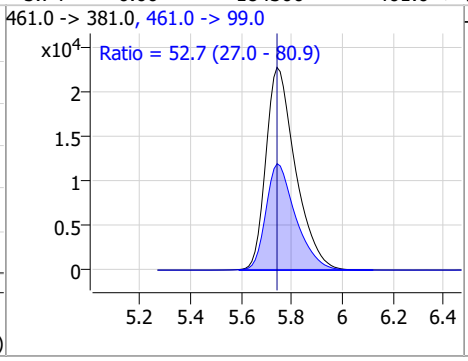


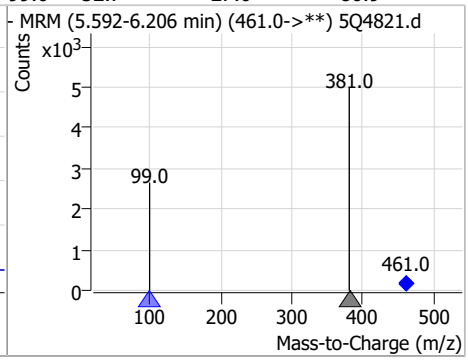




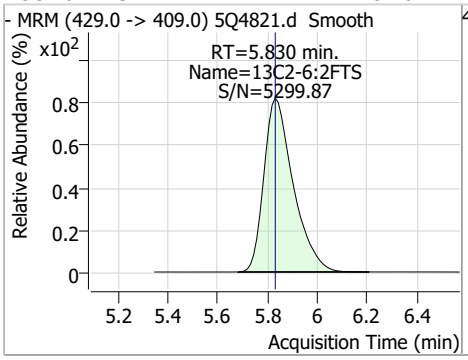
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	50.16	5.74	0.00	184300	461.0 -> 99.0	52.7	27.0	80.9

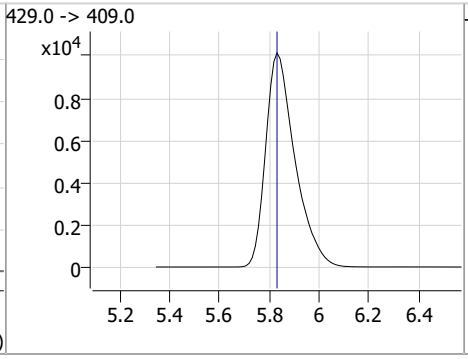


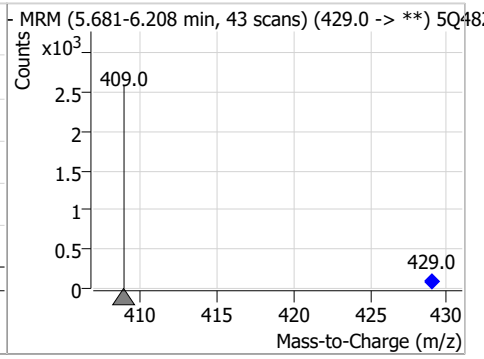




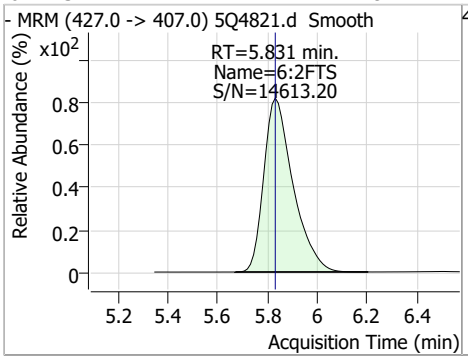
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.20	5.83	0.00	82303				

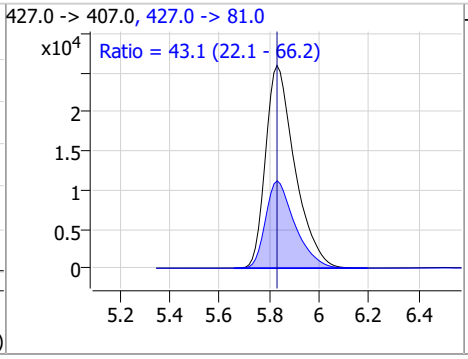


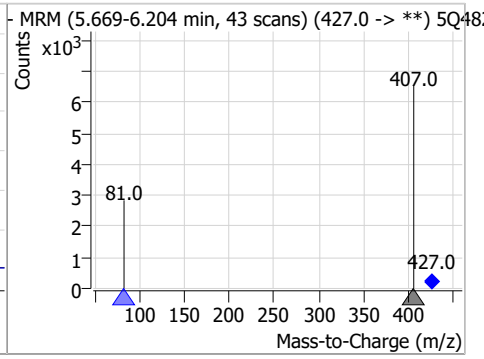




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	49.11	5.83	0.00	210573	427.0 -> 81.0	43.1	22.1	66.2

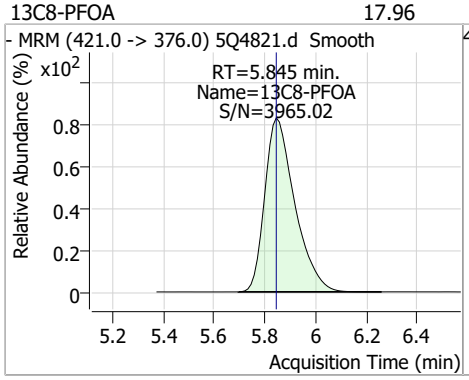


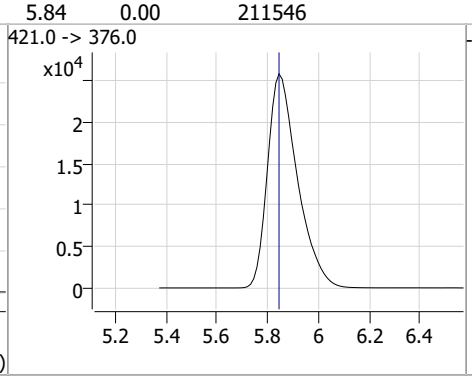


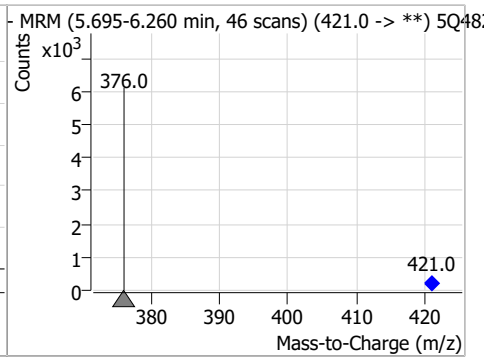


Perfluorinated Compounds by LC/MS/MS

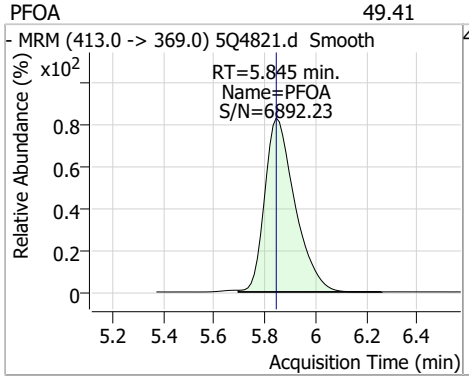
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.96	5.84	0.00	211546				

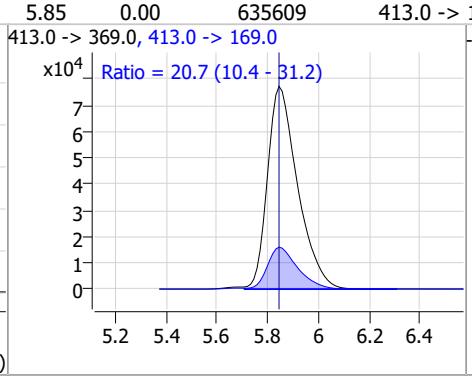


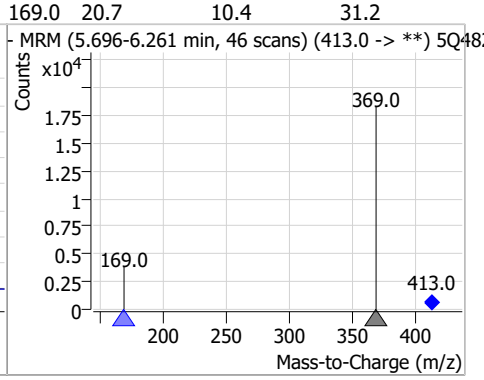




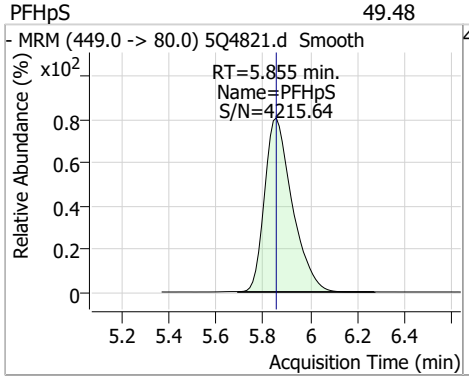
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	49.41	5.85	0.00	635609	413.0 -> 169.0	20.7	10.4	31.2

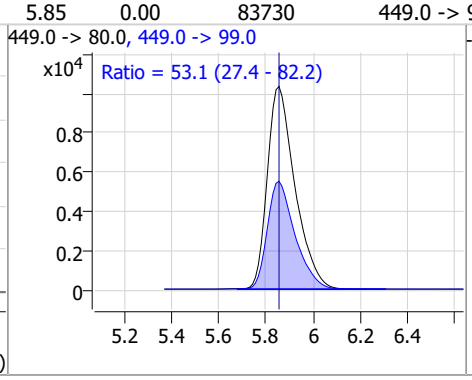


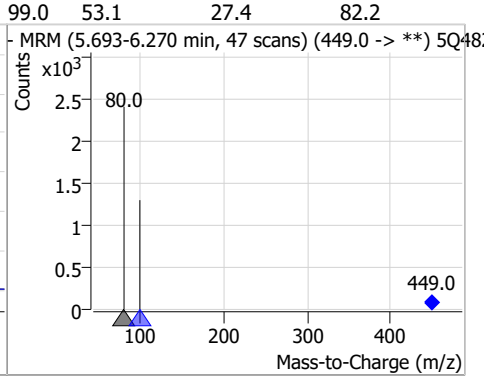




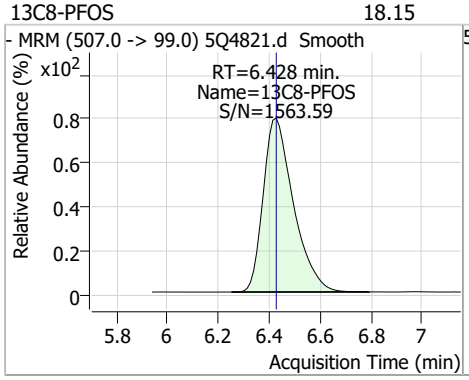
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	49.48	5.85	0.00	83730	449.0 -> 99.0	53.1	27.4	82.2

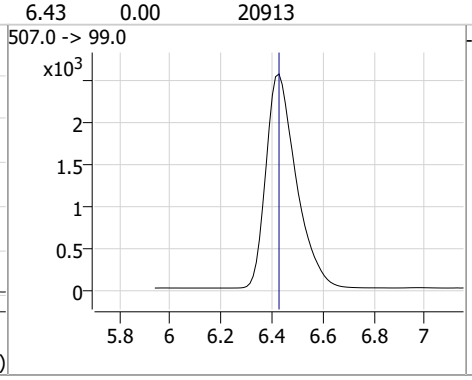


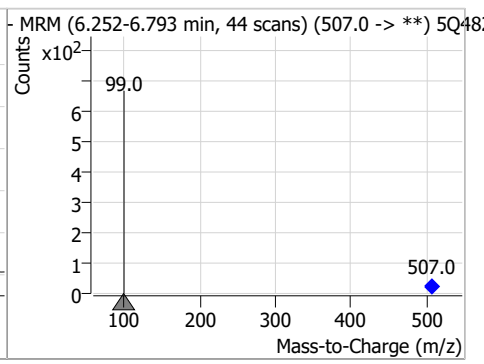




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.15	6.43	0.00	20913				

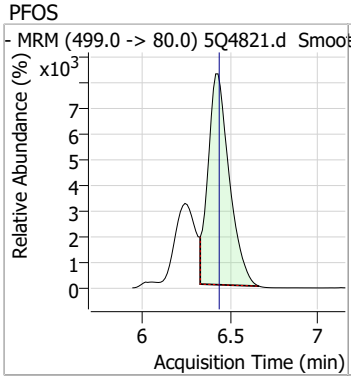


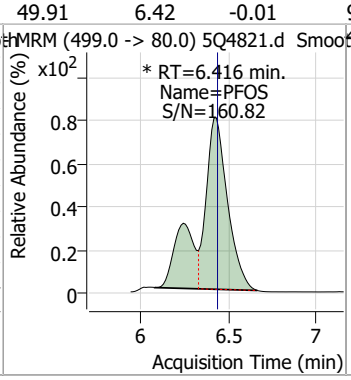


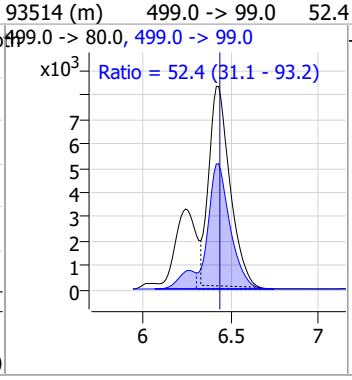


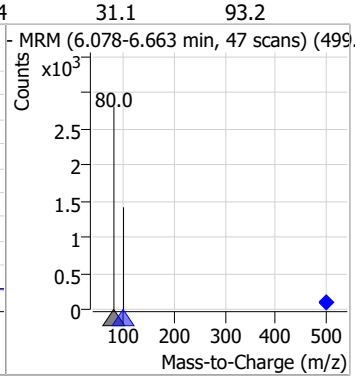
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	49.91	6.42	-0.01	93514 (m)	499.0 -> 99.0	52.4	31.1	93.2

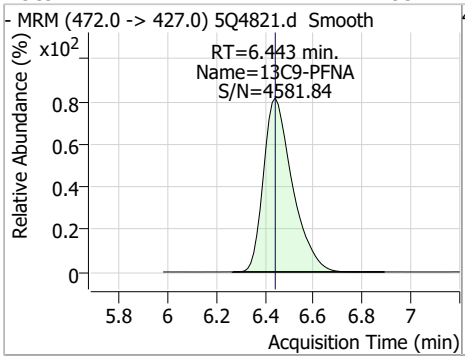


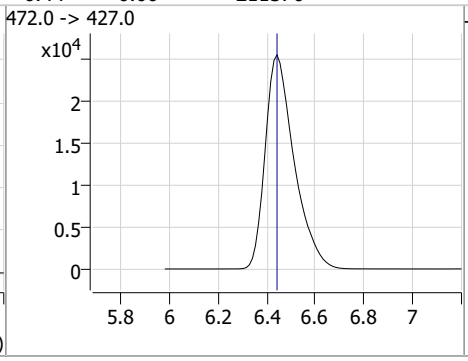


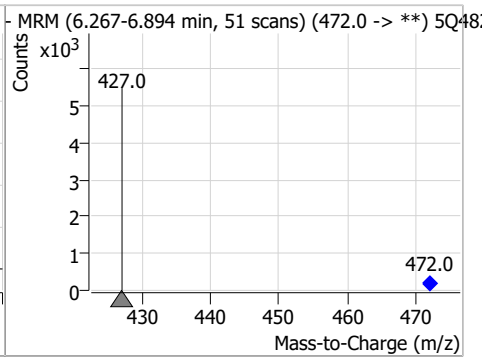




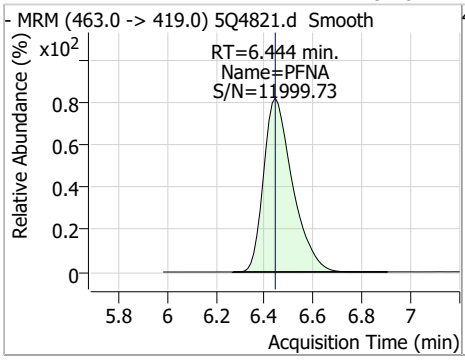
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.93	6.44	0.00	211370				

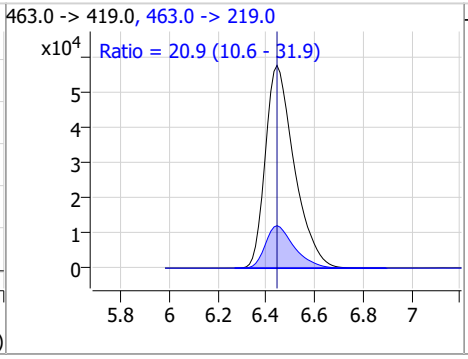


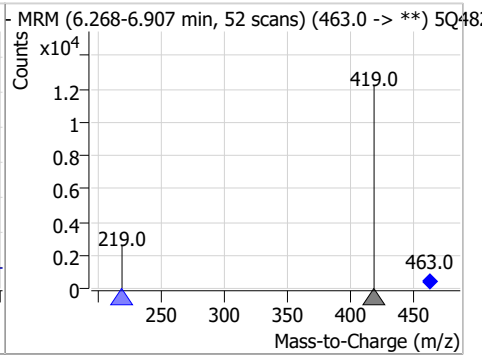




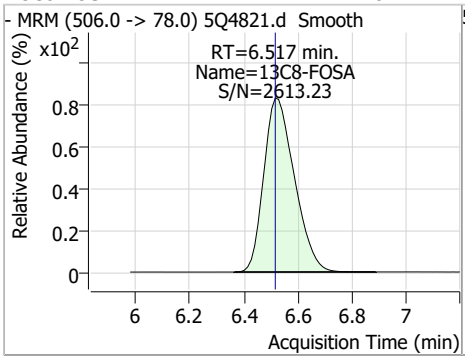
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	49.76	6.44	0.00	478673	463.0 -> 219.0	20.9	10.6	31.9

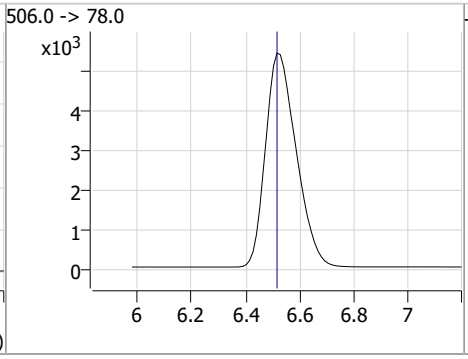


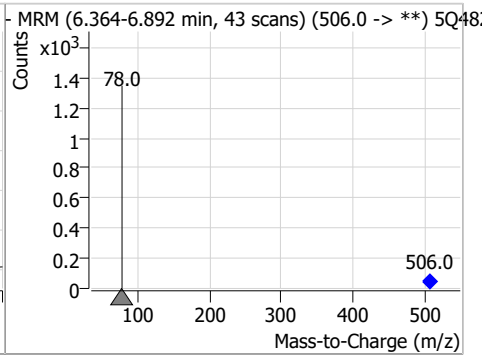




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.17	6.52	0.00	42705				

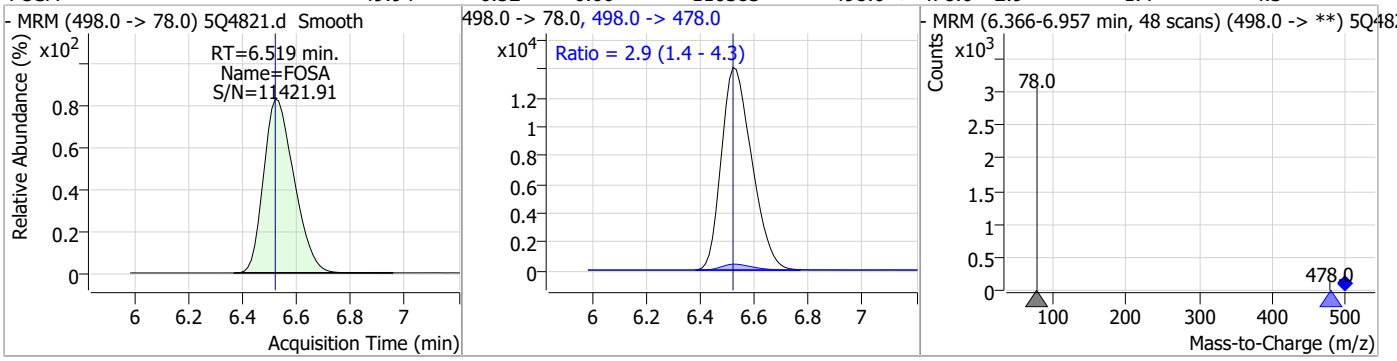




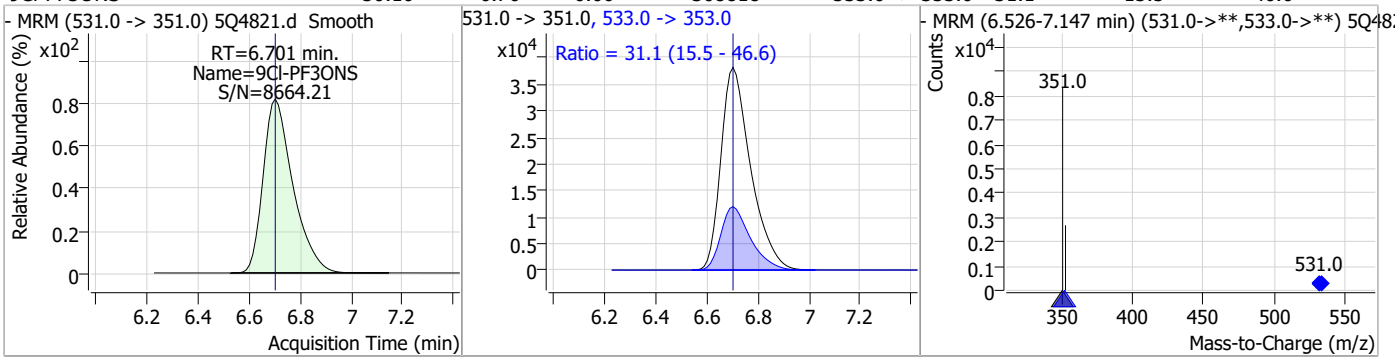


Perfluorinated Compounds by LC/MS/MS

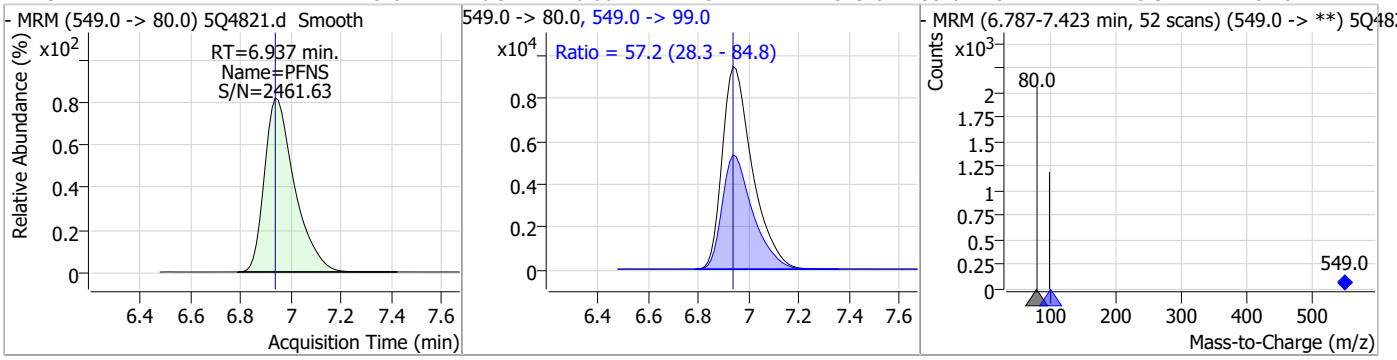
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	49.94	6.52	0.00	110383	498.0 -> 478.0	2.9	1.4	4.3



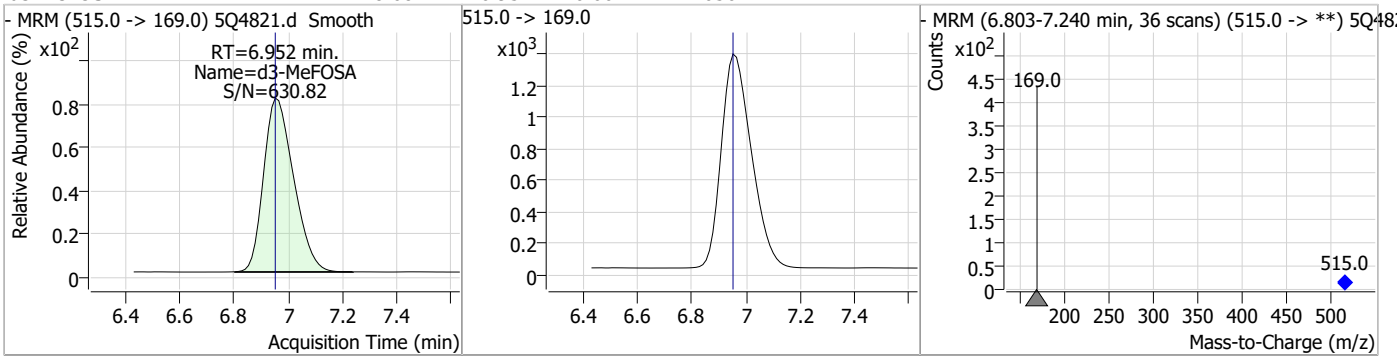
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	50.10	6.70	0.00	308818	533.0 -> 353.0	31.1	15.5	46.6



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	49.84	6.94	0.00	78741	549.0 -> 99.0	57.2	28.3	84.8

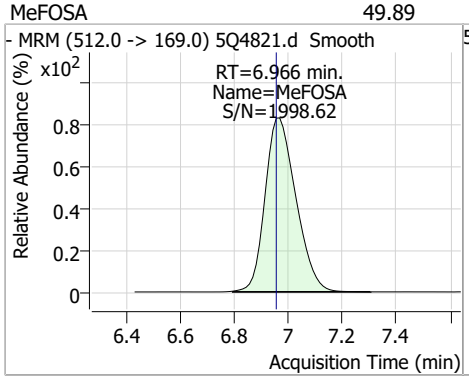


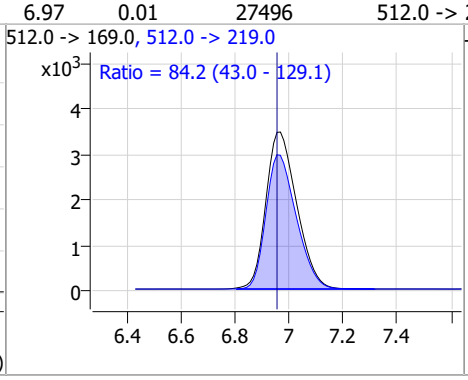
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.68	6.95	0.00	10504				

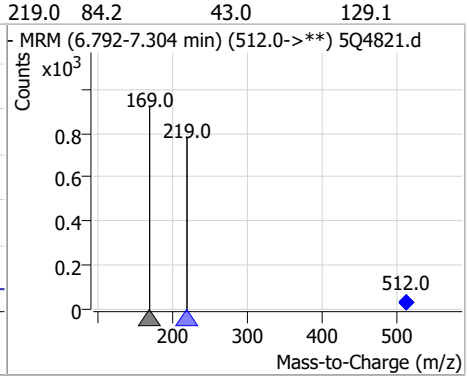


Perfluorinated Compounds by LC/MS/MS

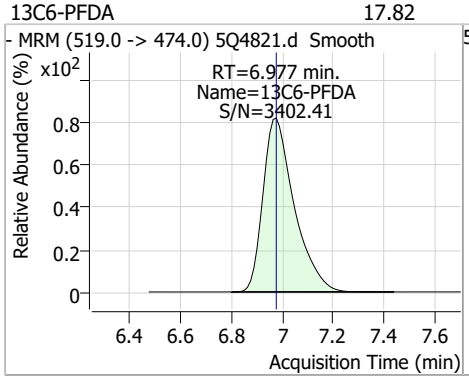
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	49.89	6.97	0.01	27496	512.0 -> 219.0	84.2	43.0	129.1

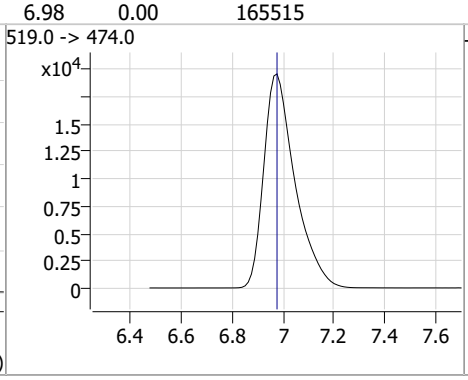


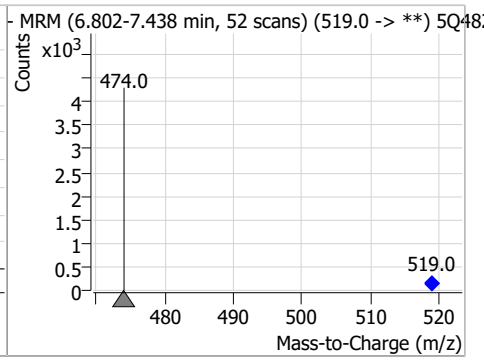




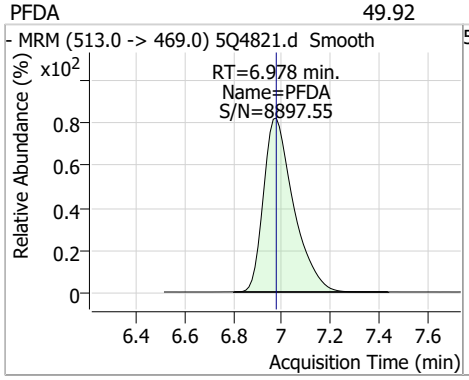
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.82	6.98	0.00	165515				

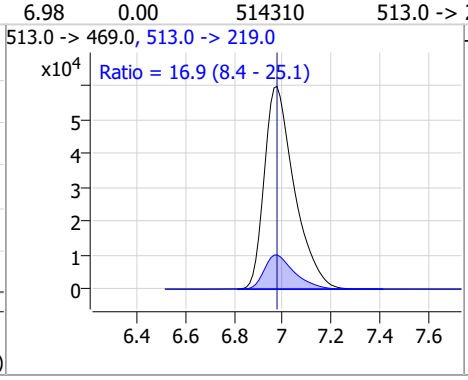


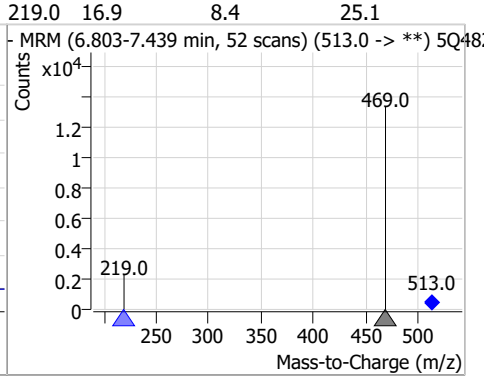




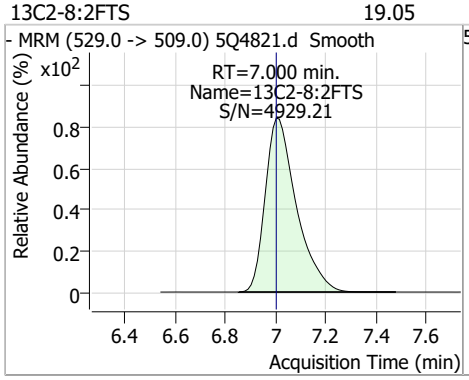
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	49.92	6.98	0.00	514310	513.0 -> 219.0	16.9	8.4	25.1

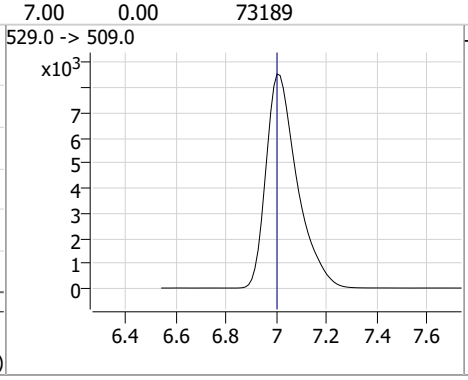


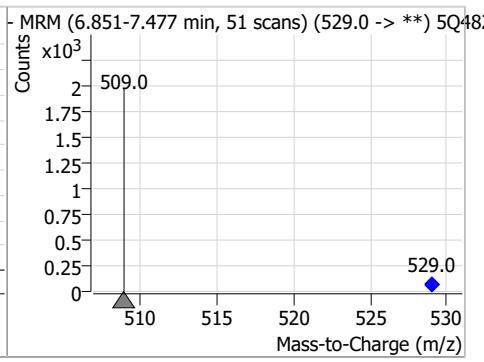




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.05	7.00	0.00	73189				

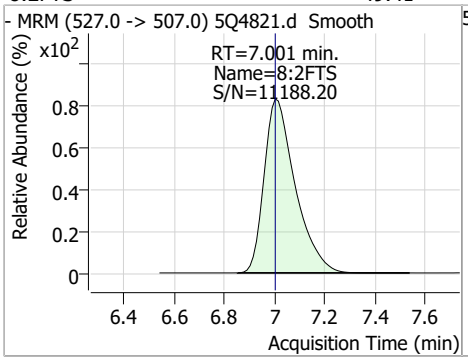


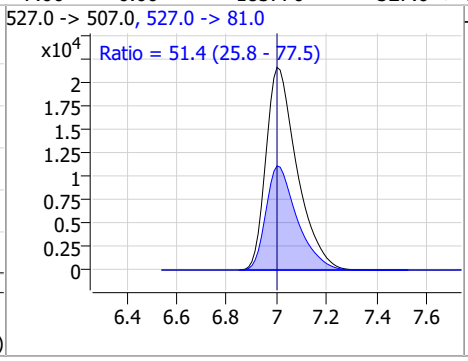


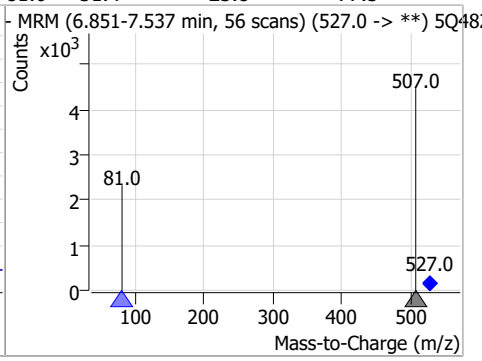


Perfluorinated Compounds by LC/MS/MS

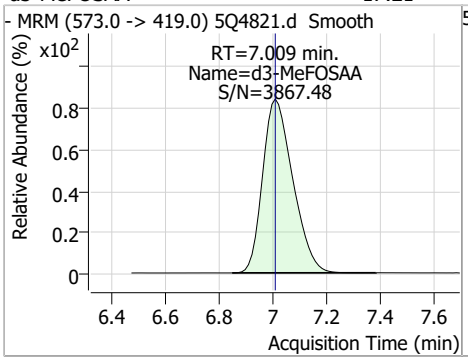
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	49.41	7.00	0.00	185770	527.0 -> 81.0	51.4	25.8	77.5

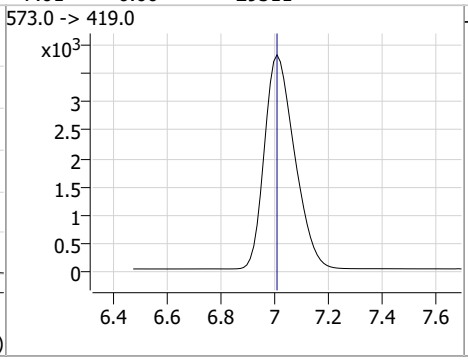


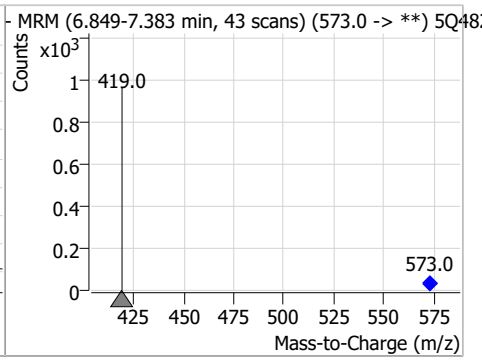




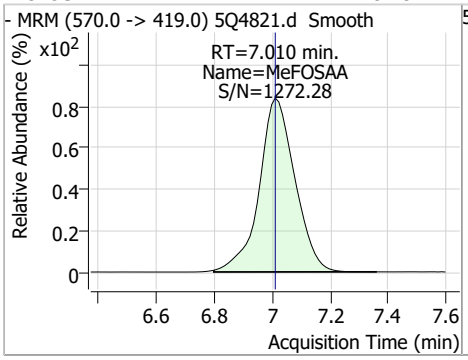
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.21	7.01	0.00	29511				

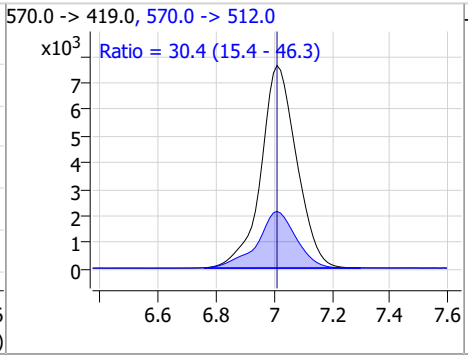


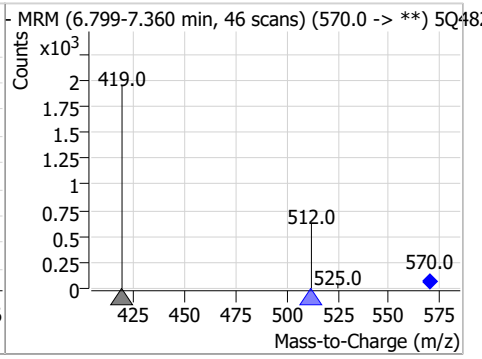




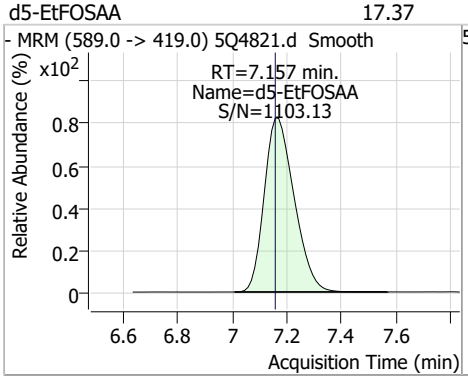
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	49.49	7.01	0.00	64975	570.0 -> 512.0	30.4	15.4	46.3

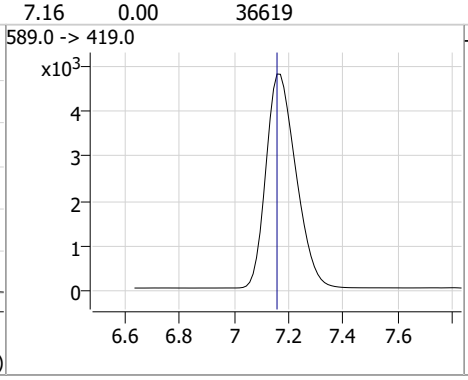


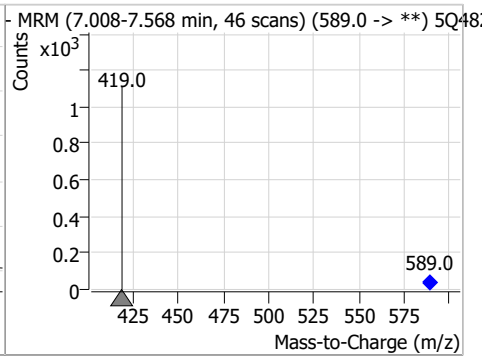




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.37	7.16	0.00	36619				

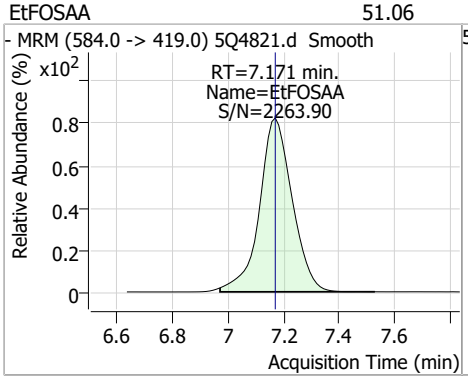


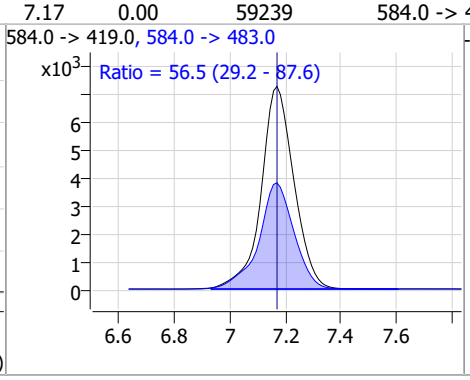


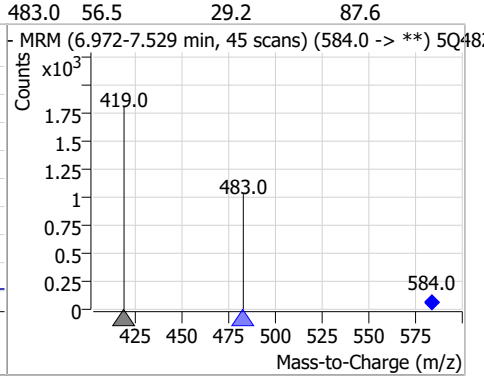


Perfluorinated Compounds by LC/MS/MS

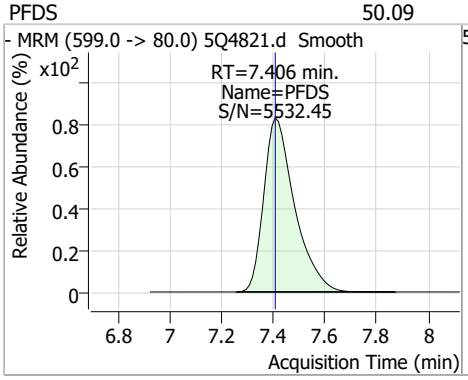
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.06	7.17	0.00	59239	584.0 -> 483.0	56.5	29.2	87.6

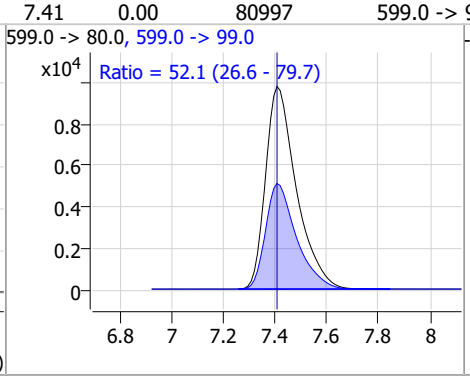


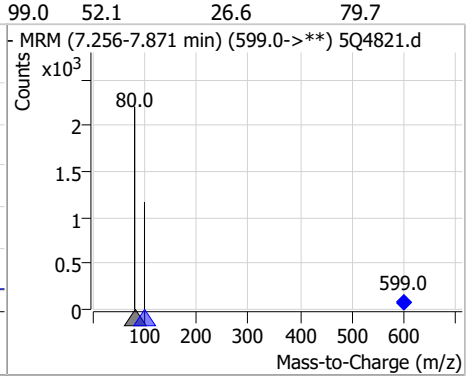




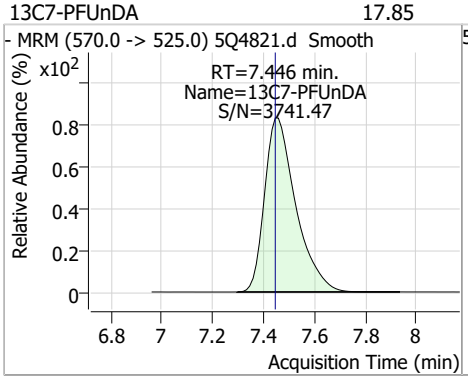
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	50.09	7.41	0.00	80997	599.0 -> 99.0	52.1	26.6	79.7

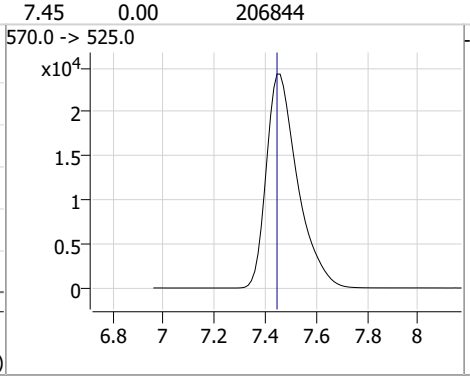


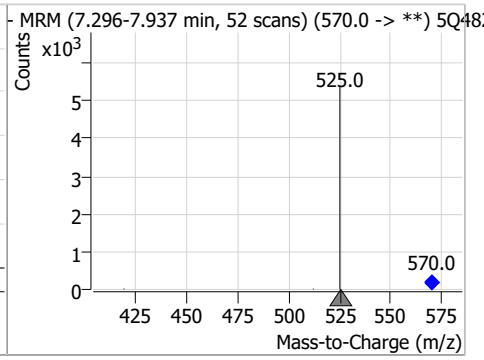




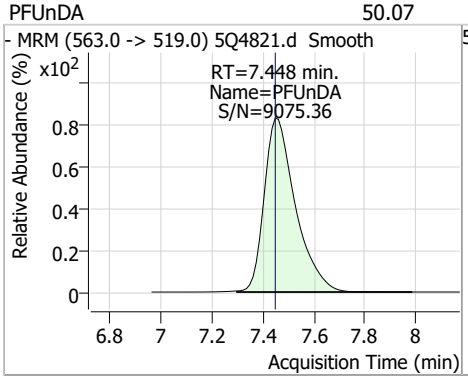
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.85	7.45	0.00	206844				

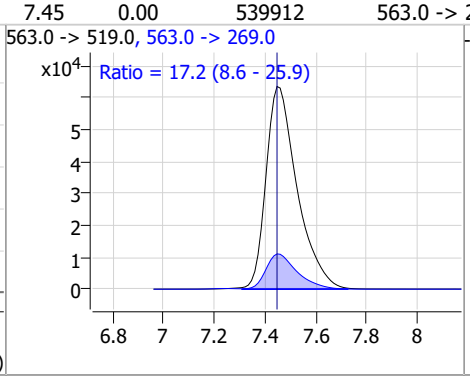


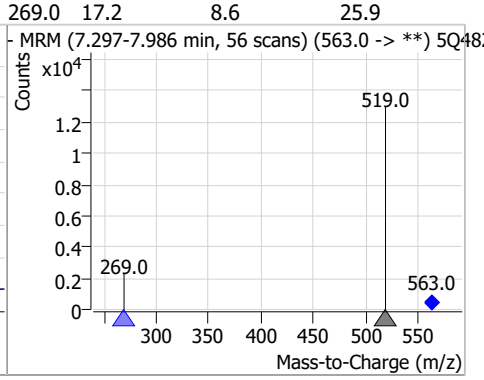




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	50.07	7.45	0.00	539912	563.0 -> 269.0	17.2	8.6	25.9

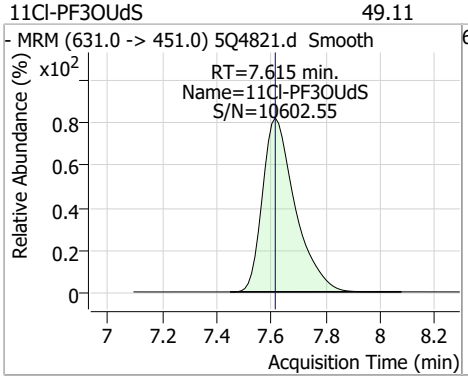


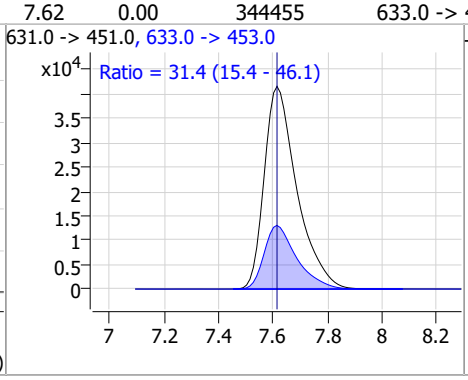


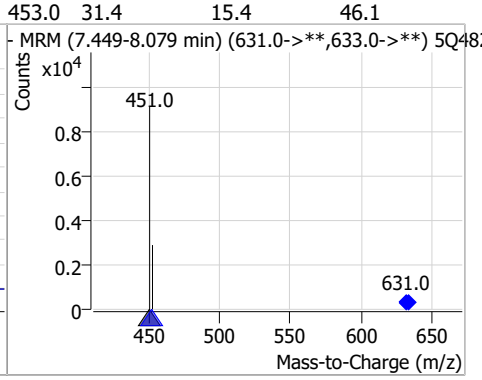


Perfluorinated Compounds by LC/MS/MS

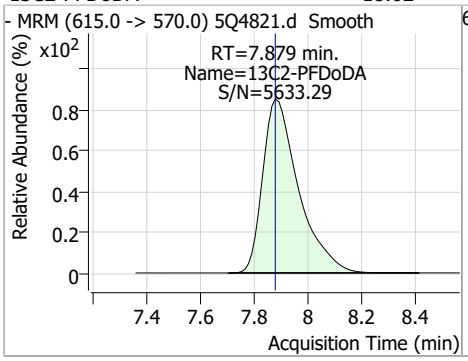
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	49.11	7.62	0.00	344455	633.0 -> 453.0	31.4	15.4	46.1

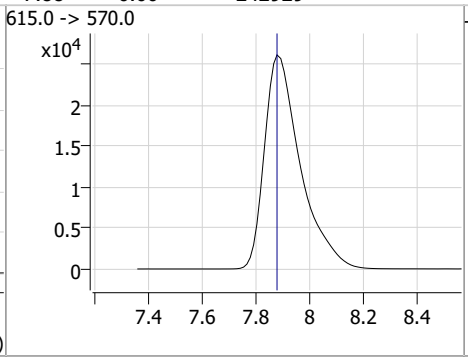


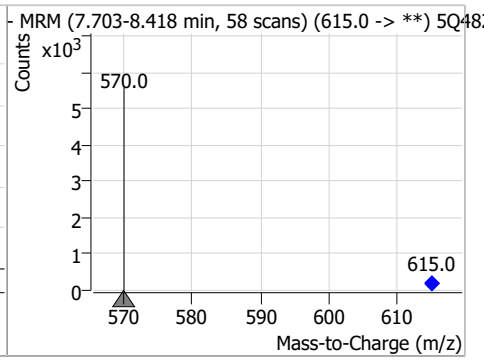




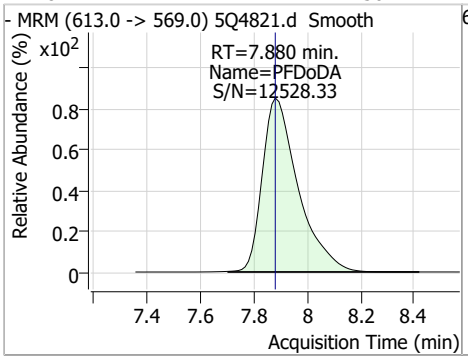
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.02	7.88	0.00	242929				

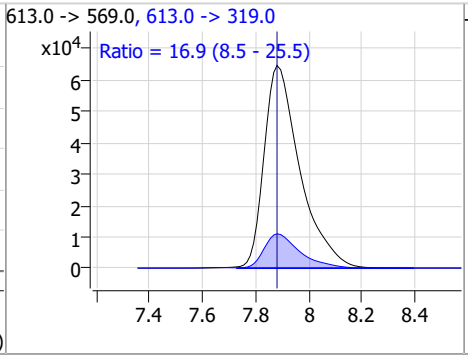


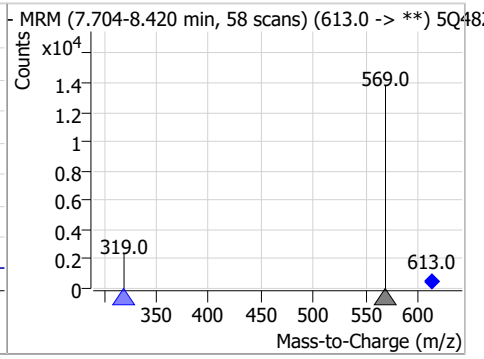




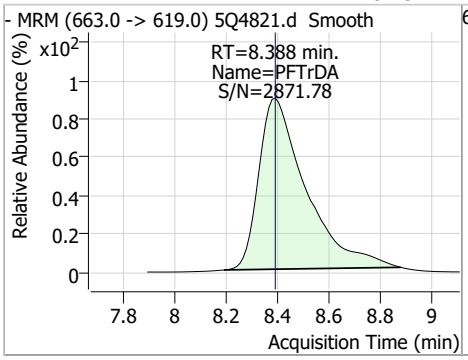
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	50.17	7.88	0.00	603729	613.0 -> 319.0	16.9	8.5	25.5

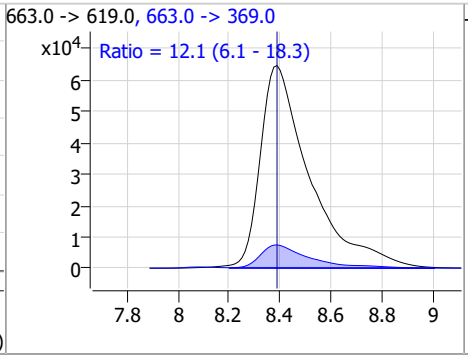


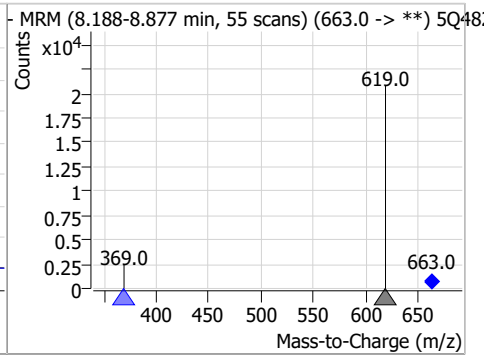




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.73	8.39	0.00	812423	663.0 -> 369.0	12.1	6.1	18.3

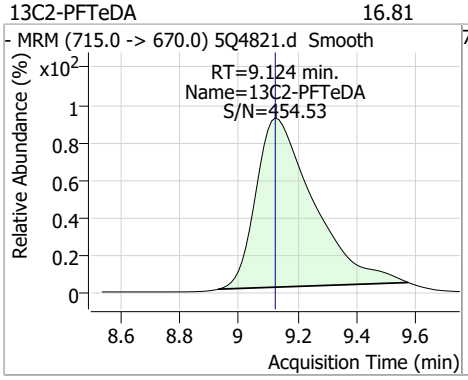


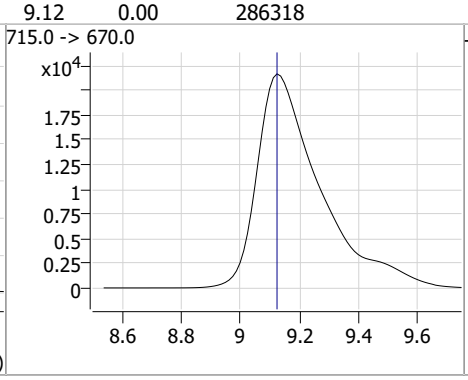


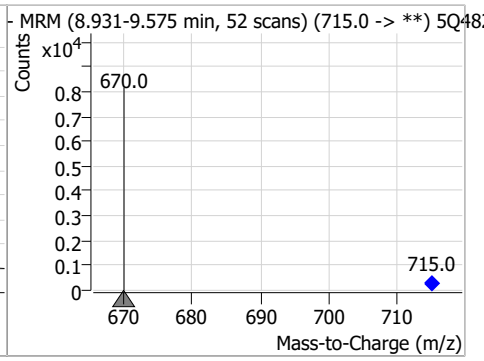


Perfluorinated Compounds by LC/MS/MS

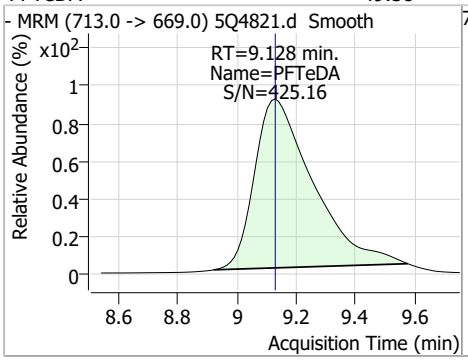
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	16.81	9.12	0.00	286318				

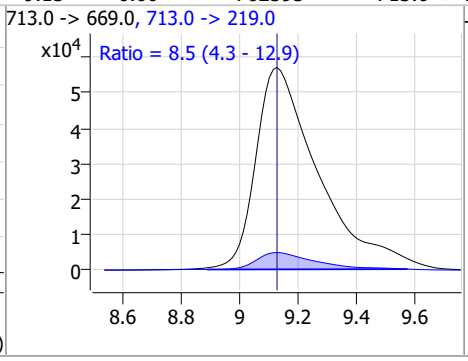


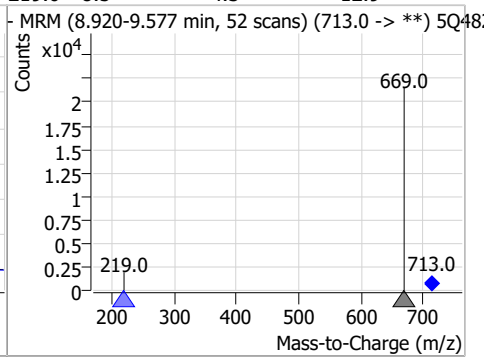




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	49.58	9.13	0.00	762393	713.0 -> 219.0	8.5	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4821.D
Injection Time: 09/17/22 13:49
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4822.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 2:04:48 PM
Sample Name : ic73-100
Vial : P1-A9
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

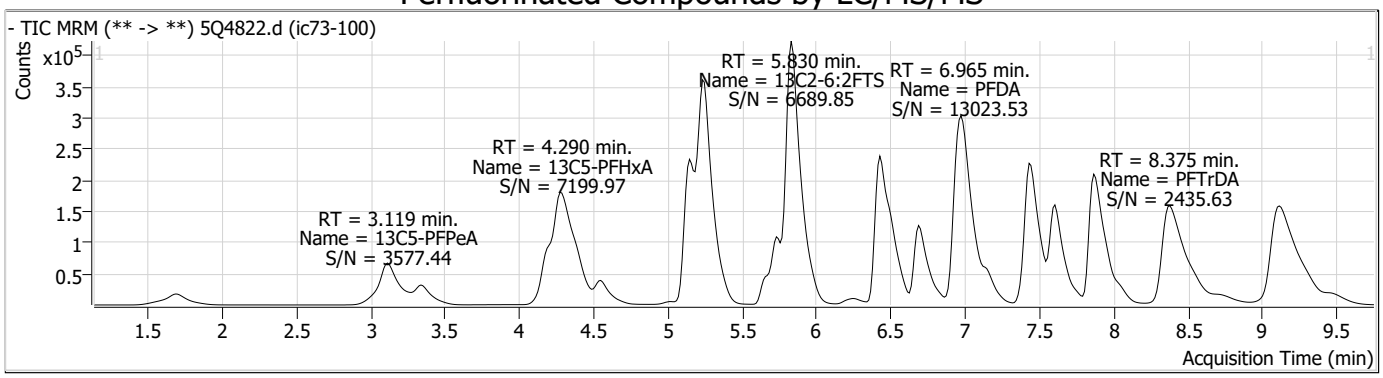
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.687	217.0 -> 172.0	68339	20.00 µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	109539	20.00 µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	173434	20.00 µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	160049	20.00 µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	211396	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	214351	20.00 µg/L	0.000
M6-PFDA	6.965	519.0 -> 474.0	161760	20.00 µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	201717	20.00 µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	246612	20.00 µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	291771	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	42808	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12233	20.00 µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12821	20.00 µg/L	0.000
M8-PFOS	6.414	507.0 -> 99.0	21048	20.00 µg/L	-0.014
M2-4:2FTS	4.199	329.0 -> 309.0	72039	20.00 µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	94549	20.00 µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	82890	20.00 µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	27071	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10733	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	9963	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	36566	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	72039	22.97 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.9%	
13C2-6:2FTS	5.830	429.0 -> 409.0	94549	22.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%	
13C2-8:2FTS	7.000	529.0 -> 509.0	82890	21.57 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%	
13C2-PFDoDA	7.879	615.0 -> 570.0	246612	18.29 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%	
13C2-PFTeDA	9.124	715.0 -> 670.0	291771	17.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 85.6%	
13C3-PFBS	3.349	302.0 -> 99.0	12233	18.30 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%	
13C3-PFHxS	5.194	402.0 -> 99.0	12821	18.71 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%	
13C4-PFBA	1.687	217.0 -> 172.0	68339	18.53 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%	
13C4-PFHpA	5.149	367.0 -> 322.0	160049	18.20 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%	
13C5-PFHxA	4.290	318.0 -> 273.0	173434	18.34 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%	
13C5-PFPeA	3.119	268.0 -> 223.0	109539	18.55 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%	
13C6-PFDA	6.965	519.0 -> 474.0	161760	17.42 µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

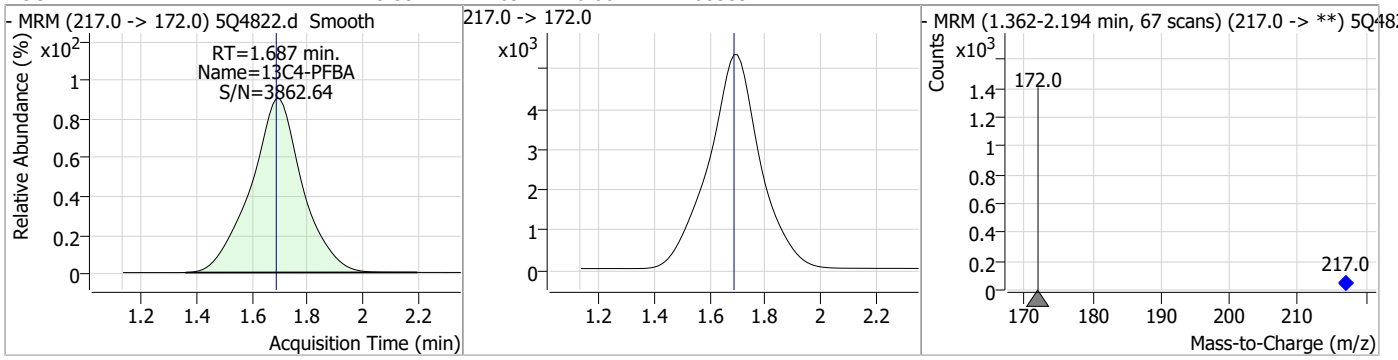
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.1%			
13C7-PFUnDA	7.446	570.0 -> 525.0	201717	17.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.0%			
13C8-FOSA	6.517	506.0 -> 78.0	42808	18.22	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.1%			
13C8-PFOA	5.845	421.0 -> 376.0	211396	17.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.7%			
13C8-PFOS	6.414	507.0 -> 99.0	21048	18.27	µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
13C9-PFNA	6.443	472.0 -> 427.0	214351	18.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	27071	15.78	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.9%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10733	18.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%			
d3-MeFOSA	6.952	515.0 -> 169.0	9963	17.72	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%			
d5-EtFOSAA	7.157	589.0 -> 419.0	36566	17.34	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	338038	86.39	µg/L		99
6:2FTS	5.831	427.0 -> 407.0	428383	86.97	µg/L		98
8:2FTS	7.001	527.0 -> 507.0	376711	88.47	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	117040	99.60	µg/L		97
FOSA	6.519	498.0 -> 78.0	225942	100.02	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	127740	100.10	µg/L		98
PFBA	1.694	213.0 -> 169.0	136272	100.21	µg/L		100
PFBS	3.342	299.0 -> 80.0	184016	99.99	µg/L		100
PFDA	6.965	513.0 -> 469.0	1007870	100.09	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	1221594	100.00	µg/L		100
PFDS	7.406	599.0 -> 80.0	164768	99.98	µg/L		99
PFHpA	5.150	363.0 -> 319.0	1094406	100.34	µg/L		100
PFHpS	5.855	449.0 -> 80.0	170993	100.40	µg/L		98
PFHxA	4.291	313.0 -> 269.0	864129	100.42	µg/L		100
PFHxS	5.195	399.0 -> 80.0	186859	100.49	µg/L	m	97
PFNA	6.444	463.0 -> 419.0	978677	100.32	µg/L		100
PFNS	6.937	549.0 -> 80.0	161336	100.04	µg/L		99
PFOA	5.845	413.0 -> 369.0	1291218	100.44	µg/L		100
PFOS	6.416	499.0 -> 80.0	188701	100.07	µg/L	m	89
PFPeA	3.122	263.0 -> 219.0	526796	100.43	µg/L		100
PFPeS	4.398	349.0 -> 80.0	147397	100.38	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	1579088	100.78	µg/L		100
PFTrDA	8.375	663.0 -> 619.0	1662756	100.27	µg/L		100
PFUnDA	7.448	563.0 -> 519.0	1065193	99.99	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	716341	100.60	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	634400	99.98	µg/L		99
ADONA	5.248	377.0 -> 251.0	1381803	100.19	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	189706	99.64	µg/L		100
MeFOSA	6.954	512.0 -> 169.0	52187	99.83	µg/L		99
4-PFECHS	5.741	461.0 -> 381.0	379816	99.97	µg/L		99
FBSA	4.343	298.0 -> 78.0	298557	99.74	µg/L		100
FHxSA	5.674	398.0 -> 78.0	249332	100.39	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

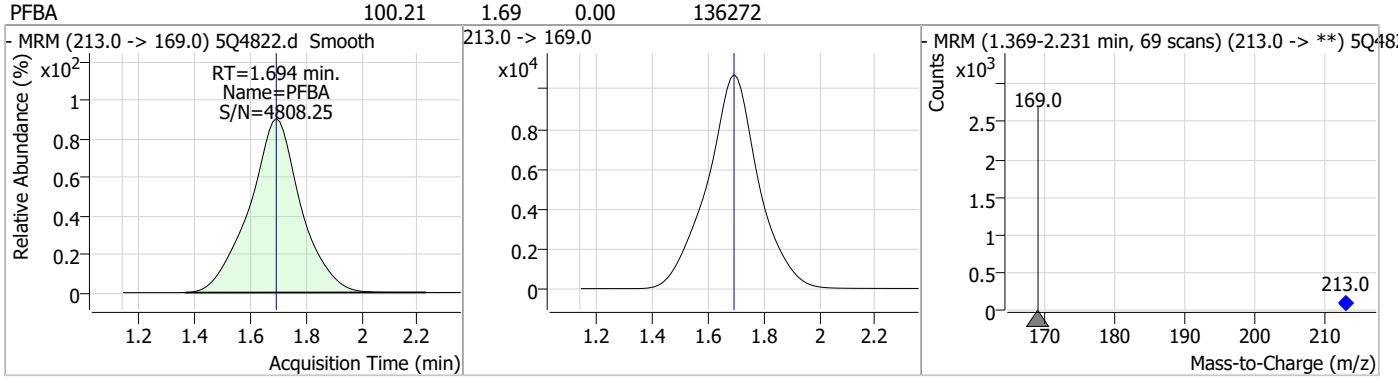
Perfluorinated Compounds by LC/MS/MS



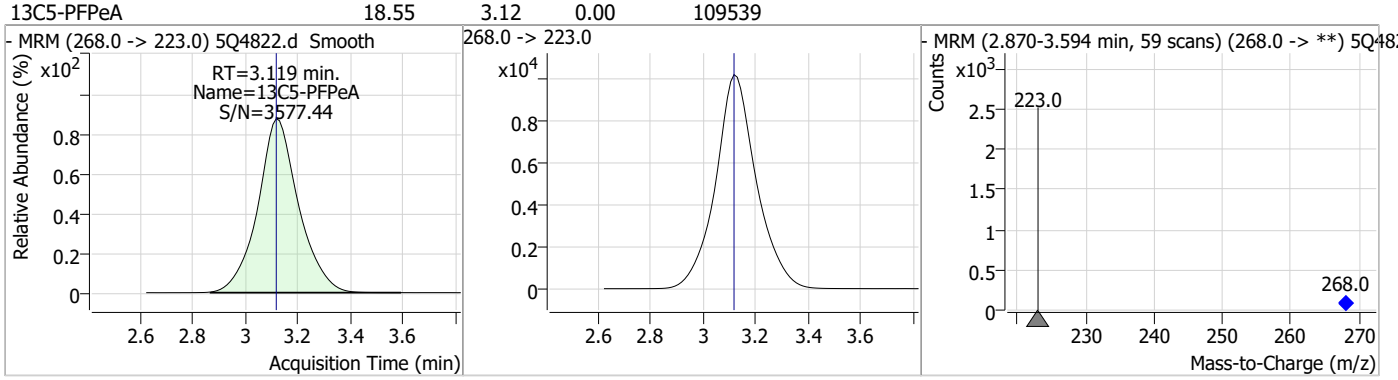
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.53	1.69	0.00	68339				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.21	1.69	0.00	136272				

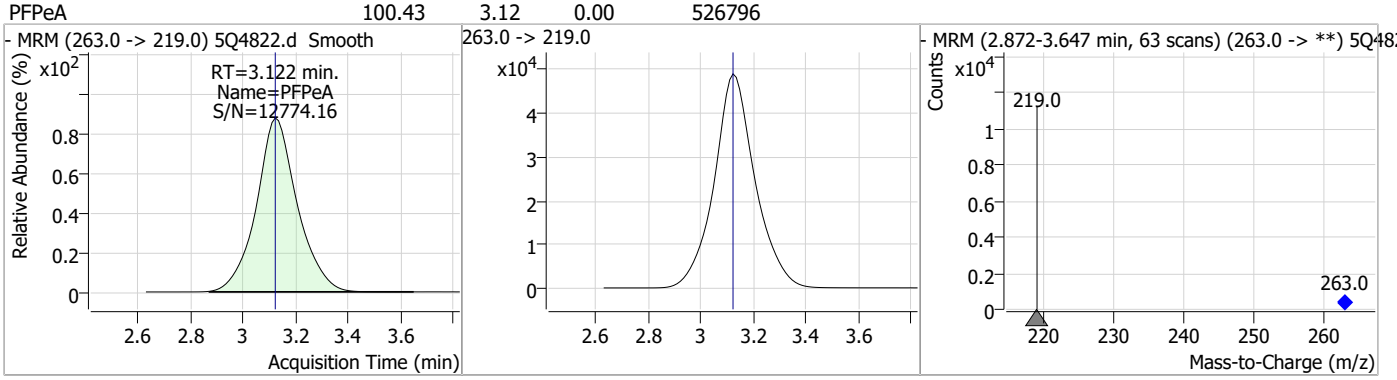


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.55	3.12	0.00	109539				

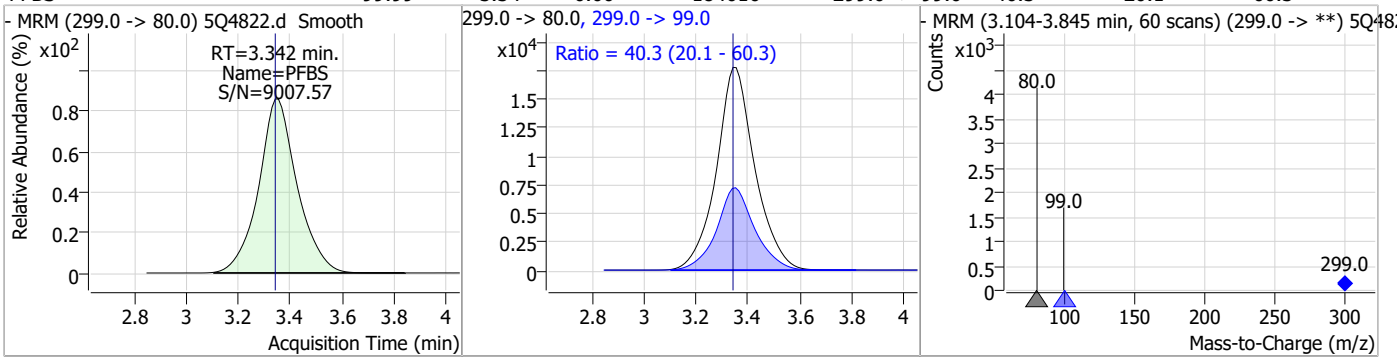


Perfluorinated Compounds by LC/MS/MS

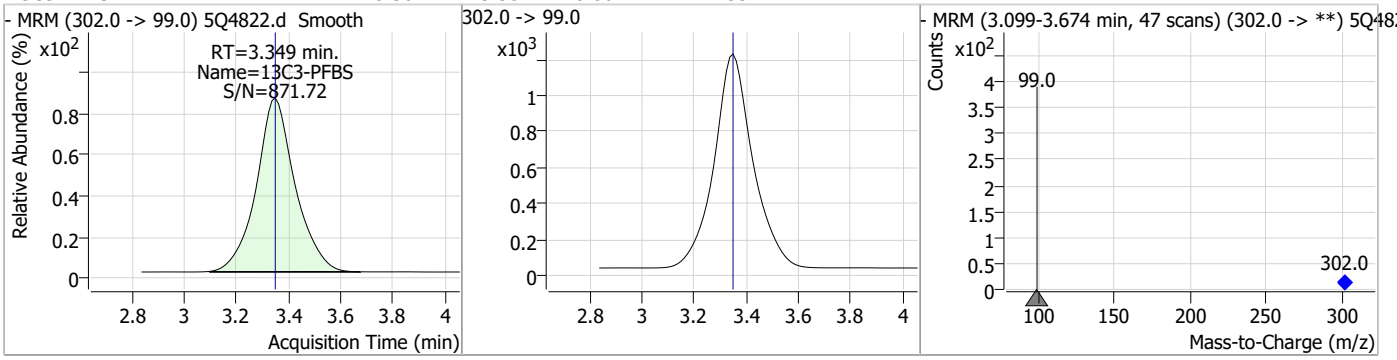
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.43	3.12	0.00	526796				



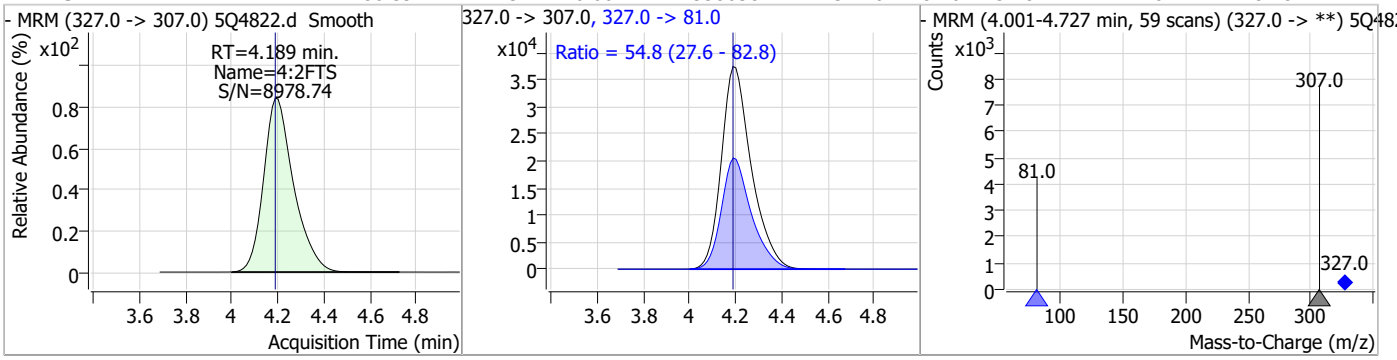
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	99.99	3.34	0.00	184016	299.0 -> 99.0	40.3	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.30	3.35	0.00	12233				

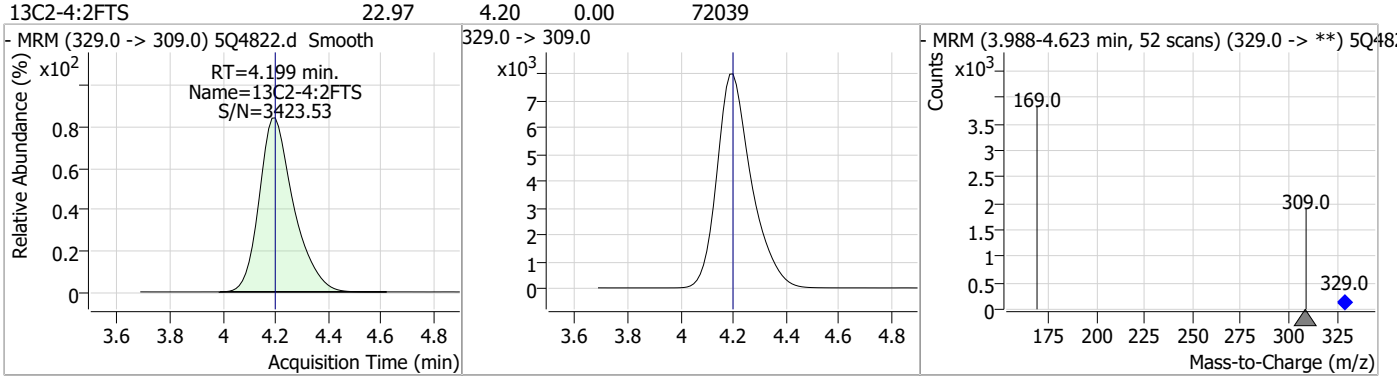


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	86.39	4.19	0.00	338038	327.0 -> 81.0	54.8	27.6	82.8

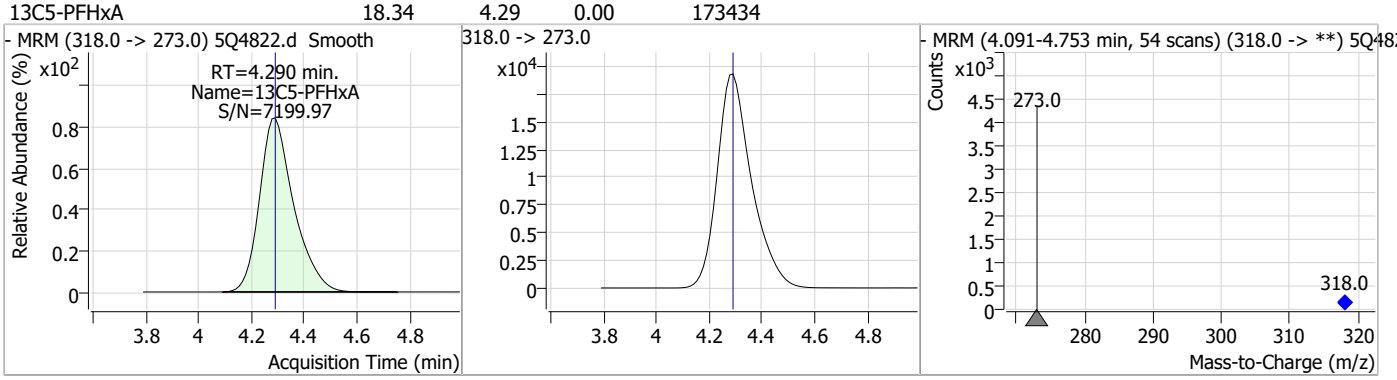


Perfluorinated Compounds by LC/MS/MS

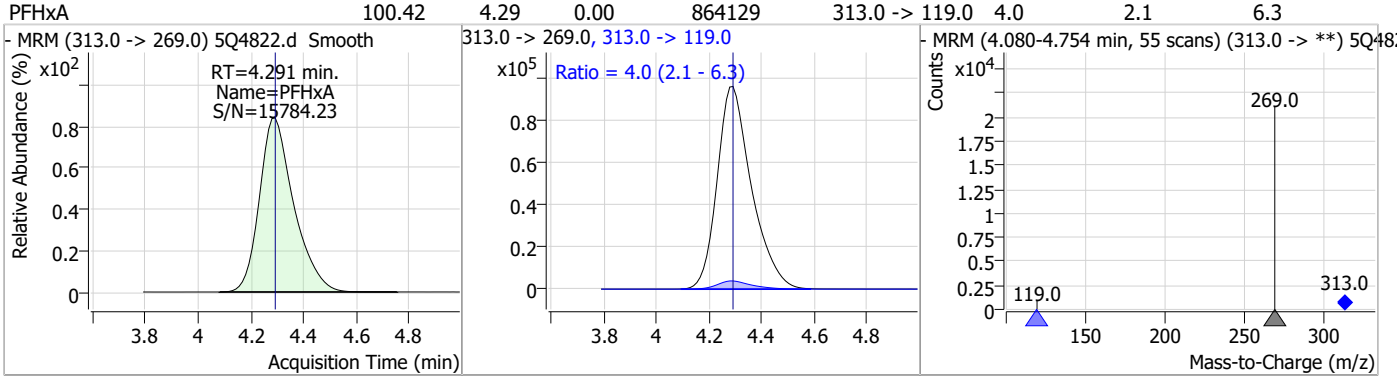
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.97	4.20	0.00	72039				



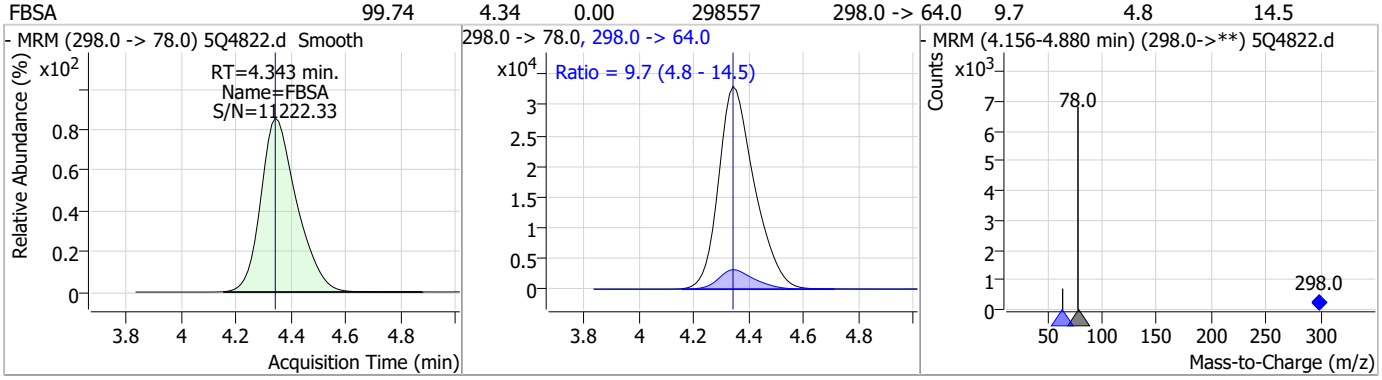
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.34	4.29	0.00	173434				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	100.42	4.29	0.00	864129	313.0 -> 119.0	4.0	2.1	6.3

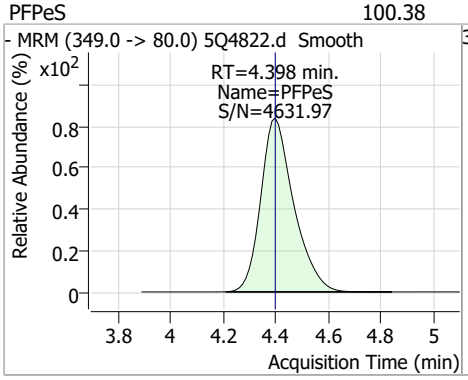


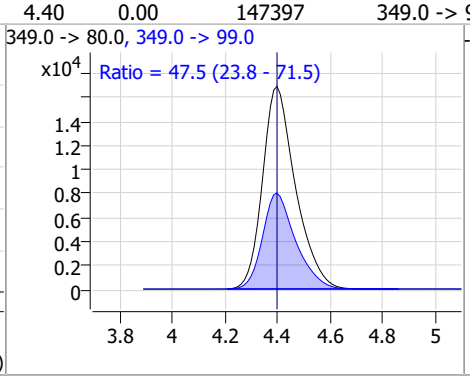
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	99.74	4.34	0.00	298557	298.0 -> 64.0	9.7	4.8	14.5

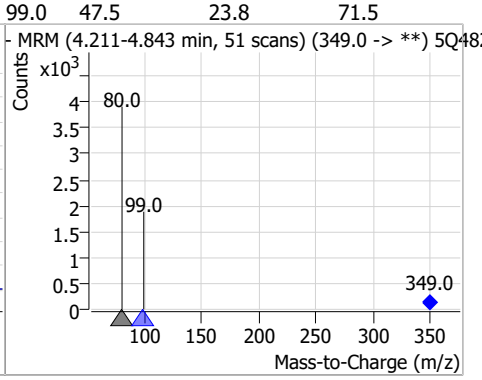


Perfluorinated Compounds by LC/MS/MS

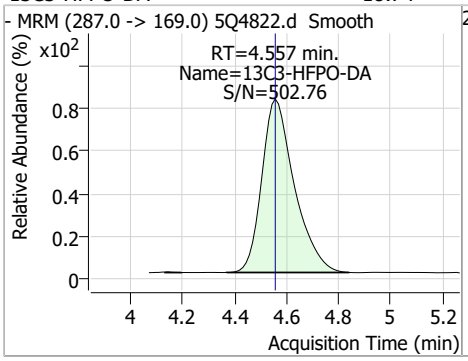
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.38	4.40	0.00	147397	349.0 -> 99.0	47.5	23.8	71.5

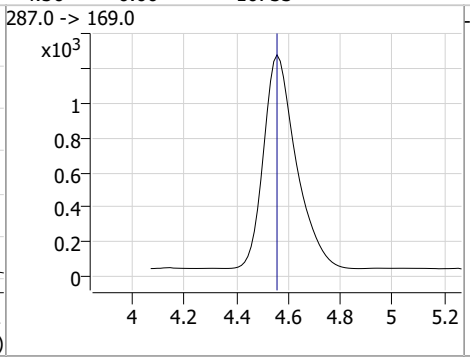


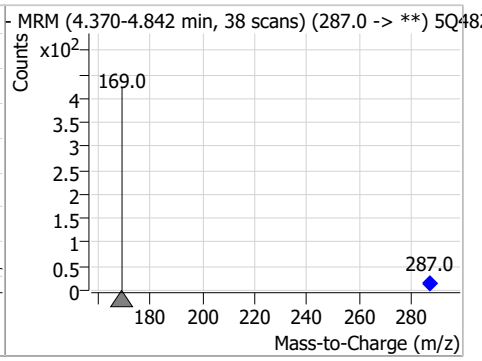




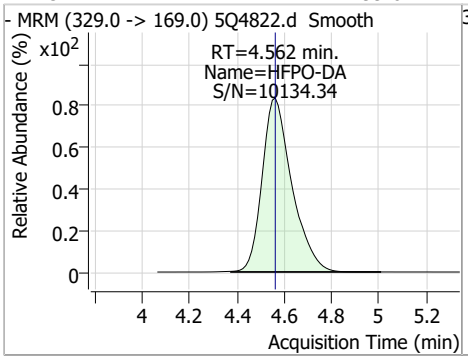
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.74	4.56	0.00	10733				

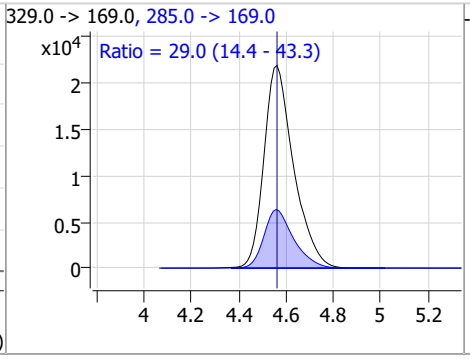


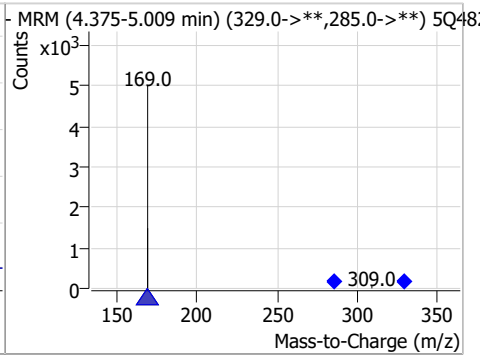




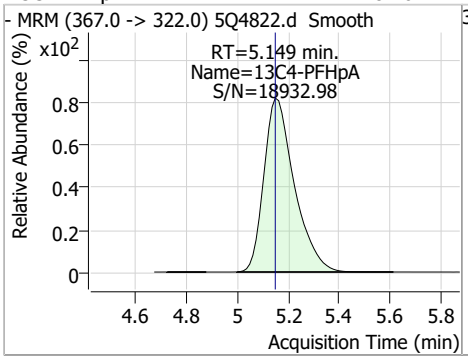
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	99.64	4.56	0.00	189706	285.0 -> 169.0	29.0	14.4	43.3

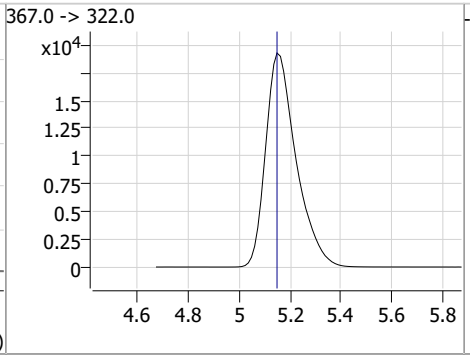


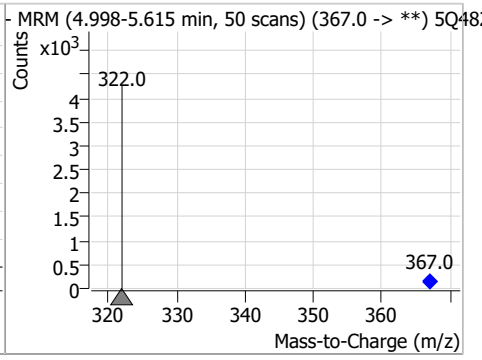




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.20	5.15	0.00	160049				

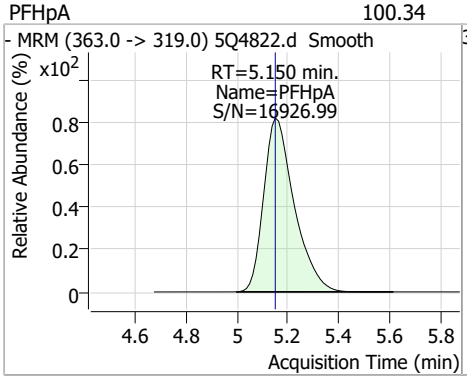


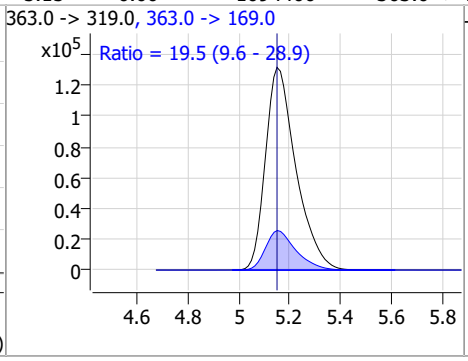


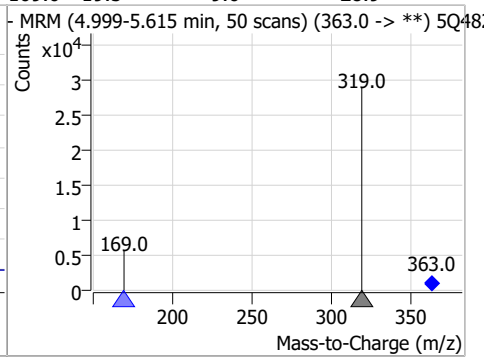


Perfluorinated Compounds by LC/MS/MS

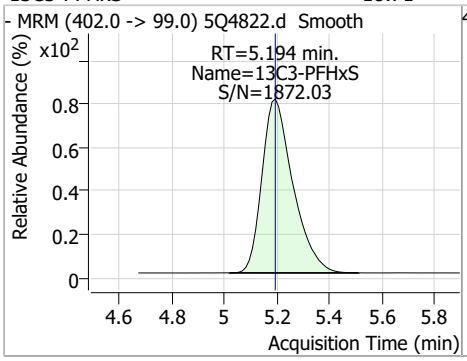
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.34	5.15	0.00	1094406	363.0 -> 169.0	19.5	9.6	28.9

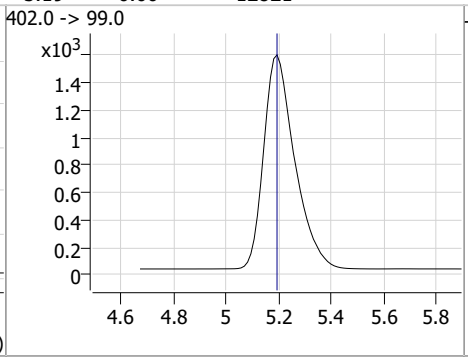


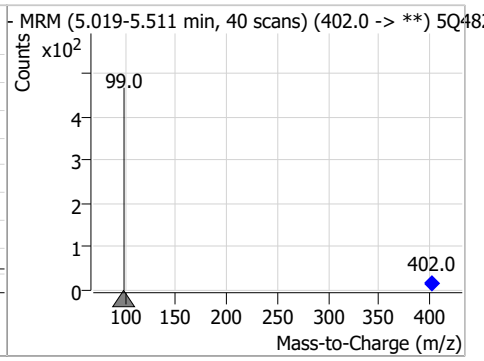




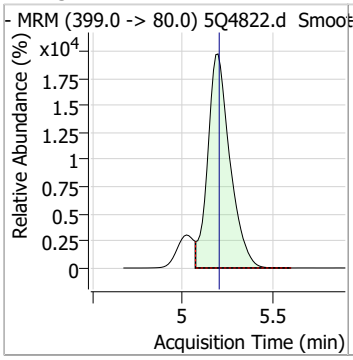
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.71	5.19	0.00	12821				

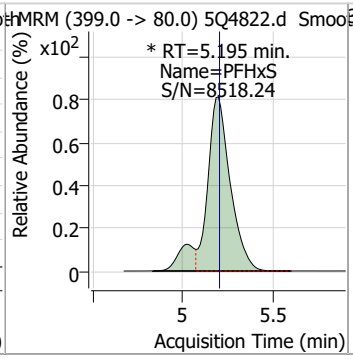


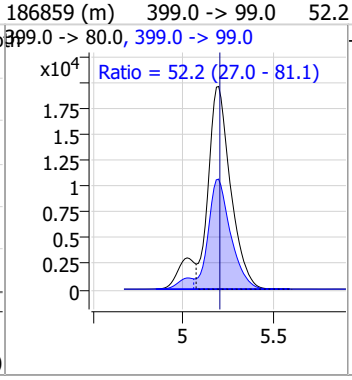


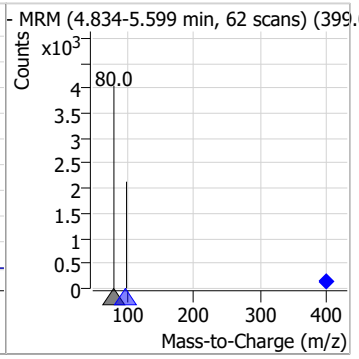


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	100.49	5.20	0.00	186859 (m)	399.0 -> 99.0	52.2	27.0	81.1

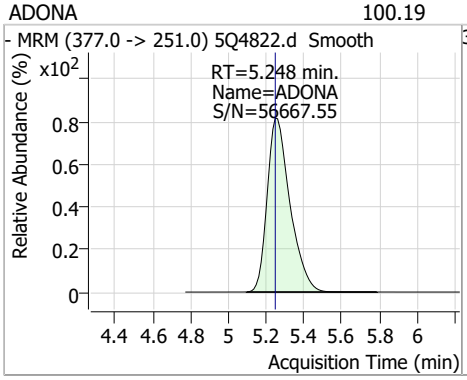


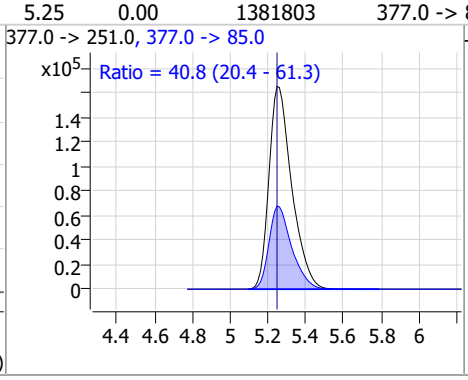


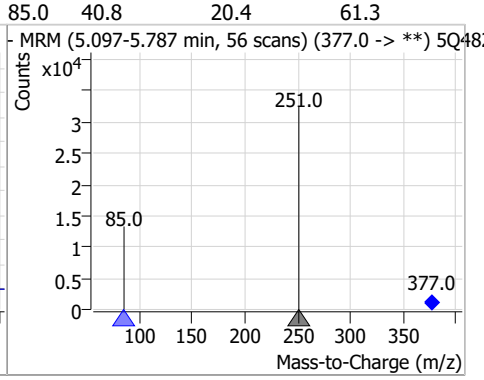




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	100.19	5.25	0.00	1381803	377.0 -> 85.0	40.8	20.4	61.3

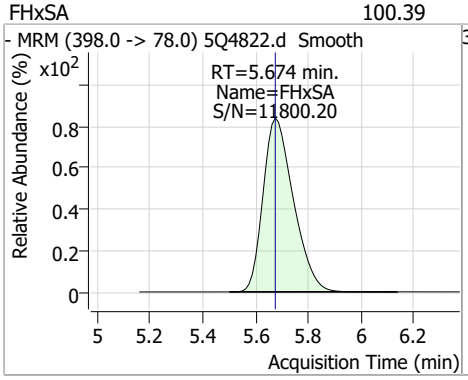


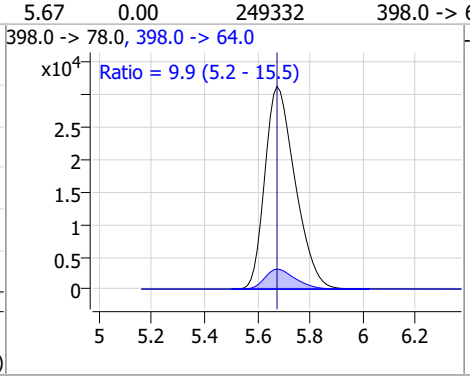


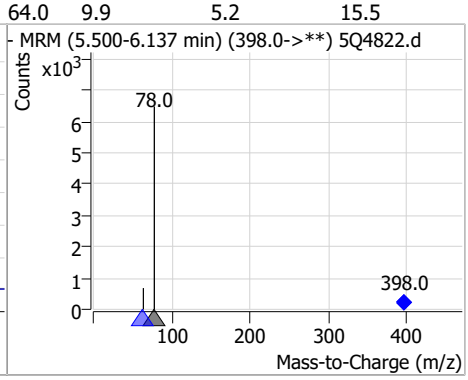


Perfluorinated Compounds by LC/MS/MS

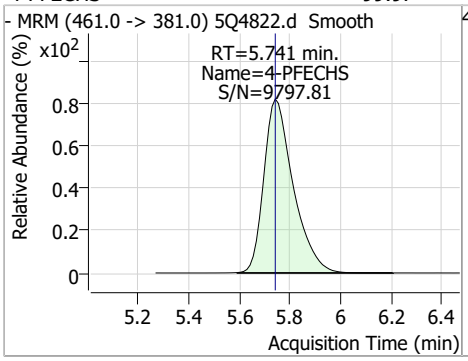
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	100.39	5.67	0.00	249332	398.0 -> 64.0	9.9	5.2	15.5

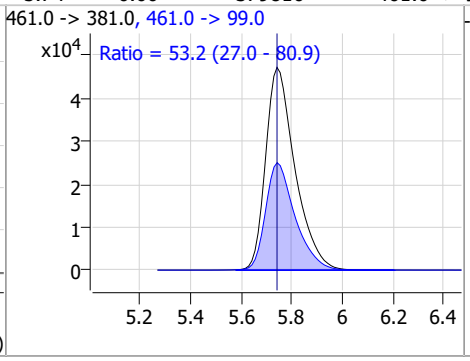


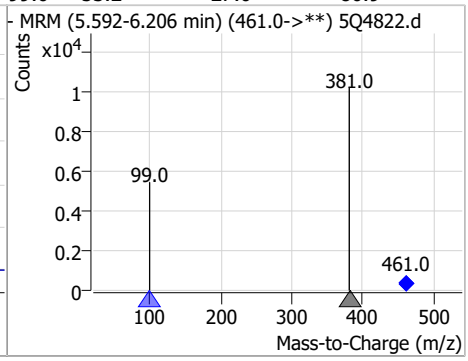




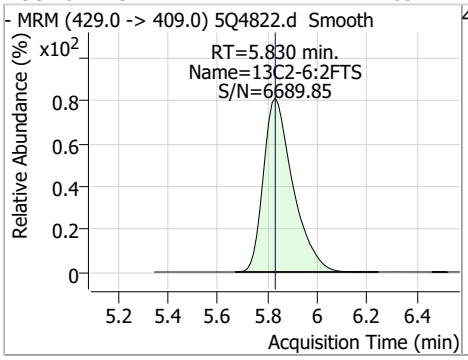
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	99.97	5.74	0.00	379816	461.0 -> 99.0	53.2	27.0	80.9

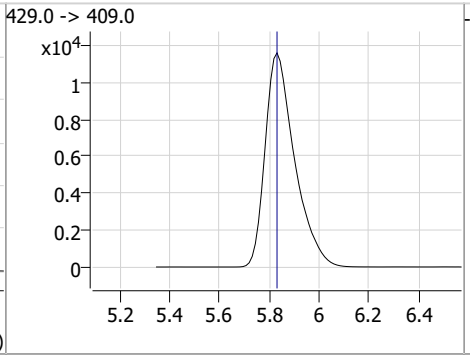


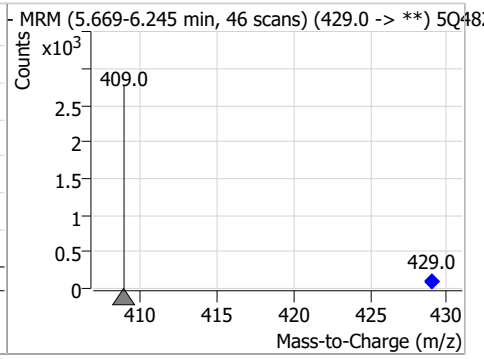




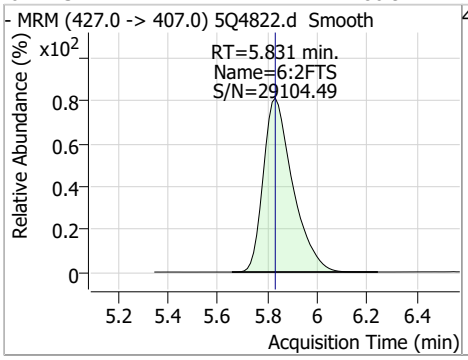
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.05	5.83	0.00	94549				

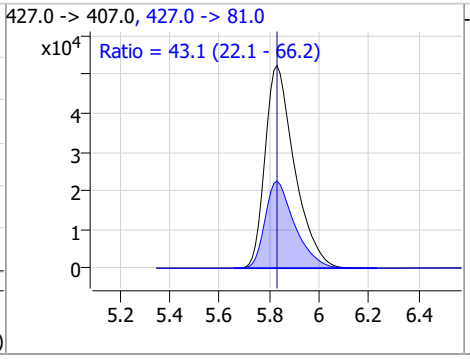


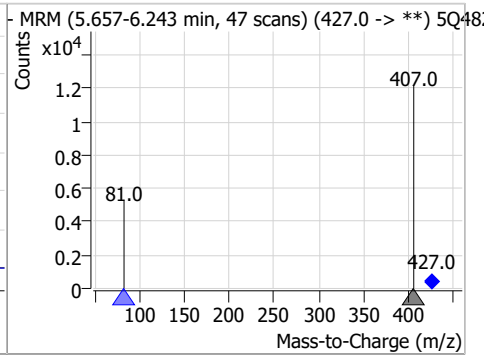




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	86.97	5.83	0.00	428383	427.0 -> 81.0	43.1	22.1	66.2

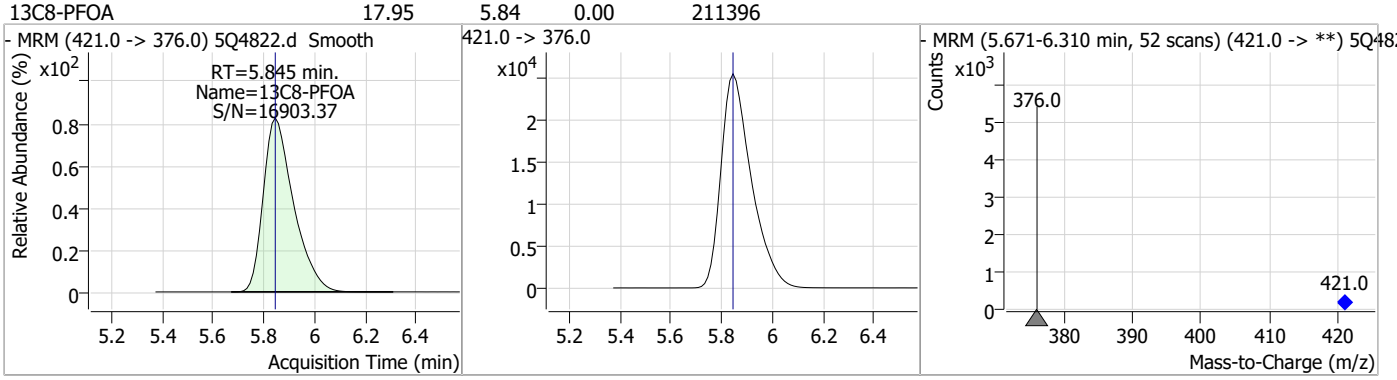




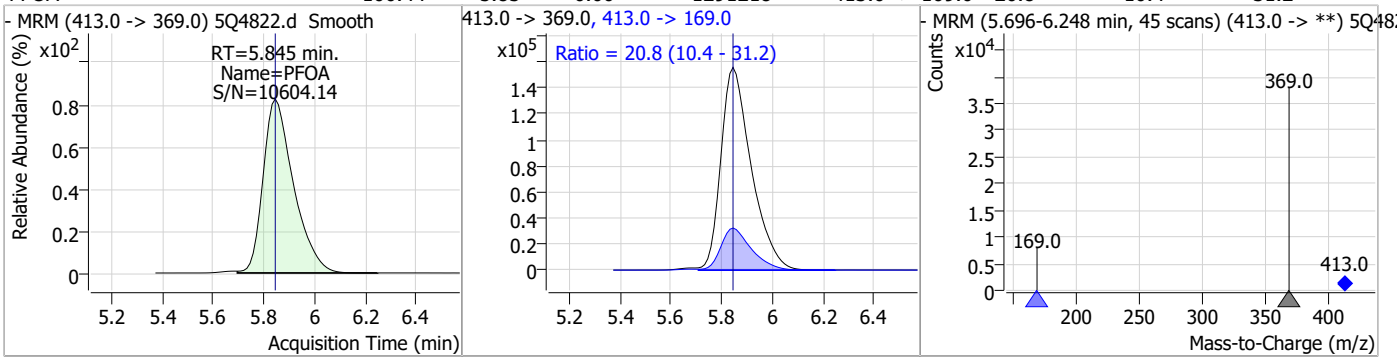


Perfluorinated Compounds by LC/MS/MS

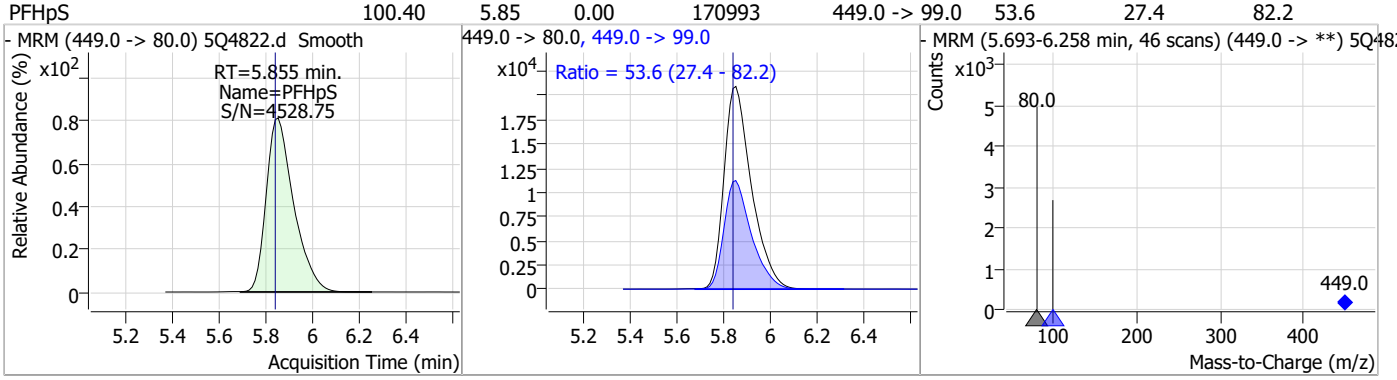
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.95	5.84	0.00	211396				



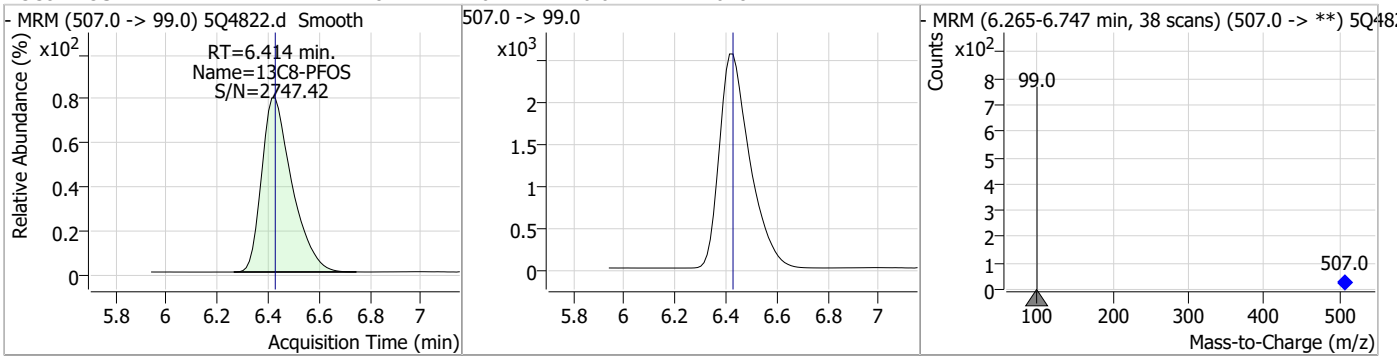
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.44	5.85	0.00	1291218	413.0 -> 169.0	20.8	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	100.40	5.85	0.00	170993	449.0 -> 99.0	53.6	27.4	82.2

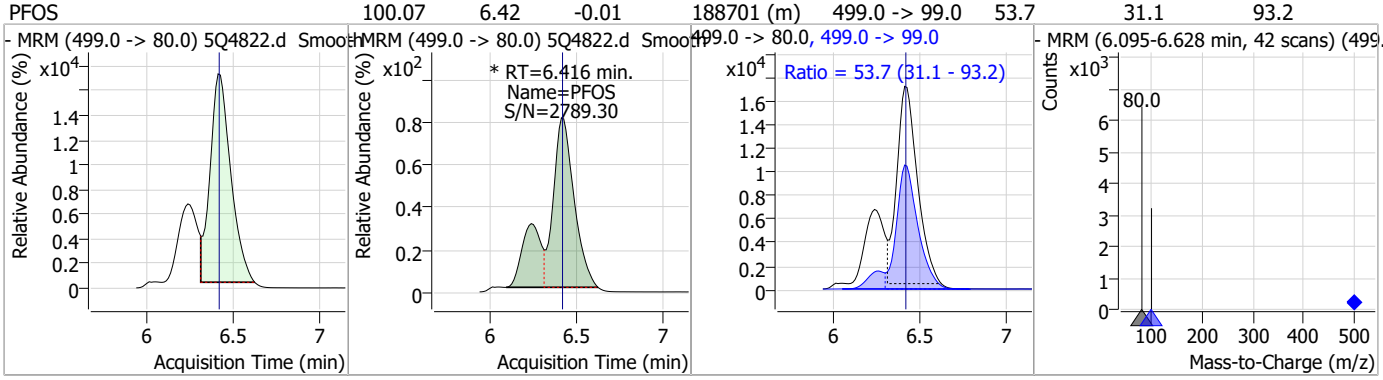


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.27	6.41	-0.01	21048				

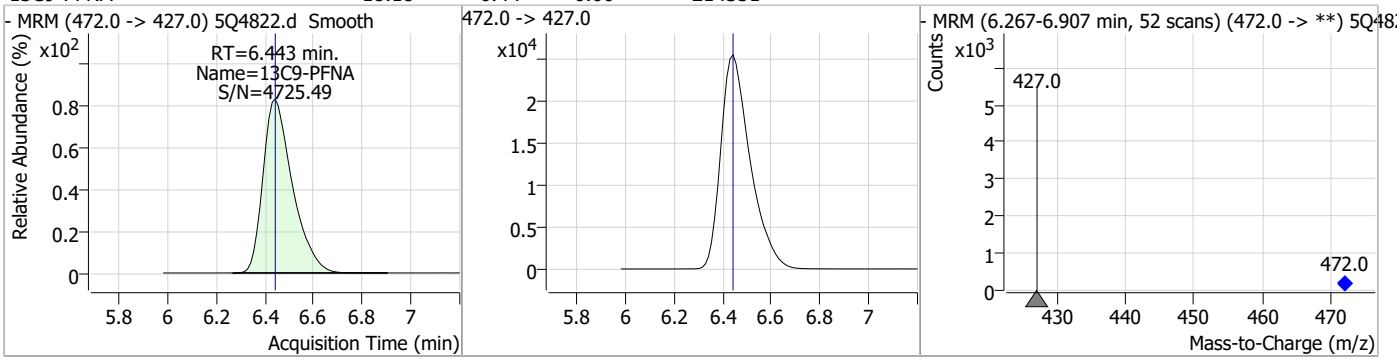


Perfluorinated Compounds by LC/MS/MS

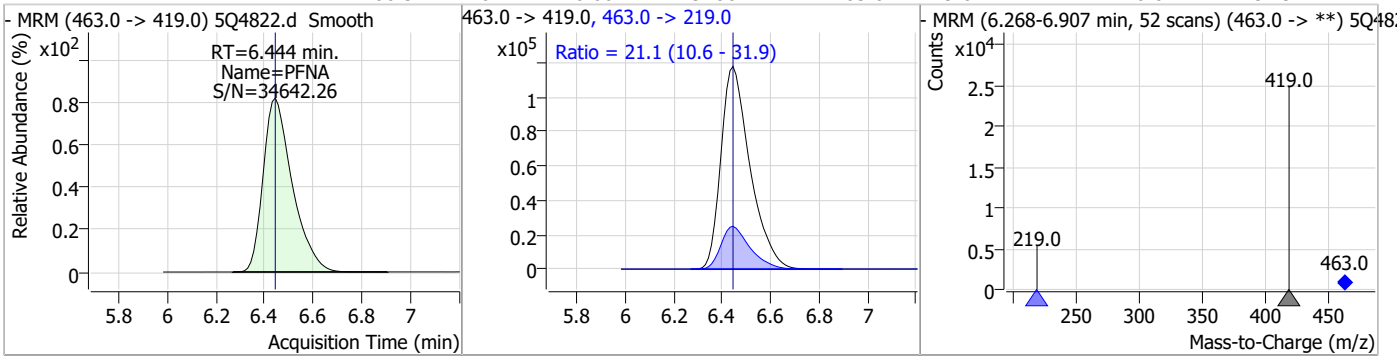
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	100.07	6.42	-0.01	188701 (m)	499.0 -> 99.0	53.7	31.1	93.2



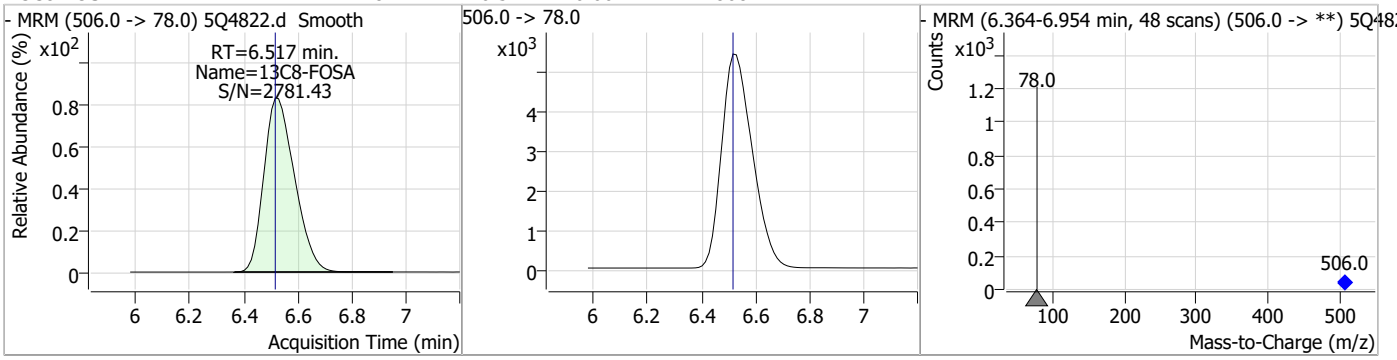
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.18	6.44	0.00	214351				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	100.32	6.44	0.00	978677	463.0 -> 219.0	21.1	10.6	31.9

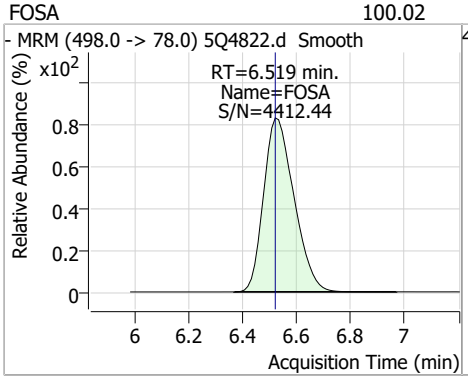


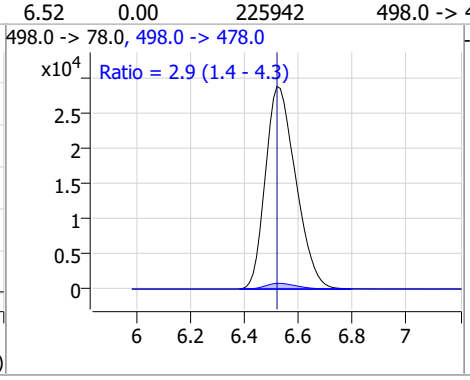
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.22	6.52	0.00	42808				

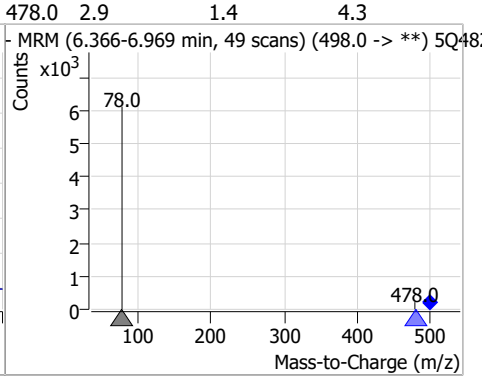


Perfluorinated Compounds by LC/MS/MS

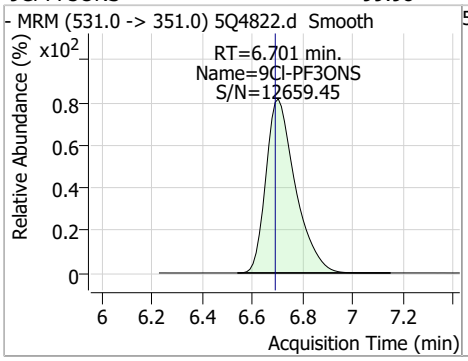
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.02	6.52	0.00	225942	498.0 -> 478.0	2.9	1.4	4.3

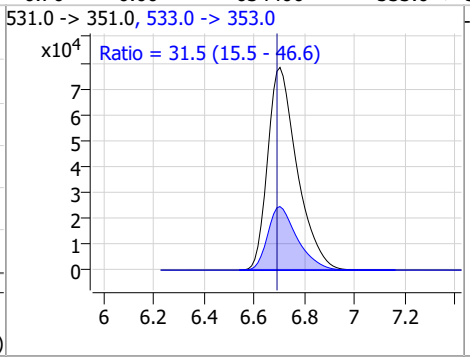


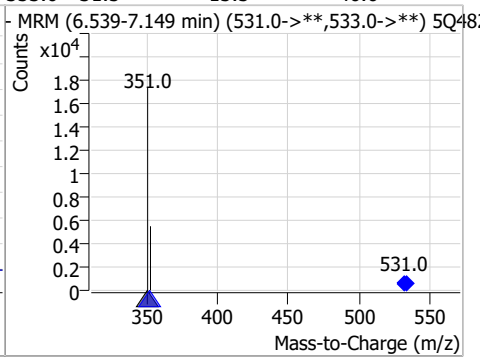




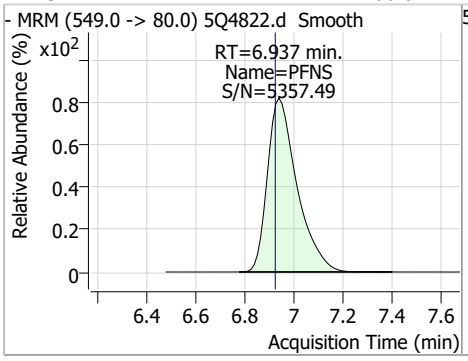
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	99.98	6.70	0.00	634400	533.0 -> 353.0	31.5	15.5	46.6

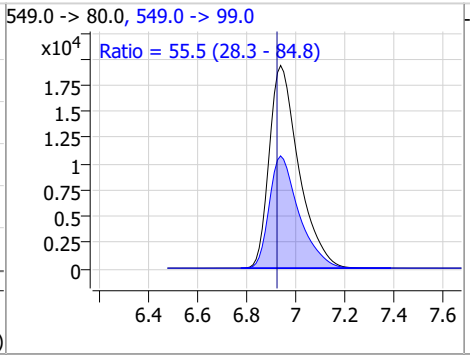


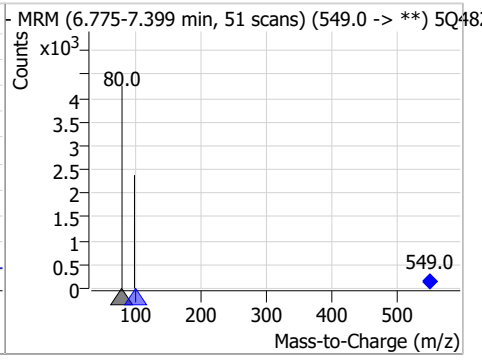




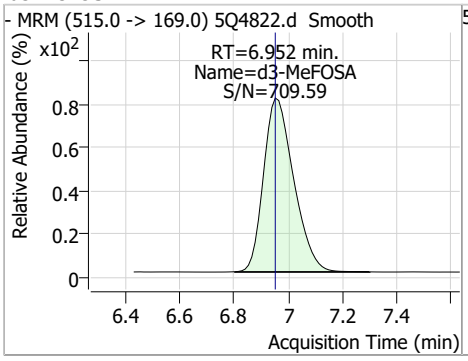
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	100.04	6.94	0.00	161336	549.0 -> 99.0	55.5	28.3	84.8

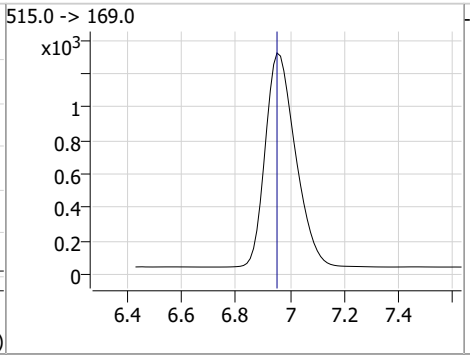


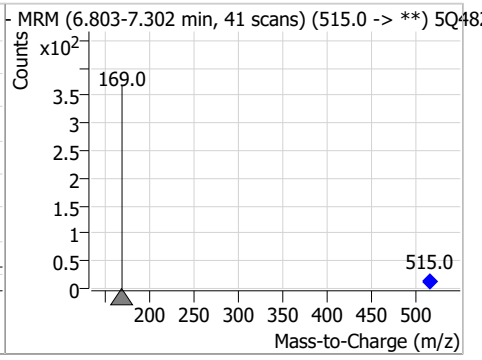




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.72	6.95	0.00	9963				

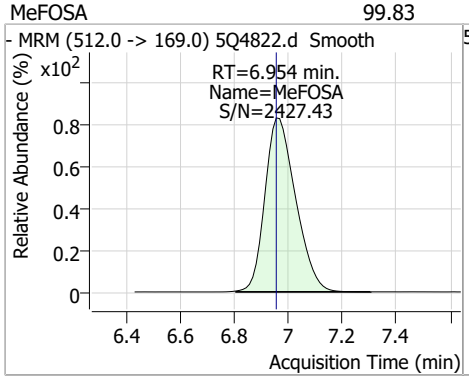


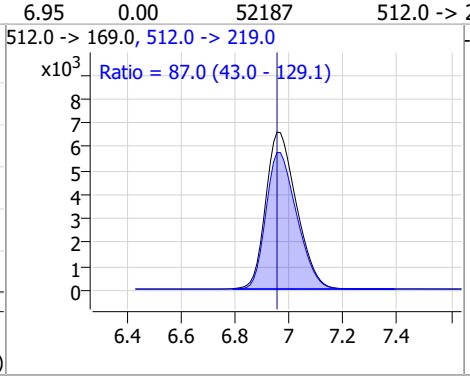


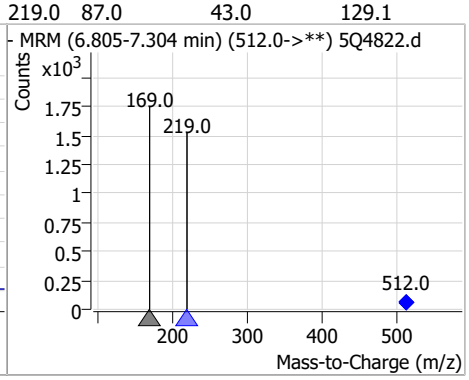


Perfluorinated Compounds by LC/MS/MS

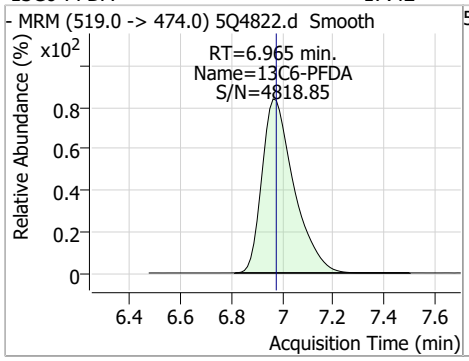
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	99.83	6.95	0.00	52187	512.0 -> 219.0	87.0	43.0	129.1

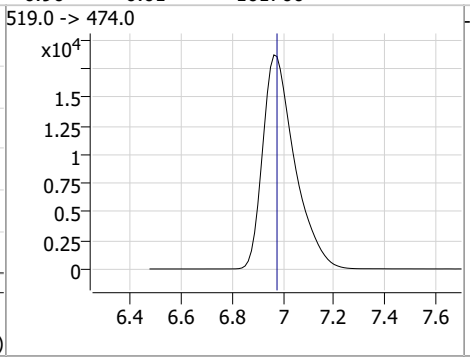


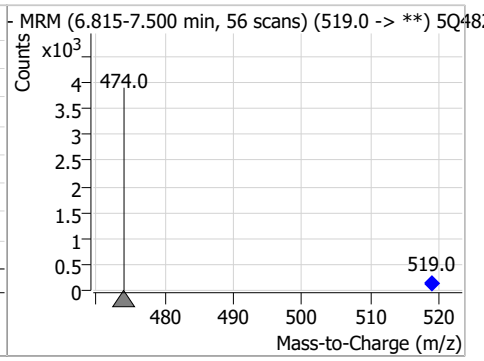




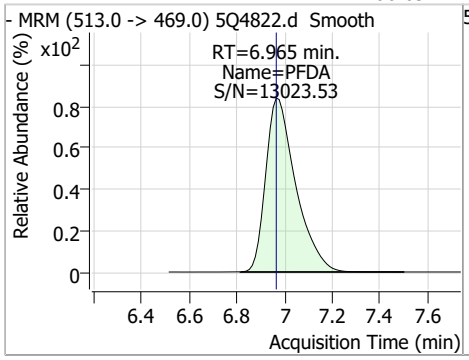
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.42	6.96	-0.01	161760				

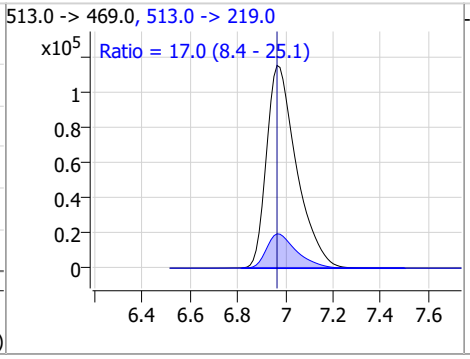


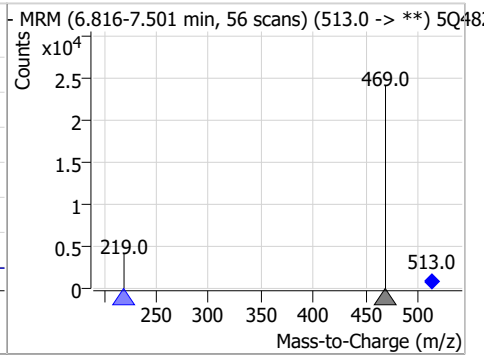




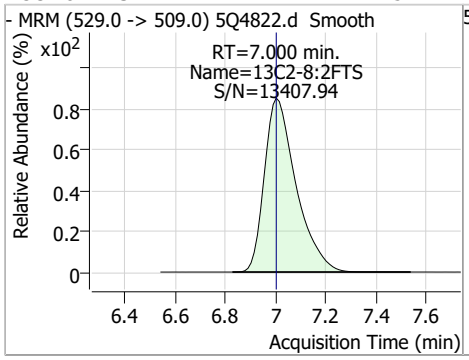
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	100.09	6.97	-0.01	1007870	513.0 -> 219.0	17.0	8.4	25.1

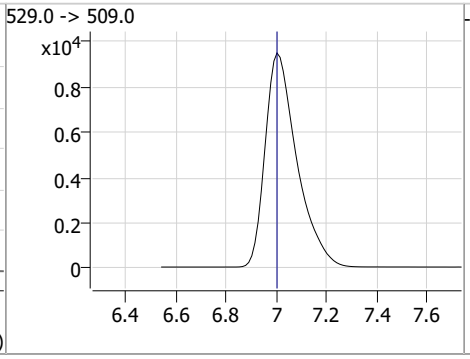


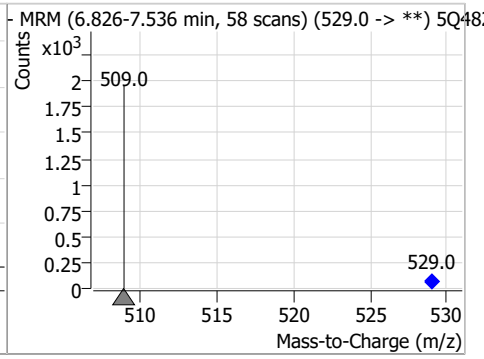




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.57	7.00	0.00	82890				

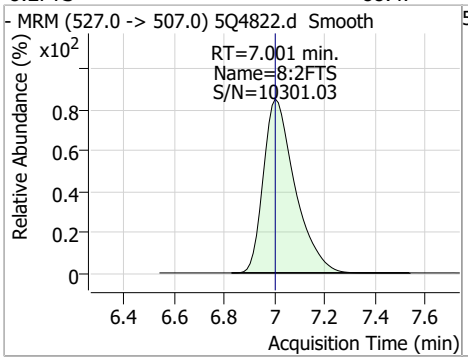


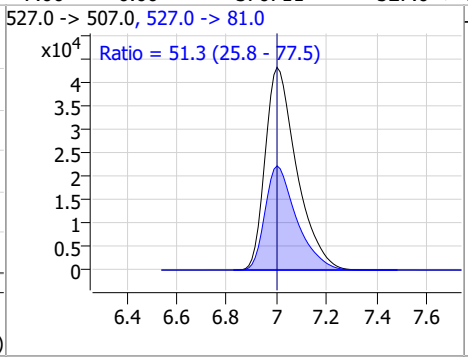


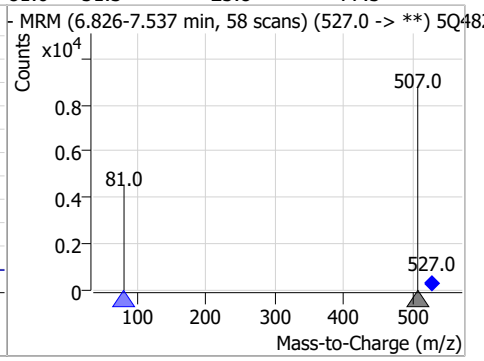


Perfluorinated Compounds by LC/MS/MS

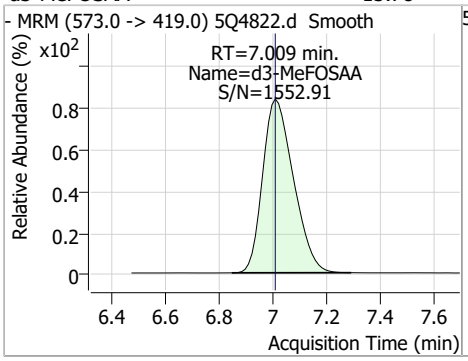
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	88.47	7.00	0.00	376711	527.0 -> 81.0	51.3	25.8	77.5

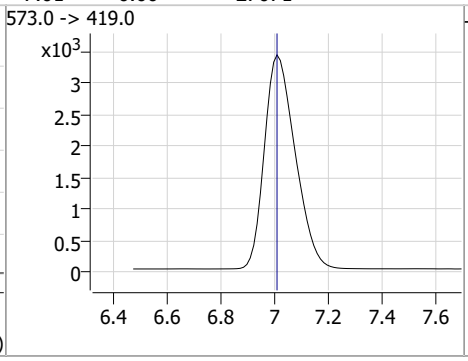


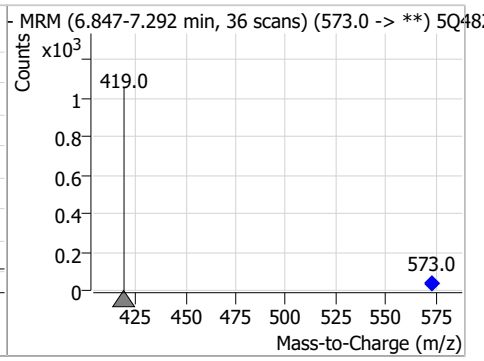




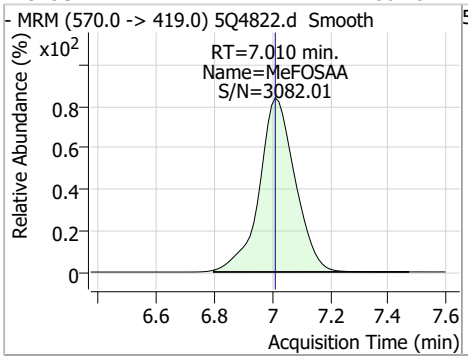
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	15.78	7.01	0.00	27071				

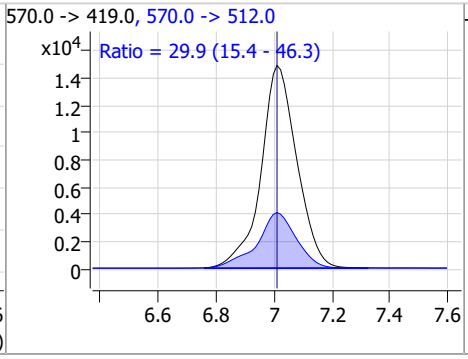


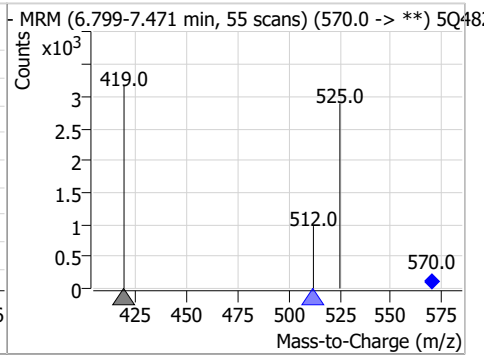




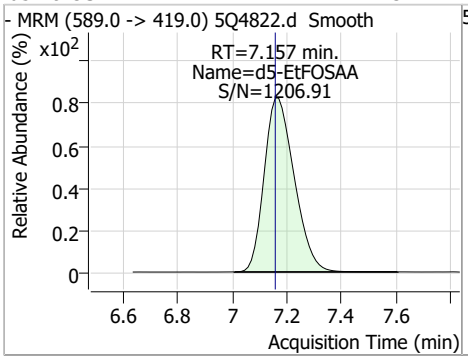
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	100.10	7.01	0.00	127740	570.0 -> 512.0	29.9	15.4	46.3

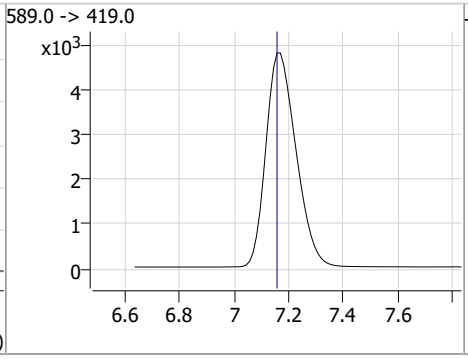


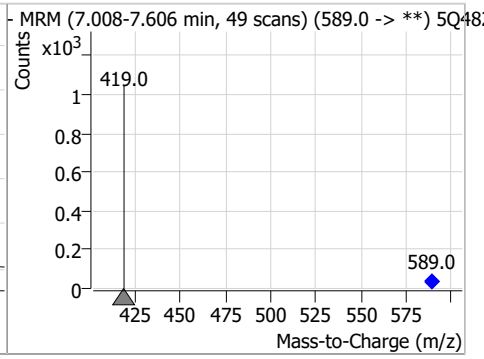




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.34	7.16	0.00	36566				

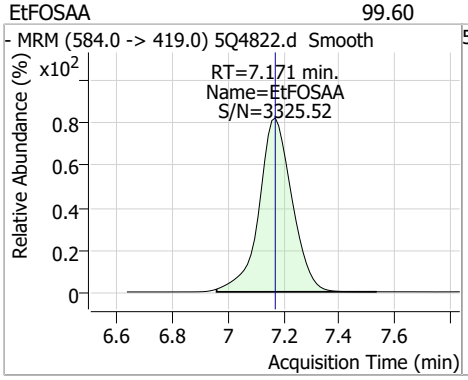


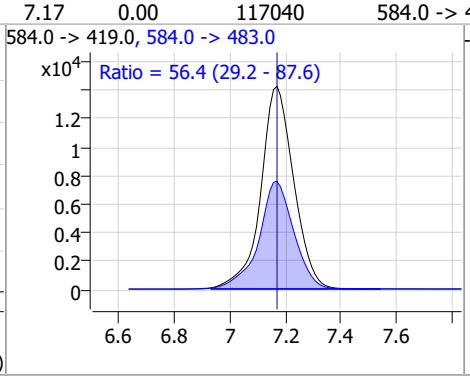


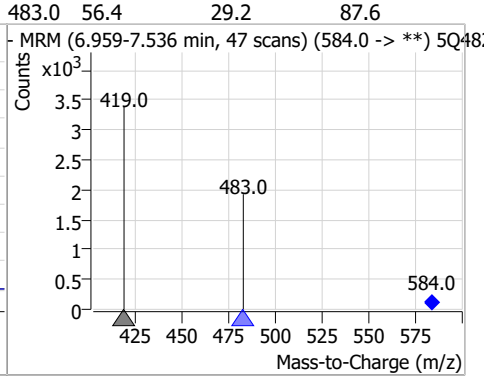


Perfluorinated Compounds by LC/MS/MS

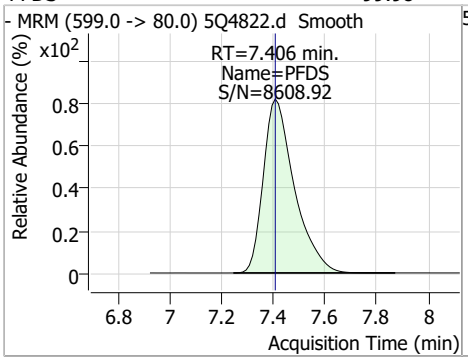
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.60	7.17	0.00	117040	584.0 -> 483.0	56.4	29.2	87.6

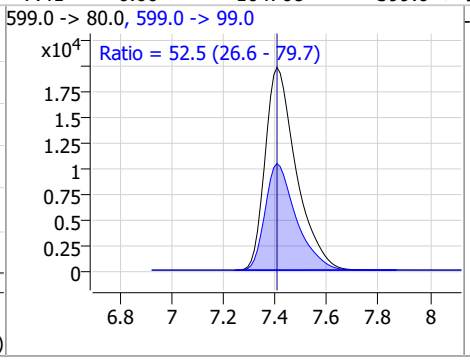


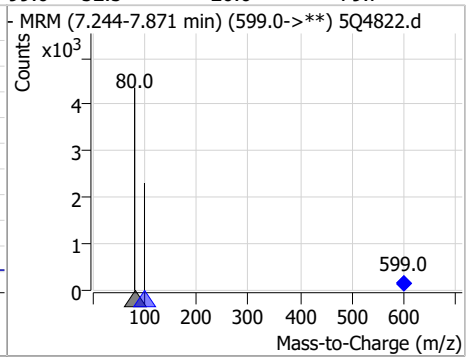




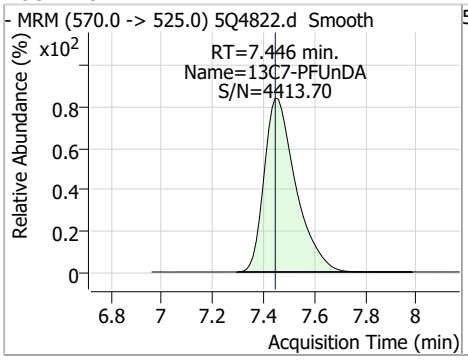
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	99.98	7.41	0.00	164768	599.0 -> 99.0	52.5	26.6	79.7

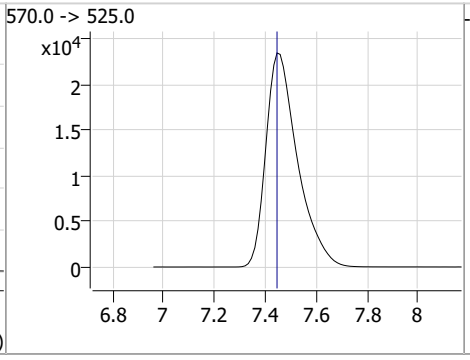


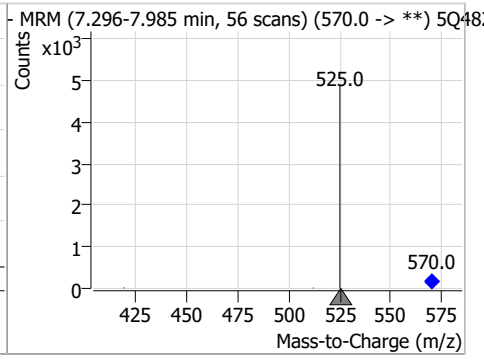




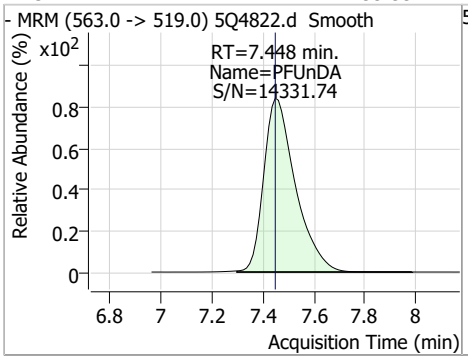
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.41	7.45	0.00	201717				

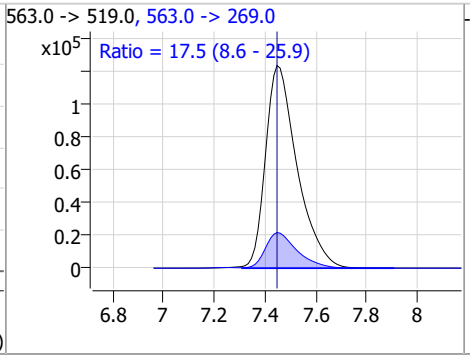


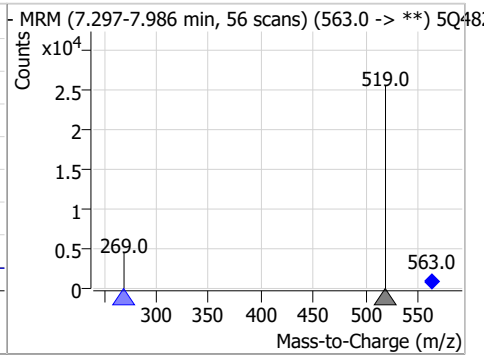




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	99.99	7.45	0.00	1065193	563.0 -> 269.0	17.5	8.6	25.9

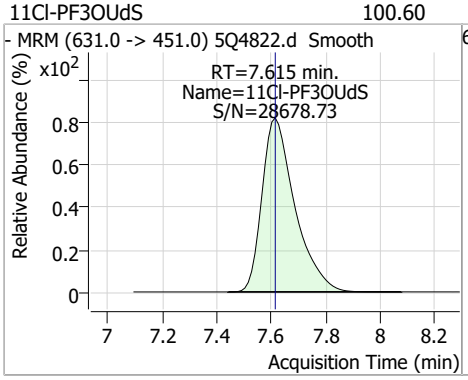


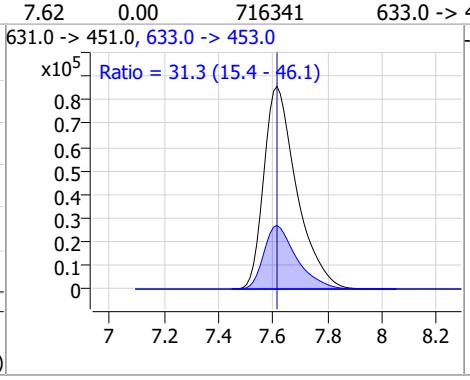


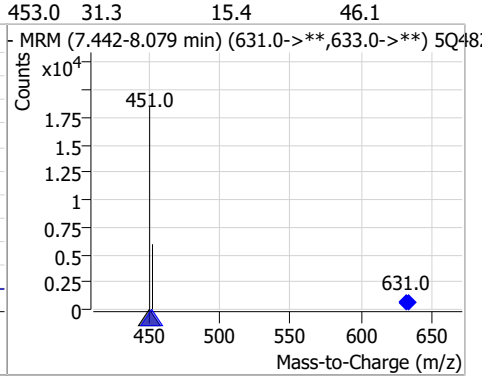


Perfluorinated Compounds by LC/MS/MS

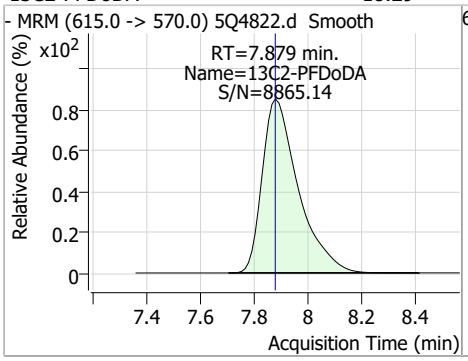
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.60	7.62	0.00	716341	633.0 -> 453.0	31.3	15.4	46.1

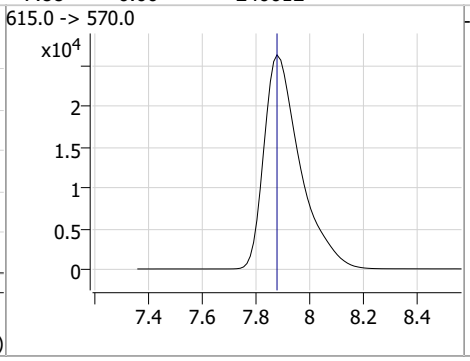


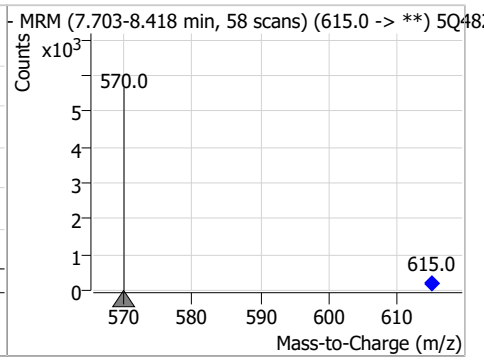




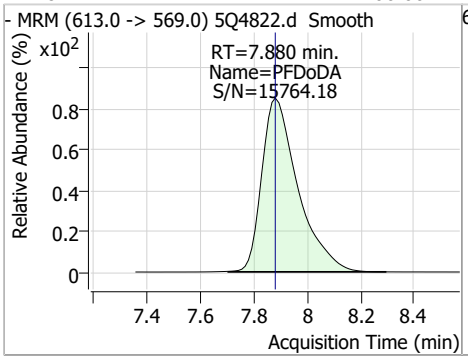
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.29	7.88	0.00	246612				

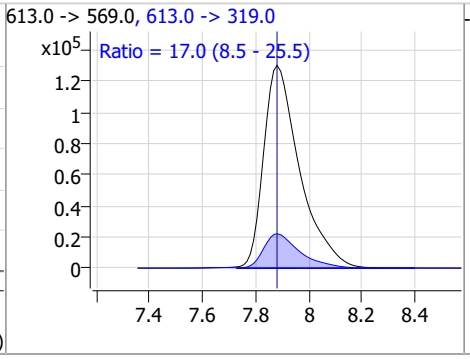


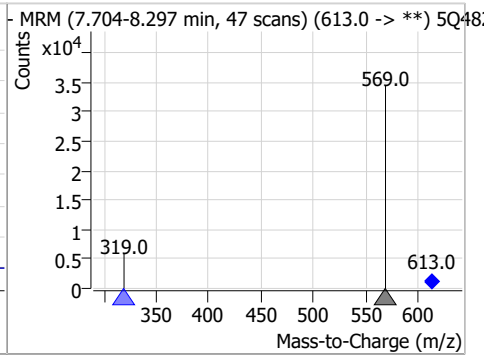




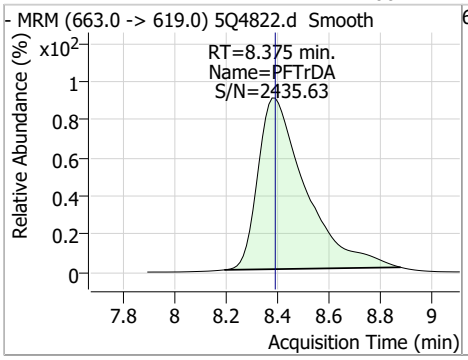
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.00	7.88	0.00	1221594	613.0 -> 319.0	17.0	8.5	25.5

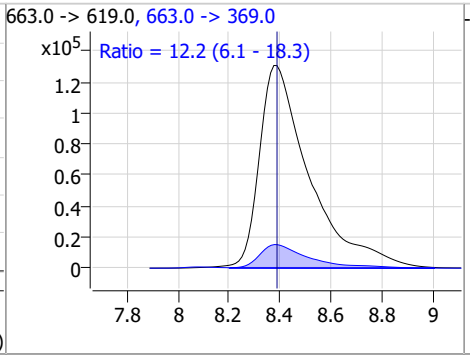


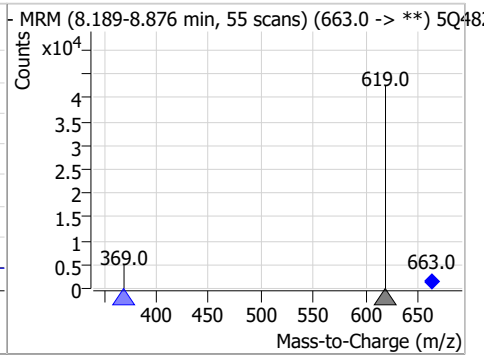




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.27	8.38	-0.01	1662756	663.0 -> 369.0	12.2	6.1	18.3

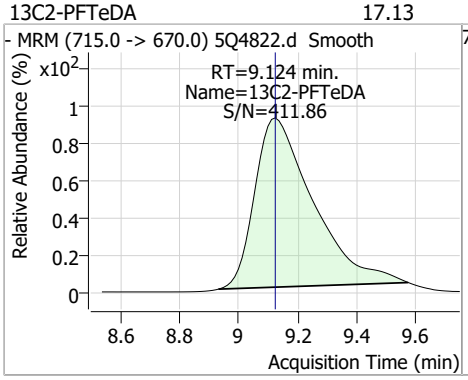


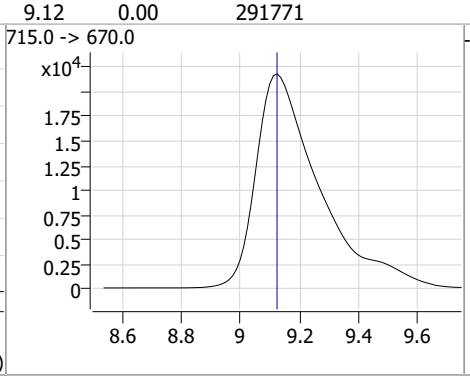


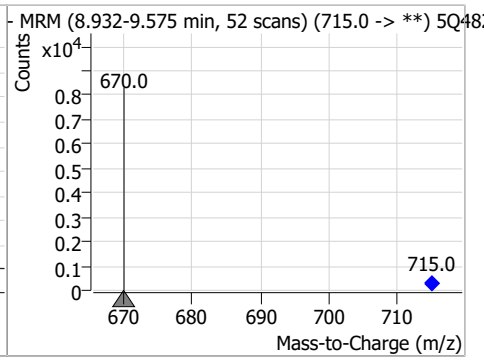


Perfluorinated Compounds by LC/MS/MS

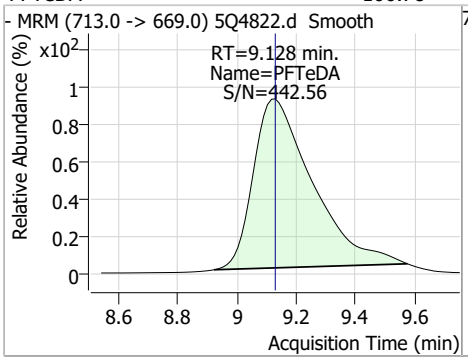
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.13	9.12	0.00	291771				

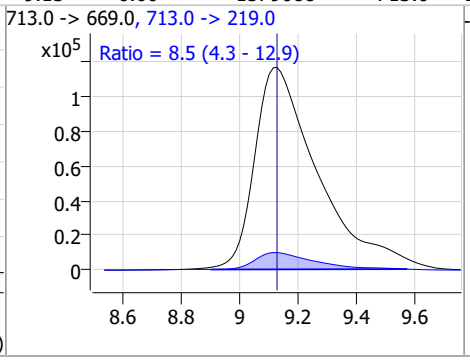


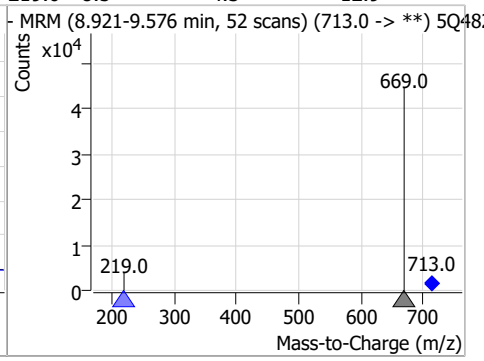




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.78	9.13	0.00	1579088	713.0 -> 219.0	8.5	4.3	12.9







7.7.67

Manual Integration Approval Summary

Sample Number: S5Q73-IC73
Lab FileID: 5Q4822.D
Injection Time: 09/17/22 14:04
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4824.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 2:35:31 PM
Sample Name : icv73-20
Vial : P1-B1
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

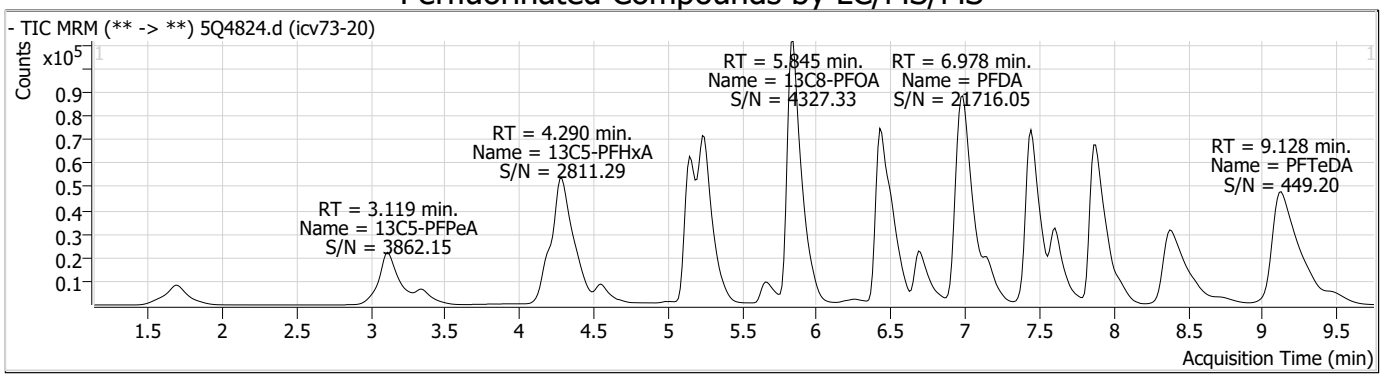
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	69119	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	111530	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	176084	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	164695	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	221598	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	222928	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	175445	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	219280	20.00	µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	251123	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	329588	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	44260	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12703	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12717	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	22309	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	57964	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	78876	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	71863	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	31143	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10643	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10943	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	39494	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	57964	18.48	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C2-6:2FTS	5.830	429.0 -> 409.0	78876	18.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%		
13C2-8:2FTS	7.013	529.0 -> 509.0	71863	18.70	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	251123	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C2-PFTeDA	9.124	715.0 -> 670.0	329588	19.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C3-PFBS	3.349	302.0 -> 99.0	12703	19.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C3-PFHxS	5.194	402.0 -> 99.0	12717	18.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C4-PFBA	1.687	217.0 -> 172.0	69119	18.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C4-PFHpA	5.163	367.0 -> 322.0	164695	18.73	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C5-PFHxA	4.290	318.0 -> 273.0	176084	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C5-PFPeA	3.119	268.0 -> 223.0	111530	18.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C6-PFDA	6.977	519.0 -> 474.0	175445	18.89	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

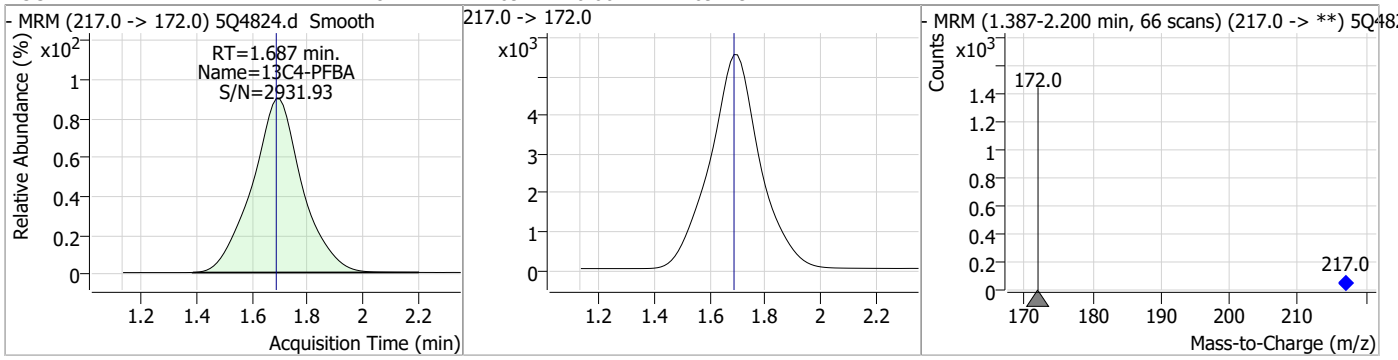
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
13C7-PFUnDA	7.459	570.0 -> 525.0	219280	18.92	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
13C8-FOSA	6.517	506.0 -> 78.0	44260	18.83	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%			
13C8-PFOA	5.845	421.0 -> 376.0	221598	18.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-PFOS	6.428	507.0 -> 99.0	22309	19.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%			
13C9-PFNA	6.443	472.0 -> 427.0	222928	18.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
d3-MeFOSAA	7.009	573.0 -> 419.0	31143	18.16	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10643	18.58	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	10943	19.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
d5-EtFOSAA	7.157	589.0 -> 419.0	39494	18.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	53430	16.97	µg/L		99
6:2FTS	5.831	427.0 -> 407.0	73443	17.87	µg/L		99
8:2FTS	7.013	527.0 -> 507.0	68738	18.62	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	22525	18.18	µg/L		99
FOSA	6.519	498.0 -> 78.0	41464	18.33	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	25048	18.76	µg/L		98
PFBA	1.694	213.0 -> 169.0	24898	18.10	µg/L		100
PFBS	3.354	299.0 -> 80.0	28607	14.97	µg/L		99
PFDA	6.978	513.0 -> 469.0	190791	17.47	µg/L		100
PFDoDA	7.880	613.0 -> 569.0	243549	19.58	µg/L		100
PFDS	7.406	599.0 -> 80.0	29396	17.66	µg/L		98
PFHpA	5.150	363.0 -> 319.0	196894	17.54	µg/L		100
PFHpS	5.855	449.0 -> 80.0	29972	16.60	µg/L		97
PFHxA	4.291	313.0 -> 269.0	146423	16.76	µg/L		100
PFHxS	5.195	399.0 -> 80.0	29058	15.75	µg/L	m	99
PFNA	6.444	463.0 -> 419.0	170453	16.80	µg/L		100
PFNS	6.949	549.0 -> 80.0	28068	16.81	µg/L		100
PFOA	5.845	413.0 -> 369.0	249157	18.49	µg/L		100
PFOS	6.429	499.0 -> 80.0	36807	18.42	µg/L	m	89
PFPeA	3.122	263.0 -> 219.0	92570	17.33	µg/L		100
PFPeS	4.398	349.0 -> 80.0	24392	16.00	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	269417	15.22	µg/L		97
PFTrDA	8.388	663.0 -> 619.0	345201	20.44	µg/L		97
PFUnDA	7.460	563.0 -> 519.0	216723	19.12	µg/L		100
11Cl-PF3OUdS	7.615	631.0 -> 451.0	123380	17.02	µg/L		98
9Cl-PF3ONS	6.701	531.0 -> 351.0	107070	16.99	µg/L		99
ADONA	5.261	377.0 -> 251.0	239821	17.53	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	33720	17.86	µg/L		99
MeFOSA	7.003	512.0 -> 169.0	0		µg/L	m	1
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	4.343	298.0 -> 78.0	61483	20.23	µg/L		99
FHxSA	5.674	398.0 -> 78.0	53763	20.65	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

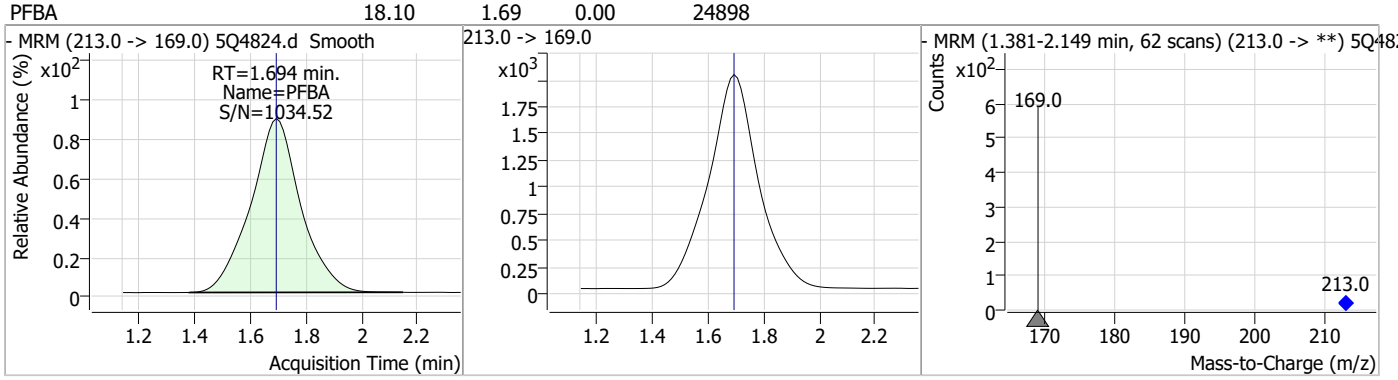
Perfluorinated Compounds by LC/MS/MS



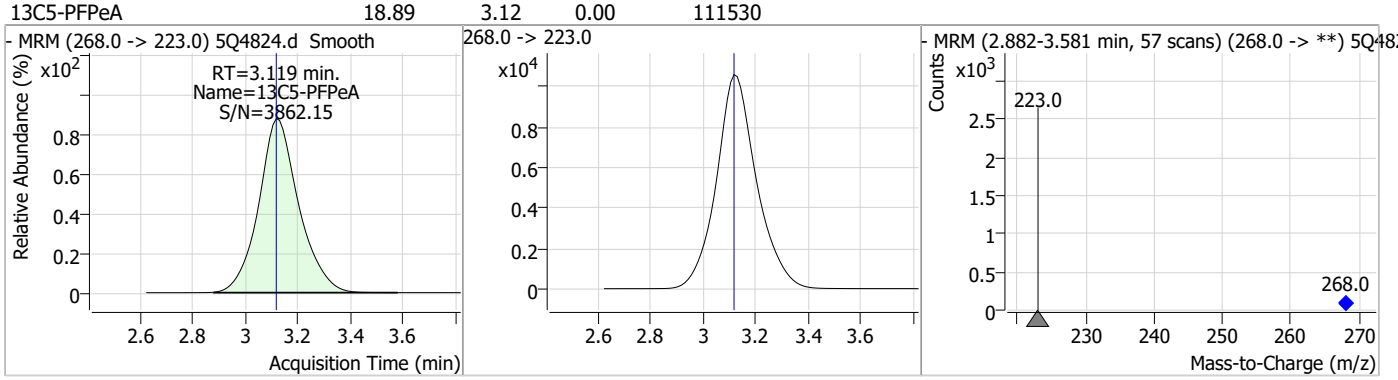
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.74	1.69	0.00	69119				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.10	1.69	0.00	24898				

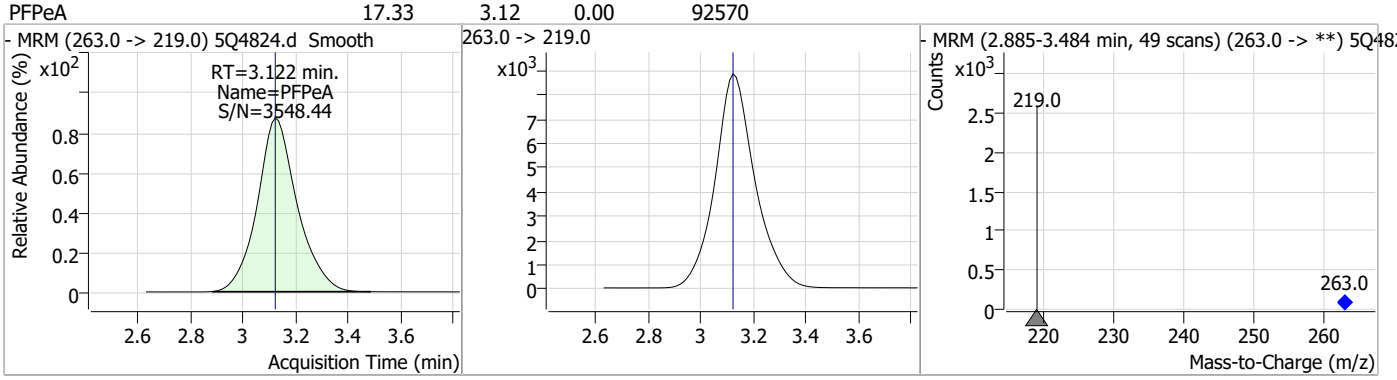


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.89	3.12	0.00	111530				

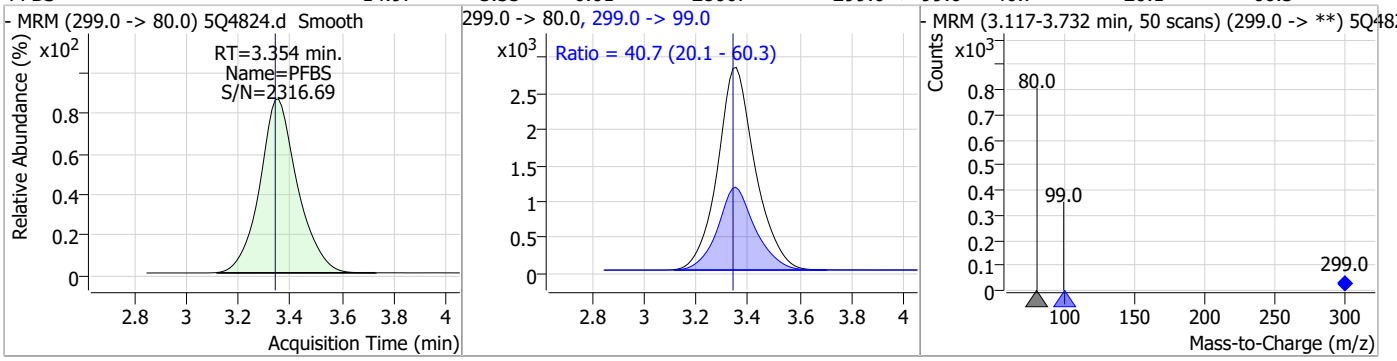


Perfluorinated Compounds by LC/MS/MS

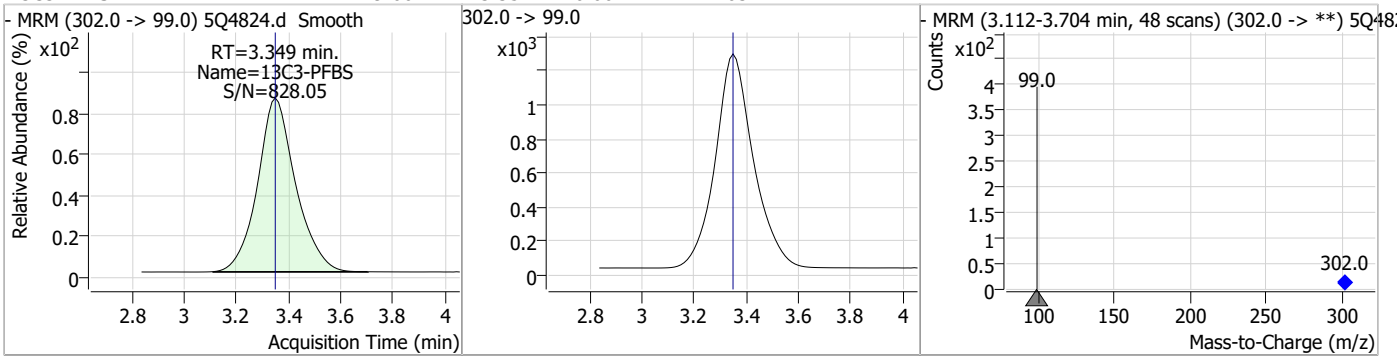
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	17.33	3.12	0.00	92570				



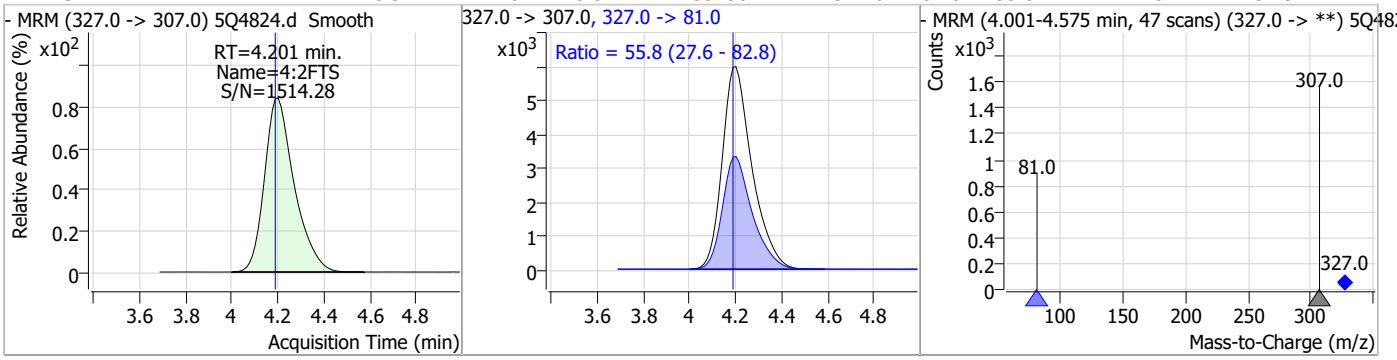
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	14.97	3.35	0.01	28607	299.0 -> 99.0	40.7	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.00	3.35	0.00	12703				

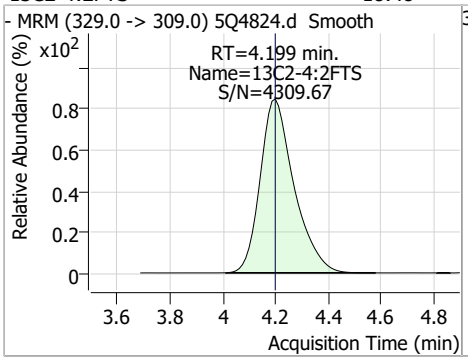


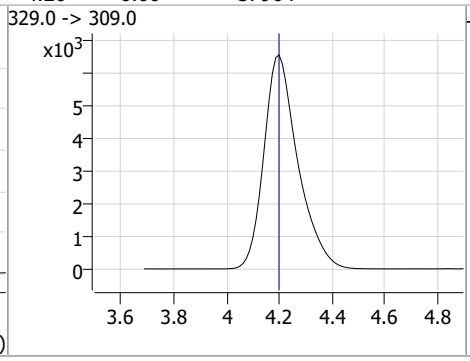
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	16.97	4.20	0.01	53430	327.0 -> 81.0	55.8	27.6	82.8

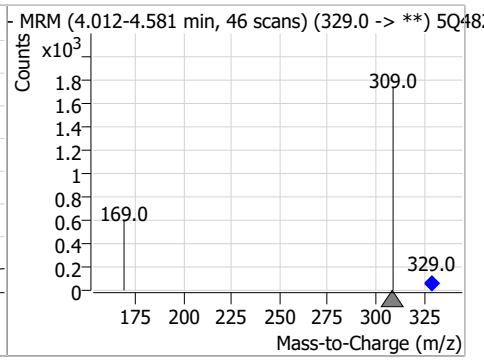


Perfluorinated Compounds by LC/MS/MS

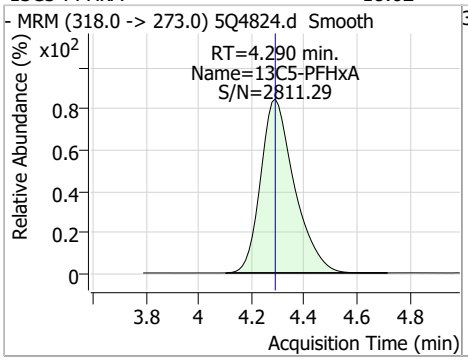
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.48	4.20	0.00	57964				

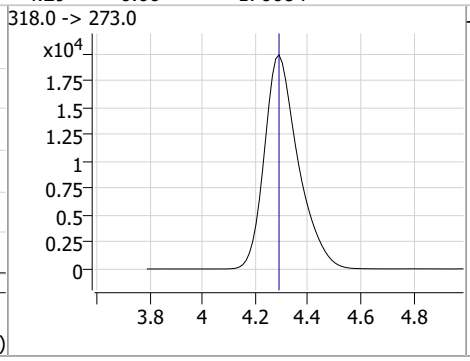


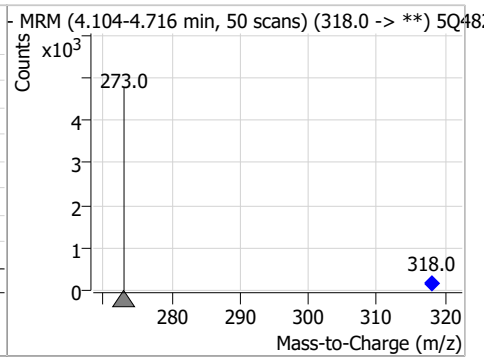




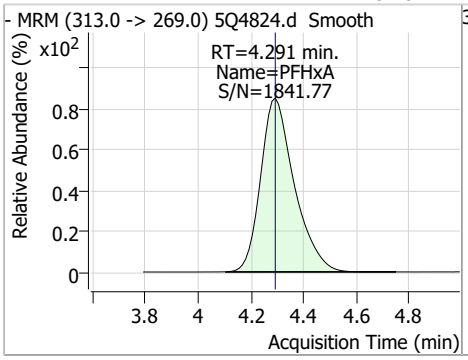
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.62	4.29	0.00	176084				

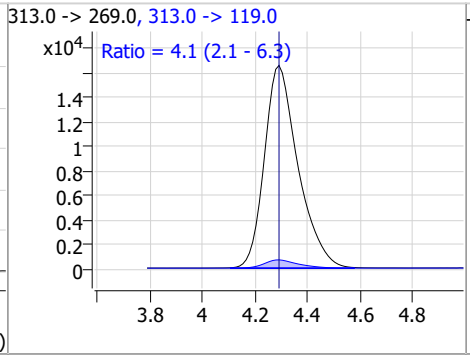


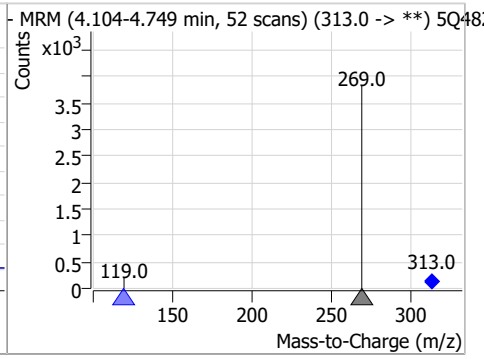




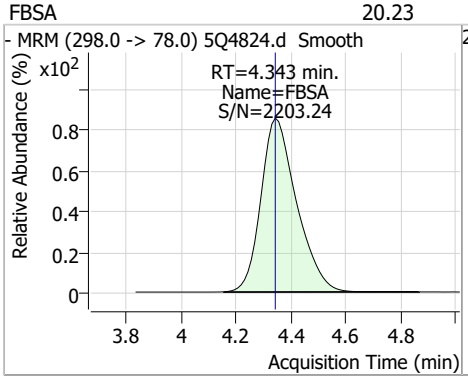
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	16.76	4.29	0.00	146423	313.0 -> 119.0	4.1	2.1	6.3

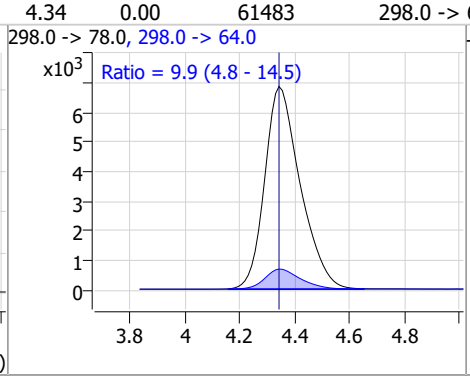


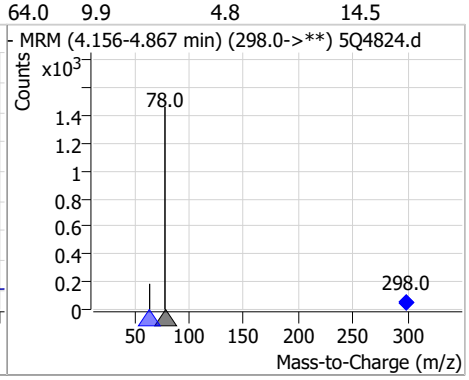




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.23	4.34	0.00	61483	298.0 -> 64.0	9.9	4.8	14.5

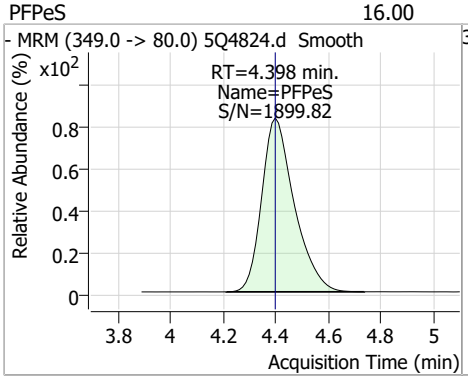


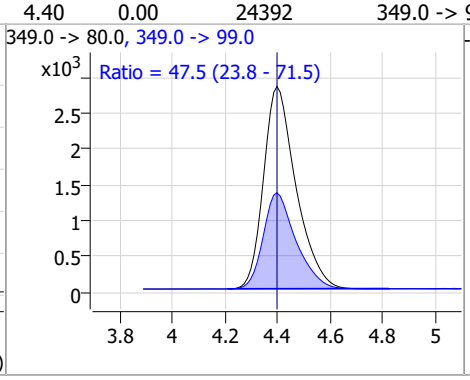


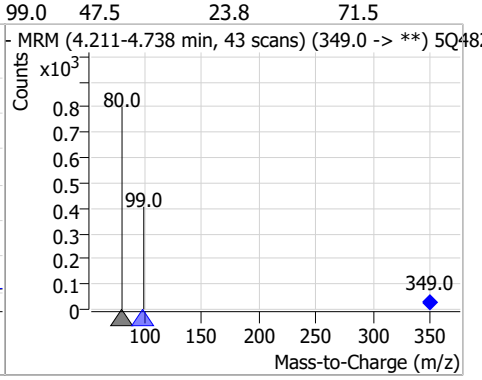


Perfluorinated Compounds by LC/MS/MS

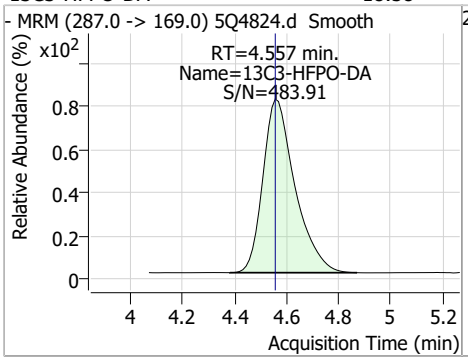
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.00	4.40	0.00	24392	349.0 -> 99.0	47.5	23.8	71.5

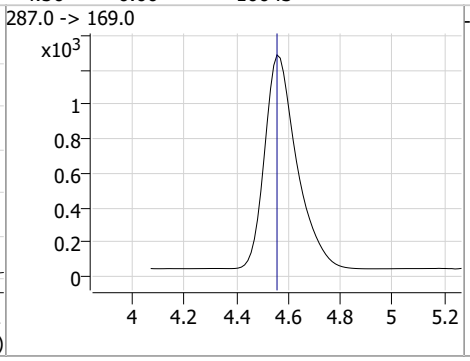


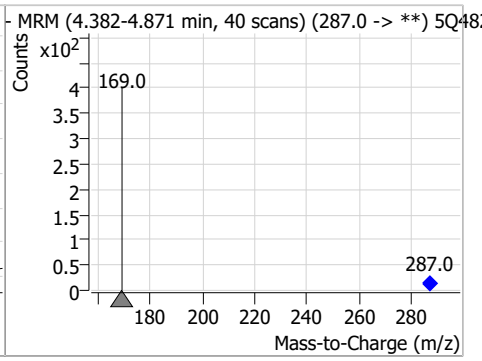




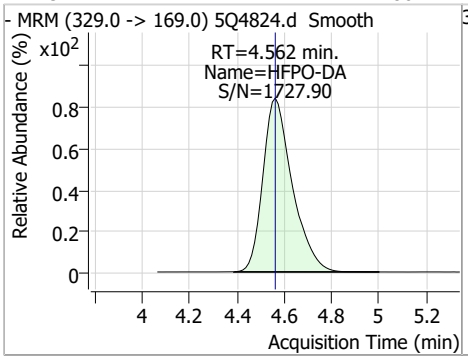
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.58	4.56	0.00	10643				

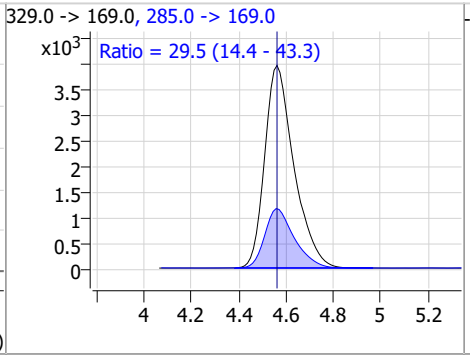


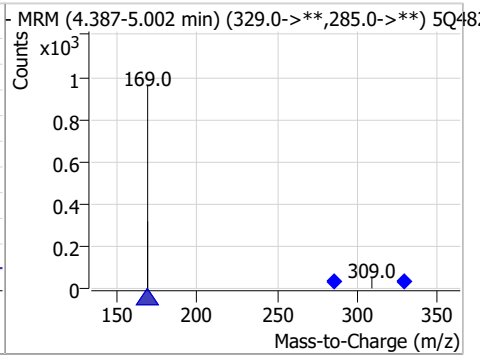




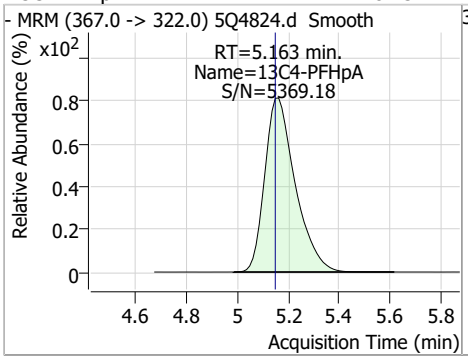
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	17.86	4.56	0.00	33720	285.0 -> 169.0	29.5	14.4	43.3

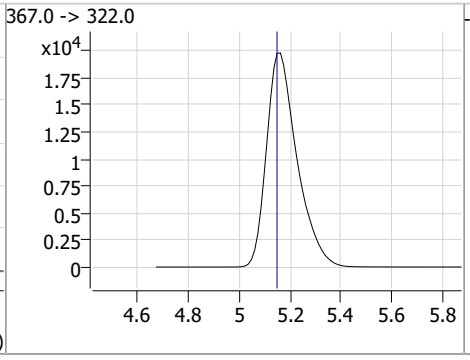


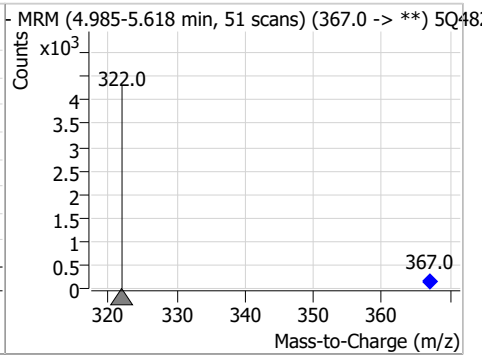




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.73	5.16	0.01	164695				

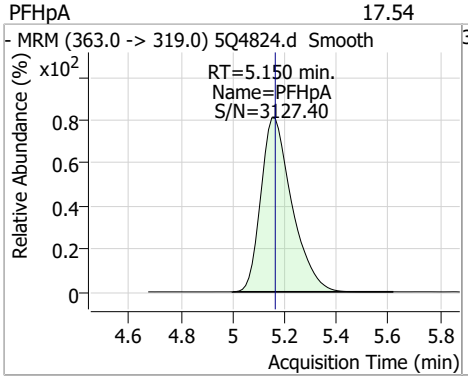


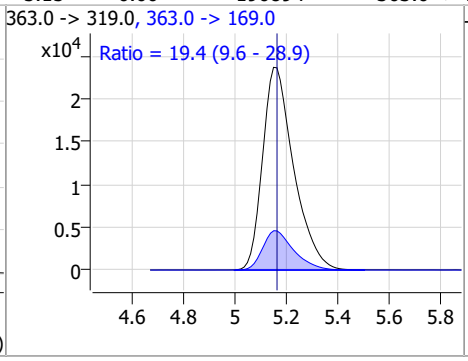


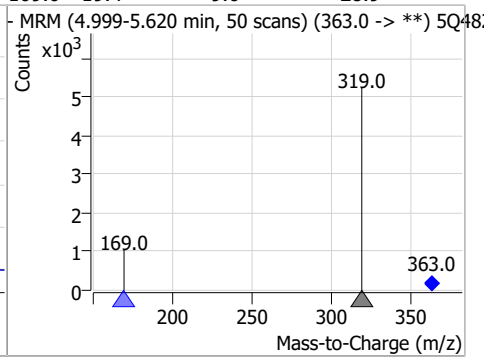


Perfluorinated Compounds by LC/MS/MS

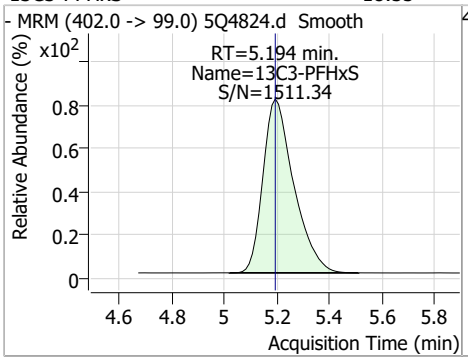
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	17.54	5.15	0.00	196894	363.0 -> 169.0	19.4	9.6	28.9

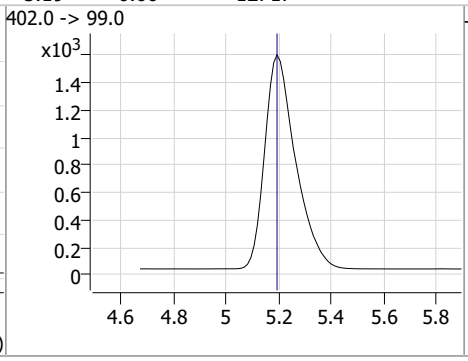


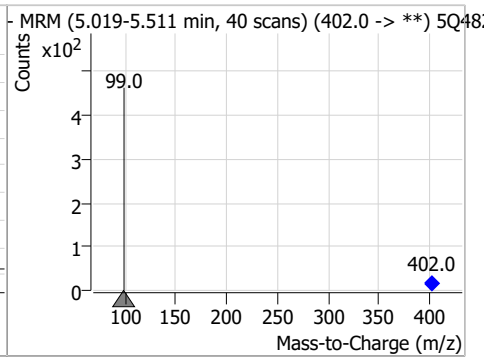




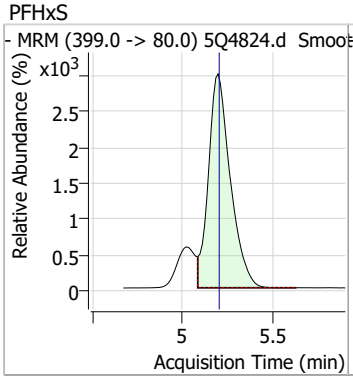
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.55	5.19	0.00	12717				

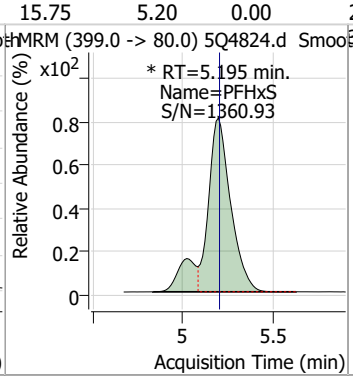


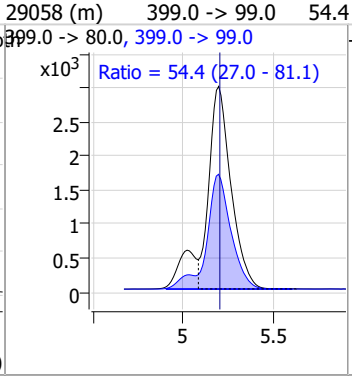


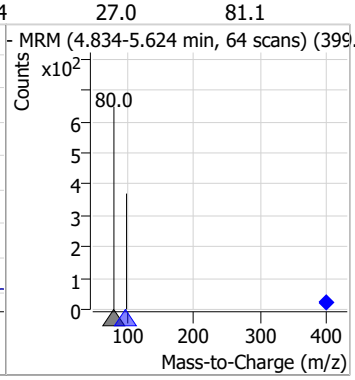


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.75	5.20	0.00	29058 (m)	399.0 -> 99.0	54.4	27.0	81.1

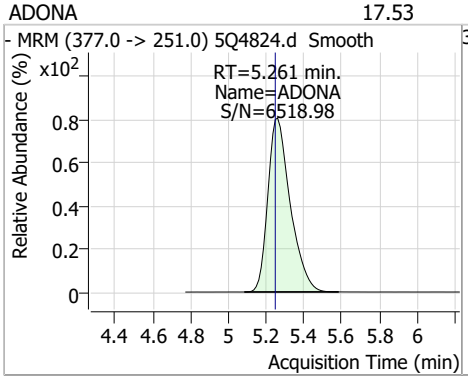


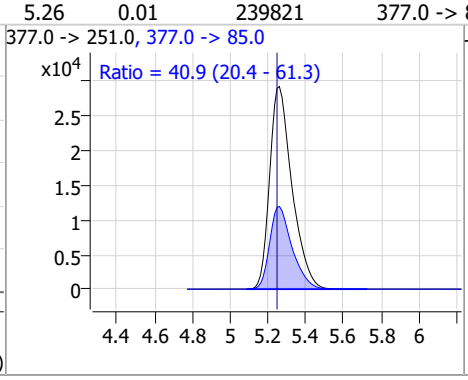


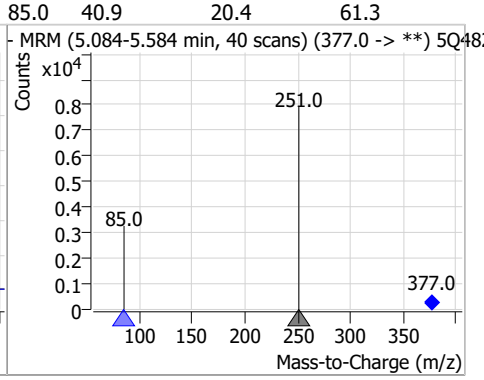




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	17.53	5.26	0.01	239821	377.0 -> 85.0	40.9	20.4	61.3

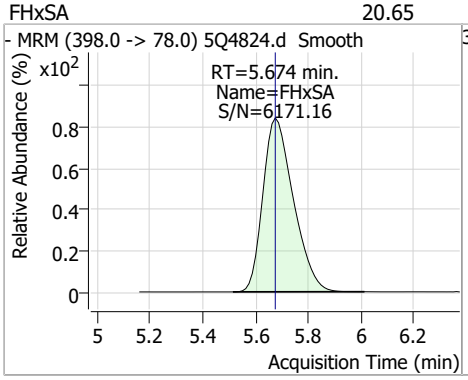


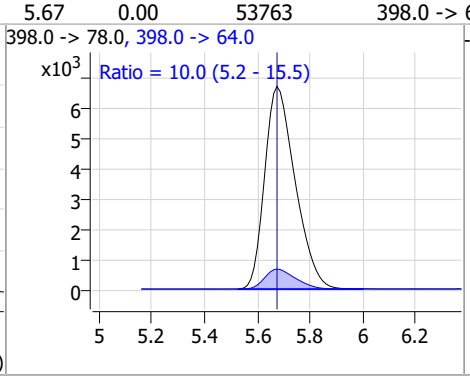


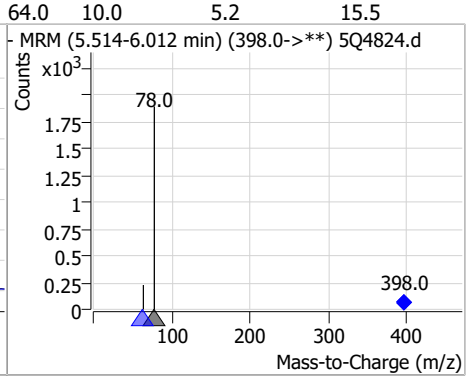


Perfluorinated Compounds by LC/MS/MS

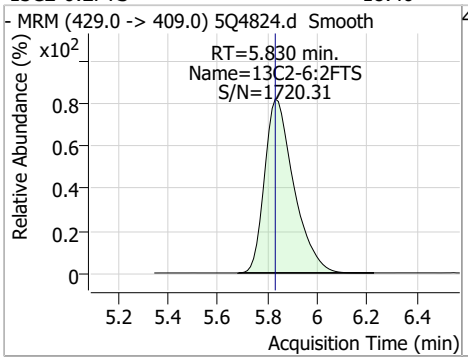
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	20.65	5.67	0.00	53763	398.0 -> 64.0	10.0	5.2	15.5

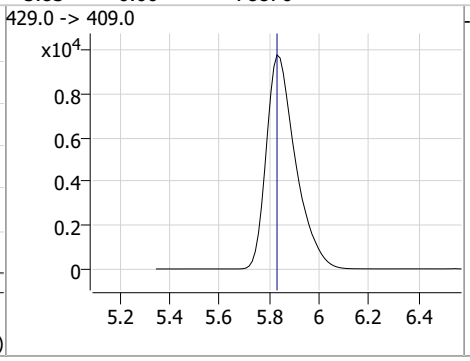


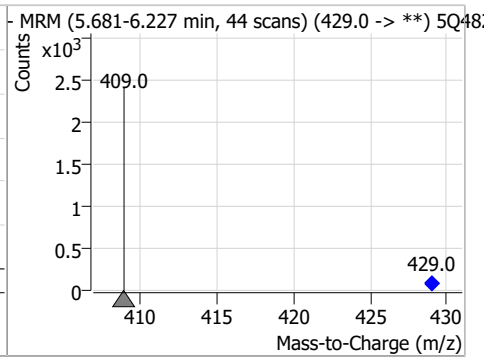




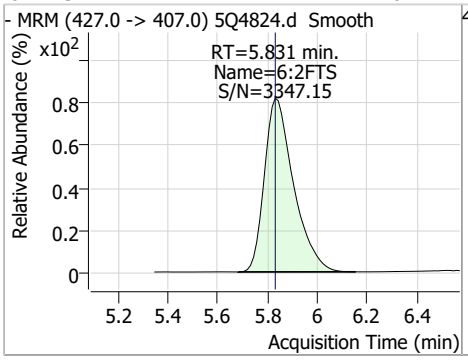
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.40	5.83	0.00	78876				

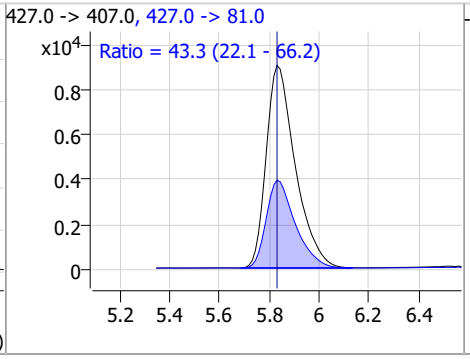


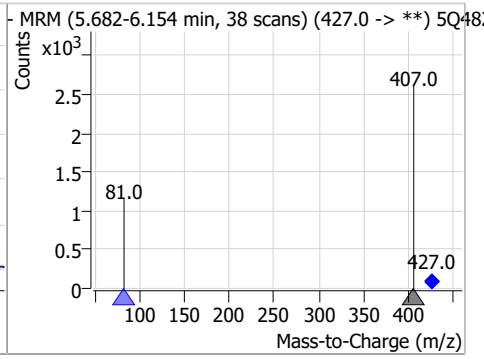




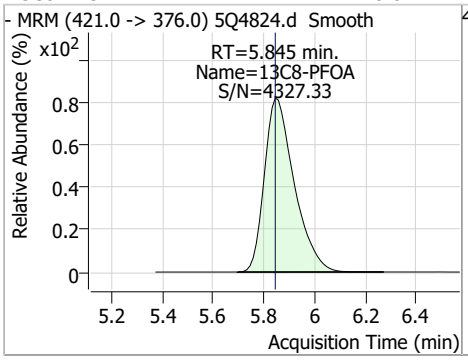
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.87	5.83	0.00	73443	427.0 -> 81.0	43.3	22.1	66.2

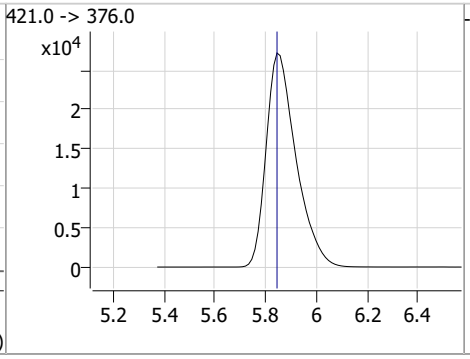


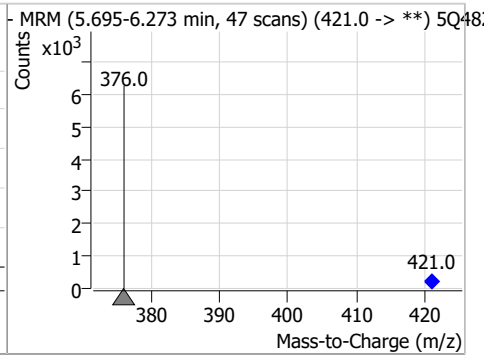




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.81	5.84	0.00	221598				

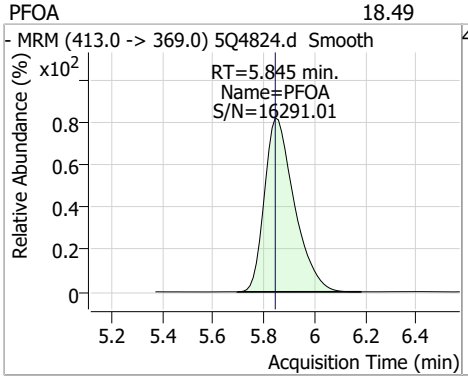


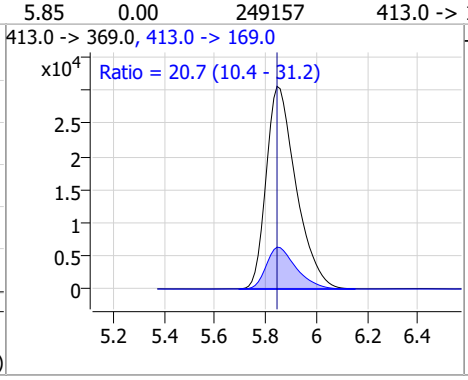


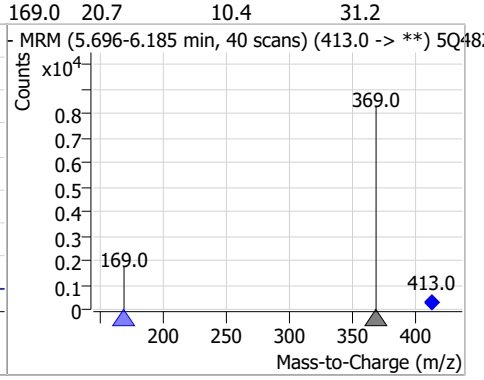


Perfluorinated Compounds by LC/MS/MS

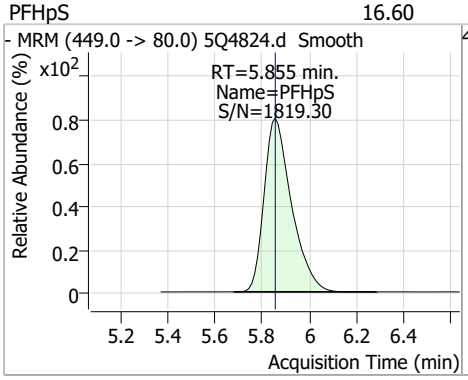
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.49	5.85	0.00	249157	413.0 -> 169.0	20.7	10.4	31.2

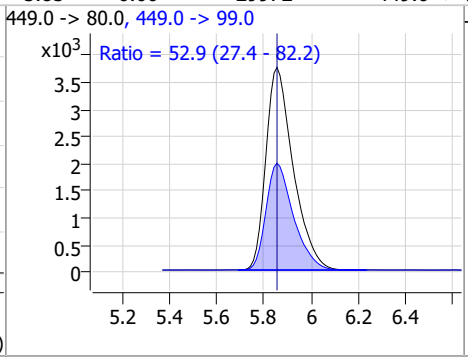


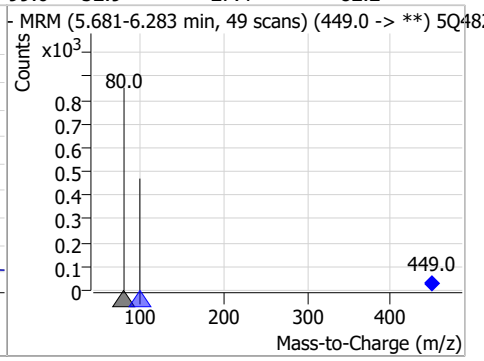




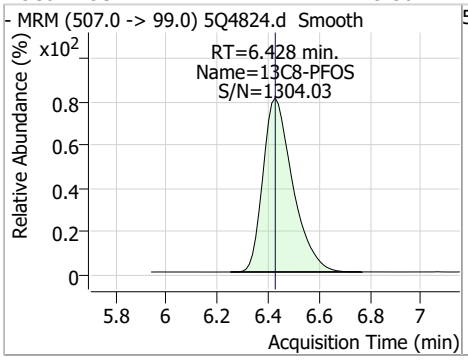
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	16.60	5.85	0.00	29972	449.0 -> 99.0	52.9	27.4	82.2

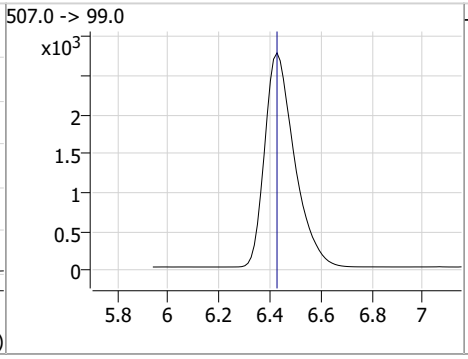


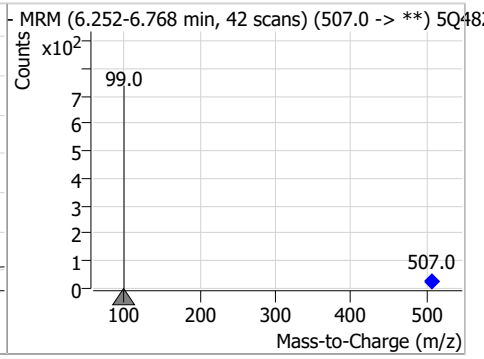




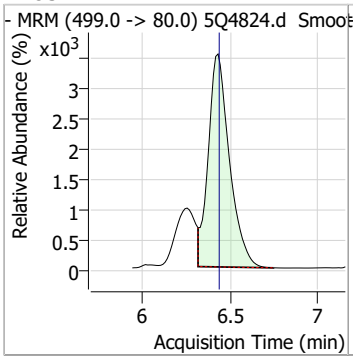
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.36	6.43	0.00	22309				

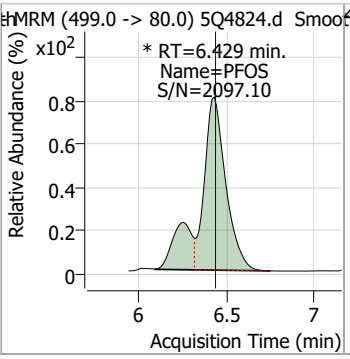


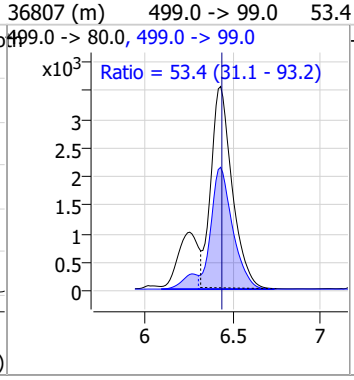


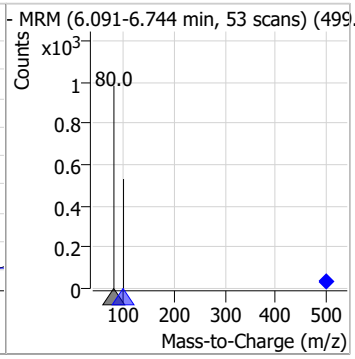


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.42	6.43	0.00	36807 (m)	499.0 -> 99.0	53.4	31.1	93.2



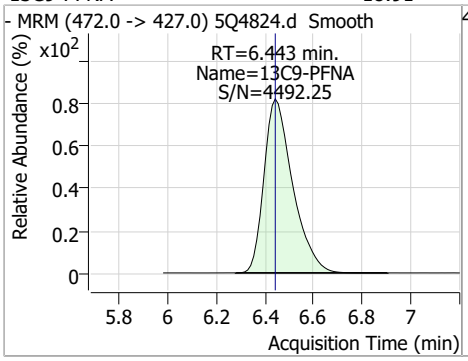


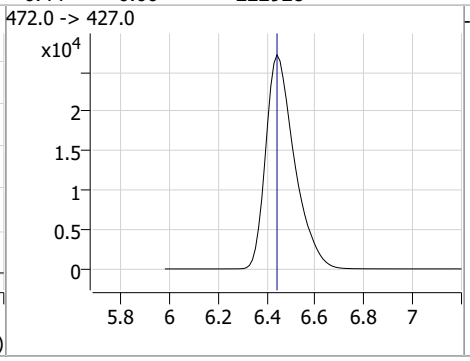


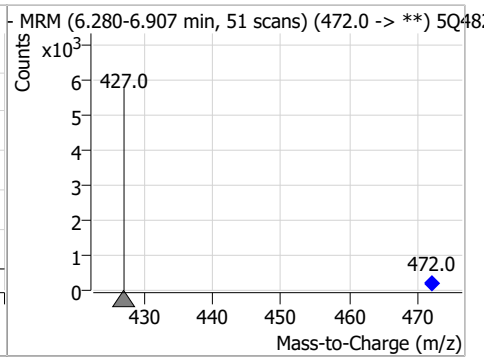


Perfluorinated Compounds by LC/MS/MS

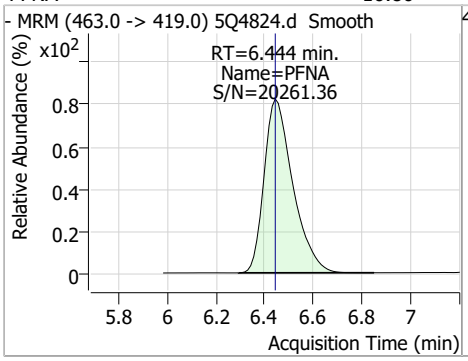
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.91	6.44	0.00	222928				

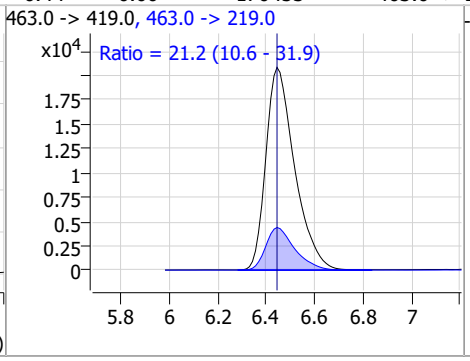


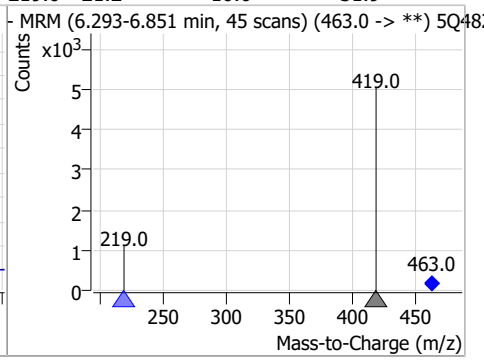




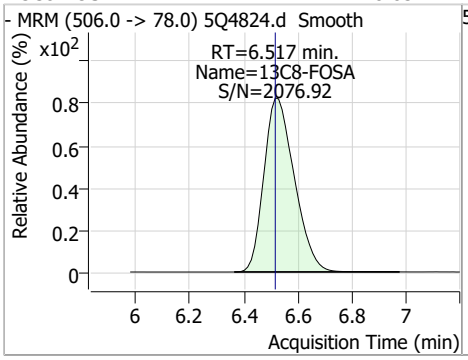
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	16.80	6.44	0.00	170453	463.0 -> 219.0	21.2	10.6	31.9

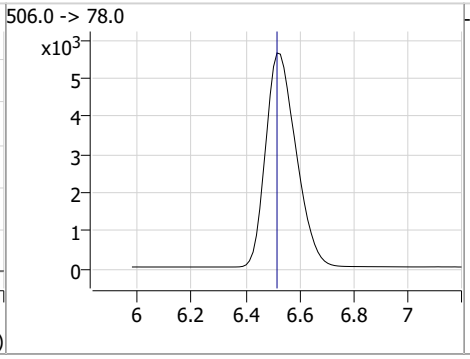


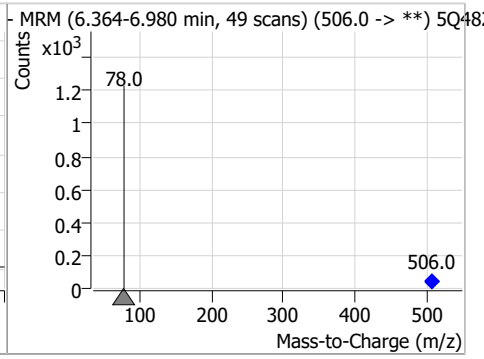




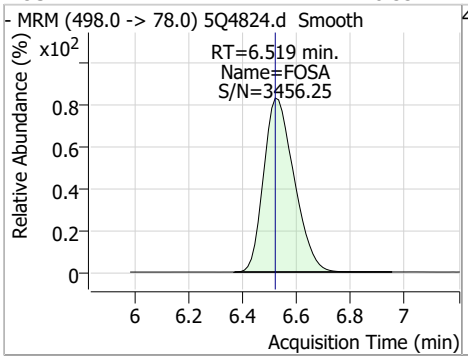
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.83	6.52	0.00	44260				

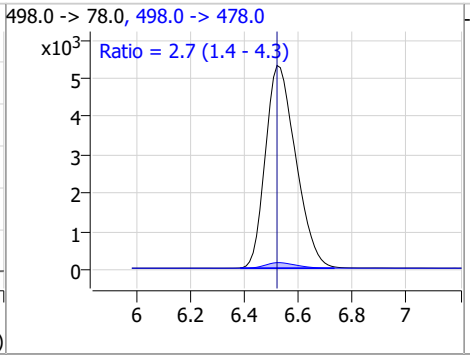


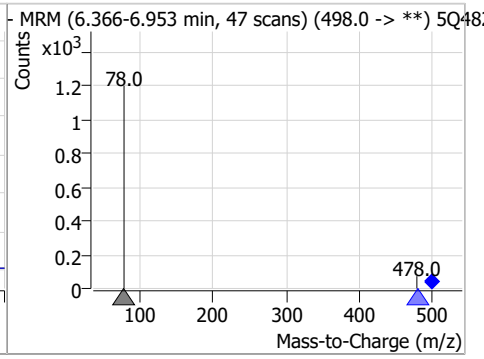




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	18.33	6.52	0.00	41464	498.0 -> 478.0	2.7	1.4	4.3

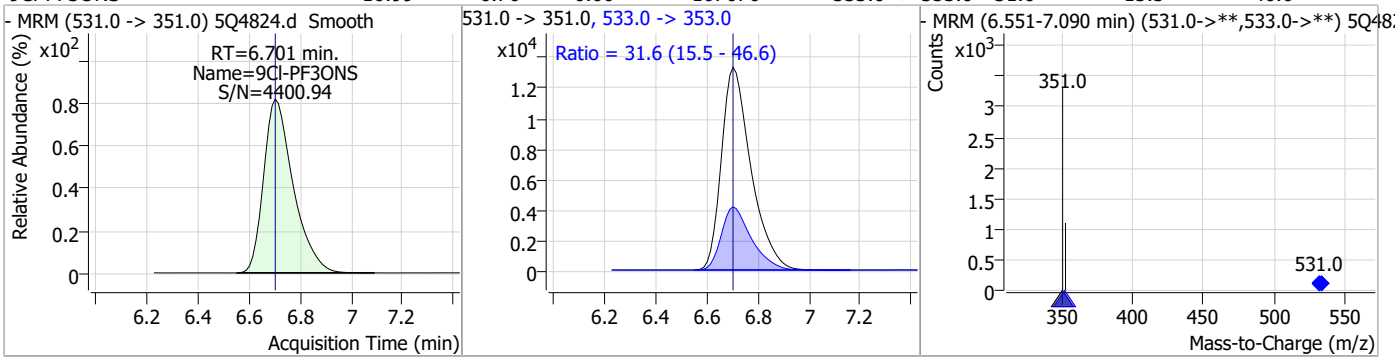




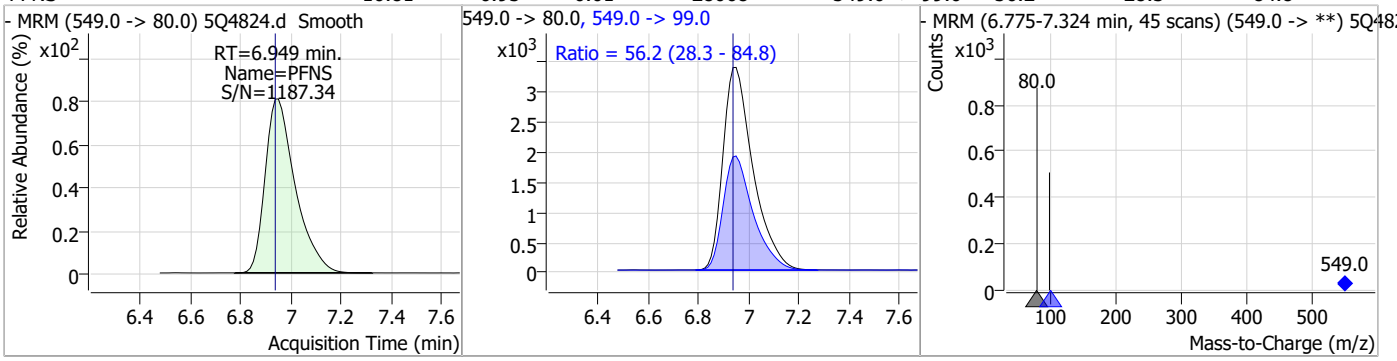


Perfluorinated Compounds by LC/MS/MS

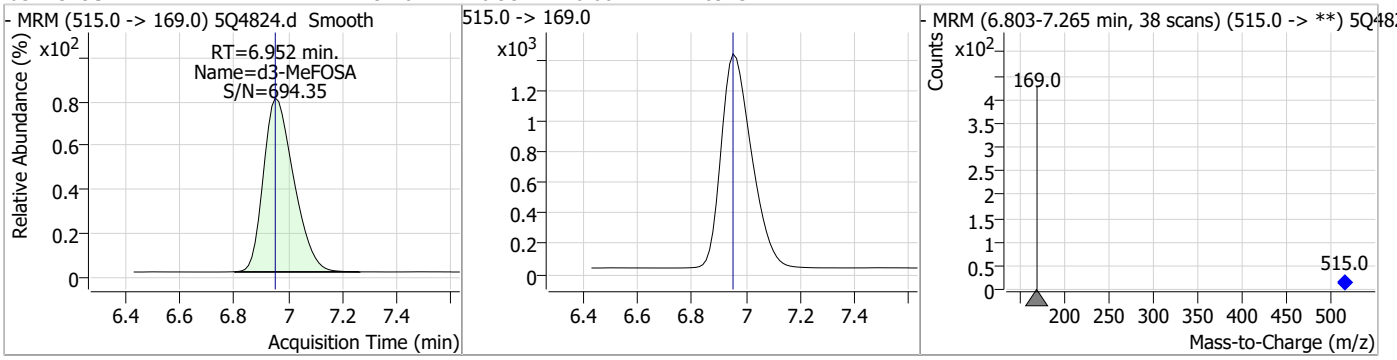
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	16.99	6.70	0.00	107070	533.0 -> 353.0	31.6	15.5	46.6



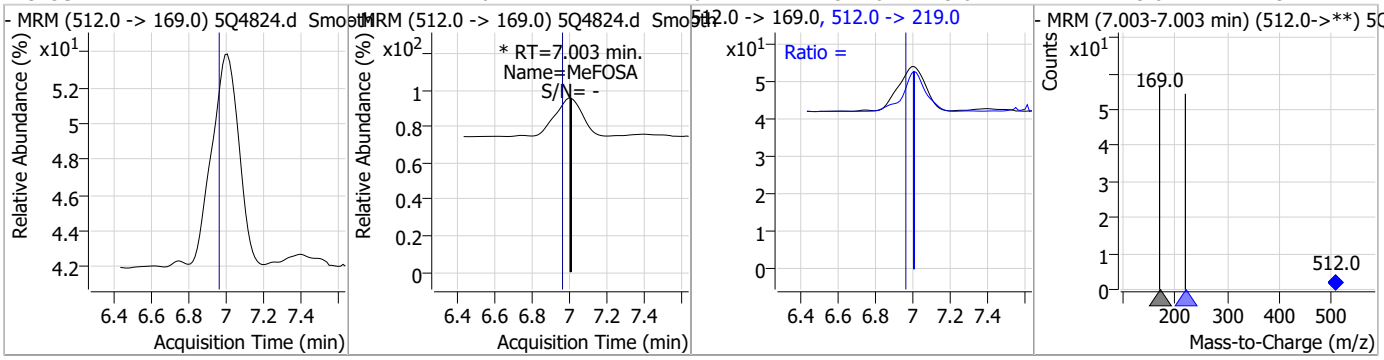
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.81	6.95	0.01	28068	549.0 -> 99.0	56.2	28.3	84.8



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.46	6.95	0.00	10943				

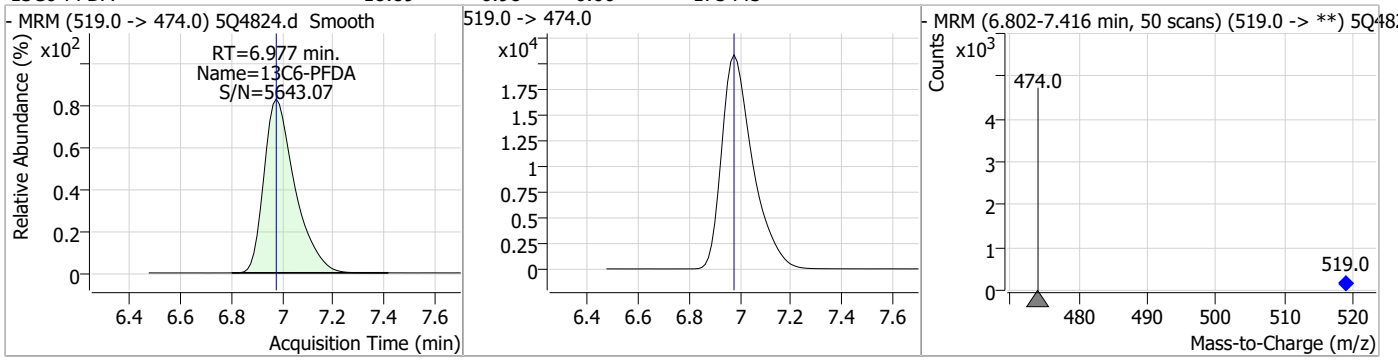


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA		0		0	512.0 -> 219.0		43.0	129.1

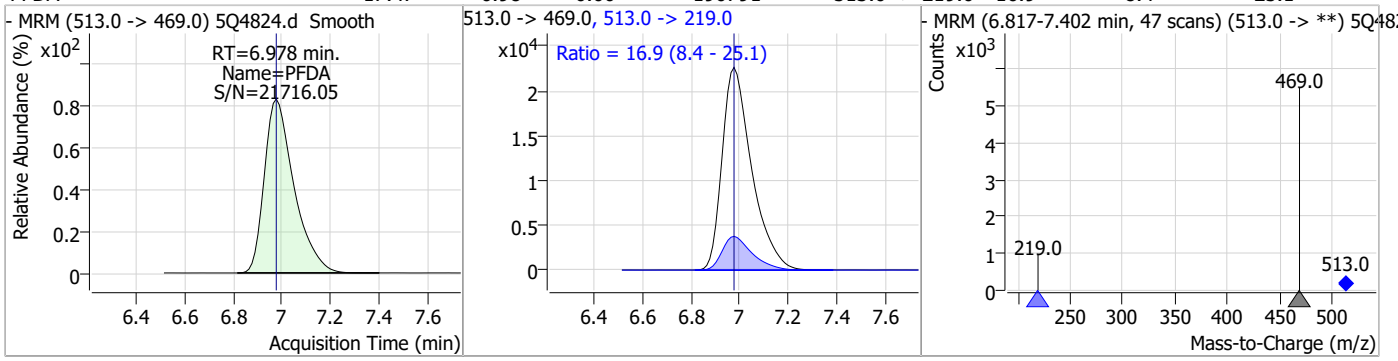


Perfluorinated Compounds by LC/MS/MS

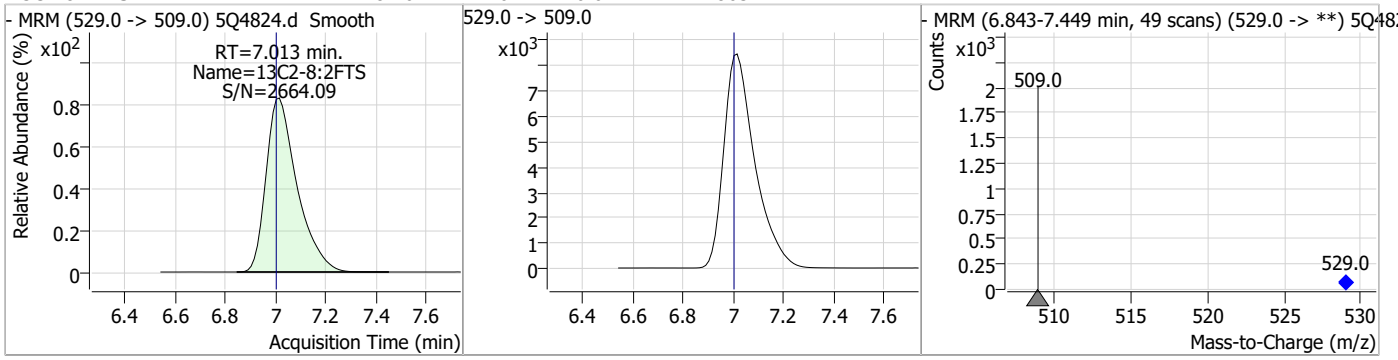
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.89	6.98	0.00	175445				



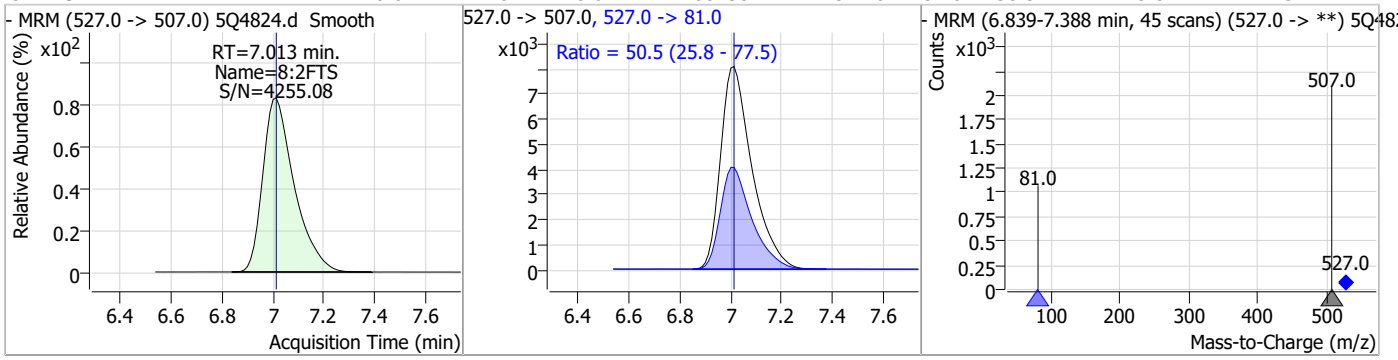
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.47	6.98	0.00	190791	513.0 -> 219.0	16.9	8.4	25.1



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.70	7.01	0.01	71863				

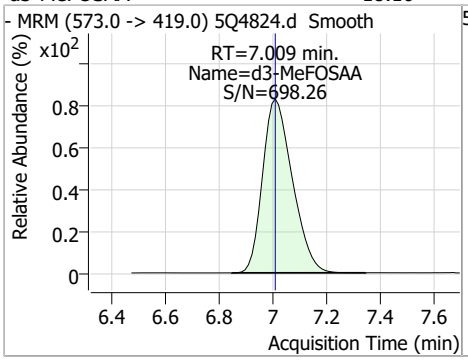


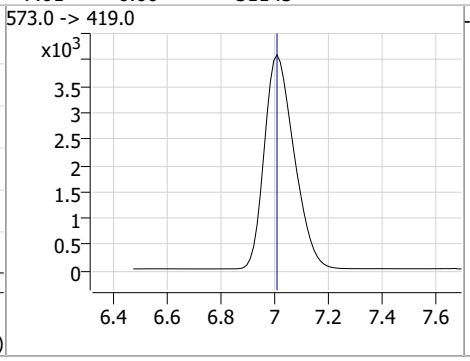
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.62	7.01	0.01	68738	527.0 -> 81.0	50.5	25.8	77.5

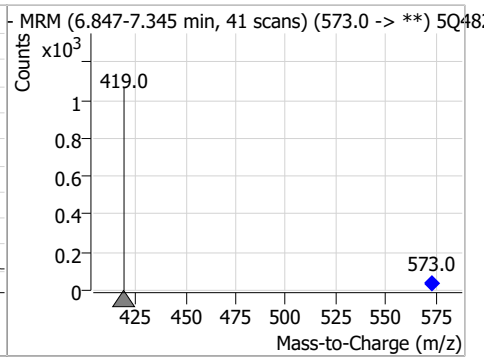


Perfluorinated Compounds by LC/MS/MS

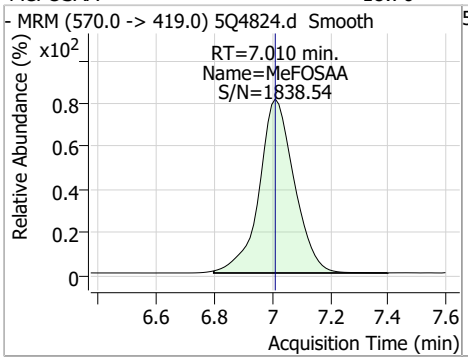
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.16	7.01	0.00	31143				

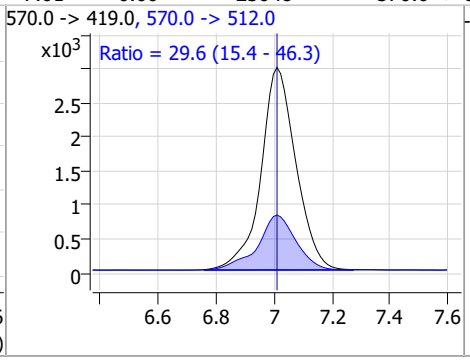


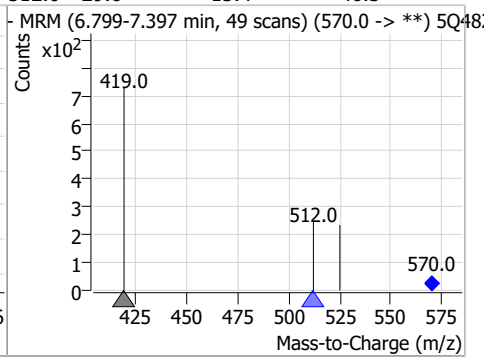




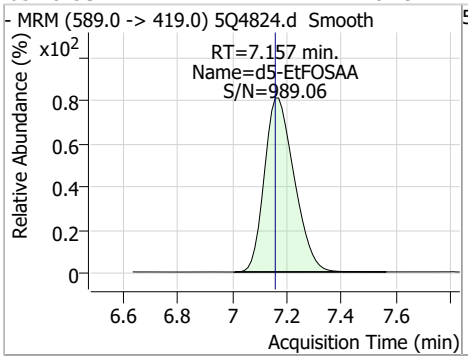
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	18.76	7.01	0.00	25048	570.0 -> 512.0	29.6	15.4	46.3

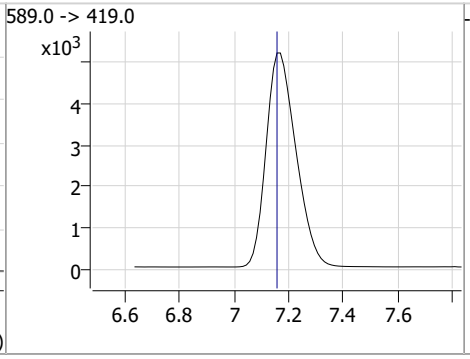


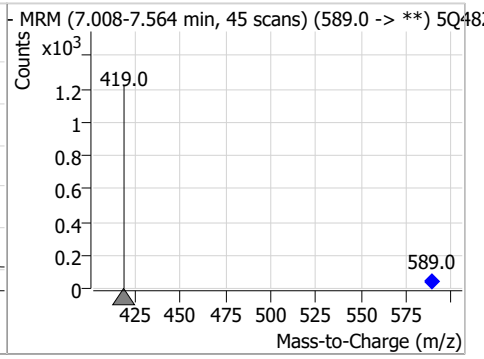




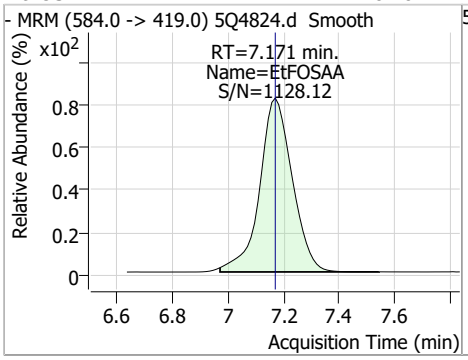
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.73	7.16	0.00	39494				

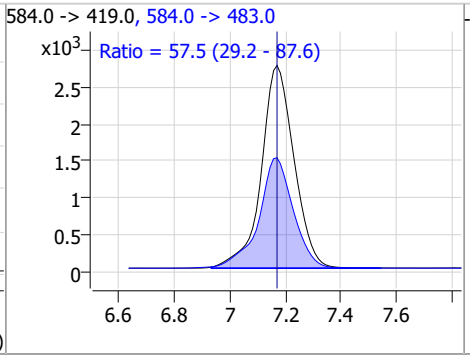


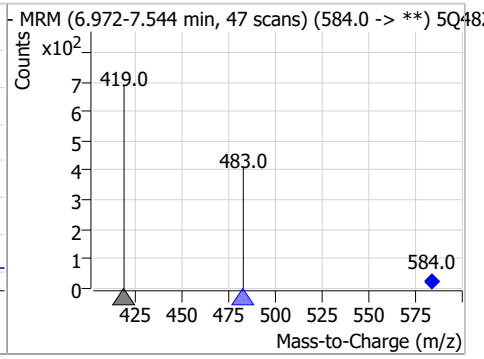




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.18	7.17	0.00	22525	584.0 -> 483.0	57.5	29.2	87.6

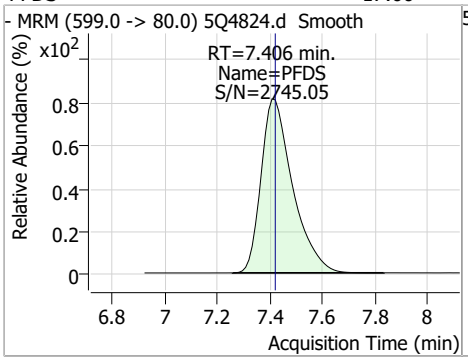


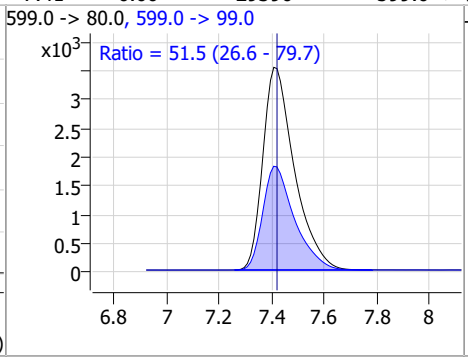


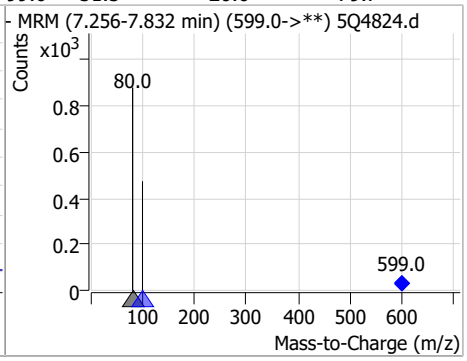


Perfluorinated Compounds by LC/MS/MS

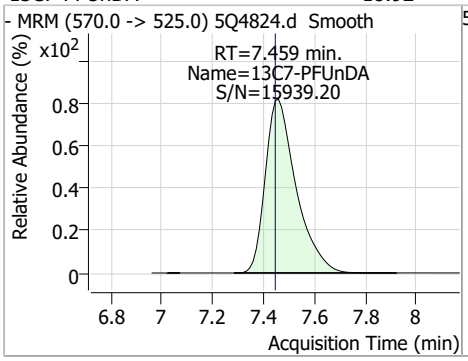
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	17.66	7.41	0.00	29396	599.0 -> 99.0	51.5	26.6	79.7

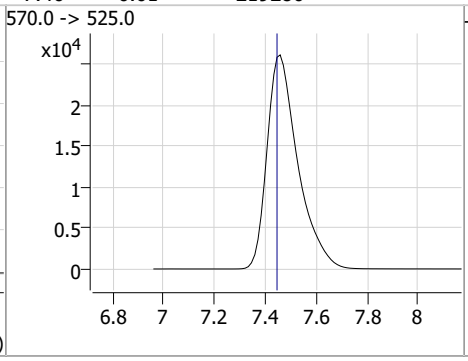


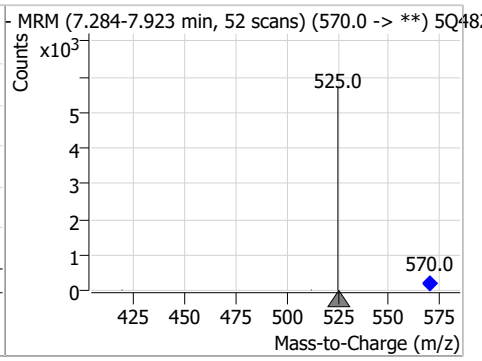




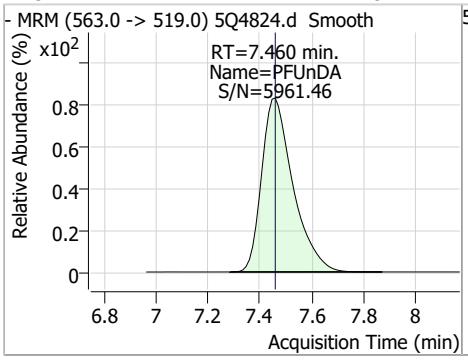
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.92	7.46	0.01	219280				

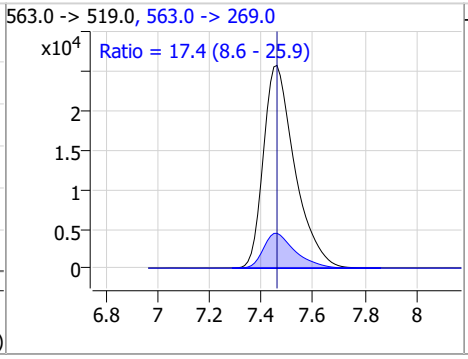


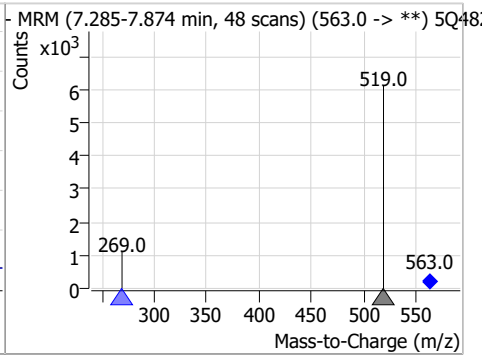




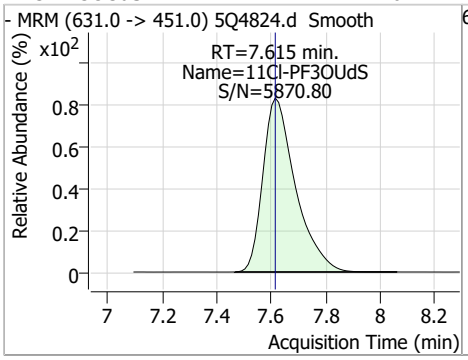
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.12	7.46	0.01	216723	563.0 -> 269.0	17.4	8.6	25.9

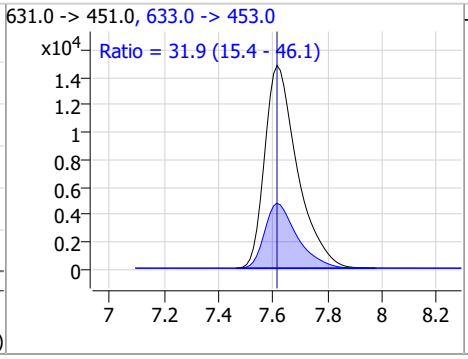


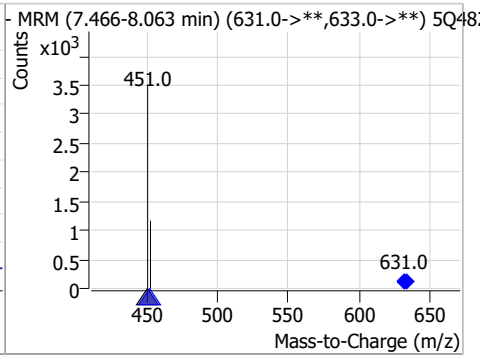




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	17.02	7.62	0.00	123380	633.0 -> 453.0	31.9	15.4	46.1

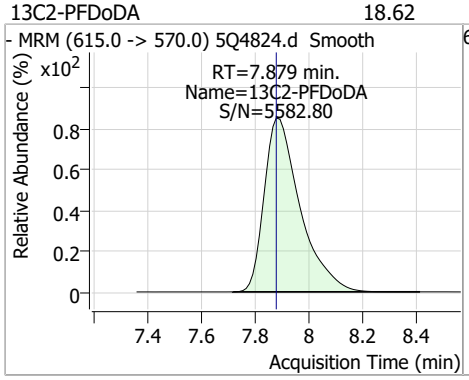


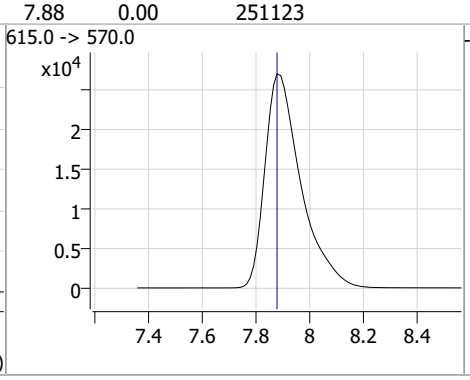


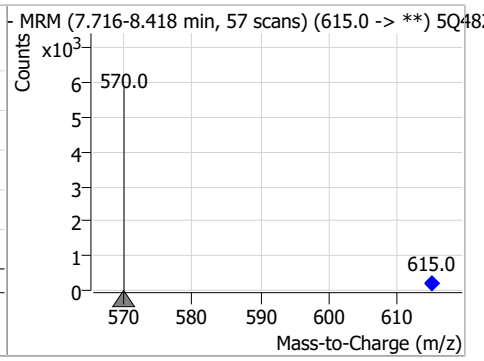


Perfluorinated Compounds by LC/MS/MS

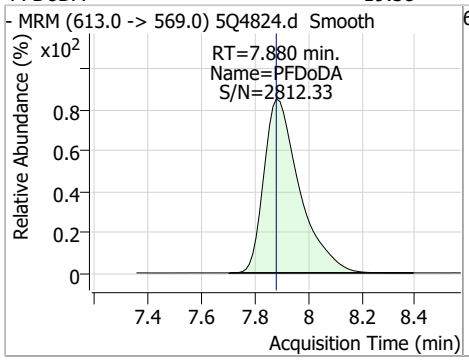
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.62	7.88	0.00	251123				

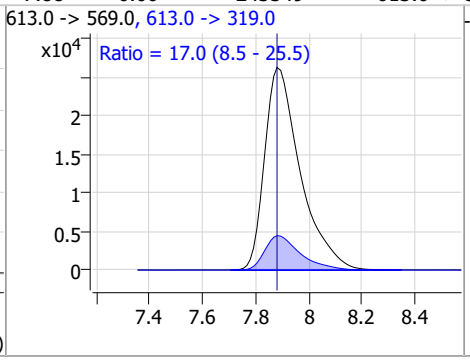


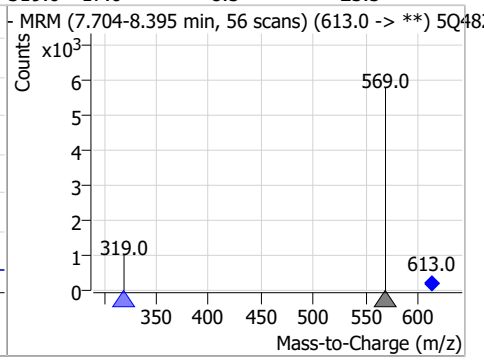




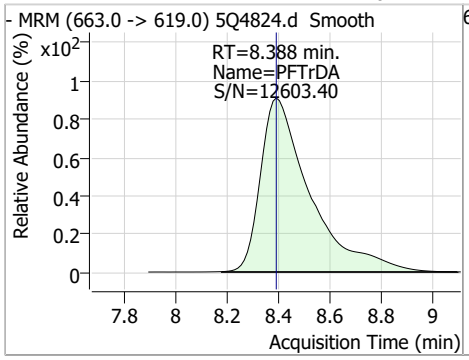
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.58	7.88	0.00	243549	613.0 -> 319.0	17.0	8.5	25.5

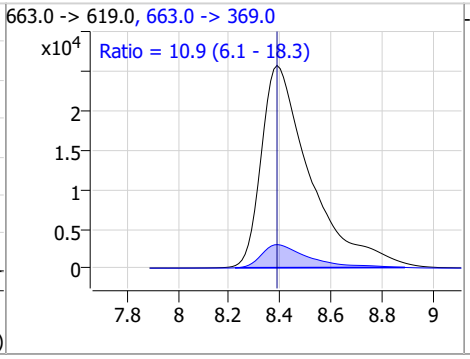


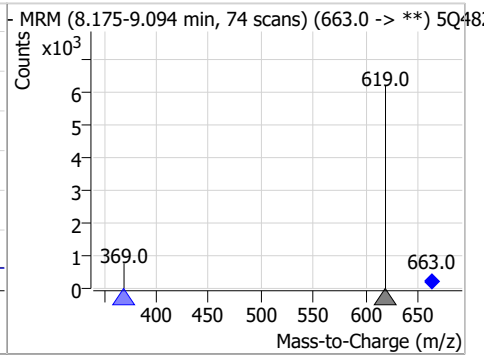




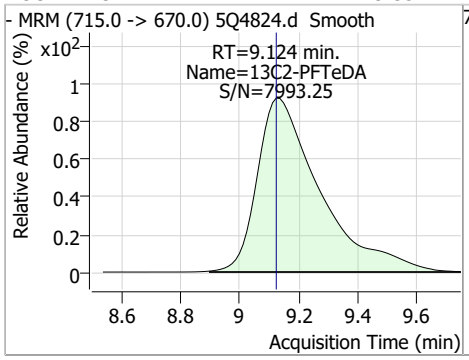
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.44	8.39	0.00	345201	663.0 -> 369.0	10.9	6.1	18.3

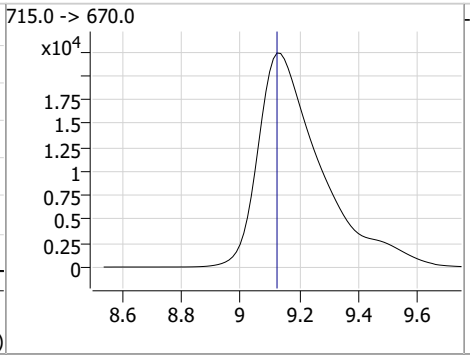


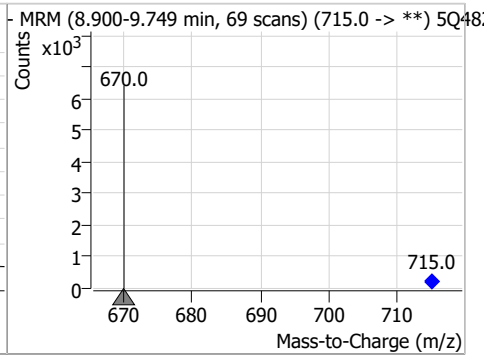




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.35	9.12	0.00	329588				

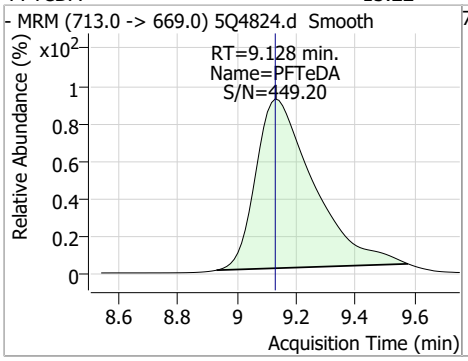


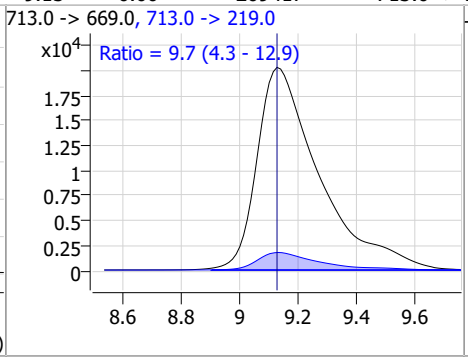


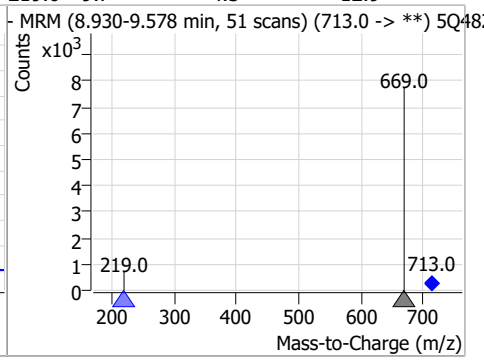


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	15.22	9.13	0.00	269417	713.0 -> 219.0	9.7	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-ICV73
Lab FileID: 5Q4824.D
Injection Time: 09/17/22 14:35
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4825.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 2:50:51 PM
Sample Name : icv73-20
Vial : P1-B2
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

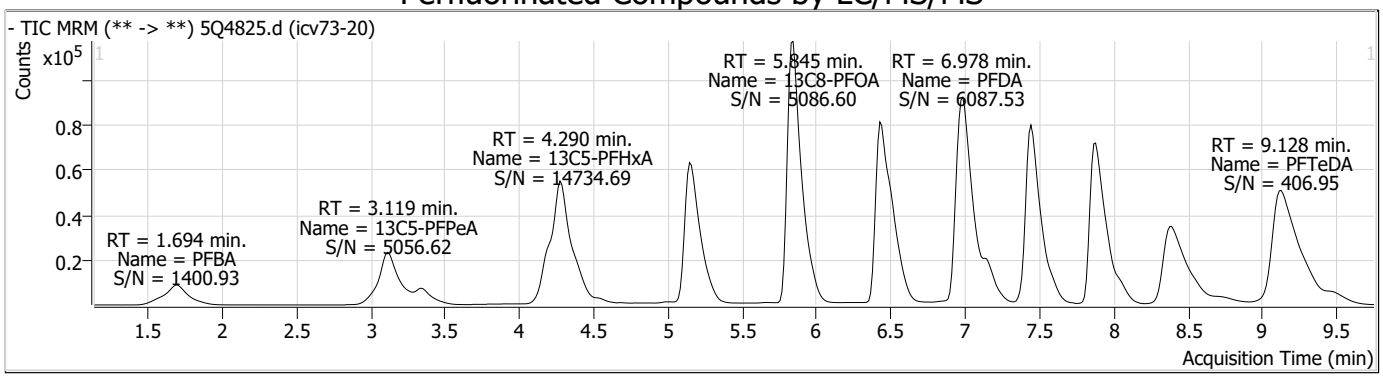
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	76437	20.00 µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	123039	20.00 µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	197193	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	181762	20.00 µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	240057	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	241250	20.00 µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	193703	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	240116	20.00 µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	277288	20.00 µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	361926	20.00 µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	48976	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	13793	20.00 µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	14430	20.00 µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	23535	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	64306	20.00 µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	86559	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	77678	20.00 µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	33780	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	11467	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	12034	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	43298	20.00 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	64306	20.51 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%	
13C2-6:2FTS	5.830	429.0 -> 409.0	86559	20.19 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%	
13C2-8:2FTS	7.013	529.0 -> 509.0	77678	20.22 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%	
13C2-PFDoDA	7.879	615.0 -> 570.0	277288	20.56 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%	
13C2-PFTeDA	9.124	715.0 -> 670.0	361926	21.24 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%	
13C3-PFBS	3.349	302.0 -> 99.0	13793	20.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%	
13C3-PFHxS	5.194	402.0 -> 99.0	14430	21.05 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%	
13C4-PFBA	1.700	217.0 -> 172.0	76437	20.73 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%	
13C4-PFHpA	5.163	367.0 -> 322.0	181762	20.67 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%	
13C5-PFHxA	4.290	318.0 -> 273.0	197193	20.86 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%	
13C5-PFPeA	3.119	268.0 -> 223.0	123039	20.83 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C6-PFDA	6.977	519.0 -> 474.0	193703	20.86 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

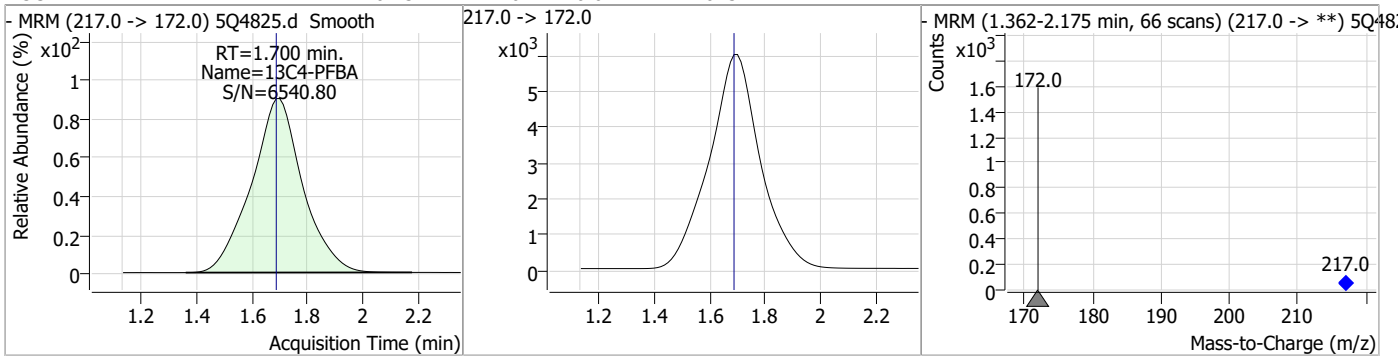
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%			
13C7-PFUnDA	7.459	570.0 -> 525.0	240116	20.72	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%			
13C8-FOSA	6.517	506.0 -> 78.0	48976	20.84	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%			
13C8-PFOA	5.845	421.0 -> 376.0	240057	20.38	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
13C8-PFOS	6.428	507.0 -> 99.0	23535	20.43	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
13C9-PFNA	6.443	472.0 -> 427.0	241250	20.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	33780	19.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	11467	20.02	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
d3-MeFOSA	6.952	515.0 -> 169.0	12034	21.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	43298	20.53	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	61882	17.72	µg/L		99
6:2FTS	5.831	427.0 -> 407.0	79378	17.60	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	73584	18.44	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	20516	15.11	µg/L		99
FOSA	6.519	498.0 -> 78.0	42969	17.17	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	24024	16.63	µg/L		98
PFBA	1.694	213.0 -> 169.0	25992	17.09	µg/L		100
PFBS	3.354	299.0 -> 80.0	33463	16.13	µg/L		100
PFDA	6.978	513.0 -> 469.0	195894	16.25	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	254294	18.51	µg/L		100
PFDS	7.406	599.0 -> 80.0	33077	18.14	µg/L		97
PFHpA	5.150	363.0 -> 319.0	185675	14.99	µg/L		100
PFHpS	5.855	449.0 -> 80.0	33740	17.72	µg/L		100
PFHxA	4.291	313.0 -> 269.0	155372	15.88	µg/L		100
PFHxS	5.195	399.0 -> 80.0	34642	16.55	µg/L	m	99
PFNA	6.444	463.0 -> 419.0	183409	16.70	µg/L		99
PFNS	-	549.0 -> 80.0	-	N.D.			
PFOA	5.845	413.0 -> 369.0	252380	17.29	µg/L		99
PFOS	6.429	499.0 -> 80.0	39577	18.77	µg/L		97
PFPeA	3.122	263.0 -> 219.0	97078	16.48	µg/L		100
PFPeS	4.398	349.0 -> 80.0	28249	17.06	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	281492	14.48	µg/L		97
PFTrDA	8.388	663.0 -> 619.0	387514	20.78	µg/L		98
PFUnDA	7.460	563.0 -> 519.0	237331	19.12	µg/L		100
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.			
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.			
ADONA	-	377.0 -> 251.0	-	N.D.			
HFPO-DA	-	329.0 -> 169.0	-	N.D.			
MeFOSA	6.966	512.0 -> 169.0	11616	18.40	µg/L		95
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
FBSA	-	298.0 -> 78.0	-	N.D.			
FHxSA	5.674	398.0 -> 78.0	0		µg/L	m	1

 # = Qualifier out of range, m = manually integrated, + = Area summed

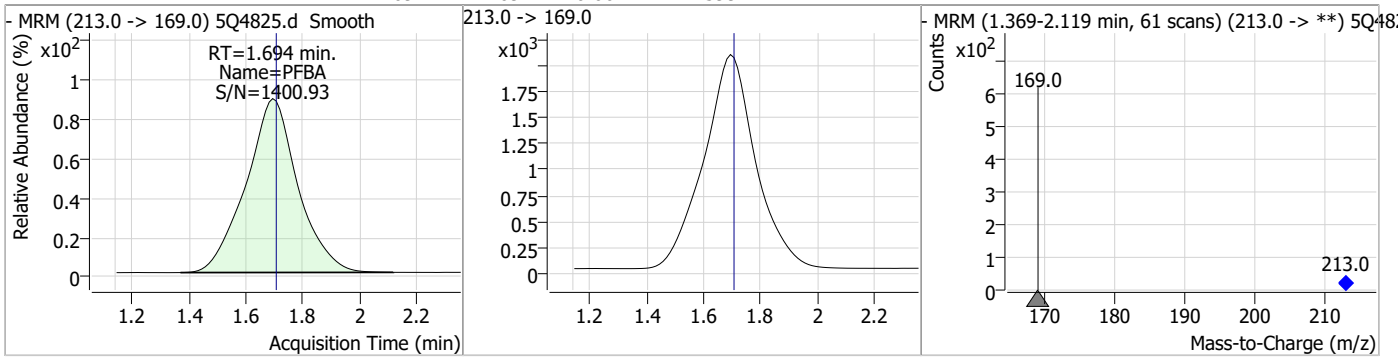
Perfluorinated Compounds by LC/MS/MS



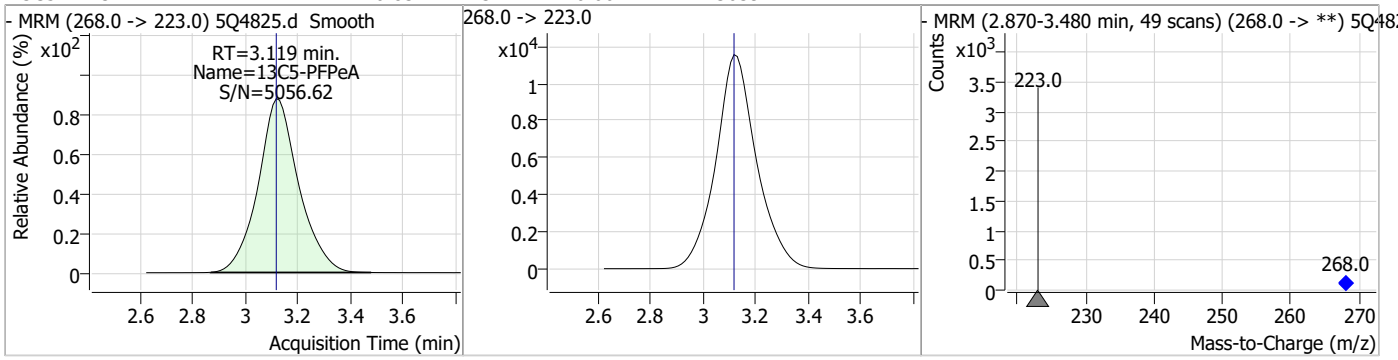
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.73	1.70	0.01	76437				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.09	1.69	0.00	25992				

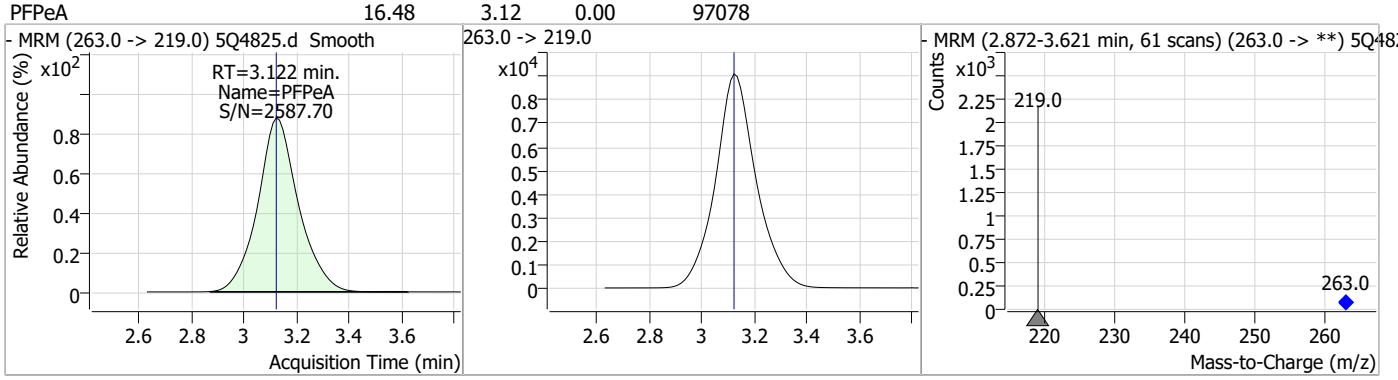


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.83	3.12	0.00	123039				

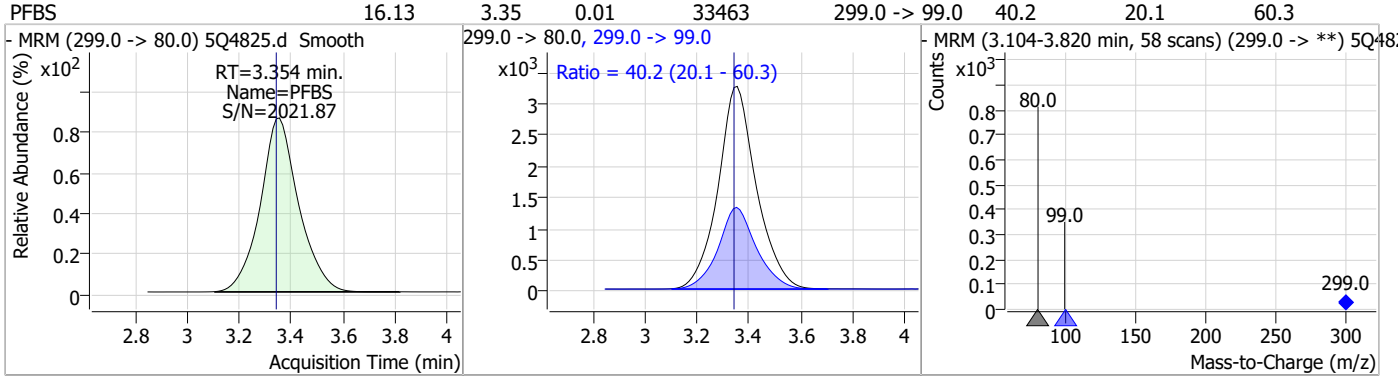


Perfluorinated Compounds by LC/MS/MS

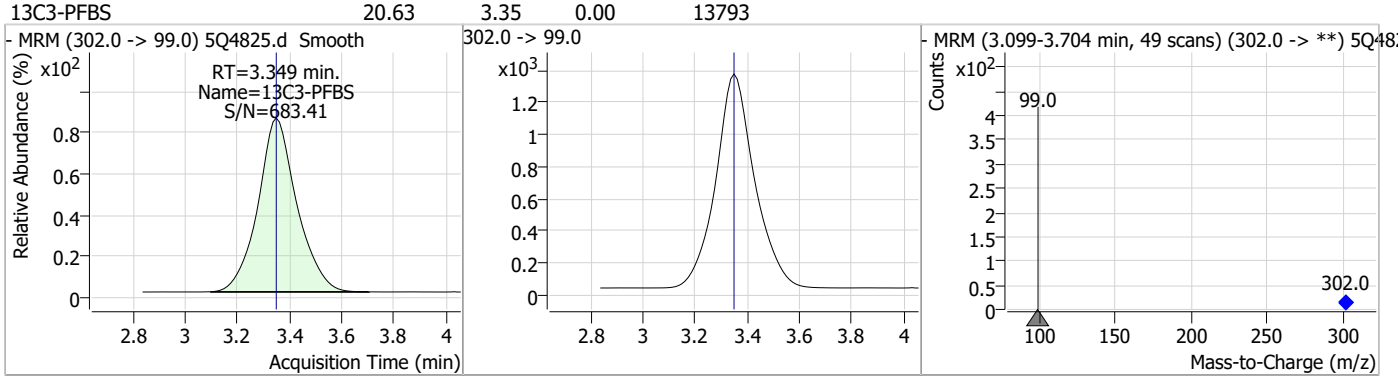
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.48	3.12	0.00	97078				



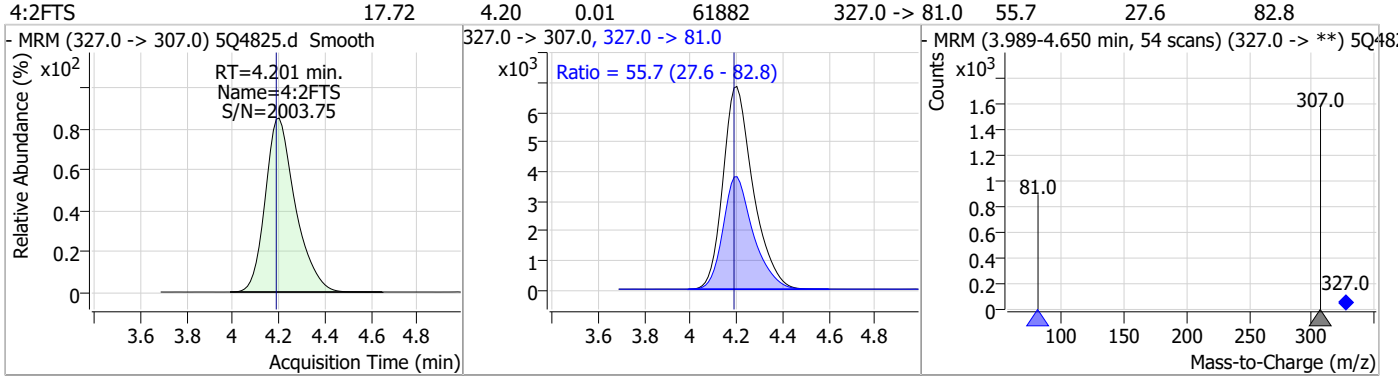
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	16.13	3.35	0.01	33463	299.0 -> 99.0	40.2	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.63	3.35	0.00	13793				

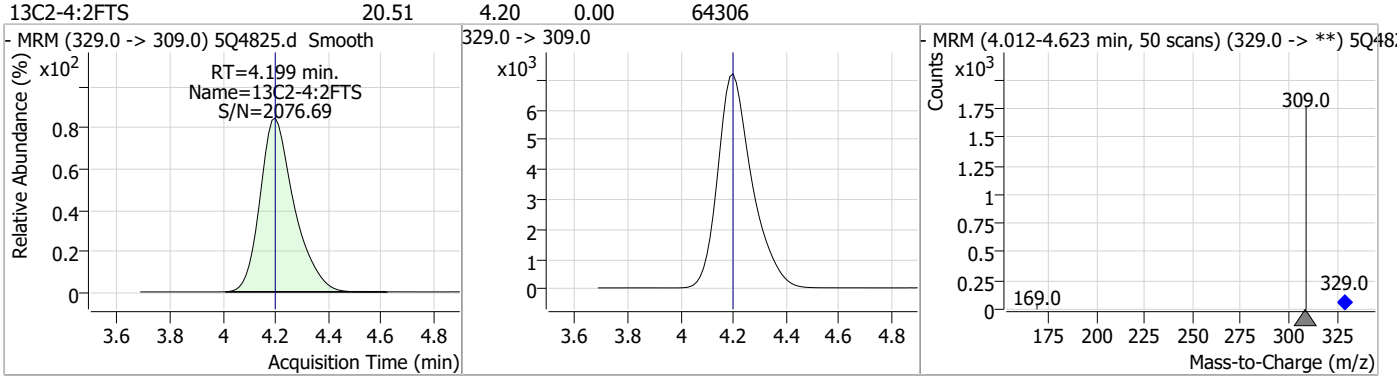


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.72	4.20	0.01	61882	327.0 -> 81.0	55.7	27.6	82.8

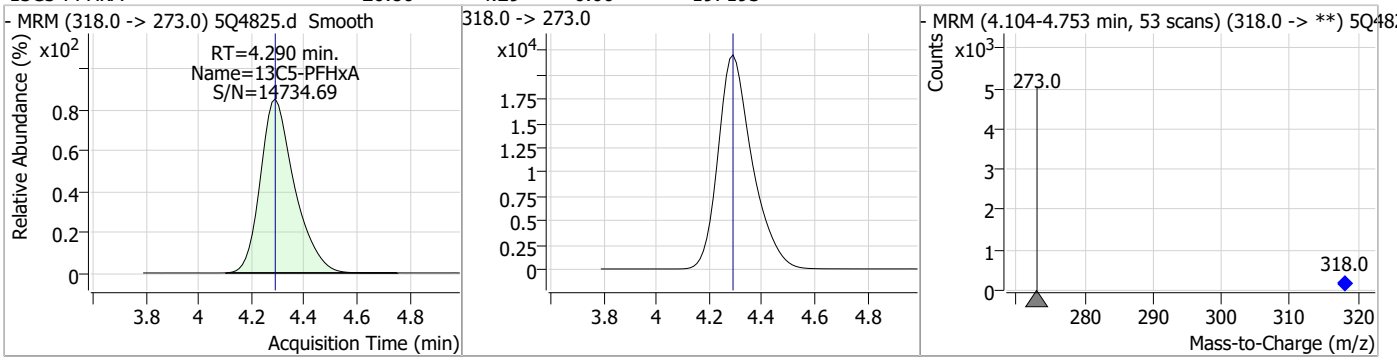


Perfluorinated Compounds by LC/MS/MS

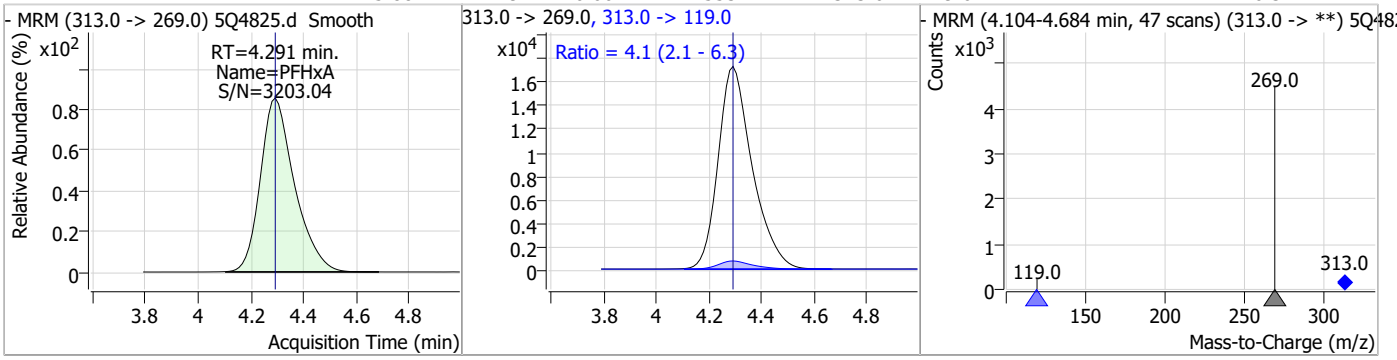
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.51	4.20	0.00	64306				



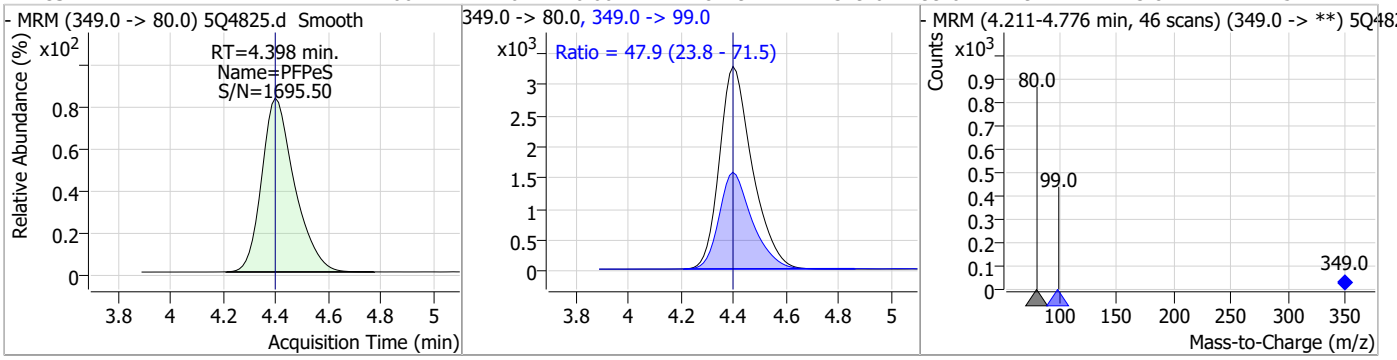
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.86	4.29	0.00	197193				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.88	4.29	0.00	155372	313.0 -> 119.0	4.1	2.1	6.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	17.06	4.40	0.00	28249	349.0 -> 99.0	47.9	23.8	71.5

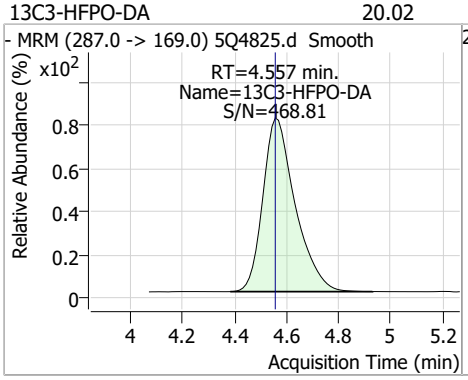


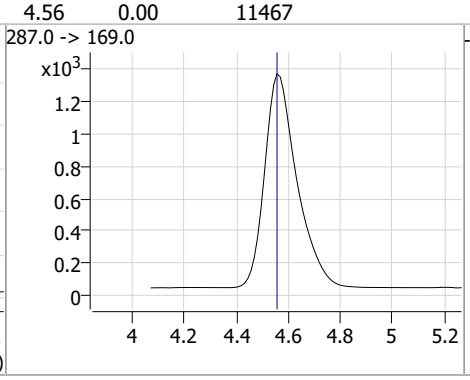
7.7.69

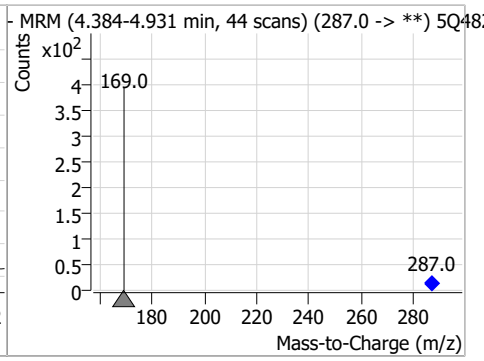
7

Perfluorinated Compounds by LC/MS/MS

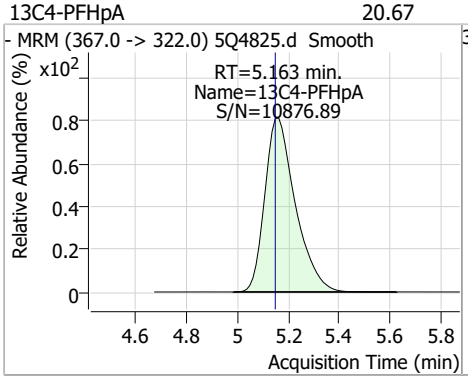
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.02	4.56	0.00	11467				

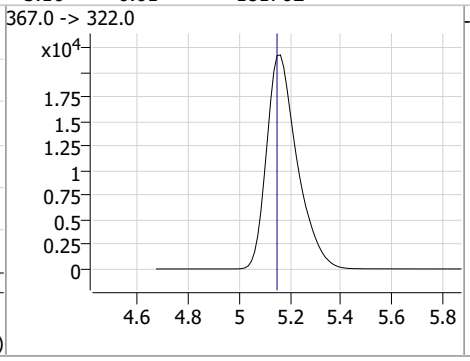


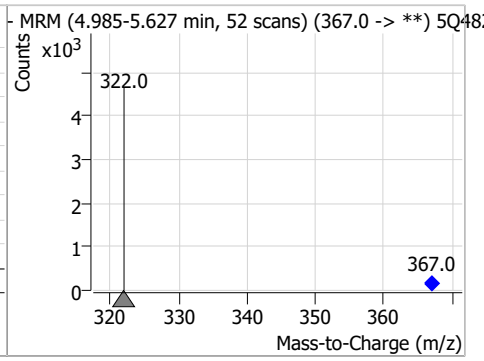




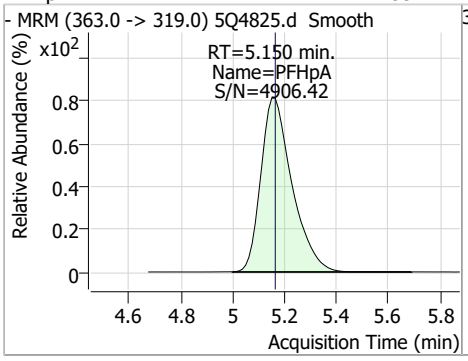
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	5.16	0.01	181762				

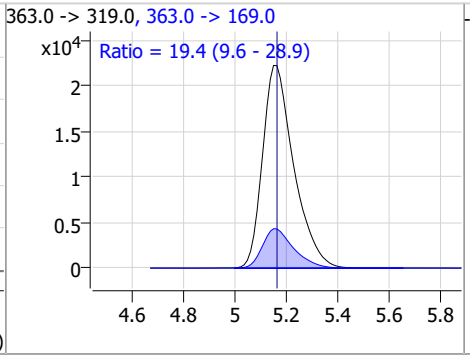


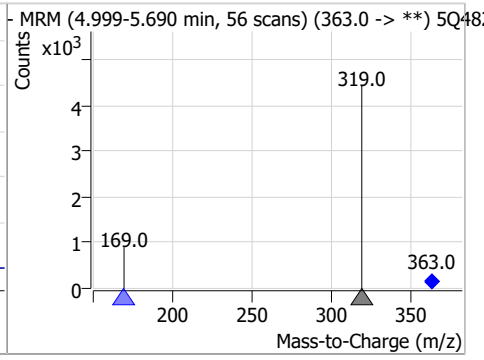




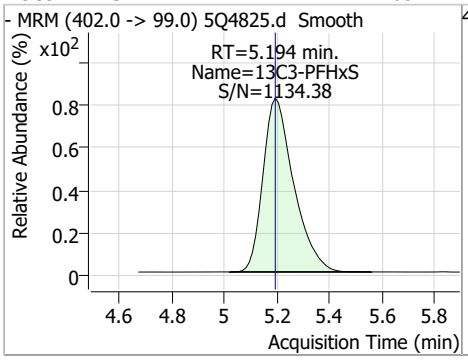
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	14.99	5.15	0.00	185675	363.0 -> 169.0	19.4	9.6	28.9

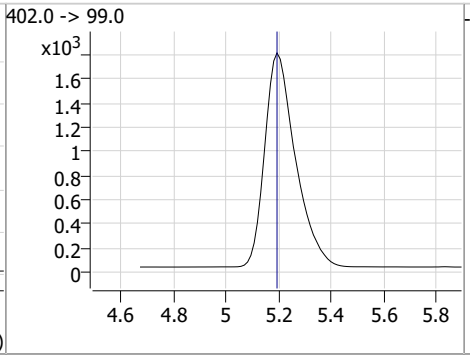


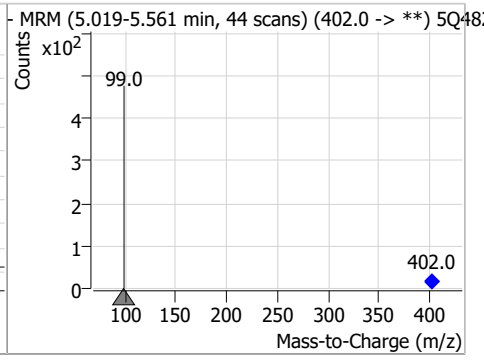




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.05	5.19	0.00	14430				

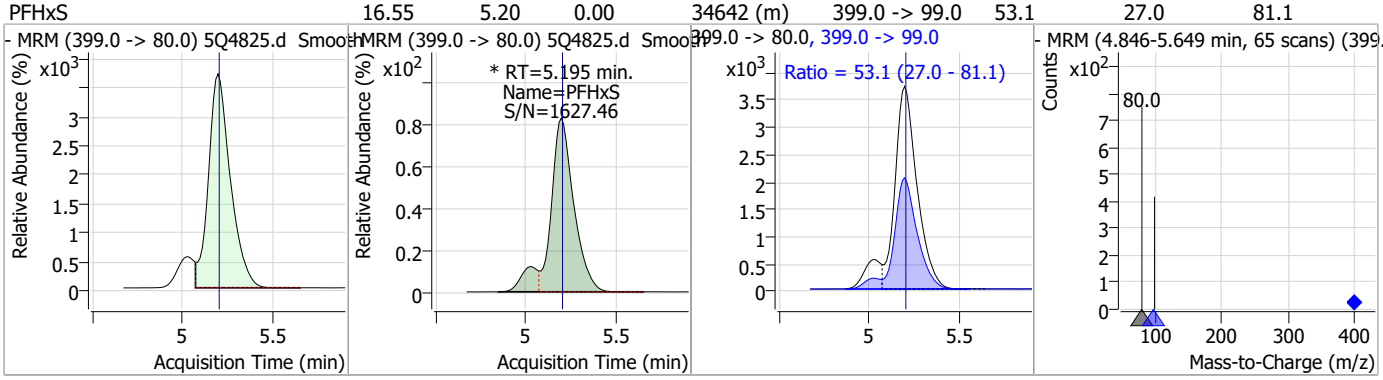




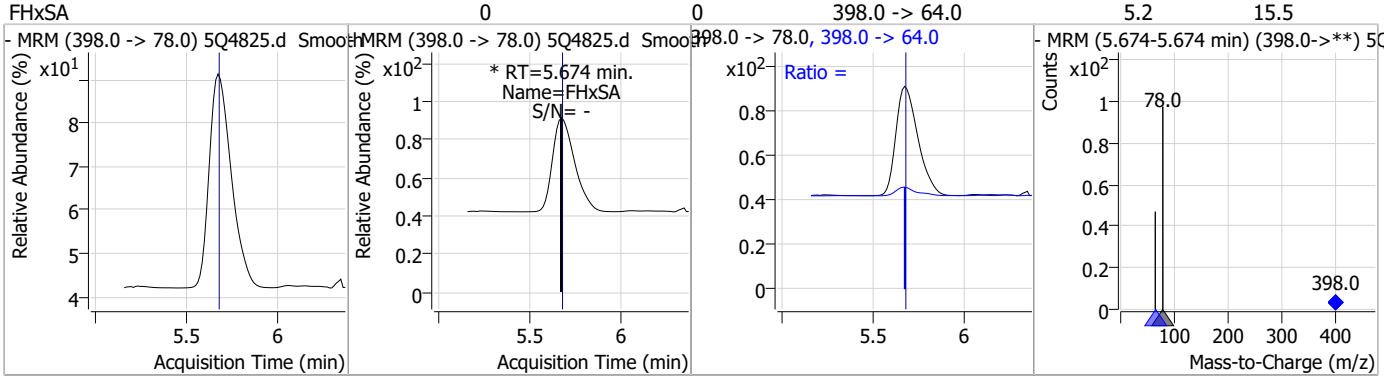


Perfluorinated Compounds by LC/MS/MS

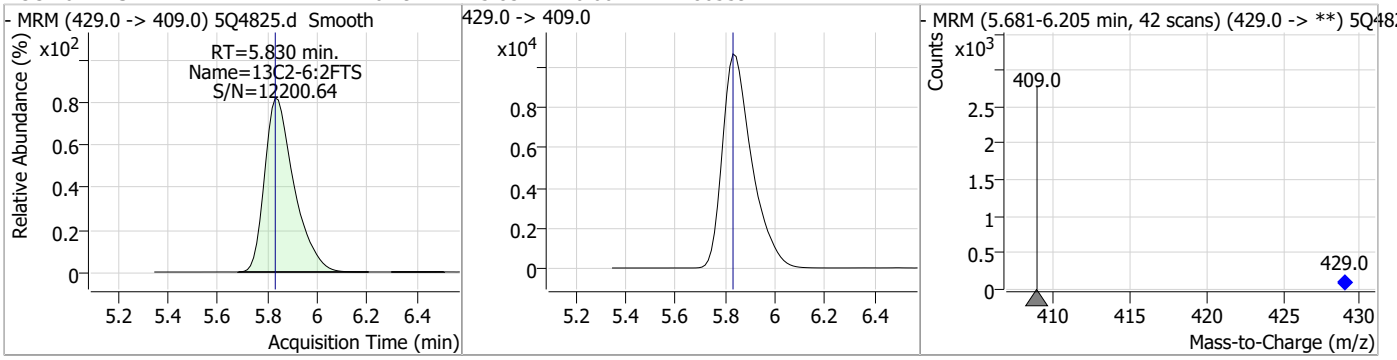
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	16.55	5.20	0.00	34642 (m)	399.0 -> 99.0	53.1	27.0	81.1



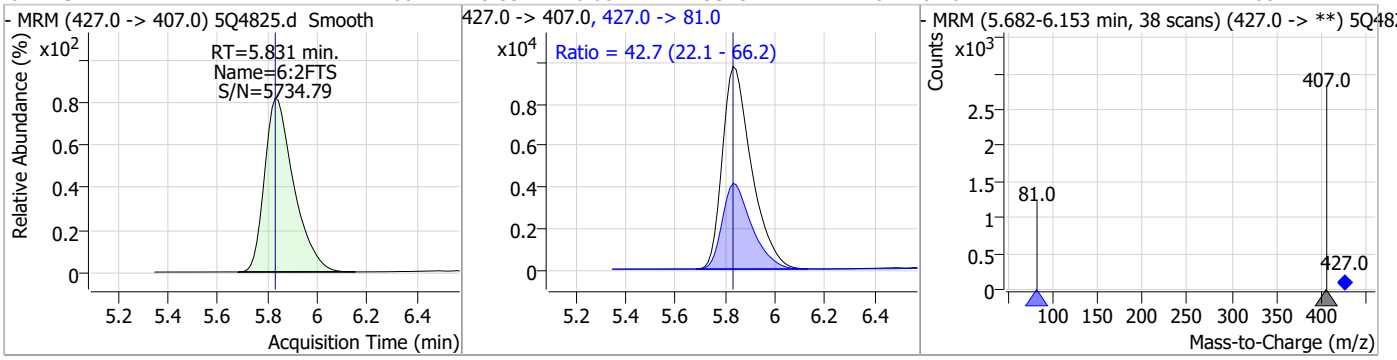
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA		0		0	398.0 -> 64.0		5.2	15.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.19	5.83	0.00	86559				

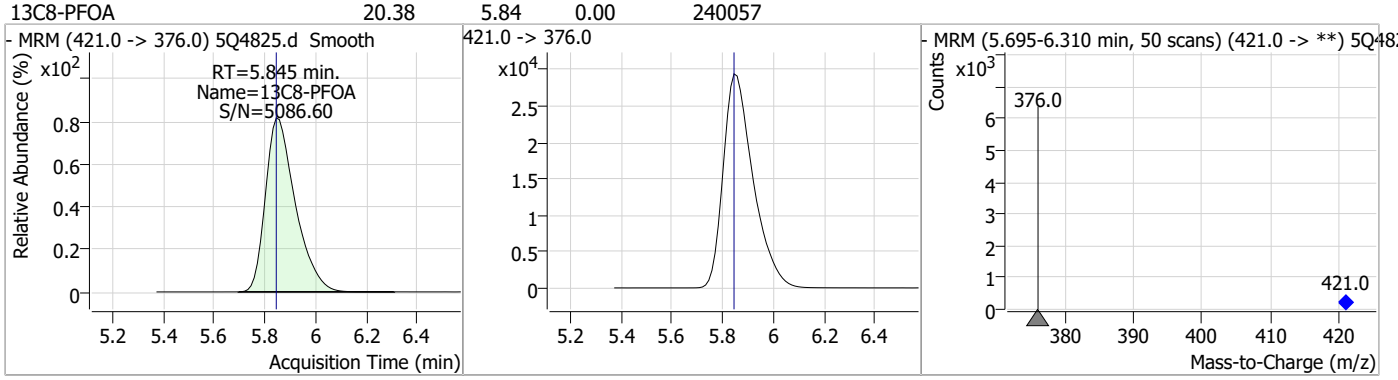


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.60	5.83	0.00	79378	427.0 -> 81.0	42.7	22.1	66.2

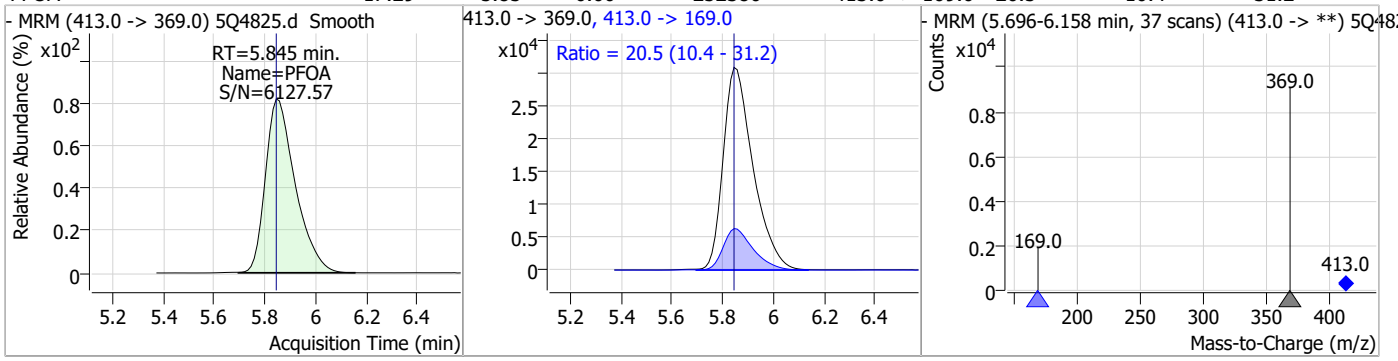


Perfluorinated Compounds by LC/MS/MS

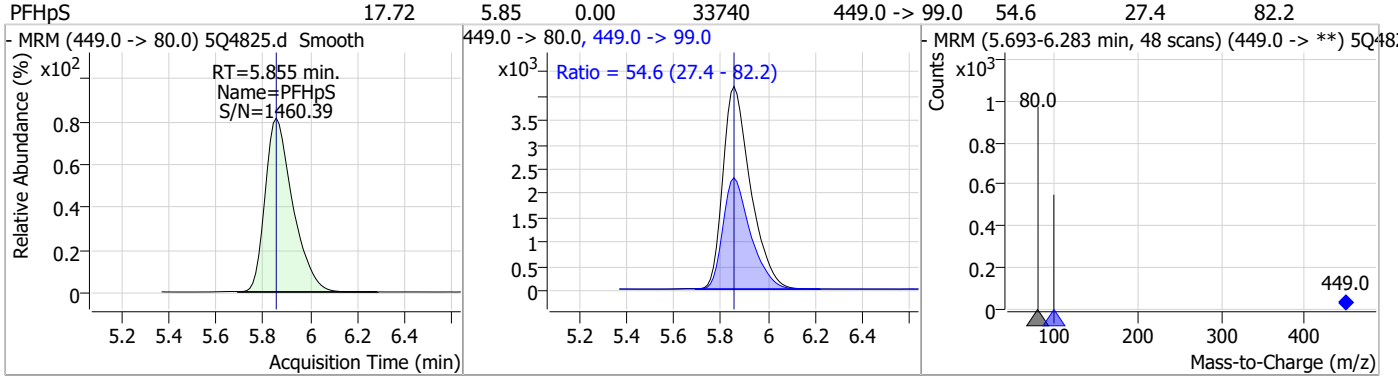
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.38	5.84	0.00	240057				



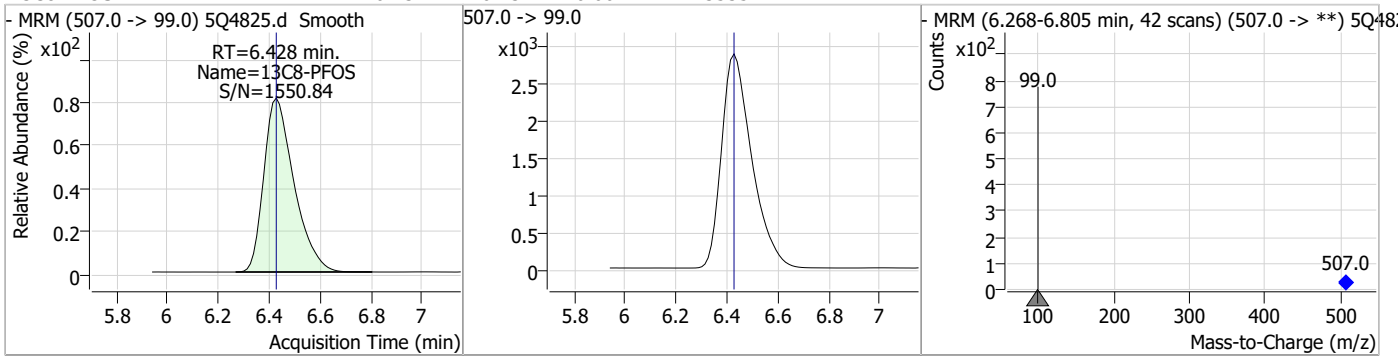
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.29	5.85	0.00	252380	413.0 -> 169.0	20.5	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.72	5.85	0.00	33740	449.0 -> 99.0	54.6	27.4	82.2

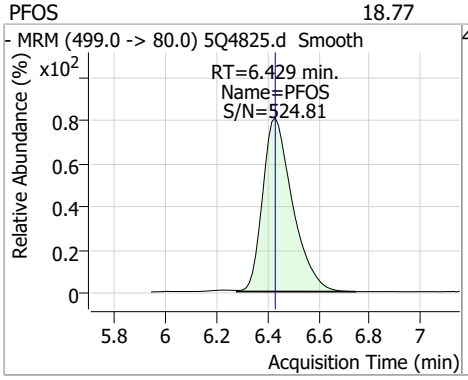


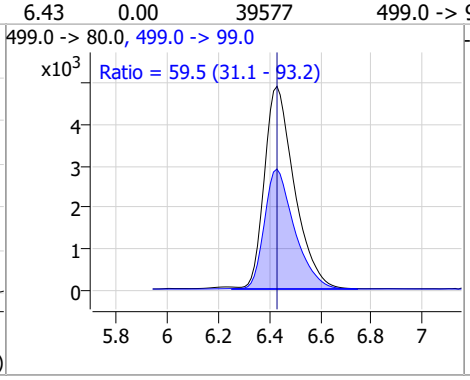
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.43	6.43	0.00	23535				

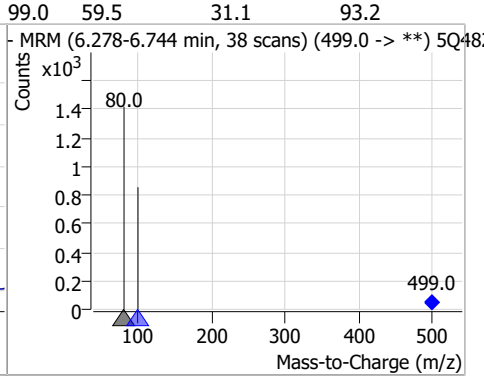


Perfluorinated Compounds by LC/MS/MS

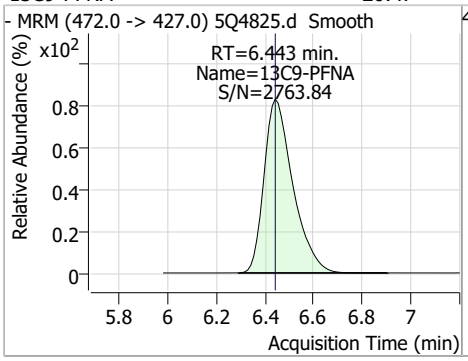
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.77	6.43	0.00	39577	499.0 -> 99.0	59.5	31.1	93.2

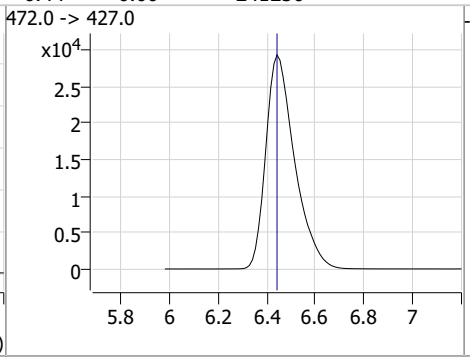


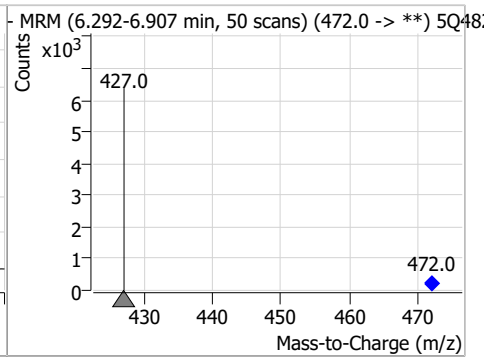




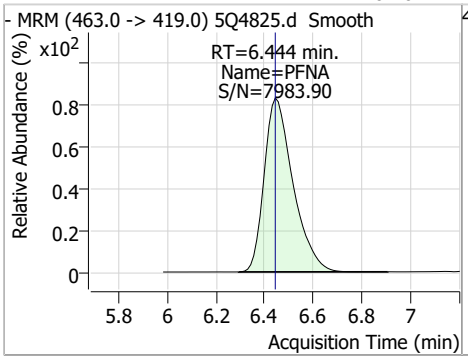
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.47	6.44	0.00	241250				

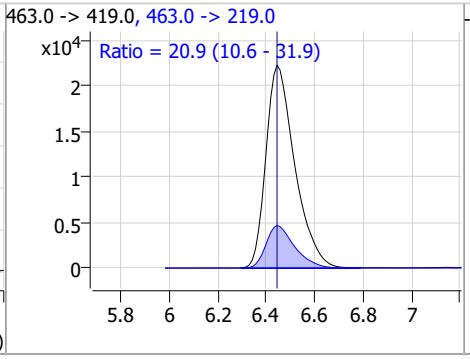


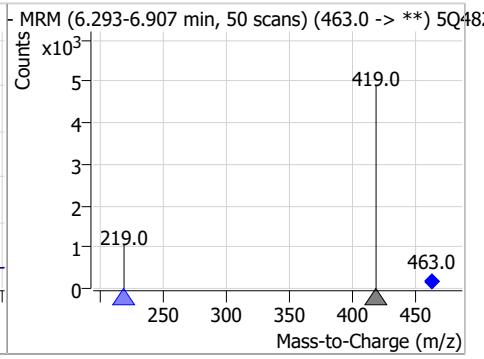




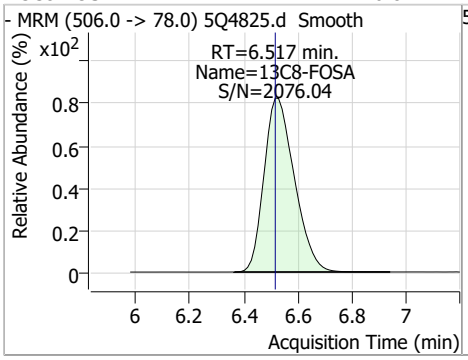
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	16.70	6.44	0.00	183409	463.0 -> 219.0	20.9	10.6	31.9

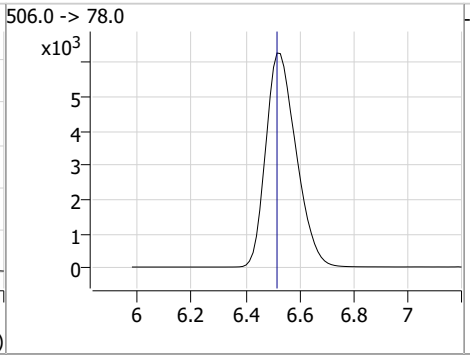


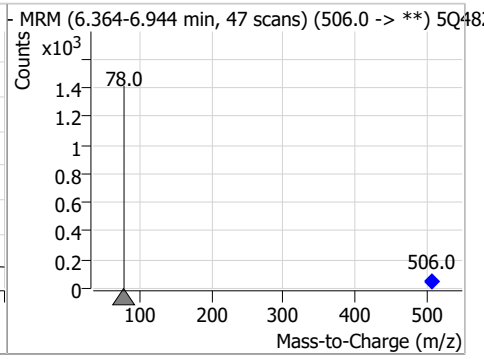




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.84	6.52	0.00	48976				

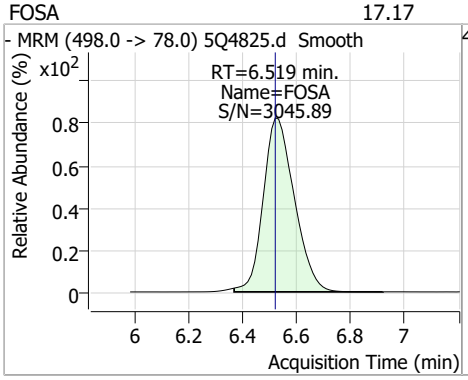


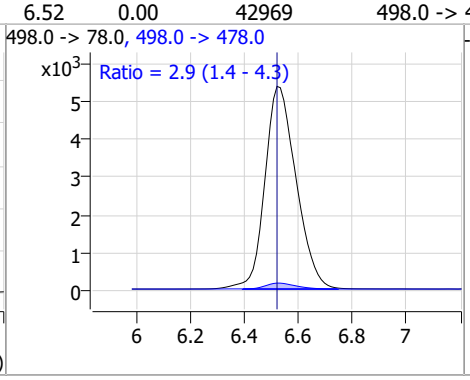


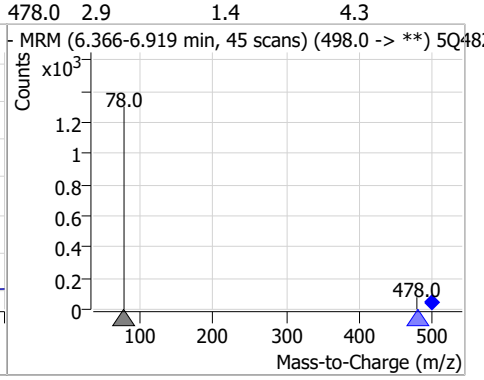


Perfluorinated Compounds by LC/MS/MS

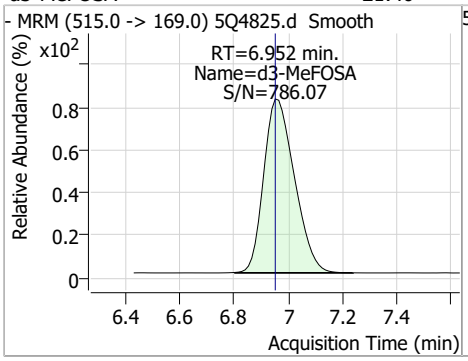
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.17	6.52	0.00	42969	498.0 -> 478.0	2.9	1.4	4.3

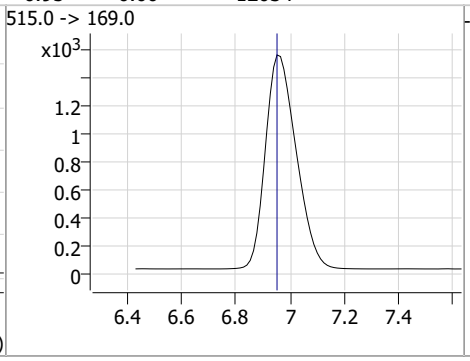


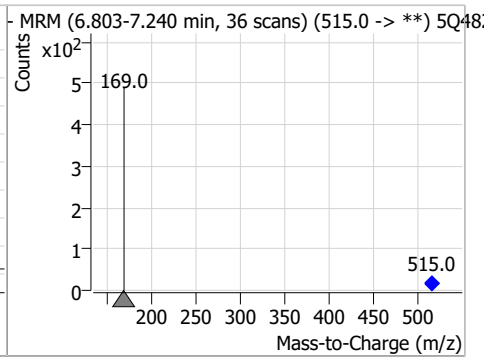




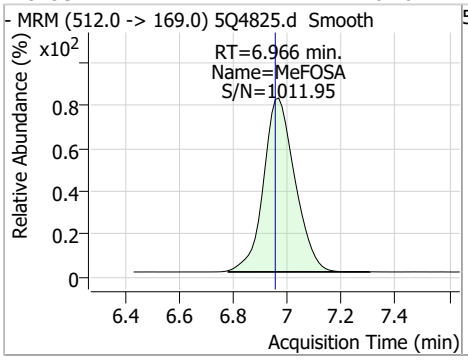
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.40	6.95	0.00	12034				

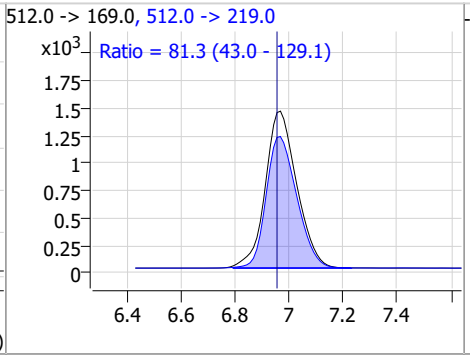


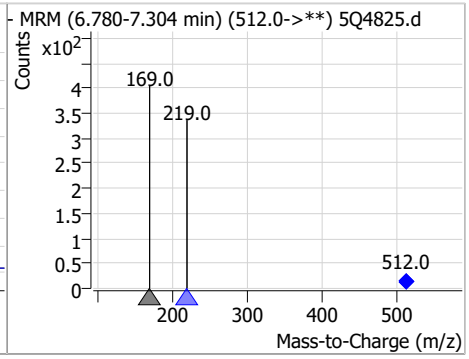




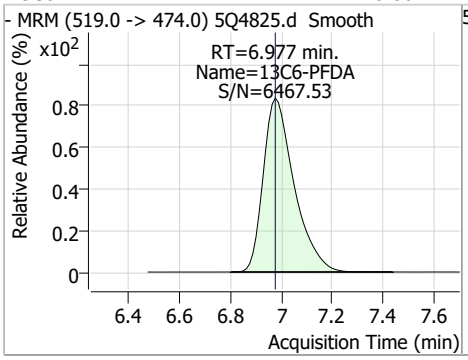
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	18.40	6.97	0.01	11616	512.0 -> 219.0	81.3	43.0	129.1

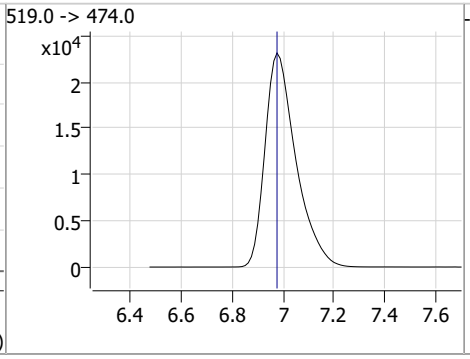


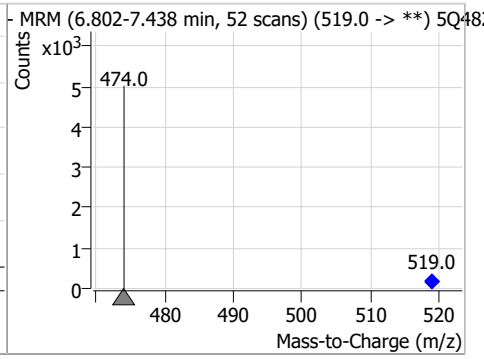




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.86	6.98	0.00	193703				

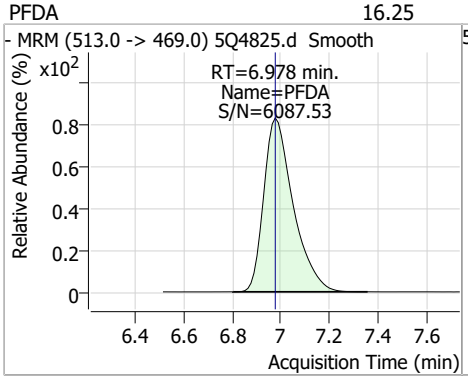


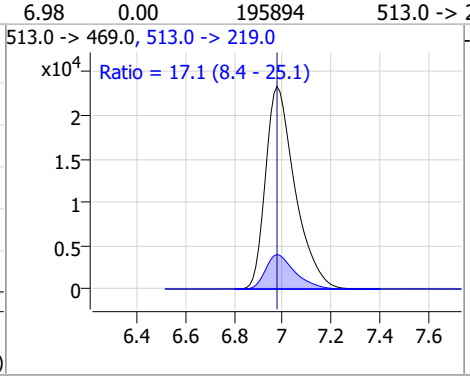


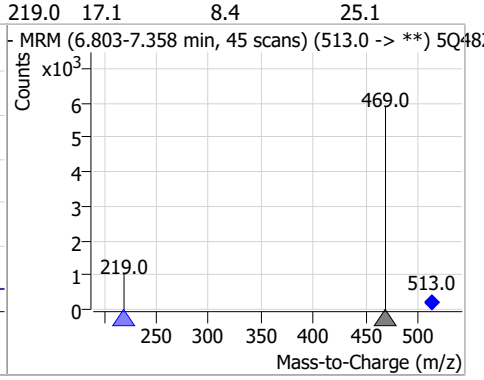


Perfluorinated Compounds by LC/MS/MS

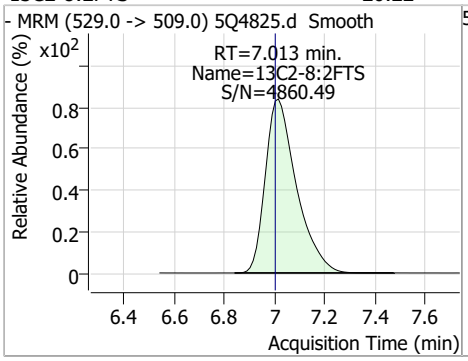
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.25	6.98	0.00	195894	513.0 -> 219.0	17.1	8.4	25.1

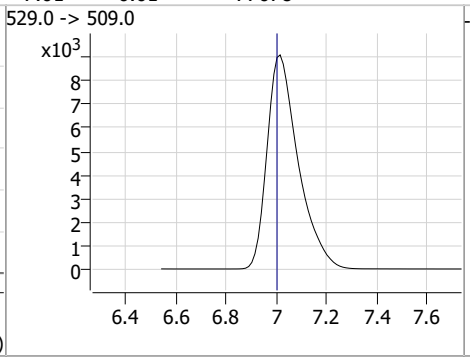


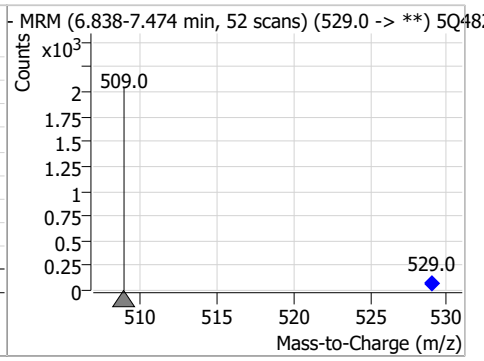




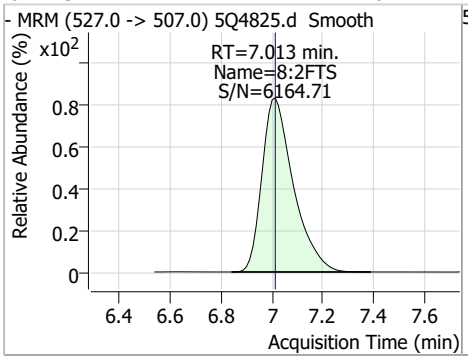
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.22	7.01	0.01	77678				

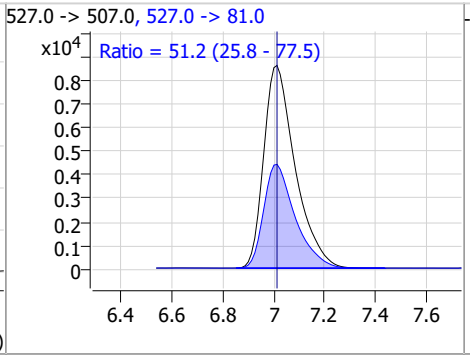


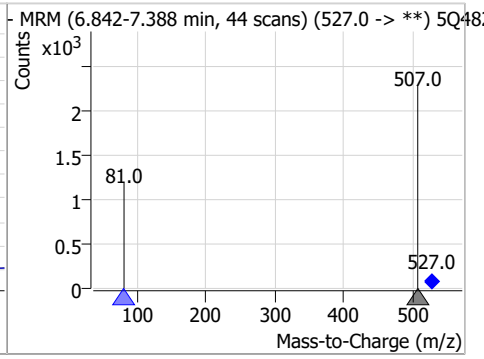




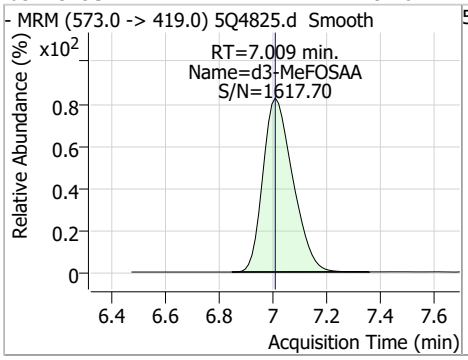
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.44	7.01	0.01	73584	527.0 -> 81.0	51.2	25.8	77.5

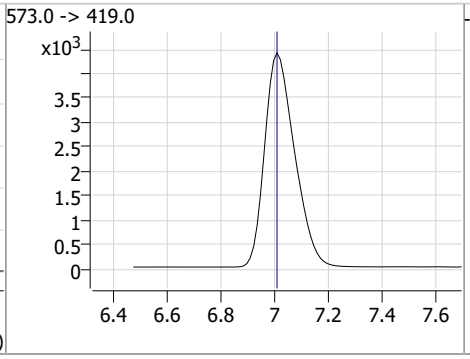


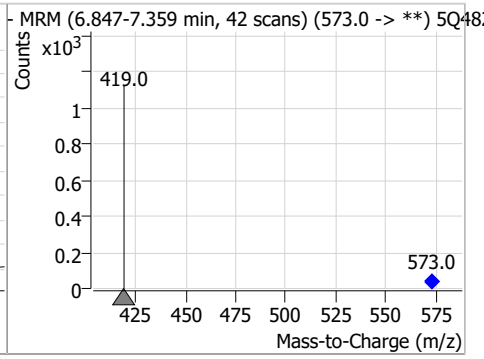




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.70	7.01	0.00	33780				

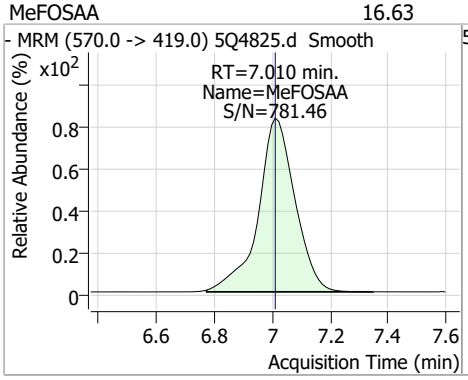


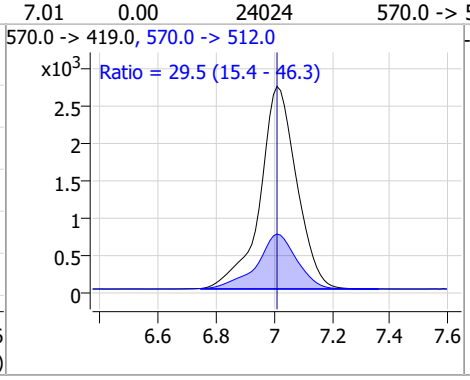


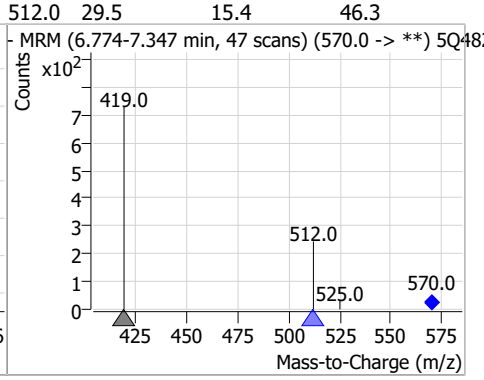


Perfluorinated Compounds by LC/MS/MS

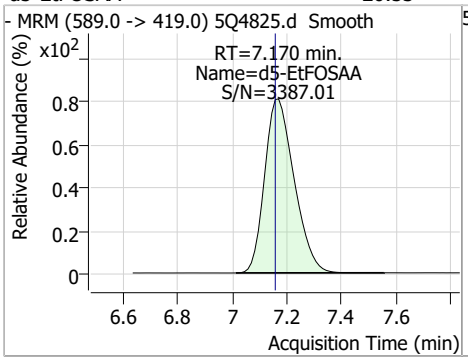
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.63	7.01	0.00	24024	570.0 -> 512.0	29.5	15.4	46.3

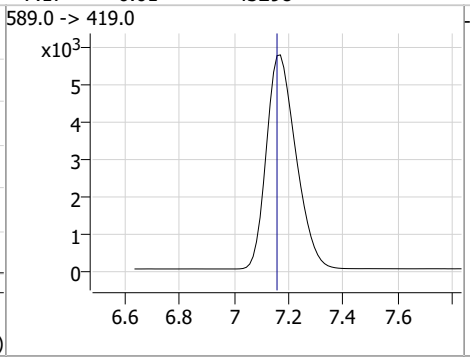


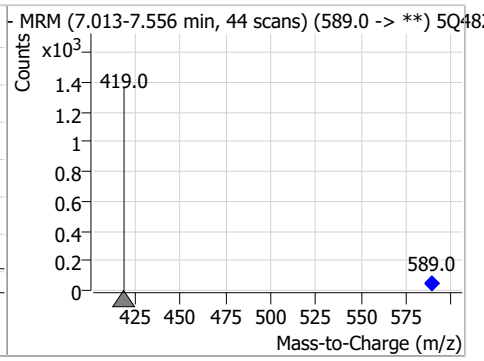




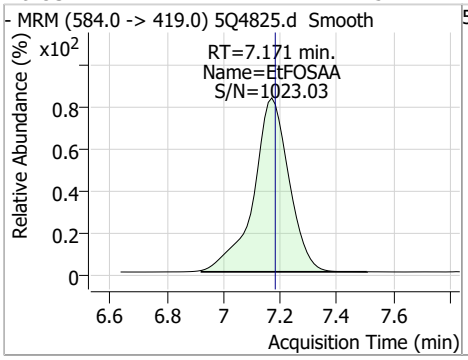
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.53	7.17	0.01	43298				

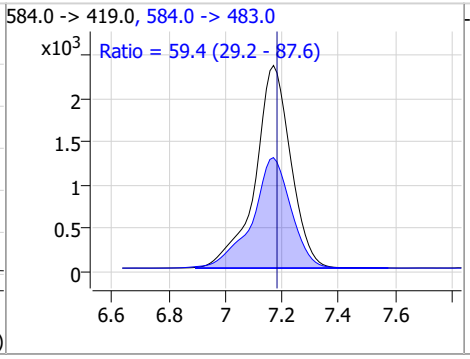


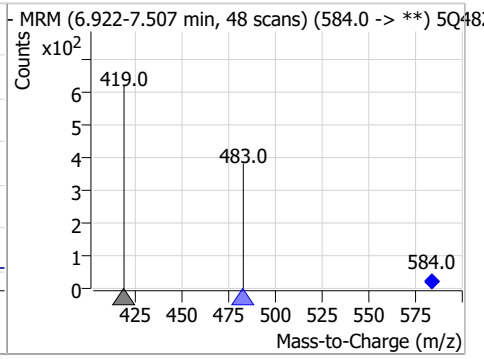




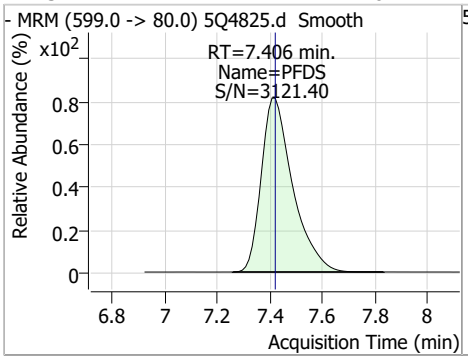
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.11	7.17	0.00	20516	584.0 -> 483.0	59.4	29.2	87.6

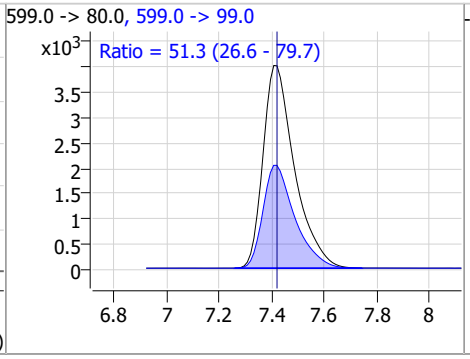


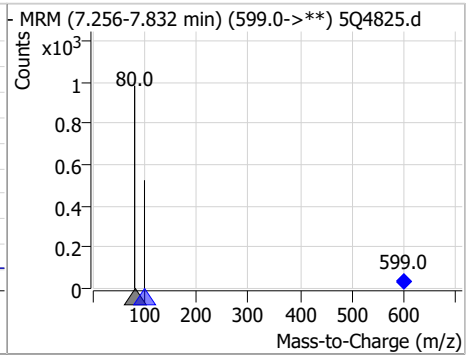




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.14	7.41	0.00	33077	599.0 -> 99.0	51.3	26.6	79.7

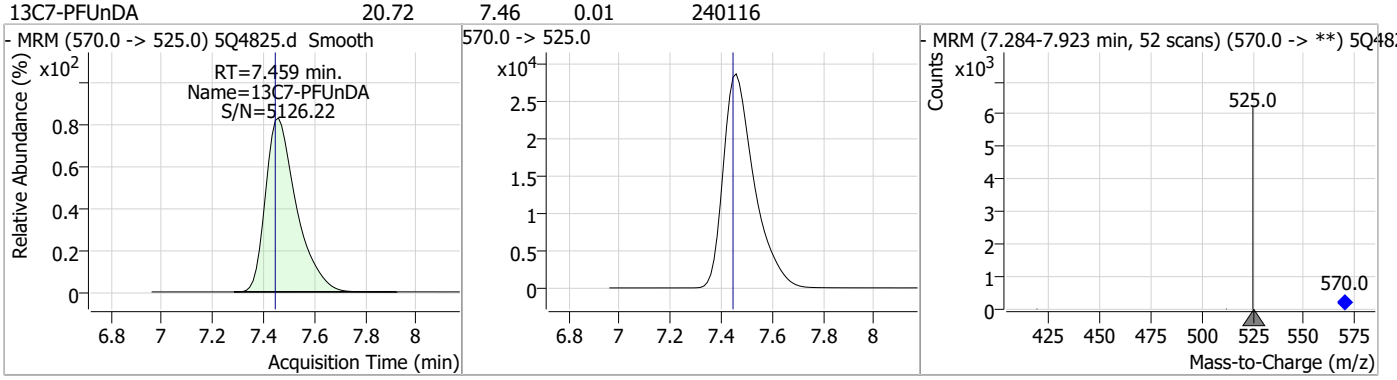




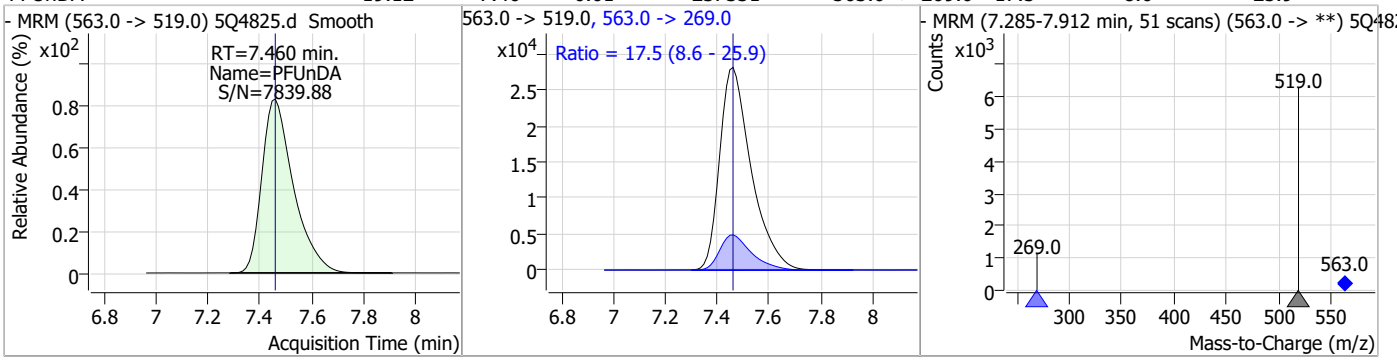


Perfluorinated Compounds by LC/MS/MS

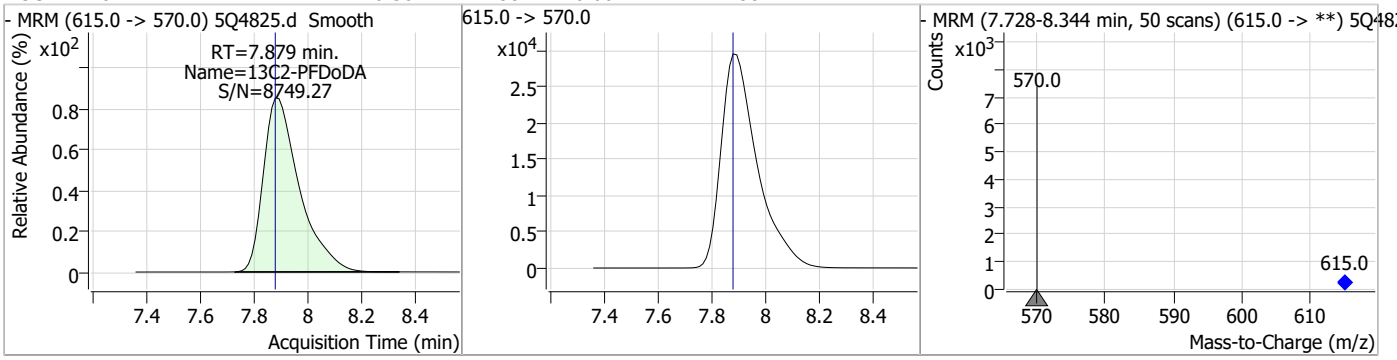
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.72	7.46	0.01	240116				



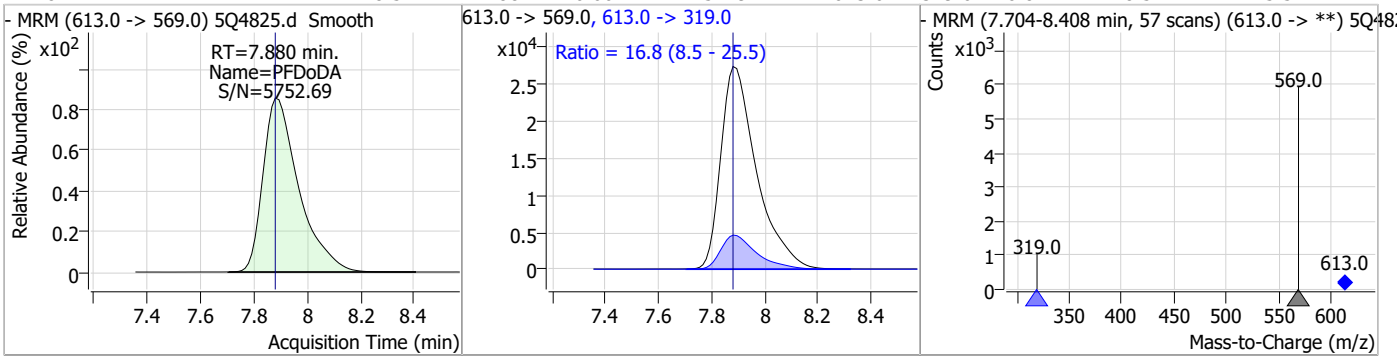
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.12	7.46	0.01	237331	563.0 -> 269.0	17.5	8.6	25.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.56	7.88	0.00	277288				

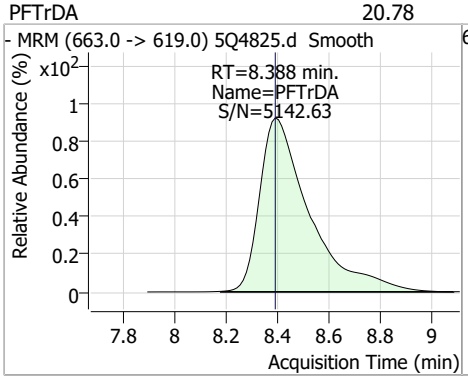


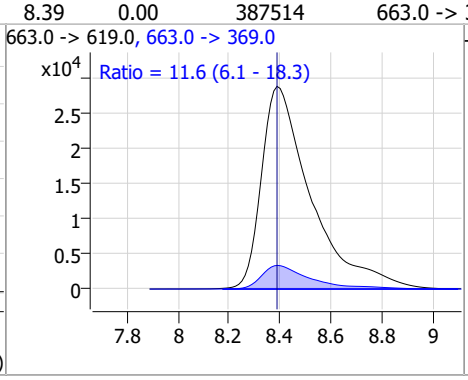
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.51	7.88	0.00	254294	613.0 -> 319.0	16.8	8.5	25.5

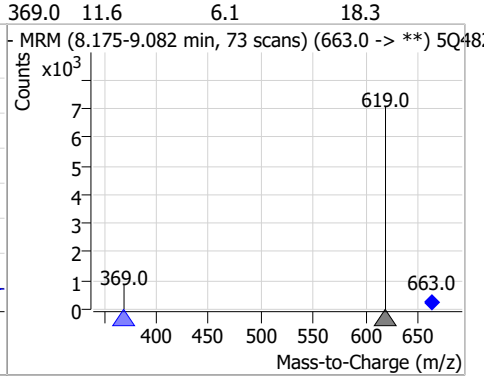


Perfluorinated Compounds by LC/MS/MS

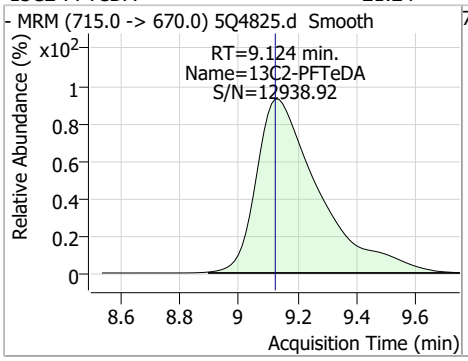
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.78	8.39	0.00	387514	663.0 -> 369.0	11.6	6.1	18.3

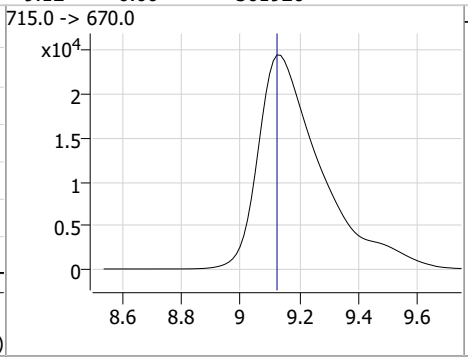


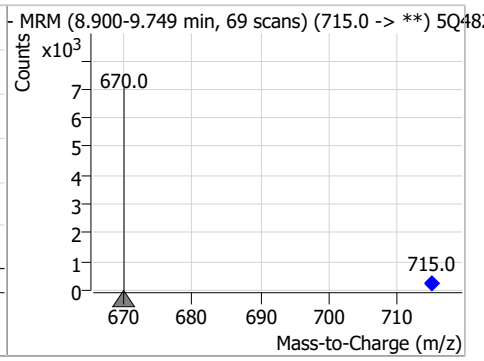




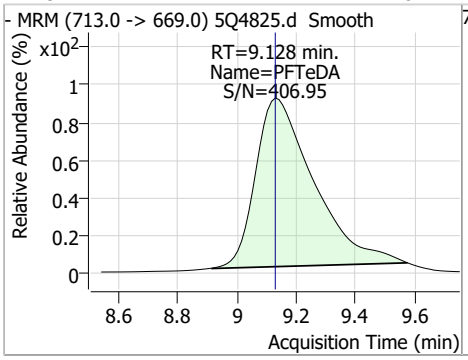
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.24	9.12	0.00	361926				

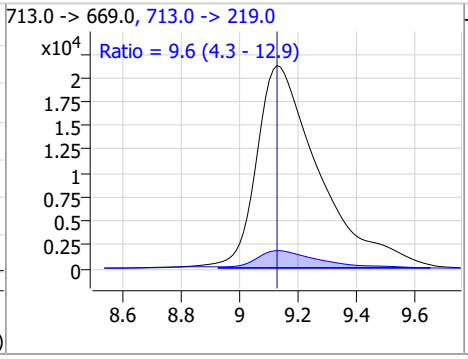


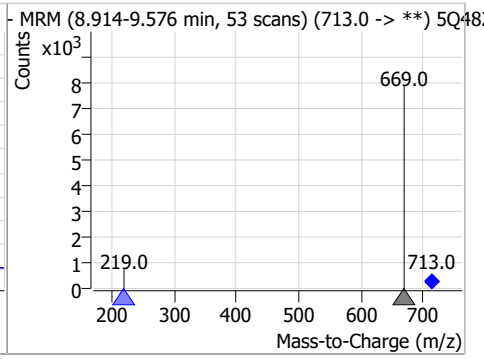




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	14.48	9.13	0.00	281492	713.0 -> 219.0	9.6	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-ICV73
Lab FileID: 5Q4825.D
Injection Time: 09/17/22 14:50
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4827.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 3:21:32 PM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

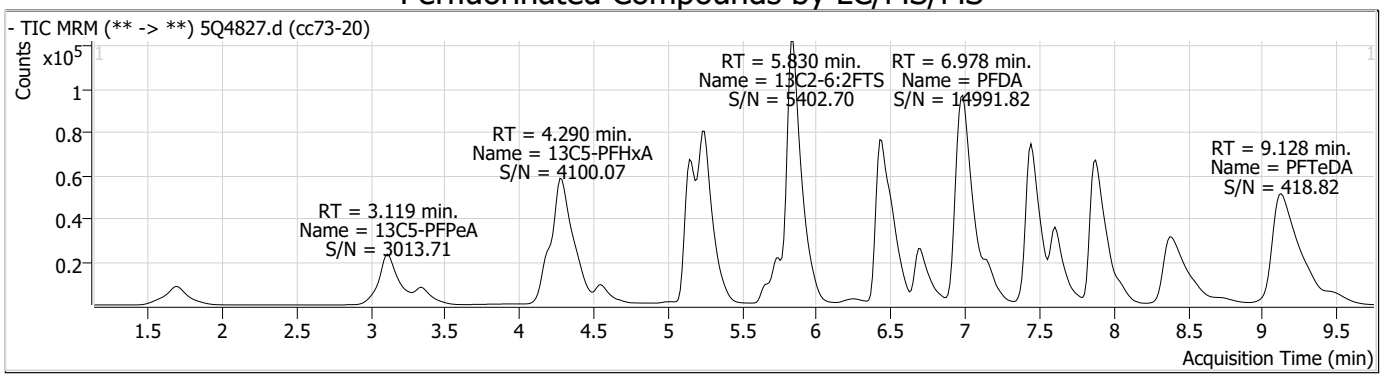
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.687	217.0 -> 172.0	68715	20.00	µg/L	0.000
M5-PFPeA	3.119	268.0 -> 223.0	111955	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	178800	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	165850	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	221695	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	220474	20.00	µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	176659	20.00	µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	218518	20.00	µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	252042	20.00	µg/L	0.000
M2-PFTeDA	9.137	715.0 -> 670.0	300007	20.00	µg/L	0.012
M8-FOSA	6.517	506.0 -> 78.0	44224	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12608	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12969	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	22232	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	59371	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	79521	20.00	µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	72612	20.00	µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	30502	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10550	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10618	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	38887	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	59371	18.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-6:2FTS	5.830	429.0 -> 409.0	79521	18.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C2-8:2FTS	7.013	529.0 -> 509.0	72612	18.90	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	252042	18.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-PFTeDA	9.137	715.0 -> 670.0	300007	17.61	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%		
13C3-PFBS	3.349	302.0 -> 99.0	12608	18.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C3-PFHxS	5.194	402.0 -> 99.0	12969	18.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C4-PFBA	1.687	217.0 -> 172.0	68715	18.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C4-PFHpA	5.163	367.0 -> 322.0	165850	18.86	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C5-PFHxA	4.290	318.0 -> 273.0	178800	18.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C5-PFPeA	3.119	268.0 -> 223.0	111955	18.96	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C6-PFDA	6.977	519.0 -> 474.0	176659	19.02	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

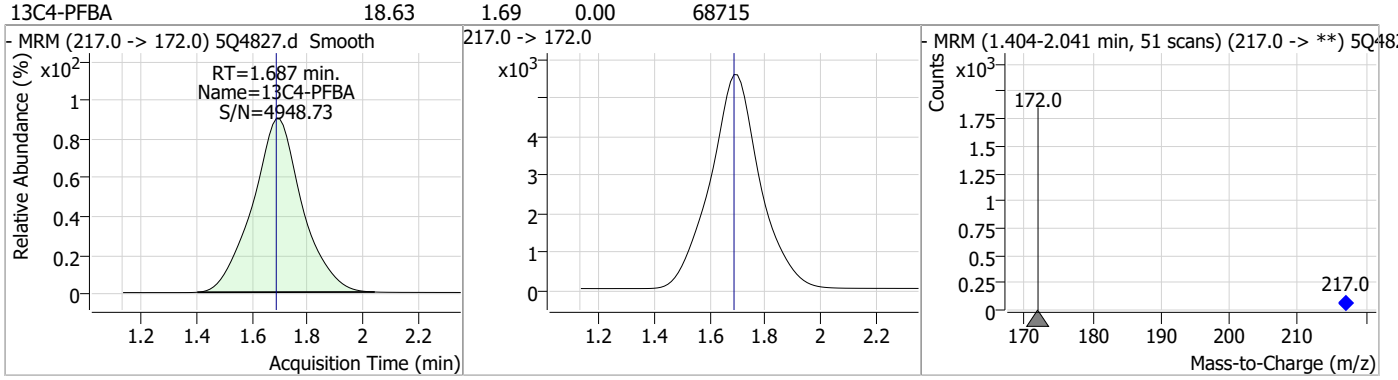
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C7-PFUnDA	7.459	570.0 -> 525.0	218518	18.86	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
13C8-FOSA	6.517	506.0 -> 78.0	44224	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-PFOA	5.845	421.0 -> 376.0	221695	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
13C8-PFOS	6.428	507.0 -> 99.0	22232	19.30	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%			
13C9-PFNA	6.443	472.0 -> 427.0	220474	18.70	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%			
d3-MeFOSAA	7.009	573.0 -> 419.0	30502	17.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10550	18.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.1%			
d3-MeFOSA	6.952	515.0 -> 169.0	10618	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
d5-EtFOSAA	7.170	589.0 -> 419.0	38887	18.44	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	66490	20.62	µg/L		99
6:2FTS	5.831	427.0 -> 407.0	87813	21.20	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	78266	20.98	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	23721	19.43	µg/L		97
FOSA	6.519	498.0 -> 78.0	45078	19.93	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	26730	20.40	µg/L		99
PFBA	1.694	213.0 -> 169.0	27000	19.75	µg/L		100
PFBS	3.354	299.0 -> 80.0	37458	19.75	µg/L		99
PFDA	6.978	513.0 -> 469.0	213466	19.41	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	243381	19.49	µg/L		100
PFDS	7.419	599.0 -> 80.0	32800	19.74	µg/L		99
PFHpA	5.164	363.0 -> 319.0	219325	19.41	µg/L		100
PFHpS	5.855	449.0 -> 80.0	34839	19.37	µg/L		97
PFHxA	4.291	313.0 -> 269.0	172722	19.47	µg/L		99
PFHxS	5.195	399.0 -> 80.0	37180	19.76	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	193639	19.30	µg/L		100
PFNS	6.949	549.0 -> 80.0	33292	19.99	µg/L		100
PFOA	5.845	413.0 -> 369.0	262647	19.48	µg/L		100
PFOS	6.429	499.0 -> 80.0	39465	19.81	µg/L	m	85
PFPeA	3.122	263.0 -> 219.0	103879	19.38	µg/L		100
PFPeS	4.398	349.0 -> 80.0	29576	19.54	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	314307	19.51	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	328168	19.36	µg/L		100
PFUnDA	7.460	563.0 -> 519.0	222562	19.70	µg/L		100
11Cl-PF3OUdS	7.615	631.0 -> 451.0	142530	19.59	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	126033	19.80	µg/L		99
ADONA	5.261	377.0 -> 251.0	275809	19.77	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	37139	19.85	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	11545	20.72	µg/L		98
4-PFECHS	5.741	461.0 -> 381.0	75783	20.10	µg/L		98
FBSA	4.343	298.0 -> 78.0	61275	19.86	µg/L		100
FHxSA	5.674	398.0 -> 78.0	49288	18.92	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

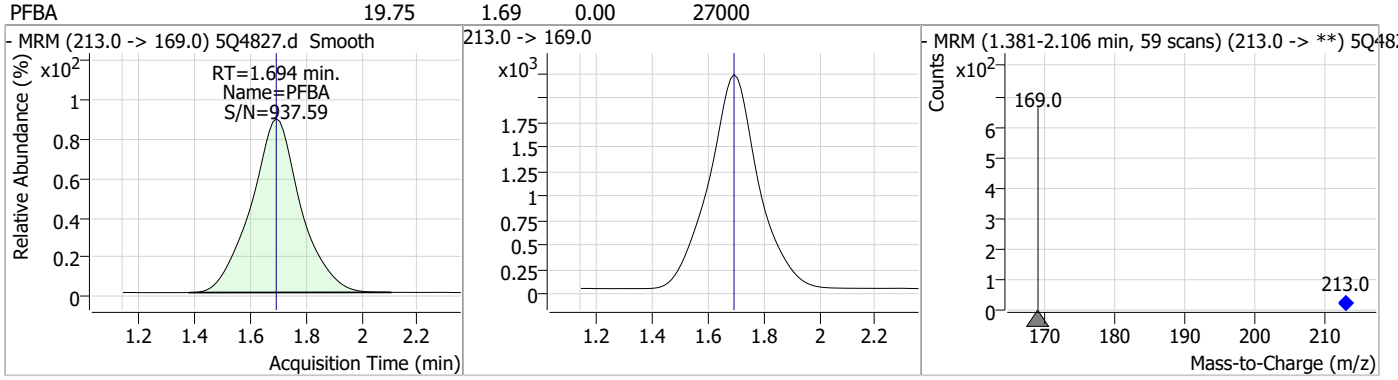
Perfluorinated Compounds by LC/MS/MS



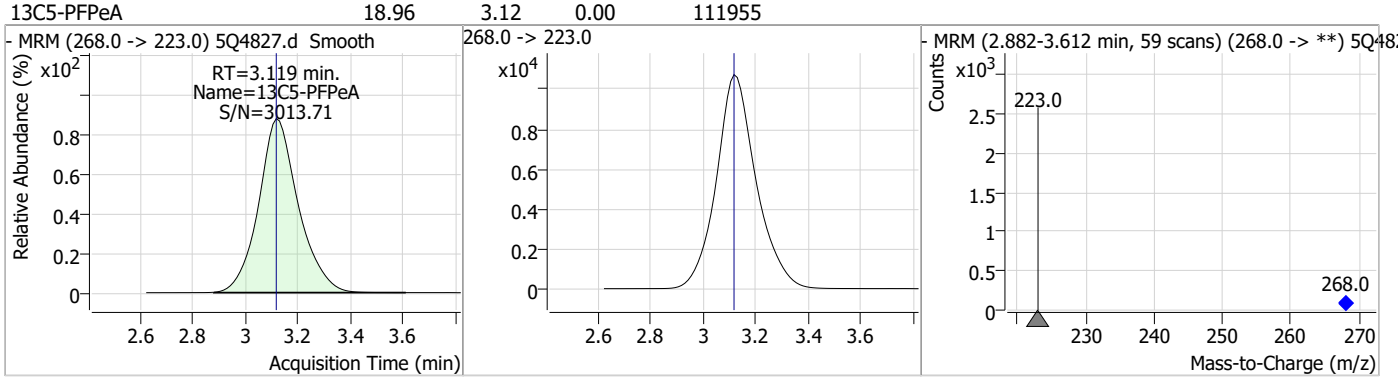
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.63	1.69	0.00	68715				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.75	1.69	0.00	27000				

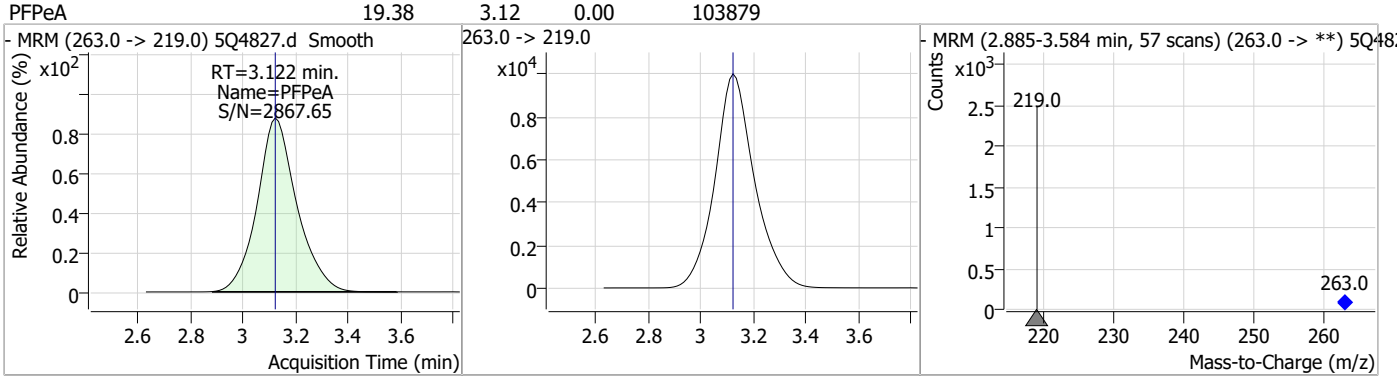


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.96	3.12	0.00	111955				

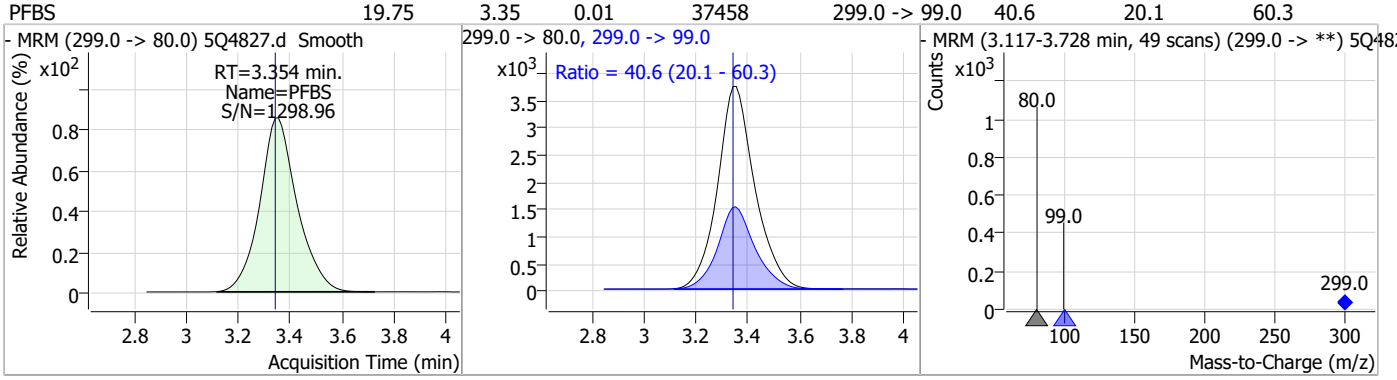


Perfluorinated Compounds by LC/MS/MS

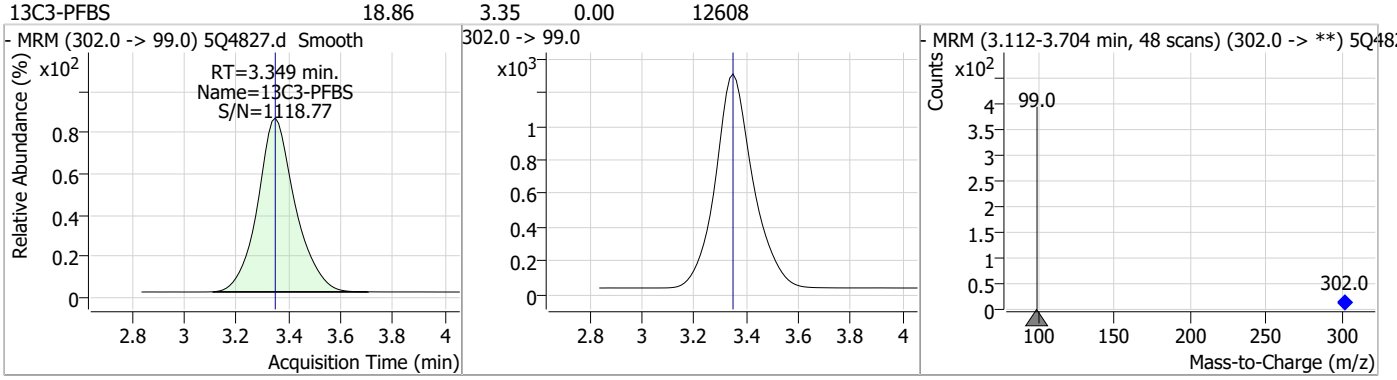
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.38	3.12	0.00	103879				



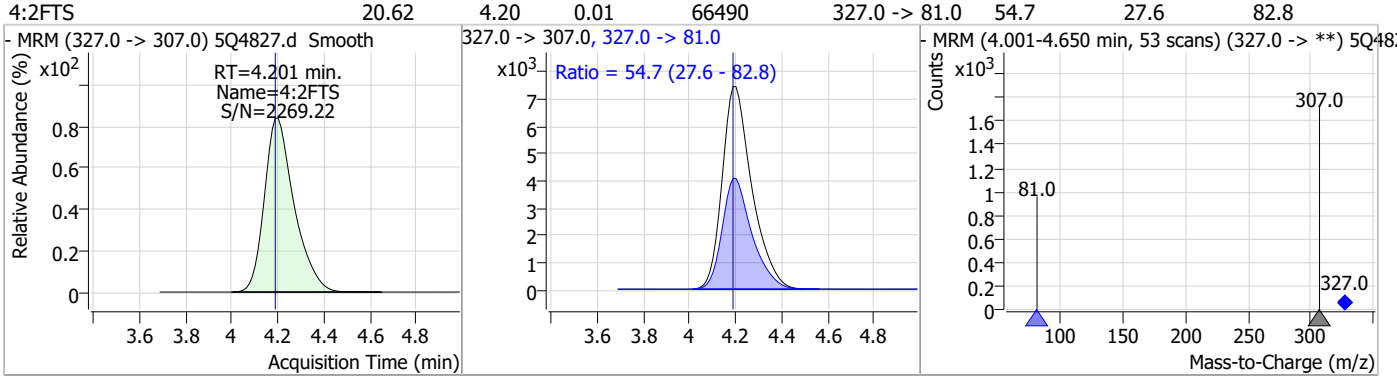
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.75	3.35	0.01	37458	299.0 -> 99.0	40.6	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.86	3.35	0.00	12608				

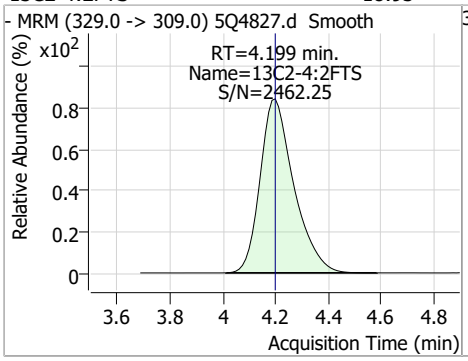


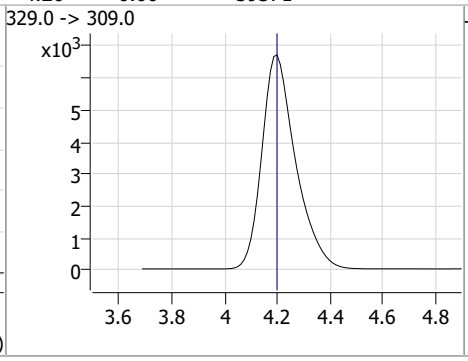
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.62	4.20	0.01	66490	327.0 -> 81.0	54.7	27.6	82.8

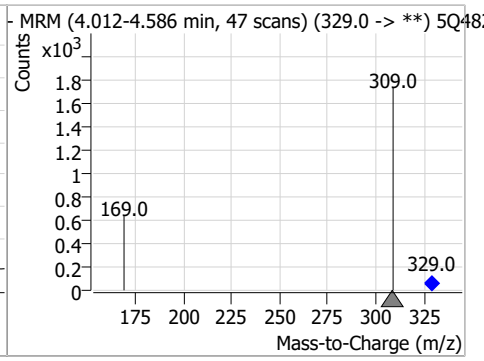


Perfluorinated Compounds by LC/MS/MS

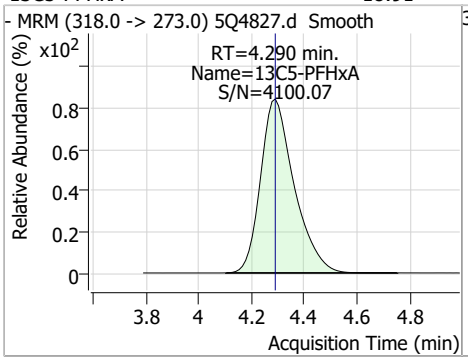
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.93	4.20	0.00	59371				

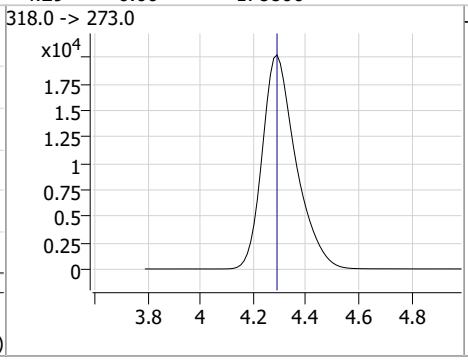


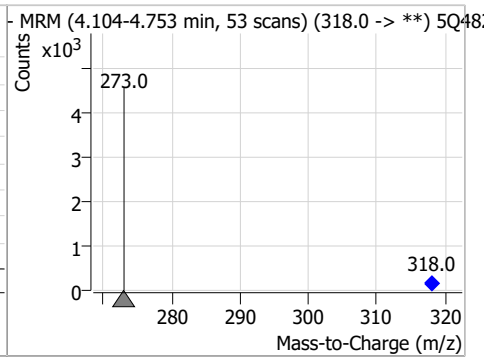




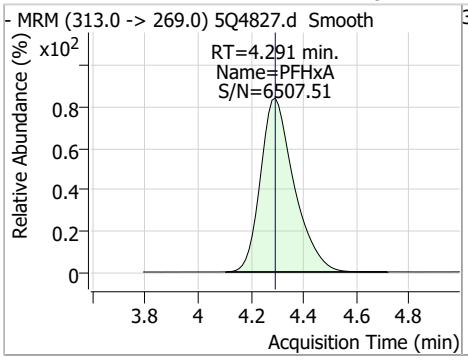
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.91	4.29	0.00	178800				

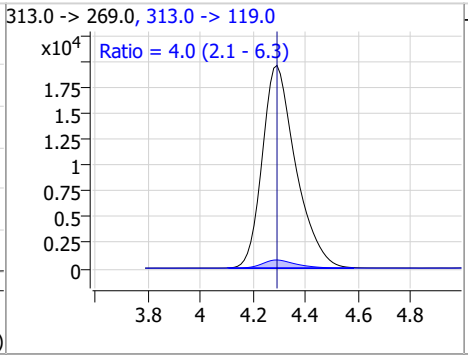


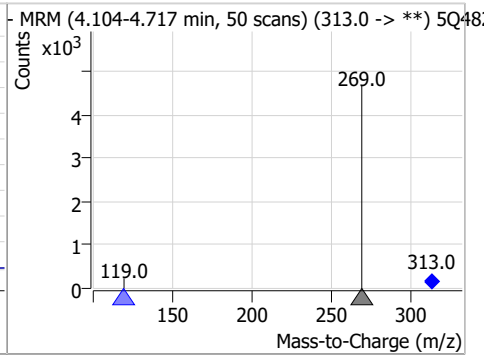




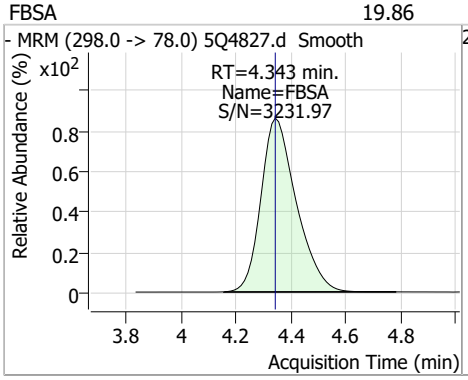
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.47	4.29	0.00	172722	313.0 -> 119.0	4.0	2.1	6.3

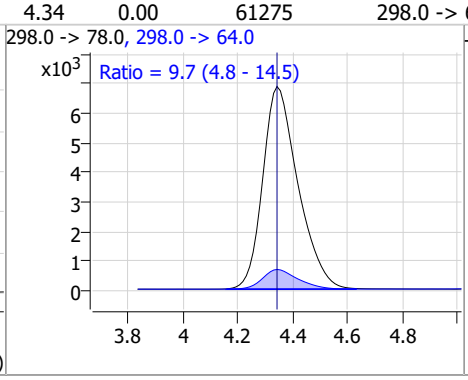


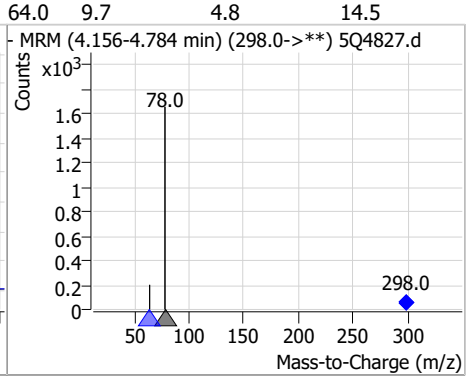




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.86	4.34	0.00	61275	298.0 -> 64.0	9.7	4.8	14.5

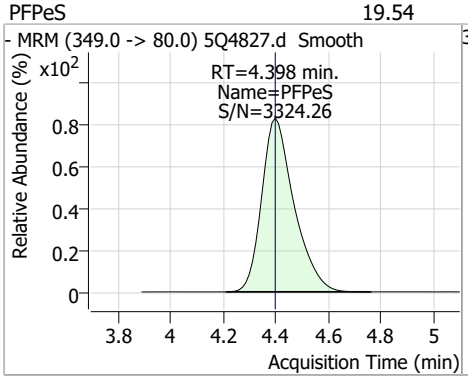


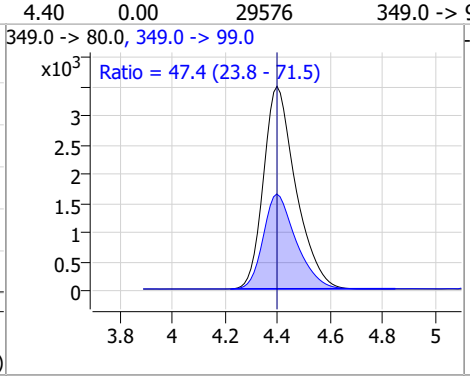


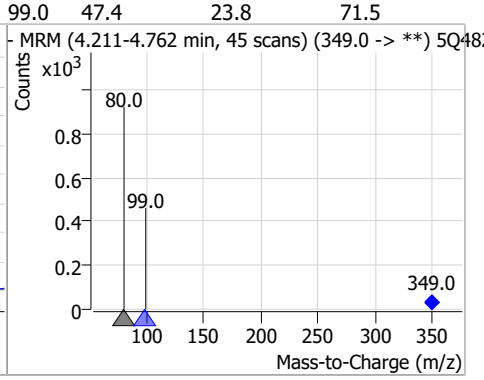


Perfluorinated Compounds by LC/MS/MS

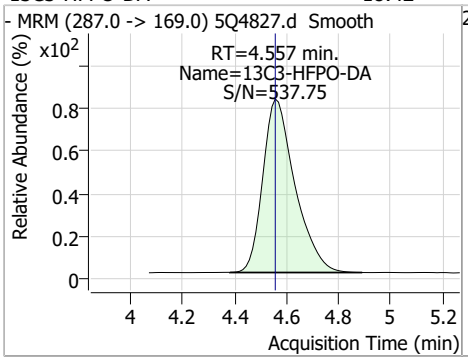
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.54	4.40	0.00	29576	349.0 -> 99.0	47.4	23.8	71.5

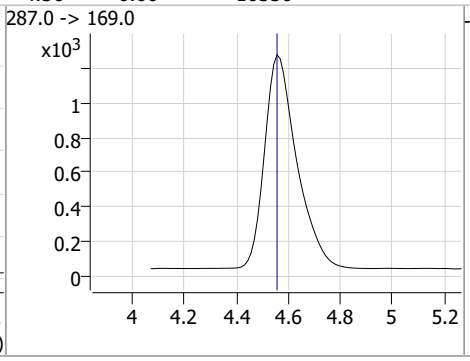


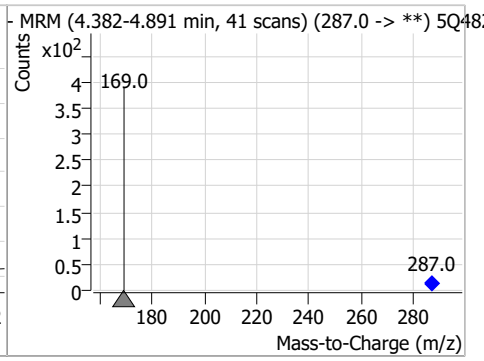




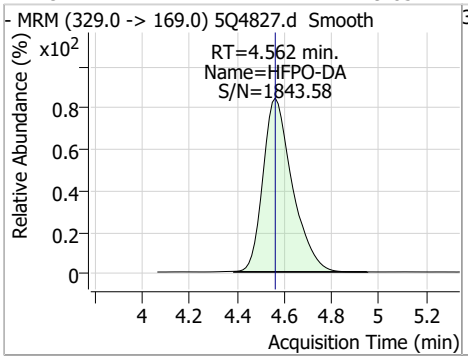
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.42	4.56	0.00	10550				

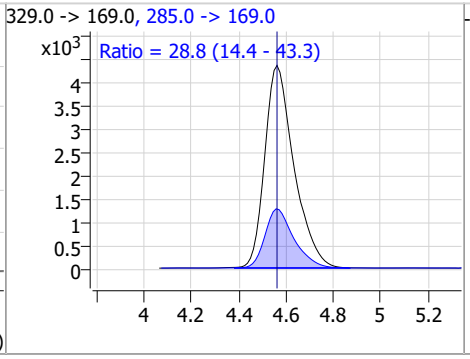


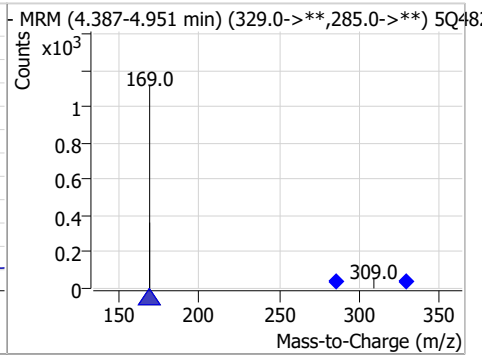




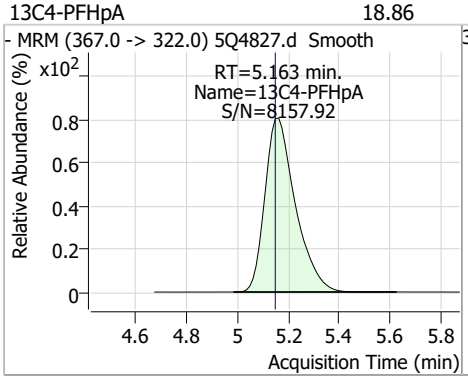
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.85	4.56	0.00	37139	285.0 -> 169.0	28.8	14.4	43.3

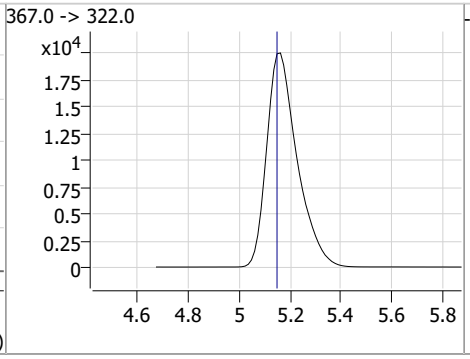


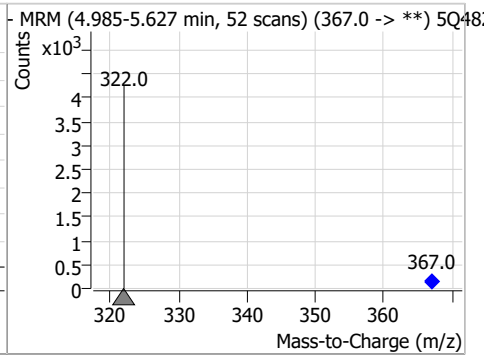




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.86	5.16	0.01	165850				

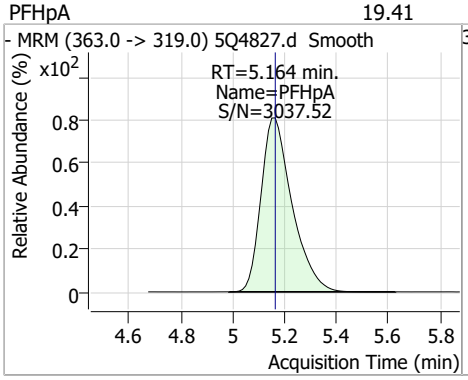


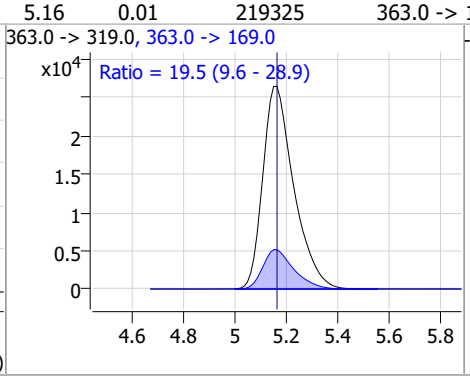


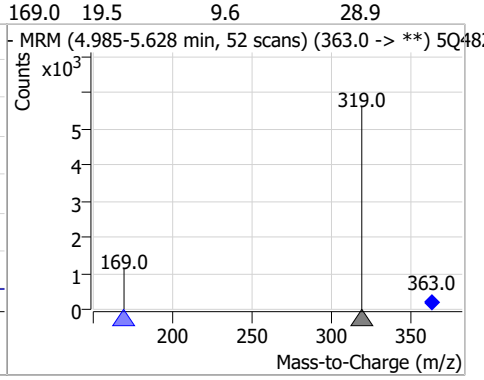


Perfluorinated Compounds by LC/MS/MS

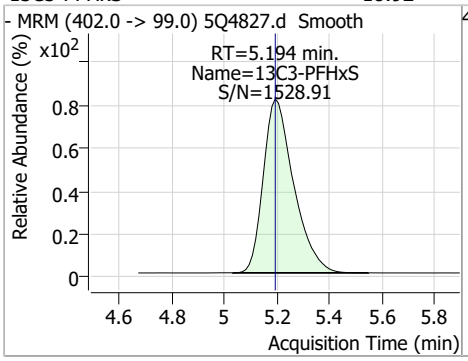
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.41	5.16	0.01	219325	363.0 -> 169.0	19.5	9.6	28.9

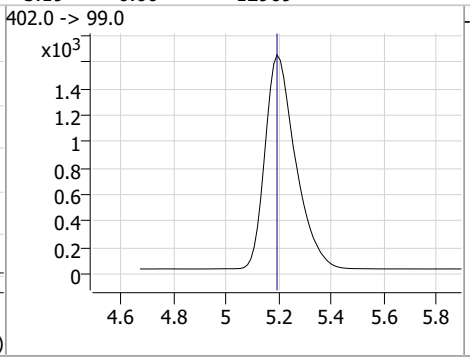


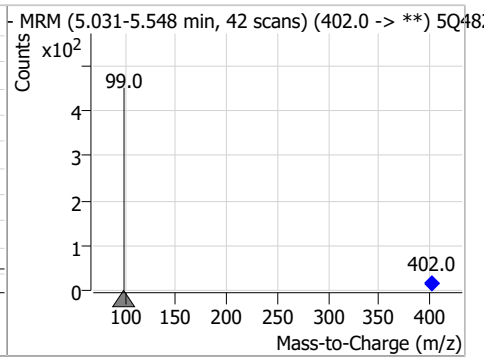




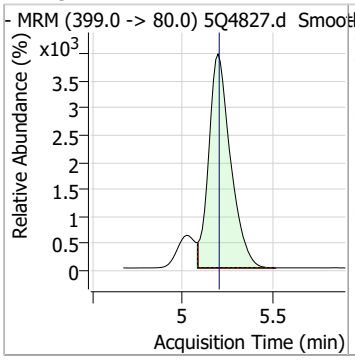
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.92	5.19	0.00	12969				

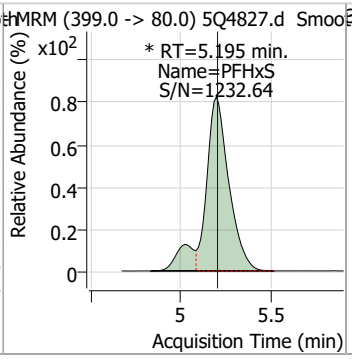


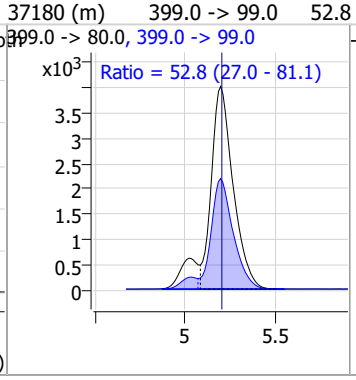


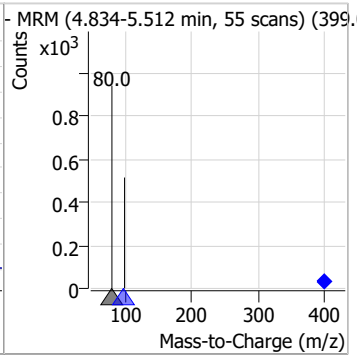


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.76	5.20	0.00	37180 (m)	399.0 -> 99.0	52.8	27.0	81.1

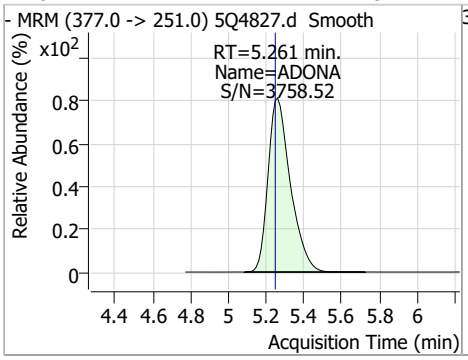


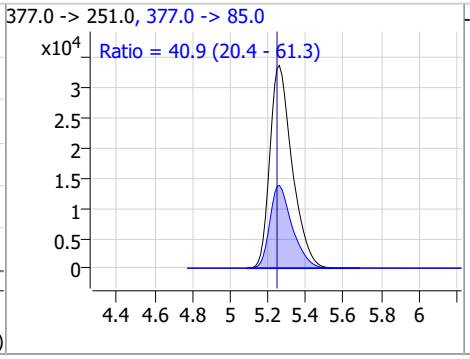


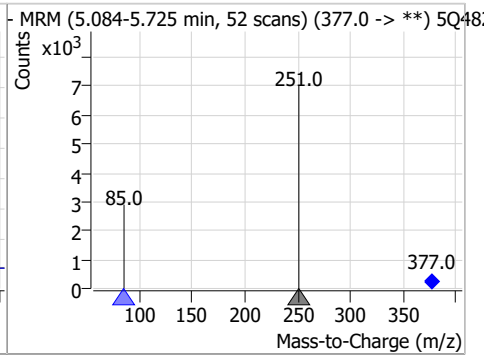




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.77	5.26	0.01	275809	377.0 -> 85.0	40.9	20.4	61.3

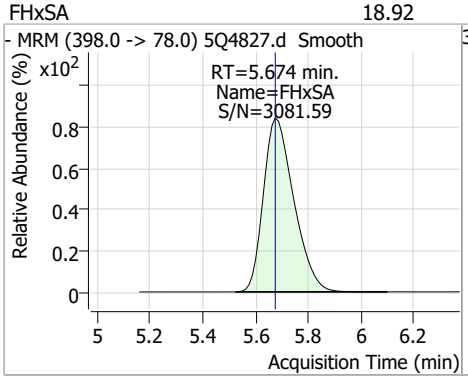


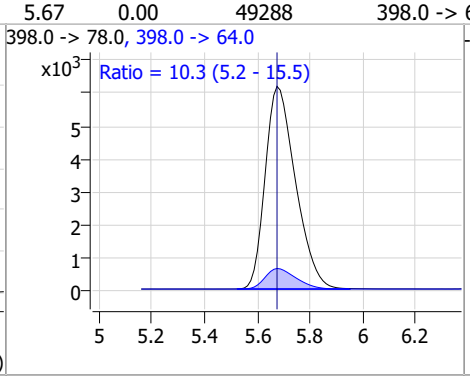


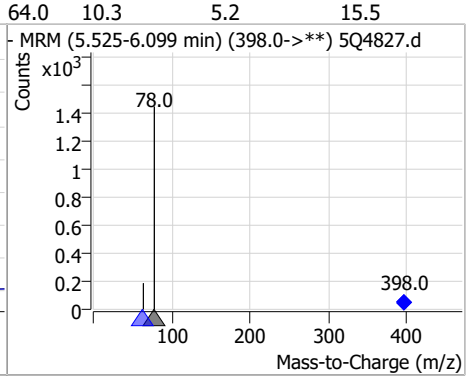


Perfluorinated Compounds by LC/MS/MS

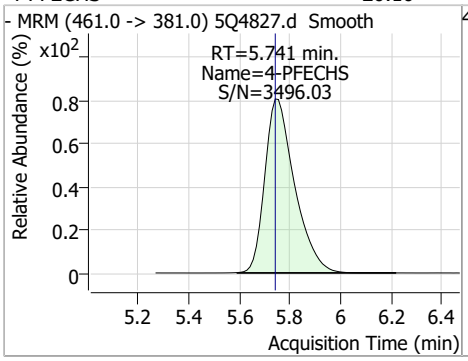
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.92	5.67	0.00	49288	398.0 -> 64.0	10.3	5.2	15.5

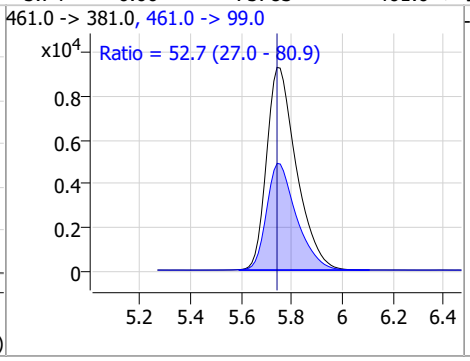


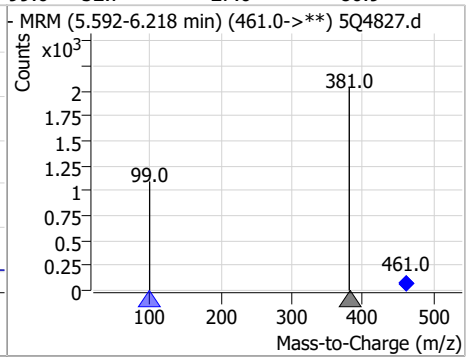




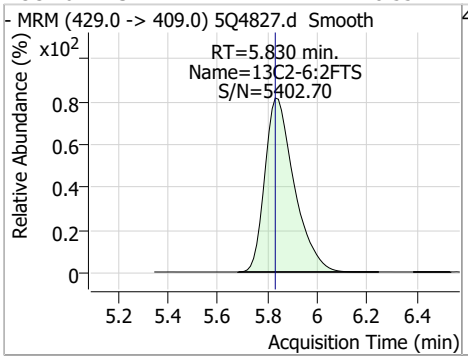
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.10	5.74	0.00	75783	461.0 -> 99.0	52.7	27.0	80.9

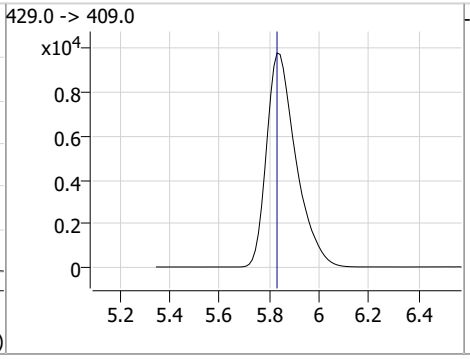


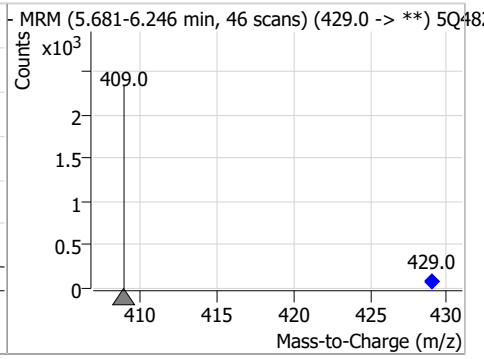




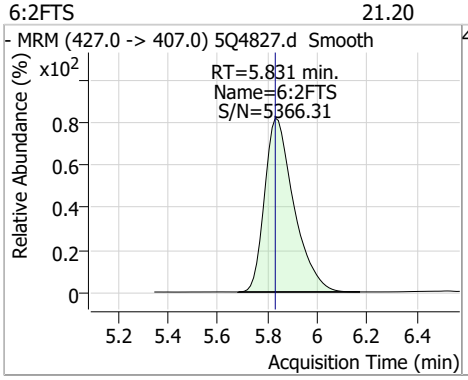
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.55	5.83	0.00	79521				

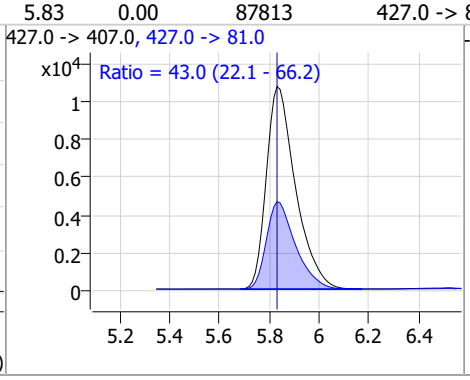


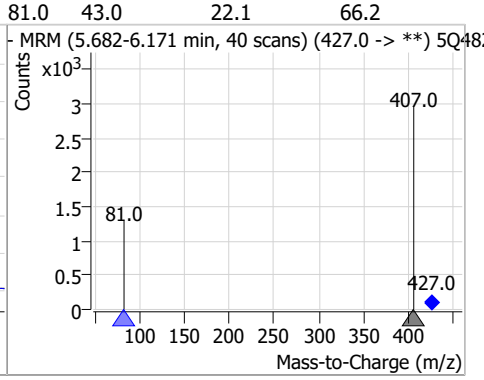




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.20	5.83	0.00	87813	427.0 -> 81.0	43.0	22.1	66.2

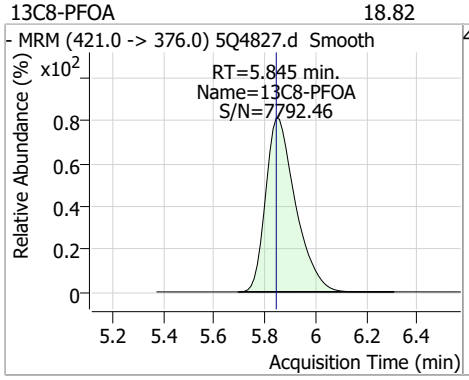


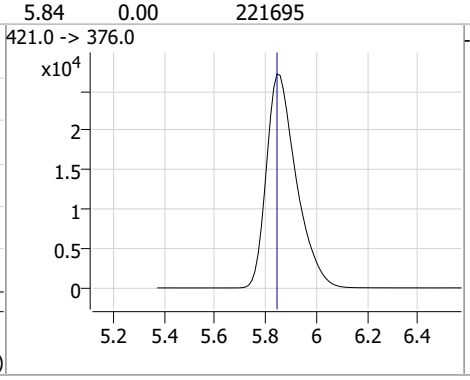


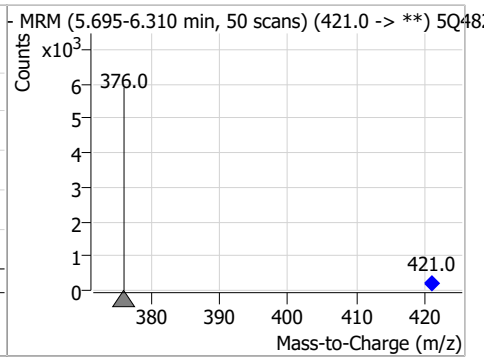


Perfluorinated Compounds by LC/MS/MS

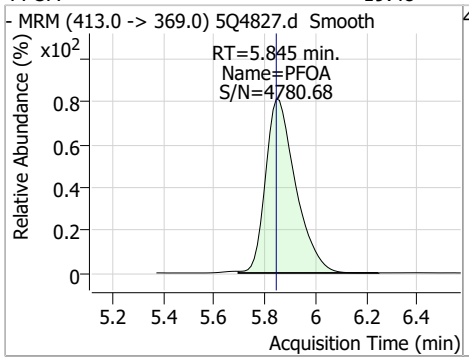
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.82	5.84	0.00	221695				

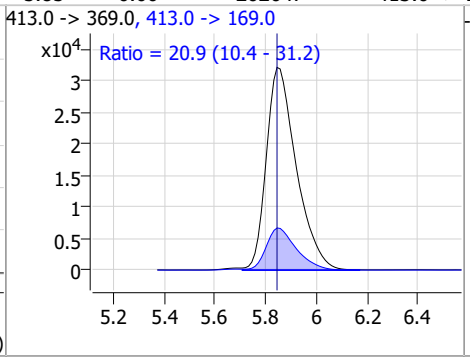


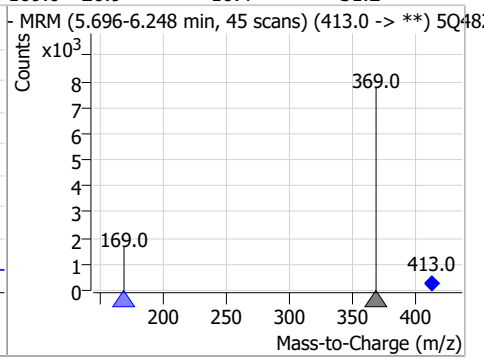




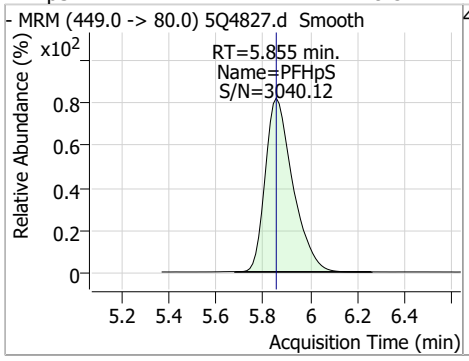
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.48	5.85	0.00	262647	413.0 -> 169.0	20.9	10.4	31.2

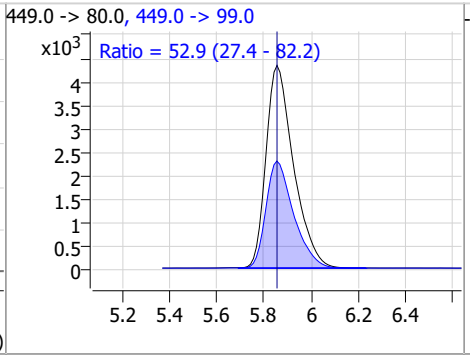


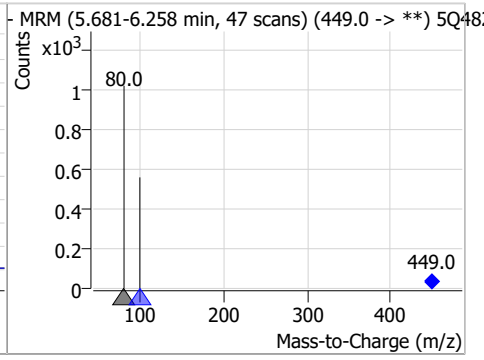




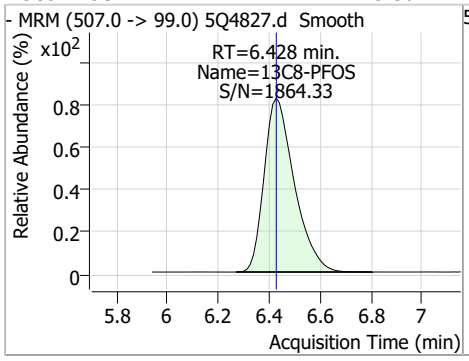
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.37	5.85	0.00	34839	449.0 -> 99.0	52.9	27.4	82.2

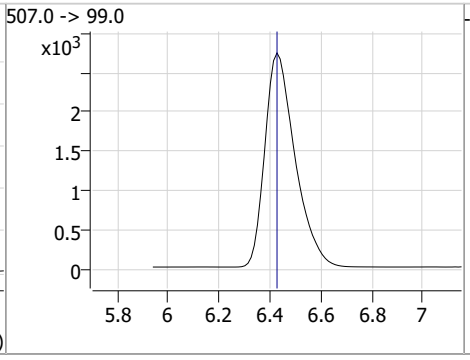


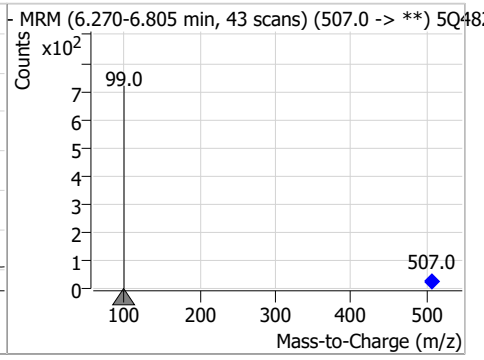




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.30	6.43	0.00	22232				

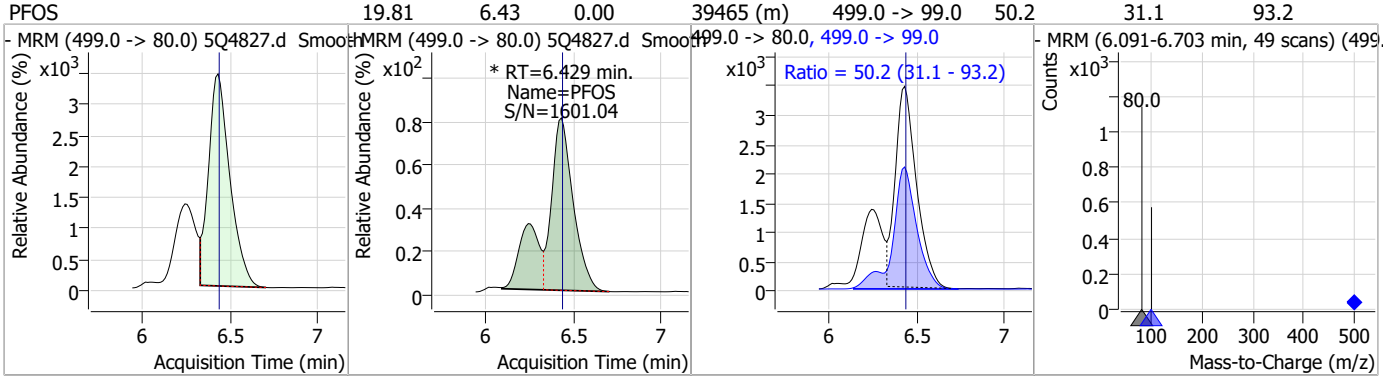




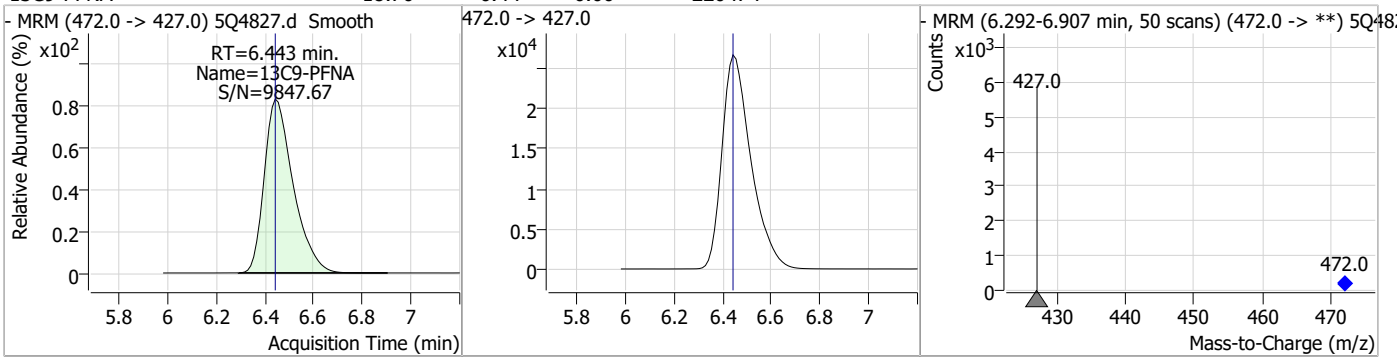


Perfluorinated Compounds by LC/MS/MS

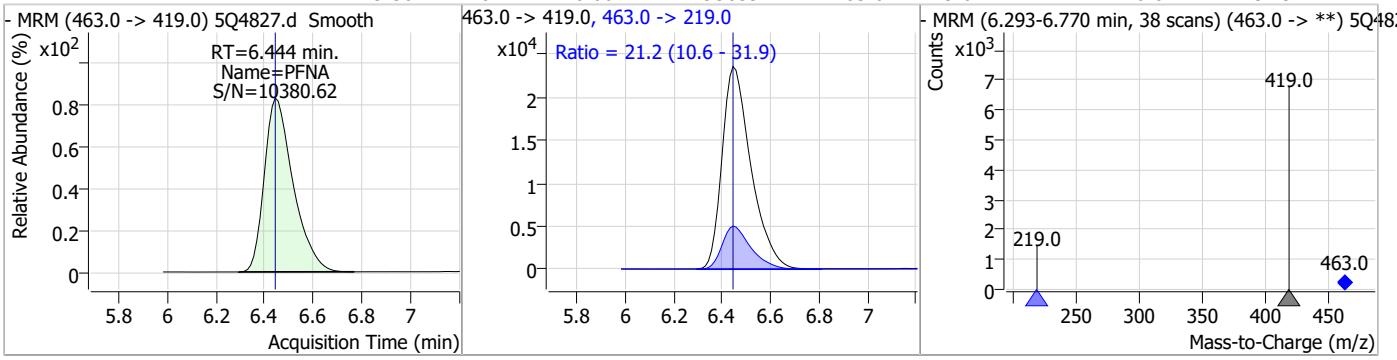
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.81	6.43	0.00	39465 (m)	499.0 -> 99.0	50.2	31.1	93.2



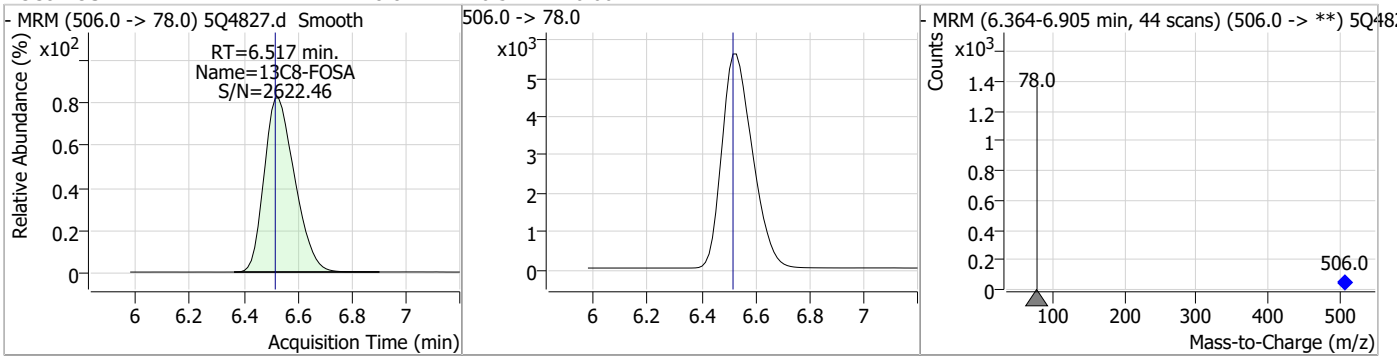
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.70	6.44	0.00	220474				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.30	6.44	0.00	193639	463.0 -> 219.0	21.2	10.6	31.9

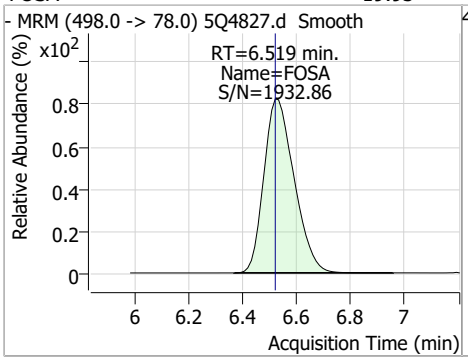


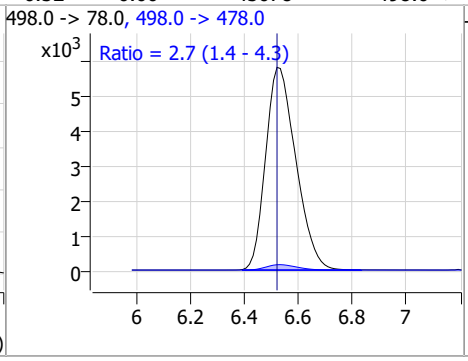
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.82	6.52	0.00	44224				

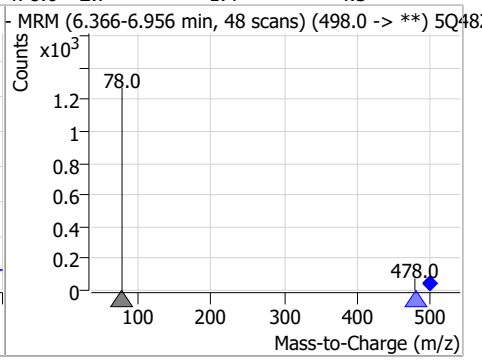


Perfluorinated Compounds by LC/MS/MS

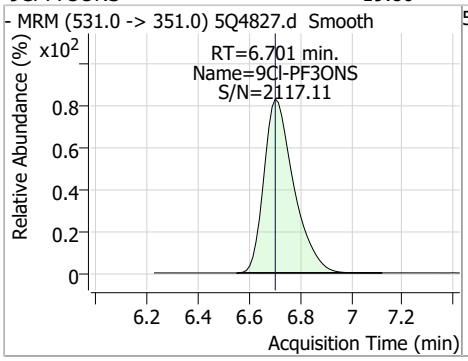
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.93	6.52	0.00	45078	498.0 -> 478.0	2.7	1.4	4.3

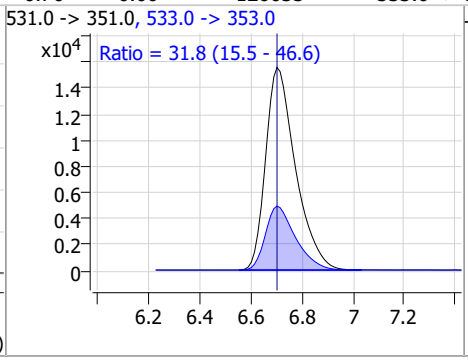


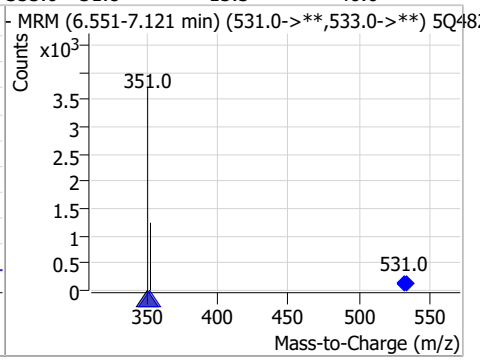




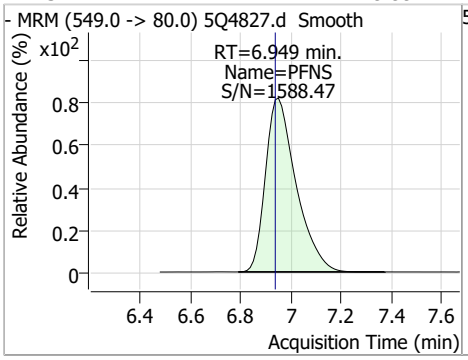
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.80	6.70	0.00	126033	533.0 -> 353.0	31.8	15.5	46.6

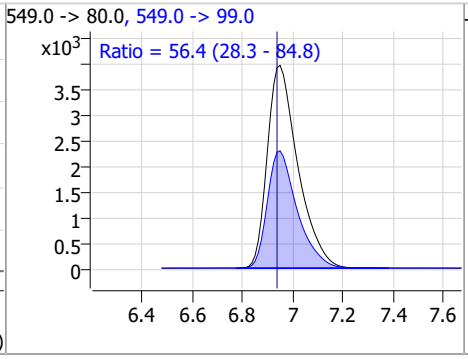


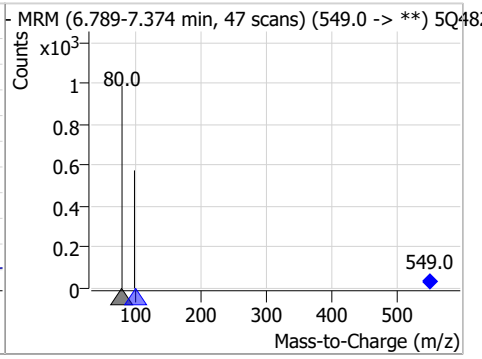




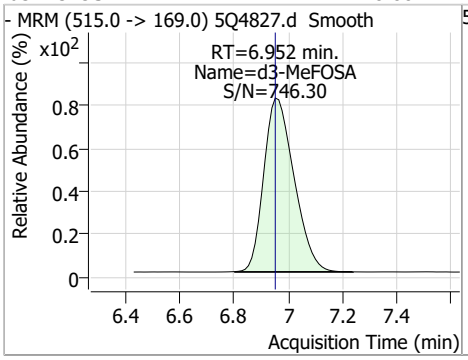
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.99	6.95	0.01	33292	549.0 -> 99.0	56.4	28.3	84.8

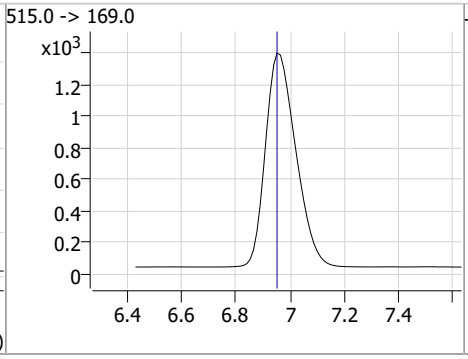


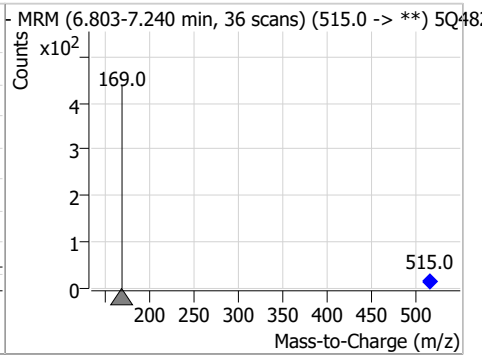




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.88	6.95	0.00	10618				

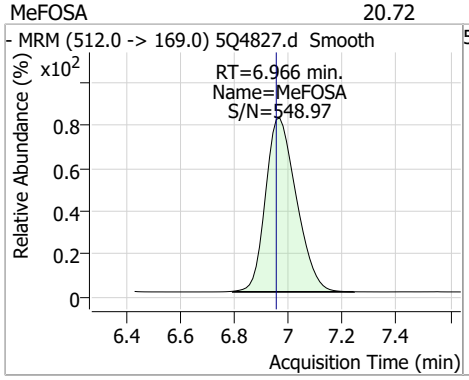


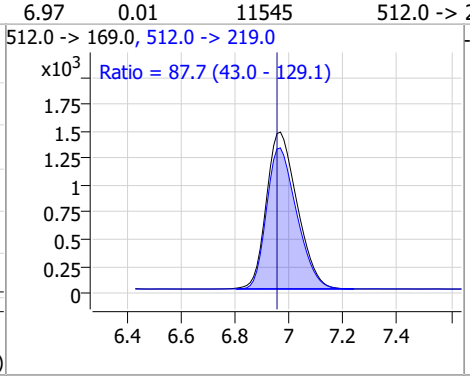


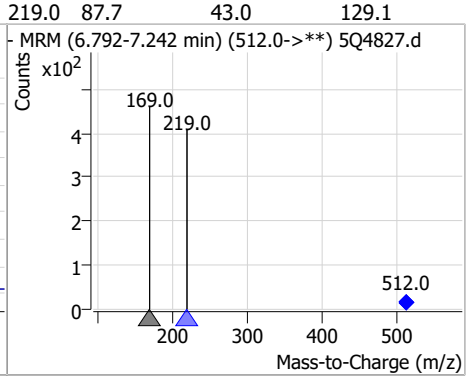


Perfluorinated Compounds by LC/MS/MS

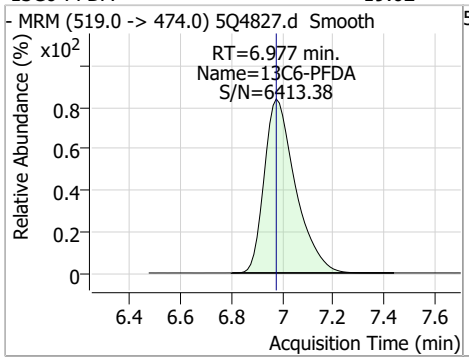
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.72	6.97	0.01	11545	512.0 -> 219.0	87.7	43.0	129.1

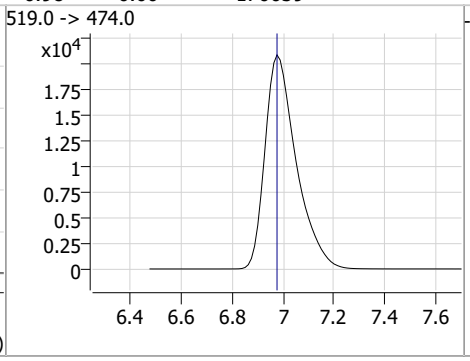


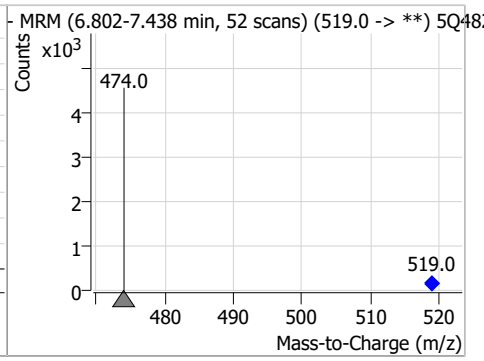




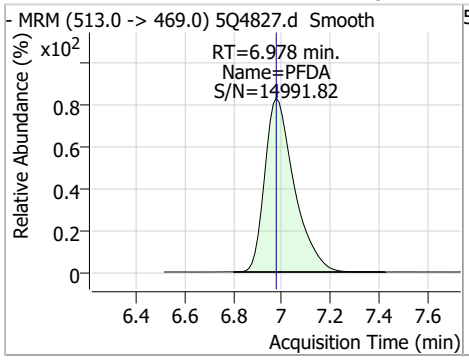
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.02	6.98	0.00	176659				

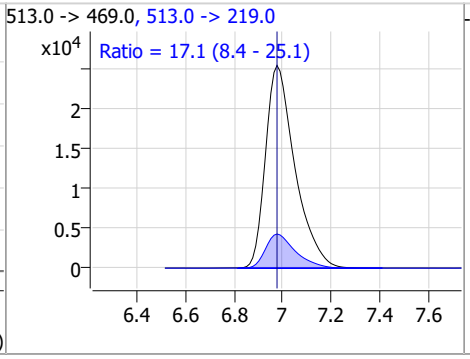


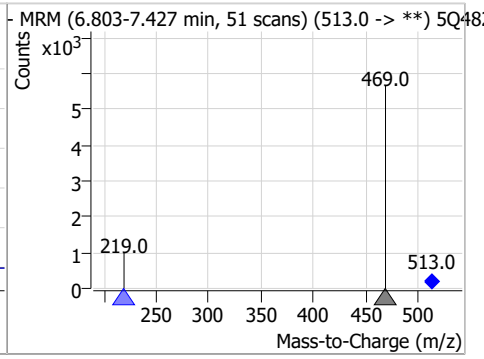




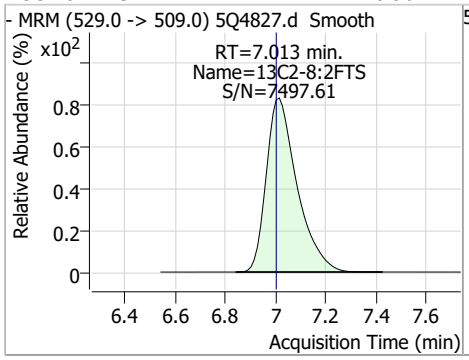
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.41	6.98	0.00	213466	513.0 -> 219.0	17.1	8.4	25.1

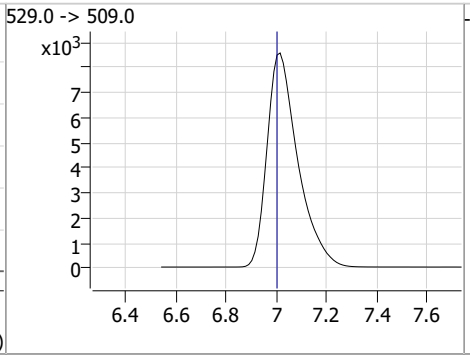


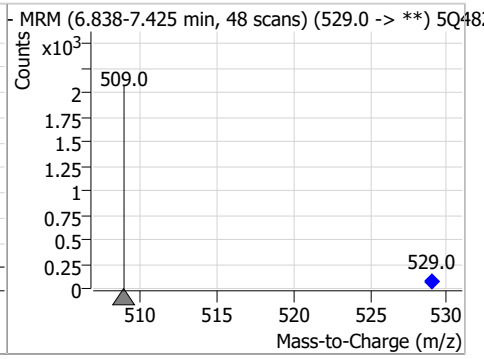




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.90	7.01	0.01	72612				

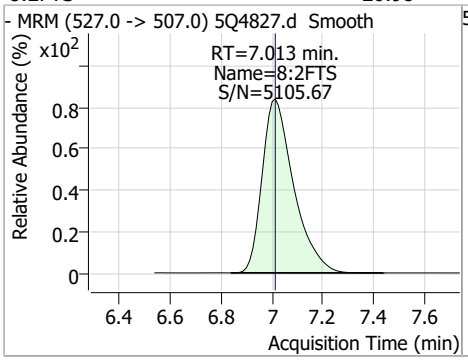


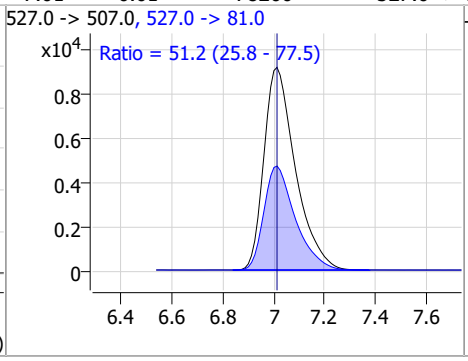


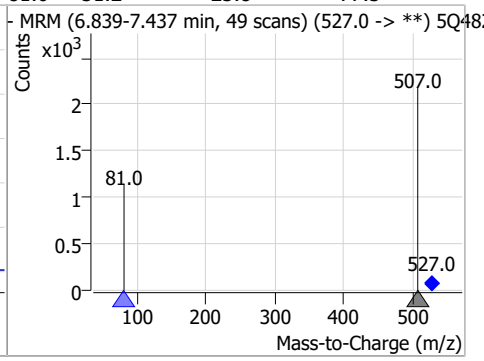


Perfluorinated Compounds by LC/MS/MS

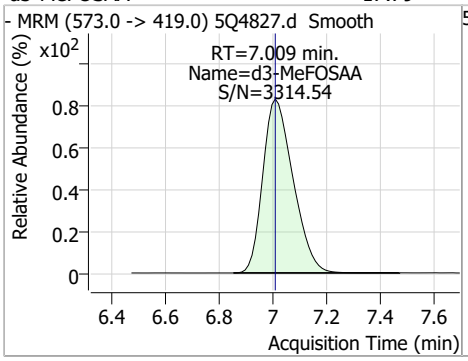
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.98	7.01	0.01	78266	527.0 -> 81.0	51.2	25.8	77.5

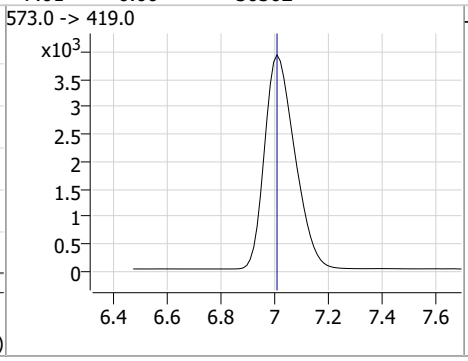


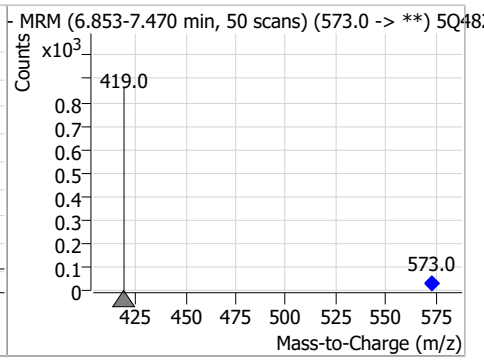




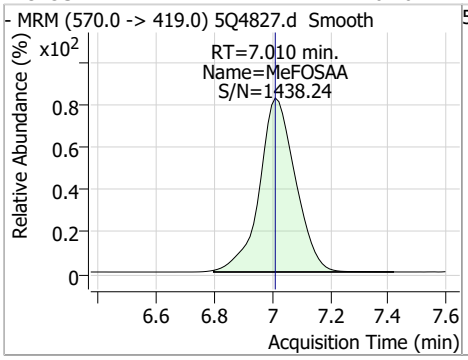
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	17.79	7.01	0.00	30502				

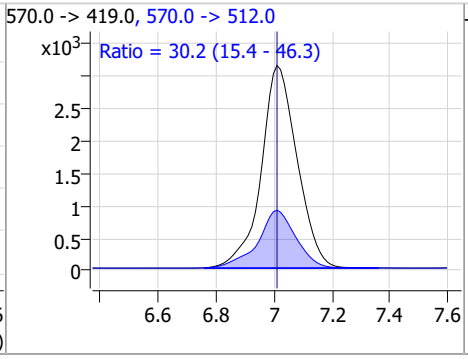


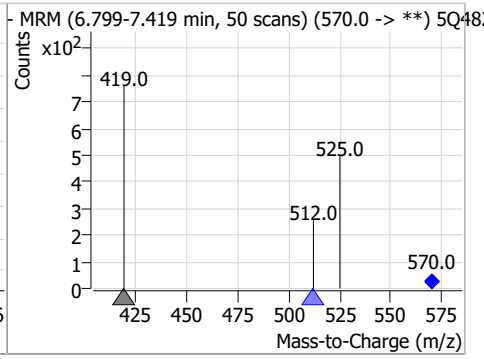




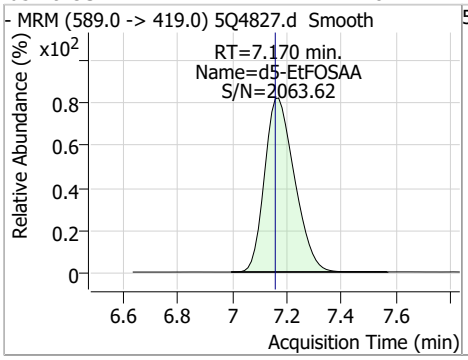
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.40	7.01	0.00	26730	570.0 -> 512.0	30.2	15.4	46.3

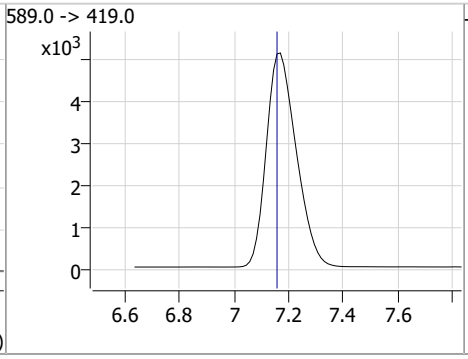


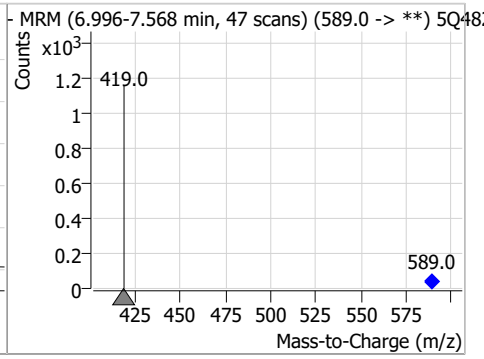




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.44	7.17	0.01	38887				

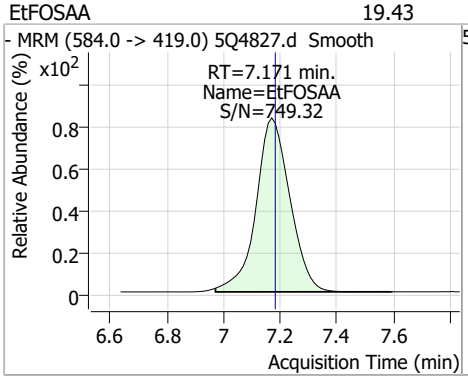


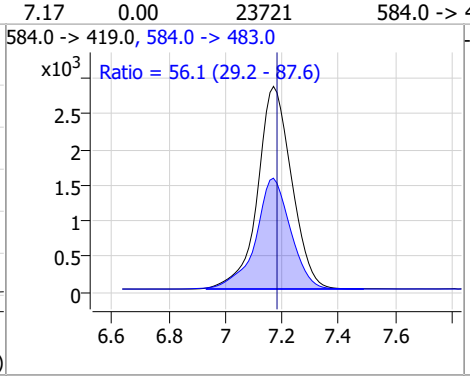


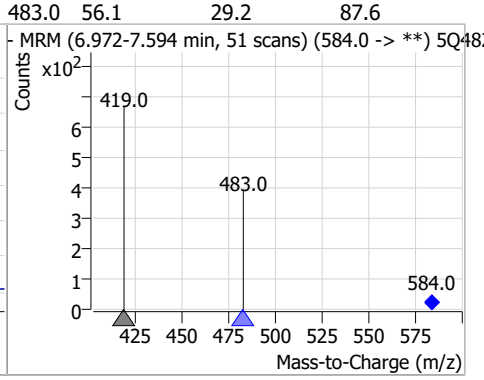


Perfluorinated Compounds by LC/MS/MS

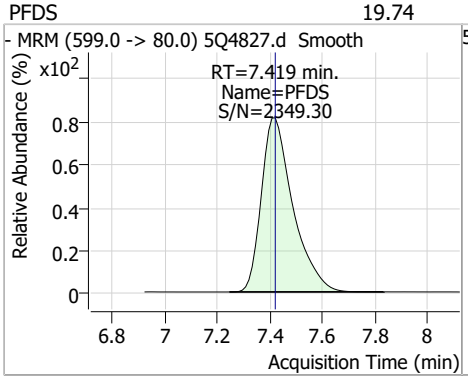
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.43	7.17	0.00	23721	584.0 -> 483.0	56.1	29.2	87.6

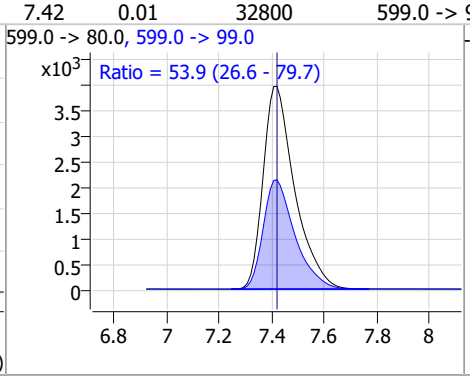


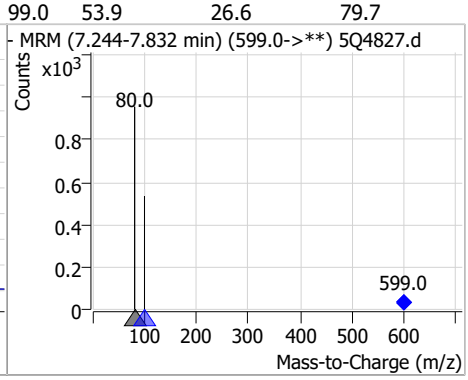




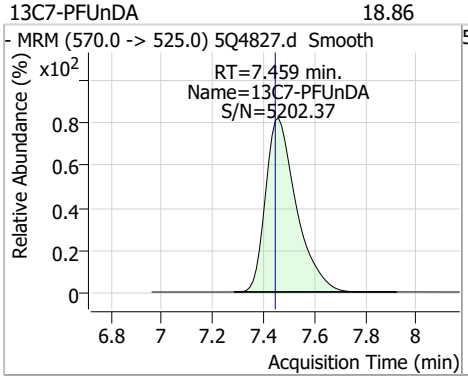
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.74	7.42	0.01	32800	599.0 -> 99.0	53.9	26.6	79.7

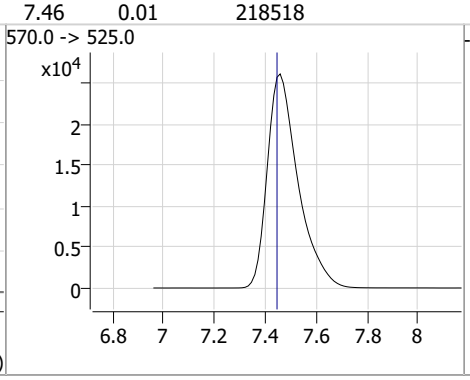


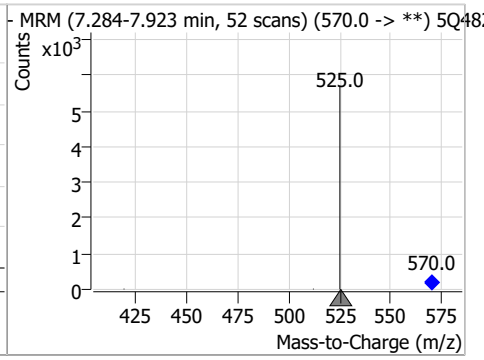




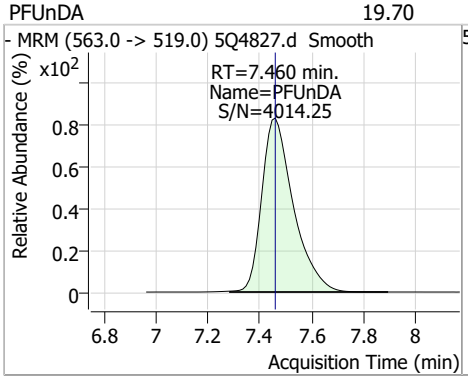
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.86	7.46	0.01	218518				

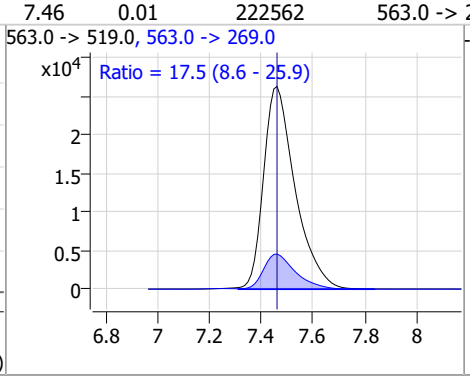


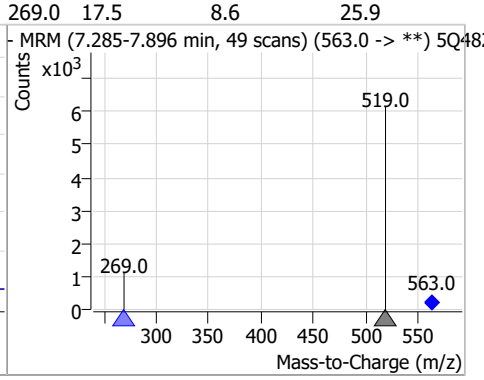




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.70	7.46	0.01	222562	563.0 -> 269.0	17.5	8.6	25.9

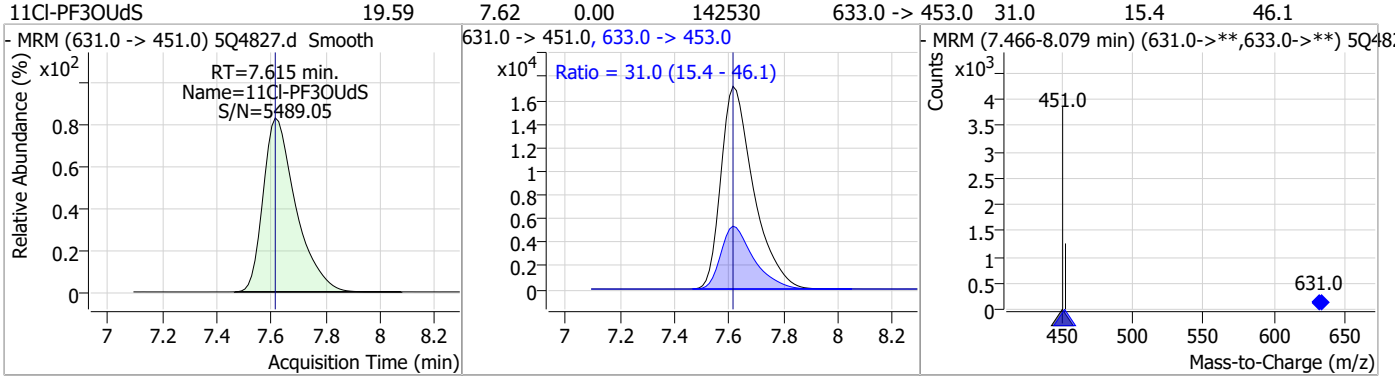




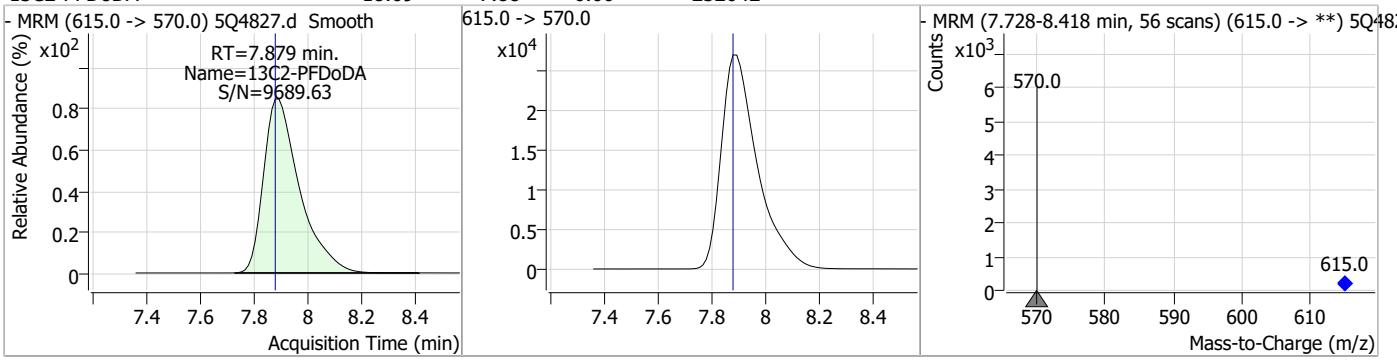


Perfluorinated Compounds by LC/MS/MS

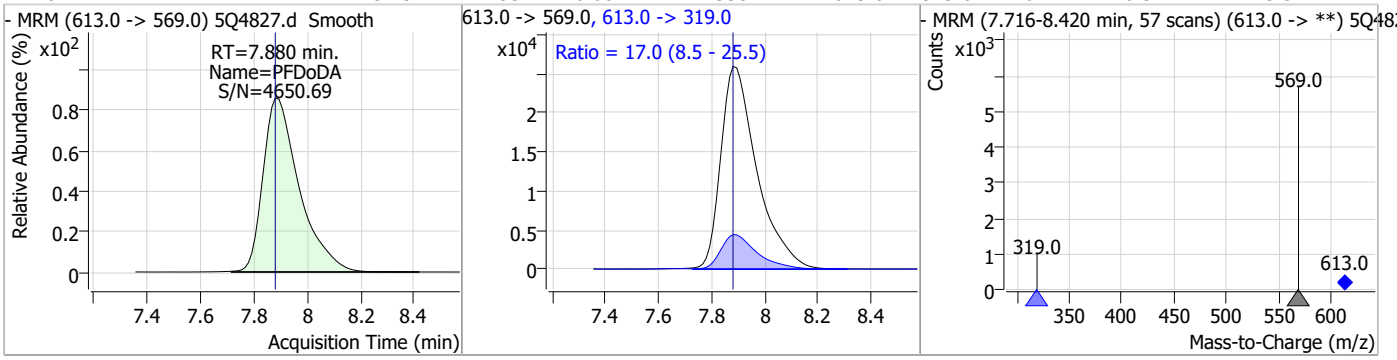
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.59	7.62	0.00	142530	633.0 -> 453.0	31.0	15.4	46.1



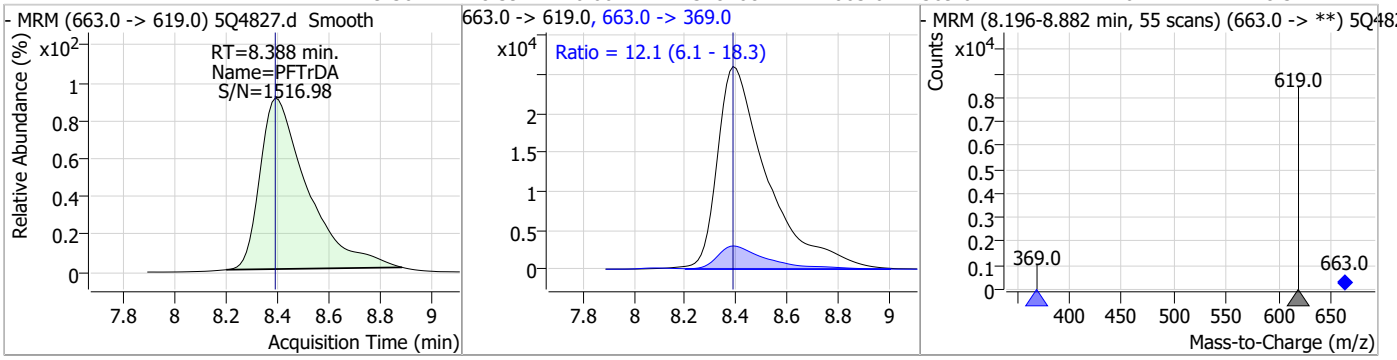
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.69	7.88	0.00	252042				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.49	7.88	0.00	243381	613.0 -> 319.0	17.0	8.5	25.5

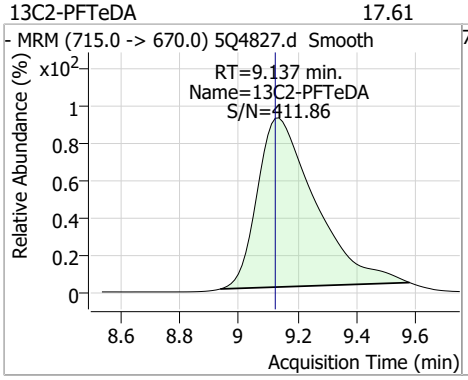


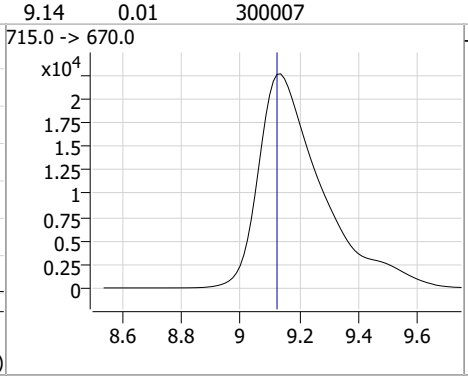
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.36	8.39	0.00	328168	663.0 -> 369.0	12.1	6.1	18.3

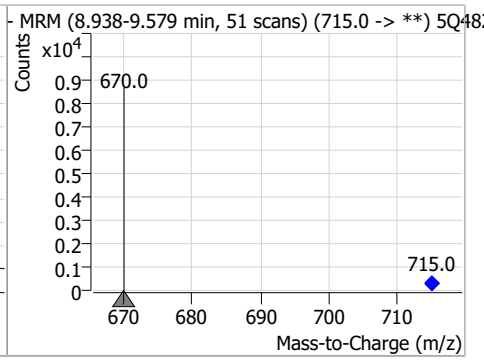


Perfluorinated Compounds by LC/MS/MS

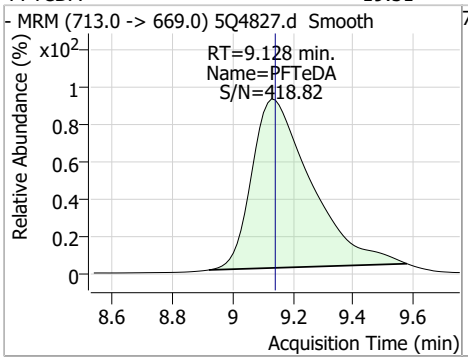
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.61	9.14	0.01	300007				

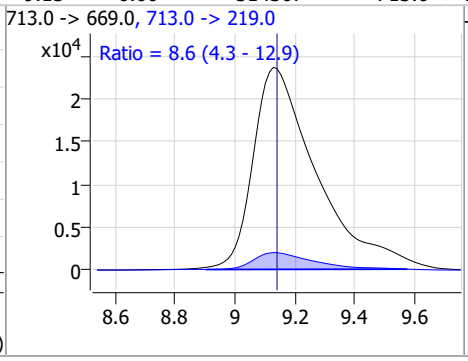


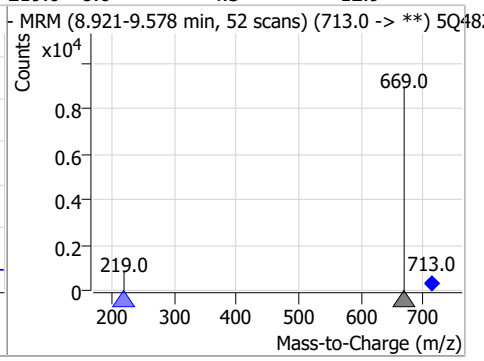




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.51	9.13	0.00	314307	713.0 -> 219.0	8.6	4.3	12.9







7.7.70

7

Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4827.D
Injection Time: 09/17/22 15:21
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:04

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4828.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 3:36:55 PM
Sample Name : cc73-1.0LL
Vial : P1-A3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

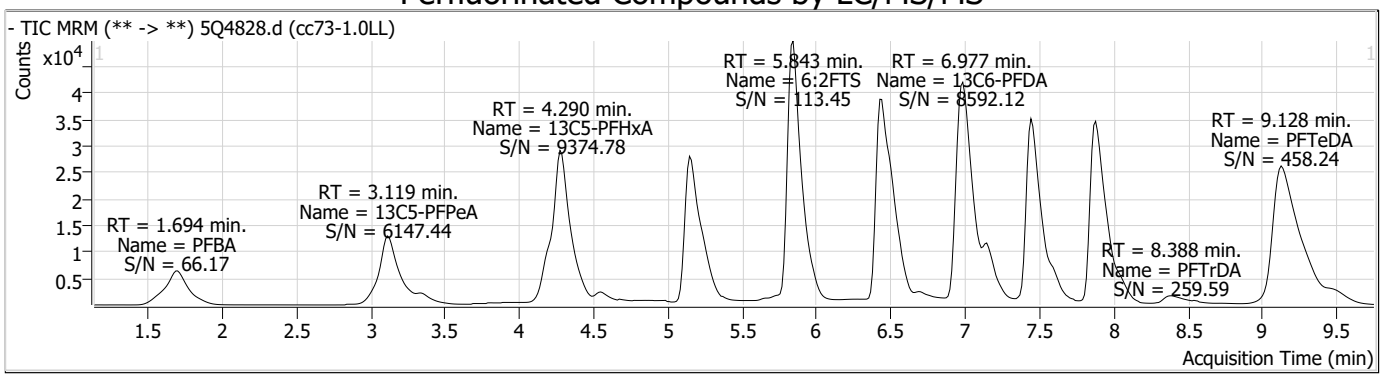
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	70106	20.00 µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	112870	20.00 µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	180976	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	168319	20.00 µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	225908	20.00 µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	223639	20.00 µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	179709	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	222086	20.00 µg/L	0.012
M2-PFDoDA	7.893	615.0 -> 570.0	257885	20.00 µg/L	0.014
M2-PFTeDA	9.137	715.0 -> 670.0	303663	20.00 µg/L	0.012
M8-FOSA	6.517	506.0 -> 78.0	44408	20.00 µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12884	20.00 µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	13331	20.00 µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	22157	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	56867	20.00 µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	77253	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	69200	20.00 µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	31980	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10696	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10917	20.00 µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	40032	20.00 µg/L	0.012
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	56867	18.13 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.7%	
13C2-6:2FTS	5.830	429.0 -> 409.0	77253	18.02 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
13C2-8:2FTS	7.013	529.0 -> 509.0	69200	18.01 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.1%	
13C2-PFDoDA	7.893	615.0 -> 570.0	257885	19.12 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C2-PFTeDA	9.137	715.0 -> 670.0	303663	17.82 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%	
13C3-PFBS	3.349	302.0 -> 99.0	12884	19.27 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%	
13C3-PFHxS	5.194	402.0 -> 99.0	13331	19.45 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%	
13C4-PFBA	1.700	217.0 -> 172.0	70106	19.01 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%	
13C4-PFHpA	5.163	367.0 -> 322.0	168319	19.14 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	180976	19.14 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%	
13C5-PFPeA	3.119	268.0 -> 223.0	112870	19.11 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%	
13C6-PFDA	6.977	519.0 -> 474.0	179709	19.35 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

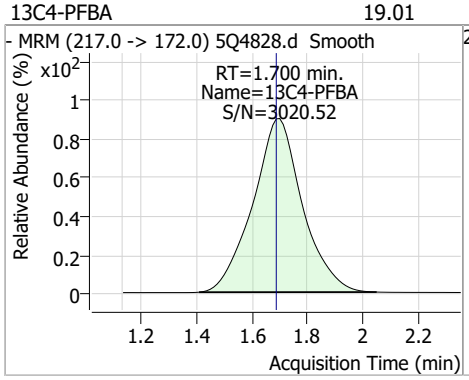
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C7-PFUnDA	7.459	570.0 -> 525.0	222086	19.16	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C8-FOSA	6.517	506.0 -> 78.0	44408	18.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-PFOA	5.845	421.0 -> 376.0	225908	19.18	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%			
13C8-PFOS	6.428	507.0 -> 99.0	22157	19.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%			
13C9-PFNA	6.443	472.0 -> 427.0	223639	18.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
d3-MeFOSAA	7.009	573.0 -> 419.0	31980	18.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10696	18.67	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%			
d3-MeFOSA	6.952	515.0 -> 169.0	10917	19.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%			
d5-EtFOSAA	7.170	589.0 -> 419.0	40032	18.99	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	3299	1.07	µg/L		95
6:2FTS	5.843	427.0 -> 407.0	4058	1.01	µg/L		96
8:2FTS	7.013	527.0 -> 507.0	3939	1.11	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	1158	0.93	µg/L		88
FOSA	6.519	498.0 -> 78.0	2286	1.01	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	1440	1.07	µg/L		94
PFBA	1.694	213.0 -> 169.0	1278	0.92	µg/L		100
PFBS	3.354	299.0 -> 80.0	1864	0.96	µg/L		98
PFDA	6.978	513.0 -> 469.0	10671	0.95	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	12166	0.95	µg/L		99
PFDS	7.419	599.0 -> 80.0	1674	1.01	µg/L		90
PFHpA	5.164	363.0 -> 319.0	10921	0.95	µg/L		99
PFHpS	5.855	449.0 -> 80.0	1646	0.92	µg/L		91
PFHxA	4.291	313.0 -> 269.0	8268	0.92	µg/L		98
PFHxS	5.195	399.0 -> 80.0	1791	0.93	µg/L	m	99
PFNA	6.444	463.0 -> 419.0	9303	0.91	µg/L		99
PFNS	6.949	549.0 -> 80.0	1537	0.93	µg/L		100
PFOA	5.845	413.0 -> 369.0	12892	0.94	µg/L		99
PFOS	6.429	499.0 -> 80.0	1993	1.00	µg/L	m	82
PFPeA	3.122	263.0 -> 219.0	5091	0.94	µg/L		100
PFPeS	4.398	349.0 -> 80.0	1381	0.89	µg/L		98
PFTeDA	9.128	713.0 -> 669.0	17406	1.07	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	16238	0.94	µg/L		99
PFUnDA	7.460	563.0 -> 519.0	11007	0.96	µg/L		99
11Cl-PF3OUdS	7.615	631.0 -> 451.0	7116	0.96	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	6114	0.96	µg/L		100
ADONA	5.261	377.0 -> 251.0	12830	0.89	µg/L		96
HFPO-DA	4.562	329.0 -> 169.0	1835	0.97	µg/L		97
MeFOSA	6.954	512.0 -> 169.0	546	0.95	µg/L		97
4-PFECHS	5.753	461.0 -> 381.0	3550	0.94	µg/L		96
FBSA	4.343	298.0 -> 78.0	3105	0.99	µg/L		99
FHxSA	5.674	398.0 -> 78.0	2523	0.95	µg/L		99

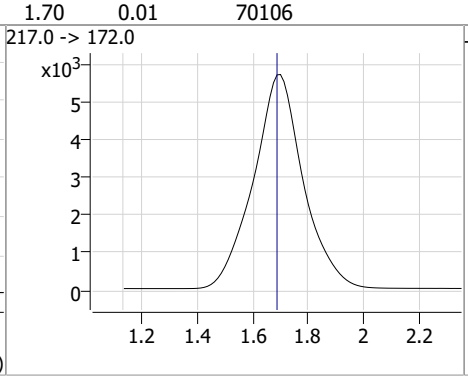
 # = Qualifier out of range, m = manually integrated, + = Area summed

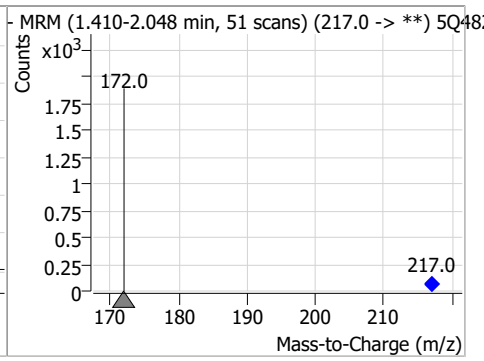
Perfluorinated Compounds by LC/MS/MS



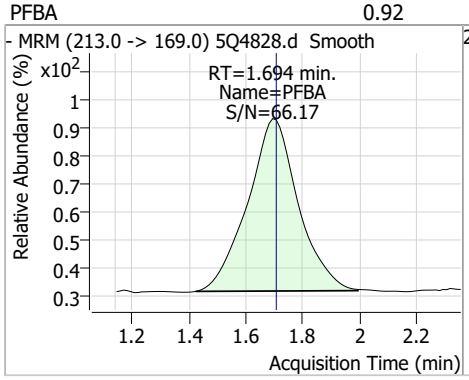
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.01	1.70	0.01	70106				

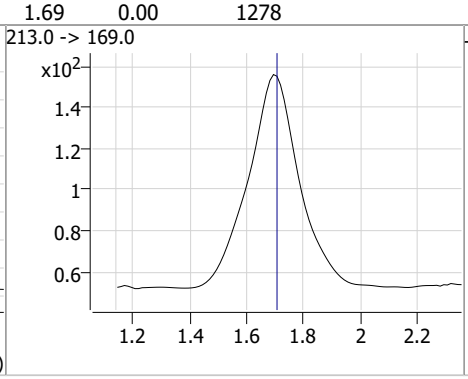


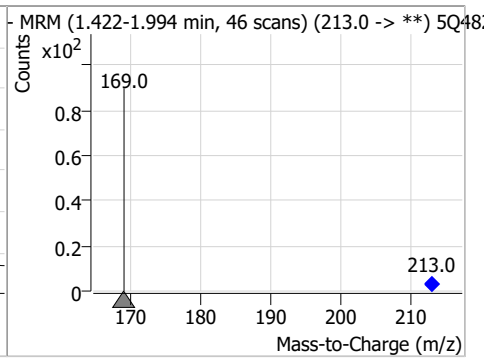




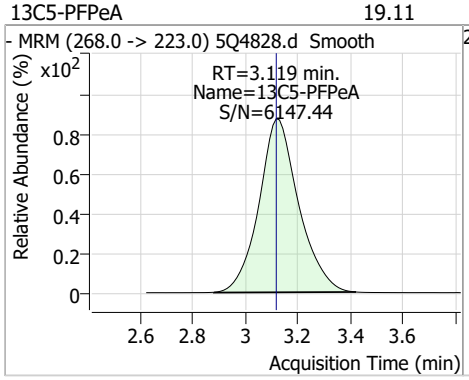
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.92	1.69	0.00	1278				

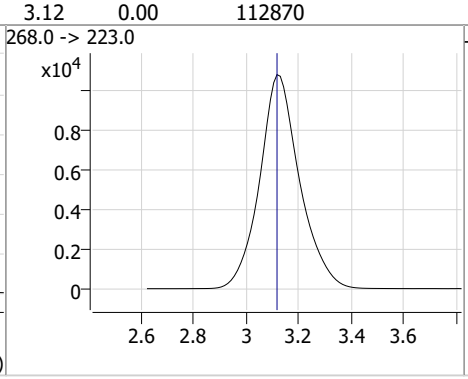


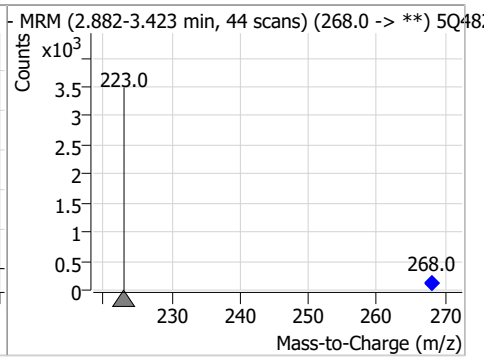




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.11	3.12	0.00	112870				

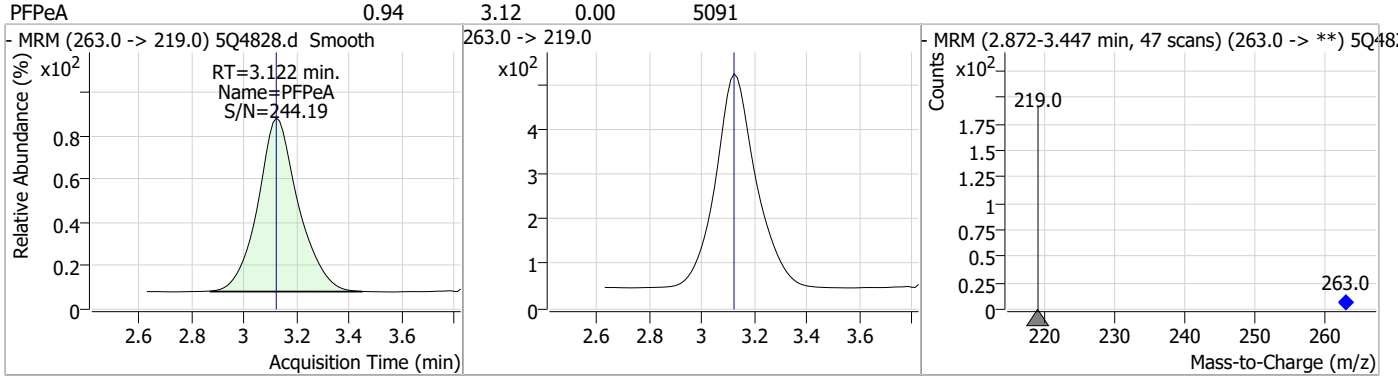




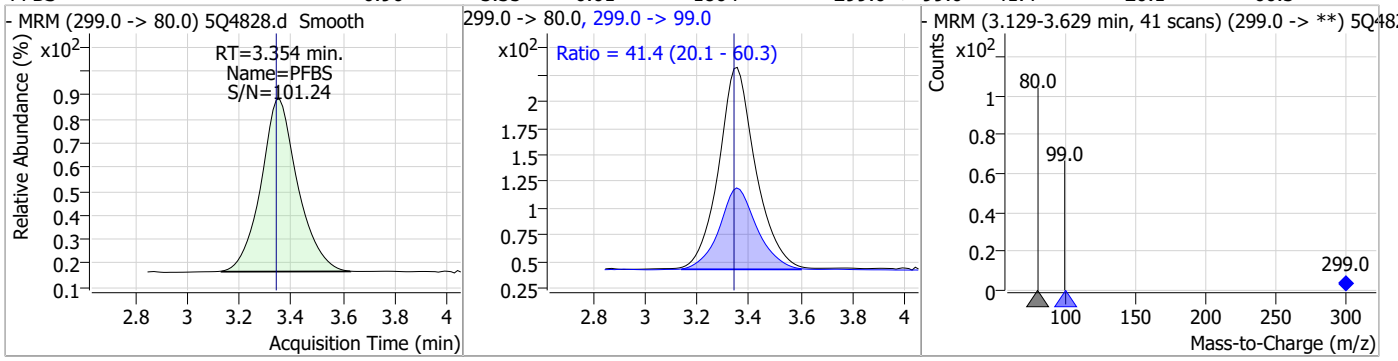


Perfluorinated Compounds by LC/MS/MS

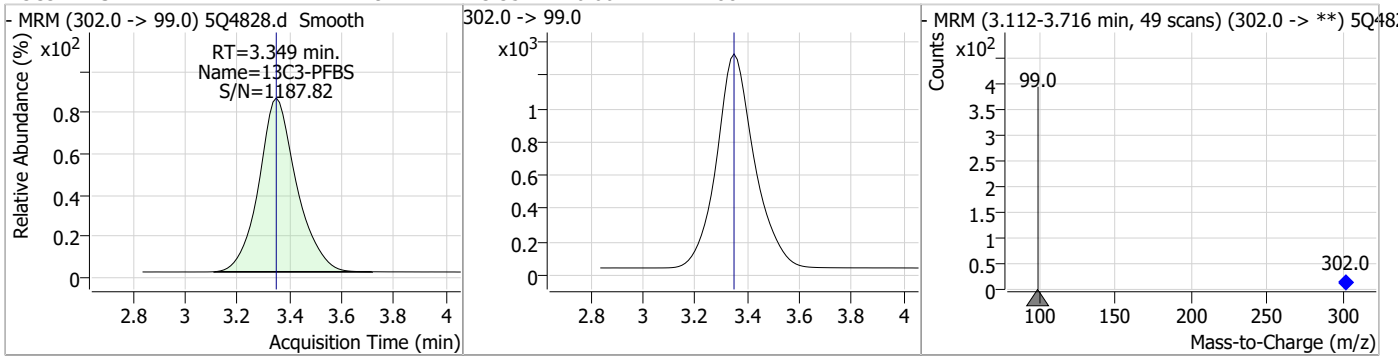
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.94	3.12	0.00	5091				



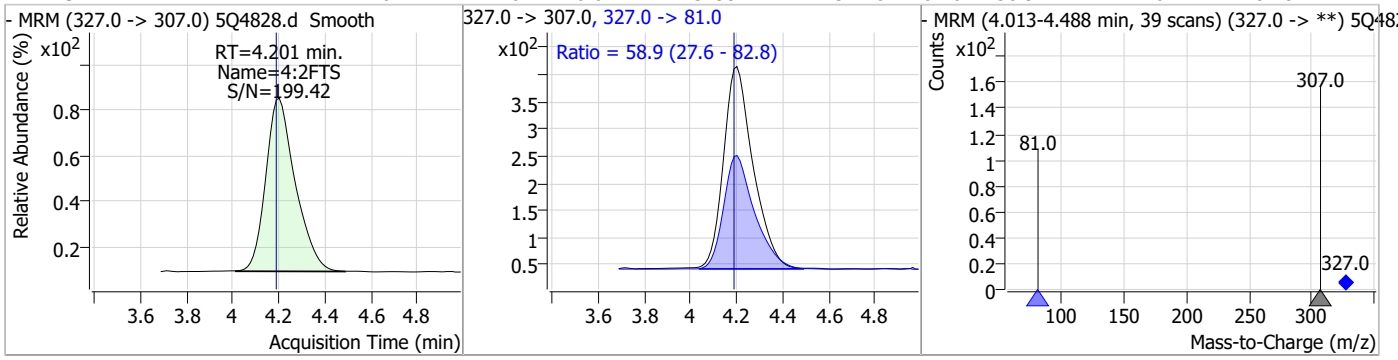
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.96	3.35	0.01	1864	299.0 -> 99.0	41.4	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.27	3.35	0.00	12884				

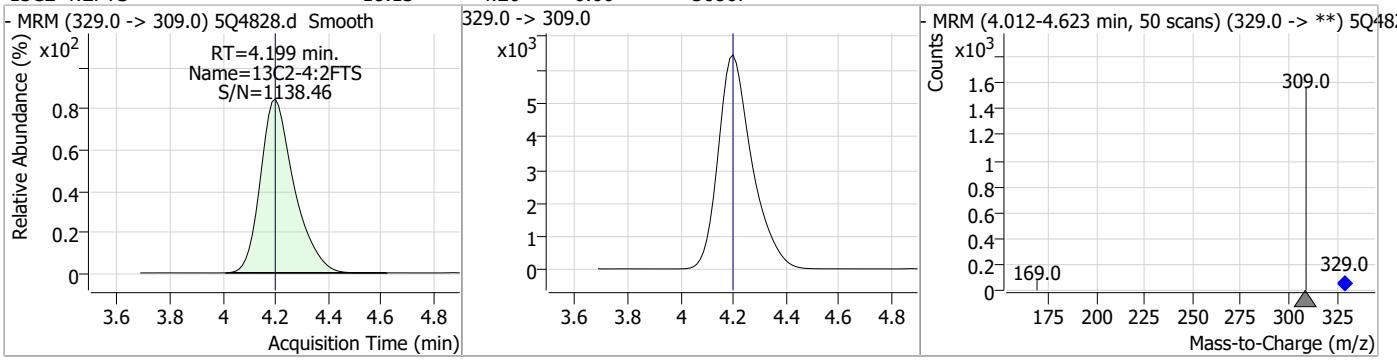


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.07	4.20	0.01	3299	327.0 -> 81.0	58.9	27.6	82.8

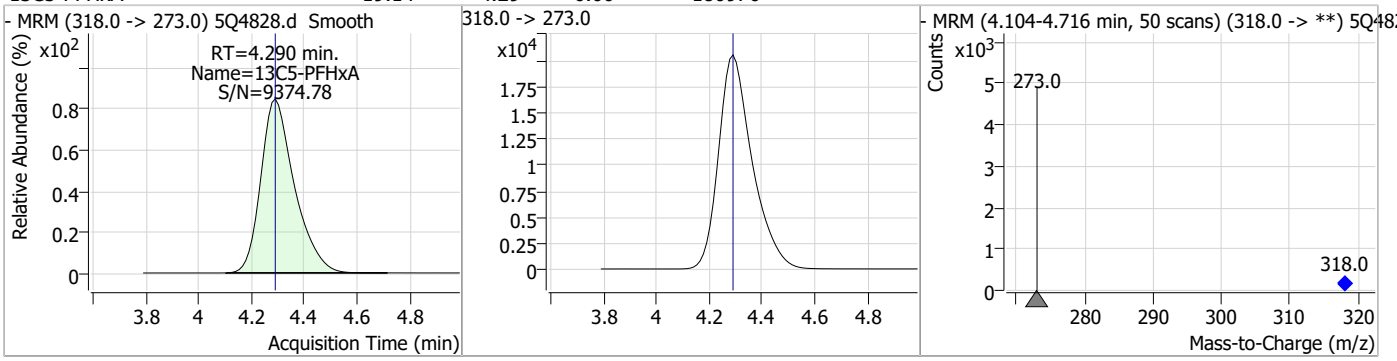


Perfluorinated Compounds by LC/MS/MS

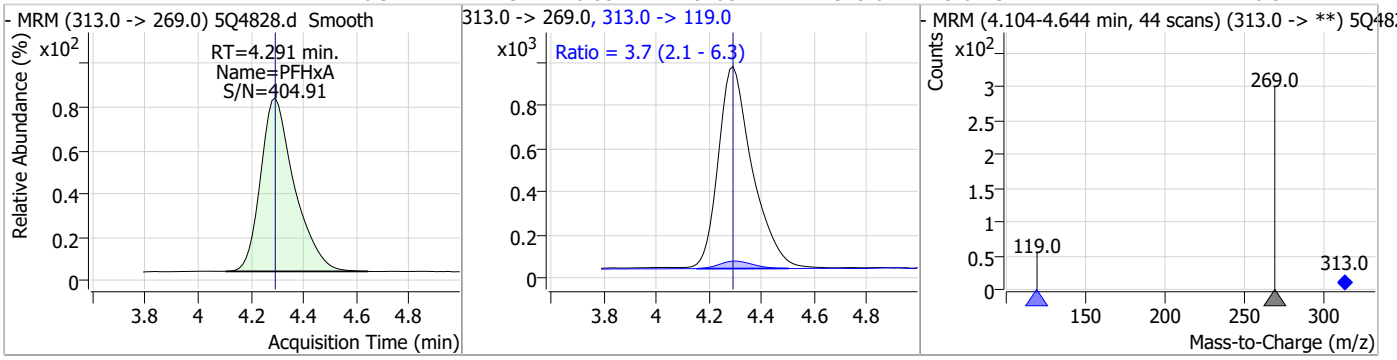
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.13	4.20	0.00	56867				



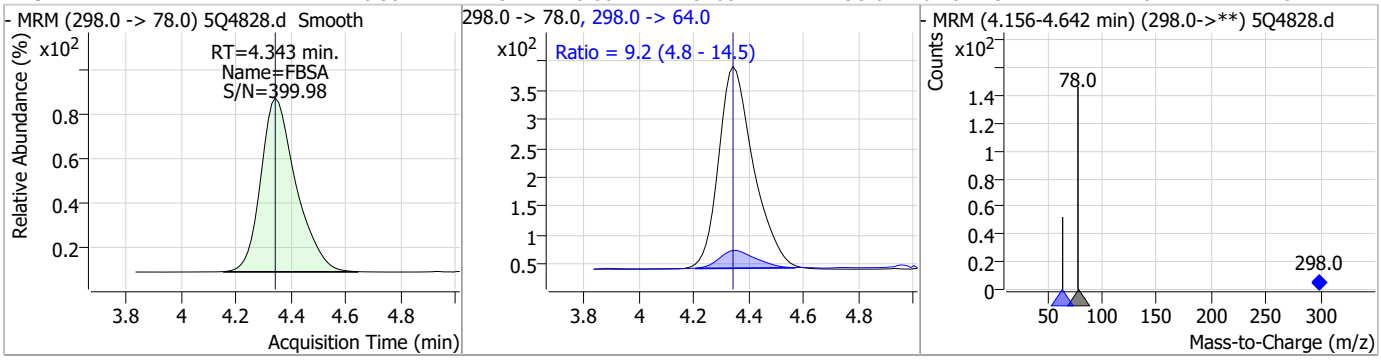
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.14	4.29	0.00	180976				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.92	4.29	0.00	8268	313.0 -> 119.0	3.7	2.1	6.3

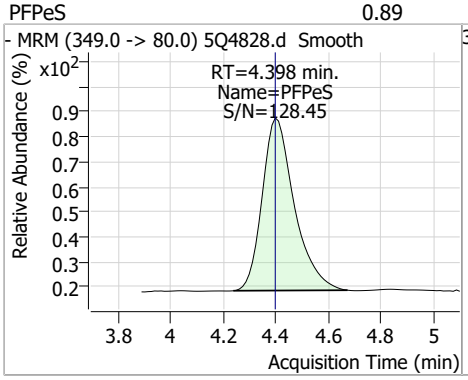


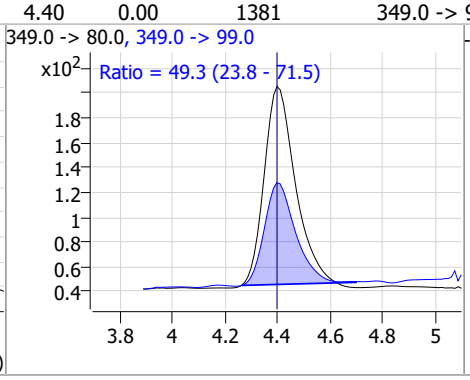
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.99	4.34	0.00	3105	298.0 -> 64.0	9.2	4.8	14.5

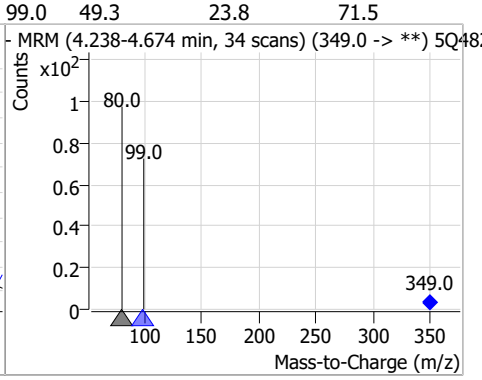


Perfluorinated Compounds by LC/MS/MS

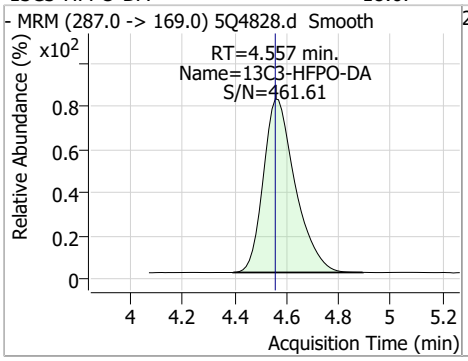
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.89	4.40	0.00	1381	349.0 -> 99.0	49.3	23.8	71.5

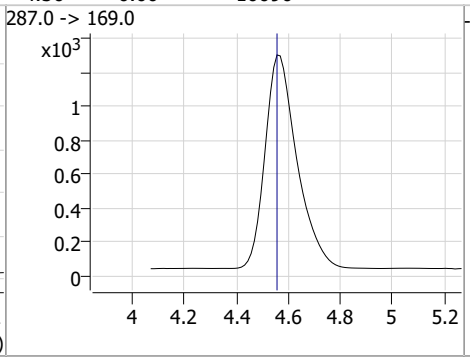


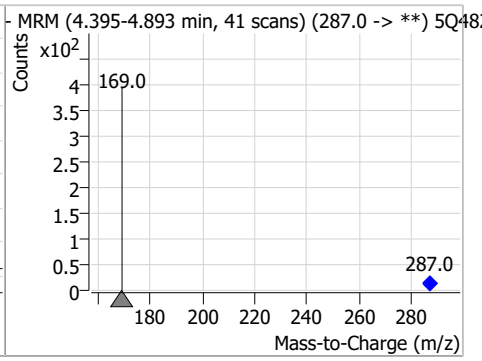




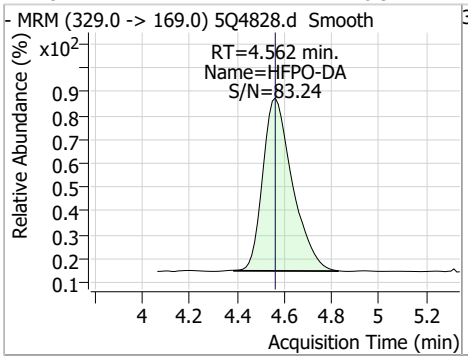
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.67	4.56	0.00	10696				

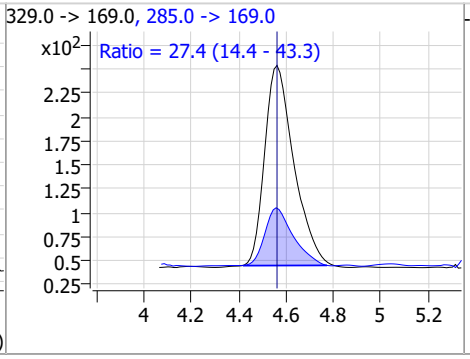


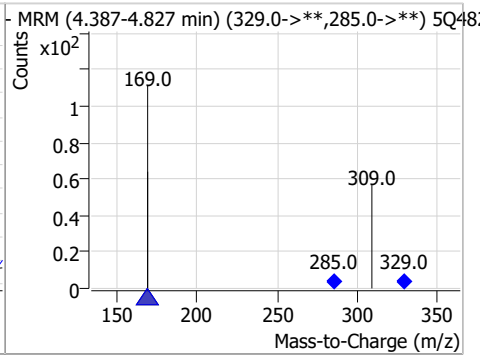




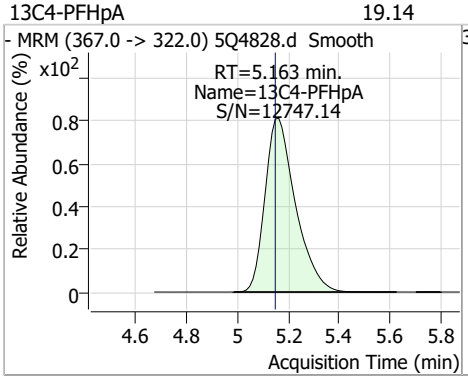
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.97	4.56	0.00	1835	285.0 -> 169.0	27.4	14.4	43.3

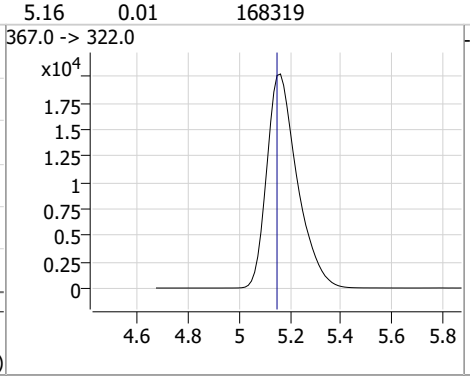


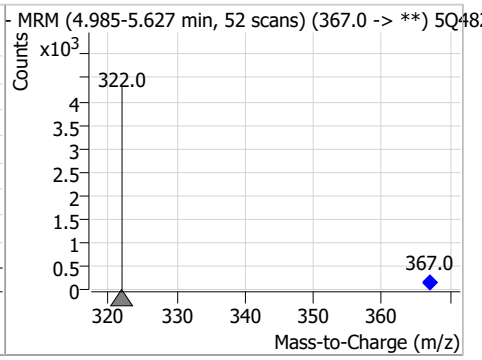




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.14	5.16	0.01	168319				

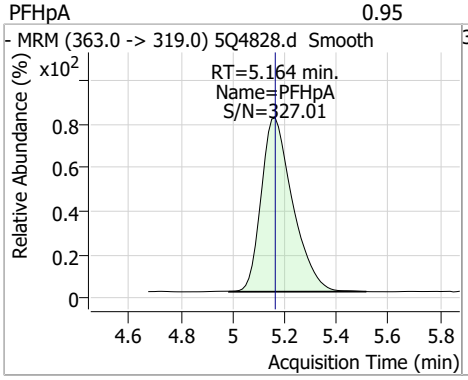


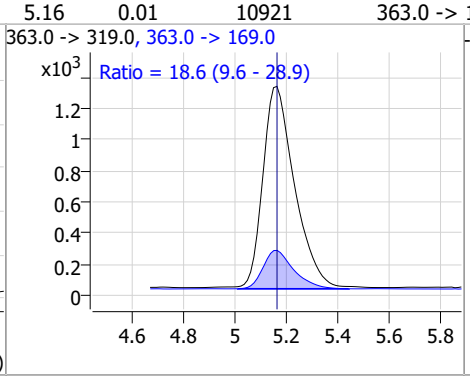


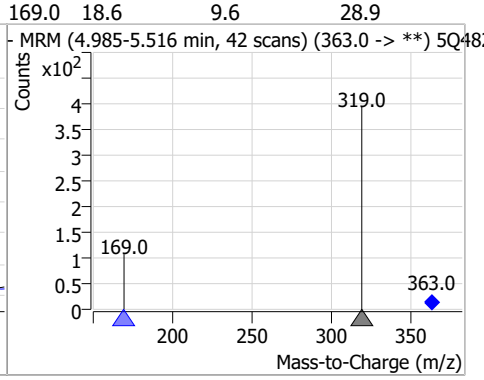


Perfluorinated Compounds by LC/MS/MS

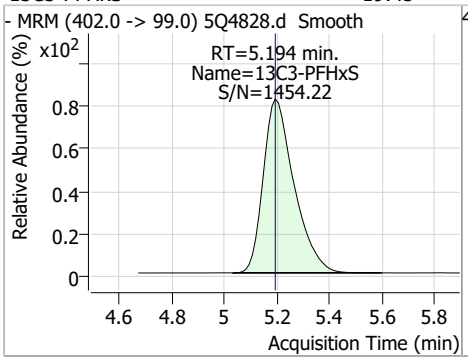
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.95	5.16	0.01	10921	363.0 -> 169.0	18.6	9.6	28.9

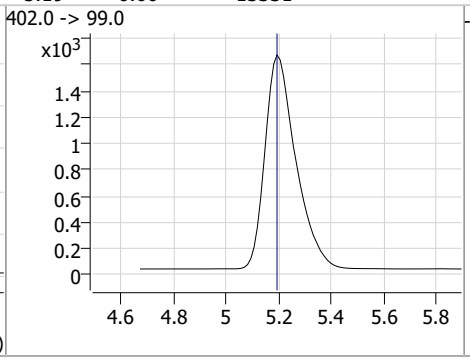


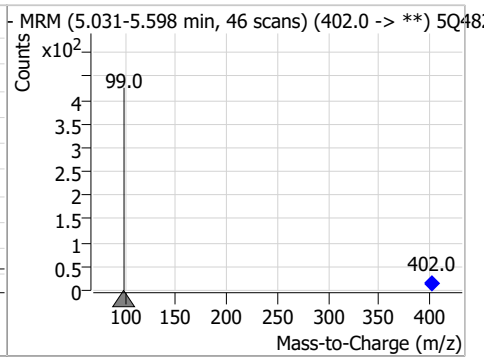




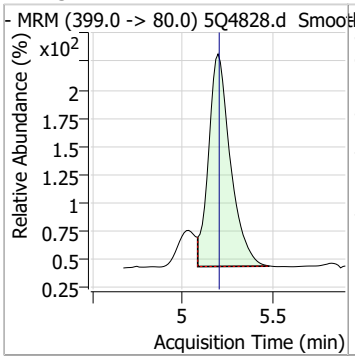
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.45	5.19	0.00	13331				

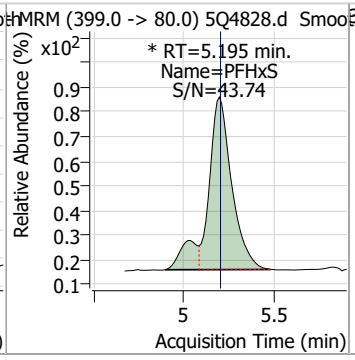


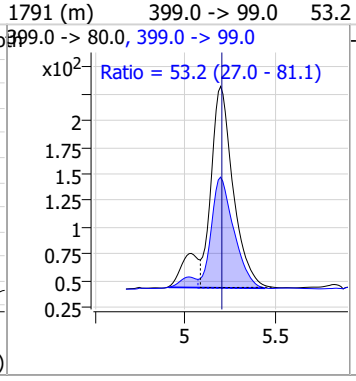


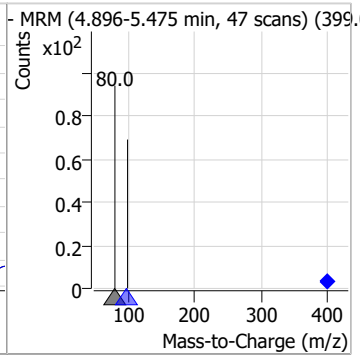


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	5.20	0.00	1791 (m)	399.0 -> 99.0	53.2	27.0	81.1

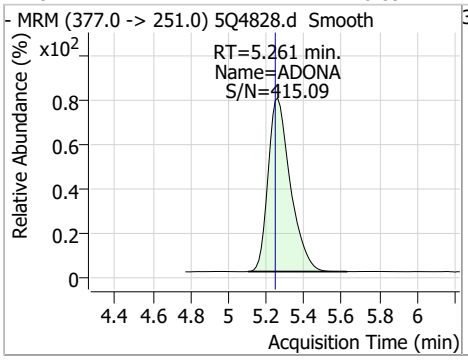


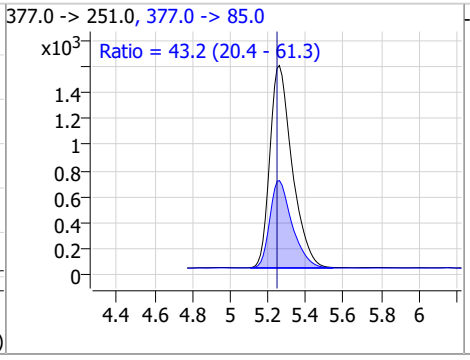


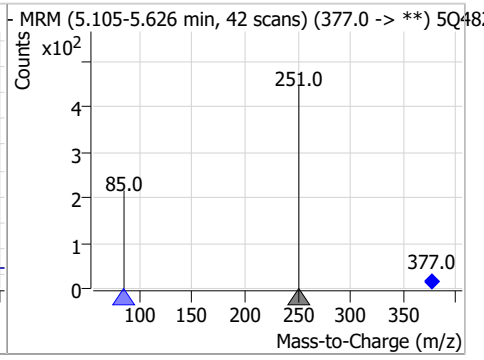




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.89	5.26	0.01	12830	377.0 -> 85.0	43.2	20.4	61.3

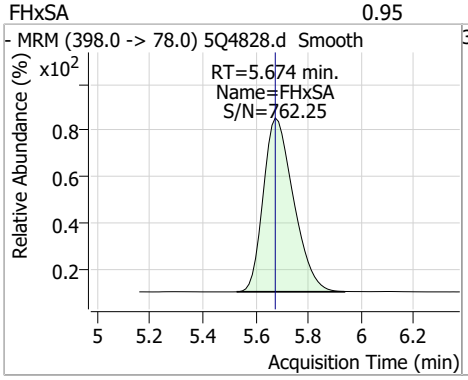


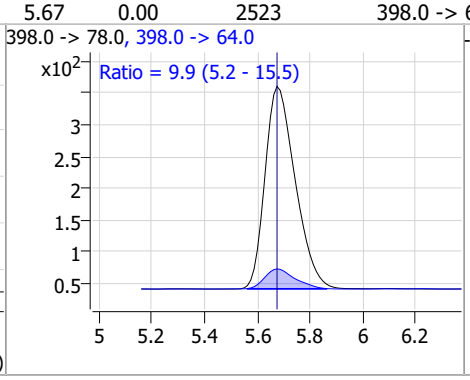


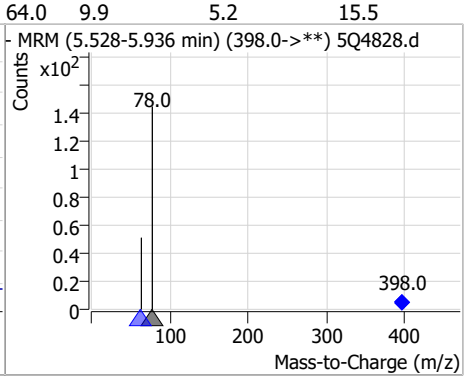


Perfluorinated Compounds by LC/MS/MS

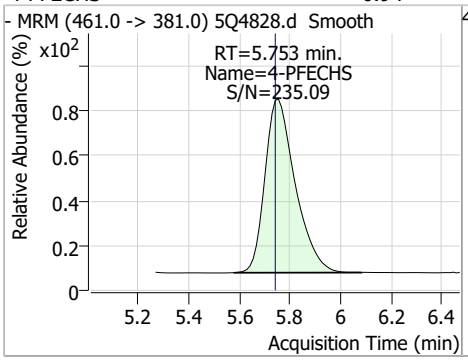
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.95	5.67	0.00	2523	398.0 -> 64.0	9.9	5.2	15.5

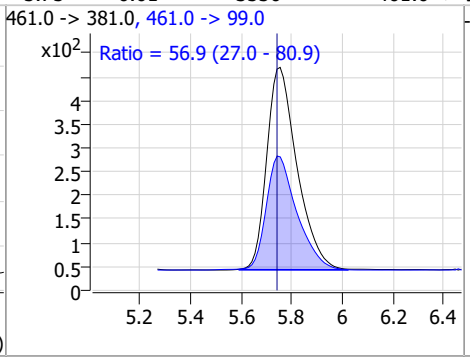


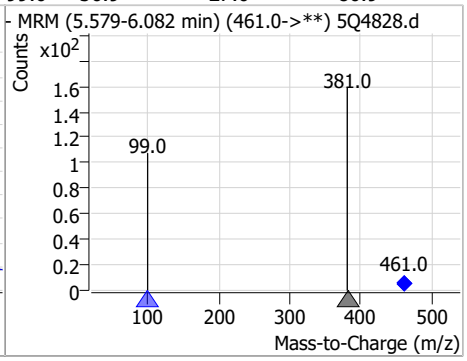




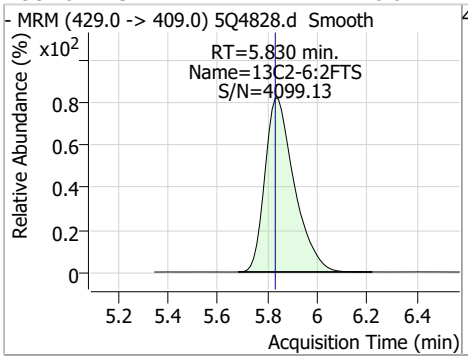
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.94	5.75	0.01	3550	461.0 -> 99.0	56.9	27.0	80.9

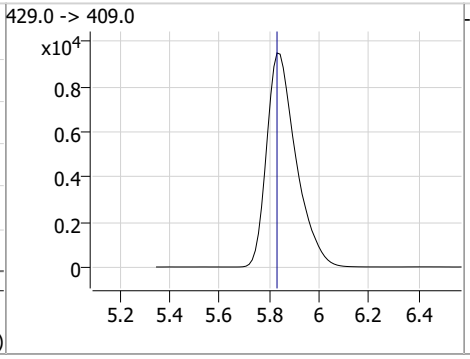


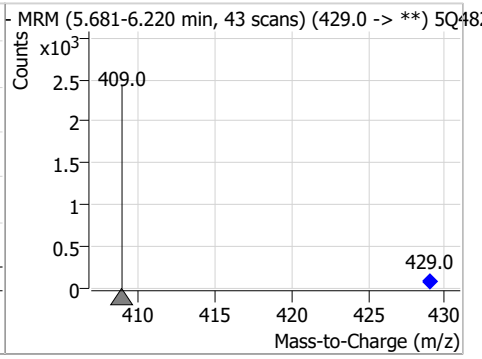




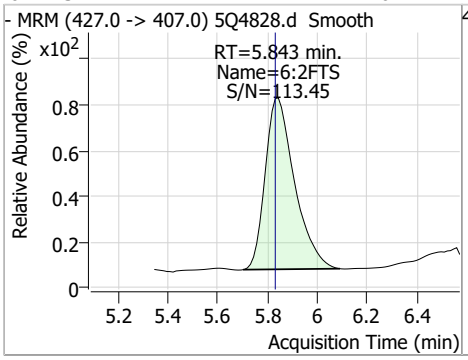
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.02	5.83	0.00	77253				

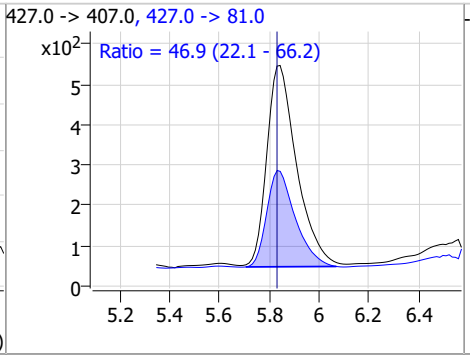


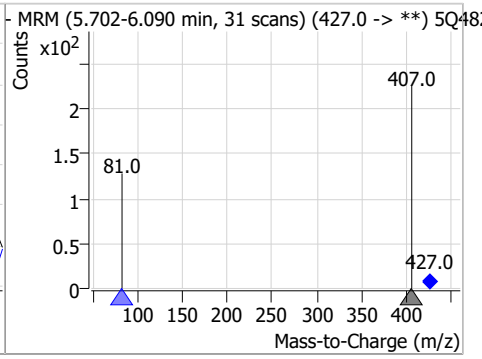




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.01	5.84	0.01	4058	427.0 -> 81.0	46.9	22.1	66.2

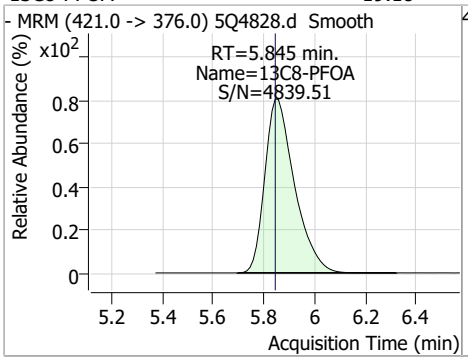


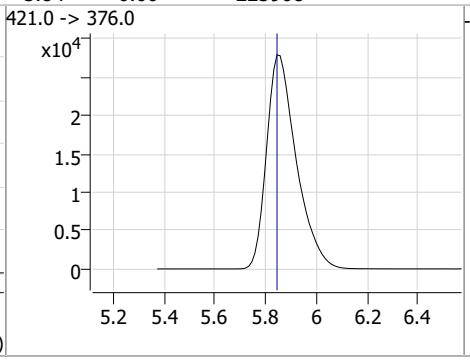


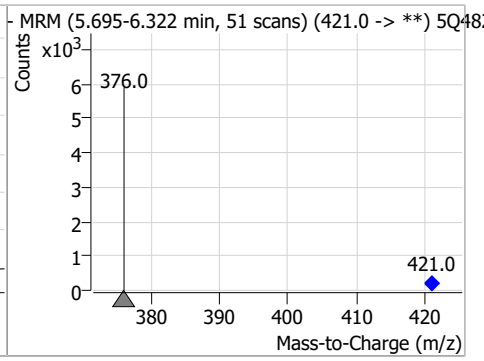


Perfluorinated Compounds by LC/MS/MS

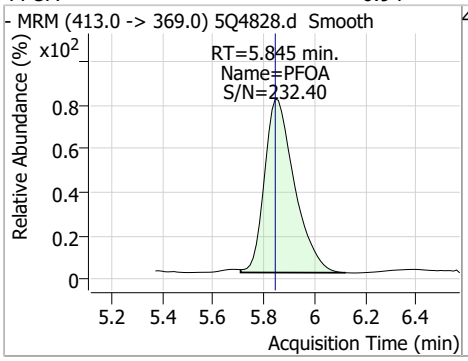
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.18	5.84	0.00	225908				

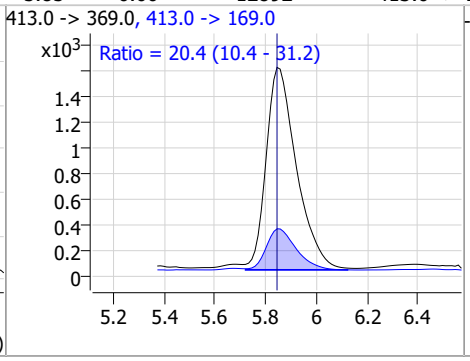


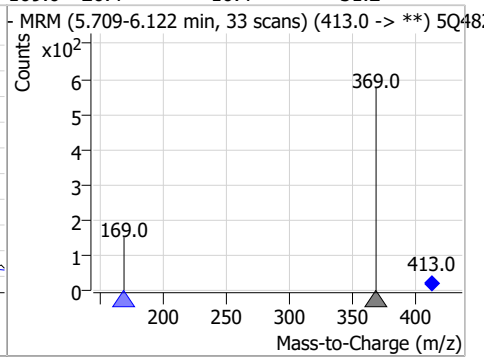




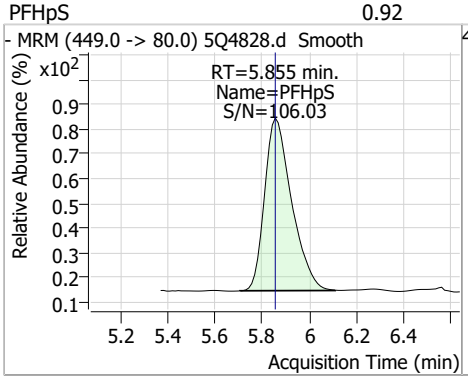
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.94	5.85	0.00	12892	413.0 -> 169.0	20.4	10.4	31.2

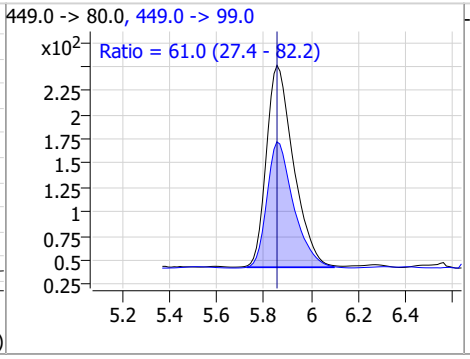


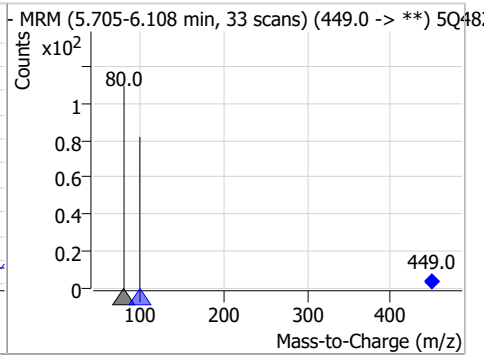




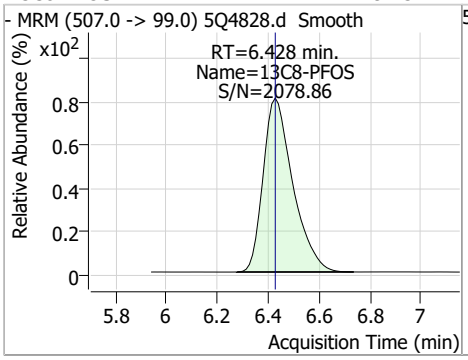
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.92	5.85	0.00	1646	449.0 -> 99.0	61.0	27.4	82.2

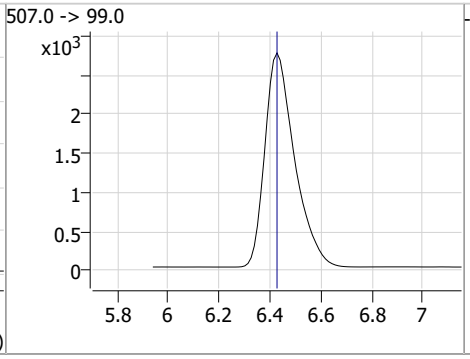


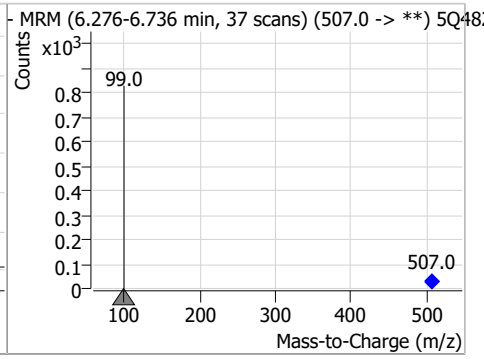




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.23	6.43	0.00	22157				

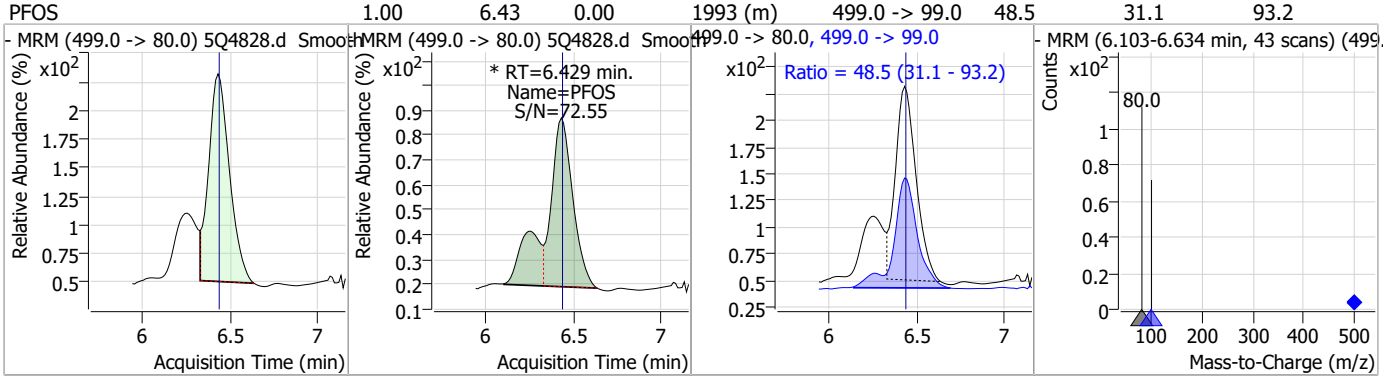




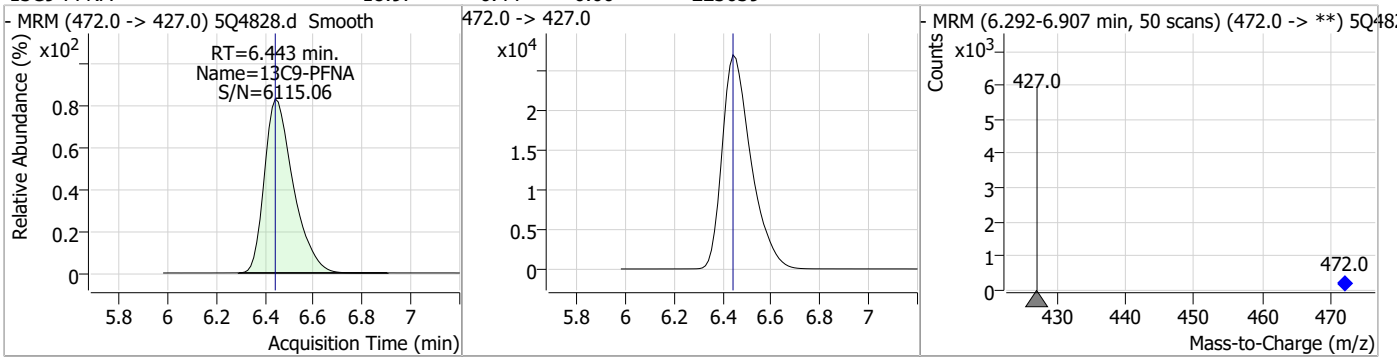


Perfluorinated Compounds by LC/MS/MS

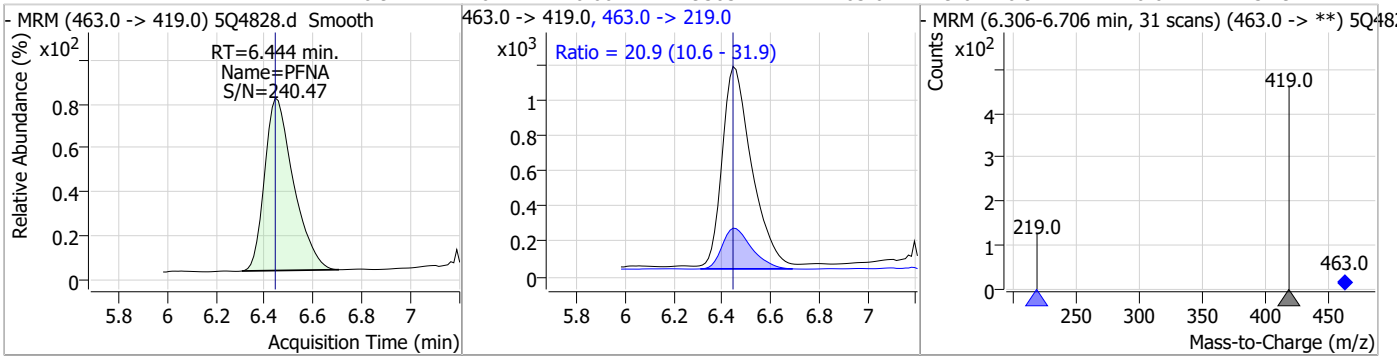
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	6.43	0.00	1993 (m)	499.0 -> 99.0	48.5	31.1	93.2



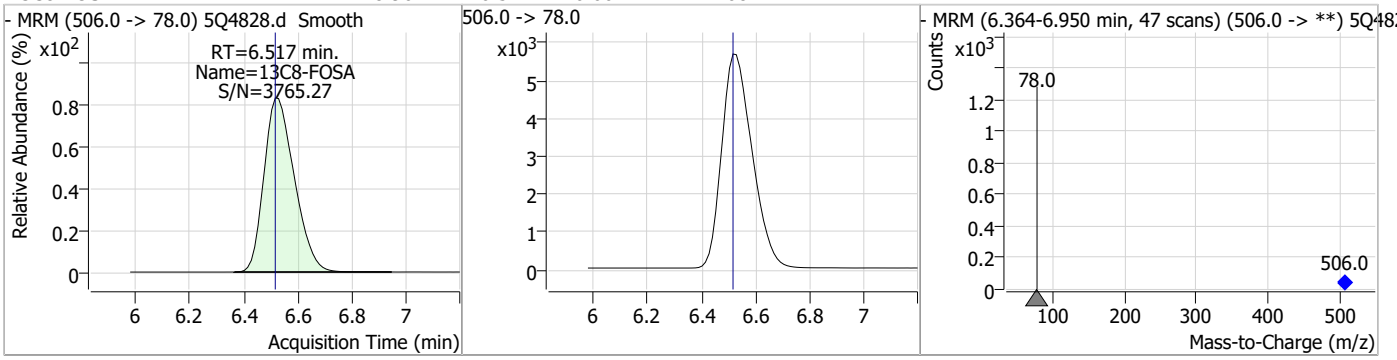
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.97	6.44	0.00	223639				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	6.44	0.00	9303	463.0 -> 219.0	20.9	10.6	31.9

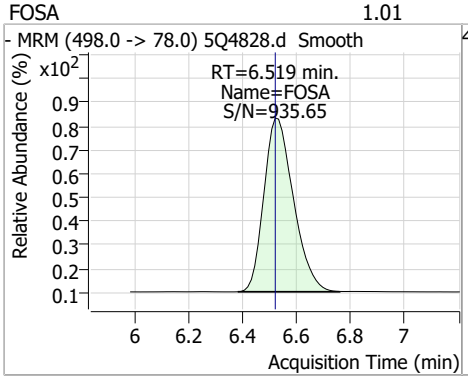


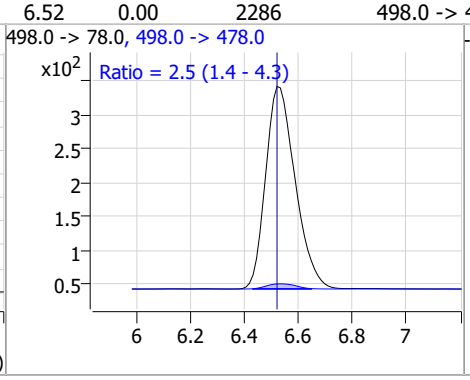
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.90	6.52	0.00	44408				

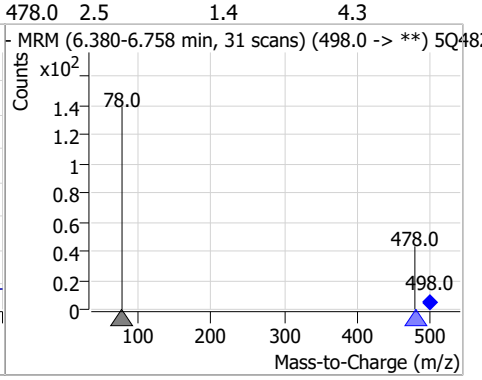


Perfluorinated Compounds by LC/MS/MS

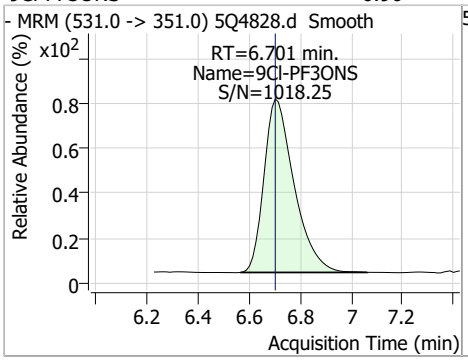
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	6.52	0.00	2286	498.0 -> 478.0	2.5	1.4	4.3

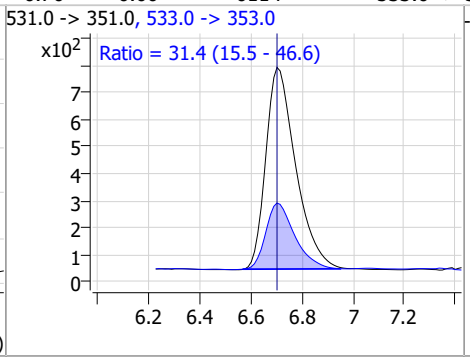


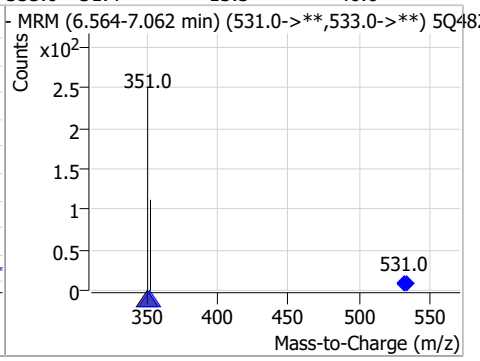




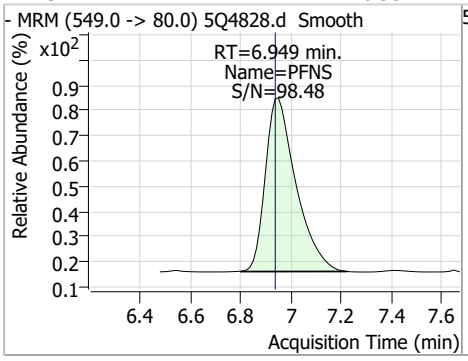
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.96	6.70	0.00	6114	533.0 -> 353.0	31.4	15.5	46.6

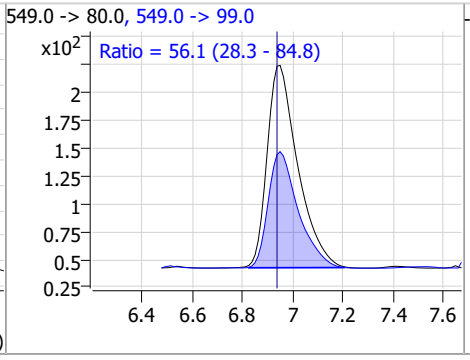


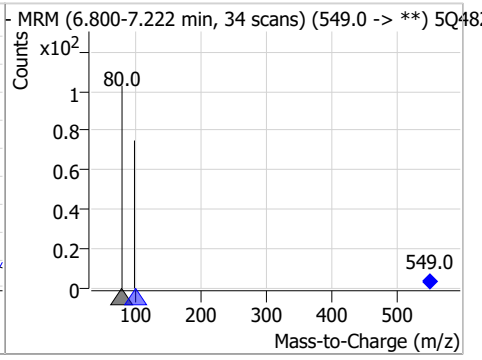




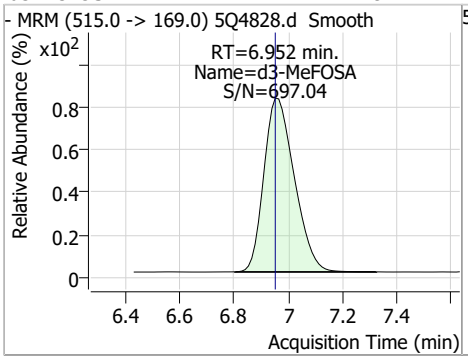
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.93	6.95	0.01	1537	549.0 -> 99.0	56.1	28.3	84.8

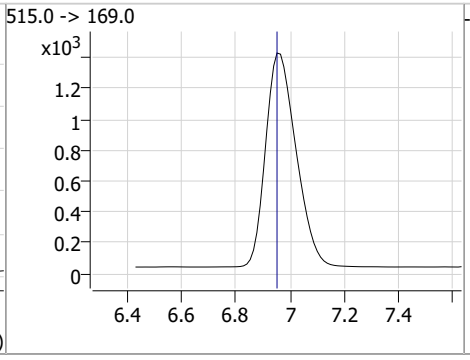


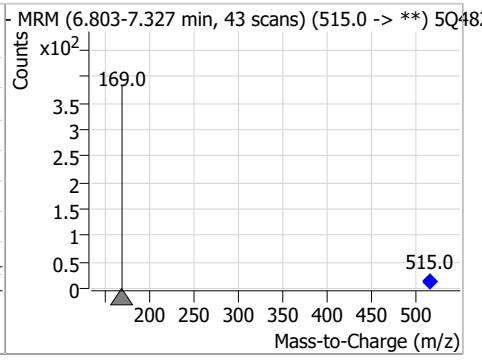




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.41	6.95	0.00	10917				

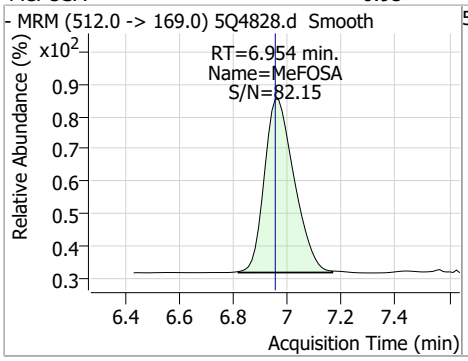


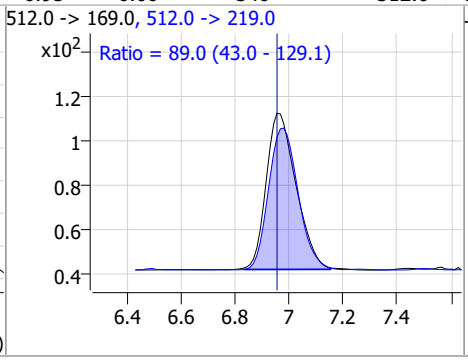


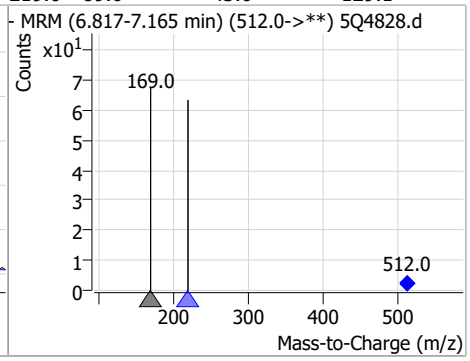


Perfluorinated Compounds by LC/MS/MS

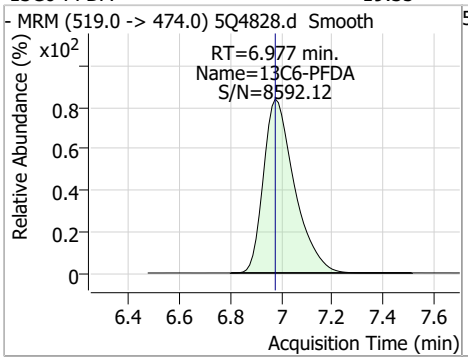
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.95	6.95	0.00	546	512.0 -> 219.0	89.0	43.0	129.1

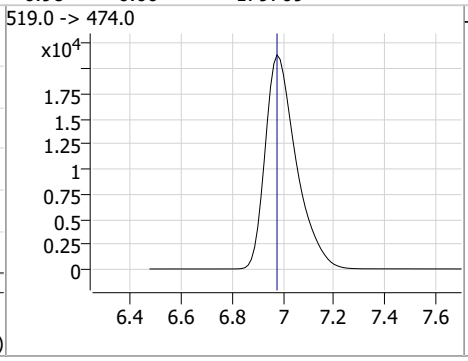


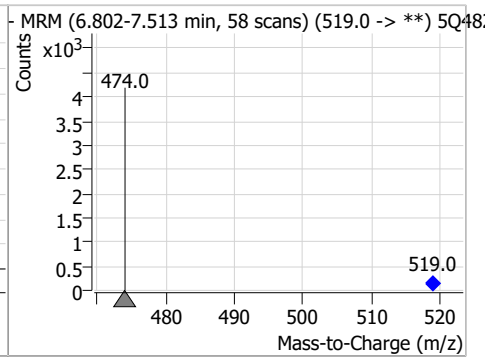




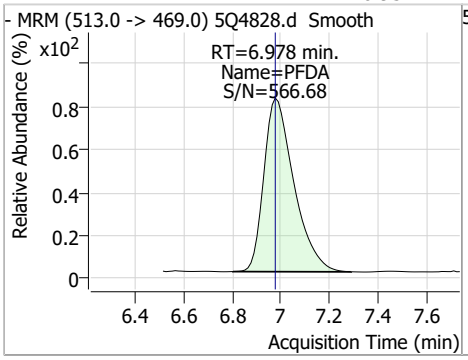
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.35	6.98	0.00	179709				

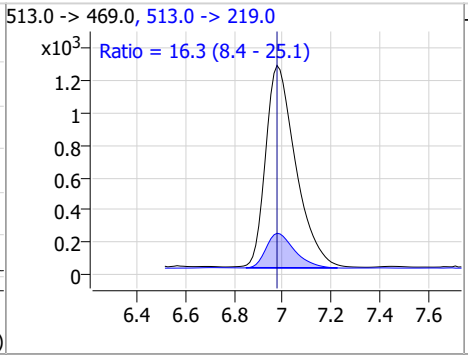


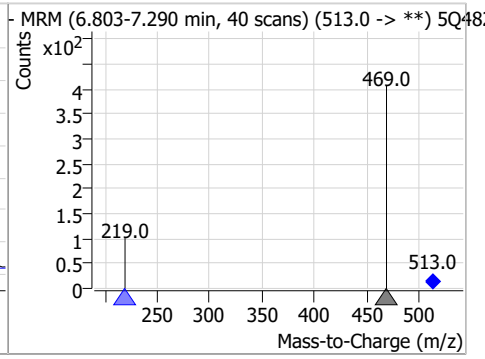




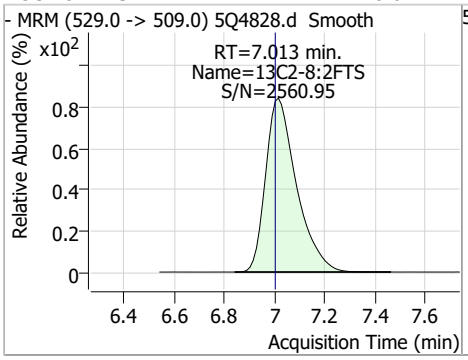
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.95	6.98	0.00	10671	513.0 -> 219.0	16.3	8.4	25.1

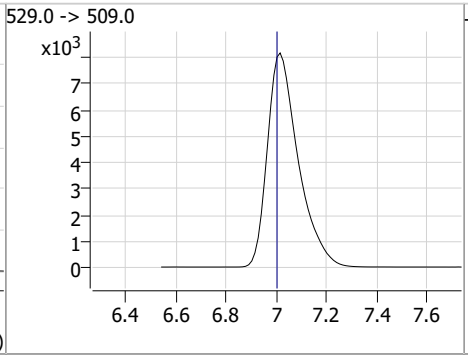


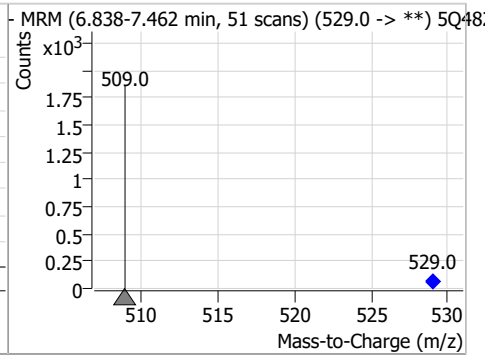




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.01	7.01	0.01	69200				

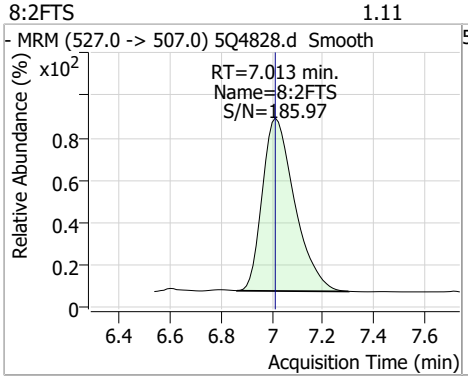


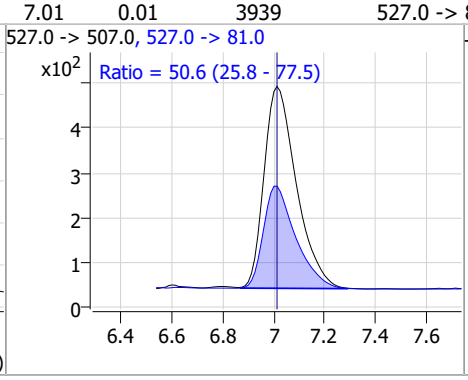


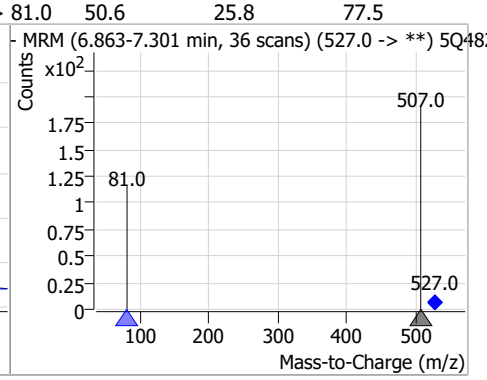


Perfluorinated Compounds by LC/MS/MS

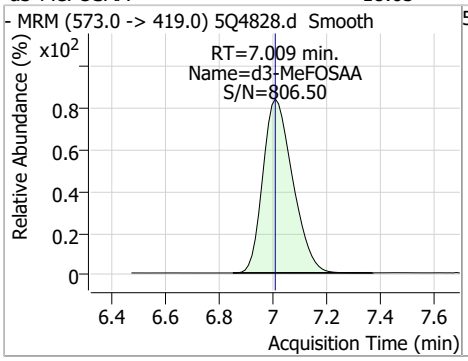
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.11	7.01	0.01	3939	527.0 -> 81.0	50.6	25.8	77.5

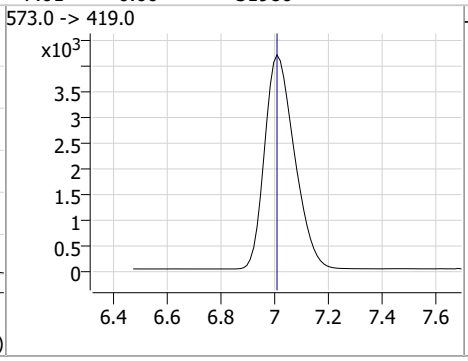


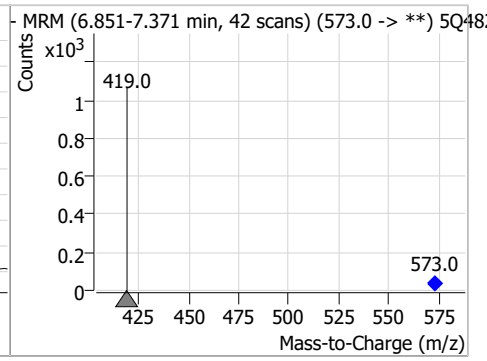




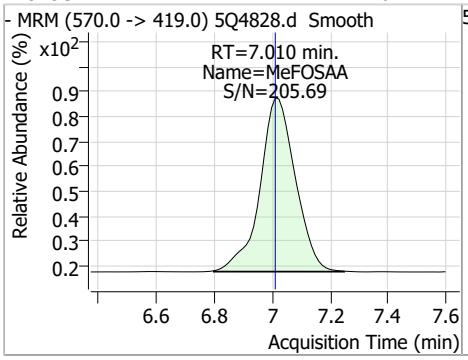
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.65	7.01	0.00	31980				

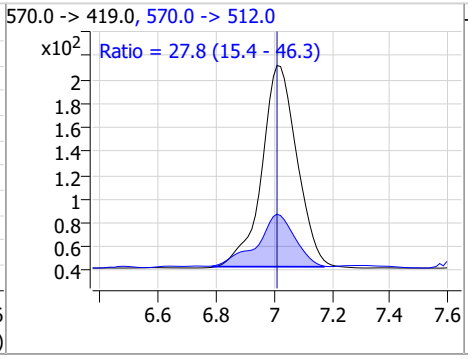


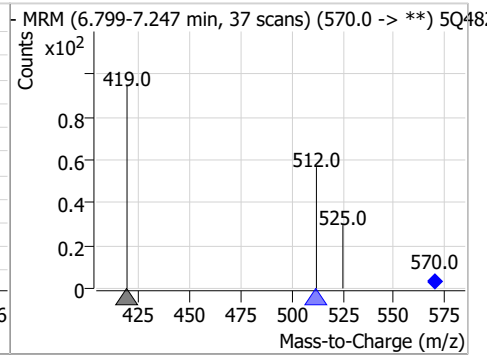




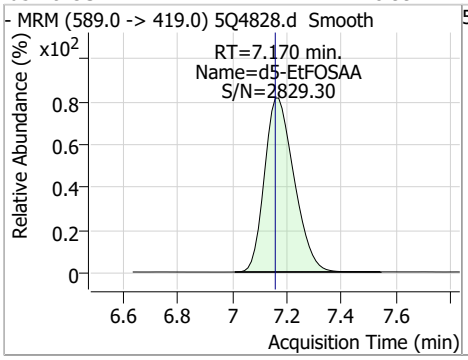
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.07	7.01	0.00	1440	570.0 -> 512.0	27.8	15.4	46.3

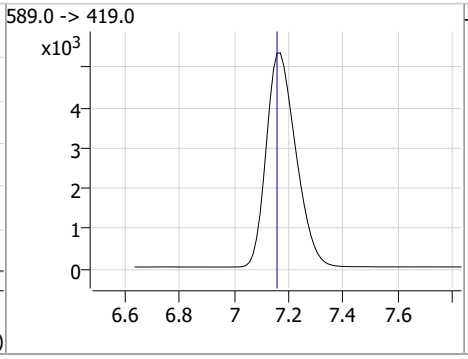


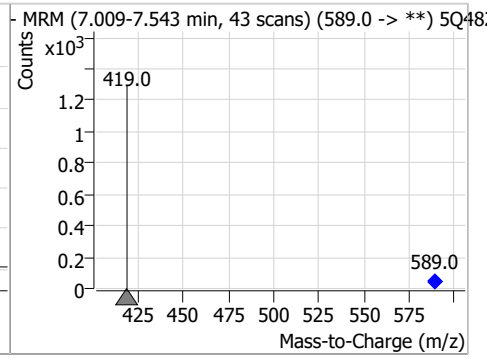




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.99	7.17	0.01	40032				

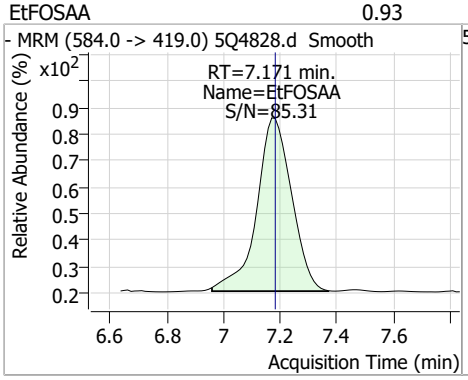


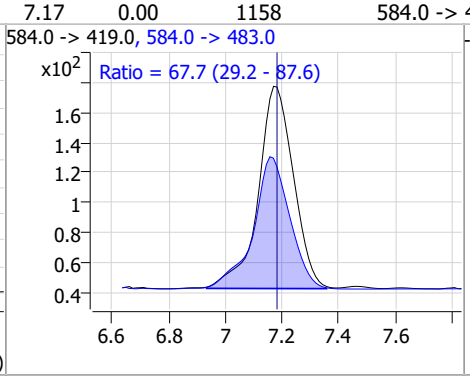


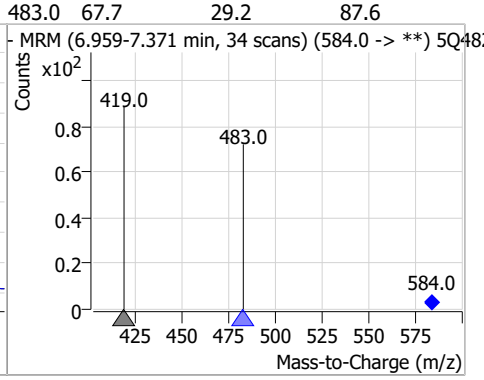


Perfluorinated Compounds by LC/MS/MS

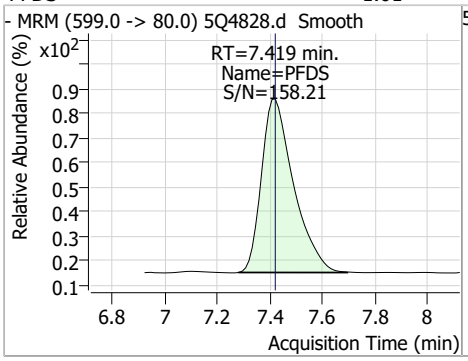
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.93	7.17	0.00	1158	584.0 -> 483.0	67.7	29.2	87.6

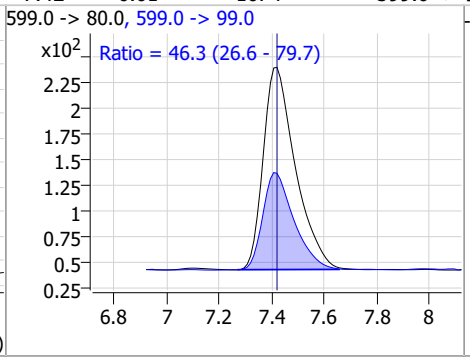


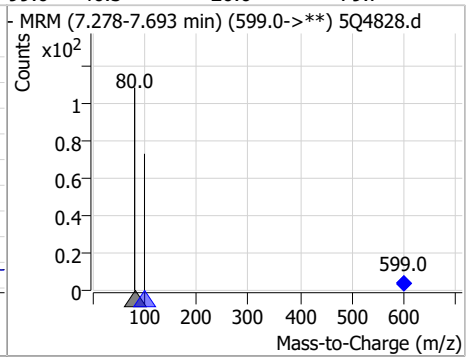




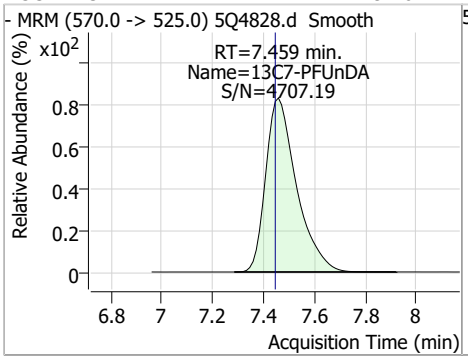
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.01	7.42	0.01	1674	599.0 -> 99.0	46.3	26.6	79.7

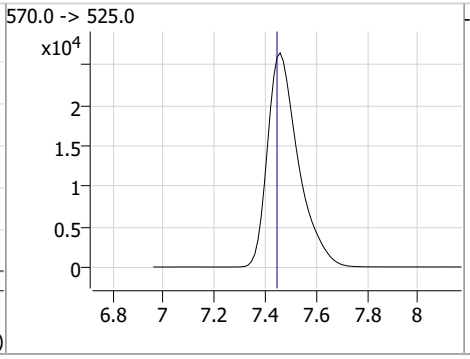


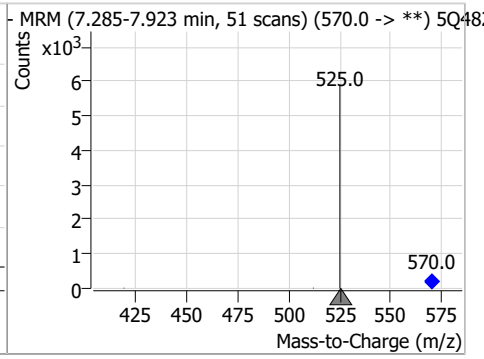




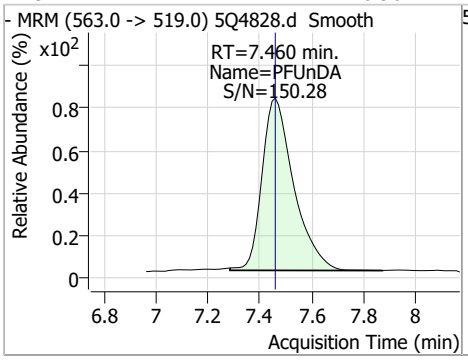
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.16	7.46	0.01	222086				

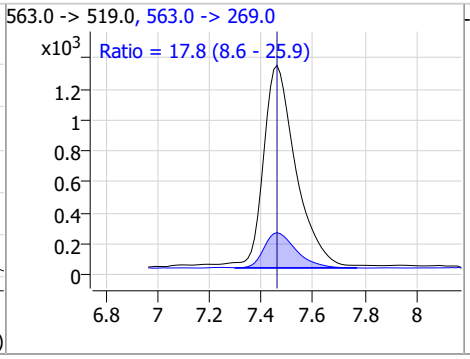


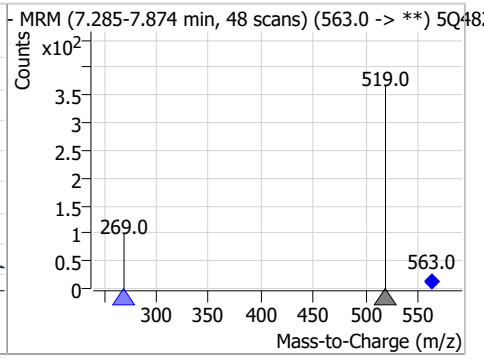




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.96	7.46	0.01	11007	563.0 -> 269.0	17.8	8.6	25.9

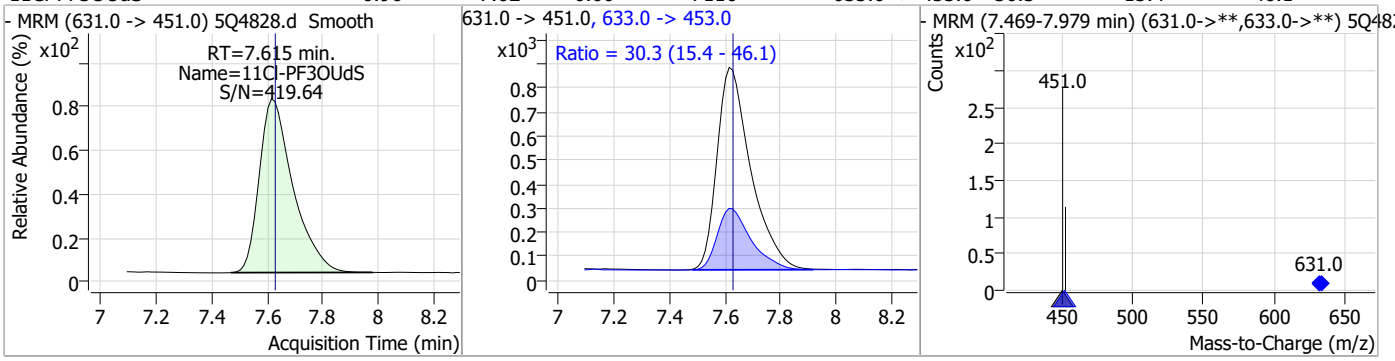




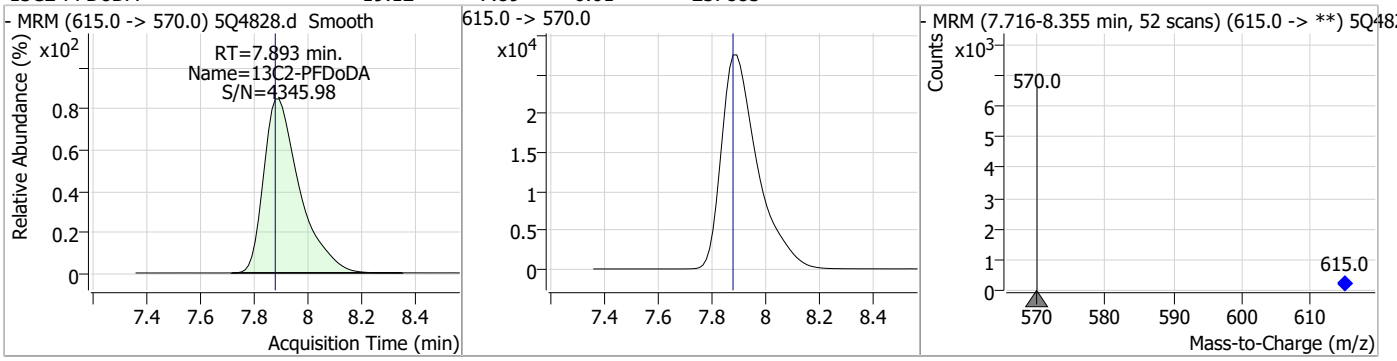


Perfluorinated Compounds by LC/MS/MS

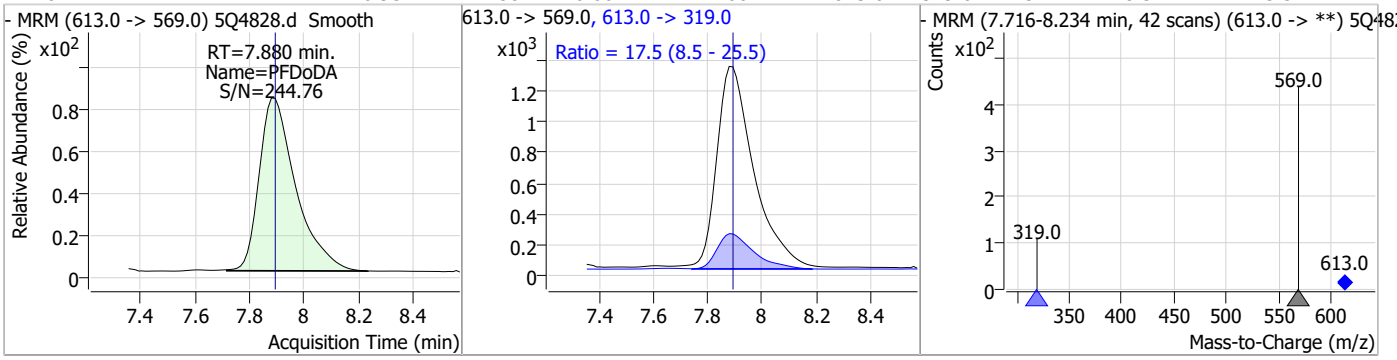
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.96	7.62	0.00	7116	633.0 -> 453.0	30.3	15.4	46.1



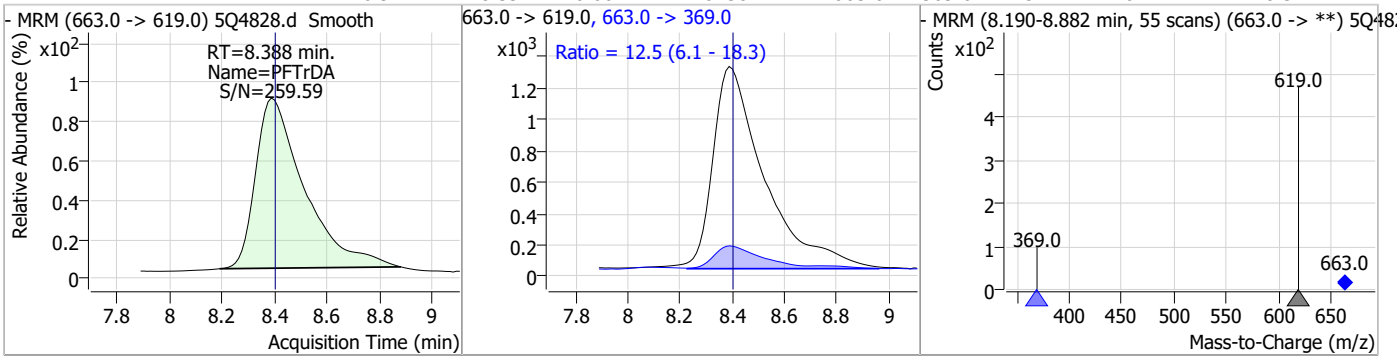
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.12	7.89	0.01	257885				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.95	7.88	0.00	12166	613.0 -> 319.0	17.5	8.5	25.5

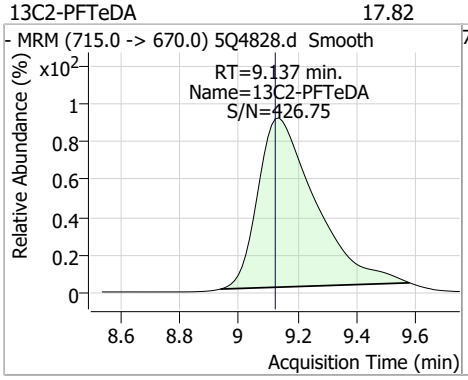


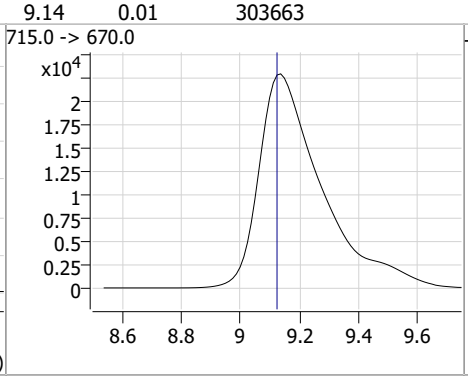
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.94	8.39	0.00	16238	663.0 -> 369.0	12.5	6.1	18.3

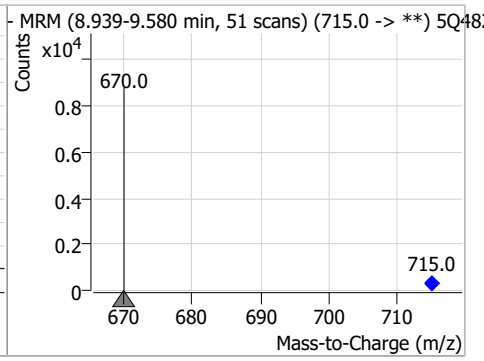


Perfluorinated Compounds by LC/MS/MS

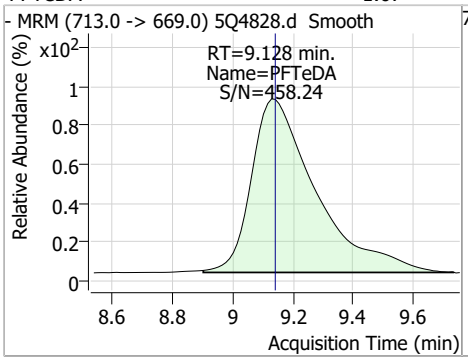
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.82	9.14	0.01	303663				

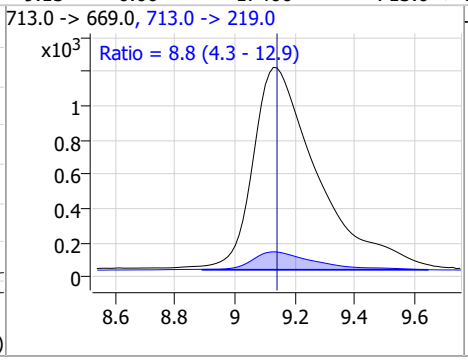


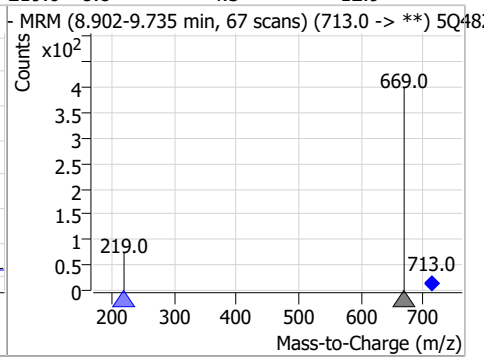




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.07	9.13	0.00	17406	713.0 -> 219.0	8.8	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4828.D
Injection Time: 09/17/22 15:36
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:04 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:06

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4832.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/17/2022 4:38:15 PM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

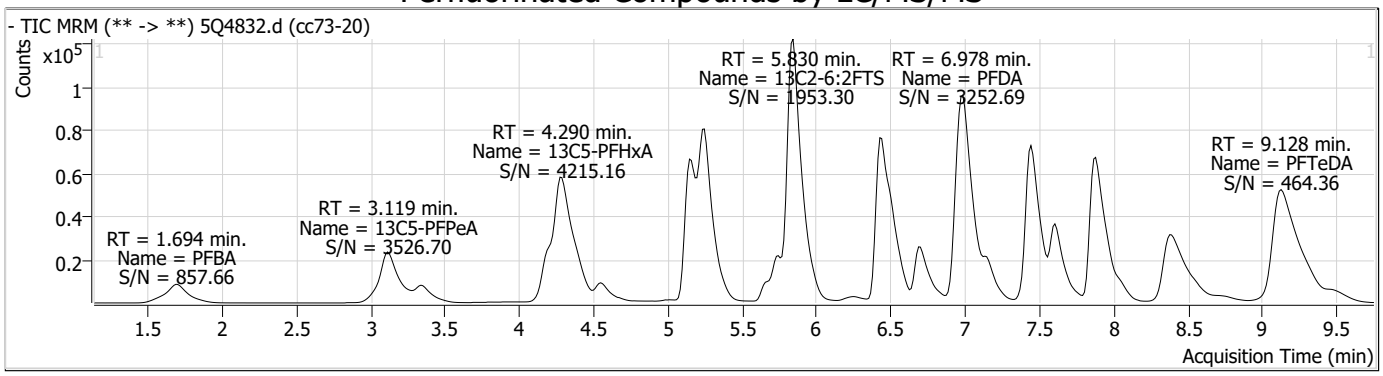
Compound	RT	QIon	Resp.	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.700	217.0 -> 172.0	68696	20.00 µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	110185	20.00 µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	176200	20.00 µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	164812	20.00 µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	219712	20.00 µg/L	0.012
M9-PFNA	6.443	472.0 -> 427.0	218769	20.00 µg/L	0.000
M6-PFDA	6.977	519.0 -> 474.0	171420	20.00 µg/L	0.000
M7-PFUnDA	7.459	570.0 -> 525.0	211368	20.00 µg/L	0.012
M2-PFDoDA	7.879	615.0 -> 570.0	250661	20.00 µg/L	0.000
M2-PFTeDA	9.137	715.0 -> 670.0	301974	20.00 µg/L	0.012
M8-FOSA	6.530	506.0 -> 78.0	43078	20.00 µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12489	20.00 µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12874	20.00 µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	21990	20.00 µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	58424	20.00 µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	79073	20.00 µg/L	0.000
M2-8:2FTS	7.013	529.0 -> 509.0	71706	20.00 µg/L	0.012
M3-MeFOSAA	7.009	573.0 -> 419.0	31396	20.00 µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10446	20.00 µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10573	20.00 µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	39623	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.199	329.0 -> 309.0	58424	18.63 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C2-6:2FTS	5.830	429.0 -> 409.0	79073	18.44 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%	
13C2-8:2FTS	7.013	529.0 -> 509.0	71706	18.66 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C2-PFDoDA	7.879	615.0 -> 570.0	250661	18.59 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%	
13C2-PFTeDA	9.137	715.0 -> 670.0	301974	17.72 µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%	
13C3-PFBS	3.349	302.0 -> 99.0	12489	18.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%	
13C3-PFHxS	5.194	402.0 -> 99.0	12874	18.78 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%	
13C4-PFBA	1.700	217.0 -> 172.0	68696	18.63 µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%	
13C4-PFHpA	5.163	367.0 -> 322.0	164812	18.74 µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%	
13C5-PFHxA	4.290	318.0 -> 273.0	176200	18.64 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%	
13C5-PFPeA	3.119	268.0 -> 223.0	110185	18.66 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%	
13C6-PFDA	6.977	519.0 -> 474.0	171420	18.46 µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

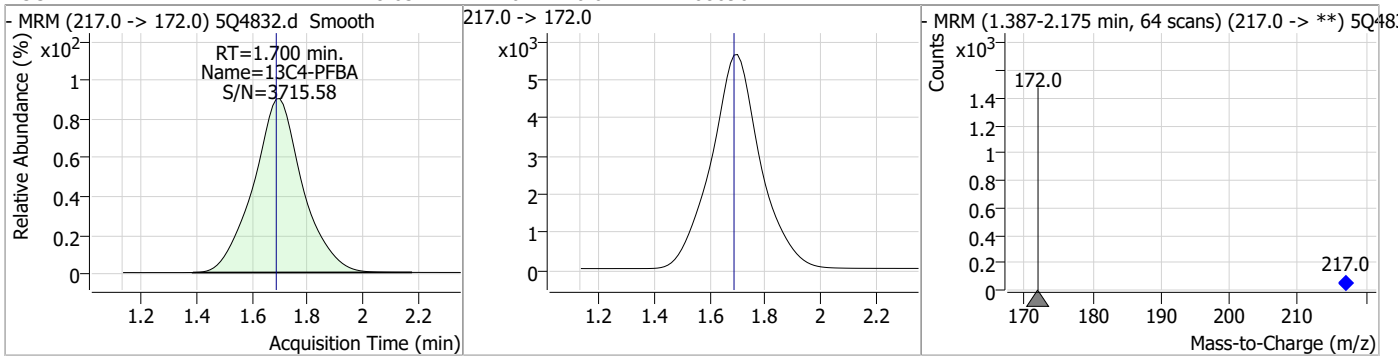
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.3%			
13C7-PFUnDA	7.459	570.0 -> 525.0	211368	18.24	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%			
13C8-FOSA	6.530	506.0 -> 78.0	43078	18.33	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%			
13C8-PFOA	5.857	421.0 -> 376.0	219712	18.65	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
13C8-PFOS	6.428	507.0 -> 99.0	21990	19.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%			
13C9-PFNA	6.443	472.0 -> 427.0	218769	18.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%			
d3-MeFOSAA	7.009	573.0 -> 419.0	31396	18.31	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.5%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10446	18.24	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%			
d3-MeFOSA	6.952	515.0 -> 169.0	10573	18.80	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
d5-EtFOSAA	7.157	589.0 -> 419.0	39623	18.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	66632	21.00	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	86547	21.01	µg/L		98
8:2FTS	7.013	527.0 -> 507.0	76434	20.75	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	24171	19.43	µg/L		99
FOSA	6.519	498.0 -> 78.0	44957	20.40	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	27818	20.62	µg/L		97
PFBA	1.694	213.0 -> 169.0	26385	19.30	µg/L		100
PFBS	3.354	299.0 -> 80.0	37012	19.70	µg/L		99
PFDA	6.978	513.0 -> 469.0	212837	19.95	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	244583	19.70	µg/L		99
PFDS	7.406	599.0 -> 80.0	32601	20.27	µg/L		99
PFHpA	5.164	363.0 -> 319.0	217611	19.38	µg/L		100
PFHpS	5.855	449.0 -> 80.0	34575	19.43	µg/L		98
PFHxA	4.291	313.0 -> 269.0	169985	19.44	µg/L		100
PFHxS	5.195	399.0 -> 80.0	36604	19.60	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	191436	19.23	µg/L		99
PFNS	6.949	549.0 -> 80.0	32690	19.84	µg/L		98
PFOA	5.858	413.0 -> 369.0	259655	19.43	µg/L		100
PFOS	6.429	499.0 -> 80.0	38485	19.53	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	102796	19.48	µg/L		100
PFPeS	4.398	349.0 -> 80.0	28986	19.34	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	316662	19.53	µg/L		100
PFTrDA	8.388	663.0 -> 619.0	326631	19.38	µg/L		100
PFUnDA	7.460	563.0 -> 519.0	220416	20.16	µg/L		100
11Cl-PF3OUdS	7.615	631.0 -> 451.0	144497	19.96	µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	124823	20.20	µg/L		100
ADONA	5.261	377.0 -> 251.0	274289	19.81	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	36933	19.93	µg/L		99
MeFOSA	6.966	512.0 -> 169.0	11614	20.94	µg/L		96
4-PFECHS	5.753	461.0 -> 381.0	75673	20.25	µg/L		99
FBSA	4.343	298.0 -> 78.0	59931	19.71	µg/L		100
FHxSA	5.674	398.0 -> 78.0	50024	19.38	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

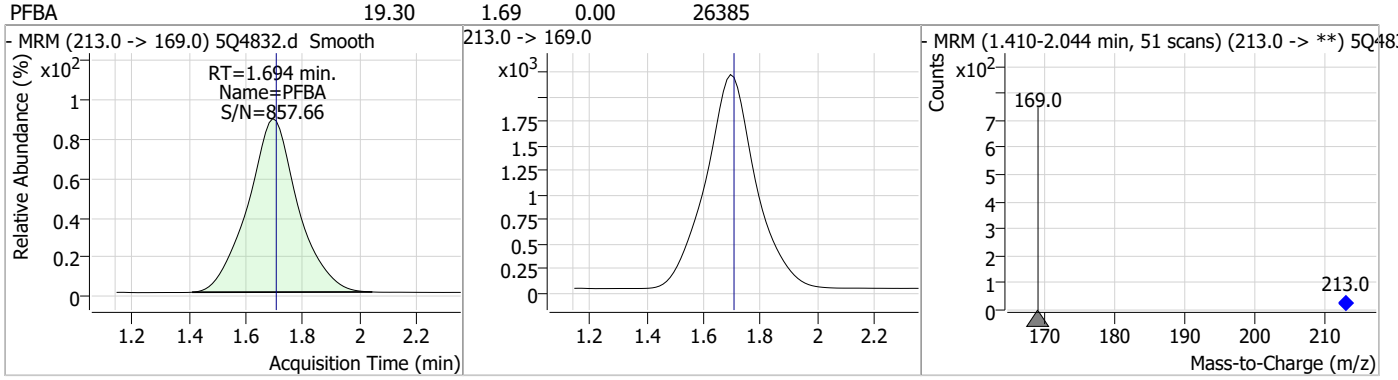
Perfluorinated Compounds by LC/MS/MS



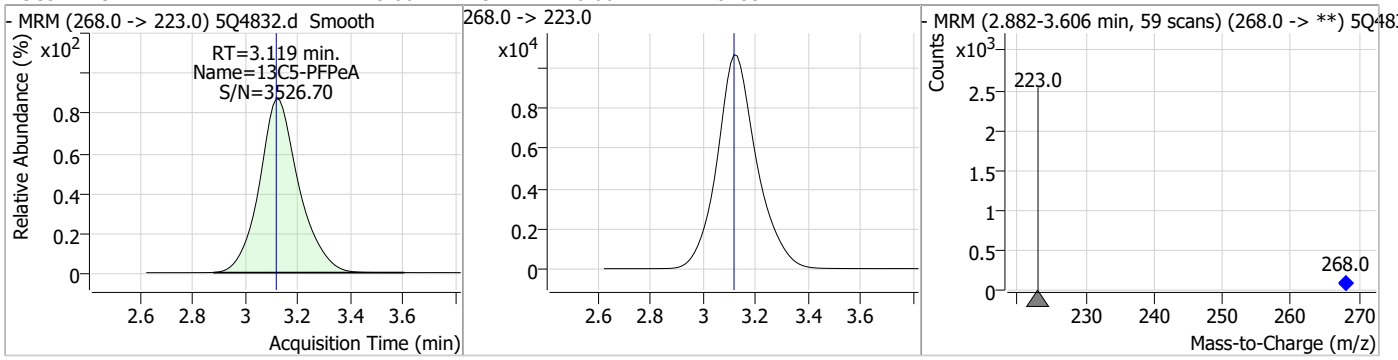
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.63	1.70	0.01	68696				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.30	1.69	0.00	26385				

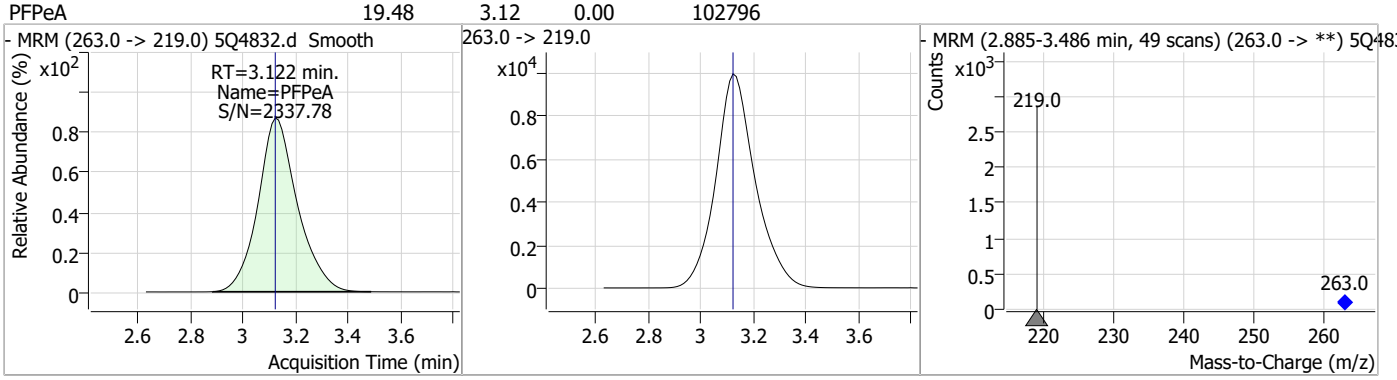


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.66	3.12	0.00	110185				

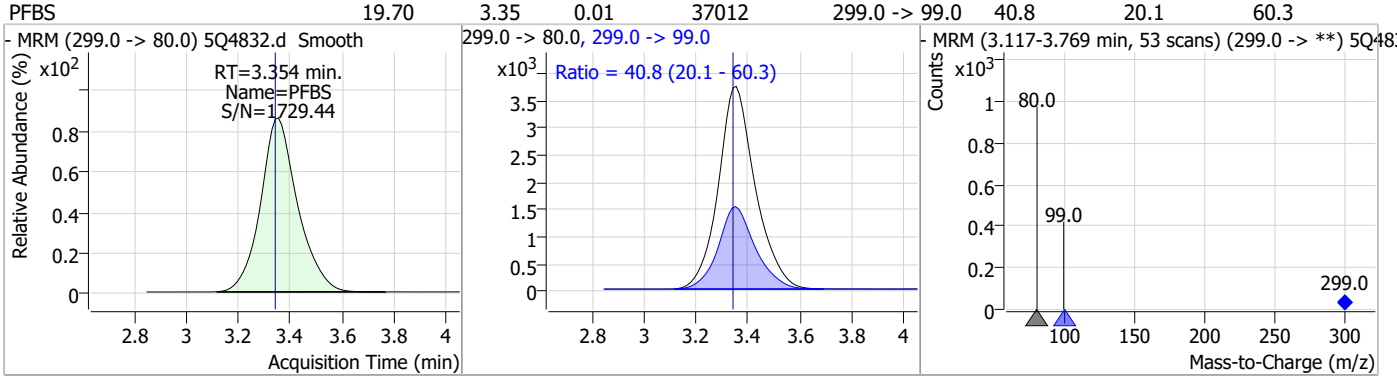


Perfluorinated Compounds by LC/MS/MS

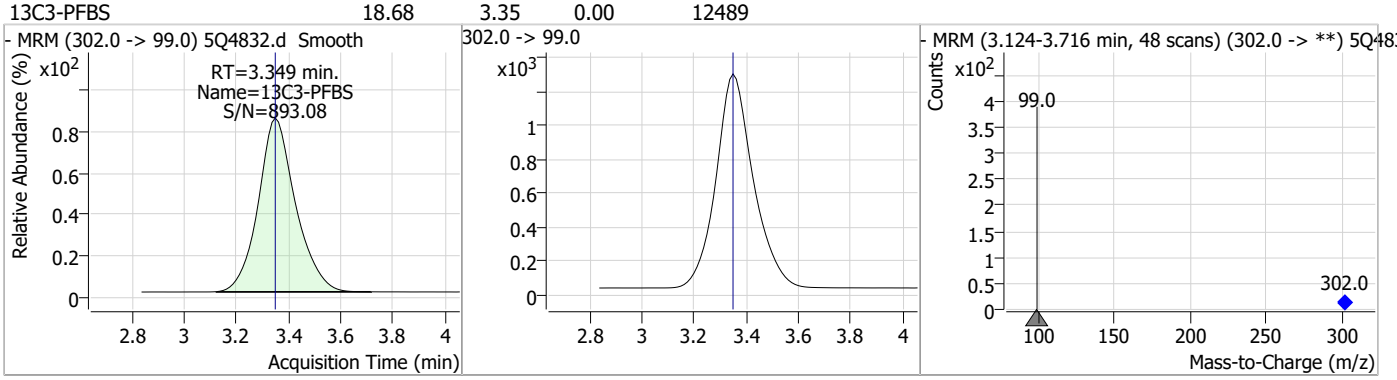
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.48	3.12	0.00	102796				



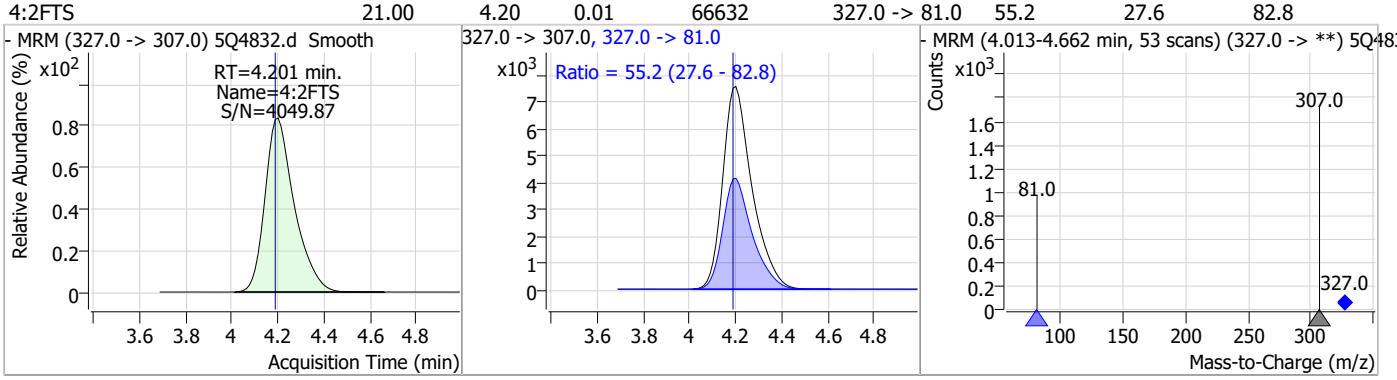
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.70	3.35	0.01	37012	299.0 -> 99.0	40.8	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.68	3.35	0.00	12489				

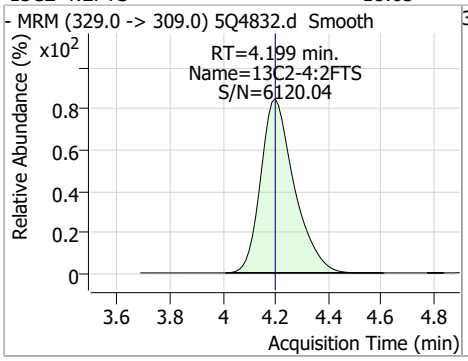


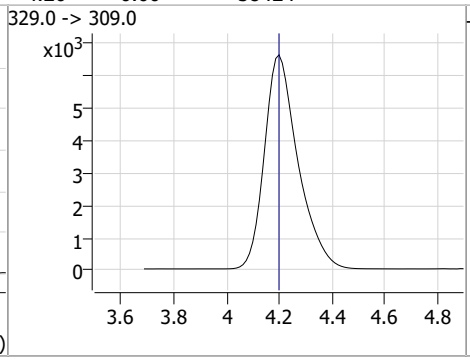
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.00	4.20	0.01	66632	327.0 -> 81.0	55.2	27.6	82.8

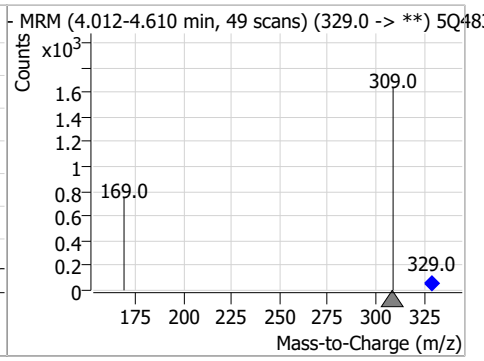


Perfluorinated Compounds by LC/MS/MS

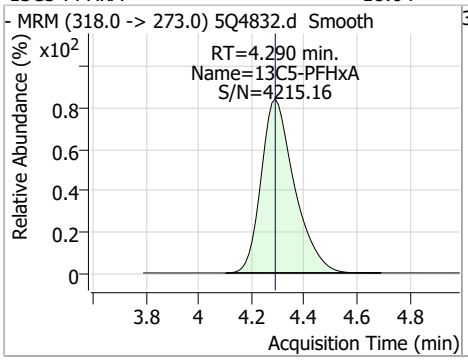
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.63	4.20	0.00	58424				

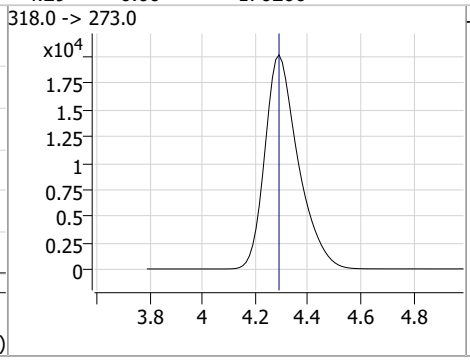


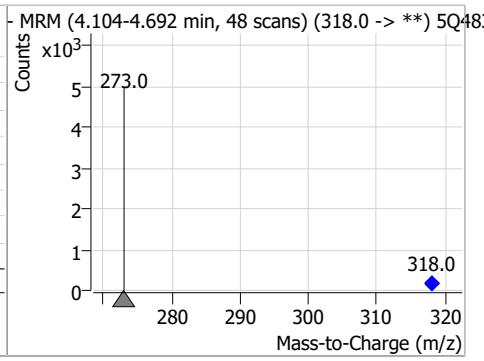




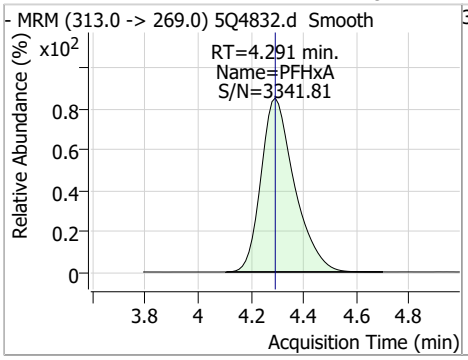
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.64	4.29	0.00	176200				

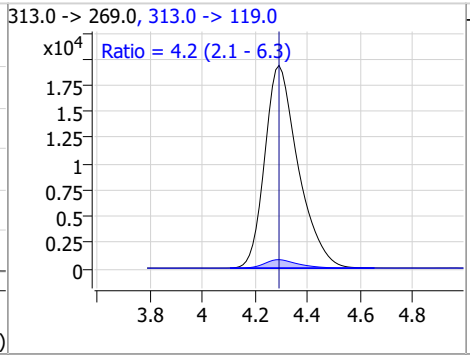


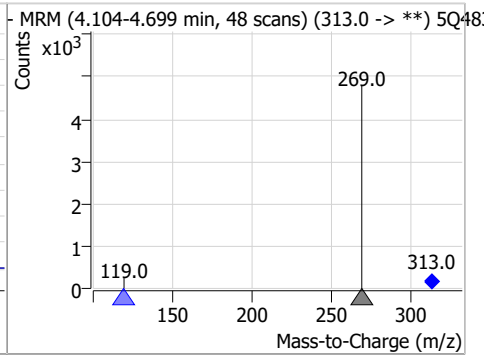




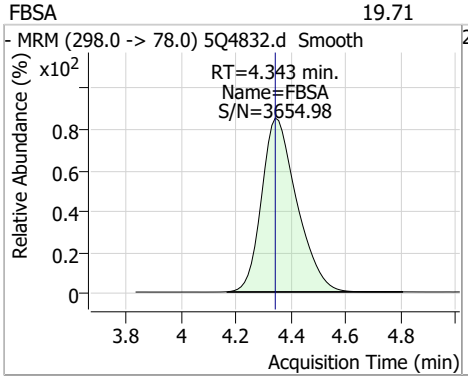
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.44	4.29	0.00	169985	313.0 -> 119.0	4.2	2.1	6.3

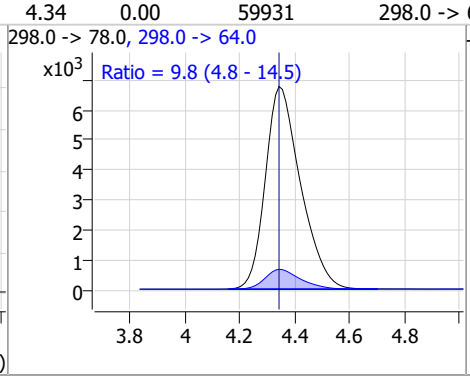


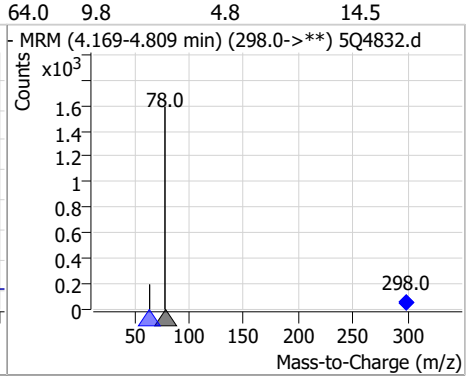




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.71	4.34	0.00	59931	298.0 -> 64.0	9.8	4.8	14.5

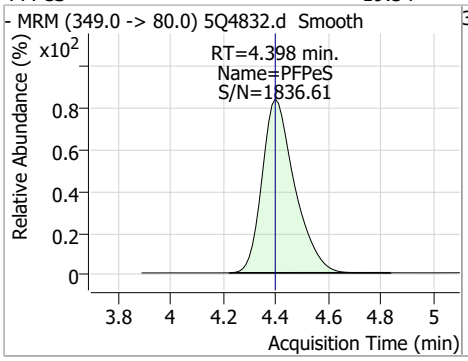


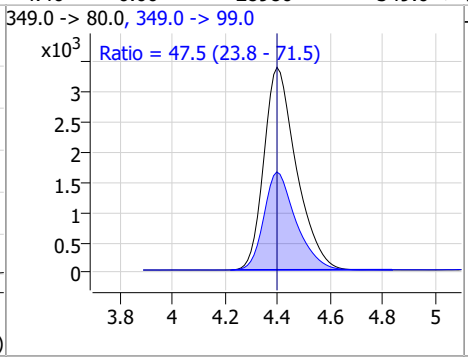


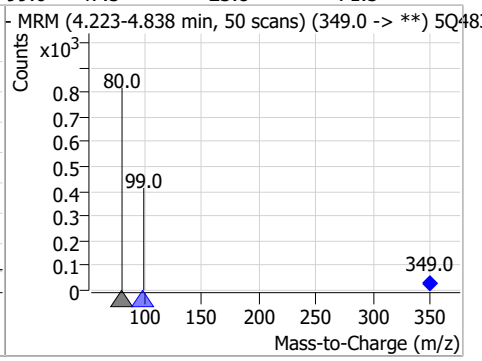


Perfluorinated Compounds by LC/MS/MS

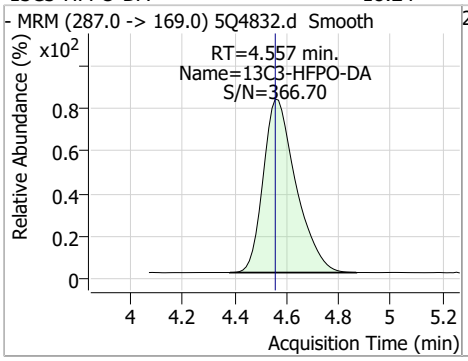
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.34	4.40	0.00	28986	349.0 -> 99.0	47.5	23.8	71.5

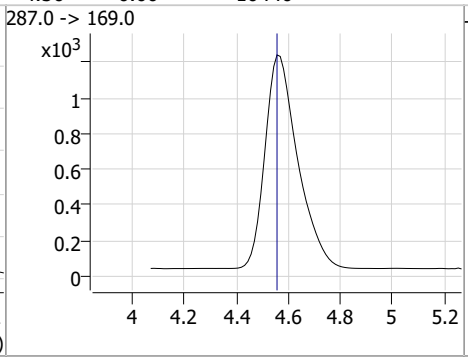


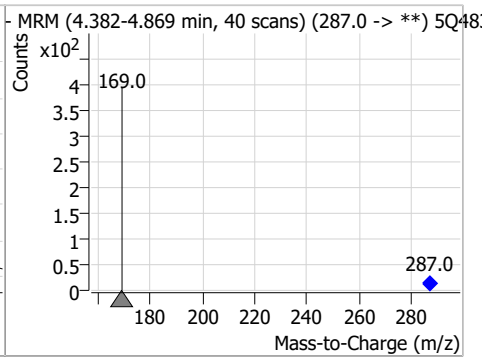




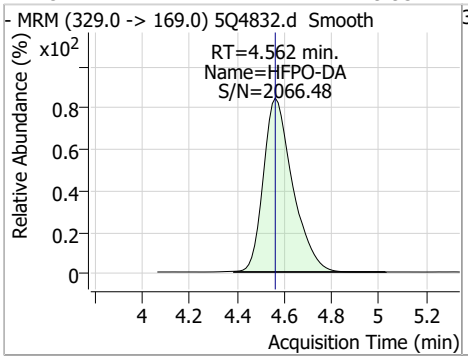
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.24	4.56	0.00	10446				

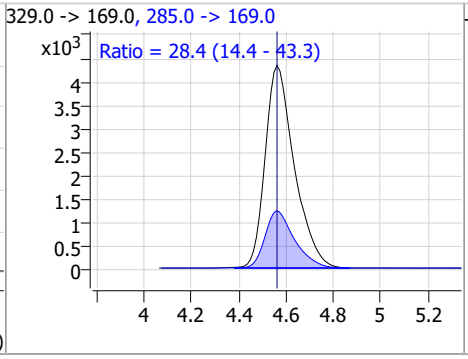


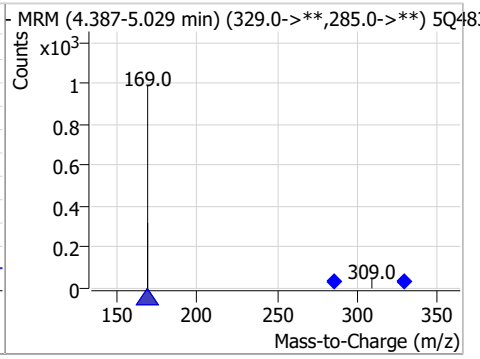




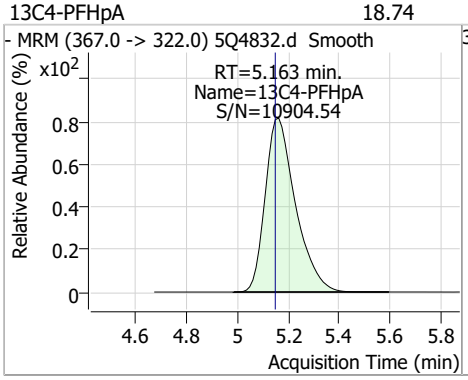
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.93	4.56	0.00	36933	285.0 -> 169.0	28.4	14.4	43.3

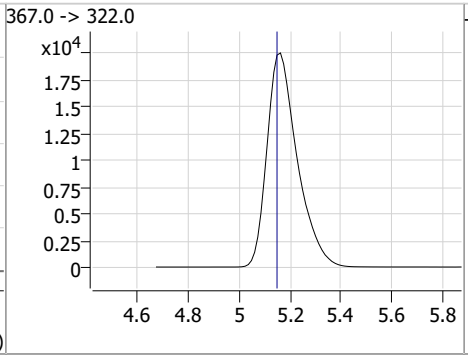


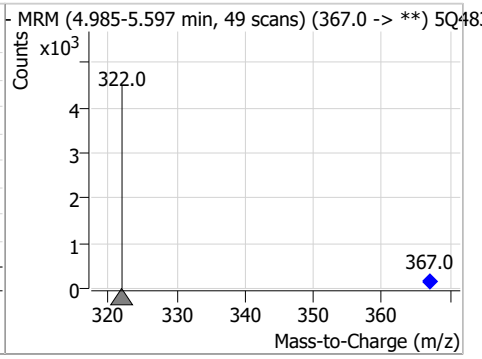




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.74	5.16	0.01	164812				

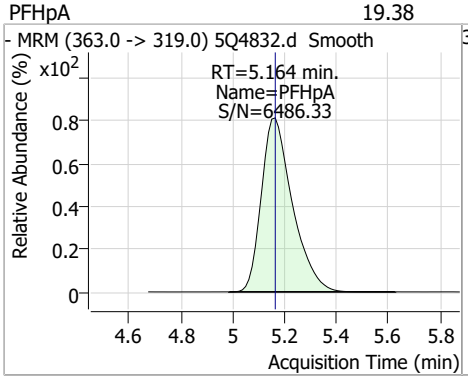


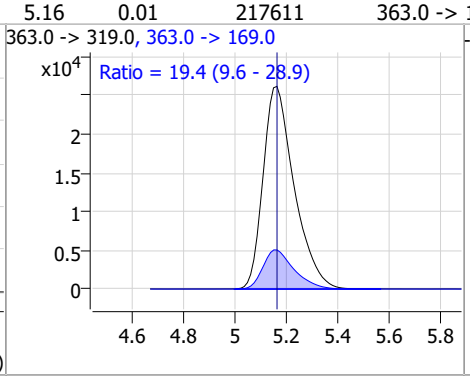


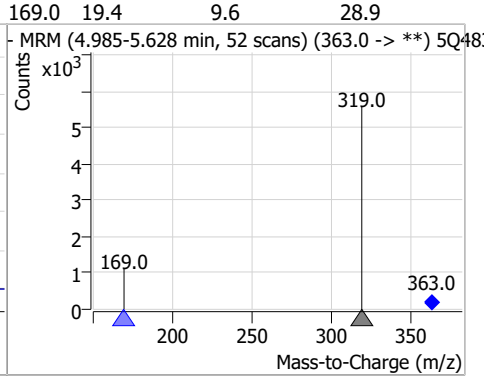


Perfluorinated Compounds by LC/MS/MS

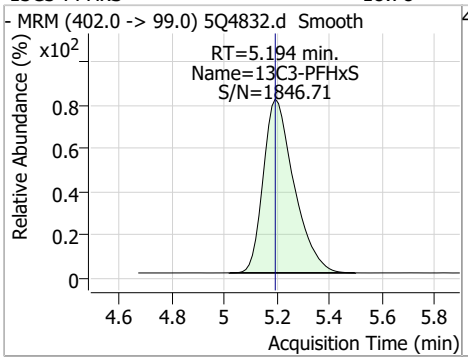
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.38	5.16	0.01	217611	363.0 -> 169.0	19.4	9.6	28.9

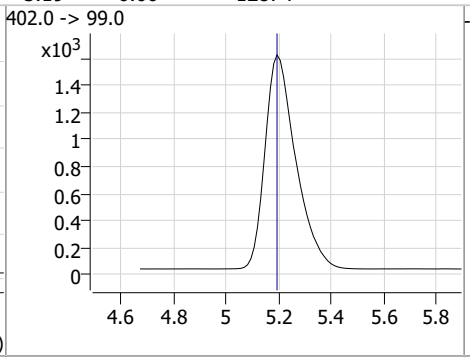


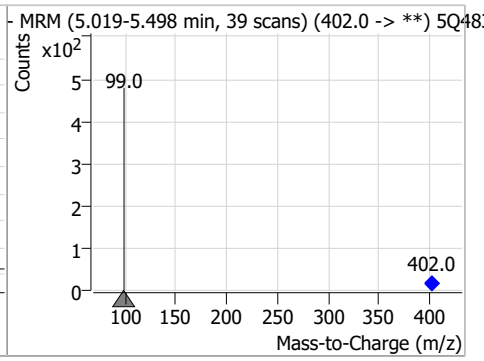




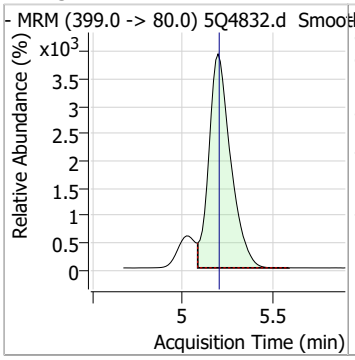
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.78	5.19	0.00	12874				

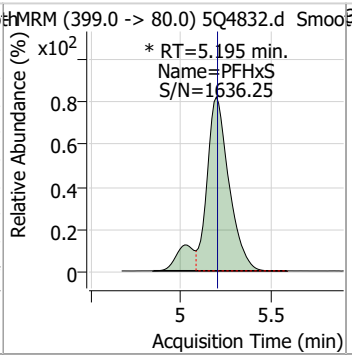


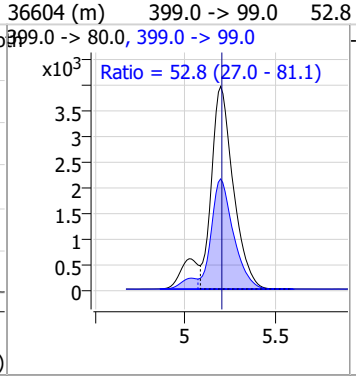


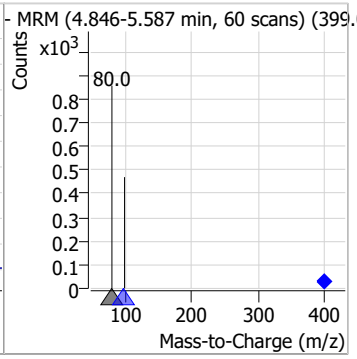


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.60	5.20	0.00	36604 (m)	399.0 -> 99.0	52.8	27.0	81.1

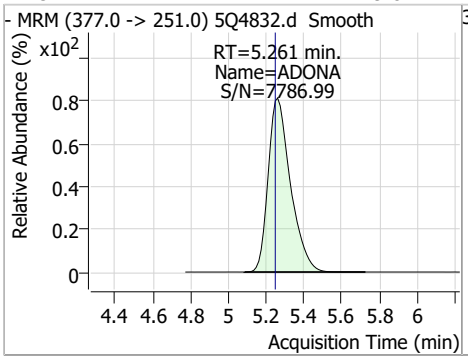


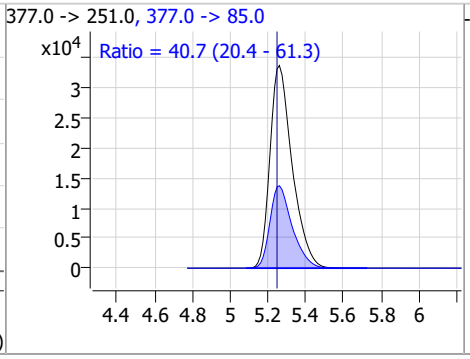


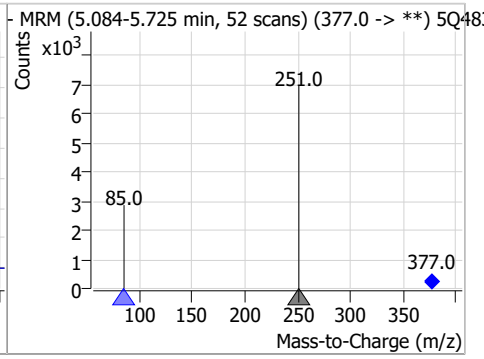




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.81	5.26	0.01	274289	377.0 -> 85.0	40.7	20.4	61.3

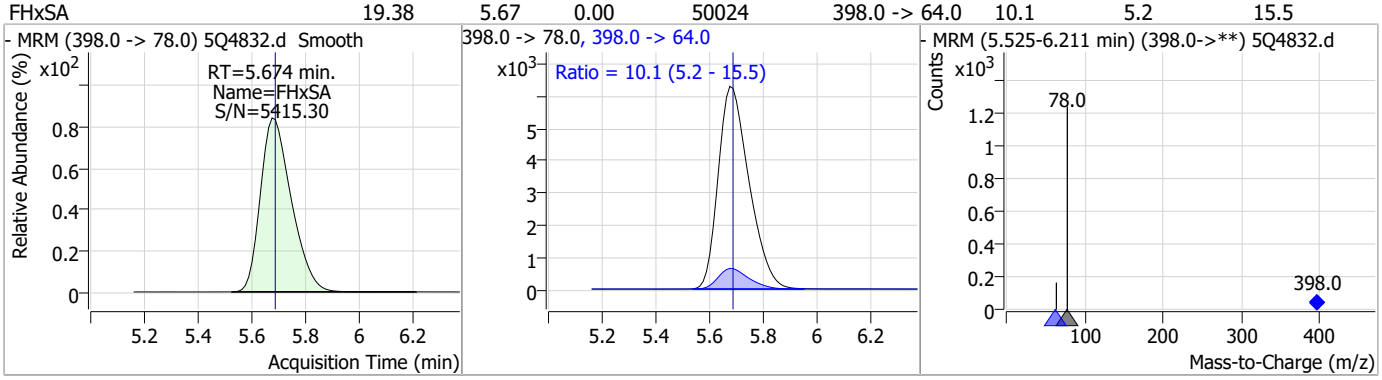




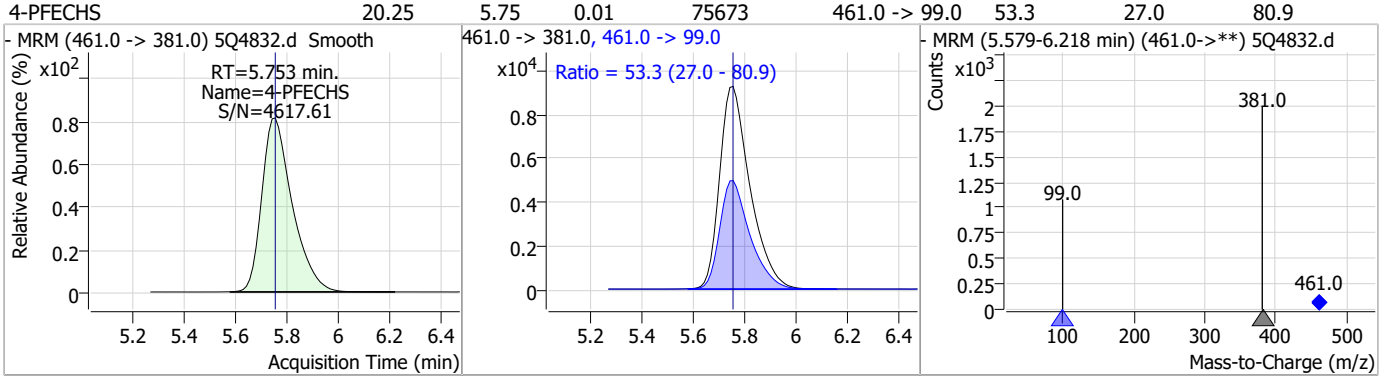


Perfluorinated Compounds by LC/MS/MS

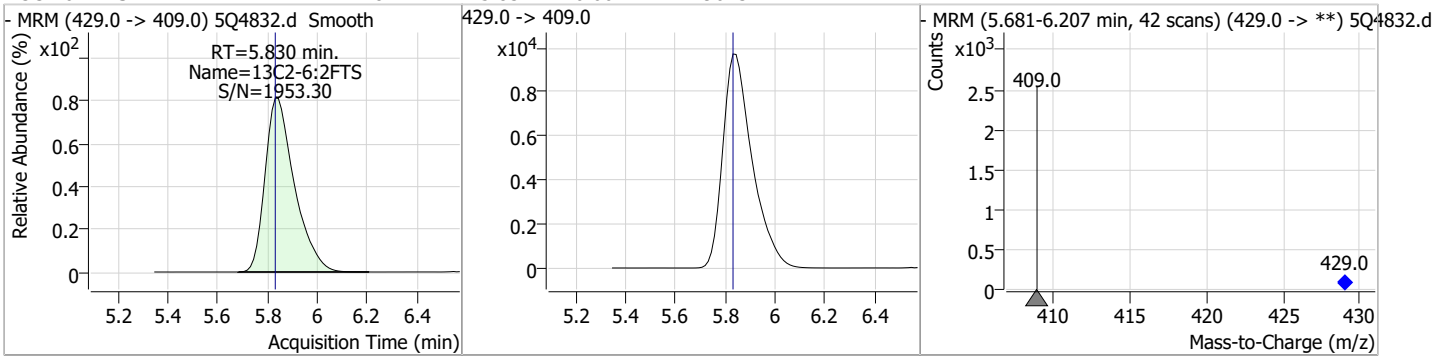
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.38	5.67	0.00	50024	398.0 -> 64.0	10.1	5.2	15.5



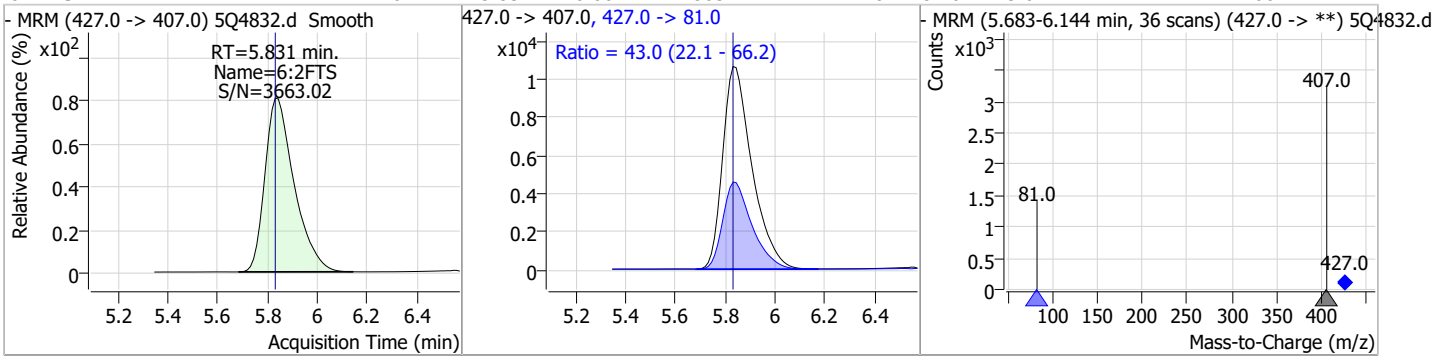
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.25	5.75	0.01	75673	461.0 -> 99.0	53.3	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.44	5.83	0.00	79073				

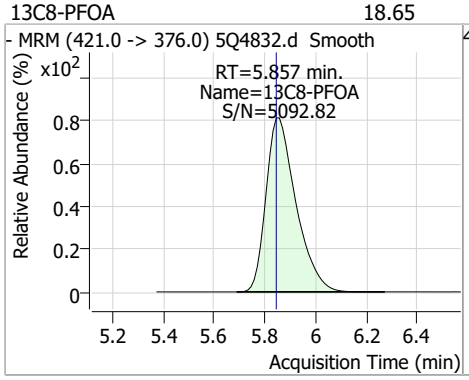


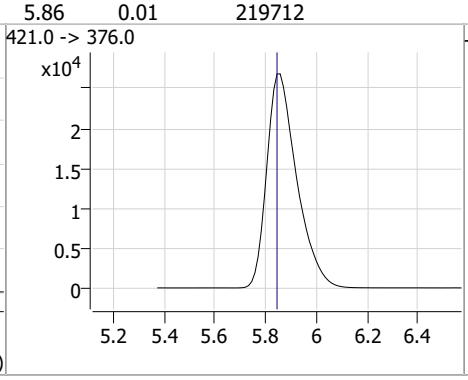
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.01	5.83	0.00	86547	427.0 -> 81.0	43.0	22.1	66.2

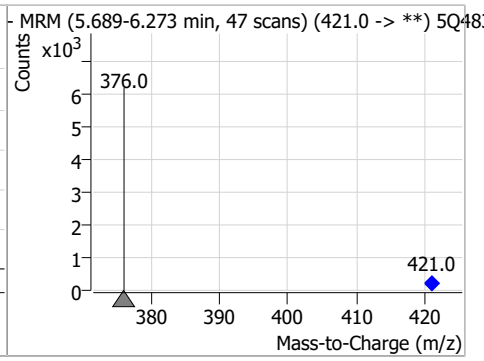


Perfluorinated Compounds by LC/MS/MS

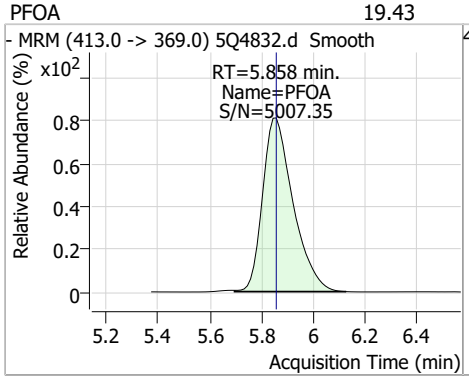
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.65	5.86	0.01	219712				

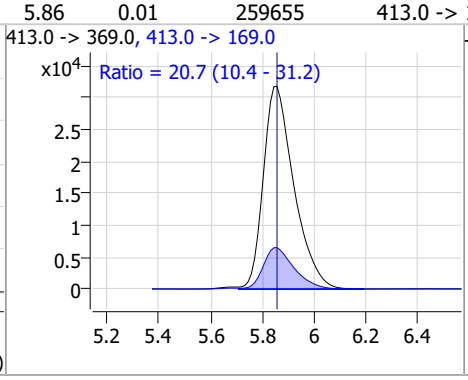


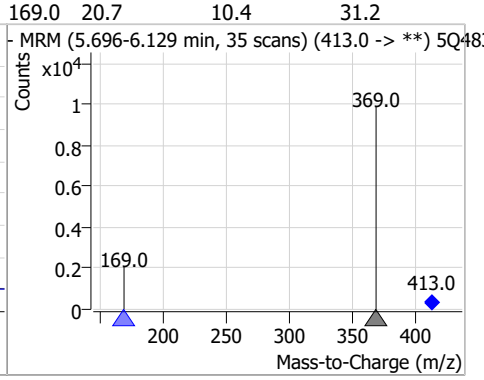




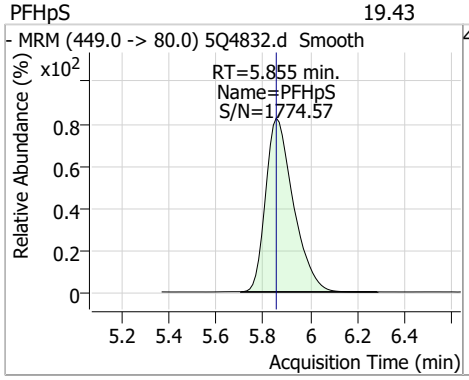
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.43	5.86	0.01	259655	413.0 -> 169.0	20.7	10.4	31.2

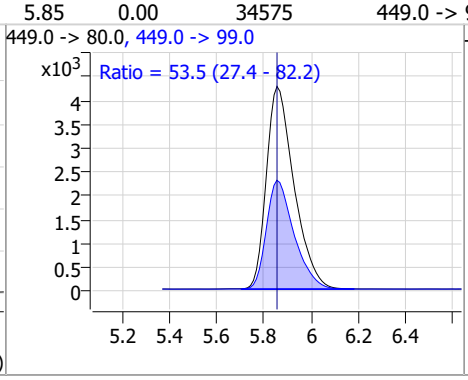


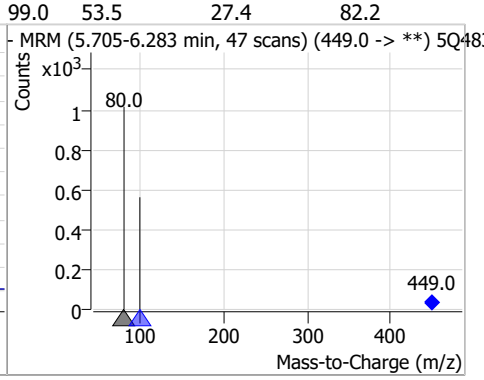




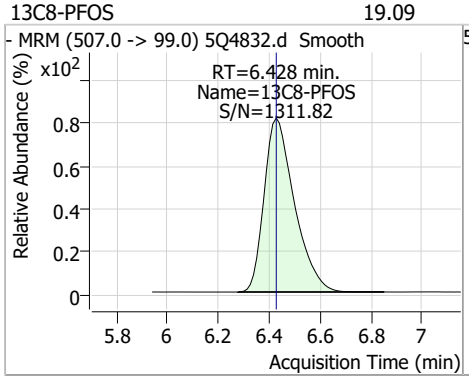
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.43	5.85	0.00	34575	449.0 -> 99.0	53.5	27.4	82.2

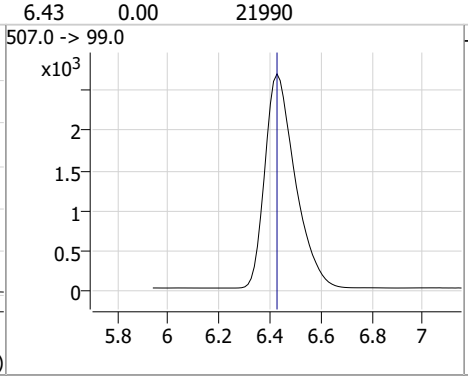


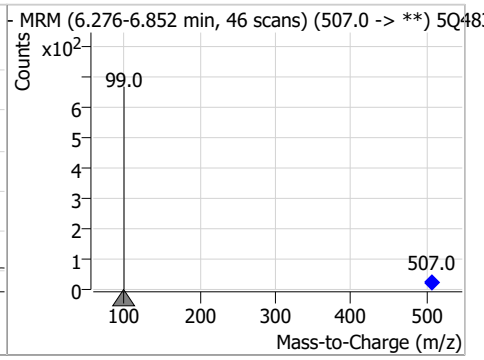




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.09	6.43	0.00	21990				

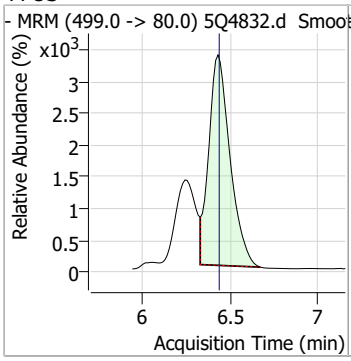


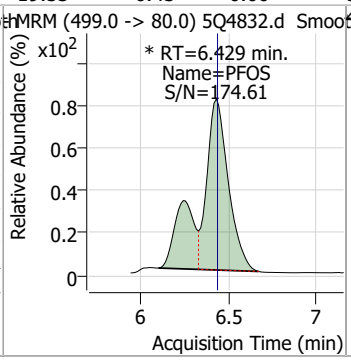


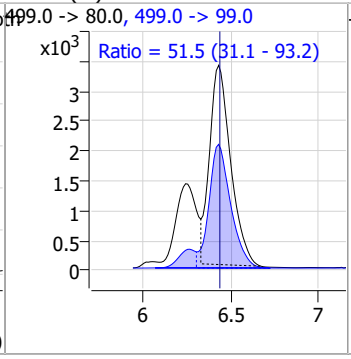


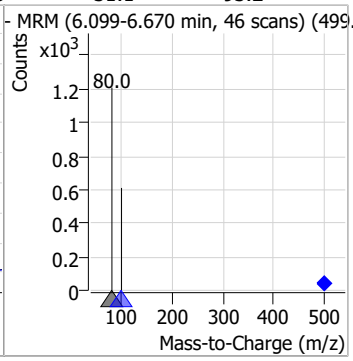
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.53	6.43	0.00	38485 (m)	499.0 -> 99.0	51.5	31.1	93.2

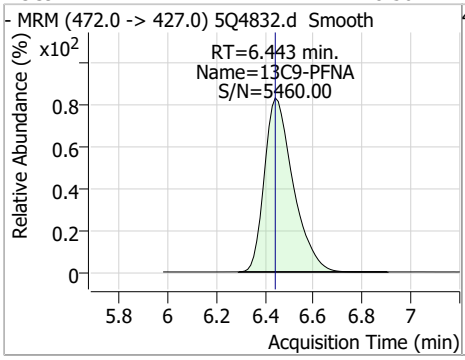


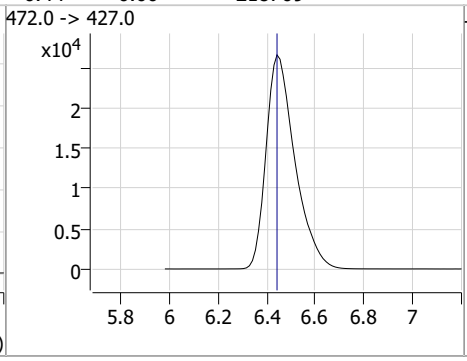


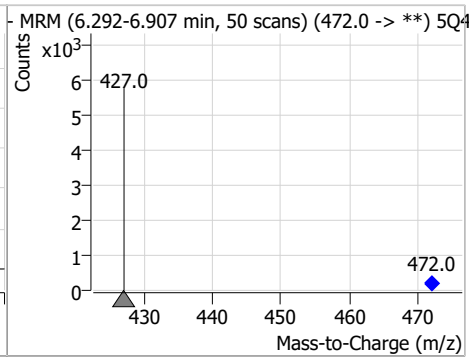




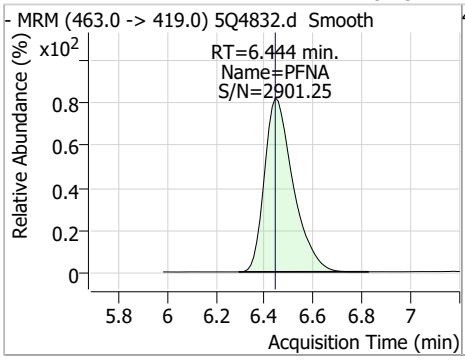
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.56	6.44	0.00	218769				

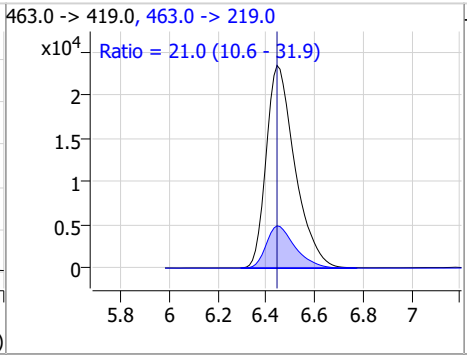


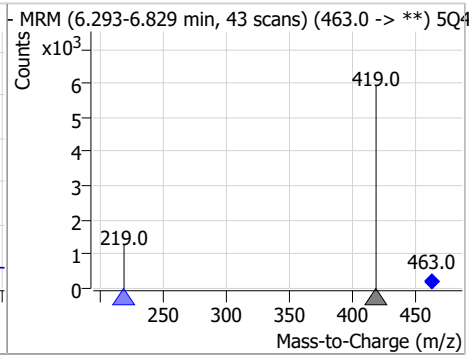




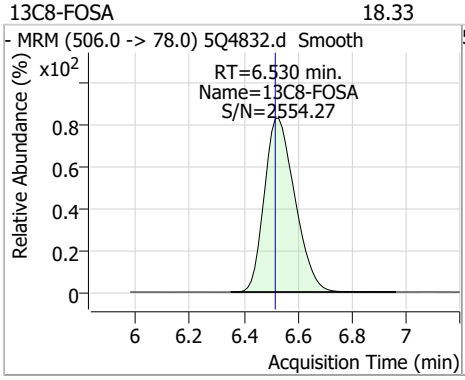
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.23	6.44	0.00	191436	463.0 -> 219.0	21.0	10.6	31.9

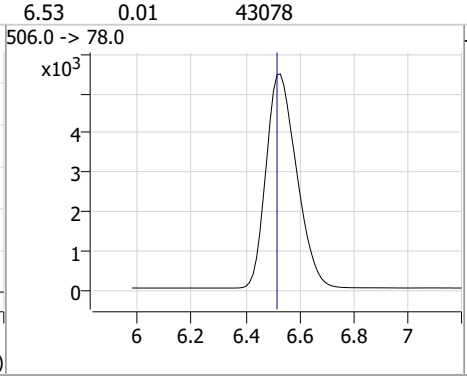


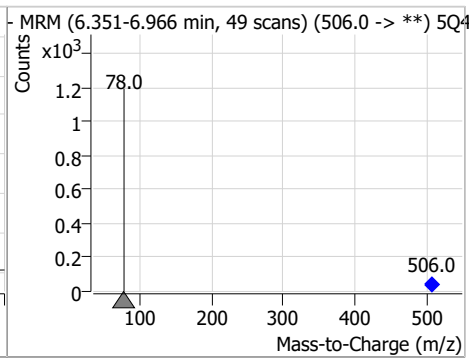




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.33	6.53	0.01	43078				

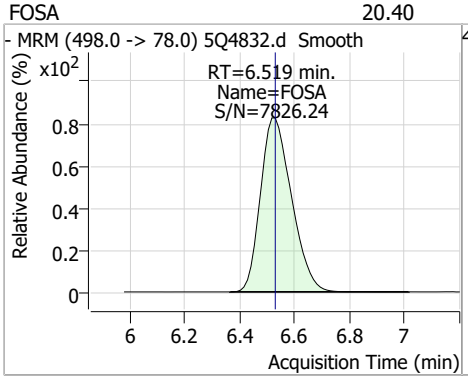


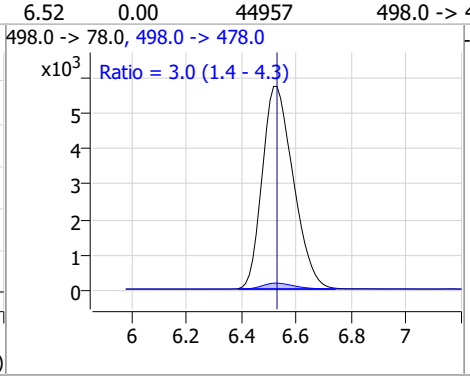


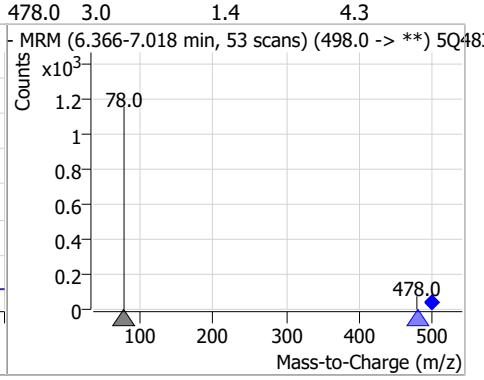


Perfluorinated Compounds by LC/MS/MS

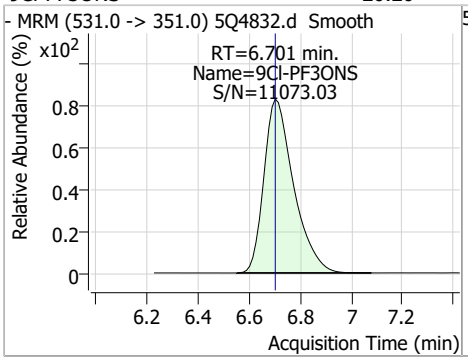
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.40	6.52	0.00	44957	498.0 -> 478.0	3.0	1.4	4.3

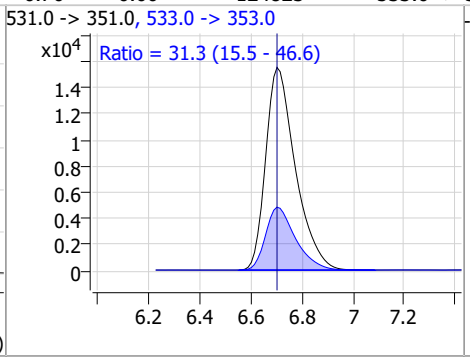


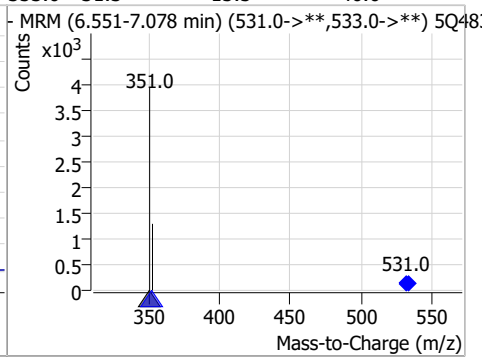




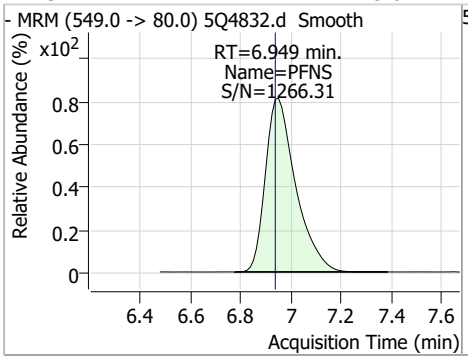
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.20	6.70	0.00	124823	533.0 -> 353.0	31.3	15.5	46.6

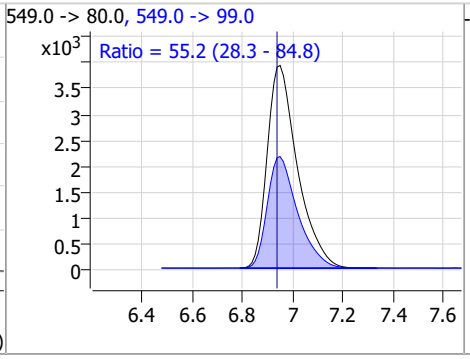


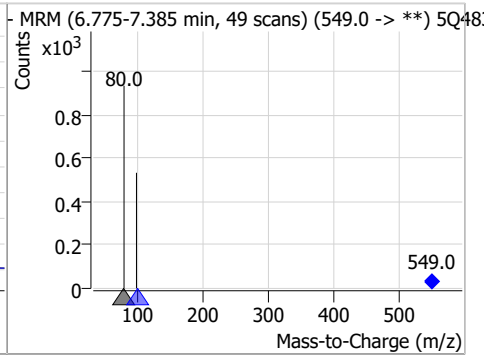




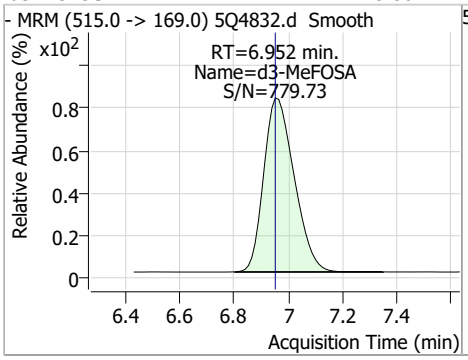
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.84	6.95	0.01	32690	549.0 -> 99.0	55.2	28.3	84.8

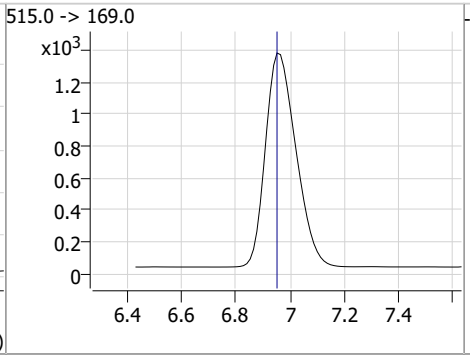


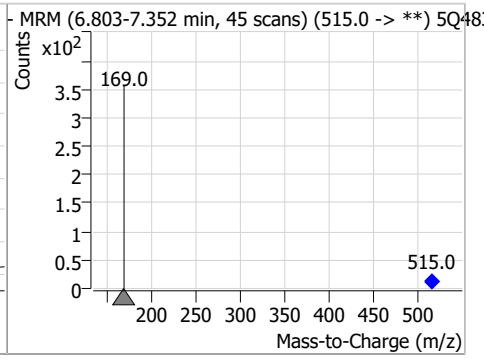




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.80	6.95	0.00	10573				

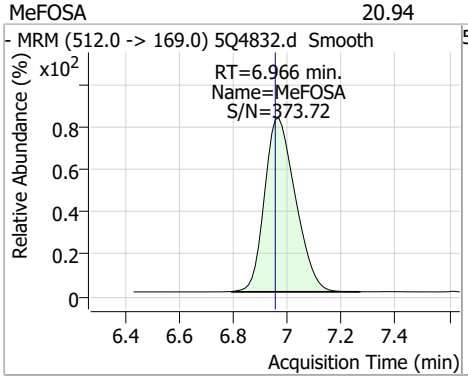


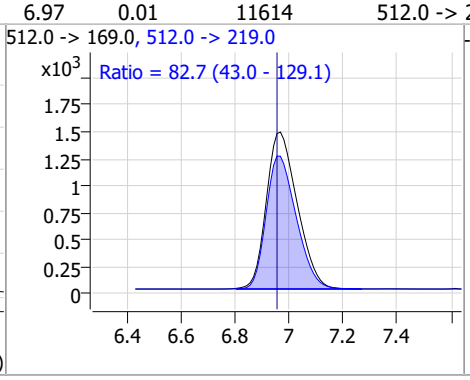


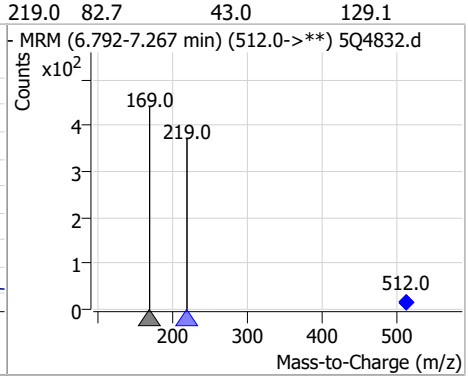


Perfluorinated Compounds by LC/MS/MS

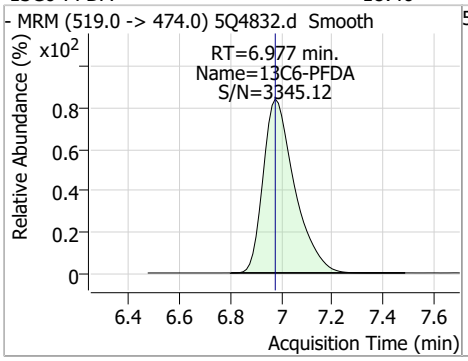
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.94	6.97	0.01	11614	512.0 -> 219.0	82.7	43.0	129.1

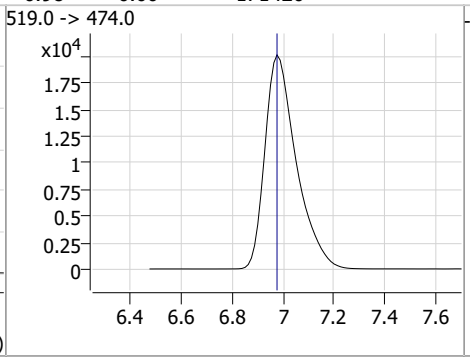


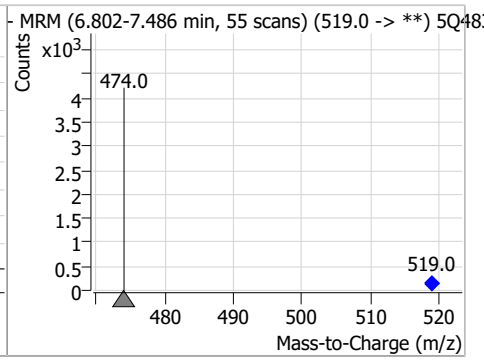




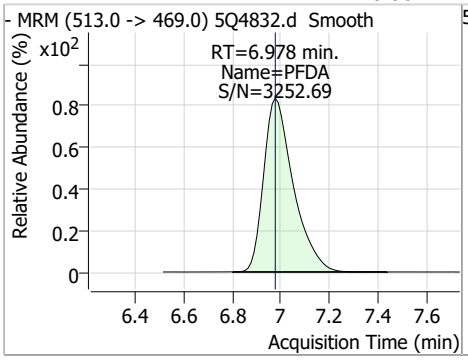
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.46	6.98	0.00	171420				

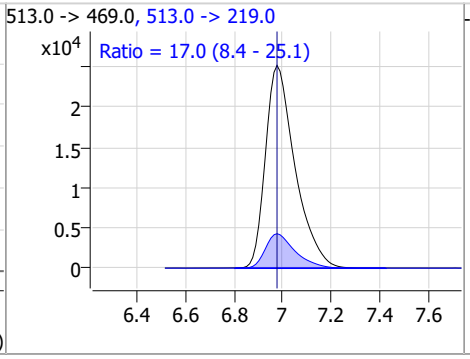


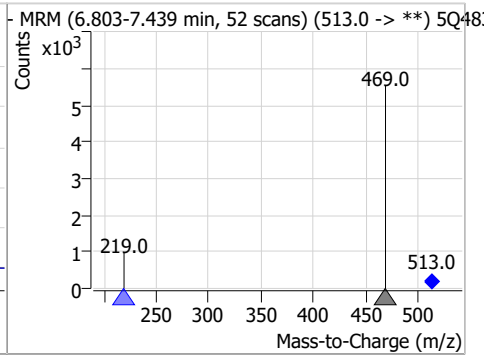




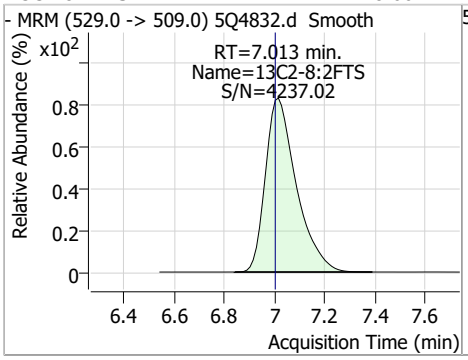
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.95	6.98	0.00	212837	513.0 -> 219.0	17.0	8.4	25.1

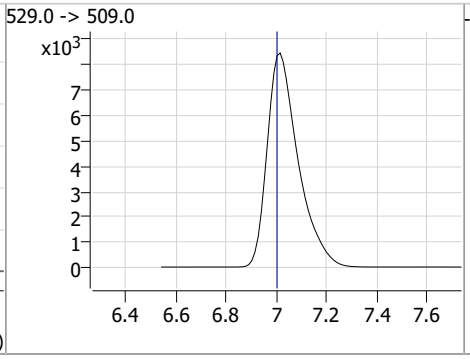


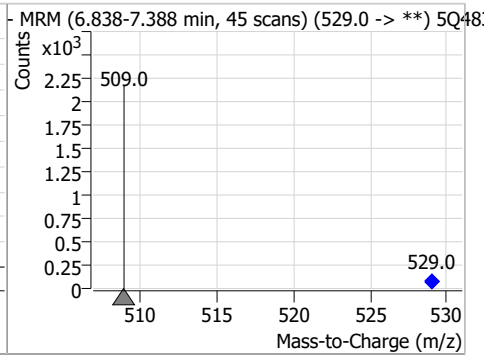




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.66	7.01	0.01	71706				

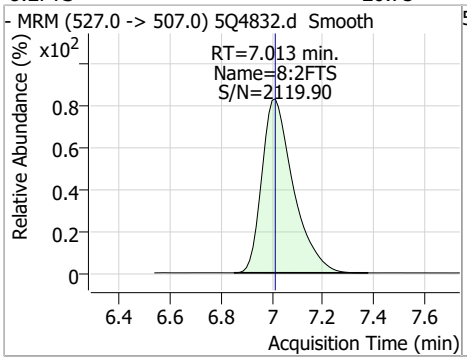


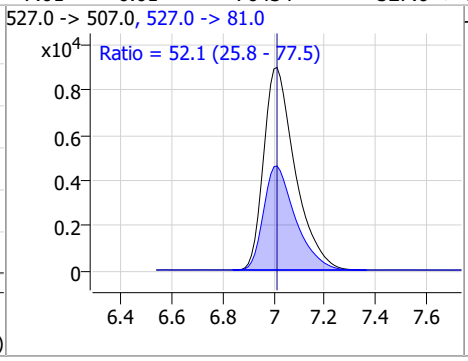


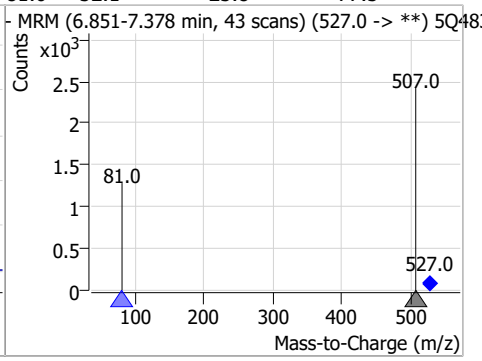


Perfluorinated Compounds by LC/MS/MS

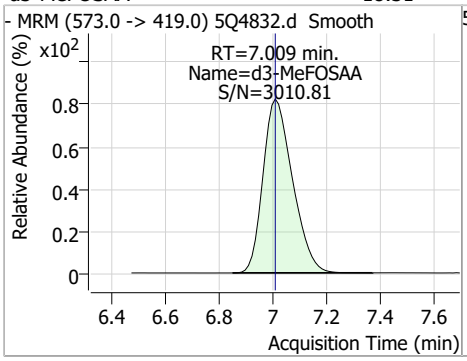
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.75	7.01	0.01	76434	527.0 -> 81.0	52.1	25.8	77.5

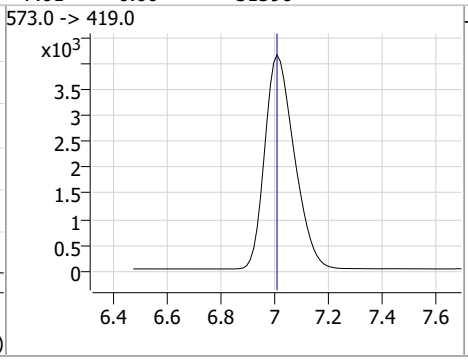


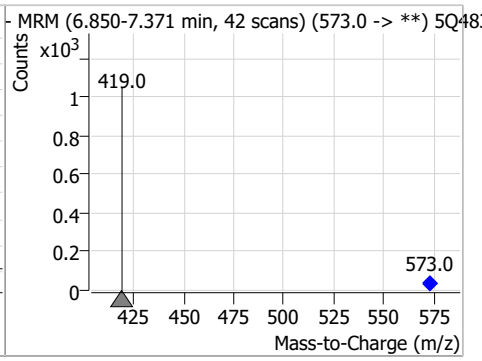




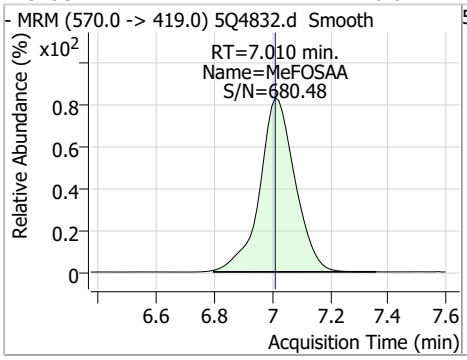
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.31	7.01	0.00	31396				

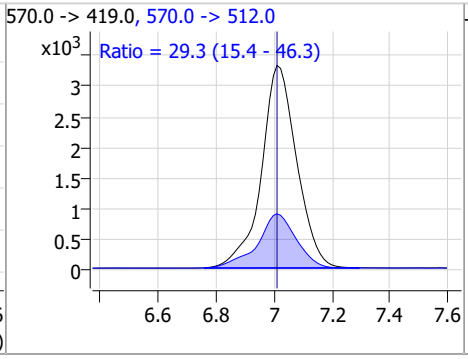


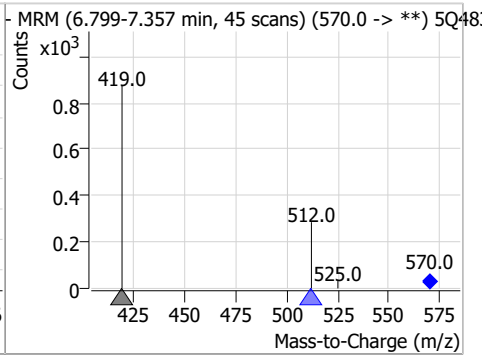




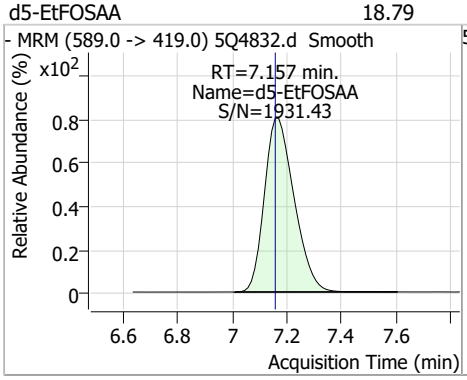
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.62	7.01	0.00	27818	570.0 -> 512.0	29.3	15.4	46.3

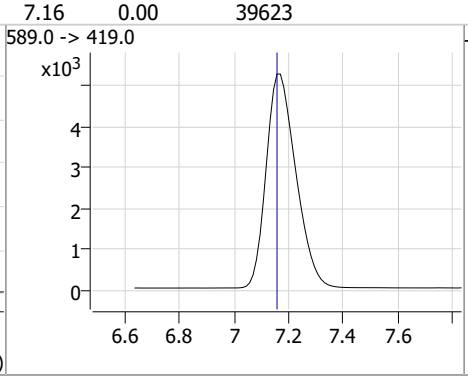


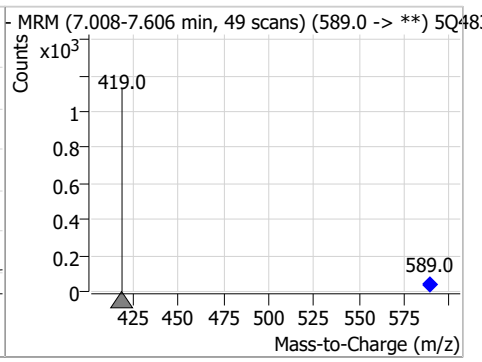




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.79	7.16	0.00	39623				

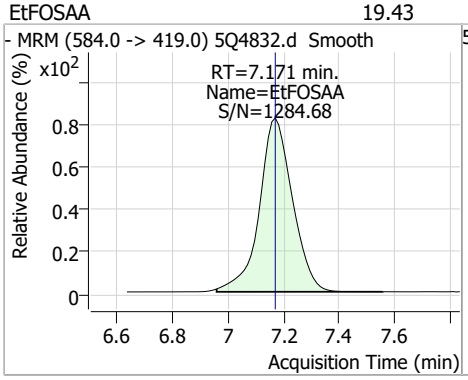


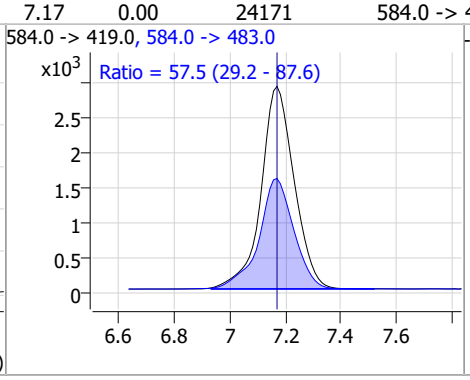


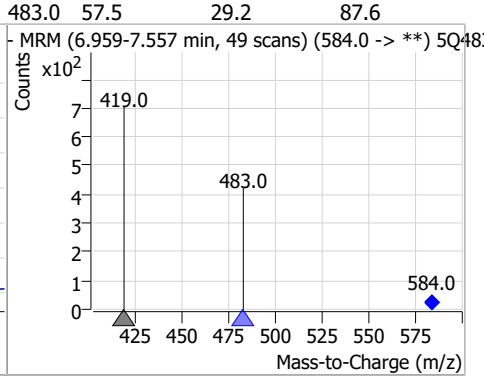


Perfluorinated Compounds by LC/MS/MS

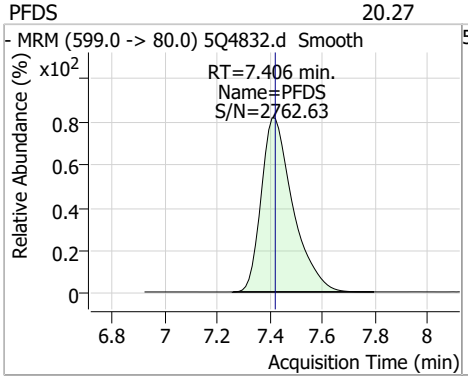
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.43	7.17	0.00	24171	584.0 -> 483.0	57.5	29.2	87.6

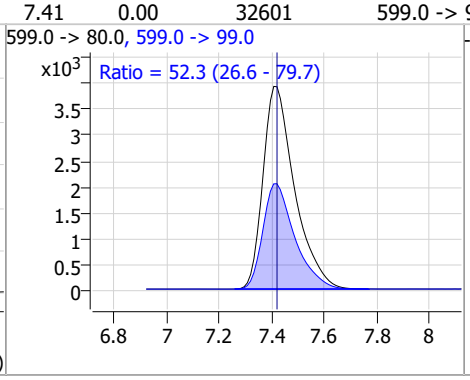


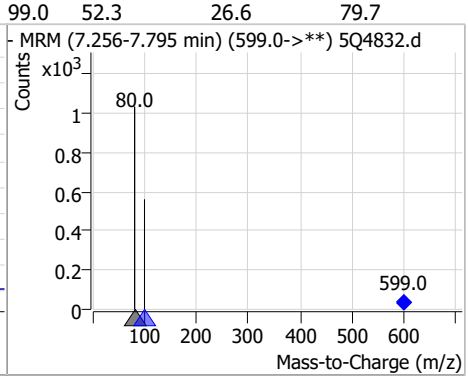




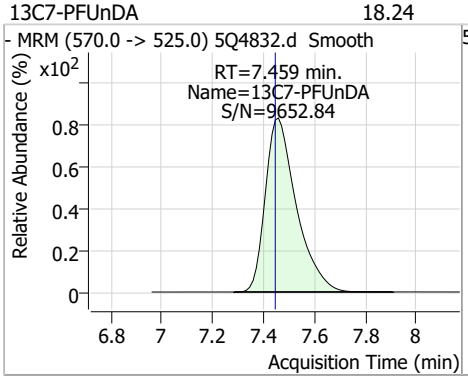
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.27	7.41	0.00	32601	599.0 -> 99.0	52.3	26.6	79.7

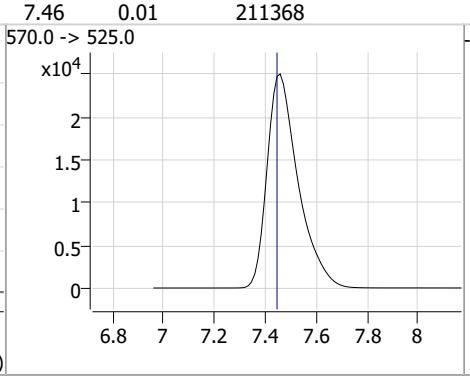


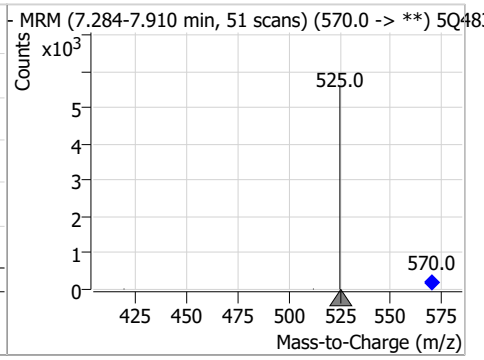




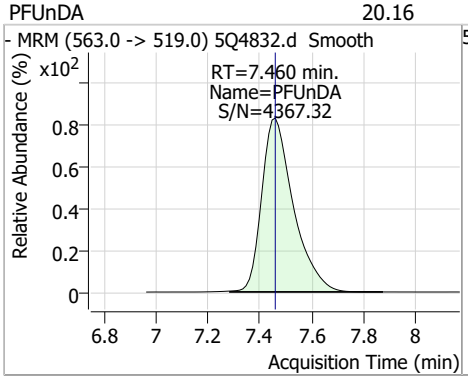
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.24	7.46	0.01	211368				

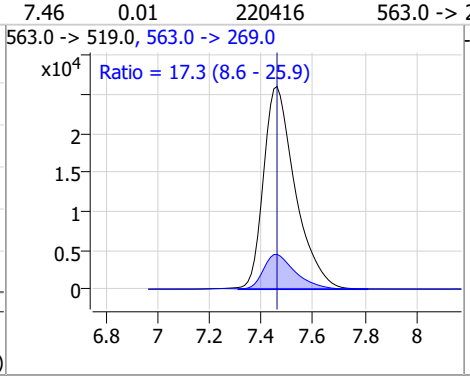


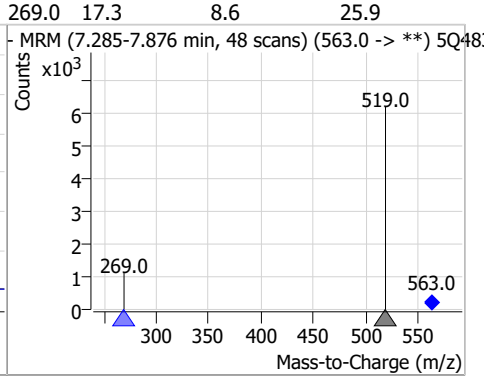




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.16	7.46	0.01	220416	563.0 -> 269.0	17.3	8.6	25.9

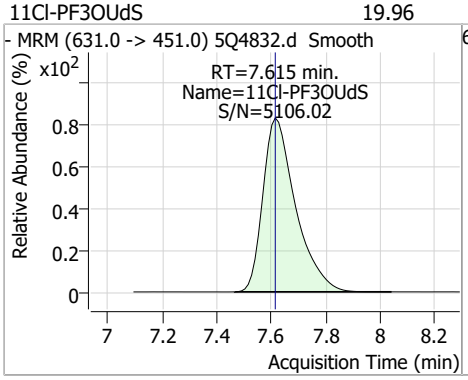


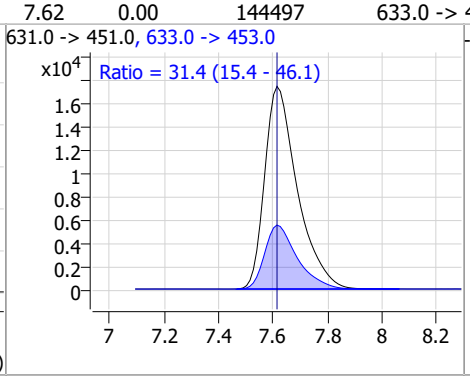


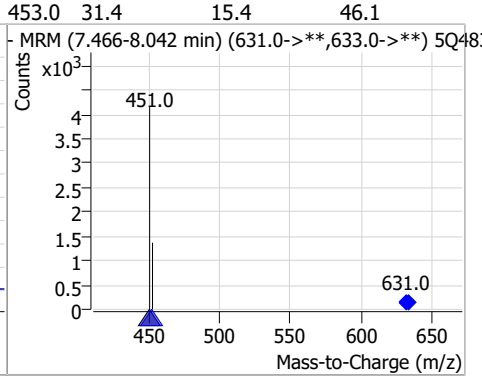


Perfluorinated Compounds by LC/MS/MS

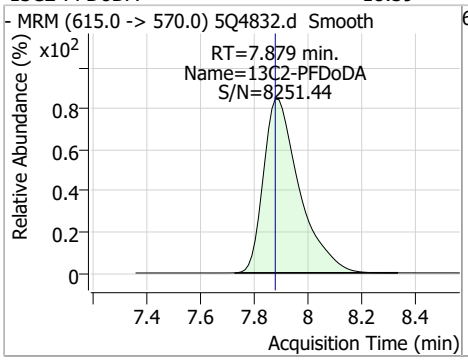
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.96	7.62	0.00	144497	633.0 -> 453.0	31.4	15.4	46.1

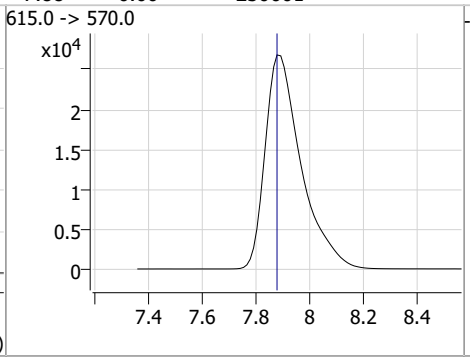


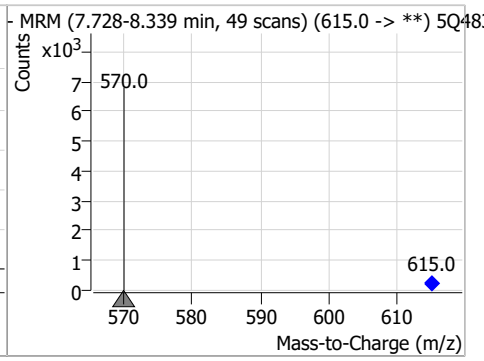




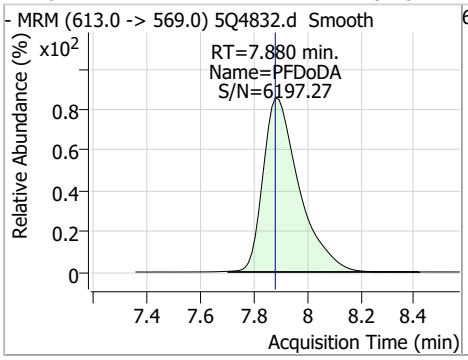
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.59	7.88	0.00	250661				

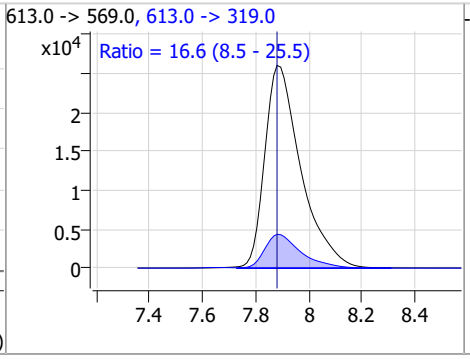


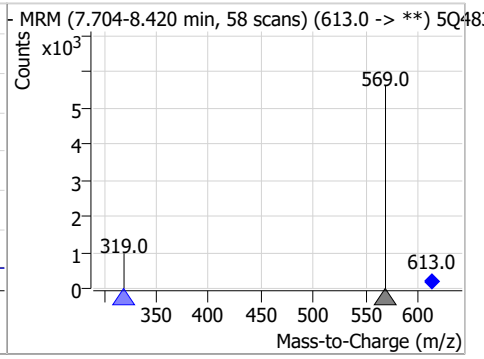




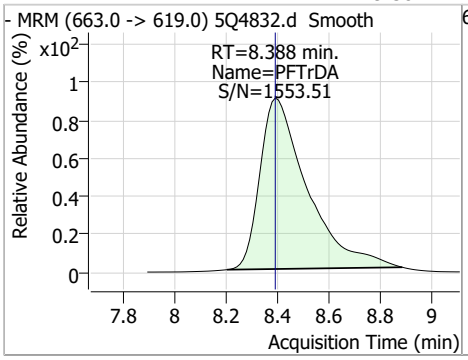
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.70	7.88	0.00	244583	613.0 -> 319.0	16.6	8.5	25.5

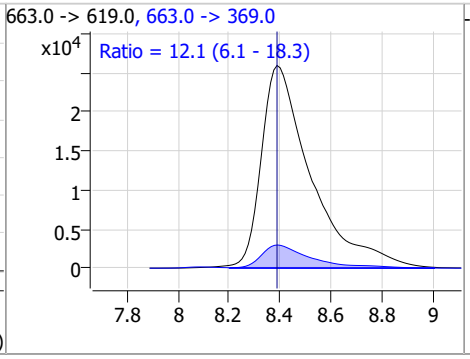


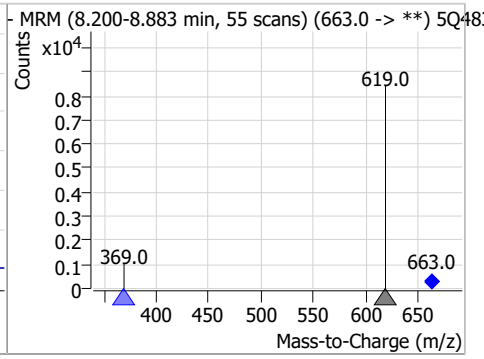




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.38	8.39	0.00	326631	663.0 -> 369.0	12.1	6.1	18.3

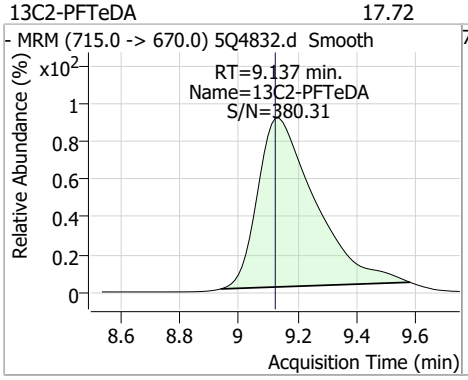


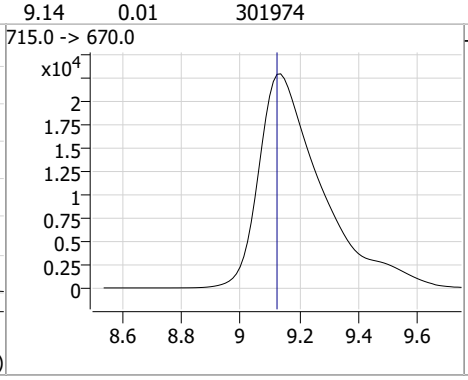


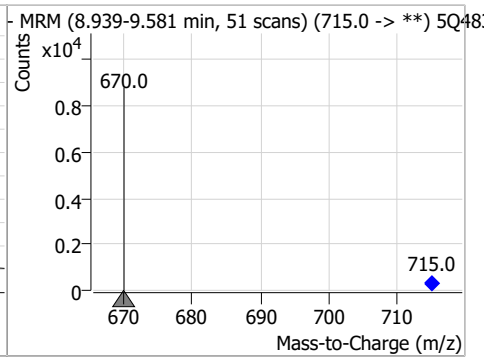


Perfluorinated Compounds by LC/MS/MS

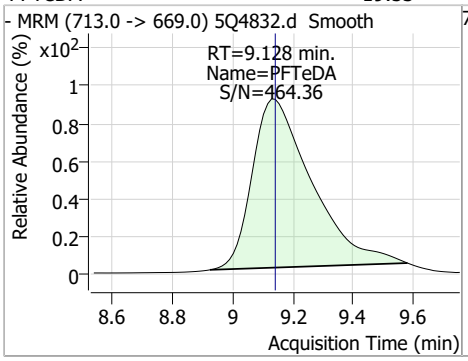
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.72	9.14	0.01	301974				

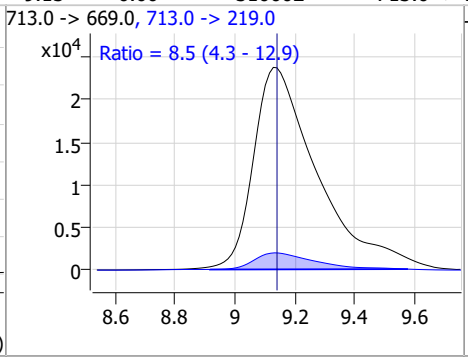


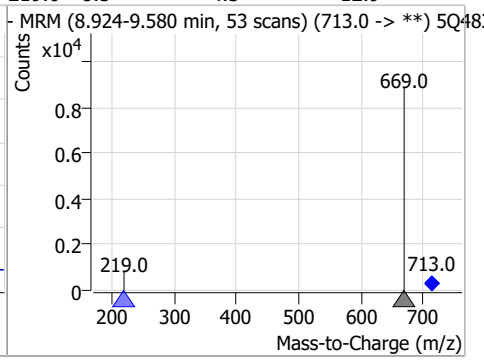




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.53	9.13	0.00	316662	713.0 -> 219.0	8.5	4.3	12.9







7.7.72

7

Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4832.D
Injection Time: 09/17/22 16:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:06 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:06

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4864.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/18/2022 12:49:11 AM
Sample Name : cc73-1.0LL
Vial : P1-A3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

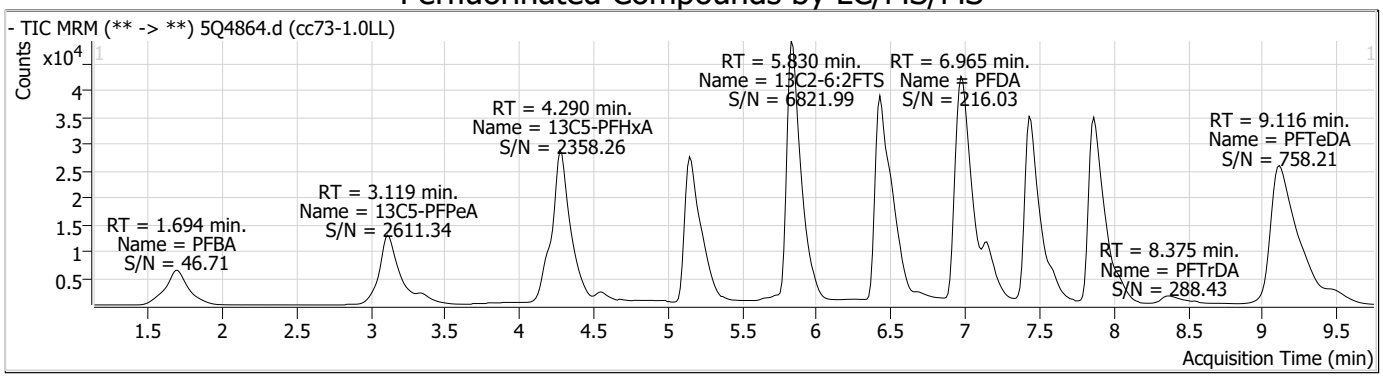
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68852	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	110879	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	177329	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	166301	20.00	µg/L	0.014
M8-PFOA	5.845	421.0 -> 376.0	223389	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	221823	20.00	µg/L	0.000
M6-PFDA	6.965	519.0 -> 474.0	178399	20.00	µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	221253	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	255896	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	338116	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	43977	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12474	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12444	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	21354	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	55786	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	77638	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	71076	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	37945	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10647	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10454	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	43632	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	55786	17.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%		
13C2-6:2FTS	5.830	429.0 -> 409.0	77638	18.11	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.5%		
13C2-8:2FTS	7.000	529.0 -> 509.0	71076	18.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.5%		
13C2-PFDoDA	7.879	615.0 -> 570.0	255896	18.98	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C2-PFTeDA	9.124	715.0 -> 670.0	338116	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C3-PFBS	3.349	302.0 -> 99.0	12474	18.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C3-PFHxS	5.194	402.0 -> 99.0	12444	18.16	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.8%		
13C4-PFBA	1.700	217.0 -> 172.0	68852	18.67	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFHpA	5.163	367.0 -> 322.0	166301	18.91	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C5-PFHxA	4.290	318.0 -> 273.0	177329	18.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C5-PFPeA	3.119	268.0 -> 223.0	110879	18.78	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C6-PFDA	6.965	519.0 -> 474.0	178399	19.21	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

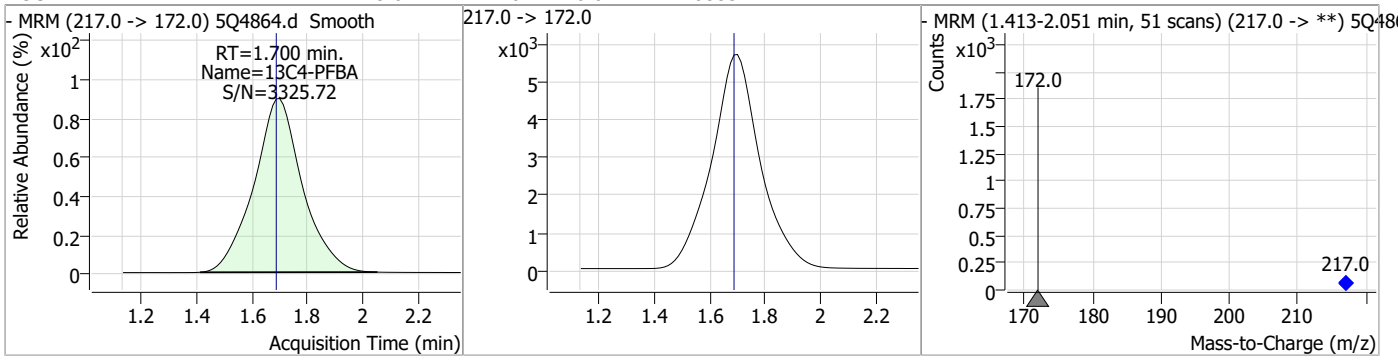
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%			
13C7-PFUnDA	7.446	570.0 -> 525.0	221253	19.09	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-FOSA	6.530	506.0 -> 78.0	43977	18.71	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-PFOA	5.845	421.0 -> 376.0	223389	18.97	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C8-PFOS	6.428	507.0 -> 99.0	21354	18.54	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%			
13C9-PFNA	6.443	472.0 -> 427.0	221823	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	37945	22.13	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10647	18.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
d3-MeFOSA	6.952	515.0 -> 169.0	10454	18.59	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%			
d5-EtFOSAA	7.157	589.0 -> 419.0	43632	20.69	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%			
Target Compounds							**QValue**
4:2FTS	4.189	327.0 -> 307.0	3169	1.05	µg/L		94
6:2FTS	5.831	427.0 -> 407.0	4261	1.05	µg/L		99
8:2FTS	7.001	527.0 -> 507.0	3779	1.04	µg/L		98
EtFOSAA	7.171	584.0 -> 419.0	1366	1.00	µg/L	m	94
FOSA	6.519	498.0 -> 78.0	2251	1.01	µg/L	#	93
MeFOSAA	7.010	570.0 -> 419.0	1719	1.08	µg/L		87
PFBA	1.694	213.0 -> 169.0	1245	0.91	µg/L		100
PFBS	3.354	299.0 -> 80.0	1806	0.96	µg/L		99
PFDA	6.965	513.0 -> 469.0	10460	0.94	µg/L		99
PFDoDA	7.880	613.0 -> 569.0	11900	0.94	µg/L		100
PFDS	7.406	599.0 -> 80.0	1437	0.87	µg/L		90
PFHpA	5.150	363.0 -> 319.0	10659	0.94	µg/L		100
PFHpS	5.855	449.0 -> 80.0	1625	0.94	µg/L		96
PFHxA	4.291	313.0 -> 269.0	8265	0.94	µg/L		99
PFHxS	5.195	399.0 -> 80.0	1684	0.93	µg/L	m	98
PFNA	6.444	463.0 -> 419.0	9140	0.91	µg/L		98
PFNS	6.937	549.0 -> 80.0	1478	0.93	µg/L		97
PFOA	5.845	413.0 -> 369.0	12423	0.91	µg/L		99
PFOS	6.416	499.0 -> 80.0	1941	1.01	µg/L	m	81
PFPeA	3.122	263.0 -> 219.0	5109	0.96	µg/L		100
PFPeS	4.398	349.0 -> 80.0	1344	0.90	µg/L		95
PFTeDA	9.116	713.0 -> 669.0	17385	0.96	µg/L		97
PFTrDA	8.375	663.0 -> 619.0	15382	0.89	µg/L		99
PFUnDA	7.448	563.0 -> 519.0	11023	0.97	µg/L		97
11Cl-PF3OUdS	7.603	631.0 -> 451.0	6592	0.89	µg/L		96
9Cl-PF3ONS	6.701	531.0 -> 351.0	5622	0.89	µg/L		94
ADONA	5.248	377.0 -> 251.0	13173	0.98	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	1756	0.93	µg/L		98
MeFOSA	6.954	512.0 -> 169.0	530	0.97	µg/L		95
4-PFECHS	5.741	461.0 -> 381.0	3444	0.92	µg/L		99
FBSA	4.356	298.0 -> 78.0	3071	1.00	µg/L		99
FHxSA	5.674	398.0 -> 78.0	2671	1.02	µg/L		97

 # = Qualifier out of range, m = manually integrated, + = Area summed

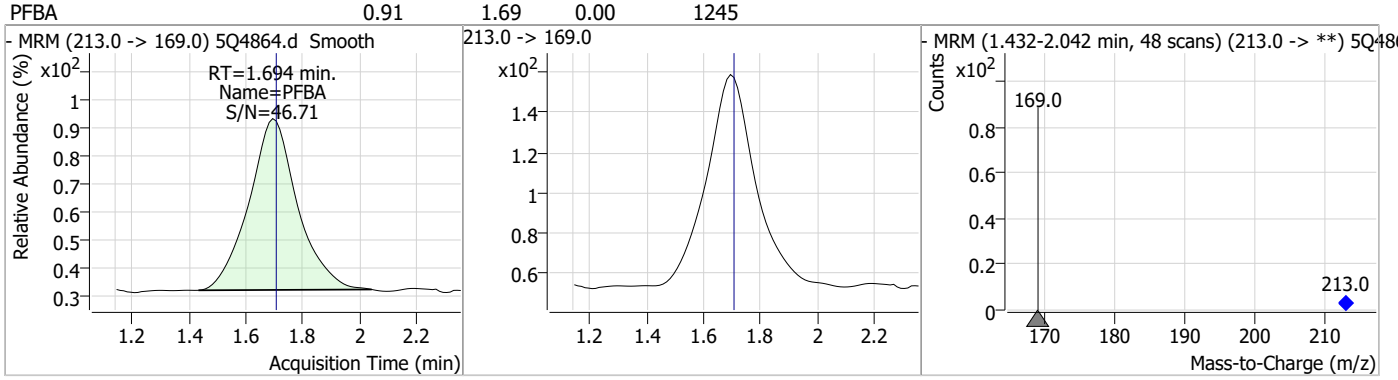
Perfluorinated Compounds by LC/MS/MS



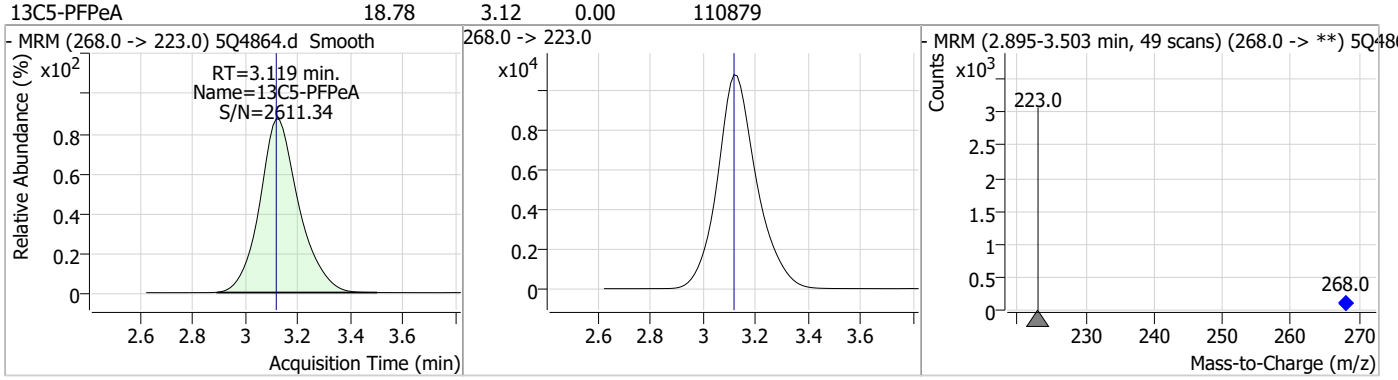
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.67	1.70	0.01	68852				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.91	1.69	0.00	1245				

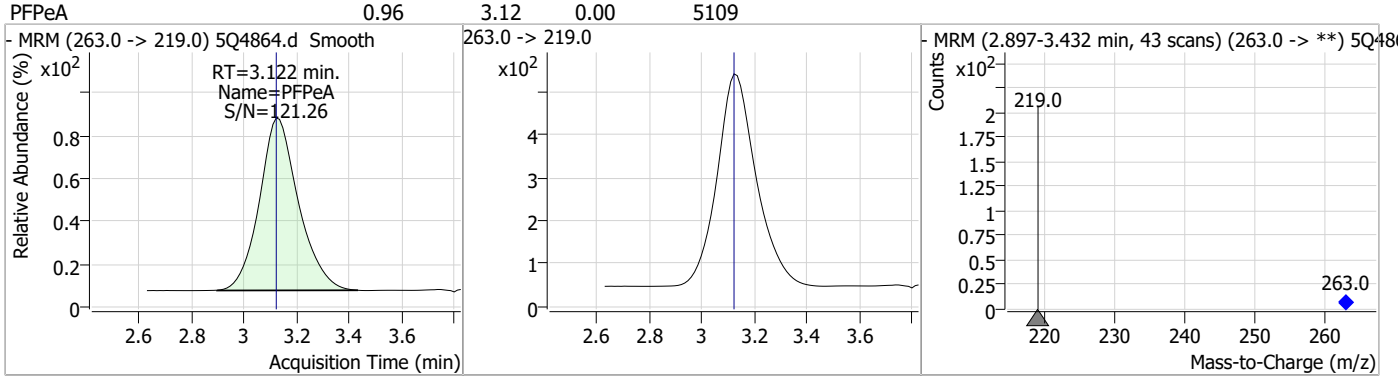


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.78	3.12	0.00	110879				

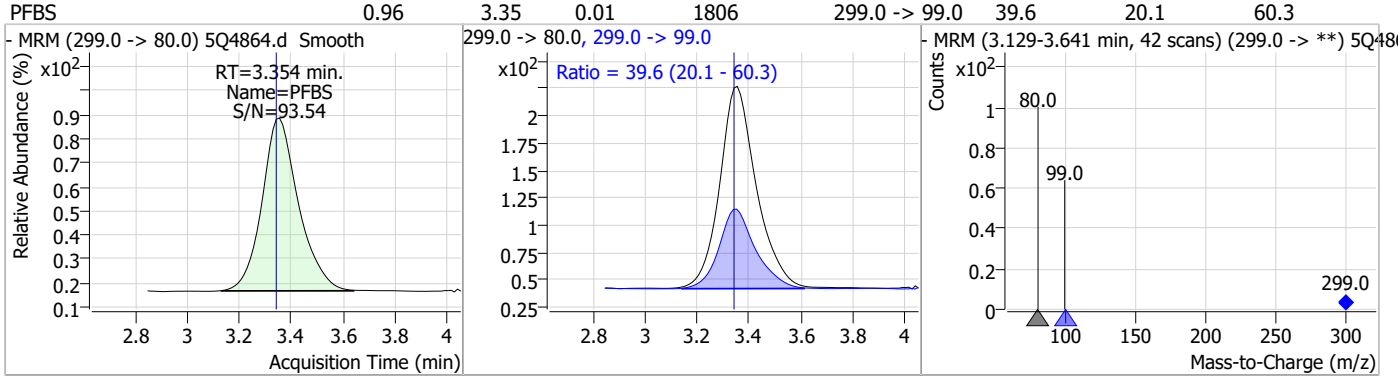


Perfluorinated Compounds by LC/MS/MS

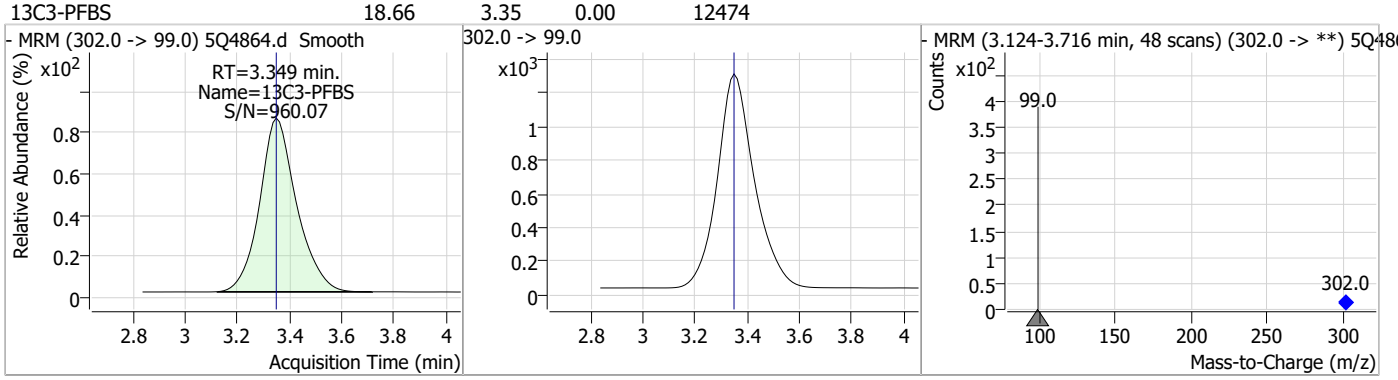
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.96	3.12	0.00	5109				



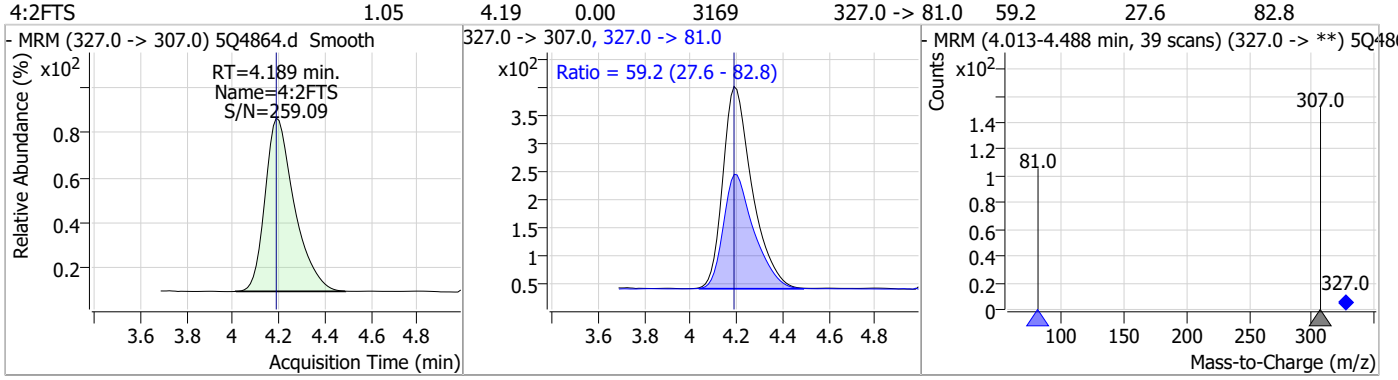
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.96	3.35	0.01	1806	299.0 -> 99.0	39.6	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.66	3.35	0.00	12474				

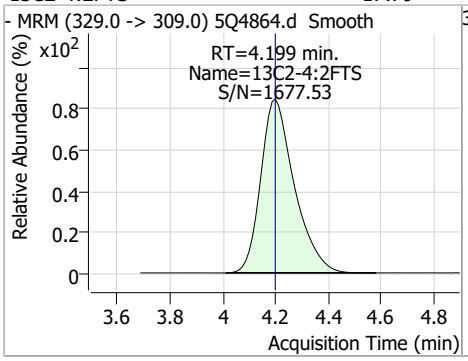


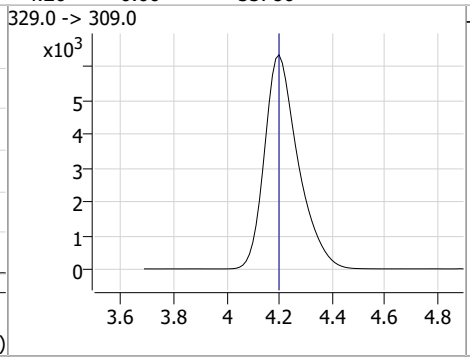
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	4.19	0.00	3169	327.0 -> 81.0	59.2	27.6	82.8

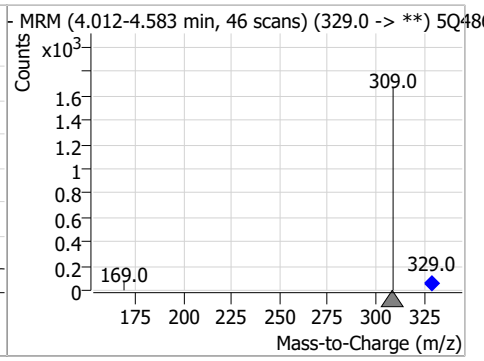


Perfluorinated Compounds by LC/MS/MS

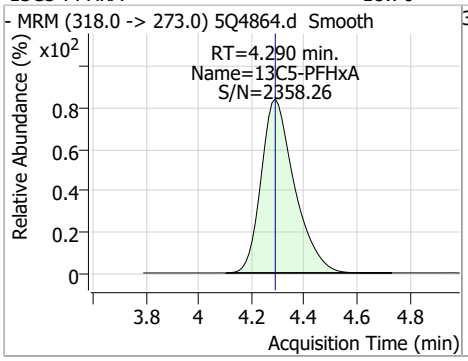
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.79	4.20	0.00	55786				

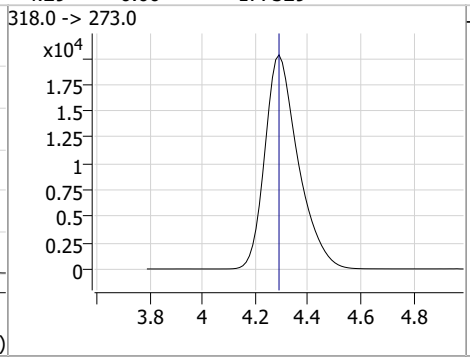


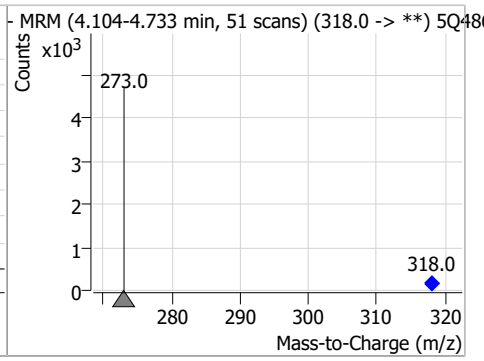




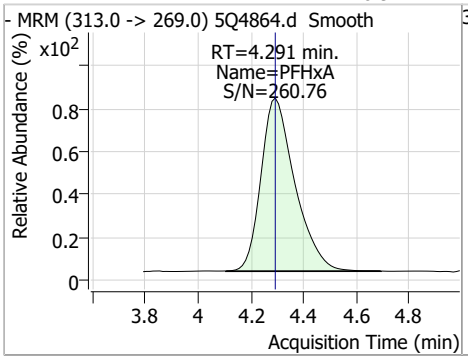
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.76	4.29	0.00	177329				

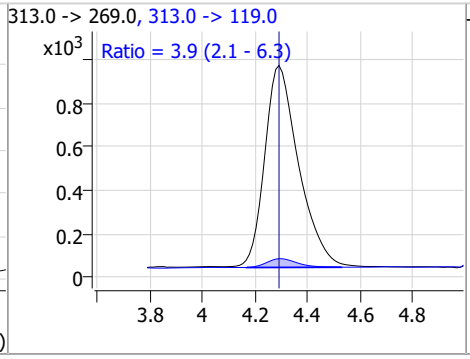


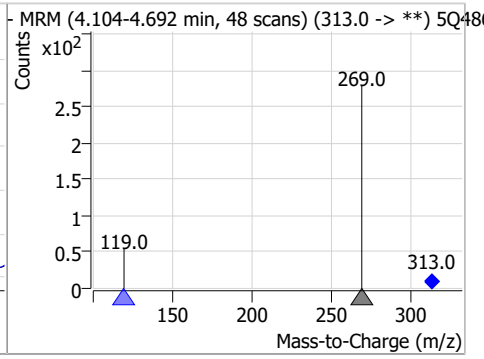




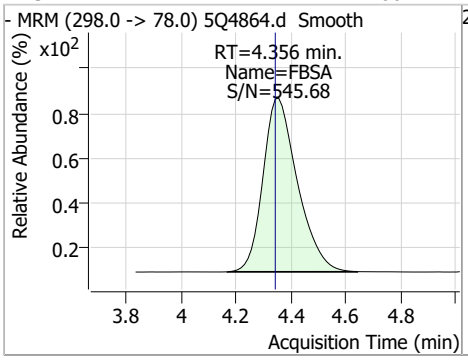
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.94	4.29	0.00	8265	313.0 -> 119.0	3.9	2.1	6.3

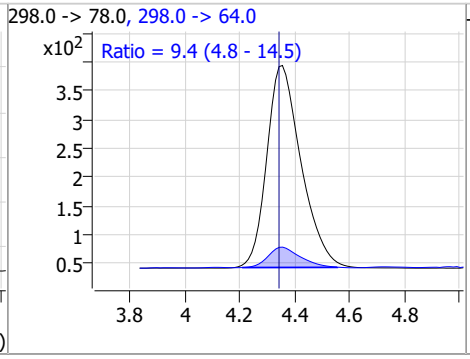


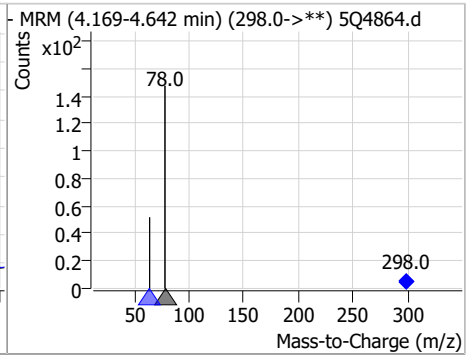




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.00	4.36	0.01	3071	298.0 -> 64.0	9.4	4.8	14.5

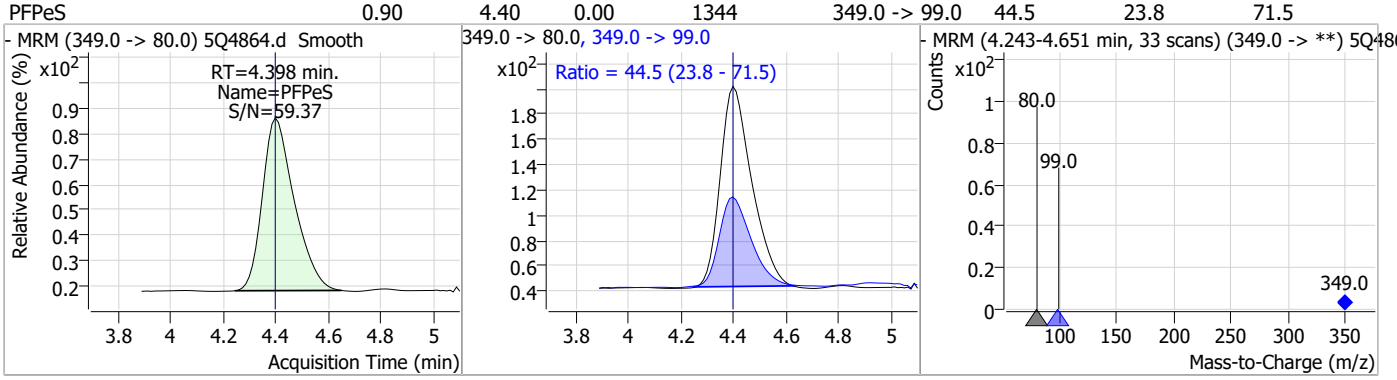




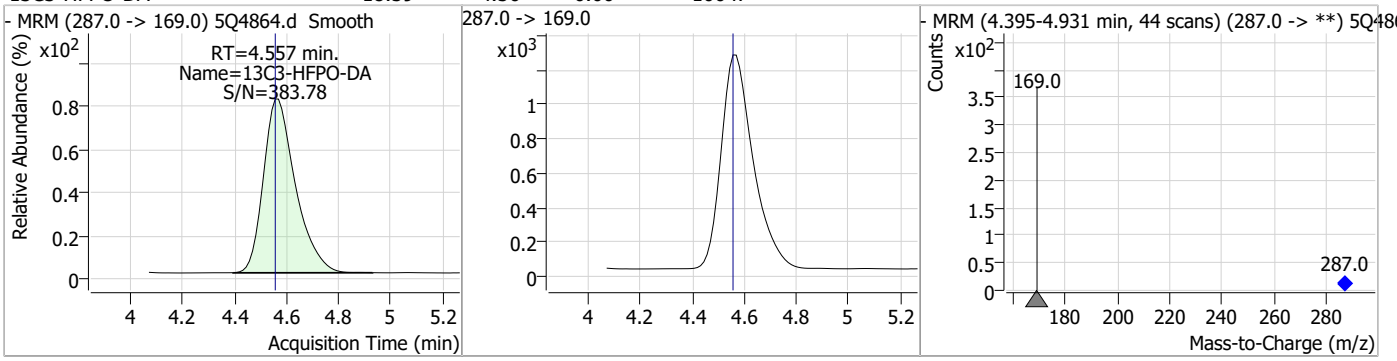


Perfluorinated Compounds by LC/MS/MS

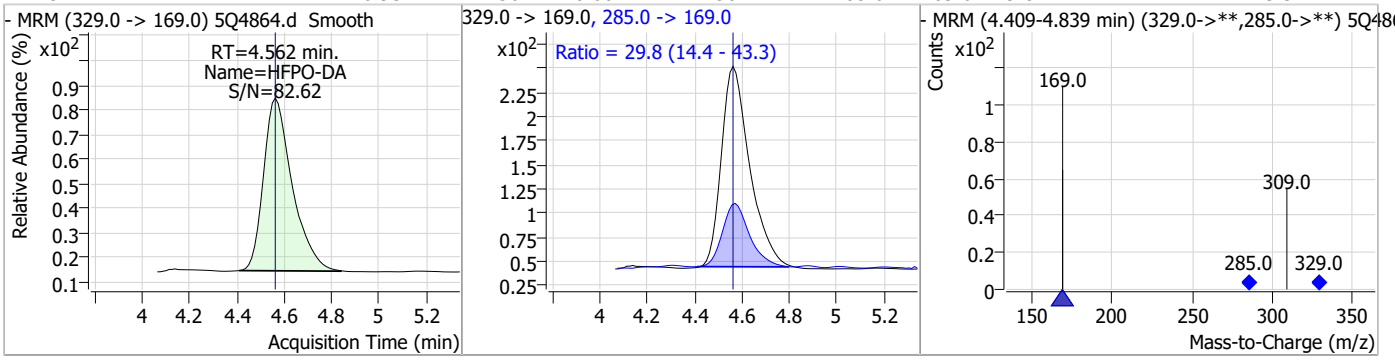
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.90	4.40	0.00	1344	349.0 -> 99.0	44.5	23.8	71.5



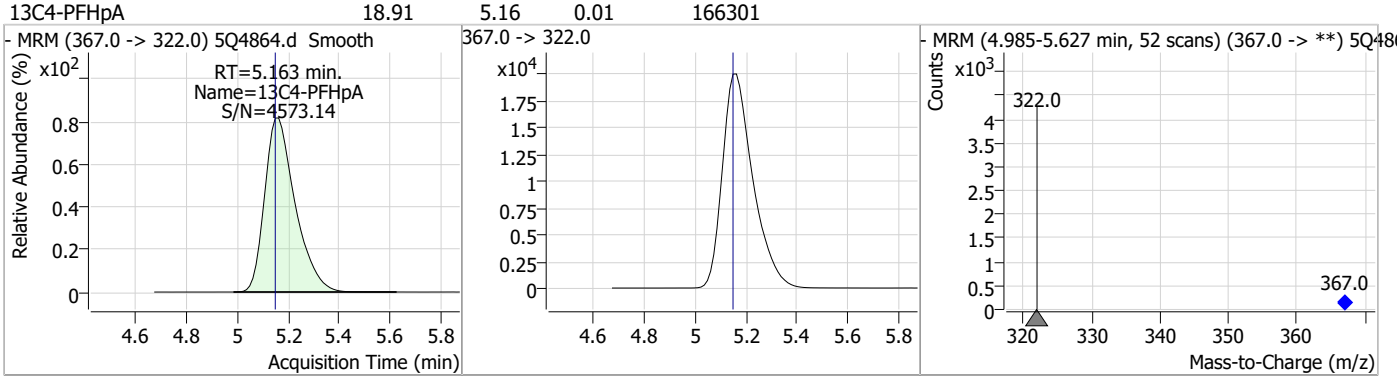
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.59	4.56	0.00	10647				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.93	4.56	0.00	1756	285.0 -> 169.0	29.8	14.4	43.3

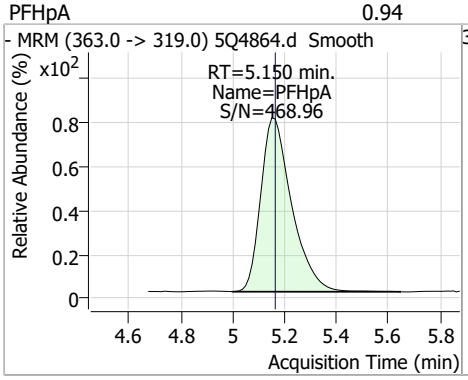


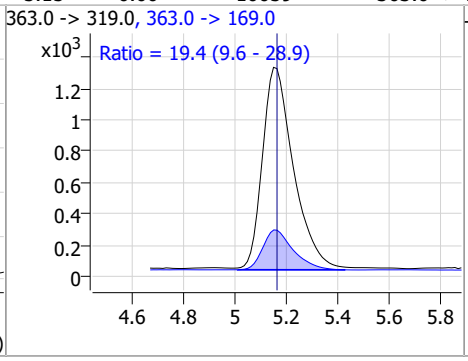
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.91	5.16	0.01	166301				

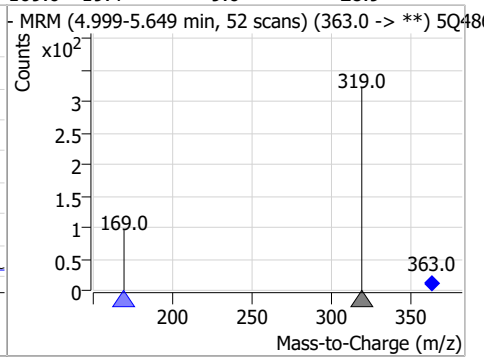


Perfluorinated Compounds by LC/MS/MS

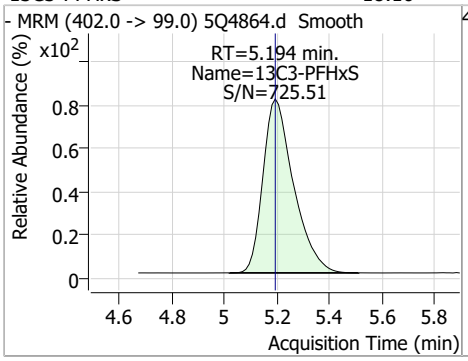
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.94	5.15	0.00	10659	363.0 -> 169.0	19.4	9.6	28.9

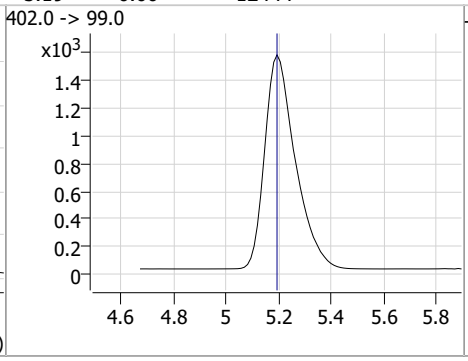


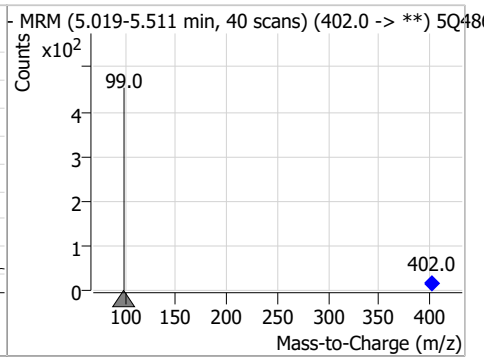




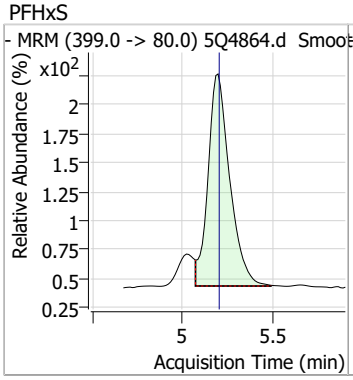
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.16	5.19	0.00	12444				

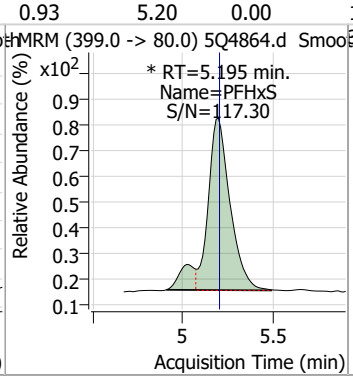


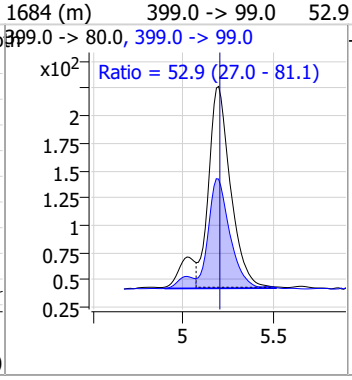


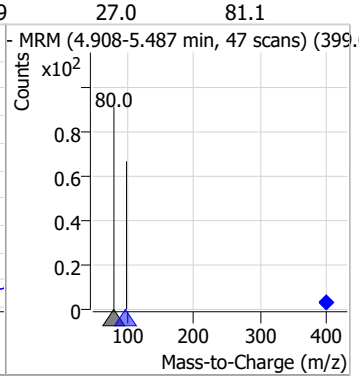


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.93	5.20	0.00	1684 (m)	399.0 -> 99.0	52.9	27.0	81.1

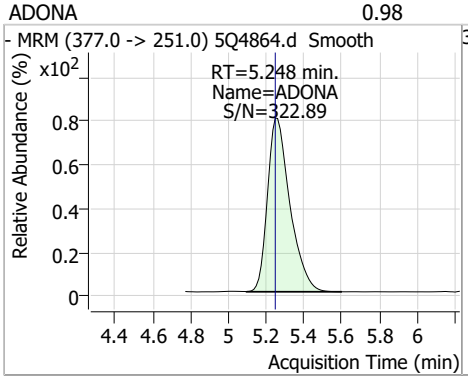


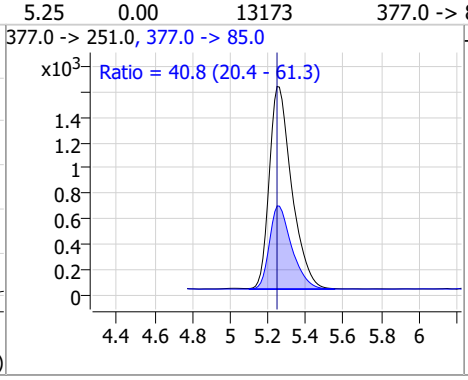


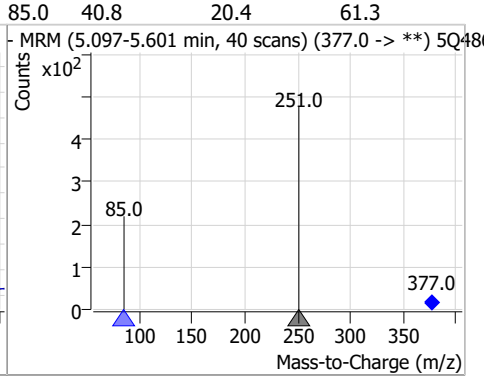




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.98	5.25	0.00	13173	377.0 -> 85.0	40.8	20.4	61.3

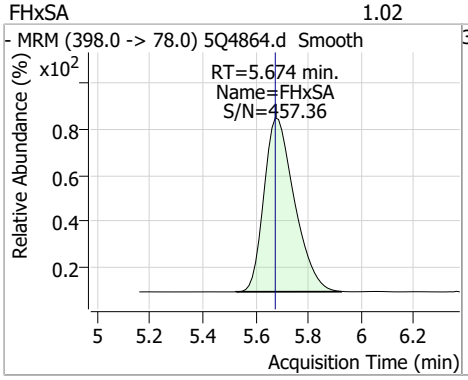


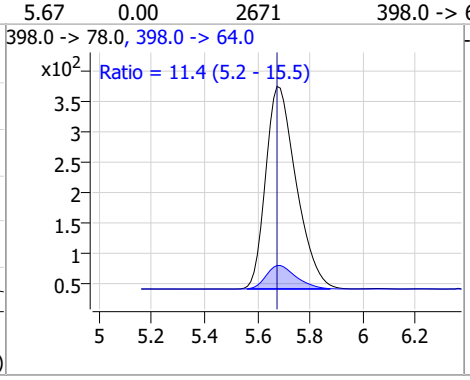


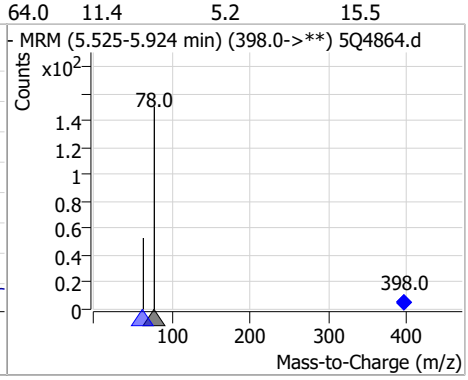


Perfluorinated Compounds by LC/MS/MS

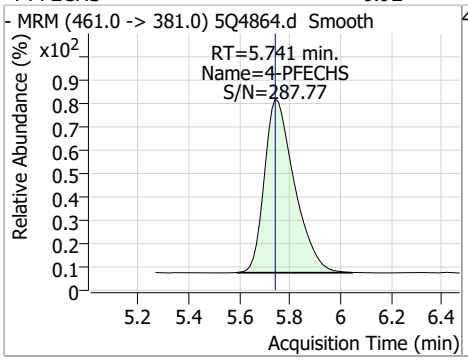
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.02	5.67	0.00	2671	398.0 -> 64.0	11.4	5.2	15.5

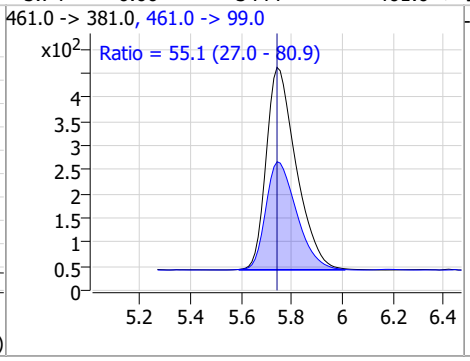


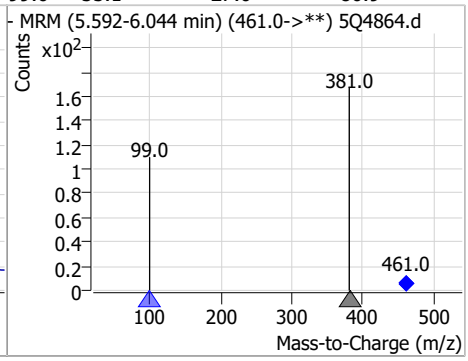




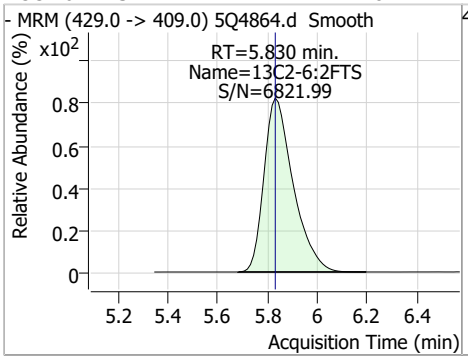
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.92	5.74	0.00	3444	461.0 -> 99.0	55.1	27.0	80.9

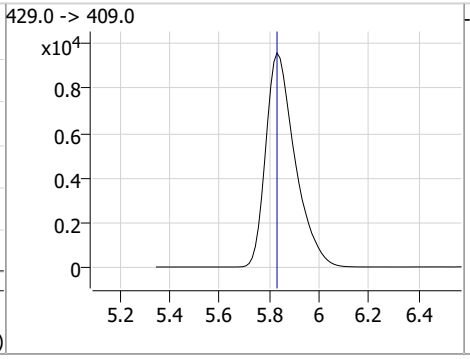


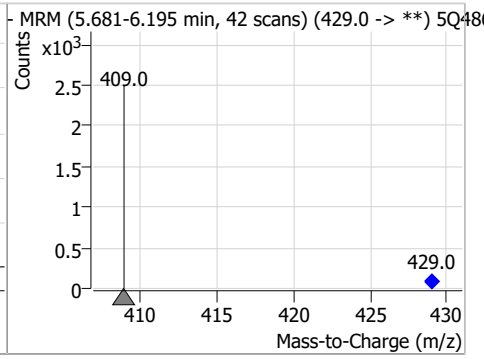




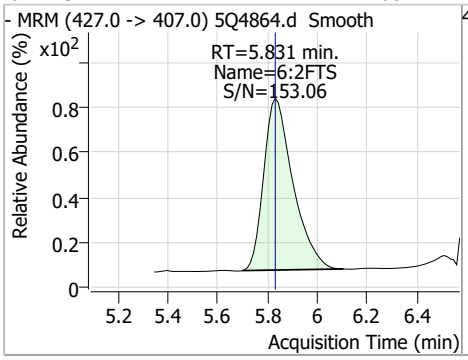
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.11	5.83	0.00	77638				

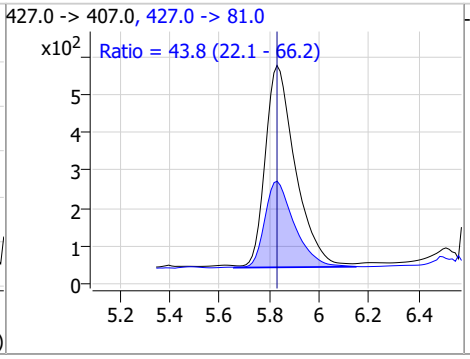


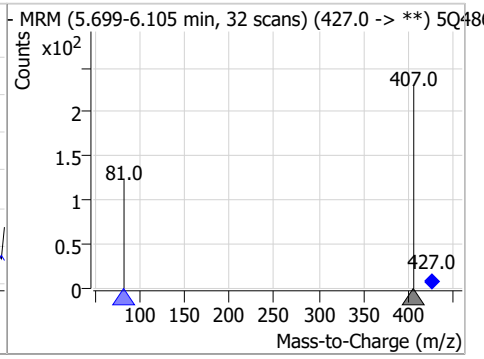




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.05	5.83	0.00	4261	427.0 -> 81.0	43.8	22.1	66.2

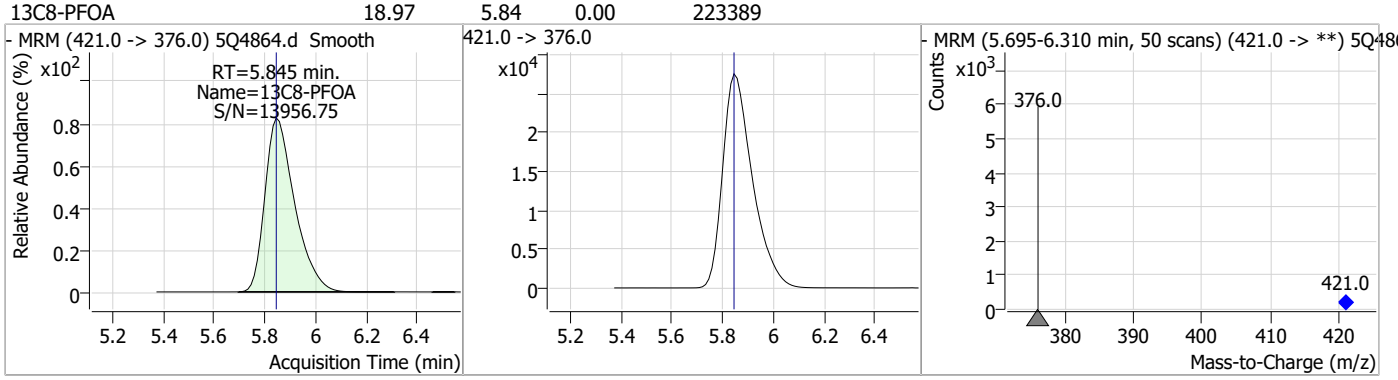




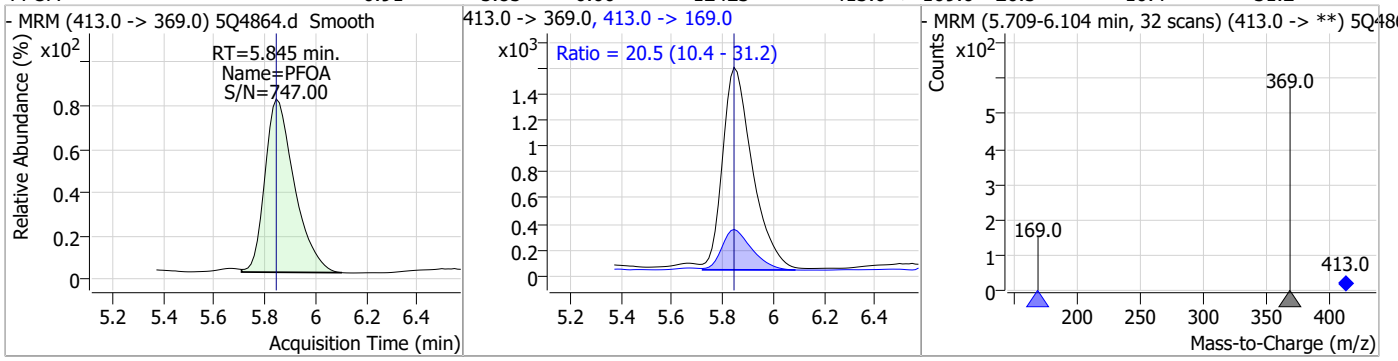


Perfluorinated Compounds by LC/MS/MS

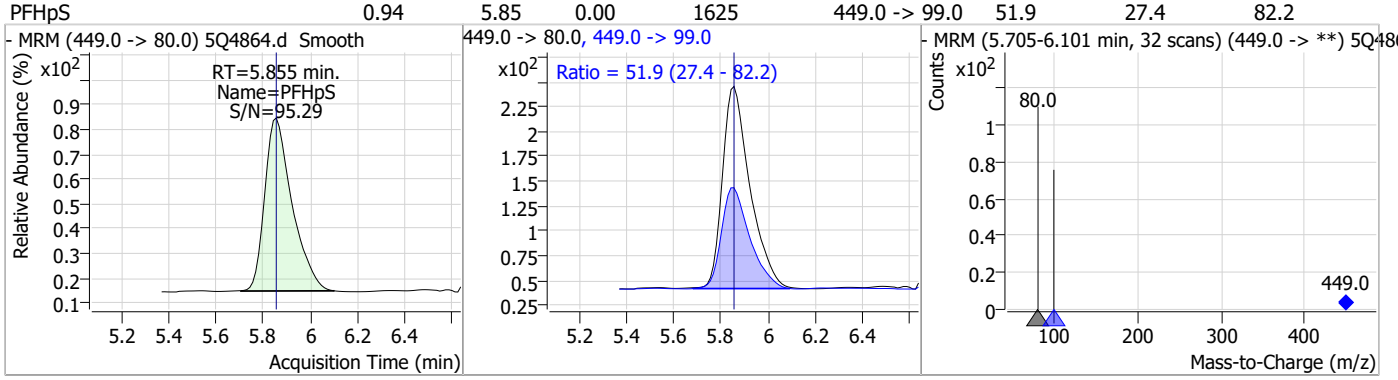
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.97	5.84	0.00	223389				



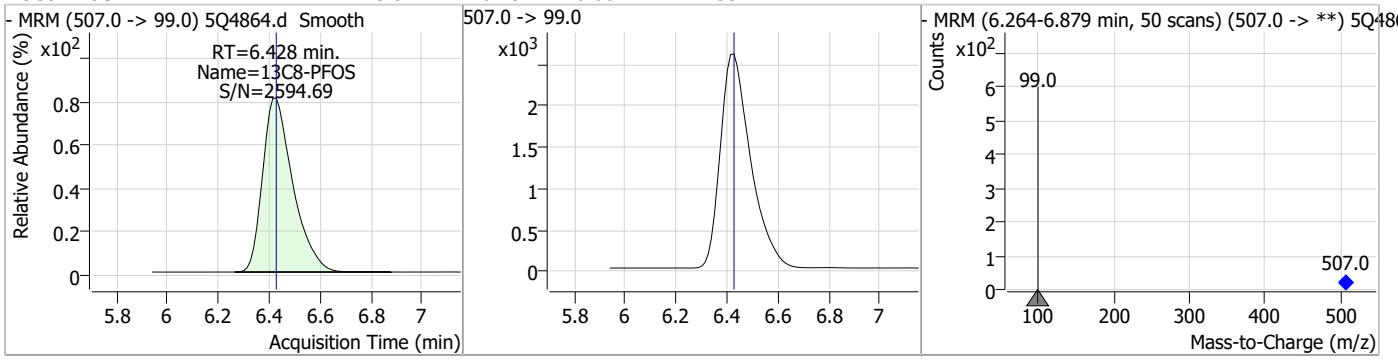
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.91	5.85	0.00	12423	413.0 -> 169.0	20.5	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.94	5.85	0.00	1625	449.0 -> 99.0	51.9	27.4	82.2

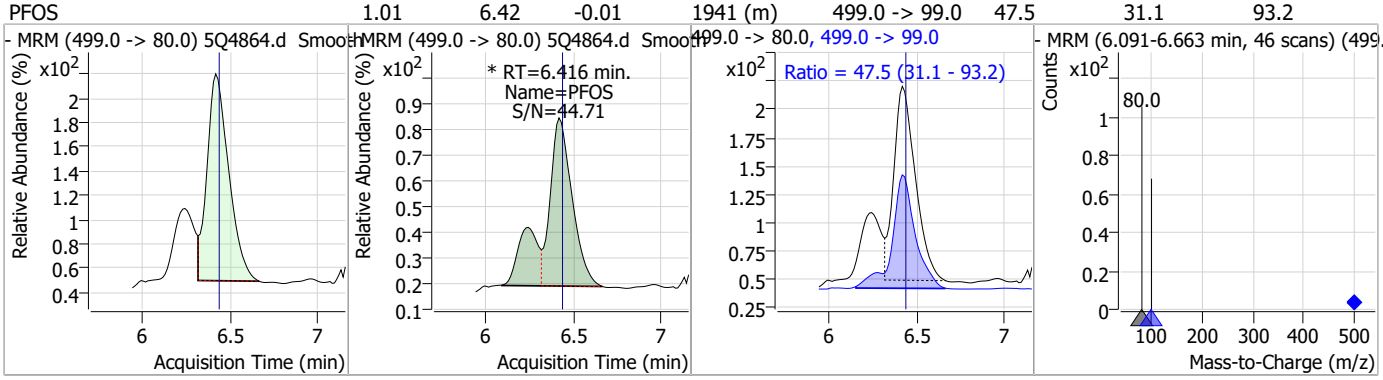


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.54	6.43	0.00	21354				

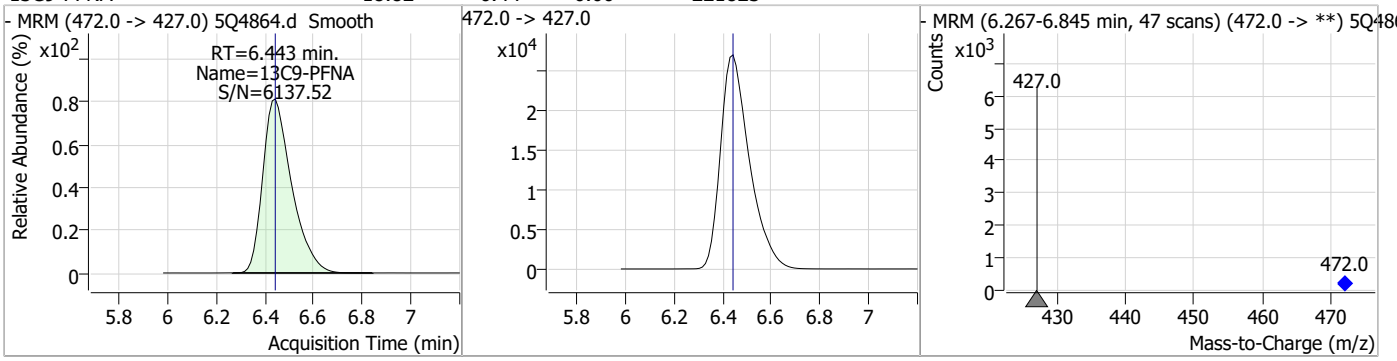


Perfluorinated Compounds by LC/MS/MS

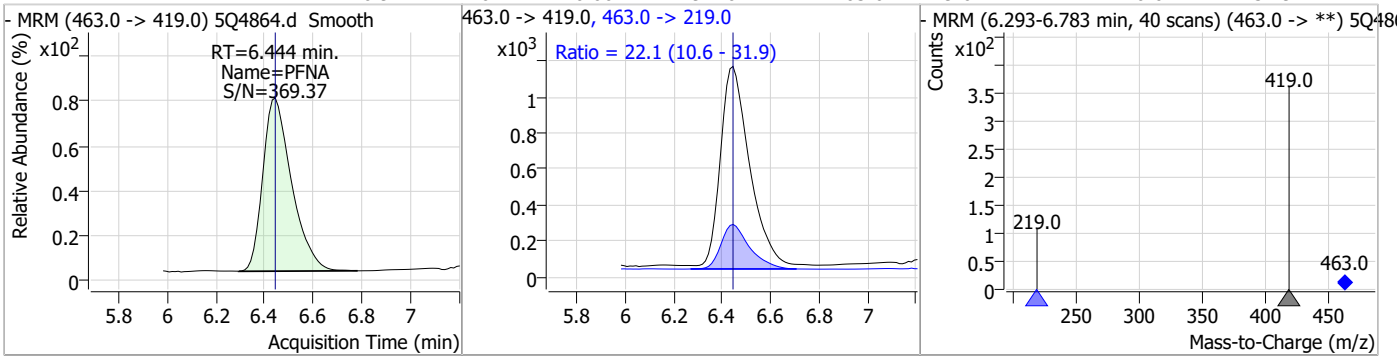
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.01	6.42	-0.01	1941 (m)	499.0 -> 99.0	47.5	31.1	93.2



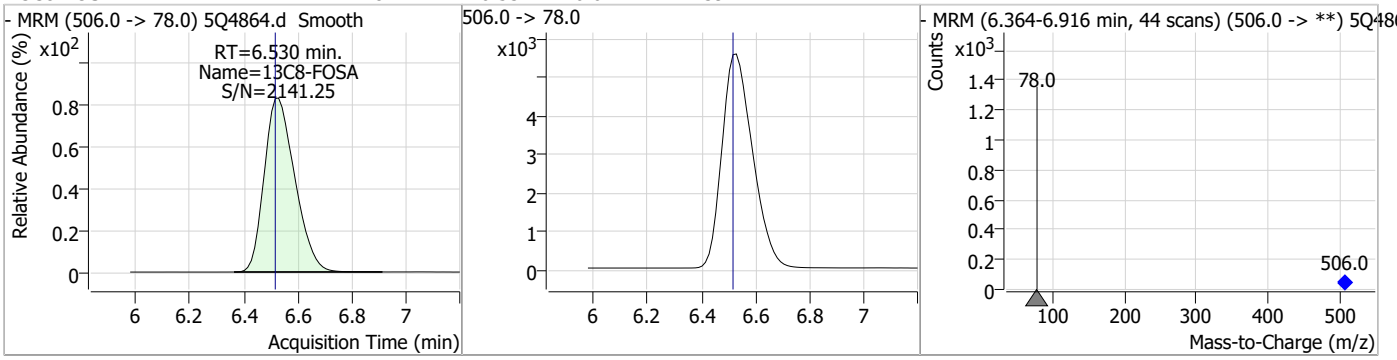
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.82	6.44	0.00	221823				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	6.44	0.00	9140	463.0 -> 219.0	22.1	10.6	31.9

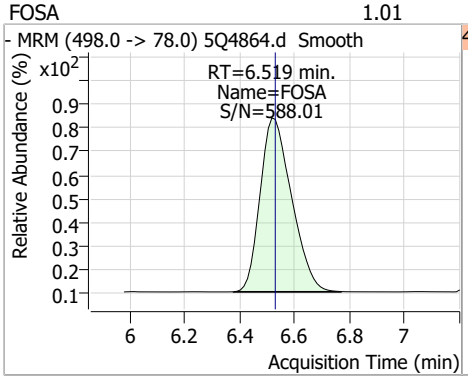


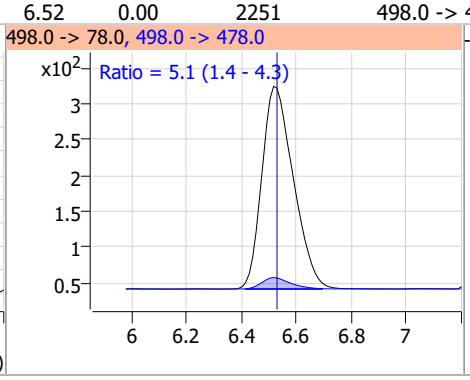
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.71	6.53	0.01	43977				

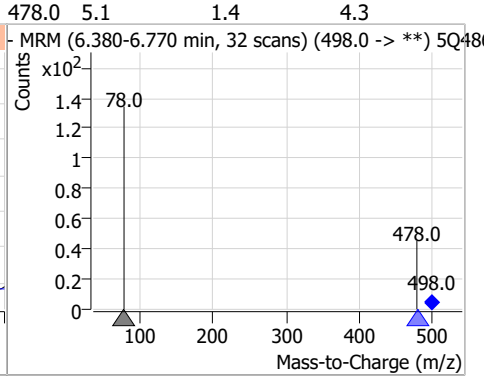


Perfluorinated Compounds by LC/MS/MS

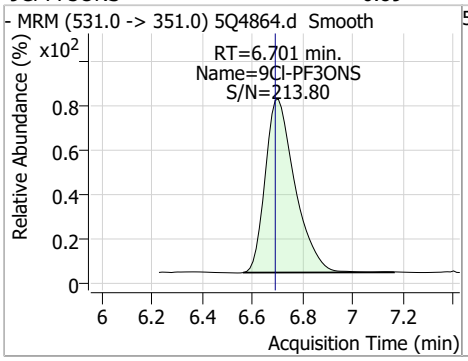
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.01	6.52	0.00	2251	498.0 -> 478.0	5.1	1.4	4.3

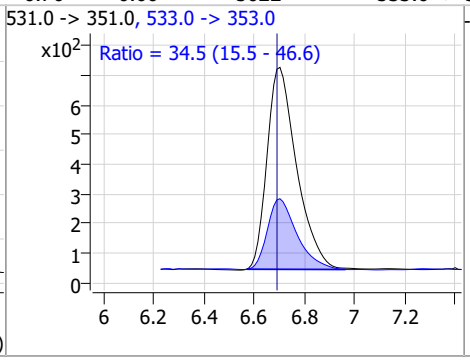


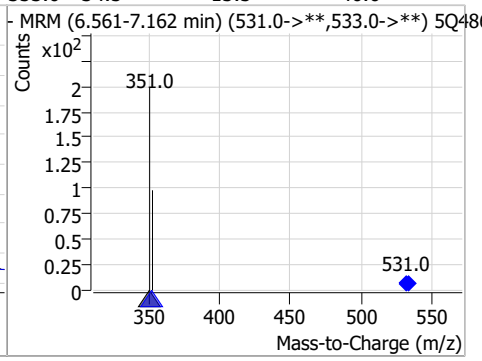




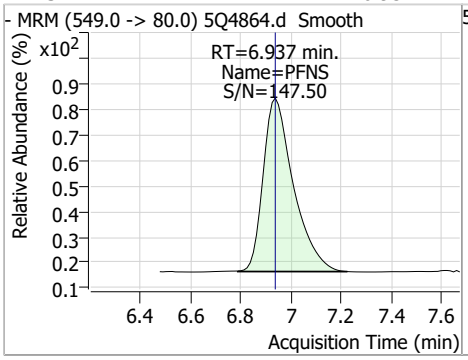
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.89	6.70	0.00	5622	533.0 -> 353.0	34.5	15.5	46.6

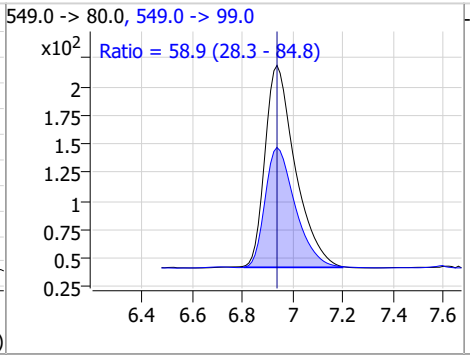


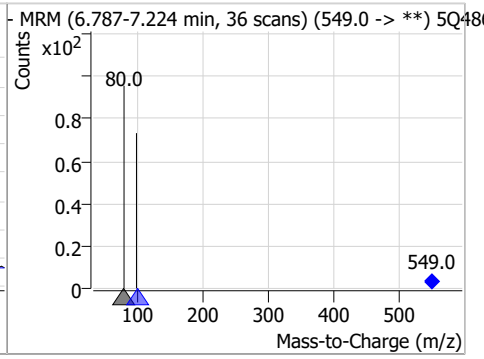




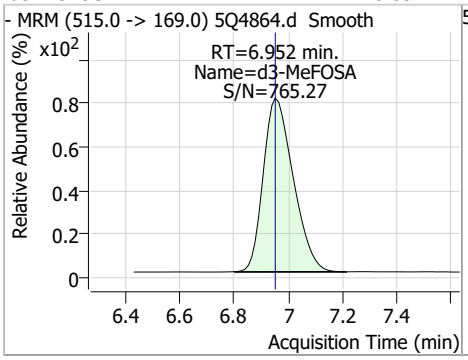
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.93	6.94	0.00	1478	549.0 -> 99.0	58.9	28.3	84.8

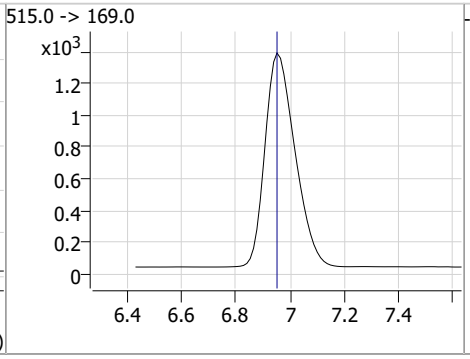


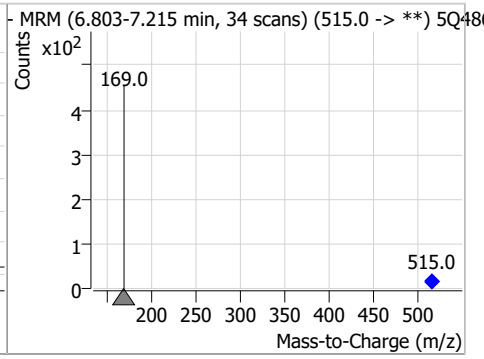




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.59	6.95	0.00	10454				

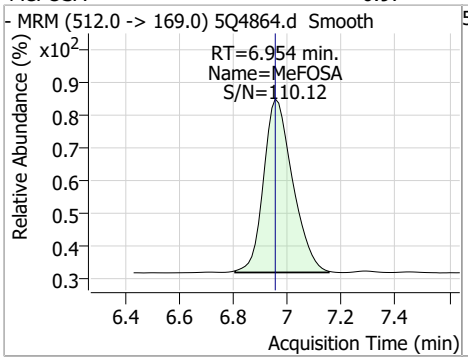


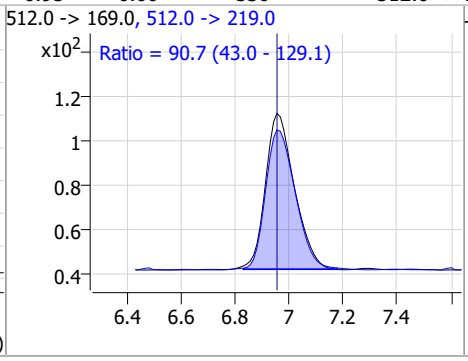


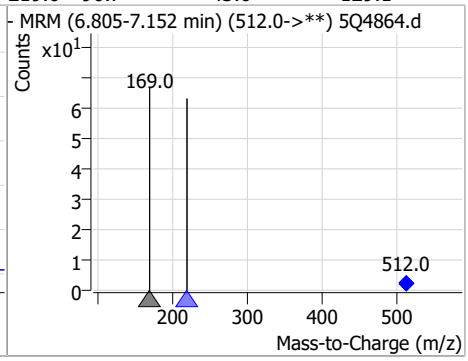


Perfluorinated Compounds by LC/MS/MS

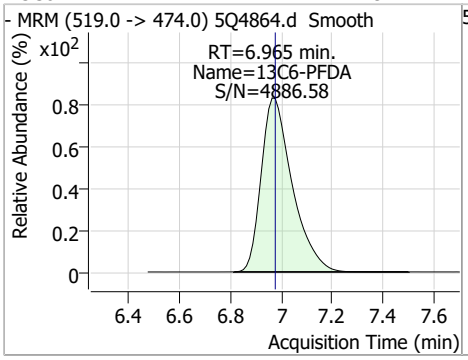
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.97	6.95	0.00	530	512.0 -> 219.0	90.7	43.0	129.1

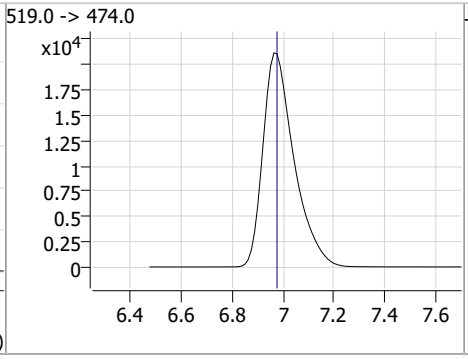


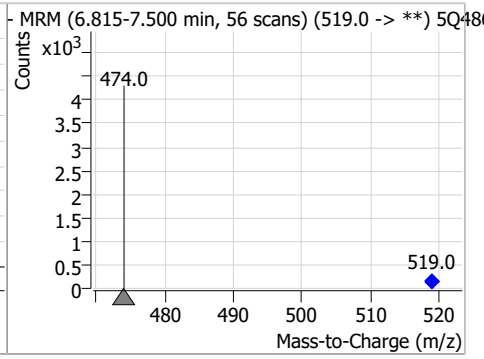




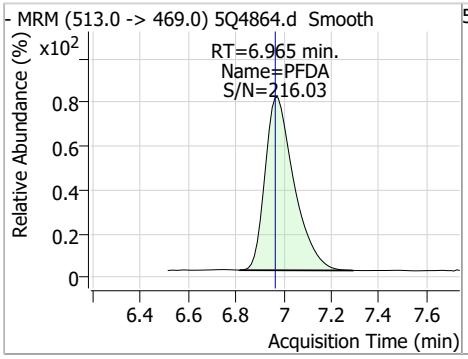
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.21	6.96	-0.01	178399				

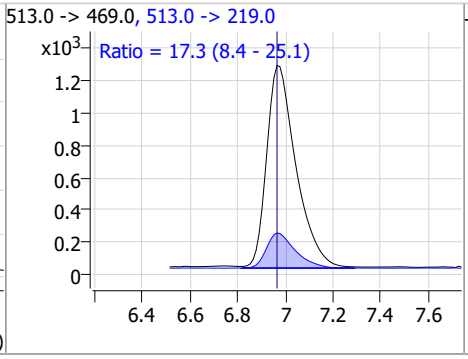


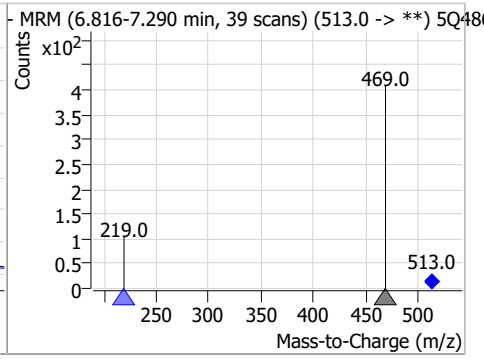




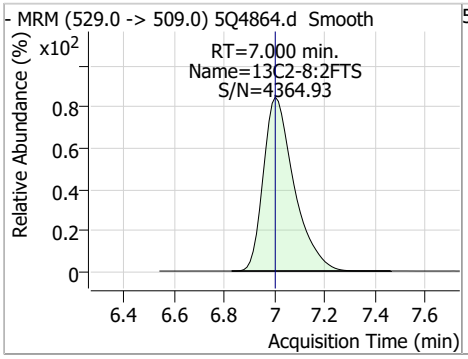
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.94	6.97	-0.01	10460	513.0 -> 219.0	17.3	8.4	25.1

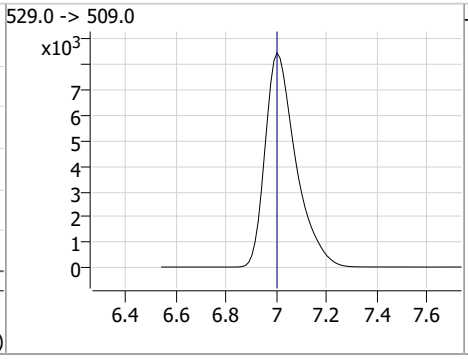


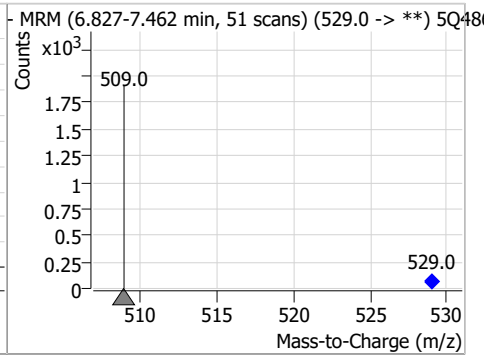




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.50	7.00	0.00	71076				

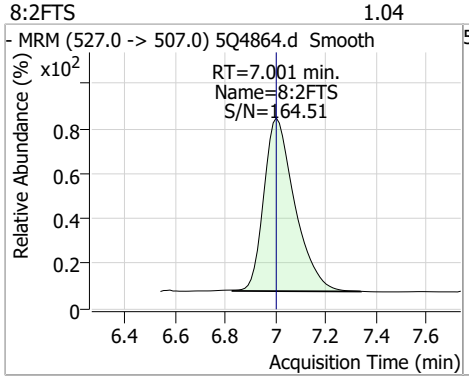


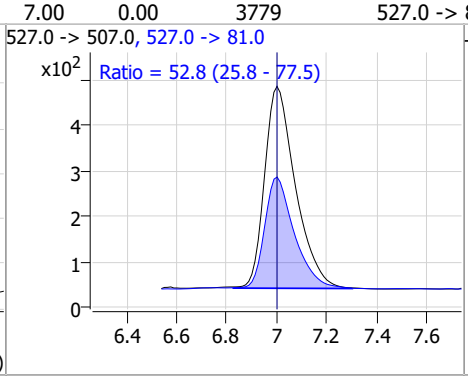


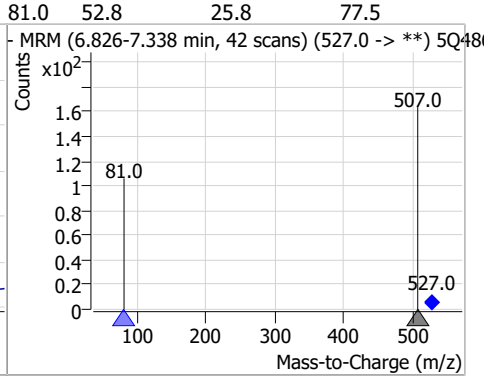


Perfluorinated Compounds by LC/MS/MS

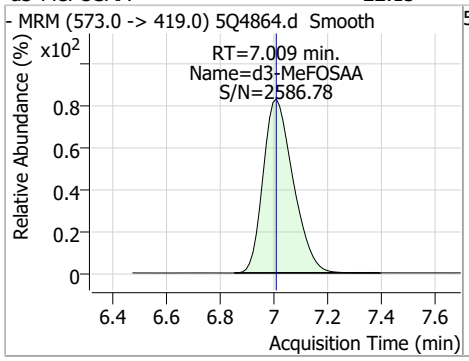
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	7.00	0.00	3779	527.0 -> 81.0	52.8	25.8	77.5

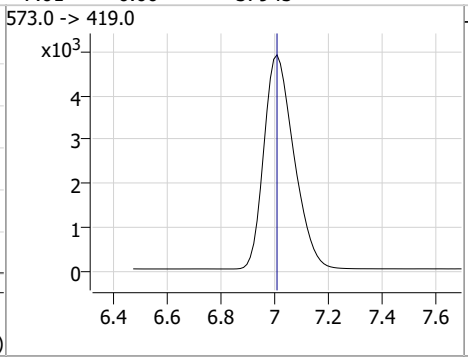


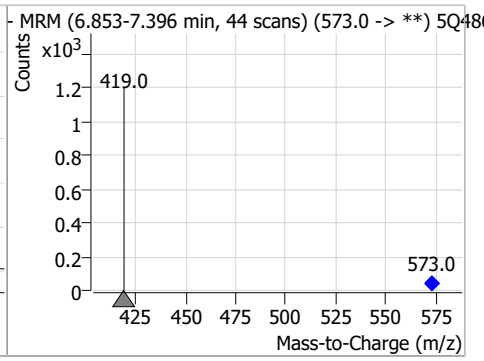




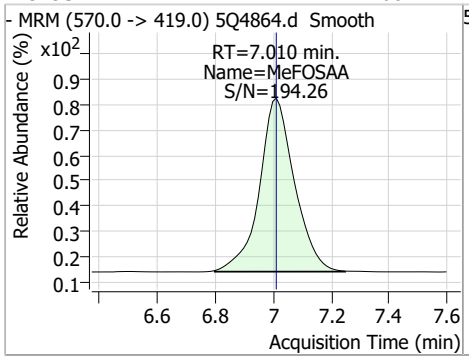
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.13	7.01	0.00	37945				

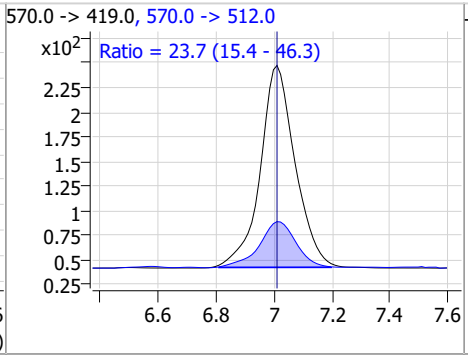


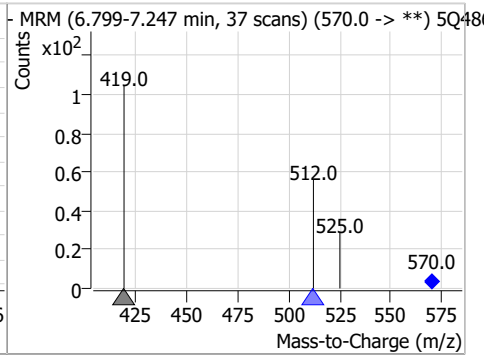




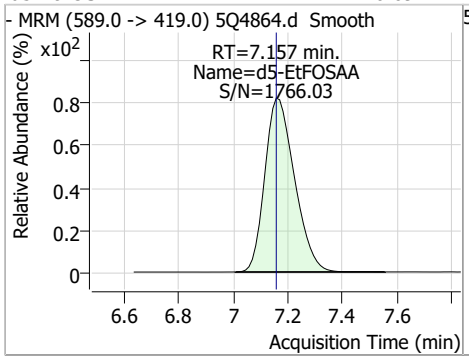
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.08	7.01	0.00	1719	570.0 -> 512.0	23.7	15.4	46.3

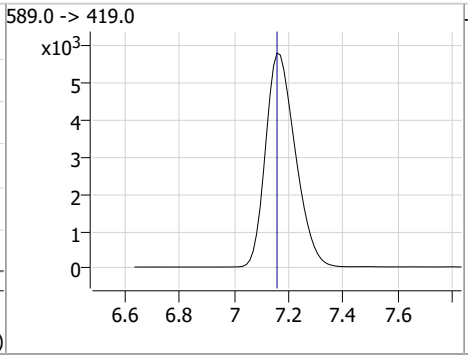


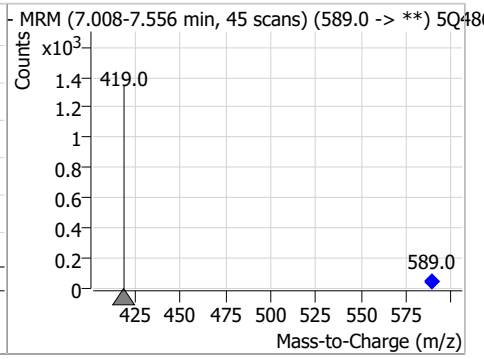




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.69	7.16	0.00	43632				

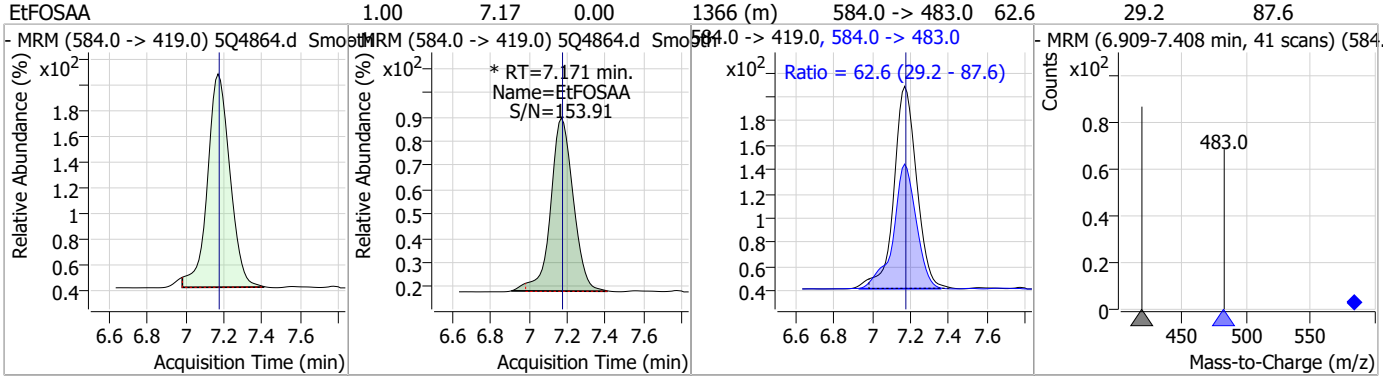




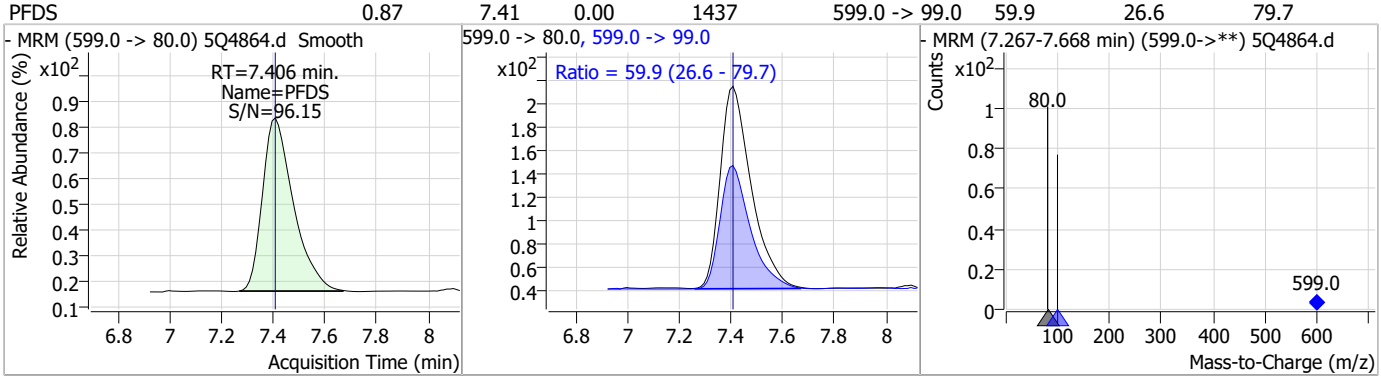


Perfluorinated Compounds by LC/MS/MS

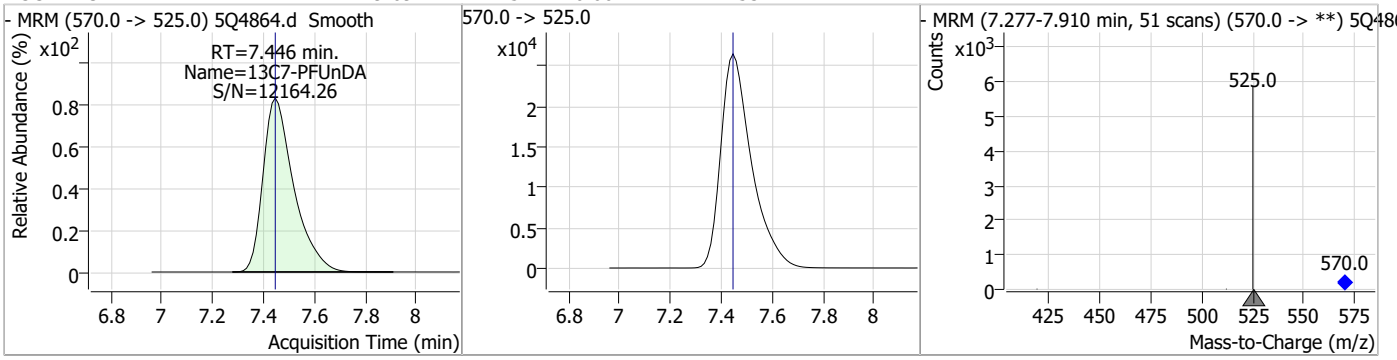
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.00	7.17	0.00	1366 (m)	584.0 -> 483.0	62.6	29.2	87.6



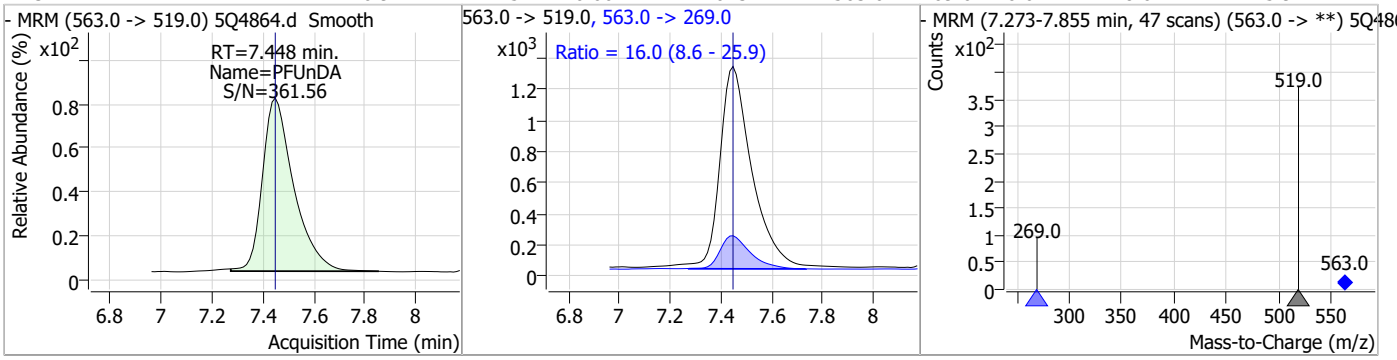
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.87	7.41	0.00	1437	599.0 -> 99.0	59.9	26.6	79.7



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.09	7.45	0.00	221253				

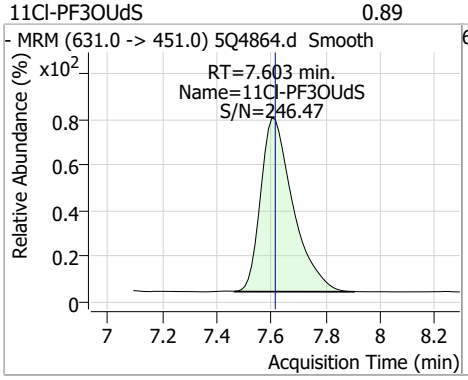


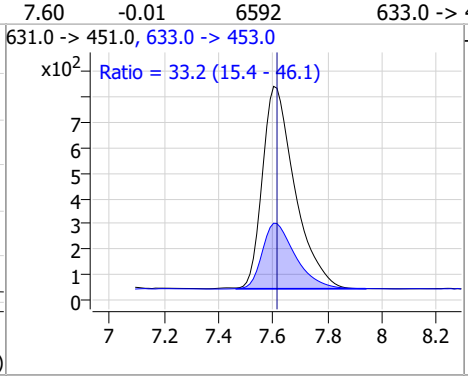
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.97	7.45	0.00	11023	563.0 -> 269.0	16.0	8.6	25.9

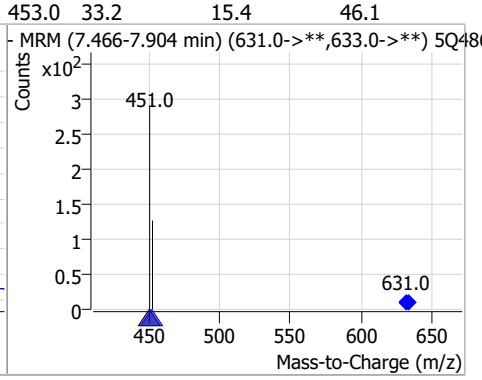


Perfluorinated Compounds by LC/MS/MS

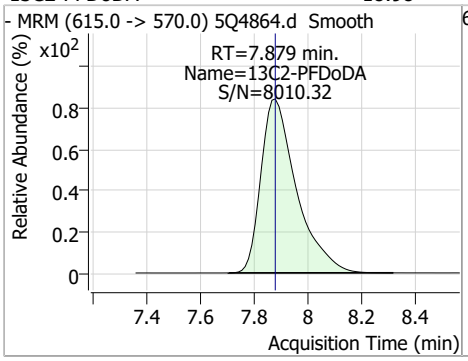
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.89	7.60	-0.01	6592	633.0 -> 453.0	33.2	15.4	46.1

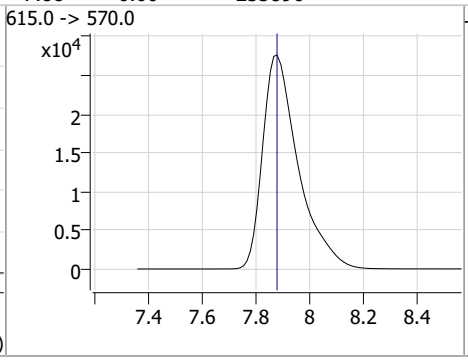


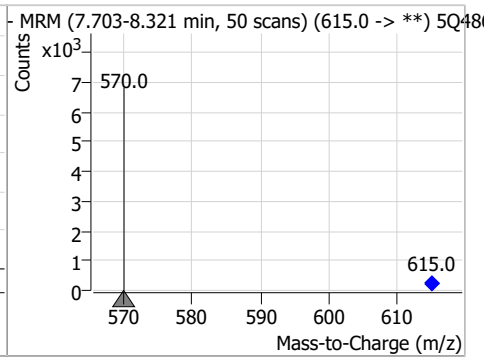




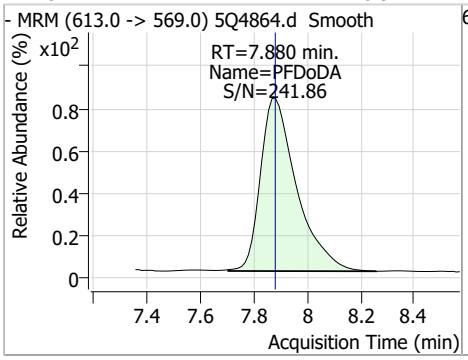
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.98	7.88	0.00	255896				

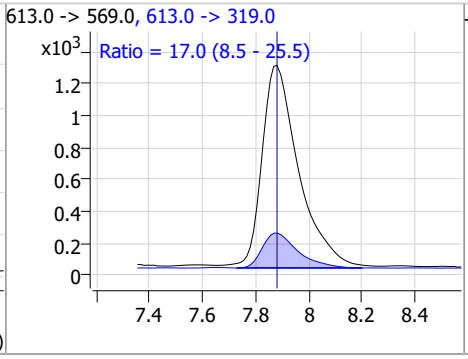


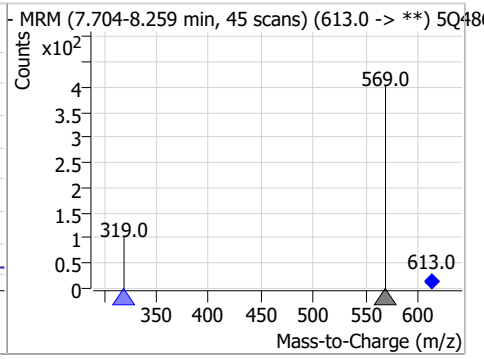




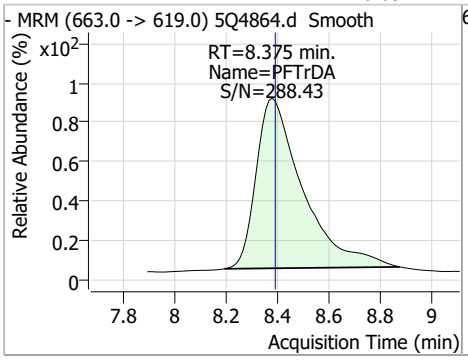
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.94	7.88	0.00	11900	613.0 -> 319.0	17.0	8.5	25.5

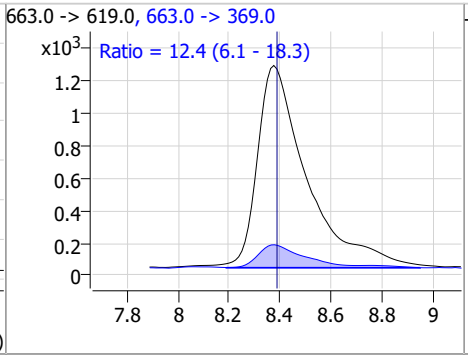


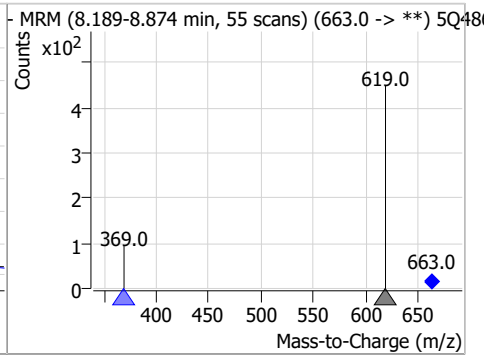




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.89	8.38	-0.01	15382	663.0 -> 369.0	12.4	6.1	18.3

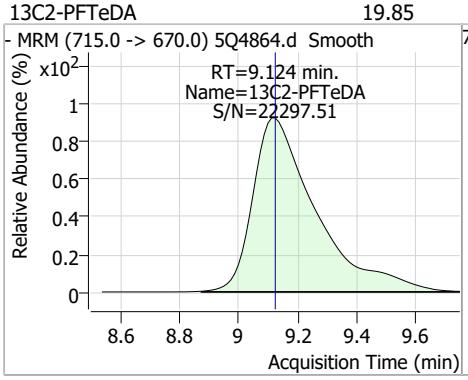


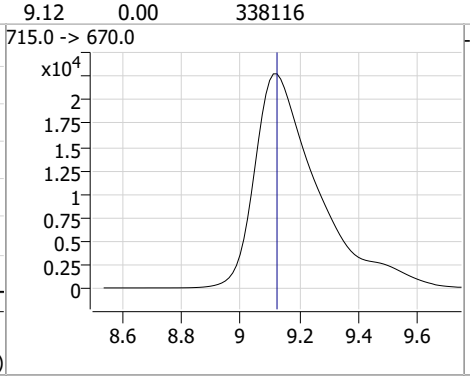


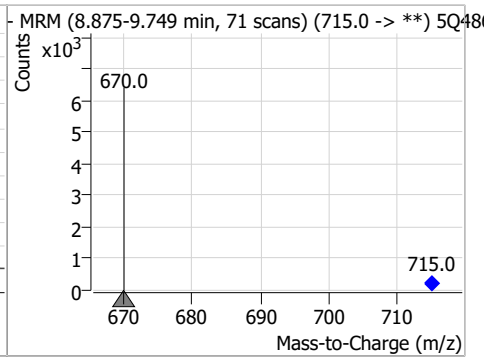


Perfluorinated Compounds by LC/MS/MS

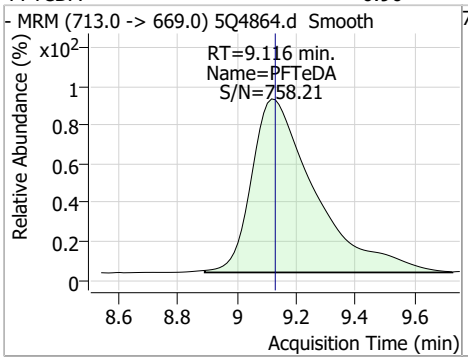
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.85	9.12	0.00	338116				

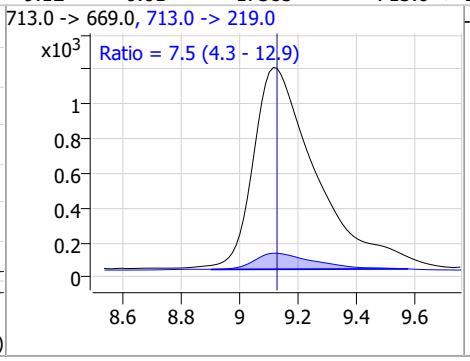


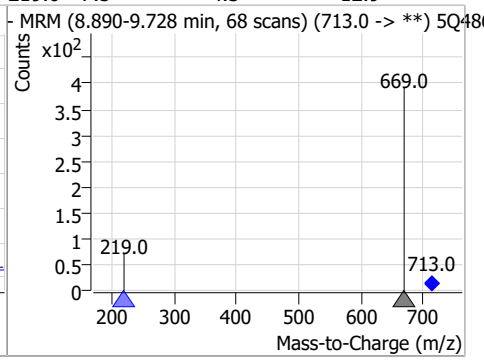




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.96	9.12	-0.01	17385	713.0 -> 219.0	7.5	4.3	12.9







7.7.73

7

Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4864.D
Injection Time: 09/18/22 00:49
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:06 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak
EtFOSAA	2991-50-6		7.17	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:07

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4875.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/18/2022 3:37:55 AM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

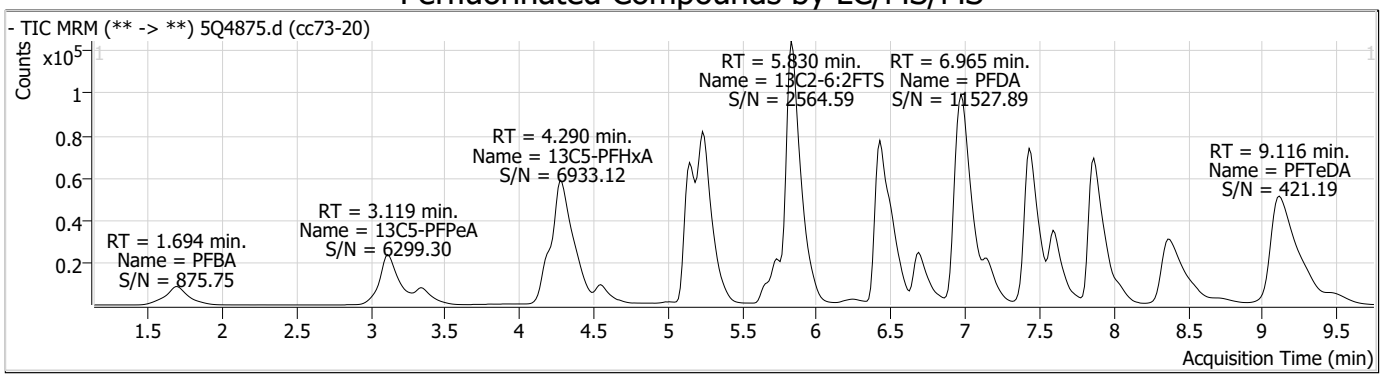
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68356	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	109840	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	177321	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	165734	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	222607	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	222279	20.00	µg/L	0.000
M6-PFDA	6.965	519.0 -> 474.0	176263	20.00	µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	214977	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	251447	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	331494	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	43793	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12349	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12640	20.00	µg/L	0.000
M8-PFOS	6.414	507.0 -> 99.0	20734	20.00	µg/L	-0.014
M2-4:2FTS	4.199	329.0 -> 309.0	59122	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	82209	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	74288	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	38129	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10461	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10351	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	43175	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	59122	18.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-6:2FTS	5.830	429.0 -> 409.0	82209	19.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C2-8:2FTS	7.000	529.0 -> 509.0	74288	19.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-PFDoDA	7.879	615.0 -> 570.0	251447	18.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C2-PFTeDA	9.124	715.0 -> 670.0	331494	19.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C3-PFBS	3.349	302.0 -> 99.0	12349	18.47	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.4%		
13C3-PFHxS	5.194	402.0 -> 99.0	12640	18.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C4-PFBA	1.700	217.0 -> 172.0	68356	18.53	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%		
13C4-PFHpA	5.149	367.0 -> 322.0	165734	18.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	177321	18.75	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C5-PFPeA	3.119	268.0 -> 223.0	109840	18.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%		
13C6-PFDA	6.965	519.0 -> 474.0	176263	18.98	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

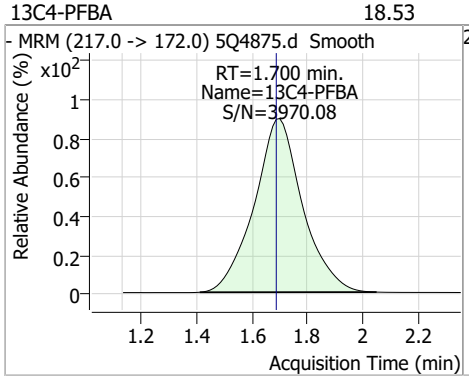
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%			
13C7-PFUnDA	7.446	570.0 -> 525.0	214977	18.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%			
13C8-FOSA	6.530	506.0 -> 78.0	43793	18.63	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%			
13C8-PFOA	5.845	421.0 -> 376.0	222607	18.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%			
13C8-PFOS	6.414	507.0 -> 99.0	20734	18.00	µg/L		-0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
13C9-PFNA	6.443	472.0 -> 427.0	222279	18.86	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%			
d3-MeFOSAA	7.009	573.0 -> 419.0	38129	22.23	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10461	18.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	10351	18.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
d5-EtFOSAA	7.157	589.0 -> 419.0	43175	20.48	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	66285	20.64	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	90104	21.04	µg/L		98
8:2FTS	7.001	527.0 -> 507.0	80698	21.15	µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	30528	22.51	µg/L		100
FOSA	6.519	498.0 -> 78.0	44294	19.77	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	33807	20.63	µg/L		98
PFBA	1.694	213.0 -> 169.0	26119	19.20	µg/L		100
PFBS	3.354	299.0 -> 80.0	36265	19.52	µg/L		100
PFDA	6.965	513.0 -> 469.0	214857	19.58	µg/L		100
PFDoDA	7.880	613.0 -> 569.0	243312	19.53	µg/L		100
PFDS	7.406	599.0 -> 80.0	30793	18.85	µg/L		100
PFHpA	5.150	363.0 -> 319.0	219400	19.43	µg/L		100
PFHpS	5.855	449.0 -> 80.0	33190	19.78	µg/L		99
PFHxA	4.291	313.0 -> 269.0	172037	19.55	µg/L		100
PFHxS	5.195	399.0 -> 80.0	35615	19.43	µg/L	m	99
PFNA	6.444	463.0 -> 419.0	197273	19.50	µg/L		99
PFNS	6.937	549.0 -> 80.0	30789	19.82	µg/L		99
PFOA	5.845	413.0 -> 369.0	266277	19.67	µg/L		100
PFOS	6.416	499.0 -> 80.0	37877	20.39	µg/L	m	84
PFPeA	3.122	263.0 -> 219.0	103315	19.64	µg/L		100
PFPeS	4.398	349.0 -> 80.0	28363	19.13	µg/L		99
PFTeDA	9.116	713.0 -> 669.0	311920	17.52	µg/L		99
PFTrDA	8.375	663.0 -> 619.0	339778	20.10	µg/L		97
PFUnDA	7.448	563.0 -> 519.0	222519	20.02	µg/L		100
11Cl-PF3OUdS	7.603	631.0 -> 451.0	136688	18.83	µg/L		98
9Cl-PF3ONS	6.701	531.0 -> 351.0	118795	18.73	µg/L		99
ADONA	5.248	377.0 -> 251.0	278027	20.45	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	37124	20.01	µg/L		100
MeFOSA	6.966	512.0 -> 169.0	11193	20.61	µg/L		95
4-PFECHS	5.741	461.0 -> 381.0	72771	19.23	µg/L		99
FBSA	4.343	298.0 -> 78.0	62157	20.31	µg/L		99
FHxSA	5.674	398.0 -> 78.0	51924	19.85	µg/L		99

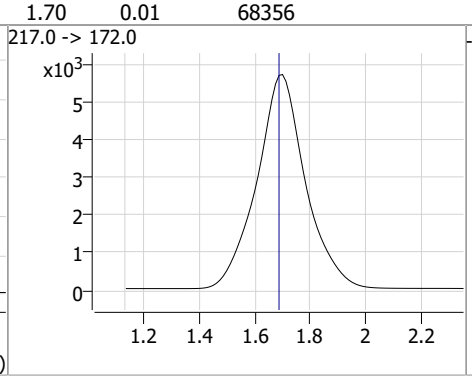
 # = Qualifier out of range, m = manually integrated, + = Area summed

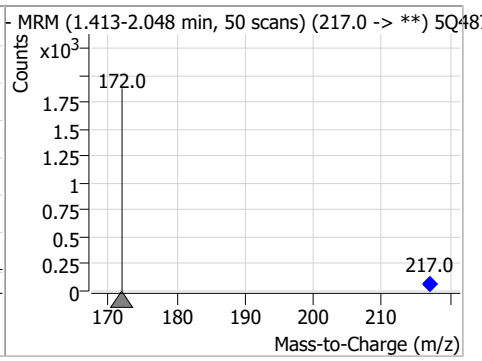
Perfluorinated Compounds by LC/MS/MS



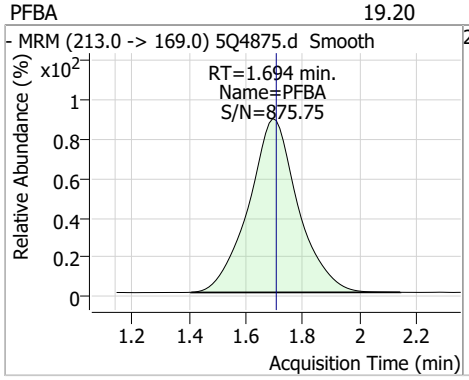
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.53	1.70	0.01	68356				

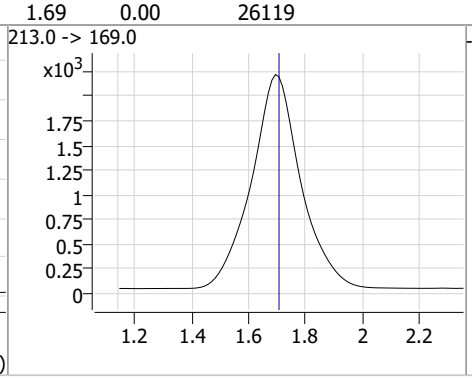


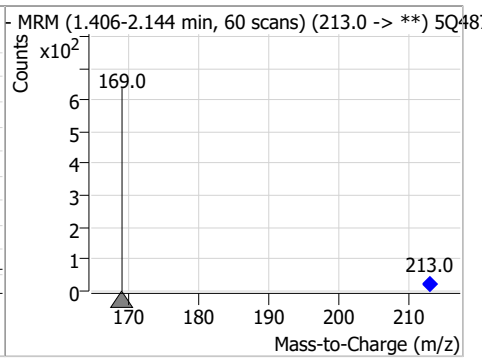




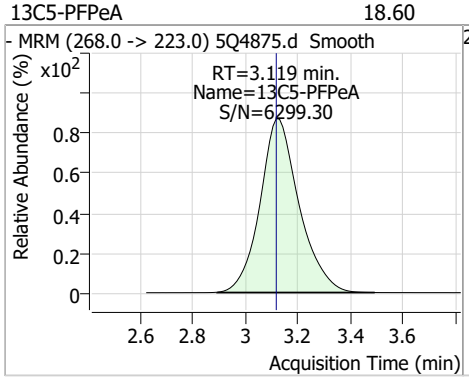
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.20	1.69	0.00	26119				

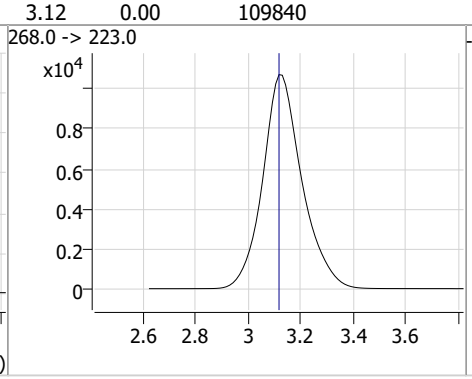


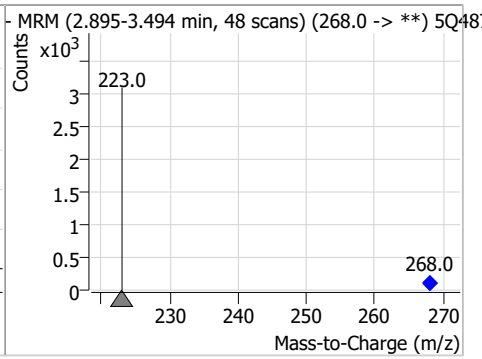




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.60	3.12	0.00	109840				

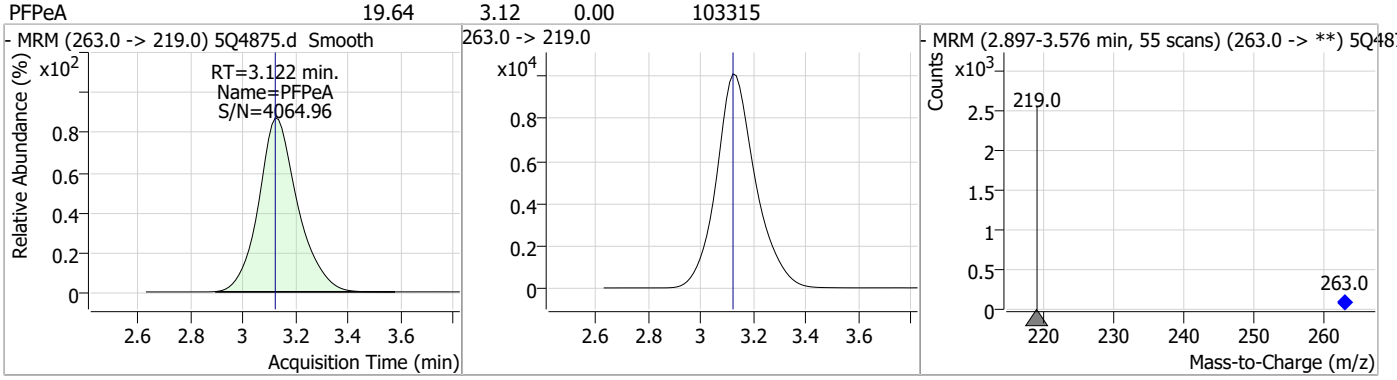




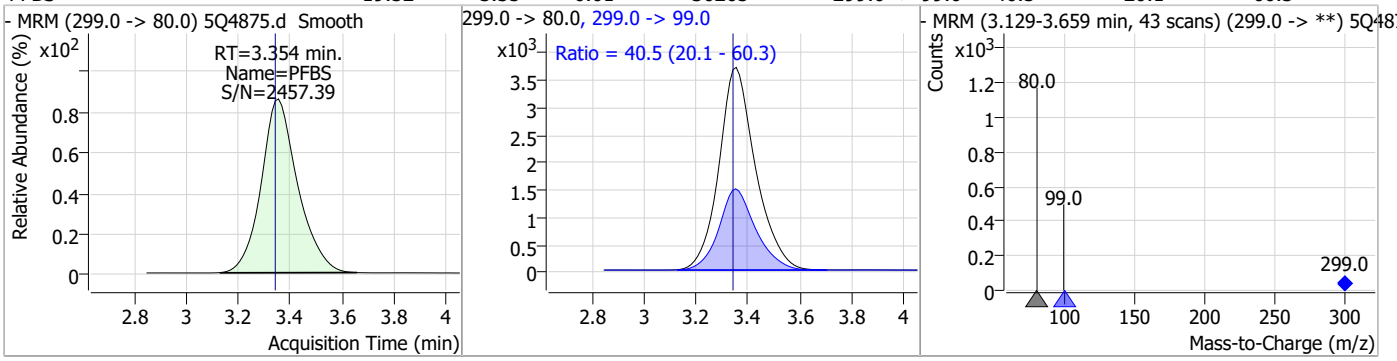


Perfluorinated Compounds by LC/MS/MS

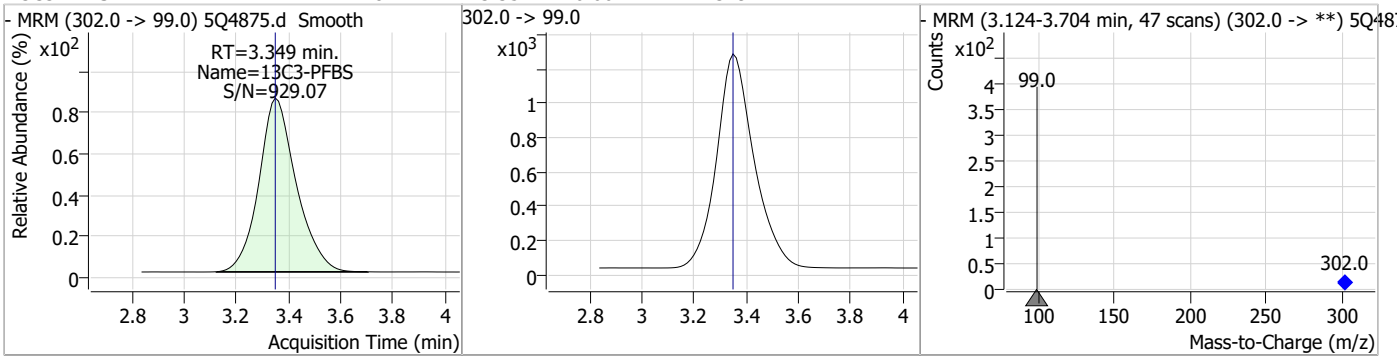
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.64	3.12	0.00	103315				



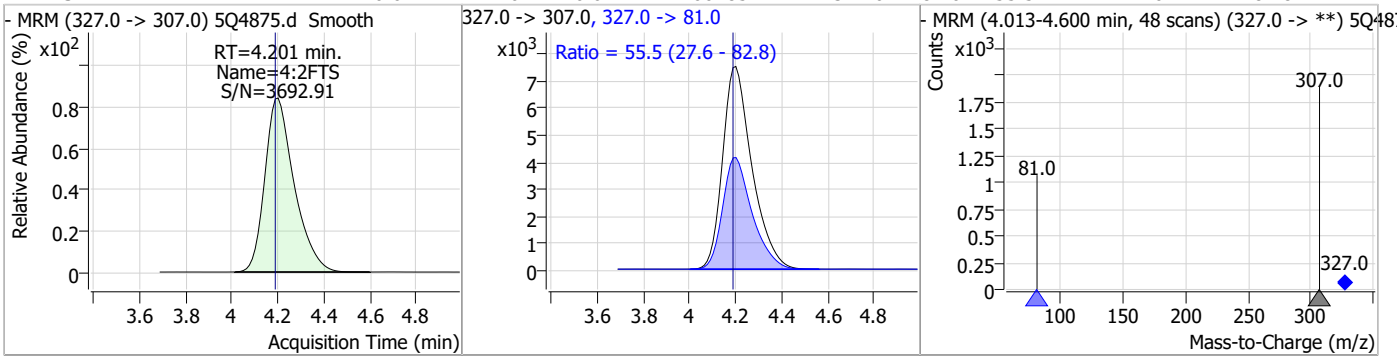
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.52	3.35	0.01	36265	299.0 -> 99.0	40.5	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.47	3.35	0.00	12349				

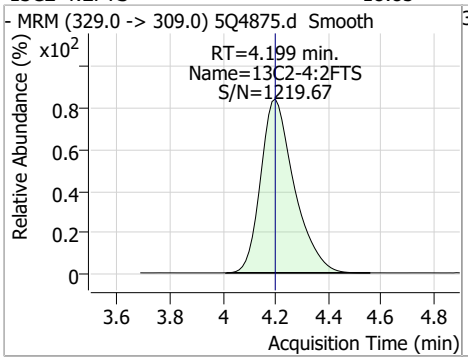


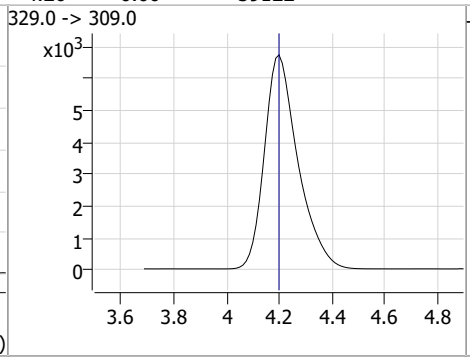
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.64	4.20	0.01	66285	327.0 -> 81.0	55.5	27.6	82.8

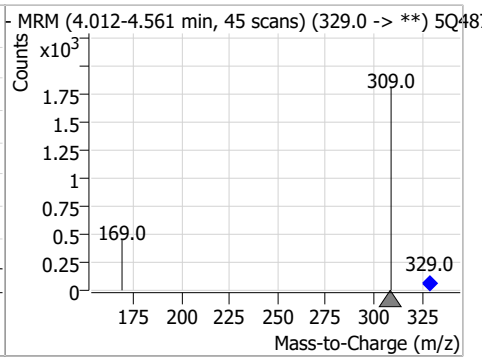


Perfluorinated Compounds by LC/MS/MS

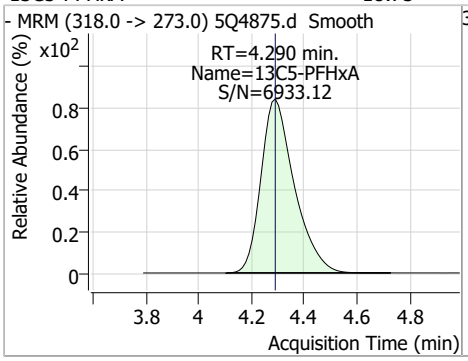
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.85	4.20	0.00	59122				

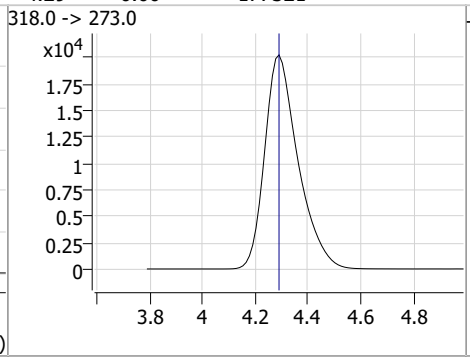


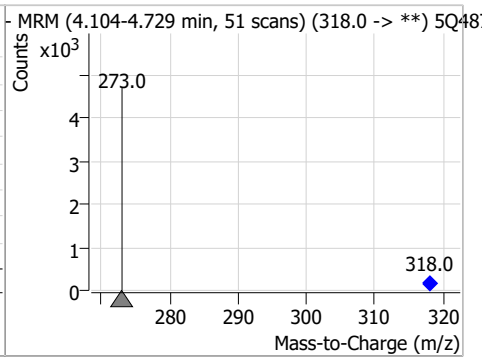




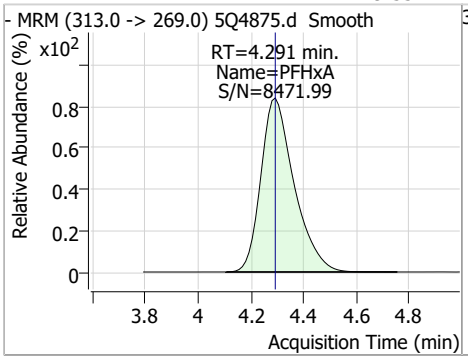
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.75	4.29	0.00	177321				

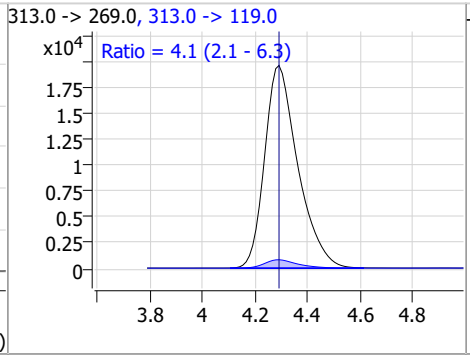


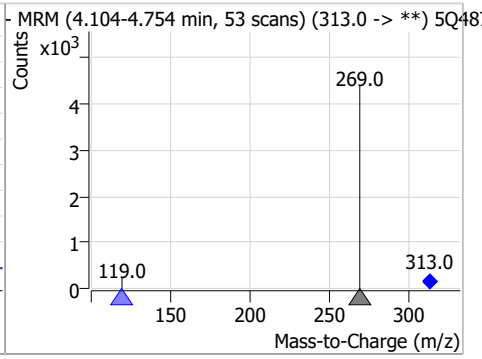




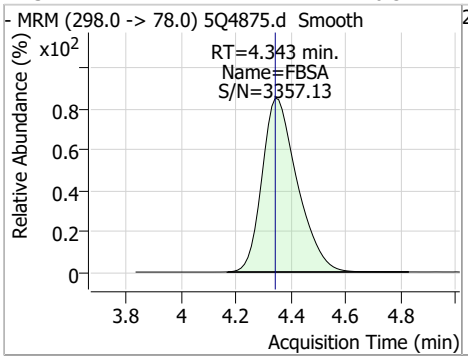
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.55	4.29	0.00	172037	313.0 -> 119.0	4.1	2.1	6.3

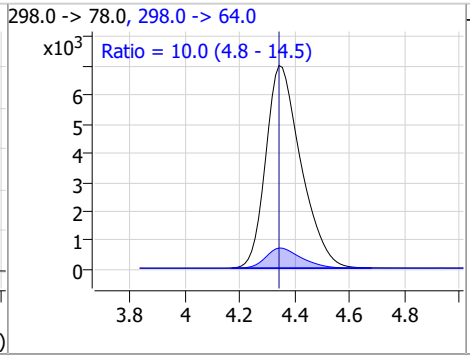


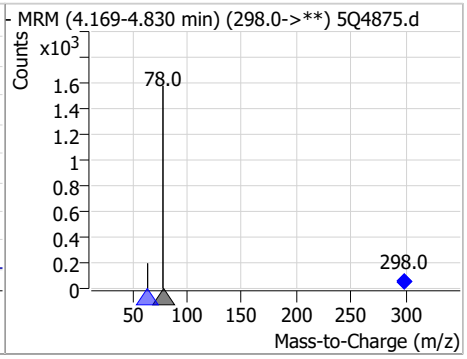




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.31	4.34	0.00	62157	298.0 -> 64.0	10.0	4.8	14.5

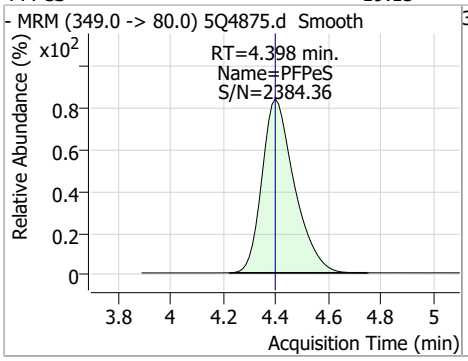


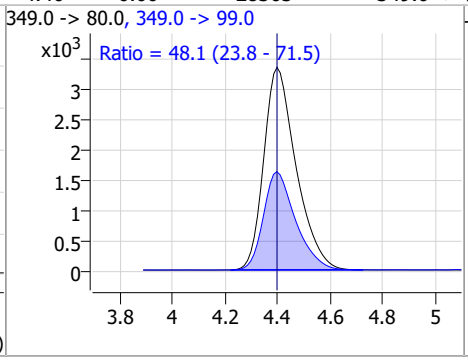


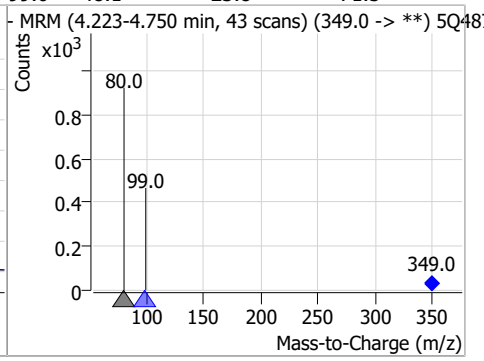


Perfluorinated Compounds by LC/MS/MS

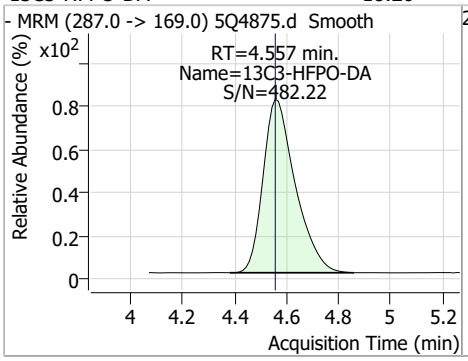
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.13	4.40	0.00	28363	349.0 -> 99.0	48.1	23.8	71.5

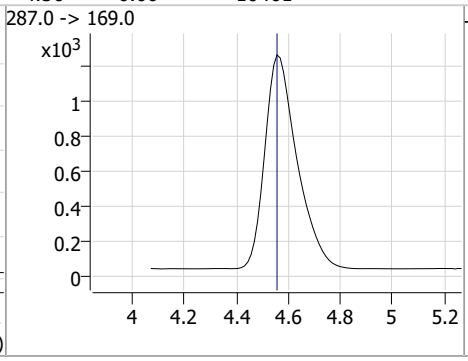


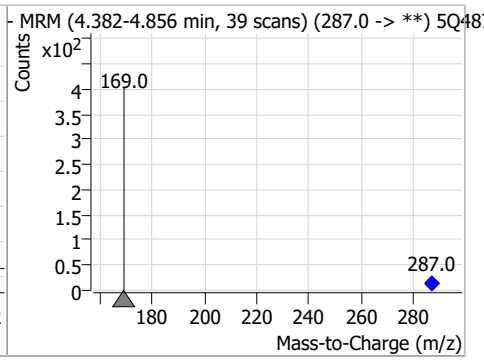




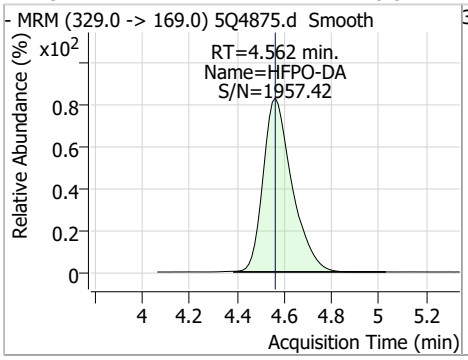
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.26	4.56	0.00	10461				

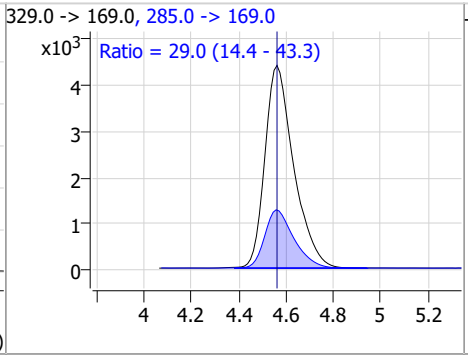


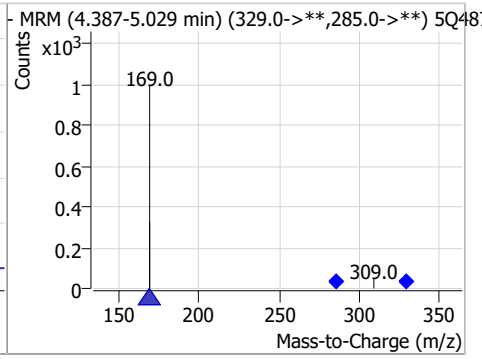




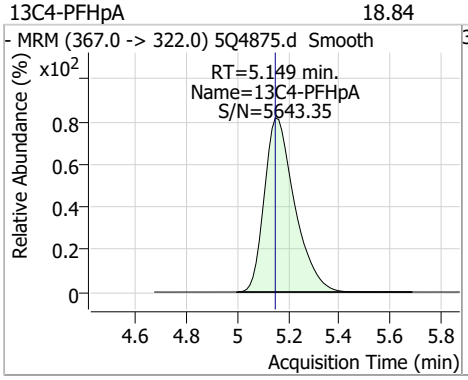
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.01	4.56	0.00	37124	285.0 -> 169.0	29.0	14.4	43.3

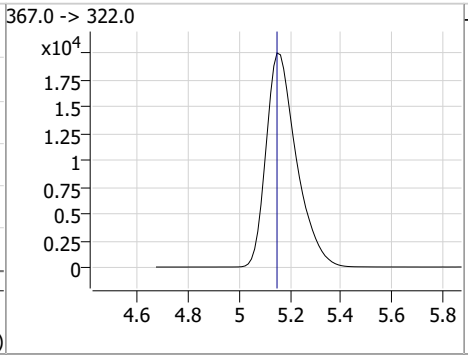


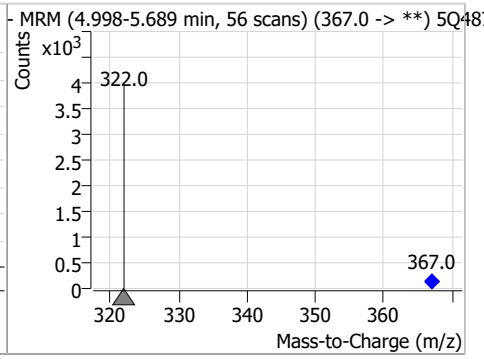




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.84	5.15	0.00	165734				

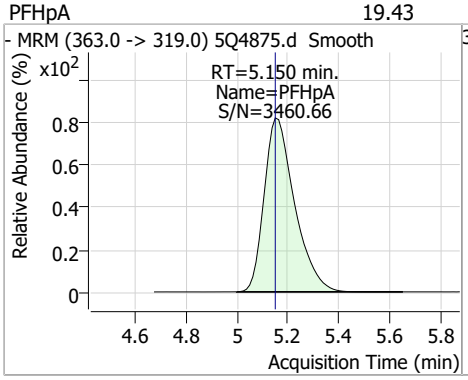


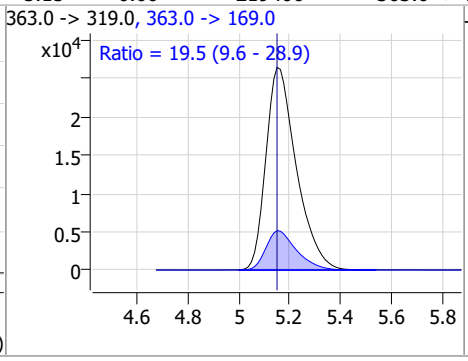


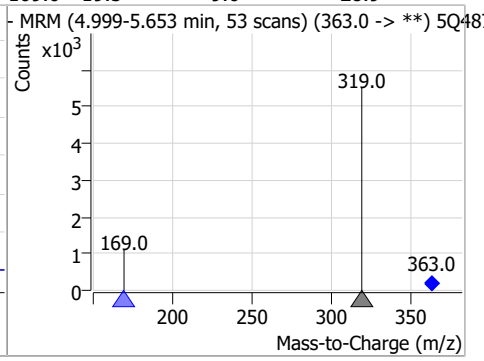


Perfluorinated Compounds by LC/MS/MS

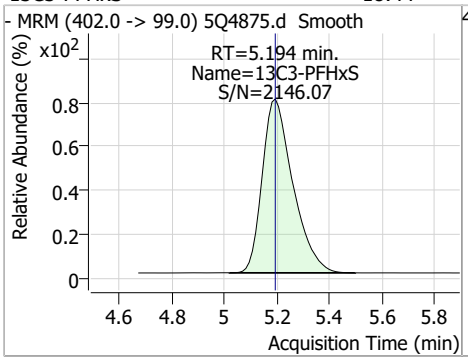
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.43	5.15	0.00	219400	363.0 -> 169.0	19.5	9.6	28.9

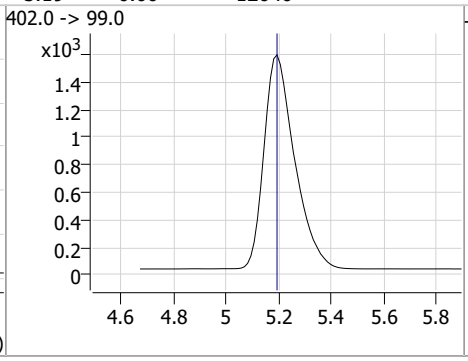


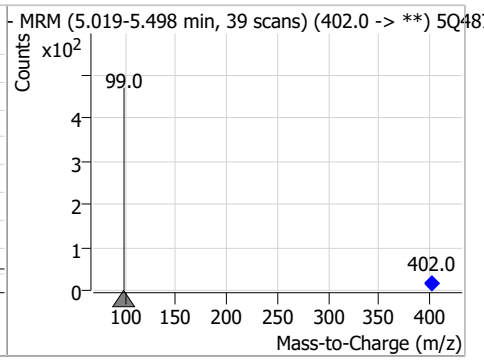




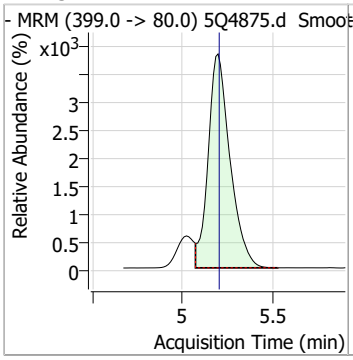
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.44	5.19	0.00	12640				

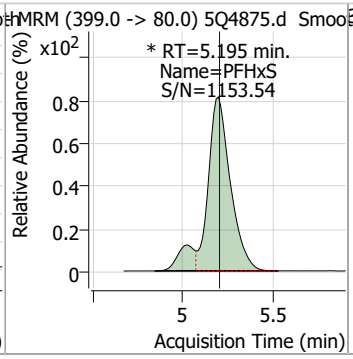


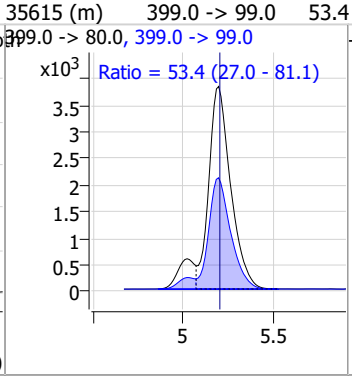


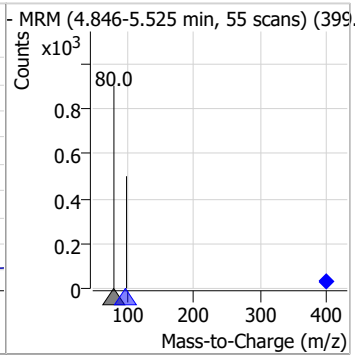


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.43	5.20	0.00	35615 (m)	399.0 -> 99.0	53.4	27.0	81.1

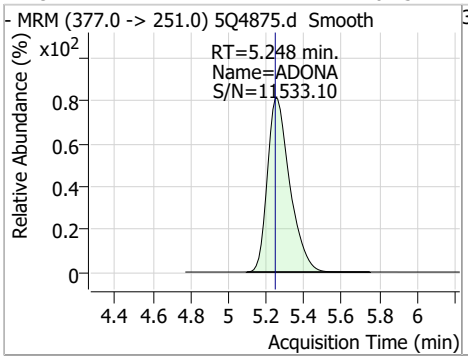


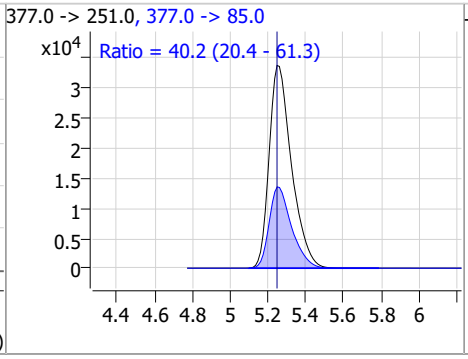


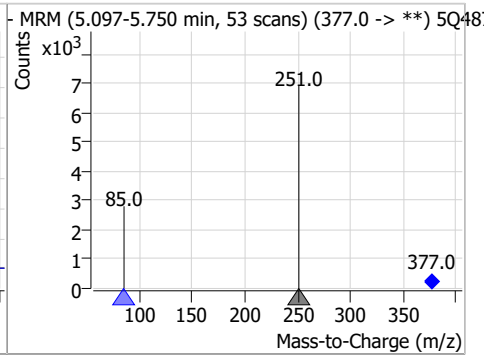




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.45	5.25	0.00	278027	377.0 -> 85.0	40.2	20.4	61.3

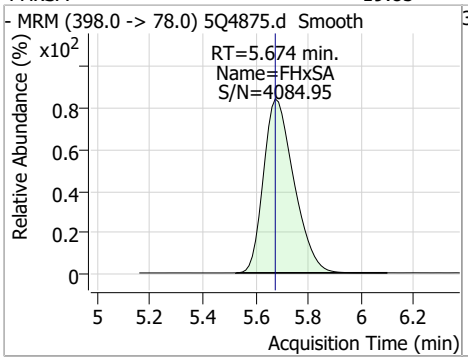


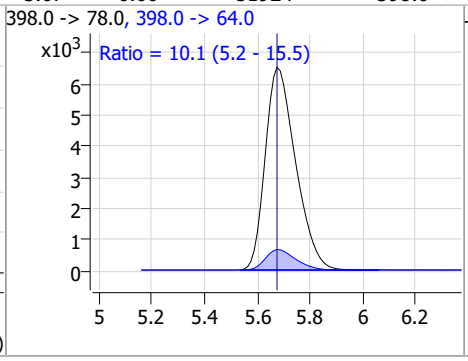


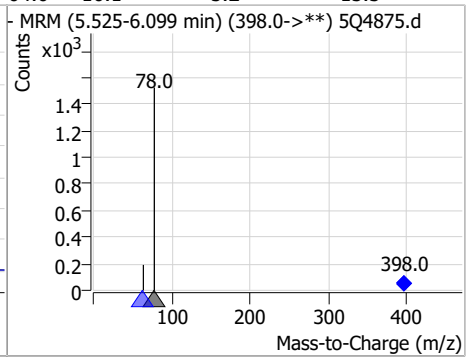


Perfluorinated Compounds by LC/MS/MS

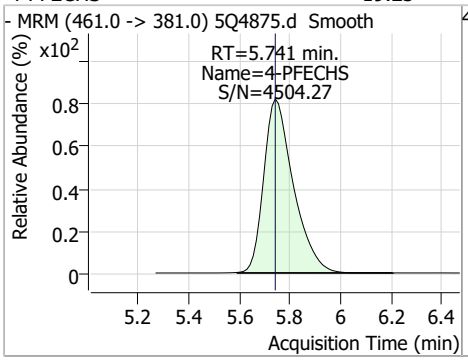
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.85	5.67	0.00	51924	398.0 -> 64.0	10.1	5.2	15.5

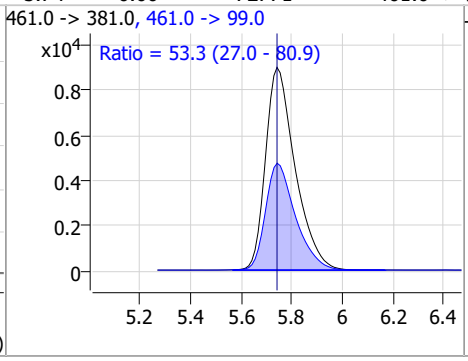


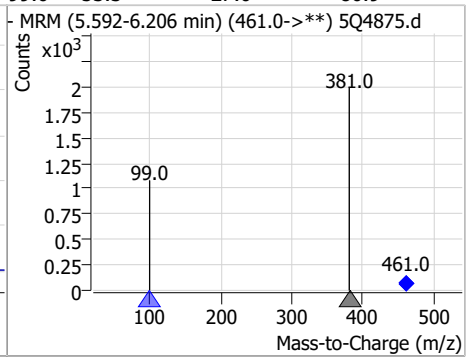




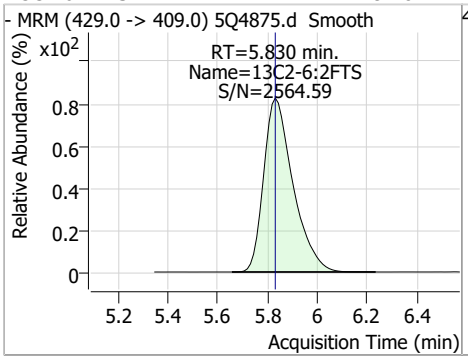
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.23	5.74	0.00	72771	461.0 -> 99.0	53.3	27.0	80.9

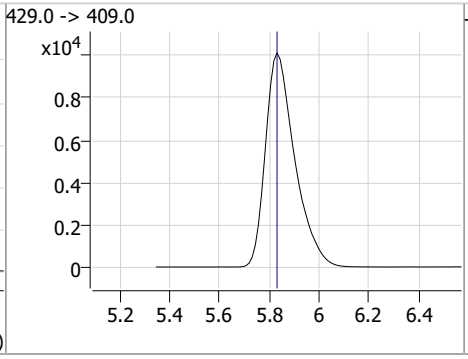


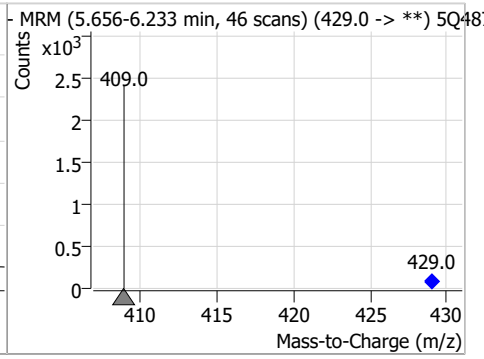




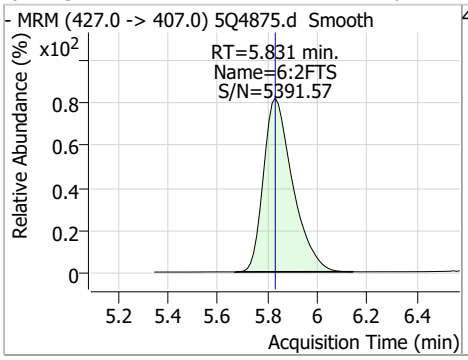
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.18	5.83	0.00	82209				

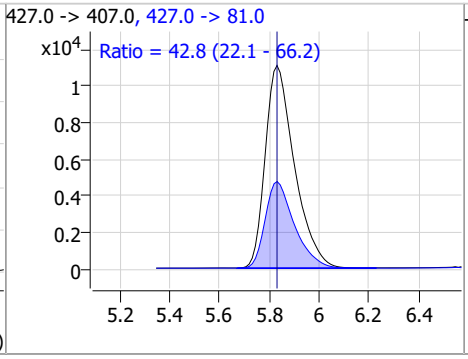


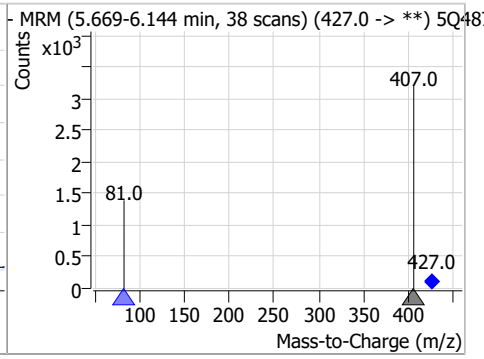




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.04	5.83	0.00	90104	427.0 -> 81.0	42.8	22.1	66.2

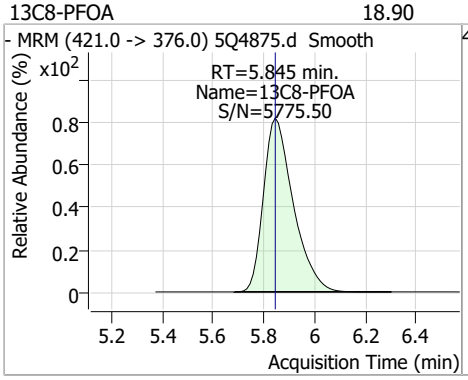


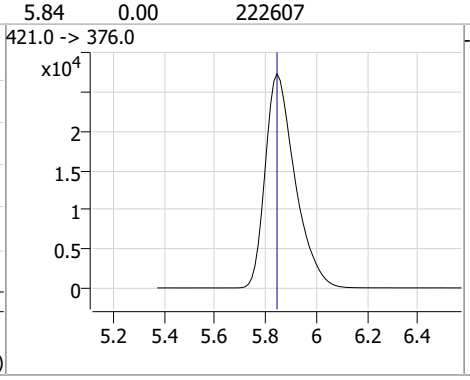


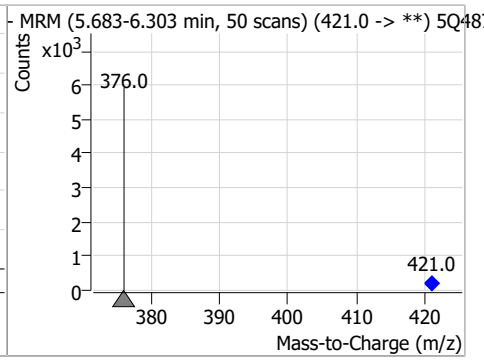


Perfluorinated Compounds by LC/MS/MS

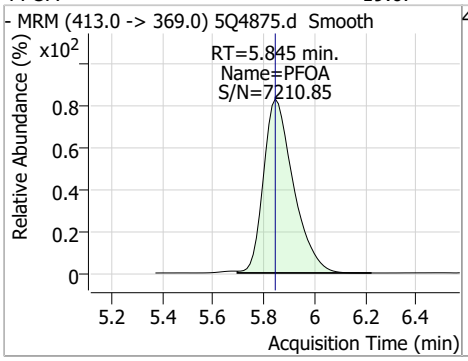
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.90	5.84	0.00	222607				

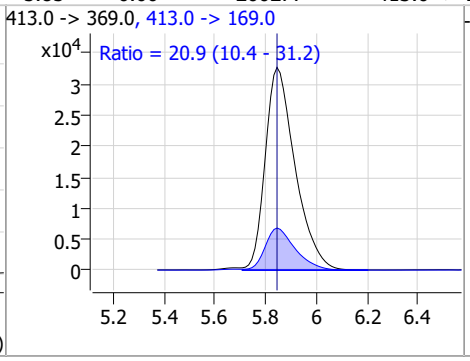


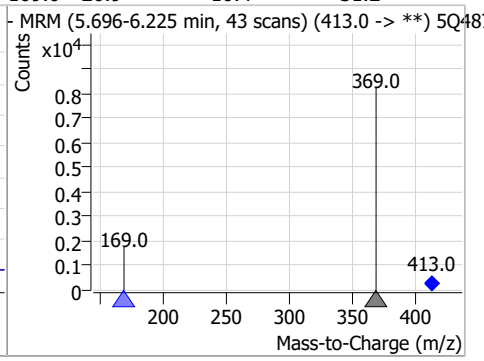




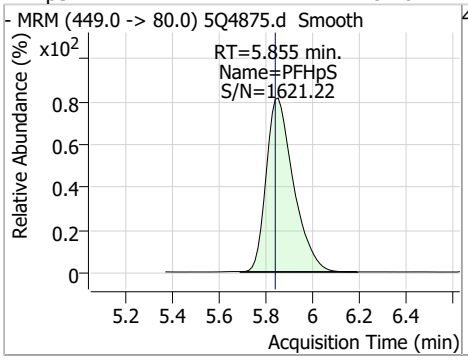
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.67	5.85	0.00	266277	413.0 -> 169.0	20.9	10.4	31.2

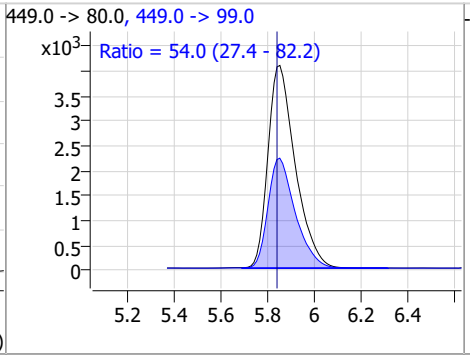


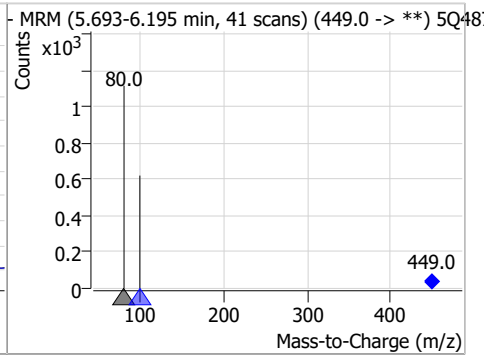




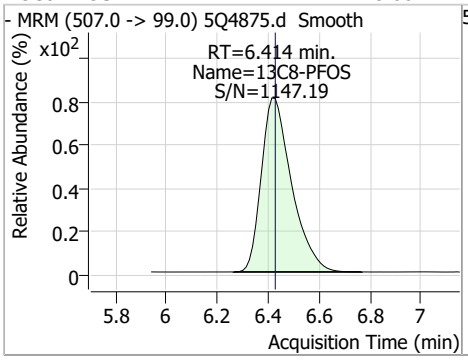
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.78	5.85	0.00	33190	449.0 -> 99.0	54.0	27.4	82.2

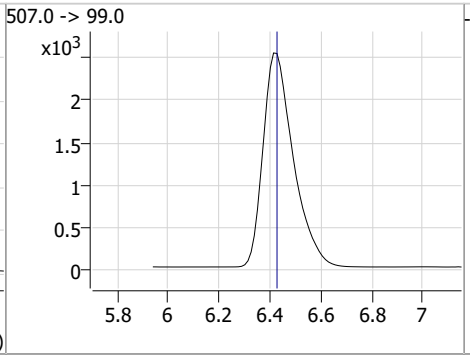


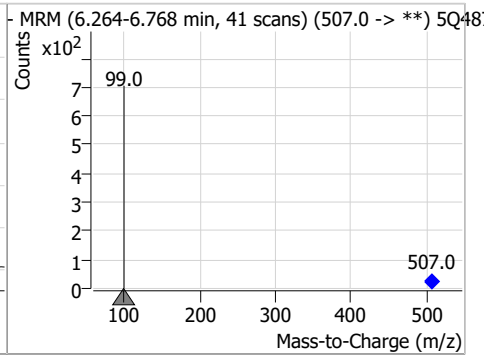




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.00	6.41	-0.01	20734				

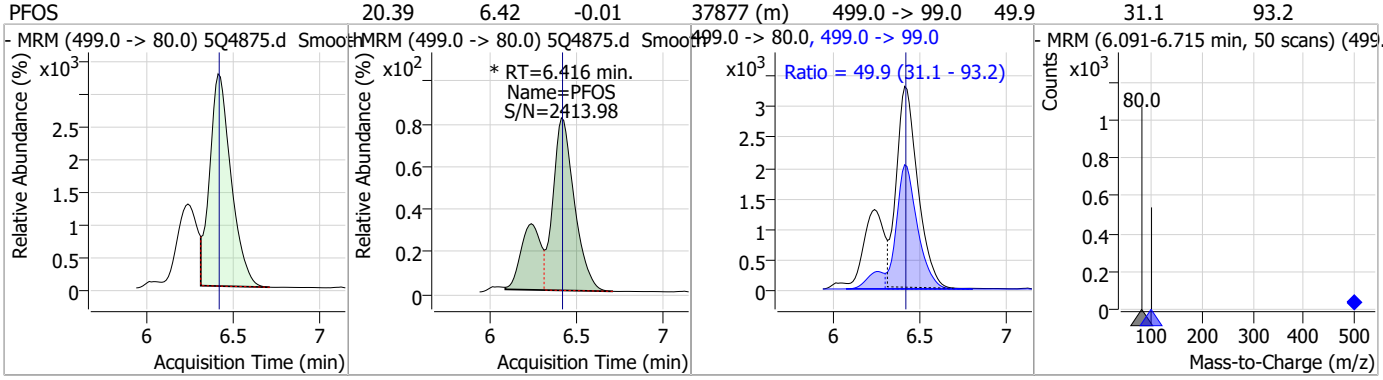




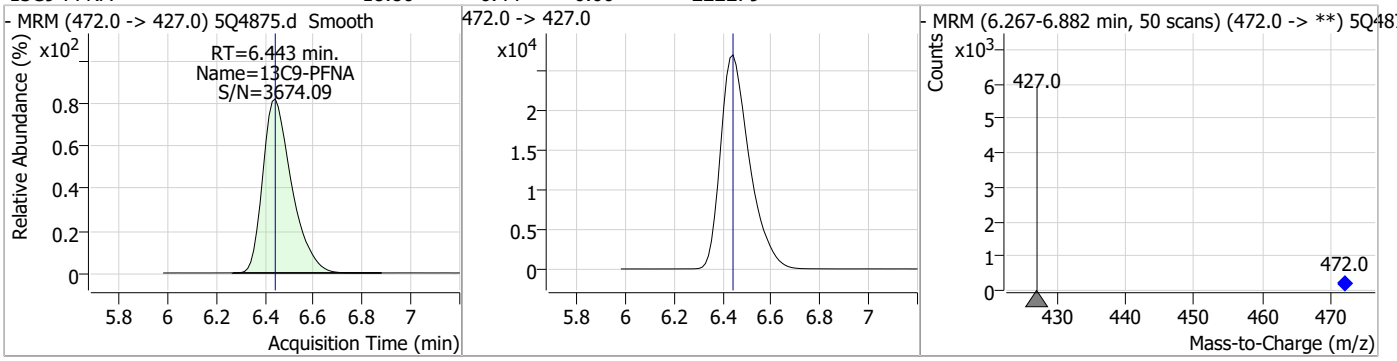


Perfluorinated Compounds by LC/MS/MS

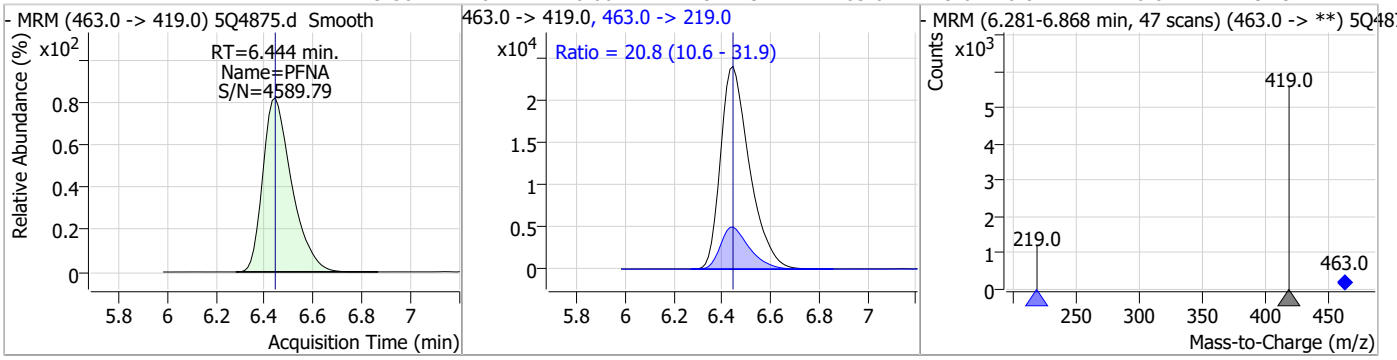
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.39	6.42	-0.01	37877 (m)	499.0 -> 99.0	49.9	31.1	93.2



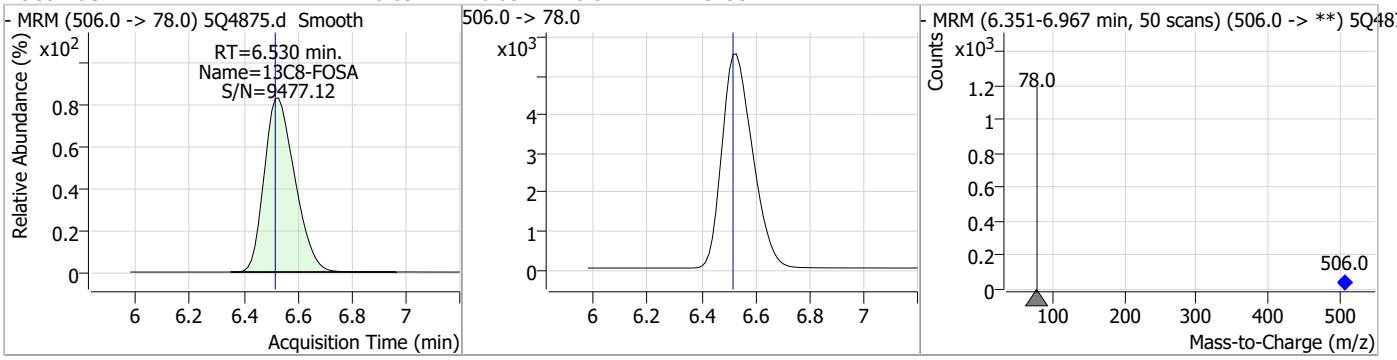
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.86	6.44	0.00	222279				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.50	6.44	0.00	197273	463.0 -> 219.0	20.8	10.6	31.9

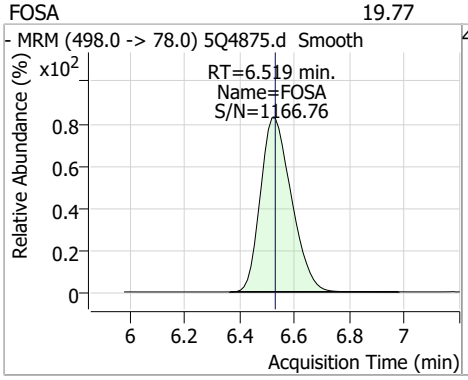


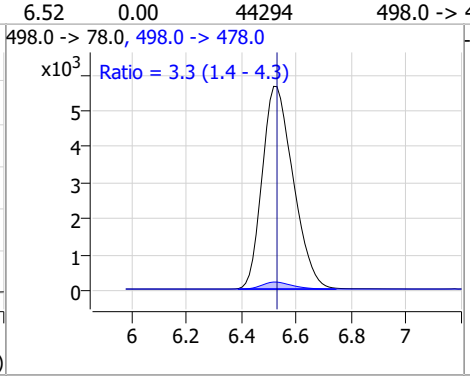
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.63	6.53	0.01	43793				

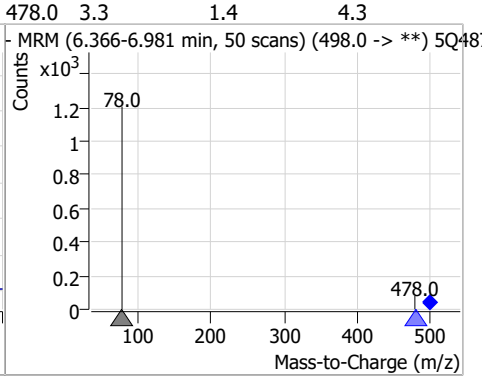


Perfluorinated Compounds by LC/MS/MS

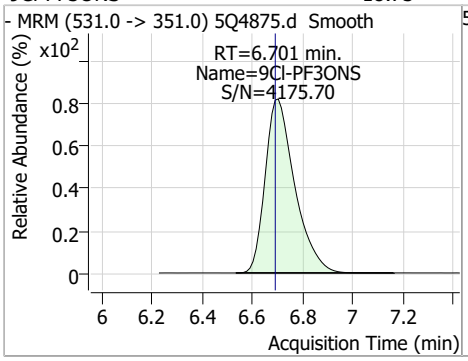
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.77	6.52	0.00	44294	498.0 -> 478.0	3.3	1.4	4.3

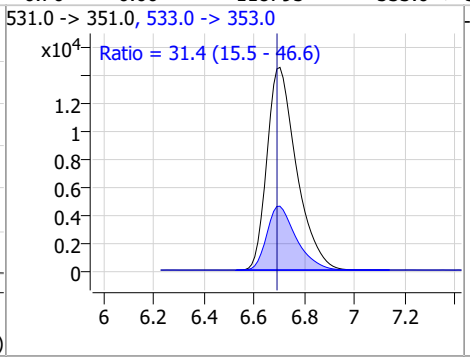


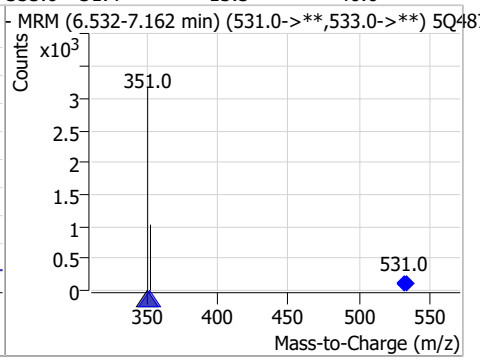




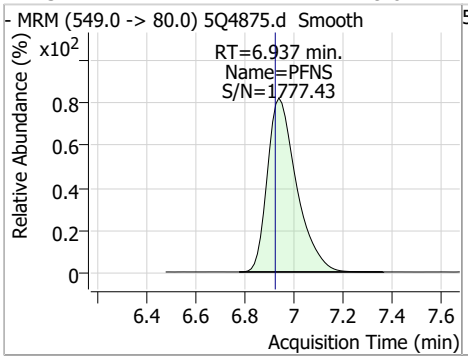
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.73	6.70	0.00	118795	533.0 -> 353.0	31.4	15.5	46.6

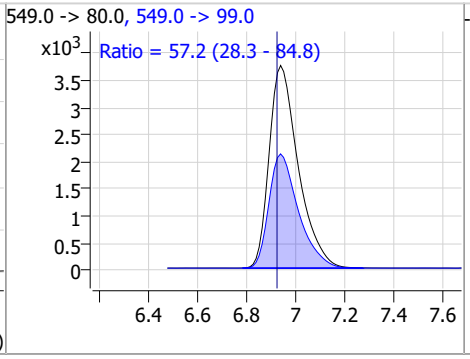


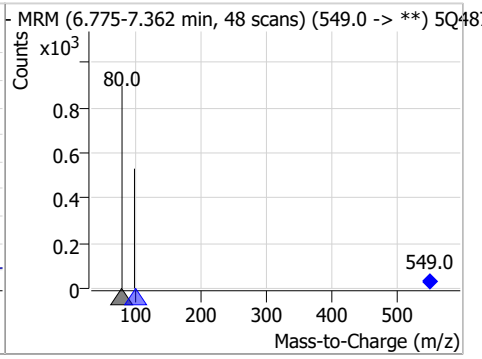




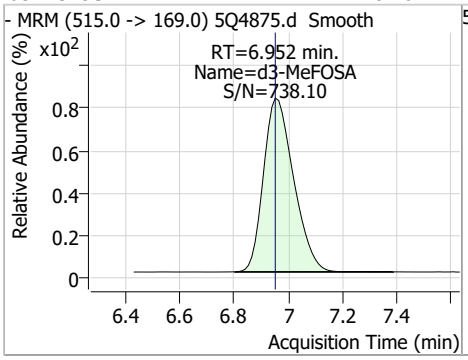
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.82	6.94	0.00	30789	549.0 -> 99.0	57.2	28.3	84.8

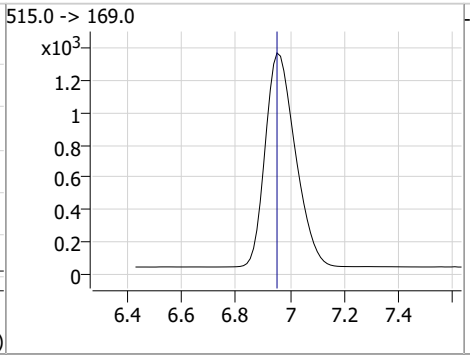


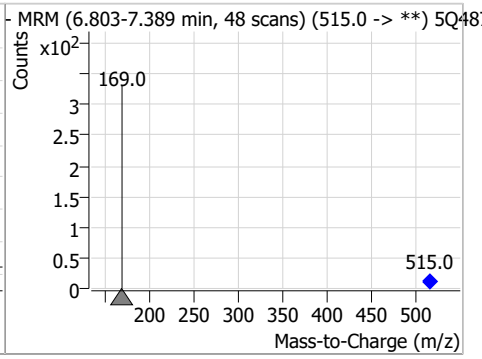




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.40	6.95	0.00	10351				

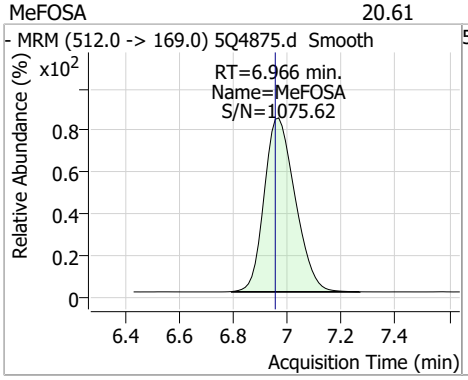


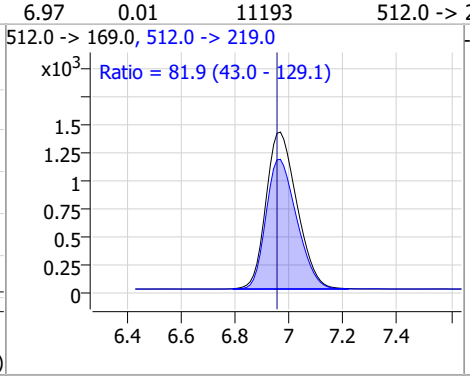


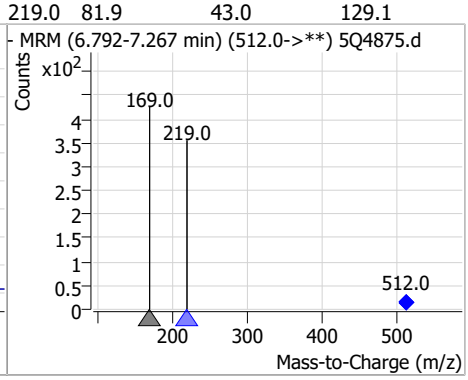


Perfluorinated Compounds by LC/MS/MS

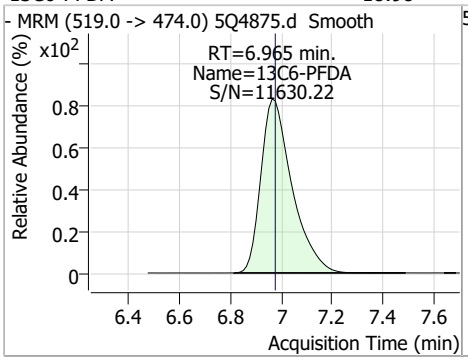
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.61	6.97	0.01	11193	512.0 -> 219.0	81.9	43.0	129.1

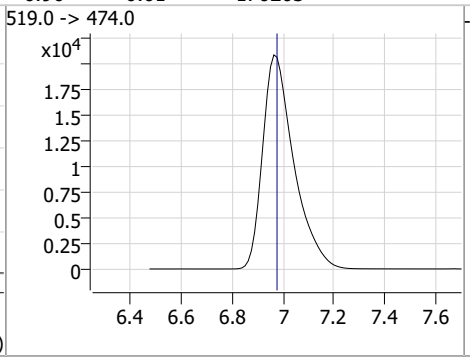


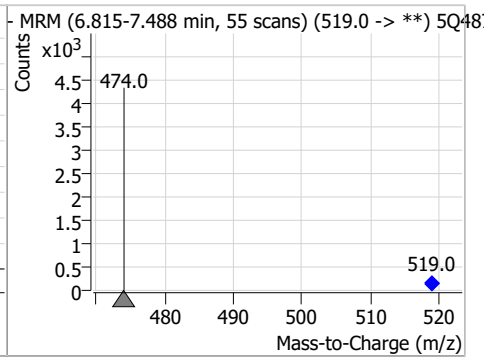




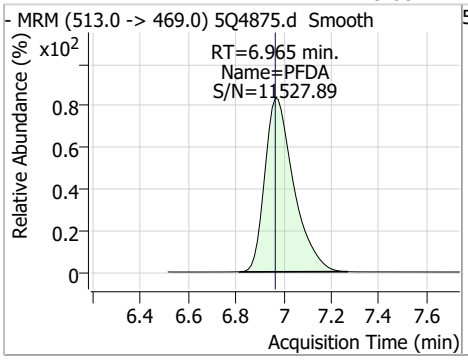
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.98	6.96	-0.01	176263				

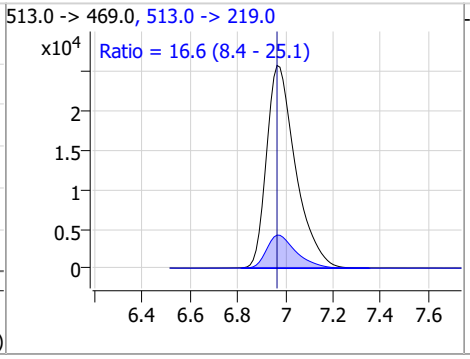


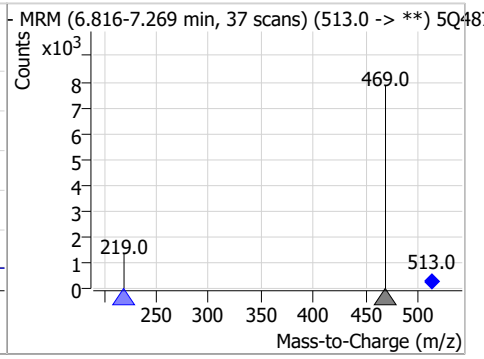




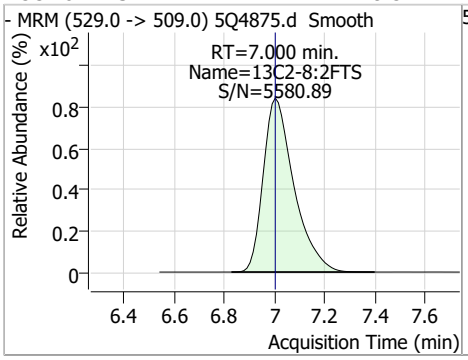
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.58	6.97	-0.01	214857	513.0 -> 219.0	16.6	8.4	25.1

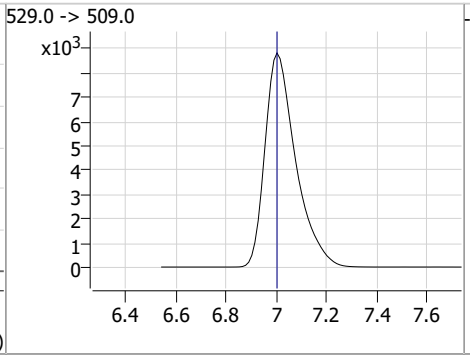


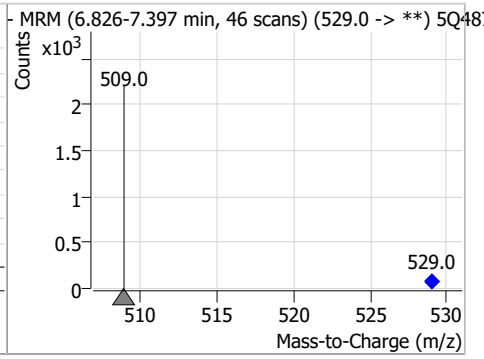




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.34	7.00	0.00	74288				

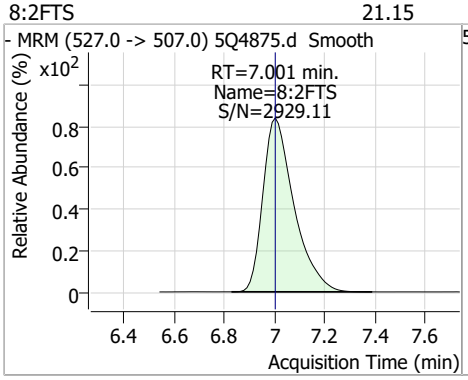


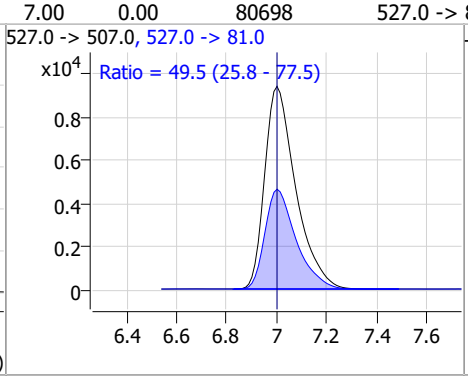


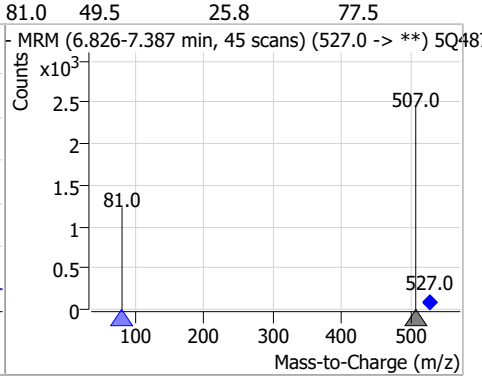


Perfluorinated Compounds by LC/MS/MS

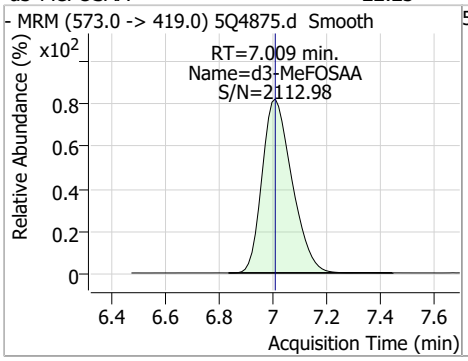
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.15	7.00	0.00	80698	527.0 -> 81.0	49.5	25.8	77.5

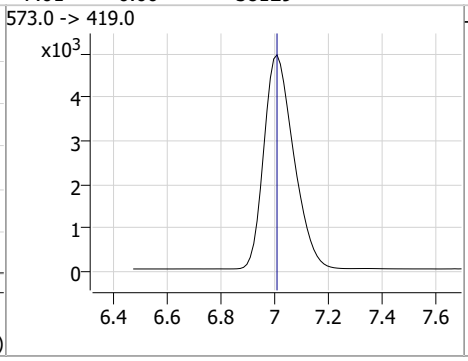


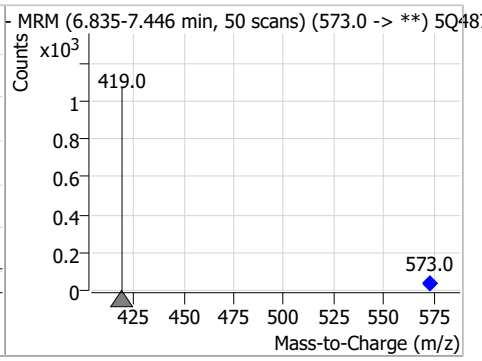




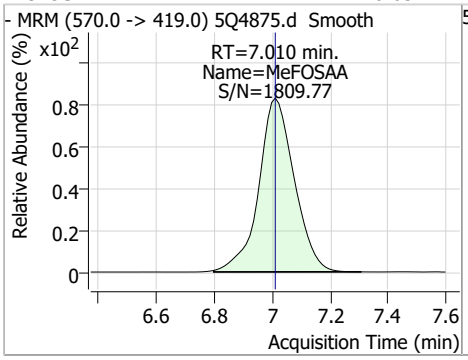
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.23	7.01	0.00	38129				

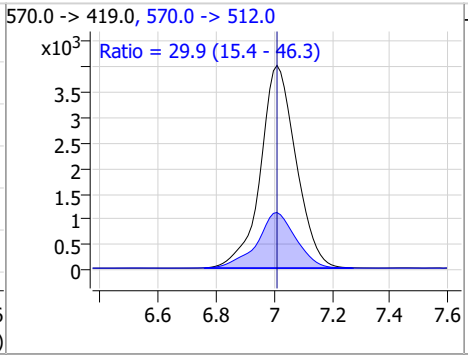


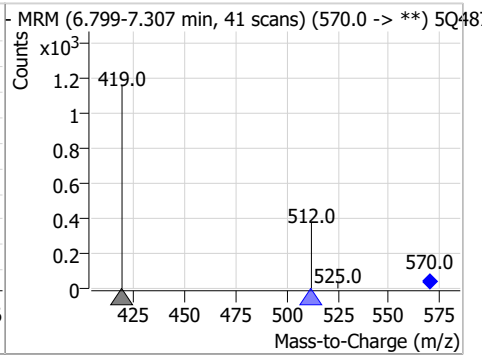




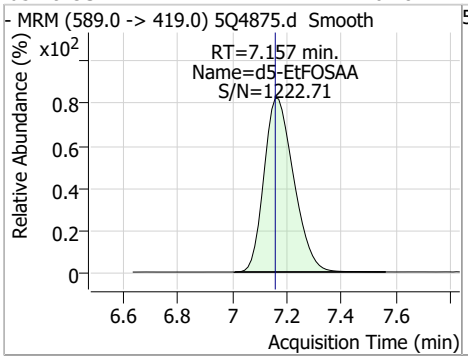
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.63	7.01	0.00	33807	570.0 -> 512.0	29.9	15.4	46.3

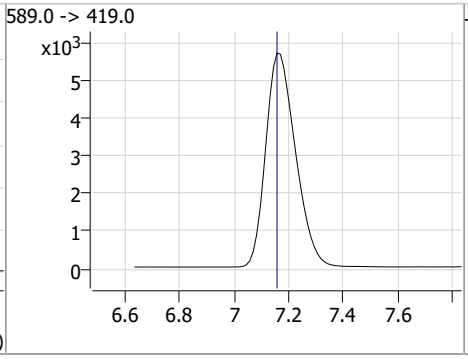


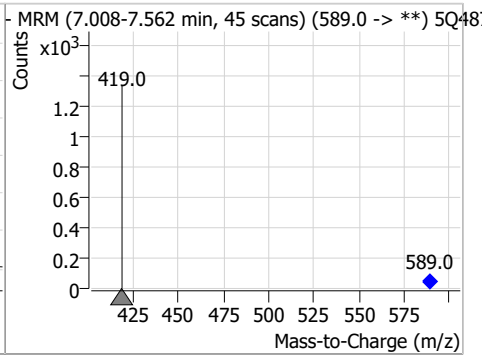




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.48	7.16	0.00	43175				

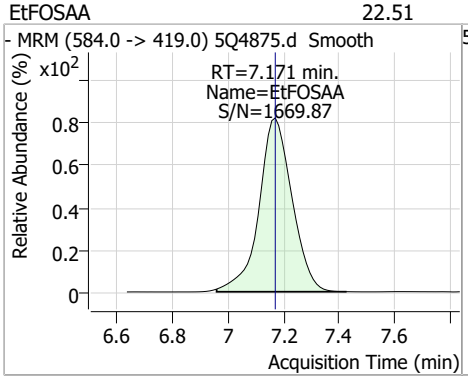


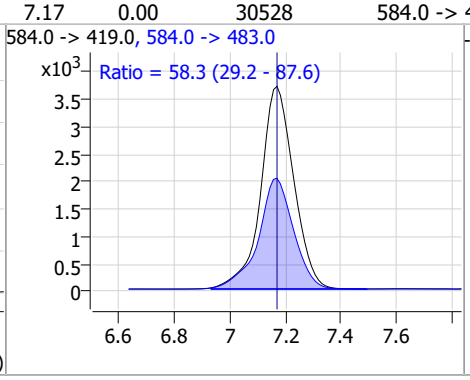


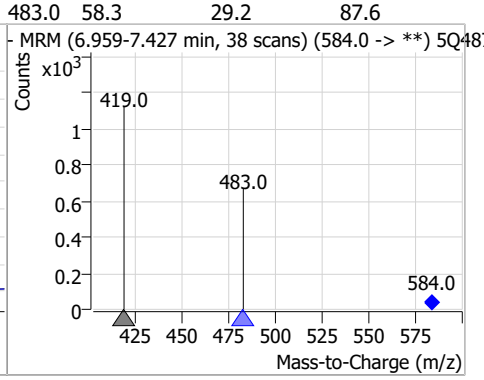


Perfluorinated Compounds by LC/MS/MS

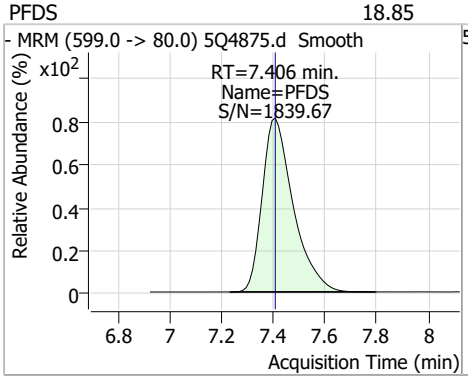
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	22.51	7.17	0.00	30528	584.0 -> 483.0	58.3	29.2	87.6

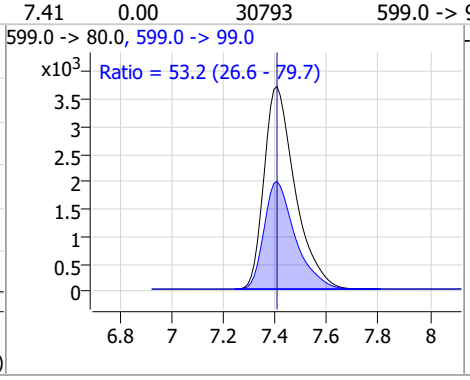


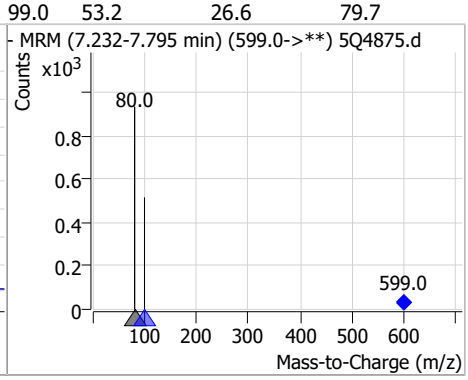




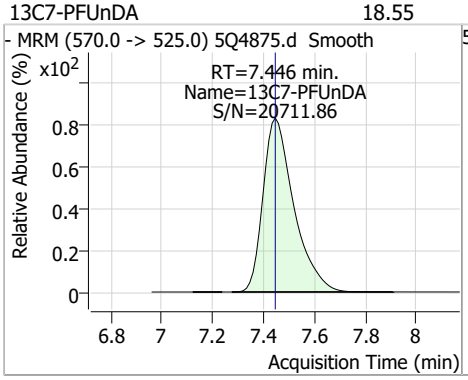
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.85	7.41	0.00	30793	599.0 -> 99.0	53.2	26.6	79.7

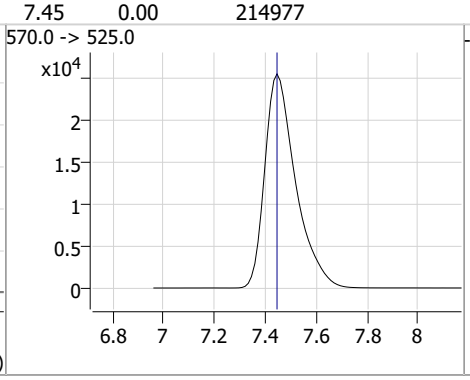


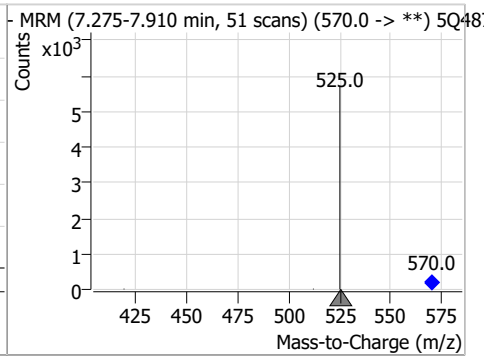




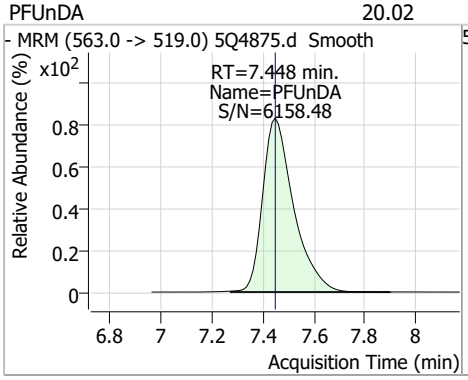
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.55	7.45	0.00	214977				

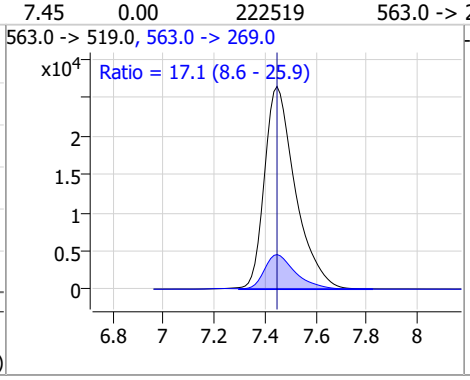


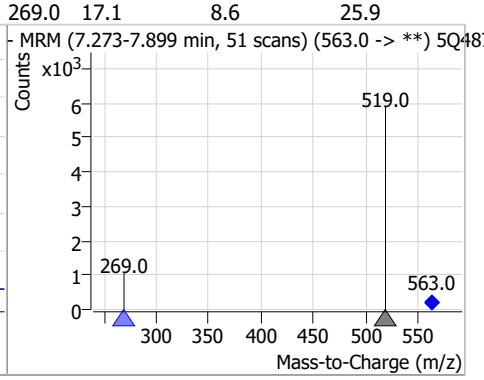




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.02	7.45	0.00	222519	563.0 -> 269.0	17.1	8.6	25.9

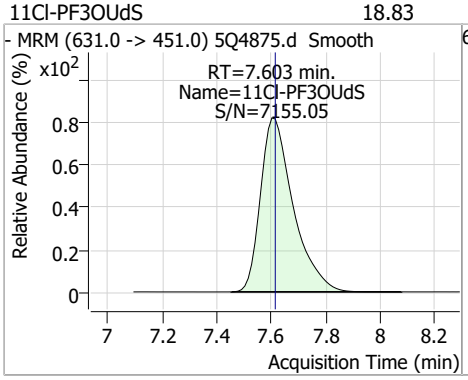


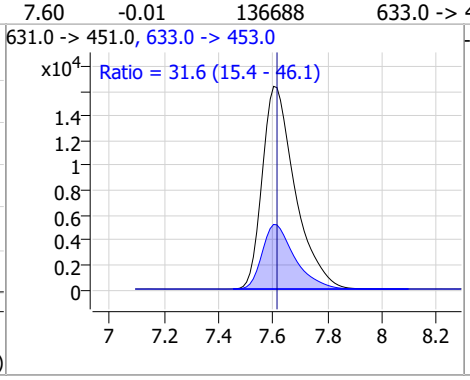


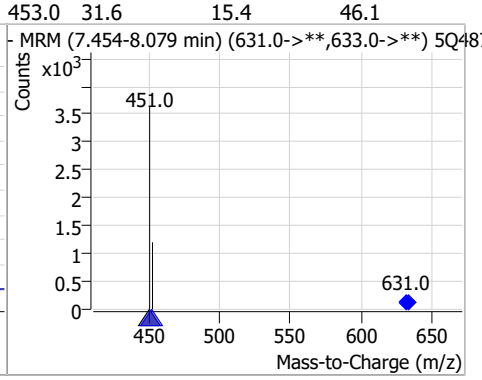


Perfluorinated Compounds by LC/MS/MS

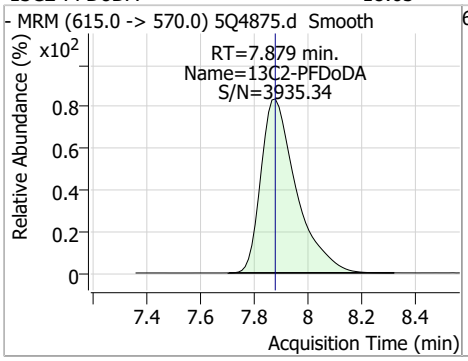
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.83	7.60	-0.01	136688	633.0 -> 453.0	31.6	15.4	46.1

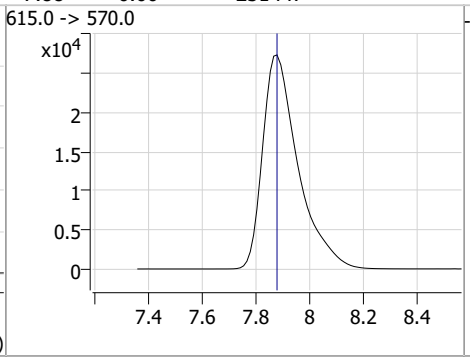


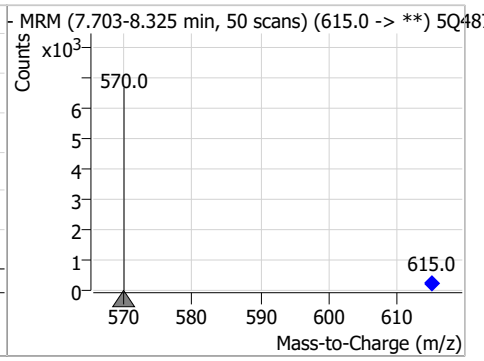




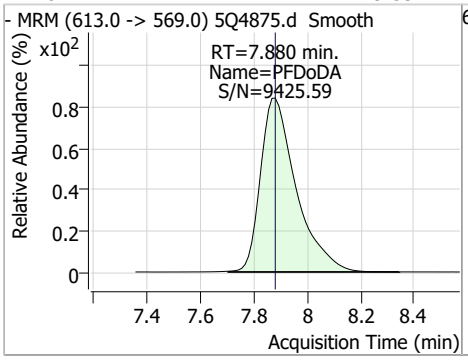
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.65	7.88	0.00	251447				

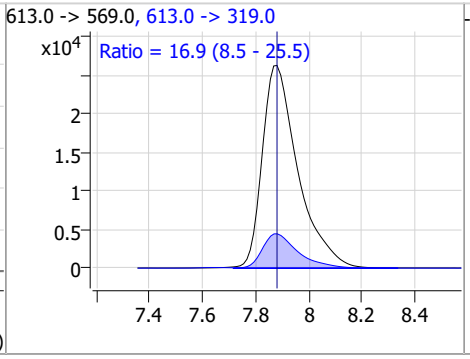


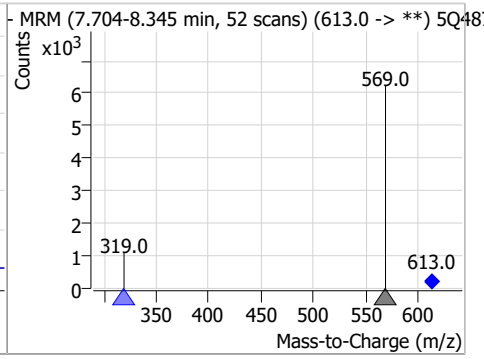




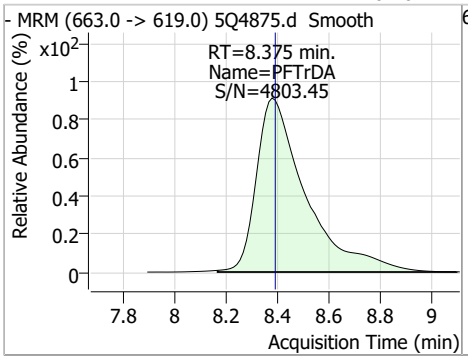
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.53	7.88	0.00	243312	613.0 -> 319.0	16.9	8.5	25.5

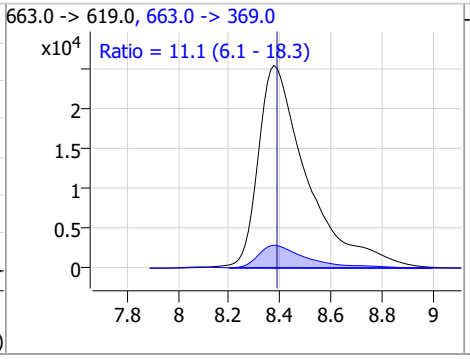


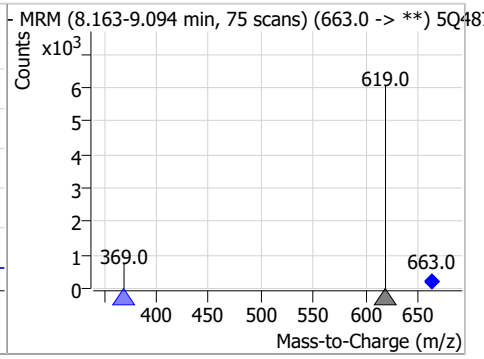




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.10	8.38	-0.01	339778	663.0 -> 369.0	11.1	6.1	18.3

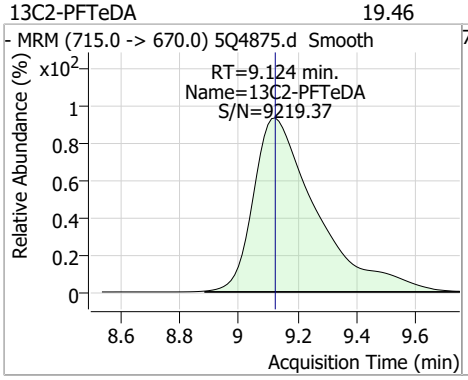


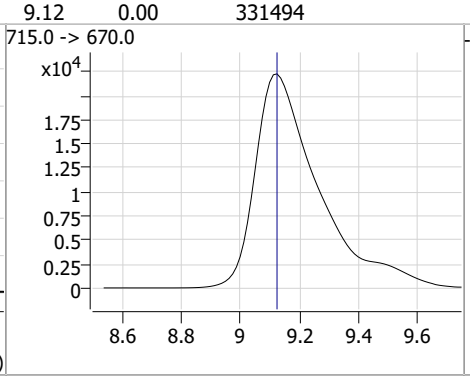


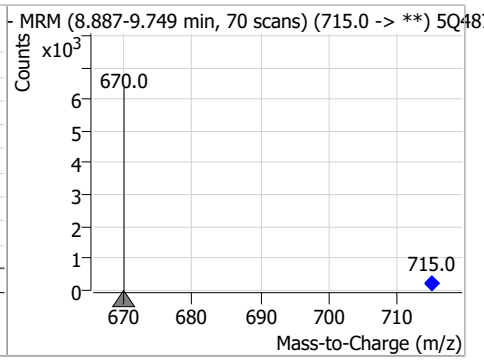


Perfluorinated Compounds by LC/MS/MS

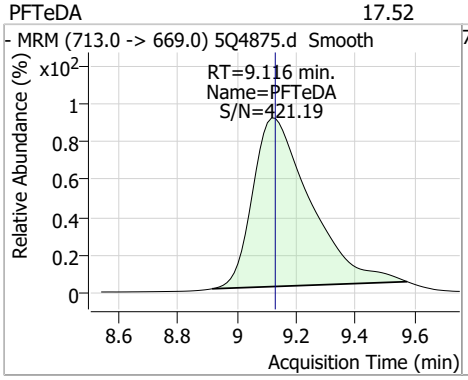
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.46	9.12	0.00	331494				

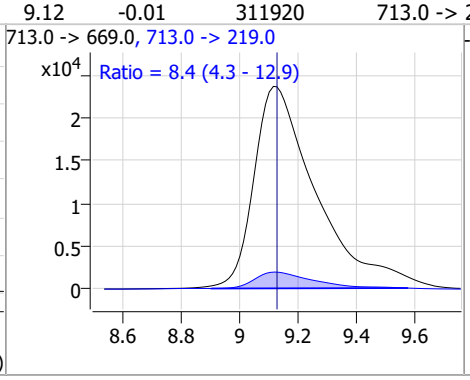


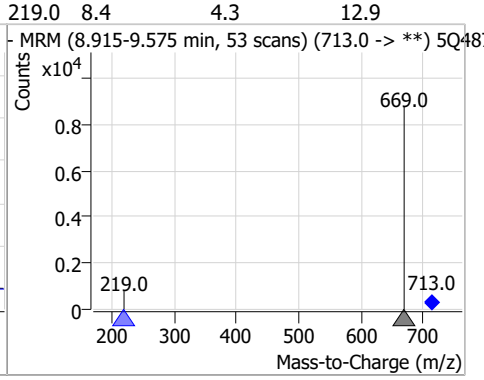




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.52	9.12	-0.01	311920	713.0 -> 219.0	8.4	4.3	12.9







7.7.74

7

Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4875.D
Injection Time: 09/18/22 03:37
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:07

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4887.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/18/2022 6:41:59 AM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

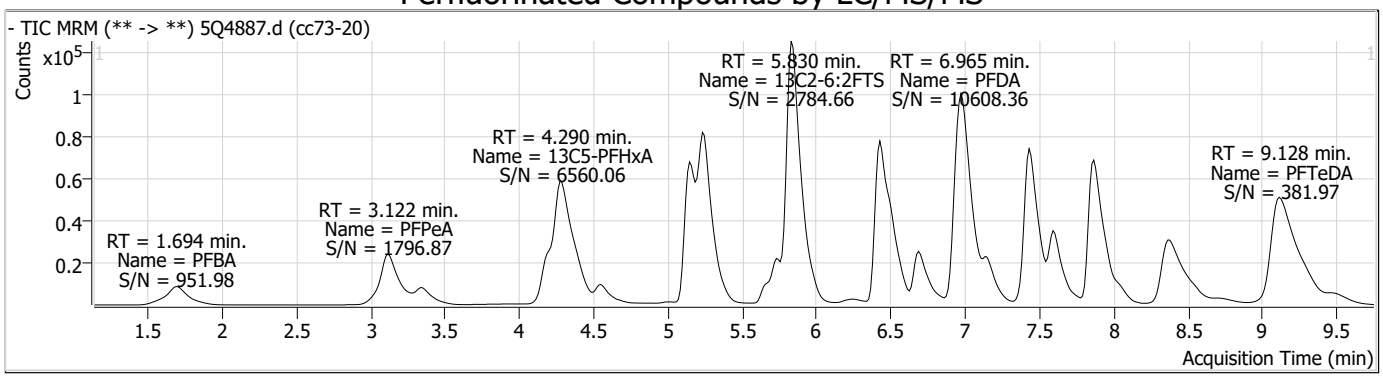
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68766	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	111127	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	176684	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	166331	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	225060	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	221793	20.00	µg/L	0.000
M6-PFDA	6.965	519.0 -> 474.0	174433	20.00	µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	214781	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	250265	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	328804	20.00	µg/L	0.000
M8-FOSA	6.517	506.0 -> 78.0	42766	20.00	µg/L	0.000
M3-PFBS	3.349	302.0 -> 99.0	12263	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12603	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	20826	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	59223	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	83328	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	75141	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	38814	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10308	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	10041	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	43729	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	59223	18.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%		
13C2-6:2FTS	5.830	429.0 -> 409.0	83328	19.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-8:2FTS	7.000	529.0 -> 509.0	75141	19.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.8%		
13C2-PFDoDA	7.879	615.0 -> 570.0	250265	18.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C2-PFTeDA	9.124	715.0 -> 670.0	328804	19.30	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
13C3-PFBS	3.349	302.0 -> 99.0	12263	18.34	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C3-PFHxS	5.194	402.0 -> 99.0	12603	18.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C4-PFBA	1.700	217.0 -> 172.0	68766	18.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C4-PFHpA	5.149	367.0 -> 322.0	166331	18.91	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%		
13C5-PFHxA	4.290	318.0 -> 273.0	176684	18.69	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.4%		
13C5-PFPeA	3.132	268.0 -> 223.0	111127	18.82	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C6-PFDA	6.965	519.0 -> 474.0	174433	18.78	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

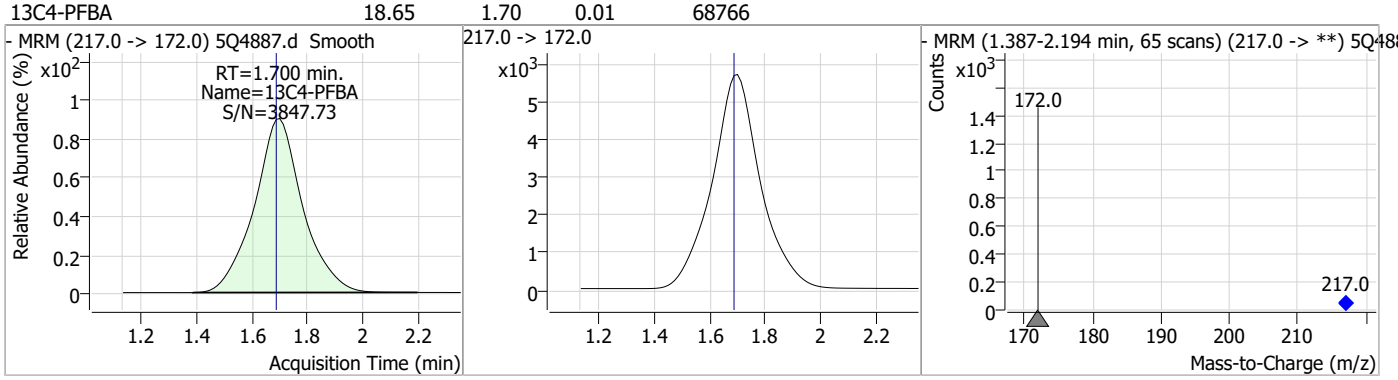
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%			
13C7-PFUnDA	7.446	570.0 -> 525.0	214781	18.53	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.7%			
13C8-FOSA	6.517	506.0 -> 78.0	42766	18.20	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%			
13C8-PFOA	5.845	421.0 -> 376.0	225060	19.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C8-PFOS	6.428	507.0 -> 99.0	20826	18.08	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.4%			
13C9-PFNA	6.443	472.0 -> 427.0	221793	18.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%			
d3-MeFOSAA	7.009	573.0 -> 419.0	38814	22.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%			
13C3-HFPO-DA	4.557	287.0 -> 169.0	10308	17.99	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	10041	17.85	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.3%			
d5-EtFOSAA	7.157	589.0 -> 419.0	43729	20.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	66715	20.74	µg/L		100
6:2FTS	5.831	427.0 -> 407.0	90616	20.87	µg/L		96
8:2FTS	7.001	527.0 -> 507.0	82430	21.36	µg/L		96
EtFOSAA	7.171	584.0 -> 419.0	32484	23.64	µg/L		96
FOSA	6.519	498.0 -> 78.0	44683	20.42	µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	34708	20.81	µg/L		100
PFBA	1.694	213.0 -> 169.0	25845	18.89	µg/L		100
PFBS	3.354	299.0 -> 80.0	36428	19.75	µg/L		99
PFDA	6.965	513.0 -> 469.0	217116	20.00	µg/L		100
PFDoDA	7.867	613.0 -> 569.0	240309	19.38	µg/L		100
PFDS	7.406	599.0 -> 80.0	30832	18.89	µg/L		100
PFHpA	5.150	363.0 -> 319.0	222718	19.65	µg/L		99
PFHpS	5.855	449.0 -> 80.0	33365	19.80	µg/L		99
PFHxA	4.291	313.0 -> 269.0	170942	19.50	µg/L		100
PFHxS	5.195	399.0 -> 80.0	35619	19.49	µg/L	m	99
PFNA	6.444	463.0 -> 419.0	195733	19.39	µg/L		99
PFNS	6.937	549.0 -> 80.0	31051	19.90	µg/L		98
PFOA	5.845	413.0 -> 369.0	269480	19.69	µg/L		99
PFOS	6.416	499.0 -> 80.0	36627	19.63	µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	103516	19.45	µg/L		100
PFPeS	4.398	349.0 -> 80.0	28473	19.34	µg/L		100
PFTeDA	9.128	713.0 -> 669.0	309483	17.53	µg/L		99
PFTrDA	8.375	663.0 -> 619.0	336883	20.02	µg/L		97
PFUnDA	7.448	563.0 -> 519.0	220924	19.89	µg/L		100
11Cl-PF3OUdS	7.603	631.0 -> 451.0	135484	18.75	µg/L		98
9Cl-PF3ONS	6.701	531.0 -> 351.0	120342	19.16	µg/L		99
ADONA	5.261	377.0 -> 251.0	277139	20.44	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	37944	20.75	µg/L		99
MeFOSA	6.954	512.0 -> 169.0	10917	20.72	µg/L		96
4-PFECHS	5.741	461.0 -> 381.0	73413	19.19	µg/L		98
FBSA	4.343	298.0 -> 78.0	62108	20.37	µg/L		99
FHxSA	5.674	398.0 -> 78.0	52312	19.78	µg/L		100

 # = Qualifier out of range, m = manually integrated, + = Area summed

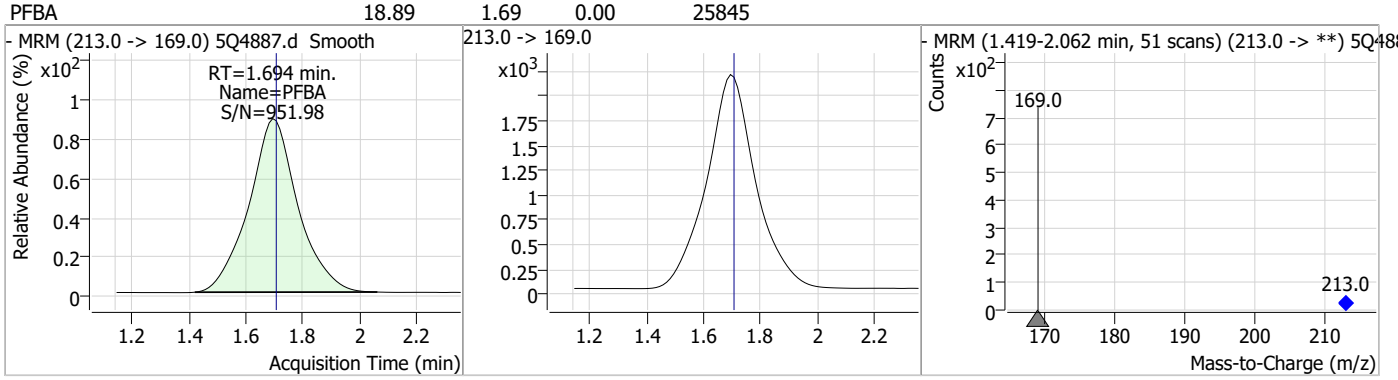
Perfluorinated Compounds by LC/MS/MS



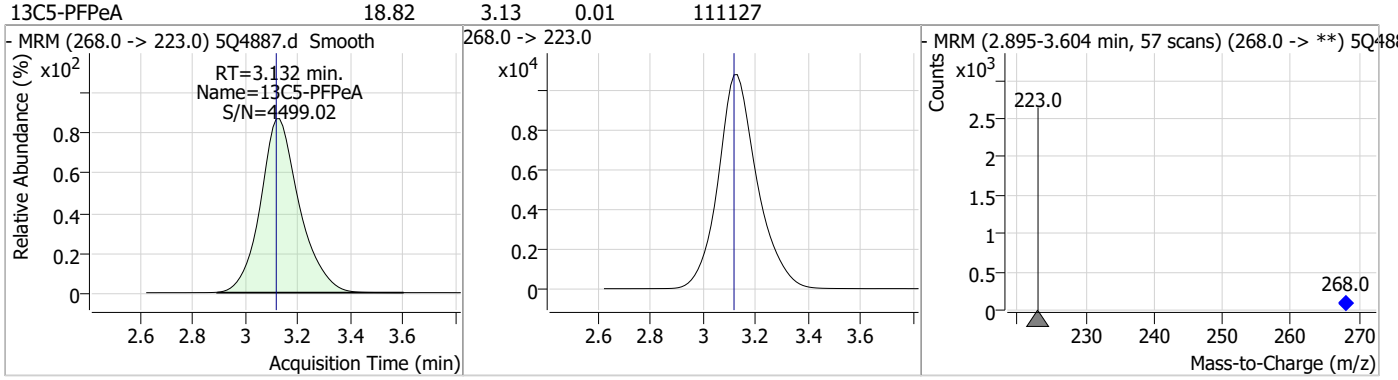
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.65	1.70	0.01	68766				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	18.89	1.69	0.00	25845				

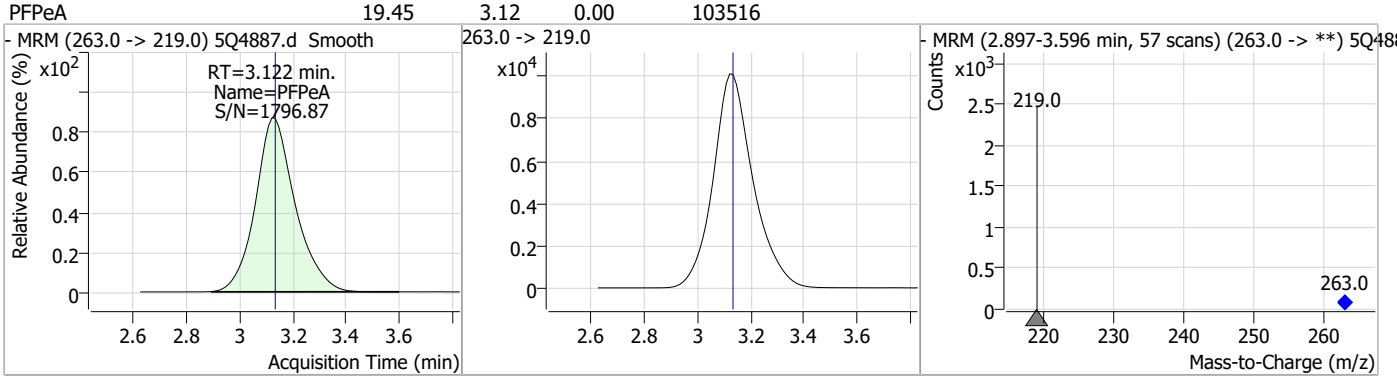


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.82	3.13	0.01	111127				

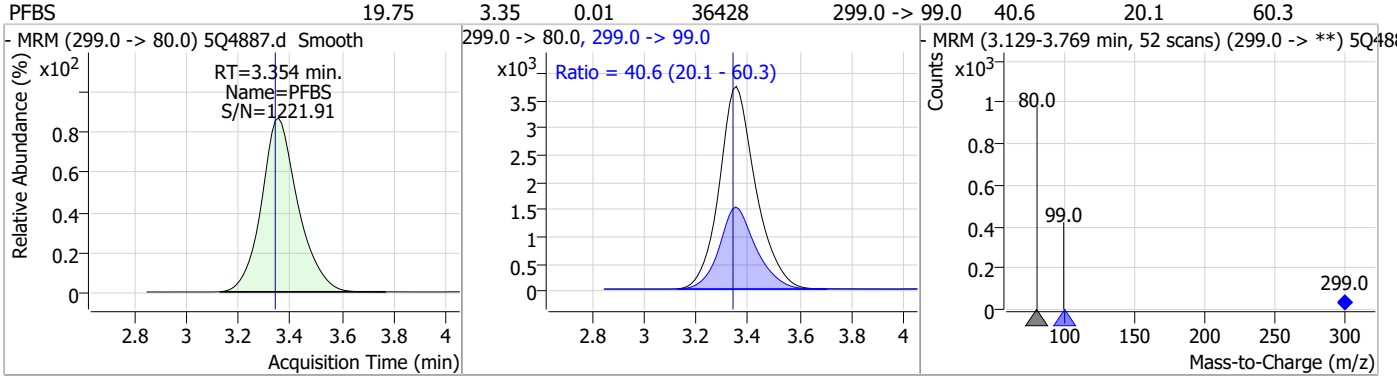


Perfluorinated Compounds by LC/MS/MS

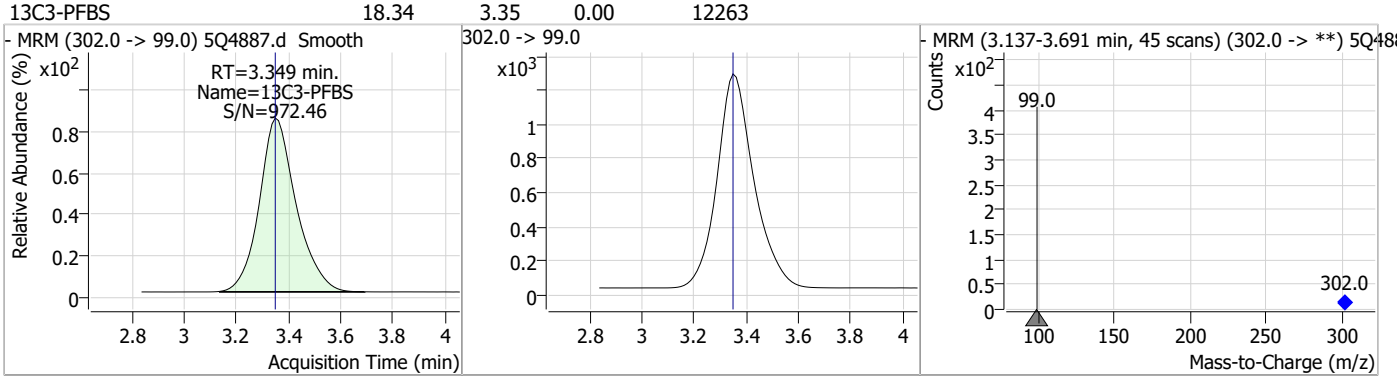
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.45	3.12	0.00	103516				



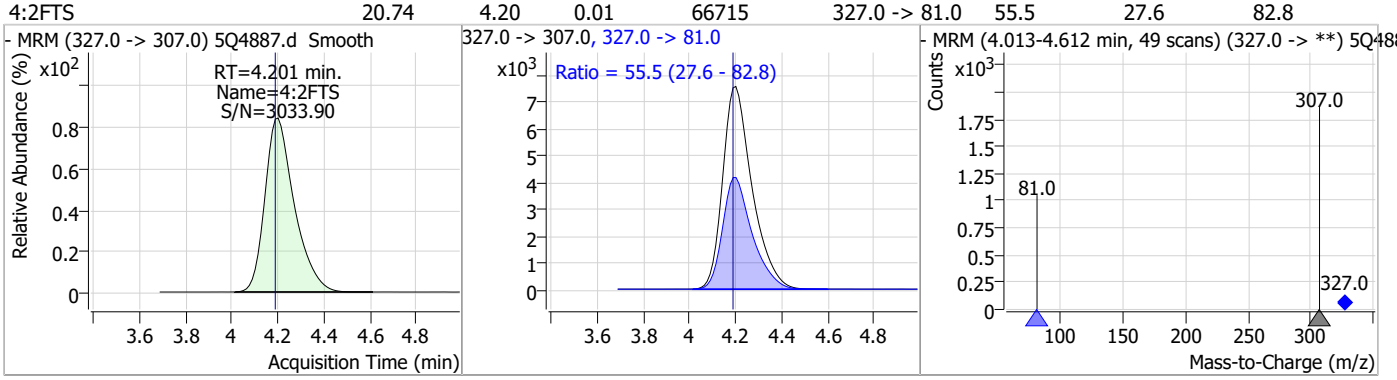
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.75	3.35	0.01	36428	299.0 -> 99.0	40.6	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.34	3.35	0.00	12263				

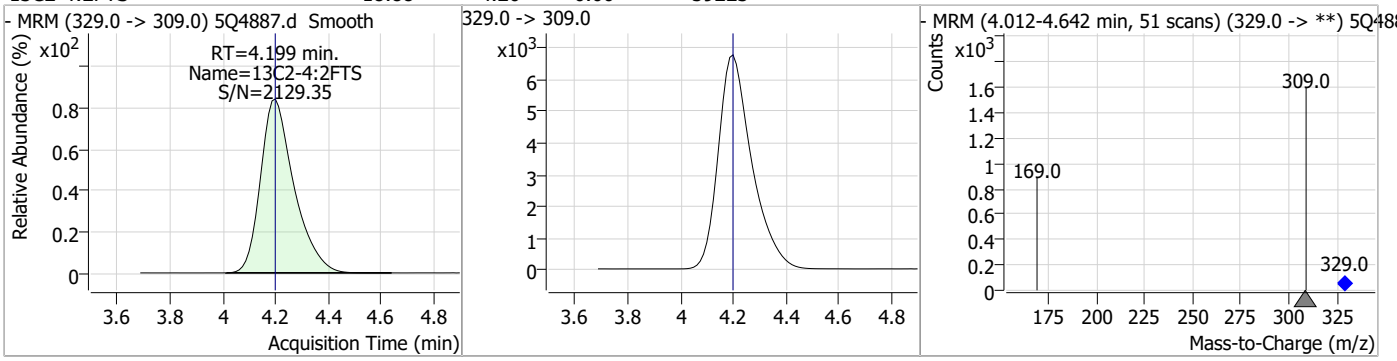


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.74	4.20	0.01	66715	327.0 -> 81.0	55.5	27.6	82.8

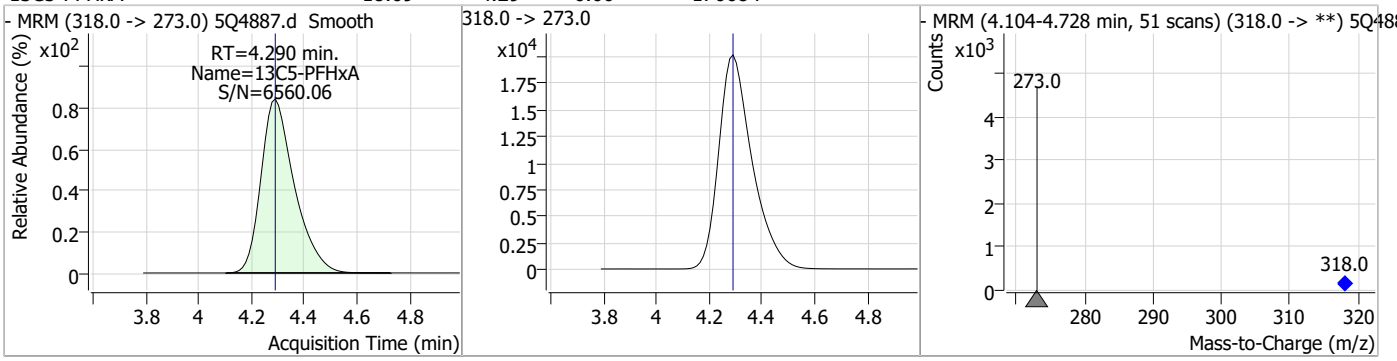


Perfluorinated Compounds by LC/MS/MS

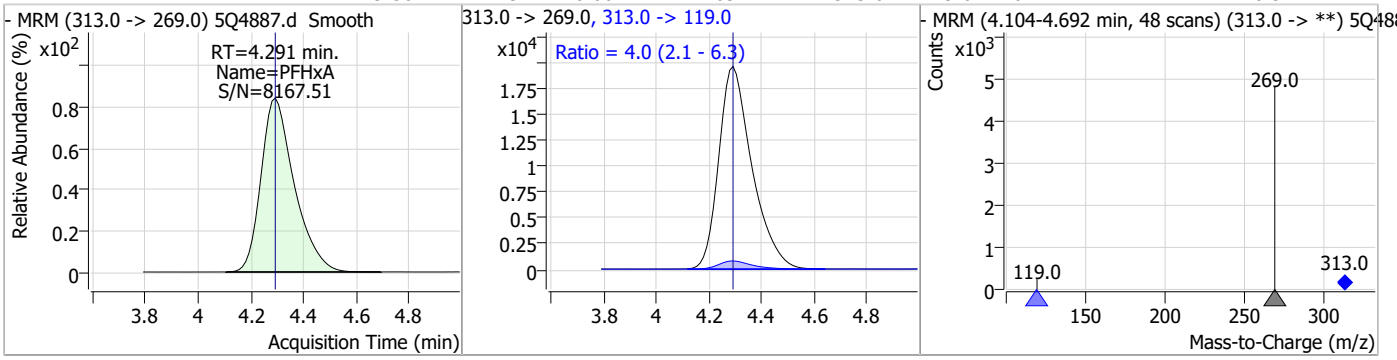
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.88	4.20	0.00	59223				



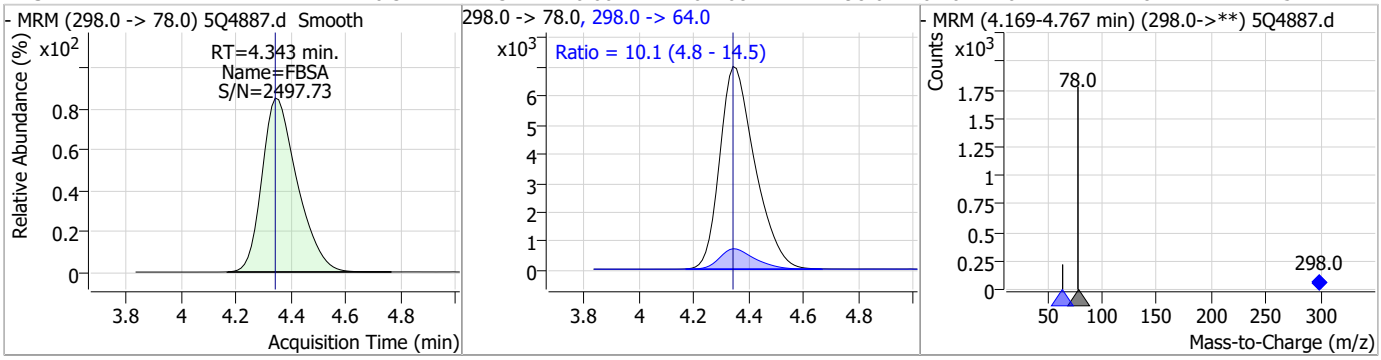
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.69	4.29	0.00	176684				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.50	4.29	0.00	170942	313.0 -> 119.0	4.0	2.1	6.3

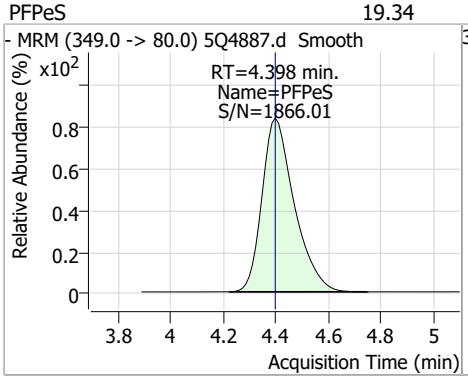


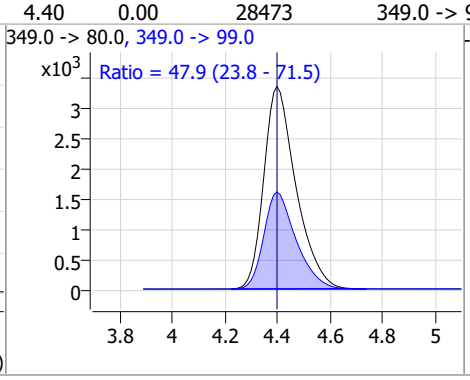
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.37	4.34	0.00	62108	298.0 -> 64.0	10.1	4.8	14.5

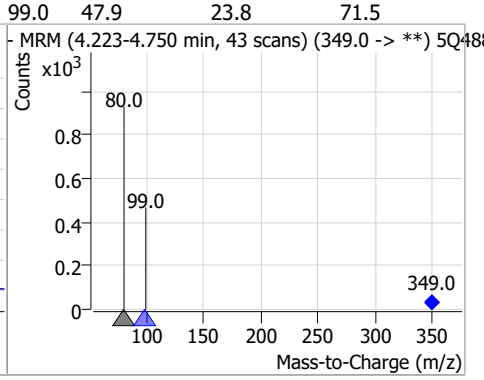


Perfluorinated Compounds by LC/MS/MS

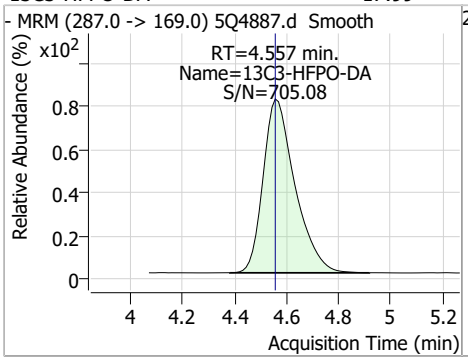
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.34	4.40	0.00	28473	349.0 -> 99.0	47.9	23.8	71.5

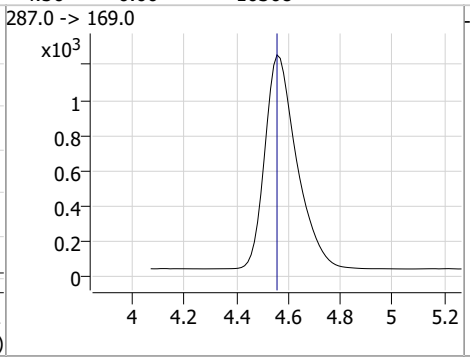


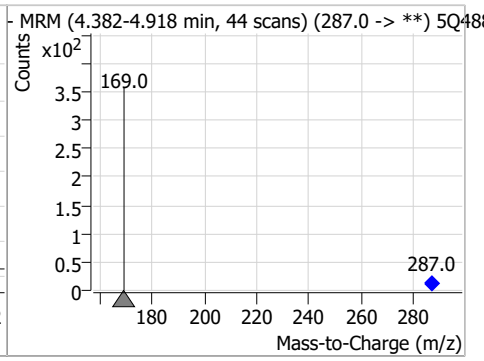




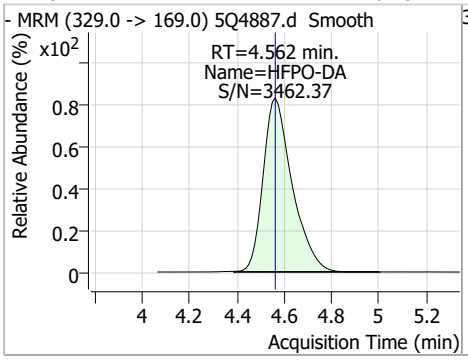
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.99	4.56	0.00	10308				

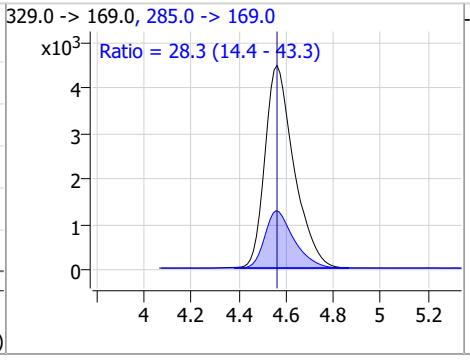


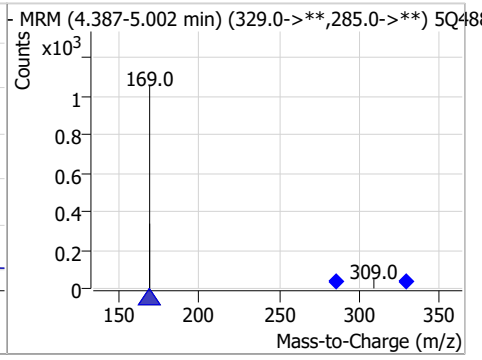




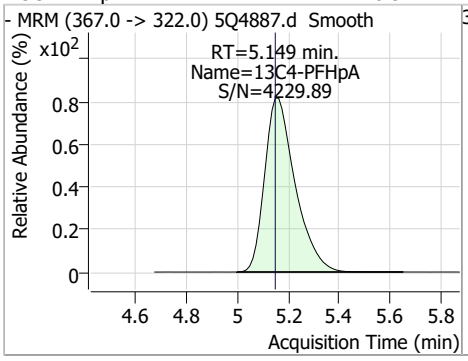
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.75	4.56	0.00	37944	285.0 -> 169.0	28.3	14.4	43.3

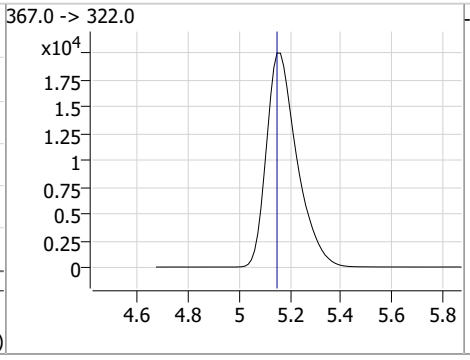


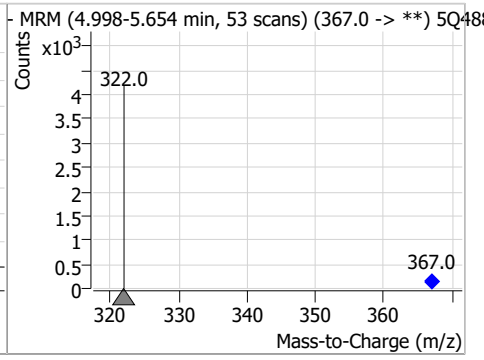




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.91	5.15	0.00	166331				

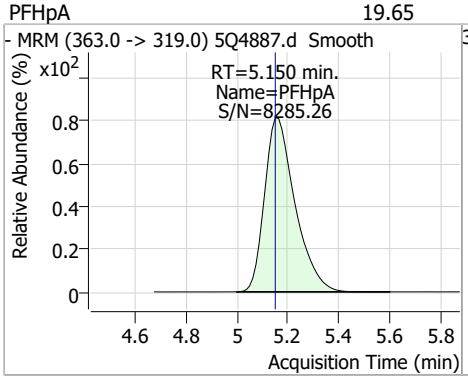


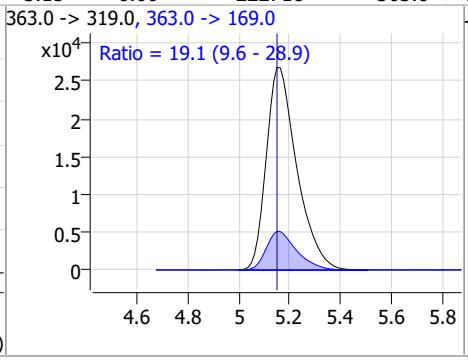


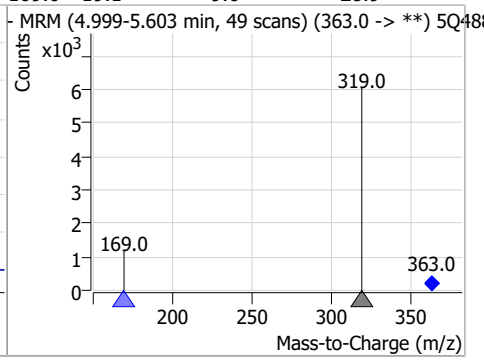


Perfluorinated Compounds by LC/MS/MS

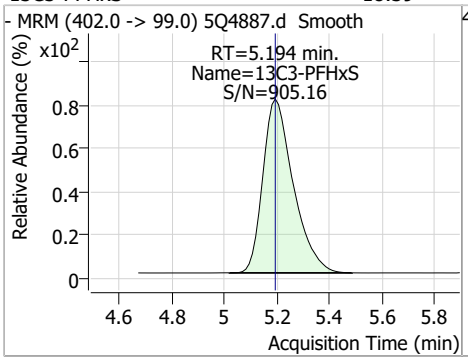
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.65	5.15	0.00	222718	363.0 -> 169.0	19.1	9.6	28.9

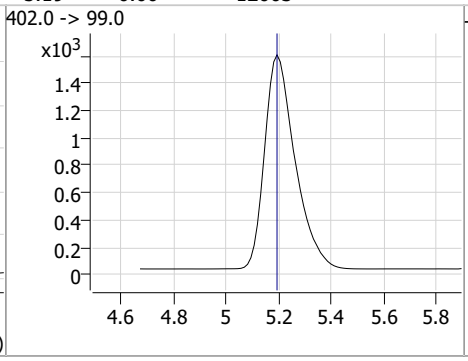


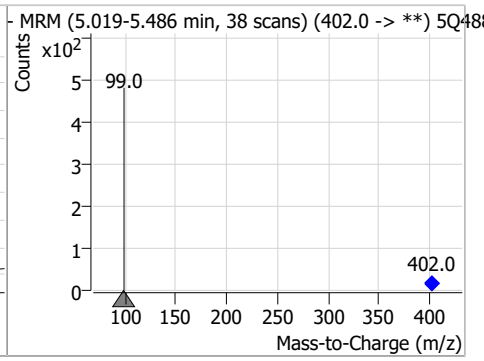




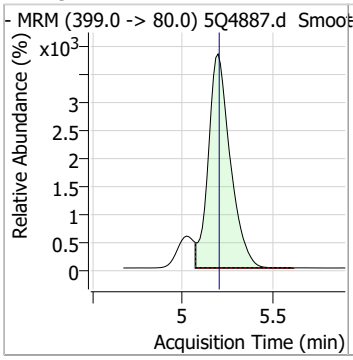
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.39	5.19	0.00	12603				

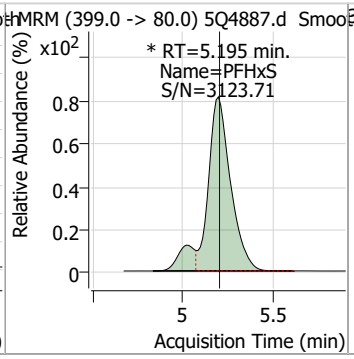


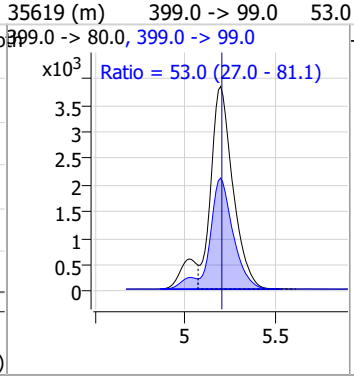


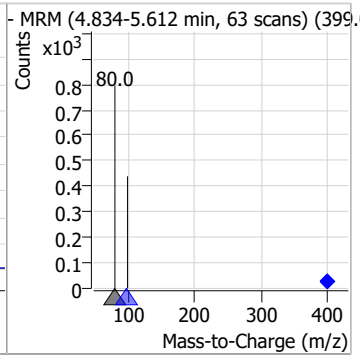


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.49	5.20	0.00	35619 (m)	399.0 -> 99.0	53.0	27.0	81.1

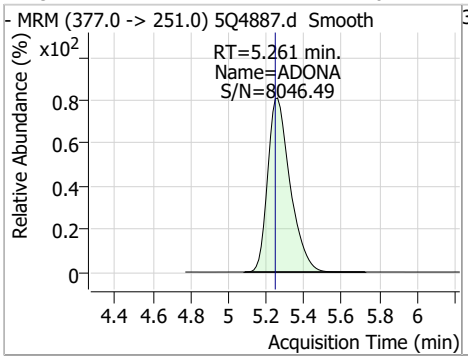


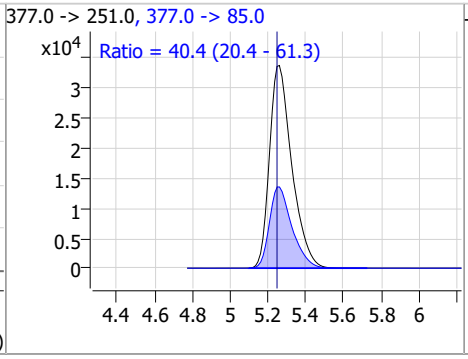


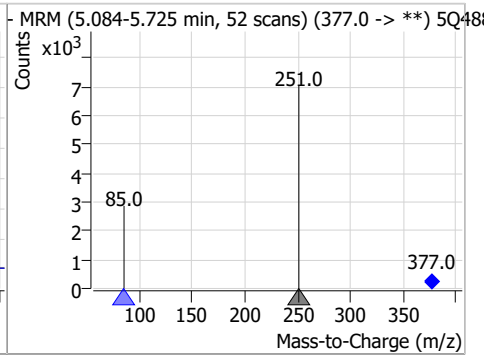




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.44	5.26	0.01	277139	377.0 -> 85.0	40.4	20.4	61.3

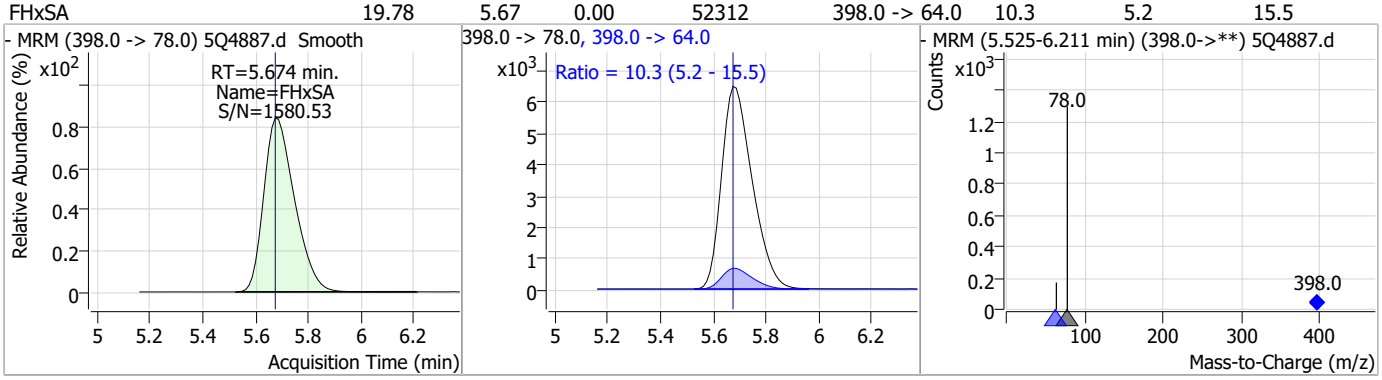




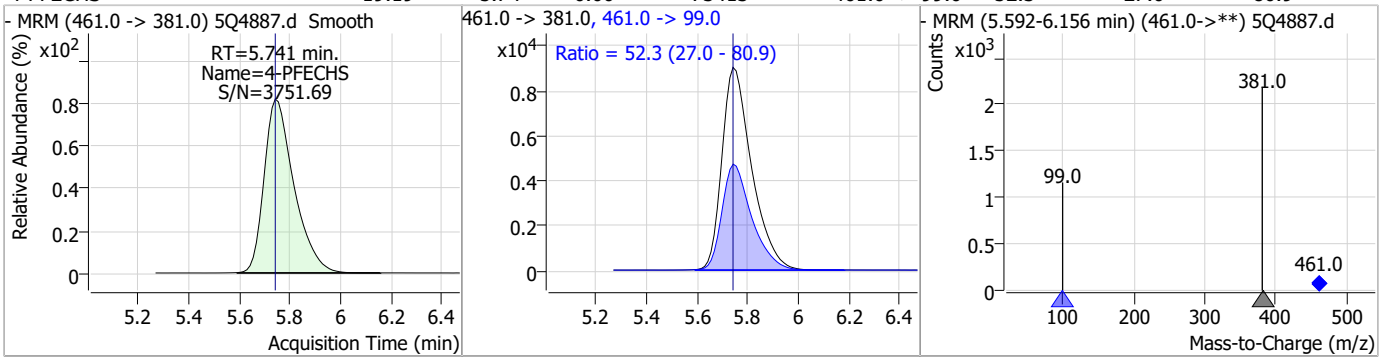


Perfluorinated Compounds by LC/MS/MS

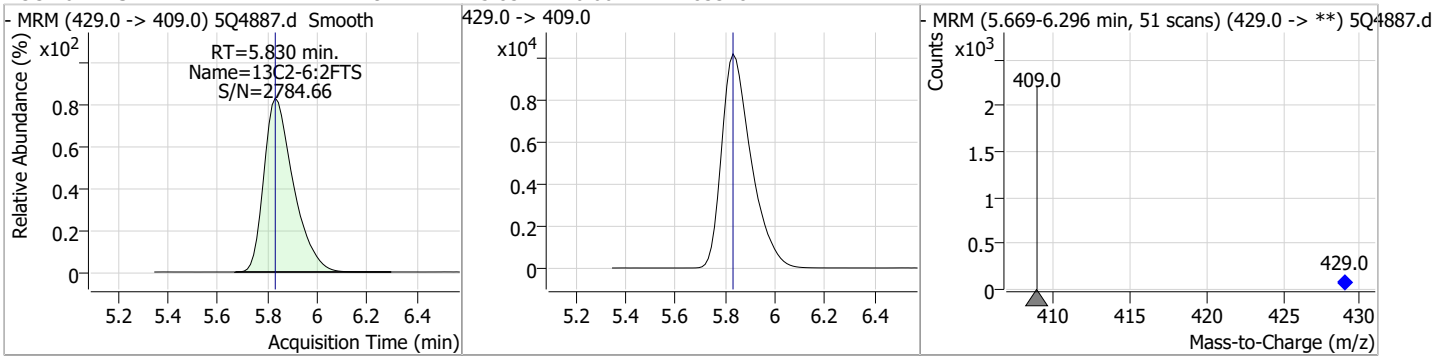
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.78	5.67	0.00	52312	398.0 -> 64.0	10.3	5.2	15.5



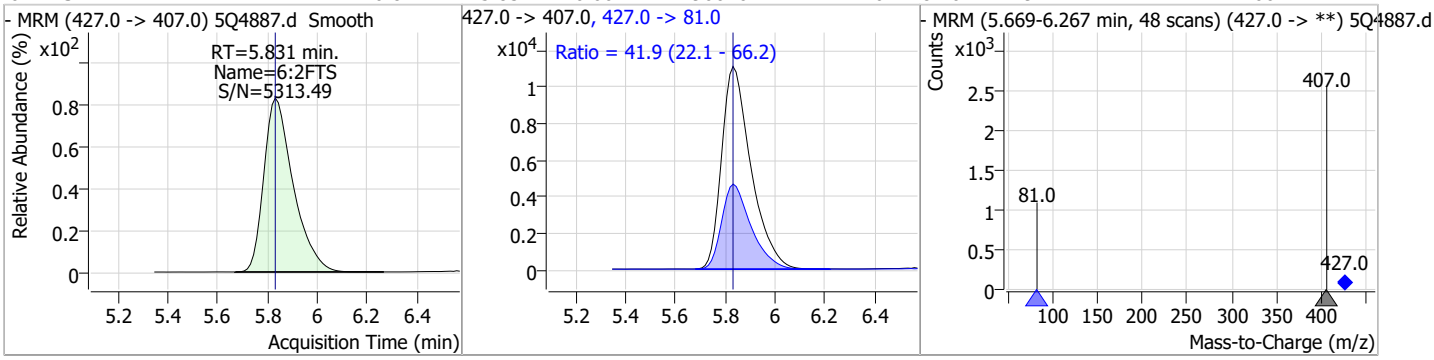
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.19	5.74	0.00	73413	461.0 -> 99.0	52.3	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.44	5.83	0.00	83328				

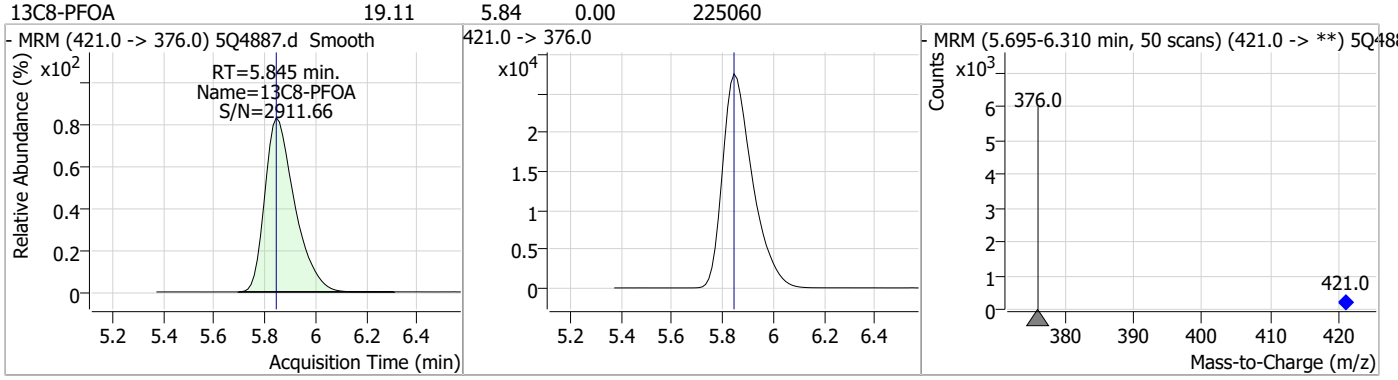


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.87	5.83	0.00	90616	427.0 -> 81.0	41.9	22.1	66.2

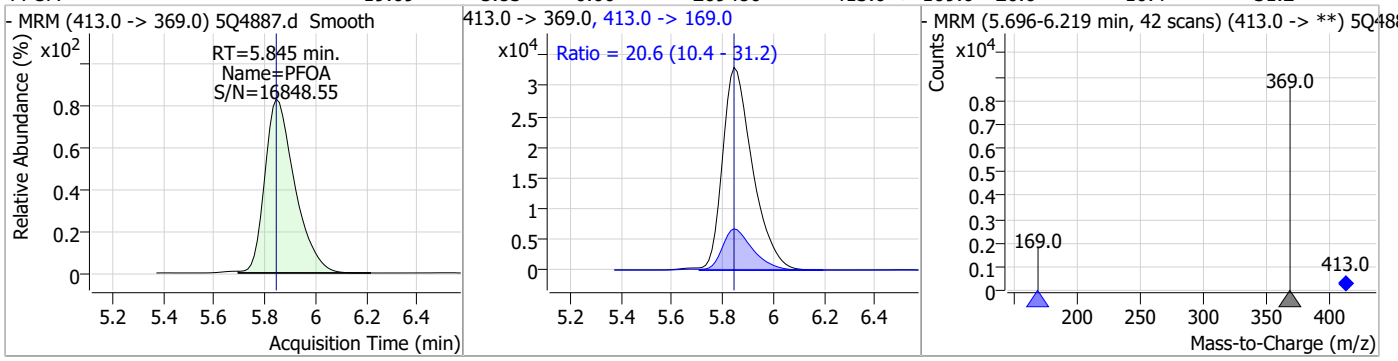


Perfluorinated Compounds by LC/MS/MS

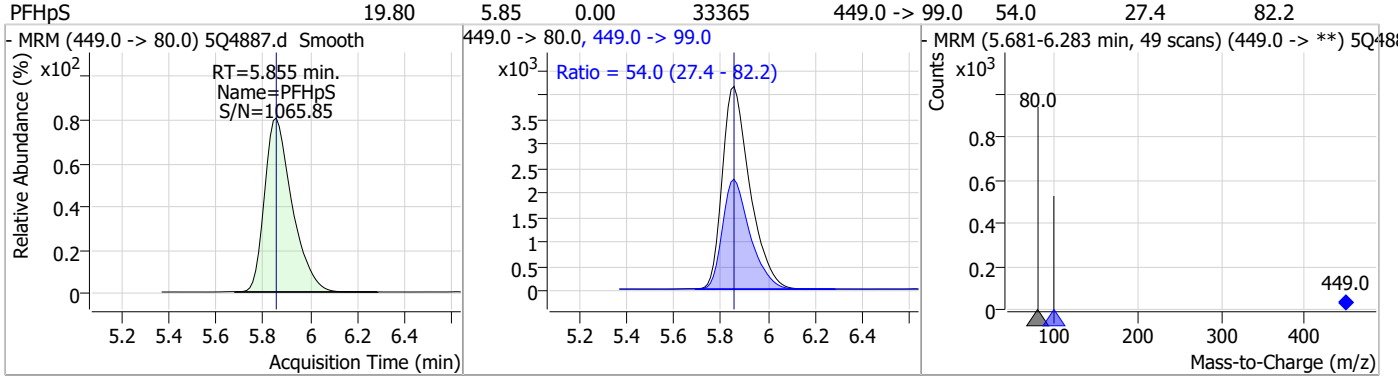
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.11	5.84	0.00	225060				



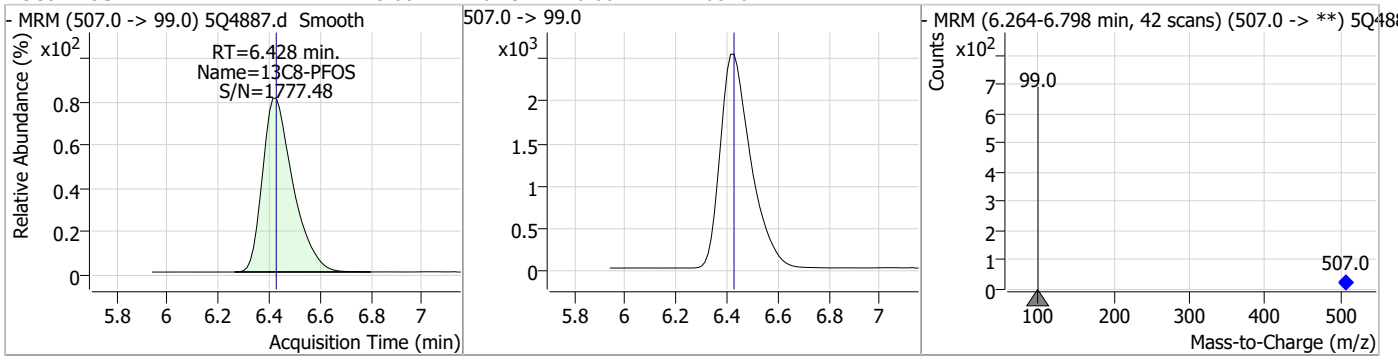
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.69	5.85	0.00	269480	413.0 -> 169.0	20.6	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.80	5.85	0.00	33365	449.0 -> 99.0	54.0	27.4	82.2

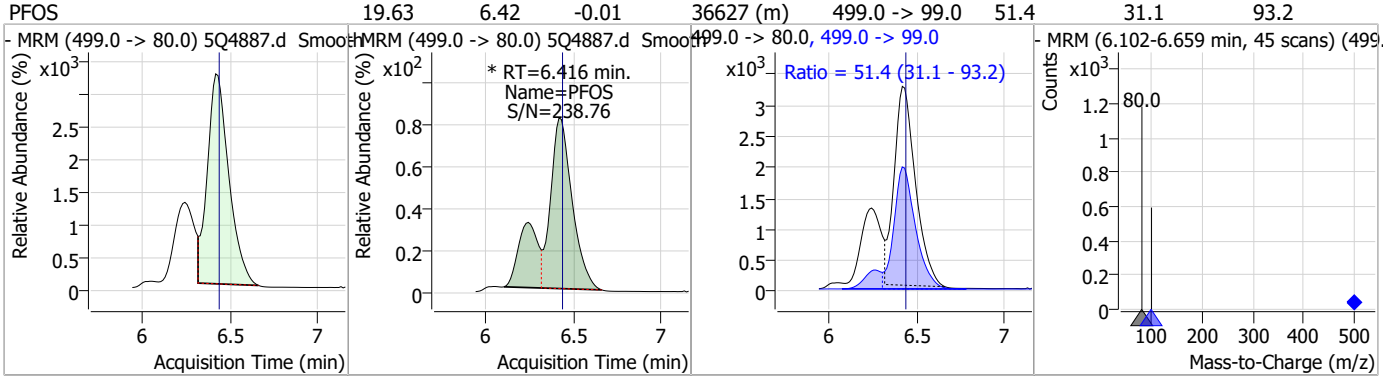


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.08	6.43	0.00	20826				

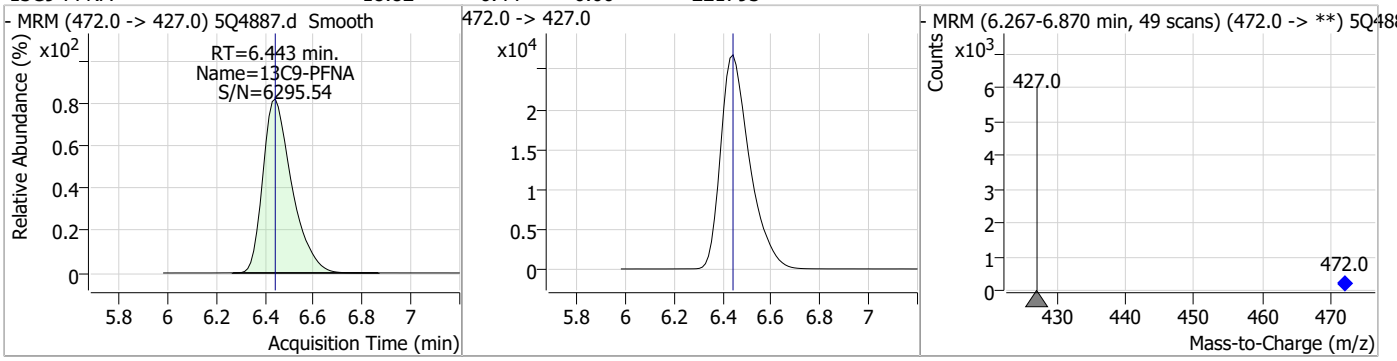


Perfluorinated Compounds by LC/MS/MS

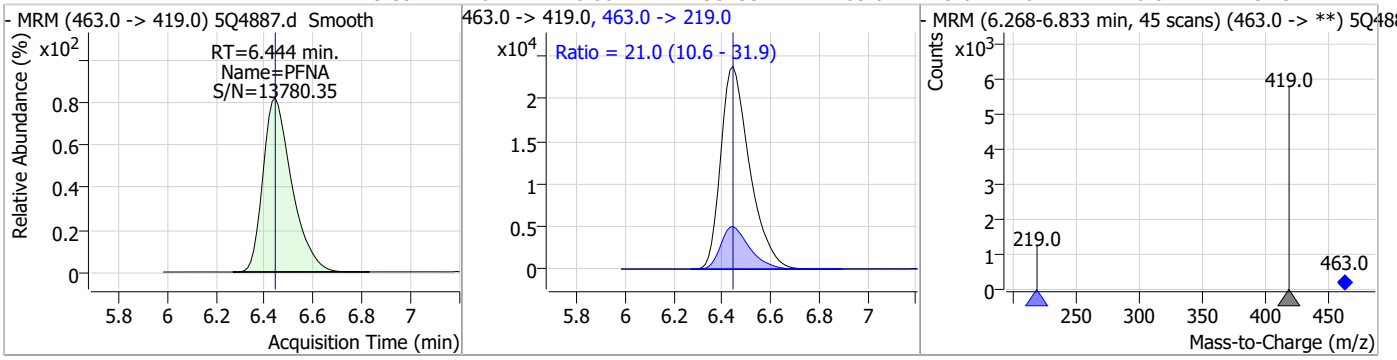
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.63	6.42	-0.01	36627 (m)	499.0 -> 99.0	51.4	31.1	93.2



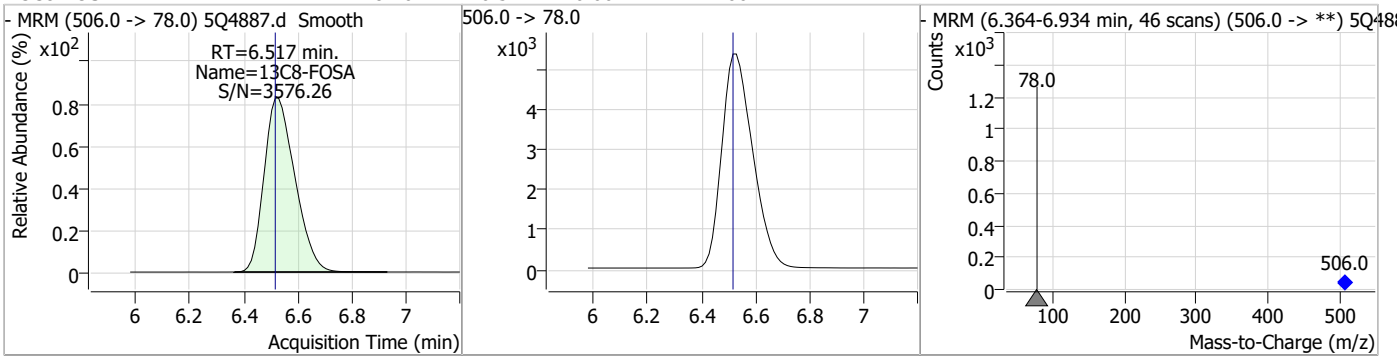
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.82	6.44	0.00	221793				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.39	6.44	0.00	195733	463.0 -> 219.0	21.0	10.6	31.9

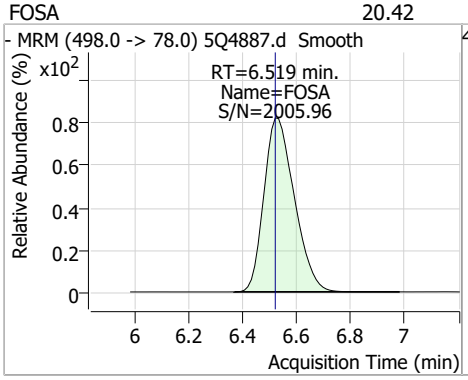


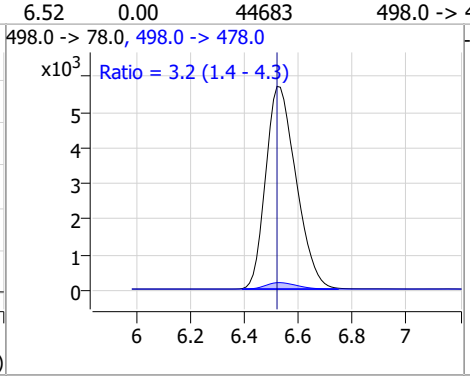
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.20	6.52	0.00	42766				

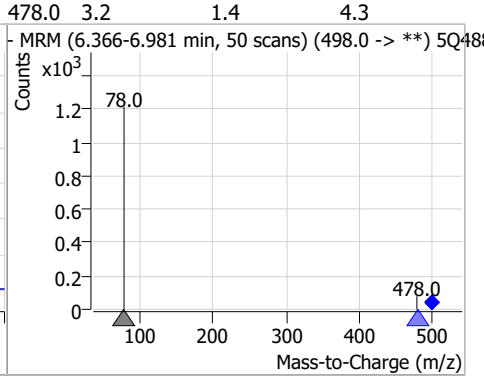


Perfluorinated Compounds by LC/MS/MS

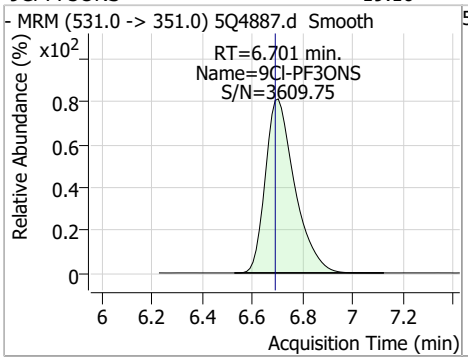
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.42	6.52	0.00	44683	498.0 -> 478.0	3.2	1.4	4.3

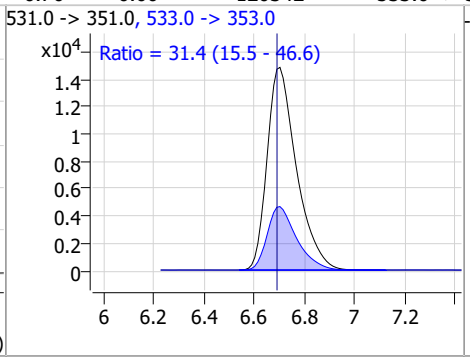


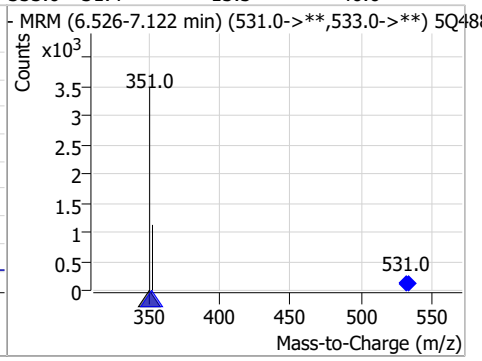




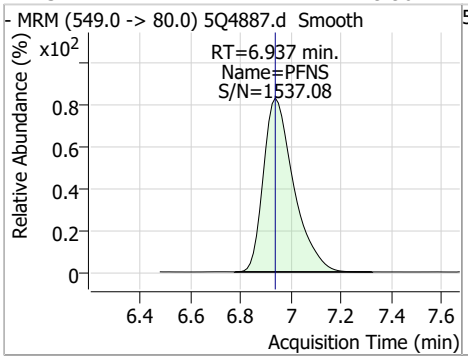
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.16	6.70	0.00	120342	533.0 -> 353.0	31.4	15.5	46.6

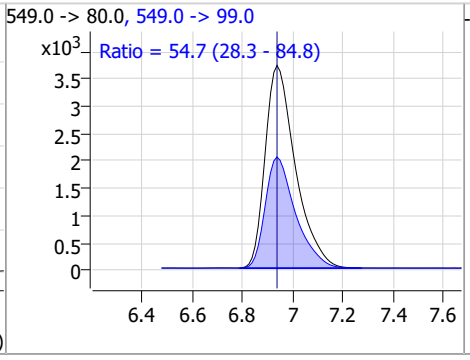


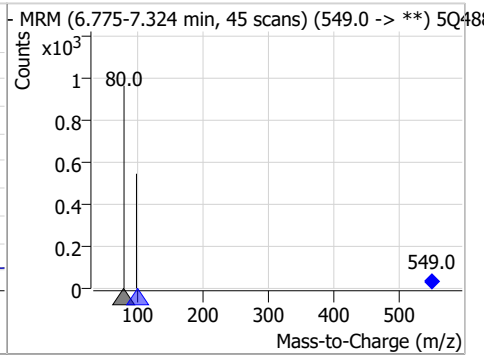




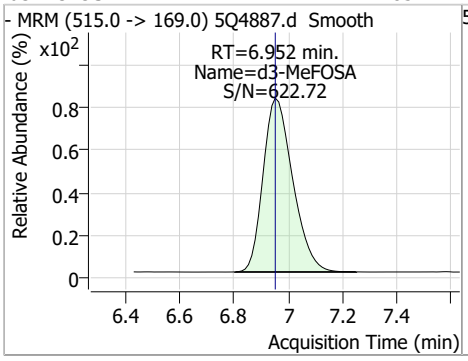
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.90	6.94	0.00	31051	549.0 -> 99.0	54.7	28.3	84.8

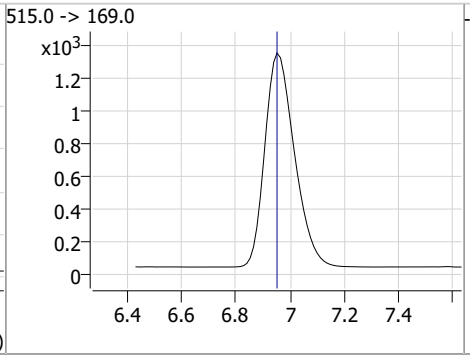


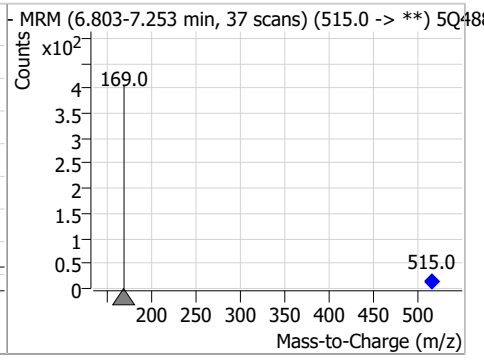




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.85	6.95	0.00	10041				

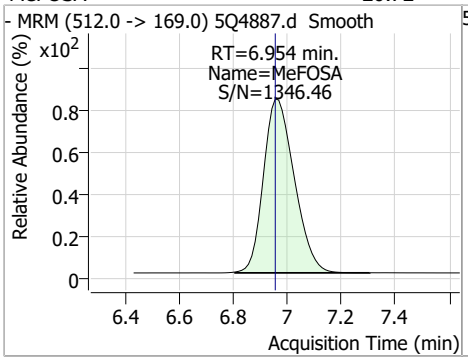


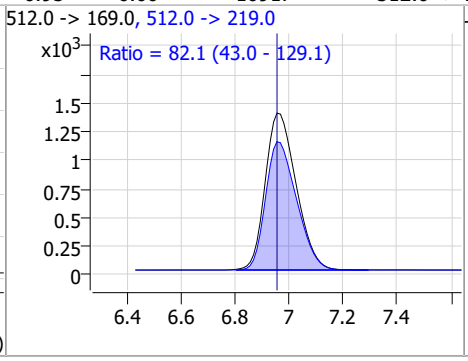


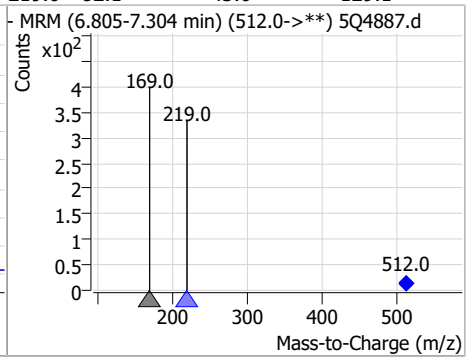


Perfluorinated Compounds by LC/MS/MS

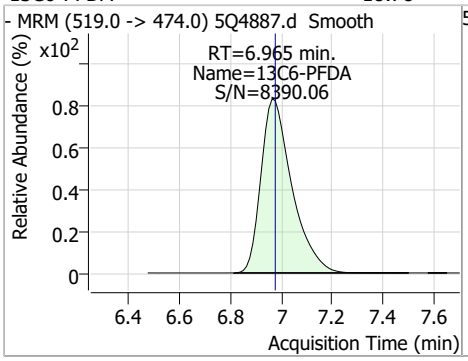
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.72	6.95	0.00	10917	512.0 -> 219.0	82.1	43.0	129.1

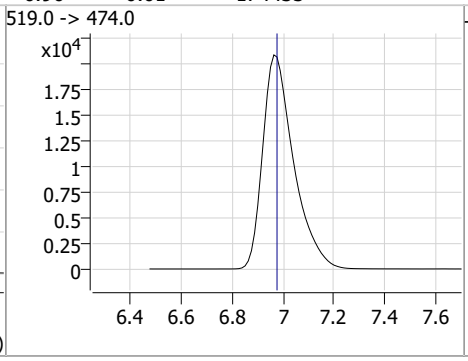


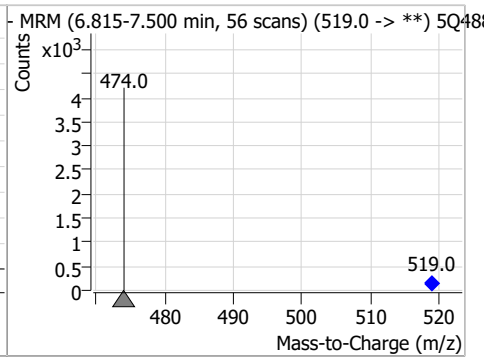




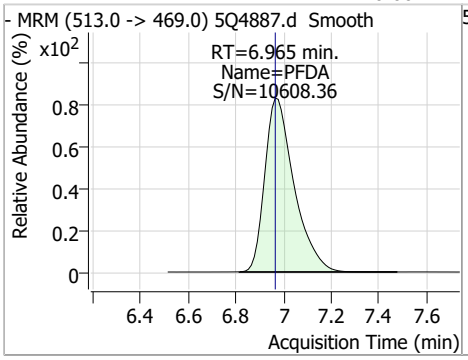
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.78	6.96	-0.01	174433				

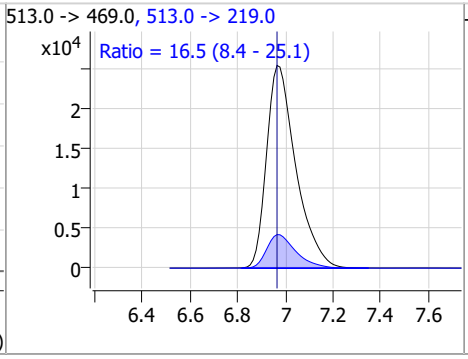


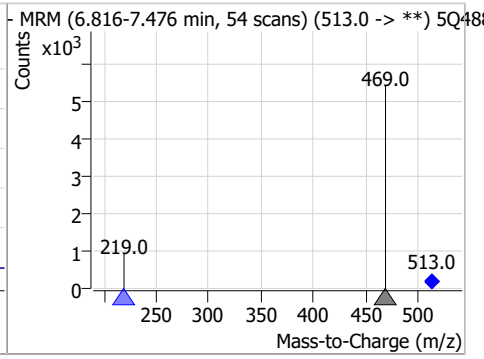




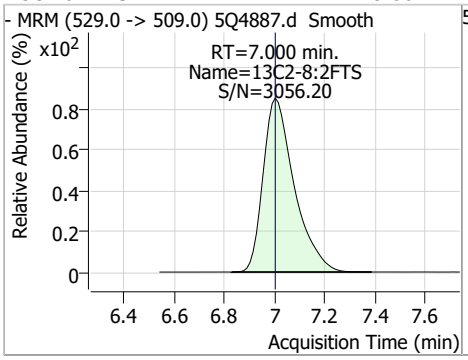
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.00	6.97	-0.01	217116	513.0 -> 219.0	16.5	8.4	25.1

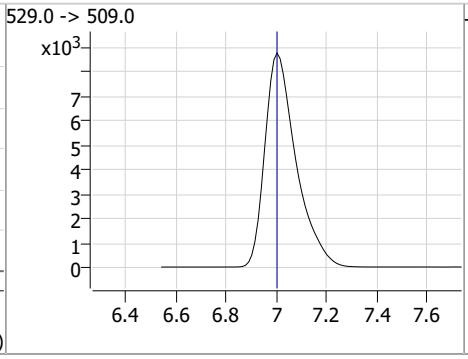


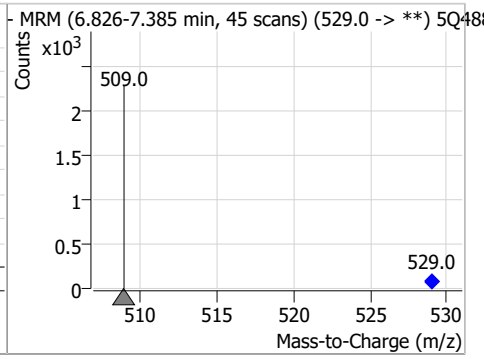




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.56	7.00	0.00	75141				

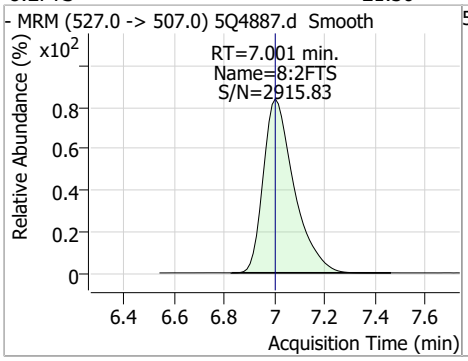


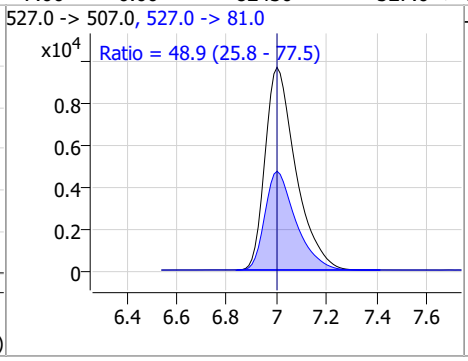


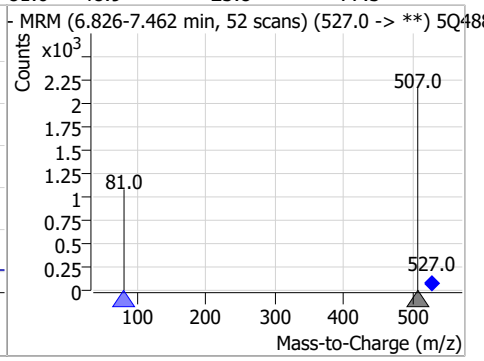


Perfluorinated Compounds by LC/MS/MS

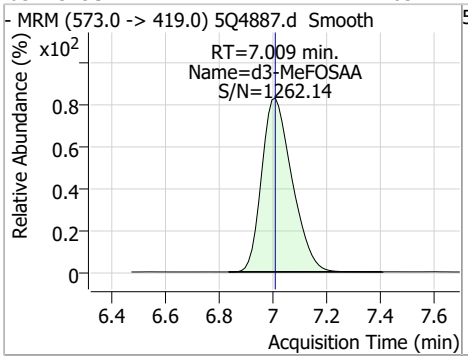
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.36	7.00	0.00	82430	527.0 -> 81.0	48.9	25.8	77.5

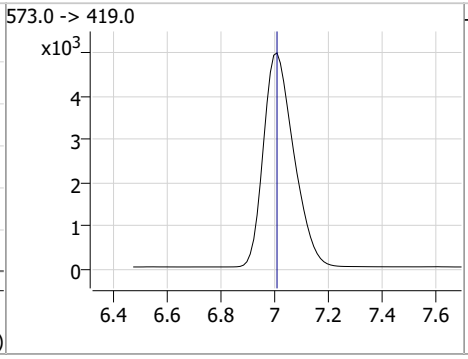


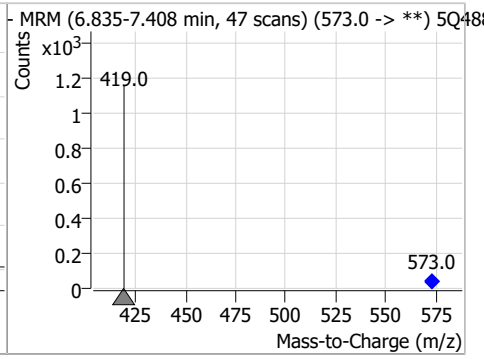




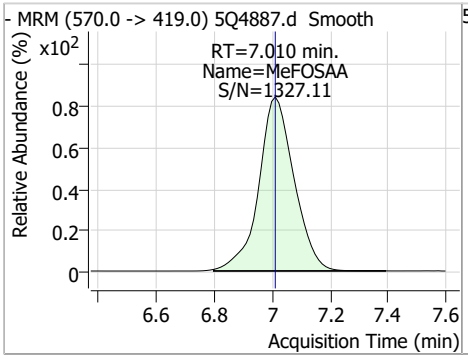
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.63	7.01	0.00	38814				

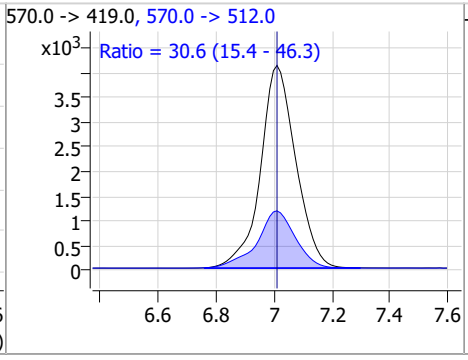


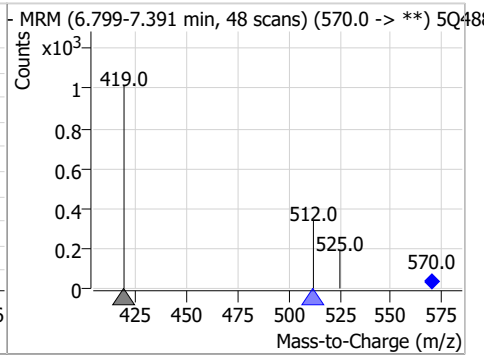




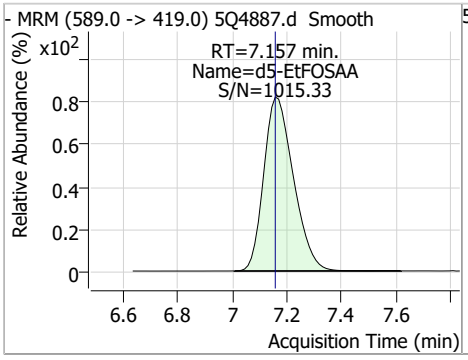
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.81	7.01	0.00	34708	570.0 -> 512.0	30.6	15.4	46.3

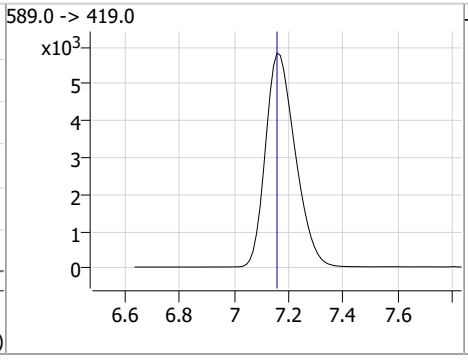


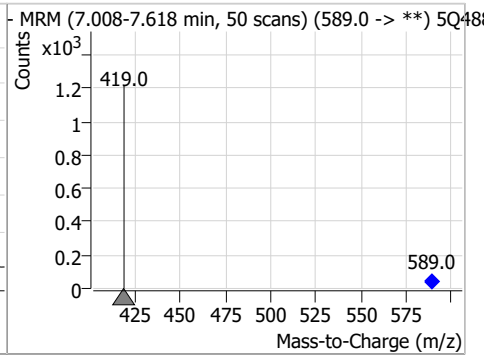




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.74	7.16	0.00	43729				

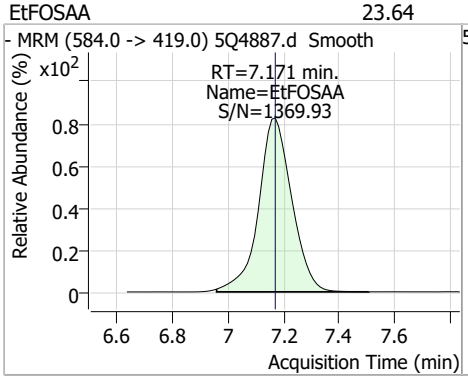


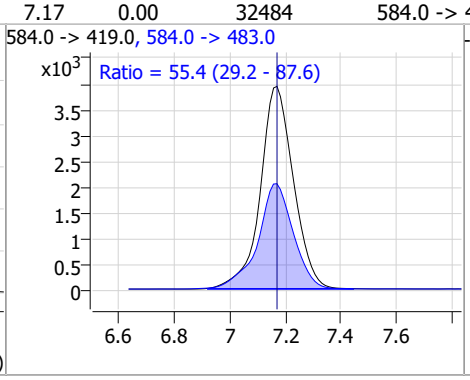


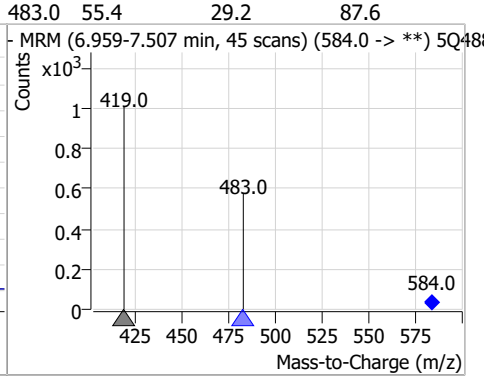


Perfluorinated Compounds by LC/MS/MS

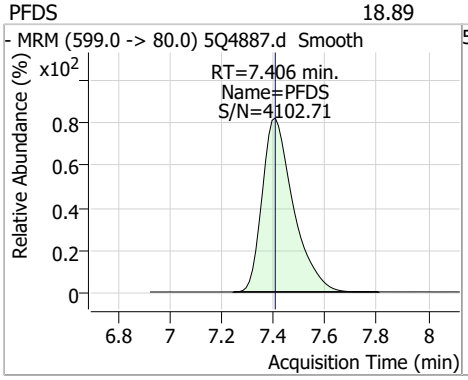
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.64	7.17	0.00	32484	584.0 -> 483.0	55.4	29.2	87.6

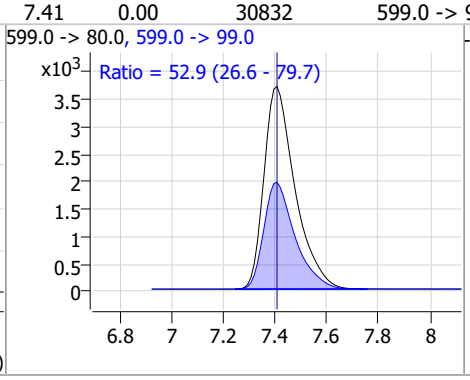


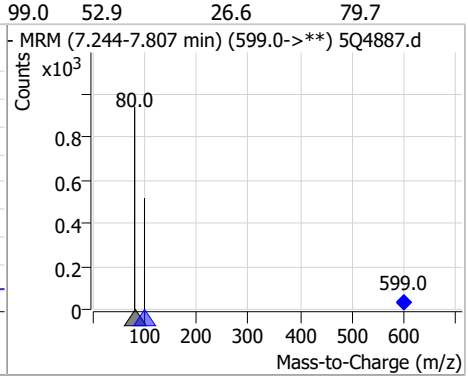




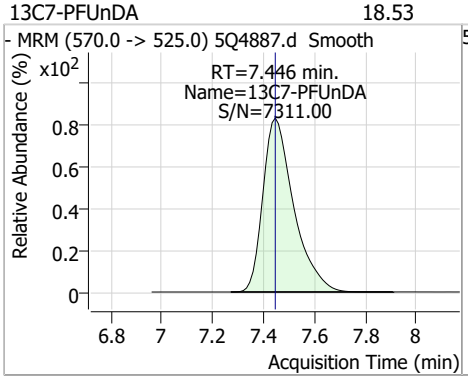
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.89	7.41	0.00	30832	599.0 -> 99.0	52.9	26.6	79.7

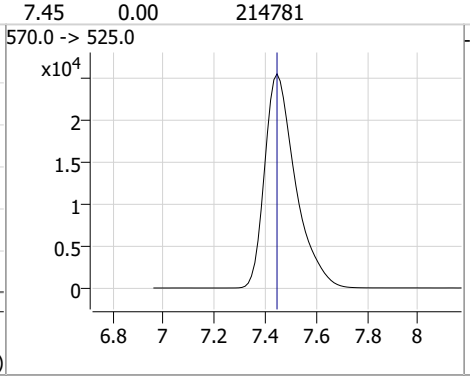


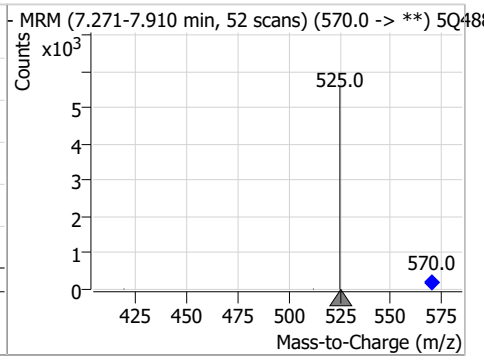




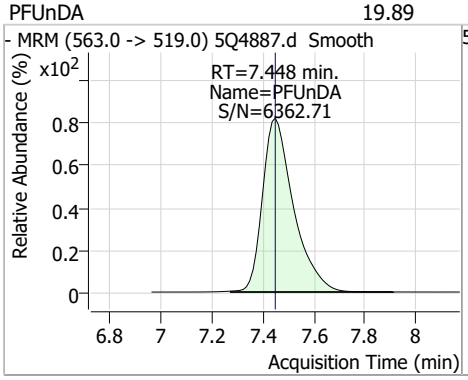
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.53	7.45	0.00	214781				

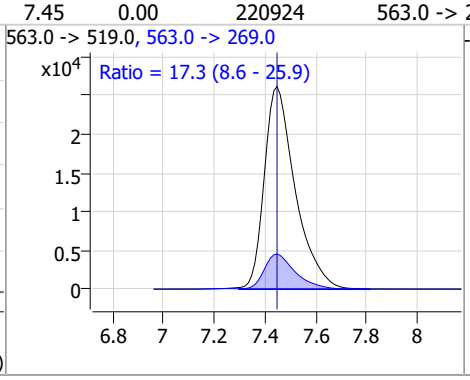


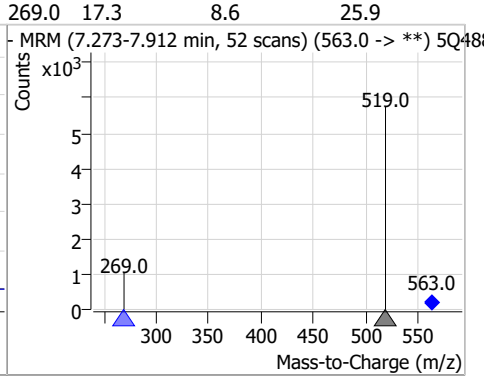




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.89	7.45	0.00	220924	563.0 -> 269.0	17.3	8.6	25.9

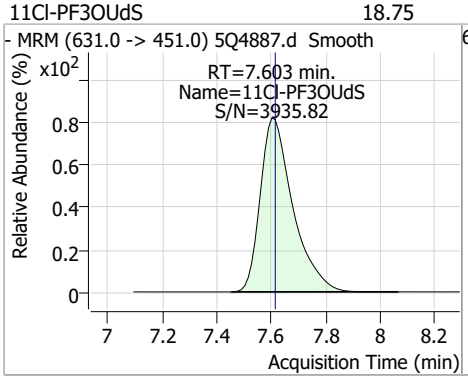


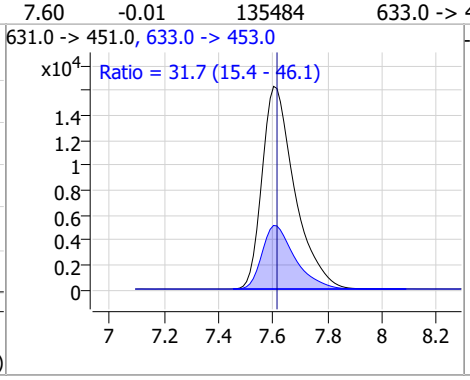


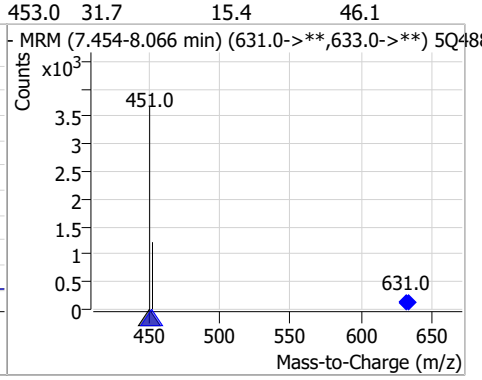


Perfluorinated Compounds by LC/MS/MS

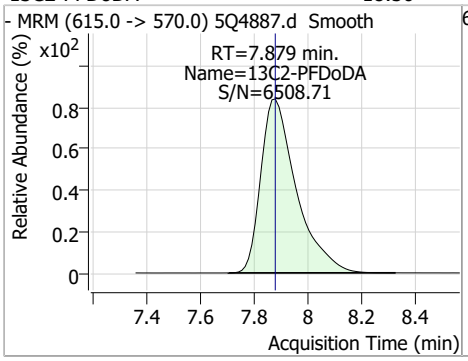
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.75	7.60	-0.01	135484	633.0 -> 453.0	31.7	15.4	46.1

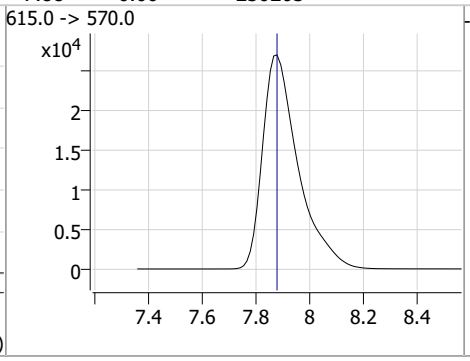


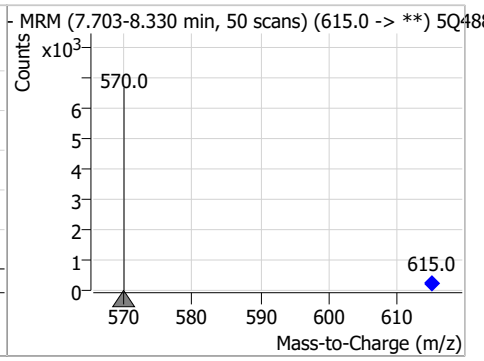




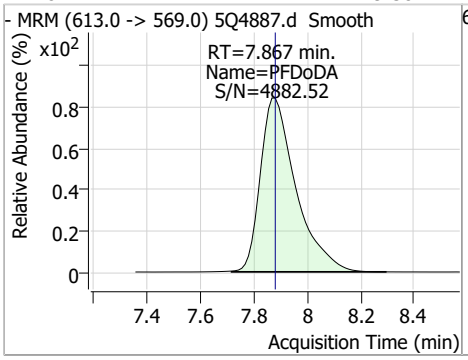
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.56	7.88	0.00	250265				

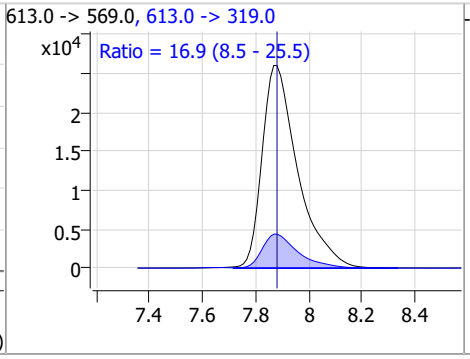


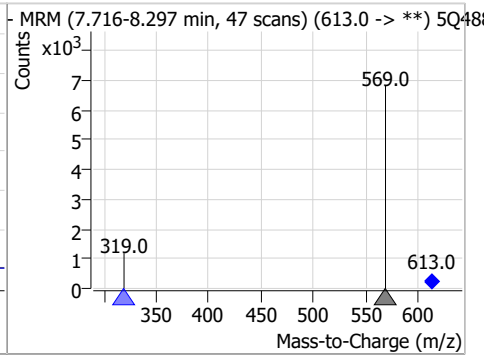




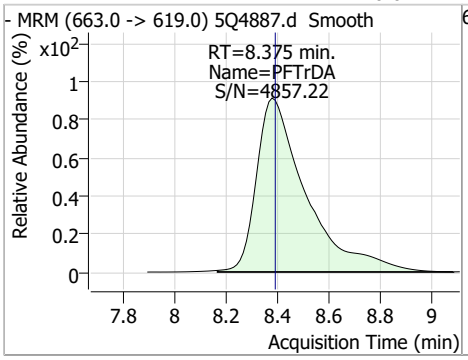
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.38	7.87	-0.01	240309	613.0 -> 319.0	16.9	8.5	25.5

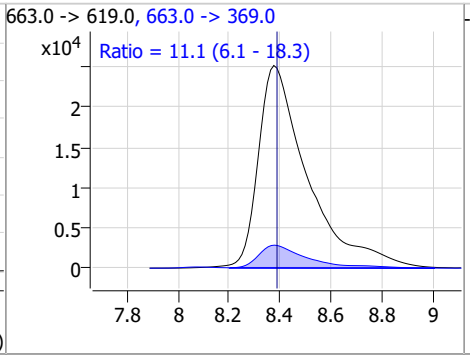


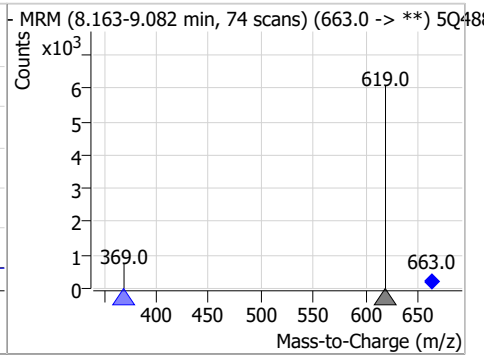




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.02	8.38	-0.01	336883	663.0 -> 369.0	11.1	6.1	18.3

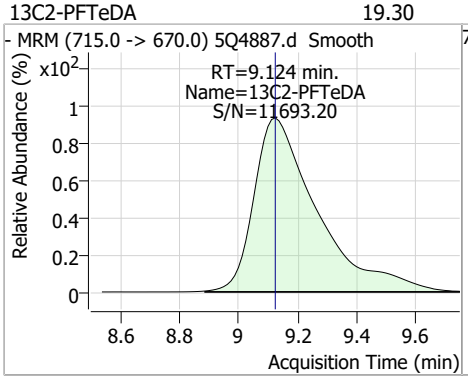


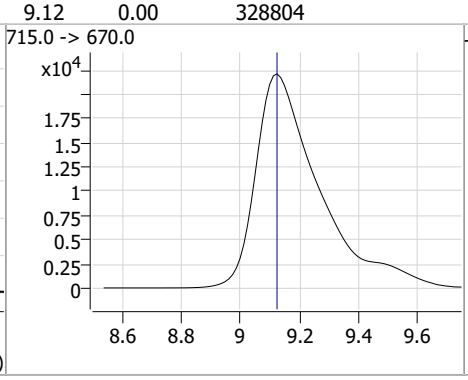


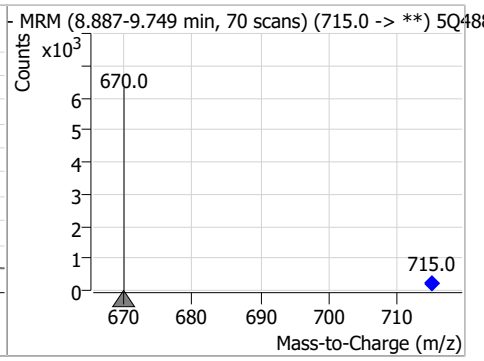


Perfluorinated Compounds by LC/MS/MS

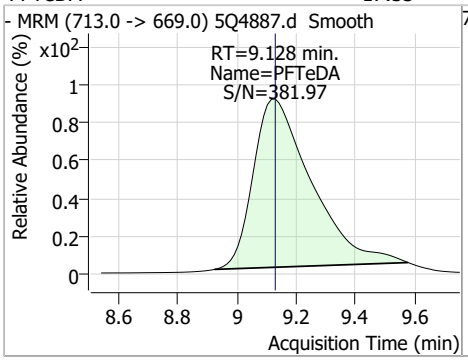
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.30	9.12	0.00	328804				

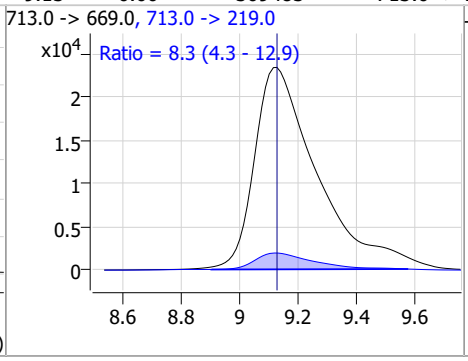


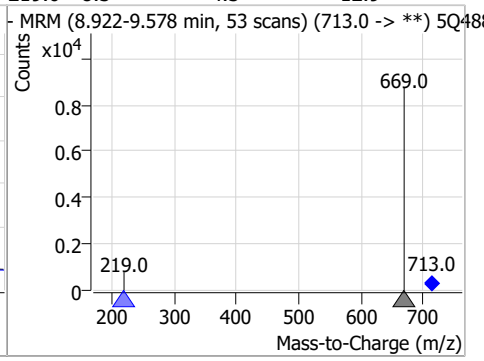




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.53	9.13	0.00	309483	713.0 -> 219.0	8.3	4.3	12.9







7.7.75

7

Manual Integration Approval Summary

Sample Number: S5Q73-CC73
Lab FileID: 5Q4887.D
Injection Time: 09/18/22 06:41
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/19/22 15:07

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4894.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/18/2022 8:29:23 AM
Sample Name : ecc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q73.batch.bin
Sample Information : OP92656,S5Q73,250,,,1.0,1,water

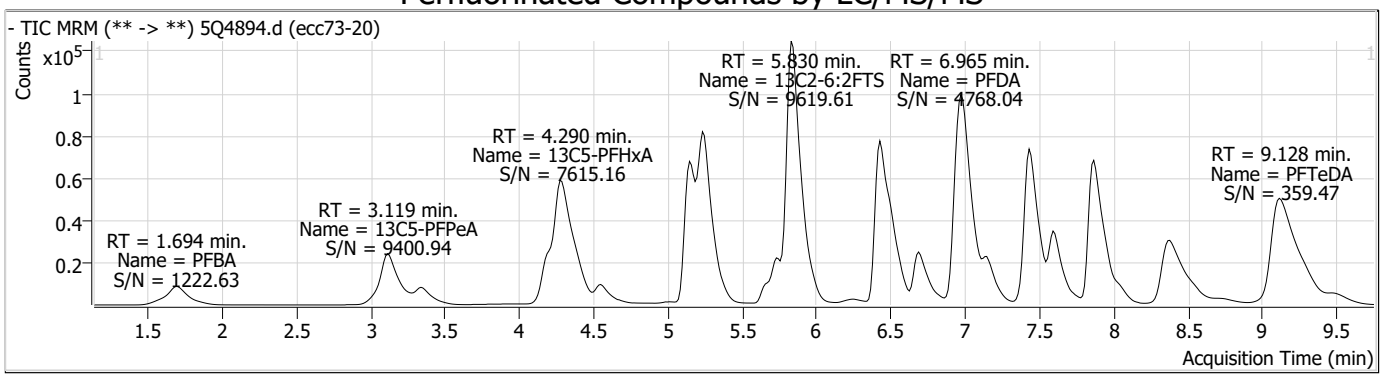
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68475	20.00	µg/L	0.013
M5-PFPeA	3.119	268.0 -> 223.0	111225	20.00	µg/L	0.000
M5-PFHxA	4.290	318.0 -> 273.0	178000	20.00	µg/L	0.000
M4-PFHpA	5.149	367.0 -> 322.0	167622	20.00	µg/L	0.000
M8-PFOA	5.845	421.0 -> 376.0	225590	20.00	µg/L	0.000
M9-PFNA	6.443	472.0 -> 427.0	223761	20.00	µg/L	0.000
M6-PFDA	6.965	519.0 -> 474.0	177101	20.00	µg/L	-0.012
M7-PFUnDA	7.446	570.0 -> 525.0	217152	20.00	µg/L	0.000
M2-PFDoDA	7.879	615.0 -> 570.0	249825	20.00	µg/L	0.000
M2-PFTeDA	9.124	715.0 -> 670.0	303877	20.00	µg/L	0.000
M8-FOSA	6.530	506.0 -> 78.0	43108	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12450	20.00	µg/L	0.000
M3-PFHxS	5.194	402.0 -> 99.0	12832	20.00	µg/L	0.000
M8-PFOS	6.428	507.0 -> 99.0	20967	20.00	µg/L	0.000
M2-4:2FTS	4.199	329.0 -> 309.0	59407	20.00	µg/L	0.000
M2-6:2FTS	5.830	429.0 -> 409.0	82887	20.00	µg/L	0.000
M2-8:2FTS	7.000	529.0 -> 509.0	75339	20.00	µg/L	0.000
M3-MeFOSAA	7.009	573.0 -> 419.0	38651	20.00	µg/L	0.000
M3-HFPO-DA	4.557	287.0 -> 169.0	10761	20.00	µg/L	0.000
M3-MeFOSA	6.952	515.0 -> 169.0	9986	20.00	µg/L	0.000
M5-EtFOSAA	7.157	589.0 -> 419.0	44503	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	59407	18.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C2-6:2FTS	5.830	429.0 -> 409.0	82887	19.33	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C2-8:2FTS	7.000	529.0 -> 509.0	75339	19.61	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.0%		
13C2-PFDoDA	7.879	615.0 -> 570.0	249825	18.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C2-PFTeDA	9.124	715.0 -> 670.0	303877	17.84	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.2%		
13C3-PFBS	3.349	302.0 -> 99.0	12450	18.62	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.1%		
13C3-PFHxS	5.194	402.0 -> 99.0	12832	18.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C4-PFBA	1.700	217.0 -> 172.0	68475	18.57	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.8%		
13C4-PFHpA	5.149	367.0 -> 322.0	167622	19.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C5-PFHxA	4.290	318.0 -> 273.0	178000	18.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C5-PFPeA	3.119	268.0 -> 223.0	111225	18.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.2%		
13C6-PFDA	6.965	519.0 -> 474.0	177101	19.07	µg/L	-0.012

Perfluorinated Compounds by LC/MS/MS

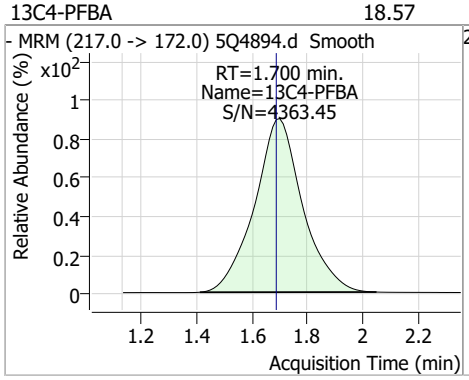
Compound	RT	QIon	Resp.	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%		
13C7-PFUnDA	7.446	570.0 -> 525.0	217152	18.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%		
13C8-FOSA	6.530	506.0 -> 78.0	43108	18.34 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.7%		
13C8-PFOA	5.845	421.0 -> 376.0	225590	19.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C8-PFOS	6.428	507.0 -> 99.0	20967	18.20 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.0%		
13C9-PFNA	6.443	472.0 -> 427.0	223761	18.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
d3-MeFOSAA	7.009	573.0 -> 419.0	38651	22.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
13C3-HFPO-DA	4.557	287.0 -> 169.0	10761	18.79 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
d3-MeFOSA	6.952	515.0 -> 169.0	9986	17.75 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%		
d5-EtFOSAA	7.157	589.0 -> 419.0	44503	21.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
Target Compounds						**QValue**
4:2FTS	4.201	327.0 -> 307.0	66479	20.60 µg/L		99
6:2FTS	5.831	427.0 -> 407.0	89916	20.82 µg/L		98
8:2FTS	7.001	527.0 -> 507.0	81021	20.94 µg/L		97
EtFOSAA	7.171	584.0 -> 419.0	32720	23.40 µg/L		98
FOSA	6.519	498.0 -> 78.0	43880	19.90 µg/L		99
MeFOSAA	7.010	570.0 -> 419.0	35299	21.24 µg/L		98
PFBA	1.694	213.0 -> 169.0	25949	19.04 µg/L		100
PFBS	3.354	299.0 -> 80.0	36867	19.68 µg/L		100
PFDA	6.965	513.0 -> 469.0	214586	19.46 µg/L		100
PFDoDA	7.880	613.0 -> 569.0	241482	19.51 µg/L		99
PFDS	7.406	599.0 -> 80.0	30835	18.69 µg/L		98
PFHpA	5.150	363.0 -> 319.0	221935	19.43 µg/L		100
PFHpS	5.855	449.0 -> 80.0	33106	19.51 µg/L		99
PFHxA	4.291	313.0 -> 269.0	172197	19.50 µg/L		100
PFHxS	5.195	399.0 -> 80.0	35994	19.34 µg/L	m	98
PFNA	6.444	463.0 -> 419.0	197202	19.36 µg/L		99
PFNS	6.937	549.0 -> 80.0	30327	19.31 µg/L		98
PFOA	5.845	413.0 -> 369.0	268942	19.60 µg/L		100
PFOS	6.416	499.0 -> 80.0	37498	19.96 µg/L	m	86
PFPeA	3.122	263.0 -> 219.0	104292	19.58 µg/L		100
PFPeS	4.398	349.0 -> 80.0	28382	18.99 µg/L		99
PFTeDA	9.128	713.0 -> 669.0	306466	18.78 µg/L		100
PFTrDA	8.375	663.0 -> 619.0	311964	18.57 µg/L		99
PFUnDA	7.448	563.0 -> 519.0	219759	19.57 µg/L		100
11Cl-PF3OUdS	7.603	631.0 -> 451.0	135251	18.75 µg/L		99
9Cl-PF3ONS	6.701	531.0 -> 351.0	119669	18.77 µg/L		100
ADONA	5.261	377.0 -> 251.0	278276	20.16 µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	38026	19.92 µg/L		100
MeFOSA	6.954	512.0 -> 169.0	11120	21.23 µg/L		98
4-PFECHS	5.741	461.0 -> 381.0	74403	19.40 µg/L		97
FBSA	4.343	298.0 -> 78.0	63208	20.57 µg/L		99
FHxSA	5.674	398.0 -> 78.0	52707	19.89 µg/L		100

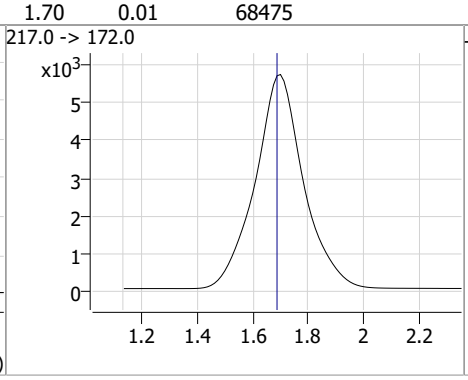
 # = Qualifier out of range, m = manually integrated, + = Area summed

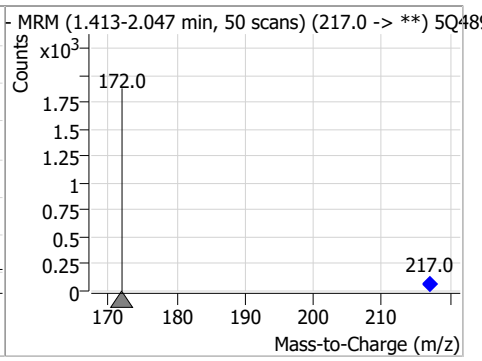
Perfluorinated Compounds by LC/MS/MS



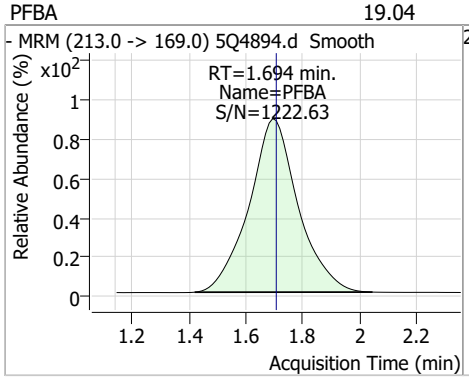
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.57	1.70	0.01	68475				

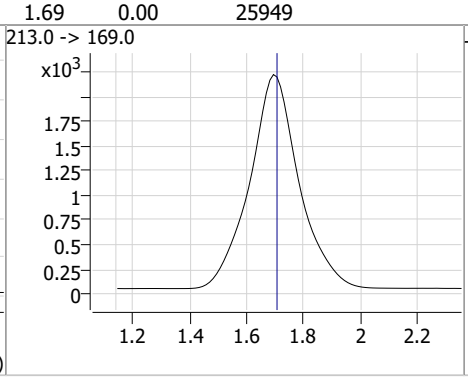


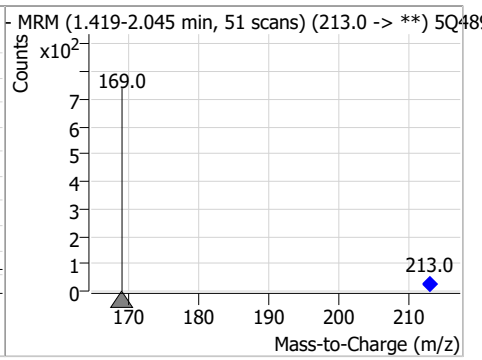




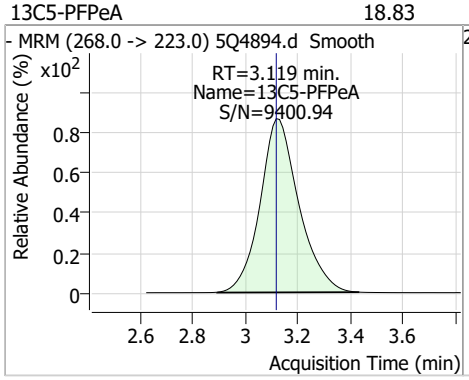
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.04	1.69	0.00	25949				

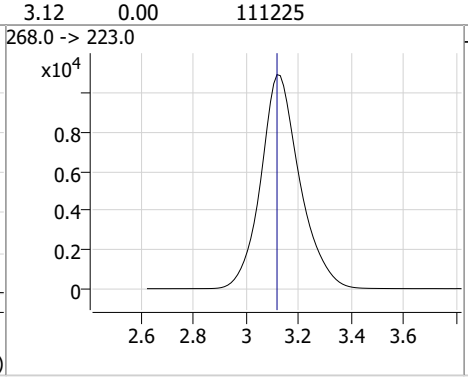


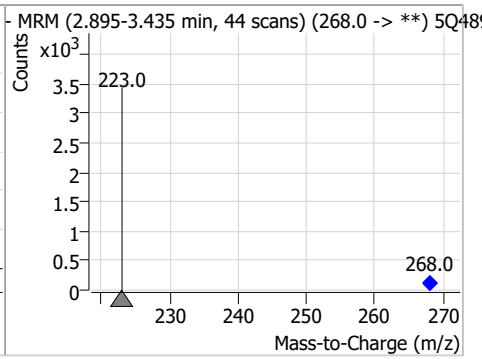




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.83	3.12	0.00	111225				

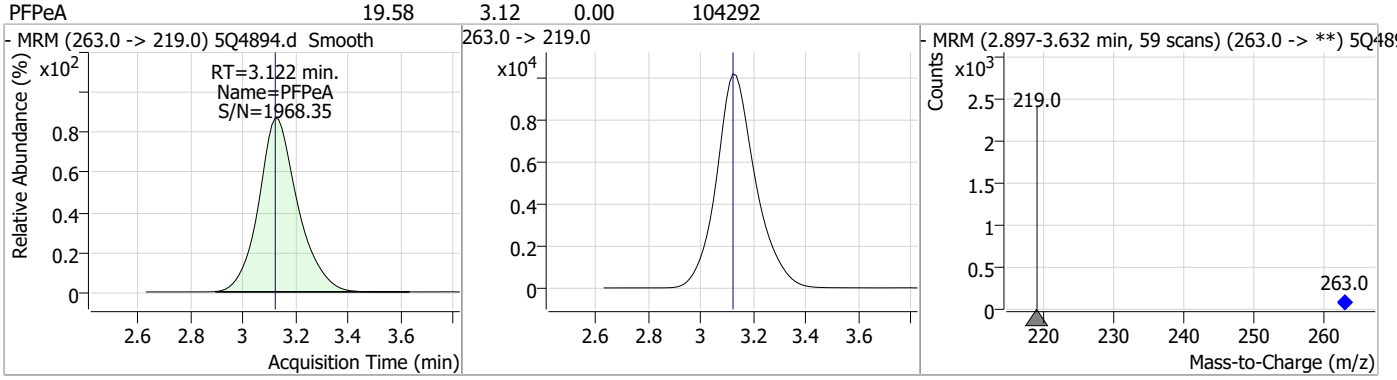




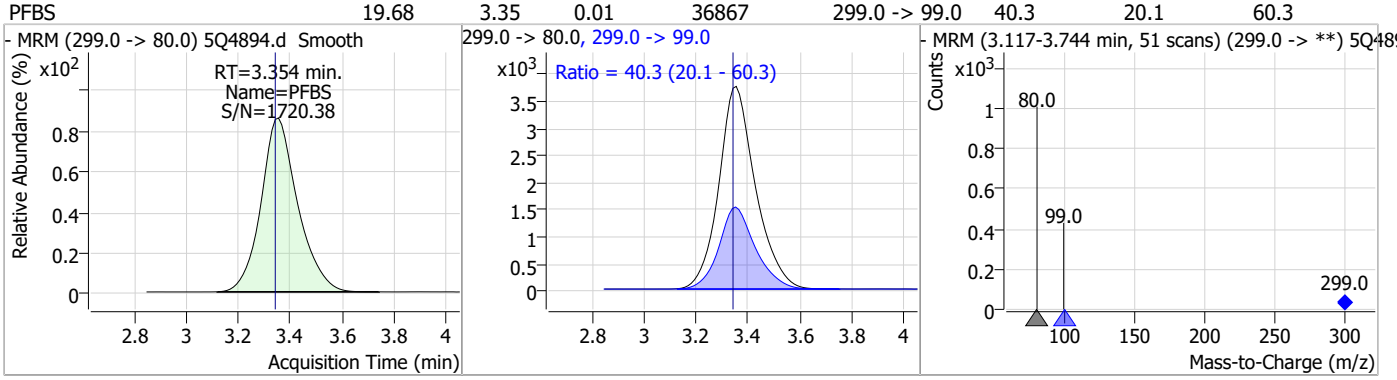


Perfluorinated Compounds by LC/MS/MS

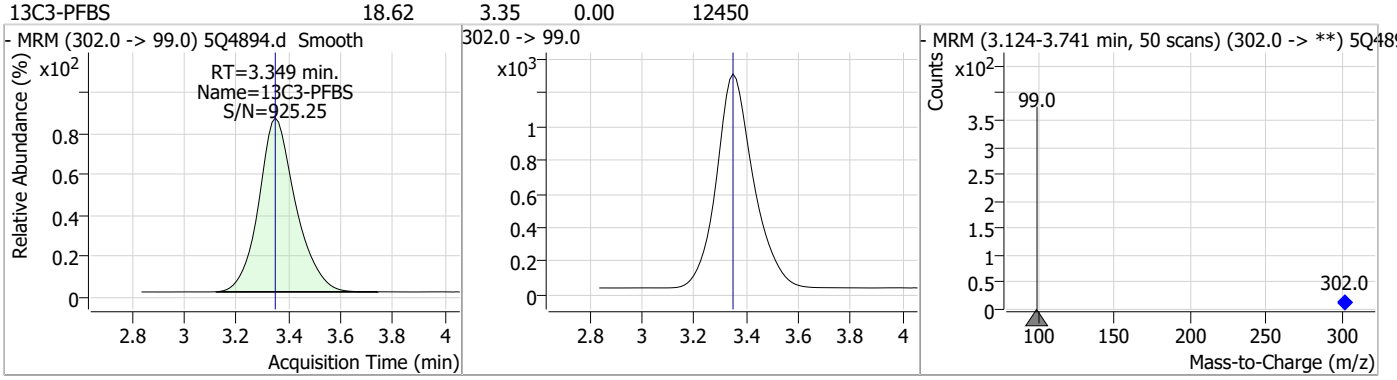
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.58	3.12	0.00	104292				



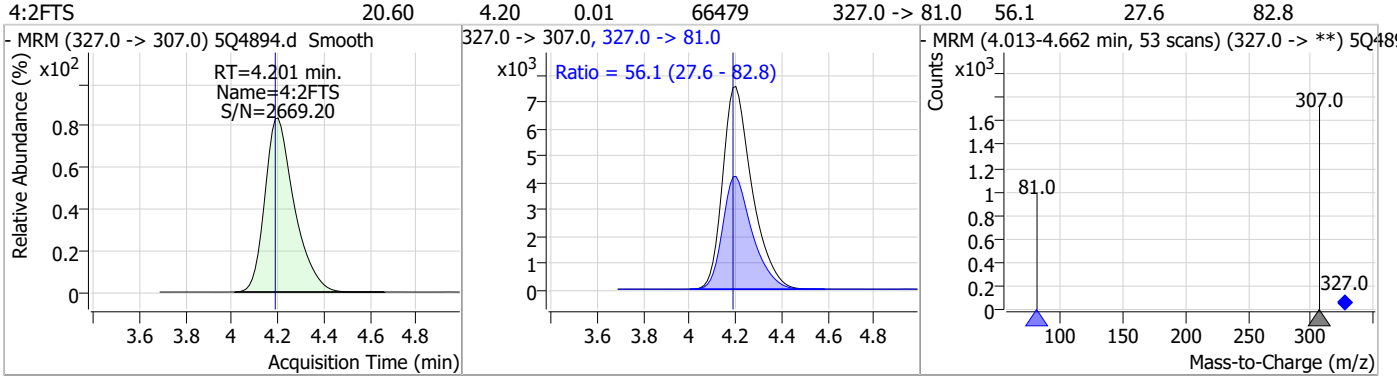
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.68	3.35	0.01	36867	299.0 -> 99.0	40.3	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.62	3.35	0.00	12450				

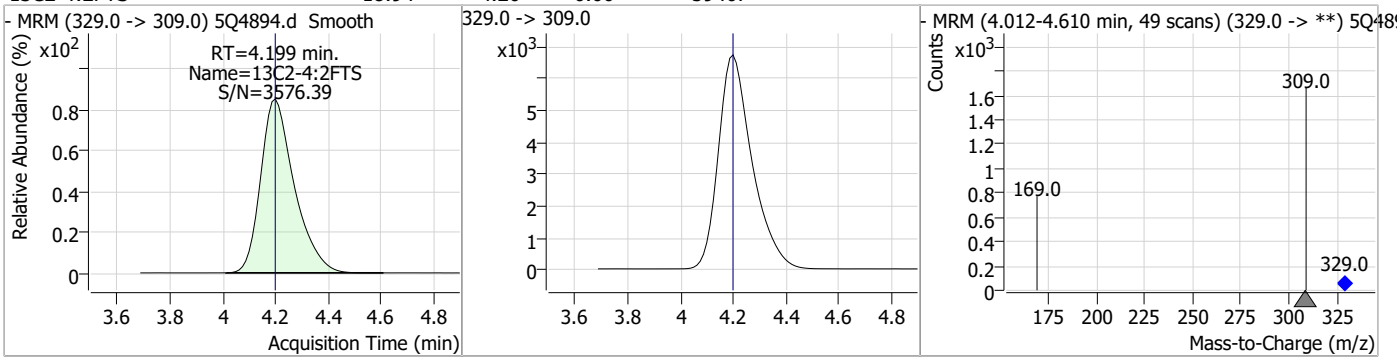


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.60	4.20	0.01	66479	327.0 -> 81.0	56.1	27.6	82.8

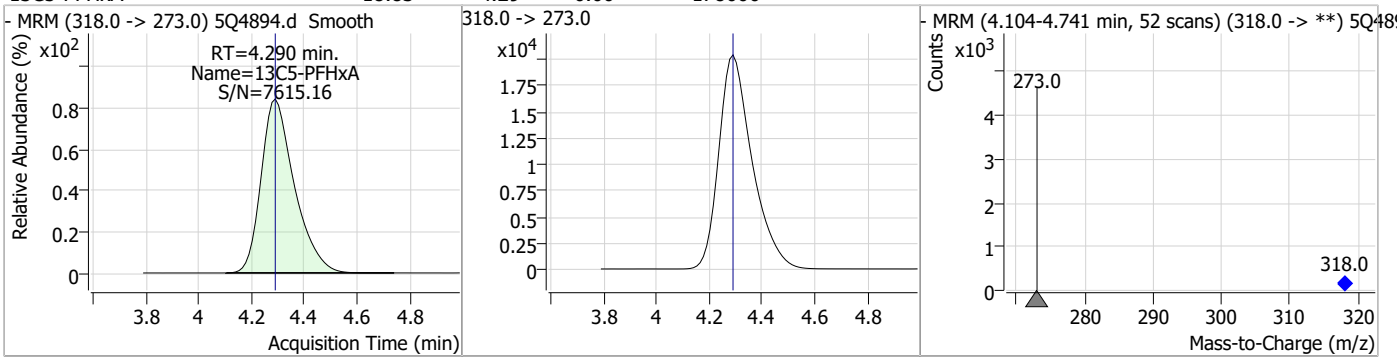


Perfluorinated Compounds by LC/MS/MS

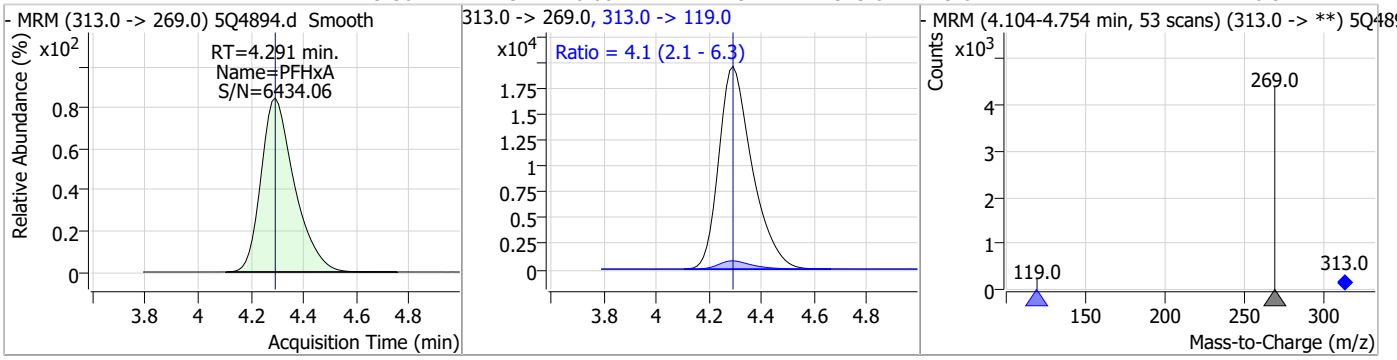
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.94	4.20	0.00	59407				



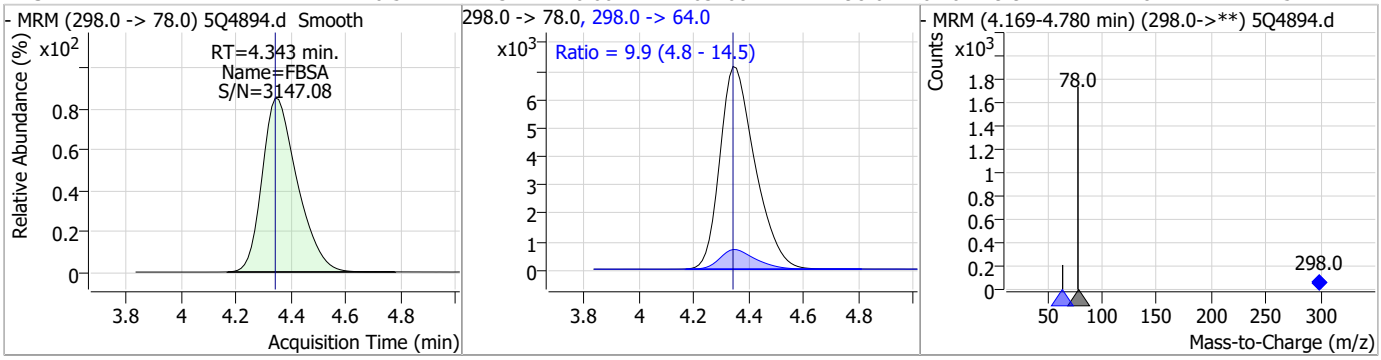
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.83	4.29	0.00	178000				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.50	4.29	0.00	172197	313.0 -> 119.0	4.1	2.1	6.3

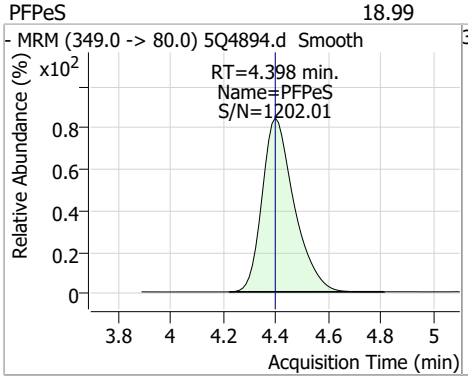


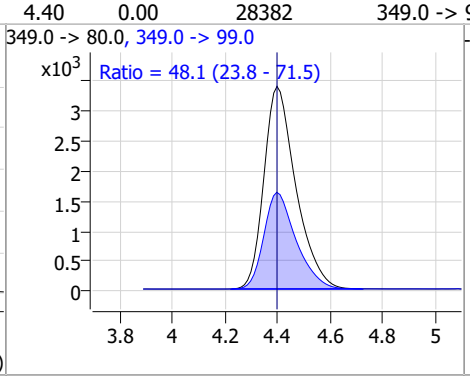
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.57	4.34	0.00	63208	298.0 -> 64.0	9.9	4.8	14.5

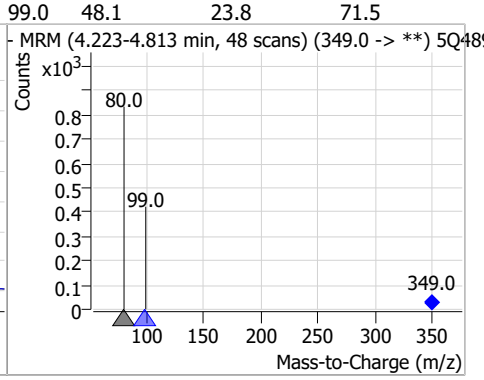


Perfluorinated Compounds by LC/MS/MS

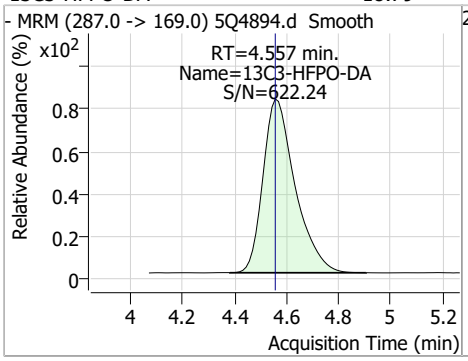
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	18.99	4.40	0.00	28382	349.0 -> 99.0	48.1	23.8	71.5

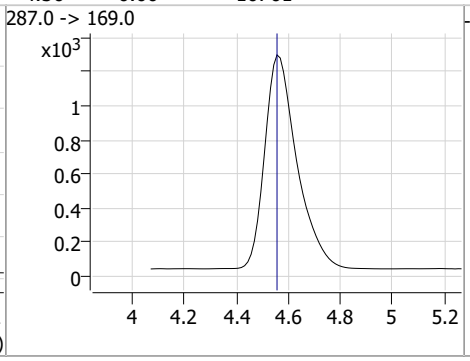


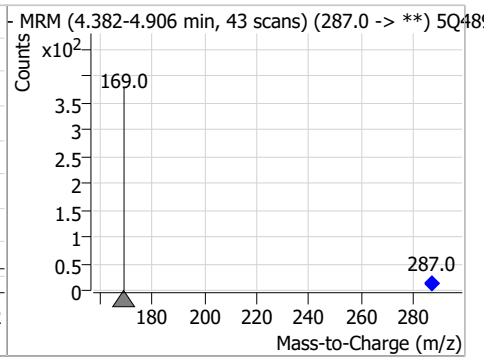




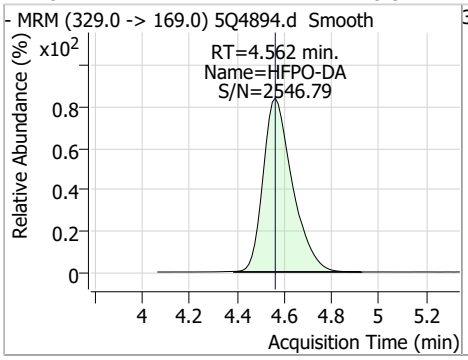
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.79	4.56	0.00	10761				

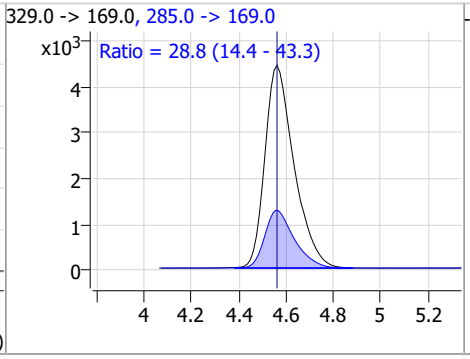


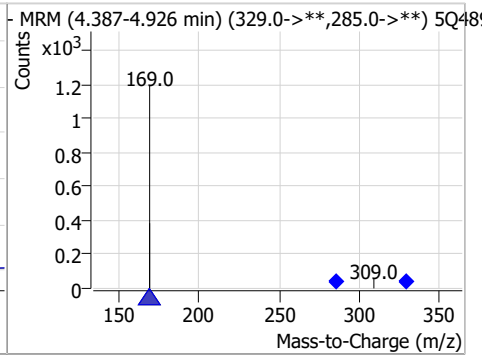




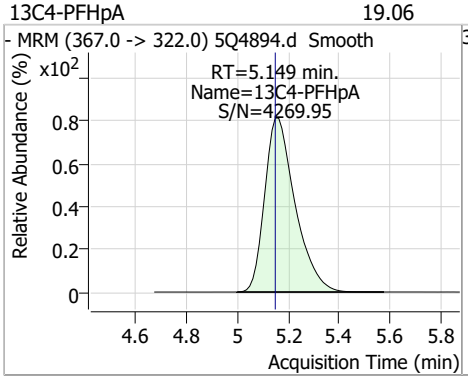
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.92	4.56	0.00	38026	285.0 -> 169.0	28.8	14.4	43.3

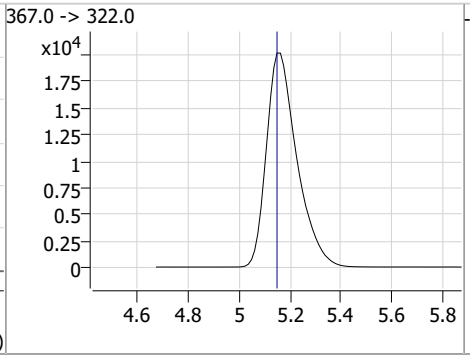


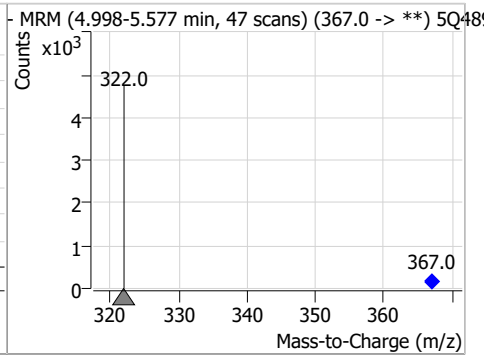




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.06	5.15	0.00	167622				

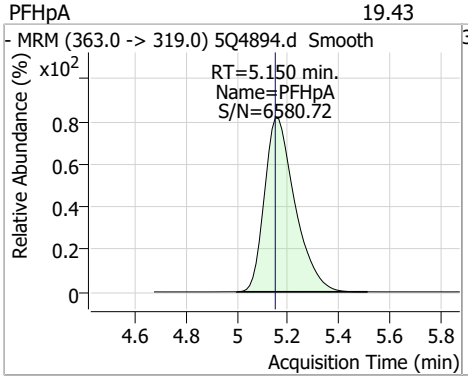


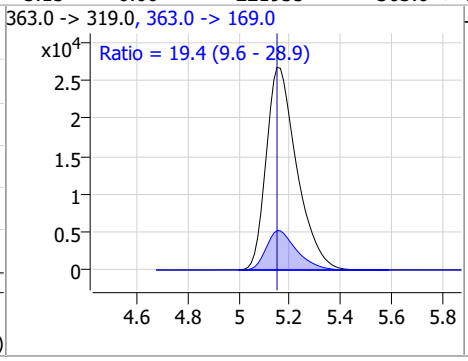


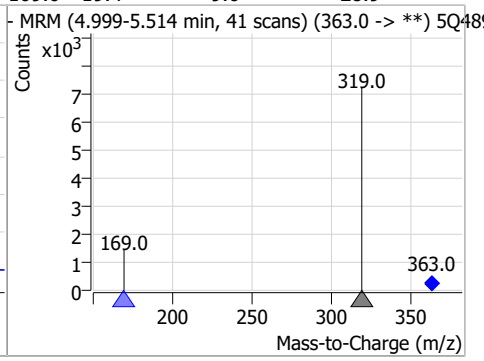


Perfluorinated Compounds by LC/MS/MS

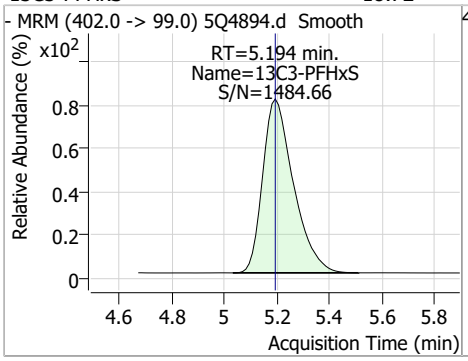
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.43	5.15	0.00	221935	363.0 -> 169.0	19.4	9.6	28.9

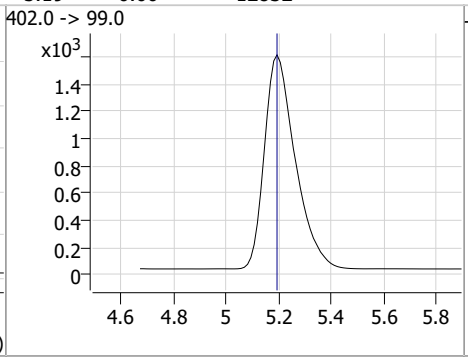


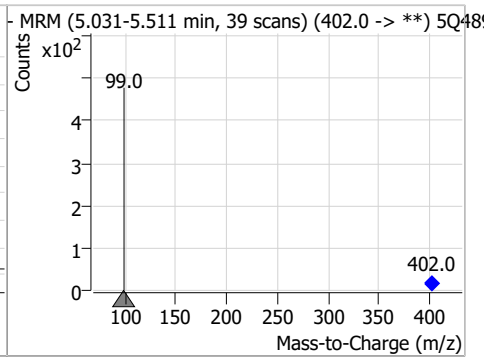




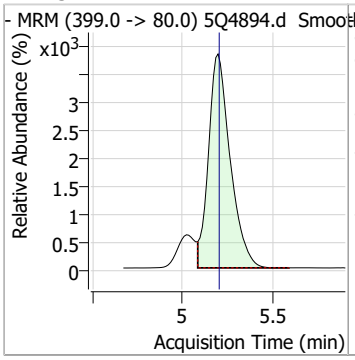
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.72	5.19	0.00	12832				

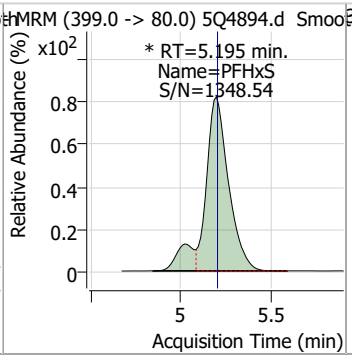


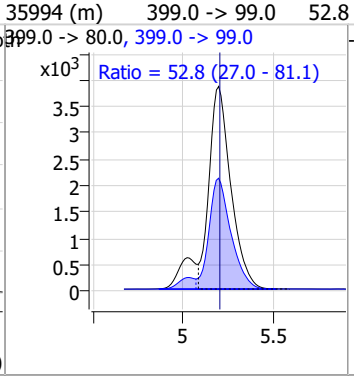


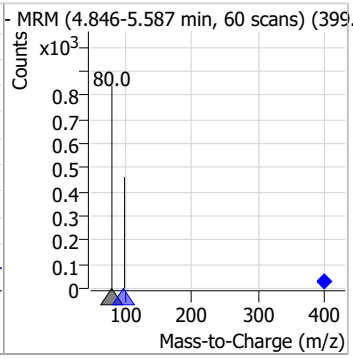


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.34	5.20	0.00	35994 (m)	399.0 -> 99.0	52.8	27.0	81.1

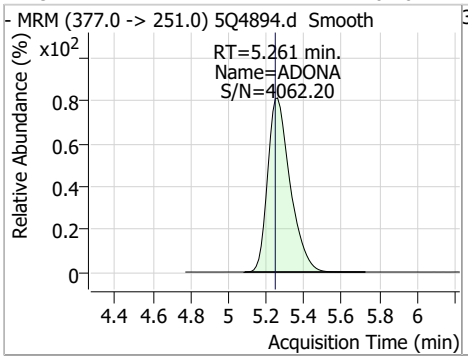


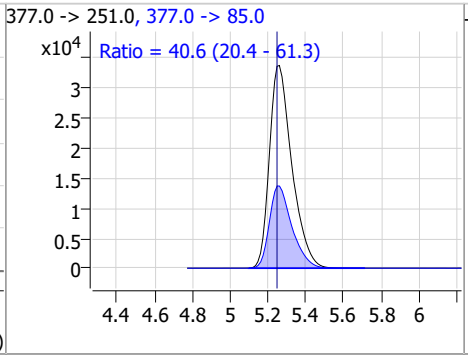


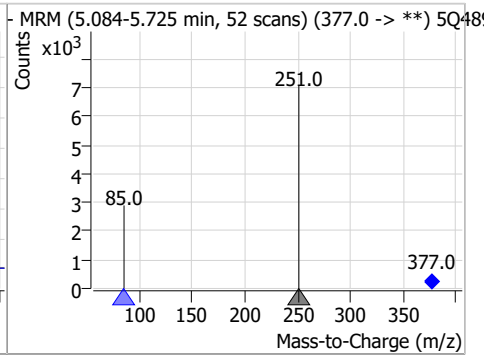




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.16	5.26	0.01	278276	377.0 -> 85.0	40.6	20.4	61.3

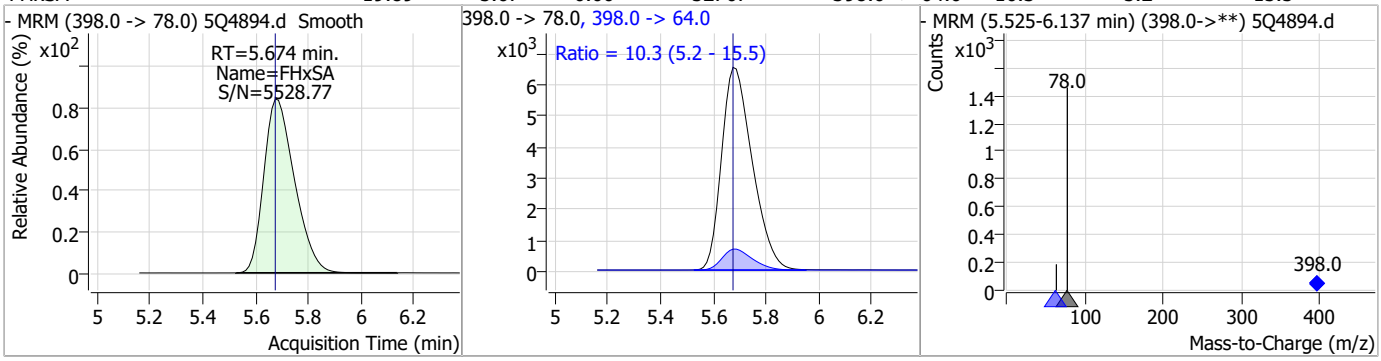




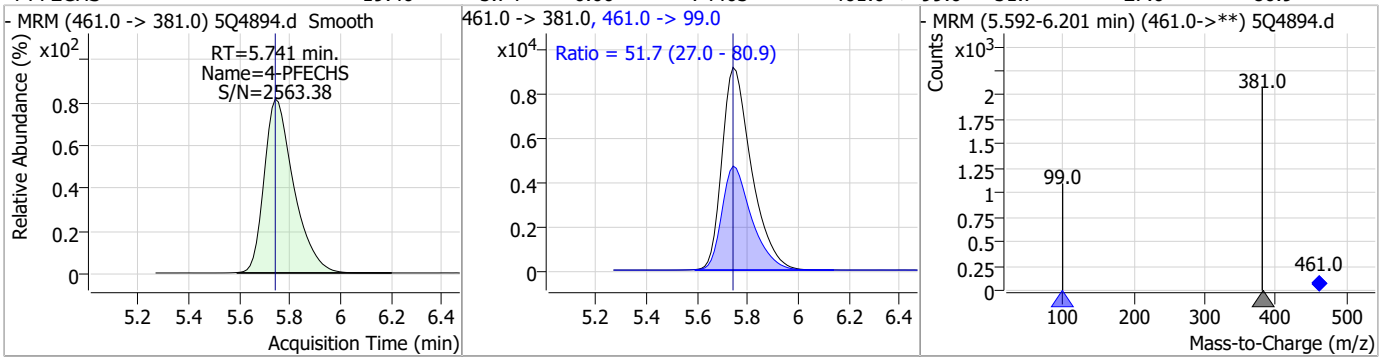


Perfluorinated Compounds by LC/MS/MS

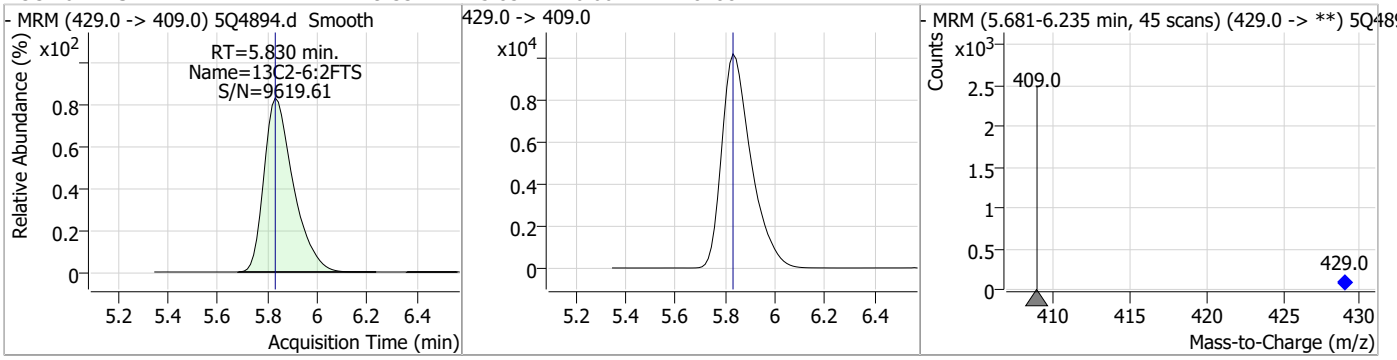
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.89	5.67	0.00	52707	398.0 -> 64.0	10.3	5.2	15.5



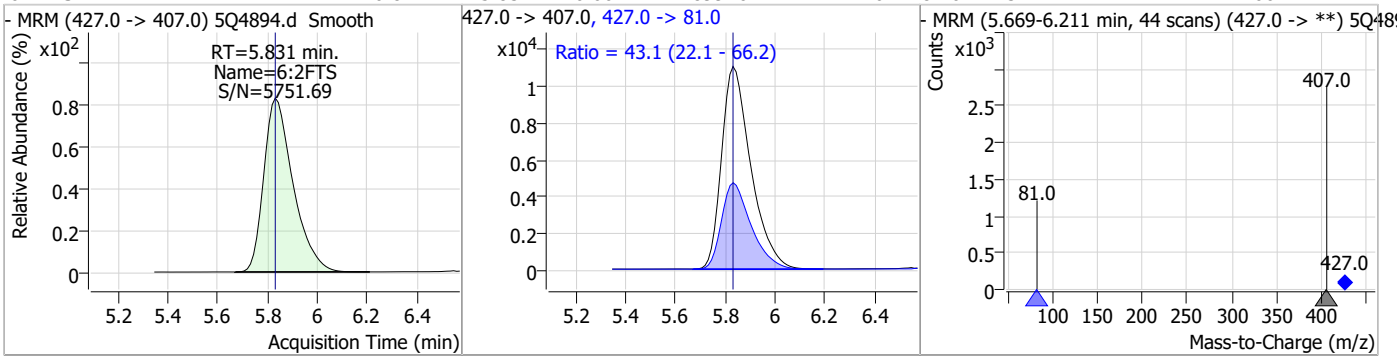
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.40	5.74	0.00	74403	461.0 -> 99.0	51.7	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.33	5.83	0.00	82887				

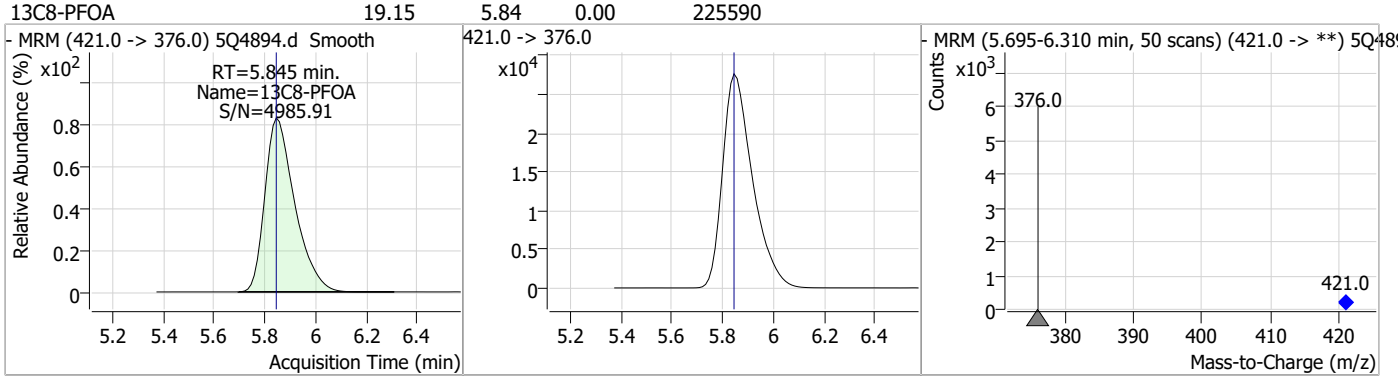


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.82	5.83	0.00	89916	427.0 -> 81.0	43.1	22.1	66.2

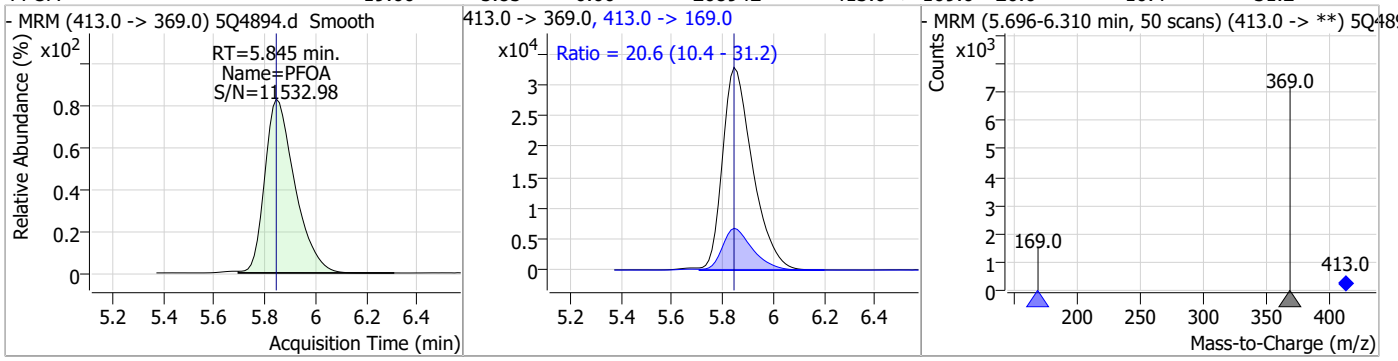


Perfluorinated Compounds by LC/MS/MS

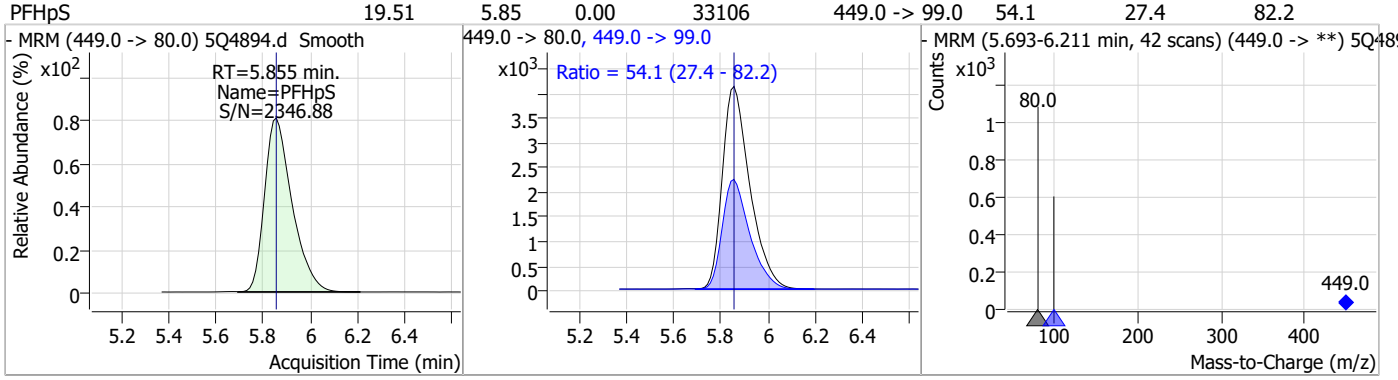
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.15	5.84	0.00	225590				



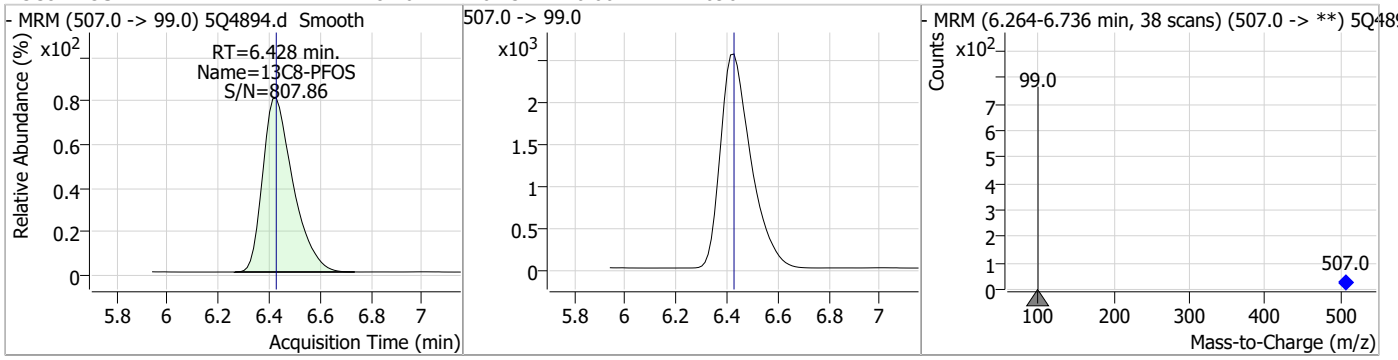
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.60	5.85	0.00	268942	413.0 -> 169.0	20.6	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.51	5.85	0.00	33106	449.0 -> 99.0	54.1	27.4	82.2

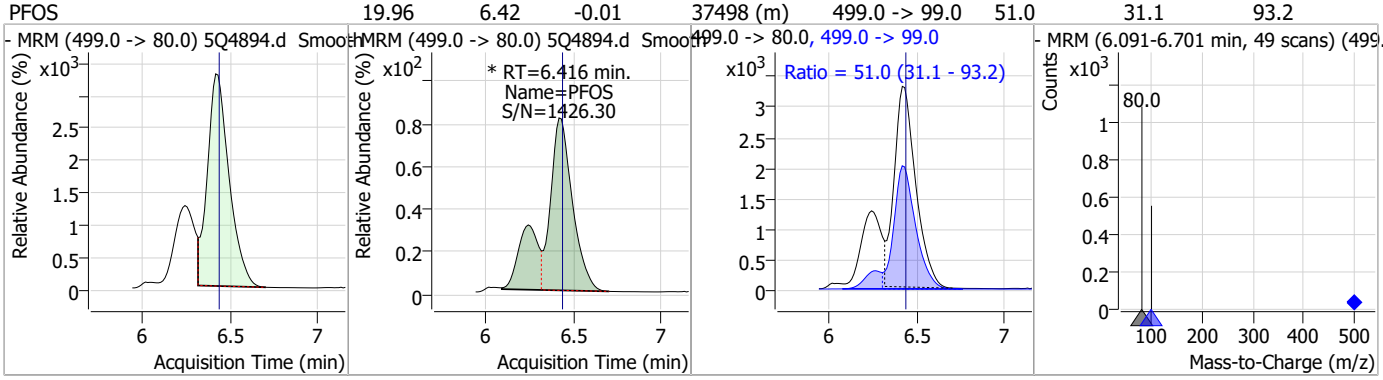


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	18.20	6.43	0.00	20967				

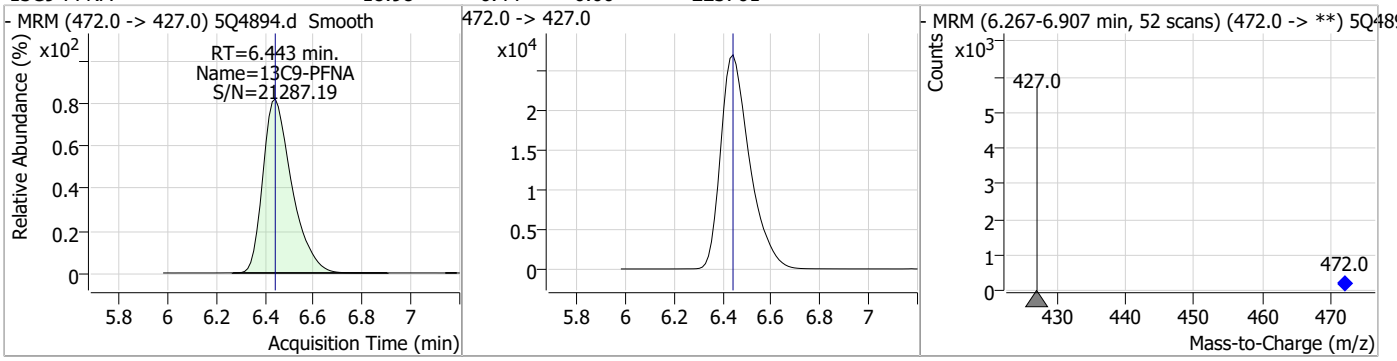


Perfluorinated Compounds by LC/MS/MS

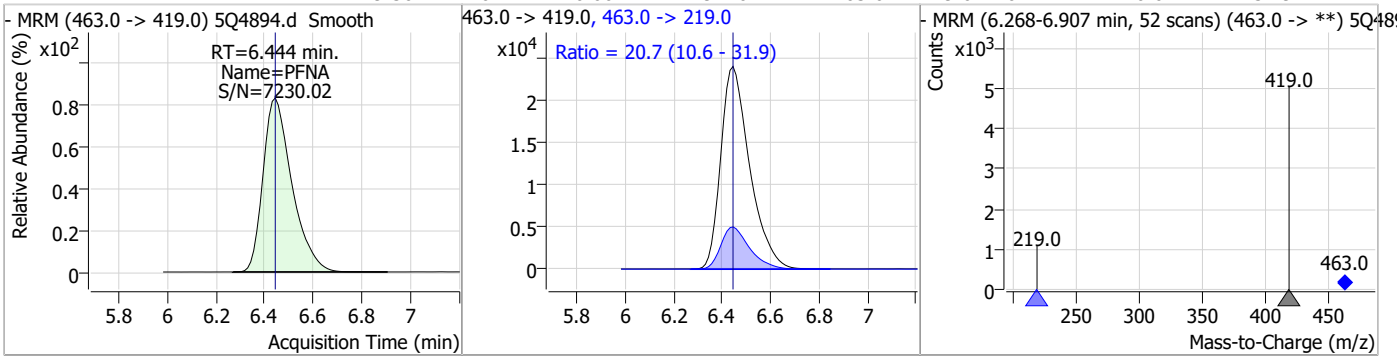
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.96	6.42	-0.01	37498 (m)	499.0 -> 99.0	51.0	31.1	93.2



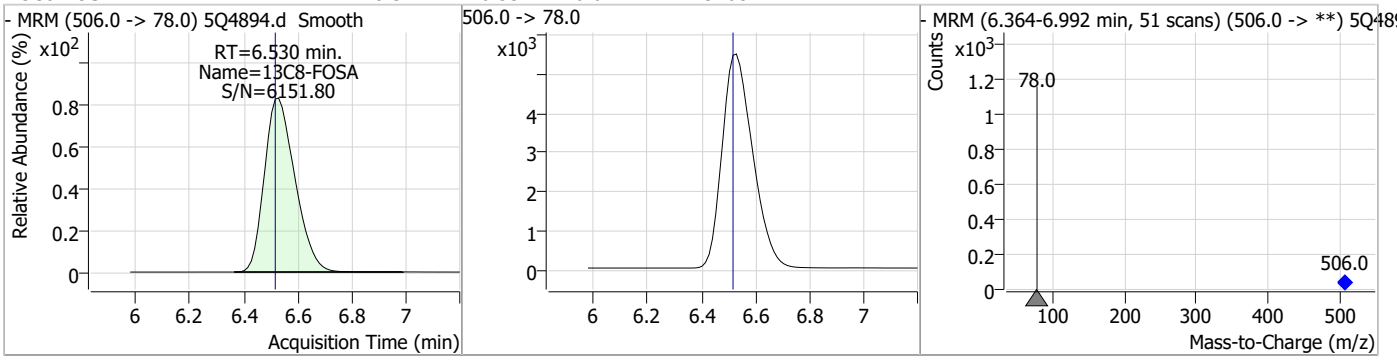
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.98	6.44	0.00	223761				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.36	6.44	0.00	197202	463.0 -> 219.0	20.7	10.6	31.9

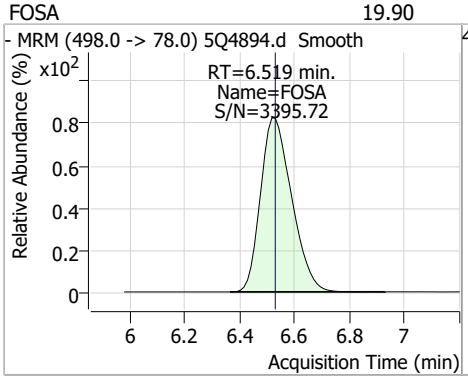


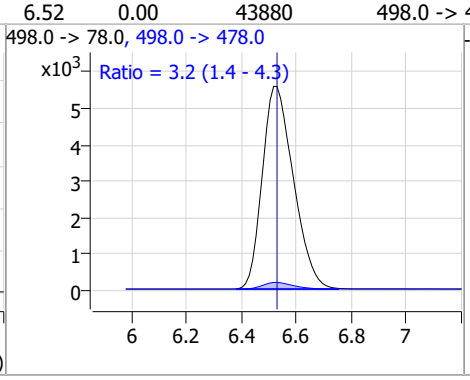
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.34	6.53	0.01	43108				

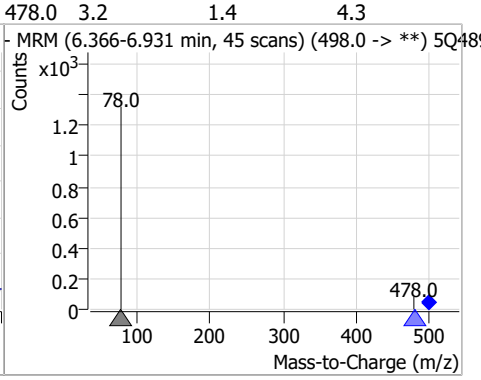


Perfluorinated Compounds by LC/MS/MS

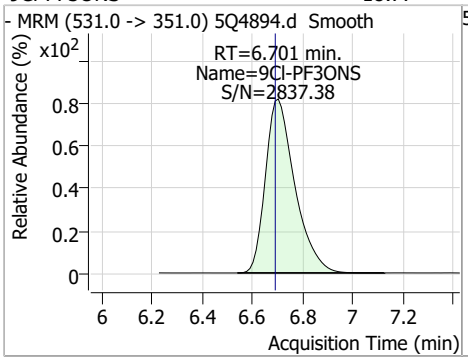
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.90	6.52	0.00	43880	498.0 -> 478.0	3.2	1.4	4.3

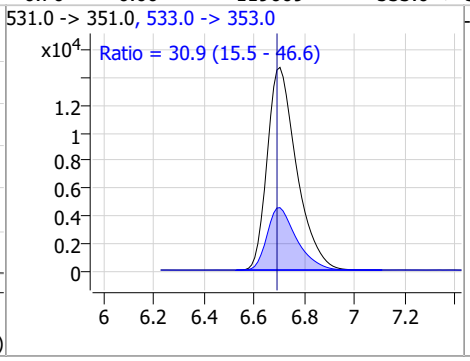


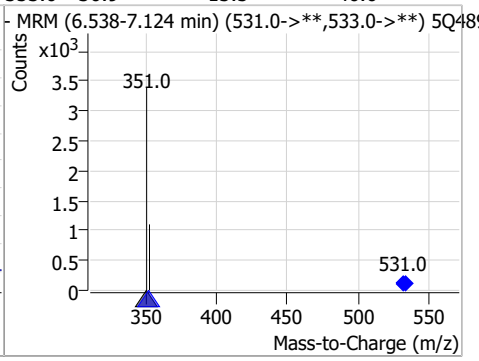




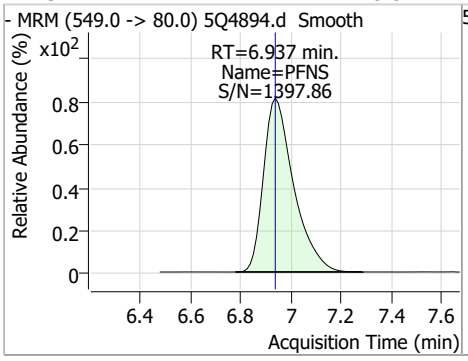
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.77	6.70	0.00	119669	533.0 -> 353.0	30.9	15.5	46.6

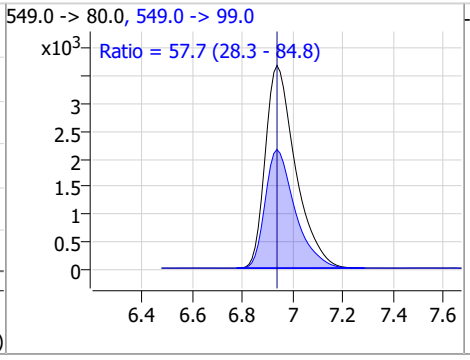


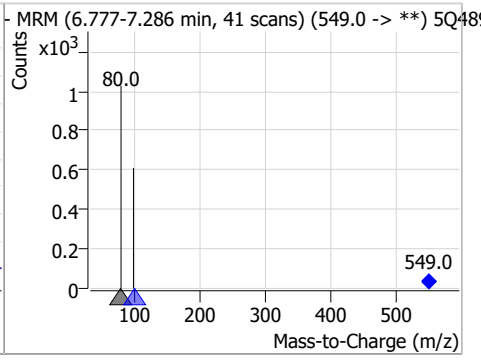




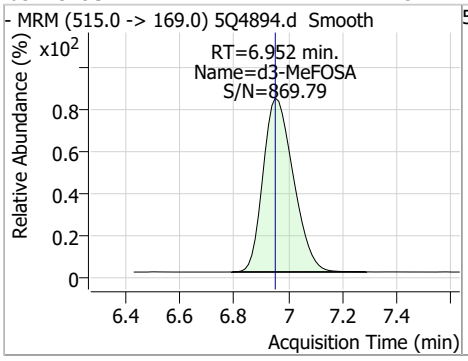
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.31	6.94	0.00	30327	549.0 -> 99.0	57.7	28.3	84.8

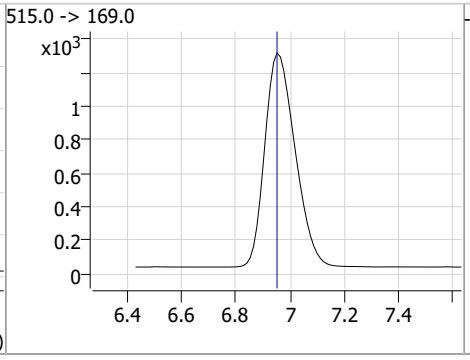


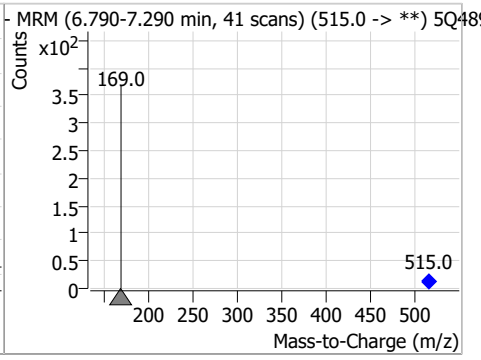




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.75	6.95	0.00	9986				

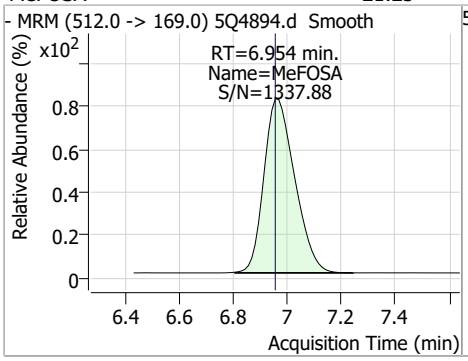


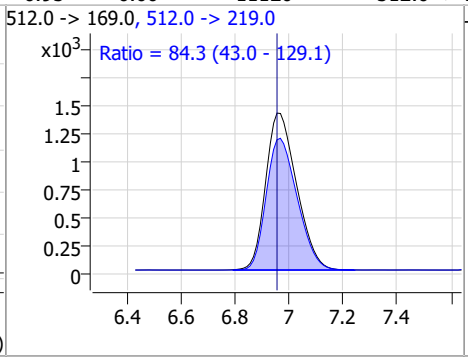


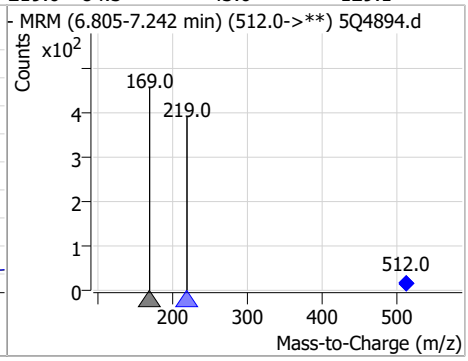


Perfluorinated Compounds by LC/MS/MS

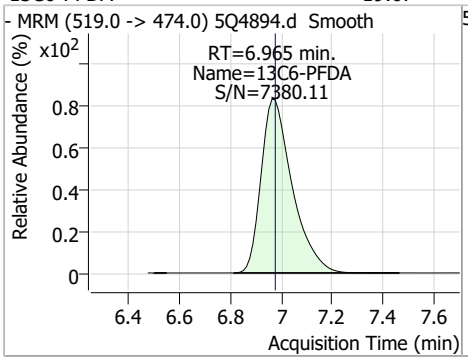
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.23	6.95	0.00	11120	512.0 -> 219.0	84.3	43.0	129.1

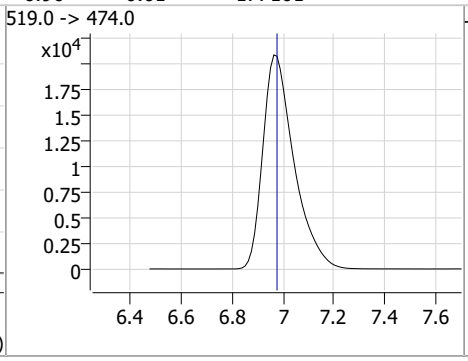


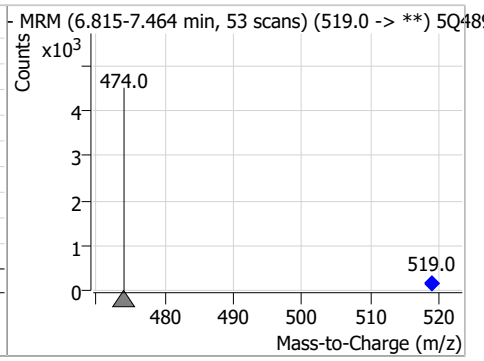




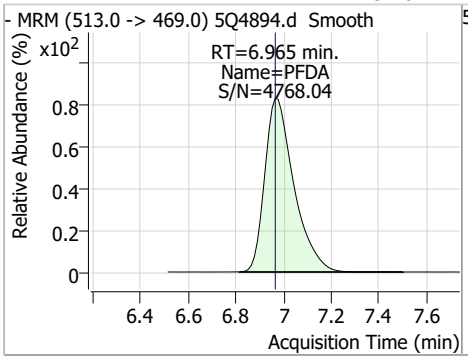
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.07	6.96	-0.01	177101				

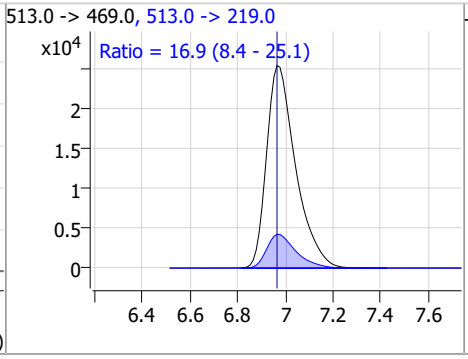


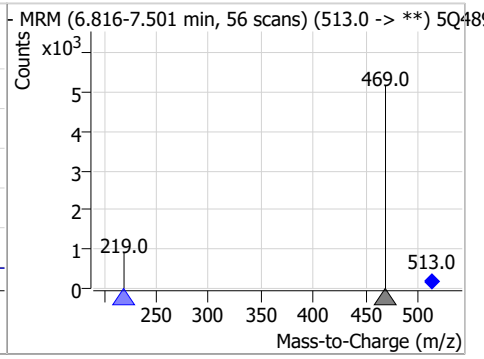




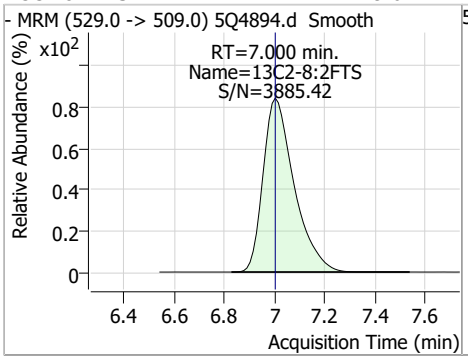
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.46	6.97	-0.01	214586	513.0 -> 219.0	16.9	8.4	25.1

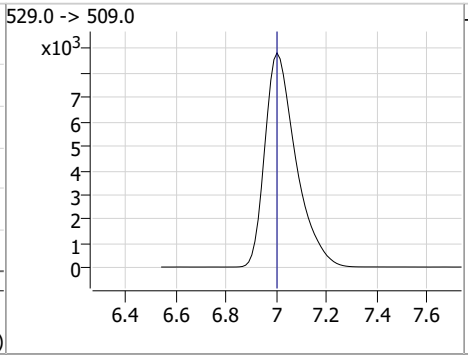


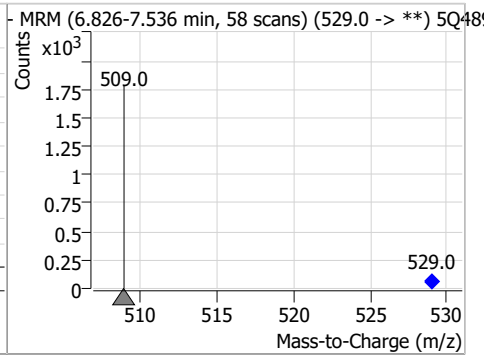




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.61	7.00	0.00	75339				

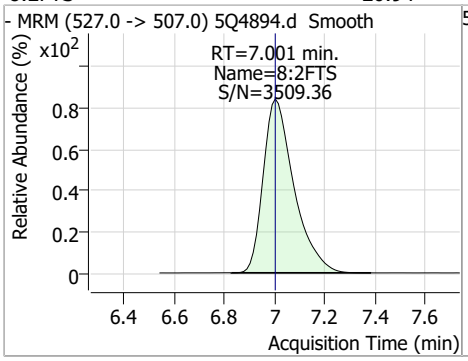


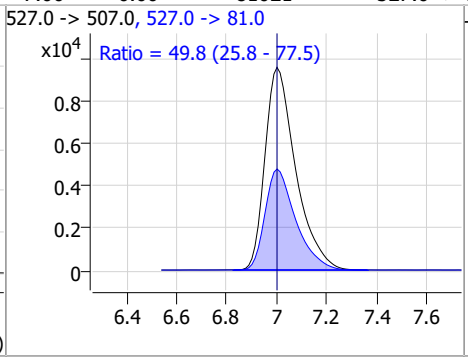


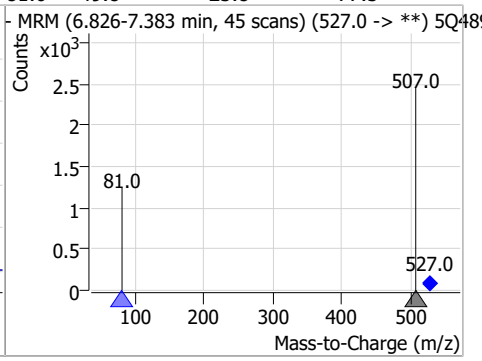


Perfluorinated Compounds by LC/MS/MS

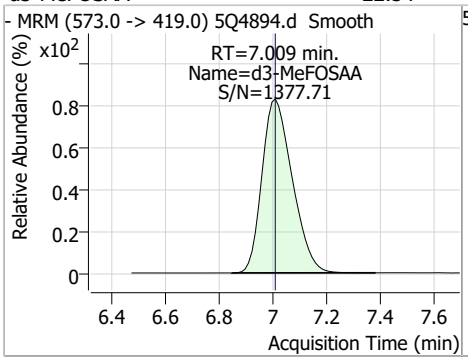
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.94	7.00	0.00	81021	527.0 -> 81.0	49.8	25.8	77.5

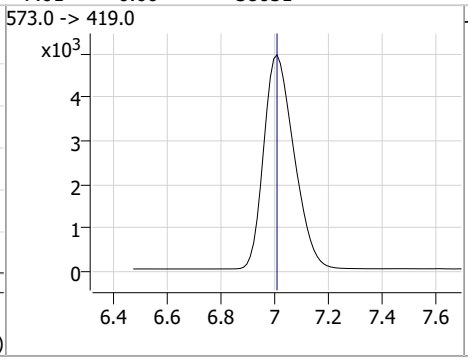


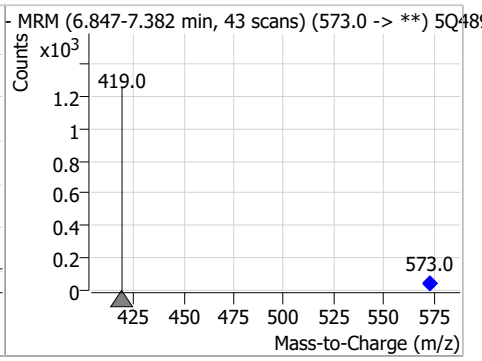




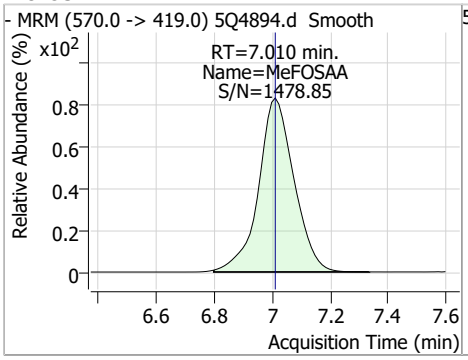
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.54	7.01	0.00	38651				

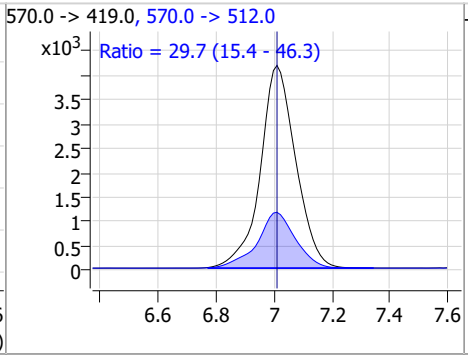


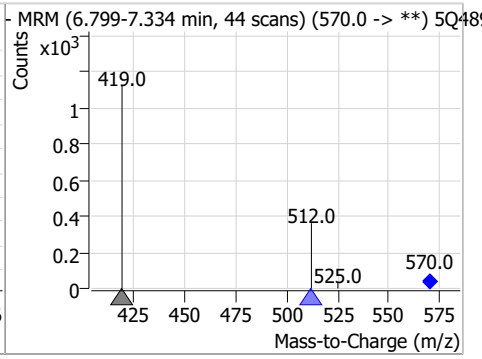




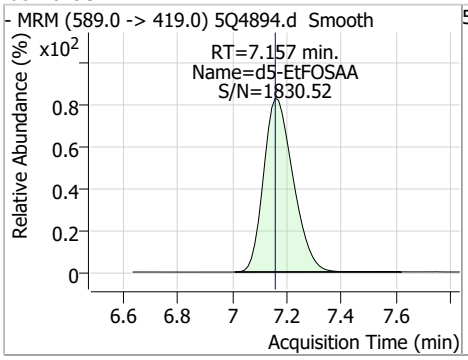
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.24	7.01	0.00	35299	570.0 -> 512.0	29.7	15.4	46.3

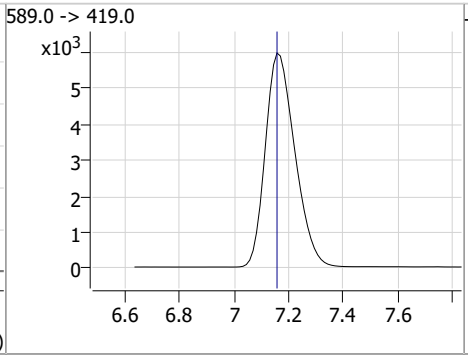


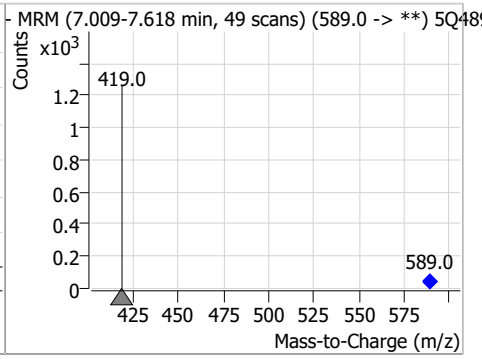




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.11	7.16	0.00	44503				

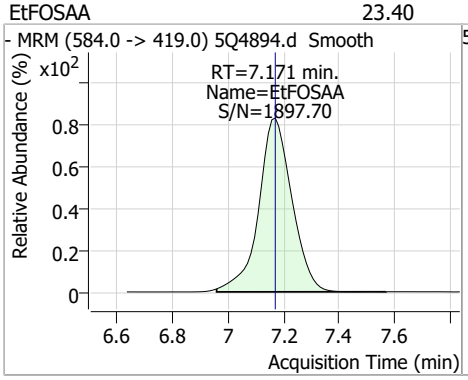


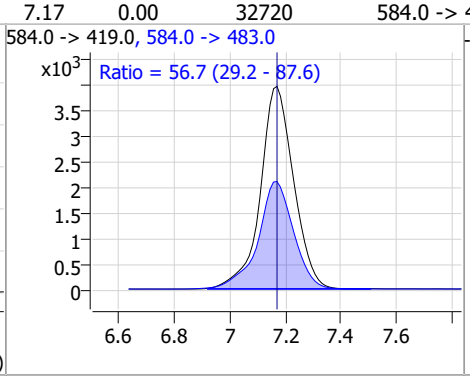


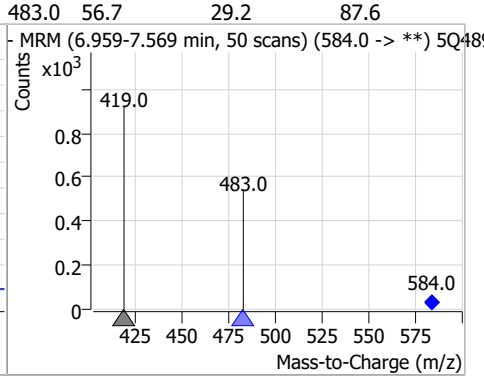


Perfluorinated Compounds by LC/MS/MS

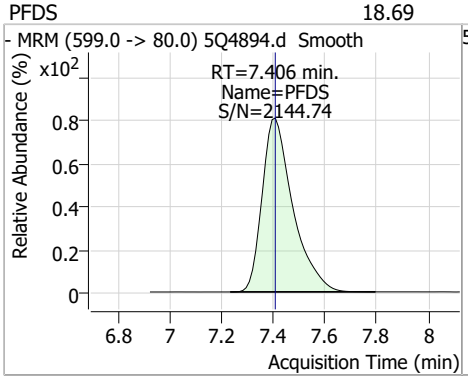
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	23.40	7.17	0.00	32720	584.0 -> 483.0	56.7	29.2	87.6

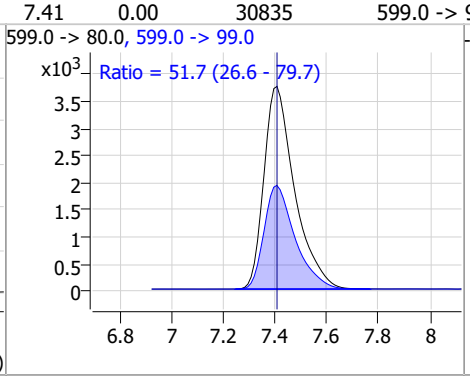


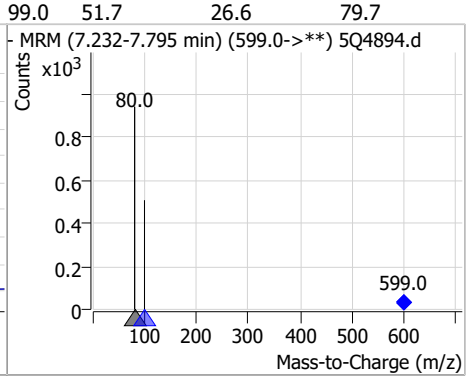




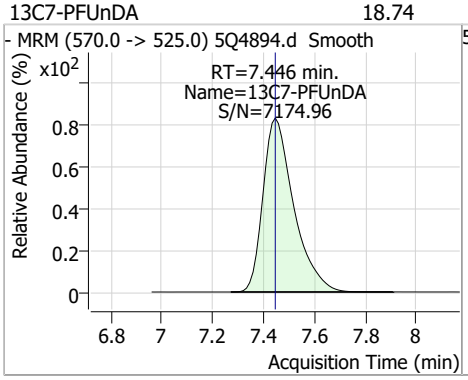
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.69	7.41	0.00	30835	599.0 -> 99.0	51.7	26.6	79.7

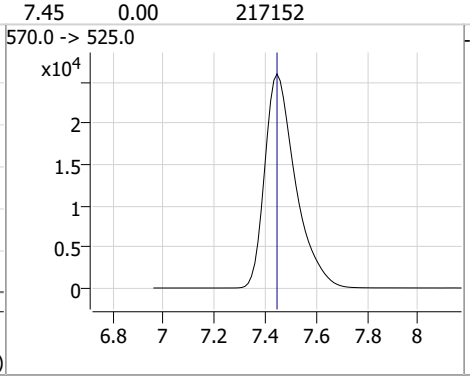


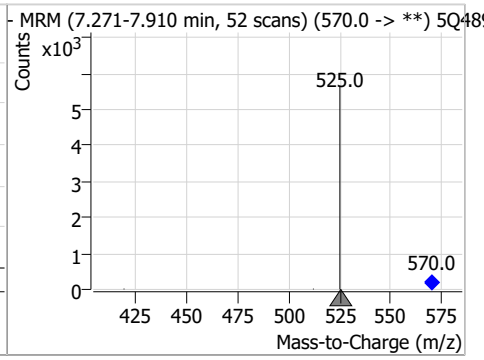




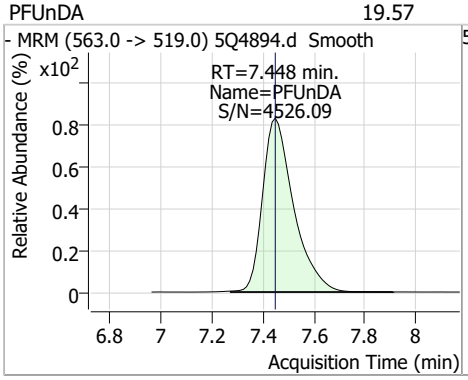
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.74	7.45	0.00	217152				

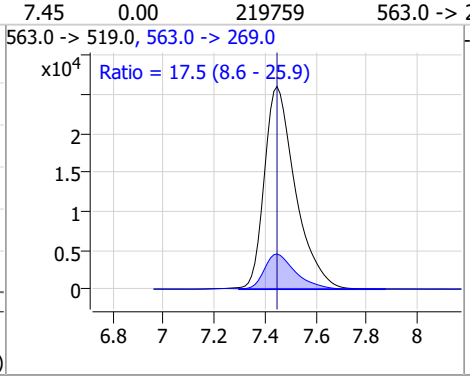


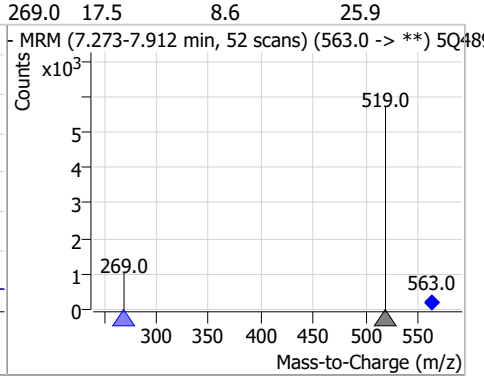




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.57	7.45	0.00	219759	563.0 -> 269.0	17.5	8.6	25.9

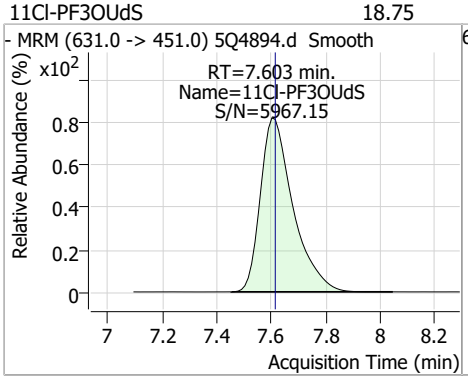


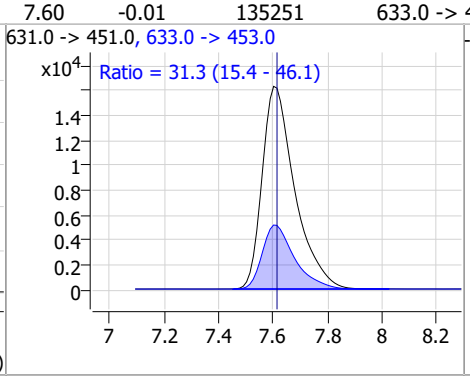


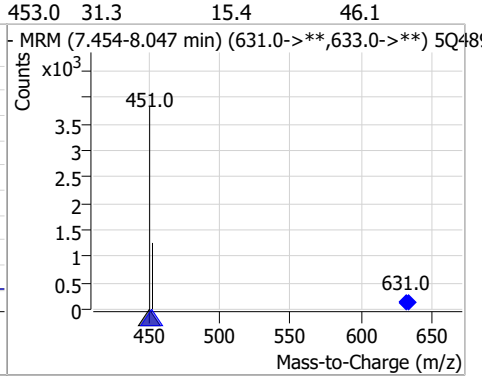


Perfluorinated Compounds by LC/MS/MS

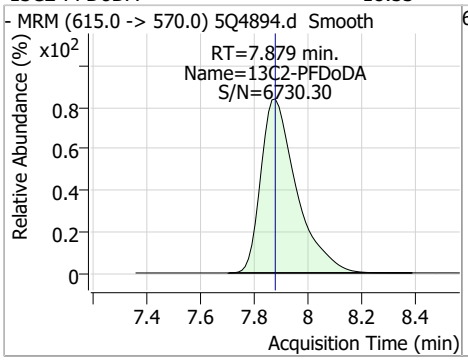
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	18.75	7.60	-0.01	135251	633.0 -> 453.0	31.3	15.4	46.1

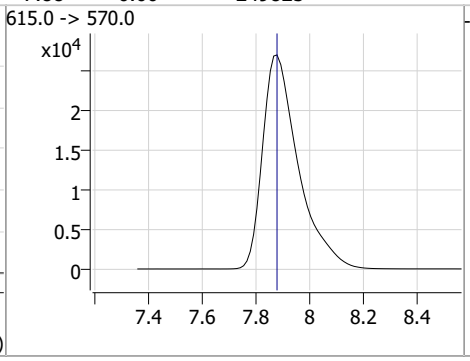


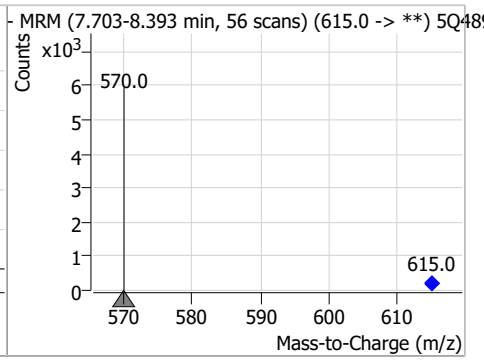




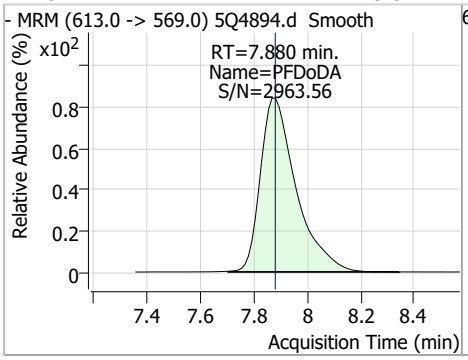
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.53	7.88	0.00	249825				

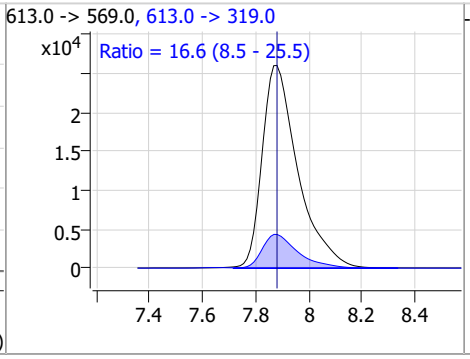


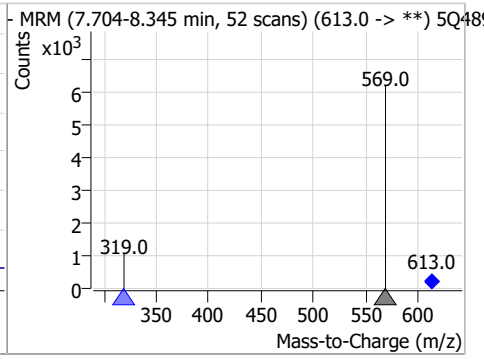




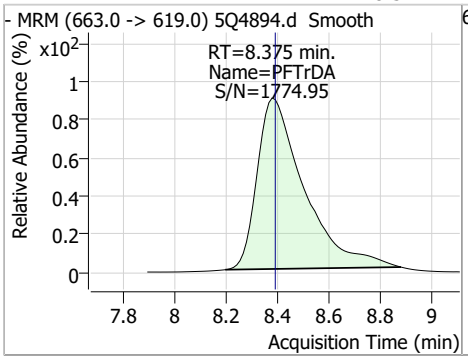
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.51	7.88	0.00	241482	613.0 -> 319.0	16.6	8.5	25.5

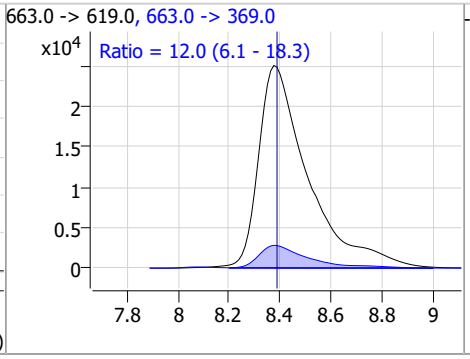


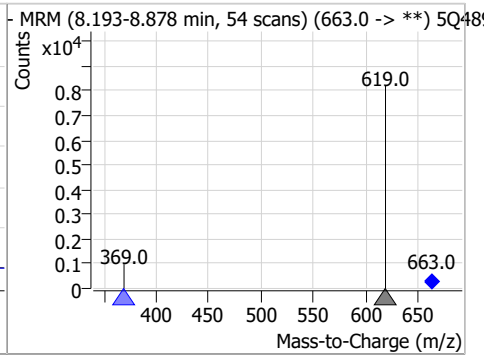




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.57	8.38	-0.01	311964	663.0 -> 369.0	12.0	6.1	18.3

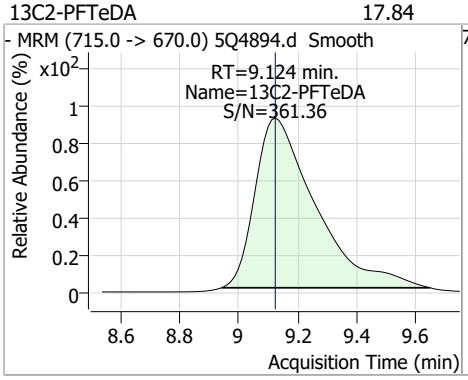


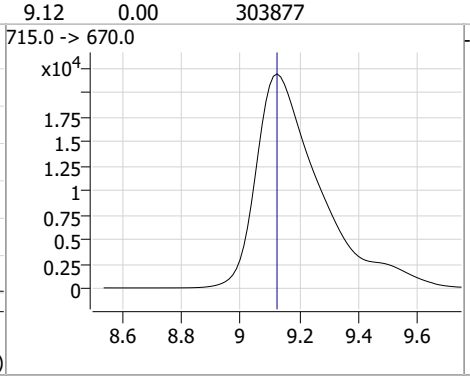


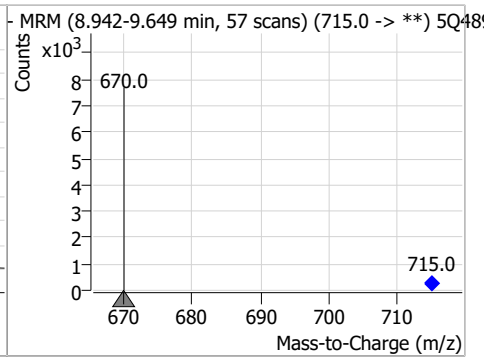


Perfluorinated Compounds by LC/MS/MS

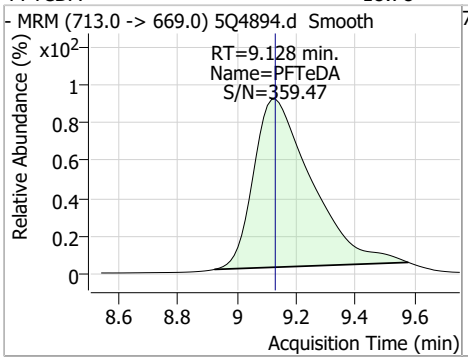
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	17.84	9.12	0.00	303877				

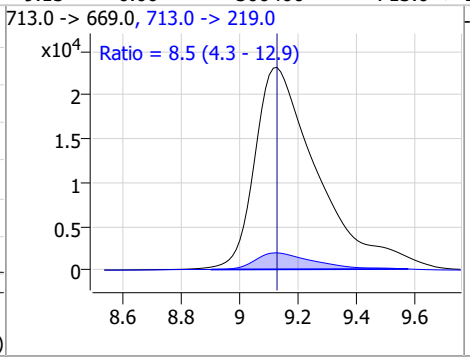


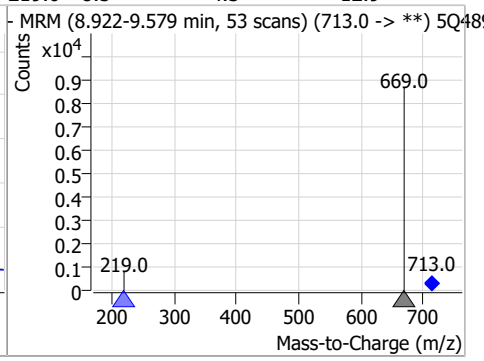




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	18.78	9.13	0.00	306466	713.0 -> 219.0	8.5	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q73-ECC73
Lab FileID: 5Q4894.D
Injection Time: 09/18/22 08:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/19/22 14:09 Anna Ludwig
Supervisor approved: 09/19/22 15:07 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.42	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:39

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4912.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/19/2022 6:10:59 PM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q74.batch.bin
Sample Information : OP92656,S5Q74,250,,,1.0,1,water

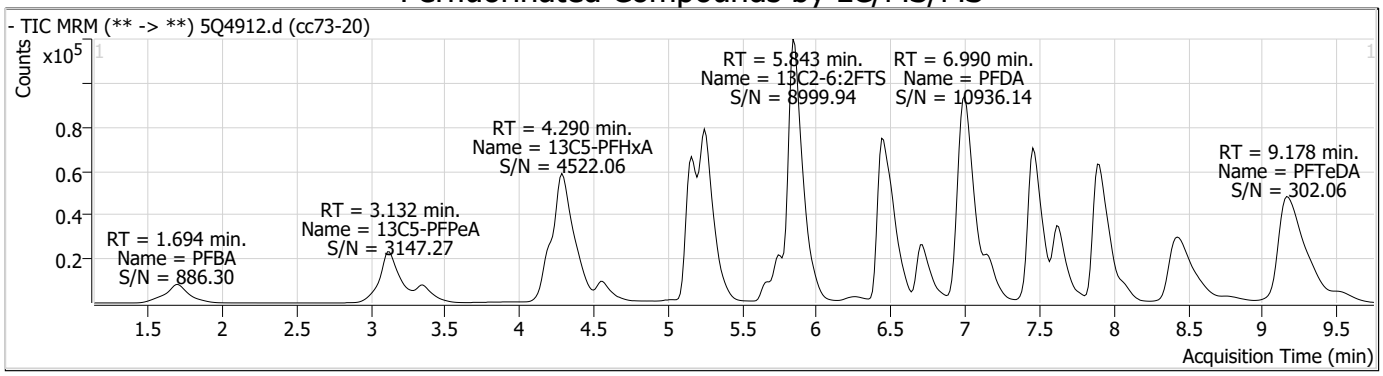
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68781	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	111987	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	177355	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	161687	20.00	µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	208668	20.00	µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	209567	20.00	µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	159921	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	200911	20.00	µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	235565	20.00	µg/L	0.027
M2-PFTeDA	9.174	715.0 -> 670.0	308868	20.00	µg/L	0.050
M8-FOSA	6.530	506.0 -> 78.0	42127	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12867	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	12794	20.00	µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	22270	20.00	µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	58631	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	79649	20.00	µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	73139	20.00	µg/L	0.025
M3-MeFOSAA	7.021	573.0 -> 419.0	31267	20.00	µg/L	0.012
M3-HFPO-DA	4.569	287.0 -> 169.0	11344	20.00	µg/L	0.012
M3-MeFOSA	6.952	515.0 -> 169.0	10007	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	40598	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	58631	18.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C2-6:2FTS	5.843	429.0 -> 409.0	79649	18.58	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.9%		
13C2-8:2FTS	7.025	529.0 -> 509.0	73139	19.04	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.2%		
13C2-PFDoDA	7.905	615.0 -> 570.0	235565	17.47	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%		
13C2-PFTeDA	9.174	715.0 -> 670.0	308868	18.13	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.6%		
13C3-PFBS	3.349	302.0 -> 99.0	12867	19.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.2%		
13C3-PFHxS	5.206	402.0 -> 99.0	12794	18.67	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFBA	1.700	217.0 -> 172.0	68781	18.65	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.2%		
13C4-PFHpA	5.163	367.0 -> 322.0	161687	18.38	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	177355	18.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.8%		
13C5-PFPeA	3.132	268.0 -> 223.0	111987	18.96	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C6-PFDA	6.989	519.0 -> 474.0	159921	17.22	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

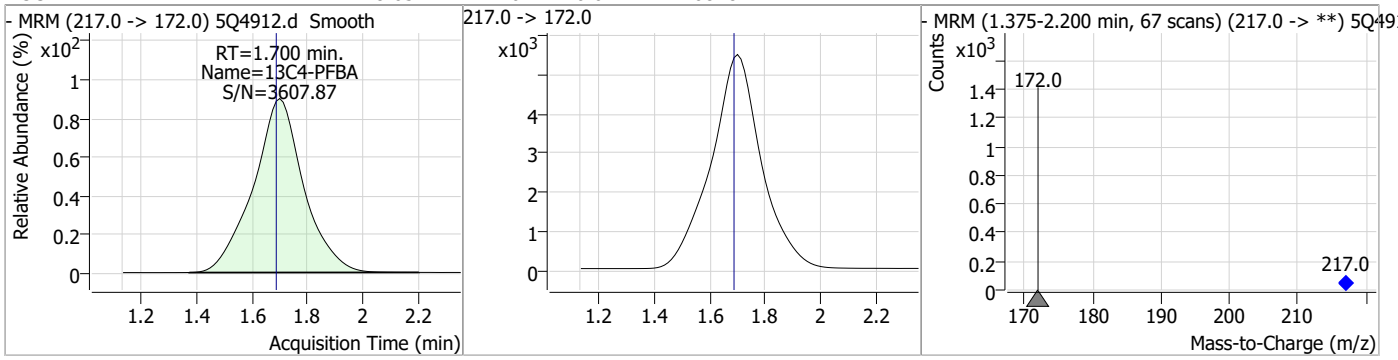
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.1%			
13C7-PFUnDA	7.471	570.0 -> 525.0	200911	17.34	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 86.7%			
13C8-FOSA	6.530	506.0 -> 78.0	42127	17.93	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.6%			
13C8-PFOA	5.857	421.0 -> 376.0	208668	17.72	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%			
13C8-PFOS	6.440	507.0 -> 99.0	22270	19.33	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%			
13C9-PFNA	6.455	472.0 -> 427.0	209567	17.78	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.9%			
d3-MeFOSAA	7.021	573.0 -> 419.0	31267	18.23	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.2%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	11344	19.80	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
d3-MeFOSA	6.952	515.0 -> 169.0	10007	17.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	40598	19.25	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.3%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	66720	20.95	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	87178	21.01	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	76886	20.46	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	23386	18.36	µg/L		99
FOSA	6.531	498.0 -> 78.0	43964	20.40	µg/L		100
MeFOSAA	7.023	570.0 -> 419.0	26289	19.59	µg/L		97
PFBA	1.694	213.0 -> 169.0	26561	19.41	µg/L		100
PFBS	3.354	299.0 -> 80.0	38285	19.78	µg/L		99
PFDA	6.990	513.0 -> 469.0	198778	19.97	µg/L		100
PFDoDA	7.906	613.0 -> 569.0	229420	19.66	µg/L		99
PFDS	7.431	599.0 -> 80.0	32451	21.21	µg/L		100
PFHpA	5.164	363.0 -> 319.0	214534	19.47	µg/L		100
PFHpS	5.867	449.0 -> 80.0	34808	19.32	µg/L		98
PFHxA	4.291	313.0 -> 269.0	171018	19.44	µg/L		100
PFHxS	5.195	399.0 -> 80.0	37602	20.26	µg/L	m	98
PFNA	6.456	463.0 -> 419.0	185150	19.41	µg/L		99
PFNS	6.962	549.0 -> 80.0	33453	20.05	µg/L		99
PFOA	5.858	413.0 -> 369.0	251599	19.83	µg/L		100
PFOS	6.442	499.0 -> 80.0	38430	19.26	µg/L	m	87
PFPeA	3.134	263.0 -> 219.0	104603	19.51	µg/L		100
PFPeS	4.410	349.0 -> 80.0	29606	19.17	µg/L		98
PFTeDA	9.178	713.0 -> 669.0	296817	17.89	µg/L		99
PFTrDA	8.437	663.0 -> 619.0	344706	21.76	µg/L		97
PFUnDA	7.472	563.0 -> 519.0	210083	20.22	µg/L		100
11Cl-PF3OUdS	7.640	631.0 -> 451.0	142742	20.99	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	126333	21.87	µg/L		100
ADONA	5.261	377.0 -> 251.0	267825	19.46	µg/L		100
HFPO-DA	4.574	329.0 -> 169.0	39814	19.79	µg/L		99
MeFOSA	6.966	512.0 -> 169.0	11046	21.04	µg/L		100
4-PFECHS	5.753	461.0 -> 381.0	76475	21.53	µg/L		100
FBSA	4.343	298.0 -> 78.0	60457	19.75	µg/L		99
FHxSA	5.674	398.0 -> 78.0	48485	19.78	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

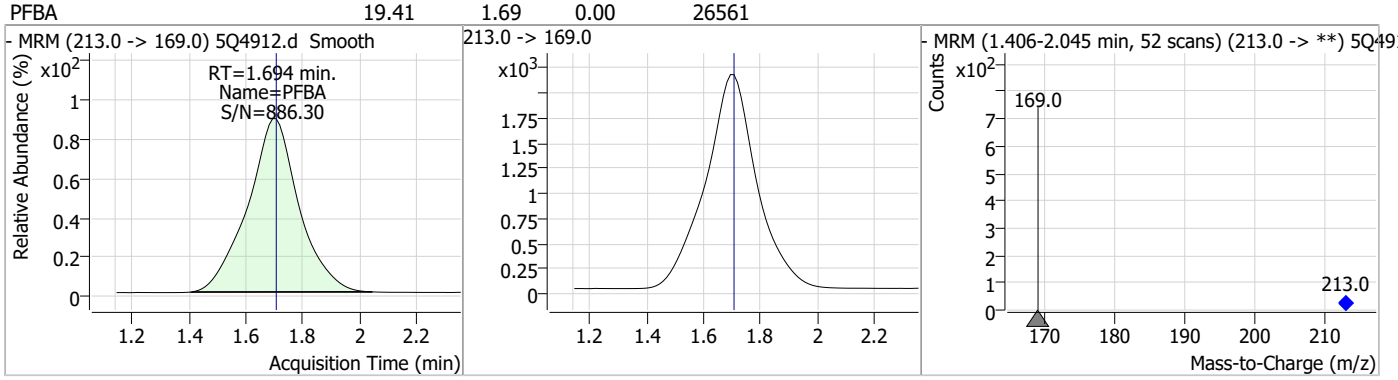
Perfluorinated Compounds by LC/MS/MS



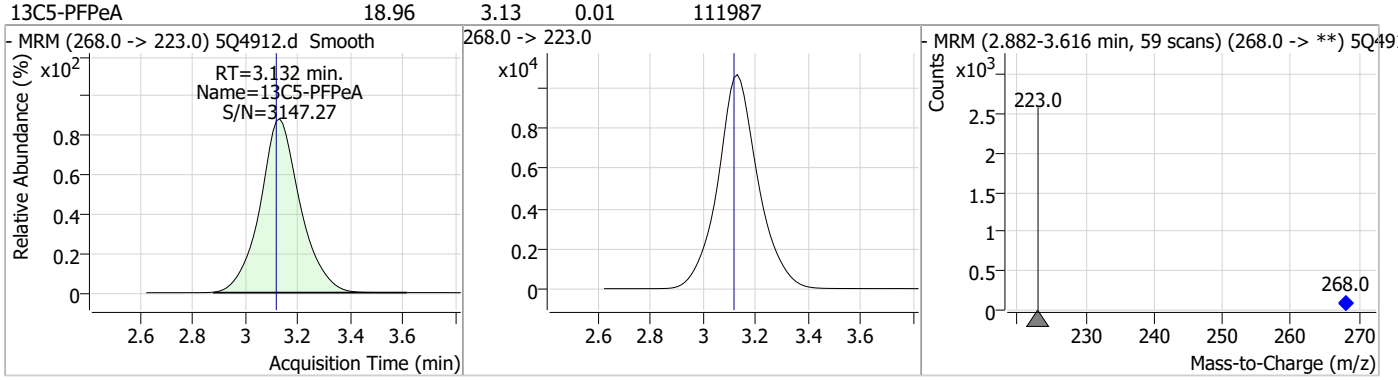
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.65	1.70	0.01	68781				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.41	1.69	0.00	26561				

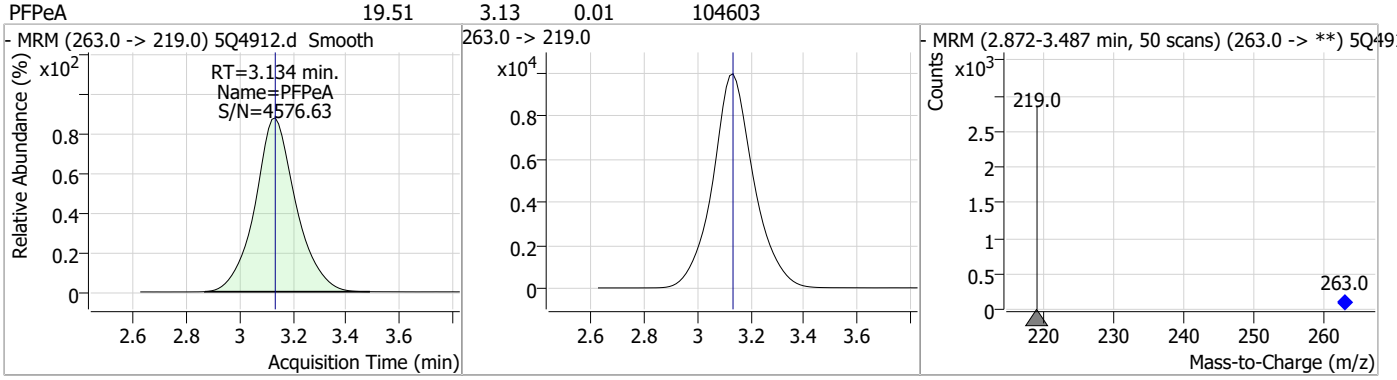


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.96	3.13	0.01	111987				

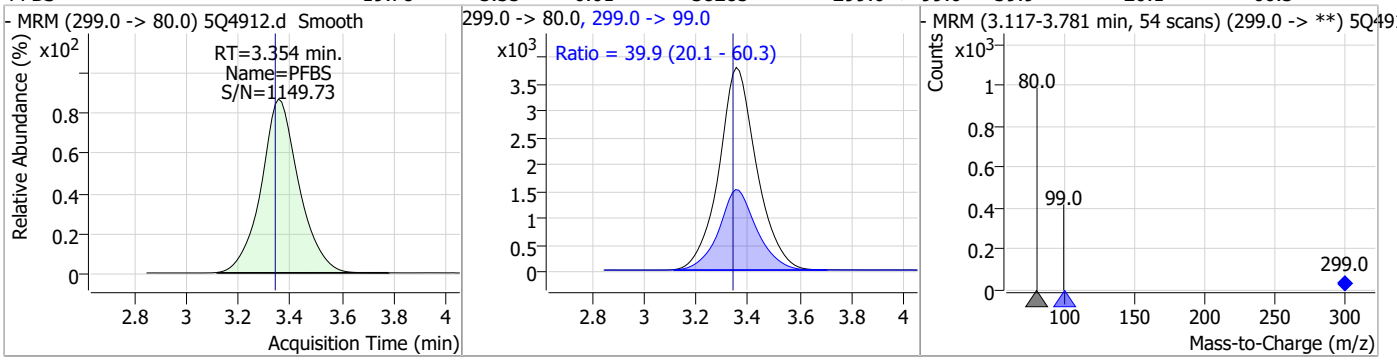


Perfluorinated Compounds by LC/MS/MS

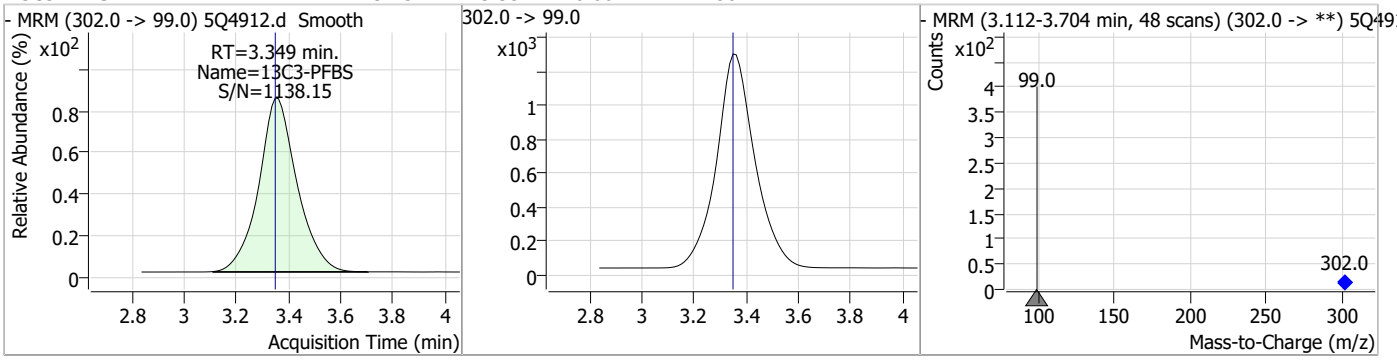
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.51	3.13	0.01	104603				



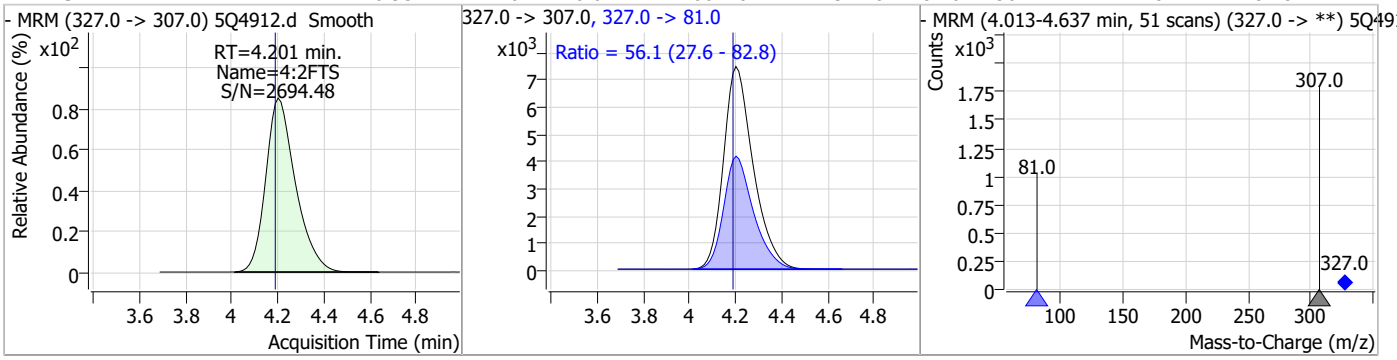
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.78	3.35	0.01	38285	299.0 -> 99.0	39.9	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.25	3.35	0.00	12867				

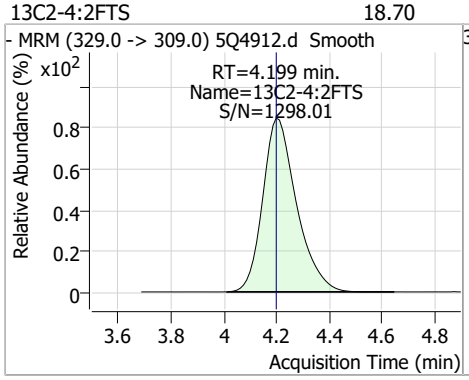


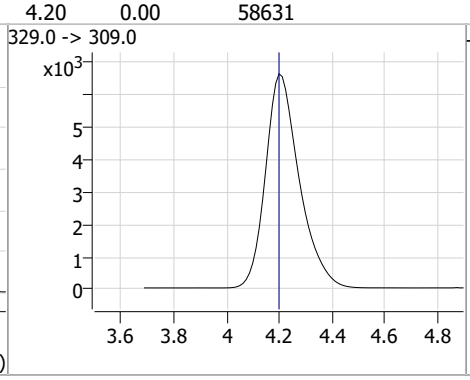
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.95	4.20	0.01	66720	327.0 -> 81.0	56.1	27.6	82.8

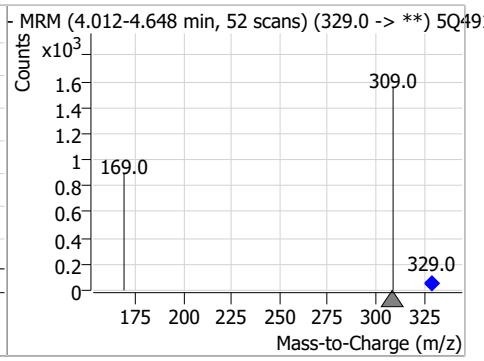


Perfluorinated Compounds by LC/MS/MS

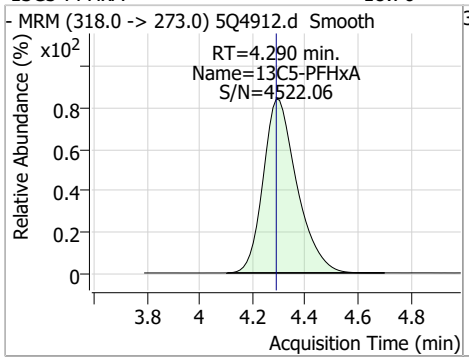
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.70	4.20	0.00	58631				

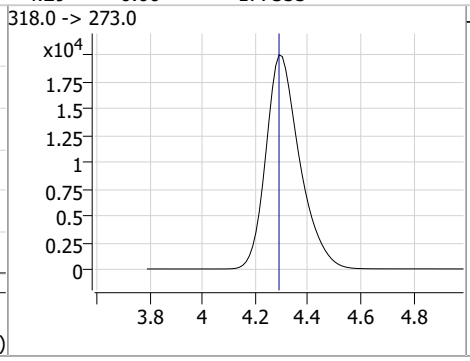


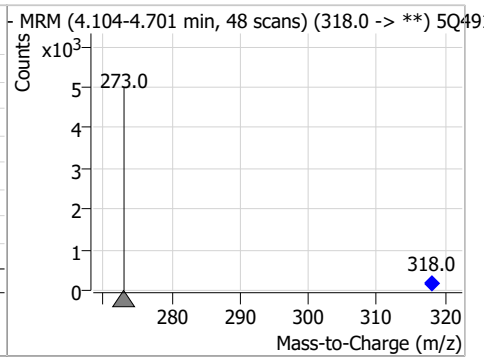




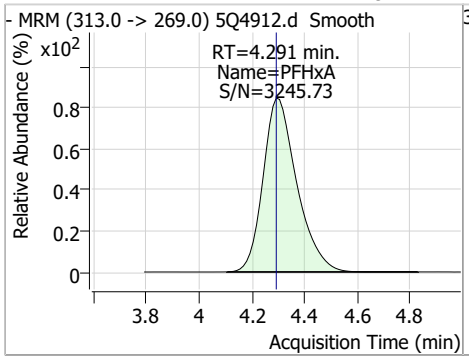
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.76	4.29	0.00	177355				

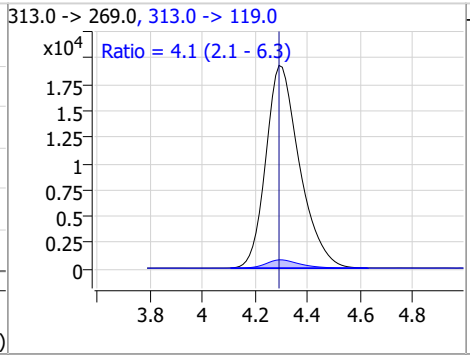


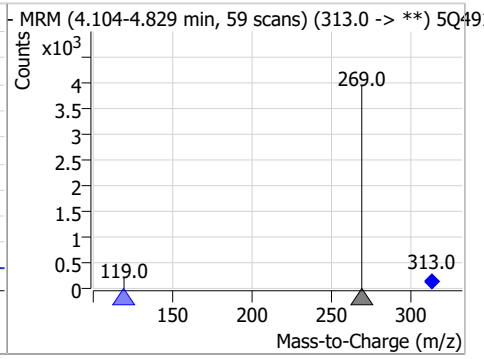




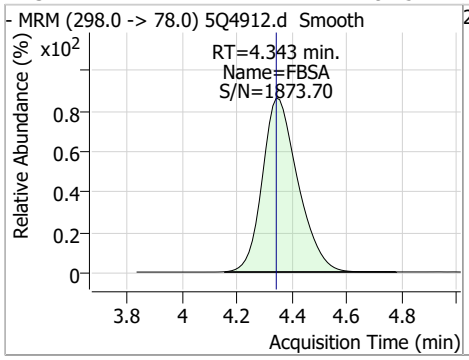
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.44	4.29	0.00	171018	313.0 -> 119.0	4.1	2.1	6.3

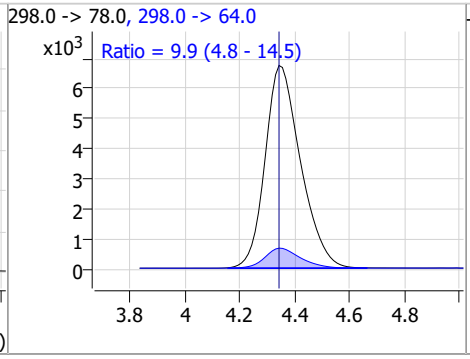


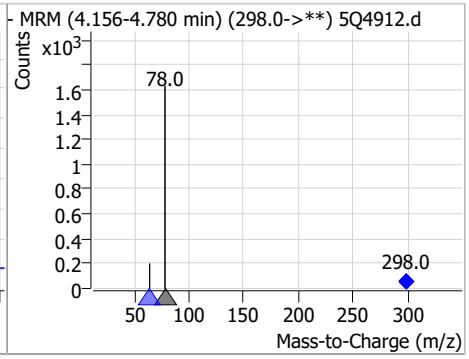




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.75	4.34	0.00	60457	298.0 -> 64.0	9.9	4.8	14.5

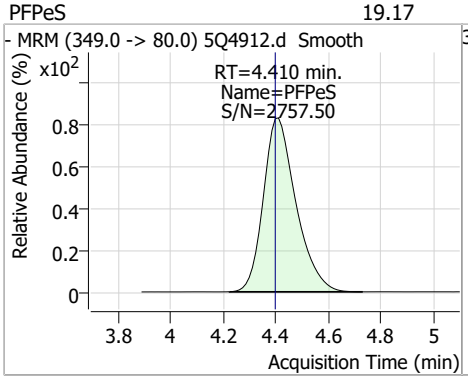


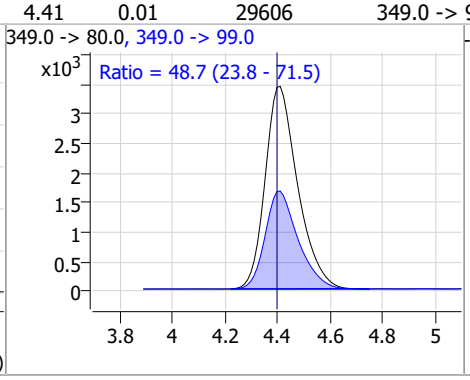


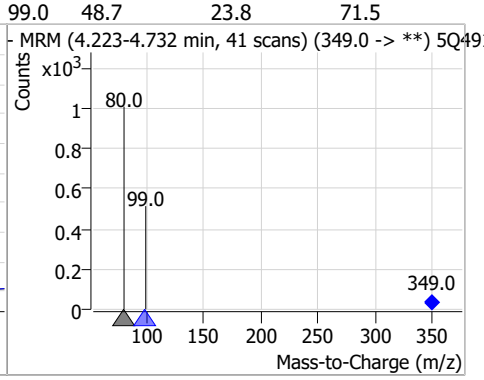


Perfluorinated Compounds by LC/MS/MS

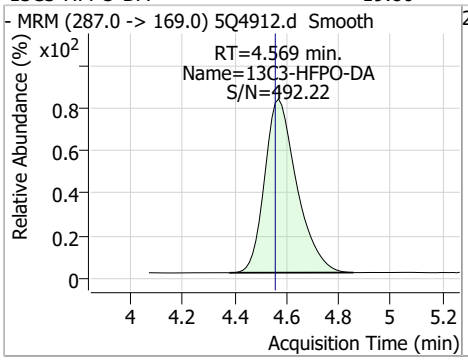
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.17	4.41	0.01	29606	349.0 -> 99.0	48.7	23.8	71.5

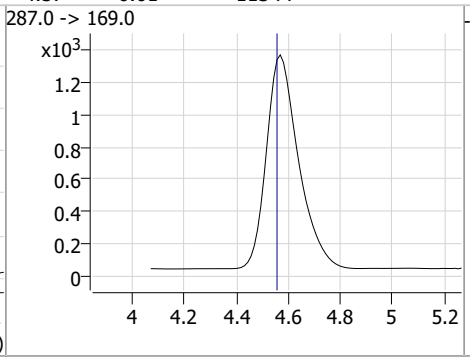


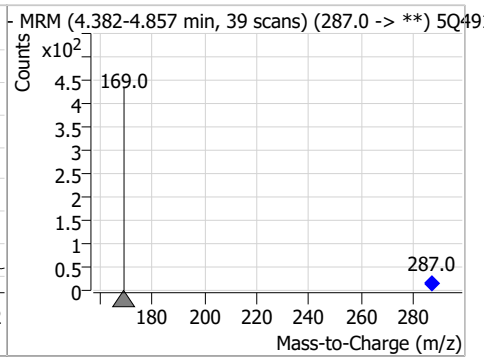




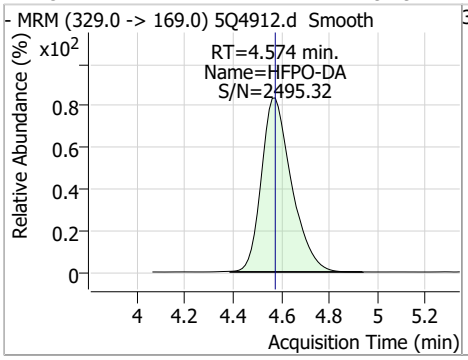
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.80	4.57	0.01	11344				

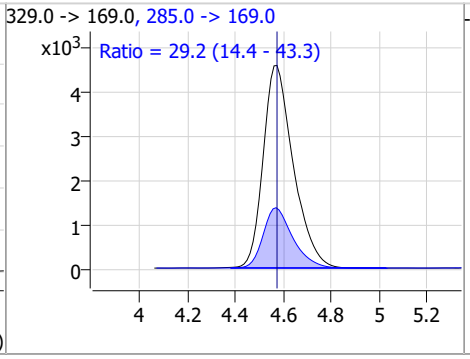


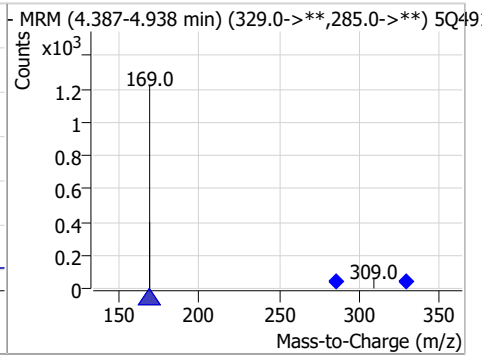




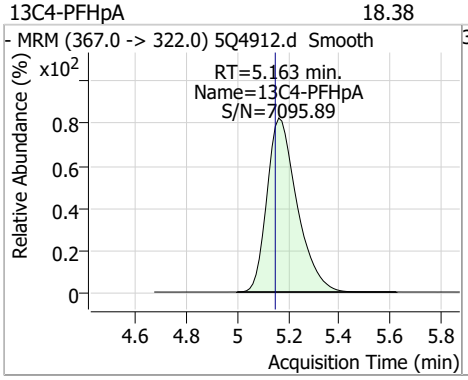
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.79	4.57	0.01	39814	285.0 -> 169.0	29.2	14.4	43.3

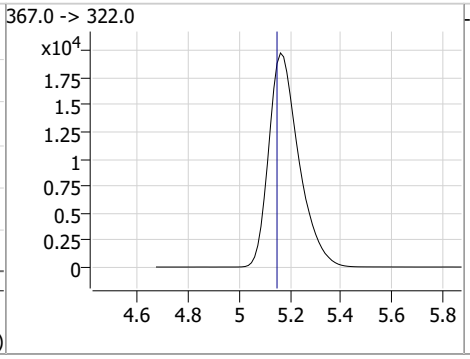


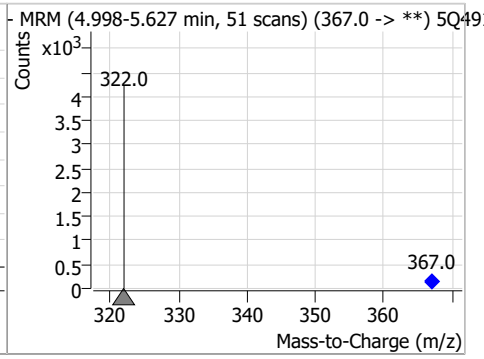




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.38	5.16	0.01	161687				

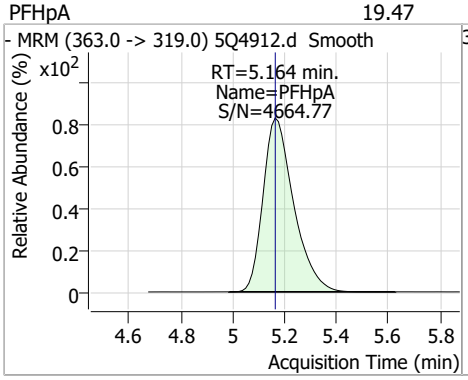


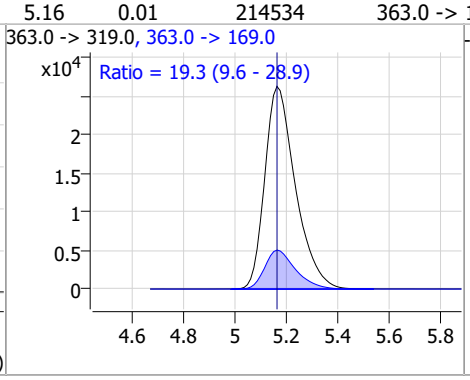


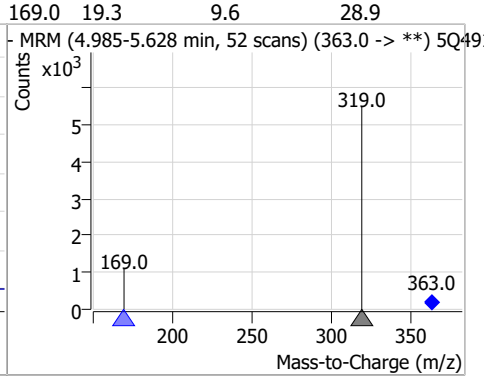


Perfluorinated Compounds by LC/MS/MS

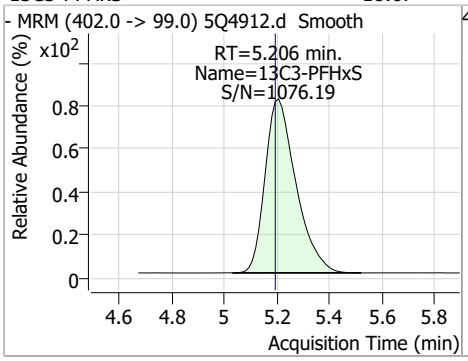
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.47	5.16	0.01	214534	363.0 -> 169.0	19.3	9.6	28.9

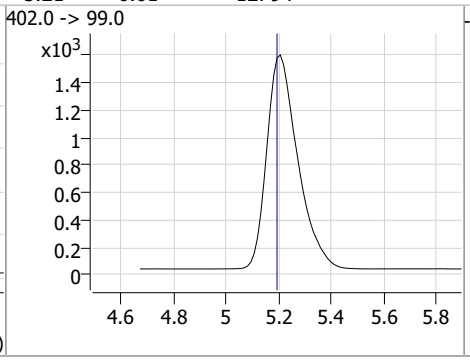


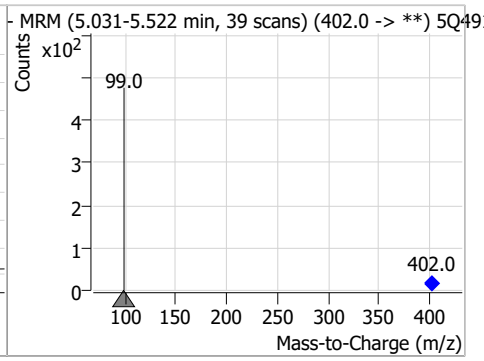




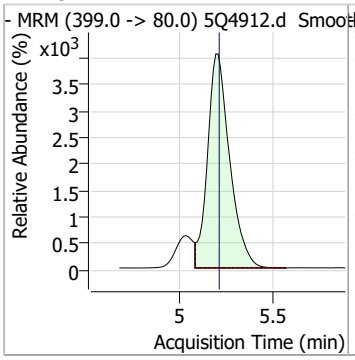
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.67	5.21	0.01	12794				

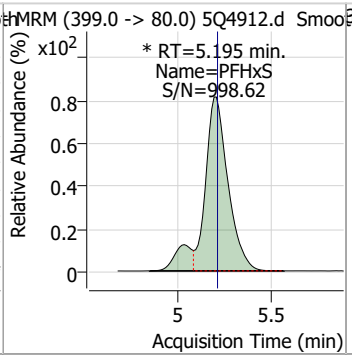


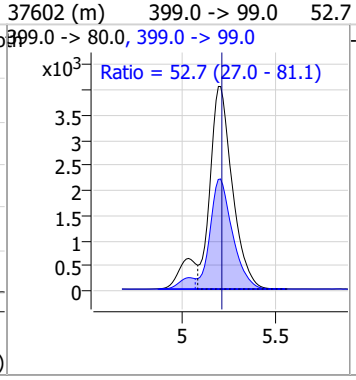


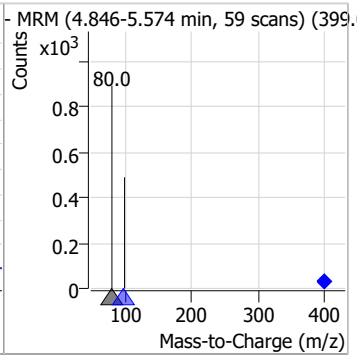


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.26	5.20	0.00	37602 (m)	399.0 -> 99.0	52.7	27.0	81.1

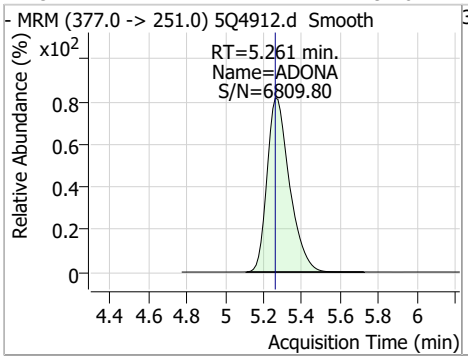


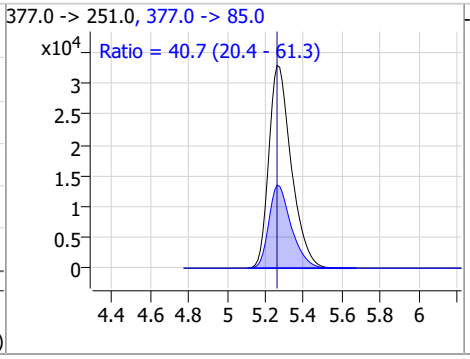


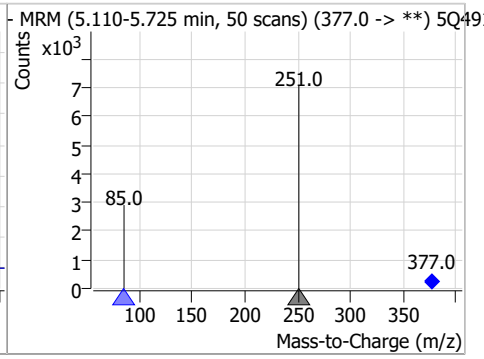




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.46	5.26	0.01	267825	377.0 -> 85.0	40.7	20.4	61.3

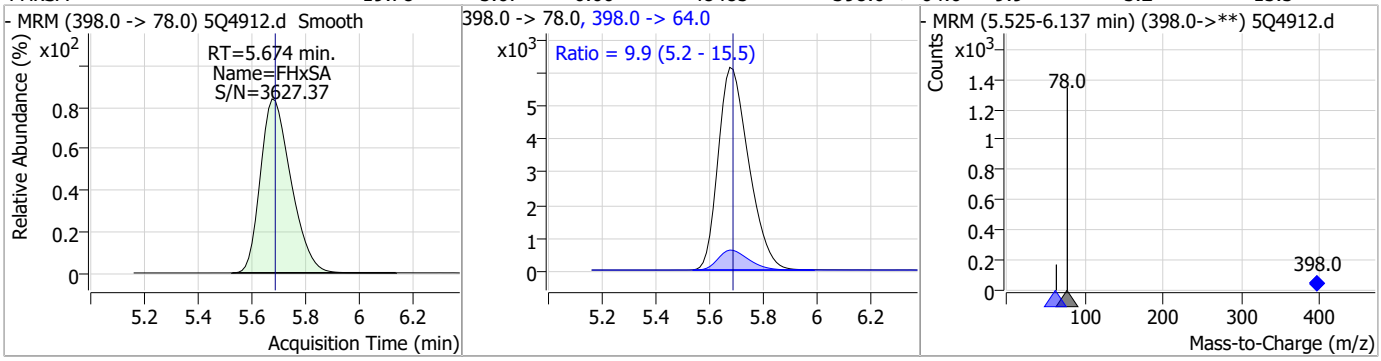




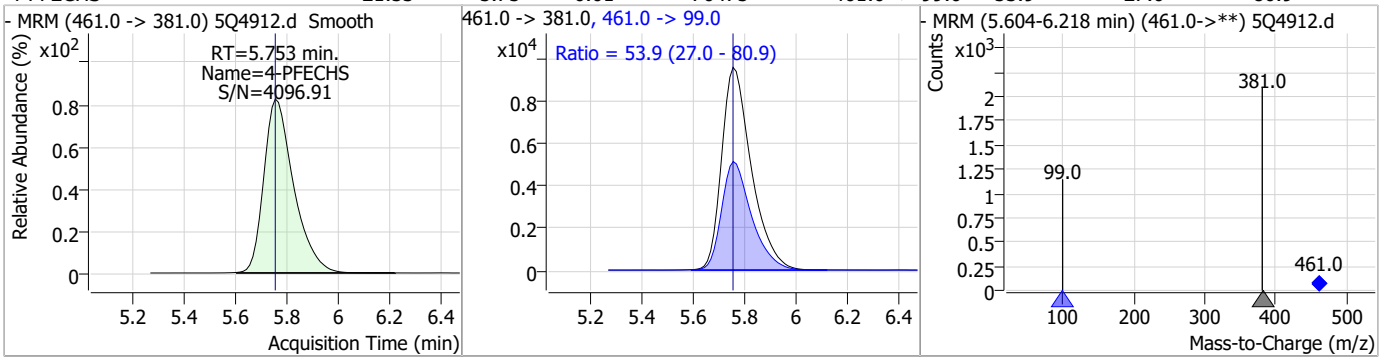


Perfluorinated Compounds by LC/MS/MS

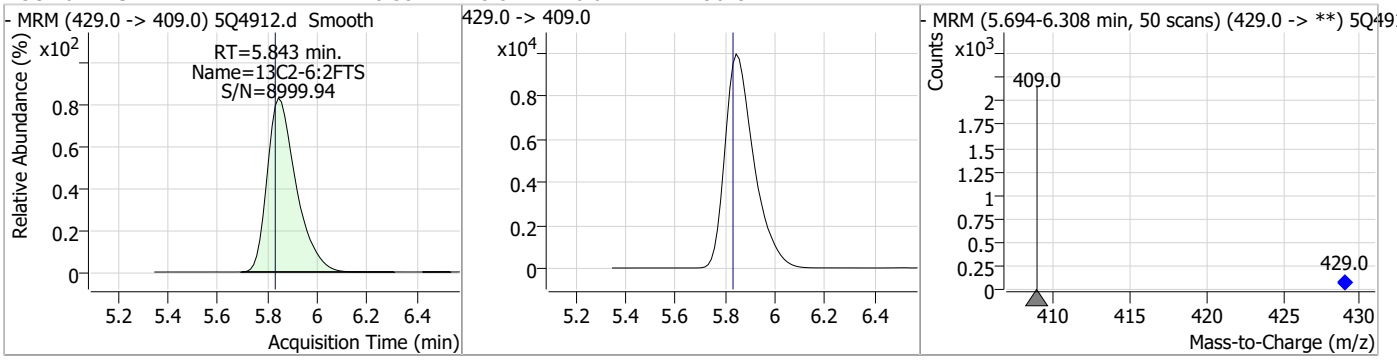
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.78	5.67	0.00	48485	398.0 -> 64.0	9.9	5.2	15.5



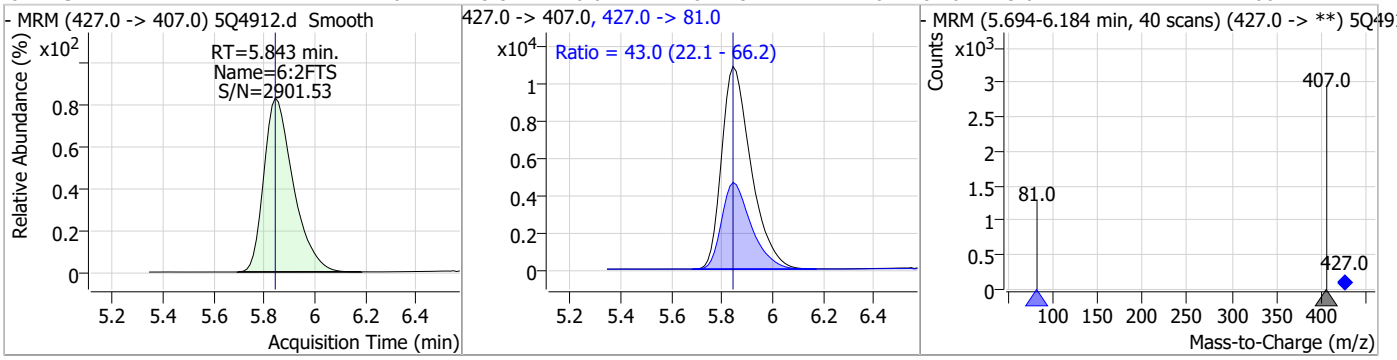
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	21.53	5.75	0.01	76475	461.0 -> 99.0	53.9	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	18.58	5.84	0.01	79649				

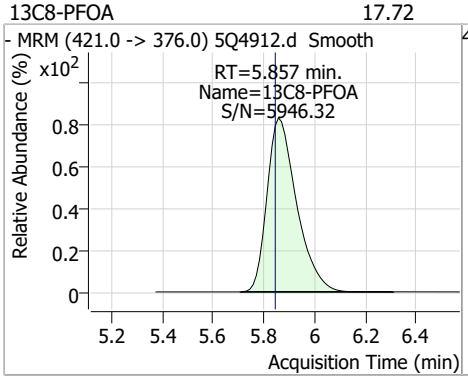


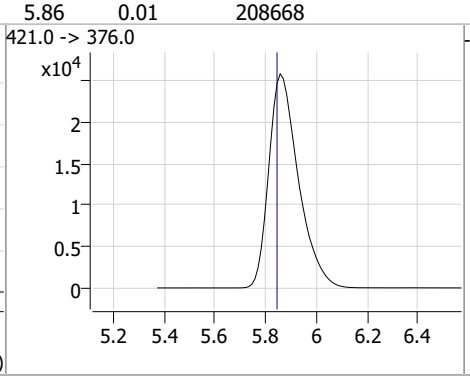
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.01	5.84	0.01	87178	427.0 -> 81.0	43.0	22.1	66.2

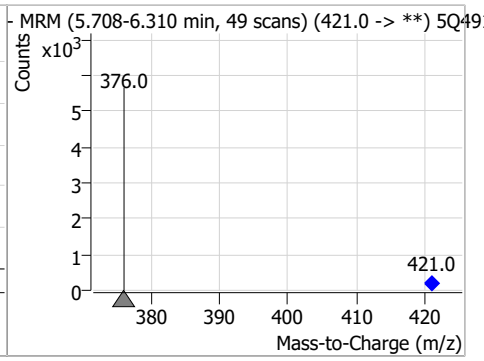


Perfluorinated Compounds by LC/MS/MS

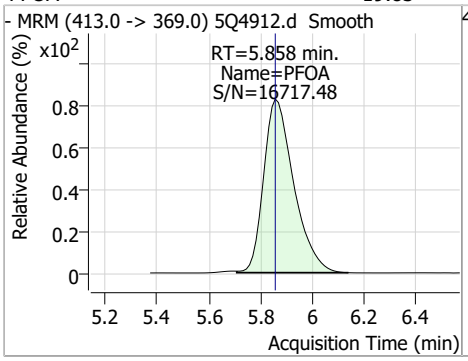
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.72	5.86	0.01	208668				

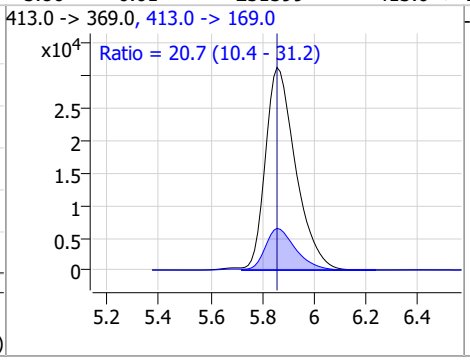


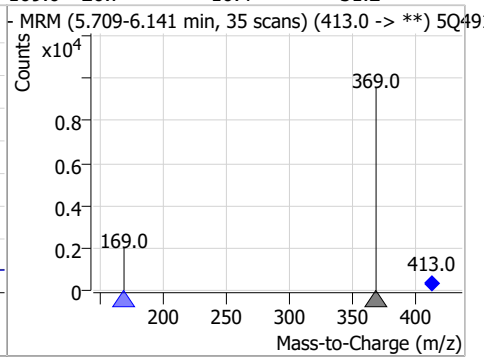




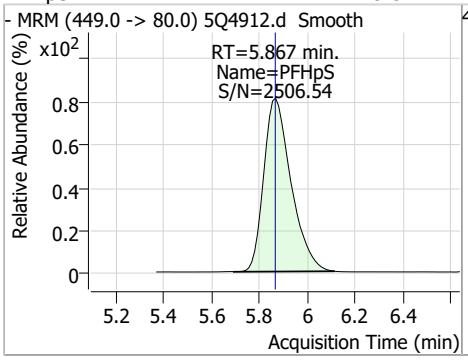
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.83	5.86	0.01	251599	413.0 -> 169.0	20.7	10.4	31.2

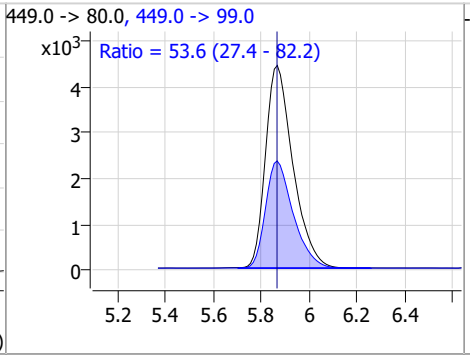


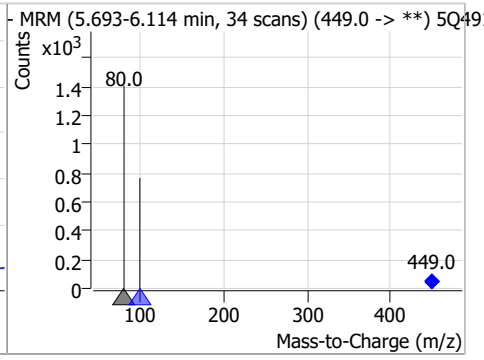




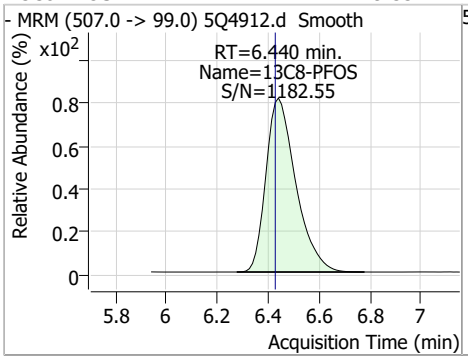
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.32	5.87	0.01	34808	449.0 -> 99.0	53.6	27.4	82.2

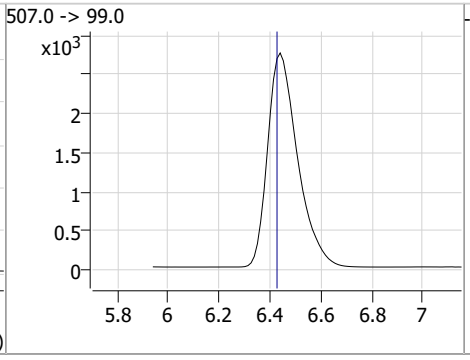


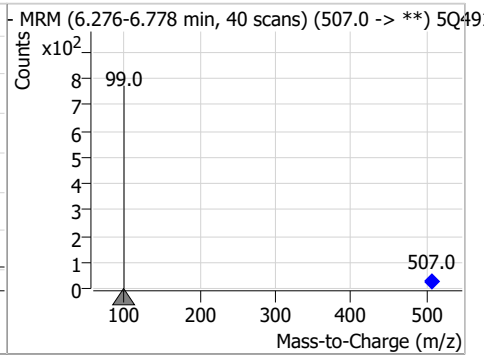




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.33	6.44	0.01	22270				

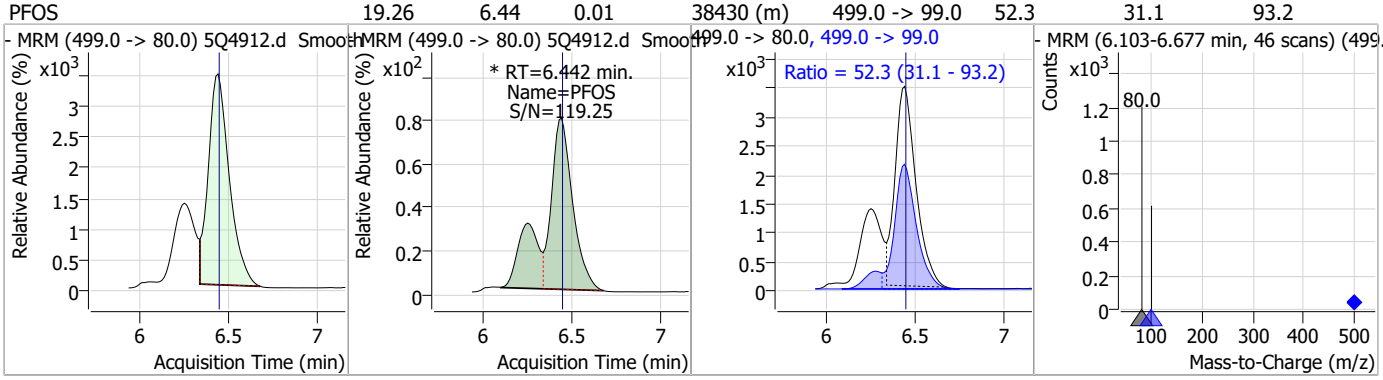




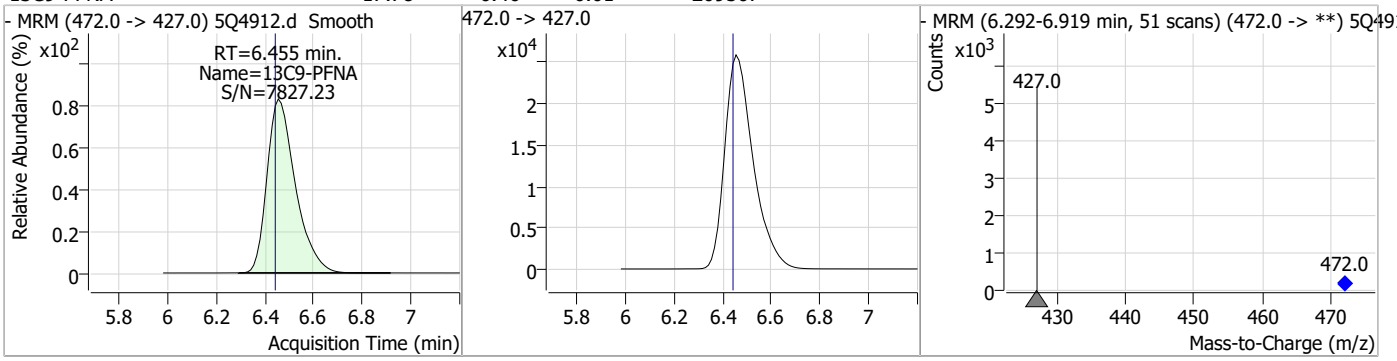


Perfluorinated Compounds by LC/MS/MS

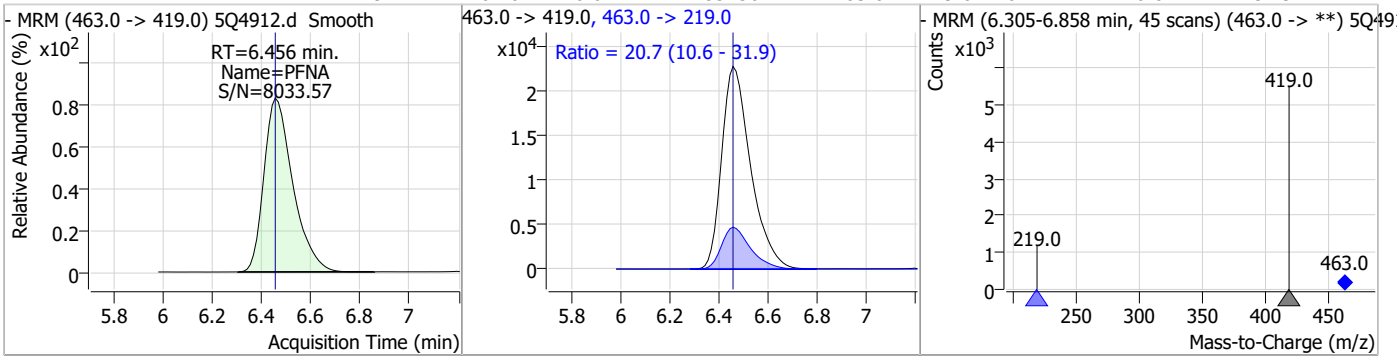
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.26	6.44	0.01	38430 (m)	499.0 -> 99.0	52.3	31.1	93.2



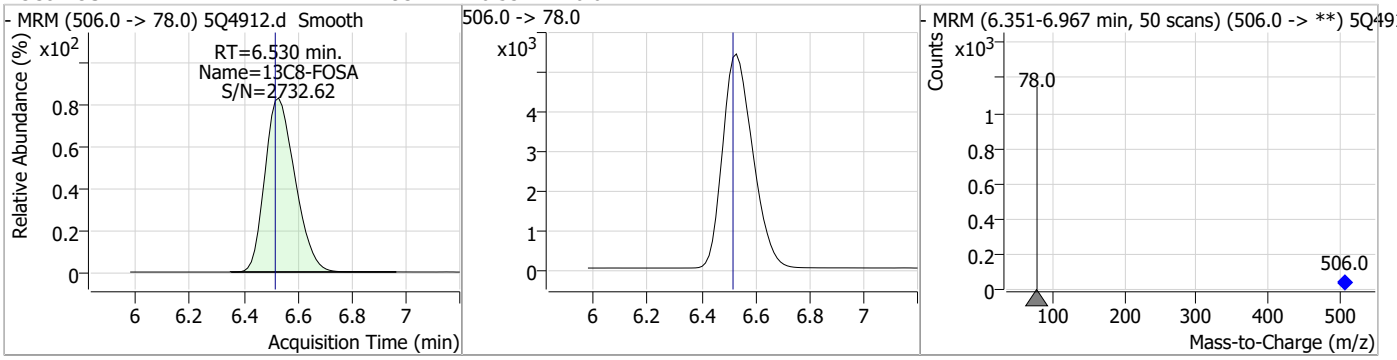
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.78	6.46	0.01	209567				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.41	6.46	0.01	185150	463.0 -> 219.0	20.7	10.6	31.9

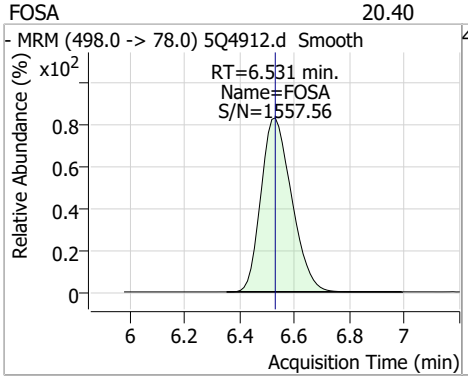


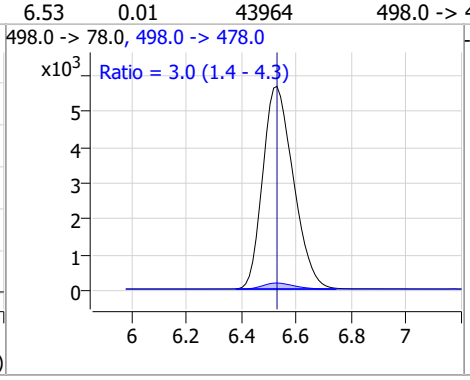
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	17.93	6.53	0.01	42127				

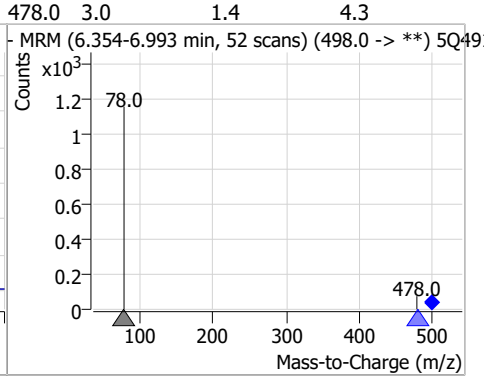


Perfluorinated Compounds by LC/MS/MS

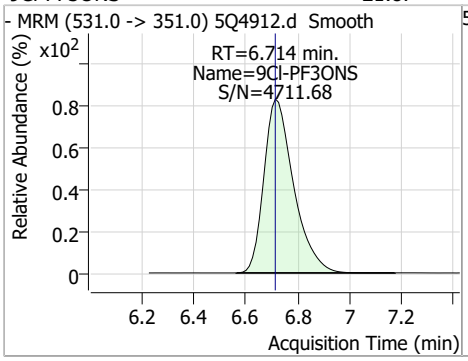
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.40	6.53	0.01	43964	498.0 -> 478.0	3.0	1.4	4.3

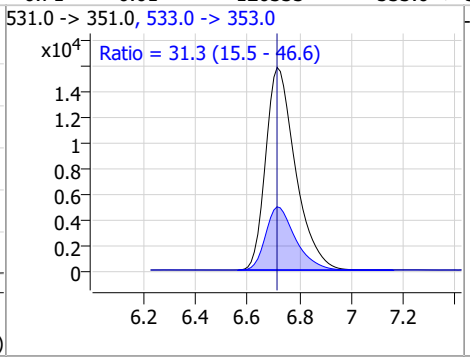


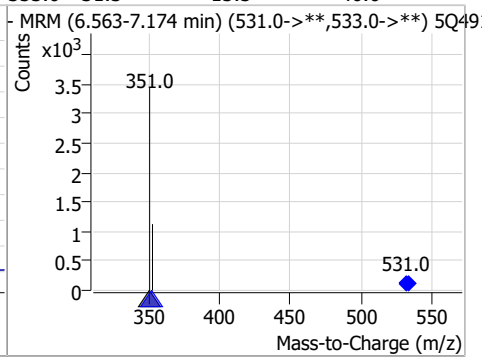




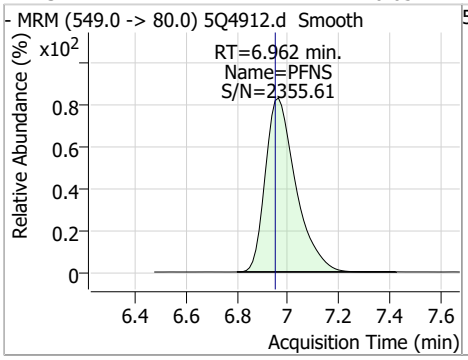
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.87	6.71	0.01	126333	533.0 -> 353.0	31.3	15.5	46.6

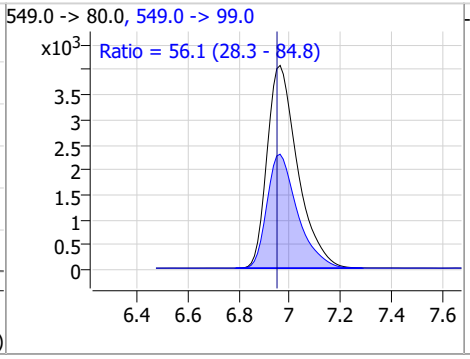


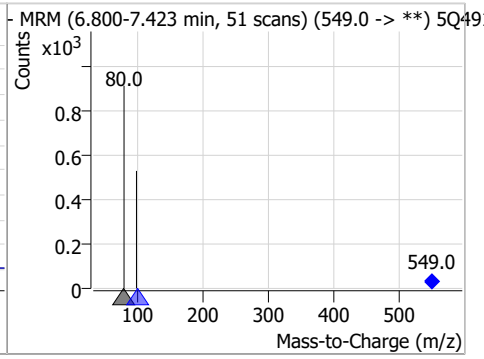




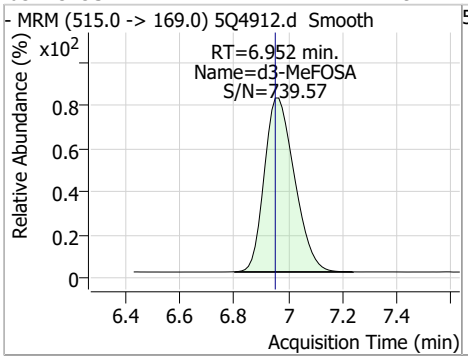
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.05	6.96	0.03	33453	549.0 -> 99.0	56.1	28.3	84.8

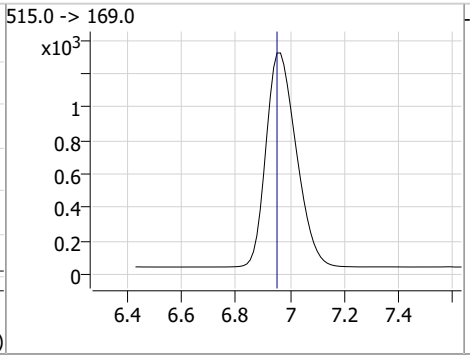


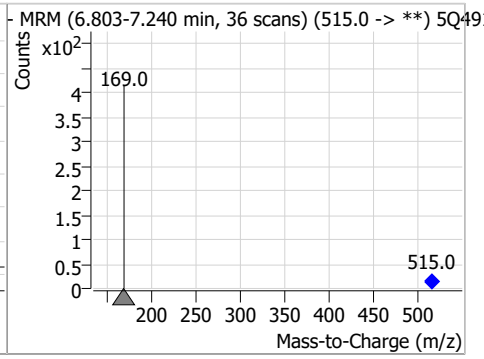




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	17.79	6.95	0.00	10007				

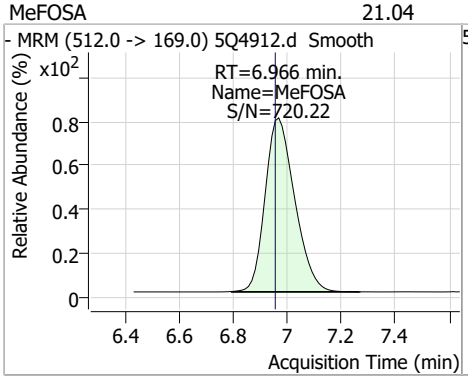


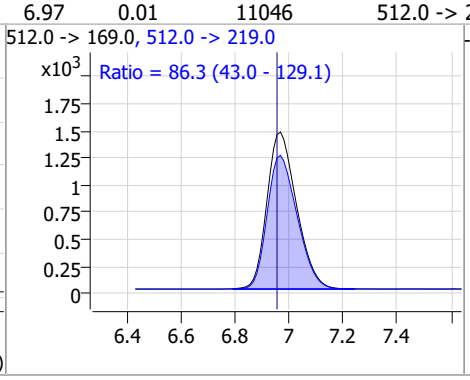


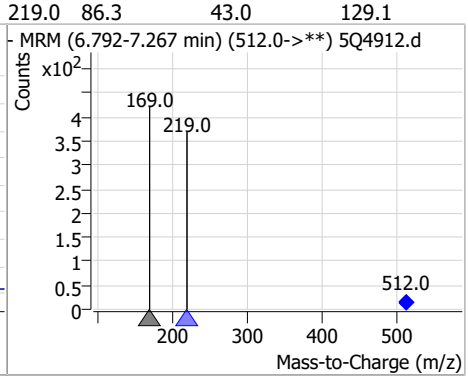


Perfluorinated Compounds by LC/MS/MS

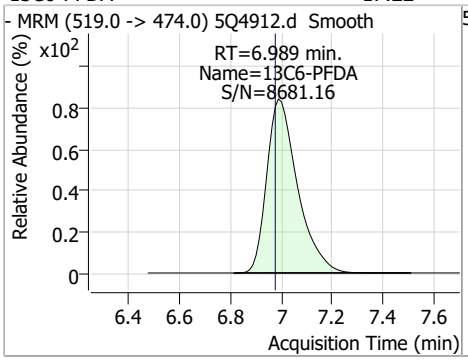
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.04	6.97	0.01	11046	512.0 -> 219.0	86.3	43.0	129.1

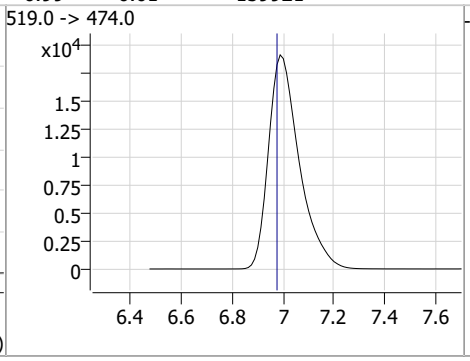


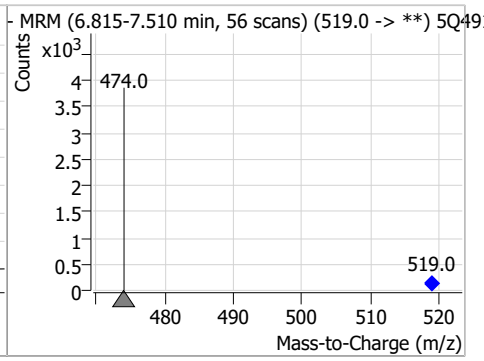




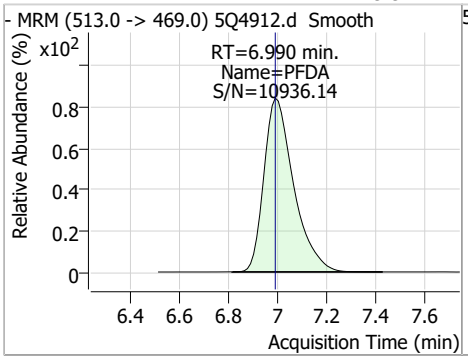
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.22	6.99	0.01	159921				

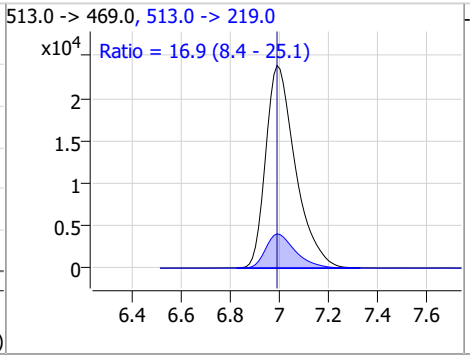


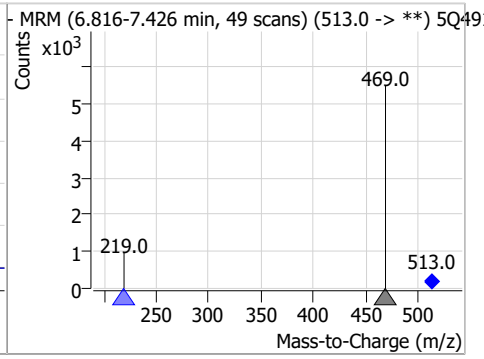




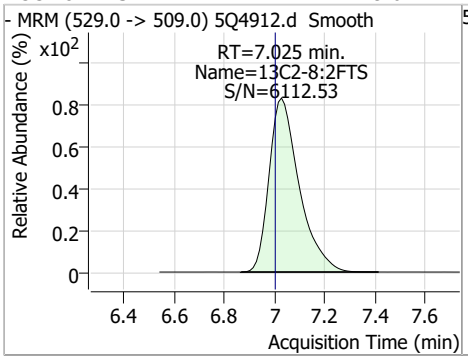
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.97	6.99	0.01	198778	513.0 -> 219.0	16.9	8.4	25.1

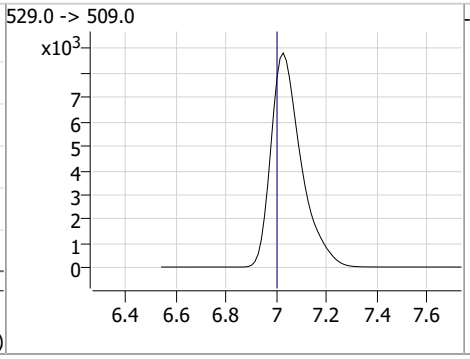


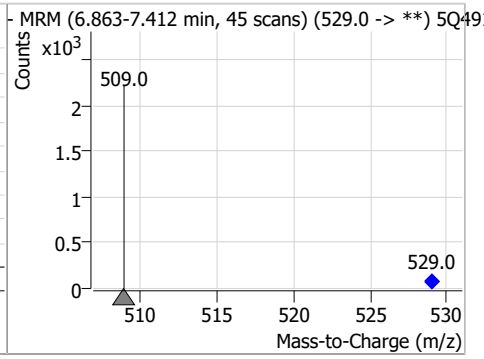




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.04	7.03	0.02	73139				

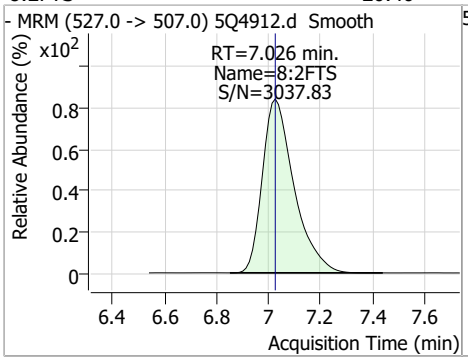


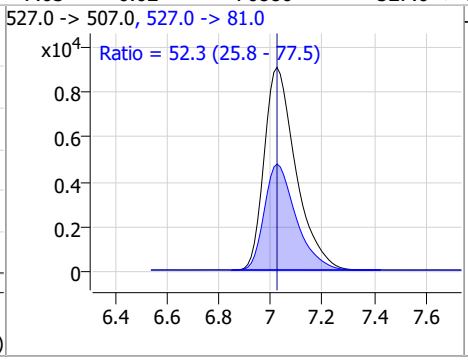


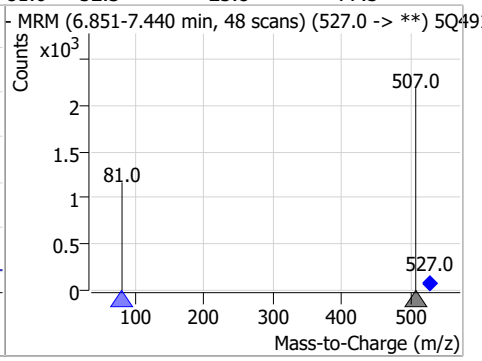


Perfluorinated Compounds by LC/MS/MS

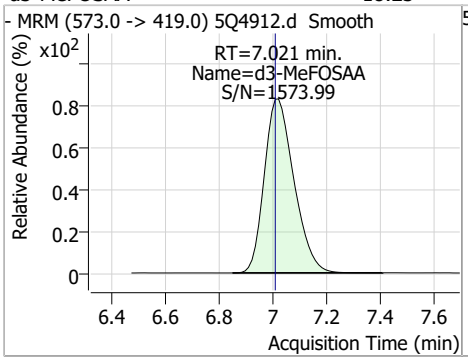
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.46	7.03	0.02	76886	527.0 -> 81.0	52.3	25.8	77.5

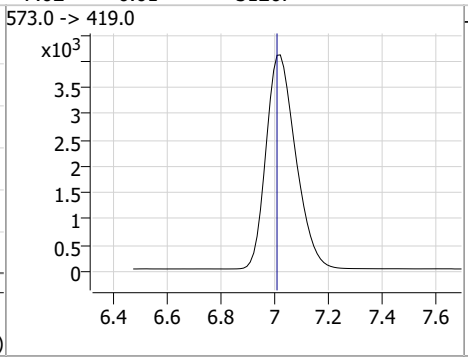


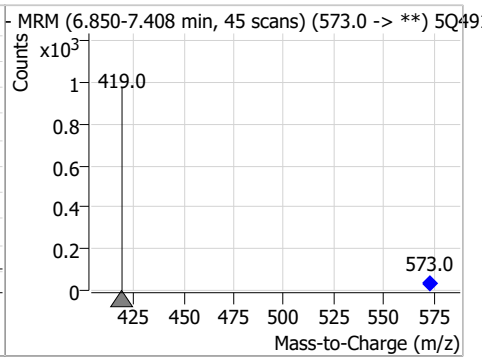




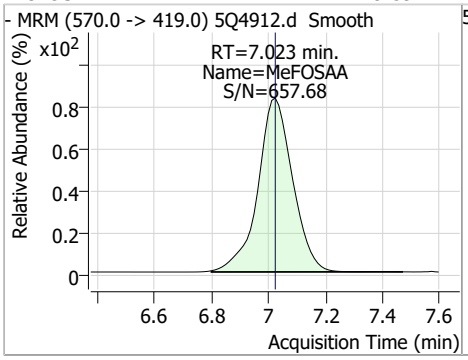
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.23	7.02	0.01	31267				

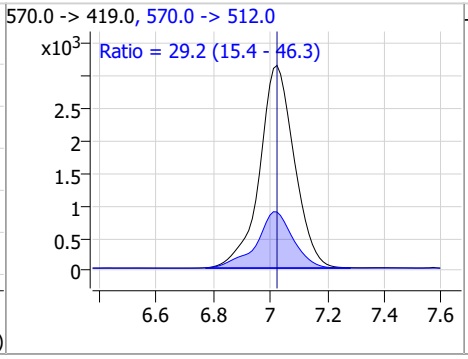


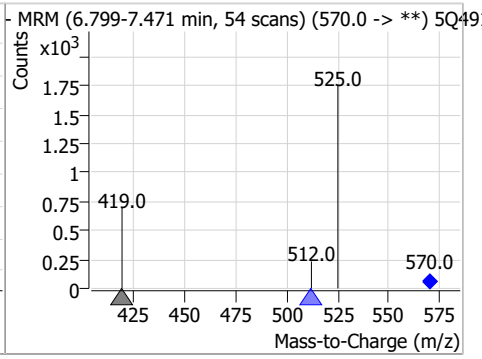




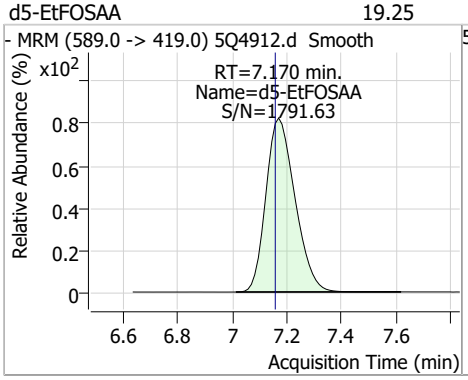
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.59	7.02	0.01	26289	570.0 -> 512.0	29.2	15.4	46.3

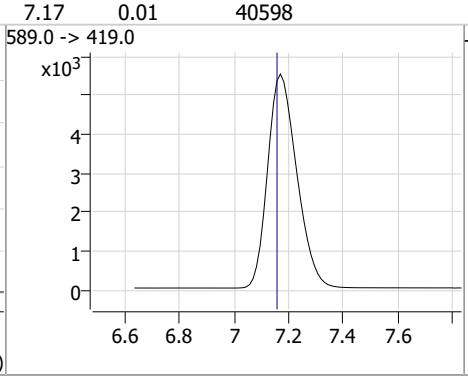


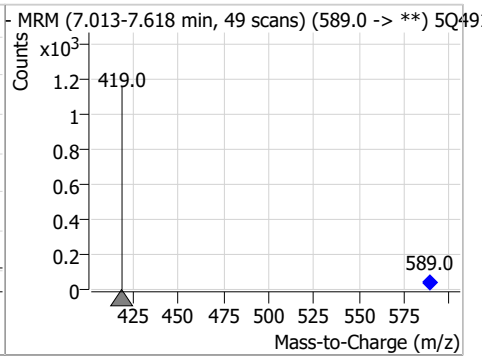




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.25	7.17	0.01	40598				

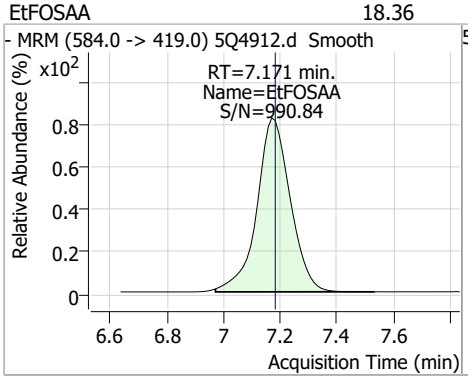


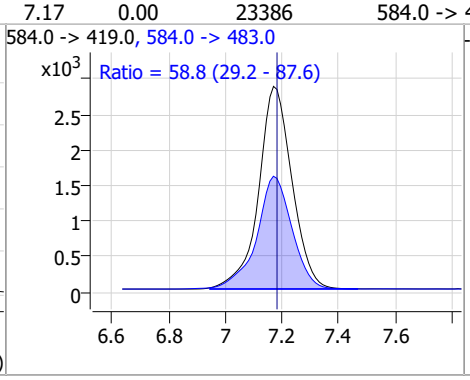


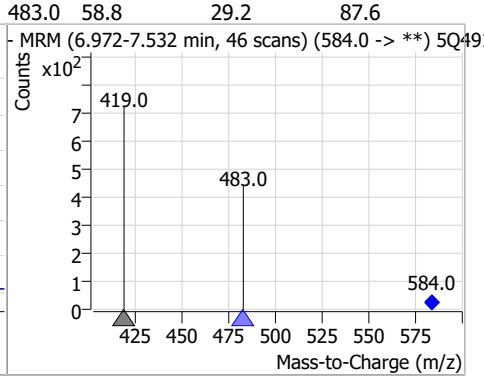


Perfluorinated Compounds by LC/MS/MS

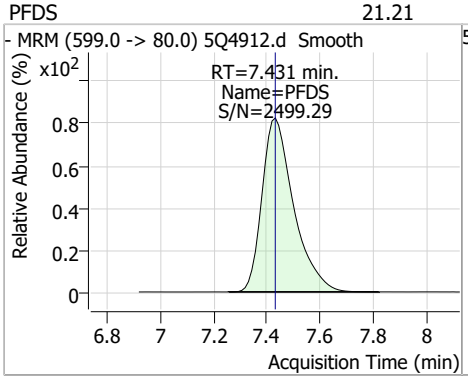
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.36	7.17	0.00	23386	584.0 -> 483.0	58.8	29.2	87.6

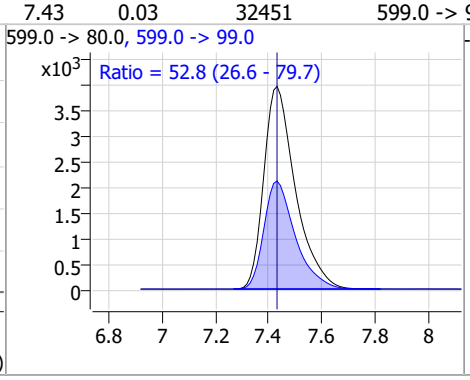


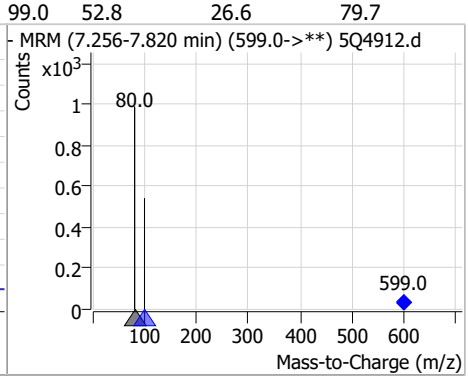




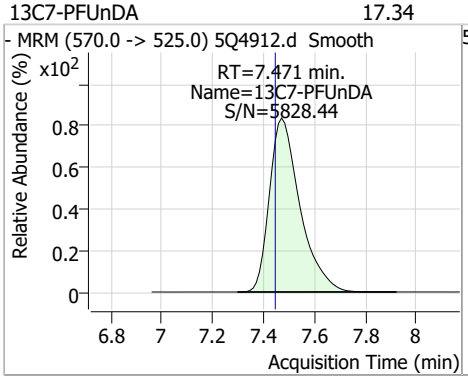
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	21.21	7.43	0.03	32451	599.0 -> 99.0	52.8	26.6	79.7

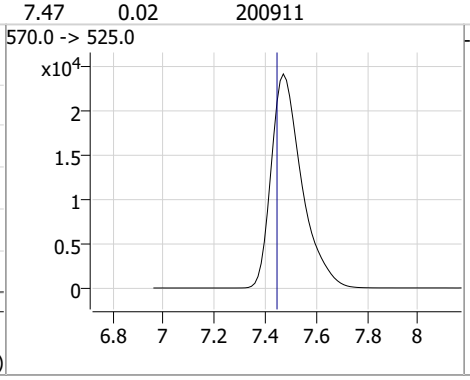


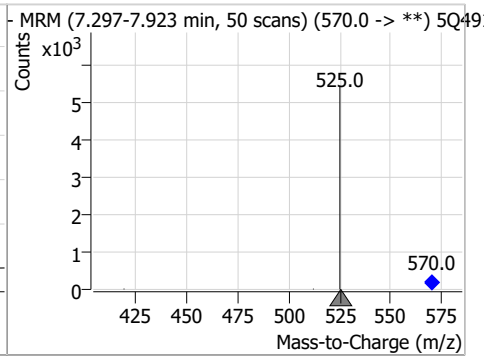




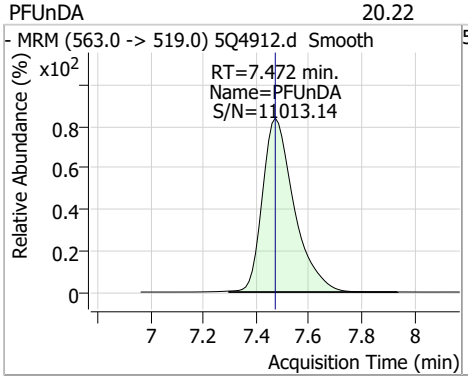
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.34	7.47	0.02	200911				

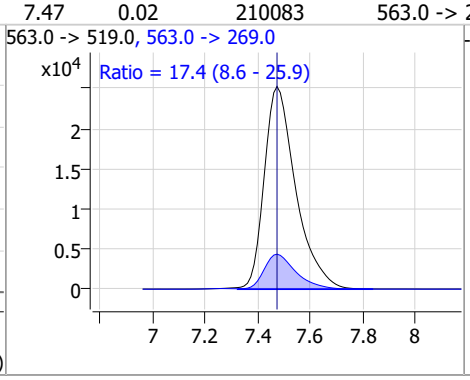


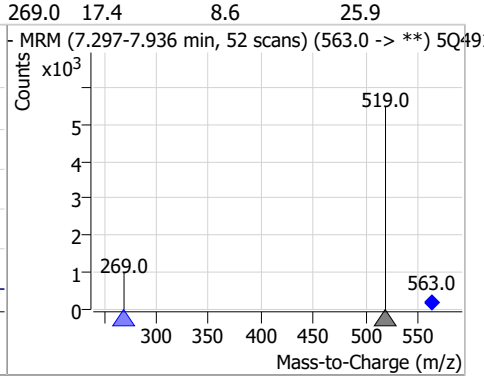




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.22	7.47	0.02	210083	563.0 -> 269.0	17.4	8.6	25.9

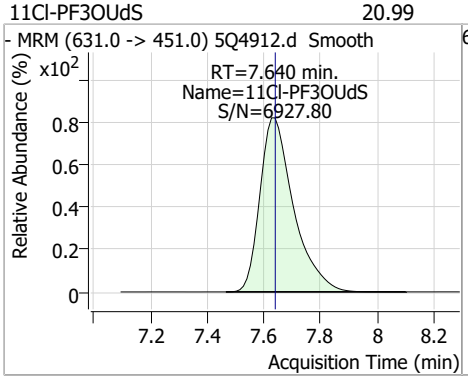


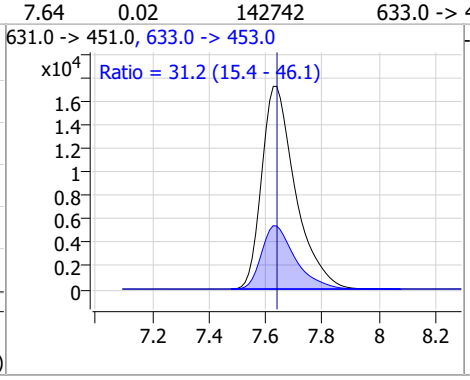


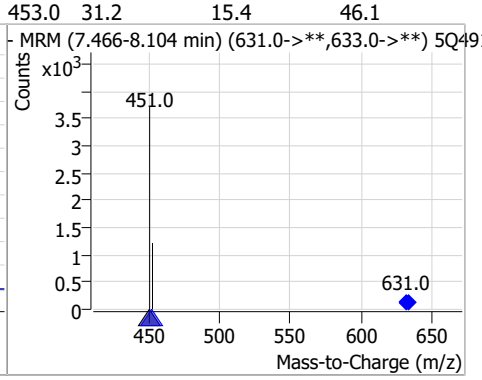


Perfluorinated Compounds by LC/MS/MS

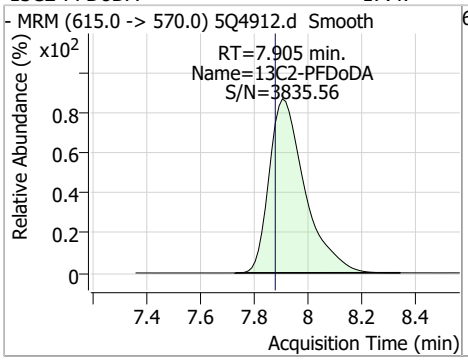
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.99	7.64	0.02	142742	633.0 -> 453.0	31.2	15.4	46.1

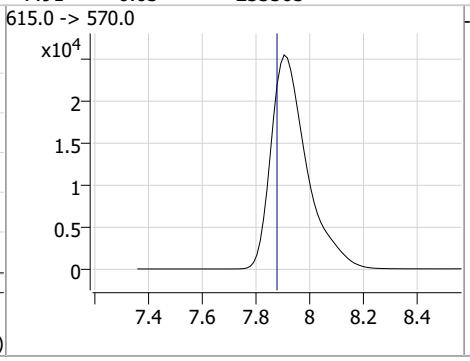


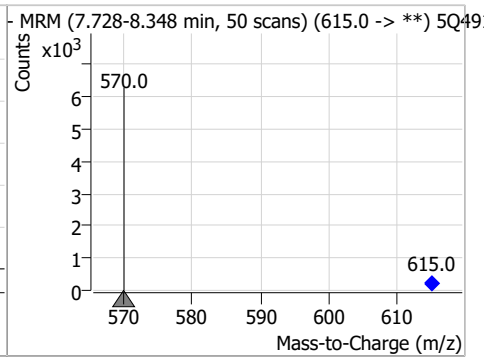




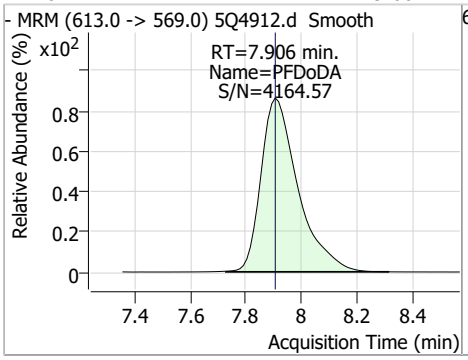
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.47	7.91	0.03	235565				

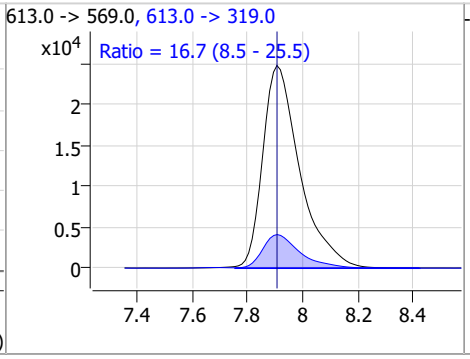


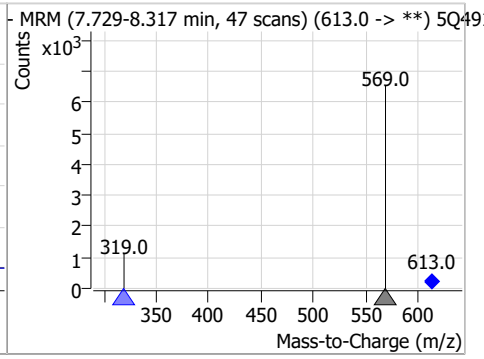




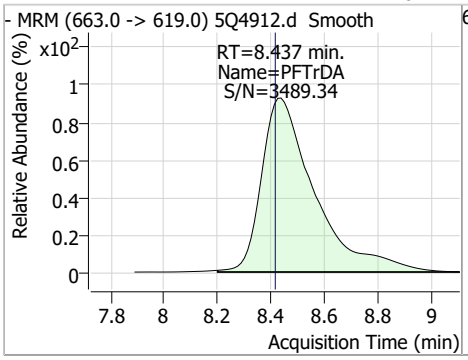
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.66	7.91	0.03	229420	613.0 -> 319.0	16.7	8.5	25.5

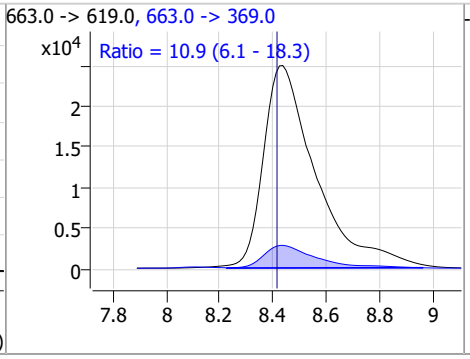


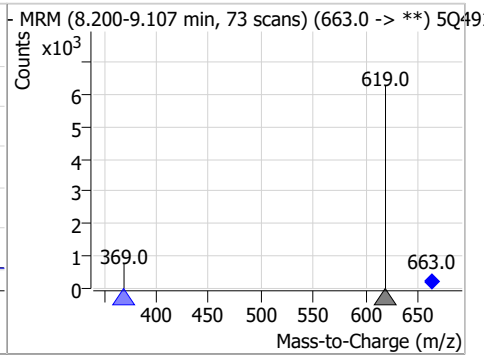




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.76	8.44	0.05	344706	663.0 -> 369.0	10.9	6.1	18.3

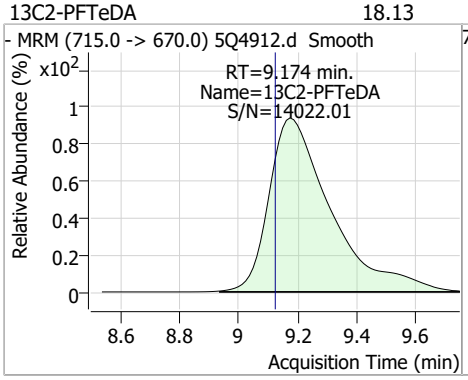


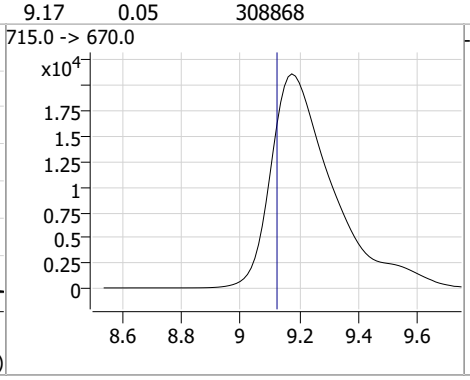


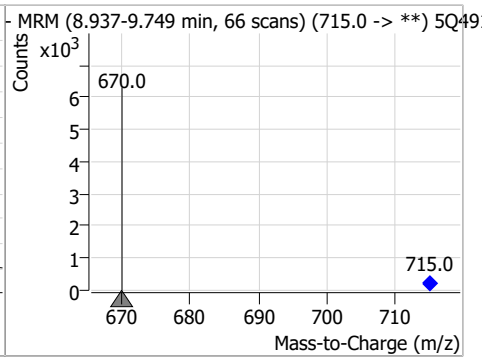


Perfluorinated Compounds by LC/MS/MS

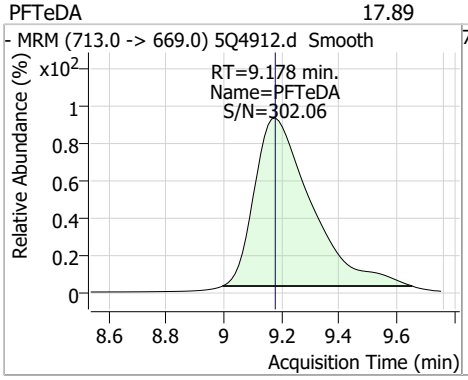
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.13	9.17	0.05	308868				

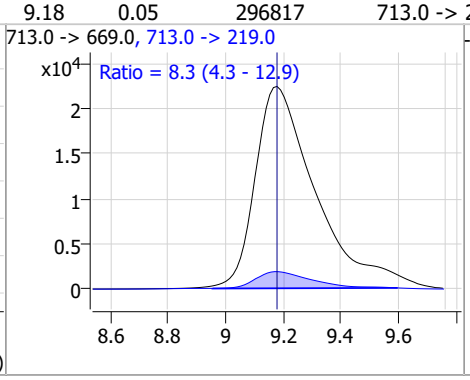


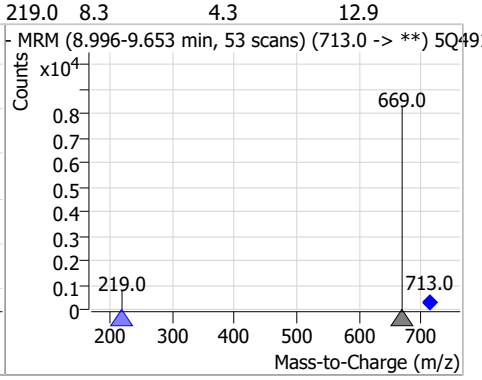




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.89	9.18	0.05	296817	713.0 -> 219.0	8.3	4.3	12.9







7.7.77

7

Manual Integration Approval Summary

Sample Number: S5Q74-CC73
Lab FileID: 5Q4912.D
Injection Time: 09/19/22 18:10
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 10:49 Anna Ludwig
Supervisor approved: 09/20/22 13:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:39

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4913.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/19/2022 6:26:19 PM
Sample Name : cc73-1.0LL
Vial : P1-A3
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q74.batch.bin
Sample Information : OP92656,S5Q74,250,,,1.0,1,water

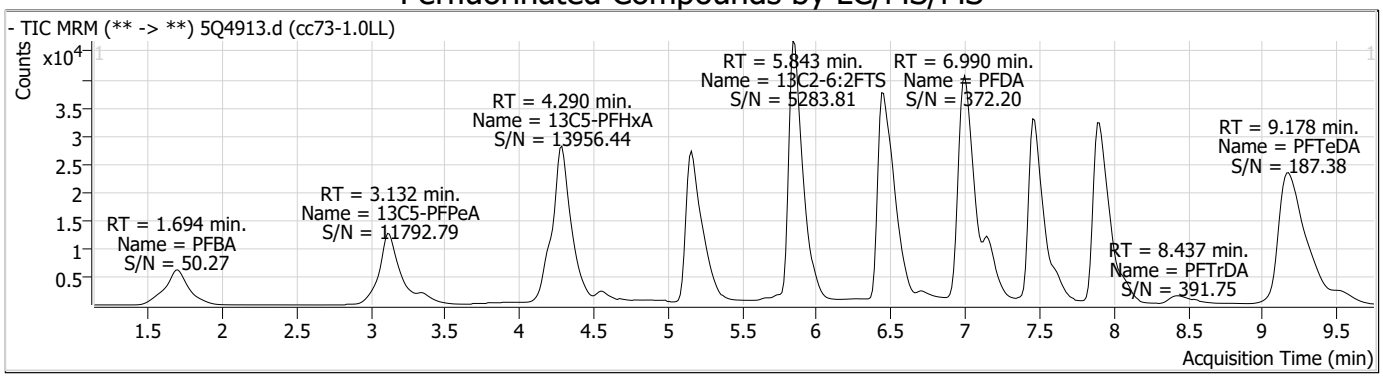
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	68299	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	111417	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	176368	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	162179	20.00	µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	208705	20.00	µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	209788	20.00	µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	162715	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	205874	20.00	µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	241390	20.00	µg/L	0.027
M2-PFTeDA	9.174	715.0 -> 670.0	268067	20.00	µg/L	0.050
M8-FOSA	6.530	506.0 -> 78.0	42317	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12763	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	13072	20.00	µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	22061	20.00	µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	54975	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	75262	20.00	µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	68490	20.00	µg/L	0.025
M3-MeFOSAA	7.009	573.0 -> 419.0	32502	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	10924	20.00	µg/L	0.012
M3-MeFOSA	6.952	515.0 -> 169.0	10264	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	41295	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	54975	17.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.7%		
13C2-6:2FTS	5.843	429.0 -> 409.0	75262	17.56	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.8%		
13C2-8:2FTS	7.025	529.0 -> 509.0	68490	17.83	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.1%		
13C2-PFDoDA	7.905	615.0 -> 570.0	241390	17.90	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.5%		
13C2-PFTeDA	9.174	715.0 -> 670.0	268067	15.73	µg/L	0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 78.7%		
13C3-PFBS	3.349	302.0 -> 99.0	12763	19.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C3-PFHxS	5.206	402.0 -> 99.0	13072	19.07	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.4%		
13C4-PFBA	1.700	217.0 -> 172.0	68299	18.52	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.6%		
13C4-PFHpA	5.163	367.0 -> 322.0	162179	18.44	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.2%		
13C5-PFHxA	4.290	318.0 -> 273.0	176368	18.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C5-PFPeA	3.132	268.0 -> 223.0	111417	18.87	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C6-PFDA	6.989	519.0 -> 474.0	162715	17.52	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

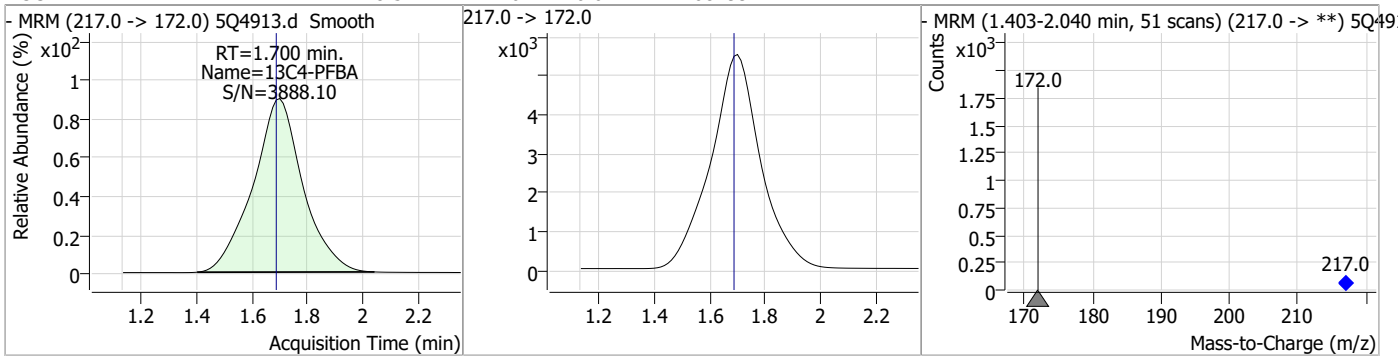
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.6%			
13C7-PFUnDA	7.471	570.0 -> 525.0	205874	17.77	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.8%			
13C8-FOSA	6.530	506.0 -> 78.0	42317	18.01	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
13C8-PFOA	5.857	421.0 -> 376.0	208705	17.72	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.6%			
13C8-PFOS	6.440	507.0 -> 99.0	22061	19.15	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%			
13C9-PFNA	6.455	472.0 -> 427.0	209788	17.80	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 89.0%			
d3-MeFOSAA	7.009	573.0 -> 419.0	32502	18.95	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	10924	19.07	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.3%			
d3-MeFOSA	6.952	515.0 -> 169.0	10264	18.25	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.3%			
d5-EtFOSAA	7.170	589.0 -> 419.0	41295	19.58	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.9%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	3140	1.05	µg/L		92
6:2FTS	5.843	427.0 -> 407.0	3931	1.00	µg/L		99
8:2FTS	7.026	527.0 -> 507.0	3767	1.07	µg/L		96
EtFOSAA	7.171	584.0 -> 419.0	1129	0.88	µg/L		99
FOSA	6.531	498.0 -> 78.0	2095	0.97	µg/L		97
MeFOSAA	7.010	570.0 -> 419.0	1389	1.02	µg/L		94
PFBA	1.694	213.0 -> 169.0	1286	0.95	µg/L		100
PFBS	3.354	299.0 -> 80.0	1856	0.97	µg/L		98
PFDA	6.990	513.0 -> 469.0	9850	0.97	µg/L		99
PFDoDA	7.906	613.0 -> 569.0	11344	0.95	µg/L		98
PFDS	7.431	599.0 -> 80.0	1596	1.04	µg/L		95
PFHpA	5.164	363.0 -> 319.0	10224	0.93	µg/L		100
PFHpS	5.867	449.0 -> 80.0	1695	0.95	µg/L		99
PFHxA	4.291	313.0 -> 269.0	8234	0.94	µg/L		100
PFHxS	5.195	399.0 -> 80.0	1861	0.98	µg/L	m	96
PFNA	6.456	463.0 -> 419.0	8695	0.91	µg/L		97
PFNS	6.962	549.0 -> 80.0	1568	0.95	µg/L		95
PFOA	5.858	413.0 -> 369.0	12063	0.95	µg/L		99
PFOS	6.442	499.0 -> 80.0	1971	1.00	µg/L	m	84
PFPeA	3.134	263.0 -> 219.0	5067	0.95	µg/L		100
PFPeS	4.398	349.0 -> 80.0	1395	0.91	µg/L		97
PFTeDA	9.178	713.0 -> 669.0	14045	0.98	µg/L		99
PFTrDA	8.437	663.0 -> 619.0	16462	1.01	µg/L		88
PFUnDA	7.472	563.0 -> 519.0	10209	0.96	µg/L		99
11Cl-PF3OUdS	7.640	631.0 -> 451.0	6961	1.00	µg/L		99
9Cl-PF3ONS	6.714	531.0 -> 351.0	5926	1.03	µg/L		96
ADONA	5.261	377.0 -> 251.0	12704	0.90	µg/L		99
HFPO-DA	4.562	329.0 -> 169.0	1945	1.00	µg/L		96
MeFOSA	6.966	512.0 -> 169.0	572	1.06	µg/L		91
4-PFECHS	5.753	461.0 -> 381.0	3704	1.06	µg/L		95
FBSA	4.343	298.0 -> 78.0	2906	0.95	µg/L		98
FHxSA	5.674	398.0 -> 78.0	2468	1.01	µg/L		99

 # = Qualifier out of range, m = manually integrated, + = Area summed

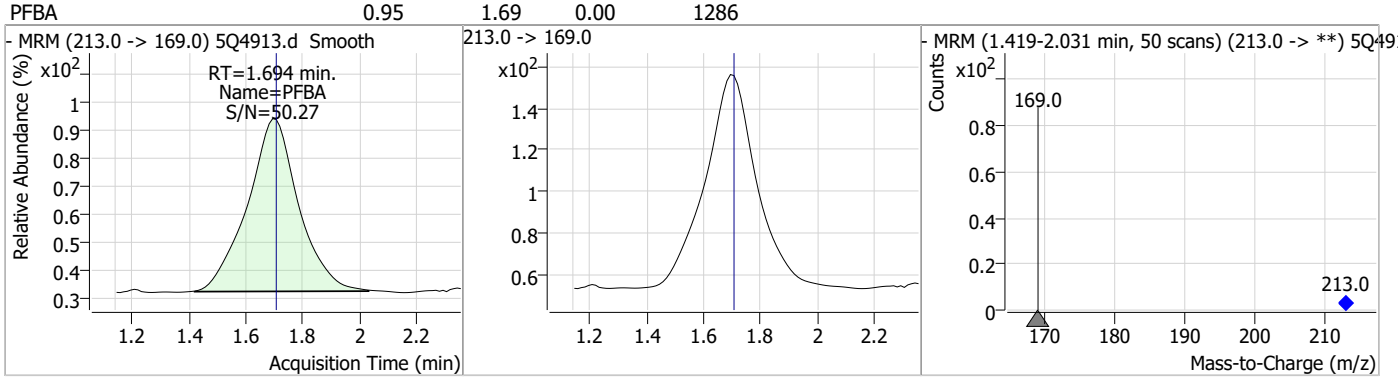
Perfluorinated Compounds by LC/MS/MS



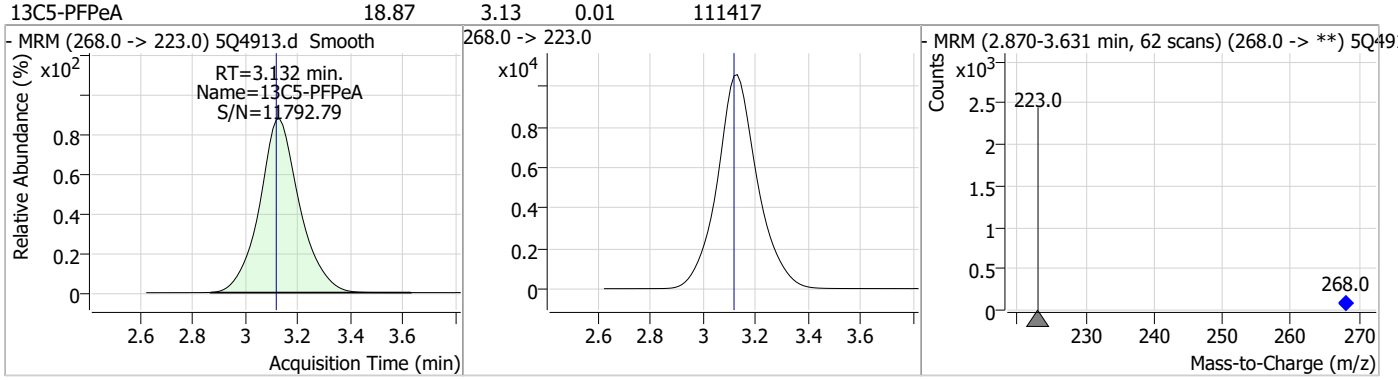
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.52	1.70	0.01	68299				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.95	1.69	0.00	1286				

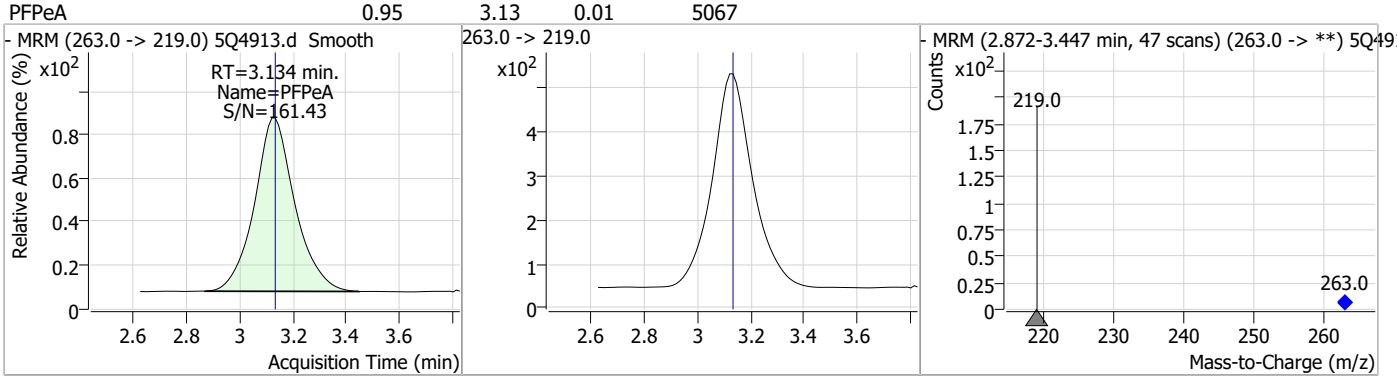


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.87	3.13	0.01	111417				

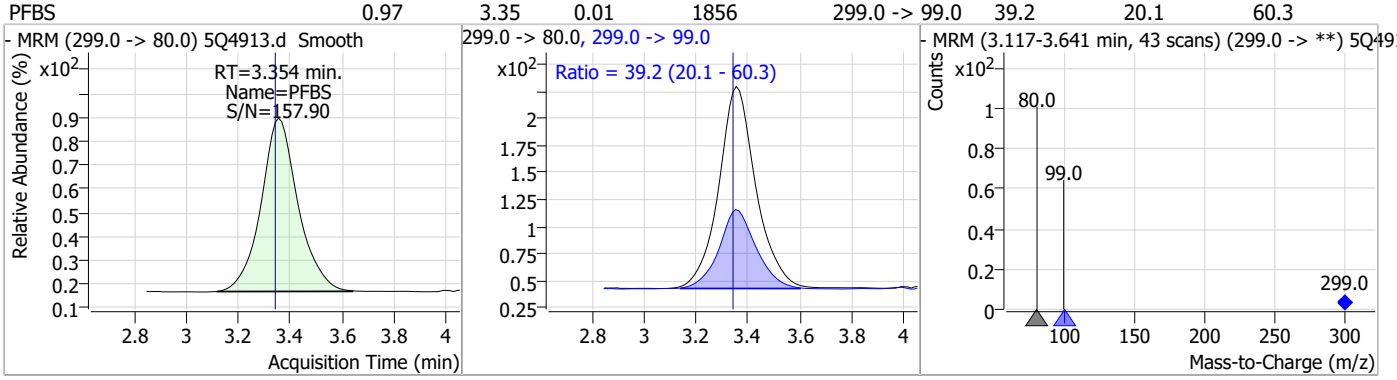


Perfluorinated Compounds by LC/MS/MS

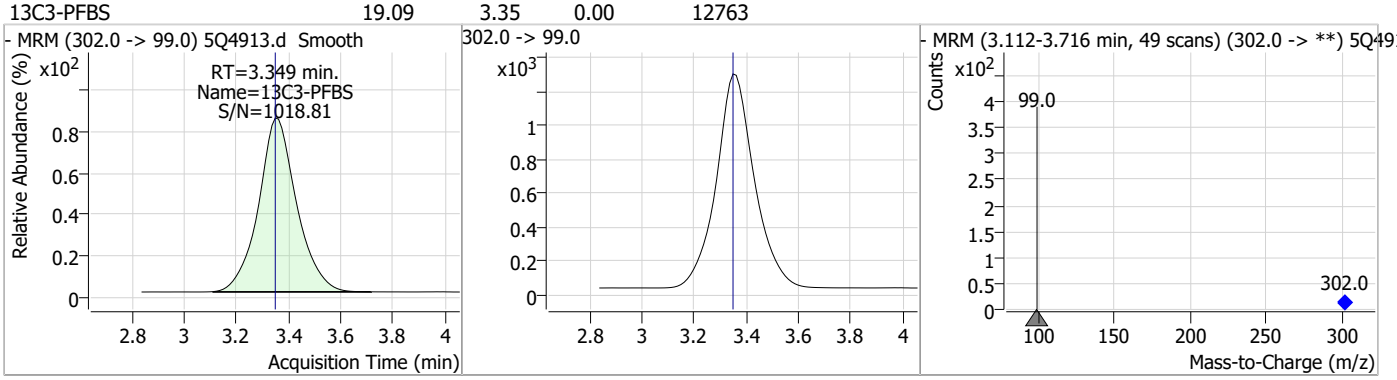
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.95	3.13	0.01	5067				



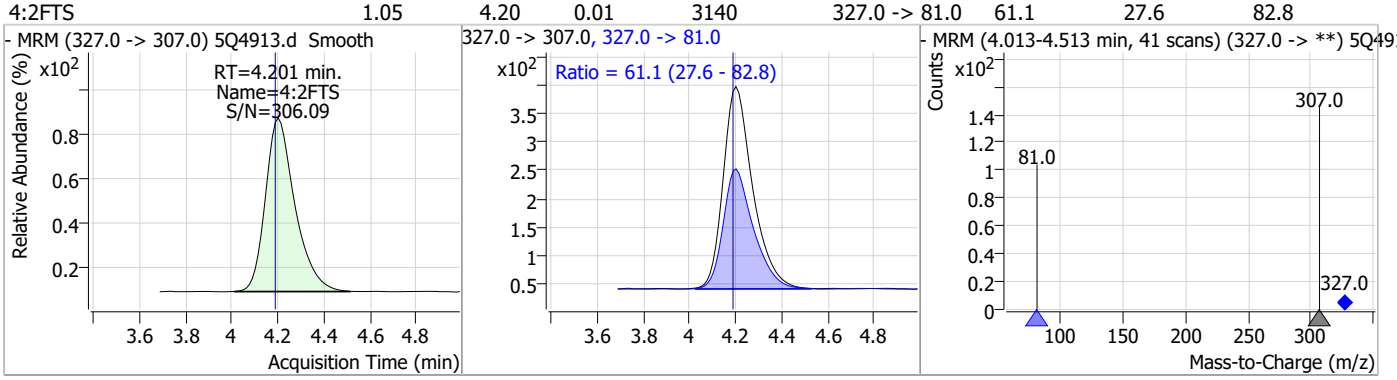
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.97	3.35	0.01	1856	299.0 -> 99.0	39.2	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.09	3.35	0.00	12763				

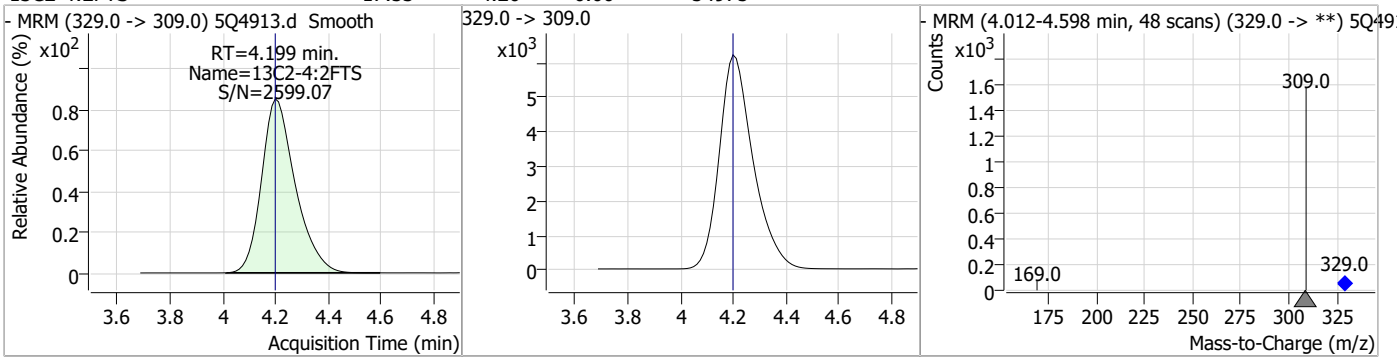


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	1.05	4.20	0.01	3140	327.0 -> 81.0	61.1	27.6	82.8

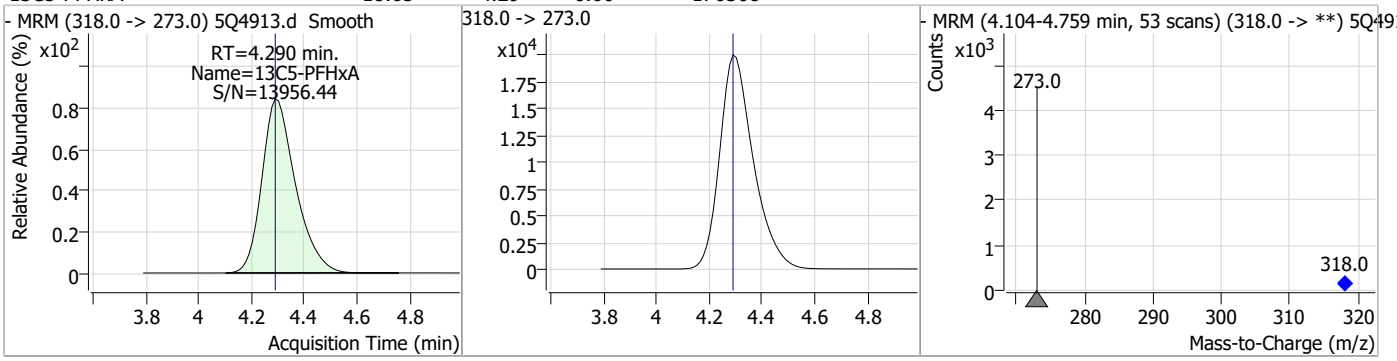


Perfluorinated Compounds by LC/MS/MS

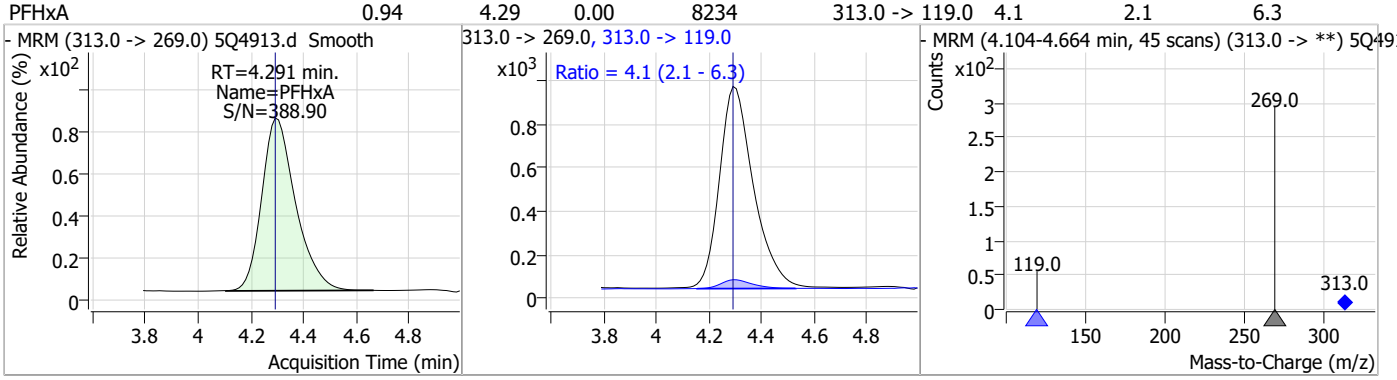
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	17.53	4.20	0.00	54975				



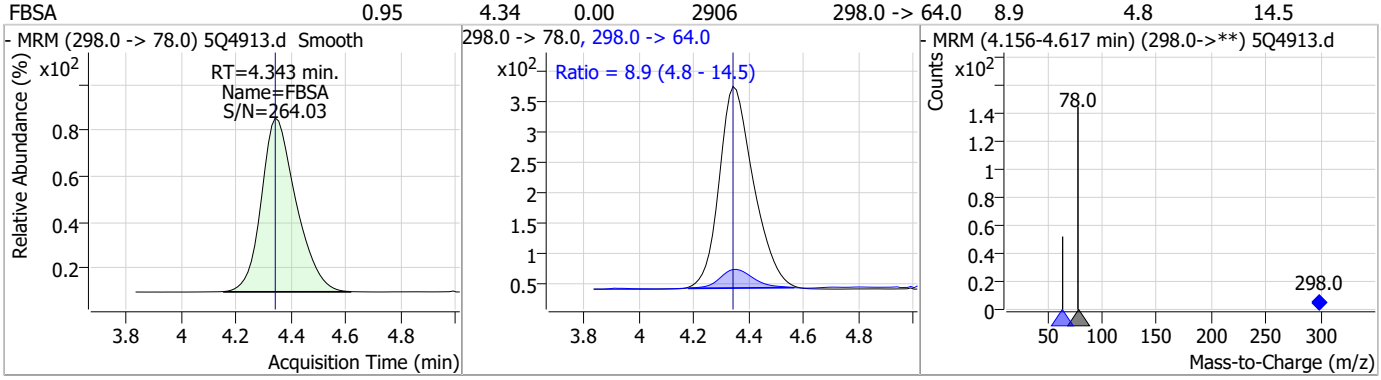
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.65	4.29	0.00	176368				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.94	4.29	0.00	8234	313.0 -> 119.0	4.1	2.1	6.3

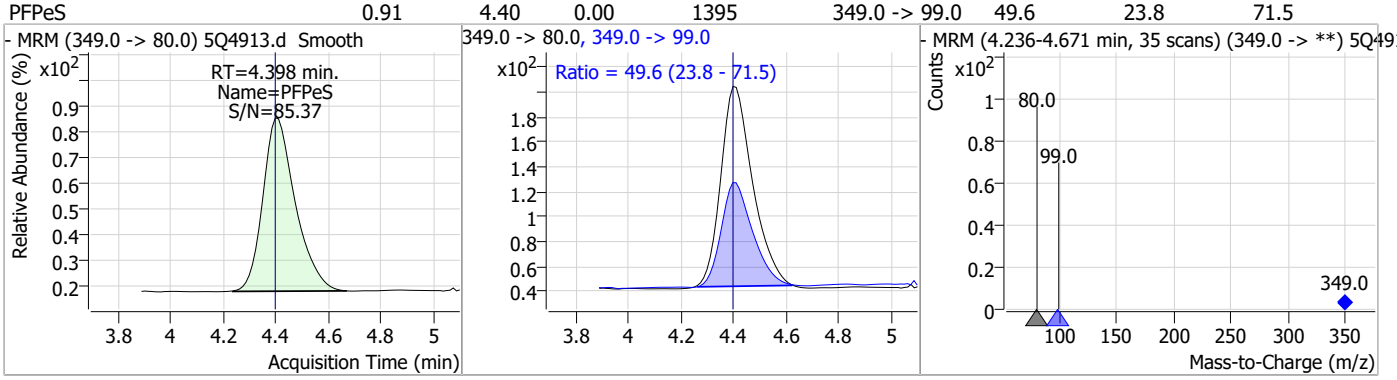


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.95	4.34	0.00	2906	298.0 -> 64.0	8.9	4.8	14.5

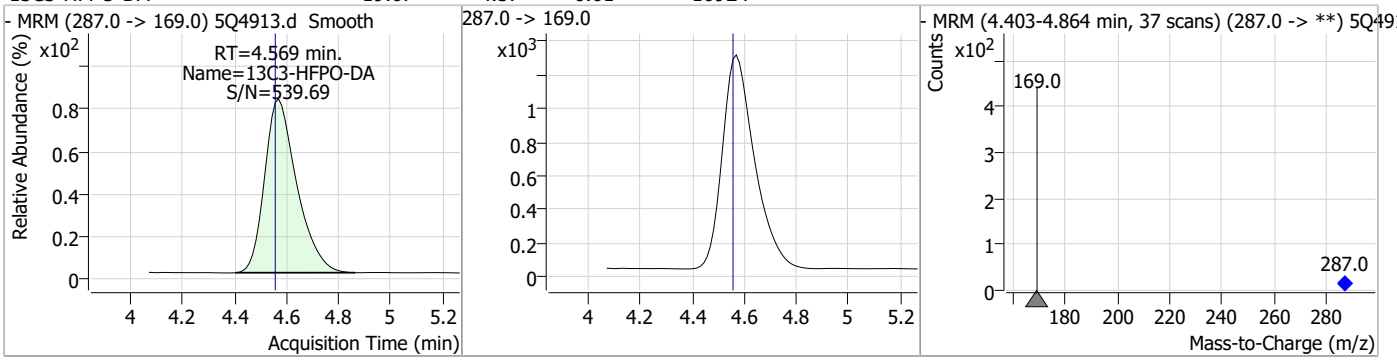


Perfluorinated Compounds by LC/MS/MS

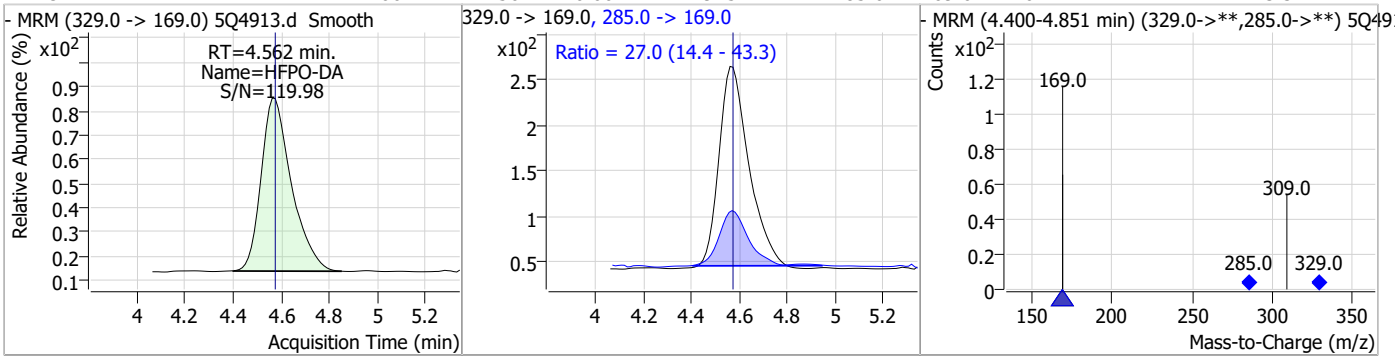
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	4.40	0.00	1395	349.0 -> 99.0	49.6	23.8	71.5



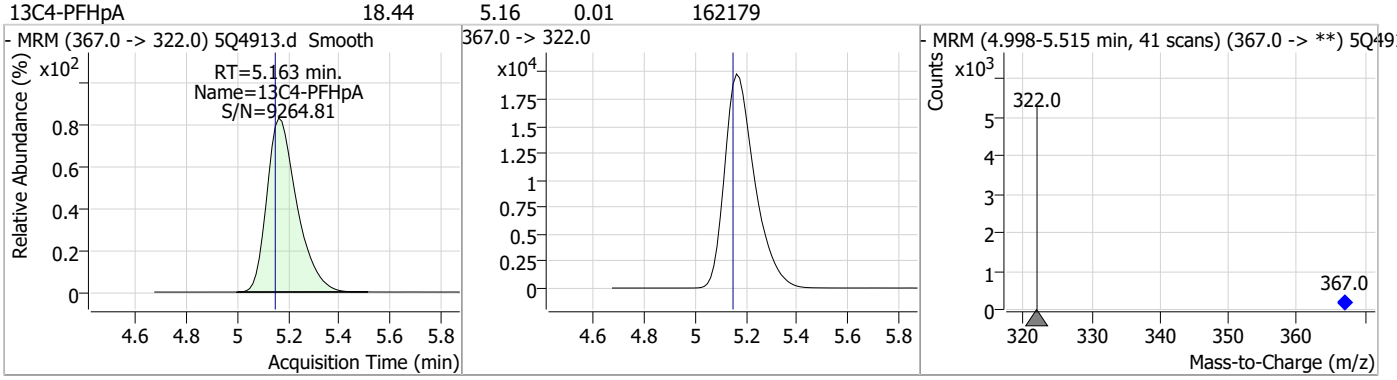
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.07	4.57	0.01	10924				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.00	4.56	0.00	1945	285.0 -> 169.0	27.0	14.4	43.3

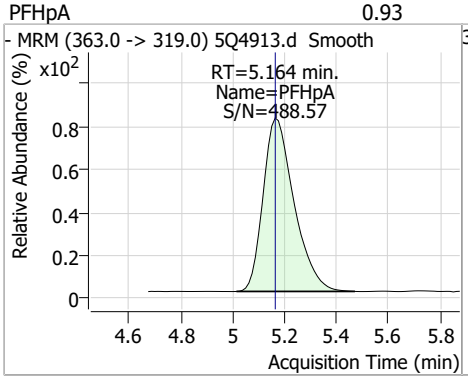


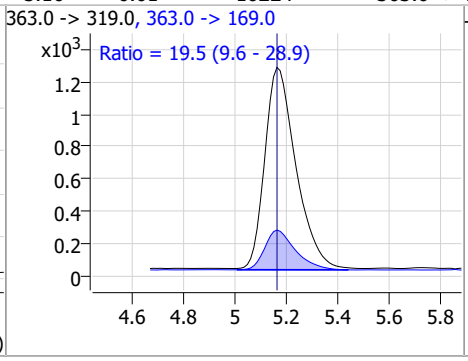
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.44	5.16	0.01	162179				

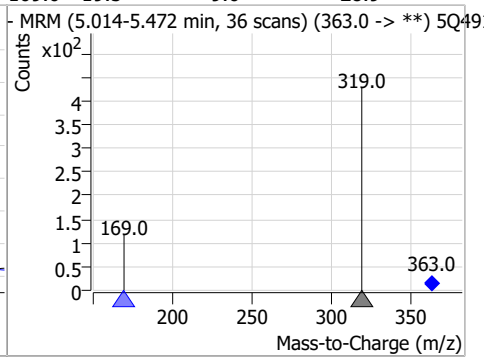


Perfluorinated Compounds by LC/MS/MS

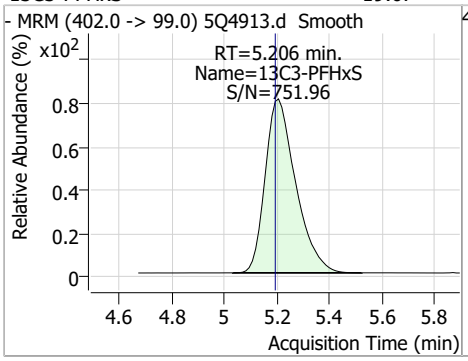
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.93	5.16	0.01	10224	363.0 -> 169.0	19.5	9.6	28.9

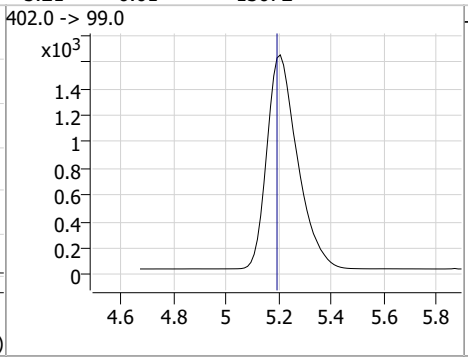


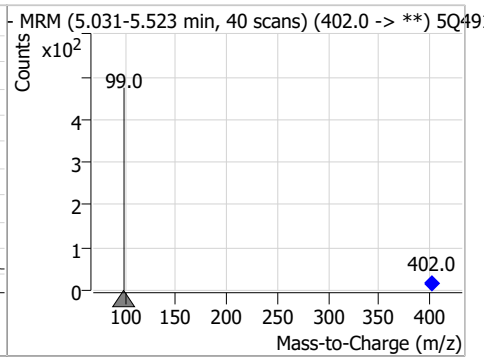




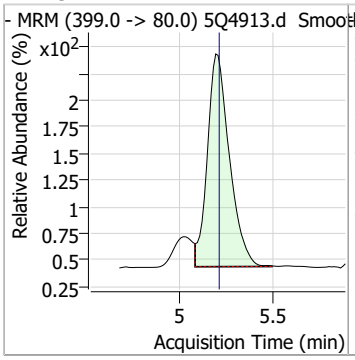
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.07	5.21	0.01	13072				

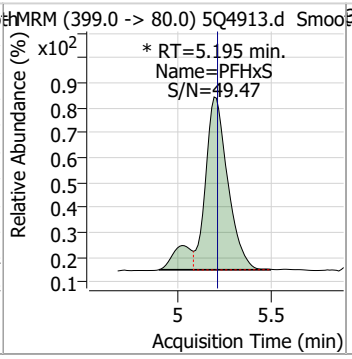


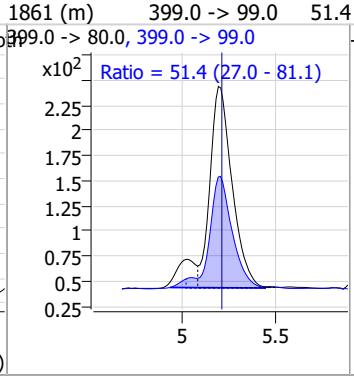


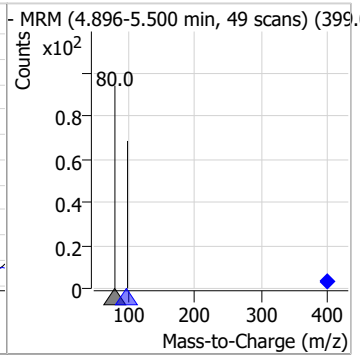


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.98	5.20	0.00	1861 (m)	399.0 -> 99.0	51.4	27.0	81.1

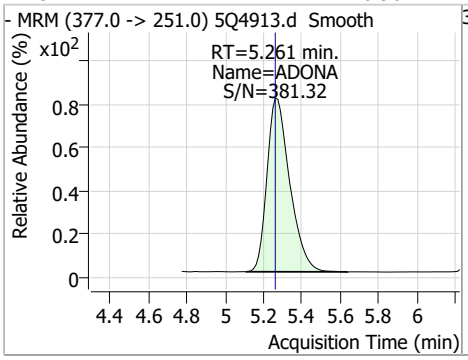


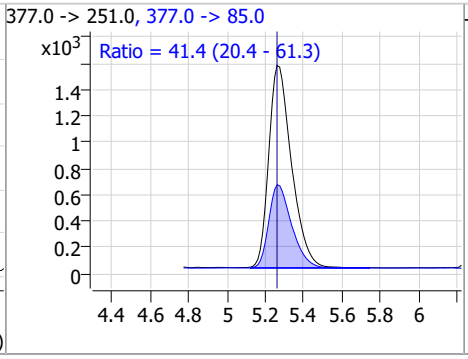


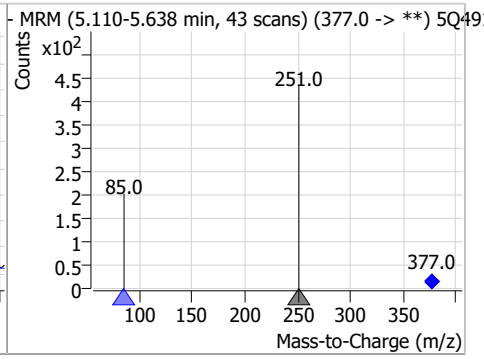




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.90	5.26	0.01	12704	377.0 -> 85.0	41.4	20.4	61.3

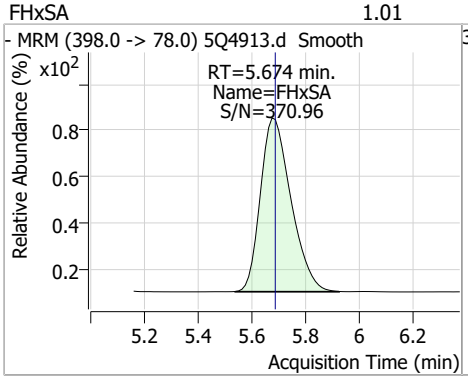


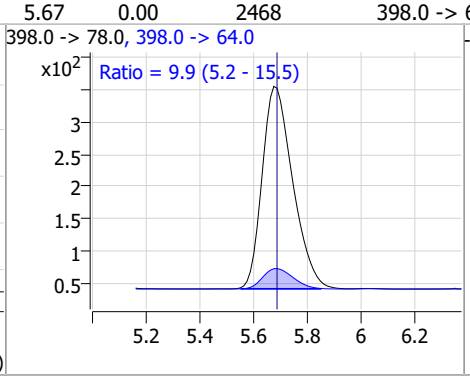


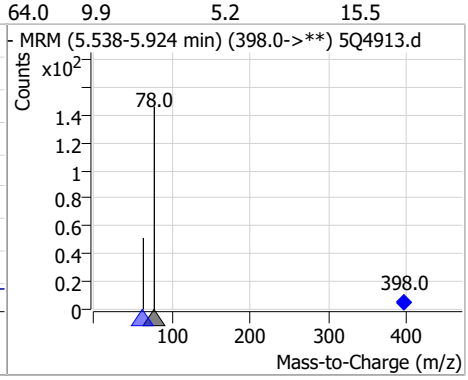


Perfluorinated Compounds by LC/MS/MS

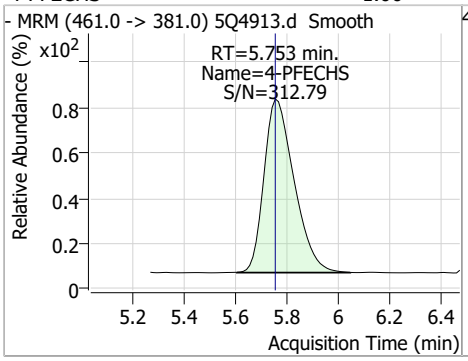
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.01	5.67	0.00	2468	398.0 -> 64.0	9.9	5.2	15.5

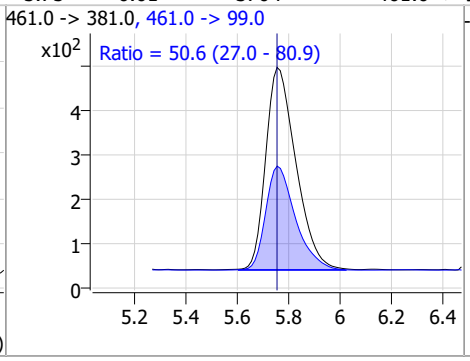


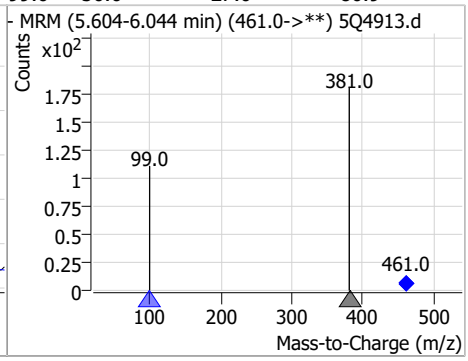




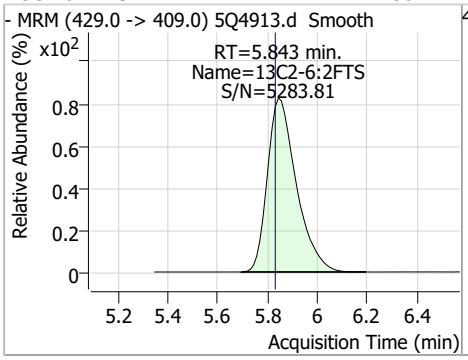
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.06	5.75	0.01	3704	461.0 -> 99.0	50.6	27.0	80.9

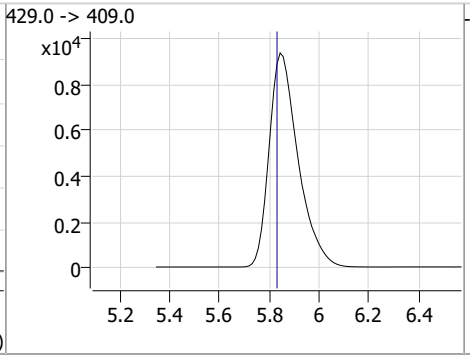


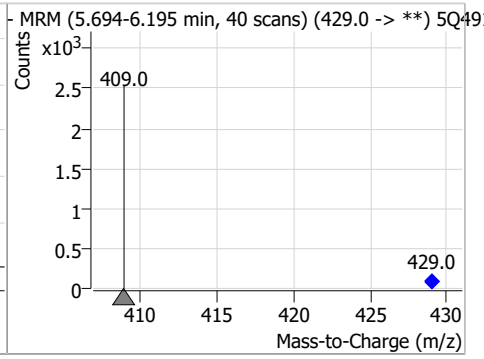




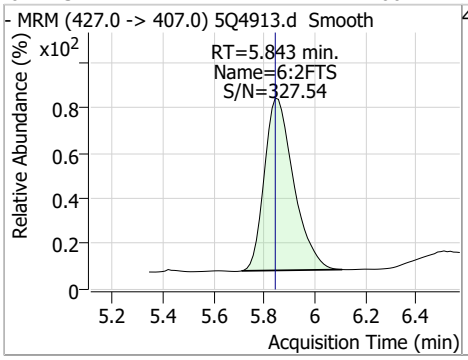
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	17.56	5.84	0.01	75262				

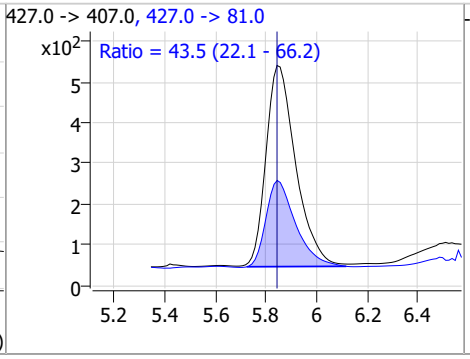


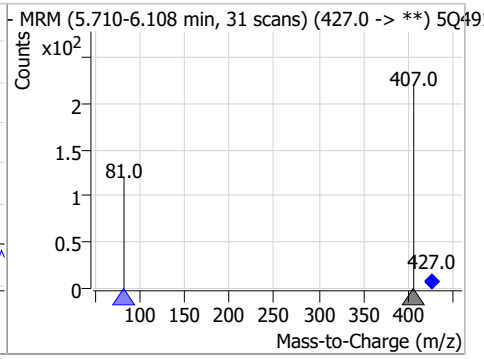




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	1.00	5.84	0.01	3931	427.0 -> 81.0	43.5	22.1	66.2

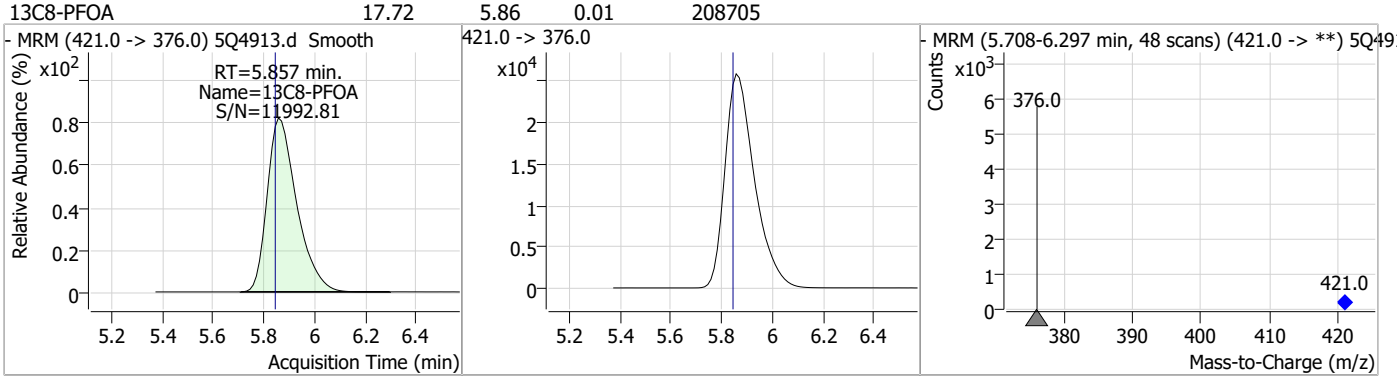




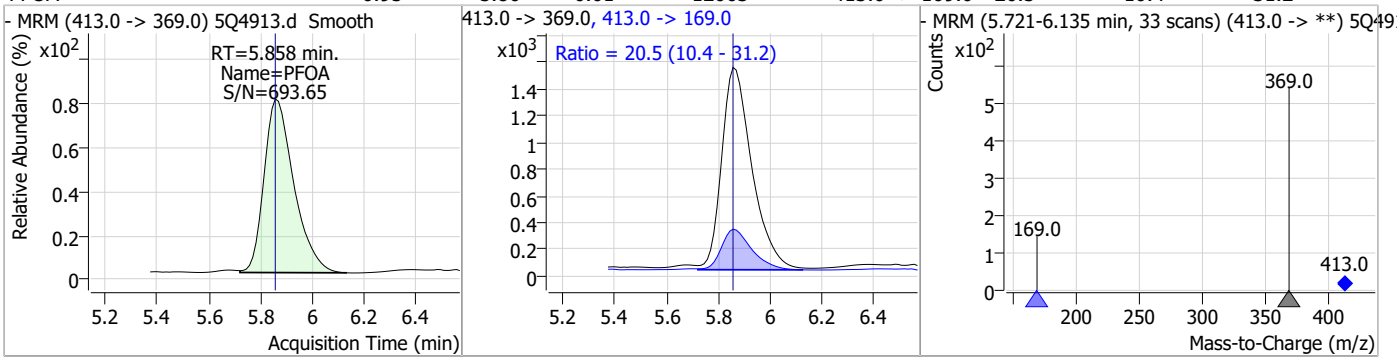


Perfluorinated Compounds by LC/MS/MS

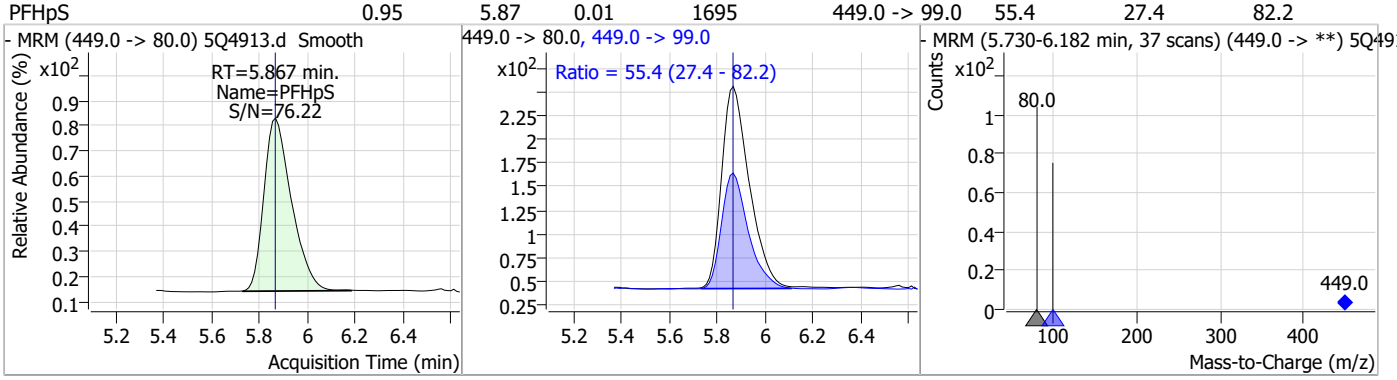
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.72	5.86	0.01	208705				



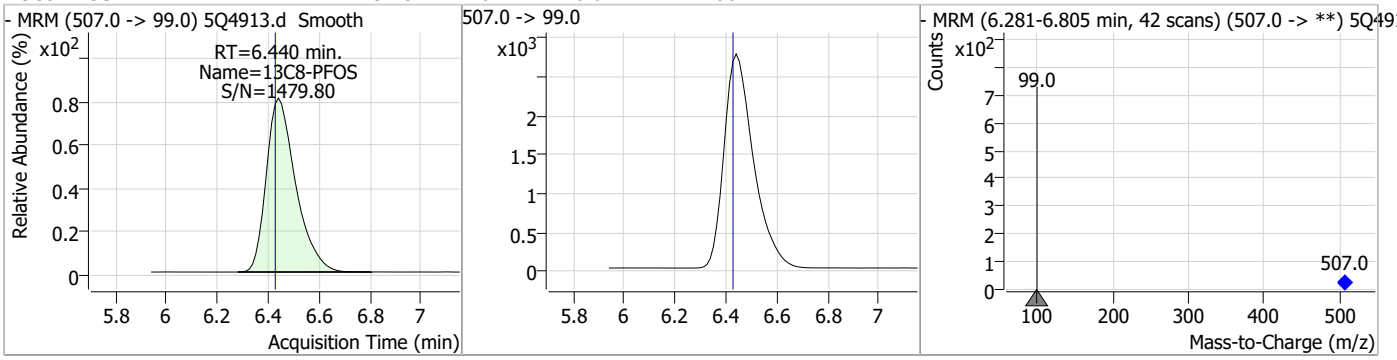
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.95	5.86	0.01	12063	413.0 -> 169.0	20.5	10.4	31.2



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.95	5.87	0.01	1695	449.0 -> 99.0	55.4	27.4	82.2

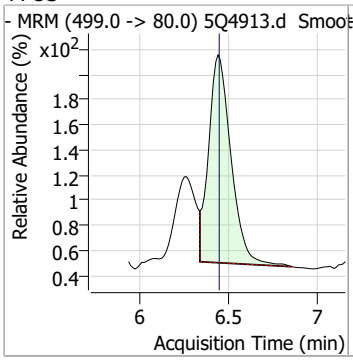


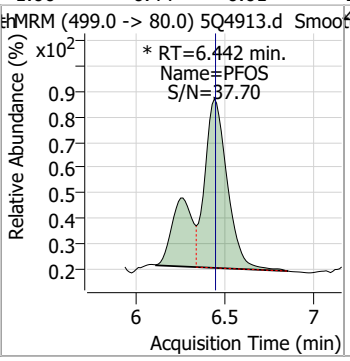
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.15	6.44	0.01	22061				

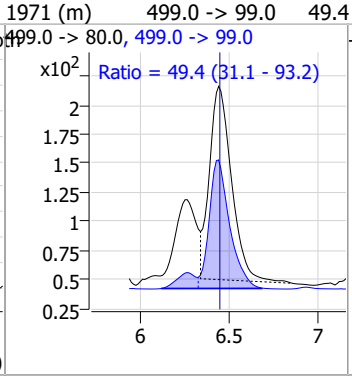


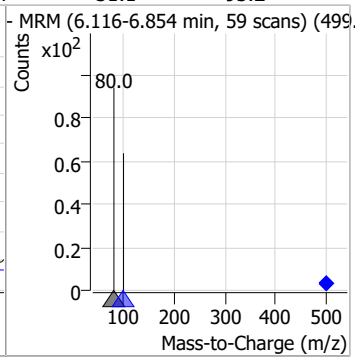
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.00	6.44	0.01	1971 (m)	499.0 -> 99.0	49.4	31.1	93.2

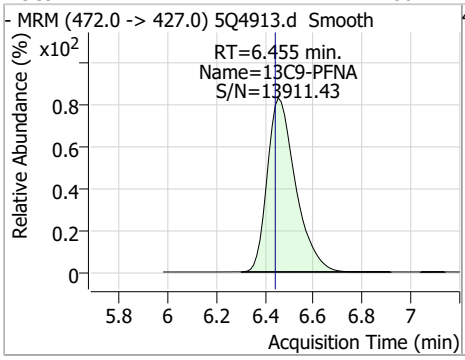


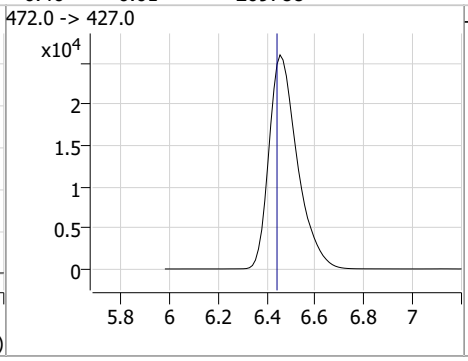


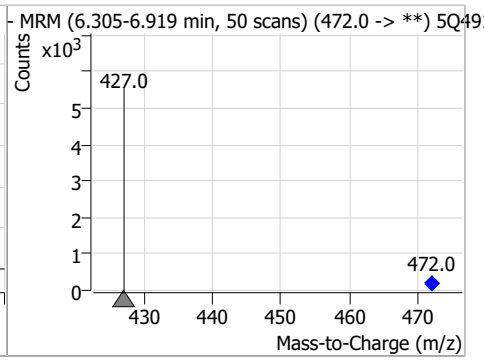




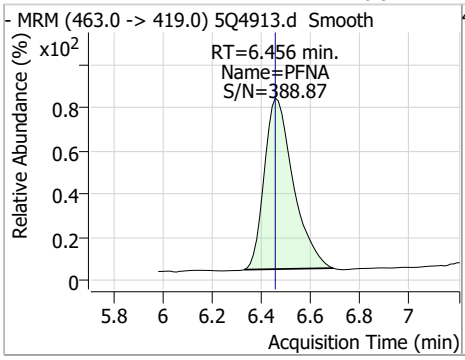
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	17.80	6.46	0.01	209788				

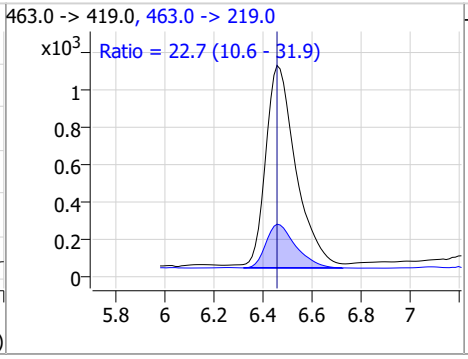


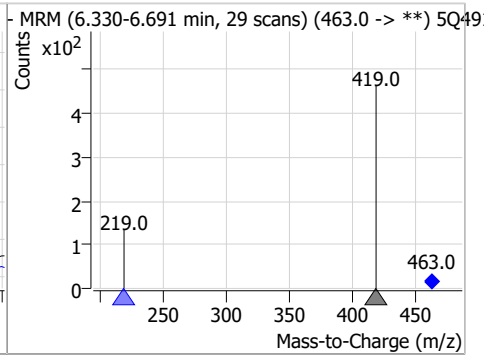




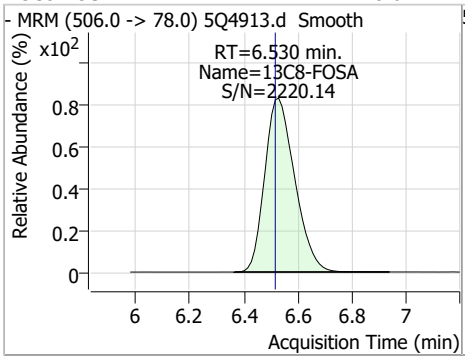
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.91	6.46	0.01	8695	463.0 -> 219.0	22.7	10.6	31.9

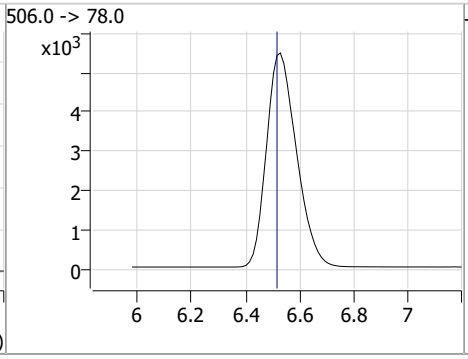


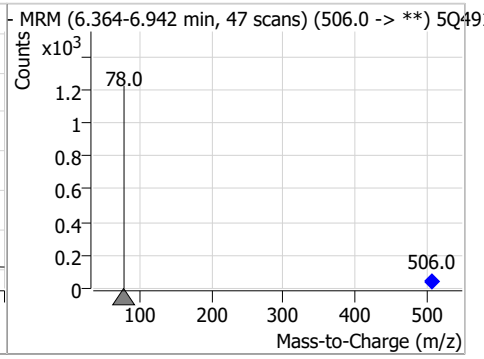




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.01	6.53	0.01	42317				

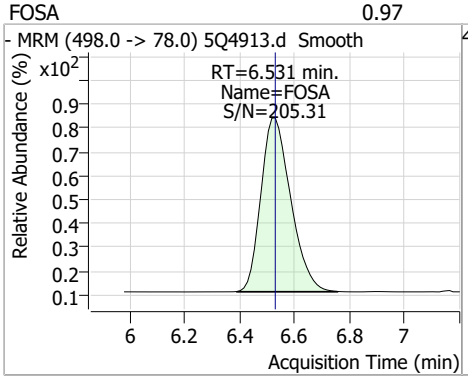


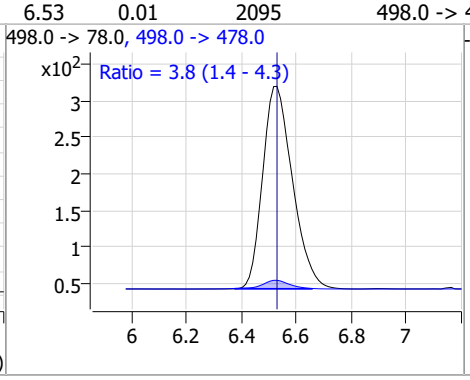


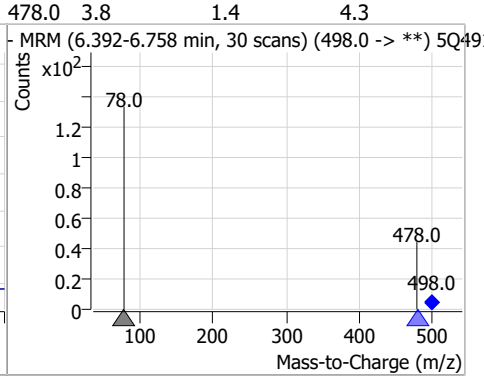


Perfluorinated Compounds by LC/MS/MS

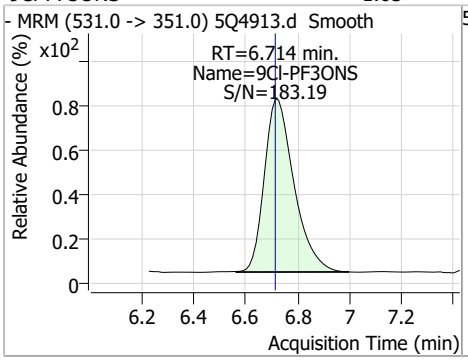
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.97	6.53	0.01	2095	498.0 -> 478.0	3.8	1.4	4.3

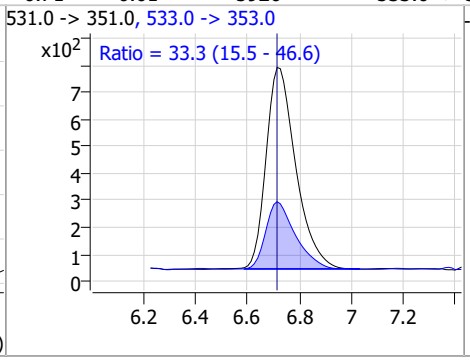


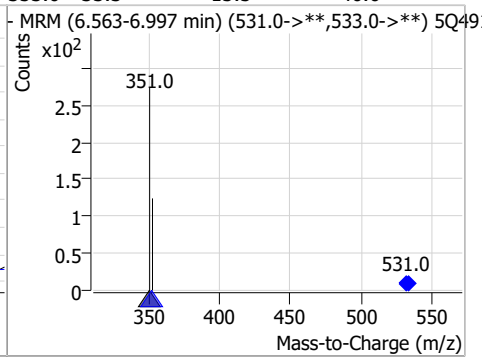




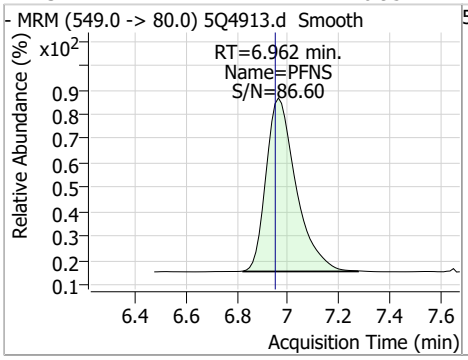
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.03	6.71	0.01	5926	533.0 -> 353.0	33.3	15.5	46.6

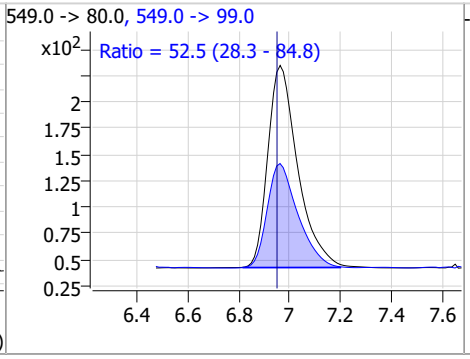


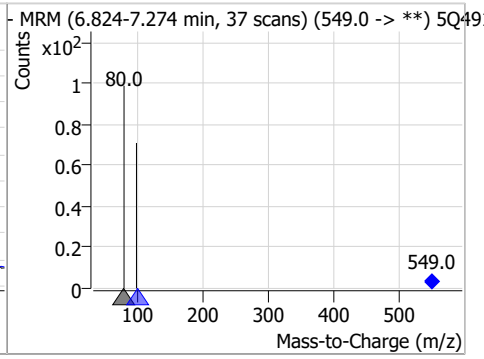




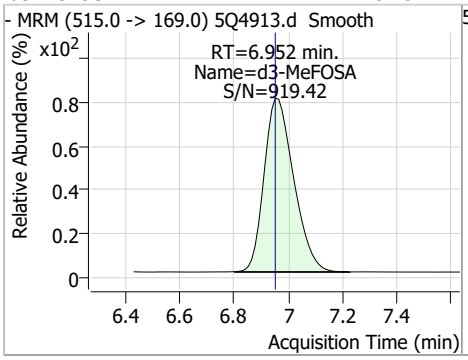
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.95	6.96	0.03	1568	549.0 -> 99.0	52.5	28.3	84.8

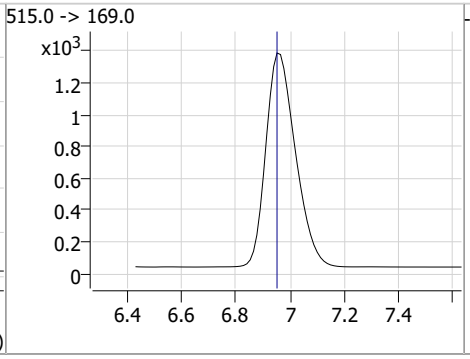


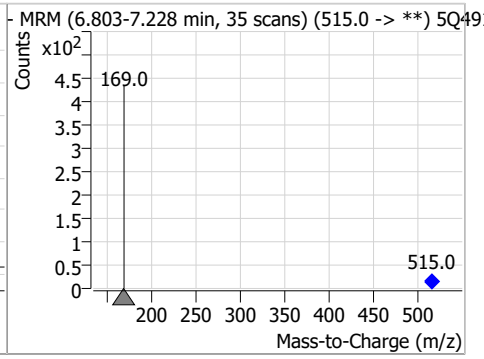




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.25	6.95	0.00	10264				

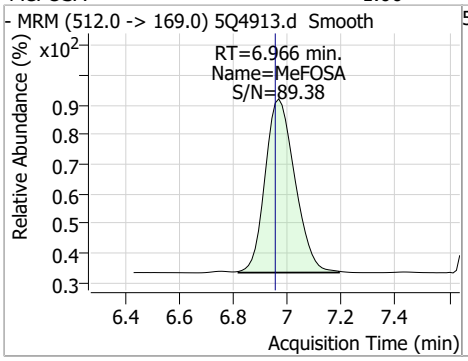


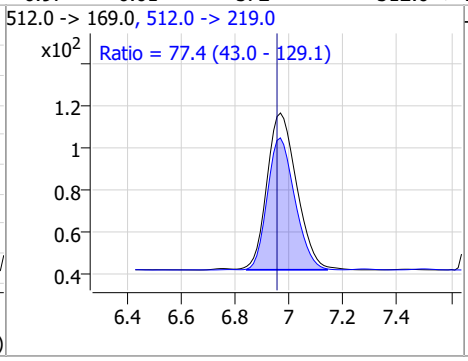


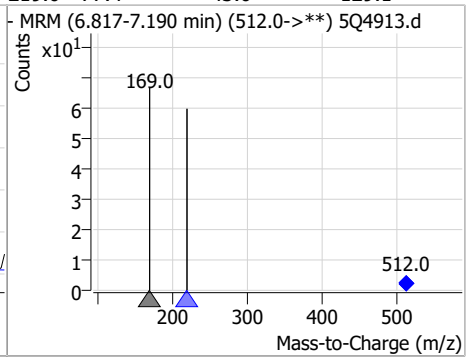


Perfluorinated Compounds by LC/MS/MS

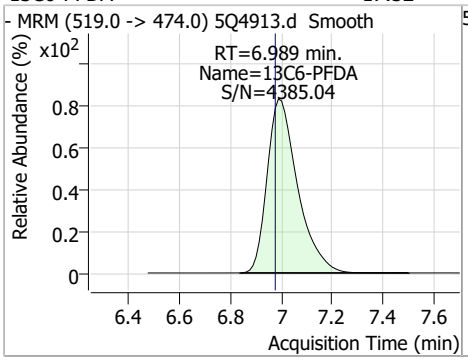
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	1.06	6.97	0.01	572	512.0 -> 219.0	77.4	43.0	129.1

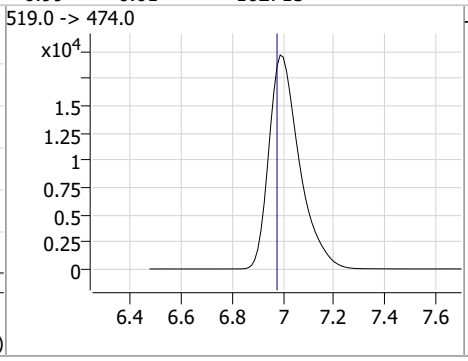


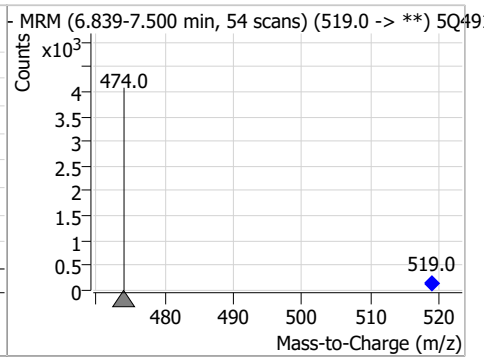




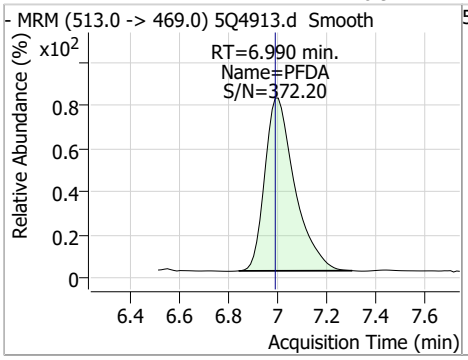
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	17.52	6.99	0.01	162715				

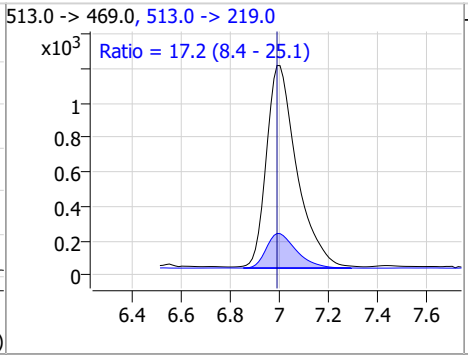


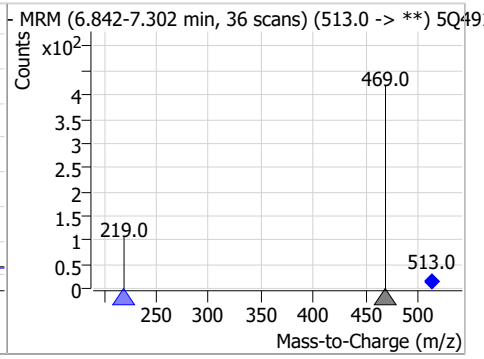




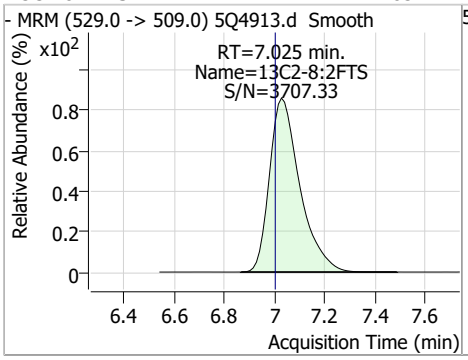
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.97	6.99	0.01	9850	513.0 -> 219.0	17.2	8.4	25.1

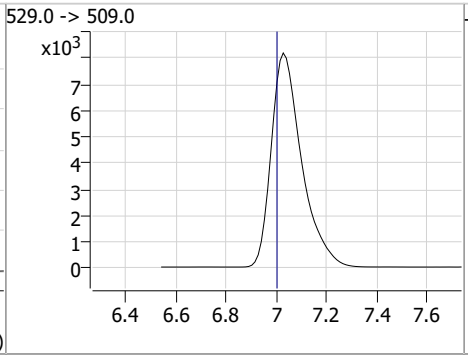


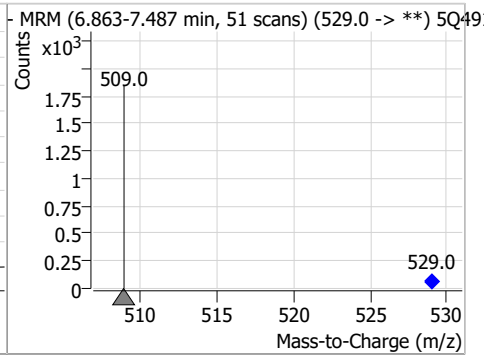




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	17.83	7.03	0.02	68490				

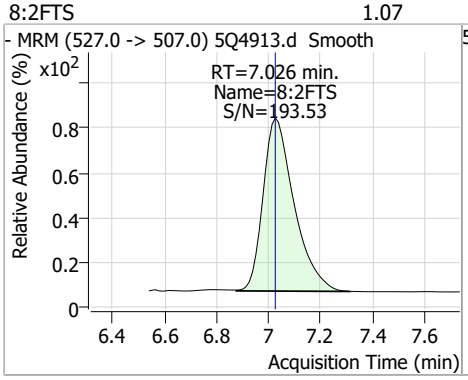


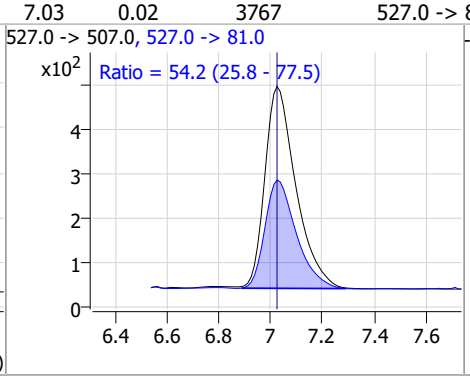


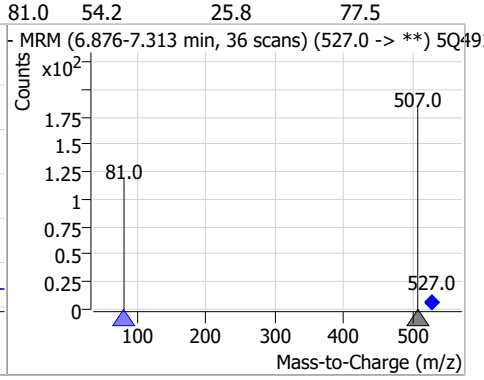


Perfluorinated Compounds by LC/MS/MS

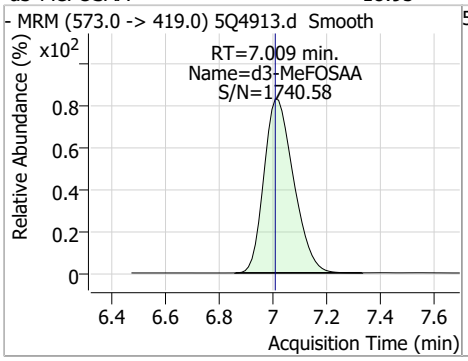
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.07	7.03	0.02	3767	527.0 -> 81.0	54.2	25.8	77.5

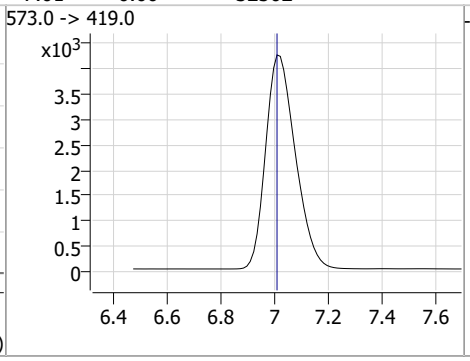


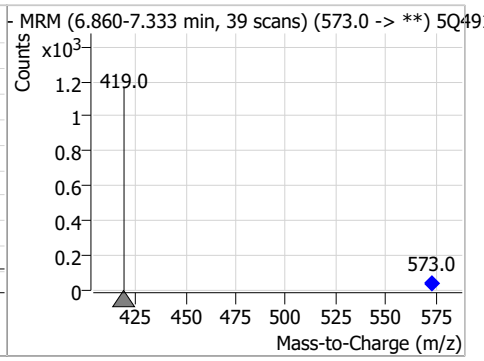




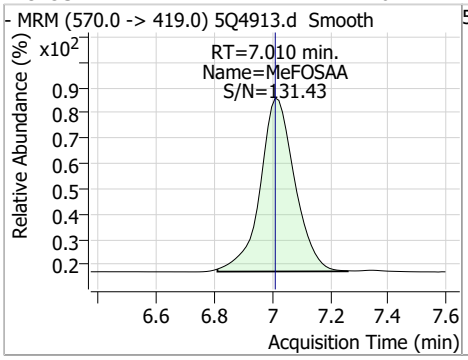
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.95	7.01	0.00	32502				

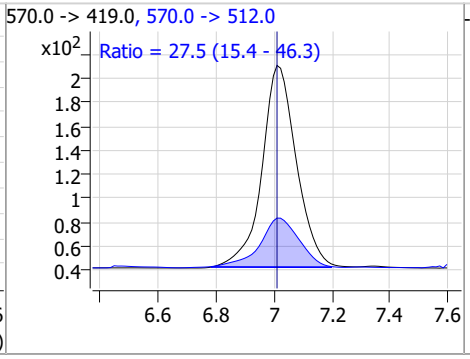


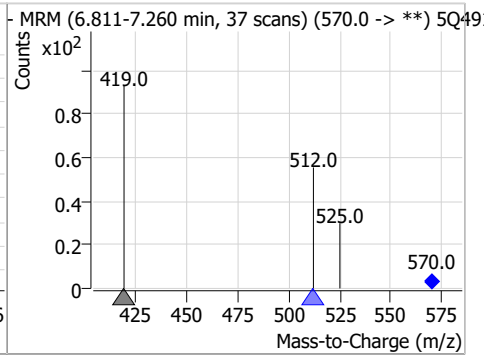




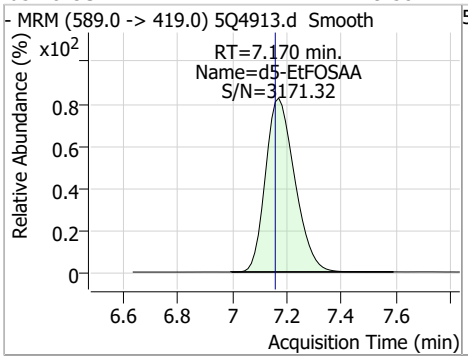
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.02	7.01	0.00	1389	570.0 -> 512.0	27.5	15.4	46.3

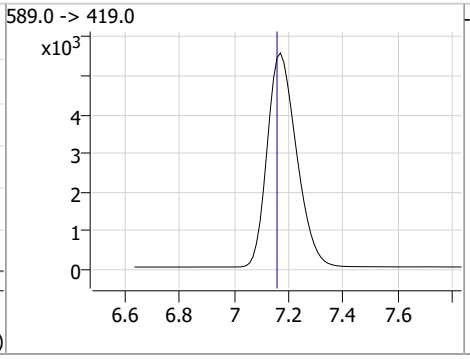


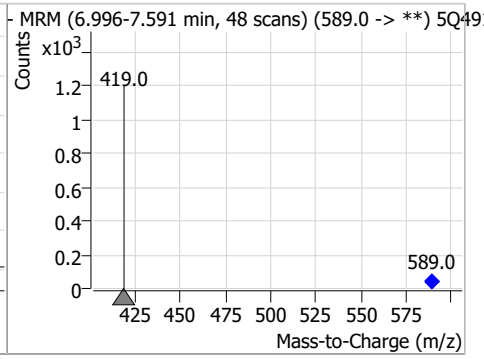




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	19.58	7.17	0.01	41295				

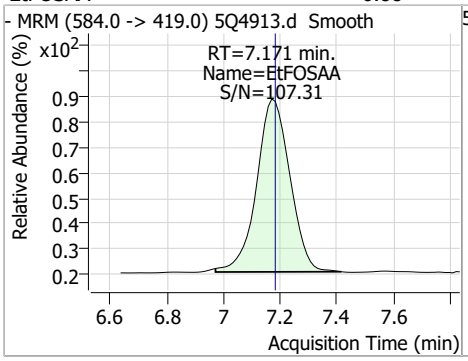


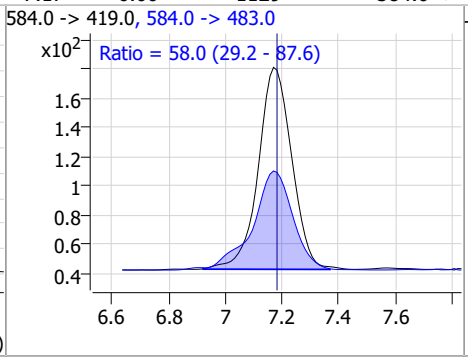


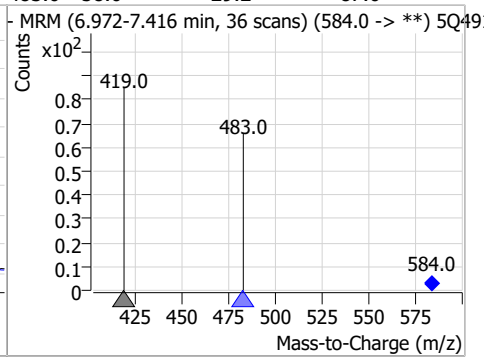


Perfluorinated Compounds by LC/MS/MS

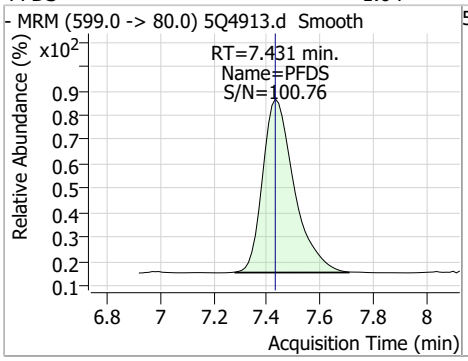
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.88	7.17	0.00	1129	584.0 -> 483.0	58.0	29.2	87.6

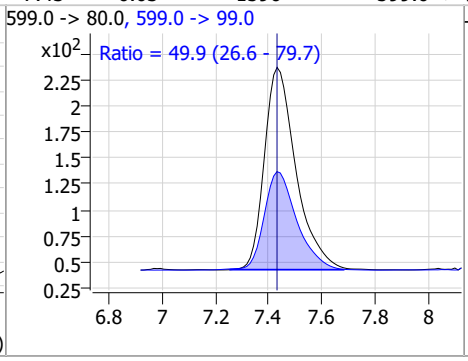


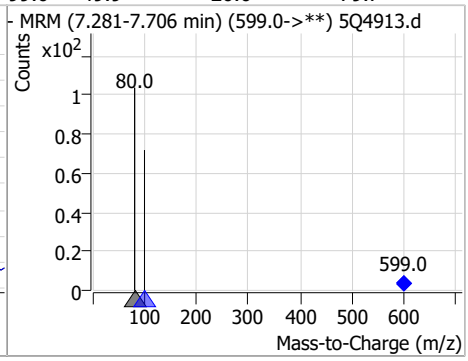




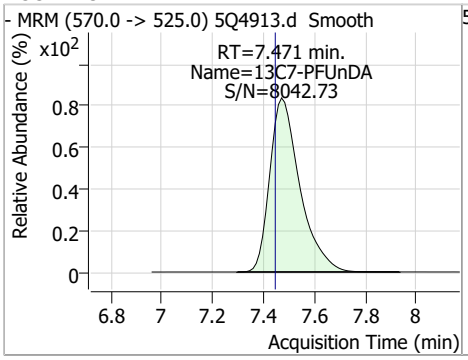
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.04	7.43	0.03	1596	599.0 -> 99.0	49.9	26.6	79.7

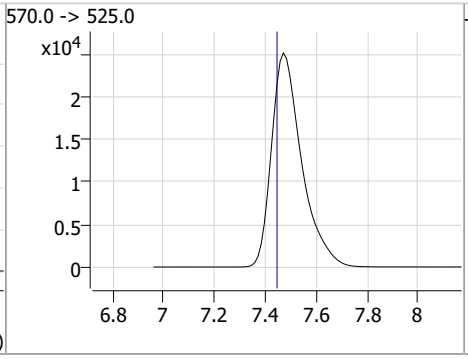


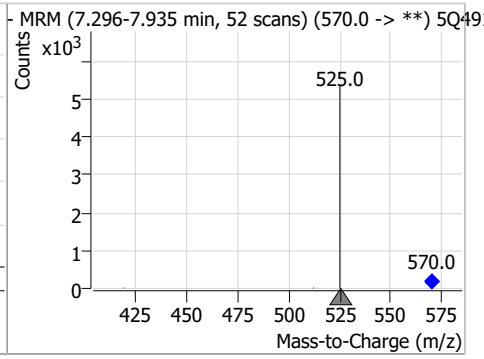




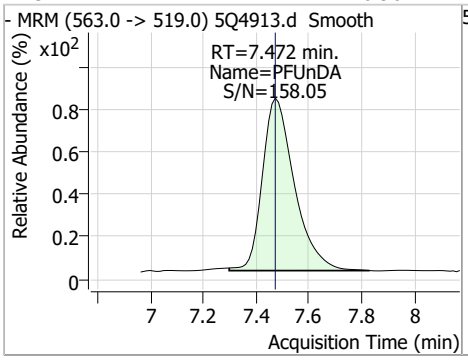
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	17.77	7.47	0.02	205874				

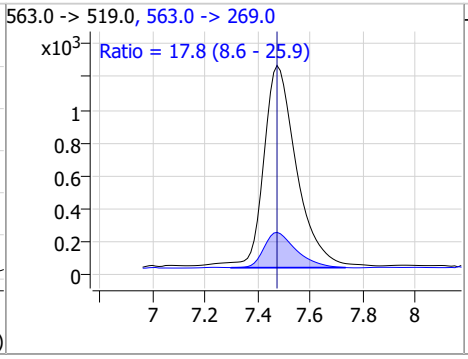


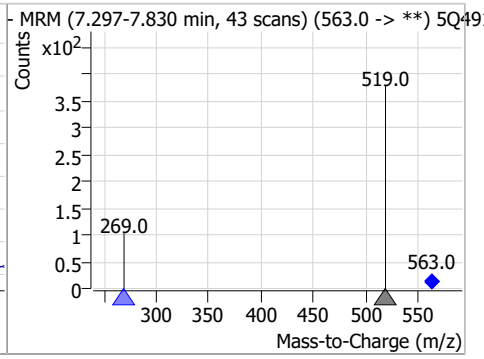




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.96	7.47	0.02	10209	563.0 -> 269.0	17.8	8.6	25.9

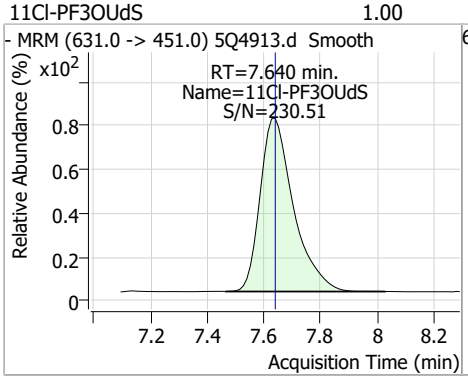


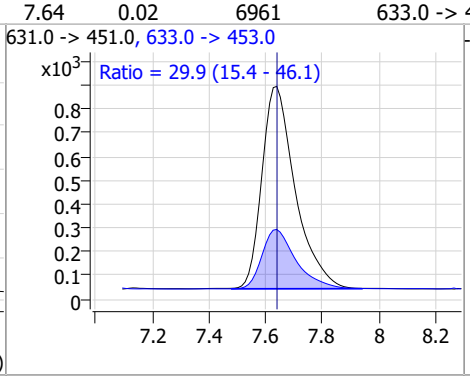


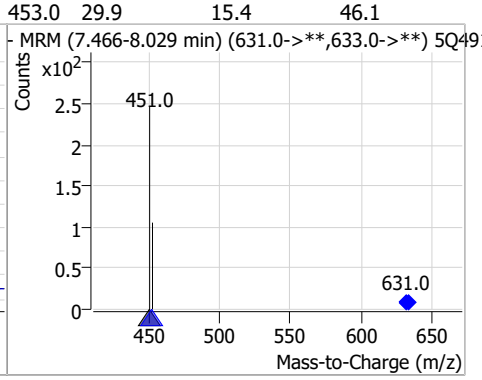


Perfluorinated Compounds by LC/MS/MS

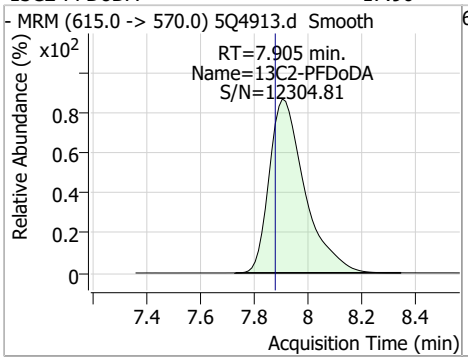
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.00	7.64	0.02	6961	633.0 -> 453.0	29.9	15.4	46.1

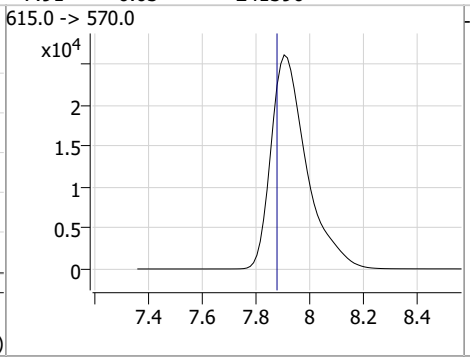


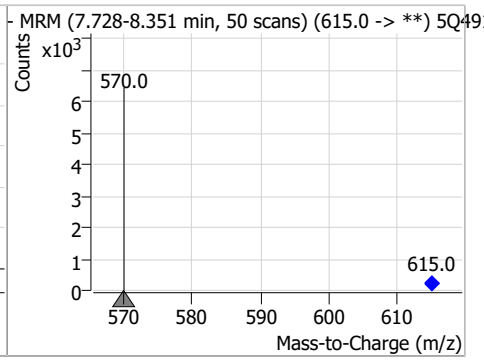




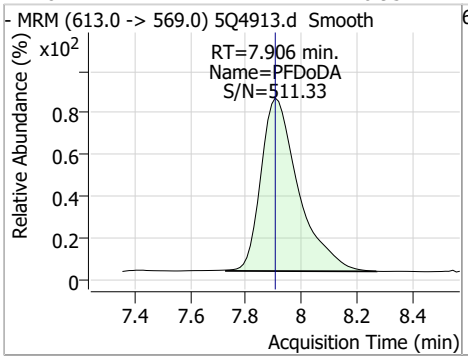
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	17.90	7.91	0.03	241390				

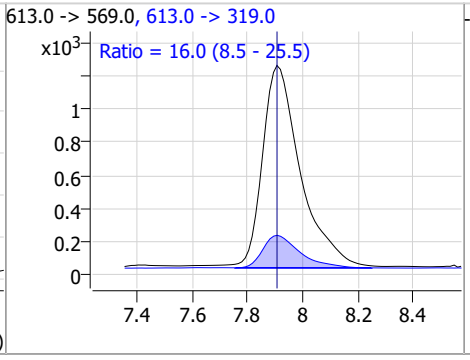


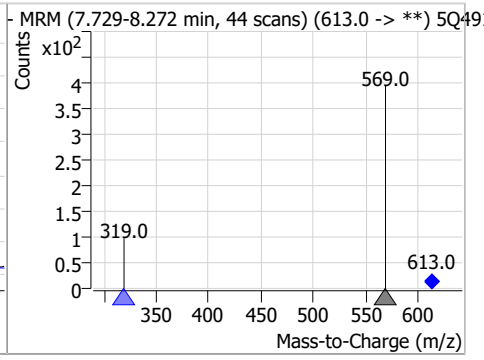




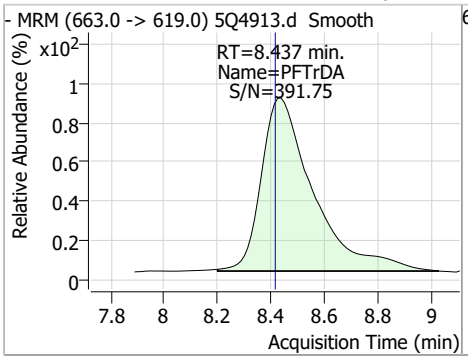
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.95	7.91	0.03	11344	613.0 -> 319.0	16.0	8.5	25.5

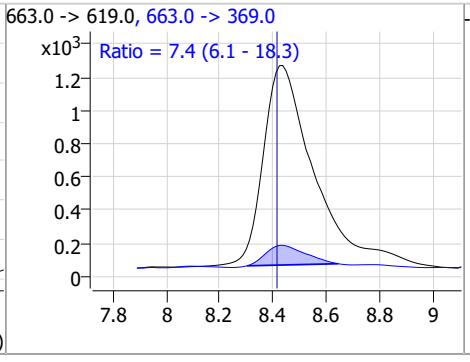


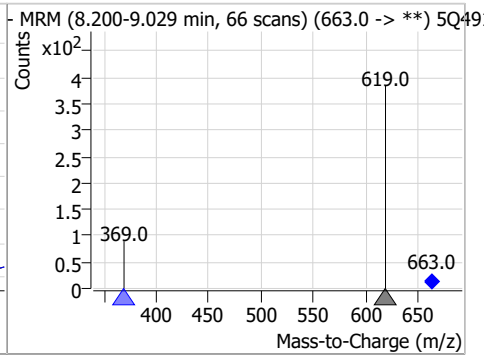




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.01	8.44	0.05	16462	663.0 -> 369.0	7.4	6.1	18.3

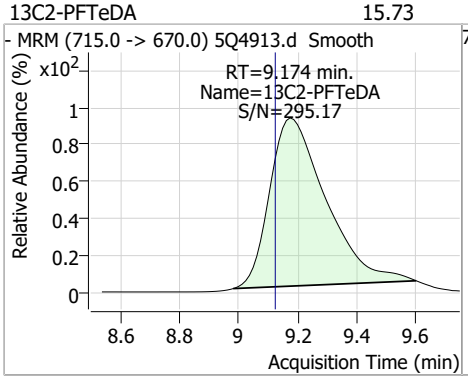


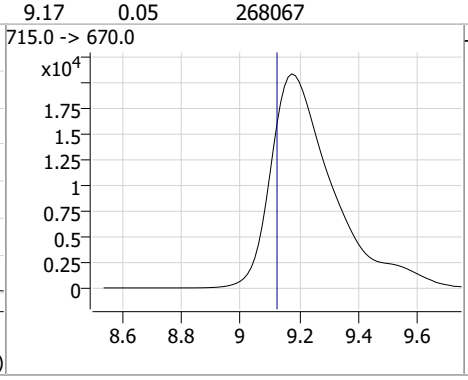


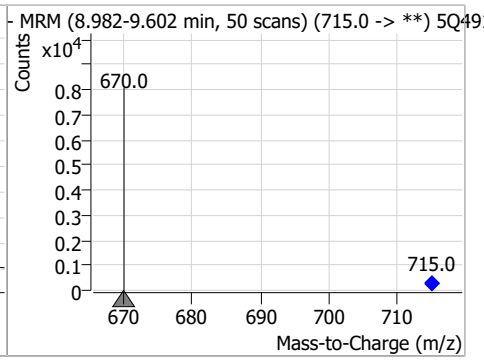


Perfluorinated Compounds by LC/MS/MS

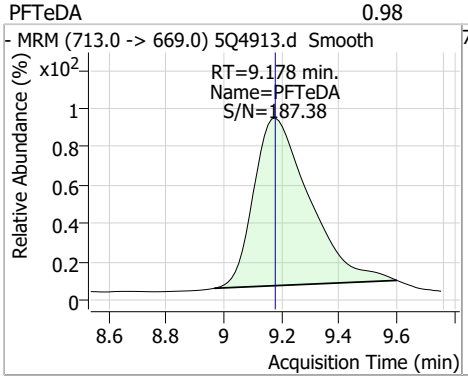
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	15.73	9.17	0.05	268067				

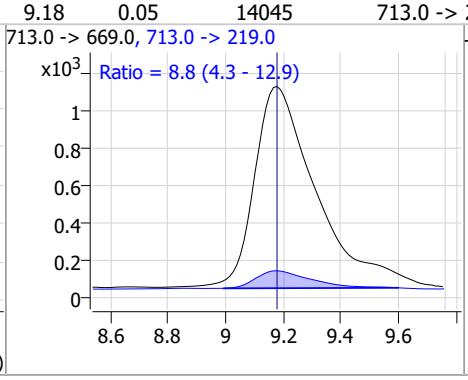


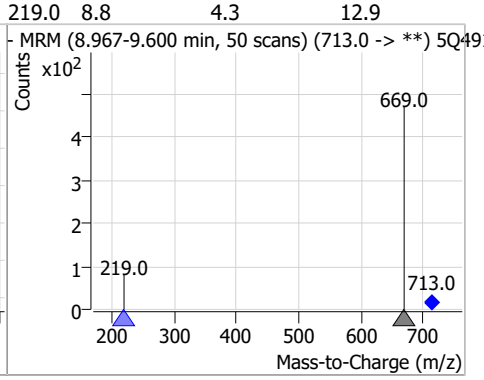




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.98	9.18	0.05	14045	713.0 -> 219.0	8.8	4.3	12.9







7.7.78

7

Manual Integration Approval Summary

Sample Number: S5Q74-CC73
Lab FileID: 5Q4913.D
Injection Time: 09/19/22 18:26
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 10:49 Anna Ludwig
Supervisor approved: 09/20/22 13:39 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.44	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/20/22 13:49

Perfluorinated Compounds by LC/MS/MS

Data File : 5Q4924.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/19/2022 9:15:04 PM
Sample Name : cc73-20
Vial : P1-A7
DA Method File : ID_091722_S5Q73.quantmethod.xml
Batch Name : s5q74.batch.bin
Sample Information : OP92656,S5Q74,250,,,1.0,1,water

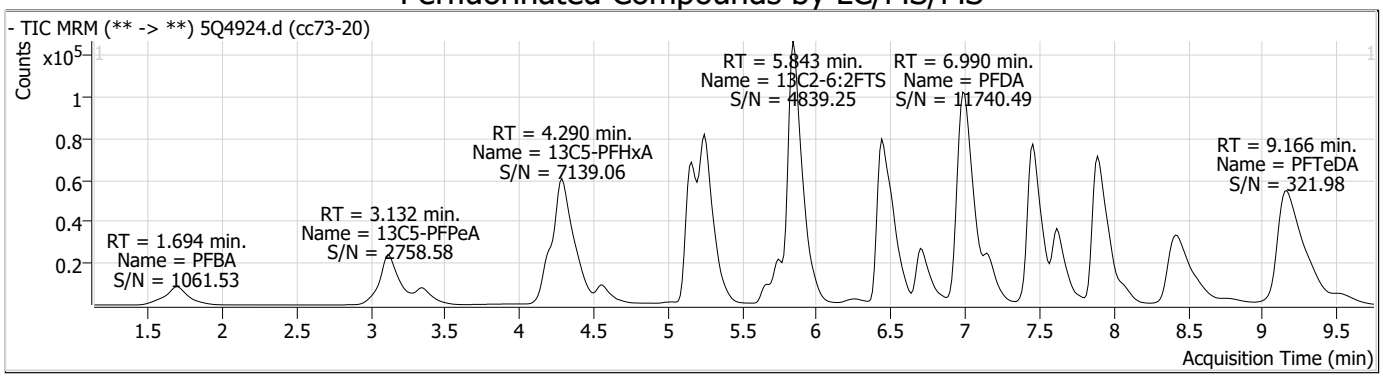
Compound	RT	QIon	Resp.	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.700	217.0 -> 172.0	69697	20.00	µg/L	0.013
M5-PFPeA	3.132	268.0 -> 223.0	113287	20.00	µg/L	0.012
M5-PFHxA	4.290	318.0 -> 273.0	181572	20.00	µg/L	0.000
M4-PFHpA	5.163	367.0 -> 322.0	167001	20.00	µg/L	0.014
M8-PFOA	5.857	421.0 -> 376.0	220489	20.00	µg/L	0.012
M9-PFNA	6.455	472.0 -> 427.0	223298	20.00	µg/L	0.012
M6-PFDA	6.989	519.0 -> 474.0	174620	20.00	µg/L	0.012
M7-PFUnDA	7.471	570.0 -> 525.0	216971	20.00	µg/L	0.025
M2-PFDoDA	7.905	615.0 -> 570.0	261501	20.00	µg/L	0.027
M2-PFTeDA	9.162	715.0 -> 670.0	345180	20.00	µg/L	0.037
M8-FOSA	6.530	506.0 -> 78.0	44445	20.00	µg/L	0.012
M3-PFBS	3.349	302.0 -> 99.0	12781	20.00	µg/L	0.000
M3-PFHxS	5.206	402.0 -> 99.0	12785	20.00	µg/L	0.012
M8-PFOS	6.440	507.0 -> 99.0	22004	20.00	µg/L	0.012
M2-4:2FTS	4.199	329.0 -> 309.0	59589	20.00	µg/L	0.000
M2-6:2FTS	5.843	429.0 -> 409.0	83440	20.00	µg/L	0.012
M2-8:2FTS	7.025	529.0 -> 509.0	76789	20.00	µg/L	0.025
M3-MeFOSAA	7.009	573.0 -> 419.0	38330	20.00	µg/L	0.000
M3-HFPO-DA	4.569	287.0 -> 169.0	10937	20.00	µg/L	0.012
M3-MeFOSA	6.952	515.0 -> 169.0	10349	20.00	µg/L	0.000
M5-EtFOSAA	7.170	589.0 -> 419.0	46323	20.00	µg/L	0.012
System Monitoring Compounds						
13C2-4:2FTS	4.199	329.0 -> 309.0	59589	19.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-6:2FTS	5.843	429.0 -> 409.0	83440	19.46	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-8:2FTS	7.025	529.0 -> 509.0	76789	19.99	µg/L	0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C2-PFDoDA	7.905	615.0 -> 570.0	261501	19.39	µg/L	0.027
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFTeDA	9.162	715.0 -> 670.0	345180	20.26	µg/L	0.037
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C3-PFBS	3.349	302.0 -> 99.0	12781	19.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C3-PFHxS	5.206	402.0 -> 99.0	12785	18.65	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C4-PFBA	1.700	217.0 -> 172.0	69697	18.90	µg/L	0.013
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.5%		
13C4-PFHpA	5.163	367.0 -> 322.0	167001	18.99	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.9%		
13C5-PFHxA	4.290	318.0 -> 273.0	181572	19.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C5-PFPeA	3.132	268.0 -> 223.0	113287	19.18	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C6-PFDA	6.989	519.0 -> 474.0	174620	18.80	µg/L	0.012

Perfluorinated Compounds by LC/MS/MS

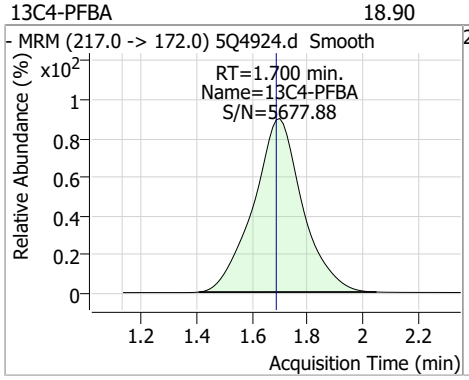
Compound	RT	QIon	Resp.	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.0%			
13C7-PFUnDA	7.471	570.0 -> 525.0	216971	18.72	µg/L		0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-FOSA	6.530	506.0 -> 78.0	44445	18.91	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
13C8-PFOA	5.857	421.0 -> 376.0	220489	18.72	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%			
13C8-PFOS	6.440	507.0 -> 99.0	22004	19.10	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
13C9-PFNA	6.455	472.0 -> 427.0	223298	18.94	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%			
d3-MeFOSAA	7.009	573.0 -> 419.0	38330	22.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.7%			
13C3-HFPO-DA	4.569	287.0 -> 169.0	10937	19.09	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.5%			
d3-MeFOSA	6.952	515.0 -> 169.0	10349	18.40	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
d5-EtFOSAA	7.170	589.0 -> 419.0	46323	21.97	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%			
Target Compounds							**QValue**
4:2FTS	4.201	327.0 -> 307.0	67594	20.88	µg/L		99
6:2FTS	5.843	427.0 -> 407.0	89631	20.62	µg/L		98
8:2FTS	7.026	527.0 -> 507.0	80790	20.48	µg/L		99
EtFOSAA	7.171	584.0 -> 419.0	29761	20.46	µg/L		99
FOSA	6.531	498.0 -> 78.0	44734	19.68	µg/L		100
MeFOSAA	7.010	570.0 -> 419.0	33319	20.24	µg/L		99
PFBA	1.694	213.0 -> 169.0	27246	19.65	µg/L		100
PFBS	3.354	299.0 -> 80.0	37672	19.59	µg/L		99
PFDA	6.990	513.0 -> 469.0	216002	19.87	µg/L		100
PFDoDA	7.906	613.0 -> 569.0	255918	19.76	µg/L		99
PFDS	7.431	599.0 -> 80.0	33107	20.06	µg/L		99
PFHpA	5.164	363.0 -> 319.0	221130	19.43	µg/L		99
PFHpS	5.867	449.0 -> 80.0	34756	19.52	µg/L		99
PFHxA	4.291	313.0 -> 269.0	174151	19.33	µg/L		100
PFHxS	5.195	399.0 -> 80.0	36934	19.92	µg/L	m	99
PFNA	6.456	463.0 -> 419.0	196407	19.33	µg/L		99
PFNS	6.949	549.0 -> 80.0	33250	20.17	µg/L		100
PFOA	5.858	413.0 -> 369.0	267776	19.97	µg/L		99
PFOS	6.429	499.0 -> 80.0	38721	19.64	µg/L	m	86
PFPeA	3.134	263.0 -> 219.0	105664	19.48	µg/L		100
PFPeS	4.398	349.0 -> 80.0	29480	19.22	µg/L		99
PFTeDA	9.166	713.0 -> 669.0	330832	17.85	µg/L		97
PFTrDA	8.425	663.0 -> 619.0	341198	19.40	µg/L		99
PFUnDA	7.472	563.0 -> 519.0	230081	20.50	µg/L		99
11Cl-PF3OUdS	7.628	631.0 -> 451.0	143723	19.03	µg/L		98
9Cl-PF3ONS	6.714	531.0 -> 351.0	127705	20.28	µg/L		99
ADONA	5.261	377.0 -> 251.0	278004	20.21	µg/L		100
HFPO-DA	4.562	329.0 -> 169.0	38063	19.62	µg/L		99
MeFOSA	6.966	512.0 -> 169.0	11158	20.55	µg/L		99
4-PFECHS	5.753	461.0 -> 381.0	75334	20.09	µg/L		99
FBSA	4.343	298.0 -> 78.0	62027	19.79	µg/L		99
FHxSA	5.674	398.0 -> 78.0	49629	19.16	µg/L		99

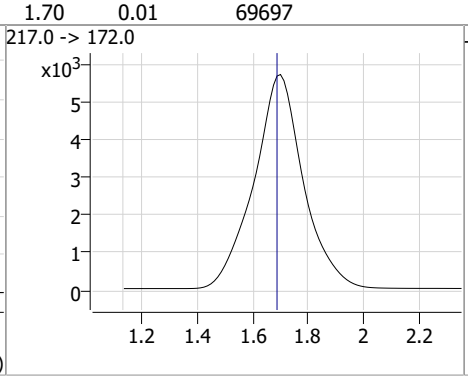
 # = Qualifier out of range, m = manually integrated, + = Area summed

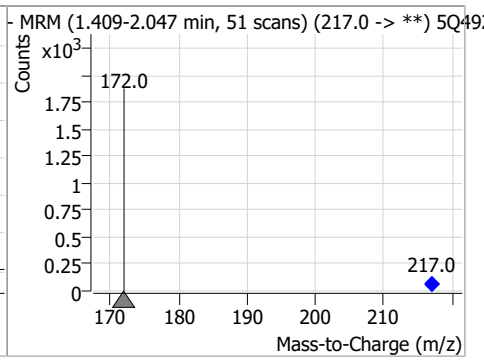
Perfluorinated Compounds by LC/MS/MS



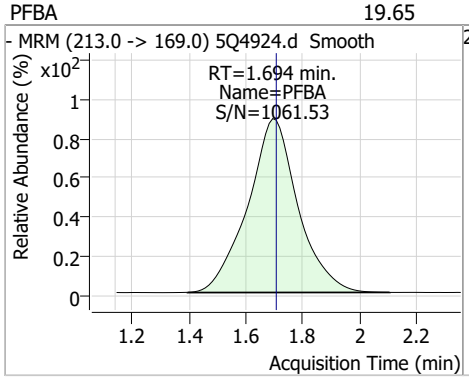
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	18.90	1.70	0.01	69697				

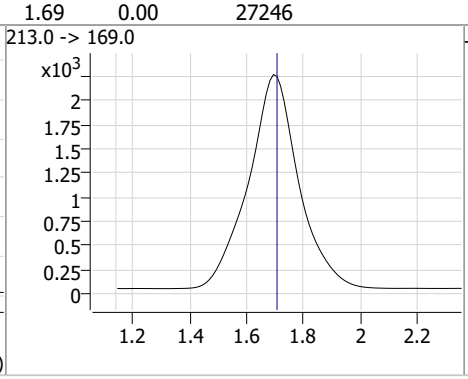


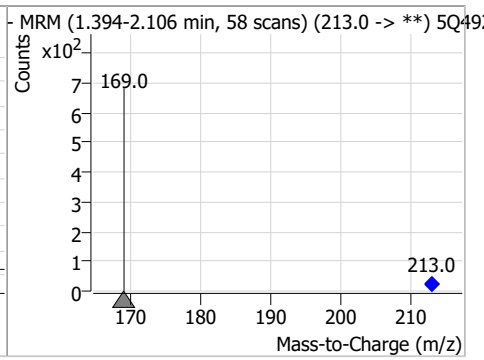




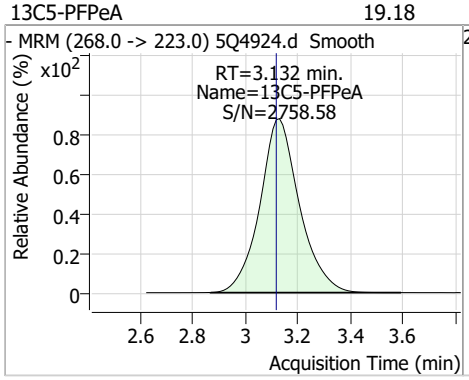
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.65	1.69	0.00	27246				

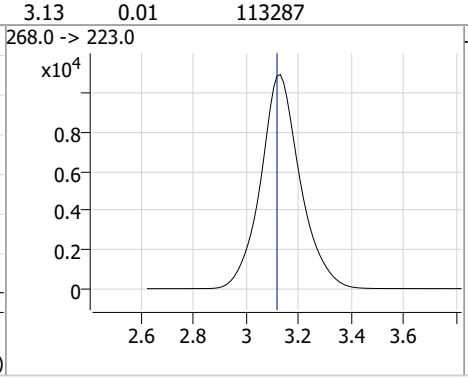


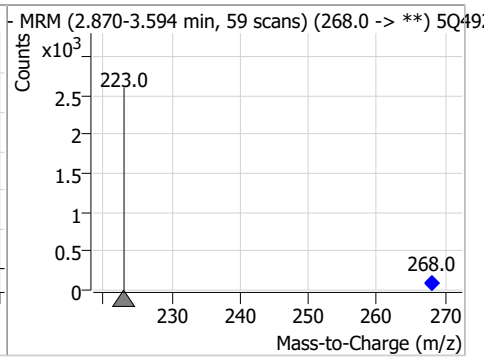




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.18	3.13	0.01	113287				

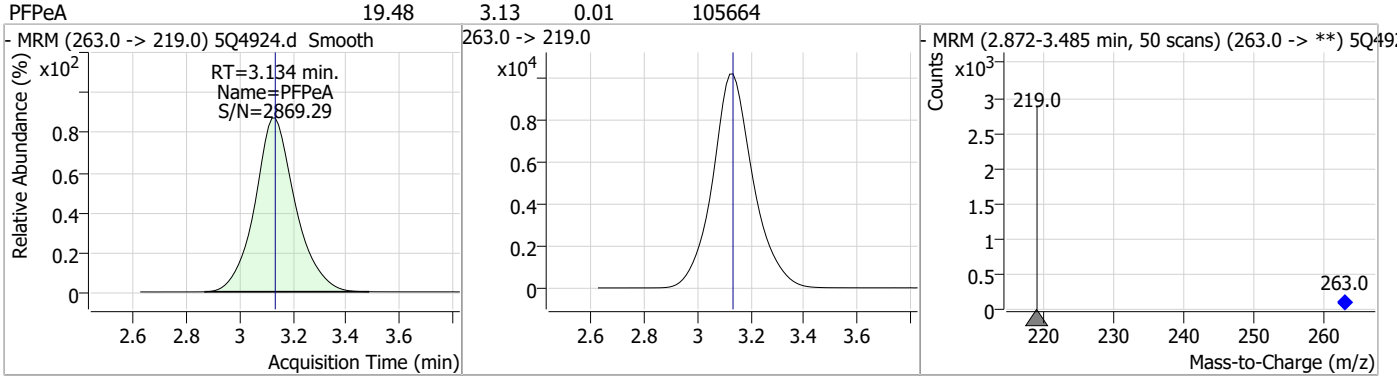




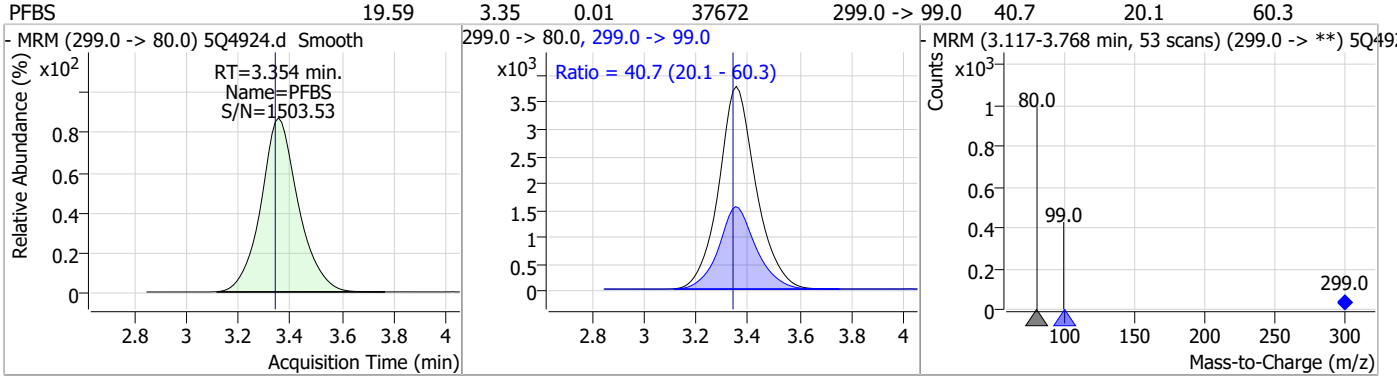


Perfluorinated Compounds by LC/MS/MS

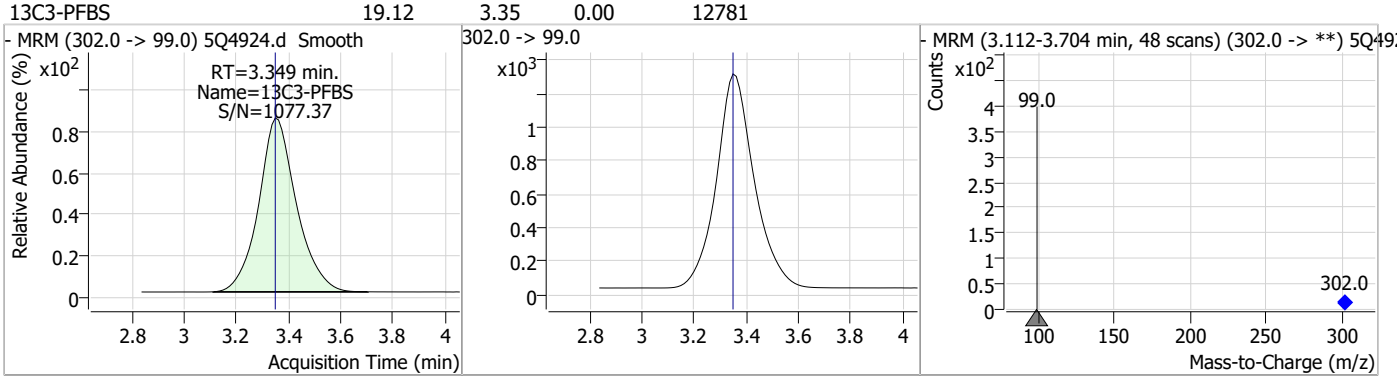
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.48	3.13	0.01	105664				



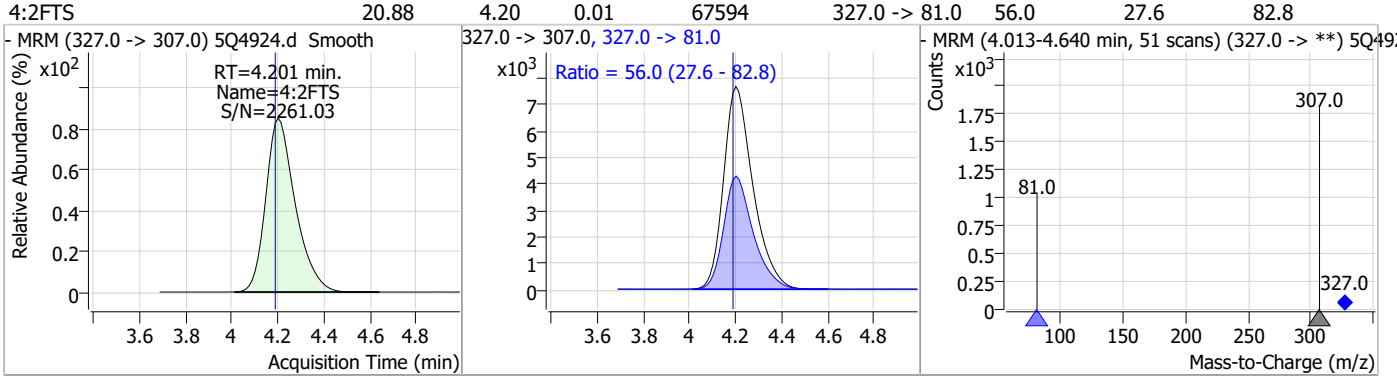
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.59	3.35	0.01	37672	299.0 -> 99.0	40.7	20.1	60.3



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.12	3.35	0.00	12781				

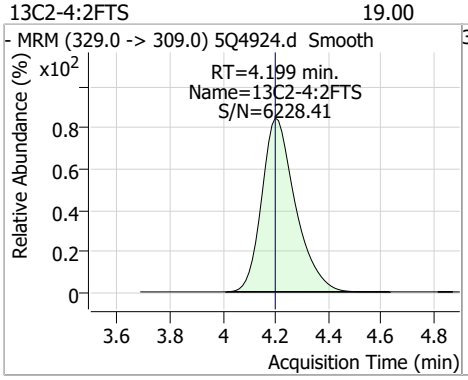


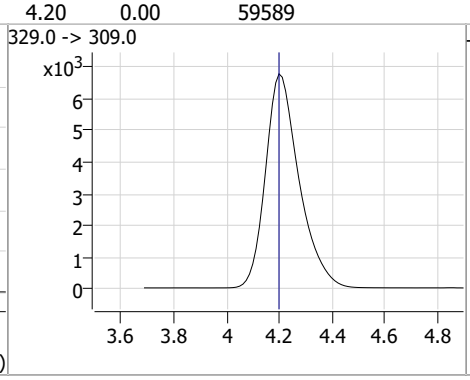
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.88	4.20	0.01	67594	327.0 -> 81.0	56.0	27.6	82.8

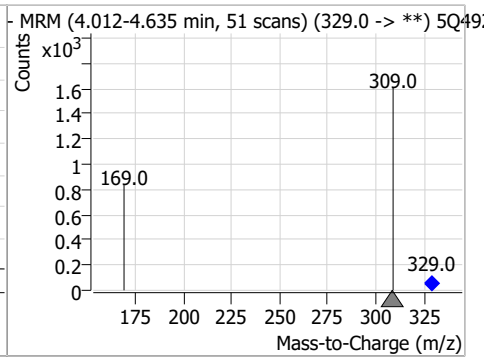


Perfluorinated Compounds by LC/MS/MS

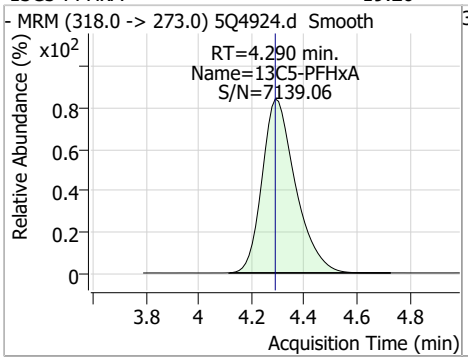
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.00	4.20	0.00	59589				

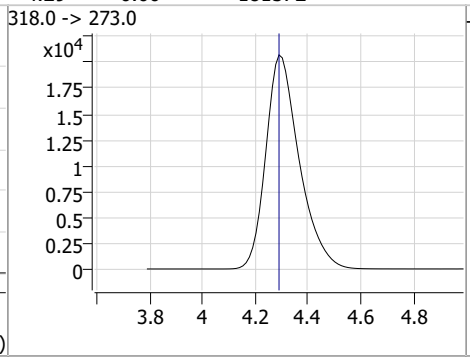


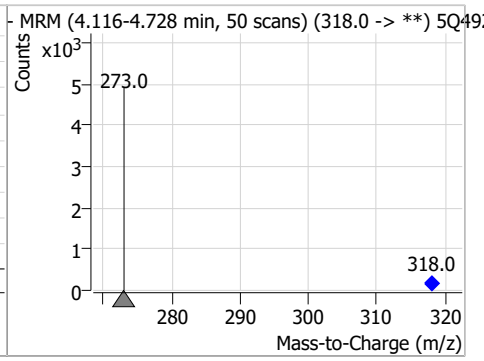




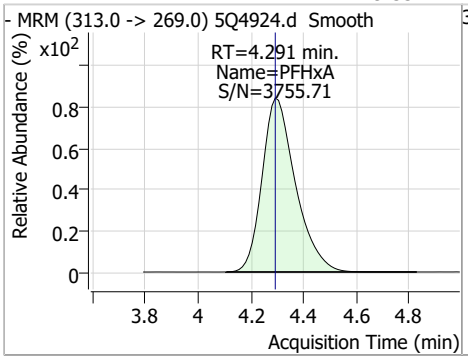
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.20	4.29	0.00	181572				

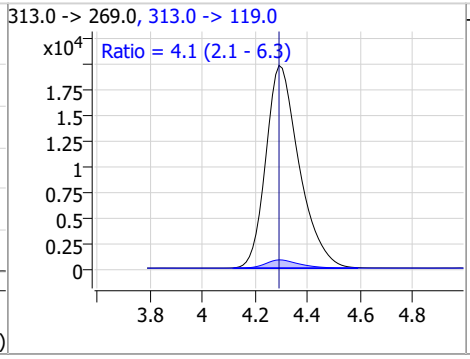


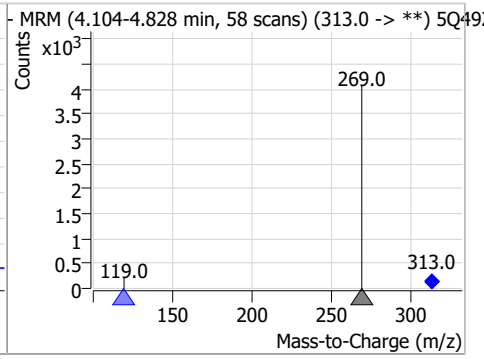




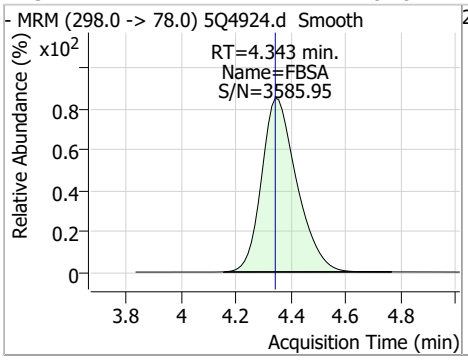
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.33	4.29	0.00	174151	313.0 -> 119.0	4.1	2.1	6.3

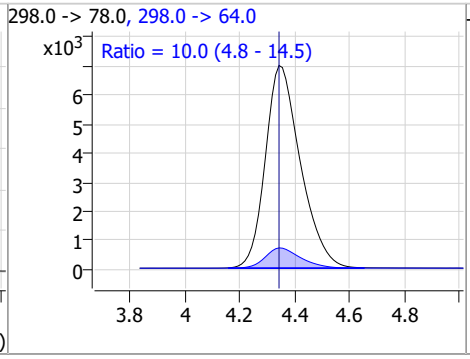


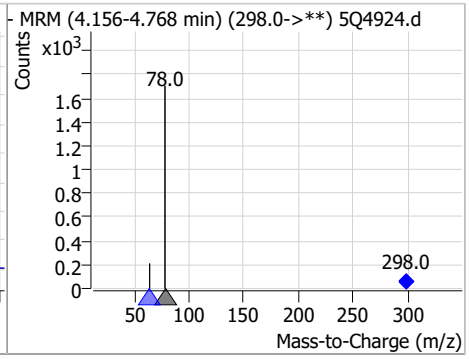




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.79	4.34	0.00	62027	298.0 -> 64.0	10.0	4.8	14.5

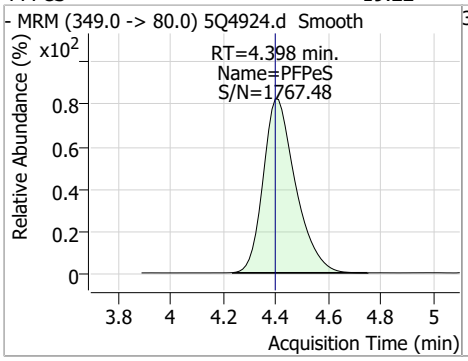


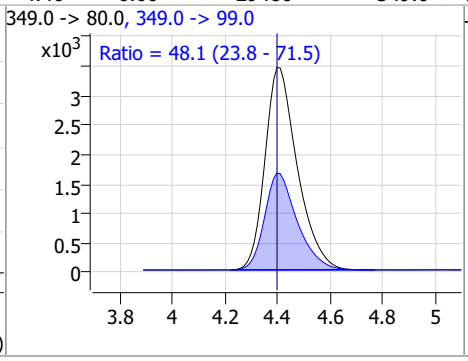


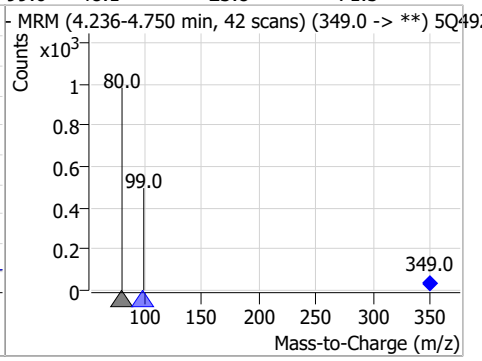


Perfluorinated Compounds by LC/MS/MS

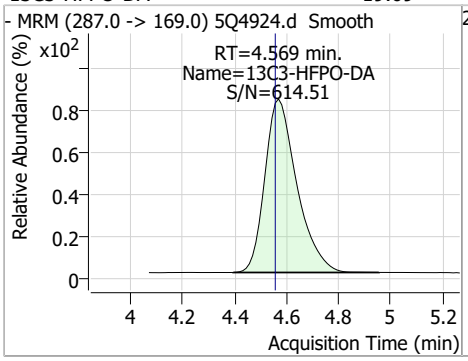
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.22	4.40	0.00	29480	349.0 -> 99.0	48.1	23.8	71.5

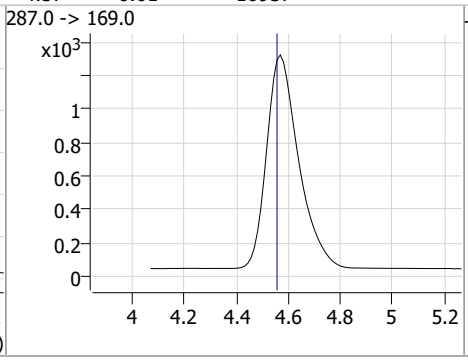


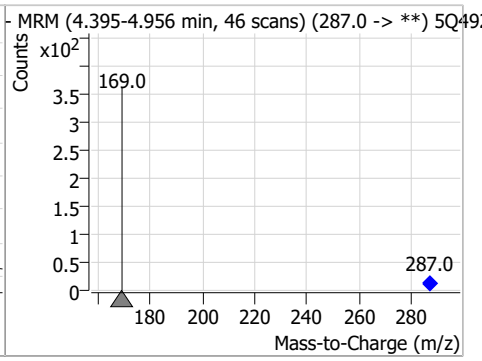




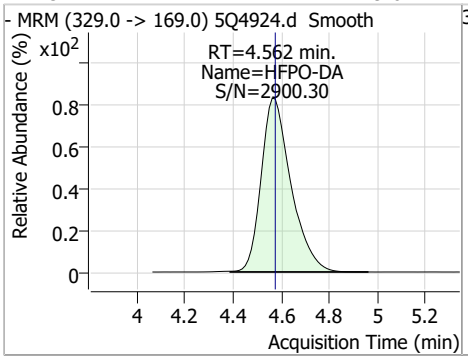
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.09	4.57	0.01	10937				

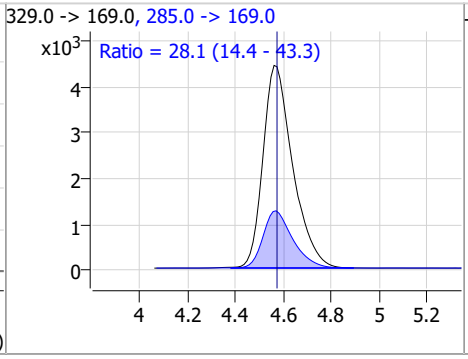


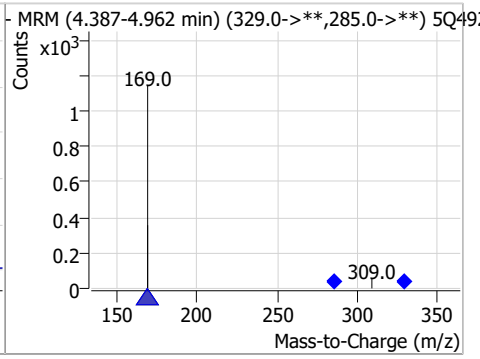




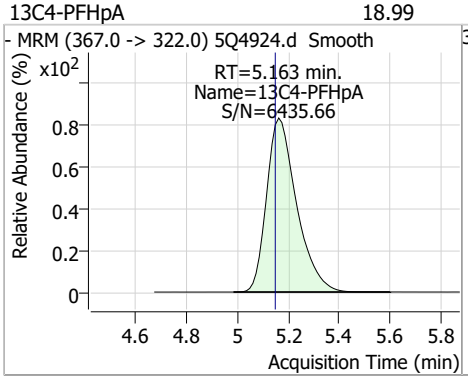
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	19.62	4.56	0.00	38063	285.0 -> 169.0	28.1	14.4	43.3

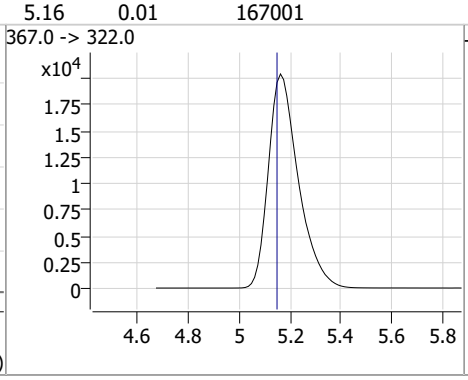


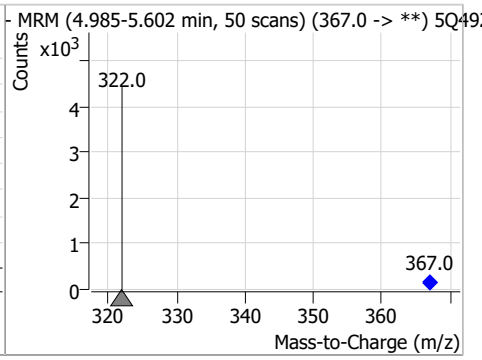




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.99	5.16	0.01	167001				

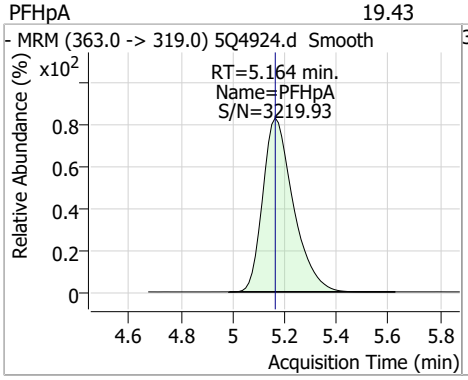


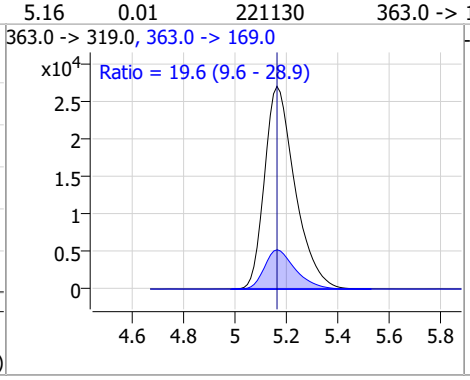


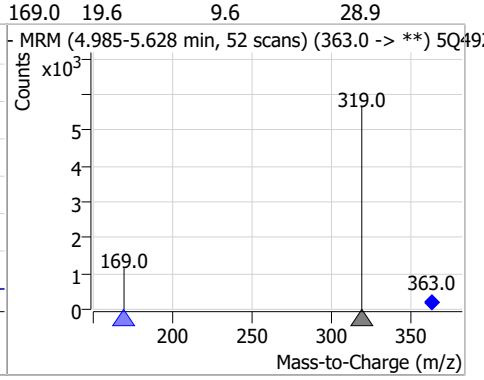


Perfluorinated Compounds by LC/MS/MS

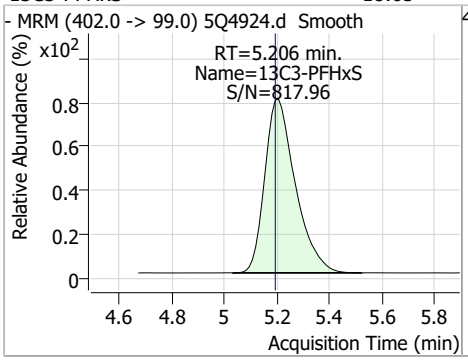
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.43	5.16	0.01	221130	363.0 -> 169.0	19.6	9.6	28.9

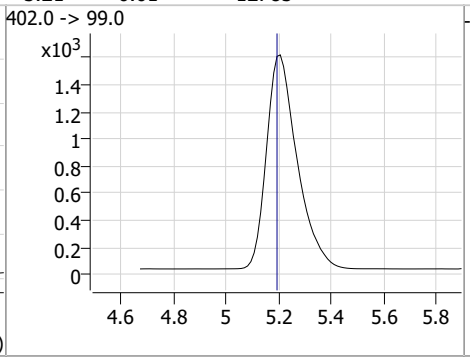


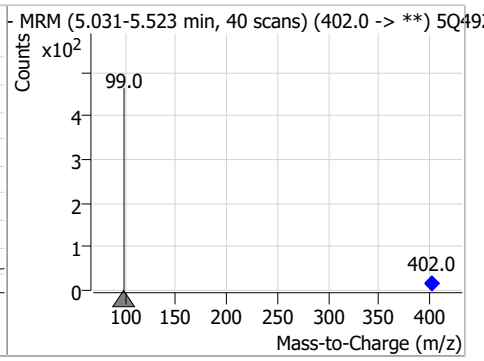




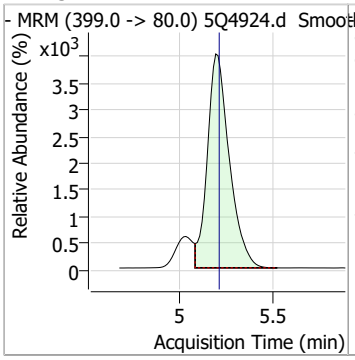
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.65	5.21	0.01	12785				

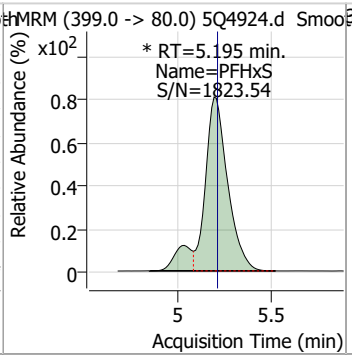


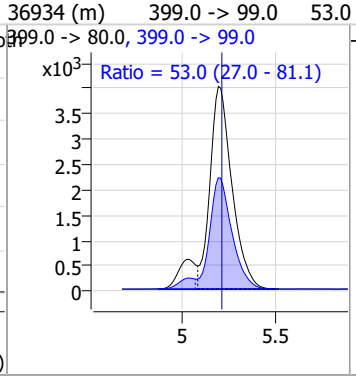


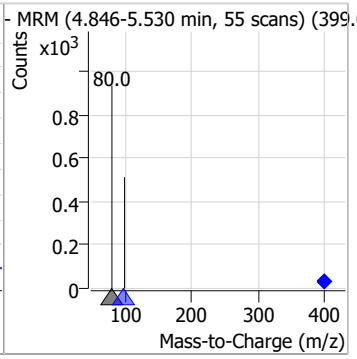


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.92	5.20	0.00	36934 (m)	399.0 -> 99.0	53.0	27.0	81.1

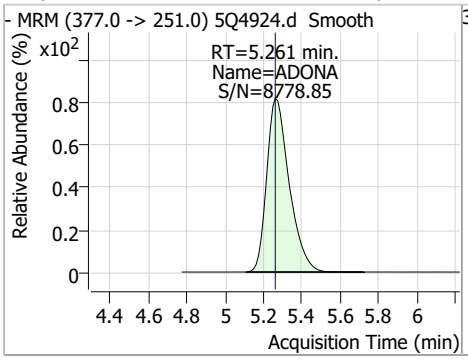


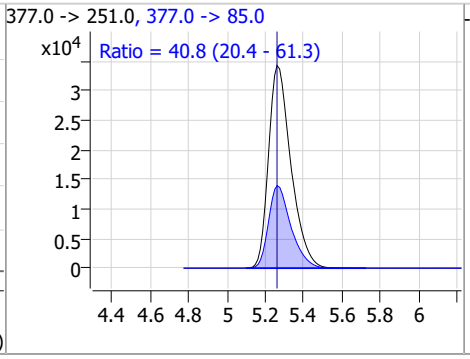


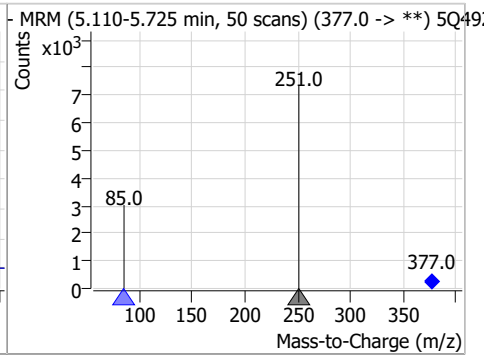




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.21	5.26	0.01	278004	377.0 -> 85.0	40.8	20.4	61.3

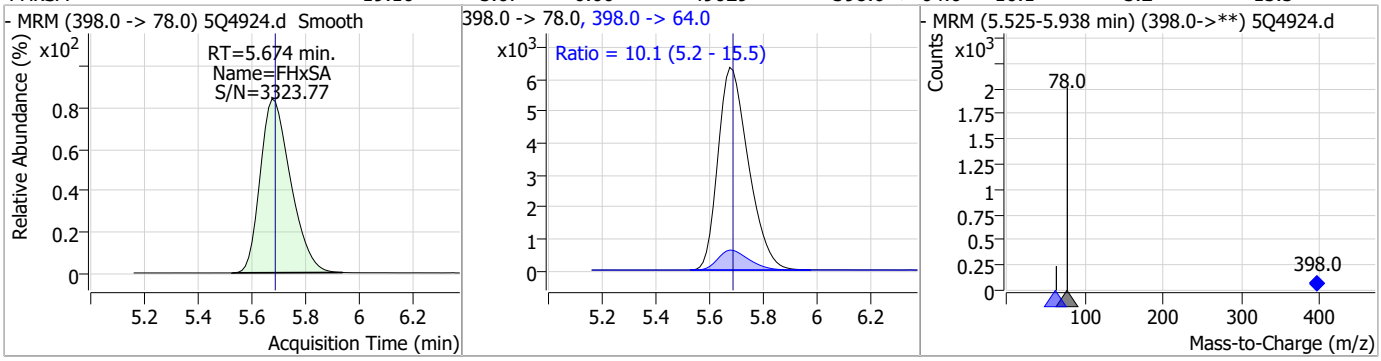




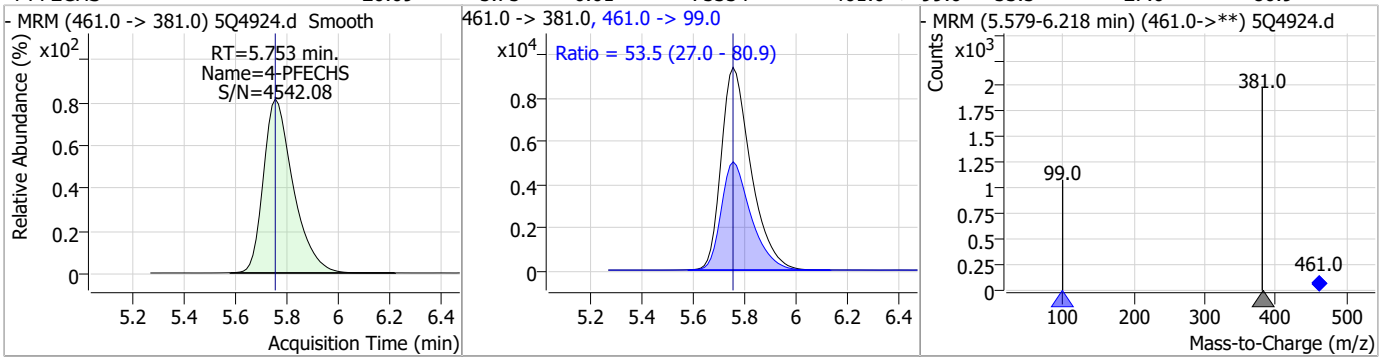


Perfluorinated Compounds by LC/MS/MS

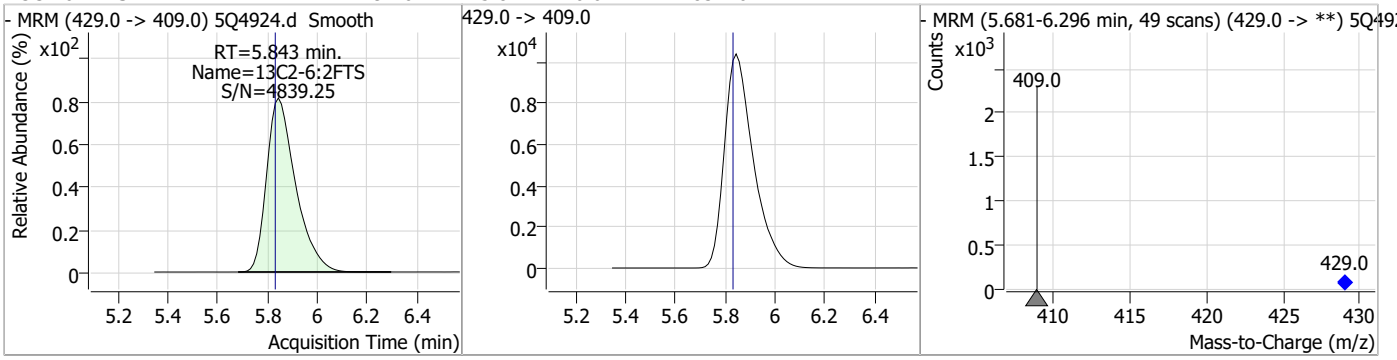
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.16	5.67	0.00	49629	398.0 -> 64.0	10.1	5.2	15.5



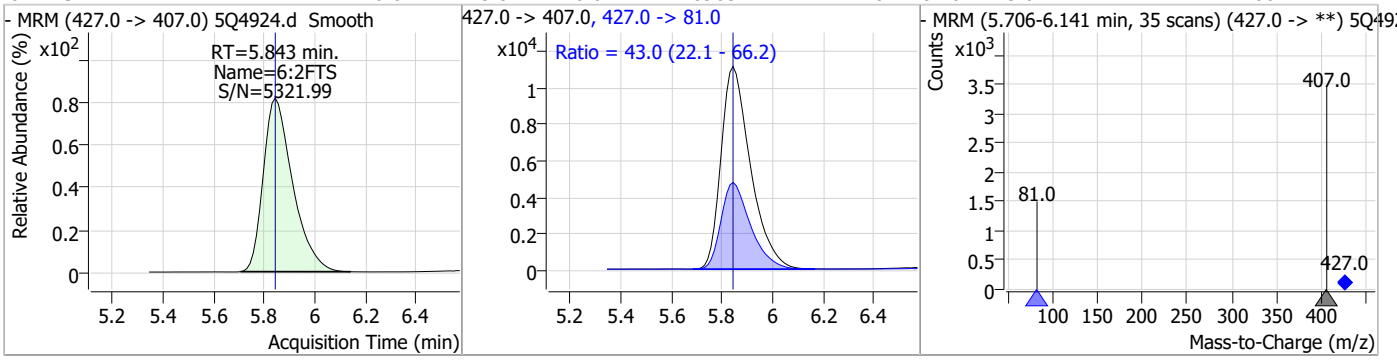
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	20.09	5.75	0.01	75334	461.0 -> 99.0	53.5	27.0	80.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.46	5.84	0.01	83440				

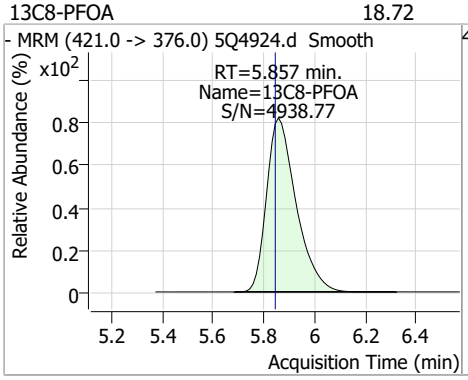


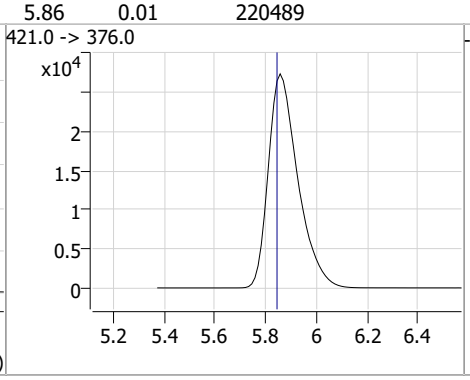
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.62	5.84	0.01	89631	427.0 -> 81.0	43.0	22.1	66.2

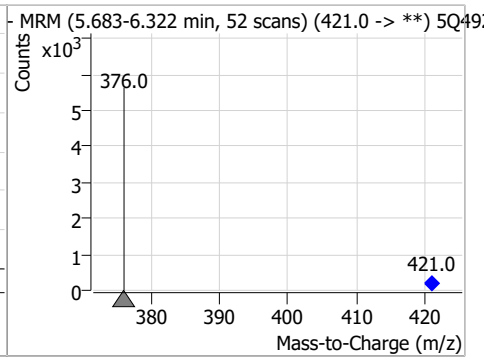


Perfluorinated Compounds by LC/MS/MS

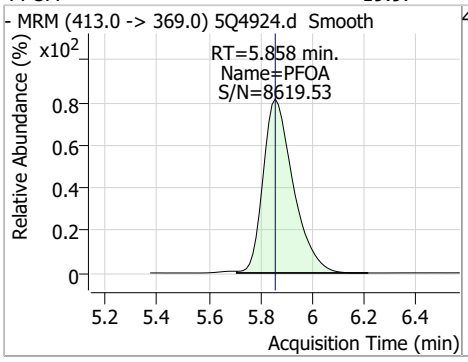
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	18.72	5.86	0.01	220489				

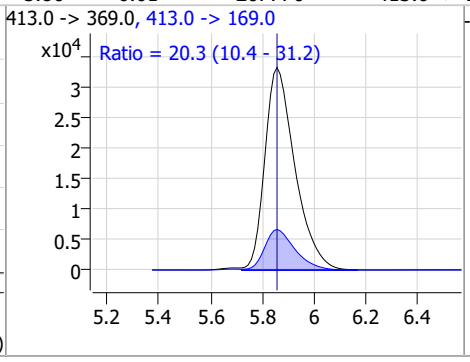


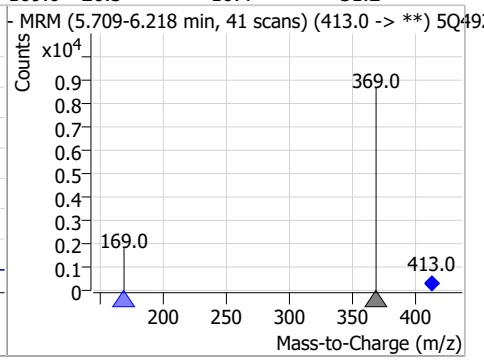




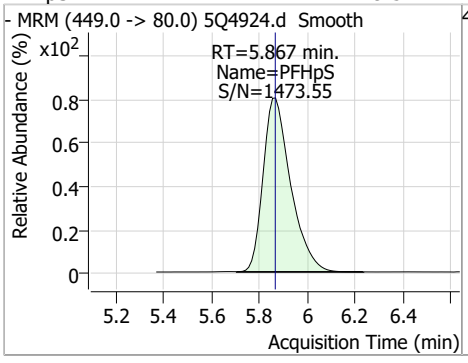
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.97	5.86	0.01	267776	413.0 -> 169.0	20.3	10.4	31.2

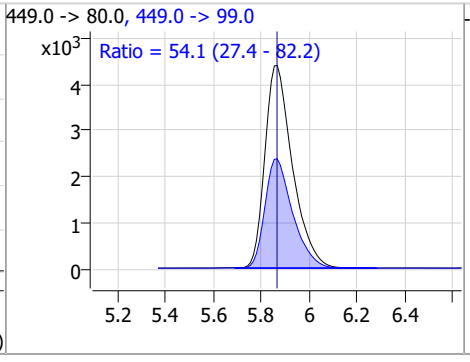


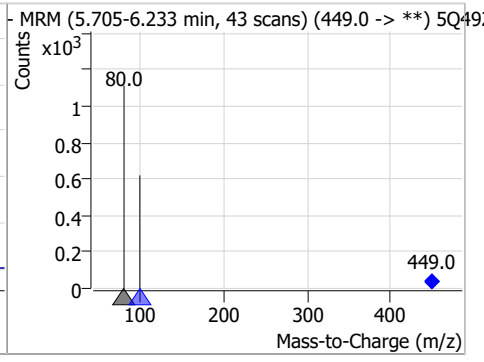




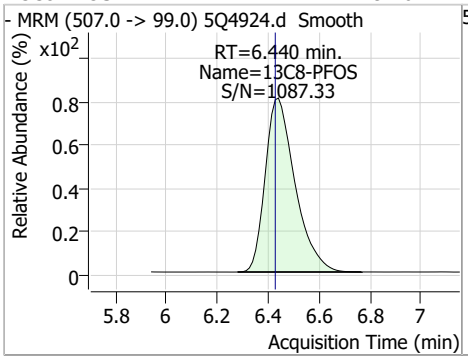
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.52	5.87	0.01	34756	449.0 -> 99.0	54.1	27.4	82.2

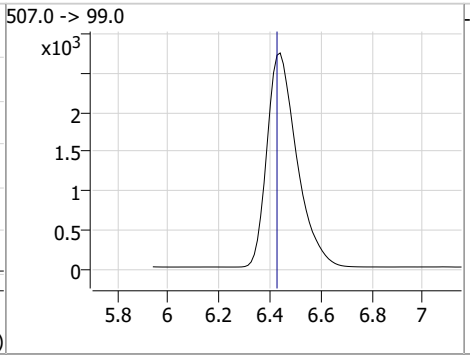


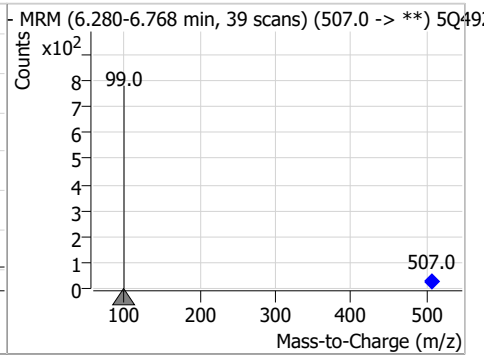




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.10	6.44	0.01	22004				

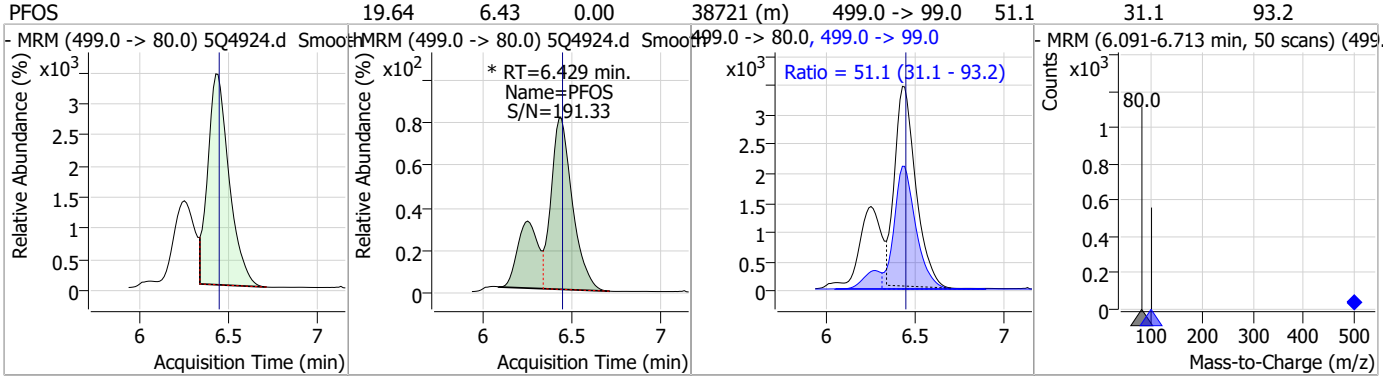




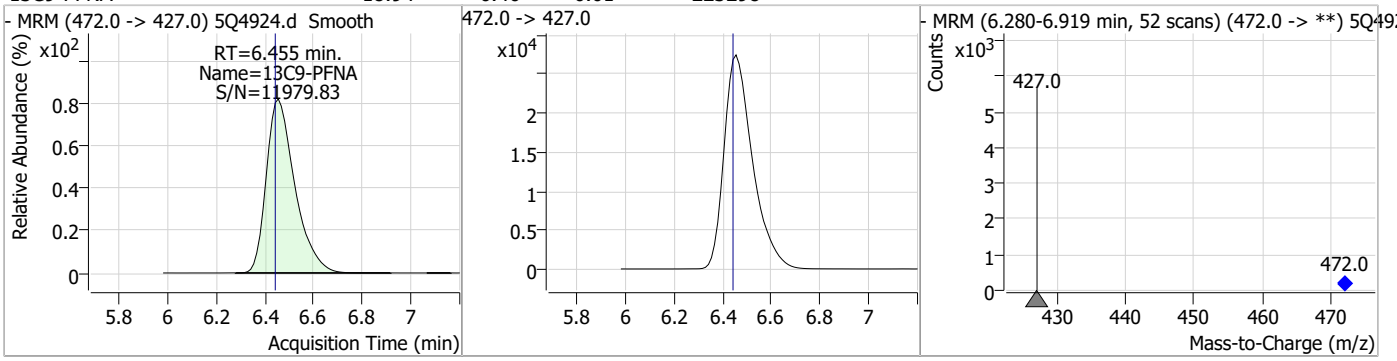


Perfluorinated Compounds by LC/MS/MS

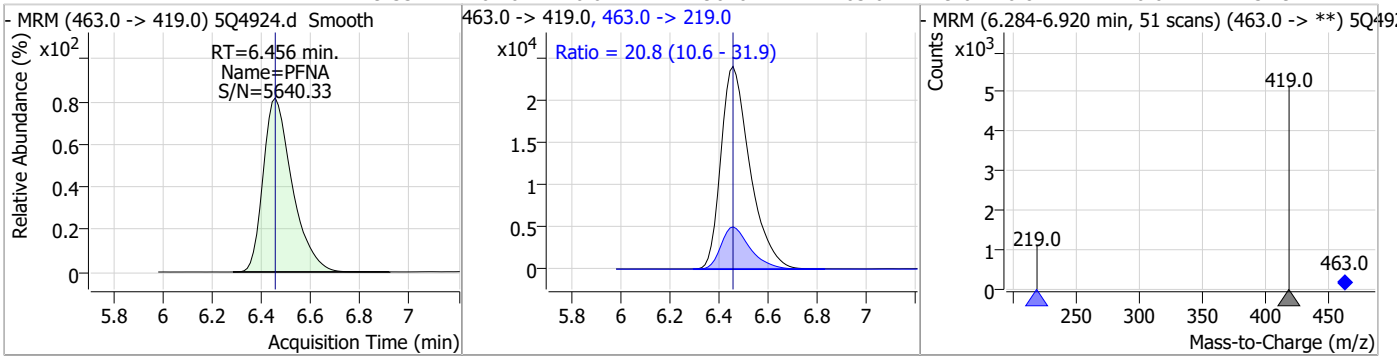
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.64	6.43	0.00	38721 (m)	499.0 -> 99.0	51.1	31.1	93.2



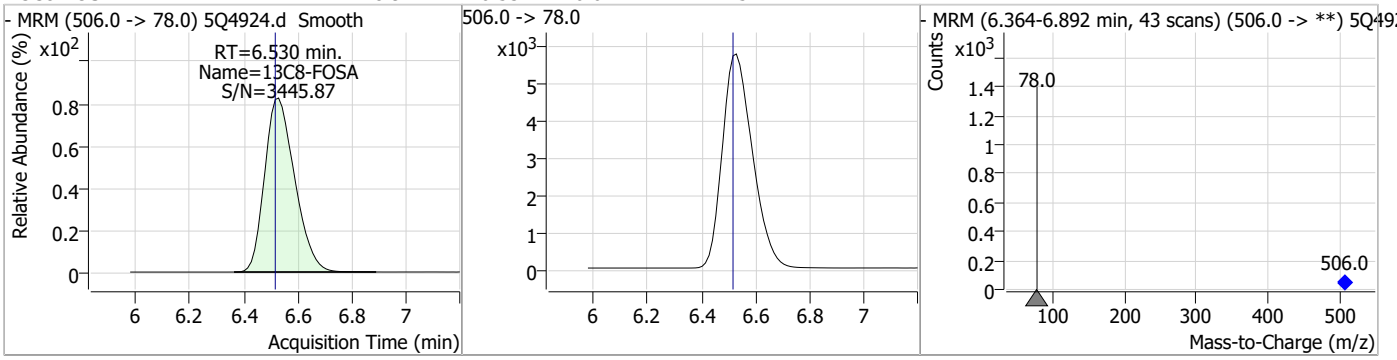
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.94	6.46	0.01	223298				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.33	6.46	0.01	196407	463.0 -> 219.0	20.8	10.6	31.9

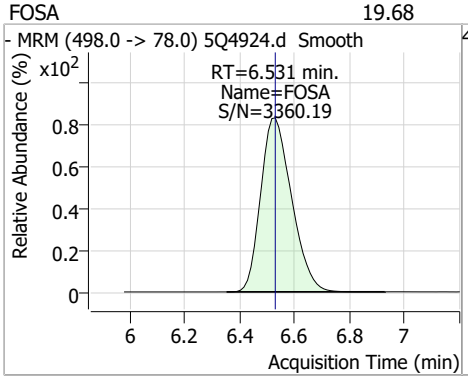


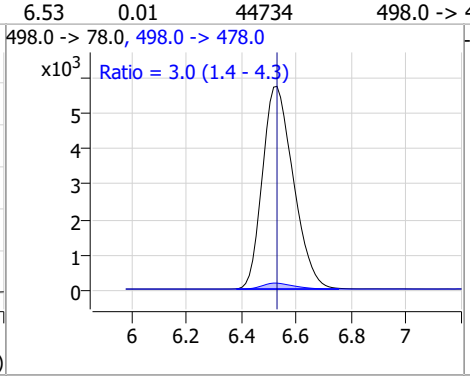
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.91	6.53	0.01	44445				

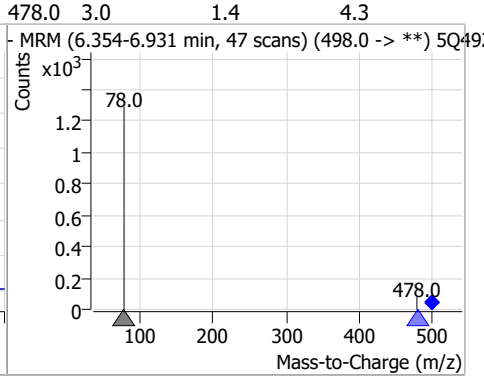


Perfluorinated Compounds by LC/MS/MS

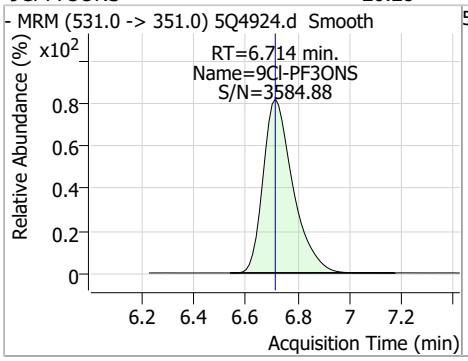
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.68	6.53	0.01	44734	498.0 -> 478.0	3.0	1.4	4.3

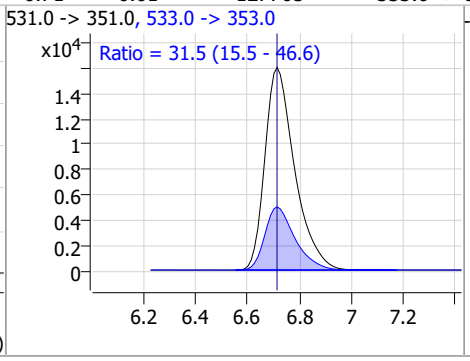


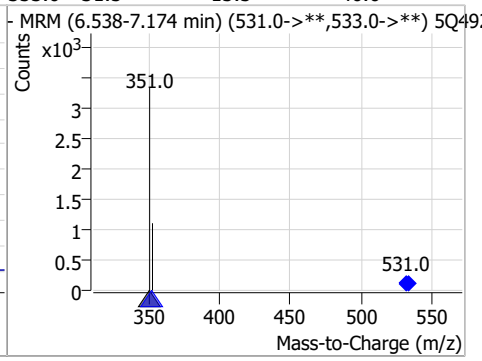




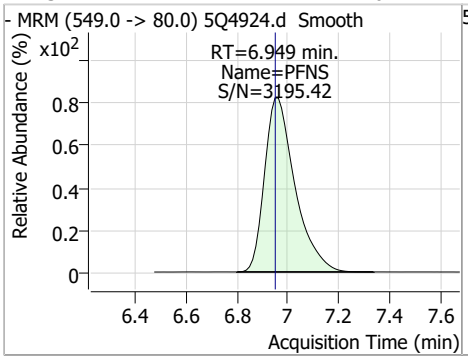
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.28	6.71	0.01	127705	533.0 -> 353.0	31.5	15.5	46.6

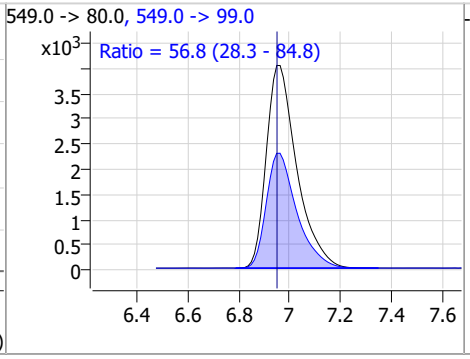


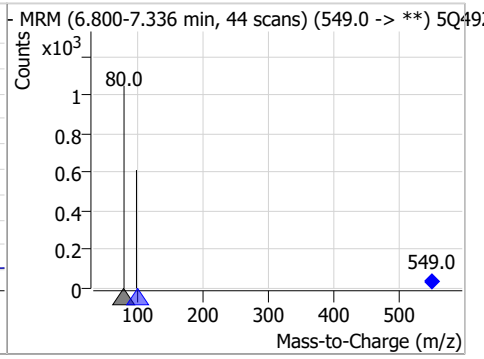




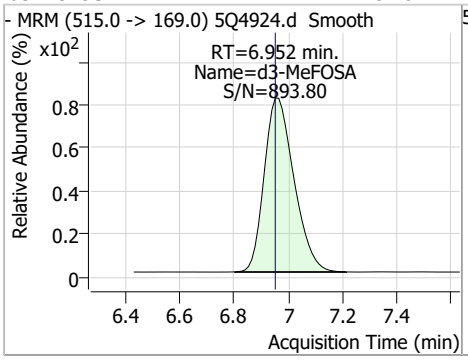
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.17	6.95	0.01	33250	549.0 -> 99.0	56.8	28.3	84.8

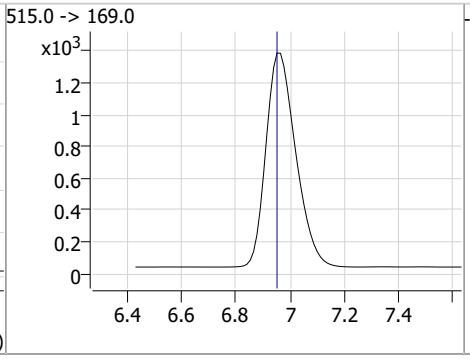


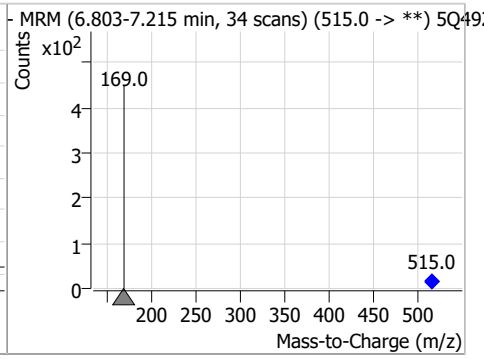




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.40	6.95	0.00	10349				

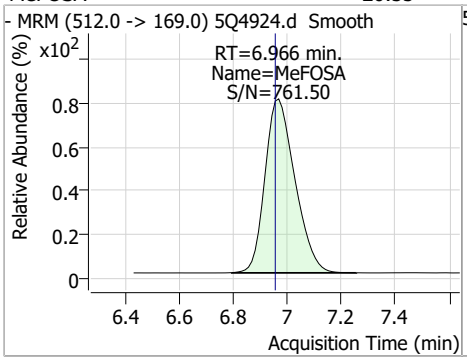


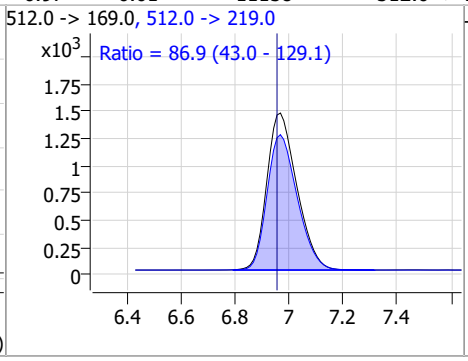


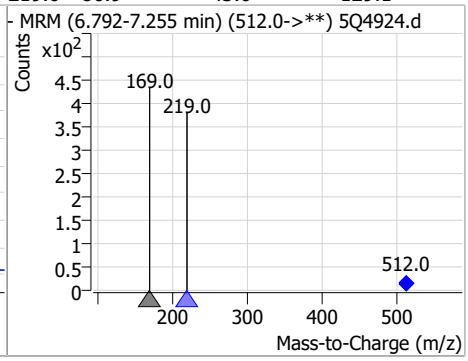


Perfluorinated Compounds by LC/MS/MS

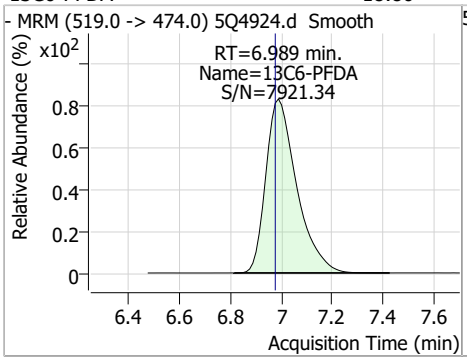
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.55	6.97	0.01	11158	512.0 -> 219.0	86.9	43.0	129.1

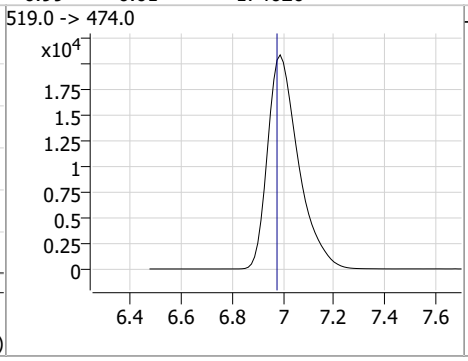


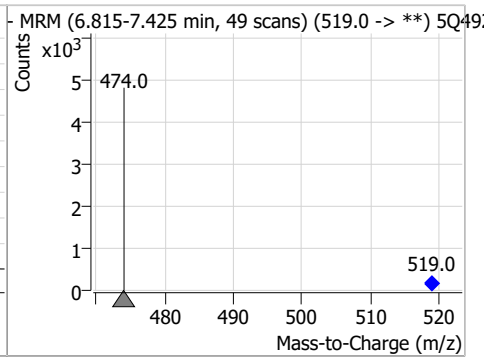




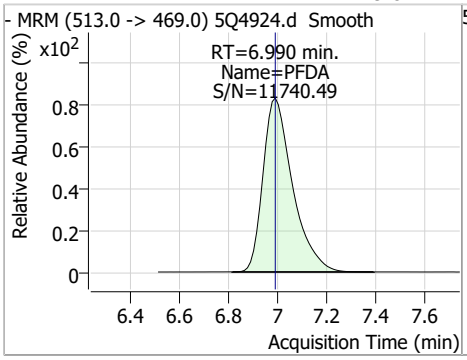
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	18.80	6.99	0.01	174620				

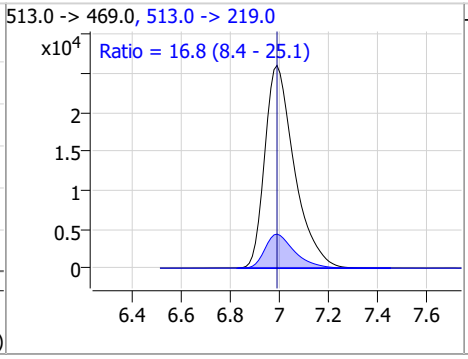


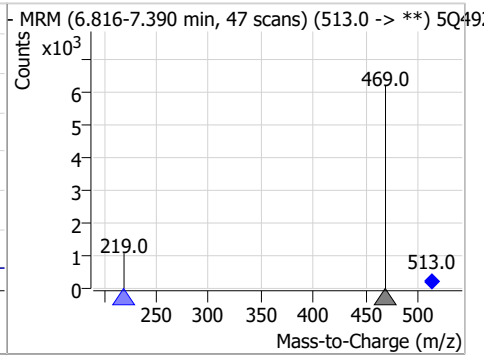




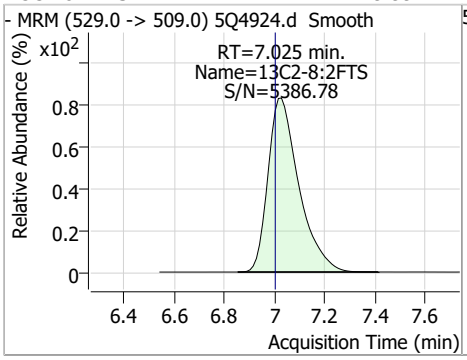
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.87	6.99	0.01	216002	513.0 -> 219.0	16.8	8.4	25.1

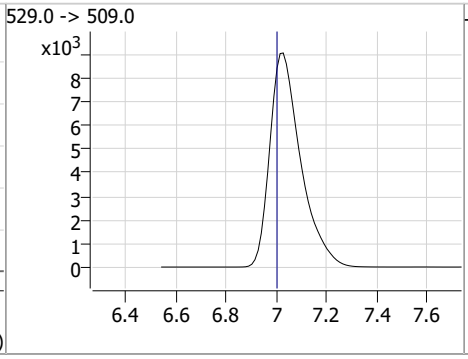


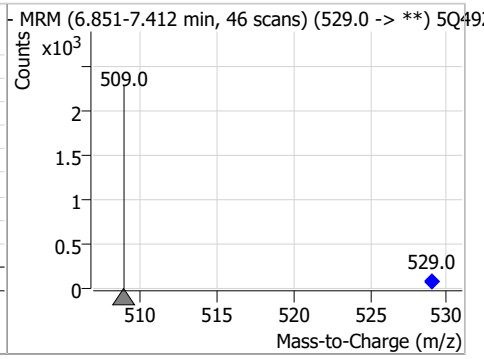




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.99	7.03	0.02	76789				

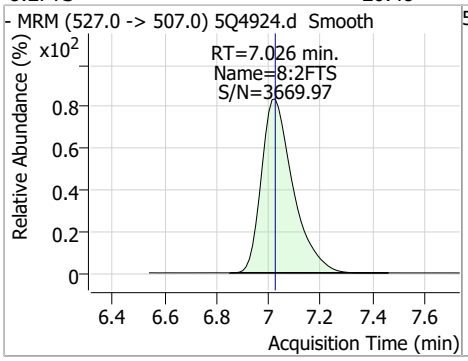


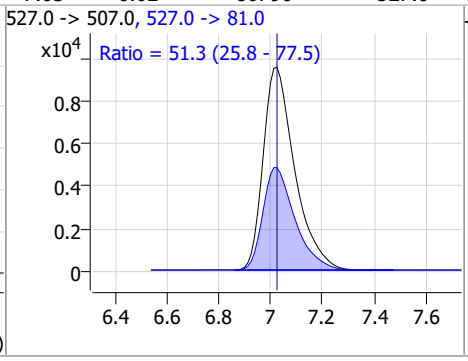


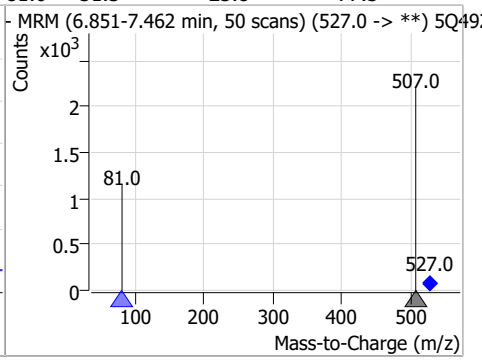


Perfluorinated Compounds by LC/MS/MS

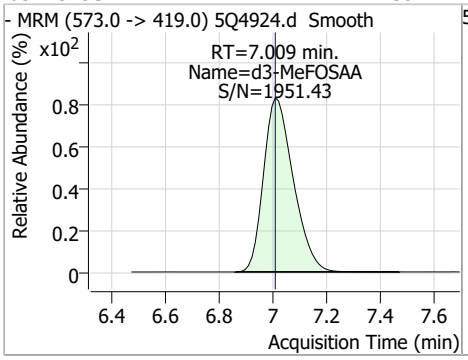
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.48	7.03	0.02	80790	527.0 -> 81.0	51.3	25.8	77.5

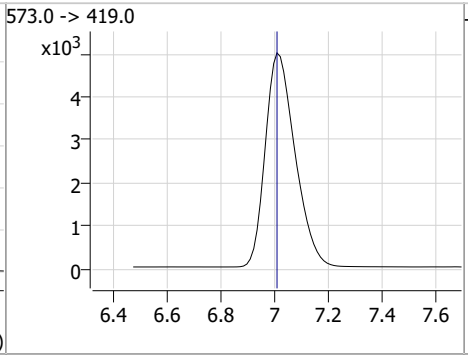


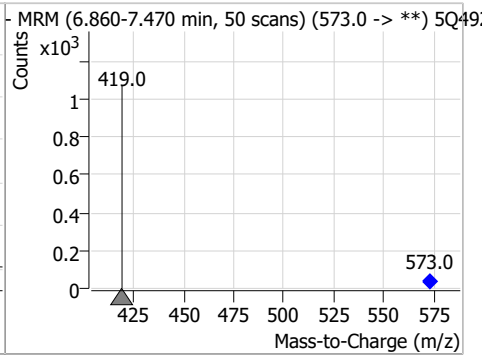




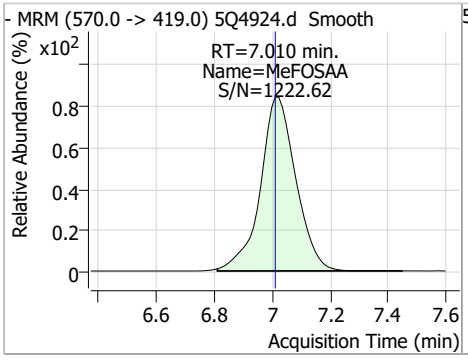
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.35	7.01	0.00	38330				

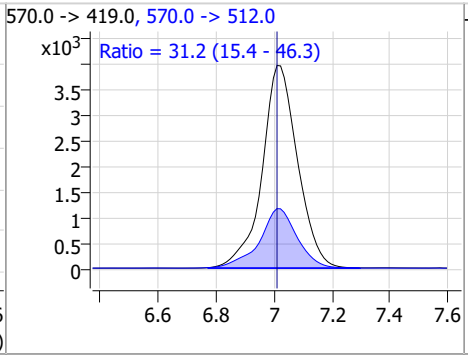


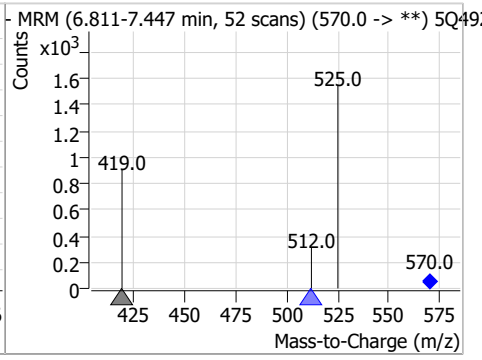




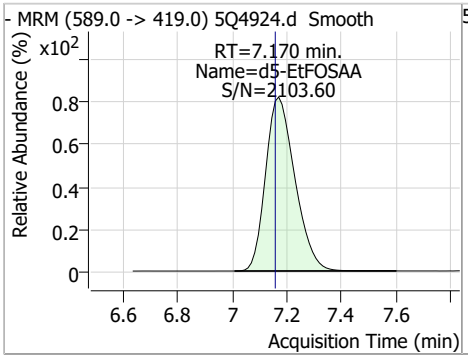
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.24	7.01	0.00	33319	570.0 -> 512.0	31.2	15.4	46.3

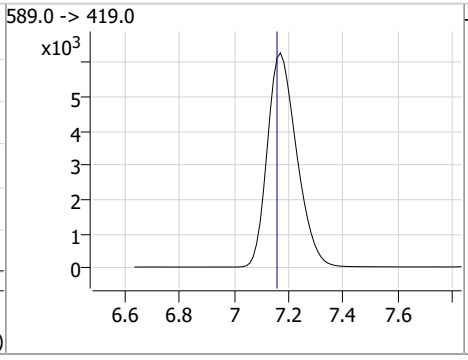


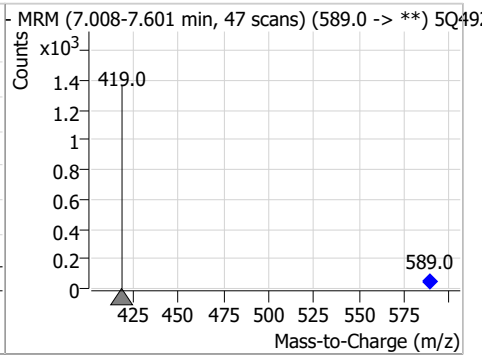




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.97	7.17	0.01	46323				

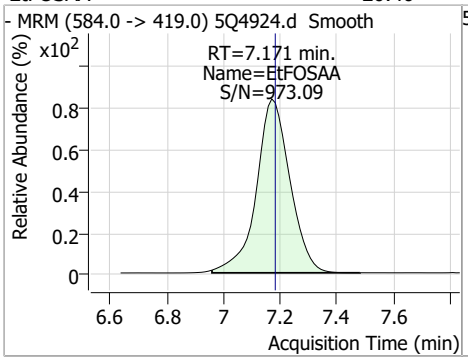


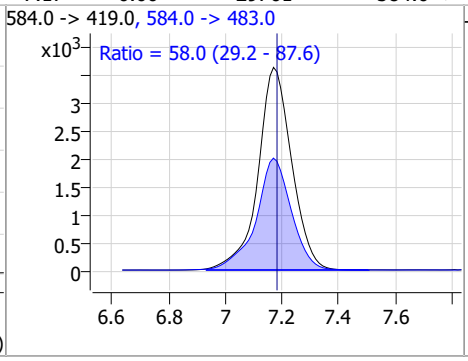


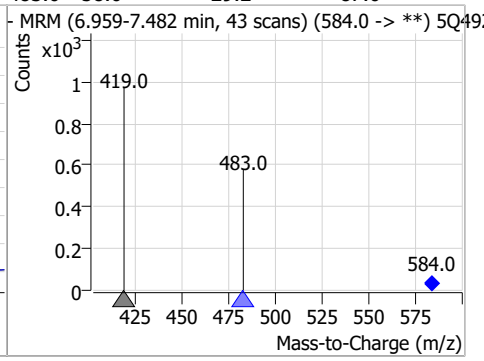


Perfluorinated Compounds by LC/MS/MS

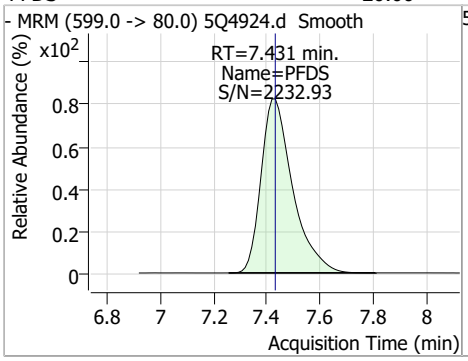
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	20.46	7.17	0.00	29761	584.0 -> 483.0	58.0	29.2	87.6

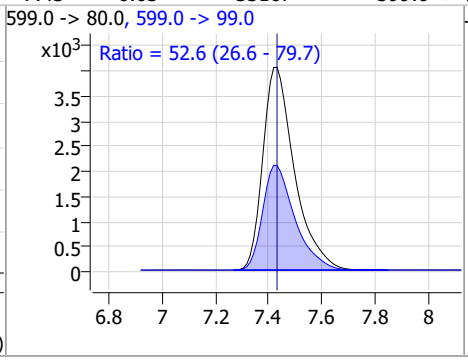


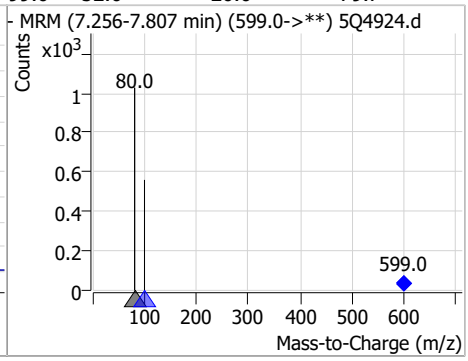




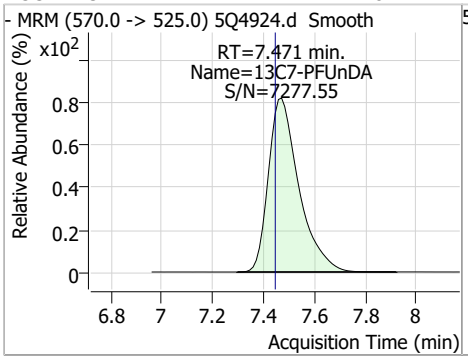
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.06	7.43	0.03	33107	599.0 -> 99.0	52.6	26.6	79.7

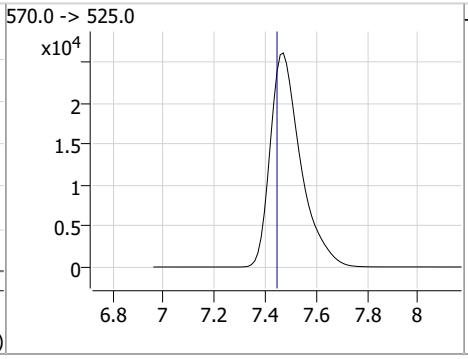


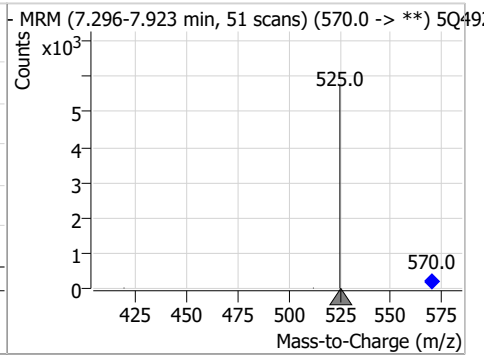




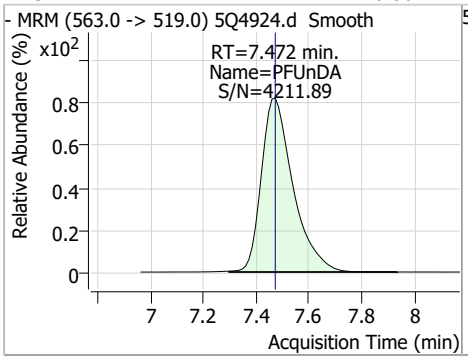
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.72	7.47	0.02	216971				

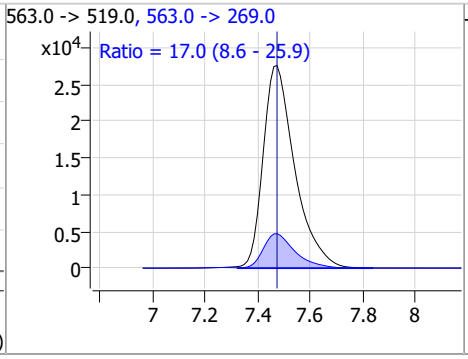


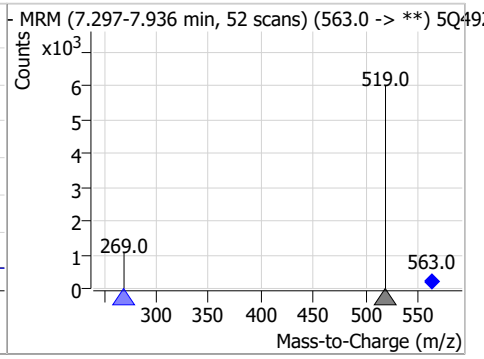




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.50	7.47	0.02	230081	563.0 -> 269.0	17.0	8.6	25.9

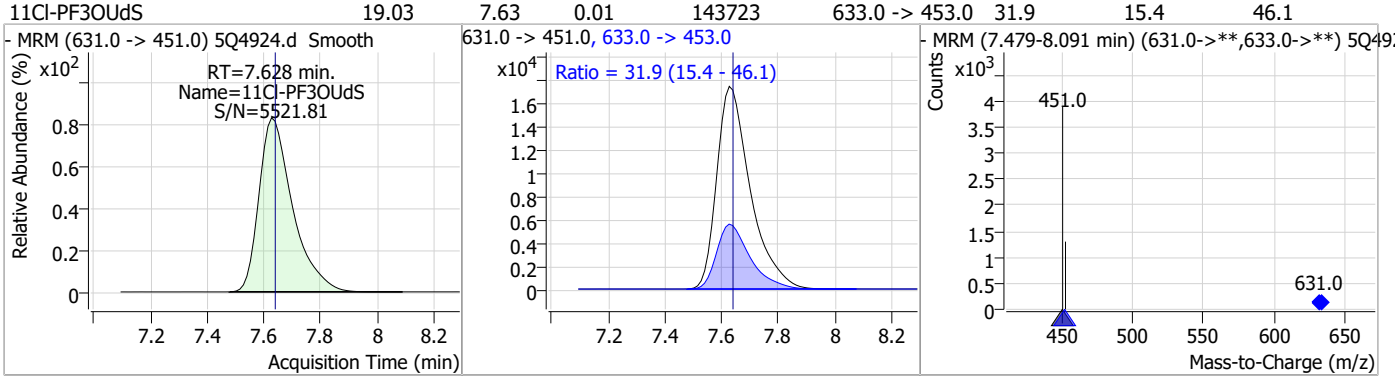




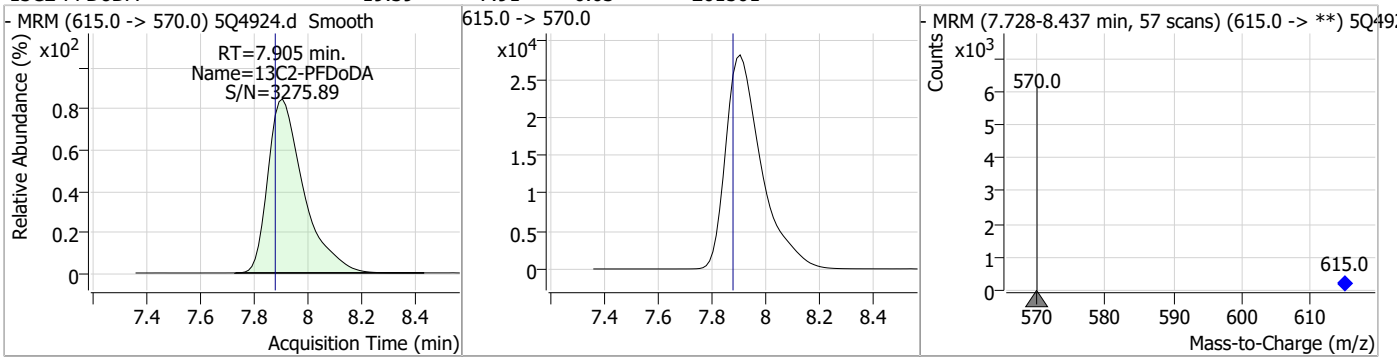


Perfluorinated Compounds by LC/MS/MS

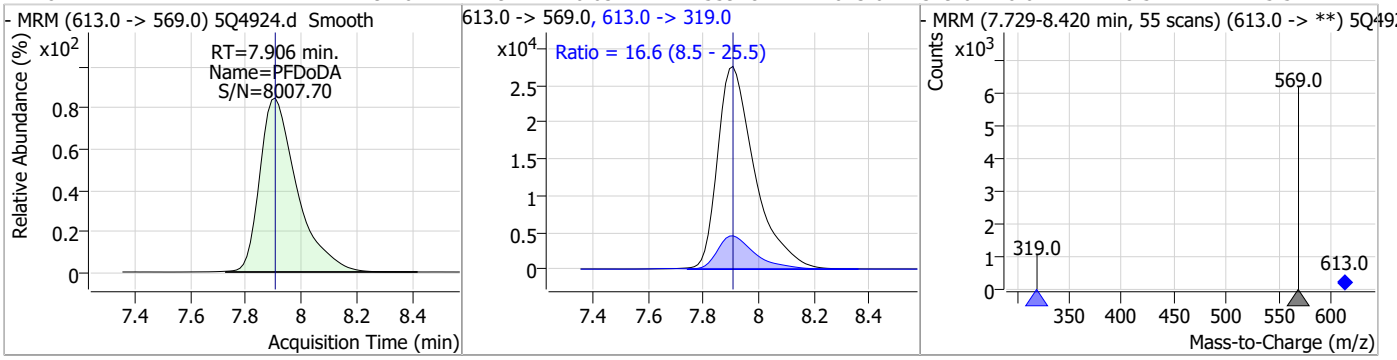
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.03	7.63	0.01	143723	633.0 -> 453.0	31.9	15.4	46.1



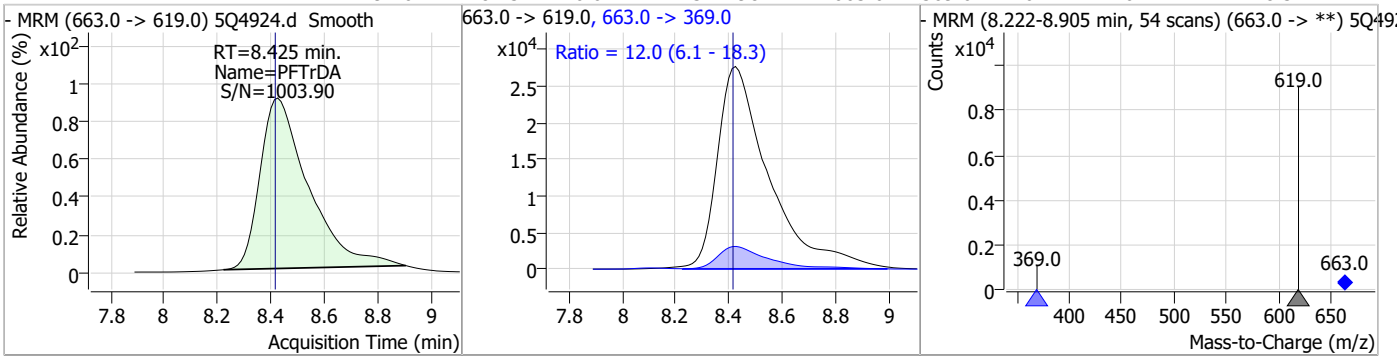
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.39	7.91	0.03	261501				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	19.76	7.91	0.03	255918	613.0 -> 319.0	16.6	8.5	25.5

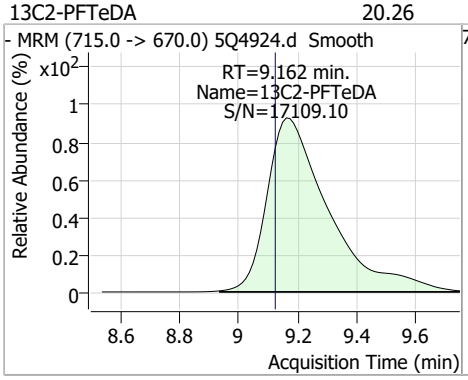


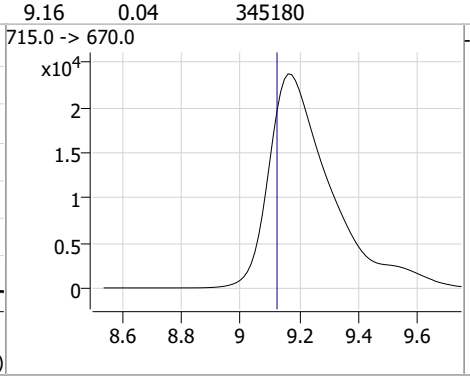
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	19.40	8.43	0.04	341198	663.0 -> 369.0	12.0	6.1	18.3

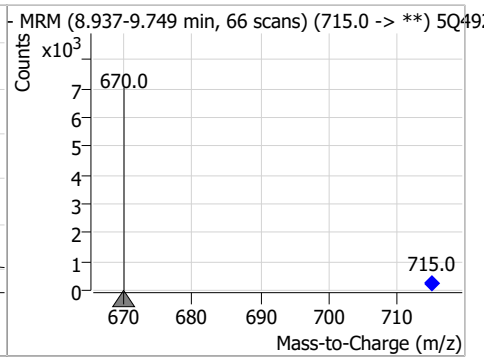


Perfluorinated Compounds by LC/MS/MS

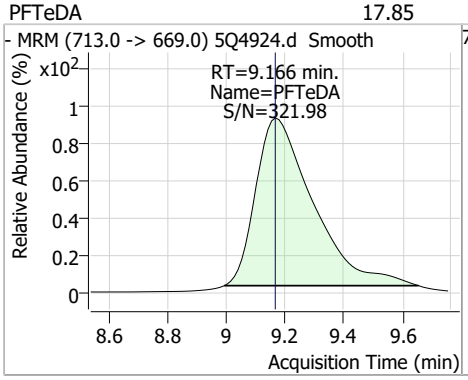
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.26	9.16	0.04	345180				

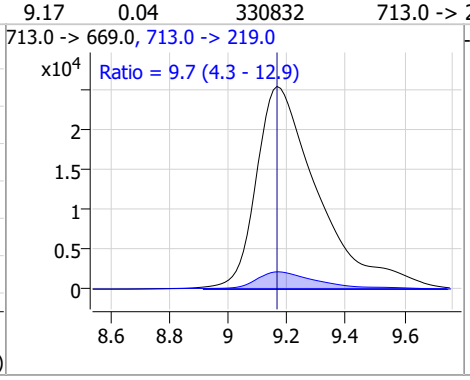


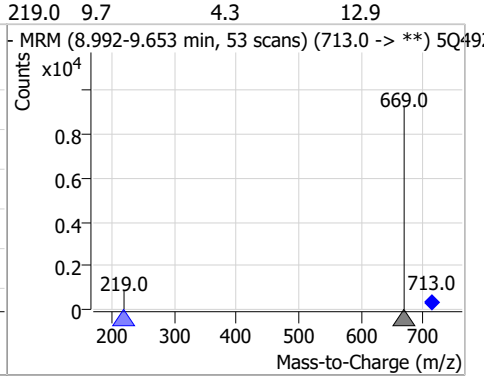




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	17.85	9.17	0.04	330832	713.0 -> 219.0	9.7	4.3	12.9







Manual Integration Approval Summary

Sample Number: S5Q74-CC73
Lab FileID: 5Q4924.D
Injection Time: 09/19/22 21:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/20/22 10:49 Anna Ludwig
Supervisor approved: 09/20/22 13:49 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.20	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.43	Split peak

QQQ Check Tune Report

Agilent | Trusted Answers

Instrument Name	LCMS Q6
MS Model	G6495B
MS Instrument Serial	SG1752D103
Software_Firmware Version	10.1.67, FW: A.00.08.112
Tune Date & Time	12 September 2022 12:14:46
File Path	D:\MassHunter\Tune\QQQ\G6495B\atunes.tune.xml
Ion Source	AJS ESI
Ionization Mode	AJS ESI
Tuned Resolution	All
Vacuum Pressure	1.87E+0 [R] (Torr); 2.94E-5 [H] (Torr)

Source Parameters

Parameter	Negative
Gas Temp (°C)	220
Gas Flow (l/min)	14
Nebulizer (psi)	20
Capillary (V)	3000
Nozzle Voltage (V)	1500
Sheath Gas Temp (°C)	250
Sheath Gas Flow (l/min)	11

7.7.80

7

QQQ Check Tune Report

Agilent | Trusted Answers

Negative Results

Analyzer: MS1 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.95	-0.04	Pass	0.70	0.81	0.11	Pass	438710
302.00	301.94	-0.06	Pass	0.70	0.77	0.07	Pass	933818
601.98	602.00	0.02	Pass	0.70	0.84	0.14	Pass	4507232
1033.99	1034.02	0.03	Pass	0.70	0.82	0.12	Pass	1548101
1633.95	1634.13	0.18	Pass	0.70	0.81	0.11	Pass	1145824
2233.91	2234.18	0.27	Pass	0.70	1.12	0.42	Adjust	615768

Analyzer: MS2 Polarity: Negative Width: Unit

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.06	0.06	Pass	0.70	0.61	-0.09	Pass	103830
112.99	113.00	0.01	Pass	0.70	0.69	-0.01	Pass	338039
302.00	302.06	0.06	Pass	0.70	0.63	-0.07	Pass	715943
601.98	601.99	0.01	Pass	0.70	0.72	0.02	Pass	3503507
1033.99	1033.96	-0.03	Pass	0.70	0.67	-0.03	Pass	881745
1633.95	1633.90	-0.05	Pass	0.70	0.70	0.00	Pass	794266
2233.91	2233.84	-0.07	Pass	0.70	0.65	-0.05	Pass	233902

Analyzer: MS1 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.93	-0.06	Pass	1.20	1.35	0.15	Pass	495914
302.00	301.91	-0.09	Pass	1.20	1.58	0.38	Pass	1067753
601.98	601.87	-0.11	Pass	1.20	1.61	0.41	Pass	4972646
1033.99	1033.93	-0.06	Pass	1.20	1.60	0.40	Pass	2114346
1633.95	1633.97	0.02	Pass	1.20	1.50	0.30	Pass	1888203
2233.91	2234.28	0.37	Pass	1.20	1.47	0.27	Pass	826966

Analyzer: MS2 Polarity: Negative Width: Wide

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	69.01	0.01	Pass	1.20	1.22	0.02	Pass	162764
112.99	112.95	-0.04	Pass	1.20	1.35	0.15	Pass	598511
302.00	301.99	-0.01	Pass	1.20	1.34	0.14	Pass	1105154
601.98	601.83	-0.15	Pass	1.20	1.56	0.36	Pass	5268708
1033.99	1033.76	-0.23	Pass	1.20	1.60	0.40	Pass	2106611
1633.95	1633.83	-0.12	Pass	1.20	1.69	0.49	Pass	2458343
2233.91	2233.78	-0.13	Pass	1.20	1.61	0.41	Pass	1408336

Analyzer: MS1 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
112.99	112.94	-0.05	Pass	2.50	2.74	0.24	Pass	530026
302.00	301.87	-0.13	Pass	2.50	2.76	0.26	Pass	1305485
601.98	601.87	-0.11	Pass	2.50	2.93	0.43	Pass	6085521
1033.99	1033.86	-0.13	Pass	2.50	2.60	0.10	Pass	3902792
1633.95	1633.80	-0.15	Pass	2.50	2.29	-0.21	Pass	3196320
2233.91	2234.03	0.12	Pass	2.50	2.18	-0.32	Pass	1644128

Analyzer: MS2 Polarity: Negative Width: Widest

m/z Expected	m/z Measured	Delta	Result	FWHM Expected	FWHM Measured	Delta	Result	Abundance
69.00	68.88	-0.12	Pass	2.50	2.54	0.04	Pass	174722
112.99	112.84	-0.15	Pass	2.50	2.64	0.14	Pass	777388
302.00	301.99	-0.01	Pass	2.50	2.59	0.09	Pass	1356188
601.98	601.92	-0.06	Pass	2.50	2.94	0.44	Pass	6152238
1033.99	1033.94	-0.05	Pass	2.50	3.18	0.68	Pass	3591774
1633.95	1633.88	-0.07	Pass	2.50	2.67	0.17	Pass	4254320
2233.91	2233.80	-0.11	Pass	2.50	2.76	0.26	Pass	2660062

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4619.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:43:54 AM
Sample Name : ic85-0.5
Vial : P1-A2
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	78781	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	139552	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	211783	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	243311	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	437552	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	510195	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	400719	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	535649	20.00	µg/L	0.000
M2-PFDoDA	8.346	615.0 -> 570.0	732207	20.00	µg/L	0.014
M2-PFTeDA	10.026	715.0 -> 670.0	600185	20.00	µg/L	0.012
M8-FOSA	6.654	506.0 -> 78.0	205562	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	30446	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	27740	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	41062	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	253552	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	330962	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	252857	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	172661	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5287	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	44658	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	136427	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	253552	18.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.9%		
13C2-6:2FTS	6.124	429.0 -> 409.0	330962	19.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	252857	19.40	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%		
13C2-PFDoDA	8.346	615.0 -> 570.0	732207	19.91	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C2-PFTeDA	10.026	715.0 -> 670.0	600185	20.01	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C3-PFBS	3.635	302.0 -> 99.0	30446	19.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C3-PFHxS	5.475	402.0 -> 99.0	27740	20.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C4-PFBA	1.949	217.0 -> 172.0	78781	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C4-PFHpA	5.445	367.0 -> 322.0	243311	19.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%		
13C5-PFHxA	4.573	318.0 -> 273.0	211783	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C5-PFPeA	3.405	268.0 -> 223.0	139552	19.90	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%		
13C6-PFDA	7.297	519.0 -> 474.0	400719	19.69	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

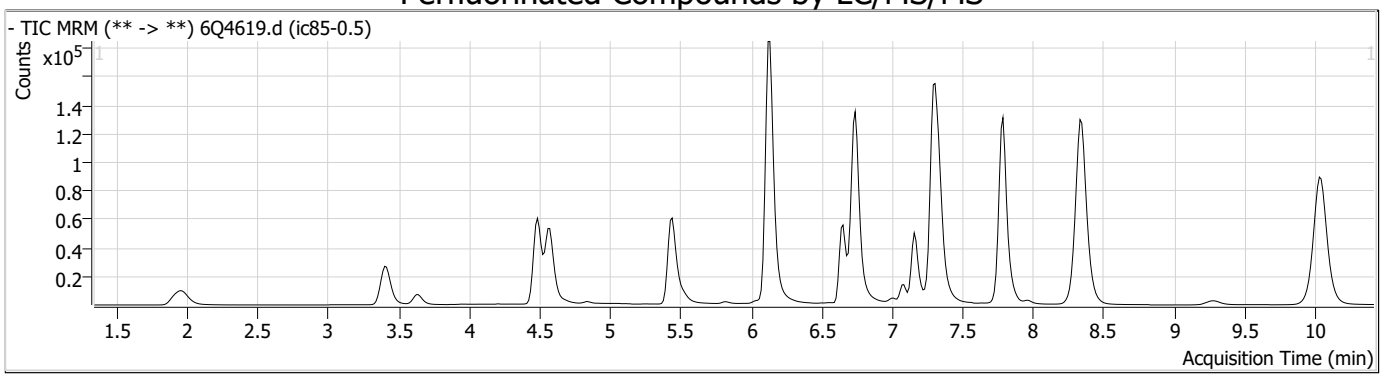
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C7-PFUnDA	7.788	570.0 -> 525.0	535649	20.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C8-FOSA	6.654	506.0 -> 78.0	205562	21.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C8-PFOA	6.138	421.0 -> 376.0	437552	20.62 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C8-PFOS	6.717	507.0 -> 99.0	41062	19.36 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.8%		
13C9-PFNA	6.745	472.0 -> 427.0	510195	19.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
d3-MeFOSAA	7.155	573.0 -> 419.0	172661	19.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5294	19.92 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.6%		
d3-MeFOSA	7.085	515.0 -> 169.0	44658	19.74 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
d5-EtFOSAA	7.302	589.0 -> 419.0	136447	20.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	7611	0.56 µg/L		96
		327.0 -> 81.0	2672			
6:2FTS	6.124	427.0 -> 407.0	8675	0.52 µg/L		98
		427.0 -> 81.0	2454			
8:2FTS	7.334	527.0 -> 507.0	7168	0.56 µg/L		98
		527.0 -> 81.0	2359			
EtFOSAA	7.303	584.0 -> 419.0	3201	0.44 µg/L		87
		584.0 -> 483.0	1946			
FOSA	6.656	498.0 -> 78.0	4833	0.47 µg/L		99
		498.0 -> 478.0	176			
MeFOSAA	7.168	570.0 -> 419.0	3991	0.50 µg/L		100
		570.0 -> 512.0	1279			
PFBA	1.955	213.0 -> 169.0	859	0.50 µg/L		100
PFBS	3.627	299.0 -> 80.0	2535	0.50 µg/L		100
		299.0 -> 99.0	947			
PFDA	7.298	513.0 -> 469.0	14367	0.49 µg/L		97
		513.0 -> 219.0	2173			
PFDoDA	8.334	613.0 -> 569.0	16974	0.50 µg/L		99
		613.0 -> 319.0	2439			
PFDS	7.736	599.0 -> 80.0	1703	0.51 µg/L		95
		599.0 -> 99.0	784			
PFHpA	5.446	363.0 -> 319.0	7981	0.50 µg/L		100
		363.0 -> 169.0	1165			
PFHpS	6.136	449.0 -> 80.0	1982	0.55 µg/L		91
		449.0 -> 99.0	922			
PFHxA	4.574	313.0 -> 269.0	5666	0.51 µg/L		99
		313.0 -> 119.0	126			
PFHxS	5.477	399.0 -> 80.0	2042	0.51 µg/L	m	97
		399.0 -> 99.0	942			
PFNA	6.745	463.0 -> 419.0	11097	0.46 µg/L		99
		463.0 -> 219.0	2085			
PFNS	7.256	549.0 -> 80.0	2060	0.49 µg/L		100
		549.0 -> 99.0	1140			
PFOA	6.138	413.0 -> 369.0	11596	0.49 µg/L		100
		413.0 -> 169.0	1757			
PFOS	6.719	499.0 -> 80.0	1771	0.47 µg/L	m	85

Perfluorinated Compounds by LC/MS/MS

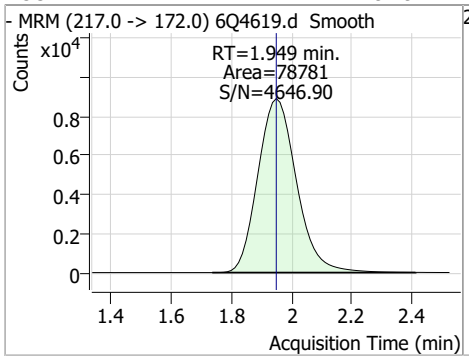
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1016			
PFPeA	3.408	263.0 -> 219.0	2997	0.51	µg/L	100
PFPeS	4.681	349.0 -> 80.0	2048	0.49	µg/L	97
		349.0 -> 99.0	970			
PFTeDA	10.030	713.0 -> 669.0	18969	0.52	µg/L	100
		713.0 -> 219.0	1339			
PFTrDA	9.285	663.0 -> 619.0	18730	0.53	µg/L	100
		663.0 -> 369.0	1650			
PFUnDA	7.789	563.0 -> 519.0	13177	0.48	µg/L	97
		563.0 -> 269.0	2075			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	7407	0.47	µg/L	99
		633.0 -> 453.0	2393			
9Cl-PF3ONS	7.009	531.0 -> 351.0	9439	0.46	µg/L	99
		533.0 -> 353.0	2872			
ADONA	5.532	377.0 -> 251.0	12256	0.48	µg/L	98
		377.0 -> 85.0	3039			
HFPO-DA	4.840	285.0 -> 169.0	136	0.54	µg/L	92
		285.0 -> 185.0	15			
MeFOSA	7.086	512.0 -> 169.0	1190	0.49	µg/L	94
		512.0 -> 219.0	1225			
4-PFECHS	6.032	461.0 -> 381.0	6439	0.46	µg/L	100
		461.0 -> 99.0	2155			
FBSA	4.514	298.0 -> 78.0	5390	0.52	µg/L	98
		298.0 -> 64.0	396			
FHxSA	5.828	398.0 -> 78.0	4974	0.52	µg/L	99
		398.0 -> 64.0	185			

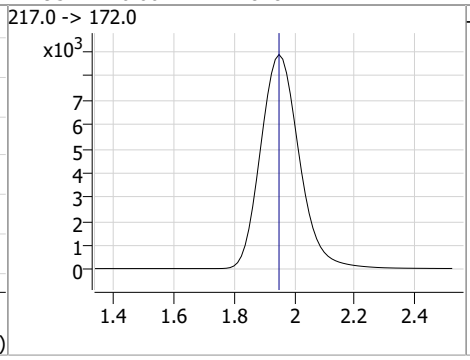
 # = Qualifier out of range, m = manually integrated, + = Area summed

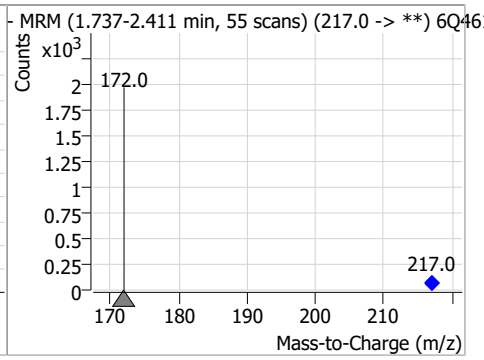
Perfluorinated Compounds by LC/MS/MS



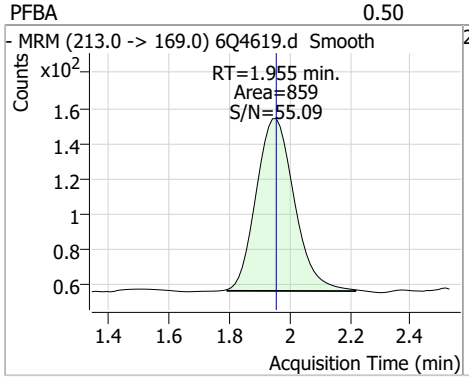
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.79	1.95	0.00	78781				

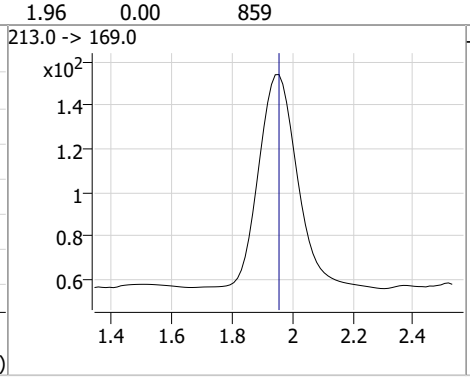


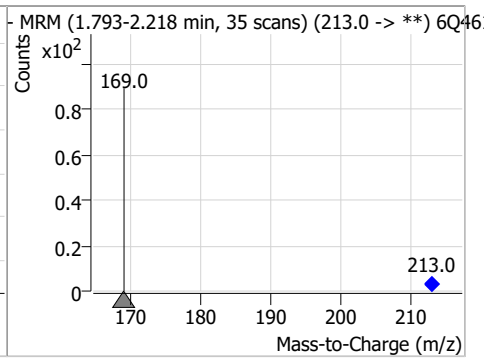




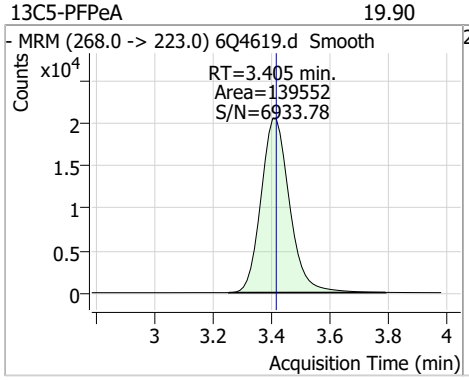
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.50	1.96	0.00	859				

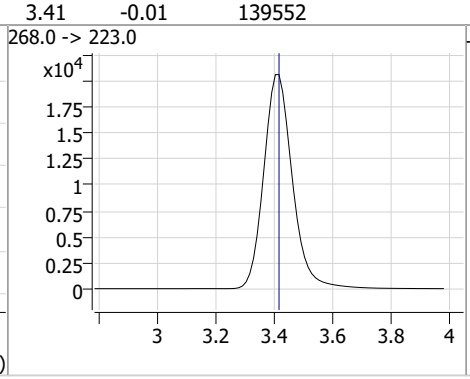


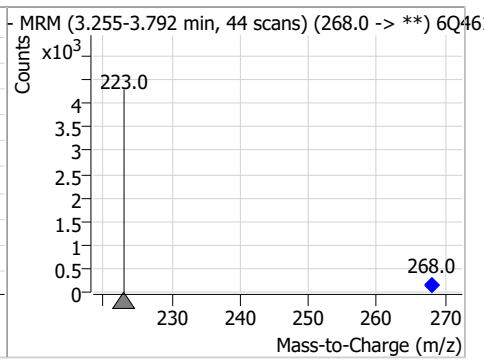




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.90	3.41	-0.01	139552				

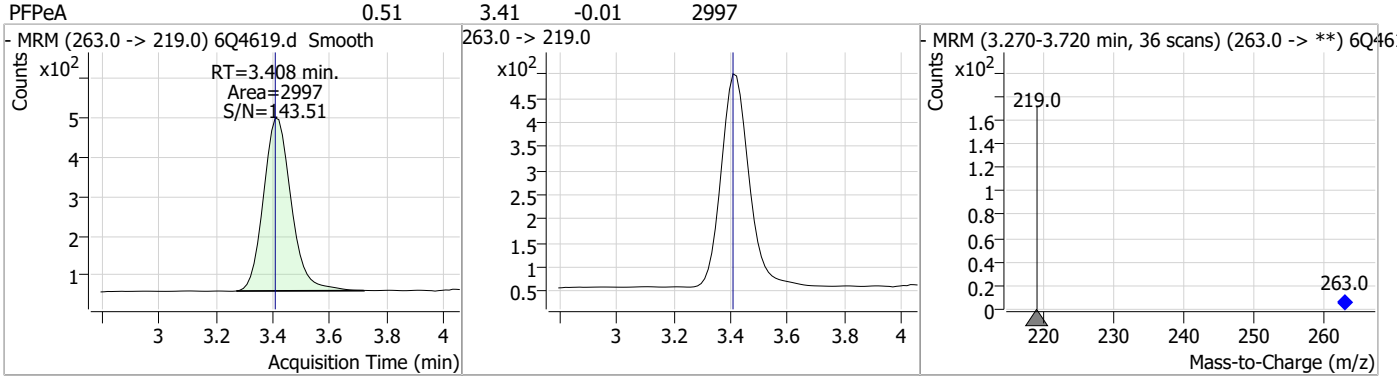




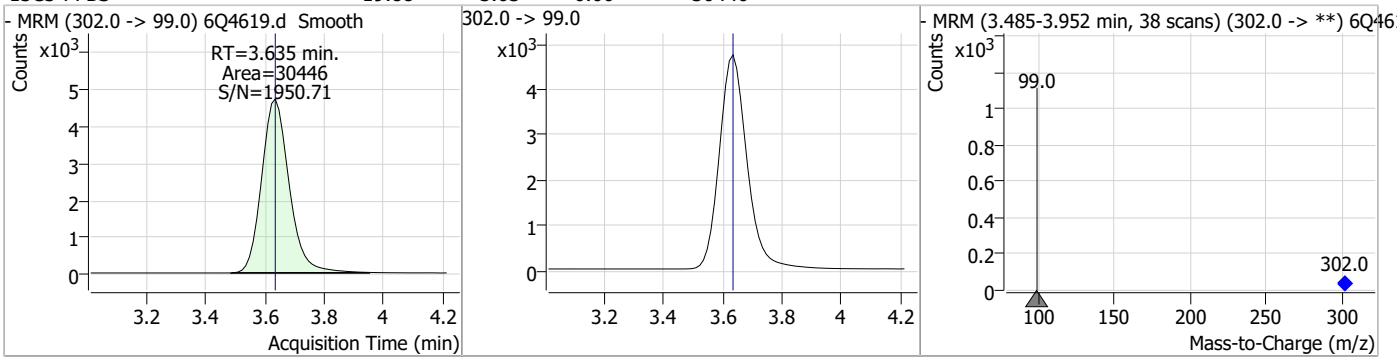


Perfluorinated Compounds by LC/MS/MS

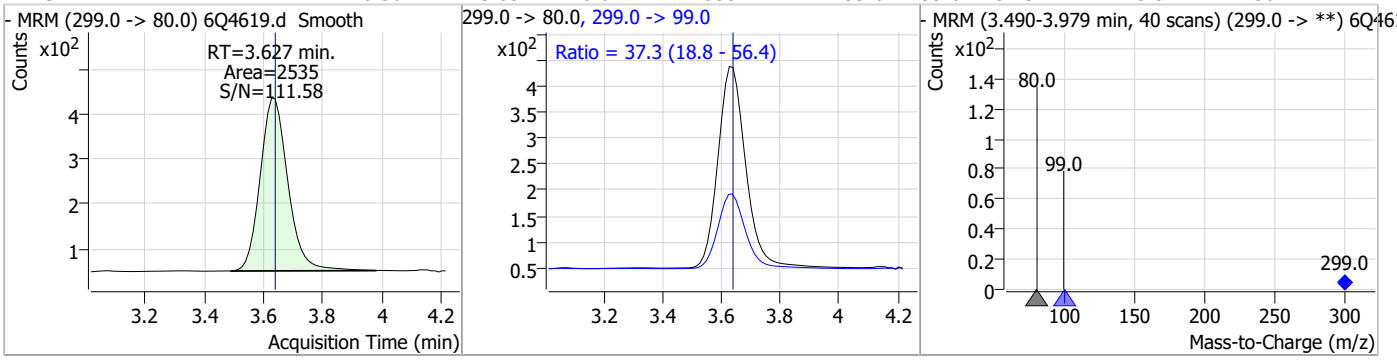
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.51	3.41	-0.01	2997				



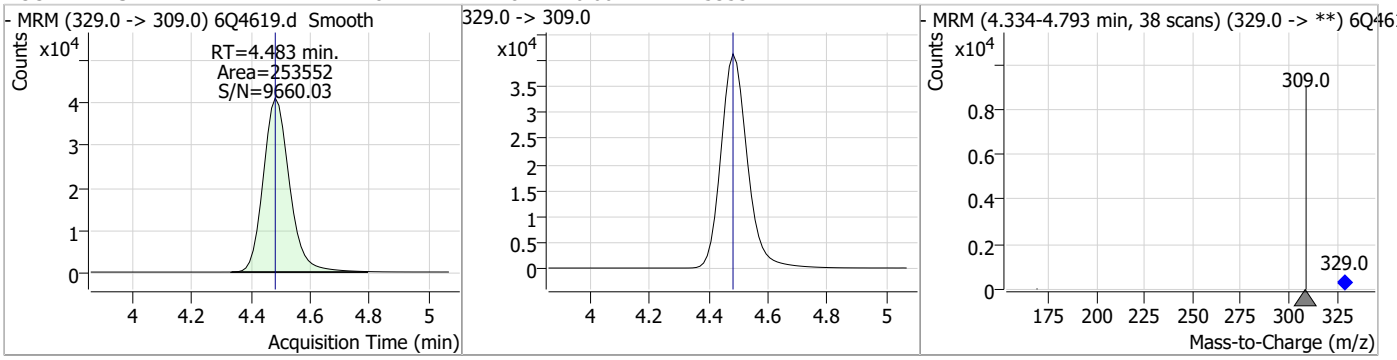
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.88	3.63	0.00	30446				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.50	3.63	-0.01	2535	299.0 -> 99.0	37.3	18.8	56.4

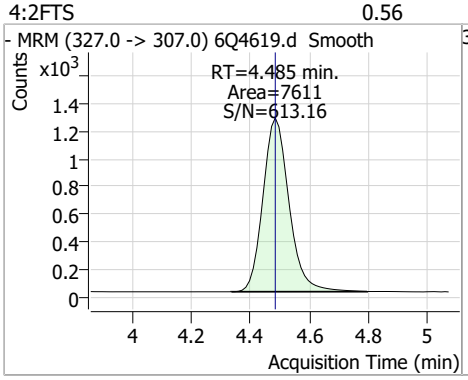


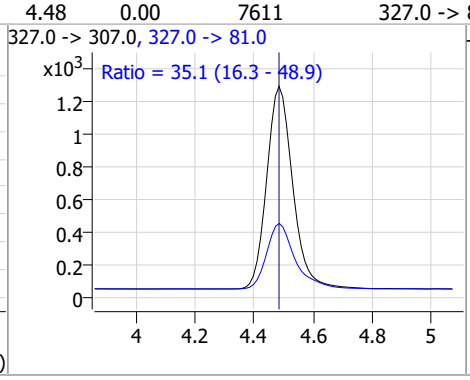
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.77	4.48	0.00	253552				

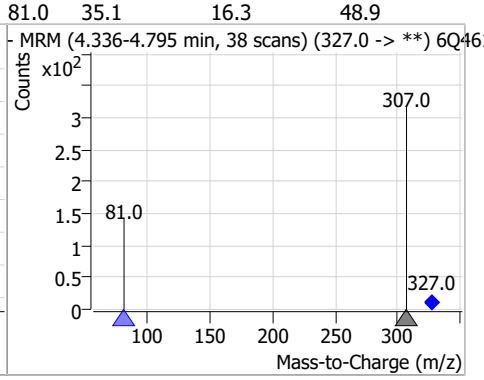


Perfluorinated Compounds by LC/MS/MS

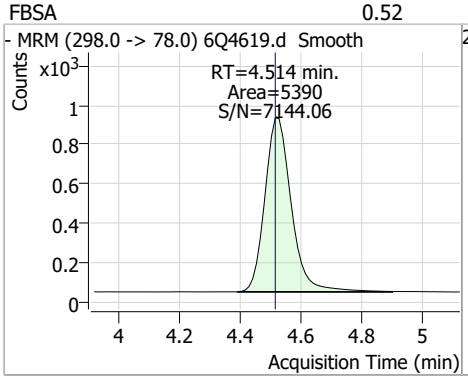
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.56	4.48	0.00	7611	327.0 -> 81.0	35.1	16.3	48.9

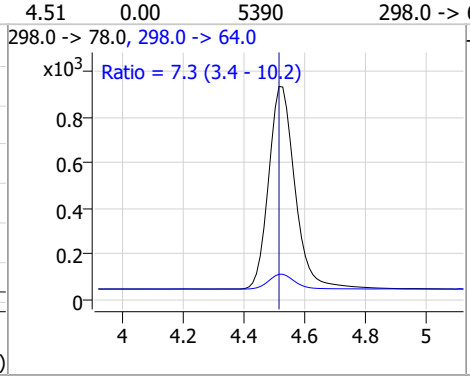


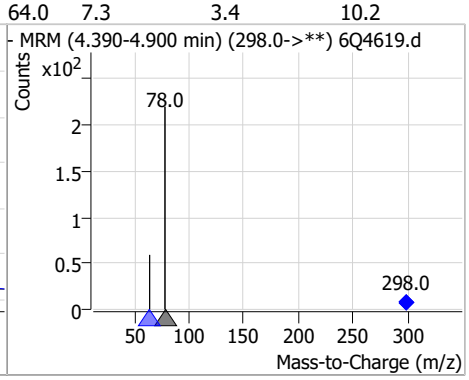




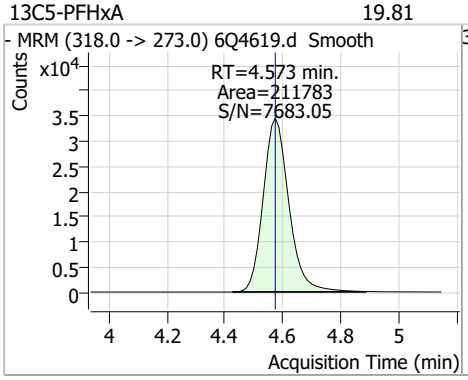
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.52	4.51	0.00	5390	298.0 -> 64.0	7.3	3.4	10.2

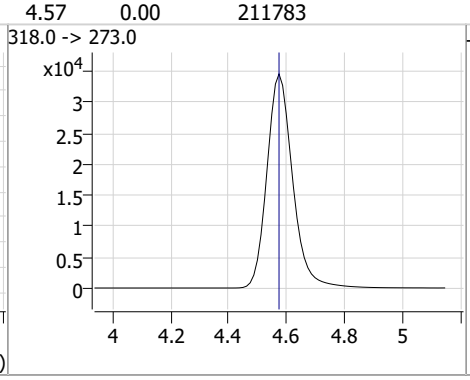


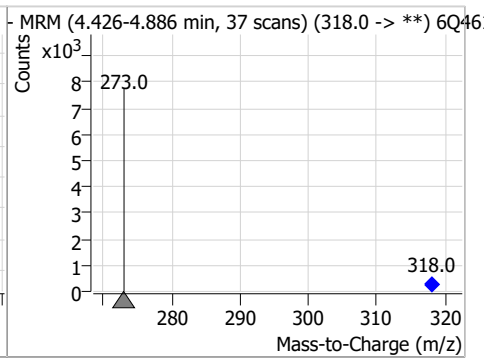




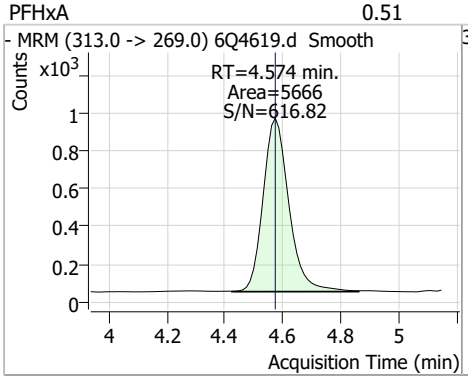
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.81	4.57	0.00	211783				

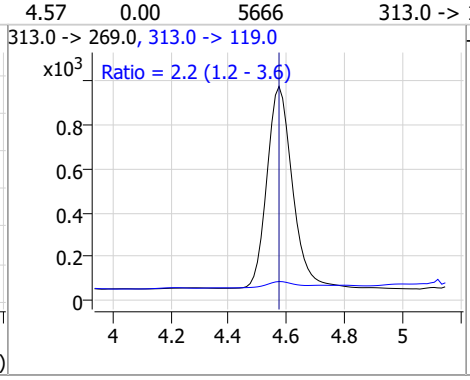


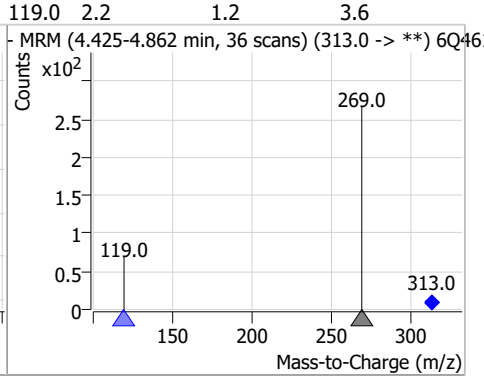




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.51	4.57	0.00	5666	313.0 -> 119.0	2.2	1.2	3.6

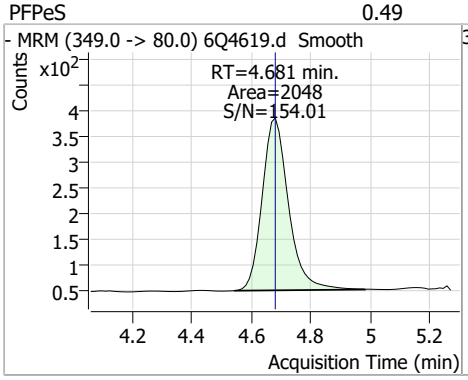


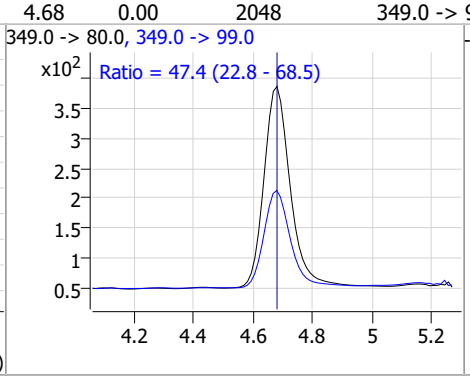


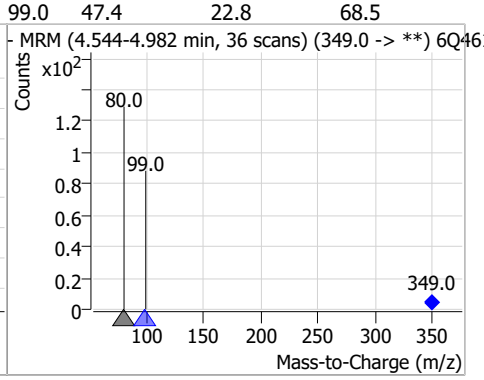


Perfluorinated Compounds by LC/MS/MS

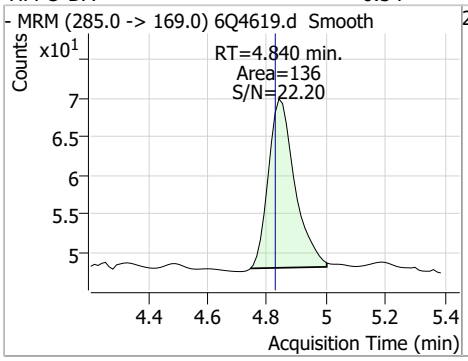
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.49	4.68	0.00	2048	349.0 -> 99.0	47.4	22.8	68.5

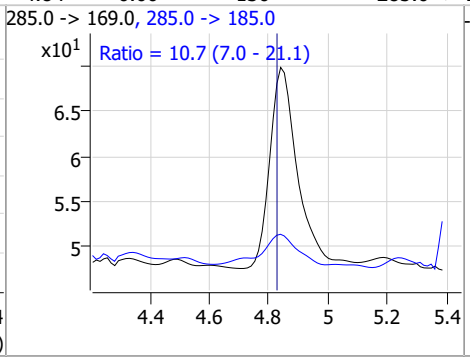


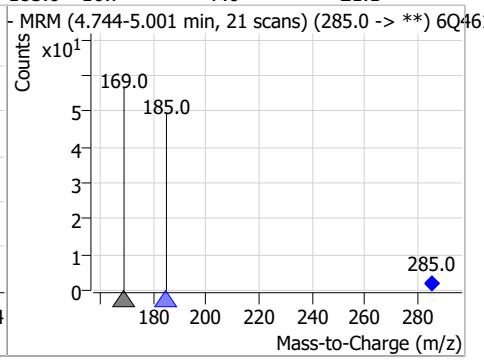




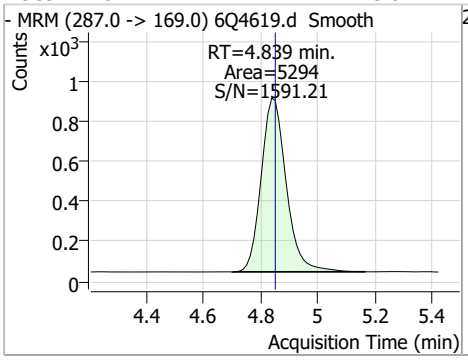
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.54	4.84	0.00	136	285.0 -> 185.0	10.7	7.0	21.1

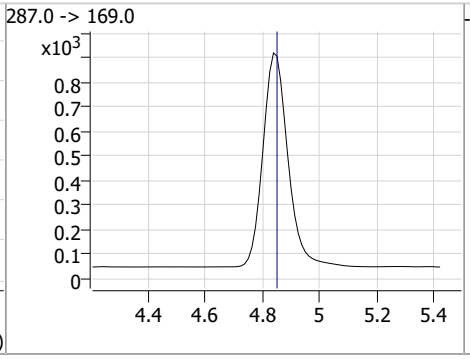


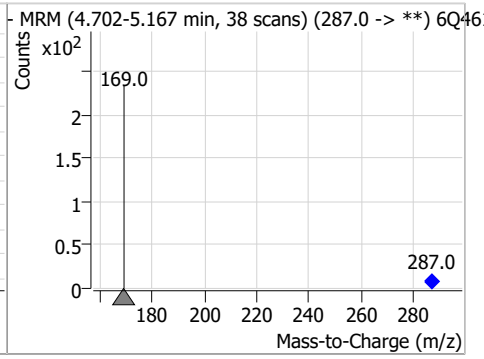




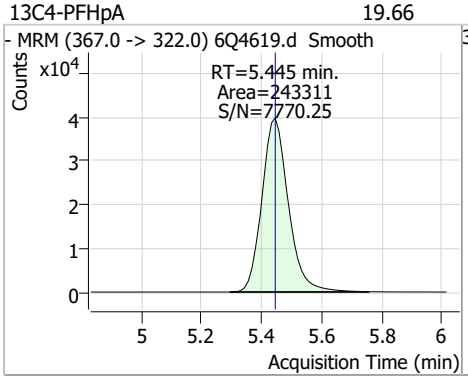
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.92	4.84	-0.01	5294				

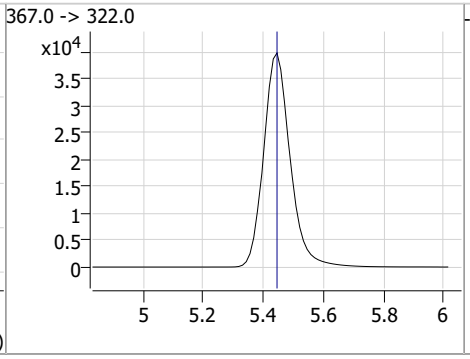


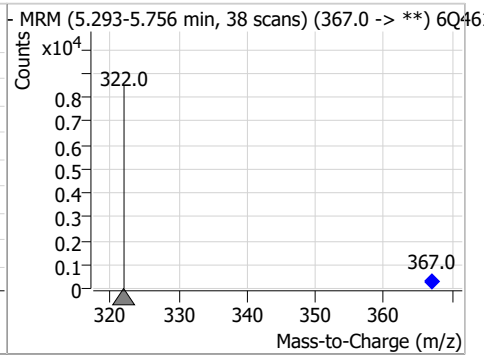




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.66	5.45	0.00	243311				

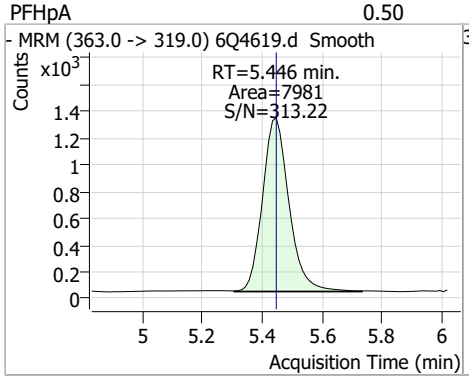


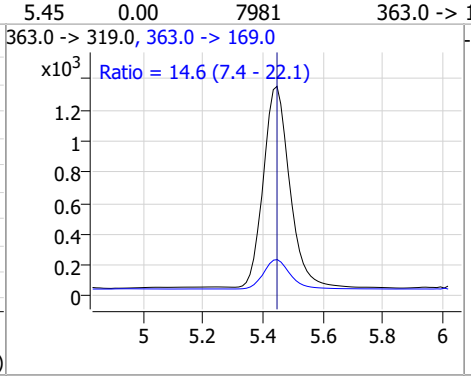


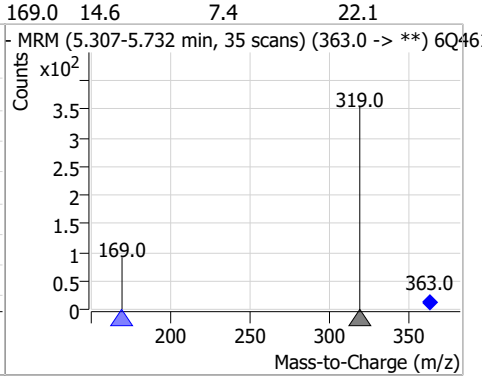


Perfluorinated Compounds by LC/MS/MS

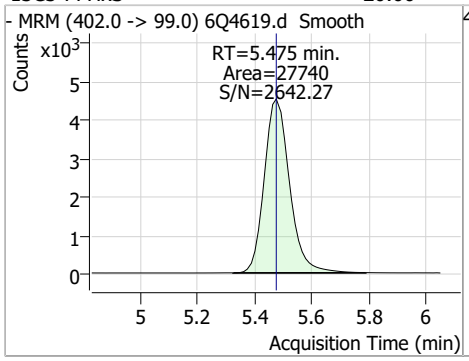
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.50	5.45	0.00	7981	363.0 -> 169.0	14.6	7.4	22.1

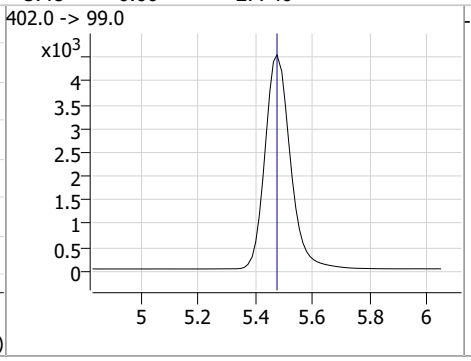


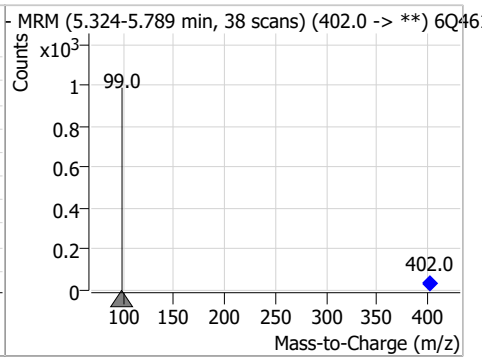




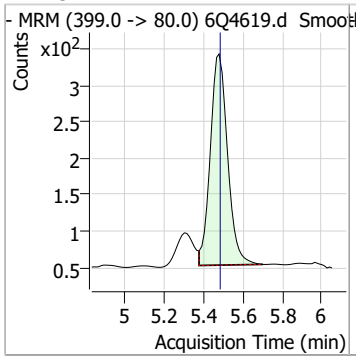
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.06	5.48	0.00	27740				

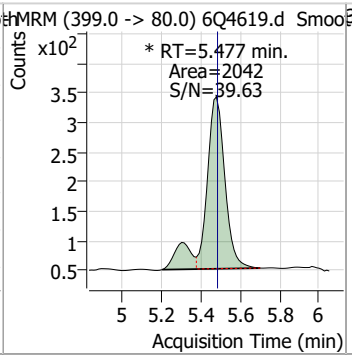


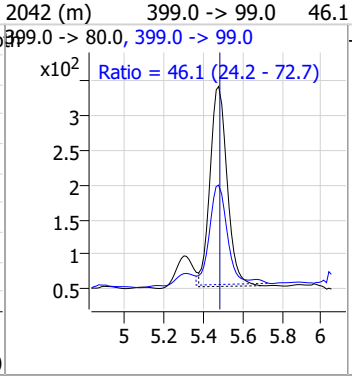


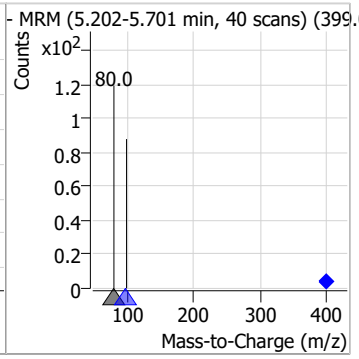


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.51	5.48	0.00	2042 (m)	399.0 -> 99.0	46.1	24.2	72.7

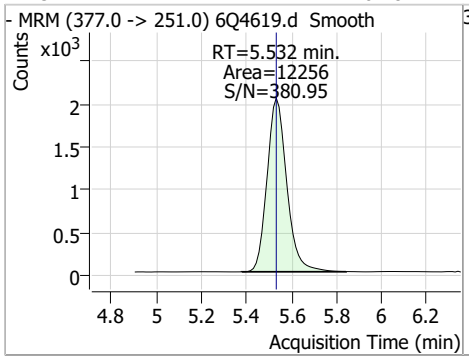


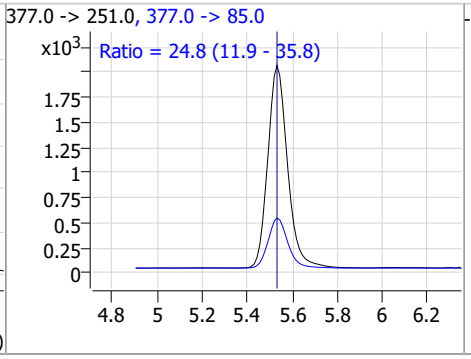


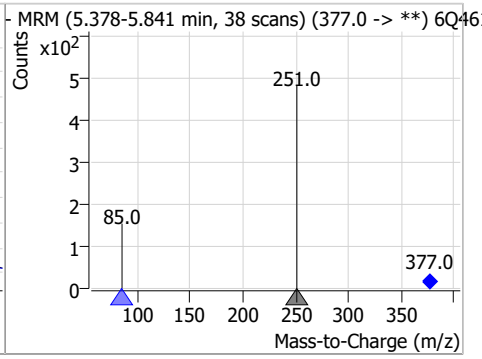




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.48	5.53	0.00	12256	377.0 -> 85.0	24.8	11.9	35.8

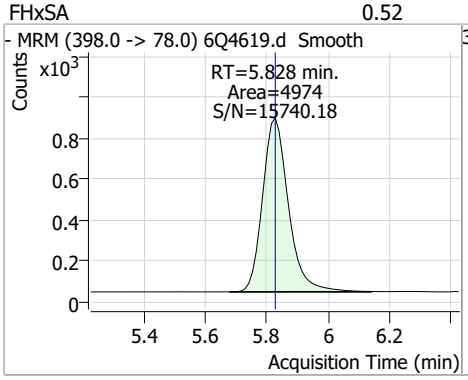


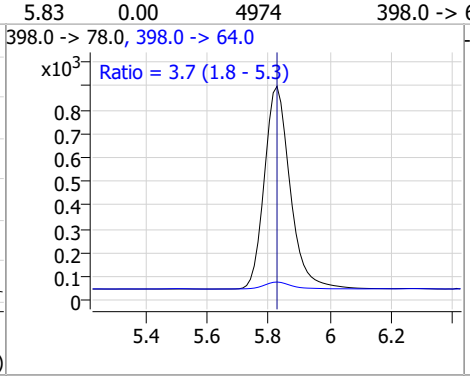


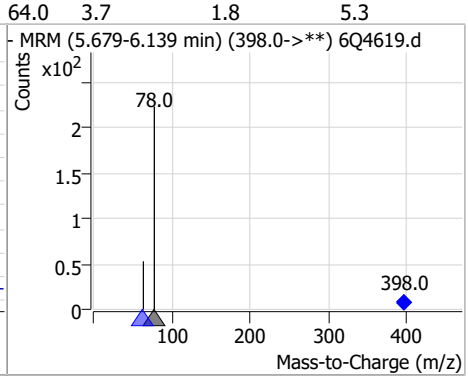


Perfluorinated Compounds by LC/MS/MS

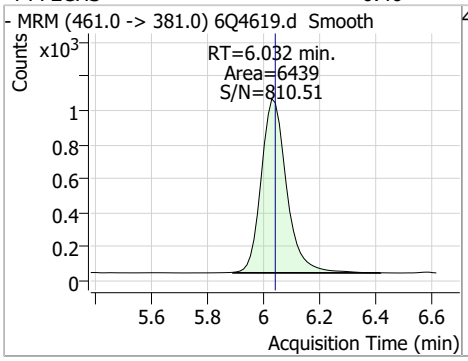
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.52	5.83	0.00	4974	398.0 -> 64.0	3.7	1.8	5.3

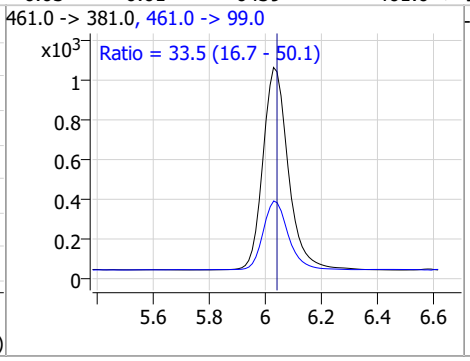


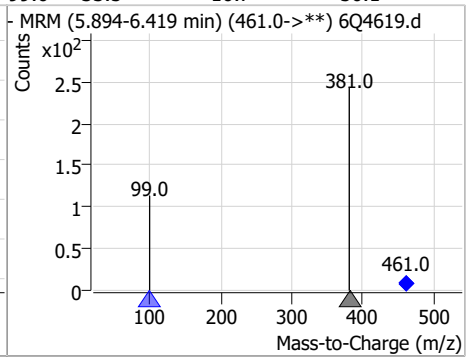




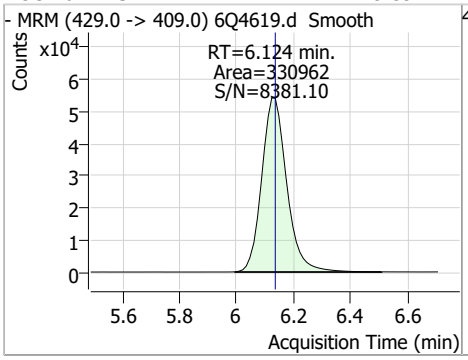
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.46	6.03	-0.01	6439	461.0 -> 99.0	33.5	16.7	50.1

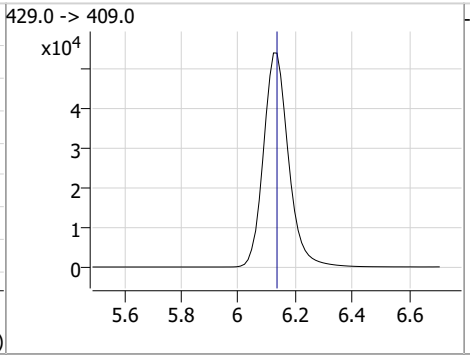


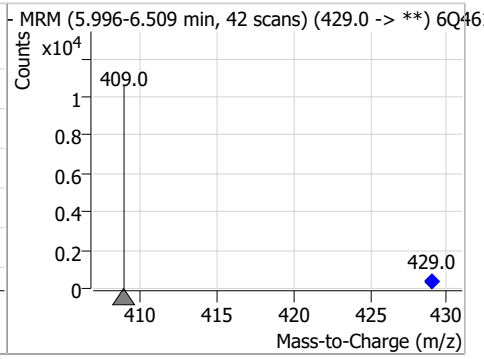




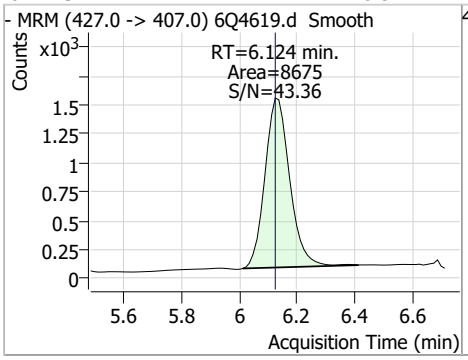
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.39	6.12	-0.01	330962				

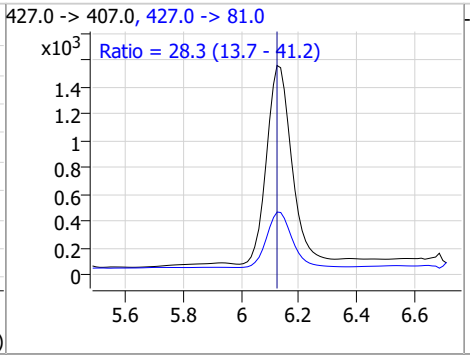


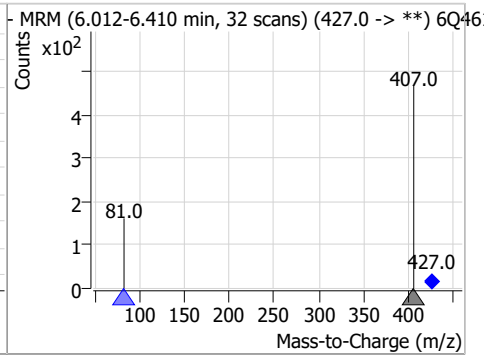




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.52	6.12	-0.01	8675	427.0 -> 81.0	28.3	13.7	41.2

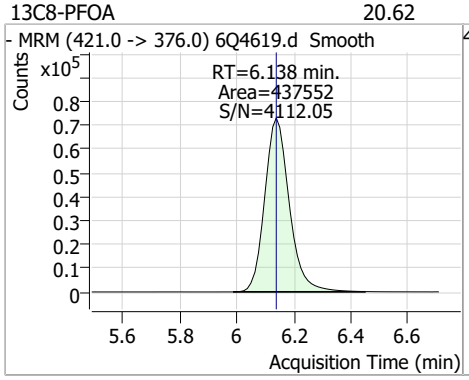


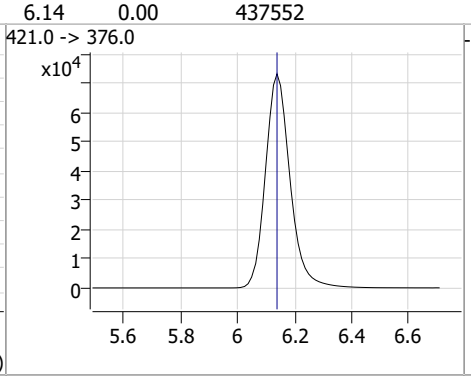


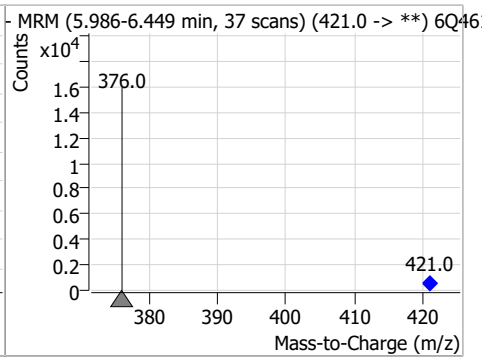


Perfluorinated Compounds by LC/MS/MS

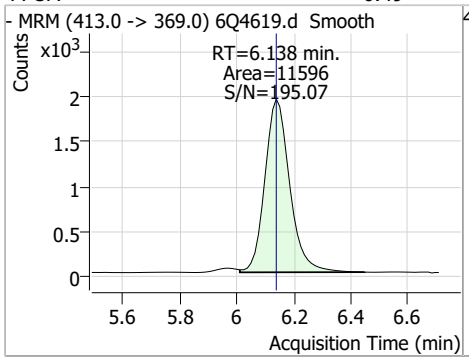
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.62	6.14	0.00	437552				

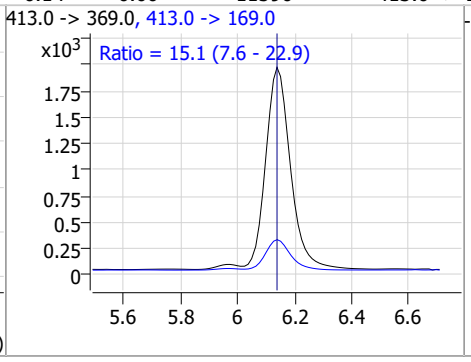


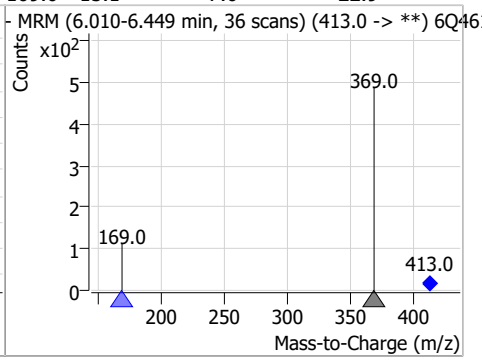




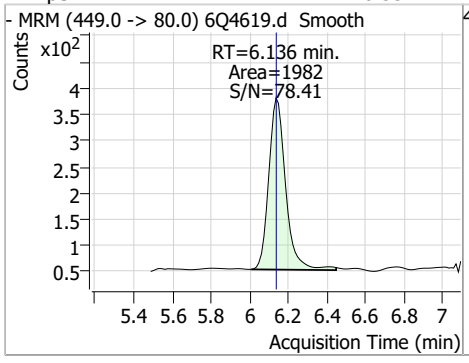
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.49	6.14	0.00	11596	413.0 -> 169.0	15.1	7.6	22.9

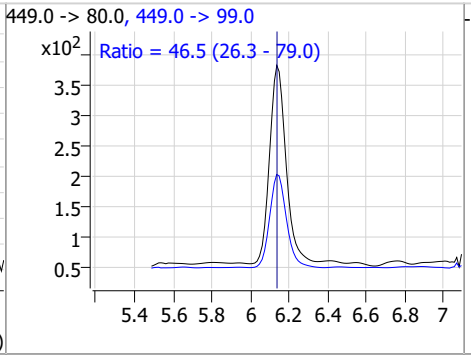


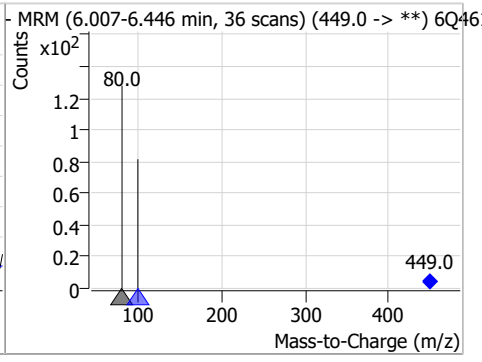




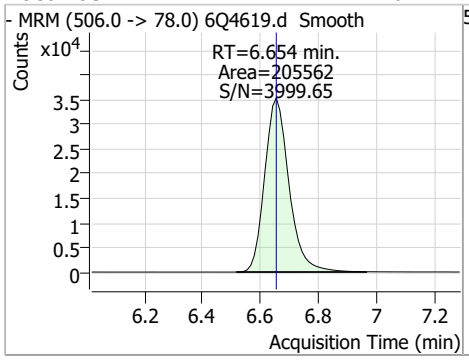
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.55	6.14	-0.01	1982	449.0 -> 99.0	46.5	26.3	79.0

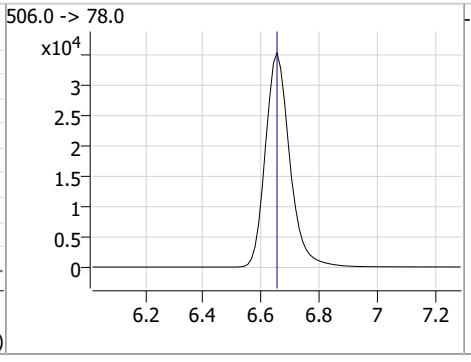


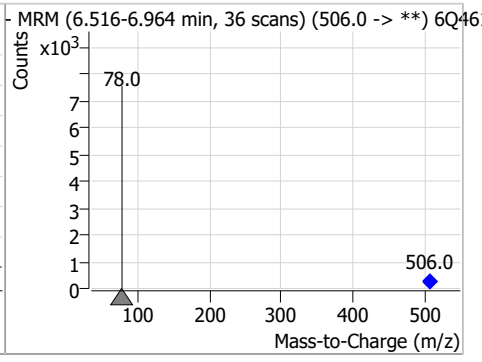




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.02	6.65	0.00	205562				

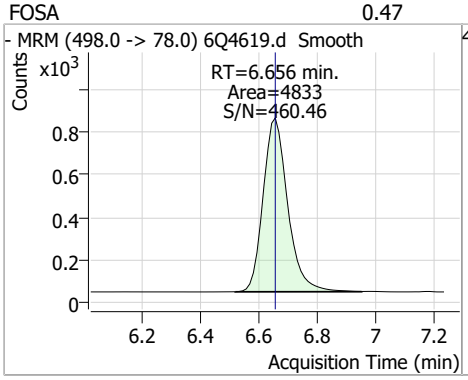


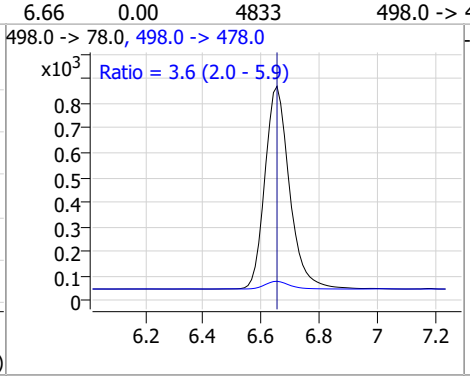


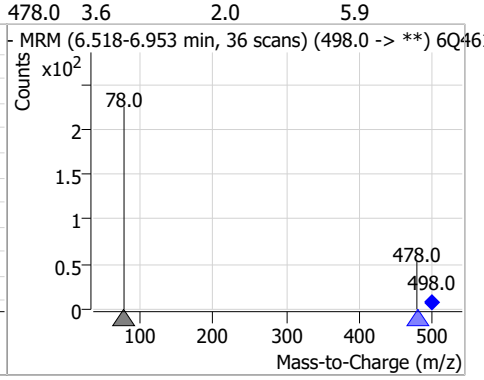


Perfluorinated Compounds by LC/MS/MS

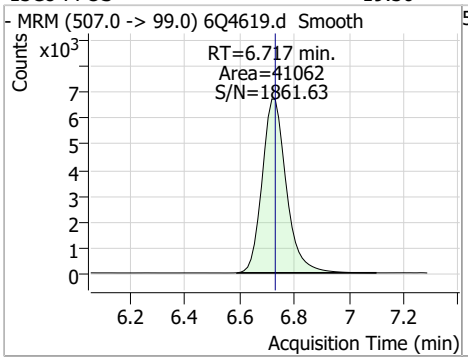
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.47	6.66	0.00	4833	498.0 -> 478.0	3.6	2.0	5.9

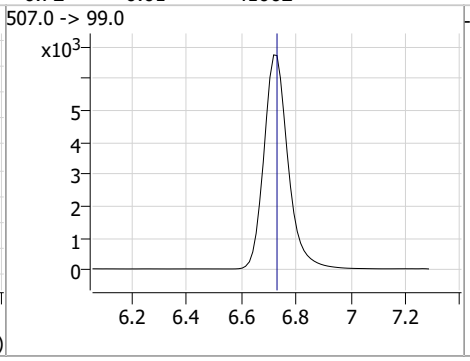


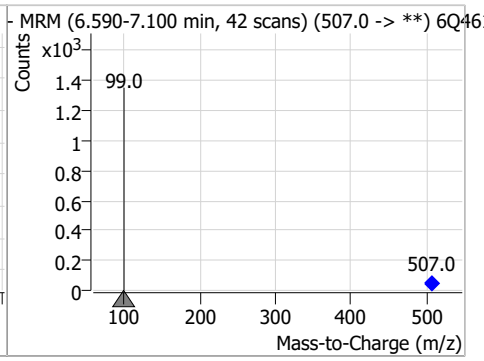




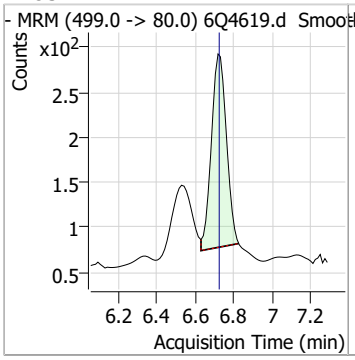
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.36	6.72	-0.01	41062				

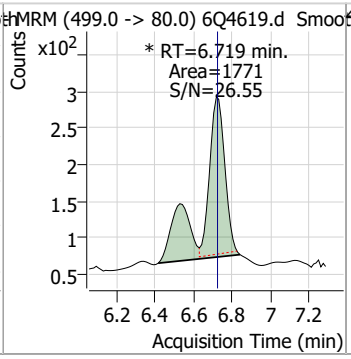


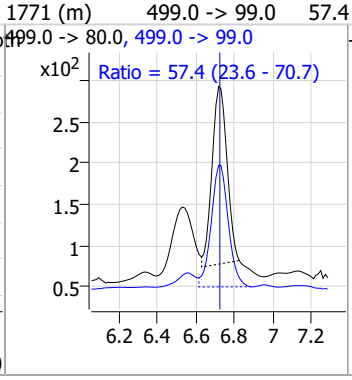


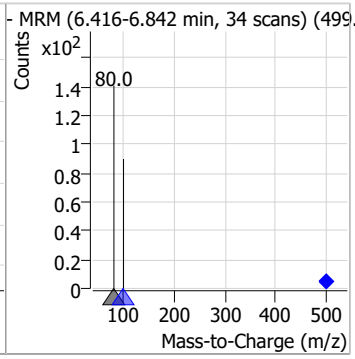


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.47	6.72	-0.01	1771 (m)	499.0 -> 99.0	57.4	23.6	70.7

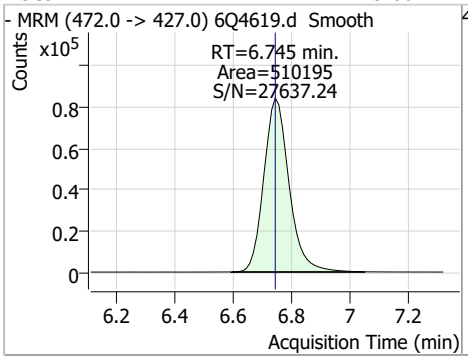


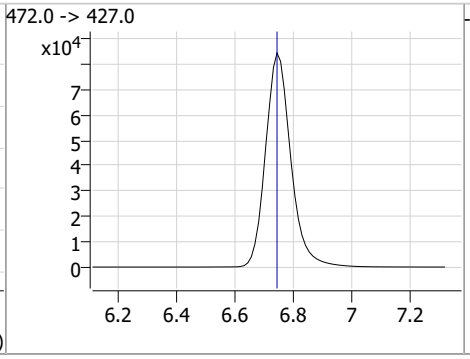


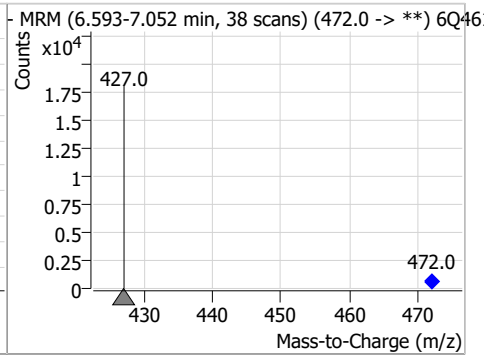




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.80	6.74	0.00	510195				

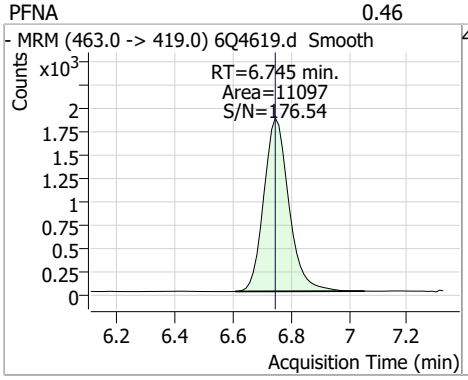


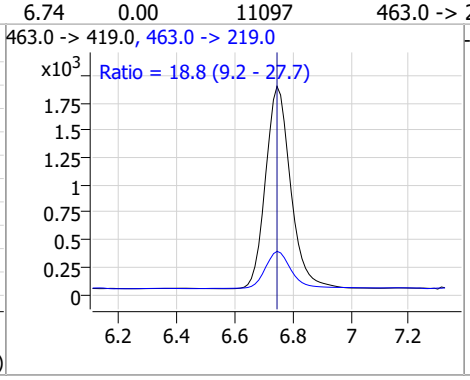


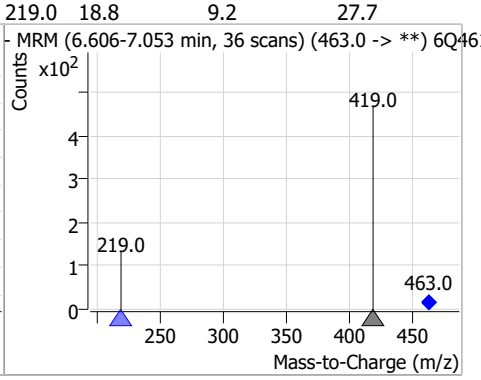


Perfluorinated Compounds by LC/MS/MS

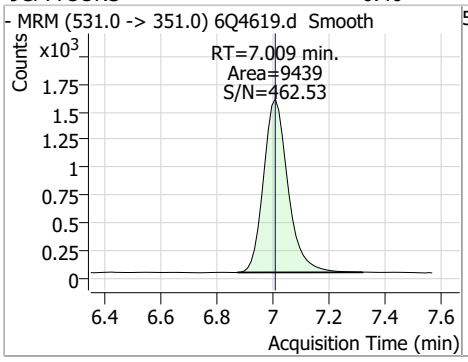
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.46	6.74	0.00	11097	463.0 -> 219.0	18.8	9.2	27.7

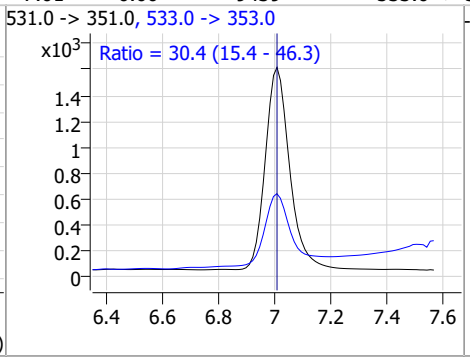


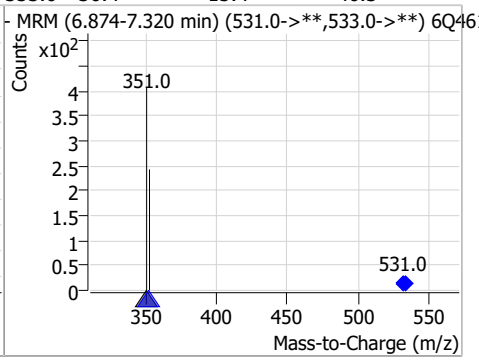




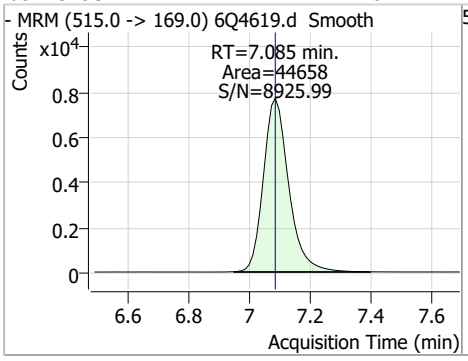
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.46	7.01	0.00	9439	533.0 -> 353.0	30.4	15.4	46.3

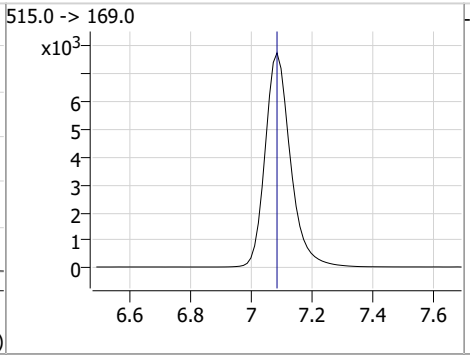


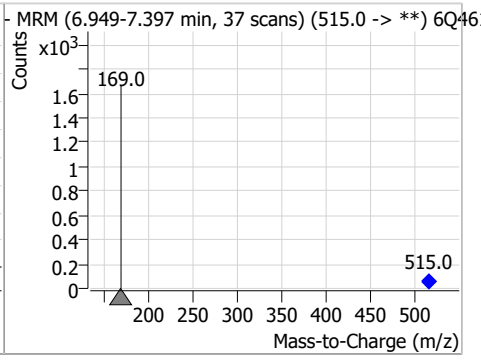




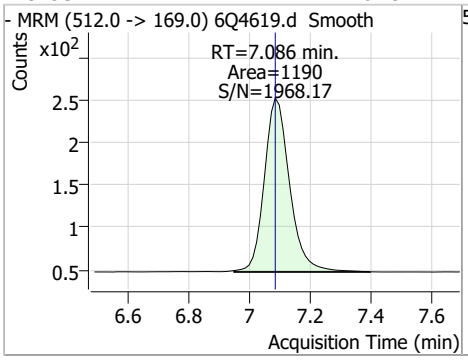
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.74	7.08	0.00	44658				

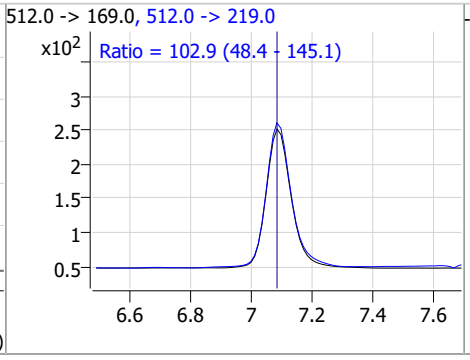


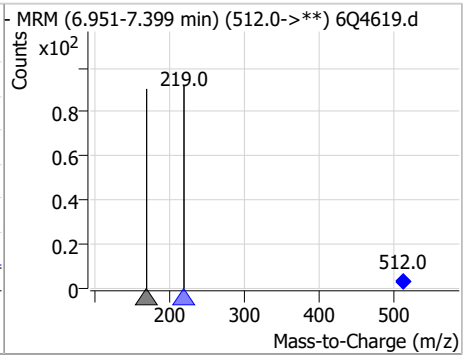




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.49	7.09	0.00	1190	512.0 -> 219.0	102.9	48.4	145.1

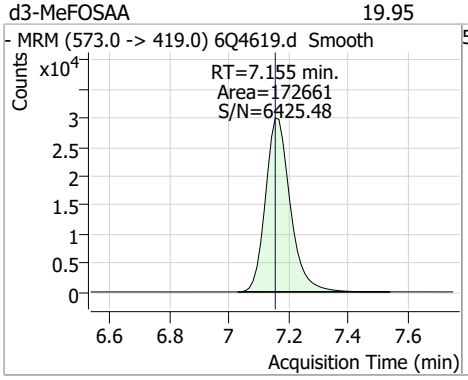


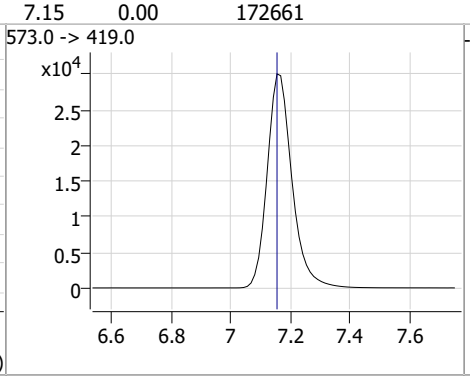


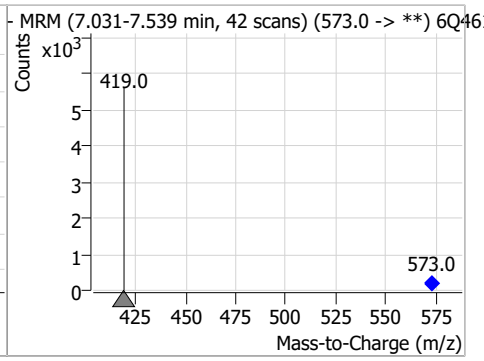


Perfluorinated Compounds by LC/MS/MS

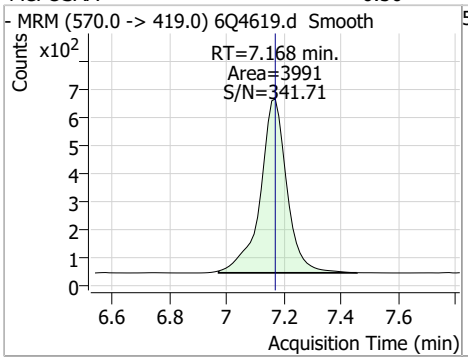
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.95	7.15	0.00	172661				

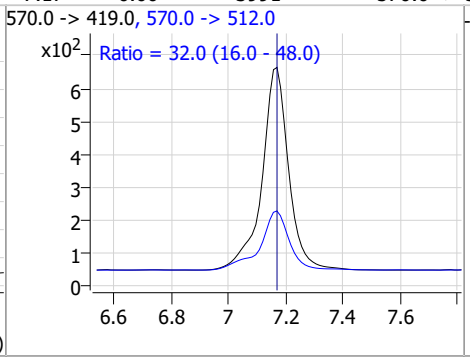


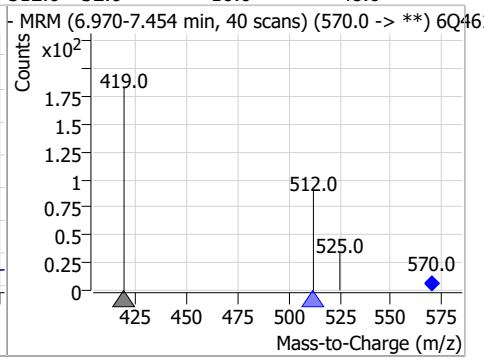




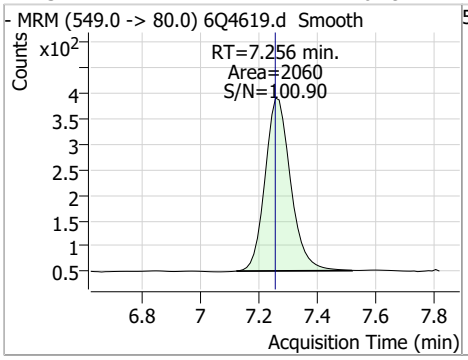
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.50	7.17	0.00	3991	570.0 -> 512.0	32.0	16.0	48.0

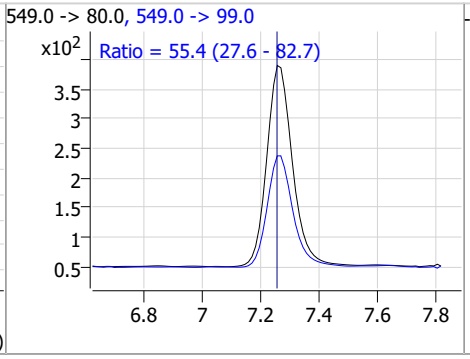


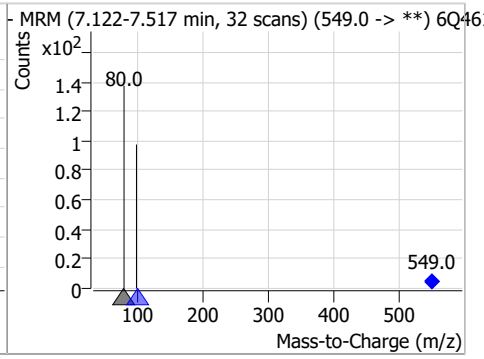




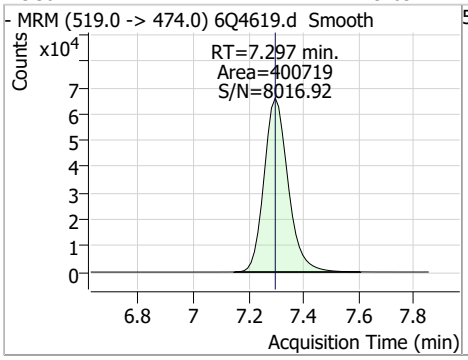
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.49	7.26	-0.01	2060	549.0 -> 99.0	55.4	27.6	82.7

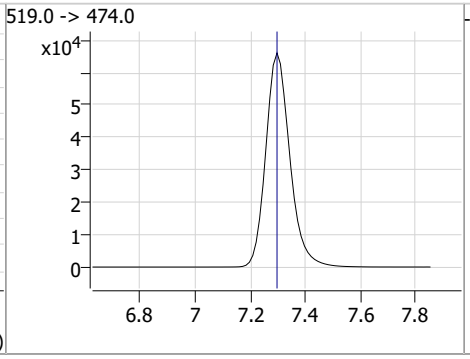


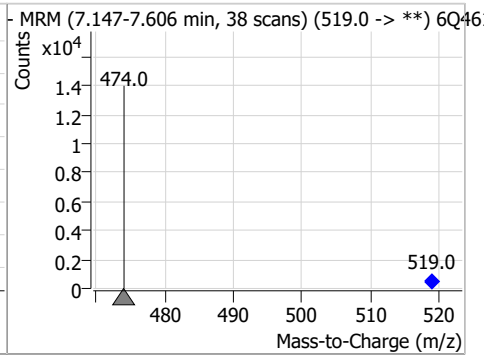




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.69	7.30	0.00	400719				

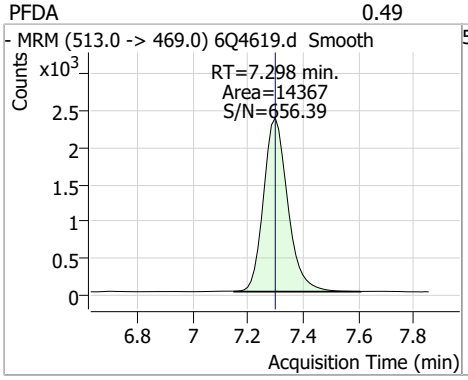


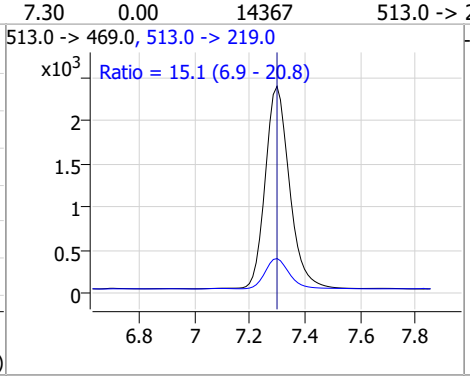


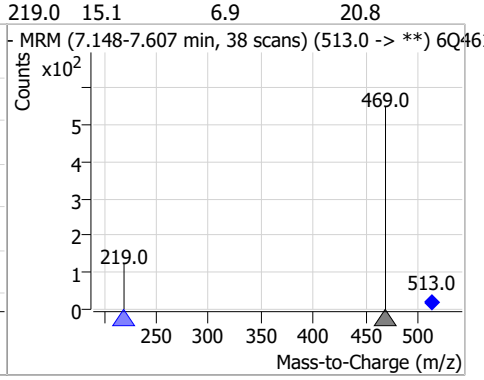


Perfluorinated Compounds by LC/MS/MS

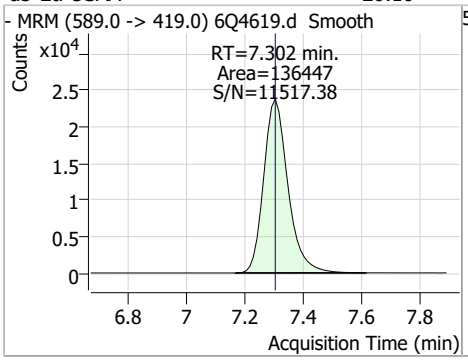
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.49	7.30	0.00	14367	513.0 -> 219.0	15.1	6.9	20.8

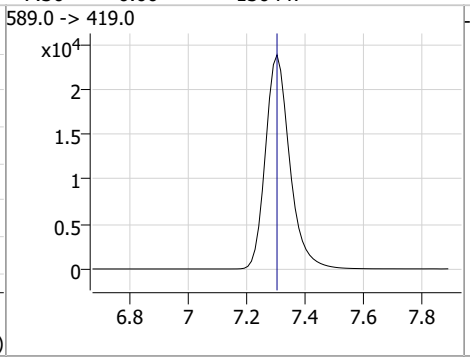


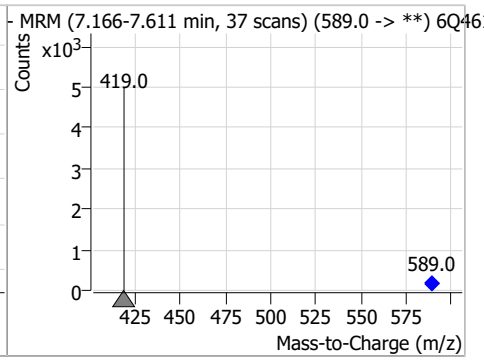




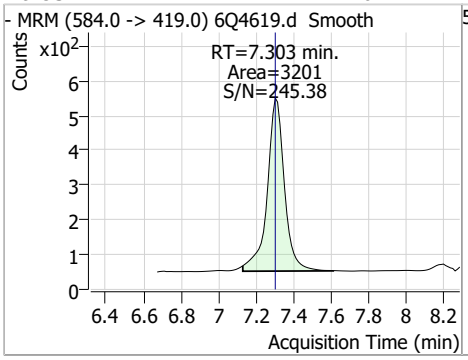
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.10	7.30	0.00	136447				

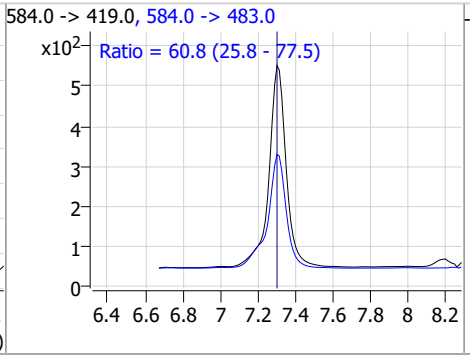


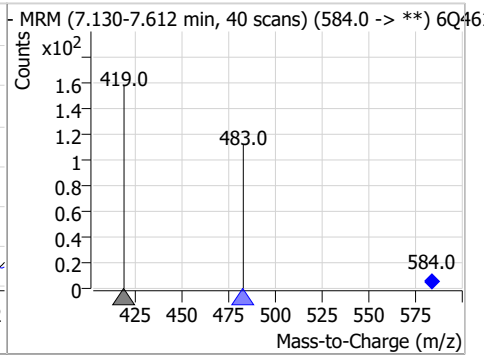




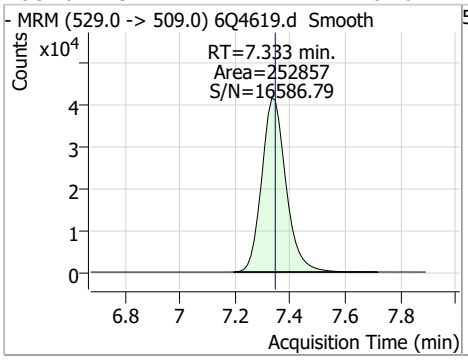
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.44	7.30	0.00	3201	584.0 -> 483.0	60.8	25.8	77.5

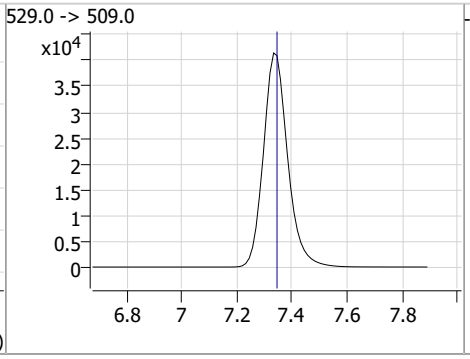


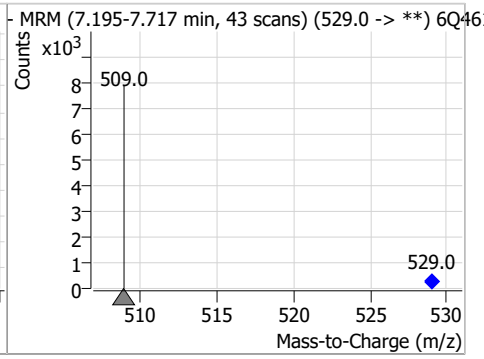




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.40	7.33	-0.01	252857				

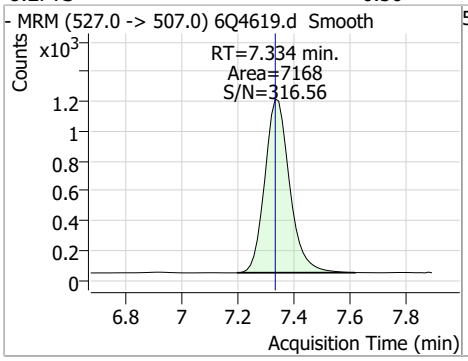


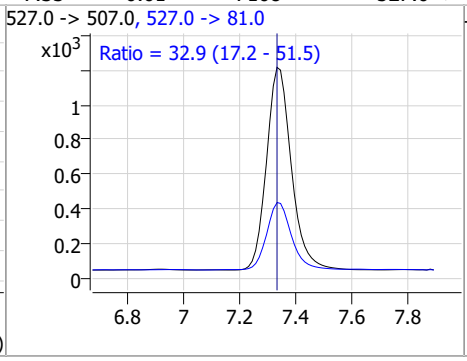


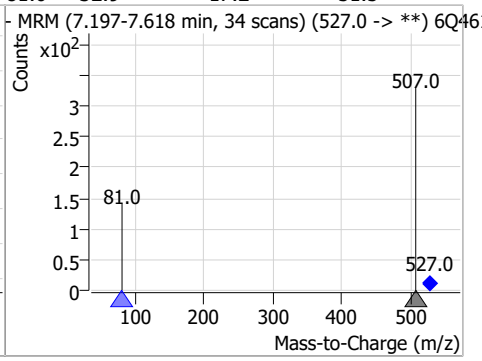


Perfluorinated Compounds by LC/MS/MS

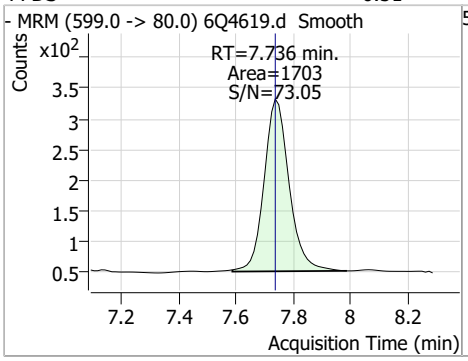
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.56	7.33	-0.01	7168	527.0 -> 81.0	32.9	17.2	51.5

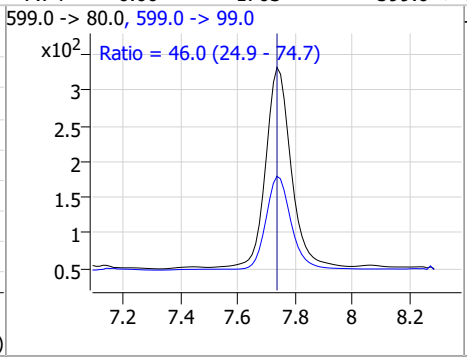


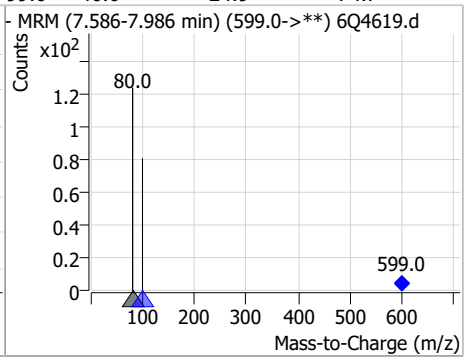




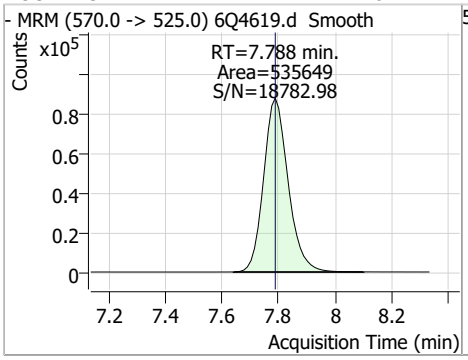
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.51	7.74	0.00	1703	599.0 -> 99.0	46.0	24.9	74.7

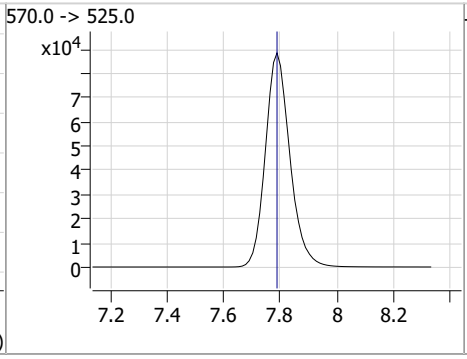


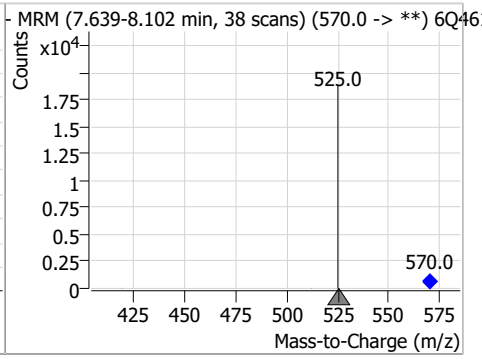




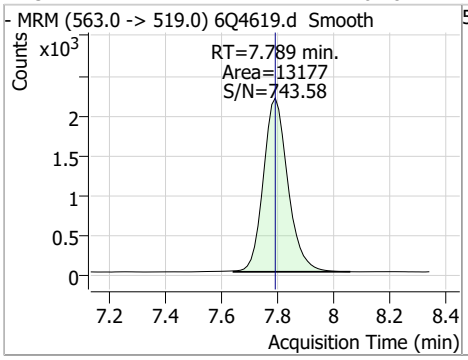
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.17	7.79	0.00	535649				

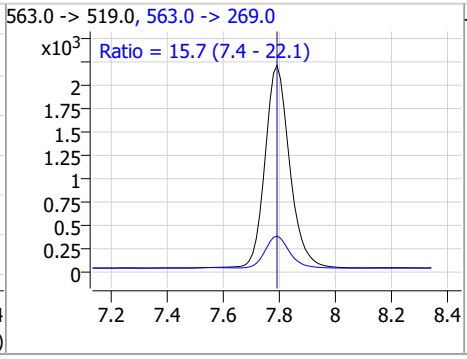


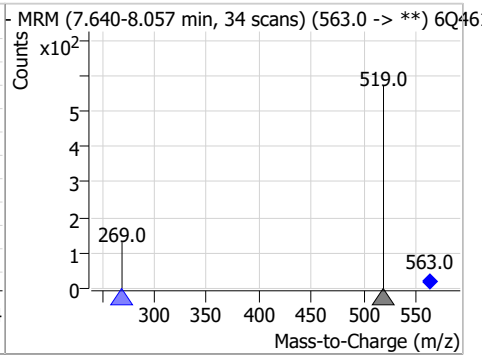




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.48	7.79	0.00	13177	563.0 -> 269.0	15.7	7.4	22.1





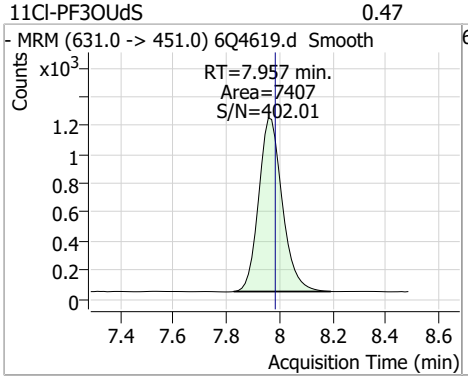


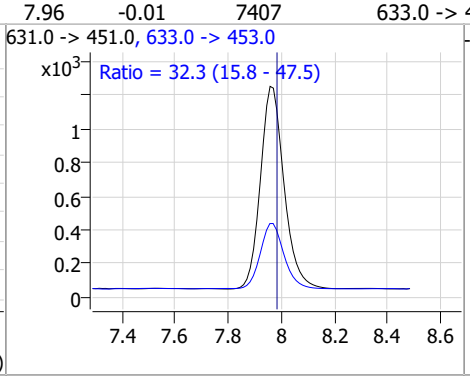
7.7.81

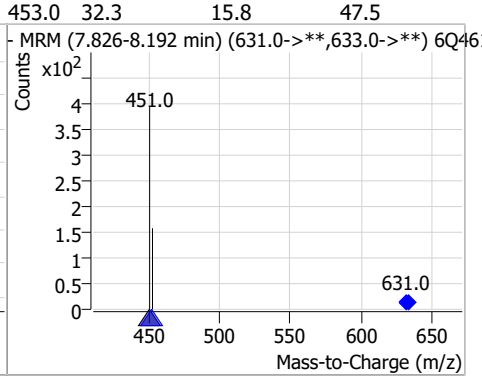
7

Perfluorinated Compounds by LC/MS/MS

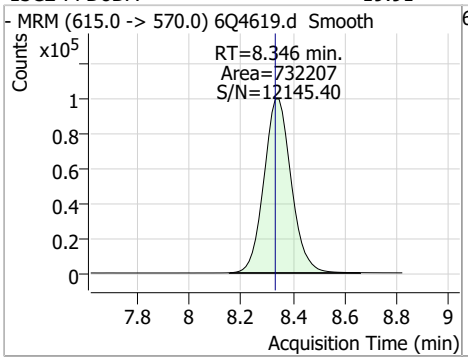
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.47	7.96	-0.01	7407	633.0 -> 453.0	32.3	15.8	47.5

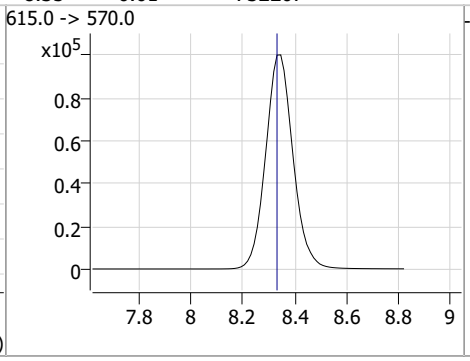


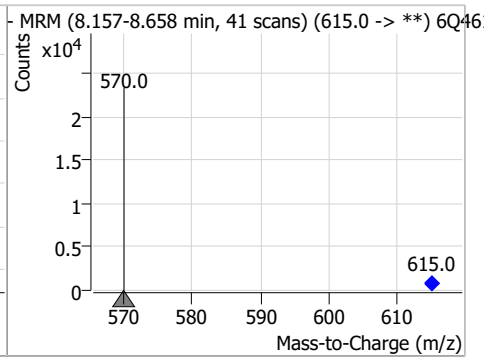




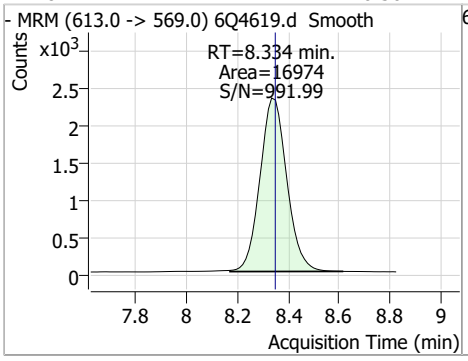
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.91	8.35	0.01	732207				

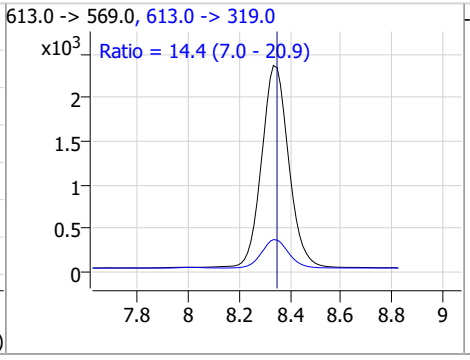


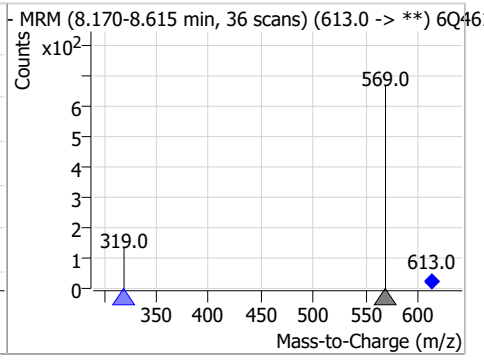




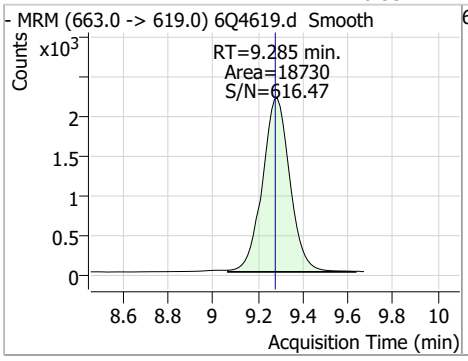
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.50	8.33	0.00	16974	613.0 -> 319.0	14.4	7.0	20.9

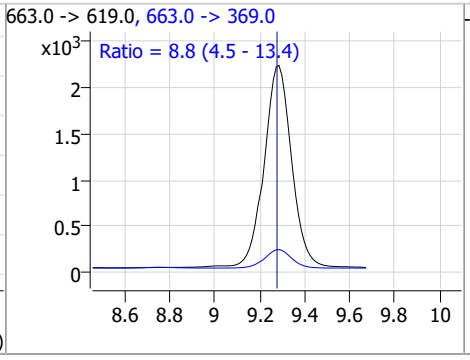


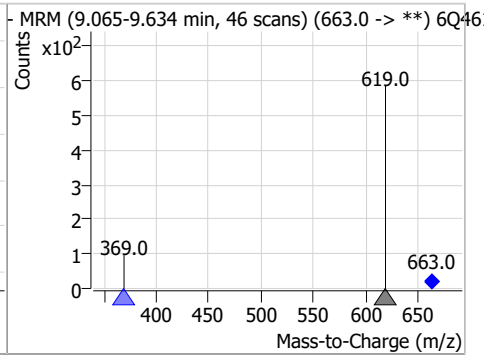




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.53	9.29	0.02	18730	663.0 -> 369.0	8.8	4.5	13.4

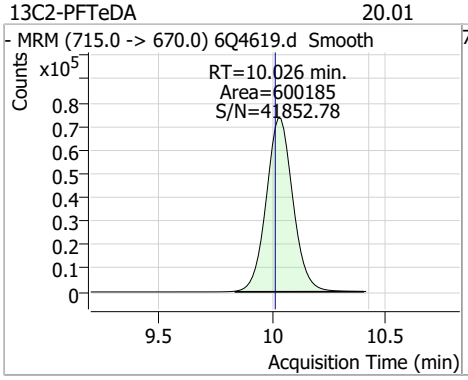


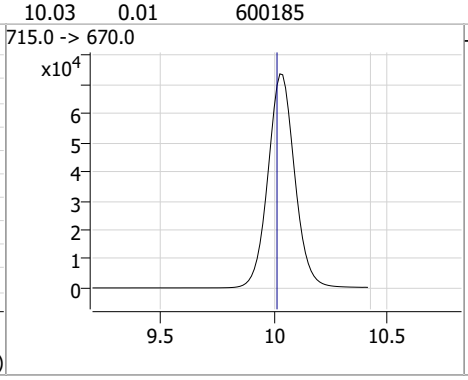


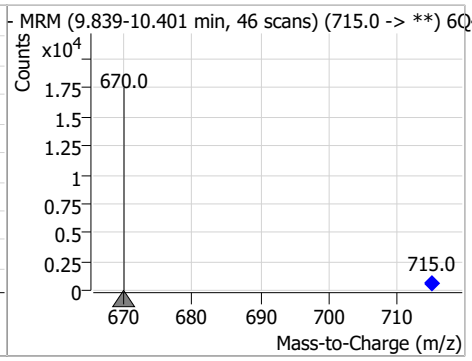


Perfluorinated Compounds by LC/MS/MS

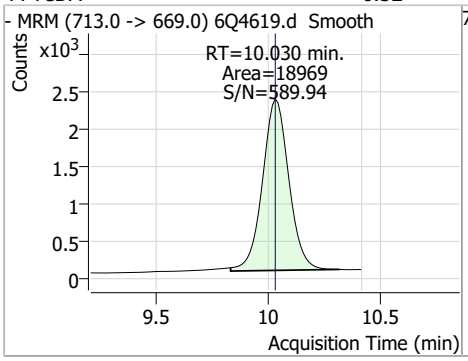
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.01	10.03	0.01	600185				

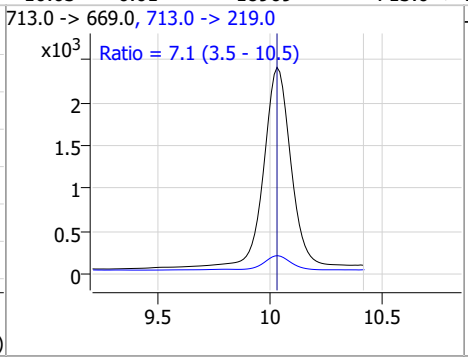


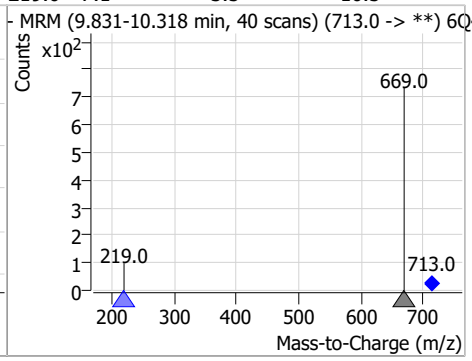




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.52	10.03	0.01	18969	713.0 -> 219.0	7.1	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4619.D
Injection Time: 09/14/22 10:43
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4620.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 10:59:55 AM
Sample Name : ic85-1
Vial : P1-A3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	80332	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	140834	20.00	µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	218834	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	245317	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	441087	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	513666	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	399825	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	524263	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	736388	20.00	µg/L	0.000
M2-PFTeDA	10.026	715.0 -> 670.0	608567	20.00	µg/L	0.012
M8-FOSA	6.654	506.0 -> 78.0	185940	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	30685	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	28688	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	41996	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	262239	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	326590	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	247061	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	167942	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5153	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	40742	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	143304	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	262239	19.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	326590	19.13	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C2-8:2FTS	7.333	529.0 -> 509.0	247061	18.95	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-PFDoDA	8.332	615.0 -> 570.0	736388	20.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-PFTeDA	10.026	715.0 -> 670.0	608567	20.29	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C3-PFBS	3.622	302.0 -> 99.0	30685	20.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-PFHxS	5.463	402.0 -> 99.0	28688	20.75	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C4-PFBA	1.949	217.0 -> 172.0	80332	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	245317	19.83	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C5-PFHxA	4.561	318.0 -> 273.0	218834	20.47	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	140834	20.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C6-PFDA	7.297	519.0 -> 474.0	399825	19.65	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

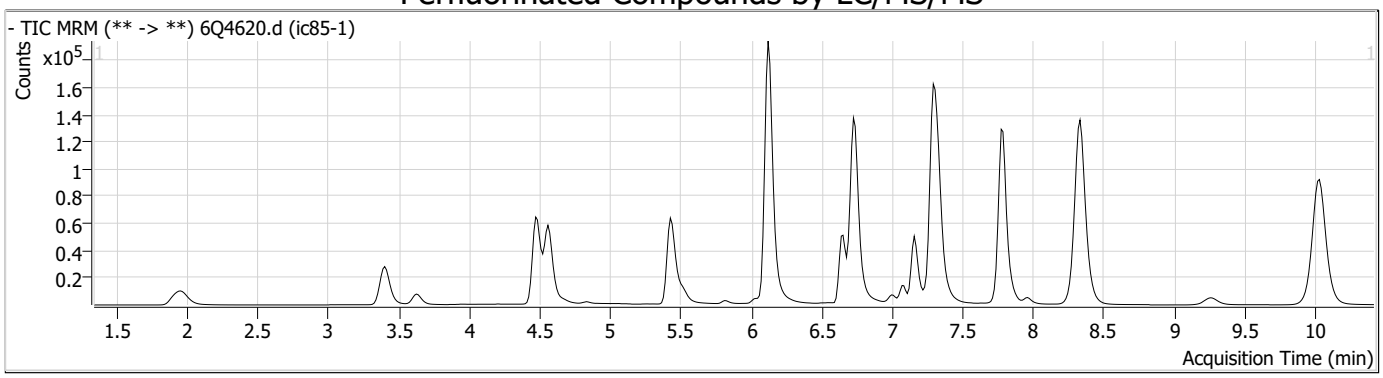
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
13C7-PFUnDA	7.788	570.0 -> 525.0	524263	19.75	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%			
13C8-FOSA	6.654	506.0 -> 78.0	185940	19.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C8-PFOA	6.138	421.0 -> 376.0	441087	20.79	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%			
13C8-PFOS	6.717	507.0 -> 99.0	41996	19.80	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%			
13C9-PFNA	6.745	472.0 -> 427.0	513666	19.94	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%			
d3-MeFOSAA	7.155	573.0 -> 419.0	167942	19.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.0%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	5170	19.45	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
d3-MeFOSA	7.085	515.0 -> 169.0	40742	18.01	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 90.0%			
d5-EtFOSAA	7.302	589.0 -> 419.0	143312	21.11	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%			
Target Compounds							QValue
4:2FTS	4.472	327.0 -> 307.0	13890	0.98	µg/L		99
		327.0 -> 81.0	4642				
6:2FTS	6.124	427.0 -> 407.0	15951	0.96	µg/L		96
		427.0 -> 81.0	4088				
8:2FTS	7.334	527.0 -> 507.0	12485	1.00	µg/L		97
		527.0 -> 81.0	4090				
EtFOSAA	7.303	584.0 -> 419.0	6020	0.79	µg/L		86
		584.0 -> 483.0	3691				
FOSA	6.656	498.0 -> 78.0	9019	0.97	µg/L		99
		498.0 -> 478.0	316				
MeFOSAA	7.168	570.0 -> 419.0	7295	0.95	µg/L		99
		570.0 -> 512.0	2279				
PFBA	1.943	213.0 -> 169.0	1578	0.90	µg/L		100
PFBS	3.627	299.0 -> 80.0	4567	0.90	µg/L		100
		299.0 -> 99.0	1728				
PFDA	7.298	513.0 -> 469.0	25829	0.88	µg/L		98
		513.0 -> 219.0	3825				
PFDoDA	8.334	613.0 -> 569.0	30974	0.90	µg/L		99
		613.0 -> 319.0	4465				
PFDS	7.736	599.0 -> 80.0	3165	0.97	µg/L		92
		599.0 -> 99.0	1408				
PFHpA	5.434	363.0 -> 319.0	14671	0.92	µg/L		100
		363.0 -> 169.0	2171				
PFHpS	6.136	449.0 -> 80.0	3543	0.97	µg/L		96
		449.0 -> 99.0	1774				
PFHxA	4.562	313.0 -> 269.0	10030	0.87	µg/L		99
		313.0 -> 119.0	290				
PFHxS	5.465	399.0 -> 80.0	3687	0.90	µg/L	m	91
		399.0 -> 99.0	1556				
PFNA	6.745	463.0 -> 419.0	20303	0.84	µg/L		100
		463.0 -> 219.0	3766				
PFNS	7.256	549.0 -> 80.0	4020	0.94	µg/L		94
		549.0 -> 99.0	2031				
PFOA	6.138	413.0 -> 369.0	20169	0.85	µg/L		98
		413.0 -> 169.0	3296				
PFOS	6.719	499.0 -> 80.0	3582	0.92	µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

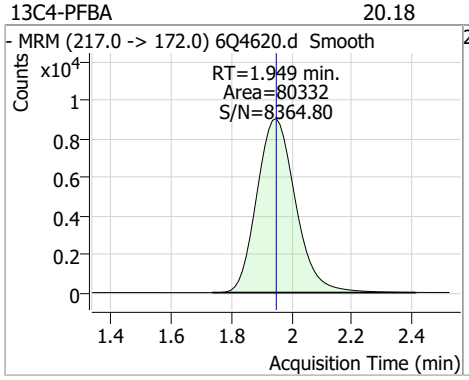
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1836			
PFPeA	3.408	263.0 -> 219.0	5476	0.92	µg/L	100
PFPeS	4.668	349.0 -> 80.0	3778	0.89	µg/L	98
		349.0 -> 99.0	1765			
PFTeDA	10.030	713.0 -> 669.0	33646	0.90	µg/L	100
		713.0 -> 219.0	2372			
PFTrDA	9.260	663.0 -> 619.0	34280	0.96	µg/L	99
		663.0 -> 369.0	2964			
PFUnDA	7.789	563.0 -> 519.0	24926	0.92	µg/L	99
		563.0 -> 269.0	3567			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	14467	0.92	µg/L	96
		633.0 -> 453.0	4269			
9Cl-PF3ONS	7.009	531.0 -> 351.0	18109	0.89	µg/L	100
		533.0 -> 353.0	5601			
ADONA	5.532	377.0 -> 251.0	23023	0.87	µg/L	97
		377.0 -> 85.0	5848			
HFPO-DA	4.840	285.0 -> 169.0	266	1.09	µg/L	93
		285.0 -> 185.0	29			
MeFOSA	7.086	512.0 -> 169.0	2162	0.97	µg/L	87
		512.0 -> 219.0	1824			
4-PFECHS	6.032	461.0 -> 381.0	11735	0.83	µg/L	100
		461.0 -> 99.0	3940			
FBSA	4.514	298.0 -> 78.0	9771	0.92	µg/L	99
		298.0 -> 64.0	691			
FHxSA	5.828	398.0 -> 78.0	8396	0.86	µg/L	99
		398.0 -> 64.0	319			

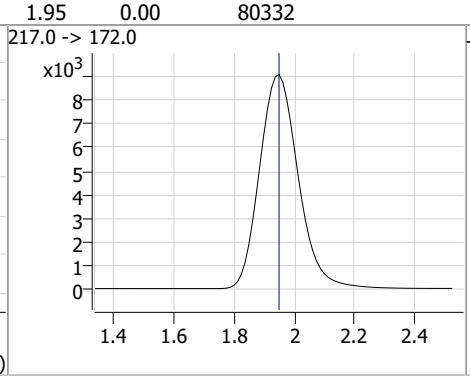
 # = Qualifier out of range, m = manually integrated, + = Area summed

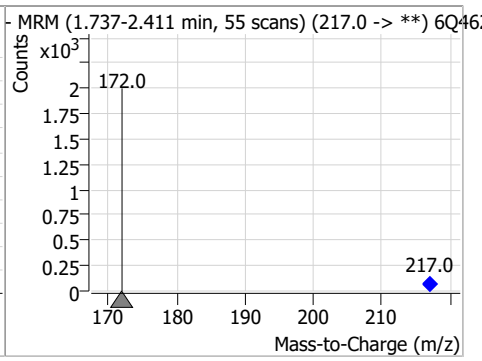
Perfluorinated Compounds by LC/MS/MS



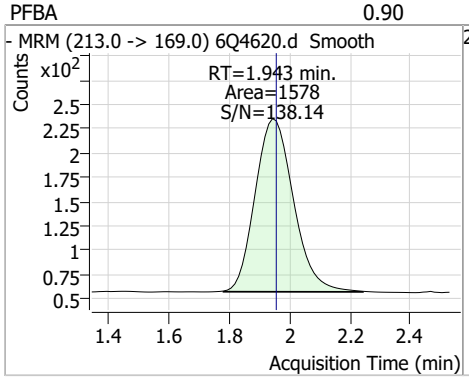
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.18	1.95	0.00	80332				

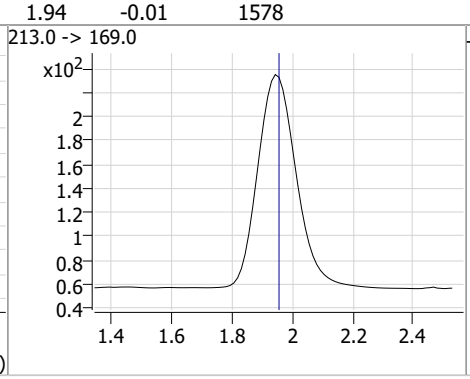


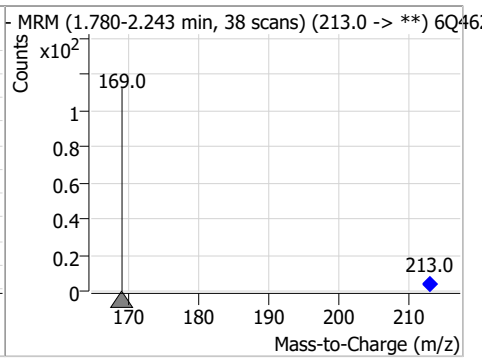




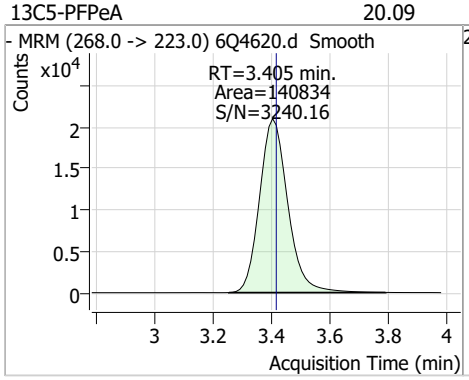
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.90	1.94	-0.01	1578				

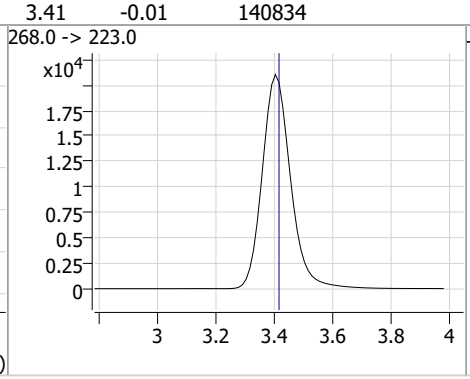


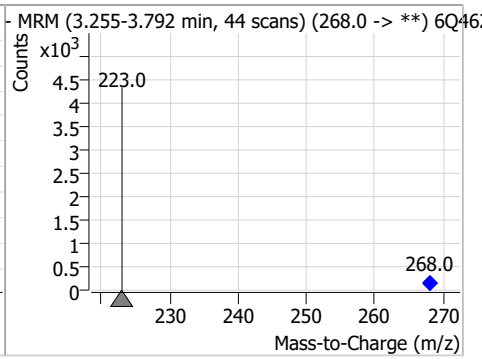




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.09	3.41	-0.01	140834				

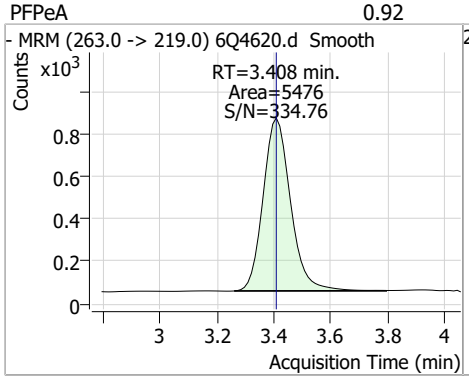


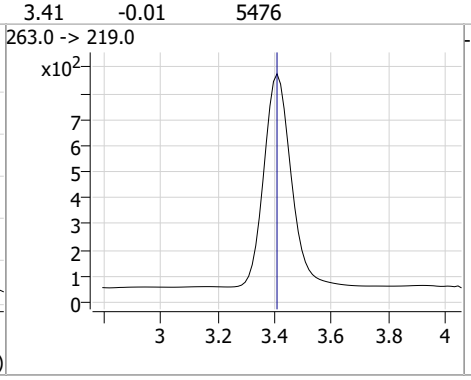


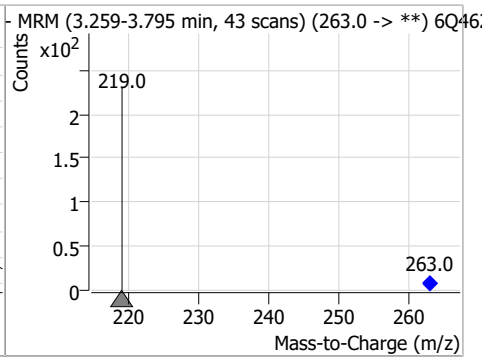


Perfluorinated Compounds by LC/MS/MS

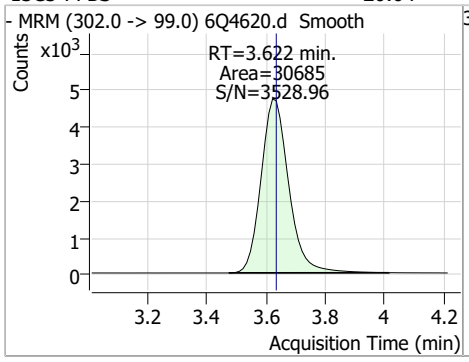
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.92	3.41	-0.01	5476				

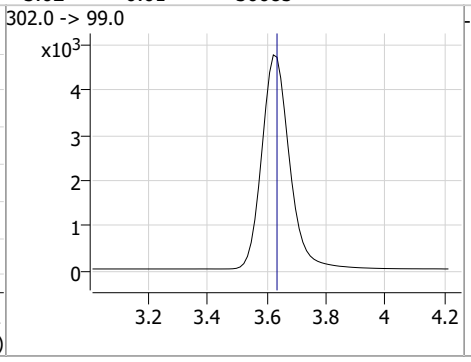


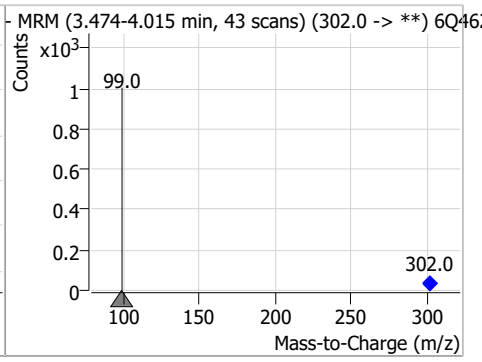




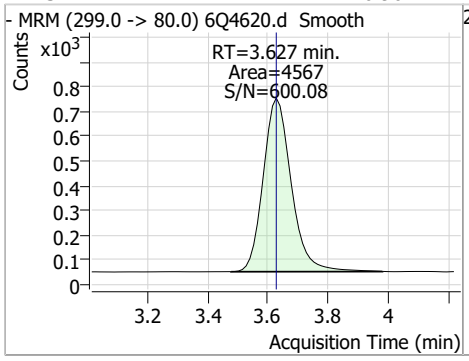
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.04	3.62	-0.01	30685				

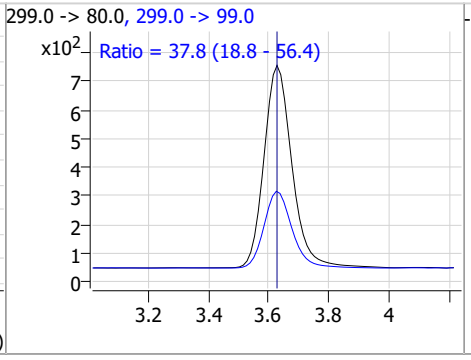


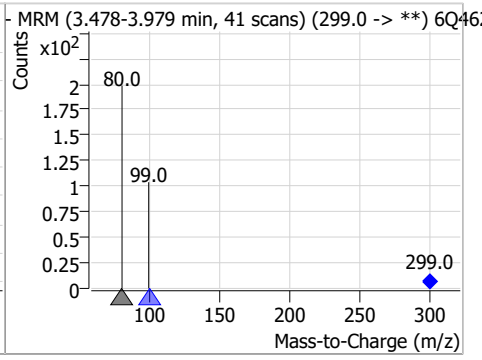




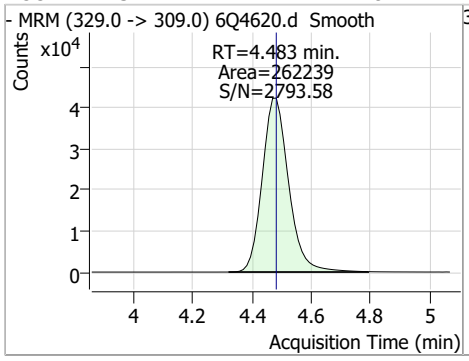
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.90	3.63	-0.01	4567	299.0 -> 99.0	37.8	18.8	56.4

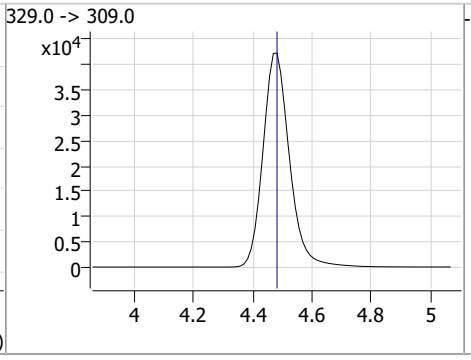


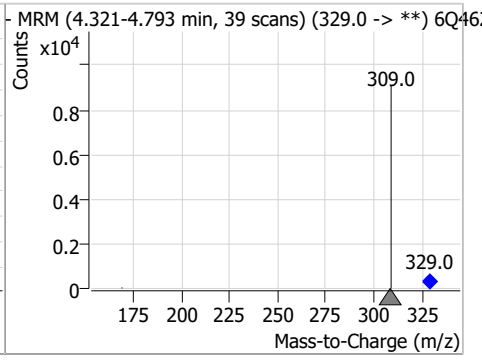




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.42	4.48	0.00	262239				

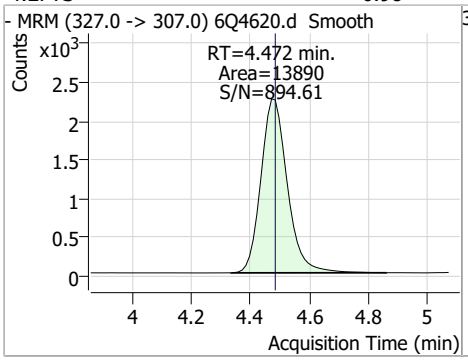


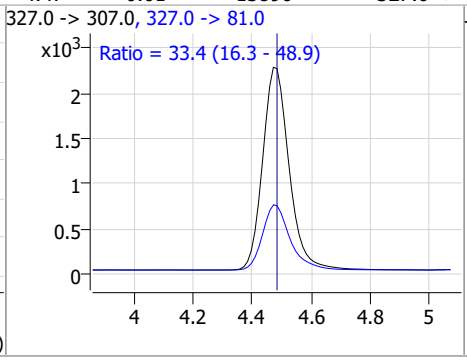


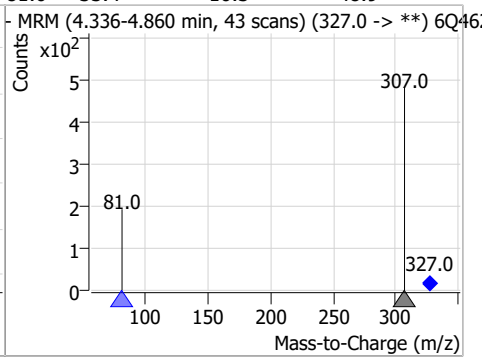


Perfluorinated Compounds by LC/MS/MS

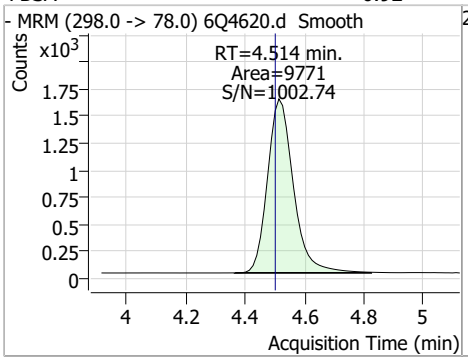
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.98	4.47	-0.01	13890	327.0 -> 81.0	33.4	16.3	48.9

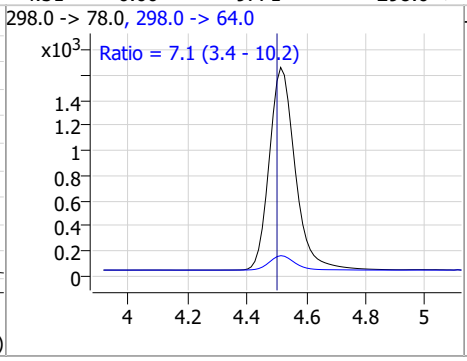


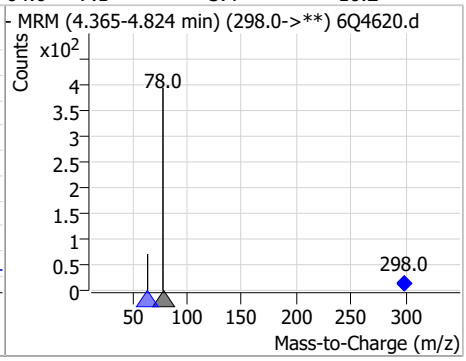




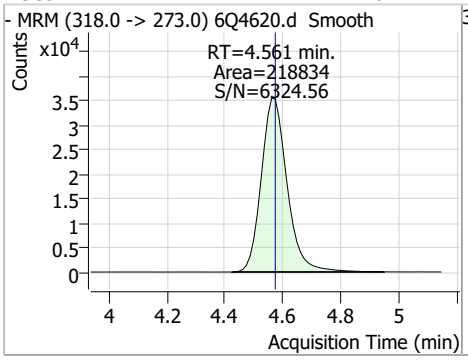
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.92	4.51	0.00	9771	298.0 -> 64.0	7.1	3.4	10.2

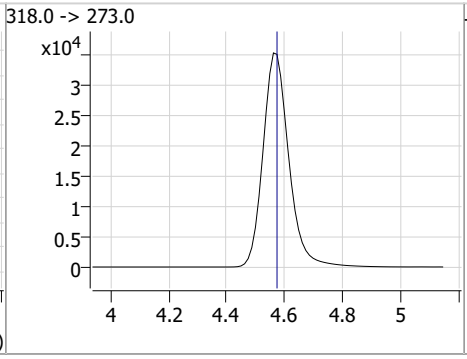


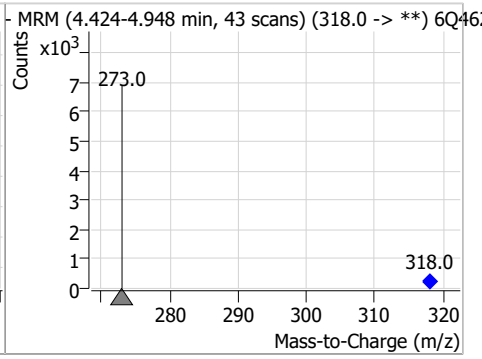




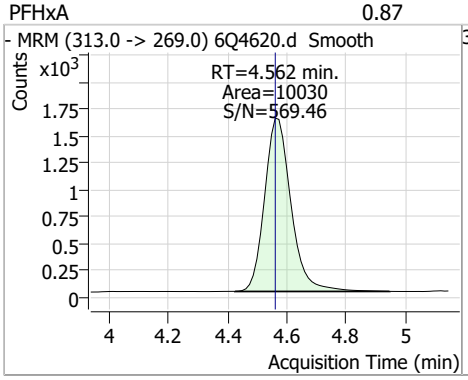
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.47	4.56	-0.01	218834				

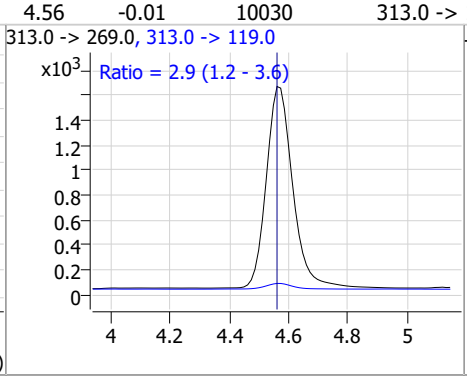


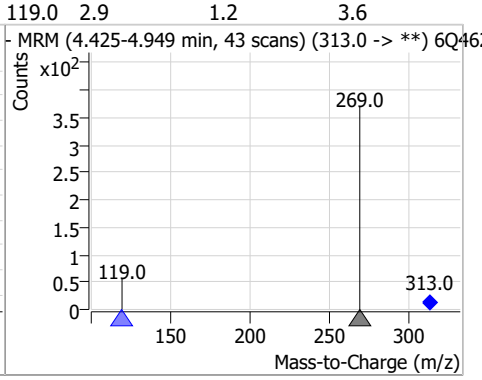




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.87	4.56	-0.01	10030	313.0 -> 119.0	2.9	1.2	3.6

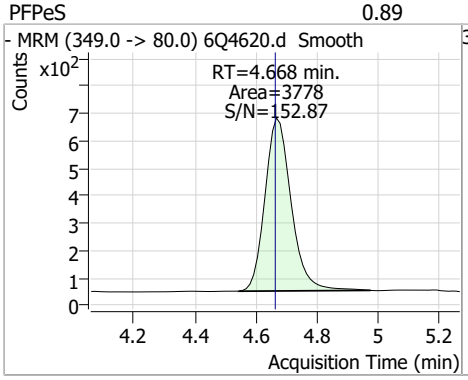


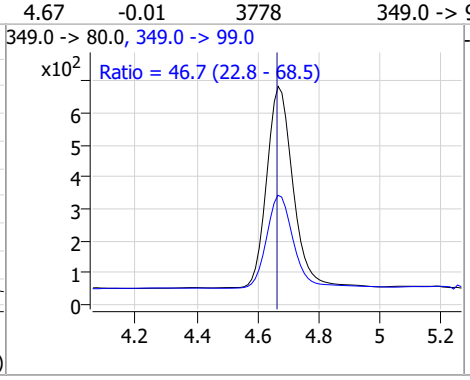


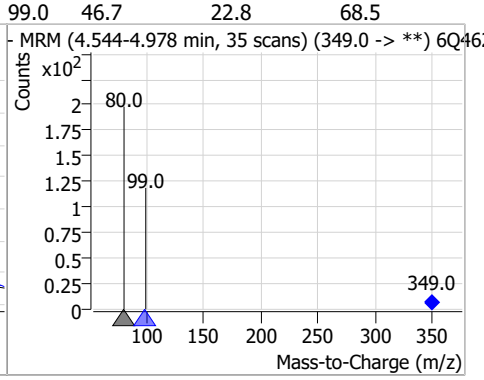


Perfluorinated Compounds by LC/MS/MS

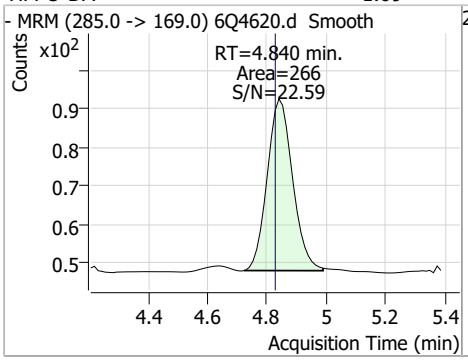
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.89	4.67	-0.01	3778	349.0 -> 99.0	46.7	22.8	68.5

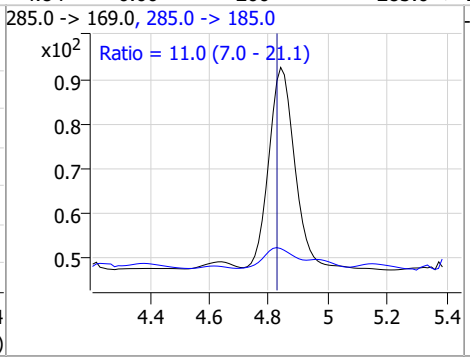


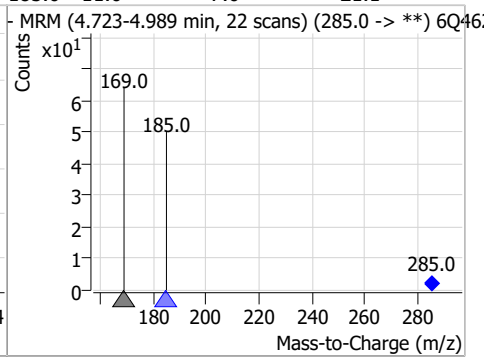




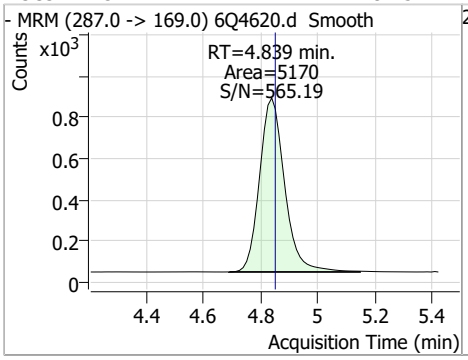
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	1.09	4.84	0.00	266	285.0 -> 185.0	11.0	7.0	21.1

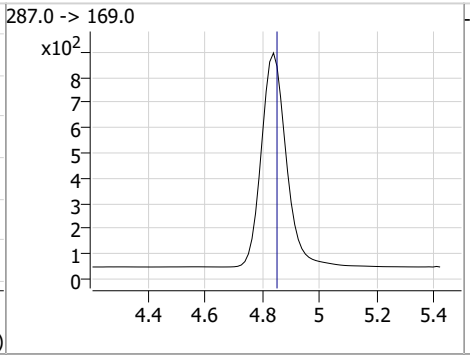


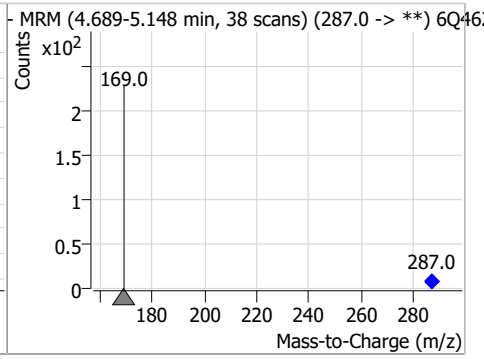




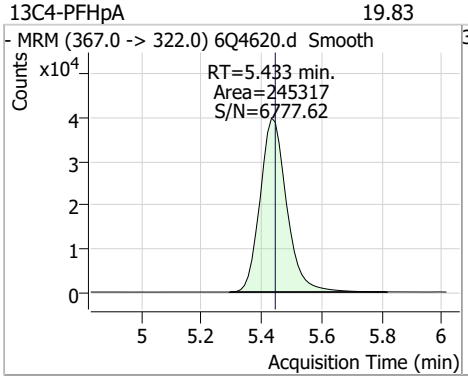
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.45	4.84	-0.01	5170				

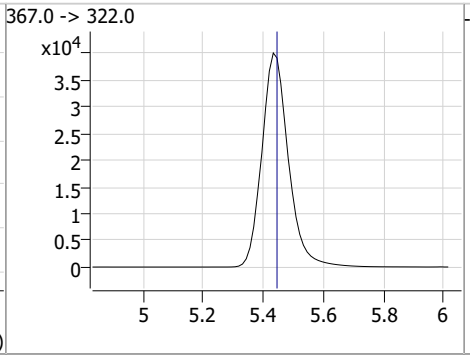


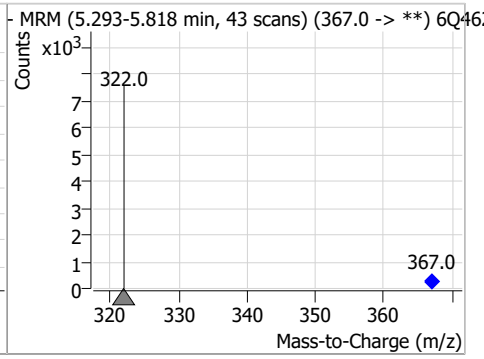




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.83	5.43	-0.01	245317				

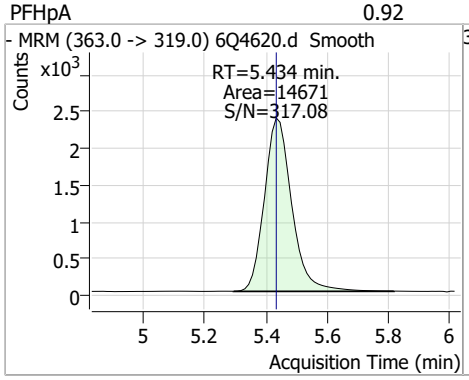


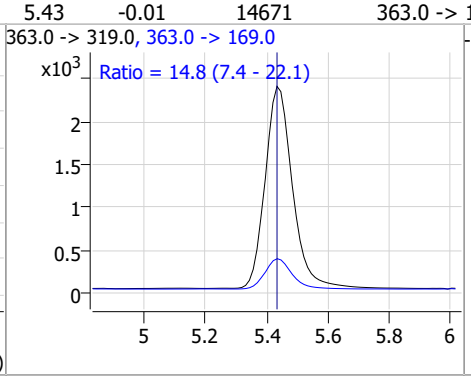


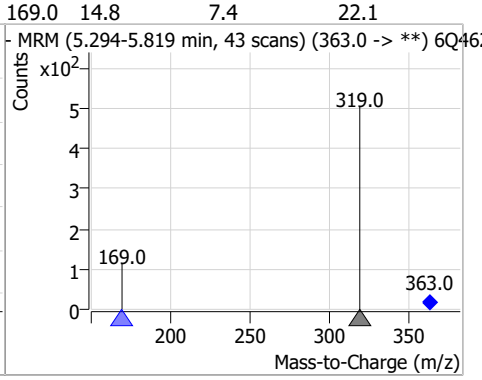


Perfluorinated Compounds by LC/MS/MS

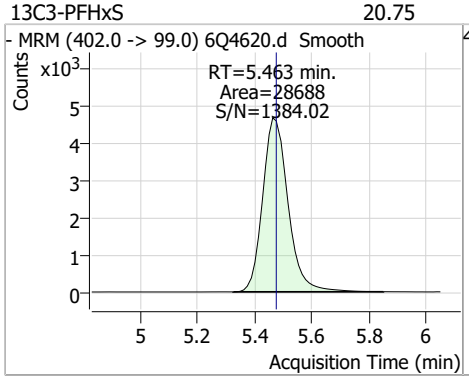
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.92	5.43	-0.01	14671	363.0 -> 169.0	14.8	7.4	22.1

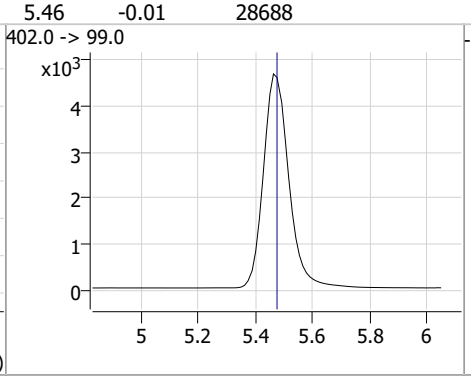


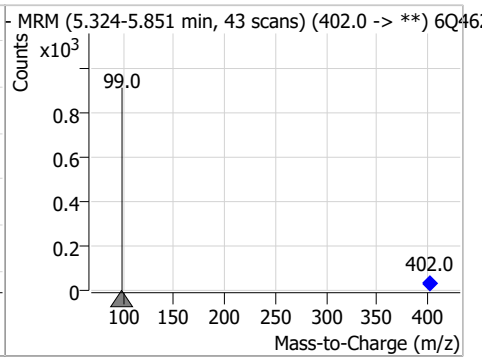




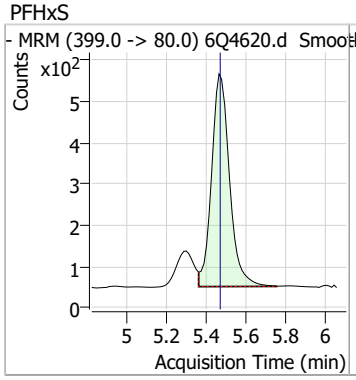
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.75	5.46	-0.01	28688				

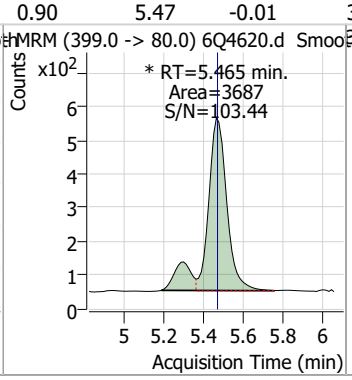


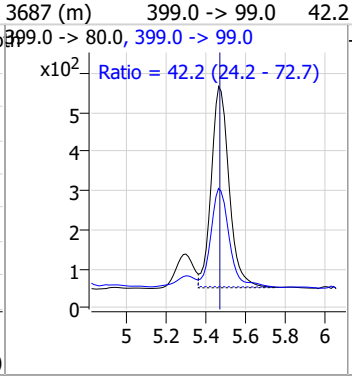


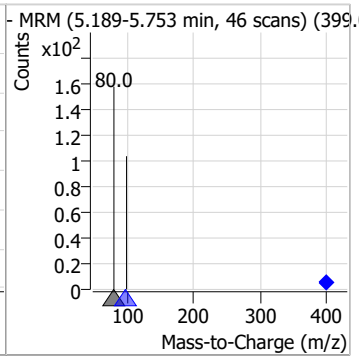


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.90	5.47	-0.01	3687 (m)	399.0 -> 99.0	42.2	24.2	72.7

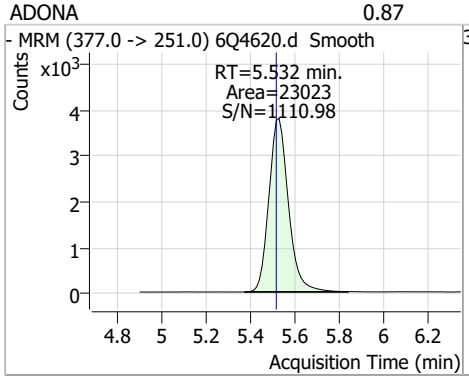


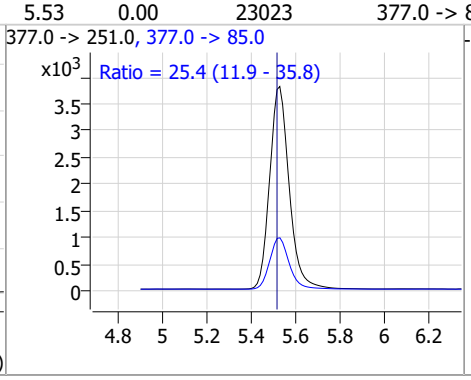


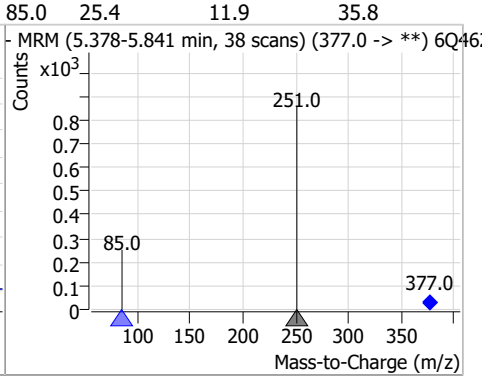




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.87	5.53	0.00	23023	377.0 -> 85.0	25.4	11.9	35.8

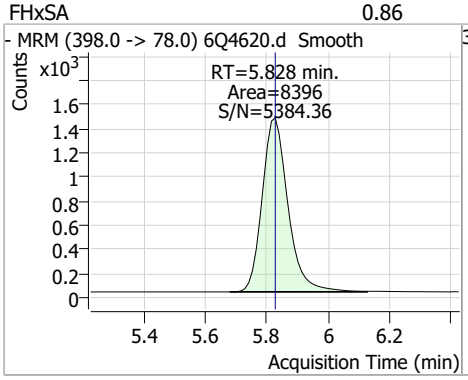


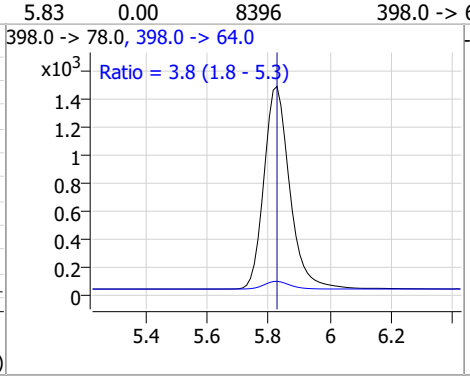


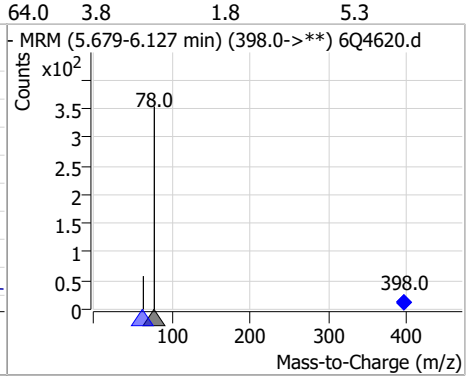


Perfluorinated Compounds by LC/MS/MS

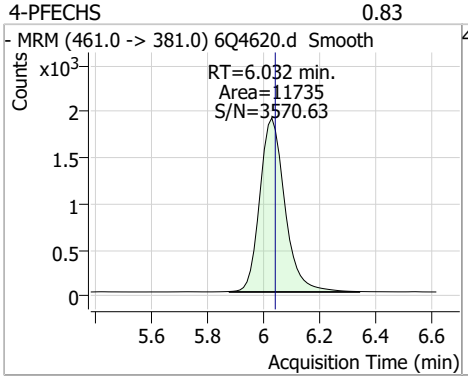
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.86	5.83	0.00	8396	398.0 -> 64.0	3.8	1.8	5.3

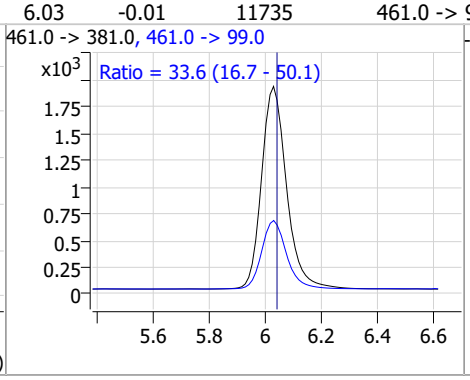


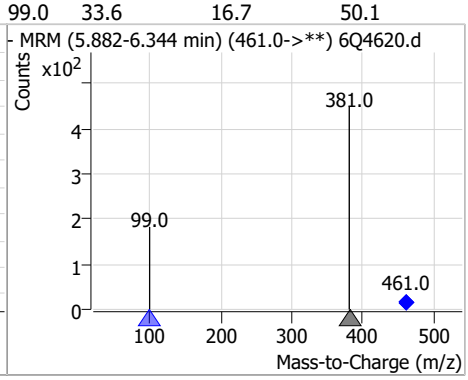




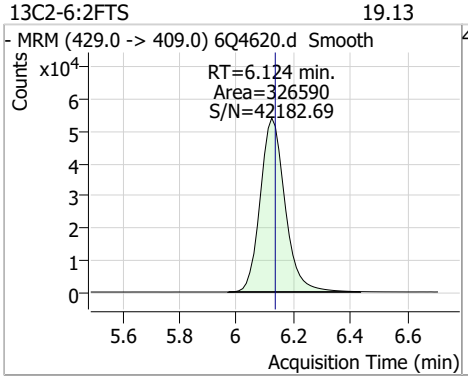
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.83	6.03	-0.01	11735	461.0 -> 99.0	33.6	16.7	50.1

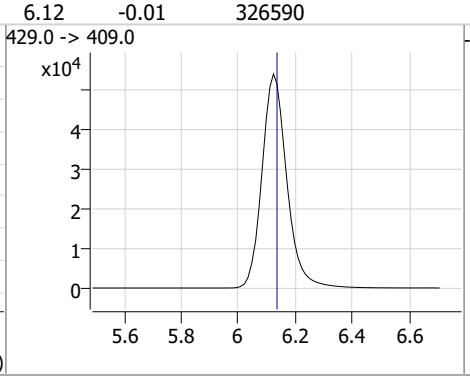


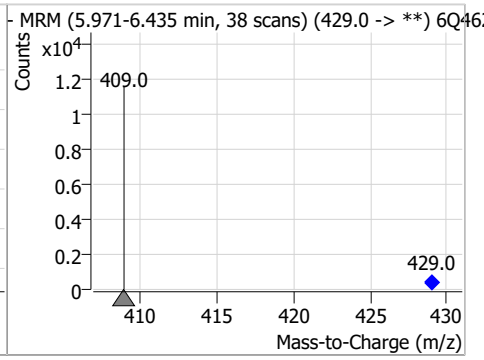




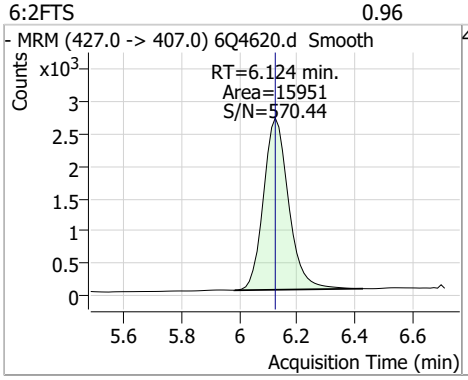
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.13	6.12	-0.01	326590				

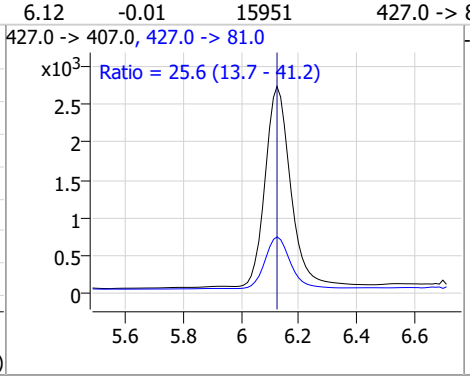


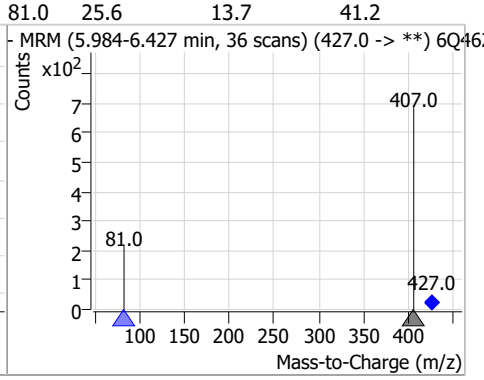




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.96	6.12	-0.01	15951	427.0 -> 81.0	25.6	13.7	41.2

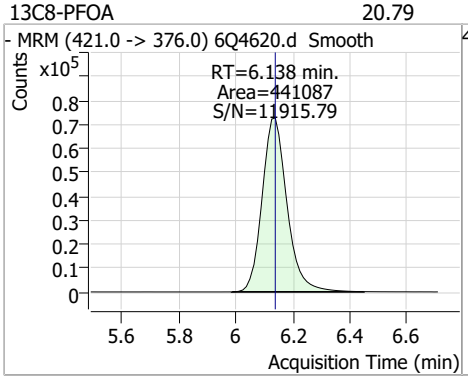


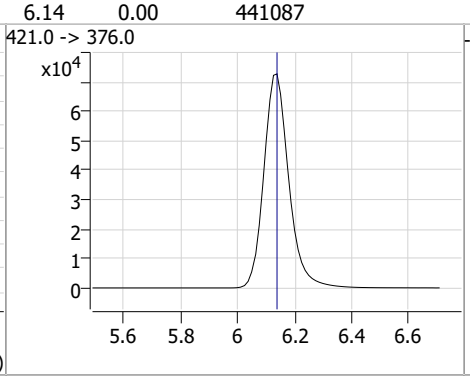


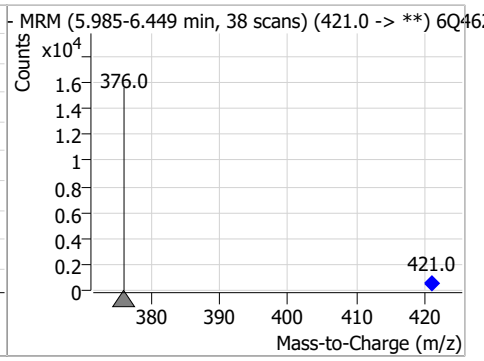


Perfluorinated Compounds by LC/MS/MS

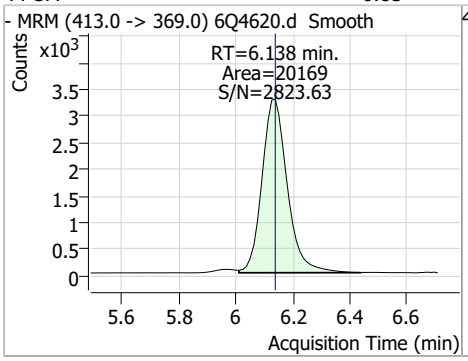
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.79	6.14	0.00	441087				

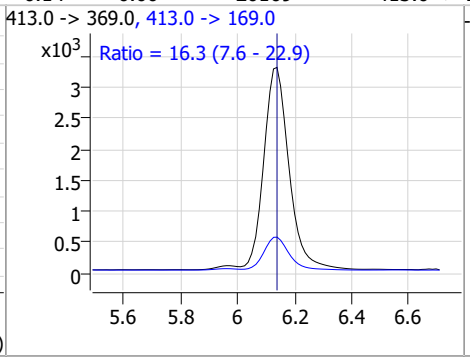


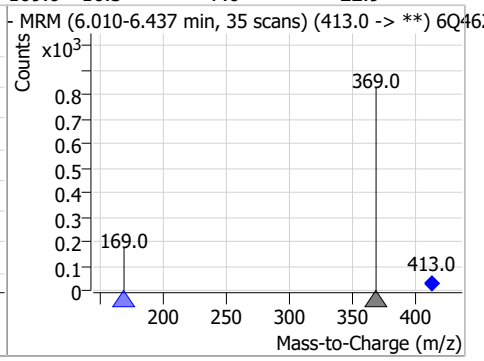




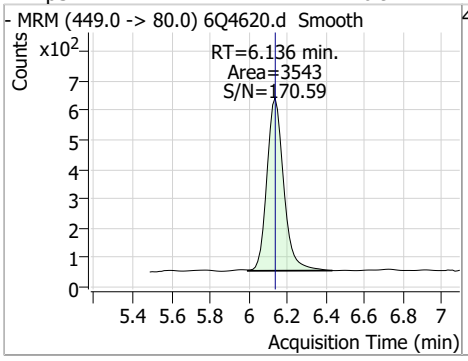
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.85	6.14	0.00	20169	413.0 -> 169.0	16.3	7.6	22.9

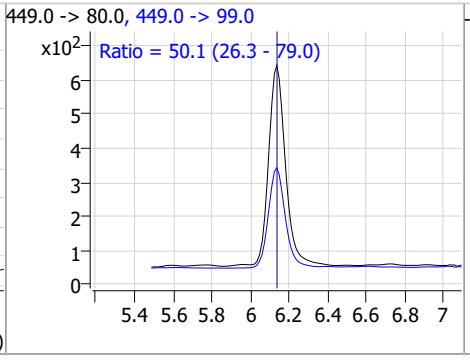


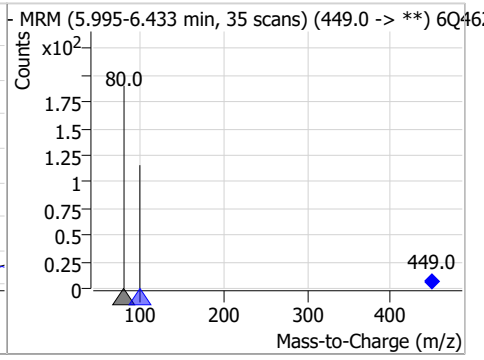




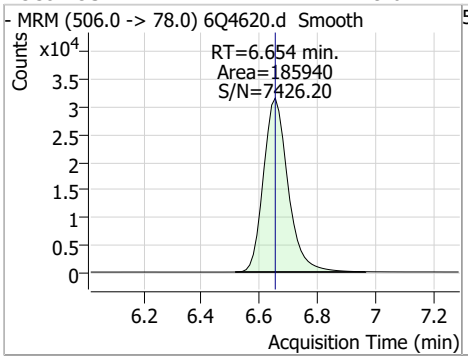
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.97	6.14	-0.01	3543	449.0 -> 99.0	50.1	26.3	79.0

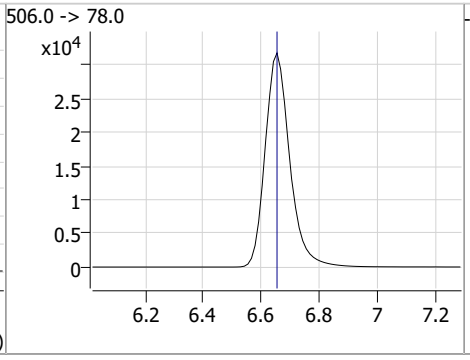


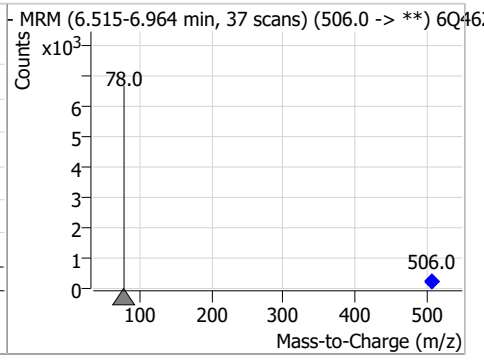




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.01	6.65	0.00	185940				

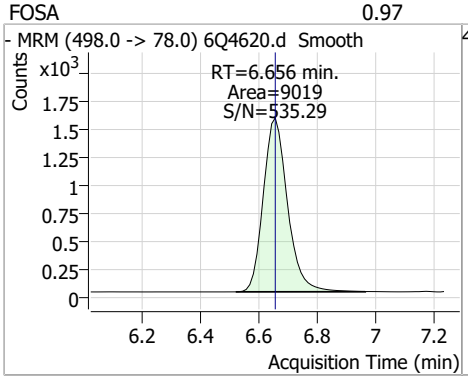


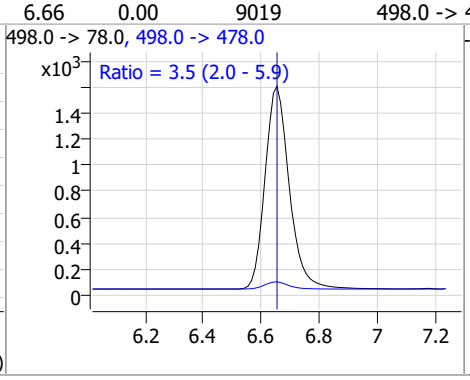


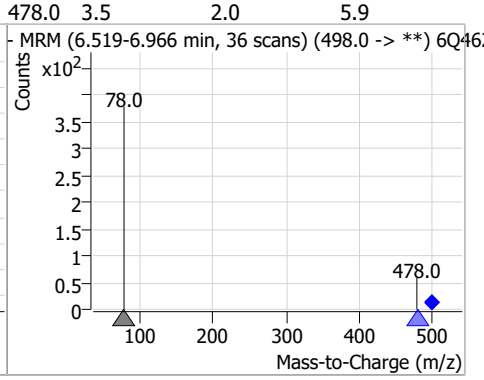


Perfluorinated Compounds by LC/MS/MS

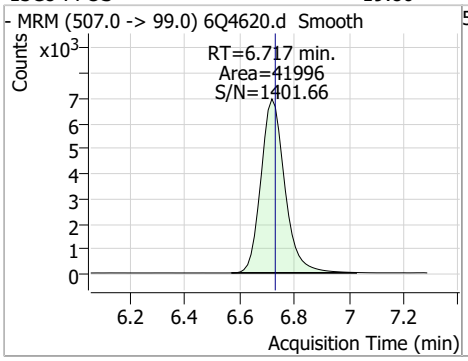
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.97	6.66	0.00	9019	498.0 -> 478.0	3.5	2.0	5.9

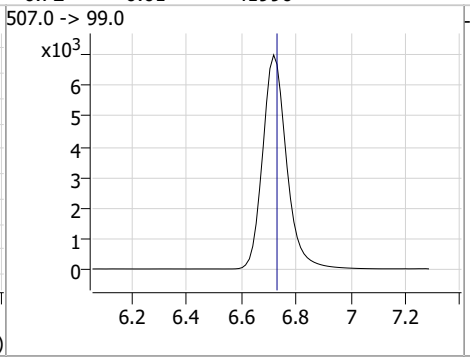


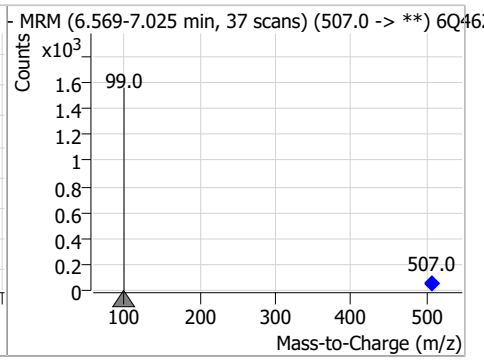




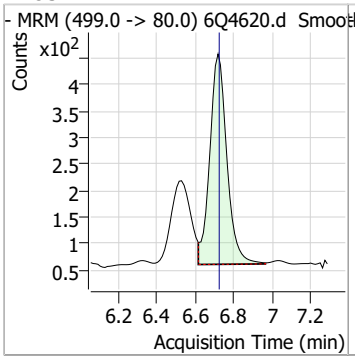
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.80	6.72	-0.01	41996				

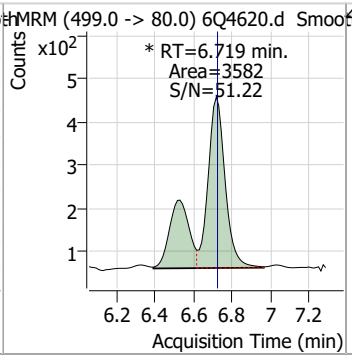


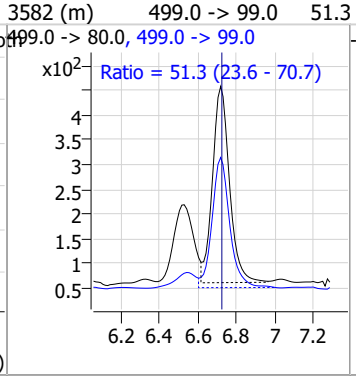


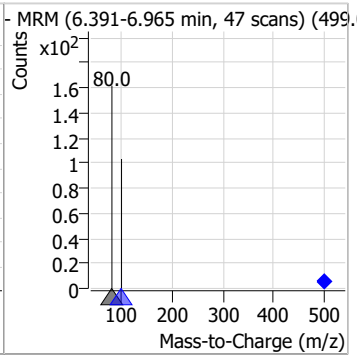


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.92	6.72	-0.01	3582 (m)	499.0 -> 99.0	51.3	23.6	70.7

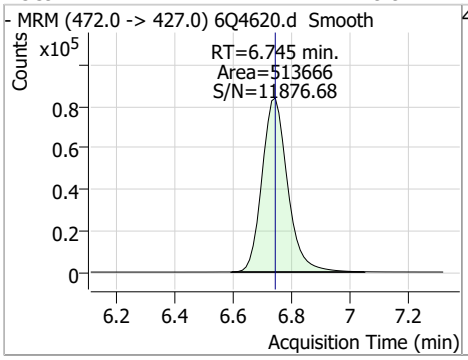


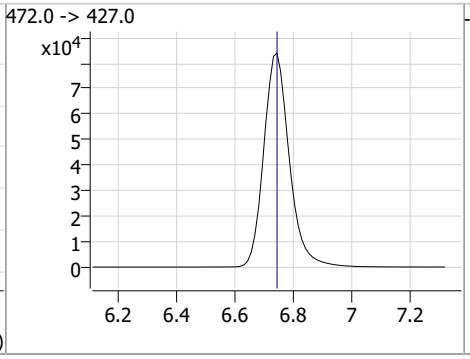


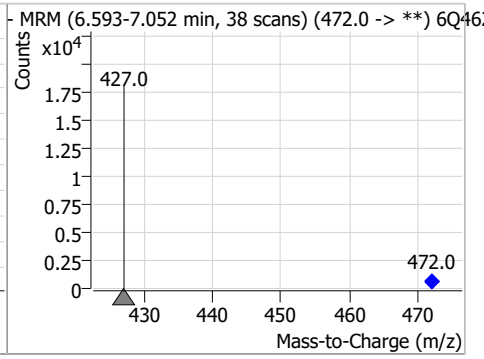




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.94	6.74	0.00	513666				

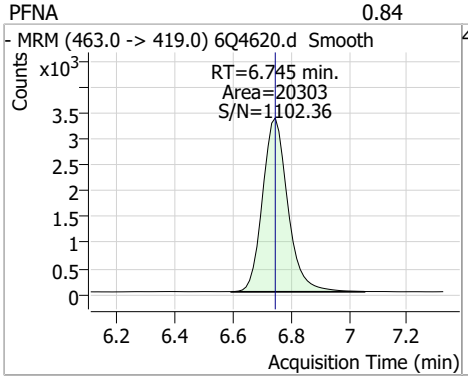


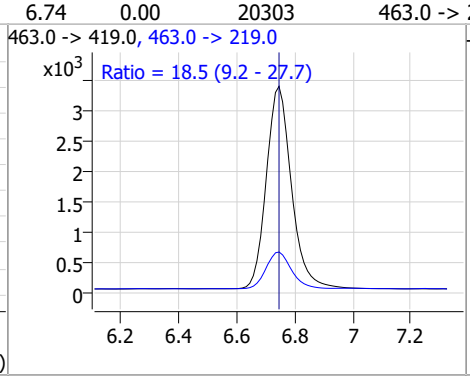


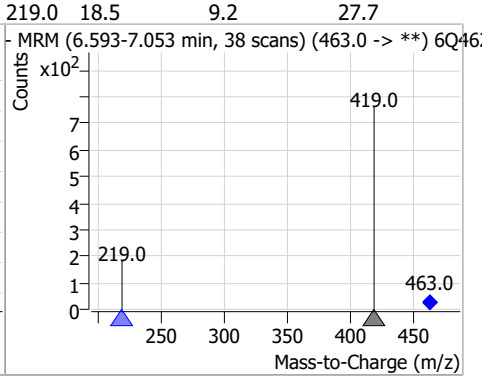


Perfluorinated Compounds by LC/MS/MS

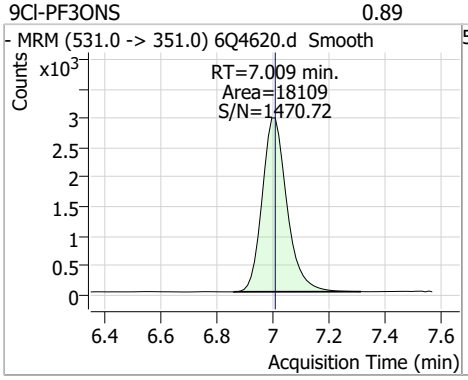
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.84	6.74	0.00	20303	463.0 -> 219.0	18.5	9.2	27.7

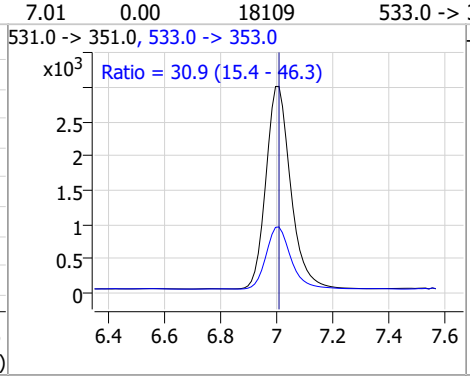


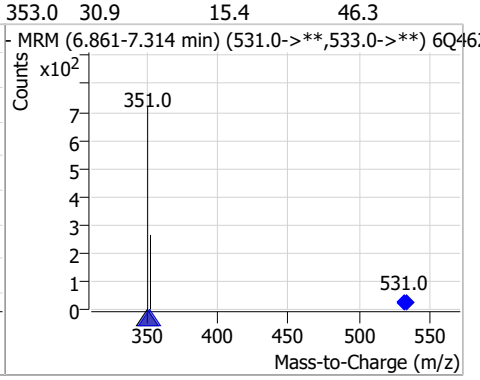




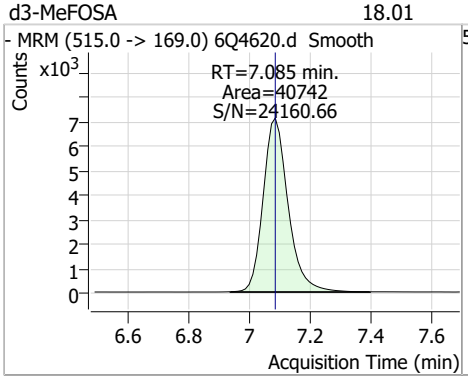
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.89	7.01	0.00	18109	533.0 -> 353.0	30.9	15.4	46.3

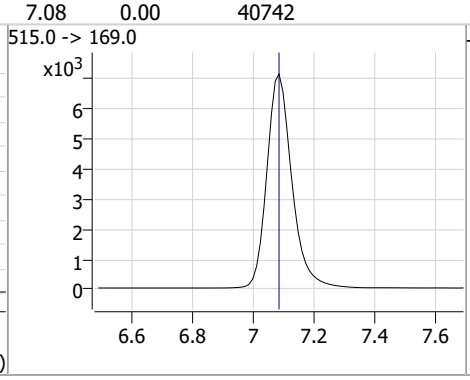


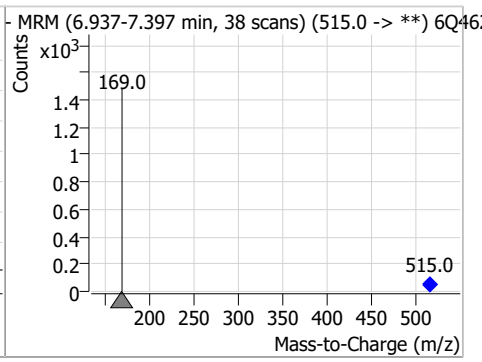




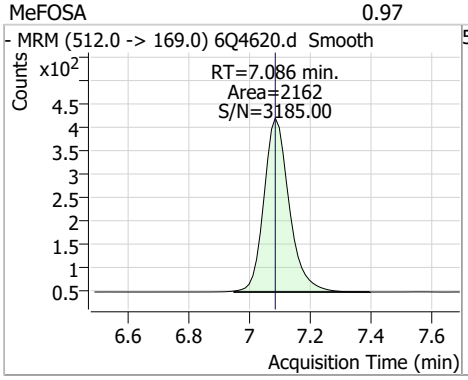
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.01	7.08	0.00	40742				

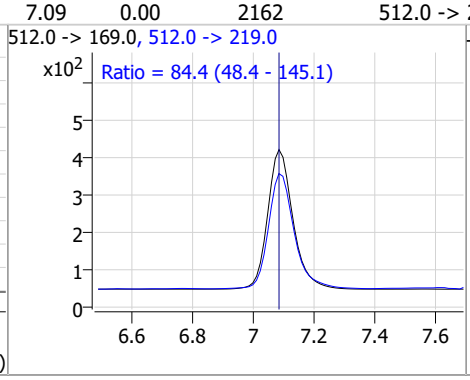


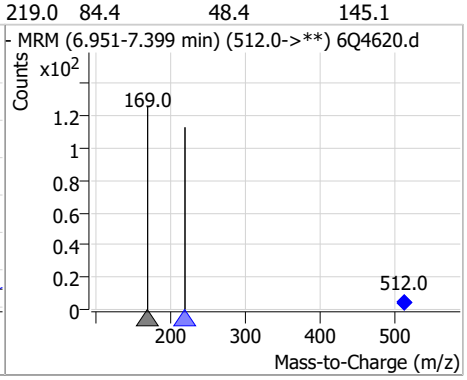




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.97	7.09	0.00	2162	512.0 -> 219.0	84.4	48.4	145.1

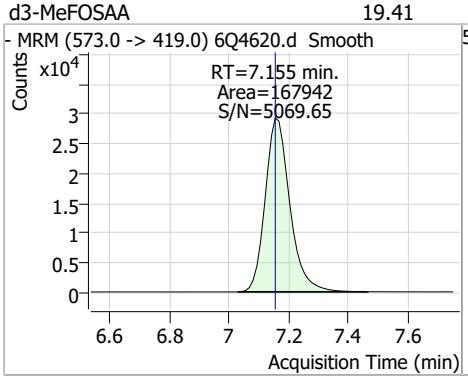


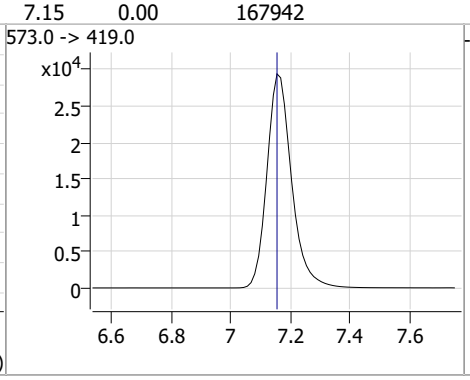


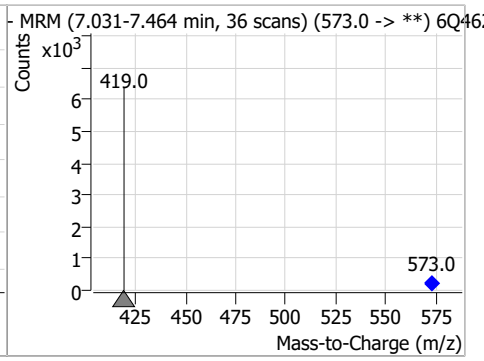


Perfluorinated Compounds by LC/MS/MS

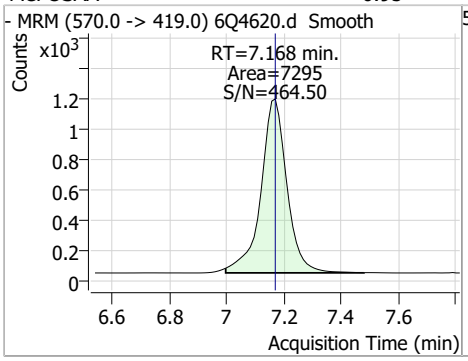
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.41	7.15	0.00	167942				

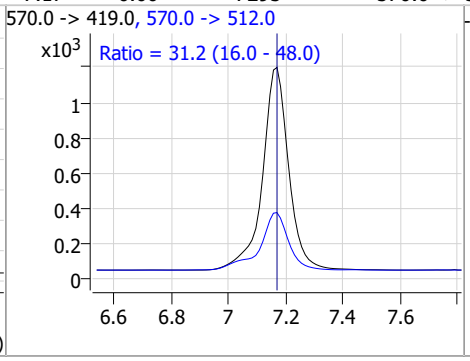


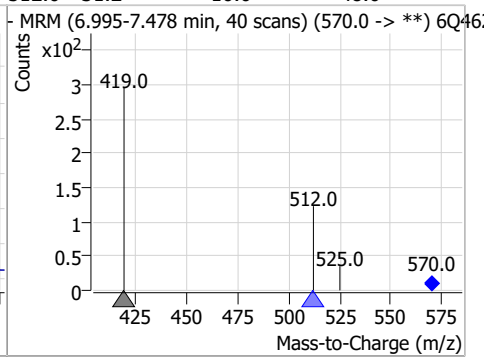




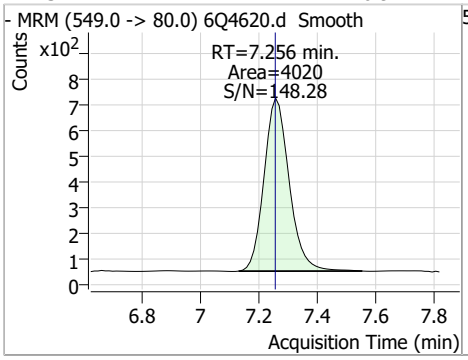
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.95	7.17	0.00	7295	570.0 -> 512.0	31.2	16.0	48.0

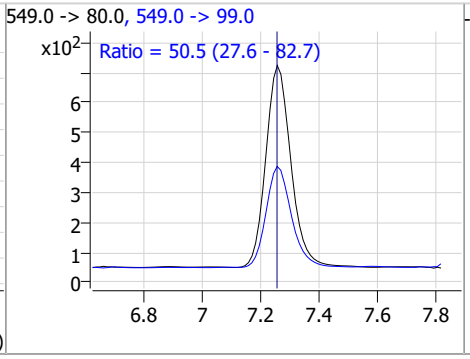


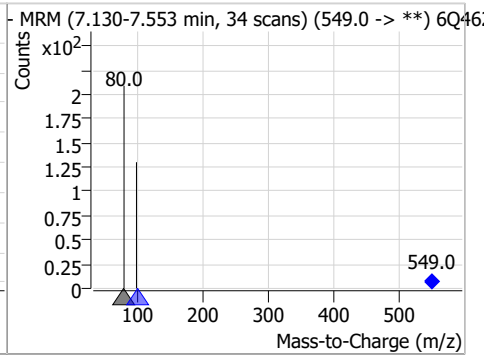




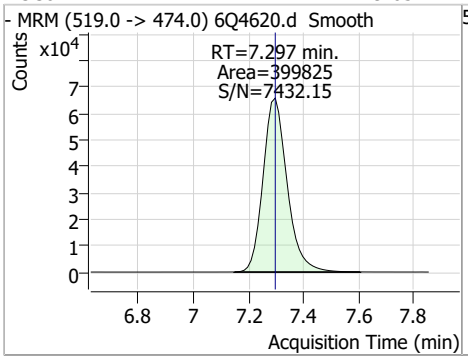
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.94	7.26	-0.01	4020	549.0 -> 99.0	50.5	27.6	82.7

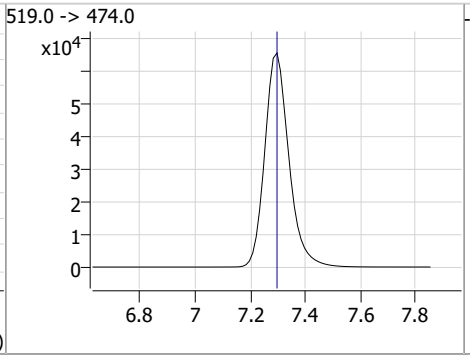


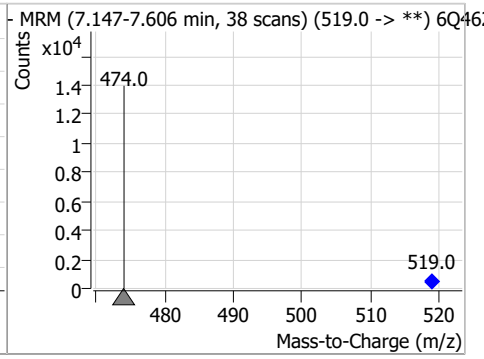




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.65	7.30	0.00	399825				

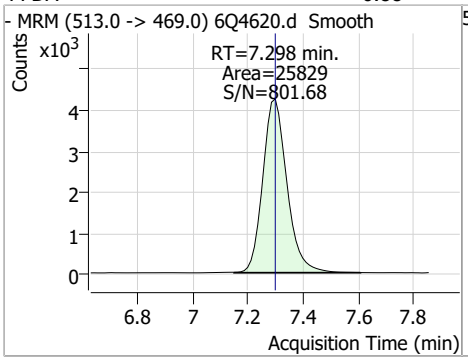


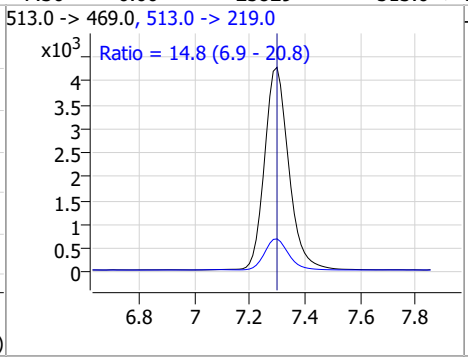


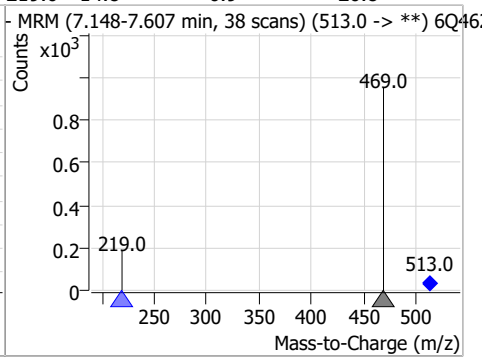


Perfluorinated Compounds by LC/MS/MS

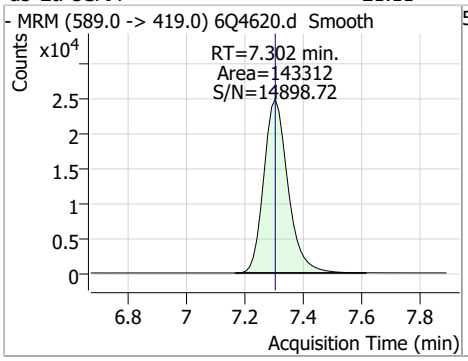
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.88	7.30	0.00	25829	513.0 -> 219.0	14.8	6.9	20.8

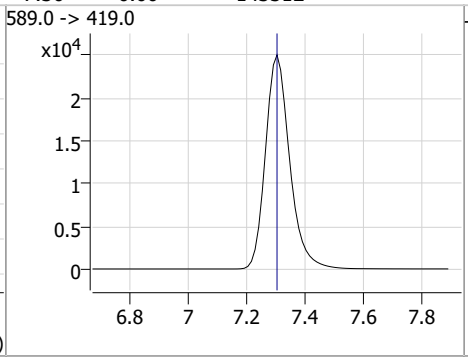


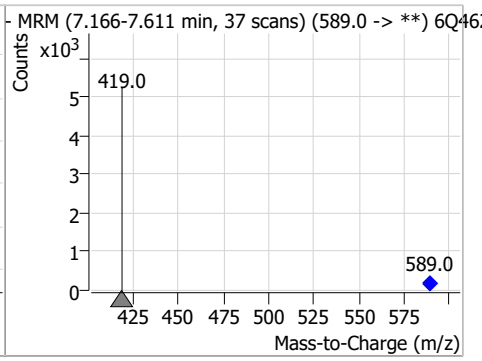




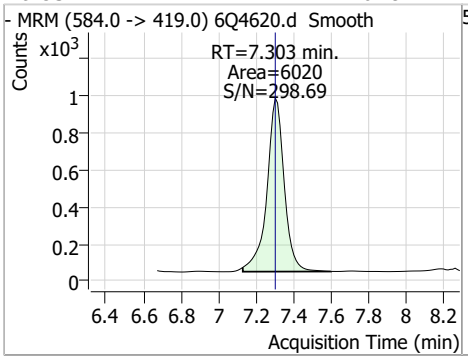
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.11	7.30	0.00	143312				

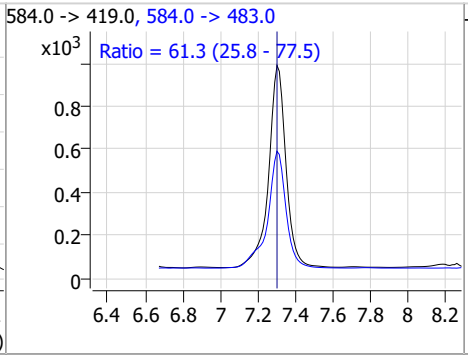


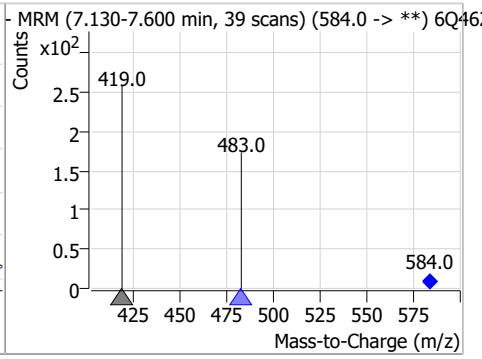




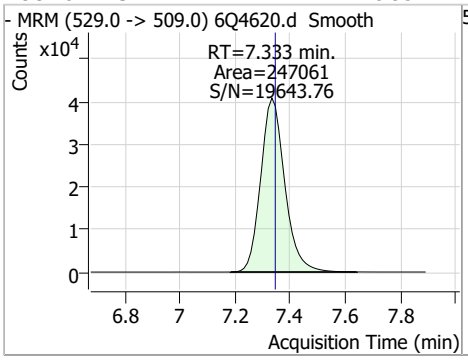
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.79	7.30	0.00	6020	584.0 -> 483.0	61.3	25.8	77.5

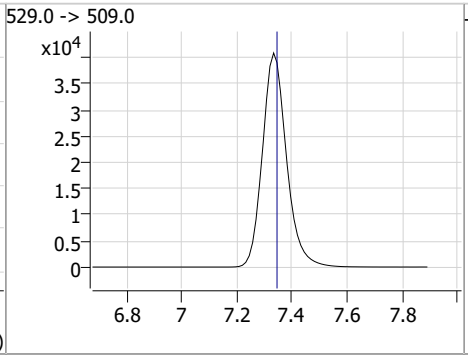


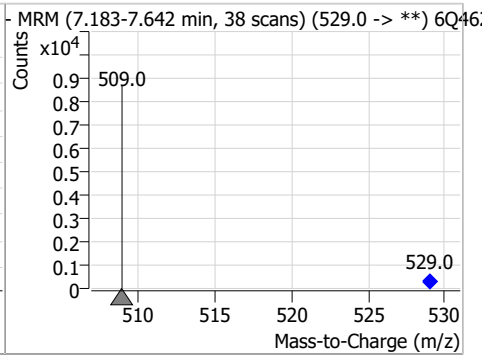




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.95	7.33	-0.01	247061				

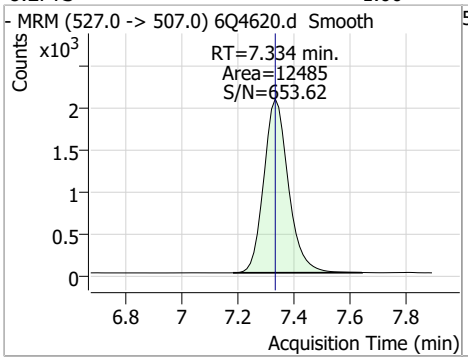


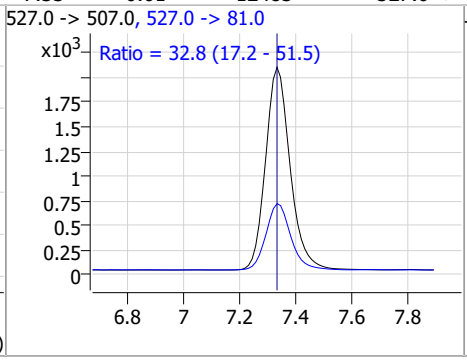


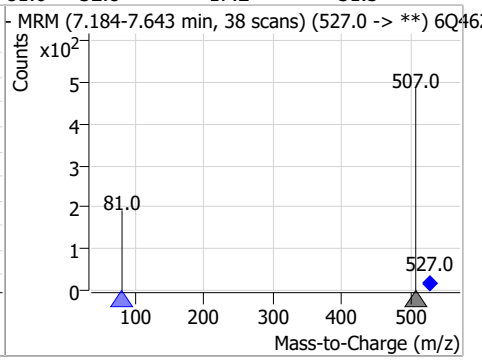


Perfluorinated Compounds by LC/MS/MS

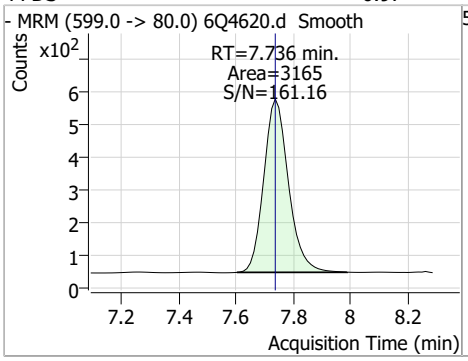
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.00	7.33	-0.01	12485	527.0 -> 81.0	32.8	17.2	51.5

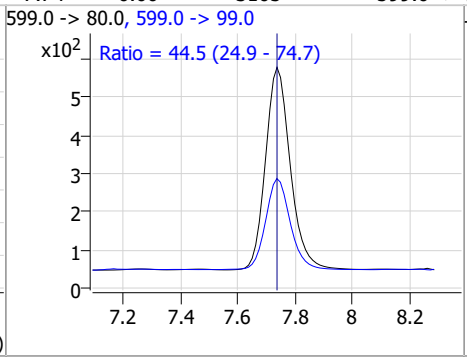


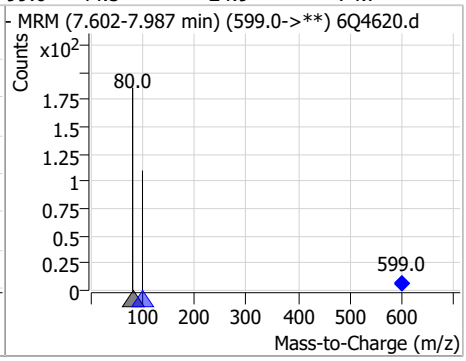




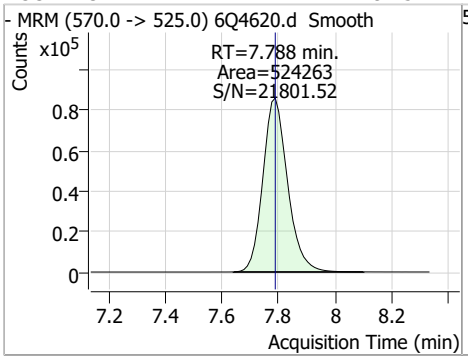
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.97	7.74	0.00	3165	599.0 -> 99.0	44.5	24.9	74.7

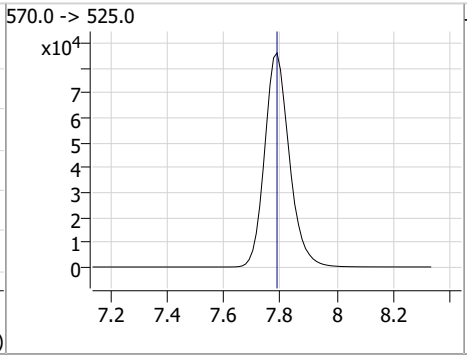


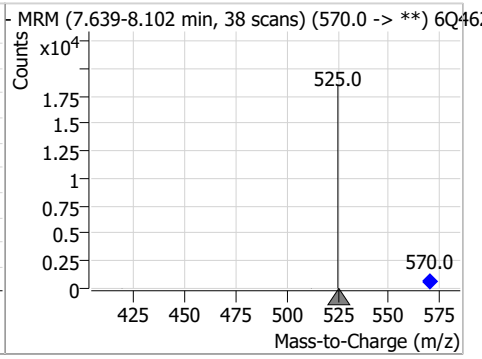




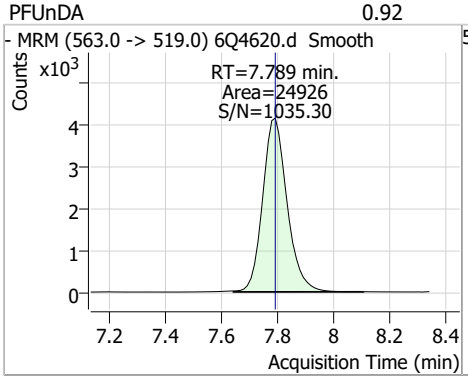
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.75	7.79	0.00	524263				

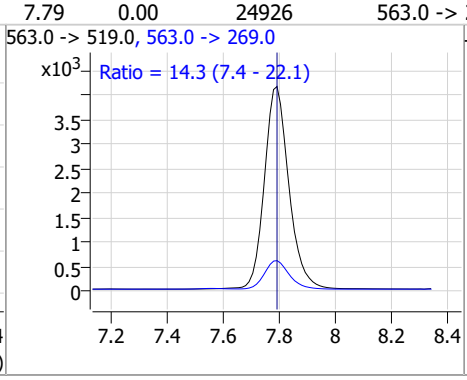


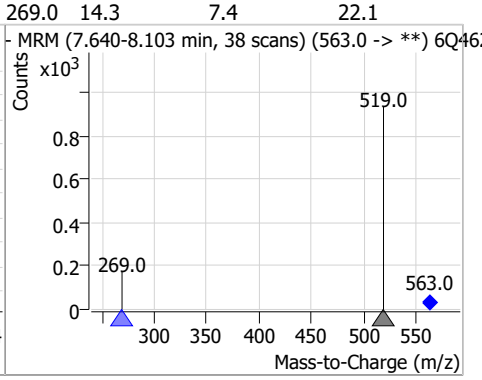




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.92	7.79	0.00	24926	563.0 -> 269.0	14.3	7.4	22.1

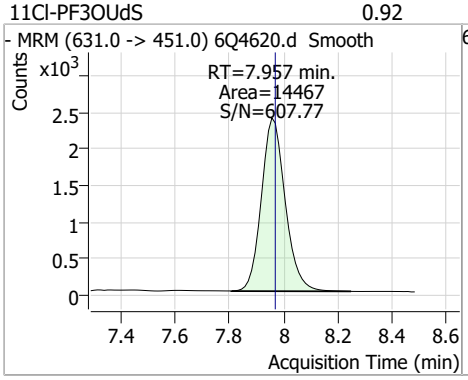


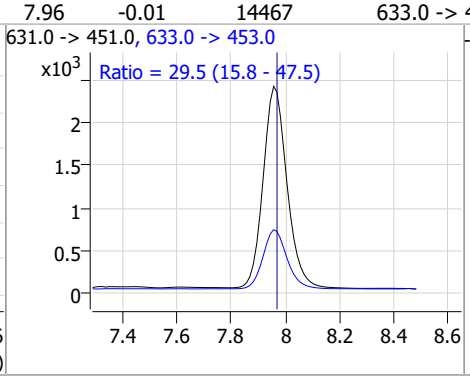


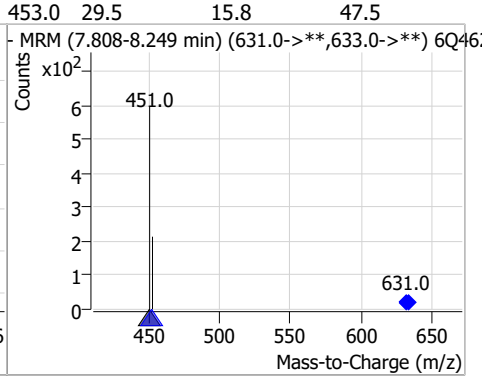


Perfluorinated Compounds by LC/MS/MS

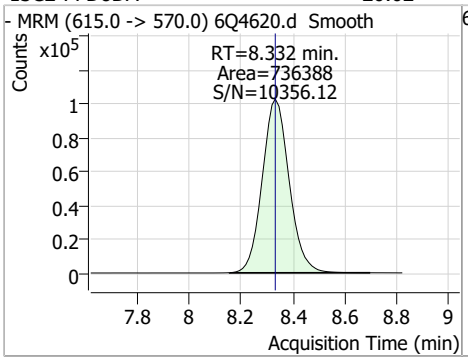
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.92	7.96	-0.01	14467	633.0 -> 453.0	29.5	15.8	47.5

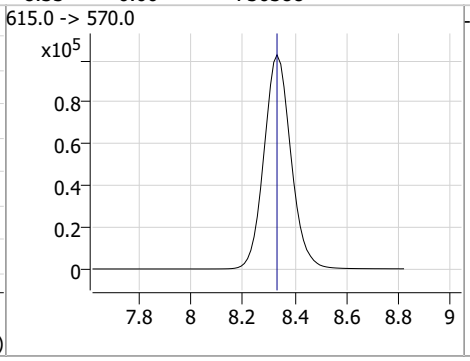


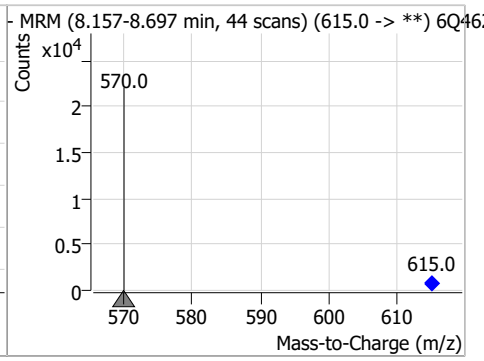




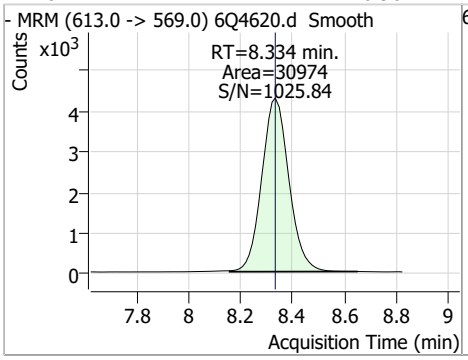
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.02	8.33	0.00	736388				

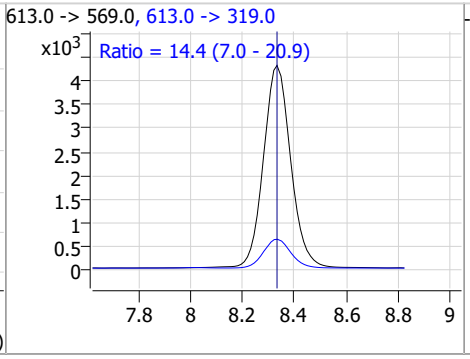


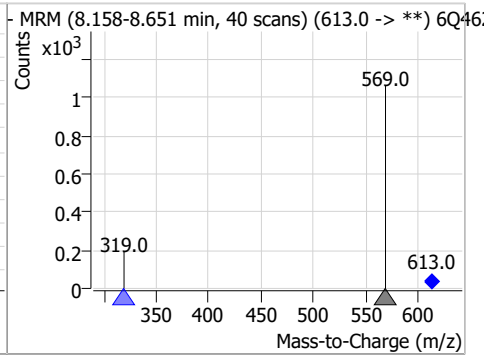




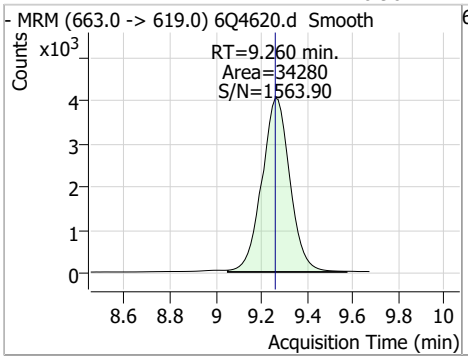
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.90	8.33	0.00	30974	613.0 -> 319.0	14.4	7.0	20.9

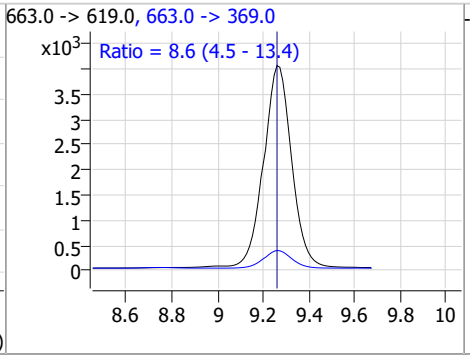


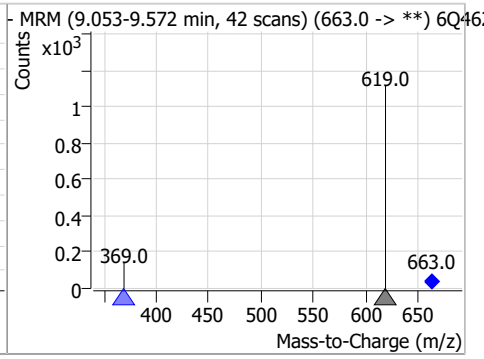




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.96	9.26	0.00	34280	663.0 -> 369.0	8.6	4.5	13.4

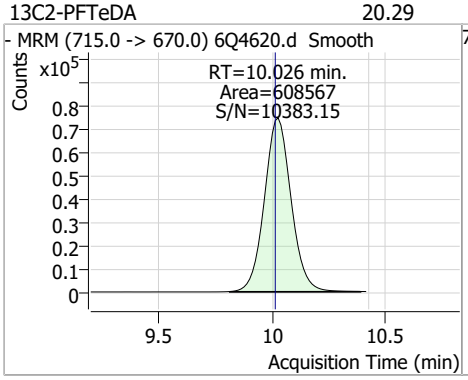


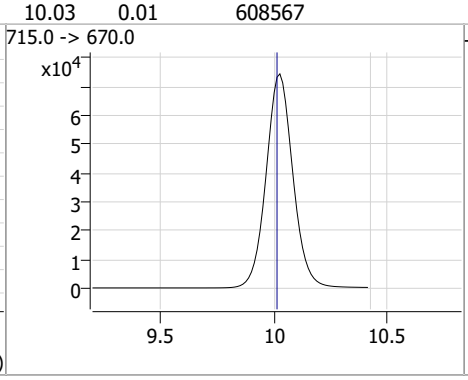


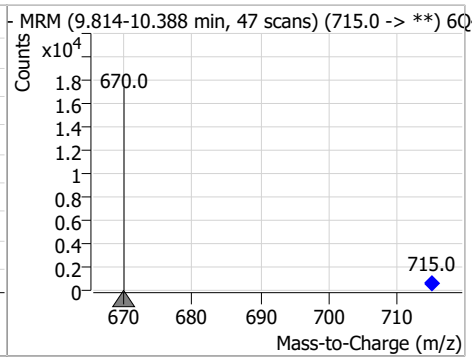


Perfluorinated Compounds by LC/MS/MS

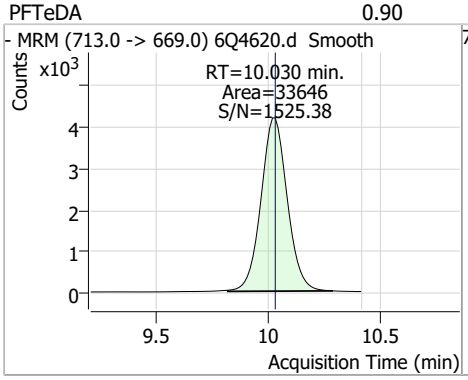
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.29	10.03	0.01	608567				

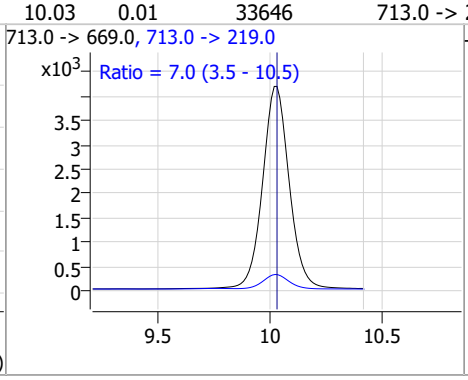


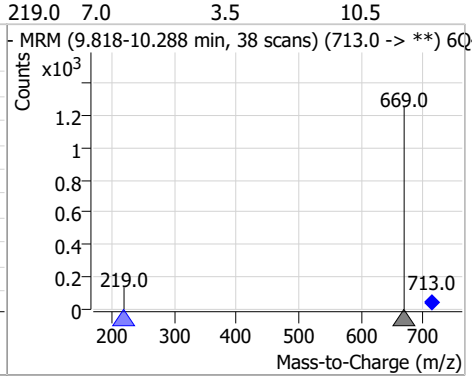




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.90	10.03	0.01	33646	713.0 -> 219.0	7.0	3.5	10.5







7.7.82

Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4620.D
Injection Time: 09/14/22 10:59
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4621.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:15:56 AM
Sample Name : ic85-2
Vial : P1-A4
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	80748	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	142704	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	219933	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	255402	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	443991	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	547431	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	421195	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	546578	20.00	µg/L	0.000
M2-PFDoDA	8.320	615.0 -> 570.0	755398	20.00	µg/L	-0.012
M2-PFTeDA	10.014	715.0 -> 670.0	622009	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	210337	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31638	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	28361	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	43667	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	259576	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	329052	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	260244	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	183059	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	5339	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	46114	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	139518	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	259576	19.22	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.1%		
13C2-6:2FTS	6.136	429.0 -> 409.0	329052	19.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-8:2FTS	7.333	529.0 -> 509.0	260244	19.97	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	8.320	615.0 -> 570.0	755398	20.54	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFTeDA	10.014	715.0 -> 670.0	622009	20.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C3-PFBS	3.635	302.0 -> 99.0	31638	20.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C3-PFHxS	5.475	402.0 -> 99.0	28361	20.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C4-PFBA	1.949	217.0 -> 172.0	80748	20.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.4%		
13C4-PFHpA	5.445	367.0 -> 322.0	255402	20.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFHxA	4.573	318.0 -> 273.0	219933	20.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C5-PFPeA	3.418	268.0 -> 223.0	142704	20.35	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C6-PFDA	7.297	519.0 -> 474.0	421195	20.70	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

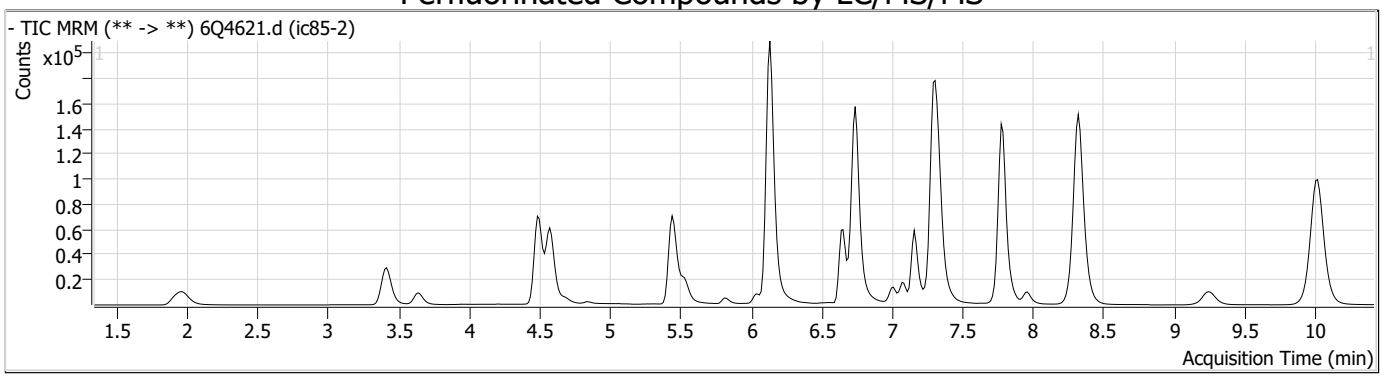
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C7-PFUnDA	7.788	570.0 -> 525.0	546578	20.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C8-FOSA	6.654	506.0 -> 78.0	210337	21.50 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C8-PFOA	6.138	421.0 -> 376.0	443991	20.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-PFOS	6.730	507.0 -> 99.0	43667	20.59 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C9-PFNA	6.745	472.0 -> 427.0	547431	21.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.2%		
d3-MeFOSAA	7.155	573.0 -> 419.0	183059	21.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C3-HFPO-DA	4.852	287.0 -> 169.0	5352	20.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
d3-MeFOSA	7.085	515.0 -> 169.0	46114	20.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d5-EtFOSAA	7.302	589.0 -> 419.0	139528	20.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	29038	2.07 µg/L		99
		327.0 -> 81.0	9304			
6:2FTS	6.137	427.0 -> 407.0	34539	2.07 µg/L		97
		427.0 -> 81.0	8870			
8:2FTS	7.334	527.0 -> 507.0	25029	1.91 µg/L		97
		527.0 -> 81.0	8202			
EtFOSAA	7.303	584.0 -> 419.0	12683	1.71 µg/L		94
		584.0 -> 483.0	7057			
FOSA	6.656	498.0 -> 78.0	18872	1.79 µg/L		99
		498.0 -> 478.0	800			
MeFOSAA	7.168	570.0 -> 419.0	14981	1.79 µg/L		99
		570.0 -> 512.0	4873			
PFBA	1.955	213.0 -> 169.0	3245	1.84 µg/L		100
PFBS	3.640	299.0 -> 80.0	9481	1.80 µg/L		98
		299.0 -> 99.0	3658			
PFDA	7.298	513.0 -> 469.0	54376	1.75 µg/L		100
		513.0 -> 219.0	7574			
PFDoDA	8.321	613.0 -> 569.0	63333	1.80 µg/L		99
		613.0 -> 319.0	9124			
PFDS	7.736	599.0 -> 80.0	6138	1.81 µg/L		97
		599.0 -> 99.0	3172			
PFHpA	5.446	363.0 -> 319.0	30226	1.82 µg/L		100
		363.0 -> 169.0	4498			
PFHpS	6.148	449.0 -> 80.0	7544	1.98 µg/L		98
		449.0 -> 99.0	3884			
PFHxA	4.574	313.0 -> 269.0	20880	1.81 µg/L		100
		313.0 -> 119.0	472			
PFHxS	5.477	399.0 -> 80.0	7611	1.87 µg/L	m	98
		399.0 -> 99.0	3599			
PFNA	6.745	463.0 -> 419.0	44103	1.71 µg/L		99
		463.0 -> 219.0	7983			
PFNS	7.256	549.0 -> 80.0	8351	1.88 µg/L		95
		549.0 -> 99.0	4276			
PFOA	6.138	413.0 -> 369.0	44134	1.84 µg/L		99
		413.0 -> 169.0	6583			
PFOS	6.731	499.0 -> 80.0	7268	1.80 µg/L	m	92

Perfluorinated Compounds by LC/MS/MS

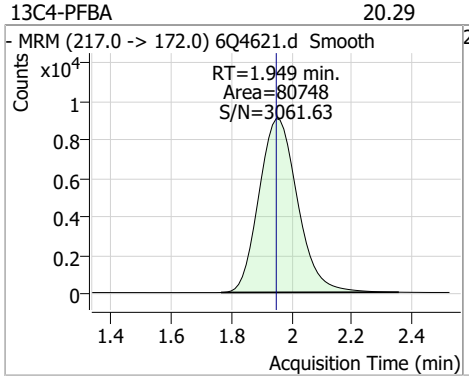
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	3814			
PFPeA	3.420	263.0 -> 219.0	11132	1.85	µg/L	100
PFPeS	4.681	349.0 -> 80.0	7834	1.79	µg/L	97
		349.0 -> 99.0	3734			
PFTeDA	10.005	713.0 -> 669.0	68923	1.81	µg/L	100
		713.0 -> 219.0	4859			
PFTrDA	9.248	663.0 -> 619.0	68757	1.88	µg/L	99
		663.0 -> 369.0	6353			
PFUnDA	7.777	563.0 -> 519.0	49785	1.76	µg/L	95
		563.0 -> 269.0	8342			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	30069	1.86	µg/L	99
		633.0 -> 453.0	9305			
9Cl-PF3ONS	7.009	531.0 -> 351.0	38336	1.79	µg/L	98
		533.0 -> 353.0	12268			
ADONA	5.532	377.0 -> 251.0	48729	1.85	µg/L	96
		377.0 -> 85.0	12503			
HFPO-DA	4.853	285.0 -> 169.0	579	2.29	µg/L	96
		285.0 -> 185.0	71			
MeFOSA	7.086	512.0 -> 169.0	5260	2.09	µg/L	90
		512.0 -> 219.0	4560			
4-PFECHS	6.044	461.0 -> 381.0	24561	1.72	µg/L	99
		461.0 -> 99.0	8361			
FBSA	4.514	298.0 -> 78.0	20555	1.92	µg/L	99
		298.0 -> 64.0	1359			
FHxSA	5.828	398.0 -> 78.0	17517	1.79	µg/L	100
		398.0 -> 64.0	640			

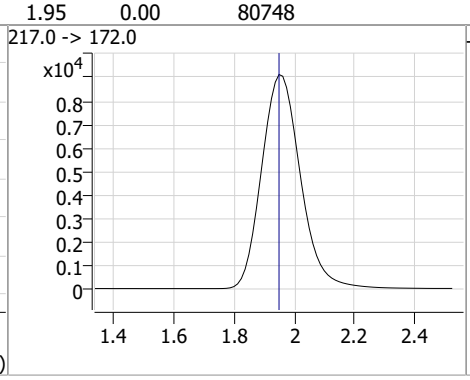
 # = Qualifier out of range, m = manually integrated, + = Area summed

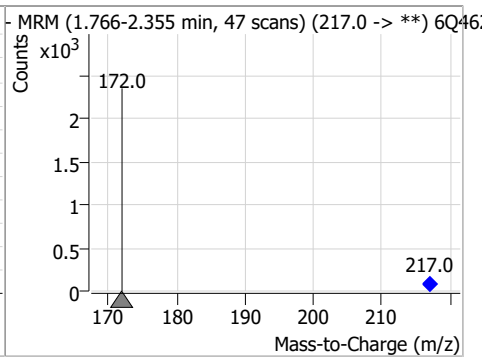
Perfluorinated Compounds by LC/MS/MS



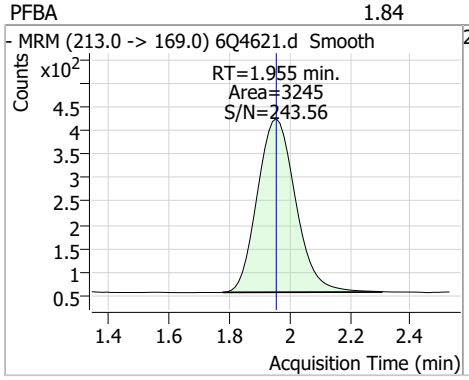
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.29	1.95	0.00	80748				

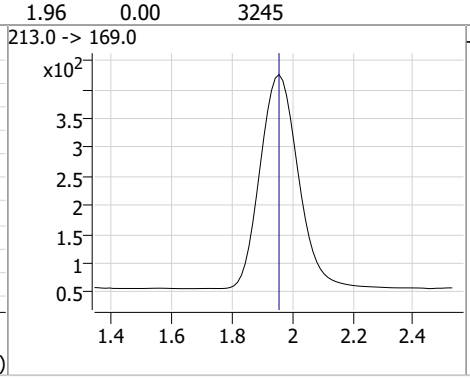


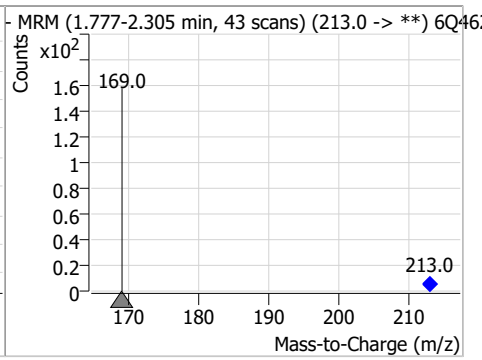




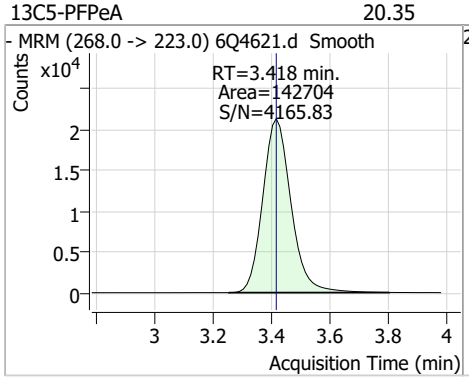
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	1.84	1.96	0.00	3245				

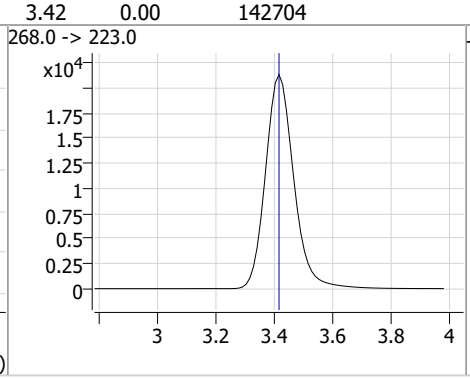


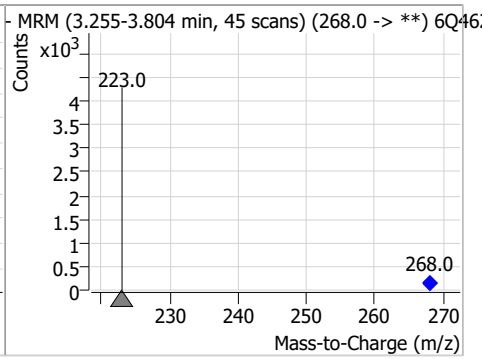




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.35	3.42	0.00	142704				

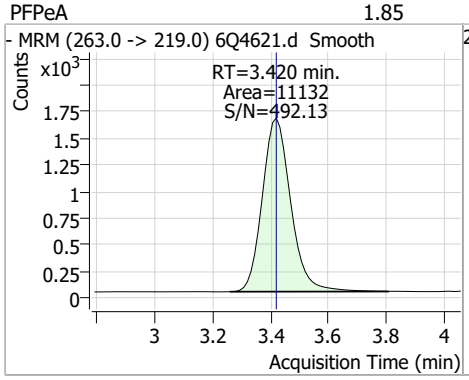


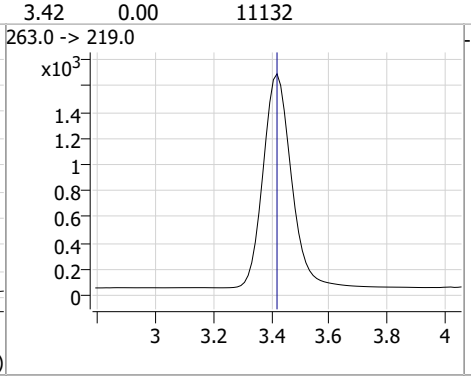


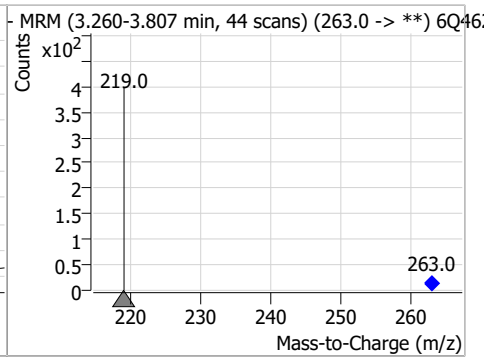


Perfluorinated Compounds by LC/MS/MS

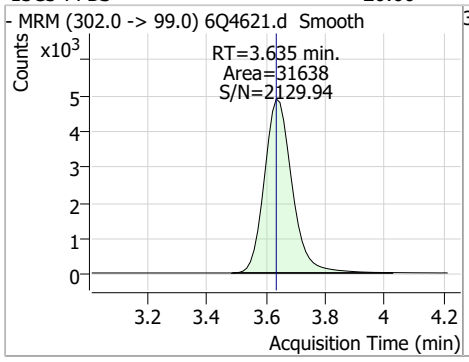
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	1.85	3.42	0.00	11132				

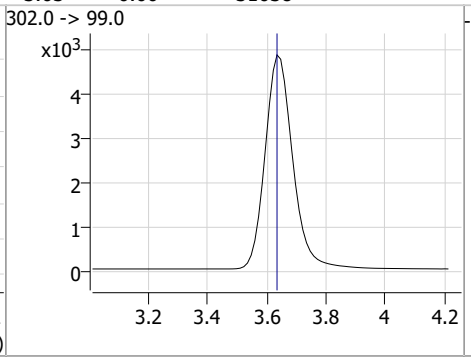


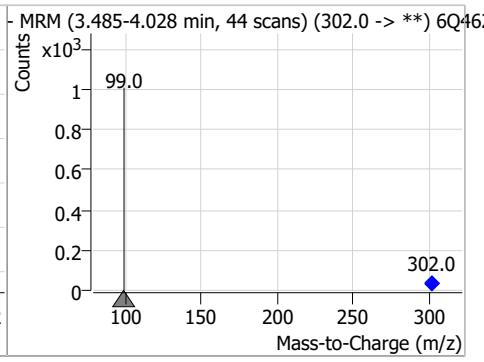




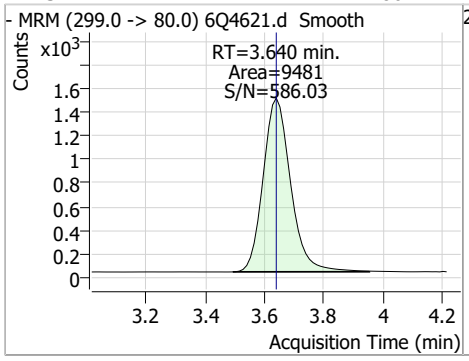
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.66	3.63	0.00	31638				

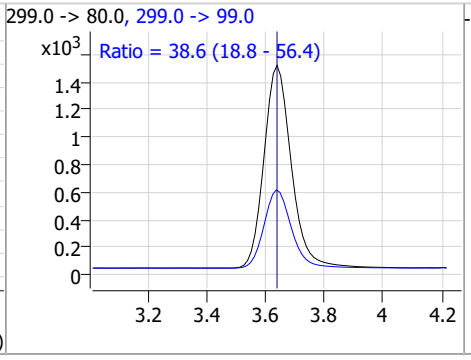


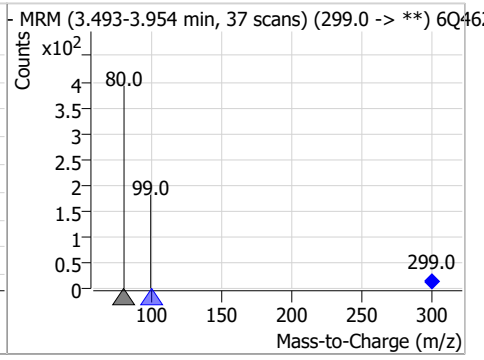




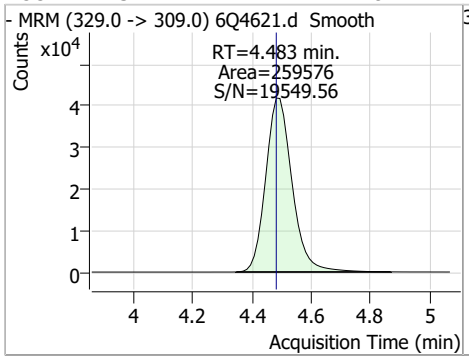
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	1.80	3.64	0.00	9481	299.0 -> 99.0	38.6	18.8	56.4

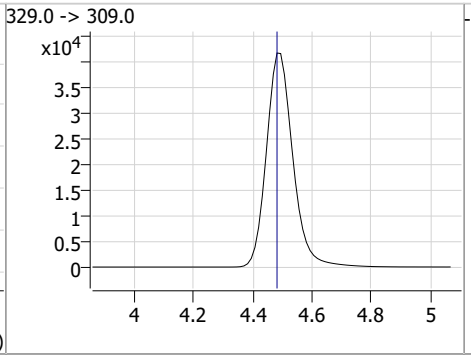


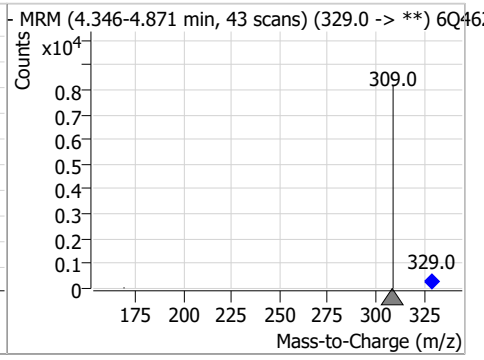




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.22	4.48	0.00	259576				

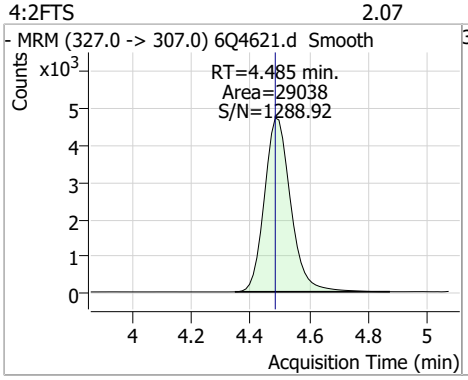


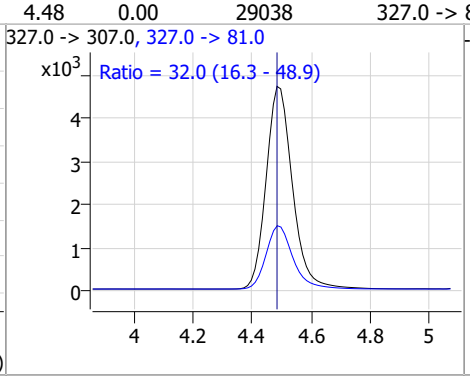


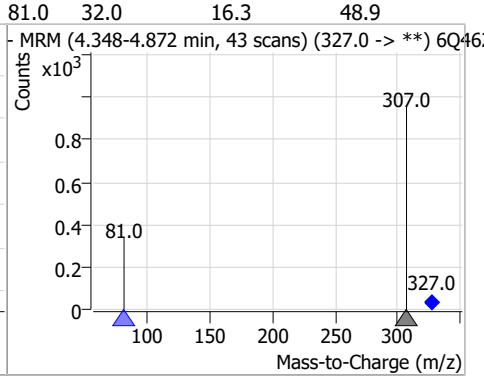


Perfluorinated Compounds by LC/MS/MS

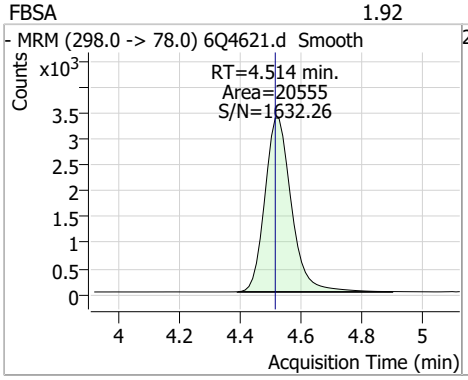
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	2.07	4.48	0.00	29038	327.0 -> 81.0	32.0	16.3	48.9

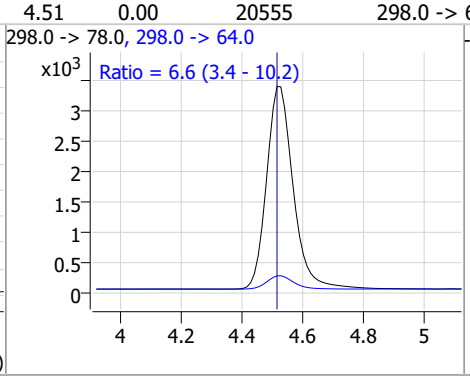


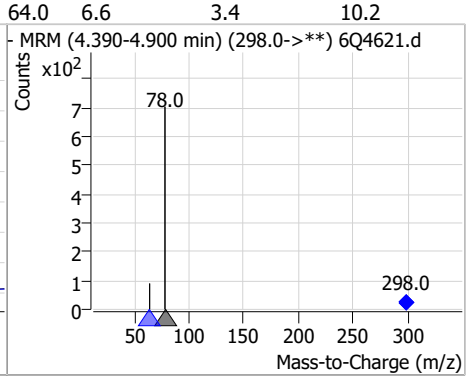




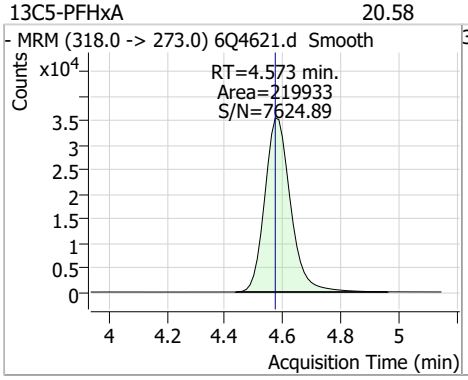
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	1.92	4.51	0.00	20555	298.0 -> 64.0	6.6	3.4	10.2

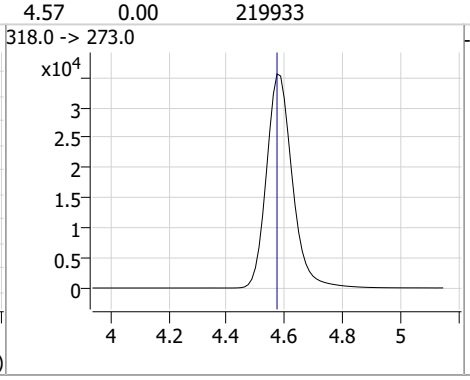


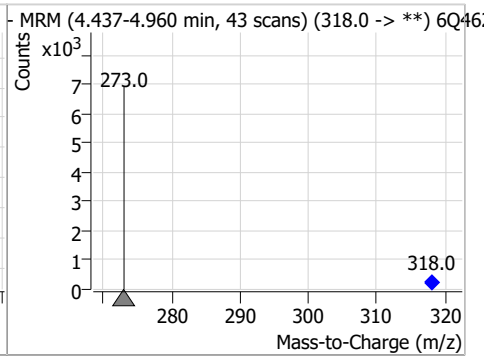




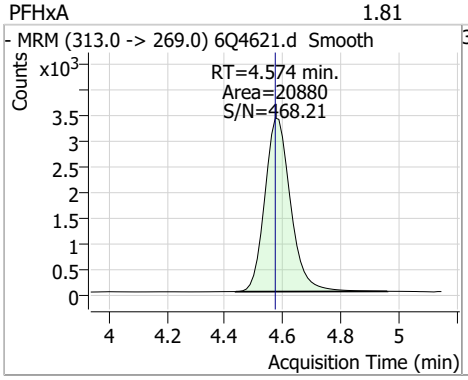
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.58	4.57	0.00	219933				

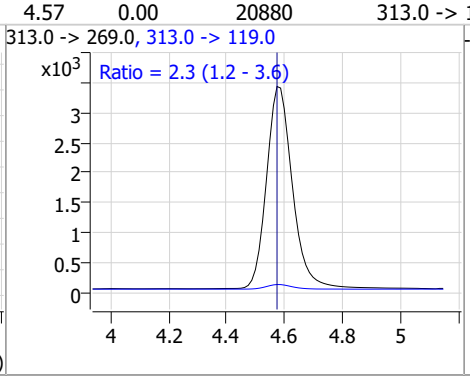


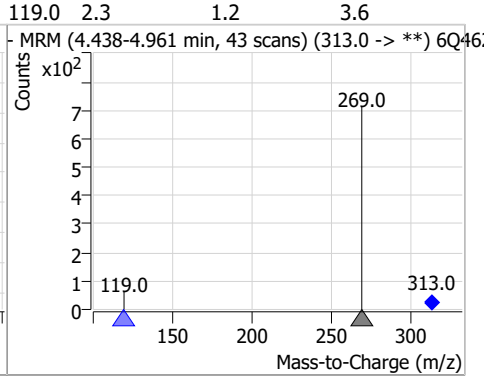




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	1.81	4.57	0.00	20880	313.0 -> 119.0	2.3	1.2	3.6

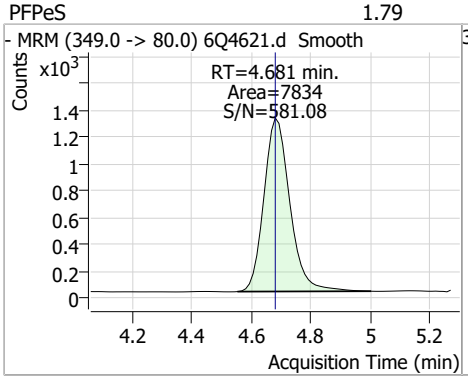


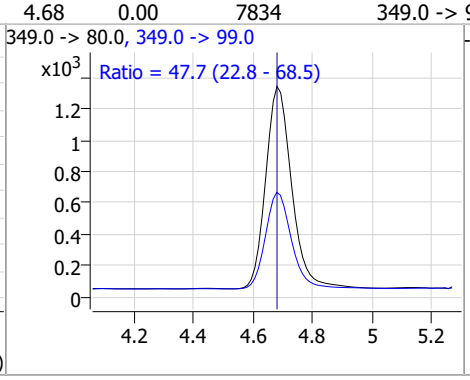


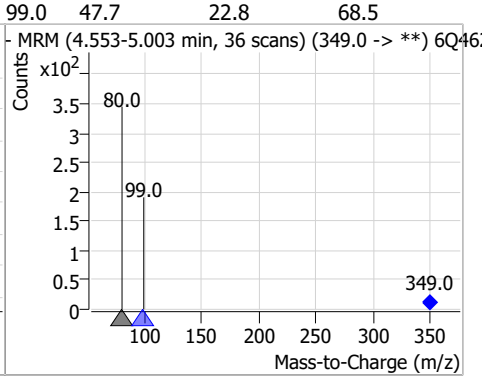


Perfluorinated Compounds by LC/MS/MS

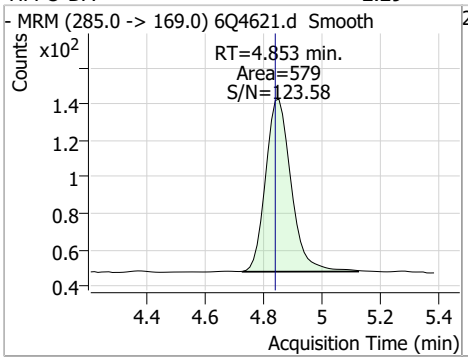
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	1.79	4.68	0.00	7834	349.0 -> 99.0	47.7	22.8	68.5

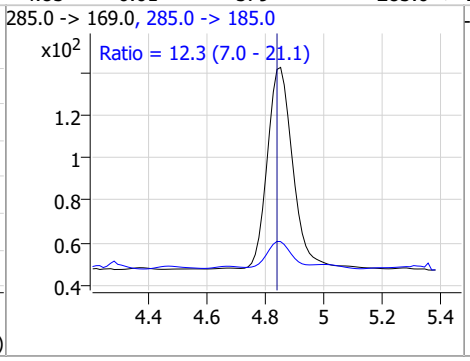


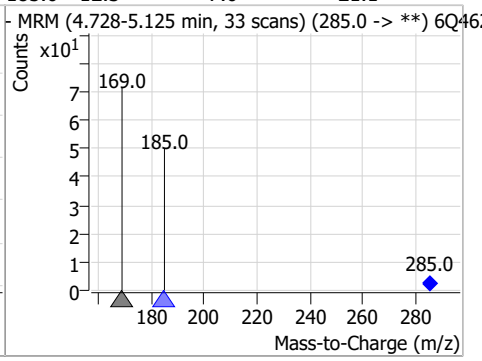




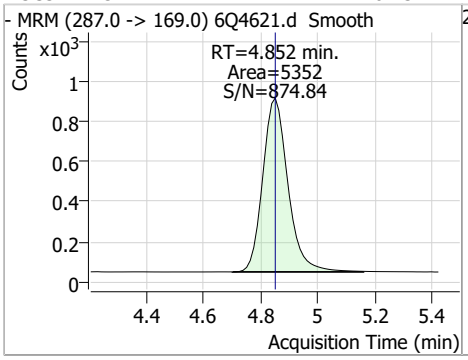
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	2.29	4.85	0.01	579	285.0 -> 185.0	12.3	7.0	21.1

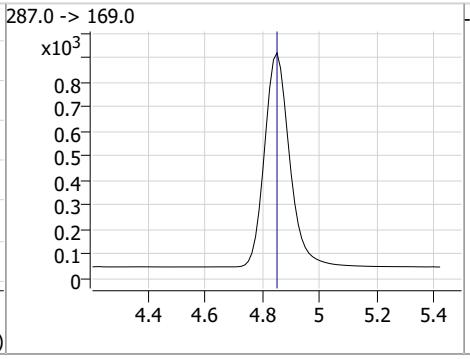


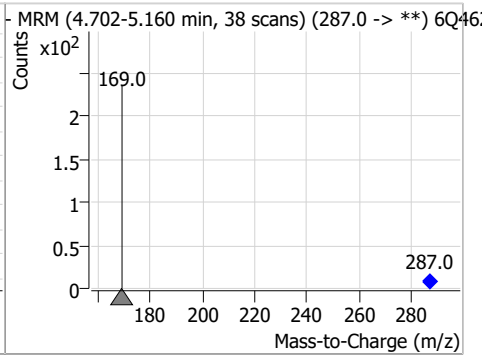




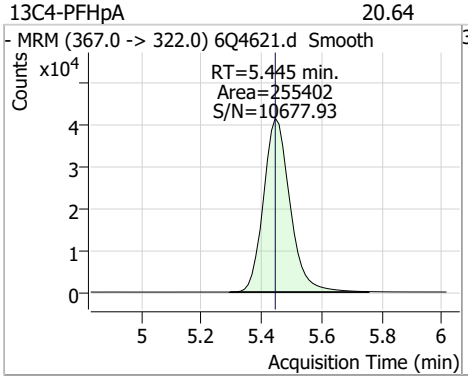
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.13	4.85	0.00	5352				

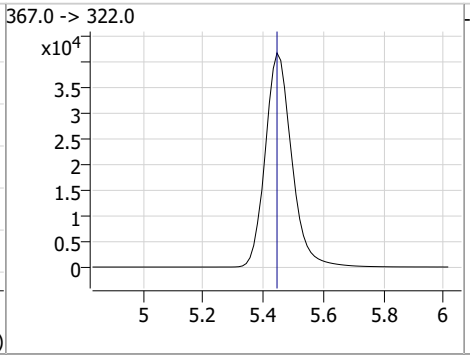


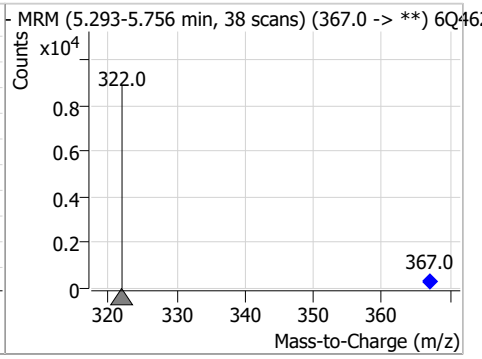




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.64	5.45	0.00	255402				





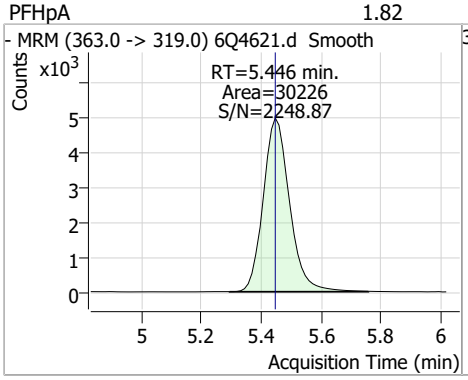


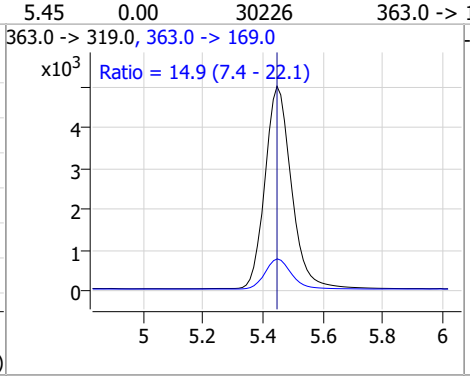
7.7.83

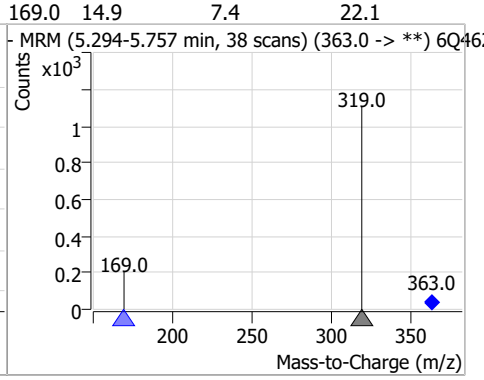
7

Perfluorinated Compounds by LC/MS/MS

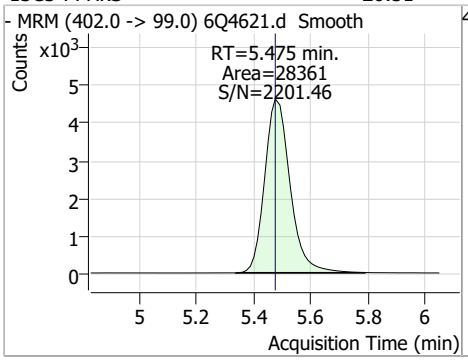
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	1.82	5.45	0.00	30226	363.0 -> 169.0	14.9	7.4	22.1

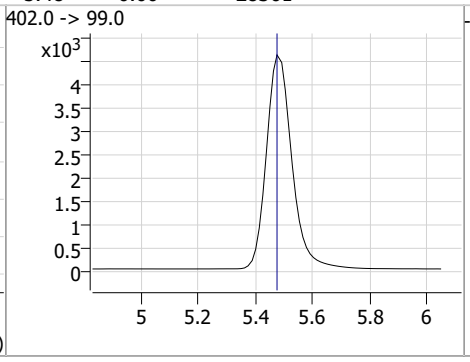


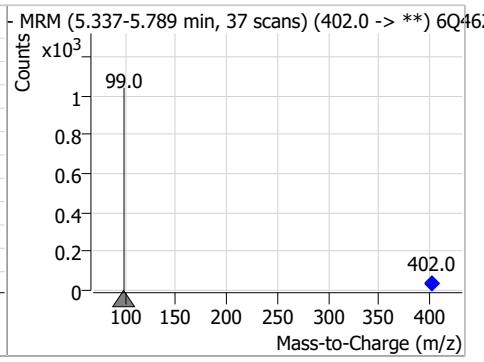




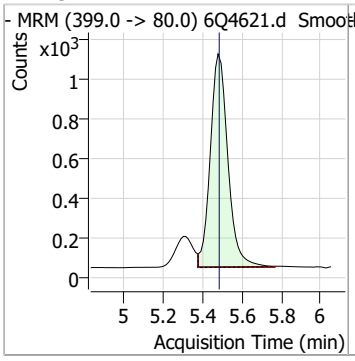
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.51	5.48	0.00	28361				

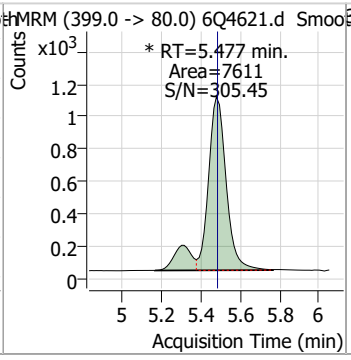


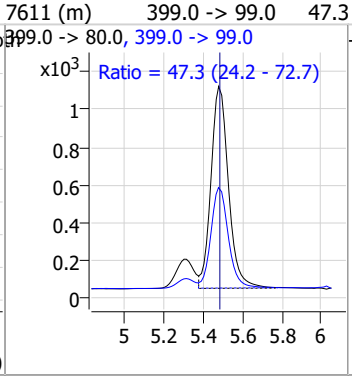


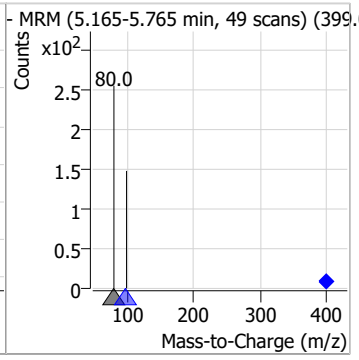


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	1.87	5.48	0.00	7611 (m)	399.0 -> 99.0	47.3	24.2	72.7

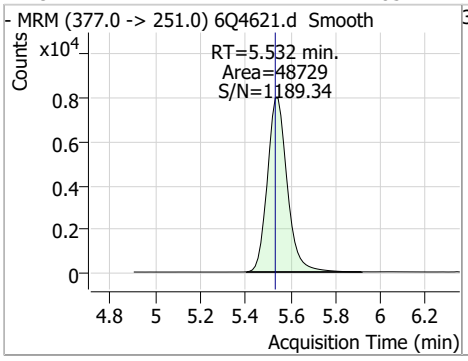


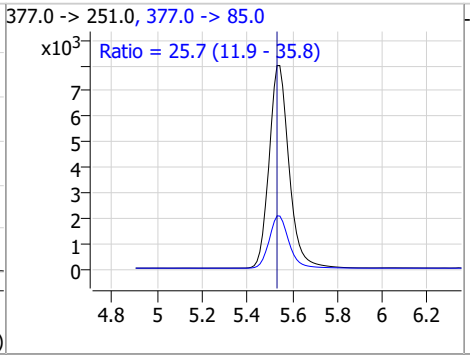


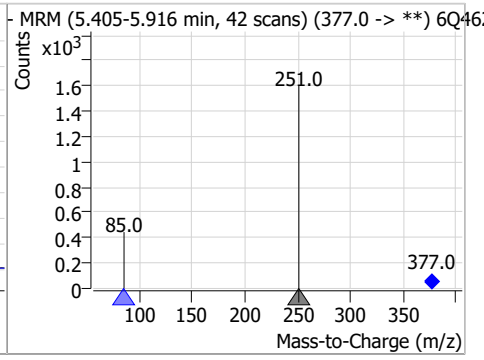




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	1.85	5.53	0.00	48729	377.0 -> 85.0	25.7	11.9	35.8

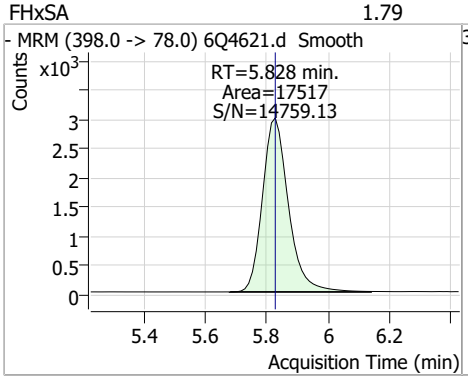


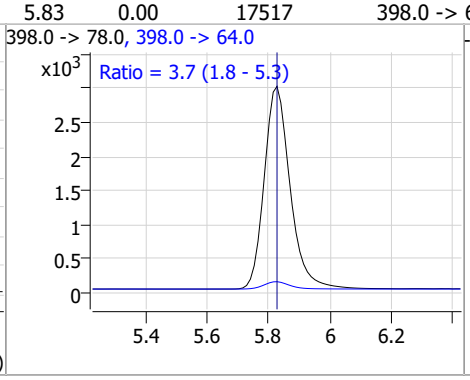


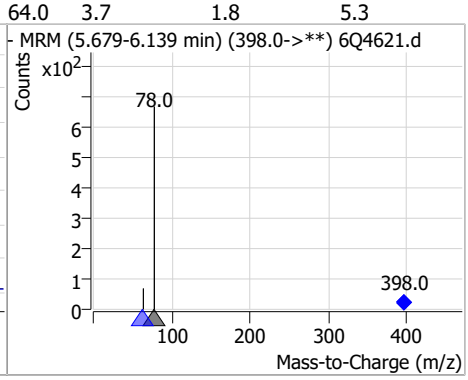


Perfluorinated Compounds by LC/MS/MS

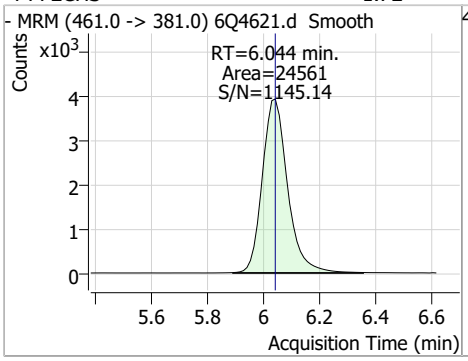
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	1.79	5.83	0.00	17517	398.0 -> 64.0	3.7	1.8	5.3

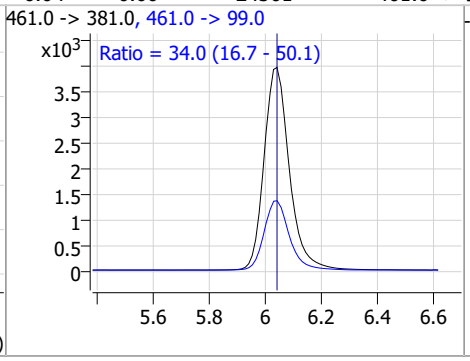


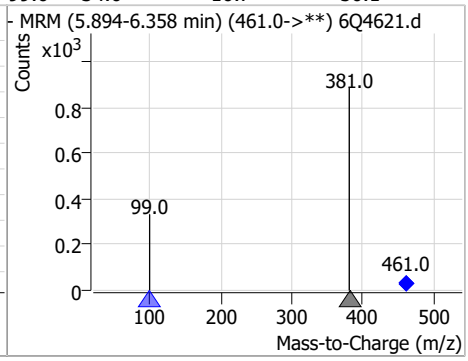




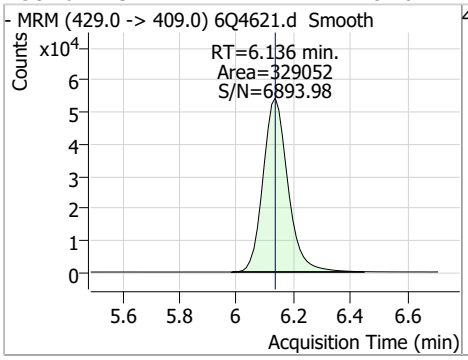
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	1.72	6.04	0.00	24561	461.0 -> 99.0	34.0	16.7	50.1

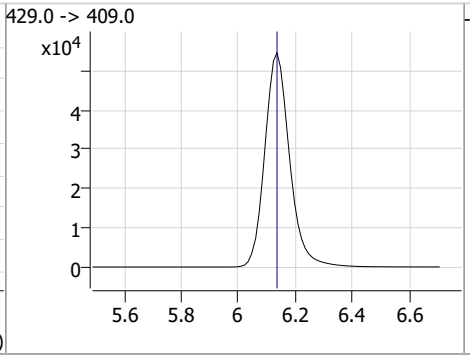


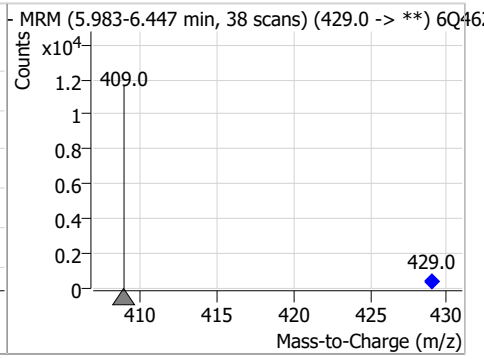




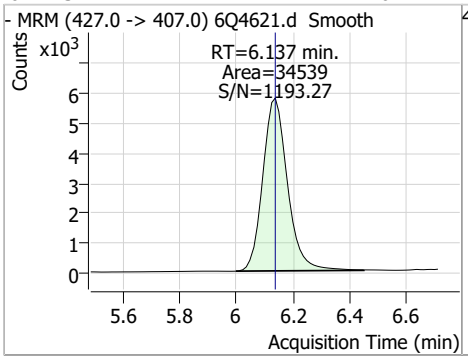
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.28	6.14	0.00	329052				

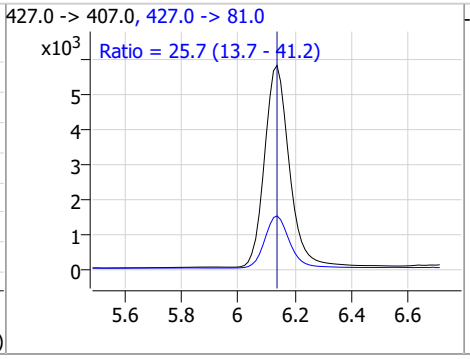


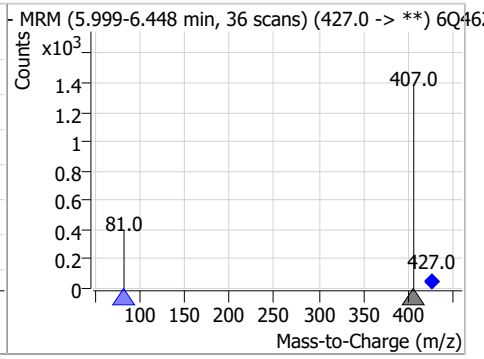




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	2.07	6.14	0.00	34539	427.0 -> 81.0	25.7	13.7	41.2

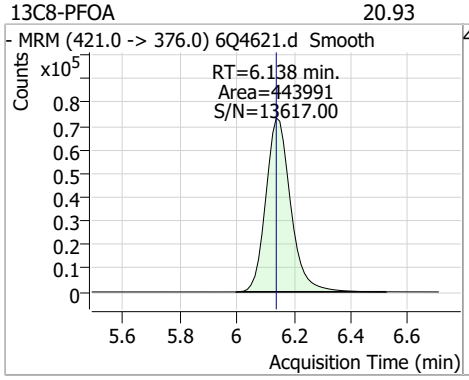


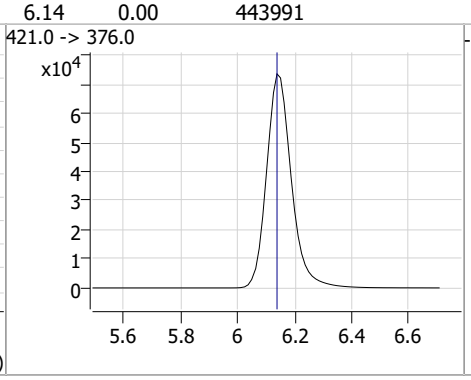


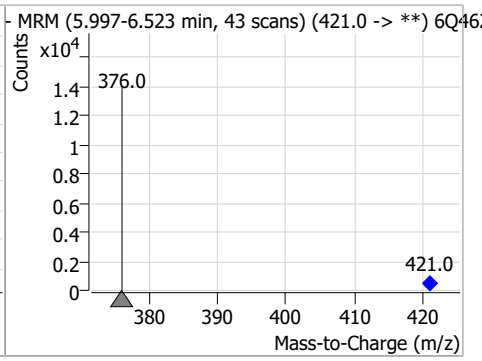


Perfluorinated Compounds by LC/MS/MS

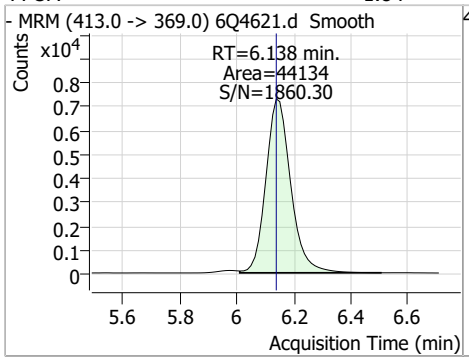
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.93	6.14	0.00	443991				

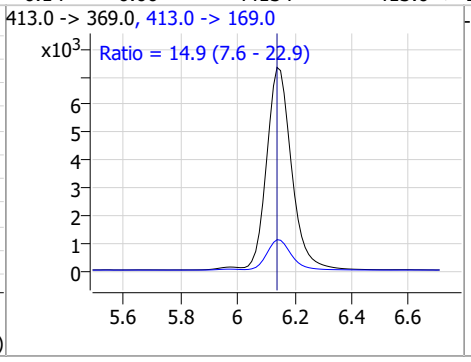


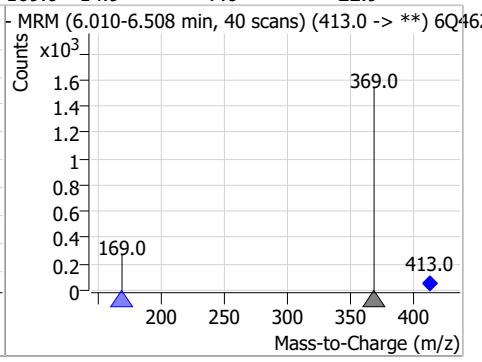




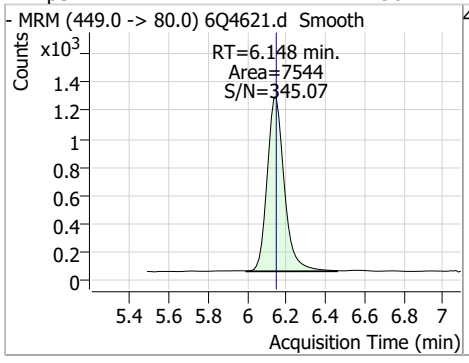
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	1.84	6.14	0.00	44134	413.0 -> 169.0	14.9	7.6	22.9

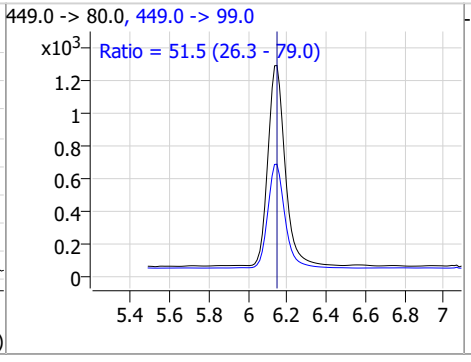


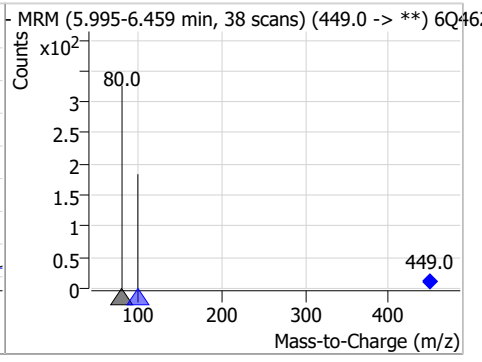




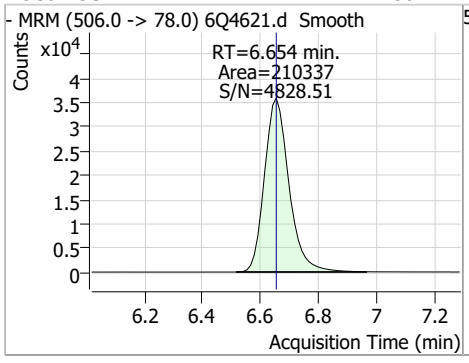
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.98	6.15	0.00	7544	449.0 -> 99.0	51.5	26.3	79.0

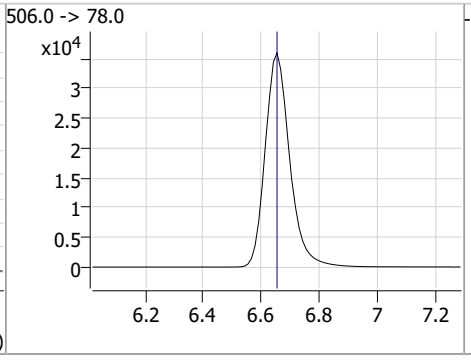


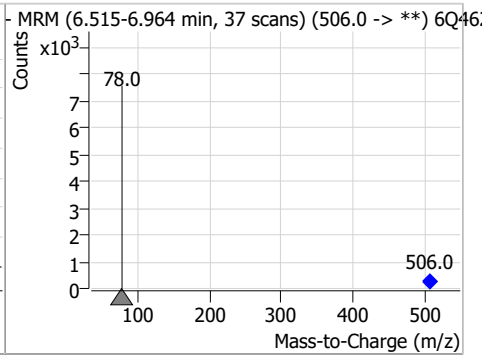




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.50	6.65	0.00	210337				

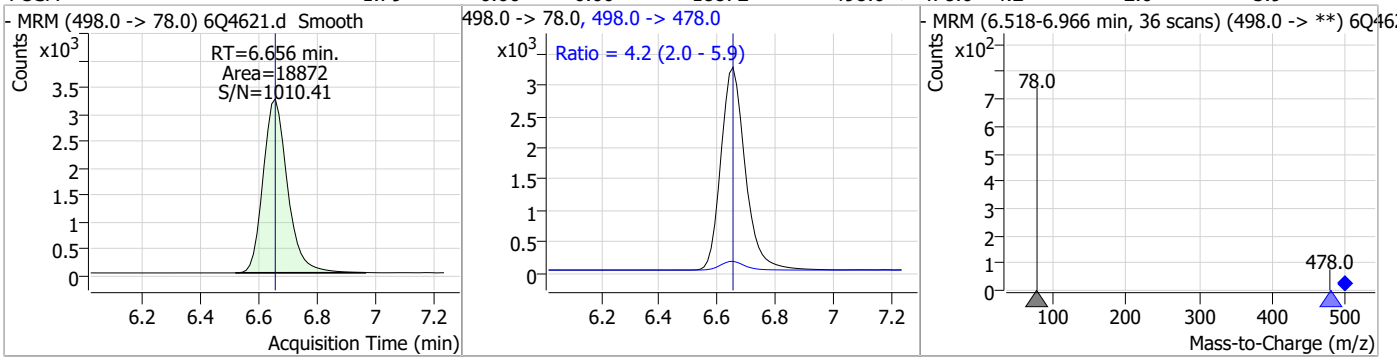




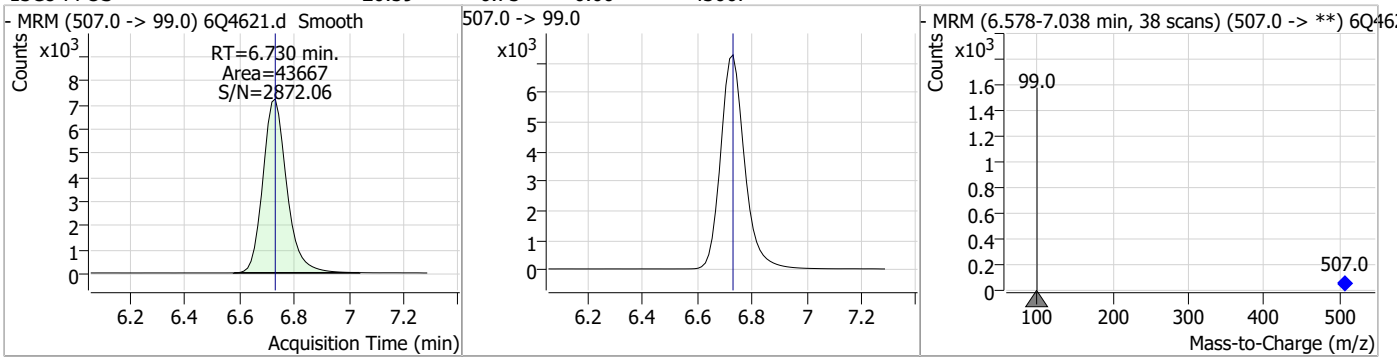


Perfluorinated Compounds by LC/MS/MS

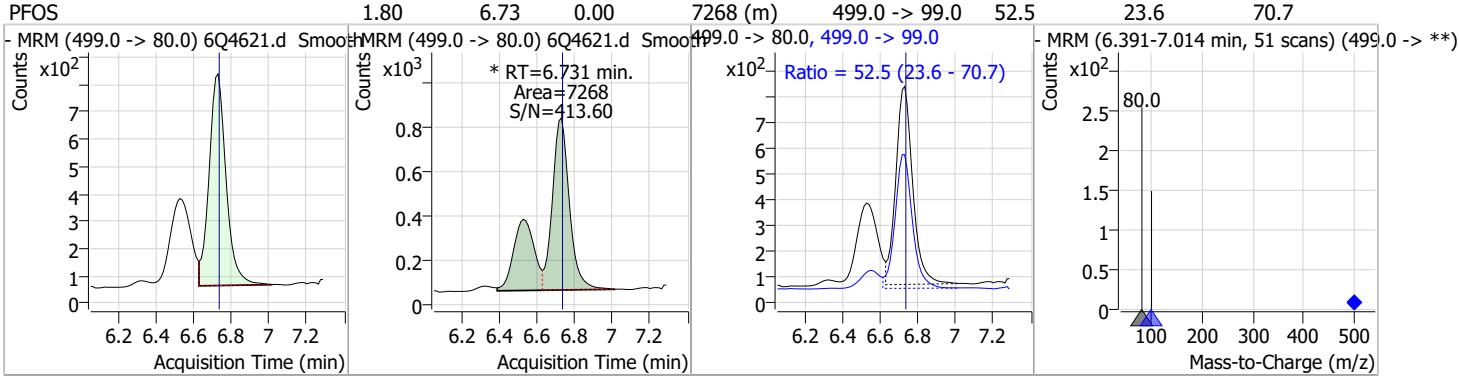
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	1.79	6.66	0.00	18872	498.0 -> 478.0	4.2	2.0	5.9



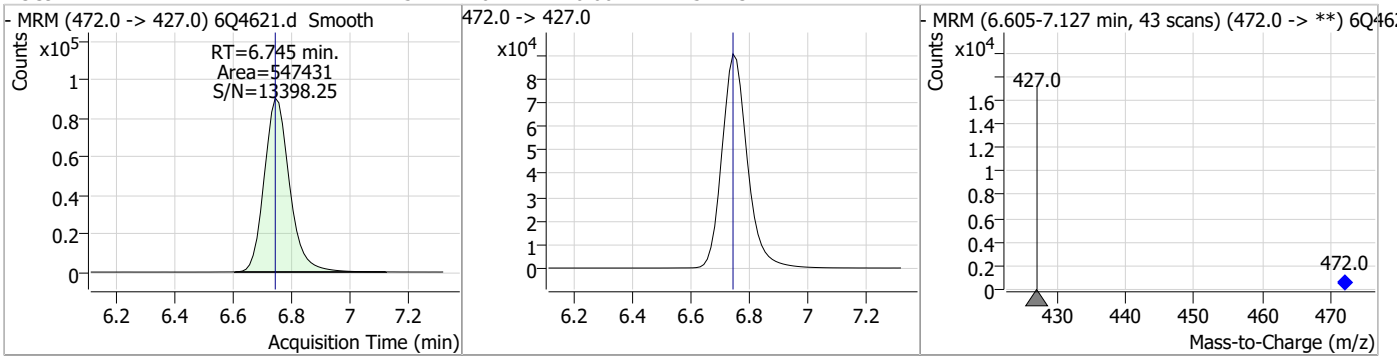
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.59	6.73	0.00	43667				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	1.80	6.73	0.00	7268 (m)	499.0 -> 99.0	52.5	23.6	70.7

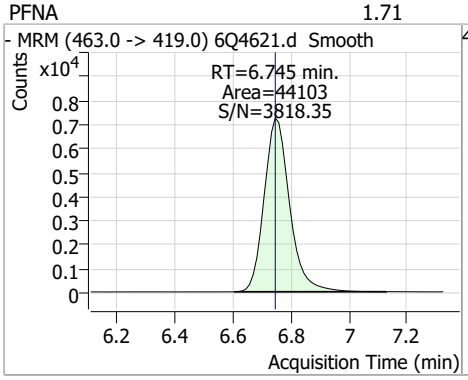


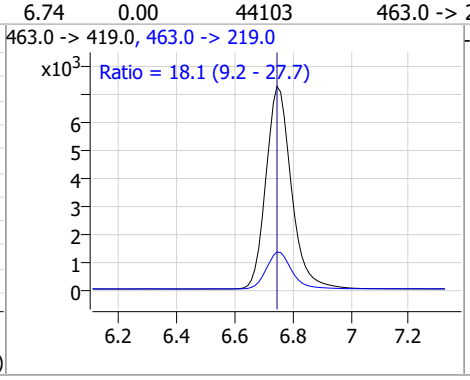
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.25	6.74	0.00	547431				

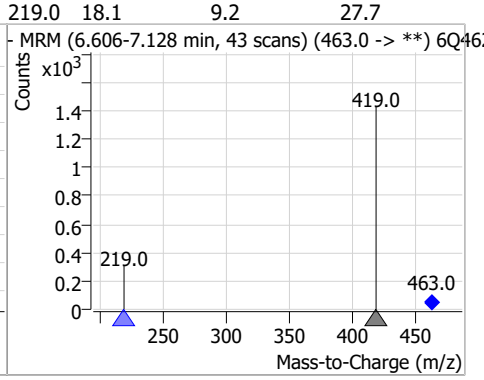


Perfluorinated Compounds by LC/MS/MS

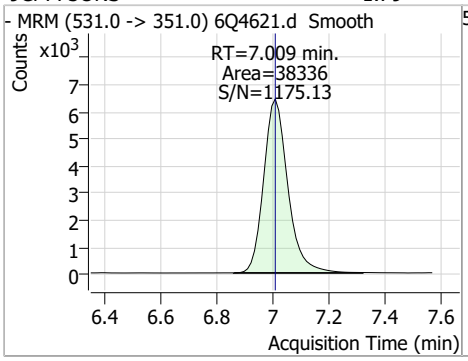
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	1.71	6.74	0.00	44103	463.0 -> 219.0	18.1	9.2	27.7

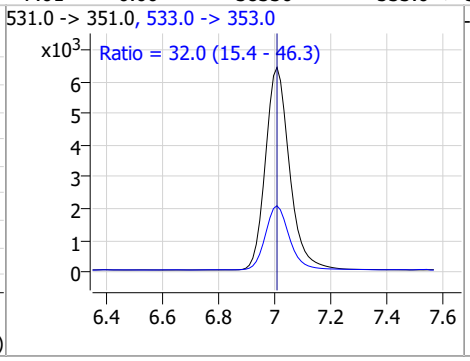


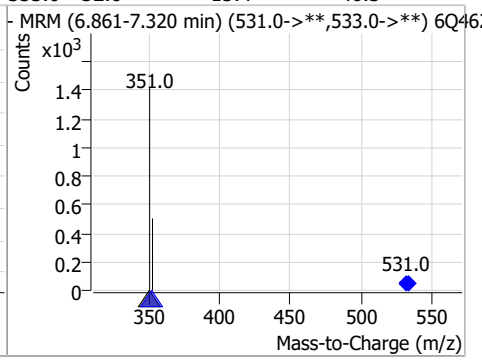




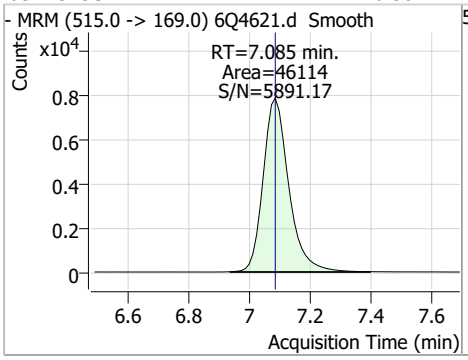
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	1.79	7.01	0.00	38336	533.0 -> 353.0	32.0	15.4	46.3

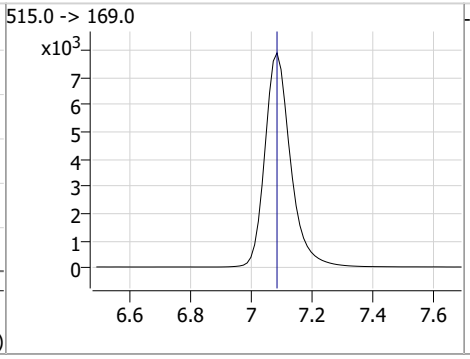


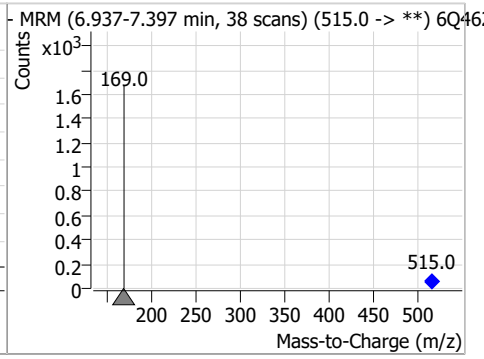




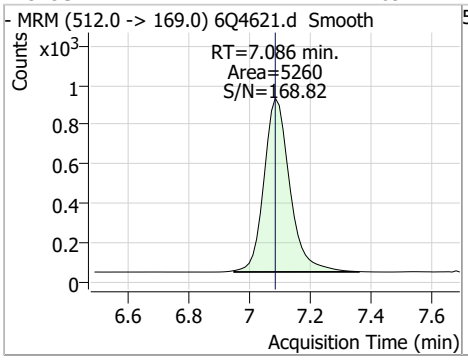
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.38	7.08	0.00	46114				

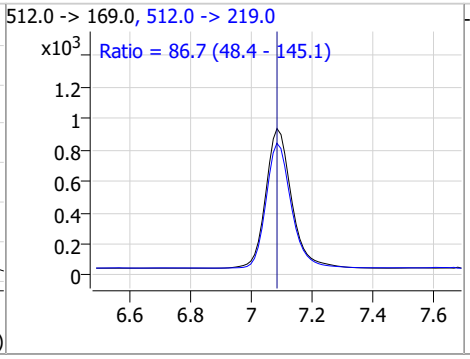


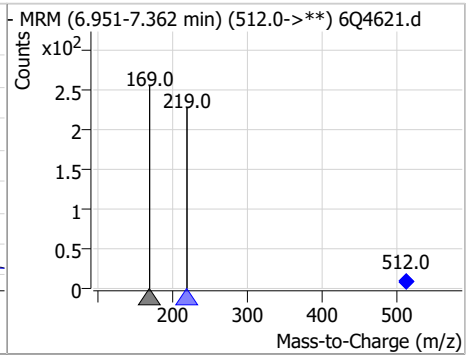




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	2.09	7.09	0.00	5260	512.0 -> 219.0	86.7	48.4	145.1

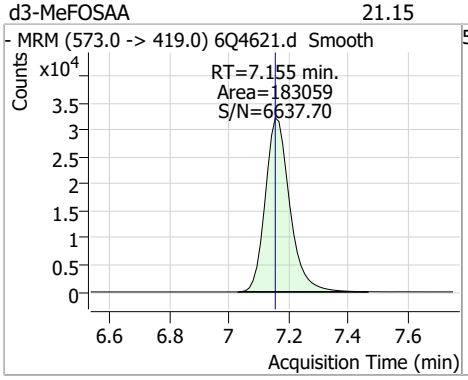


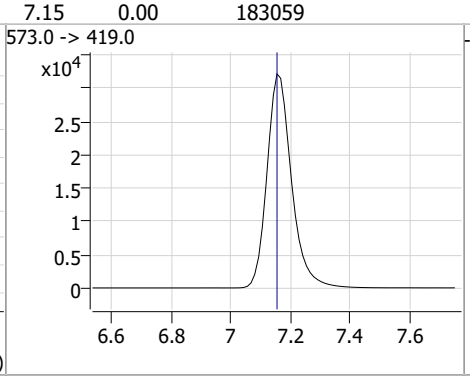


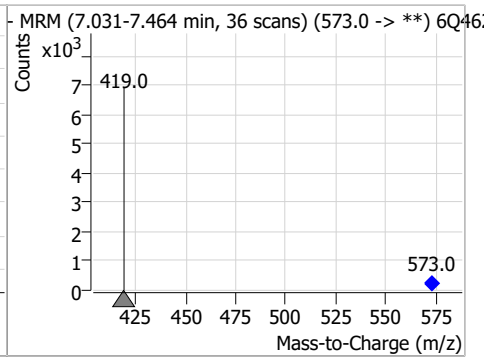


Perfluorinated Compounds by LC/MS/MS

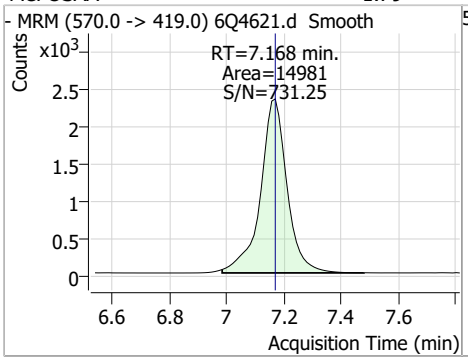
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.15	7.15	0.00	183059				

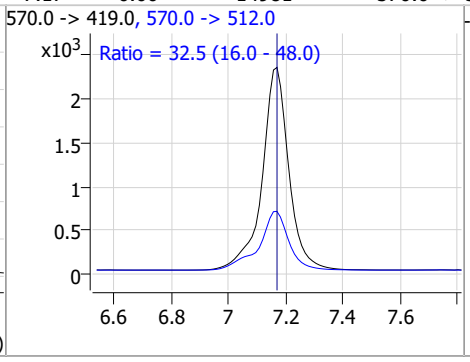


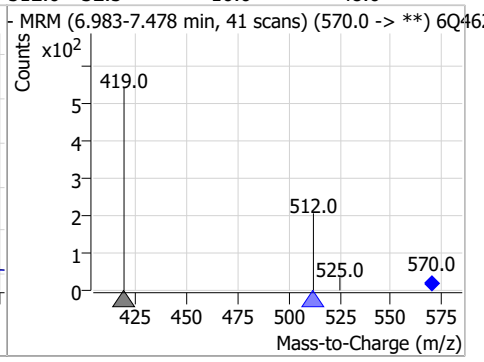




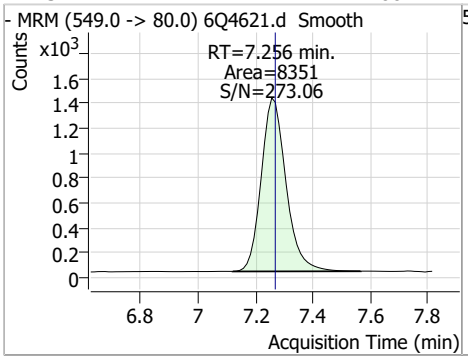
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	1.79	7.17	0.00	14981	570.0 -> 512.0	32.5	16.0	48.0

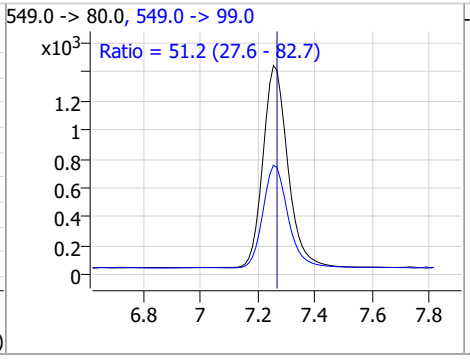


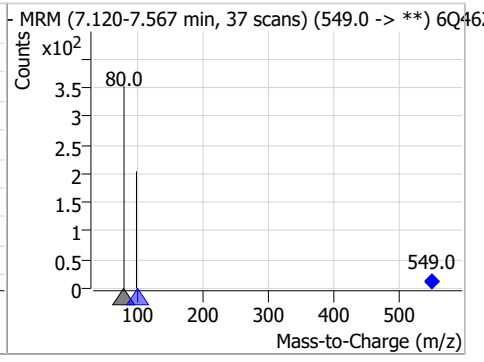




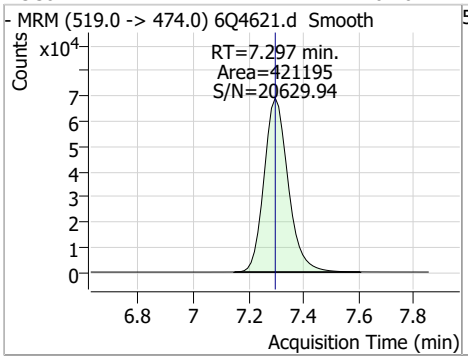
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.88	7.26	-0.01	8351	549.0 -> 99.0	51.2	27.6	82.7

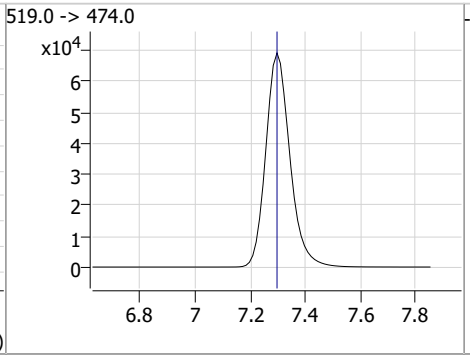


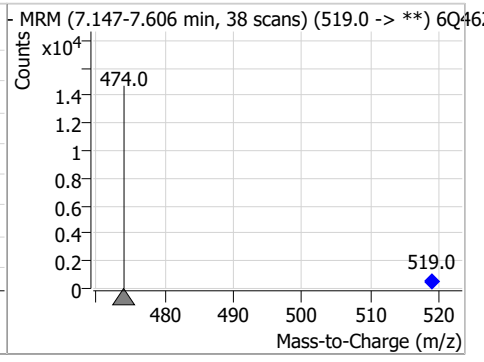




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.70	7.30	0.00	421195				

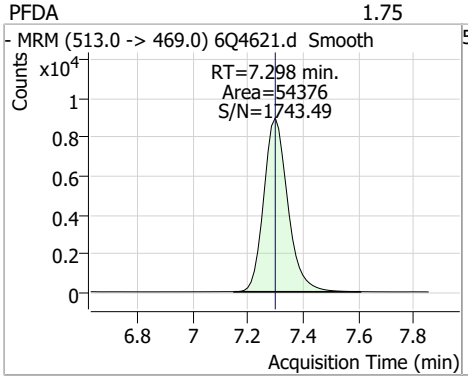


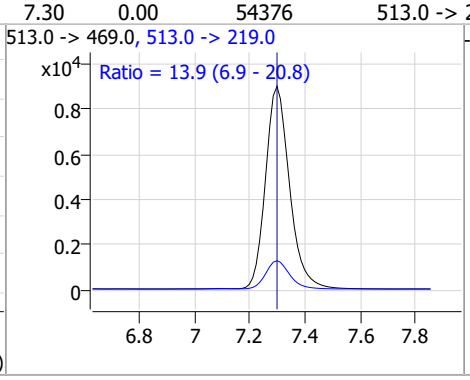


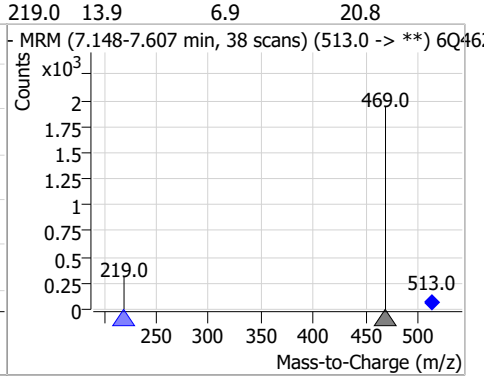


Perfluorinated Compounds by LC/MS/MS

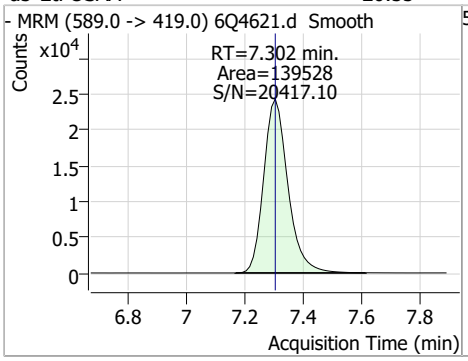
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	1.75	7.30	0.00	54376	513.0 -> 219.0	13.9	6.9	20.8

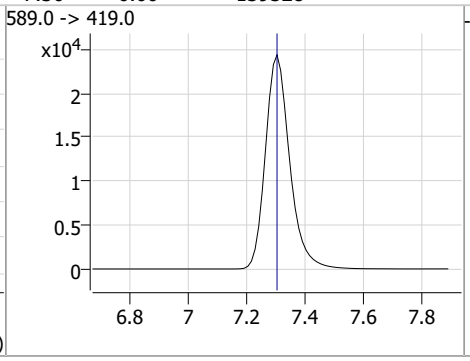


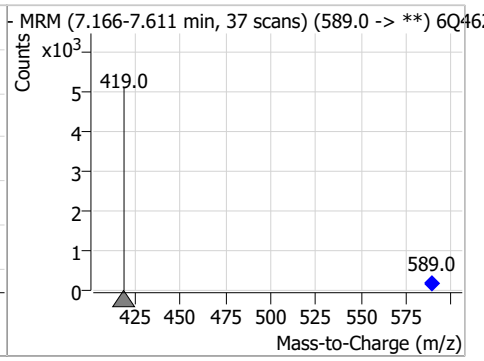




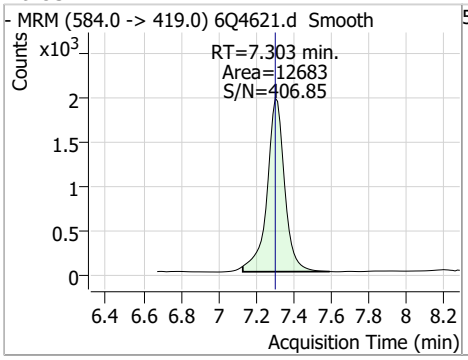
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.55	7.30	0.00	139528				

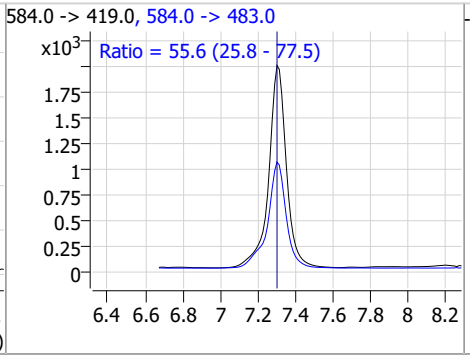


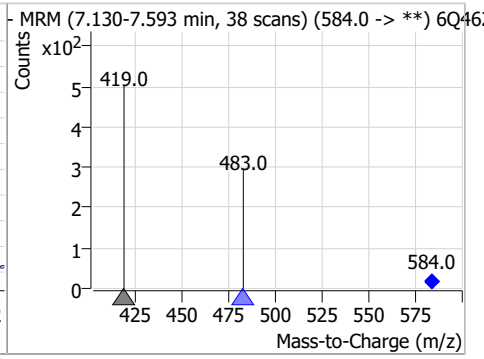




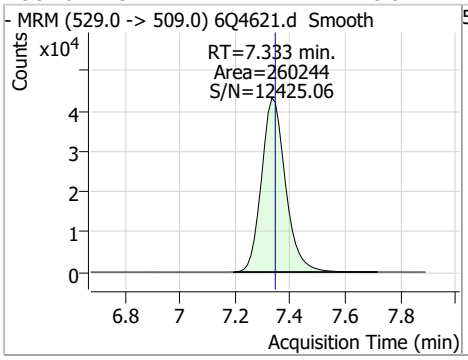
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	1.71	7.30	0.00	12683	584.0 -> 483.0	55.6	25.8	77.5

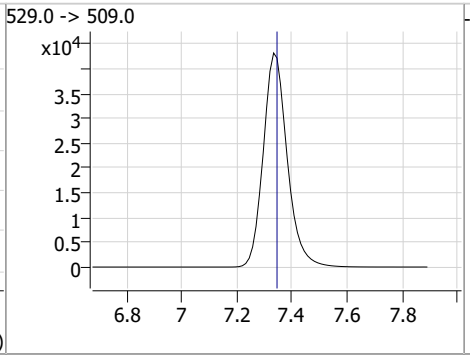


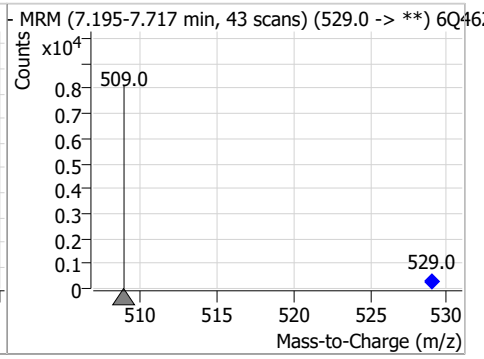




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.97	7.33	-0.01	260244				

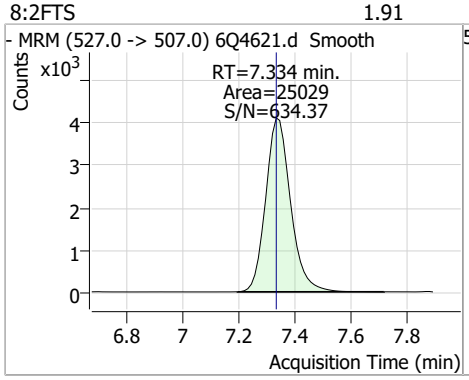


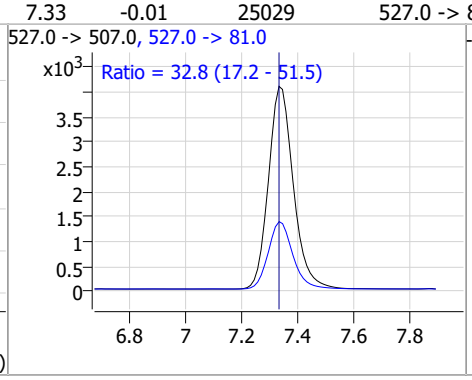


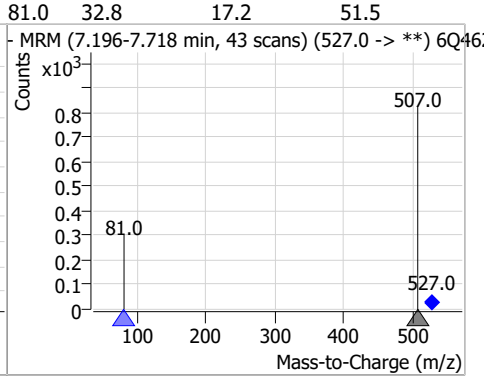


Perfluorinated Compounds by LC/MS/MS

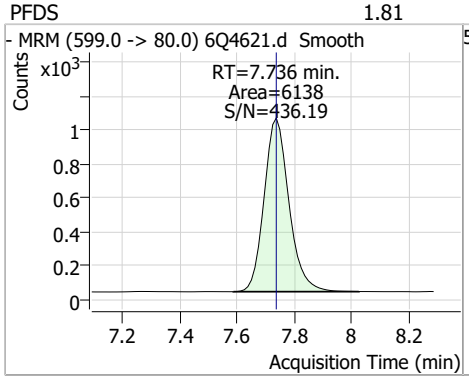
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.91	7.33	-0.01	25029	527.0 -> 81.0	32.8	17.2	51.5

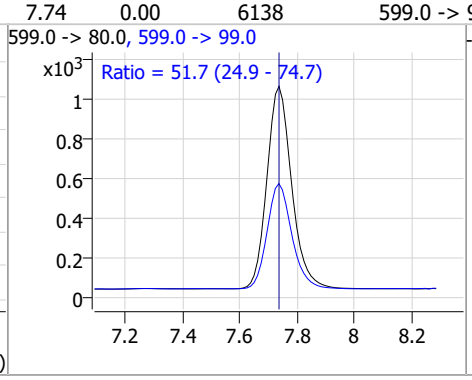


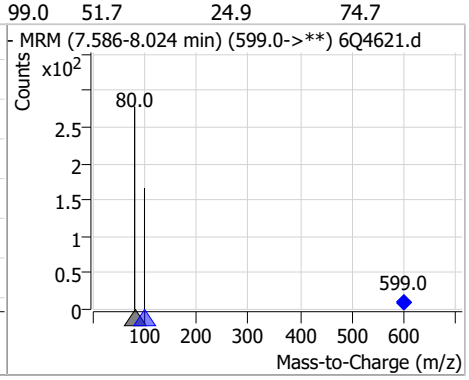




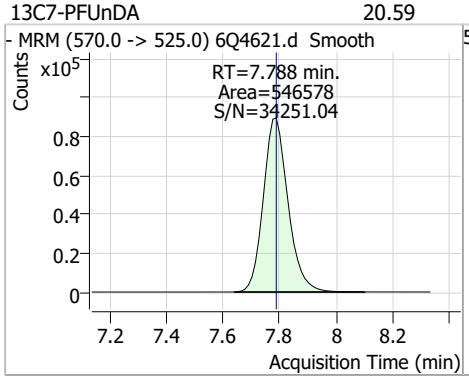
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	1.81	7.74	0.00	6138	599.0 -> 99.0	51.7	24.9	74.7

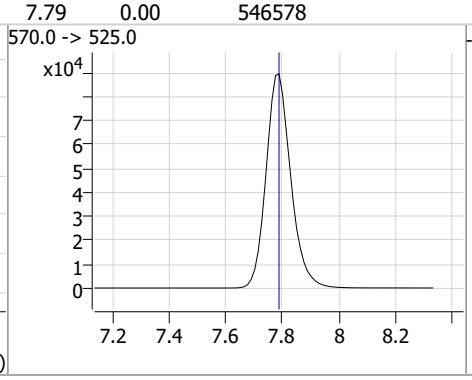


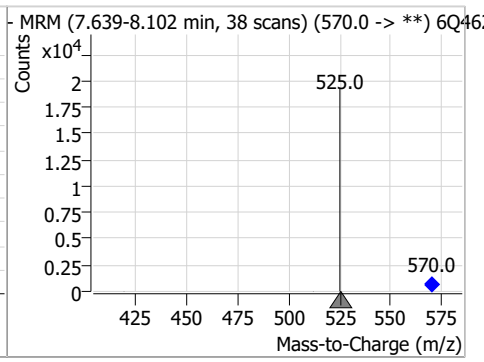




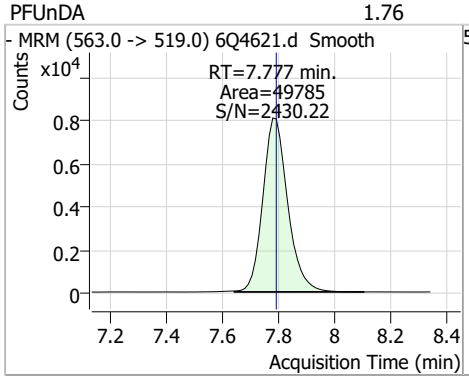
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.59	7.79	0.00	546578				

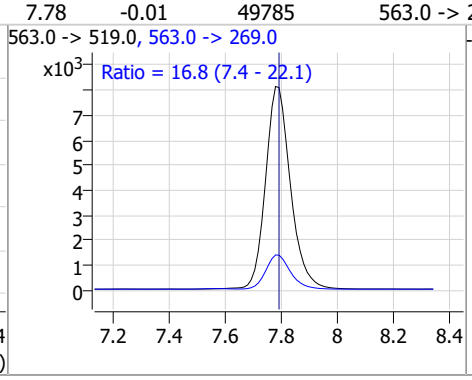


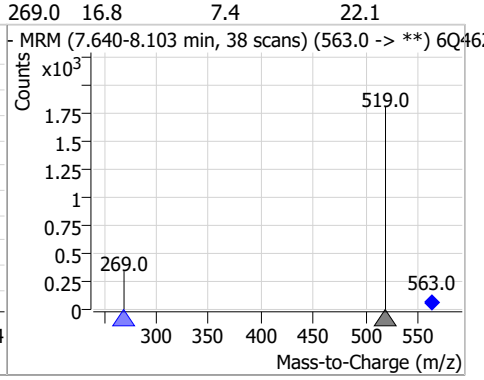




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	1.76	7.78	-0.01	49785	563.0 -> 269.0	16.8	7.4	22.1

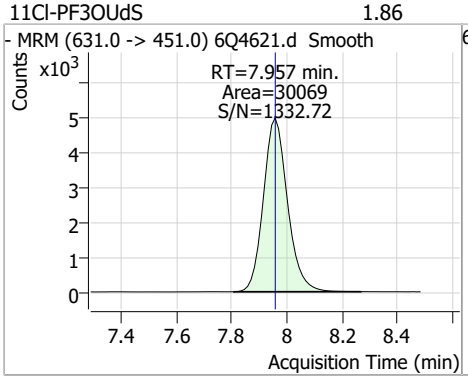


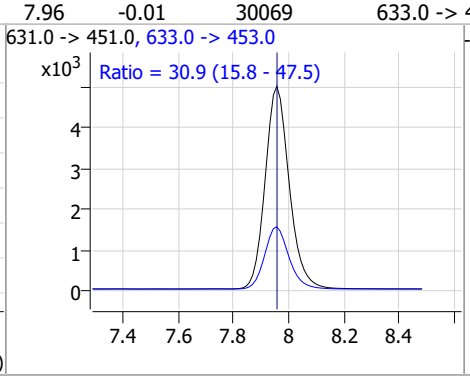


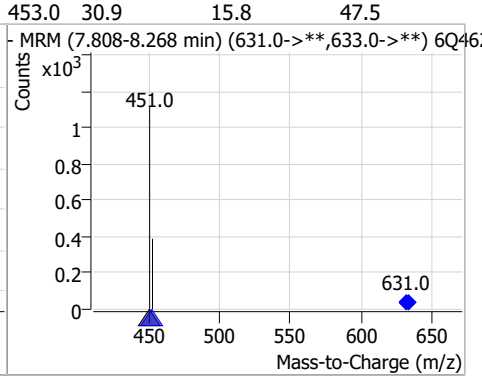


Perfluorinated Compounds by LC/MS/MS

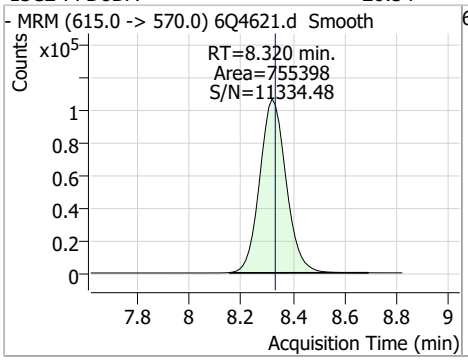
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	1.86	7.96	-0.01	30069	633.0 -> 453.0	30.9	15.8	47.5

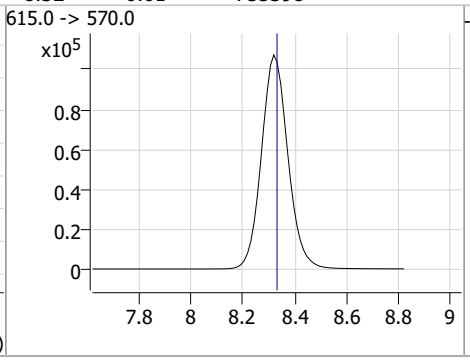


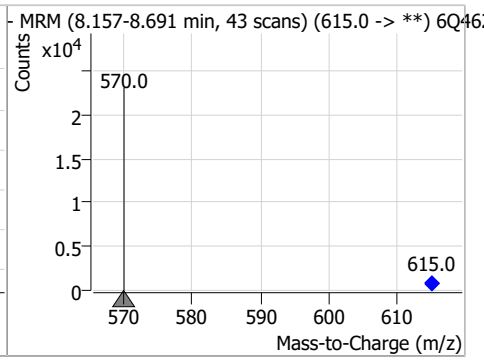




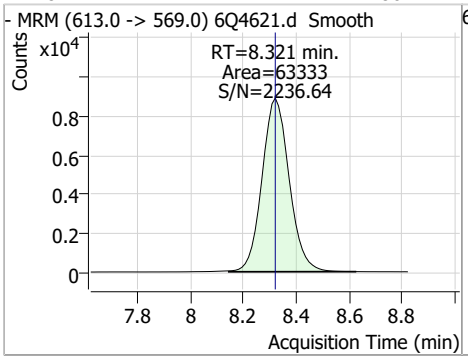
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.54	8.32	-0.01	755398				

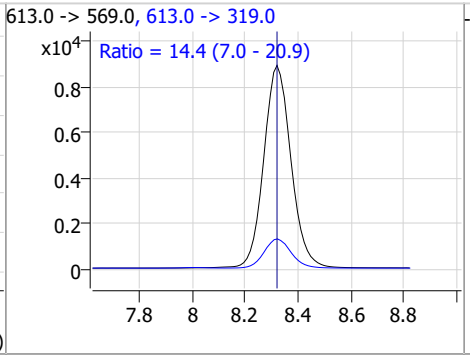


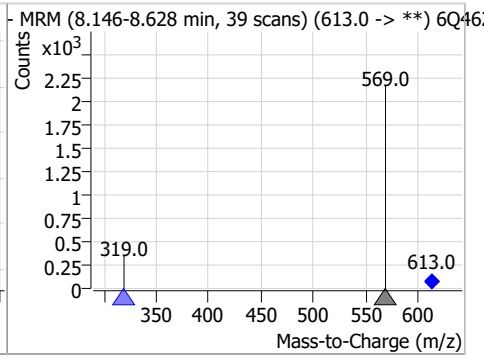




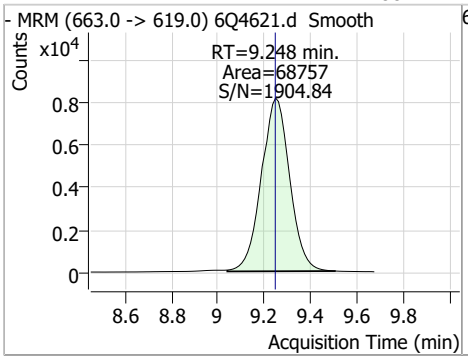
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	1.80	8.32	-0.01	63333	613.0 -> 319.0	14.4	7.0	20.9

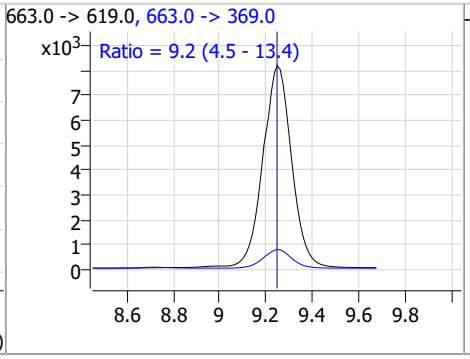


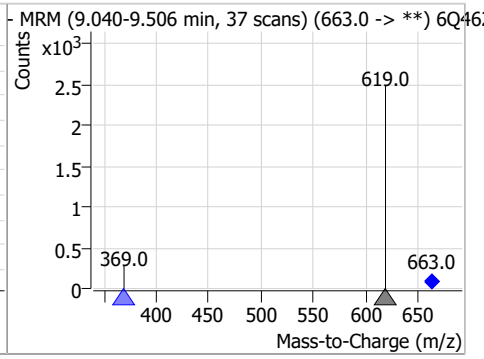




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	1.88	9.25	-0.01	68757	663.0 -> 369.0	9.2	4.5	13.4

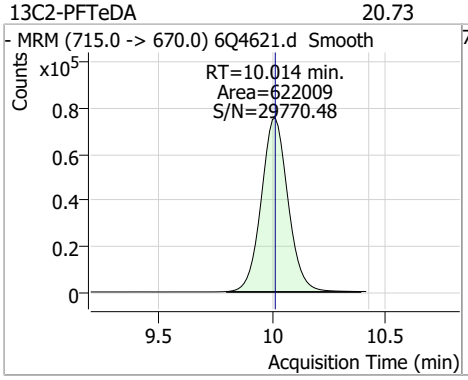


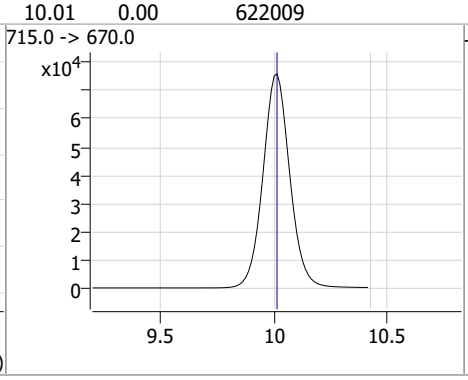


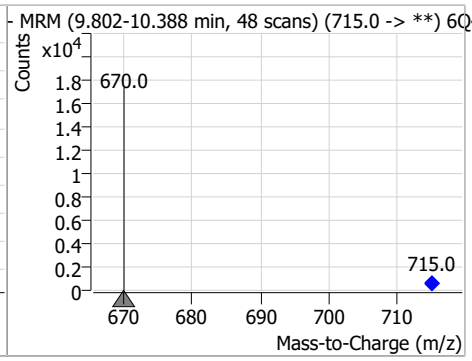


Perfluorinated Compounds by LC/MS/MS

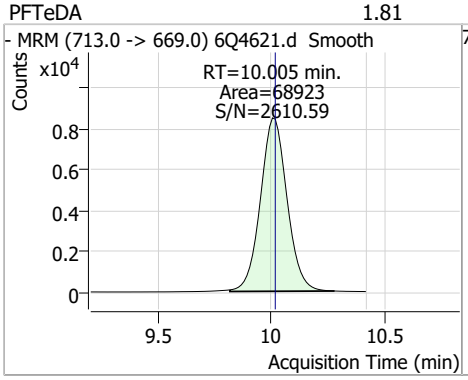
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.73	10.01	0.00	622009				

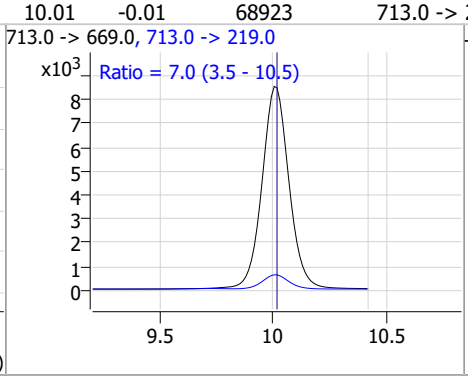


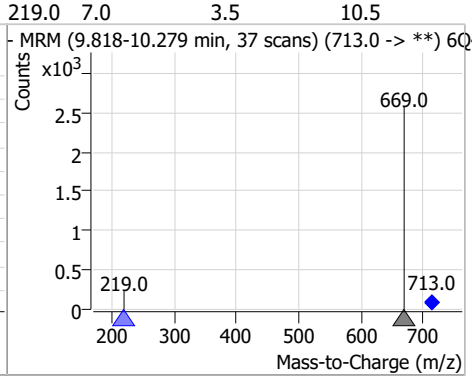




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	1.81	10.01	-0.01	68923	713.0 -> 219.0	7.0	3.5	10.5







7.7.83

7

Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4621.D
Injection Time: 09/14/22 11:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4622.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/14/2022 11:31:57 AM
Sample Name	:	ic85-5
Vial	:	P1-A5
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	s6q85.batch.bin
Sample Information	:	OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	78182	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	138985	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	211582	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	245597	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	434271	20.00	µg/L	0.000
M9-PFNA	6.757	472.0 -> 427.0	522955	20.00	µg/L	0.012
M6-PFDA	7.297	519.0 -> 474.0	396110	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	521660	20.00	µg/L	0.000
M2-PFDoDA	8.346	615.0 -> 570.0	741096	20.00	µg/L	0.014
M2-PFTeDA	10.026	715.0 -> 670.0	594643	20.00	µg/L	0.012
M8-FOSA	6.654	506.0 -> 78.0	193811	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	30176	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	26901	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	41637	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	252107	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	324287	20.00	µg/L	0.000
M2-8:2FTS	7.346	529.0 -> 509.0	244113	20.00	µg/L	0.000
M3-MeFOSAA	7.155	573.0 -> 419.0	158909	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	4942	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	43975	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	138418	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	252107	18.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%		
13C2-6:2FTS	6.136	429.0 -> 409.0	324287	19.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.0%		
13C2-8:2FTS	7.346	529.0 -> 509.0	244113	18.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C2-PFDoDA	8.346	615.0 -> 570.0	741096	20.15	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C2-PFTeDA	10.026	715.0 -> 670.0	594643	19.82	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C3-PFBS	3.635	302.0 -> 99.0	30176	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C3-PFHxS	5.475	402.0 -> 99.0	26901	19.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C4-PFBA	1.949	217.0 -> 172.0	78182	19.64	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%		
13C4-PFHpA	5.445	367.0 -> 322.0	245597	19.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
13C5-PFHxA	4.573	318.0 -> 273.0	211582	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C5-PFPeA	3.418	268.0 -> 223.0	138985	19.82	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C6-PFDA	7.297	519.0 -> 474.0	396110	19.47	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

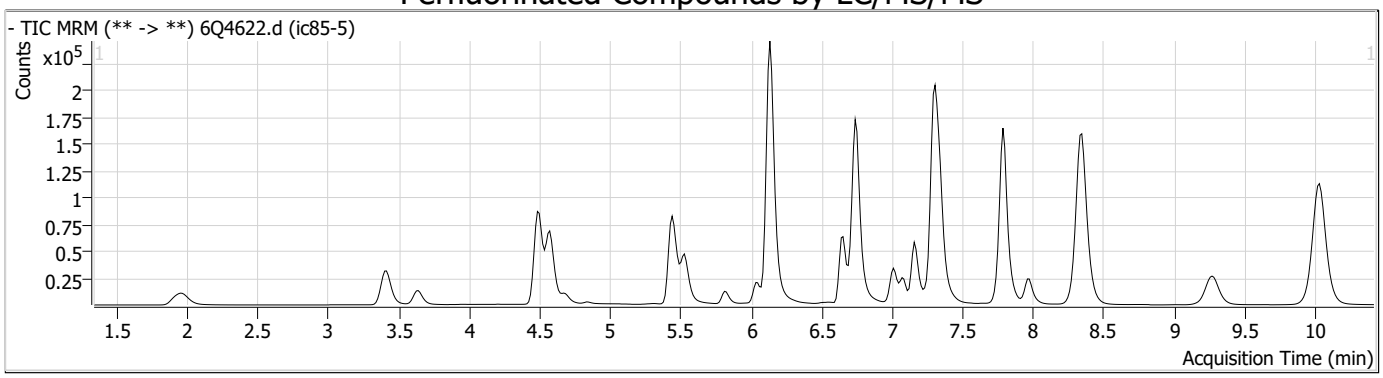
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C7-PFUnDA	7.788	570.0 -> 525.0	521660	19.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
13C8-FOSA	6.654	506.0 -> 78.0	193811	19.82	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%			
13C8-PFOA	6.138	421.0 -> 376.0	434271	20.47	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%			
13C8-PFOS	6.730	507.0 -> 99.0	41637	19.63	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.2%			
13C9-PFNA	6.757	472.0 -> 427.0	522955	20.30	µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%			
d3-MeFOSAA	7.155	573.0 -> 419.0	158909	18.36	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.8%			
13C3-HFPO-DA	4.852	287.0 -> 169.0	4961	18.66	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.3%			
d3-MeFOSA	7.085	515.0 -> 169.0	43975	19.44	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	138411	20.39	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%			
Target Compounds							QValue
4:2FTS	4.485	327.0 -> 307.0	72983	5.35	µg/L		99
		327.0 -> 81.0	23306				
6:2FTS	6.137	427.0 -> 407.0	89148	5.43	µg/L		96
		427.0 -> 81.0	22748				
8:2FTS	7.346	527.0 -> 507.0	65417	5.33	µg/L		99
		527.0 -> 81.0	22113				
EtFOSAA	7.303	584.0 -> 419.0	33084	4.48	µg/L		96
		584.0 -> 483.0	18127				
FOSA	6.656	498.0 -> 78.0	49566	5.10	µg/L		100
		498.0 -> 478.0	1892				
MeFOSAA	7.168	570.0 -> 419.0	37683	5.17	µg/L		95
		570.0 -> 512.0	13044				
PFBA	1.955	213.0 -> 169.0	8426	4.94	µg/L		100
PFBS	3.640	299.0 -> 80.0	24211	4.83	µg/L		100
		299.0 -> 99.0	9082				
PFDA	7.298	513.0 -> 469.0	137878	4.72	µg/L		99
		513.0 -> 219.0	19923				
PFDoDA	8.349	613.0 -> 569.0	164621	4.76	µg/L		100
		613.0 -> 319.0	23110				
PFDS	7.748	599.0 -> 80.0	16294	5.04	µg/L		98
		599.0 -> 99.0	7862				
PFHpA	5.446	363.0 -> 319.0	78996	4.95	µg/L		100
		363.0 -> 169.0	11572				
PFHpS	6.148	449.0 -> 80.0	18712	5.15	µg/L		97
		449.0 -> 99.0	9388				
PFHxA	4.574	313.0 -> 269.0	52300	4.70	µg/L		100
		313.0 -> 119.0	1324				
PFHxS	5.477	399.0 -> 80.0	19226	4.99	µg/L	m	100
		399.0 -> 99.0	9375				
PFNA	6.757	463.0 -> 419.0	111339	4.52	µg/L		98
		463.0 -> 219.0	19368				
PFNS	7.268	549.0 -> 80.0	20757	4.91	µg/L		93
		549.0 -> 99.0	10350				
PFOA	6.138	413.0 -> 369.0	113397	4.83	µg/L		99
		413.0 -> 169.0	17025				
PFOS	6.731	499.0 -> 80.0	19274	4.99	µg/L	m	94

Perfluorinated Compounds by LC/MS/MS

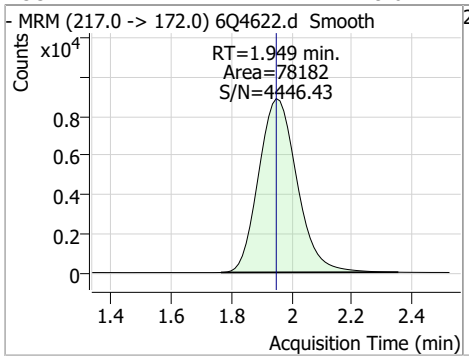
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	9880			
PFPeA	3.420	263.0 -> 219.0	28177	4.81	µg/L	100
PFPeS	4.681	349.0 -> 80.0	20120	4.82	µg/L	100
		349.0 -> 99.0	9197			
PFTeDA	10.030	713.0 -> 669.0	175475	4.81	µg/L	100
		713.0 -> 219.0	12266			
PFTrDA	9.273	663.0 -> 619.0	175394	4.90	µg/L	100
		663.0 -> 369.0	15861			
PFUnDA	7.789	563.0 -> 519.0	134085	4.97	µg/L	99
		563.0 -> 269.0	20275			
11Cl-PF3OUdS	7.969	631.0 -> 451.0	77189	4.86	µg/L	98
		633.0 -> 453.0	23456			
9Cl-PF3ONS	7.009	531.0 -> 351.0	100223	4.97	µg/L	100
		533.0 -> 353.0	31170			
ADONA	5.532	377.0 -> 251.0	130324	5.23	µg/L	100
		377.0 -> 85.0	31238			
HFPO-DA	4.853	285.0 -> 169.0	1291	5.52	µg/L	100
		285.0 -> 185.0	181			
MeFOSA	7.086	512.0 -> 169.0	12639	5.27	µg/L	99
		512.0 -> 219.0	12117			
4-PFECHS	6.044	461.0 -> 381.0	63471	4.54	µg/L	98
		461.0 -> 99.0	21770			
FBSA	4.514	298.0 -> 78.0	52481	5.09	µg/L	100
		298.0 -> 64.0	3608			
FHxSA	5.828	398.0 -> 78.0	44326	4.62	µg/L	100
		398.0 -> 64.0	1612			

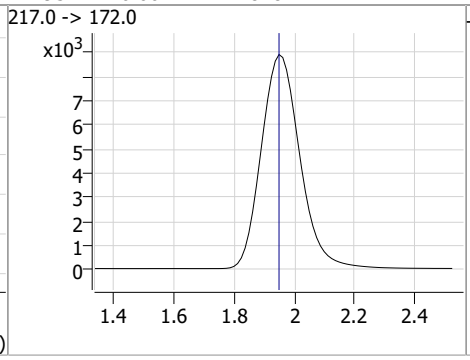
 # = Qualifier out of range, m = manually integrated, + = Area summed

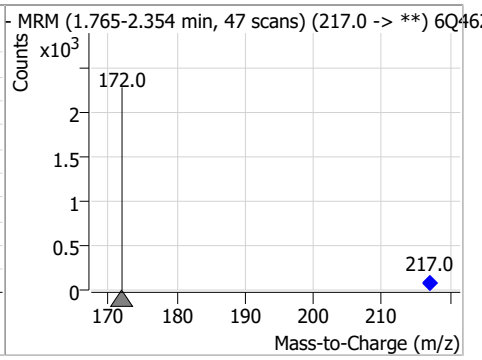
Perfluorinated Compounds by LC/MS/MS



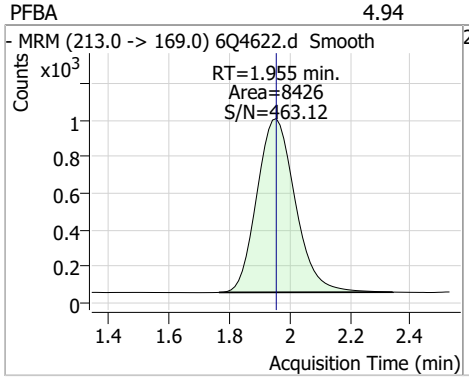
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.64	1.95	0.00	78182				

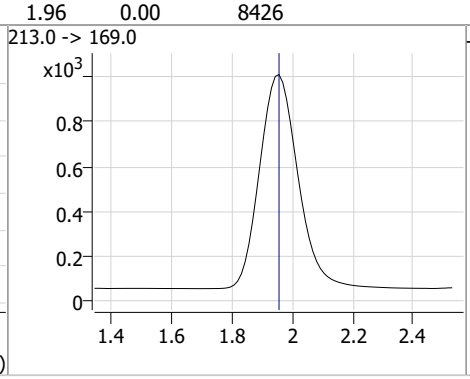


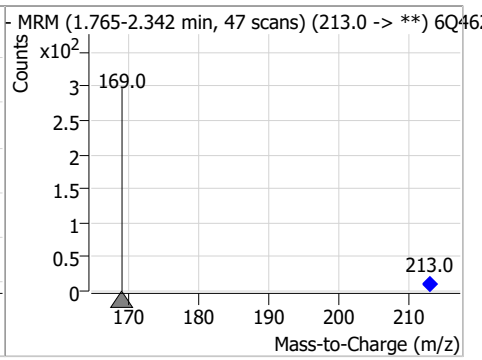




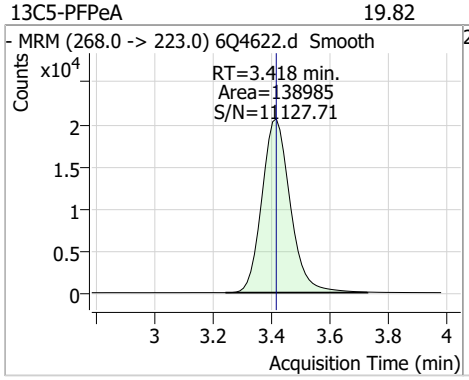
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	4.94	1.96	0.00	8426				

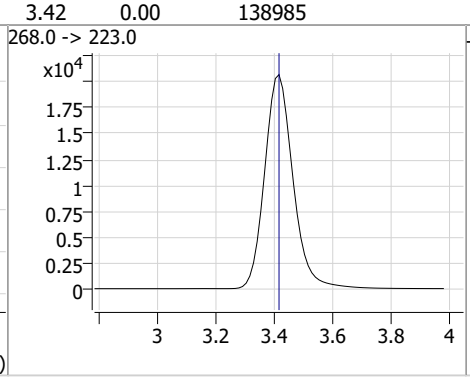


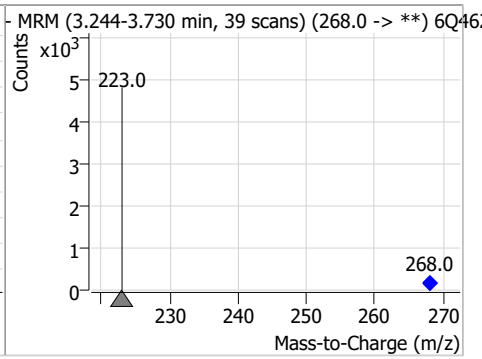




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.82	3.42	0.00	138985				

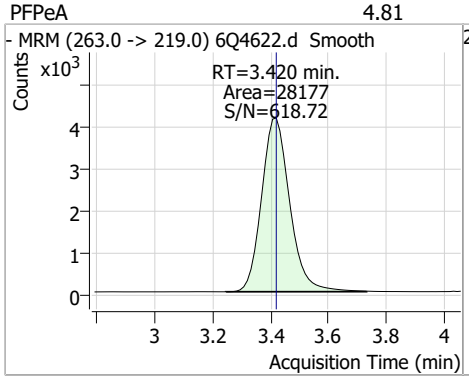


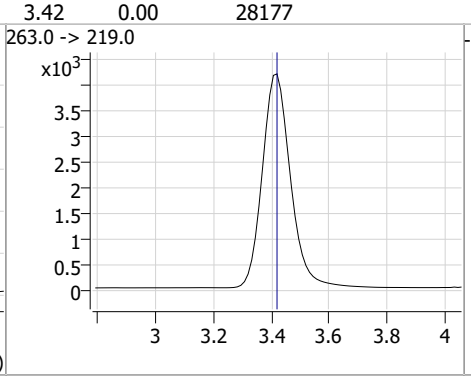


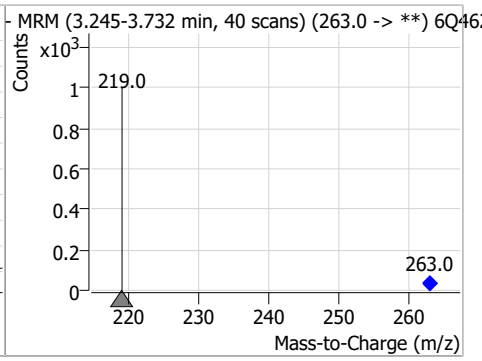


Perfluorinated Compounds by LC/MS/MS

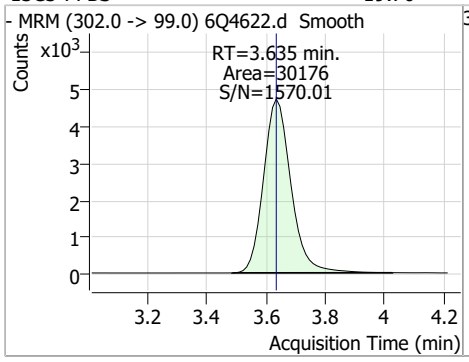
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	4.81	3.42	0.00	28177				

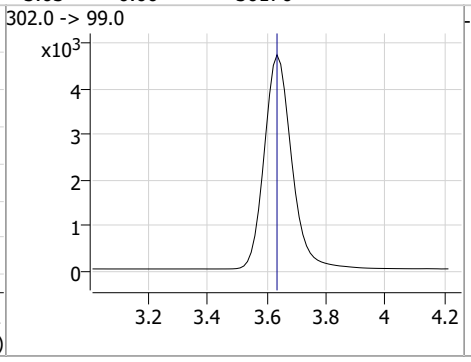


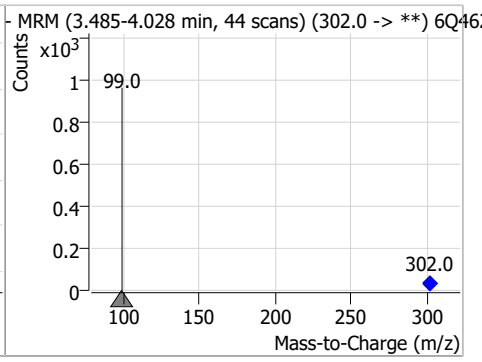




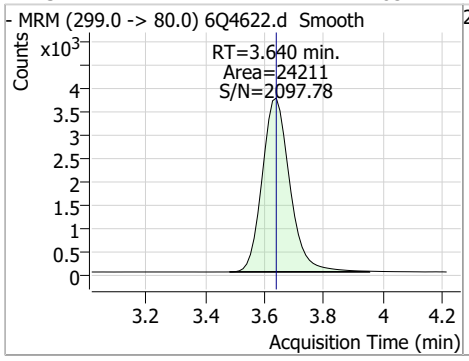
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.70	3.63	0.00	30176				

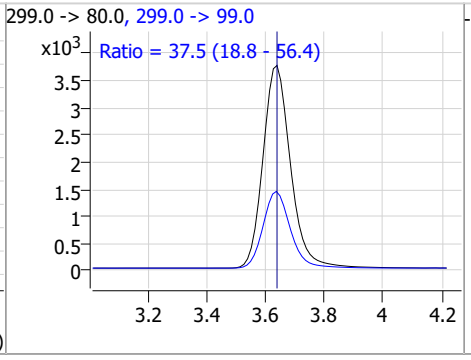


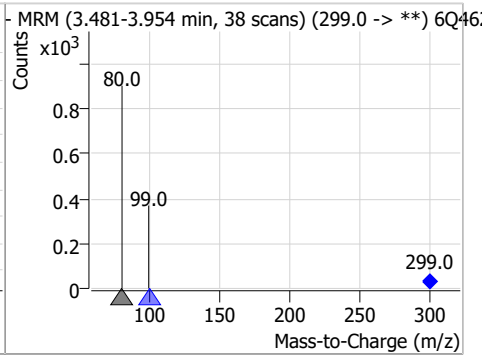




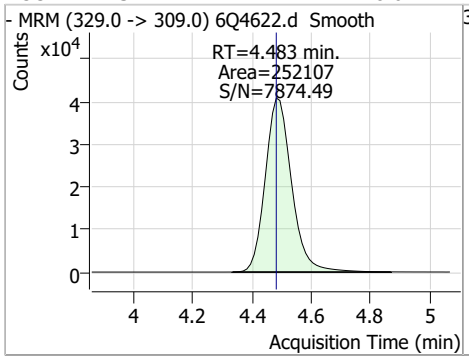
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	4.83	3.64	0.00	24211	299.0 -> 99.0	37.5	18.8	56.4

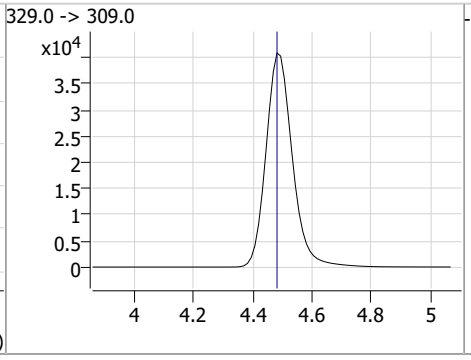


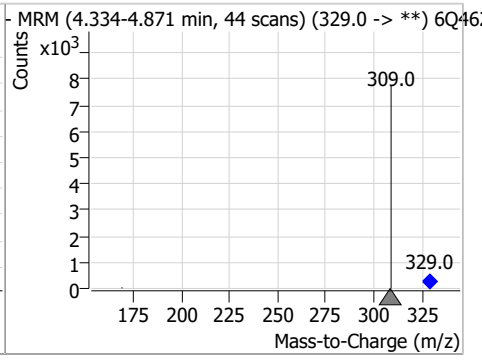




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	18.67	4.48	0.00	252107				

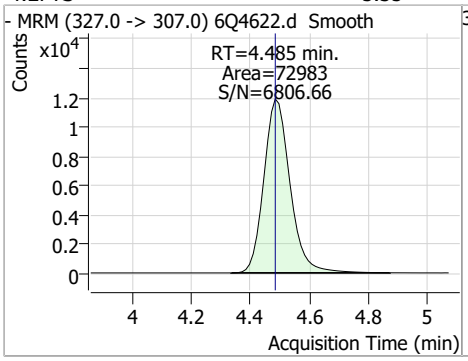


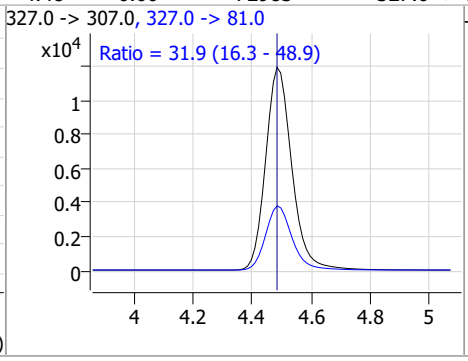


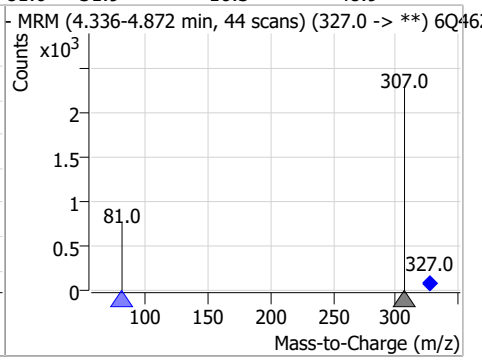


Perfluorinated Compounds by LC/MS/MS

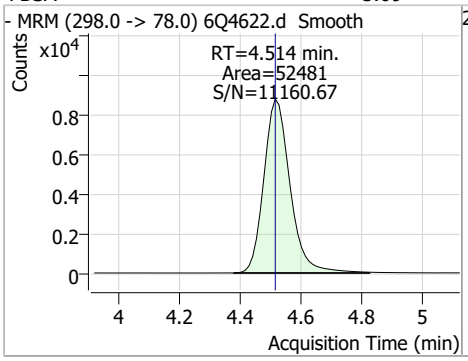
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	5.35	4.48	0.00	72983	327.0 -> 81.0	31.9	16.3	48.9

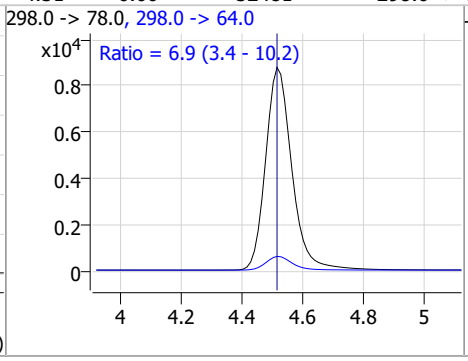


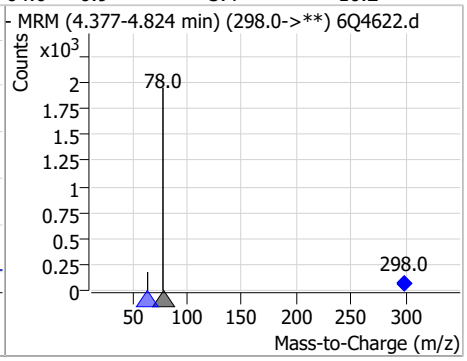




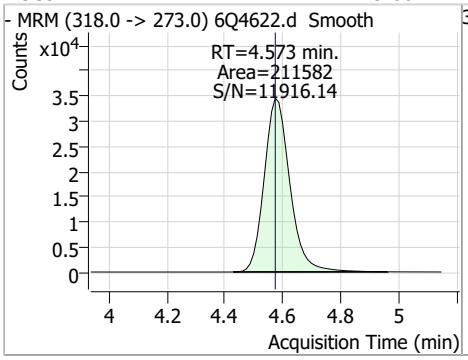
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	5.09	4.51	0.00	52481	298.0 -> 64.0	6.9	3.4	10.2

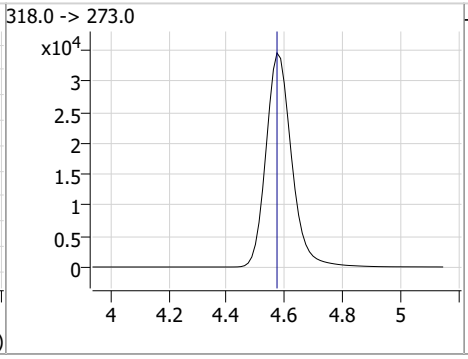


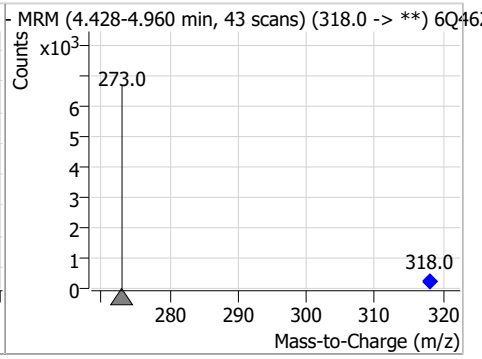




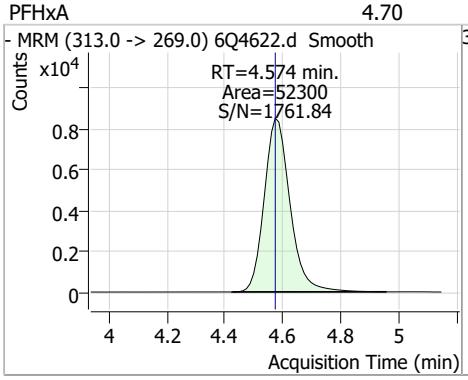
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.80	4.57	0.00	211582				

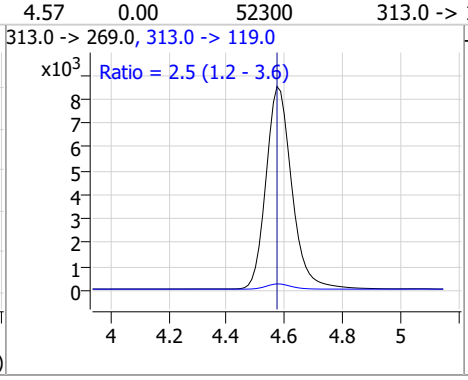


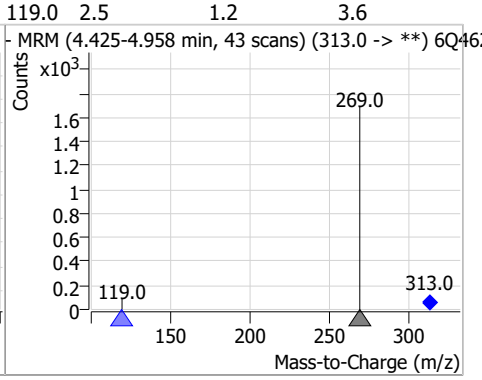




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	4.70	4.57	0.00	52300	313.0 -> 119.0	2.5	1.2	3.6

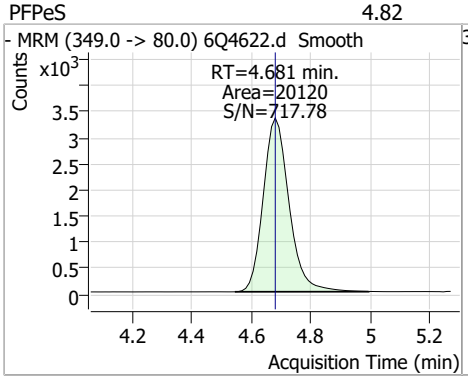


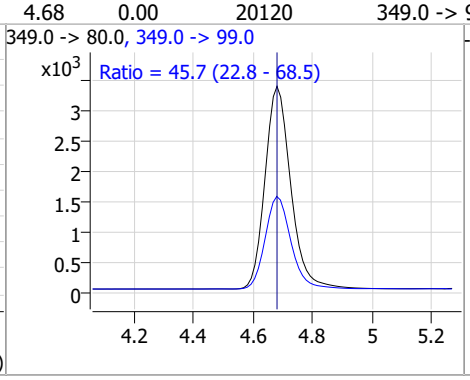


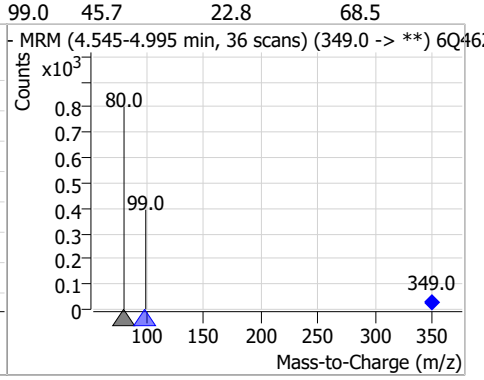


Perfluorinated Compounds by LC/MS/MS

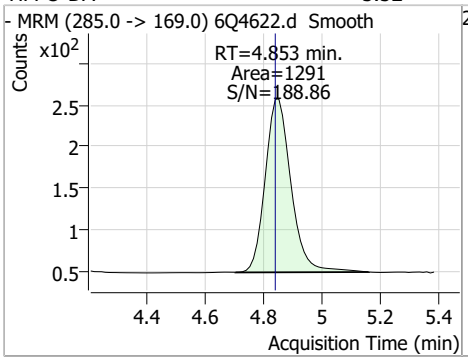
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	4.82	4.68	0.00	20120	349.0 -> 99.0	45.7	22.8	68.5

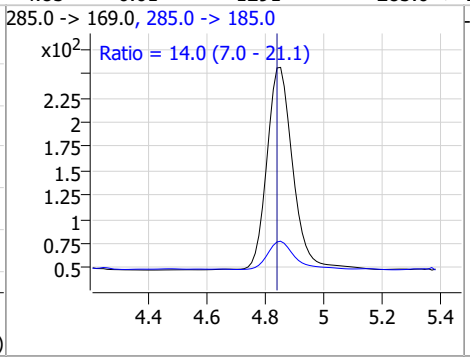


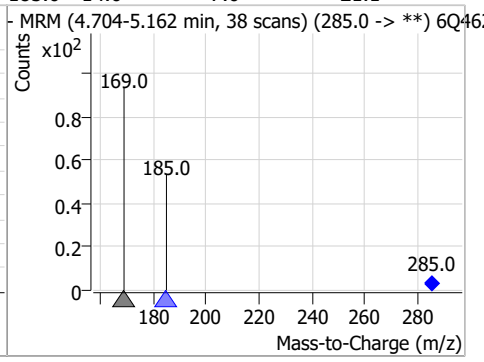




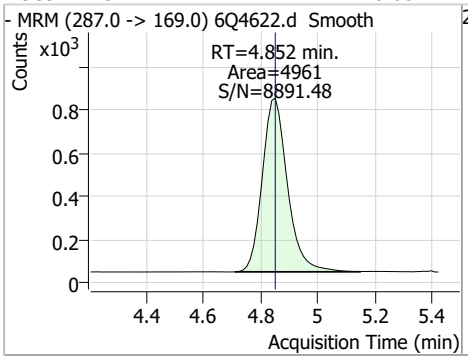
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	5.52	4.85	0.01	1291	285.0 -> 185.0	14.0	7.0	21.1

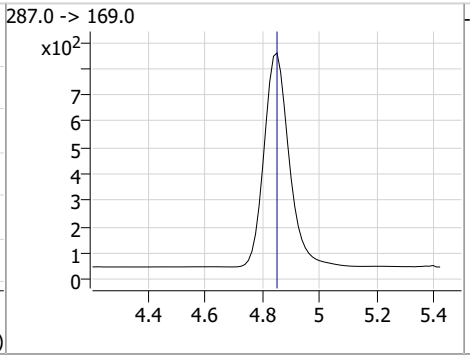


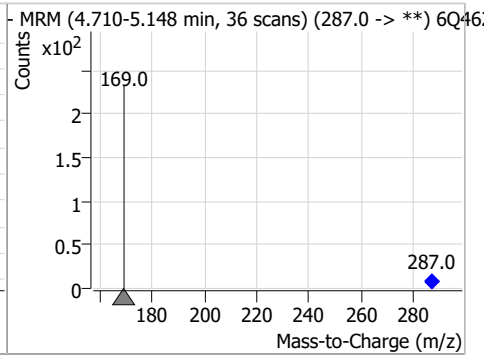




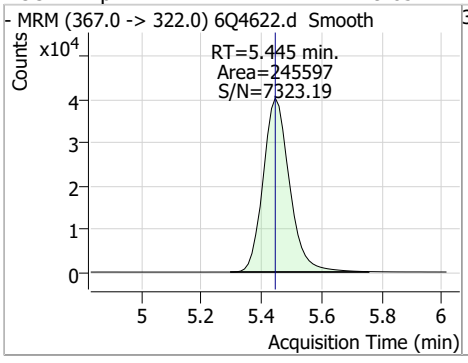
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	18.66	4.85	0.00	4961				

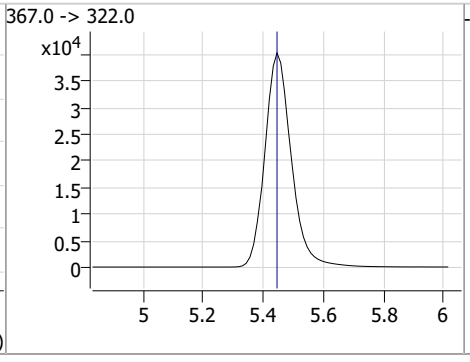


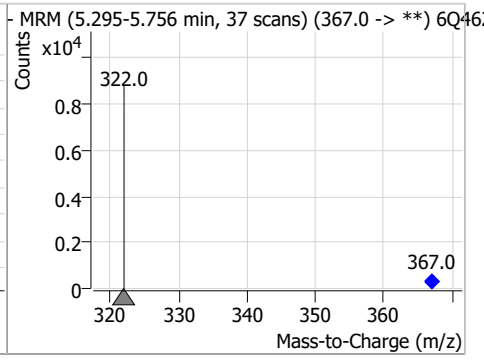




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.85	5.45	0.00	245597				

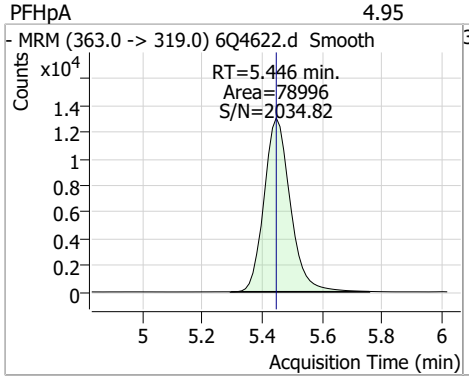


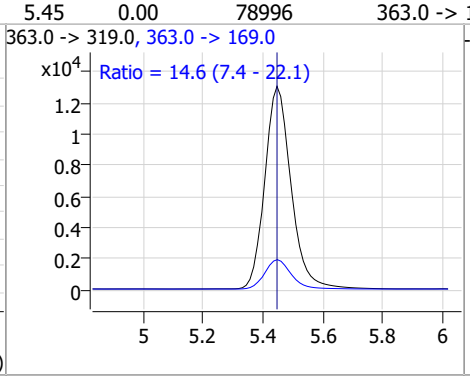


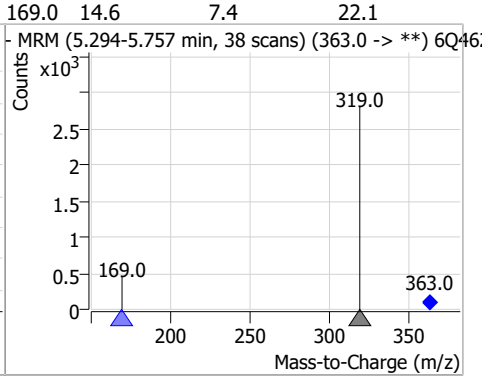


Perfluorinated Compounds by LC/MS/MS

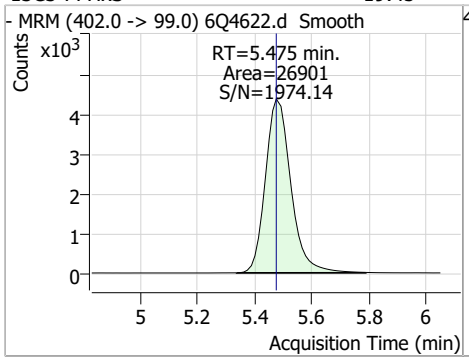
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	4.95	5.45	0.00	78996	363.0 -> 169.0	14.6	7.4	22.1

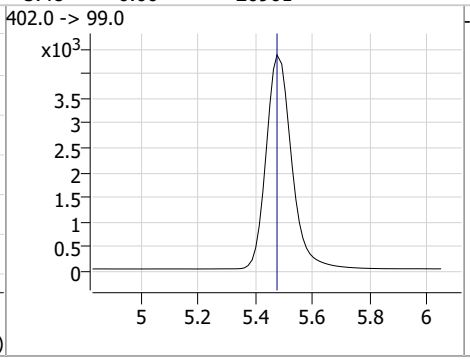


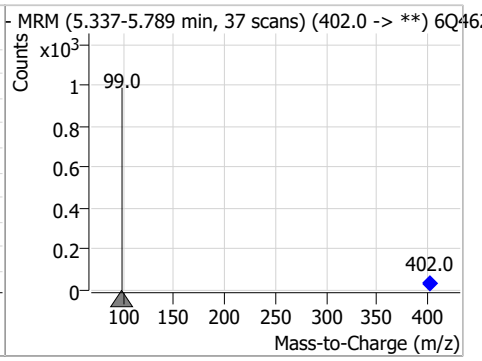




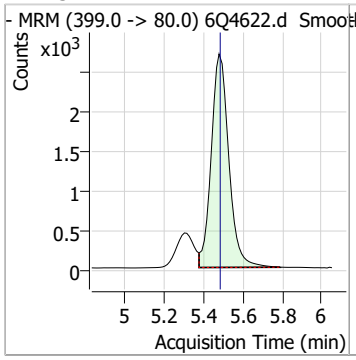
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.45	5.48	0.00	26901				

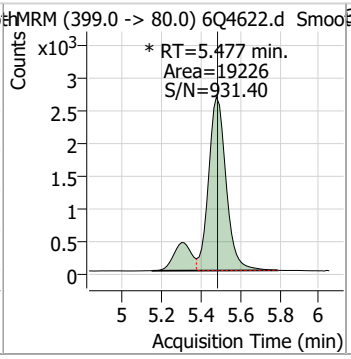


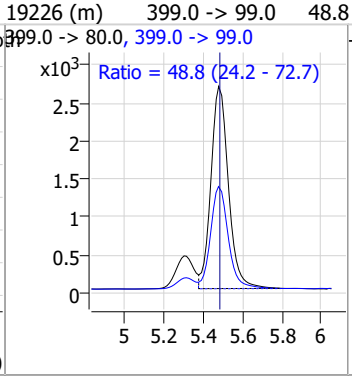


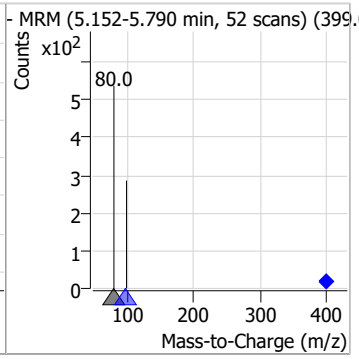


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	4.99	5.48	0.00	19226 (m)	399.0 -> 99.0	48.8	24.2	72.7

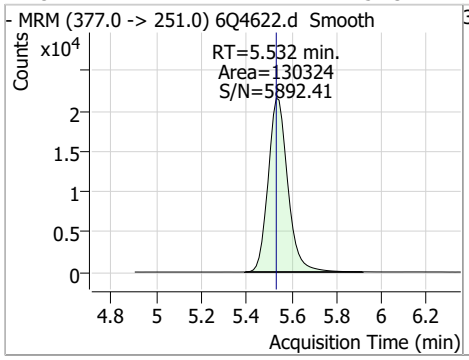


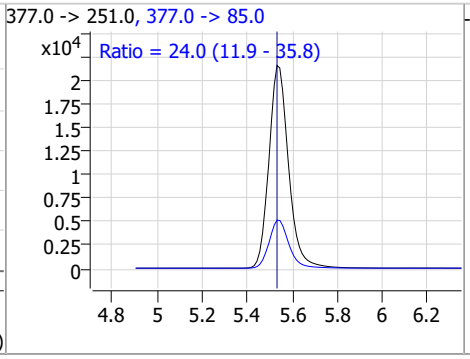


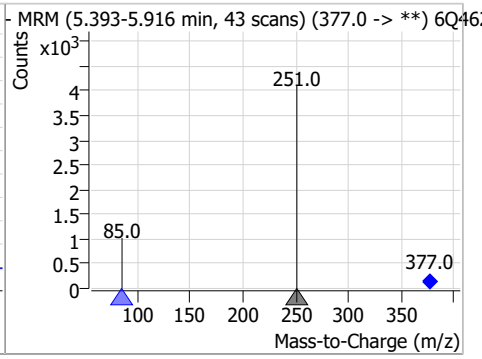




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	5.23	5.53	0.00	130324	377.0 -> 85.0	24.0	11.9	35.8

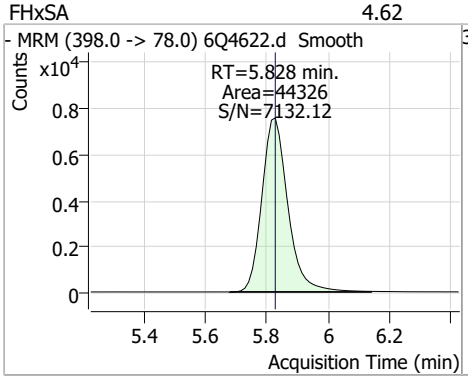


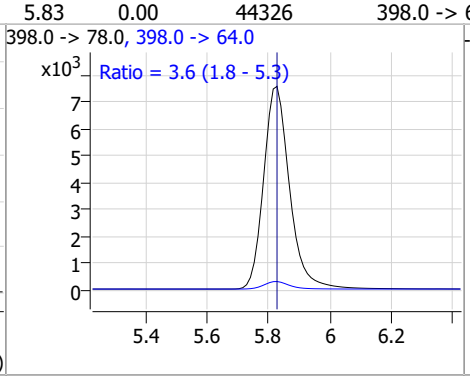


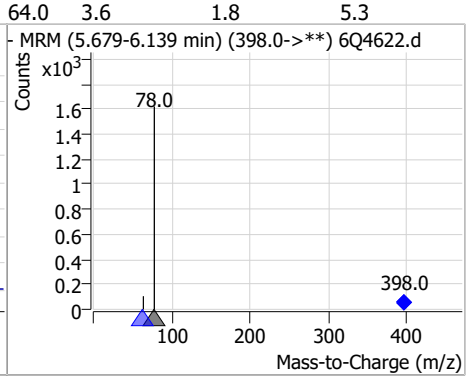


Perfluorinated Compounds by LC/MS/MS

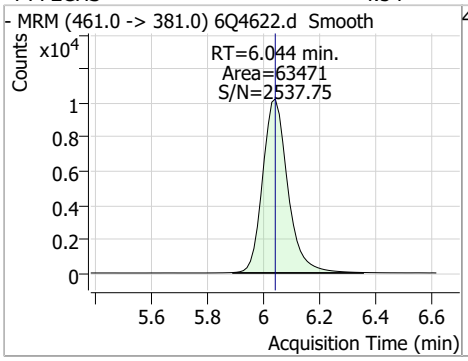
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	4.62	5.83	0.00	44326	398.0 -> 64.0	3.6	1.8	5.3

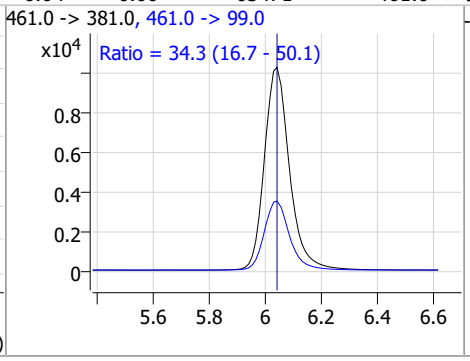


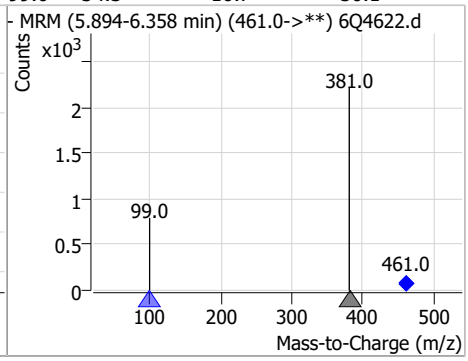




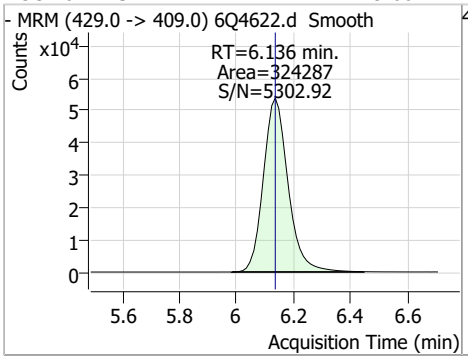
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	4.54	6.04	0.00	63471	461.0 -> 99.0	34.3	16.7	50.1

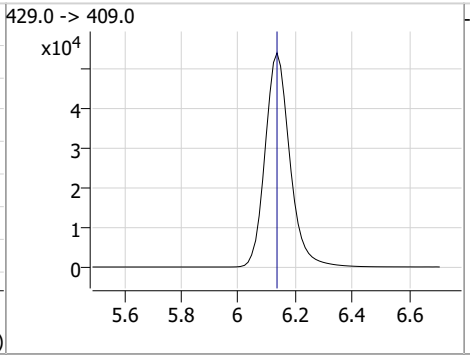


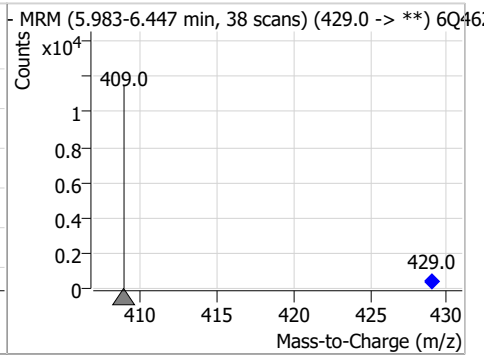




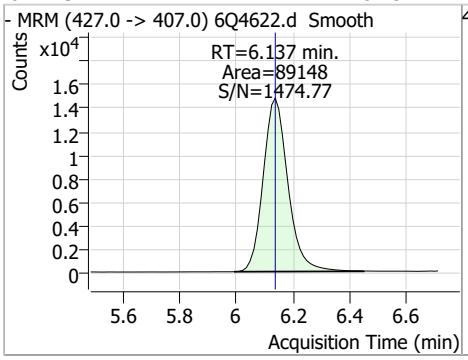
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.00	6.14	0.00	324287				

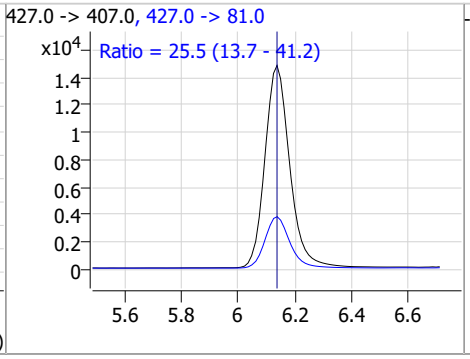


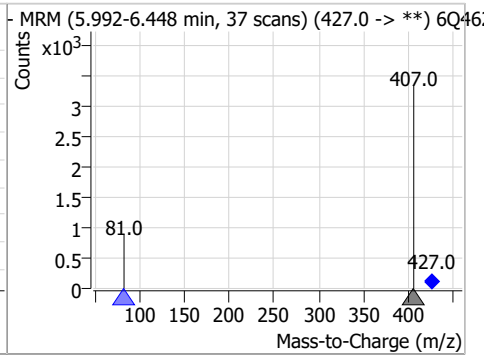




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	5.43	6.14	0.00	89148	427.0 -> 81.0	25.5	13.7	41.2

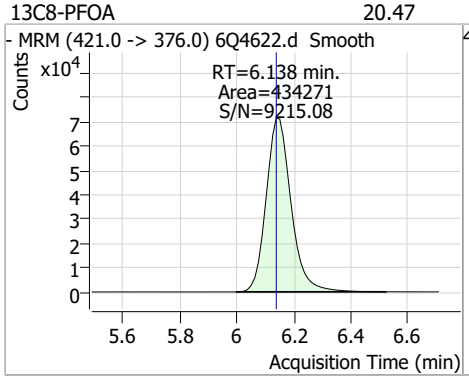


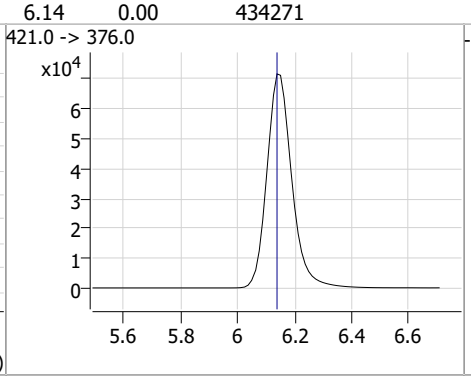


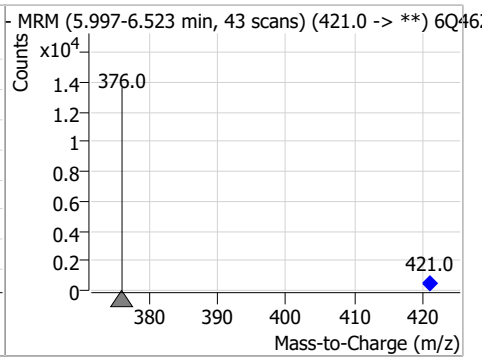


Perfluorinated Compounds by LC/MS/MS

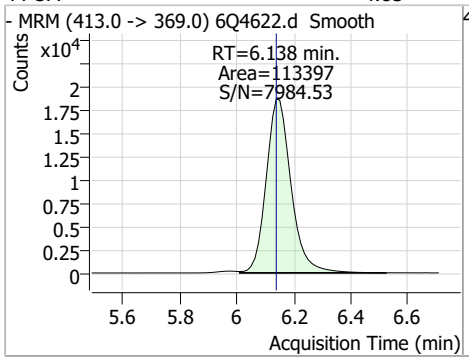
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.47	6.14	0.00	434271				

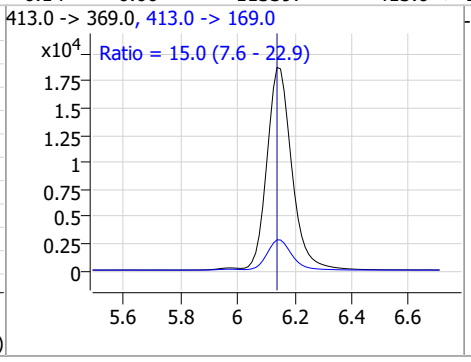


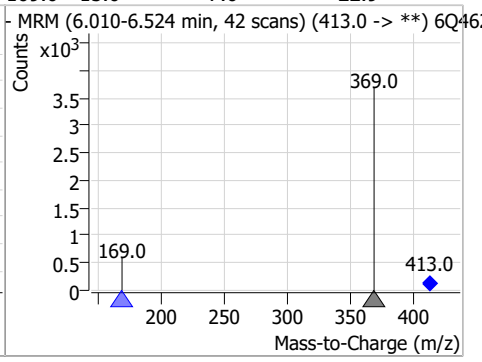




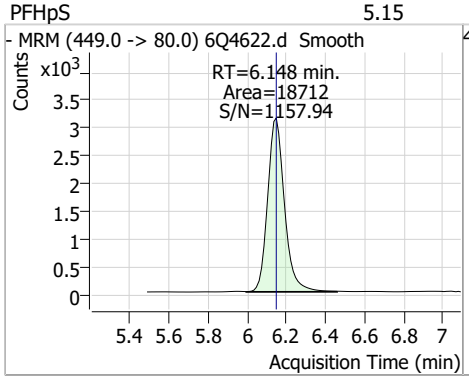
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	4.83	6.14	0.00	113397	413.0 -> 169.0	15.0	7.6	22.9

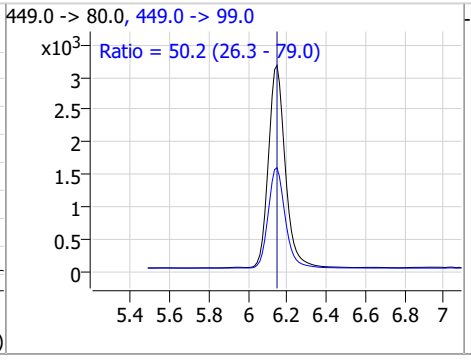


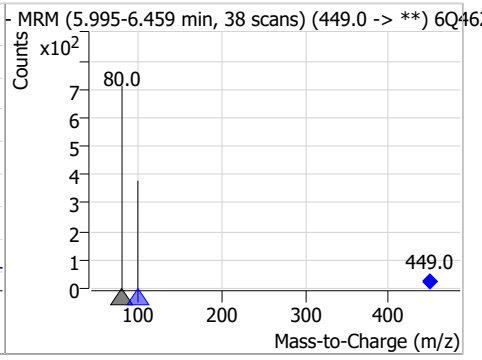




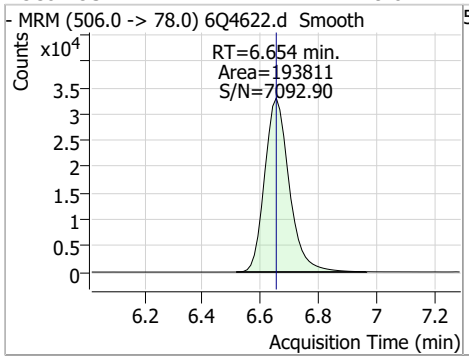
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	5.15	6.15	0.00	18712	449.0 -> 99.0	50.2	26.3	79.0

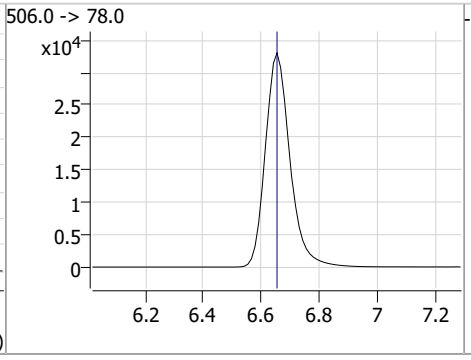


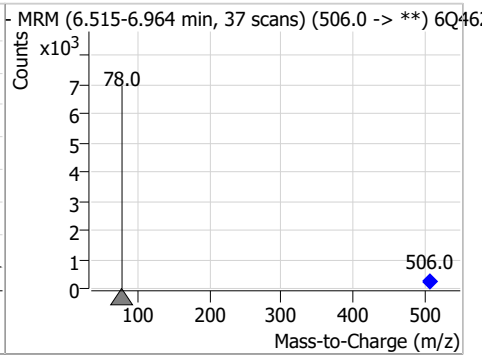




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.82	6.65	0.00	193811				

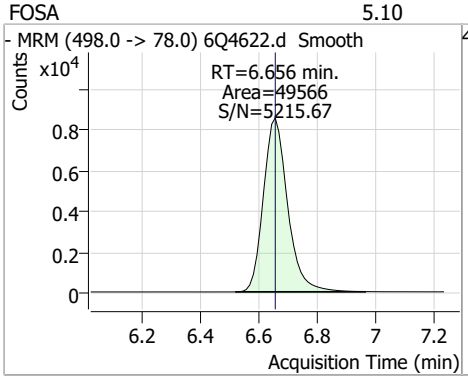


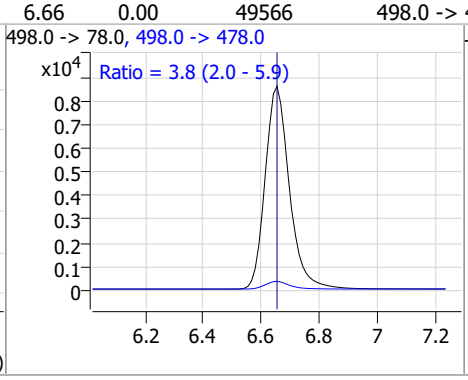


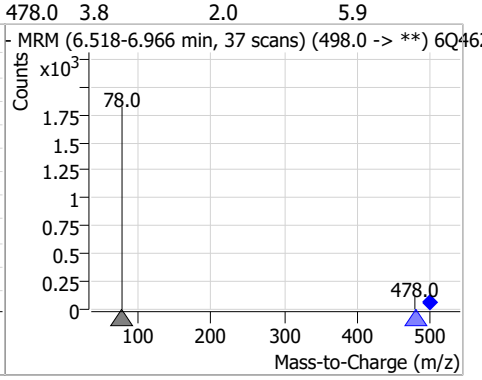


Perfluorinated Compounds by LC/MS/MS

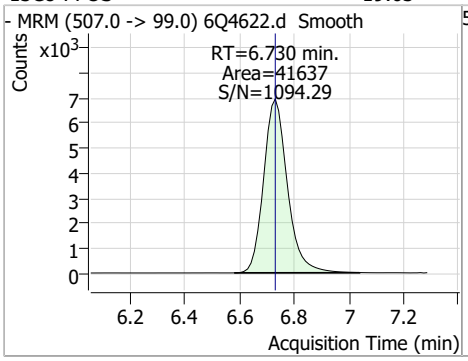
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	5.10	6.66	0.00	49566	498.0 -> 478.0	3.8	2.0	5.9

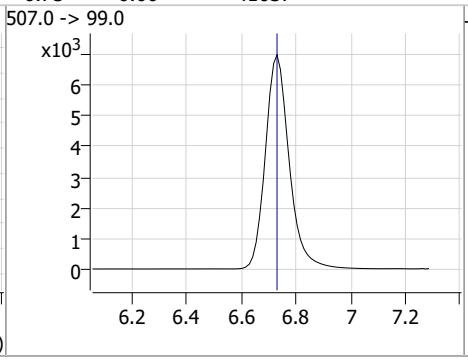


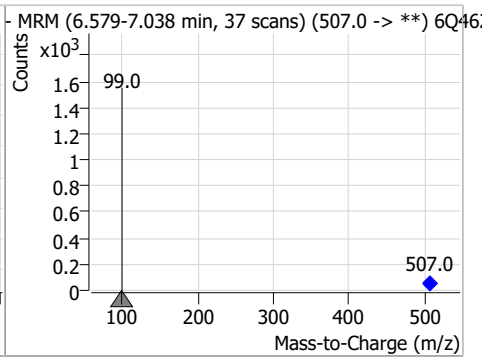




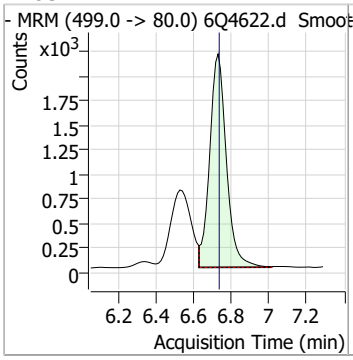
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.63	6.73	0.00	41637				

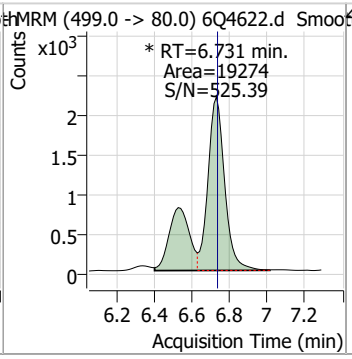


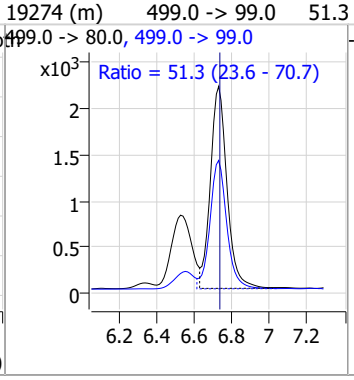


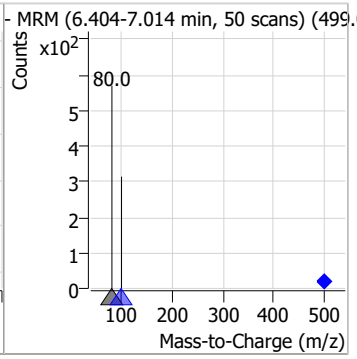


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	4.99	6.73	0.00	19274 (m)	499.0 -> 99.0	51.3	23.6	70.7

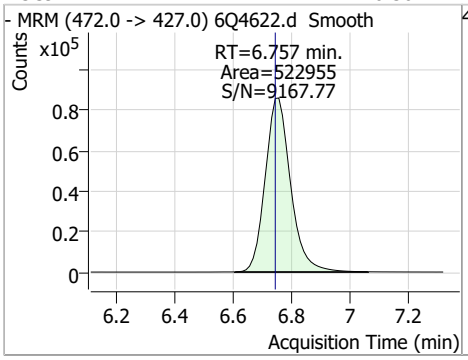


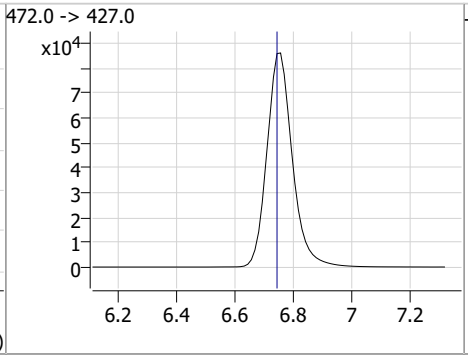


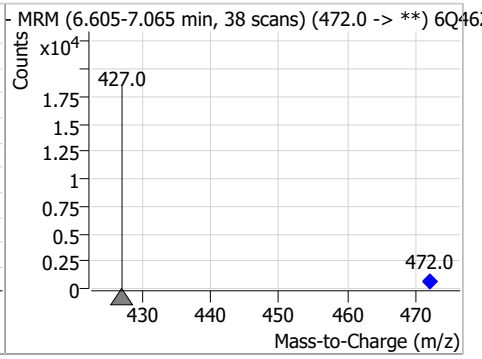




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.30	6.76	0.01	522955				

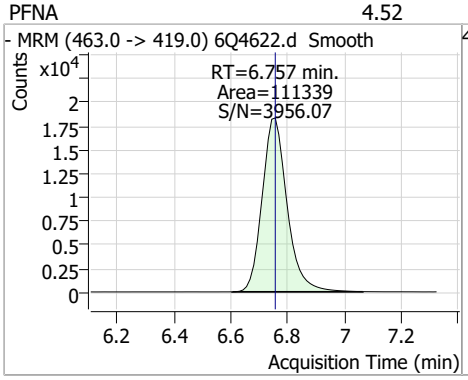


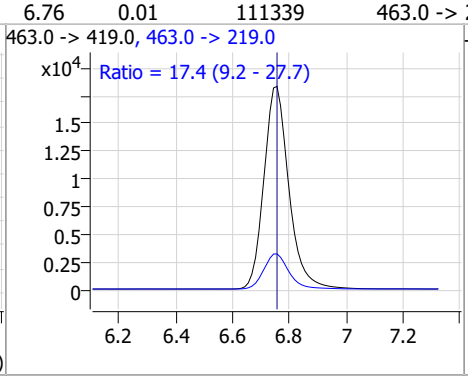


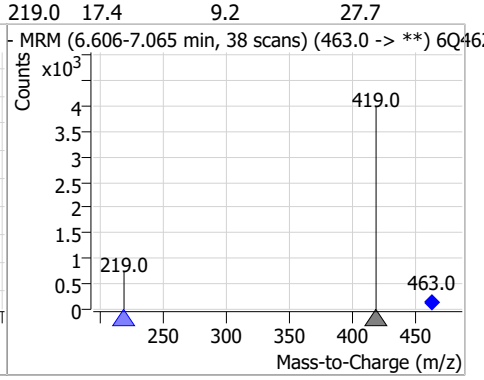


Perfluorinated Compounds by LC/MS/MS

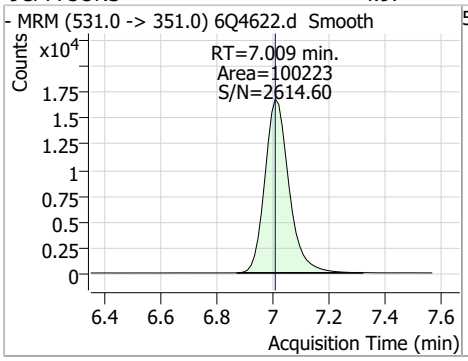
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	4.52	6.76	0.01	111339	463.0 -> 219.0	17.4	9.2	27.7

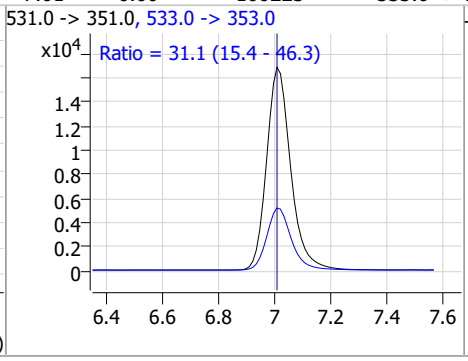


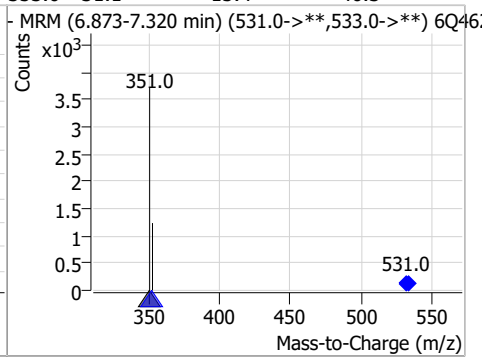




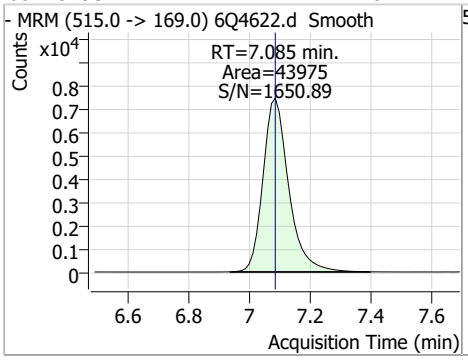
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	4.97	7.01	0.00	100223	533.0 -> 353.0	31.1	15.4	46.3

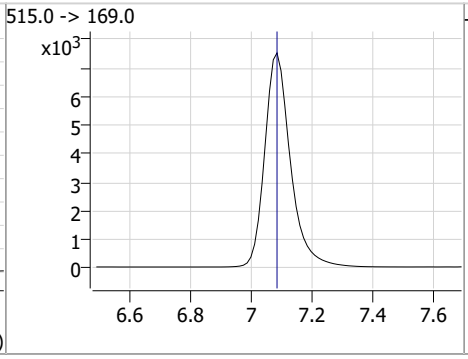


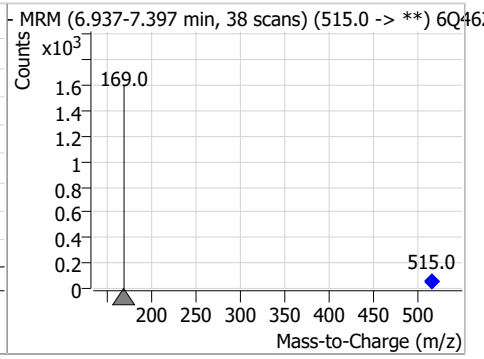




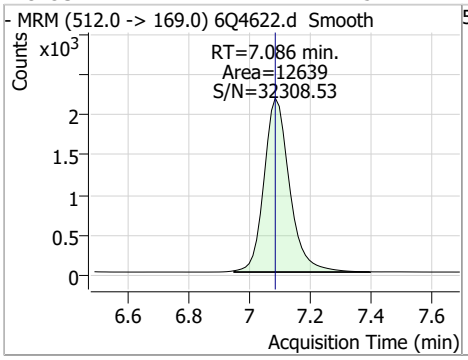
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	19.44	7.08	0.00	43975				

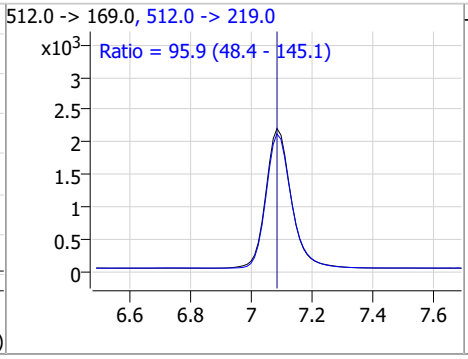


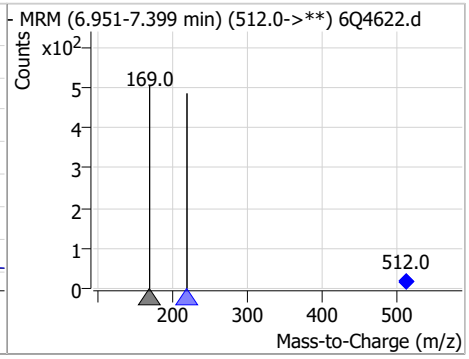




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	5.27	7.09	0.00	12639	512.0 -> 219.0	95.9	48.4	145.1

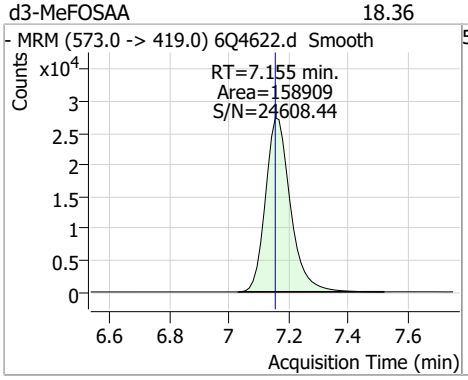


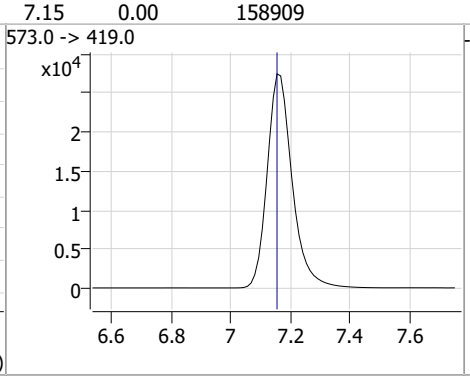


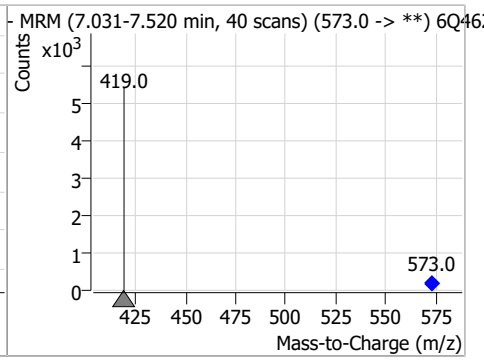


Perfluorinated Compounds by LC/MS/MS

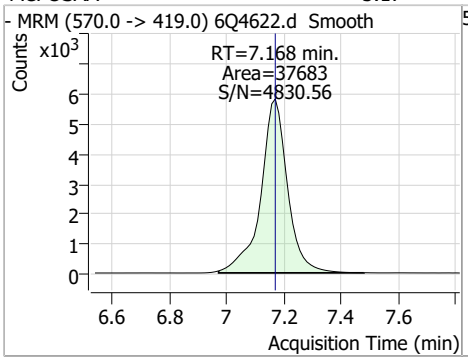
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.36	7.15	0.00	158909				

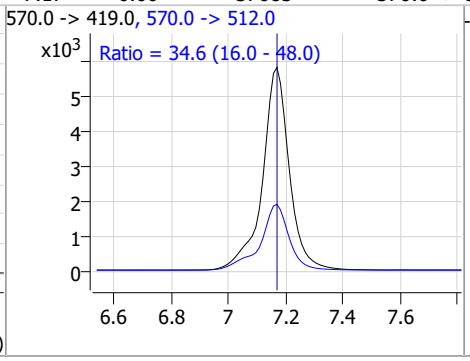


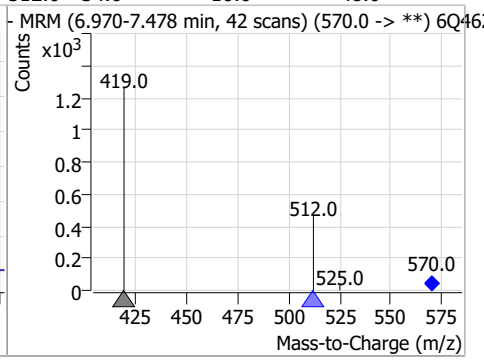




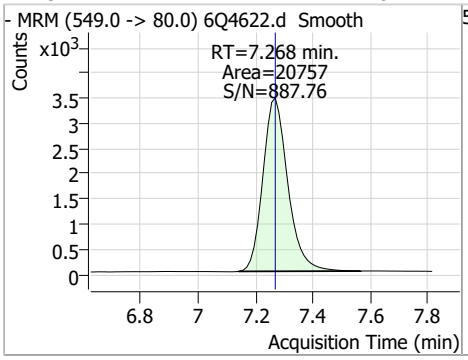
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	5.17	7.17	0.00	37683	570.0 -> 512.0	34.6	16.0	48.0

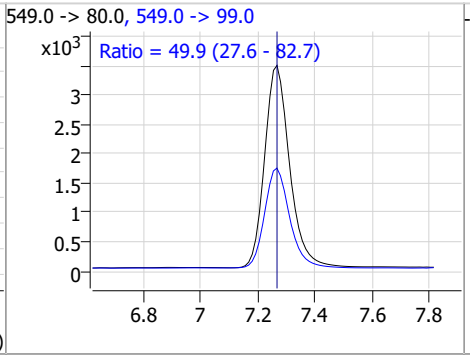


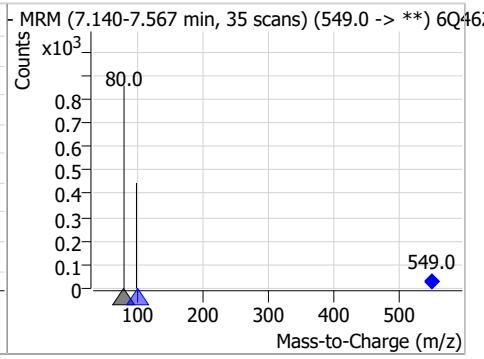




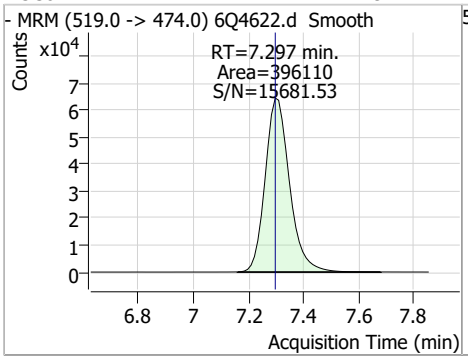
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	4.91	7.27	0.00	20757	549.0 -> 99.0	49.9	27.6	82.7

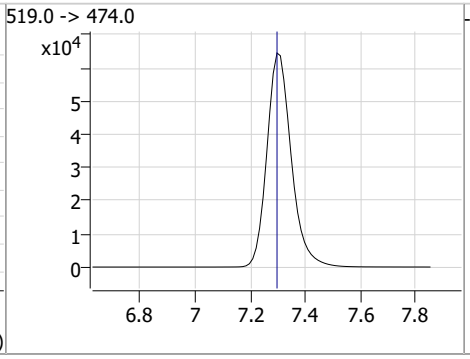


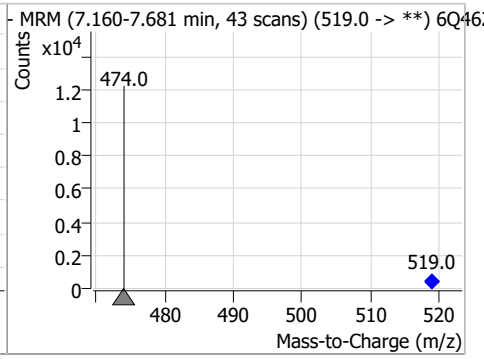




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.47	7.30	0.00	396110				

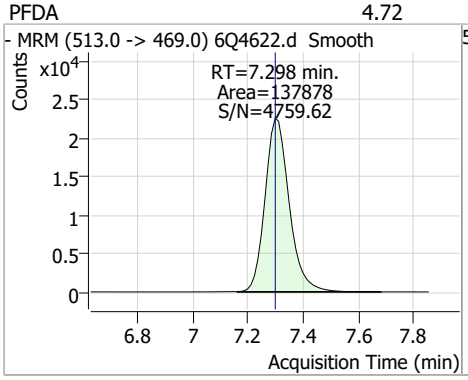


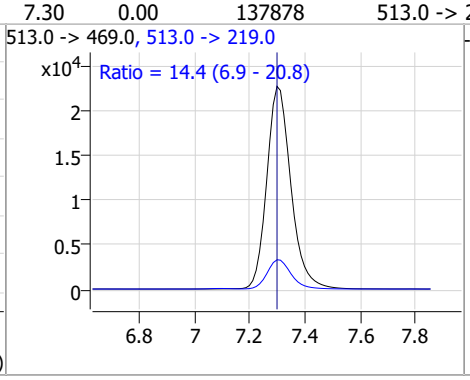


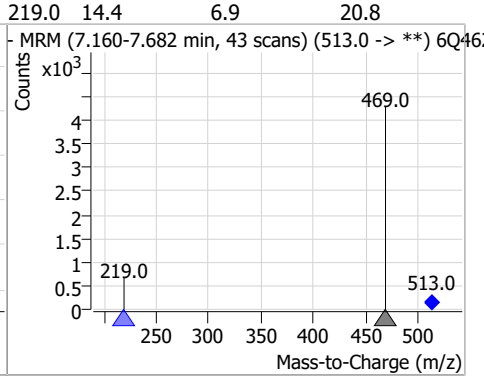


Perfluorinated Compounds by LC/MS/MS

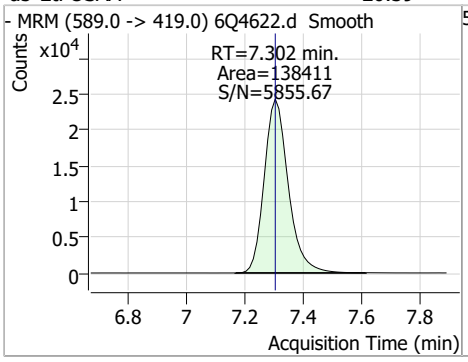
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	4.72	7.30	0.00	137878	513.0 -> 219.0	14.4	6.9	20.8

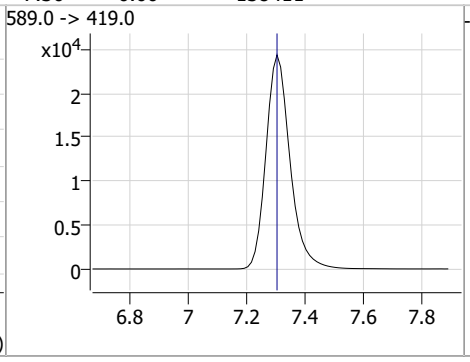


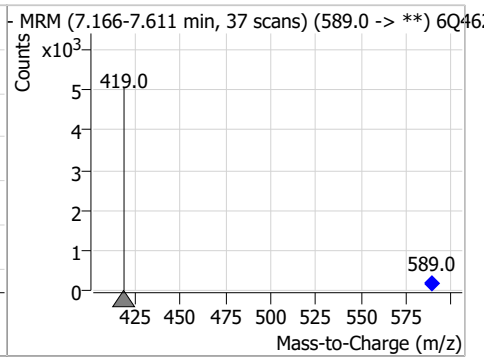




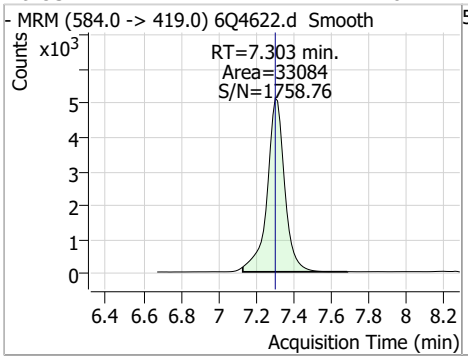
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.39	7.30	0.00	138411				

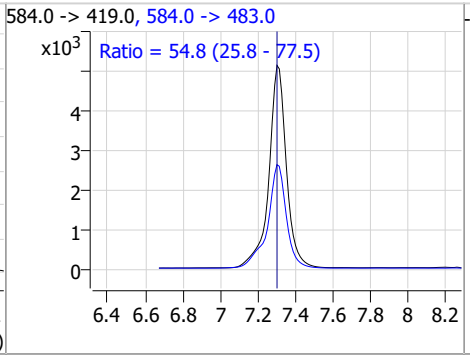


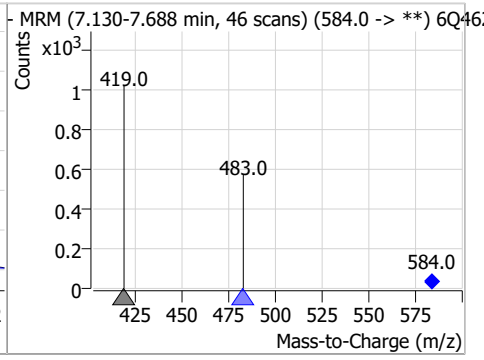




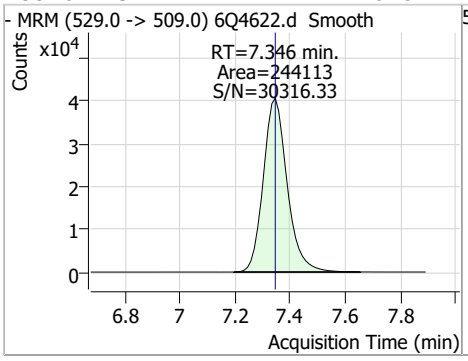
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	4.48	7.30	0.00	33084	584.0 -> 483.0	54.8	25.8	77.5

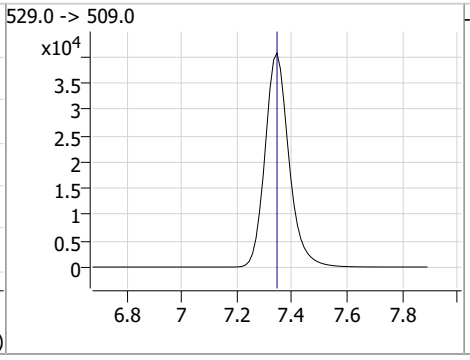


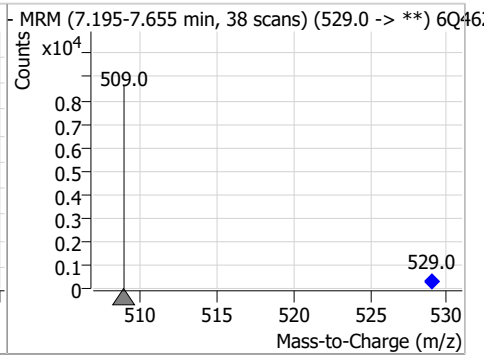




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.73	7.35	0.00	244113				

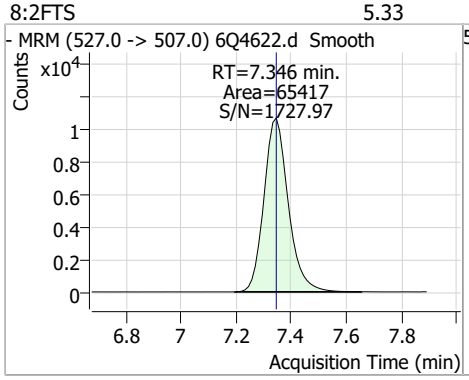


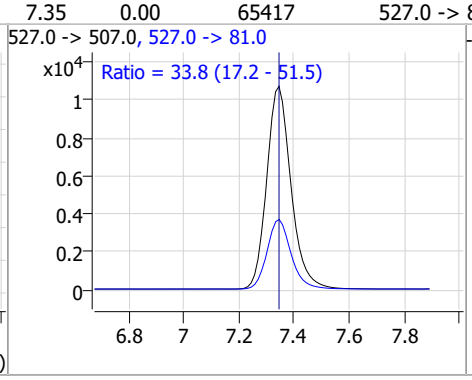


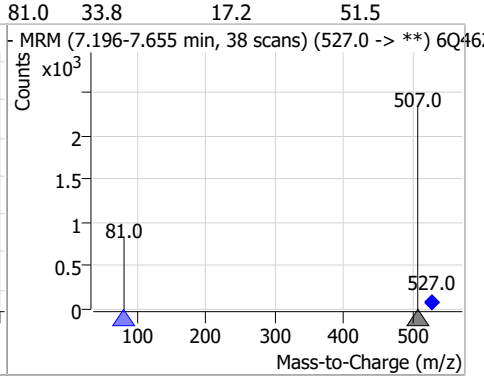


Perfluorinated Compounds by LC/MS/MS

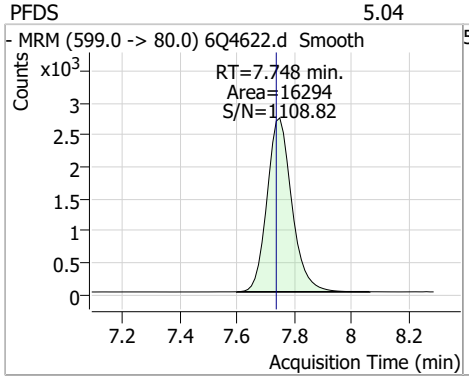
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	5.33	7.35	0.00	65417	527.0 -> 81.0	33.8	17.2	51.5

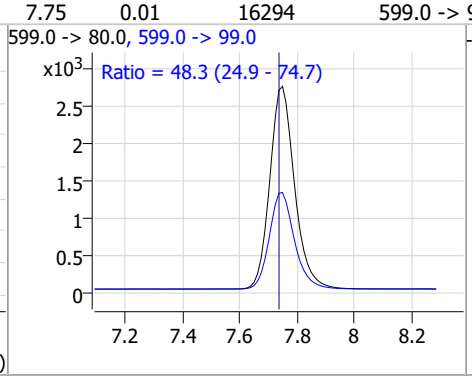


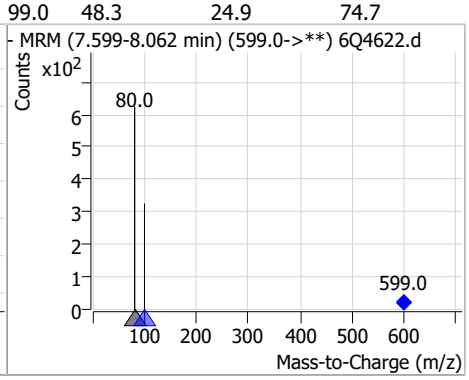




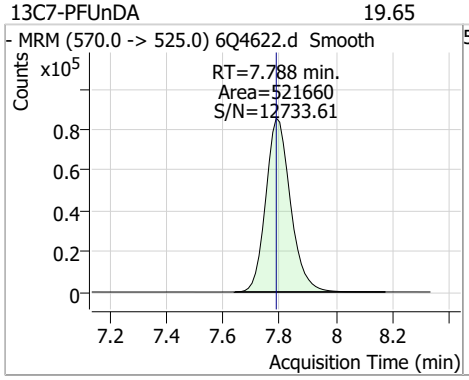
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	5.04	7.75	0.01	16294	599.0 -> 99.0	48.3	24.9	74.7

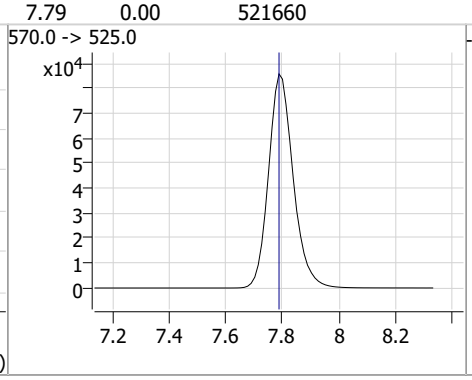


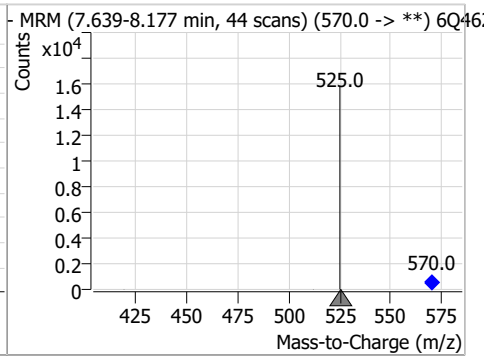




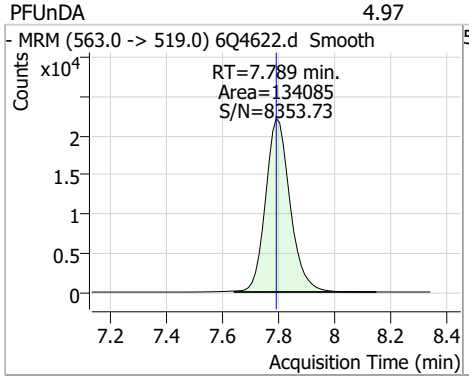
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.65	7.79	0.00	521660				

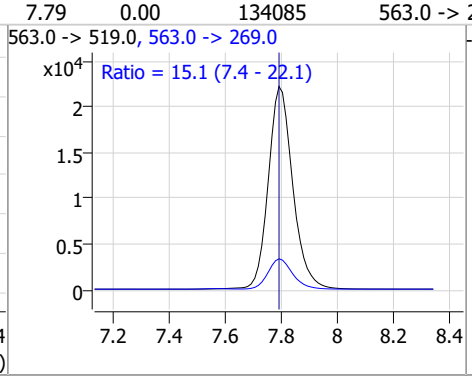


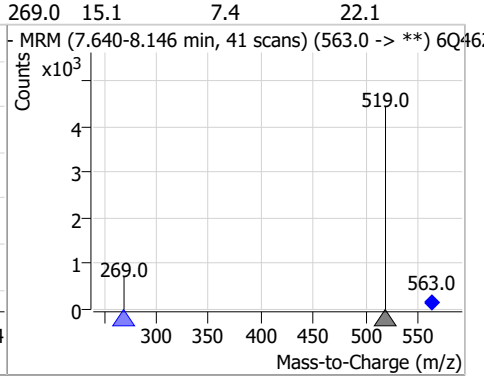




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	4.97	7.79	0.00	134085	563.0 -> 269.0	15.1	7.4	22.1

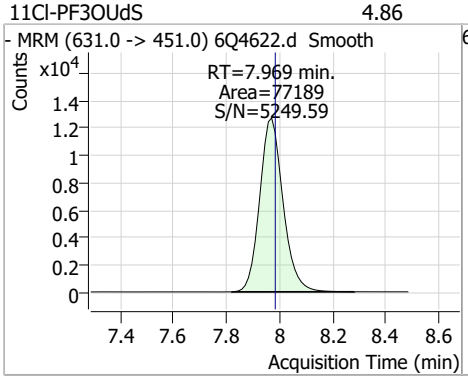


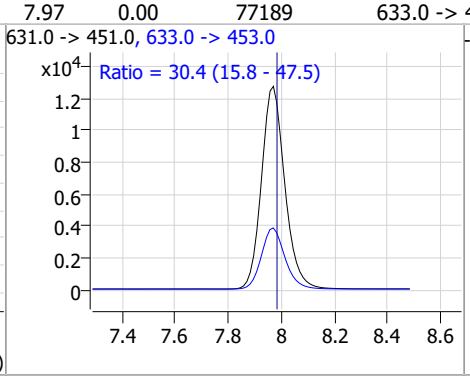


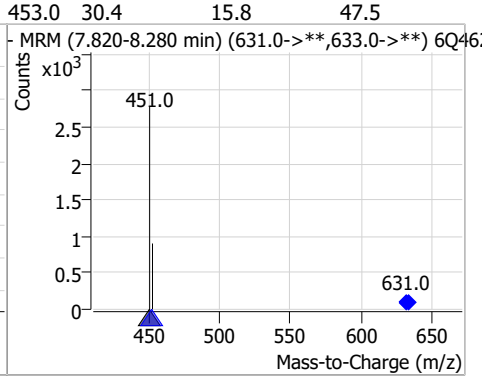


Perfluorinated Compounds by LC/MS/MS

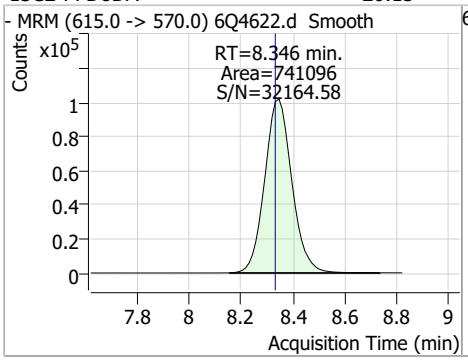
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	4.86	7.97	0.00	77189	633.0 -> 453.0	30.4	15.8	47.5

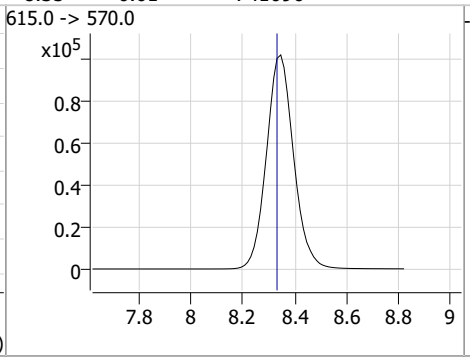


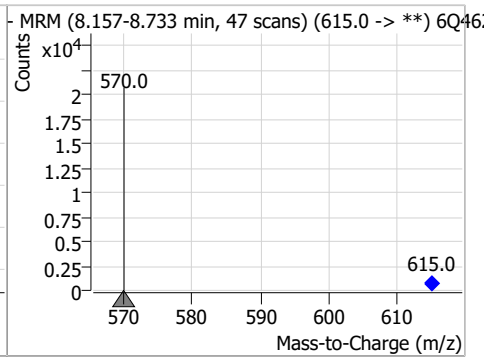




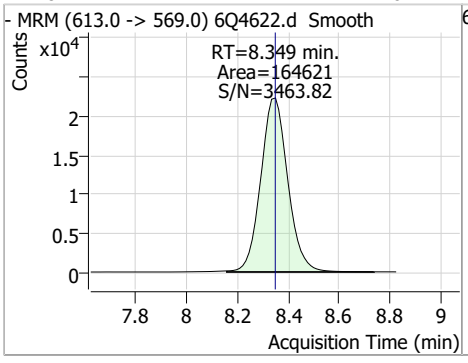
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.15	8.35	0.01	741096				

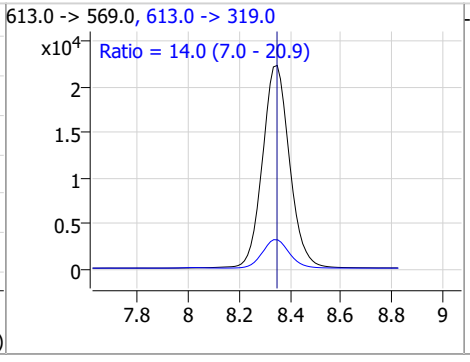


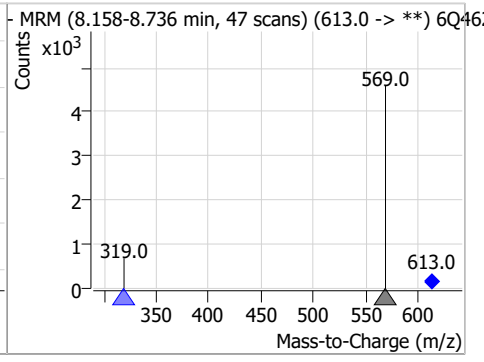




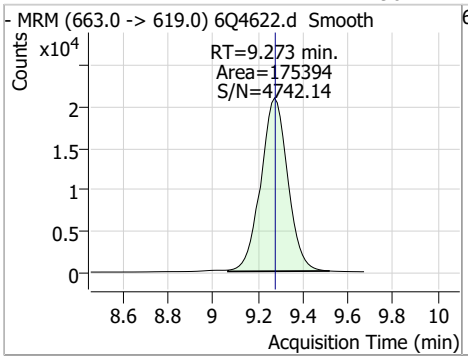
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	4.76	8.35	0.02	164621	613.0 -> 319.0	14.0	7.0	20.9

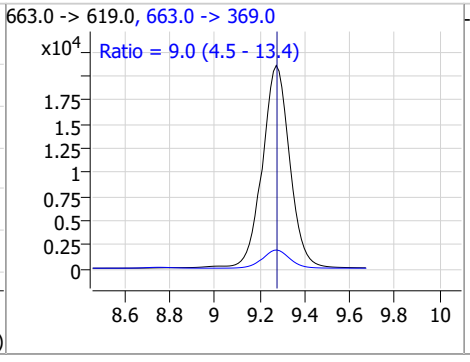


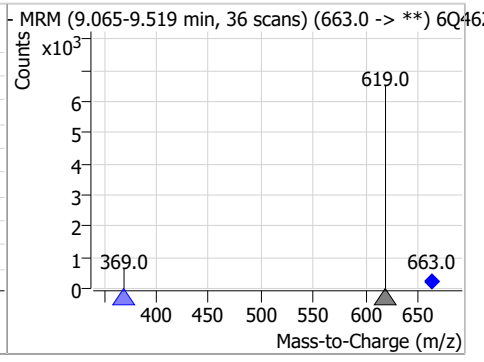




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	4.90	9.27	0.01	175394	663.0 -> 369.0	9.0	4.5	13.4

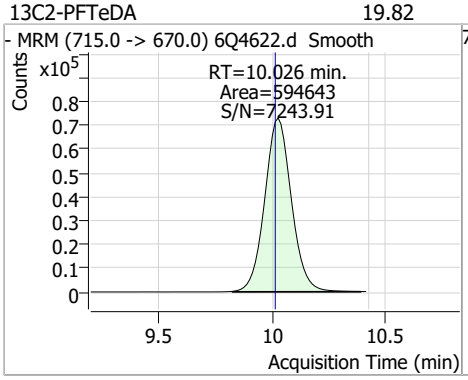


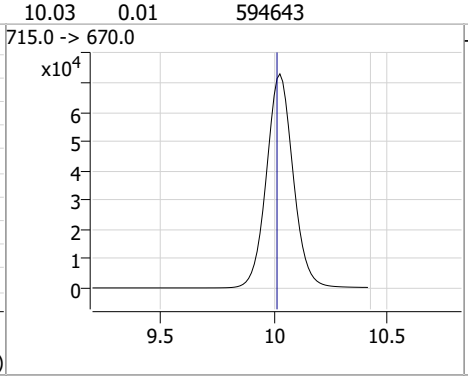


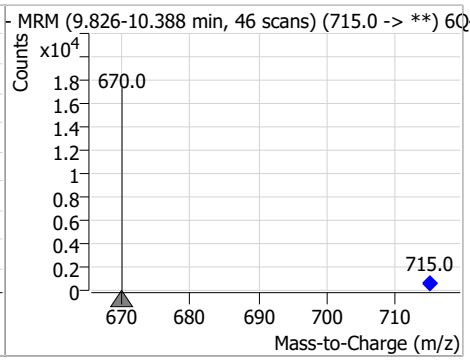


Perfluorinated Compounds by LC/MS/MS

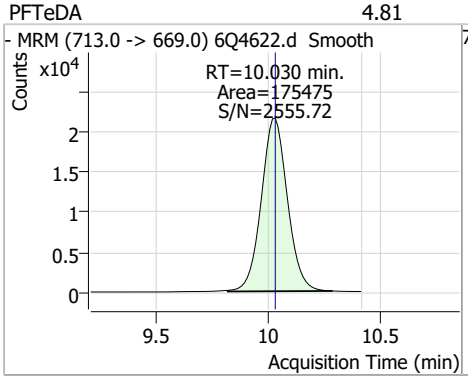
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.82	10.03	0.01	594643				

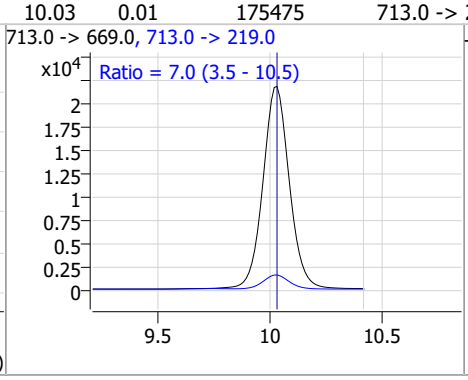


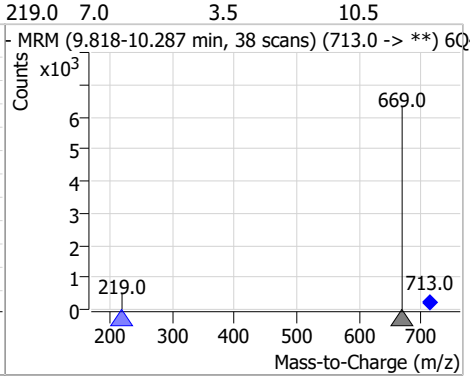




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	4.81	10.03	0.01	175475	713.0 -> 219.0	7.0	3.5	10.5







7.7.84

Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4622.D
Injection Time: 09/14/22 11:31
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4623.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 11:47:59 AM
Sample Name : ic85-10
Vial : P1-A6
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	83466	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	146687	20.00	µg/L	0.000
M5-PFHxA	4.586	318.0 -> 273.0	220480	20.00	µg/L	0.012
M4-PFHpA	5.445	367.0 -> 322.0	259110	20.00	µg/L	0.000
M8-PFOA	6.150	421.0 -> 376.0	441153	20.00	µg/L	0.012
M9-PFNA	6.757	472.0 -> 427.0	553699	20.00	µg/L	0.012
M6-PFDA	7.297	519.0 -> 474.0	460480	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	555449	20.00	µg/L	0.000
M2-PFDoDA	8.346	615.0 -> 570.0	764896	20.00	µg/L	0.014
M2-PFTeDA	10.026	715.0 -> 670.0	621198	20.00	µg/L	0.012
M8-FOSA	6.654	506.0 -> 78.0	203799	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	32210	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29224	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	45762	20.00	µg/L	0.000
M2-4:2FTS	4.495	329.0 -> 309.0	270060	20.00	µg/L	0.012
M2-6:2FTS	6.136	429.0 -> 409.0	339296	20.00	µg/L	0.000
M2-8:2FTS	7.346	529.0 -> 509.0	266074	20.00	µg/L	0.000
M3-MeFOSAA	7.167	573.0 -> 419.0	176840	20.00	µg/L	0.012
M3-HFPO-DA	4.852	287.0 -> 169.0	5321	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	49989	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	144573	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.495	329.0 -> 309.0	270060	20.00	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	339296	19.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-8:2FTS	7.346	529.0 -> 509.0	266074	20.41	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C2-PFDoDA	8.346	615.0 -> 570.0	764896	20.80	µg/L	0.014
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C2-PFTeDA	10.026	715.0 -> 670.0	621198	20.71	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C3-PFBS	3.635	302.0 -> 99.0	32210	21.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C3-PFHxS	5.475	402.0 -> 99.0	29224	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C4-PFBA	1.949	217.0 -> 172.0	83466	20.97	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%		
13C4-PFHpA	5.445	367.0 -> 322.0	259110	20.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C5-PFHxA	4.586	318.0 -> 273.0	220480	20.63	µg/L	0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.1%		
13C5-PFPeA	3.418	268.0 -> 223.0	146687	20.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C6-PFDA	7.297	519.0 -> 474.0	460480	22.63	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

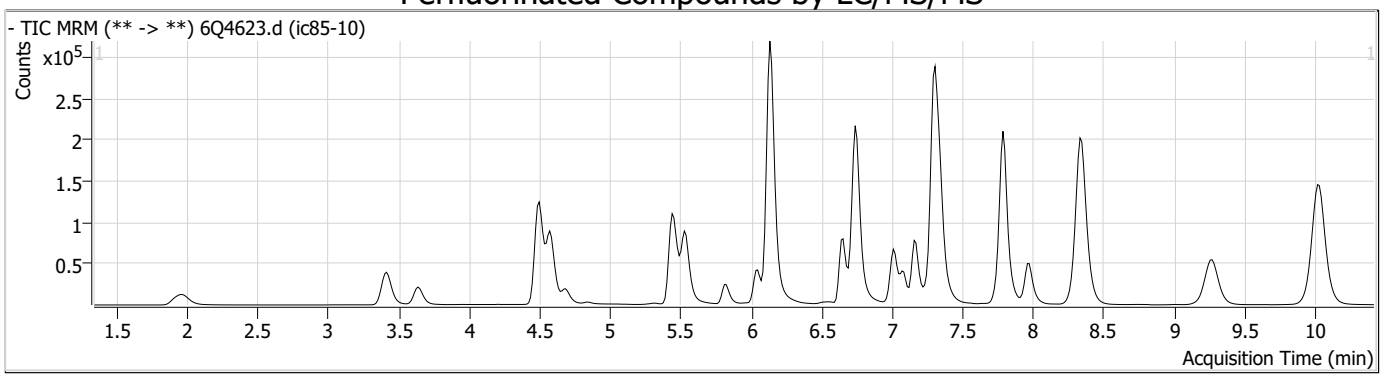
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.2%		
13C7-PFUnDA	7.788	570.0 -> 525.0	555449	20.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C8-FOSA	6.654	506.0 -> 78.0	203799	20.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C8-PFOA	6.150	421.0 -> 376.0	441153	20.79 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C8-PFOS	6.730	507.0 -> 99.0	45762	21.58 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.9%		
13C9-PFNA	6.757	472.0 -> 427.0	553699	21.49 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
d3-MeFOSAA	7.167	573.0 -> 419.0	176840	20.43 µg/L		0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C3-HFPO-DA	4.852	287.0 -> 169.0	5336	20.08 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
d3-MeFOSA	7.085	515.0 -> 169.0	49989	22.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
d5-EtFOSAA	7.302	589.0 -> 419.0	144614	21.30 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	148484	10.17 µg/L		99
		327.0 -> 81.0	49286			
6:2FTS	6.137	427.0 -> 407.0	183035	10.65 µg/L		95
		427.0 -> 81.0	45971			
8:2FTS	7.346	527.0 -> 507.0	134804	10.07 µg/L		97
		527.0 -> 81.0	44248			
EtFOSAA	7.303	584.0 -> 419.0	66763	8.66 µg/L		91
		584.0 -> 483.0	38633			
FOSA	6.656	498.0 -> 78.0	101269	9.91 µg/L		99
		498.0 -> 478.0	4233			
MeFOSAA	7.168	570.0 -> 419.0	83022	10.24 µg/L		98
		570.0 -> 512.0	27573			
PFBA	1.955	213.0 -> 169.0	17431	9.57 µg/L		100
PFBS	3.640	299.0 -> 80.0	50803	9.49 µg/L		100
		299.0 -> 99.0	19146			
PFDA	7.298	513.0 -> 469.0	283229	8.33 µg/L		98
		513.0 -> 219.0	42191			
PFDoDA	8.334	613.0 -> 569.0	351322	9.84 µg/L		99
		613.0 -> 319.0	47836			
PFDS	7.748	599.0 -> 80.0	33630	9.76 µg/L		96
		599.0 -> 99.0	15845			
PFHpA	5.446	363.0 -> 319.0	164216	9.74 µg/L		99
		363.0 -> 169.0	24499			
PFHpS	6.148	449.0 -> 80.0	39986	10.01 µg/L		94
		449.0 -> 99.0	19322			
PFHxA	4.587	313.0 -> 269.0	110429	9.52 µg/L		99
		313.0 -> 119.0	2862			
PFHxS	5.477	399.0 -> 80.0	40936	9.78 µg/L	m	99
		399.0 -> 99.0	19467			
PFNA	6.757	463.0 -> 419.0	223351	8.56 µg/L		97
		463.0 -> 219.0	44672			
PFNS	7.268	549.0 -> 80.0	44246	9.52 µg/L		94
		549.0 -> 99.0	22547			
PFOA	6.151	413.0 -> 369.0	230769	9.68 µg/L		99
		413.0 -> 169.0	34445			
PFOS	6.731	499.0 -> 80.0	37461	8.83 µg/L	m	88

Perfluorinated Compounds by LC/MS/MS

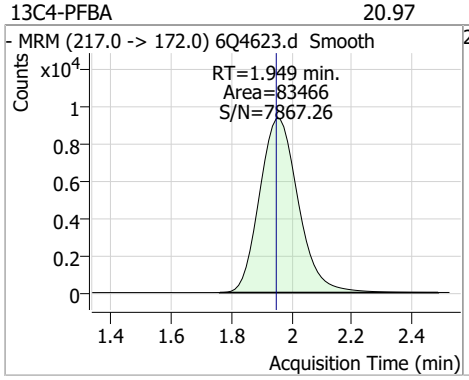
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	20535			
PFPeA	3.420	263.0 -> 219.0	59348	9.60	µg/L	100
PFPeS	4.681	349.0 -> 80.0	42028	9.43	µg/L	99
		349.0 -> 99.0	19488			
PFTeDA	10.018	713.0 -> 669.0	367182	9.64	µg/L	100
		713.0 -> 219.0	25276			
PFTrDA	9.273	663.0 -> 619.0	367692	9.95	µg/L	100
		663.0 -> 369.0	32594			
PFUnDA	7.789	563.0 -> 519.0	267614	9.32	µg/L	95
		563.0 -> 269.0	44829			
11Cl-PF3OUdS	7.969	631.0 -> 451.0	162104	9.88	µg/L	100
		633.0 -> 453.0	50917			
9Cl-PF3ONS	7.009	531.0 -> 351.0	201723	8.61	µg/L	96
		533.0 -> 353.0	67311			
ADONA	5.545	377.0 -> 251.0	263241	9.72	µg/L	98
		377.0 -> 85.0	65512			
HFPO-DA	4.853	285.0 -> 169.0	2517	10.00	µg/L	96
		285.0 -> 185.0	389			
MeFOSA	7.086	512.0 -> 169.0	27547	10.10	µg/L	99
		512.0 -> 219.0	26423			
4-PFECHS	6.044	461.0 -> 381.0	133662	9.41	µg/L	100
		461.0 -> 99.0	44517			
FBSA	4.514	298.0 -> 78.0	107792	10.04	µg/L	100
		298.0 -> 64.0	7407			
FHxSA	5.828	398.0 -> 78.0	91742	9.42	µg/L	99
		398.0 -> 64.0	3055			

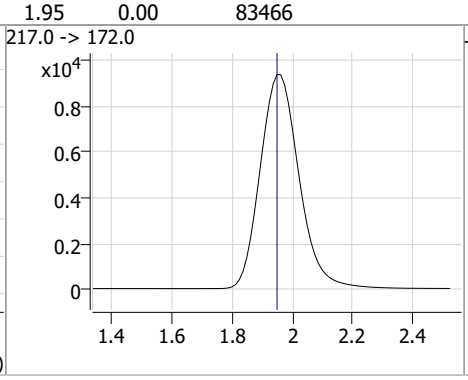
 # = Qualifier out of range, m = manually integrated, + = Area summed

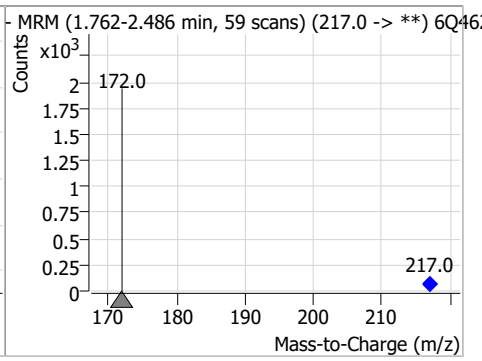
Perfluorinated Compounds by LC/MS/MS



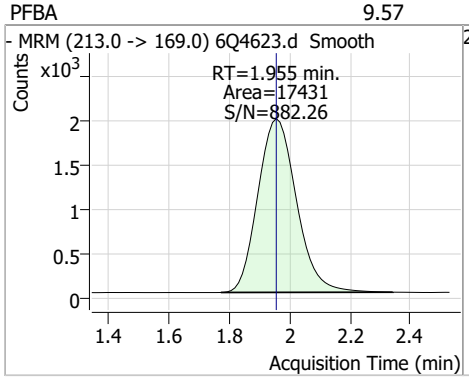
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.97	1.95	0.00	83466				

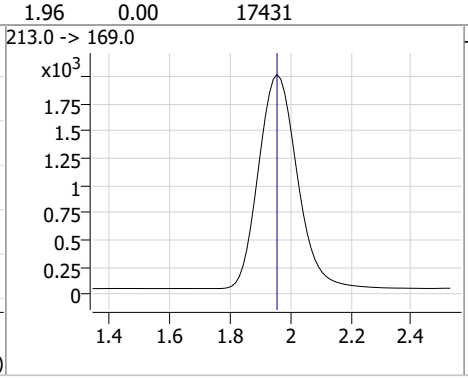


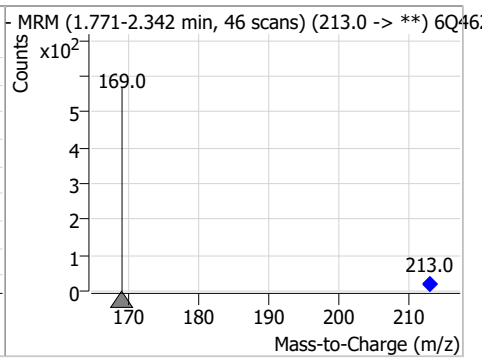




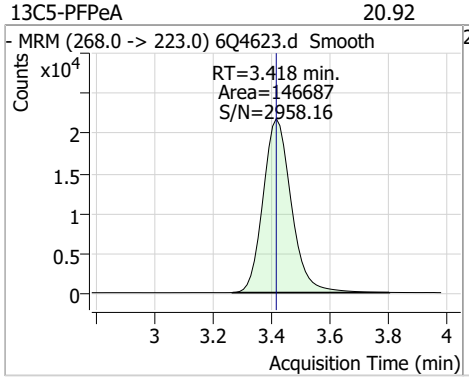
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	9.57	1.96	0.00	17431				

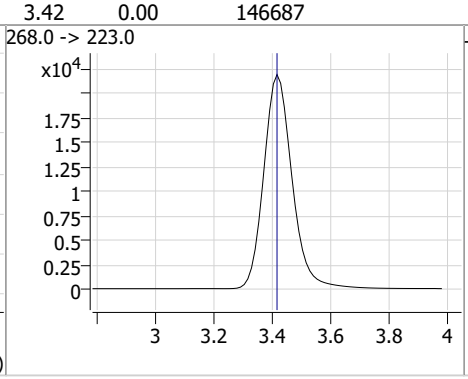


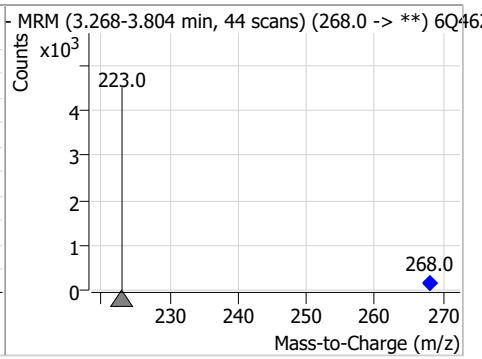




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.92	3.42	0.00	146687				

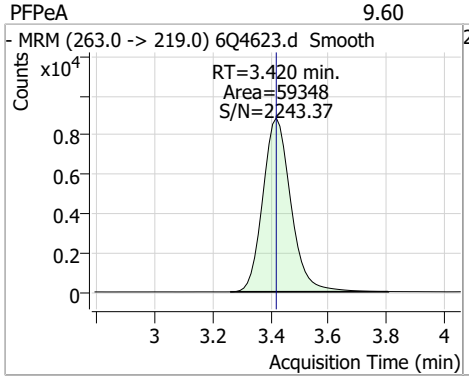


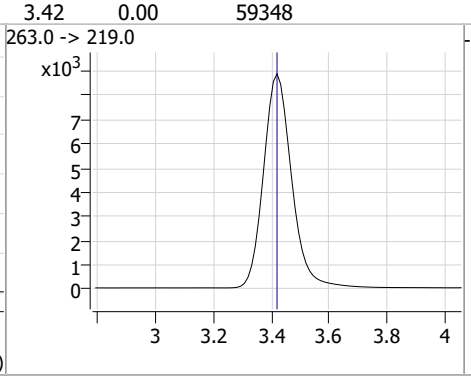


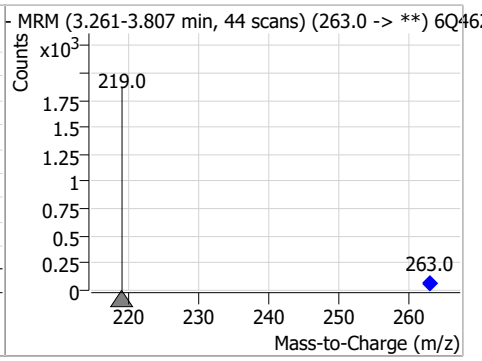


Perfluorinated Compounds by LC/MS/MS

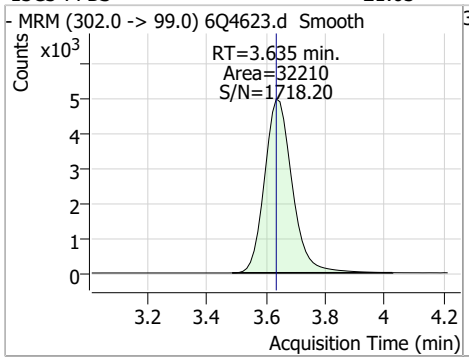
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	9.60	3.42	0.00	59348				

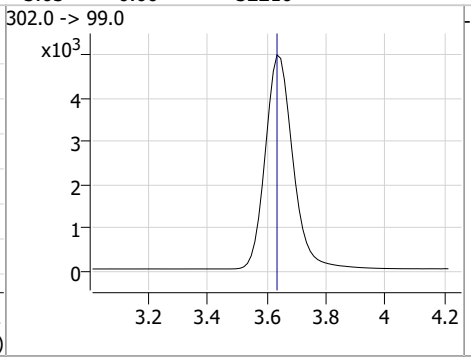


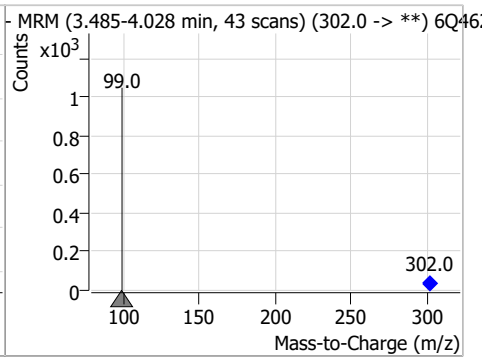




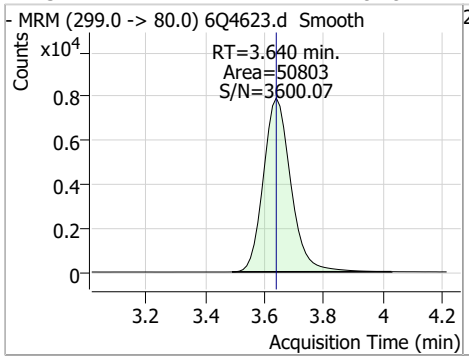
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.03	3.63	0.00	32210				

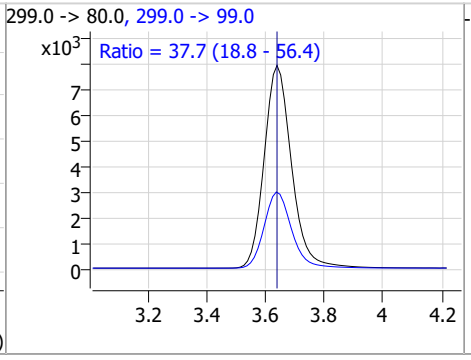


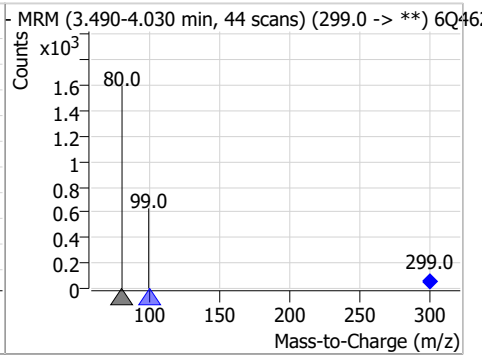




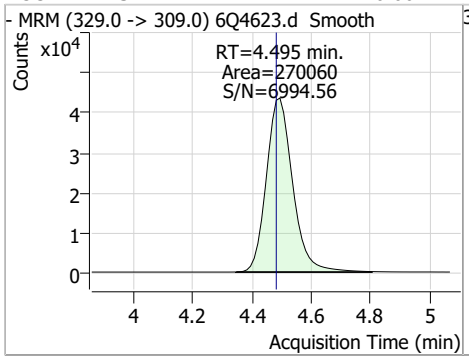
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	9.49	3.64	0.00	50803	299.0 -> 99.0	37.7	18.8	56.4

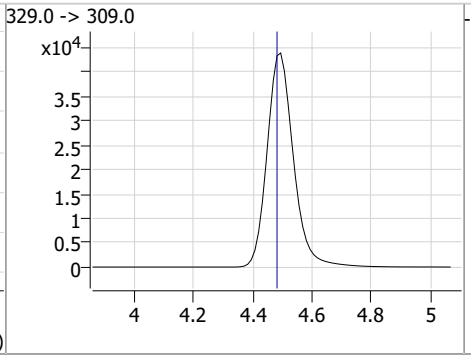


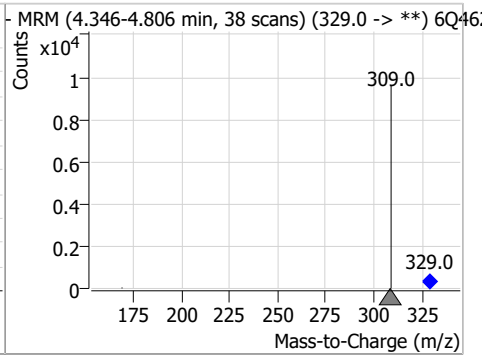




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.00	4.50	0.01	270060				

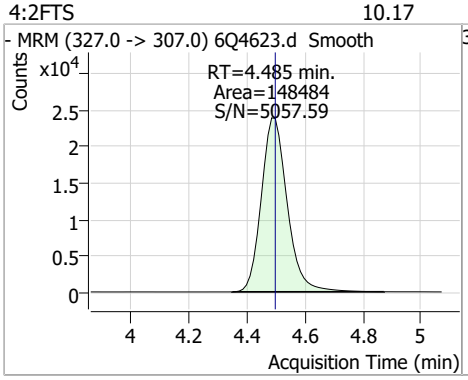


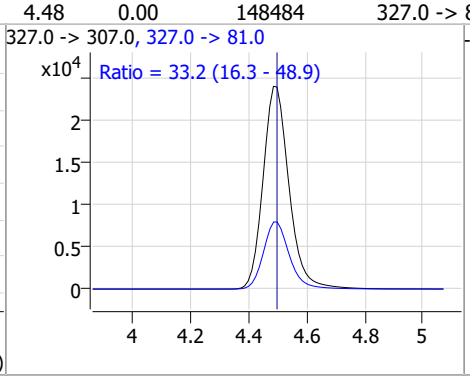


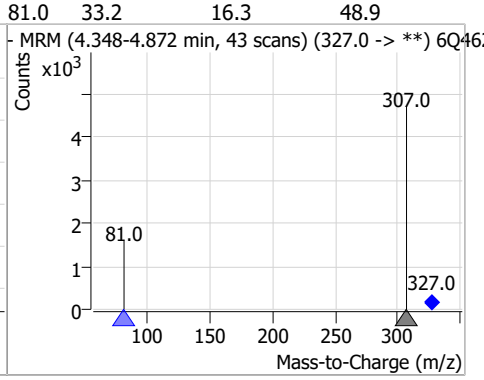


Perfluorinated Compounds by LC/MS/MS

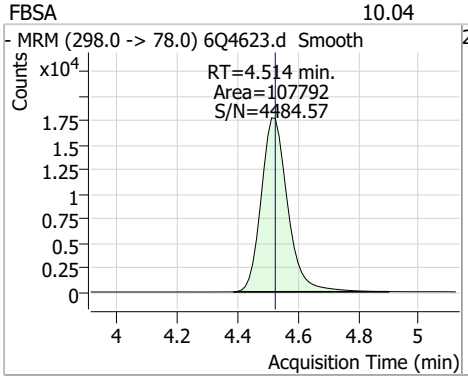
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	10.17	4.48	0.00	148484	327.0 -> 81.0	33.2	16.3	48.9

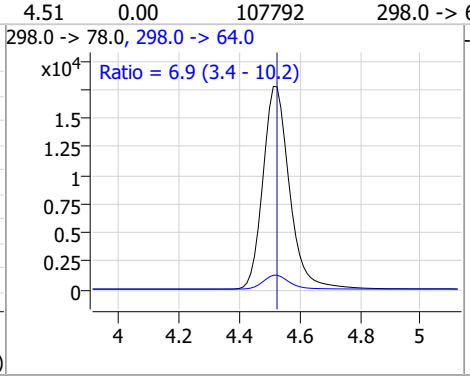


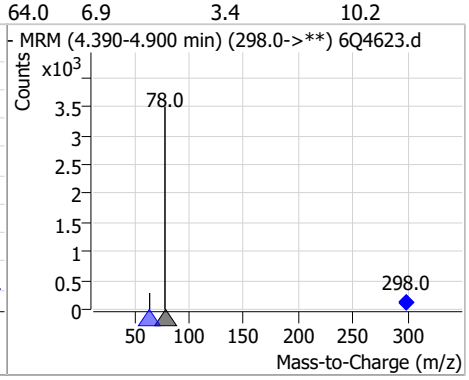




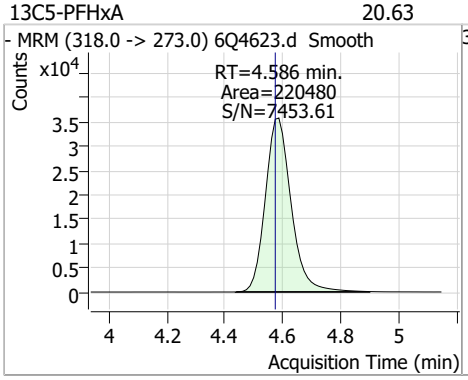
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	10.04	4.51	0.00	107792	298.0 -> 64.0	6.9	3.4	10.2

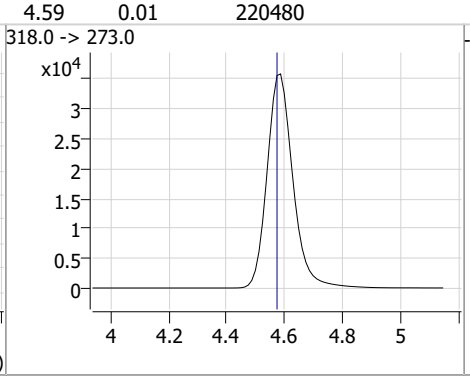


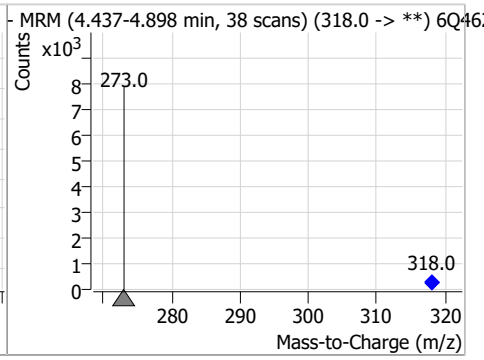




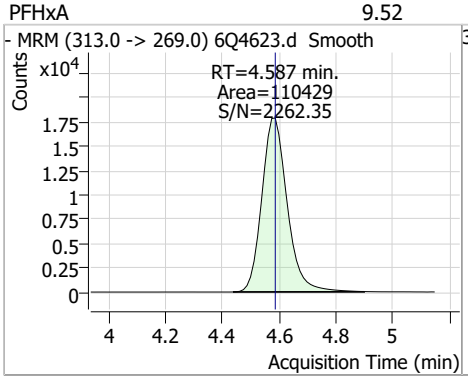
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.63	4.59	0.01	220480				

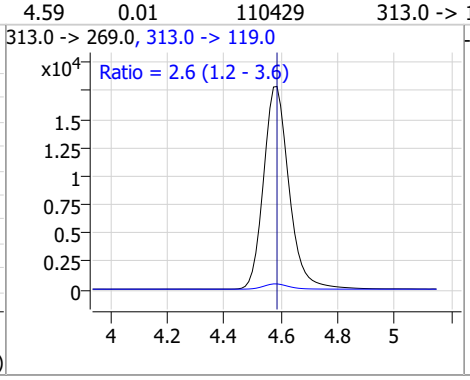


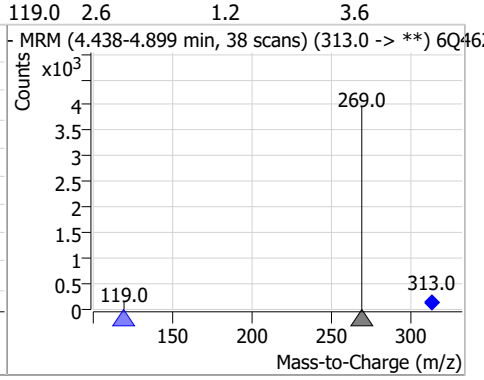




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	9.52	4.59	0.01	110429	313.0 -> 119.0	2.6	1.2	3.6

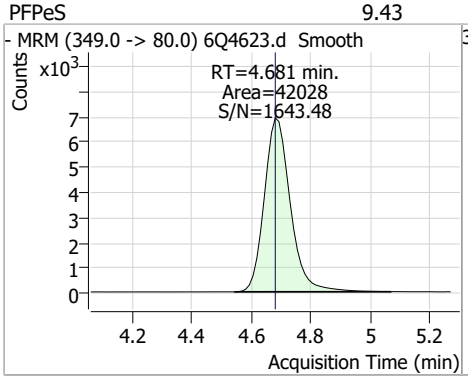


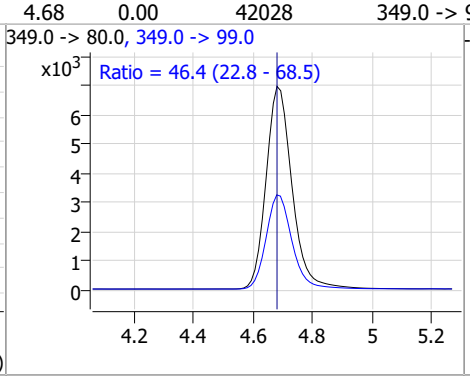


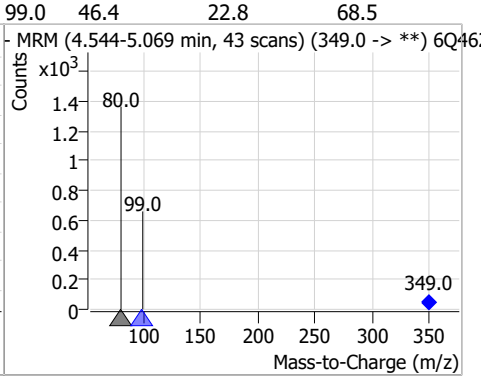


Perfluorinated Compounds by LC/MS/MS

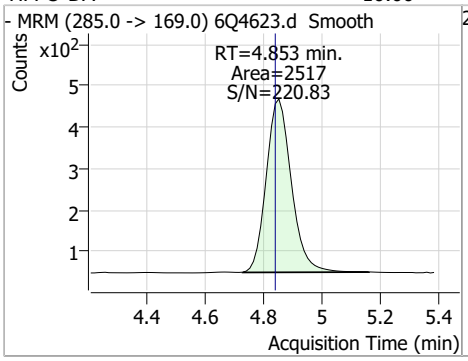
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	9.43	4.68	0.00	42028	349.0 -> 99.0	46.4	22.8	68.5

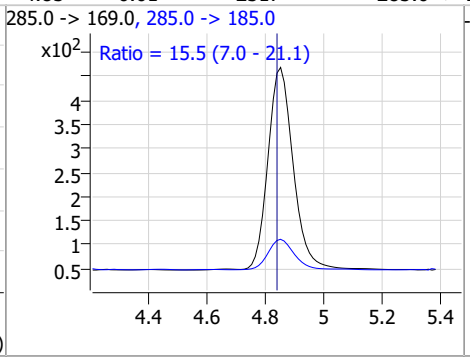


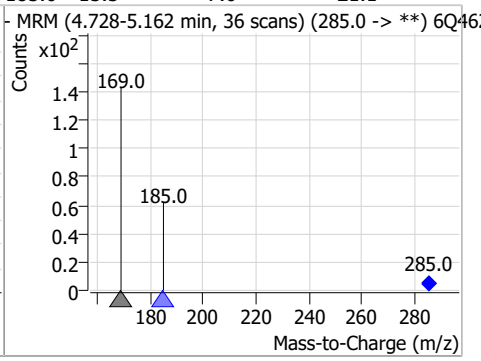




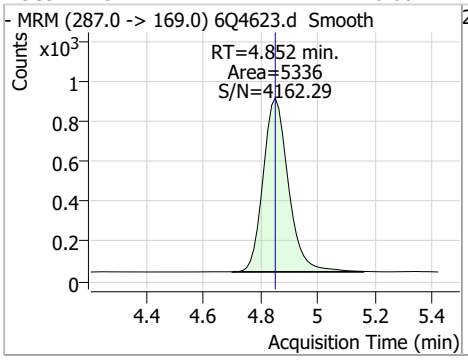
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	10.00	4.85	0.01	2517	285.0 -> 185.0	15.5	7.0	21.1

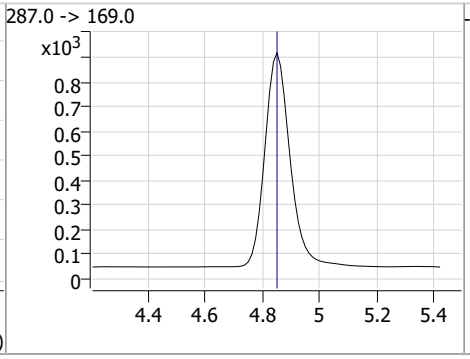


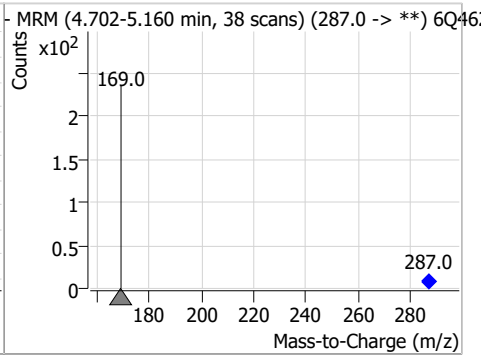




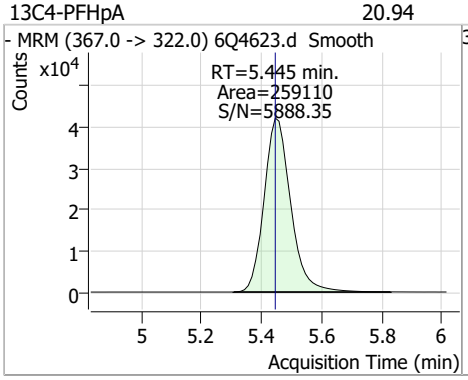
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.08	4.85	0.00	5336				

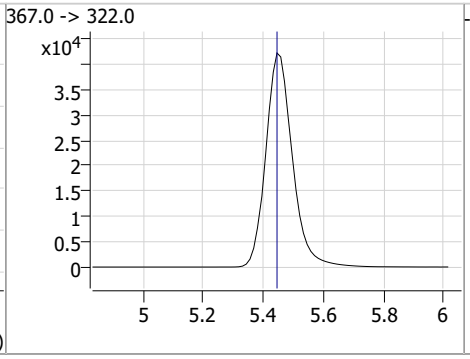


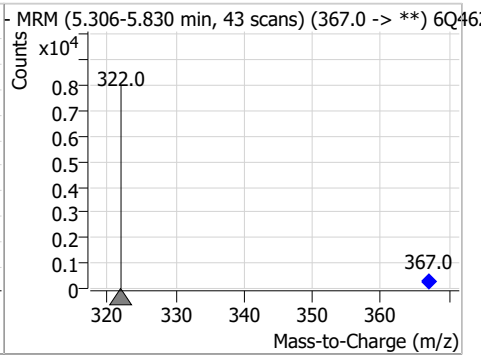




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.94	5.45	0.00	259110				

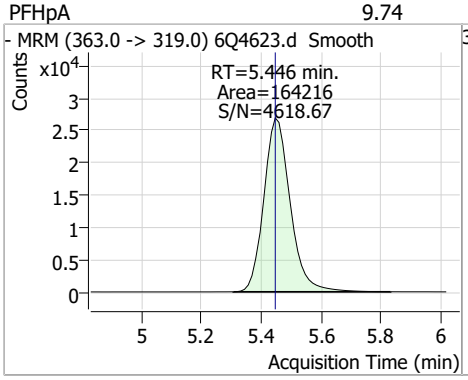


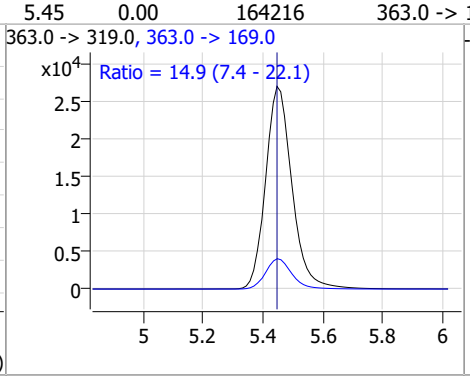


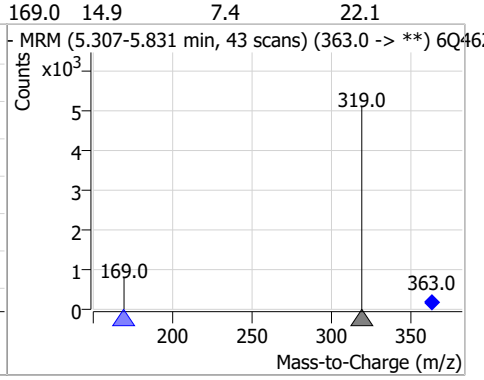


Perfluorinated Compounds by LC/MS/MS

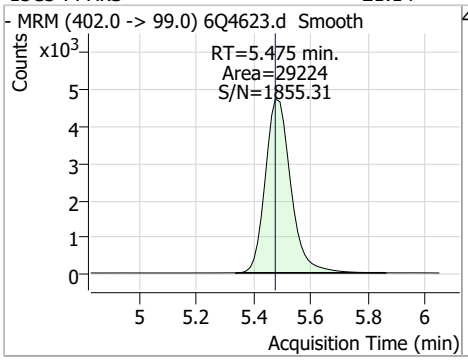
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	9.74	5.45	0.00	164216	363.0 -> 169.0	14.9	7.4	22.1

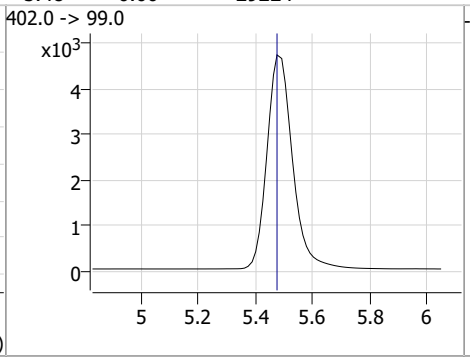


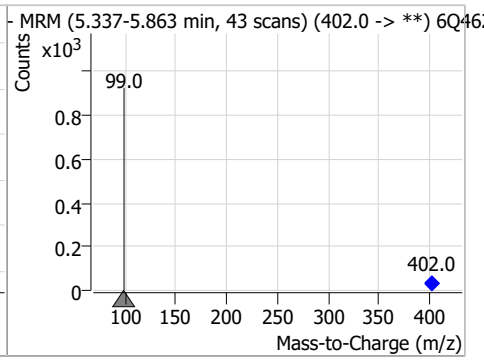




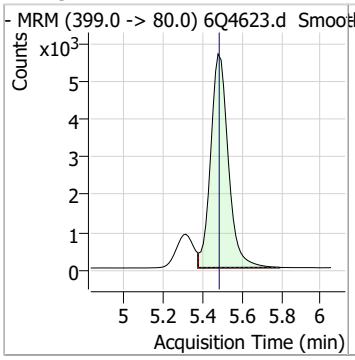
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.14	5.48	0.00	29224				

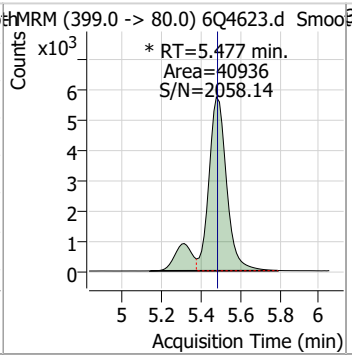


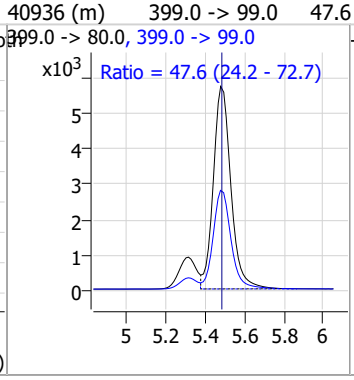


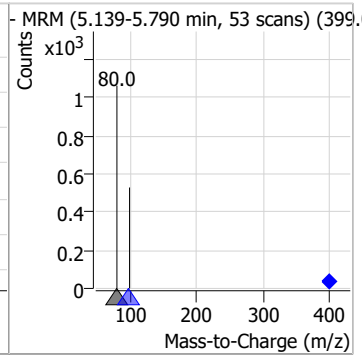


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	9.78	5.48	0.00	40936 (m)	399.0 -> 99.0	47.6	24.2	72.7

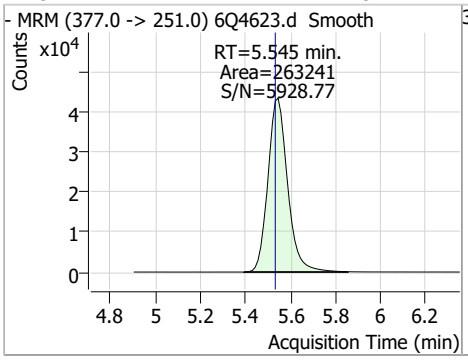


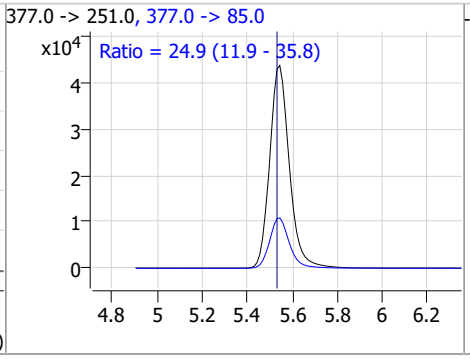


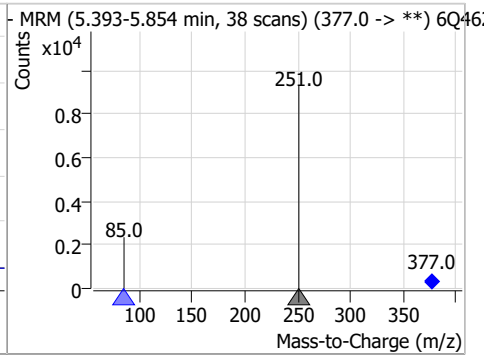




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	9.72	5.54	0.01	263241	377.0 -> 85.0	24.9	11.9	35.8

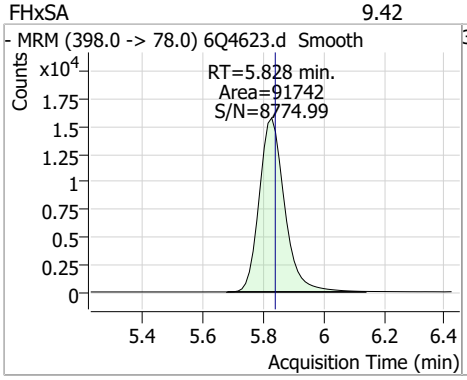


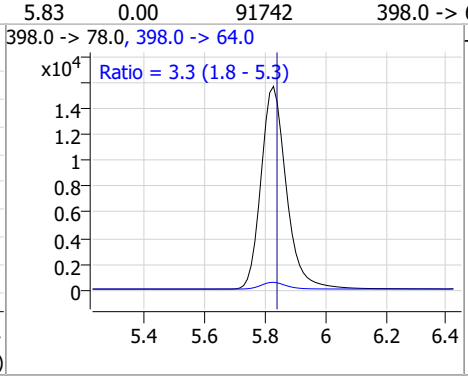


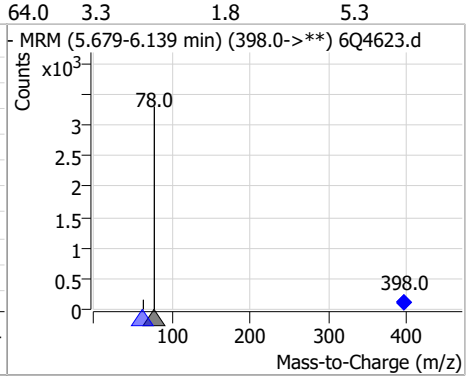


Perfluorinated Compounds by LC/MS/MS

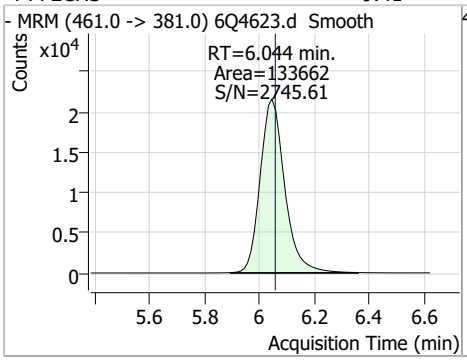
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	9.42	5.83	0.00	91742	398.0 -> 64.0	3.3	1.8	5.3

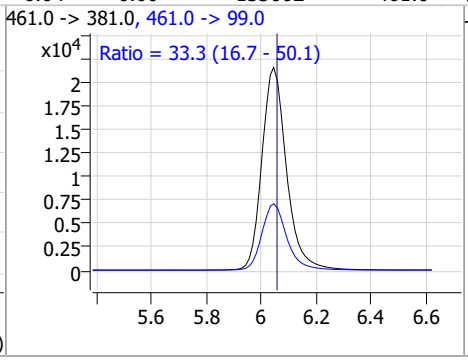


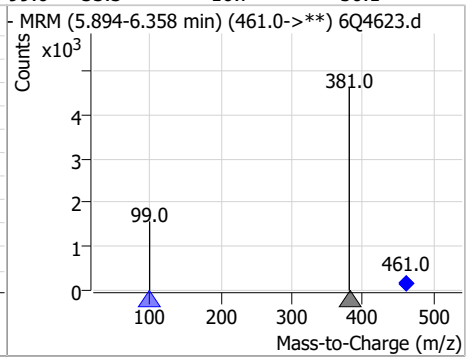




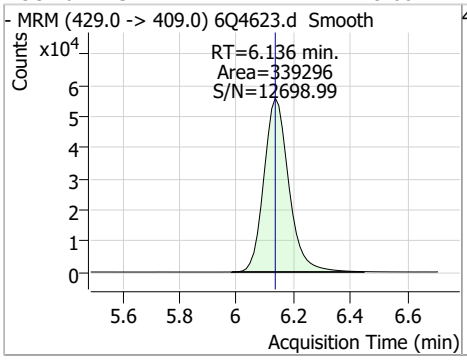
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	9.41	6.04	0.00	133662	461.0 -> 99.0	33.3	16.7	50.1

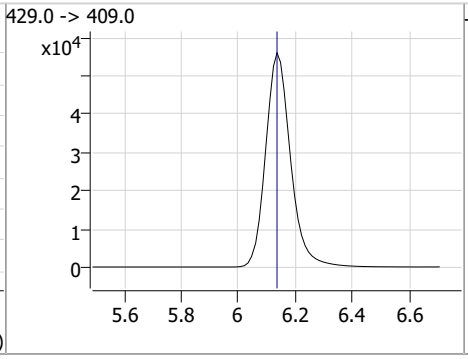


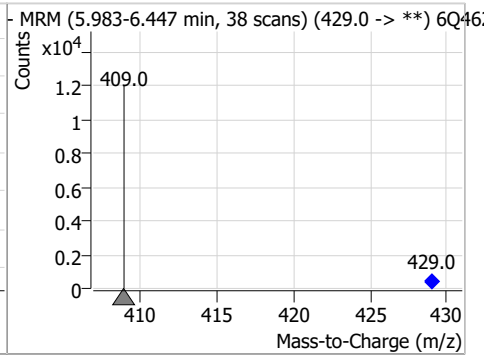




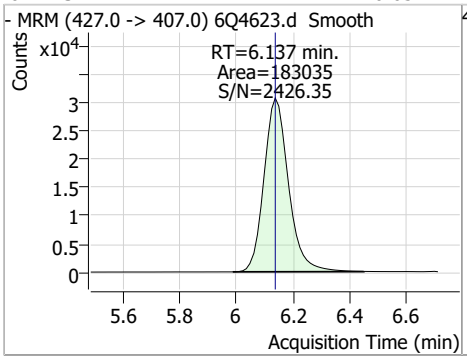
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.88	6.14	0.00	339296				

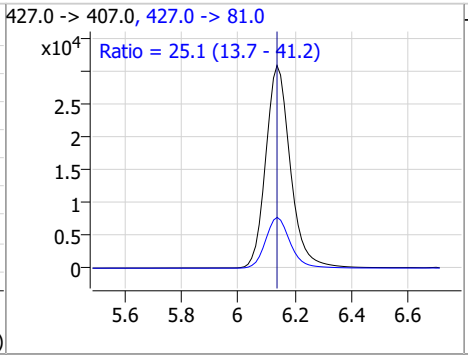


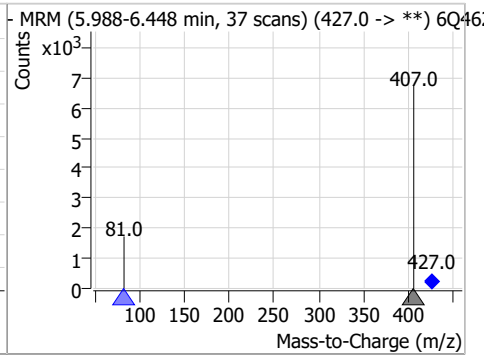




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	10.65	6.14	0.00	183035	427.0 -> 81.0	25.1	13.7	41.2

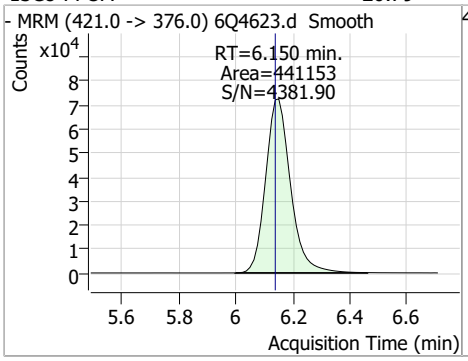


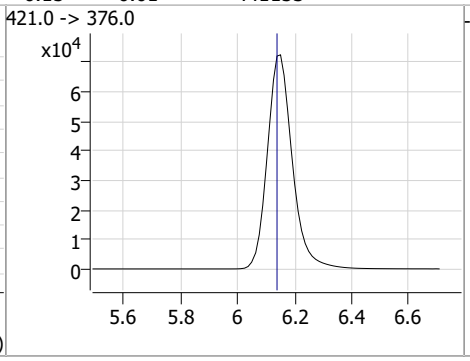


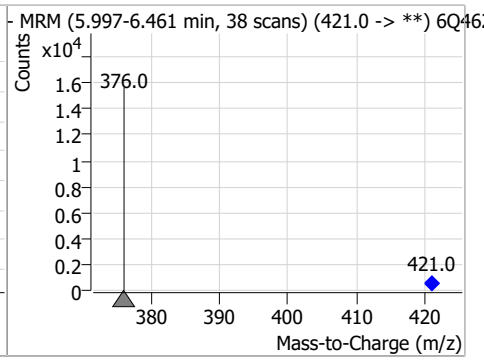


Perfluorinated Compounds by LC/MS/MS

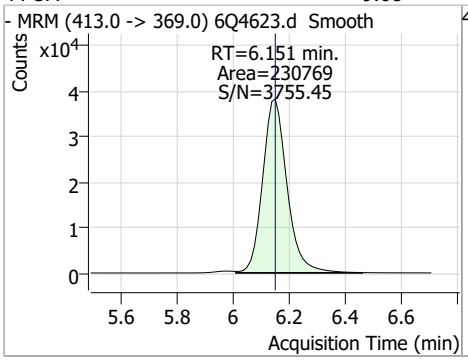
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.79	6.15	0.01	441153				

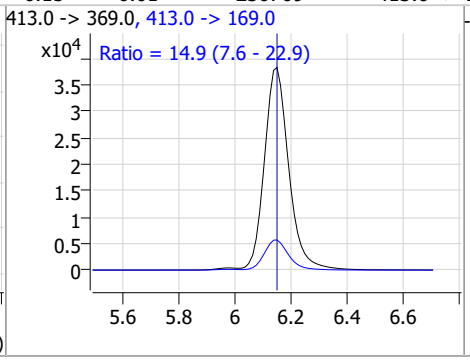


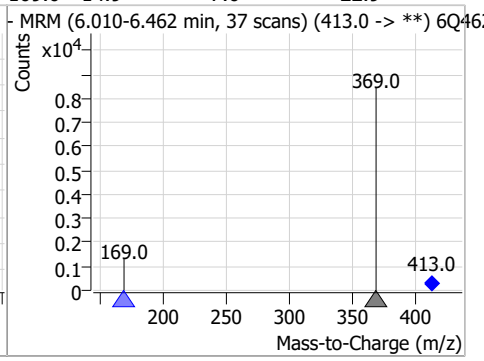




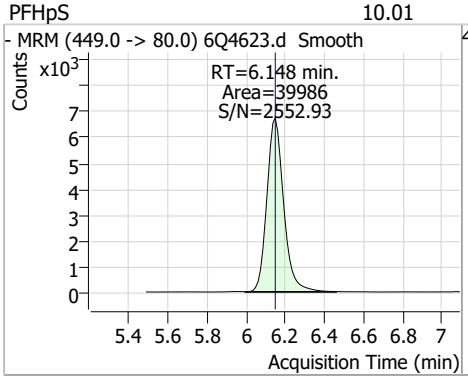
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	9.68	6.15	0.01	230769	413.0 -> 169.0	14.9	7.6	22.9

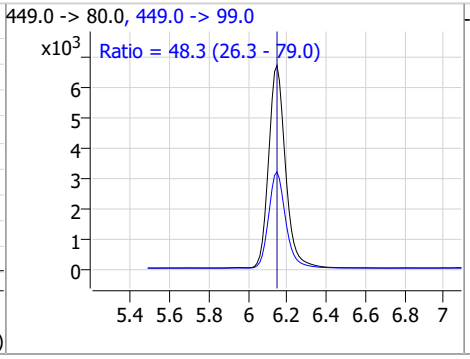


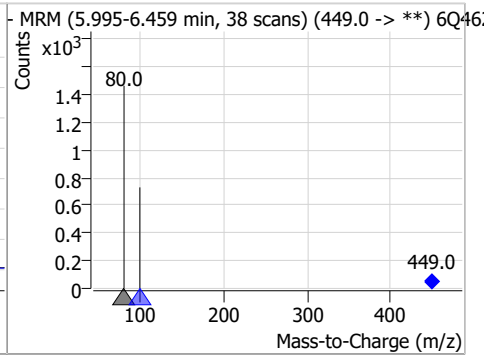




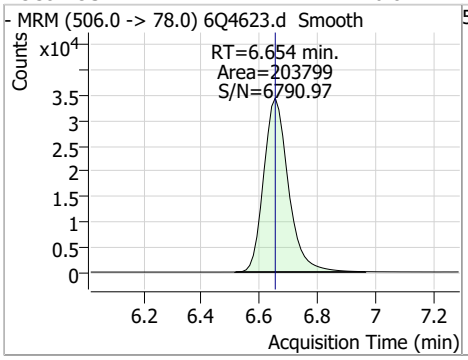
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	10.01	6.15	0.00	39986	449.0 -> 99.0	48.3	26.3	79.0

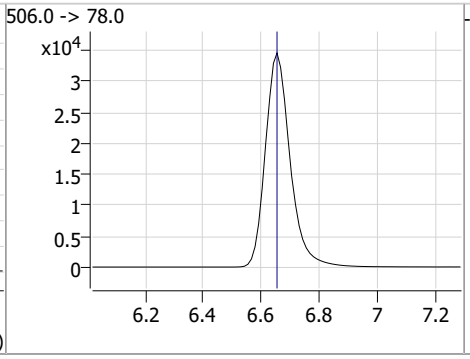


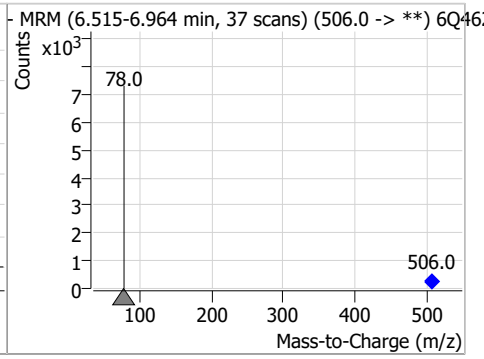




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.84	6.65	0.00	203799				

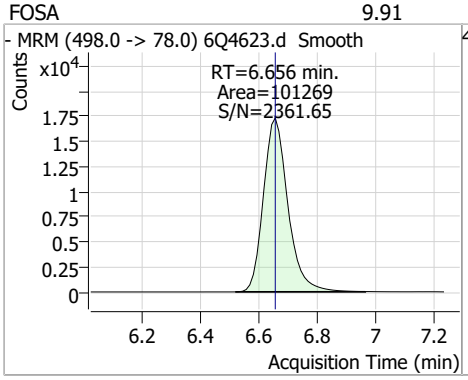


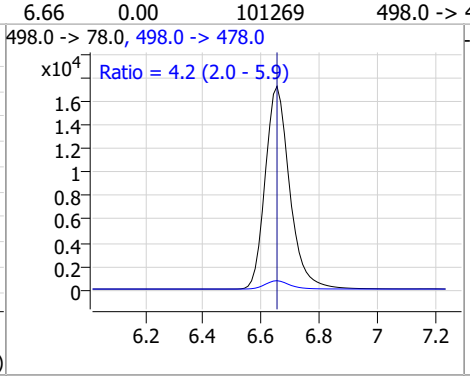


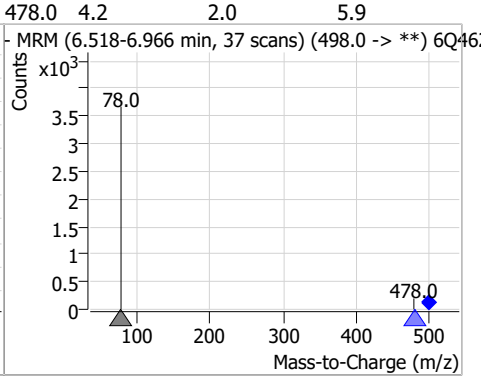


Perfluorinated Compounds by LC/MS/MS

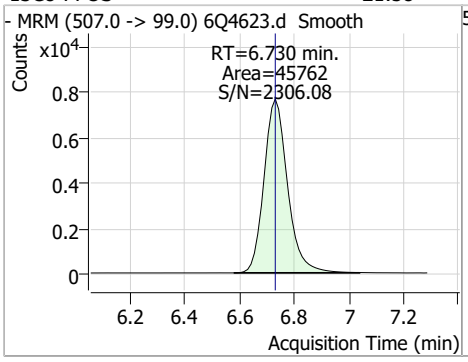
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	9.91	6.66	0.00	101269	498.0 -> 478.0	4.2	2.0	5.9

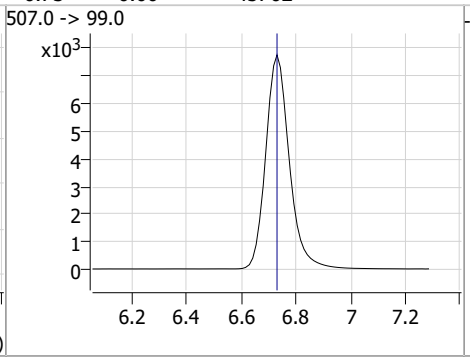


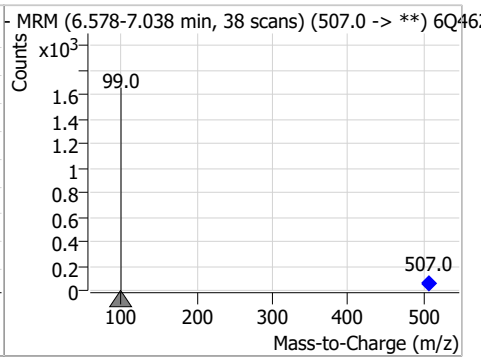




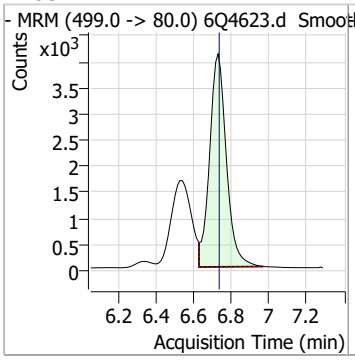
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.58	6.73	0.00	45762				

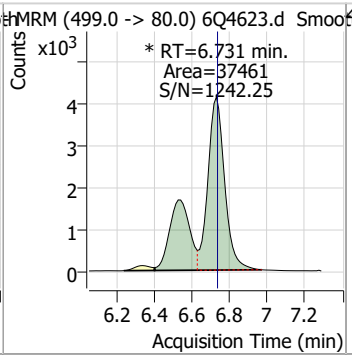


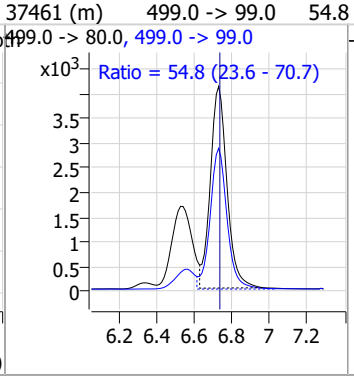


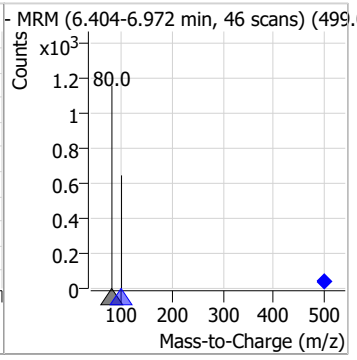


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	8.83	6.73	0.00	37461 (m)	499.0 -> 99.0	54.8	23.6	70.7

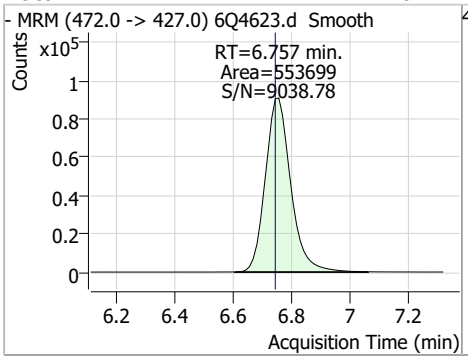


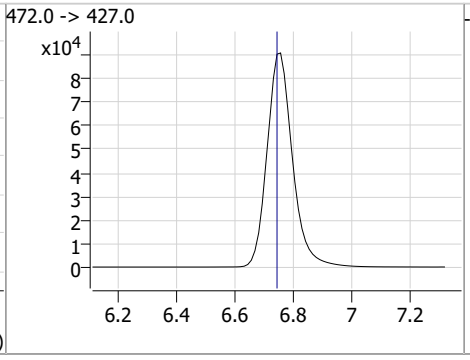


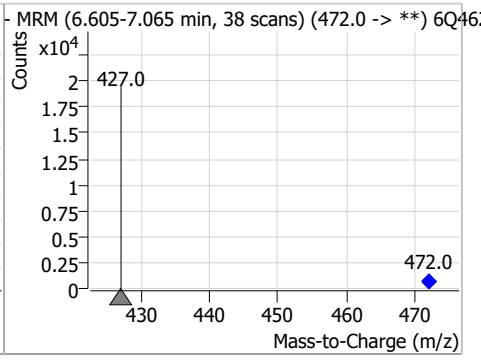




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.49	6.76	0.01	553699				

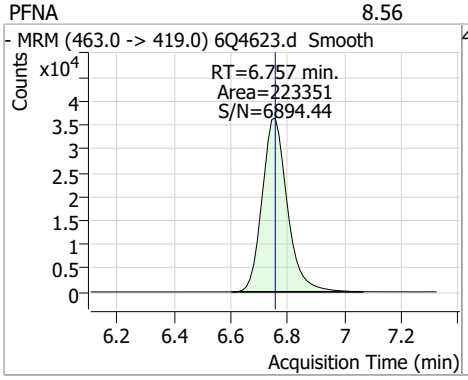


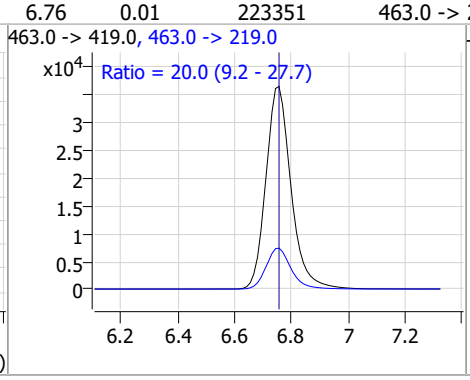


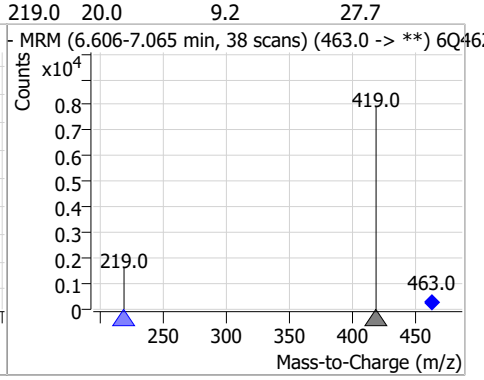


Perfluorinated Compounds by LC/MS/MS

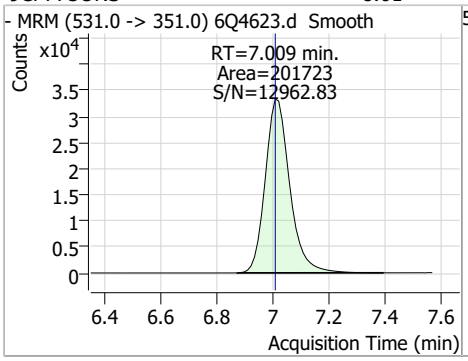
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	8.56	6.76	0.01	223351	463.0 -> 219.0	20.0	9.2	27.7

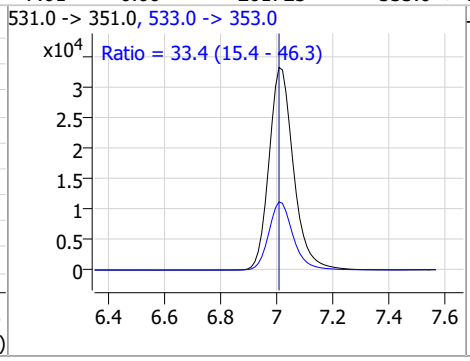


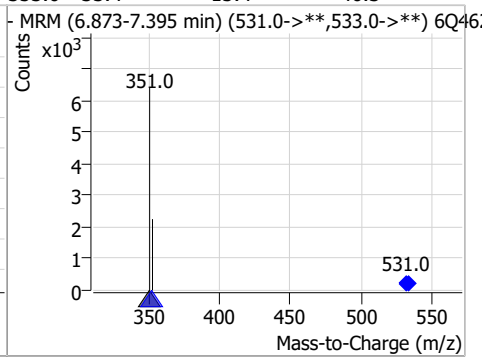




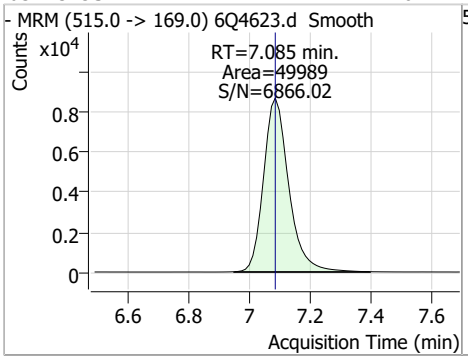
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	8.61	7.01	0.00	201723	533.0 -> 353.0	33.4	15.4	46.3

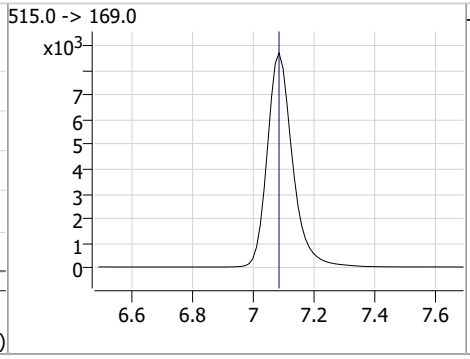


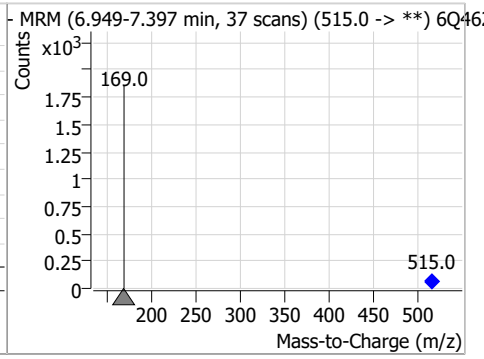




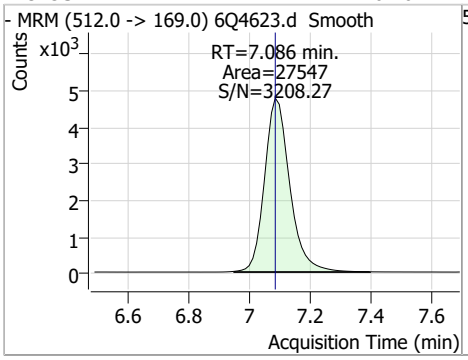
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.10	7.08	0.00	49989				

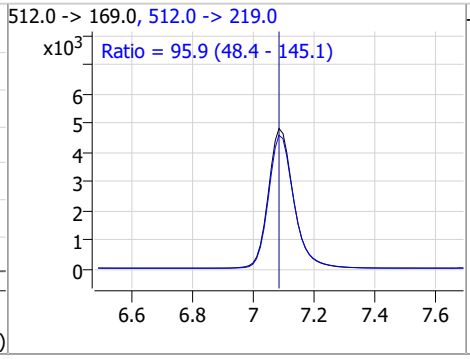


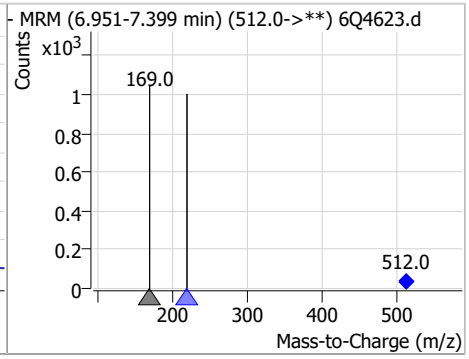




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	10.10	7.09	0.00	27547	512.0 -> 219.0	95.9	48.4	145.1

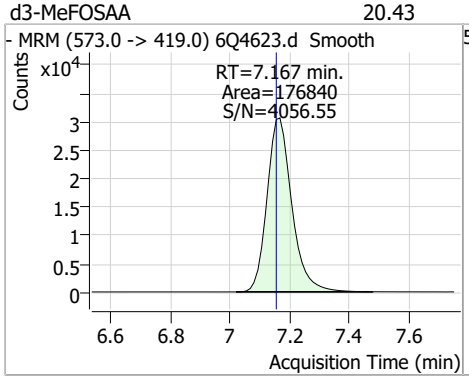


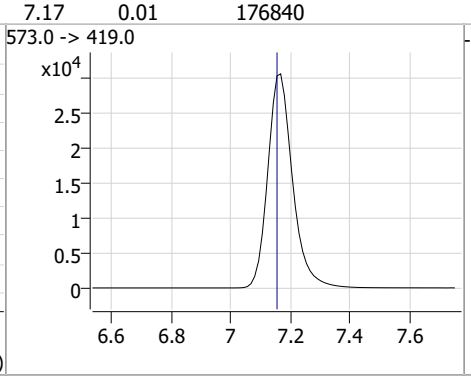


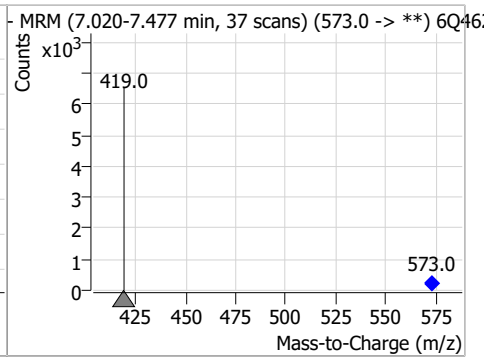


Perfluorinated Compounds by LC/MS/MS

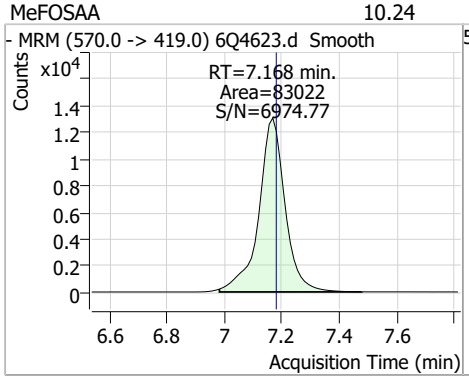
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.43	7.17	0.01	176840				

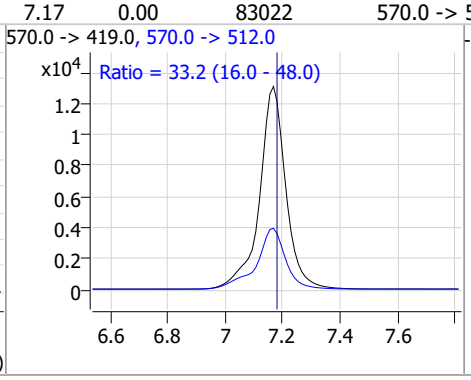


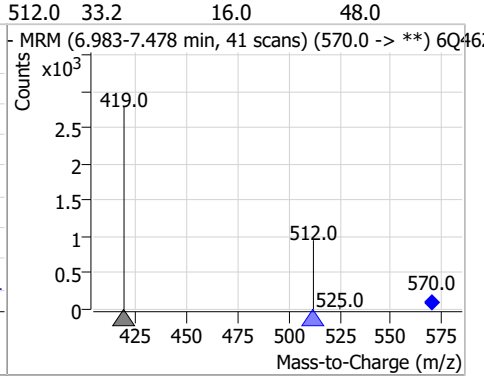




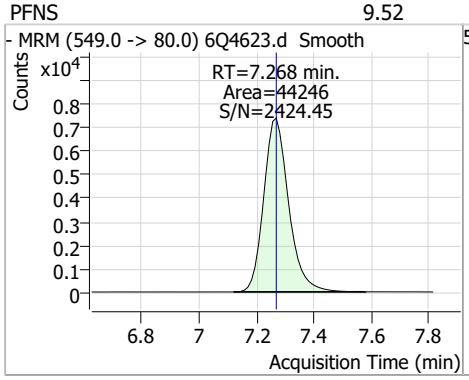
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	10.24	7.17	0.00	83022	570.0 -> 512.0	33.2	16.0	48.0

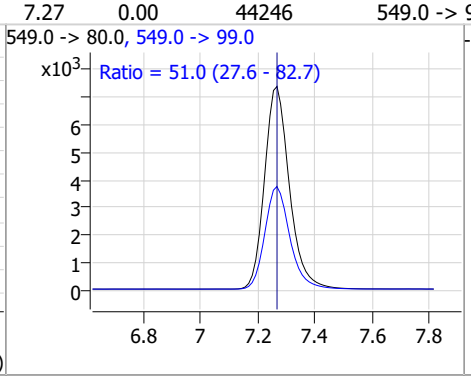


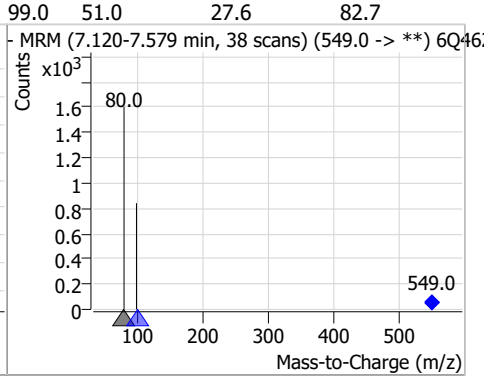




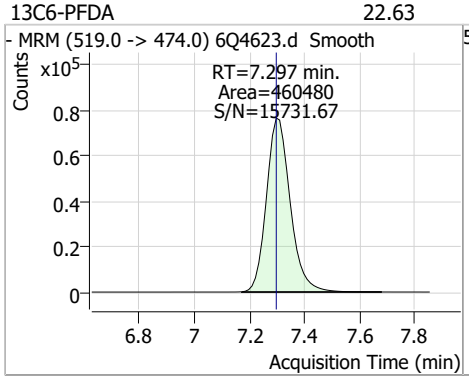
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	9.52	7.27	0.00	44246	549.0 -> 99.0	51.0	27.6	82.7

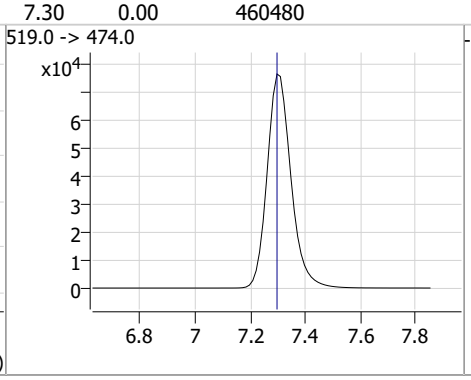


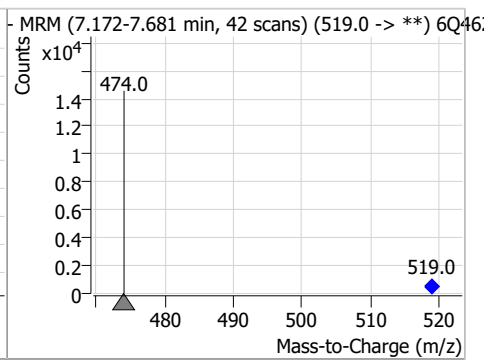




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	22.63	7.30	0.00	460480				

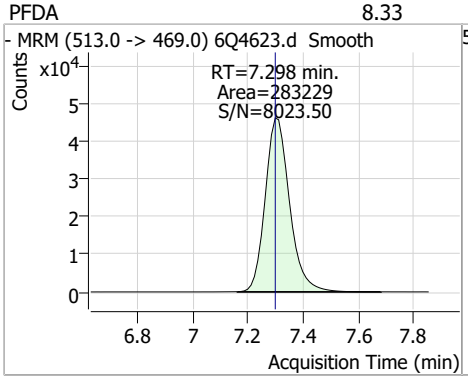


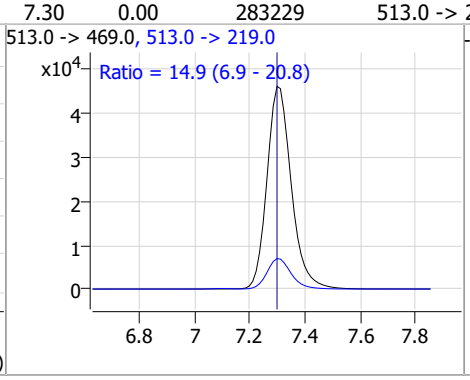


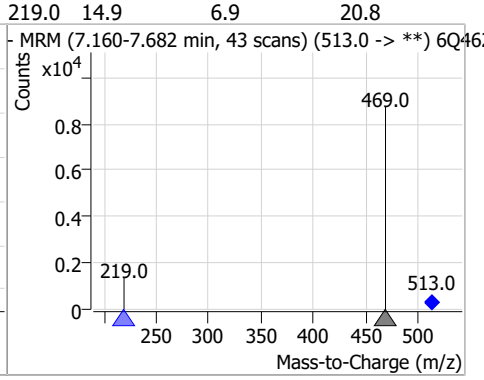


Perfluorinated Compounds by LC/MS/MS

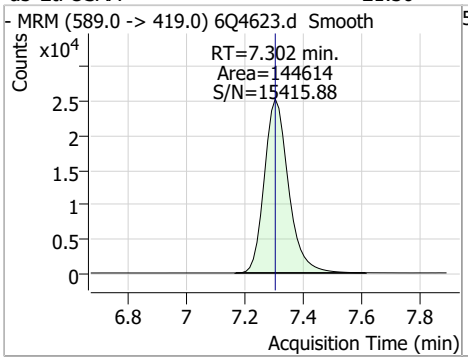
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	8.33	7.30	0.00	283229	513.0 -> 219.0	14.9	6.9	20.8

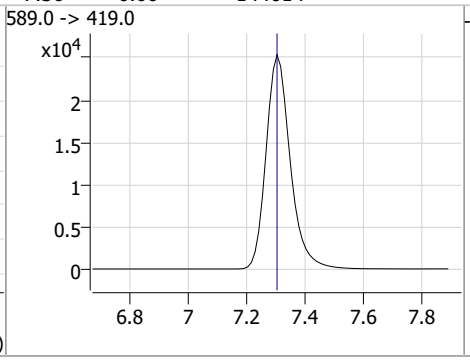


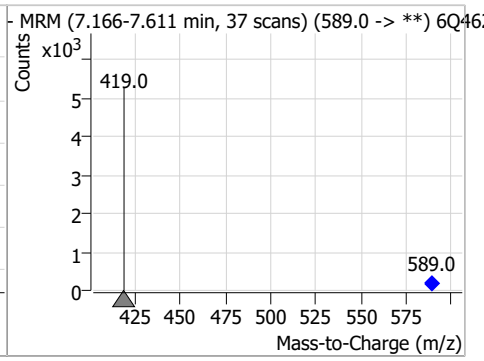




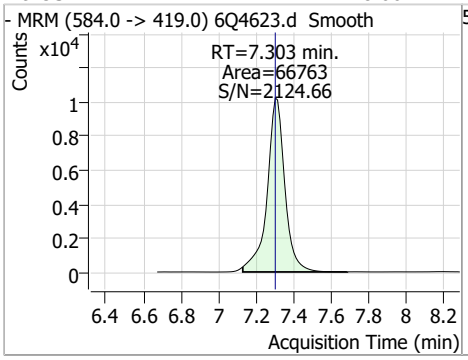
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.30	7.30	0.00	144614				

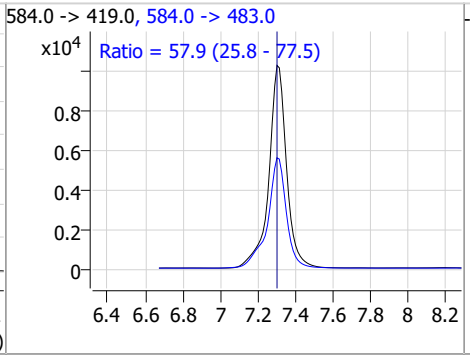


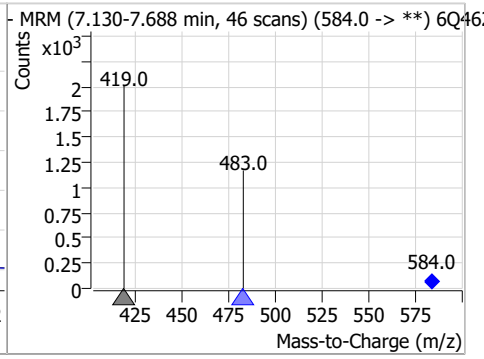




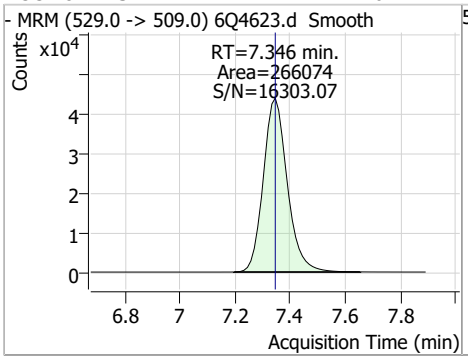
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	8.66	7.30	0.00	66763	584.0 -> 483.0	57.9	25.8	77.5

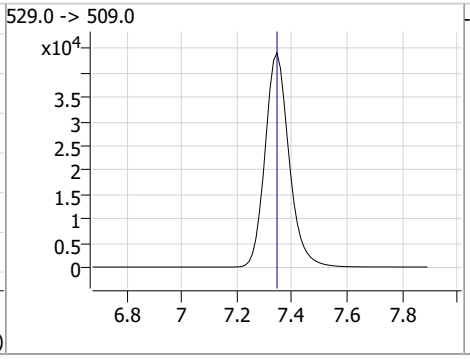


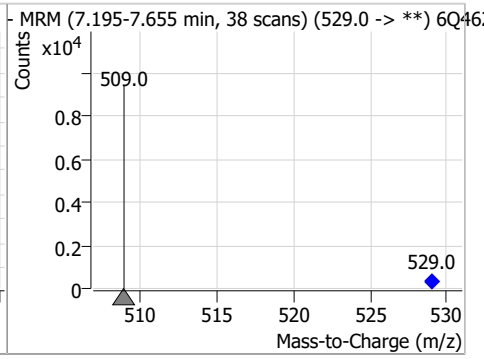




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.41	7.35	0.00	266074				

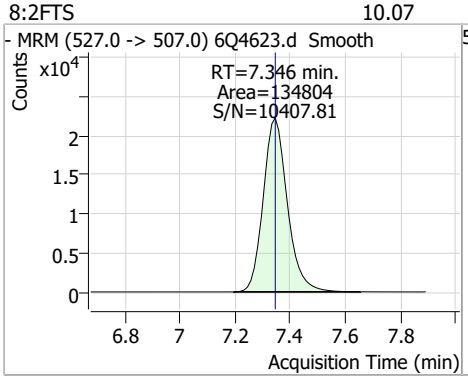


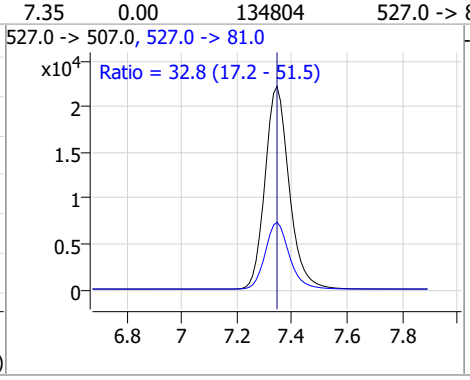


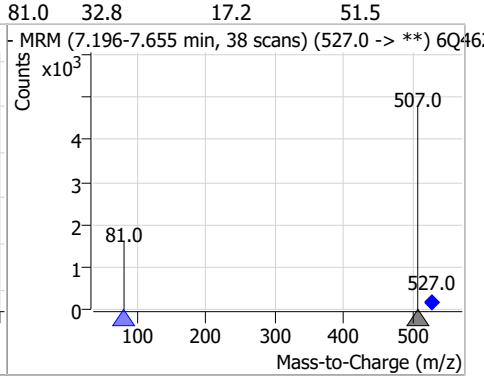


Perfluorinated Compounds by LC/MS/MS

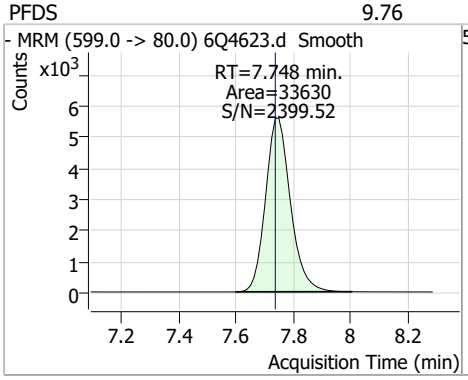
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	10.07	7.35	0.00	134804	527.0 -> 81.0	32.8	17.2	51.5

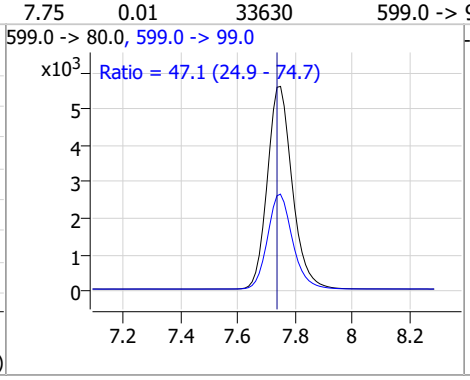


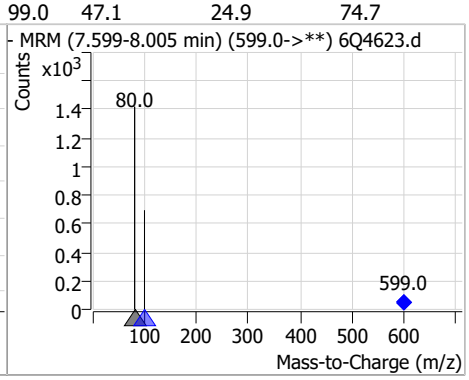




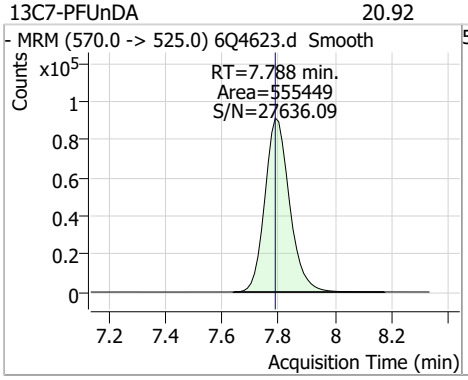
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	9.76	7.75	0.01	33630	599.0 -> 99.0	47.1	24.9	74.7

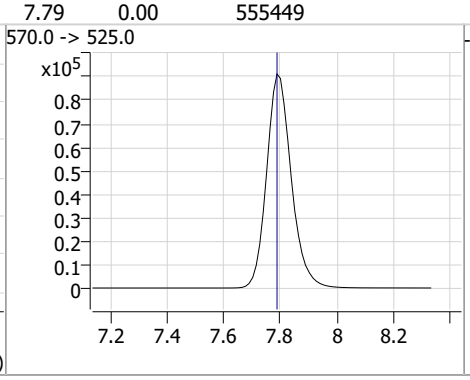


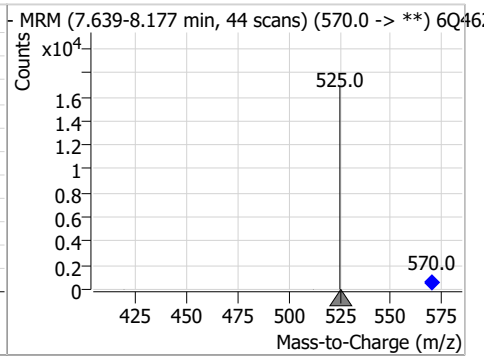




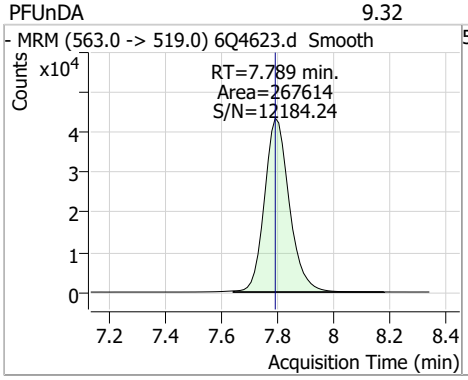
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.92	7.79	0.00	555449				

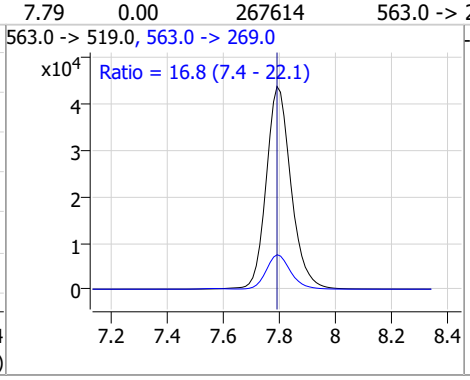


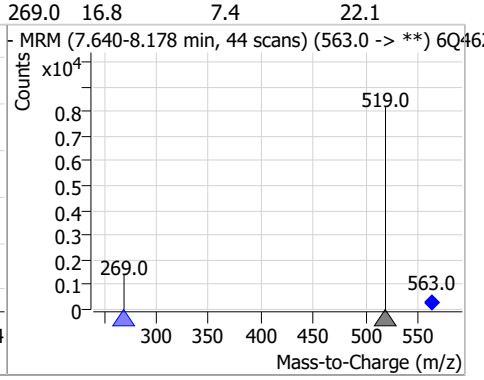




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	9.32	7.79	0.00	267614	563.0 -> 269.0	16.8	7.4	22.1

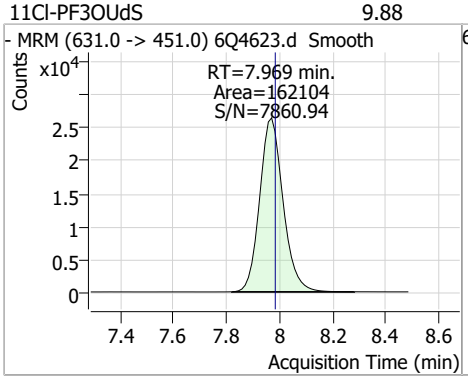


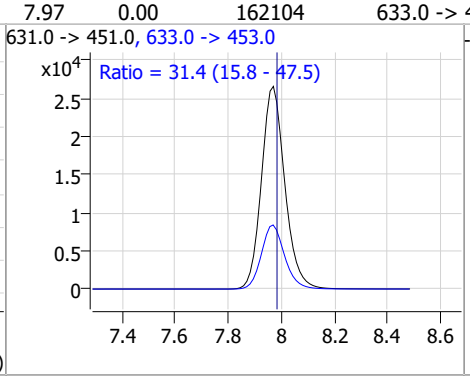


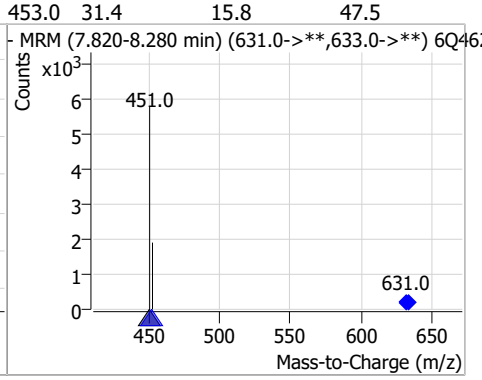


Perfluorinated Compounds by LC/MS/MS

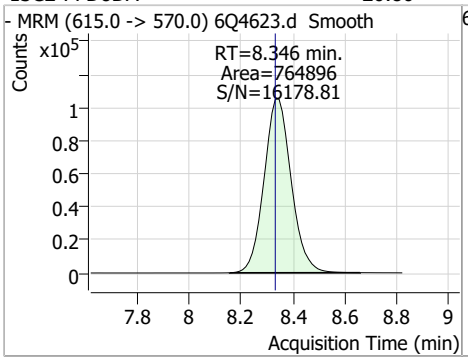
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	9.88	7.97	0.00	162104	633.0 -> 453.0	31.4	15.8	47.5

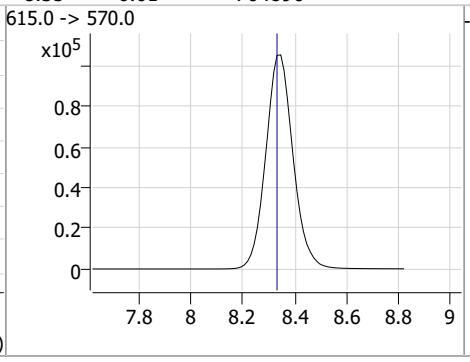


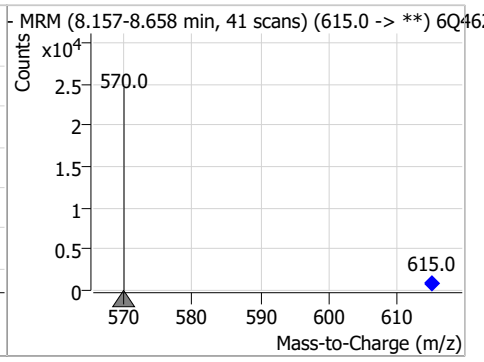




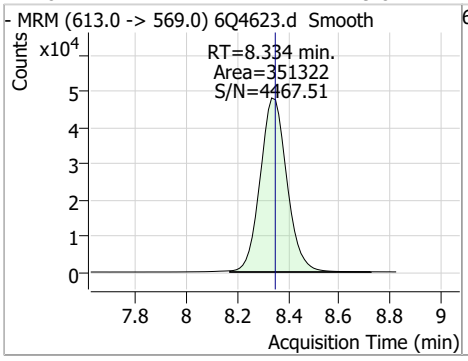
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.80	8.35	0.01	764896				

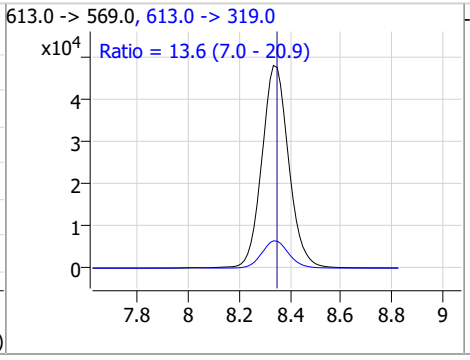


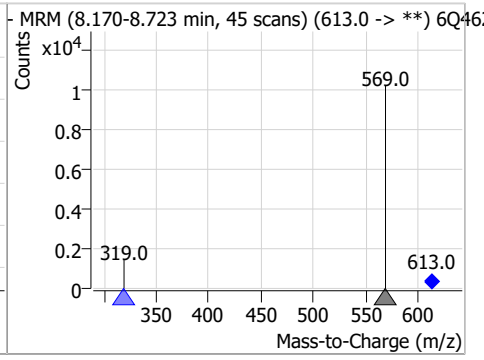




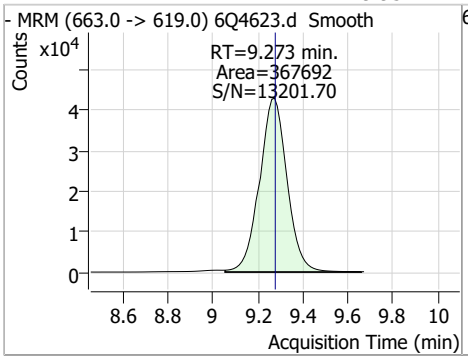
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	9.84	8.33	0.00	351322	613.0 -> 319.0	13.6	7.0	20.9

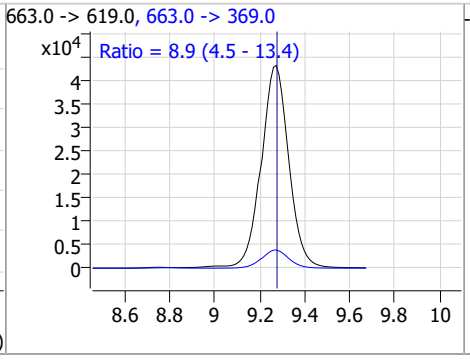


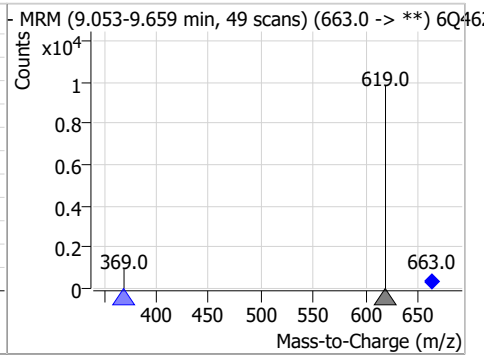




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	9.95	9.27	0.01	367692	663.0 -> 369.0	8.9	4.5	13.4

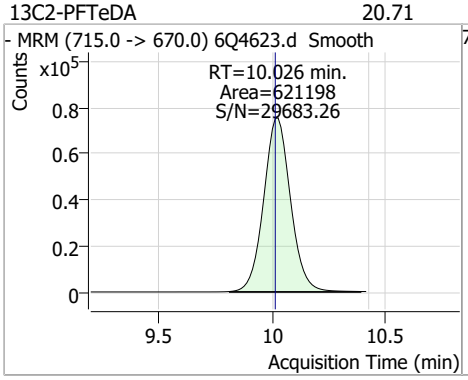


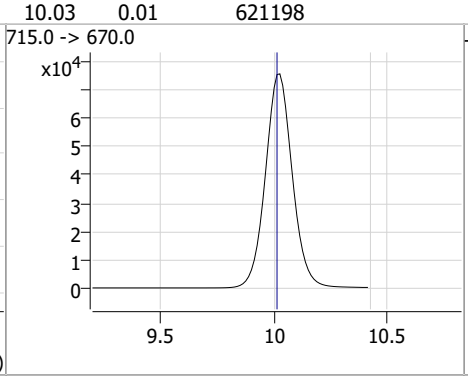


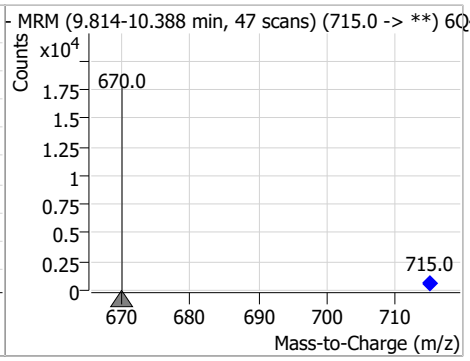


Perfluorinated Compounds by LC/MS/MS

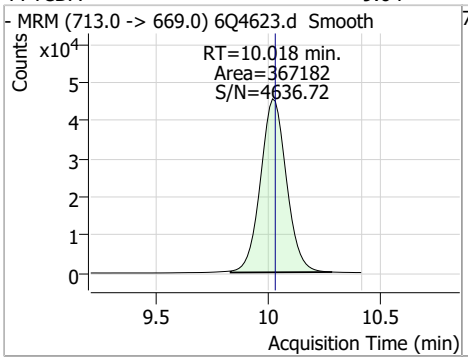
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.71	10.03	0.01	621198				

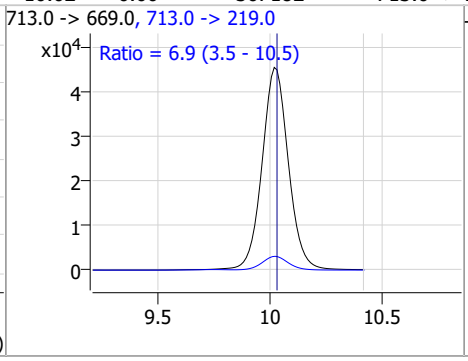


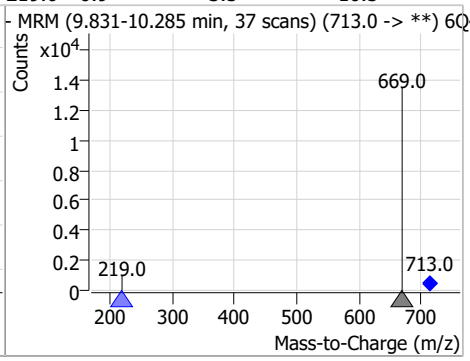




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	9.64	10.02	0.00	367182	713.0 -> 219.0	6.9	3.5	10.5







7.7.85

7

Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4623.D
Injection Time: 09/14/22 11:47
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

6Q4624.D

Manual Integrations APPROVED (compounds with "m" flag)

Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File	:	6Q4624.d
Operator	:	annal
Acq. Method	:	537_ID.m
Acq. Date-Time	:	9/14/2022 12:04:01 PM
Sample Name	:	icc85-20
Vial	:	P1-A7
DA Method File	:	ID_091422_S6Q85.quantmethod.xml
Batch Name	:	s6q85.batch.bin
Sample Information	:	OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	78649	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	138745	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	213196	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	245108	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	410287	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	497253	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	392315	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	534181	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	726808	20.00	µg/L	0.000
M2-PFTeDA	10.014	715.0 -> 670.0	590362	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	190824	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	30313	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	26201	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	41314	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	266075	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	336934	20.00	µg/L	0.000
M2-8:2FTS	7.346	529.0 -> 509.0	245713	20.00	µg/L	0.000
M3-MeFOSAA	7.155	573.0 -> 419.0	175336	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	5272	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	47692	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	137963	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	266075	19.70	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-6:2FTS	6.136	429.0 -> 409.0	336934	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C2-8:2FTS	7.346	529.0 -> 509.0	245713	18.85	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C2-PFDoDA	8.332	615.0 -> 570.0	726808	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C2-PFTeDA	10.014	715.0 -> 670.0	590362	19.68	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.4%		
13C3-PFBS	3.635	302.0 -> 99.0	30313	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-PFHxS	5.475	402.0 -> 99.0	26201	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C4-PFBA	1.949	217.0 -> 172.0	78649	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	5.445	367.0 -> 322.0	245108	19.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C5-PFHxA	4.573	318.0 -> 273.0	213196	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C5-PFPeA	3.418	268.0 -> 223.0	138745	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C6-PFDA	7.297	519.0 -> 474.0	392315	19.28	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

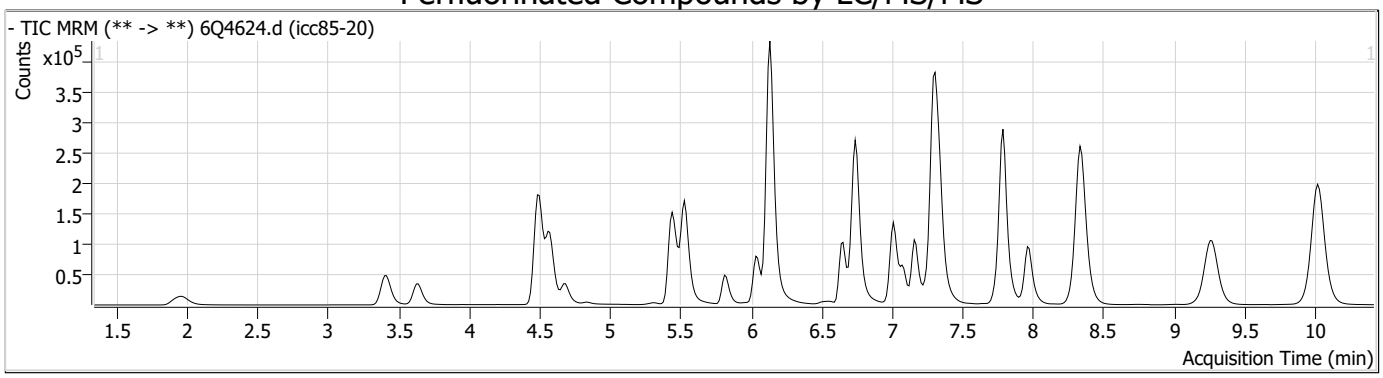
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C7-PFUnDA	7.788	570.0 -> 525.0	534181	20.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C8-FOSA	6.654	506.0 -> 78.0	190824	19.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.5%		
13C8-PFOA	6.138	421.0 -> 376.0	410287	19.34 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.7%		
13C8-PFOS	6.730	507.0 -> 99.0	41314	19.48 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
13C9-PFNA	6.745	472.0 -> 427.0	497253	19.30 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.5%		
d3-MeFOSAA	7.155	573.0 -> 419.0	175336	20.26 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C3-HFPO-DA	4.852	287.0 -> 169.0	5277	19.85 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.3%		
d3-MeFOSA	7.085	515.0 -> 169.0	47692	21.08 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
d5-EtFOSAA	7.302	589.0 -> 419.0	138130	20.35 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	293353	20.39 µg/L		100
		327.0 -> 81.0	95686			
6:2FTS	6.137	427.0 -> 407.0	345164	20.23 µg/L		100
		427.0 -> 81.0	94795			
8:2FTS	7.346	527.0 -> 507.0	262445	21.24 µg/L		100
		527.0 -> 81.0	90118			
EtFOSAA	7.303	584.0 -> 419.0	140290	19.08 µg/L		100
		584.0 -> 483.0	72516			
FOSA	6.656	498.0 -> 78.0	201942	21.10 µg/L		100
		498.0 -> 478.0	7888			
MeFOSAA	7.168	570.0 -> 419.0	165602	20.61 µg/L		100
		570.0 -> 512.0	53015			
PFBA	1.955	213.0 -> 169.0	34278	19.97 µg/L		100
PFBS	3.640	299.0 -> 80.0	100326	19.90 µg/L		100
		299.0 -> 99.0	37690			
PFDA	7.298	513.0 -> 469.0	575741	19.88 µg/L		100
		513.0 -> 219.0	79856			
PFDoDA	8.334	613.0 -> 569.0	680647	20.07 µg/L		100
		613.0 -> 319.0	94684			
PFDS	7.736	599.0 -> 80.0	64504	19.47 µg/L		100
		599.0 -> 99.0	32112			
PFHpA	5.446	363.0 -> 319.0	320442	20.10 µg/L		100
		363.0 -> 169.0	47201			
PFHpS	6.148	449.0 -> 80.0	75349	20.89 µg/L		100
		449.0 -> 99.0	39659			
PFHxA	4.574	313.0 -> 269.0	226543	20.20 µg/L		100
		313.0 -> 119.0	5435			
PFHxS	5.477	399.0 -> 80.0	78617	20.94 µg/L	m	100
		399.0 -> 99.0	38126			
PFNA	6.745	463.0 -> 419.0	445715	19.02 µg/L		100
		463.0 -> 219.0	82450			
PFNS	7.268	549.0 -> 80.0	84773	20.19 µg/L		100
		549.0 -> 99.0	46735			
PFOA	6.138	413.0 -> 369.0	442767	19.98 µg/L		100
		413.0 -> 169.0	67567			
PFOS	6.731	499.0 -> 80.0	77969	20.36 µg/L	m	100

Perfluorinated Compounds by LC/MS/MS

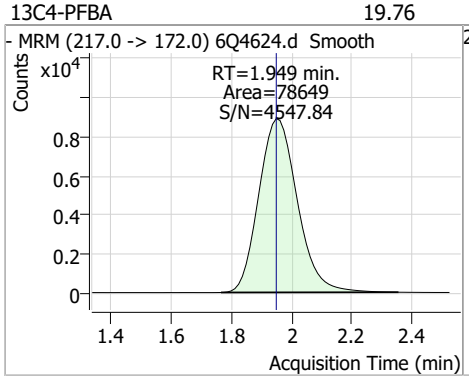
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	36728			
PFPeA	3.420	263.0 -> 219.0	117392	20.08	µg/L	100
PFPeS	4.681	349.0 -> 80.0	83778	19.97	µg/L	100
		349.0 -> 99.0	38239			
PFTeDA	10.018	713.0 -> 669.0	723450	19.99	µg/L	100
		713.0 -> 219.0	50402			
PFTrDA	9.260	663.0 -> 619.0	720768	20.54	µg/L	100
		663.0 -> 369.0	64265			
PFUnDA	7.789	563.0 -> 519.0	557530	20.19	µg/L	100
		563.0 -> 269.0	82060			
11Cl-PF3OUdS	7.969	631.0 -> 451.0	310564	19.93	µg/L	100
		633.0 -> 453.0	98267			
9Cl-PF3ONS	7.009	531.0 -> 351.0	413543	20.72	µg/L	100
		533.0 -> 353.0	127678			
ADONA	5.532	377.0 -> 251.0	526069	21.66	µg/L	100
		377.0 -> 85.0	125622			
HFPO-DA	4.840	285.0 -> 169.0	5451	21.87	µg/L	100
		285.0 -> 185.0	765			
MeFOSA	7.086	512.0 -> 169.0	52305	20.10	µg/L	100
		512.0 -> 219.0	50588			
4-PFECHS	6.044	461.0 -> 381.0	253334	19.18	µg/L	100
		461.0 -> 99.0	84565			
FBSA	4.514	298.0 -> 78.0	208470	20.07	µg/L	100
		298.0 -> 64.0	14240			
FHxSA	5.828	398.0 -> 78.0	179587	19.83	µg/L	100
		398.0 -> 64.0	6336			

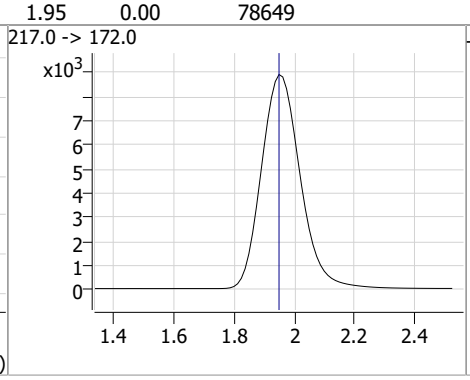
 # = Qualifier out of range, m = manually integrated, + = Area summed

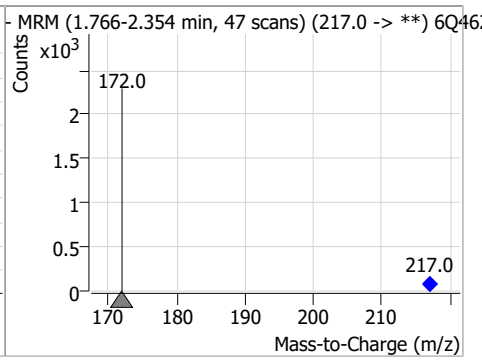
Perfluorinated Compounds by LC/MS/MS



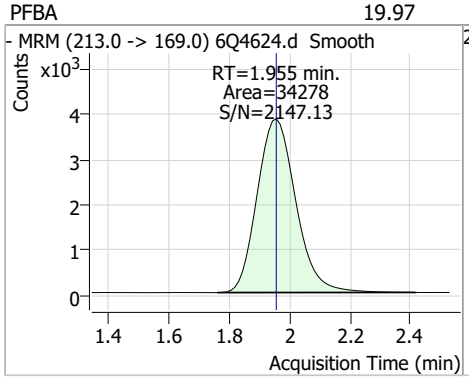
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.76	1.95	0.00	78649				

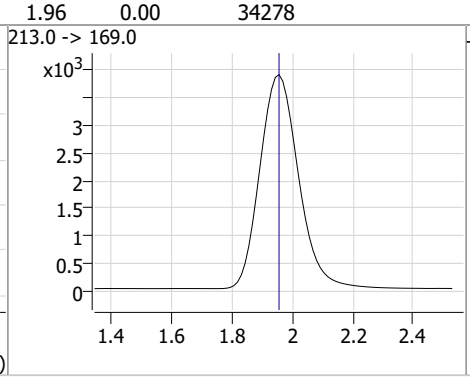


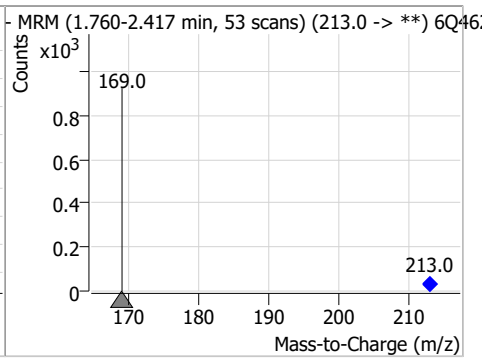




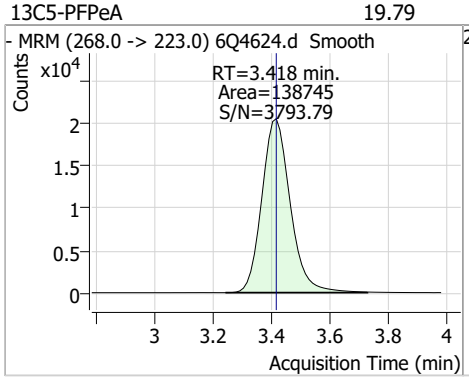
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.97	1.96	0.00	34278				

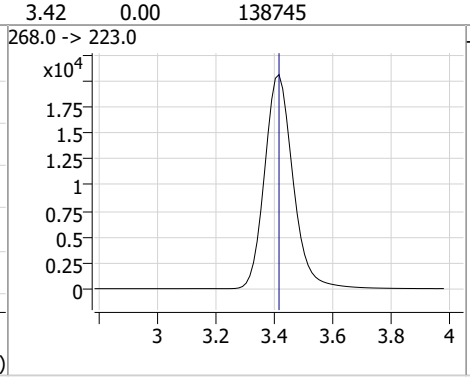


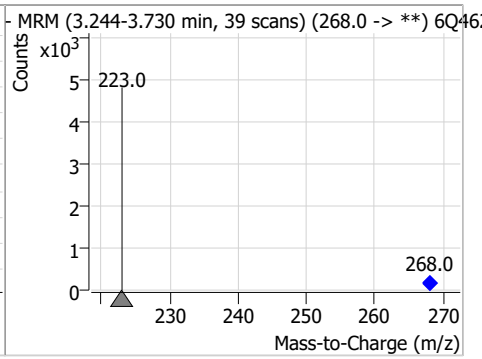




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.79	3.42	0.00	138745				

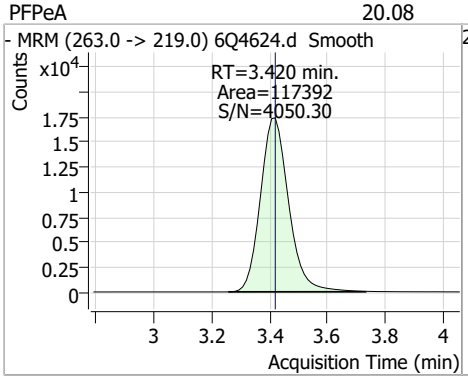


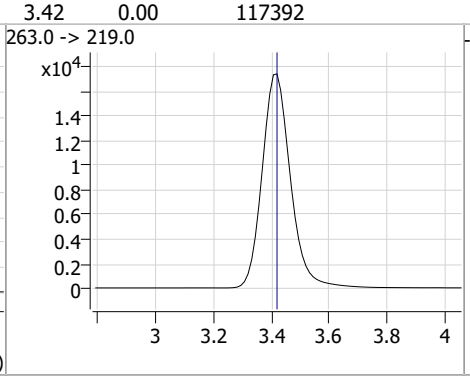


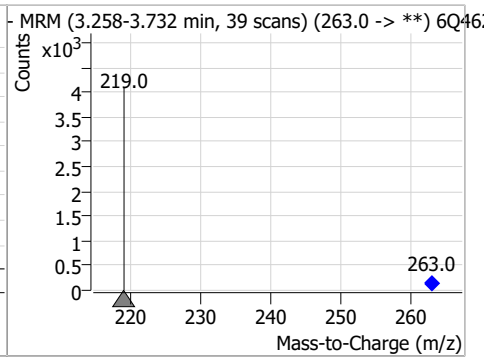


Perfluorinated Compounds by LC/MS/MS

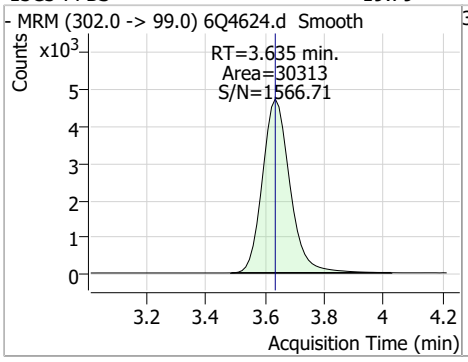
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	20.08	3.42	0.00	117392				

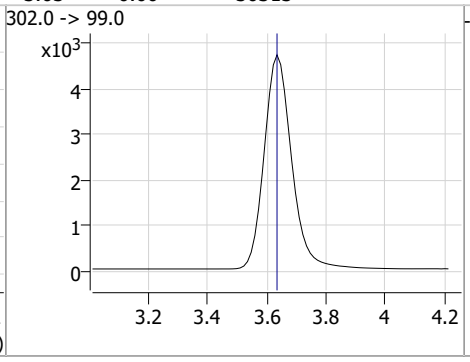


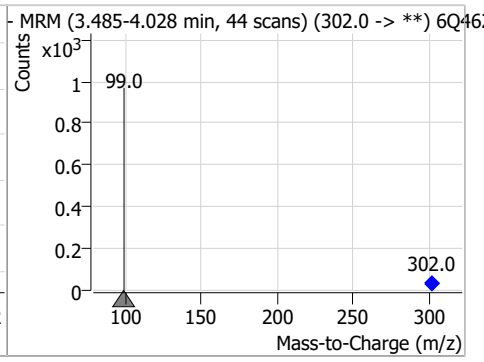




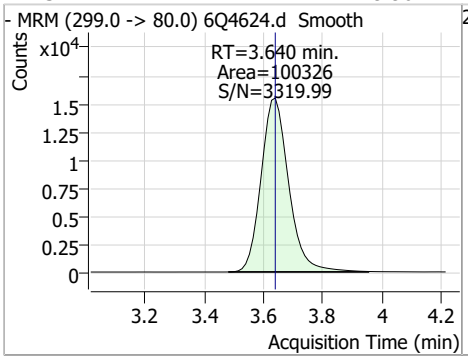
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.79	3.63	0.00	30313				

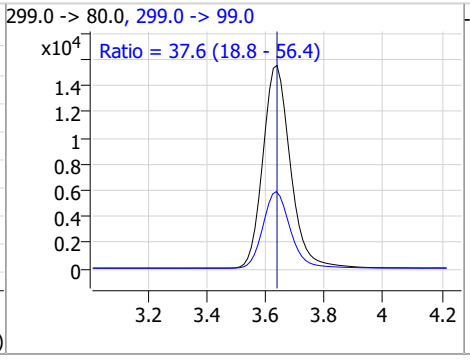


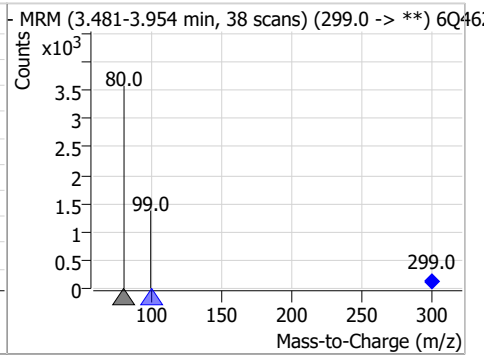




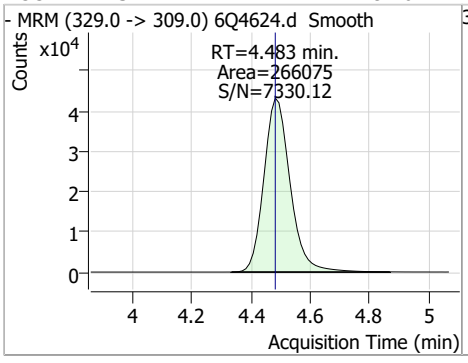
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.90	3.64	0.00	100326	299.0 -> 99.0	37.6	18.8	56.4

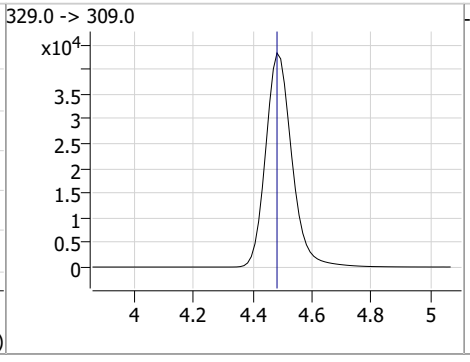


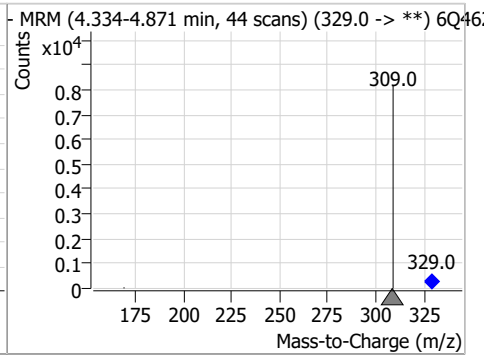




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.70	4.48	0.00	266075				

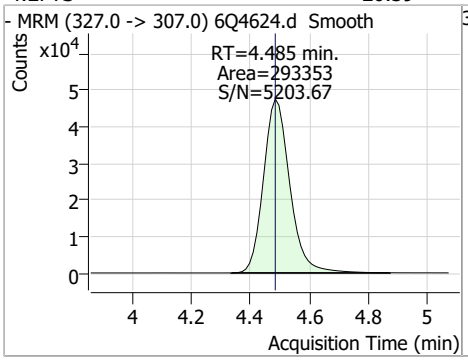


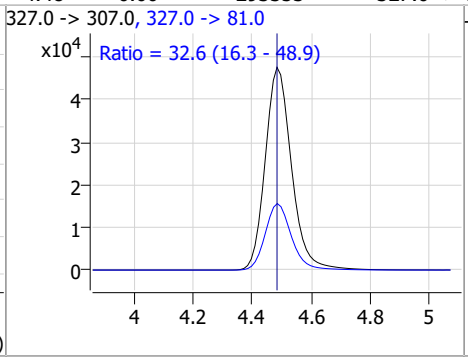


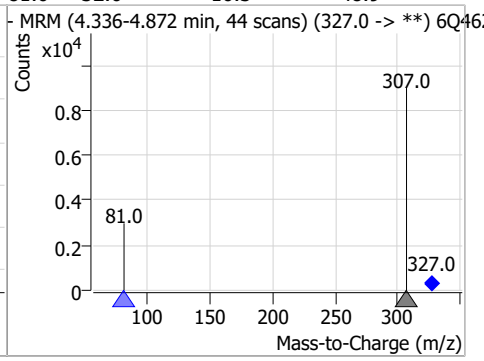


Perfluorinated Compounds by LC/MS/MS

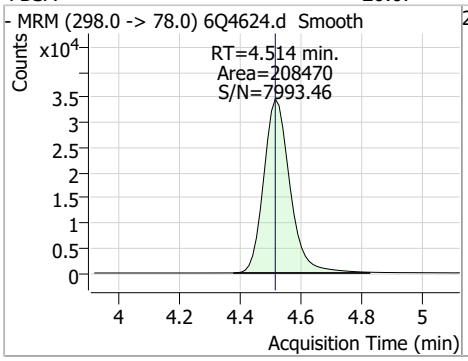
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.39	4.48	0.00	293353	327.0 -> 81.0	32.6	16.3	48.9

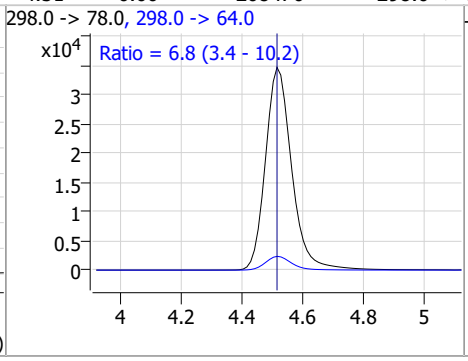


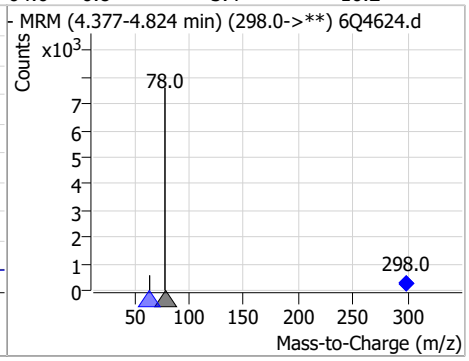




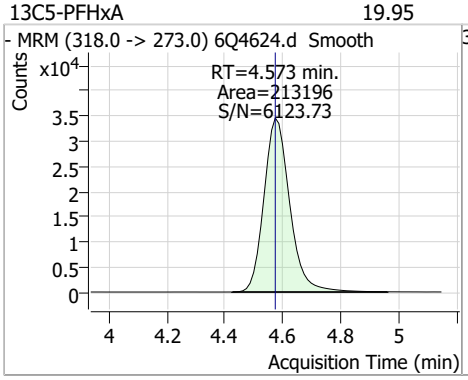
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.07	4.51	0.00	208470	298.0 -> 64.0	6.8	3.4	10.2

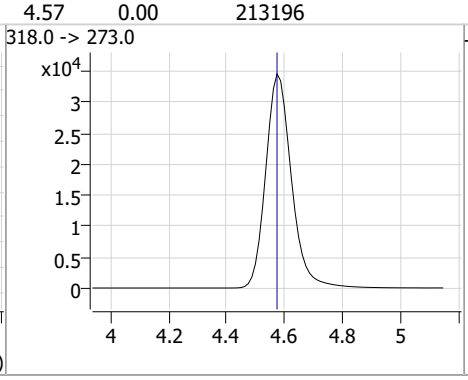


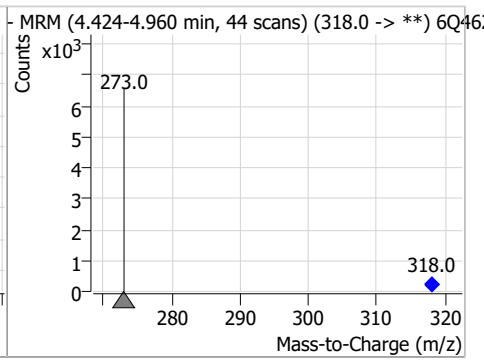




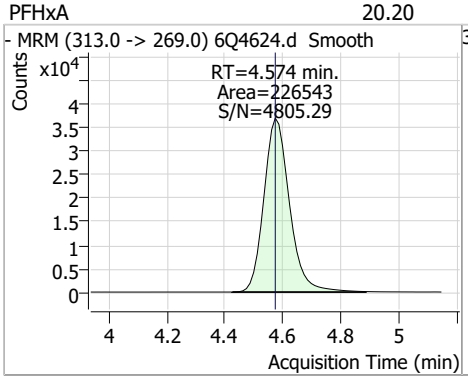
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.95	4.57	0.00	213196				

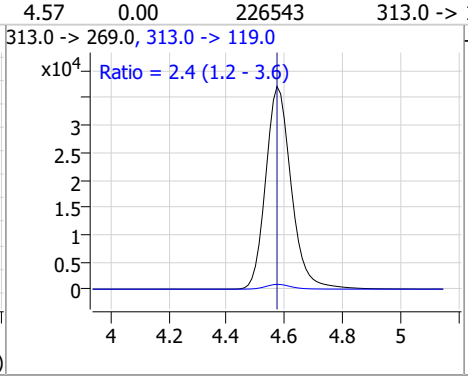


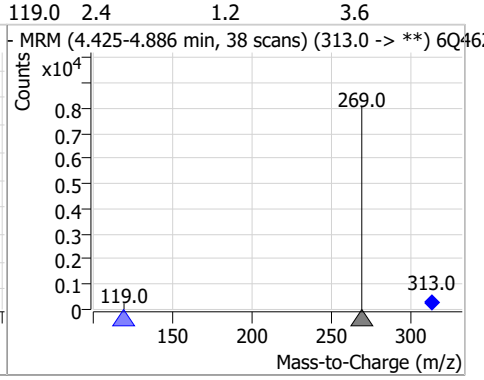




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.20	4.57	0.00	226543	313.0 -> 119.0	2.4	1.2	3.6

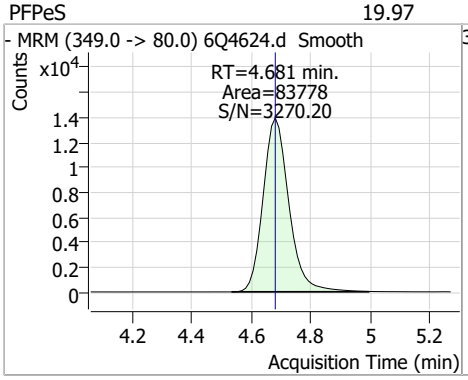


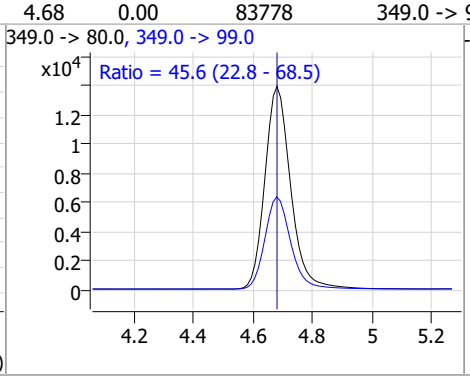


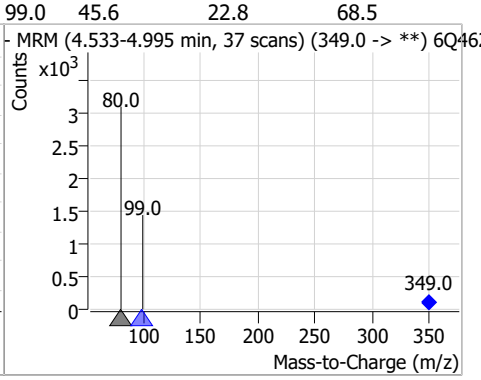


Perfluorinated Compounds by LC/MS/MS

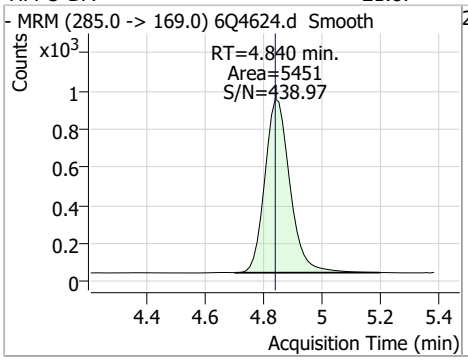
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.97	4.68	0.00	83778	349.0 -> 99.0	45.6	22.8	68.5

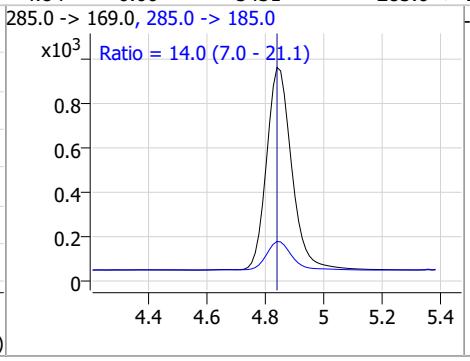


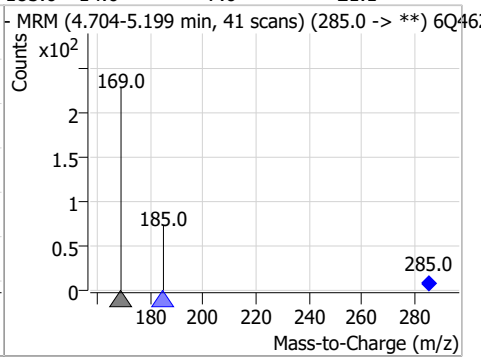




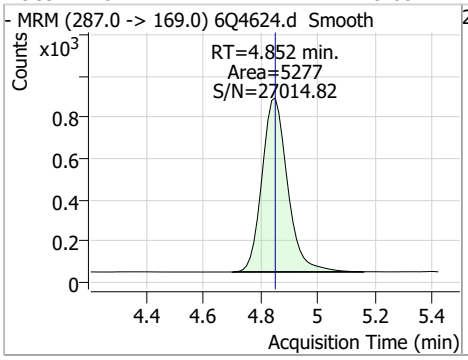
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.87	4.84	0.00	5451	285.0 -> 185.0	14.0	7.0	21.1

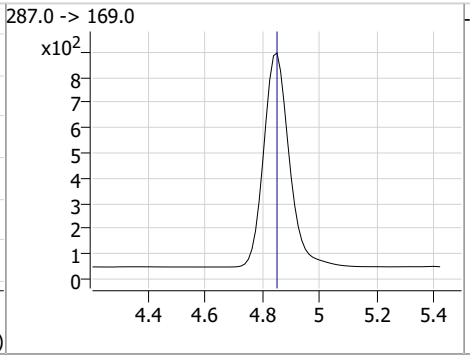


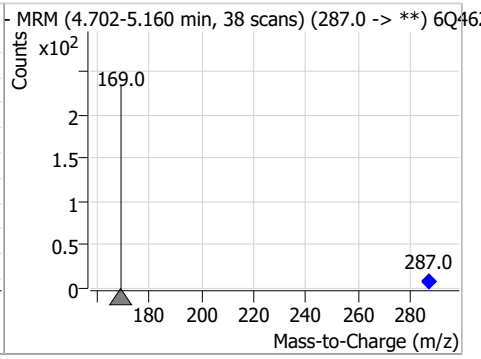




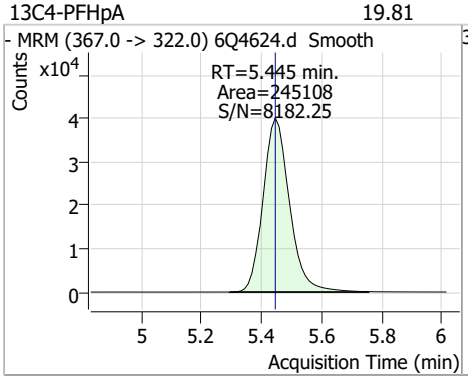
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.85	4.85	0.00	5277				

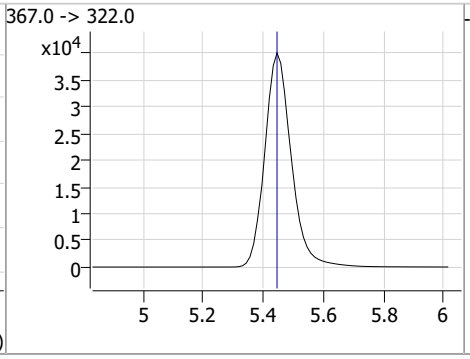


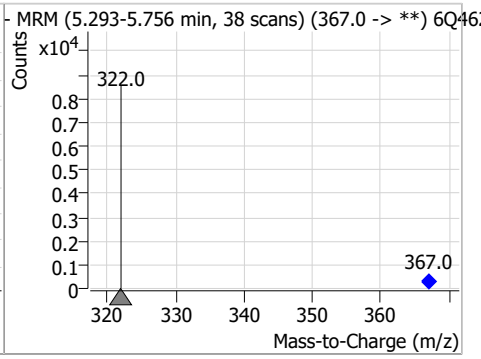




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	19.81	5.45	0.00	245108				

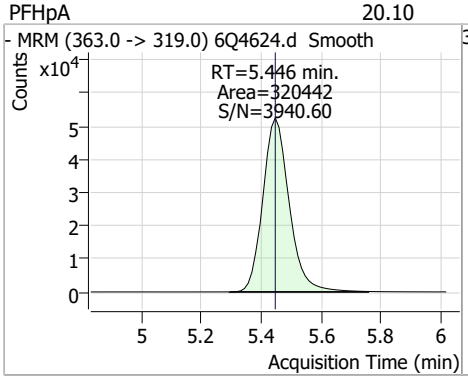


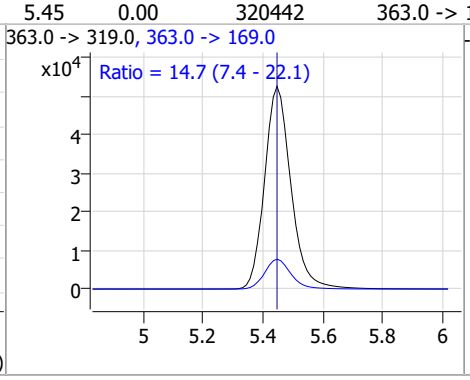


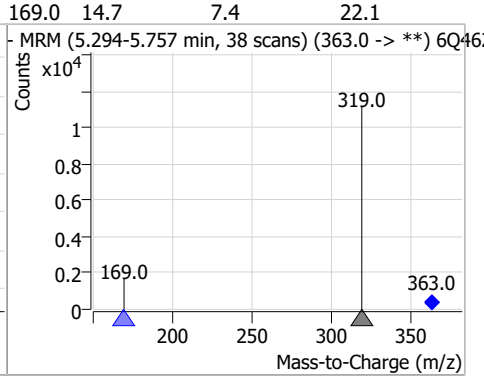


Perfluorinated Compounds by LC/MS/MS

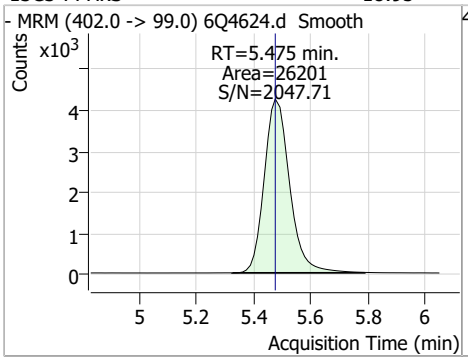
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.10	5.45	0.00	320442	363.0 -> 169.0	14.7	7.4	22.1

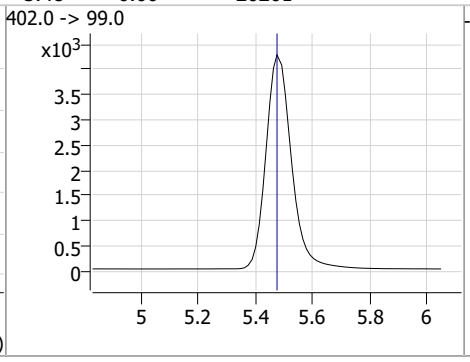


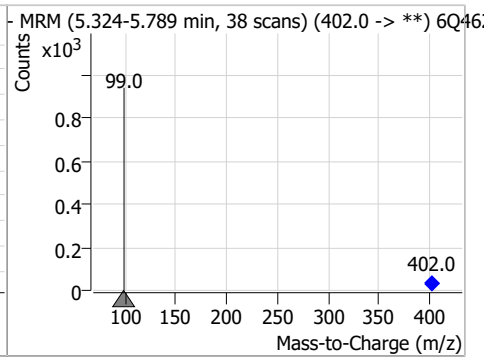




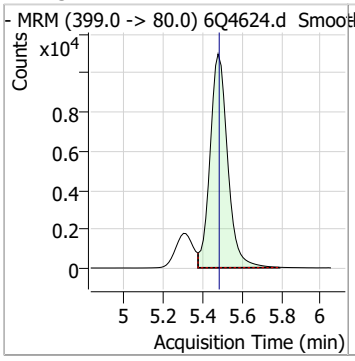
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	18.95	5.48	0.00	26201				

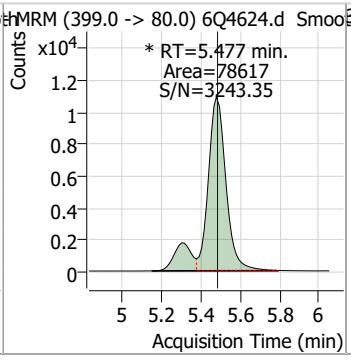


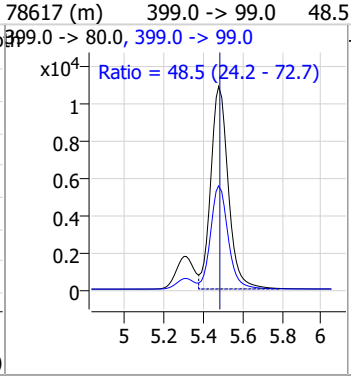


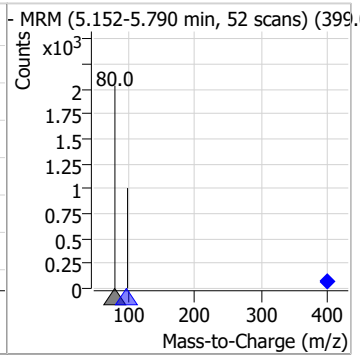


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.94	5.48	0.00	78617 (m)	399.0 -> 99.0	48.5	24.2	72.7

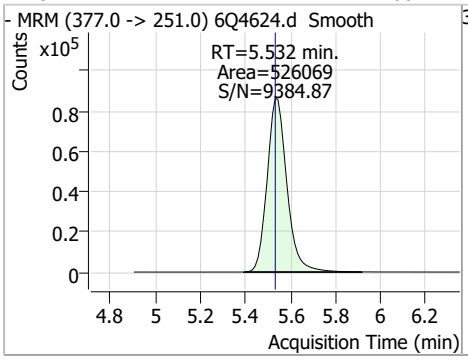


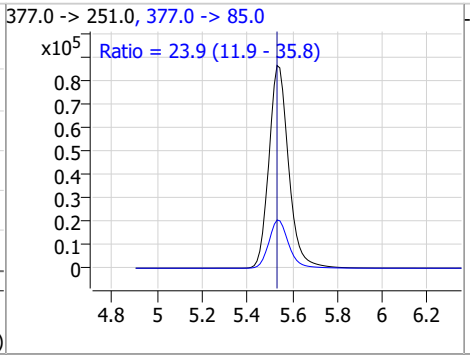


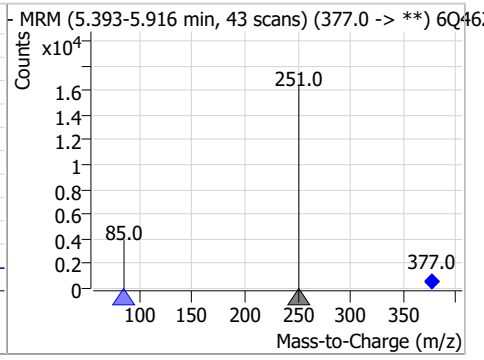




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	21.66	5.53	0.00	526069	377.0 -> 85.0	23.9	11.9	35.8

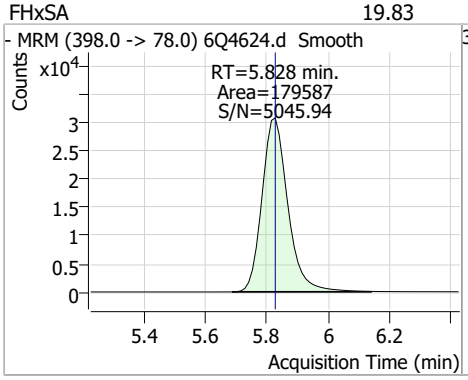


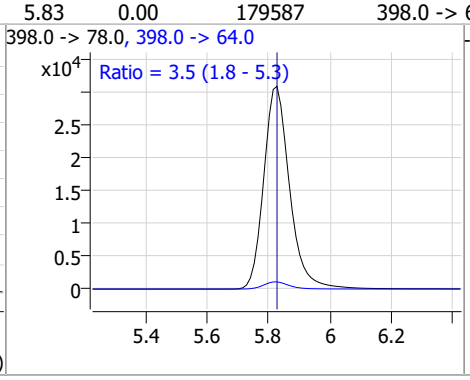


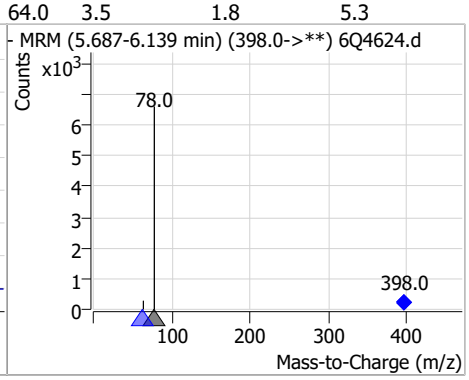


Perfluorinated Compounds by LC/MS/MS

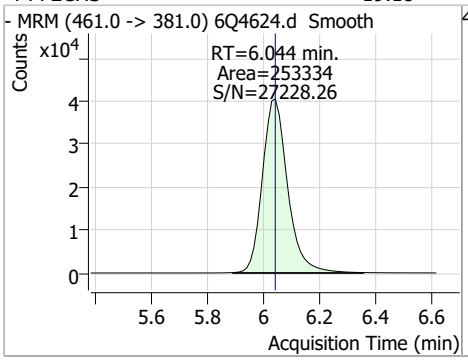
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.83	5.83	0.00	179587	398.0 -> 64.0	3.5	1.8	5.3

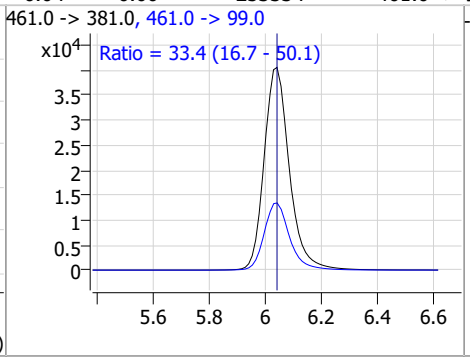


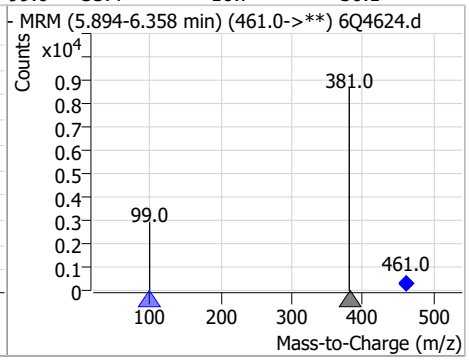




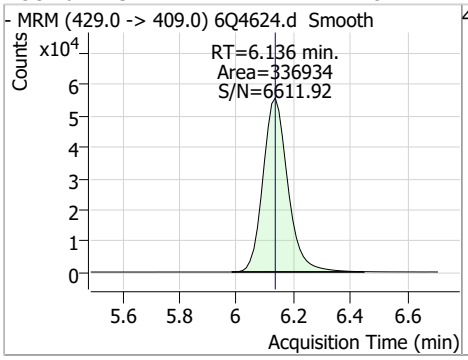
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.18	6.04	0.00	253334	461.0 -> 99.0	33.4	16.7	50.1

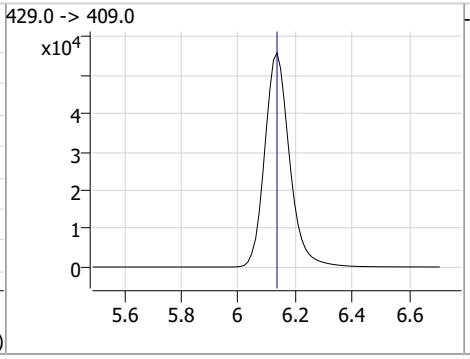


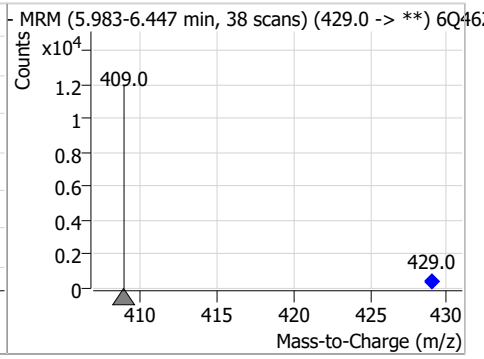




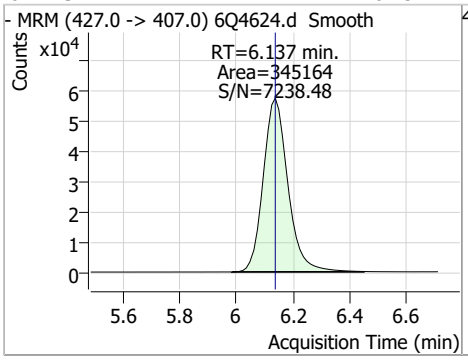
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.74	6.14	0.00	336934				

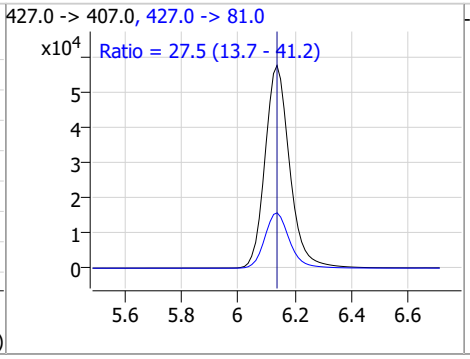


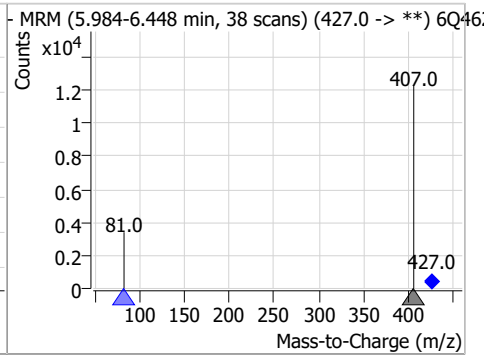




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.23	6.14	0.00	345164	427.0 -> 81.0	27.5	13.7	41.2

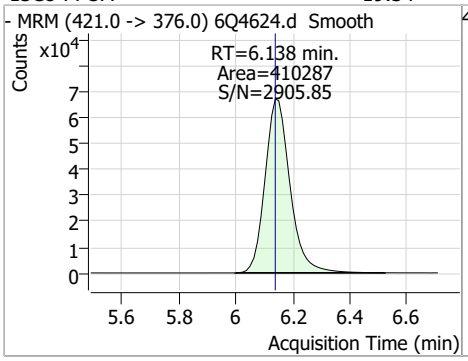


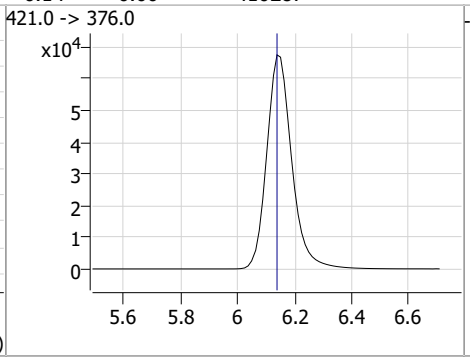


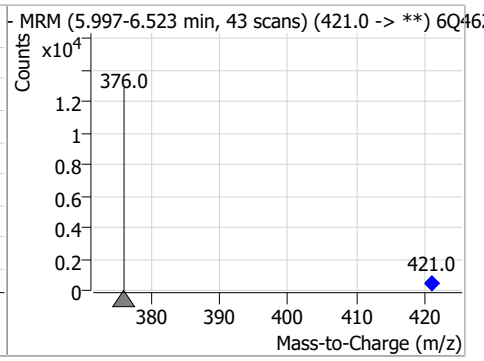


Perfluorinated Compounds by LC/MS/MS

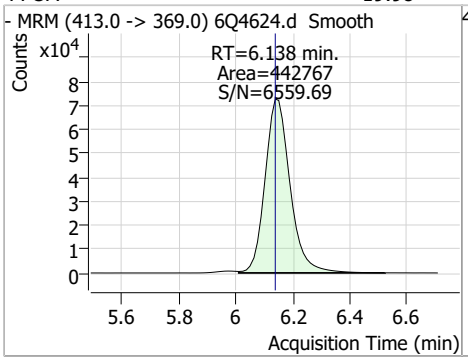
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.34	6.14	0.00	410287				

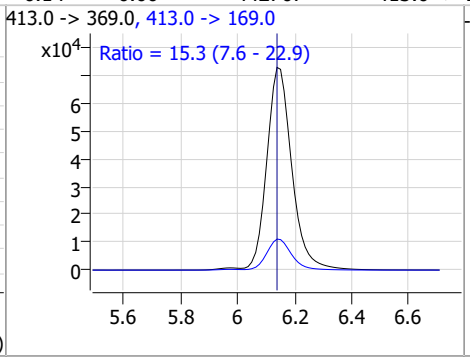


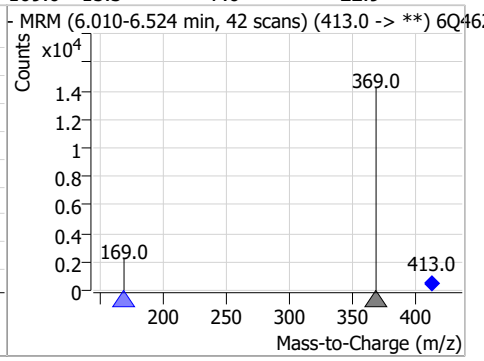




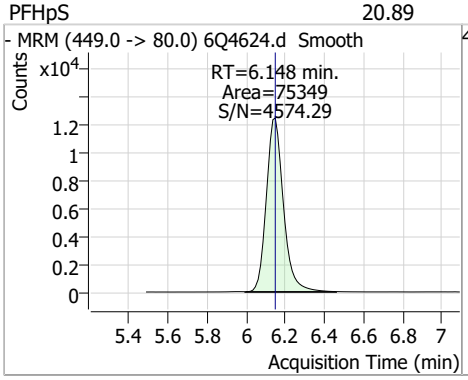
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.98	6.14	0.00	442767	413.0 -> 169.0	15.3	7.6	22.9

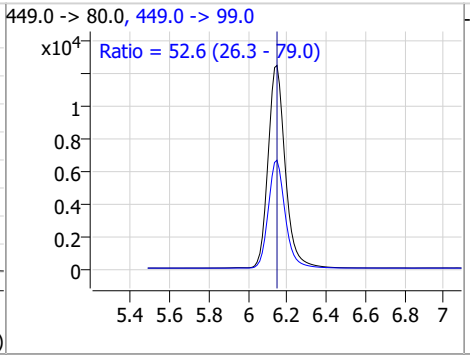


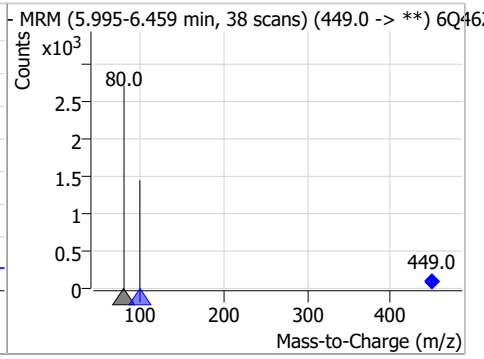




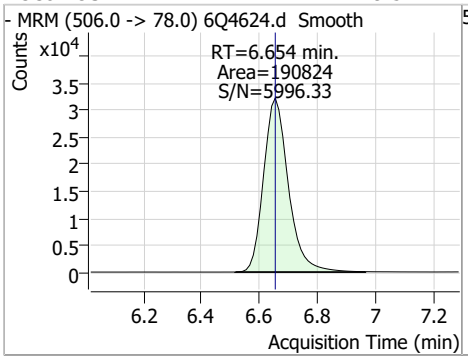
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.89	6.15	0.00	75349	449.0 -> 99.0	52.6	26.3	79.0

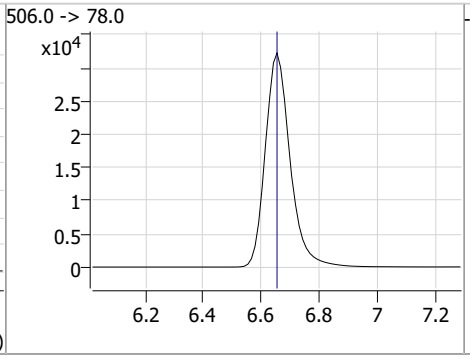


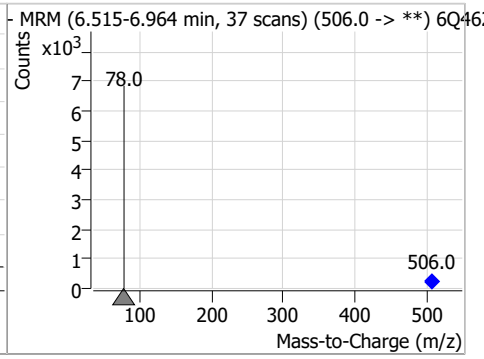




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.51	6.65	0.00	190824				

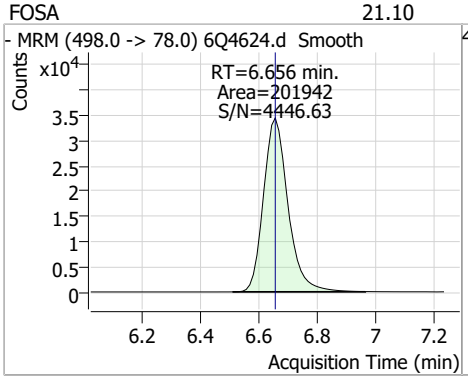


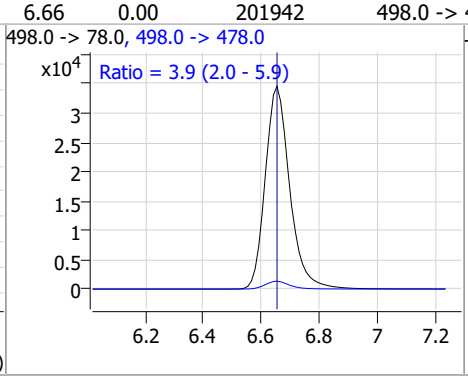


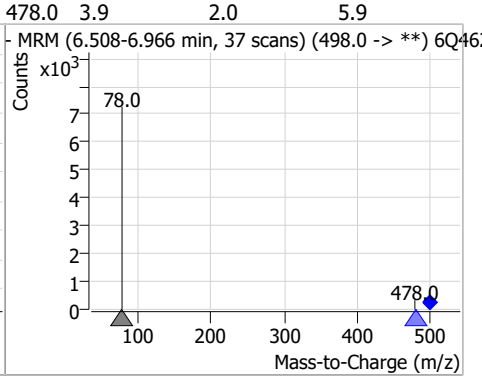


Perfluorinated Compounds by LC/MS/MS

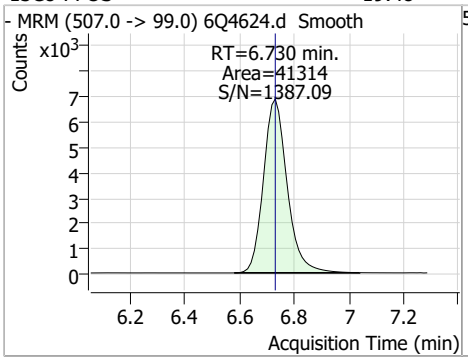
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.10	6.66	0.00	201942	498.0 -> 478.0	3.9	2.0	5.9

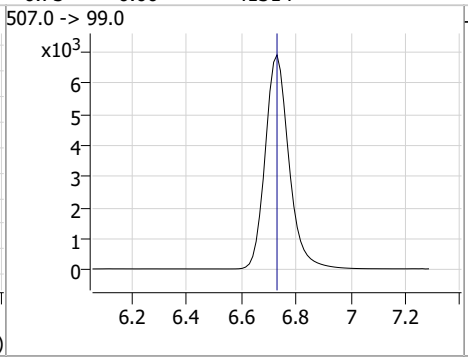


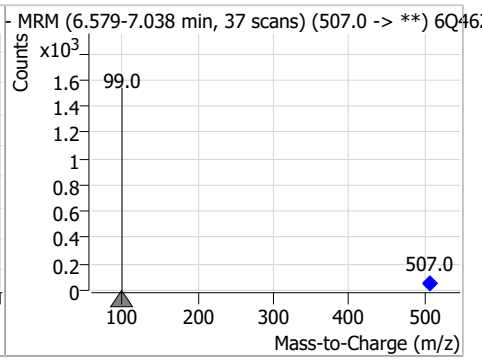




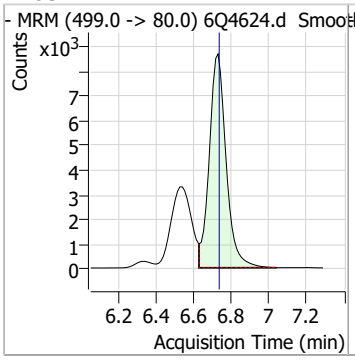
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.48	6.73	0.00	41314				

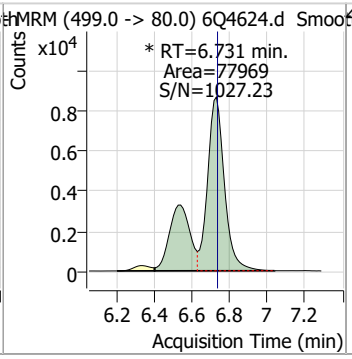


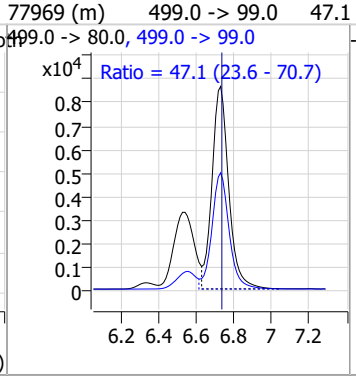


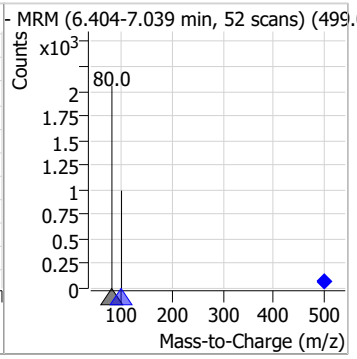


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.36	6.73	0.00	77969 (m)	499.0 -> 99.0	47.1	23.6	70.7

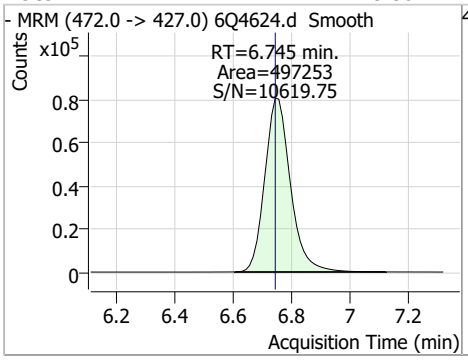


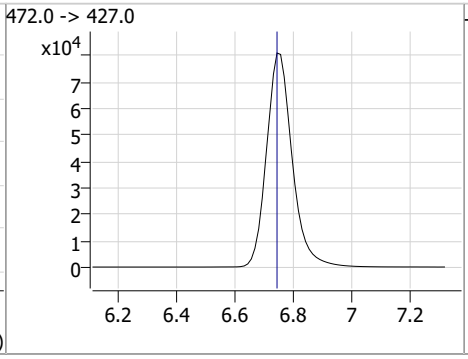


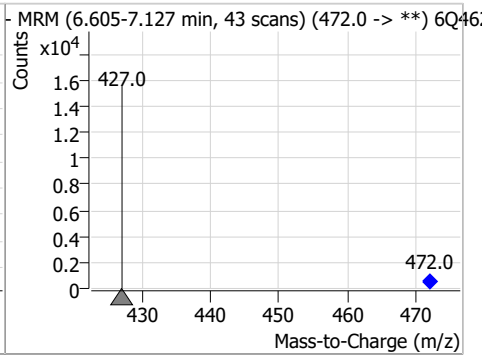




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.30	6.74	0.00	497253				

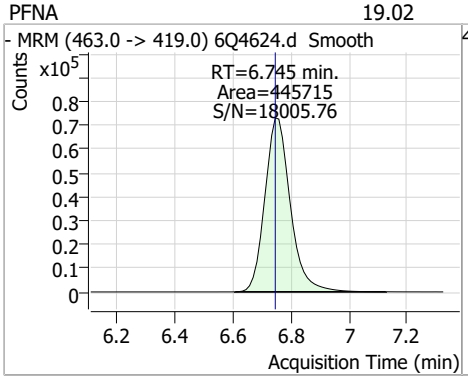


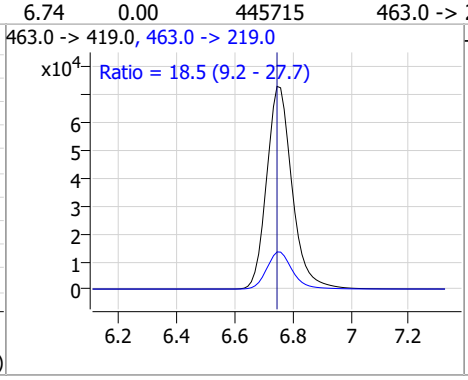


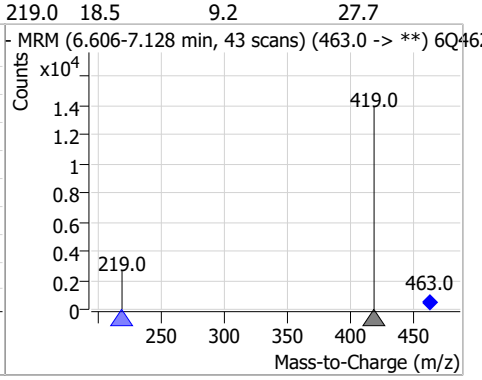


Perfluorinated Compounds by LC/MS/MS

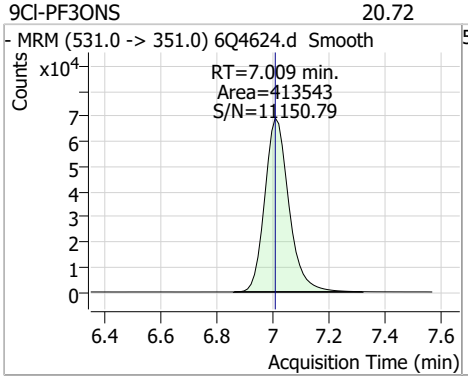
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.02	6.74	0.00	445715	463.0 -> 219.0	18.5	9.2	27.7

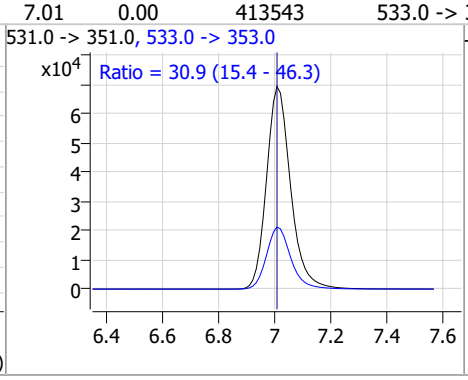


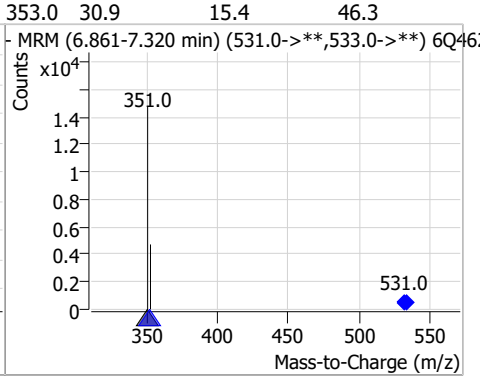




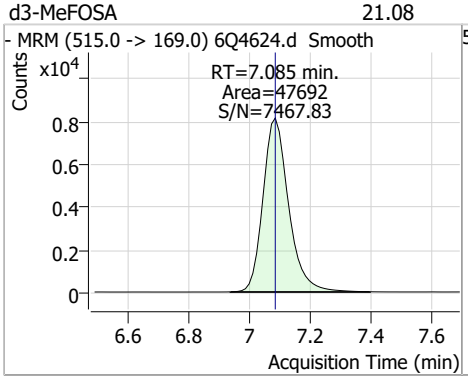
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.72	7.01	0.00	413543	533.0 -> 353.0	30.9	15.4	46.3

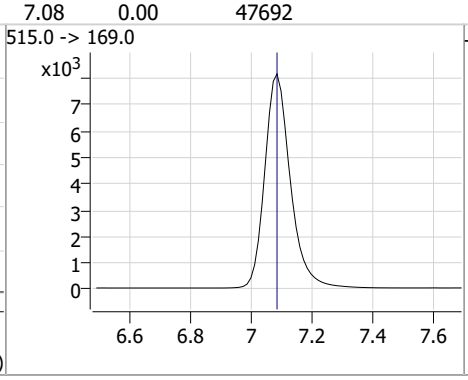


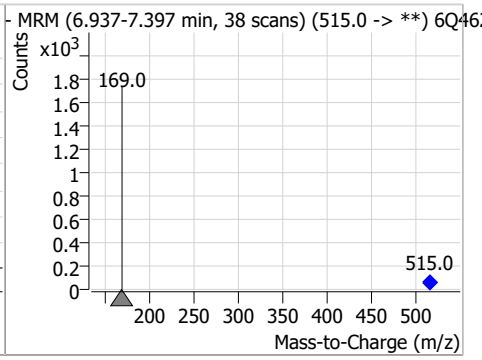




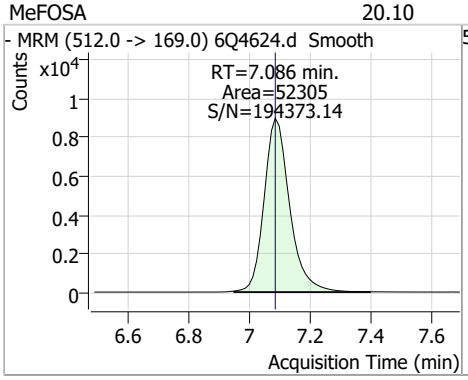
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.08	7.08	0.00	47692				

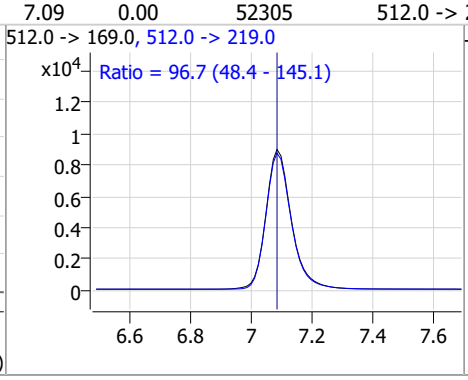


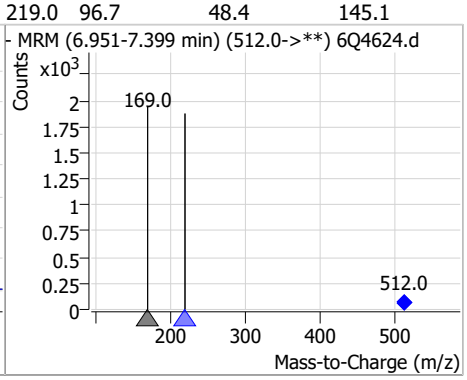




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.10	7.09	0.00	52305	512.0 -> 219.0	96.7	48.4	145.1

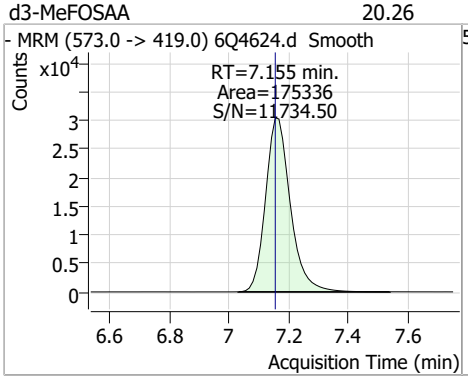


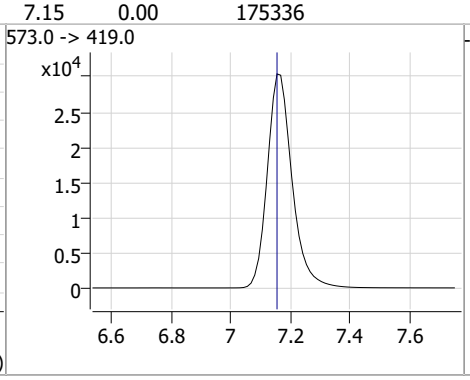


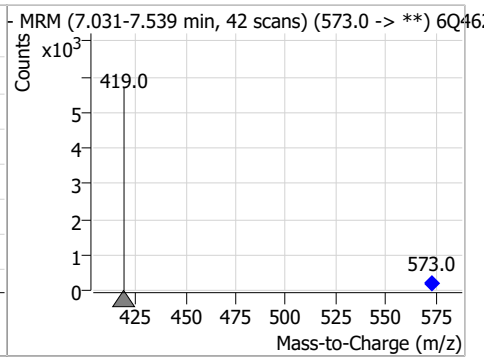


Perfluorinated Compounds by LC/MS/MS

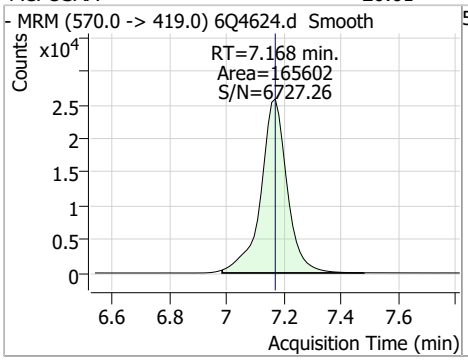
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.26	7.15	0.00	175336				

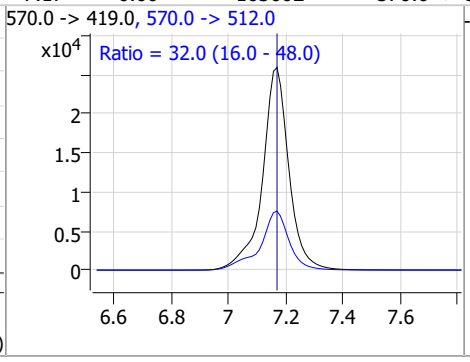


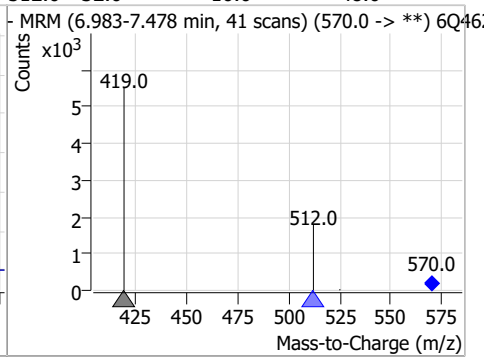




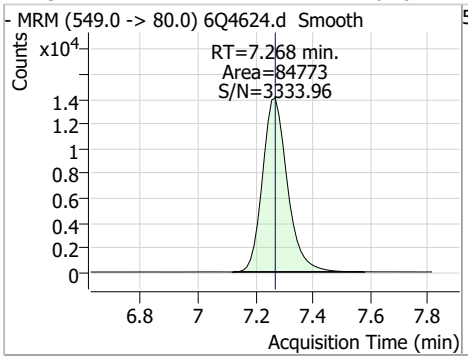
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.61	7.17	0.00	165602	570.0 -> 512.0	32.0	16.0	48.0

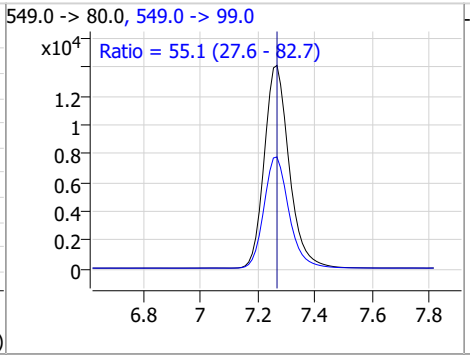


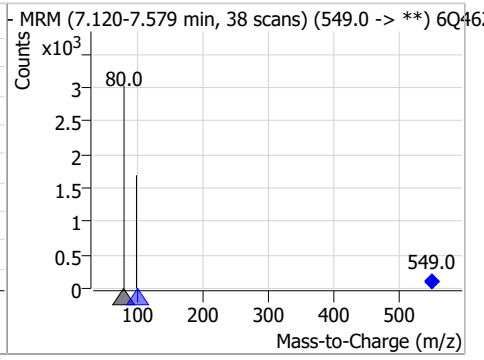




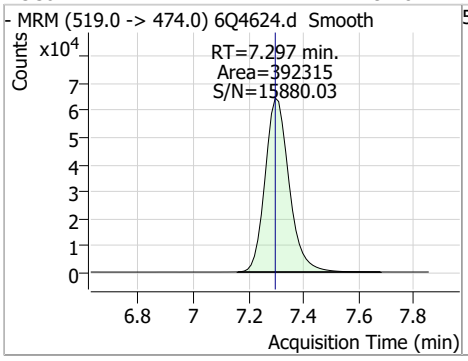
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.19	7.27	0.00	84773	549.0 -> 99.0	55.1	27.6	82.7

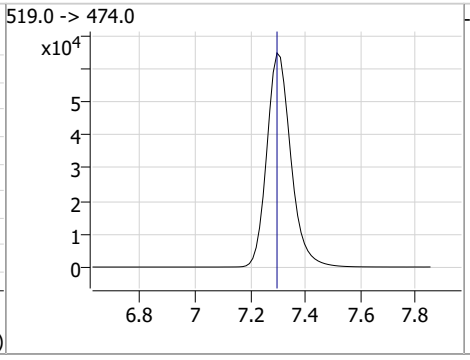


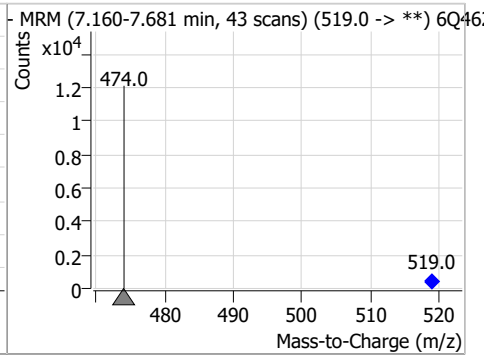




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.28	7.30	0.00	392315				

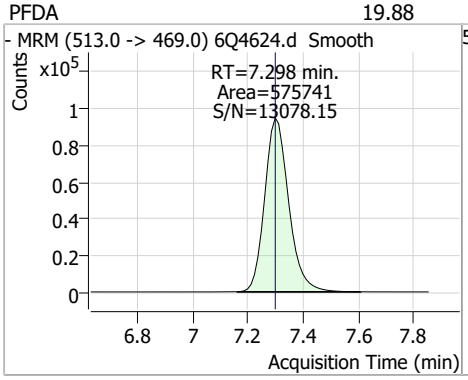


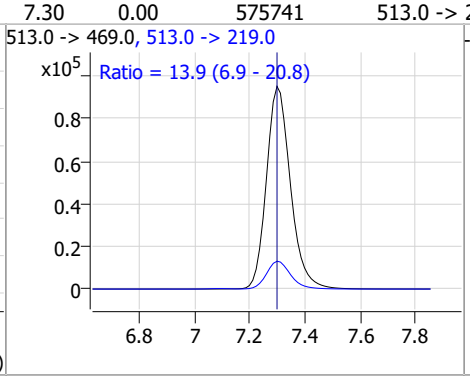


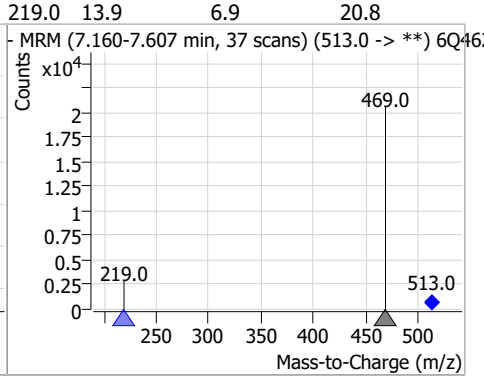


Perfluorinated Compounds by LC/MS/MS

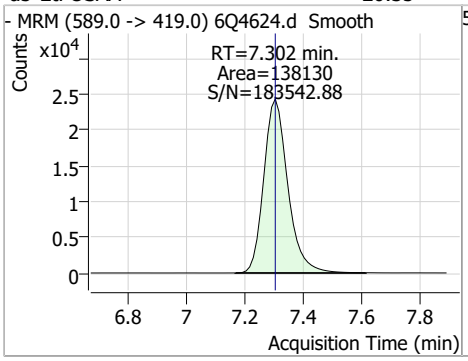
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.88	7.30	0.00	575741	513.0 -> 219.0	13.9	6.9	20.8

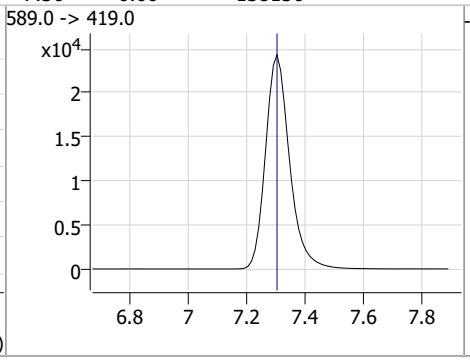


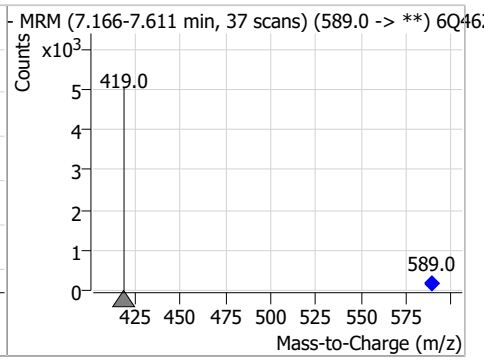




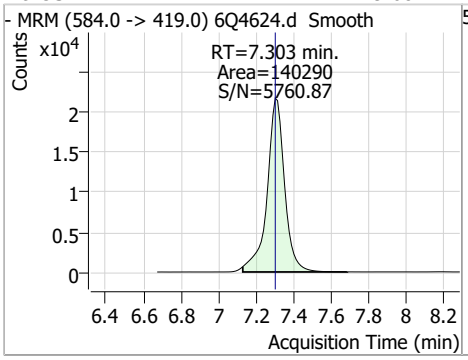
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.35	7.30	0.00	138130				

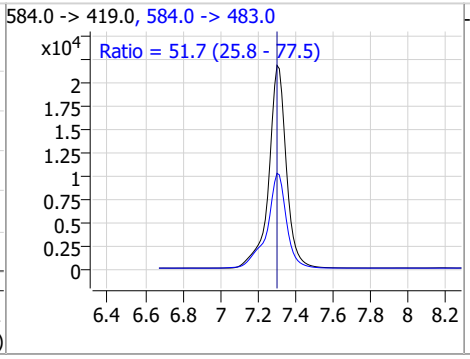


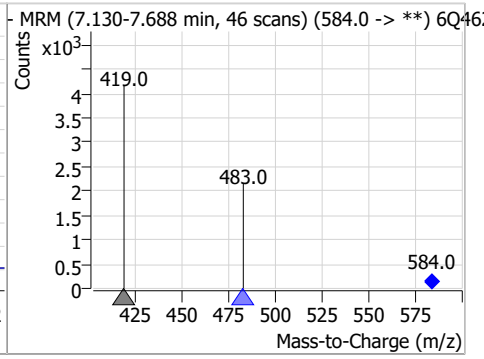




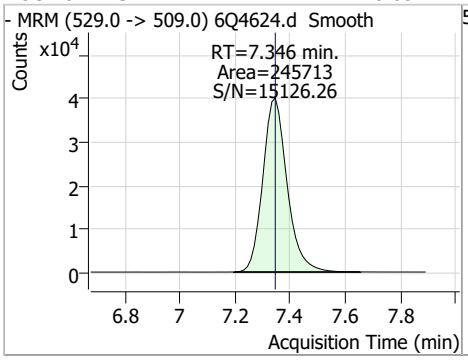
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.08	7.30	0.00	140290	584.0 -> 483.0	51.7	25.8	77.5

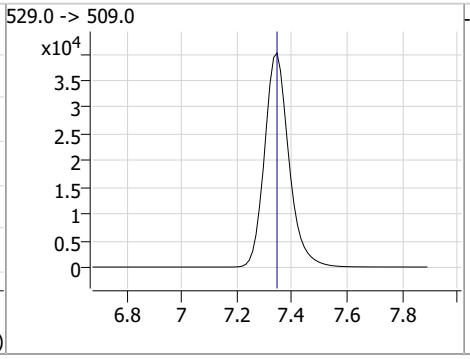


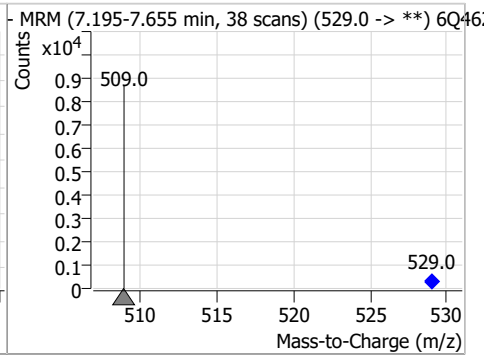




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	18.85	7.35	0.00	245713				

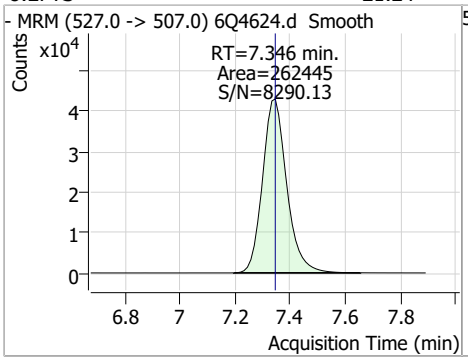


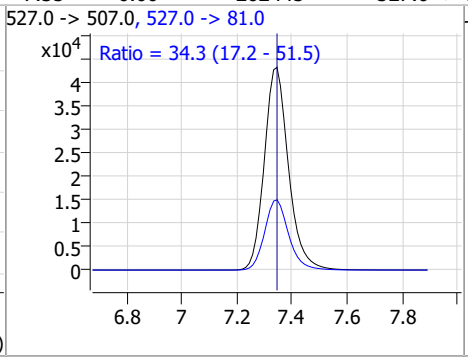


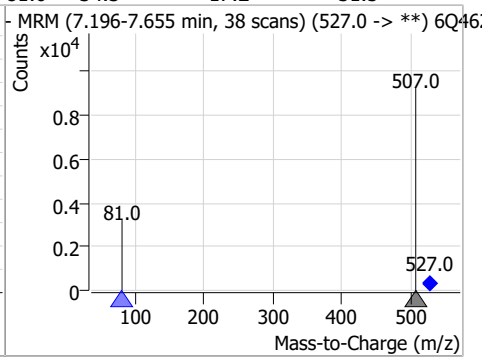


Perfluorinated Compounds by LC/MS/MS

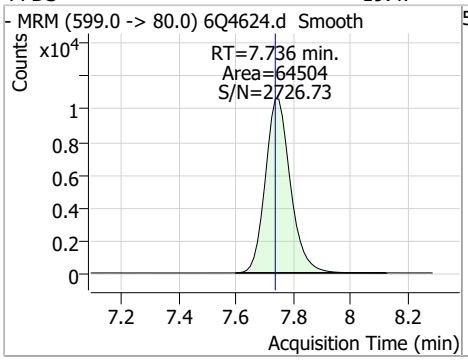
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.24	7.35	0.00	262445	527.0 -> 81.0	34.3	17.2	51.5

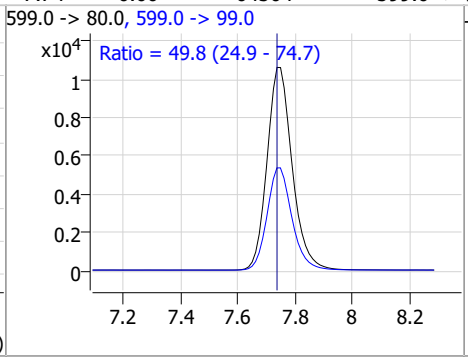


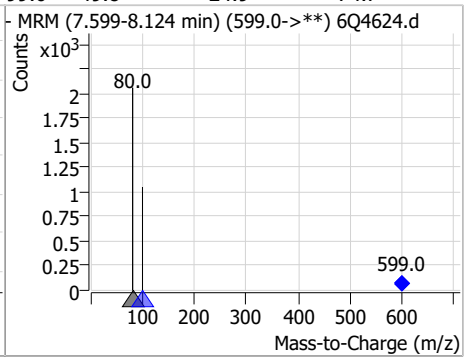




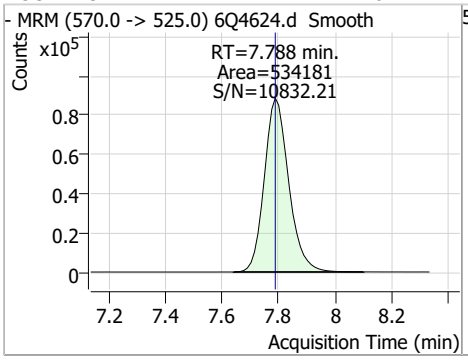
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.47	7.74	0.00	64504	599.0 -> 99.0	49.8	24.9	74.7

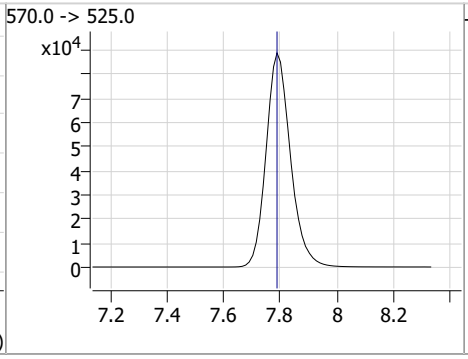


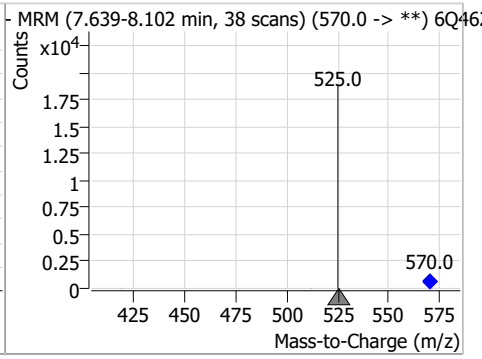




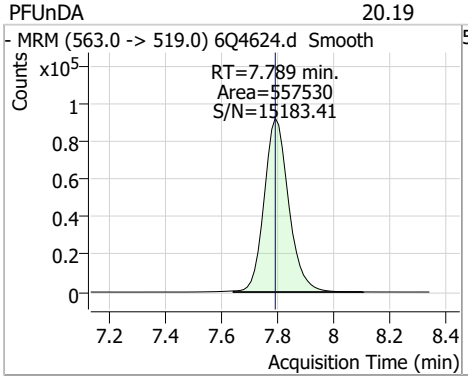
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.12	7.79	0.00	534181				

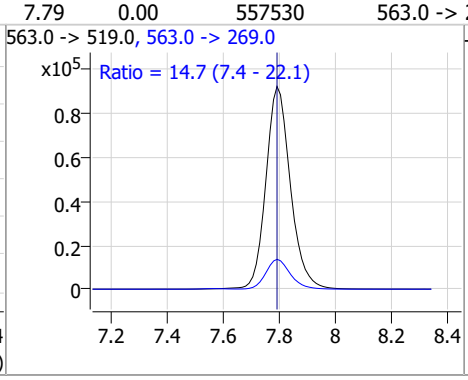


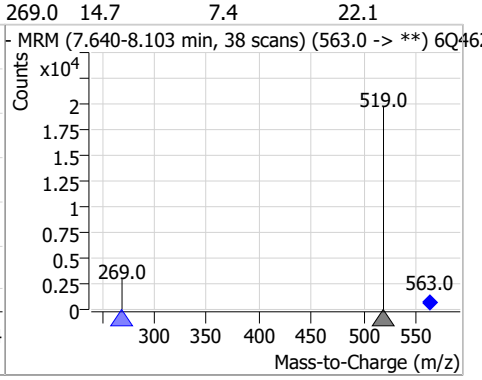




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.19	7.79	0.00	557530	563.0 -> 269.0	14.7	7.4	22.1

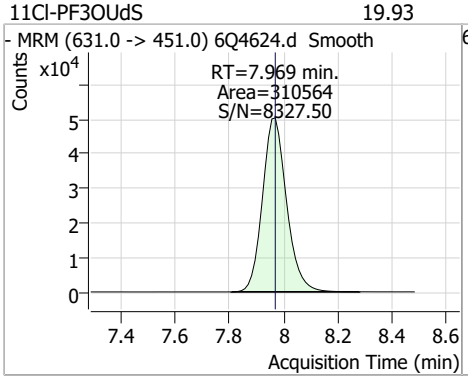


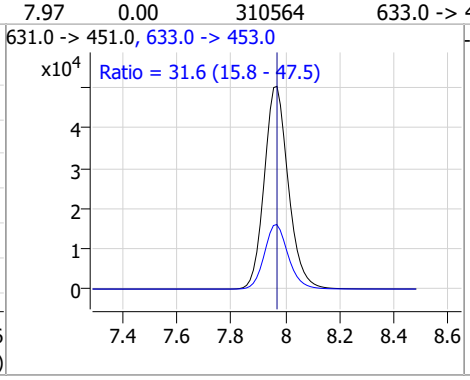


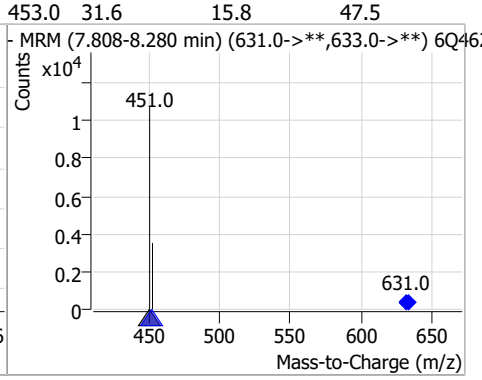


Perfluorinated Compounds by LC/MS/MS

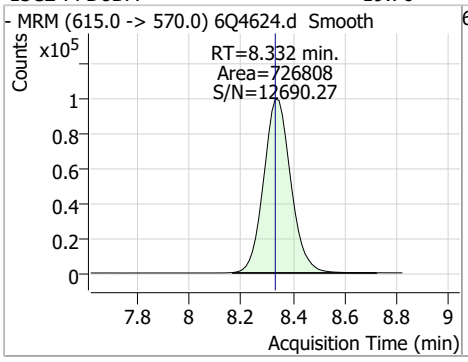
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.93	7.97	0.00	310564	633.0 -> 453.0	31.6	15.8	47.5

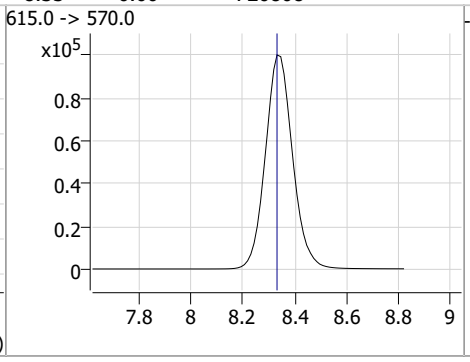


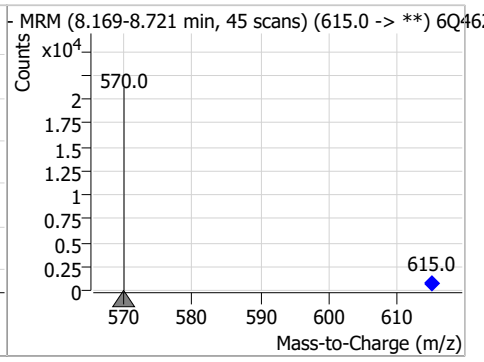




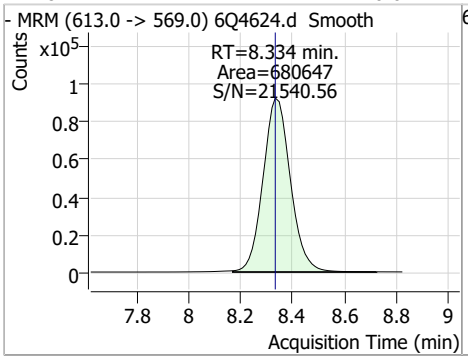
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.76	8.33	0.00	726808				

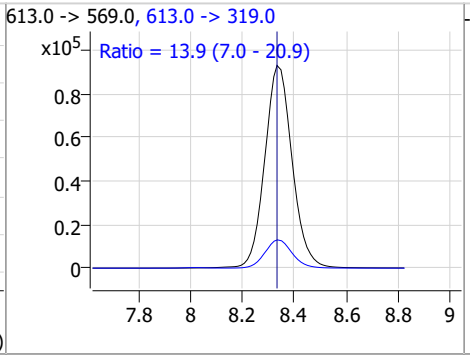


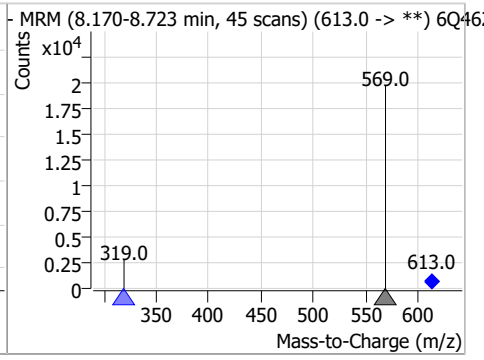




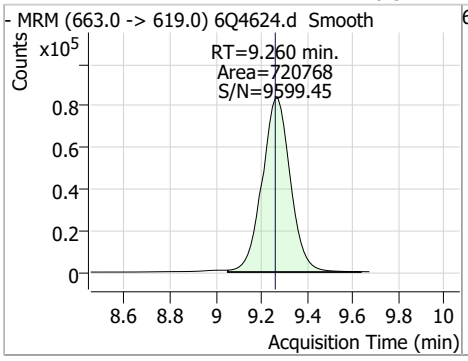
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.07	8.33	0.00	680647	613.0 -> 319.0	13.9	7.0	20.9

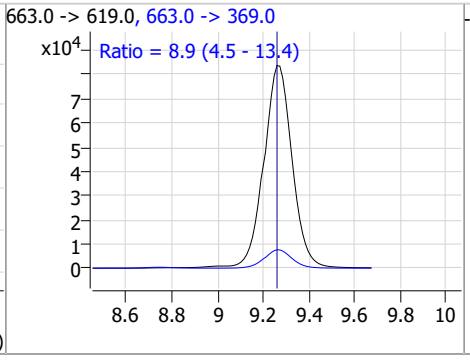


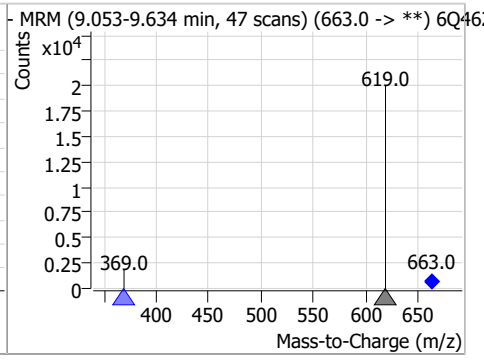




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.54	9.26	0.00	720768	663.0 -> 369.0	8.9	4.5	13.4

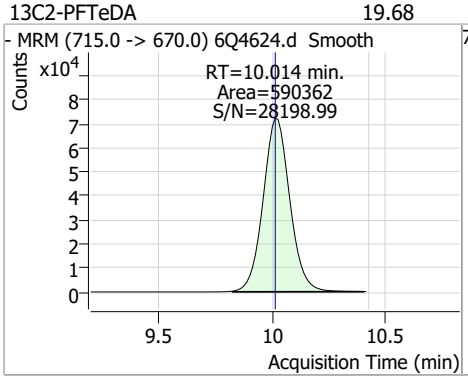


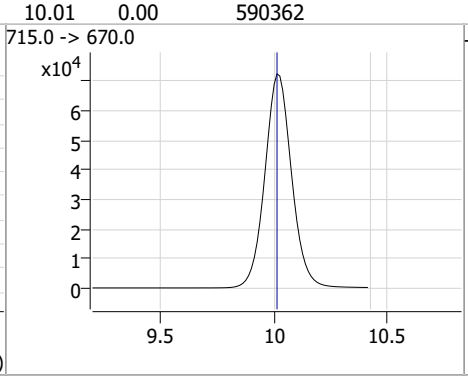


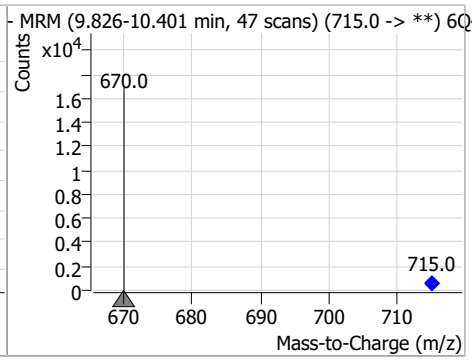


Perfluorinated Compounds by LC/MS/MS

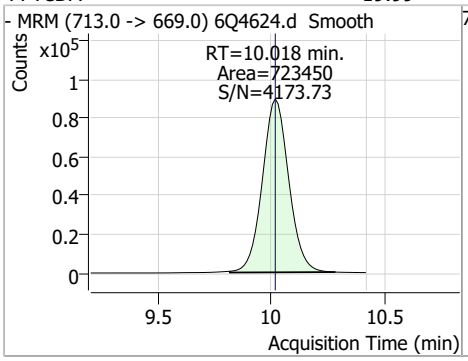
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.68	10.01	0.00	590362				

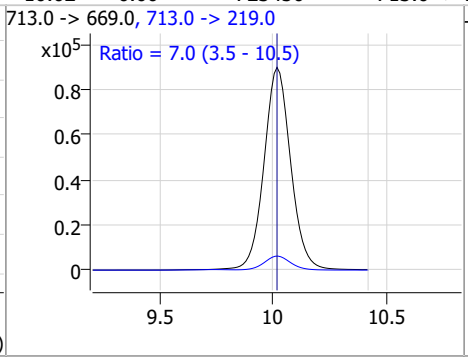


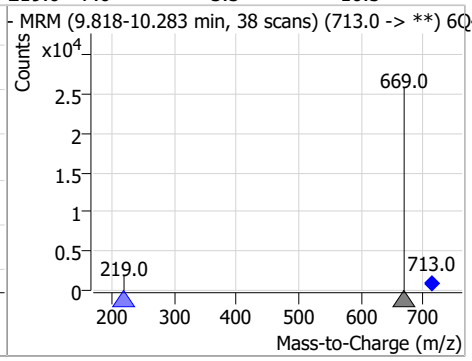




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.99	10.02	0.00	723450	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-ICC85
Lab FileID: 6Q4624.D
Injection Time: 09/14/22 12:04
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4625.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:20:03 PM
Sample Name : ic85-50
Vial : P1-A8
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	80616	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	141495	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	213281	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	254337	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	412791	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	506307	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	397643	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	532903	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	730833	20.00	µg/L	0.000
M2-PFTeDA	10.014	715.0 -> 670.0	602043	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	194638	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	30681	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	27656	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	43306	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	291765	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	359736	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	282985	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	186491	20.00	µg/L	0.000
M3-HFPO-DA	4.852	287.0 -> 169.0	5758	20.00	µg/L	0.000
M3-MeFOSA	7.085	515.0 -> 169.0	46032	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	126207	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	291765	21.60	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	359736	21.08	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
13C2-8:2FTS	7.333	529.0 -> 509.0	282985	21.71	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C2-PFDoDA	8.332	615.0 -> 570.0	730833	19.87	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
13C2-PFTeDA	10.014	715.0 -> 670.0	602043	20.07	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C3-PFBS	3.635	302.0 -> 99.0	30681	20.03	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.2%		
13C3-PFHxS	5.475	402.0 -> 99.0	27656	20.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.0%		
13C4-PFBA	1.949	217.0 -> 172.0	80616	20.25	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%		
13C4-PFHpA	5.445	367.0 -> 322.0	254337	20.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C5-PFHxA	4.573	318.0 -> 273.0	213281	19.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C5-PFPeA	3.418	268.0 -> 223.0	141495	20.18	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C6-PFDA	7.297	519.0 -> 474.0	397643	19.54	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%			
13C7-PFUnDA	7.788	570.0 -> 525.0	532903	20.07	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%			
13C8-FOSA	6.654	506.0 -> 78.0	194638	19.90	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.5%			
13C8-PFOA	6.138	421.0 -> 376.0	412791	19.46	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%			
13C8-PFOS	6.730	507.0 -> 99.0	43306	20.42	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%			
13C9-PFNA	6.745	472.0 -> 427.0	506307	19.65	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.3%			
d3-MeFOSAA	7.155	573.0 -> 419.0	186491	21.55	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%			
13C3-HFPO-DA	4.852	287.0 -> 169.0	5779	21.74	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%			
d3-MeFOSA	7.085	515.0 -> 169.0	46032	20.35	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%			
d5-EtFOSAA	7.302	589.0 -> 419.0	126275	18.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.0%			
Target Compounds							QValue
4:2FTS	4.485	327.0 -> 307.0	723889	45.89	µg/L		99
		327.0 -> 81.0	238987				
6:2FTS	6.137	427.0 -> 407.0	875029	48.03	µg/L		95
		427.0 -> 81.0	218555				
8:2FTS	7.334	527.0 -> 507.0	645424	45.35	µg/L		99
		527.0 -> 81.0	217216				
EtFOSAA	7.303	584.0 -> 419.0	347165	51.60	µg/L		98
		584.0 -> 483.0	185403				
FOSA	6.656	498.0 -> 78.0	473311	48.48	µg/L		99
		498.0 -> 478.0	19738				
MeFOSAA	7.168	570.0 -> 419.0	385155	45.06	µg/L		100
		570.0 -> 512.0	124158				
PFBA	1.955	213.0 -> 169.0	85857	48.79	µg/L		100
PFBS	3.640	299.0 -> 80.0	248034	48.62	µg/L		100
		299.0 -> 99.0	93363				
PFDA	7.298	513.0 -> 469.0	1374859	46.84	µg/L		100
		513.0 -> 219.0	193484				
PFDoDA	8.334	613.0 -> 569.0	1673187	49.07	µg/L		100
		613.0 -> 319.0	233230				
PFDS	7.736	599.0 -> 80.0	158165	47.86	µg/L		99
		599.0 -> 99.0	79604				
PFHpA	5.446	363.0 -> 319.0	797266	48.19	µg/L		100
		363.0 -> 169.0	116212				
PFHpS	6.148	449.0 -> 80.0	194202	51.36	µg/L		98
		449.0 -> 99.0	99885				
PFHxA	4.574	313.0 -> 269.0	537926	47.95	µg/L		100
		313.0 -> 119.0	13494				
PFHxS	5.477	399.0 -> 80.0	197732	49.90	µg/L	m	97
		399.0 -> 99.0	91638				
PFNA	6.745	463.0 -> 419.0	1124686	47.14	µg/L		100
		463.0 -> 219.0	207353				
PFNS	7.256	549.0 -> 80.0	213385	48.49	µg/L		97
		549.0 -> 99.0	112560				
PFOA	6.138	413.0 -> 369.0	1079057	48.39	µg/L		100
		413.0 -> 169.0	163855				
PFOS	6.731	499.0 -> 80.0	188742	47.01	µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

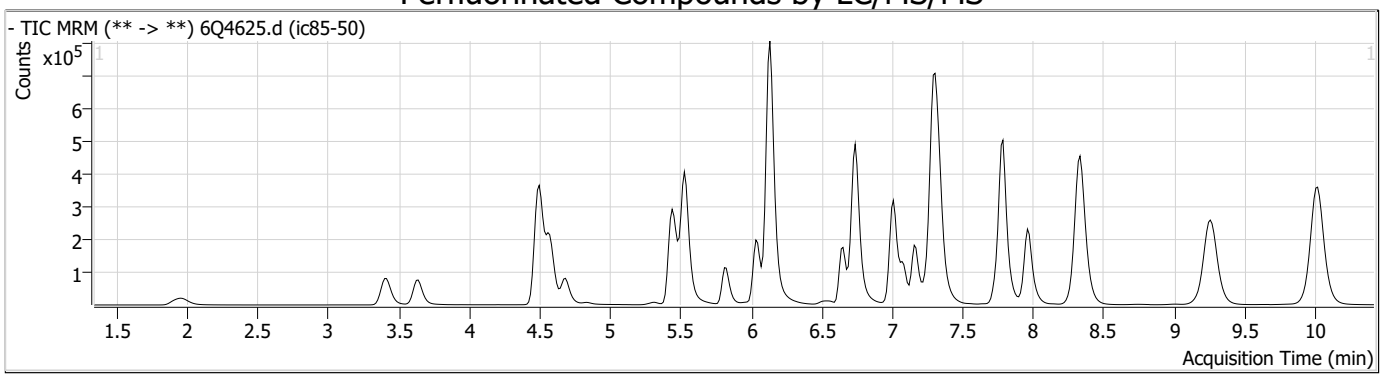
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	98357			
PFPeA	3.420	263.0 -> 219.0	290037	48.65	µg/L	100
PFPeS	4.681	349.0 -> 80.0	205689	48.43	µg/L	100
		349.0 -> 99.0	93869			
PFTeDA	10.018	713.0 -> 669.0	1786431	48.39	µg/L	100
		713.0 -> 219.0	124757			
PFTrDA	9.260	663.0 -> 619.0	1740324	49.31	µg/L	100
		663.0 -> 369.0	156748			
PFUnDA	7.789	563.0 -> 519.0	1336524	48.51	µg/L	98
		563.0 -> 269.0	205363			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	758247	48.38	µg/L	99
		633.0 -> 453.0	243725			
9Cl-PF3ONS	7.009	531.0 -> 351.0	995957	49.22	µg/L	97
		533.0 -> 353.0	322162			
ADONA	5.532	377.0 -> 251.0	1275965	49.76	µg/L	99
		377.0 -> 85.0	313868			
HFPO-DA	4.853	285.0 -> 169.0	11903	43.72	µg/L	94
		285.0 -> 185.0	1941			
MeFOSA	7.086	512.0 -> 169.0	122846	48.91	µg/L	95
		512.0 -> 219.0	124896			
4-PFECHS	6.044	461.0 -> 381.0	632047	47.56	µg/L	99
		461.0 -> 99.0	214155			
FBSA	4.514	298.0 -> 78.0	513780	49.45	µg/L	100
		298.0 -> 64.0	35246			
FHxSA	5.828	398.0 -> 78.0	437959	48.07	µg/L	100
		398.0 -> 64.0	15319			

 # = Qualifier out of range, m = manually integrated, + = Area summed

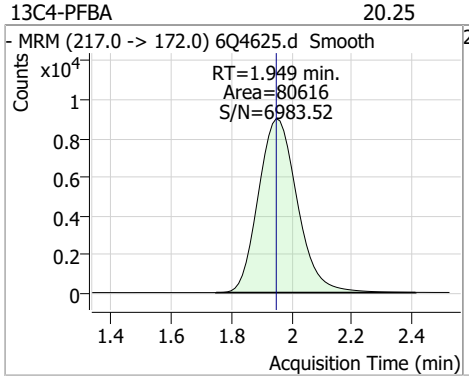
7.7.87

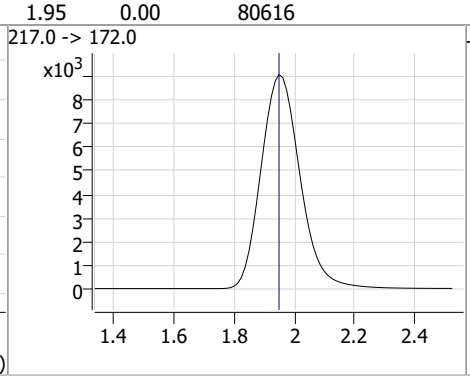
7

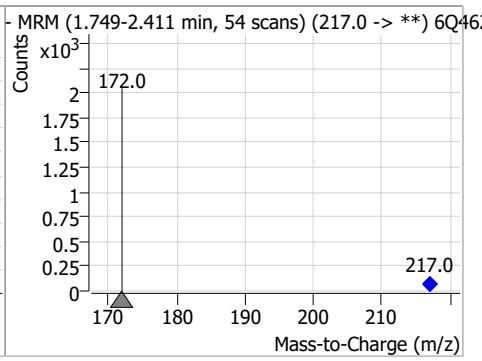
Perfluorinated Compounds by LC/MS/MS



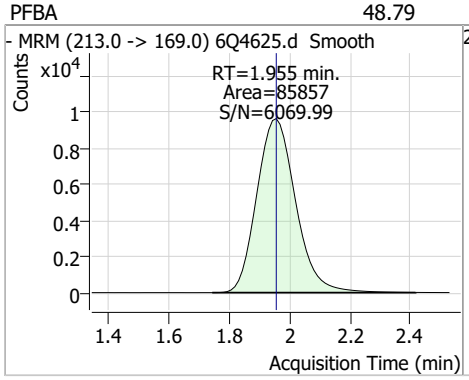
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.25	1.95	0.00	80616				

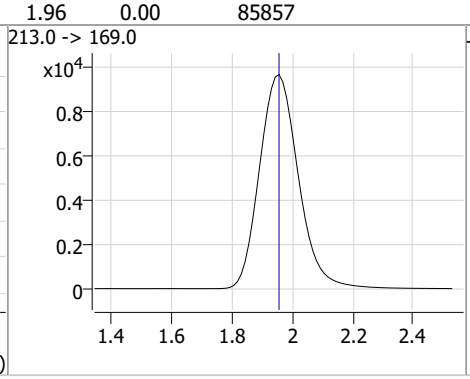


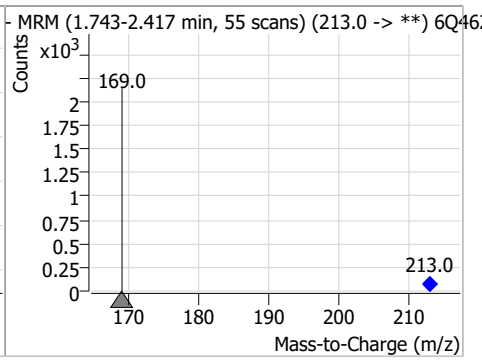




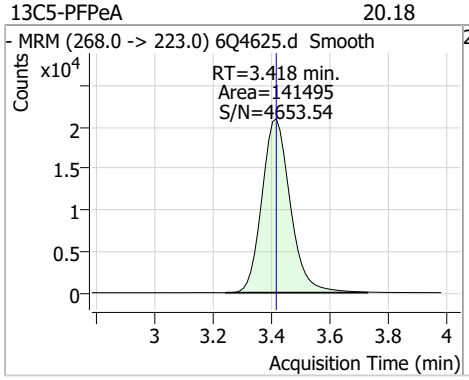
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	48.79	1.96	0.00	85857				

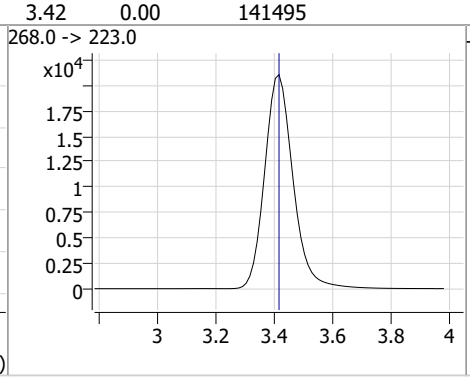


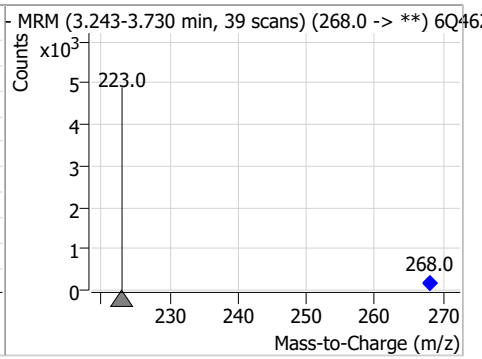




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.18	3.42	0.00	141495				

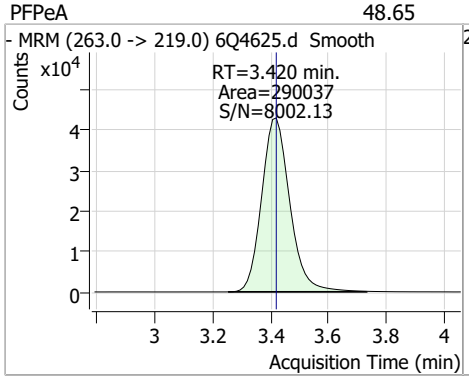


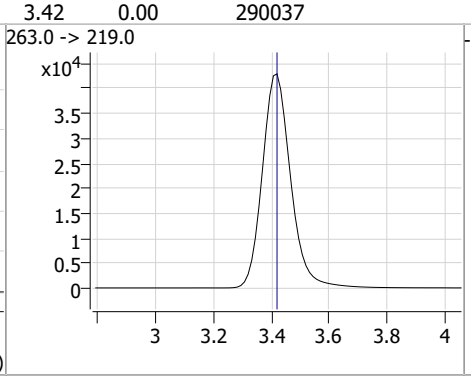


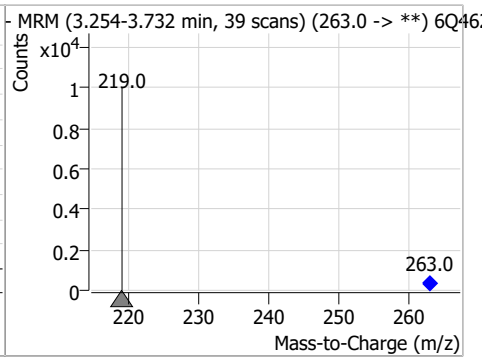


Perfluorinated Compounds by LC/MS/MS

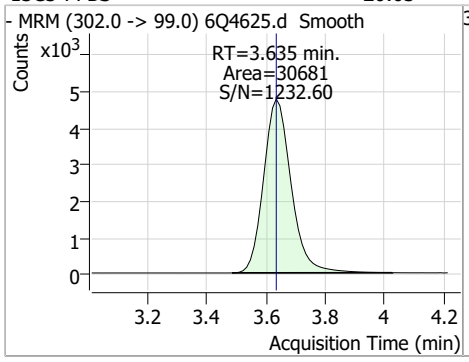
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	48.65	3.42	0.00	290037				

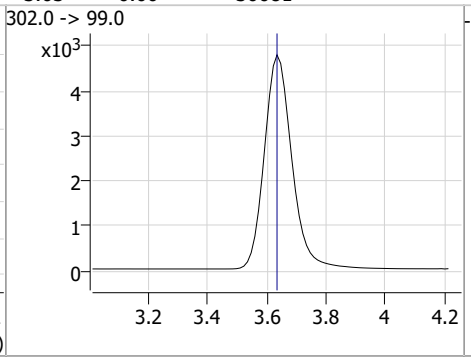


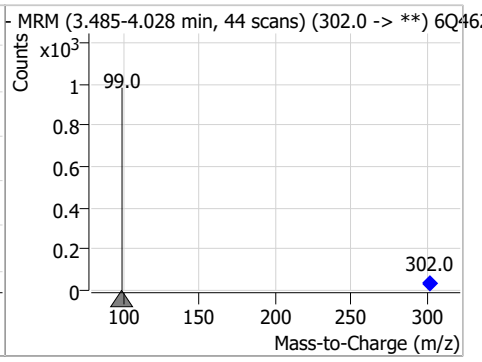




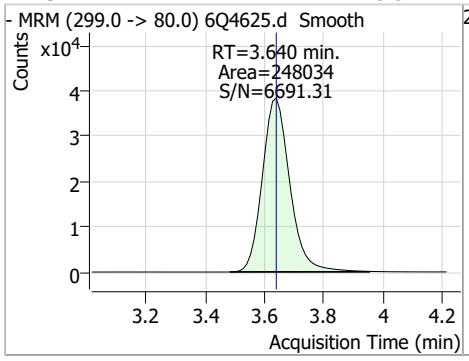
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.03	3.63	0.00	30681				

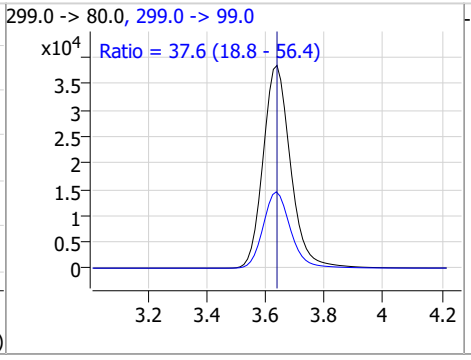


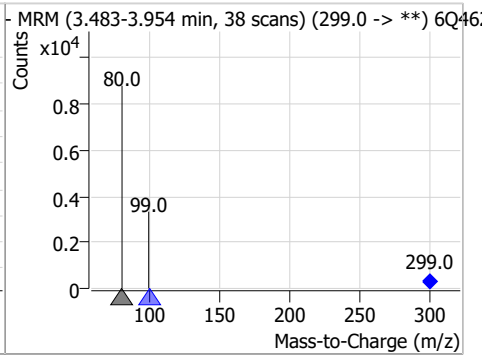




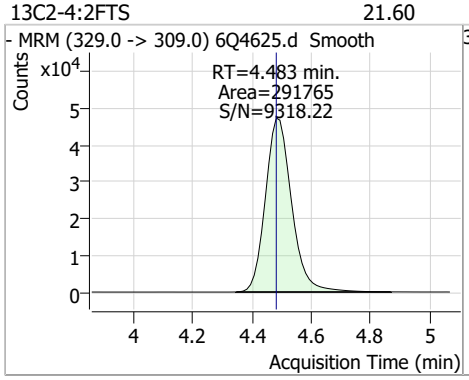
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	48.62	3.64	0.00	248034	299.0 -> 99.0	37.6	18.8	56.4

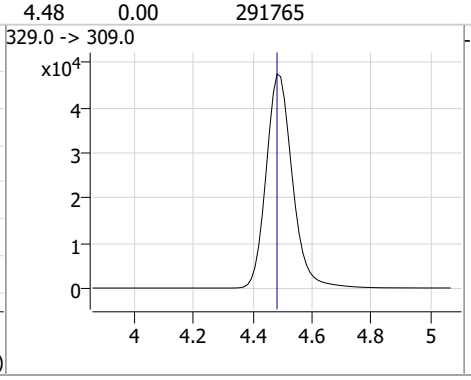


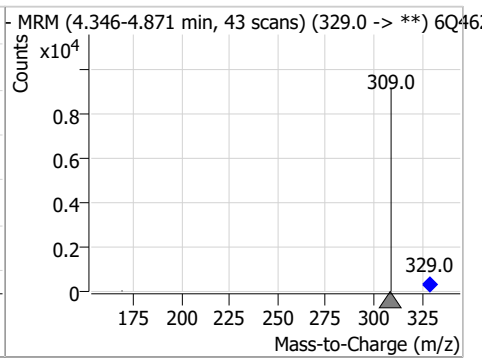




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.60	4.48	0.00	291765				

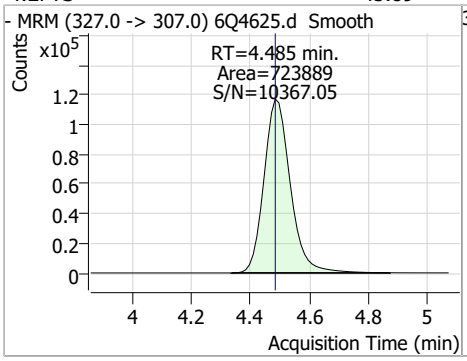


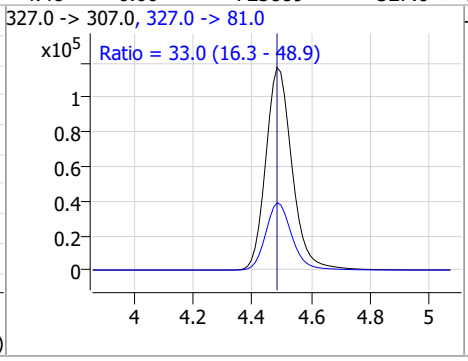


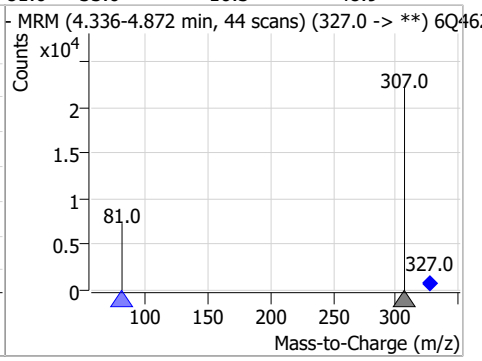


Perfluorinated Compounds by LC/MS/MS

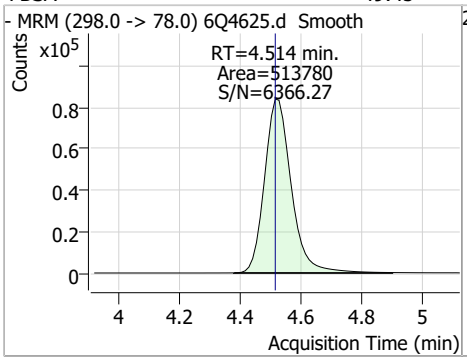
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	45.89	4.48	0.00	723889	327.0 -> 81.0	33.0	16.3	48.9

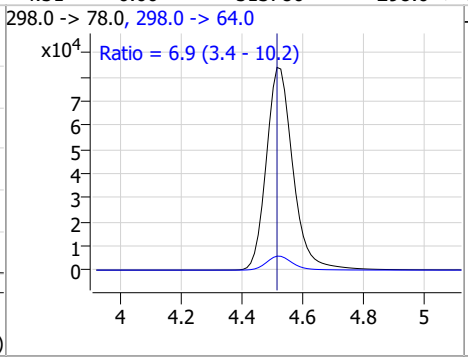


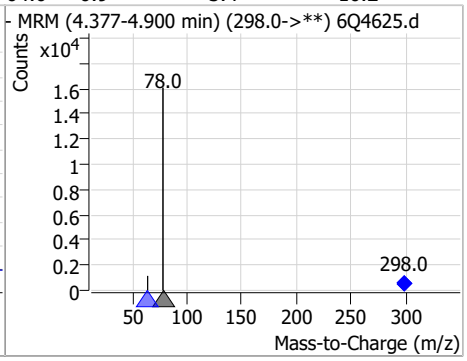




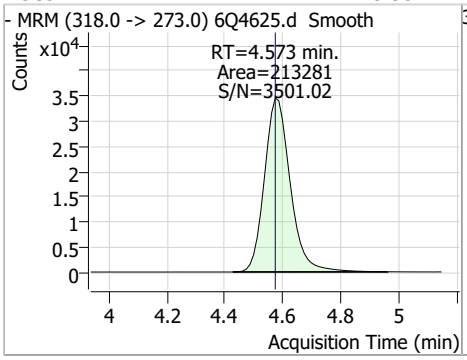
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	49.45	4.51	0.00	513780	298.0 -> 64.0	6.9	3.4	10.2

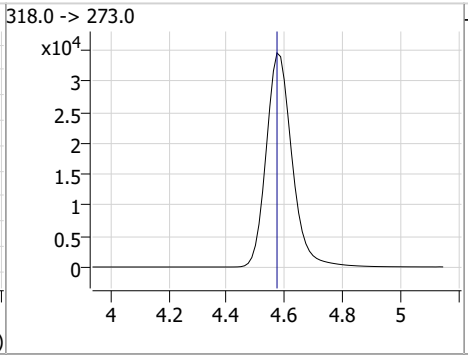


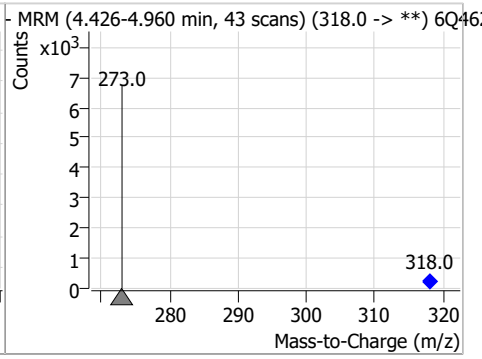




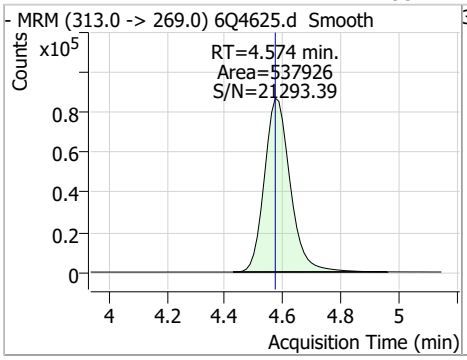
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.95	4.57	0.00	213281				

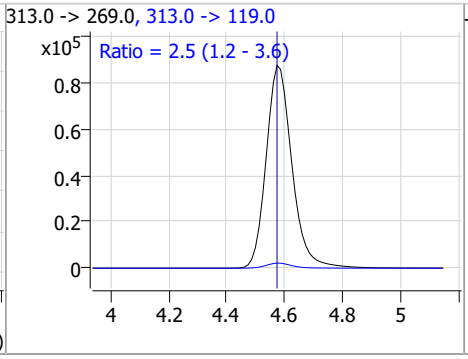


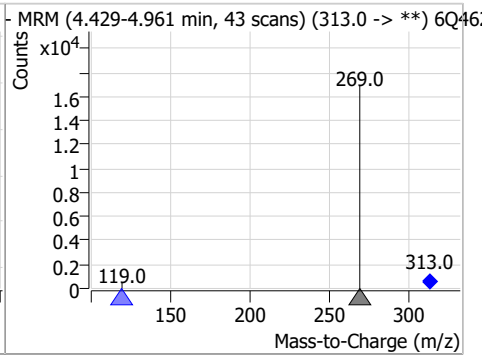




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	47.95	4.57	0.00	537926	313.0 -> 119.0	2.5	1.2	3.6

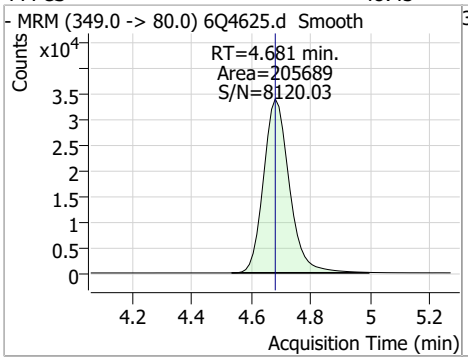


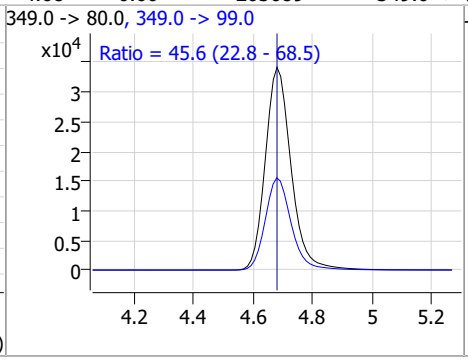


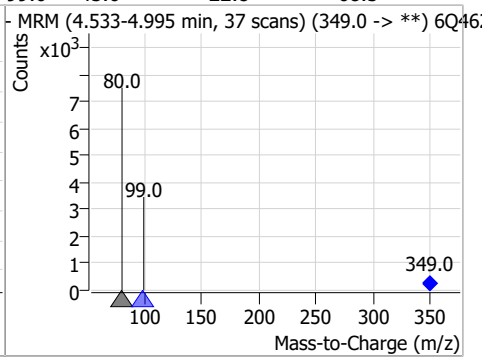


Perfluorinated Compounds by LC/MS/MS

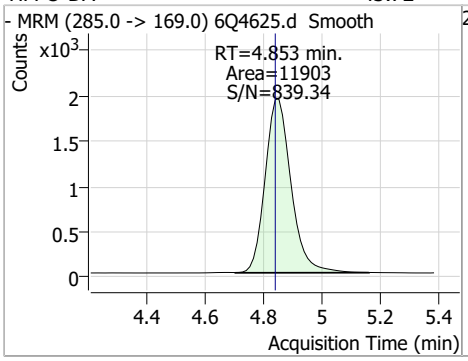
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	48.43	4.68	0.00	205689	349.0 -> 99.0	45.6	22.8	68.5

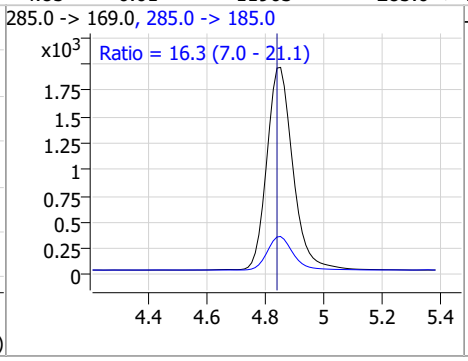


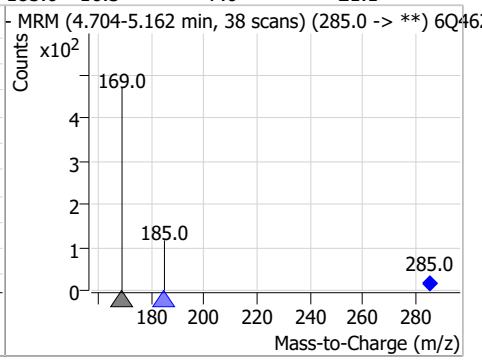




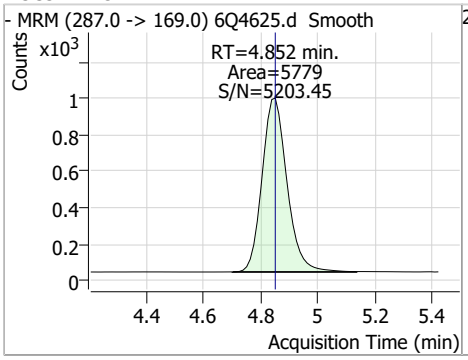
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	43.72	4.85	0.01	11903	285.0 -> 185.0	16.3	7.0	21.1

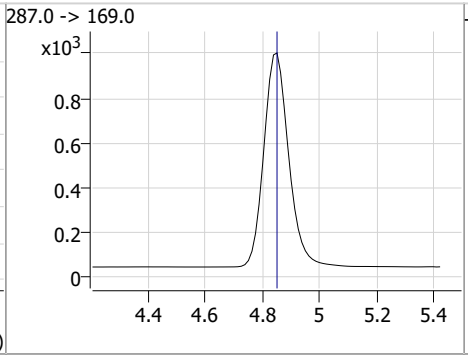


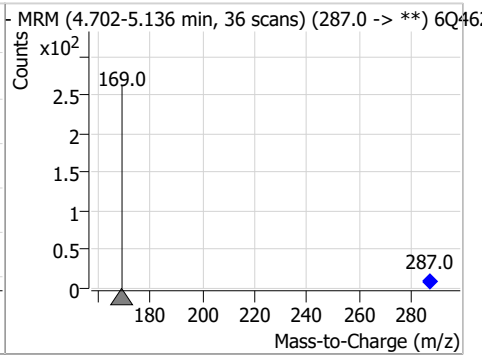




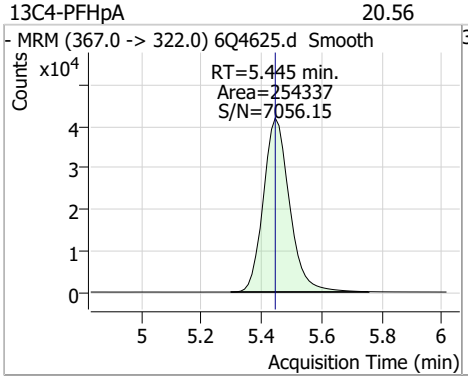
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.74	4.85	0.00	5779				

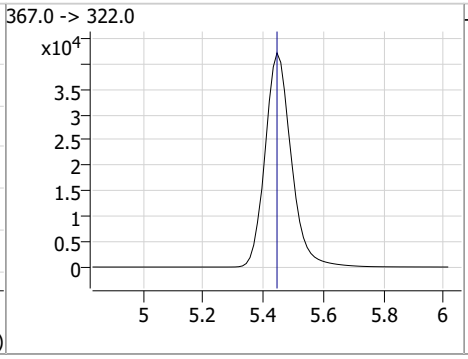


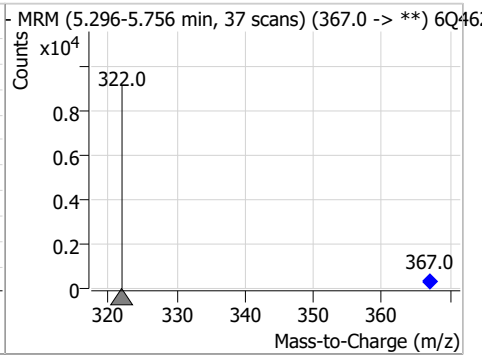




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.56	5.45	0.00	254337				

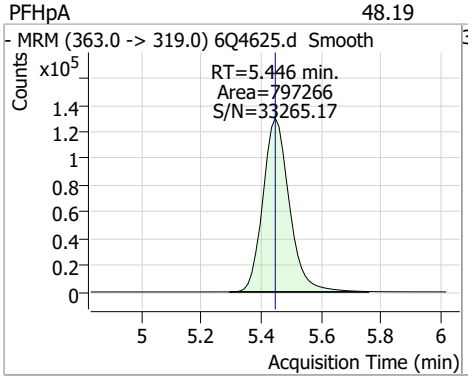


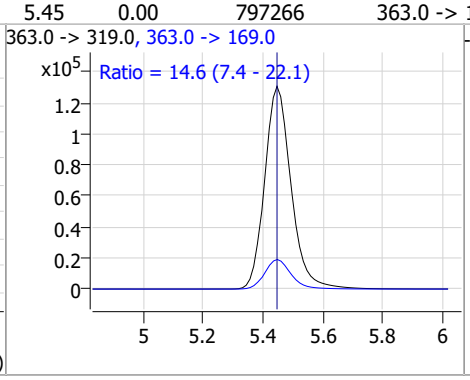


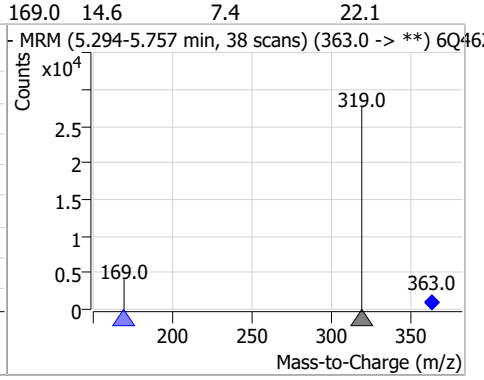


Perfluorinated Compounds by LC/MS/MS

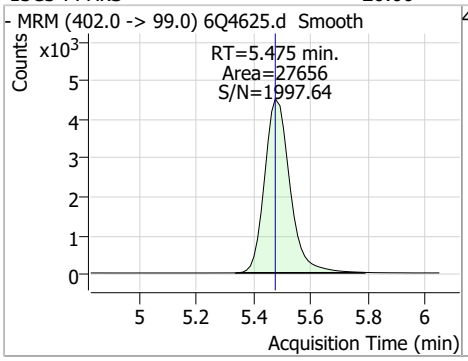
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	48.19	5.45	0.00	797266	363.0 -> 169.0	14.6	7.4	22.1

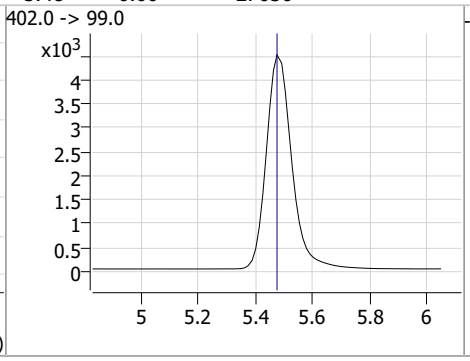


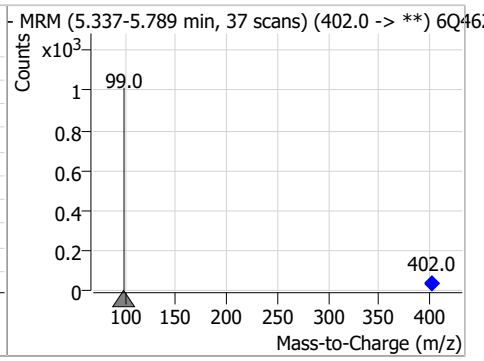




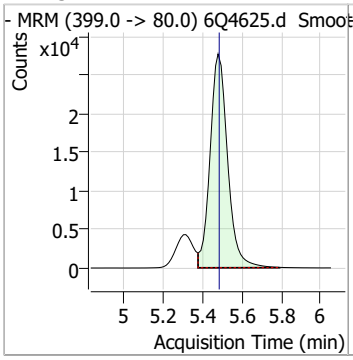
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.00	5.48	0.00	27656				

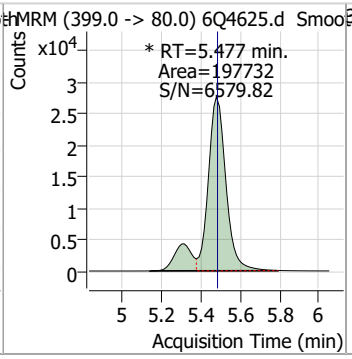


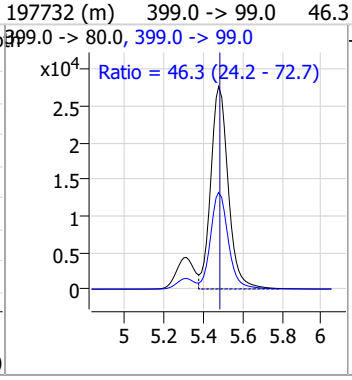


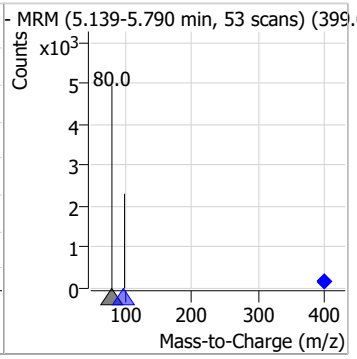


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	49.90	5.48	0.00	197732 (m)	399.0 -> 99.0	46.3	24.2	72.7

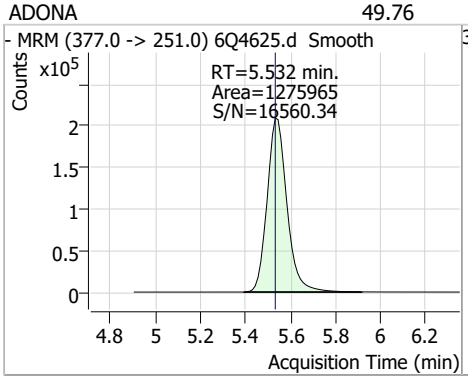


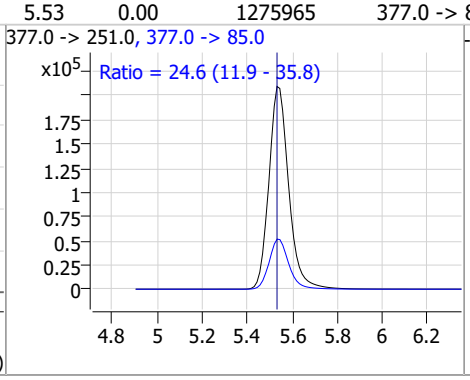


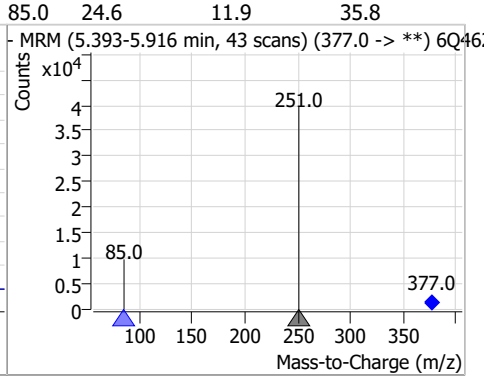




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	49.76	5.53	0.00	1275965	377.0 -> 85.0	24.6	11.9	35.8

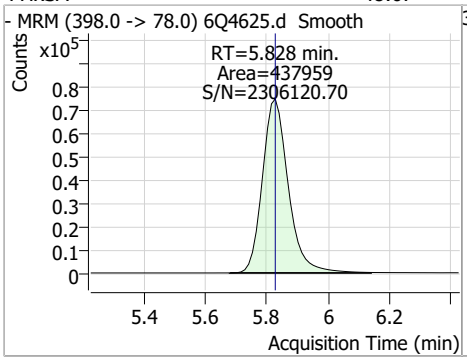


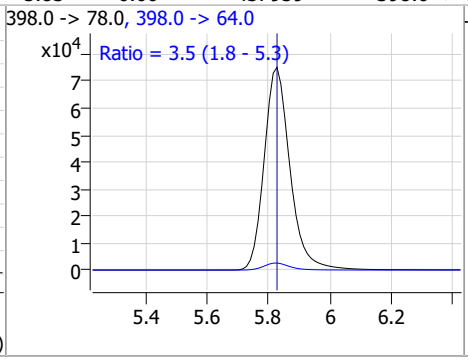


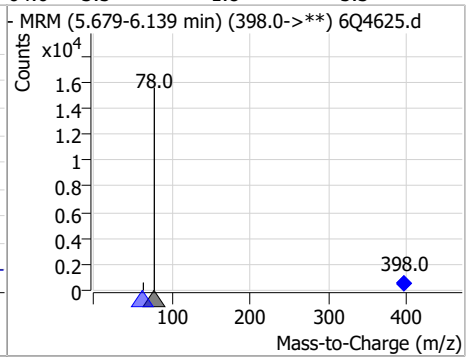


Perfluorinated Compounds by LC/MS/MS

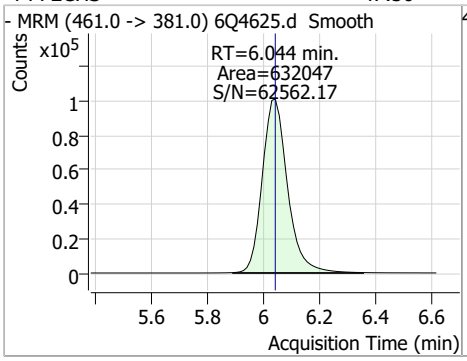
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	48.07	5.83	0.00	437959	398.0 -> 64.0	3.5	1.8	5.3

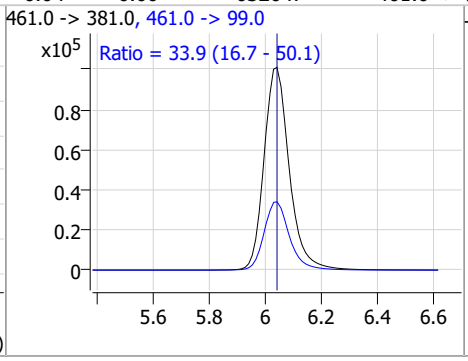


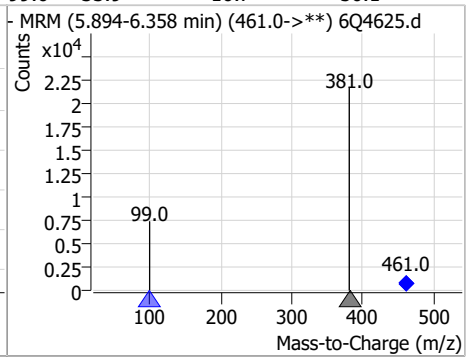




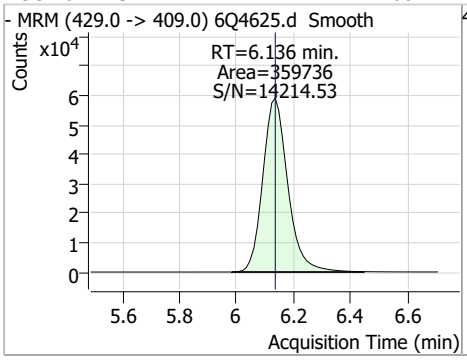
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	47.56	6.04	0.00	632047	461.0 -> 99.0	33.9	16.7	50.1

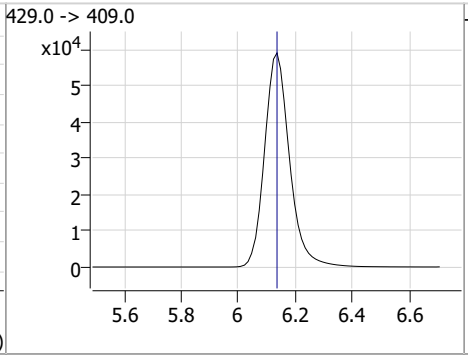


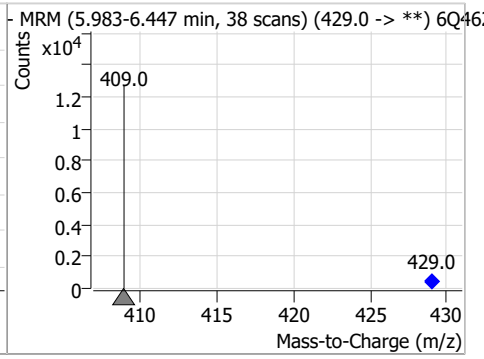




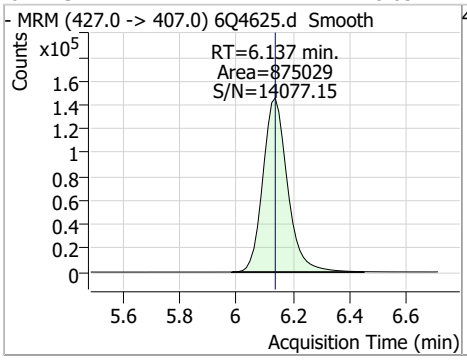
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.08	6.14	0.00	359736				

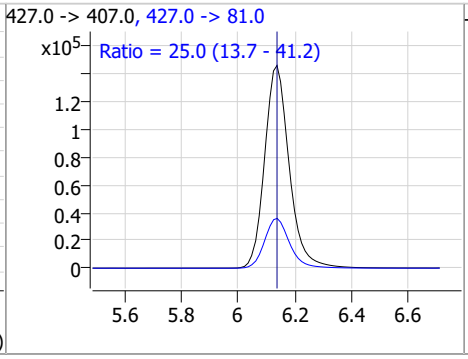


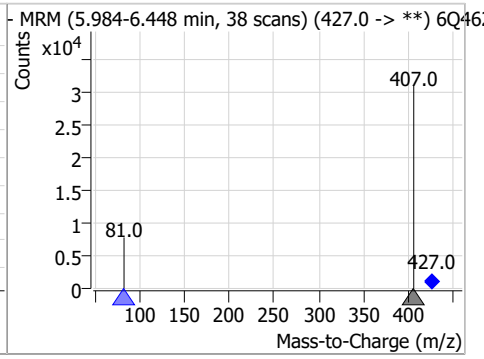




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	48.03	6.14	0.00	875029	427.0 -> 81.0	25.0	13.7	41.2

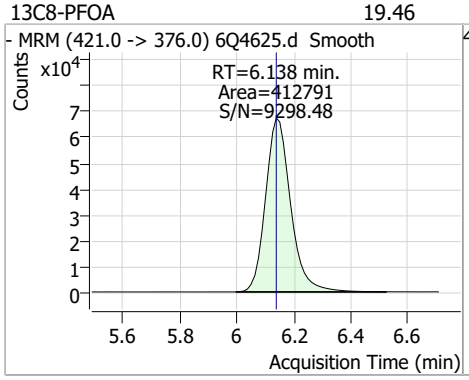


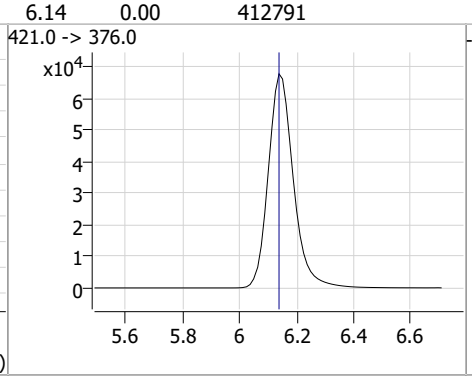


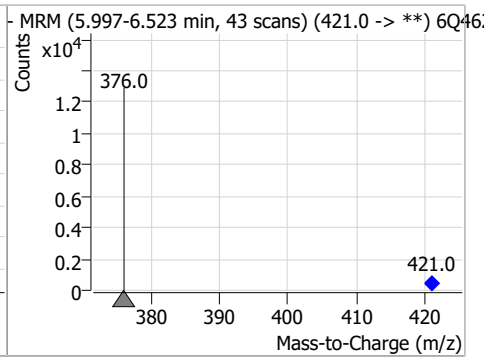


Perfluorinated Compounds by LC/MS/MS

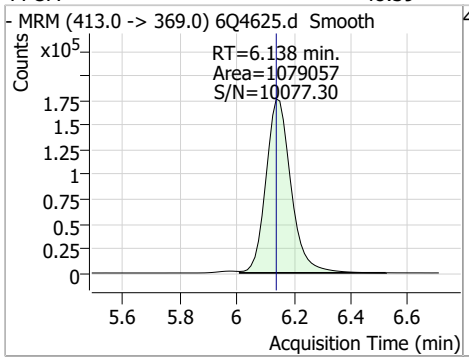
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.46	6.14	0.00	412791				

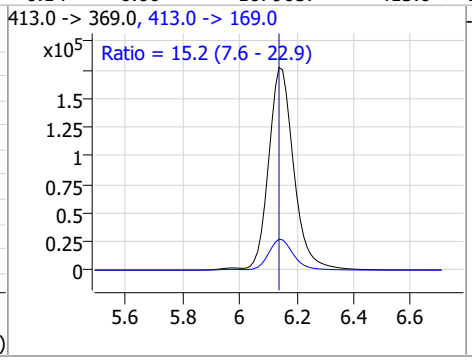


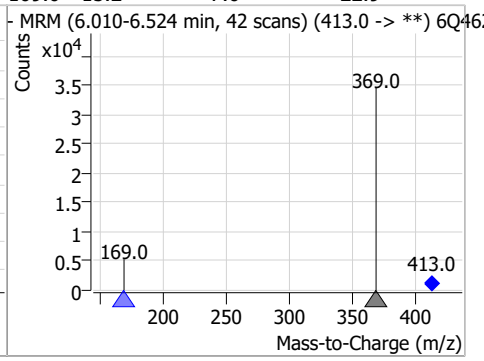




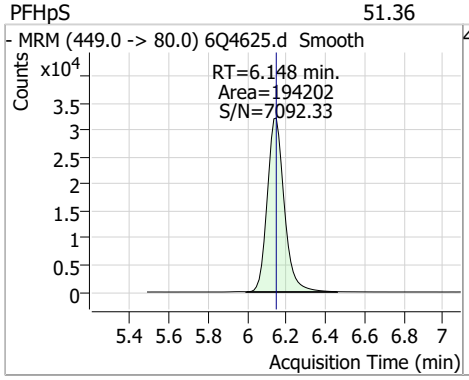
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	48.39	6.14	0.00	1079057	413.0 -> 169.0	15.2	7.6	22.9

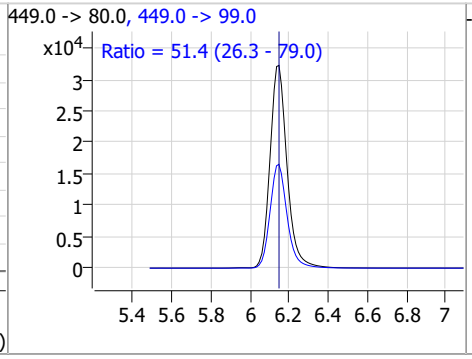


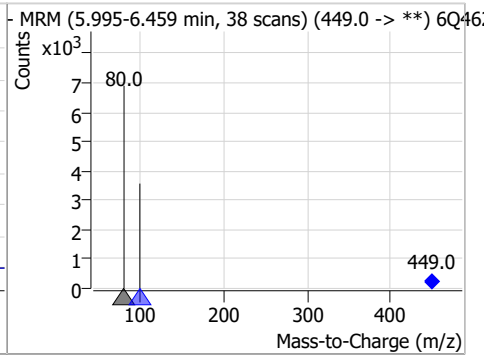




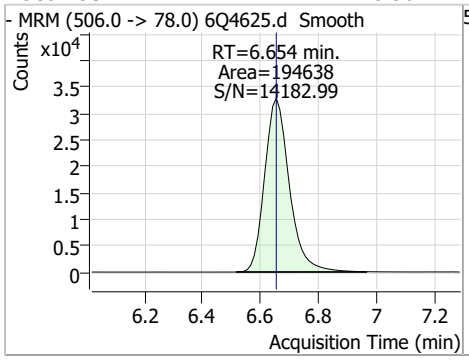
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	51.36	6.15	0.00	194202	449.0 -> 99.0	51.4	26.3	79.0

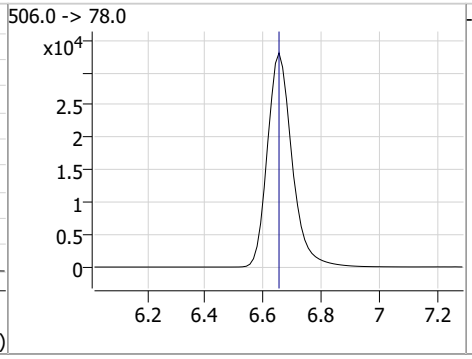


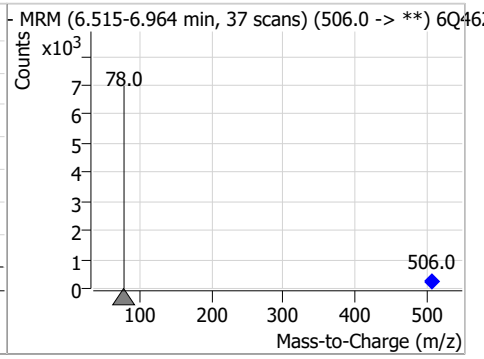




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	19.90	6.65	0.00	194638				

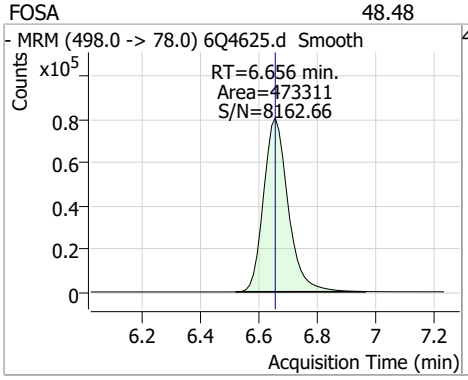


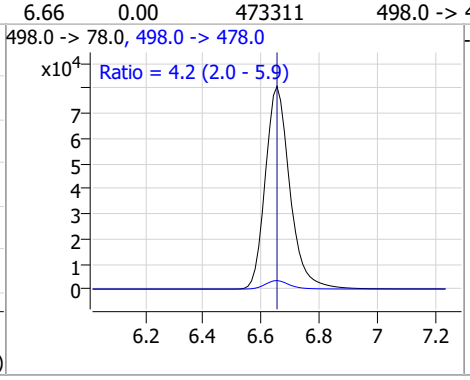


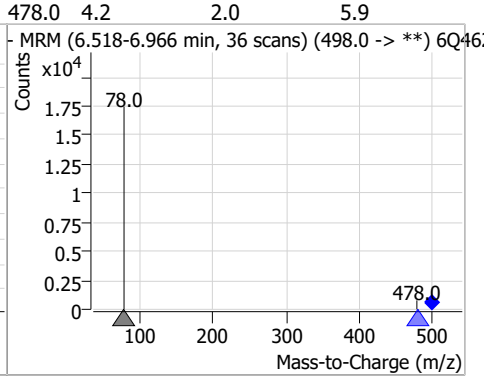


Perfluorinated Compounds by LC/MS/MS

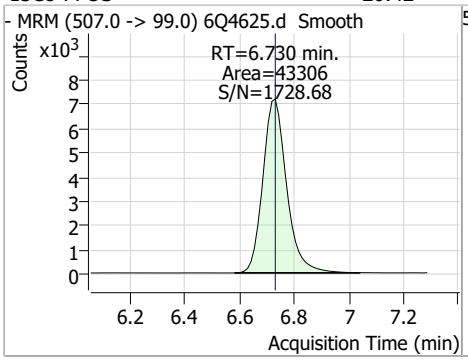
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	48.48	6.66	0.00	473311	498.0 -> 478.0	4.2	2.0	5.9

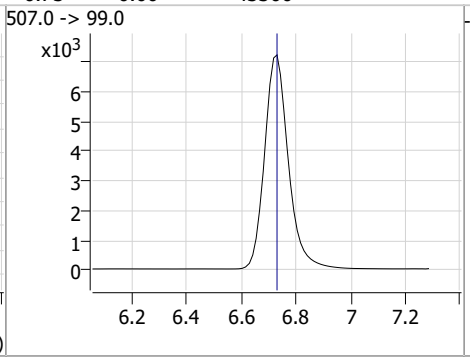


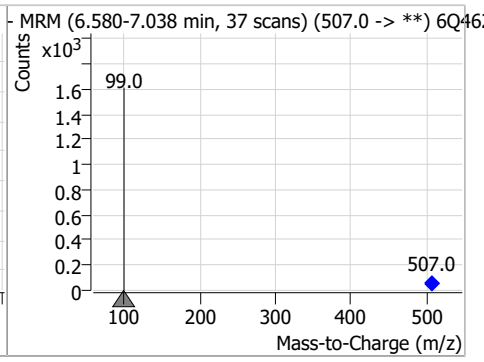




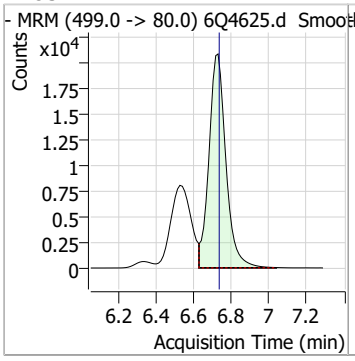
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.42	6.73	0.00	43306				

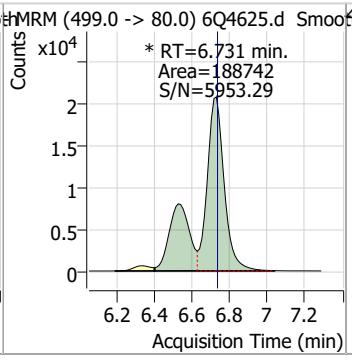


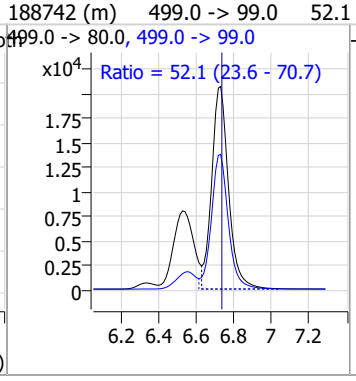


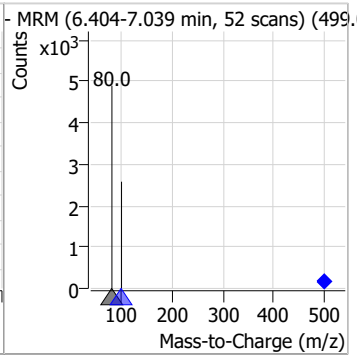


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	47.01	6.73	0.00	188742 (m)	499.0 -> 99.0	52.1	23.6	70.7

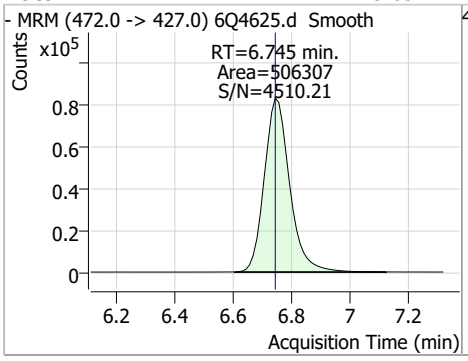


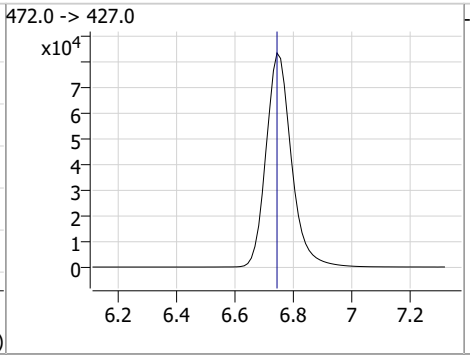


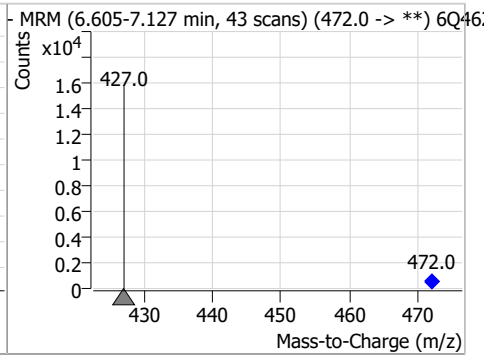




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	19.65	6.74	0.00	506307				





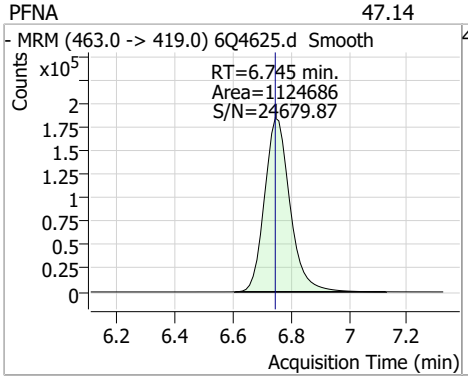


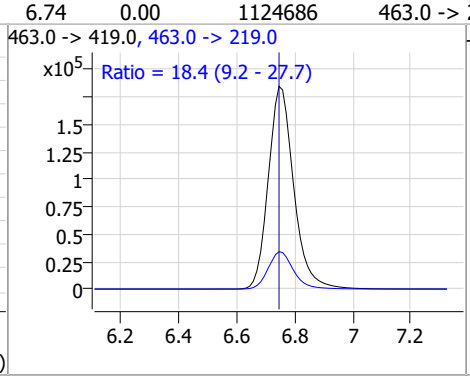
7.7.87

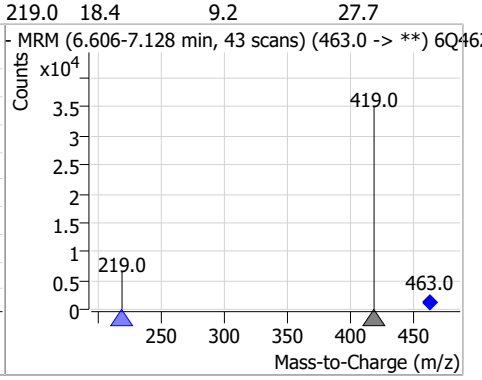
7

Perfluorinated Compounds by LC/MS/MS

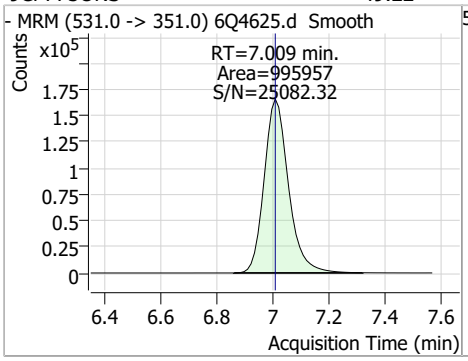
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	47.14	6.74	0.00	1124686	463.0 -> 219.0	18.4	9.2	27.7

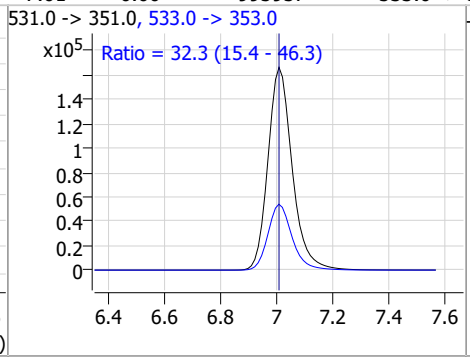


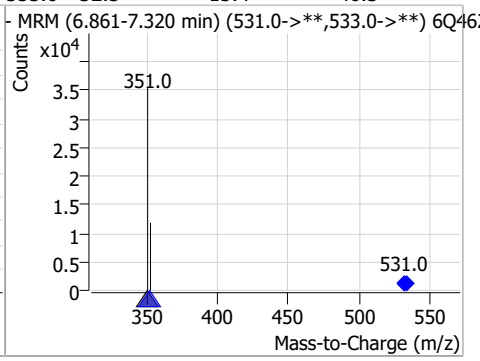




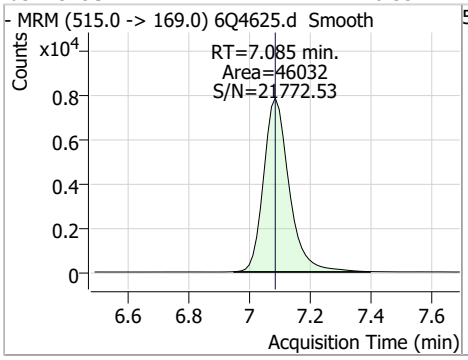
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	49.22	7.01	0.00	995957	533.0 -> 353.0	32.3	15.4	46.3

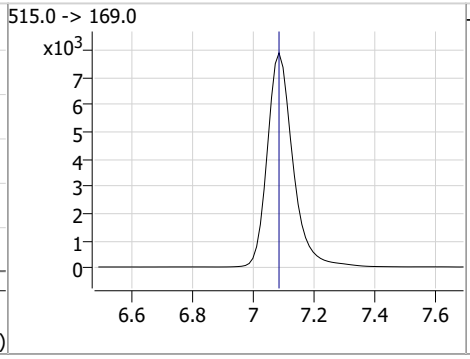


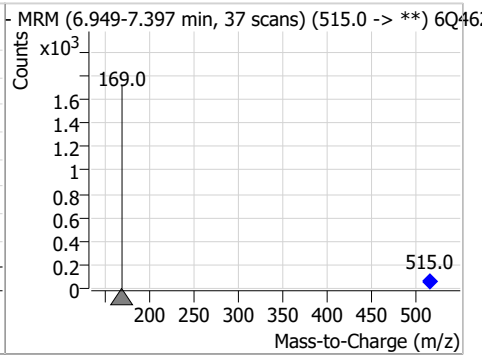




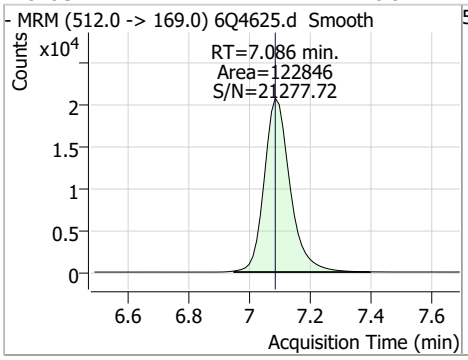
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.35	7.08	0.00	46032				

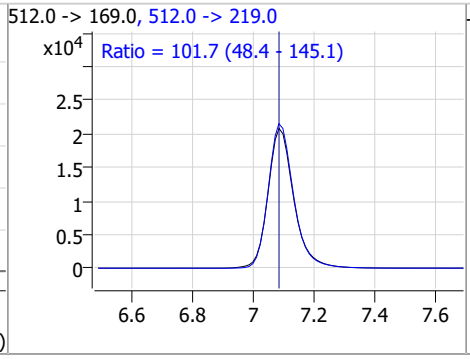


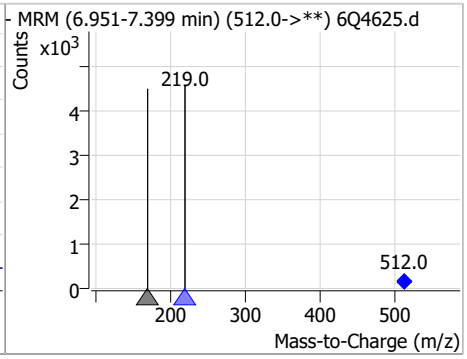




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	48.91	7.09	0.00	122846	512.0 -> 219.0	101.7	48.4	145.1

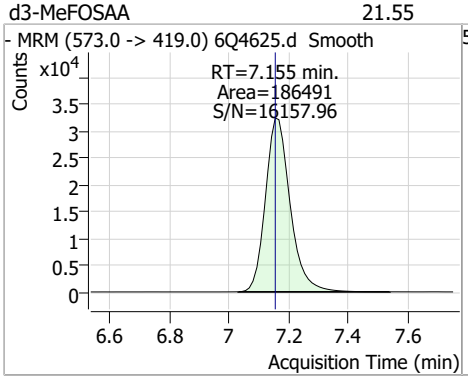


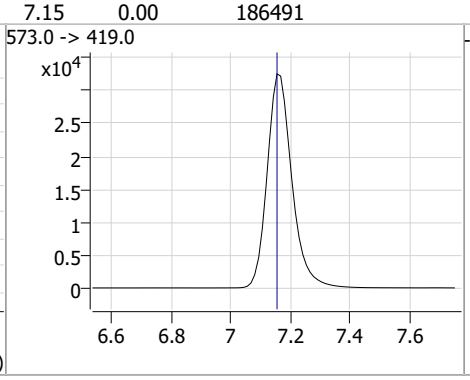


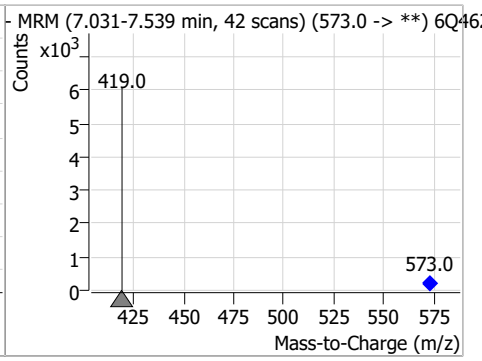


Perfluorinated Compounds by LC/MS/MS

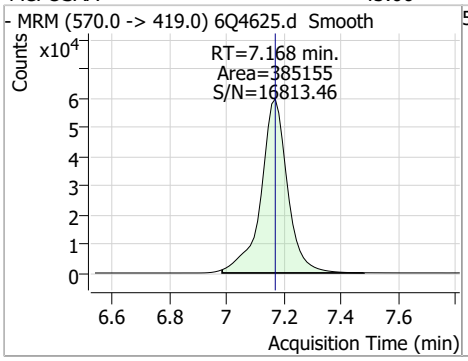
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.55	7.15	0.00	186491				

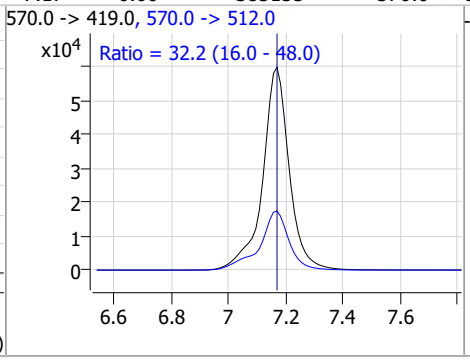


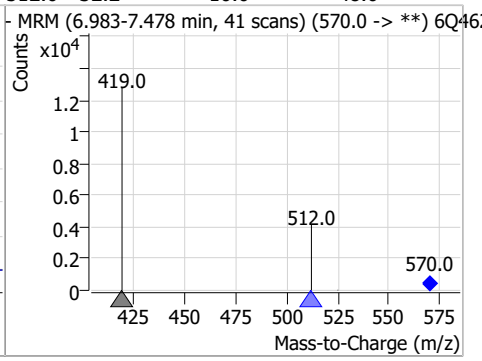




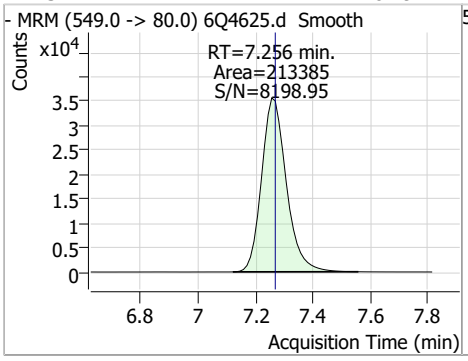
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	45.06	7.17	0.00	385155	570.0 -> 512.0	32.2	16.0	48.0

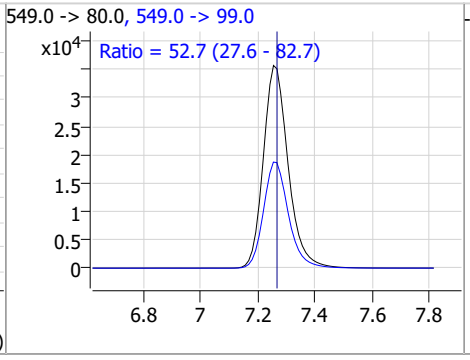


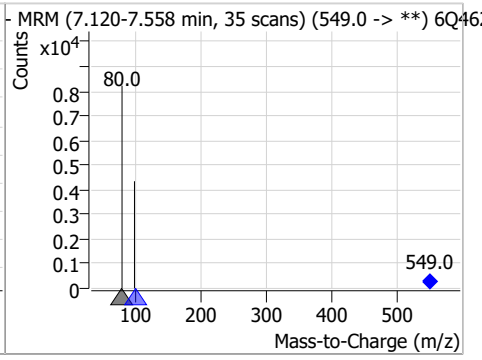




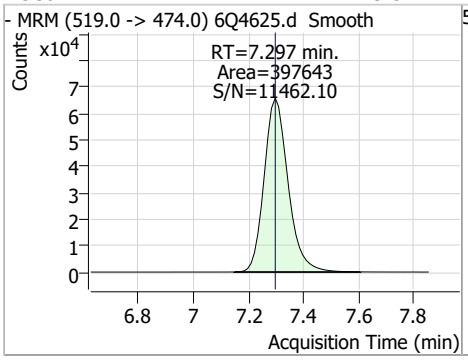
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	48.49	7.26	-0.01	213385	549.0 -> 99.0	52.7	27.6	82.7

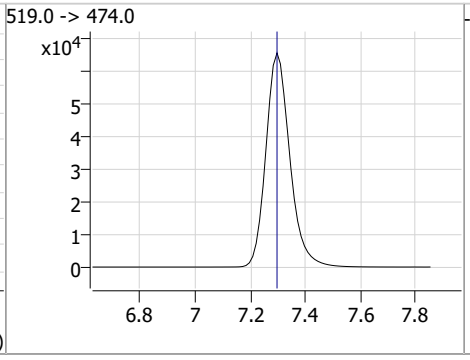


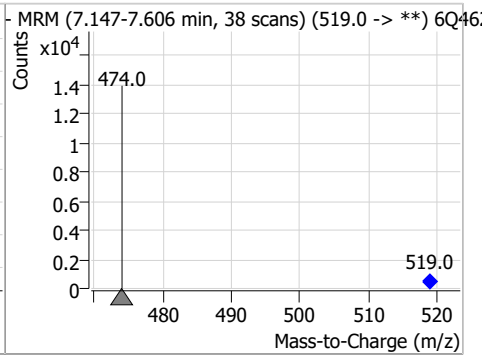




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.54	7.30	0.00	397643				

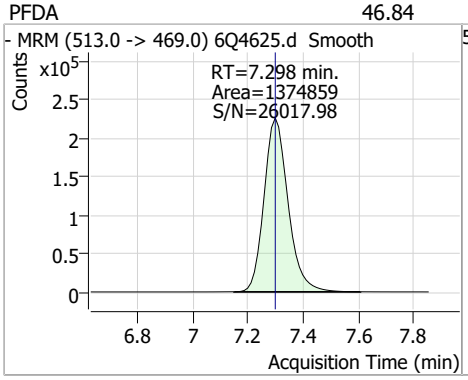


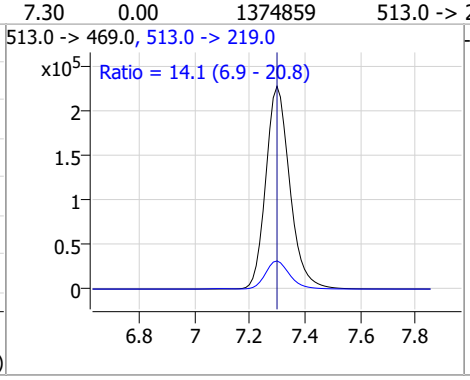


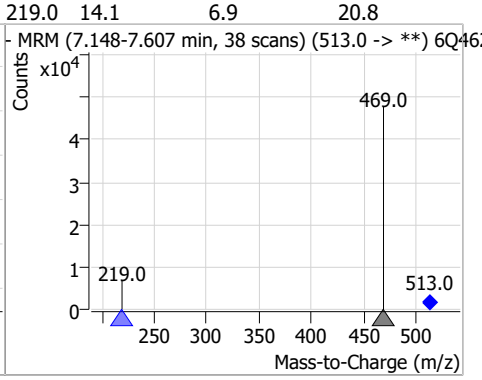


Perfluorinated Compounds by LC/MS/MS

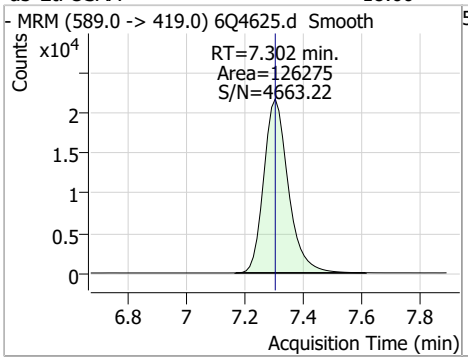
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	46.84	7.30	0.00	1374859	513.0 -> 219.0	14.1	6.9	20.8

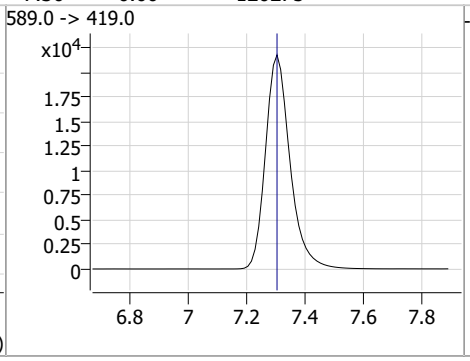


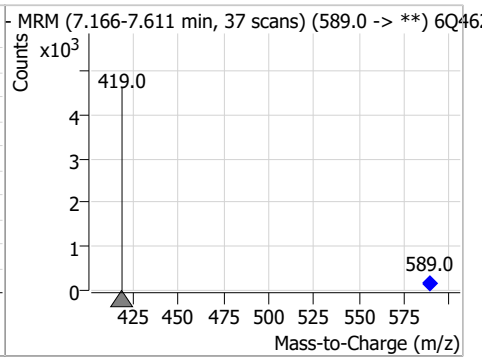




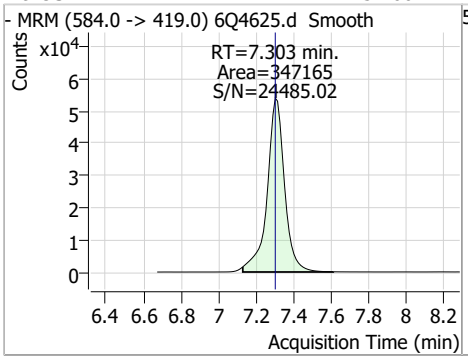
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	18.60	7.30	0.00	126275				

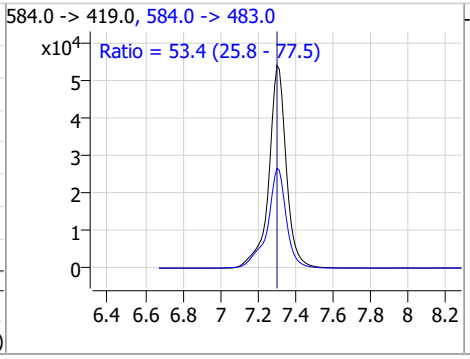


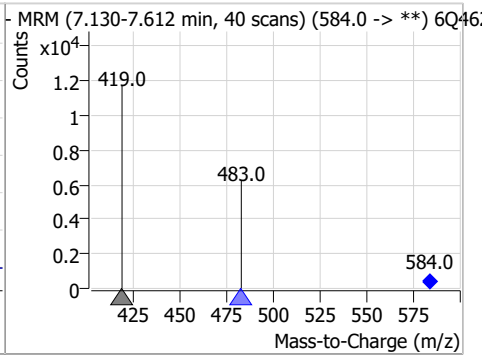




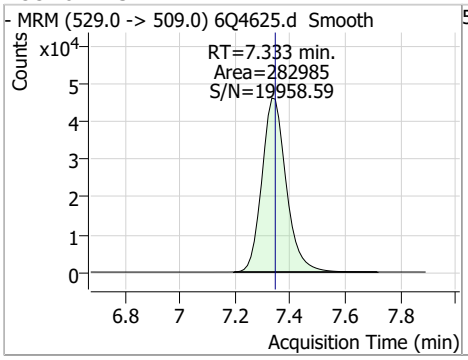
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	51.60	7.30	0.00	347165	584.0 -> 483.0	53.4	25.8	77.5

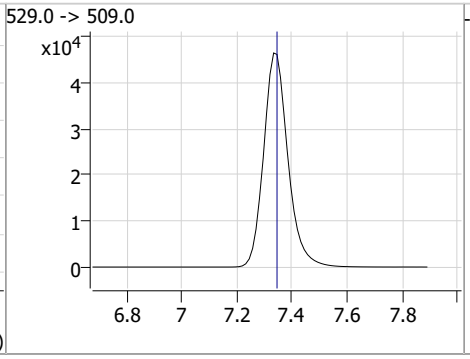


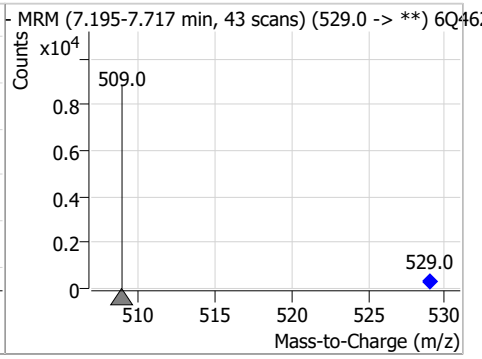




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.71	7.33	-0.01	282985				

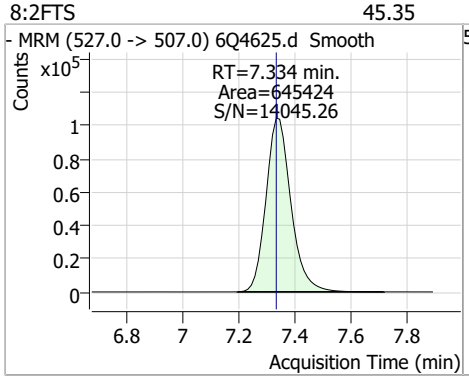


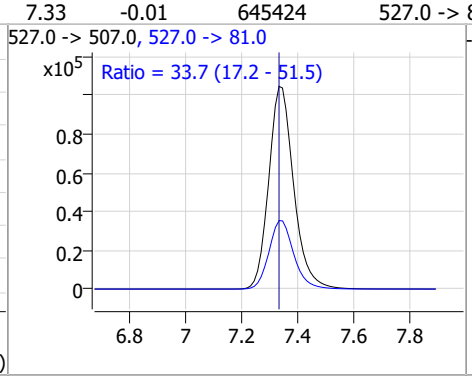


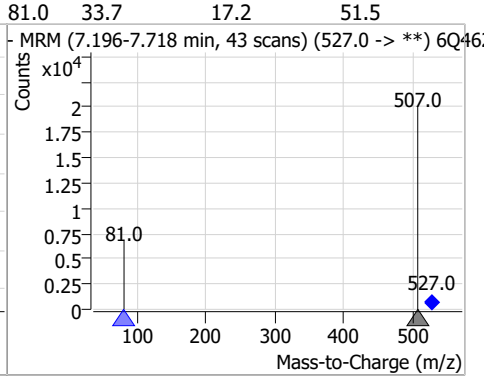


Perfluorinated Compounds by LC/MS/MS

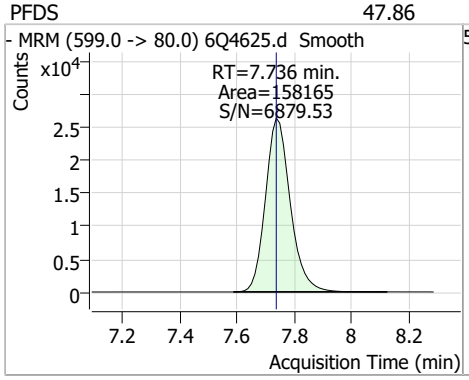
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	45.35	7.33	-0.01	645424	527.0 -> 81.0	33.7	17.2	51.5

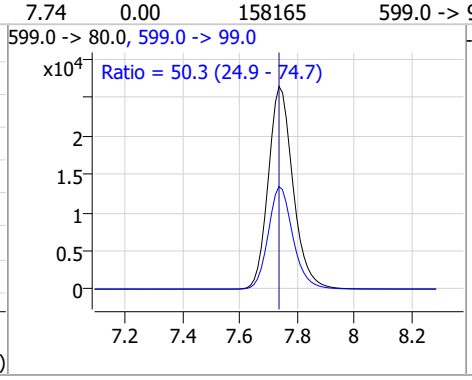


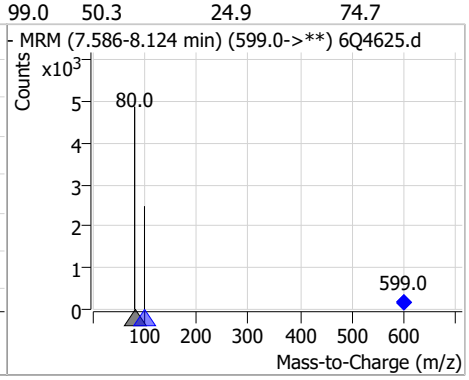




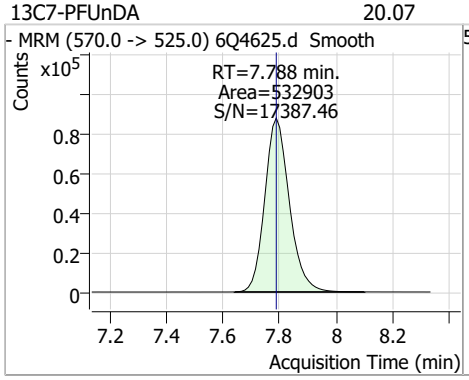
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	47.86	7.74	0.00	158165	599.0 -> 99.0	50.3	24.9	74.7

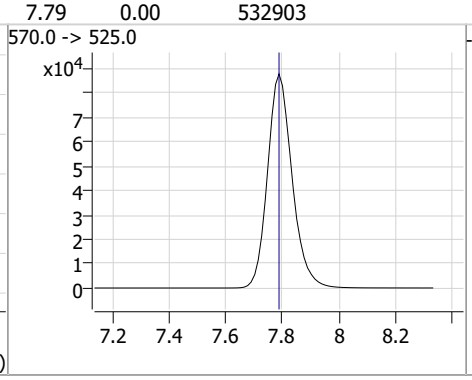


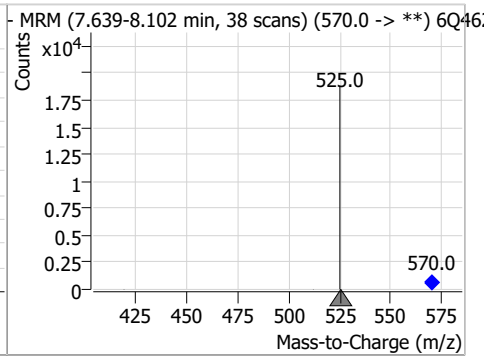




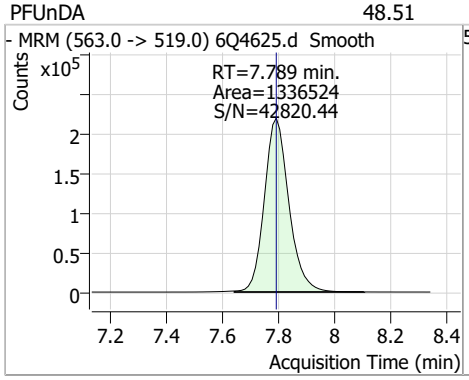
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.07	7.79	0.00	532903				

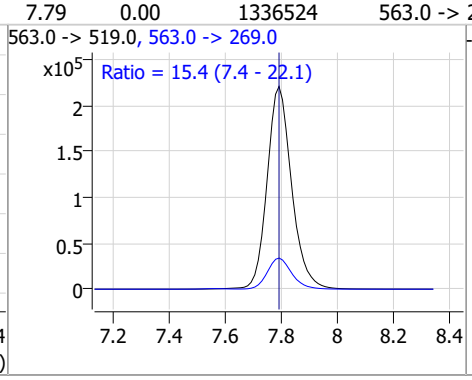


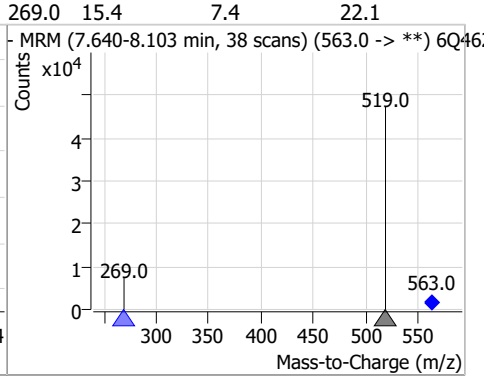




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	48.51	7.79	0.00	1336524	563.0 -> 269.0	15.4	7.4	22.1

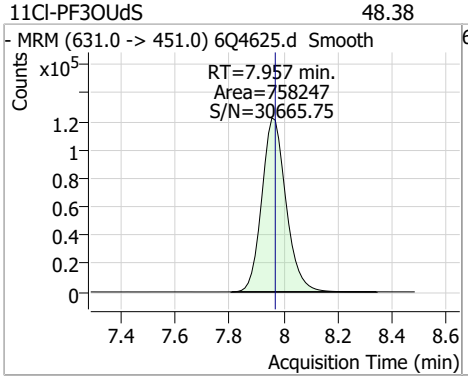


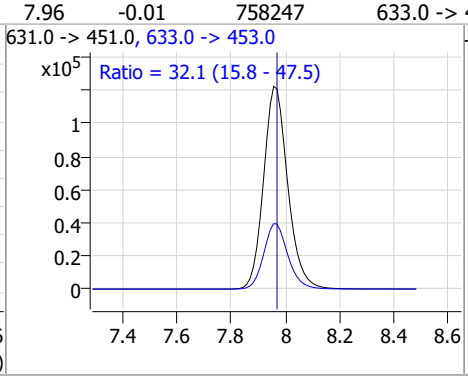


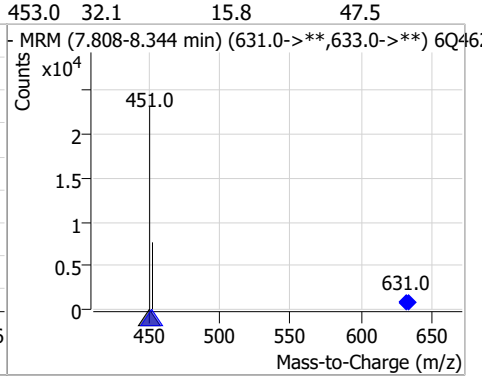


Perfluorinated Compounds by LC/MS/MS

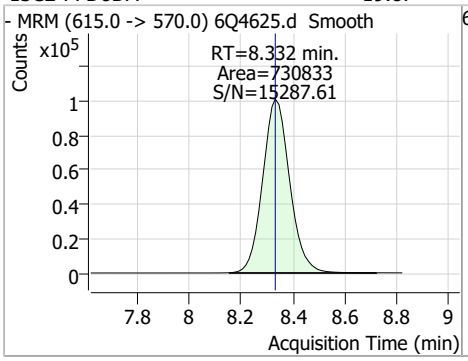
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	48.38	7.96	-0.01	758247	633.0 -> 453.0	32.1	15.8	47.5

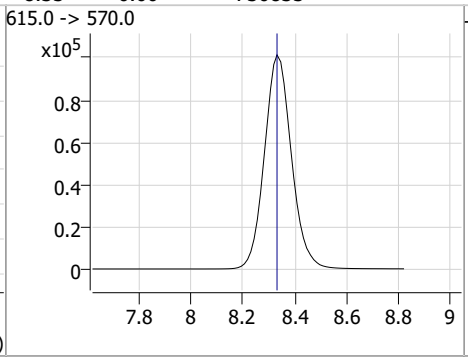


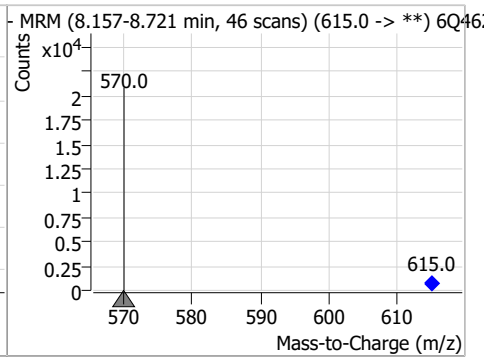




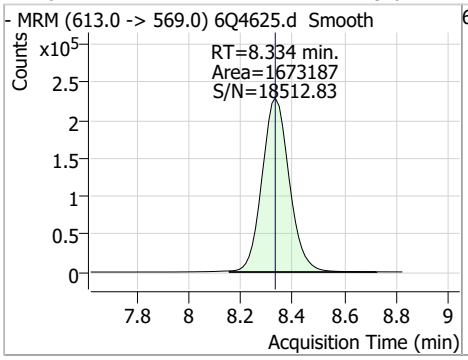
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.87	8.33	0.00	730833				

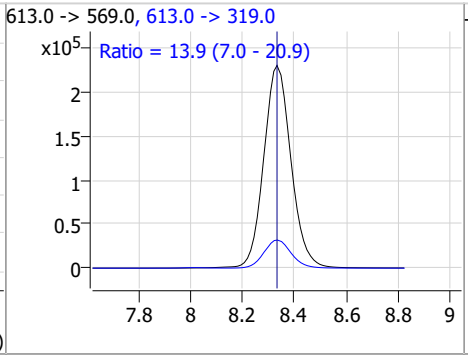


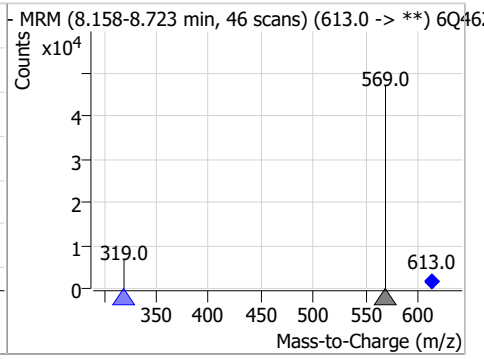




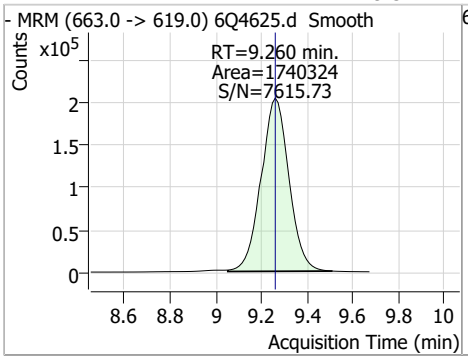
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	49.07	8.33	0.00	1673187	613.0 -> 319.0	13.9	7.0	20.9

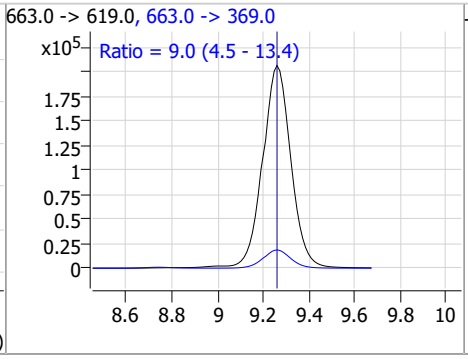


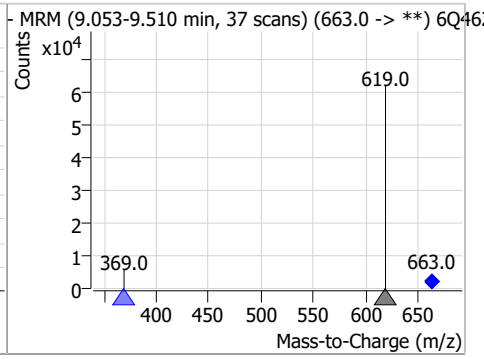




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	49.31	9.26	0.00	1740324	663.0 -> 369.0	9.0	4.5	13.4

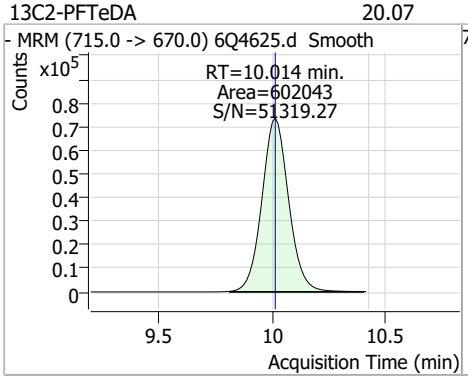


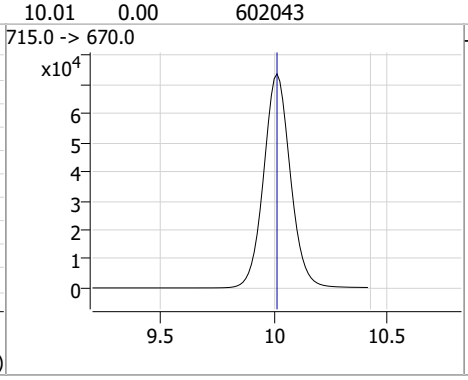


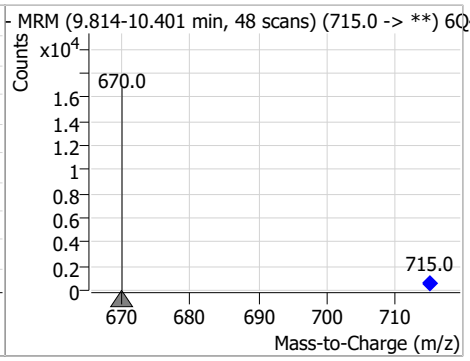


Perfluorinated Compounds by LC/MS/MS

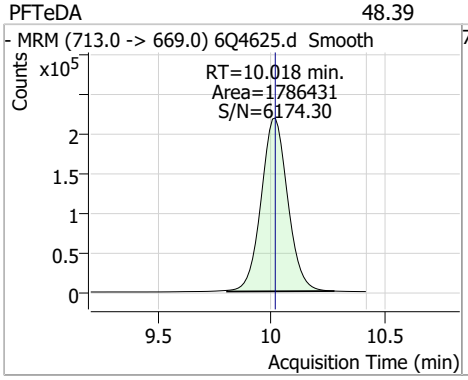
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.07	10.01	0.00	602043				

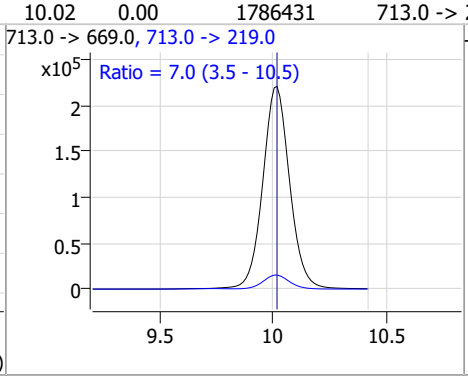


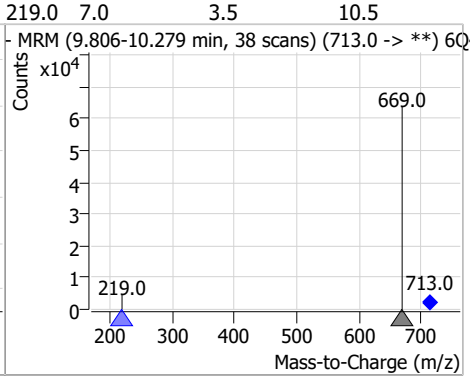




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	48.39	10.02	0.00	1786431	713.0 -> 219.0	7.0	3.5	10.5







7.7.87

7

Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4625.D
Injection Time: 09/14/22 12:20
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4626.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 12:36:08 PM
Sample Name : ic85-100
Vial : P1-A9
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	76088	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	132772	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	201057	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	231556	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	373443	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	471050	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	387143	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	497343	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	697097	20.00	µg/L	0.000
M2-PFTeDA	10.001	715.0 -> 670.0	560858	20.00	µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	180039	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	28885	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	26465	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	40621	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	305577	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	384146	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	286457	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	163406	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5350	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	42785	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	119453	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	305577	22.63	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	384146	22.51	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%		
13C2-8:2FTS	7.333	529.0 -> 509.0	286457	21.98	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C2-PFDoDA	8.332	615.0 -> 570.0	697097	18.95	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.8%		
13C2-PFTeDA	10.001	715.0 -> 670.0	560858	18.70	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.5%		
13C3-PFBS	3.635	302.0 -> 99.0	28885	18.86	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.3%		
13C3-PFHxS	5.475	402.0 -> 99.0	26465	19.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.7%		
13C4-PFBA	1.949	217.0 -> 172.0	76088	19.12	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.6%		
13C4-PFHpA	5.445	367.0 -> 322.0	231556	18.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.6%		
13C5-PFHxA	4.573	318.0 -> 273.0	201057	18.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.1%		
13C5-PFPeA	3.405	268.0 -> 223.0	132772	18.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.7%		
13C6-PFDA	7.297	519.0 -> 474.0	387143	19.03	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.1%			
13C7-PFUnDA	7.788	570.0 -> 525.0	497343	18.73	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 93.7%			
13C8-FOSA	6.654	506.0 -> 78.0	180039	18.41	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 92.0%			
13C8-PFOA	6.138	421.0 -> 376.0	373443	17.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%			
13C8-PFOS	6.717	507.0 -> 99.0	40621	19.15	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%			
13C9-PFNA	6.745	472.0 -> 427.0	471050	18.28	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 91.4%			
d3-MeFOSAA	7.155	573.0 -> 419.0	163406	18.88	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.4%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	5357	20.15	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.8%			
d3-MeFOSA	7.085	515.0 -> 169.0	42785	18.91	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 94.6%			
d5-EtFOSAA	7.302	589.0 -> 419.0	119467	17.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 88.0%			
Target Compounds							QValue
4:2FTS	4.485	327.0 -> 307.0	1403363	84.95	µg/L		100
		327.0 -> 81.0	455732				
6:2FTS	6.124	427.0 -> 407.0	1636768	84.13	µg/L		96
		427.0 -> 81.0	416002				
8:2FTS	7.334	527.0 -> 507.0	1251992	86.91	µg/L		98
		527.0 -> 81.0	412016				
EtFOSAA	7.303	584.0 -> 419.0	633934	99.55	µg/L		98
		584.0 -> 483.0	336240				
FOSA	6.656	498.0 -> 78.0	908140	100.55	µg/L		100
		498.0 -> 478.0	34773				
MeFOSAA	7.168	570.0 -> 419.0	766355	102.32	µg/L		99
		570.0 -> 512.0	249099				
PFBA	1.943	213.0 -> 169.0	167171	100.66	µg/L		100
PFBS	3.627	299.0 -> 80.0	484038	100.78	µg/L		100
		299.0 -> 99.0	183390				
PFDA	7.298	513.0 -> 469.0	2909216	101.79	µg/L		97
		513.0 -> 219.0	368956				
PFDoDA	8.321	613.0 -> 569.0	3268039	100.48	µg/L		100
		613.0 -> 319.0	453023				
PFDS	7.736	599.0 -> 80.0	312093	101.20	µg/L		96
		599.0 -> 99.0	163076				
PFHpA	5.446	363.0 -> 319.0	1519895	100.92	µg/L		100
		363.0 -> 169.0	222344				
PFHpS	6.136	449.0 -> 80.0	351618	99.14	µg/L		98
		449.0 -> 99.0	189094				
PFHxA	4.574	313.0 -> 269.0	1068569	101.05	µg/L		100
		313.0 -> 119.0	26103				
PFHxS	5.477	399.0 -> 80.0	378803	99.89	µg/L	m	100
		399.0 -> 99.0	183682				
PFNA	6.745	463.0 -> 419.0	2259640	101.80	µg/L		96
		463.0 -> 219.0	382027				
PFNS	7.256	549.0 -> 80.0	415919	100.77	µg/L		99
		549.0 -> 99.0	225399				
PFOA	6.138	413.0 -> 369.0	2034360	100.85	µg/L		99
		413.0 -> 169.0	316069				
PFOS	6.719	499.0 -> 80.0	382392	101.54	µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

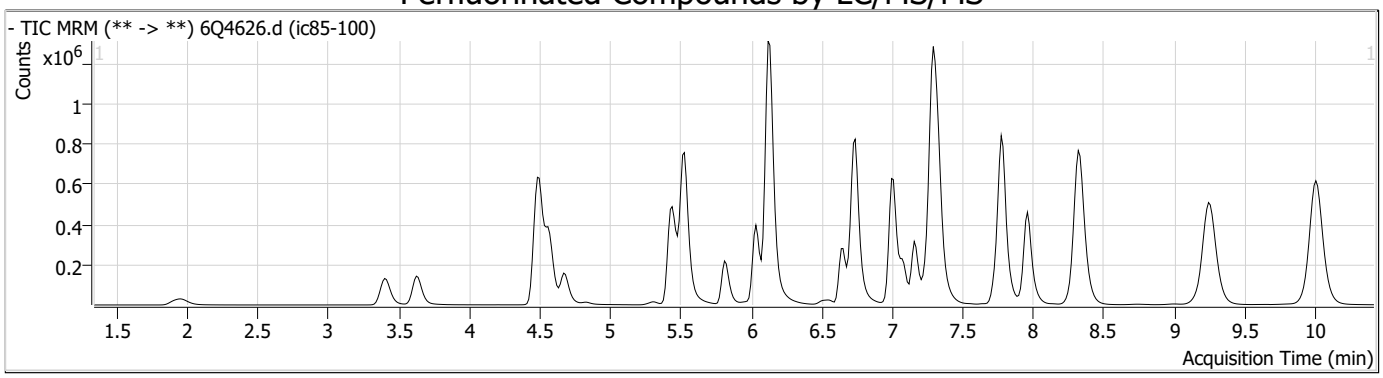
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	190469			
PFPeA	3.408	263.0 -> 219.0	563343	100.71	µg/L	100
PFPeS	4.681	349.0 -> 80.0	403317	100.86	µg/L	99
		349.0 -> 99.0	186716			
PFTeDA	10.005	713.0 -> 669.0	3468412	100.86	µg/L	100
		713.0 -> 219.0	243111			
PFTrDA	9.248	663.0 -> 619.0	3374821	100.25	µg/L	99
		663.0 -> 369.0	307793			
PFUnDA	7.789	563.0 -> 519.0	2591735	100.79	µg/L	98
		563.0 -> 269.0	403226			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	1507502	100.85	µg/L	98
		633.0 -> 453.0	460536			
9Cl-PF3ONS	7.009	531.0 -> 351.0	1977676	100.39	µg/L	97
		533.0 -> 353.0	646036			
ADONA	5.532	377.0 -> 251.0	2449123	99.81	µg/L	99
		377.0 -> 85.0	601297			
HFPO-DA	4.840	285.0 -> 169.0	25989	102.73	µg/L	97
		285.0 -> 185.0	3903			
MeFOSA	7.086	512.0 -> 169.0	234630	100.50	µg/L	95
		512.0 -> 219.0	216168			
4-PFECHS	6.032	461.0 -> 381.0	1219888	101.47	µg/L	97
		461.0 -> 99.0	427789			
FBSA	4.514	298.0 -> 78.0	981854	100.25	µg/L	100
		298.0 -> 64.0	66377			
FHxSA	5.828	398.0 -> 78.0	833215	101.08	µg/L	100
		398.0 -> 64.0	29085			

 # = Qualifier out of range, m = manually integrated, + = Area summed

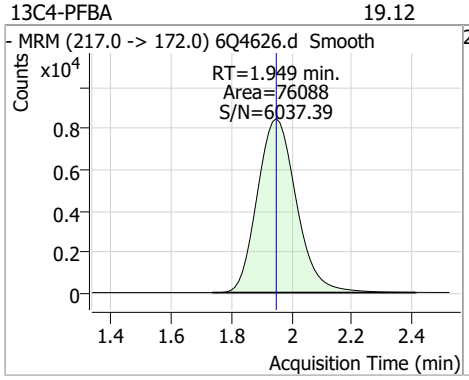
7.7.88

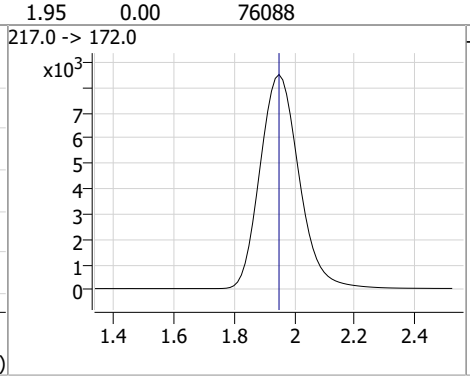
7

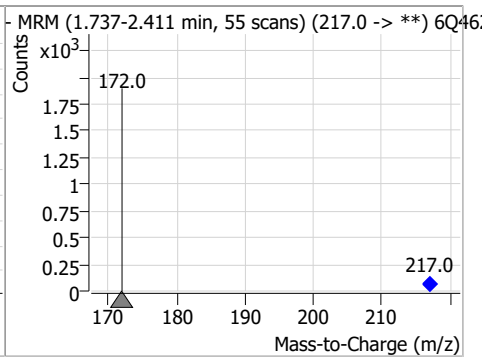
Perfluorinated Compounds by LC/MS/MS



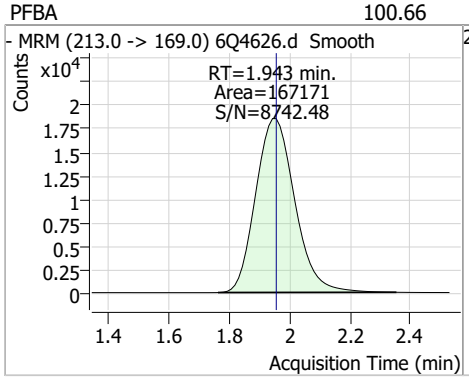
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.12	1.95	0.00	76088				

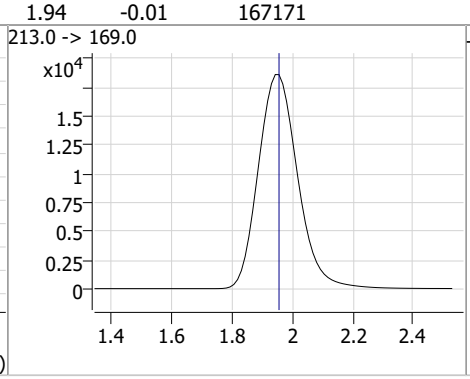


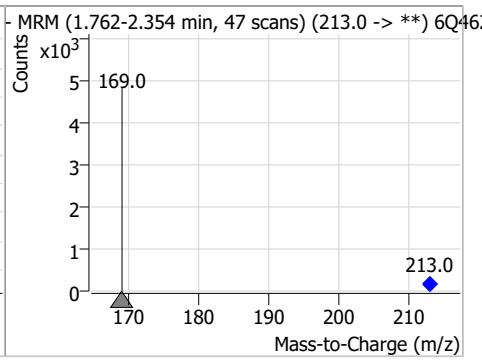




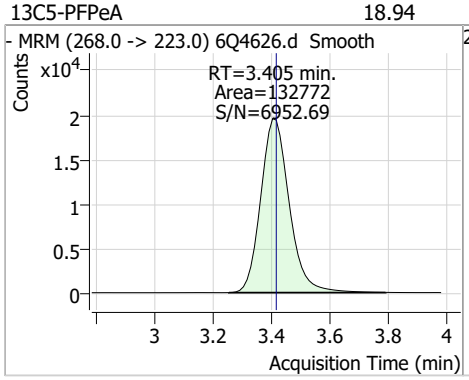
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	100.66	1.94	-0.01	167171				

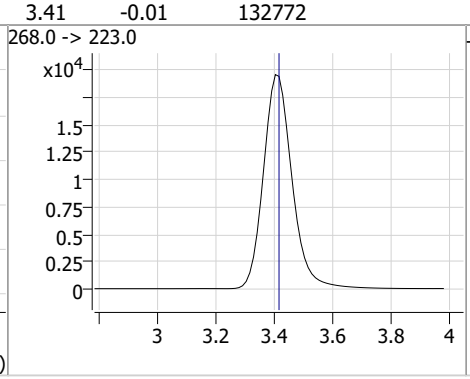


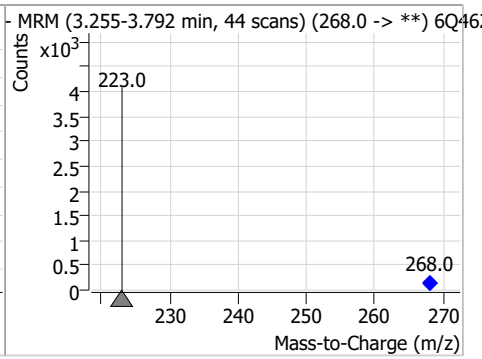




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	18.94	3.41	-0.01	132772				

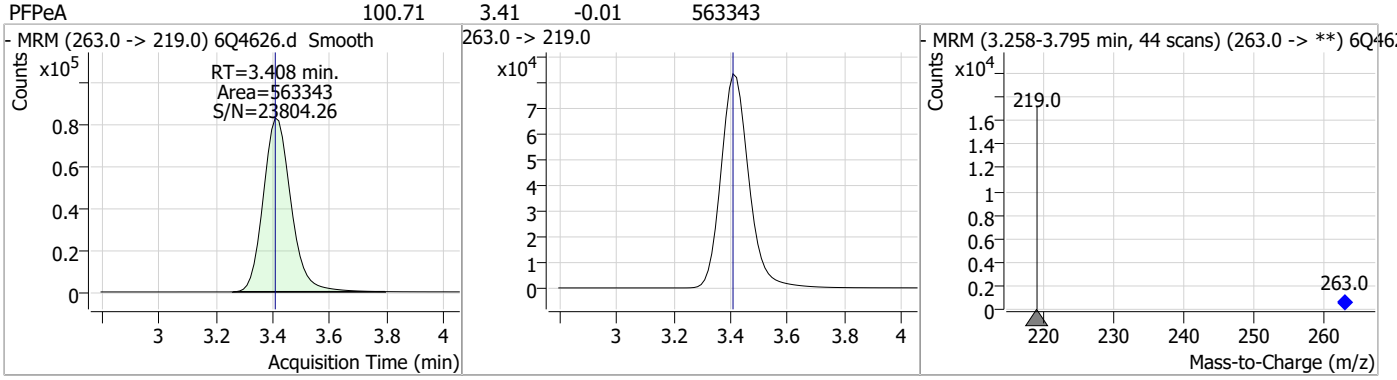




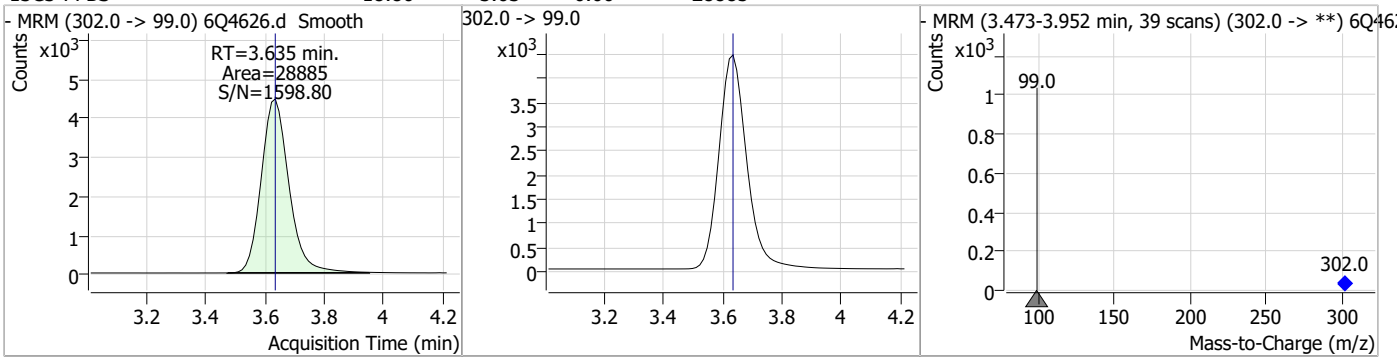


Perfluorinated Compounds by LC/MS/MS

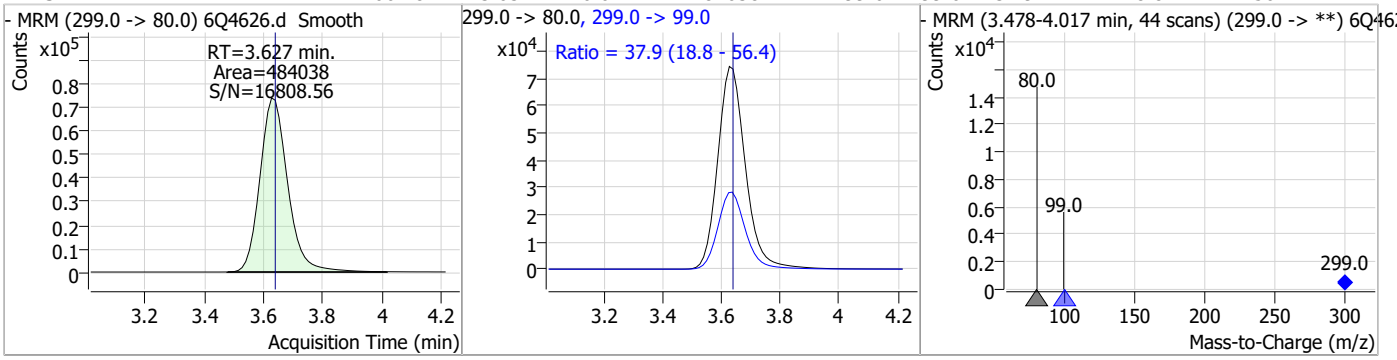
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	100.71	3.41	-0.01	563343				



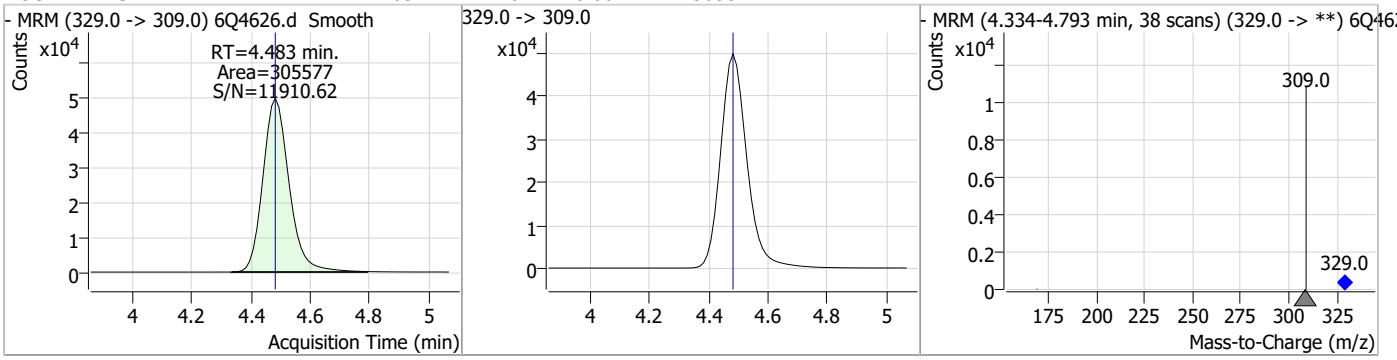
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	18.86	3.63	0.00	28885				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	100.78	3.63	-0.01	484038	299.0 -> 99.0	37.9	18.8	56.4

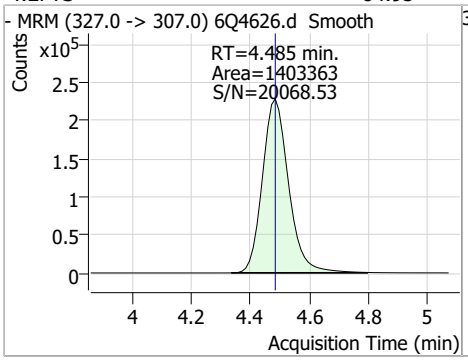


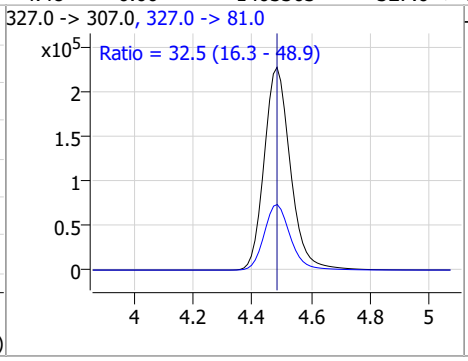
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.63	4.48	0.00	305577				

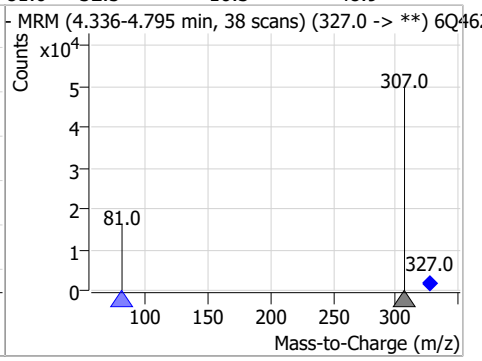


Perfluorinated Compounds by LC/MS/MS

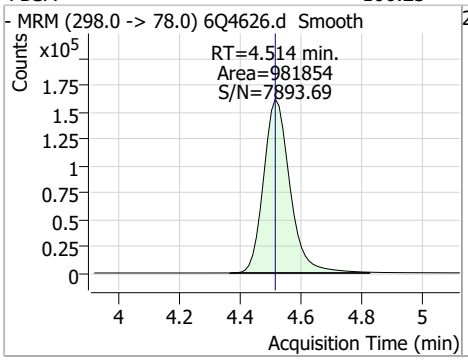
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	84.95	4.48	0.00	1403363	327.0 -> 81.0	32.5	16.3	48.9

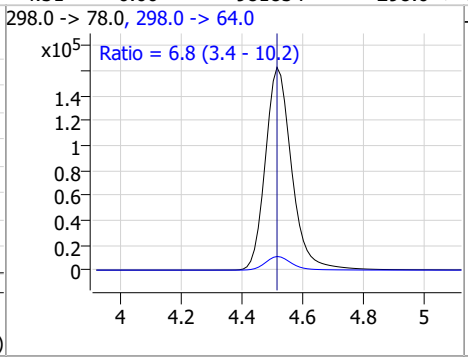


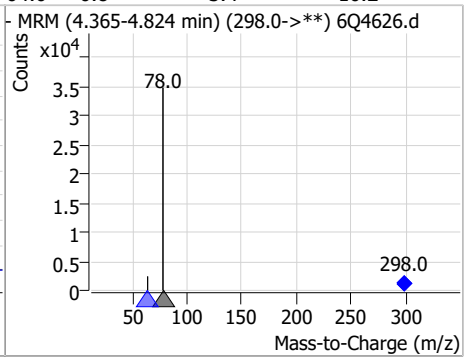




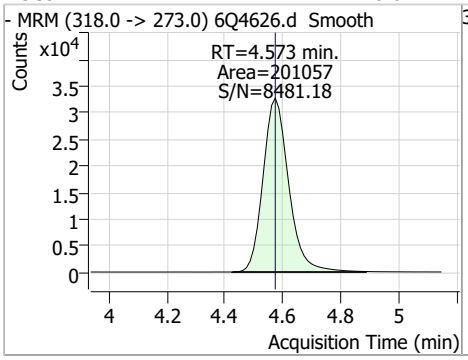
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	100.25	4.51	0.00	981854	298.0 -> 64.0	6.8	3.4	10.2

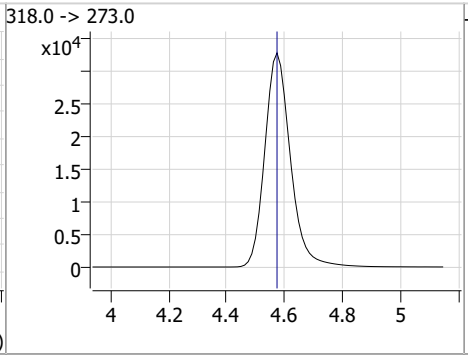


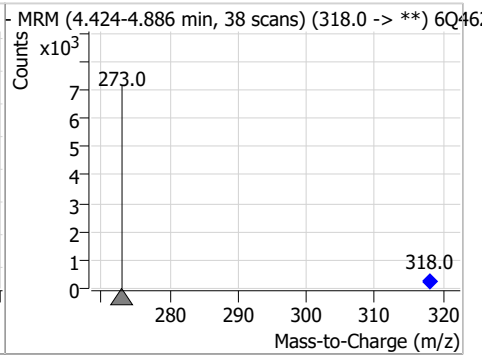




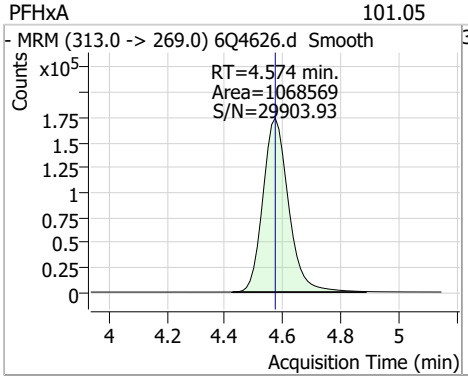
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	18.81	4.57	0.00	201057				

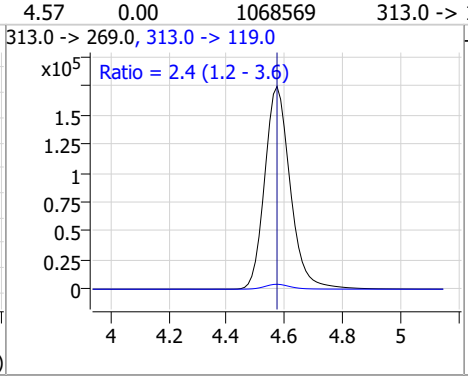


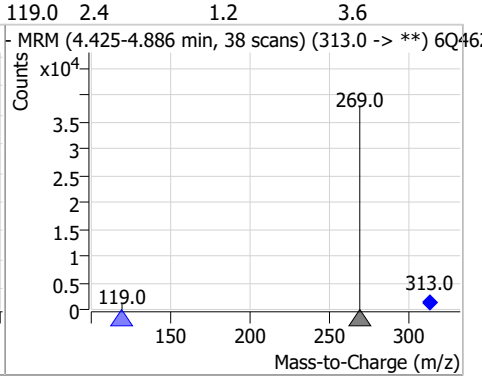




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	101.05	4.57	0.00	1068569	313.0 -> 119.0	2.4	1.2	3.6

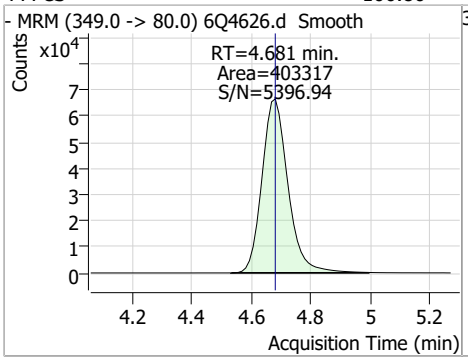


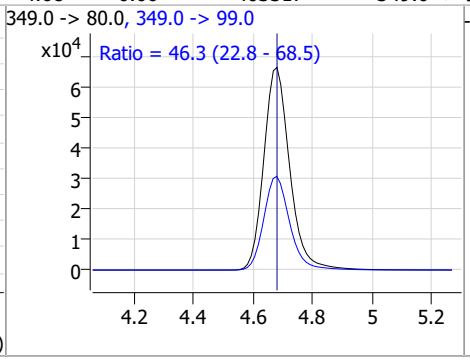


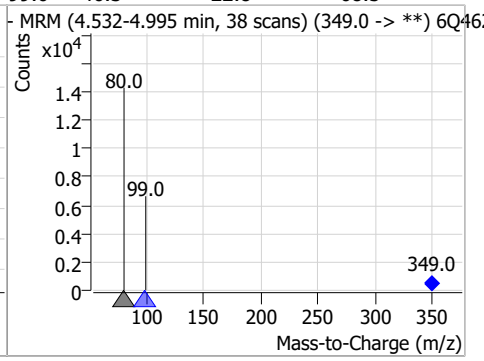


Perfluorinated Compounds by LC/MS/MS

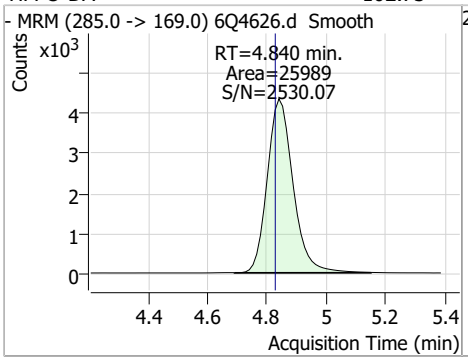
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	100.86	4.68	0.00	403317	349.0 -> 99.0	46.3	22.8	68.5

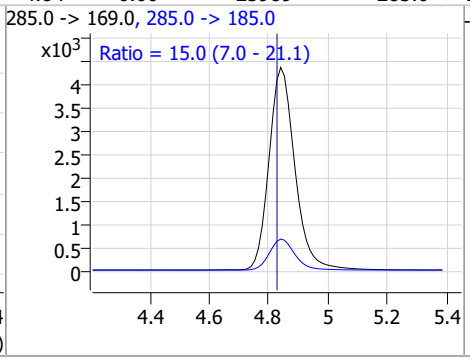


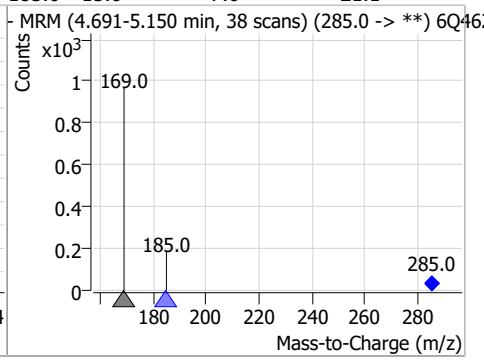




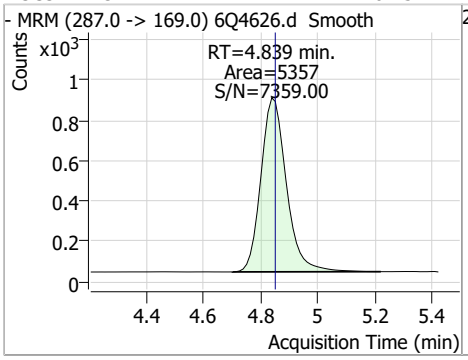
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	102.73	4.84	0.00	25989	285.0 -> 185.0	15.0	7.0	21.1

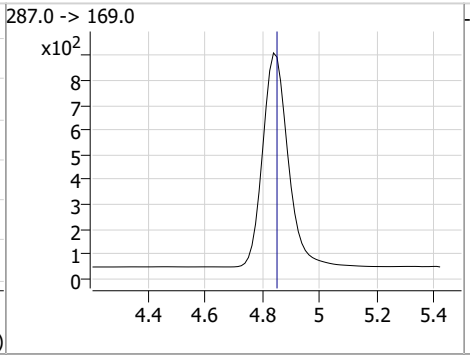


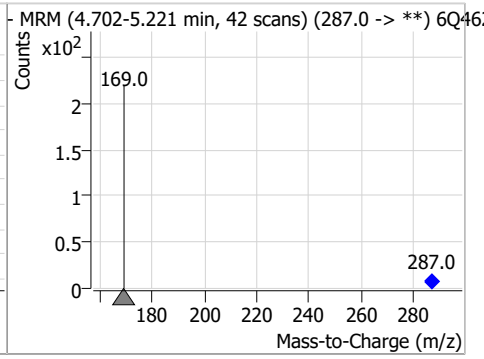




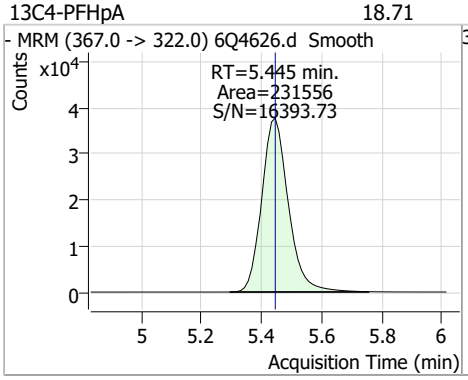
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.15	4.84	-0.01	5357				

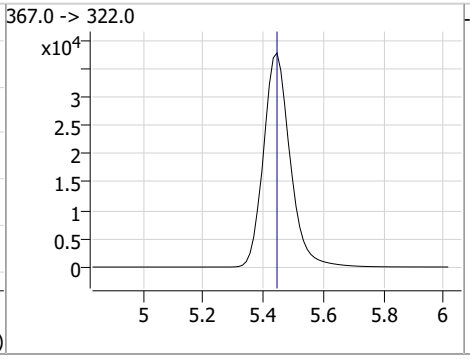


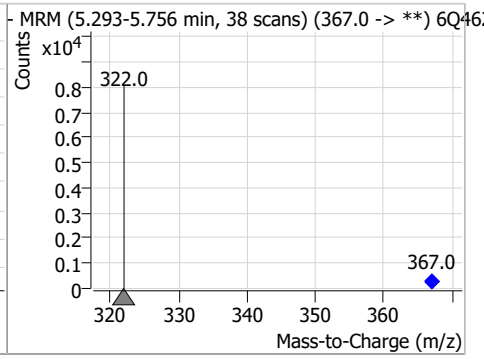




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	18.71	5.45	0.00	231556				

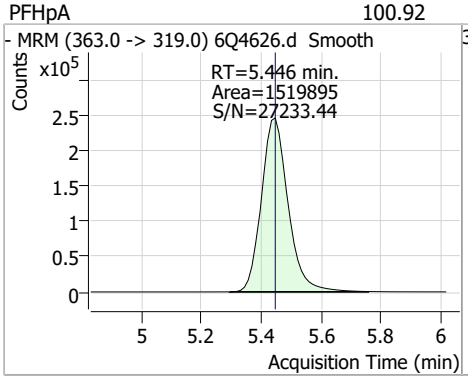


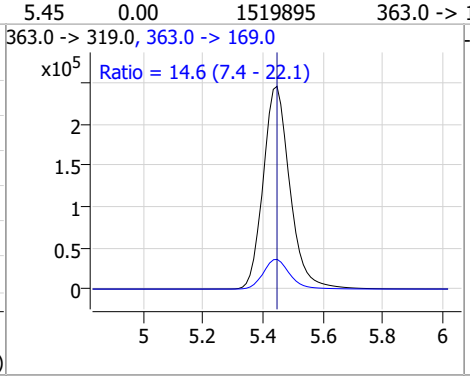


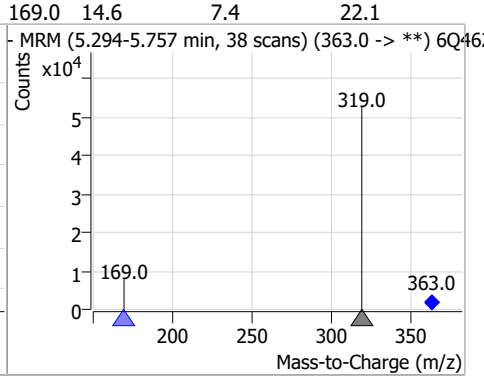


Perfluorinated Compounds by LC/MS/MS

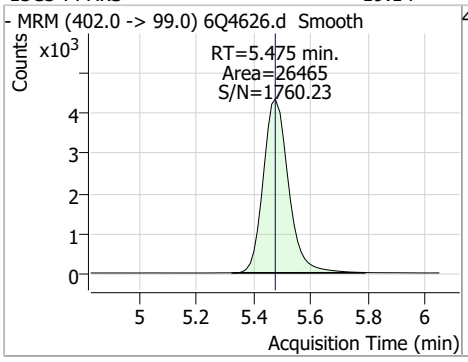
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	100.92	5.45	0.00	1519895	363.0 -> 169.0	14.6	7.4	22.1

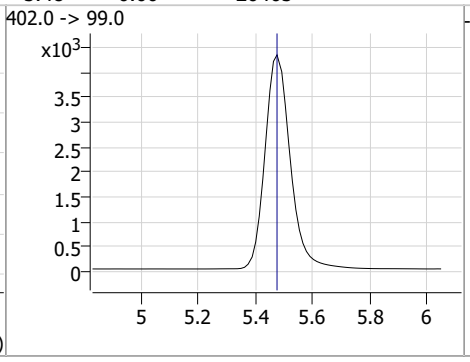


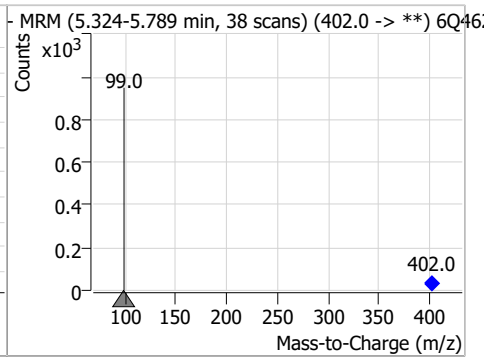




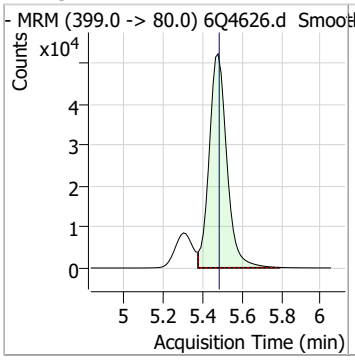
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.14	5.48	0.00	26465				

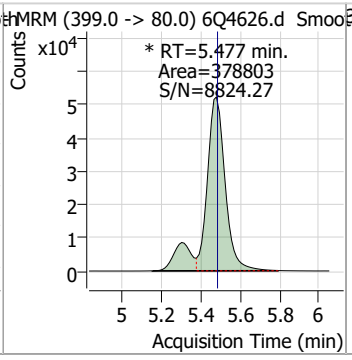


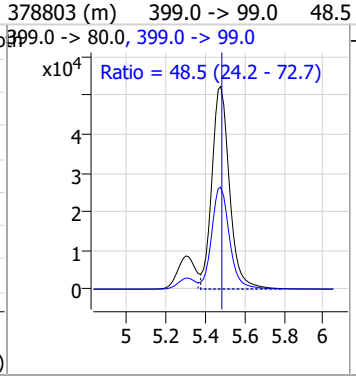


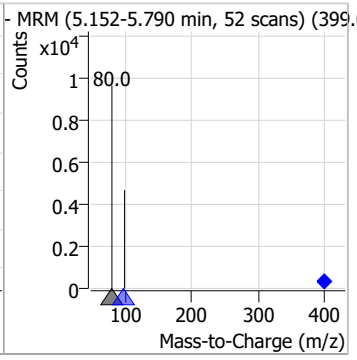


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	99.89	5.48	0.00	378803 (m)	399.0 -> 99.0	48.5	24.2	72.7

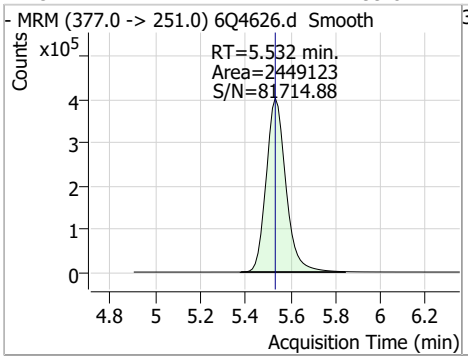


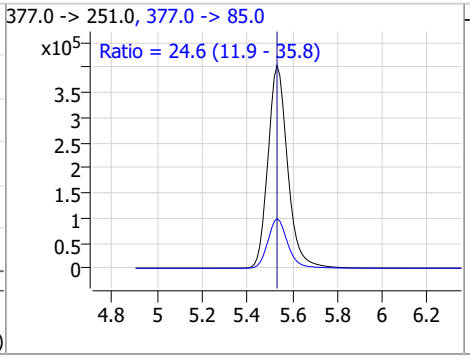


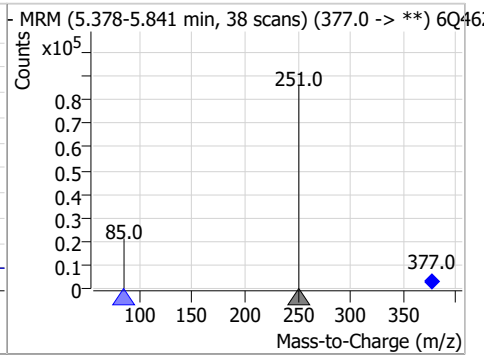




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	99.81	5.53	0.00	2449123	377.0 -> 85.0	24.6	11.9	35.8

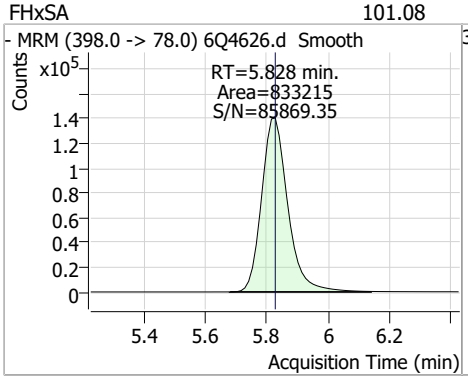


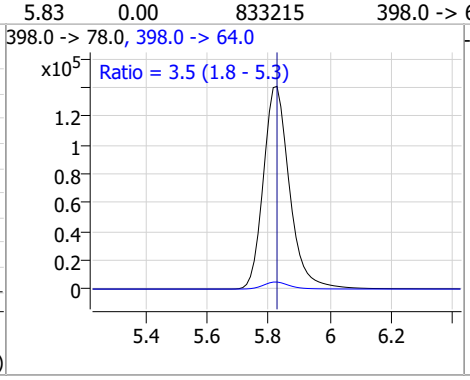


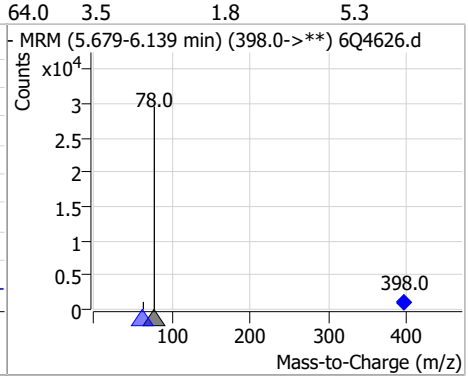


Perfluorinated Compounds by LC/MS/MS

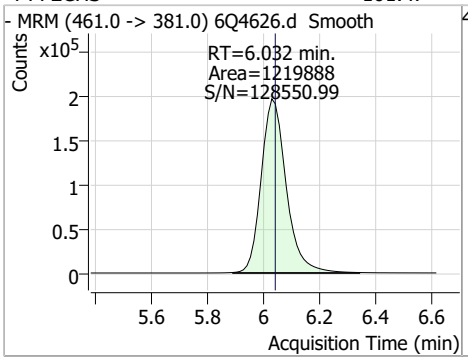
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	101.08	5.83	0.00	833215	398.0 -> 64.0	3.5	1.8	5.3

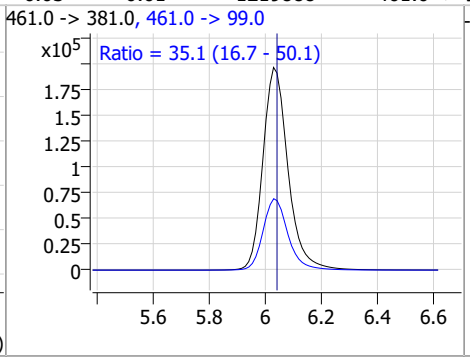


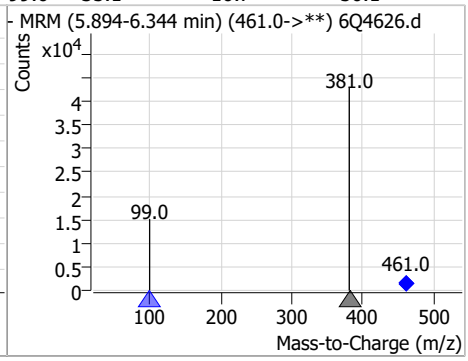




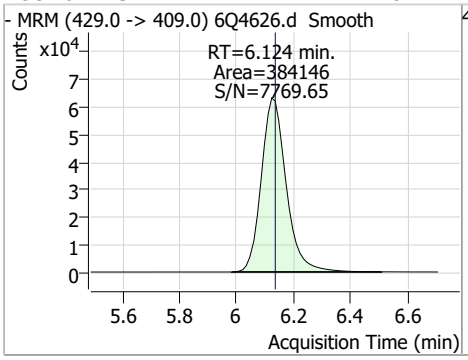
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	101.47	6.03	-0.01	1219888	461.0 -> 99.0	35.1	16.7	50.1

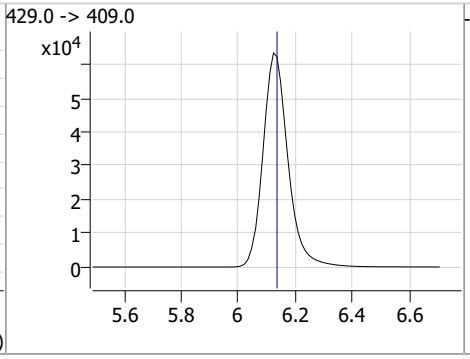


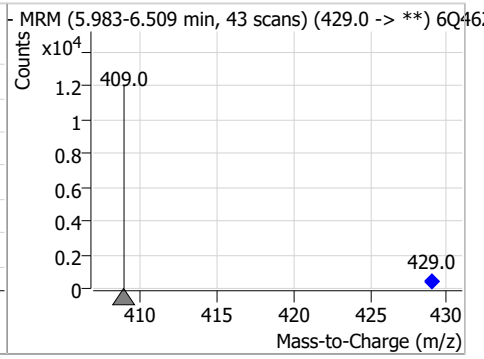




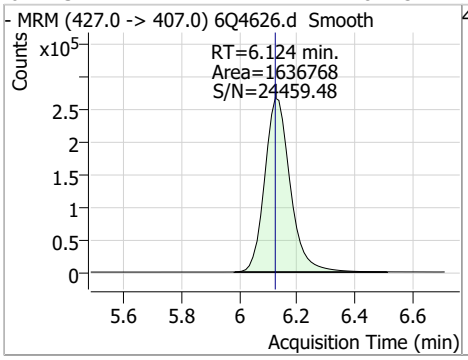
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.51	6.12	-0.01	384146				

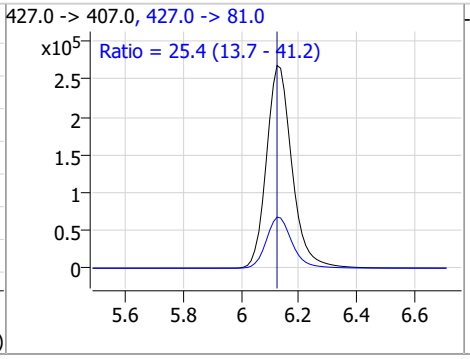


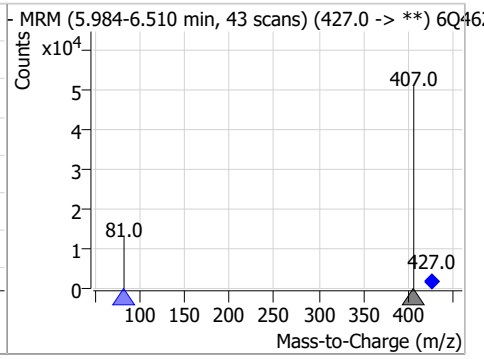




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	84.13	6.12	-0.01	1636768	427.0 -> 81.0	25.4	13.7	41.2

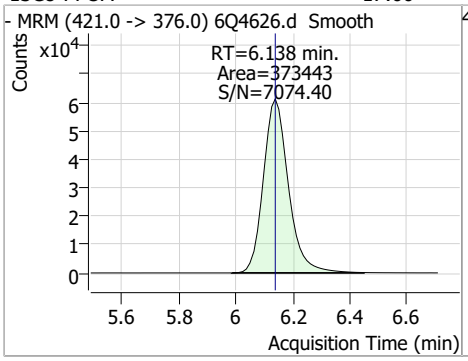


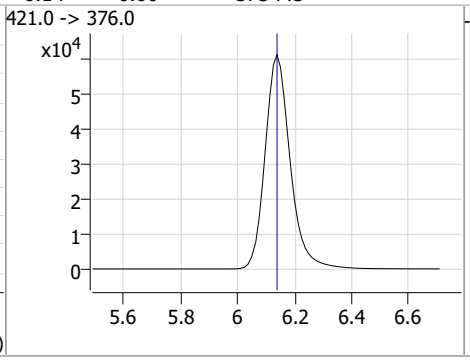


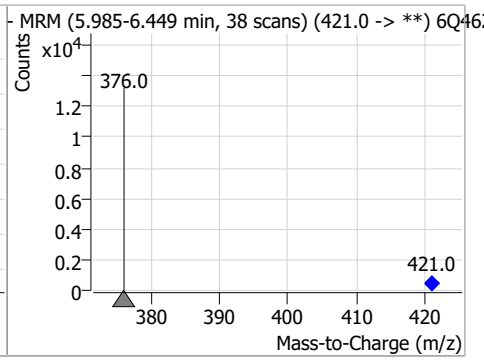


Perfluorinated Compounds by LC/MS/MS

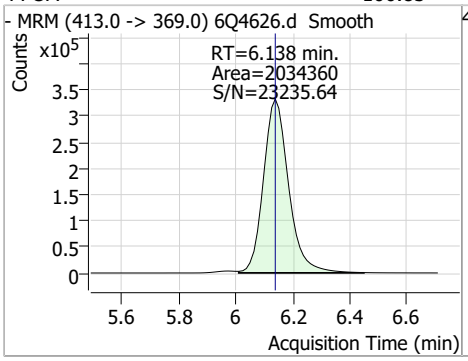
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	17.60	6.14	0.00	373443				

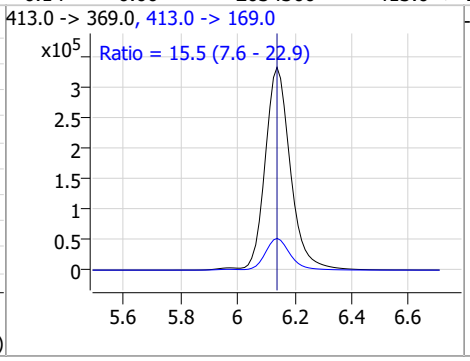


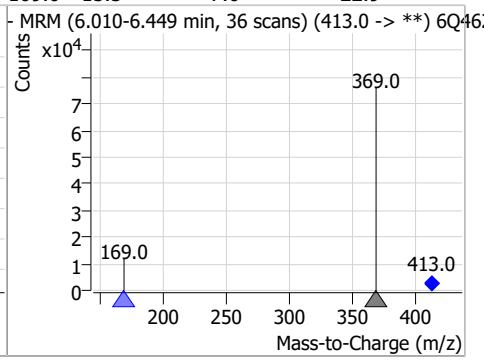




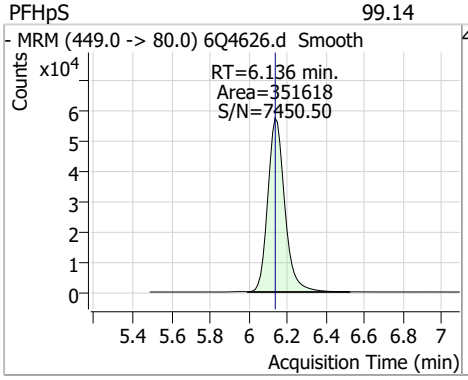
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	100.85	6.14	0.00	2034360	413.0 -> 169.0	15.5	7.6	22.9

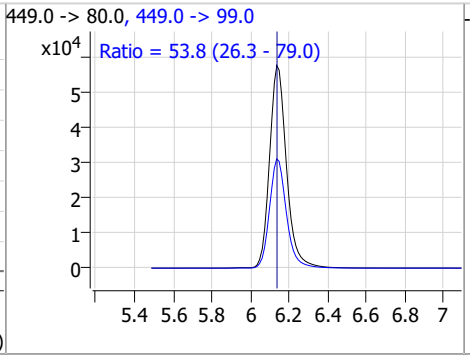


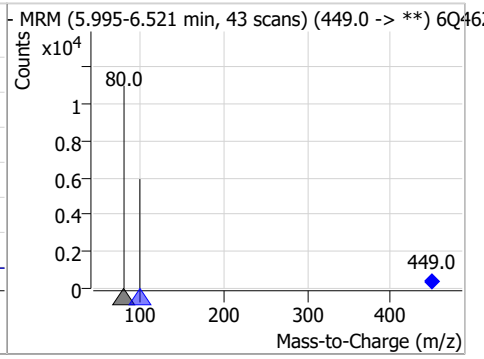




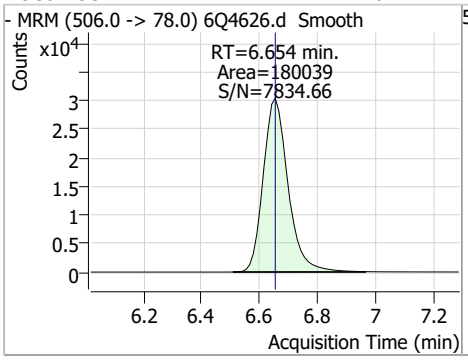
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	99.14	6.14	-0.01	351618	449.0 -> 99.0	53.8	26.3	79.0

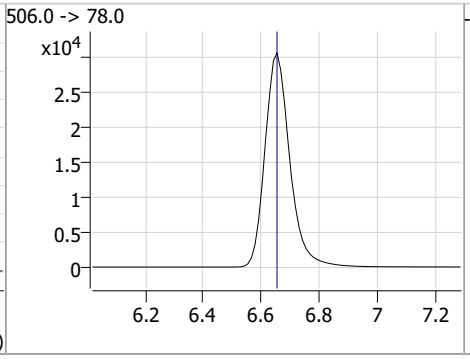


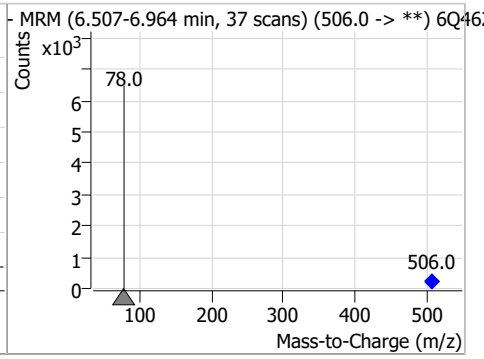




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	18.41	6.65	0.00	180039				

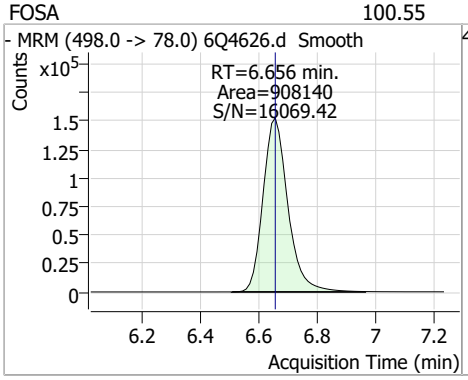


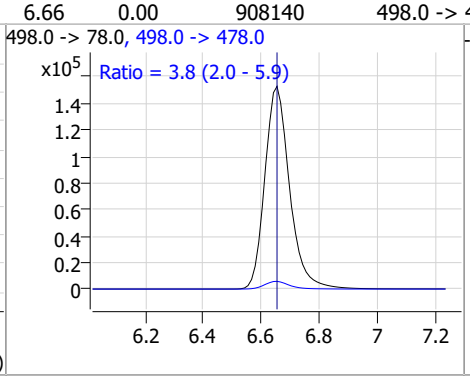


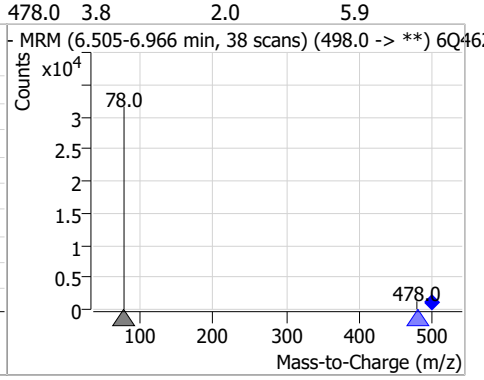


Perfluorinated Compounds by LC/MS/MS

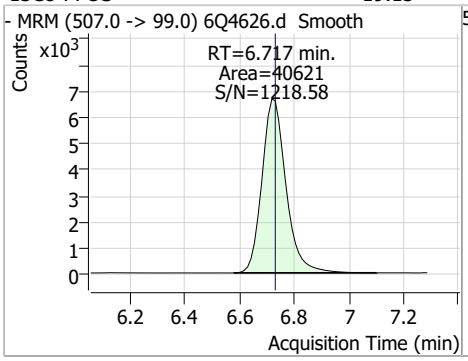
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	100.55	6.66	0.00	908140	498.0 -> 478.0	3.8	2.0	5.9

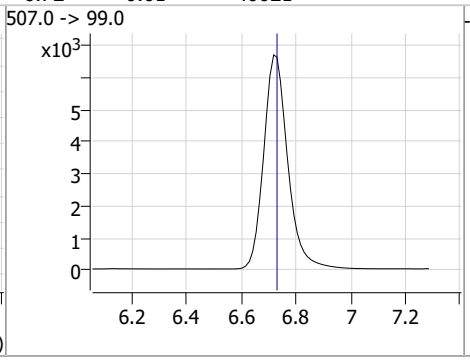


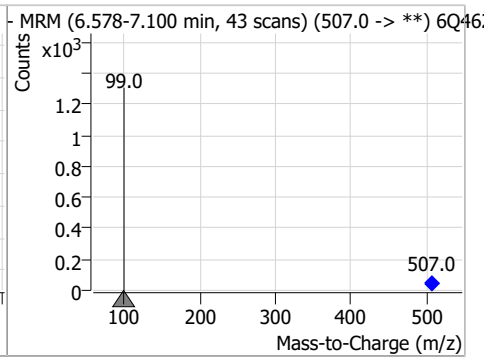




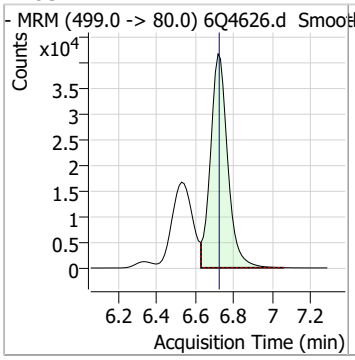
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.15	6.72	-0.01	40621				

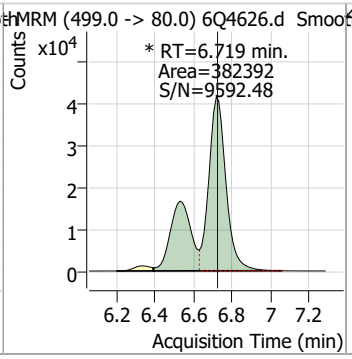


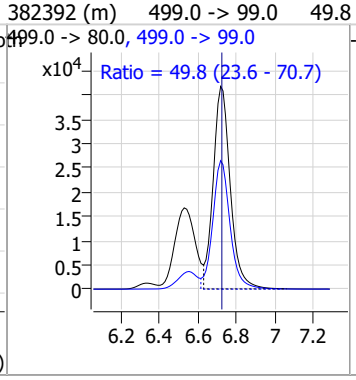


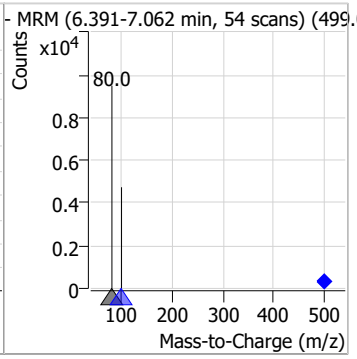


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	101.54	6.72	-0.01	382392 (m)	499.0 -> 99.0	49.8	23.6	70.7

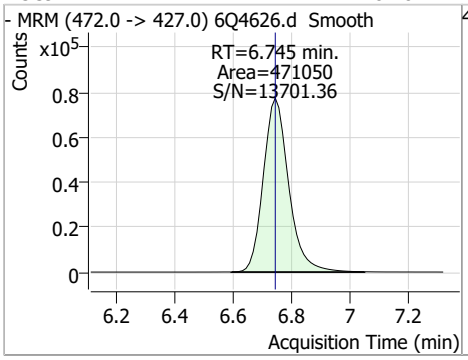


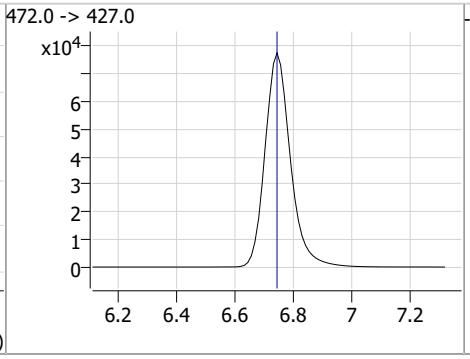


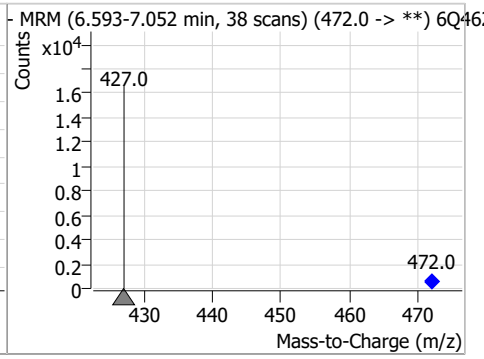




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	18.28	6.74	0.00	471050				

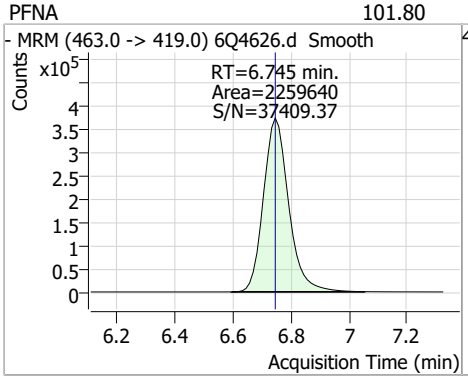


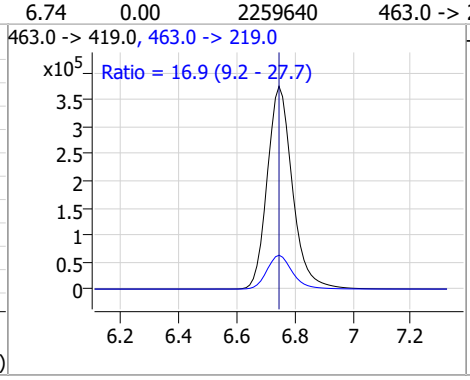


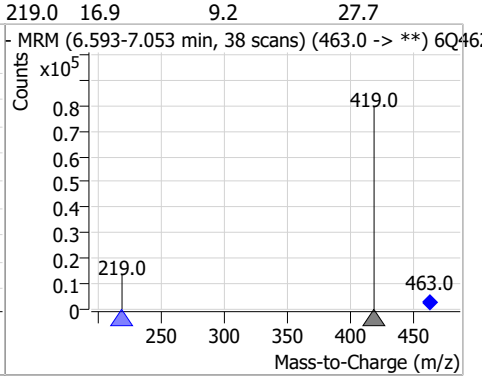


Perfluorinated Compounds by LC/MS/MS

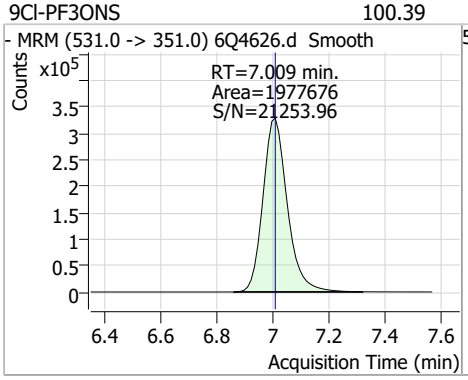
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	101.80	6.74	0.00	2259640	463.0 -> 219.0	16.9	9.2	27.7

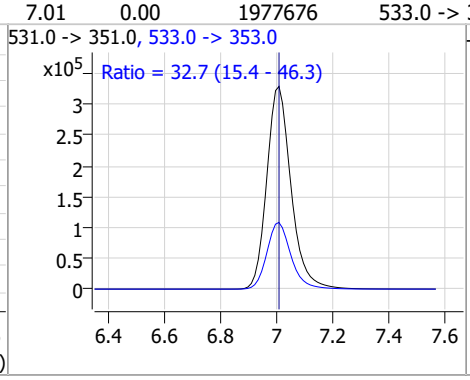


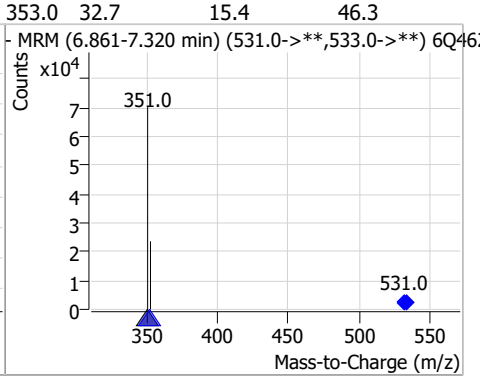




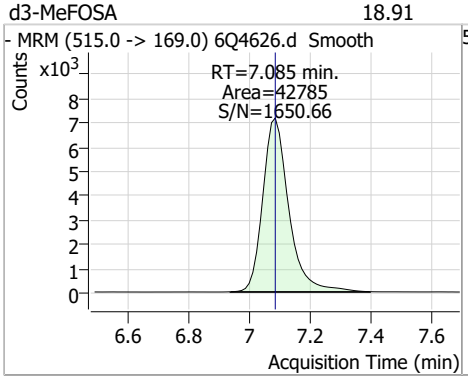
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	100.39	7.01	0.00	1977676	533.0 -> 353.0	32.7	15.4	46.3

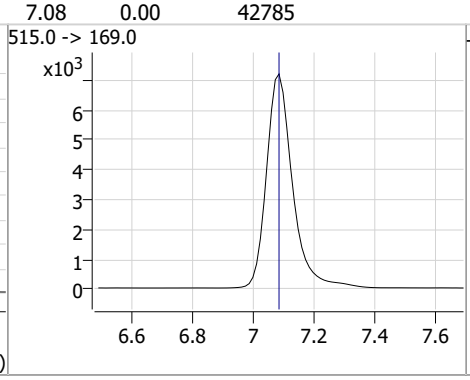


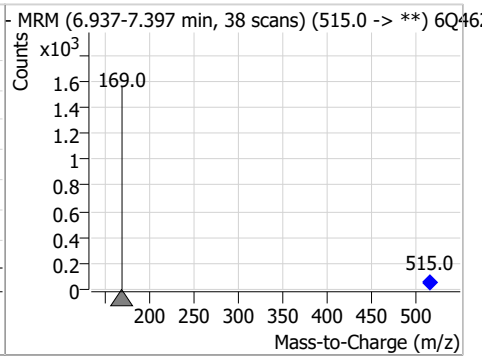




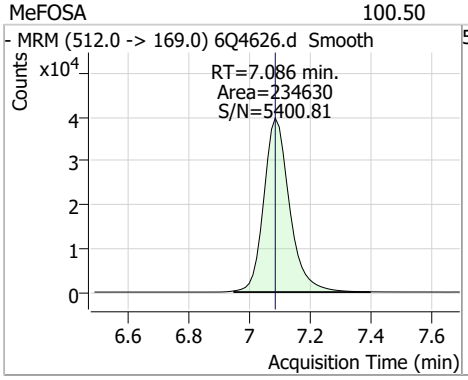
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	18.91	7.08	0.00	42785				

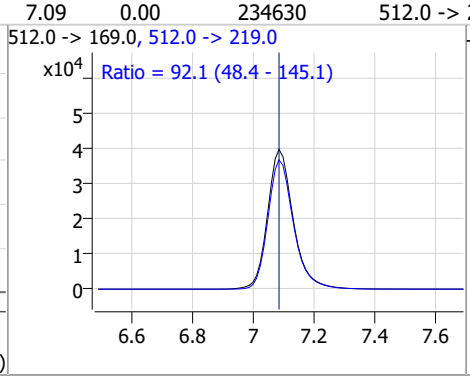


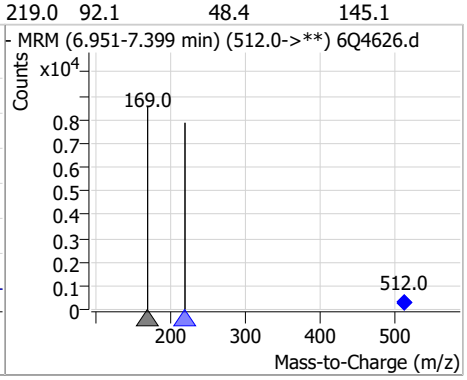




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	100.50	7.09	0.00	234630	512.0 -> 219.0	92.1	48.4	145.1

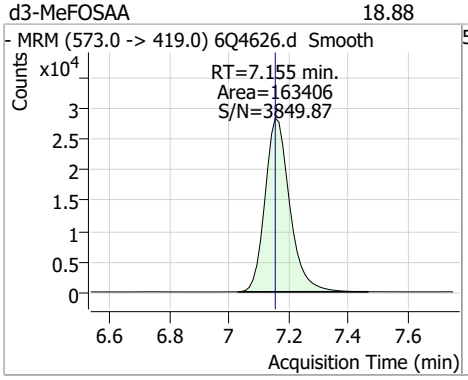


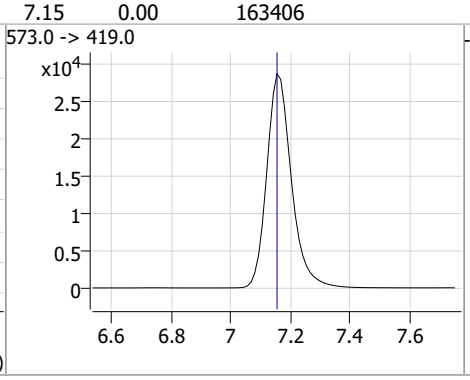


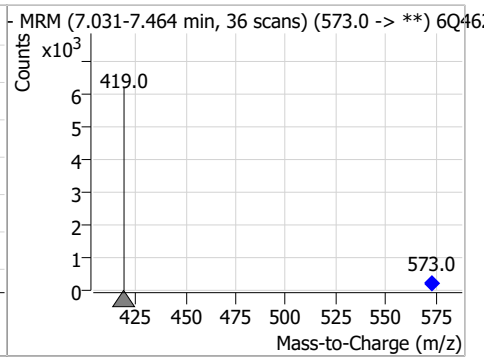


Perfluorinated Compounds by LC/MS/MS

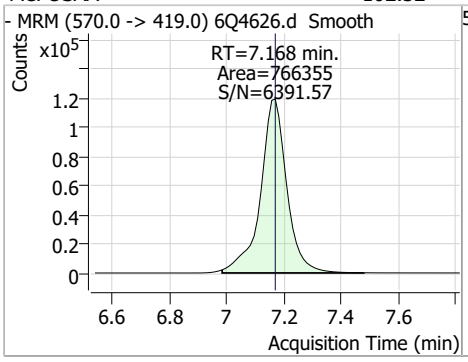
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	18.88	7.15	0.00	163406				

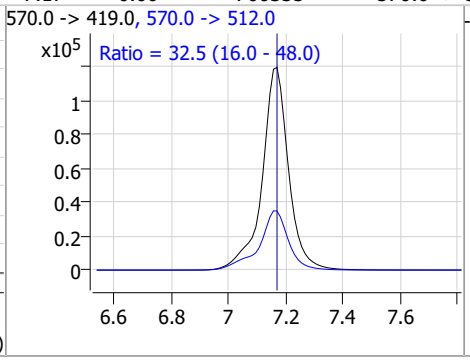


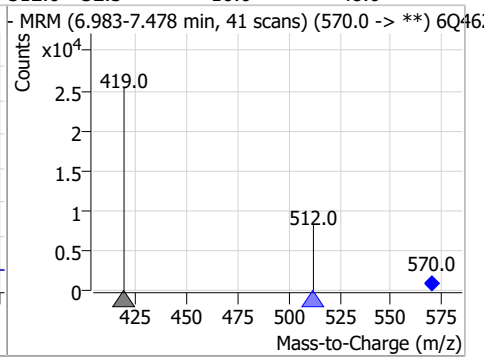




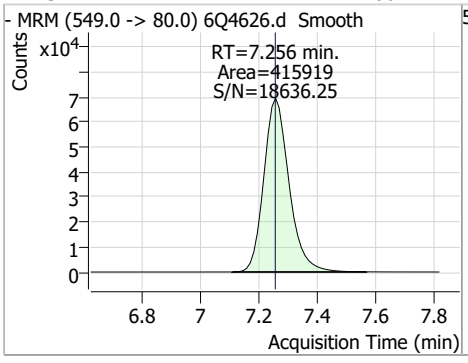
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	102.32	7.17	0.00	766355	570.0 -> 512.0	32.5	16.0	48.0

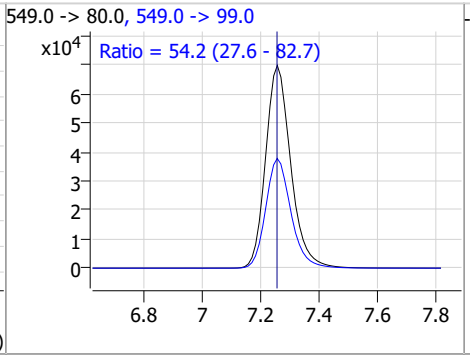


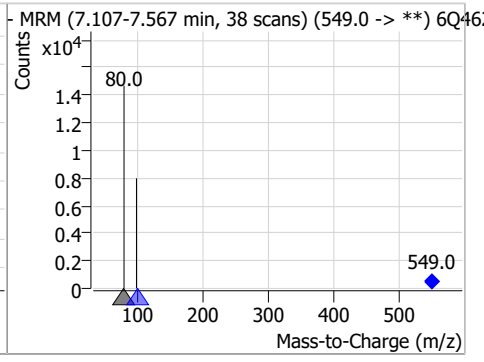




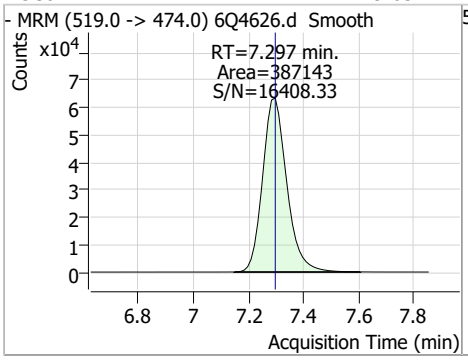
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	100.77	7.26	-0.01	415919	549.0 -> 99.0	54.2	27.6	82.7

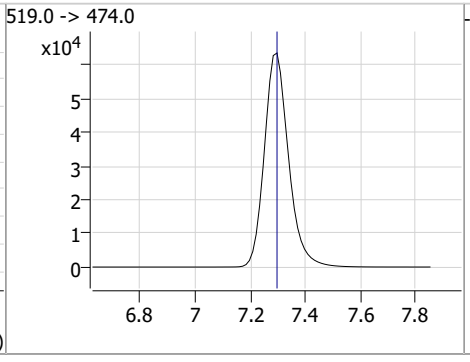


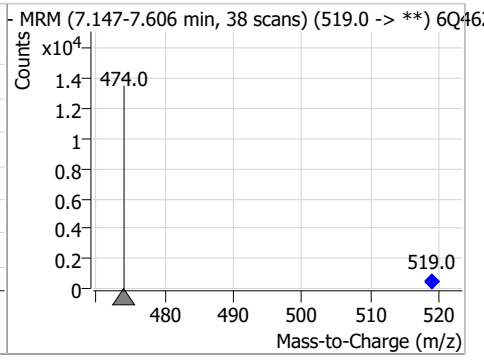




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.03	7.30	0.00	387143				

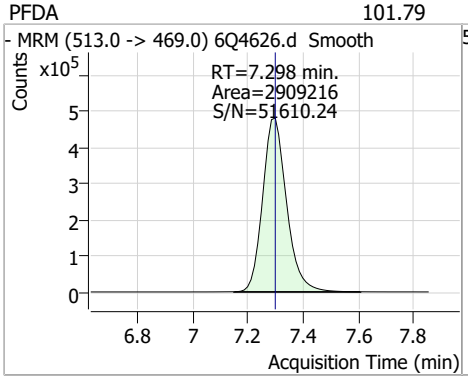


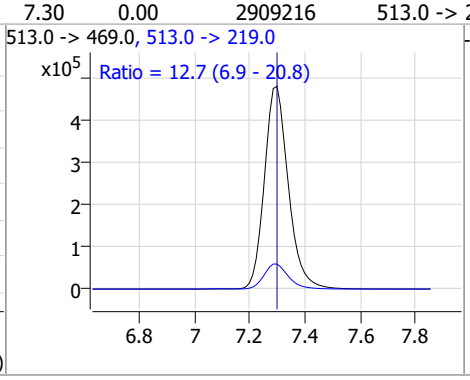


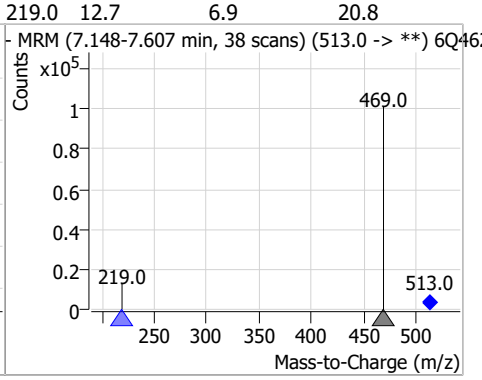


Perfluorinated Compounds by LC/MS/MS

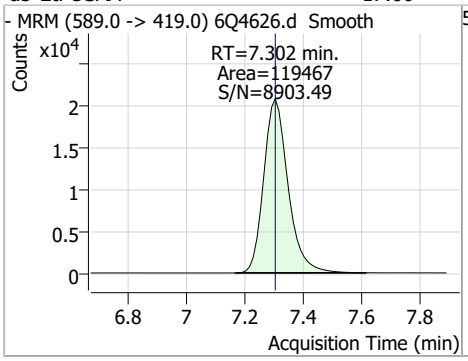
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	101.79	7.30	0.00	2909216	513.0 -> 219.0	12.7	6.9	20.8

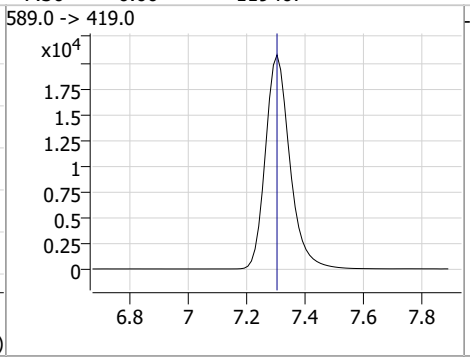


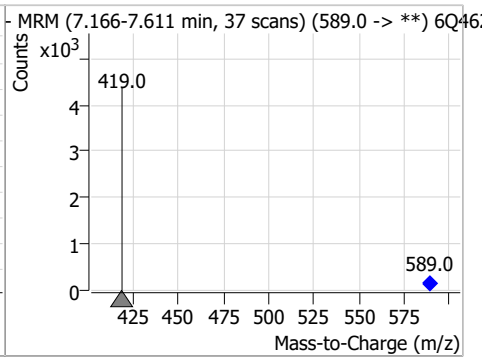




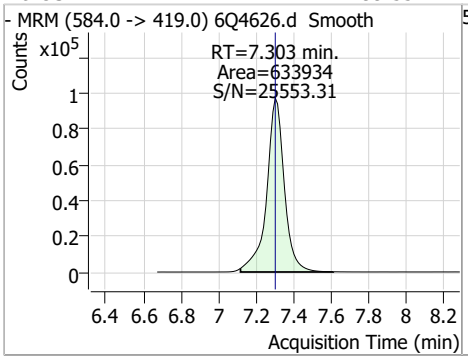
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	17.60	7.30	0.00	119467				

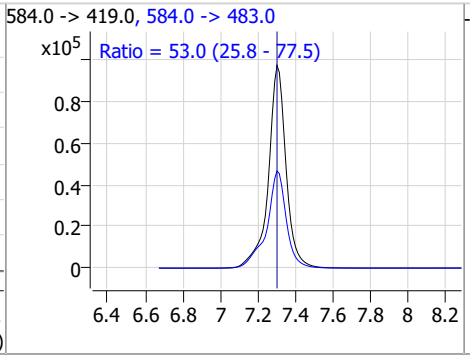


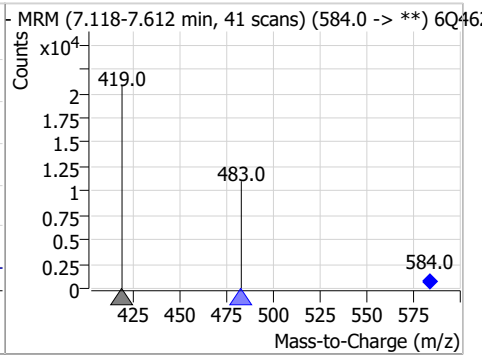




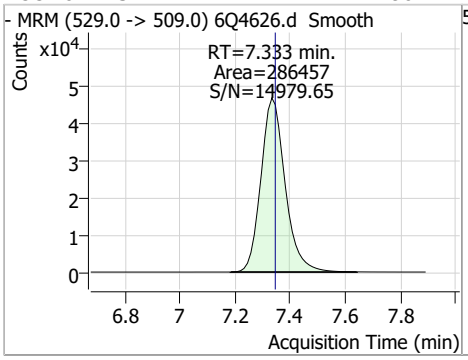
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	99.55	7.30	0.00	633934	584.0 -> 483.0	53.0	25.8	77.5

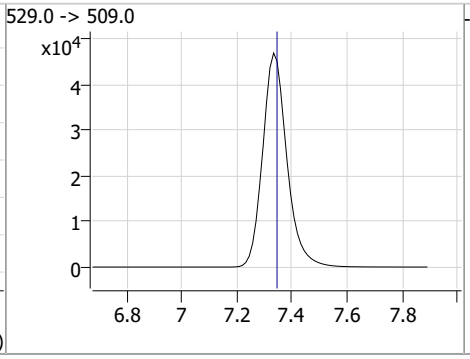


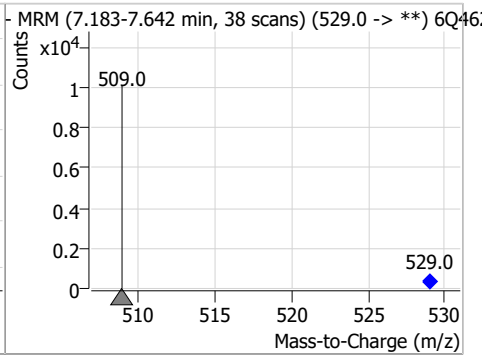




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.98	7.33	-0.01	286457				

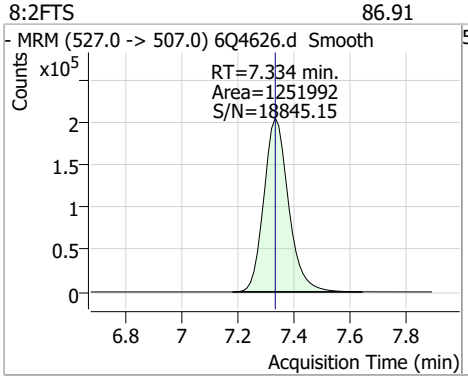


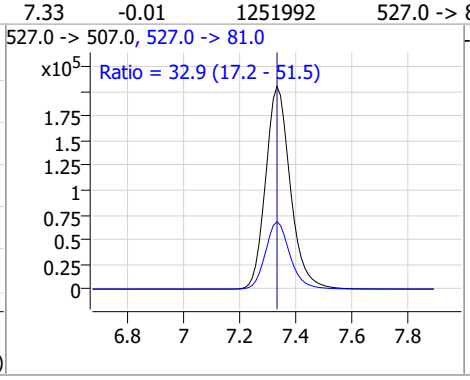


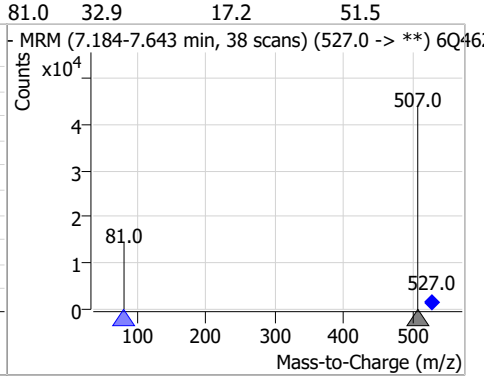


Perfluorinated Compounds by LC/MS/MS

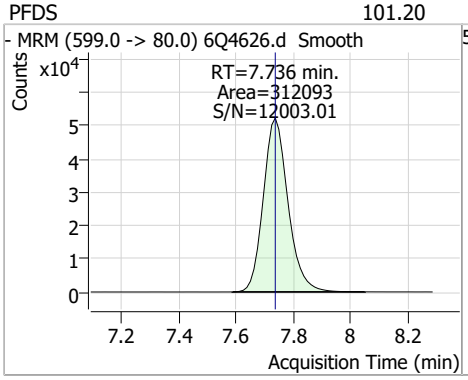
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	86.91	7.33	-0.01	1251992	527.0 -> 81.0	32.9	17.2	51.5

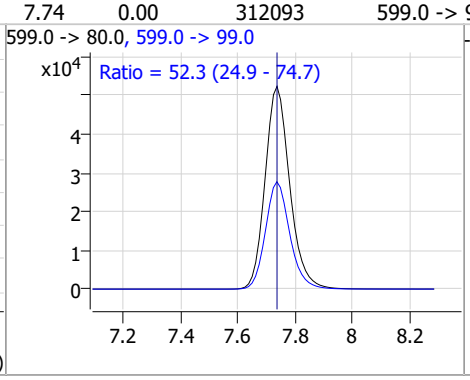


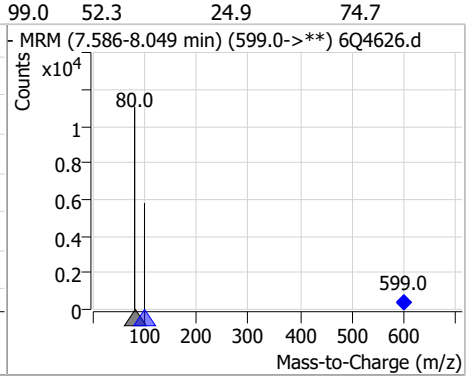




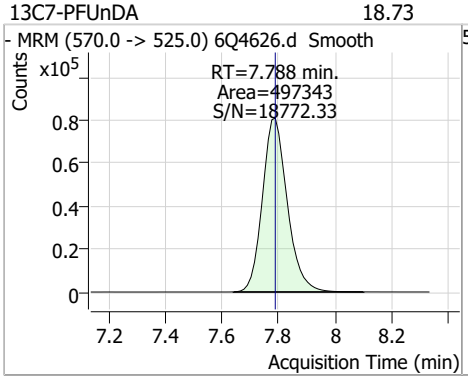
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	101.20	7.74	0.00	312093	599.0 -> 99.0	52.3	24.9	74.7

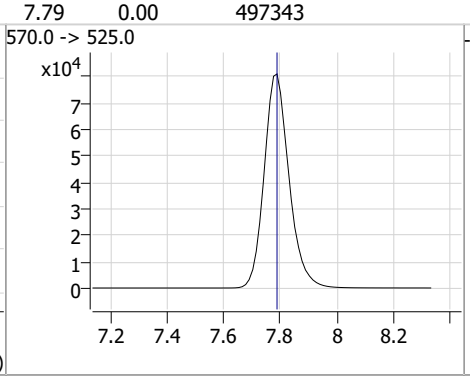


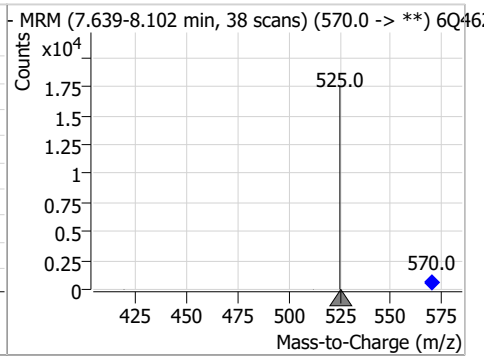




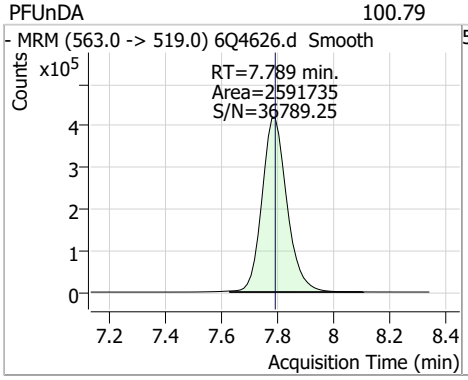
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	18.73	7.79	0.00	497343				

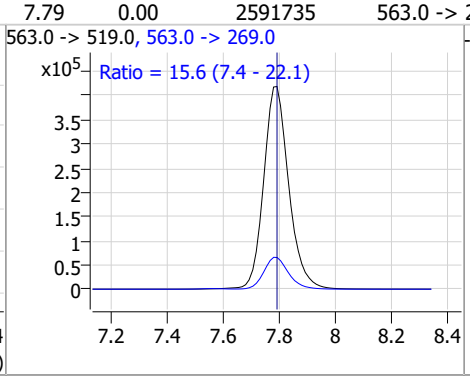


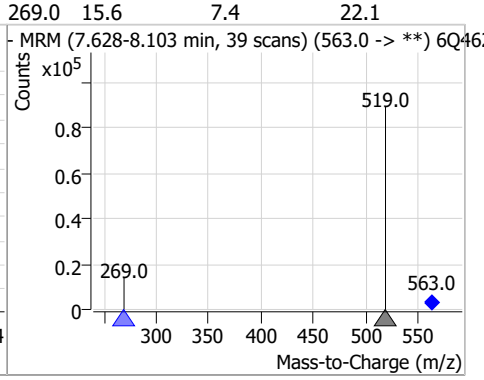




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	100.79	7.79	0.00	2591735	563.0 -> 269.0	15.6	7.4	22.1

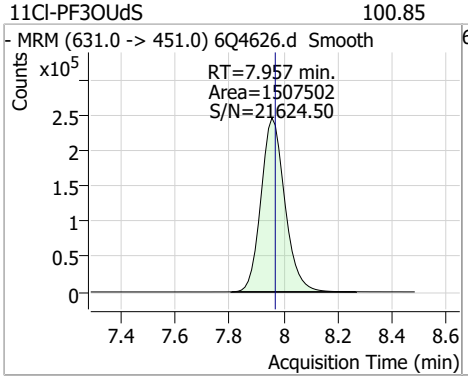


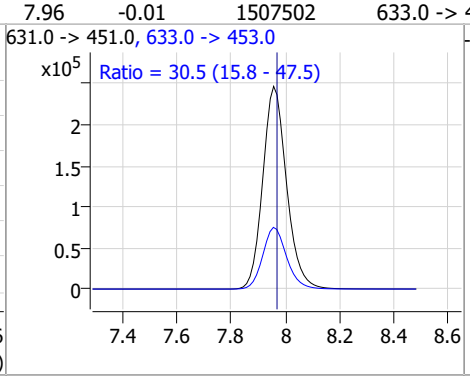


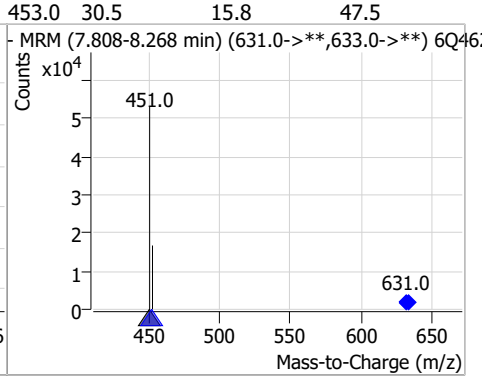


Perfluorinated Compounds by LC/MS/MS

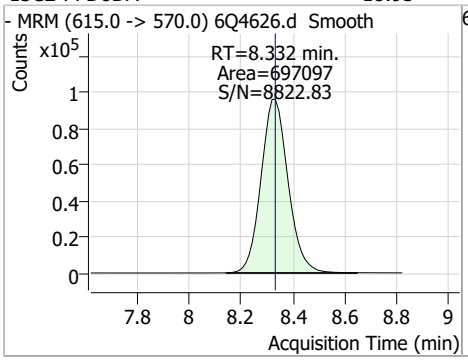
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	100.85	7.96	-0.01	1507502	633.0 -> 453.0	30.5	15.8	47.5

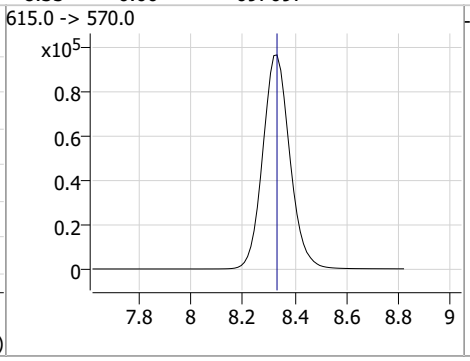


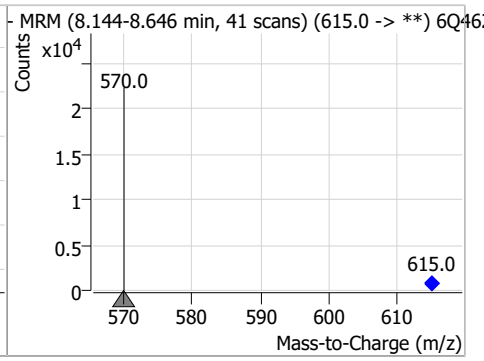




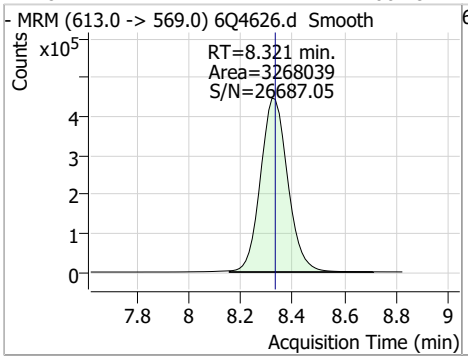
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	18.95	8.33	0.00	697097				

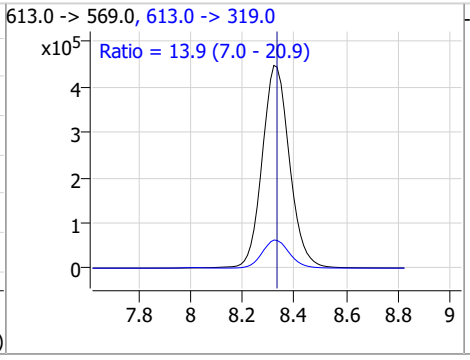


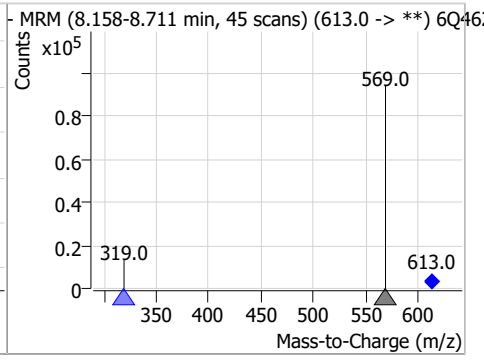




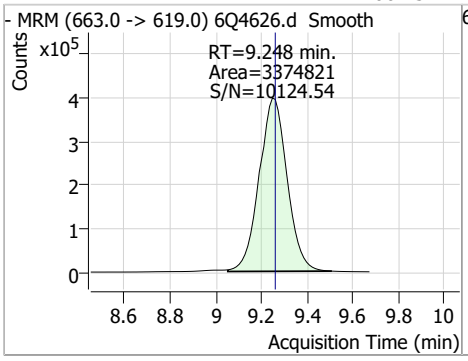
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	100.48	8.32	-0.01	3268039	613.0 -> 319.0	13.9	7.0	20.9

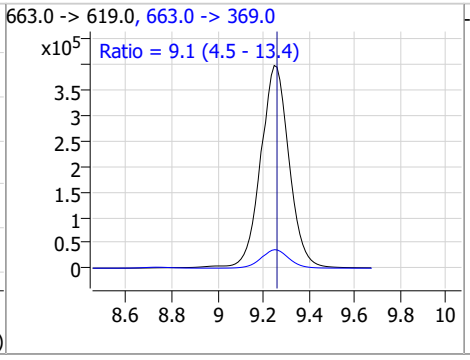


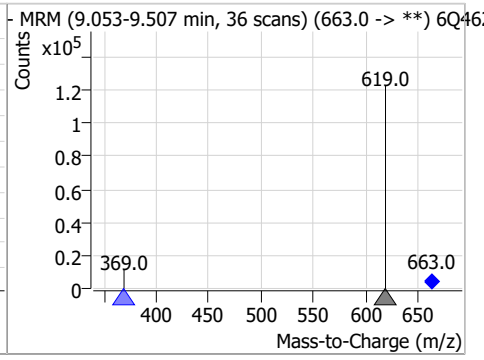




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	100.25	9.25	-0.01	3374821	663.0 -> 369.0	9.1	4.5	13.4

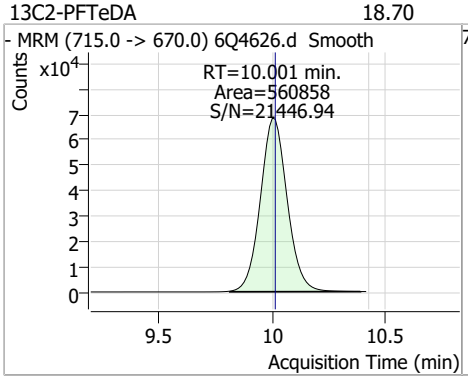


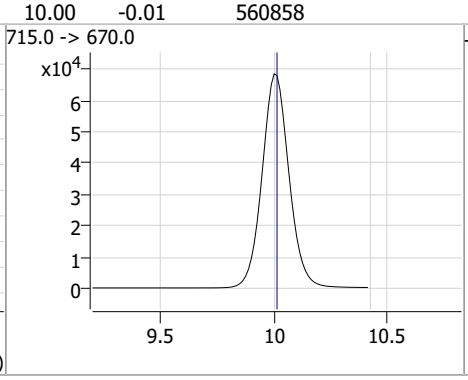


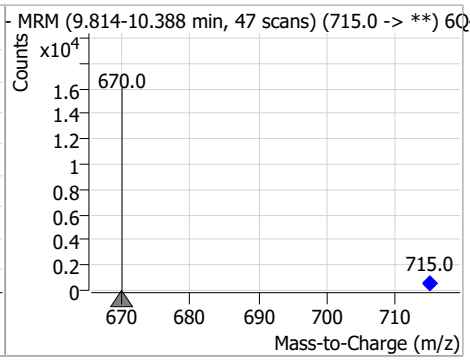


Perfluorinated Compounds by LC/MS/MS

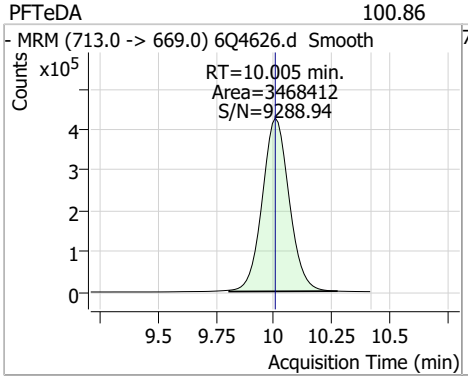
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	18.70	10.00	-0.01	560858				

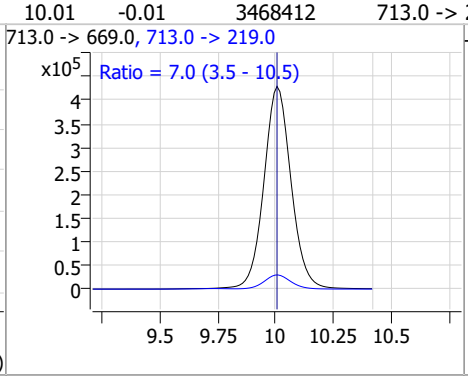


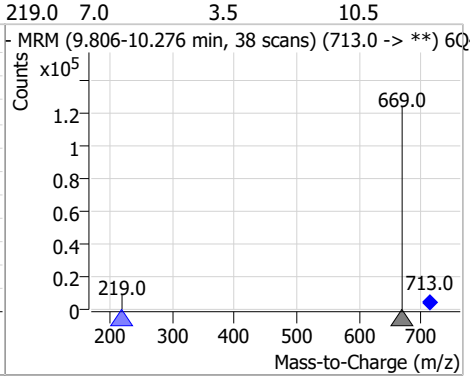




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	100.86	10.01	-0.01	3468412	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-IC85
Lab FileID: 6Q4626.D
Injection Time: 09/14/22 12:36
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4629.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:24:12 PM
Sample Name : icv85-20
Vial : P1-B1
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	82260	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	146369	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	217898	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	252827	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	445110	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	526019	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	419259	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	539281	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	755127	20.00	µg/L	0.000
M2-PFTeDA	10.014	715.0 -> 670.0	617255	20.00	µg/L	0.000
M8-FOSA	6.654	506.0 -> 78.0	211792	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31661	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	28564	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	44593	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	271358	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	348234	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	272606	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	177924	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5649	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	49059	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	148712	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	271358	20.09	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.5%		
13C2-6:2FTS	6.136	429.0 -> 409.0	348234	20.40	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C2-8:2FTS	7.333	529.0 -> 509.0	272606	20.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C2-PFDoDA	8.332	615.0 -> 570.0	755127	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-PFTeDA	10.014	715.0 -> 670.0	617255	20.58	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C3-PFBS	3.635	302.0 -> 99.0	31661	20.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C3-PFHxS	5.475	402.0 -> 99.0	28564	20.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFBA	1.949	217.0 -> 172.0	82260	20.67	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C4-PFHpA	5.445	367.0 -> 322.0	252827	20.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C5-PFHxA	4.573	318.0 -> 273.0	217898	20.39	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C5-PFPeA	3.418	268.0 -> 223.0	146369	20.88	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C6-PFDA	7.297	519.0 -> 474.0	419259	20.61	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

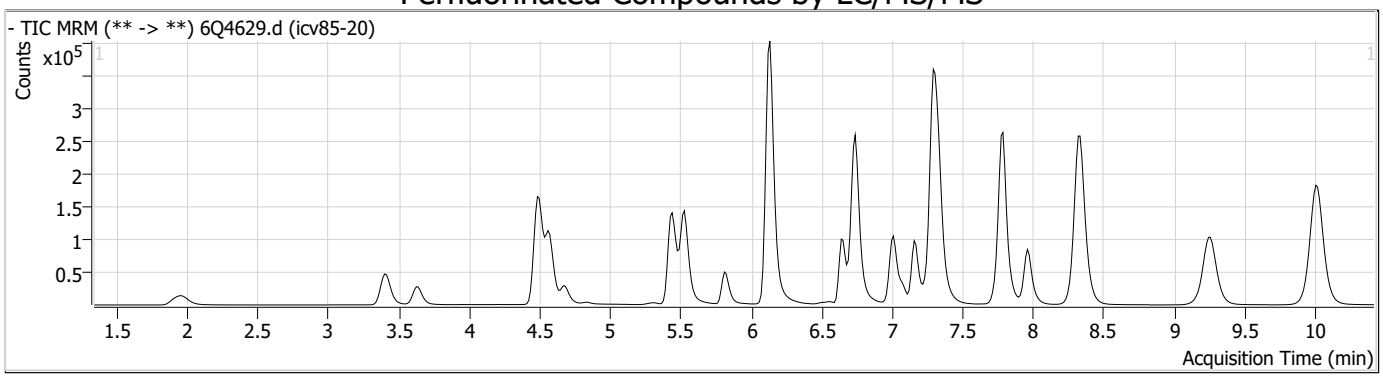
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.0%		
13C7-PFUnDA	7.788	570.0 -> 525.0	539281	20.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C8-FOSA	6.654	506.0 -> 78.0	211792	21.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.3%		
13C8-PFOA	6.138	421.0 -> 376.0	445110	20.98 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C8-PFOS	6.730	507.0 -> 99.0	44593	21.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C9-PFNA	6.745	472.0 -> 427.0	526019	20.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
d3-MeFOSAA	7.155	573.0 -> 419.0	177924	20.56 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5670	21.33 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.7%		
d3-MeFOSA	7.085	515.0 -> 169.0	49059	21.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.4%		
d5-EtFOSAA	7.302	589.0 -> 419.0	148806	21.92 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	235432	16.05 µg/L		98
		327.0 -> 81.0	73881			
6:2FTS	6.137	427.0 -> 407.0	280483	15.90 µg/L		100
		427.0 -> 81.0	76930			
8:2FTS	7.334	527.0 -> 507.0	221916	16.19 µg/L		100
		527.0 -> 81.0	75693			
EtFOSAA	7.303	584.0 -> 419.0	122057	15.40 µg/L		96
		584.0 -> 483.0	66417			
FOSA	6.656	498.0 -> 78.0	170535	16.05 µg/L		99
		498.0 -> 478.0	7268			
MeFOSAA	7.168	570.0 -> 419.0	143607	17.61 µg/L		97
		570.0 -> 512.0	48187			
PFBA	1.955	213.0 -> 169.0	31030	17.28 µg/L		100
PFBS	3.627	299.0 -> 80.0	75008	14.25 µg/L		99
		299.0 -> 99.0	27815			
PFDA	7.298	513.0 -> 469.0	501961	16.22 µg/L		100
		513.0 -> 219.0	69909			
PFDoDA	8.334	613.0 -> 569.0	647211	18.37 µg/L		99
		613.0 -> 319.0	92220			
PFDS	7.736	599.0 -> 80.0	54203	16.21 µg/L		95
		599.0 -> 99.0	28683			
PFHpA	5.446	363.0 -> 319.0	278374	16.93 µg/L		99
		363.0 -> 169.0	42493			
PFHpS	6.136	449.0 -> 80.0	67770	17.41 µg/L		97
		449.0 -> 99.0	34309			
PFHxA	4.574	313.0 -> 269.0	183277	15.99 µg/L		100
		313.0 -> 119.0	4614			
PFHxS	5.477	399.0 -> 80.0	61577	15.04 µg/L	m	99
		399.0 -> 99.0	30293			
PFNA	6.745	463.0 -> 419.0	381001	15.37 µg/L		100
		463.0 -> 219.0	70662			
PFNS	7.256	549.0 -> 80.0	74238	16.38 µg/L		94
		549.0 -> 99.0	37746			
PFOA	6.138	413.0 -> 369.0	412169	17.14 µg/L		99
		413.0 -> 169.0	65634			
PFOS	6.731	499.0 -> 80.0	70184	16.98 µg/L	m	95

Perfluorinated Compounds by LC/MS/MS

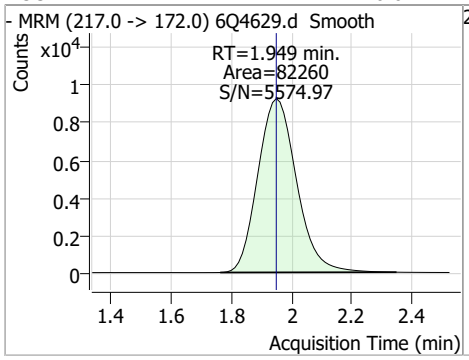
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
		499.0 -> 99.0	35361				
PFPeA	3.408	263.0 -> 219.0	102715	16.66	µg/L		100
PFPeS	4.681	349.0 -> 80.0	67561	15.41	µg/L		99
		349.0 -> 99.0	31329				
PFTeDA	10.005	713.0 -> 669.0	619656	16.37	µg/L		99
		713.0 -> 219.0	42277				
PFTrDA	9.260	663.0 -> 619.0	691193	18.95	µg/L		100
		663.0 -> 369.0	61641				
PFUnDA	7.789	563.0 -> 519.0	496415	17.80	µg/L		98
		563.0 -> 269.0	76756				
11Cl-PF3OUdS	7.957	631.0 -> 451.0	269817	16.66	µg/L		99
		633.0 -> 453.0	83450				
9Cl-PF3ONS	7.009	531.0 -> 351.0	324999	15.23	µg/L		95
		533.0 -> 353.0	108874				
ADONA	5.532	377.0 -> 251.0	441576	16.67	µg/L		99
		377.0 -> 85.0	107197				
HFPO-DA	4.840	285.0 -> 169.0	4001	14.98	µg/L		92
		285.0 -> 185.0	698				
MeFOSA	7.162	512.0 -> 169.0	0		µg/L	m	1
		512.0 -> 219.0	0				
4-PFECHS	-	461.0 -> 381.0	-	N.D.			
		461.0 -> 99.0					
FBSA	4.514	298.0 -> 78.0	212833	20.05	µg/L		100
		298.0 -> 64.0	14170				
FHxSA	5.828	398.0 -> 78.0	186975	19.03	µg/L		100
		398.0 -> 64.0	6585				

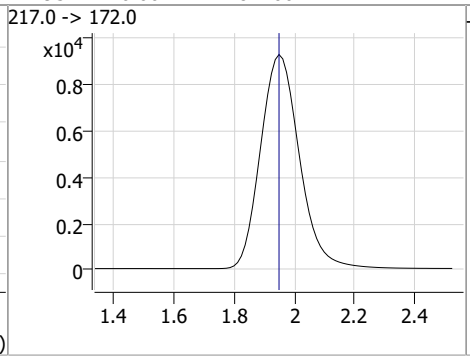
 # = Qualifier out of range, m = manually integrated, + = Area summed

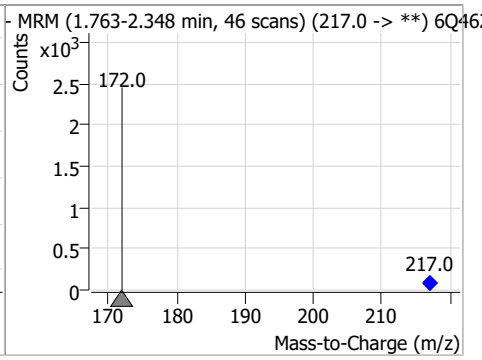
Perfluorinated Compounds by LC/MS/MS



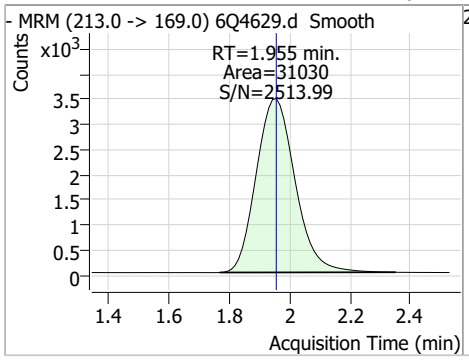
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.67	1.95	0.00	82260				

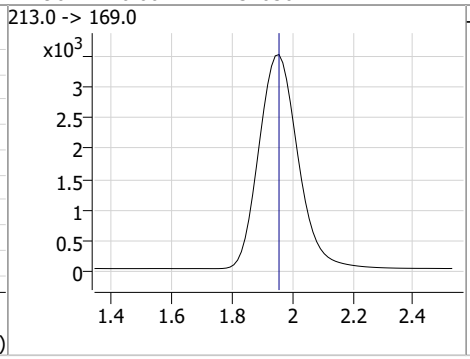


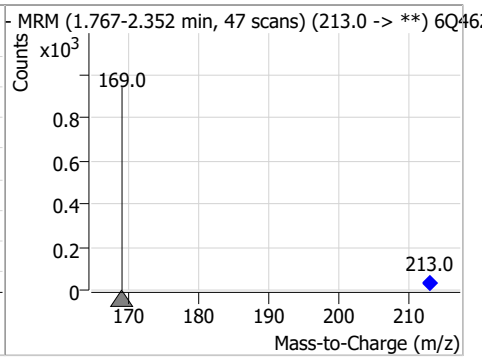




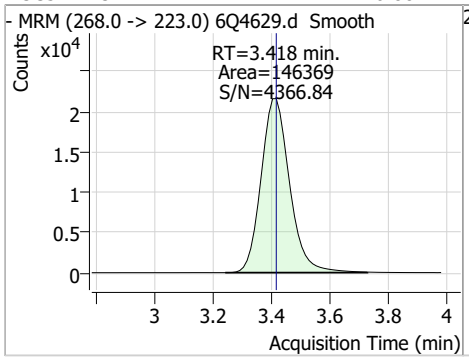
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.28	1.96	0.00	31030				

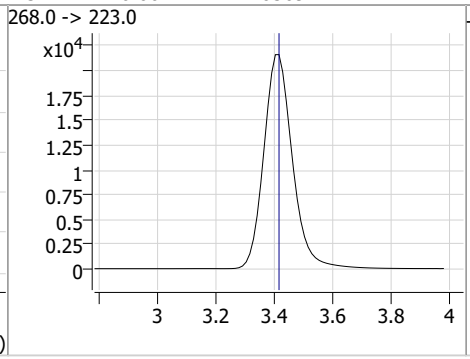


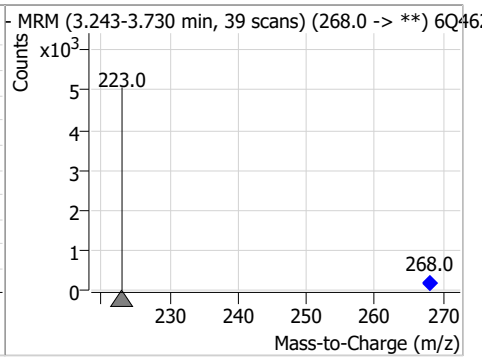




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.88	3.42	0.00	146369				

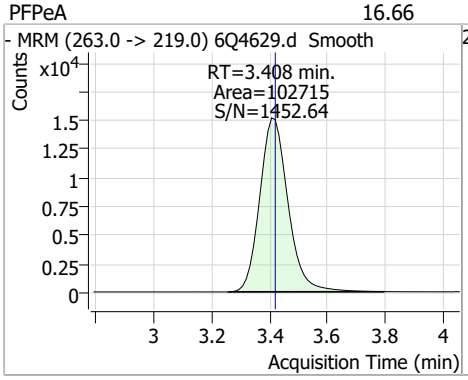


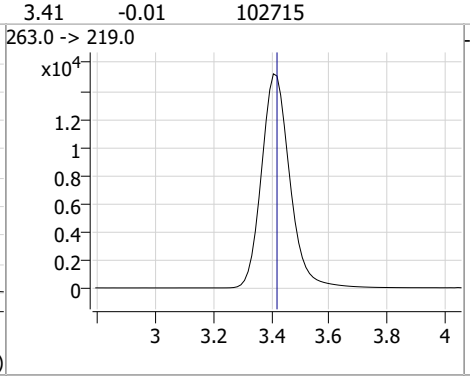


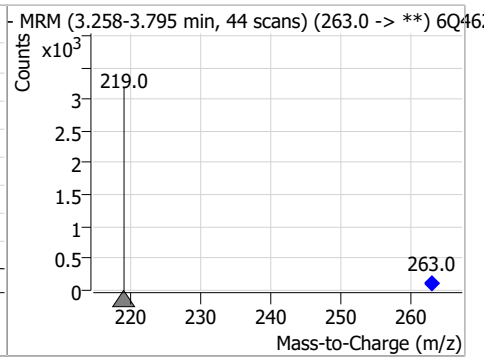


Perfluorinated Compounds by LC/MS/MS

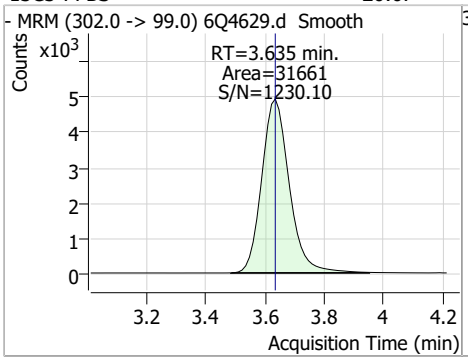
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.66	3.41	-0.01	102715				

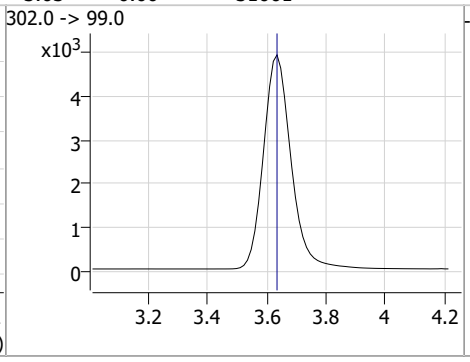


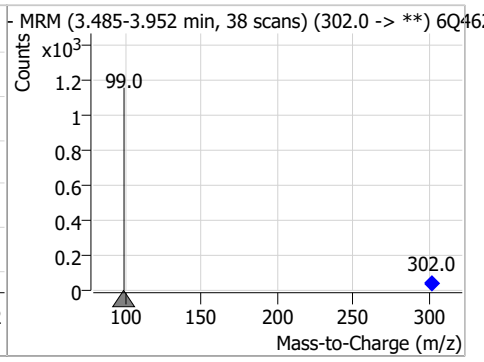




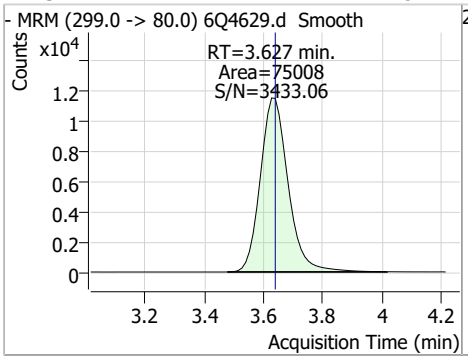
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.67	3.63	0.00	31661				

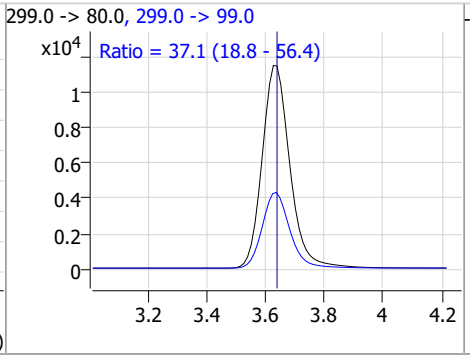


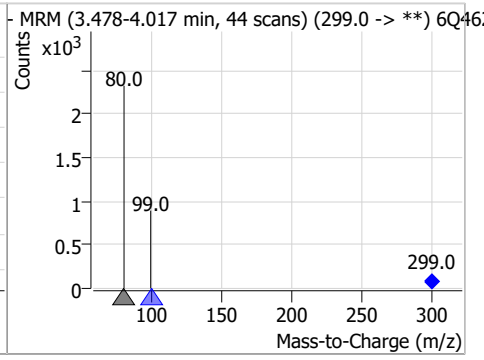




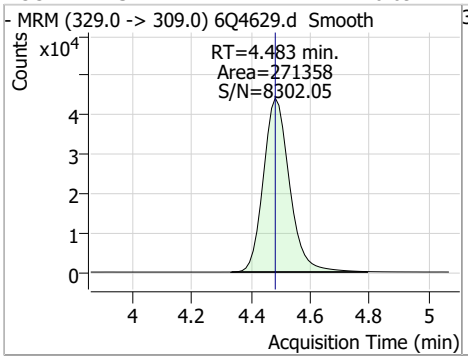
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	14.25	3.63	-0.01	75008	299.0 -> 99.0	37.1	18.8	56.4

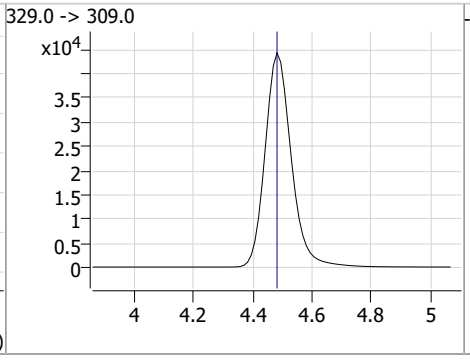


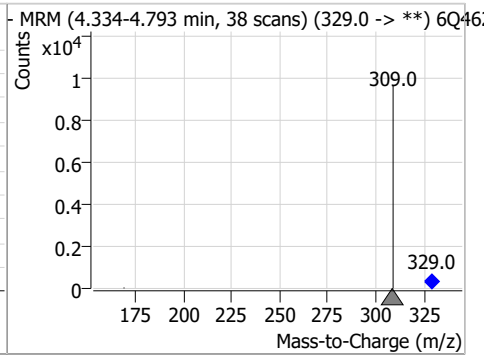




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.09	4.48	0.00	271358				

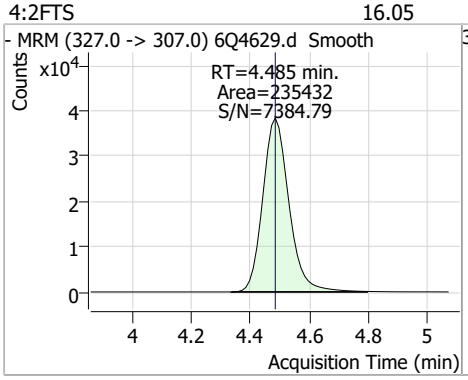


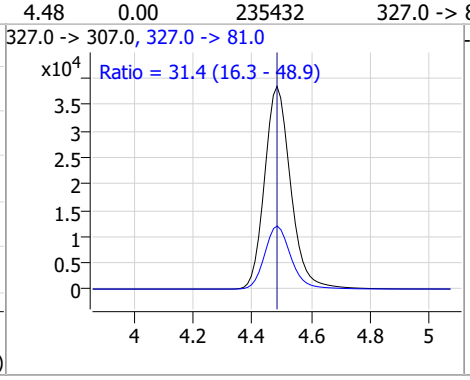


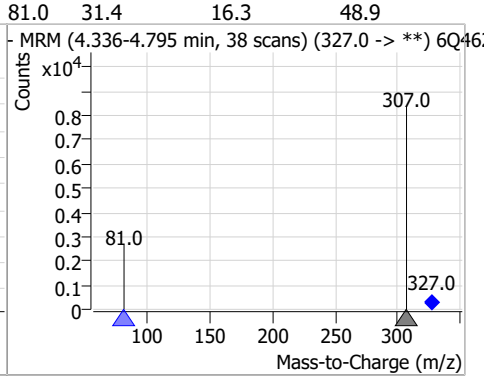


Perfluorinated Compounds by LC/MS/MS

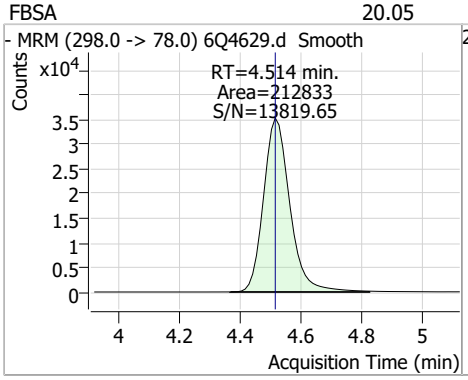
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	16.05	4.48	0.00	235432	327.0 -> 81.0	31.4	16.3	48.9

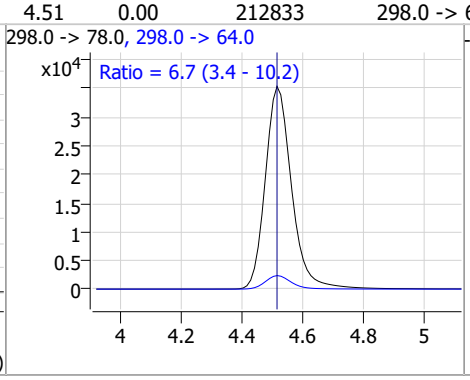


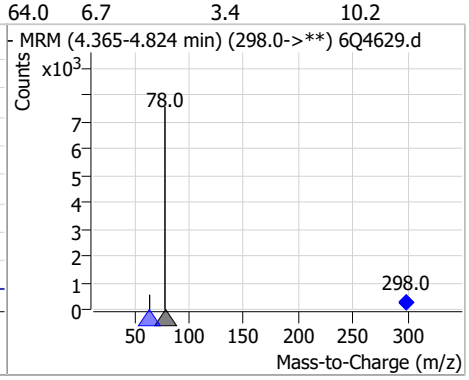




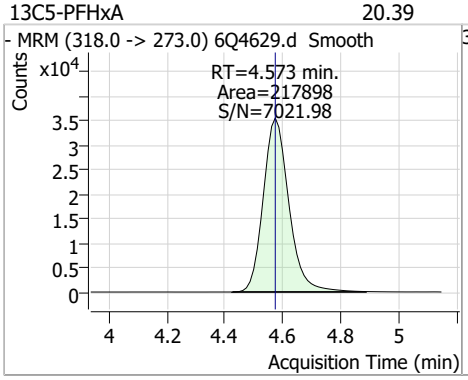
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.05	4.51	0.00	212833	298.0 -> 64.0	6.7	3.4	10.2

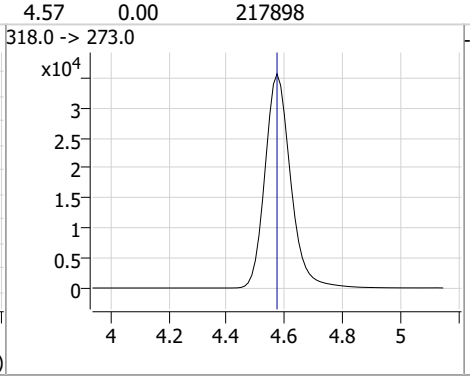


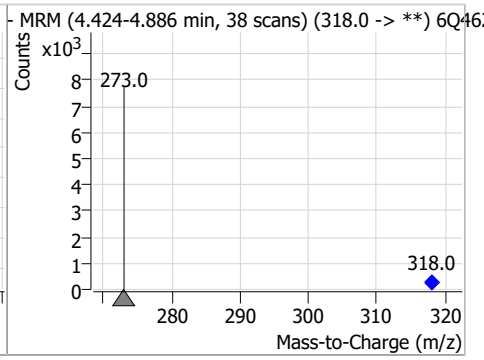




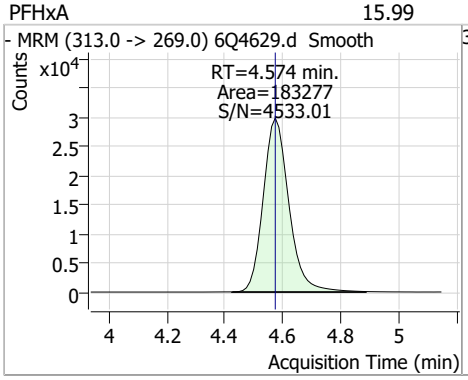
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.39	4.57	0.00	217898				

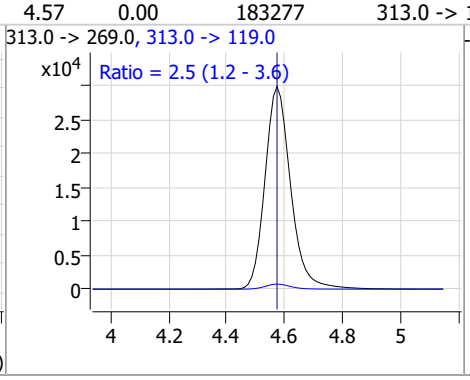


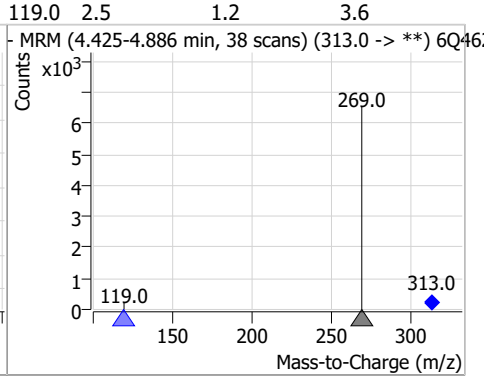




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.99	4.57	0.00	183277	313.0 -> 119.0	2.5	1.2	3.6

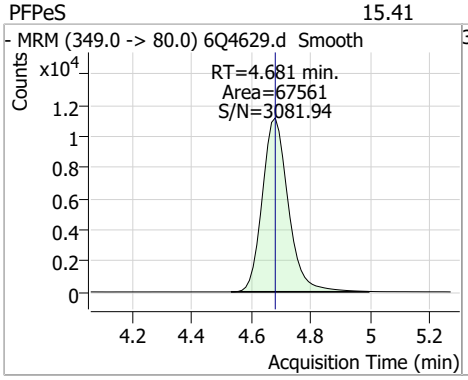


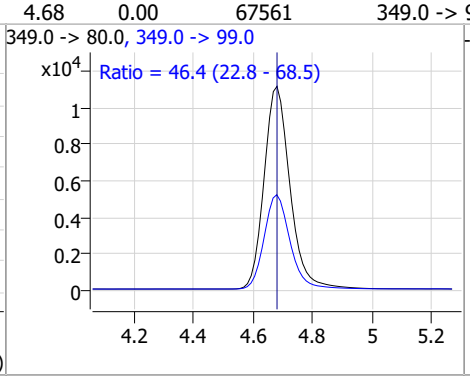


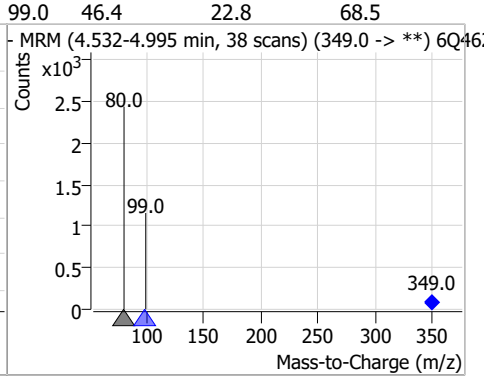


Perfluorinated Compounds by LC/MS/MS

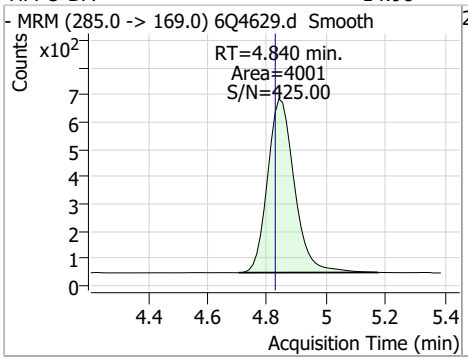
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	15.41	4.68	0.00	67561	349.0 -> 99.0	46.4	22.8	68.5

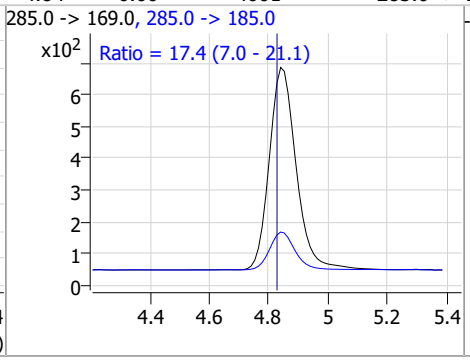


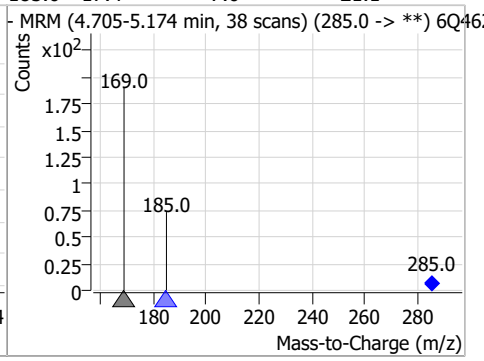




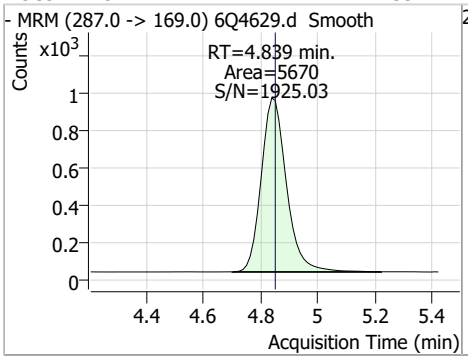
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	14.98	4.84	0.00	4001	285.0 -> 185.0	17.4	7.0	21.1

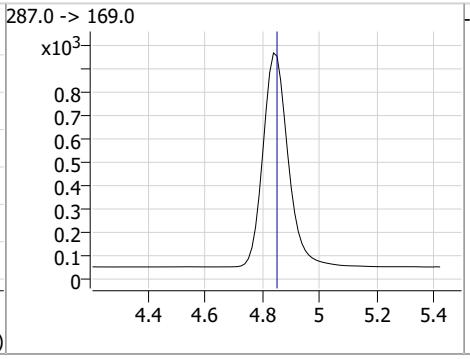


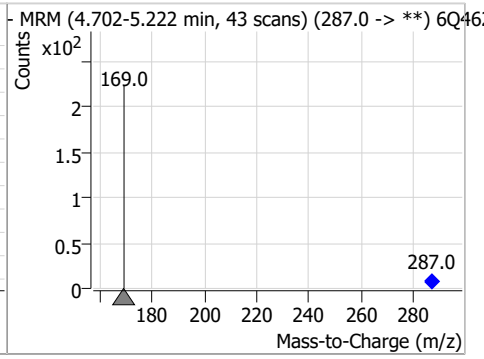




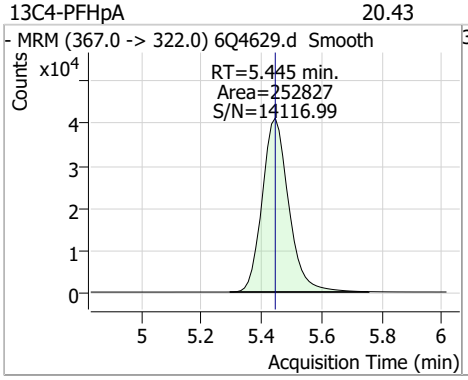
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.33	4.84	-0.01	5670				

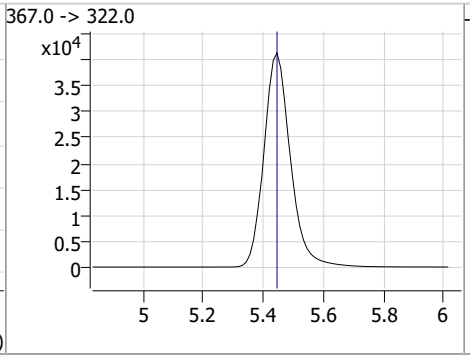


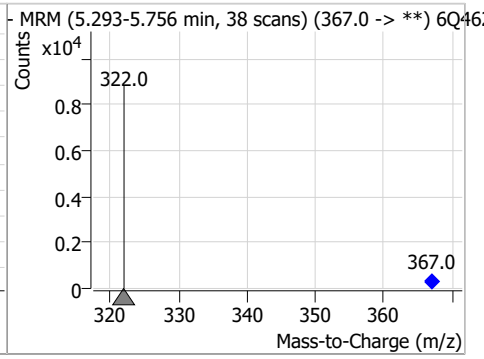




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.43	5.45	0.00	252827				

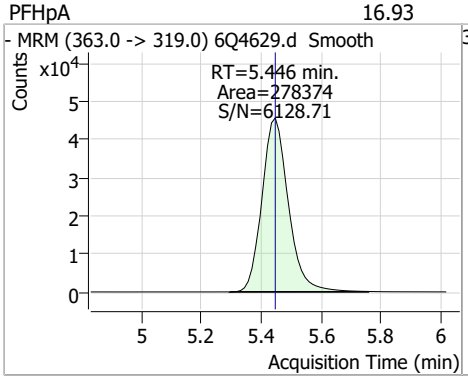


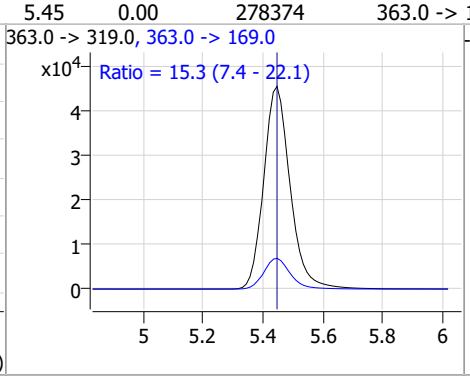


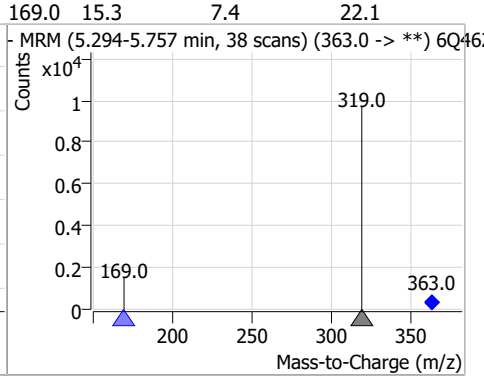


Perfluorinated Compounds by LC/MS/MS

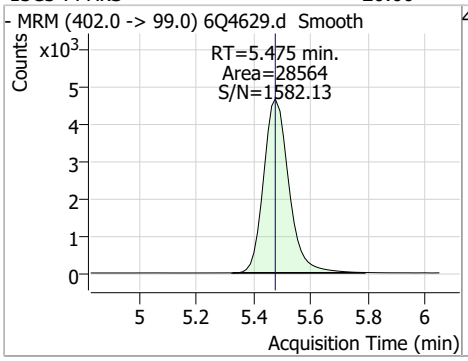
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	16.93	5.45	0.00	278374	363.0 -> 169.0	15.3	7.4	22.1

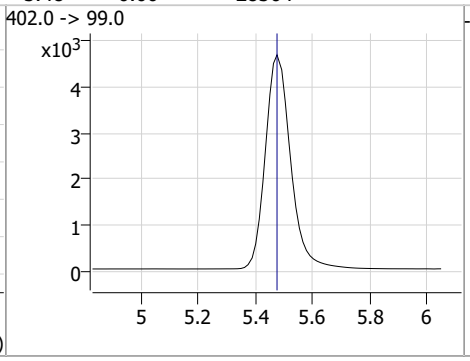


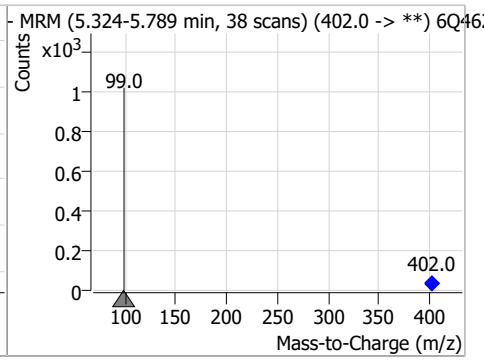




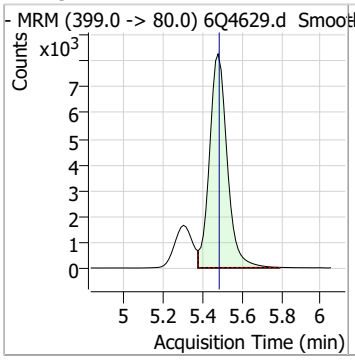
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.66	5.48	0.00	28564				

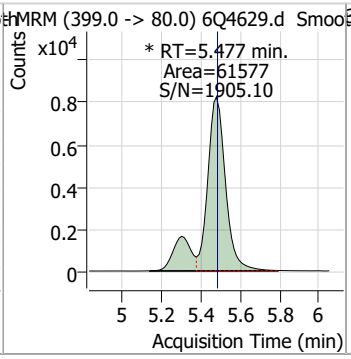


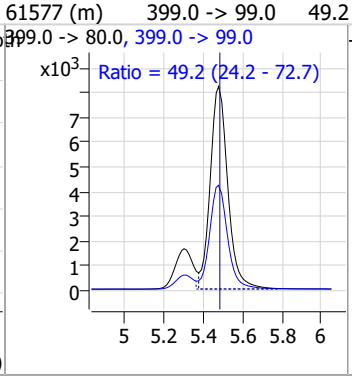


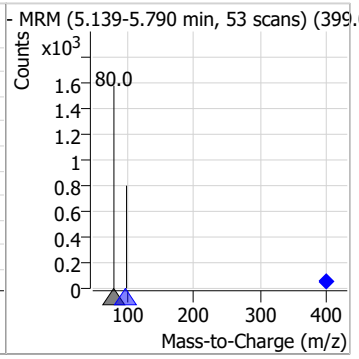


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	15.04	5.48	0.00	61577 (m)	399.0 -> 99.0	49.2	24.2	72.7

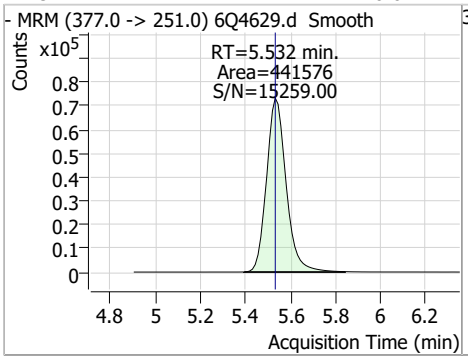


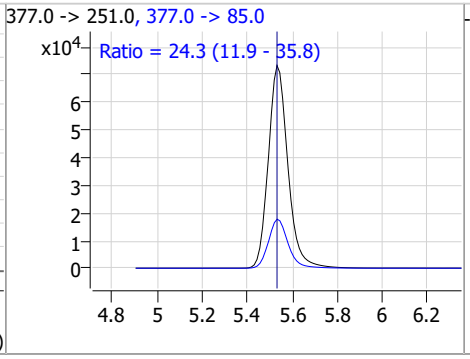


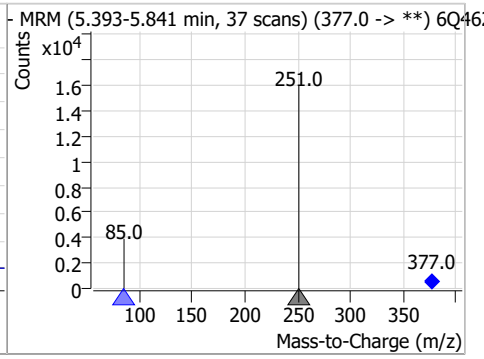




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	16.67	5.53	0.00	441576	377.0 -> 85.0	24.3	11.9	35.8

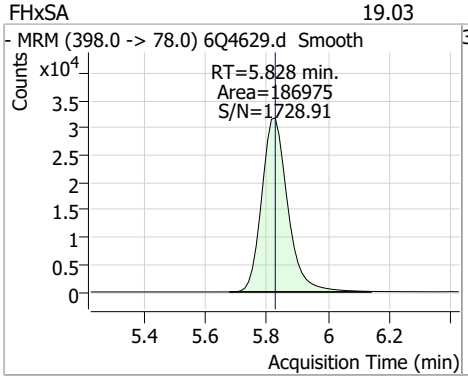


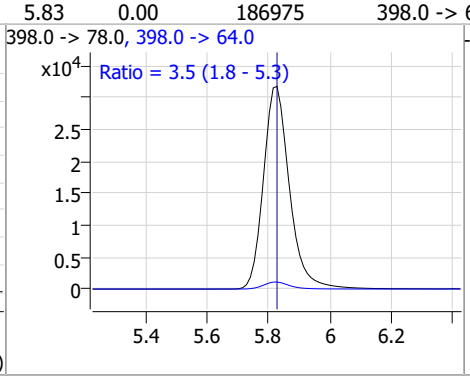


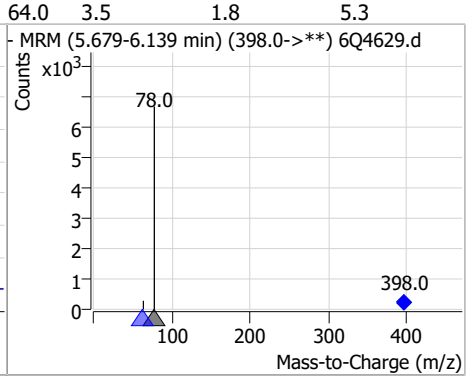


Perfluorinated Compounds by LC/MS/MS

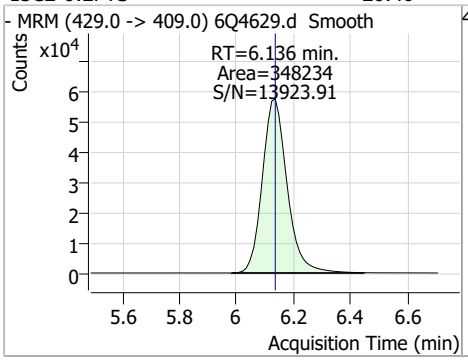
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.03	5.83	0.00	186975	398.0 -> 64.0	3.5	1.8	5.3

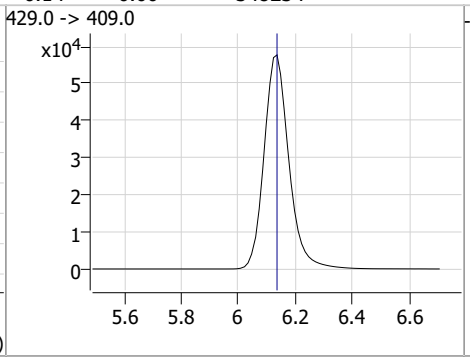


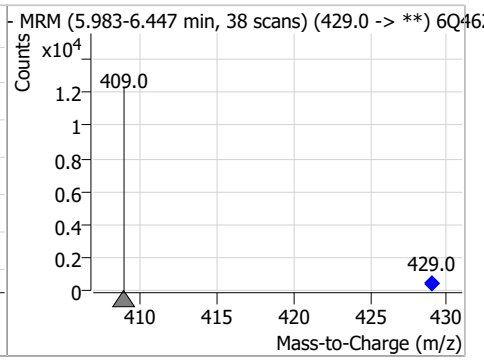




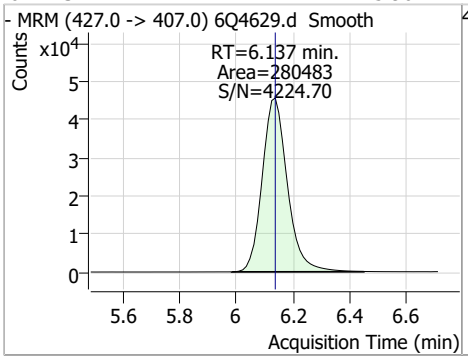
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.40	6.14	0.00	348234				

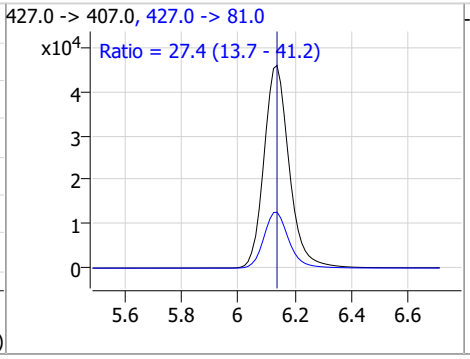


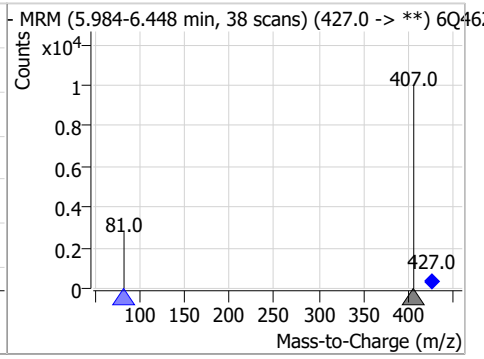




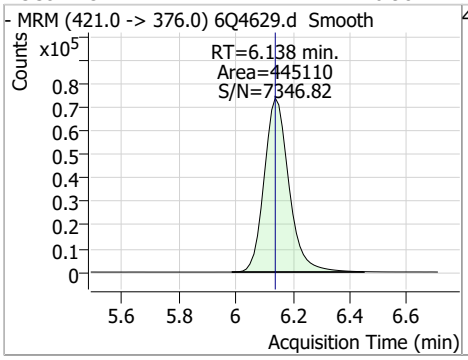
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	15.90	6.14	0.00	280483	427.0 -> 81.0	27.4	13.7	41.2

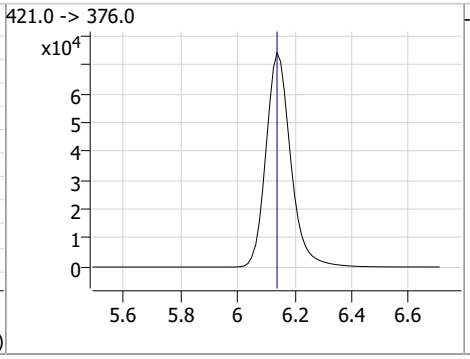


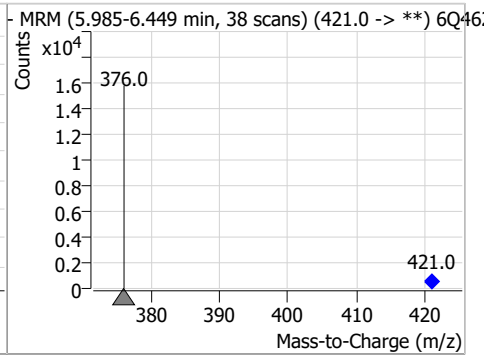




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.98	6.14	0.00	445110				

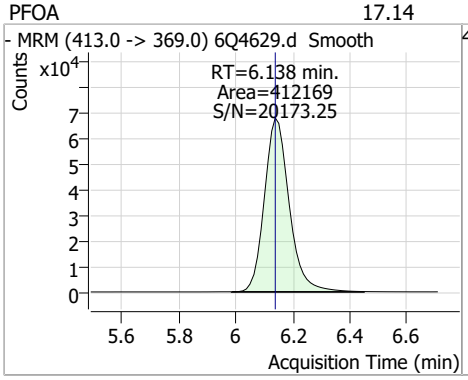


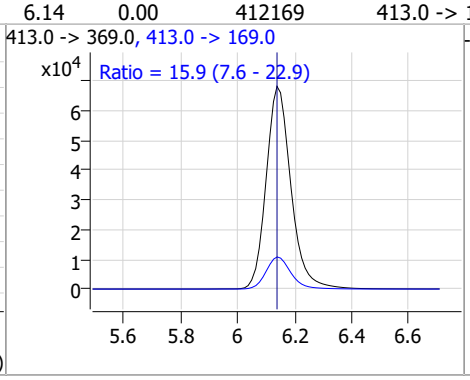


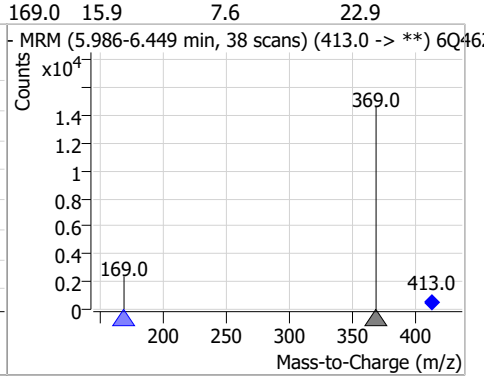


Perfluorinated Compounds by LC/MS/MS

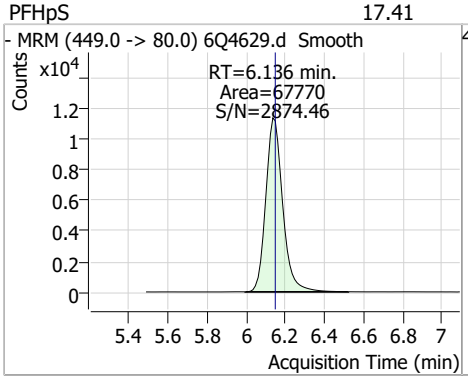
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.14	6.14	0.00	412169	413.0 -> 169.0	15.9	7.6	22.9

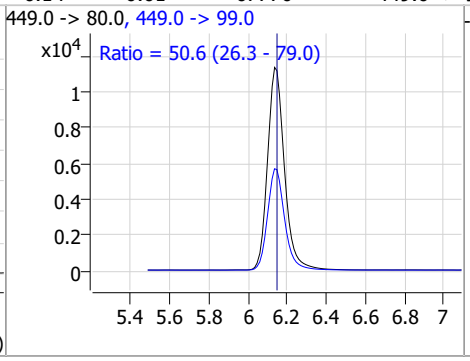


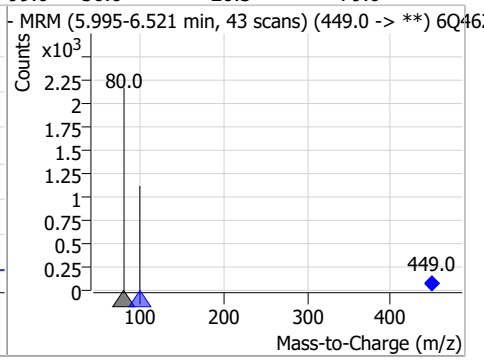




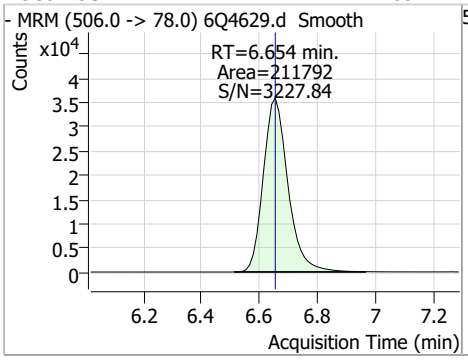
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	17.41	6.14	-0.01	67770	449.0 -> 99.0	50.6	26.3	79.0

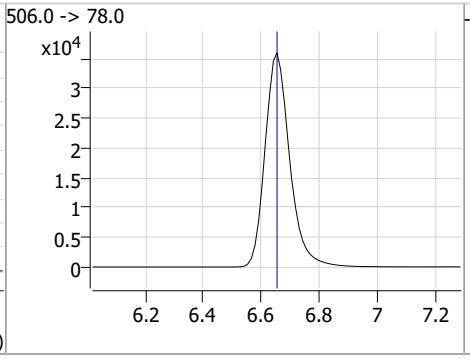


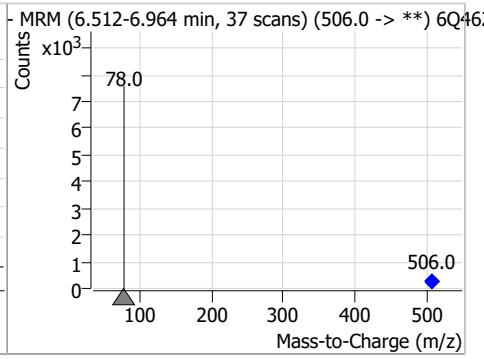




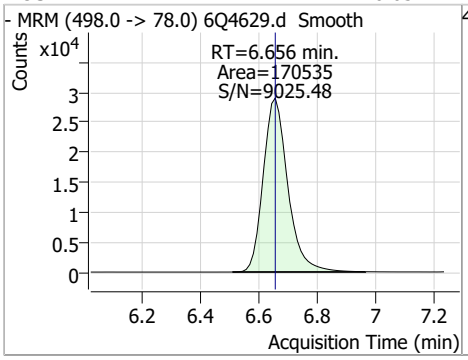
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.65	6.65	0.00	211792				

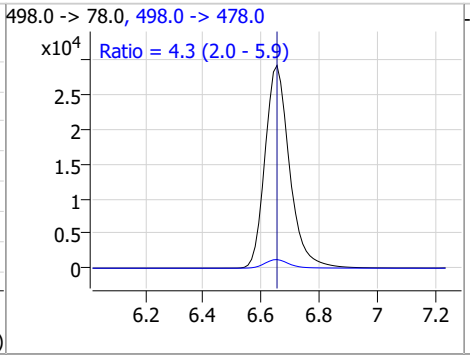


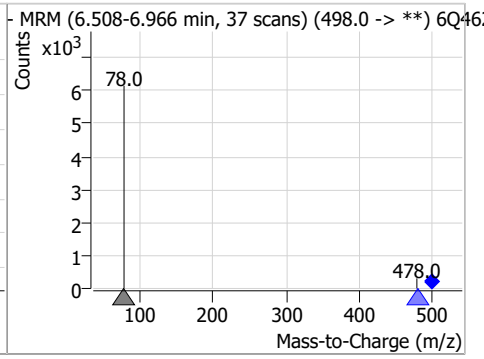




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	16.05	6.66	0.00	170535	498.0 -> 478.0	4.3	2.0	5.9

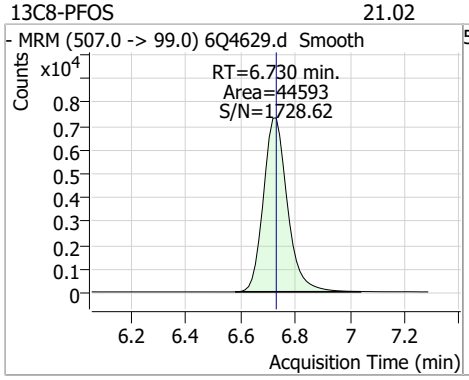


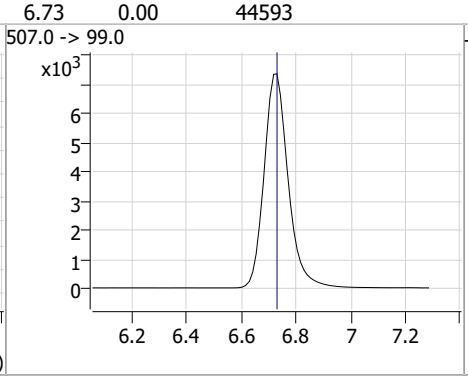


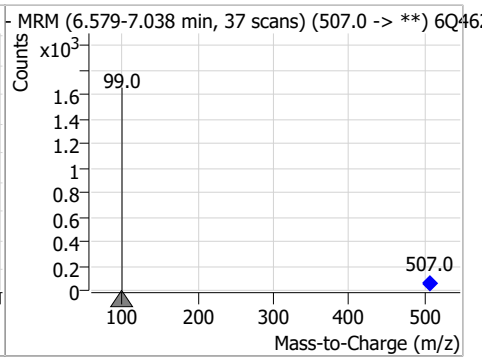


Perfluorinated Compounds by LC/MS/MS

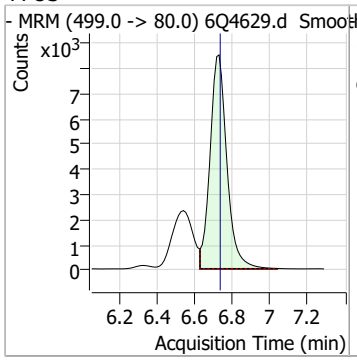
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.02	6.73	0.00	44593				

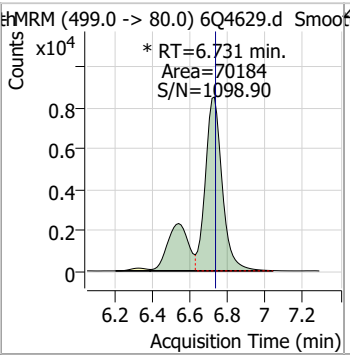


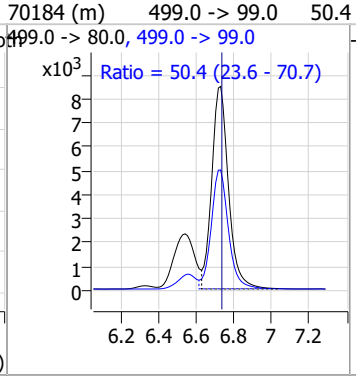


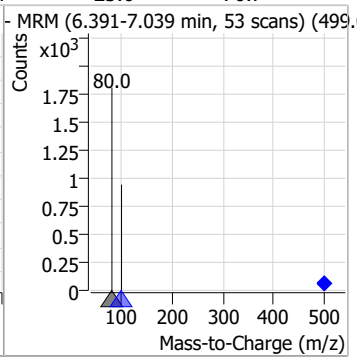


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	16.98	6.73	0.00	70184 (m)	499.0 -> 99.0	50.4	23.6	70.7

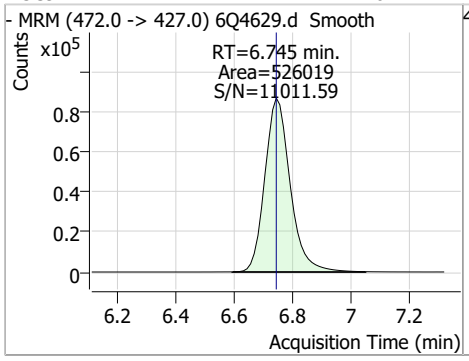


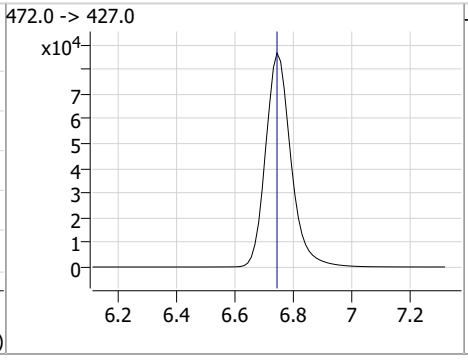


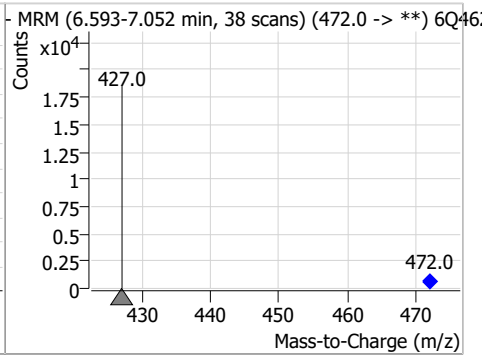




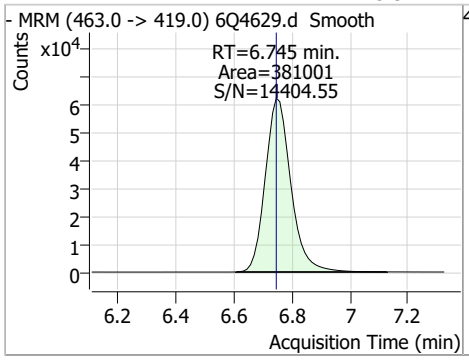
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.42	6.74	0.00	526019				

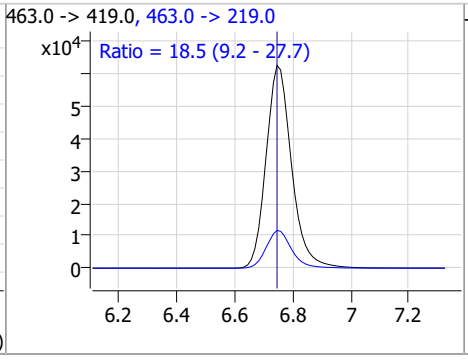


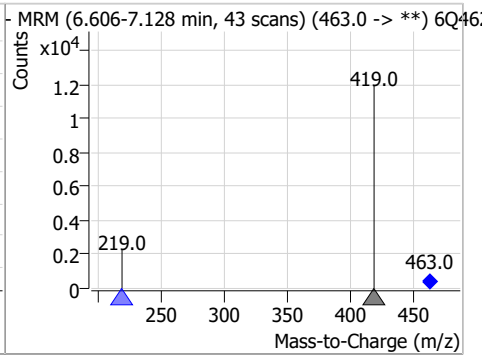




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	15.37	6.74	0.00	381001	463.0 -> 219.0	18.5	9.2	27.7

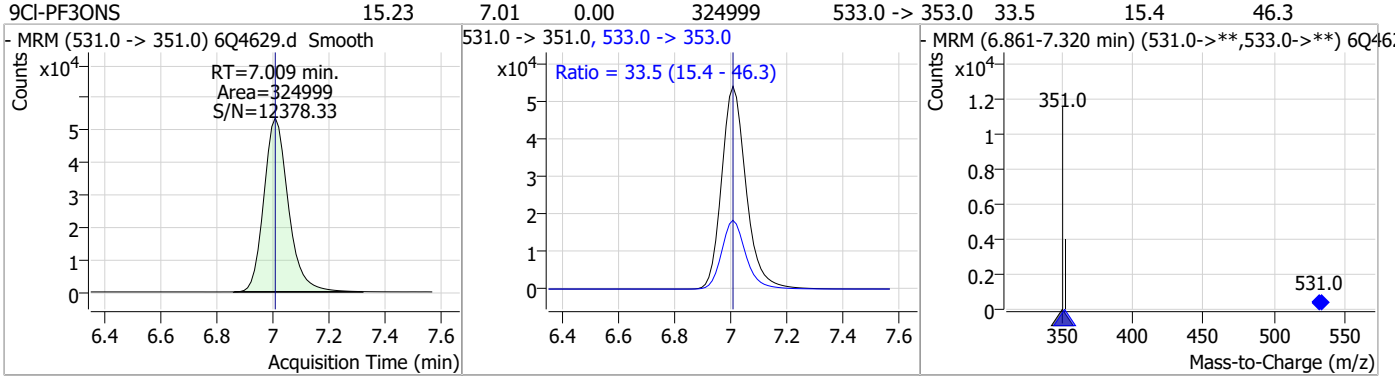




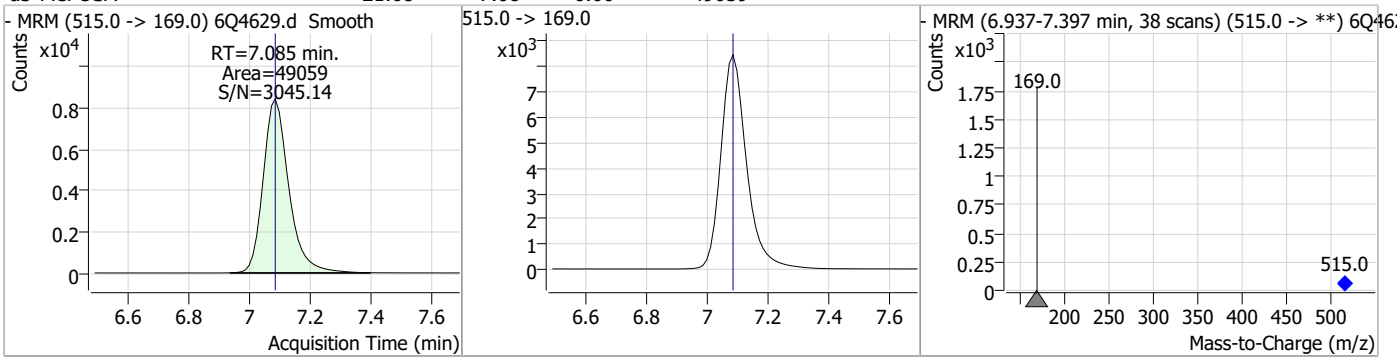


Perfluorinated Compounds by LC/MS/MS

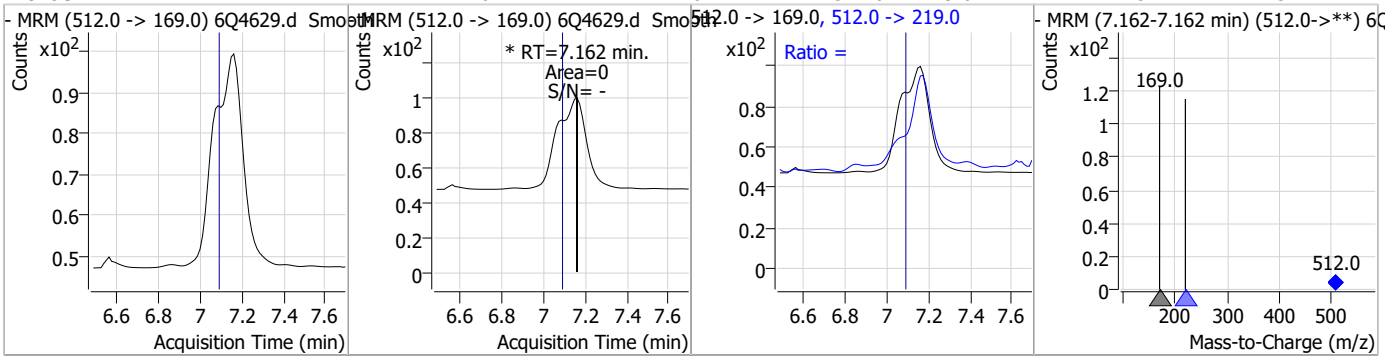
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	15.23	7.01	0.00	324999	533.0 -> 353.0	33.5	15.4	46.3



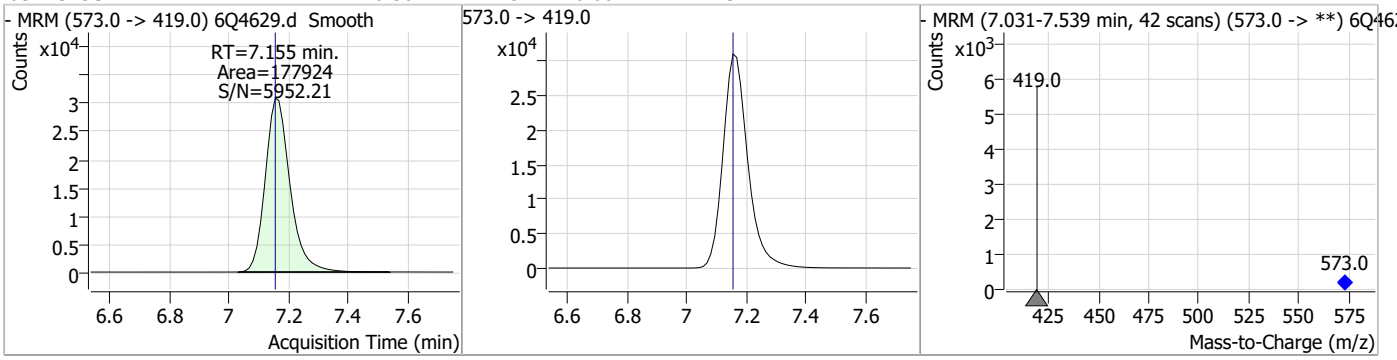
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.68	7.08	0.00	49059				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0		0	0	512.0 -> 219.0		48.4	145.1

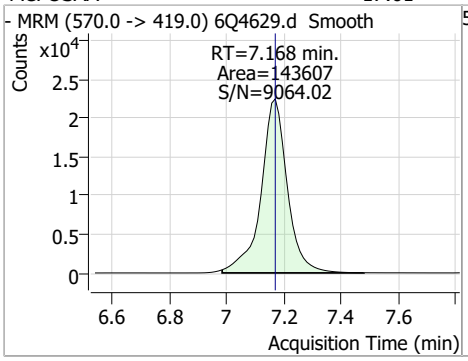


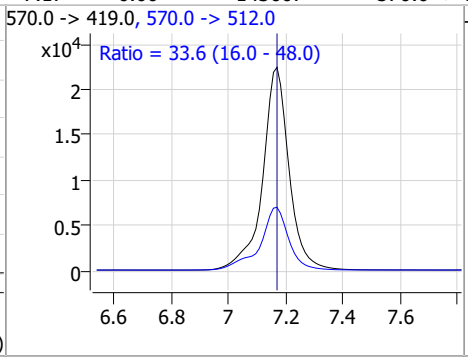
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.56	7.15	0.00	177924				

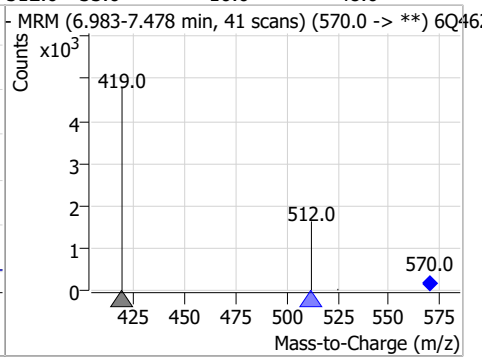


Perfluorinated Compounds by LC/MS/MS

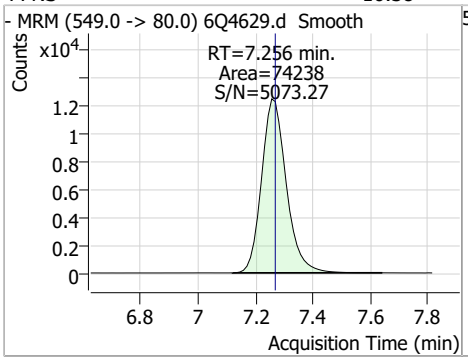
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	17.61	7.17	0.00	143607	570.0 -> 512.0	33.6	16.0	48.0

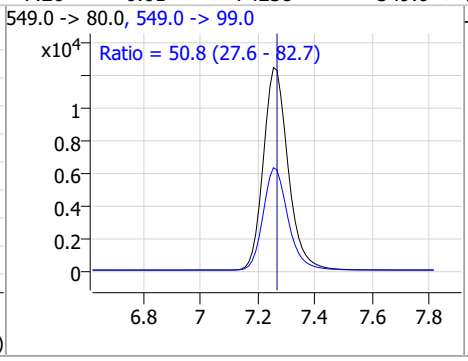


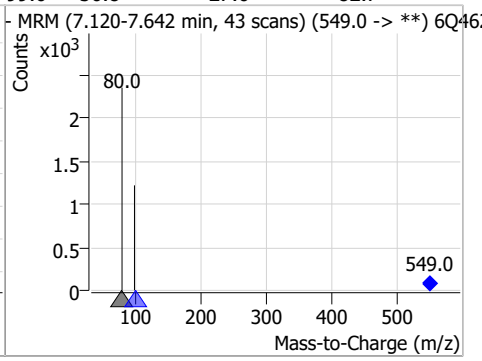




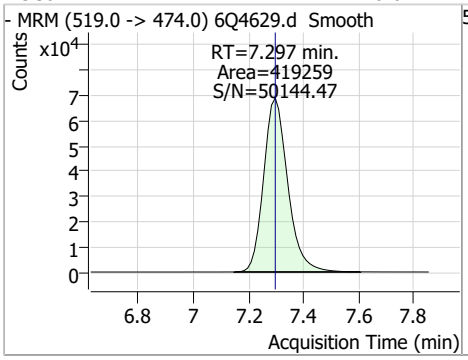
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	16.38	7.26	-0.01	74238	549.0 -> 99.0	50.8	27.6	82.7

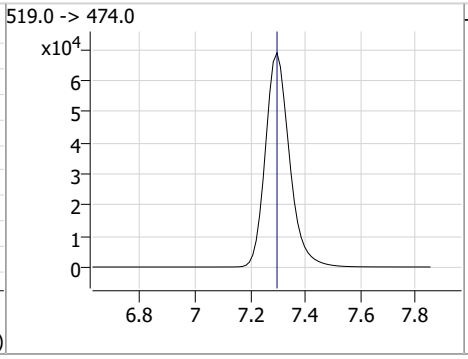


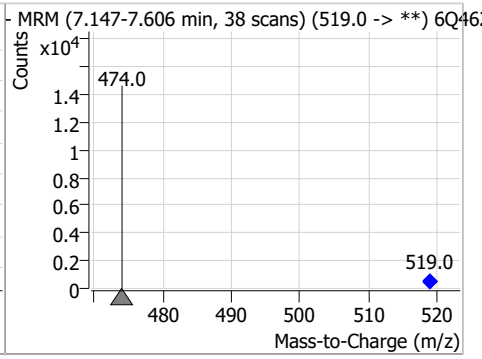




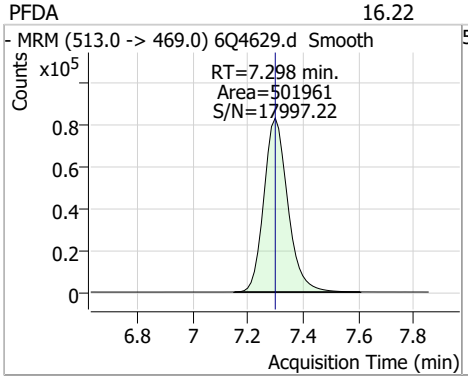
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.61	7.30	0.00	419259				

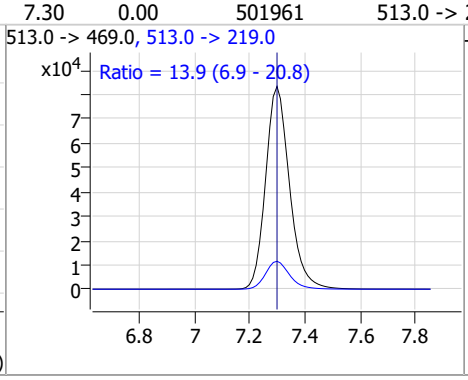


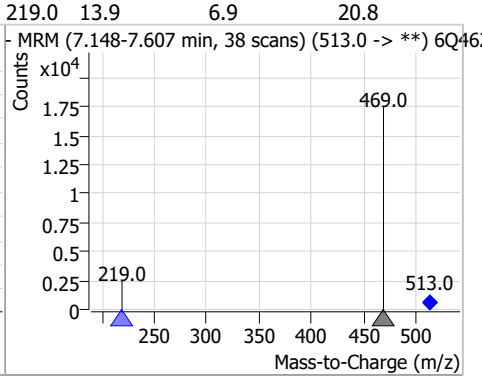




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	16.22	7.30	0.00	501961	513.0 -> 219.0	13.9	6.9	20.8

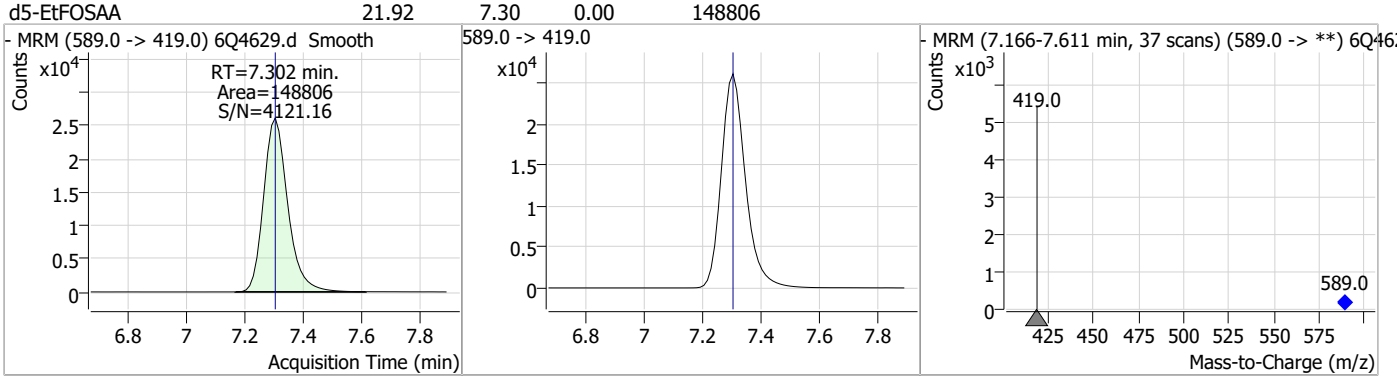




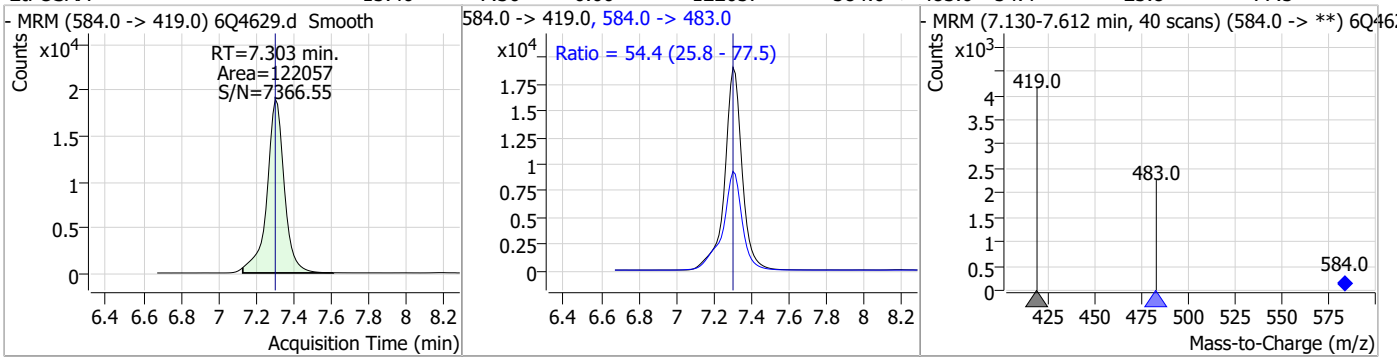


Perfluorinated Compounds by LC/MS/MS

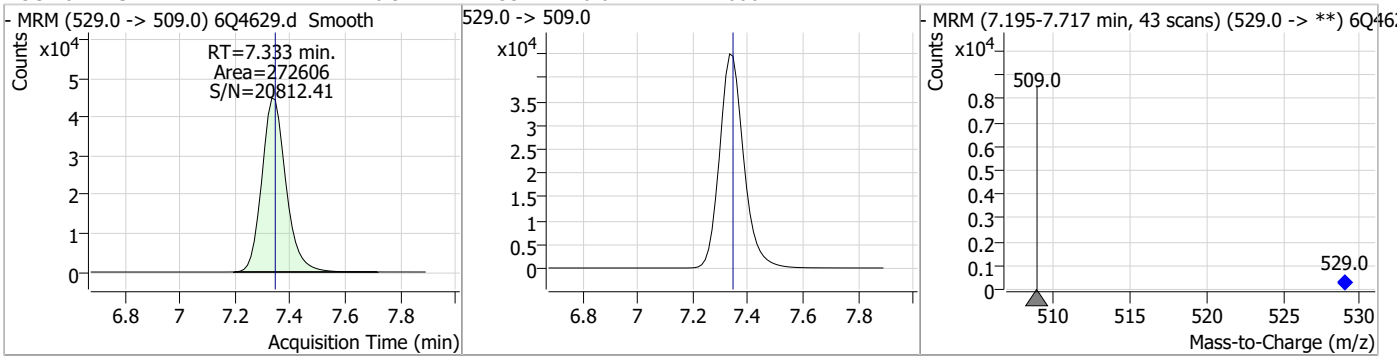
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.92	7.30	0.00	148806				



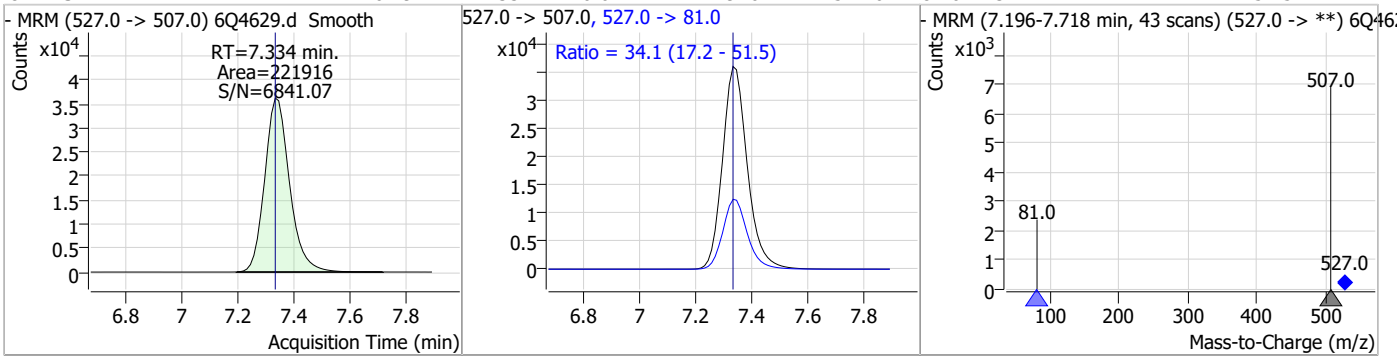
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	15.40	7.30	0.00	122057	584.0 -> 483.0	54.4	25.8	77.5



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.91	7.33	-0.01	272606				

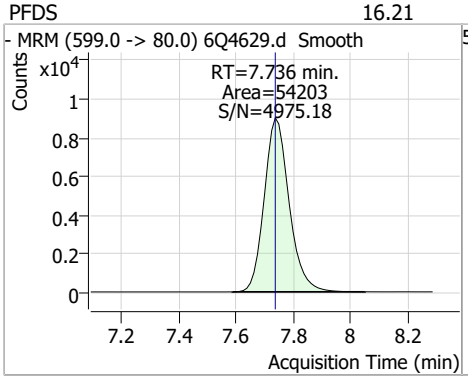


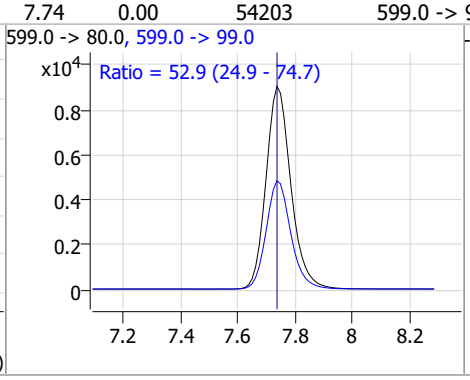
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	16.19	7.33	-0.01	221916	527.0 -> 81.0	34.1	17.2	51.5

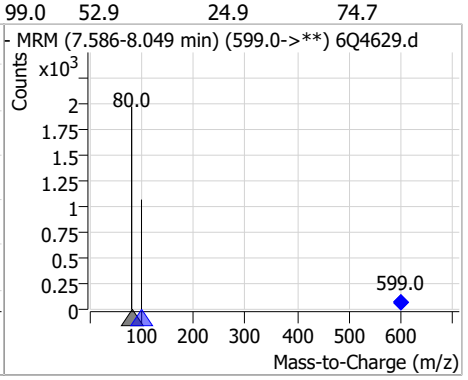


Perfluorinated Compounds by LC/MS/MS

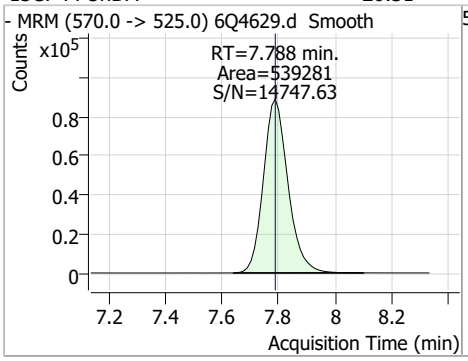
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	16.21	7.74	0.00	54203	599.0 -> 99.0	52.9	24.9	74.7

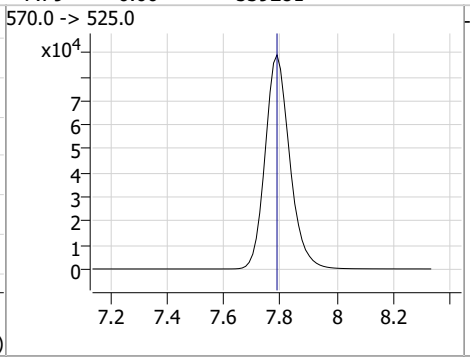


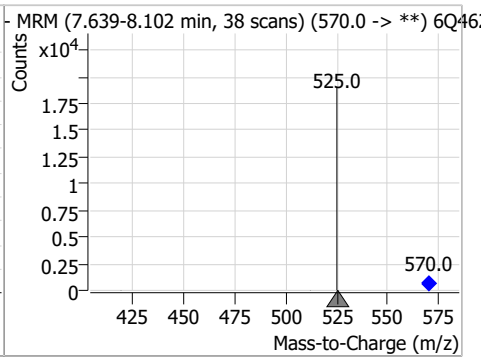




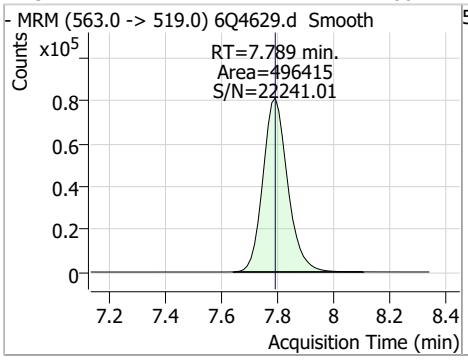
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.31	7.79	0.00	539281				

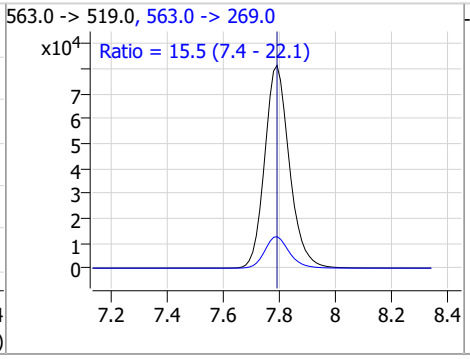


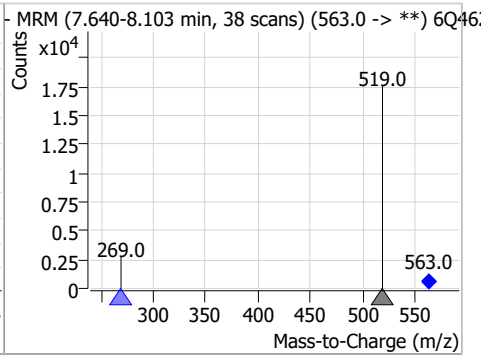




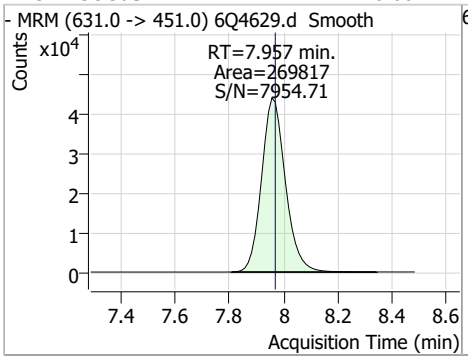
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	17.80	7.79	0.00	496415	563.0 -> 269.0	15.5	7.4	22.1

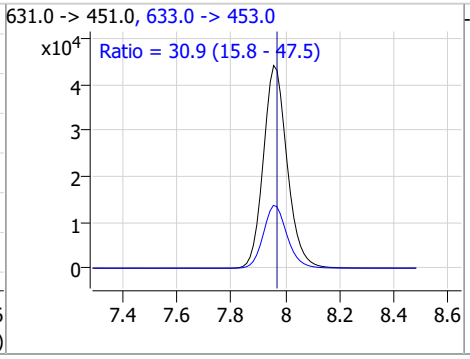


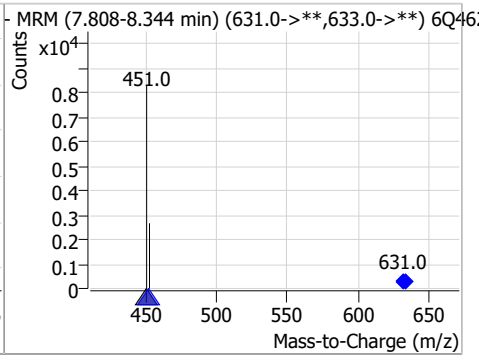




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	16.66	7.96	-0.01	269817	633.0 -> 453.0	30.9	15.8	47.5

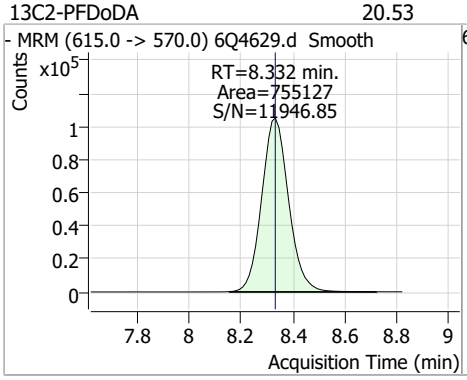


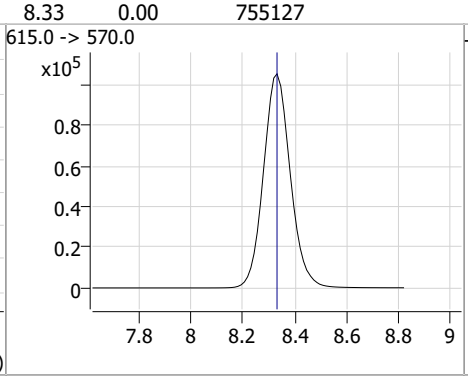


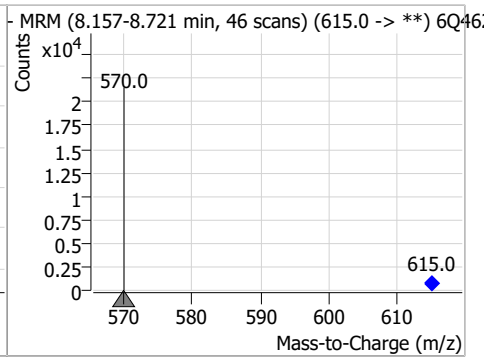


Perfluorinated Compounds by LC/MS/MS

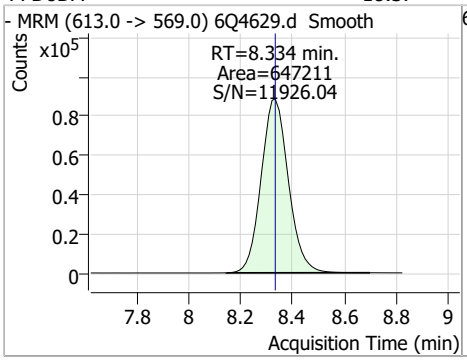
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.53	8.33	0.00	755127				

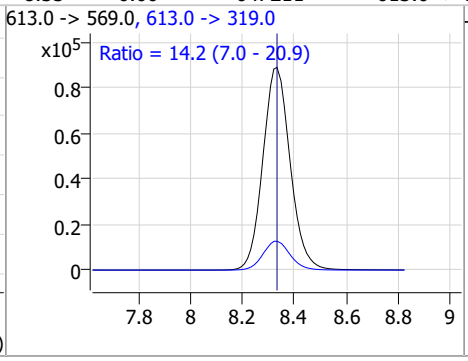


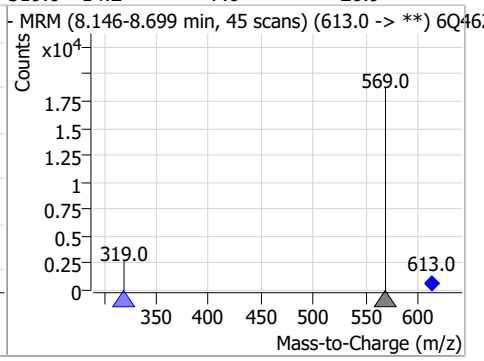




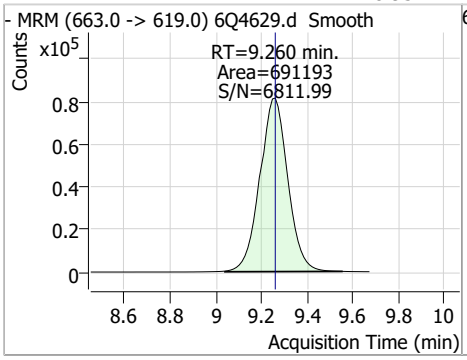
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.37	8.33	0.00	647211	613.0 -> 319.0	14.2	7.0	20.9

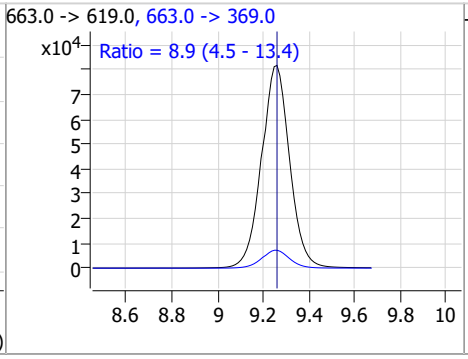


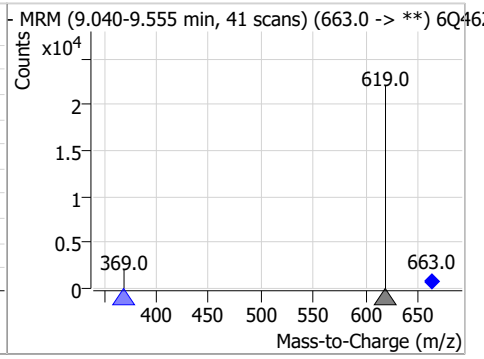




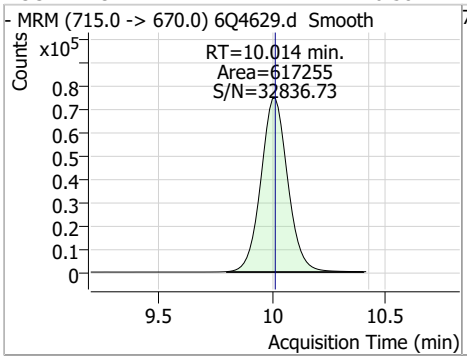
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	18.95	9.26	0.00	691193	663.0 -> 369.0	8.9	4.5	13.4

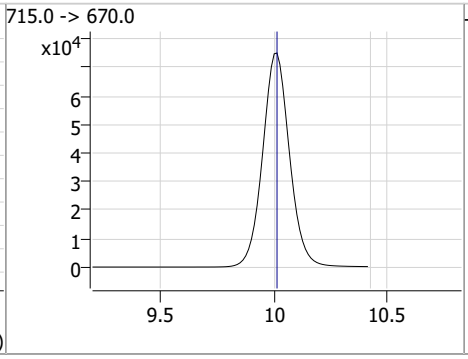


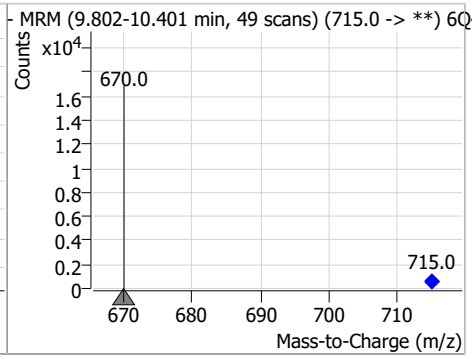




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.58	10.01	0.00	617255				

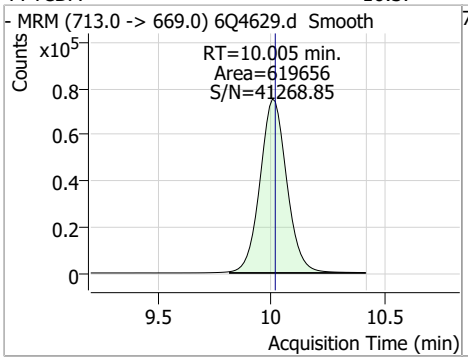


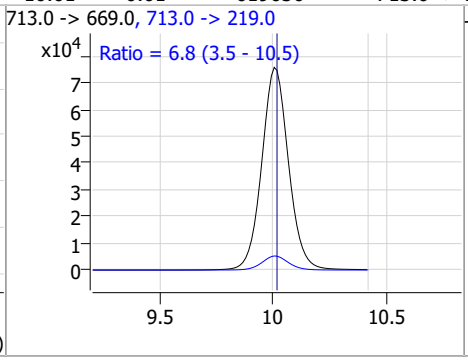


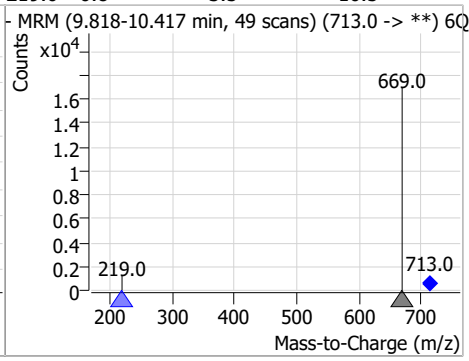


Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.37	10.01	-0.01	619656	713.0 -> 219.0	6.8	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-ICV85
Lab FileID: 6Q4629.D
Injection Time: 09/14/22 13:24
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4630.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:40:14 PM
Sample Name : icv85-20
Vial : P1-B2
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	81731	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	143398	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	220707	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	253135	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	438715	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	518636	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	425966	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	542789	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	751199	20.00	µg/L	0.000
M2-PFTeDA	10.001	715.0 -> 670.0	611290	20.00	µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	212471	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31406	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29212	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	42049	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	272803	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	346794	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	257828	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	180010	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5143	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	50717	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	146830	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	272803	20.20	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	346794	20.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	257828	19.78	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.9%		
13C2-PFDoDA	8.332	615.0 -> 570.0	751199	20.42	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%		
13C2-PFTeDA	10.001	715.0 -> 670.0	611290	20.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C3-PFBS	3.635	302.0 -> 99.0	31406	20.51	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.5%		
13C3-PFHxS	5.475	402.0 -> 99.0	29212	21.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C4-PFBA	1.949	217.0 -> 172.0	81731	20.53	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C4-PFHpA	5.445	367.0 -> 322.0	253135	20.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C5-PFHxA	4.573	318.0 -> 273.0	220707	20.65	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C5-PFPeA	3.405	268.0 -> 223.0	143398	20.45	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C6-PFDA	7.297	519.0 -> 474.0	425966	20.94	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

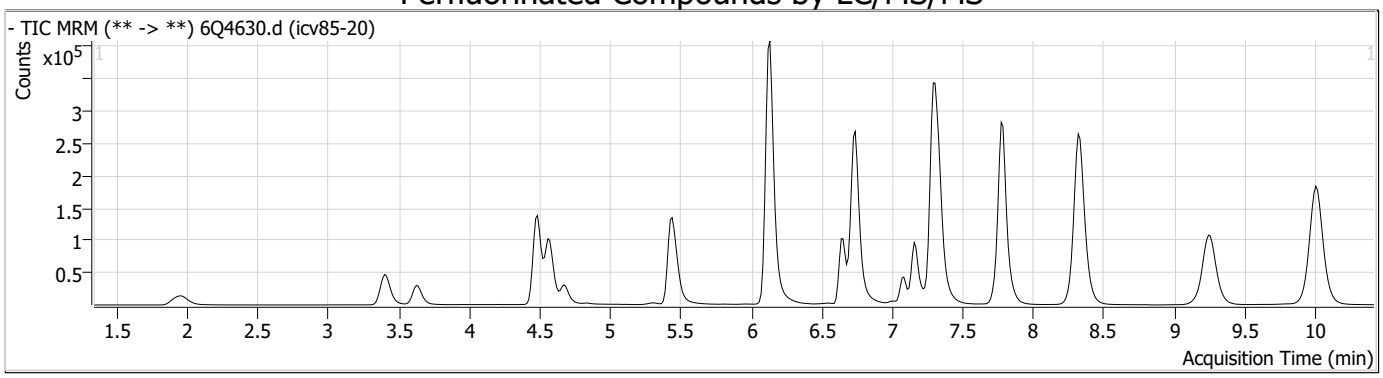
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C7-PFUnDA	7.788	570.0 -> 525.0	542789	20.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C8-FOSA	6.654	506.0 -> 78.0	212471	21.72 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C8-PFOA	6.138	421.0 -> 376.0	438715	20.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C8-PFOS	6.730	507.0 -> 99.0	42049	19.82 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.1%		
13C9-PFNA	6.745	472.0 -> 427.0	518636	20.13 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
d3-MeFOSAA	7.155	573.0 -> 419.0	180010	20.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5167	19.44 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
d3-MeFOSA	7.085	515.0 -> 169.0	50717	22.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
d5-EtFOSAA	7.302	589.0 -> 419.0	146828	21.63 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	260666	17.67 µg/L		99
		327.0 -> 81.0	83305			
6:2FTS	6.137	427.0 -> 407.0	304199	17.32 µg/L		98
		427.0 -> 81.0	81166			
8:2FTS	7.334	527.0 -> 507.0	238693	18.41 µg/L		96
		527.0 -> 81.0	76579			
EtFOSAA	7.303	584.0 -> 419.0	113390	14.49 µg/L		92
		584.0 -> 483.0	65179			
FOSA	6.656	498.0 -> 78.0	181642	17.04 µg/L		100
		498.0 -> 478.0	6919			
MeFOSAA	7.168	570.0 -> 419.0	134235	16.27 µg/L		97
		570.0 -> 512.0	44910			
PFBA	1.943	213.0 -> 169.0	30672	17.19 µg/L		100
PFBS	3.627	299.0 -> 80.0	82959	15.89 µg/L		99
		299.0 -> 99.0	30832			
PFDA	7.298	513.0 -> 469.0	483516	15.38 µg/L		99
		513.0 -> 219.0	70096			
PFDoDA	8.321	613.0 -> 569.0	654070	18.66 µg/L		99
		613.0 -> 319.0	92379			
PFDS	7.736	599.0 -> 80.0	61117	18.16 µg/L		96
		599.0 -> 99.0	28636			
PFHpA	5.446	363.0 -> 319.0	257638	15.65 µg/L		100
		363.0 -> 169.0	37855			
PFHpS	6.136	449.0 -> 80.0	71003	19.34 µg/L		98
		449.0 -> 99.0	36554			
PFHxA	4.574	313.0 -> 269.0	182074	15.69 µg/L		100
		313.0 -> 119.0	4540			
PFHxS	5.477	399.0 -> 80.0	71362	17.05 µg/L	m	97
		399.0 -> 99.0	32978			
PFNA	6.745	463.0 -> 419.0	407544	16.68 µg/L		99
		463.0 -> 219.0	73495			
PFNS	-	549.0 -> 80.0	-	N.D.		
		549.0 -> 99.0				
PFOA	6.138	413.0 -> 369.0	414540	17.49 µg/L		100
		413.0 -> 169.0	63043			
PFOS	6.731	499.0 -> 80.0	69545	17.84 µg/L		73

Perfluorinated Compounds by LC/MS/MS

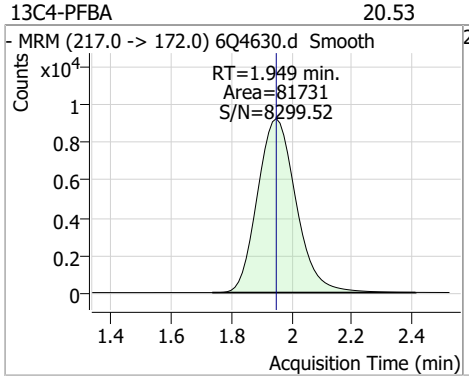
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	45301			
PFPeA	3.408	263.0 -> 219.0	101475	16.80	µg/L	100
PFPeS	4.681	349.0 -> 80.0	73521	16.91	µg/L	98
		349.0 -> 99.0	34594			
PFTeDA	10.005	713.0 -> 669.0	615448	16.42	µg/L	100
		713.0 -> 219.0	42728			
PFTrDA	9.248	663.0 -> 619.0	731472	20.16	µg/L	100
		663.0 -> 369.0	66263			
PFUnDA	7.789	563.0 -> 519.0	553084	19.71	µg/L	98
		563.0 -> 269.0	85096			
11Cl-PF3OUdS	-	631.0 -> 451.0	-	N.D.		
		633.0 -> 453.0				
9Cl-PF3ONS	-	531.0 -> 351.0	-	N.D.		
		533.0 -> 353.0				
ADONA	-	377.0 -> 251.0	-	N.D.		
		377.0 -> 85.0				
HFPO-DA	-	285.0 -> 169.0	-	N.D.		
		285.0 -> 185.0				
MeFOSA	7.086	512.0 -> 169.0	47716	17.24	µg/L	98
		512.0 -> 219.0	45263			
4-PFECHS	-	461.0 -> 381.0	-	N.D.		
		461.0 -> 99.0				
FBSA	-	298.0 -> 78.0	-	N.D.		
		298.0 -> 64.0				
FHxSA	-	398.0 -> 78.0	-	N.D.		
		398.0 -> 64.0				

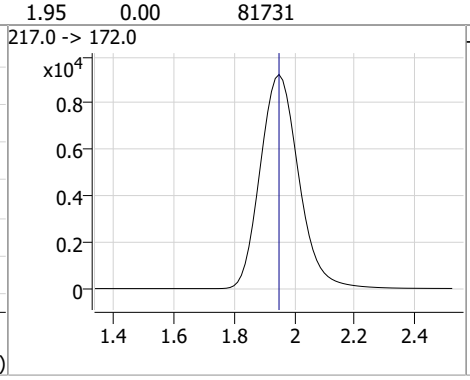
 # = Qualifier out of range, m = manually integrated, + = Area summed

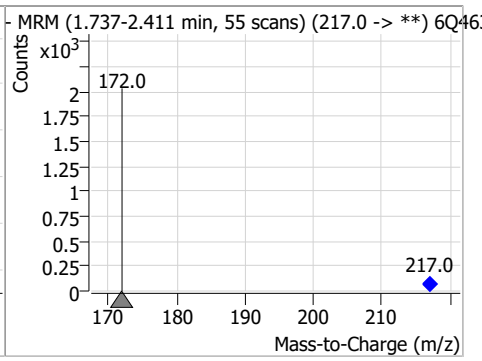
Perfluorinated Compounds by LC/MS/MS



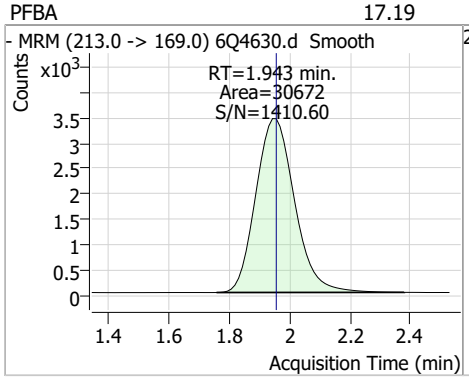
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.53	1.95	0.00	81731				

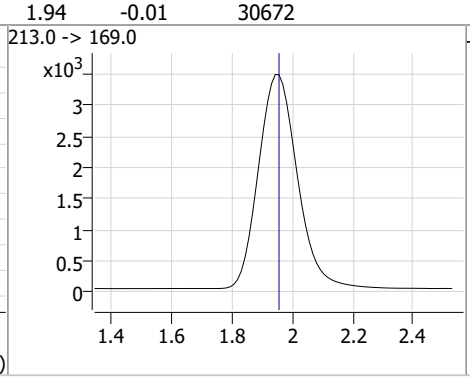


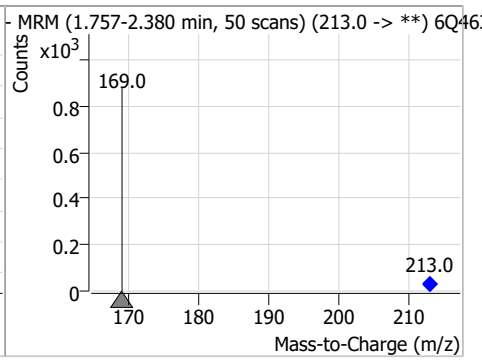




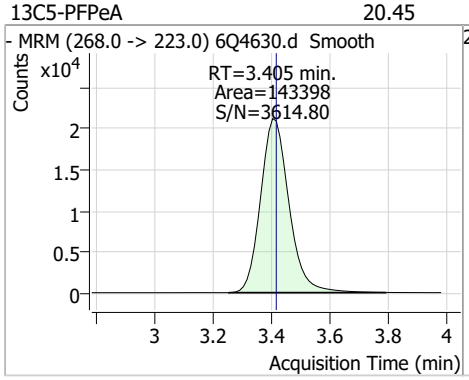
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	17.19	1.94	-0.01	30672				

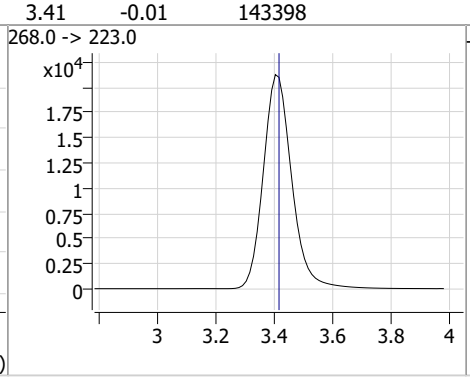


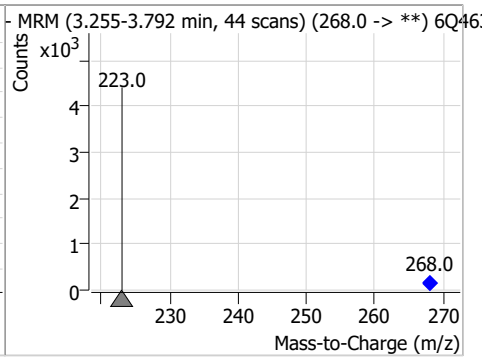




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.45	3.41	-0.01	143398				

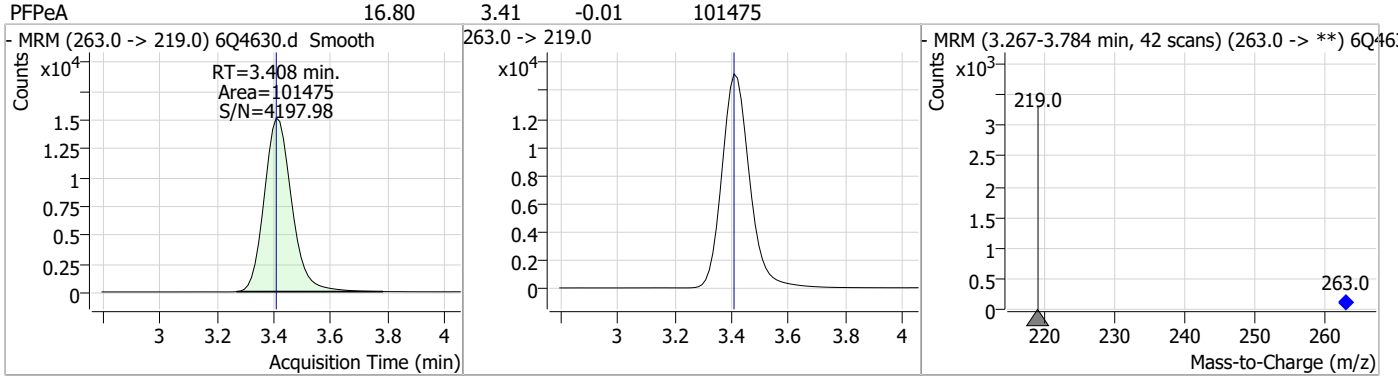




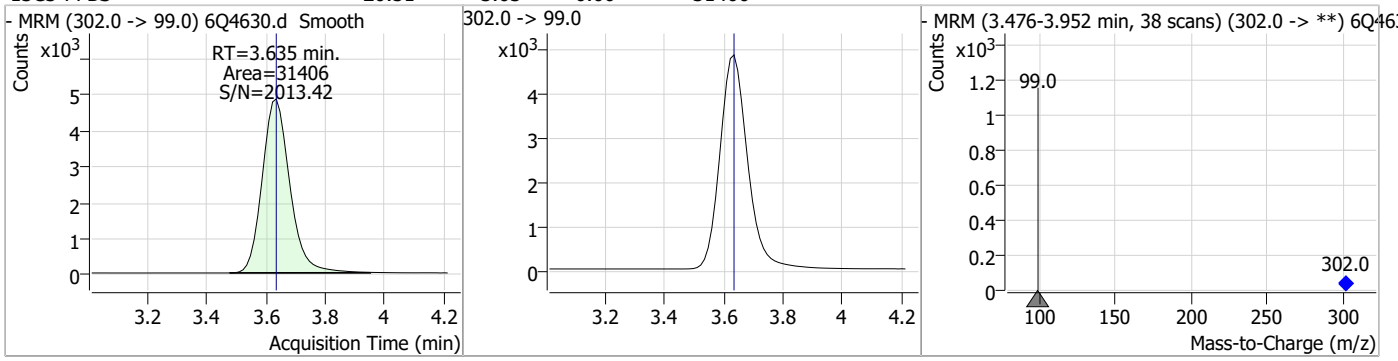


Perfluorinated Compounds by LC/MS/MS

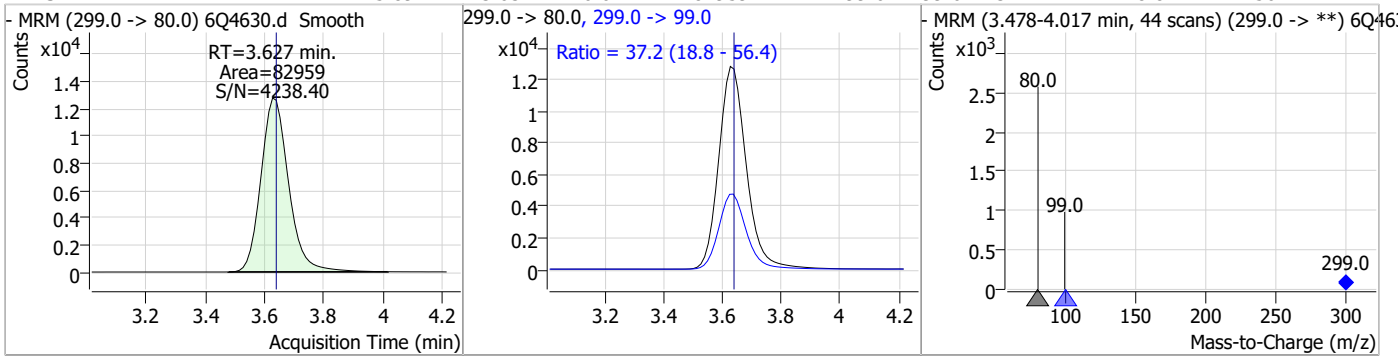
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	16.80	3.41	-0.01	101475				



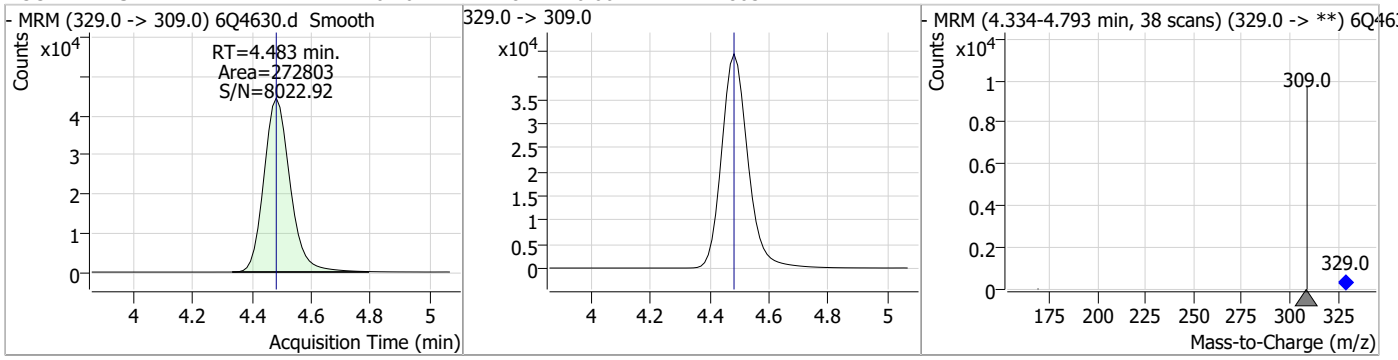
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.51	3.63	0.00	31406				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	15.89	3.63	-0.01	82959	299.0 -> 99.0	37.2	18.8	56.4

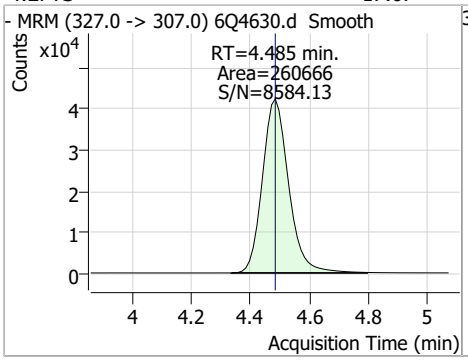


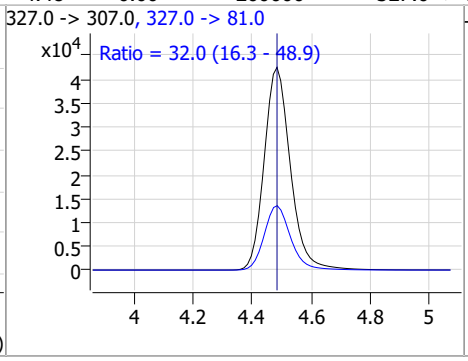
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.20	4.48	0.00	272803				

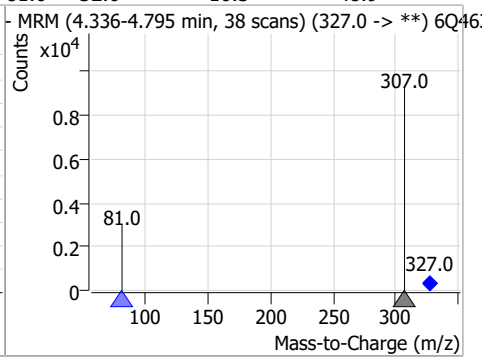


Perfluorinated Compounds by LC/MS/MS

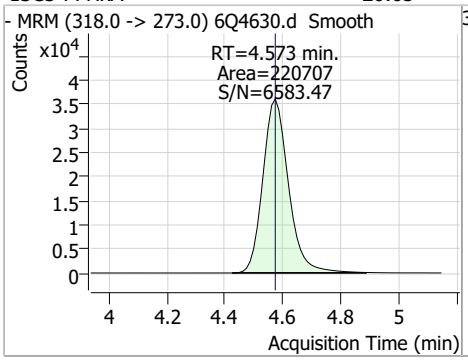
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	17.67	4.48	0.00	260666	327.0 -> 81.0	32.0	16.3	48.9

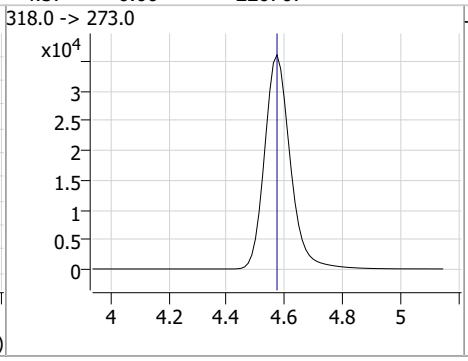


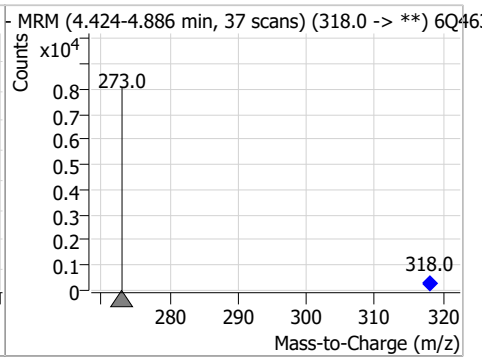




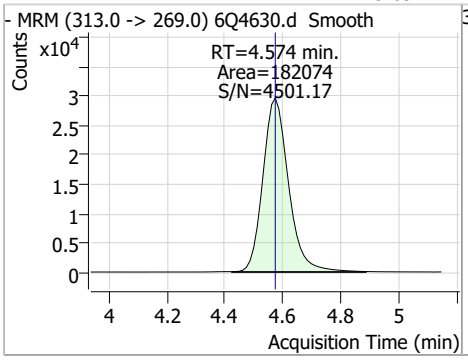
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.65	4.57	0.00	220707				

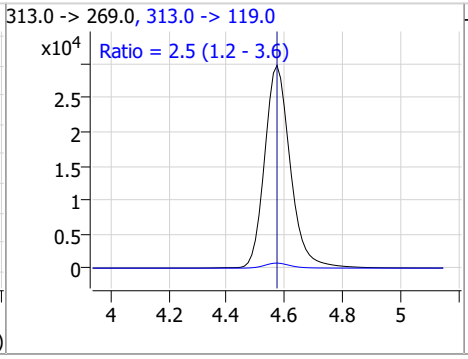


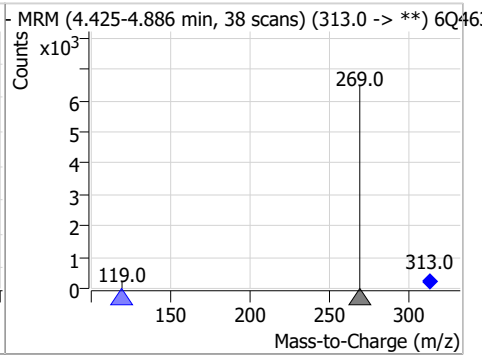




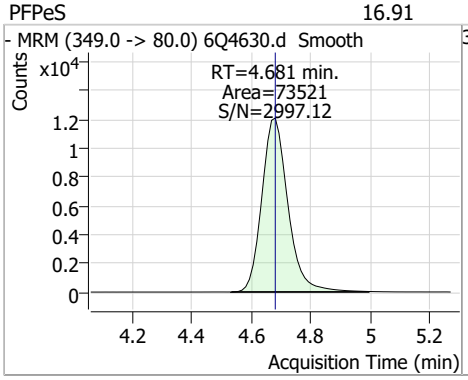
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	15.69	4.57	0.00	182074	313.0 -> 119.0	2.5	1.2	3.6

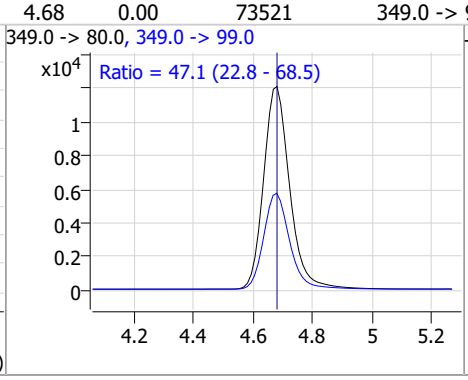


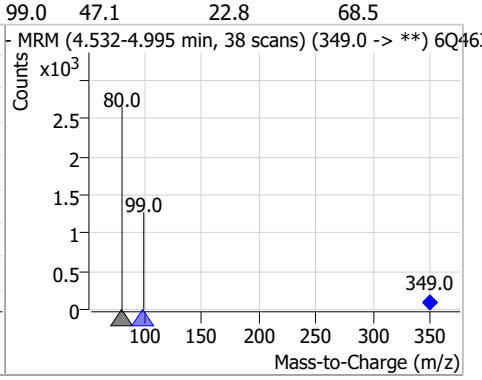




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	16.91	4.68	0.00	73521	349.0 -> 99.0	47.1	22.8	68.5

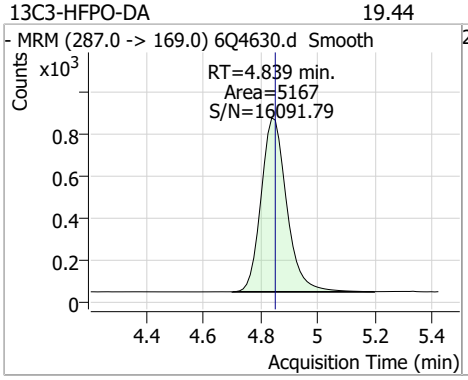


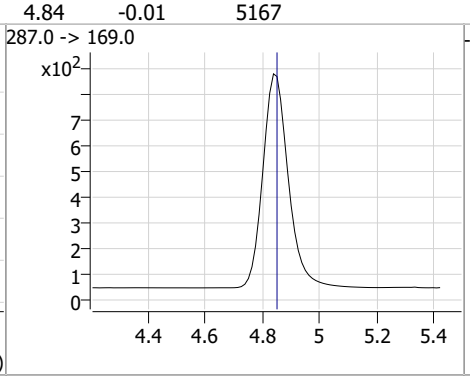


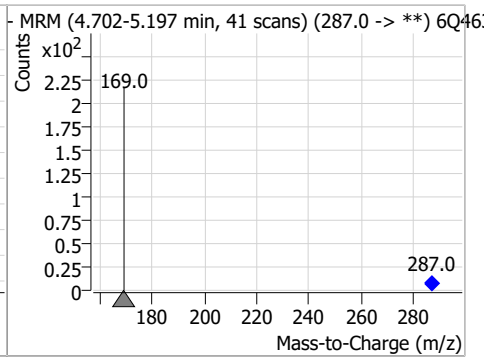


Perfluorinated Compounds by LC/MS/MS

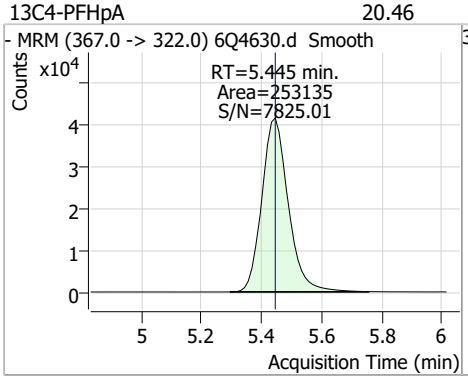
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.44	4.84	-0.01	5167				

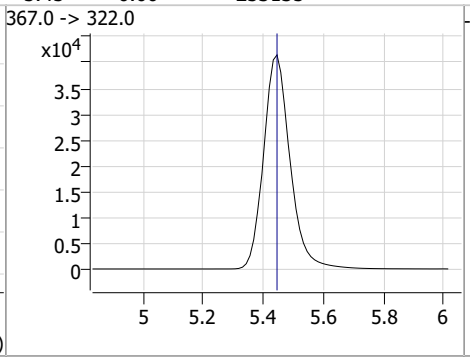


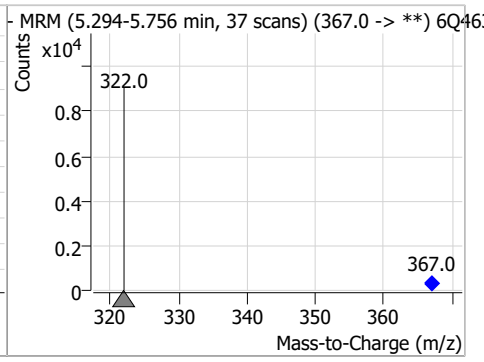




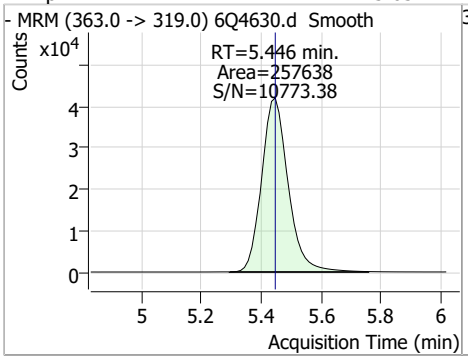
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.46	5.45	0.00	253135				

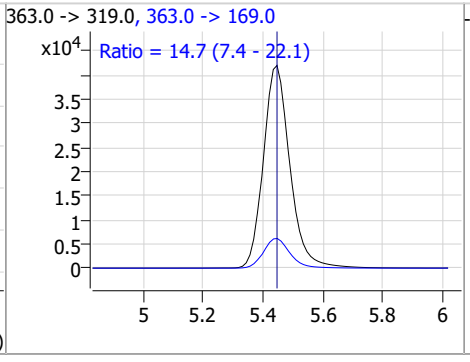


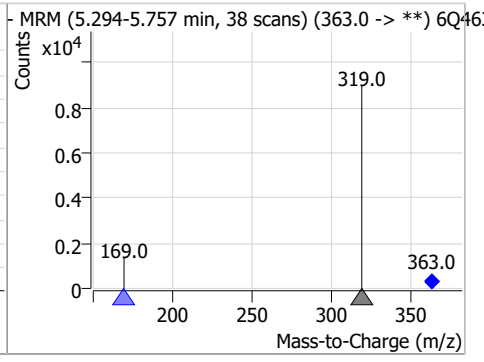




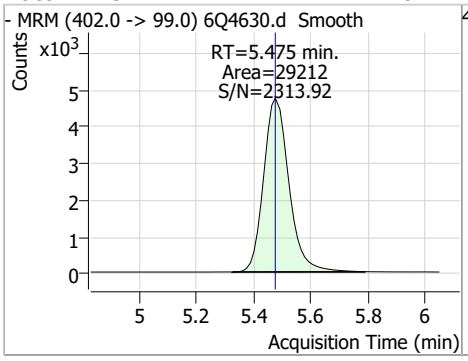
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	15.65	5.45	0.00	257638	363.0 -> 169.0	14.7	7.4	22.1

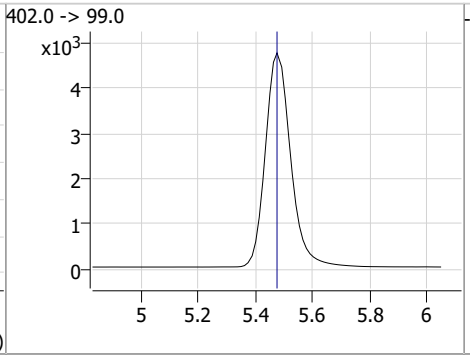


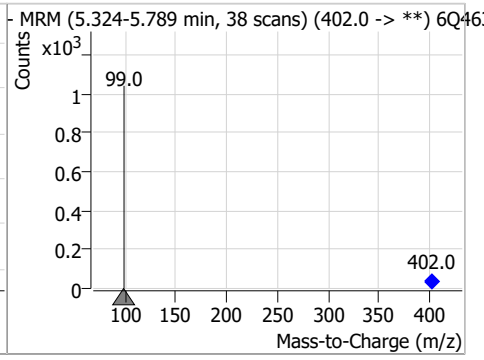




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.13	5.48	0.00	29212				

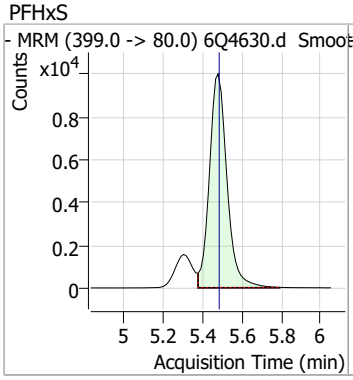


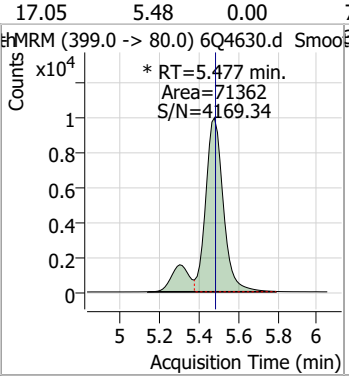


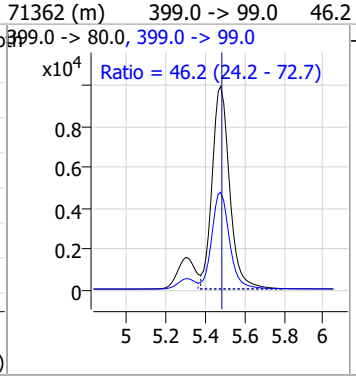


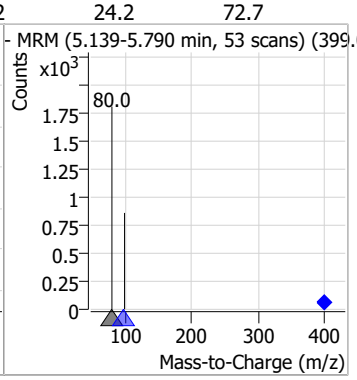
Perfluorinated Compounds by LC/MS/MS

Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	17.05	5.48	0.00	71362 (m)	399.0 -> 99.0	46.2	24.2	72.7

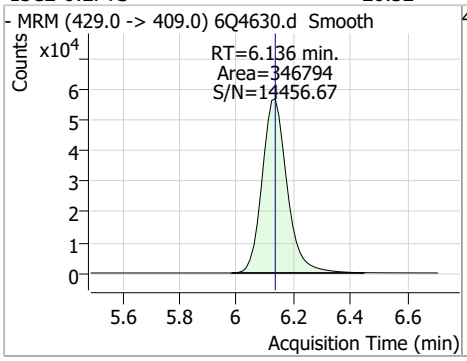


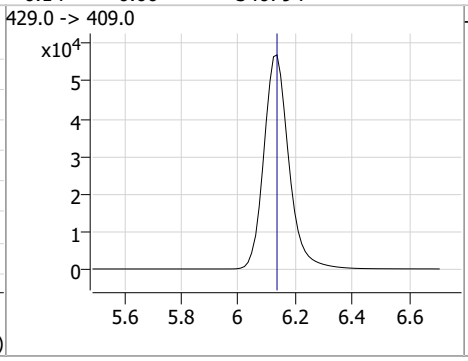


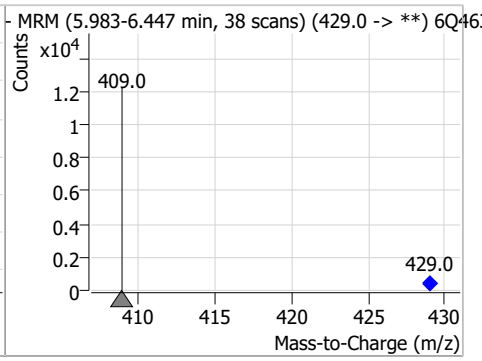




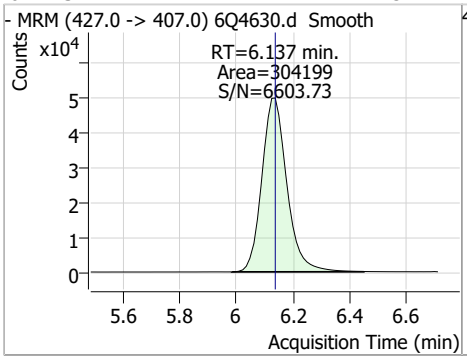
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.32	6.14	0.00	346794				

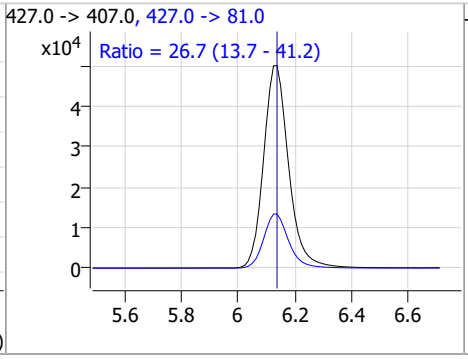


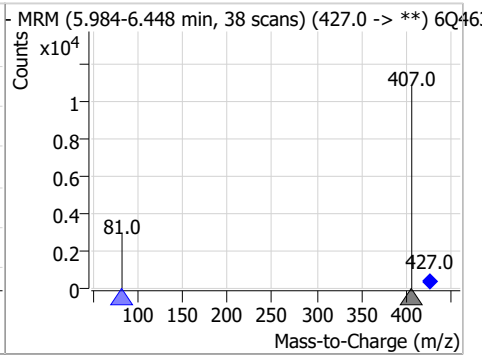




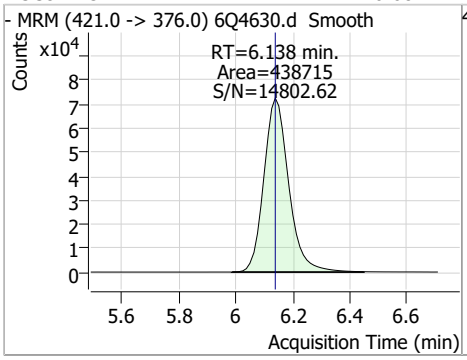
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	17.32	6.14	0.00	304199	427.0 -> 81.0	26.7	13.7	41.2

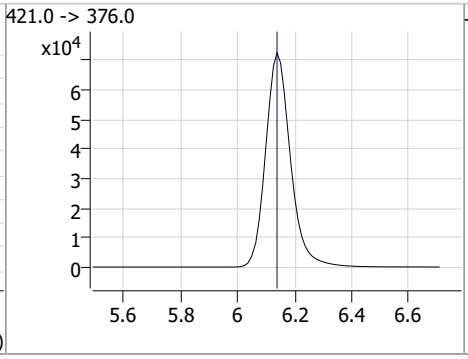


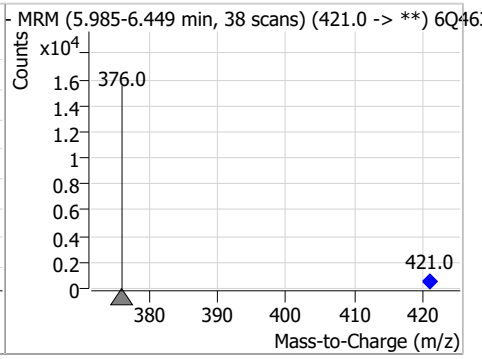




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.68	6.14	0.00	438715				

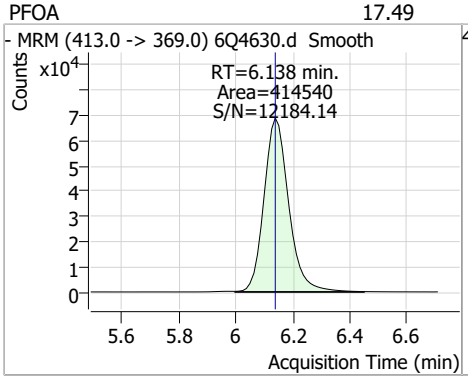


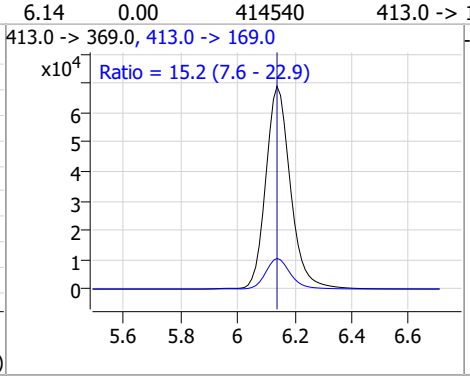


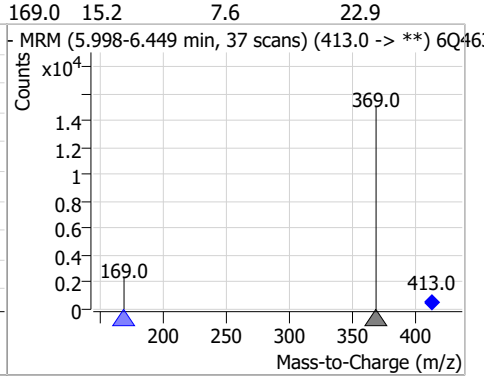


Perfluorinated Compounds by LC/MS/MS

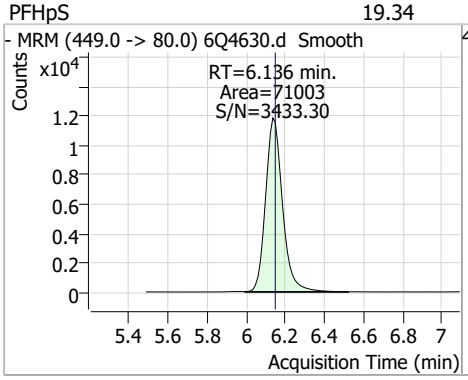
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	17.49	6.14	0.00	414540	413.0 -> 169.0	15.2	7.6	22.9

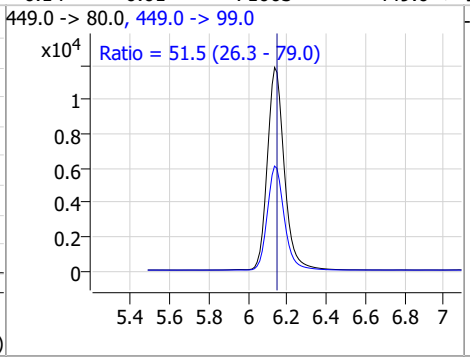


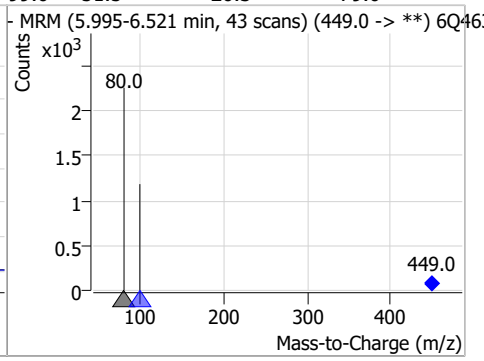




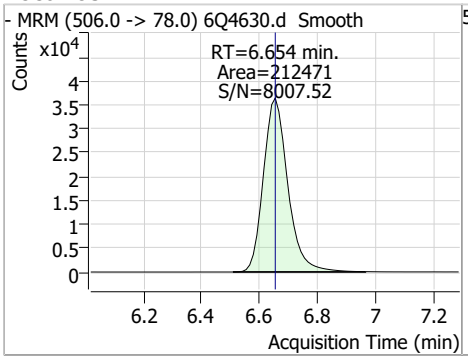
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.34	6.14	-0.01	71003	449.0 -> 99.0	51.5	26.3	79.0

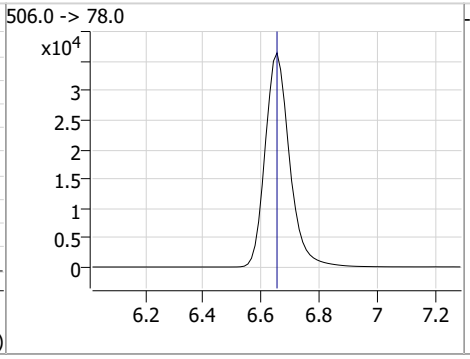


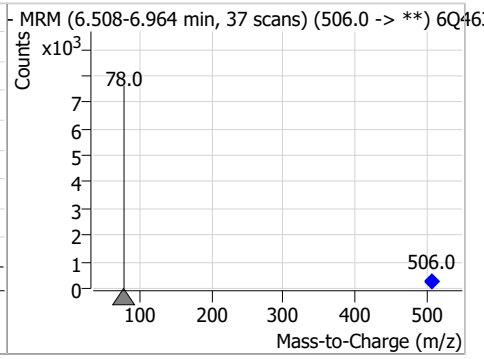




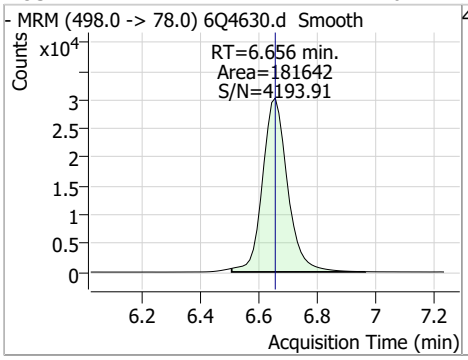
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.72	6.65	0.00	212471				

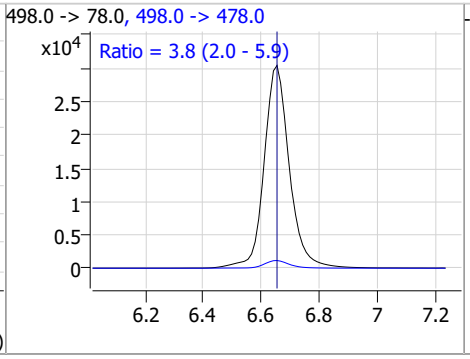


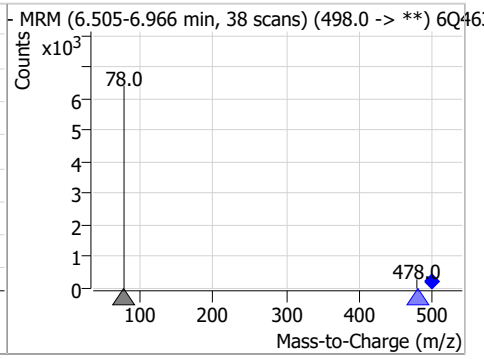




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	17.04	6.66	0.00	181642	498.0 -> 478.0	3.8	2.0	5.9

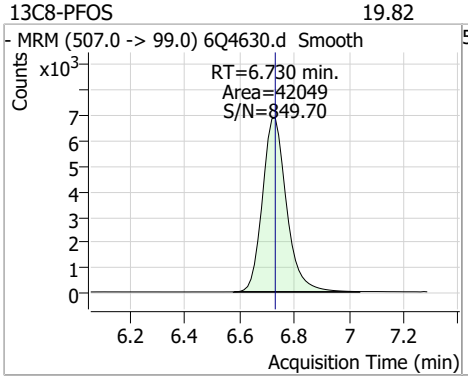


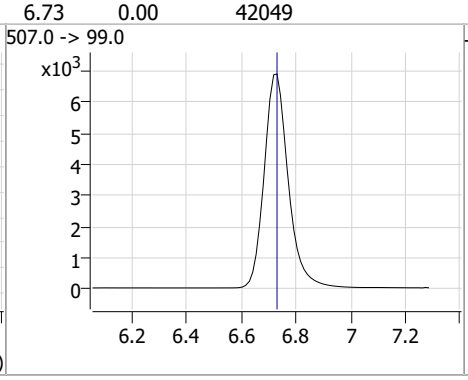


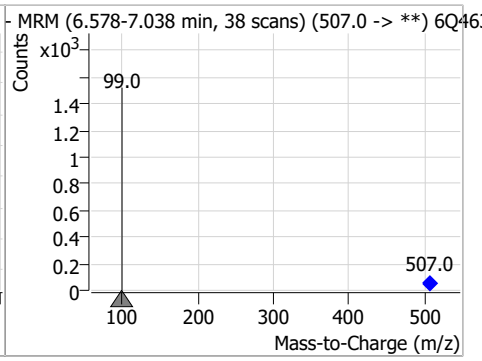


Perfluorinated Compounds by LC/MS/MS

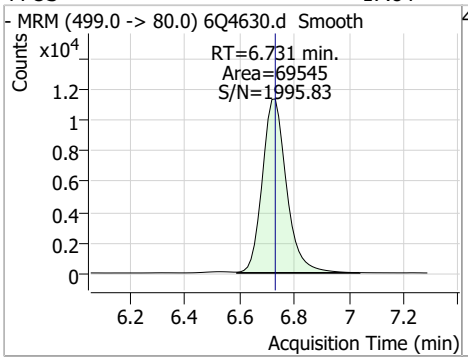
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.82	6.73	0.00	42049				

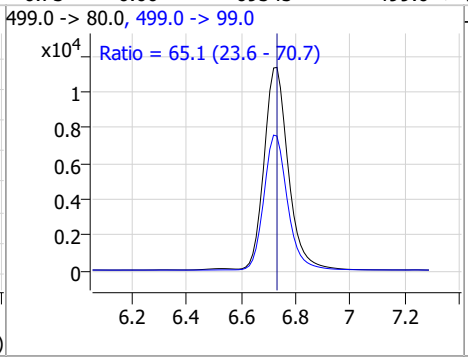


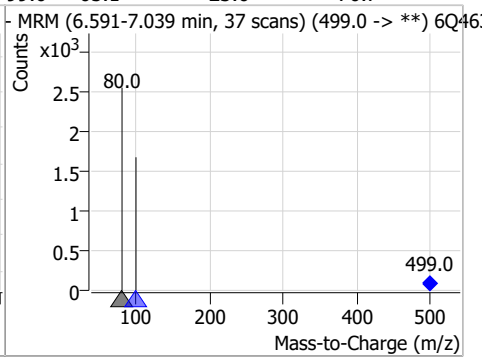




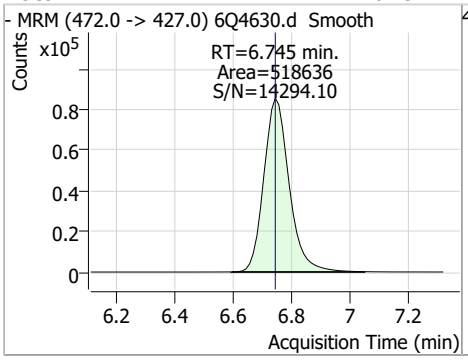
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	17.84	6.73	0.00	69545	499.0 -> 99.0	65.1	23.6	70.7

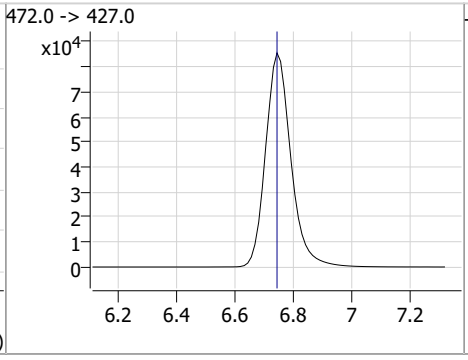


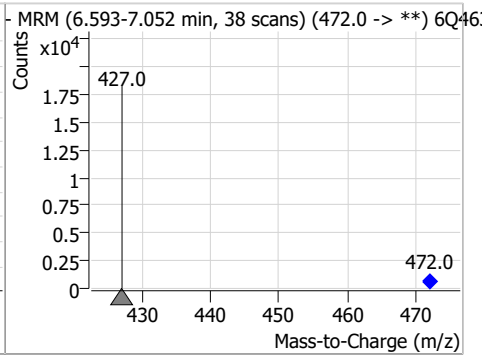




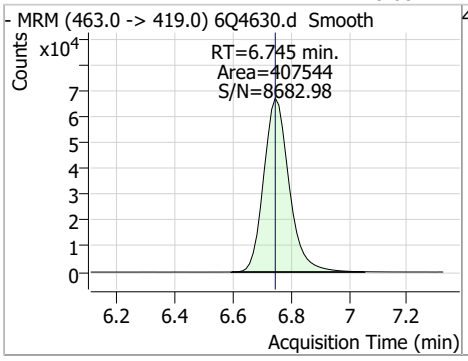
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.13	6.74	0.00	518636				

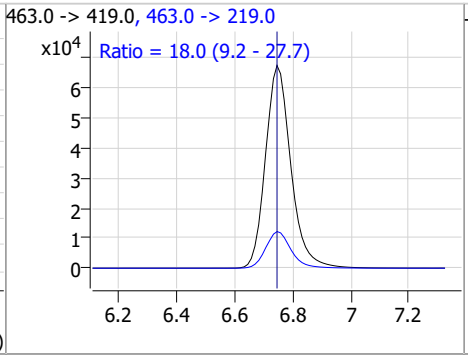


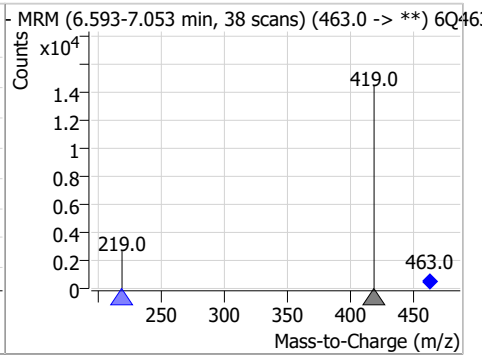




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	16.68	6.74	0.00	407544	463.0 -> 219.0	18.0	9.2	27.7

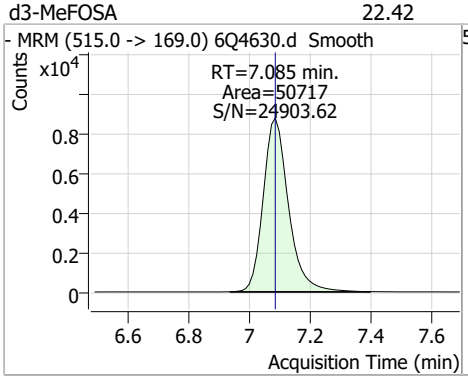


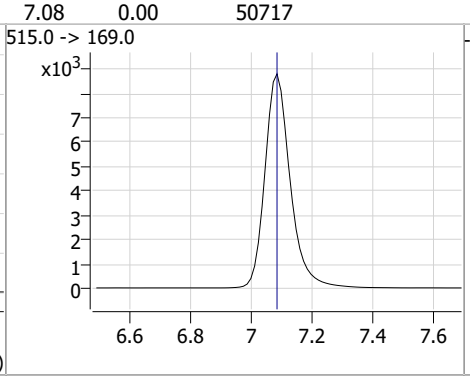


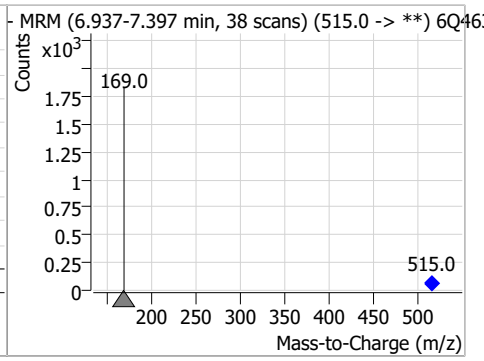


Perfluorinated Compounds by LC/MS/MS

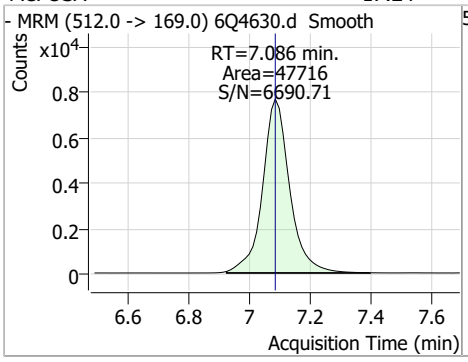
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.42	7.08	0.00	50717				

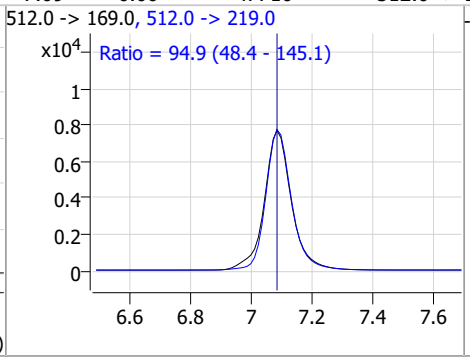


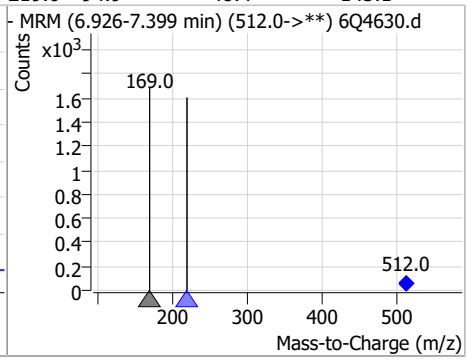




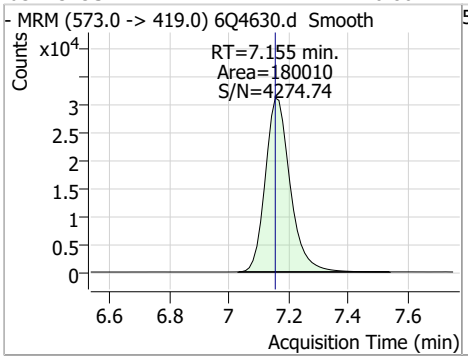
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	17.24	7.09	0.00	47716	512.0 -> 219.0	94.9	48.4	145.1

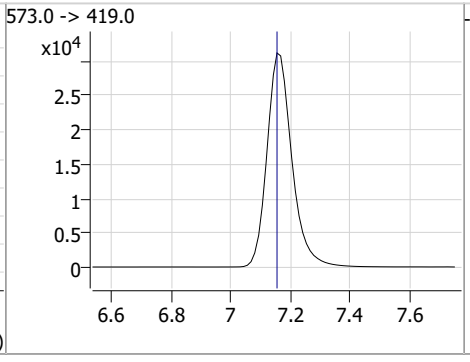


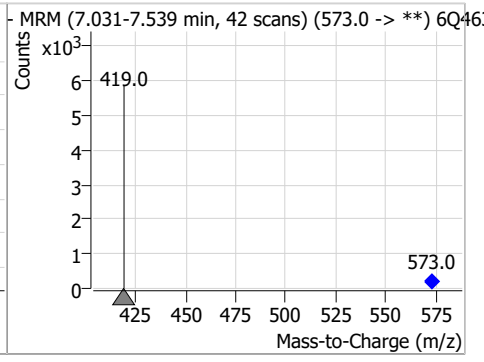




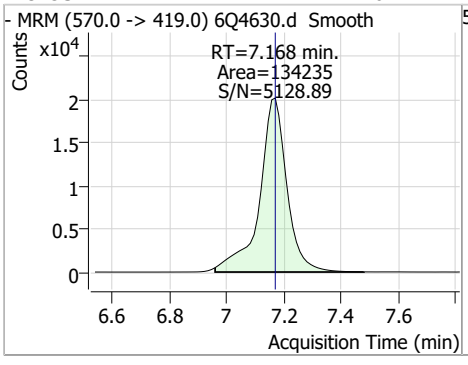
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	20.80	7.15	0.00	180010				

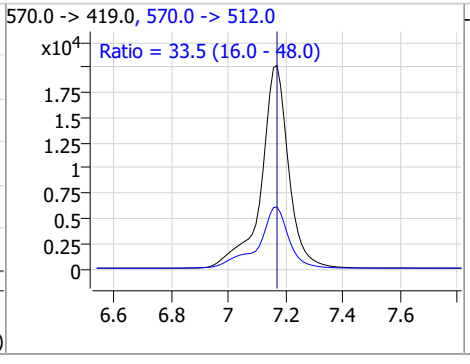


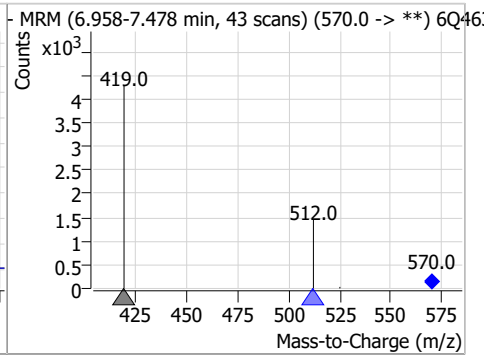




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	16.27	7.17	0.00	134235	570.0 -> 512.0	33.5	16.0	48.0

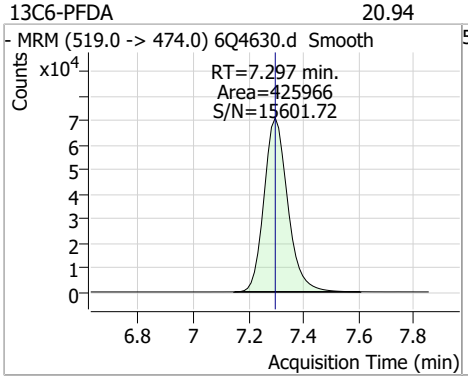


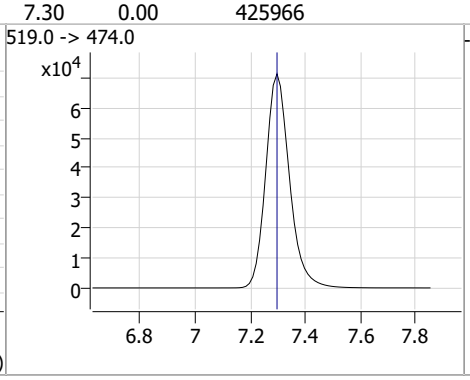


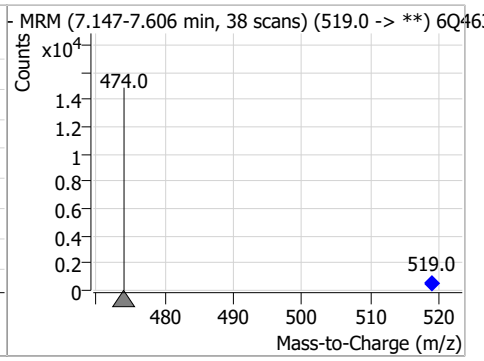


Perfluorinated Compounds by LC/MS/MS

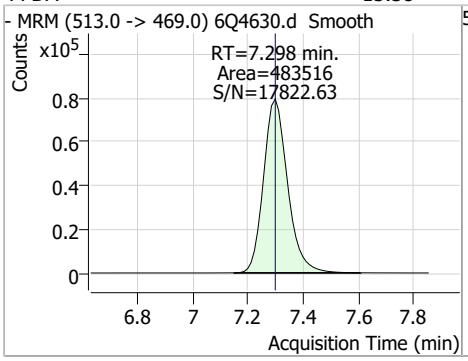
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.94	7.30	0.00	425966				

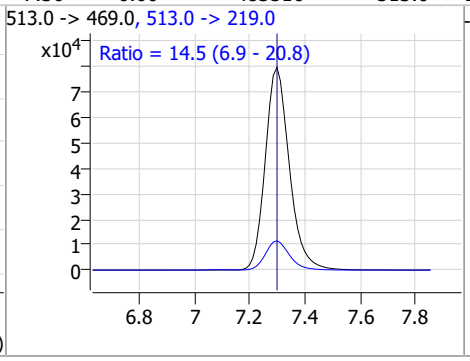


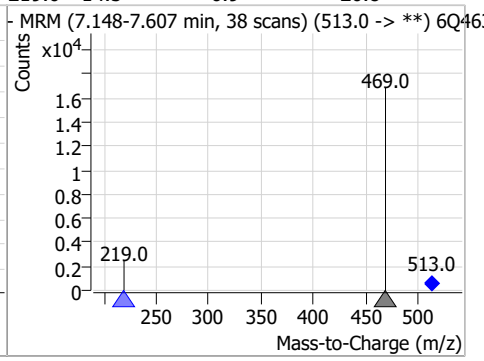




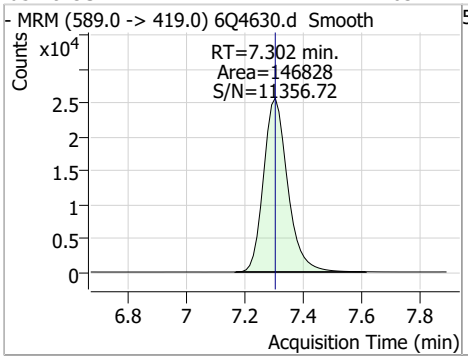
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	15.38	7.30	0.00	483516	513.0 -> 219.0	14.5	6.9	20.8

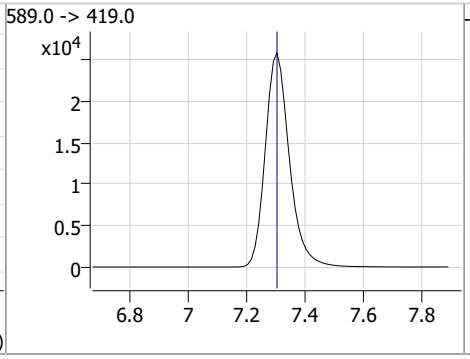


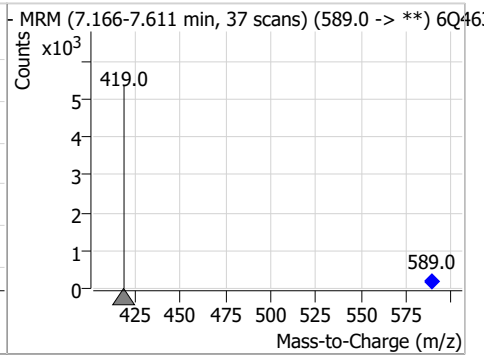




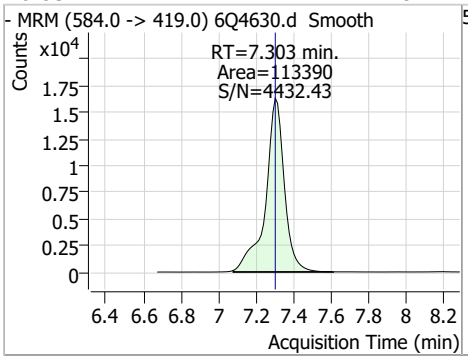
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.63	7.30	0.00	146828				

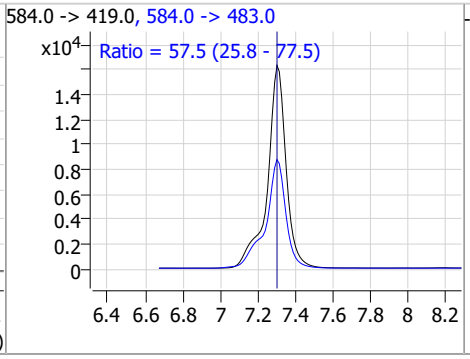


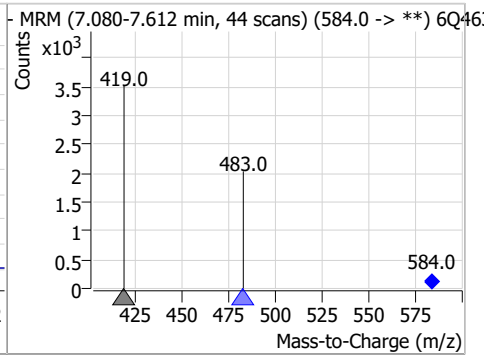




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	14.49	7.30	0.00	113390	584.0 -> 483.0	57.5	25.8	77.5

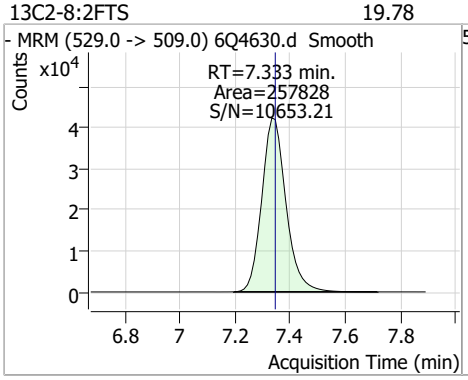


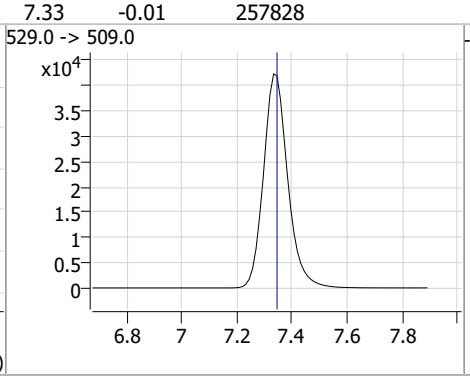


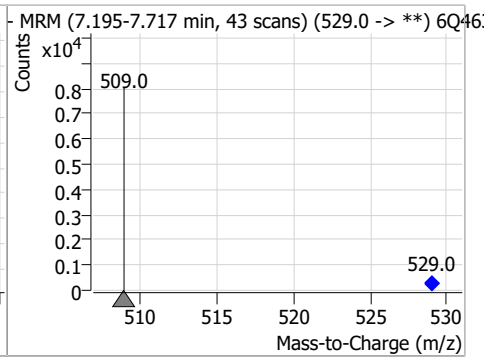


Perfluorinated Compounds by LC/MS/MS

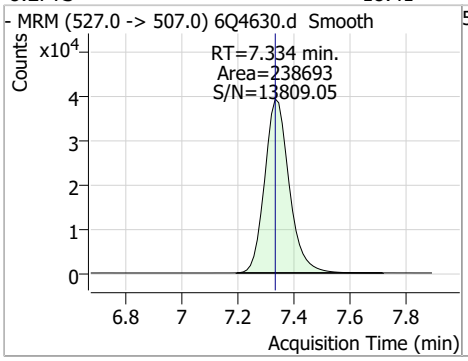
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.78	7.33	-0.01	257828				

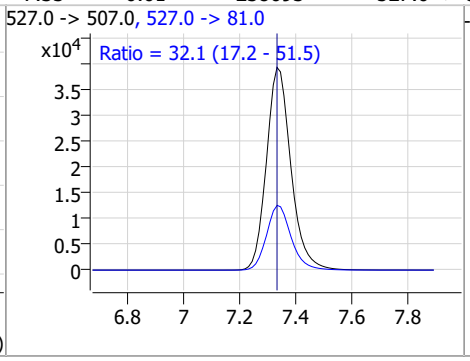


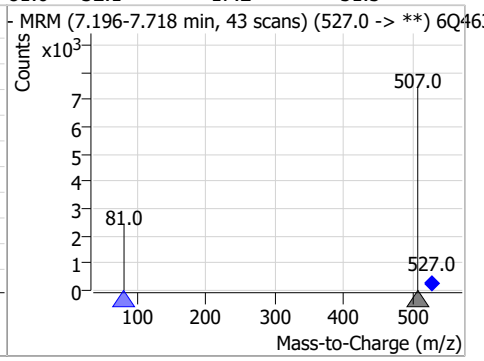




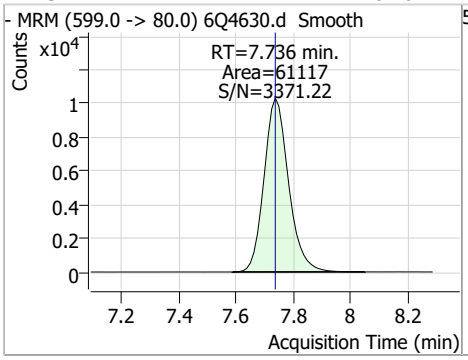
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	18.41	7.33	-0.01	238693	527.0 -> 81.0	32.1	17.2	51.5

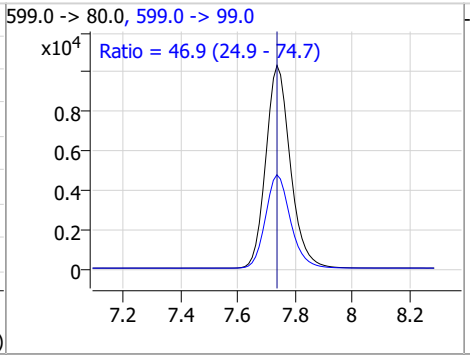


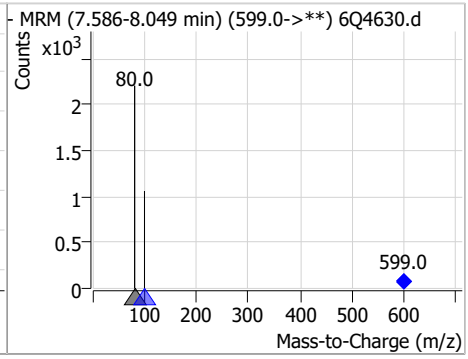




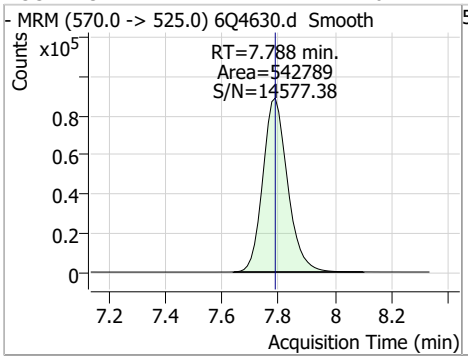
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.16	7.74	0.00	61117	599.0 -> 99.0	46.9	24.9	74.7

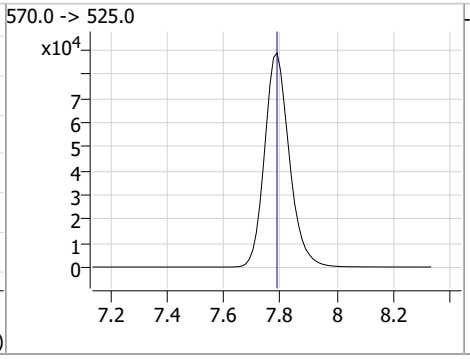


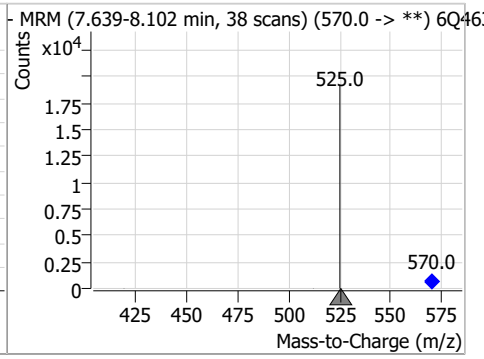




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.44	7.79	0.00	542789				

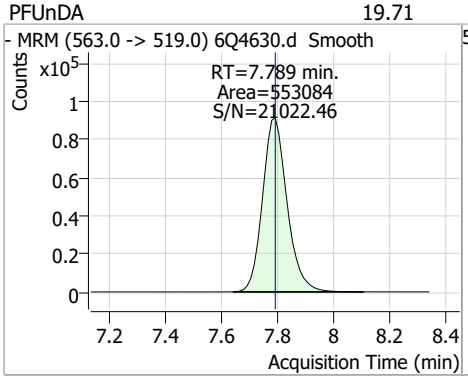


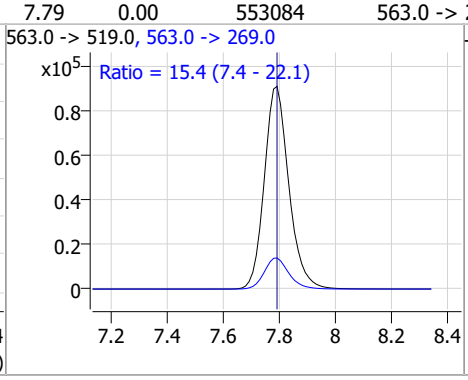


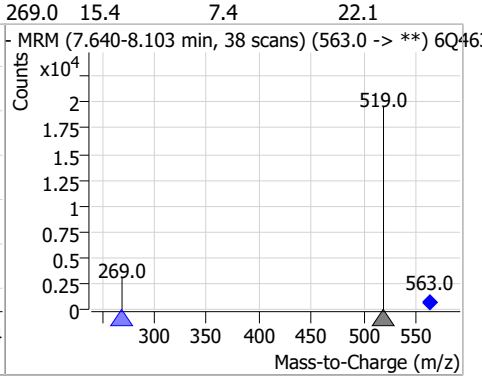


Perfluorinated Compounds by LC/MS/MS

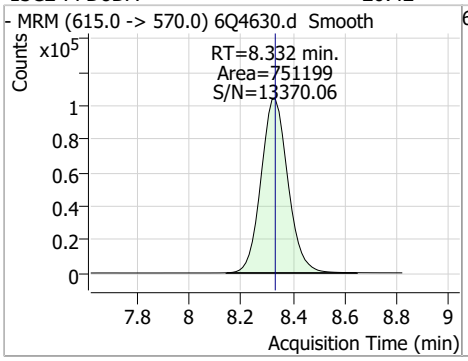
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.71	7.79	0.00	553084	563.0 -> 269.0	15.4	7.4	22.1

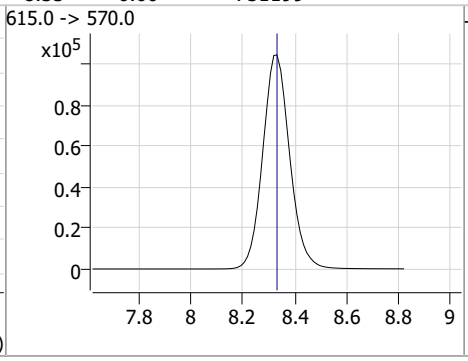


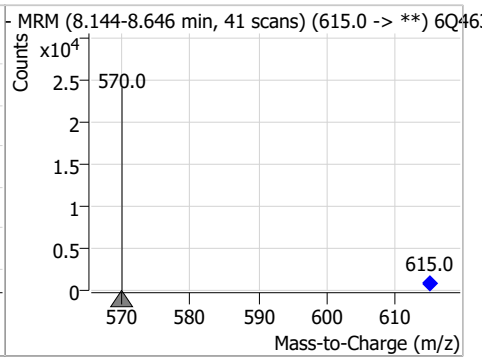




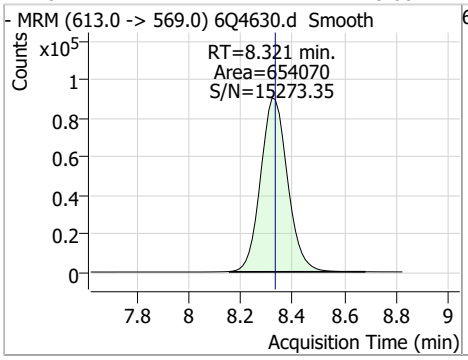
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.42	8.33	0.00	751199				

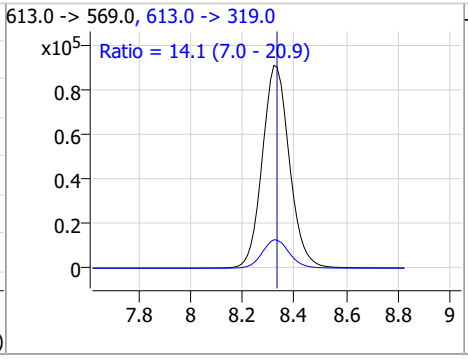


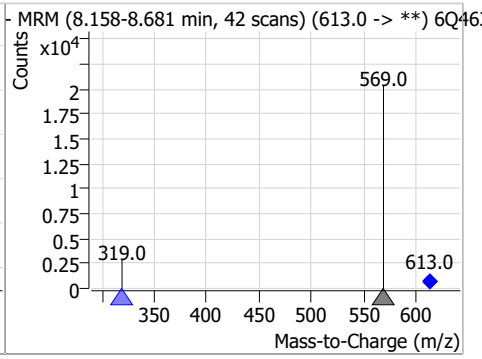




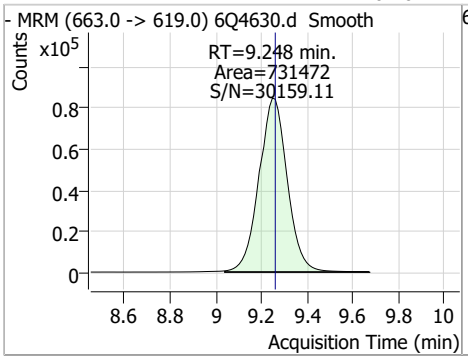
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	18.66	8.32	-0.01	654070	613.0 -> 319.0	14.1	7.0	20.9

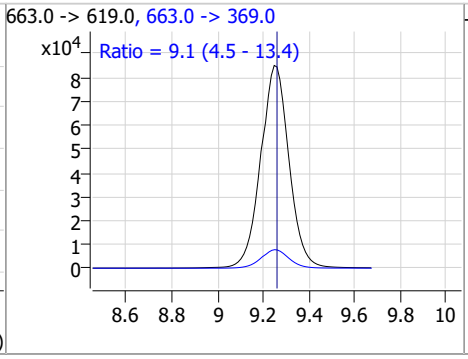


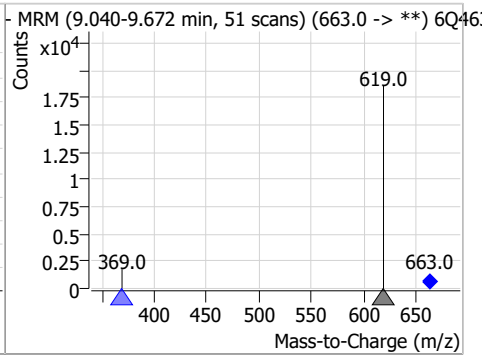




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.16	9.25	-0.01	731472	663.0 -> 369.0	9.1	4.5	13.4

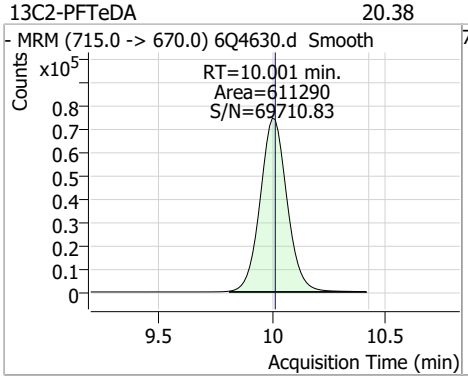


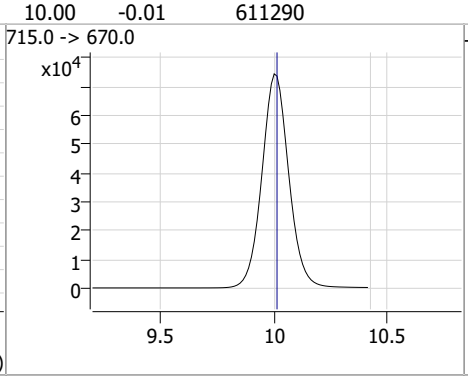


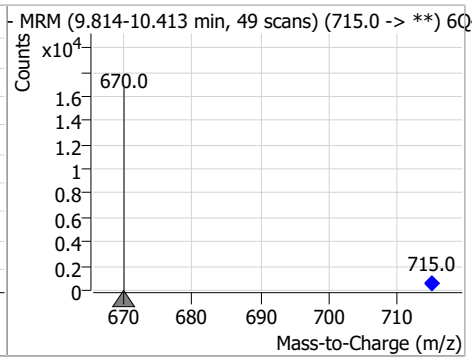


Perfluorinated Compounds by LC/MS/MS

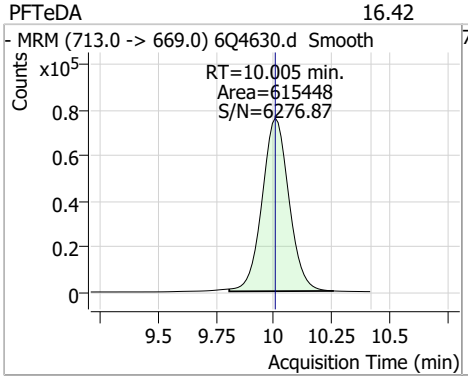
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.38	10.00	-0.01	611290				

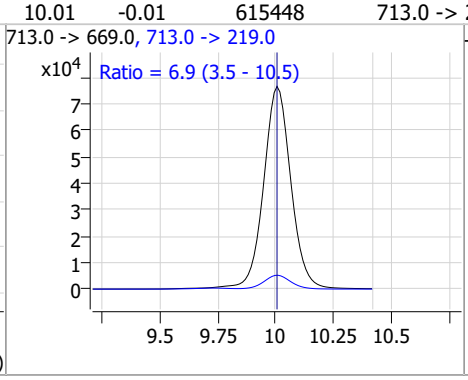


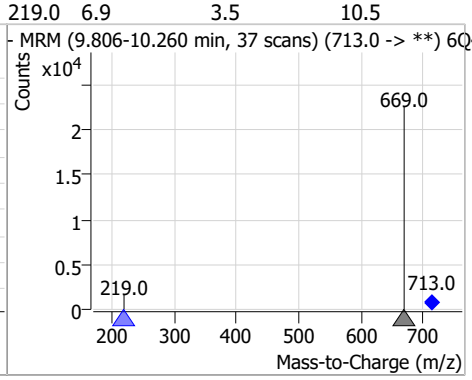




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	16.42	10.01	-0.01	615448	713.0 -> 219.0	6.9	3.5	10.5







7.7.90

7

Manual Integration Approval Summary

Sample Number: S6Q85-ICV85
Lab FileID: 6Q4630.D
Injection Time: 09/14/22 13:40
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4631.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 1:56:16 PM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	78655	20.00	µg/L	0.000
M5-PFPeA	3.418	268.0 -> 223.0	138273	20.00	µg/L	0.000
M5-PFHxA	4.573	318.0 -> 273.0	211042	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	249120	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	423655	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	516014	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	401274	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	509619	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	715530	20.00	µg/L	0.000
M2-PFTeDA	10.001	715.0 -> 670.0	586187	20.00	µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	202015	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	30318	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	27574	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	43570	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	267342	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	331912	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	251935	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	168222	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5160	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	47487	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	140265	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	267342	19.79	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C2-6:2FTS	6.136	429.0 -> 409.0	331912	19.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-8:2FTS	7.333	529.0 -> 509.0	251935	19.33	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.6%		
13C2-PFDoDA	8.332	615.0 -> 570.0	715530	19.45	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.3%		
13C2-PFTeDA	10.001	715.0 -> 670.0	586187	19.54	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.7%		
13C3-PFBS	3.635	302.0 -> 99.0	30318	19.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.0%		
13C3-PFHxS	5.475	402.0 -> 99.0	27574	19.94	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.7%		
13C4-PFBA	1.949	217.0 -> 172.0	78655	19.76	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.8%		
13C4-PFHpA	5.445	367.0 -> 322.0	249120	20.13	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.7%		
13C5-PFHxA	4.573	318.0 -> 273.0	211042	19.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
13C5-PFPeA	3.418	268.0 -> 223.0	138273	19.72	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C6-PFDA	7.297	519.0 -> 474.0	401274	19.72	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

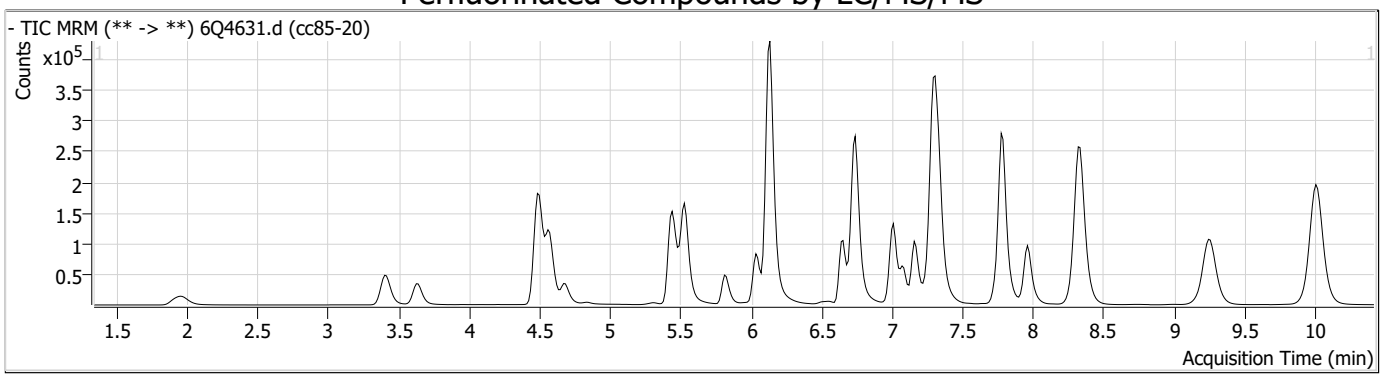
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C7-PFUnDA	7.788	570.0 -> 525.0	509619	19.19 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.0%		
13C8-FOSA	6.654	506.0 -> 78.0	202015	20.65 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C8-PFOA	6.138	421.0 -> 376.0	423655	19.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C8-PFOS	6.730	507.0 -> 99.0	43570	20.54 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C9-PFNA	6.745	472.0 -> 427.0	516014	20.03 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
d3-MeFOSAA	7.155	573.0 -> 419.0	168222	19.44 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5176	19.48 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.4%		
d3-MeFOSA	7.085	515.0 -> 169.0	47487	20.99 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
d5-EtFOSAA	7.302	589.0 -> 419.0	140256	20.66 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	302252	20.91 µg/L		98
		327.0 -> 81.0	95443			
6:2FTS	6.137	427.0 -> 407.0	343928	20.46 µg/L		99
		427.0 -> 81.0	95714			
8:2FTS	7.334	527.0 -> 507.0	278748	22.00 µg/L		93
		527.0 -> 81.0	83847			
EtFOSAA	7.303	584.0 -> 419.0	135747	18.15 µg/L		94
		584.0 -> 483.0	75569			
FOSA	6.656	498.0 -> 78.0	197121	19.45 µg/L		100
		498.0 -> 478.0	7891			
MeFOSAA	7.168	570.0 -> 419.0	164952	21.39 µg/L		100
		570.0 -> 512.0	52953			
PFBA	1.955	213.0 -> 169.0	34396	20.04 µg/L		100
PFBS	3.640	299.0 -> 80.0	100351	19.91 µg/L		99
		299.0 -> 99.0	37189			
PFDA	7.298	513.0 -> 469.0	548414	18.51 µg/L		98
		513.0 -> 219.0	79634			
PFDoDA	8.334	613.0 -> 569.0	676283	20.26 µg/L		100
		613.0 -> 319.0	94172			
PFDS	7.736	599.0 -> 80.0	63731	20.17 µg/L		99
		599.0 -> 99.0	31968			
PFHpA	5.446	363.0 -> 319.0	317675	19.61 µg/L		99
		363.0 -> 169.0	47726			
PFHpS	6.136	449.0 -> 80.0	73851	19.41 µg/L		99
		449.0 -> 99.0	39167			
PFHxA	4.574	313.0 -> 269.0	220523	19.87 µg/L		100
		313.0 -> 119.0	5666			
PFHxS	5.477	399.0 -> 80.0	80458	20.36 µg/L	m	97
		399.0 -> 99.0	37478			
PFNA	6.745	463.0 -> 419.0	444259	18.27 µg/L		100
		463.0 -> 219.0	82112			
PFNS	7.256	549.0 -> 80.0	89719	20.27 µg/L		92
		549.0 -> 99.0	44226			
PFOA	6.138	413.0 -> 369.0	442965	19.36 µg/L		99
		413.0 -> 169.0	69512			
PFOS	6.731	499.0 -> 80.0	82377	20.39 µg/L	m	97

Perfluorinated Compounds by LC/MS/MS

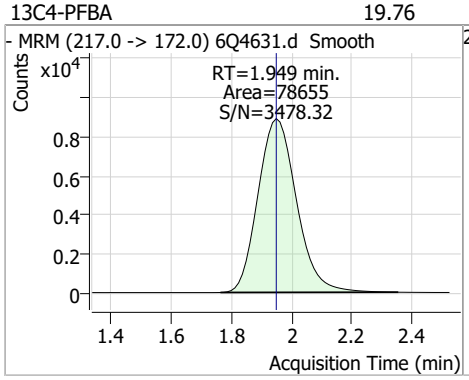
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	36874			
PFPeA	3.408	263.0 -> 219.0	116425	19.99	µg/L	100
PFPeS	4.681	349.0 -> 80.0	83644	19.93	µg/L	100
		349.0 -> 99.0	38289			
PFTeDA	10.005	713.0 -> 669.0	721305	20.07	µg/L	100
		713.0 -> 219.0	50219			
PFTrDA	9.248	663.0 -> 619.0	708738	20.51	µg/L	100
		663.0 -> 369.0	63910			
PFUnDA	7.789	563.0 -> 519.0	559635	21.24	µg/L	99
		563.0 -> 269.0	85642			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	312245	20.35	µg/L	98
		633.0 -> 453.0	94650			
9Cl-PF3ONS	7.009	531.0 -> 351.0	396180	19.40	µg/L	94
		533.0 -> 353.0	134503			
ADONA	5.532	377.0 -> 251.0	513153	20.07	µg/L	99
		377.0 -> 85.0	126371			
HFPO-DA	4.840	285.0 -> 169.0	5039	20.65	µg/L	96
		285.0 -> 185.0	795			
MeFOSA	7.086	512.0 -> 169.0	54190	20.91	µg/L	99
		512.0 -> 219.0	52837			
4-PFECHS	6.032	461.0 -> 381.0	258958	18.99	µg/L	100
		461.0 -> 99.0	86334			
FBSA	4.514	298.0 -> 78.0	211236	20.55	µg/L	100
		298.0 -> 64.0	14675			
FHxSA	5.828	398.0 -> 78.0	180545	19.31	µg/L	100
		398.0 -> 64.0	6424			

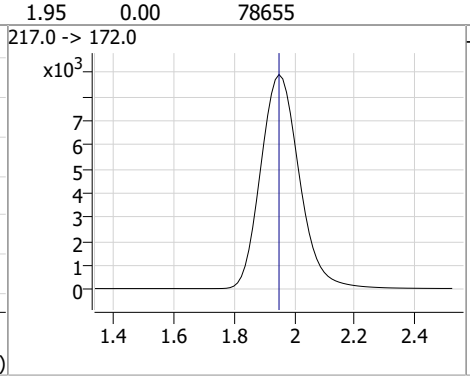
 # = Qualifier out of range, m = manually integrated, + = Area summed

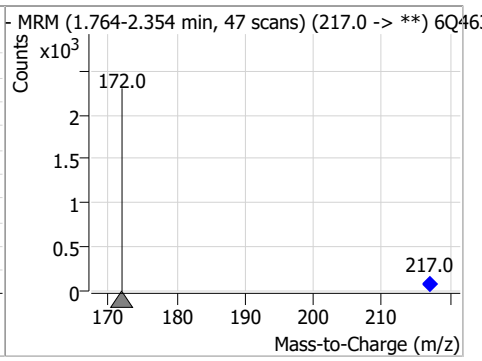
Perfluorinated Compounds by LC/MS/MS



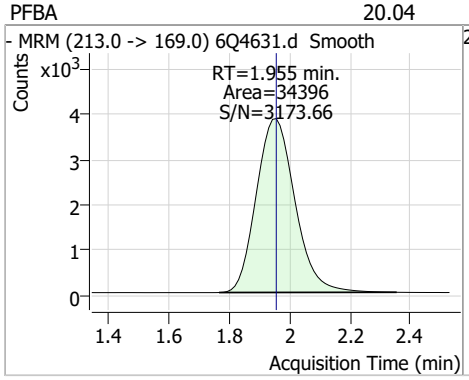
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	19.76	1.95	0.00	78655				

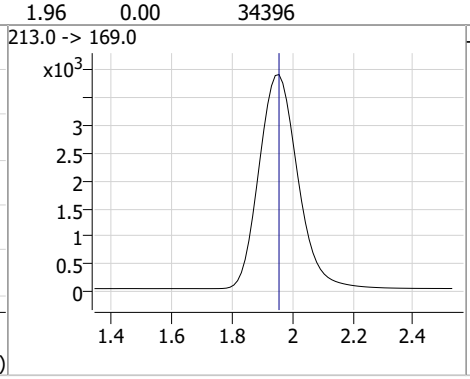


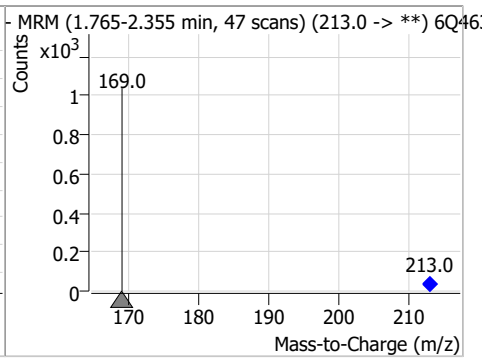




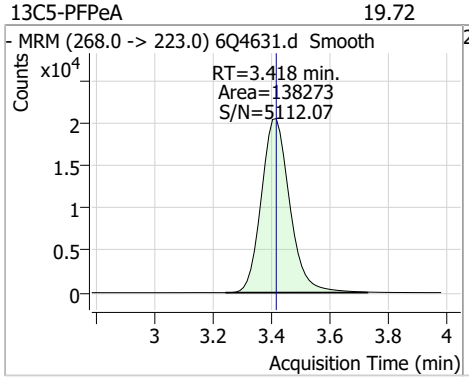
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	20.04	1.96	0.00	34396				

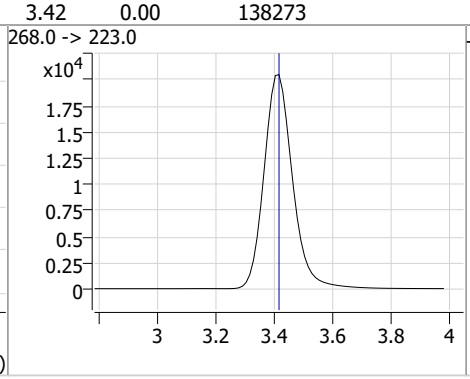


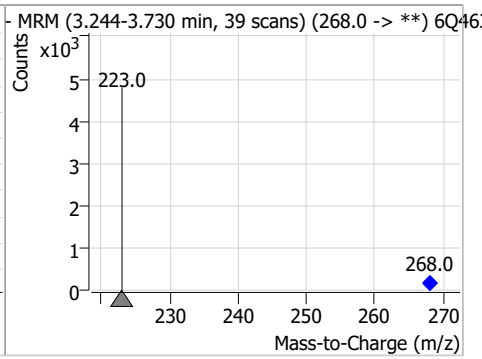




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	19.72	3.42	0.00	138273				

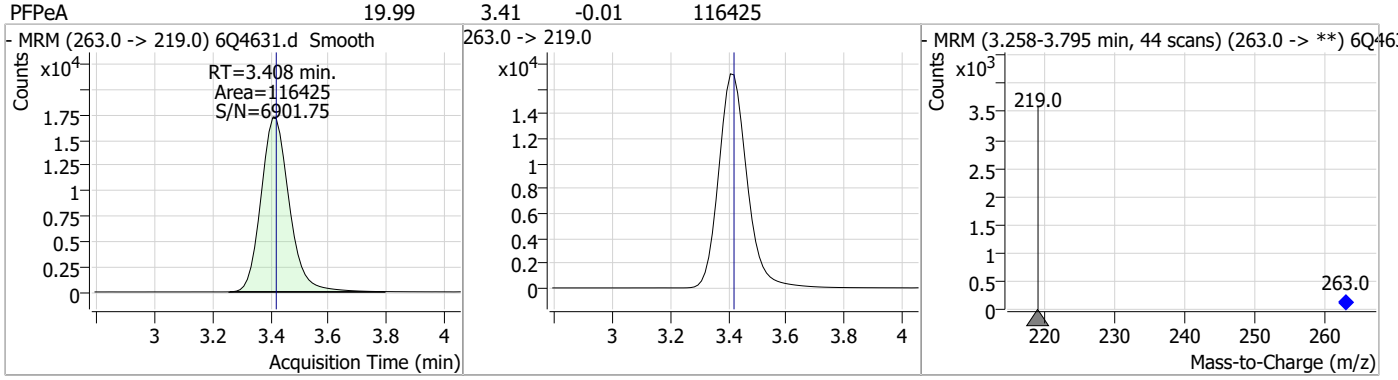




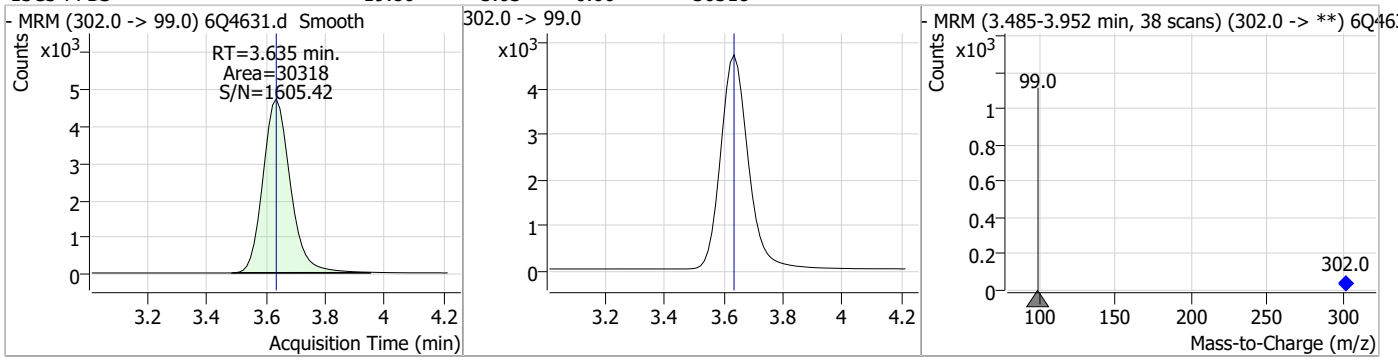


Perfluorinated Compounds by LC/MS/MS

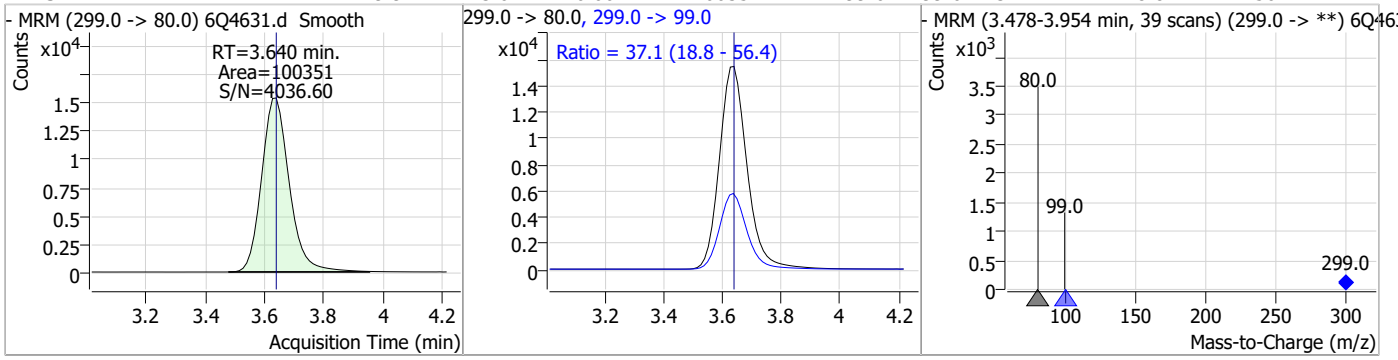
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.99	3.41	-0.01	116425				



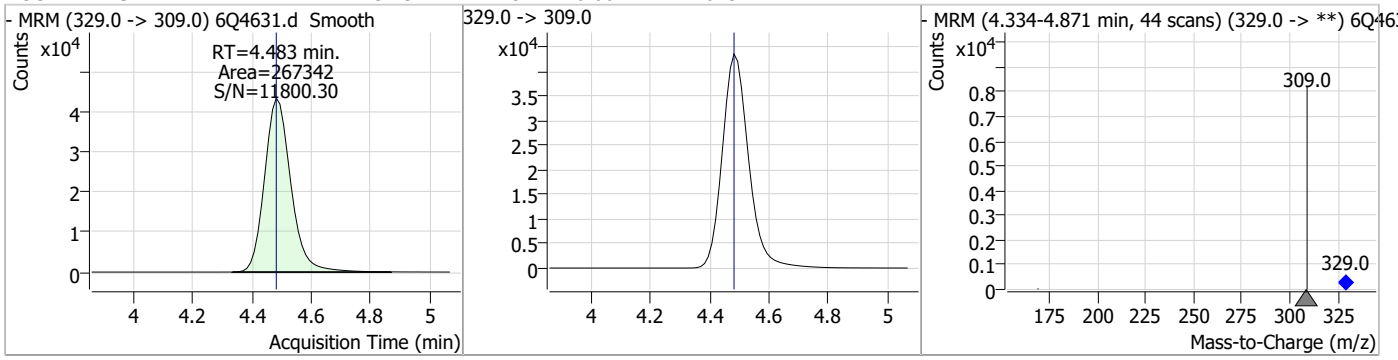
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	19.80	3.63	0.00	30318				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.91	3.64	0.00	100351	299.0 -> 99.0	37.1	18.8	56.4

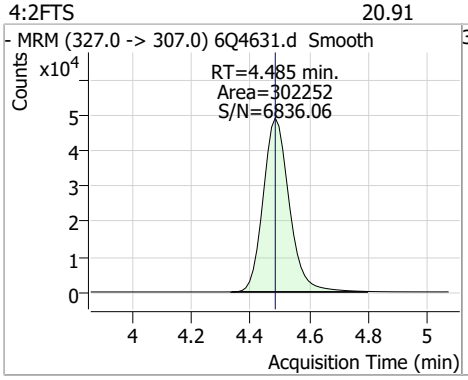


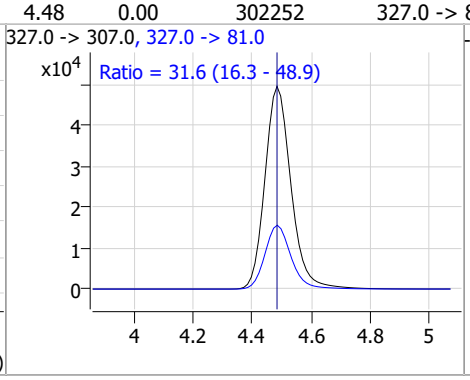
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.79	4.48	0.00	267342				

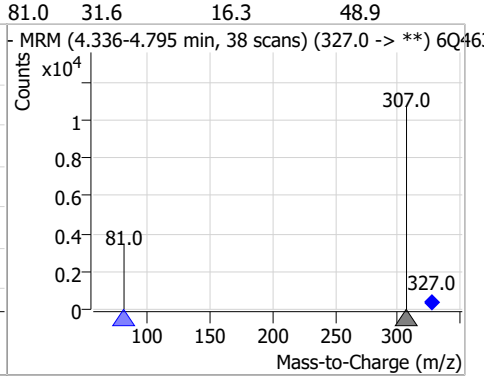


Perfluorinated Compounds by LC/MS/MS

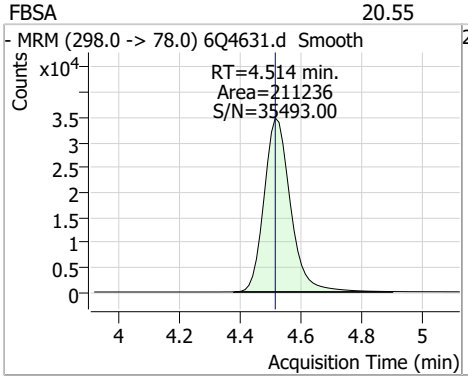
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.91	4.48	0.00	302252	327.0 -> 81.0	31.6	16.3	48.9

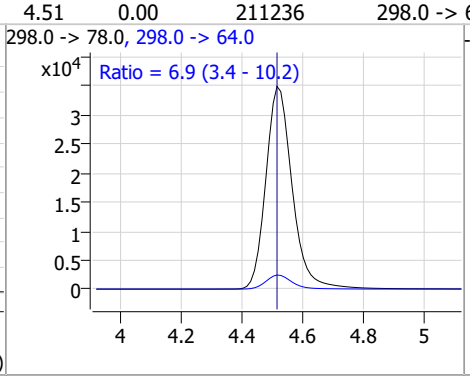


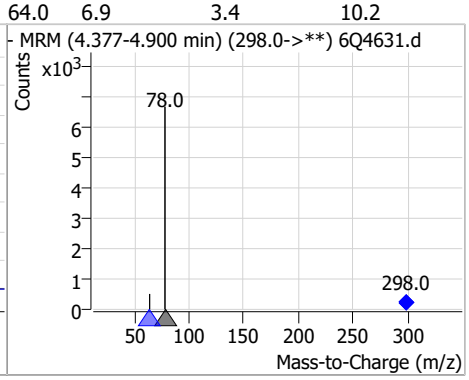




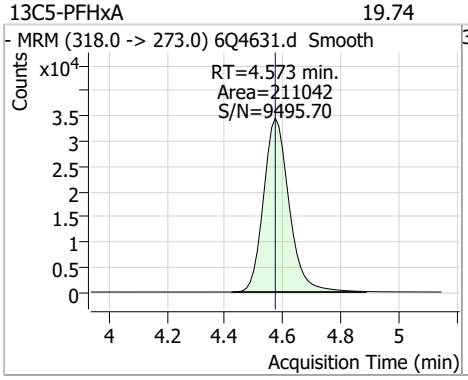
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.55	4.51	0.00	211236	298.0 -> 64.0	6.9	3.4	10.2

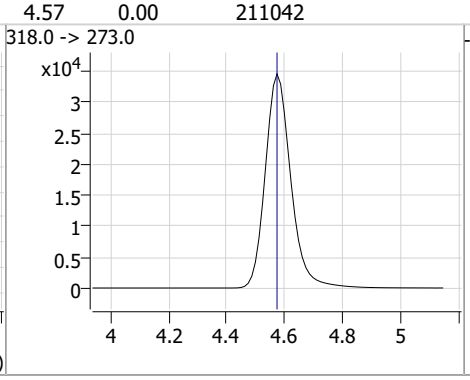


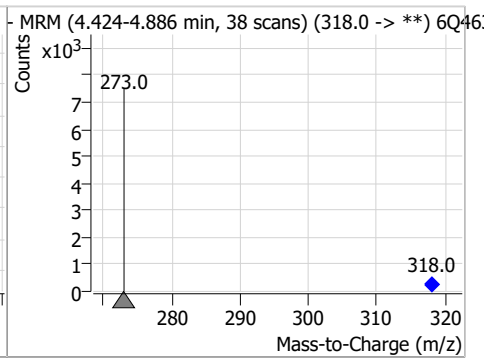




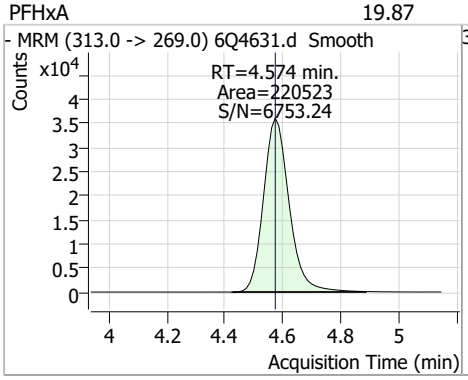
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	19.74	4.57	0.00	211042				

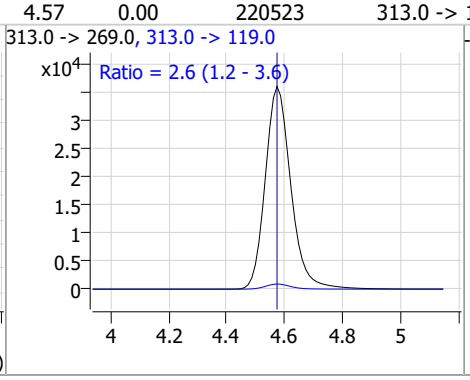


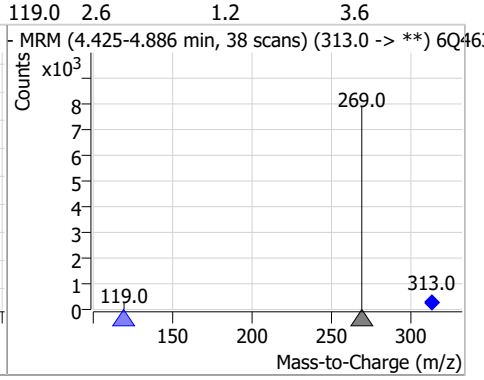




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.87	4.57	0.00	220523	313.0 -> 119.0	2.6	1.2	3.6

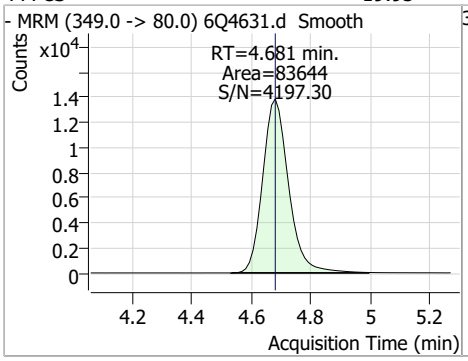


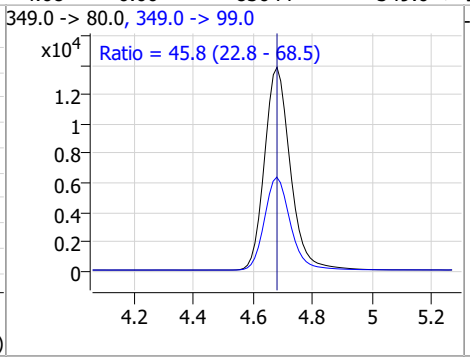


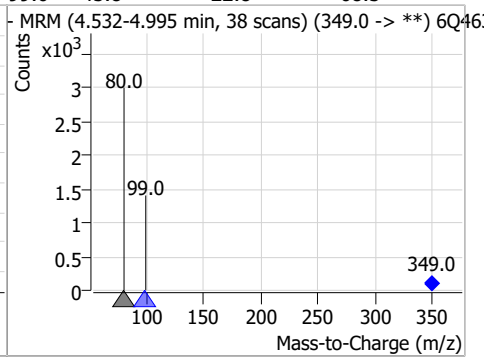


Perfluorinated Compounds by LC/MS/MS

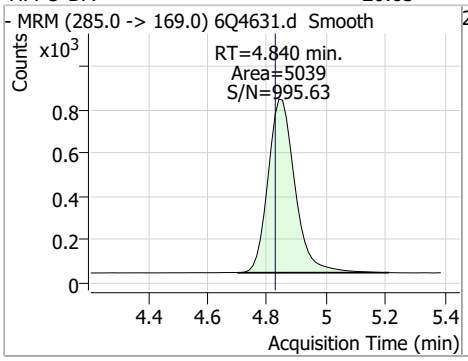
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.93	4.68	0.00	83644	349.0 -> 99.0	45.8	22.8	68.5

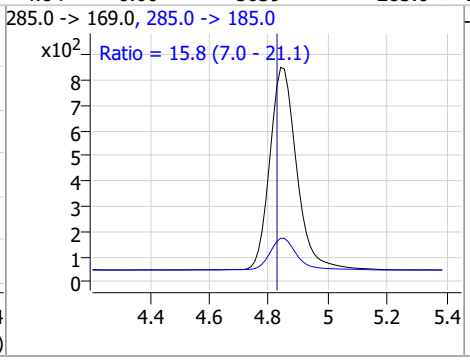


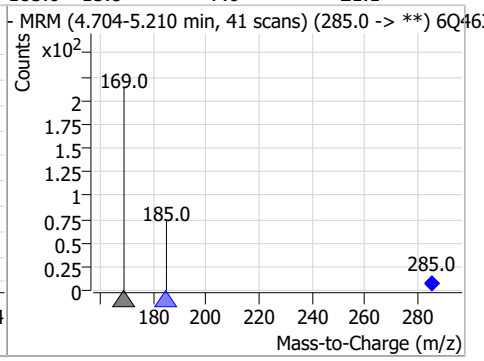




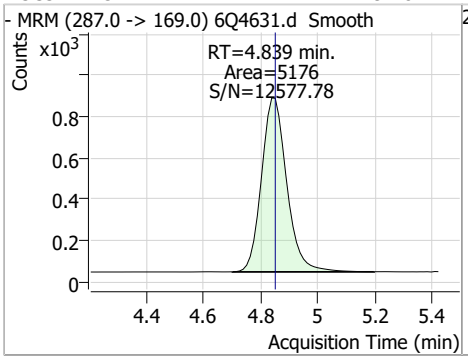
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.65	4.84	0.00	5039	285.0 -> 185.0	15.8	7.0	21.1

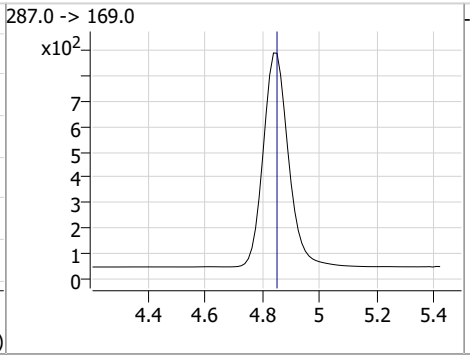


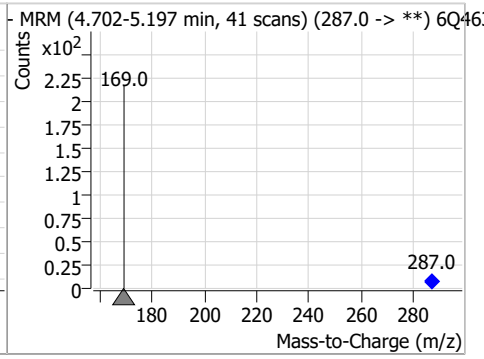




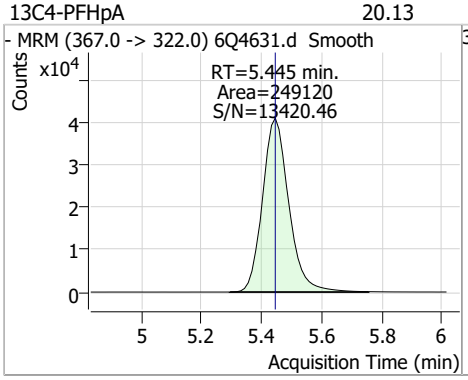
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.48	4.84	-0.01	5176				

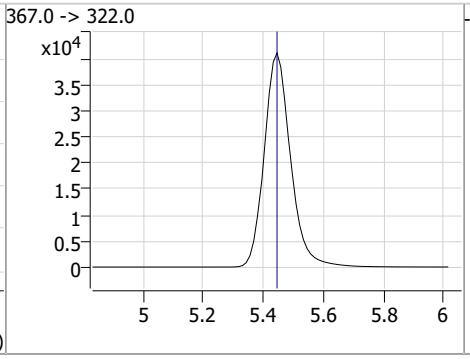


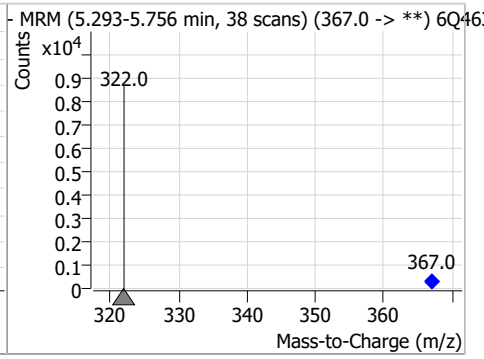




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.13	5.45	0.00	249120				

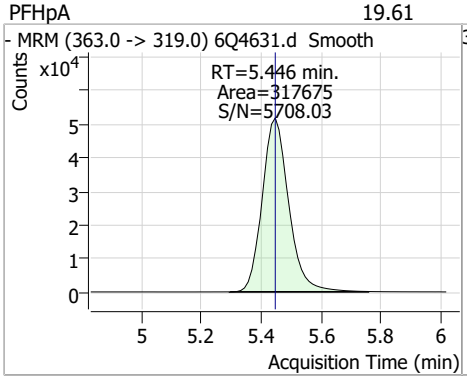


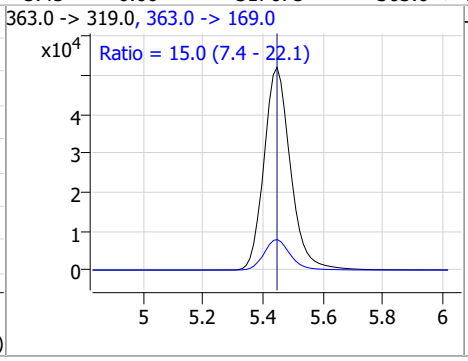


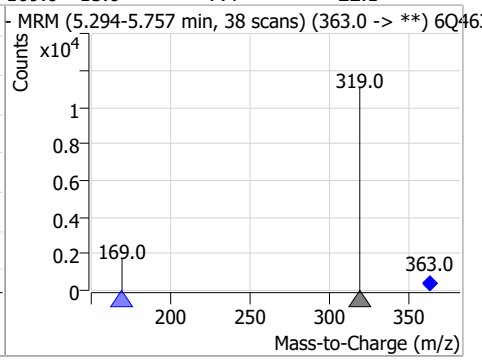


Perfluorinated Compounds by LC/MS/MS

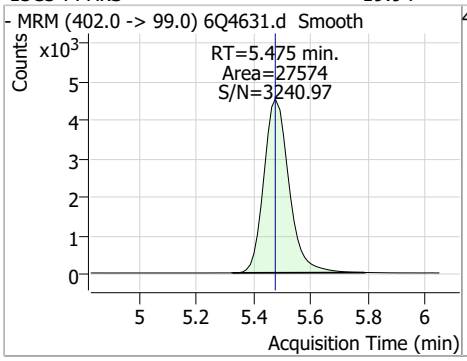
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.61	5.45	0.00	317675	363.0 -> 169.0	15.0	7.4	22.1

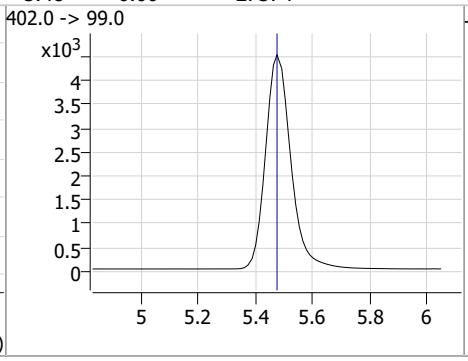


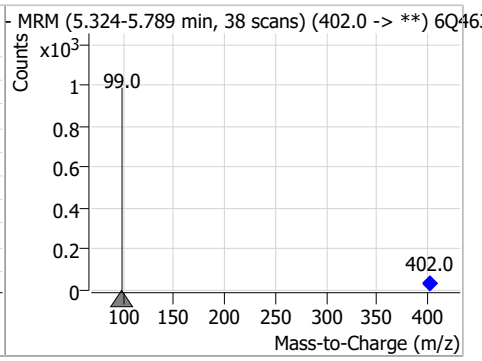




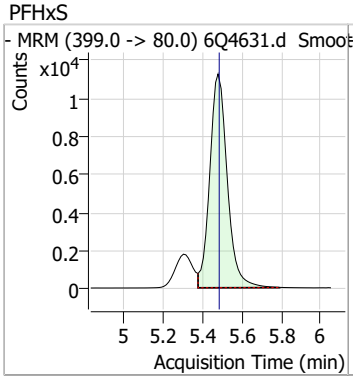
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	19.94	5.48	0.00	27574				

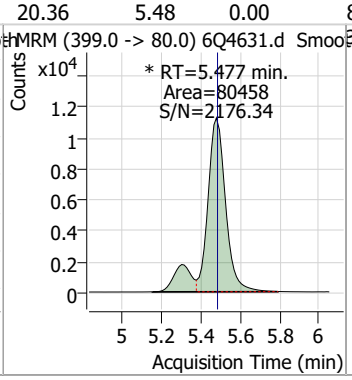


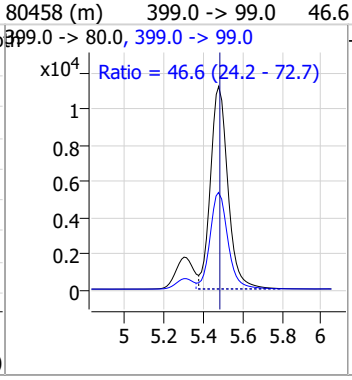


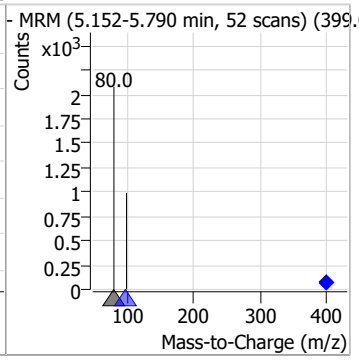


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.36	5.48	0.00	80458 (m)	399.0 -> 99.0	46.6	24.2	72.7

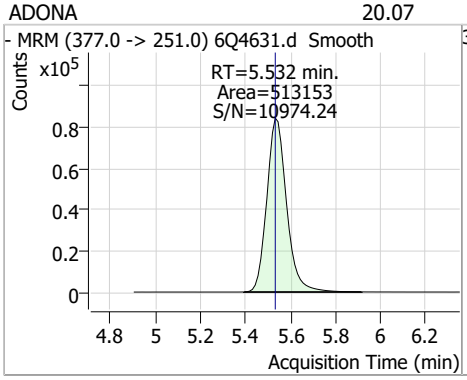


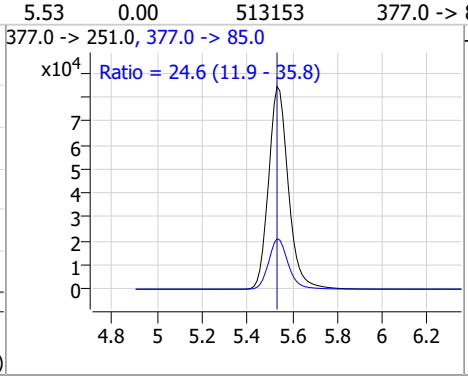


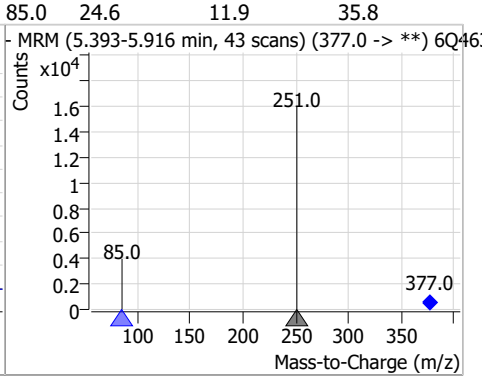




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.07	5.53	0.00	513153	377.0 -> 85.0	24.6	11.9	35.8

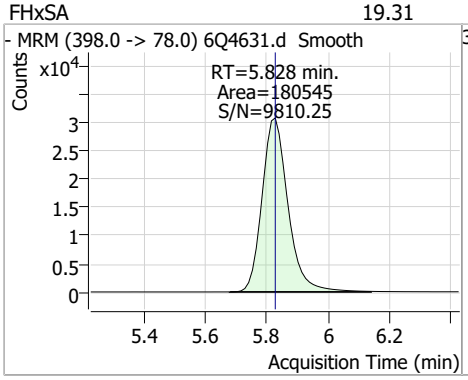


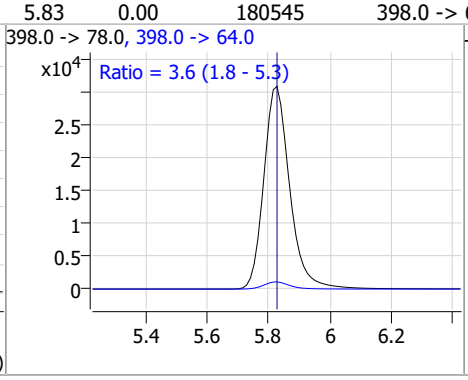


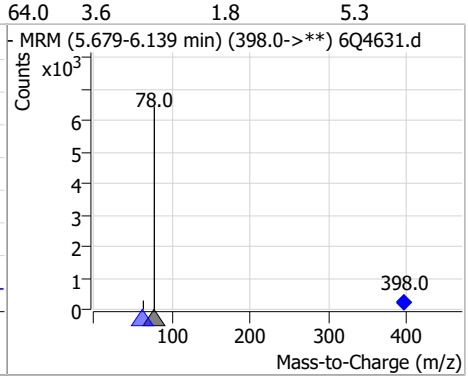


Perfluorinated Compounds by LC/MS/MS

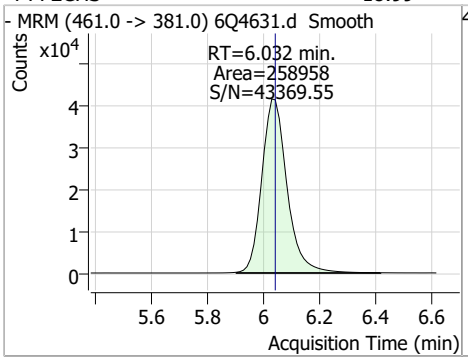
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.31	5.83	0.00	180545	398.0 -> 64.0	3.6	1.8	5.3

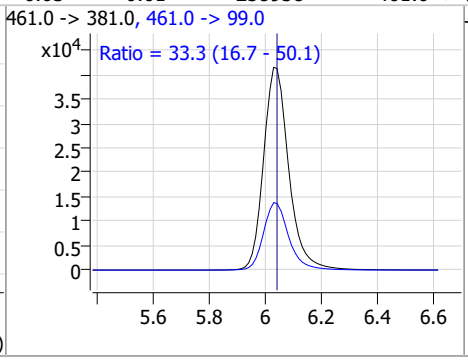


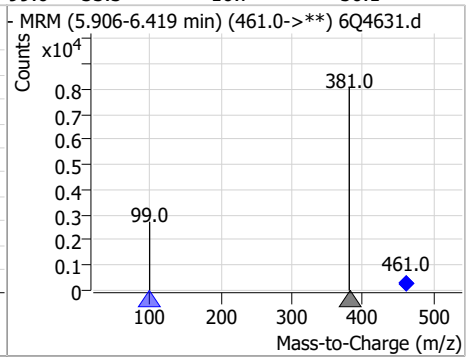




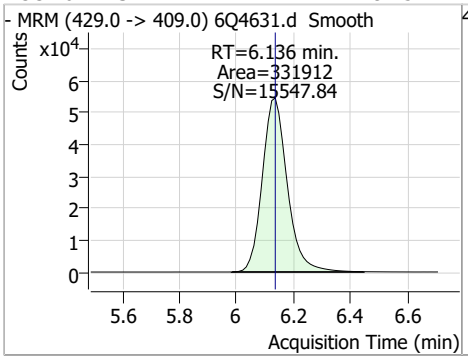
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.99	6.03	-0.01	258958	461.0 -> 99.0	33.3	16.7	50.1

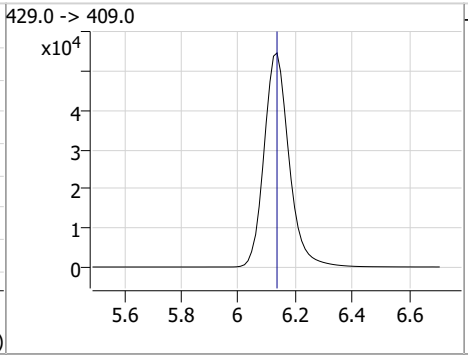


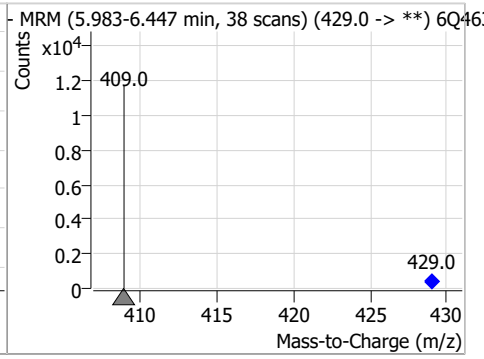




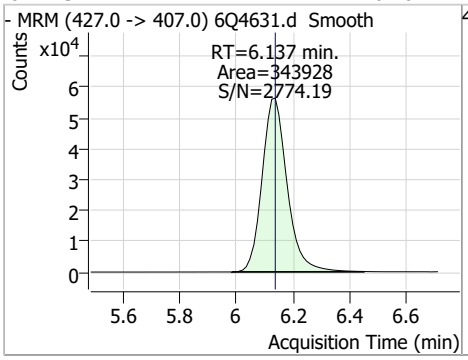
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	19.45	6.14	0.00	331912				

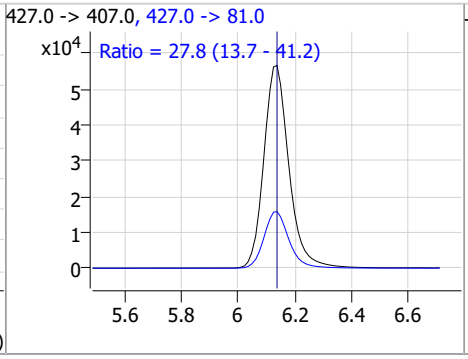


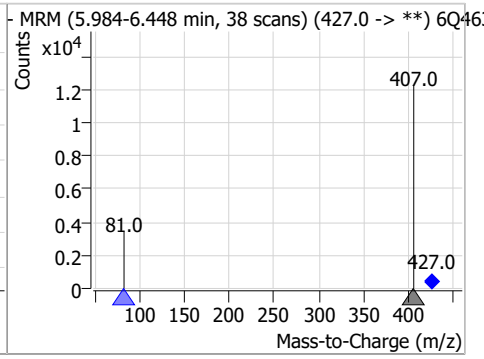




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.46	6.14	0.00	343928	427.0 -> 81.0	27.8	13.7	41.2

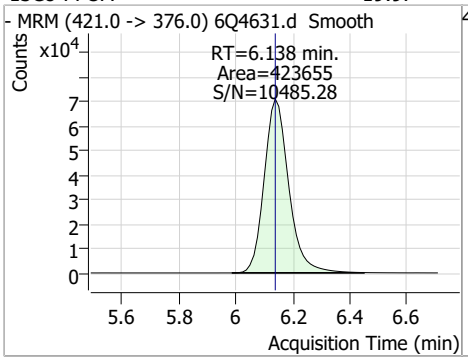


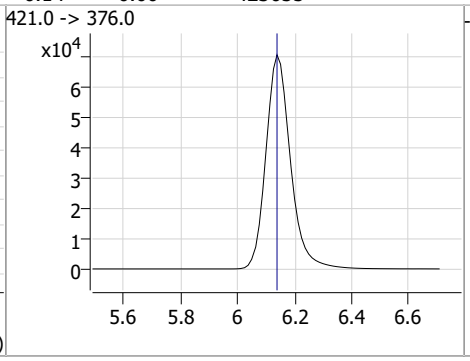


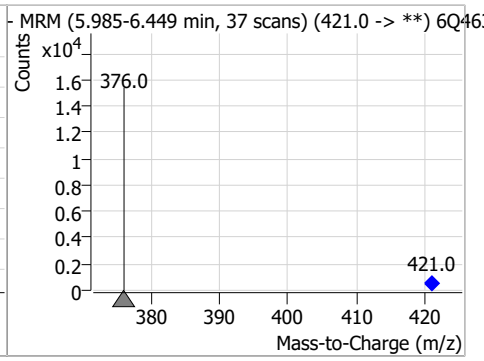


Perfluorinated Compounds by LC/MS/MS

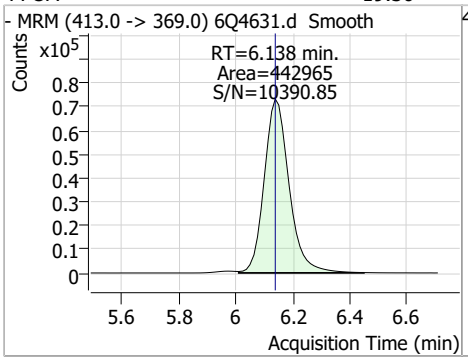
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	19.97	6.14	0.00	423655				

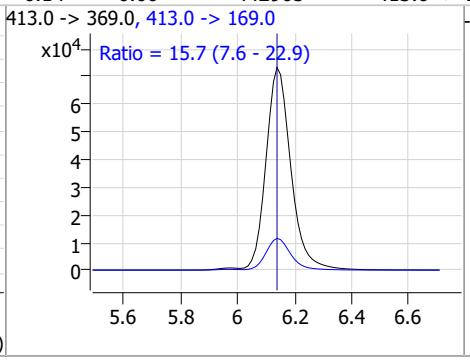


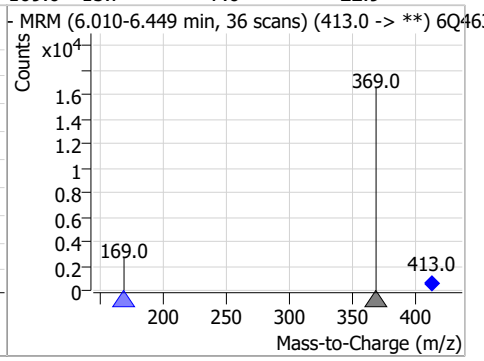




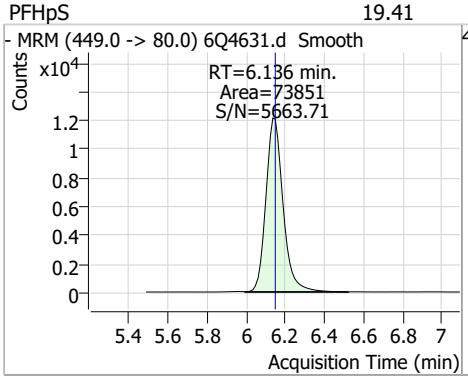
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.36	6.14	0.00	442965	413.0 -> 169.0	15.7	7.6	22.9

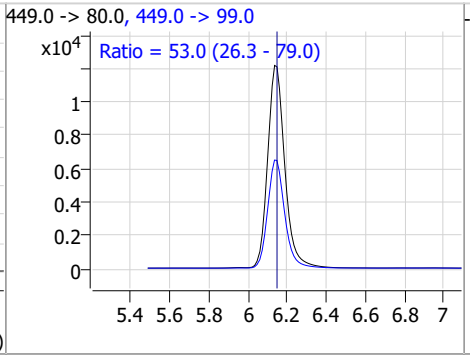


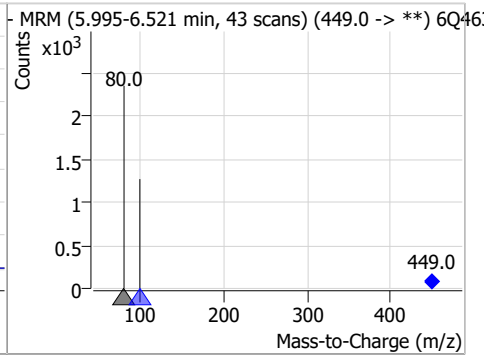




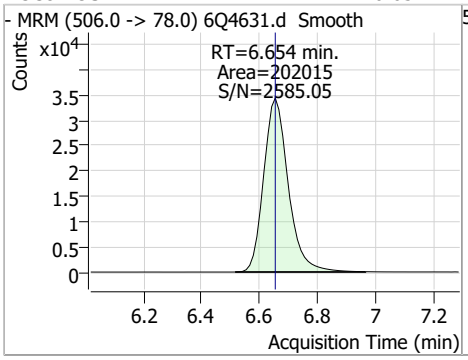
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.41	6.14	-0.01	73851	449.0 -> 99.0	53.0	26.3	79.0

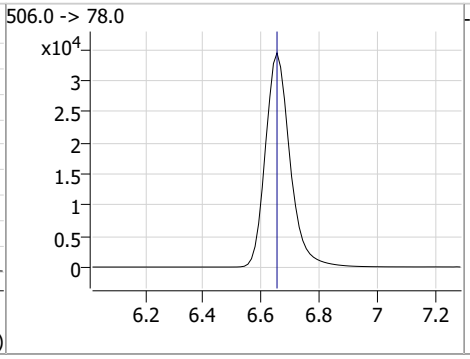


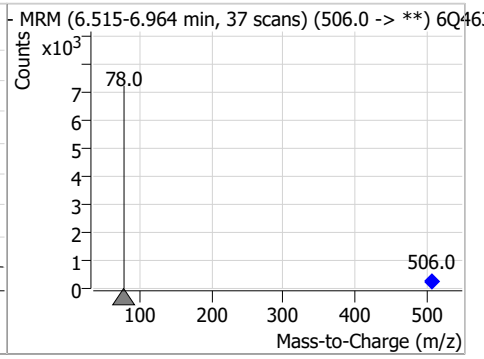




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	20.65	6.65	0.00	202015				

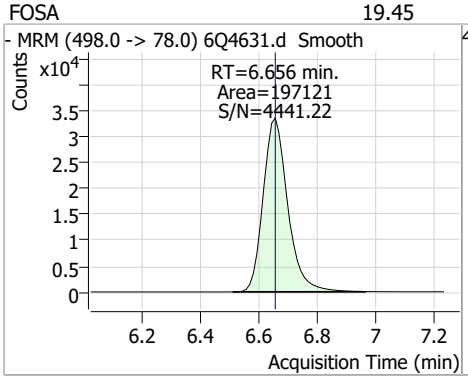


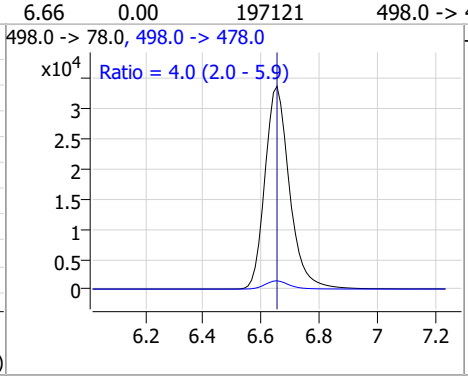


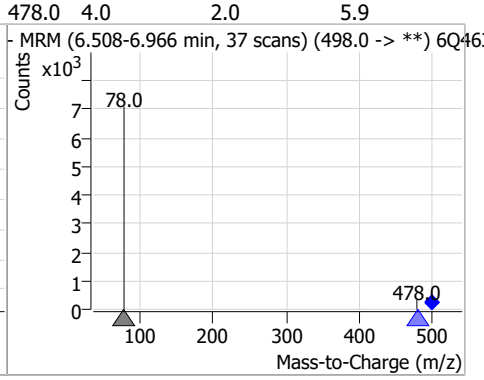


Perfluorinated Compounds by LC/MS/MS

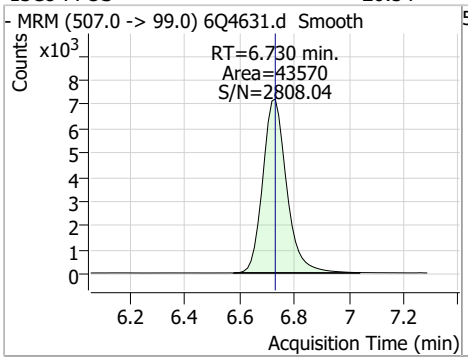
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.45	6.66	0.00	197121	498.0 -> 478.0	4.0	2.0	5.9

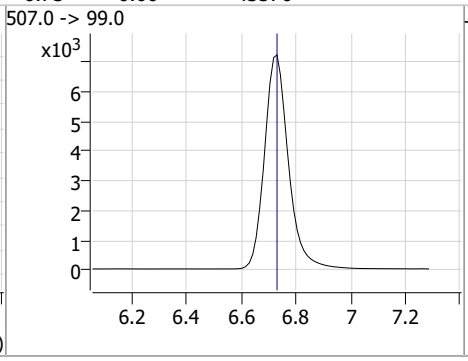


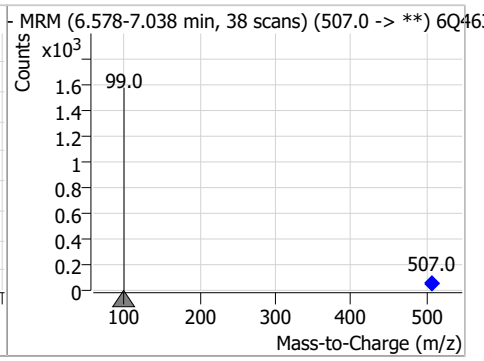




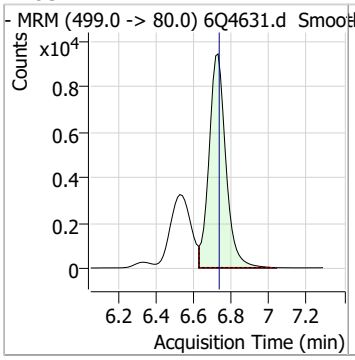
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.54	6.73	0.00	43570				

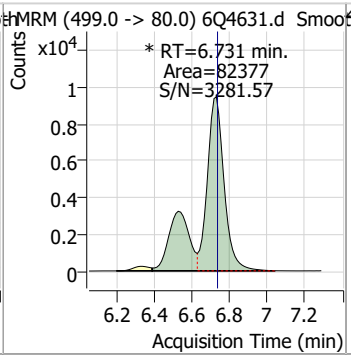


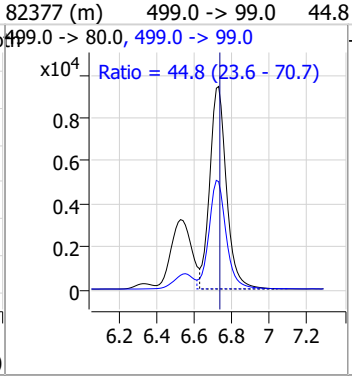


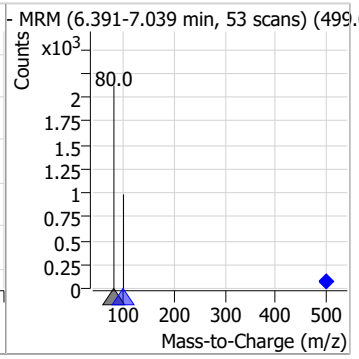


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.39	6.73	0.00	82377 (m)	499.0 -> 99.0	44.8	23.6	70.7

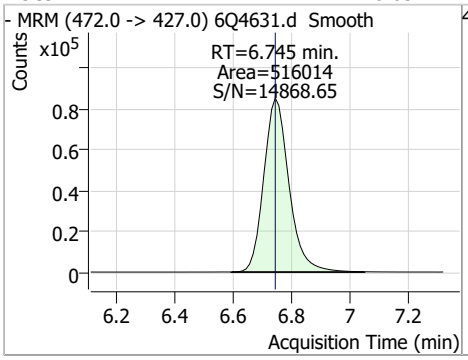


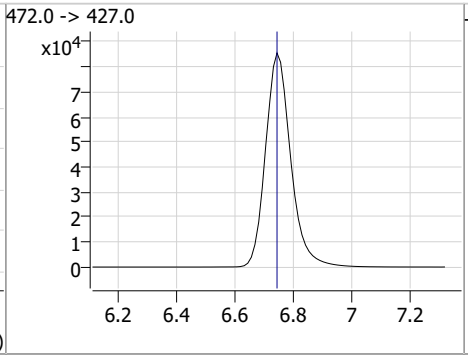


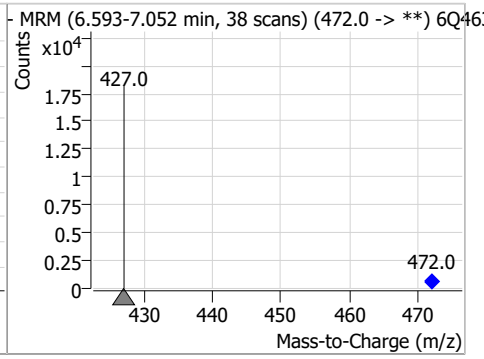




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.03	6.74	0.00	516014				

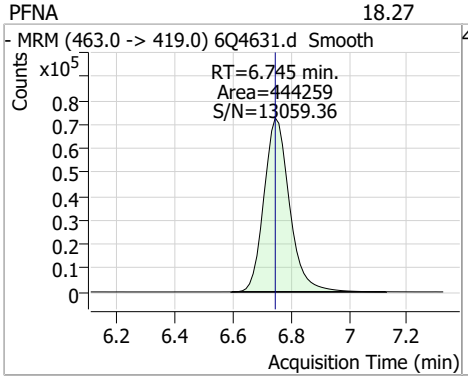


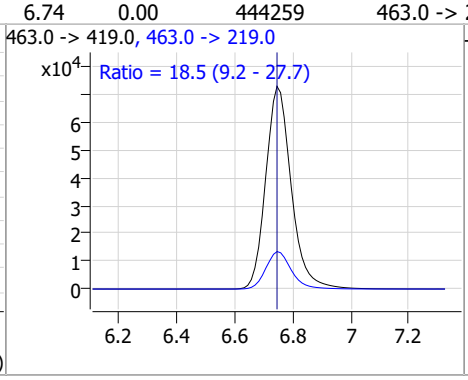


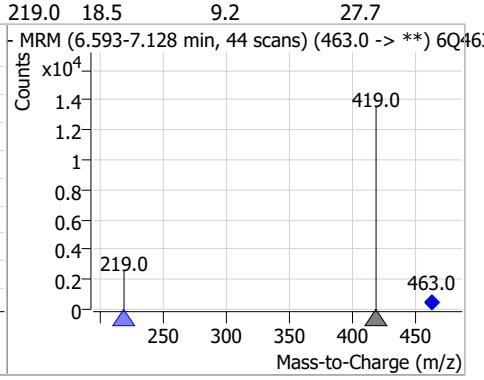


Perfluorinated Compounds by LC/MS/MS

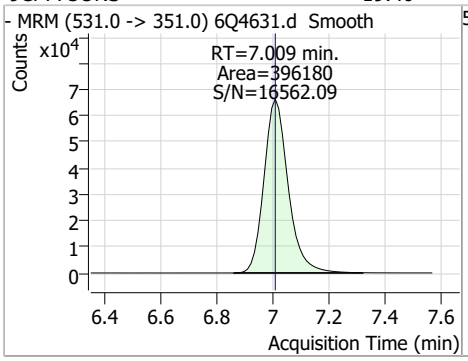
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.27	6.74	0.00	444259	463.0 -> 219.0	18.5	9.2	27.7

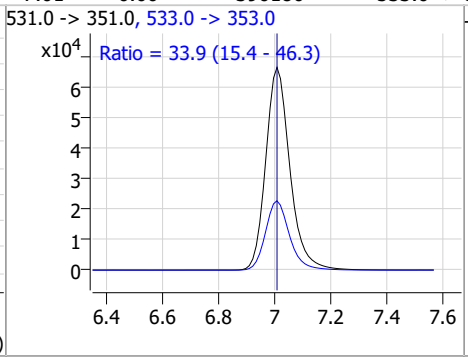


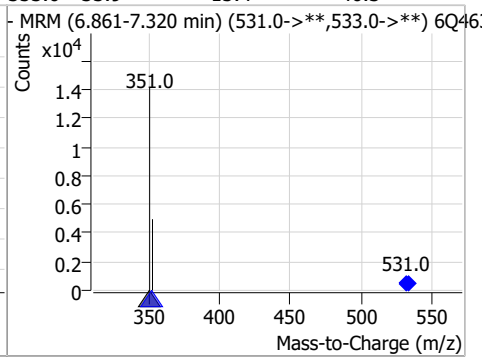




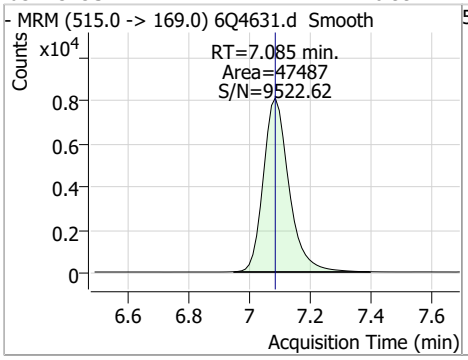
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.40	7.01	0.00	396180	533.0 -> 353.0	33.9	15.4	46.3

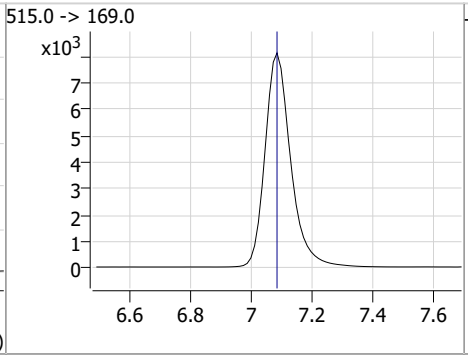


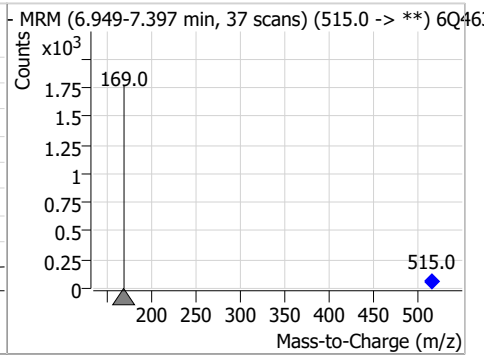




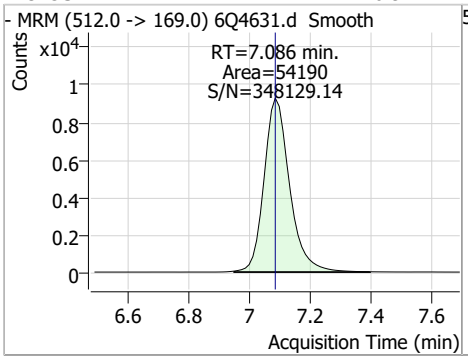
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.99	7.08	0.00	47487				

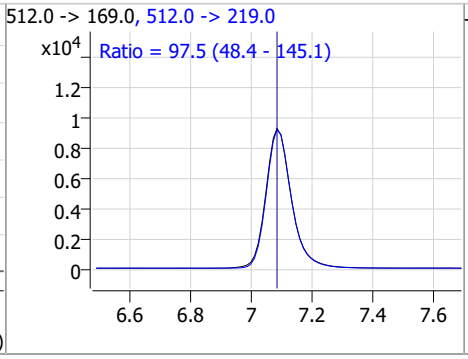


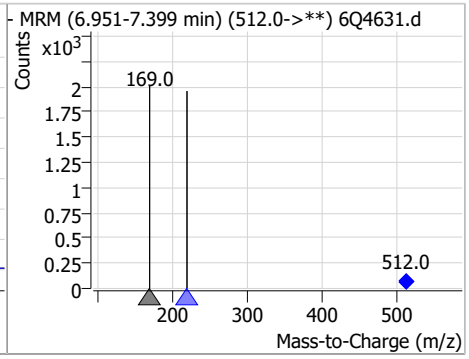




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.91	7.09	0.00	54190	512.0 -> 219.0	97.5	48.4	145.1

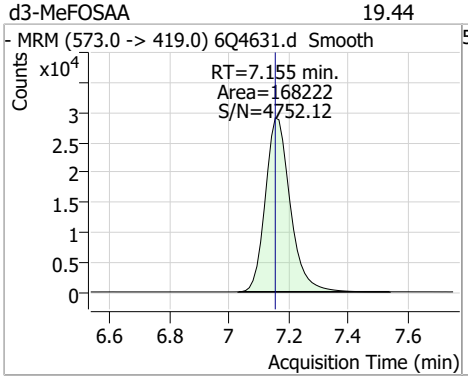


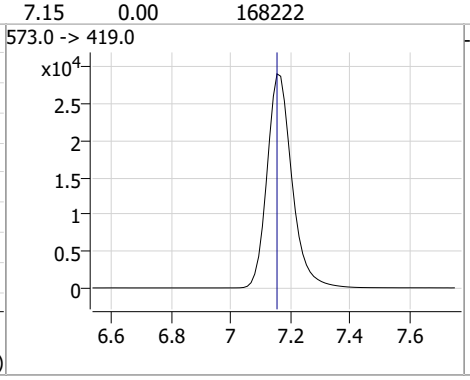


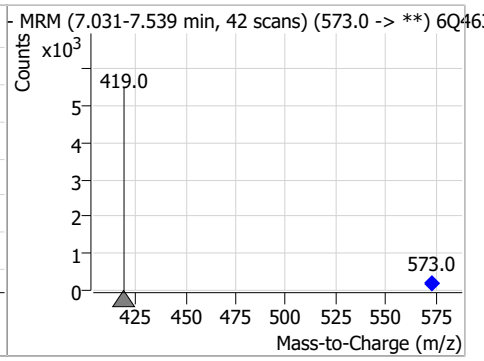


Perfluorinated Compounds by LC/MS/MS

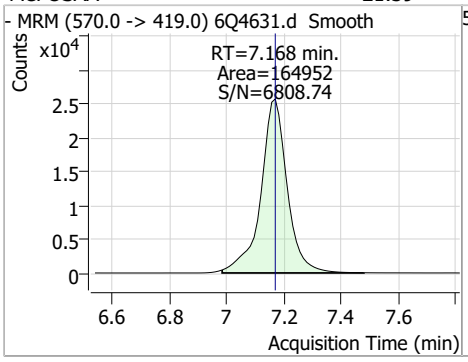
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	19.44	7.15	0.00	168222				

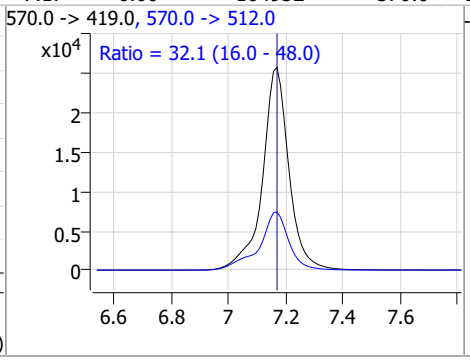


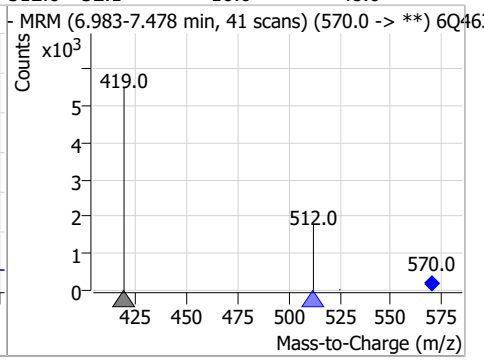




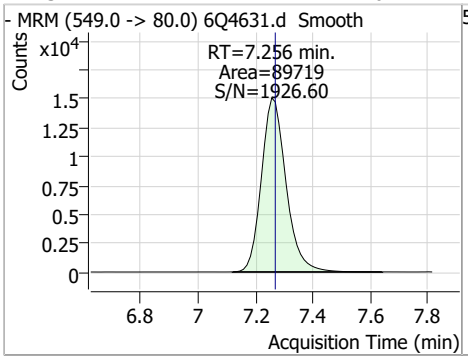
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.39	7.17	0.00	164952	570.0 -> 512.0	32.1	16.0	48.0

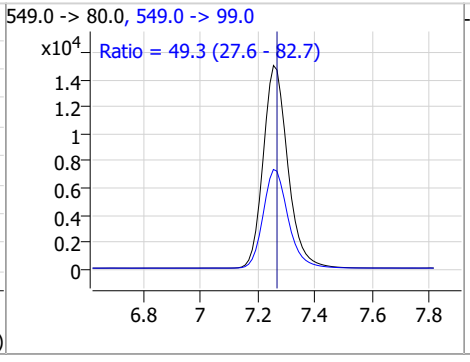


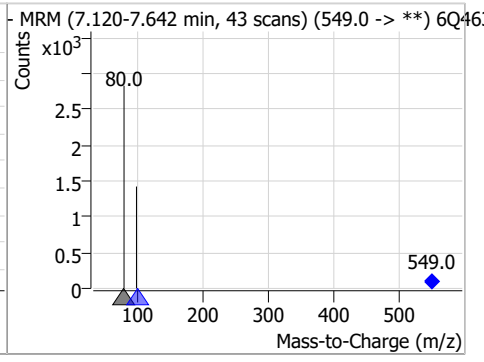




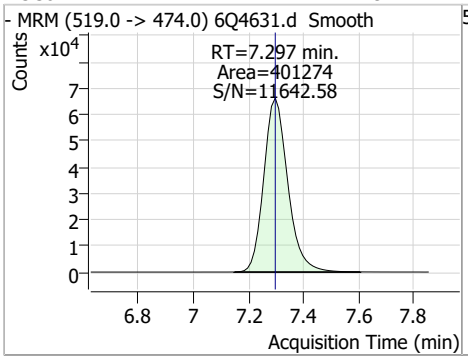
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.27	7.26	-0.01	89719	549.0 -> 99.0	49.3	27.6	82.7

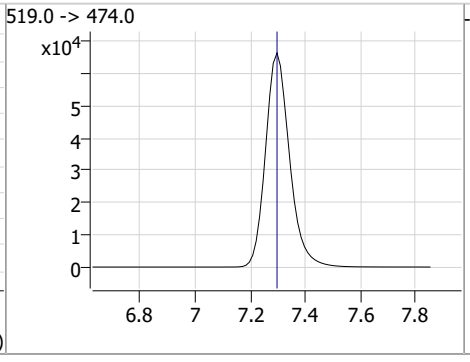


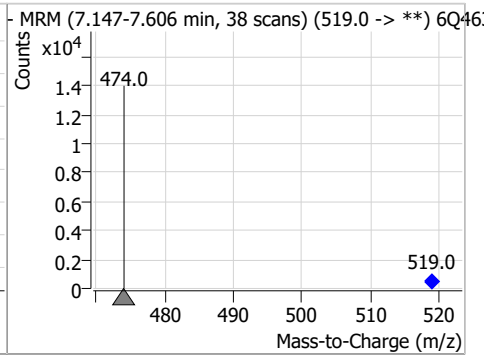




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.72	7.30	0.00	401274				

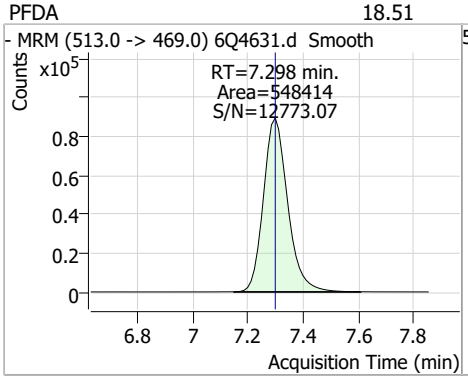


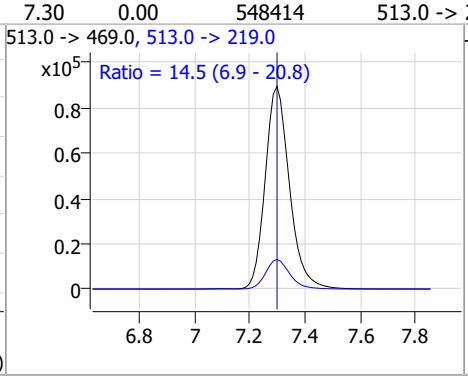


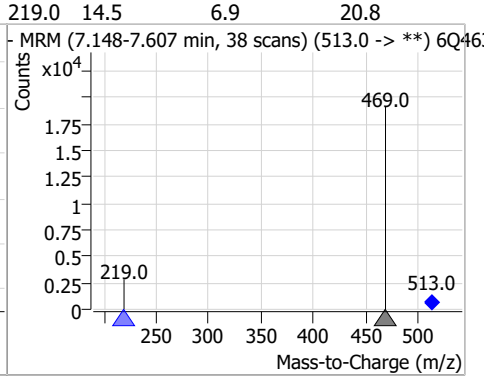


Perfluorinated Compounds by LC/MS/MS

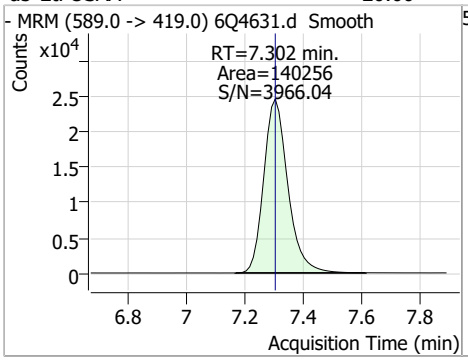
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.51	7.30	0.00	548414	513.0 -> 219.0	14.5	6.9	20.8

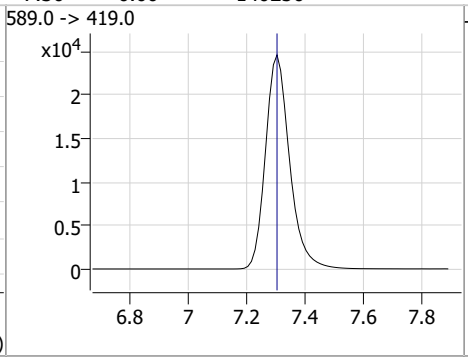


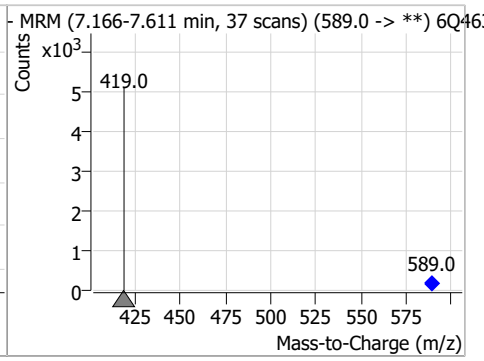




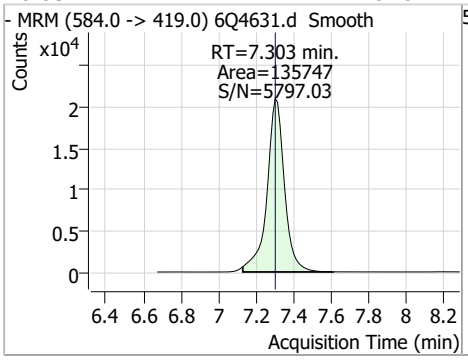
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	20.66	7.30	0.00	140256				

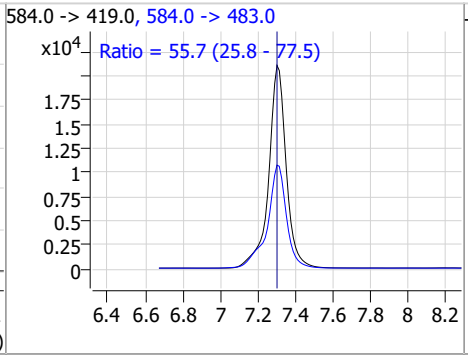


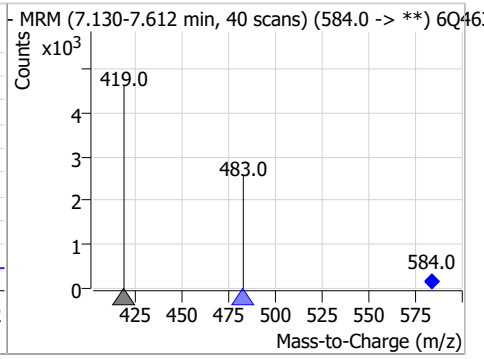




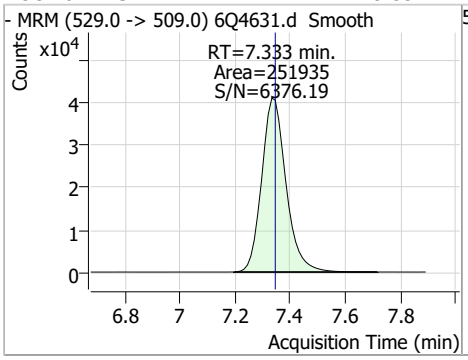
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.15	7.30	0.00	135747	584.0 -> 483.0	55.7	25.8	77.5

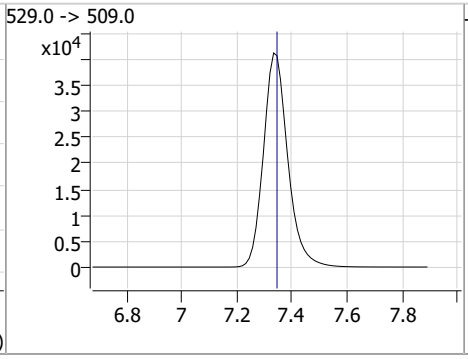


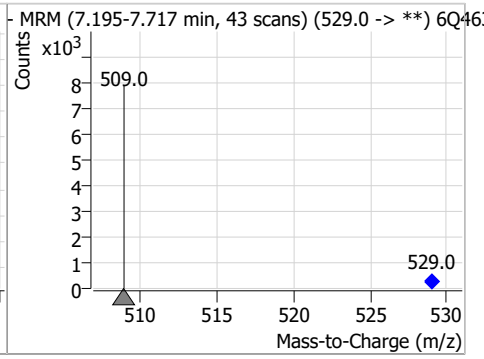




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.33	7.33	-0.01	251935				

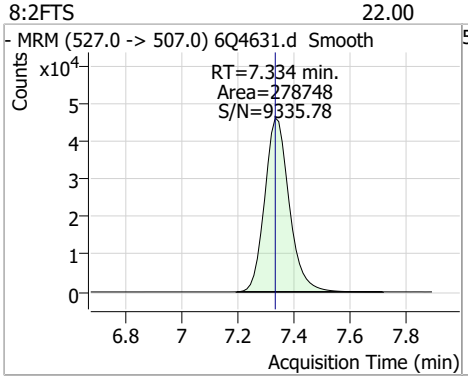


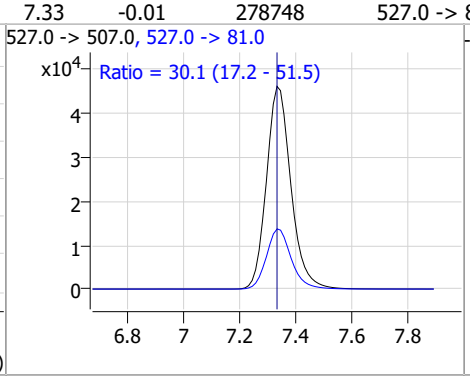


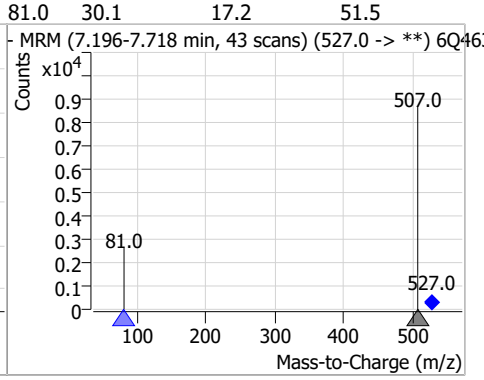


Perfluorinated Compounds by LC/MS/MS

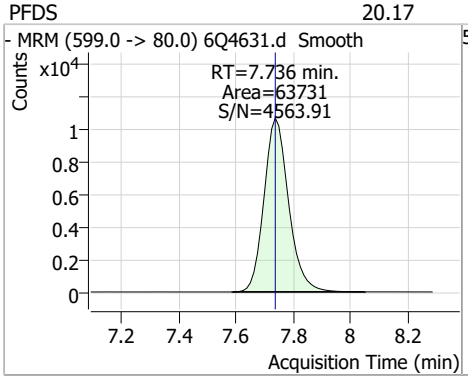
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	22.00	7.33	-0.01	278748	527.0 -> 81.0	30.1	17.2	51.5

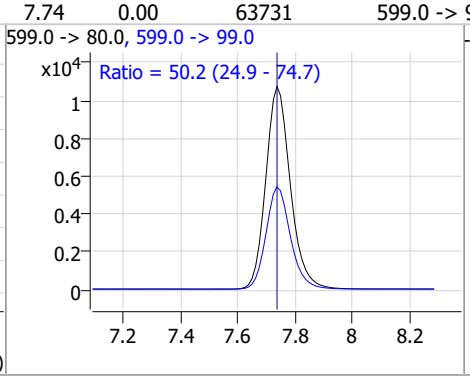


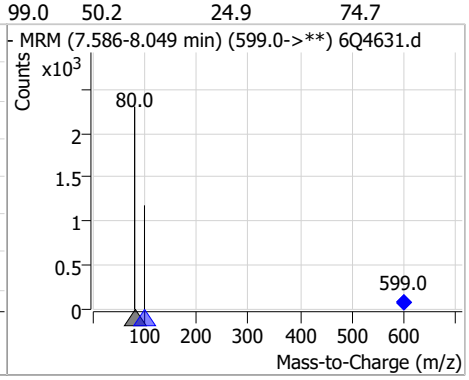




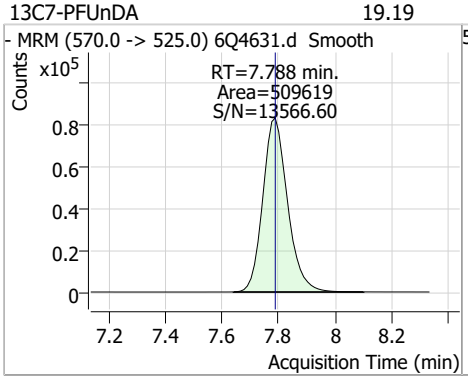
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.17	7.74	0.00	63731	599.0 -> 99.0	50.2	24.9	74.7

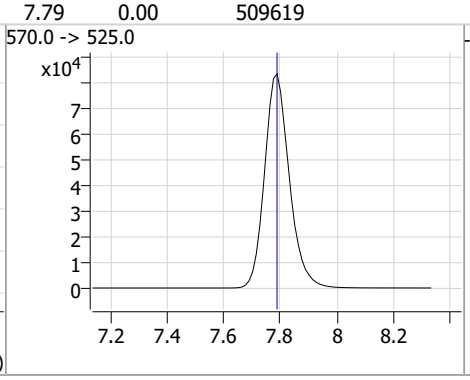


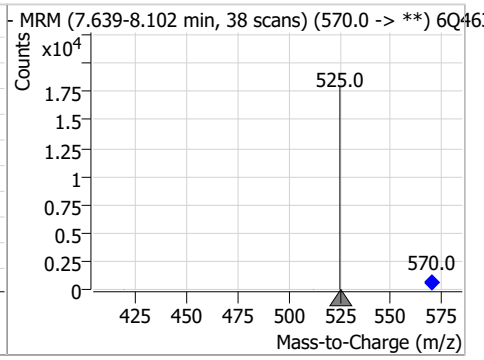




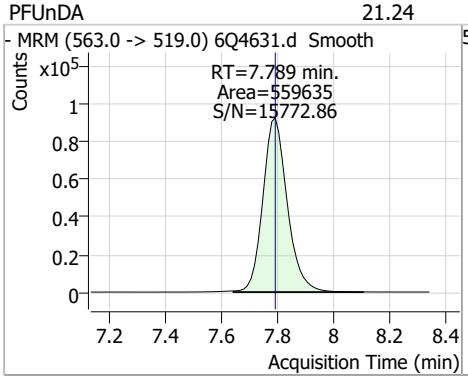
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	19.19	7.79	0.00	509619				

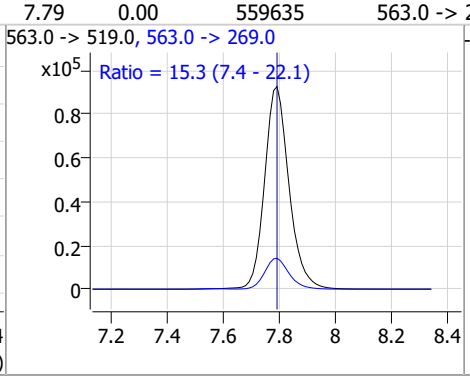


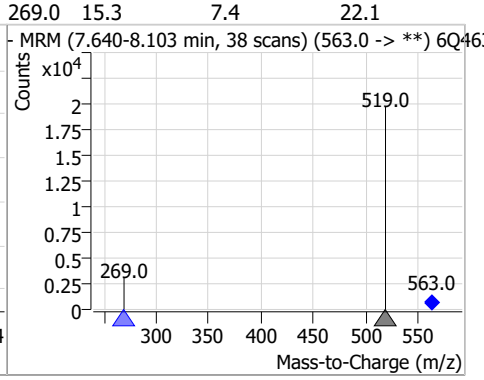




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	21.24	7.79	0.00	559635	563.0 -> 269.0	15.3	7.4	22.1

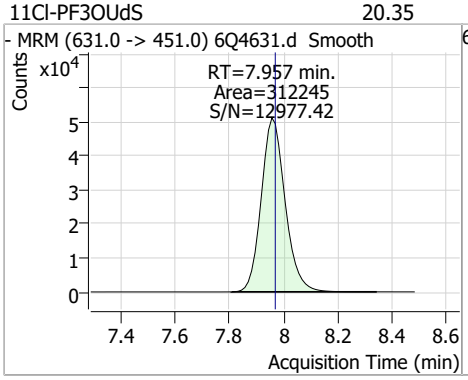


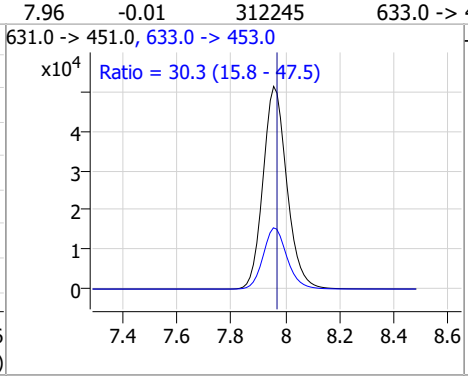


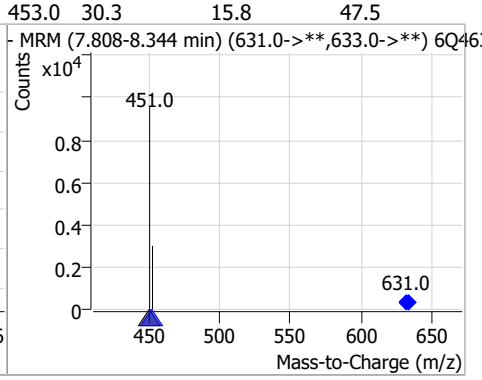


Perfluorinated Compounds by LC/MS/MS

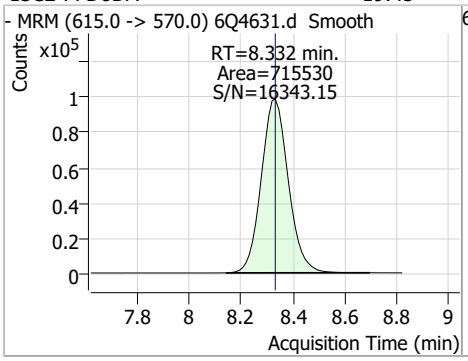
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.35	7.96	-0.01	312245	633.0 -> 453.0	30.3	15.8	47.5

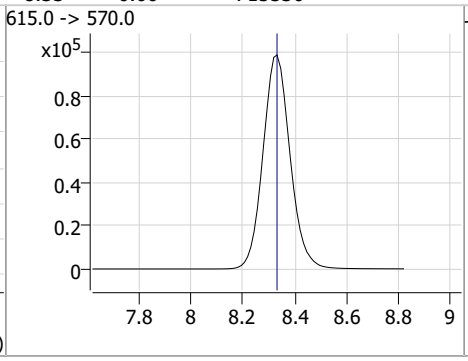


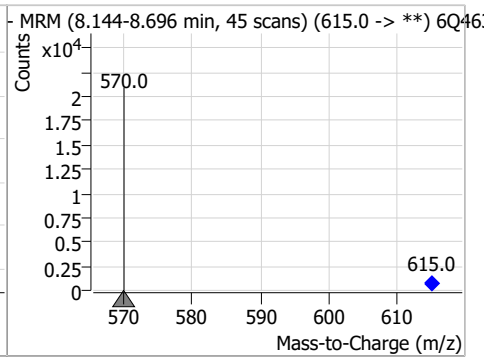




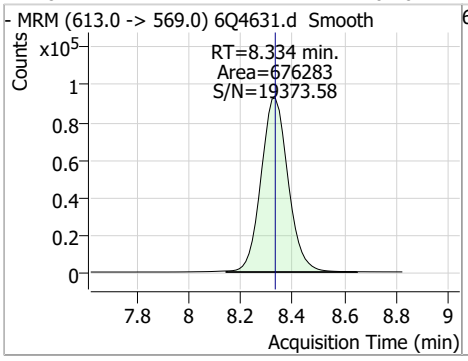
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.45	8.33	0.00	715530				

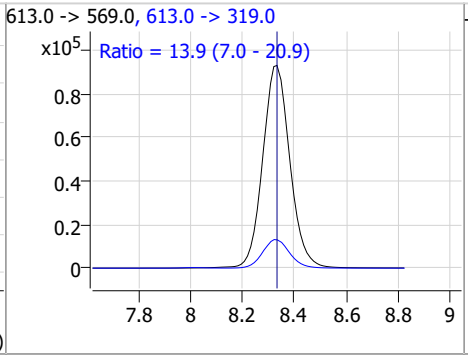


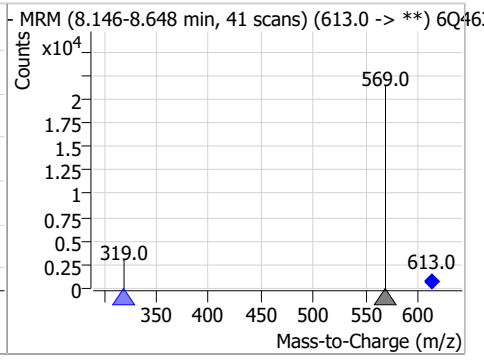




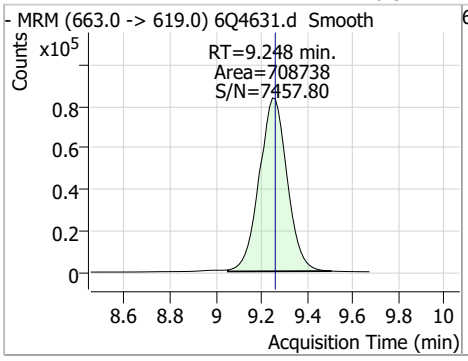
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.26	8.33	0.00	676283	613.0 -> 319.0	13.9	7.0	20.9

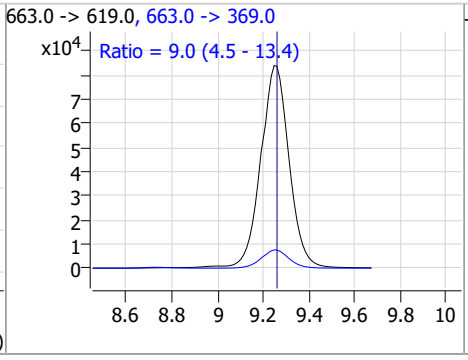


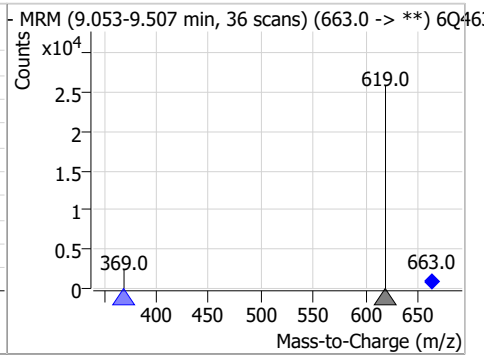




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.51	9.25	-0.01	708738	663.0 -> 369.0	9.0	4.5	13.4

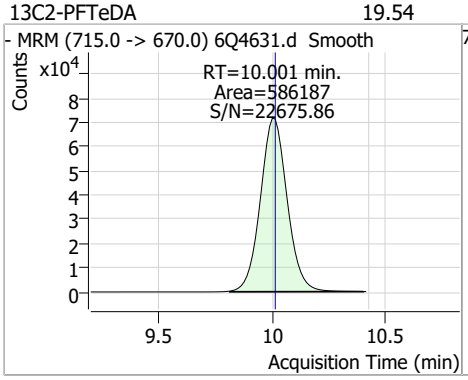


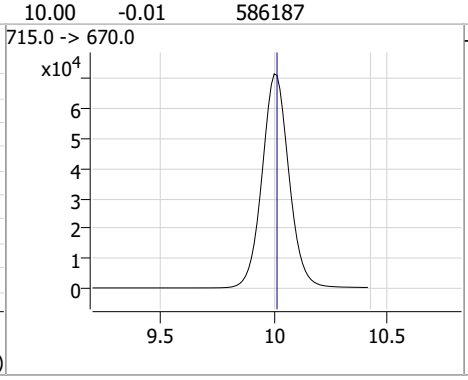


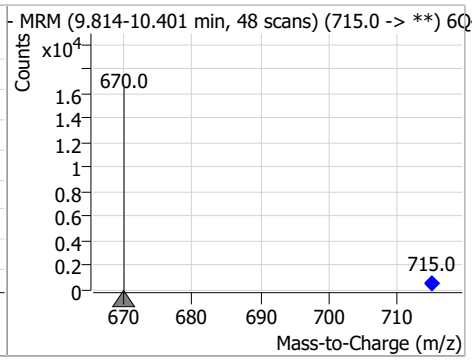


Perfluorinated Compounds by LC/MS/MS

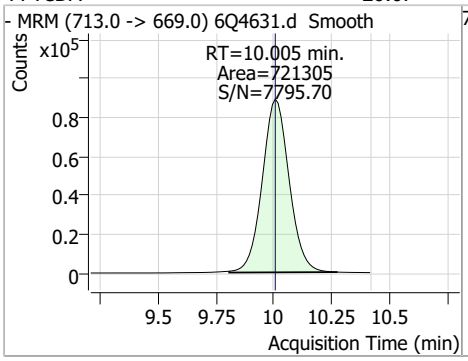
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	19.54	10.00	-0.01	586187				

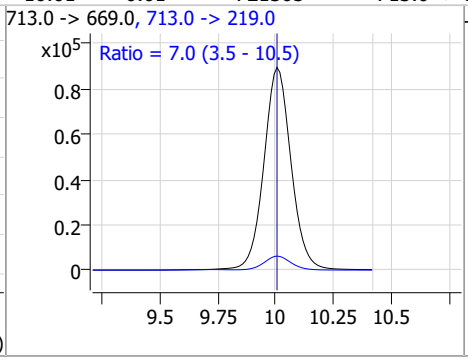


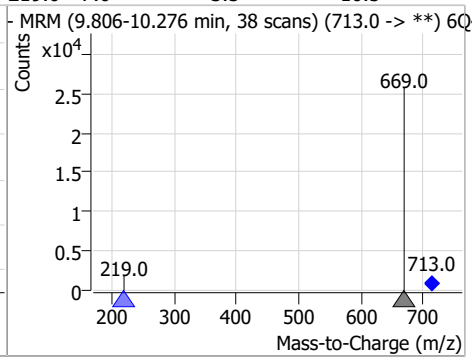




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.07	10.01	-0.01	721305	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4631.D
Injection Time: 09/14/22 13:56
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.73	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4632.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 2:12:17 PM
Sample Name : cc85-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	83155	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	145411	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	224391	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	259844	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	442436	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	565472	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	418626	20.00	µg/L	0.000
M7-PFUnDA	7.788	570.0 -> 525.0	549847	20.00	µg/L	0.000
M2-PFDoDA	8.332	615.0 -> 570.0	759961	20.00	µg/L	0.000
M2-PFTeDA	10.001	715.0 -> 670.0	631125	20.00	µg/L	-0.012
M8-FOSA	6.654	506.0 -> 78.0	209949	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31487	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29171	20.00	µg/L	0.000
M8-PFOS	6.730	507.0 -> 99.0	40667	20.00	µg/L	0.000
M2-4:2FTS	4.483	329.0 -> 309.0	262480	20.00	µg/L	0.000
M2-6:2FTS	6.136	429.0 -> 409.0	341714	20.00	µg/L	0.000
M2-8:2FTS	7.333	529.0 -> 509.0	251287	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	183596	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5404	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	50276	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	143012	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	262480	19.43	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 97.2%		
13C2-6:2FTS	6.136	429.0 -> 409.0	341714	20.02	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%		
13C2-8:2FTS	7.333	529.0 -> 509.0	251287	19.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 96.4%		
13C2-PFDoDA	8.332	615.0 -> 570.0	759961	20.66	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C2-PFTeDA	10.001	715.0 -> 670.0	631125	21.04	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C3-PFBS	3.635	302.0 -> 99.0	31487	20.56	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFHxS	5.475	402.0 -> 99.0	29171	21.10	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C4-PFBA	1.949	217.0 -> 172.0	83155	20.89	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C4-PFHpA	5.445	367.0 -> 322.0	259844	21.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C5-PFHxA	4.573	318.0 -> 273.0	224391	20.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C5-PFPeA	3.405	268.0 -> 223.0	145411	20.74	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C6-PFDA	7.297	519.0 -> 474.0	418626	20.57	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C7-PFUnDA	7.788	570.0 -> 525.0	549847	20.71 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-FOSA	6.654	506.0 -> 78.0	209949	21.47 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.3%		
13C8-PFOA	6.138	421.0 -> 376.0	442436	20.85 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C8-PFOS	6.730	507.0 -> 99.0	40667	19.17 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.9%		
13C9-PFNA	6.745	472.0 -> 427.0	565472	21.95 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
d3-MeFOSAA	7.155	573.0 -> 419.0	183596	21.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5408	20.35 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%		
d3-MeFOSA	7.085	515.0 -> 169.0	50276	22.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
d5-EtFOSAA	7.302	589.0 -> 419.0	143157	21.09 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.4%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	13811	0.97 µg/L		96
		327.0 -> 81.0	4798			
6:2FTS	6.137	427.0 -> 407.0	16683	0.96 µg/L		100
		427.0 -> 81.0	4616			
8:2FTS	7.334	527.0 -> 507.0	12414	0.98 µg/L		99
		527.0 -> 81.0	4168			
EtFOSAA	7.303	584.0 -> 419.0	6611	0.87 µg/L		93
		584.0 -> 483.0	3746			
FOSA	6.656	498.0 -> 78.0	9662	0.92 µg/L		100
		498.0 -> 478.0	390			
MeFOSAA	7.168	570.0 -> 419.0	8309	0.99 µg/L		100
		570.0 -> 512.0	2669			
PFBA	1.955	213.0 -> 169.0	1607	0.89 µg/L		100
PFBS	3.627	299.0 -> 80.0	4751	0.91 µg/L		99
		299.0 -> 99.0	1769			
PFDA	7.298	513.0 -> 469.0	27338	0.88 µg/L		100
		513.0 -> 219.0	3809			
PFDoDA	8.334	613.0 -> 569.0	32804	0.93 µg/L		100
		613.0 -> 319.0	4573			
PFDS	7.736	599.0 -> 80.0	3042	0.89 µg/L		98
		599.0 -> 99.0	1555			
PFHpA	5.446	363.0 -> 319.0	15607	0.92 µg/L		99
		363.0 -> 169.0	2249			
PFHpS	6.136	449.0 -> 80.0	3722	1.05 µg/L		95
		449.0 -> 99.0	1821			
PFHxA	4.574	313.0 -> 269.0	10390	0.88 µg/L		99
		313.0 -> 119.0	273			
PFHxS	5.477	399.0 -> 80.0	3764	0.90 µg/L	m	89
		399.0 -> 99.0	1546			
PFNA	6.745	463.0 -> 419.0	21729	0.82 µg/L		99
		463.0 -> 219.0	3948			
PFNS	7.256	549.0 -> 80.0	4303	1.04 µg/L		85
		549.0 -> 99.0	1904			
PFOA	6.138	413.0 -> 369.0	22073	0.92 µg/L		99
		413.0 -> 169.0	3292			
PFOS	6.719	499.0 -> 80.0	3673	0.97 µg/L	m	89

Perfluorinated Compounds by LC/MS/MS

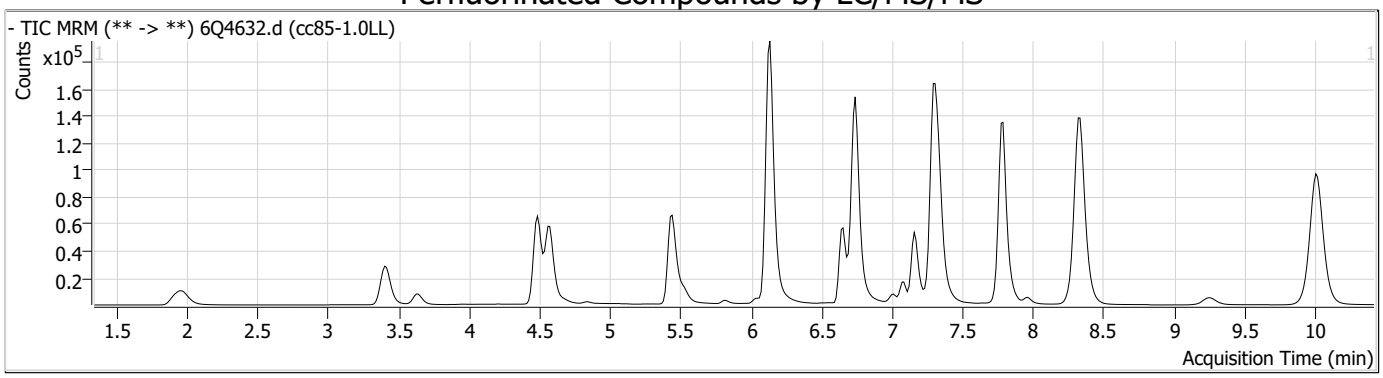
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	2003			
PFPeA	3.408	263.0 -> 219.0	5420	0.88	µg/L	100
PFPeS	4.681	349.0 -> 80.0	3969	0.91	µg/L	99
		349.0 -> 99.0	1789			
PFTeDA	10.005	713.0 -> 669.0	35889	0.93	µg/L	99
		713.0 -> 219.0	2586			
PFTrDA	9.248	663.0 -> 619.0	34538	0.94	µg/L	99
		663.0 -> 369.0	3243			
PFUnDA	7.789	563.0 -> 519.0	26152	0.92	µg/L	98
		563.0 -> 269.0	4018			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	14606	0.90	µg/L	98
		633.0 -> 453.0	4750			
9Cl-PF3ONS	7.009	531.0 -> 351.0	19448	0.91	µg/L	99
		533.0 -> 353.0	5920			
ADONA	5.532	377.0 -> 251.0	24096	0.89	µg/L	97
		377.0 -> 85.0	6072			
HFPO-DA	4.840	285.0 -> 169.0	251	0.98	µg/L	84
		285.0 -> 185.0	51			
MeFOSA	7.086	512.0 -> 169.0	2613	0.95	µg/L	93
		512.0 -> 219.0	2713			
4-PFECHS	6.032	461.0 -> 381.0	11986	0.84	µg/L	93
		461.0 -> 99.0	4476			
FBSA	4.514	298.0 -> 78.0	10110	0.92	µg/L	99
		298.0 -> 64.0	716			
FHxSA	5.828	398.0 -> 78.0	9371	0.96	µg/L	100
		398.0 -> 64.0	322			

 # = Qualifier out of range, m = manually integrated, + = Area summed

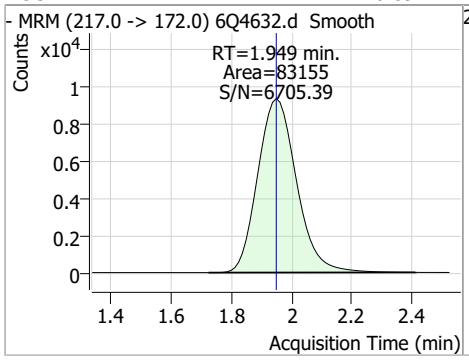
7.7.92

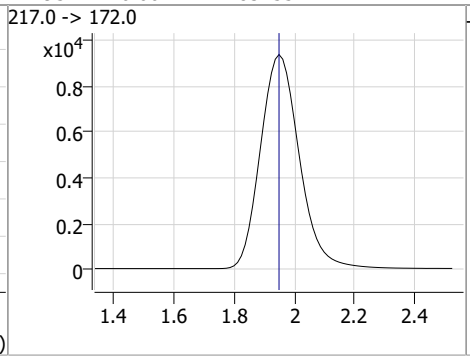
7

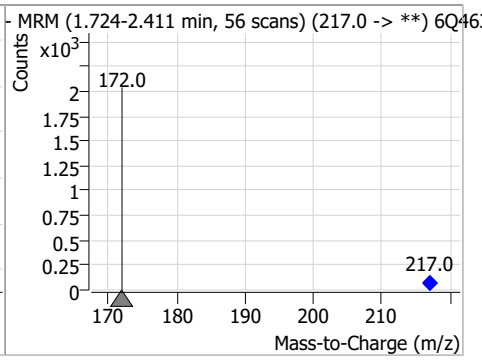
Perfluorinated Compounds by LC/MS/MS



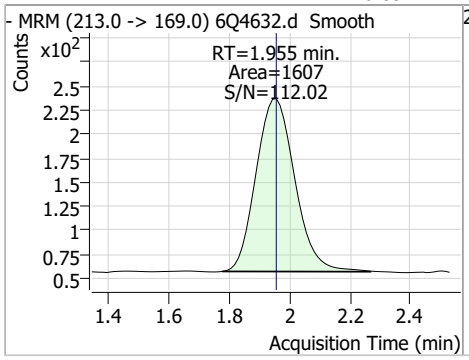
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.89	1.95	0.00	83155				

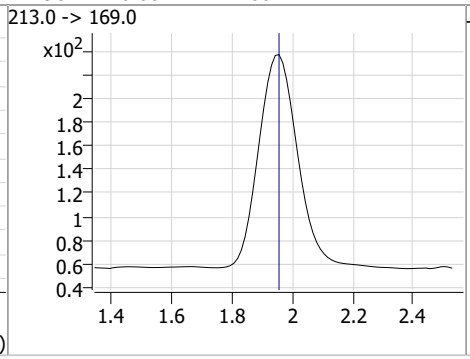


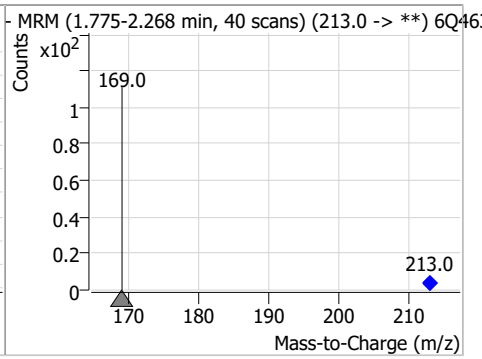




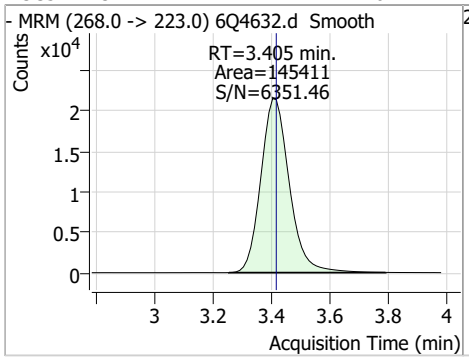
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.89	1.96	0.00	1607				

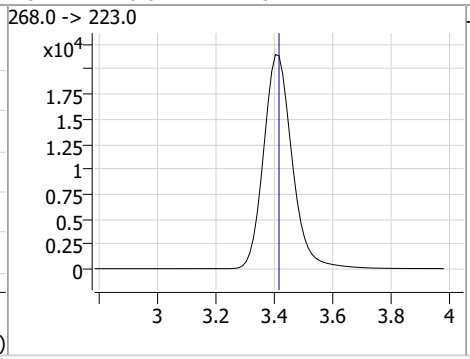


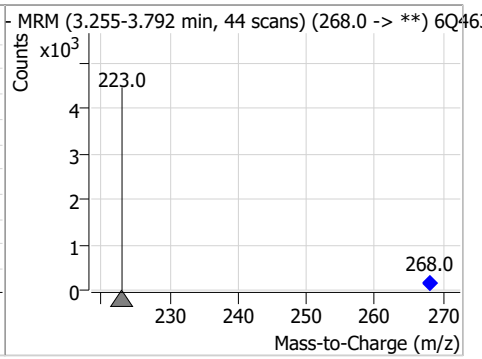




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.74	3.41	-0.01	145411				

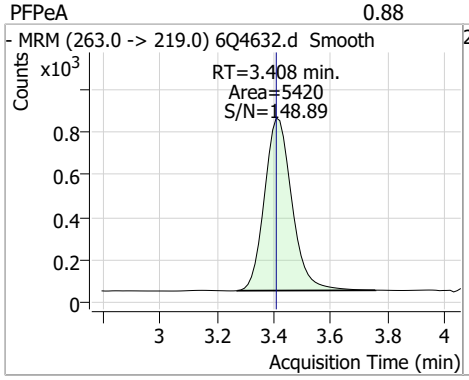


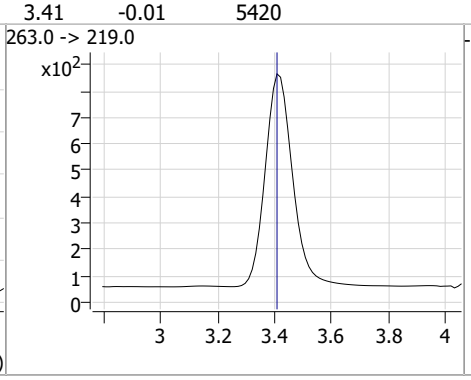


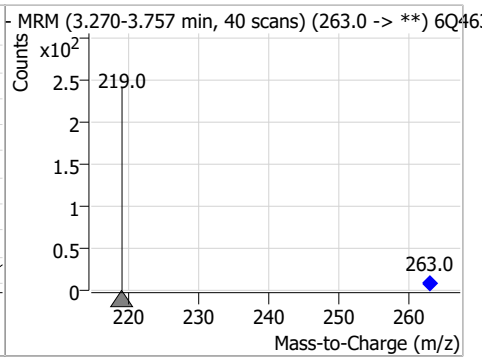


Perfluorinated Compounds by LC/MS/MS

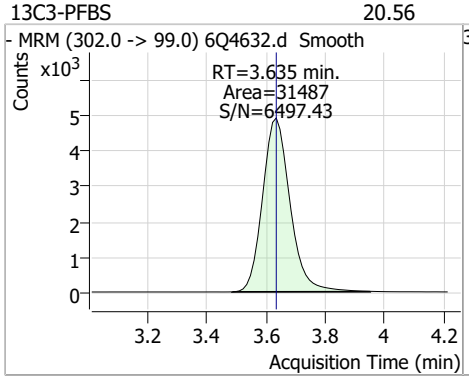
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.88	3.41	-0.01	5420				

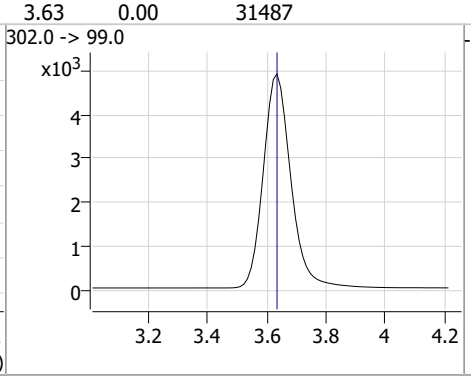


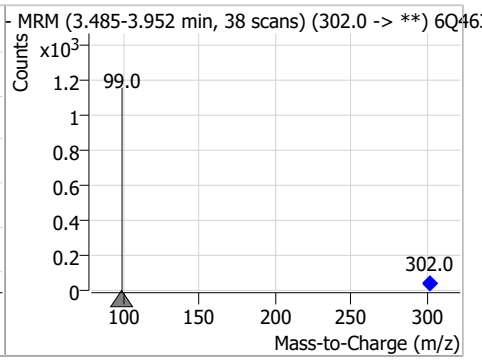




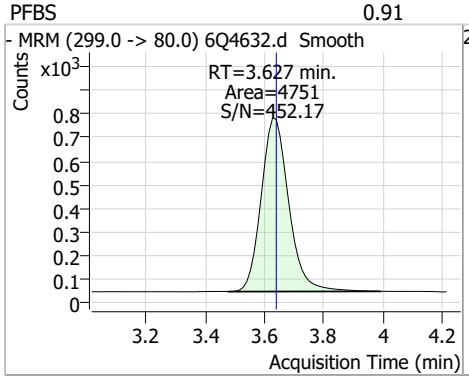
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.56	3.63	0.00	31487				

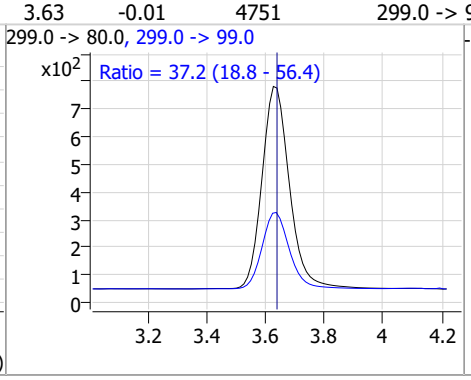


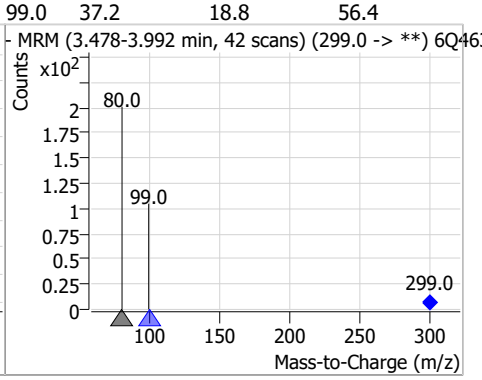




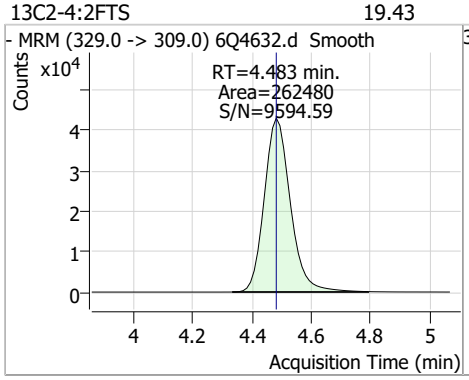
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.91	3.63	-0.01	4751	299.0 -> 99.0	37.2	18.8	56.4

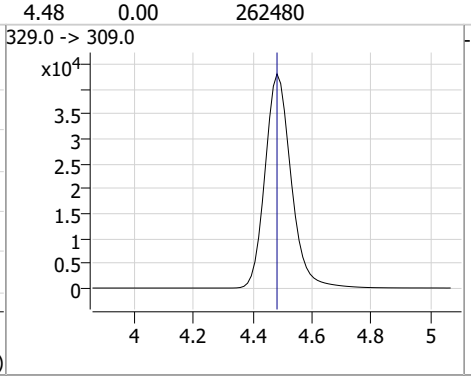


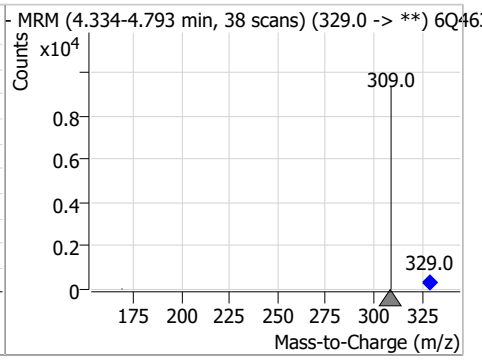




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	19.43	4.48	0.00	262480				

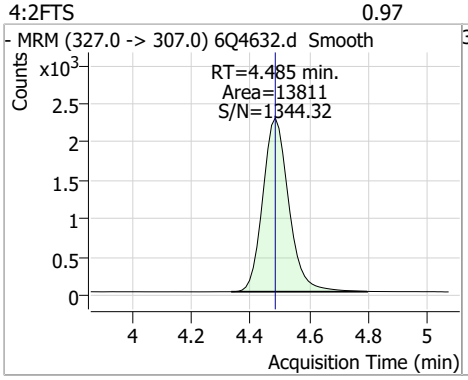


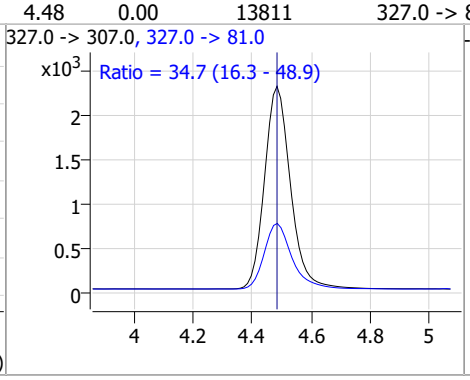


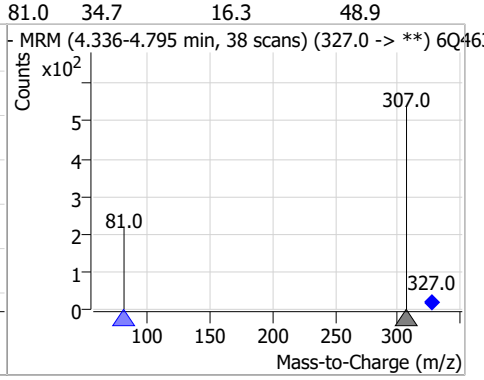


Perfluorinated Compounds by LC/MS/MS

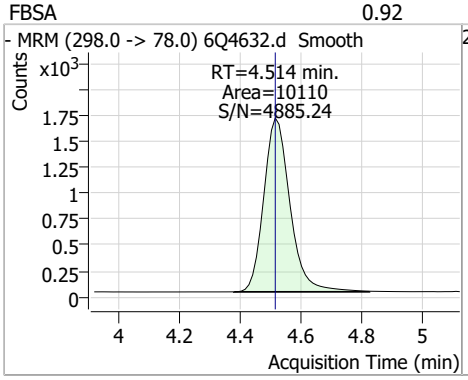
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.97	4.48	0.00	13811	327.0 -> 81.0	34.7	16.3	48.9

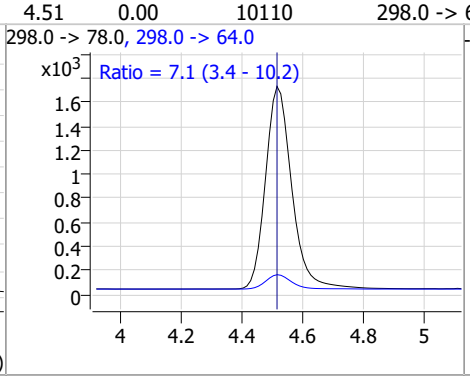


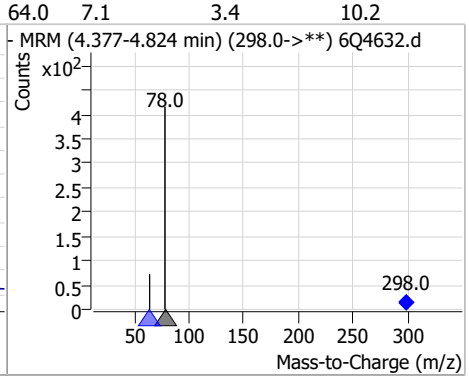




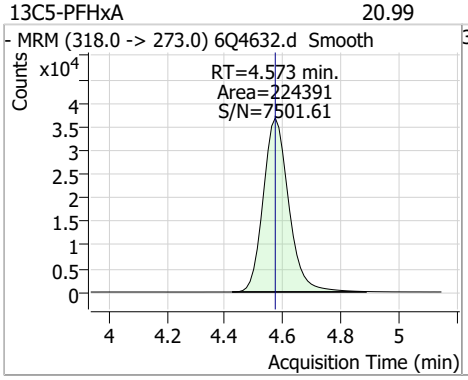
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.92	4.51	0.00	10110	298.0 -> 64.0	7.1	3.4	10.2

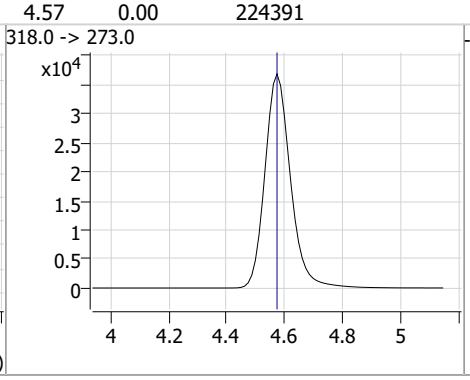


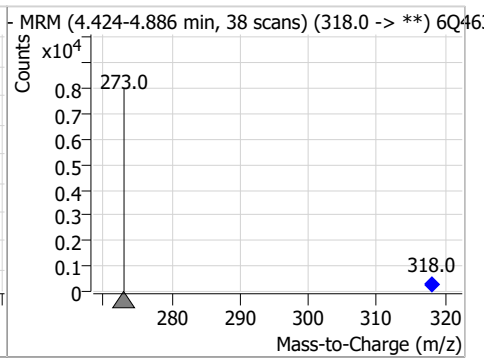




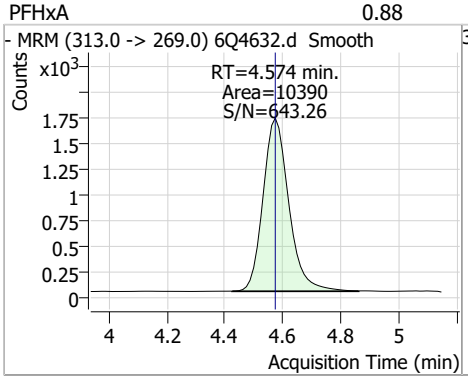
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.99	4.57	0.00	224391				

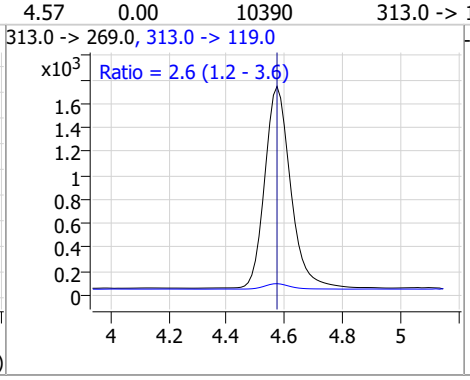


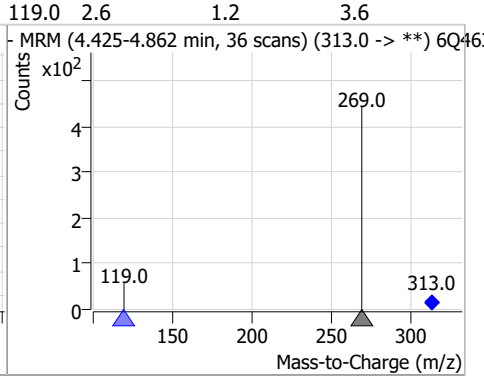




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.88	4.57	0.00	10390	313.0 -> 119.0	2.6	1.2	3.6

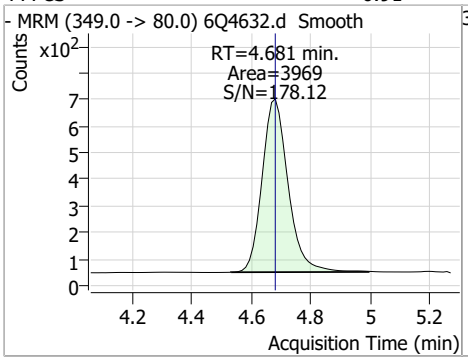


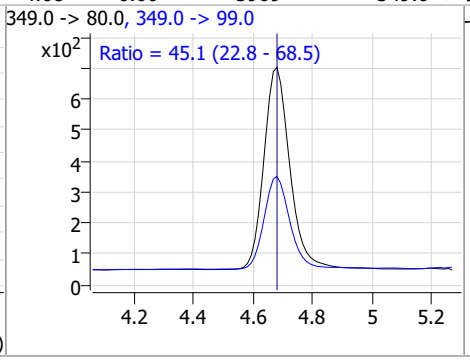


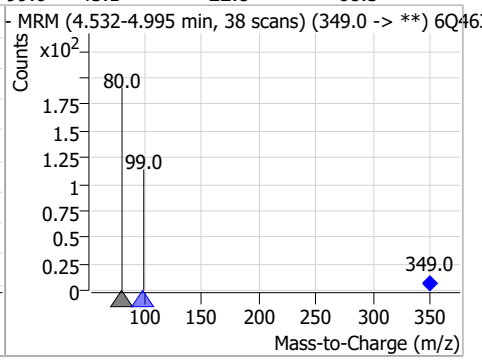


Perfluorinated Compounds by LC/MS/MS

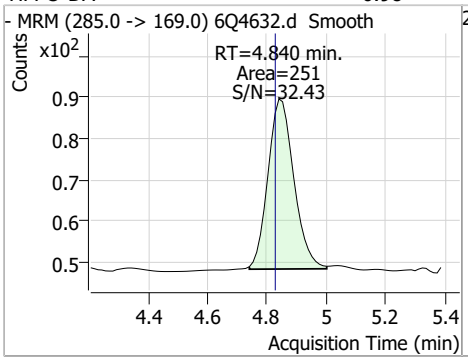
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.91	4.68	0.00	3969	349.0 -> 99.0	45.1	22.8	68.5

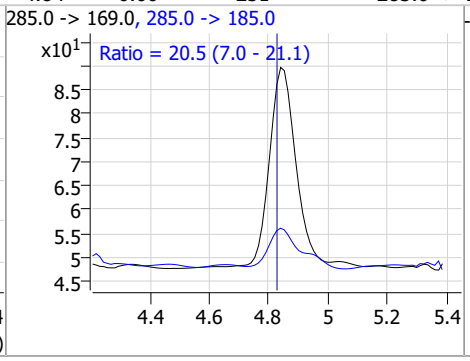


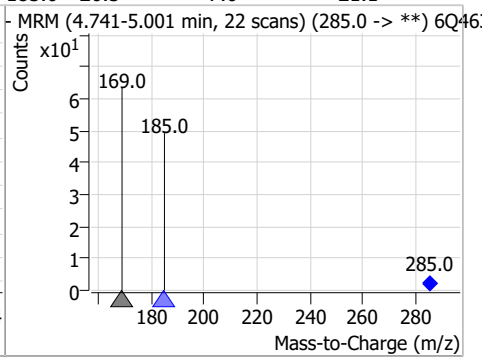




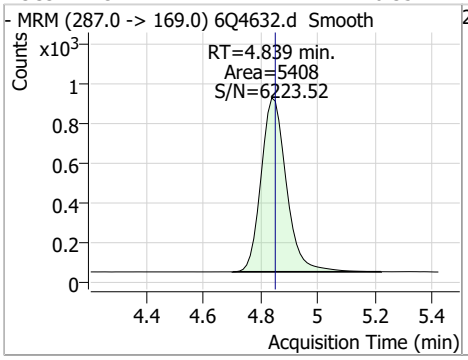
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.98	4.84	0.00	251	285.0 -> 185.0	20.5	7.0	21.1

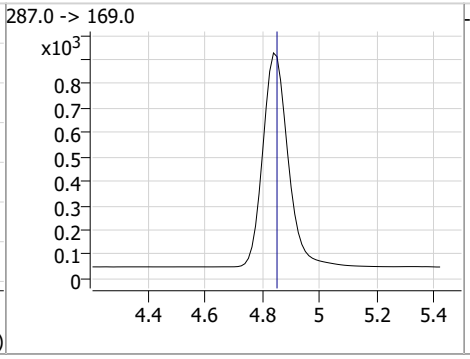


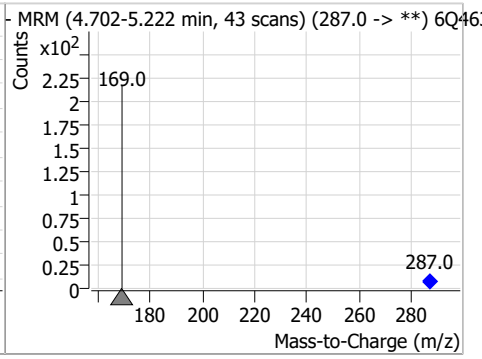




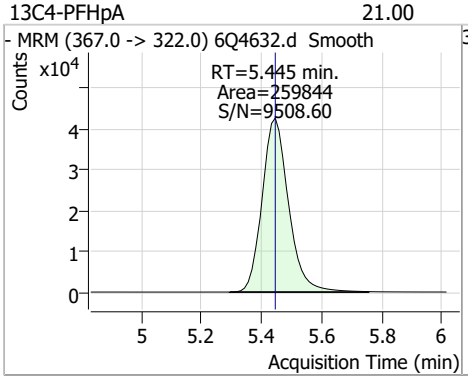
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.35	4.84	-0.01	5408				

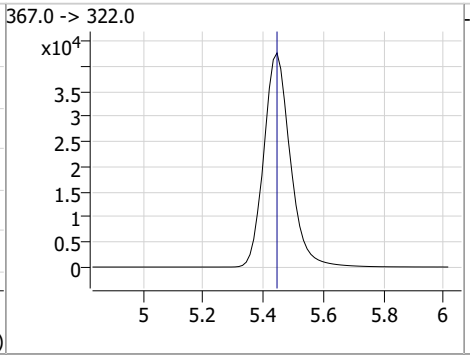


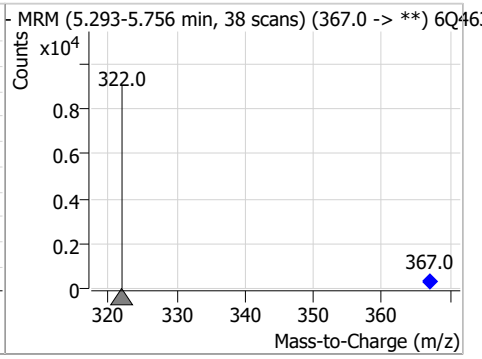




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.00	5.45	0.00	259844				

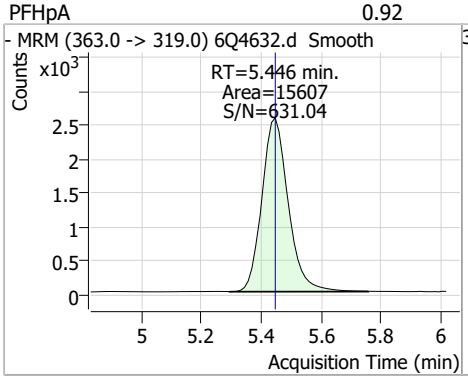


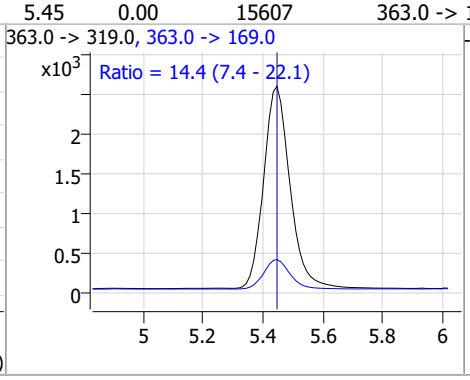


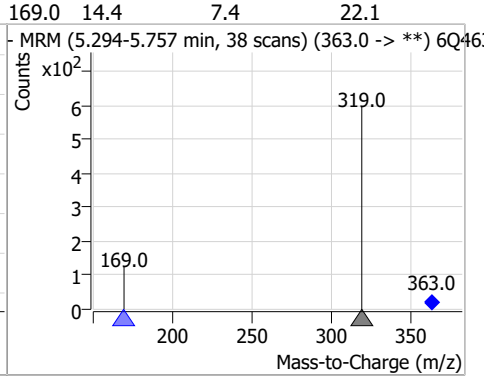


Perfluorinated Compounds by LC/MS/MS

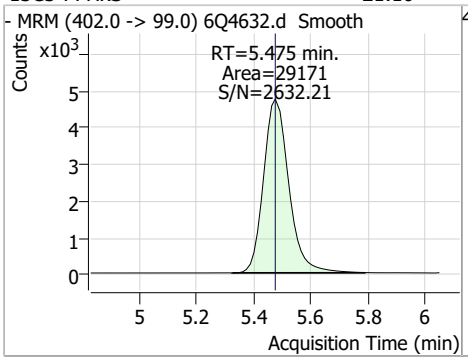
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.92	5.45	0.00	15607	363.0 -> 169.0	14.4	7.4	22.1

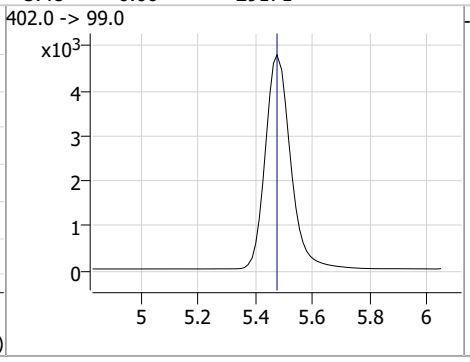


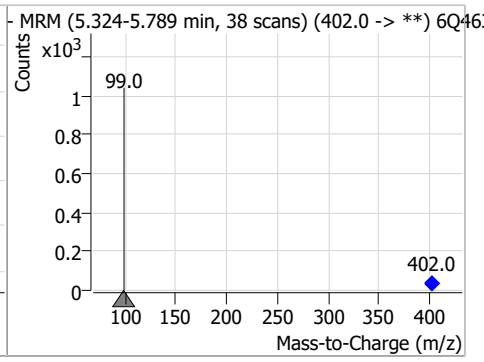




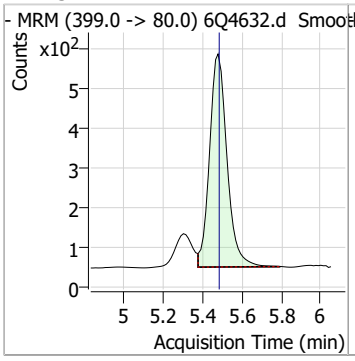
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.10	5.48	0.00	29171				

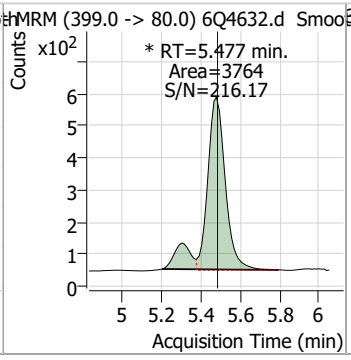


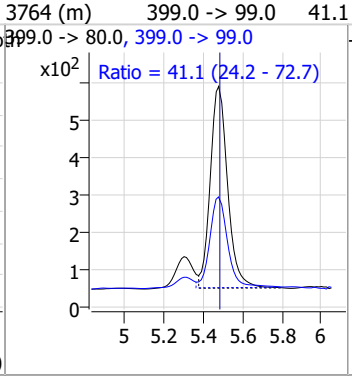


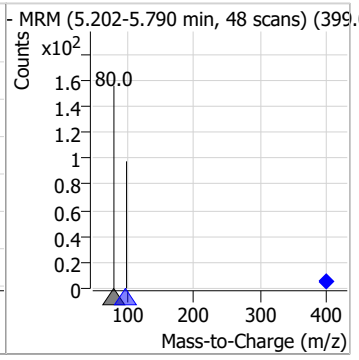


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.90	5.48	0.00	3764 (m)	399.0 -> 99.0	41.1	24.2	72.7

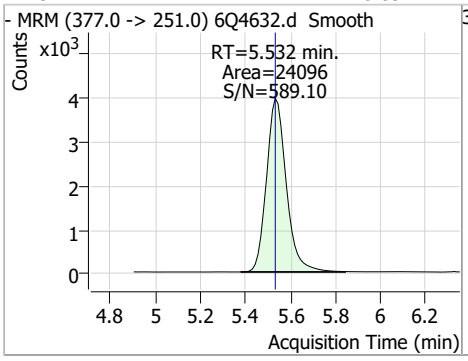


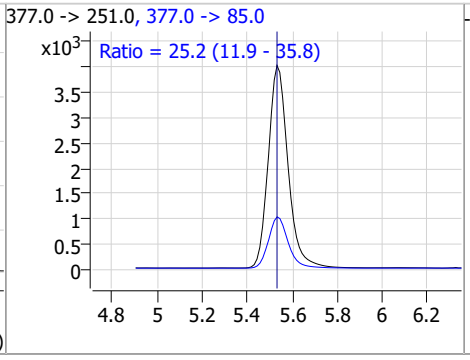


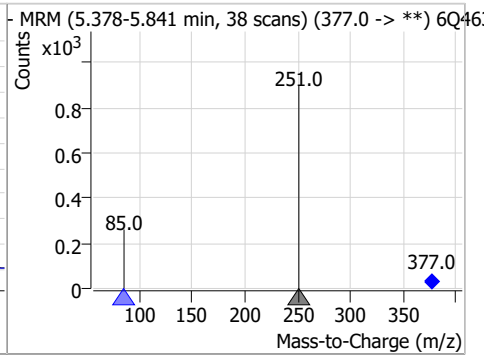




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.89	5.53	0.00	24096	377.0 -> 85.0	25.2	11.9	35.8

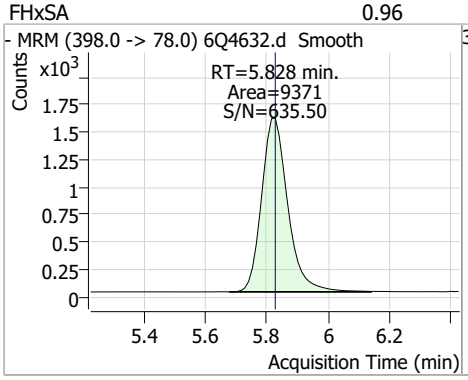


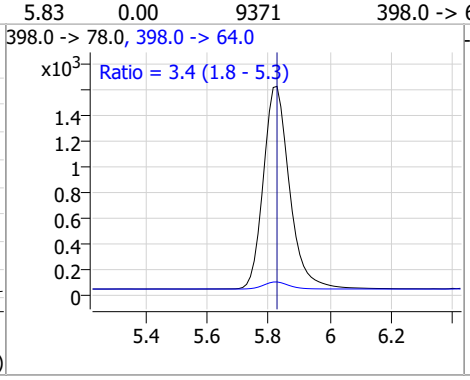


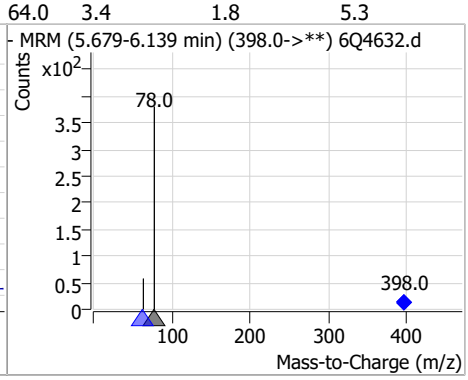


Perfluorinated Compounds by LC/MS/MS

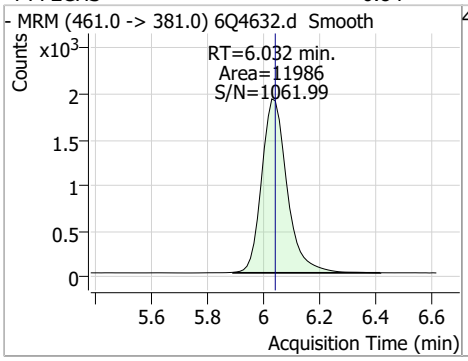
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.96	5.83	0.00	9371	398.0 -> 64.0	3.4	1.8	5.3

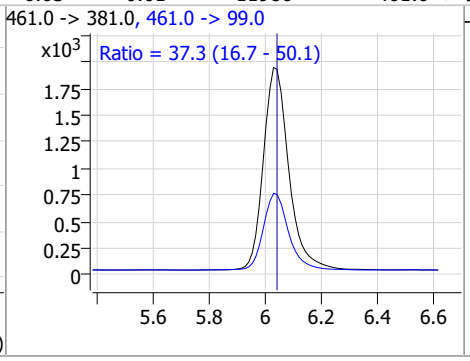


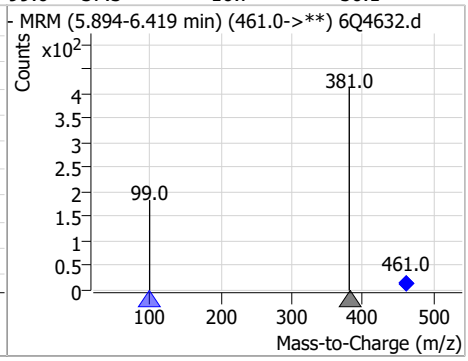




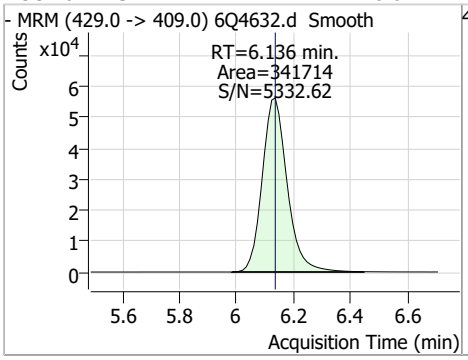
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.84	6.03	-0.01	11986	461.0 -> 99.0	37.3	16.7	50.1

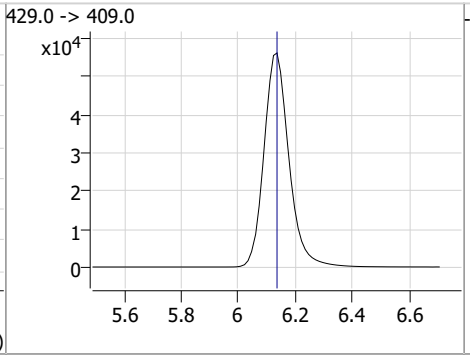


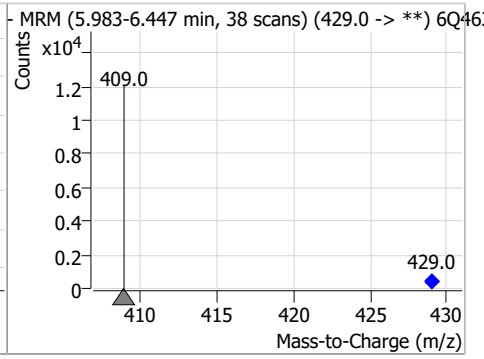




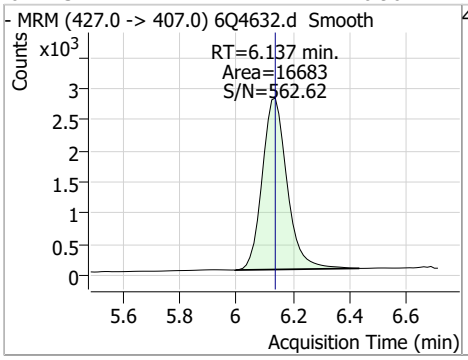
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.02	6.14	0.00	341714				

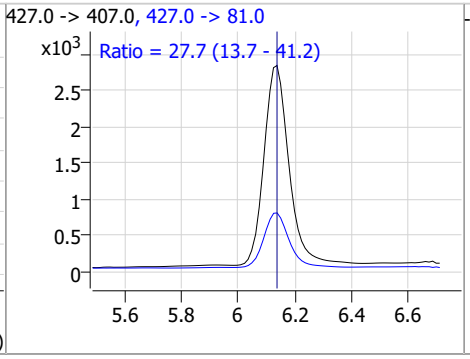


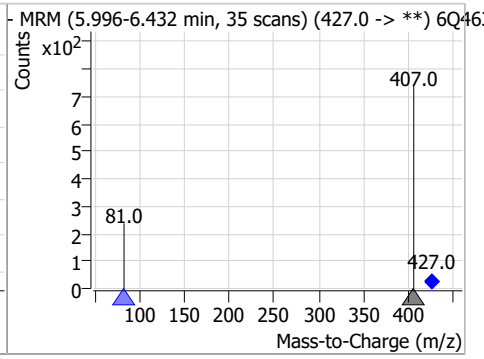




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.96	6.14	0.00	16683	427.0 -> 81.0	27.7	13.7	41.2

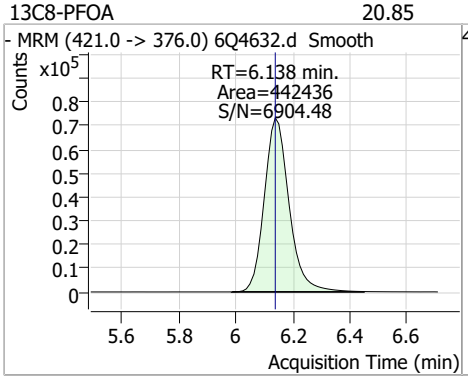


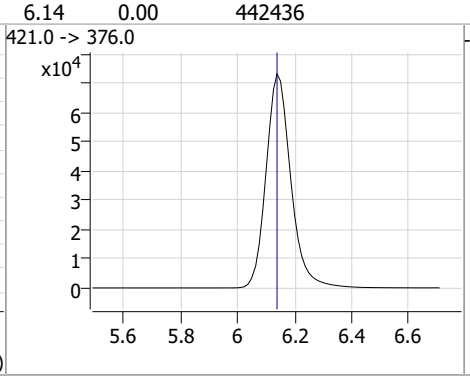


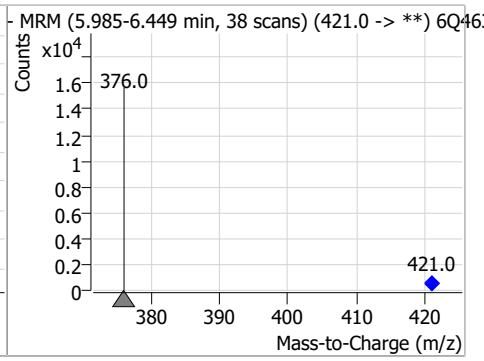


Perfluorinated Compounds by LC/MS/MS

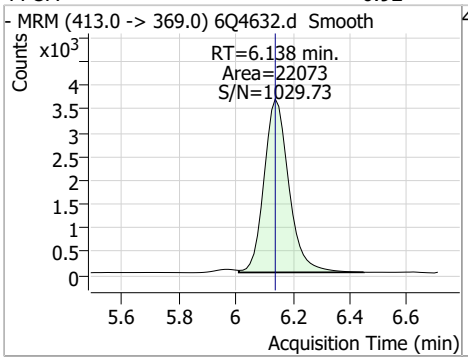
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.85	6.14	0.00	442436				

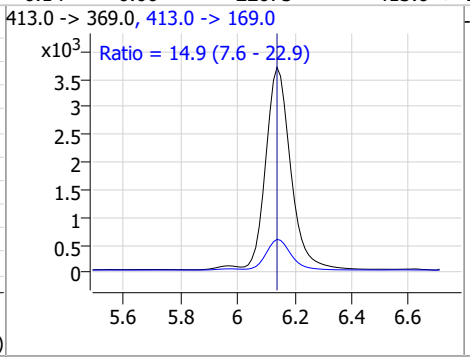


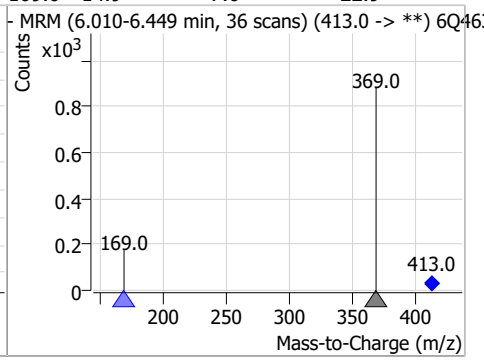




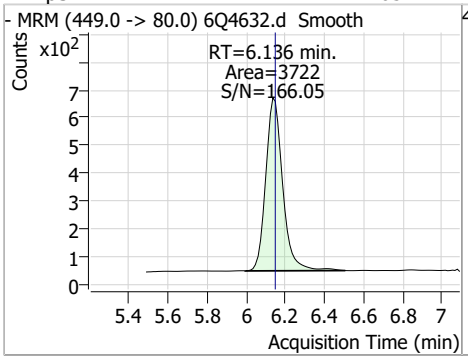
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.92	6.14	0.00	22073	413.0 -> 169.0	14.9	7.6	22.9

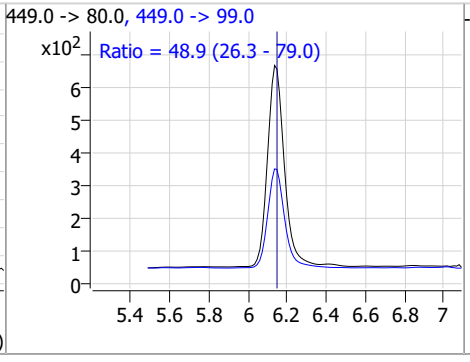


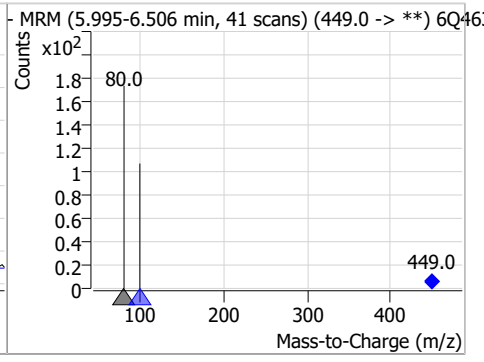




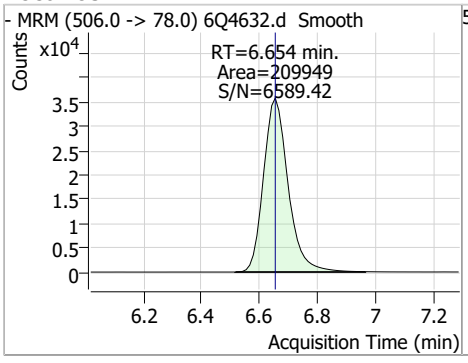
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	1.05	6.14	-0.01	3722	449.0 -> 99.0	48.9	26.3	79.0

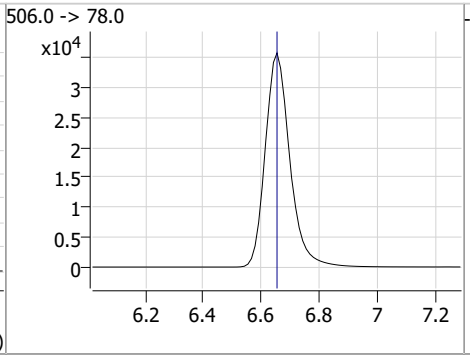


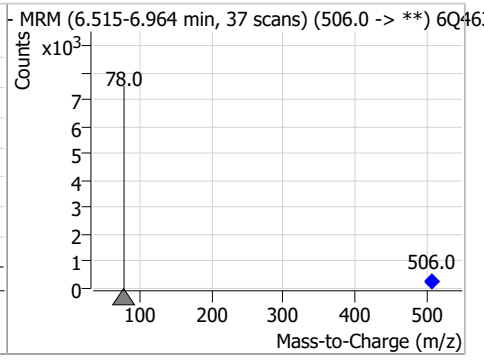




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.47	6.65	0.00	209949				

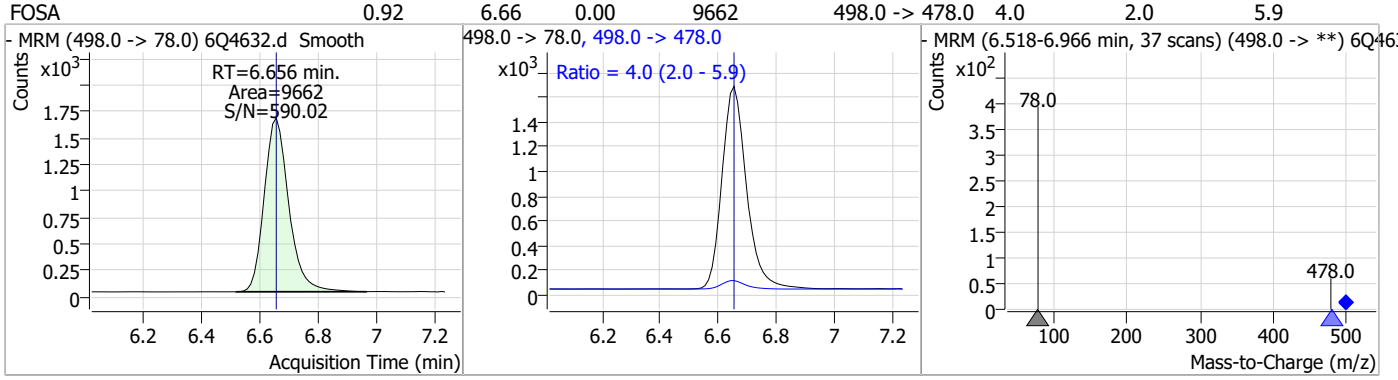




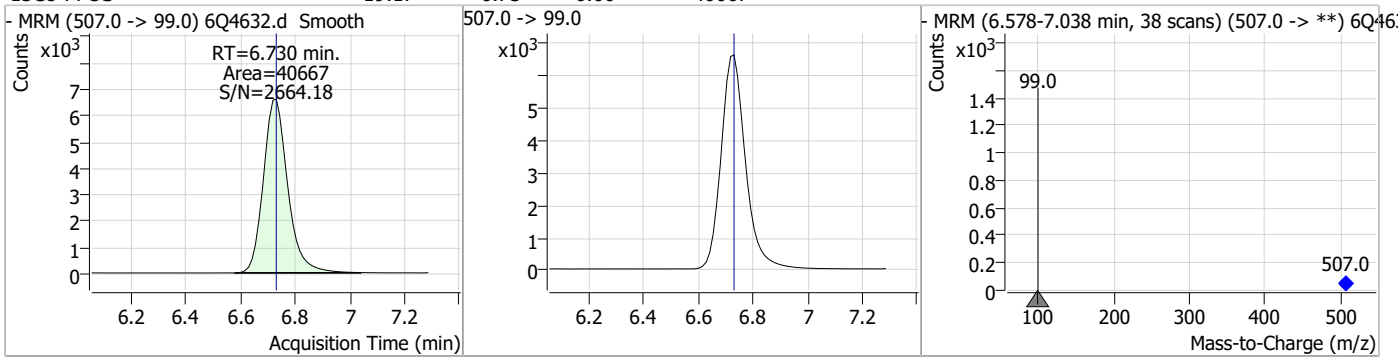


Perfluorinated Compounds by LC/MS/MS

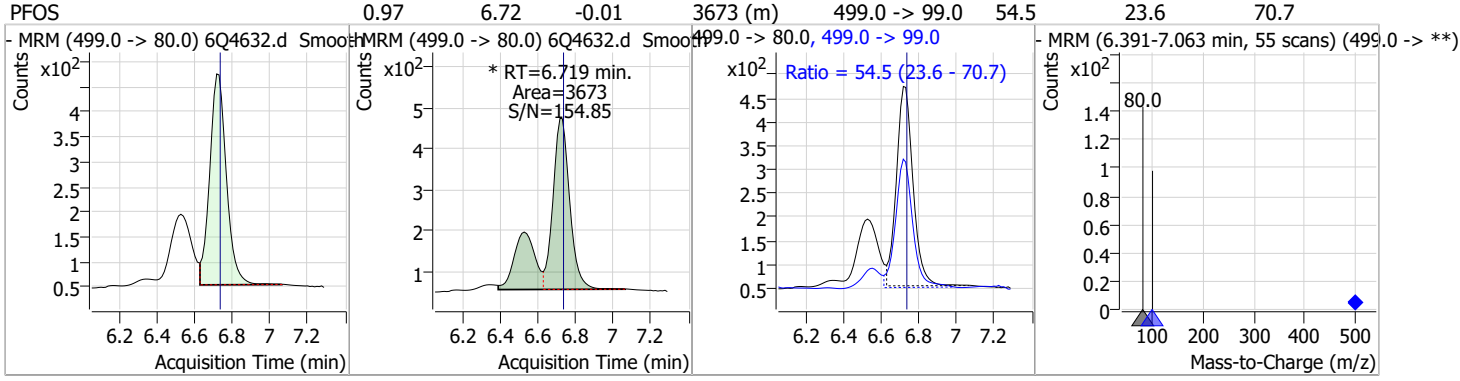
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.92	6.66	0.00	9662	498.0 -> 478.0	4.0	2.0	5.9



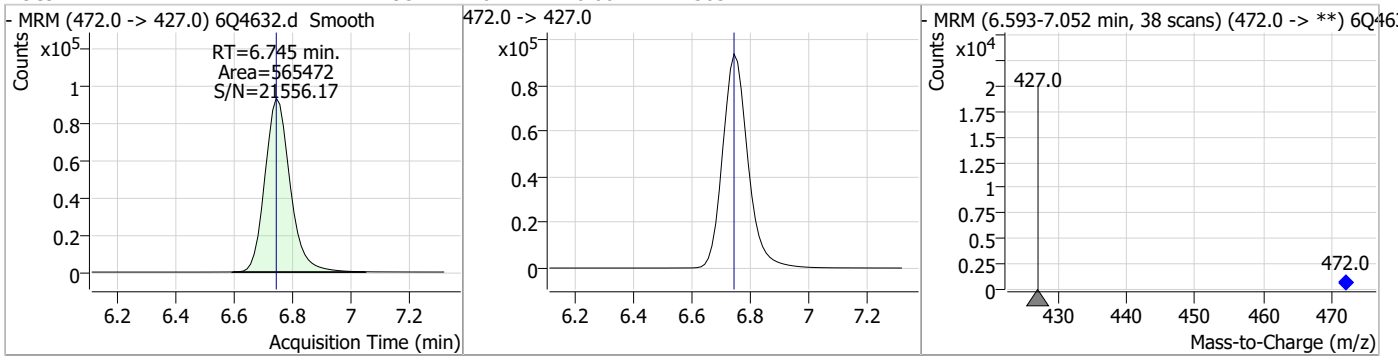
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.17	6.73	0.00	40667				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.97	6.72	-0.01	3673 (m)	499.0 -> 99.0	54.5	23.6	70.7

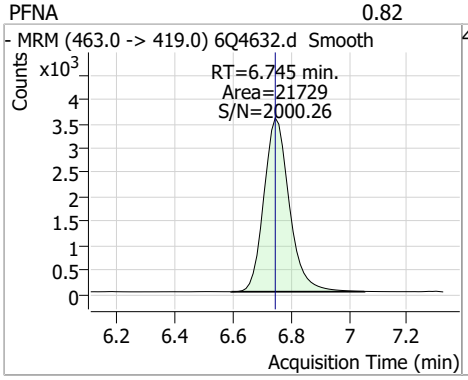


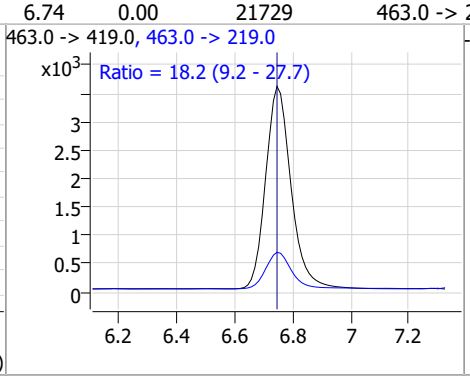
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.95	6.74	0.00	565472				

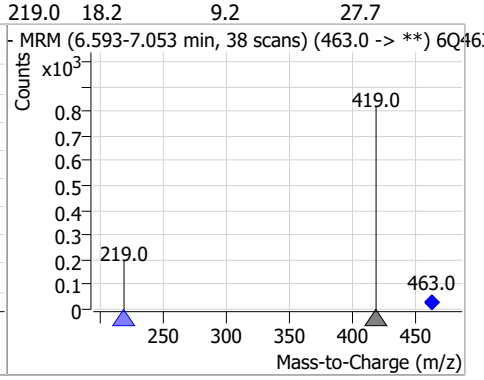


Perfluorinated Compounds by LC/MS/MS

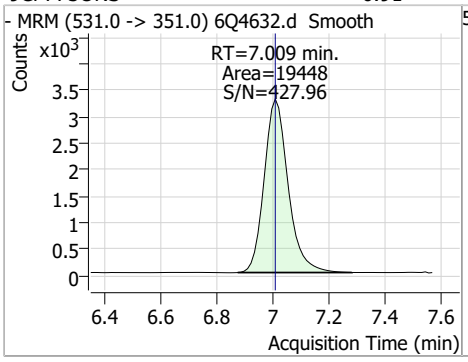
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.82	6.74	0.00	21729	463.0 -> 219.0	18.2	9.2	27.7

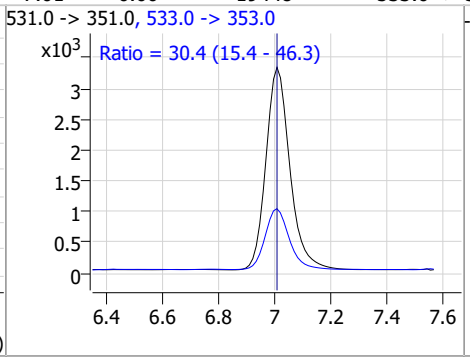


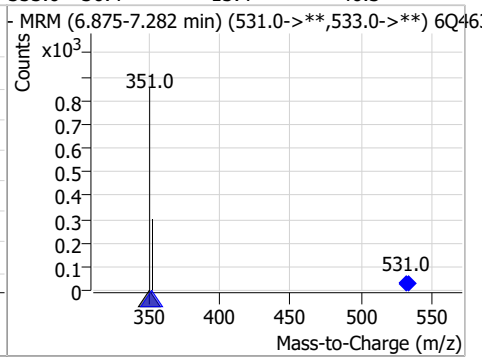




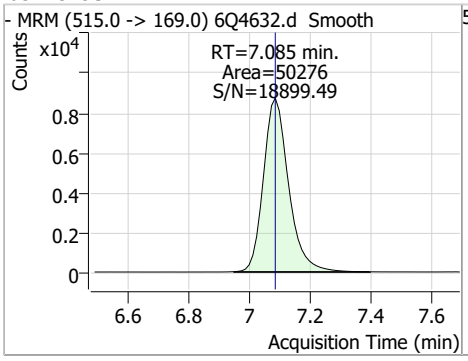
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.91	7.01	0.00	19448	533.0 -> 353.0	30.4	15.4	46.3

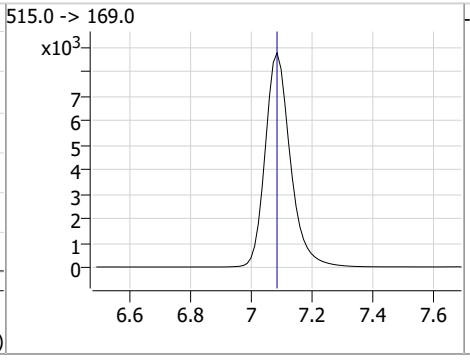


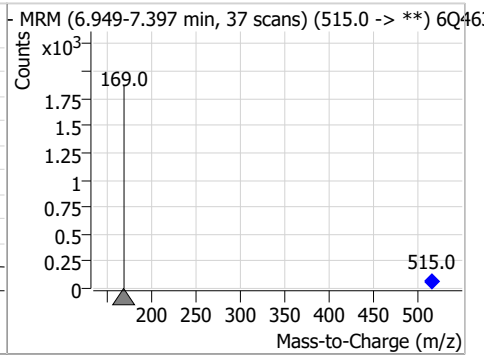




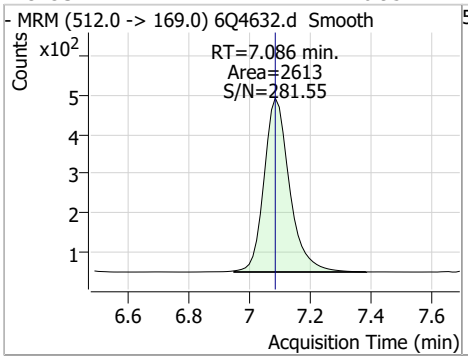
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.22	7.08	0.00	50276				

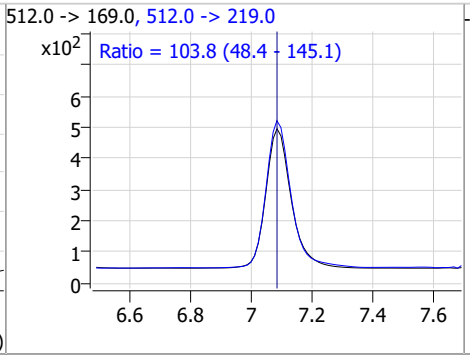


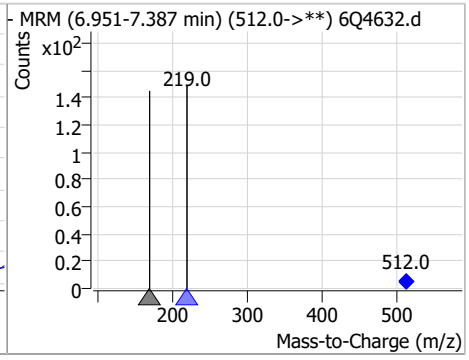




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.95	7.09	0.00	2613	512.0 -> 219.0	103.8	48.4	145.1

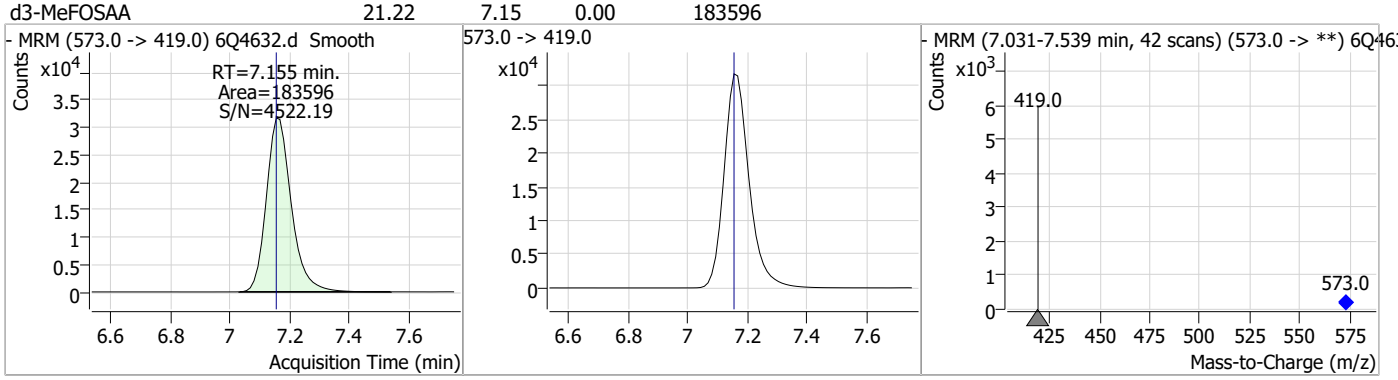




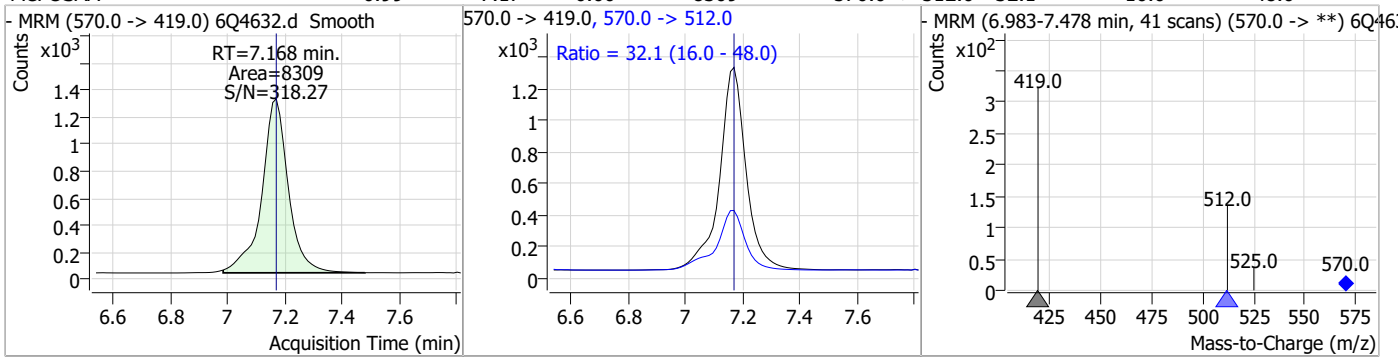


Perfluorinated Compounds by LC/MS/MS

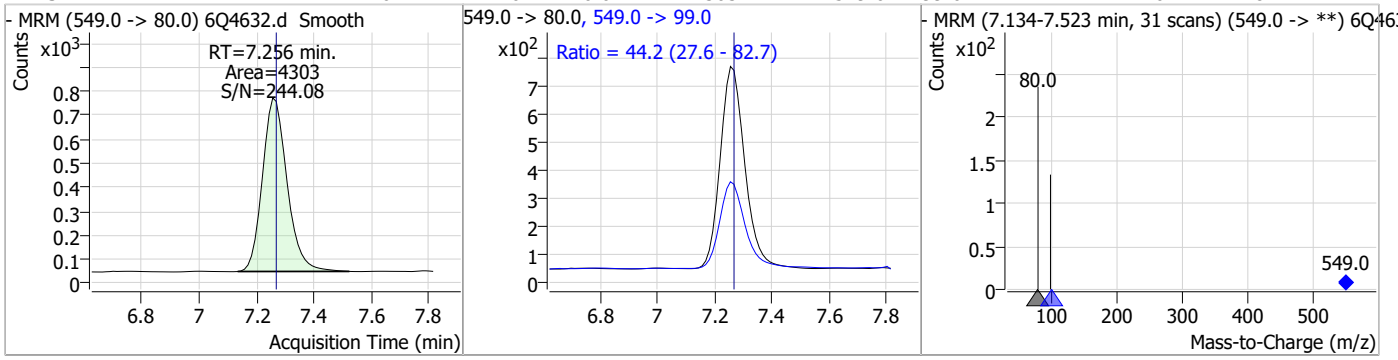
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.22	7.15	0.00	183596				



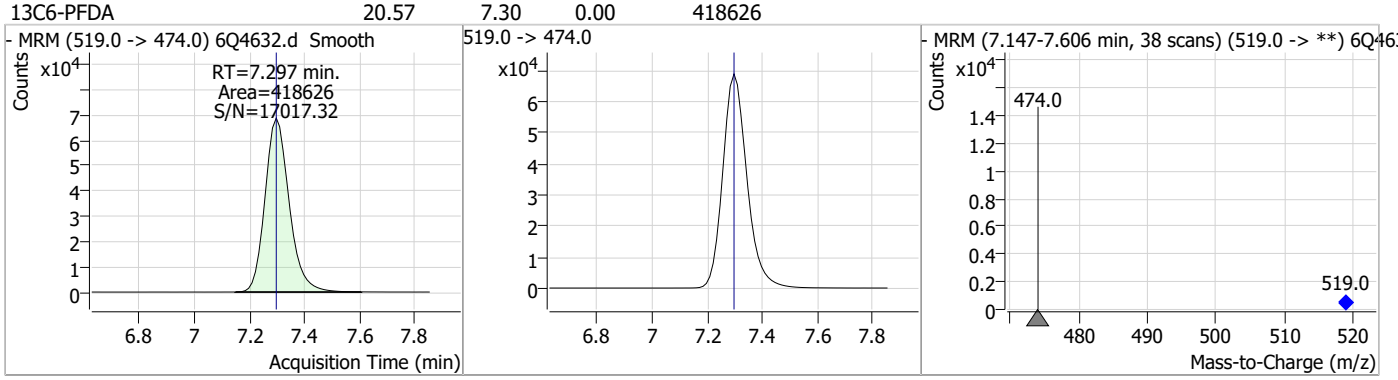
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.99	7.17	0.00	8309	570.0 -> 512.0	32.1	16.0	48.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	1.04	7.26	-0.01	4303	549.0 -> 99.0	44.2	27.6	82.7

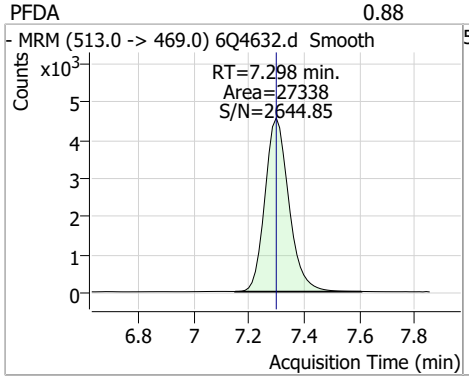


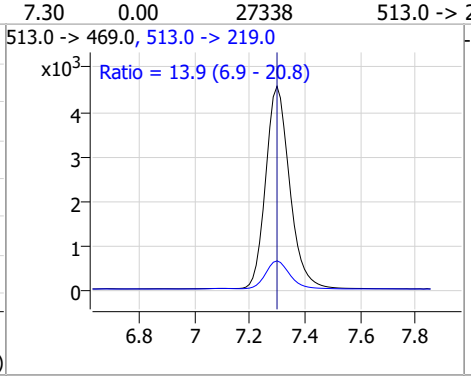
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.57	7.30	0.00	418626				

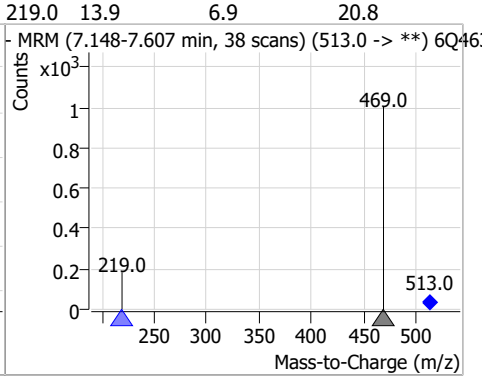


Perfluorinated Compounds by LC/MS/MS

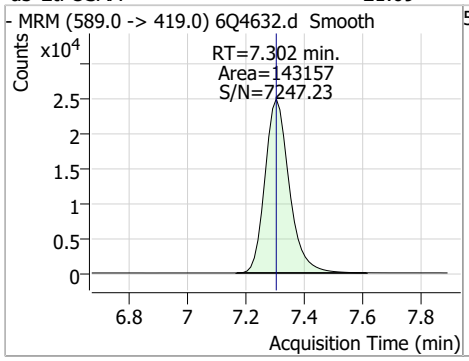
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.88	7.30	0.00	27338	513.0 -> 219.0	13.9	6.9	20.8

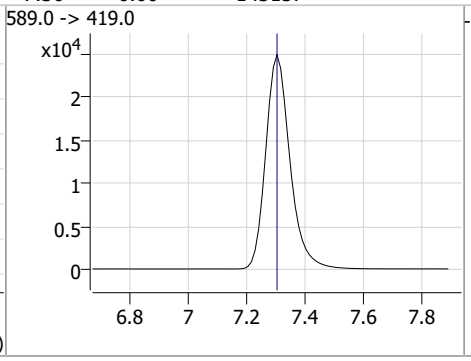


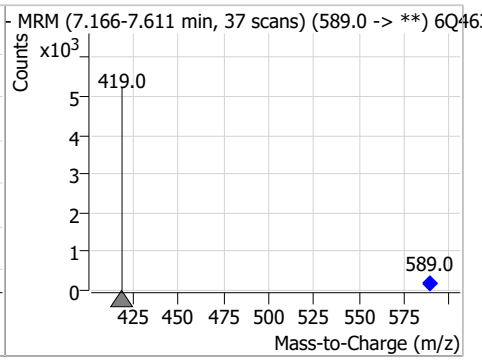




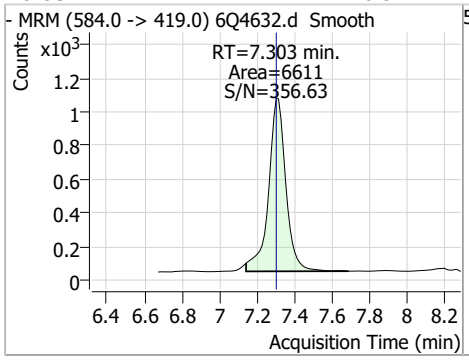
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.09	7.30	0.00	143157				

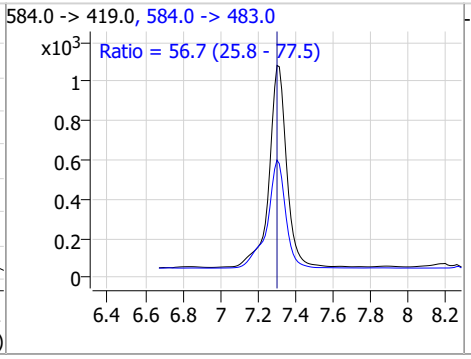


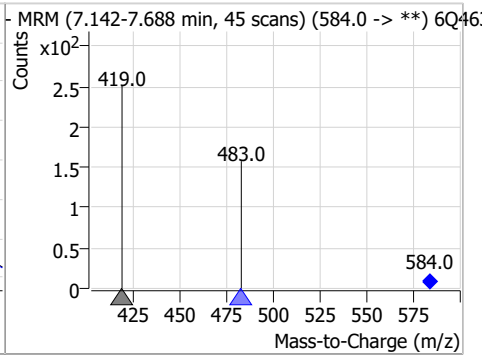




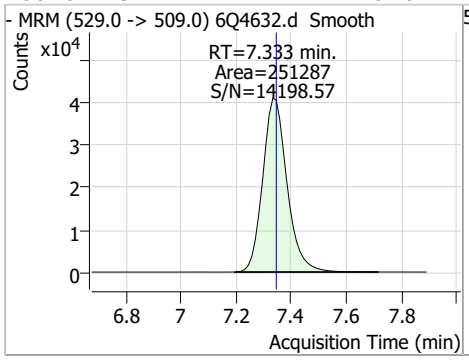
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.87	7.30	0.00	6611	584.0 -> 483.0	56.7	25.8	77.5

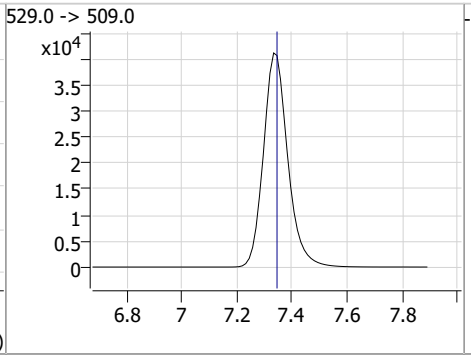


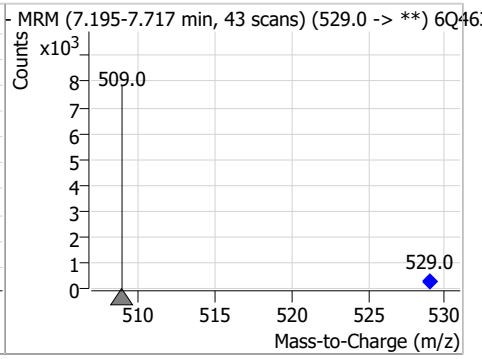




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.28	7.33	-0.01	251287				

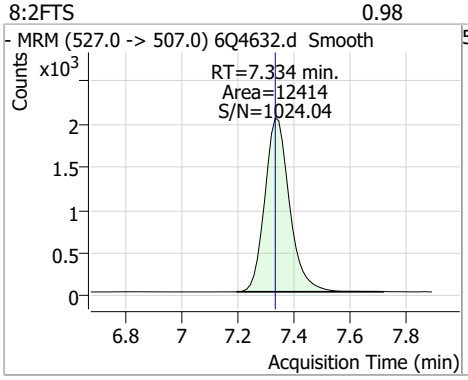


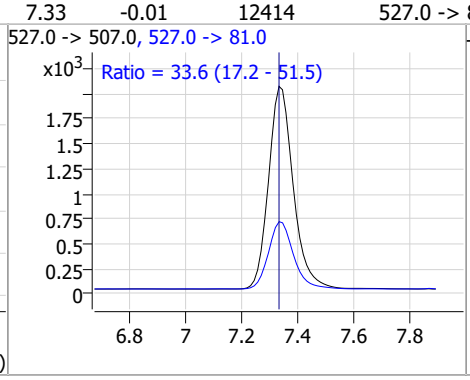


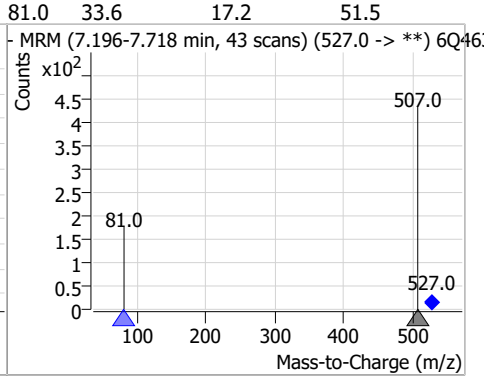


Perfluorinated Compounds by LC/MS/MS

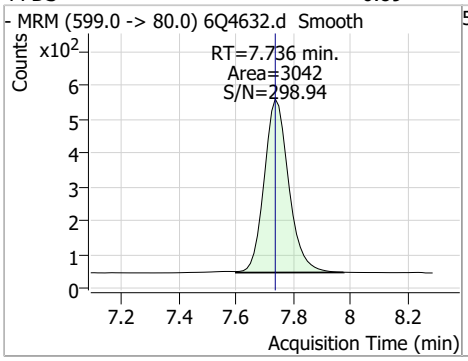
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	0.98	7.33	-0.01	12414	527.0 -> 81.0	33.6	17.2	51.5

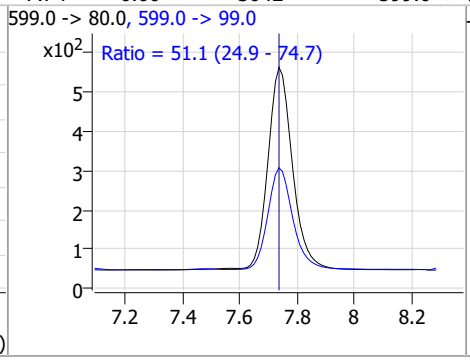


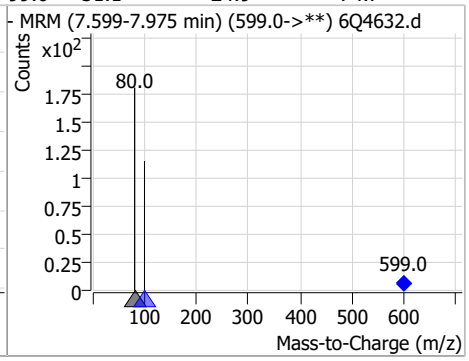




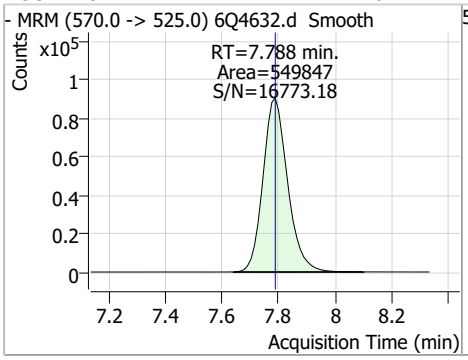
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.89	7.74	0.00	3042	599.0 -> 99.0	51.1	24.9	74.7

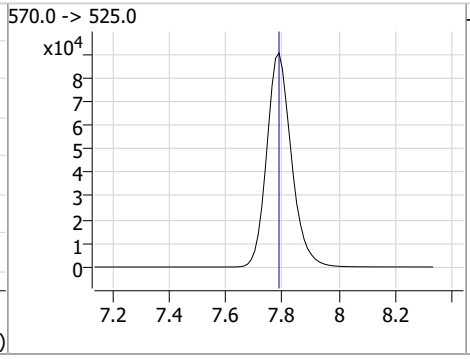


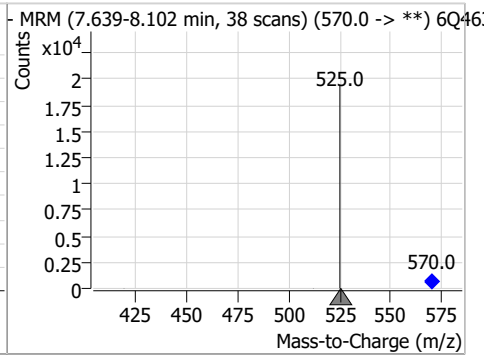




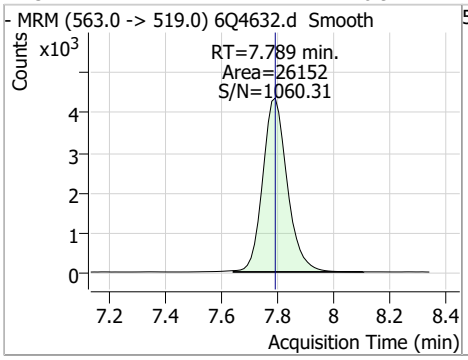
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.71	7.79	0.00	549847				

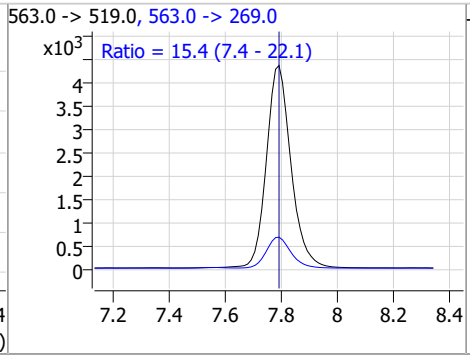


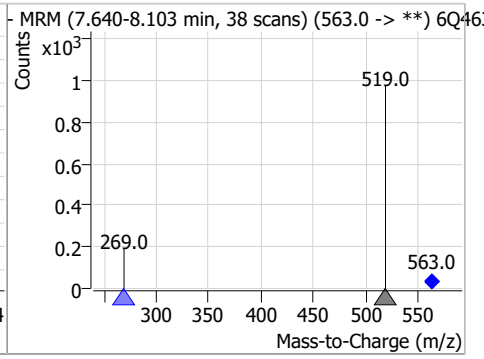




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.92	7.79	0.00	26152	563.0 -> 269.0	15.4	7.4	22.1

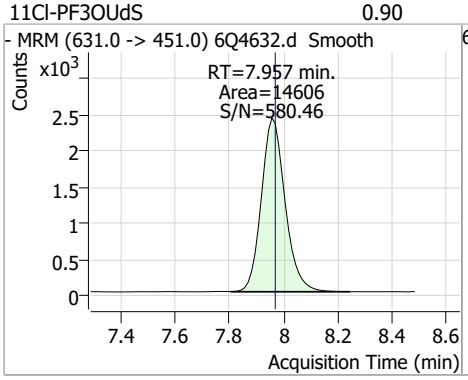


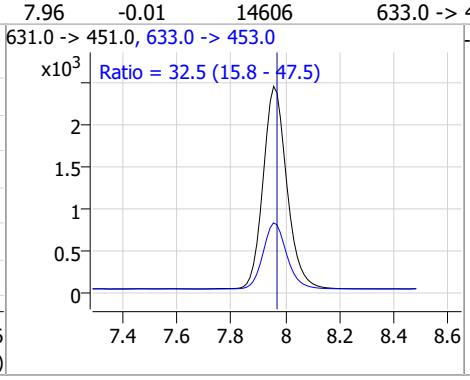


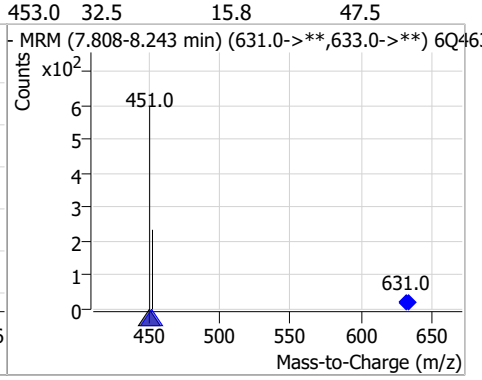


Perfluorinated Compounds by LC/MS/MS

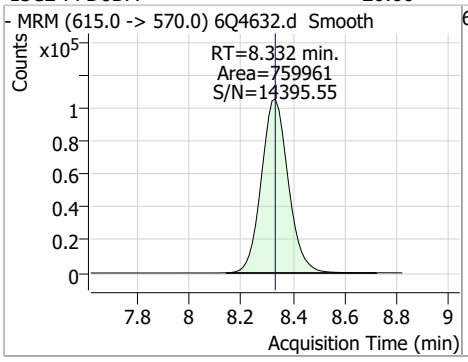
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.90	7.96	-0.01	14606	633.0 -> 453.0	32.5	15.8	47.5

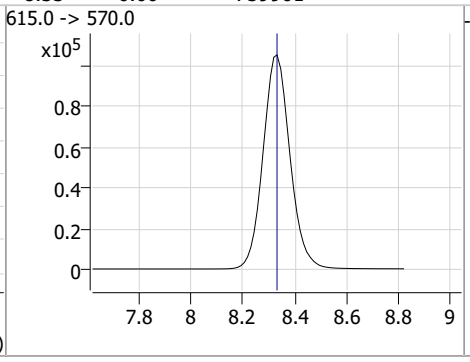


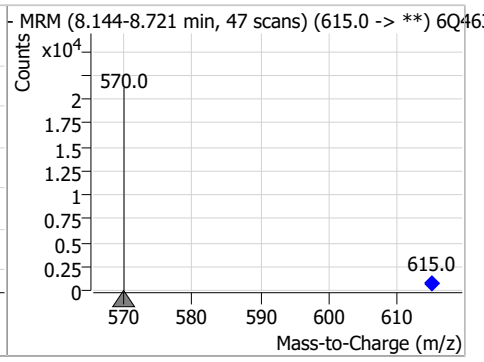




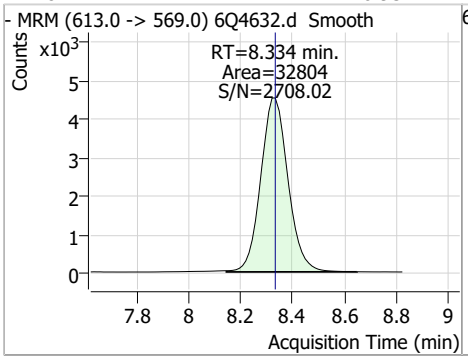
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.66	8.33	0.00	759961				

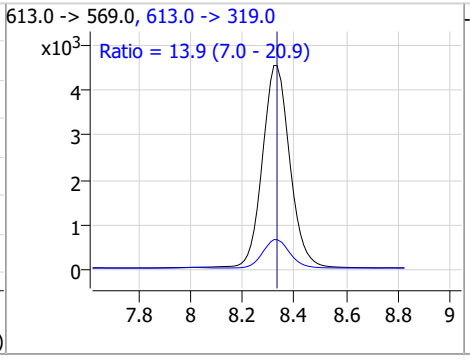


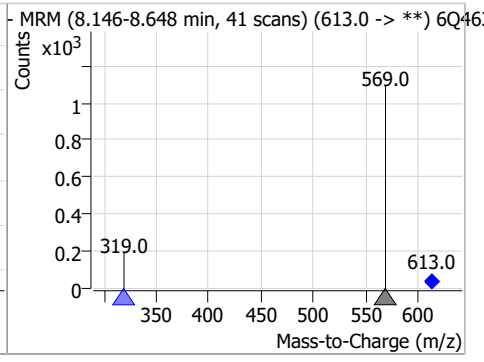




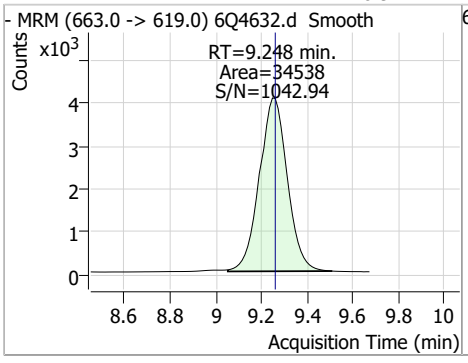
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.93	8.33	0.00	32804	613.0 -> 319.0	13.9	7.0	20.9

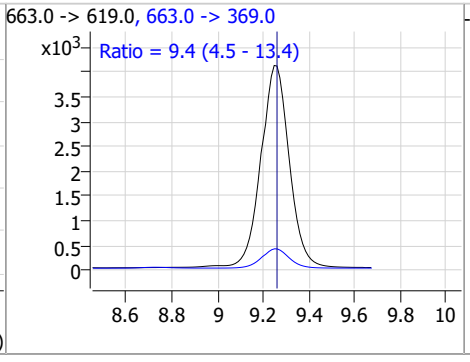


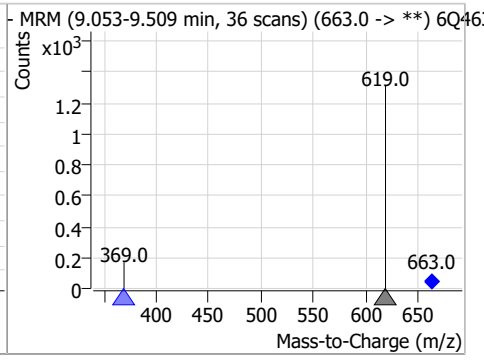




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.94	9.25	-0.01	34538	663.0 -> 369.0	9.4	4.5	13.4

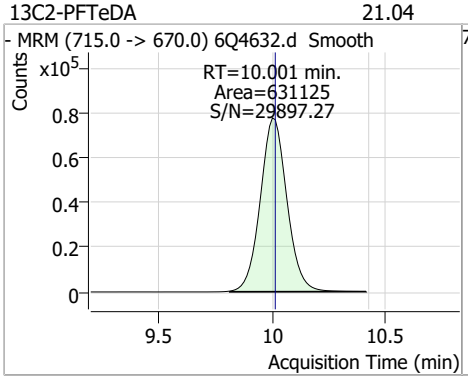


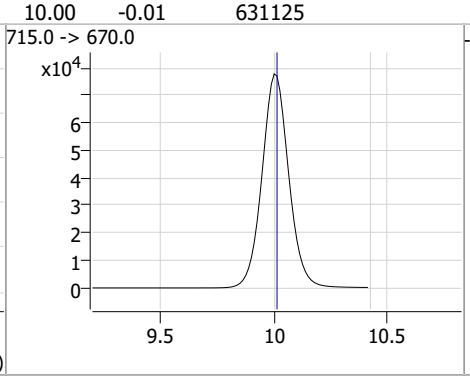


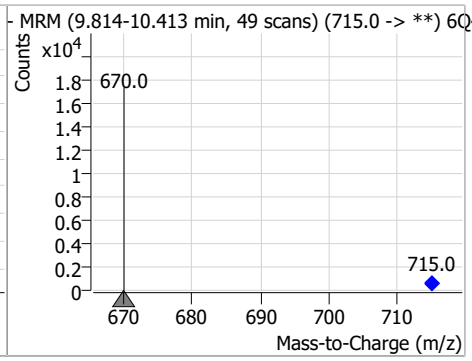


Perfluorinated Compounds by LC/MS/MS

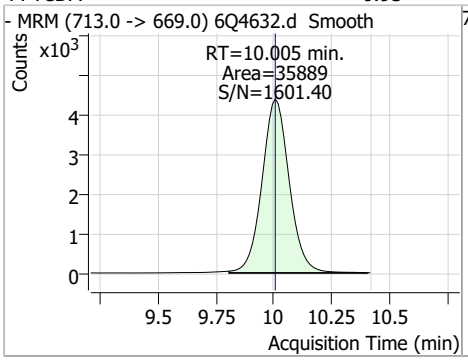
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.04	10.00	-0.01	631125				

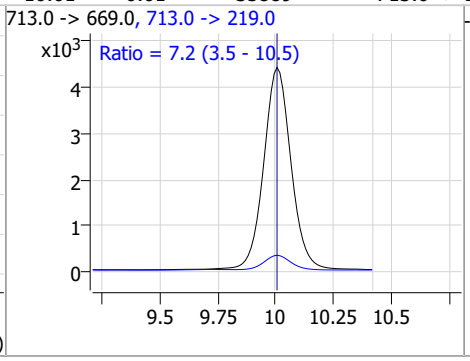


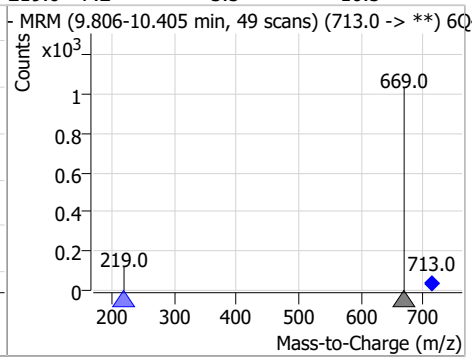




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.93	10.01	-0.01	35889	713.0 -> 219.0	7.2	3.5	10.5







7.7.92

7

Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4632.D
Injection Time: 09/14/22 14:12
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4660.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/14/2022 9:41:02 PM
Sample Name : cc85-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	87781	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	154356	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	234322	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	269702	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	466195	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	569445	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	436220	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	578006	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	778163	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	658826	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	235187	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	33292	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	30951	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	47284	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	279742	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	352251	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	265616	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	212294	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5638	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	51579	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	157163	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	279742	20.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-6:2FTS	6.124	429.0 -> 409.0	352251	20.64	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-8:2FTS	7.333	529.0 -> 509.0	265616	20.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFDoDA	8.320	615.0 -> 570.0	778163	21.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	658826	21.96	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C3-PFBS	3.635	302.0 -> 99.0	33292	21.74	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C3-PFHxS	5.475	402.0 -> 99.0	30951	22.38	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
13C4-PFBA	1.949	217.0 -> 172.0	87781	22.05	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C4-PFHpA	5.445	367.0 -> 322.0	269702	21.80	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C5-PFHxA	4.573	318.0 -> 273.0	234322	21.92	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C5-PFPeA	3.405	268.0 -> 223.0	154356	22.02	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
13C6-PFDA	7.297	519.0 -> 474.0	436220	21.44	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

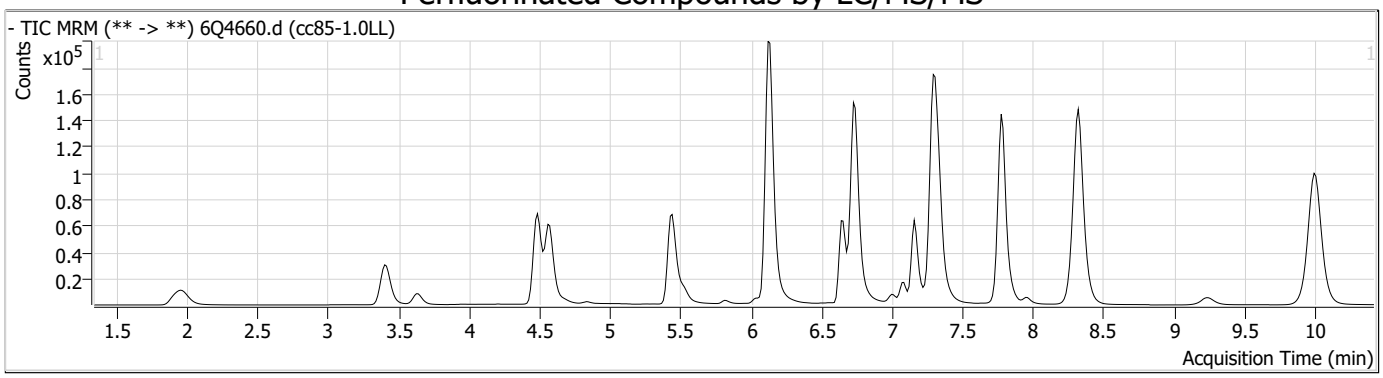
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C7-PFUnDA	7.775	570.0 -> 525.0	578006	21.77 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-FOSA	6.654	506.0 -> 78.0	235187	24.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 120.2%		
13C8-PFOA	6.138	421.0 -> 376.0	466195	21.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C8-PFOS	6.717	507.0 -> 99.0	47284	22.29 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C9-PFNA	6.745	472.0 -> 427.0	569445	22.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
d3-MeFOSAA	7.155	573.0 -> 419.0	212294	24.53 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.7%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5653	21.27 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.3%		
d3-MeFOSA	7.085	515.0 -> 169.0	51579	22.80 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.0%		
d5-EtFOSAA	7.302	589.0 -> 419.0	157162	23.15 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.8%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	14991	0.99 µg/L		99
		327.0 -> 81.0	4950			
6:2FTS	6.124	427.0 -> 407.0	17190	0.96 µg/L		99
		427.0 -> 81.0	4844			
8:2FTS	7.334	527.0 -> 507.0	13470	1.01 µg/L		97
		527.0 -> 81.0	4389			
EtFOSAA	7.303	584.0 -> 419.0	7216	0.86 µg/L		99
		584.0 -> 483.0	3761			
FOSA	6.656	498.0 -> 78.0	10394	0.88 µg/L		98
		498.0 -> 478.0	340			
MeFOSAA	7.168	570.0 -> 419.0	8021	0.82 µg/L		97
		570.0 -> 512.0	2694			
PFBA	1.955	213.0 -> 169.0	1744	0.91 µg/L		100
PFBS	3.627	299.0 -> 80.0	4975	0.90 µg/L		99
		299.0 -> 99.0	1890			
PFDA	7.298	513.0 -> 469.0	27878	0.87 µg/L		100
		513.0 -> 219.0	3931			
PFDoDA	8.321	613.0 -> 569.0	32235	0.89 µg/L		99
		613.0 -> 319.0	4676			
PFDS	7.736	599.0 -> 80.0	3082	0.86 µg/L		88
		599.0 -> 99.0	1789			
PFHpA	5.446	363.0 -> 319.0	16138	0.92 µg/L		100
		363.0 -> 169.0	2396			
PFHpS	6.136	449.0 -> 80.0	3870	0.94 µg/L		97
		449.0 -> 99.0	1959			
PFHxA	4.574	313.0 -> 269.0	11096	0.90 µg/L		100
		313.0 -> 119.0	282			
PFHxS	5.477	399.0 -> 80.0	3947	0.89 µg/L	m	98
		399.0 -> 99.0	1967			
PFNA	6.745	463.0 -> 419.0	21845	0.81 µg/L		99
		463.0 -> 219.0	4132			
PFNS	7.256	549.0 -> 80.0	4107	0.85 µg/L		96
		549.0 -> 99.0	2151			
PFOA	6.138	413.0 -> 369.0	22704	0.90 µg/L		98
		413.0 -> 169.0	3658			
PFOS	6.719	499.0 -> 80.0	3744	0.85 µg/L	m	90

Perfluorinated Compounds by LC/MS/MS

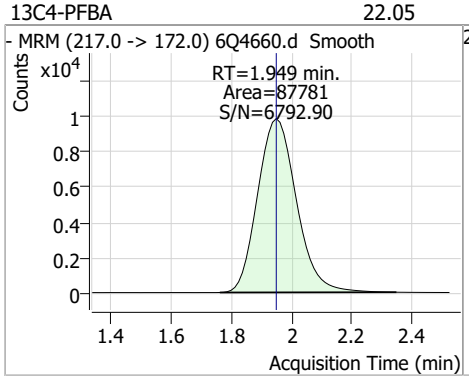
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	2019			
PFPeA	3.408	263.0 -> 219.0	5828	0.90	µg/L	100
PFPeS	4.681	349.0 -> 80.0	4101	0.89	µg/L	100
		349.0 -> 99.0	1882			
PFTeDA	9.993	713.0 -> 669.0	35799	0.89	µg/L	99
		713.0 -> 219.0	2580			
PFTrDA	9.235	663.0 -> 619.0	36162	0.96	µg/L	94
		663.0 -> 369.0	2402			
PFUnDA	7.777	563.0 -> 519.0	27049	0.91	µg/L	99
		563.0 -> 269.0	4067			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	15227	0.91	µg/L	99
		633.0 -> 453.0	4688			
9Cl-PF3ONS	7.009	531.0 -> 351.0	20027	0.90	µg/L	99
		533.0 -> 353.0	6119			
ADONA	5.532	377.0 -> 251.0	24721	0.86	µg/L	96
		377.0 -> 85.0	6411			
HFPO-DA	4.840	285.0 -> 169.0	243	0.91	µg/L	97
		285.0 -> 185.0	31			
MeFOSA	7.086	512.0 -> 169.0	2796	0.99	µg/L	93
		512.0 -> 219.0	2505			
4-PFECHS	6.032	461.0 -> 381.0	13045	0.87	µg/L	99
		461.0 -> 99.0	4428			
FBSA	4.514	298.0 -> 78.0	10588	0.93	µg/L	99
		298.0 -> 64.0	692			
FHxSA	5.828	398.0 -> 78.0	9616	0.93	µg/L	99
		398.0 -> 64.0	316			

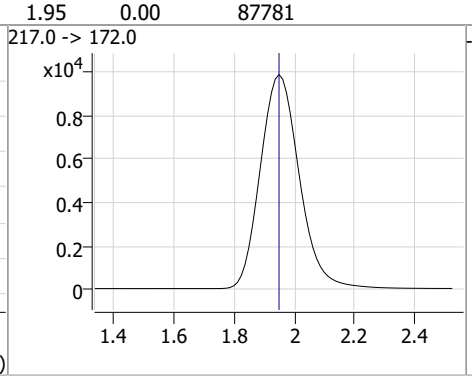
 # = Qualifier out of range, m = manually integrated, + = Area summed

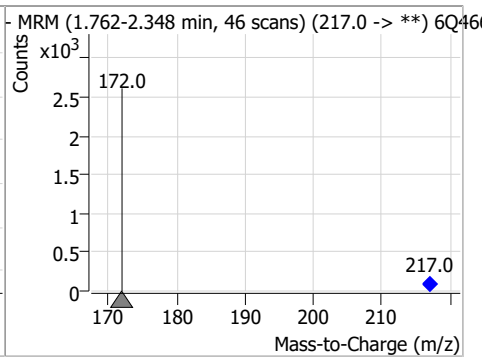
Perfluorinated Compounds by LC/MS/MS



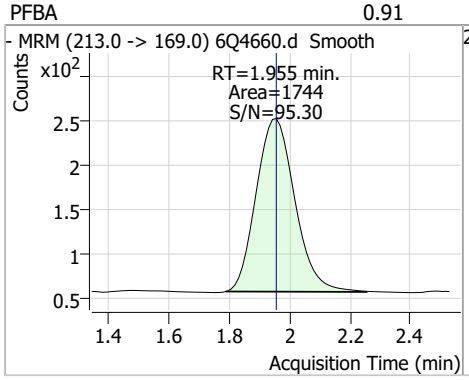
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.05	1.95	0.00	87781				

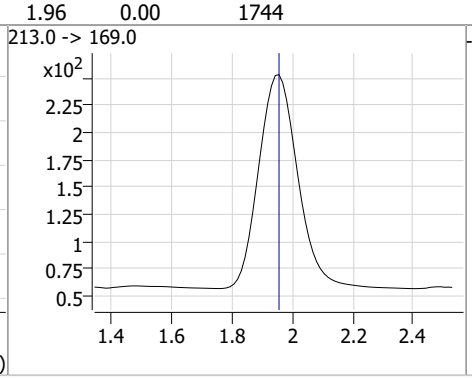


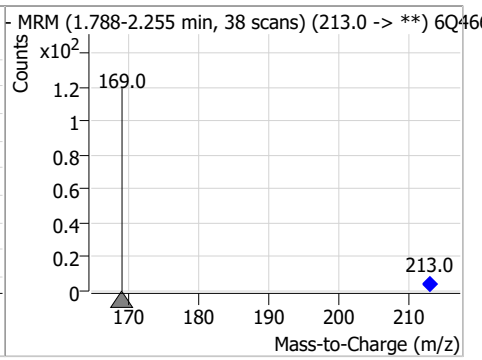




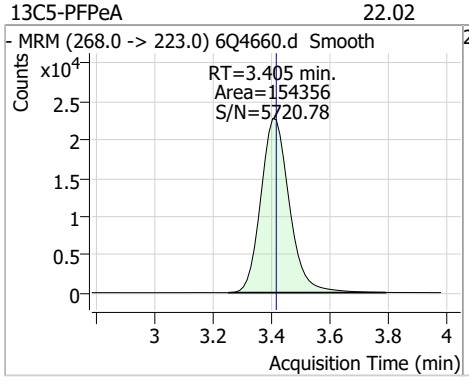
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.91	1.96	0.00	1744				

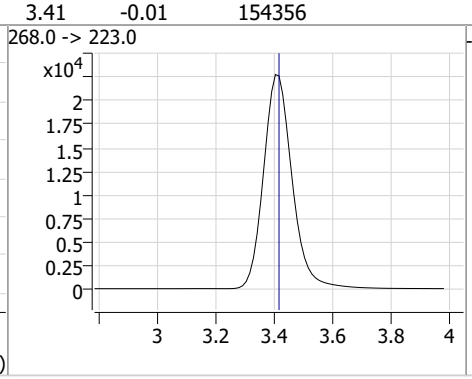


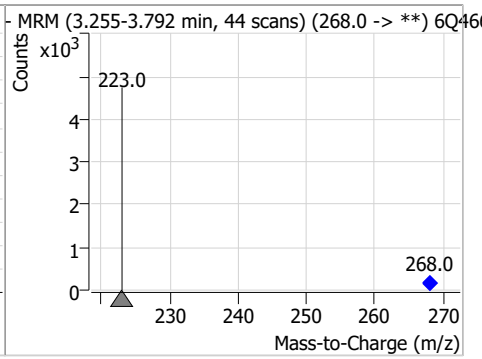




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.02	3.41	-0.01	154356				

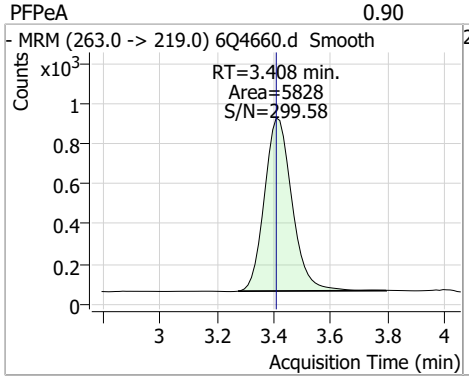


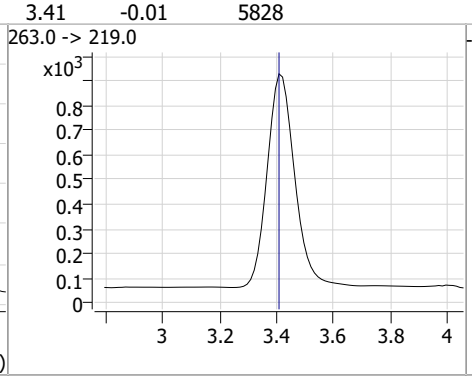


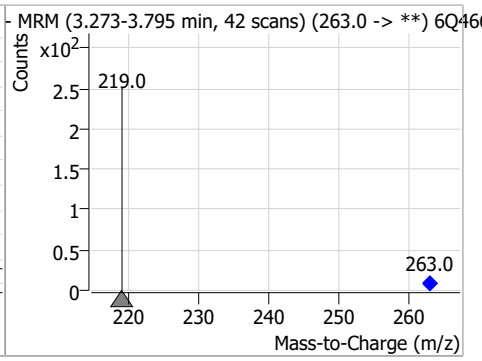


Perfluorinated Compounds by LC/MS/MS

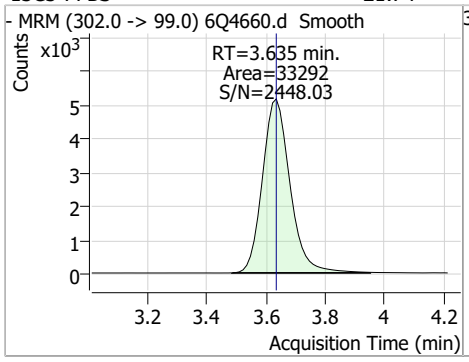
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.90	3.41	-0.01	5828				

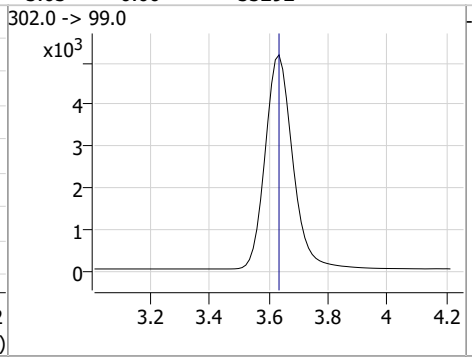


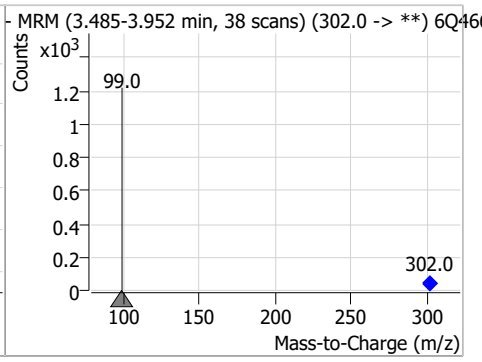




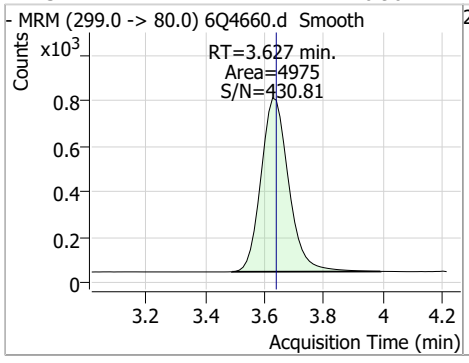
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.74	3.63	0.00	33292				

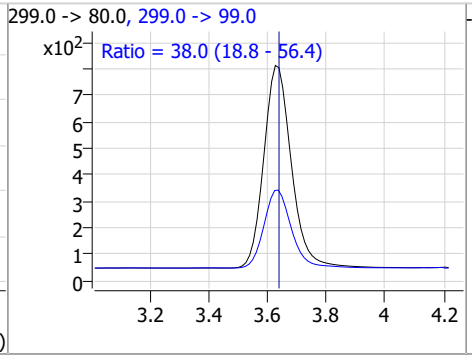


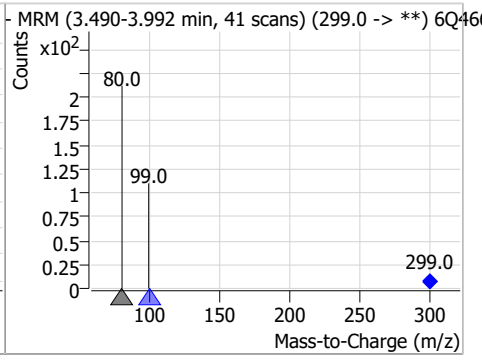




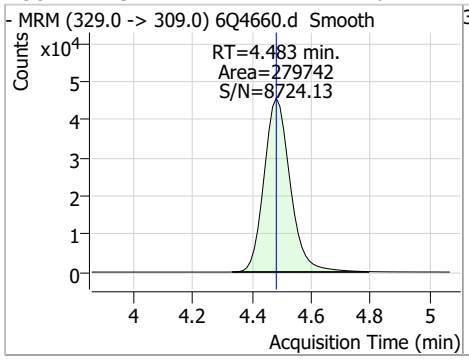
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.90	3.63	-0.01	4975	299.0 -> 99.0	38.0	18.8	56.4

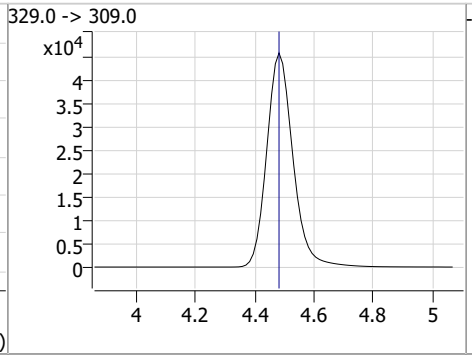


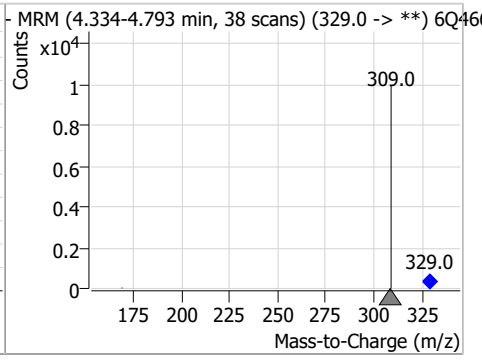




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.71	4.48	0.00	279742				

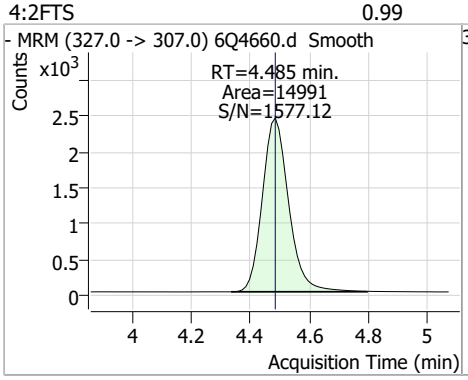


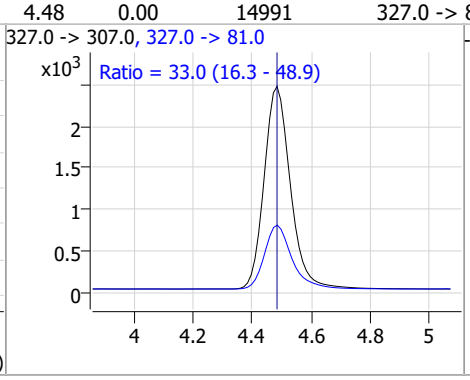


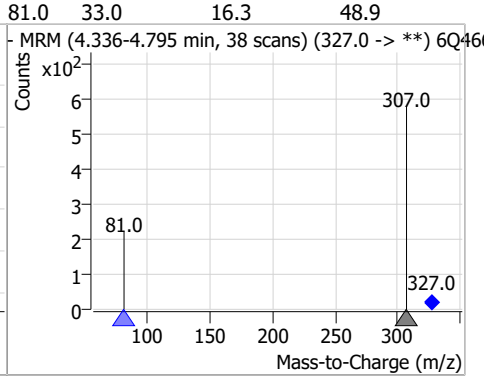


Perfluorinated Compounds by LC/MS/MS

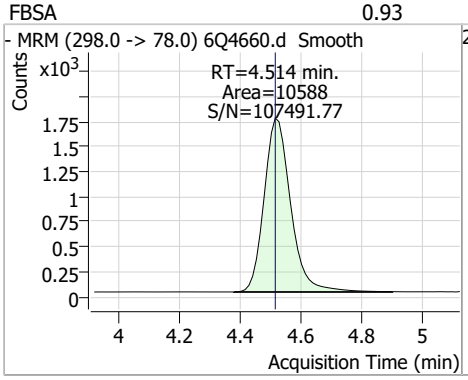
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.99	4.48	0.00	14991	327.0 -> 81.0	33.0	16.3	48.9

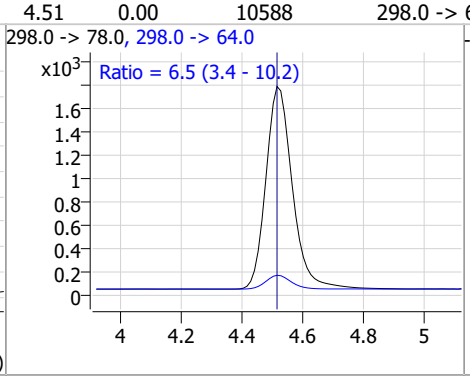


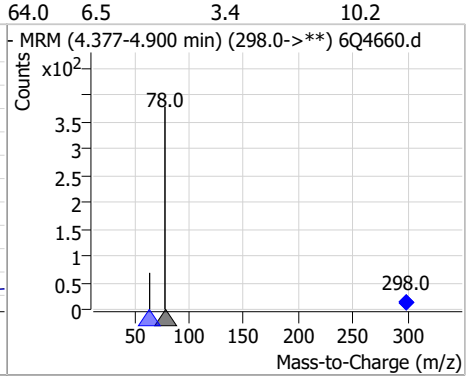




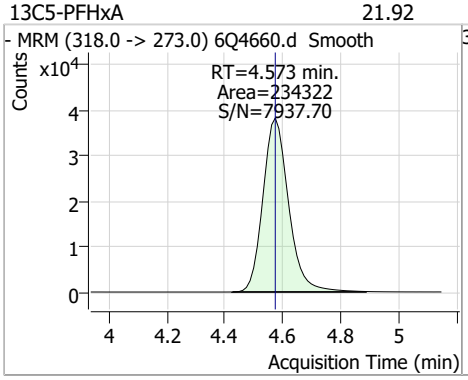
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.93	4.51	0.00	10588	298.0 -> 64.0	6.5	3.4	10.2

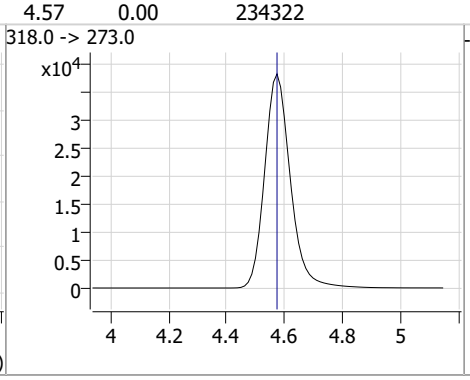


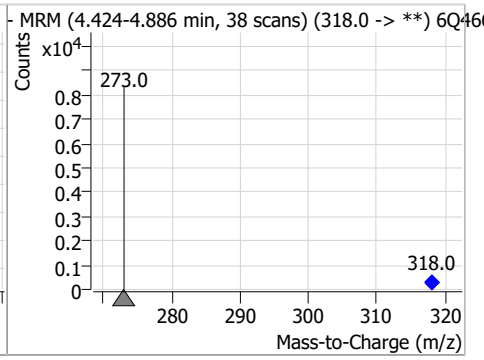




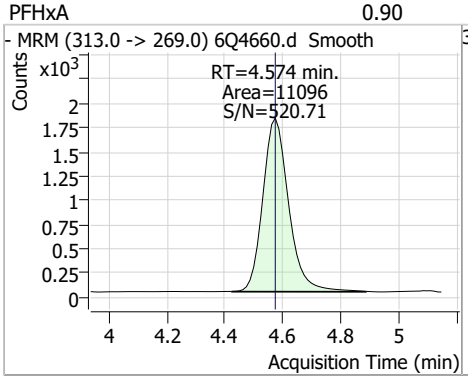
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.92	4.57	0.00	234322				

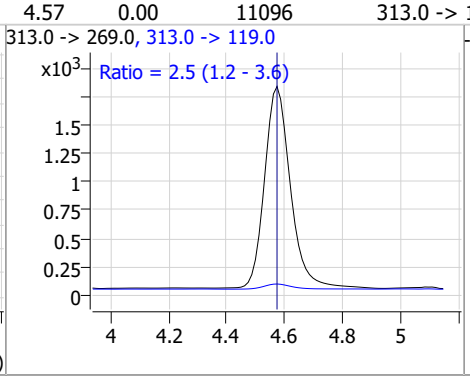


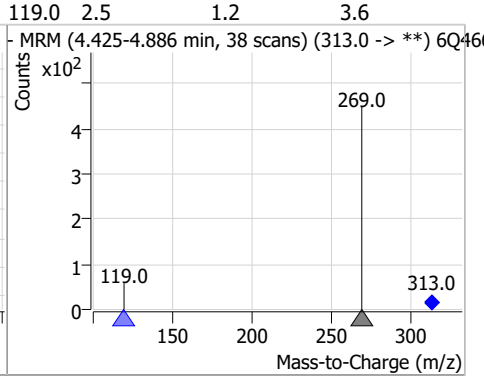




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.90	4.57	0.00	11096	313.0 -> 119.0	2.5	1.2	3.6

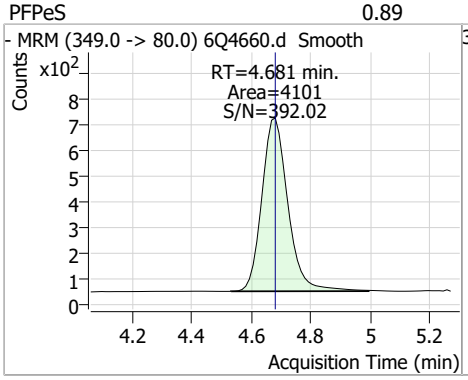


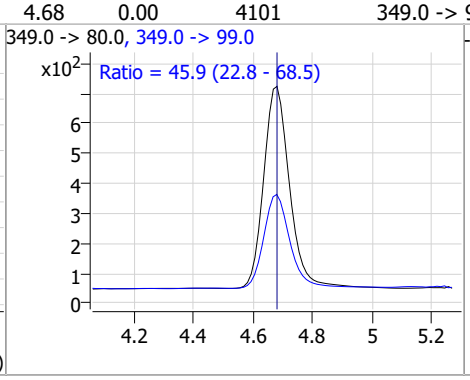


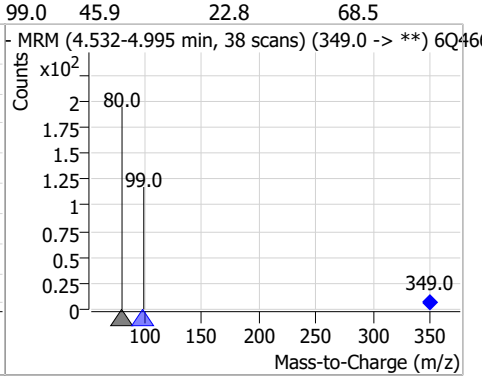


Perfluorinated Compounds by LC/MS/MS

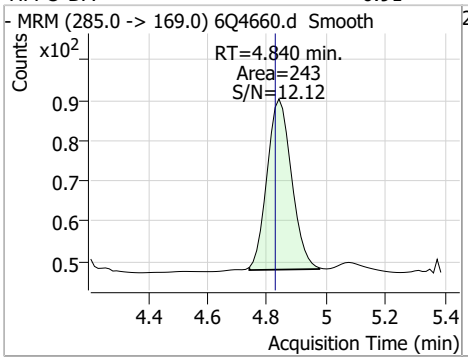
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.89	4.68	0.00	4101	349.0 -> 99.0	45.9	22.8	68.5

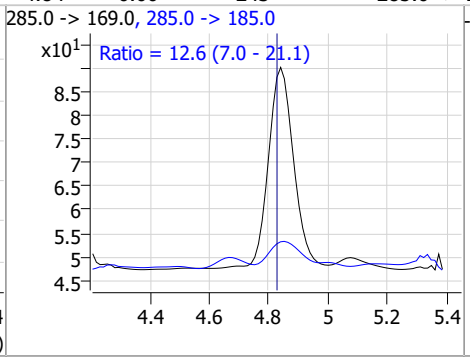


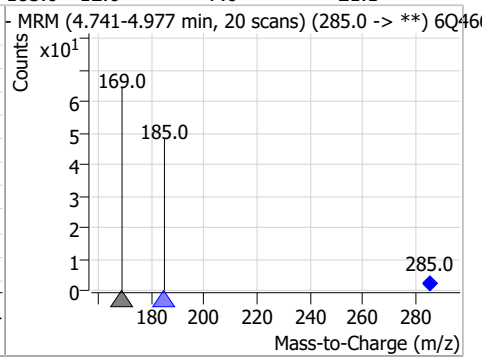




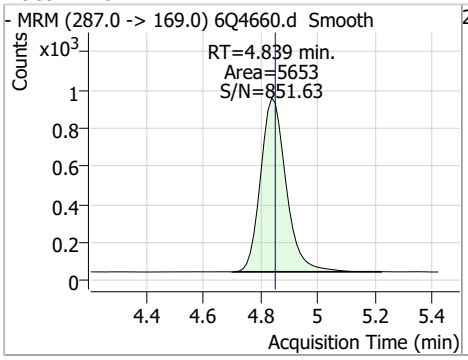
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.91	4.84	0.00	243	285.0 -> 185.0	12.6	7.0	21.1

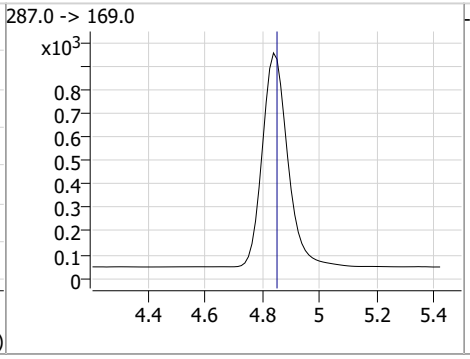


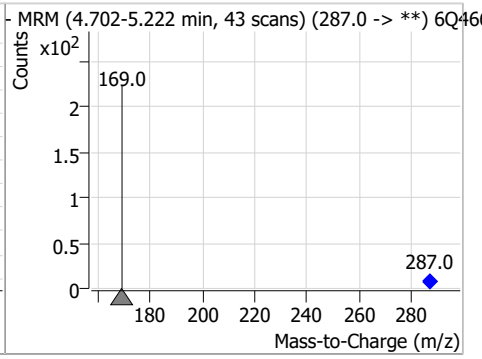




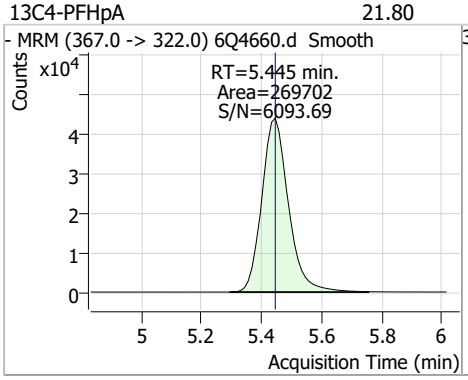
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	21.27	4.84	-0.01	5653				

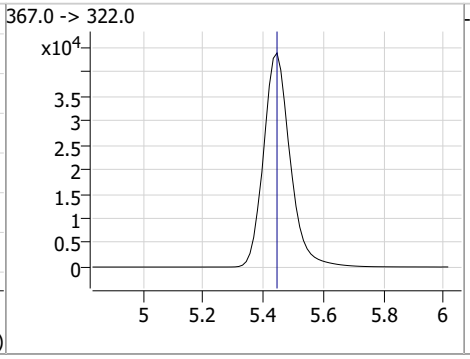


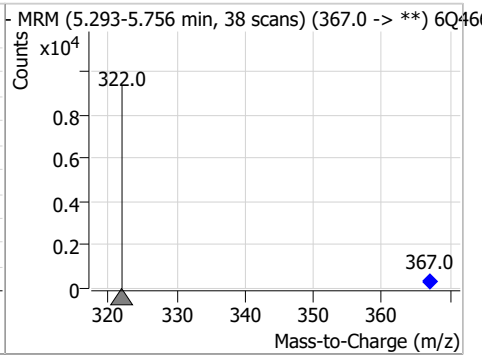




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.80	5.45	0.00	269702				

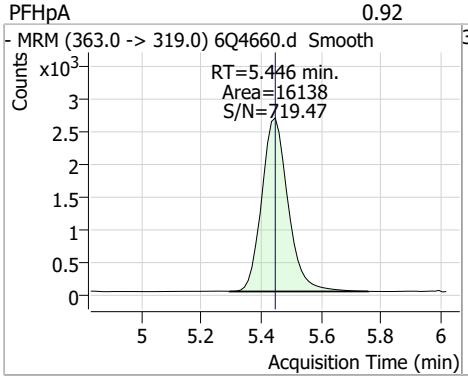


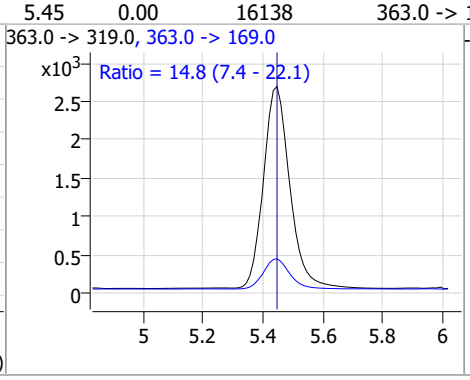


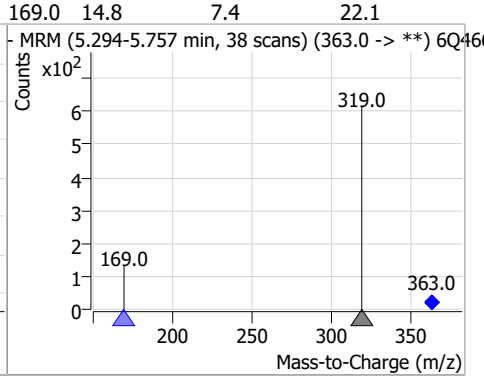


Perfluorinated Compounds by LC/MS/MS

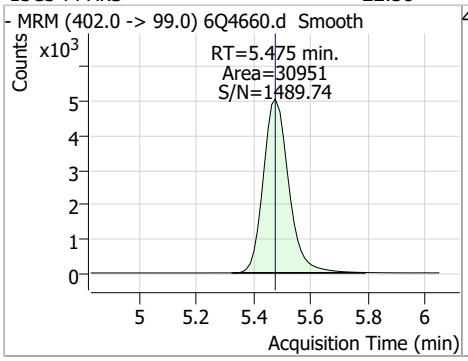
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.92	5.45	0.00	16138	363.0 -> 169.0	14.8	7.4	22.1

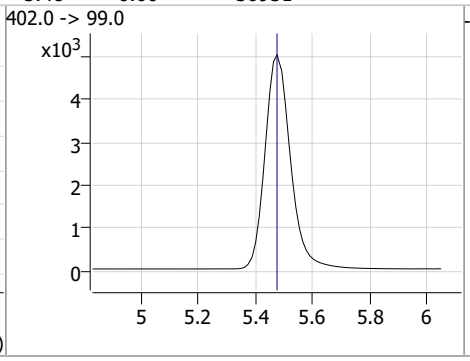


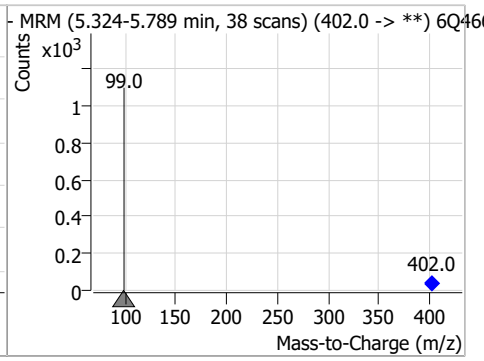




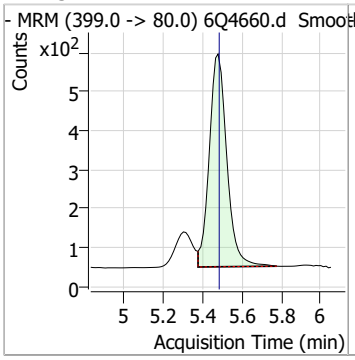
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.38	5.48	0.00	30951				

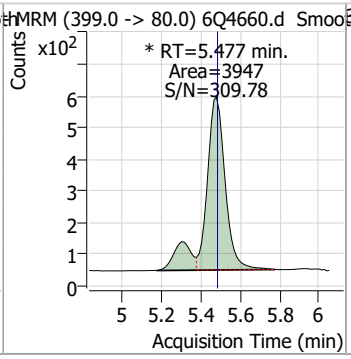


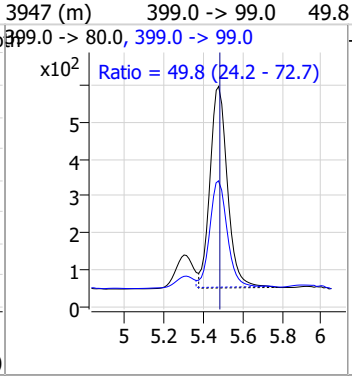


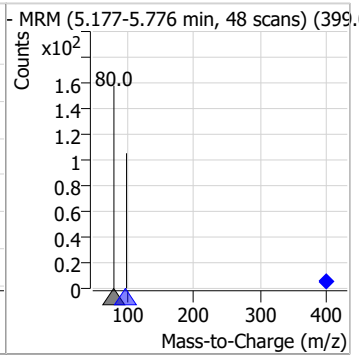


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.89	5.48	0.00	3947 (m)	399.0 -> 99.0	49.8	24.2	72.7

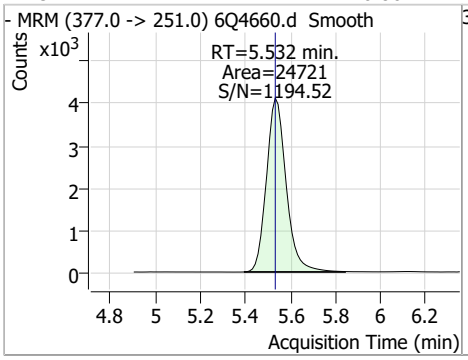


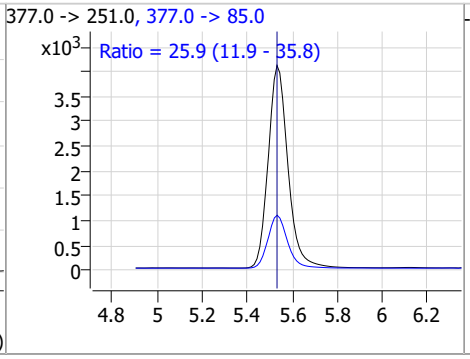


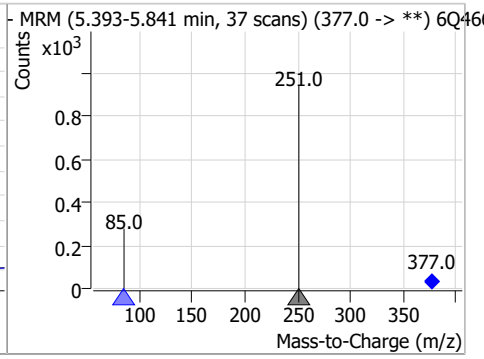




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.86	5.53	0.00	24721	377.0 -> 85.0	25.9	11.9	35.8

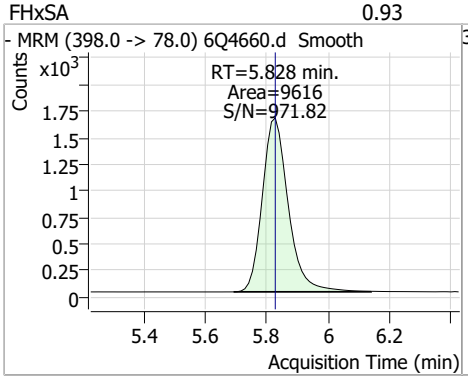


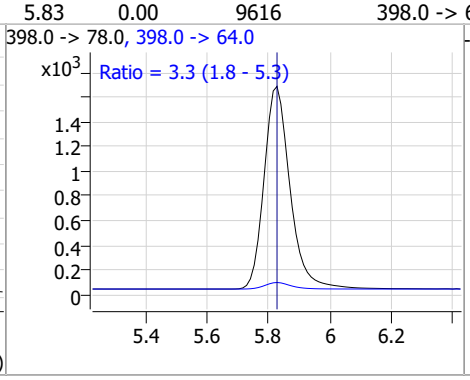


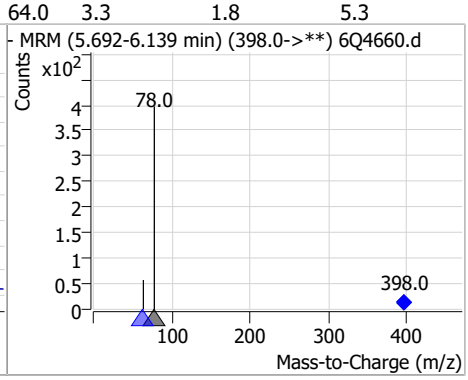


Perfluorinated Compounds by LC/MS/MS

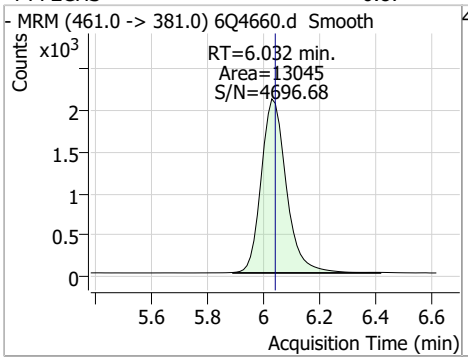
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.93	5.83	0.00	9616	398.0 -> 64.0	3.3	1.8	5.3

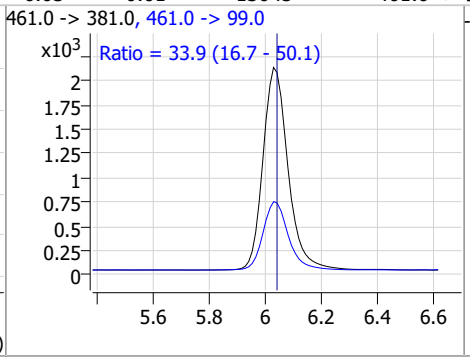


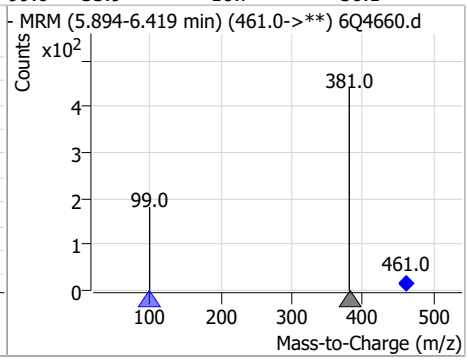




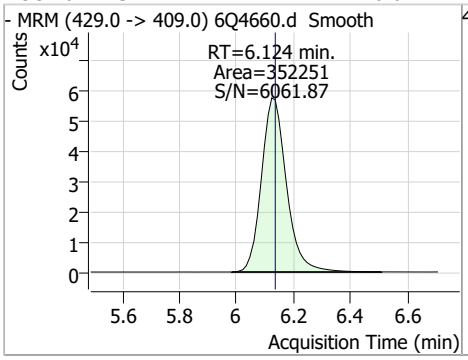
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.87	6.03	-0.01	13045	461.0 -> 99.0	33.9	16.7	50.1

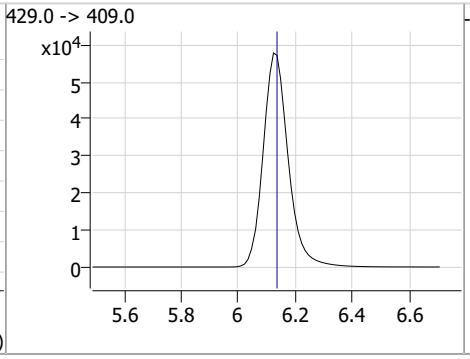


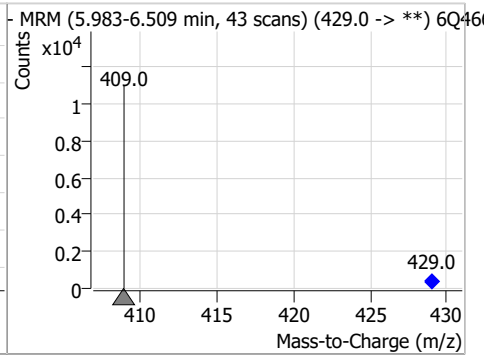




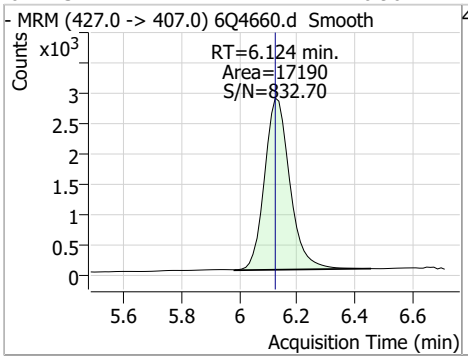
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.64	6.12	-0.01	352251				

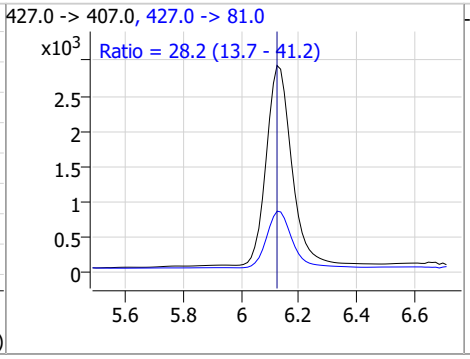


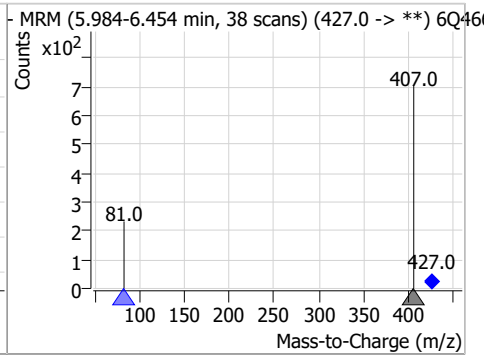




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.96	6.12	-0.01	17190	427.0 -> 81.0	28.2	13.7	41.2

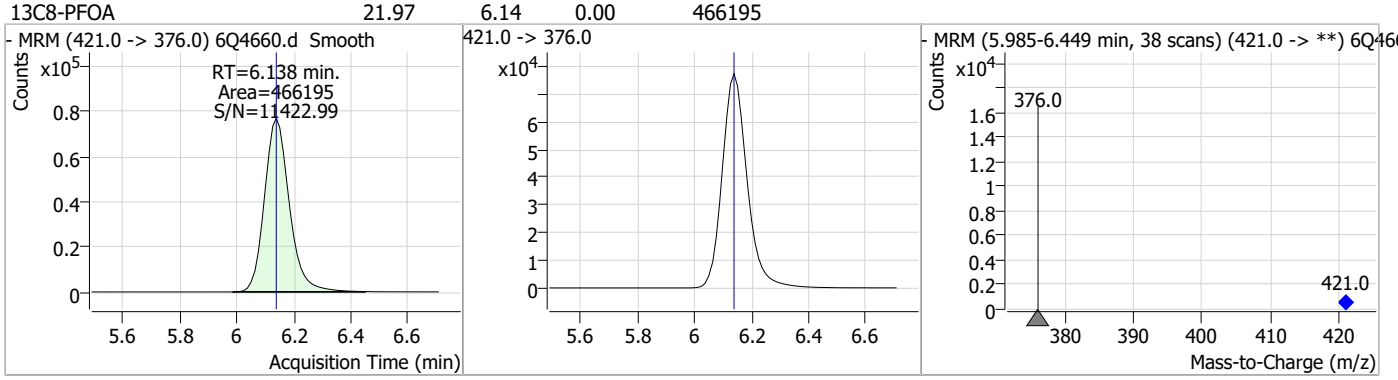




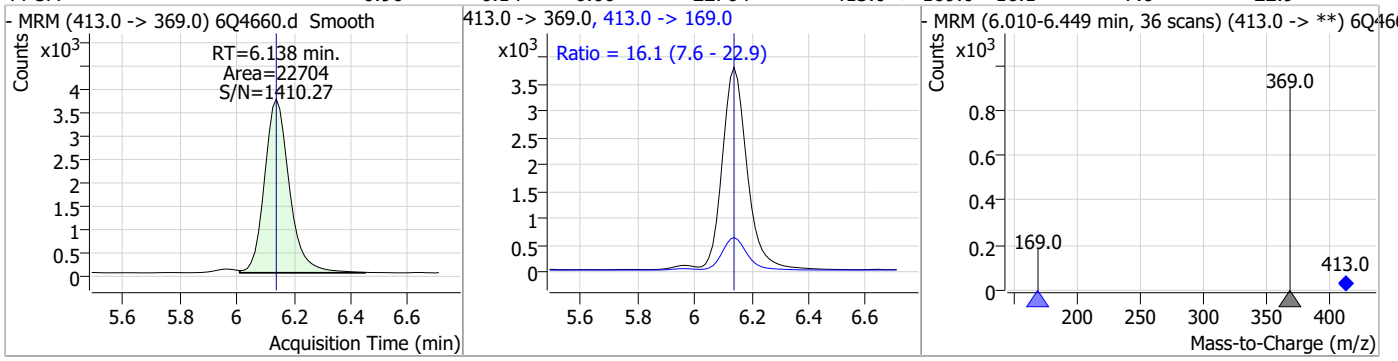


Perfluorinated Compounds by LC/MS/MS

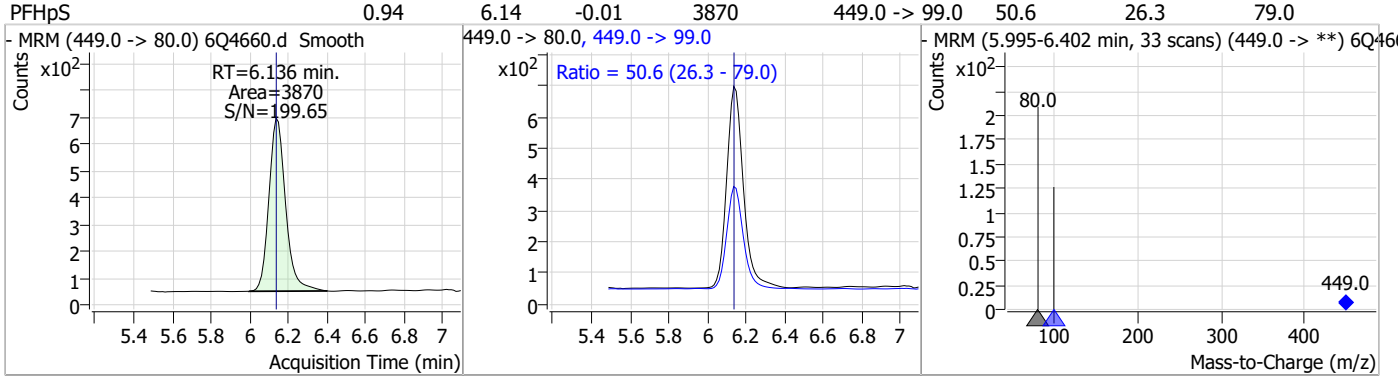
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.97	6.14	0.00	466195				



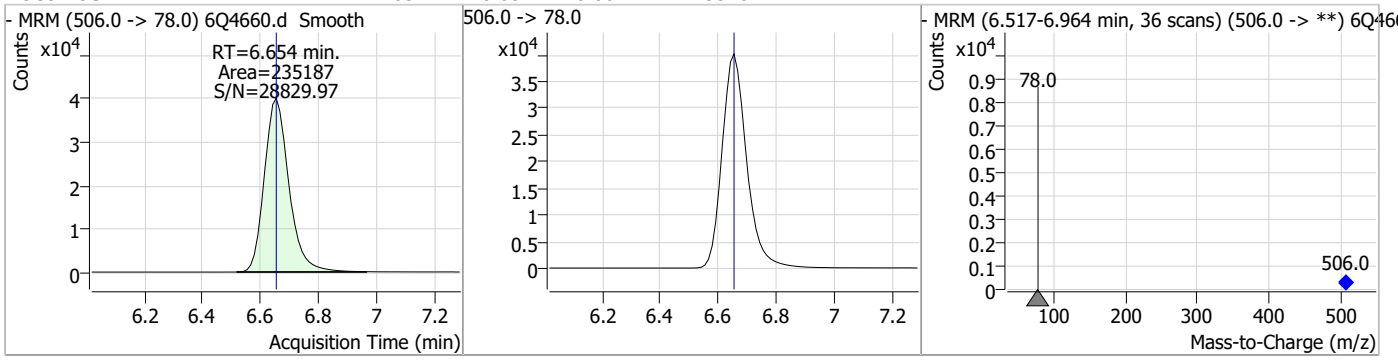
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.90	6.14	0.00	22704	413.0 -> 169.0	16.1	7.6	22.9



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.94	6.14	-0.01	3870	449.0 -> 99.0	50.6	26.3	79.0

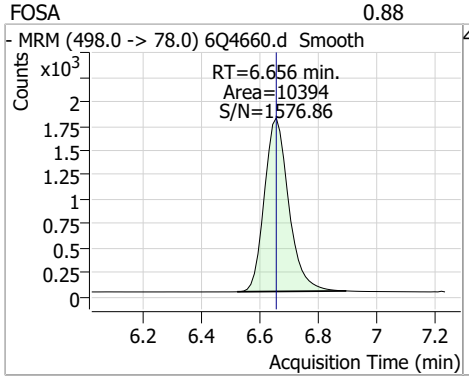


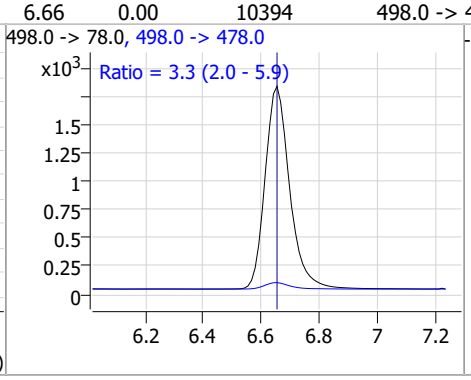
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	24.05	6.65	0.00	235187				

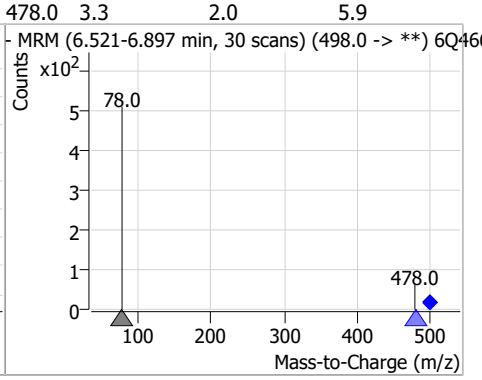


Perfluorinated Compounds by LC/MS/MS

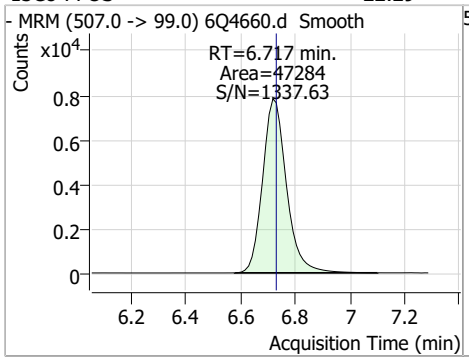
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.88	6.66	0.00	10394	498.0 -> 478.0	3.3	2.0	5.9

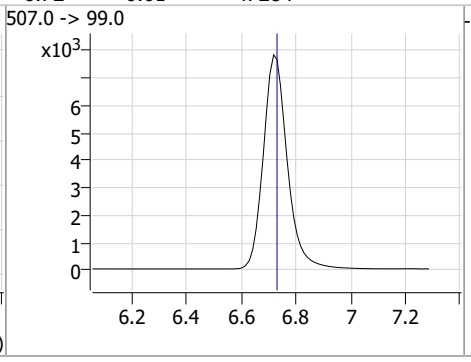


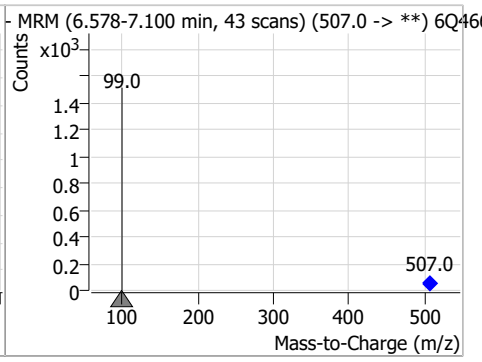




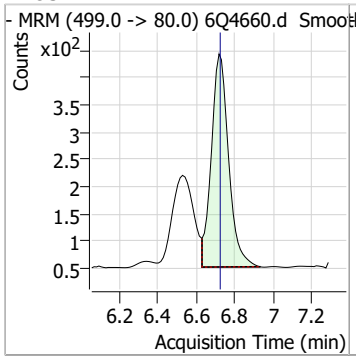
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	22.29	6.72	-0.01	47284				

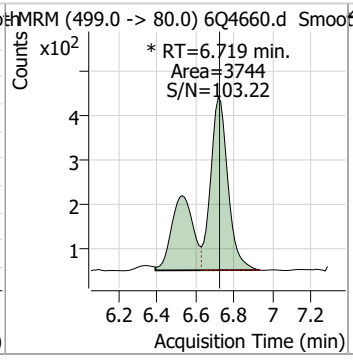


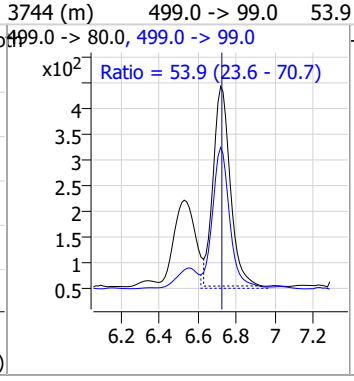


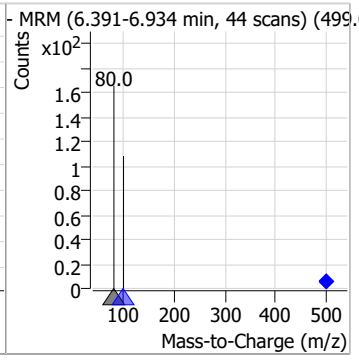


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.85	6.72	-0.01	3744 (m)	499.0 -> 99.0	53.9	23.6	70.7

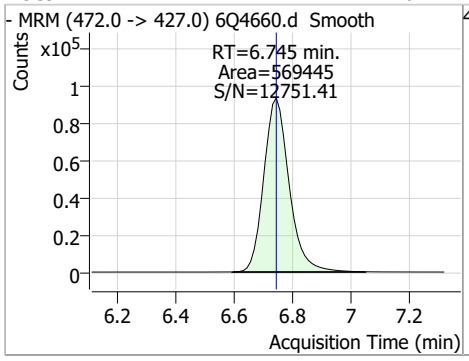


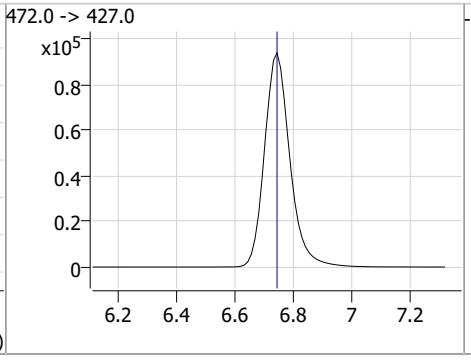


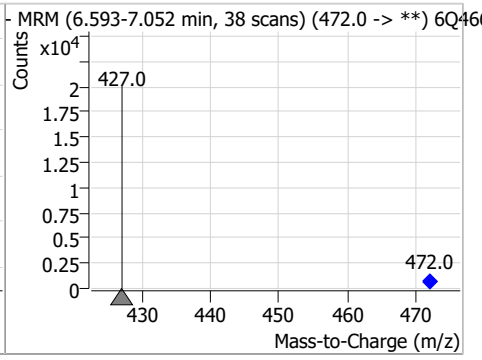




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.10	6.74	0.00	569445				

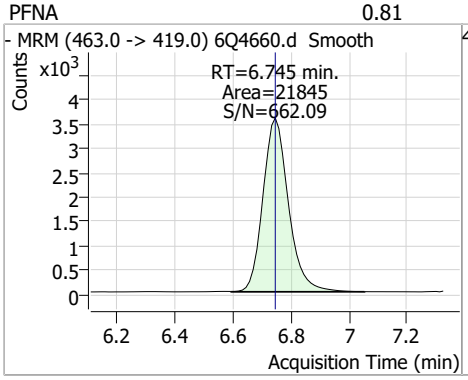


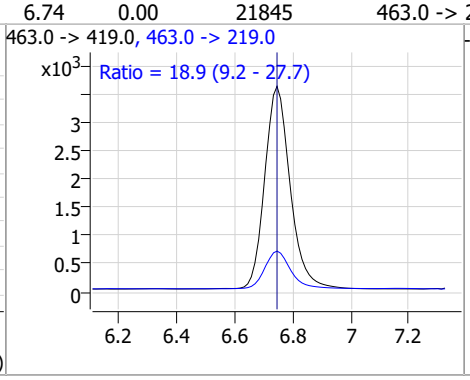


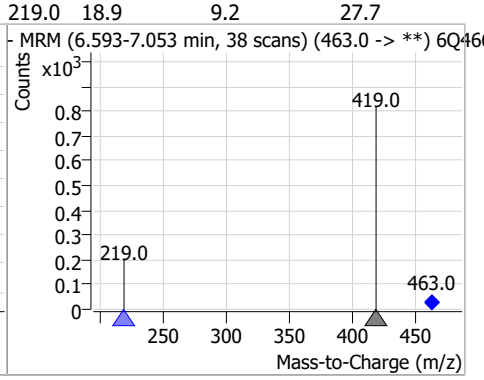


Perfluorinated Compounds by LC/MS/MS

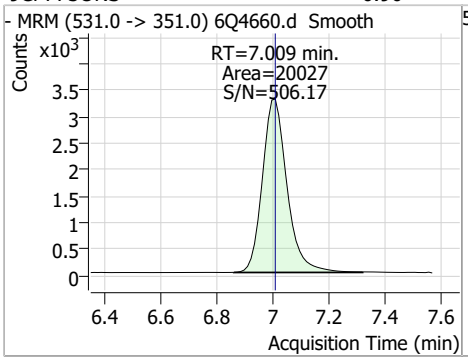
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.81	6.74	0.00	21845	463.0 -> 219.0	18.9	9.2	27.7

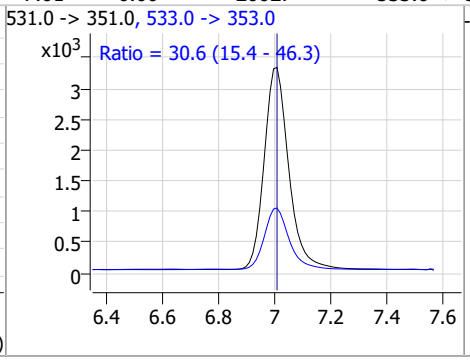


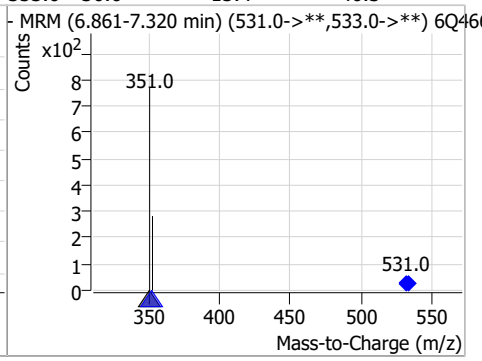




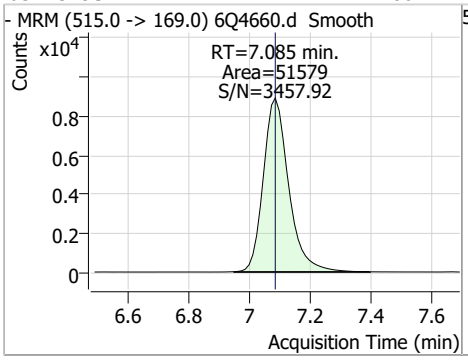
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.90	7.01	0.00	20027	533.0 -> 353.0	30.6	15.4	46.3

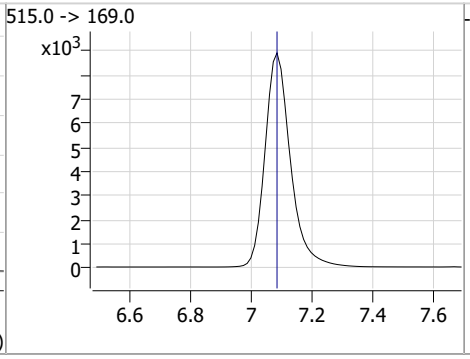


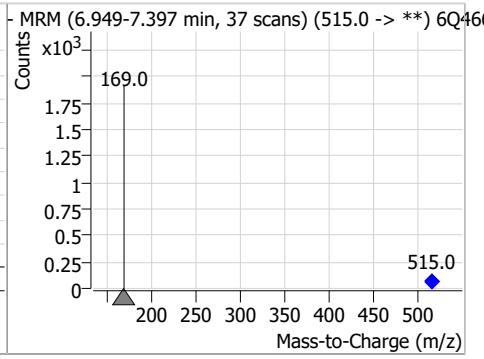




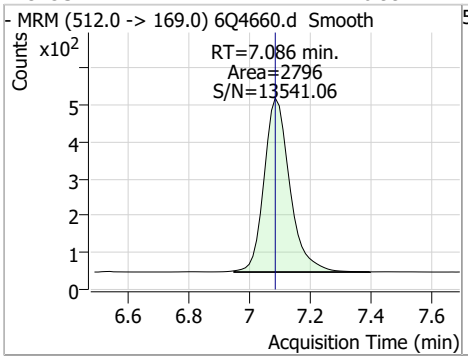
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.80	7.08	0.00	51579				

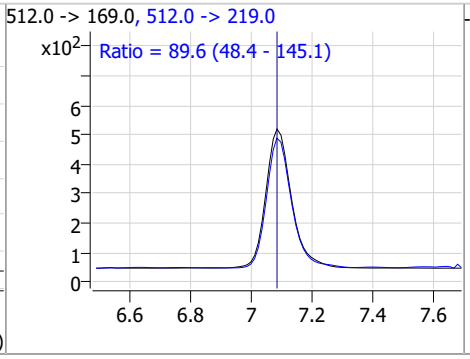


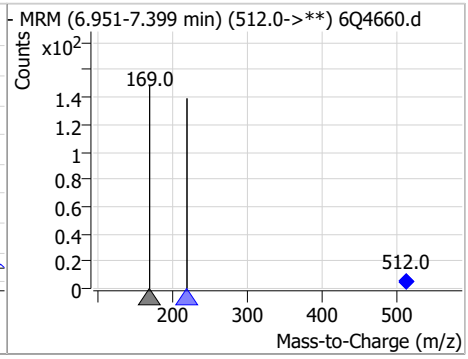




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.99	7.09	0.00	2796	512.0 -> 219.0	89.6	48.4	145.1

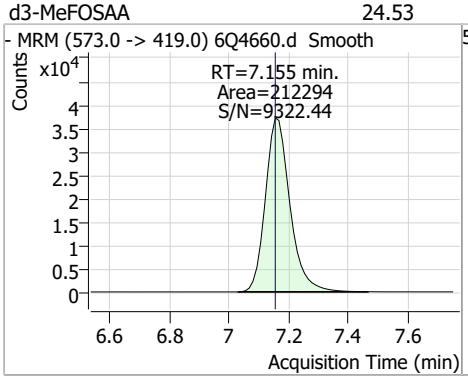


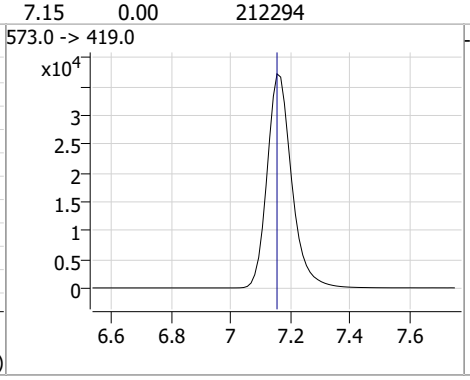


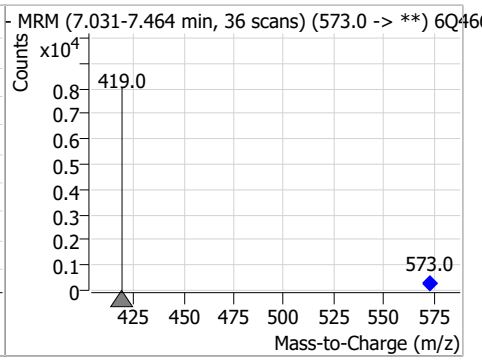


Perfluorinated Compounds by LC/MS/MS

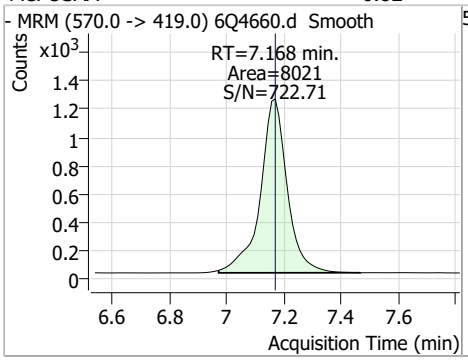
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.53	7.15	0.00	212294				

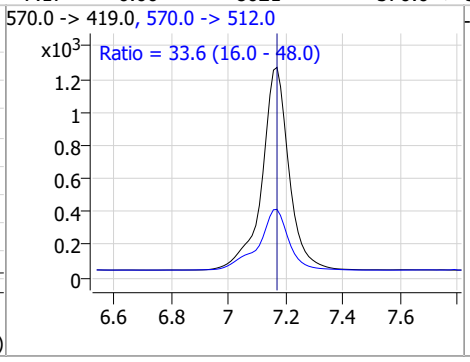


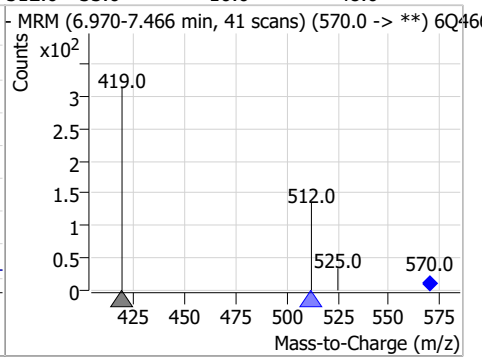




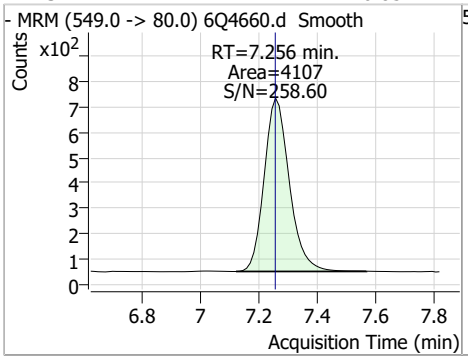
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.82	7.17	0.00	8021	570.0 -> 512.0	33.6	16.0	48.0

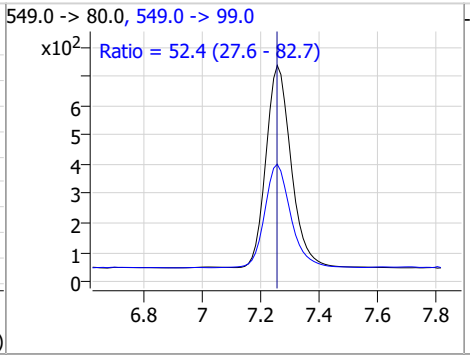


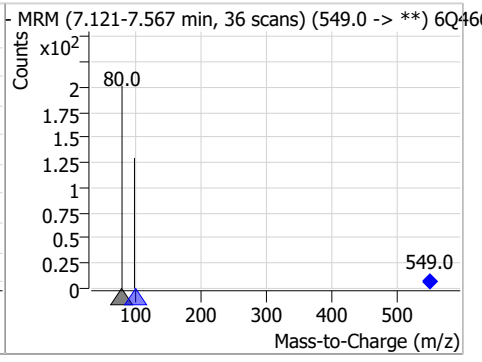




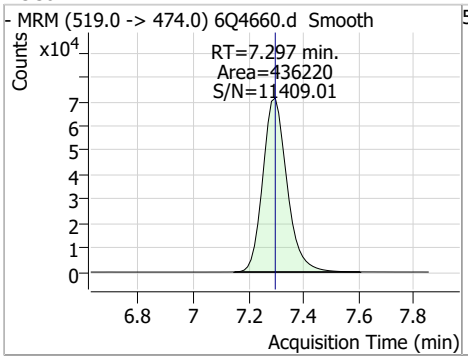
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.85	7.26	-0.01	4107	549.0 -> 99.0	52.4	27.6	82.7

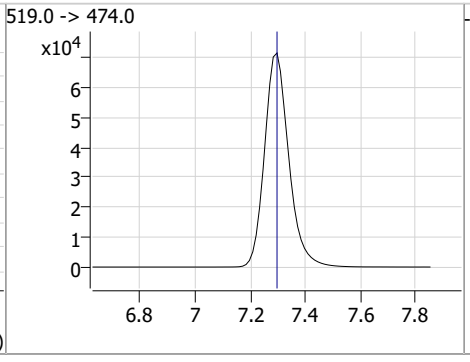


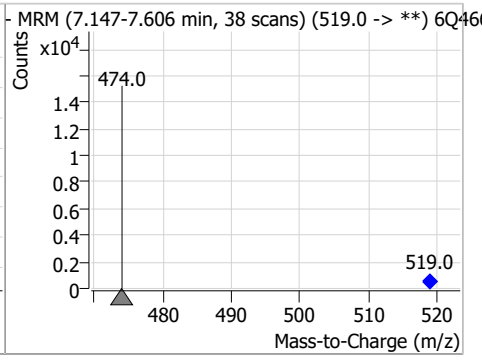




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.44	7.30	0.00	436220				

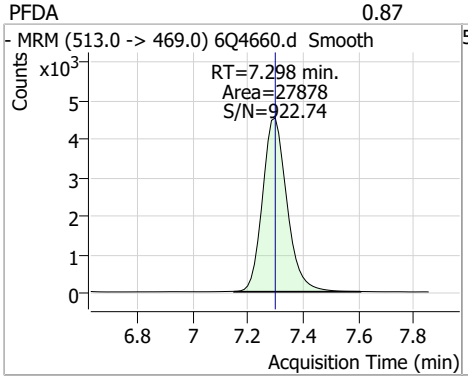


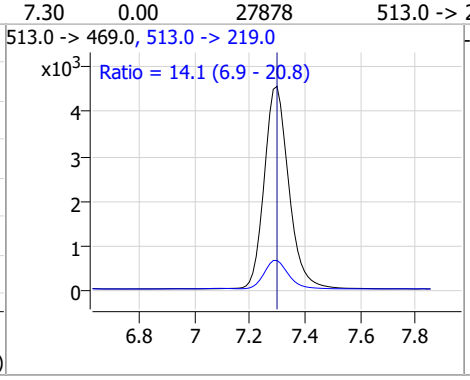


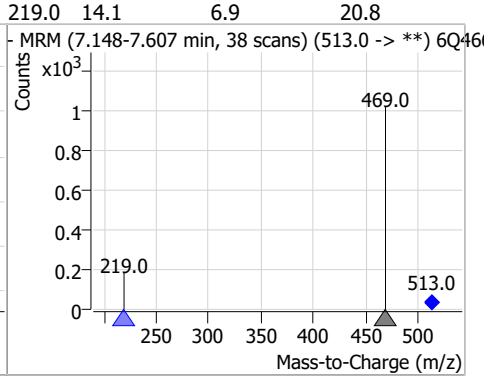


Perfluorinated Compounds by LC/MS/MS

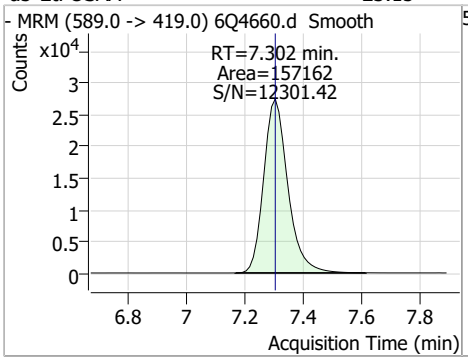
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.87	7.30	0.00	27878	513.0 -> 219.0	14.1	6.9	20.8

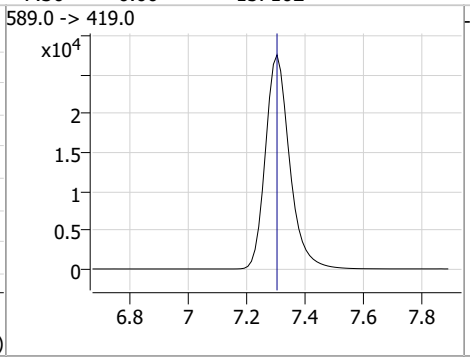


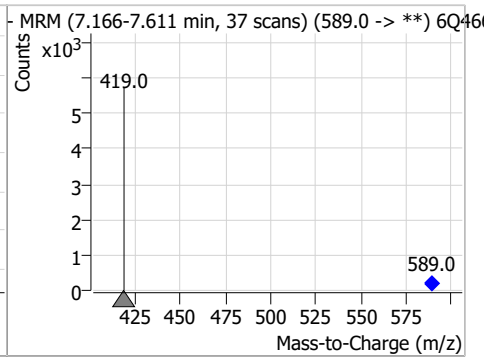




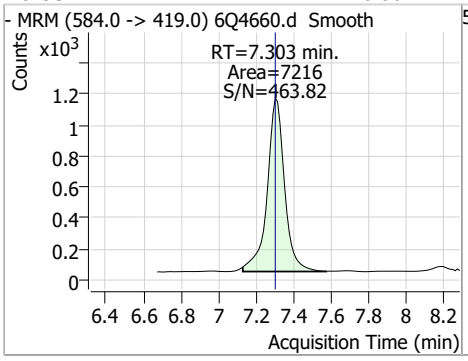
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.15	7.30	0.00	157162				

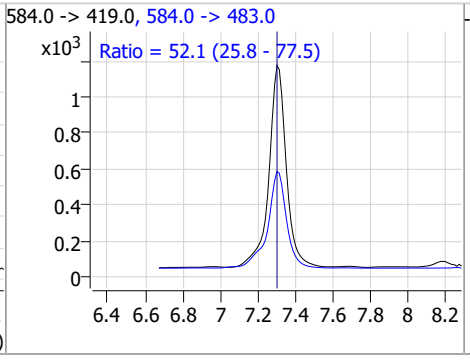


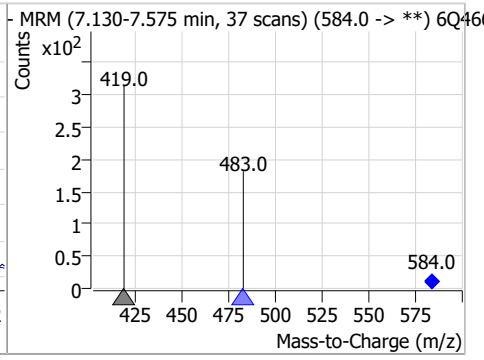




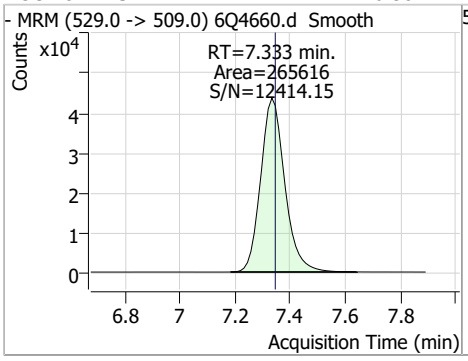
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.86	7.30	0.00	7216	584.0 -> 483.0	52.1	25.8	77.5

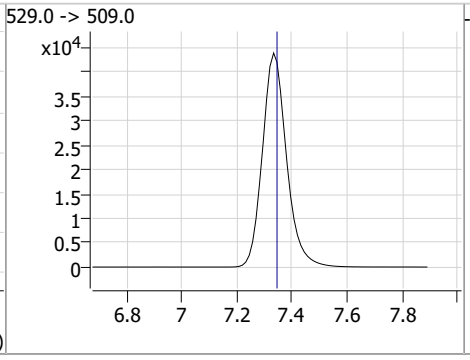


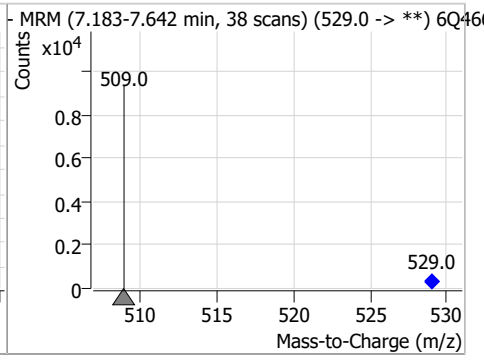




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.38	7.33	-0.01	265616				

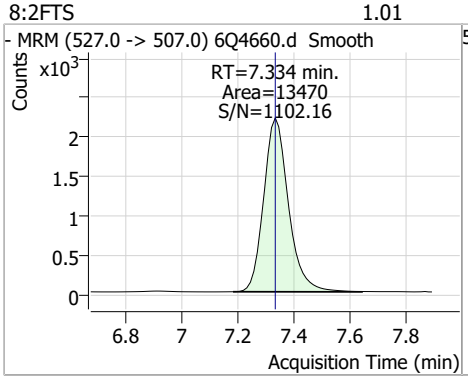


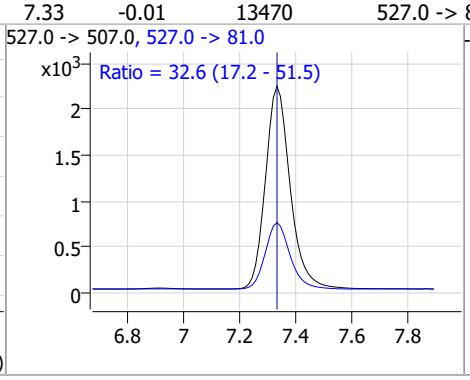


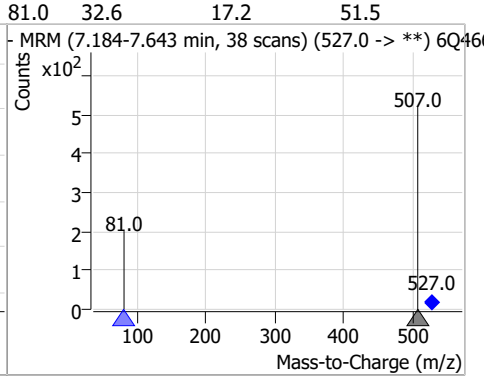


Perfluorinated Compounds by LC/MS/MS

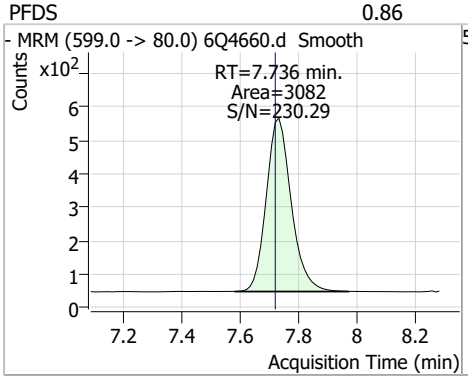
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.01	7.33	-0.01	13470	527.0 -> 81.0	32.6	17.2	51.5

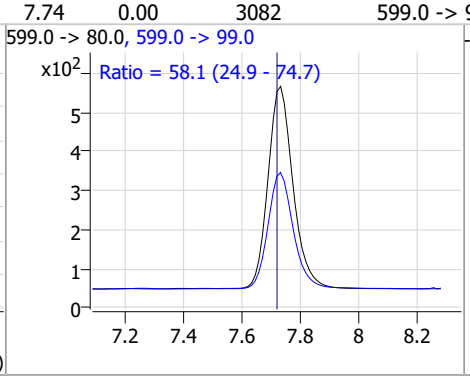


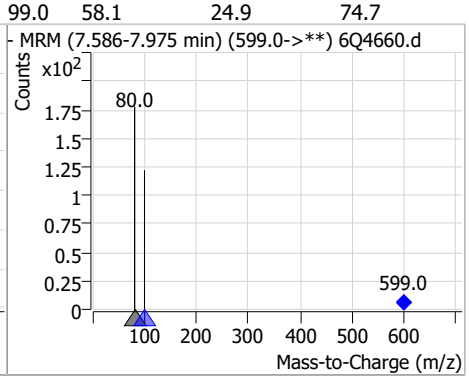




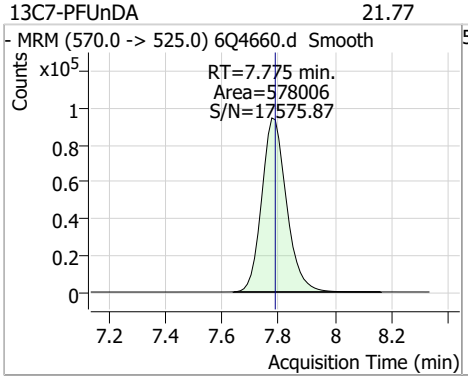
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.86	7.74	0.00	3082	599.0 -> 99.0	58.1	24.9	74.7

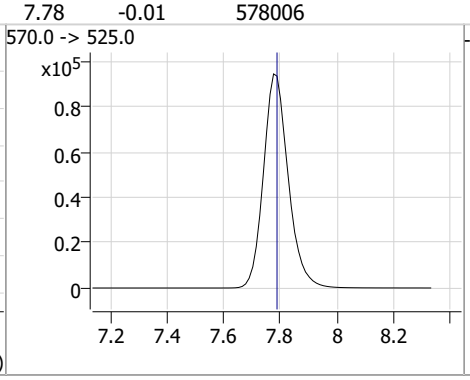


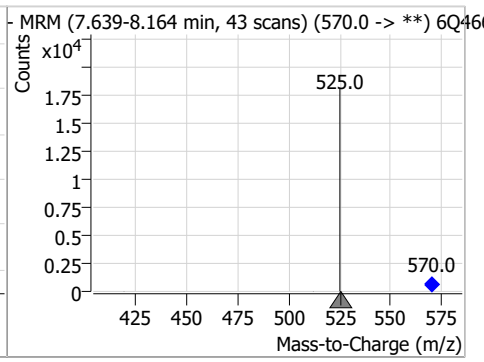




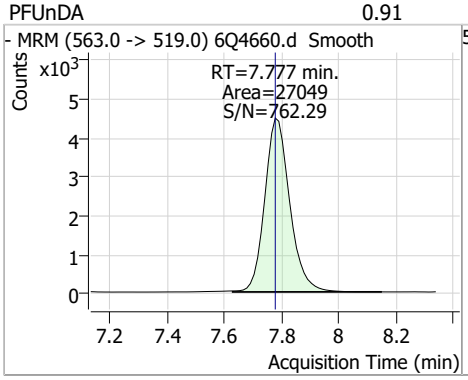
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.77	7.78	-0.01	578006				

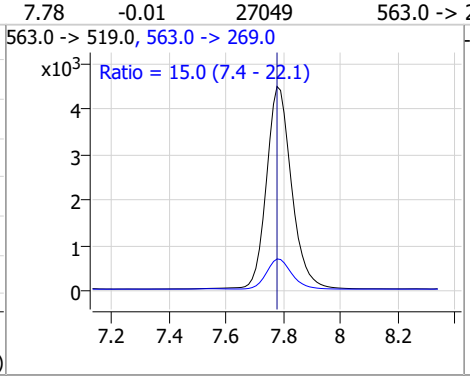


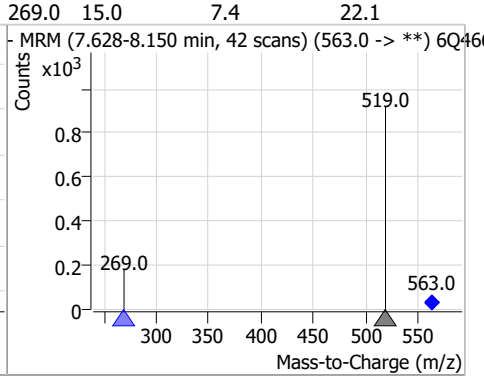




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.91	7.78	-0.01	27049	563.0 -> 269.0	15.0	7.4	22.1

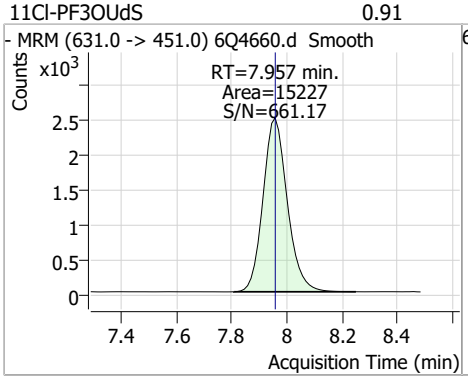


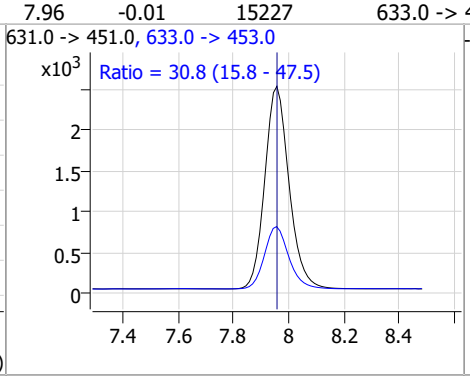


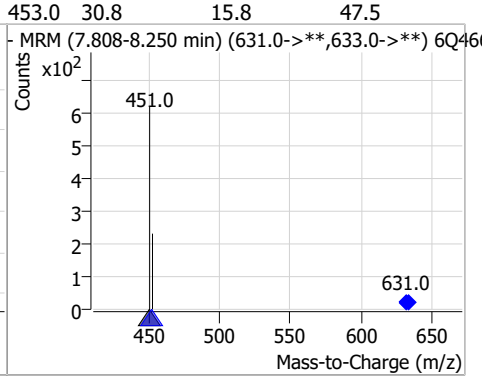


Perfluorinated Compounds by LC/MS/MS

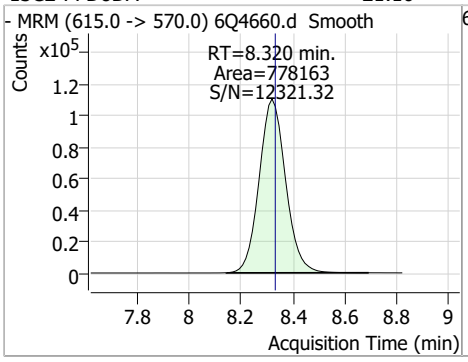
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.91	7.96	-0.01	15227	633.0 -> 453.0	30.8	15.8	47.5

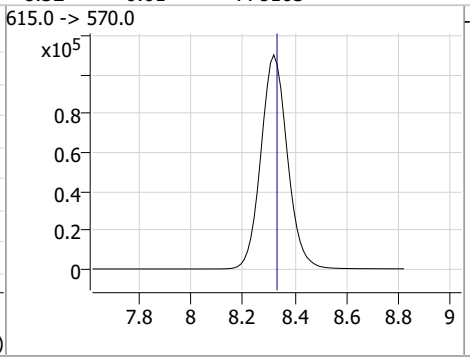


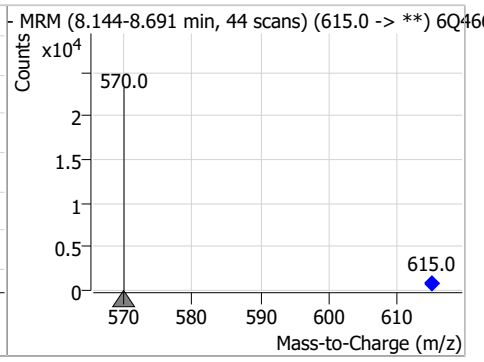




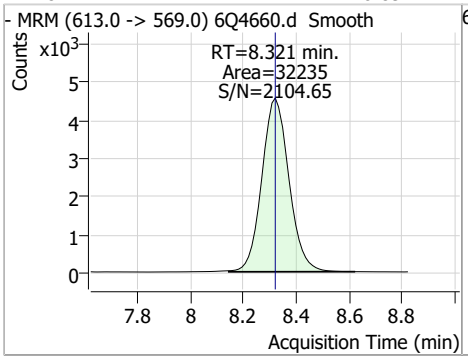
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.16	8.32	-0.01	778163				

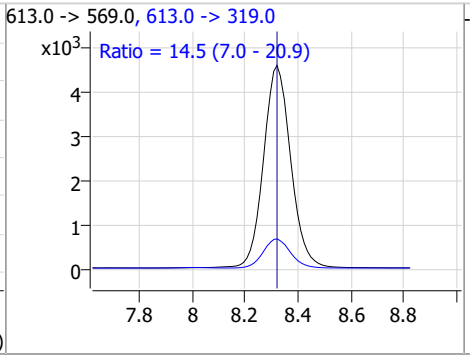


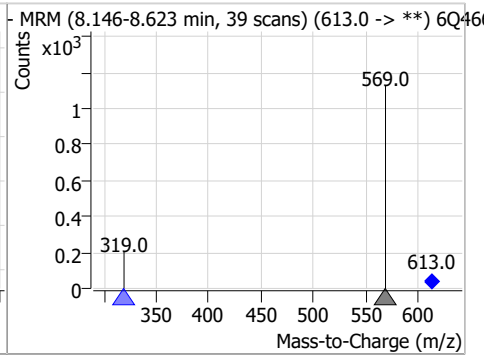




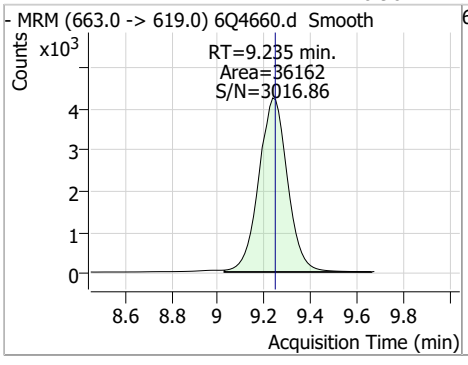
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.89	8.32	-0.01	32235	613.0 -> 319.0	14.5	7.0	20.9

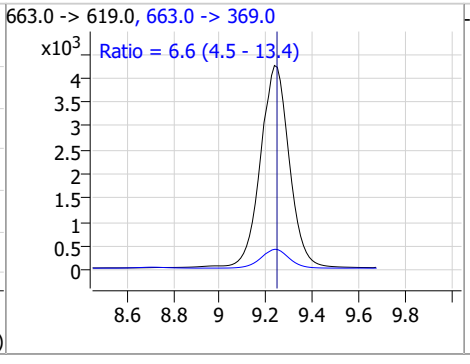


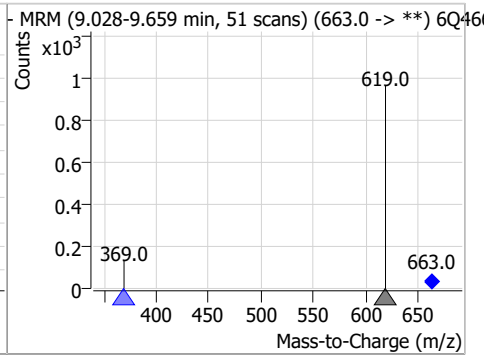




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.96	9.24	-0.02	36162	663.0 -> 369.0	6.6	4.5	13.4

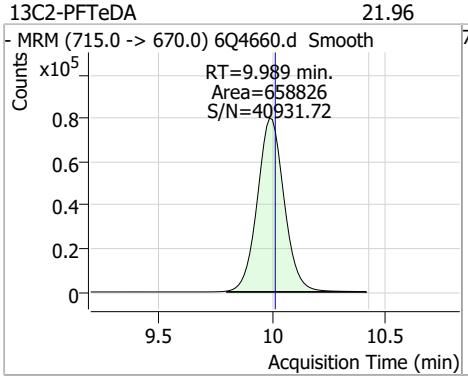


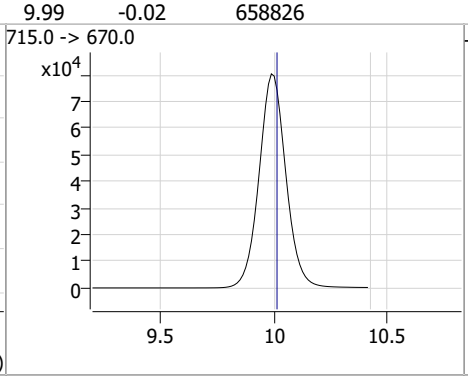


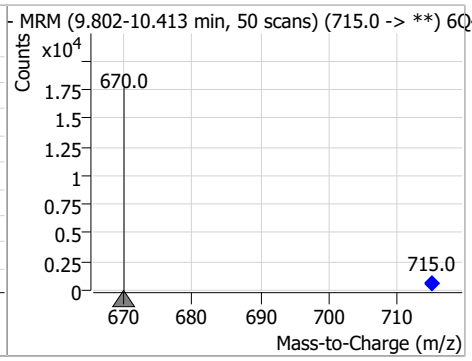


Perfluorinated Compounds by LC/MS/MS

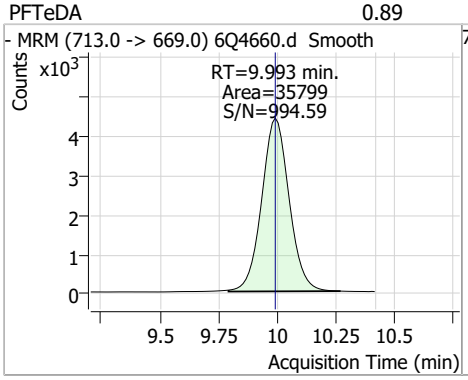
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.96	9.99	-0.02	658826				

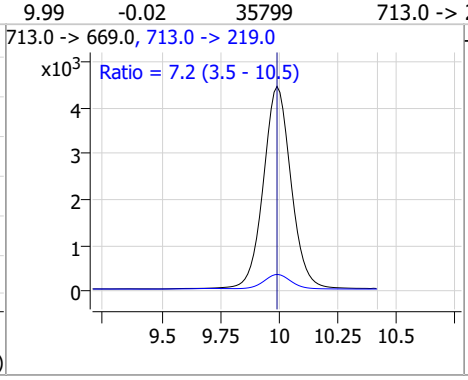


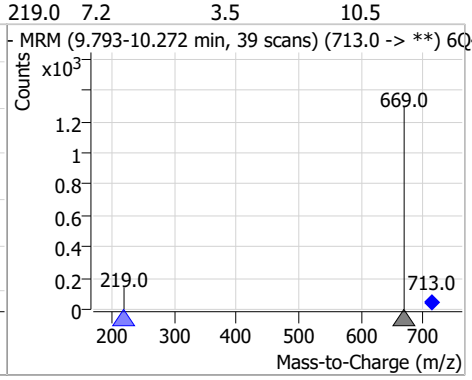




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.89	9.99	-0.02	35799	713.0 -> 219.0	7.2	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4660.D
Injection Time: 09/14/22 21:41
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4669.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 12:05:14 AM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	82814	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	143240	20.00	µg/L	-0.012
M5-PFHxA	4.561	318.0 -> 273.0	220724	20.00	µg/L	-0.012
M4-PFHpA	5.433	367.0 -> 322.0	248126	20.00	µg/L	-0.012
M8-PFOA	6.126	421.0 -> 376.0	439982	20.00	µg/L	-0.012
M9-PFNA	6.732	472.0 -> 427.0	538977	20.00	µg/L	-0.012
M6-PFDA	7.283	519.0 -> 474.0	413067	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	549758	20.00	µg/L	-0.012
M2-PFDoDA	8.307	615.0 -> 570.0	725422	20.00	µg/L	-0.025
M2-PFTeDA	9.964	715.0 -> 670.0	602493	20.00	µg/L	-0.050
M8-FOSA	6.654	506.0 -> 78.0	216142	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	31342	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	28198	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	44572	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	272620	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	342630	20.00	µg/L	-0.012
M2-8:2FTS	7.320	529.0 -> 509.0	266357	20.00	µg/L	-0.026
M3-MeFOSAA	7.155	573.0 -> 419.0	194061	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5387	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	47157	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	150837	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	272620	20.19	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
13C2-6:2FTS	6.124	429.0 -> 409.0	342630	20.07	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C2-8:2FTS	7.320	529.0 -> 509.0	266357	20.43	µg/L	-0.026
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C2-PFDoDA	8.307	615.0 -> 570.0	725422	19.72	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.6%		
13C2-PFTeDA	9.964	715.0 -> 670.0	602493	20.08	µg/L	-0.050
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.4%		
13C3-PFBS	3.622	302.0 -> 99.0	31342	20.47	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.3%		
13C3-PFHxS	5.463	402.0 -> 99.0	28198	20.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%		
13C4-PFBA	1.949	217.0 -> 172.0	82814	20.81	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.0%		
13C4-PFHpA	5.433	367.0 -> 322.0	248126	20.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.3%		
13C5-PFHxA	4.561	318.0 -> 273.0	220724	20.65	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.3%		
13C5-PFPeA	3.405	268.0 -> 223.0	143240	20.43	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%		
13C6-PFDA	7.283	519.0 -> 474.0	413067	20.30	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C7-PFUnDA	7.775	570.0 -> 525.0	549758	20.71 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C8-FOSA	6.654	506.0 -> 78.0	216142	22.10 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.5%		
13C8-PFOA	6.126	421.0 -> 376.0	439982	20.74 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C8-PFOS	6.717	507.0 -> 99.0	44572	21.01 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C9-PFNA	6.732	472.0 -> 427.0	538977	20.92 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
d3-MeFOSAA	7.155	573.0 -> 419.0	194061	22.42 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.1%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5416	20.38 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d3-MeFOSA	7.085	515.0 -> 169.0	47157	20.84 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
d5-EtFOSAA	7.302	589.0 -> 419.0	150920	22.23 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
Target Compounds						QValue
4:2FTS	4.472	327.0 -> 307.0	311348	21.13 µg/L		97
		327.0 -> 81.0	95834			
6:2FTS	6.124	427.0 -> 407.0	351141	20.24 µg/L		99
		427.0 -> 81.0	95164			
8:2FTS	7.321	527.0 -> 507.0	269431	20.11 µg/L		94
		527.0 -> 81.0	83333			
EtFOSAA	7.303	584.0 -> 419.0	150980	18.78 µg/L		97
		584.0 -> 483.0	81583			
FOSA	6.656	498.0 -> 78.0	212599	19.61 µg/L		99
		498.0 -> 478.0	8969			
MeFOSAA	7.168	570.0 -> 419.0	169639	19.07 µg/L		96
		570.0 -> 512.0	58373			
PFBA	1.943	213.0 -> 169.0	35699	19.75 µg/L		100
PFBS	3.627	299.0 -> 80.0	102761	19.72 µg/L		100
		299.0 -> 99.0	38533			
PFDA	7.284	513.0 -> 469.0	544146	17.84 µg/L		95
		513.0 -> 219.0	87263			
PFDoDA	8.309	613.0 -> 569.0	694516	20.52 µg/L		100
		613.0 -> 319.0	96165			
PFDS	7.724	599.0 -> 80.0	66579	19.53 µg/L		97
		599.0 -> 99.0	31846			
PFHpA	5.434	363.0 -> 319.0	334746	20.74 µg/L		100
		363.0 -> 169.0	49218			
PFHpS	6.136	449.0 -> 80.0	80141	20.59 µg/L		98
		449.0 -> 99.0	41035			
PFHxA	4.562	313.0 -> 269.0	221776	19.10 µg/L		100
		313.0 -> 119.0	5507			
PFHxS	5.465	399.0 -> 80.0	83003	20.54 µg/L	m	97
		399.0 -> 99.0	38688			
PFNA	6.733	463.0 -> 419.0	473389	18.64 µg/L		100
		463.0 -> 219.0	88192			
PFNS	7.244	549.0 -> 80.0	89946	19.86 µg/L		95
		549.0 -> 99.0	46506			
PFOA	6.126	413.0 -> 369.0	462025	19.44 µg/L		100
		413.0 -> 169.0	71293			
PFOS	6.719	499.0 -> 80.0	78607	19.02 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

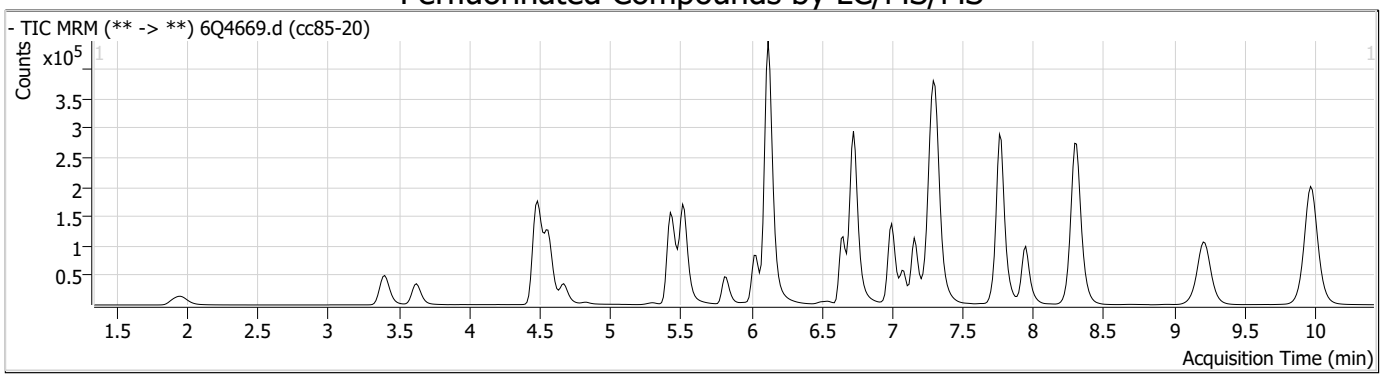
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	39043			
PFPeA	3.408	263.0 -> 219.0	120051	19.89	µg/L	100
PFPeS	4.668	349.0 -> 80.0	84982	19.59	µg/L	99
		349.0 -> 99.0	39396			
PFTeDA	9.968	713.0 -> 669.0	736997	19.95	µg/L	100
		713.0 -> 219.0	51851			
PFTrDA	9.210	663.0 -> 619.0	728835	20.80	µg/L	99
		663.0 -> 369.0	67041			
PFUnDA	7.777	563.0 -> 519.0	570059	20.05	µg/L	99
		563.0 -> 269.0	85763			
11Cl-PF3OUdS	7.945	631.0 -> 451.0	318309	20.46	µg/L	99
		633.0 -> 453.0	98223			
9Cl-PF3ONS	6.996	531.0 -> 351.0	419656	19.97	µg/L	98
		533.0 -> 353.0	134813			
ADONA	5.532	377.0 -> 251.0	523957	20.04	µg/L	97
		377.0 -> 85.0	131713			
HFPO-DA	4.840	285.0 -> 169.0	5702	22.38	µg/L	95
		285.0 -> 185.0	694			
MeFOSA	7.086	512.0 -> 169.0	54948	21.35	µg/L	99
		512.0 -> 219.0	52516			
4-PFECHS	6.032	461.0 -> 381.0	265664	18.76	µg/L	98
		461.0 -> 99.0	91366			
FBSA	4.514	298.0 -> 78.0	213403	19.85	µg/L	99
		298.0 -> 64.0	15171			
FHxSA	5.828	398.0 -> 78.0	181596	18.70	µg/L	100
		398.0 -> 64.0	6651			

 # = Qualifier out of range, m = manually integrated, + = Area summed

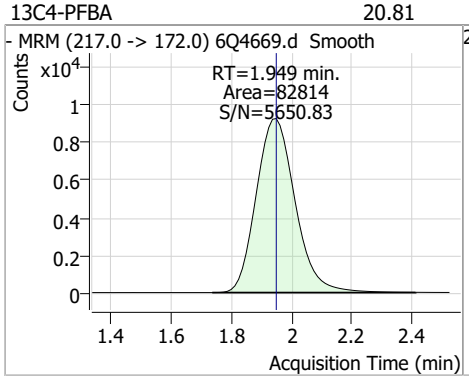
7.7.94

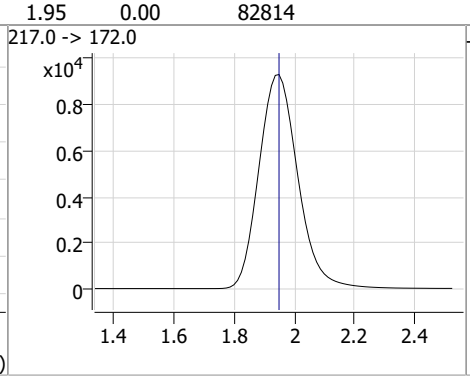
7

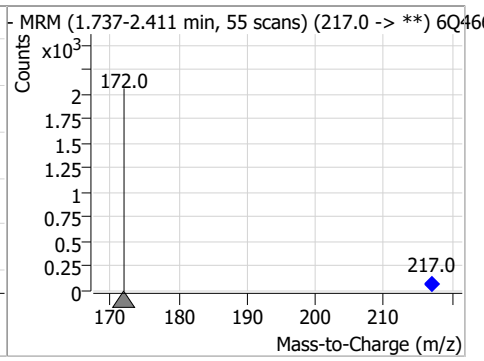
Perfluorinated Compounds by LC/MS/MS



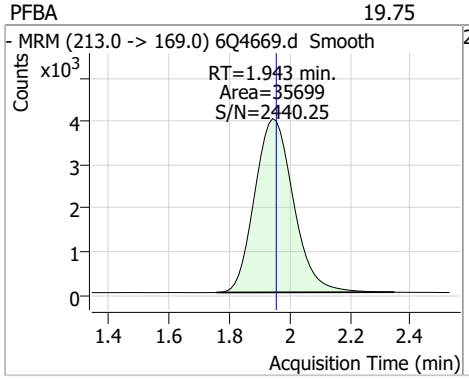
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	20.81	1.95	0.00	82814				

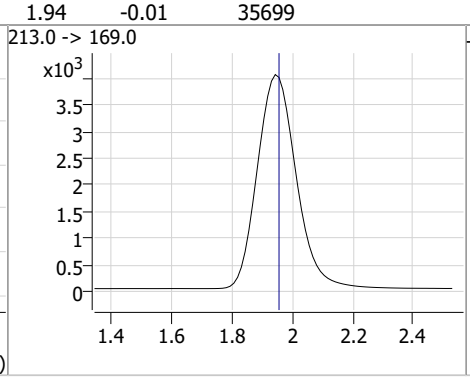


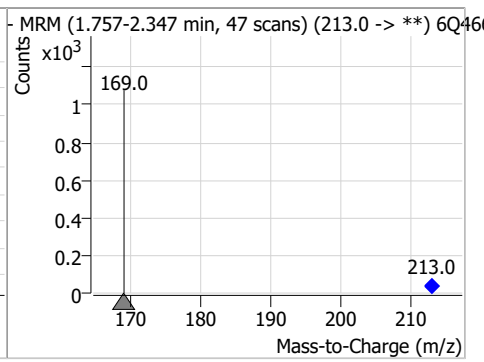




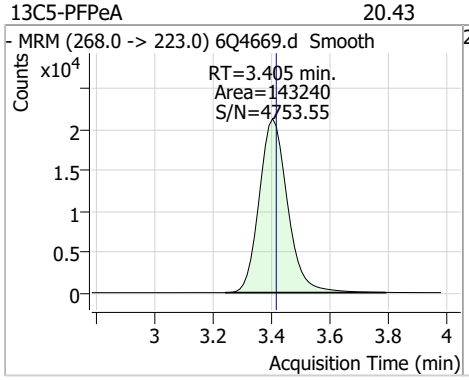
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.75	1.94	-0.01	35699				

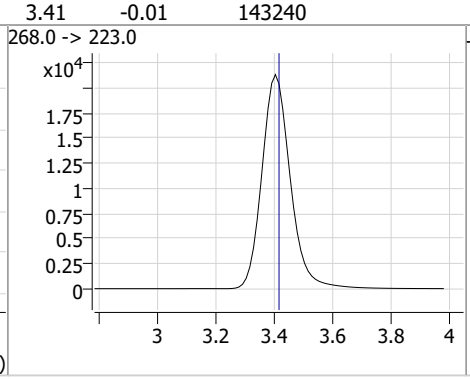


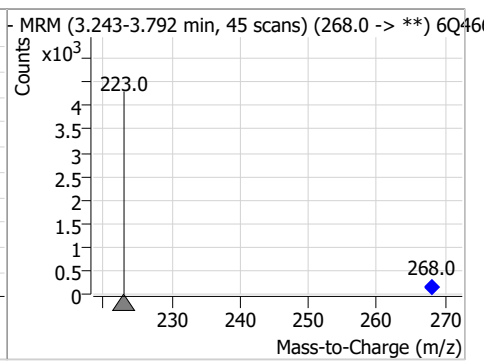




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.43	3.41	-0.01	143240				

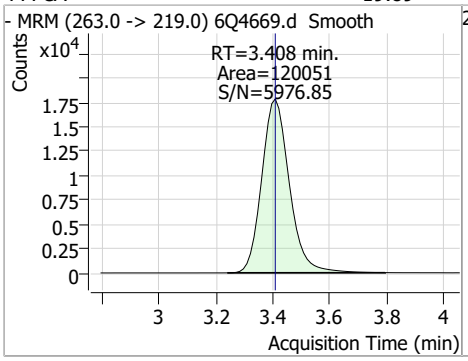


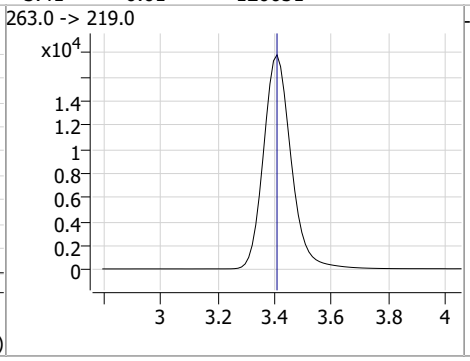


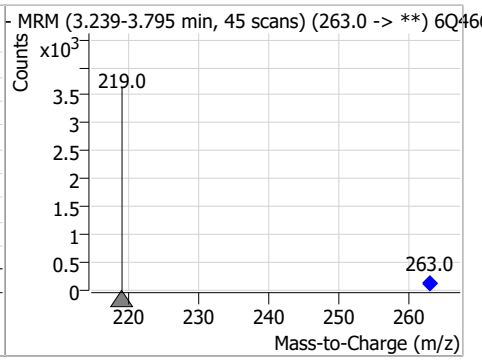


Perfluorinated Compounds by LC/MS/MS

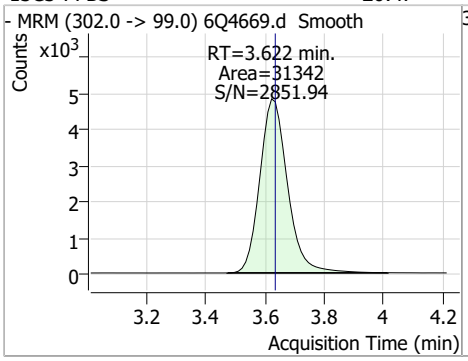
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.89	3.41	-0.01	120051				

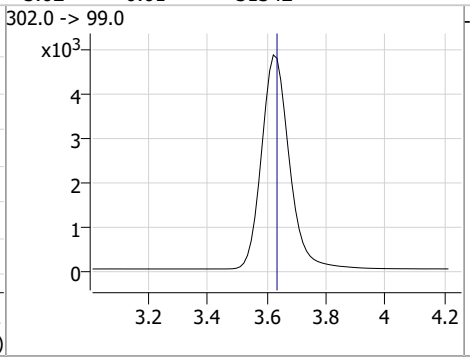


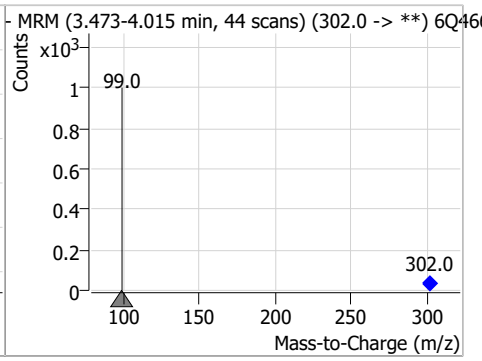




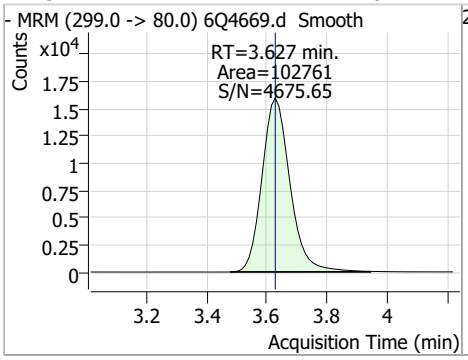
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.47	3.62	-0.01	31342				

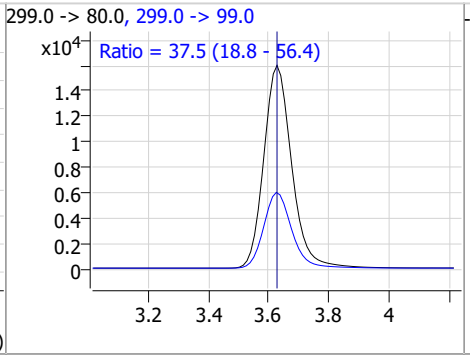


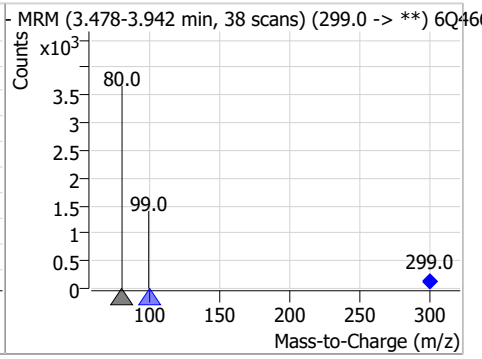




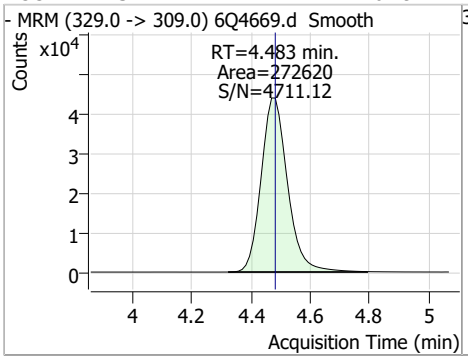
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.72	3.63	-0.01	102761	299.0 -> 99.0	37.5	18.8	56.4

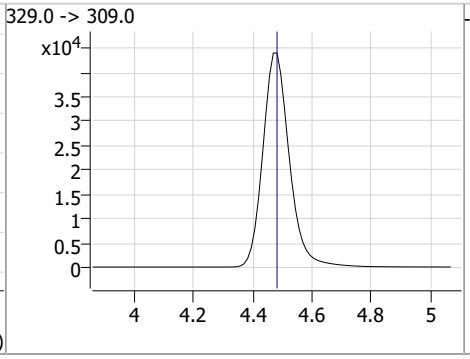


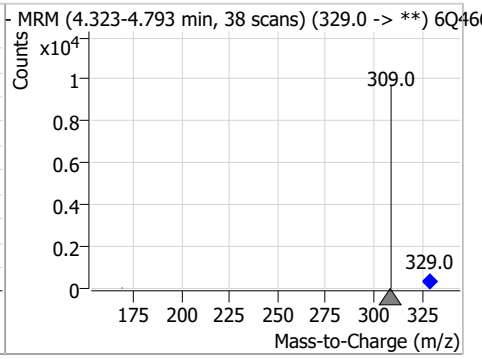




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.19	4.48	0.00	272620				

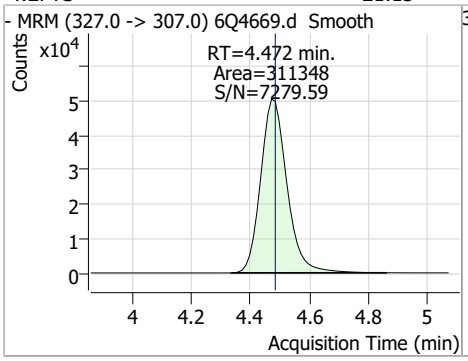


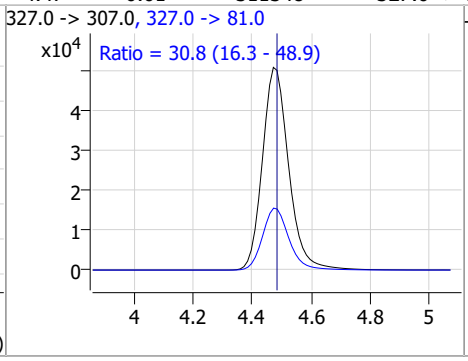


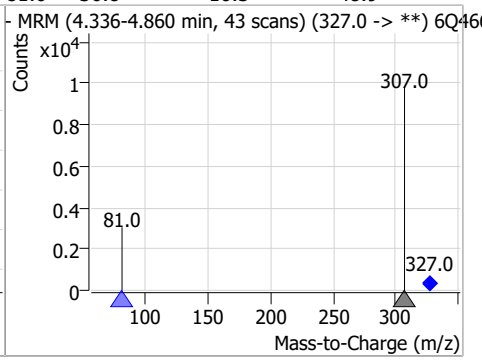


Perfluorinated Compounds by LC/MS/MS

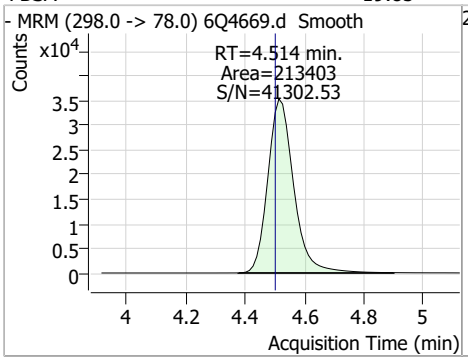
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.13	4.47	-0.01	311348	327.0 -> 81.0	30.8	16.3	48.9

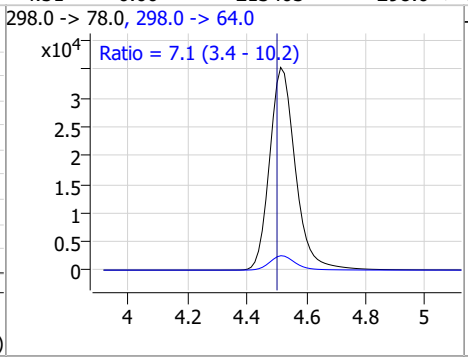


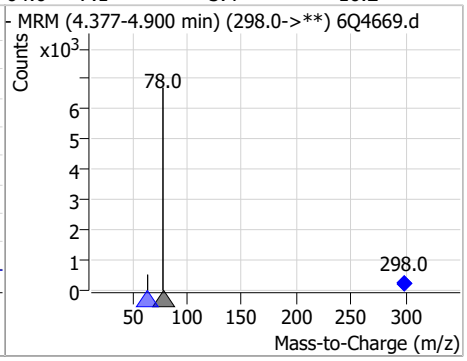




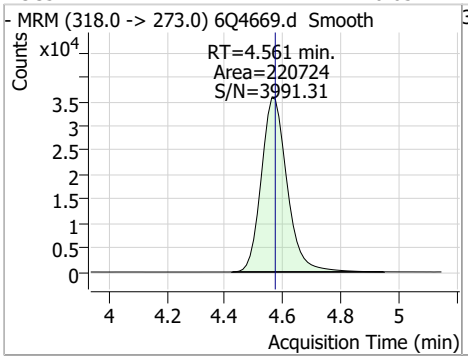
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.85	4.51	0.00	213403	298.0 -> 64.0	7.1	3.4	10.2

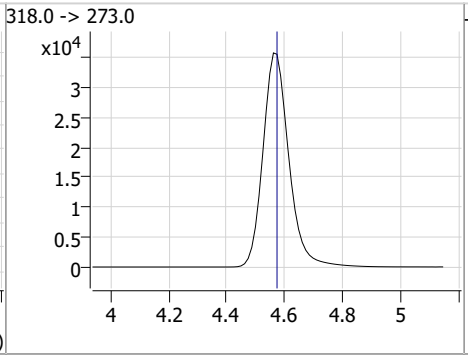


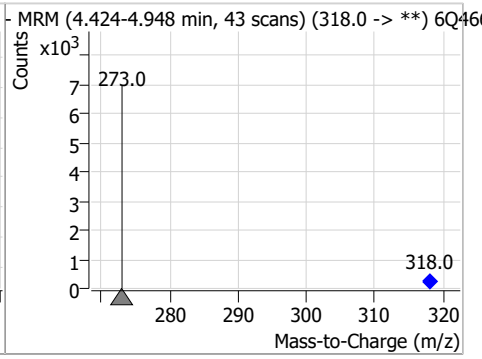




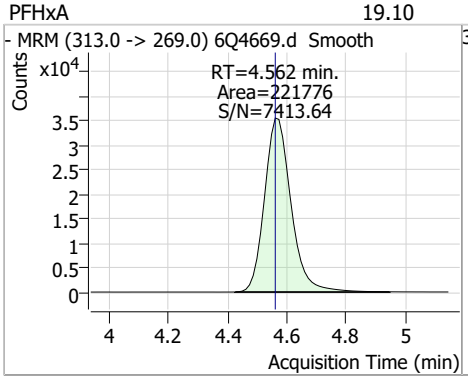
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.65	4.56	-0.01	220724				

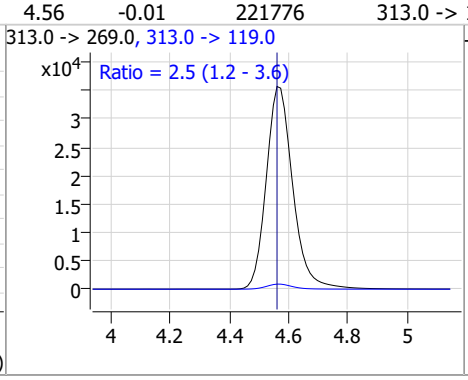


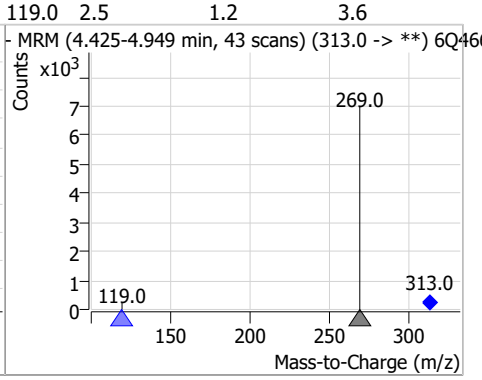




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.10	4.56	-0.01	221776	313.0 -> 119.0	2.5	1.2	3.6

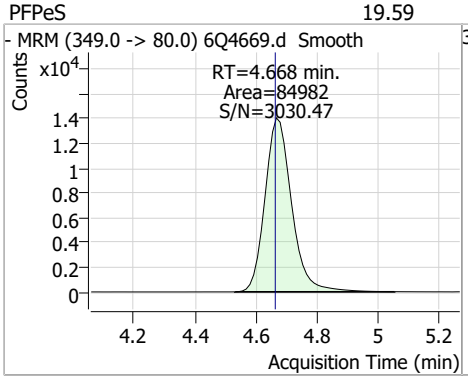


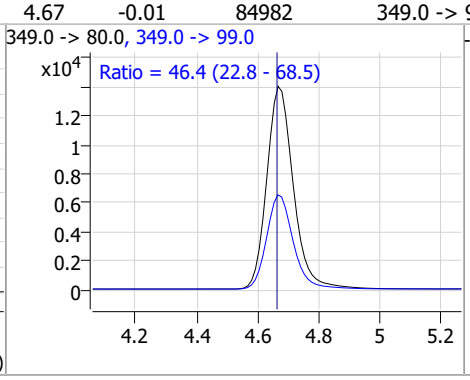


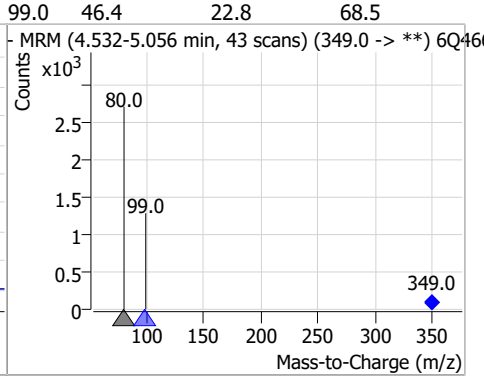


Perfluorinated Compounds by LC/MS/MS

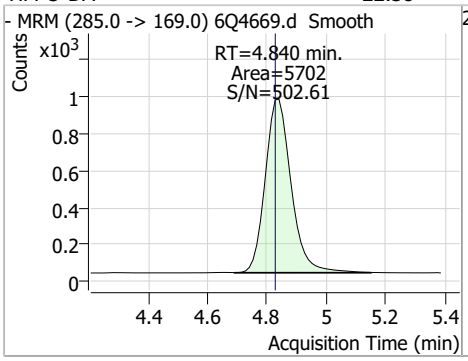
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.59	4.67	-0.01	84982	349.0 -> 99.0	46.4	22.8	68.5

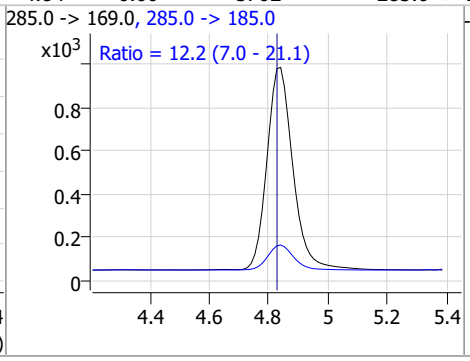


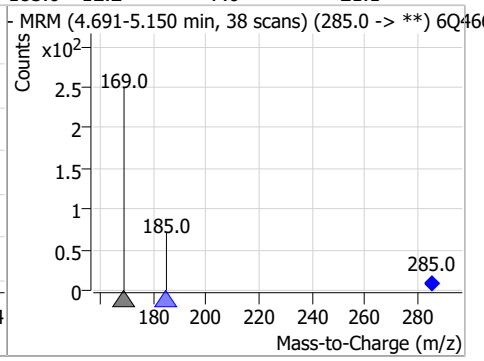




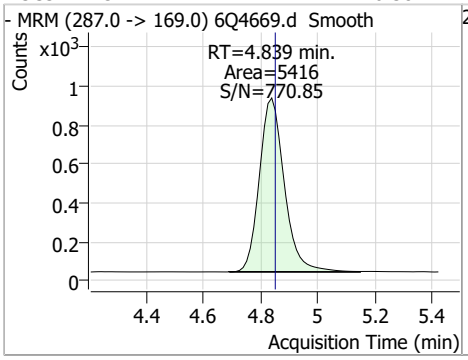
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.38	4.84	0.00	5702	285.0 -> 185.0	12.2	7.0	21.1

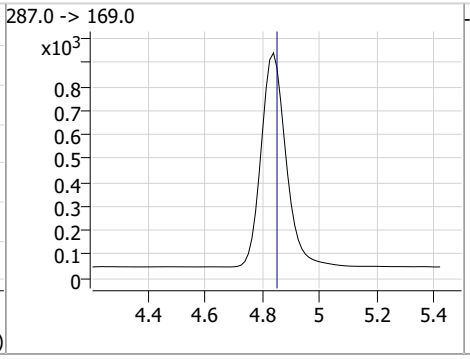


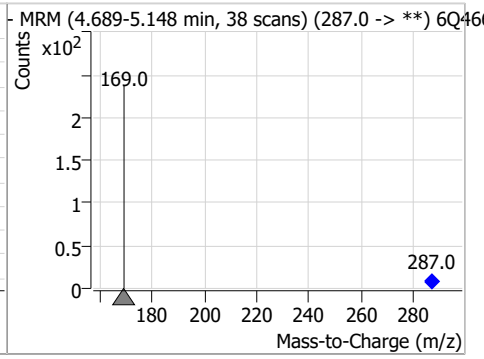




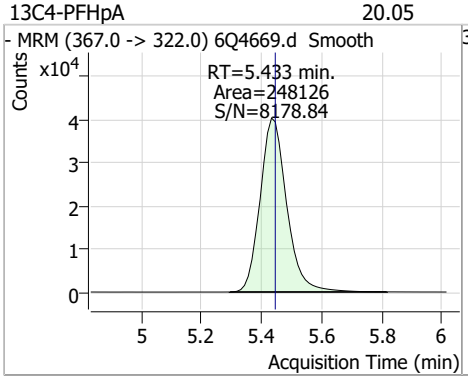
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.38	4.84	-0.01	5416				

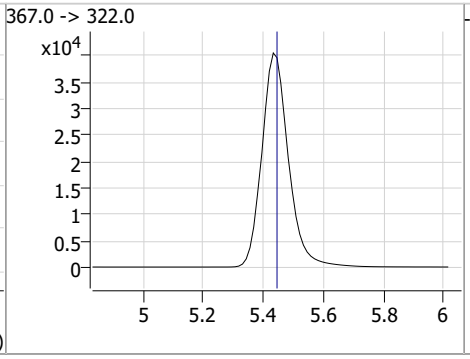


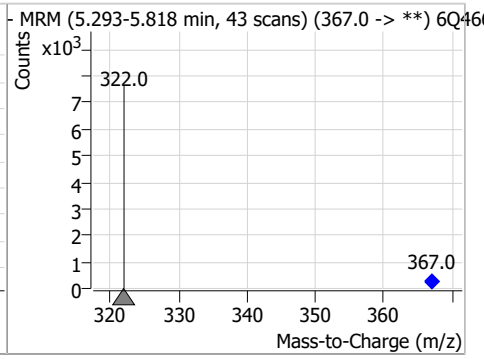




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.05	5.43	-0.01	248126				

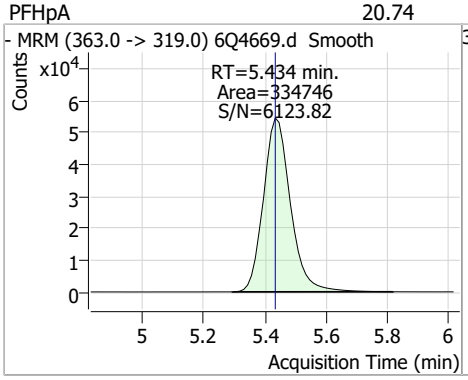


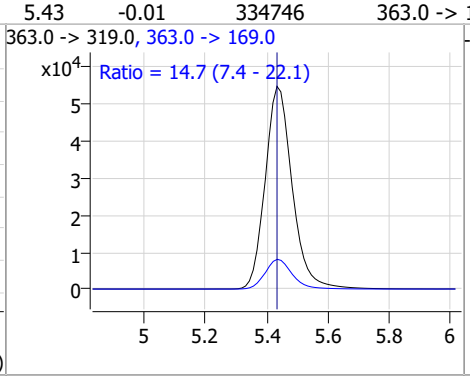


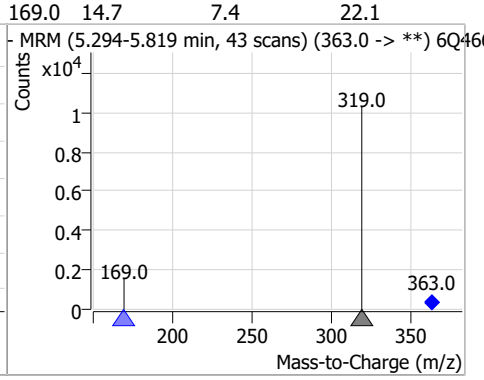


Perfluorinated Compounds by LC/MS/MS

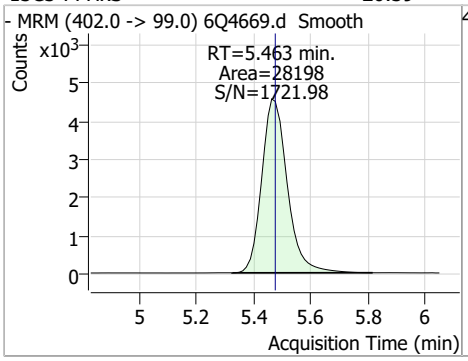
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.74	5.43	-0.01	334746	363.0 -> 169.0	14.7	7.4	22.1

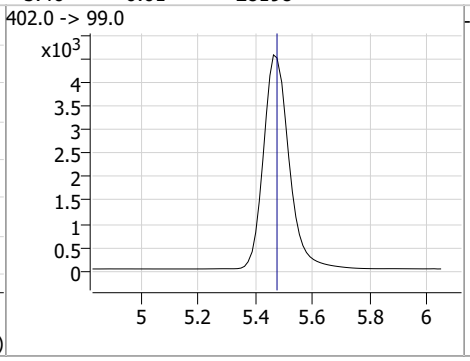


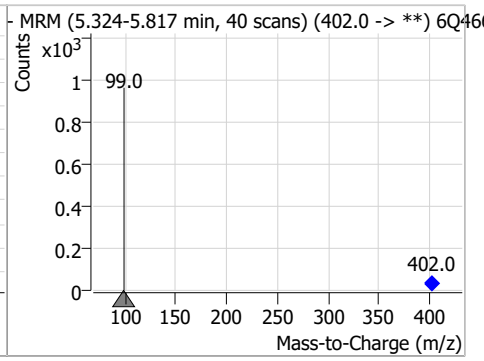




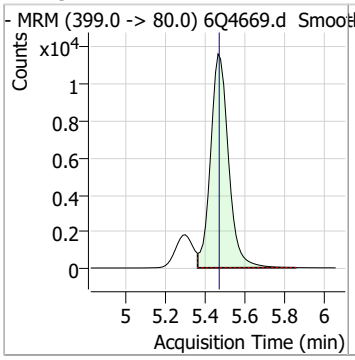
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.39	5.46	-0.01	28198				

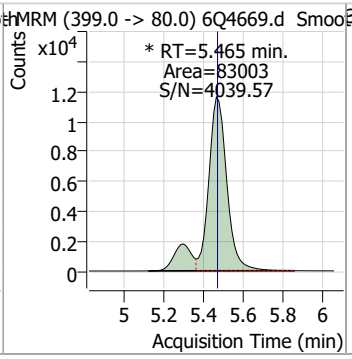


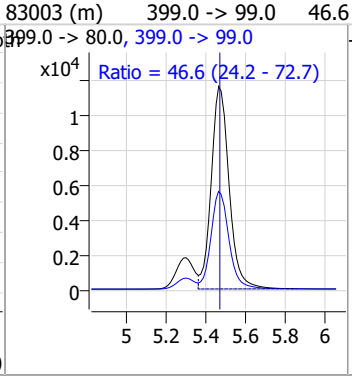


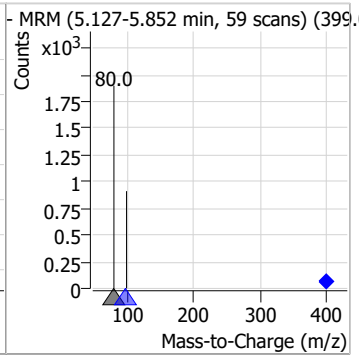


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.54	5.47	-0.01	83003 (m)	399.0 -> 99.0	46.6	24.2	72.7

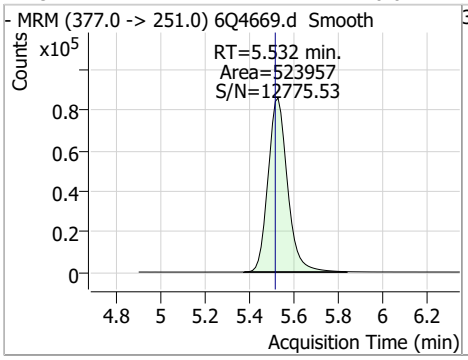


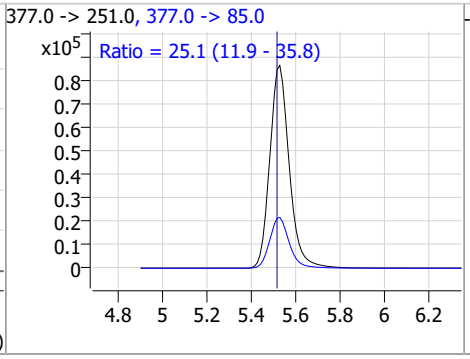


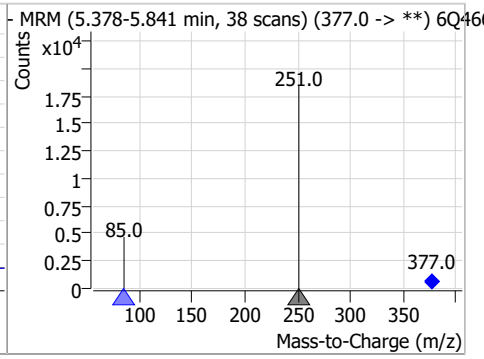




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.04	5.53	0.00	523957	377.0 -> 85.0	25.1	11.9	35.8

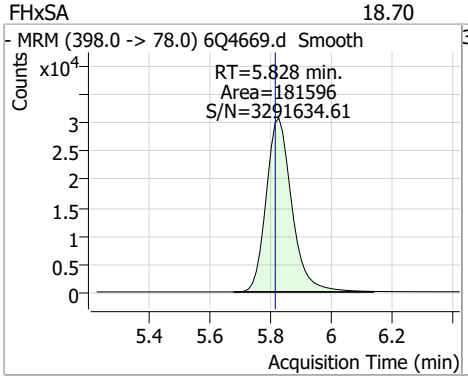


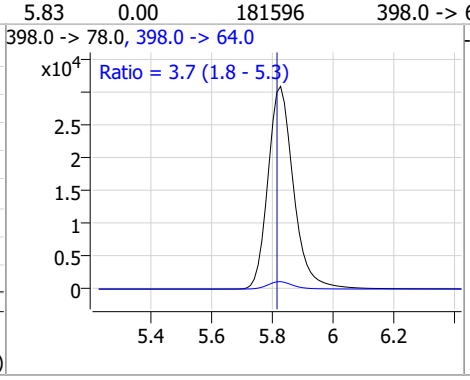


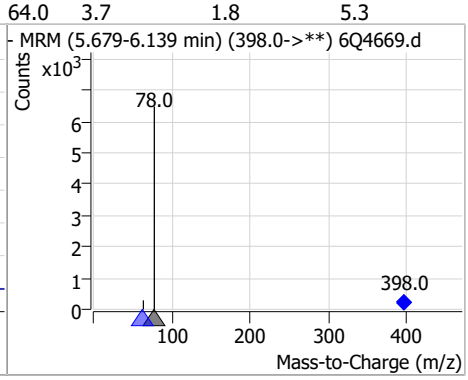


Perfluorinated Compounds by LC/MS/MS

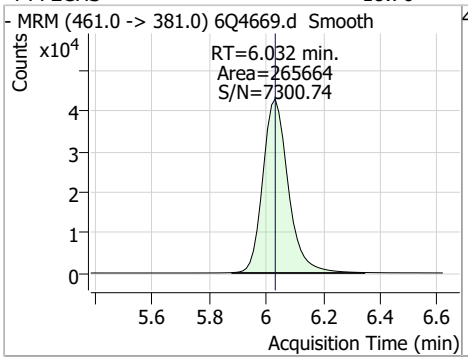
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.70	5.83	0.00	181596	398.0 -> 64.0	3.7	1.8	5.3

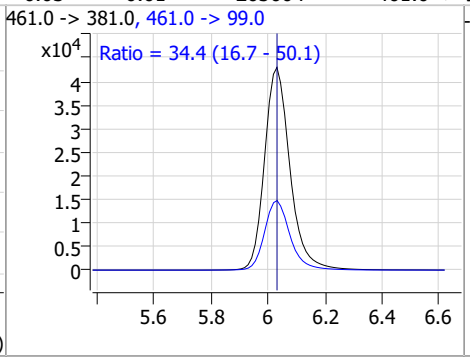


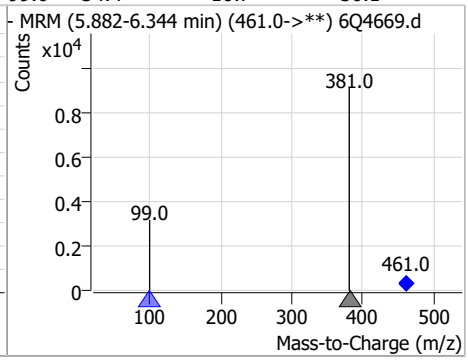




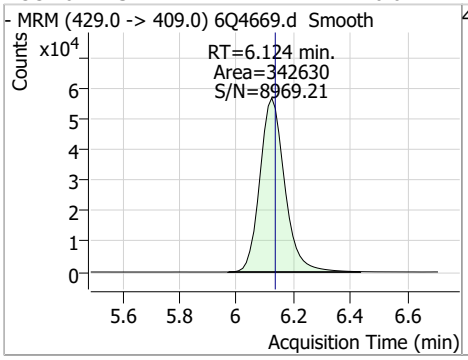
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.76	6.03	-0.01	265664	461.0 -> 99.0	34.4	16.7	50.1

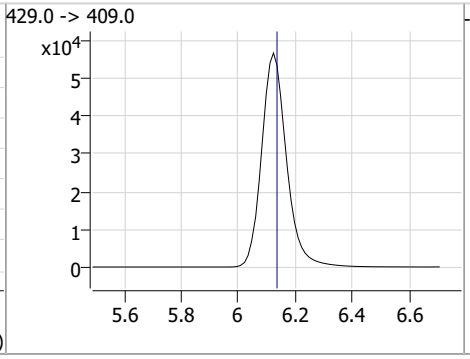


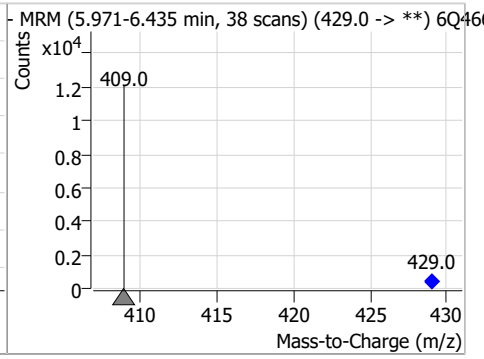




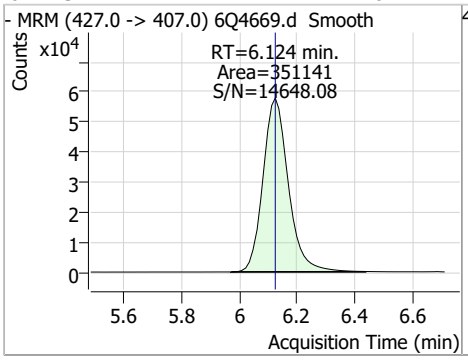
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.07	6.12	-0.01	342630				

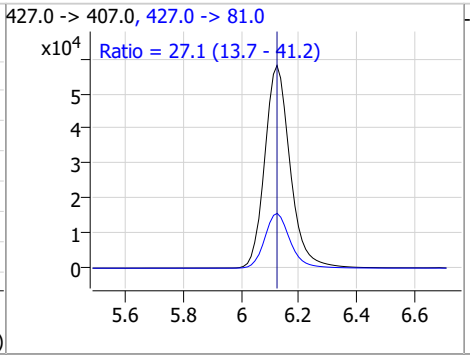


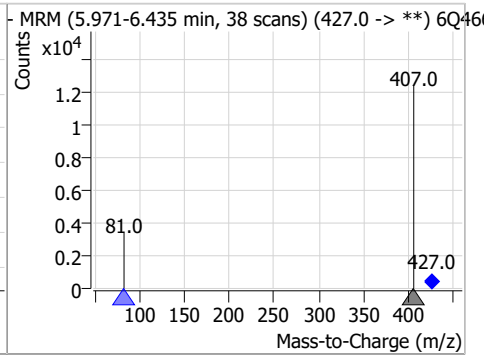




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.24	6.12	-0.01	351141	427.0 -> 81.0	27.1	13.7	41.2

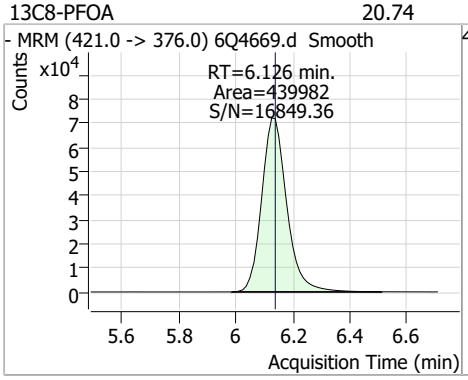


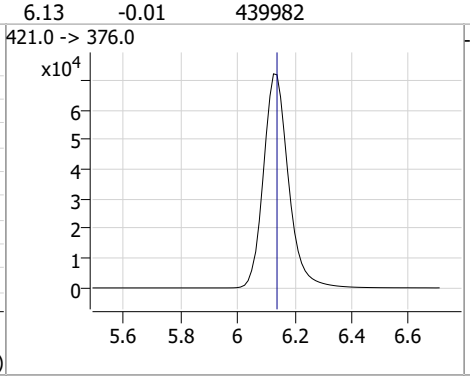


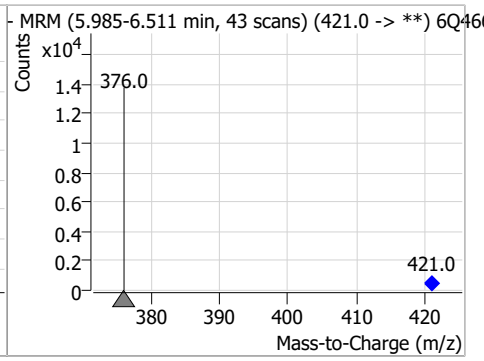


Perfluorinated Compounds by LC/MS/MS

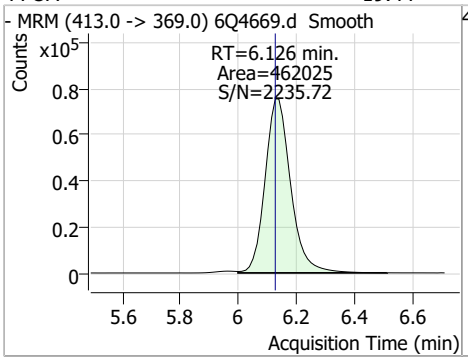
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.74	6.13	-0.01	439982				

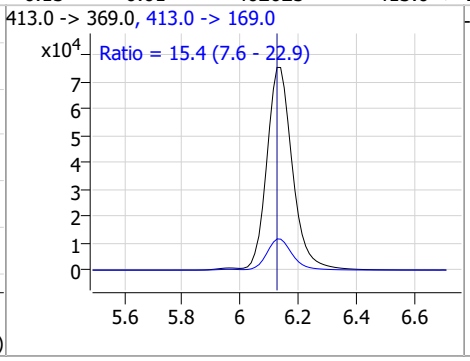


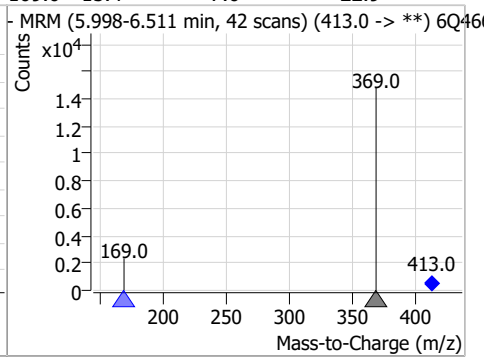




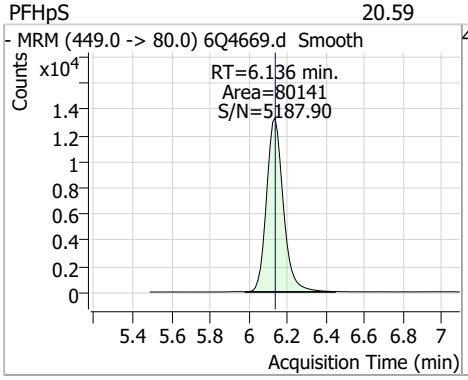
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.44	6.13	-0.01	462025	413.0 -> 169.0	15.4	7.6	22.9

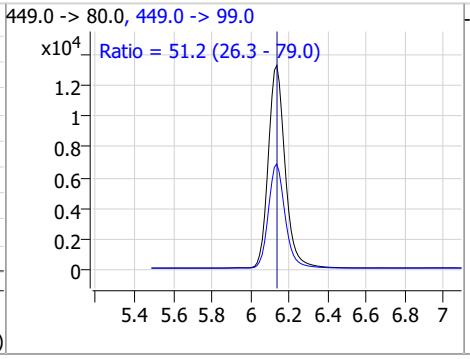


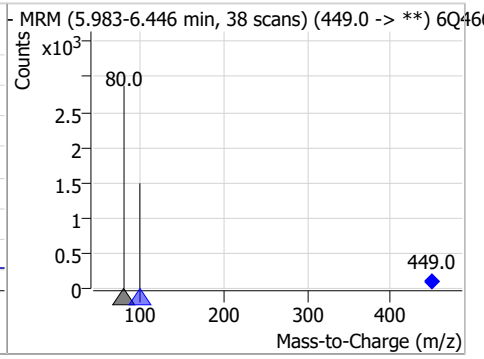




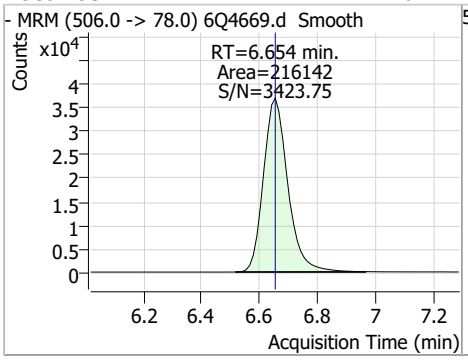
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.59	6.14	-0.01	80141	449.0 -> 99.0	51.2	26.3	79.0

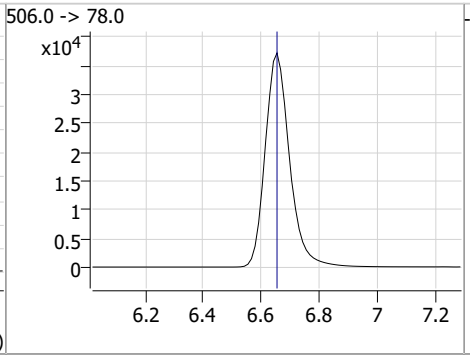


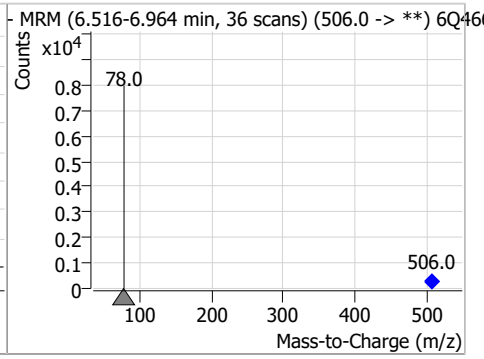




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.10	6.65	0.00	216142				

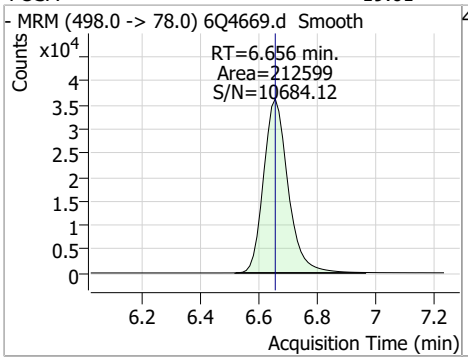


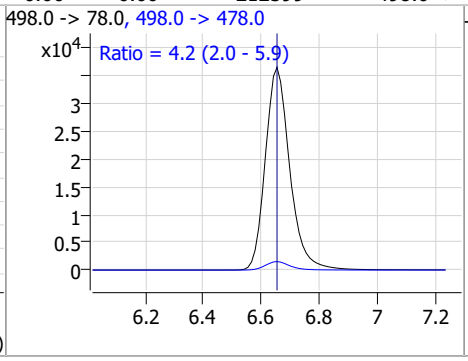


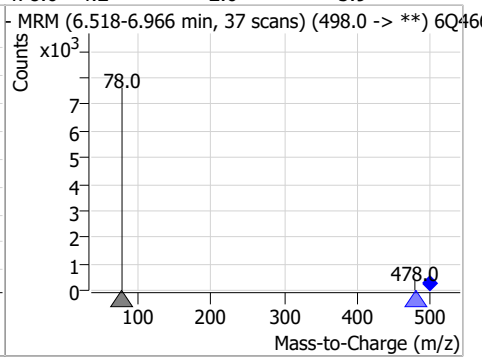


Perfluorinated Compounds by LC/MS/MS

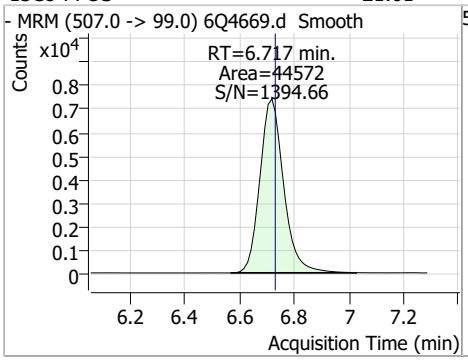
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.61	6.66	0.00	212599	498.0 -> 478.0	4.2	2.0	5.9

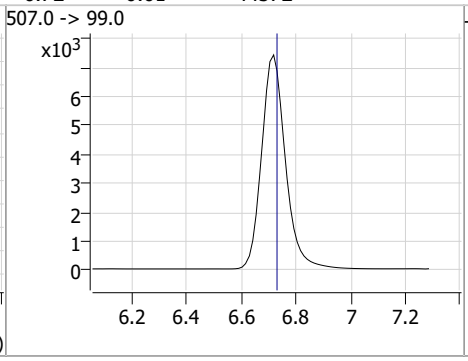


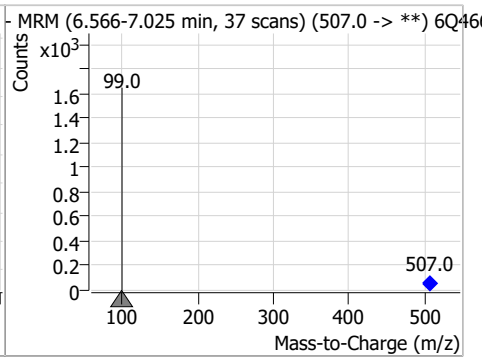




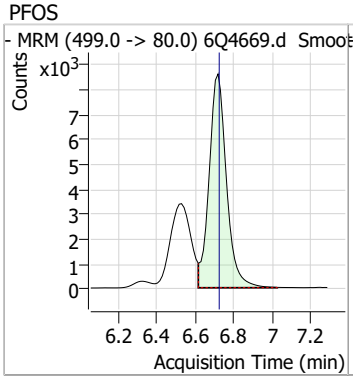
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.01	6.72	-0.01	44572				

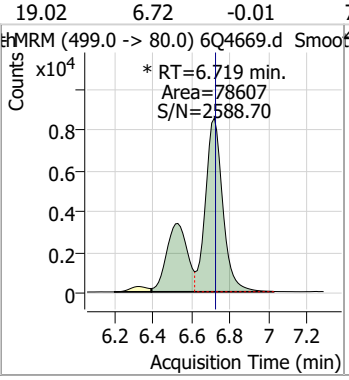


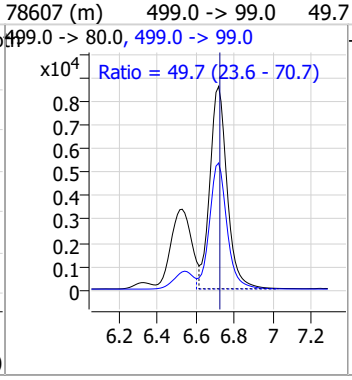


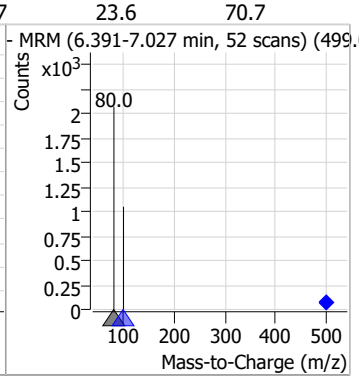


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.02	6.72	-0.01	78607 (m)	499.0 -> 99.0	49.7	23.6	70.7

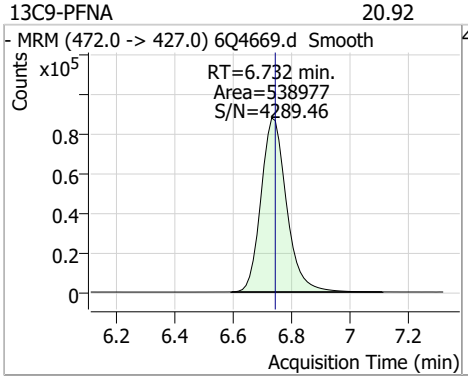


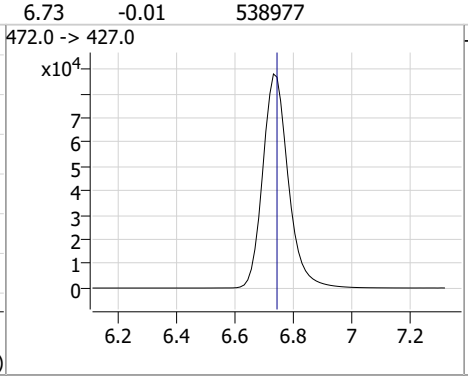


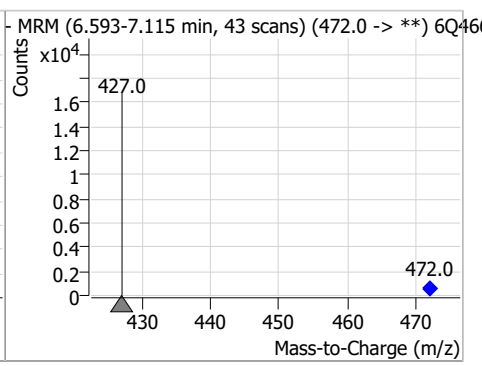




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.92	6.73	-0.01	538977				

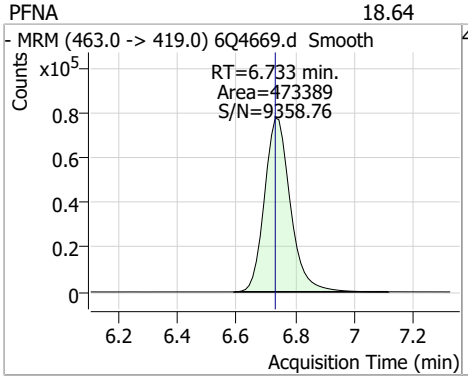


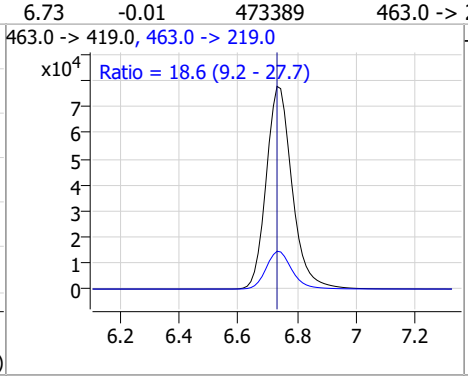


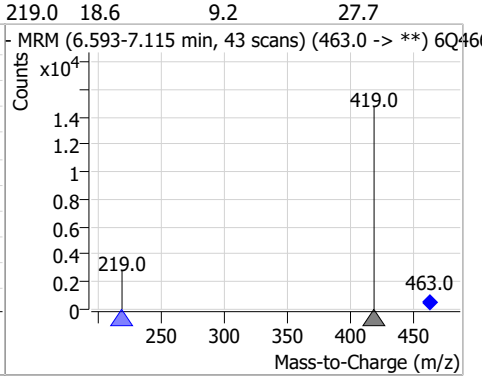


Perfluorinated Compounds by LC/MS/MS

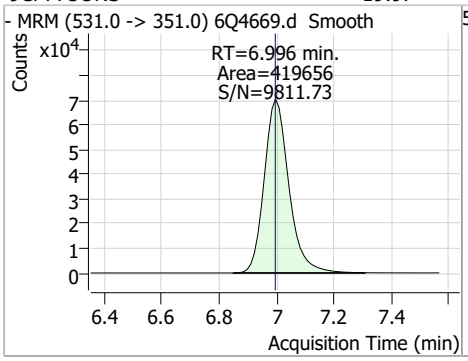
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.64	6.73	-0.01	473389	463.0 -> 219.0	18.6	9.2	27.7

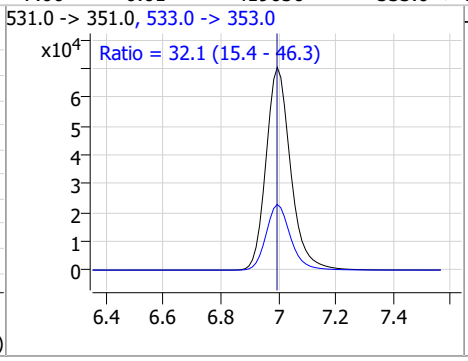


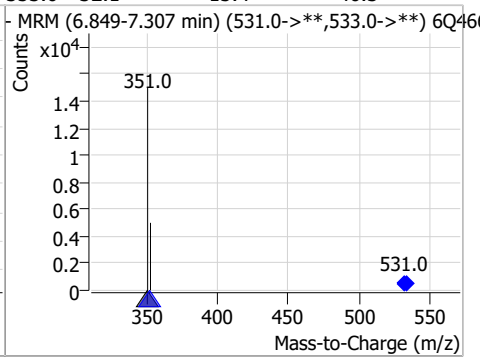




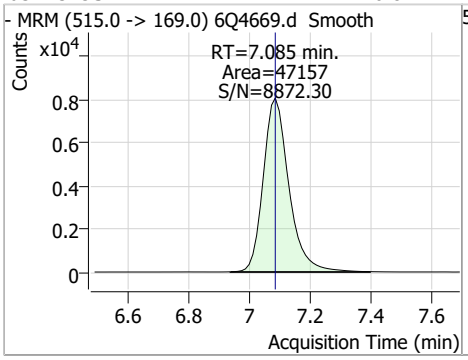
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.97	7.00	-0.01	419656	533.0 -> 353.0	32.1	15.4	46.3

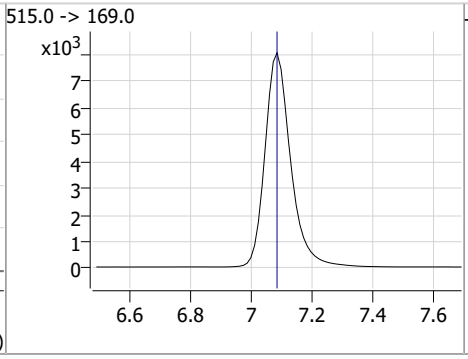


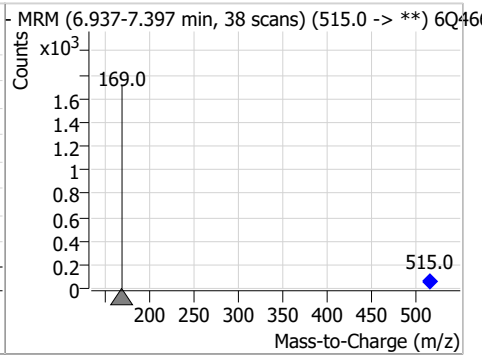




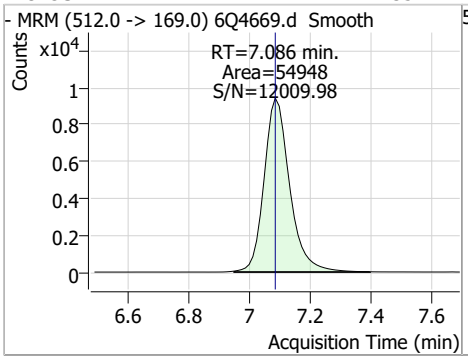
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	20.84	7.08	0.00	47157				

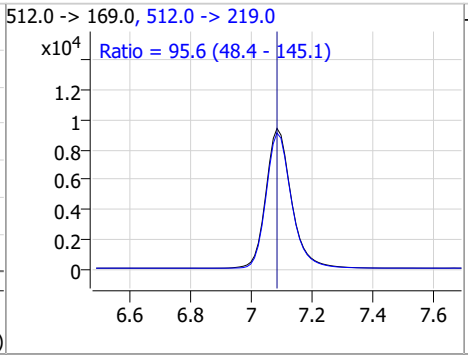


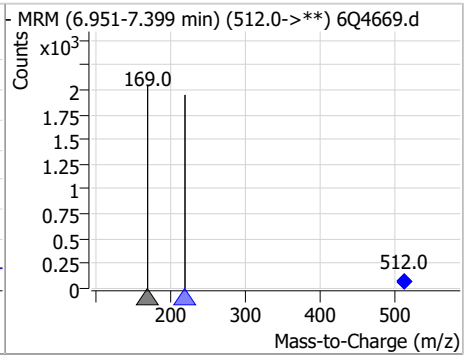




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.35	7.09	0.00	54948	512.0 -> 219.0	95.6	48.4	145.1

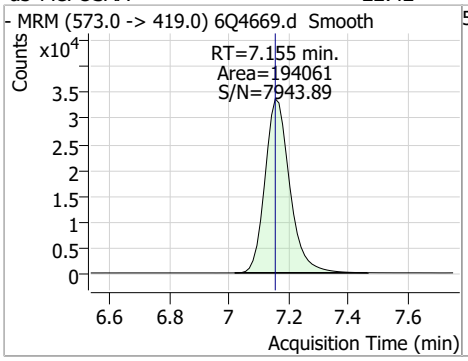


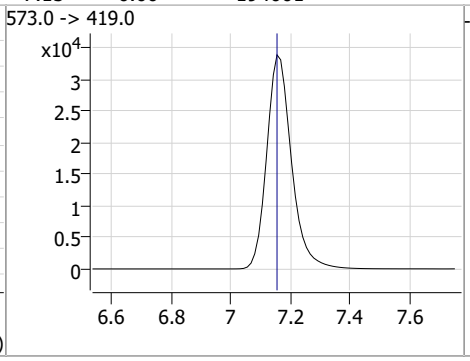


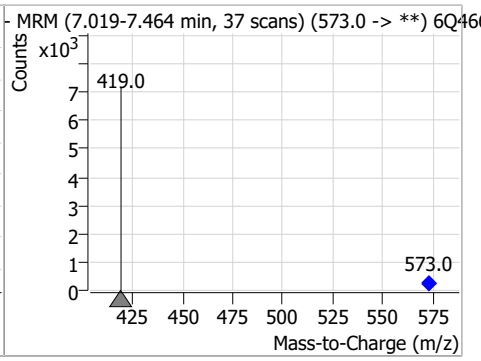


Perfluorinated Compounds by LC/MS/MS

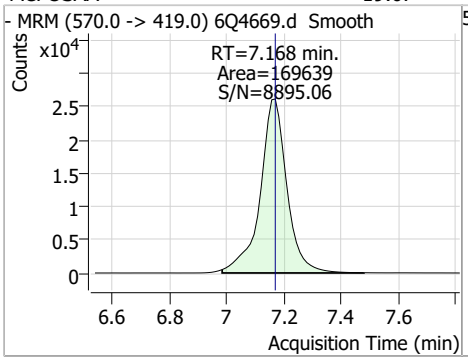
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.42	7.15	0.00	194061				

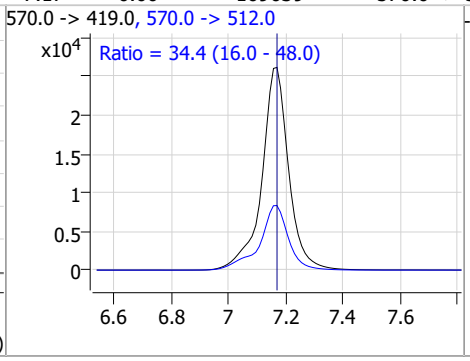


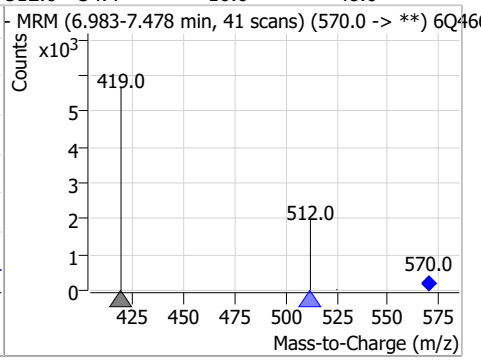




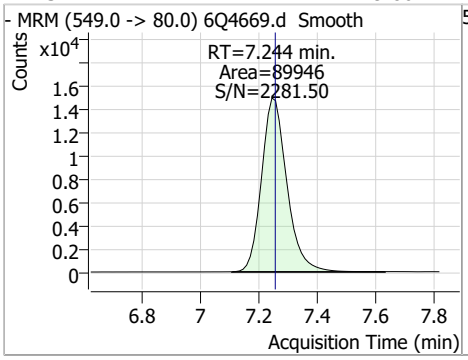
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.07	7.17	0.00	169639	570.0 -> 512.0	34.4	16.0	48.0

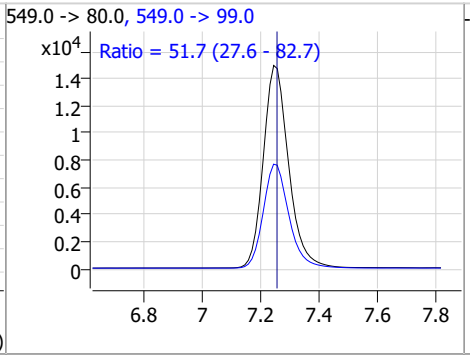


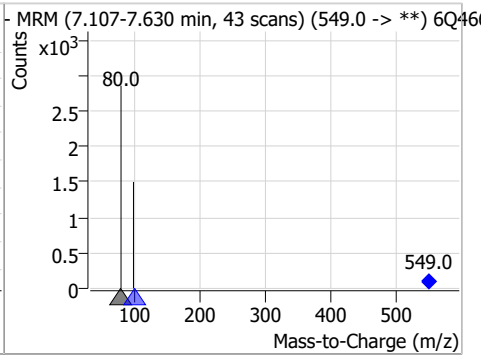




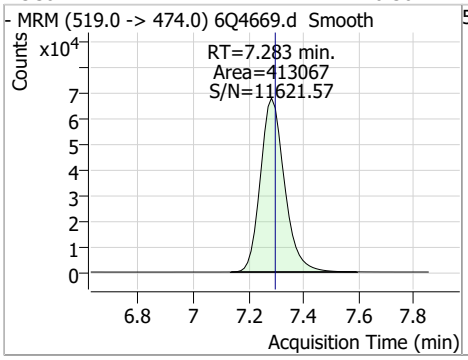
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.86	7.24	-0.02	89946	549.0 -> 99.0	51.7	27.6	82.7

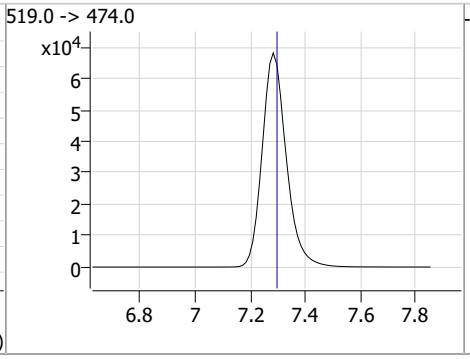


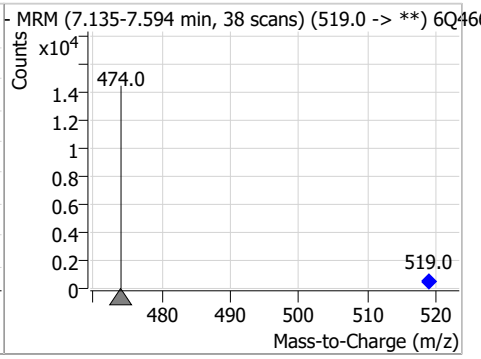




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.30	7.28	-0.01	413067				

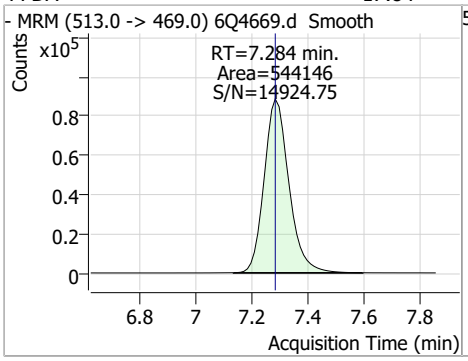


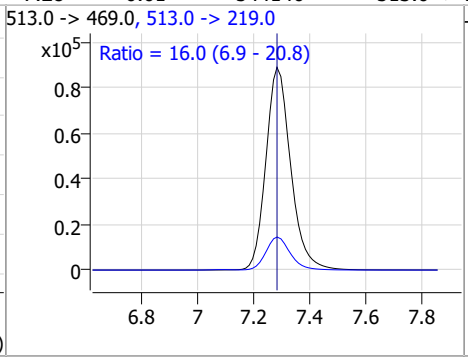


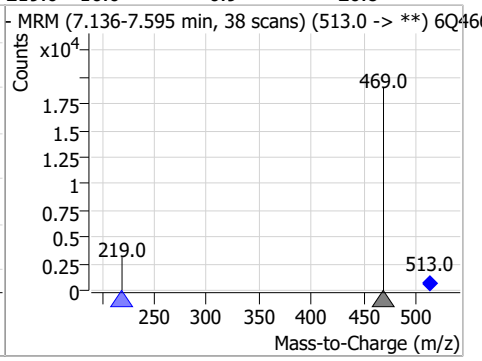


Perfluorinated Compounds by LC/MS/MS

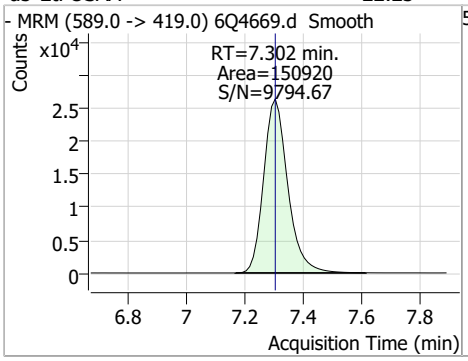
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.84	7.28	-0.01	544146	513.0 -> 219.0	16.0	6.9	20.8

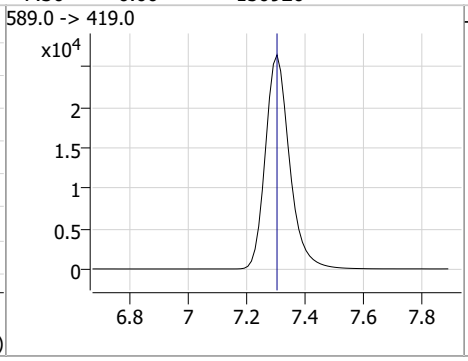


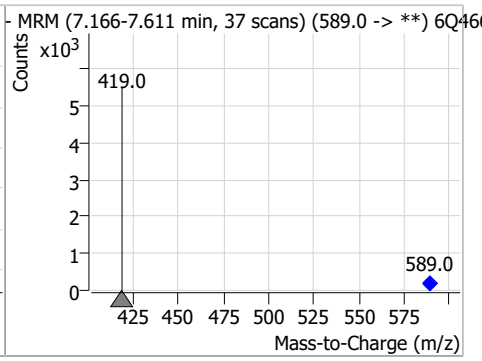




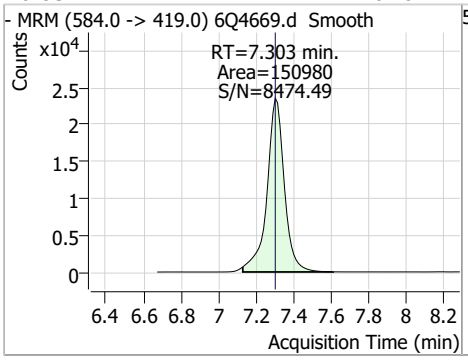
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.23	7.30	0.00	150920				

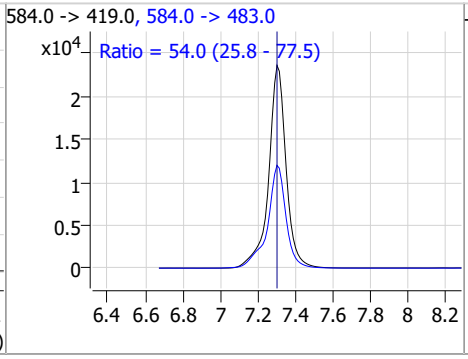


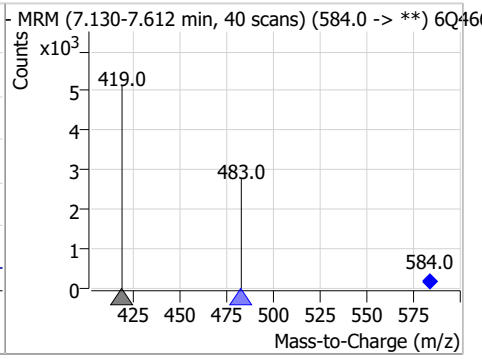




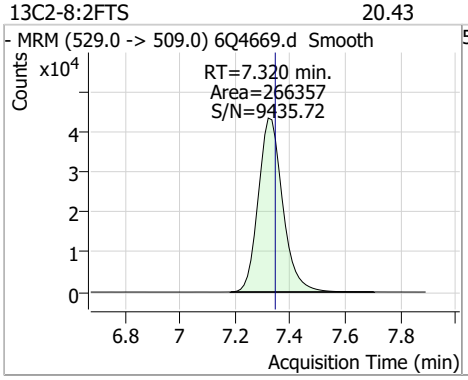
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.78	7.30	0.00	150980	584.0 -> 483.0	54.0	25.8	77.5

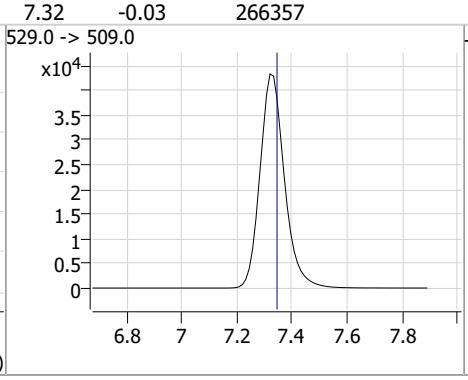


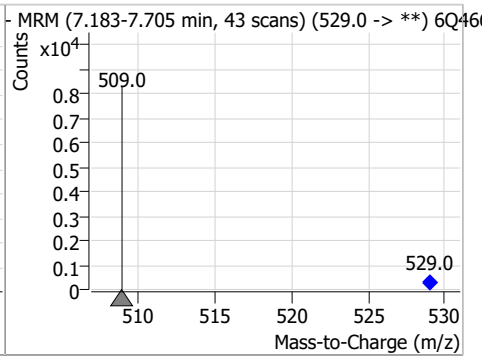




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.43	7.32	-0.03	266357				

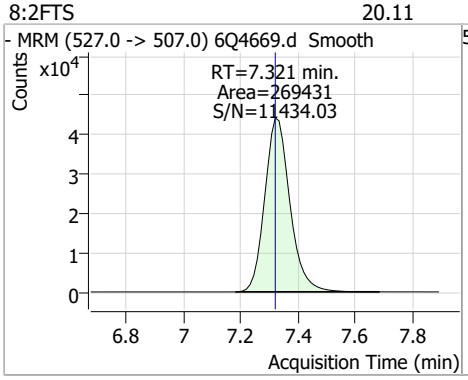


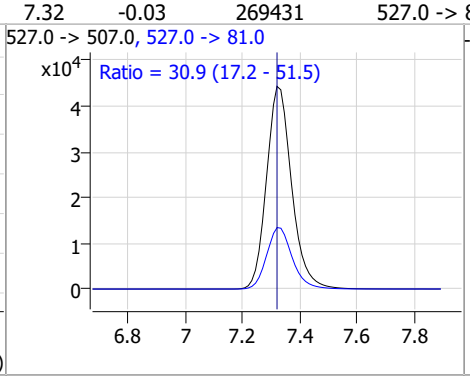


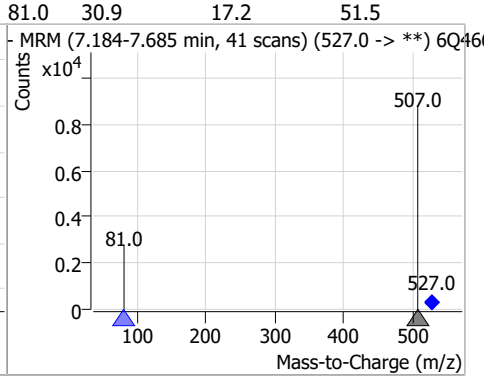


Perfluorinated Compounds by LC/MS/MS

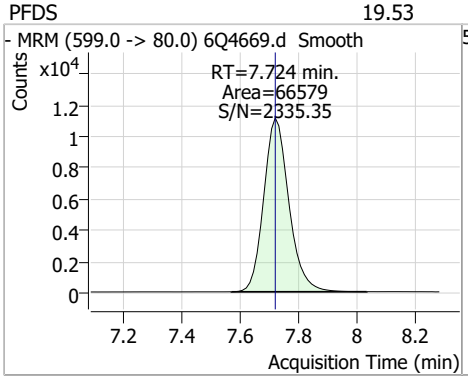
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.11	7.32	-0.03	269431	527.0 -> 81.0	30.9	17.2	51.5

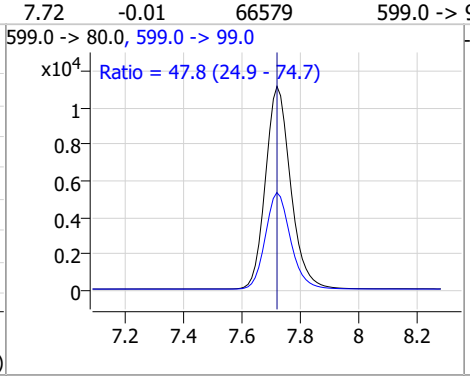


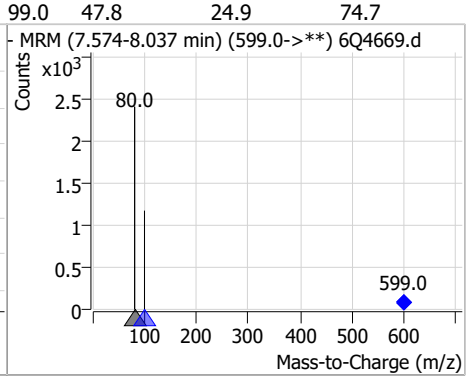




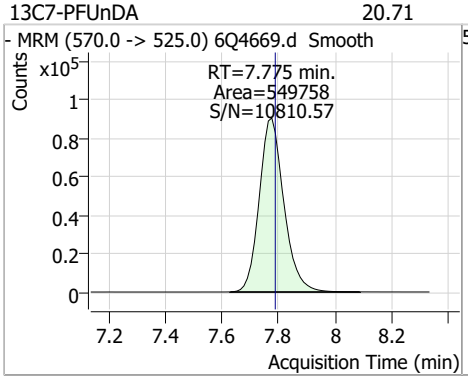
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.53	7.72	-0.01	66579	599.0 -> 99.0	47.8	24.9	74.7

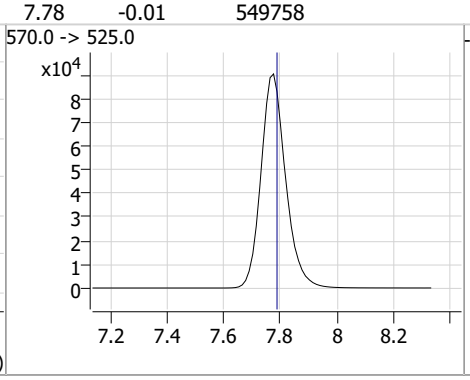


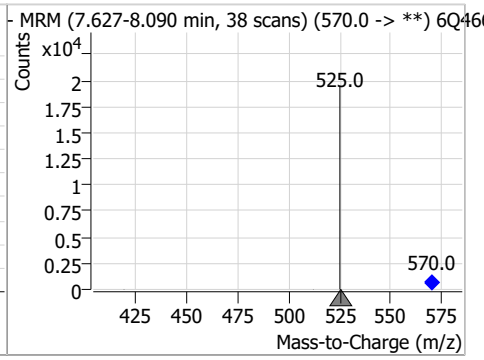




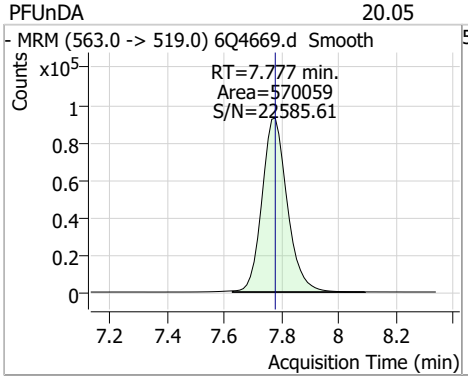
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.71	7.78	-0.01	549758				

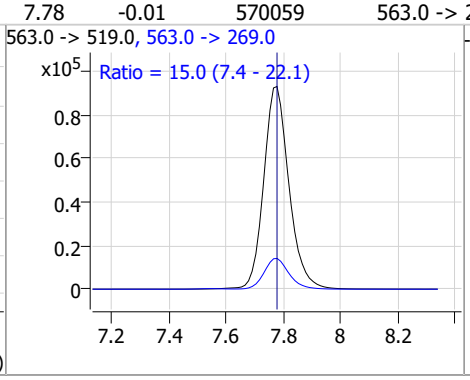


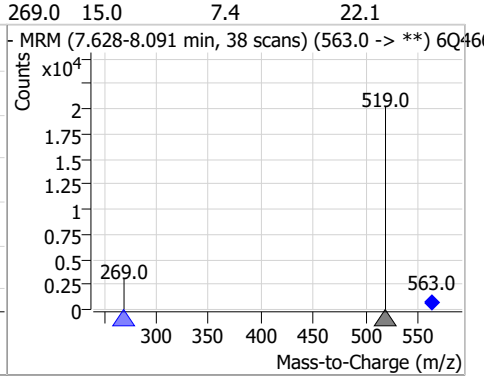




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.05	7.78	-0.01	570059	563.0 -> 269.0	15.0	7.4	22.1

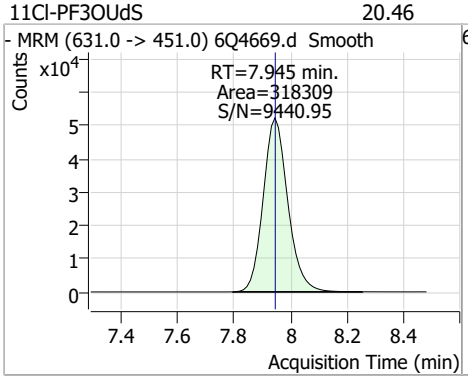


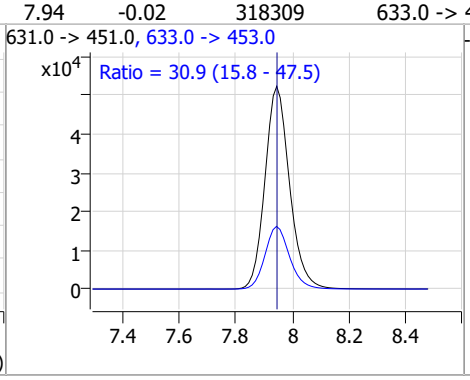


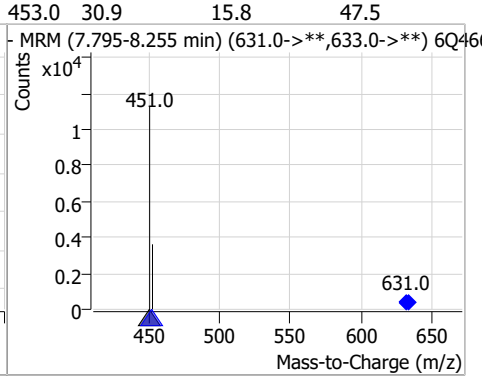


Perfluorinated Compounds by LC/MS/MS

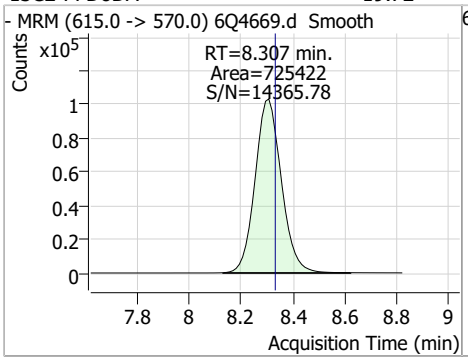
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.46	7.94	-0.02	318309	633.0 -> 453.0	30.9	15.8	47.5

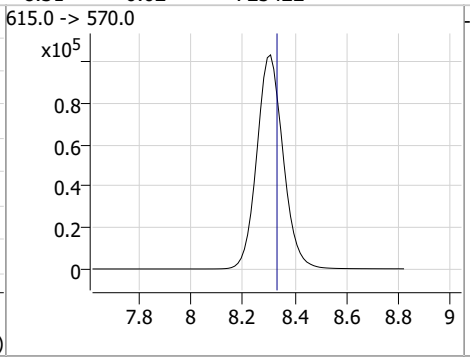


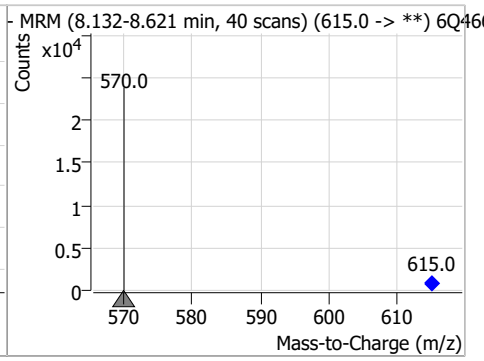




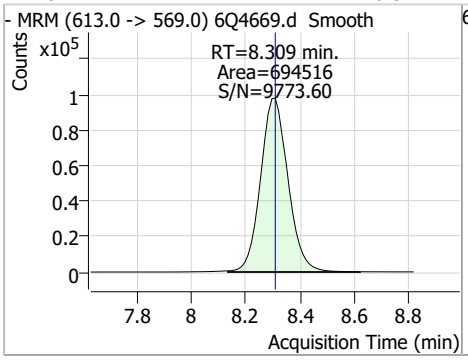
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	19.72	8.31	-0.02	725422				

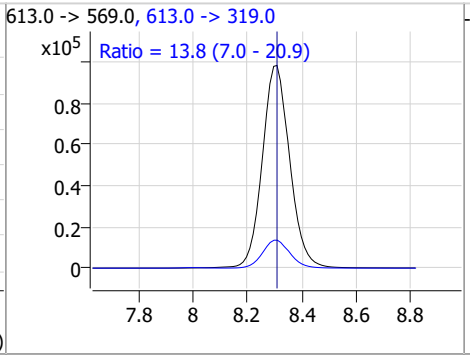


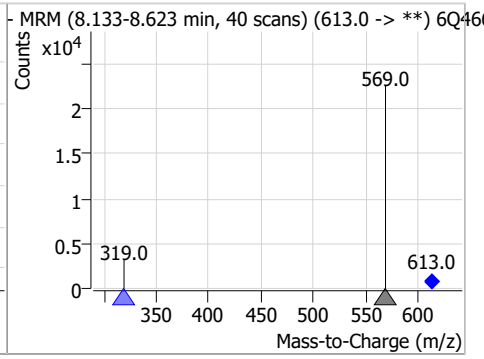




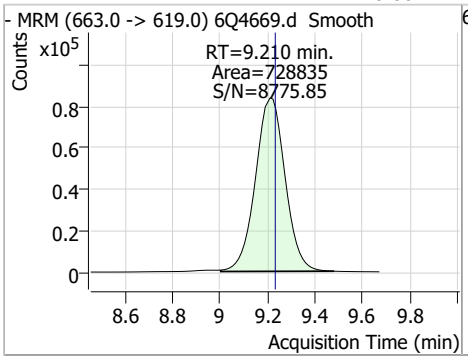
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.52	8.31	-0.02	694516	613.0 -> 319.0	13.8	7.0	20.9

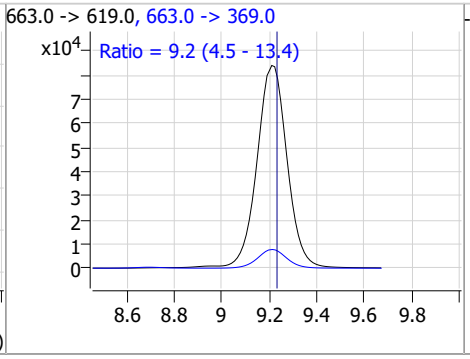


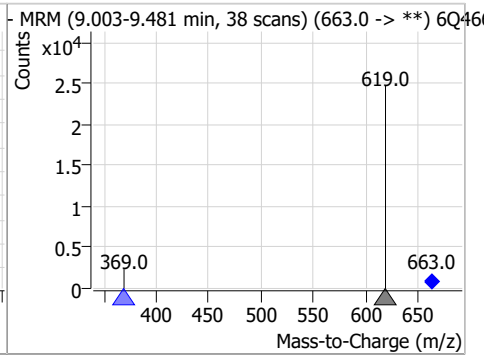




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.80	9.21	-0.05	728835	663.0 -> 369.0	9.2	4.5	13.4

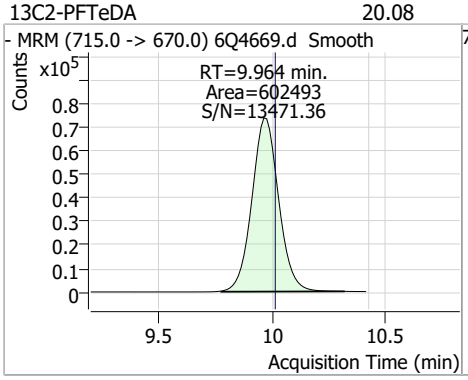


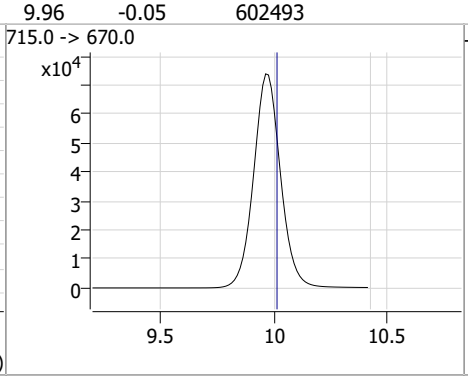


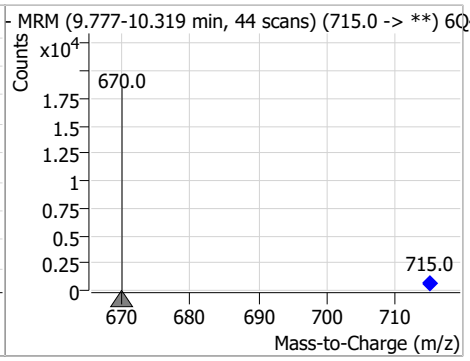


Perfluorinated Compounds by LC/MS/MS

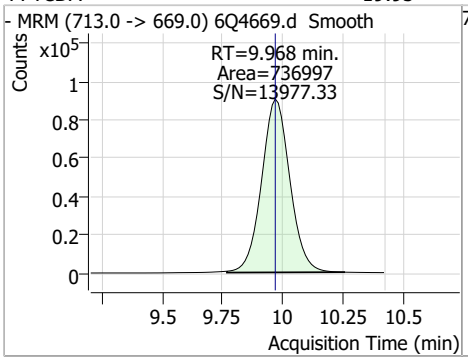
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.08	9.96	-0.05	602493				

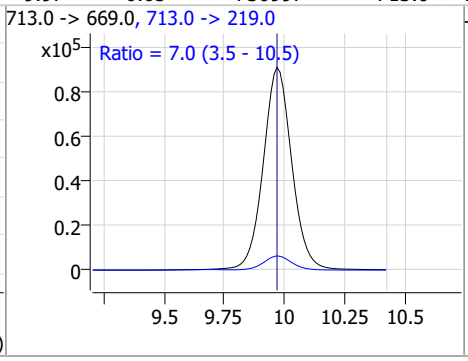


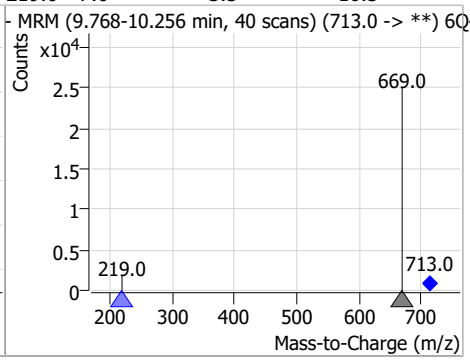




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.95	9.97	-0.05	736997	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4669.D
Injection Time: 09/15/22 00:05
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4681.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 3:17:39 AM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc. Units	Dev(Min)
Internal Standards					
M4-PFBA	1.949	217.0 -> 172.0	85541	20.00 µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	148767	20.00 µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	218164	20.00 µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	261178	20.00 µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	450291	20.00 µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	546733	20.00 µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	425987	20.00 µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	590431	20.00 µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	748002	20.00 µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	624943	20.00 µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	211630	20.00 µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	31763	20.00 µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	28594	20.00 µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	43617	20.00 µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	275464	20.00 µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	347675	20.00 µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	273129	20.00 µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	190788	20.00 µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5276	20.00 µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	49626	20.00 µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	150885	20.00 µg/L	0.000
System Monitoring Compounds					
13C2-4:2FTS	4.483	329.0 -> 309.0	275464	20.40 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.0%	
13C2-6:2FTS	6.124	429.0 -> 409.0	347675	20.37 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%	
13C2-8:2FTS	7.333	529.0 -> 509.0	273129	20.95 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.8%	
13C2-PFDoDA	8.320	615.0 -> 570.0	748002	20.34 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.7%	
13C2-PFTeDA	9.989	715.0 -> 670.0	624943	20.83 µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%	
13C3-PFBS	3.635	302.0 -> 99.0	31763	20.74 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%	
13C3-PFHxS	5.475	402.0 -> 99.0	28594	20.68 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%	
13C4-PFBA	1.949	217.0 -> 172.0	85541	21.49 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%	
13C4-PFHpA	5.445	367.0 -> 322.0	261178	21.11 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%	
13C5-PFHxA	4.573	318.0 -> 273.0	218164	20.41 µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.1%	
13C5-PFPeA	3.405	268.0 -> 223.0	148767	21.22 µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%	
13C6-PFDA	7.283	519.0 -> 474.0	425987	20.94 µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C7-PFUnDA	7.775	570.0 -> 525.0	590431	22.24 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
13C8-FOSA	6.654	506.0 -> 78.0	211630	21.64 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
13C8-PFOA	6.138	421.0 -> 376.0	450291	21.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C8-PFOS	6.717	507.0 -> 99.0	43617	20.56 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C9-PFNA	6.745	472.0 -> 427.0	546733	21.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
d3-MeFOSAA	7.155	573.0 -> 419.0	190788	22.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.2%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5282	19.87 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.4%		
d3-MeFOSA	7.085	515.0 -> 169.0	49626	21.93 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
d5-EtFOSAA	7.302	589.0 -> 419.0	151040	22.25 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.2%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	321241	21.57 µg/L		99
		327.0 -> 81.0	102120			
6:2FTS	6.124	427.0 -> 407.0	381642	21.67 µg/L		96
		427.0 -> 81.0	97234			
8:2FTS	7.334	527.0 -> 507.0	281438	20.49 µg/L		98
		527.0 -> 81.0	93275			
EtFOSAA	7.303	584.0 -> 419.0	144501	17.97 µg/L		92
		584.0 -> 483.0	83181			
FOSA	6.656	498.0 -> 78.0	213441	20.11 µg/L		99
		498.0 -> 478.0	8727			
MeFOSAA	7.168	570.0 -> 419.0	183145	20.94 µg/L		99
		570.0 -> 512.0	59276			
PFBA	1.943	213.0 -> 169.0	36935	19.78 µg/L		100
PFBS	3.627	299.0 -> 80.0	106364	20.14 µg/L		100
		299.0 -> 99.0	39869			
PFDA	7.284	513.0 -> 469.0	594537	18.91 µg/L		99
		513.0 -> 219.0	85663			
PFDoDA	8.321	613.0 -> 569.0	713632	20.45 µg/L		99
		613.0 -> 319.0	100782			
PFDS	7.736	599.0 -> 80.0	69316	18.93 µg/L		98
		599.0 -> 99.0	33593			
PFHpA	5.434	363.0 -> 319.0	339017	19.96 µg/L		100
		363.0 -> 169.0	50509			
PFHpS	6.136	449.0 -> 80.0	85385	22.42 µg/L		94
		449.0 -> 99.0	41400			
PFHxA	4.574	313.0 -> 269.0	234046	20.40 µg/L		100
		313.0 -> 119.0	5847			
PFHxS	5.465	399.0 -> 80.0	85015	20.75 µg/L	m	99
		399.0 -> 99.0	40410			
PFNA	6.745	463.0 -> 419.0	482715	18.74 µg/L		100
		463.0 -> 219.0	89719			
PFNS	7.256	549.0 -> 80.0	97289	21.95 µg/L		90
		549.0 -> 99.0	46260			
PFOA	6.138	413.0 -> 369.0	482259	19.83 µg/L		100
		413.0 -> 169.0	74229			
PFOS	6.719	499.0 -> 80.0	82189	20.33 µg/L	m	93

Perfluorinated Compounds by LC/MS/MS

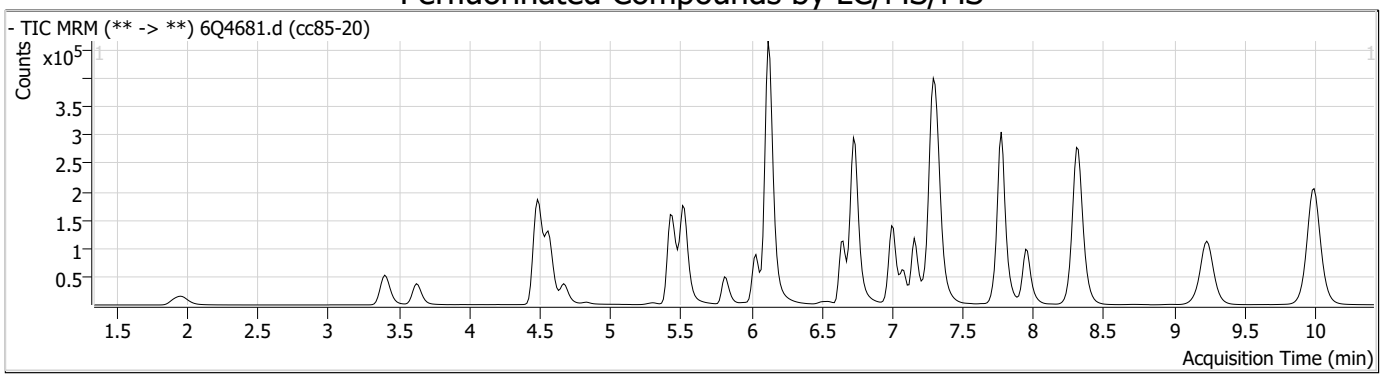
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	42405			
PFPeA	3.408	263.0 -> 219.0	124714	19.90	µg/L	100
PFPeS	4.668	349.0 -> 80.0	87299	19.85	µg/L	97
		349.0 -> 99.0	41281			
PFTeDA	9.993	713.0 -> 669.0	755766	19.72	µg/L	100
		713.0 -> 219.0	53455			
PFTrDA	9.235	663.0 -> 619.0	745535	20.64	µg/L	99
		663.0 -> 369.0	68194			
PFUnDA	7.777	563.0 -> 519.0	557281	18.25	µg/L	97
		563.0 -> 269.0	89631			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	317097	19.77	µg/L	98
		633.0 -> 453.0	103267			
9Cl-PF3ONS	6.996	531.0 -> 351.0	436474	20.14	µg/L	99
		533.0 -> 353.0	133421			
ADONA	5.532	377.0 -> 251.0	541656	20.43	µg/L	98
		377.0 -> 85.0	134287			
HFPO-DA	4.840	285.0 -> 169.0	6063	24.30	µg/L	99
		285.0 -> 185.0	882			
MeFOSA	7.086	512.0 -> 169.0	58060	21.44	µg/L	93
		512.0 -> 219.0	52383			
4-PFECHS	6.032	461.0 -> 381.0	270360	18.65	µg/L	97
		461.0 -> 99.0	94745			
FBSA	4.514	298.0 -> 78.0	219998	20.70	µg/L	100
		298.0 -> 64.0	15200			
FHxSA	5.828	398.0 -> 78.0	185439	18.66	µg/L	100
		398.0 -> 64.0	6533			

 # = Qualifier out of range, m = manually integrated, + = Area summed

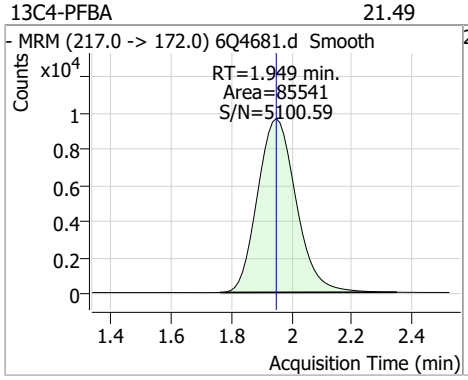
7.7.95

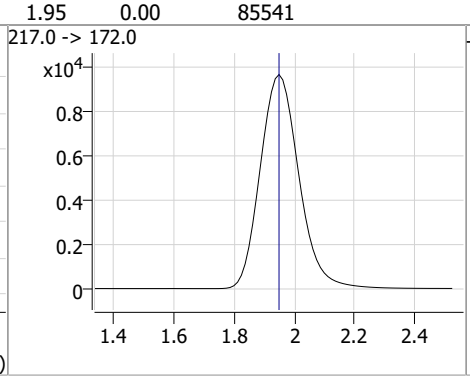
7

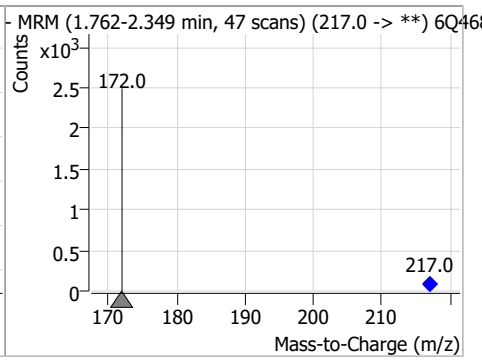
Perfluorinated Compounds by LC/MS/MS



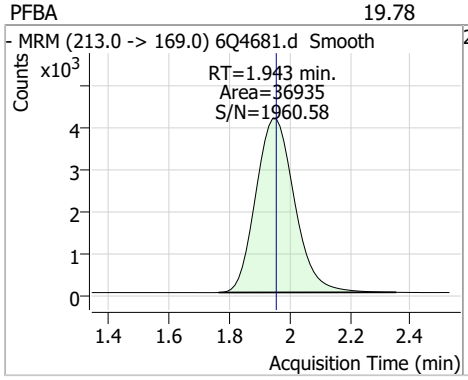
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.49	1.95	0.00	85541				

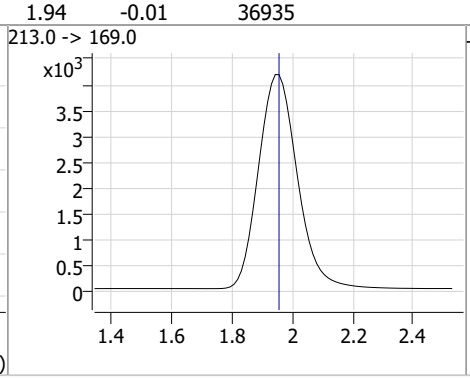


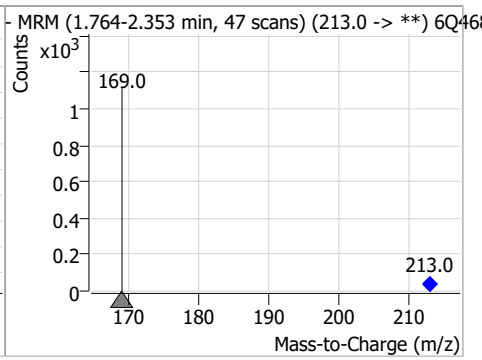




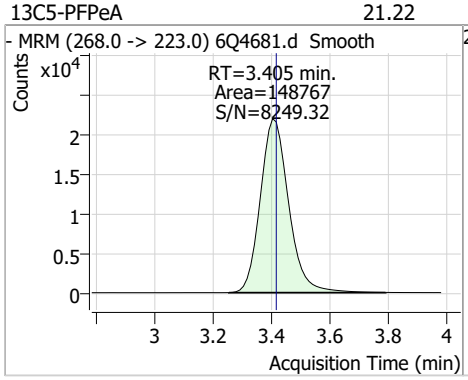
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.78	1.94	-0.01	36935				

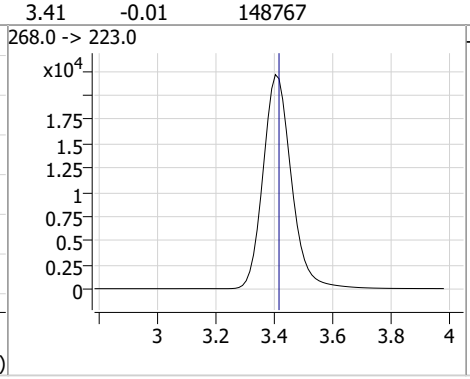


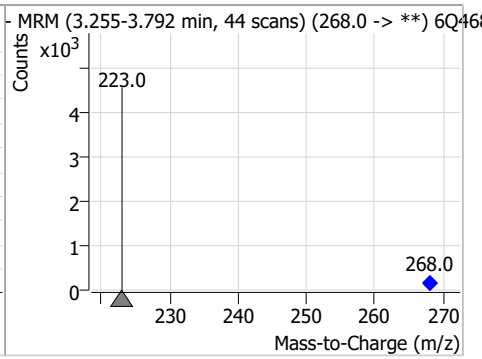




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.22	3.41	-0.01	148767				

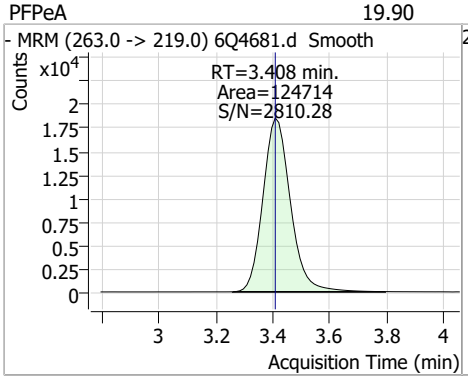


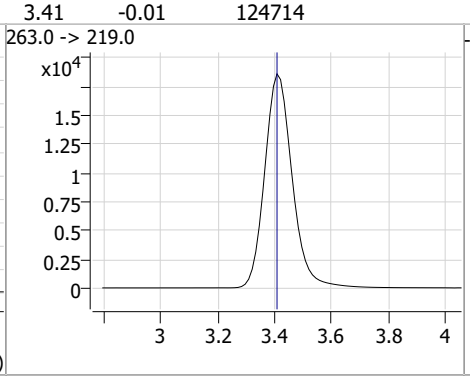


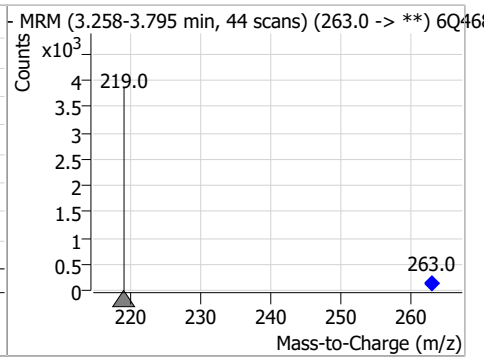


Perfluorinated Compounds by LC/MS/MS

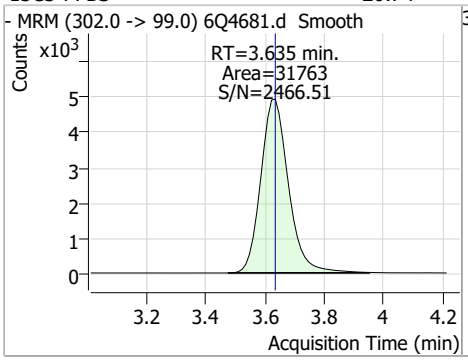
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.90	3.41	-0.01	124714				

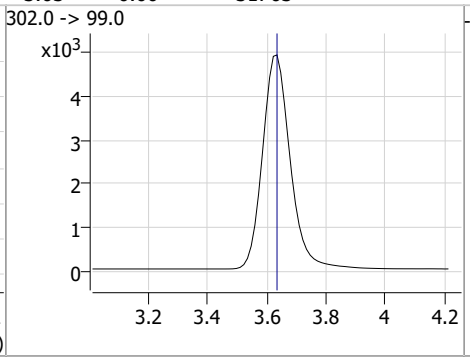


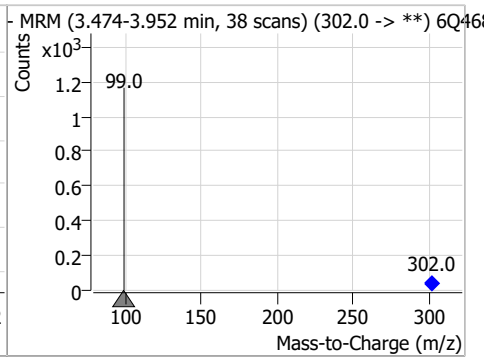




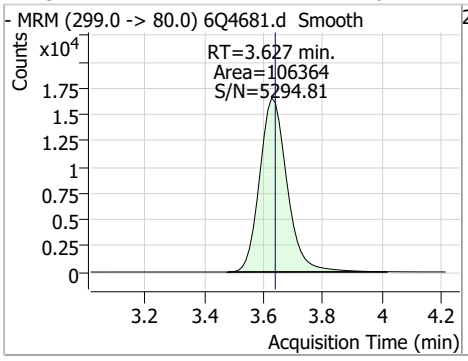
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.74	3.63	0.00	31763				

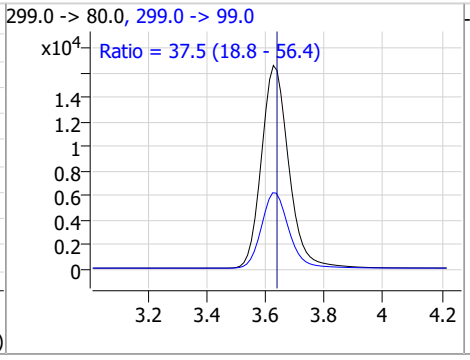


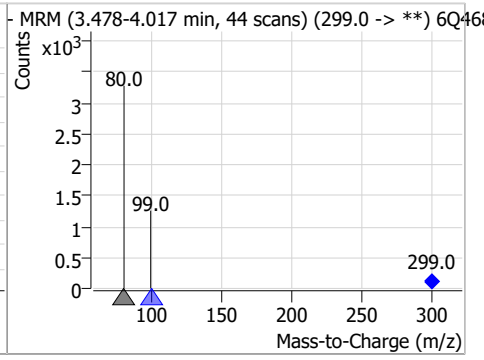




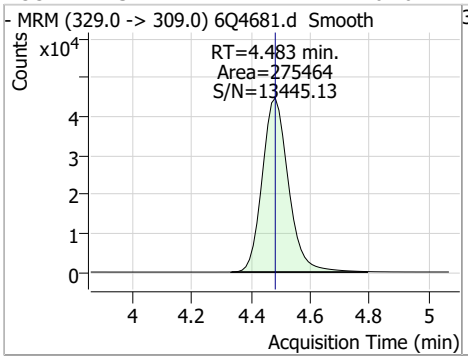
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.14	3.63	-0.01	106364	299.0 -> 99.0	37.5	18.8	56.4

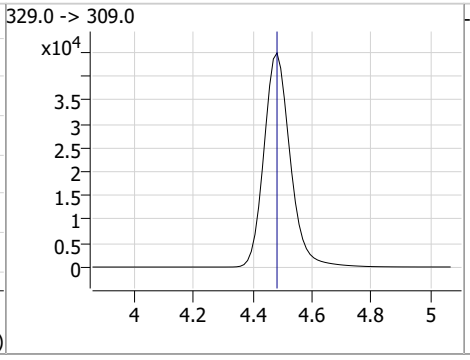


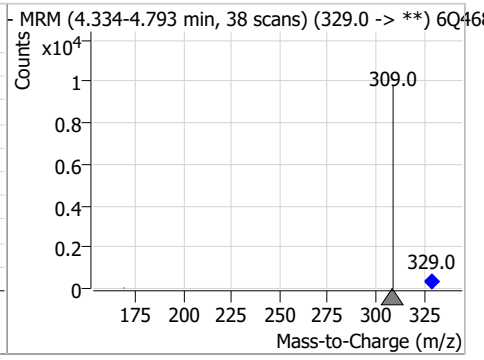




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.40	4.48	0.00	275464				

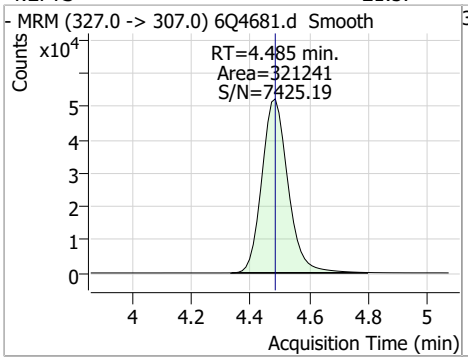


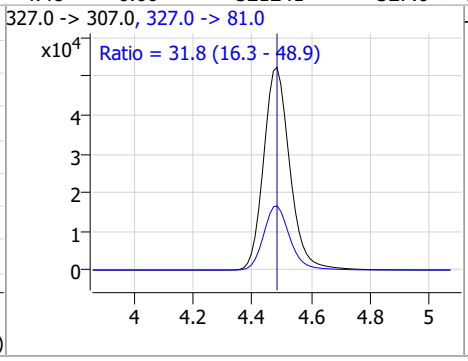


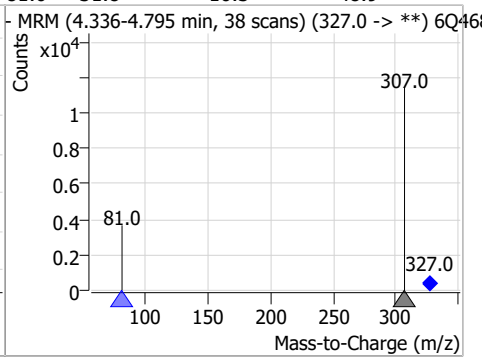


Perfluorinated Compounds by LC/MS/MS

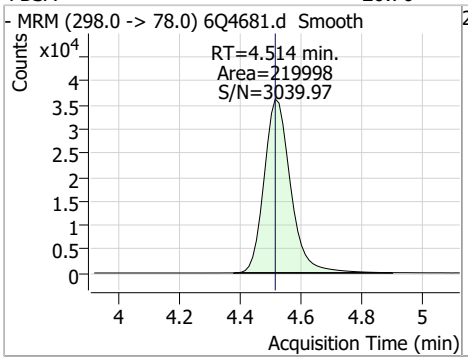
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.57	4.48	0.00	321241	327.0 -> 81.0	31.8	16.3	48.9

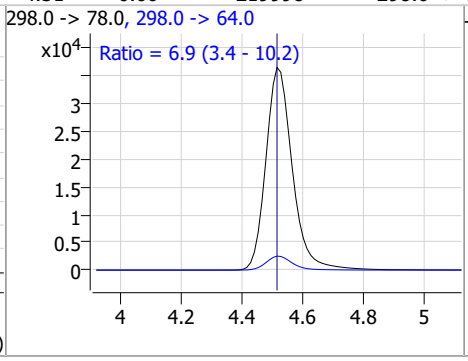


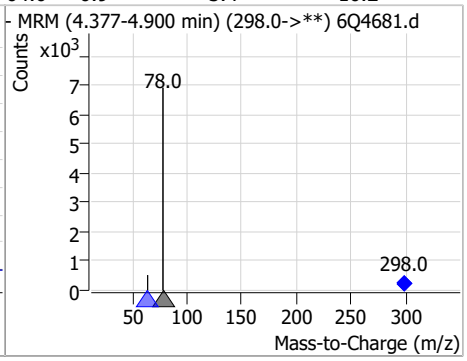




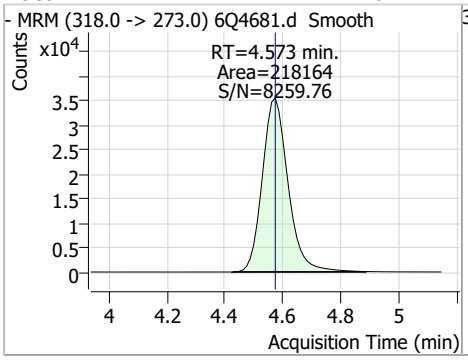
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.70	4.51	0.00	219998	298.0 -> 64.0	6.9	3.4	10.2

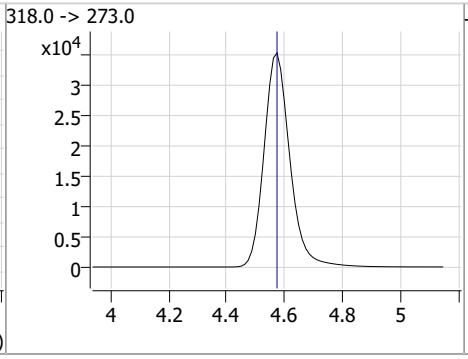


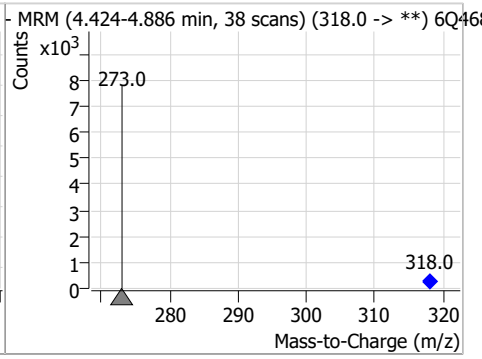




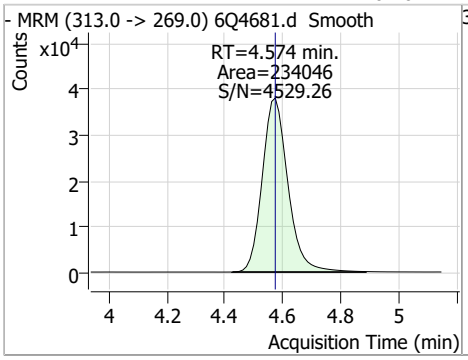
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	20.41	4.57	0.00	218164				

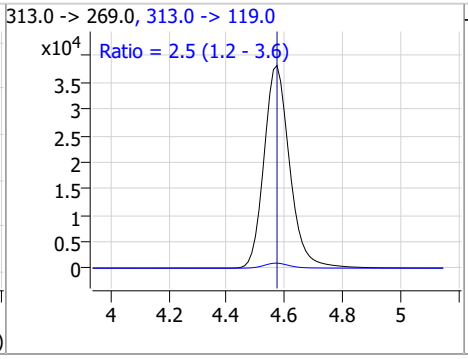


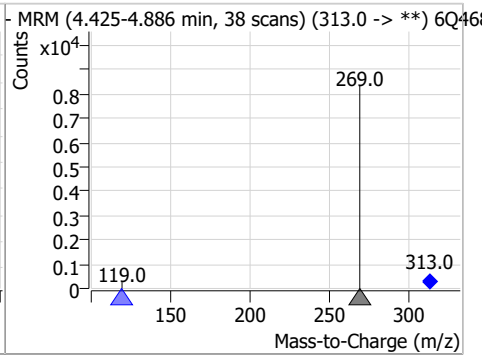




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	20.40	4.57	0.00	234046	313.0 -> 119.0	2.5	1.2	3.6

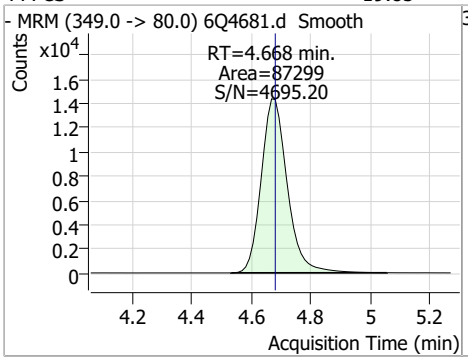


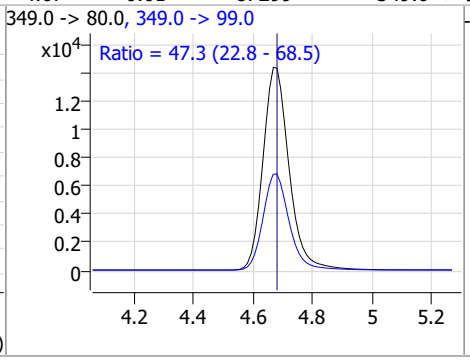


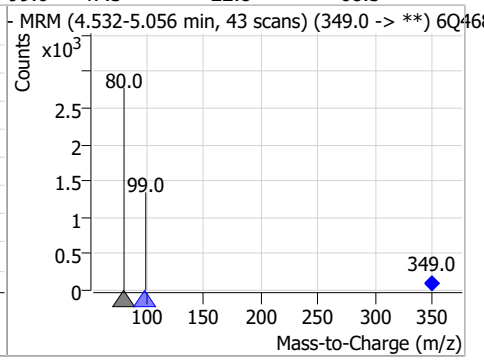


Perfluorinated Compounds by LC/MS/MS

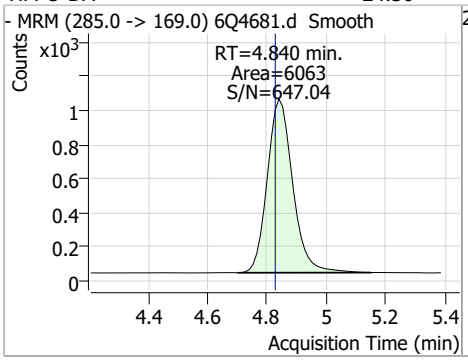
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.85	4.67	-0.01	87299	349.0 -> 99.0	47.3	22.8	68.5

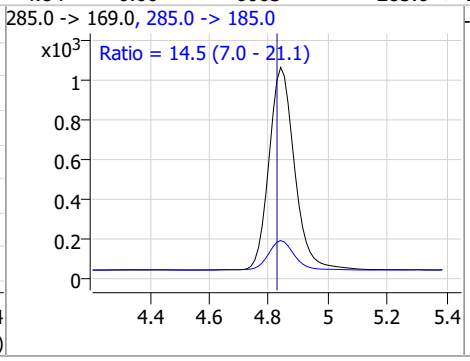


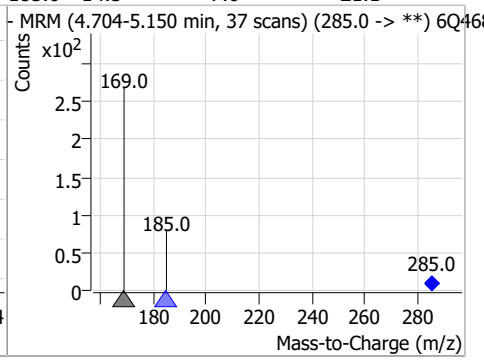




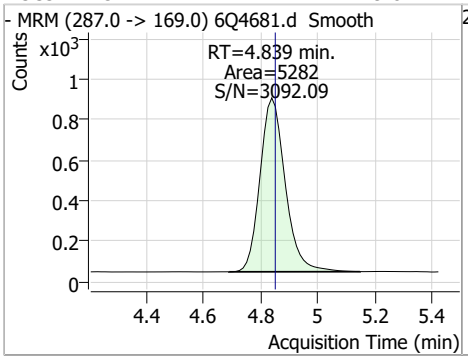
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	24.30	4.84	0.00	6063	285.0 -> 185.0	14.5	7.0	21.1

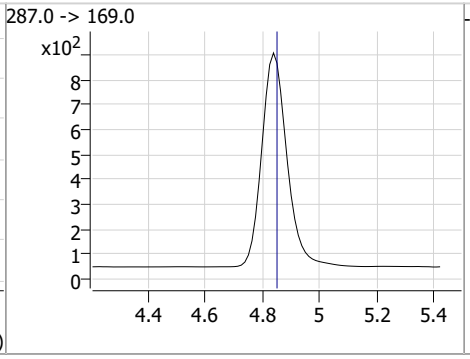


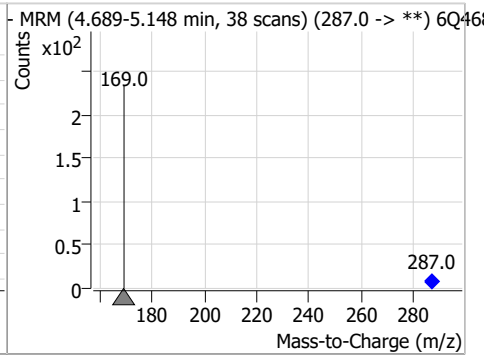




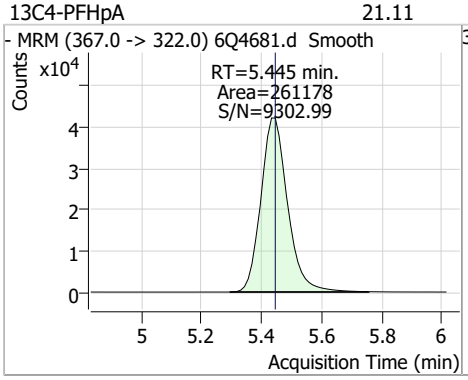
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.87	4.84	-0.01	5282				

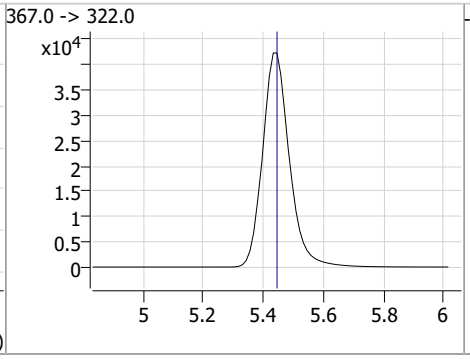


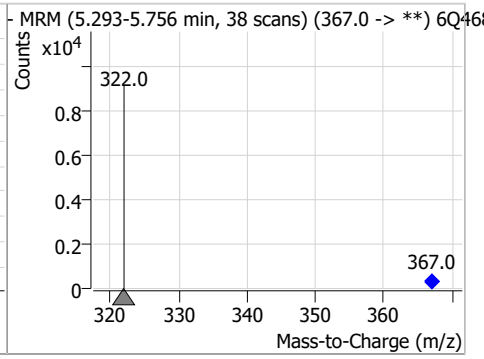




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.11	5.45	0.00	261178				

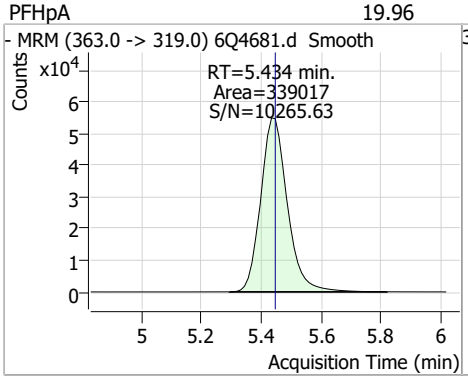


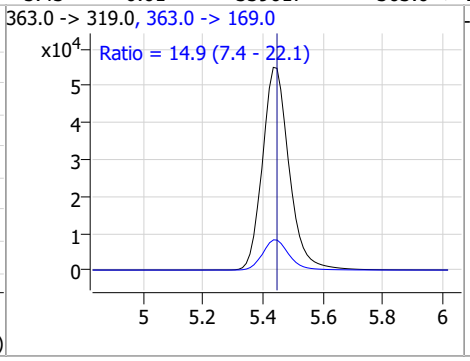


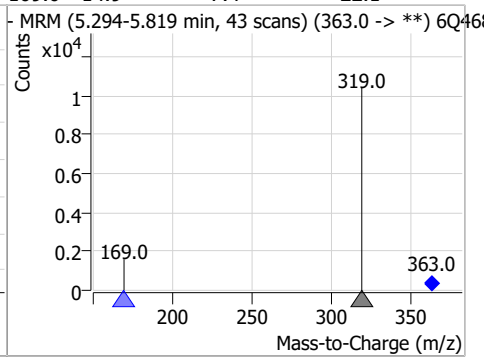


Perfluorinated Compounds by LC/MS/MS

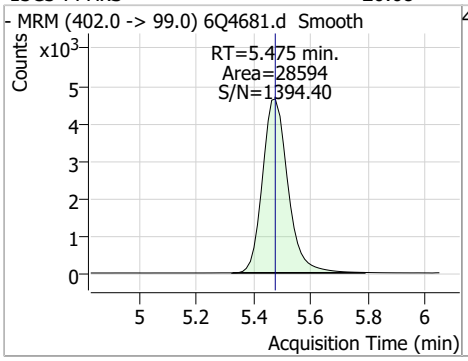
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.96	5.43	-0.01	339017	363.0 -> 169.0	14.9	7.4	22.1

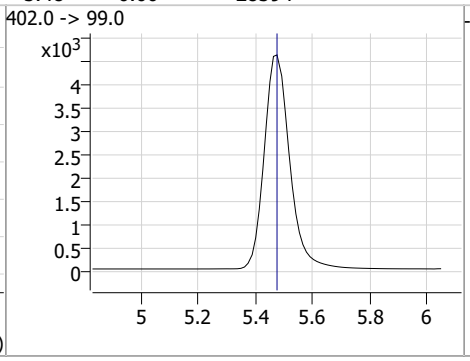


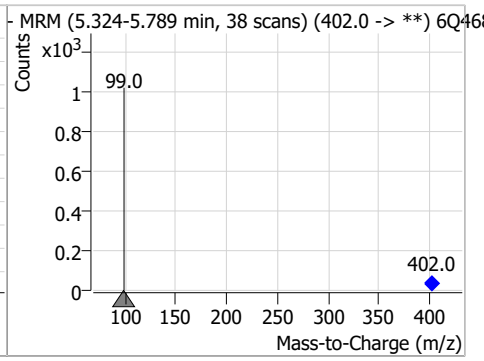




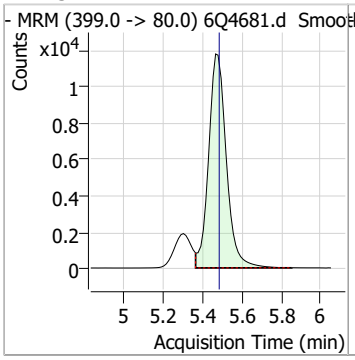
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.68	5.48	0.00	28594				

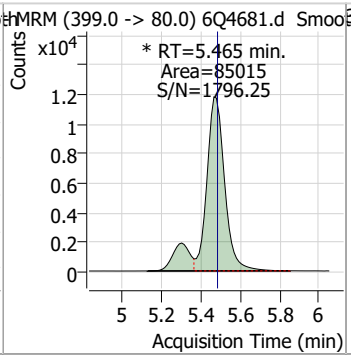


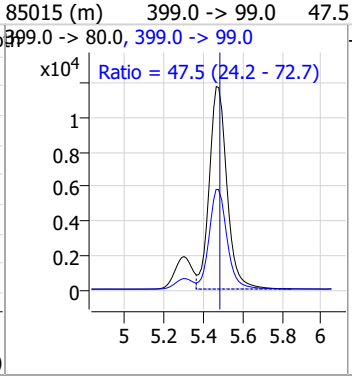


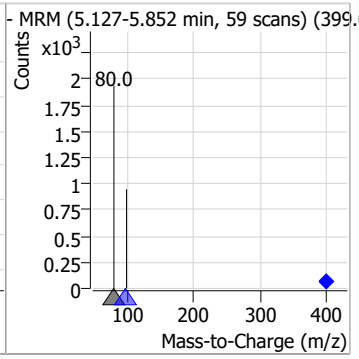


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.75	5.47	-0.01	85015 (m)	399.0 -> 99.0	47.5	24.2	72.7

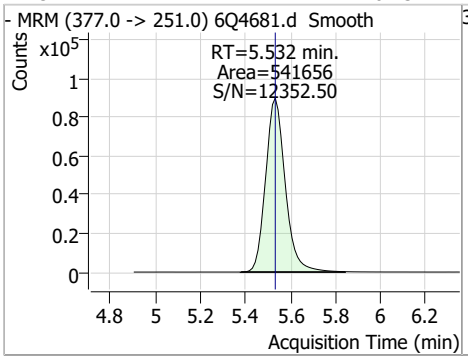


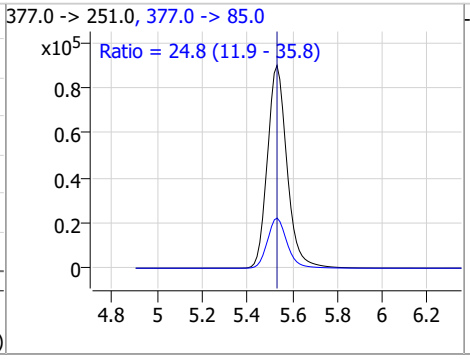


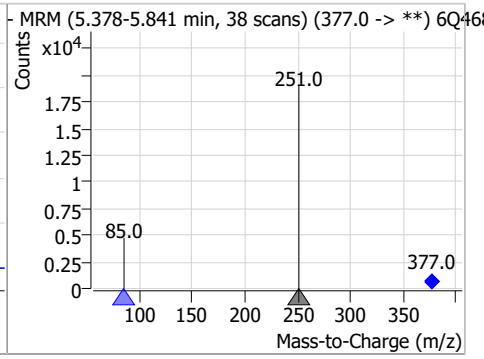




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.43	5.53	0.00	541656	377.0 -> 85.0	24.8	11.9	35.8

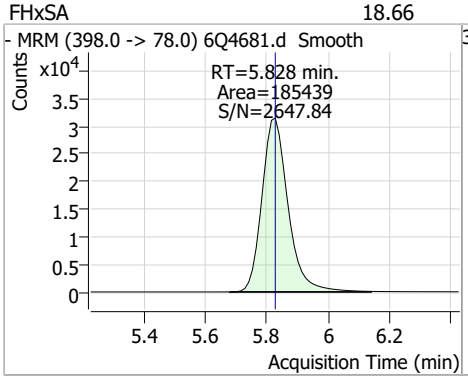


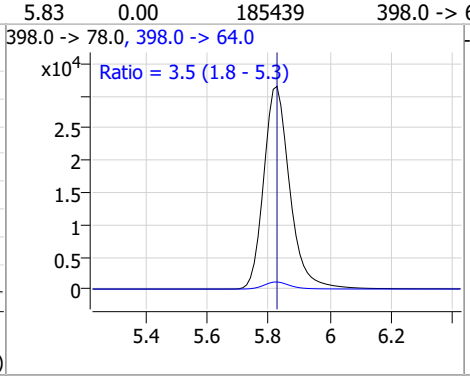


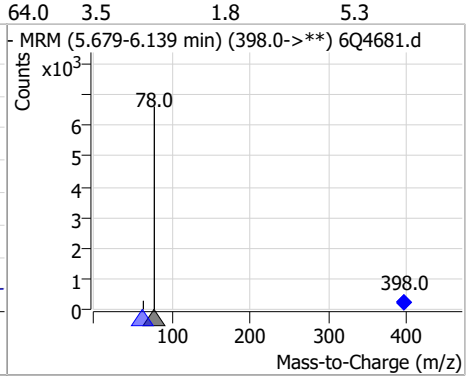


Perfluorinated Compounds by LC/MS/MS

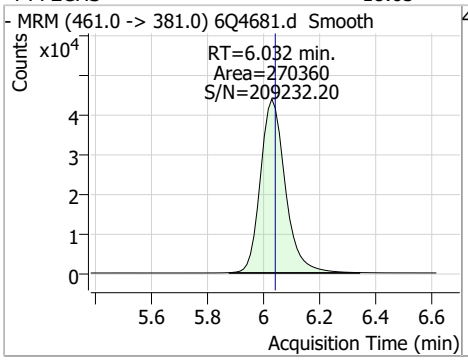
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.66	5.83	0.00	185439	398.0 -> 64.0	3.5	1.8	5.3

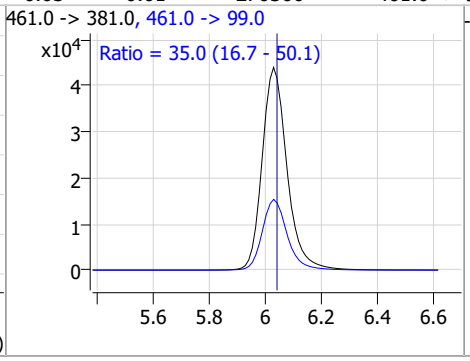


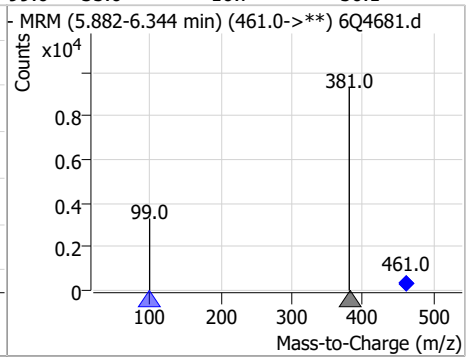




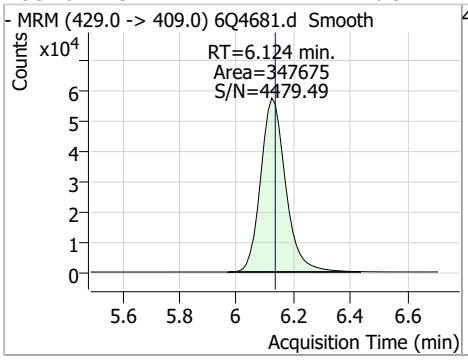
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.65	6.03	-0.01	270360	461.0 -> 99.0	35.0	16.7	50.1

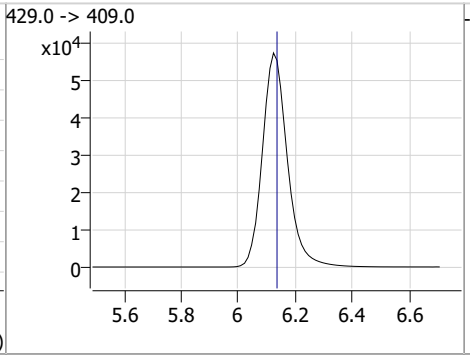


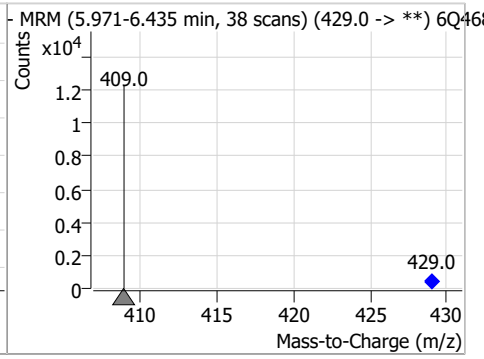




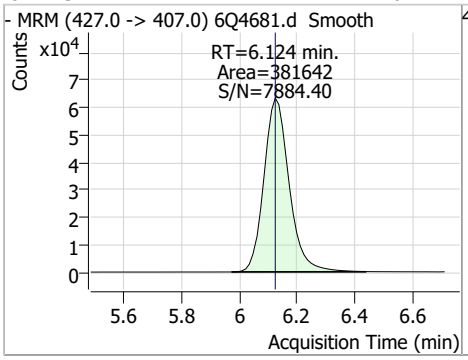
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.37	6.12	-0.01	347675				

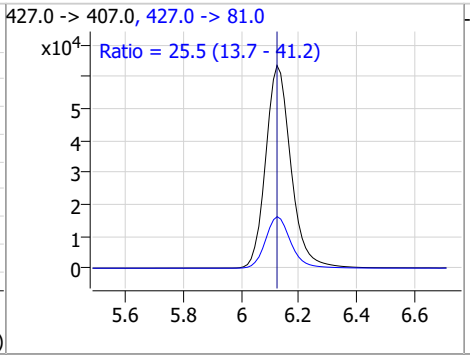


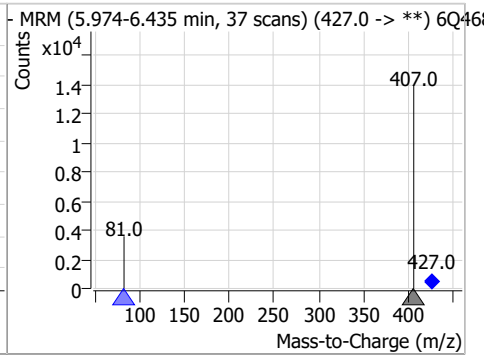




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.67	6.12	-0.01	381642	427.0 -> 81.0	25.5	13.7	41.2

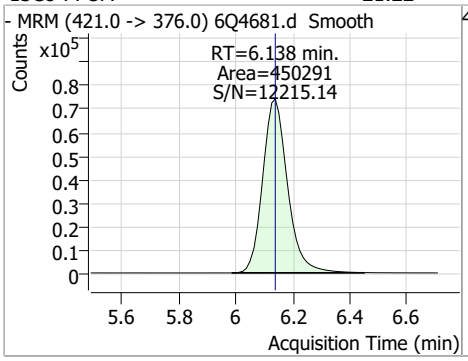


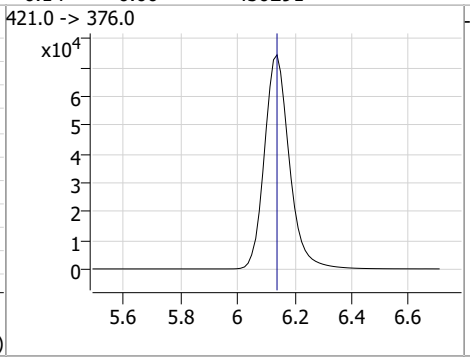


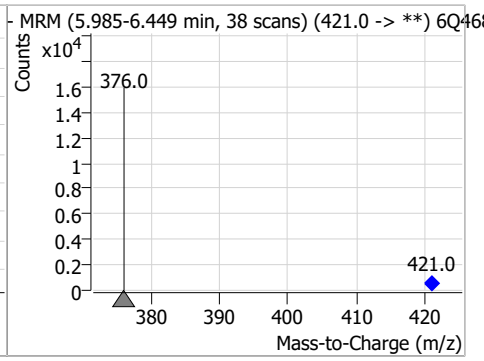


Perfluorinated Compounds by LC/MS/MS

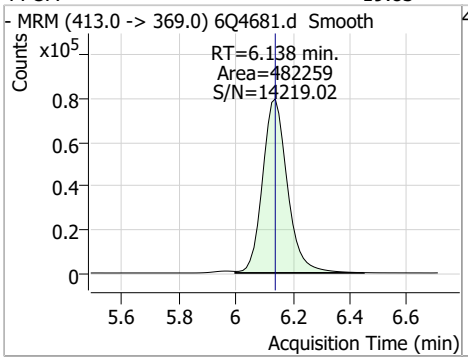
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.22	6.14	0.00	450291				

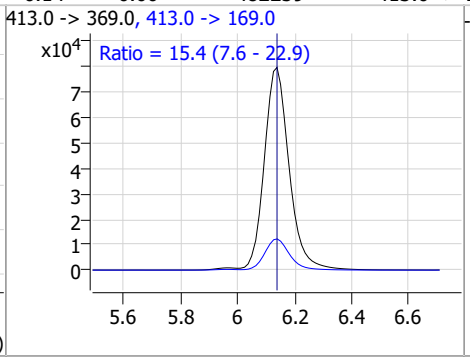


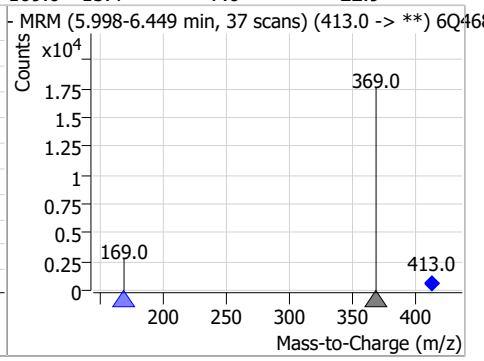




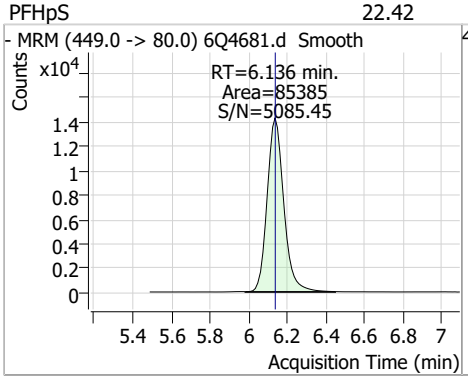
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.83	6.14	0.00	482259	413.0 -> 169.0	15.4	7.6	22.9

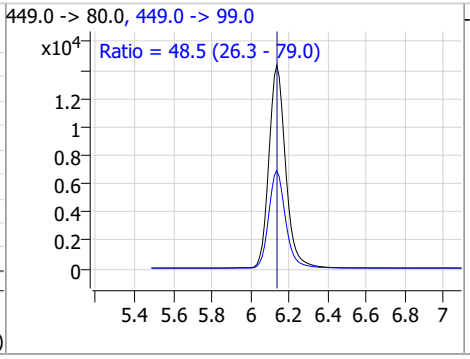


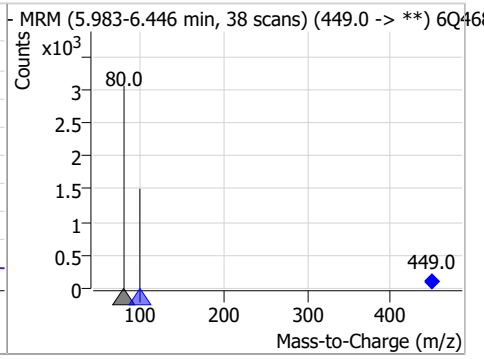




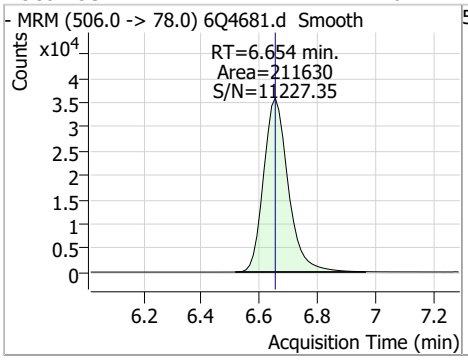
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.42	6.14	-0.01	85385	449.0 -> 99.0	48.5	26.3	79.0

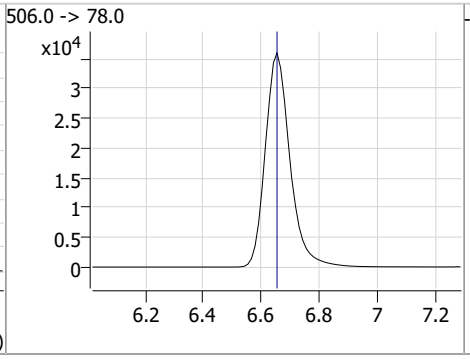


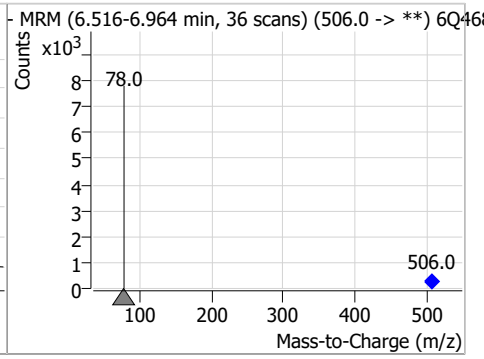




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.64	6.65	0.00	211630				

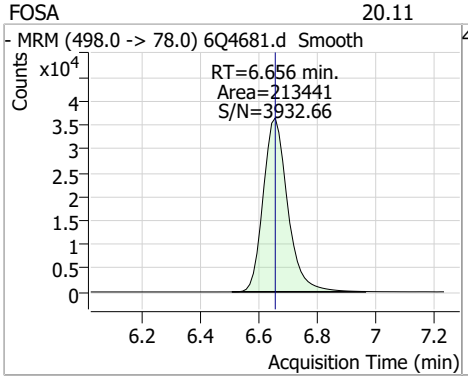


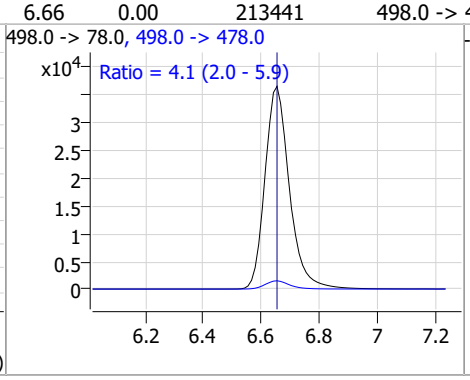


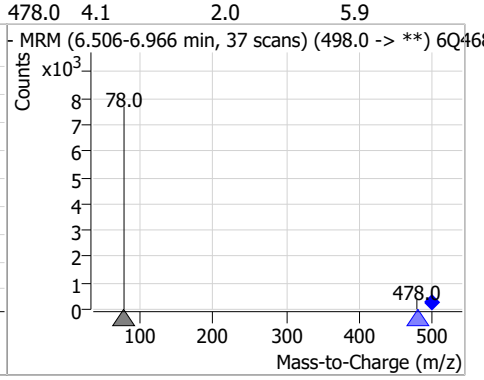


Perfluorinated Compounds by LC/MS/MS

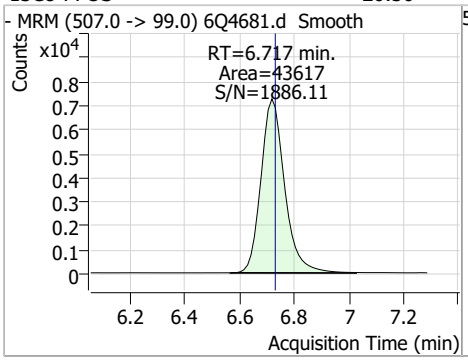
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.11	6.66	0.00	213441	498.0 -> 478.0	4.1	2.0	5.9

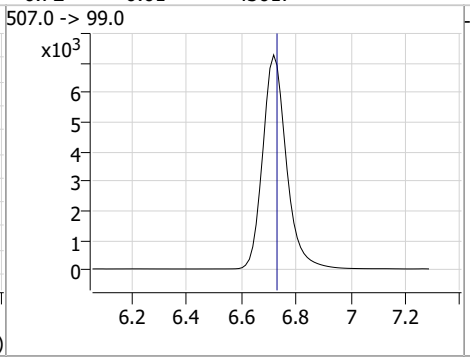


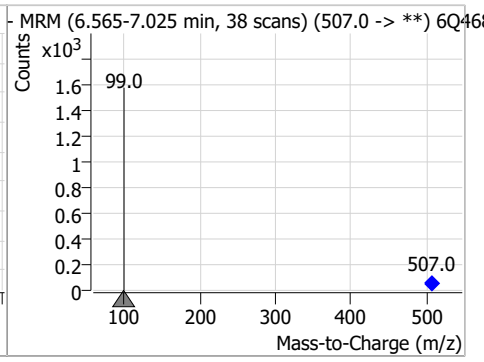




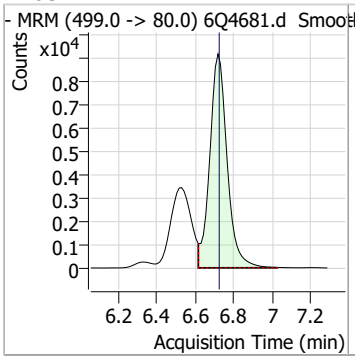
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.56	6.72	-0.01	43617				

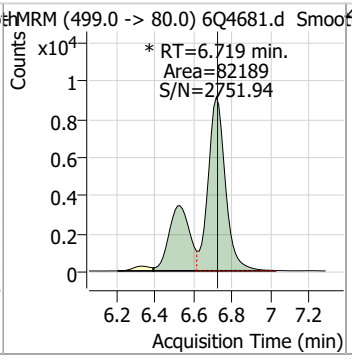


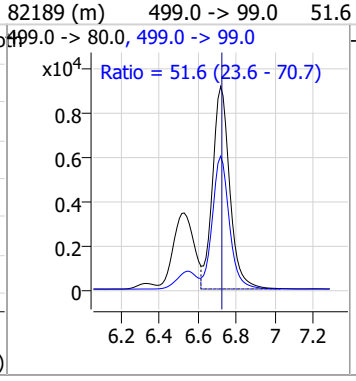


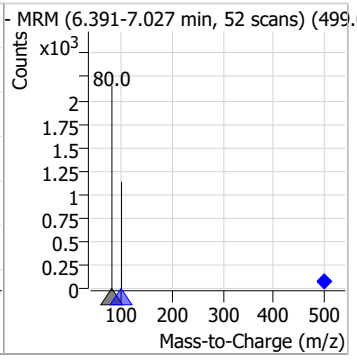


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.33	6.72	-0.01	82189 (m)	499.0 -> 99.0	51.6	23.6	70.7

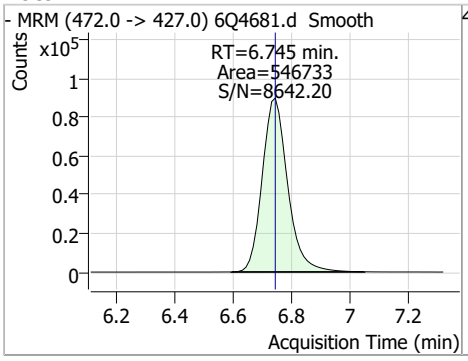


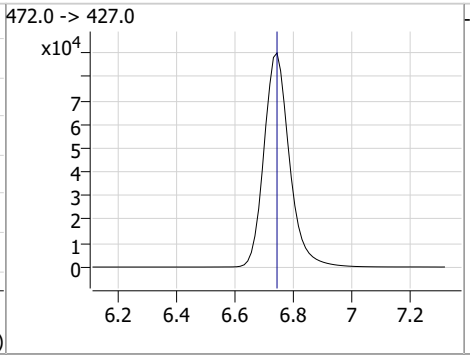


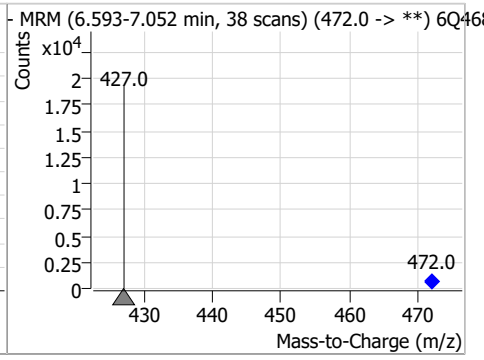




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.22	6.74	0.00	546733				

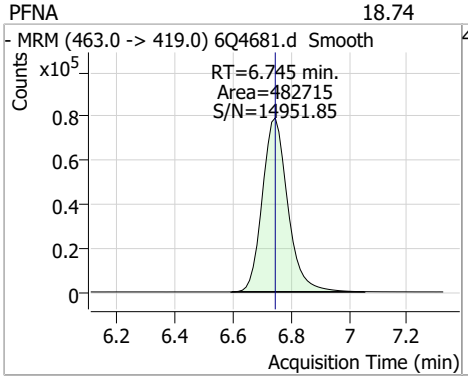


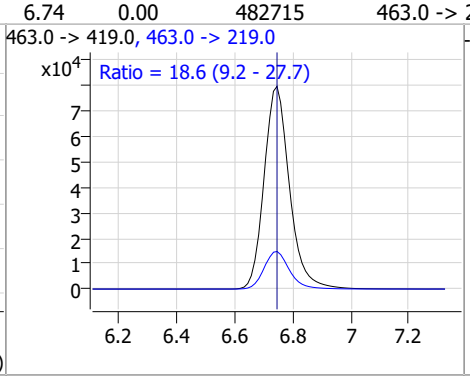


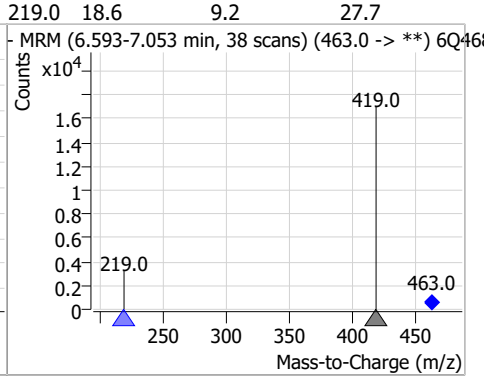


Perfluorinated Compounds by LC/MS/MS

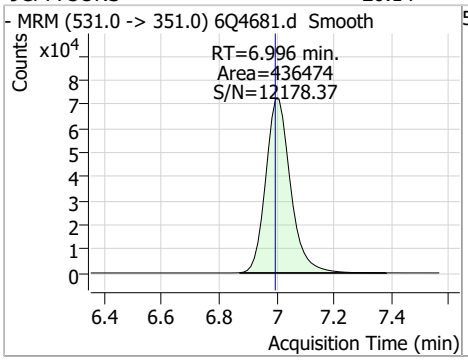
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.74	6.74	0.00	482715	463.0 -> 219.0	18.6	9.2	27.7

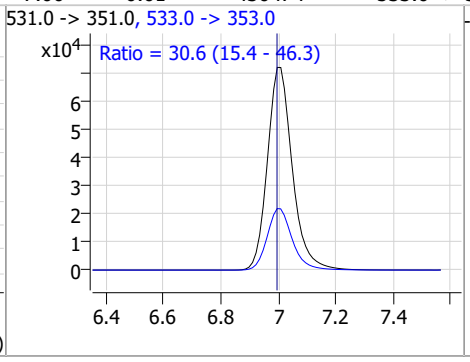


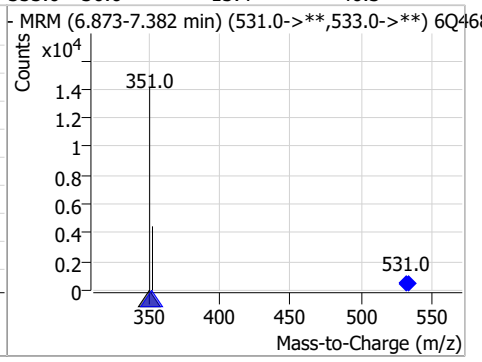




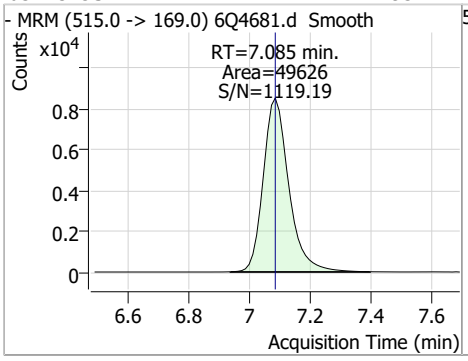
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.14	7.00	-0.01	436474	533.0 -> 353.0	30.6	15.4	46.3

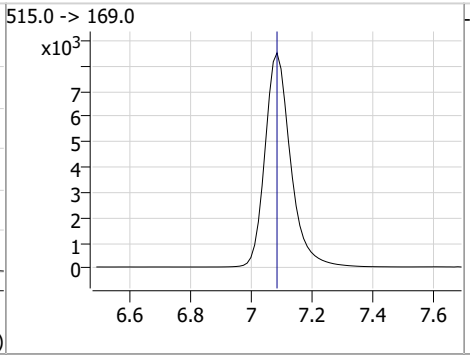


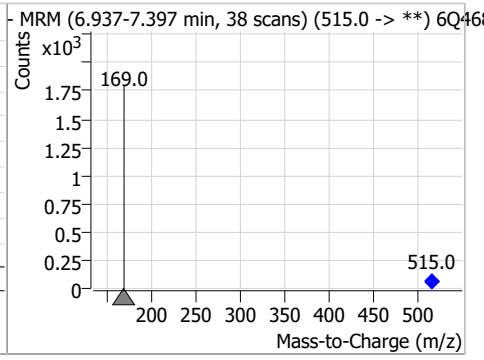




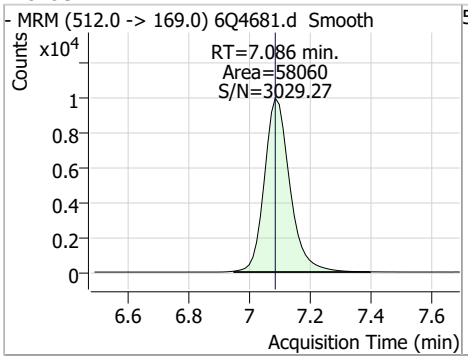
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.93	7.08	0.00	49626				

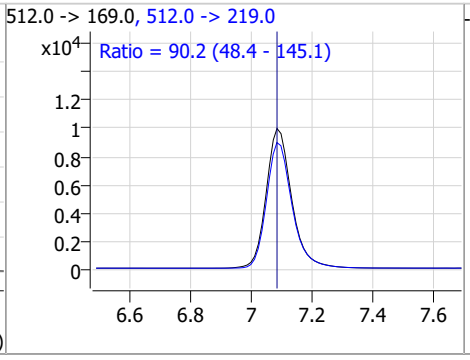


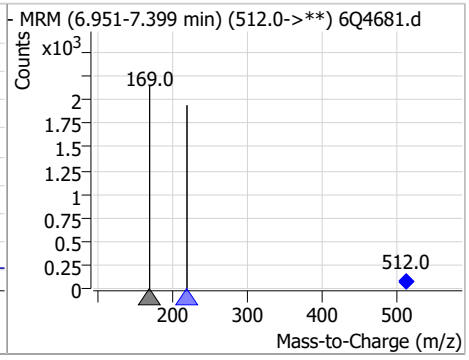




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.44	7.09	0.00	58060	512.0 -> 219.0	90.2	48.4	145.1

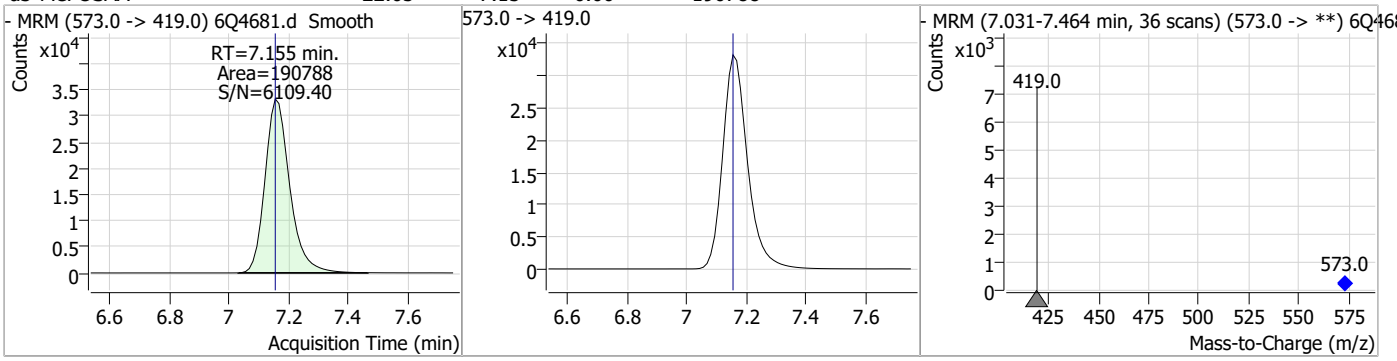




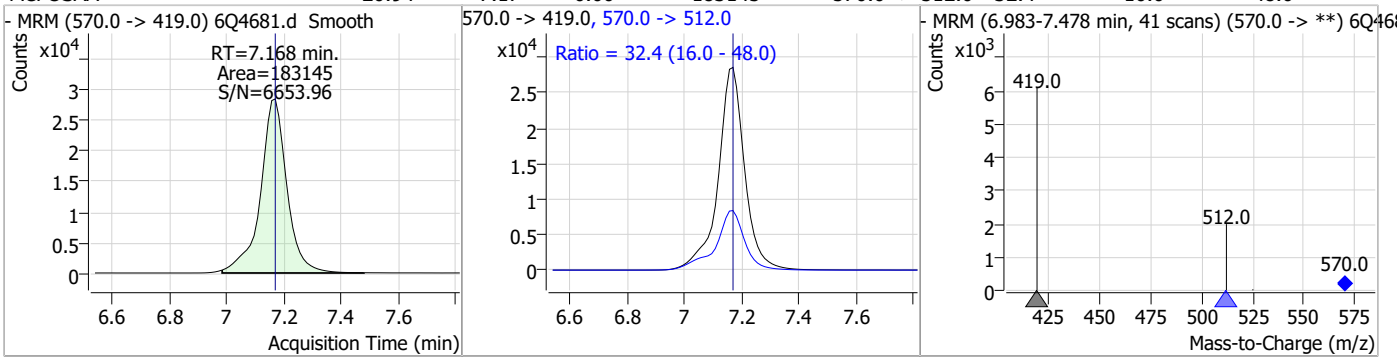


Perfluorinated Compounds by LC/MS/MS

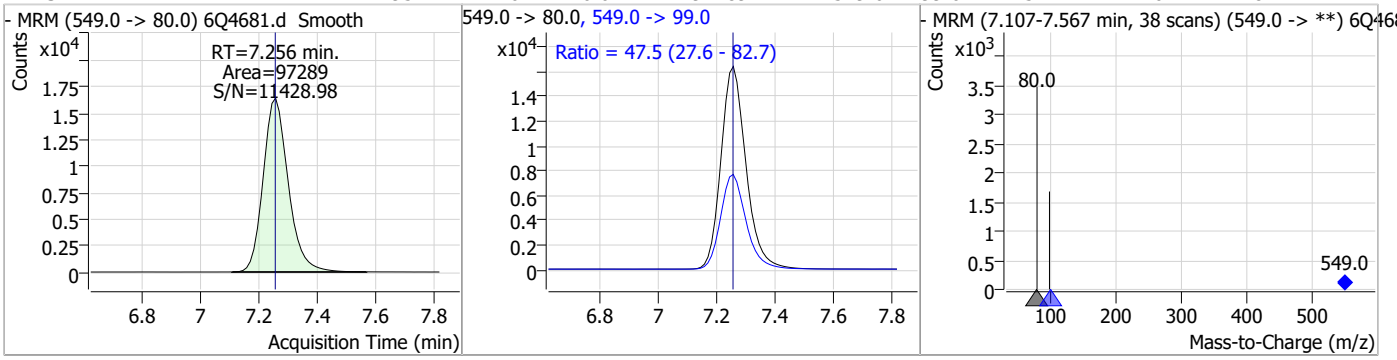
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.05	7.15	0.00	190788				



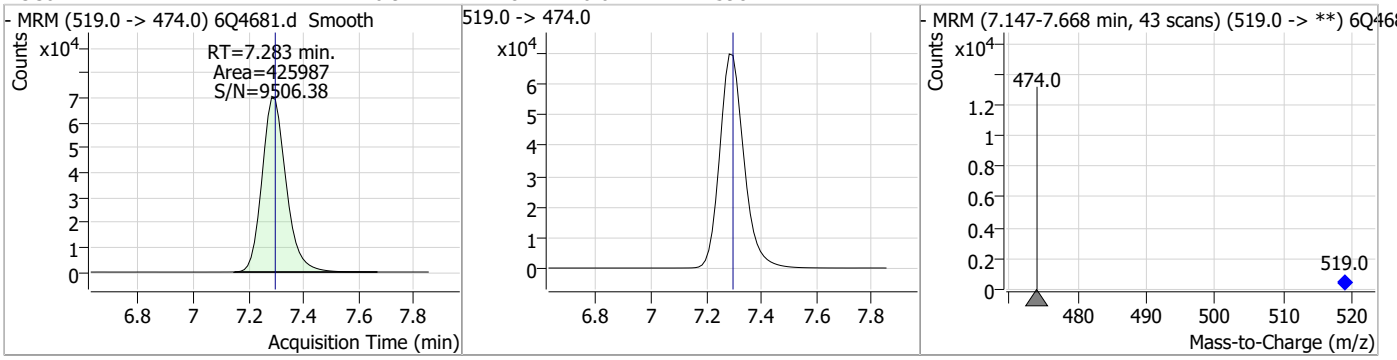
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.94	7.17	0.00	183145	570.0 -> 512.0	32.4	16.0	48.0



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.95	7.26	-0.01	97289	549.0 -> 99.0	47.5	27.6	82.7

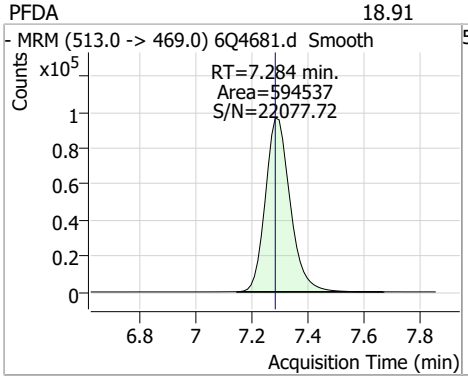


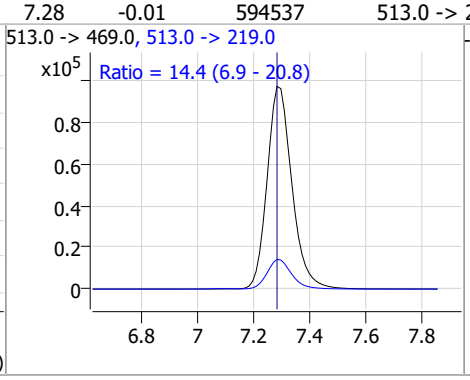
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.94	7.28	-0.01	425987				

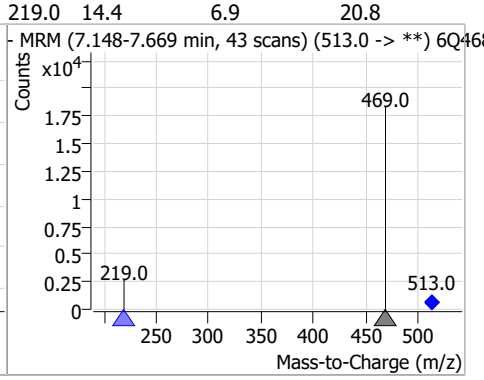


Perfluorinated Compounds by LC/MS/MS

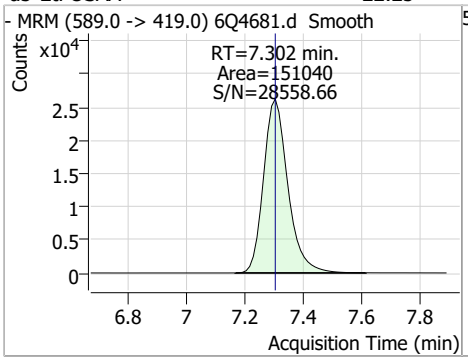
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.91	7.28	-0.01	594537	513.0 -> 219.0	14.4	6.9	20.8

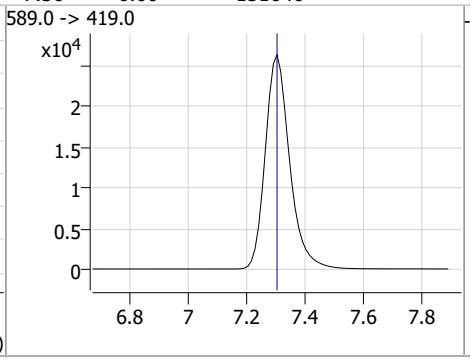


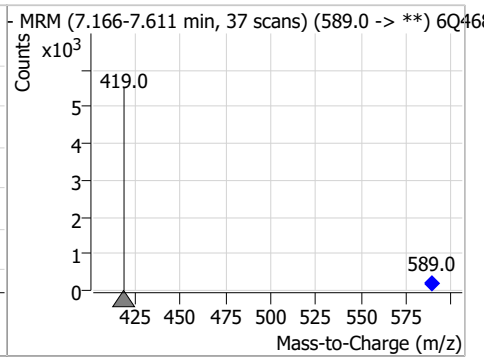




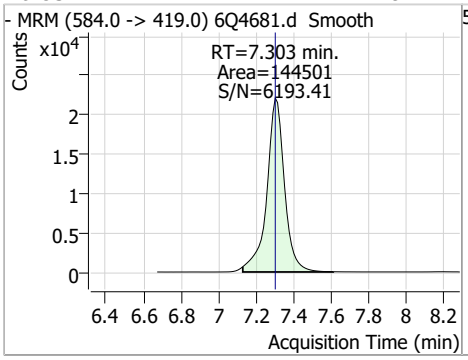
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	22.25	7.30	0.00	151040				

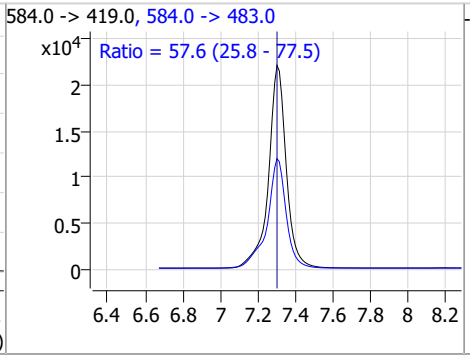


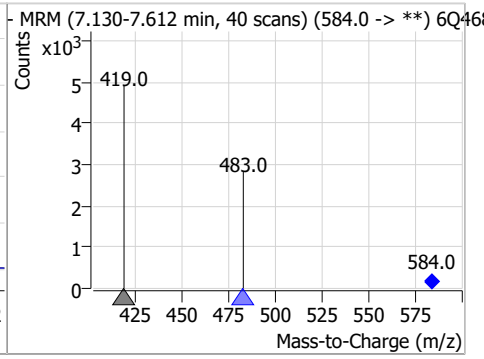




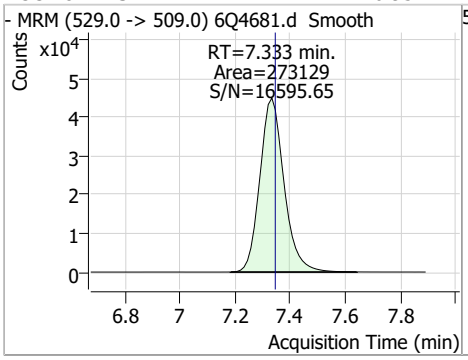
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.97	7.30	0.00	144501	584.0 -> 483.0	57.6	25.8	77.5

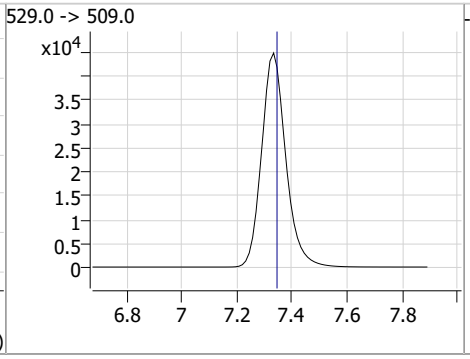


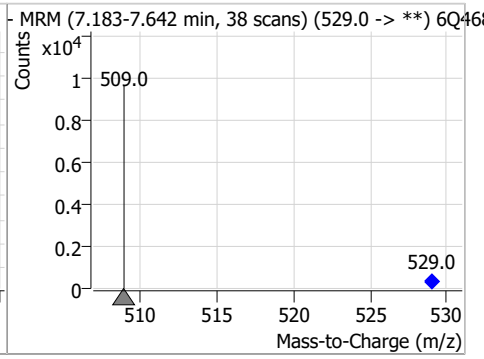




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.95	7.33	-0.01	273129				

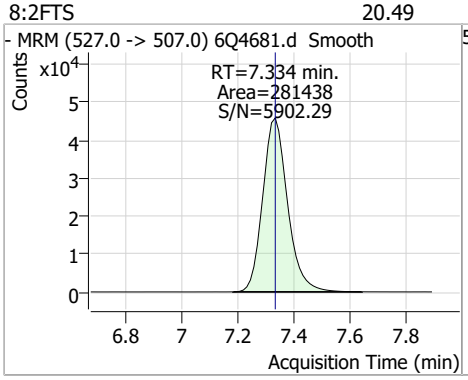


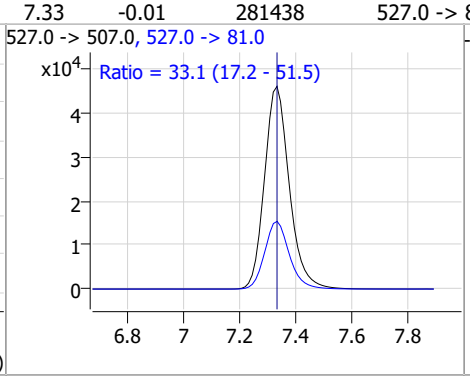


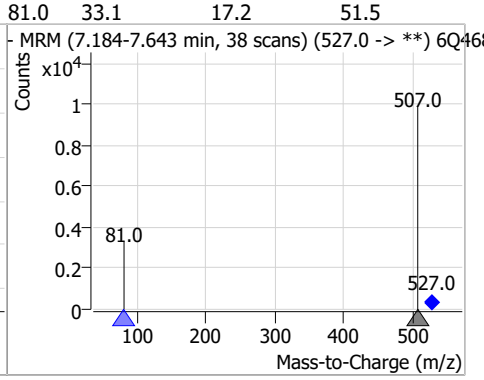


Perfluorinated Compounds by LC/MS/MS

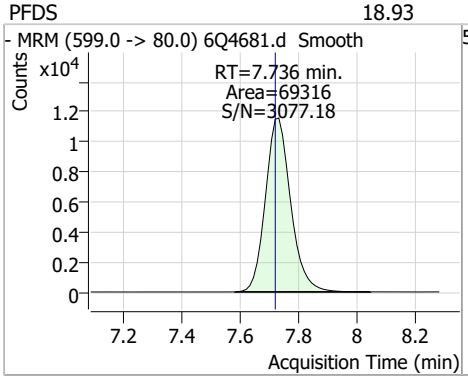
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.49	7.33	-0.01	281438	527.0 -> 81.0	33.1	17.2	51.5

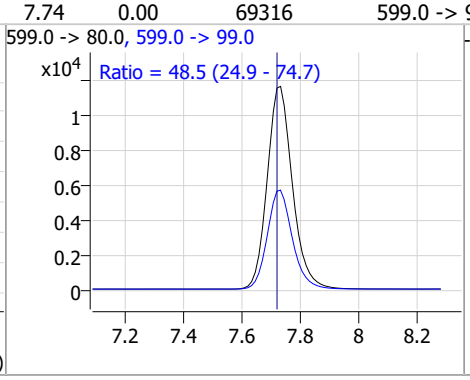


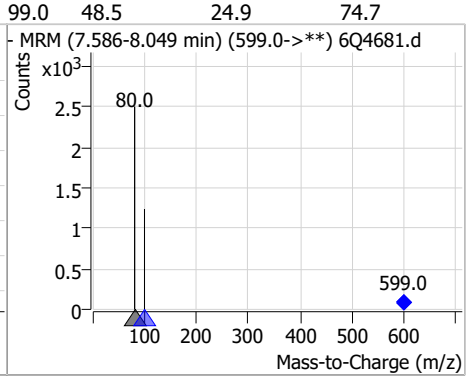




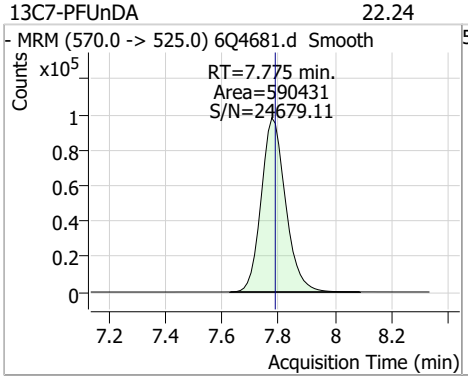
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.93	7.74	0.00	69316	599.0 -> 99.0	48.5	24.9	74.7

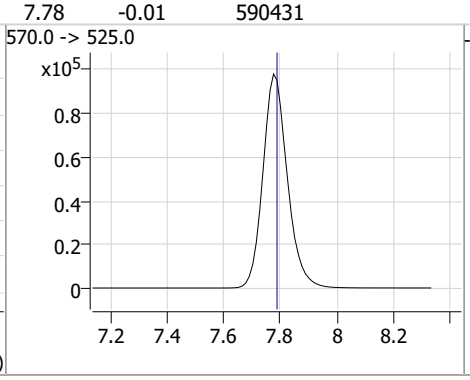


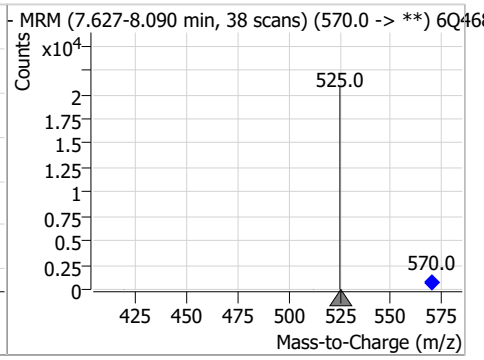




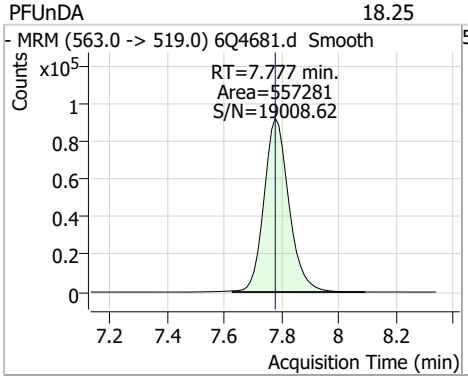
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.24	7.78	-0.01	590431				

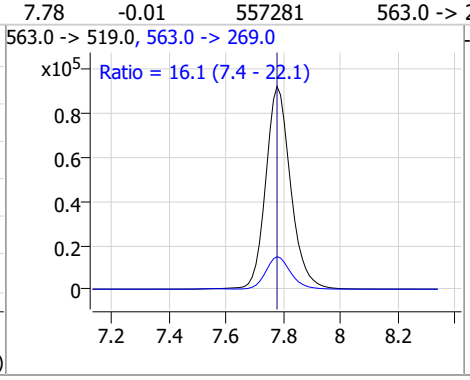


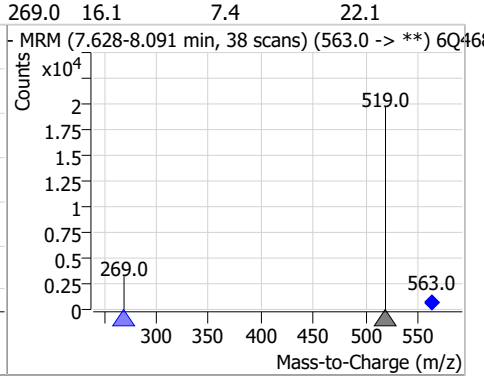




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	18.25	7.78	-0.01	557281	563.0 -> 269.0	16.1	7.4	22.1

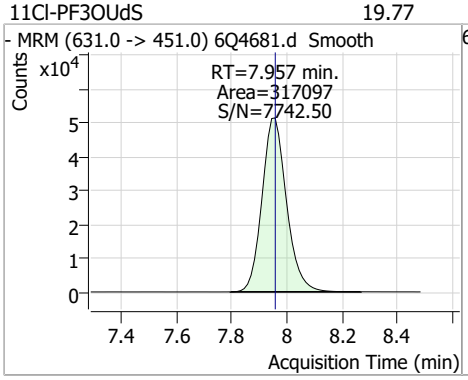


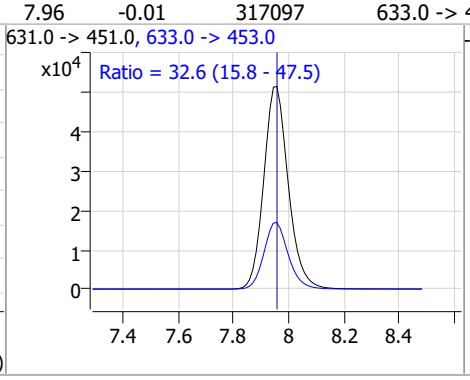


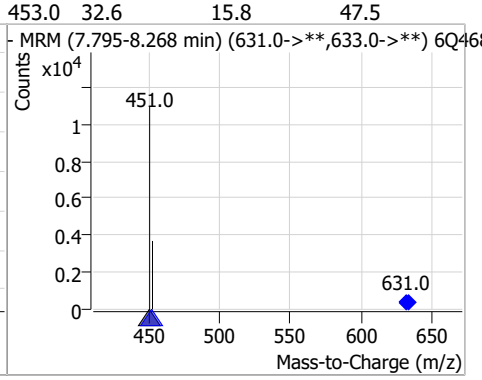


Perfluorinated Compounds by LC/MS/MS

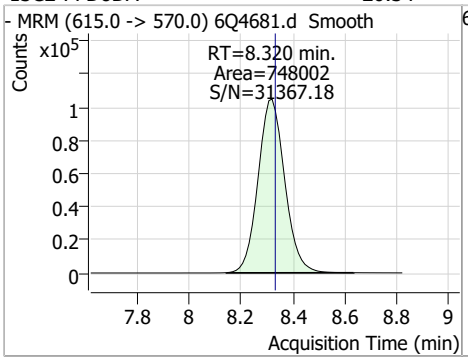
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	19.77	7.96	-0.01	317097	633.0 -> 453.0	32.6	15.8	47.5

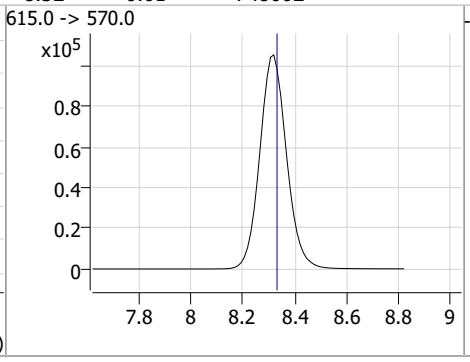


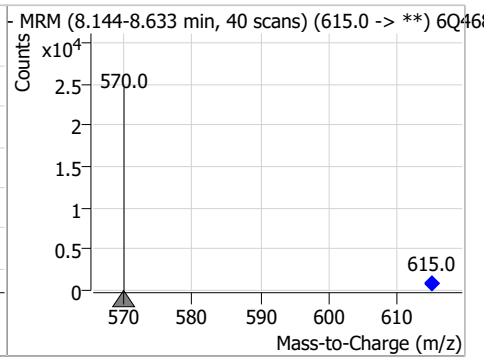




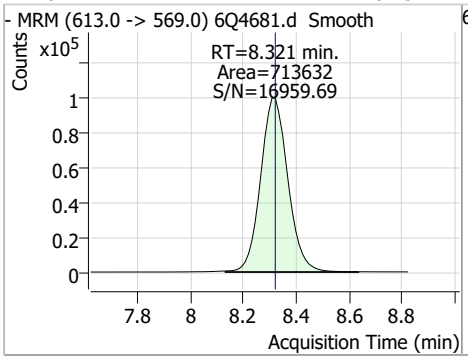
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.34	8.32	-0.01	748002				

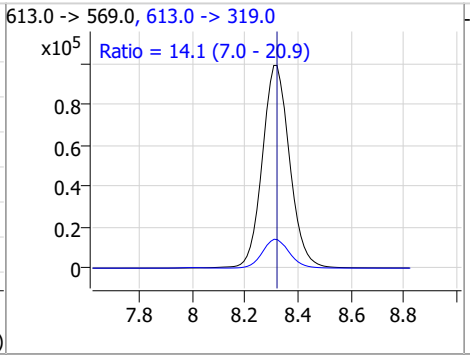


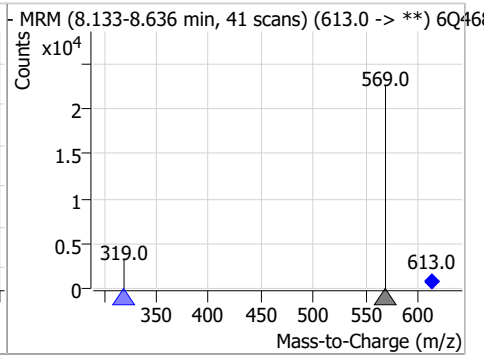




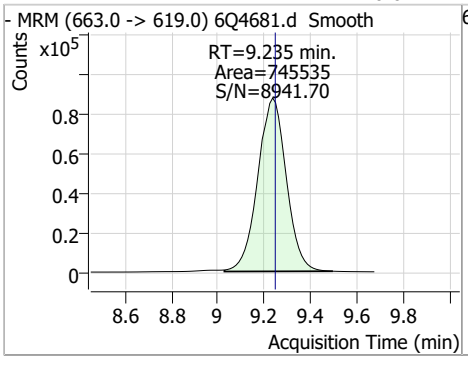
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.45	8.32	-0.01	713632	613.0 -> 319.0	14.1	7.0	20.9

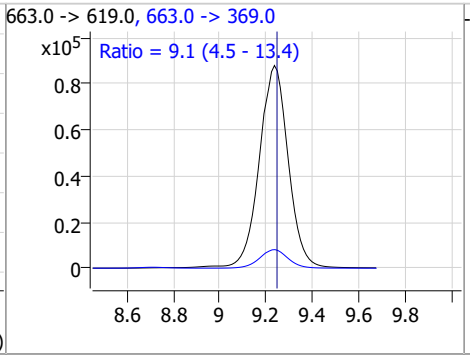


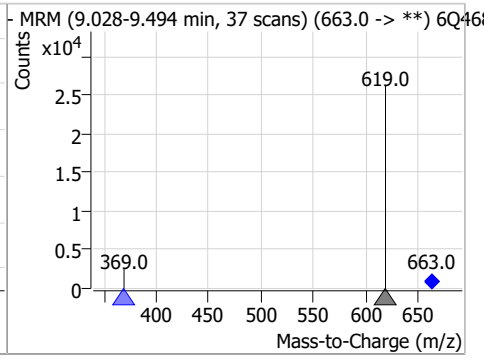




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.64	9.24	-0.02	745535	663.0 -> 369.0	9.1	4.5	13.4

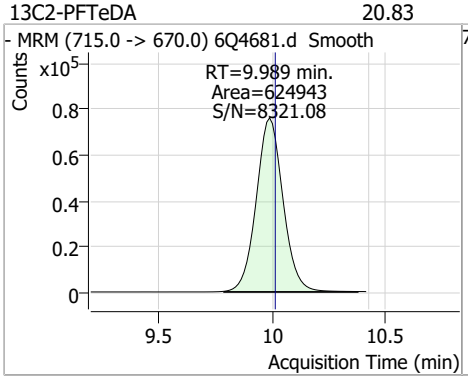


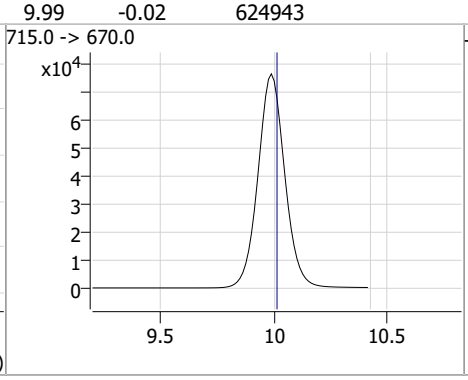


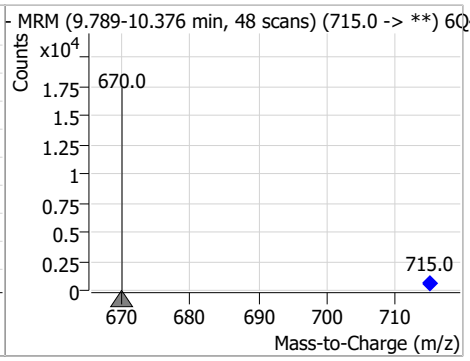


Perfluorinated Compounds by LC/MS/MS

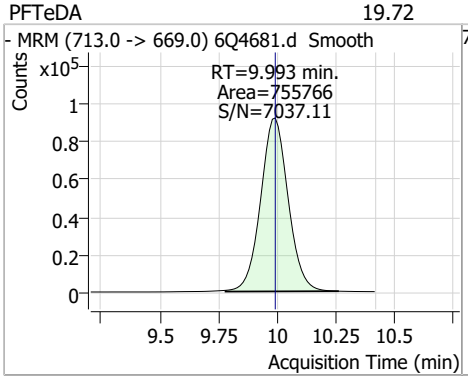
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.83	9.99	-0.02	624943				

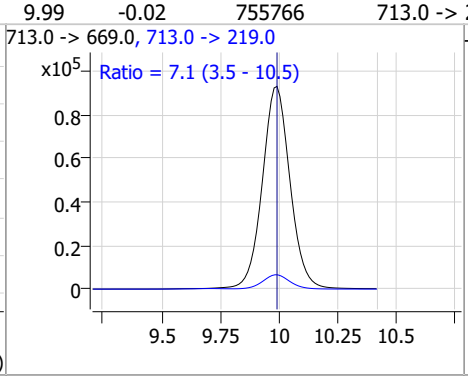


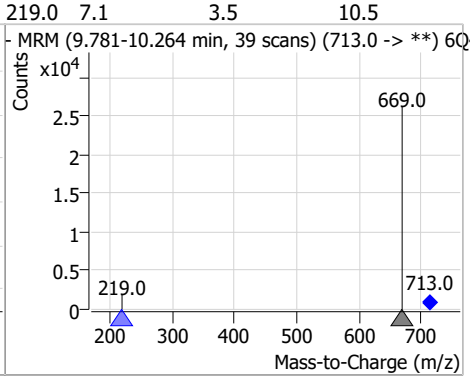




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.72	9.99	-0.02	755766	713.0 -> 219.0	7.1	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4681.D
Injection Time: 09/15/22 03:17
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4693.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 6:29:59 AM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	85320	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	148630	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	227423	20.00	µg/L	0.000
M4-PFHpA	5.433	367.0 -> 322.0	259156	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	455015	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	523631	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	443639	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	558370	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	746358	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	623169	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	216312	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	32206	20.00	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	29426	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	45409	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	280009	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	353758	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	269821	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	199455	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5302	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	49777	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	156317	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	280009	20.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.7%		
13C2-6:2FTS	6.124	429.0 -> 409.0	353758	20.73	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	269821	20.70	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.5%		
13C2-PFDoDA	8.320	615.0 -> 570.0	746358	20.29	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.5%		
13C2-PFTeDA	9.989	715.0 -> 670.0	623169	20.77	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C3-PFBS	3.622	302.0 -> 99.0	32206	21.03	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.1%		
13C3-PFHxS	5.475	402.0 -> 99.0	29426	21.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C4-PFBA	1.949	217.0 -> 172.0	85320	21.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C4-PFHpA	5.433	367.0 -> 322.0	259156	20.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C5-PFHxA	4.573	318.0 -> 273.0	227423	21.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	148630	21.20	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.0%		
13C6-PFDA	7.283	519.0 -> 474.0	443639	21.80	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%		
13C7-PFUnDA	7.775	570.0 -> 525.0	558370	21.03 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.2%		
13C8-FOSA	6.654	506.0 -> 78.0	216312	22.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
13C8-PFOA	6.138	421.0 -> 376.0	455015	21.45 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C8-PFOS	6.717	507.0 -> 99.0	45409	21.41 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.0%		
13C9-PFNA	6.745	472.0 -> 427.0	523631	20.32 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
d3-MeFOSAA	7.155	573.0 -> 419.0	199455	23.05 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5310	19.98 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d3-MeFOSA	7.085	515.0 -> 169.0	49777	22.00 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
d5-EtFOSAA	7.302	589.0 -> 419.0	156400	23.04 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.2%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	317240	20.96 µg/L		98
		327.0 -> 81.0	99220			
6:2FTS	6.124	427.0 -> 407.0	375246	20.95 µg/L		96
		427.0 -> 81.0	96085			
8:2FTS	7.334	527.0 -> 507.0	286673	21.13 µg/L		94
		527.0 -> 81.0	88630			
EtFOSAA	7.303	584.0 -> 419.0	153967	18.48 µg/L		99
		584.0 -> 483.0	80785			
FOSA	6.656	498.0 -> 78.0	220837	20.35 µg/L		99
		498.0 -> 478.0	8981			
MeFOSAA	7.168	570.0 -> 419.0	174205	19.06 µg/L		98
		570.0 -> 512.0	57548			
PFBA	1.943	213.0 -> 169.0	37000	19.87 µg/L		100
PFBS	3.627	299.0 -> 80.0	106225	19.84 µg/L		100
		299.0 -> 99.0	39659			
PFDA	7.284	513.0 -> 469.0	577425	17.63 µg/L		100
		513.0 -> 219.0	81325			
PFDoDA	8.321	613.0 -> 569.0	717780	20.61 µg/L		100
		613.0 -> 319.0	98796			
PFDS	7.736	599.0 -> 80.0	64728	18.69 µg/L		97
		599.0 -> 99.0	33368			
PFHpA	5.434	363.0 -> 319.0	336435	19.96 µg/L		99
		363.0 -> 169.0	50182			
PFHpS	6.136	449.0 -> 80.0	81223	20.49 µg/L		99
		449.0 -> 99.0	43207			
PFHxA	4.574	313.0 -> 269.0	233462	19.52 µg/L		100
		313.0 -> 119.0	5631			
PFHxS	5.465	399.0 -> 80.0	86130	20.43 µg/L	m	99
		399.0 -> 99.0	41467			
PFNA	6.745	463.0 -> 419.0	494496	20.04 µg/L		100
		463.0 -> 219.0	90707			
PFNS	7.256	549.0 -> 80.0	92796	20.11 µg/L		96
		549.0 -> 99.0	48505			
PFOA	6.138	413.0 -> 369.0	460983	18.76 µg/L		99
		413.0 -> 169.0	73075			
PFOS	6.719	499.0 -> 80.0	81587	19.38 µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

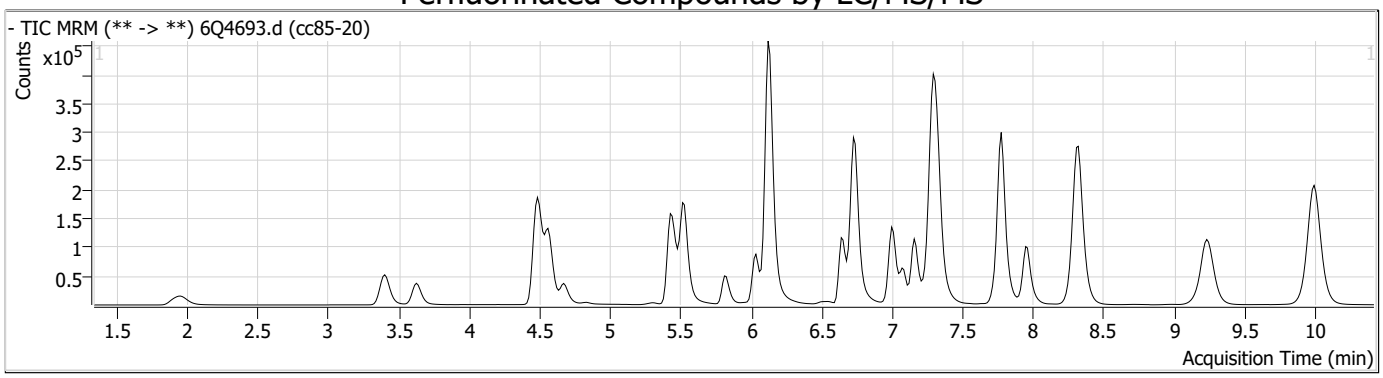
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	38768			
PFPeA	3.408	263.0 -> 219.0	123665	19.75	µg/L	100
PFPeS	4.668	349.0 -> 80.0	87027	19.52	µg/L	98
		349.0 -> 99.0	40722			
PFTeDA	9.993	713.0 -> 669.0	754801	19.75	µg/L	100
		713.0 -> 219.0	53317			
PFTrDA	9.235	663.0 -> 619.0	749255	20.79	µg/L	100
		663.0 -> 369.0	67650			
PFUnDA	7.777	563.0 -> 519.0	575862	19.95	µg/L	98
		563.0 -> 269.0	89066			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	326401	20.39	µg/L	100
		633.0 -> 453.0	103591			
9Cl-PF3ONS	6.996	531.0 -> 351.0	418645	18.55	µg/L	98
		533.0 -> 353.0	133368			
ADONA	5.532	377.0 -> 251.0	547753	20.08	µg/L	98
		377.0 -> 85.0	135744			
HFPO-DA	4.840	285.0 -> 169.0	5214	20.80	µg/L	98
		285.0 -> 185.0	776			
MeFOSA	7.086	512.0 -> 169.0	56454	20.78	µg/L	97
		512.0 -> 219.0	56233			
4-PFECHS	6.032	461.0 -> 381.0	270209	18.45	µg/L	99
		461.0 -> 99.0	91975			
FBSA	4.514	298.0 -> 78.0	221832	20.02	µg/L	100
		298.0 -> 64.0	15393			
FHxSA	5.828	398.0 -> 78.0	189917	18.91	µg/L	100
		398.0 -> 64.0	6687			

 # = Qualifier out of range, m = manually integrated, + = Area summed

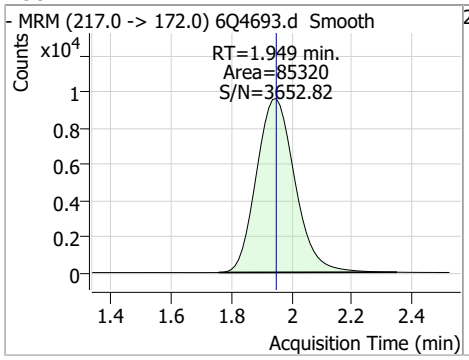
7.7.96

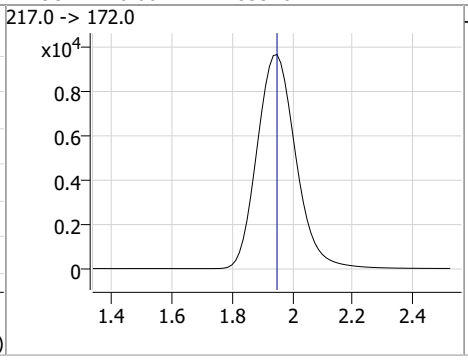
7

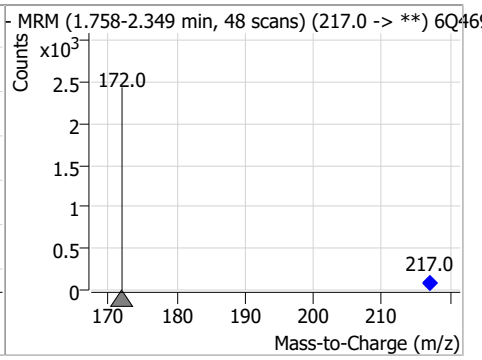
Perfluorinated Compounds by LC/MS/MS



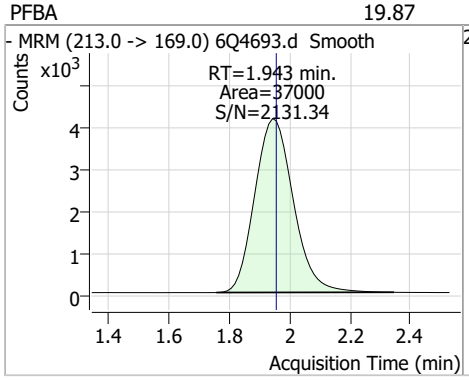
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.44	1.95	0.00	85320				

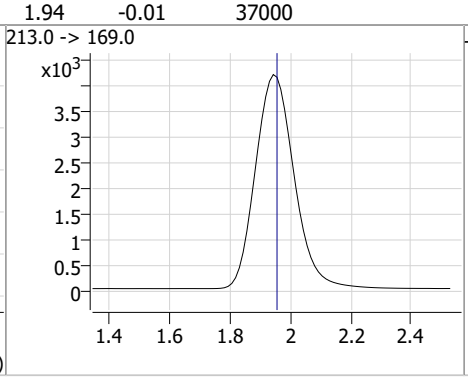


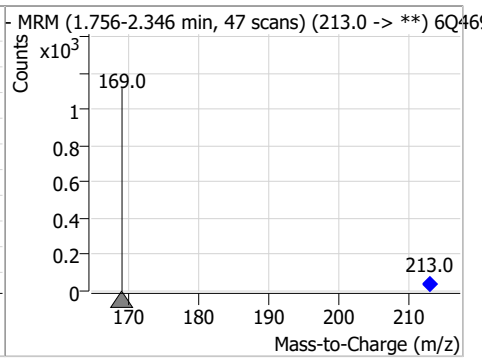




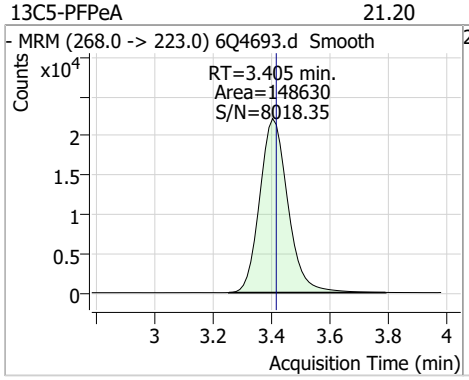
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.87	1.94	-0.01	37000				

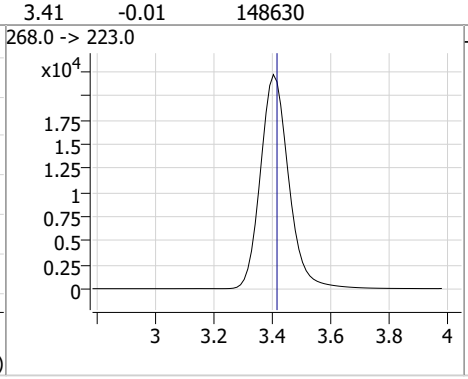


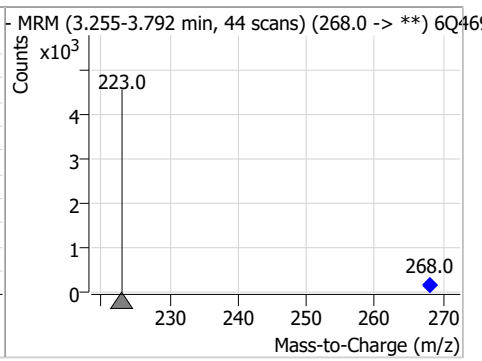




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.20	3.41	-0.01	148630				

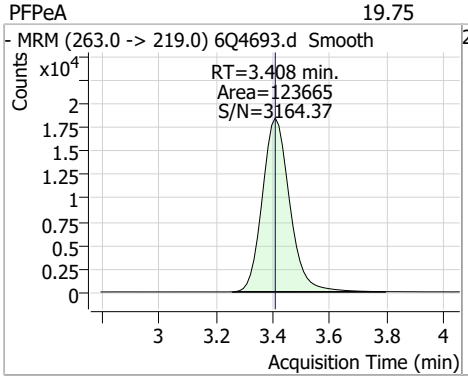


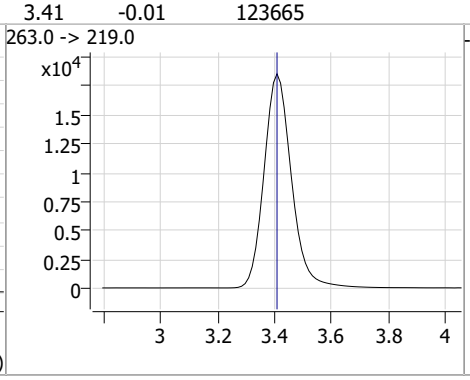


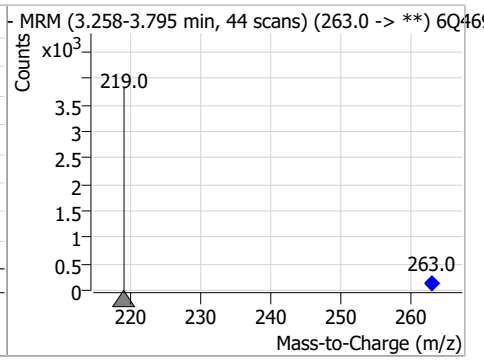


Perfluorinated Compounds by LC/MS/MS

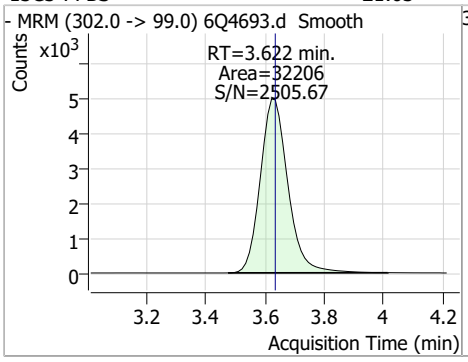
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.75	3.41	-0.01	123665				

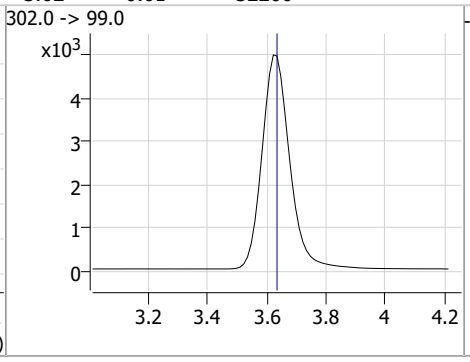


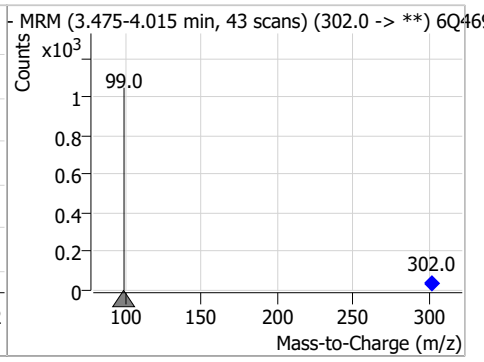




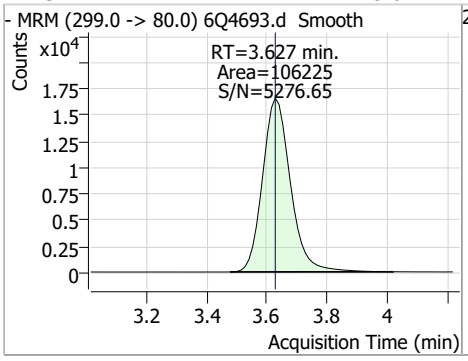
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.03	3.62	-0.01	32206				

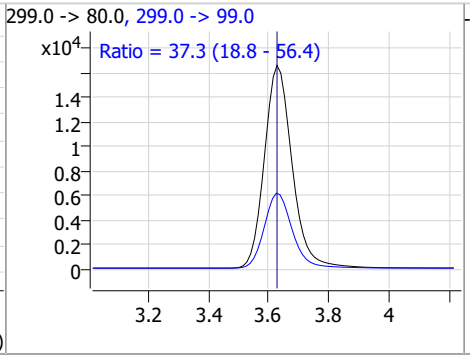


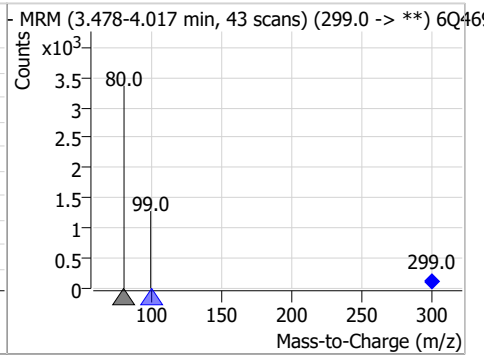




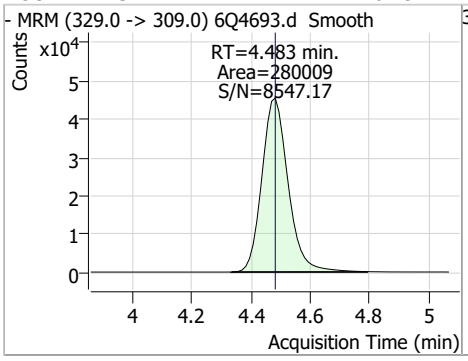
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.84	3.63	-0.01	106225	299.0 -> 99.0	37.3	18.8	56.4

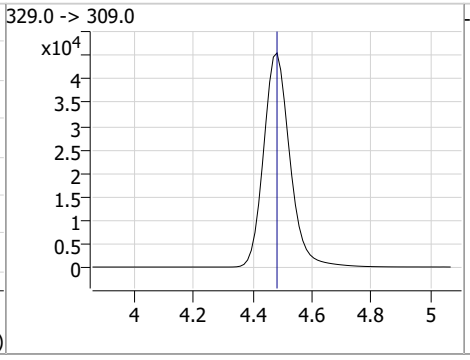


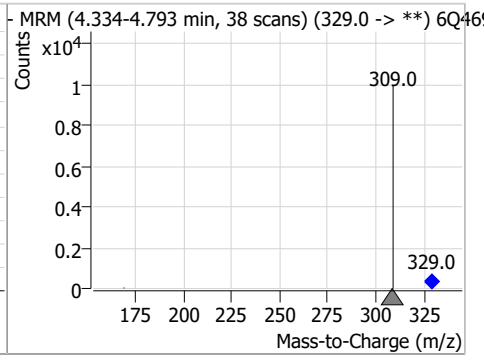




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.73	4.48	0.00	280009				

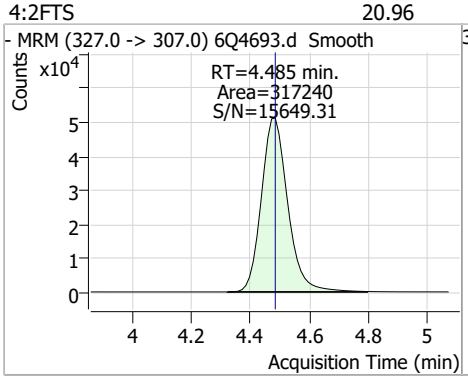


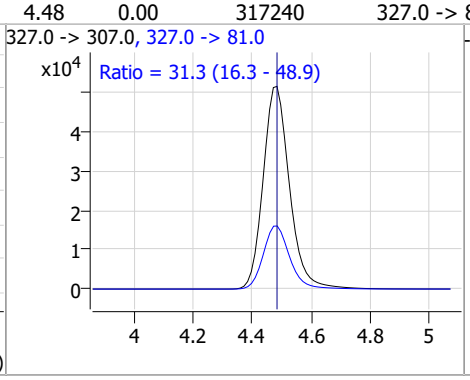


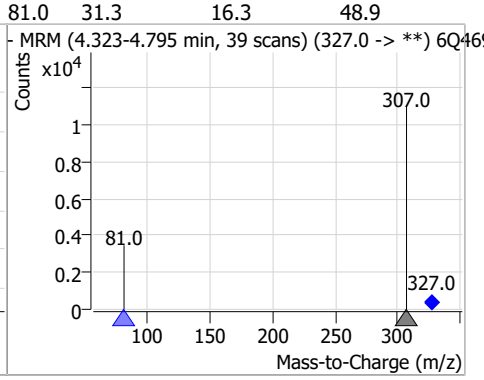


Perfluorinated Compounds by LC/MS/MS

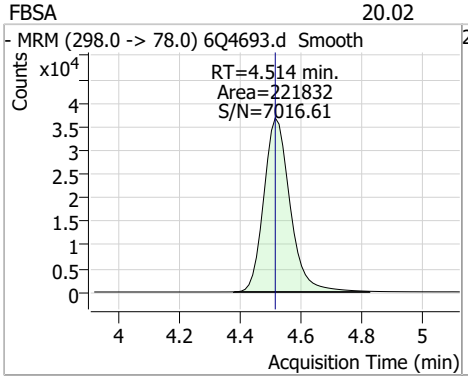
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.96	4.48	0.00	317240	327.0 -> 81.0	31.3	16.3	48.9

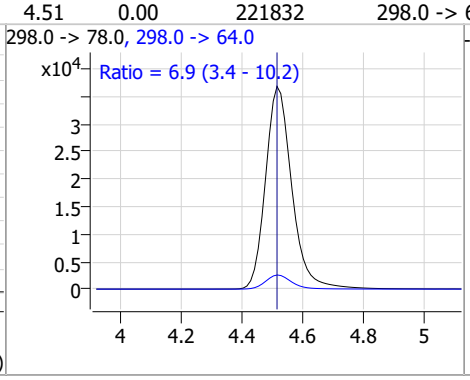


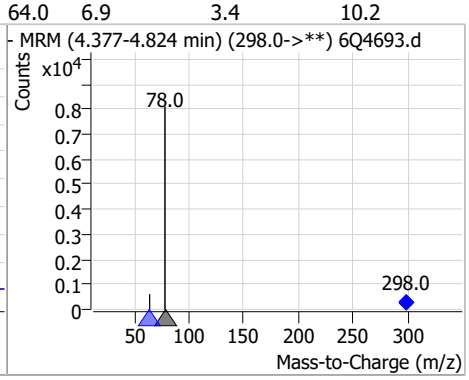




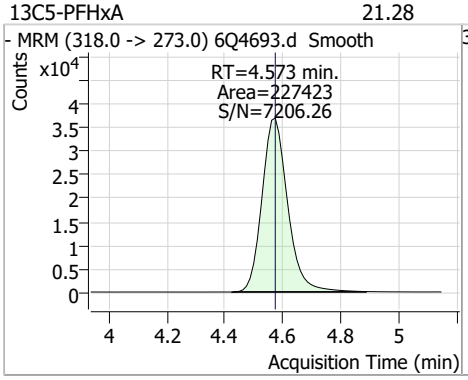
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.02	4.51	0.00	221832	298.0 -> 64.0	6.9	3.4	10.2

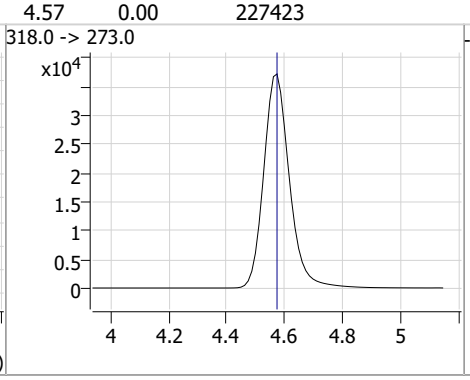


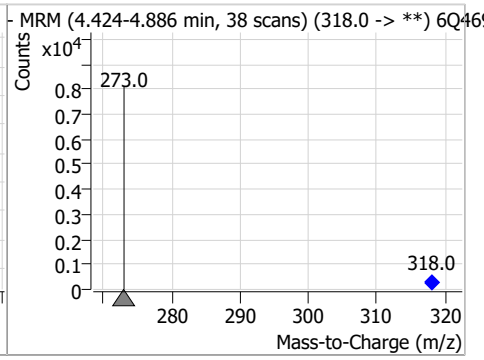




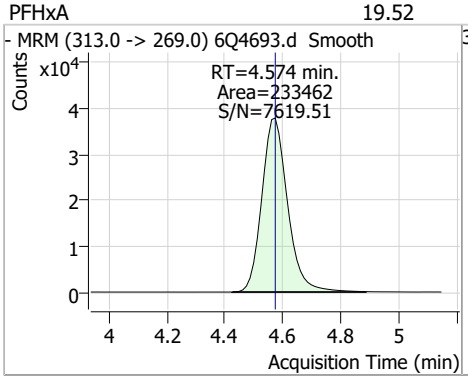
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.28	4.57	0.00	227423				

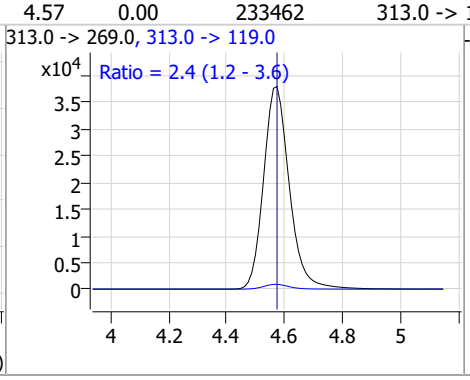


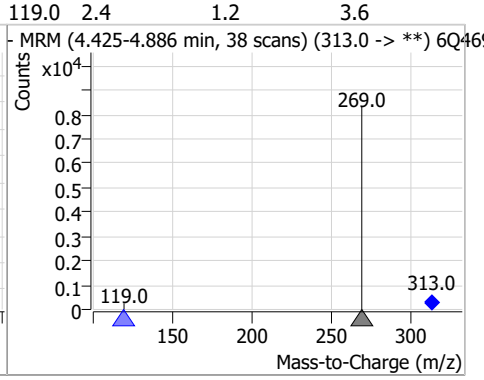




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.52	4.57	0.00	233462	313.0 -> 119.0	2.4	1.2	3.6

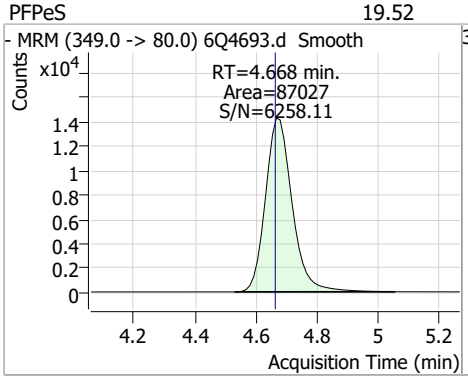


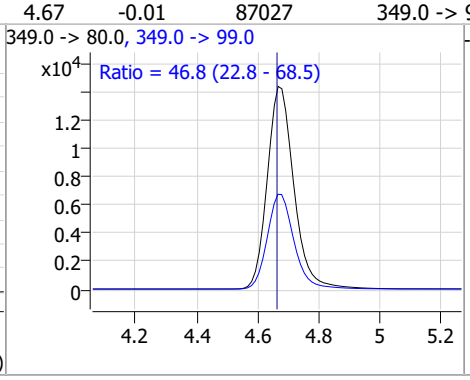


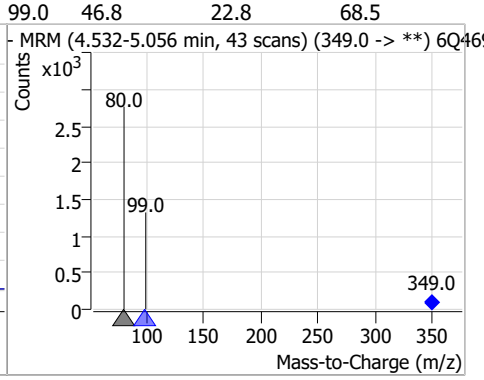


Perfluorinated Compounds by LC/MS/MS

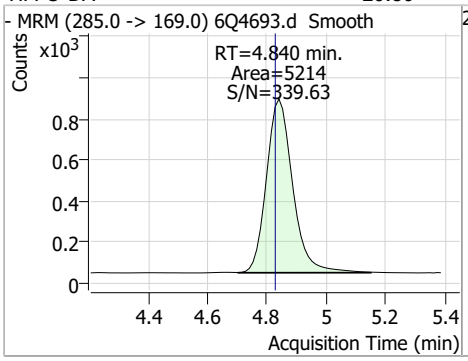
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.52	4.67	-0.01	87027	349.0 -> 99.0	46.8	22.8	68.5

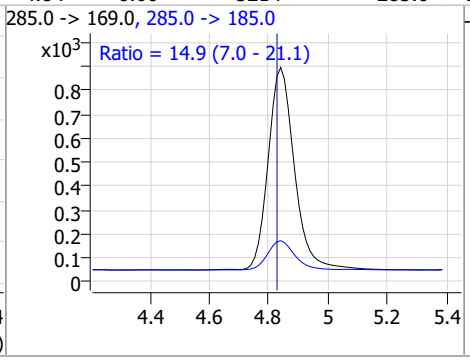


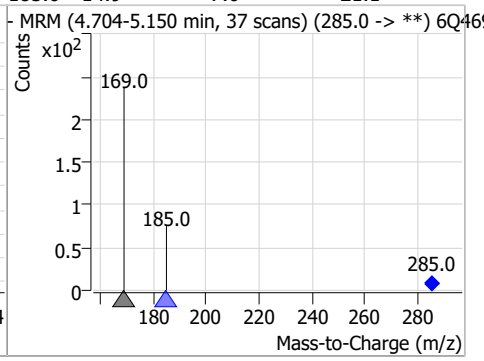




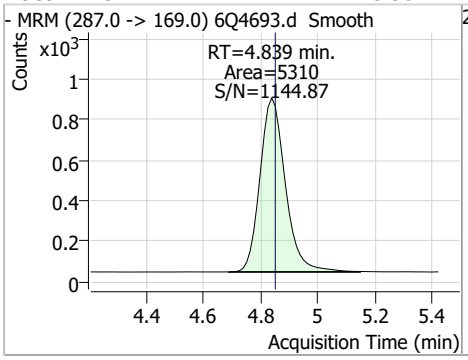
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	20.80	4.84	0.00	5214	285.0 -> 185.0	14.9	7.0	21.1

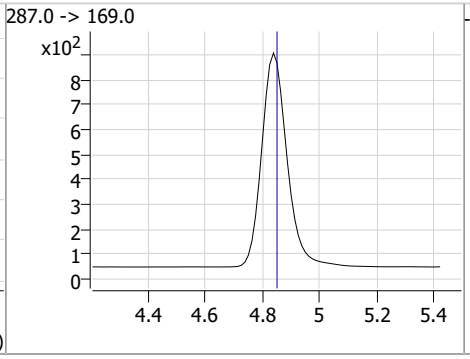


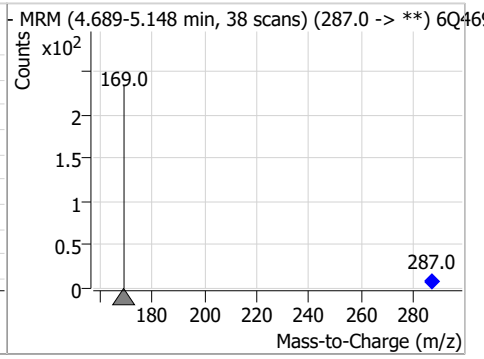




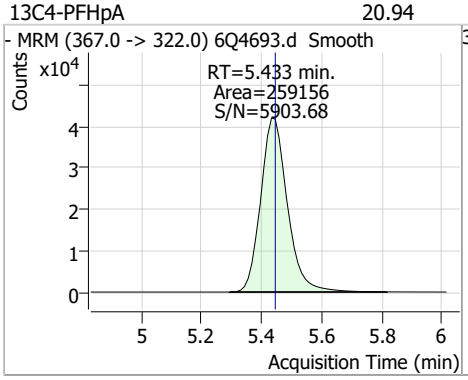
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.98	4.84	-0.01	5310				

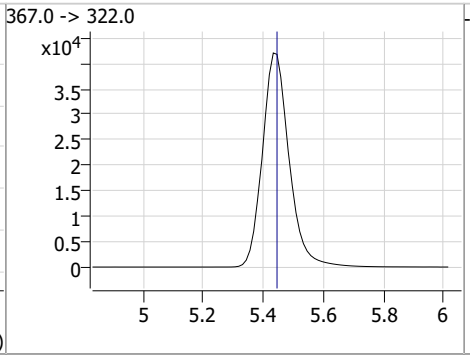


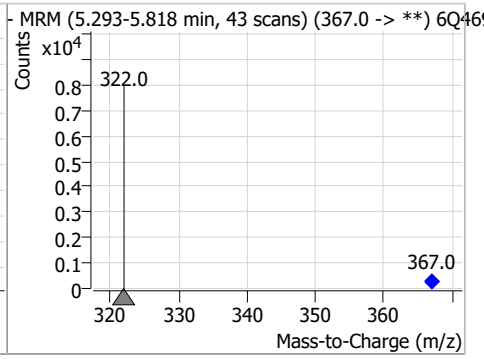




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.94	5.43	-0.01	259156				

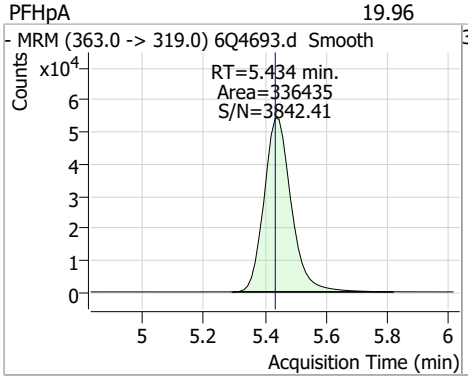


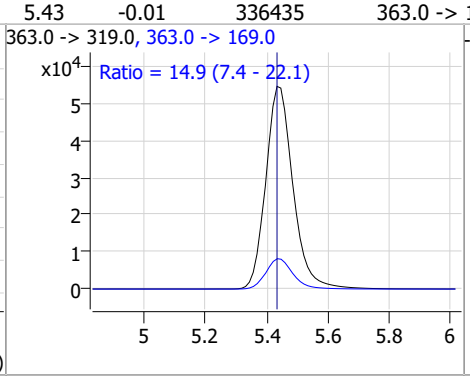


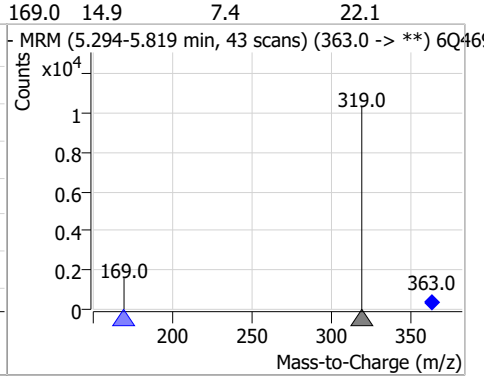


Perfluorinated Compounds by LC/MS/MS

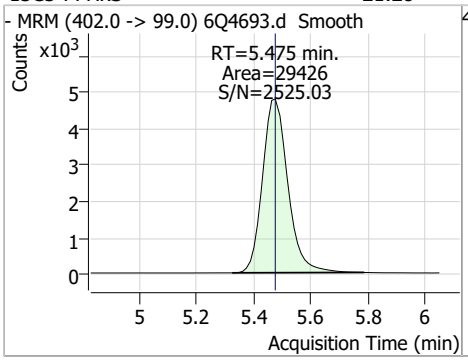
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.96	5.43	-0.01	336435	363.0 -> 169.0	14.9	7.4	22.1

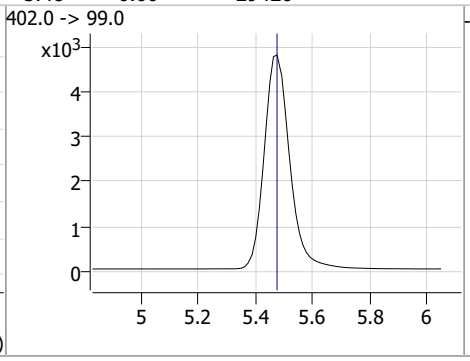


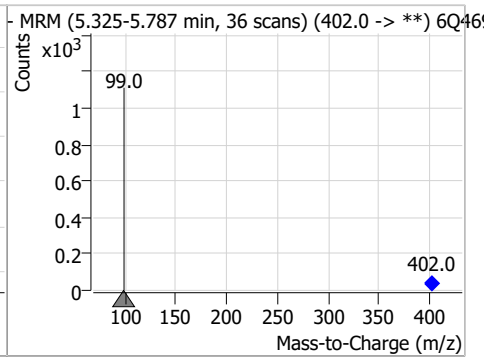




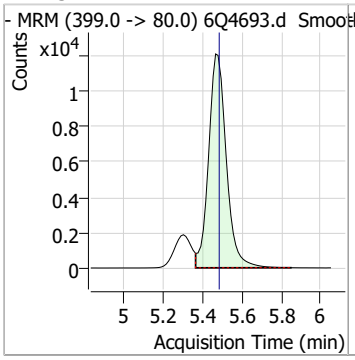
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.28	5.48	0.00	29426				

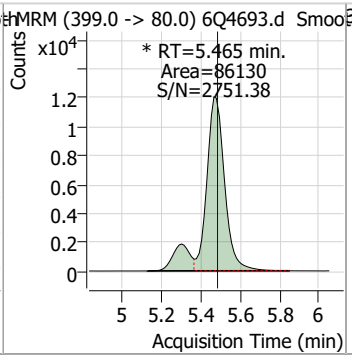


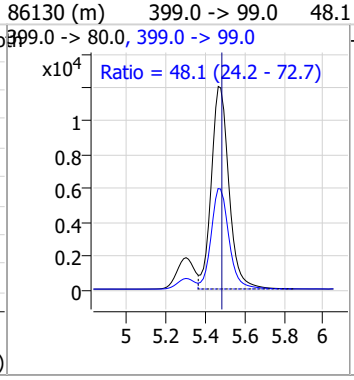


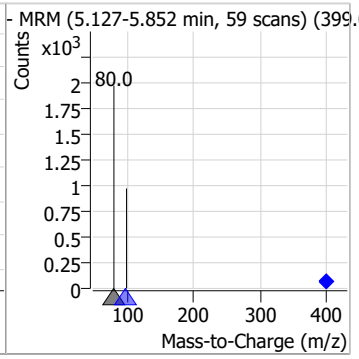


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.43	5.47	-0.01	86130 (m)	399.0 -> 99.0	48.1	24.2	72.7

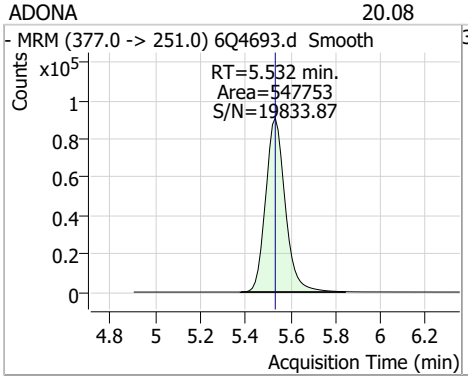


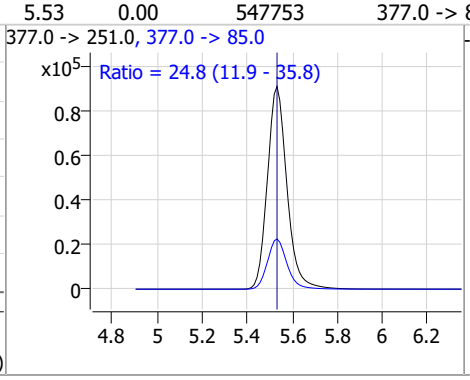


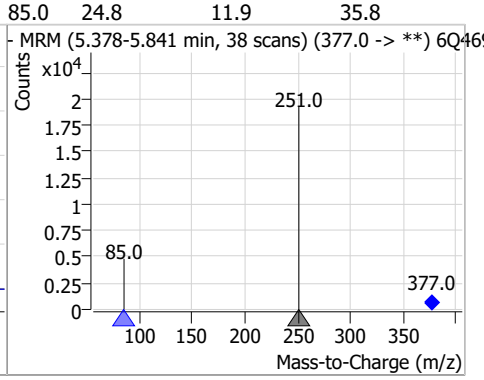




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.08	5.53	0.00	547753	377.0 -> 85.0	24.8	11.9	35.8

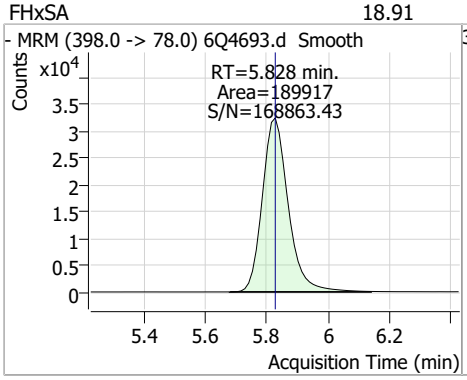


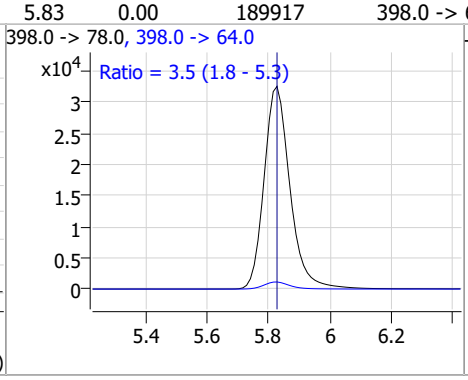


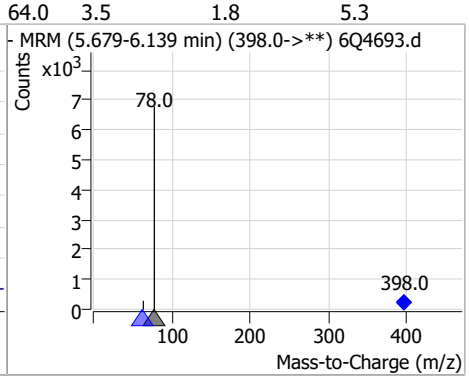


Perfluorinated Compounds by LC/MS/MS

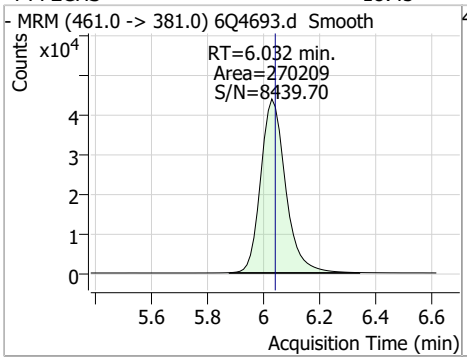
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.91	5.83	0.00	189917	398.0 -> 64.0	3.5	1.8	5.3

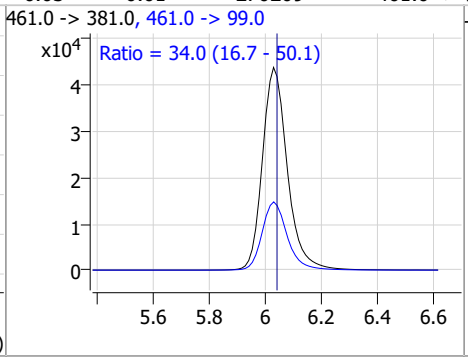


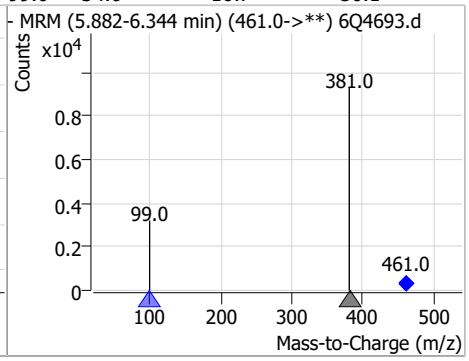




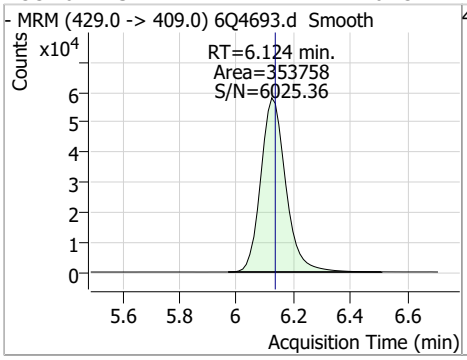
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.45	6.03	-0.01	270209	461.0 -> 99.0	34.0	16.7	50.1

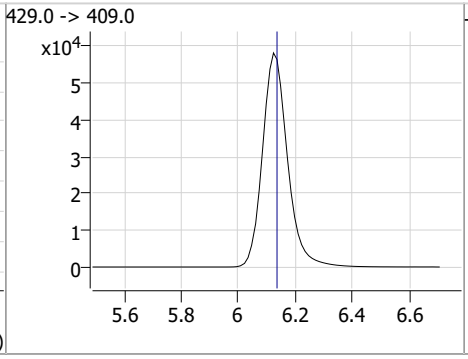


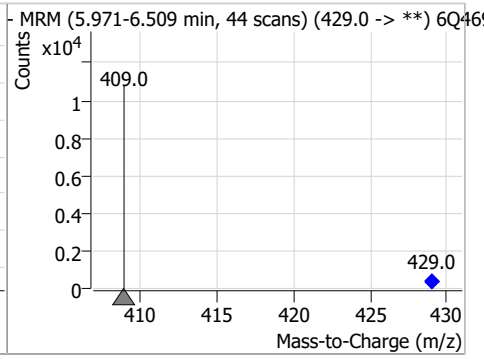




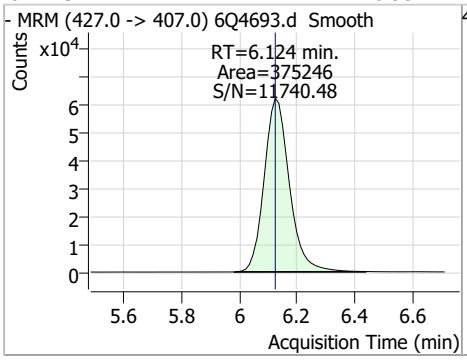
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.73	6.12	-0.01	353758				

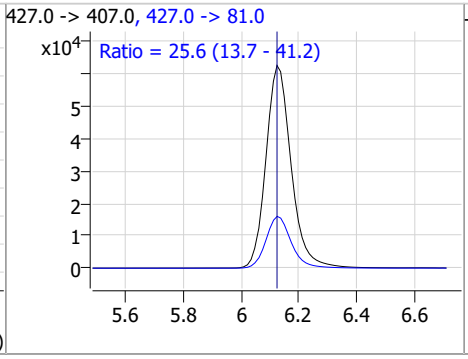


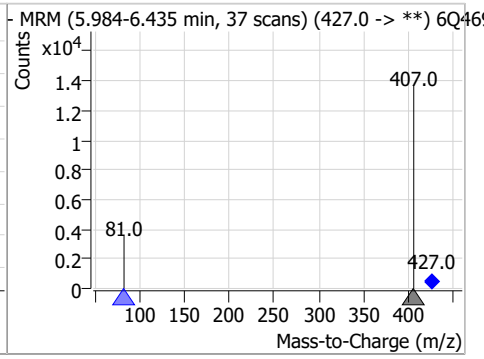




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.95	6.12	-0.01	375246	427.0 -> 81.0	25.6	13.7	41.2

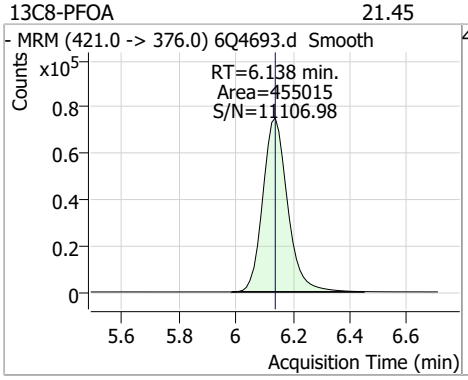


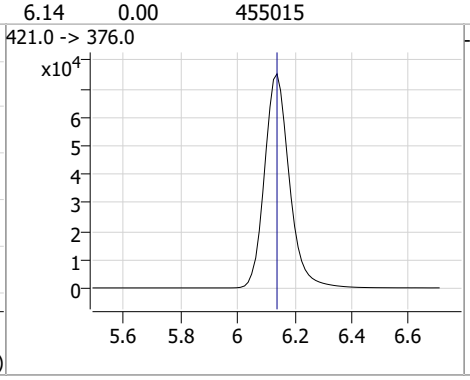


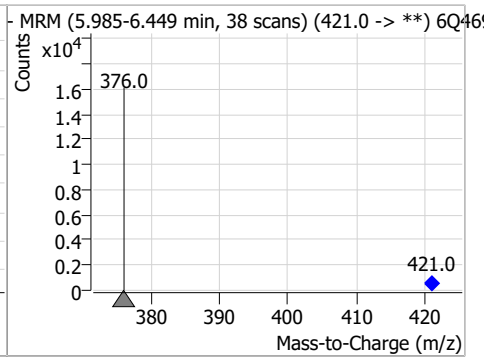


Perfluorinated Compounds by LC/MS/MS

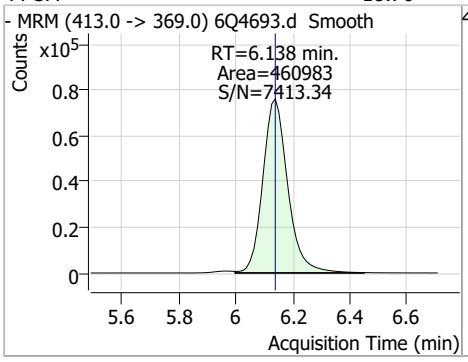
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.45	6.14	0.00	455015				

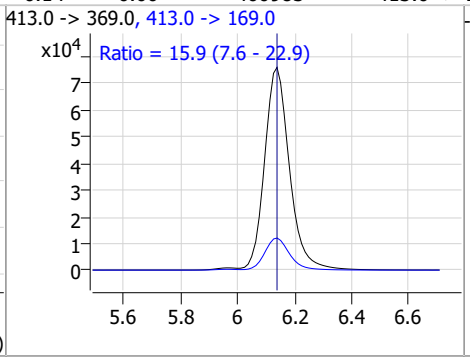


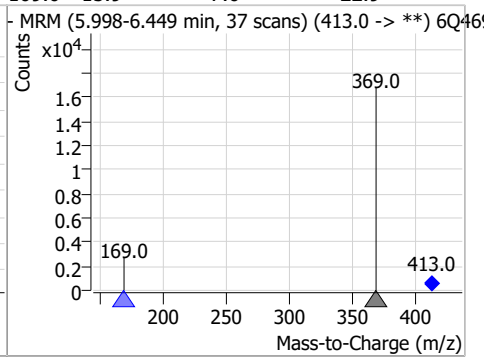




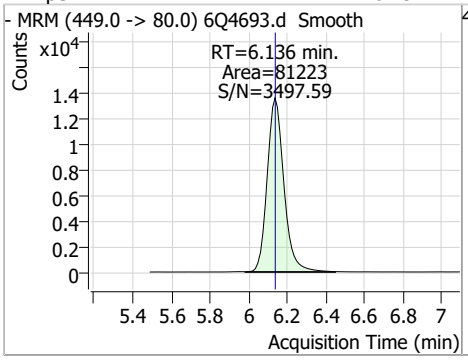
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	18.76	6.14	0.00	460983	413.0 -> 169.0	15.9	7.6	22.9

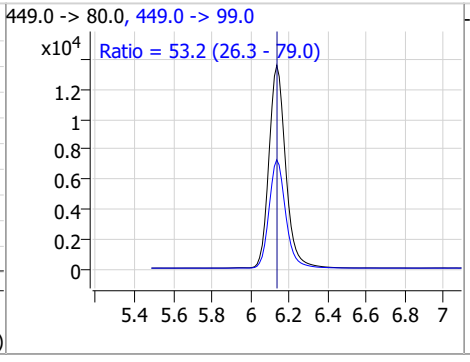


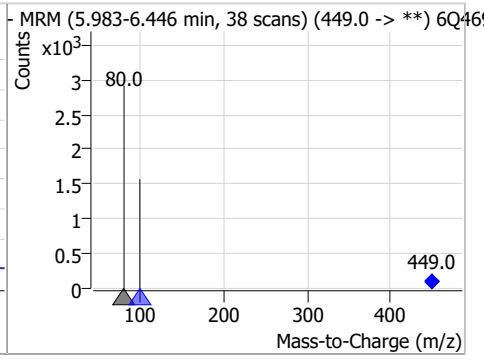




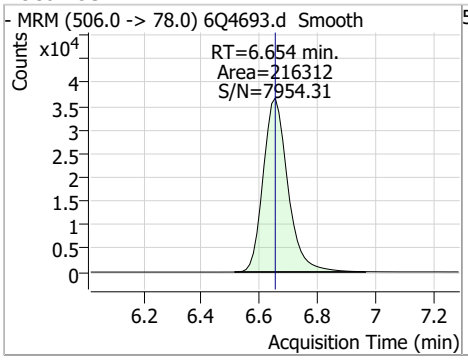
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.49	6.14	-0.01	81223	449.0 -> 99.0	53.2	26.3	79.0

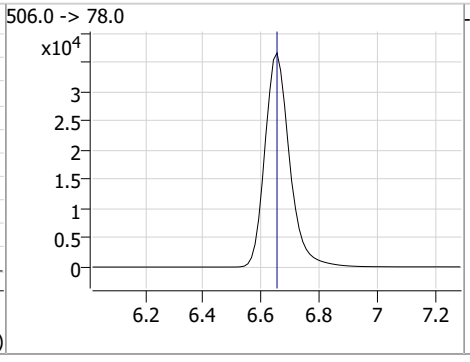


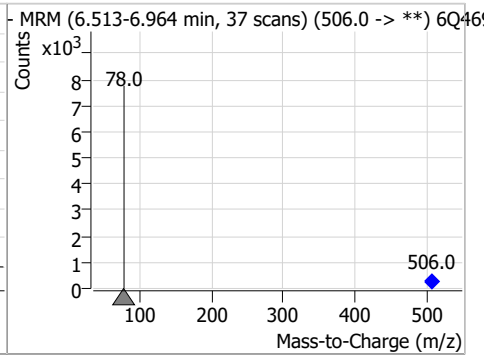




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.12	6.65	0.00	216312				

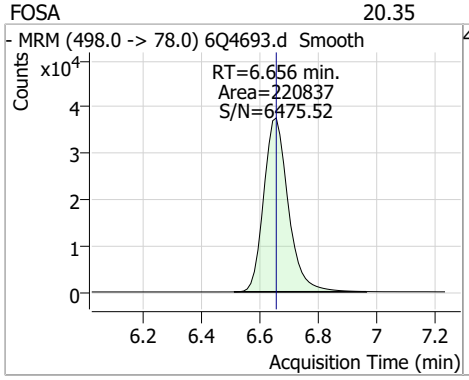


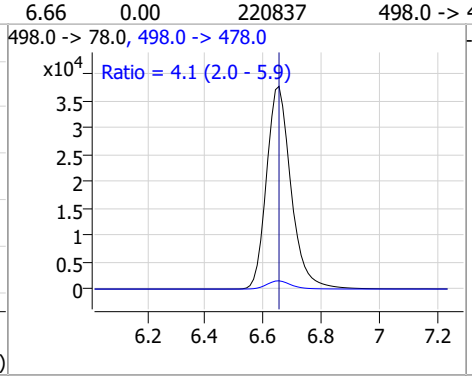


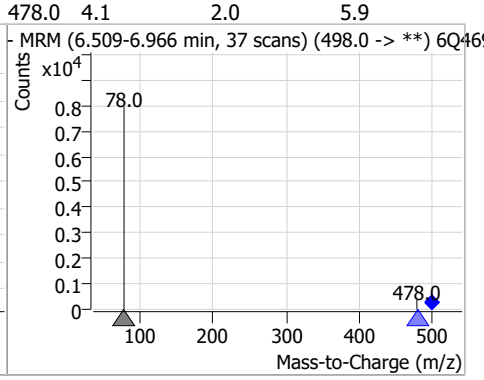


Perfluorinated Compounds by LC/MS/MS

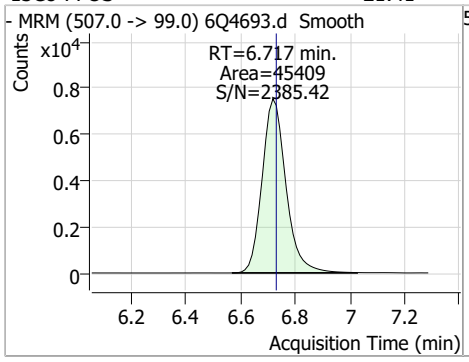
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.35	6.66	0.00	220837	498.0 -> 478.0	4.1	2.0	5.9

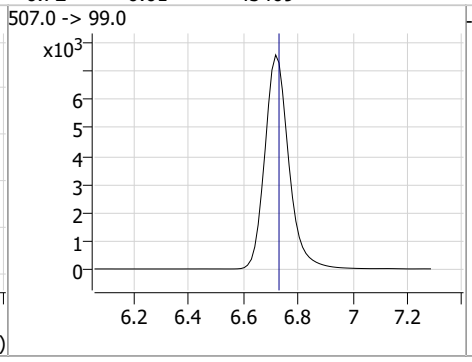


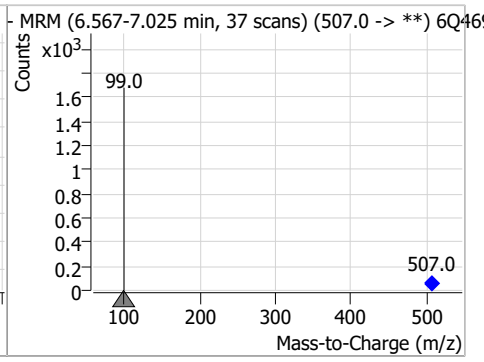




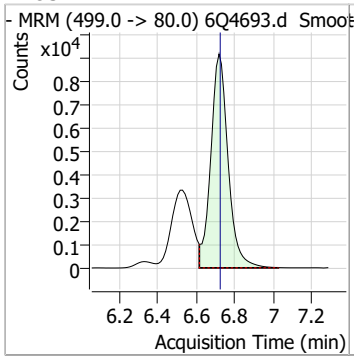
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.41	6.72	-0.01	45409				

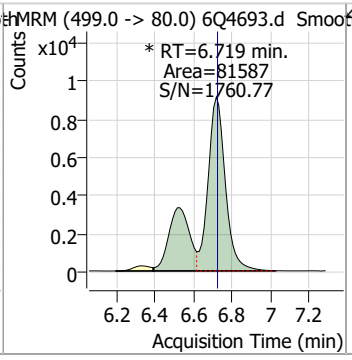


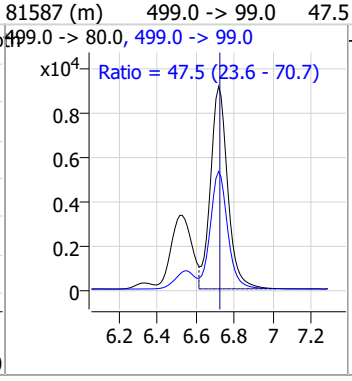


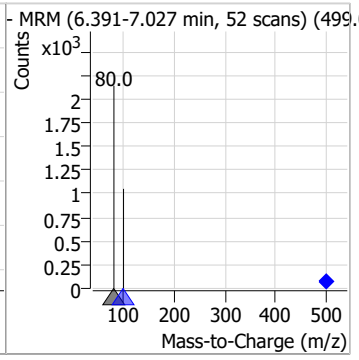


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.38	6.72	-0.01	81587 (m)	499.0 -> 99.0	47.5	23.6	70.7

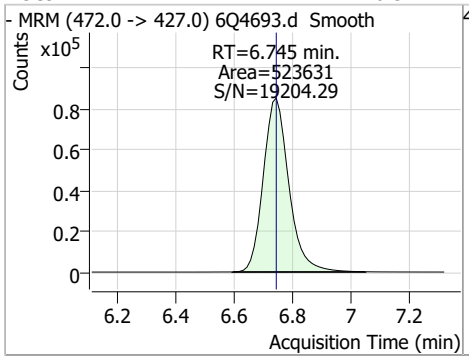


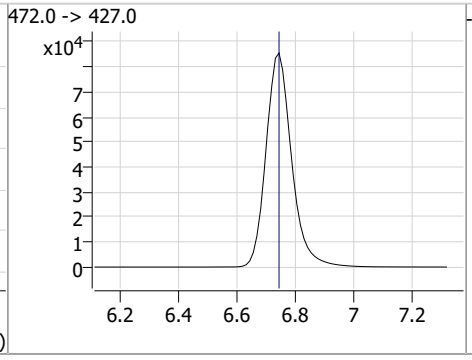


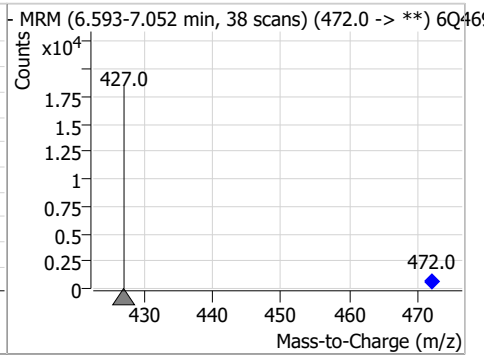




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	20.32	6.74	0.00	523631				

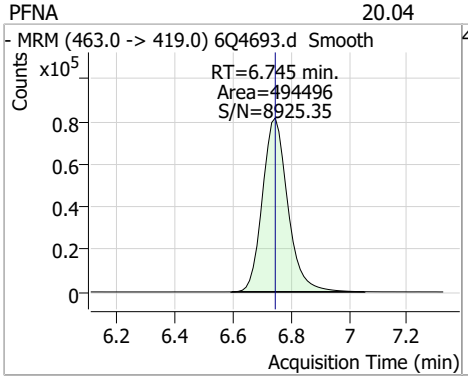


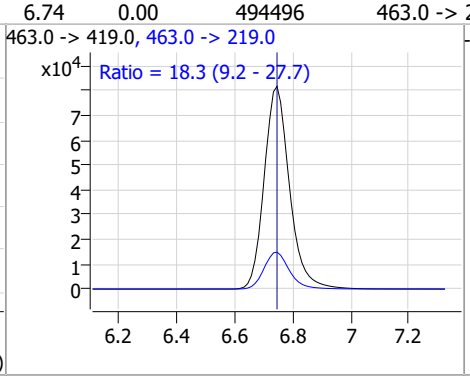


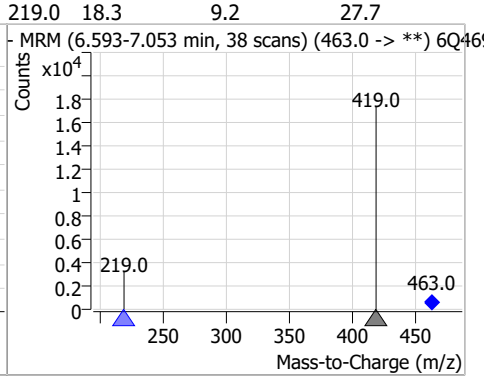


Perfluorinated Compounds by LC/MS/MS

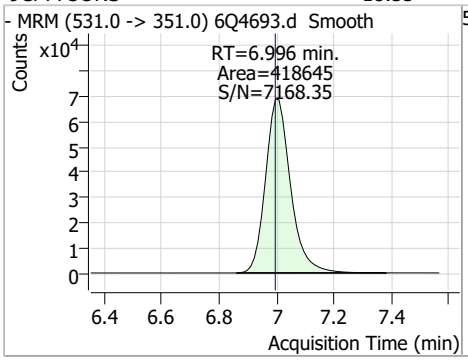
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	20.04	6.74	0.00	494496	463.0 -> 219.0	18.3	9.2	27.7

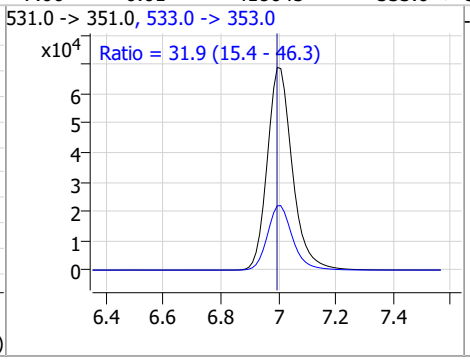


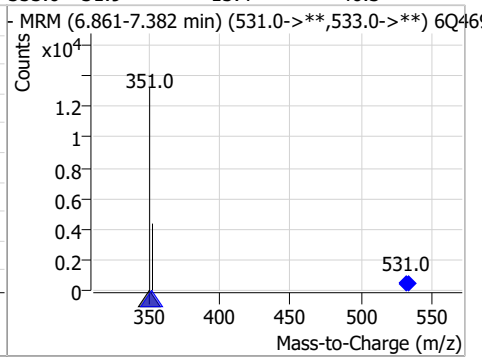




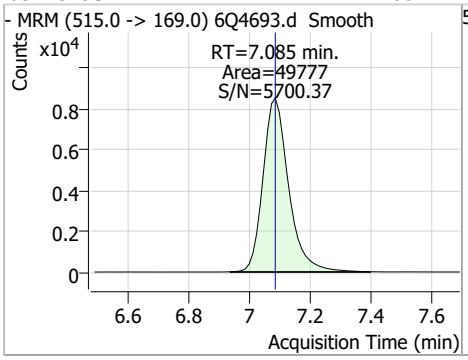
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	18.55	7.00	-0.01	418645	533.0 -> 353.0	31.9	15.4	46.3

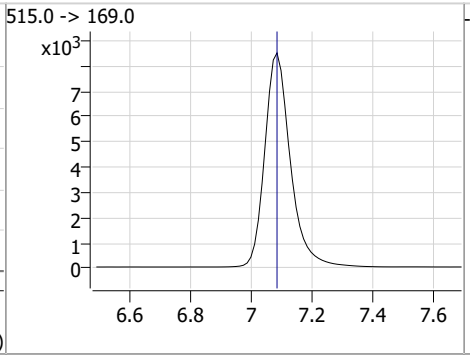


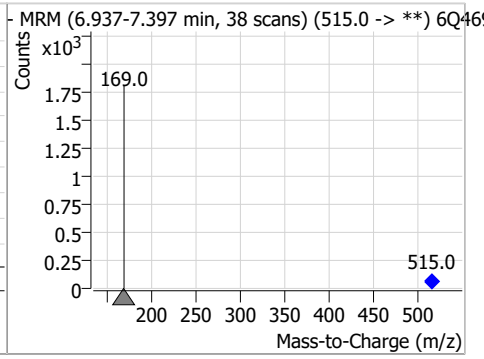




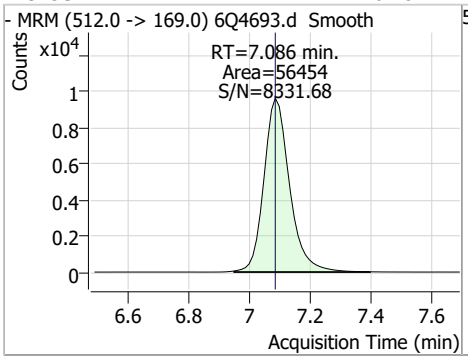
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.00	7.08	0.00	49777				

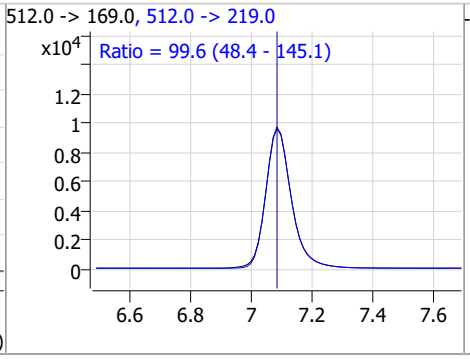


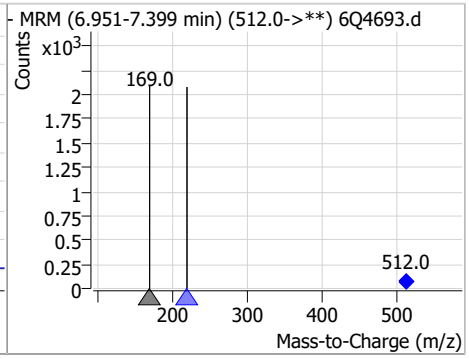




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.78	7.09	0.00	56454	512.0 -> 219.0	99.6	48.4	145.1

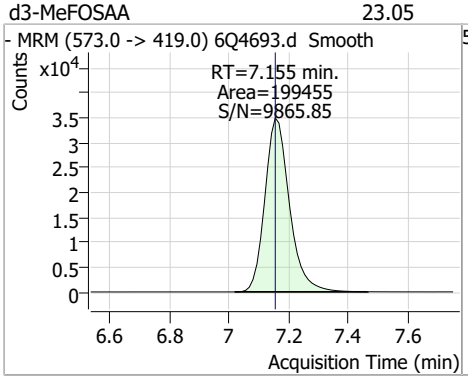


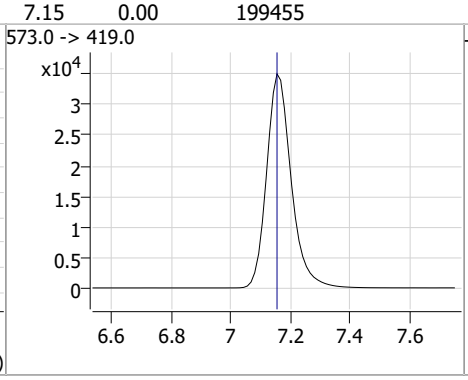


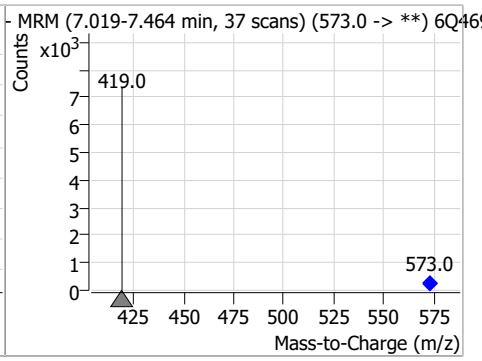


Perfluorinated Compounds by LC/MS/MS

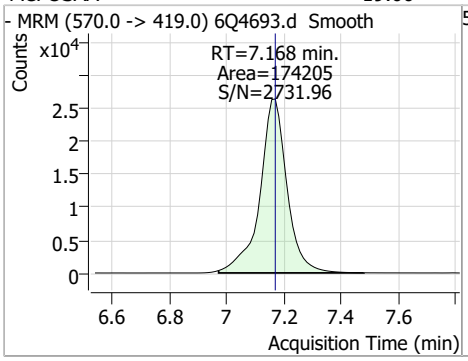
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.05	7.15	0.00	199455				

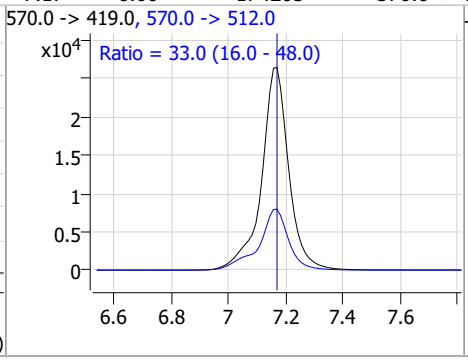


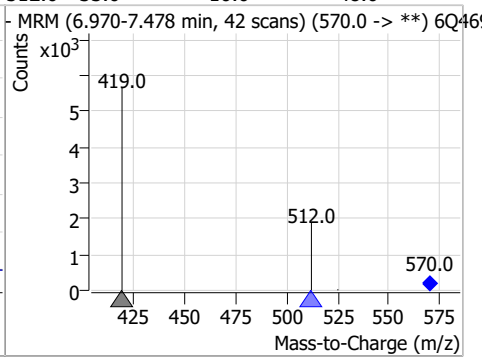




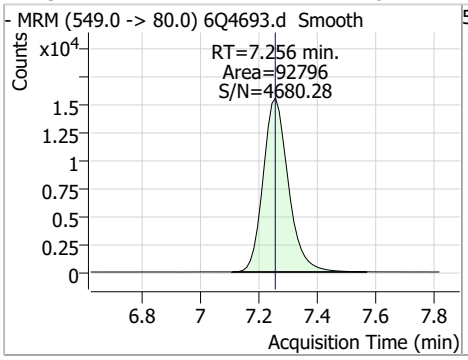
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.06	7.17	0.00	174205	570.0 -> 512.0	33.0	16.0	48.0

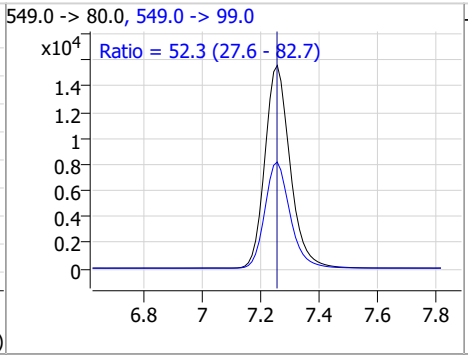


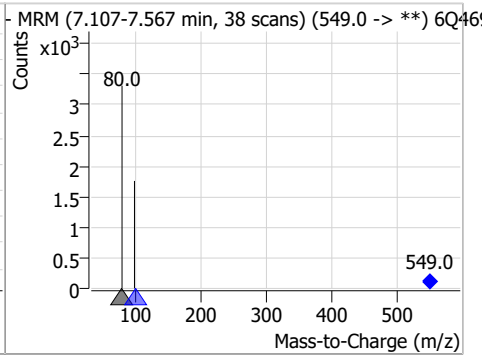




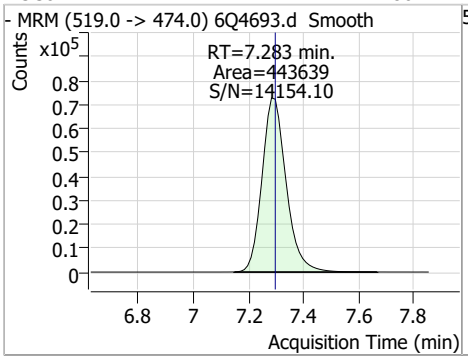
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.11	7.26	-0.01	92796	549.0 -> 99.0	52.3	27.6	82.7

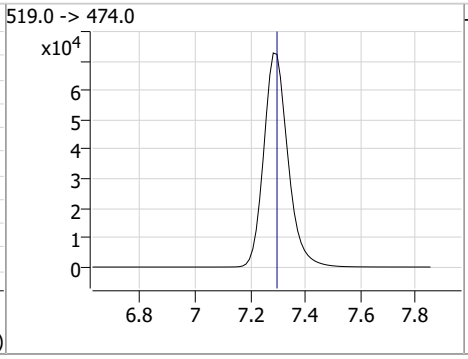


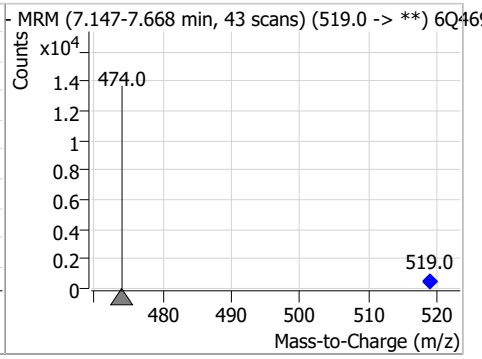




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.80	7.28	-0.01	443639				





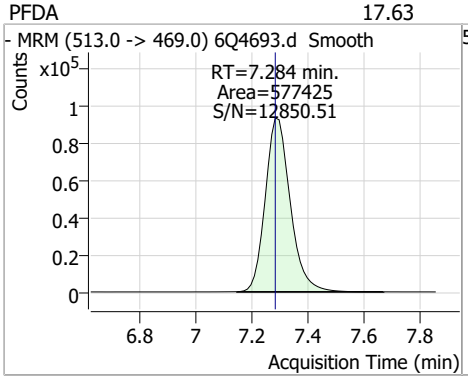


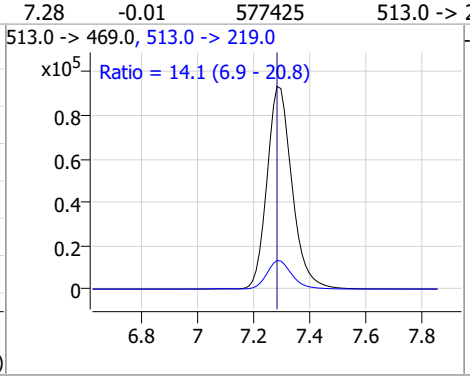
7.7.96

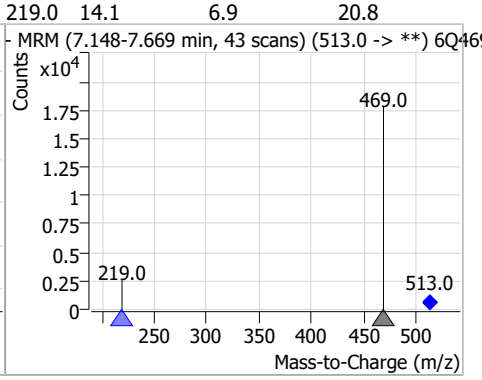
7

Perfluorinated Compounds by LC/MS/MS

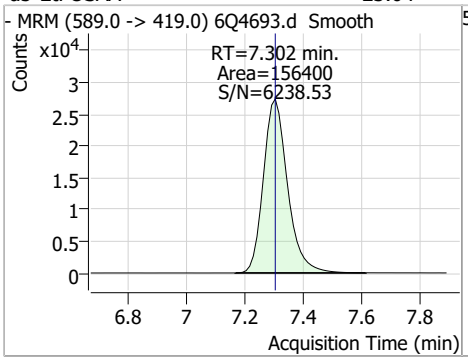
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	17.63	7.28	-0.01	577425	513.0 -> 219.0	14.1	6.9	20.8

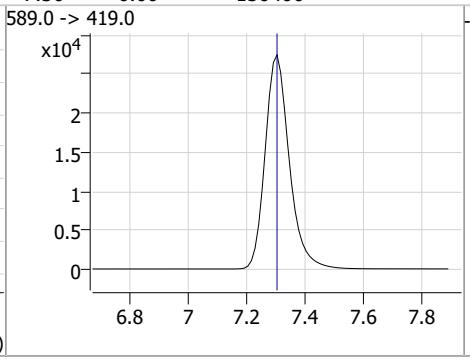


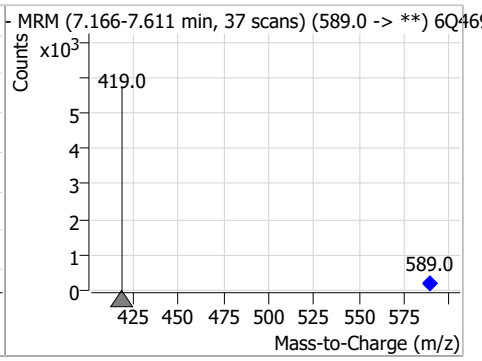




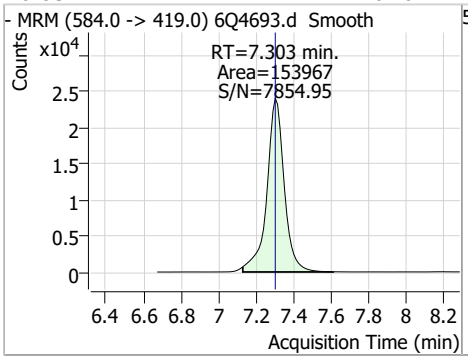
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.04	7.30	0.00	156400				

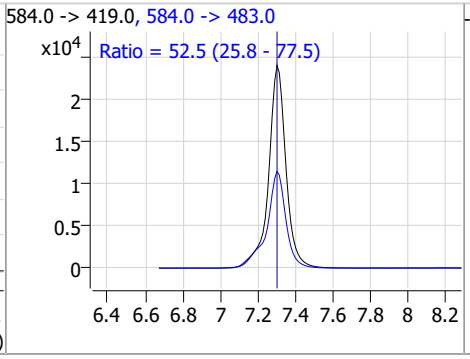


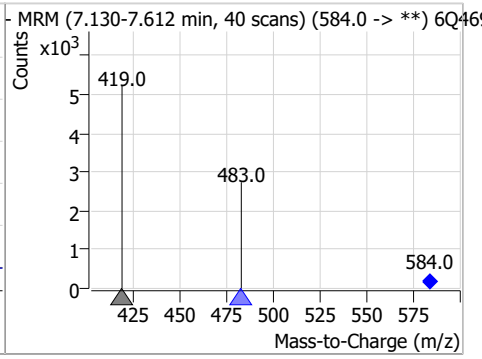




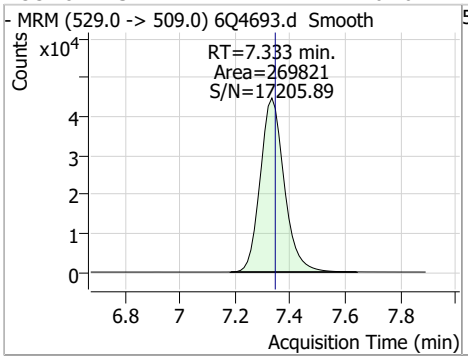
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.48	7.30	0.00	153967	584.0 -> 483.0	52.5	25.8	77.5

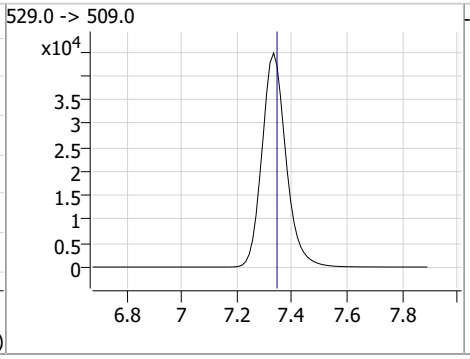


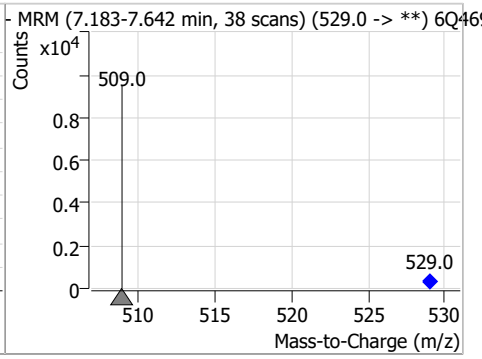




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.70	7.33	-0.01	269821				

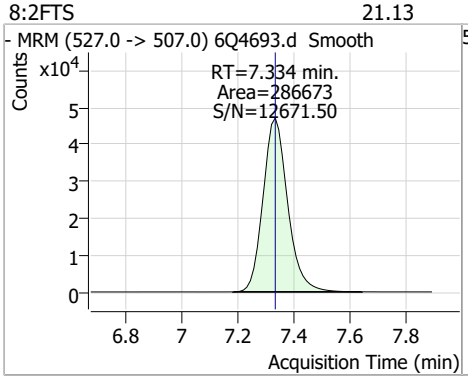


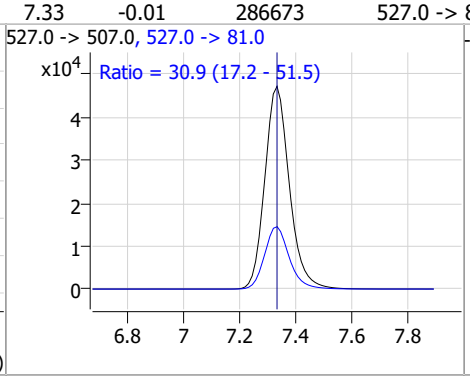


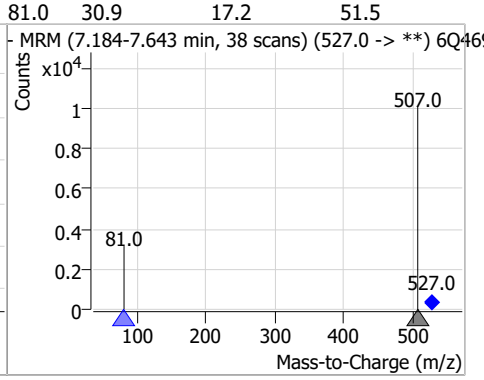


Perfluorinated Compounds by LC/MS/MS

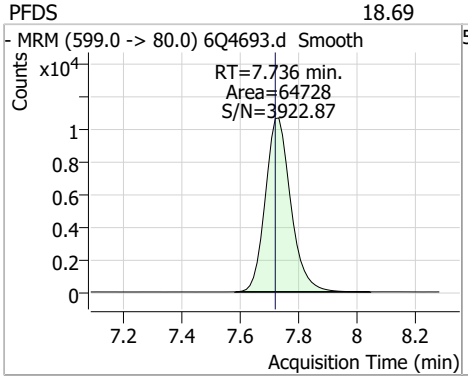
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.13	7.33	-0.01	286673	527.0 -> 81.0	30.9	17.2	51.5

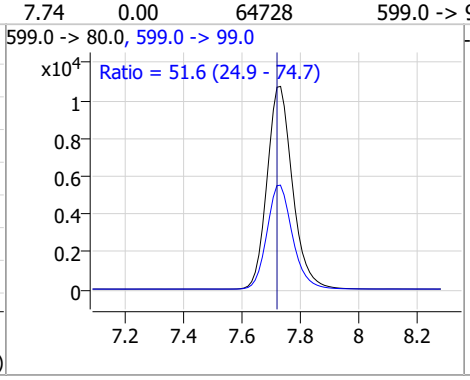


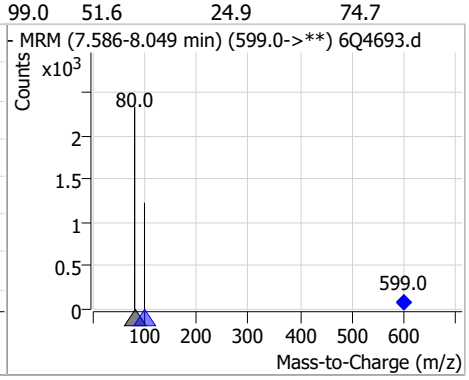




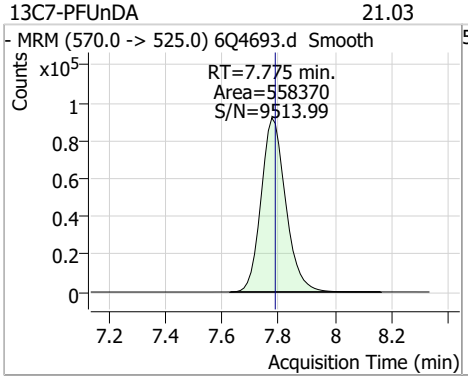
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.69	7.74	0.00	64728	599.0 -> 99.0	51.6	24.9	74.7

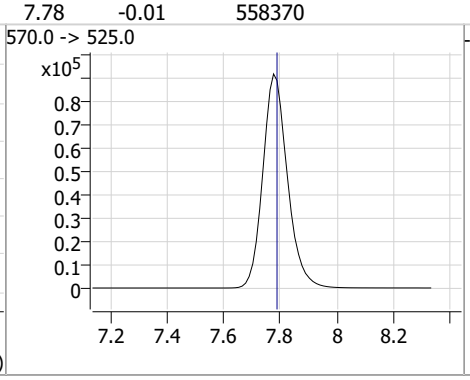


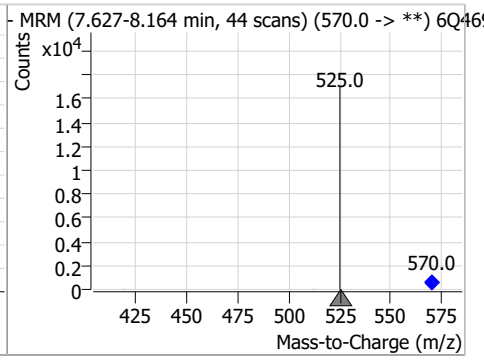




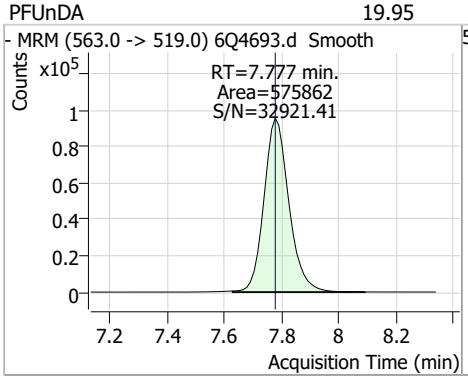
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.03	7.78	-0.01	558370				

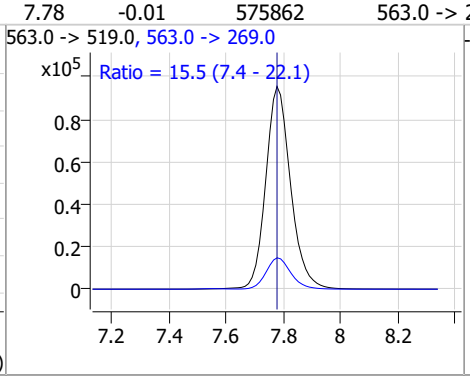


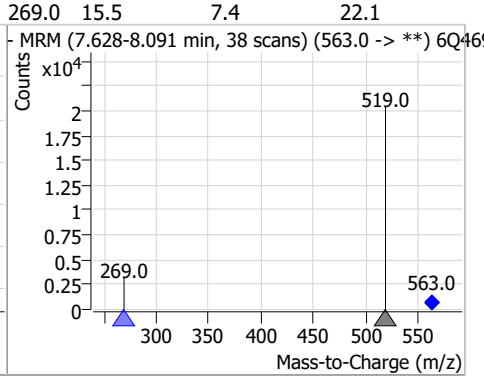




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.95	7.78	-0.01	575862	563.0 -> 269.0	15.5	7.4	22.1

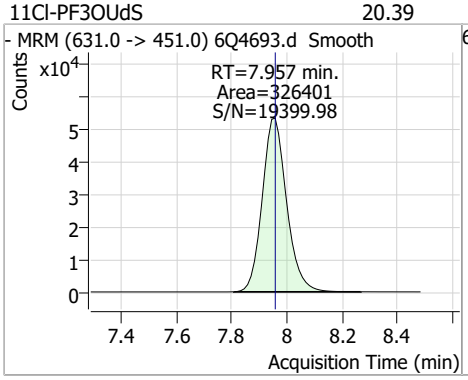


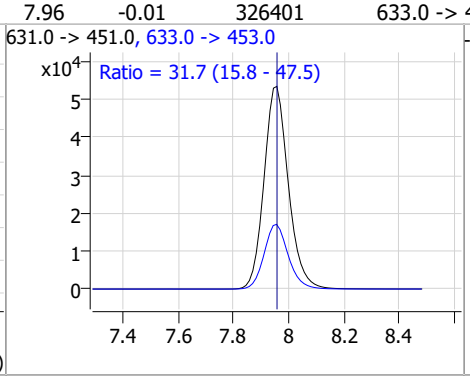


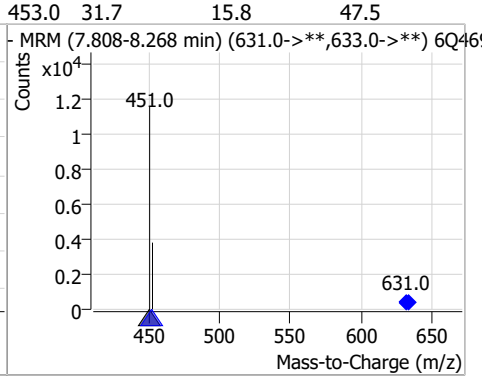


Perfluorinated Compounds by LC/MS/MS

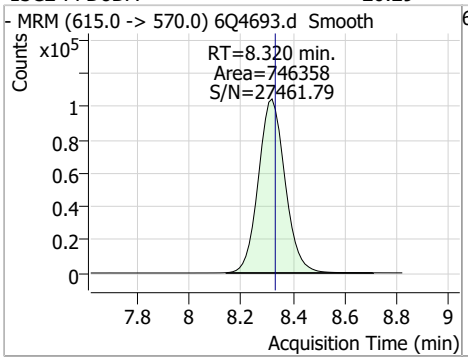
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.39	7.96	-0.01	326401	633.0 -> 453.0	31.7	15.8	47.5

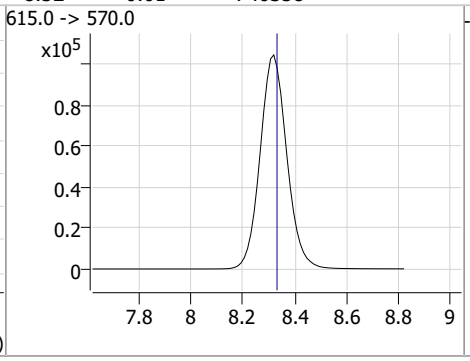


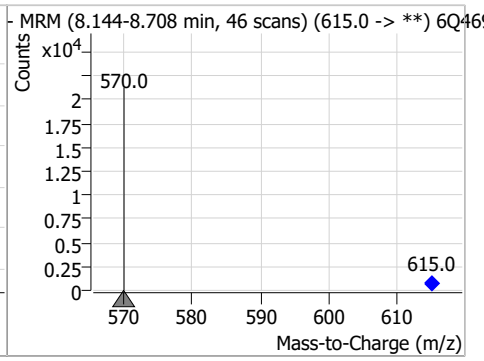




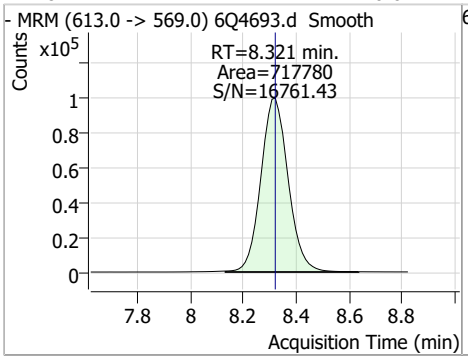
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.29	8.32	-0.01	746358				

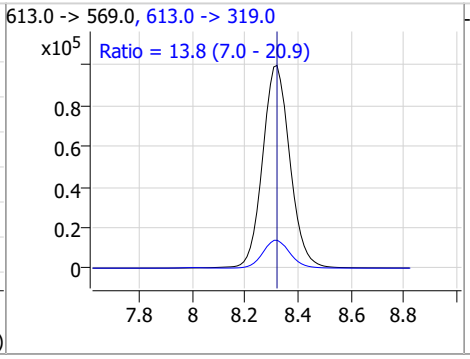


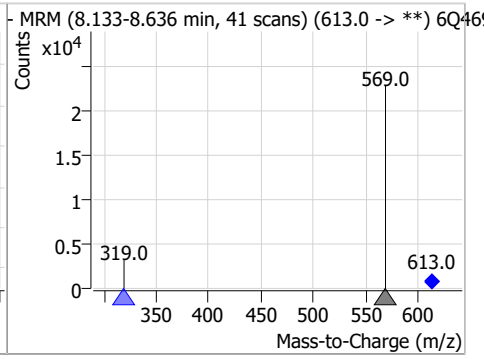




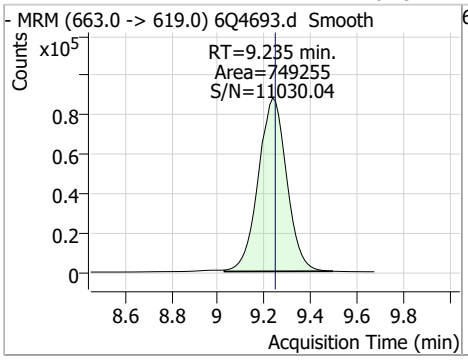
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.61	8.32	-0.01	717780	613.0 -> 319.0	13.8	7.0	20.9

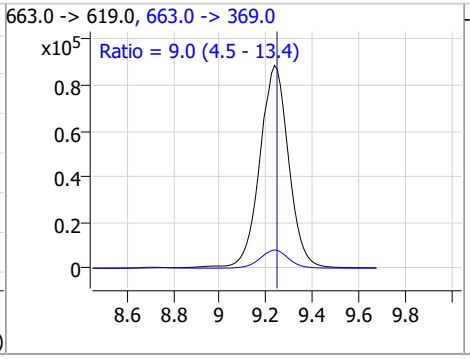


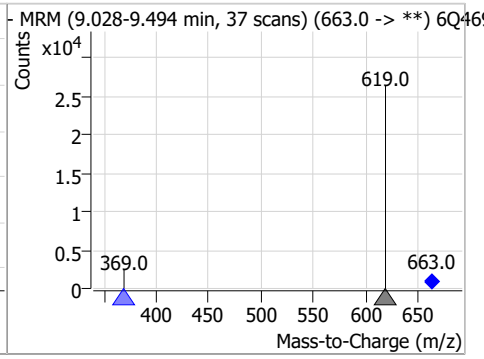




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.79	9.24	-0.02	749255	663.0 -> 369.0	9.0	4.5	13.4

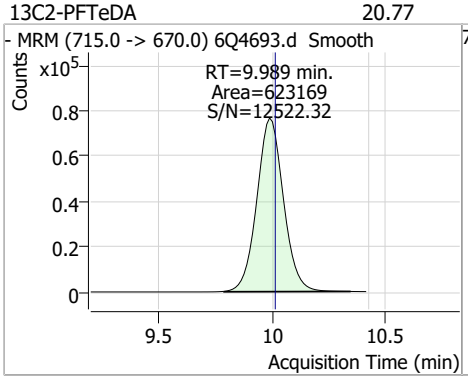


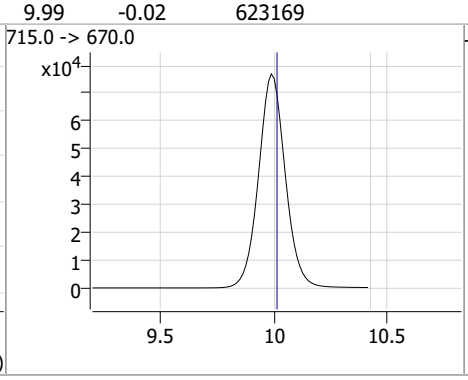


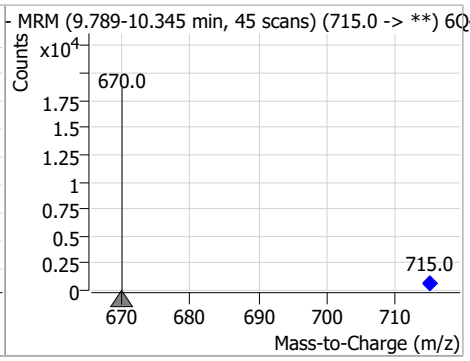


Perfluorinated Compounds by LC/MS/MS

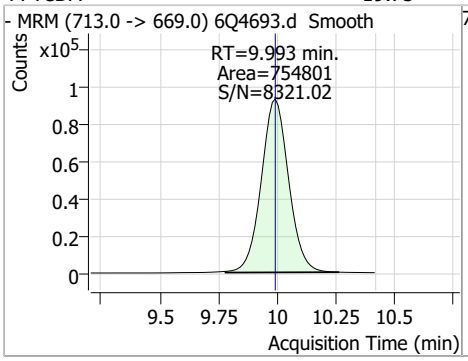
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.77	9.99	-0.02	623169				

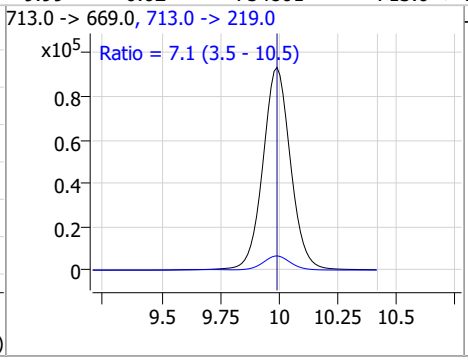


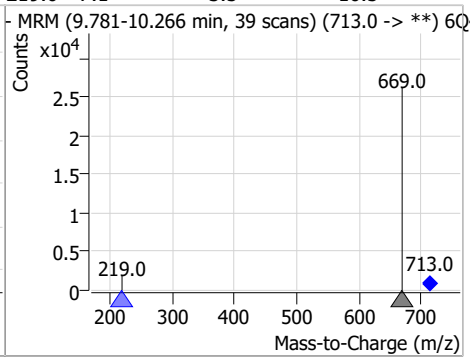




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.75	9.99	-0.02	754801	713.0 -> 219.0	7.1	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-CC85
Lab FileID: 6Q4693.D
Injection Time: 09/15/22 06:29
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:15

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4699.d
Operator : annal
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 8:06:13 AM
Sample Name : ecc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : s6q85.batch.bin
Sample Information : OP92656,S6Q85,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	85725	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	150171	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	227559	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	261609	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	447980	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	548385	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	424875	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	553787	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	749440	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	633737	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	220565	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	32159	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29713	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	48911	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	281350	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	366675	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	265429	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	189233	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5240	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	50681	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	158821	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	281350	20.83	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-6:2FTS	6.124	429.0 -> 409.0	366675	21.48	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C2-8:2FTS	7.333	529.0 -> 509.0	265429	20.36	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.8%		
13C2-PFDoDA	8.320	615.0 -> 570.0	749440	20.38	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
13C2-PFTeDA	9.989	715.0 -> 670.0	633737	21.13	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C3-PFBS	3.635	302.0 -> 99.0	32159	21.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C3-PFHxS	5.475	402.0 -> 99.0	29713	21.49	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.4%		
13C4-PFBA	1.949	217.0 -> 172.0	85725	21.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.7%		
13C4-PFHpA	5.445	367.0 -> 322.0	261609	21.14	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.7%		
13C5-PFHxA	4.573	318.0 -> 273.0	227559	21.29	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C5-PFPeA	3.405	268.0 -> 223.0	150171	21.42	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
13C6-PFDA	7.283	519.0 -> 474.0	424875	20.88	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

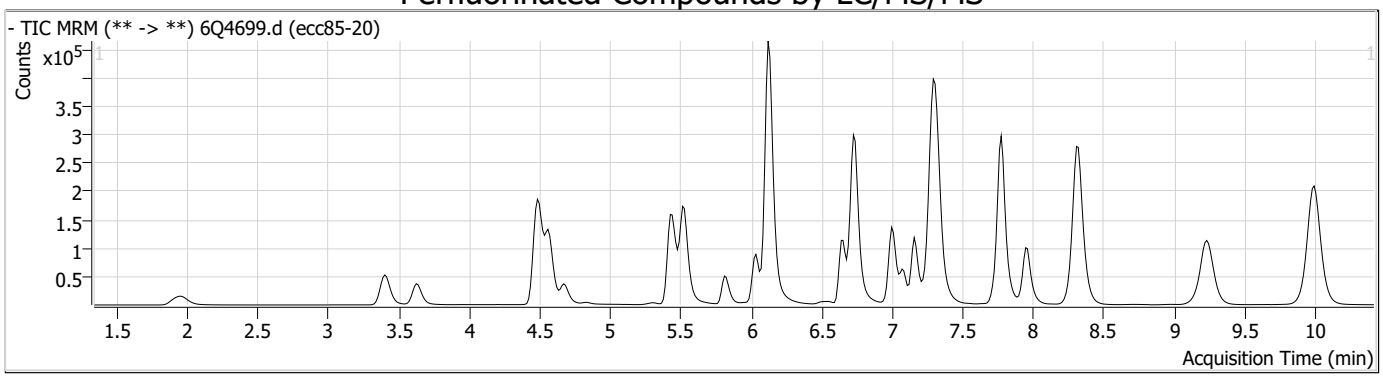
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C7-PFUnDA	7.775	570.0 -> 525.0	553787	20.86 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C8-FOSA	6.654	506.0 -> 78.0	220565	22.55 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.8%		
13C8-PFOA	6.138	421.0 -> 376.0	447980	21.12 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.6%		
13C8-PFOS	6.717	507.0 -> 99.0	48911	23.06 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 115.3%		
13C9-PFNA	6.745	472.0 -> 427.0	548385	21.28 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
d3-MeFOSAA	7.155	573.0 -> 419.0	189233	21.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.3%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5275	19.85 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%		
d3-MeFOSA	7.085	515.0 -> 169.0	50681	22.40 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.0%		
d5-EtFOSAA	7.302	589.0 -> 419.0	158794	23.39 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 117.0%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	316001	20.78 µg/L		99
		327.0 -> 81.0	101043			
6:2FTS	6.124	427.0 -> 407.0	384767	20.72 µg/L		95
		427.0 -> 81.0	96119			
8:2FTS	7.334	527.0 -> 507.0	277831	20.81 µg/L		97
		527.0 -> 81.0	90183			
EtFOSAA	7.303	584.0 -> 419.0	159242	18.81 µg/L		99
		584.0 -> 483.0	83797			
FOSA	6.656	498.0 -> 78.0	215301	19.46 µg/L		100
		498.0 -> 478.0	8714			
MeFOSAA	7.168	570.0 -> 419.0	184686	21.29 µg/L		99
		570.0 -> 512.0	58525			
PFBA	1.943	213.0 -> 169.0	37383	19.98 µg/L		100
PFBS	3.627	299.0 -> 80.0	106302	19.88 µg/L		100
		299.0 -> 99.0	39700			
PFDA	7.284	513.0 -> 469.0	574765	18.33 µg/L		97
		513.0 -> 219.0	86199			
PFDoDA	8.321	613.0 -> 569.0	714802	20.44 µg/L		100
		613.0 -> 319.0	99885			
PFDS	7.736	599.0 -> 80.0	67020	19.52 µg/L		98
		599.0 -> 99.0	34471			
PFHpA	5.434	363.0 -> 319.0	340950	20.04 µg/L		100
		363.0 -> 169.0	50347			
PFHpS	6.136	449.0 -> 80.0	82168	19.24 µg/L		98
		449.0 -> 99.0	42142			
PFHxA	4.574	313.0 -> 269.0	233588	19.52 µg/L		100
		313.0 -> 119.0	5844			
PFHxS	5.465	399.0 -> 80.0	84085	19.75 µg/L	m	98
		399.0 -> 99.0	39723			
PFNA	6.745	463.0 -> 419.0	496426	19.21 µg/L		98
		463.0 -> 219.0	87740			
PFNS	7.256	549.0 -> 80.0	92126	18.54 µg/L		96
		549.0 -> 99.0	48301			
PFOA	6.138	413.0 -> 369.0	464558	19.20 µg/L		98
		413.0 -> 169.0	75197			
PFOS	6.719	499.0 -> 80.0	85182	18.79 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

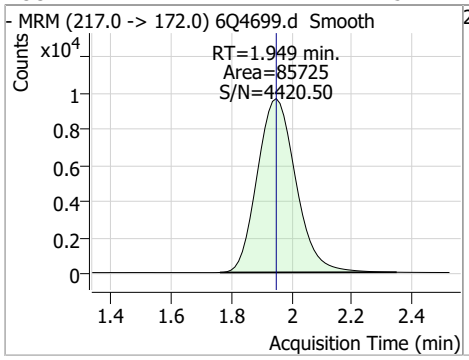
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	42418			
PFPeA	3.408	263.0 -> 219.0	124366	19.66	µg/L	100
PFPeS	4.681	349.0 -> 80.0	88232	19.82	µg/L	100
		349.0 -> 99.0	40132			
PFTeDA	9.993	713.0 -> 669.0	767028	19.74	µg/L	100
		713.0 -> 219.0	53870			
PFTrDA	9.235	663.0 -> 619.0	767945	21.22	µg/L	100
		663.0 -> 369.0	68373			
PFUnDA	7.777	563.0 -> 519.0	570873	19.94	µg/L	98
		563.0 -> 269.0	87996			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	326586	20.32	µg/L	100
		633.0 -> 453.0	103423			
9Cl-PF3ONS	6.996	531.0 -> 351.0	416446	19.26	µg/L	96
		533.0 -> 353.0	138045			
ADONA	5.532	377.0 -> 251.0	532213	19.32	µg/L	96
		377.0 -> 85.0	138359			
HFPO-DA	4.840	285.0 -> 169.0	5644	22.78	µg/L	98
		285.0 -> 185.0	826			
MeFOSA	7.086	512.0 -> 169.0	57154	20.67	µg/L	96
		512.0 -> 219.0	53166			
4-PFECHS	6.032	461.0 -> 381.0	273828	18.99	µg/L	98
		461.0 -> 99.0	94886			
FBSA	4.514	298.0 -> 78.0	222947	20.11	µg/L	100
		298.0 -> 64.0	15149			
FHxSA	5.828	398.0 -> 78.0	191032	19.32	µg/L	100
		398.0 -> 64.0	6607			

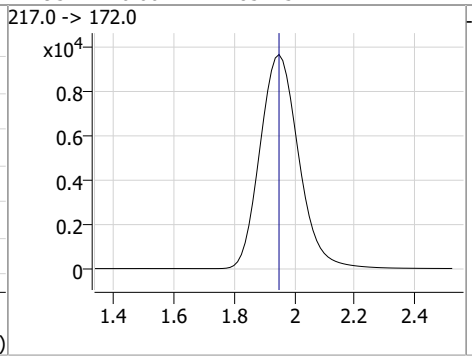
 # = Qualifier out of range, m = manually integrated, + = Area summed

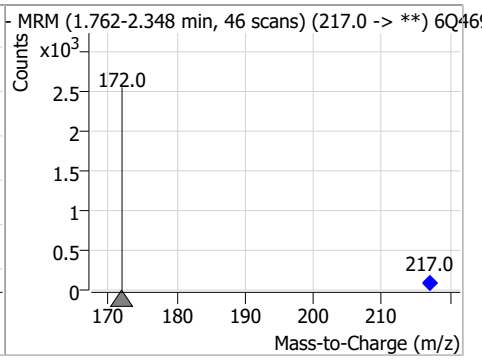
Perfluorinated Compounds by LC/MS/MS



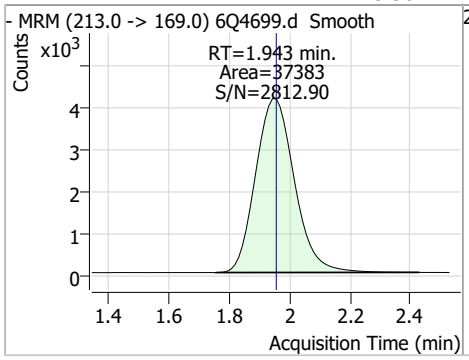
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.54	1.95	0.00	85725				

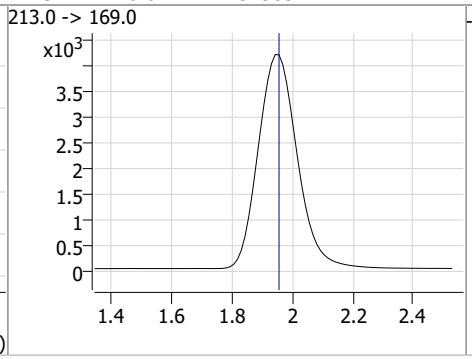


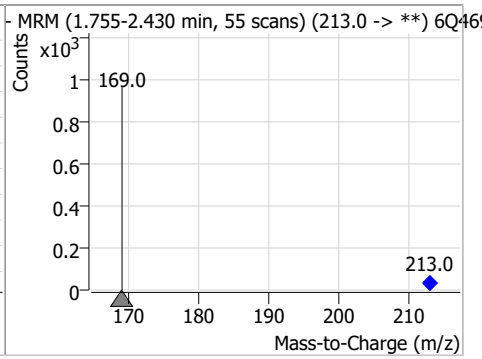




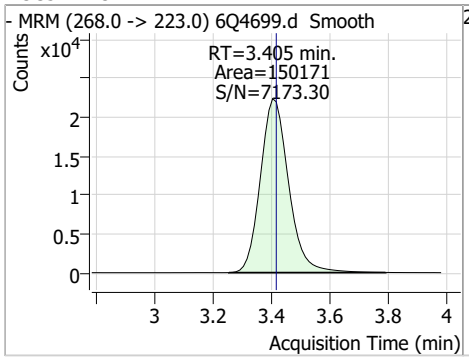
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.98	1.94	-0.01	37383				

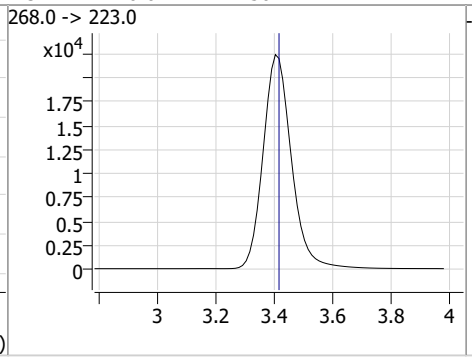


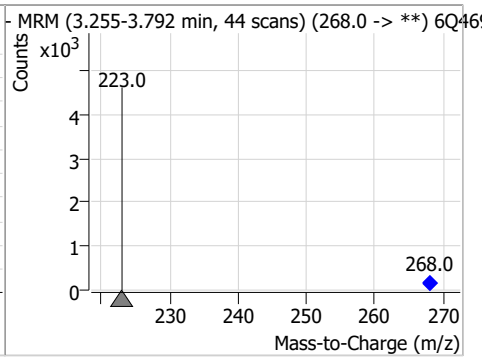




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.42	3.41	-0.01	150171				

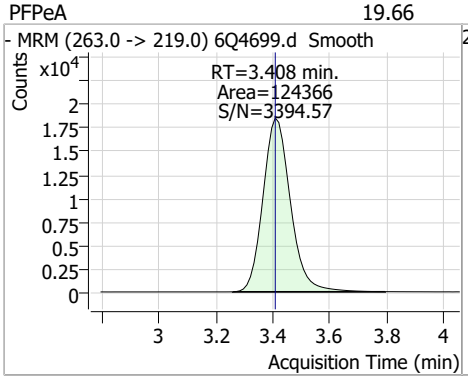


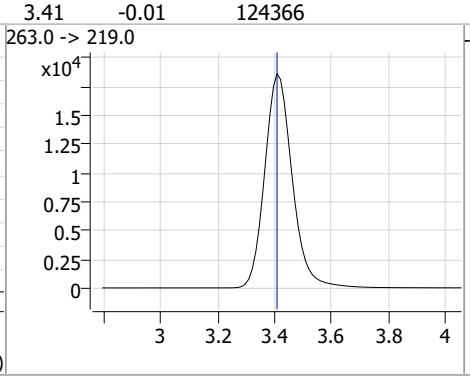


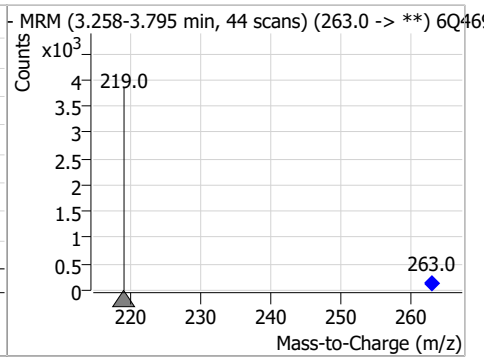


Perfluorinated Compounds by LC/MS/MS

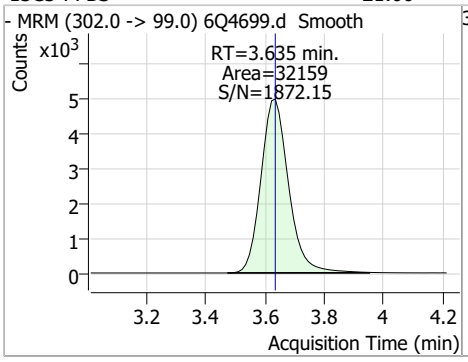
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.66	3.41	-0.01	124366				

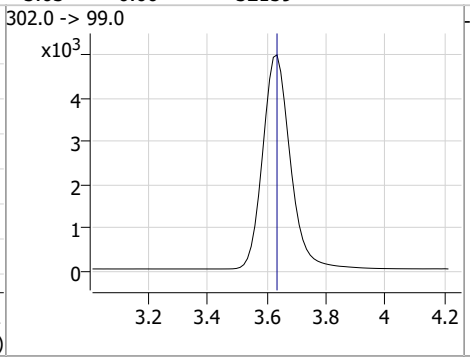


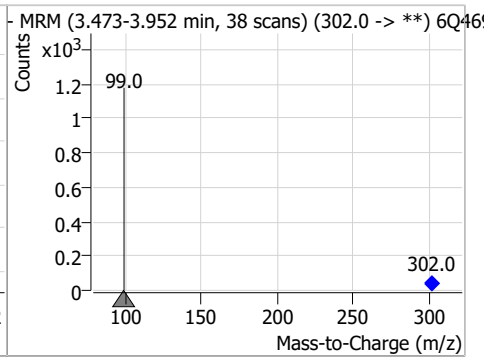




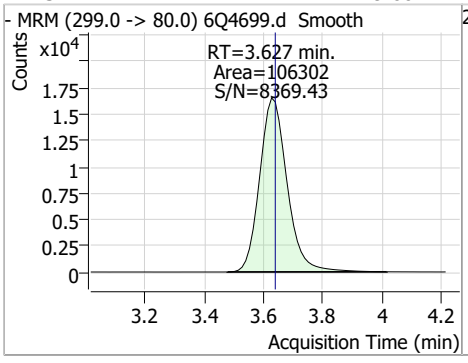
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.00	3.63	0.00	32159				

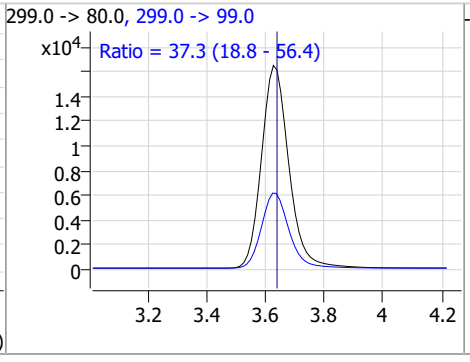


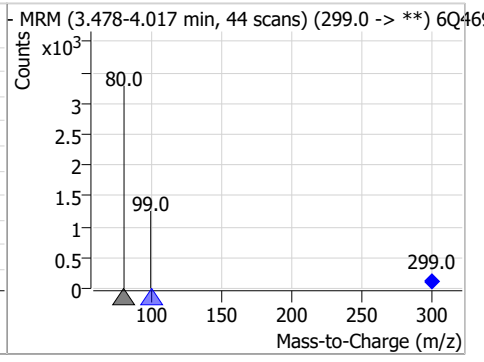




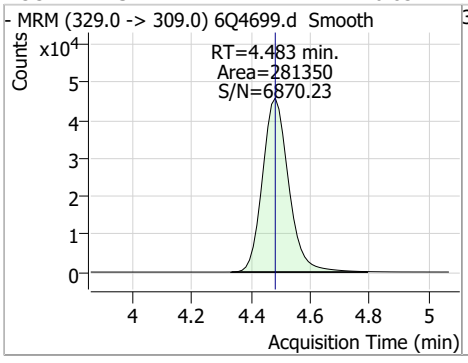
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.88	3.63	-0.01	106302	299.0 -> 99.0	37.3	18.8	56.4

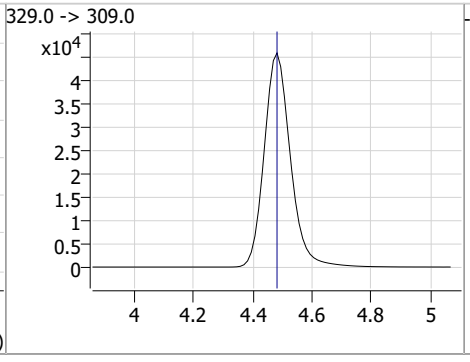


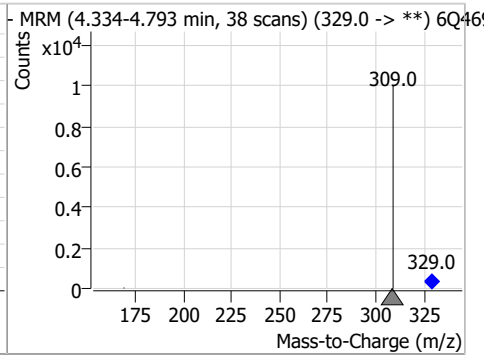




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.83	4.48	0.00	281350				

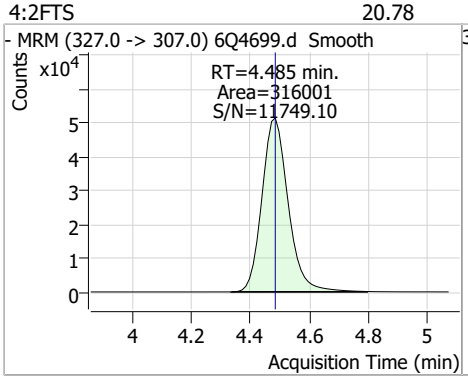


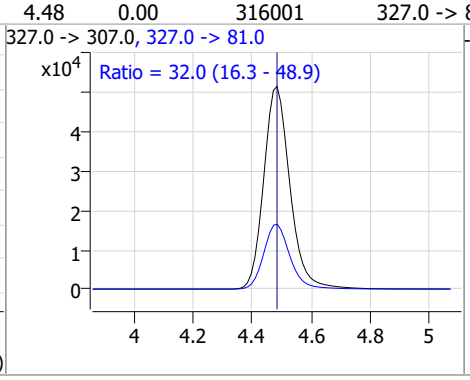


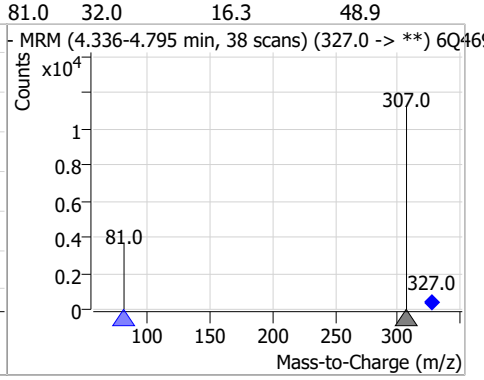


Perfluorinated Compounds by LC/MS/MS

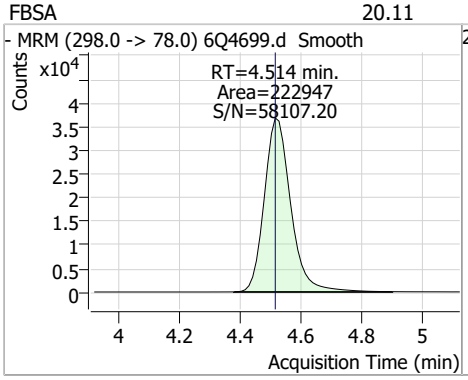
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.78	4.48	0.00	316001	327.0 -> 81.0	32.0	16.3	48.9

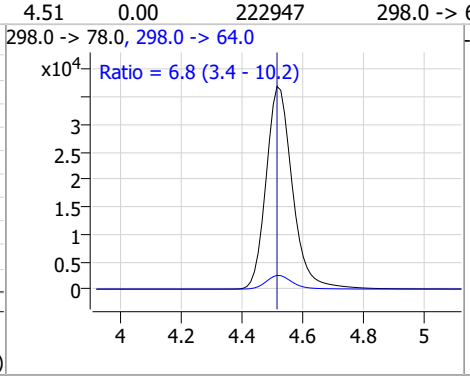


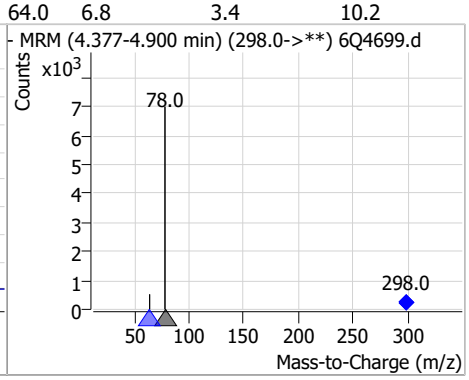




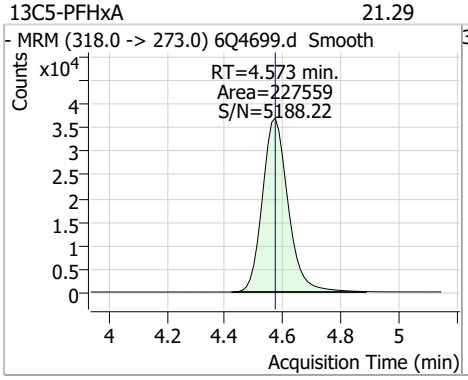
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.11	4.51	0.00	222947	298.0 -> 64.0	6.8	3.4	10.2

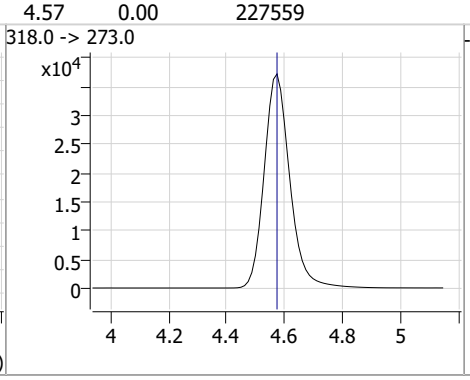


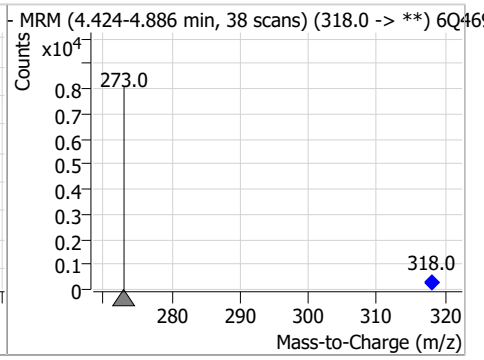




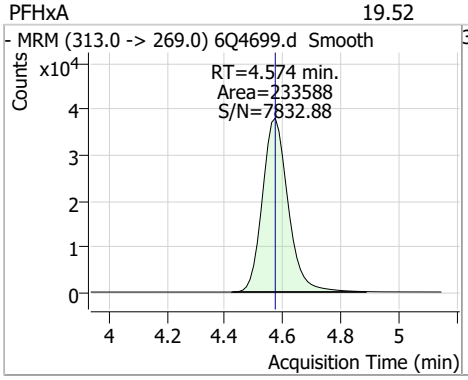
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.29	4.57	0.00	227559				

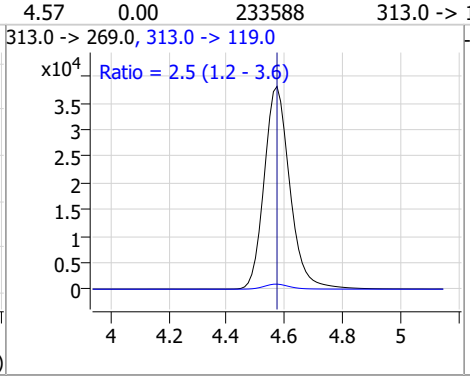


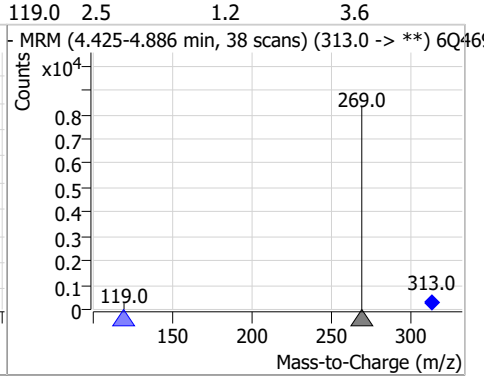




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.52	4.57	0.00	233588	313.0 -> 119.0	2.5	1.2	3.6

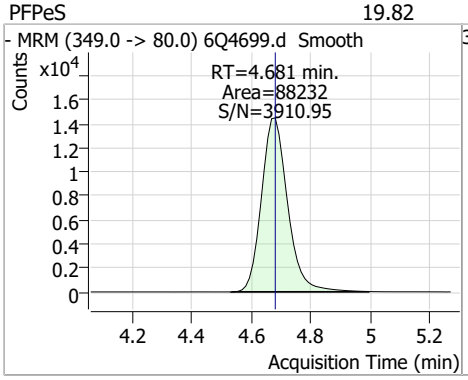


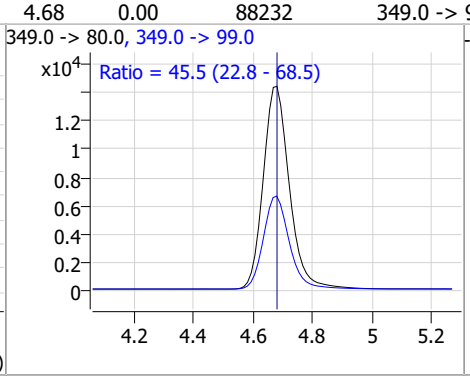


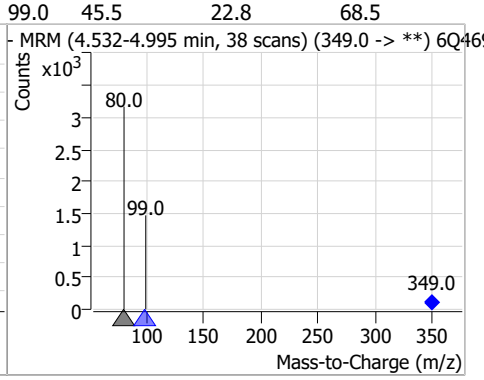


Perfluorinated Compounds by LC/MS/MS

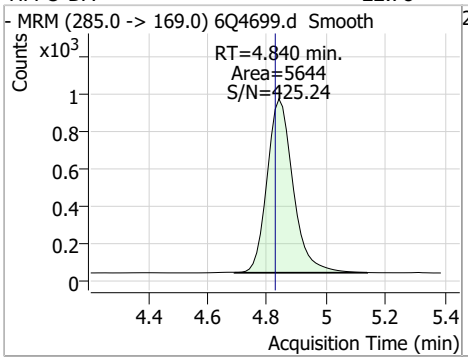
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.82	4.68	0.00	88232	349.0 -> 99.0	45.5	22.8	68.5

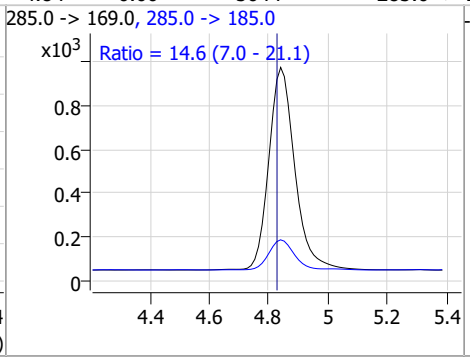


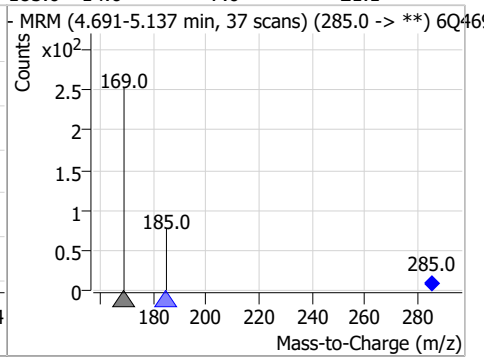




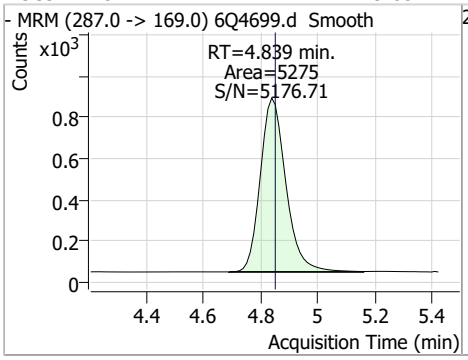
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.78	4.84	0.00	5644	285.0 -> 185.0	14.6	7.0	21.1

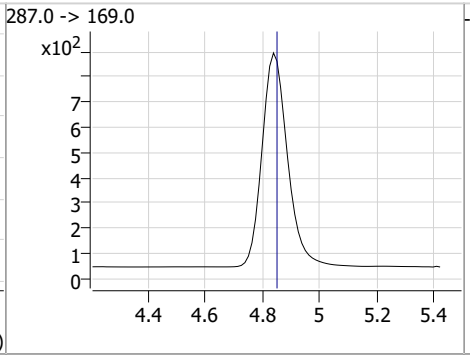


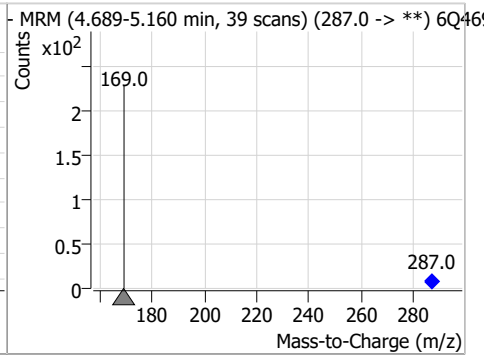




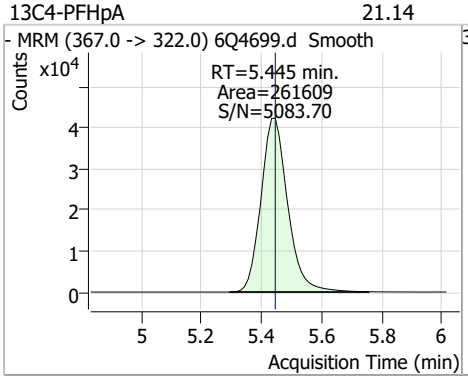
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.85	4.84	-0.01	5275				

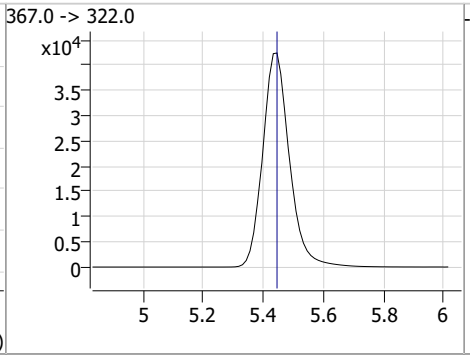


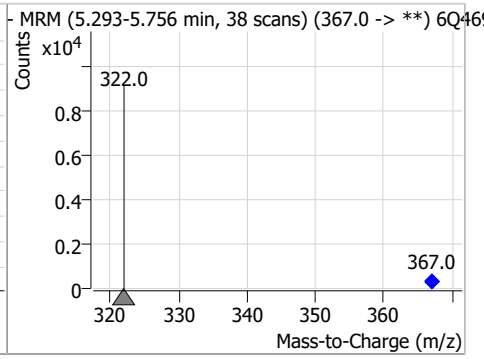




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.14	5.45	0.00	261609				

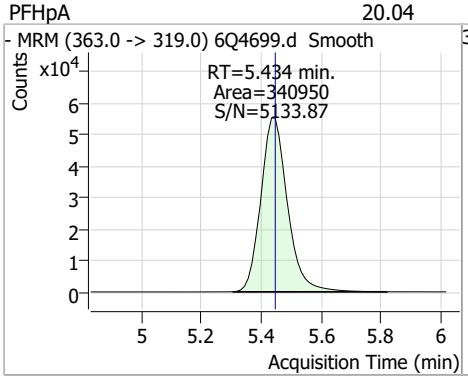


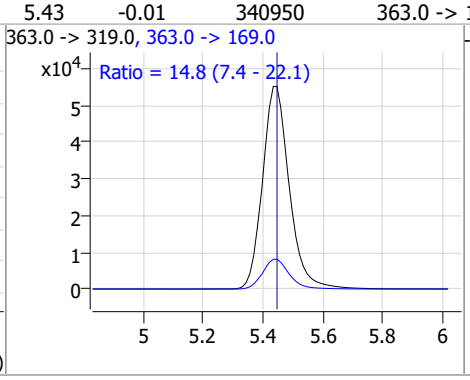


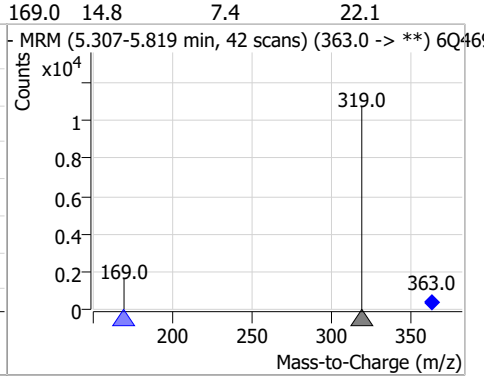


Perfluorinated Compounds by LC/MS/MS

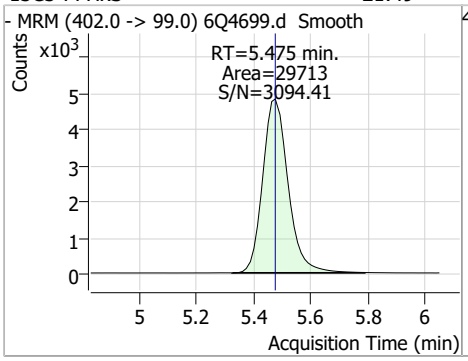
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.04	5.43	-0.01	340950	363.0 -> 169.0	14.8	7.4	22.1

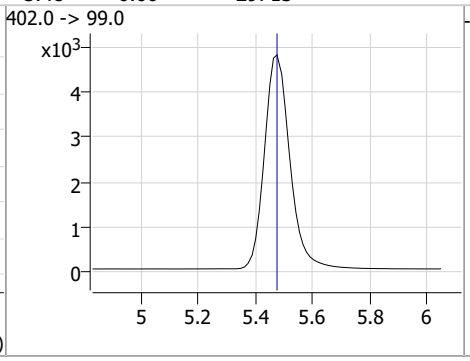


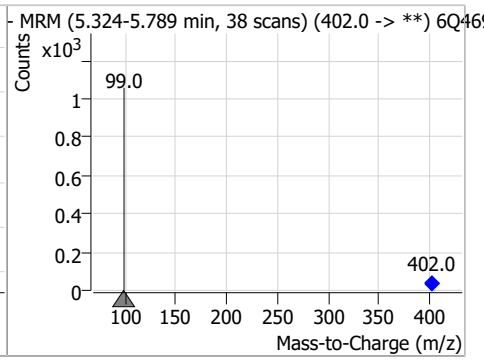




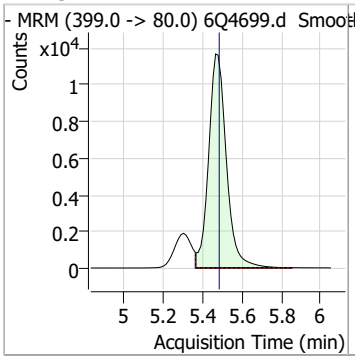
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.49	5.48	0.00	29713				

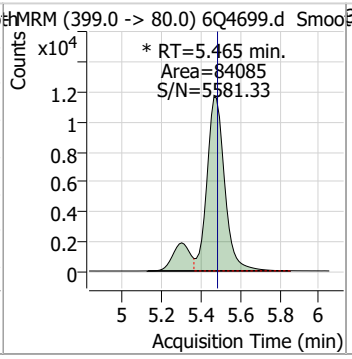


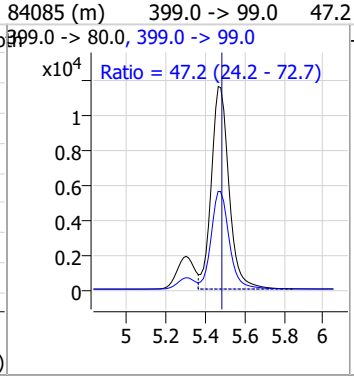


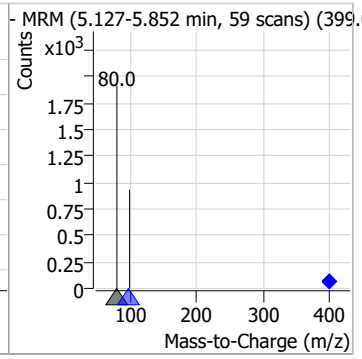


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	19.75	5.47	-0.01	84085 (m)	399.0 -> 99.0	47.2	24.2	72.7

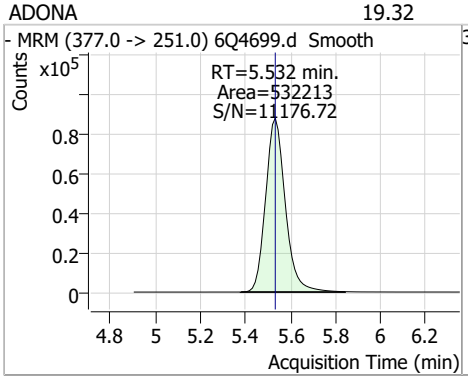


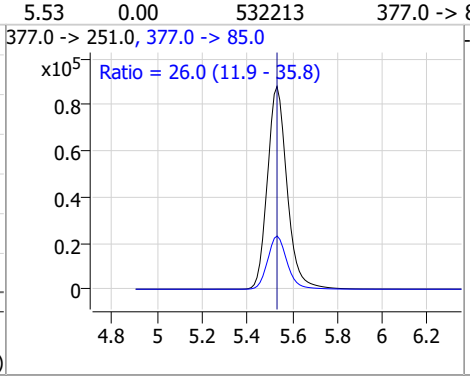


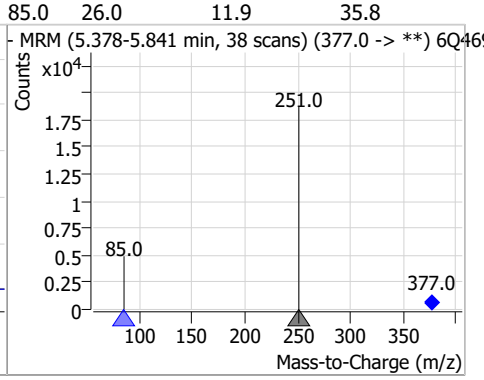




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.32	5.53	0.00	532213	377.0 -> 85.0	26.0	11.9	35.8

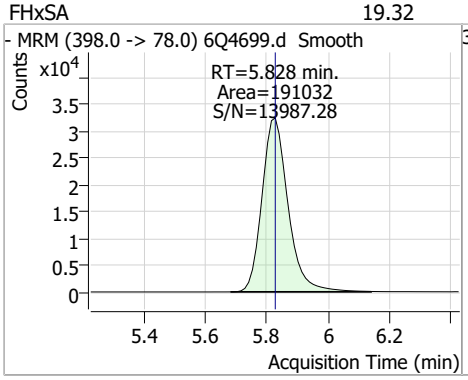


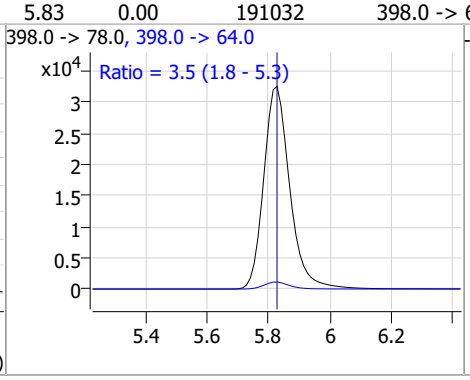


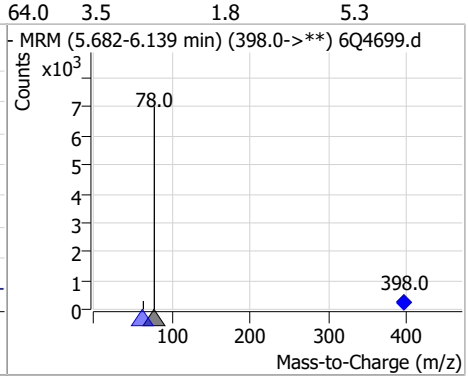


Perfluorinated Compounds by LC/MS/MS

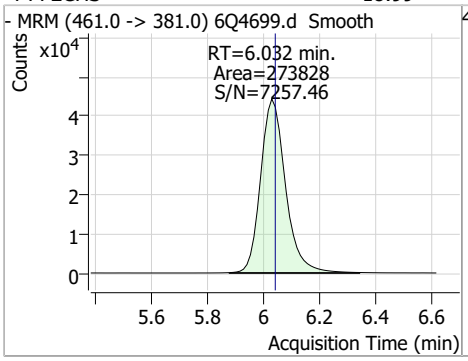
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.32	5.83	0.00	191032	398.0 -> 64.0	3.5	1.8	5.3

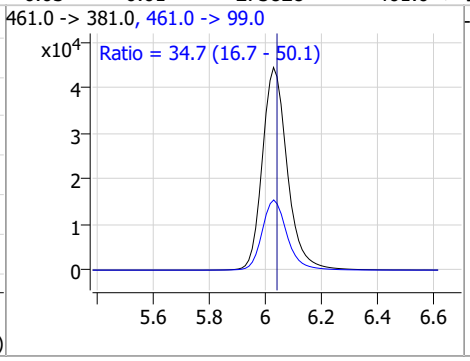


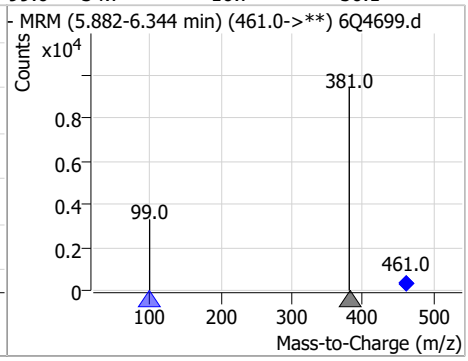




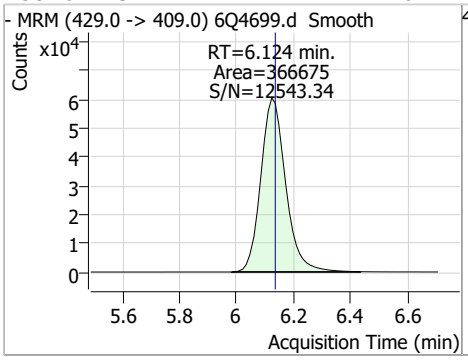
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	18.99	6.03	-0.01	273828	461.0 -> 99.0	34.7	16.7	50.1

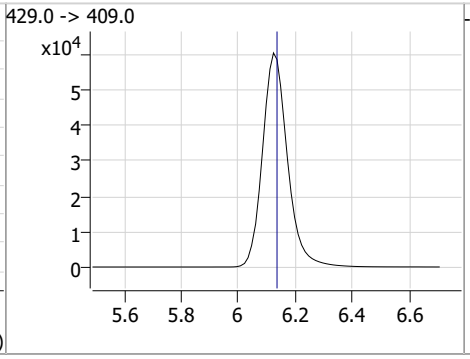


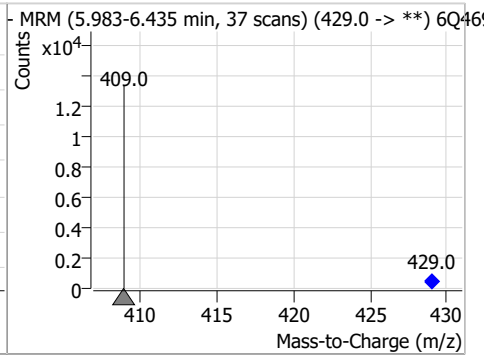




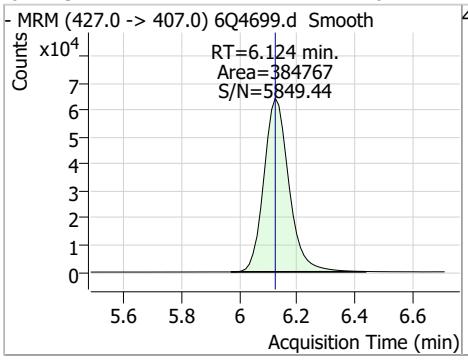
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	21.48	6.12	-0.01	366675				

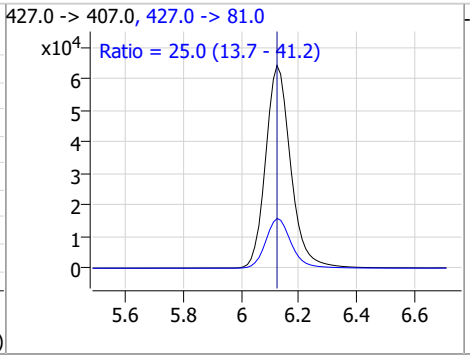


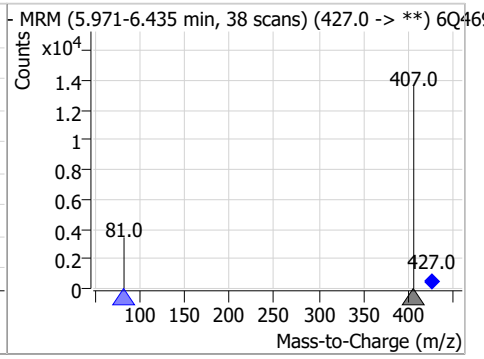




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.72	6.12	-0.01	384767	427.0 -> 81.0	25.0	13.7	41.2

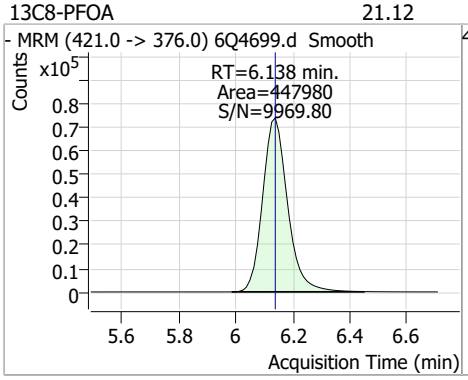


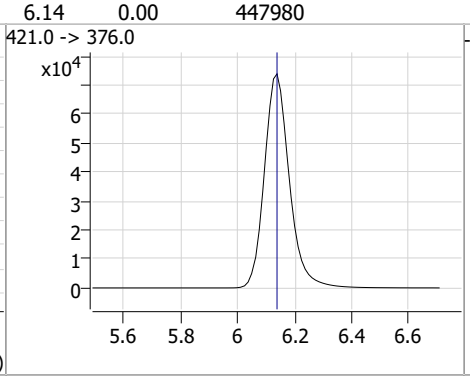


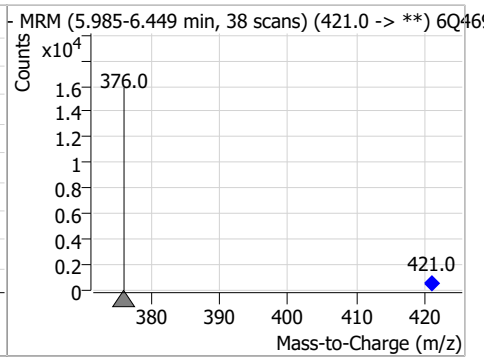


Perfluorinated Compounds by LC/MS/MS

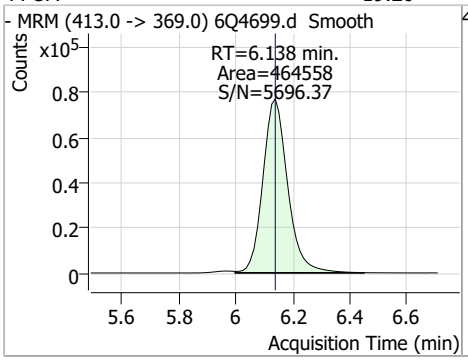
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.12	6.14	0.00	447980				

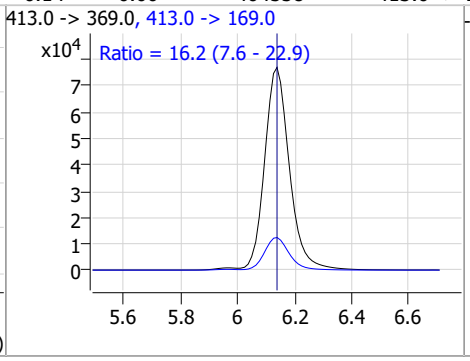


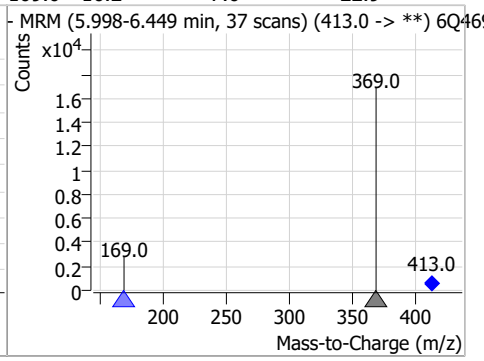




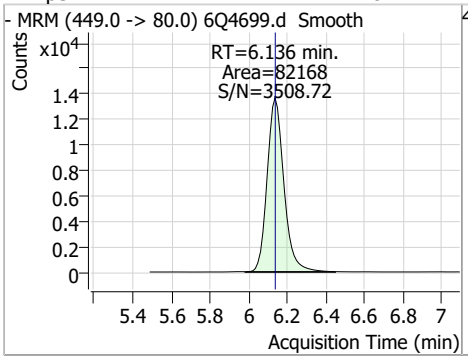
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.20	6.14	0.00	464558	413.0 -> 169.0	16.2	7.6	22.9

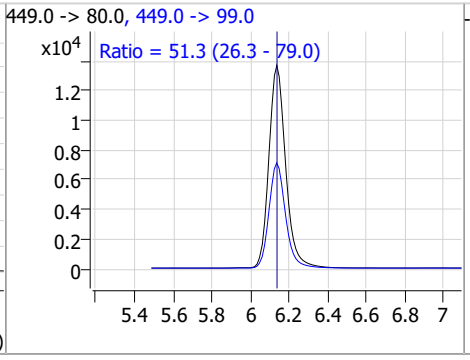


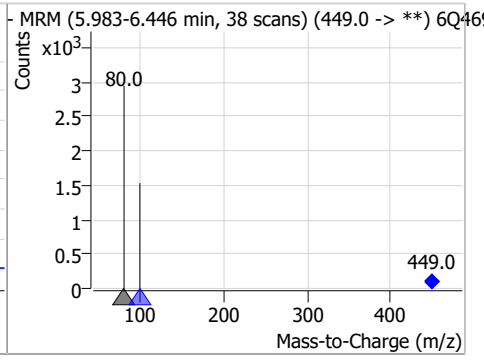




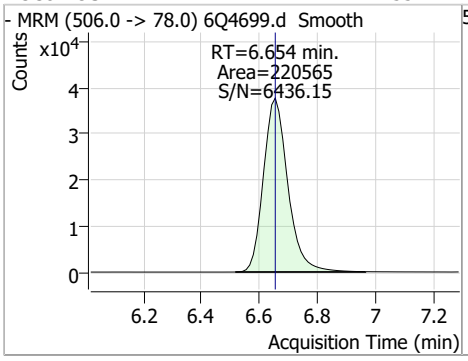
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	19.24	6.14	-0.01	82168	449.0 -> 99.0	51.3	26.3	79.0

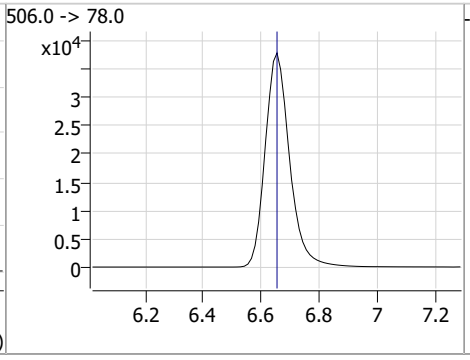


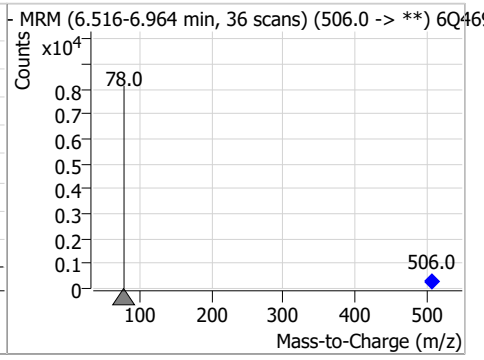




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.55	6.65	0.00	220565				

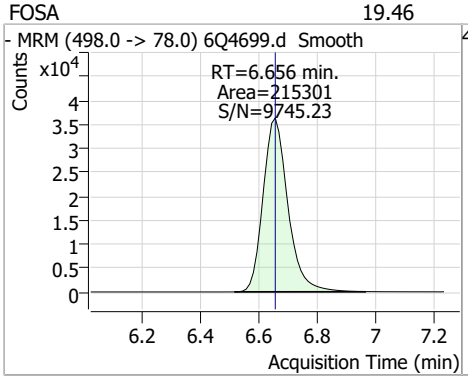


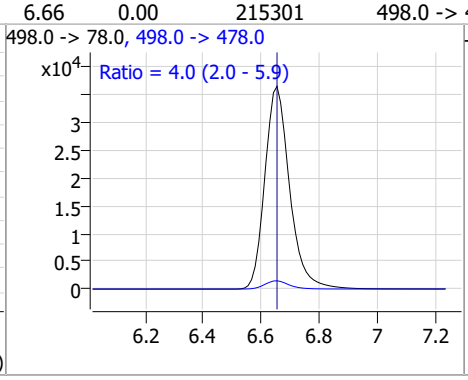


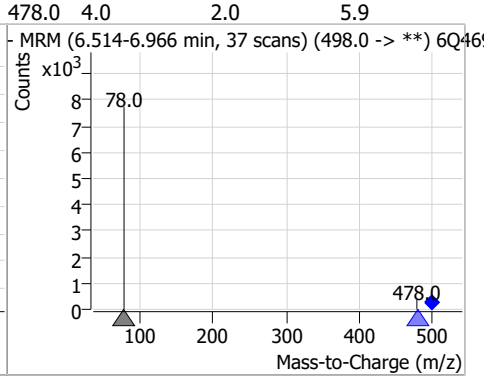


Perfluorinated Compounds by LC/MS/MS

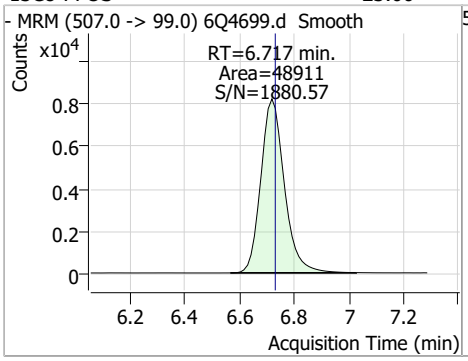
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.46	6.66	0.00	215301	498.0 -> 478.0	4.0	2.0	5.9

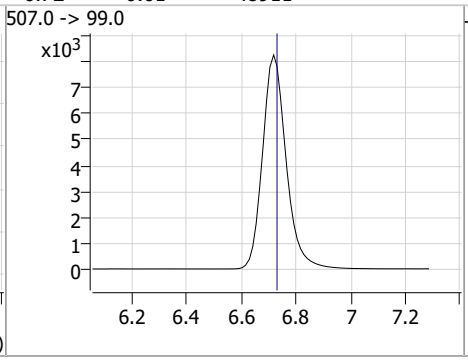


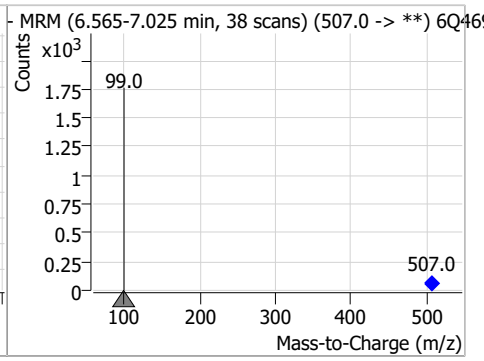




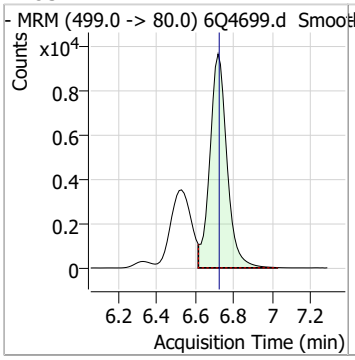
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	23.06	6.72	-0.01	48911				

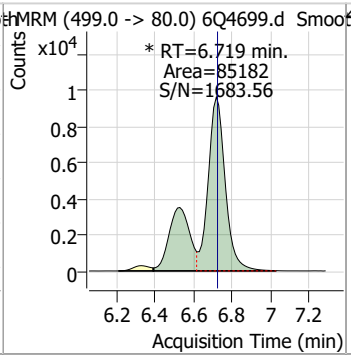


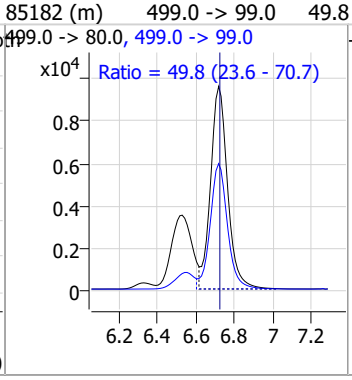


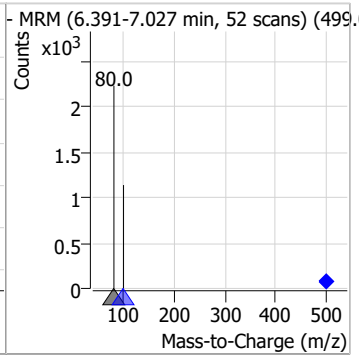


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	18.79	6.72	-0.01	85182 (m)	499.0 -> 99.0	49.8	23.6	70.7

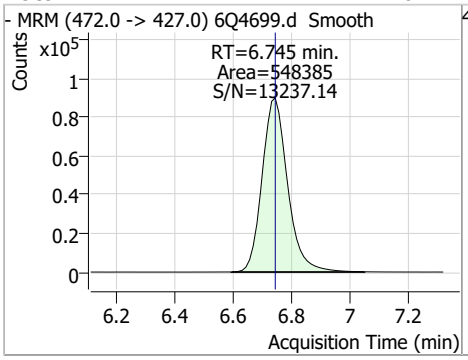


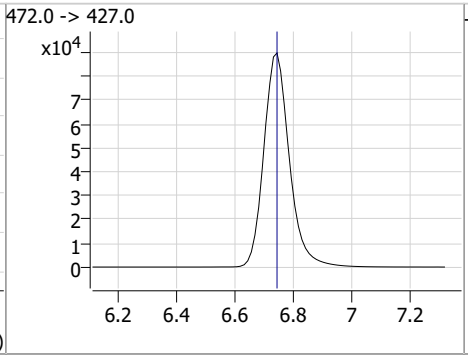


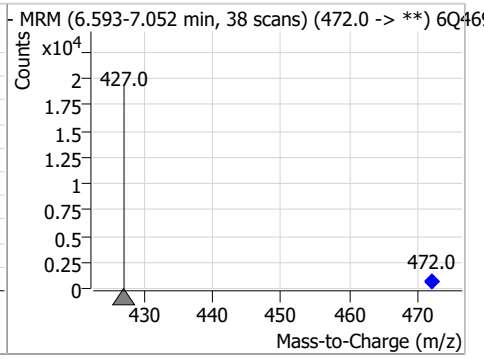




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.28	6.74	0.00	548385				

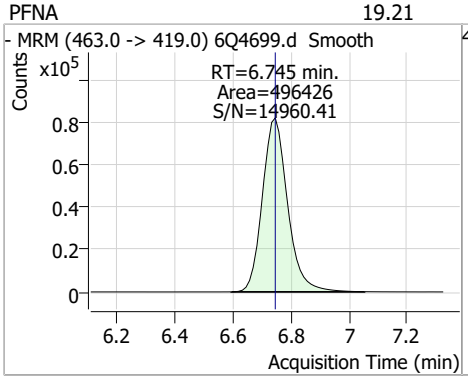


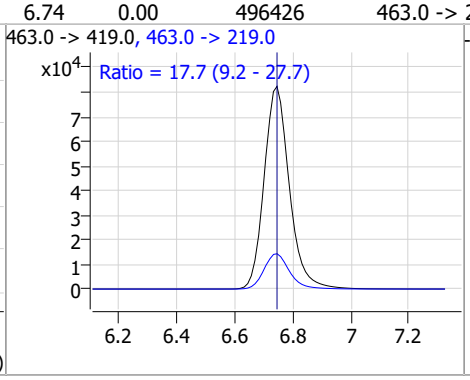


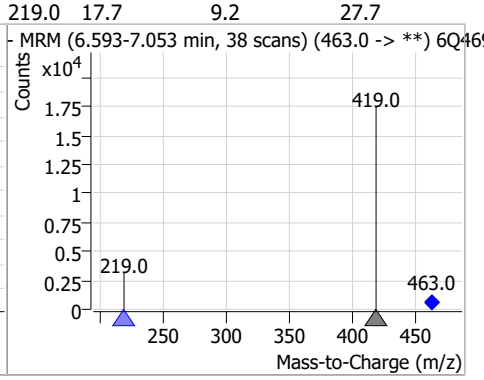


Perfluorinated Compounds by LC/MS/MS

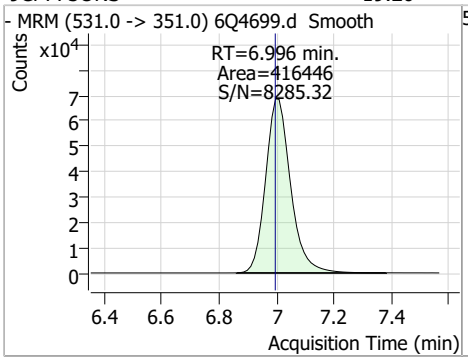
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	19.21	6.74	0.00	496426	463.0 -> 219.0	17.7	9.2	27.7

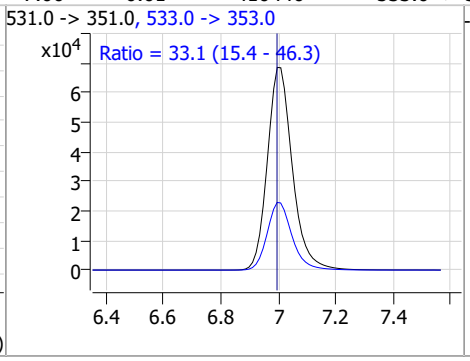


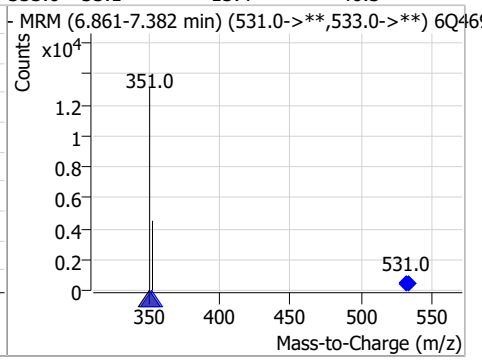




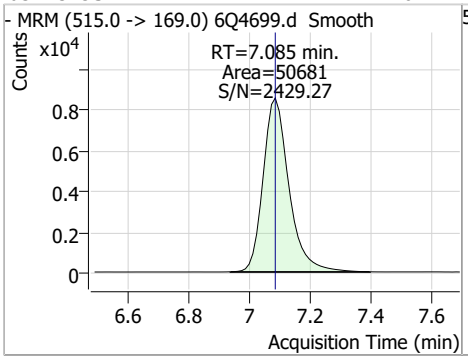
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	19.26	7.00	-0.01	416446	533.0 -> 353.0	33.1	15.4	46.3

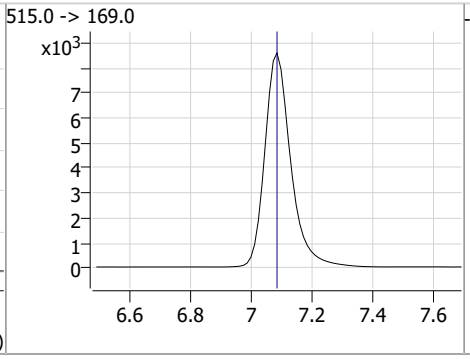


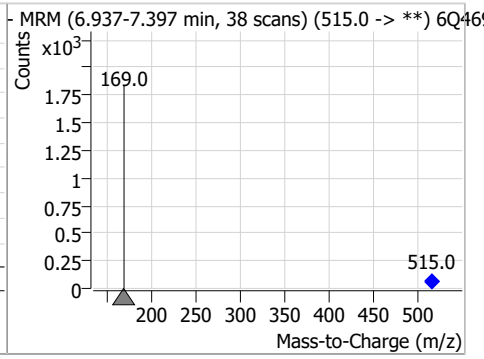




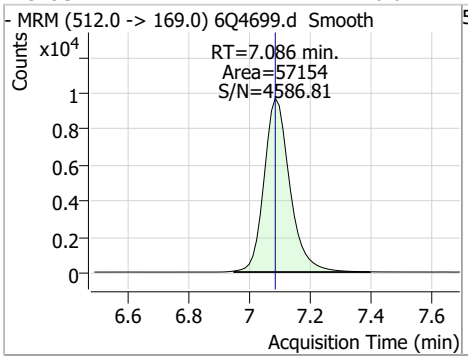
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.40	7.08	0.00	50681				

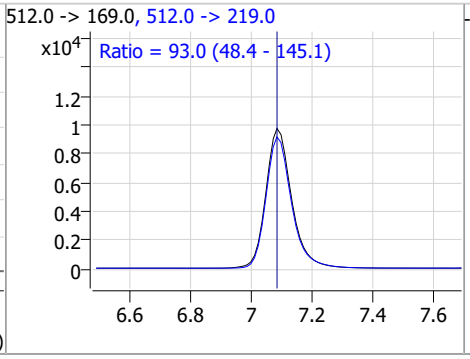


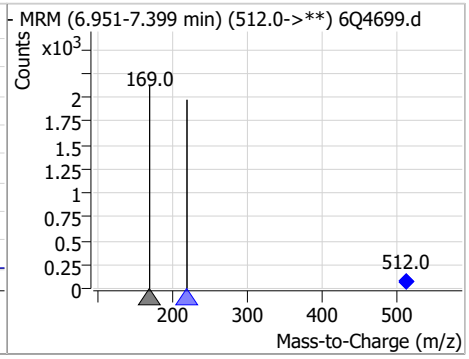




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.67	7.09	0.00	57154	512.0 -> 219.0	93.0	48.4	145.1

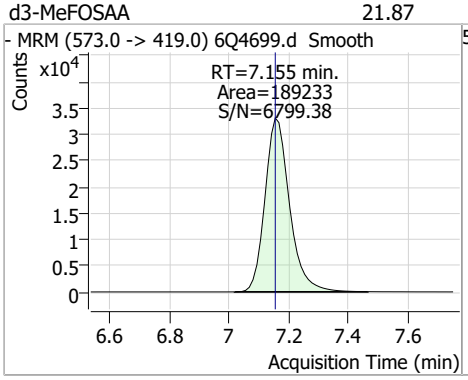


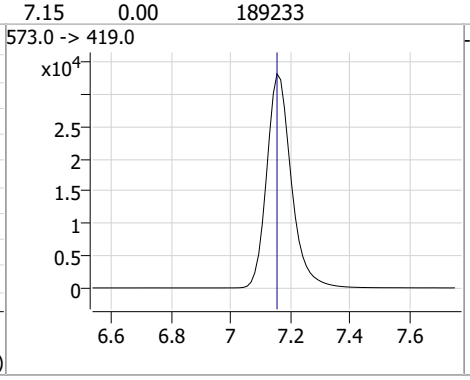


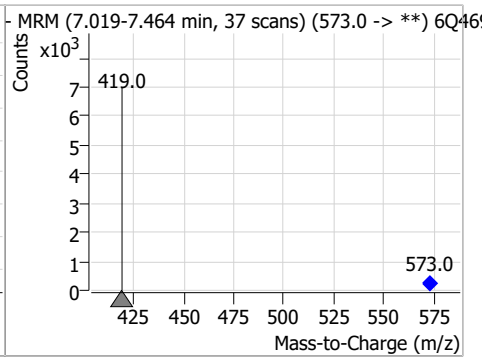


Perfluorinated Compounds by LC/MS/MS

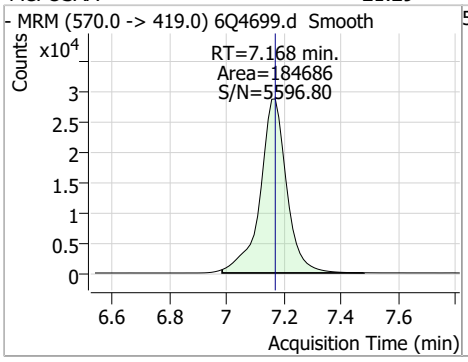
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.87	7.15	0.00	189233				

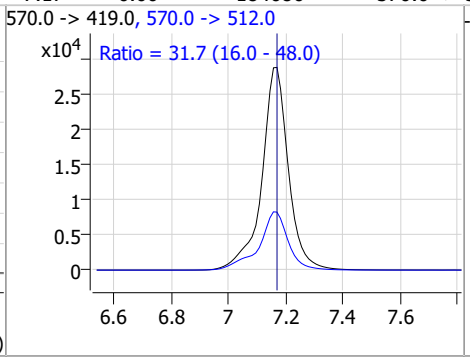


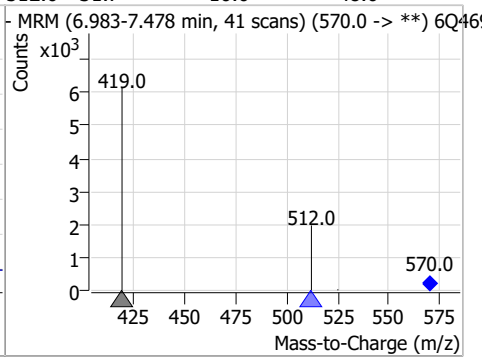




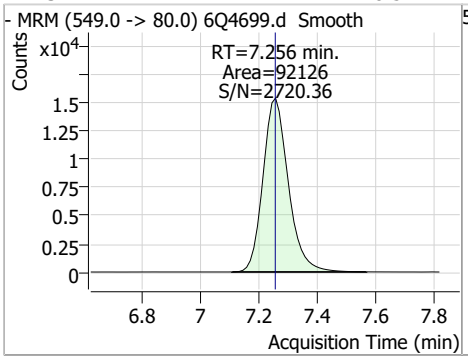
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.29	7.17	0.00	184686	570.0 -> 512.0	31.7	16.0	48.0

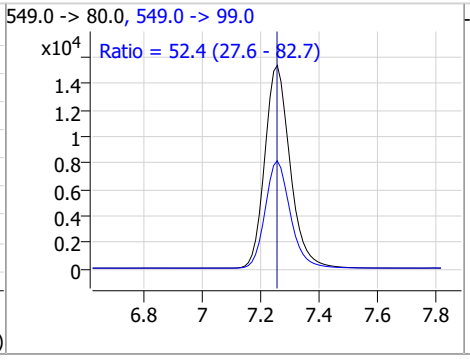


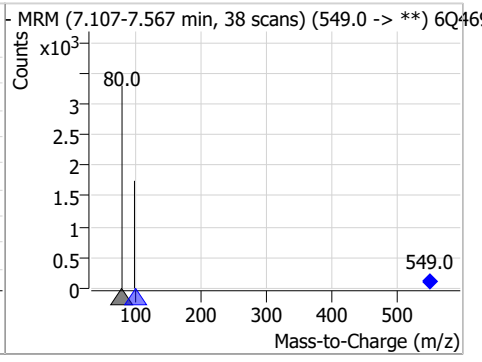




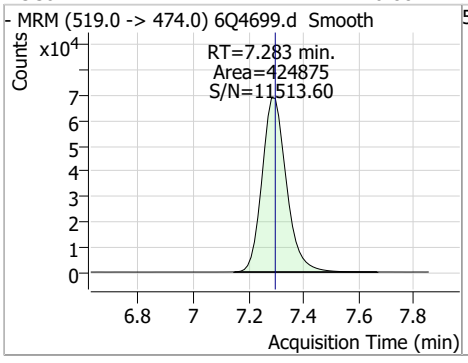
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	18.54	7.26	-0.01	92126	549.0 -> 99.0	52.4	27.6	82.7

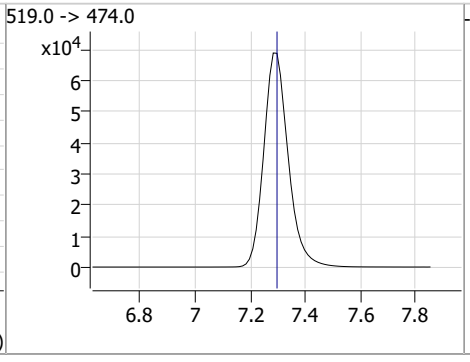


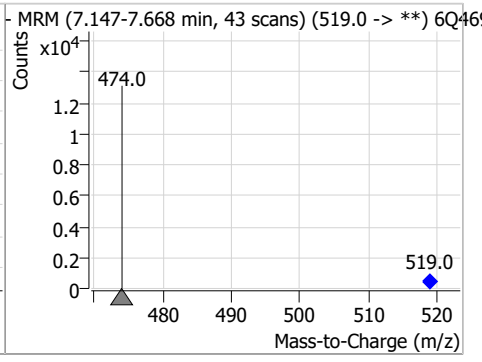




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.88	7.28	-0.01	424875				

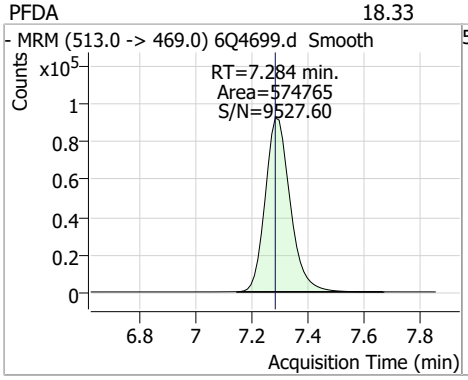


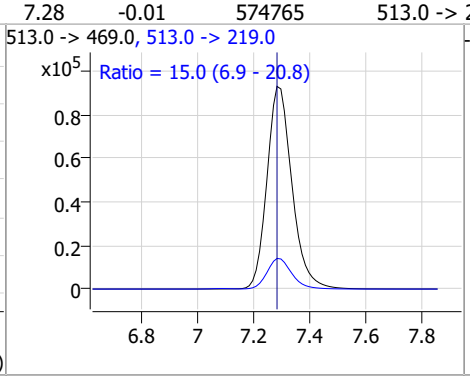


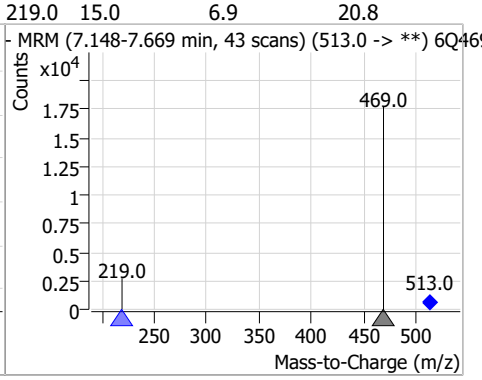


Perfluorinated Compounds by LC/MS/MS

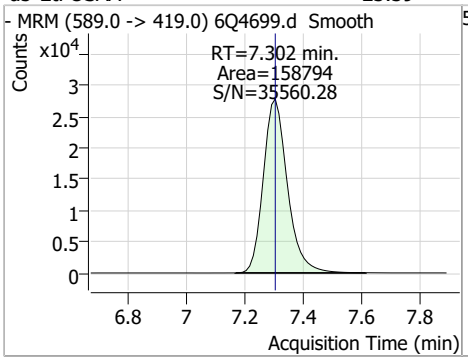
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	18.33	7.28	-0.01	574765	513.0 -> 219.0	15.0	6.9	20.8

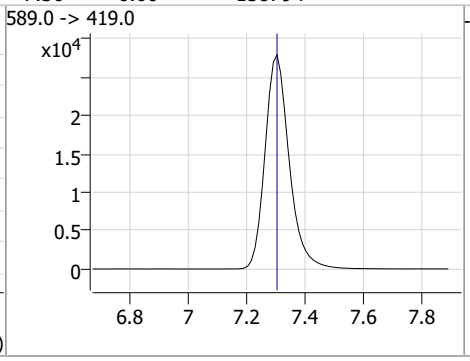


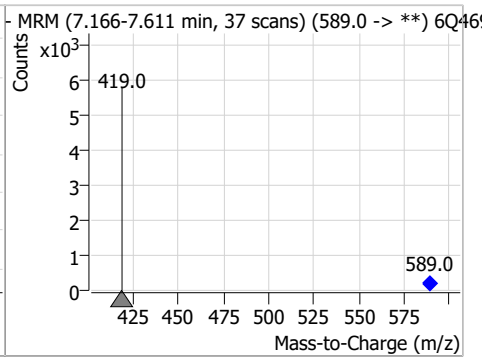




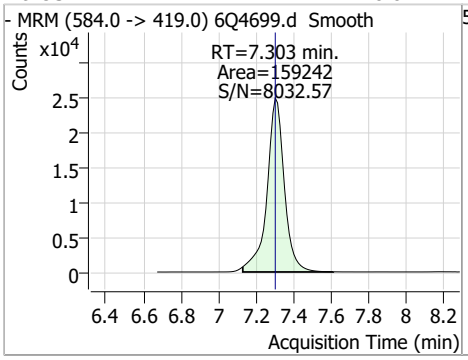
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.39	7.30	0.00	158794				

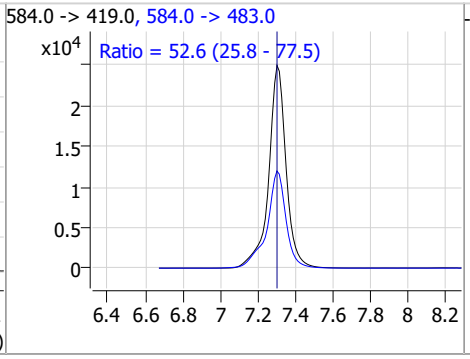


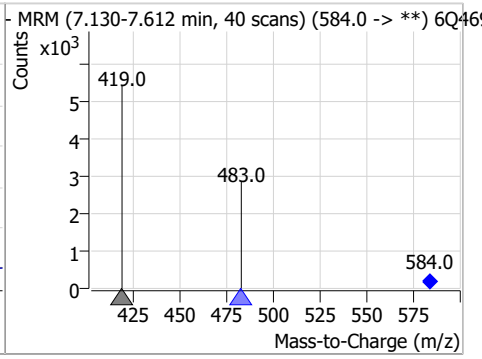




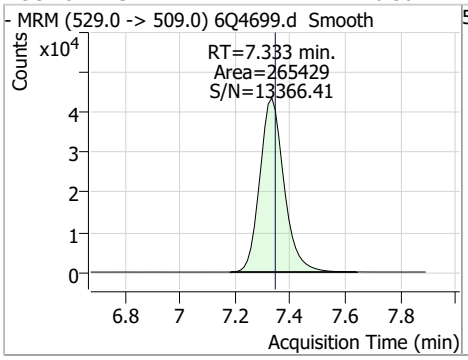
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.81	7.30	0.00	159242	584.0 -> 483.0	52.6	25.8	77.5

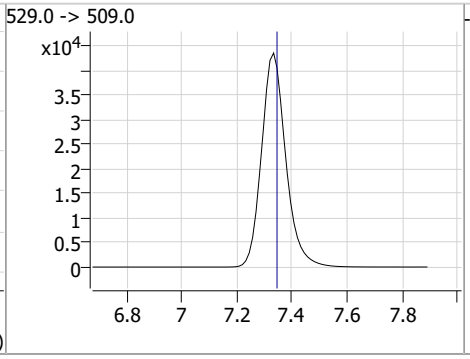


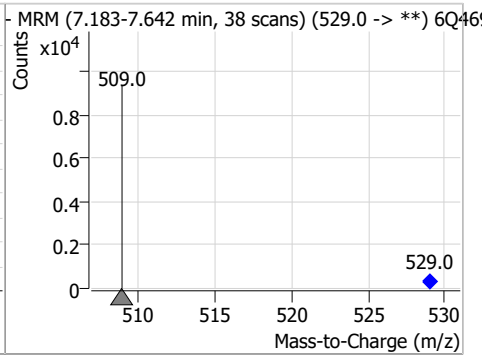




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	20.36	7.33	-0.01	265429				

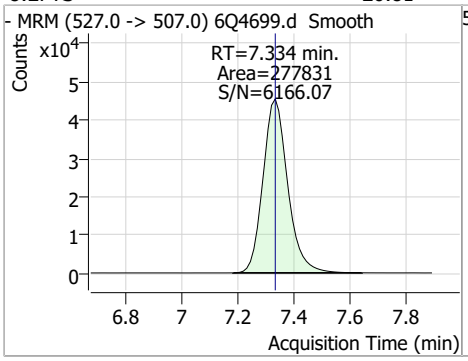


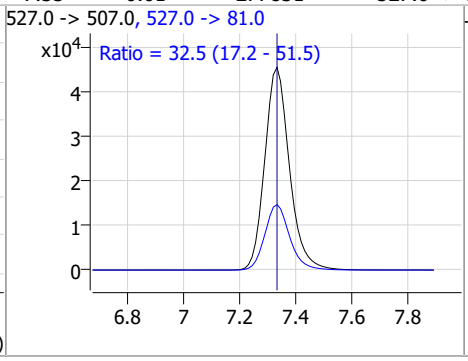


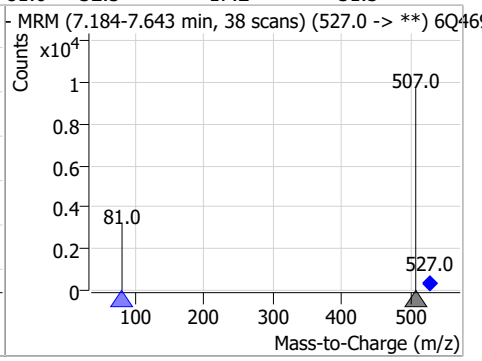


Perfluorinated Compounds by LC/MS/MS

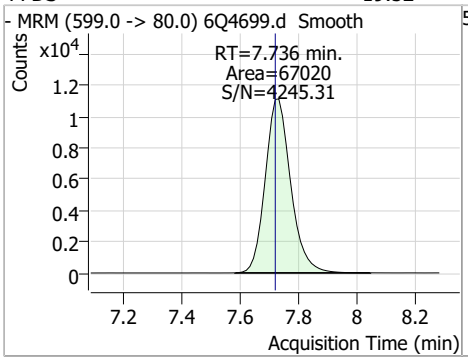
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.81	7.33	-0.01	277831	527.0 -> 81.0	32.5	17.2	51.5

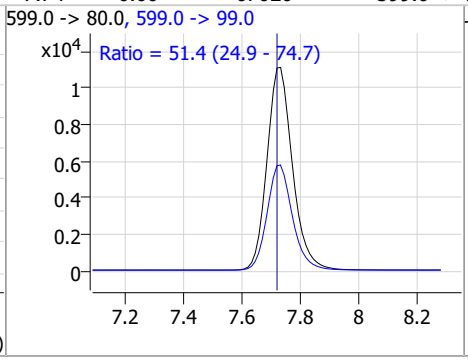


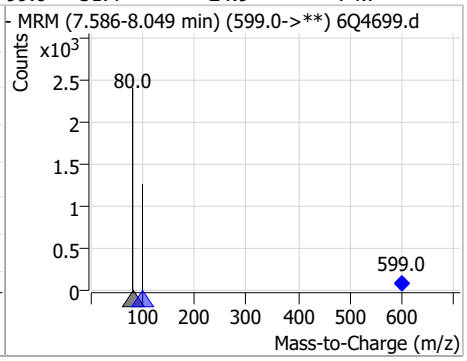




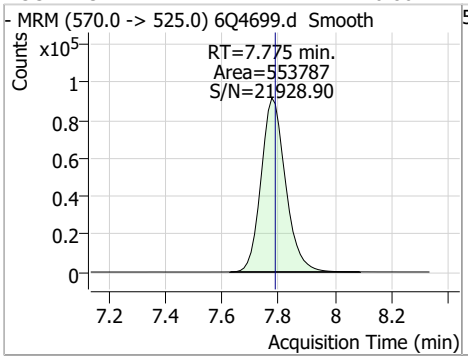
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.52	7.74	0.00	67020	599.0 -> 99.0	51.4	24.9	74.7

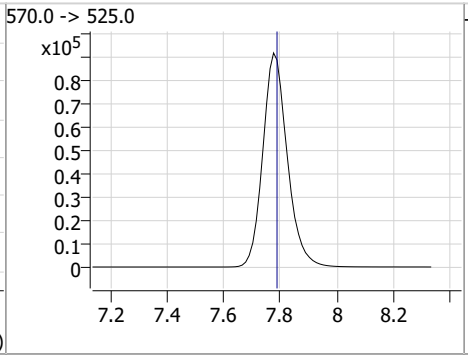


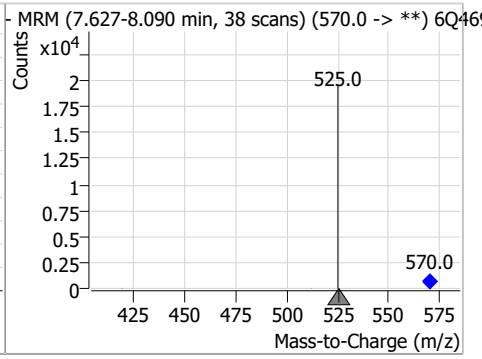




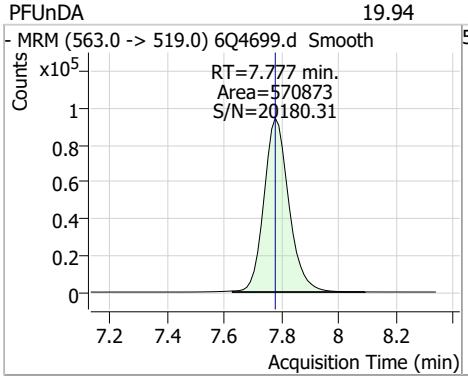
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.86	7.78	-0.01	553787				

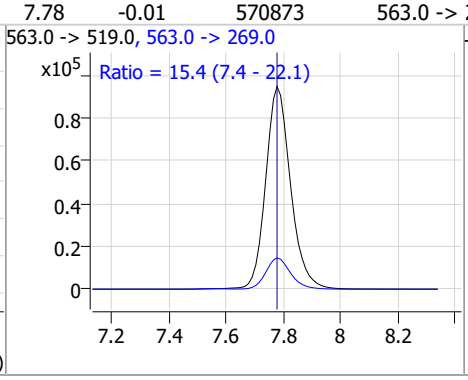


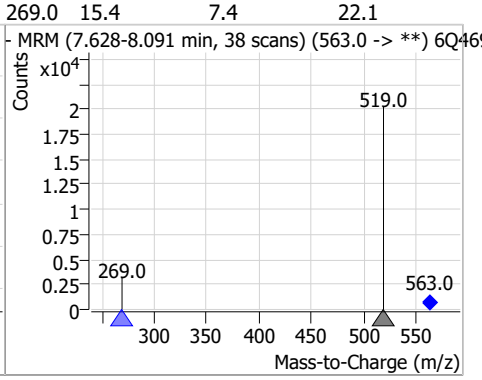




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.94	7.78	-0.01	570873	563.0 -> 269.0	15.4	7.4	22.1

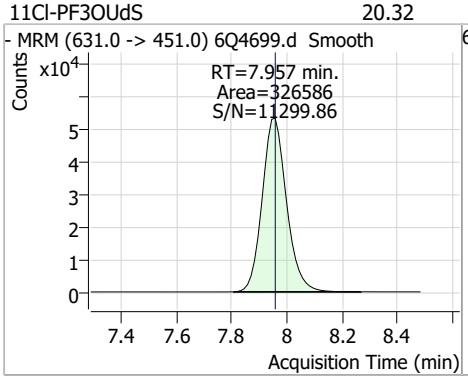


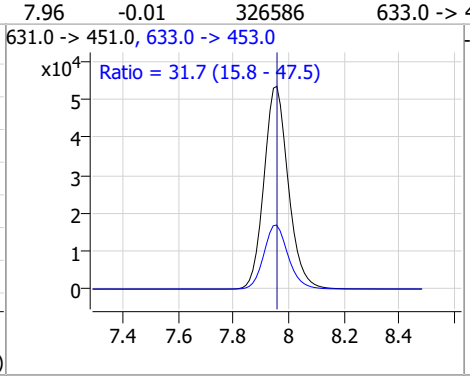


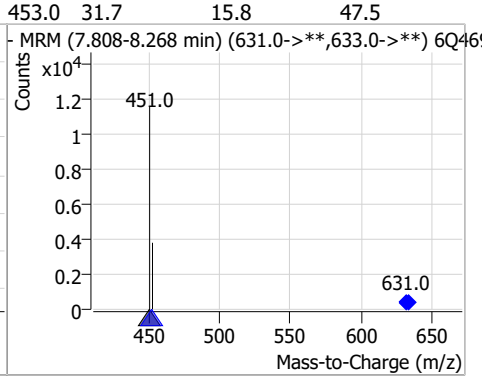


Perfluorinated Compounds by LC/MS/MS

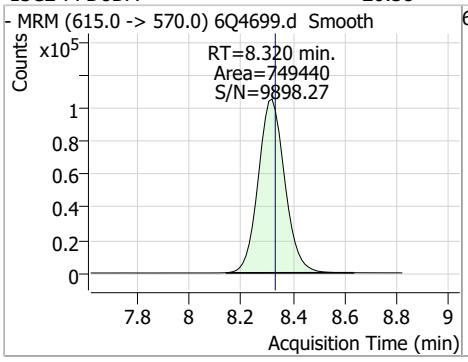
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.32	7.96	-0.01	326586	633.0 -> 453.0	31.7	15.8	47.5

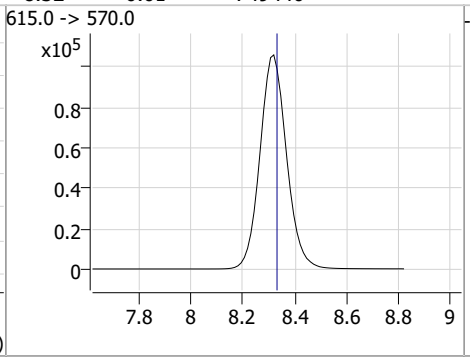


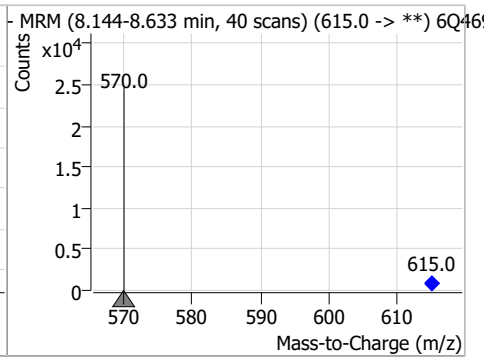




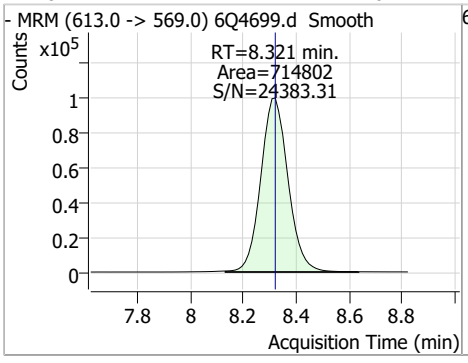
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.38	8.32	-0.01	749440				

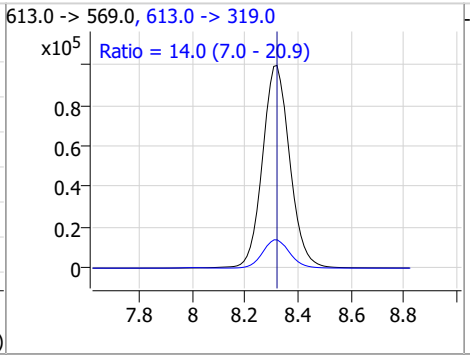


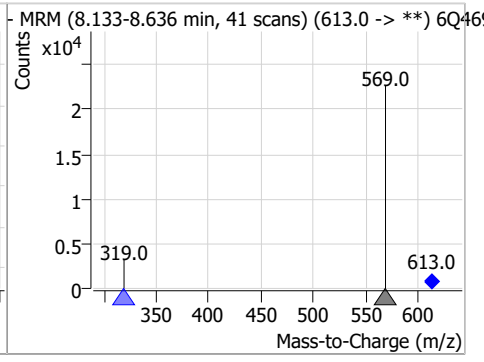




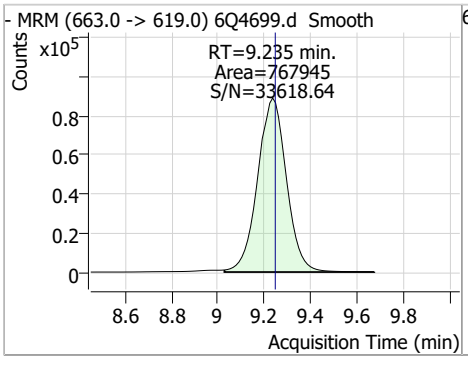
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.44	8.32	-0.01	714802	613.0 -> 319.0	14.0	7.0	20.9

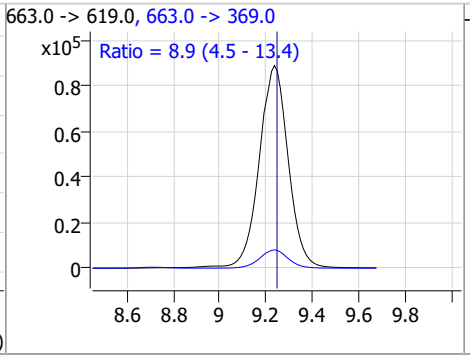


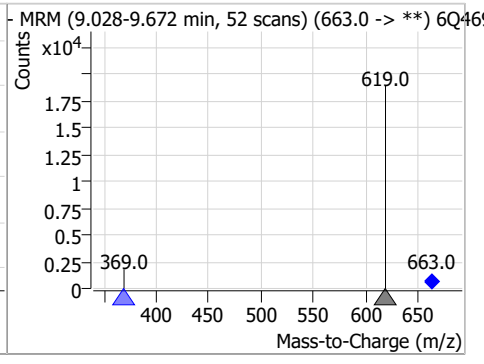




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.22	9.24	-0.02	767945	663.0 -> 369.0	8.9	4.5	13.4

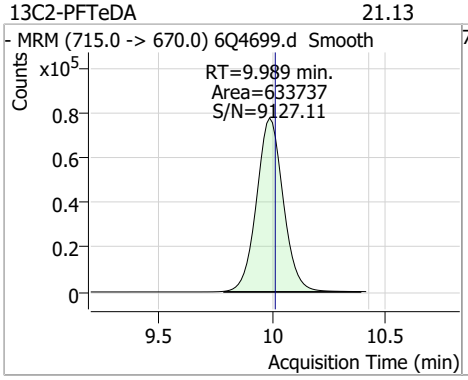


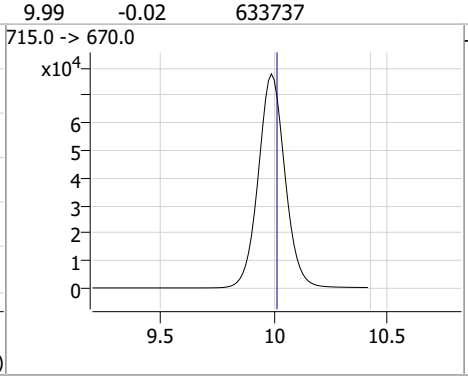


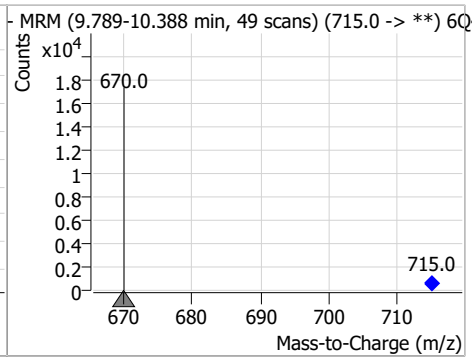


Perfluorinated Compounds by LC/MS/MS

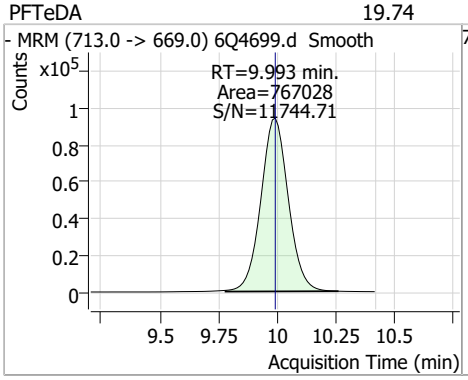
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.13	9.99	-0.02	633737				

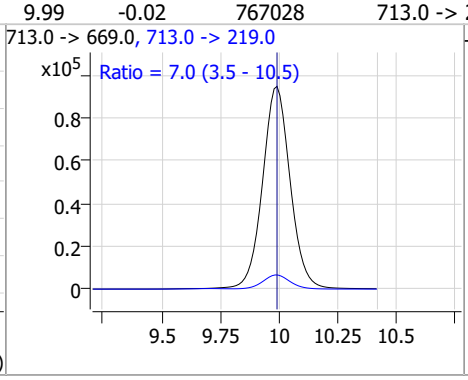


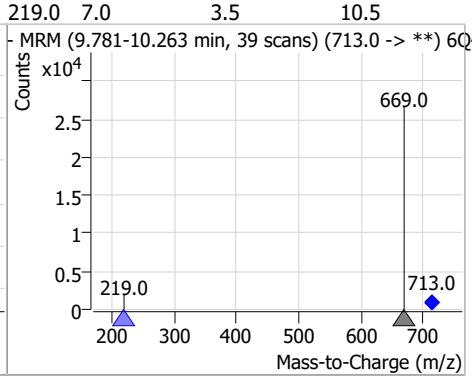




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.74	9.99	-0.02	767028	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q85-ECC85
Lab FileID: 6Q4699.D
Injection Time: 09/15/22 08:06
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/15/22 16:11 James Boone
Supervisor approved: 09/16/22 17:15 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4707.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 4:20:33 PM
Sample Name : cc85-1.0LL
Vial : P1-A3
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	87182	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	152719	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	228401	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	272953	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	471524	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	552163	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	418679	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	591889	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	780233	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	639199	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	212743	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	32961	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	31025	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	45115	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	272972	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	350125	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	249743	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	195655	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5407	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	49810	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	146838	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	272972	20.21	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.1%		
13C2-6:2FTS	6.124	429.0 -> 409.0	350125	20.51	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.6%		
13C2-8:2FTS	7.333	529.0 -> 509.0	249743	19.16	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 95.8%		
13C2-PFDoDA	8.320	615.0 -> 570.0	780233	21.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C2-PFTeDA	9.989	715.0 -> 670.0	639199	21.31	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.5%		
13C3-PFBS	3.635	302.0 -> 99.0	32961	21.52	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.6%		
13C3-PFHxS	5.475	402.0 -> 99.0	31025	22.44	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.2%		
13C4-PFBA	1.949	217.0 -> 172.0	87182	21.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C4-PFHpA	5.445	367.0 -> 322.0	272953	22.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C5-PFHxA	4.573	318.0 -> 273.0	228401	21.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.8%		
13C5-PFPeA	3.405	268.0 -> 223.0	152719	21.78	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C6-PFDA	7.297	519.0 -> 474.0	418679	20.58	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

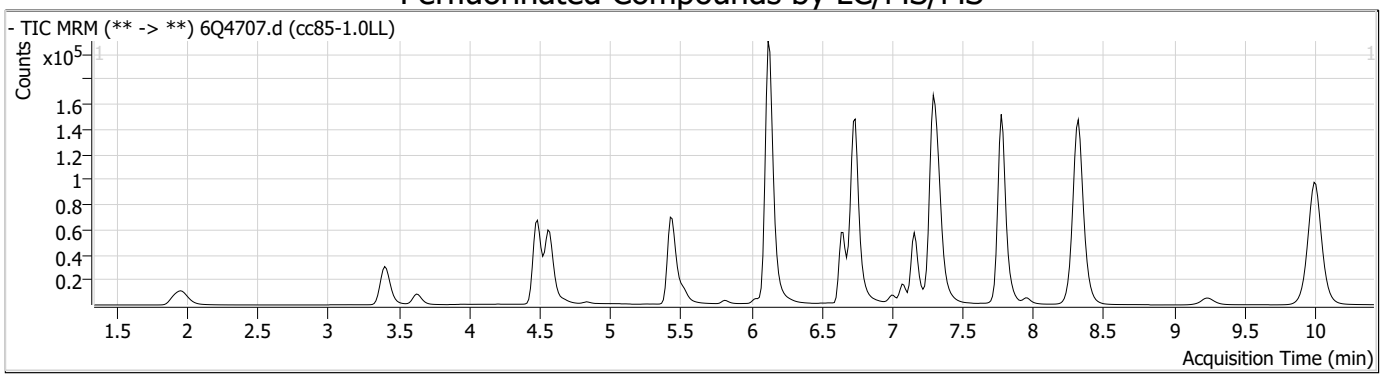
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.9%		
13C7-PFUnDA	7.775	570.0 -> 525.0	591889	22.29 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.5%		
13C8-FOSA	6.654	506.0 -> 78.0	212743	21.75 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C8-PFOA	6.138	421.0 -> 376.0	471524	22.22 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.1%		
13C8-PFOS	6.717	507.0 -> 99.0	45115	21.27 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C9-PFNA	6.745	472.0 -> 427.0	552163	21.43 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.1%		
d3-MeFOSAA	7.155	573.0 -> 419.0	195655	22.61 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.0%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5415	20.37 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.9%		
d3-MeFOSA	7.085	515.0 -> 169.0	49810	22.02 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.1%		
d5-EtFOSAA	7.302	589.0 -> 419.0	146932	21.64 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	14603	0.99 µg/L		99
		327.0 -> 81.0	4867			
6:2FTS	6.124	427.0 -> 407.0	16877	0.95 µg/L		99
		427.0 -> 81.0	4597			
8:2FTS	7.334	527.0 -> 507.0	13098	1.04 µg/L		99
		527.0 -> 81.0	4411			
EtFOSAA	7.303	584.0 -> 419.0	6969	0.89 µg/L		92
		584.0 -> 483.0	3997			
FOSA	6.656	498.0 -> 78.0	9870	0.92 µg/L		100
		498.0 -> 478.0	385			
MeFOSAA	7.168	570.0 -> 419.0	8659	0.97 µg/L		97
		570.0 -> 512.0	2621			
PFBA	1.943	213.0 -> 169.0	1679	0.88 µg/L		100
PFBS	3.627	299.0 -> 80.0	4935	0.90 µg/L		100
		299.0 -> 99.0	1848			
PFDA	7.298	513.0 -> 469.0	27346	0.88 µg/L		97
		513.0 -> 219.0	4173			
PFDoDA	8.321	613.0 -> 569.0	33166	0.91 µg/L		99
		613.0 -> 319.0	4704			
PFDS	7.736	599.0 -> 80.0	3089	0.84 µg/L		97
		599.0 -> 99.0	1600			
PFHpA	5.446	363.0 -> 319.0	15190	0.86 µg/L		97
		363.0 -> 169.0	2399			
PFHpS	6.136	449.0 -> 80.0	3893	0.99 µg/L		99
		449.0 -> 99.0	2020			
PFHxA	4.574	313.0 -> 269.0	10820	0.90 µg/L		99
		313.0 -> 119.0	286			
PFHxS	5.477	399.0 -> 80.0	3885	0.87 µg/L	m	100
		399.0 -> 99.0	1895			
PFNA	6.745	463.0 -> 419.0	22162	0.85 µg/L		100
		463.0 -> 219.0	4078			
PFNS	7.256	549.0 -> 80.0	4549	0.99 µg/L		86
		549.0 -> 99.0	2037			
PFOA	6.138	413.0 -> 369.0	22235	0.87 µg/L		99
		413.0 -> 169.0	3475			
PFOS	6.719	499.0 -> 80.0	3796	0.91 µg/L	m	98

Perfluorinated Compounds by LC/MS/MS

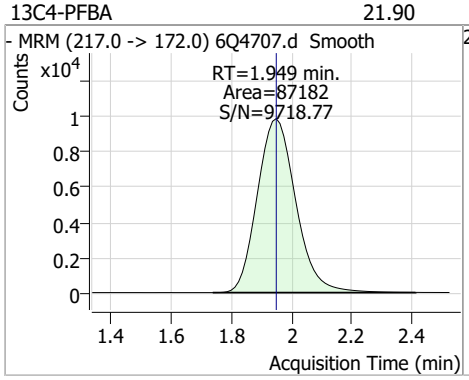
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	1737			
PFPeA	3.408	263.0 -> 219.0	5823	0.90	µg/L	100
PFPeS	4.681	349.0 -> 80.0	4046	0.89	µg/L	99
		349.0 -> 99.0	1821			
PFTeDA	9.993	713.0 -> 669.0	36491	0.93	µg/L	99
		713.0 -> 219.0	2645			
PFTrDA	9.235	663.0 -> 619.0	35517	0.94	µg/L	99
		663.0 -> 369.0	3317			
PFUnDA	7.777	563.0 -> 519.0	24660	0.81	µg/L	94
		563.0 -> 269.0	4192			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	14983	0.90	µg/L	100
		633.0 -> 453.0	4745			
9Cl-PF3ONS	7.009	531.0 -> 351.0	18851	0.88	µg/L	99
		533.0 -> 353.0	5979			
ADONA	5.532	377.0 -> 251.0	24866	0.86	µg/L	99
		377.0 -> 85.0	6005			
HFPO-DA	4.840	285.0 -> 169.0	222	0.87	µg/L	95
		285.0 -> 185.0	26			
MeFOSA	7.086	512.0 -> 169.0	2404	0.88	µg/L	96
		512.0 -> 219.0	2409			
4-PFECHS	6.032	461.0 -> 381.0	12382	0.82	µg/L	98
		461.0 -> 99.0	4290			
FBSA	4.514	298.0 -> 78.0	10445	0.94	µg/L	99
		298.0 -> 64.0	762			
FHxSA	5.828	398.0 -> 78.0	9912	0.95	µg/L	100
		398.0 -> 64.0	348			

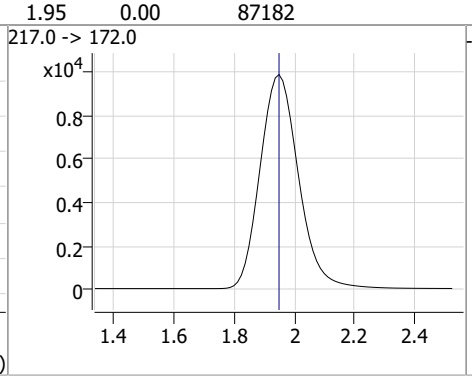
 # = Qualifier out of range, m = manually integrated, + = Area summed

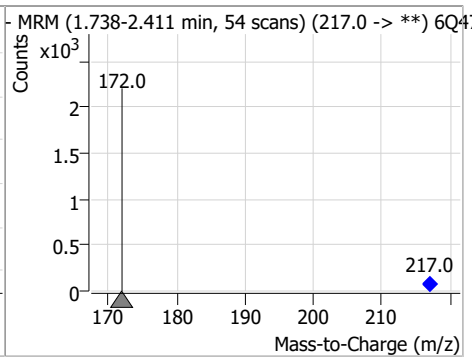
Perfluorinated Compounds by LC/MS/MS



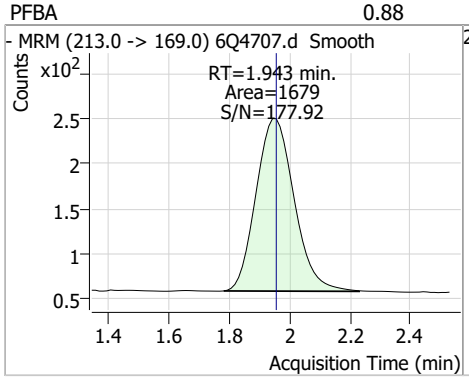
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.90	1.95	0.00	87182				

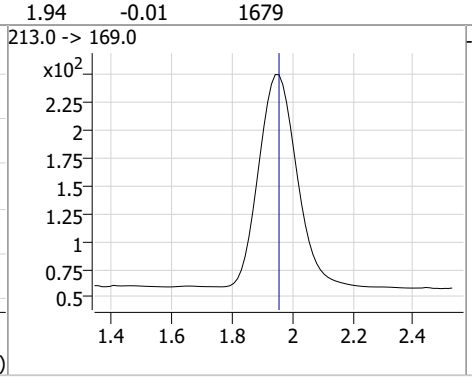


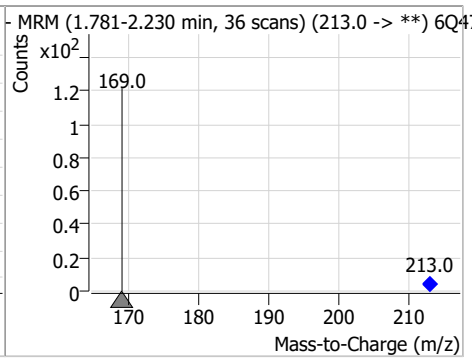




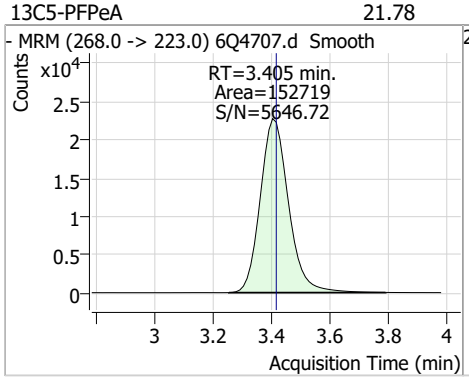
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	0.88	1.94	-0.01	1679				

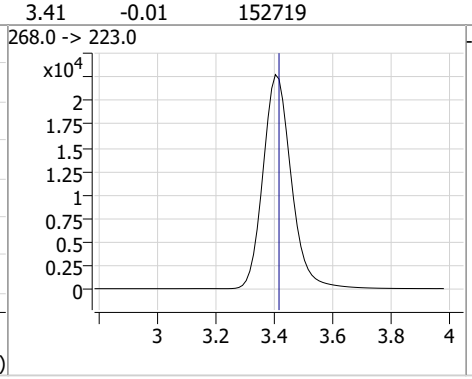


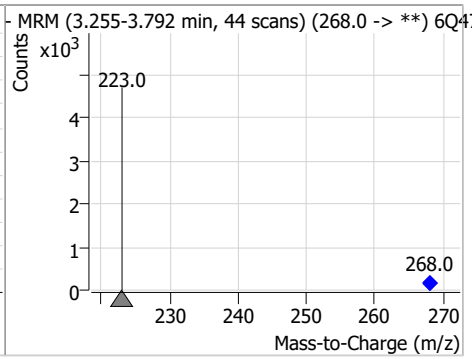




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.78	3.41	-0.01	152719				

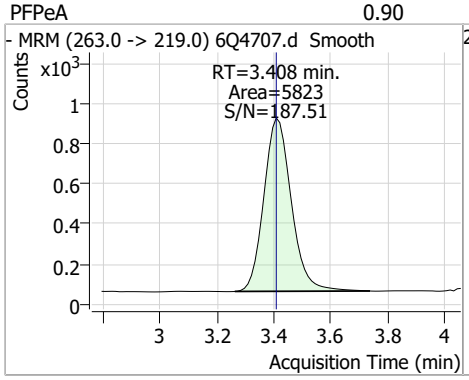


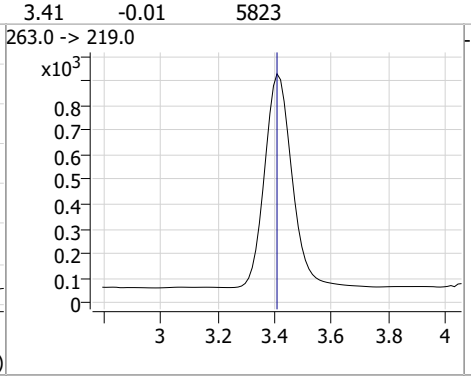


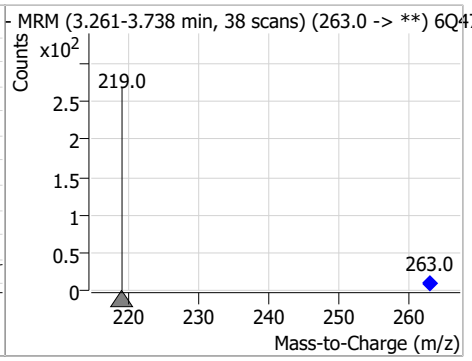


Perfluorinated Compounds by LC/MS/MS

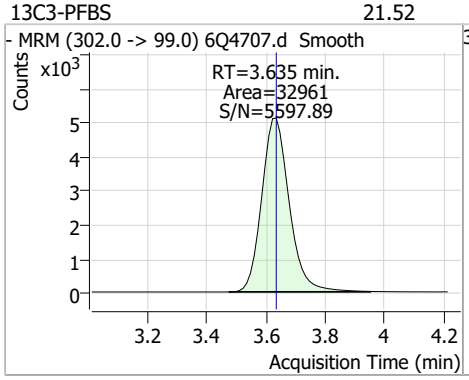
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	0.90	3.41	-0.01	5823				

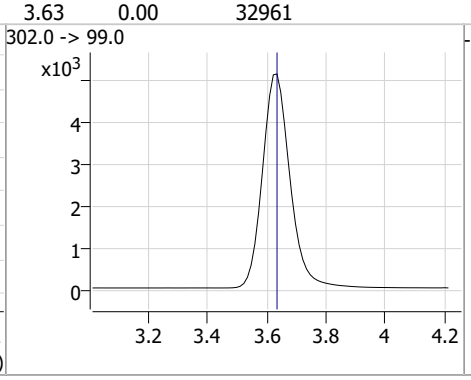


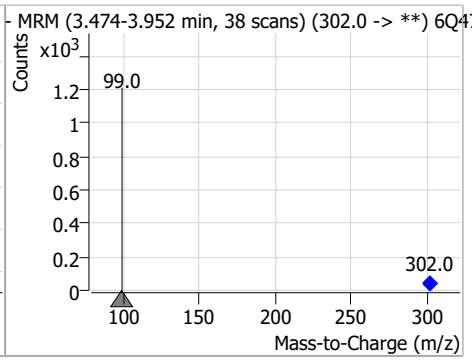




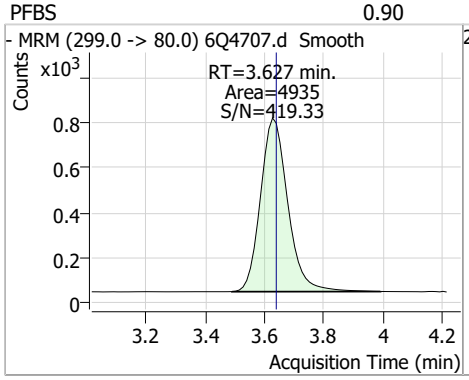
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.52	3.63	0.00	32961				

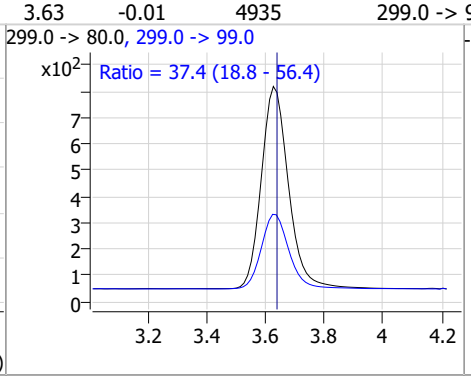


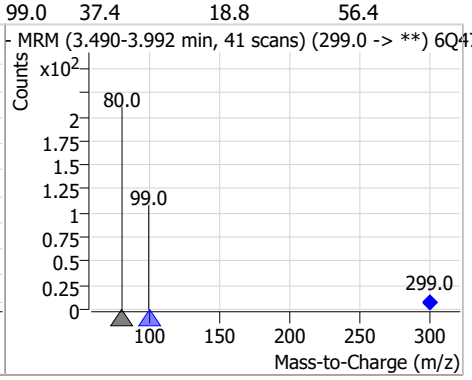




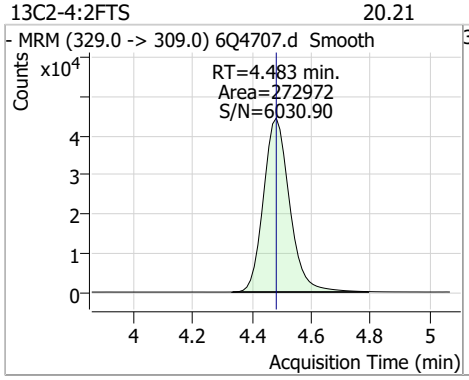
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	0.90	3.63	-0.01	4935	299.0 -> 99.0	37.4	18.8	56.4

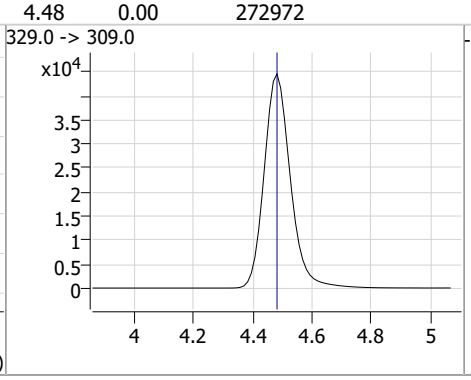


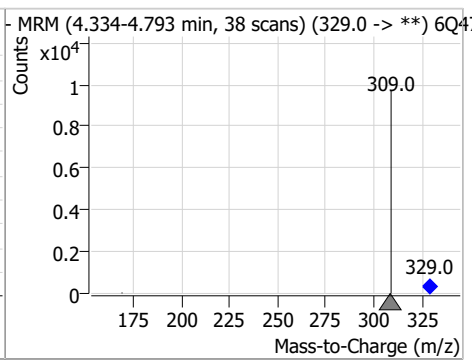




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.21	4.48	0.00	272972				

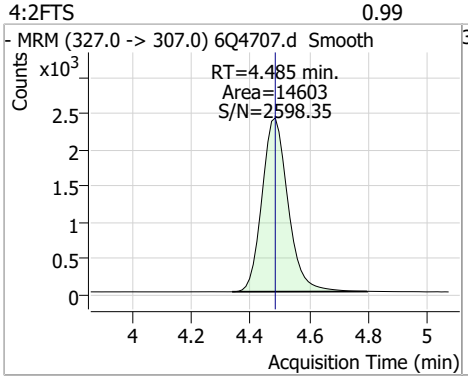


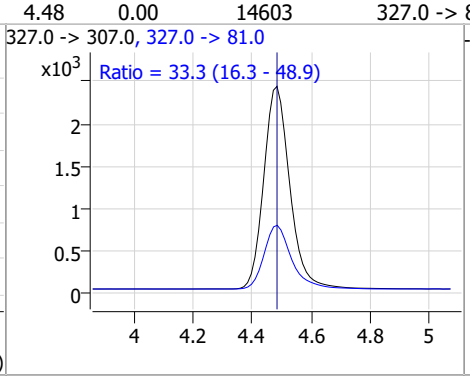


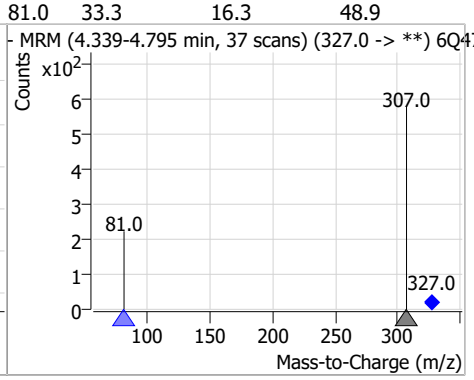


Perfluorinated Compounds by LC/MS/MS

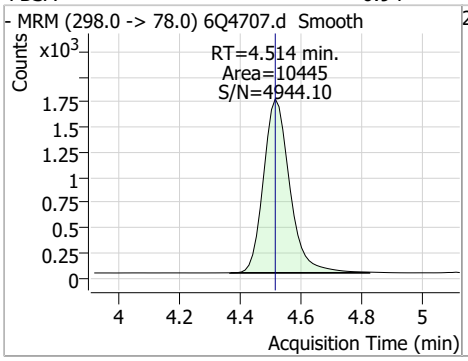
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	0.99	4.48	0.00	14603	327.0 -> 81.0	33.3	16.3	48.9

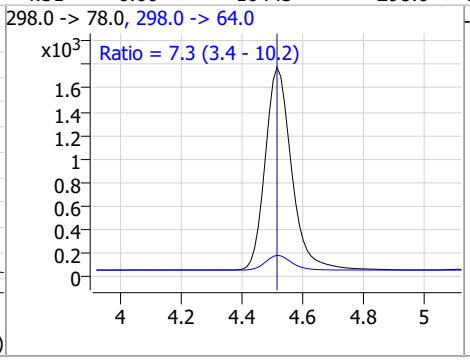


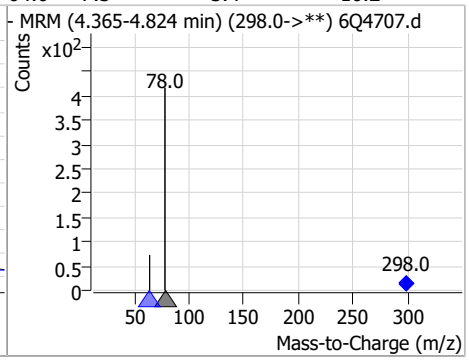




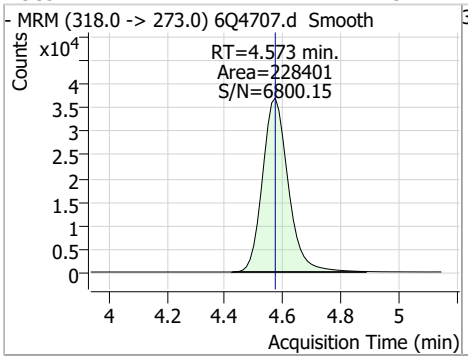
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	0.94	4.51	0.00	10445	298.0 -> 64.0	7.3	3.4	10.2

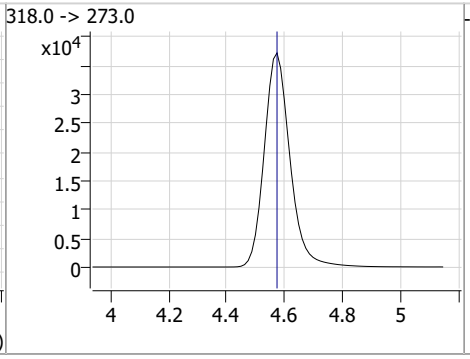


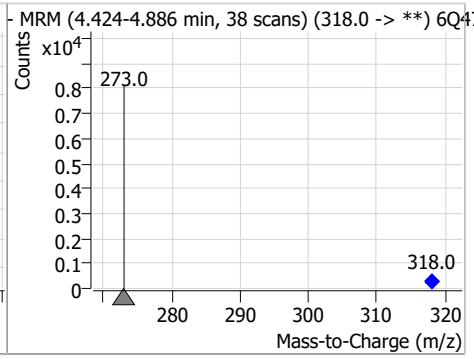




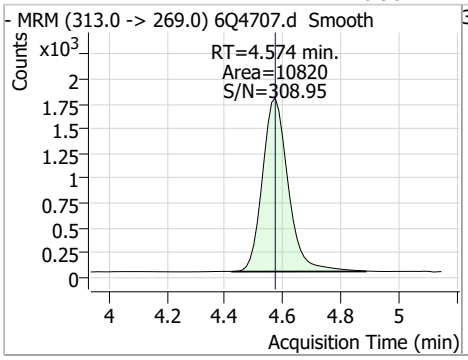
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.37	4.57	0.00	228401				

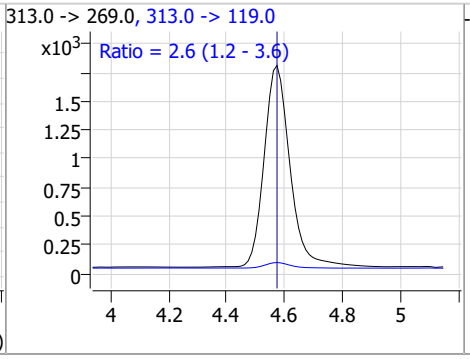


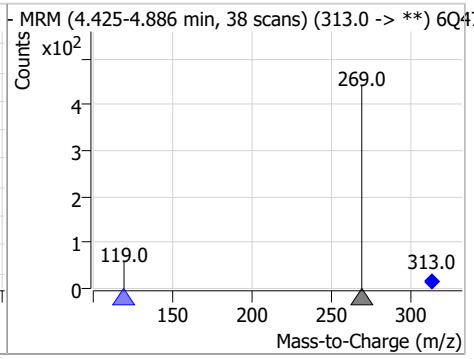




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	0.90	4.57	0.00	10820	313.0 -> 119.0	2.6	1.2	3.6

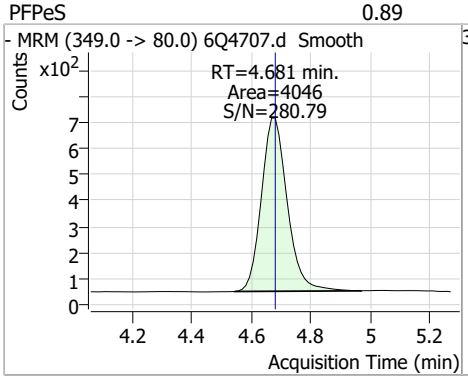


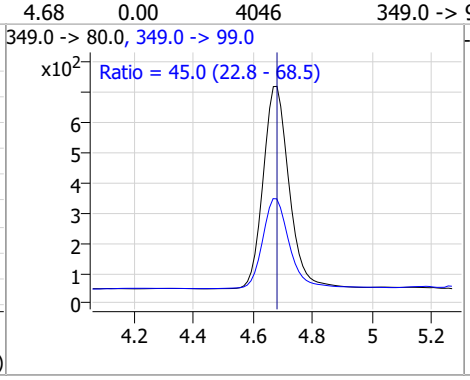


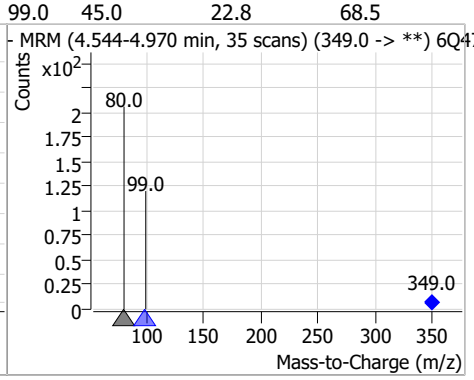


Perfluorinated Compounds by LC/MS/MS

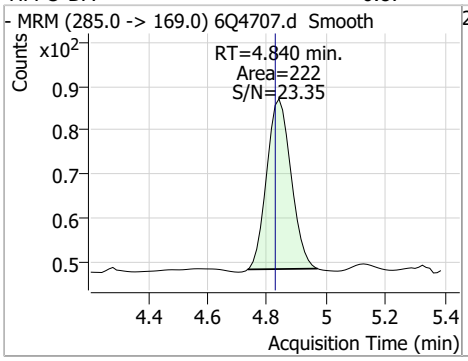
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	0.89	4.68	0.00	4046	349.0 -> 99.0	45.0	22.8	68.5

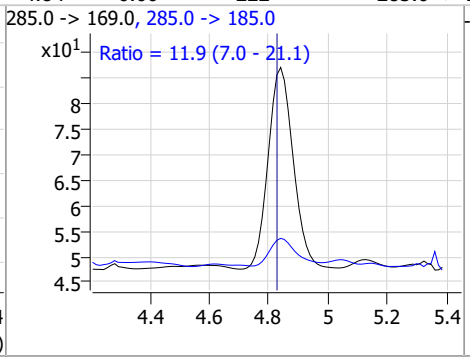


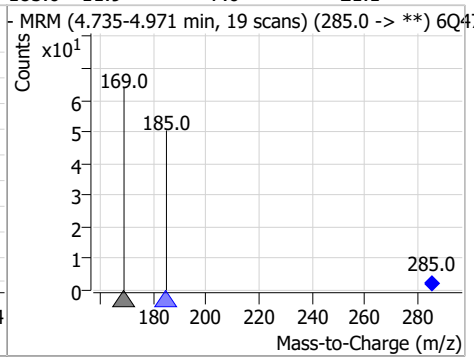




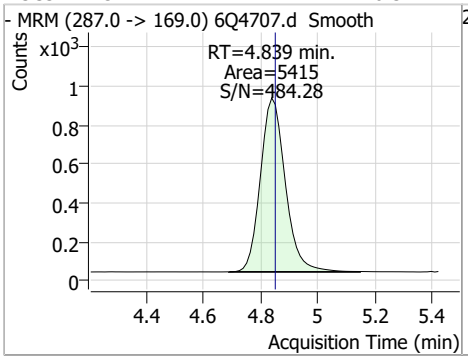
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	0.87	4.84	0.00	222	285.0 -> 185.0	11.9	7.0	21.1

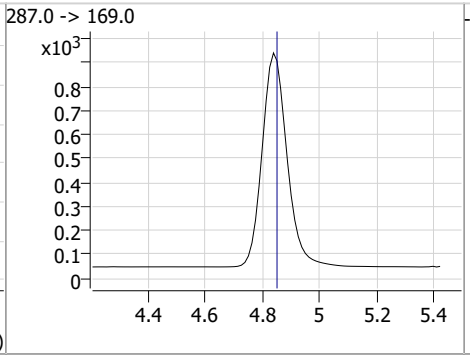


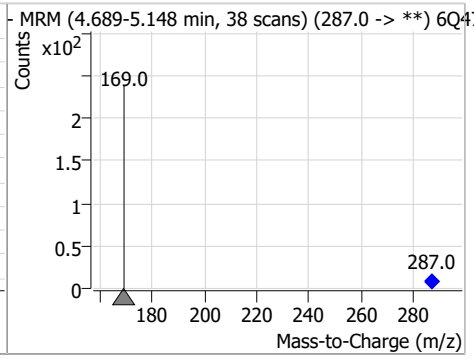




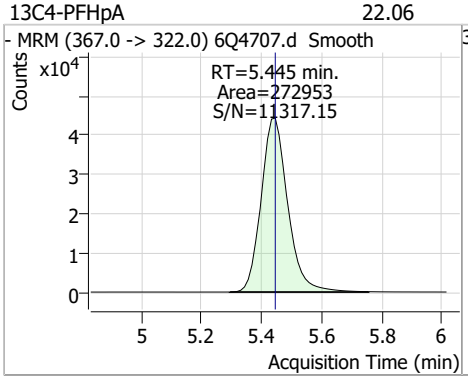
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.37	4.84	-0.01	5415				

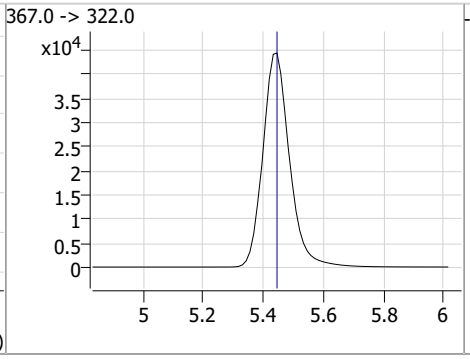


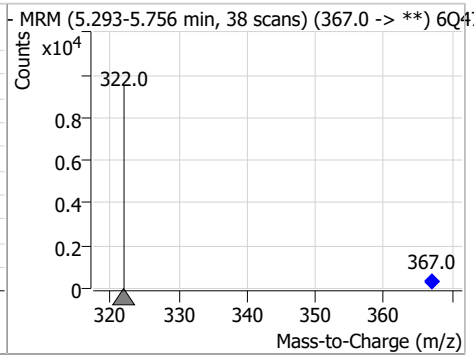




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.06	5.45	0.00	272953				

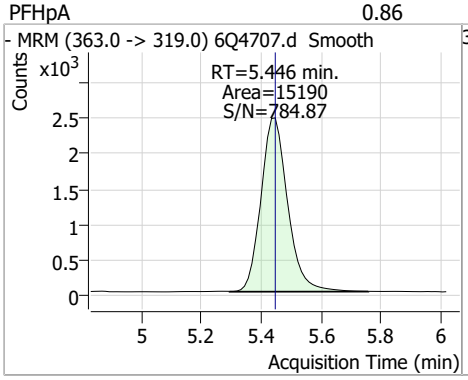


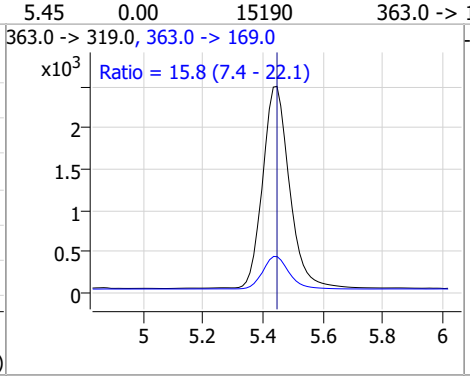


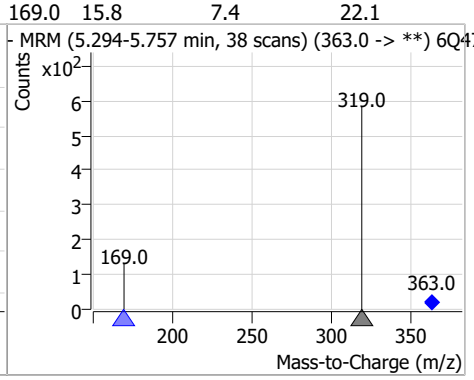


Perfluorinated Compounds by LC/MS/MS

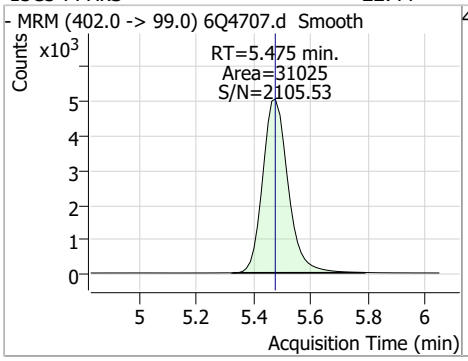
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	0.86	5.45	0.00	15190	363.0 -> 169.0	15.8	7.4	22.1

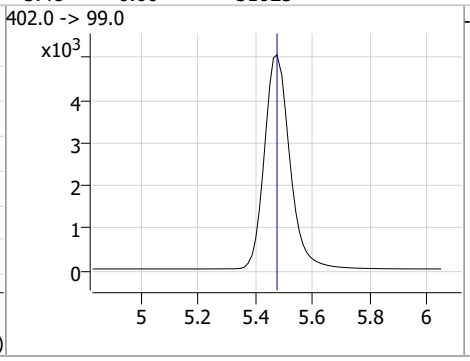


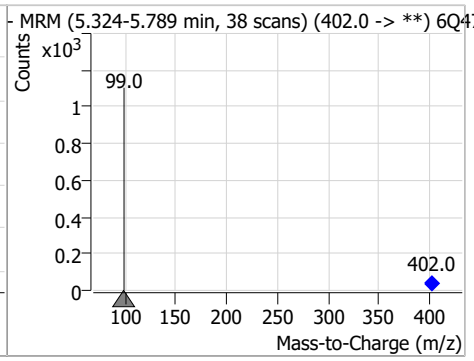




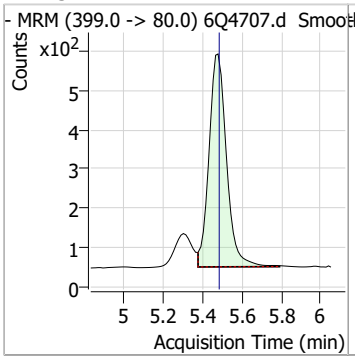
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	22.44	5.48	0.00	31025				

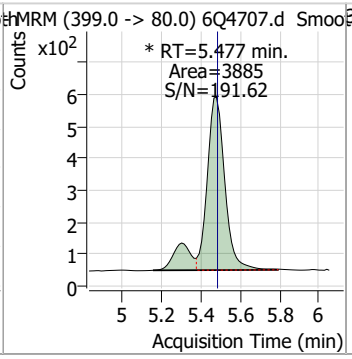


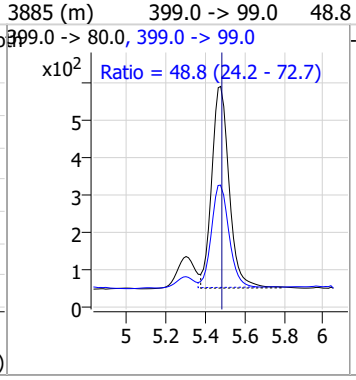


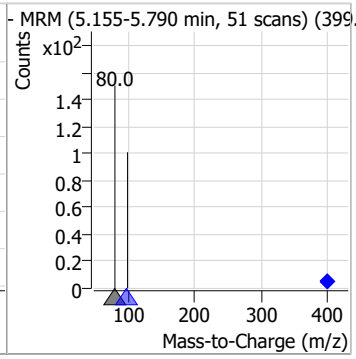


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	0.87	5.48	0.00	3885 (m)	399.0 -> 99.0	48.8	24.2	72.7

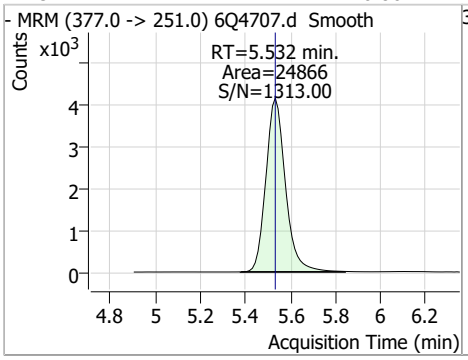


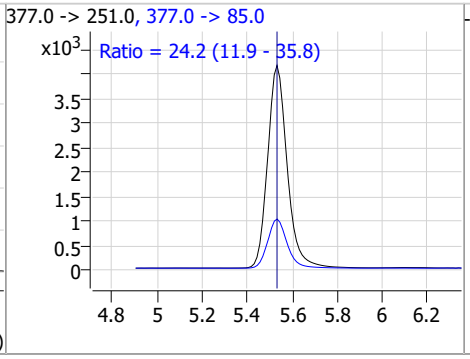


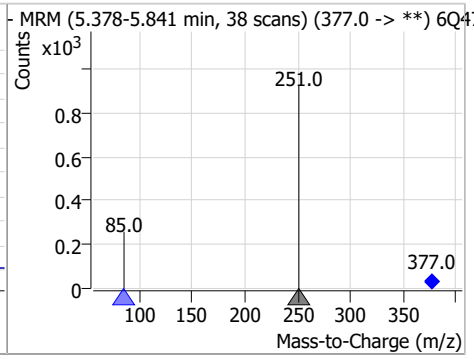




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	0.86	5.53	0.00	24866	377.0 -> 85.0	24.2	11.9	35.8

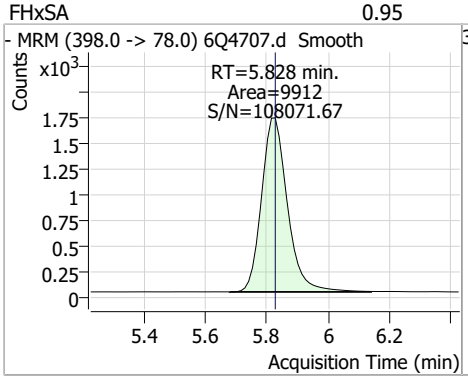


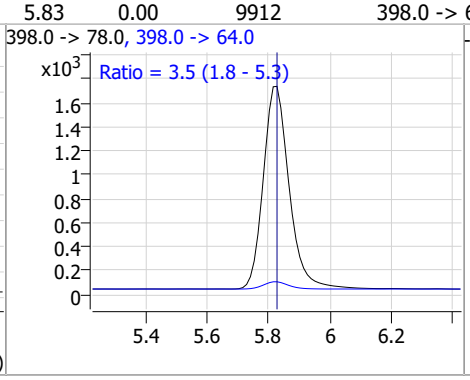


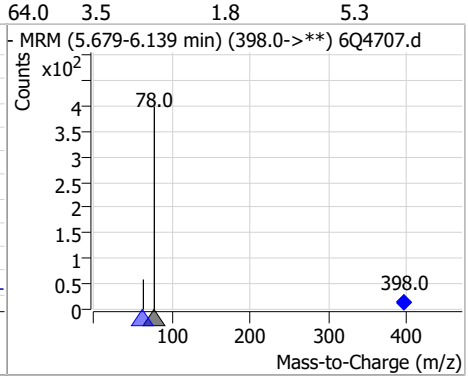


Perfluorinated Compounds by LC/MS/MS

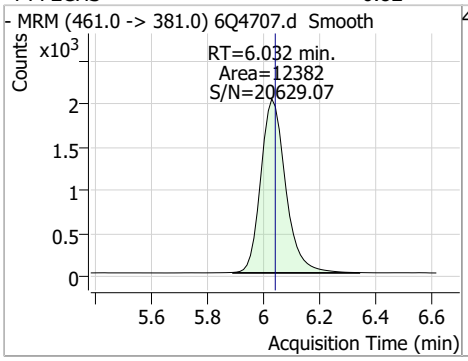
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	0.95	5.83	0.00	9912	398.0 -> 64.0	3.5	1.8	5.3

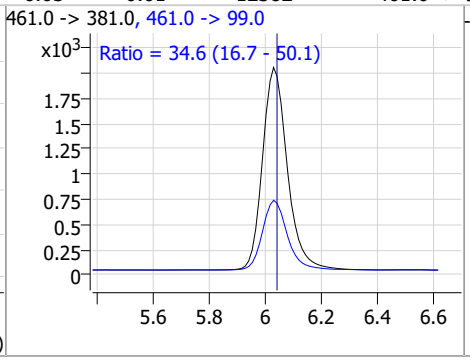


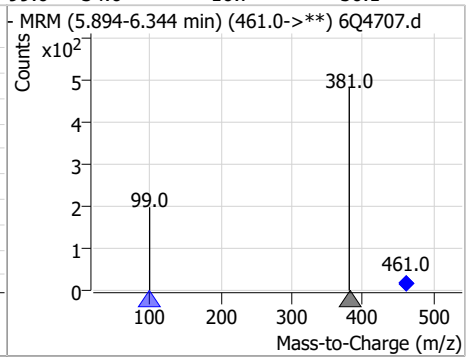




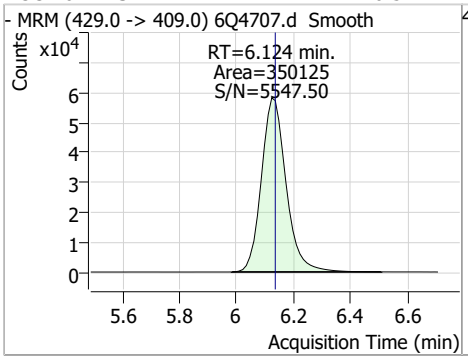
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	0.82	6.03	-0.01	12382	461.0 -> 99.0	34.6	16.7	50.1

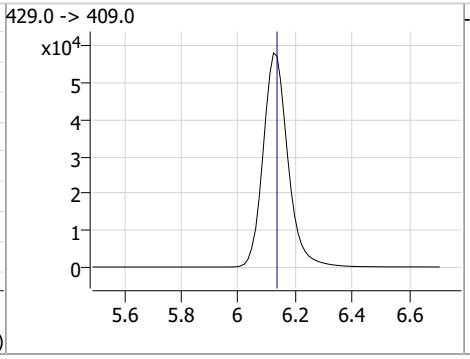


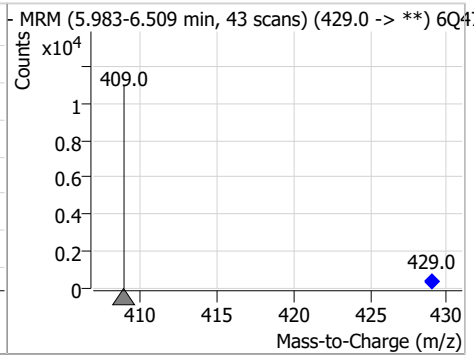




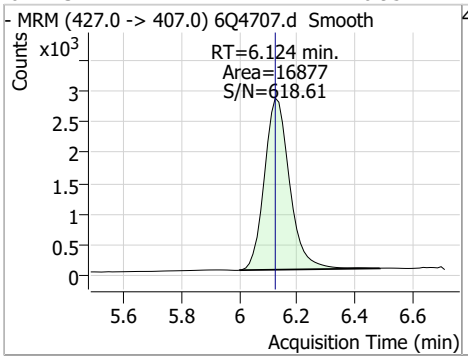
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.51	6.12	-0.01	350125				

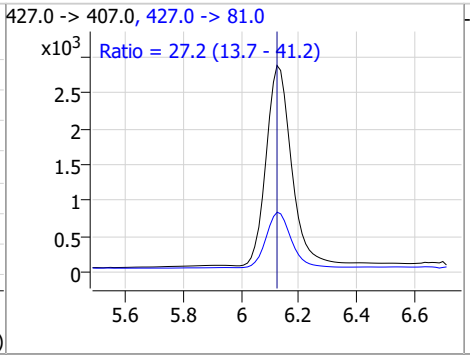


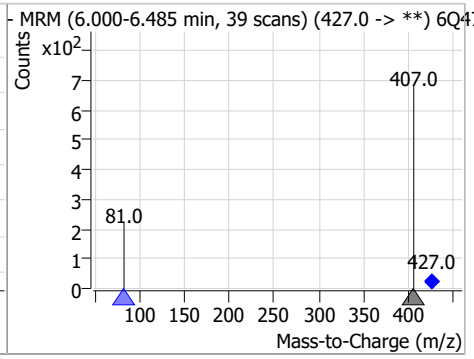




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	0.95	6.12	-0.01	16877	427.0 -> 81.0	27.2	13.7	41.2

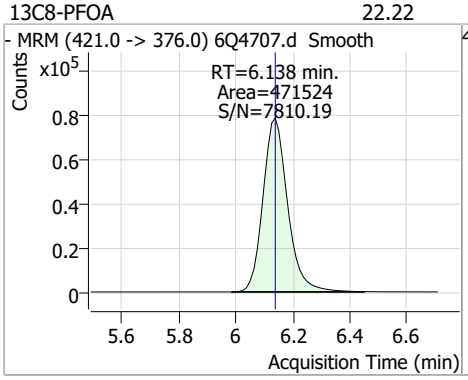


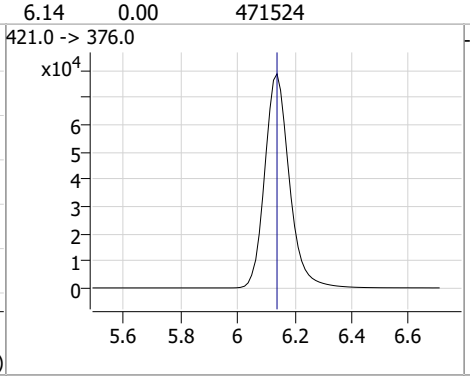


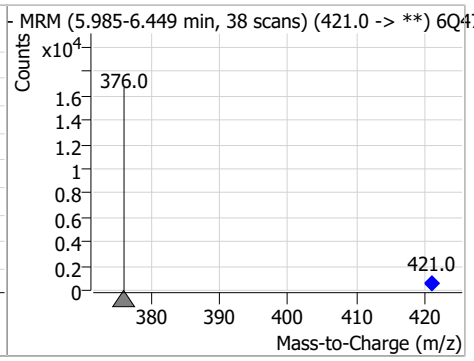


Perfluorinated Compounds by LC/MS/MS

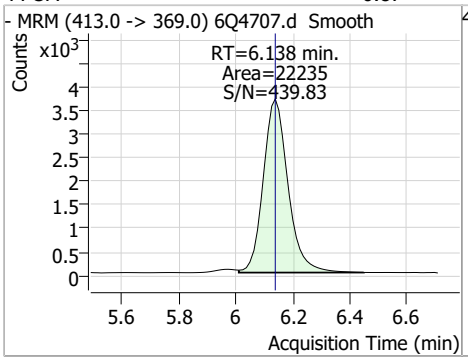
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.22	6.14	0.00	471524				

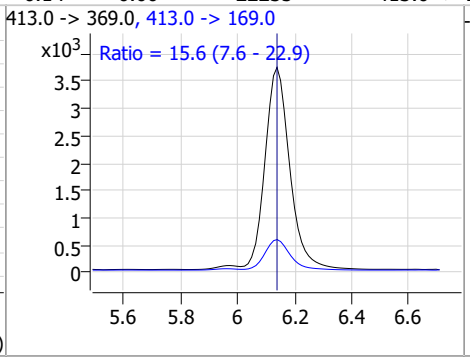


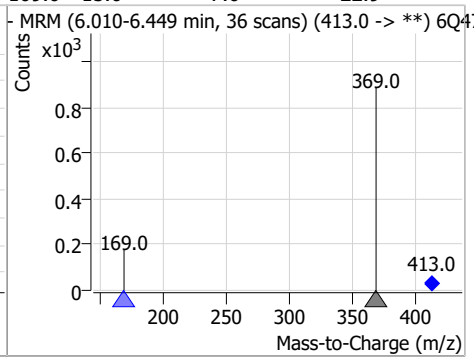




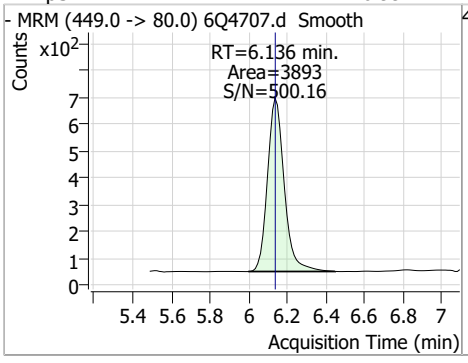
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	0.87	6.14	0.00	22235	413.0 -> 169.0	15.6	7.6	22.9

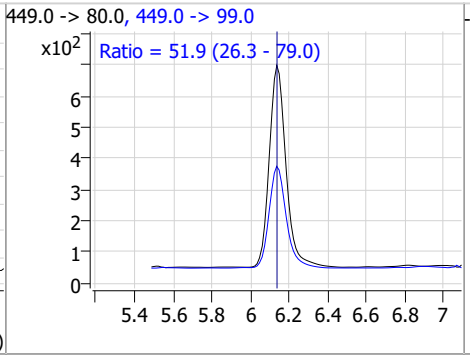


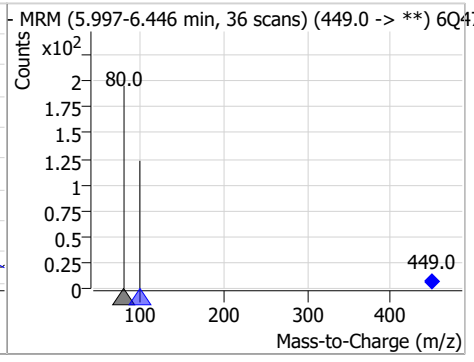




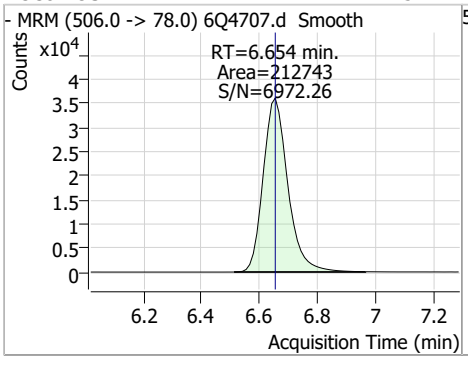
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	0.99	6.14	-0.01	3893	449.0 -> 99.0	51.9	26.3	79.0

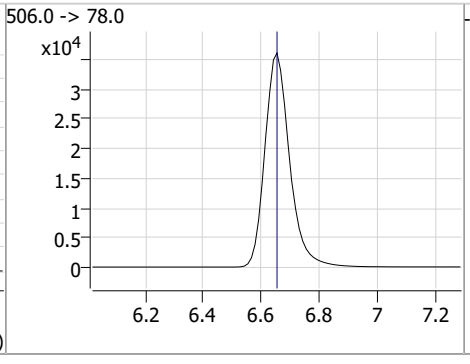


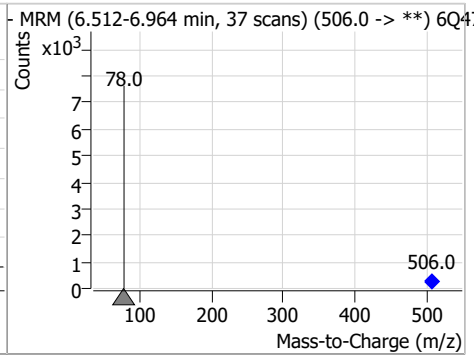




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.75	6.65	0.00	212743				

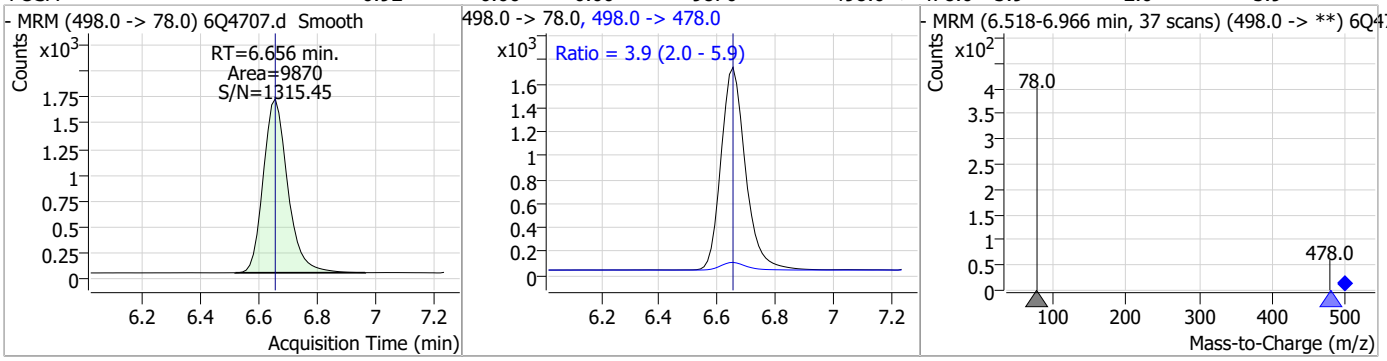




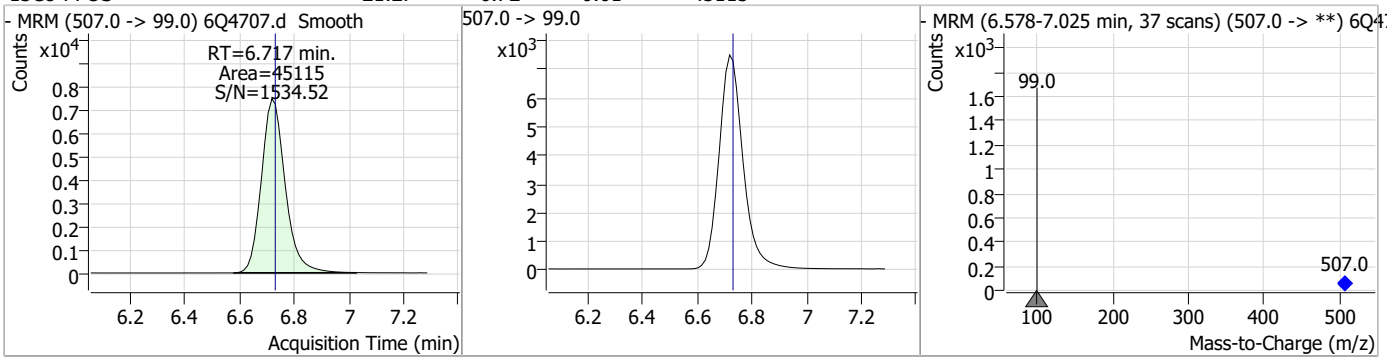


Perfluorinated Compounds by LC/MS/MS

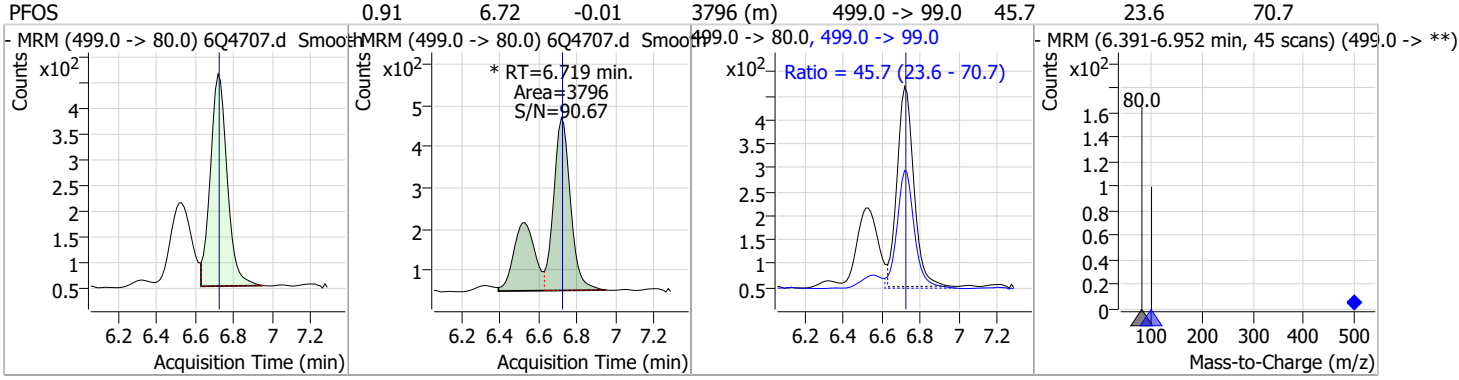
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	0.92	6.66	0.00	9870	498.0 -> 478.0	3.9	2.0	5.9



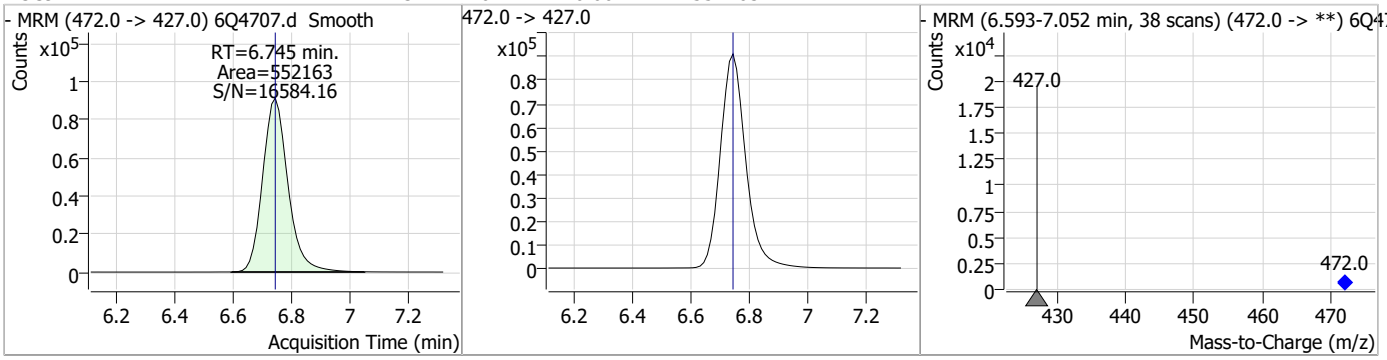
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.27	6.72	-0.01	45115				



Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	0.91	6.72	-0.01	3796 (m)	499.0 -> 99.0	45.7	23.6	70.7

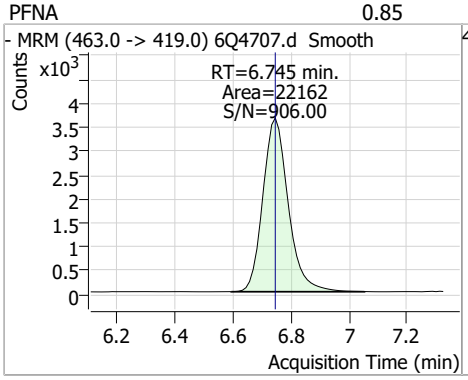


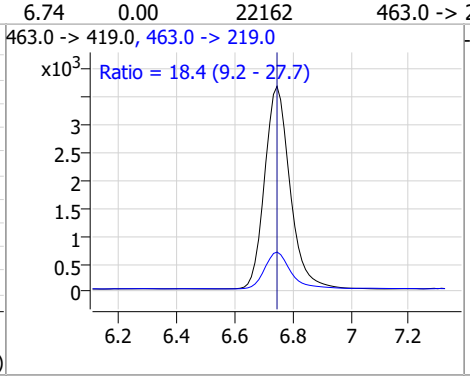
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.43	6.74	0.00	552163				

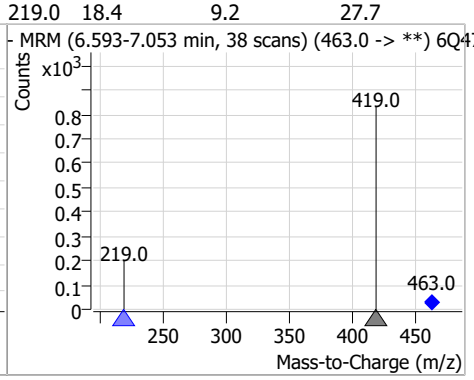


Perfluorinated Compounds by LC/MS/MS

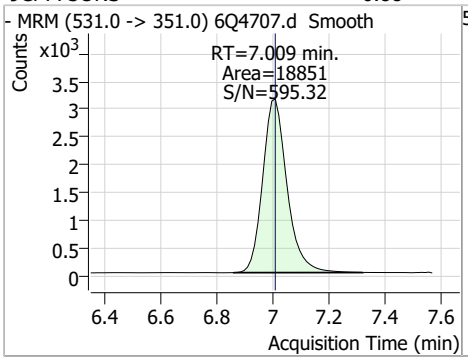
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	0.85	6.74	0.00	22162	463.0 -> 219.0	18.4	9.2	27.7

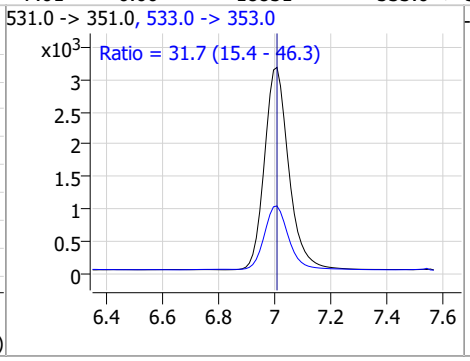


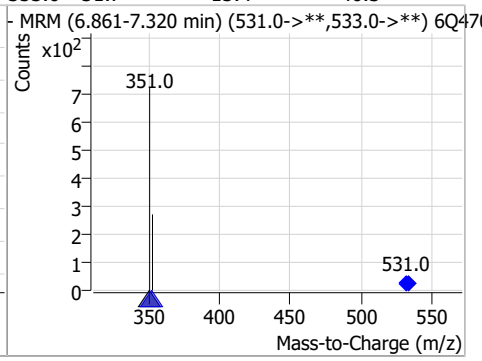




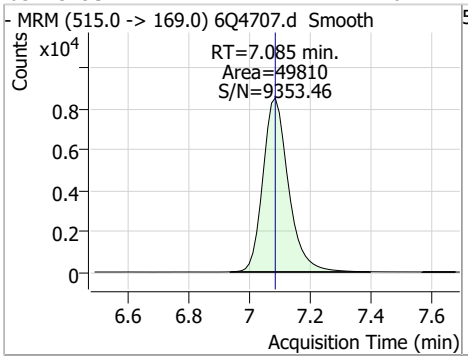
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	0.88	7.01	0.00	18851	533.0 -> 353.0	31.7	15.4	46.3

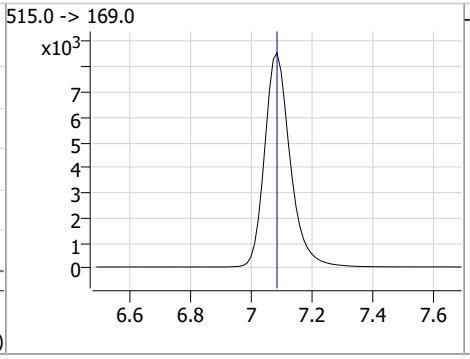


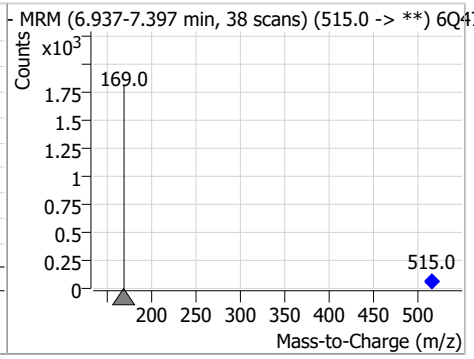




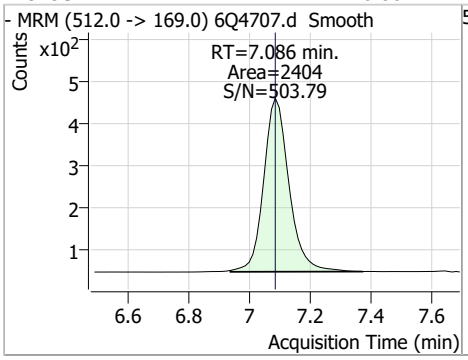
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.02	7.08	0.00	49810				

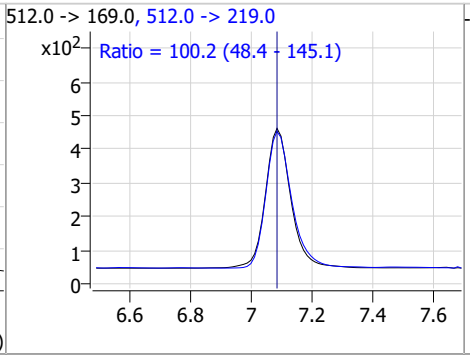


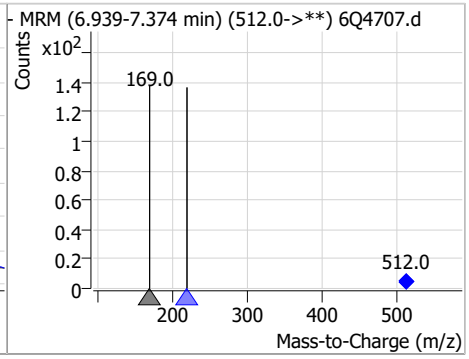




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	0.88	7.09	0.00	2404	512.0 -> 219.0	100.2	48.4	145.1

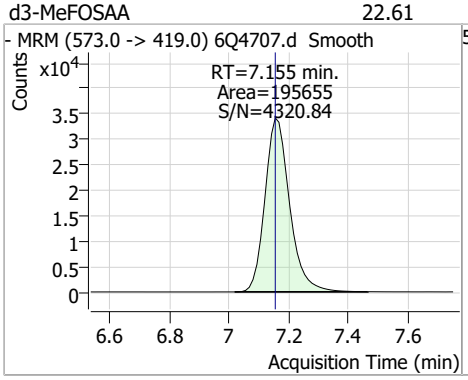


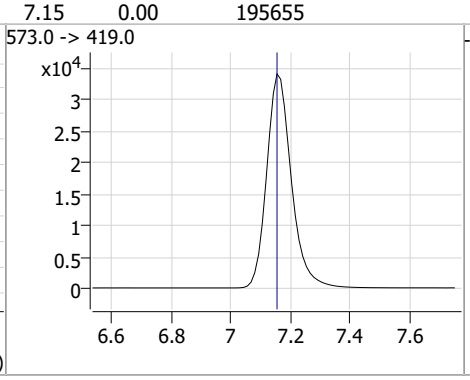


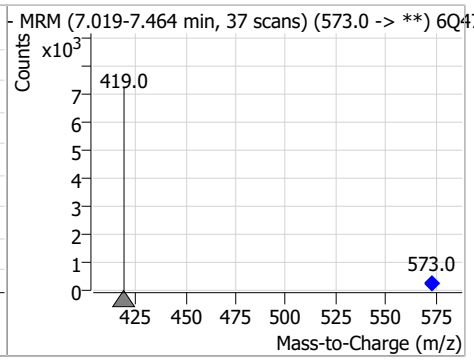


Perfluorinated Compounds by LC/MS/MS

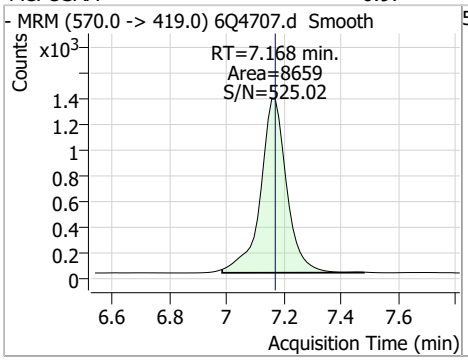
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	22.61	7.15	0.00	195655				

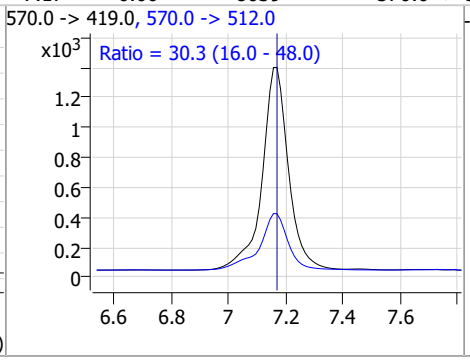


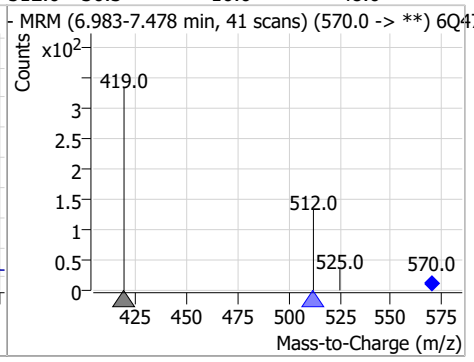




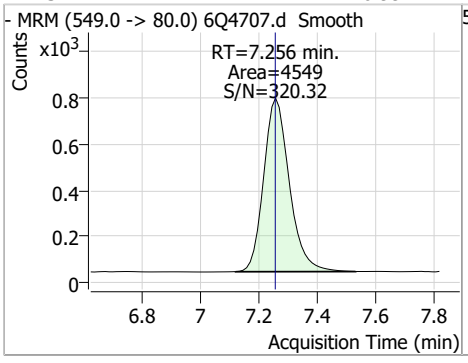
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	0.97	7.17	0.00	8659	570.0 -> 512.0	30.3	16.0	48.0

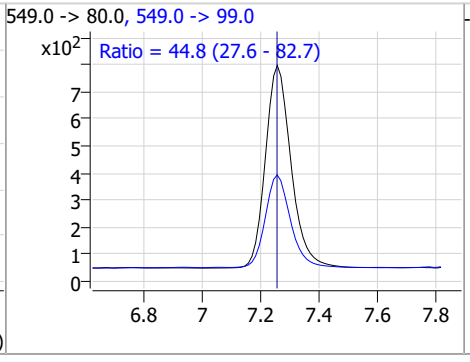


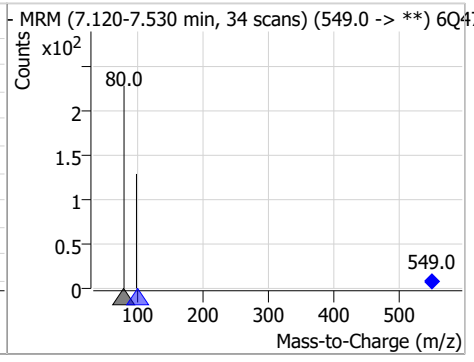




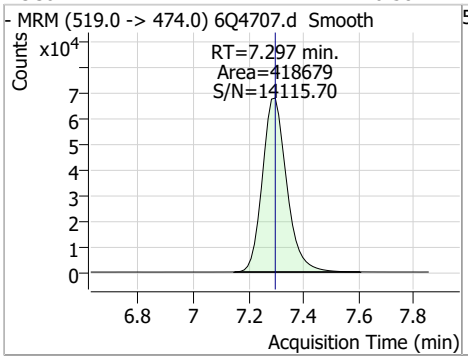
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	0.99	7.26	-0.01	4549	549.0 -> 99.0	44.8	27.6	82.7

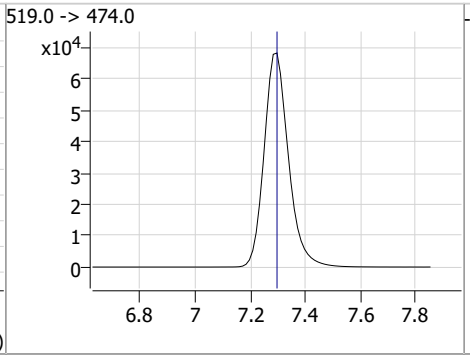


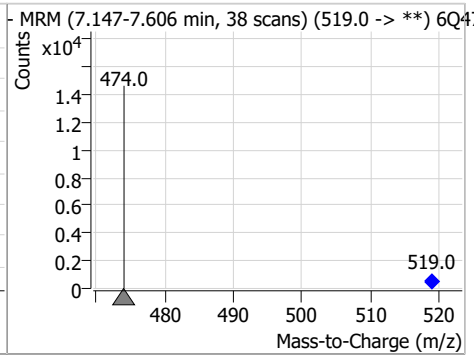




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.58	7.30	0.00	418679				

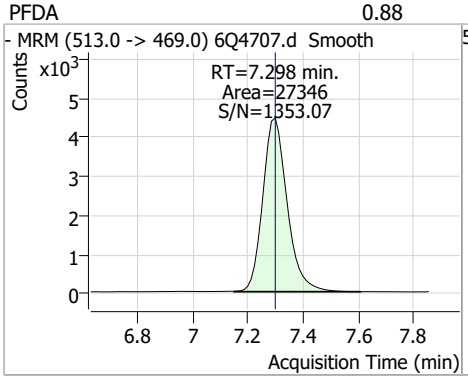


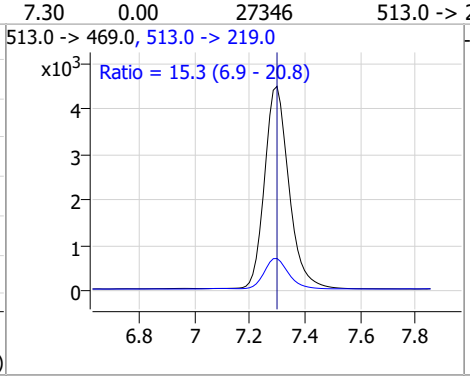


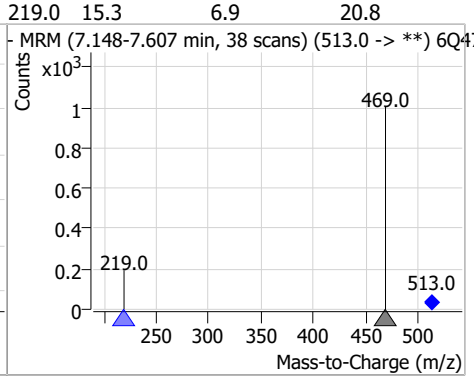


Perfluorinated Compounds by LC/MS/MS

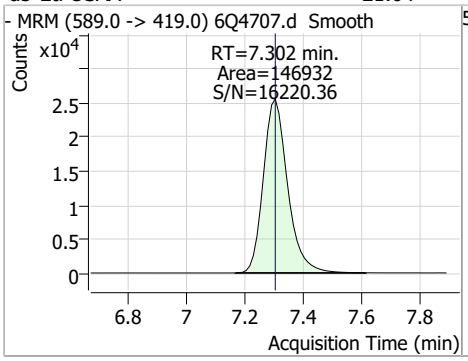
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	0.88	7.30	0.00	27346	513.0 -> 219.0	15.3	6.9	20.8

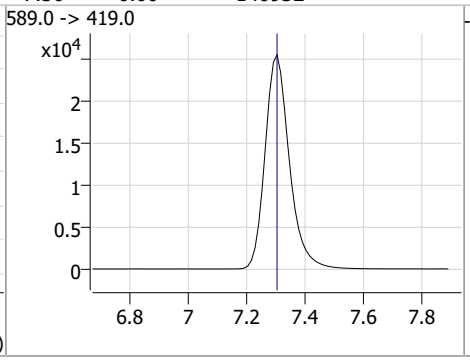


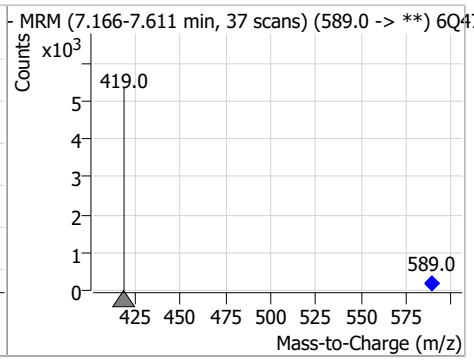




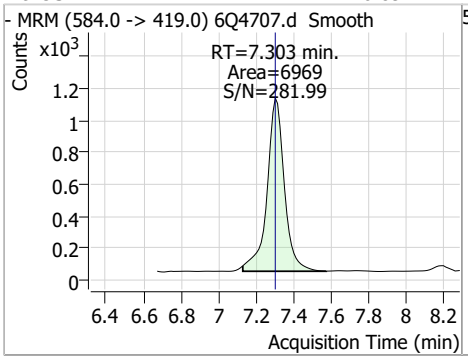
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.64	7.30	0.00	146932				

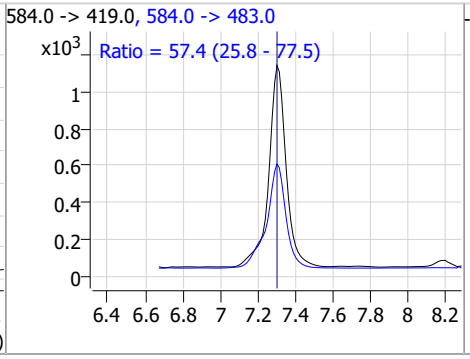


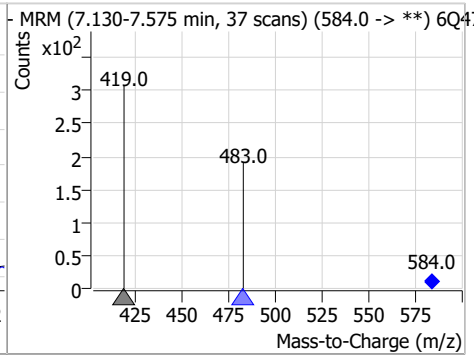




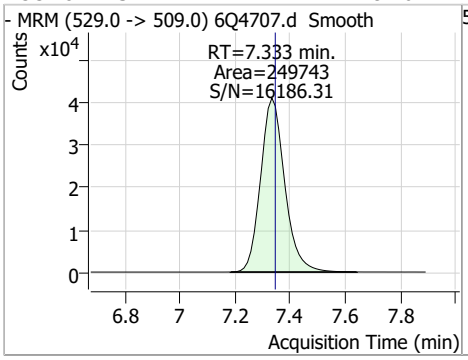
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	0.89	7.30	0.00	6969	584.0 -> 483.0	57.4	25.8	77.5

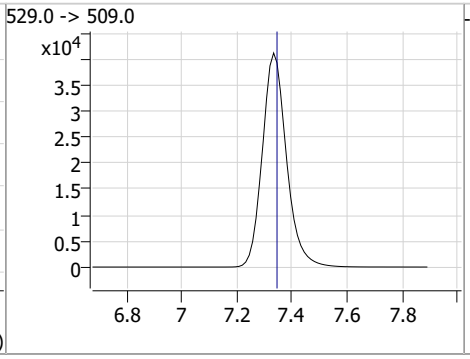


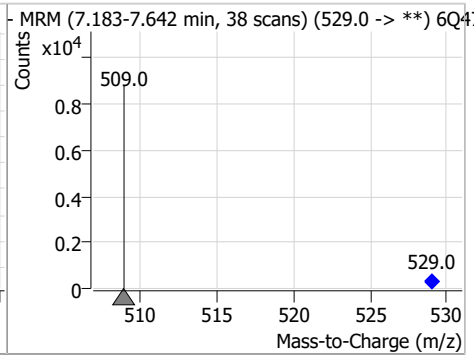




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.16	7.33	-0.01	249743				

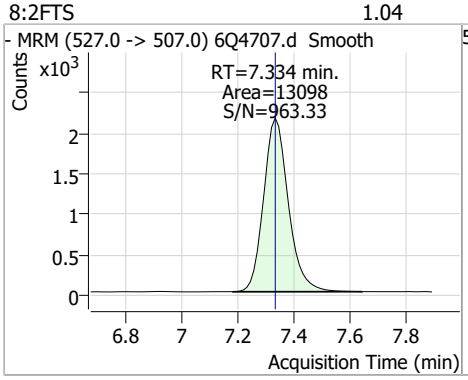


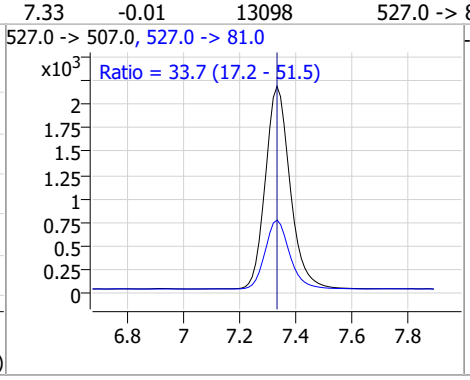


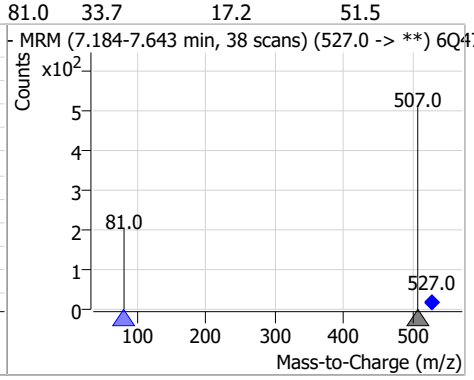


Perfluorinated Compounds by LC/MS/MS

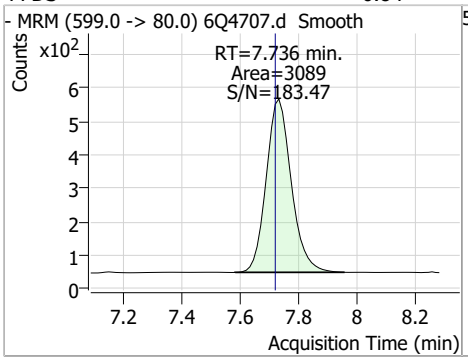
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	1.04	7.33	-0.01	13098	527.0 -> 81.0	33.7	17.2	51.5

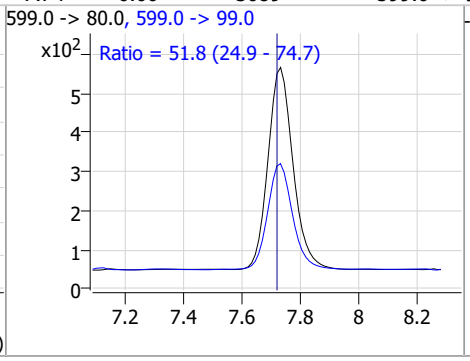


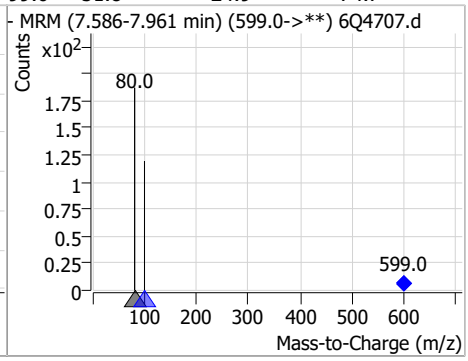




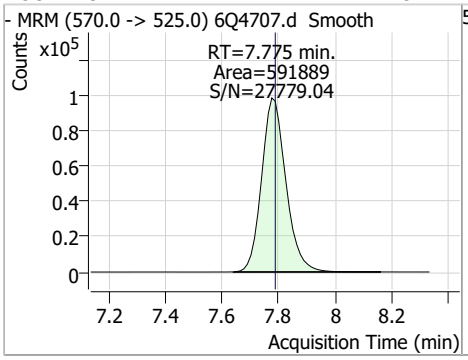
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	0.84	7.74	0.00	3089	599.0 -> 99.0	51.8	24.9	74.7

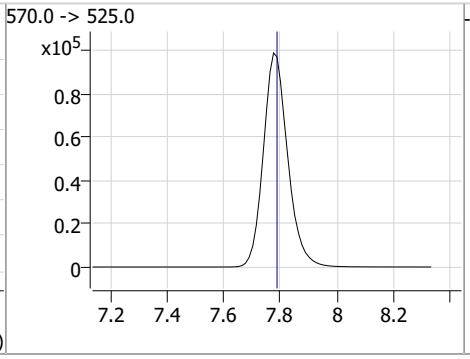


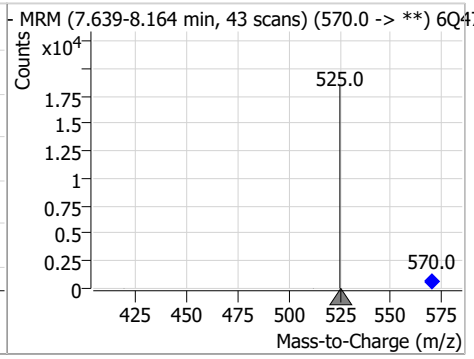




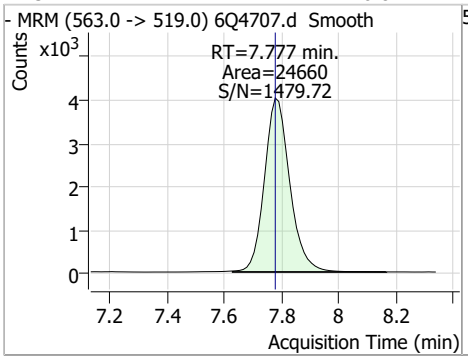
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.29	7.78	-0.01	591889				

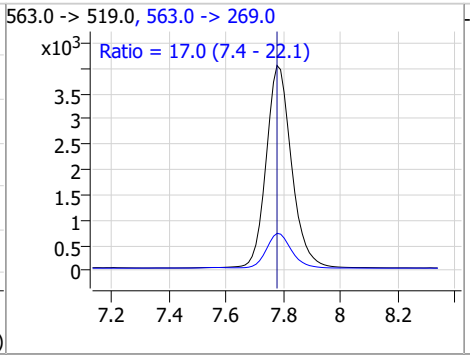


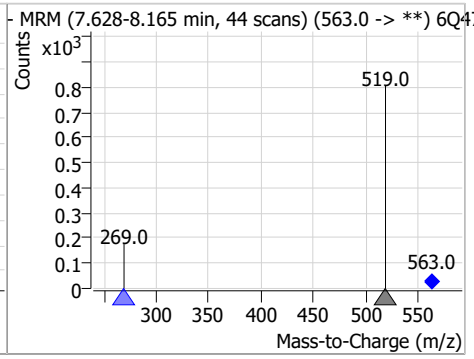




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	0.81	7.78	-0.01	24660	563.0 -> 269.0	17.0	7.4	22.1

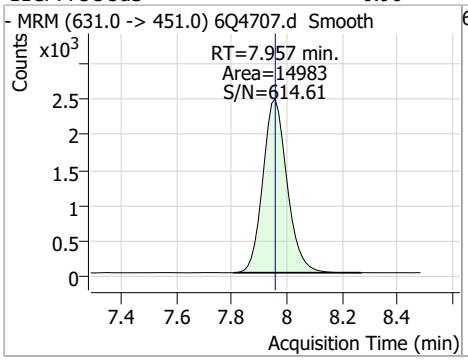


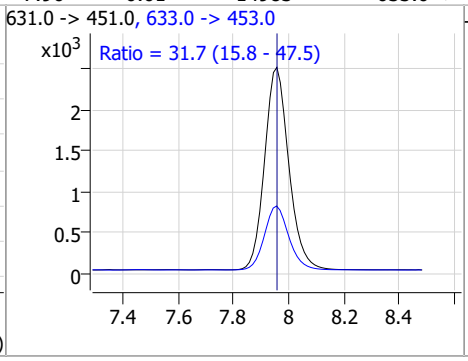


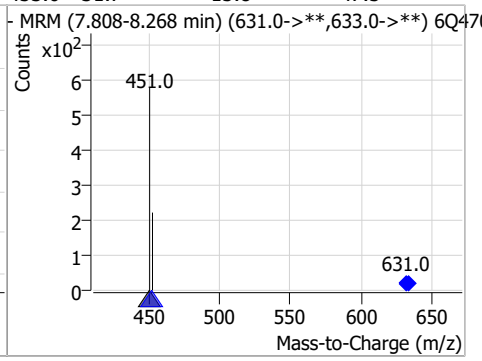


Perfluorinated Compounds by LC/MS/MS

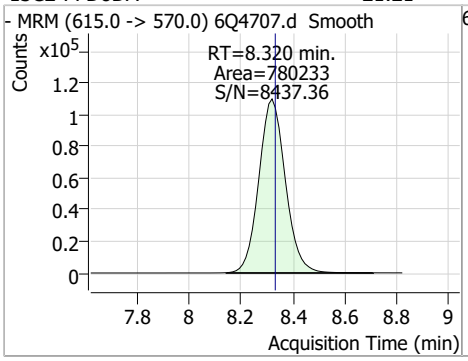
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	0.90	7.96	-0.01	14983	633.0 -> 453.0	31.7	15.8	47.5

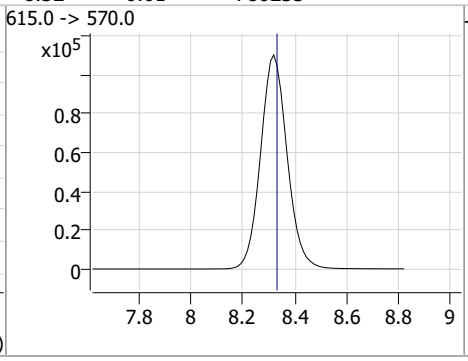


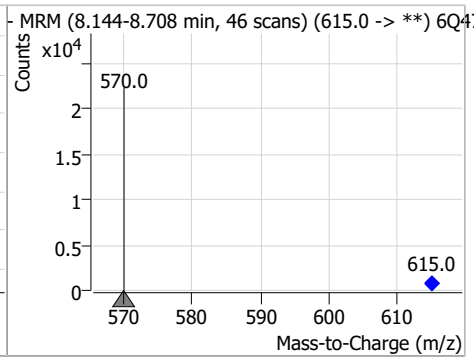




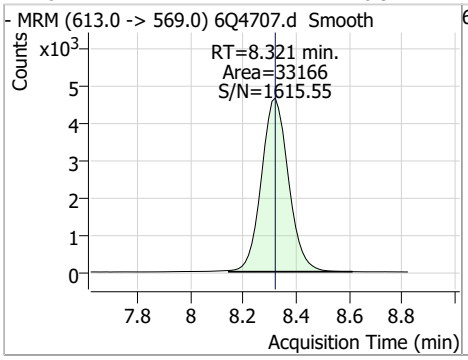
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.21	8.32	-0.01	780233				

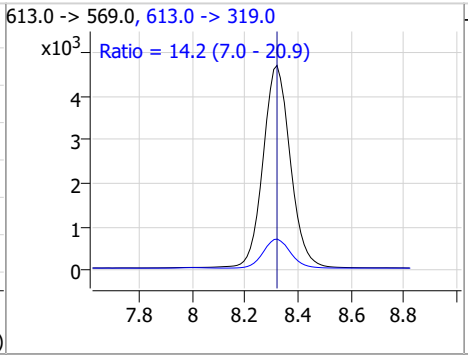


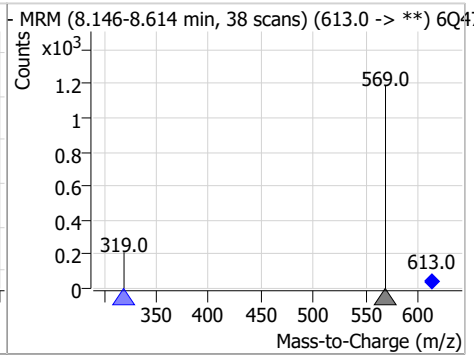




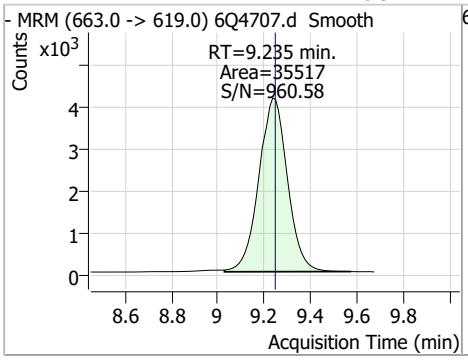
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	0.91	8.32	-0.01	33166	613.0 -> 319.0	14.2	7.0	20.9

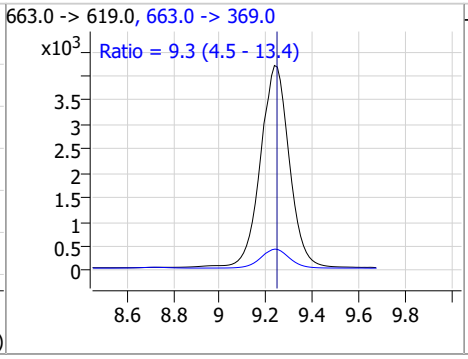


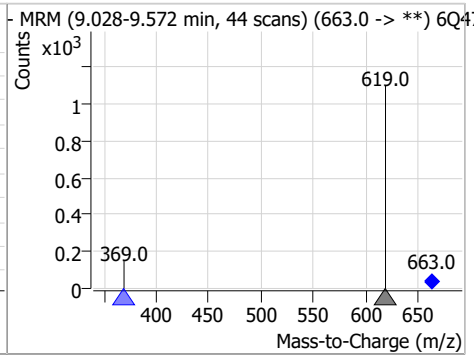




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	0.94	9.24	-0.02	35517	663.0 -> 369.0	9.3	4.5	13.4

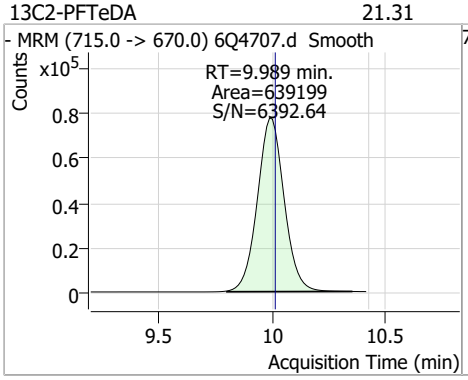


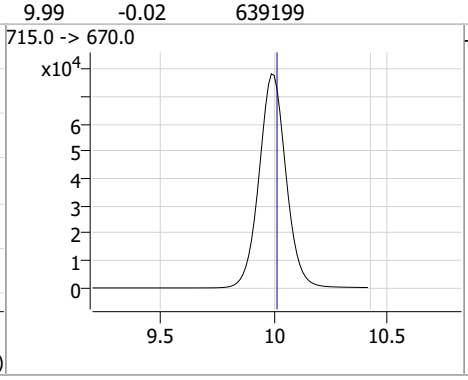


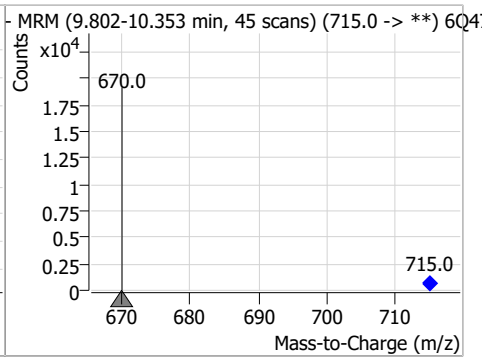


Perfluorinated Compounds by LC/MS/MS

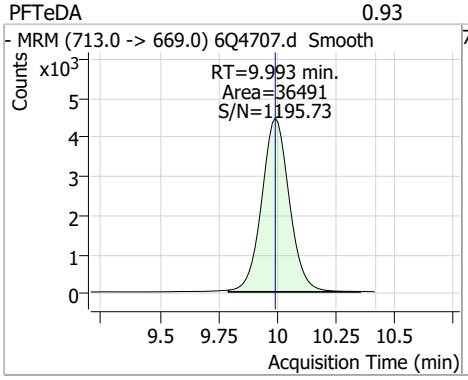
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.31	9.99	-0.02	639199				

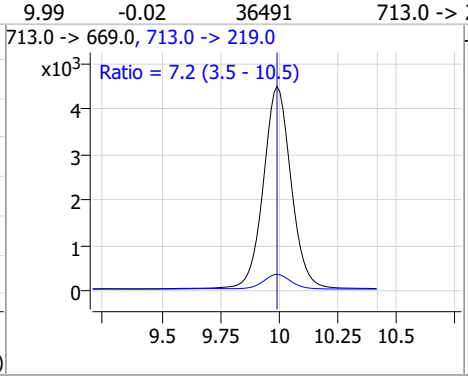


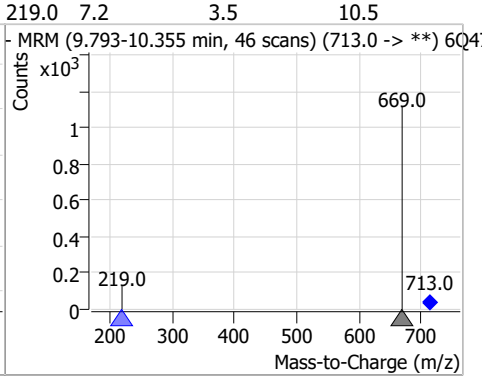




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	0.93	9.99	-0.02	36491	713.0 -> 219.0	7.2	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q86-CC85
Lab FileID: 6Q4707.D
Injection Time: 09/15/22 16:20
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:31 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4718.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/15/2022 7:38:03 PM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	85069	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	146805	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	224480	20.00	µg/L	0.000
M4-PFHpA	5.433	367.0 -> 322.0	255773	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	429883	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	556532	20.00	µg/L	0.000
M6-PFDA	7.297	519.0 -> 474.0	403531	20.00	µg/L	0.000
M7-PFUnDA	7.775	570.0 -> 525.0	531463	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	740323	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	616880	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	213290	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	31989	20.00	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	28901	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	43338	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	274436	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	352406	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	260233	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	182637	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	4624	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	48970	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	146356	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	274436	20.32	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.6%		
13C2-6:2FTS	6.124	429.0 -> 409.0	352406	20.65	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C2-8:2FTS	7.333	529.0 -> 509.0	260233	19.97	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.8%		
13C2-PFDoDA	8.320	615.0 -> 570.0	740323	20.13	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.6%		
13C2-PFTeDA	9.989	715.0 -> 670.0	616880	20.56	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C3-PFBS	3.622	302.0 -> 99.0	31989	20.89	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.4%		
13C3-PFHxS	5.475	402.0 -> 99.0	28901	20.90	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.5%		
13C4-PFBA	1.949	217.0 -> 172.0	85069	21.37	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C4-PFHpA	5.433	367.0 -> 322.0	255773	20.67	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.4%		
13C5-PFHxA	4.573	318.0 -> 273.0	224480	21.00	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.0%		
13C5-PFPeA	3.405	268.0 -> 223.0	146805	20.94	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.7%		
13C6-PFDA	7.297	519.0 -> 474.0	403531	19.83	µg/L	0.000

Perfluorinated Compounds by LC/MS/MS

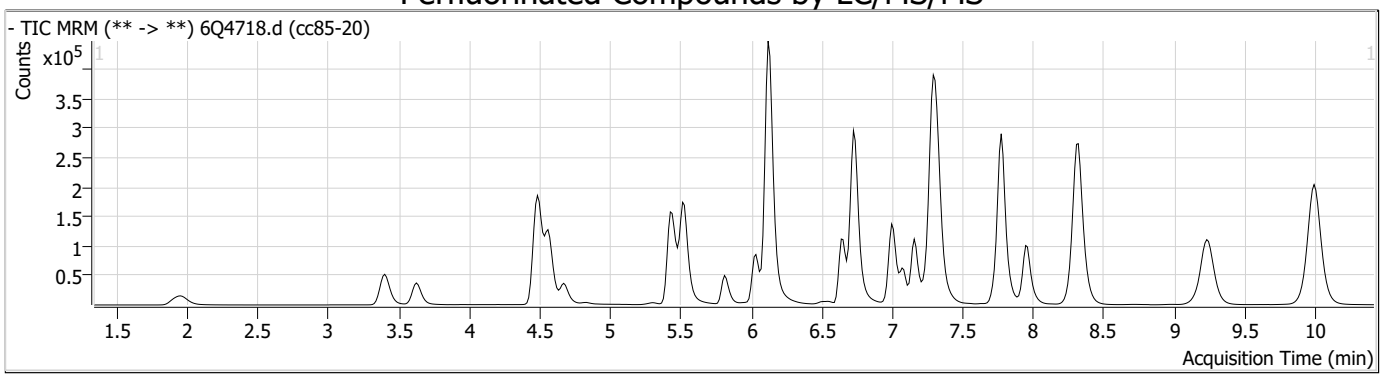
Compound	RT	Transition	Response	Conc.	Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.2%			
13C7-PFUnDA	7.775	570.0 -> 525.0	531463	20.02	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.1%			
13C8-FOSA	6.654	506.0 -> 78.0	213290	21.81	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.0%			
13C8-PFOA	6.138	421.0 -> 376.0	429883	20.26	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 101.3%			
13C8-PFOS	6.717	507.0 -> 99.0	43338	20.43	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.2%			
13C9-PFNA	6.745	472.0 -> 427.0	556532	21.60	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.0%			
d3-MeFOSAA	7.155	573.0 -> 419.0	182637	21.10	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%			
13C3-HFPO-DA	4.839	287.0 -> 169.0	4642	17.46	µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 87.3%			
d3-MeFOSA	7.085	515.0 -> 169.0	48970	21.64	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.2%			
d5-EtFOSAA	7.302	589.0 -> 419.0	146396	21.56	µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.8%			
Target Compounds							QValue
4:2FTS	4.485	327.0 -> 307.0	309555	20.86	µg/L		99
		327.0 -> 81.0	99026				
6:2FTS	6.124	427.0 -> 407.0	365904	20.50	µg/L		98
		427.0 -> 81.0	96658				
8:2FTS	7.334	527.0 -> 507.0	279497	21.36	µg/L		97
		527.0 -> 81.0	90266				
EtFOSAA	7.303	584.0 -> 419.0	144812	18.56	µg/L		95
		584.0 -> 483.0	79966				
FOSA	6.656	498.0 -> 78.0	215458	20.14	µg/L		99
		498.0 -> 478.0	7657				
MeFOSAA	7.156	570.0 -> 419.0	176894	21.13	µg/L		98
		570.0 -> 512.0	54177				
PFBA	1.943	213.0 -> 169.0	36586	19.70	µg/L		100
PFBS	3.627	299.0 -> 80.0	105522	19.84	µg/L		99
		299.0 -> 99.0	39176				
PFDA	7.284	513.0 -> 469.0	578384	19.42	µg/L		99
		513.0 -> 219.0	81835				
PFDoDA	8.321	613.0 -> 569.0	696062	20.15	µg/L		100
		613.0 -> 319.0	97716				
PFDS	7.736	599.0 -> 80.0	68668	20.84	µg/L		100
		599.0 -> 99.0	34329				
PFHpA	5.434	363.0 -> 319.0	339075	20.38	µg/L		100
		363.0 -> 169.0	50409				
PFHpS	6.136	449.0 -> 80.0	80119	21.17	µg/L		99
		449.0 -> 99.0	41753				
PFHxA	4.574	313.0 -> 269.0	221185	18.73	µg/L		99
		313.0 -> 119.0	5778				
PFHxS	5.465	399.0 -> 80.0	83708	20.21	µg/L	m	99
		399.0 -> 99.0	39946				
PFNA	6.745	463.0 -> 419.0	471439	17.98	µg/L		99
		463.0 -> 219.0	84825				
PFNS	7.256	549.0 -> 80.0	88151	20.02	µg/L		98
		549.0 -> 99.0	47277				
PFOA	6.138	413.0 -> 369.0	460779	19.84	µg/L		99
		413.0 -> 169.0	73203				
PFOS	6.719	499.0 -> 80.0	79936	19.90	µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

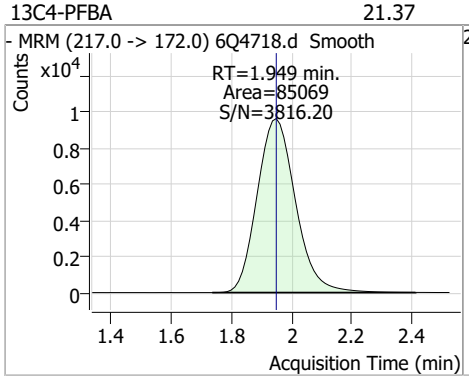
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	39626			
PFPeA	3.408	263.0 -> 219.0	121826	19.70	µg/L	100
PFPeS	4.668	349.0 -> 80.0	85246	19.25	µg/L	96
		349.0 -> 99.0	41293			
PFTeDA	9.993	713.0 -> 669.0	746768	19.74	µg/L	100
		713.0 -> 219.0	52507			
PFTrDA	9.235	663.0 -> 619.0	739683	20.69	µg/L	100
		663.0 -> 369.0	66865			
PFUnDA	7.777	563.0 -> 519.0	573295	20.86	µg/L	99
		563.0 -> 269.0	85552			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	325885	20.53	µg/L	100
		633.0 -> 453.0	103096			
9Cl-PF3ONS	6.996	531.0 -> 351.0	418336	20.37	µg/L	95
		533.0 -> 353.0	140936			
ADONA	5.532	377.0 -> 251.0	540964	20.19	µg/L	99
		377.0 -> 85.0	132710			
HFPO-DA	4.840	285.0 -> 169.0	4867	22.26	µg/L	100
		285.0 -> 185.0	684			
MeFOSA	7.086	512.0 -> 169.0	58011	21.71	µg/L	92
		512.0 -> 219.0	51394			
4-PFECHS	6.032	461.0 -> 381.0	265873	19.21	µg/L	96
		461.0 -> 99.0	94263			
FBSA	4.514	298.0 -> 78.0	219420	20.07	µg/L	100
		298.0 -> 64.0	14825			
FHxSA	5.815	398.0 -> 78.0	183513	19.34	µg/L	100
		398.0 -> 64.0	6651			

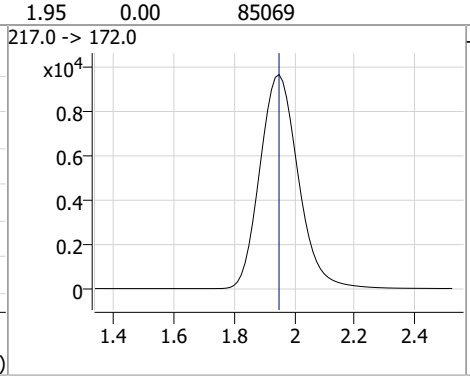
 # = Qualifier out of range, m = manually integrated, + = Area summed

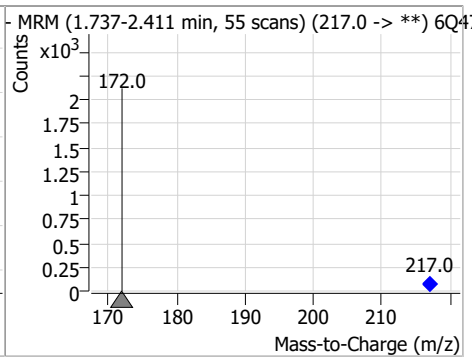
Perfluorinated Compounds by LC/MS/MS



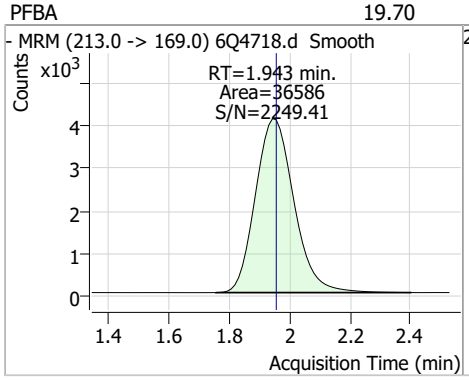
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.37	1.95	0.00	85069				

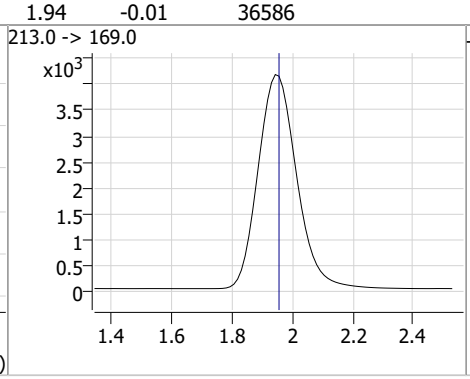


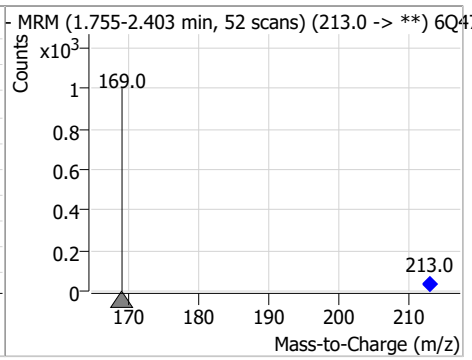




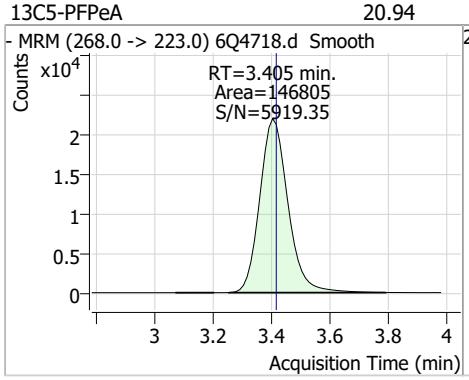
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.70	1.94	-0.01	36586				

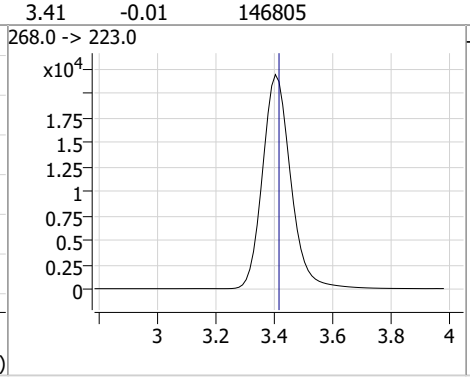


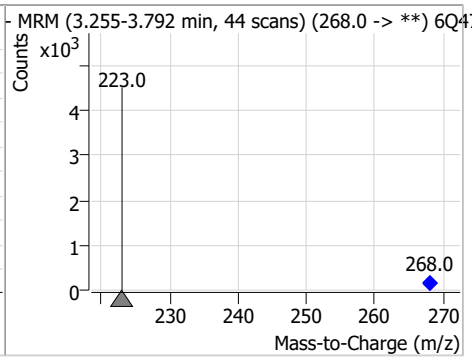




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	20.94	3.41	-0.01	146805				

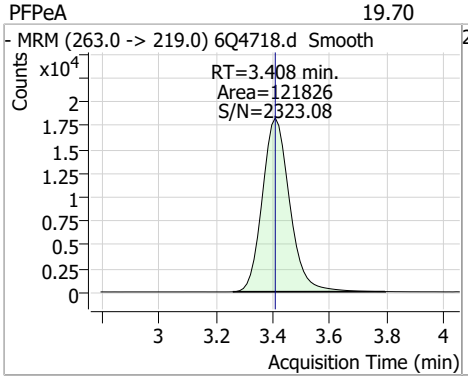


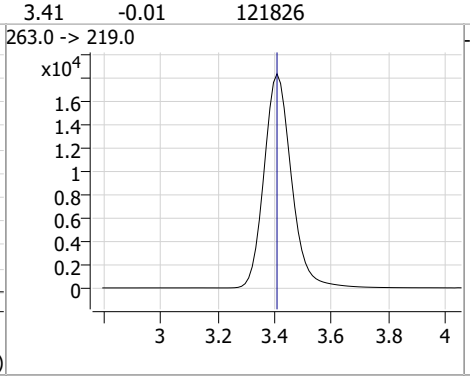


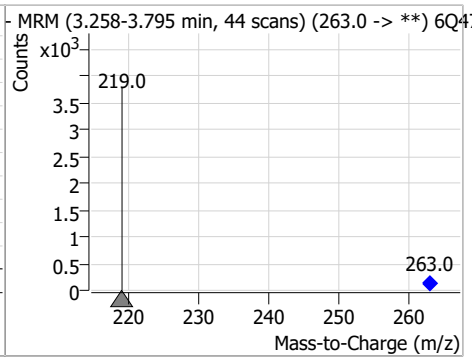


Perfluorinated Compounds by LC/MS/MS

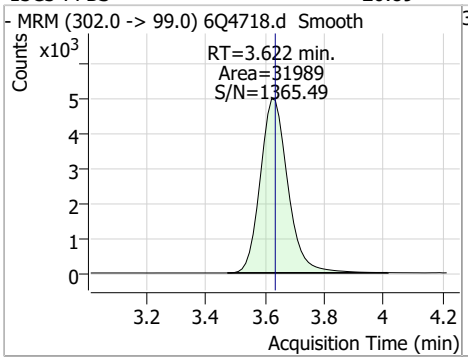
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.70	3.41	-0.01	121826				

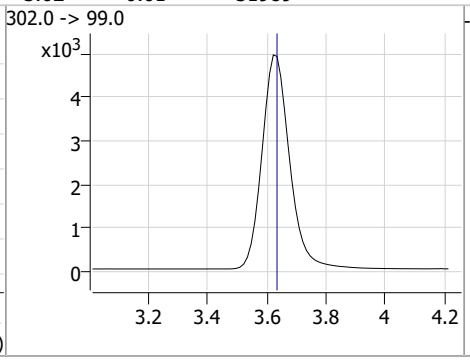


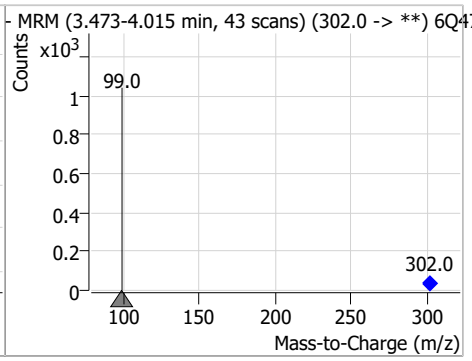




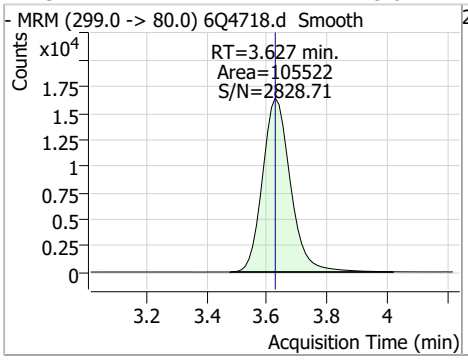
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.89	3.62	-0.01	31989				

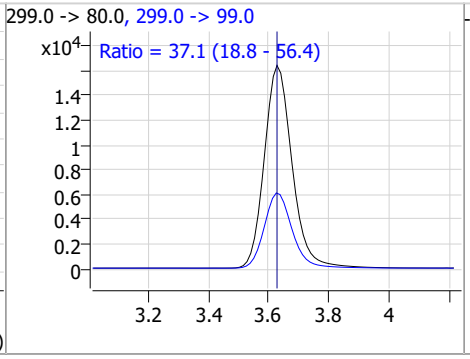


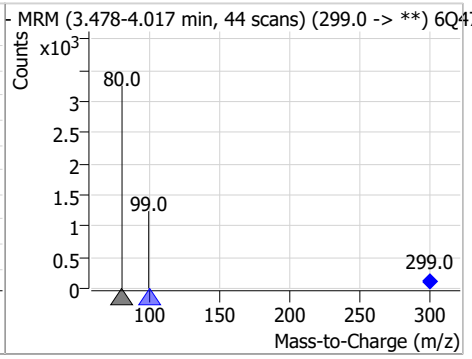




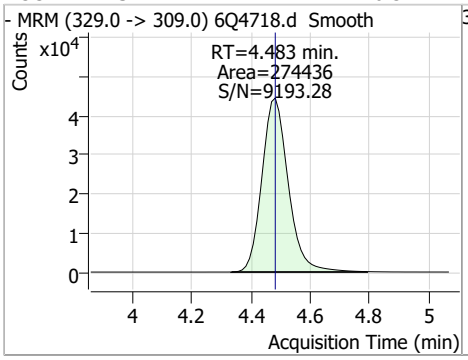
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.84	3.63	-0.01	105522	299.0 -> 99.0	37.1	18.8	56.4

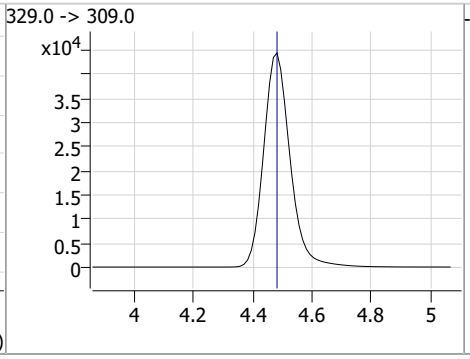


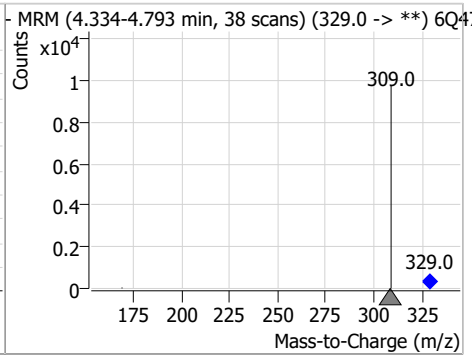




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.32	4.48	0.00	274436				

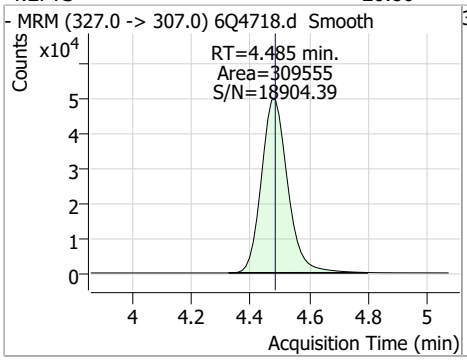


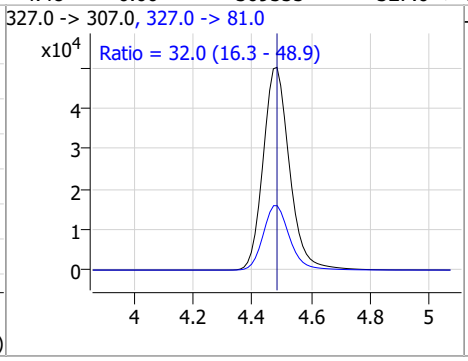


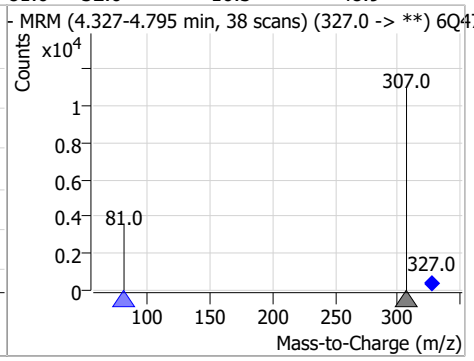


Perfluorinated Compounds by LC/MS/MS

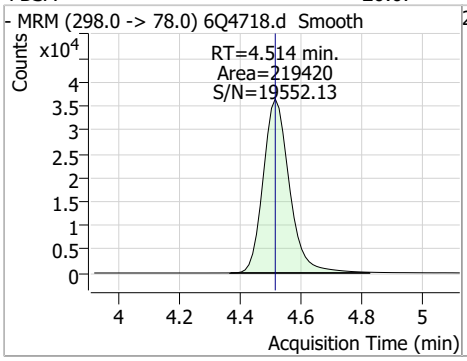
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.86	4.48	0.00	309555	327.0 -> 81.0	32.0	16.3	48.9

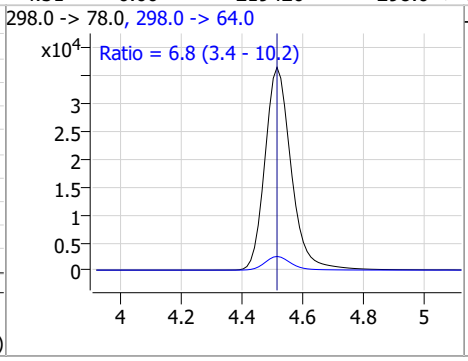


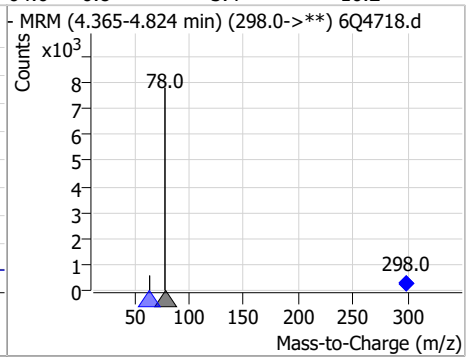




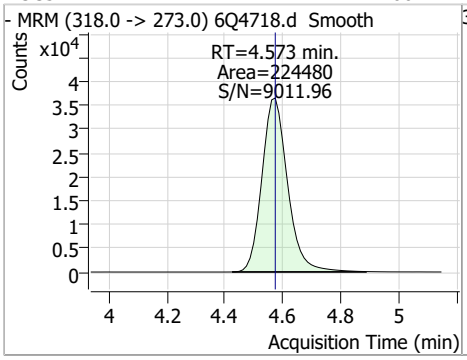
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.07	4.51	0.00	219420	298.0 -> 64.0	6.8	3.4	10.2

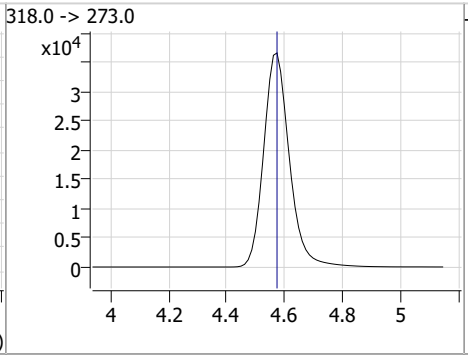


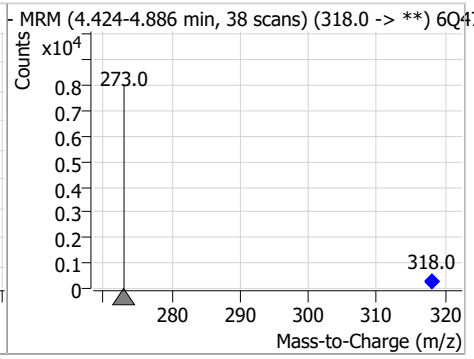




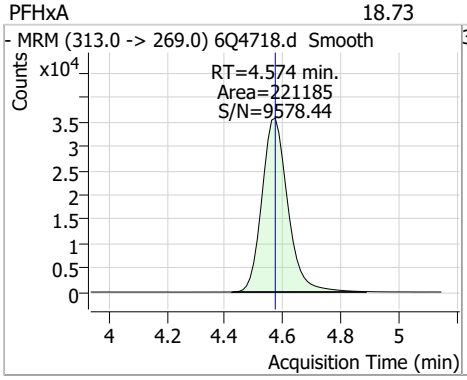
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.00	4.57	0.00	224480				

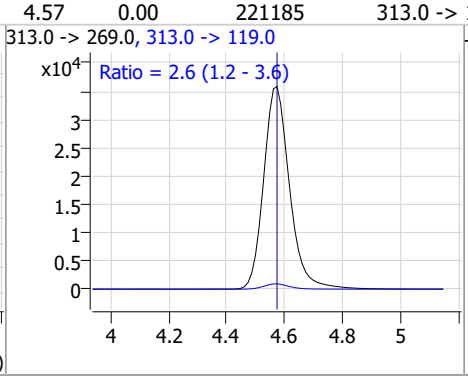


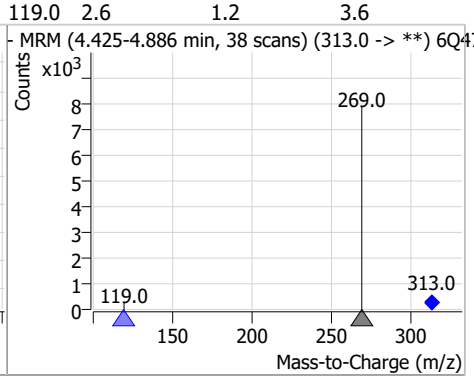




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.73	4.57	0.00	221185	313.0 -> 119.0	2.6	1.2	3.6

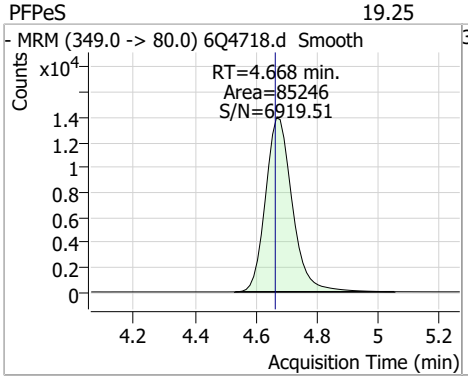


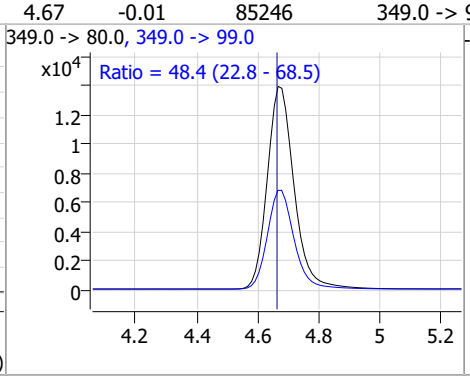


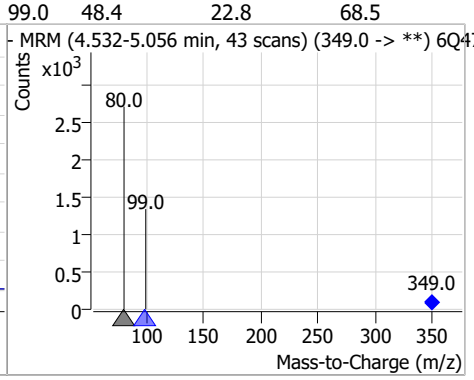


Perfluorinated Compounds by LC/MS/MS

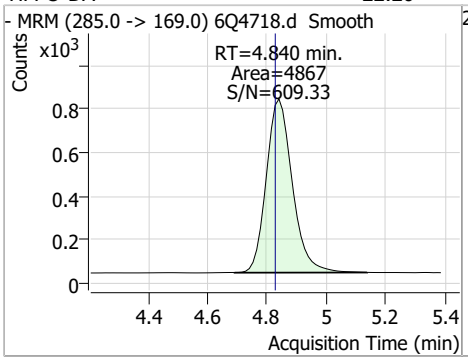
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.25	4.67	-0.01	85246	349.0 -> 99.0	48.4	22.8	68.5

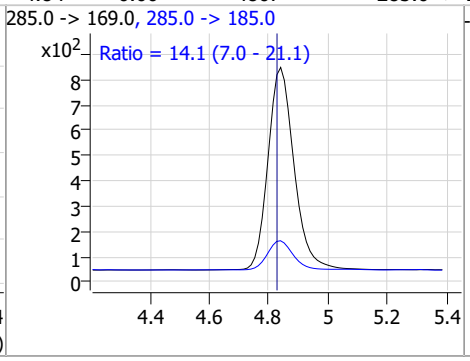


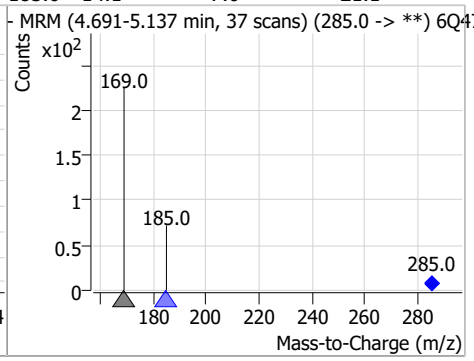




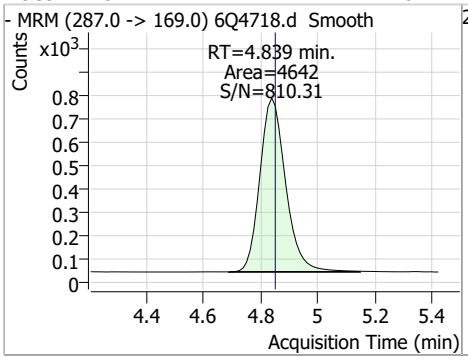
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.26	4.84	0.00	4867	285.0 -> 185.0	14.1	7.0	21.1

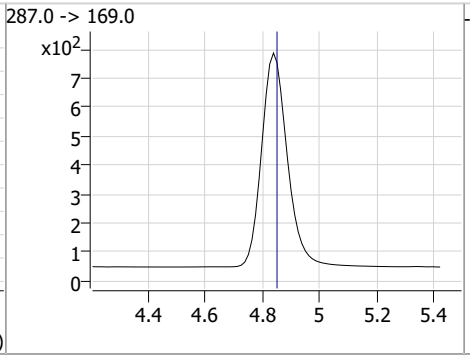


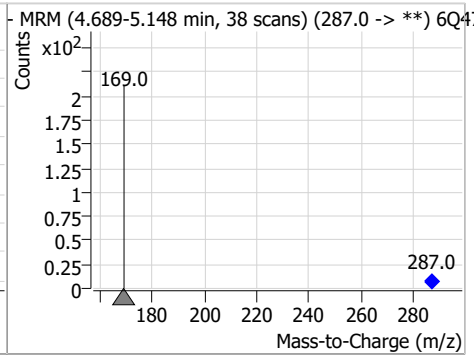




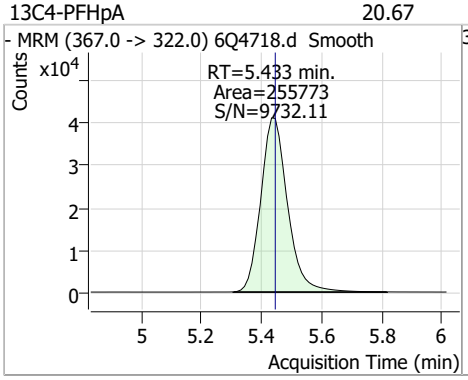
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	17.46	4.84	-0.01	4642				

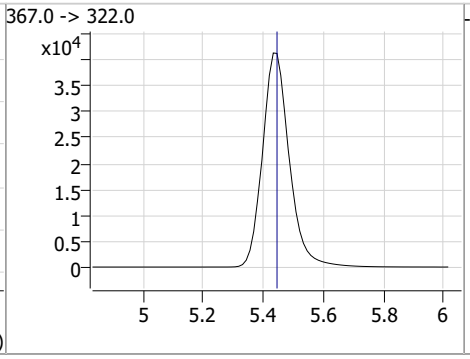


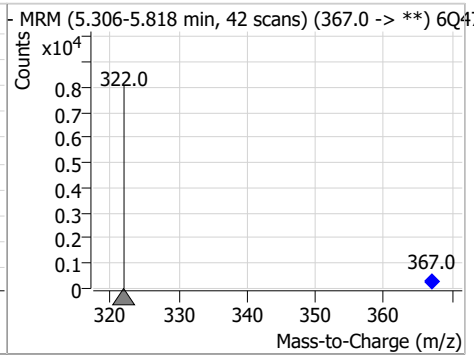




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	20.67	5.43	-0.01	255773				

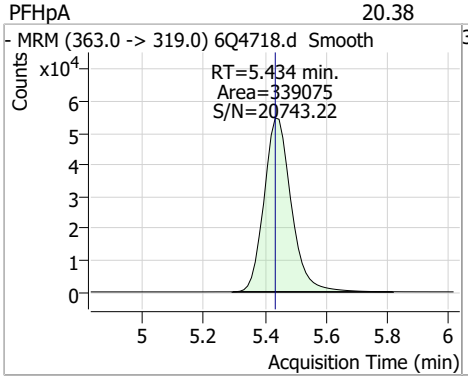


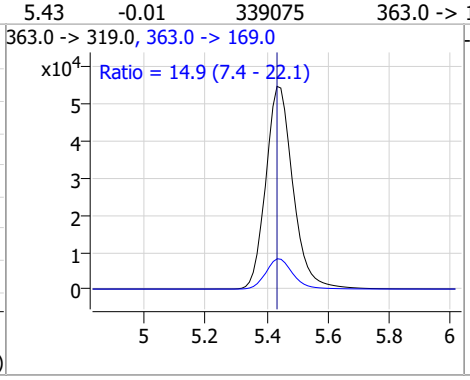


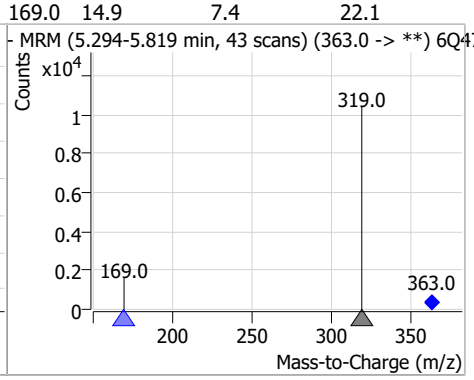


Perfluorinated Compounds by LC/MS/MS

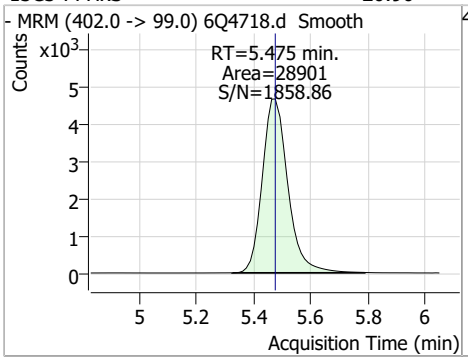
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.38	5.43	-0.01	339075	363.0 -> 169.0	14.9	7.4	22.1

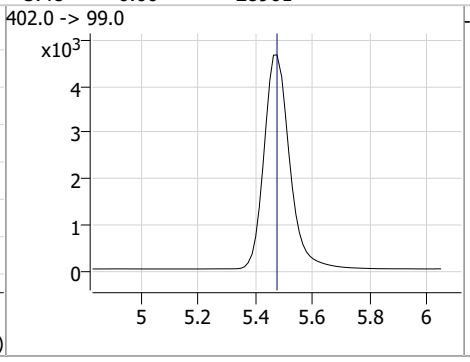


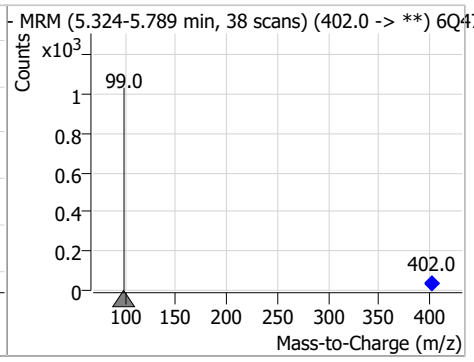




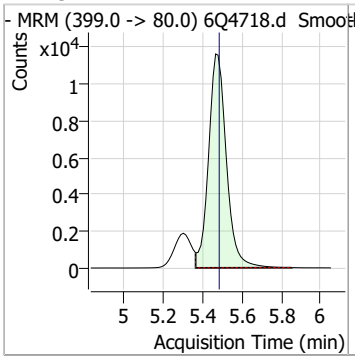
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	20.90	5.48	0.00	28901				

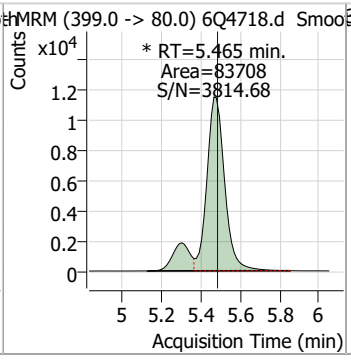


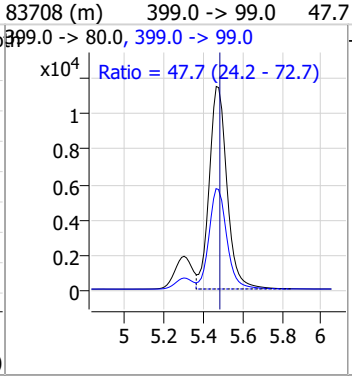


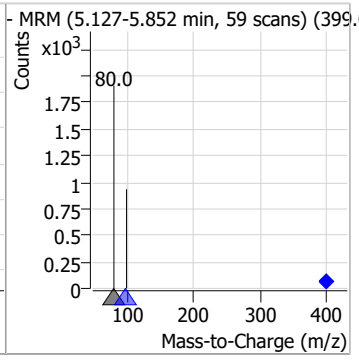


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.21	5.47	-0.01	83708 (m)	399.0 -> 99.0	47.7	24.2	72.7

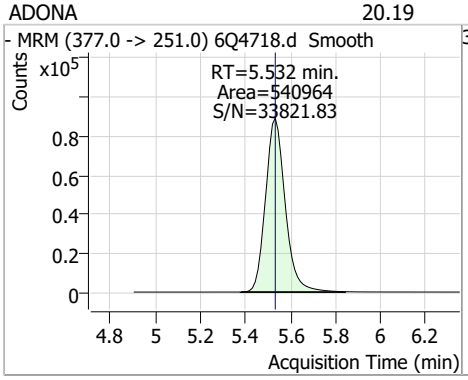


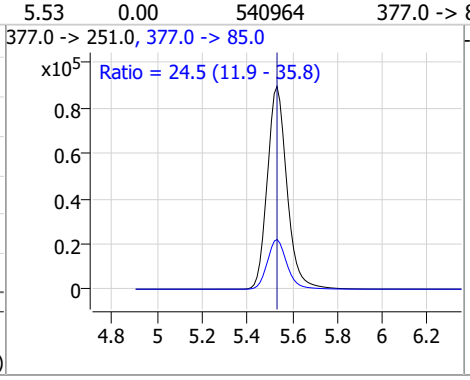


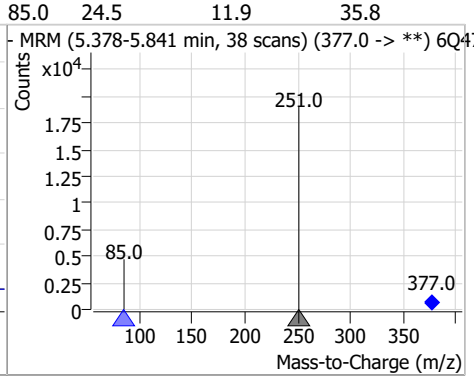




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.19	5.53	0.00	540964	377.0 -> 85.0	24.5	11.9	35.8

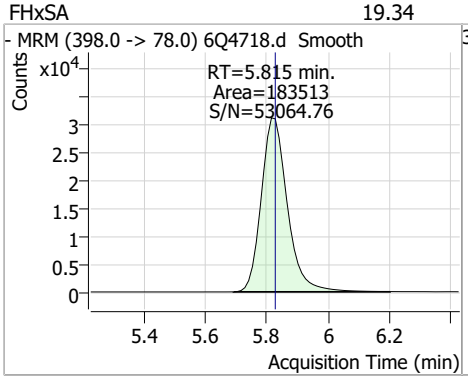


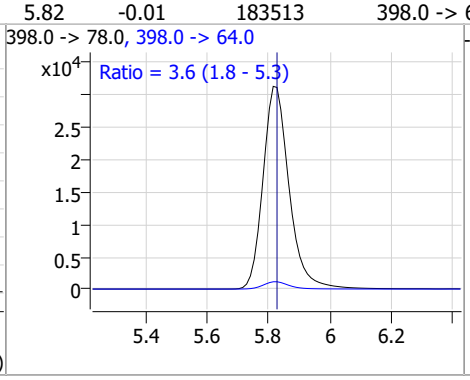


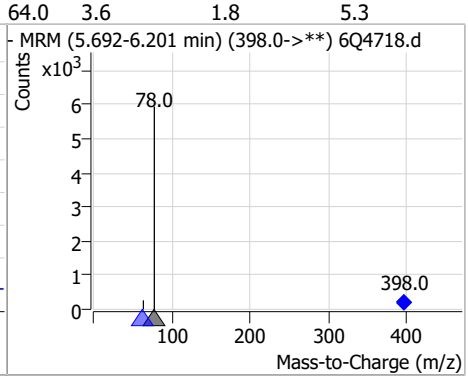


Perfluorinated Compounds by LC/MS/MS

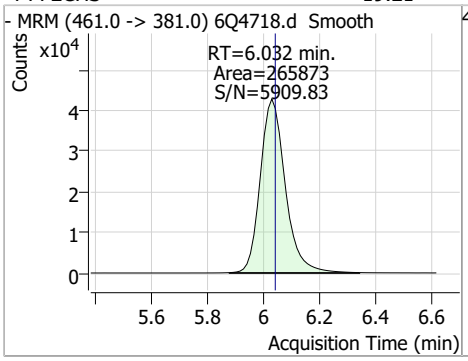
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.34	5.82	-0.01	183513	398.0 -> 64.0	3.6	1.8	5.3

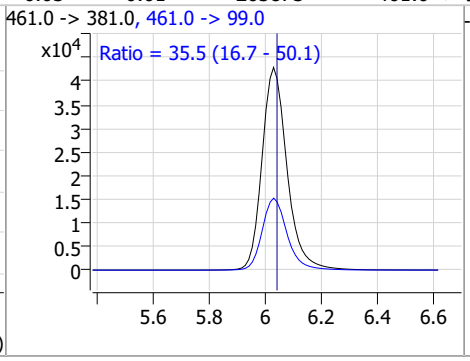


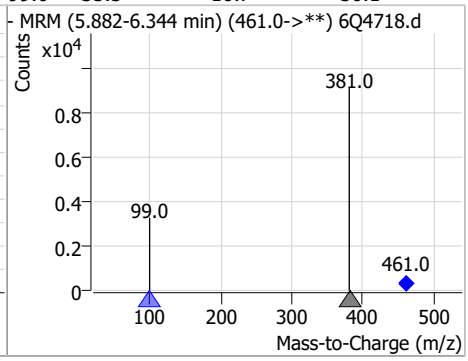




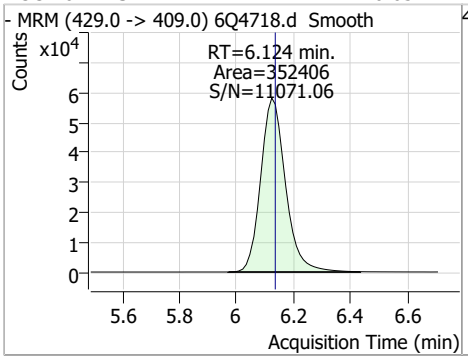
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.21	6.03	-0.01	265873	461.0 -> 99.0	35.5	16.7	50.1

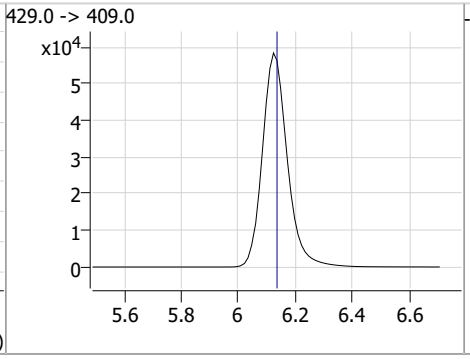


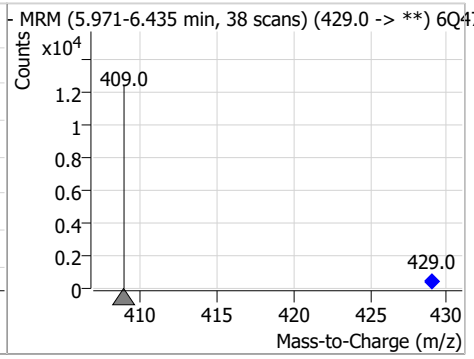




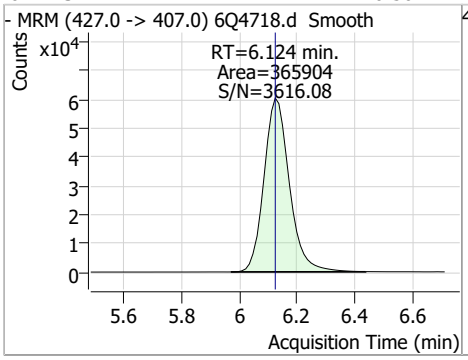
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.65	6.12	-0.01	352406				

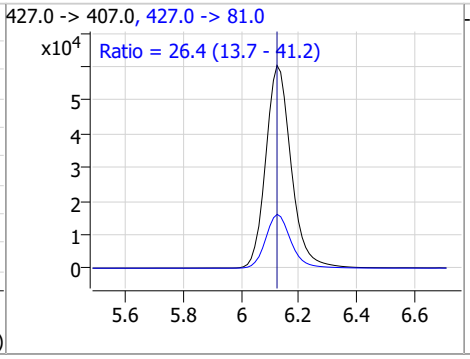


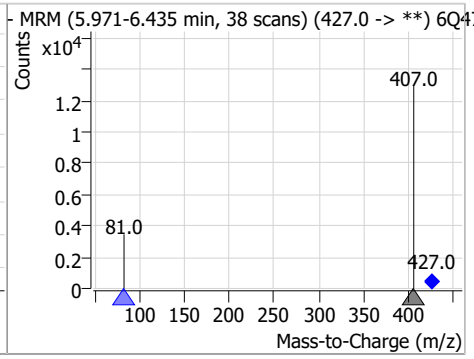




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.50	6.12	-0.01	365904	427.0 -> 81.0	26.4	13.7	41.2

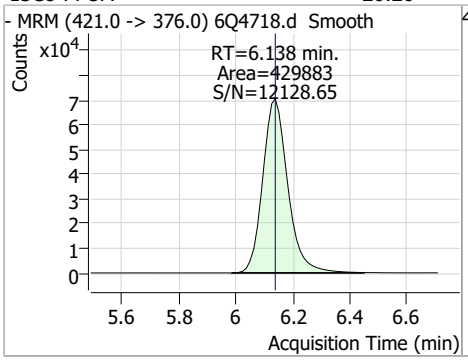


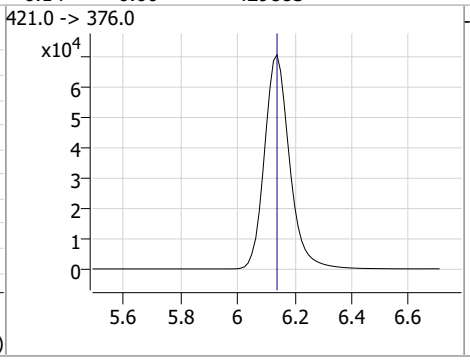


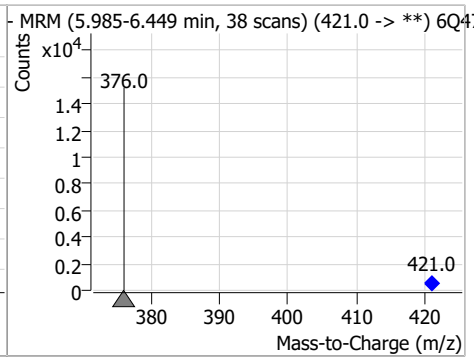


Perfluorinated Compounds by LC/MS/MS

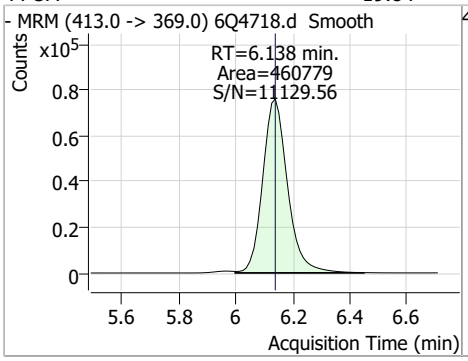
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.26	6.14	0.00	429883				

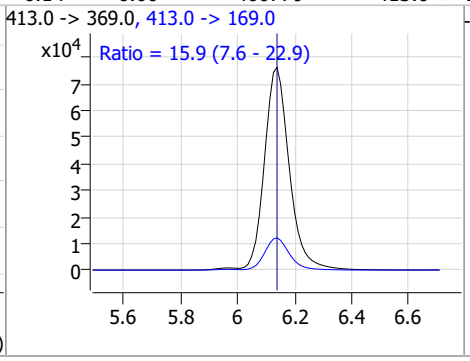


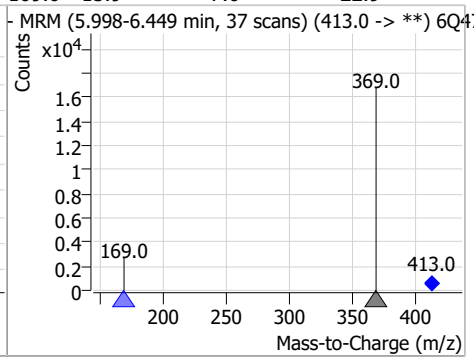




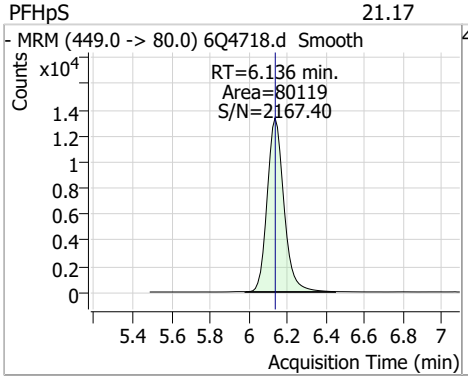
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.84	6.14	0.00	460779	413.0 -> 169.0	15.9	7.6	22.9

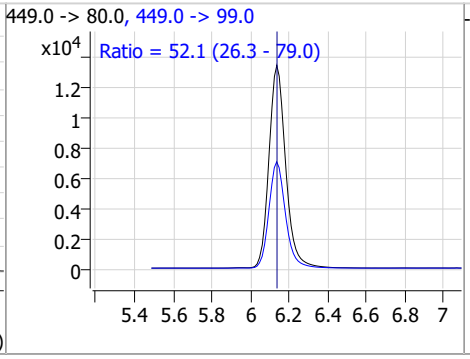


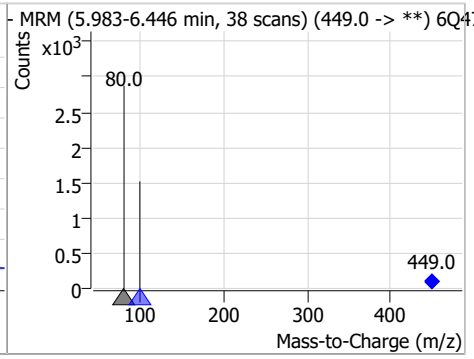




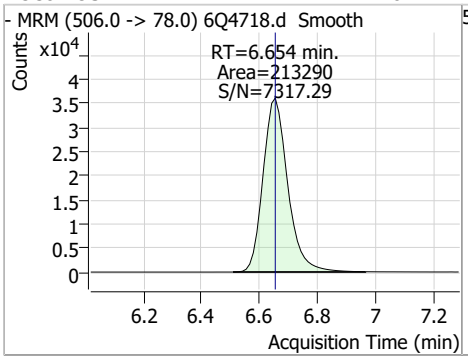
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.17	6.14	-0.01	80119	449.0 -> 99.0	52.1	26.3	79.0

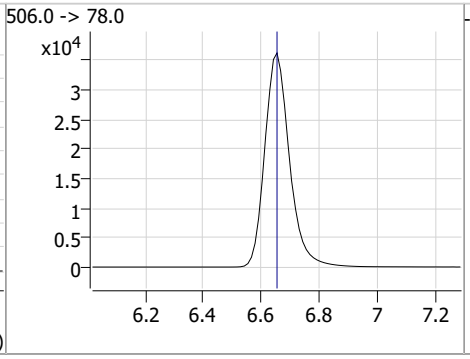


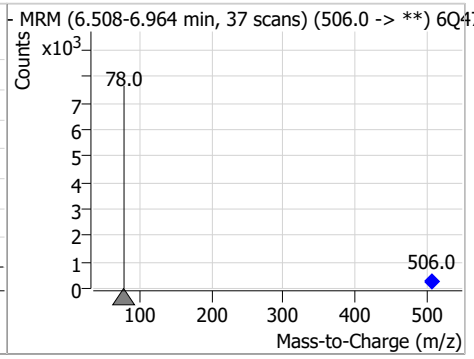




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.81	6.65	0.00	213290				

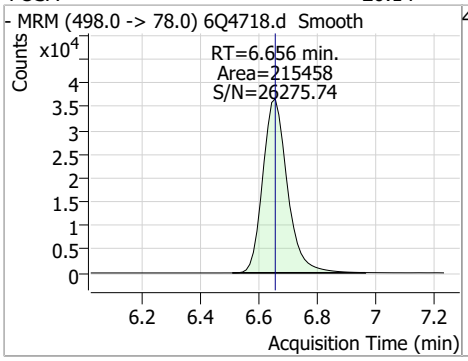


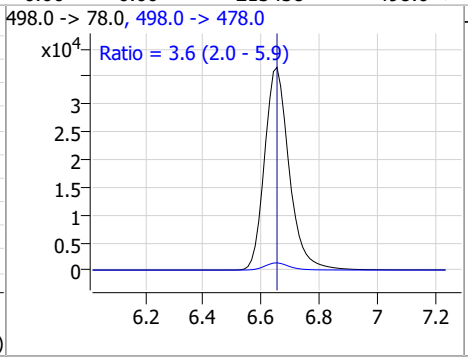


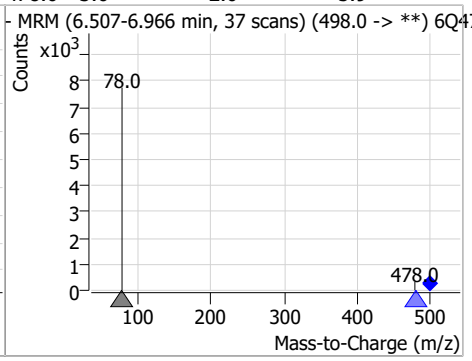


Perfluorinated Compounds by LC/MS/MS

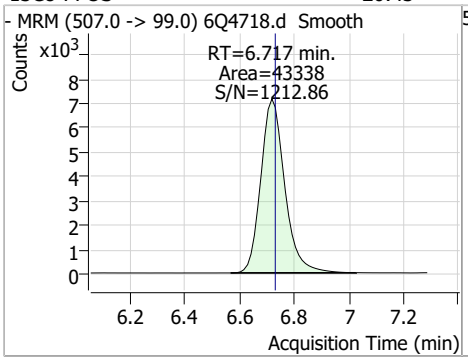
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	20.14	6.66	0.00	215458	498.0 -> 478.0	3.6	2.0	5.9

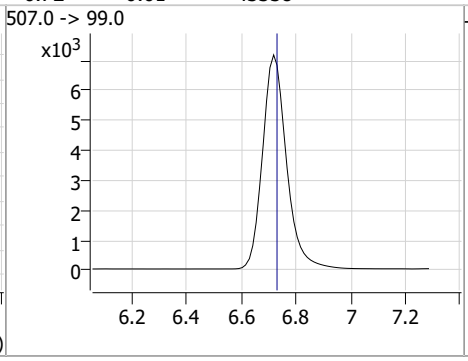


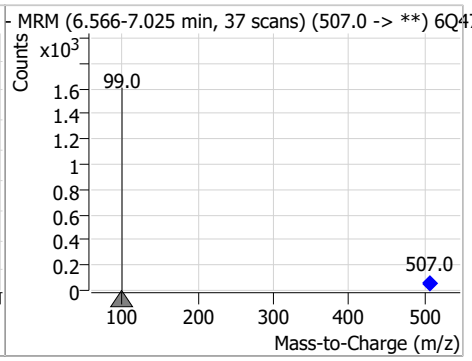




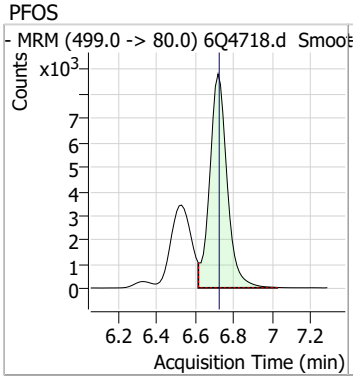
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	20.43	6.72	-0.01	43338				

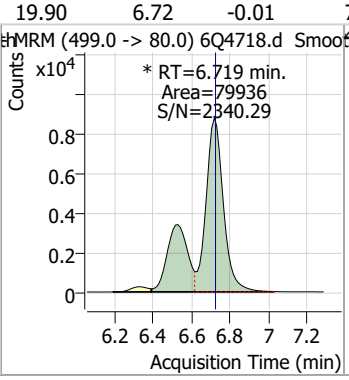


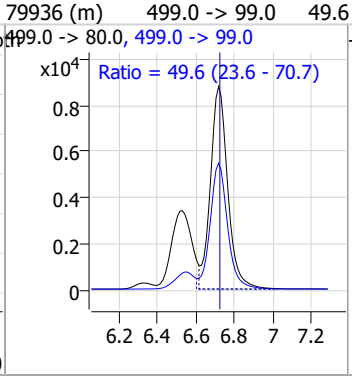


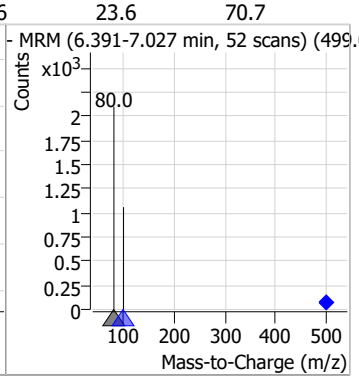


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.90	6.72	-0.01	79936 (m)	499.0 -> 99.0	49.6	23.6	70.7

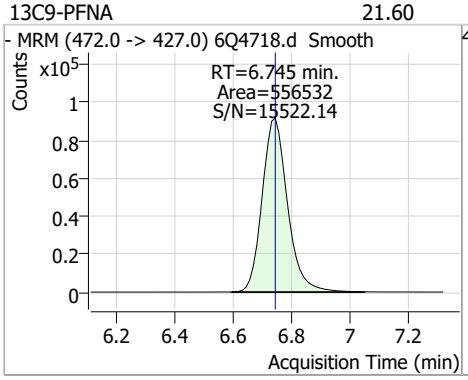


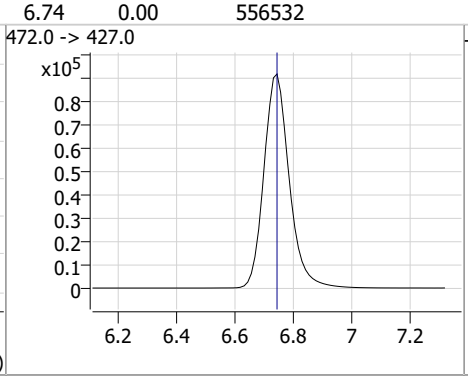


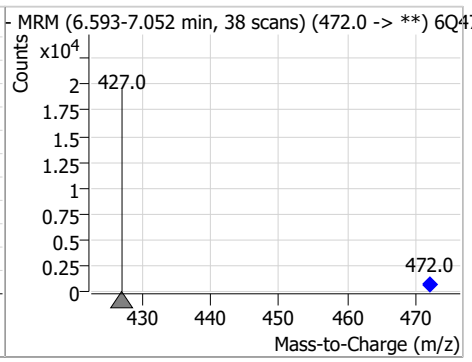




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	21.60	6.74	0.00	556532				

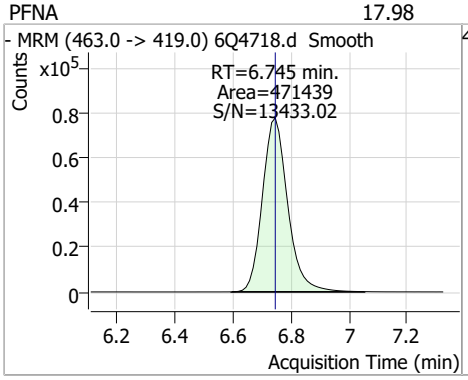


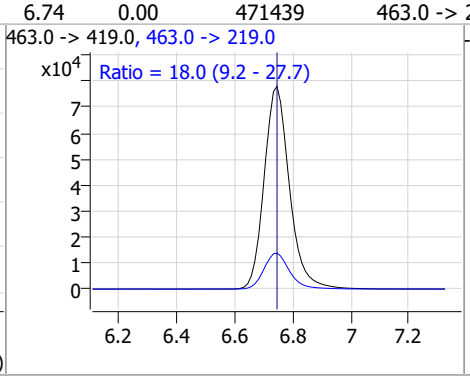


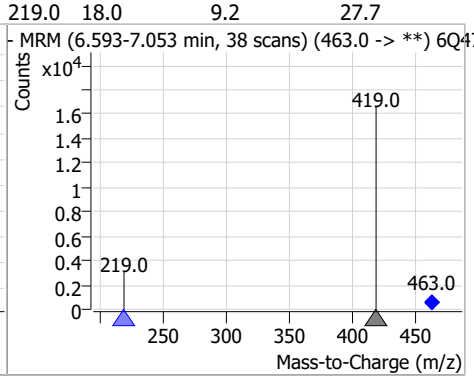


Perfluorinated Compounds by LC/MS/MS

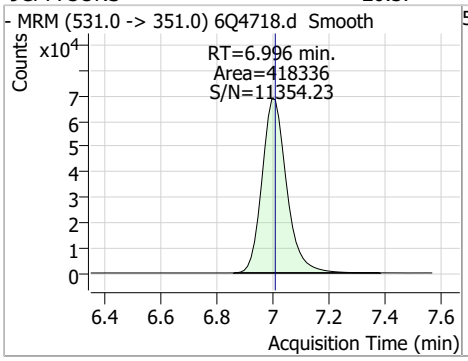
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.98	6.74	0.00	471439	463.0 -> 219.0	18.0	9.2	27.7

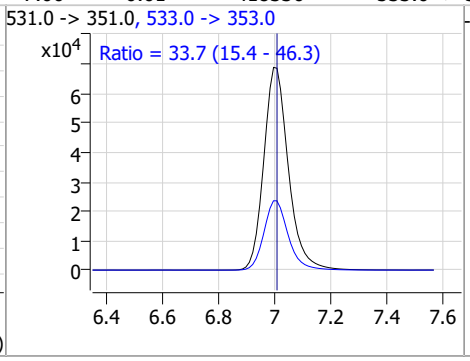


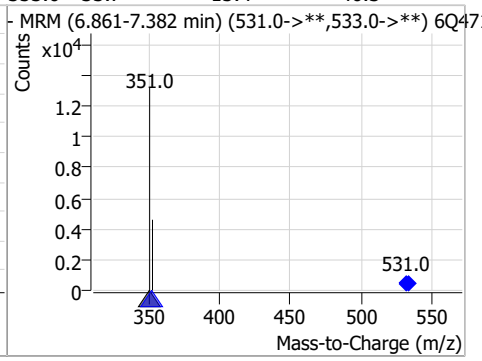




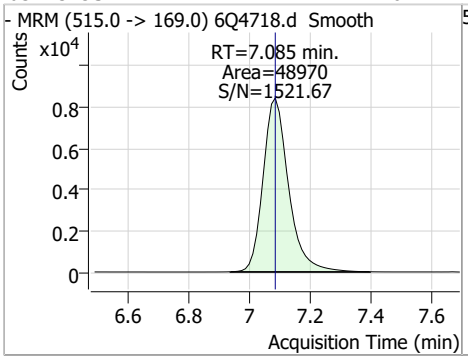
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.37	7.00	-0.01	418336	533.0 -> 353.0	33.7	15.4	46.3

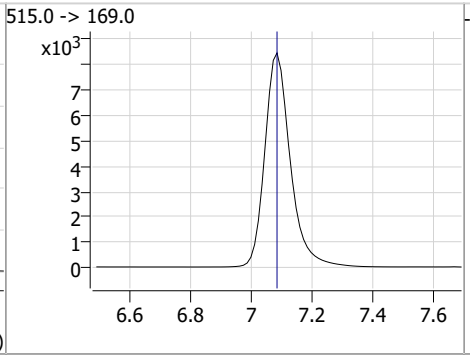


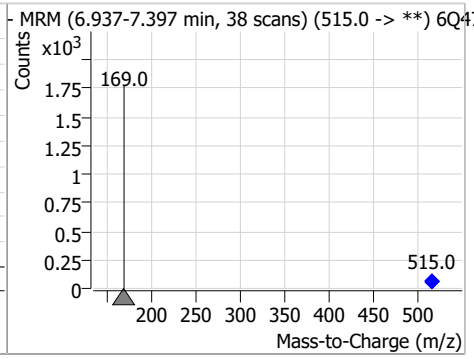




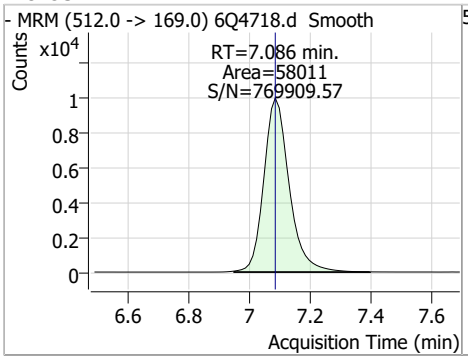
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	21.64	7.08	0.00	48970				

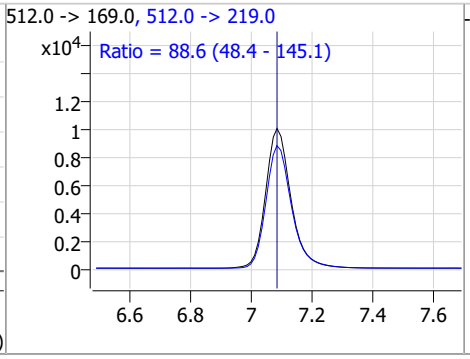


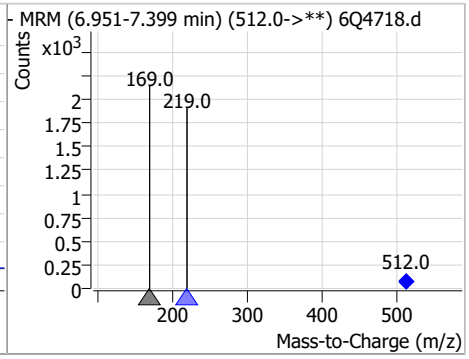




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.71	7.09	0.00	58011	512.0 -> 219.0	88.6	48.4	145.1

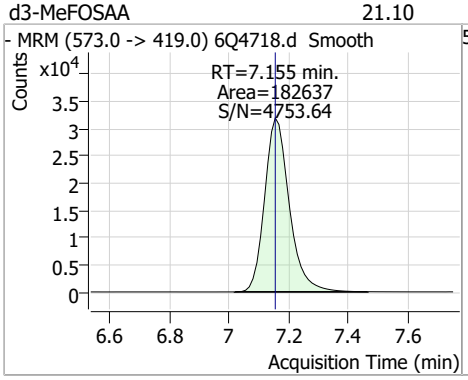


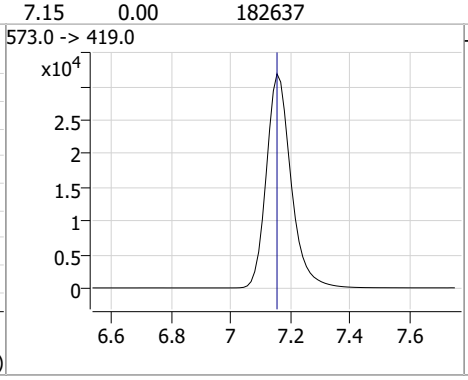


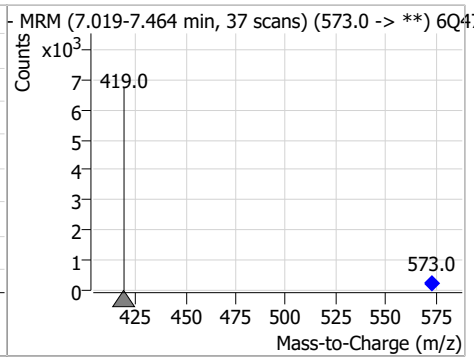


Perfluorinated Compounds by LC/MS/MS

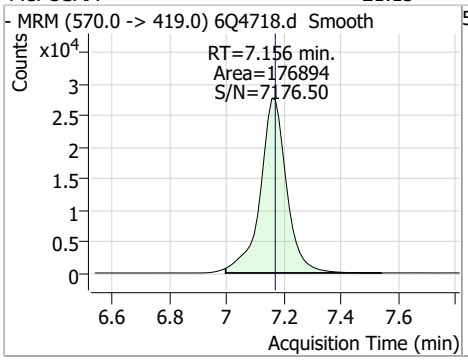
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.10	7.15	0.00	182637				

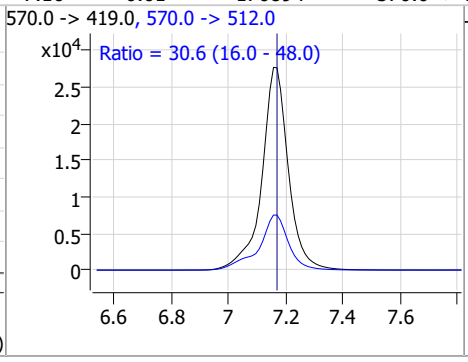


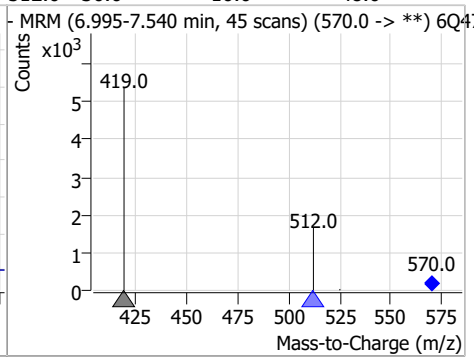




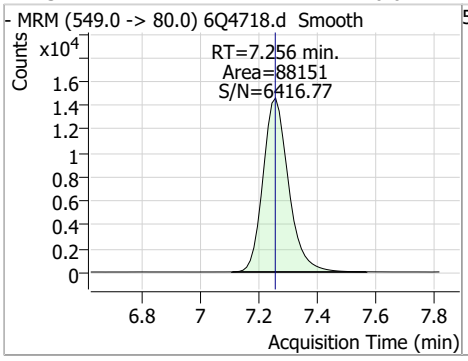
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.13	7.16	-0.01	176894	570.0 -> 512.0	30.6	16.0	48.0

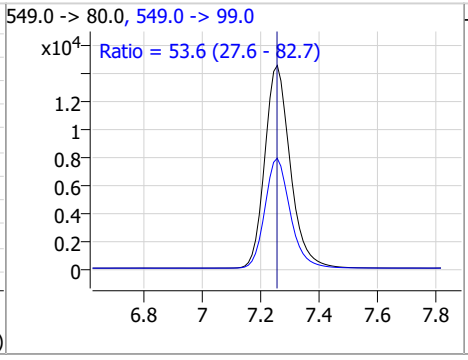


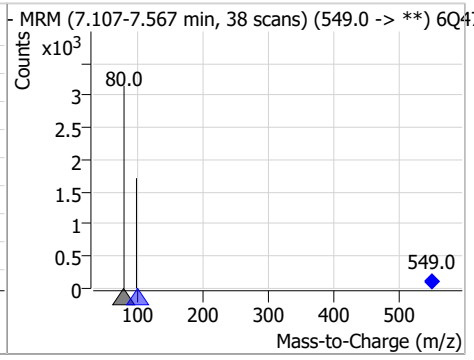




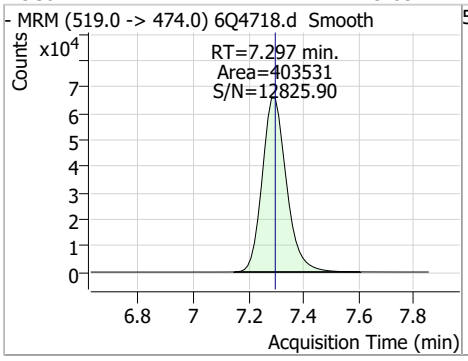
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	20.02	7.26	-0.01	88151	549.0 -> 99.0	53.6	27.6	82.7

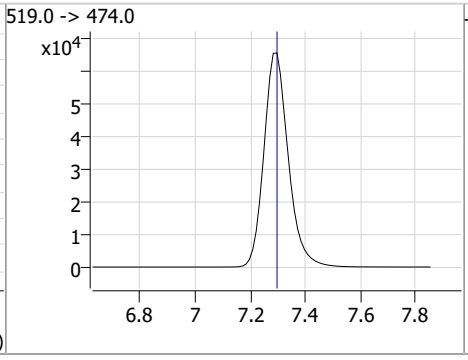


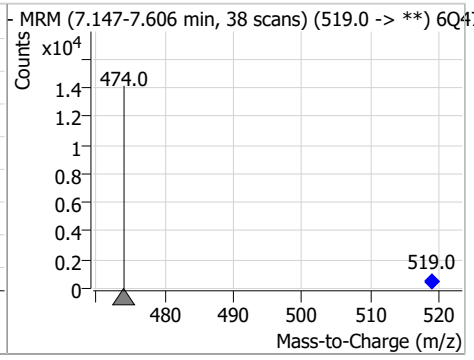




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	19.83	7.30	0.00	403531				

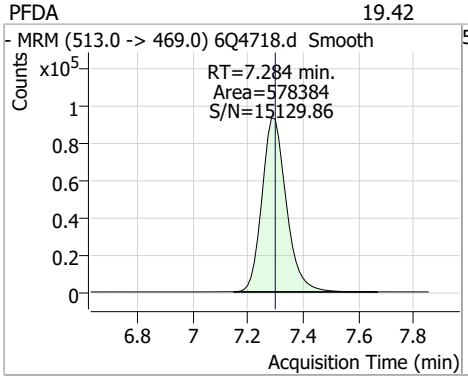


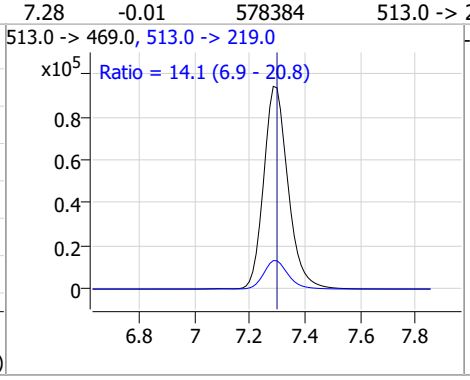


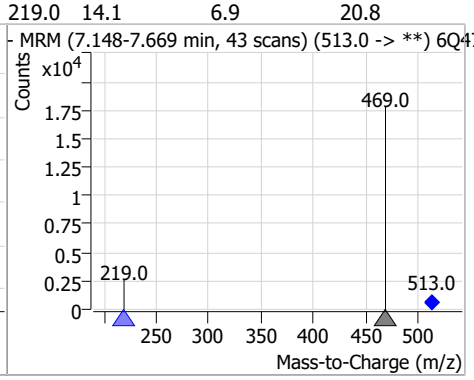


Perfluorinated Compounds by LC/MS/MS

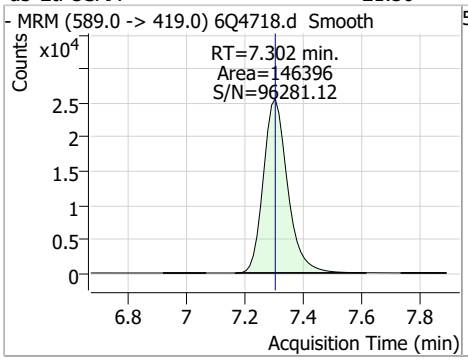
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.42	7.28	-0.01	578384	513.0 -> 219.0	14.1	6.9	20.8

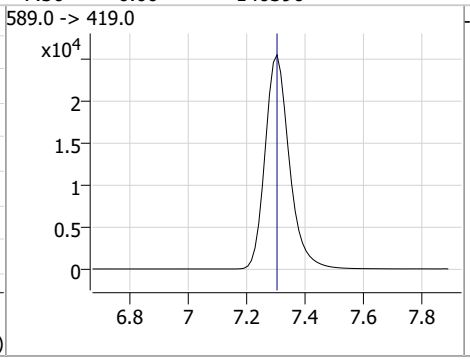


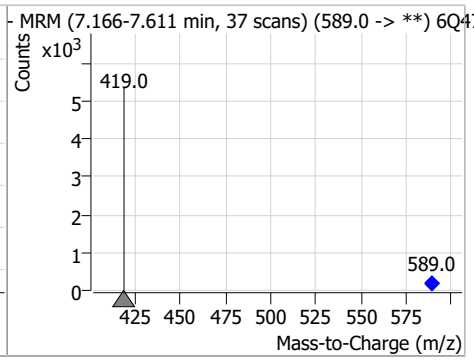




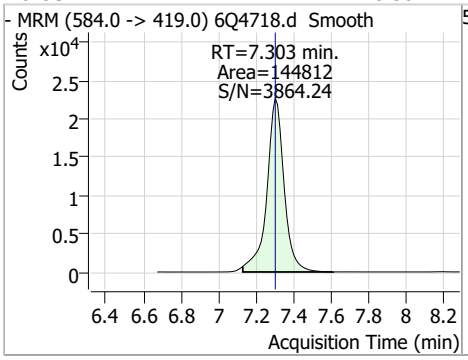
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.56	7.30	0.00	146396				

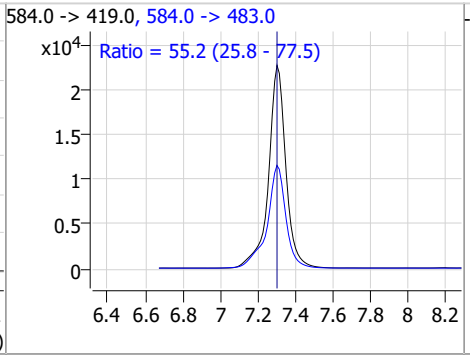


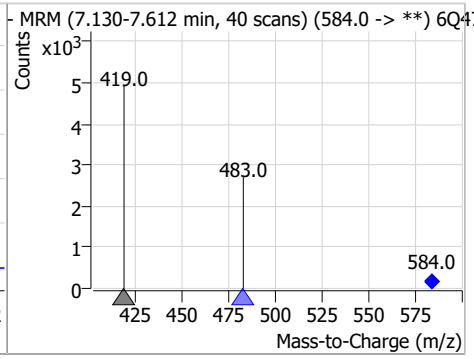




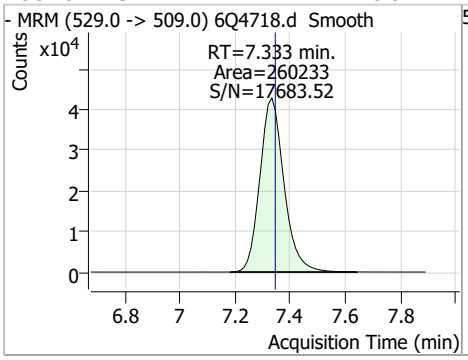
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	18.56	7.30	0.00	144812	584.0 -> 483.0	55.2	25.8	77.5

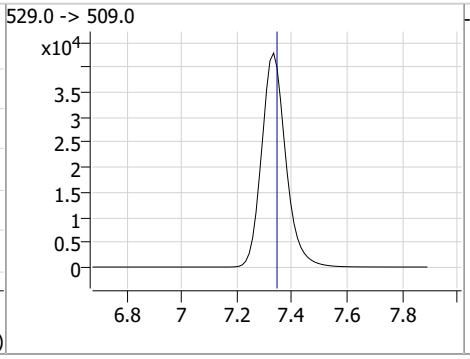


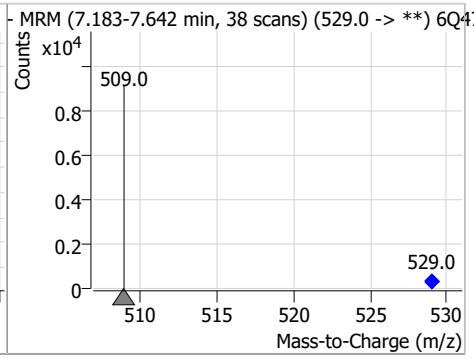




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.97	7.33	-0.01	260233				

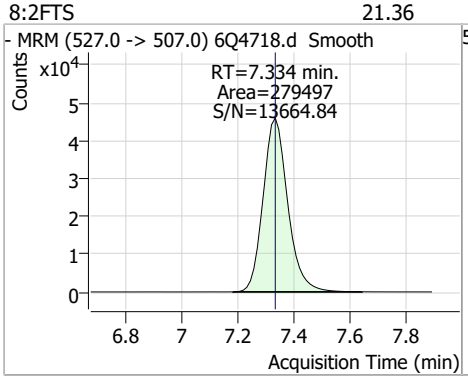


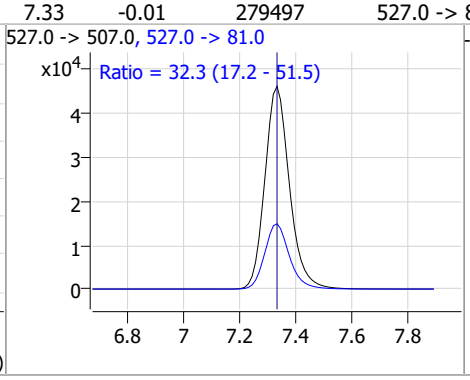


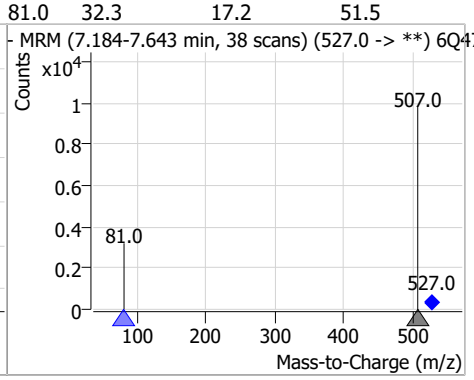


Perfluorinated Compounds by LC/MS/MS

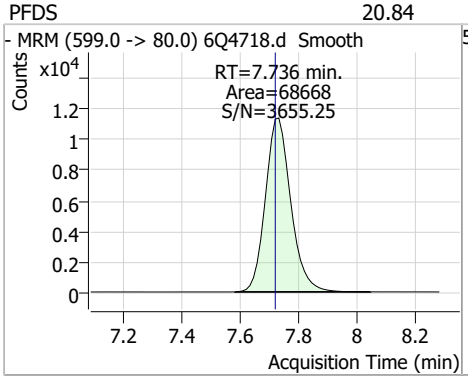
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.36	7.33	-0.01	279497	527.0 -> 81.0	32.3	17.2	51.5

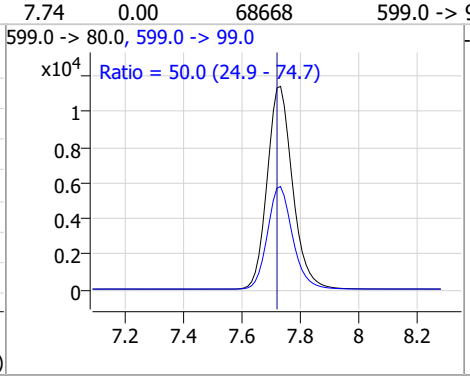


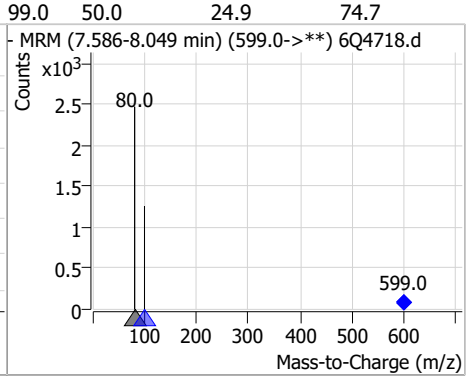




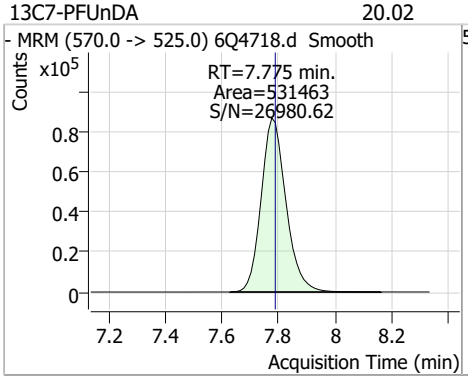
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	20.84	7.74	0.00	68668	599.0 -> 99.0	50.0	24.9	74.7

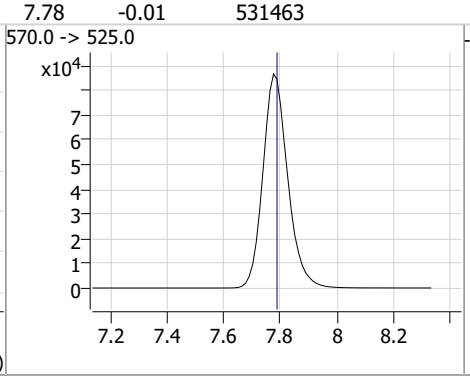


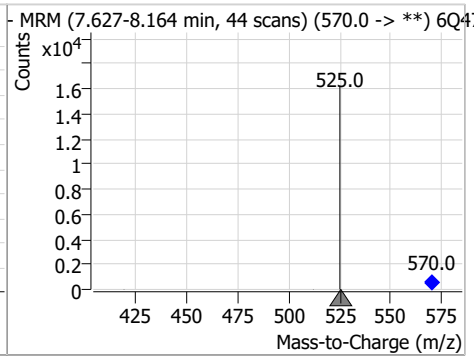




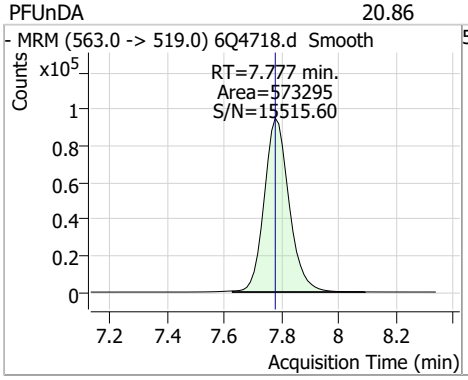
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	20.02	7.78	-0.01	531463				

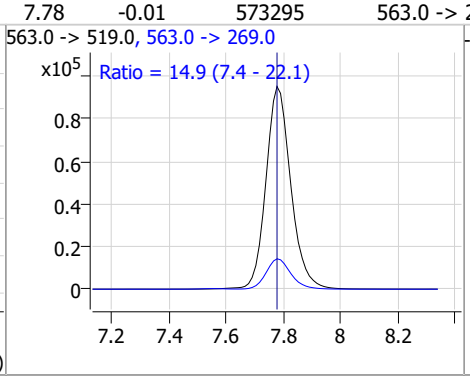


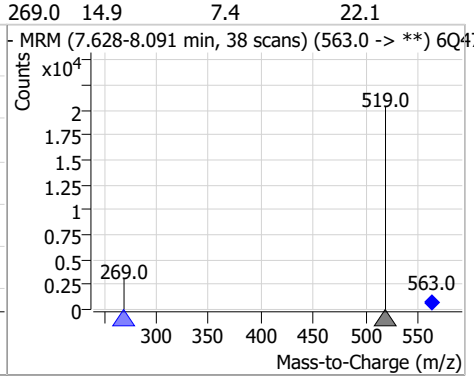




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.86	7.78	-0.01	573295	563.0 -> 269.0	14.9	7.4	22.1

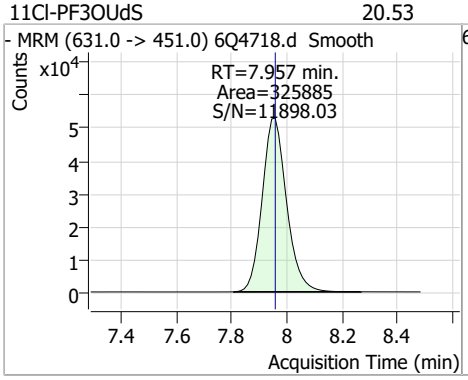


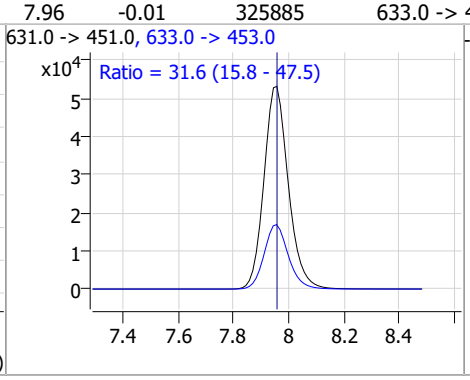


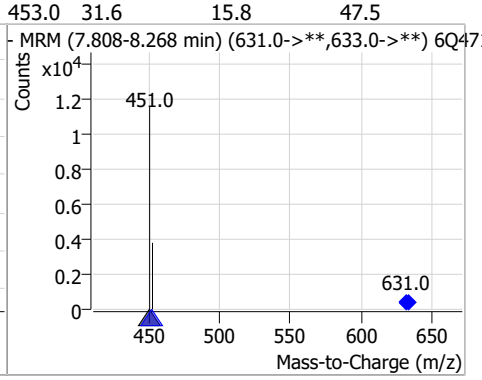


Perfluorinated Compounds by LC/MS/MS

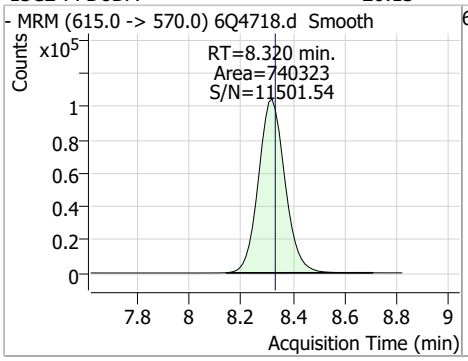
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.53	7.96	-0.01	325885	633.0 -> 453.0	31.6	15.8	47.5

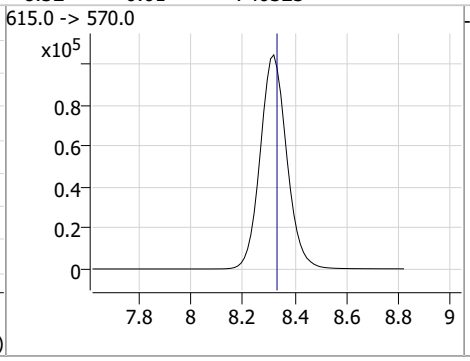


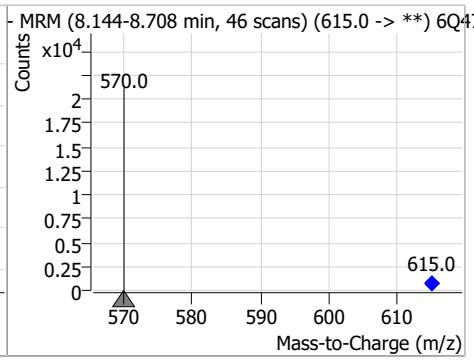




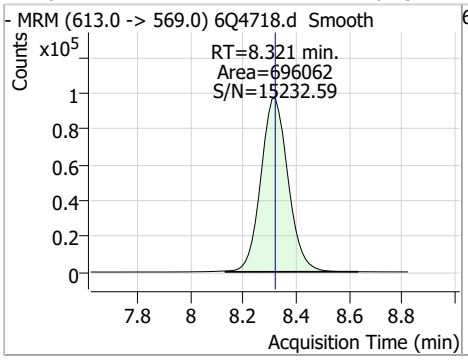
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.13	8.32	-0.01	740323				

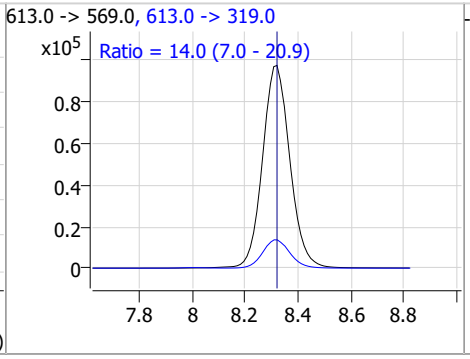


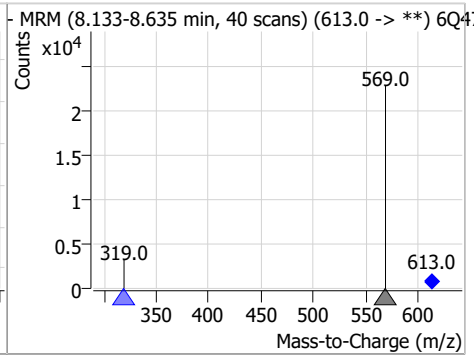




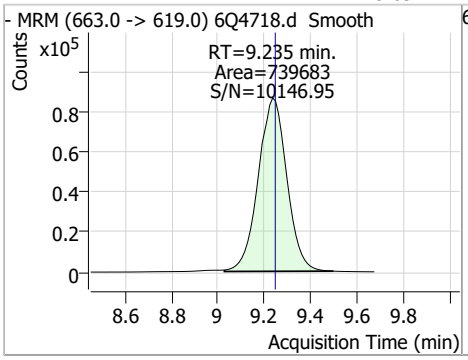
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.15	8.32	-0.01	696062	613.0 -> 319.0	14.0	7.0	20.9

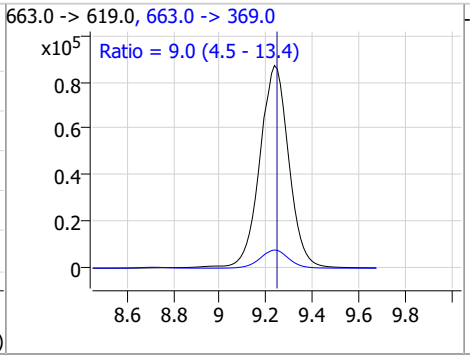


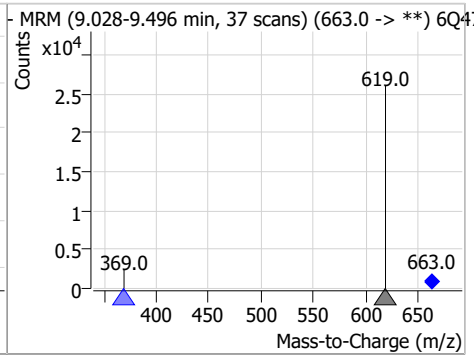




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.69	9.24	-0.02	739683	663.0 -> 369.0	9.0	4.5	13.4

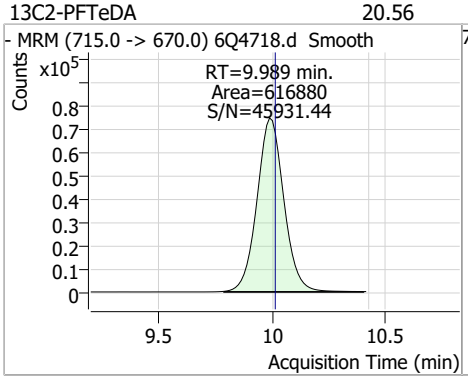


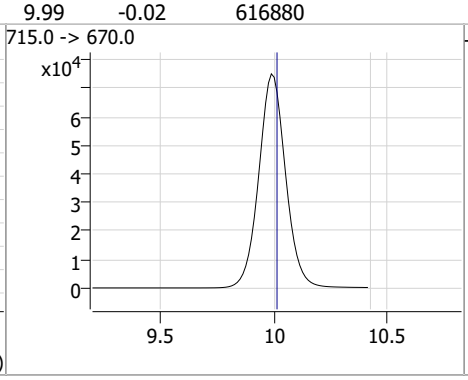


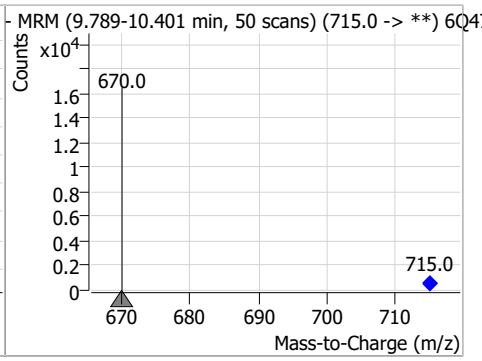


Perfluorinated Compounds by LC/MS/MS

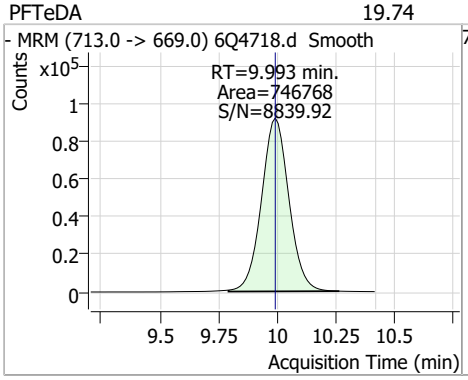
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.56	9.99	-0.02	616880				

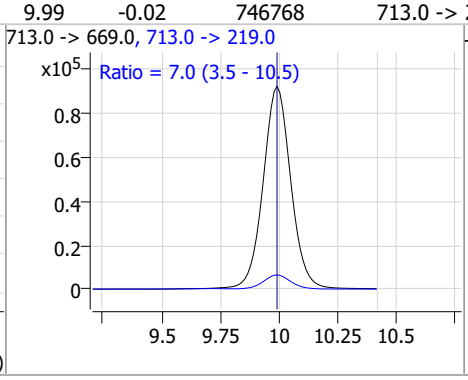


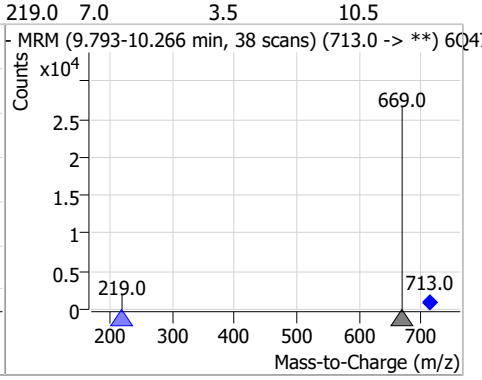




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.74	9.99	-0.02	746768	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q86-CC85
Lab FileID: 6Q4718.D
Injection Time: 09/15/22 19:38
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:31 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4742.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 2:02:42 AM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	86486	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	148713	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	227493	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	261744	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	440416	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	569760	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	419947	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	569467	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	756389	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	627790	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	211483	20.00	µg/L	0.000
M3-PFBS	3.635	302.0 -> 99.0	32139	20.00	µg/L	0.000
M3-PFHxS	5.475	402.0 -> 99.0	29734	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	42380	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	277394	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	356171	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	256860	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	190118	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5374	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	50925	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	149066	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	277394	20.54	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.7%		
13C2-6:2FTS	6.124	429.0 -> 409.0	356171	20.87	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.3%		
13C2-8:2FTS	7.333	529.0 -> 509.0	256860	19.71	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.5%		
13C2-PFDoDA	8.320	615.0 -> 570.0	756389	20.57	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 102.8%		
13C2-PFTeDA	9.989	715.0 -> 670.0	627790	20.93	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.6%		
13C3-PFBS	3.635	302.0 -> 99.0	32139	20.99	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C3-PFHxS	5.475	402.0 -> 99.0	29734	21.50	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C4-PFBA	1.949	217.0 -> 172.0	86486	21.73	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C4-PFHpA	5.445	367.0 -> 322.0	261744	21.15	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.8%		
13C5-PFHxA	4.573	318.0 -> 273.0	227493	21.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	148713	21.21	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.1%		
13C6-PFDA	7.283	519.0 -> 474.0	419947	20.64	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

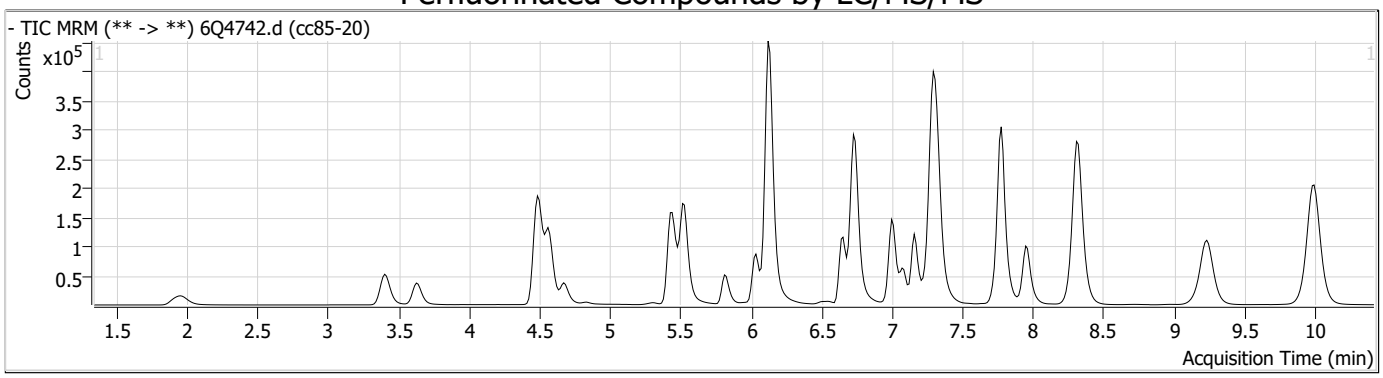
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.2%		
13C7-PFUnDA	7.775	570.0 -> 525.0	569467	21.45 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.2%		
13C8-FOSA	6.654	506.0 -> 78.0	211483	21.62 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.1%		
13C8-PFOA	6.138	421.0 -> 376.0	440416	20.76 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.8%		
13C8-PFOS	6.717	507.0 -> 99.0	42380	19.98 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
13C9-PFNA	6.745	472.0 -> 427.0	569760	22.11 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.6%		
d3-MeFOSAA	7.155	573.0 -> 419.0	190118	21.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5364	20.18 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 100.9%		
d3-MeFOSA	7.085	515.0 -> 169.0	50925	22.51 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.5%		
d5-EtFOSAA	7.302	589.0 -> 419.0	149159	21.97 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	319341	21.29 µg/L		97
		327.0 -> 81.0	99049			
6:2FTS	6.124	427.0 -> 407.0	372952	20.68 µg/L		97
		427.0 -> 81.0	96595			
8:2FTS	7.334	527.0 -> 507.0	281465	21.79 µg/L		98
		527.0 -> 81.0	93873			
EtFOSAA	7.303	584.0 -> 419.0	151423	19.06 µg/L		94
		584.0 -> 483.0	85159			
FOSA	6.656	498.0 -> 78.0	231000	21.77 µg/L		99
		498.0 -> 478.0	8147			
MeFOSAA	7.156	570.0 -> 419.0	188589	21.64 µg/L		97
		570.0 -> 512.0	63634			
PFBA	1.943	213.0 -> 169.0	37399	19.81 µg/L		100
PFBS	3.627	299.0 -> 80.0	107339	20.08 µg/L		99
		299.0 -> 99.0	39667			
PFDA	7.284	513.0 -> 469.0	595772	19.22 µg/L		99
		513.0 -> 219.0	85675			
PFDoDA	8.309	613.0 -> 569.0	715109	20.26 µg/L		100
		613.0 -> 319.0	99170			
PFDS	7.724	599.0 -> 80.0	66278	18.77 µg/L		100
		599.0 -> 99.0	33129			
PFHpA	5.446	363.0 -> 319.0	340671	20.01 µg/L		99
		363.0 -> 169.0	51655			
PFHpS	6.136	449.0 -> 80.0	82122	22.19 µg/L		99
		449.0 -> 99.0	42711			
PFHxA	4.574	313.0 -> 269.0	234219	19.58 µg/L		100
		313.0 -> 119.0	5914			
PFHxS	5.477	399.0 -> 80.0	86184	20.23 µg/L	m	97
		399.0 -> 99.0	40242			
PFNA	6.745	463.0 -> 419.0	459713	17.12 µg/L		96
		463.0 -> 219.0	92661			
PFNS	7.256	549.0 -> 80.0	91916	21.35 µg/L		99
		549.0 -> 99.0	50056			
PFOA	6.138	413.0 -> 369.0	467438	19.65 µg/L		99
		413.0 -> 169.0	72954			
PFOS	6.719	499.0 -> 80.0	87929	22.38 µg/L	m	99

Perfluorinated Compounds by LC/MS/MS

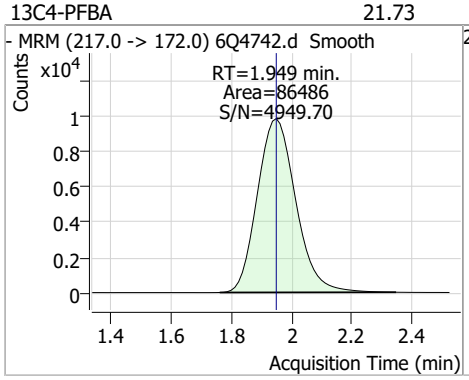
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	41089			
PFPeA	3.408	263.0 -> 219.0	124681	19.90	µg/L	100
PFPeS	4.681	349.0 -> 80.0	88499	19.89	µg/L	98
		349.0 -> 99.0	41237			
PFTeDA	9.993	713.0 -> 669.0	760642	19.76	µg/L	100
		713.0 -> 219.0	53153			
PFTrDA	9.235	663.0 -> 619.0	753445	20.63	µg/L	99
		663.0 -> 369.0	68616			
PFUnDA	7.777	563.0 -> 519.0	591775	20.10	µg/L	100
		563.0 -> 269.0	86471			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	326210	20.11	µg/L	100
		633.0 -> 453.0	103876			
9Cl-PF3ONS	6.996	531.0 -> 351.0	447797	20.96	µg/L	100
		533.0 -> 353.0	139506			
ADONA	5.532	377.0 -> 251.0	541051	19.63	µg/L	97
		377.0 -> 85.0	137776			
HFPO-DA	4.840	285.0 -> 169.0	5720	22.51	µg/L	100
		285.0 -> 185.0	800			
MeFOSA	7.086	512.0 -> 169.0	58745	21.14	µg/L	88
		512.0 -> 219.0	50073			
4-PFECHS	6.032	461.0 -> 381.0	272072	19.19	µg/L	99
		461.0 -> 99.0	92522			
FBSA	4.514	298.0 -> 78.0	221619	20.00	µg/L	99
		298.0 -> 64.0	15479			
FHxSA	5.828	398.0 -> 78.0	191527	19.70	µg/L	100
		398.0 -> 64.0	6821			

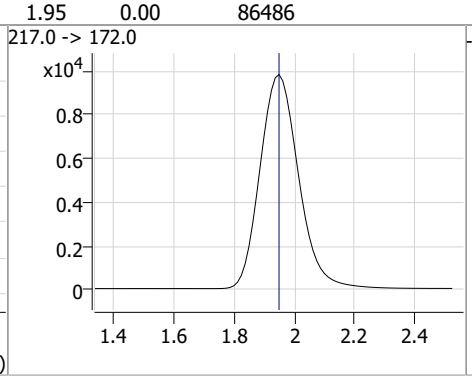
 # = Qualifier out of range, m = manually integrated, + = Area summed

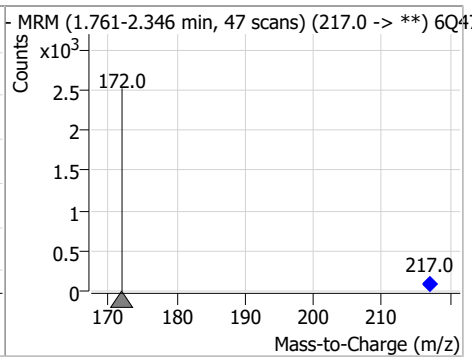
Perfluorinated Compounds by LC/MS/MS



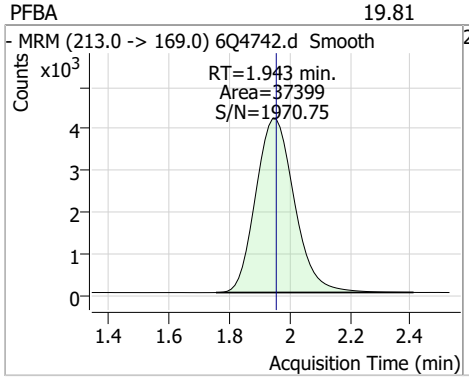
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	21.73	1.95	0.00	86486				

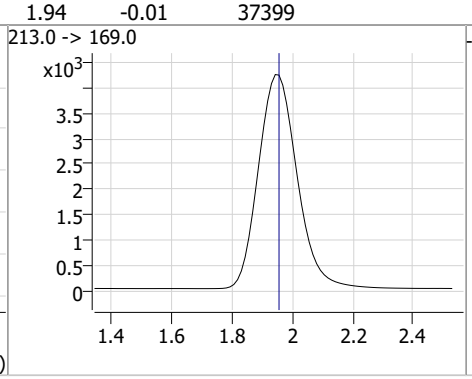


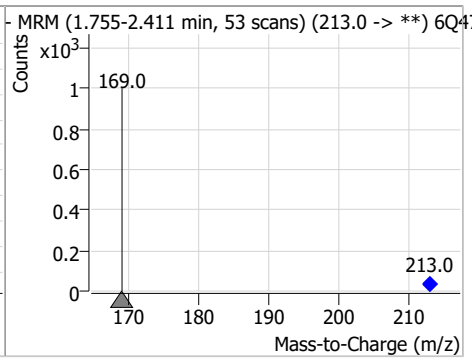




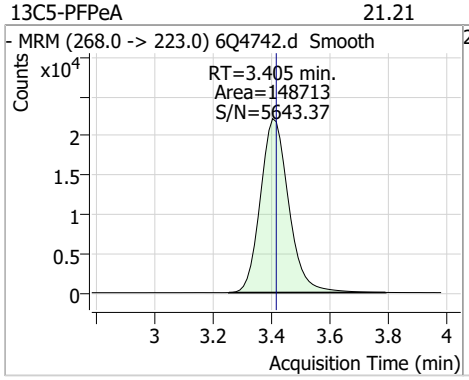
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.81	1.94	-0.01	37399				

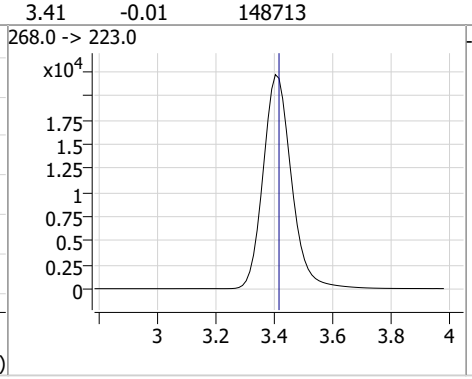


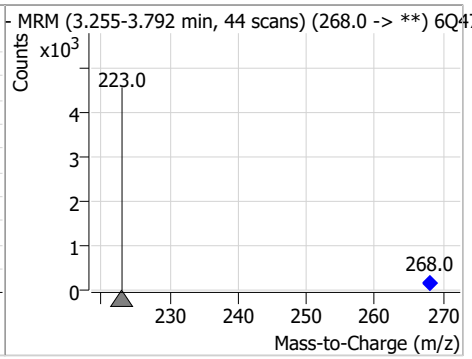




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.21	3.41	-0.01	148713				

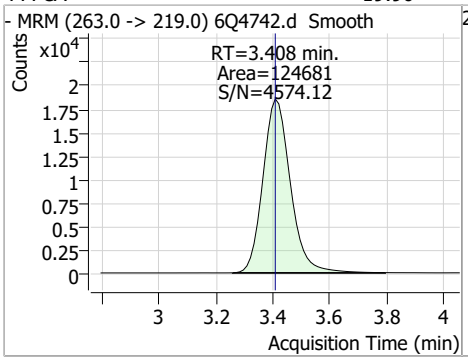


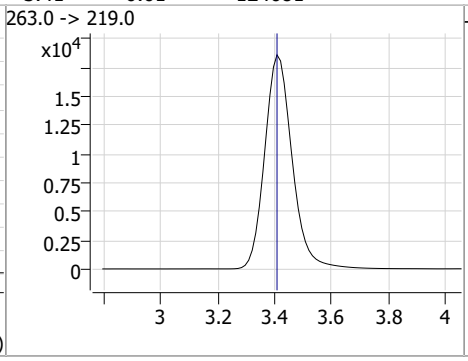


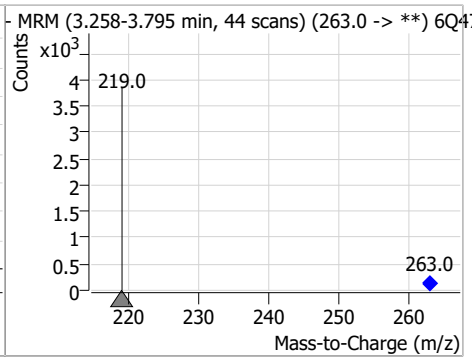


Perfluorinated Compounds by LC/MS/MS

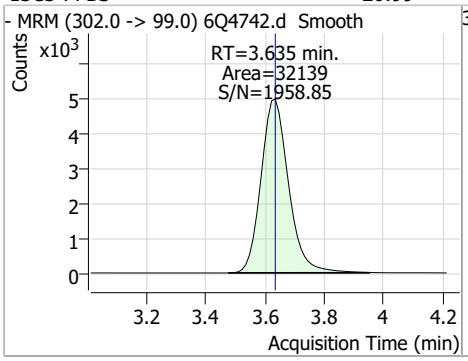
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.90	3.41	-0.01	124681				

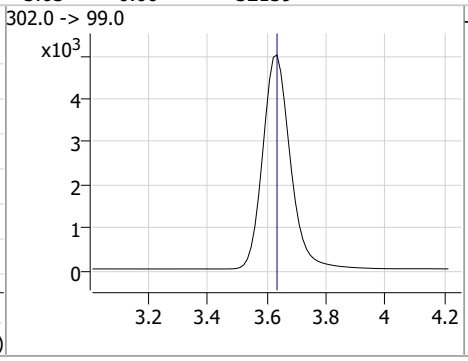


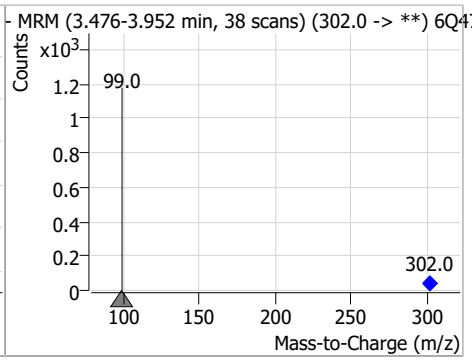




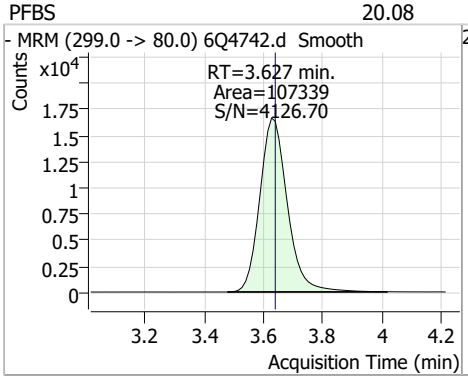
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	20.99	3.63	0.00	32139				

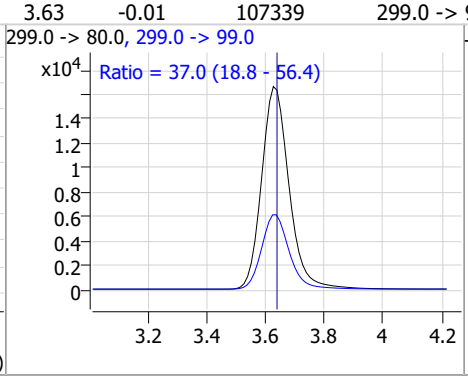


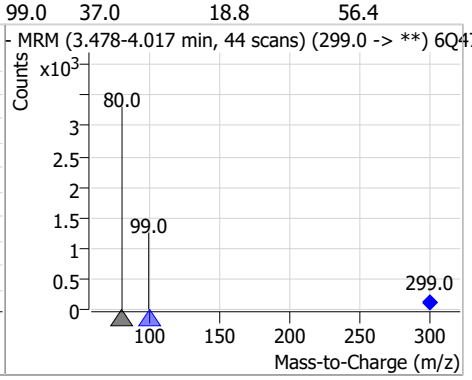




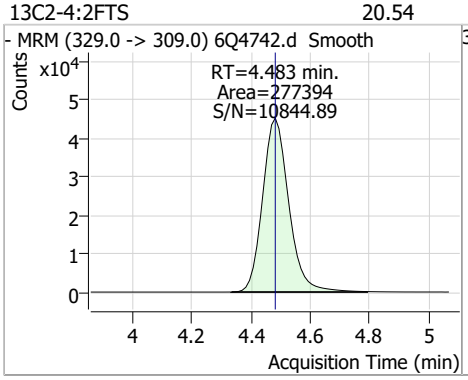
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	20.08	3.63	-0.01	107339	299.0 -> 99.0	37.0	18.8	56.4

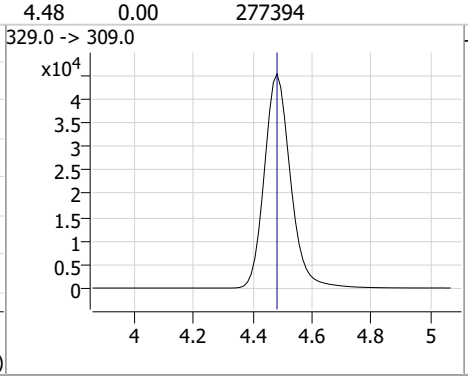


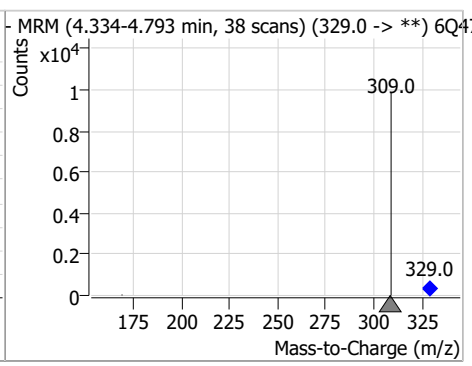




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	20.54	4.48	0.00	277394				

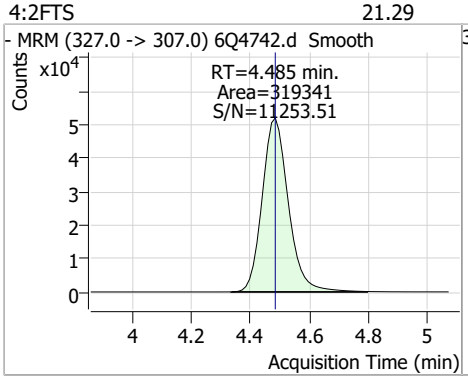


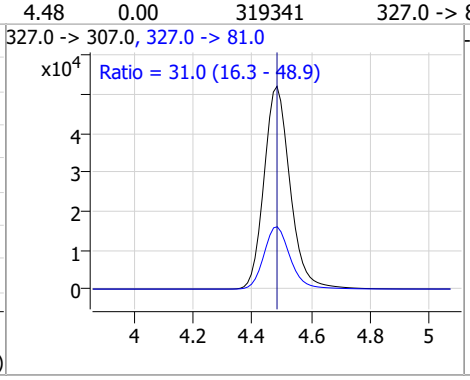


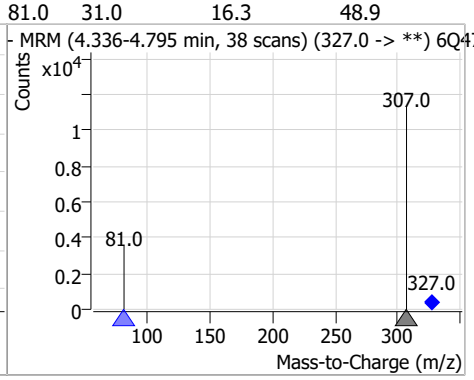


Perfluorinated Compounds by LC/MS/MS

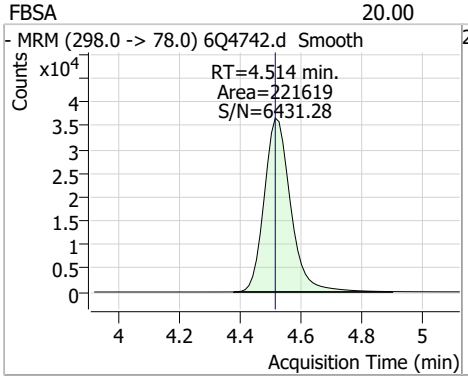
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.29	4.48	0.00	319341	327.0 -> 81.0	31.0	16.3	48.9

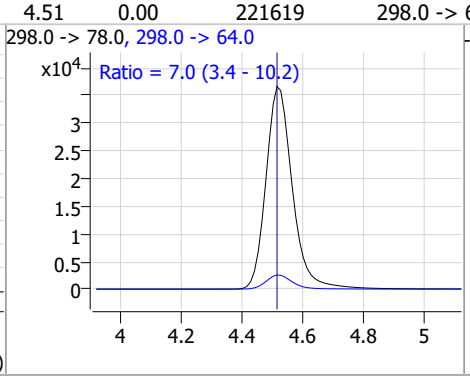


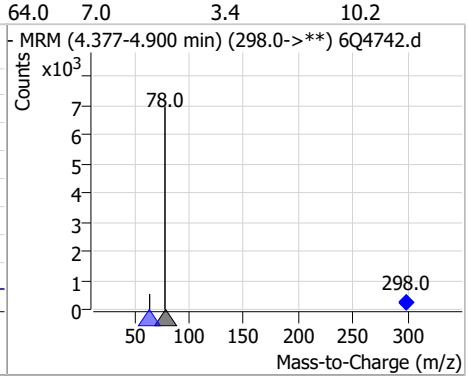




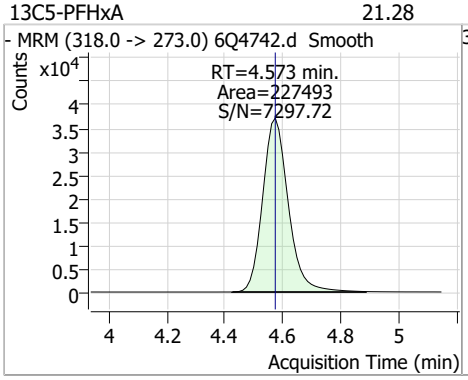
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	20.00	4.51	0.00	221619	298.0 -> 64.0	7.0	3.4	10.2

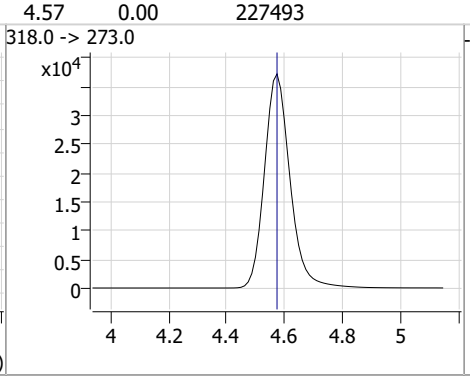


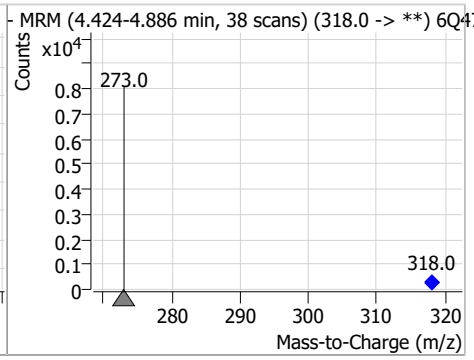




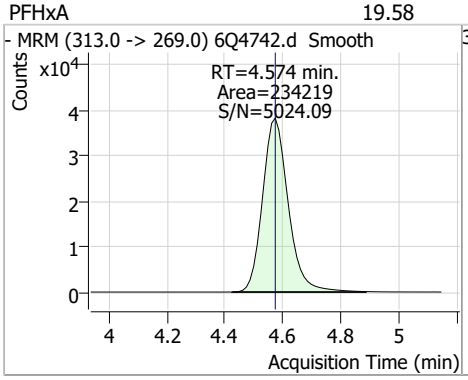
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	21.28	4.57	0.00	227493				

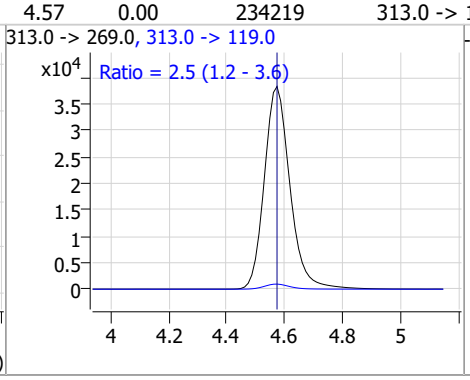


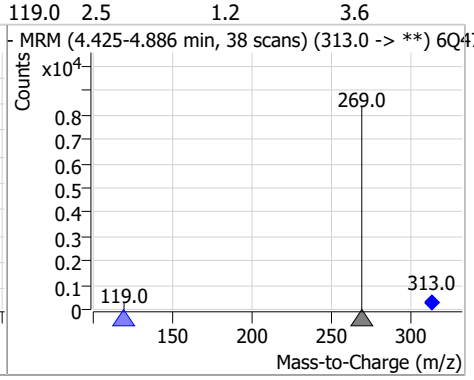




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	19.58	4.57	0.00	234219	313.0 -> 119.0	2.5	1.2	3.6

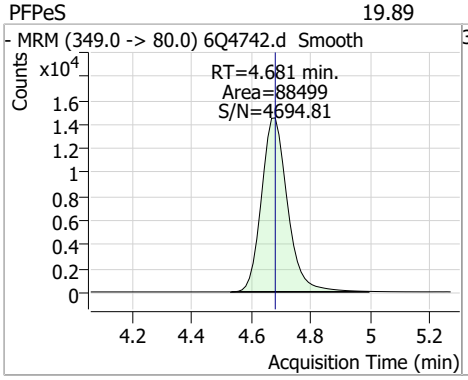


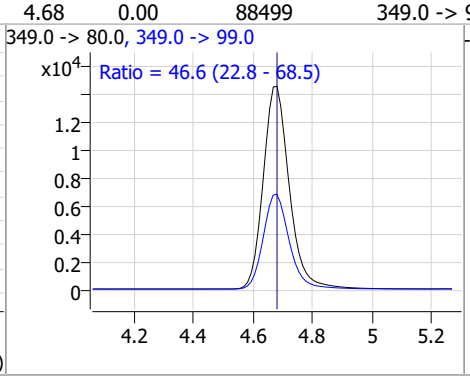


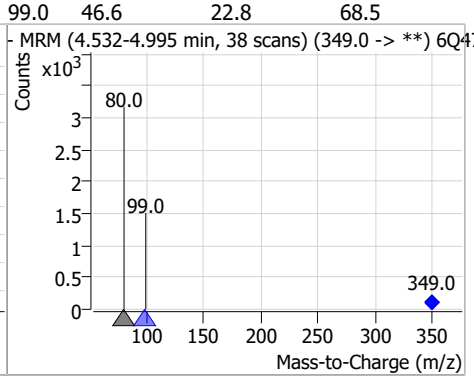


Perfluorinated Compounds by LC/MS/MS

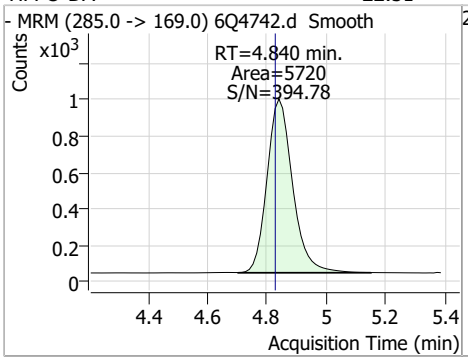
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.89	4.68	0.00	88499	349.0 -> 99.0	46.6	22.8	68.5

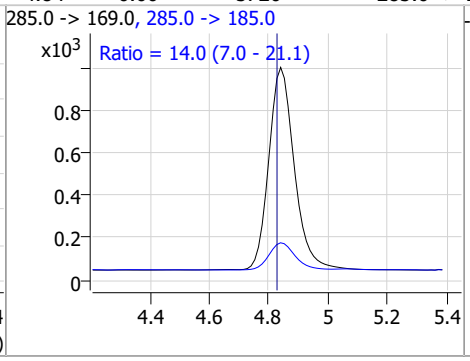


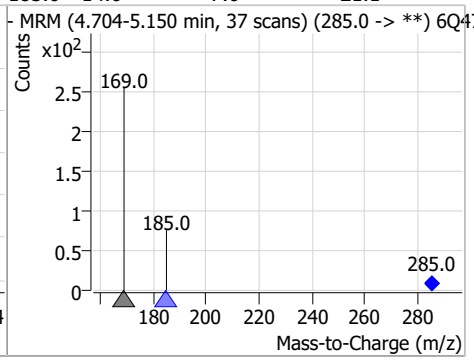




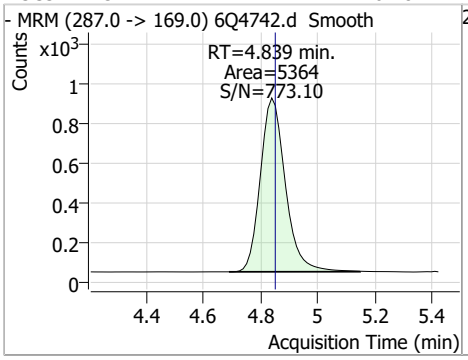
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	22.51	4.84	0.00	5720	285.0 -> 185.0	14.0	7.0	21.1

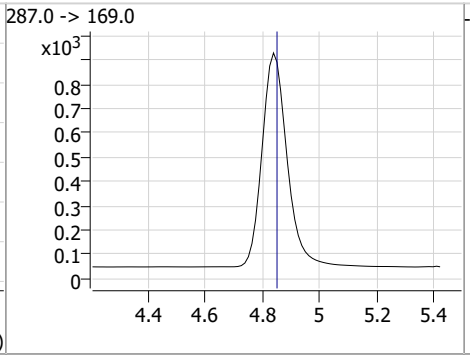


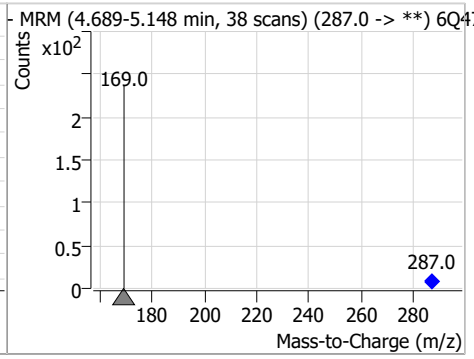




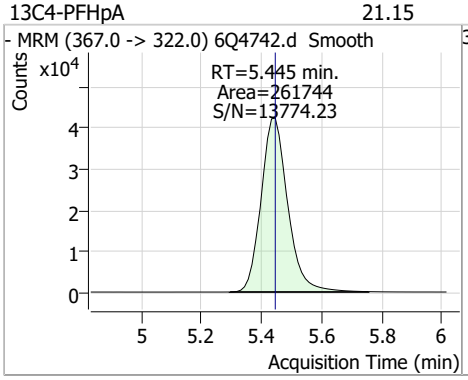
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	20.18	4.84	-0.01	5364				

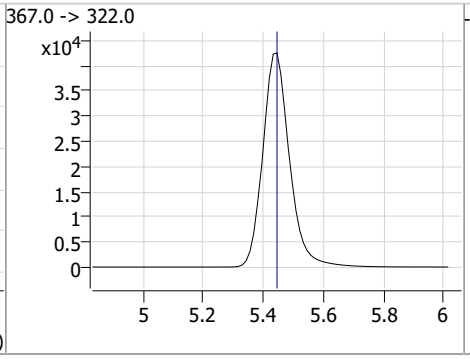


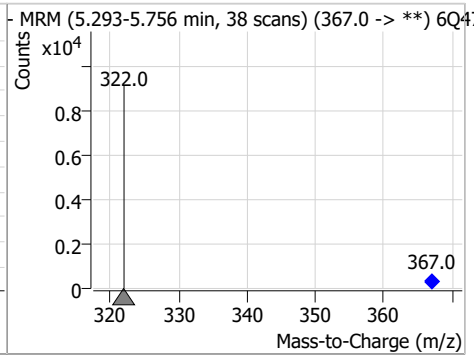




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.15	5.45	0.00	261744				

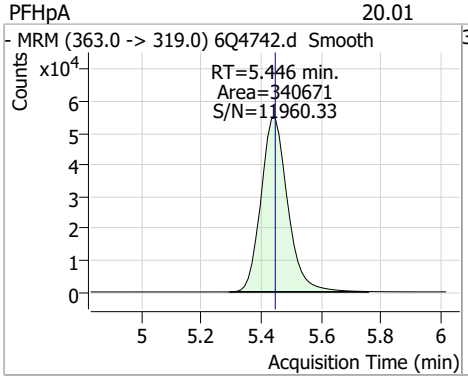


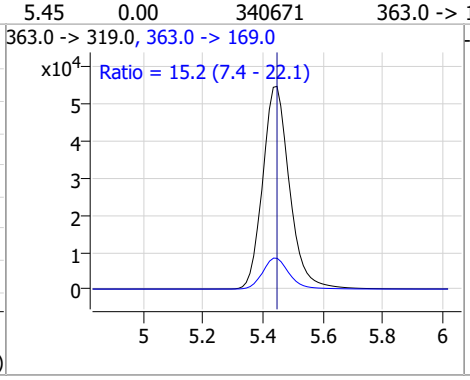


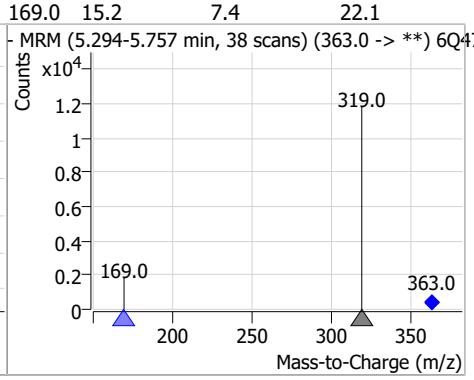


Perfluorinated Compounds by LC/MS/MS

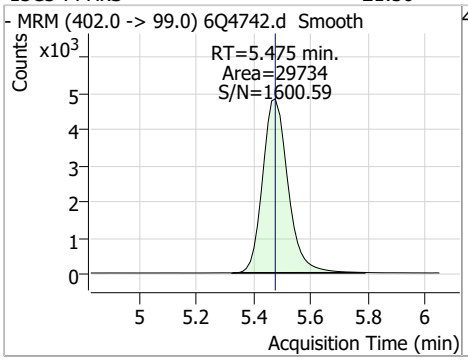
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.01	5.45	0.00	340671	363.0 -> 169.0	15.2	7.4	22.1

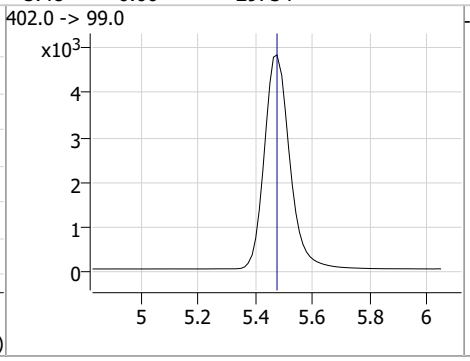


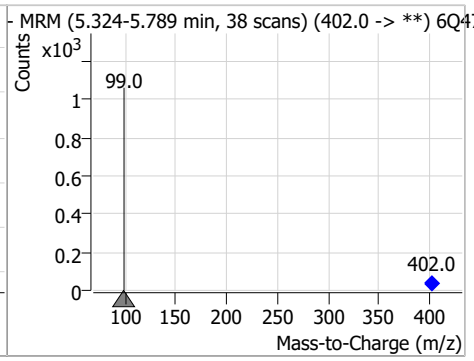




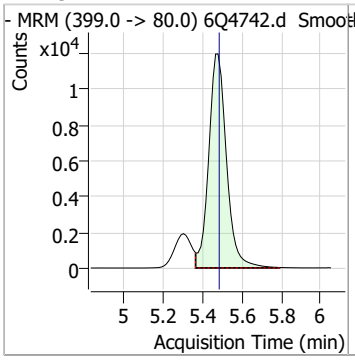
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.50	5.48	0.00	29734				

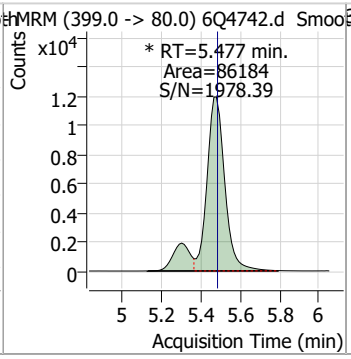


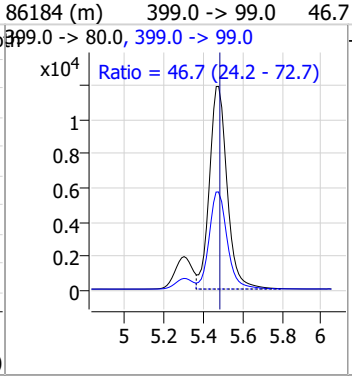


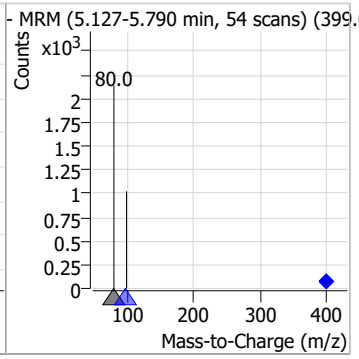


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.23	5.48	0.00	86184 (m)	399.0 -> 99.0	46.7	24.2	72.7

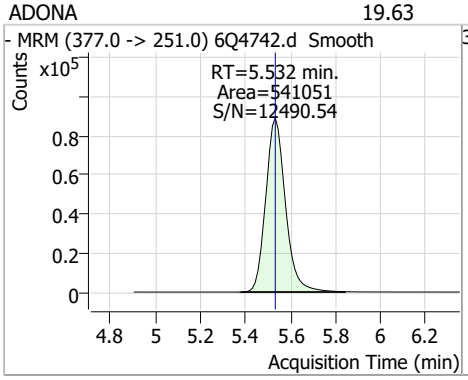


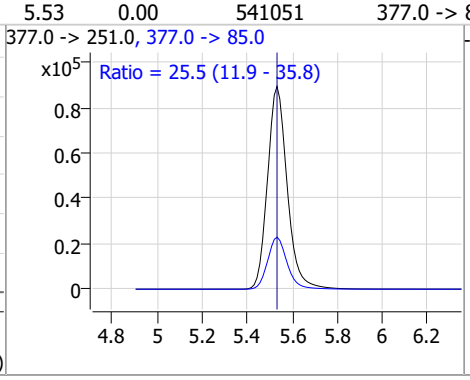


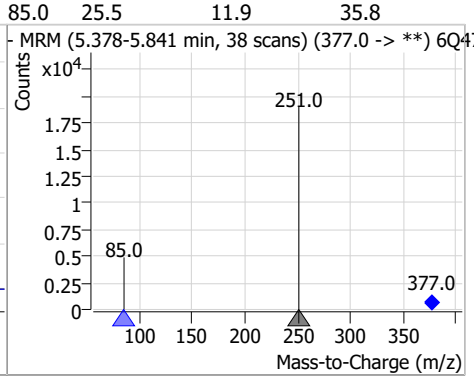




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.63	5.53	0.00	541051	377.0 -> 85.0	25.5	11.9	35.8

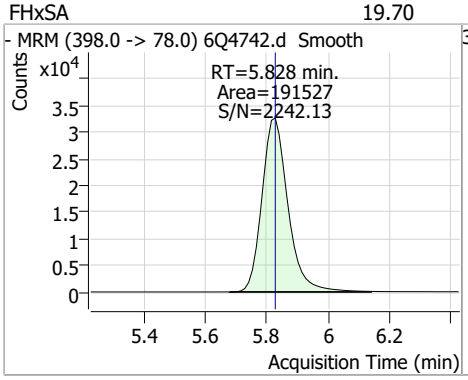


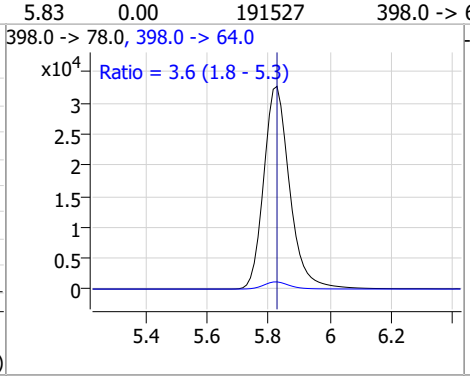


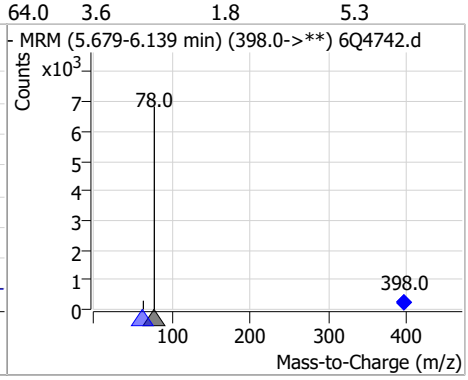


Perfluorinated Compounds by LC/MS/MS

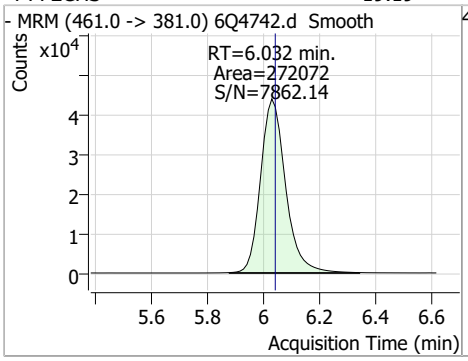
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.70	5.83	0.00	191527	398.0 -> 64.0	3.6	1.8	5.3

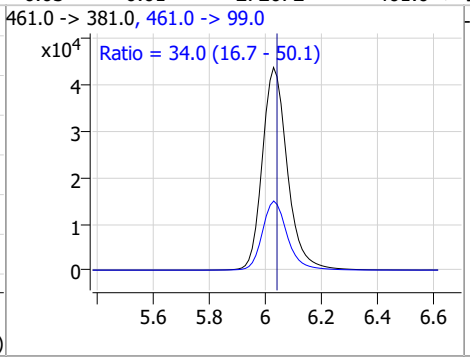


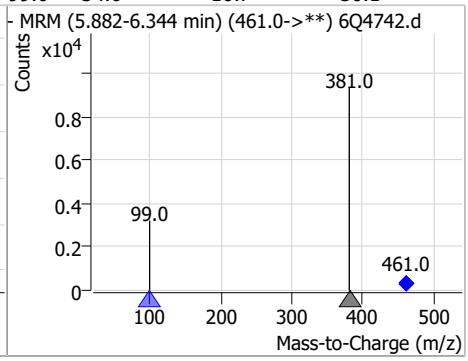




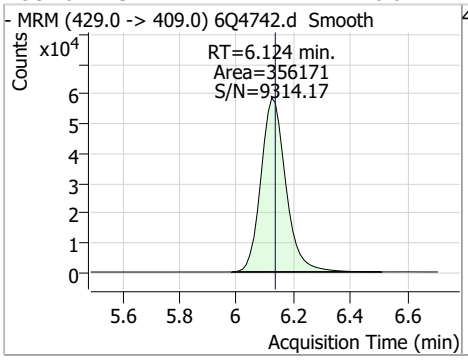
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.19	6.03	-0.01	272072	461.0 -> 99.0	34.0	16.7	50.1

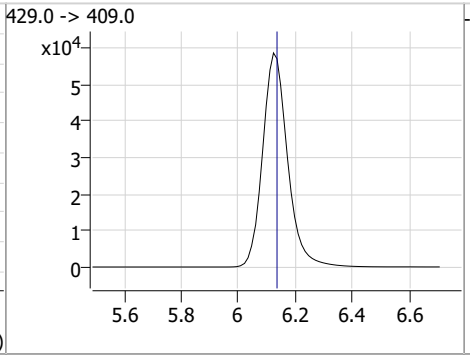


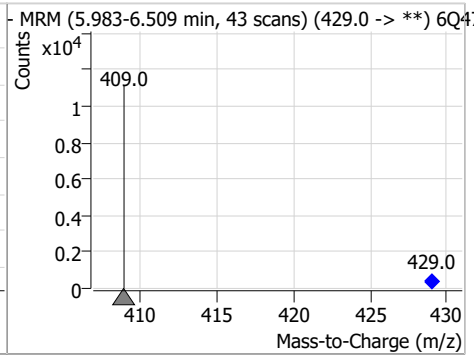




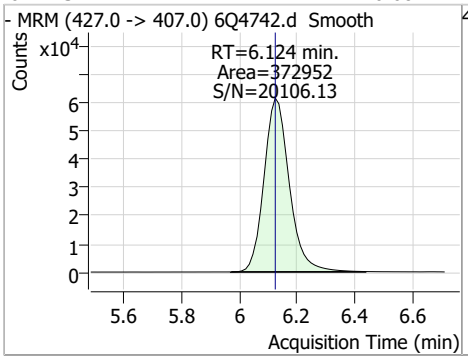
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.87	6.12	-0.01	356171				

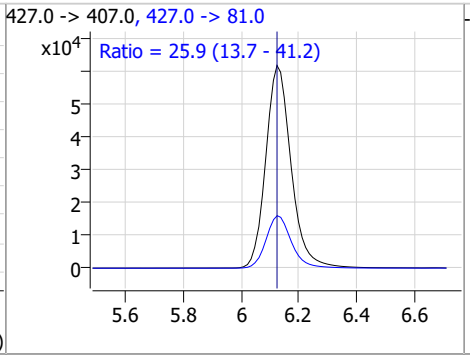


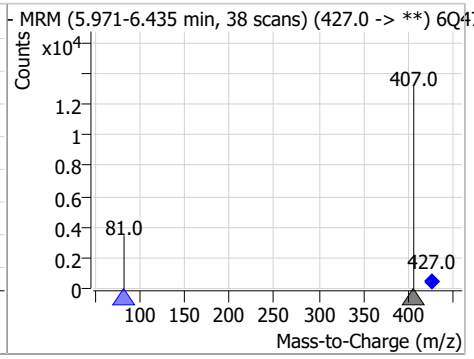




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	20.68	6.12	-0.01	372952	427.0 -> 81.0	25.9	13.7	41.2

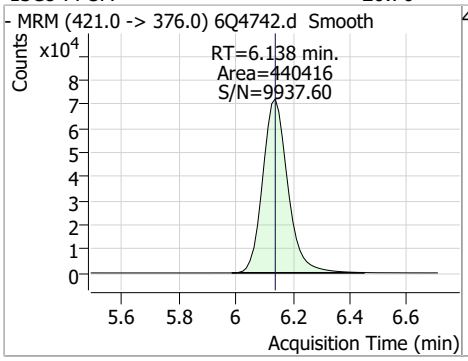


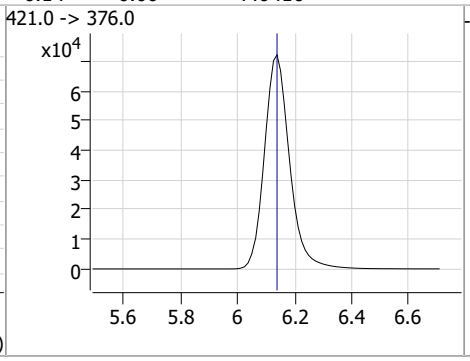


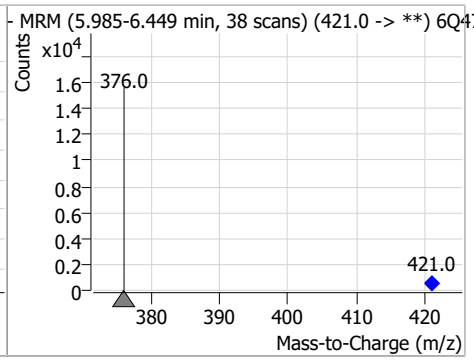


Perfluorinated Compounds by LC/MS/MS

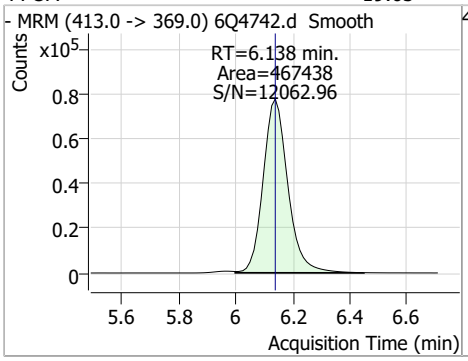
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	20.76	6.14	0.00	440416				

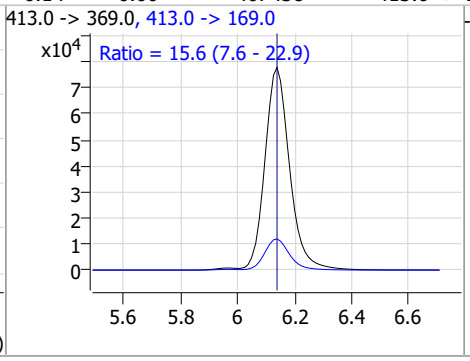


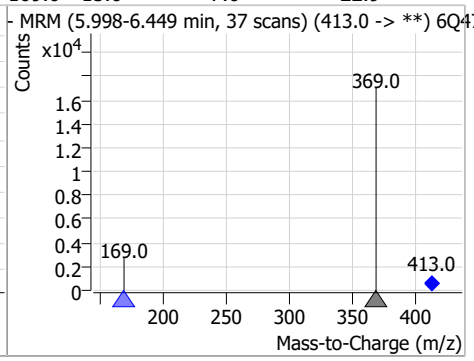




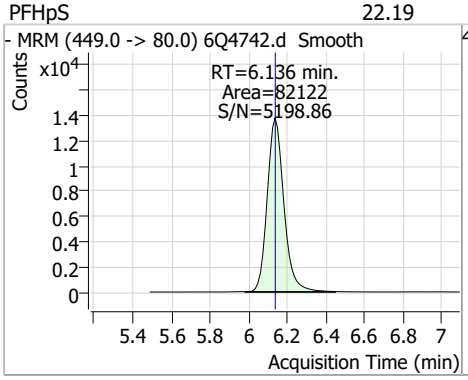
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.65	6.14	0.00	467438	413.0 -> 169.0	15.6	7.6	22.9

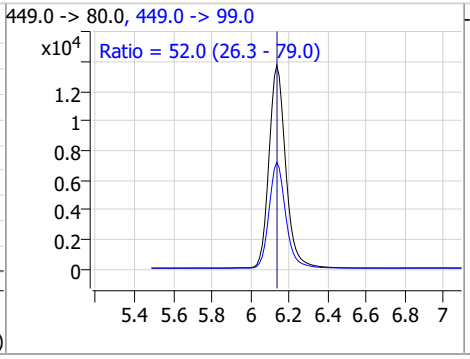


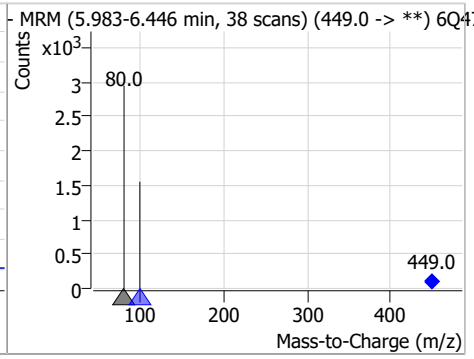




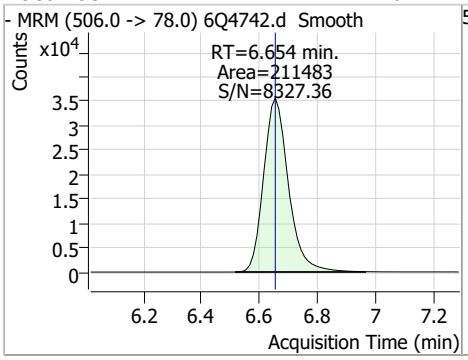
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	22.19	6.14	-0.01	82122	449.0 -> 99.0	52.0	26.3	79.0

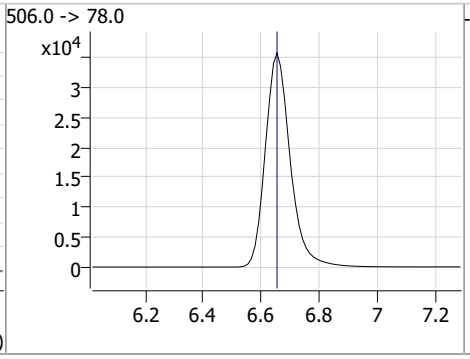


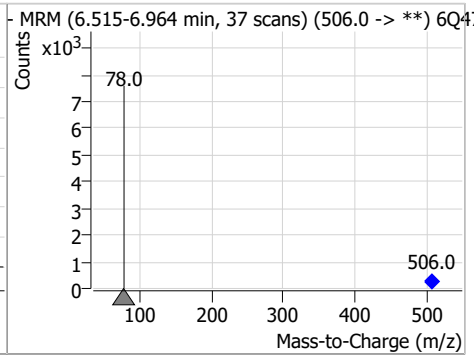




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	21.62	6.65	0.00	211483				

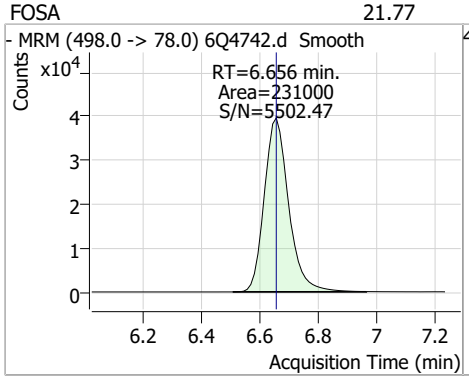


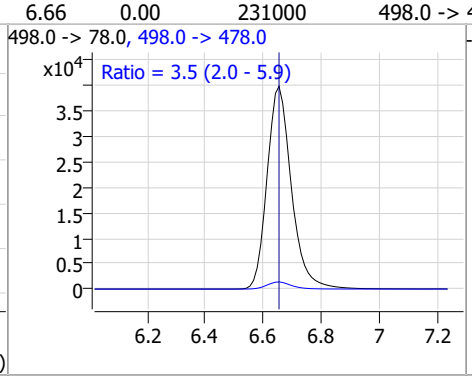


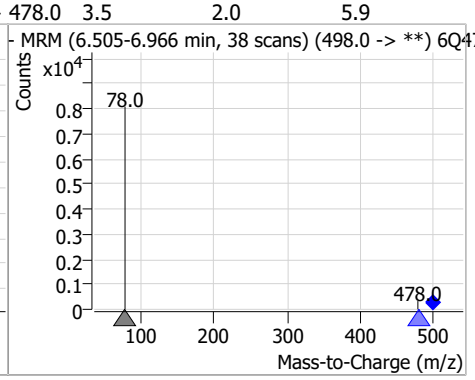


Perfluorinated Compounds by LC/MS/MS

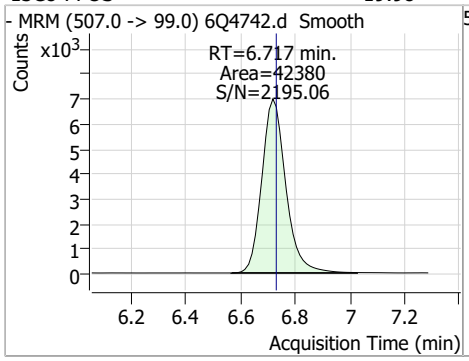
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.77	6.66	0.00	231000	498.0 -> 478.0	3.5	2.0	5.9

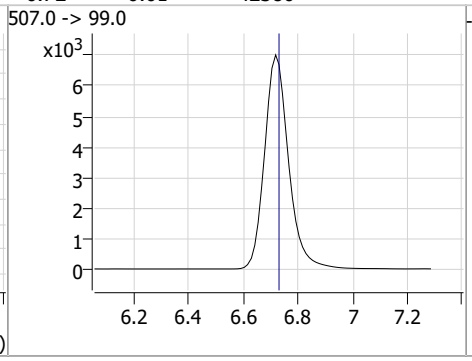


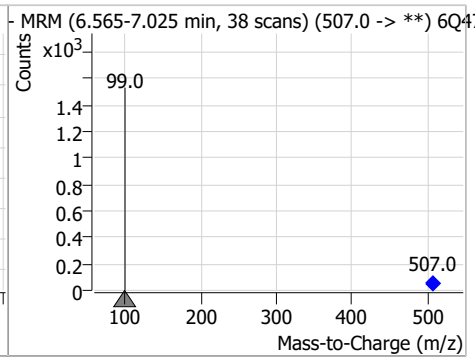




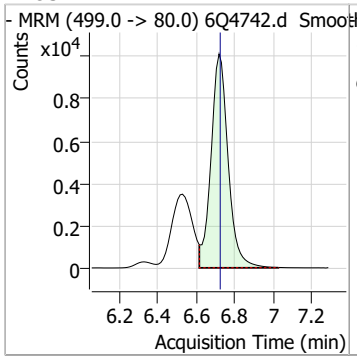
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	19.98	6.72	-0.01	42380				

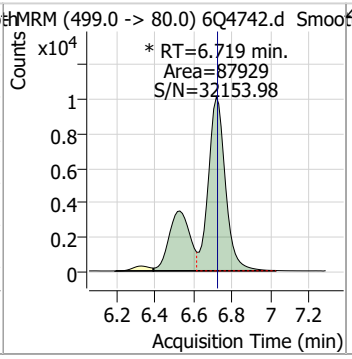


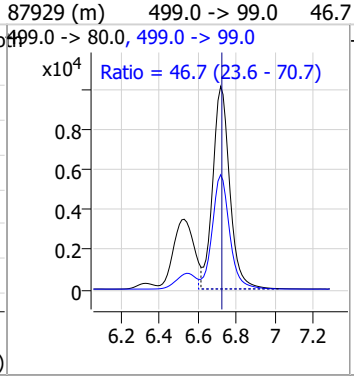


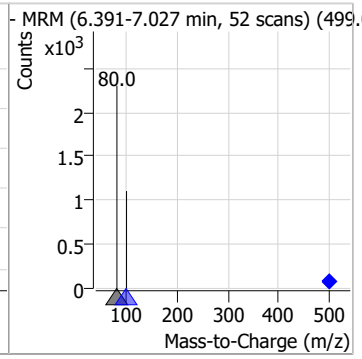


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	22.38	6.72	-0.01	87929 (m)	499.0 -> 99.0	46.7	23.6	70.7

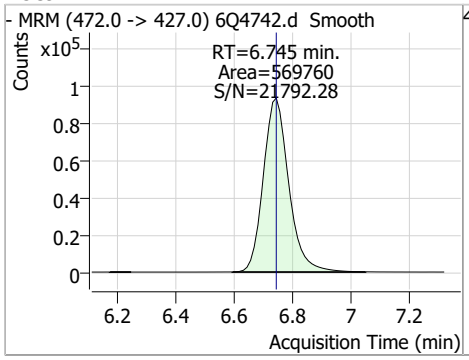


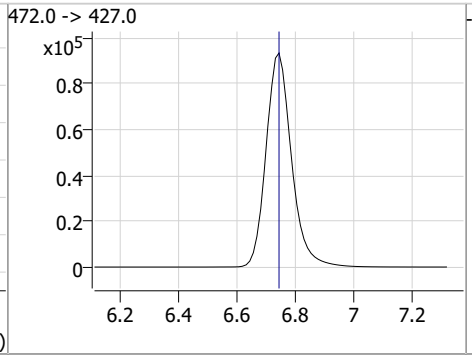


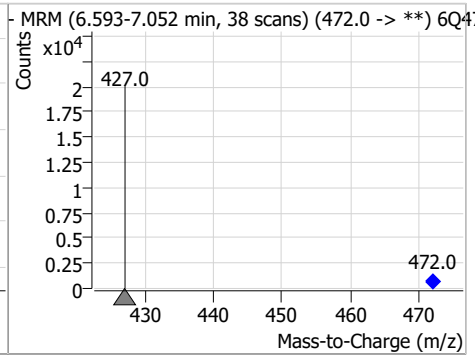




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.11	6.74	0.00	569760				

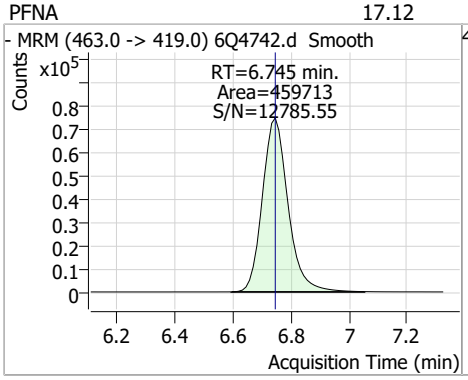


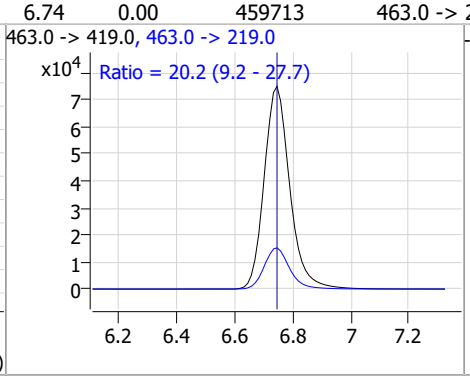


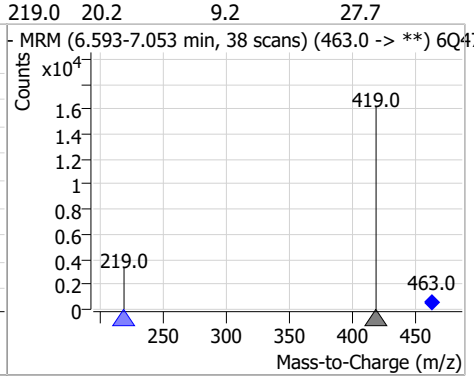


Perfluorinated Compounds by LC/MS/MS

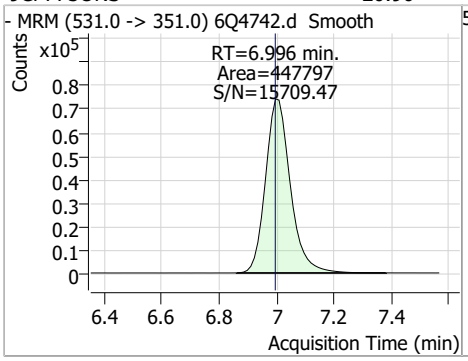
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.12	6.74	0.00	459713	463.0 -> 219.0	20.2	9.2	27.7

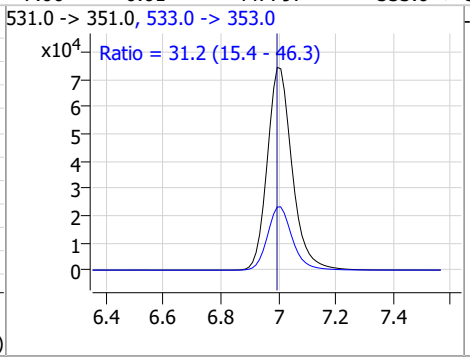


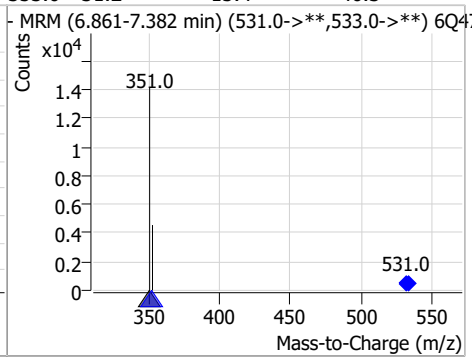




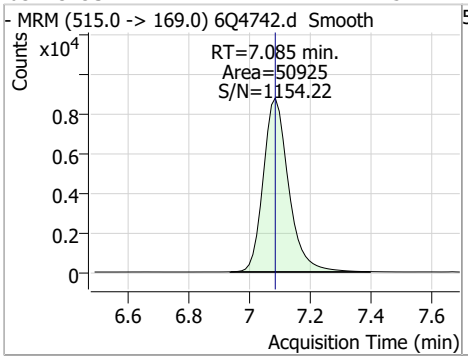
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.96	7.00	-0.01	447797	533.0 -> 353.0	31.2	15.4	46.3

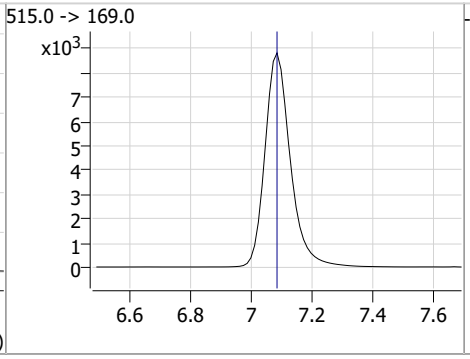


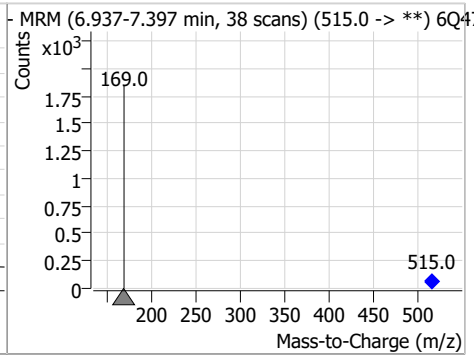




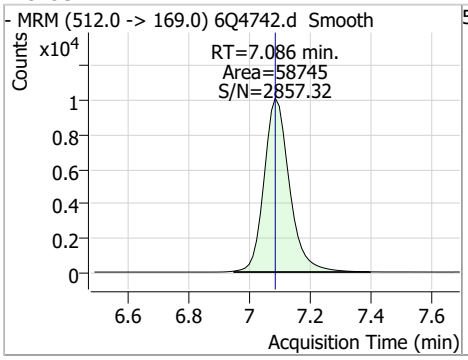
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.51	7.08	0.00	50925				

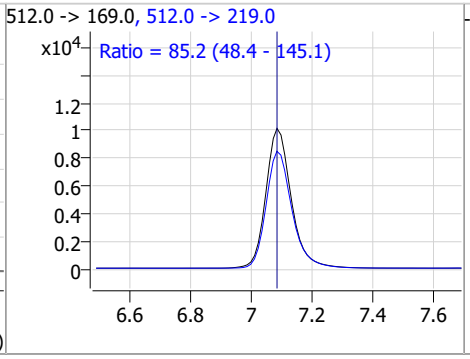


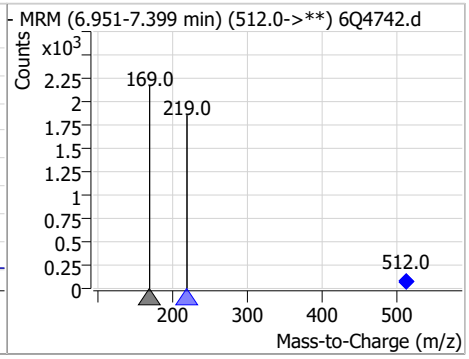




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	21.14	7.09	0.00	58745	512.0 -> 219.0	85.2	48.4	145.1

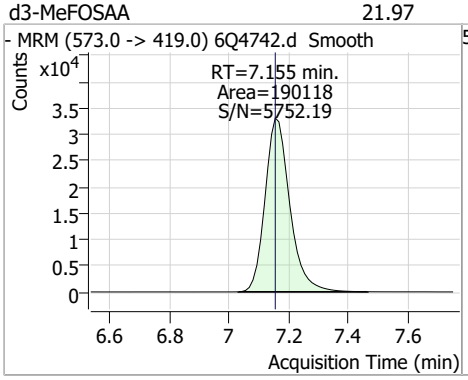


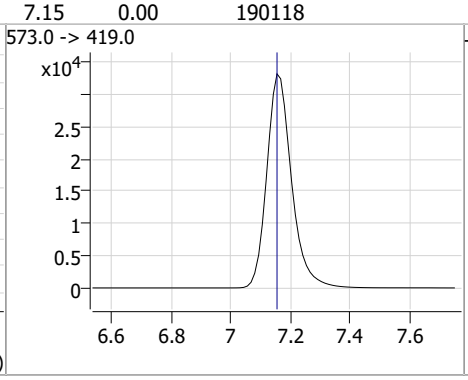


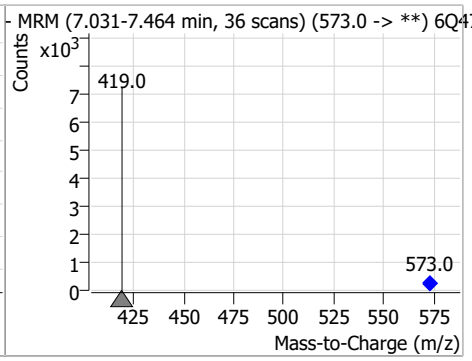


Perfluorinated Compounds by LC/MS/MS

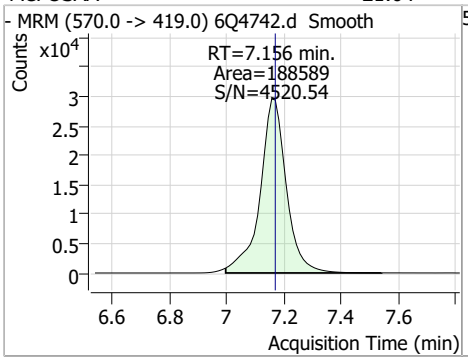
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	21.97	7.15	0.00	190118				

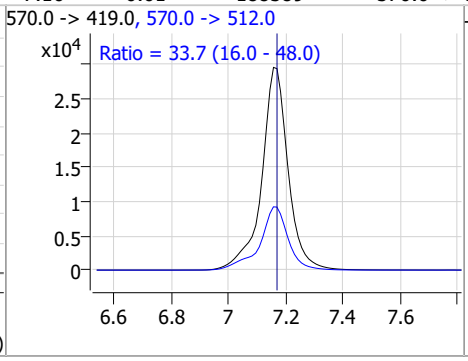


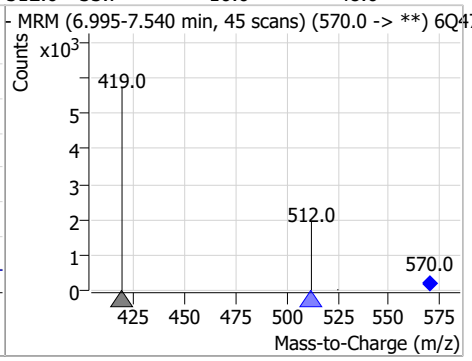




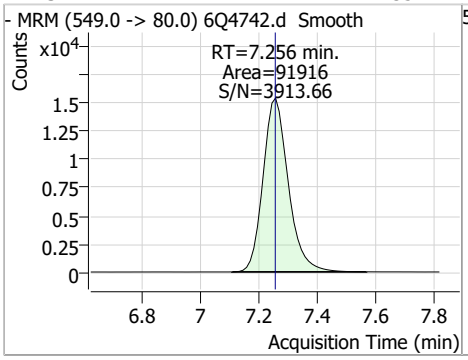
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	21.64	7.16	-0.01	188589	570.0 -> 512.0	33.7	16.0	48.0

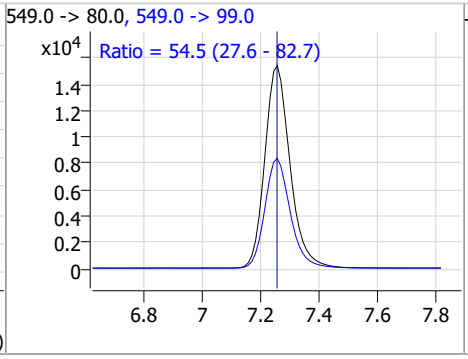


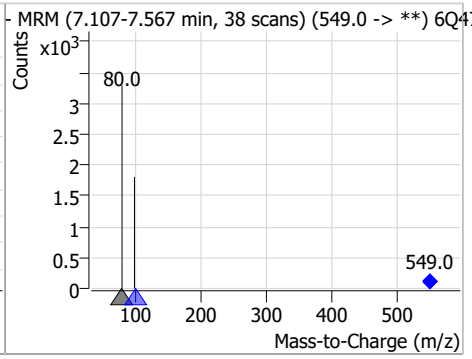




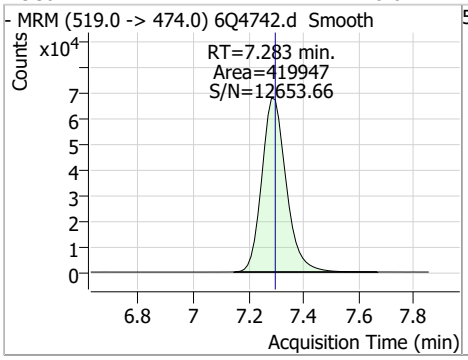
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	21.35	7.26	-0.01	91916	549.0 -> 99.0	54.5	27.6	82.7

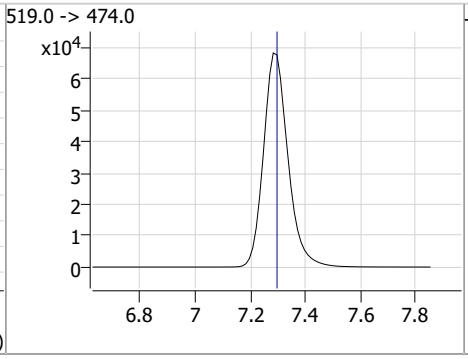


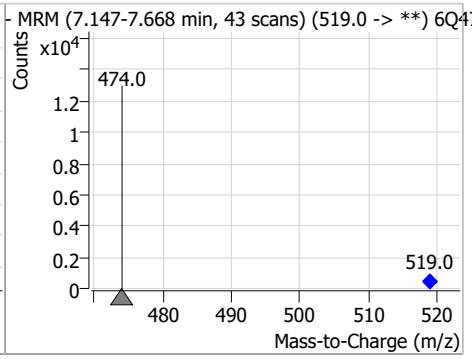




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.64	7.28	-0.01	419947				

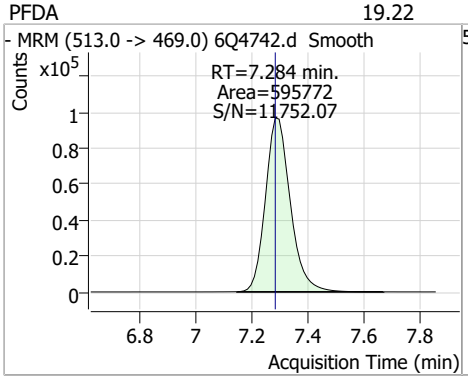


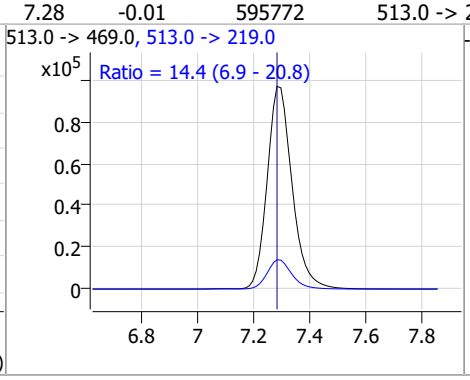


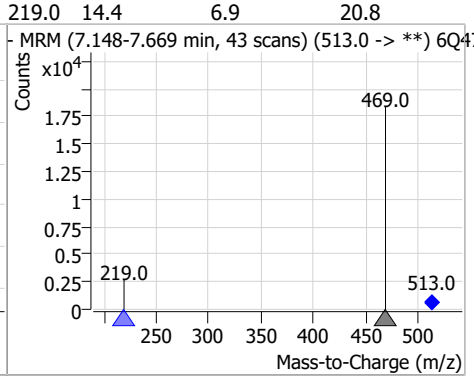


Perfluorinated Compounds by LC/MS/MS

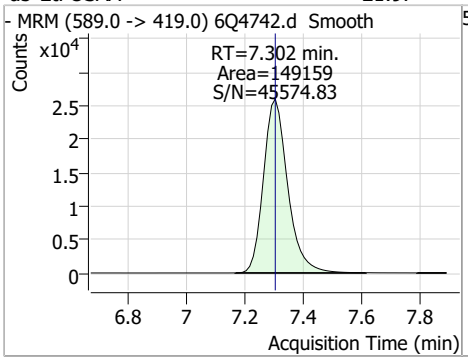
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	19.22	7.28	-0.01	595772	513.0 -> 219.0	14.4	6.9	20.8

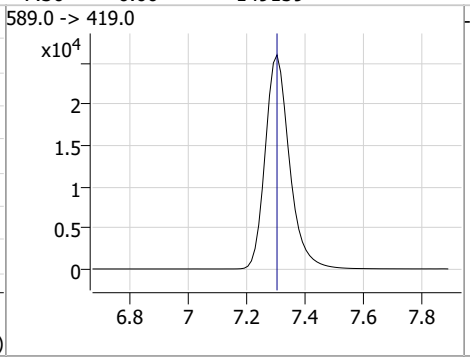


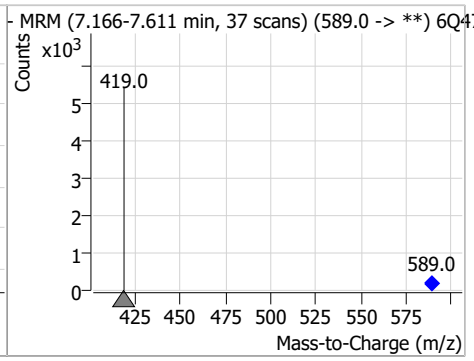




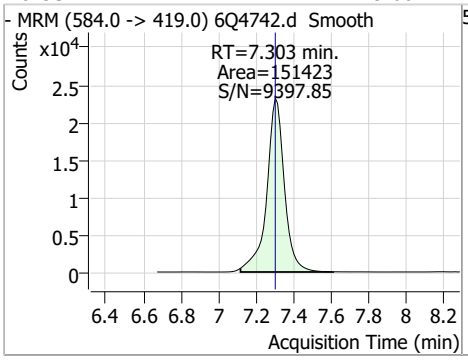
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	21.97	7.30	0.00	149159				

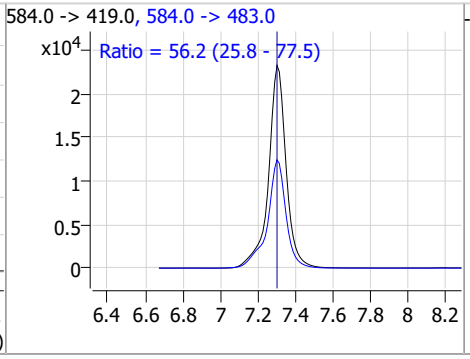


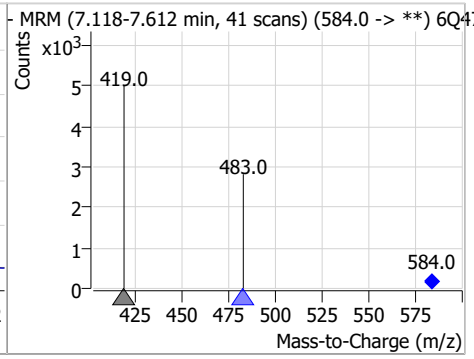




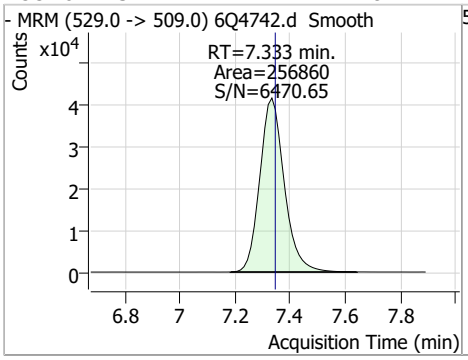
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	19.06	7.30	0.00	151423	584.0 -> 483.0	56.2	25.8	77.5

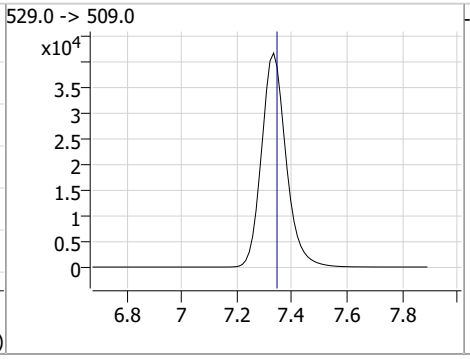


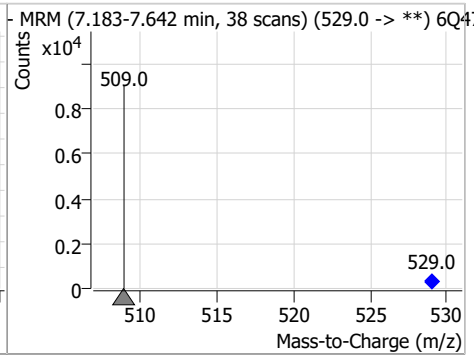




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	19.71	7.33	-0.01	256860				

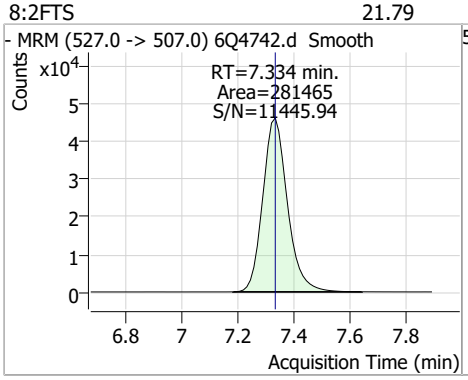


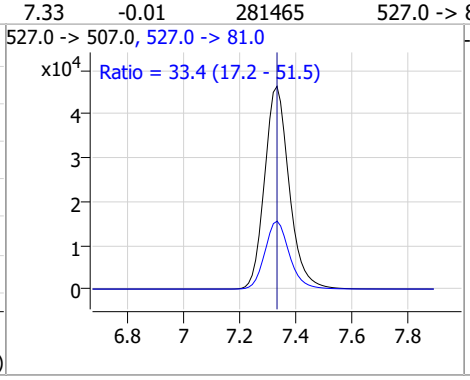


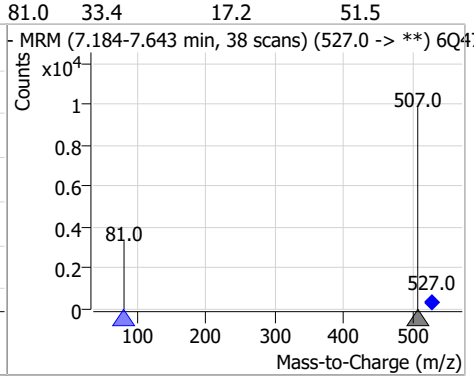


Perfluorinated Compounds by LC/MS/MS

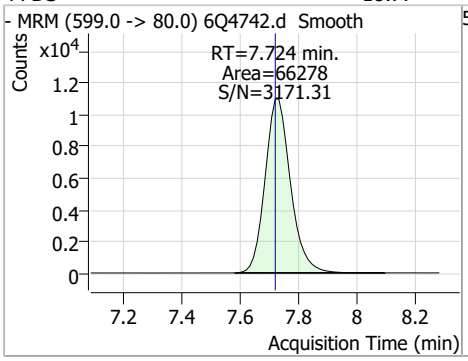
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	21.79	7.33	-0.01	281465	527.0 -> 81.0	33.4	17.2	51.5

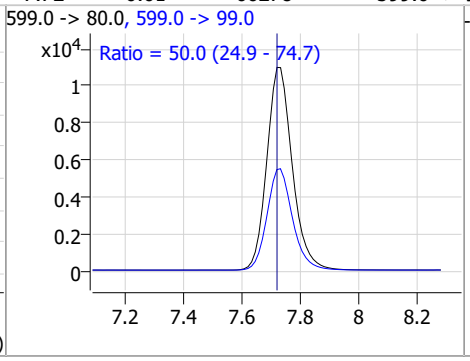


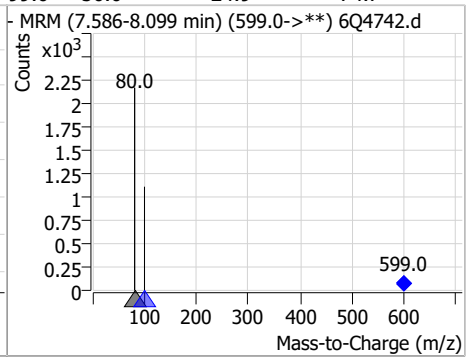




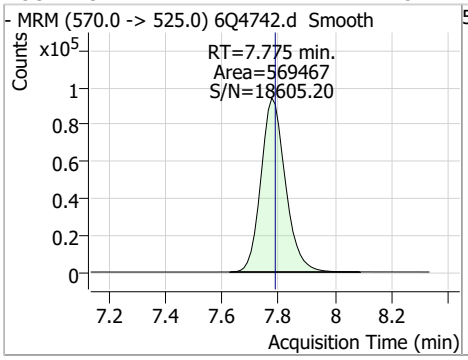
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.77	7.72	-0.01	66278	599.0 -> 99.0	50.0	24.9	74.7

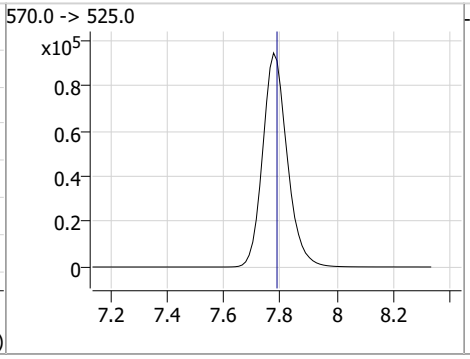


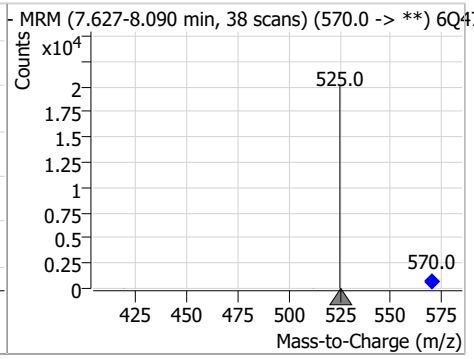




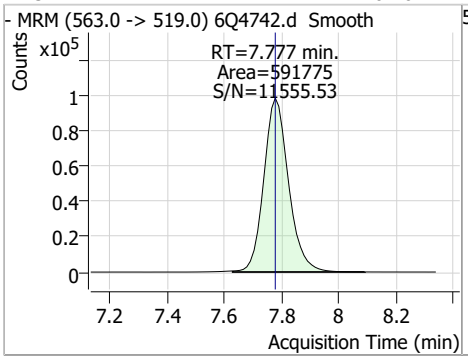
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	21.45	7.78	-0.01	569467				

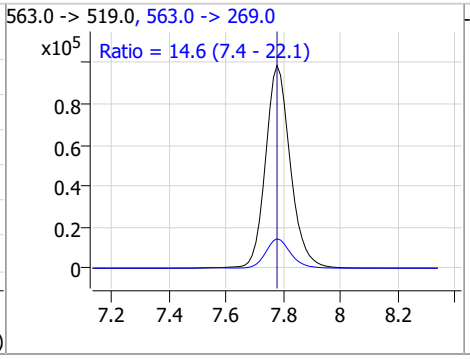


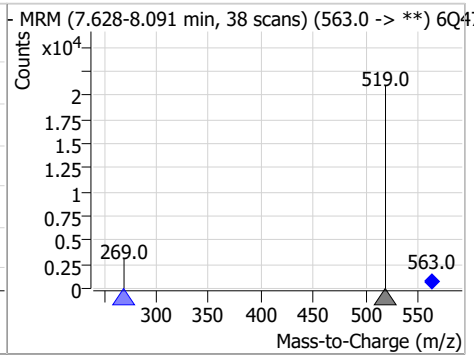




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	20.10	7.78	-0.01	591775	563.0 -> 269.0	14.6	7.4	22.1

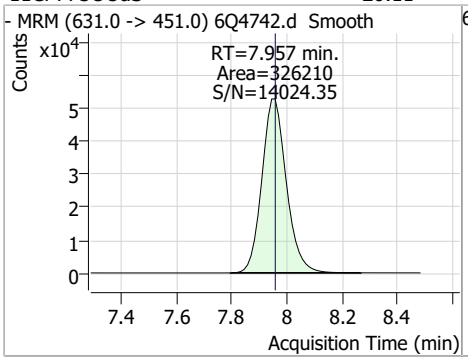


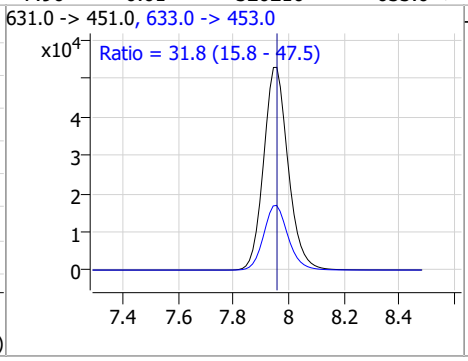


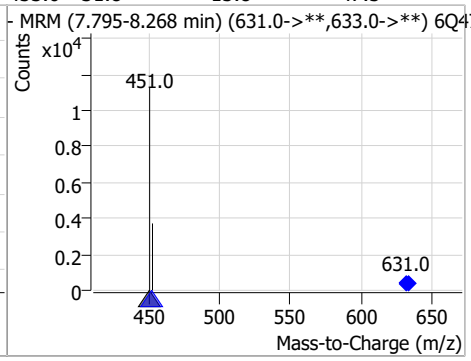


Perfluorinated Compounds by LC/MS/MS

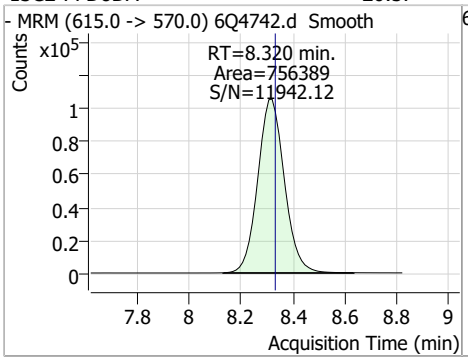
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.11	7.96	-0.01	326210	633.0 -> 453.0	31.8	15.8	47.5

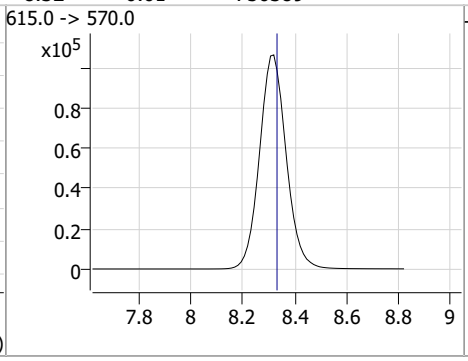


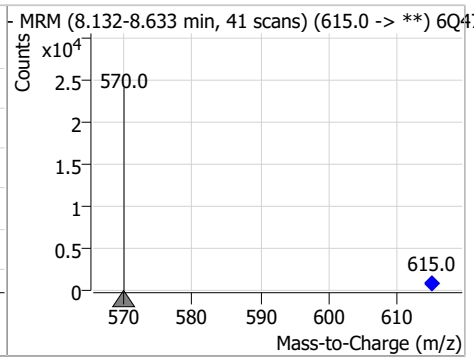




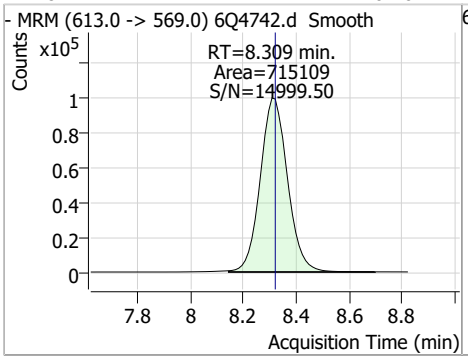
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.57	8.32	-0.01	756389				

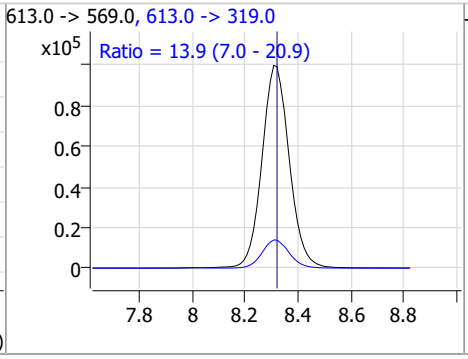


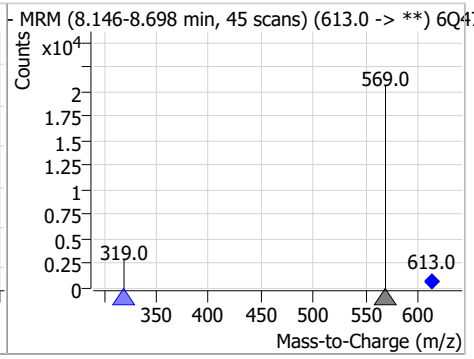




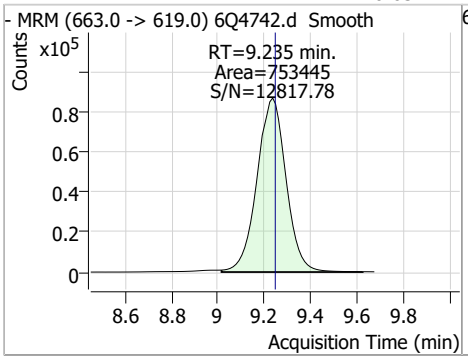
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.26	8.31	-0.02	715109	613.0 -> 319.0	13.9	7.0	20.9

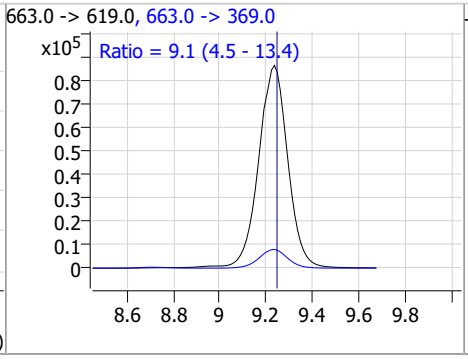


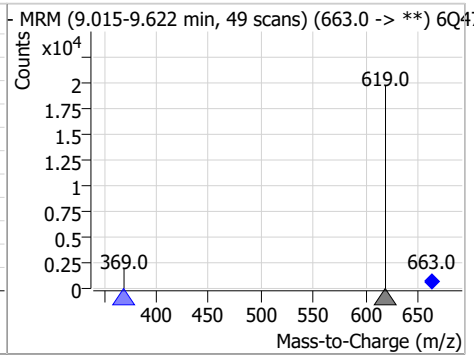




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.63	9.24	-0.02	753445	663.0 -> 369.0	9.1	4.5	13.4

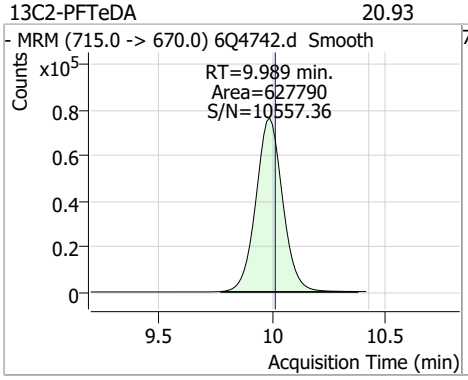


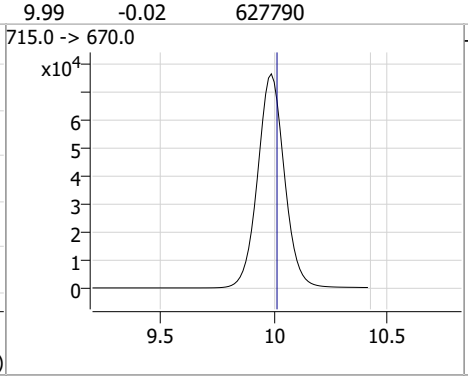


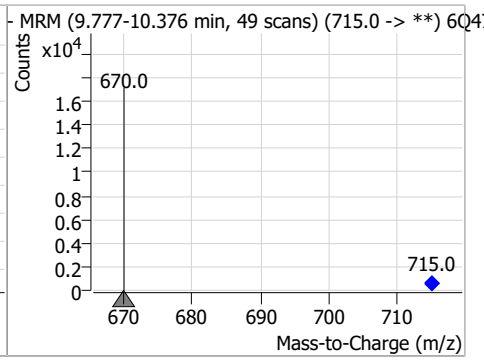


Perfluorinated Compounds by LC/MS/MS

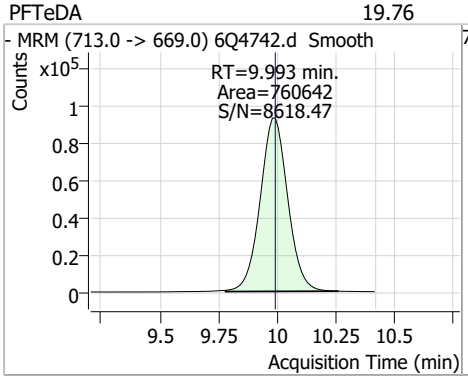
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	20.93	9.99	-0.02	627790				

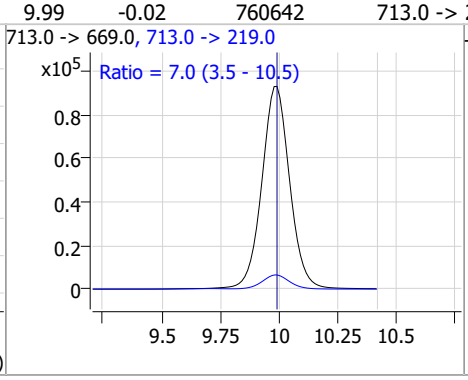


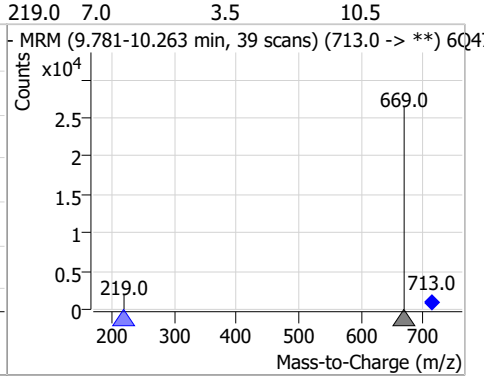




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.76	9.99	-0.02	760642	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q86-CC85
Lab FileID: 6Q4742.D
Injection Time: 09/16/22 02:02
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:31 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.48	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4754.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 5:15:03 AM
Sample Name : cc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	89751	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	154076	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	235778	20.00	µg/L	0.000
M4-PFHpA	5.445	367.0 -> 322.0	268680	20.00	µg/L	0.000
M8-PFOA	6.138	421.0 -> 376.0	462108	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	589174	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	434882	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	602810	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	774261	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	651516	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	222851	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	33553	20.00	µg/L	-0.012
M3-PFHxS	5.475	402.0 -> 99.0	30326	20.00	µg/L	0.000
M8-PFOS	6.717	507.0 -> 99.0	46476	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	297958	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	382092	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	277364	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	212322	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5232	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	51539	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	168599	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	297958	22.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C2-6:2FTS	6.124	429.0 -> 409.0	382092	22.39	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	277364	21.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.4%		
13C2-PFDoDA	8.320	615.0 -> 570.0	774261	21.05	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.3%		
13C2-PFTeDA	9.989	715.0 -> 670.0	651516	21.72	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C3-PFBS	3.622	302.0 -> 99.0	33553	21.91	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.5%		
13C3-PFHxS	5.475	402.0 -> 99.0	30326	21.93	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.7%		
13C4-PFBA	1.949	217.0 -> 172.0	89751	22.55	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.7%		
13C4-PFHpA	5.445	367.0 -> 322.0	268680	21.71	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.6%		
13C5-PFHxA	4.573	318.0 -> 273.0	235778	22.06	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.3%		
13C5-PFPeA	3.405	268.0 -> 223.0	154076	21.98	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.9%		
13C6-PFDA	7.283	519.0 -> 474.0	434882	21.37	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

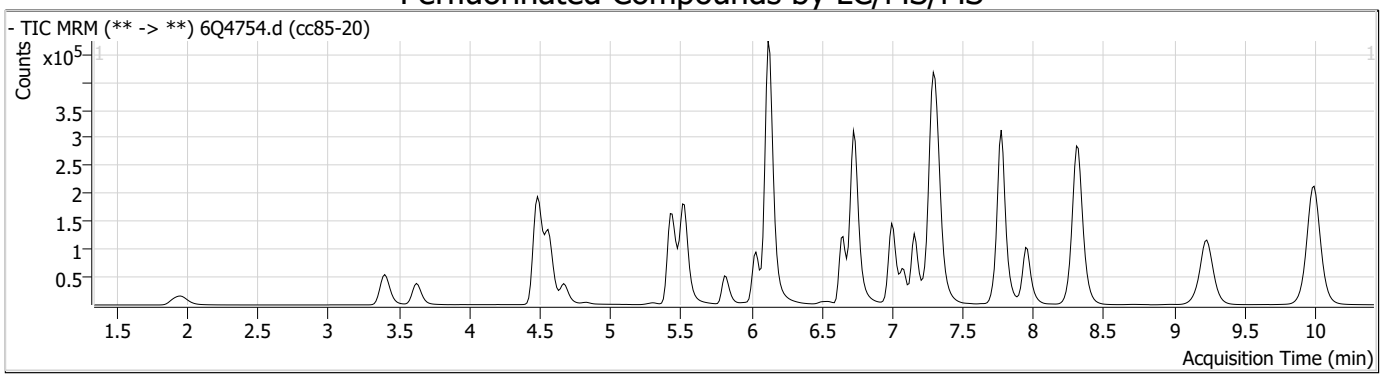
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 106.9%		
13C7-PFUnDA	7.775	570.0 -> 525.0	602810	22.70 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.5%		
13C8-FOSA	6.654	506.0 -> 78.0	222851	22.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
13C8-PFOA	6.138	421.0 -> 376.0	462108	21.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.9%		
13C8-PFOS	6.717	507.0 -> 99.0	46476	21.91 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.6%		
13C9-PFNA	6.745	472.0 -> 427.0	589174	22.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.3%		
d3-MeFOSAA	7.155	573.0 -> 419.0	212322	24.53 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 122.7%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5244	19.73 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 98.7%		
d3-MeFOSA	7.085	515.0 -> 169.0	51539	22.78 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.9%		
d5-EtFOSAA	7.302	589.0 -> 419.0	168804	24.87 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 124.3%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	329947	20.48 µg/L		97
		327.0 -> 81.0	102875			
6:2FTS	6.124	427.0 -> 407.0	376212	19.44 µg/L		100
		427.0 -> 81.0	103063			
8:2FTS	7.334	527.0 -> 507.0	290267	20.81 µg/L		98
		527.0 -> 81.0	95825			
EtFOSAA	7.303	584.0 -> 419.0	148426	16.51 µg/L		91
		584.0 -> 483.0	86222			
FOSA	6.656	498.0 -> 78.0	235419	21.06 µg/L		99
		498.0 -> 478.0	8597			
MeFOSAA	7.168	570.0 -> 419.0	194095	19.94 µg/L		99
		570.0 -> 512.0	61531			
PFBA	1.943	213.0 -> 169.0	38520	19.66 µg/L		100
PFBS	3.627	299.0 -> 80.0	109096	19.55 µg/L		100
		299.0 -> 99.0	41139			
PFDA	7.284	513.0 -> 469.0	642190	20.00 µg/L		98
		513.0 -> 219.0	84245			
PFDoDA	8.309	613.0 -> 569.0	727253	20.13 µg/L		100
		613.0 -> 319.0	101923			
PFDS	7.736	599.0 -> 80.0	67506	18.06 µg/L		96
		599.0 -> 99.0	35441			
PFHpA	5.434	363.0 -> 319.0	350424	20.05 µg/L		99
		363.0 -> 169.0	52819			
PFHpS	6.136	449.0 -> 80.0	83182	20.50 µg/L		99
		449.0 -> 99.0	42999			
PFHxA	4.574	313.0 -> 269.0	235091	18.96 µg/L		100
		313.0 -> 119.0	5831			
PFHxS	5.465	399.0 -> 80.0	89094	20.50 µg/L	m	97
		399.0 -> 99.0	41539			
PFNA	6.745	463.0 -> 419.0	494373	17.81 µg/L		100
		463.0 -> 219.0	90494			
PFNS	7.256	549.0 -> 80.0	92919	19.68 µg/L		100
		549.0 -> 99.0	50895			
PFOA	6.138	413.0 -> 369.0	476882	19.11 µg/L		97
		413.0 -> 169.0	78950			
PFOS	6.719	499.0 -> 80.0	84525	19.62 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

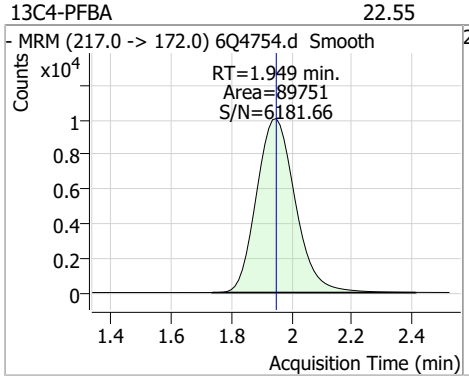
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	41826			
PFPeA	3.408	263.0 -> 219.0	128810	19.84	µg/L	100
PFPeS	4.668	349.0 -> 80.0	89637	19.30	µg/L	99
		349.0 -> 99.0	41304			
PFTeDA	9.993	713.0 -> 669.0	782733	19.59	µg/L	100
		713.0 -> 219.0	55139			
PFTrDA	9.235	663.0 -> 619.0	769477	20.58	µg/L	100
		663.0 -> 369.0	69148			
PFUnDA	7.777	563.0 -> 519.0	594372	19.07	µg/L	99
		563.0 -> 269.0	90478			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	337352	20.32	µg/L	99
		633.0 -> 453.0	105237			
9Cl-PF3ONS	6.996	531.0 -> 351.0	458658	20.73	µg/L	97
		533.0 -> 353.0	134626			
ADONA	5.532	377.0 -> 251.0	569779	20.26	µg/L	98
		377.0 -> 85.0	140937			
HFPO-DA	4.840	285.0 -> 169.0	5759	23.28	µg/L	99
		285.0 -> 185.0	772			
MeFOSA	7.086	512.0 -> 169.0	56578	20.12	µg/L	90
		512.0 -> 219.0	60270			
4-PFECHS	6.032	461.0 -> 381.0	295388	19.86	µg/L	99
		461.0 -> 99.0	97307			
FBSA	4.514	298.0 -> 78.0	227146	19.78	µg/L	100
		298.0 -> 64.0	15505			
FHxSA	5.828	398.0 -> 78.0	195500	19.17	µg/L	100
		398.0 -> 64.0	6905			

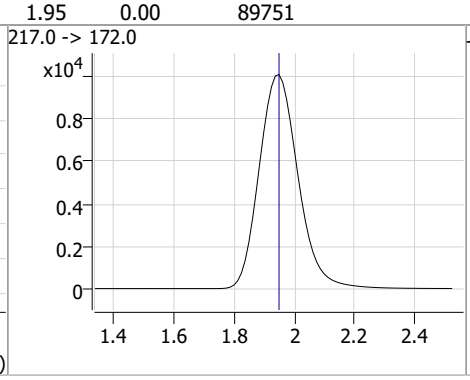
 # = Qualifier out of range, m = manually integrated, + = Area summed

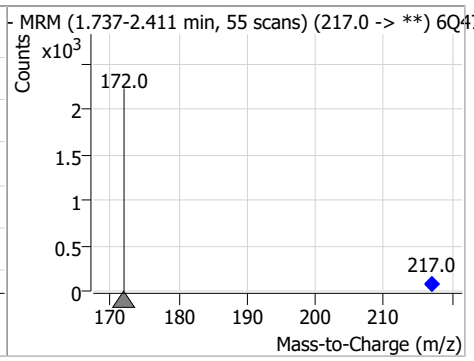
Perfluorinated Compounds by LC/MS/MS



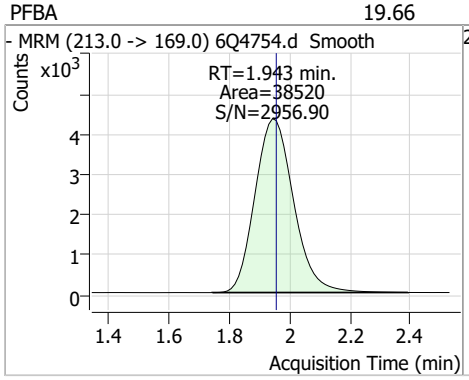
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.55	1.95	0.00	89751				

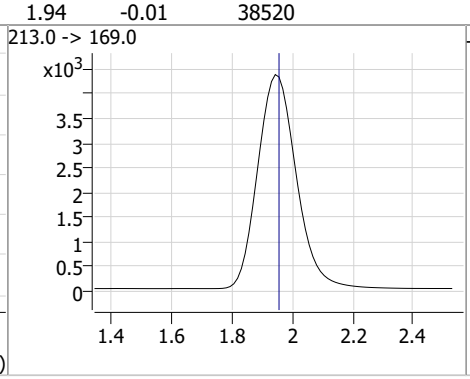


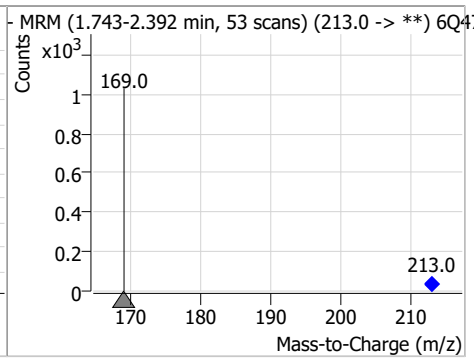




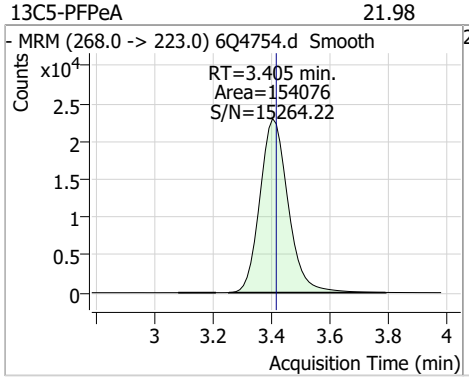
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.66	1.94	-0.01	38520				

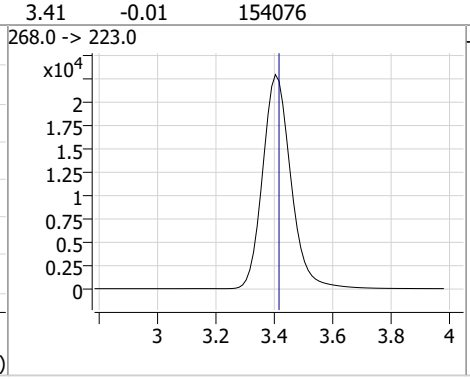


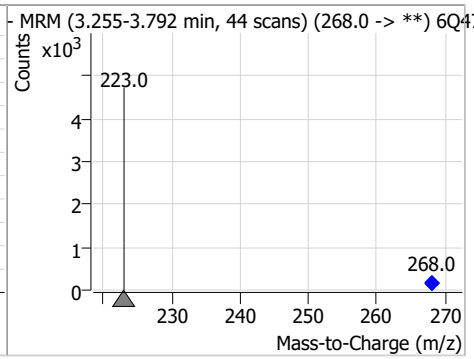




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	21.98	3.41	-0.01	154076				

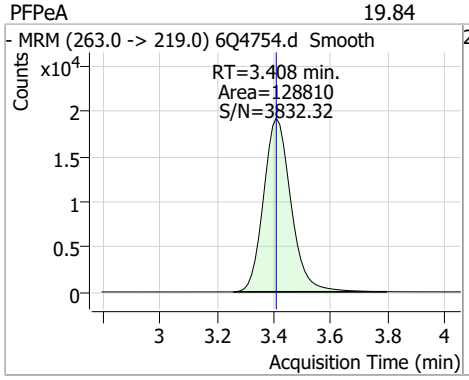


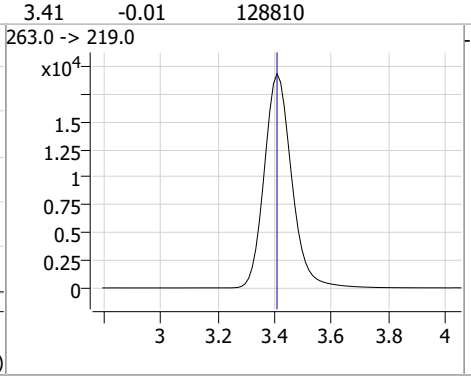


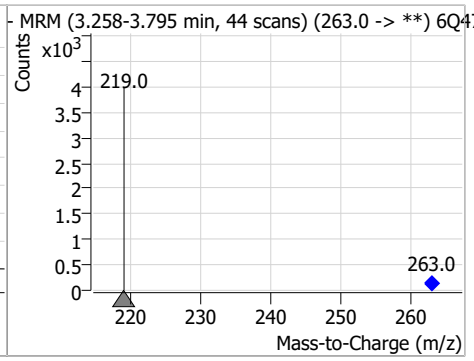


Perfluorinated Compounds by LC/MS/MS

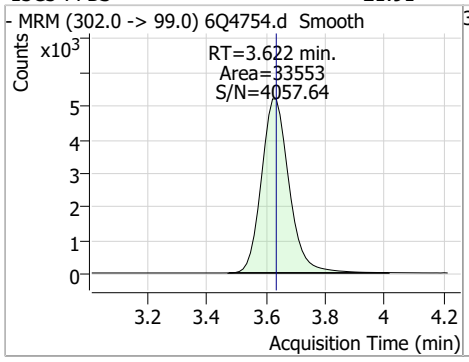
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.84	3.41	-0.01	128810				

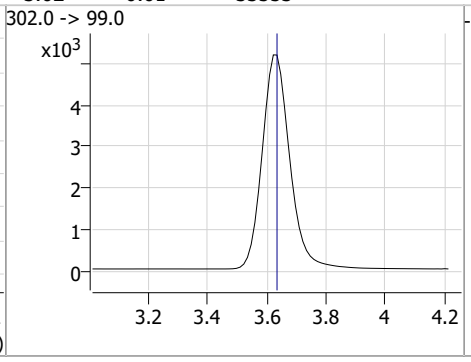


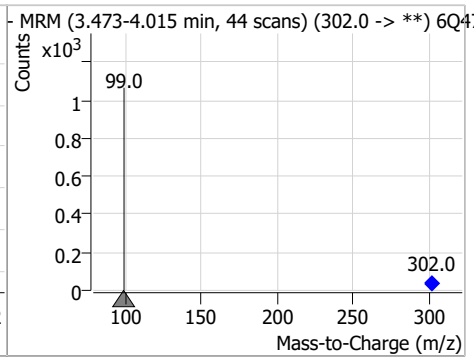




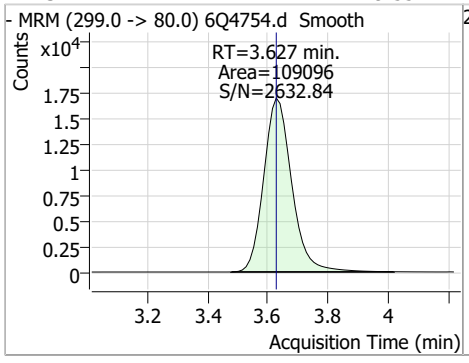
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.91	3.62	-0.01	33553				

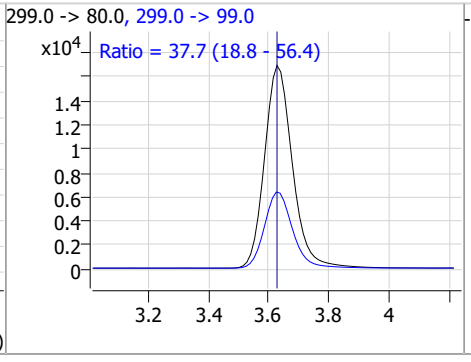


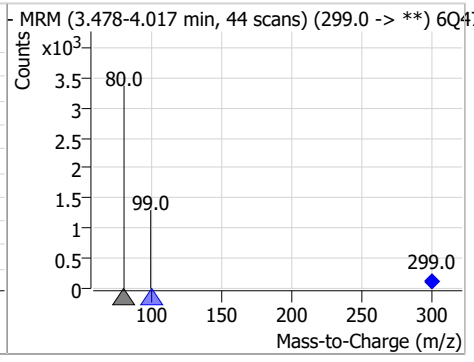




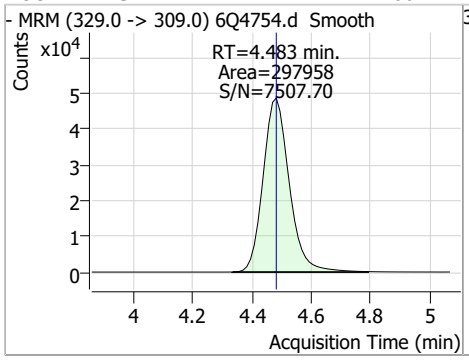
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.55	3.63	-0.01	109096	299.0 -> 99.0	37.7	18.8	56.4

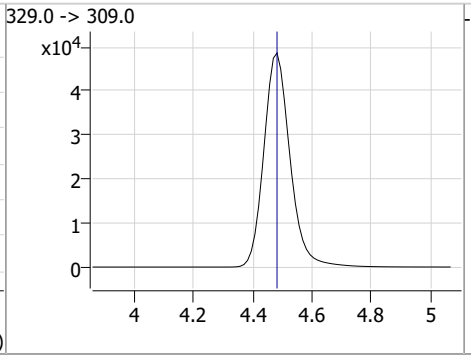


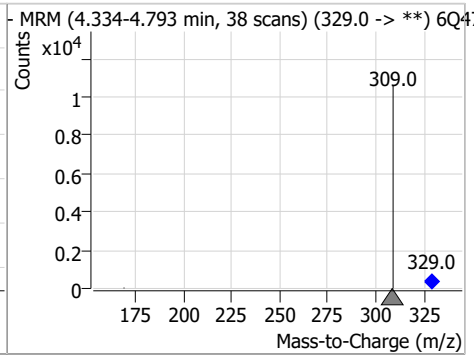




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	22.06	4.48	0.00	297958				

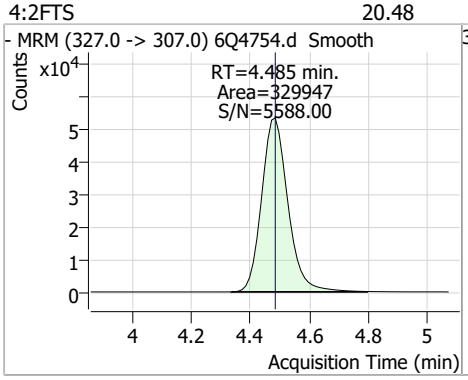


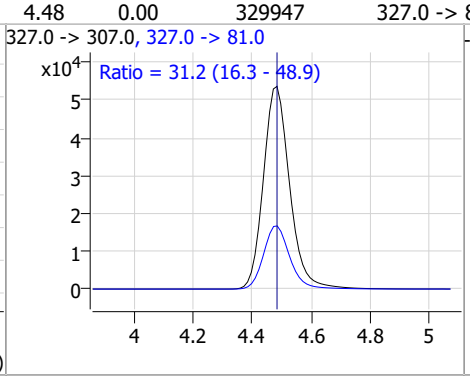


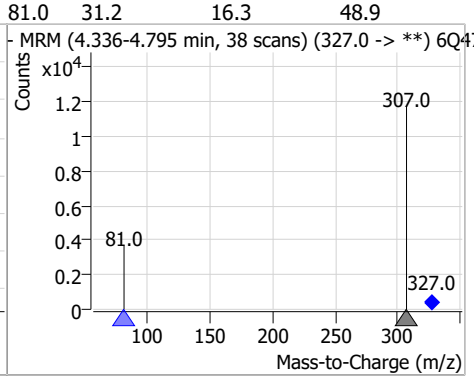


Perfluorinated Compounds by LC/MS/MS

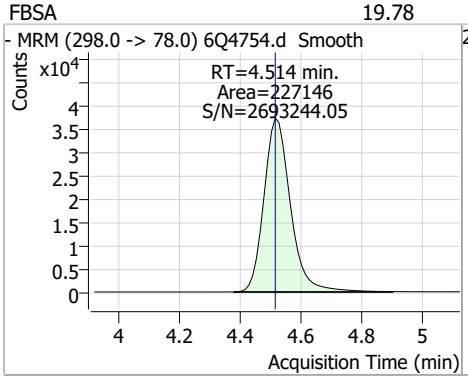
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	20.48	4.48	0.00	329947	327.0 -> 81.0	31.2	16.3	48.9

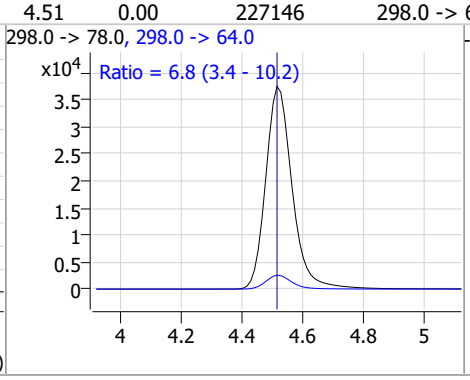


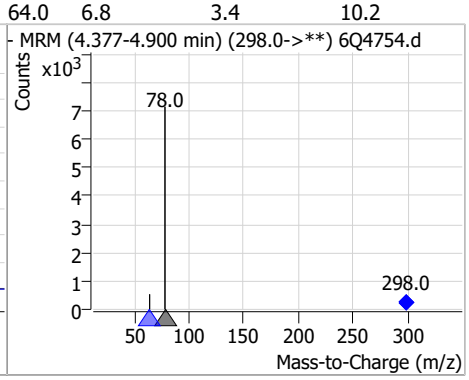




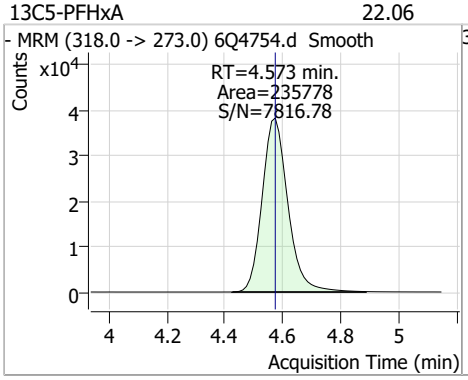
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.78	4.51	0.00	227146	298.0 -> 64.0	6.8	3.4	10.2

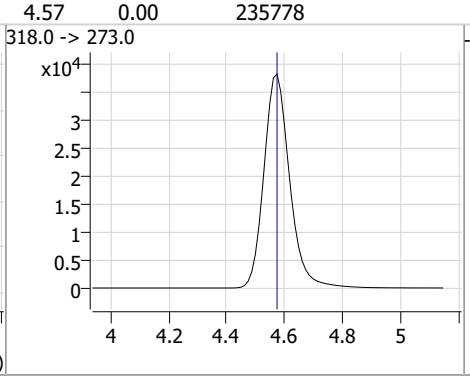


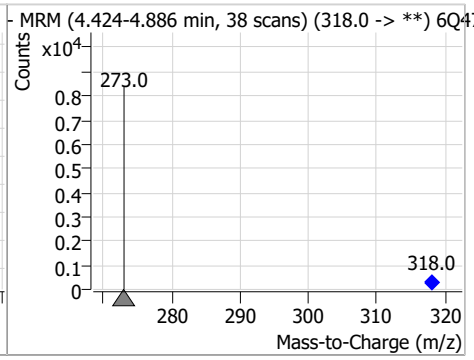




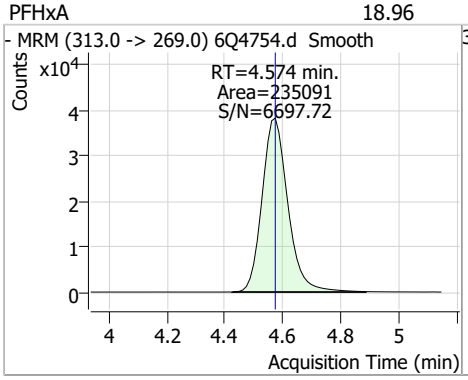
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.06	4.57	0.00	235778				

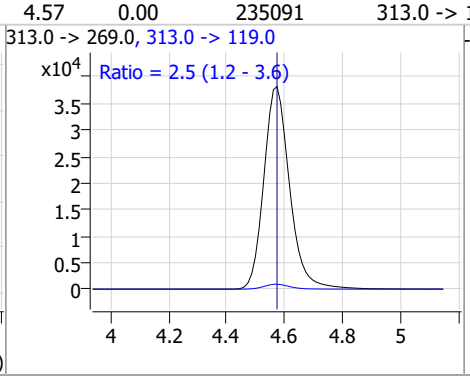


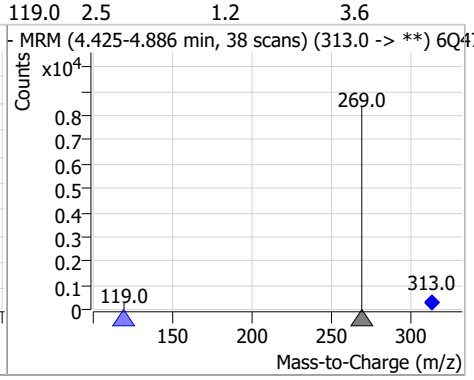




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.96	4.57	0.00	235091	313.0 -> 119.0	2.5	1.2	3.6

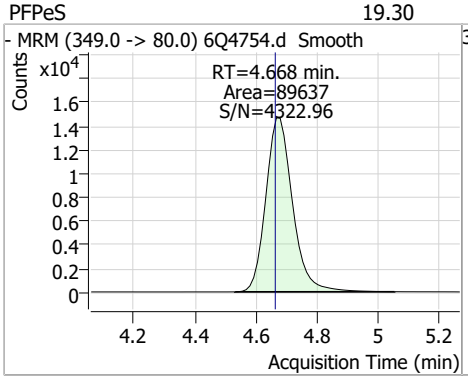


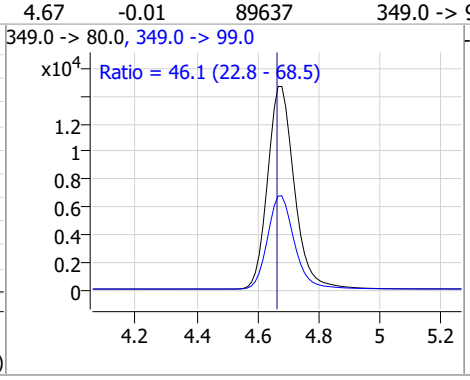


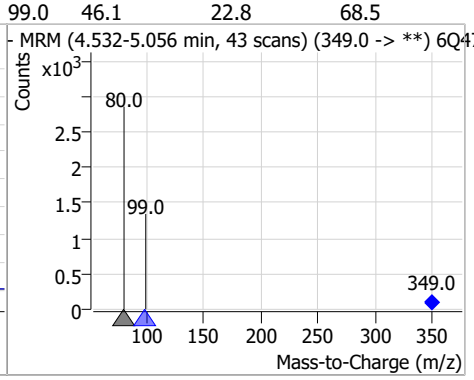


Perfluorinated Compounds by LC/MS/MS

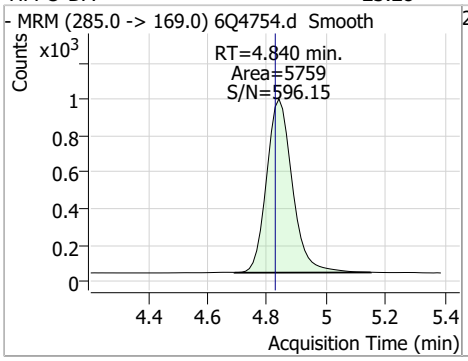
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	19.30	4.67	-0.01	89637	349.0 -> 99.0	46.1	22.8	68.5

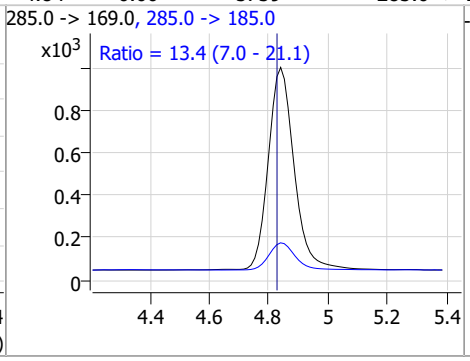


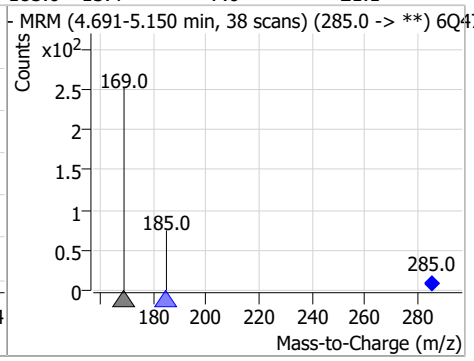




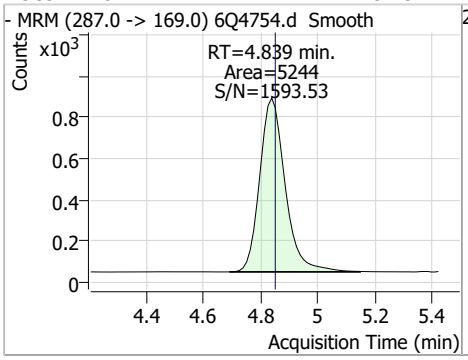
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	23.28	4.84	0.00	5759	285.0 -> 185.0	13.4	7.0	21.1

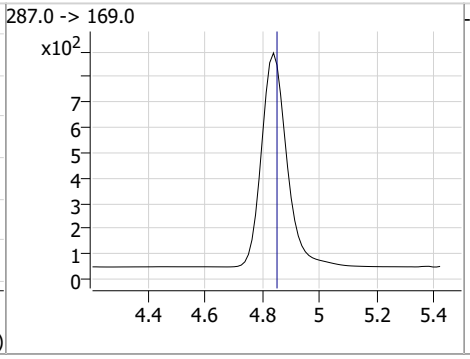


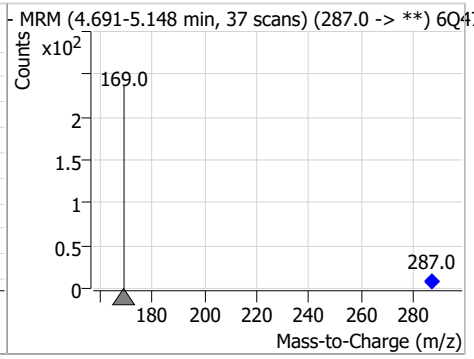




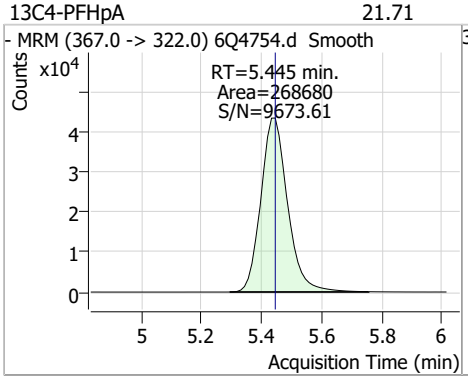
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.73	4.84	-0.01	5244				

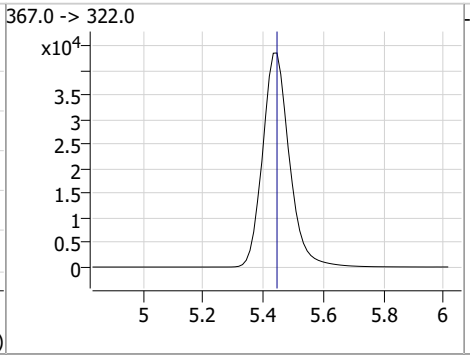


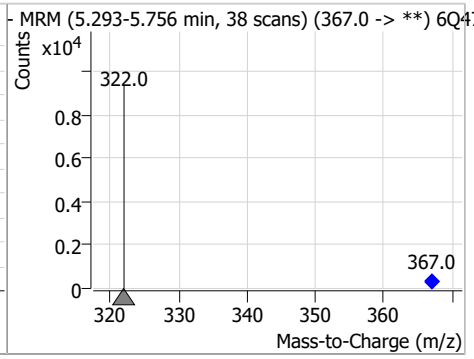




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	21.71	5.45	0.00	268680				

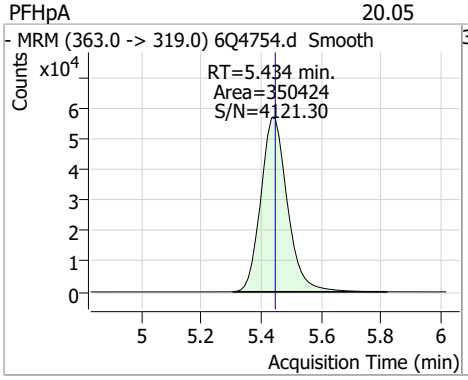


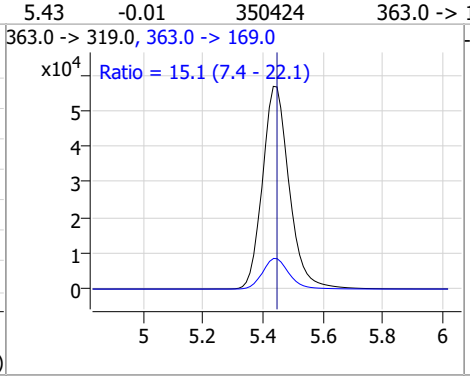


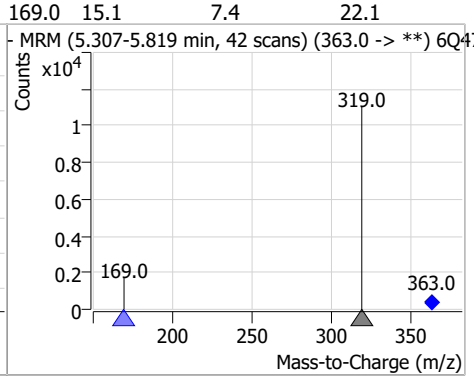


Perfluorinated Compounds by LC/MS/MS

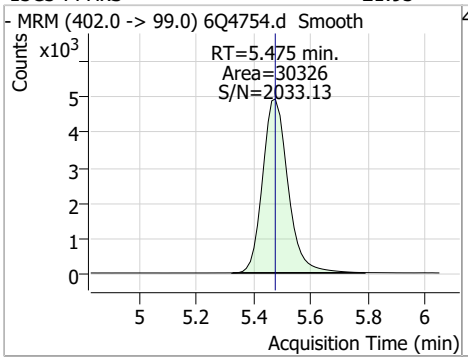
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	20.05	5.43	-0.01	350424	363.0 -> 169.0	15.1	7.4	22.1

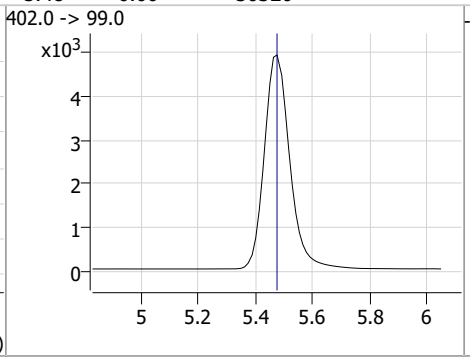


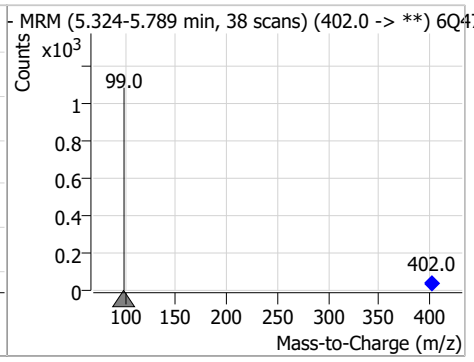




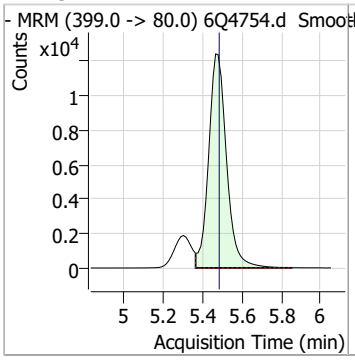
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.93	5.48	0.00	30326				

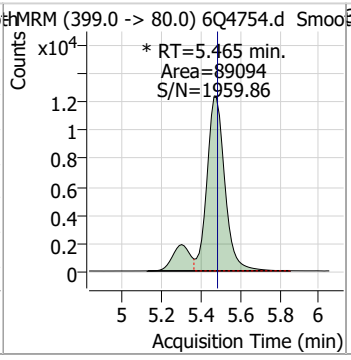


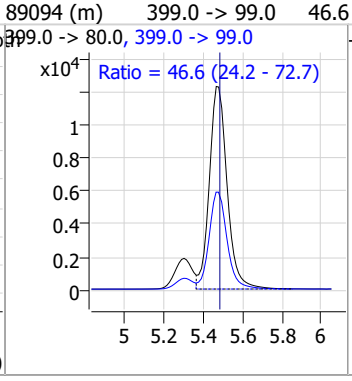


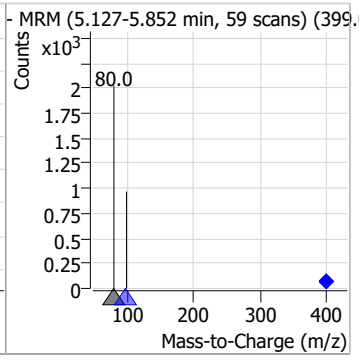


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.50	5.47	-0.01	89094 (m)	399.0 -> 99.0	46.6	24.2	72.7

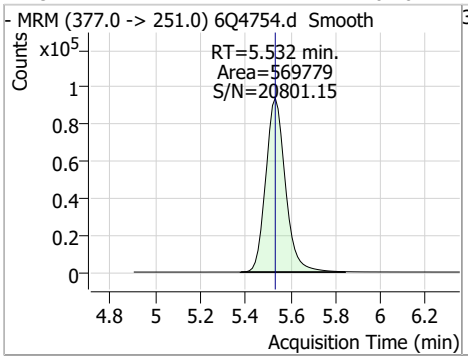


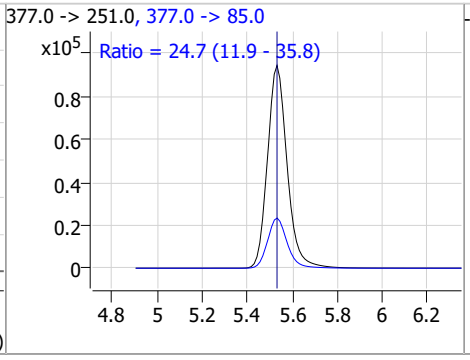


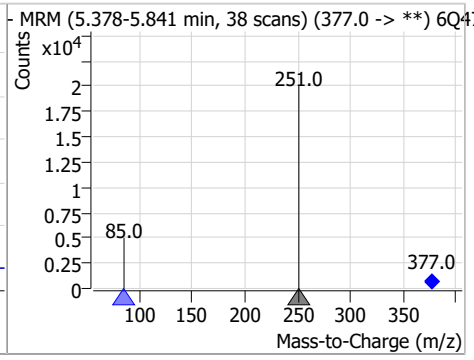




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	20.26	5.53	0.00	569779	377.0 -> 85.0	24.7	11.9	35.8

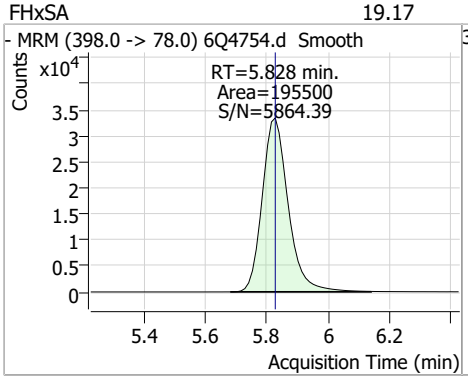


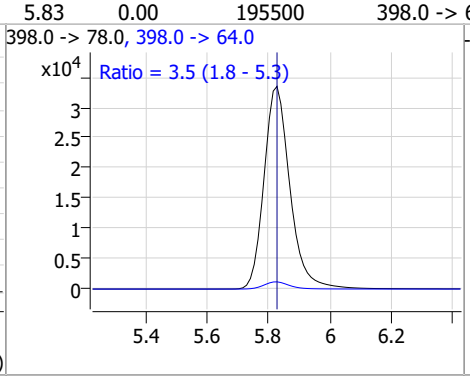


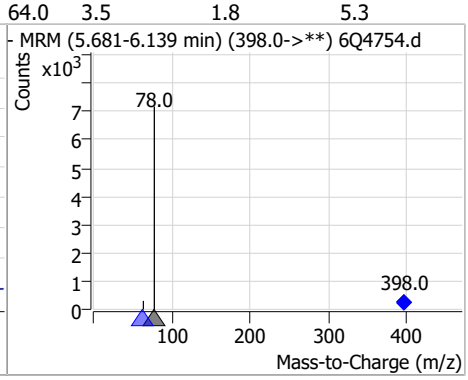


Perfluorinated Compounds by LC/MS/MS

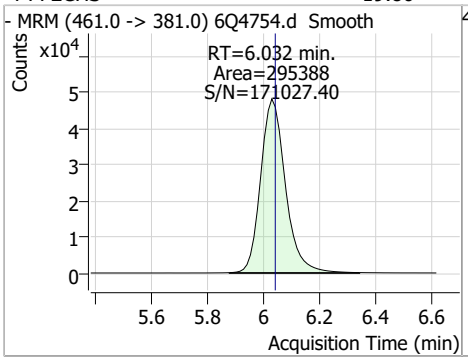
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	19.17	5.83	0.00	195500	398.0 -> 64.0	3.5	1.8	5.3

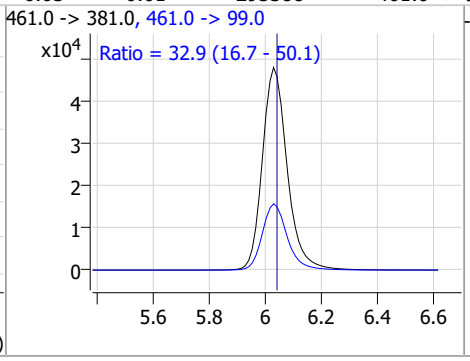


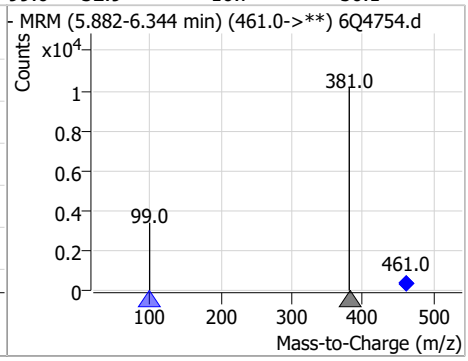




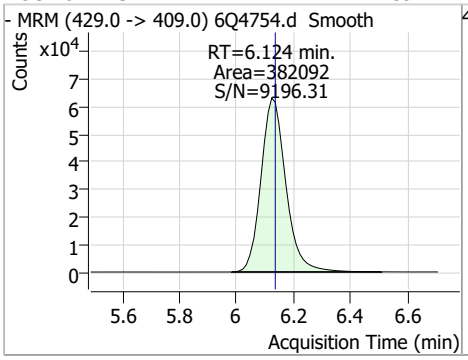
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.86	6.03	-0.01	295388	461.0 -> 99.0	32.9	16.7	50.1

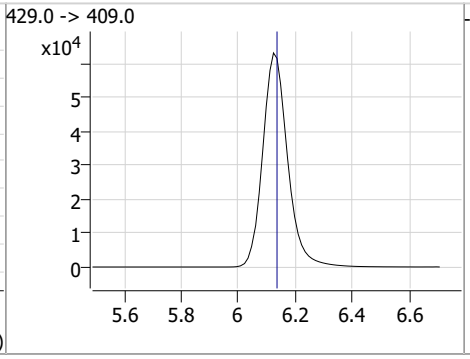


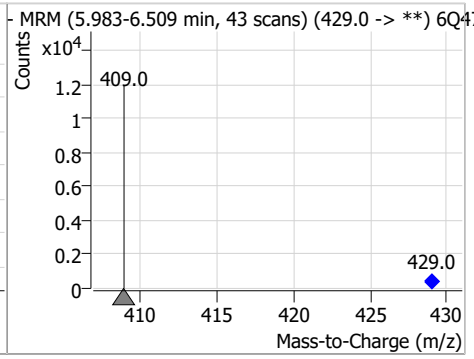




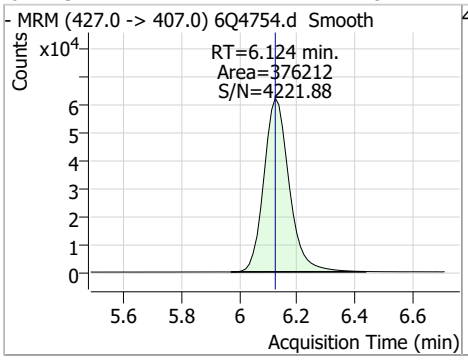
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	22.39	6.12	-0.01	382092				

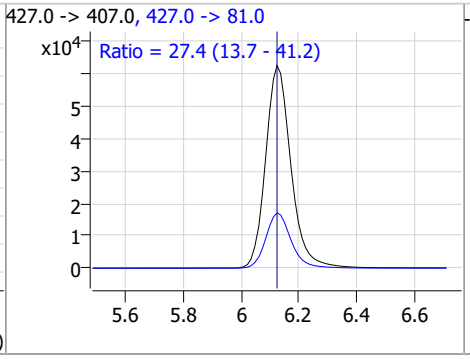


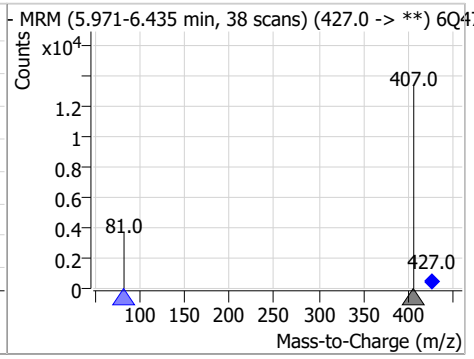




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	19.44	6.12	-0.01	376212	427.0 -> 81.0	27.4	13.7	41.2

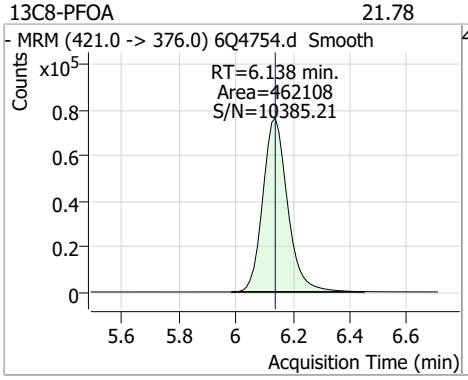


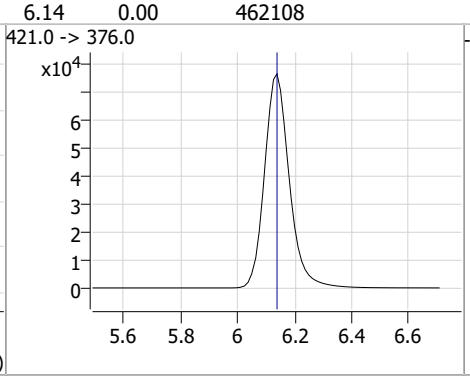


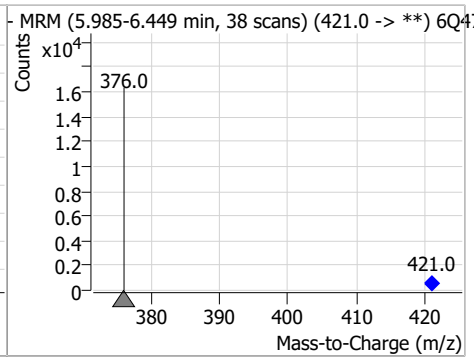


Perfluorinated Compounds by LC/MS/MS

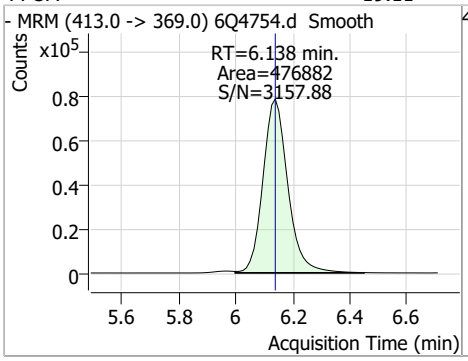
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	21.78	6.14	0.00	462108				

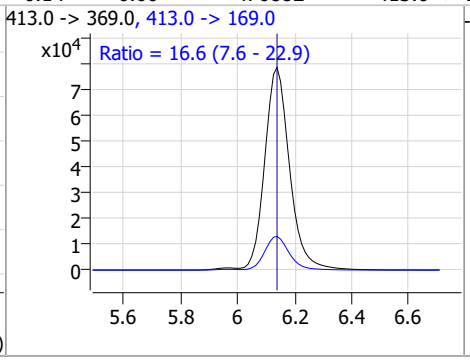


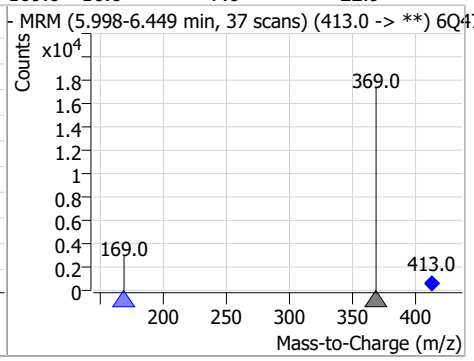




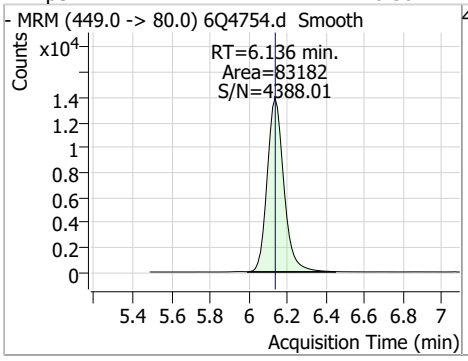
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.11	6.14	0.00	476882	413.0 -> 169.0	16.6	7.6	22.9

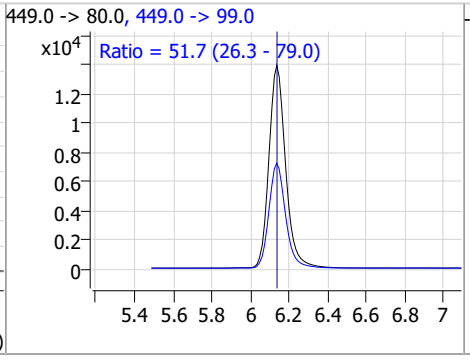


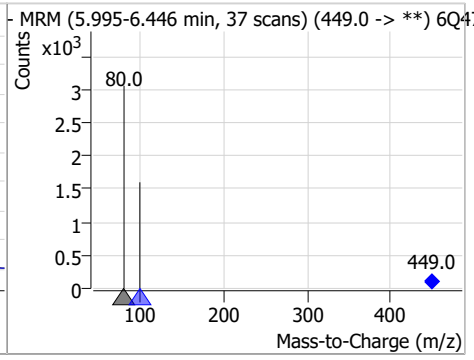




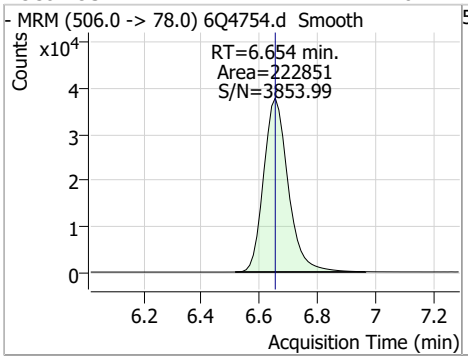
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	20.50	6.14	-0.01	83182	449.0 -> 99.0	51.7	26.3	79.0

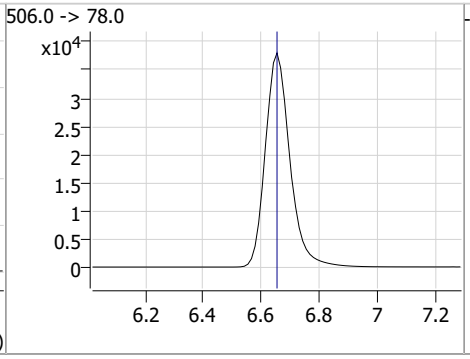


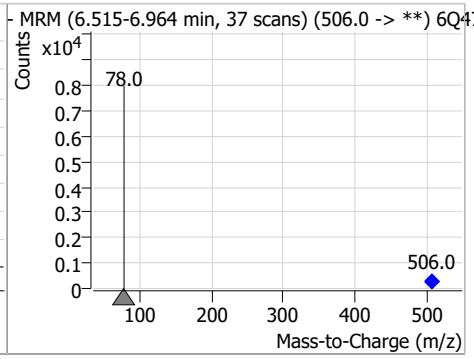




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	22.78	6.65	0.00	222851				

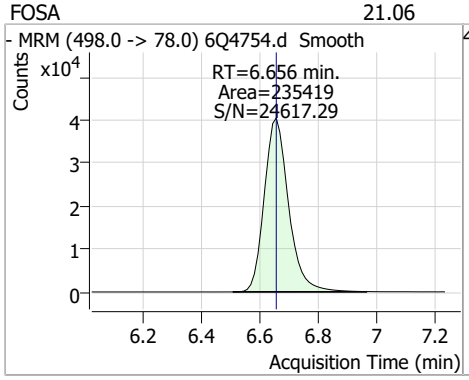


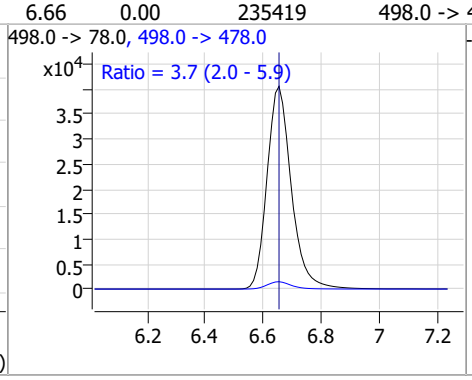


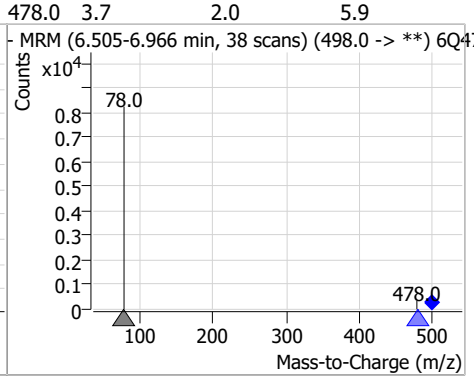


Perfluorinated Compounds by LC/MS/MS

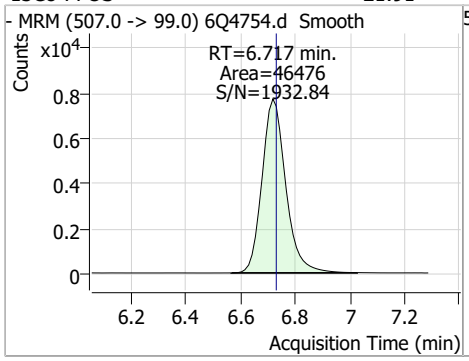
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	21.06	6.66	0.00	235419	498.0 -> 478.0	3.7	2.0	5.9

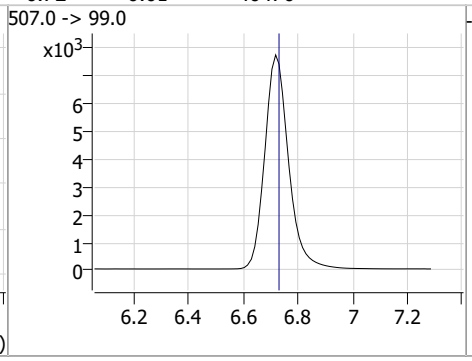


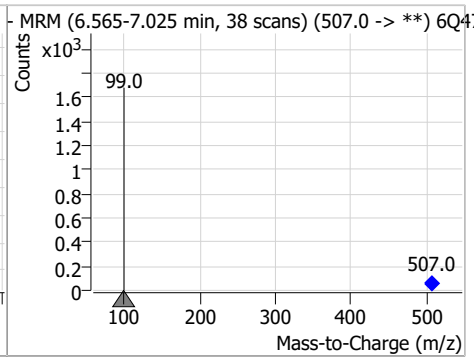




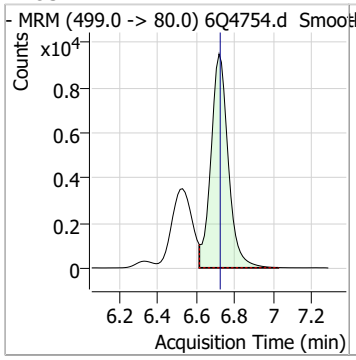
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.91	6.72	-0.01	46476				

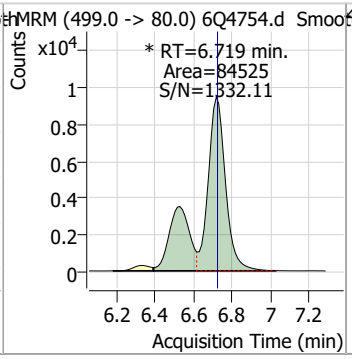


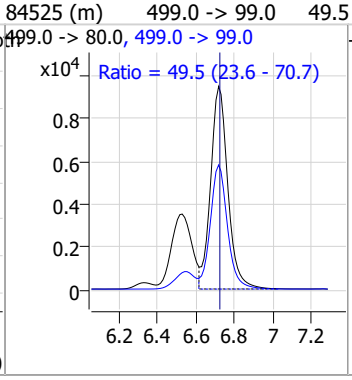


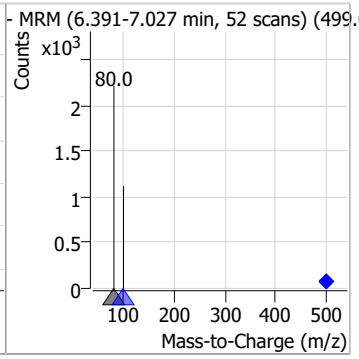


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	19.62	6.72	-0.01	84525 (m)	499.0 -> 99.0	49.5	23.6	70.7

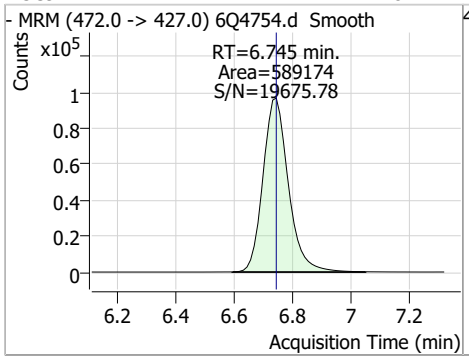


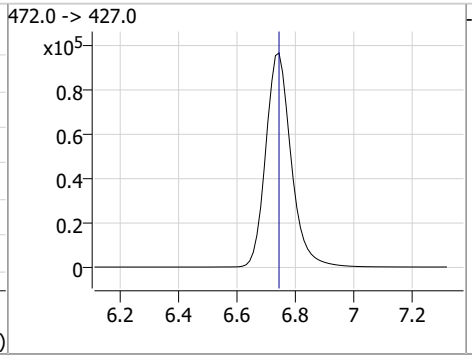


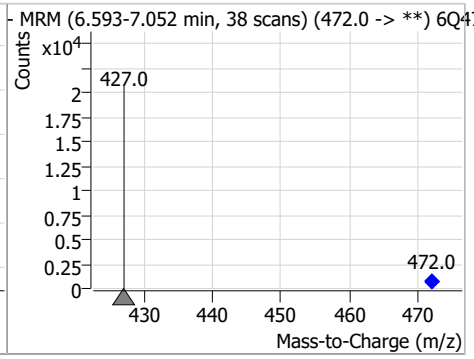




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.87	6.74	0.00	589174				

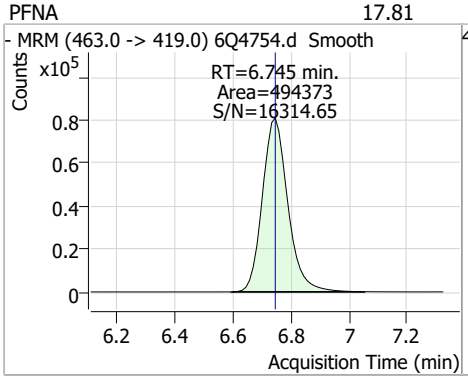


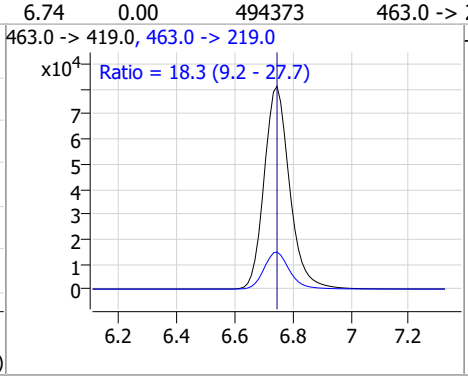


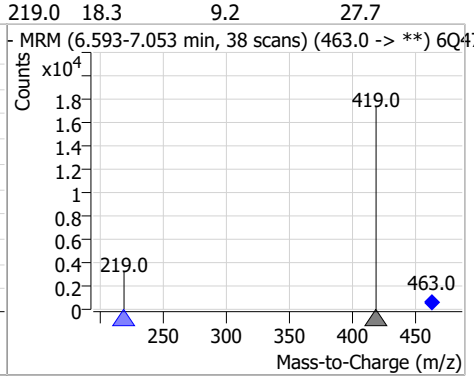


Perfluorinated Compounds by LC/MS/MS

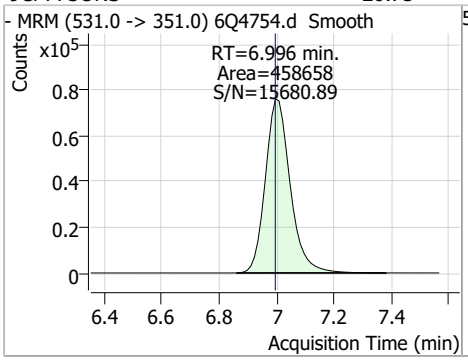
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	17.81	6.74	0.00	494373	463.0 -> 219.0	18.3	9.2	27.7

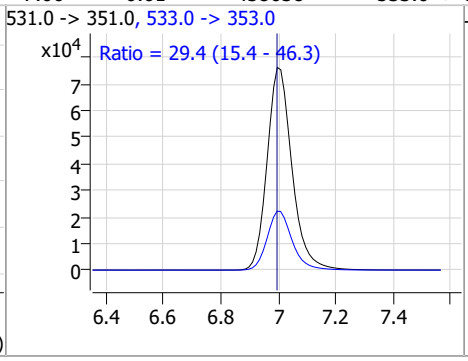


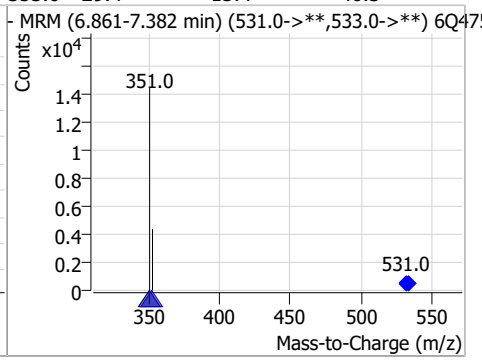




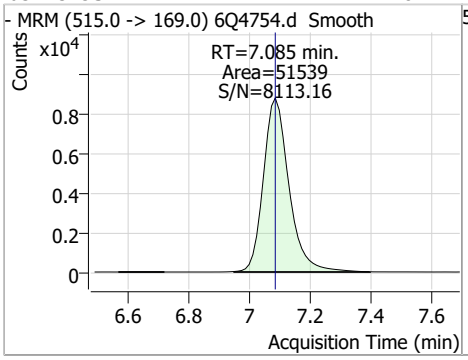
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	20.73	7.00	-0.01	458658	533.0 -> 353.0	29.4	15.4	46.3

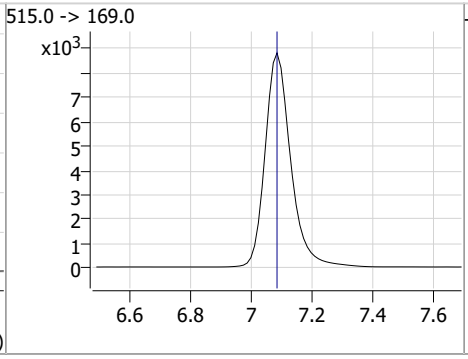


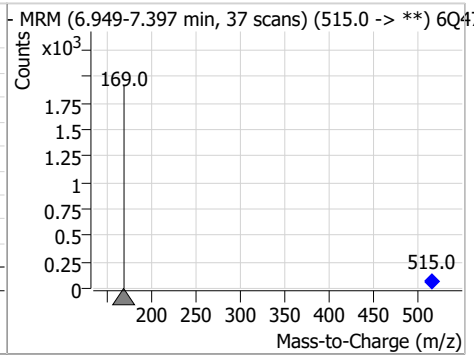




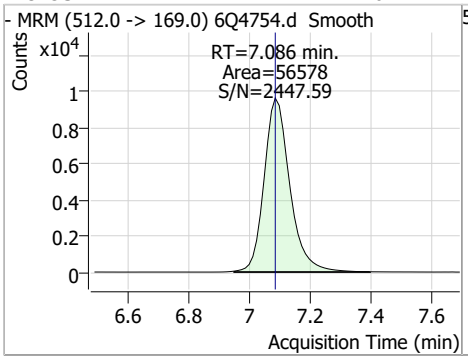
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	22.78	7.08	0.00	51539				

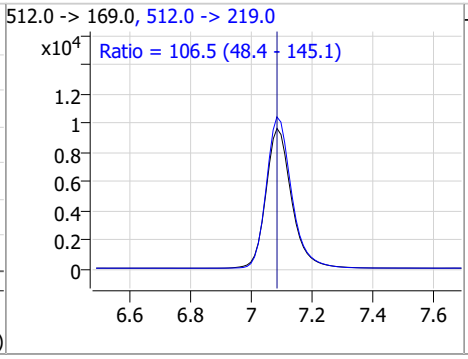


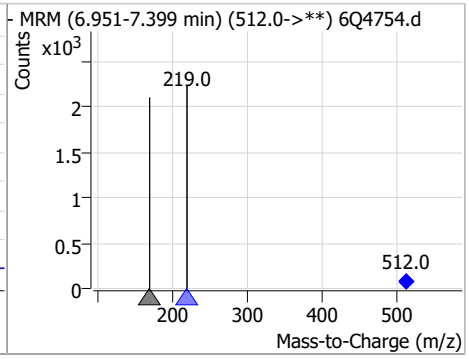




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	20.12	7.09	0.00	56578	512.0 -> 219.0	106.5	48.4	145.1

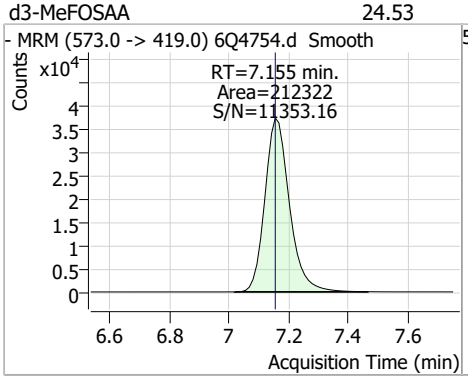


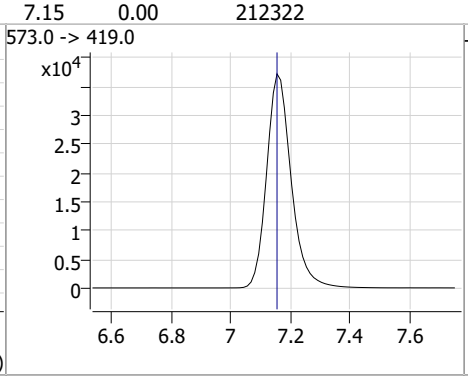


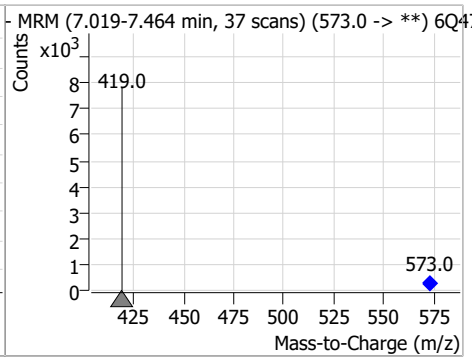


Perfluorinated Compounds by LC/MS/MS

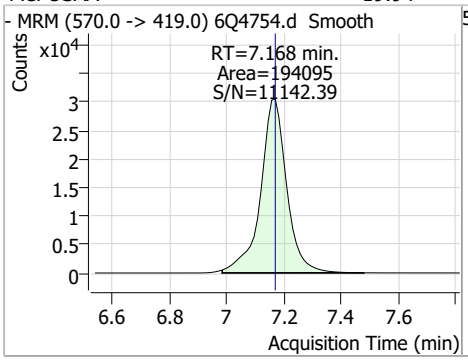
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	24.53	7.15	0.00	212322				

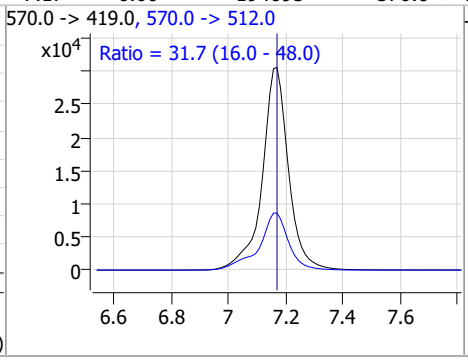


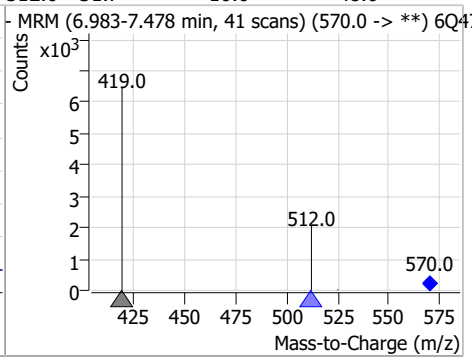




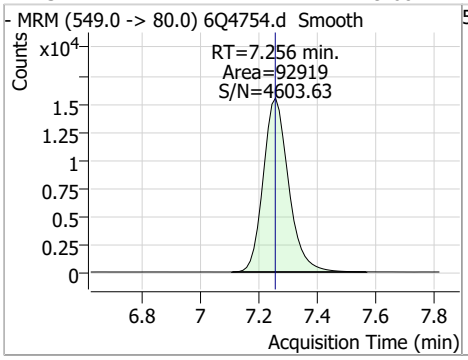
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	19.94	7.17	0.00	194095	570.0 -> 512.0	31.7	16.0	48.0

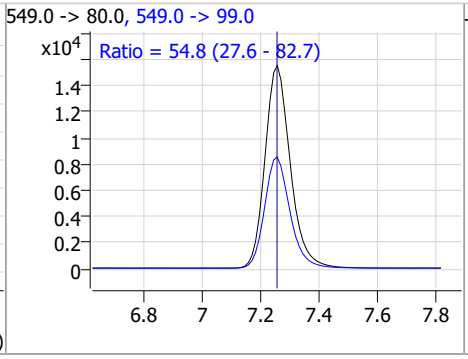


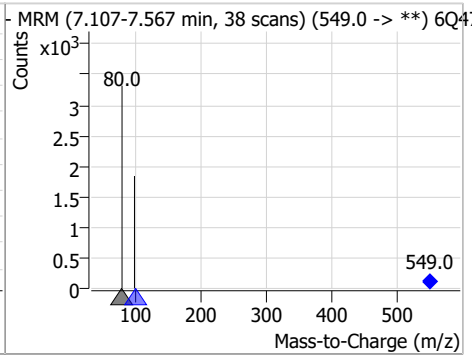




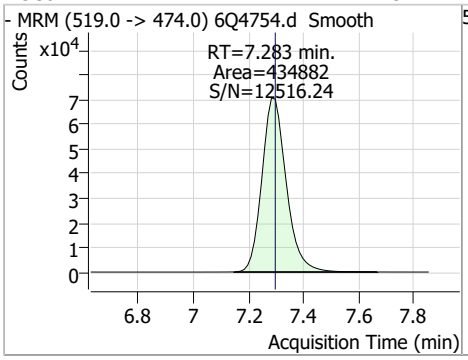
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.68	7.26	-0.01	92919	549.0 -> 99.0	54.8	27.6	82.7

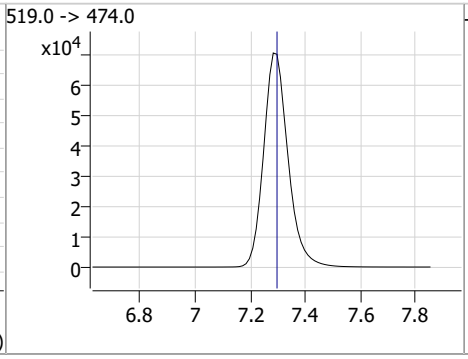


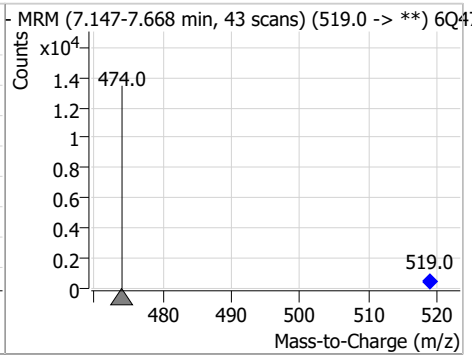




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	21.37	7.28	-0.01	434882				

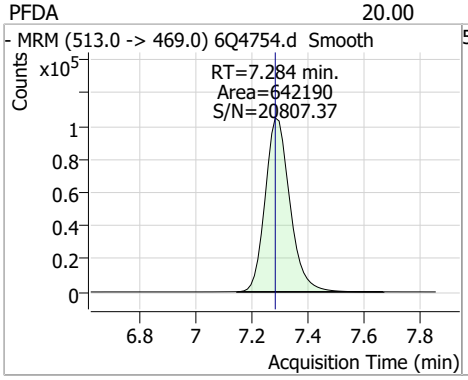


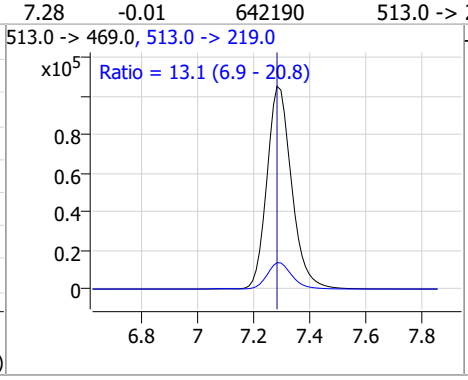


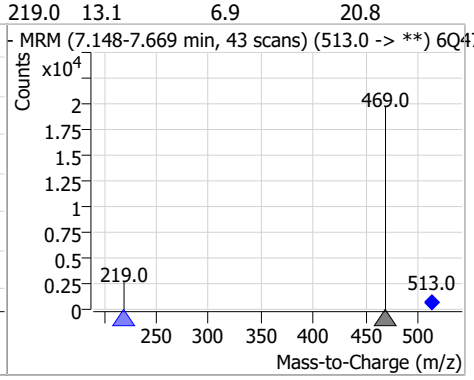


Perfluorinated Compounds by LC/MS/MS

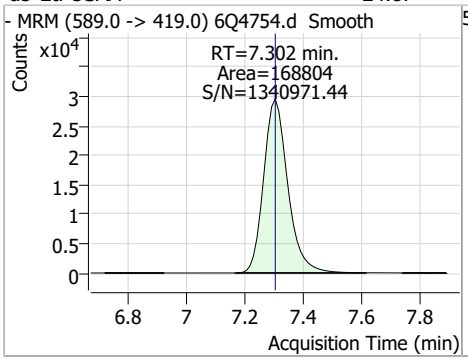
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.00	7.28	-0.01	642190	513.0 -> 219.0	13.1	6.9	20.8

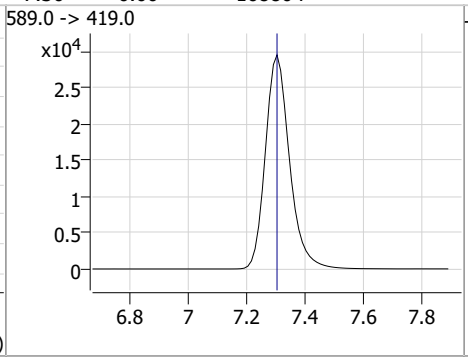


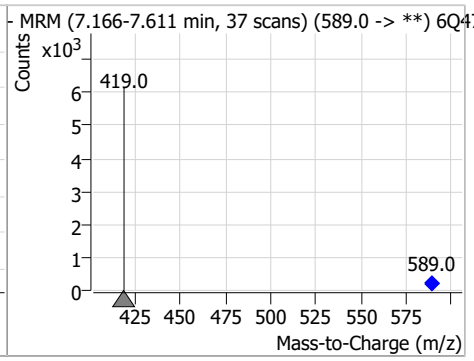




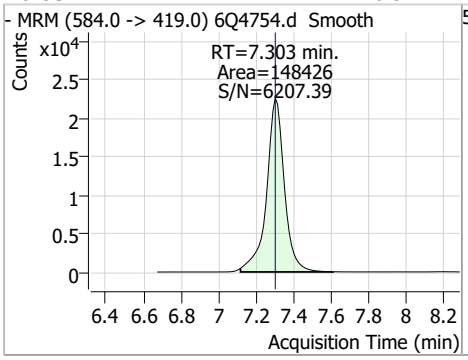
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	24.87	7.30	0.00	168804				

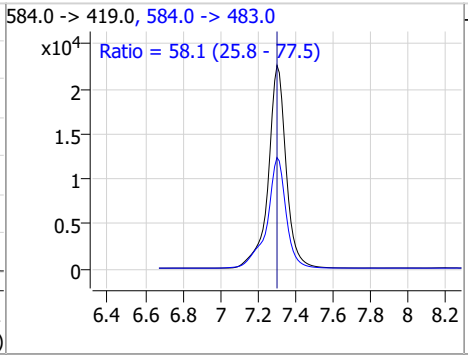


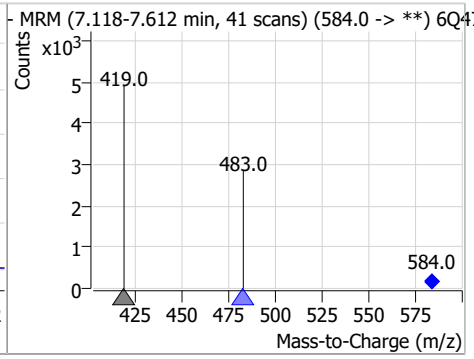




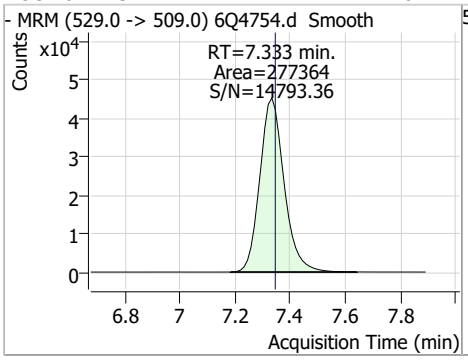
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	16.51	7.30	0.00	148426	584.0 -> 483.0	58.1	25.8	77.5

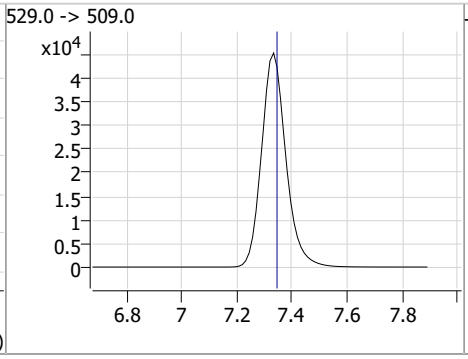


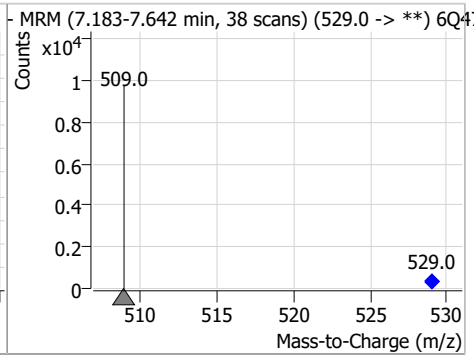




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.28	7.33	-0.01	277364				

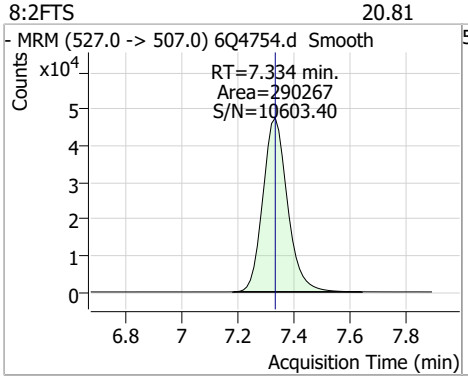


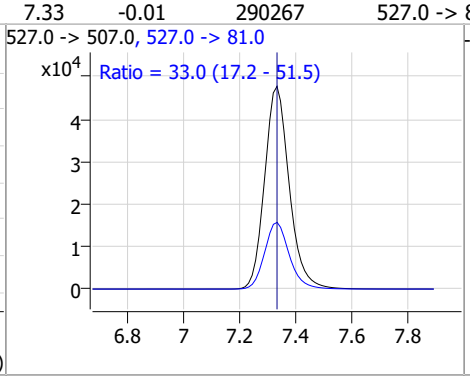


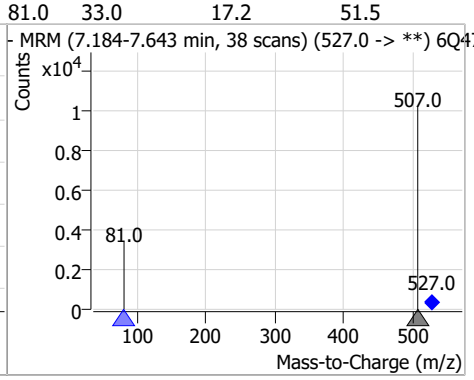


Perfluorinated Compounds by LC/MS/MS

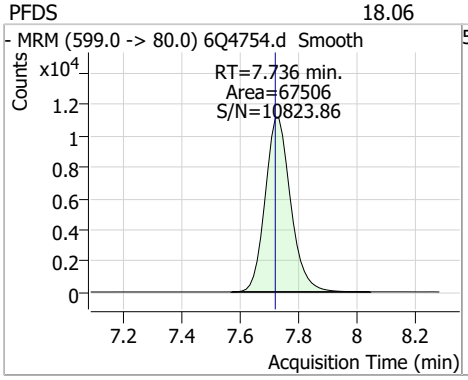
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.81	7.33	-0.01	290267	527.0 -> 81.0	33.0	17.2	51.5

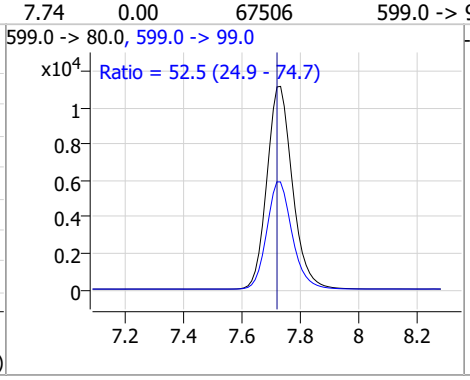


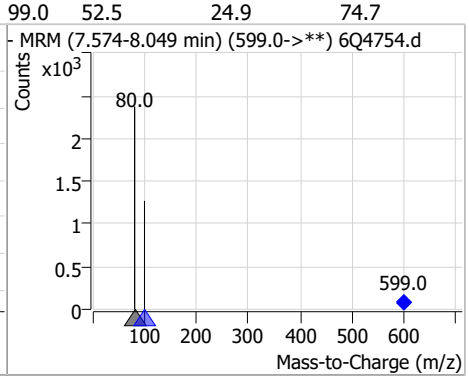




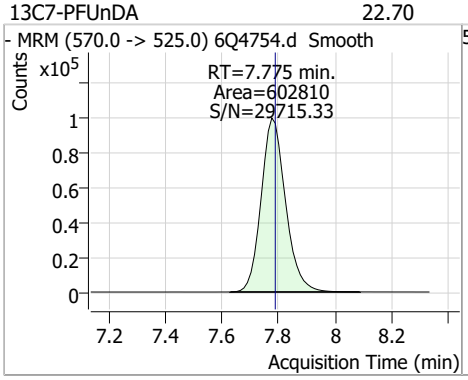
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	18.06	7.74	0.00	67506	599.0 -> 99.0	52.5	24.9	74.7

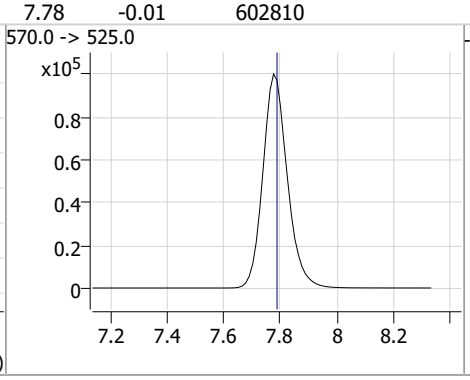


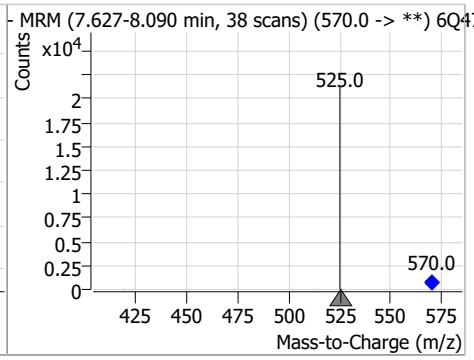




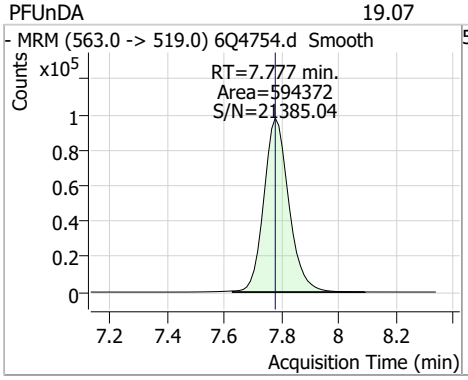
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.70	7.78	-0.01	602810				

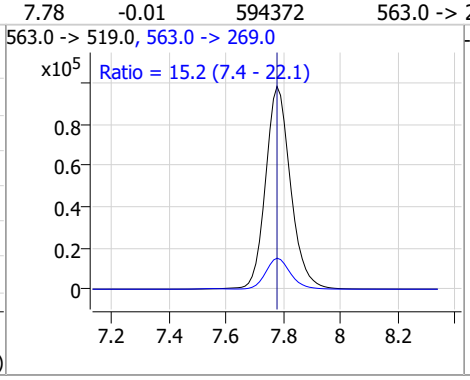


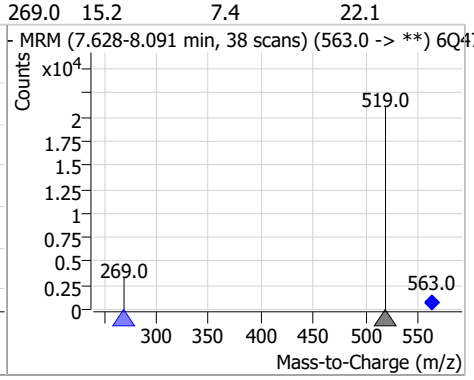




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.07	7.78	-0.01	594372	563.0 -> 269.0	15.2	7.4	22.1

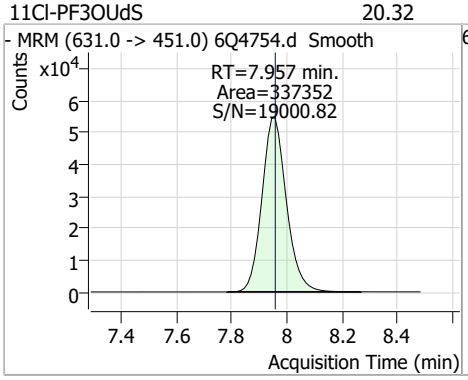


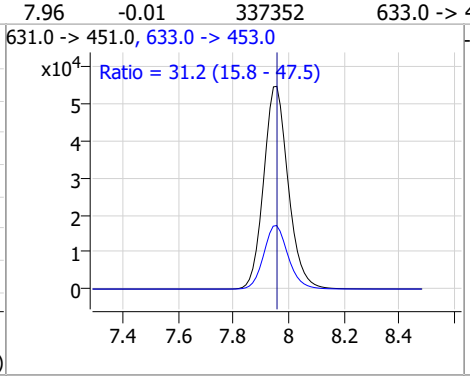


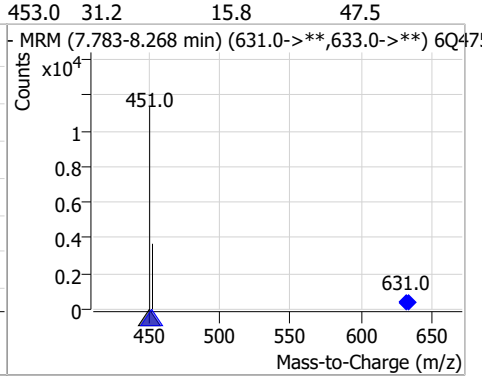


Perfluorinated Compounds by LC/MS/MS

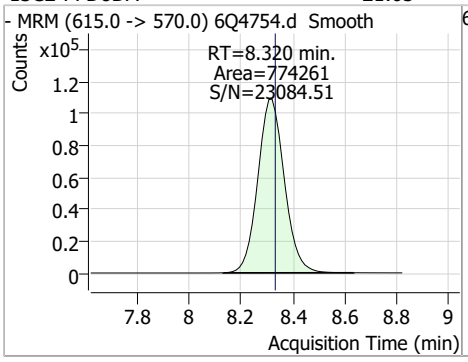
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.32	7.96	-0.01	337352	633.0 -> 453.0	31.2	15.8	47.5

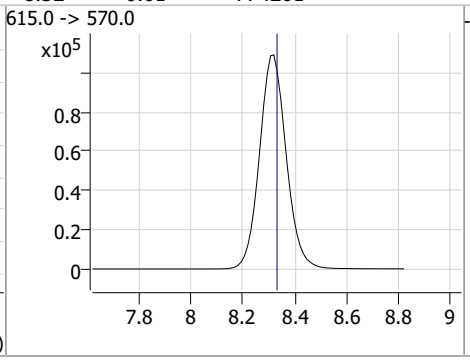


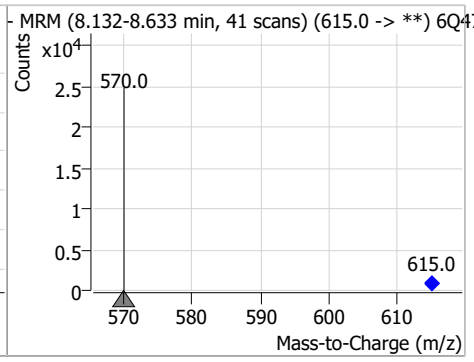




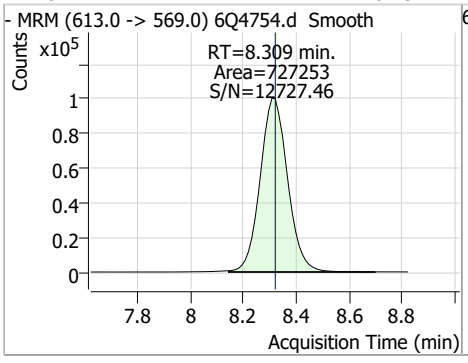
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	21.05	8.32	-0.01	774261				

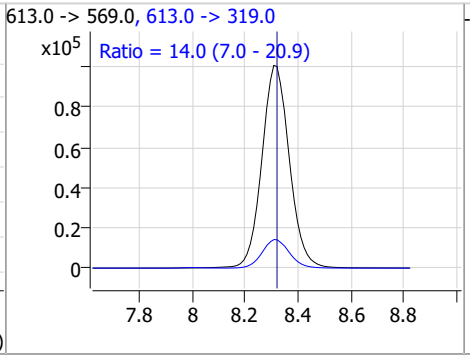


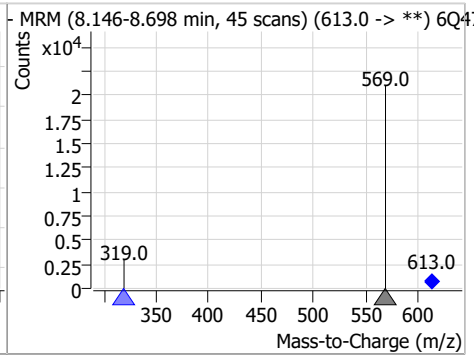




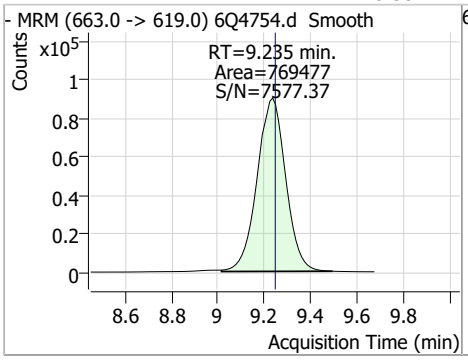
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.13	8.31	-0.02	727253	613.0 -> 319.0	14.0	7.0	20.9

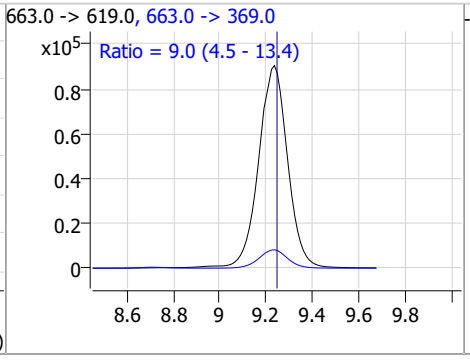


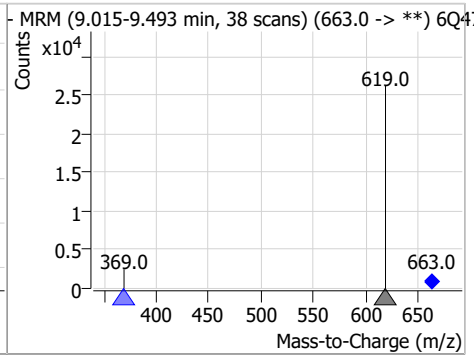




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	20.58	9.24	-0.02	769477	663.0 -> 369.0	9.0	4.5	13.4

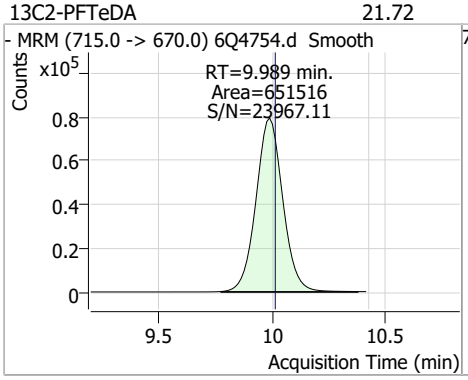


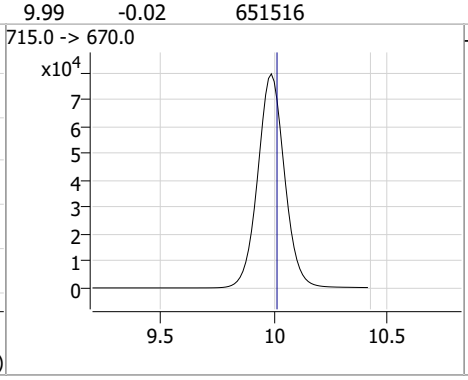


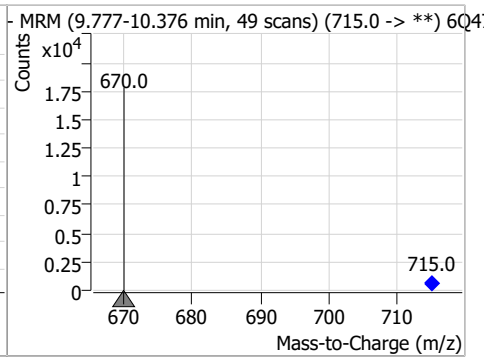


Perfluorinated Compounds by LC/MS/MS

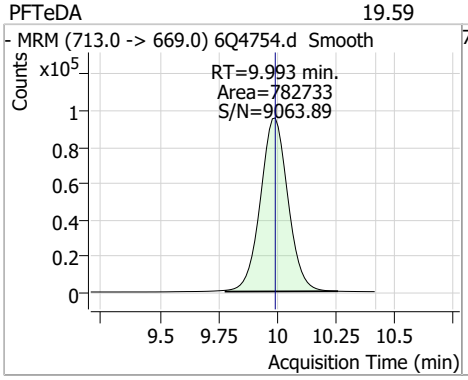
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.72	9.99	-0.02	651516				

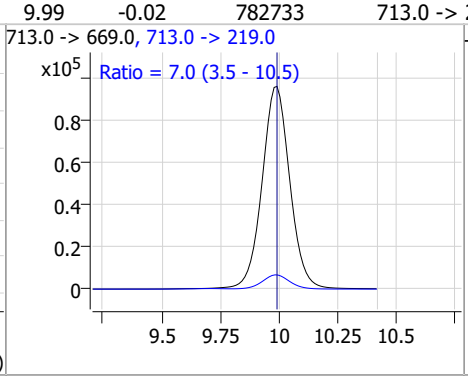


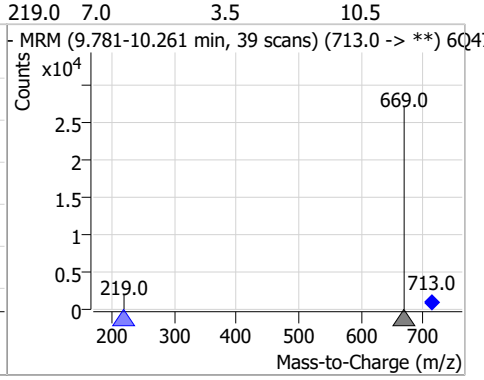




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	19.59	9.99	-0.02	782733	713.0 -> 219.0	7.0	3.5	10.5







7.7.101

7

Manual Integration Approval Summary

Sample Number: S6Q86-CC85
Lab FileID: 6Q4754.D
Injection Time: 09/16/22 05:15
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:31 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

Manual Integrations APPROVED (compounds with "m" flag)
Norman Farmer 09/16/22 17:19

Perfluorinated Compounds by LC/MS/MS

Data File : 6Q4761.d
Operator : jamesb
Acq. Method : 537_ID.m
Acq. Date-Time : 9/16/2022 7:07:19 AM
Sample Name : ecc85-20
Vial : P1-A7
DA Method File : ID_091422_S6Q85.quantmethod.xml
Batch Name : S6Q86.batch.bin
Sample Information : OP92656,S6Q86,250,,,1.0,1,water

Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
Internal Standards						
M4-PFBA	1.949	217.0 -> 172.0	89382	20.00	µg/L	0.000
M5-PFPeA	3.405	268.0 -> 223.0	154277	20.00	µg/L	-0.012
M5-PFHxA	4.573	318.0 -> 273.0	238182	20.00	µg/L	0.000
M4-PFHpA	5.433	367.0 -> 322.0	275635	20.00	µg/L	-0.012
M8-PFOA	6.138	421.0 -> 376.0	481146	20.00	µg/L	0.000
M9-PFNA	6.745	472.0 -> 427.0	576754	20.00	µg/L	0.000
M6-PFDA	7.283	519.0 -> 474.0	422889	20.00	µg/L	-0.014
M7-PFUnDA	7.775	570.0 -> 525.0	607654	20.00	µg/L	-0.012
M2-PFDoDA	8.320	615.0 -> 570.0	766317	20.00	µg/L	-0.012
M2-PFTeDA	9.989	715.0 -> 670.0	644932	20.00	µg/L	-0.025
M8-FOSA	6.654	506.0 -> 78.0	233843	20.00	µg/L	0.000
M3-PFBS	3.622	302.0 -> 99.0	33333	20.00	µg/L	-0.012
M3-PFHxS	5.463	402.0 -> 99.0	30373	20.00	µg/L	-0.012
M8-PFOS	6.717	507.0 -> 99.0	46097	20.00	µg/L	-0.012
M2-4:2FTS	4.483	329.0 -> 309.0	293997	20.00	µg/L	0.000
M2-6:2FTS	6.124	429.0 -> 409.0	358247	20.00	µg/L	-0.012
M2-8:2FTS	7.333	529.0 -> 509.0	274943	20.00	µg/L	-0.012
M3-MeFOSAA	7.155	573.0 -> 419.0	202248	20.00	µg/L	0.000
M3-HFPO-DA	4.839	287.0 -> 169.0	5286	20.00	µg/L	-0.012
M3-MeFOSA	7.085	515.0 -> 169.0	54907	20.00	µg/L	0.000
M5-EtFOSAA	7.302	589.0 -> 419.0	158328	20.00	µg/L	0.000
System Monitoring Compounds						
13C2-4:2FTS	4.483	329.0 -> 309.0	293997	21.77	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C2-6:2FTS	6.124	429.0 -> 409.0	358247	20.99	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.9%		
13C2-8:2FTS	7.333	529.0 -> 509.0	274943	21.09	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 105.5%		
13C2-PFDoDA	8.320	615.0 -> 570.0	766317	20.84	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 104.2%		
13C2-PFTeDA	9.989	715.0 -> 670.0	644932	21.50	µg/L	-0.025
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 107.5%		
13C3-PFBS	3.622	302.0 -> 99.0	33333	21.77	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.8%		
13C3-PFHxS	5.463	402.0 -> 99.0	30373	21.97	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 109.8%		
13C4-PFBA	1.949	217.0 -> 172.0	89382	22.46	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 112.3%		
13C4-PFHpA	5.433	367.0 -> 322.0	275635	22.28	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C5-PFHxA	4.573	318.0 -> 273.0	238182	22.28	µg/L	0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.4%		
13C5-PFPeA	3.405	268.0 -> 223.0	154277	22.00	µg/L	-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 110.0%		
13C6-PFDA	7.283	519.0 -> 474.0	422889	20.78	µg/L	-0.014

Perfluorinated Compounds by LC/MS/MS

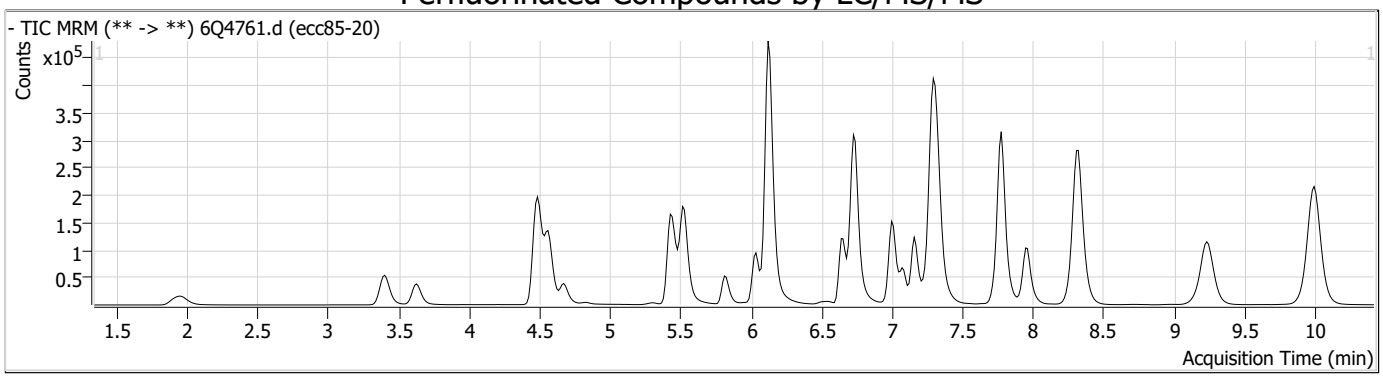
Compound	RT	Transition	Response	Conc. Units		Dev(Min)
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 103.9%		
13C7-PFUnDA	7.775	570.0 -> 525.0	607654	22.89 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 114.4%		
13C8-FOSA	6.654	506.0 -> 78.0	233843	23.91 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 119.5%		
13C8-PFOA	6.138	421.0 -> 376.0	481146	22.68 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 113.4%		
13C8-PFOS	6.717	507.0 -> 99.0	46097	21.73 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 108.7%		
13C9-PFNA	6.745	472.0 -> 427.0	576754	22.38 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 111.9%		
d3-MeFOSAA	7.155	573.0 -> 419.0	202248	23.37 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.9%		
13C3-HFPO-DA	4.839	287.0 -> 169.0	5310	19.98 µg/L		-0.012
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 99.9%		
d3-MeFOSA	7.085	515.0 -> 169.0	54907	24.27 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 121.3%		
d5-EtFOSAA	7.302	589.0 -> 419.0	158255	23.31 µg/L		0.000
Spiked Amount: 20.00	Range: 50.0 - 150.0%			Recovery = 116.6%		
Target Compounds						QValue
4:2FTS	4.485	327.0 -> 307.0	334922	21.07 µg/L		97
		327.0 -> 81.0	103752			
6:2FTS	6.124	427.0 -> 407.0	382554	21.09 µg/L		96
		427.0 -> 81.0	96698			
8:2FTS	7.334	527.0 -> 507.0	285698	20.66 µg/L		96
		527.0 -> 81.0	90916			
EtFOSAA	7.303	584.0 -> 419.0	151788	17.98 µg/L		92
		584.0 -> 483.0	87239			
FOSA	6.656	498.0 -> 78.0	230490	19.65 µg/L		99
		498.0 -> 478.0	9407			
MeFOSAA	7.156	570.0 -> 419.0	190331	20.53 µg/L		96
		570.0 -> 512.0	65130			
PFBA	1.943	213.0 -> 169.0	38519	19.74 µg/L		100
PFBS	3.627	299.0 -> 80.0	109116	19.69 µg/L		100
		299.0 -> 99.0	40855			
PFDA	7.284	513.0 -> 469.0	636493	20.39 µg/L		98
		513.0 -> 219.0	83451			
PFDoDA	8.321	613.0 -> 569.0	731774	20.47 µg/L		99
		613.0 -> 319.0	103489			
PFDS	7.736	599.0 -> 80.0	71602	19.00 µg/L		98
		599.0 -> 99.0	34557			
PFHpA	5.434	363.0 -> 319.0	345862	19.29 µg/L		99
		363.0 -> 169.0	51912			
PFHpS	6.136	449.0 -> 80.0	84712	21.05 µg/L		98
		449.0 -> 99.0	43303			
PFHxA	4.574	313.0 -> 269.0	235161	18.77 µg/L		100
		313.0 -> 119.0	5910			
PFHxS	5.465	399.0 -> 80.0	88226	20.27 µg/L	m	99
		399.0 -> 99.0	42295			
PFNA	6.745	463.0 -> 419.0	510879	18.80 µg/L		98
		463.0 -> 219.0	90196			
PFNS	7.256	549.0 -> 80.0	92746	19.80 µg/L		97
		549.0 -> 99.0	48841			
PFOA	6.138	413.0 -> 369.0	496119	19.09 µg/L		100
		413.0 -> 169.0	75528			
PFOS	6.719	499.0 -> 80.0	85878	20.10 µg/L	m	96

Perfluorinated Compounds by LC/MS/MS

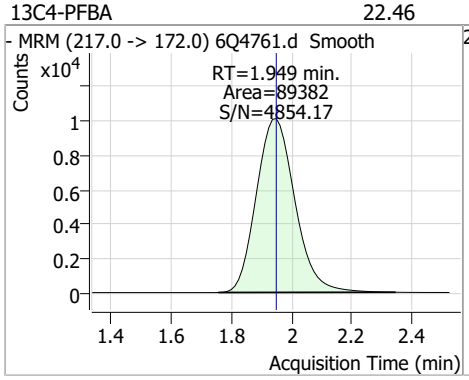
Compound	RT	Transition	Response	Conc.	Units	Dev(Min)
		499.0 -> 99.0	42617			
PFPeA	3.408	263.0 -> 219.0	127352	19.59	µg/L	100
PFPeS	4.668	349.0 -> 80.0	92439	20.03	µg/L	100
		349.0 -> 99.0	42395			
PFTeDA	9.993	713.0 -> 669.0	791748	20.02	µg/L	100
		713.0 -> 219.0	55403			
PFTrDA	9.235	663.0 -> 619.0	777806	21.02	µg/L	100
		663.0 -> 369.0	69159			
PFUnDA	7.777	563.0 -> 519.0	600149	19.10	µg/L	100
		563.0 -> 269.0	87957			
11Cl-PF3OUdS	7.957	631.0 -> 451.0	343889	20.93	µg/L	99
		633.0 -> 453.0	106841			
9Cl-PF3ONS	7.009	531.0 -> 351.0	472972	21.98	µg/L	98
		533.0 -> 353.0	141603			
ADONA	5.532	377.0 -> 251.0	550878	19.56	µg/L	96
		377.0 -> 85.0	142582			
HFPO-DA	4.840	285.0 -> 169.0	5308	21.23	µg/L	94
		285.0 -> 185.0	865			
MeFOSA	7.086	512.0 -> 169.0	58143	19.41	µg/L	99
		512.0 -> 219.0	56515			
4-PFECHS	6.032	461.0 -> 381.0	295333	19.07	µg/L	98
		461.0 -> 99.0	95263			
FBSA	4.514	298.0 -> 78.0	228253	19.67	µg/L	100
		298.0 -> 64.0	15355			
FHxSA	5.828	398.0 -> 78.0	198142	18.66	µg/L	100
		398.0 -> 64.0	7016			

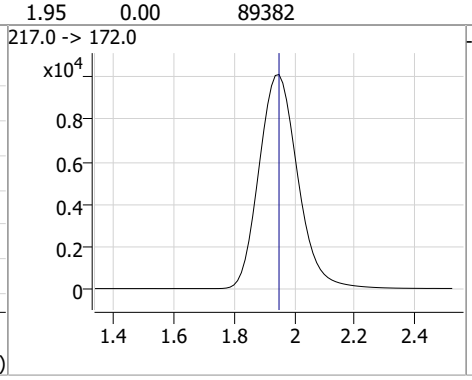
 # = Qualifier out of range, m = manually integrated, + = Area summed

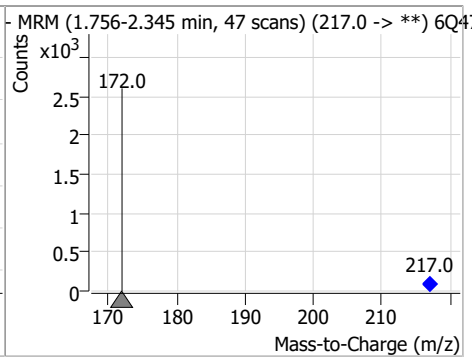
Perfluorinated Compounds by LC/MS/MS



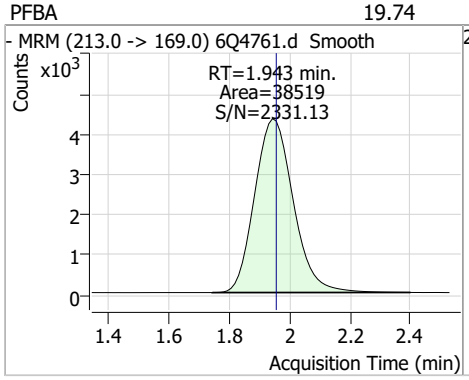
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFBA	22.46	1.95	0.00	89382				

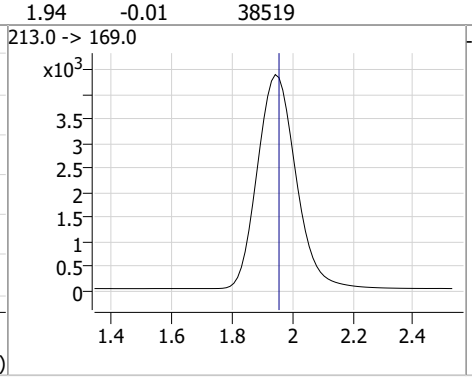


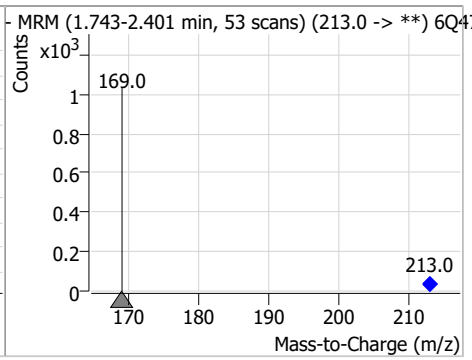




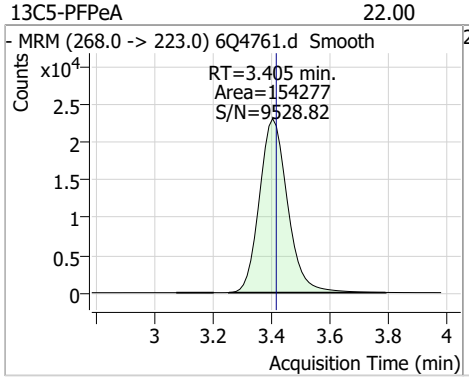
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBA	19.74	1.94	-0.01	38519				

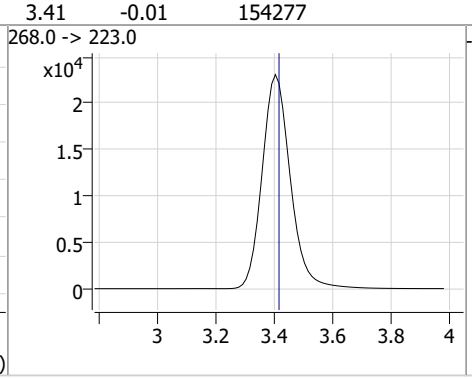


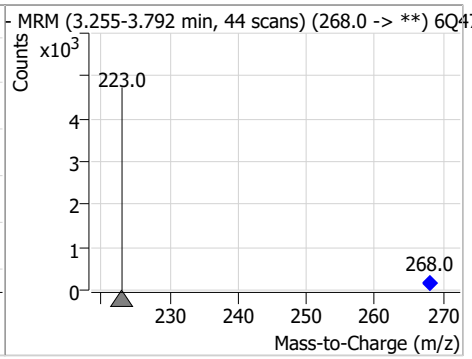




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFPeA	22.00	3.41	-0.01	154277				

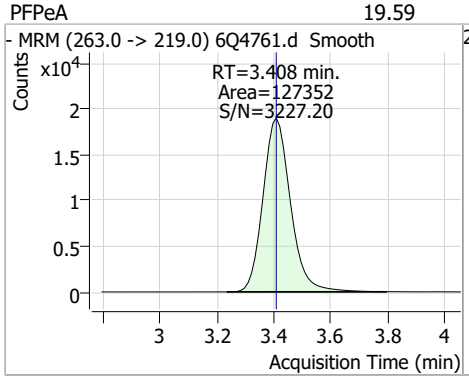


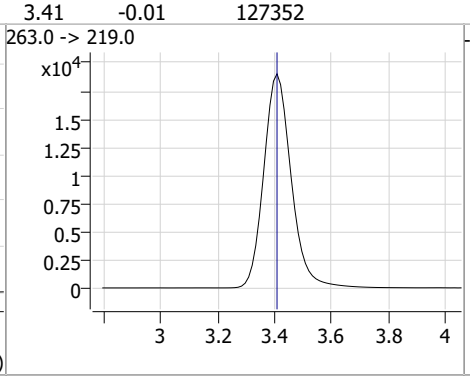


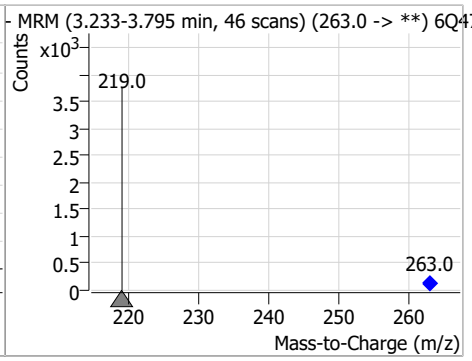


Perfluorinated Compounds by LC/MS/MS

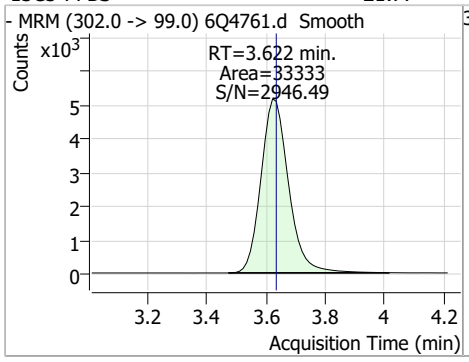
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeA	19.59	3.41	-0.01	127352				

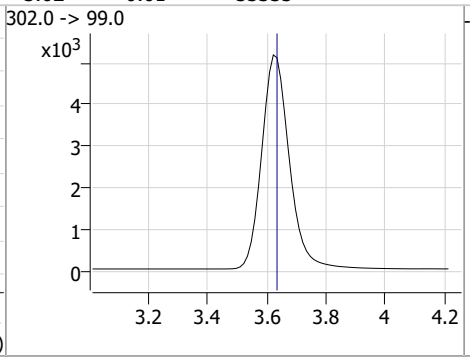


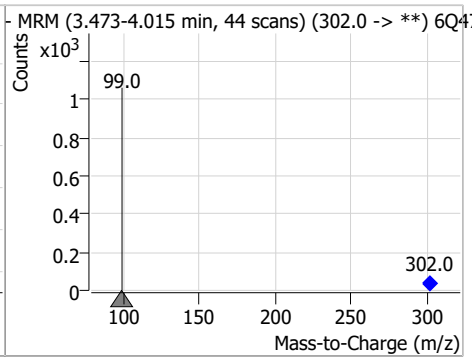




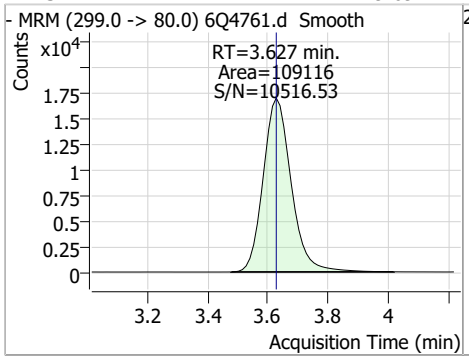
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFBS	21.77	3.62	-0.01	33333				

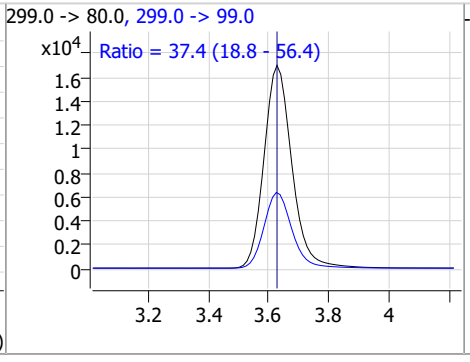


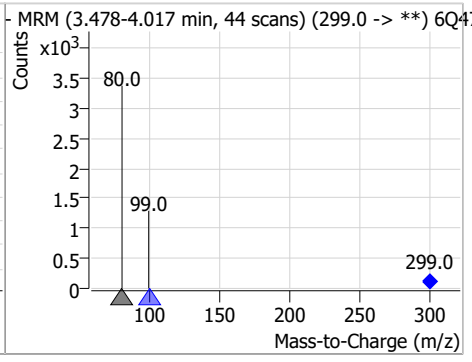




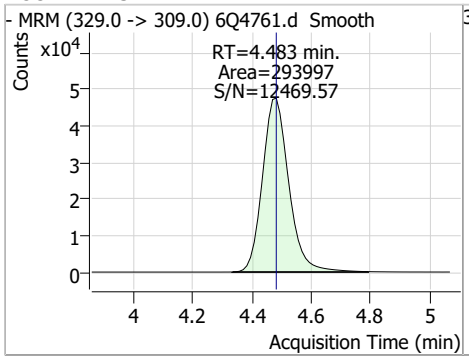
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFBS	19.69	3.63	-0.01	109116	299.0 -> 99.0	37.4	18.8	56.4

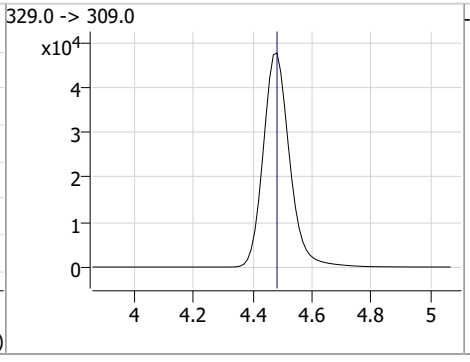


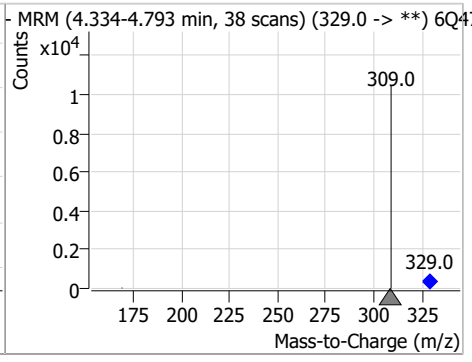




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-4:2FTS	21.77	4.48	0.00	293997				

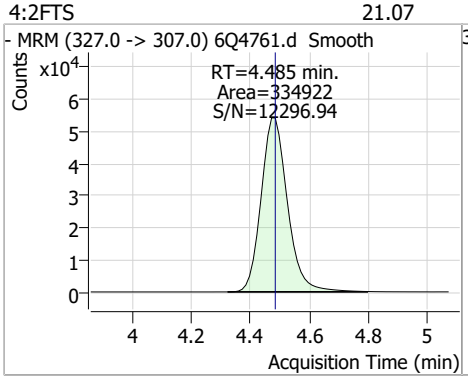


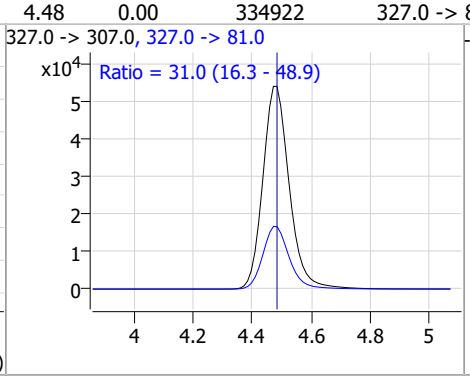


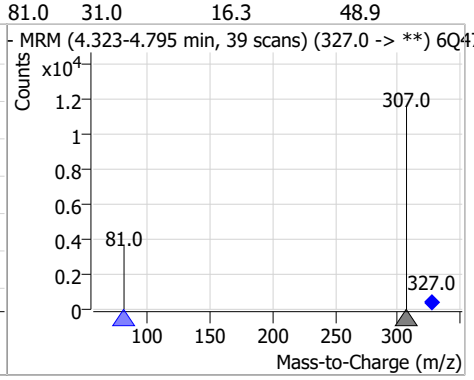


Perfluorinated Compounds by LC/MS/MS

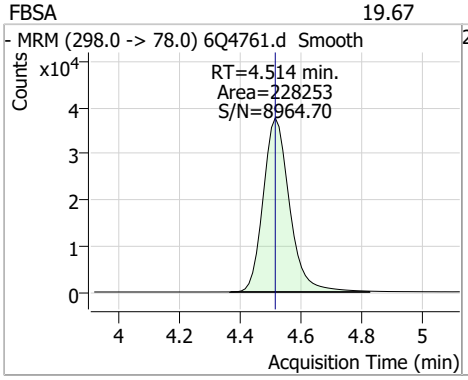
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4:2FTS	21.07	4.48	0.00	334922	327.0 -> 81.0	31.0	16.3	48.9

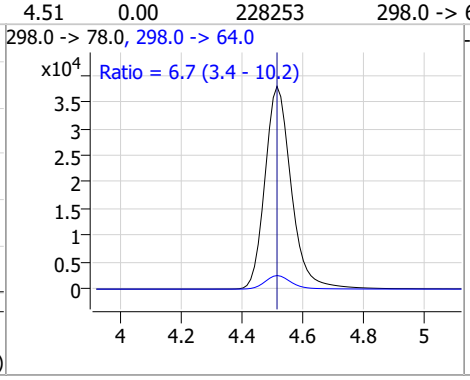


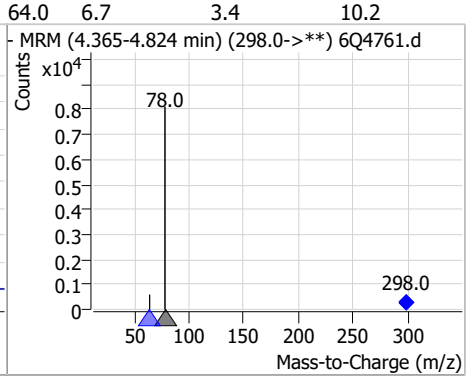




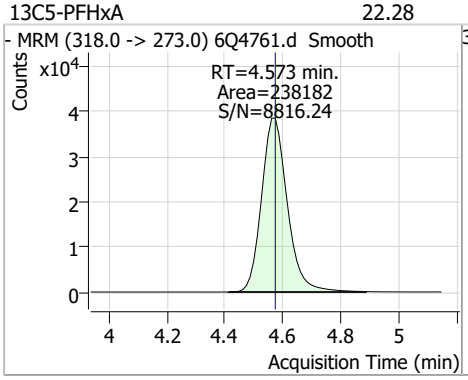
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FBSA	19.67	4.51	0.00	228253	298.0 -> 64.0	6.7	3.4	10.2

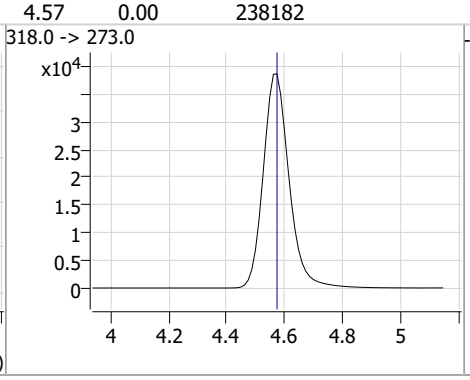


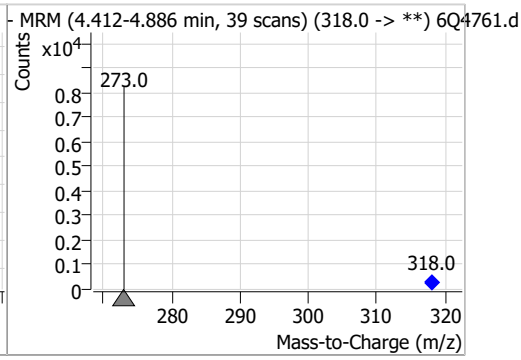




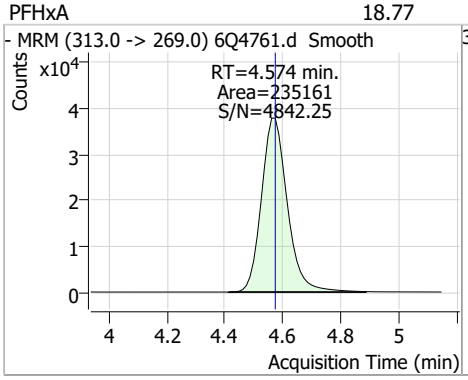
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C5-PFHxA	22.28	4.57	0.00	238182				

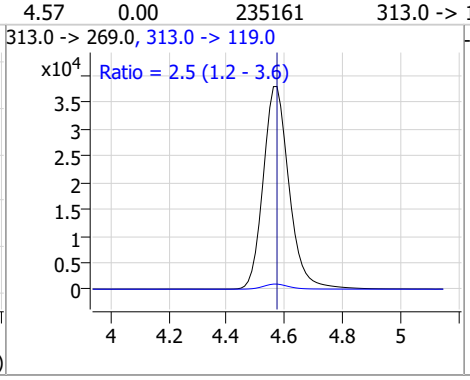


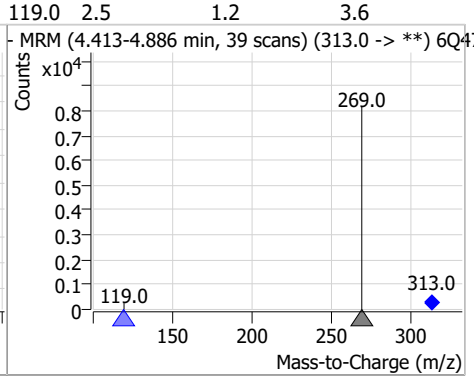




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxA	18.77	4.57	0.00	235161	313.0 -> 119.0	2.5	1.2	3.6

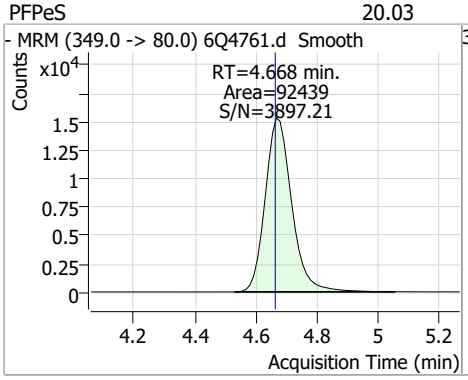


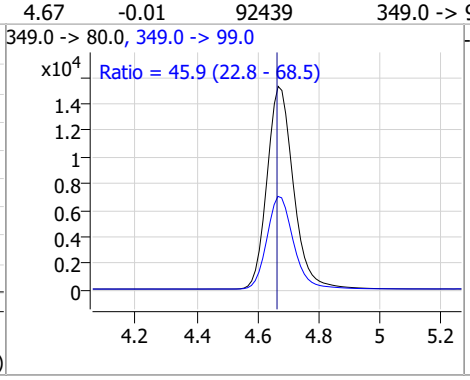


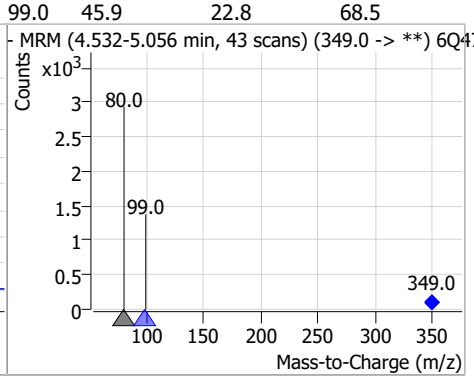


Perfluorinated Compounds by LC/MS/MS

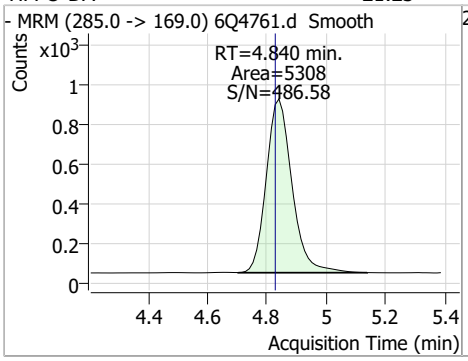
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFPeS	20.03	4.67	-0.01	92439	349.0 -> 99.0	45.9	22.8	68.5

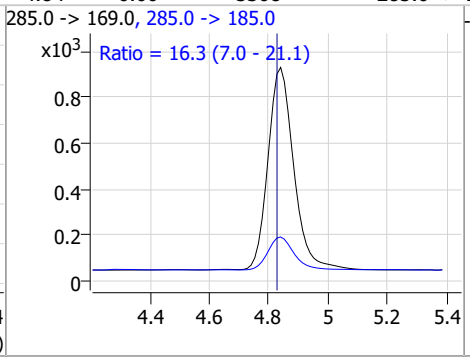


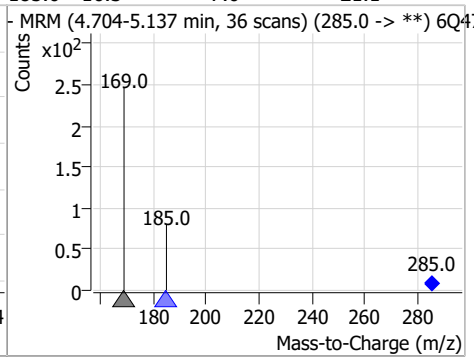




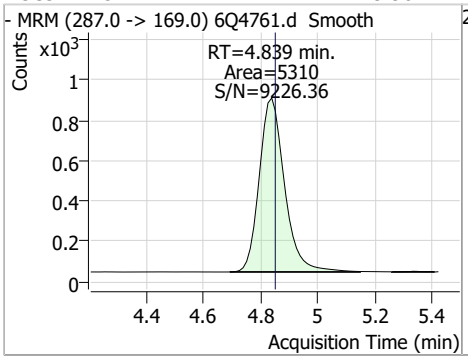
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
HFPO-DA	21.23	4.84	0.00	5308	285.0 -> 185.0	16.3	7.0	21.1

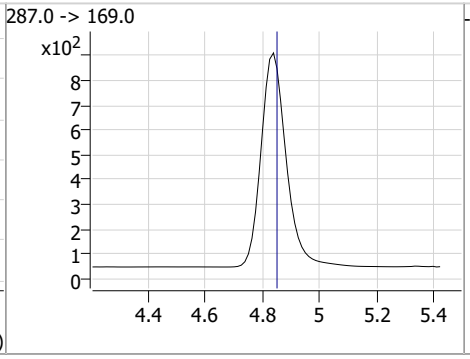


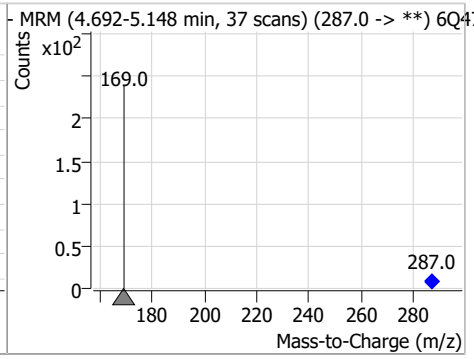




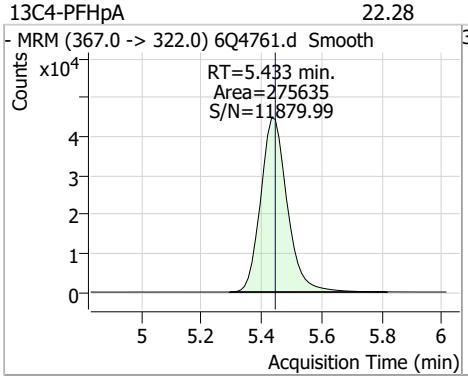
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-HFPO-DA	19.98	4.84	-0.01	5310				

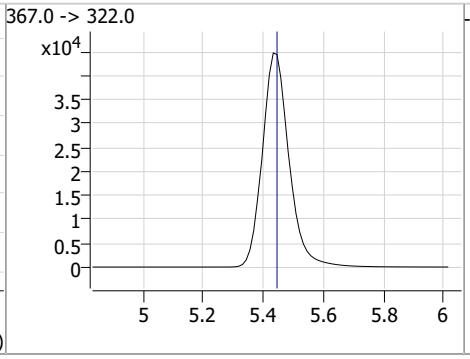


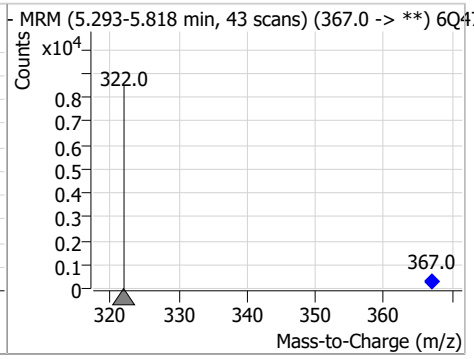




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C4-PFHpA	22.28	5.43	-0.01	275635				

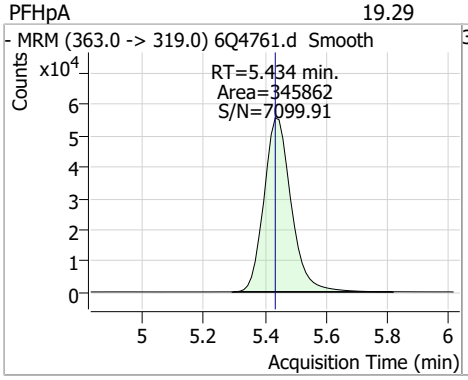


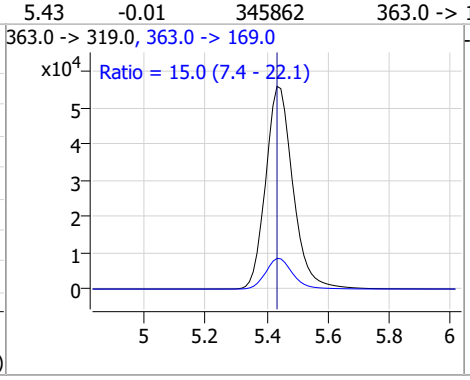


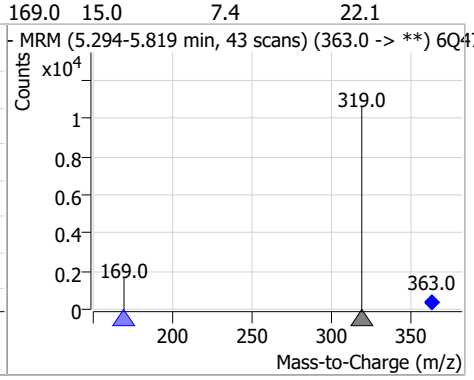


Perfluorinated Compounds by LC/MS/MS

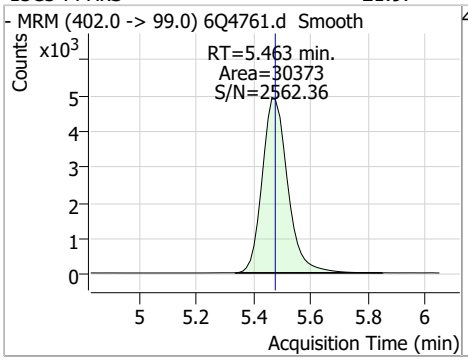
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpA	19.29	5.43	-0.01	345862	363.0 -> 169.0	15.0	7.4	22.1

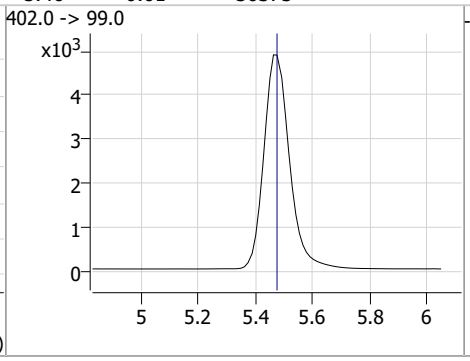


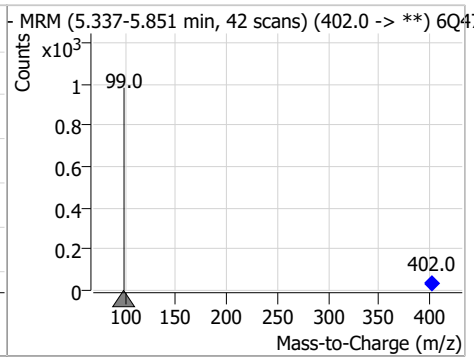




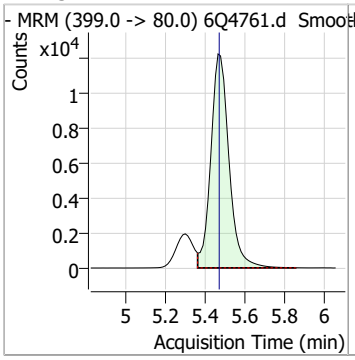
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C3-PFHxS	21.97	5.46	-0.01	30373				

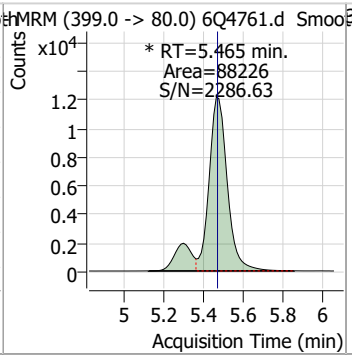


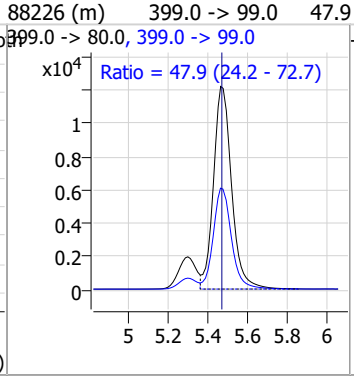


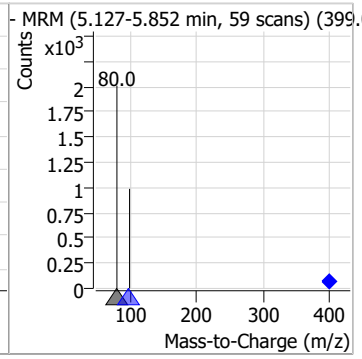


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHxS	20.27	5.47	-0.01	88226 (m)	399.0 -> 99.0	47.9	24.2	72.7

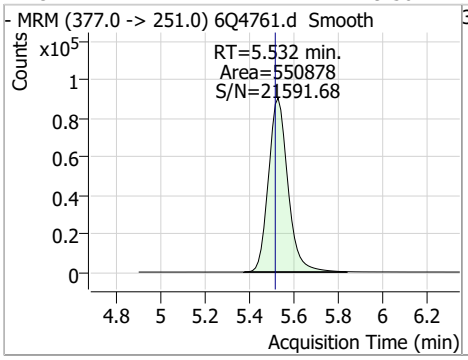


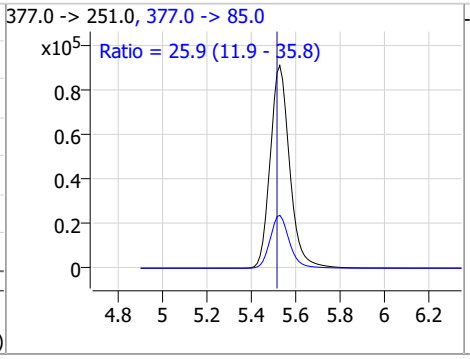


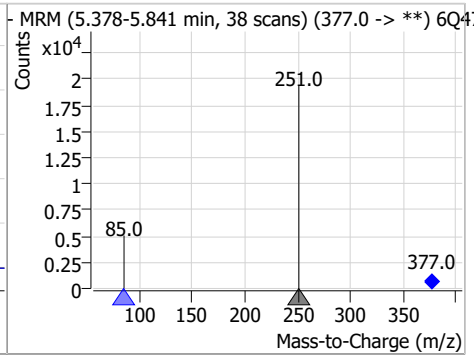




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
ADONA	19.56	5.53	0.00	550878	377.0 -> 85.0	25.9	11.9	35.8

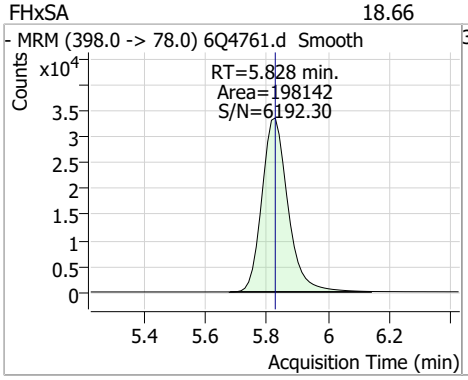


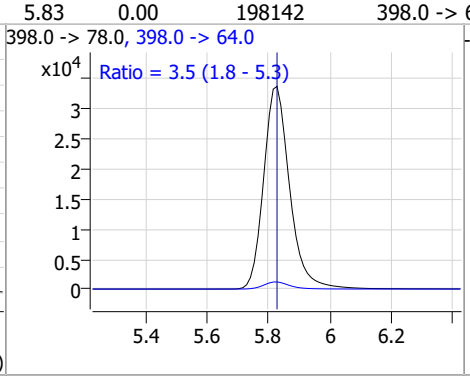


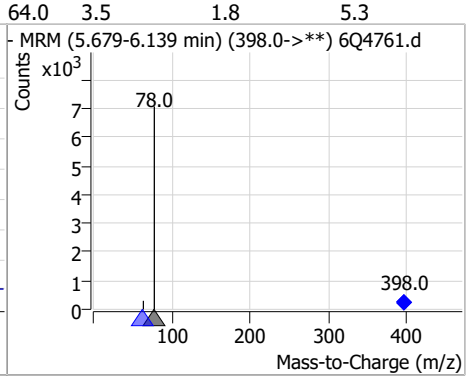


Perfluorinated Compounds by LC/MS/MS

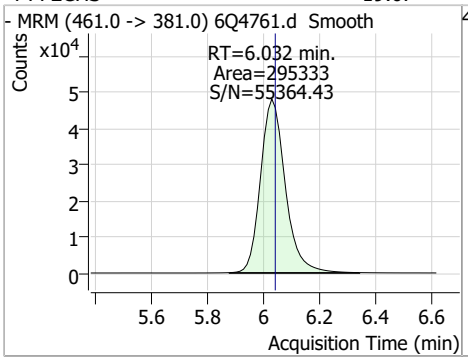
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FHxSA	18.66	5.83	0.00	198142	398.0 -> 64.0	3.5	1.8	5.3

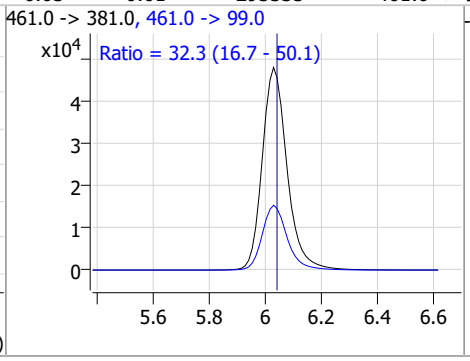


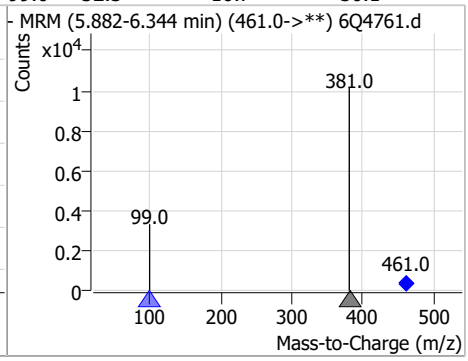




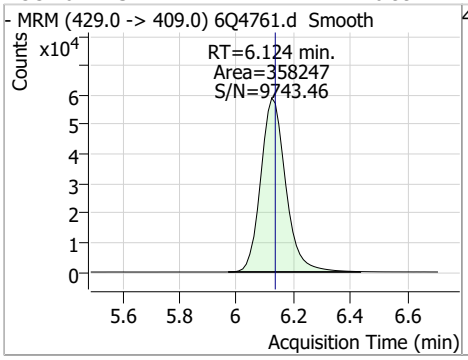
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
4-PFECHS	19.07	6.03	-0.01	295333	461.0 -> 99.0	32.3	16.7	50.1

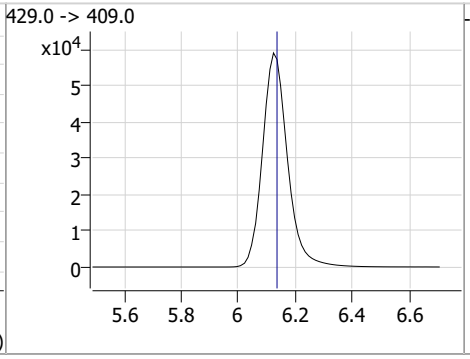


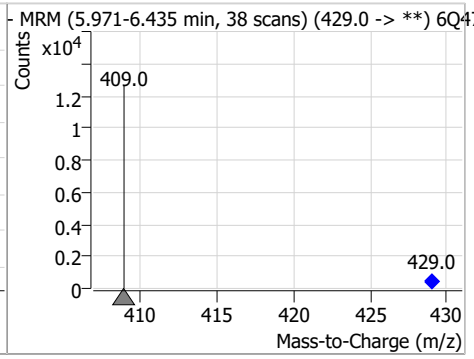




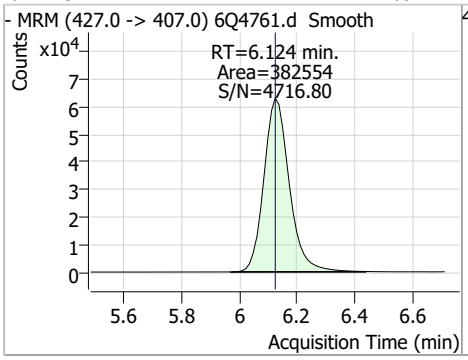
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-6:2FTS	20.99	6.12	-0.01	358247				

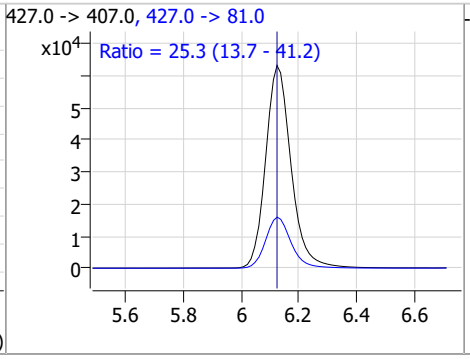


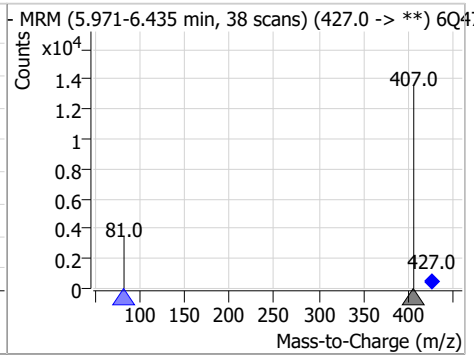




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
6:2FTS	21.09	6.12	-0.01	382554	427.0 -> 81.0	25.3	13.7	41.2

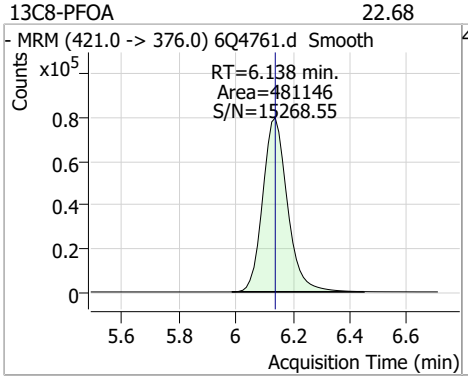


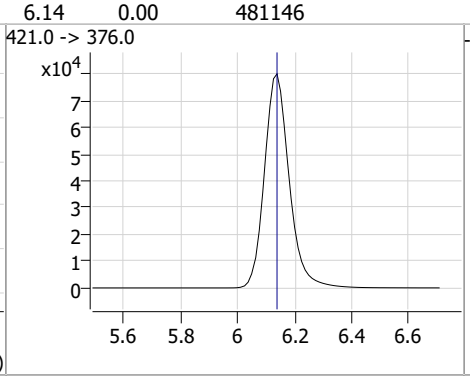


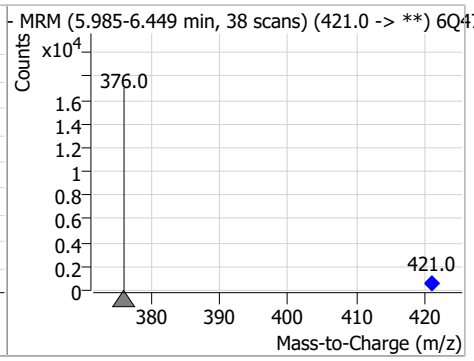


Perfluorinated Compounds by LC/MS/MS

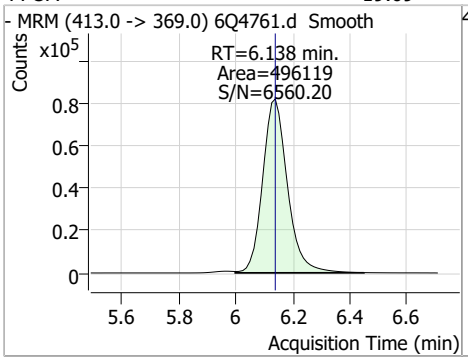
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOA	22.68	6.14	0.00	481146				

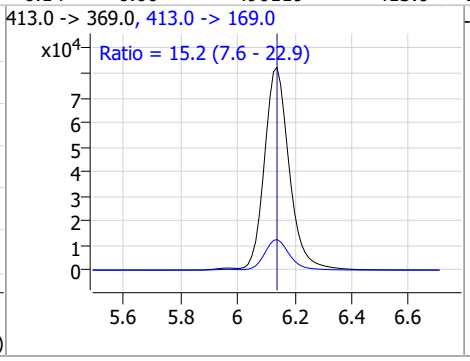


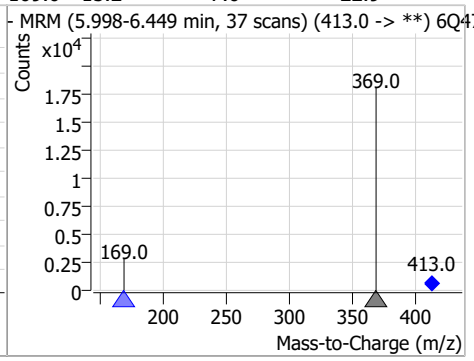




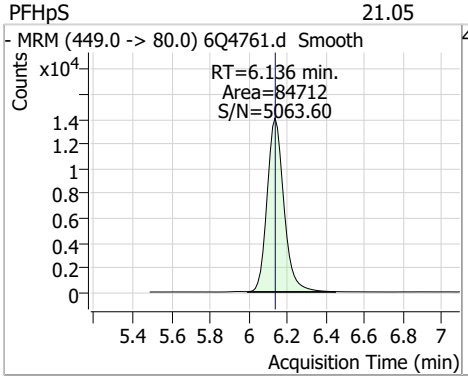
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOA	19.09	6.14	0.00	496119	413.0 -> 169.0	15.2	7.6	22.9

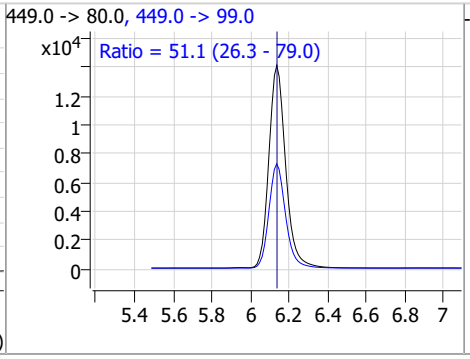


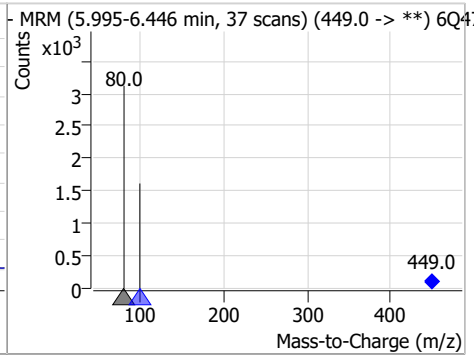




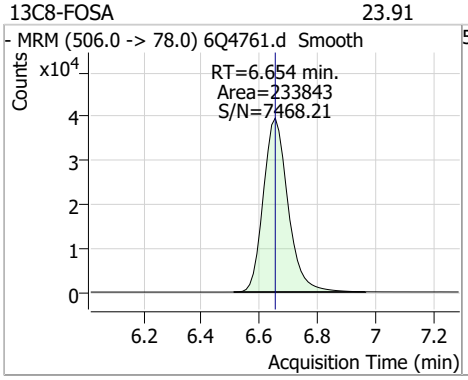
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFHpS	21.05	6.14	-0.01	84712	449.0 -> 99.0	51.1	26.3	79.0

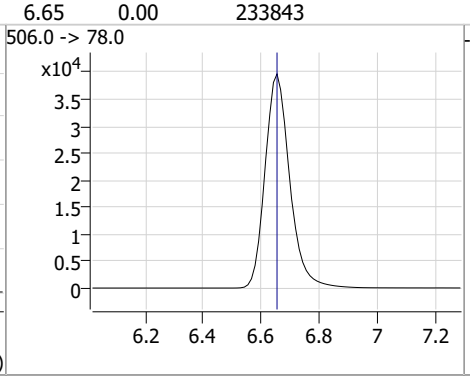


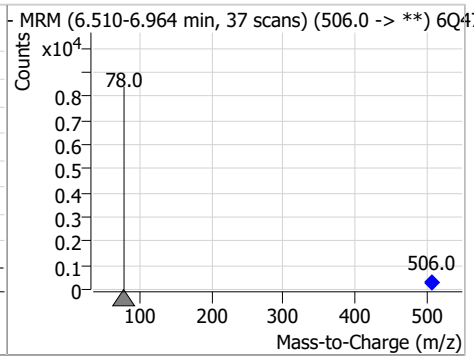




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-FOSA	23.91	6.65	0.00	233843				

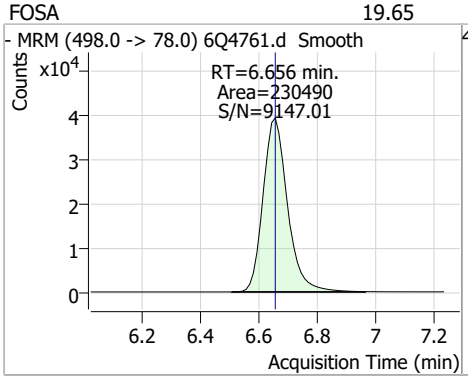


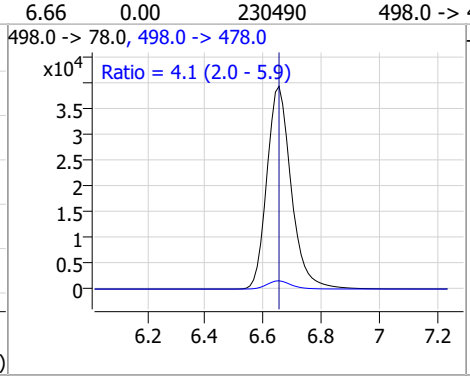


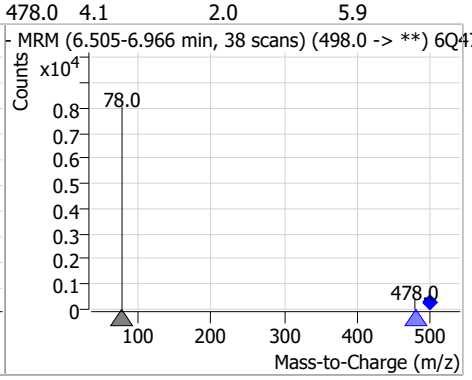


Perfluorinated Compounds by LC/MS/MS

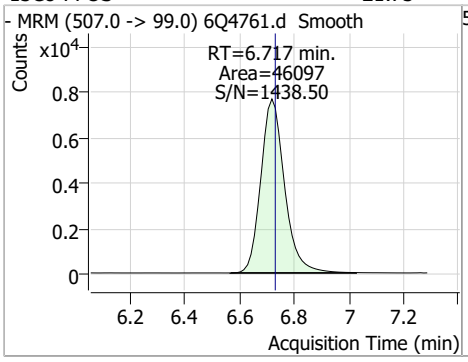
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
FOSA	19.65	6.66	0.00	230490	498.0 -> 478.0	4.1	2.0	5.9

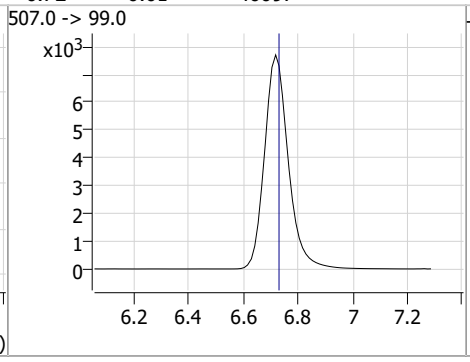


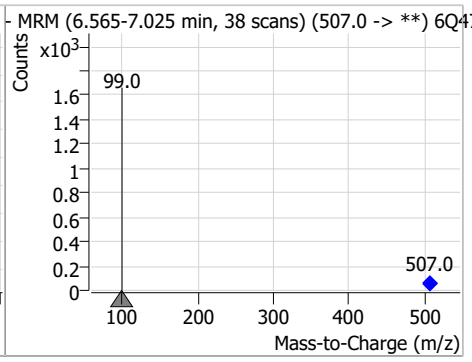




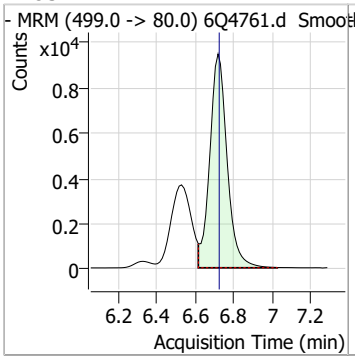
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C8-PFOS	21.73	6.72	-0.01	46097				

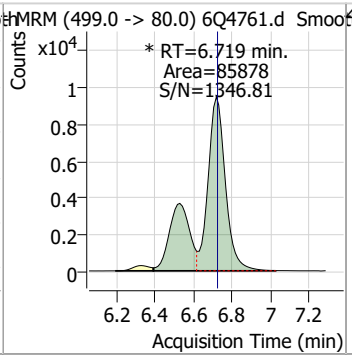


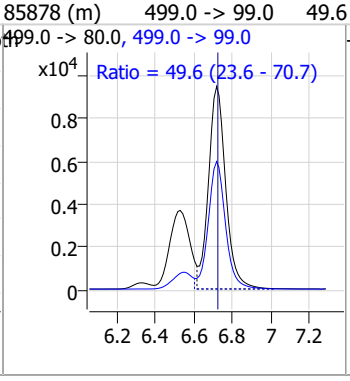


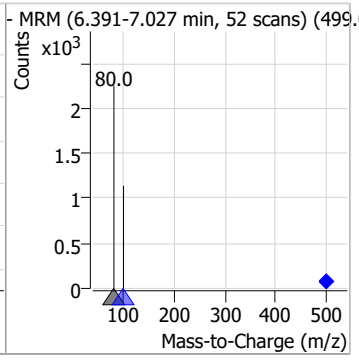


Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFOS	20.10	6.72	-0.01	85878 (m)	499.0 -> 99.0	49.6	23.6	70.7

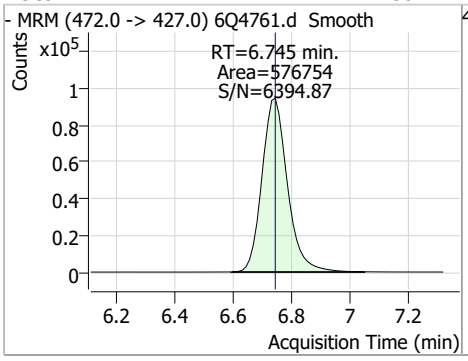


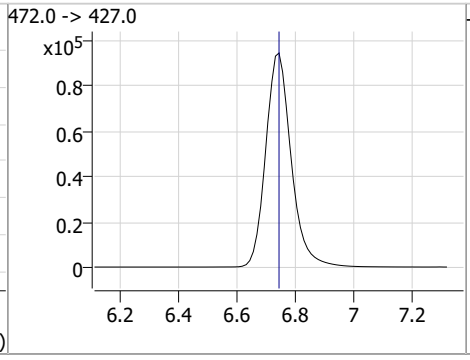


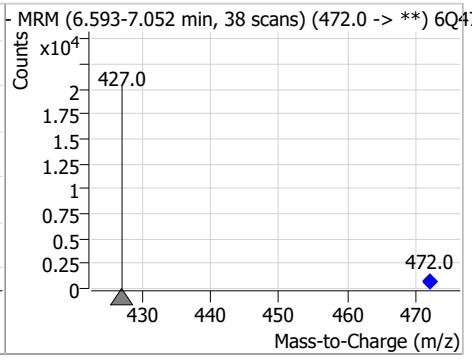




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C9-PFNA	22.38	6.74	0.00	576754				

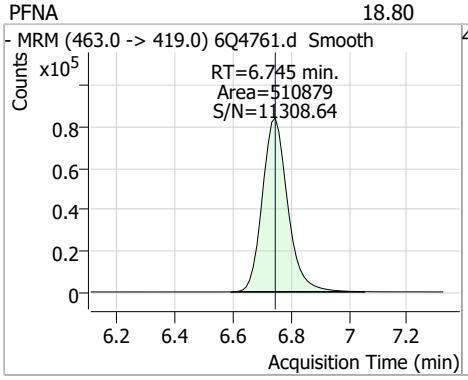


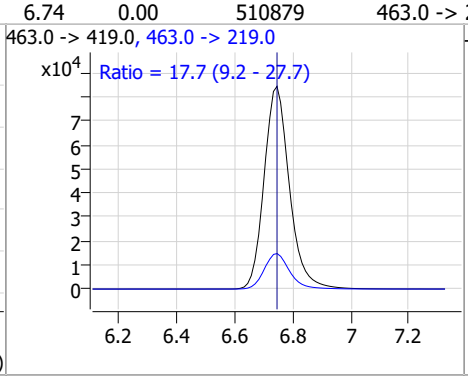


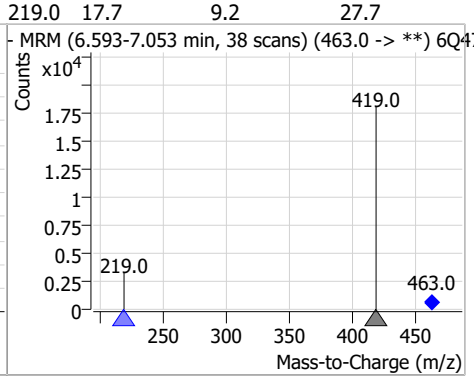


Perfluorinated Compounds by LC/MS/MS

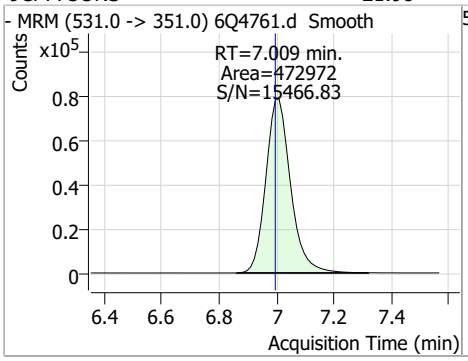
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNA	18.80	6.74	0.00	510879	463.0 -> 219.0	17.7	9.2	27.7

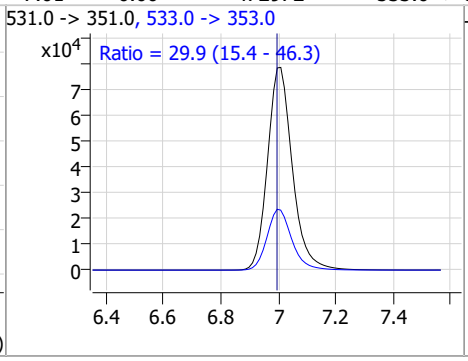


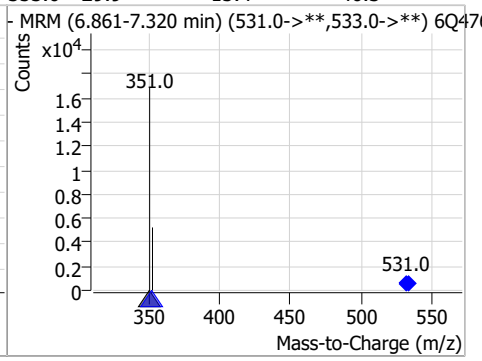




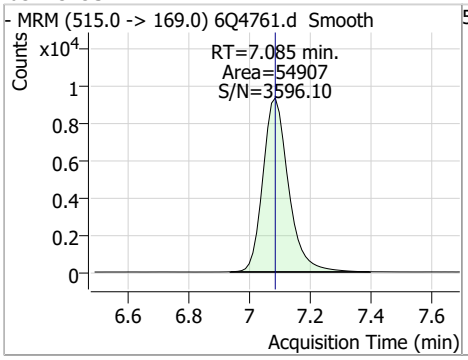
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
9Cl-PF3ONS	21.98	7.01	0.00	472972	533.0 -> 353.0	29.9	15.4	46.3

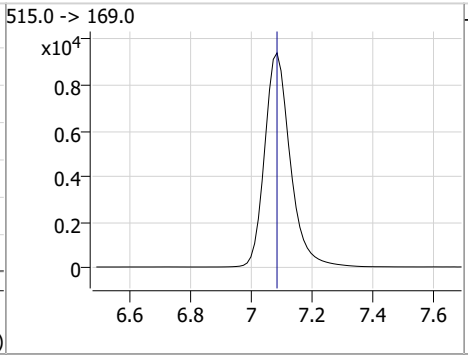


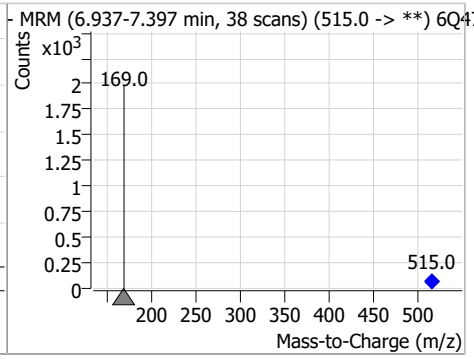




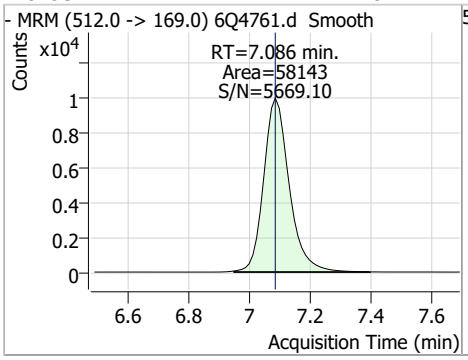
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSA	24.27	7.08	0.00	54907				

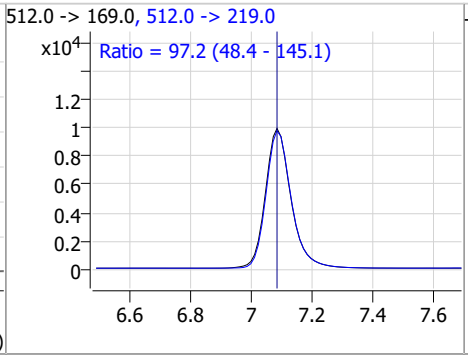


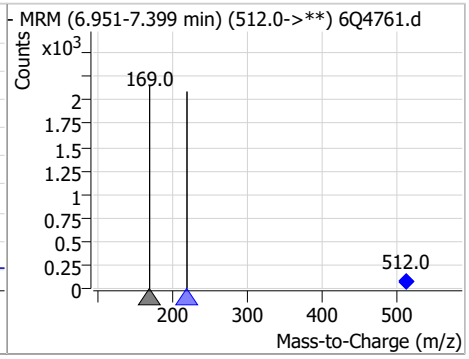




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSA	19.41	7.09	0.00	58143	512.0 -> 219.0	97.2	48.4	145.1

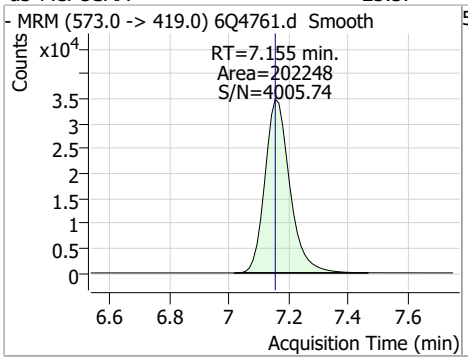


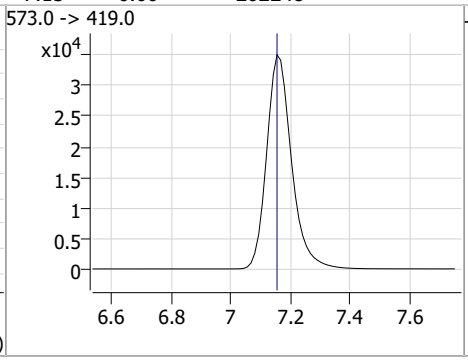


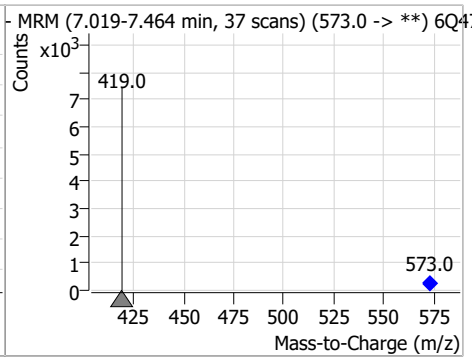


Perfluorinated Compounds by LC/MS/MS

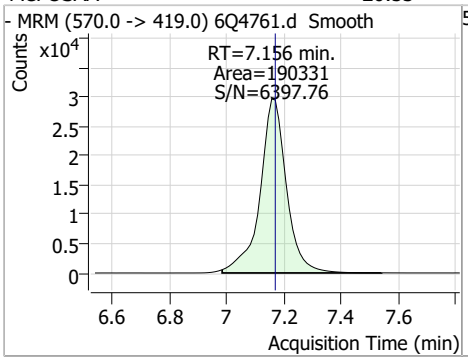
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d3-MeFOSAA	23.37	7.15	0.00	202248				

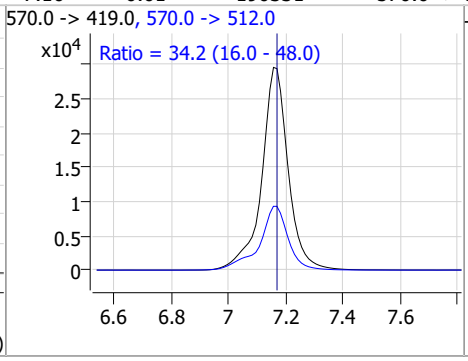


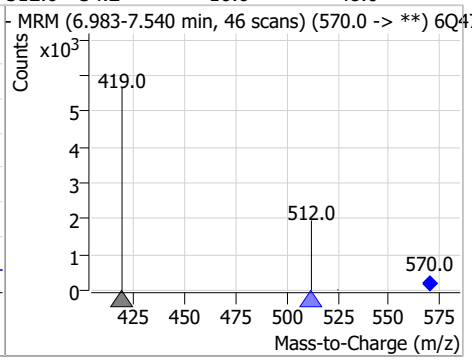




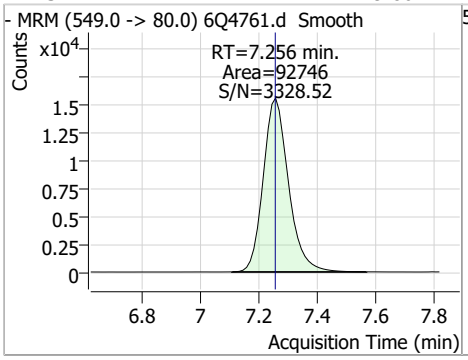
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
MeFOSAA	20.53	7.16	-0.01	190331	570.0 -> 512.0	34.2	16.0	48.0

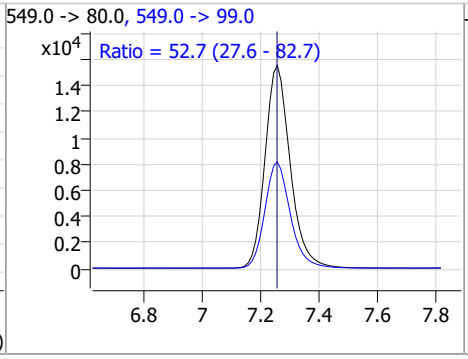


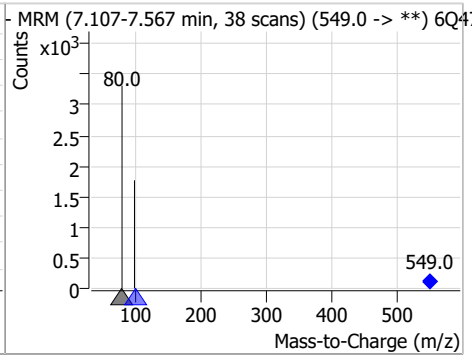




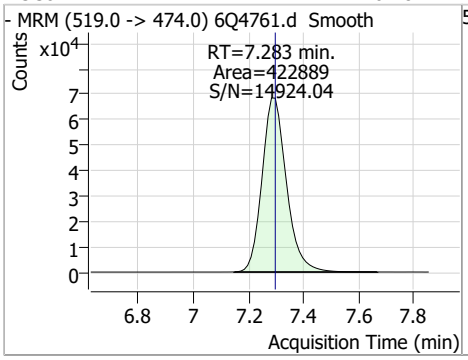
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFNS	19.80	7.26	-0.01	92746	549.0 -> 99.0	52.7	27.6	82.7

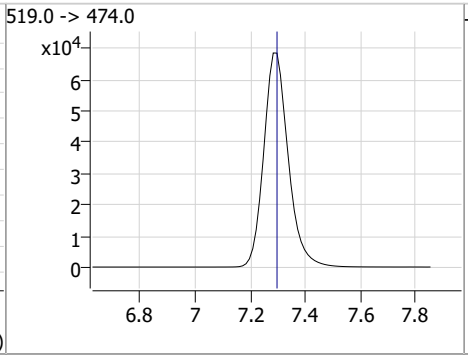


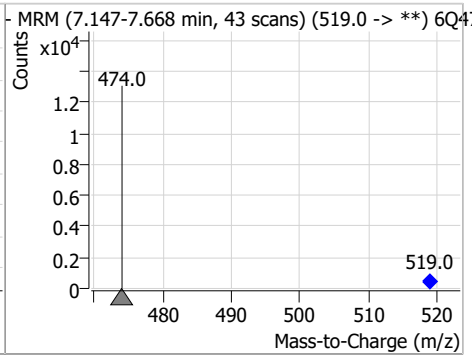




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C6-PFDA	20.78	7.28	-0.01	422889				

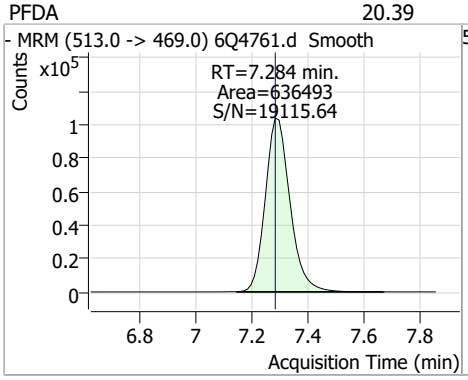


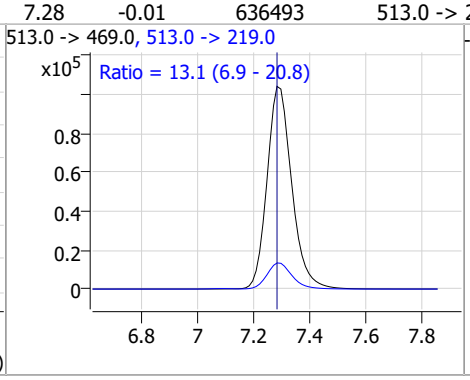


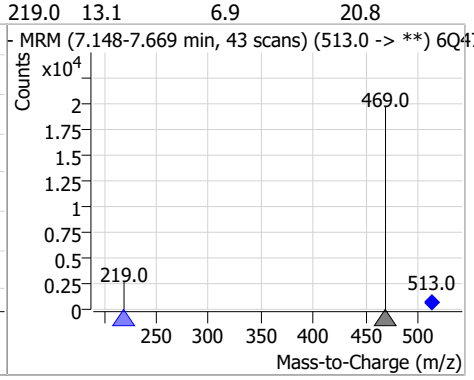


Perfluorinated Compounds by LC/MS/MS

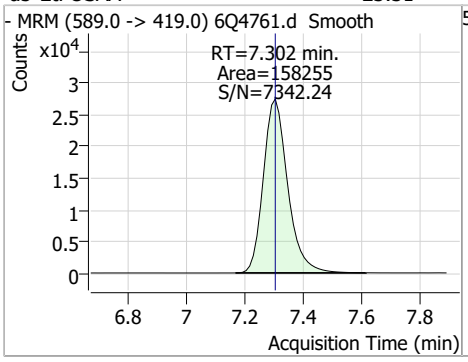
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDA	20.39	7.28	-0.01	636493	513.0 -> 219.0	13.1	6.9	20.8

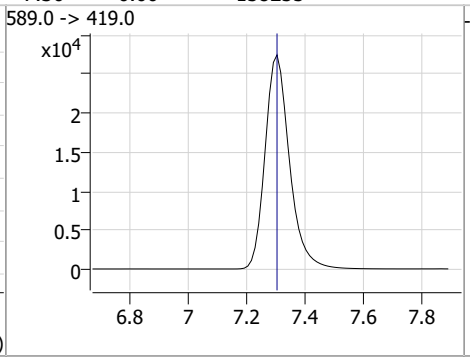


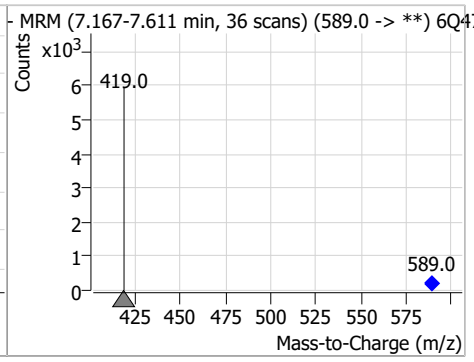




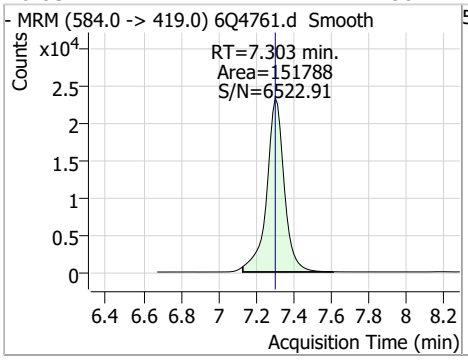
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
d5-EtFOSAA	23.31	7.30	0.00	158255				

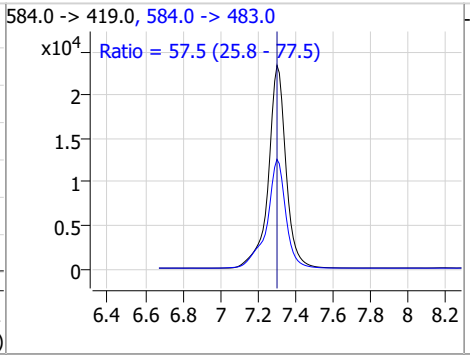


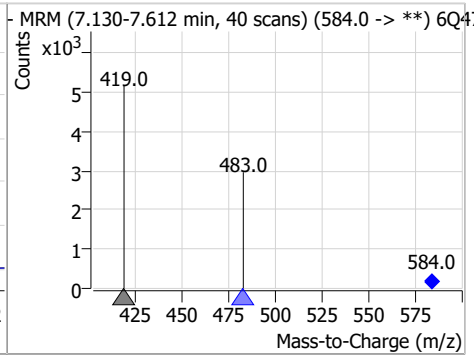




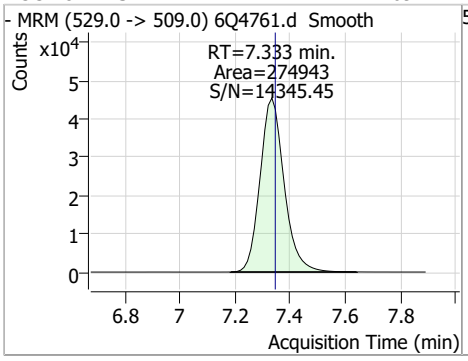
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
EtFOSAA	17.98	7.30	0.00	151788	584.0 -> 483.0	57.5	25.8	77.5

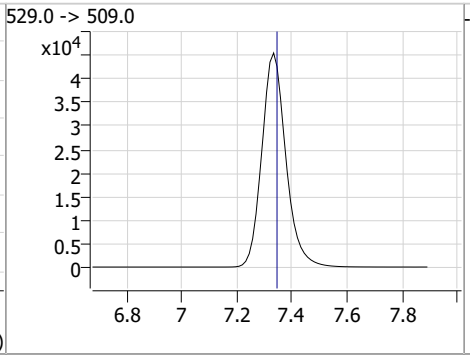


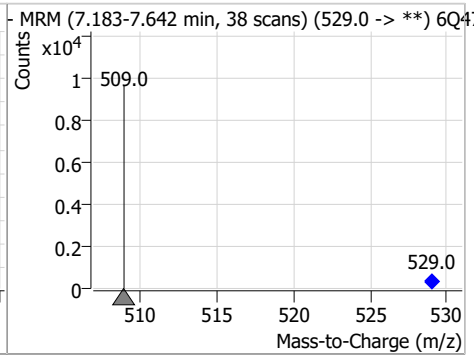




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-8:2FTS	21.09	7.33	-0.01	274943				

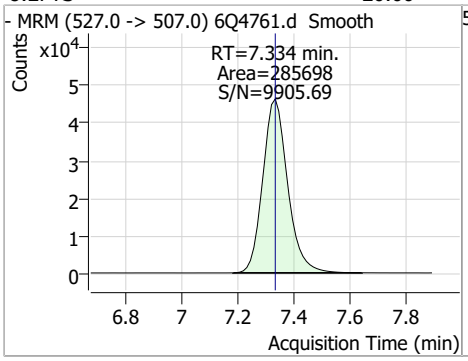


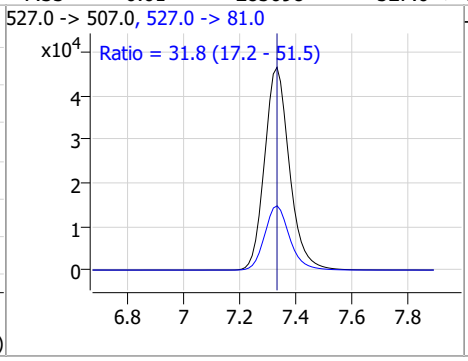


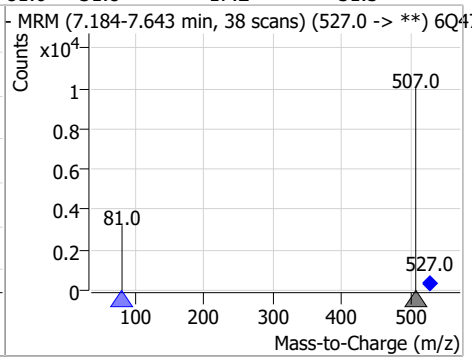


Perfluorinated Compounds by LC/MS/MS

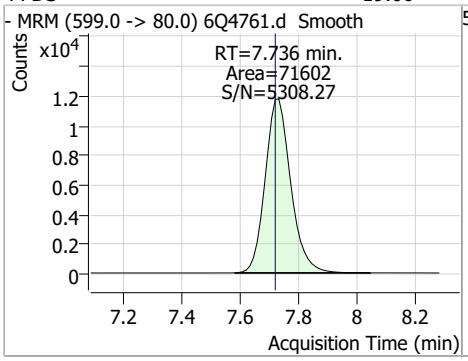
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
8:2FTS	20.66	7.33	-0.01	285698	527.0 -> 81.0	31.8	17.2	51.5

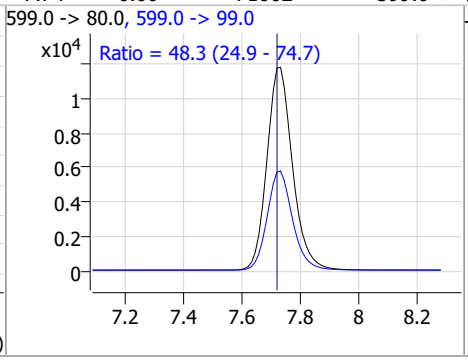


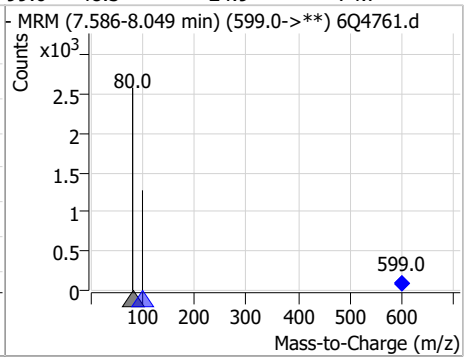




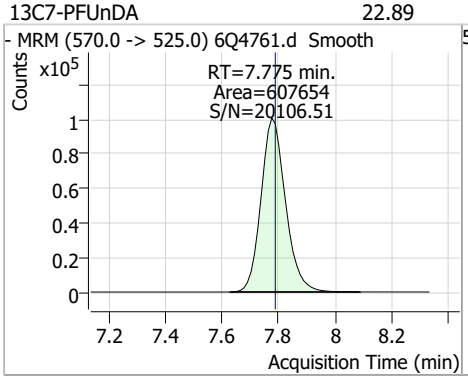
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDS	19.00	7.74	0.00	71602	599.0 -> 99.0	48.3	24.9	74.7

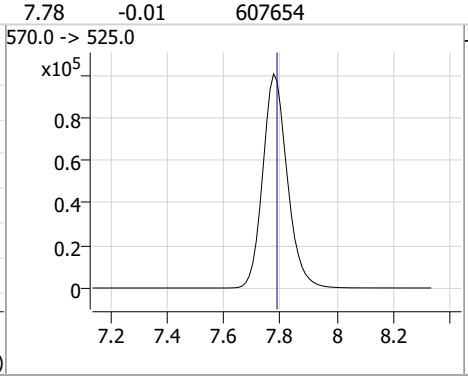


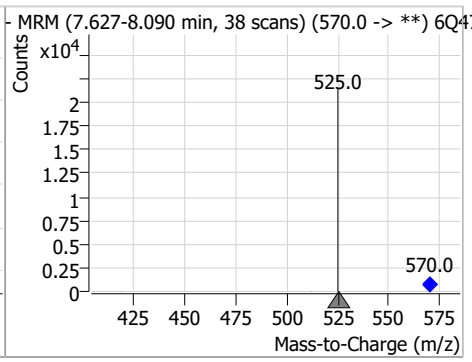




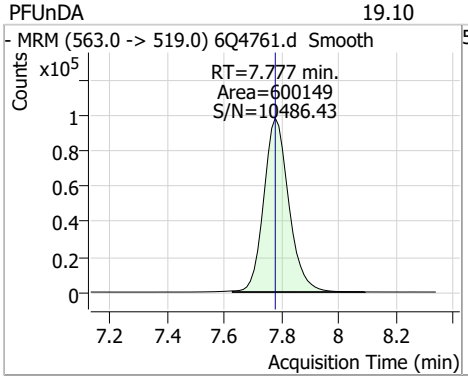
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C7-PFUnDA	22.89	7.78	-0.01	607654				

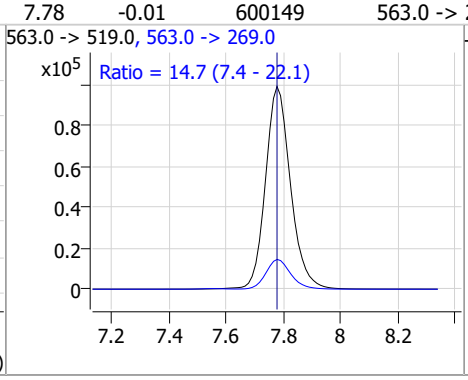


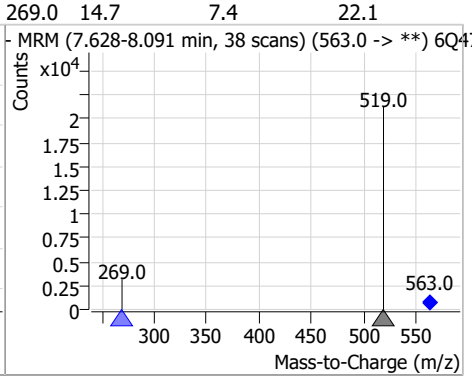




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFUnDA	19.10	7.78	-0.01	600149	563.0 -> 269.0	14.7	7.4	22.1

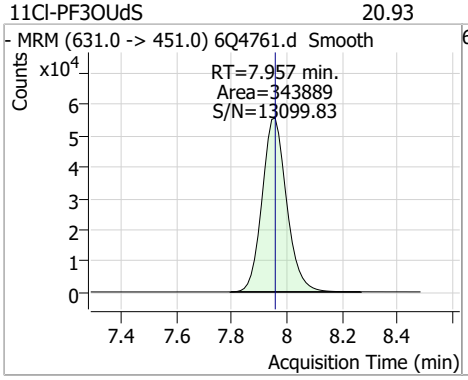


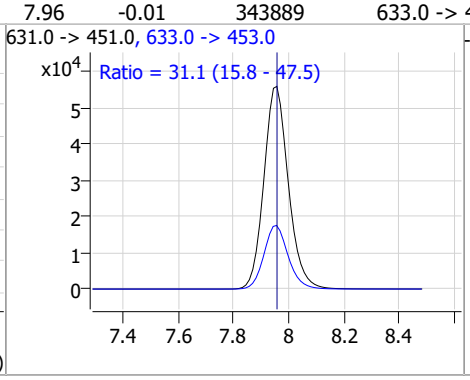


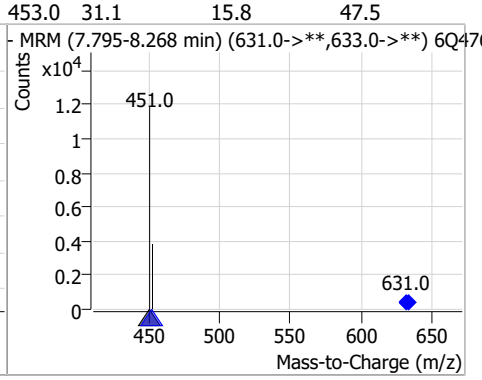


Perfluorinated Compounds by LC/MS/MS

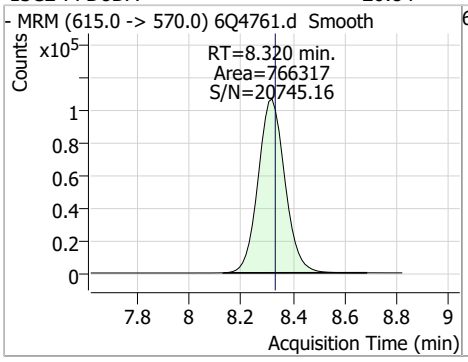
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
11Cl-PF3OUdS	20.93	7.96	-0.01	343889	633.0 -> 453.0	31.1	15.8	47.5

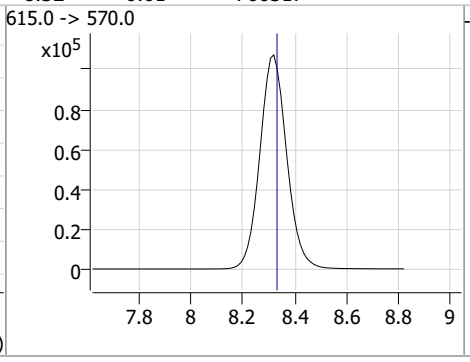


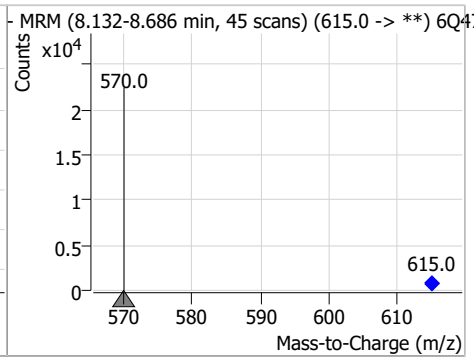




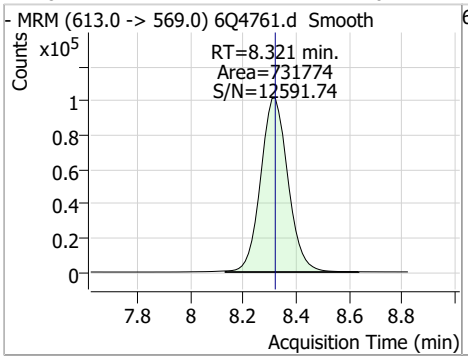
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFDoDA	20.84	8.32	-0.01	766317				

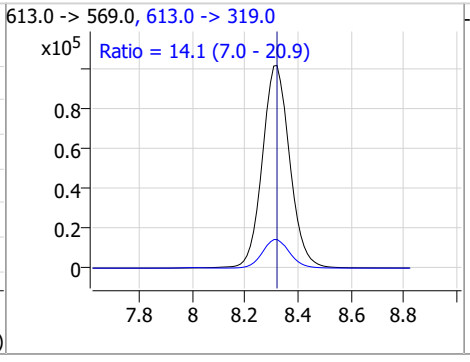


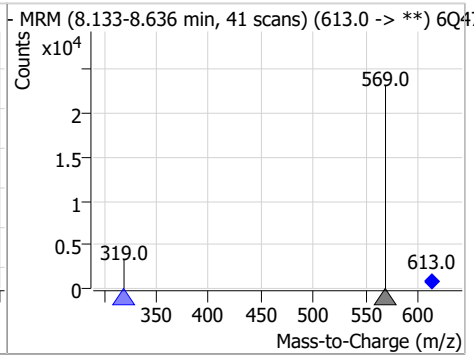




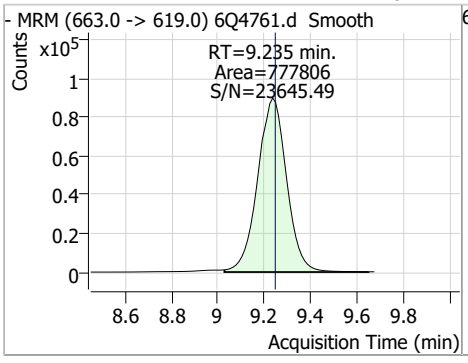
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFDoDA	20.47	8.32	-0.01	731774	613.0 -> 319.0	14.1	7.0	20.9

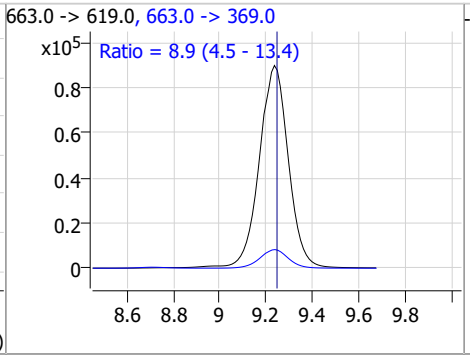


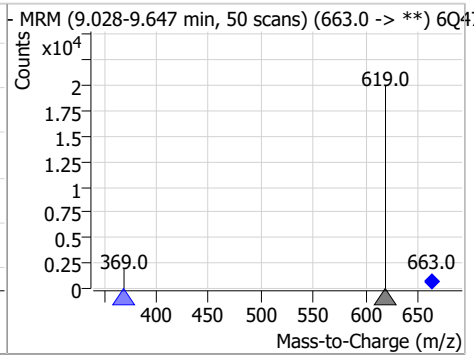




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTrDA	21.02	9.24	-0.02	777806	663.0 -> 369.0	8.9	4.5	13.4

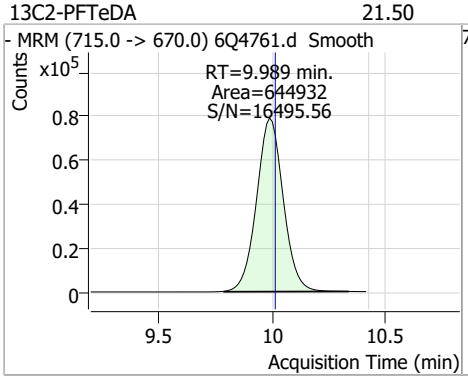


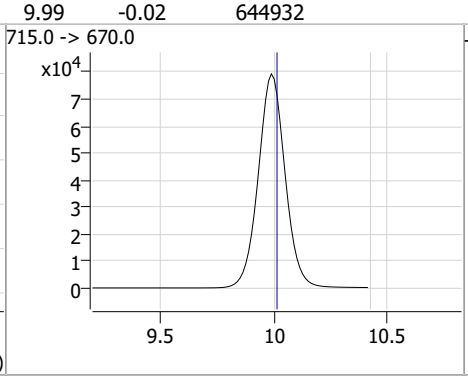


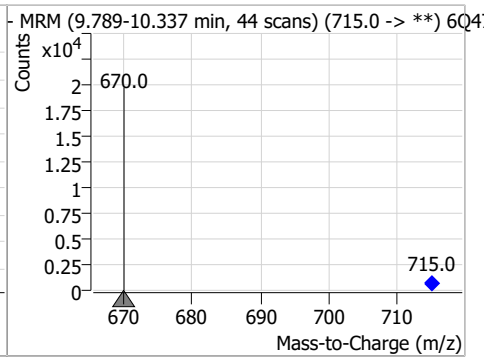


Perfluorinated Compounds by LC/MS/MS

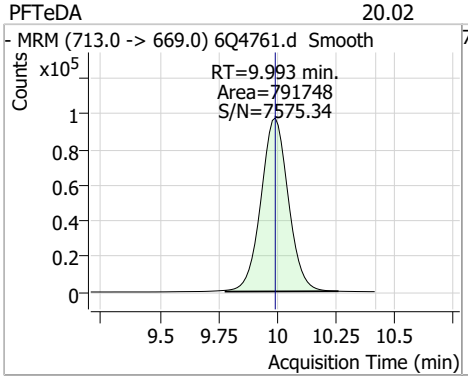
Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
13C2-PFTeDA	21.50	9.99	-0.02	644932				

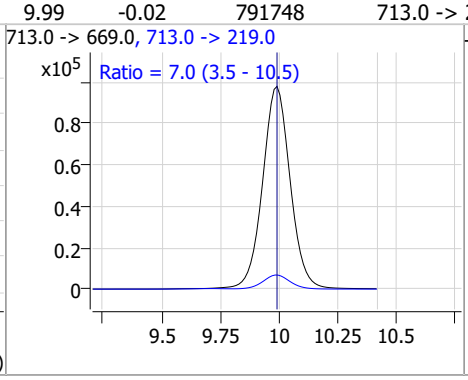


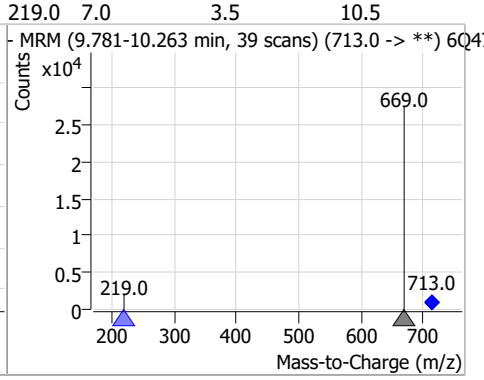




Compound	Conc.	RT	Dev(Min)	Resp.	QIon	QRatio	Min.	Max.
PFTeDA	20.02	9.99	-0.02	791748	713.0 -> 219.0	7.0	3.5	10.5







Manual Integration Approval Summary

Sample Number: S6Q86-ECC85
Lab FileID: 6Q4761.D
Injection Time: 09/16/22 07:07
Method: EPA 537M QSM5.3 B-15
Analyst approved: 09/16/22 15:31 James Boone
Supervisor approved: 09/16/22 17:19 Norman Farmer

Parameter	CAS	Sig#	R.T. (min.)	Reason
Perfluorohexanesulfonic acid	355-46-4		5.46	Split peak
Perfluorooctanesulfonic acid	1763-23-1		6.72	Split peak

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LCMS3-3Q ANALYSIS LOG

DATE:	09/13/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS3-3Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091322_S3Q898
CAL DATE:	09/13/22
ANALYST:	M.Valls
RUN BATCH:	S3Q898

ELUENT A LOT #:	222737 W/0.1% AA 194003
ELUENT B LOT #:	221020 W/0.1% AA 194003
IC/CC STD LOT #:	LCMS1945-A
ICV STD LOT #:	10947 PFOA:LCMS1947
ISTD/ID STD LOT #:	LCMS1948-G

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	3q65665.d	P1-B9	Window check	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
2	3q65666.d	P1-B9	Window check	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
3	3q65667.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
4	3q65668.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
5	3q65669.d	P1-A9	High Std	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
6	3q65670.d	P1-A1	IBLK	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
7	3q65671.d	P1-B3	RT	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
8	3q65672.d	P1-A7	cc894-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	et high, re-calibrate.
9	3q65673.d	P1-A3	cc894-1.0LL	537_ID.m	QC	5/500	op92590,S3Q898,250,,,1,1,water	✓
10	3q65674.d	P6-A1	op92762-bs	537_ID.m	Sample		op92762,S3Q898,250,,,1,1,water	✓
11	3q65675.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
12	3q65676.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
13	3q65677.d	P1-A1	ic898-0	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	✓
14	3q65678.d	P1-A2	ic898-0.5	537_ID.m	Calibration	2.5/500	op92762,S3Q898,260,,,1,1,water	✓
15	3q65679.d	P1-A3	ic898-1	537_ID.m	Calibration	5/500	op92762,S3Q898,260,,,1,1,water	✓
16	3q65680.d	P1-A4	ic898-2	537_ID.m	Calibration	10/500	op92762,S3Q898,260,,,1,1,water	✓
17	3q65681.d	P1-A5	ic898-5	537_ID.m	Calibration	25/500	op92762,S3Q898,260,,,1,1,water	✓
18	3q65682.d	P1-A6	ic898-10	537_ID.m	Calibration	50/500	op92762,S3Q898,260,,,1,1,water	✓
19	3q65683.d	P1-A7	icc898-20	537_ID.m	Calibration	100/500	op92762,S3Q898,260,,,1,1,water	✓
20	3q65684.d	P1-A8	ic898-50	537_ID.m	Calibration	250/500	op92762,S3Q898,260,,,1,1,water	✓
21	3q65685.d	P1-A9	ic898-100	537_ID.m	Calibration	500	op92762,S3Q898,260,,,1,1,water	✓
22	3q65686.d	P1-A1	IBLK	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
23	3q65687.d	P1-B1	icv898-20	537_ID.m	QC	10/500	op92590,S3Q898,250,,,1,1,water	✓
24	3q65688.d	P1-B2	icv898-20	537_ID.m	QC	10/500	op92590,S3Q898,250,,,1,1,water	✓
25	3q65689.d	P1-B3	RT	537_ID.m	Sample	100/500	op92590,S3Q898,250,,,1,1,water	✓
26	3q65690.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
27	3q65691.d	P1-A3	cc898-1.0LL	537_ID.m	QC	5/500	op92590,S3Q898,250,,,1,1,water	✓
28	3q65692.d	P6-A1	op92762-bs	537_ID.m	Sample		op92762,S3Q898,250,,,1,1,water	Pass
29	3q65693.d	P6-A2	op92762-mb	537_ID.m	Sample		op92762,S3Q898,250,,,1,1,water	ND
30	3q65694.d	P6-A3	fa98246-1	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	rr10x, 40x, 100x
31	3q65695.d	P6-A4	fa98246-2	537_ID.m	Sample		op92762,S3Q898,265,,,1,1,water	rr1x co + 10x
32	3q65696.d	P6-A5	fa98246-3	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	rr1x for verification + 5x low surr.

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LCMS3-3Q ANALYSIS LOG

33	3q65697.d	P6-A6	fa98247-1	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	fosa qual out, rr10x + 40x
34	3q65698.d	P6-A7	fa98247-2	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	rr10x +40x
35	3q65699.d	P6-A8	fa98248-1	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	fosa qual out, rr10x + 200x
36	3q65700.d	P6-A9	fa98248-2	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	fosa qual out, rr1x co, 10x + 500x
37	3q65701.d	P6-B1	fa98280-1	537_ID.m	Sample		op92762,S3Q898,255,,,1,1,water	rr1x co
38	3q65702.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
39	3q65703.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
40	3q65704.d	P6-B2	fa98280-2	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	rr10x mefosa
41	3q65705.d	P6-B3	fa98280-3	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	✓
42	3q65706.d	P6-B4	fa98281-1	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	✓
43	3q65707.d	P6-B5	op92762-ms	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	✓
44	3q65708.d	P6-B6	op92762-msd	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	✓
45	3q65709.d	P6-B7	fa98281-2	537_ID.m	Sample		op92762,S3Q898,260,,,1,1,water	✓
46	3q65710.d	P6-B8	fa98281-3	537_ID.m	Sample		op92762,S3Q898,270,,,1,1,water	rr5x mefosa low
47	3q65711.d	P6-B9	fa98286-41	537_ID.m	Sample		op92762,S3Q898,125,,,1,1,water	rr5x fosa low
48	3q65712.d	P6-C1	fa98286-42	537_ID.m	Sample		op92762,S3Q898,120,,,1,1,water	rr5x teda, fosa low
49	3q65713.d	P6-C2	fa98286-43	537_ID.m	Sample		op92762,S3Q898,110,,,1,1,water	rr5x low surr
50	3q65714.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
51	3q65715.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
52	3q65716.d	P6-C3	fa98286-44	537_ID.m	Sample		op92762,S3Q898,110,,,1,1,water	rr5x low surr
53	3q65717.d	P6-C4	fa98286-45	537_ID.m	Sample		op92762,S3Q898,110,,,1,1,water	✓
54	3q65718.d	P6-C5	fa98286-46	537_ID.m	Sample		op92762,S3Q898,120,,,1,1,water	rr5x fosa low
55	3q65719.d	P6-C6	fa98286-47	537_ID.m	Sample		op92762,S3Q898,110,,,1,1,water	rr5x low surr
56	3q65720.d	P1-C1	DA48737-1	537_ID.m	Sample	10/400	op92966,S3Q898,270,,,1,40,water	report 100x 6:2 high
57	3q65721.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
58	3q65722.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
59	3q65723.d	P1-A3	cc898-1.0LL	537_ID.m	QC	5/500	op92590,S3Q898,250,,,1,1,water	✓
60	3q65724.d	P6-C7	op92987-bs	537_ID.m	Sample		op92987,S3Q898,250,,,1,1,water	Pass
61	3q65725.d	P6-C8	op92987-mb	537_ID.m	Sample		op92987,S3Q898,250,,,1,1,water	ND
62	3q65726.d	P6-C9	fa98720-3	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
63	3q65727.d	P6-D1	fa98720-7	537_ID.m	Sample		op92987,S3Q898,260,,,1,1,water	surr fail high. Rr1x
64	3q65728.d	P6-D2	fa98720-10	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	surr fail high. Rr1x
65	3q65729.d	P6-D3	fa98720-15	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
66	3q65730.d	P6-D4	fa98720-16	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	genex high, rr1x
67	3q65731.d	P6-D5	fa98720-20	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
68	3q65732.d	P6-D6	fa98720-23	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
69	3q65733.d	P6-D7	fa98720-25	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
70	3q65734.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
71	3q65735.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓
72	3q65736.d	P6-D8	fa98720-26	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓ + rr5x

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LCMS3-3Q ANALYSIS LOG

73	3q65737.d	P6-D9	fa98720-27	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	rr1x co + 2x
74	3q65738.d	P6-E1	fa98720-28	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	1x co + 5x
75	3q65739.d	P6-E2	fa98720-35	537_ID.m	Sample		op92987,S3Q898,255,,,1,1,water	✓
76	3q65740.d	P6-E3	fa98720-36	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
77	3q65741.d	P6-E4	fa98720-37	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
78	3q65742.d	P6-E5	fa98720-38	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓ + rr10x
79	3q65743.d	P6-E6	fa98720-39	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	rr1x co
80	3q65744.d	P6-E7	fa98720-40	537_ID.m	Sample		op92987,S3Q898,270,,,1,1,water	✓
81	3q65745.d	P1-A7	ecc898-20	537_ID.m	QC	100/500	op92590,S3Q898,250,,,1,1,water	✓
82	3q65746.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q898,250,,,1,1,water	✓

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LCMS3-3Q ANALYSIS LOG

DATE:	09/15/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS3-3Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091522_S3Q900
CAL DATE:	09/15/22
ANALYST:	M.Valls
RUN BATCH:	S3Q900

ELUENT A LOT #:	222742 W/0.1% AA 194003
ELUENT B LOT #:	221020 W/0.1% AA 194003
IC/CC STD LOT #:	LCMS1954-A
ICV STD LOT #:	11040 PFOA:LCMS1947
ISTD/ID STD LOT #:	LCMS1948-G

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	3q65803.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
2	3q65804.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
3	3q65805.d	P1-A9	High Std	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
4	3q65806.d	P1-A1	IBLK	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
5	3q65807.d	P1-B3	RT	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
6	3q65808.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
7	3q65809.d	P1-A3	cc898-1.0LL	537_ID.m	QC	5/500	op92823,S3Q900,250,,,1,1,water	✓
8	3q65810.d	P2-C1	fa98286-41	537_ID.m	Sample	100/500	op92762,S3Q900,125,,,1,5,water	rr, bracket ccv fail low
9	3q65811.d	P2-C2	fa98286-42	537_ID.m	Sample	100/500	op92762,S3Q900,120,,,1,5,water	↓
10	3q65812.d	P2-C3	fa98286-43	537_ID.m	Sample	100/500	op92762,S3Q900,110,,,1,5,water	↓
11	3q65813.d	P2-C4	fa98286-44	537_ID.m	Sample	100/500	op92762,S3Q900,110,,,1,5,water	↓
12	3q65814.d	P2-C5	fa98286-46	537_ID.m	Sample	100/500	op92762,S3Q900,120,,,1,5,water	↓
13	3q65815.d	P2-C6	fa98286-47	537_ID.m	Sample		op92762,S3Q900,110,,,1,1,water	↓
14	3q65816.d	P2-C7	fa98720-7	537_ID.m	Sample		op92987A,S3Q900,260,,,1,1,water	↓
15	3q65817.d	P2-C8	fa98720-10	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	↓
16	3q65818.d	P2-C9	fa98720-16	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	↓
17	3q65819.d	P2-D1	fa98720-26	537_ID.m	Sample		op92987A,S3Q900,270,,,1,5,water	↓
18	3q65820.d	P1-A7	cc898-20	537_ID.m	QC	100/500	op92590,S3Q900,250,,,1,1,water	surr fail high. Re-calibrate.
19	3q65821.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q900,250,,,1,1,water	✓
20	3q65822.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q900,250,,,1,1,water	✓
21	3q65823.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
22	3q65824.d	P1-A1	ic900-0	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
23	3q65825.d	P1-A2	ic900-0.5	537_ID.m	Calibration	2.5/500	op92823,S3Q900,250,,,1,1,water	✓
24	3q65826.d	P1-A3	ic900-1	537_ID.m	Calibration	5/500	op92823,S3Q900,250,,,1,1,water	✓
25	3q65827.d	P1-A4	ic900-2	537_ID.m	Calibration	10/500	op92823,S3Q900,250,,,1,1,water	✓
26	3q65828.d	P1-A5	ic900-5	537_ID.m	Calibration	25/500	op92823,S3Q900,250,,,1,1,water	✓
27	3q65829.d	P1-A6	ic900-10	537_ID.m	Calibration	50/500	op92823,S3Q900,250,,,1,1,water	✓
28	3q65830.d	P1-A7	icc900-20	537_ID.m	Calibration	100/500	op92823,S3Q900,250,,,1,1,water	✓
29	3q65831.d	P1-A8	ic900-50	537_ID.m	Calibration	250/500	op92823,S3Q900,250,,,1,1,water	✓
30	3q65832.d	P1-A9	ic900-100	537_ID.m	Calibration	500	op92823,S3Q900,250,,,1,1,water	✓
31	3q65833.d	P1-A1	IBLK	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
32	3q65834.d	P1-B1	icv900-20	537_ID.m	QC	10/500	op92823,S3Q900,250,,,1,1,water	✓

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LCMS3-3Q ANALYSIS LOG

33	3q65835.d	P1-B2	icv900-20	537_ID.m	QC	10/500	op92823,S3Q900,250,,,1,1,water	✓mefosa: 11202
34	3q65836.d	P1-B3	RT	537_ID.m	Sample	100/500	op92823,S3Q900,250,,,1,1,water	✓
35	3q65837.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
36	3q65838.d	P1-A3	cc900-1.0LL	537_ID.m	QC	5/500	op92823,S3Q900,250,,,1,1,water	✓
37	3q65839.d	P2-C1	fa98286-41	537_ID.m	Sample	100/500	op92762,S3Q900,125,,,1,5,water	Surr fail low. REDO
38	3q65840.d	P2-C2	fa98286-42	537_ID.m	Sample	100/500	op92762,S3Q900,120,,,1,5,water	Surr fail low. REDO
39	3q65841.d	P2-C3	fa98286-43	537_ID.m	Sample	100/500	op92762,S3Q900,110,,,1,5,water	Surr fail low. REDO
40	3q65842.d	P2-C4	fa98286-44	537_ID.m	Sample	100/500	op92762,S3Q900,110,,,1,5,water	✓
41	3q65843.d	P2-C5	fa98286-46	537_ID.m	Sample	100/500	op92762,S3Q900,120,,,1,5,water	✓
42	3q65844.d	P2-C6	fa98286-47	537_ID.m	Sample		op92762,S3Q900,110,,,1,1,water	Surr fail low. REDO
43	3q65845.d	P2-C7	fa98720-7	537_ID.m	Sample		op92987A,S3Q900,260,,,1,1,water	✓
44	3q65846.d	P2-C8	fa98720-10	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	cf
45	3q65847.d	P2-C9	fa98720-16	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	✓
46	3q65848.d	P2-D1	fa98720-26	537_ID.m	Sample	100/500	op92987A,S3Q900,270,,,1,5,water	✓
47	3q65849.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92590,S3Q900,250,,,1,1,water	✓
48	3q65850.d	P1-A1	ccb	537_ID.m	Sample		op92590,S3Q900,250,,,1,1,water	✓
49	3q65851.d	P1-C9	fa98281-3	537_ID.m	Sample		op92762,S3Q900,270,,,1,5,water	✓
50	3q65852.d	P1-C7	fa98247-2	537_ID.m	Sample	10 x 20	op92762,S3Q900,260,,,1,200,water	✓
51	3q65853.d	P2-D2	fa98720-27	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	✓
52	3q65854.d	P2-D3	fa98720-27	537_ID.m	Sample	250/500	op92987A,S3Q900,270,,,1,2,water	✓
53	3q65855.d	P2-D4	fa98720-28	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	✓
54	3q65856.d	P2-D5	fa98720-28	537_ID.m	Sample		op92987A,S3Q900,270,,,1,5,water	✓
55	3q65857.d	P1-C8	fa98720-35	537_ID.m	Sample		op92987A,S3Q900,255,,,1,5,water	rr5x surr fail high
56	3q65858.d	P2-D6	fa98720-38	537_ID.m	Sample		op92987A,S3Q900,270,,,1,10,water	✓
57	3q65859.d	P2-D7	fa98720-39	537_ID.m	Sample		op92987A,S3Q900,270,,,1,1,water	✓
58	3q65860.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
59	3q65861.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
60	3q65862.d	P3-F2	op93055-bs	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Pass
61	3q65863.d	P3-F3	op93055-mb	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	ND
62	3q65864.d	P3-F4	fa98462-22	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	✓
63	3q65865.d	P3-F5	fa98463-3	537_ID.m	Sample		op93055,S3Q900,125,,,1,1,water	rr1x possible bad injection
64	3q65866.d	P3-F6	fa98465-1	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	✓
65	3q65867.d	P3-F7	fa98465-2	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	✓
66	3q65868.d	P3-F8	fa98465-3	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	matrix, rr10x +40x
67	3q65869.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
68	3q65870.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
69	3q65871.d	P1-C6	op93055-mb	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Test only
70	3q65872.d	P3-F9	op93055-bs2	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Test only
71	3q65873.d	P1-C3	op93055-bs3	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Test only
72	3q65874.d	P1-C4	op93055-bs4	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Test only

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73	3q65875.d	P1-C5	op93055-bs5	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	Test only
74	3q65876.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op93055,S3Q900,250,,,1,1,water	✓
75	3q65877.d	P1-A1	ccb	537_ID.m	Sample		op93055,S3Q900,250,,,1,1,water	✓
76	3q65878.d	P1-A3	cc900-1.0LL	537_ID.m	QC	5/500	op93055,S3Q900,250,,,1,1,water	✓
77	3q65879.d	P2-D8	op92823-bs	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	Pass
78	3q65880.d	P2-D9	op92823-mb	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	ND
79	3q65881.d	P2-E1	fa98273-1	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
80	3q65882.d	P2-E2	fa98308-1	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
81	3q65883.d	P2-E3	fa98308-2	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
82	3q65884.d	P2-E4	op92823-ms	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
83	3q65885.d	P2-E5	op92823-msd	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
84	3q65886.d	P2-E6	fa98308-3	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
85	3q65887.d	P2-E7	fa98308-4	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
86	3q65888.d	P2-E8	fa98308-5	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
87	3q65889.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
88	3q65890.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
89	3q65891.d	P2-E9	fa98308-6	537_ID.m	Sample	50/500	op92823,S3Q900,125,,,1,1,water	✓
90	3q65892.d	P2-F1	fa98308-7	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
91	3q65893.d	P2-F2	fa98308-8	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
92	3q65894.d	P2-F3	fa98308-9	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
93	3q65895.d	P2-F4	fa98308-10	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
94	3q65896.d	P2-F5	fa98308-11	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
95	3q65897.d	P2-F6	fa98308-12	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
96	3q65898.d	P2-F7	fa98308-13	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
97	3q65899.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
98	3q65900.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
99	3q65901.d	P2-F8	fa98309-1	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
100	3q65902.d	P2-F9	fa98309-2	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
101	3q65903.d	P1-C1	fa98309-3	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
102	3q65904.d	P1-C2	fa98309-4	537_ID.m	Sample		op92823,S3Q900,125,,,1,1,water	✓
103	3q65905.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
104	3q65906.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
105	3q65907.d	P1-A3	Ecc900-1.0LL	537_ID.m	QC	5/500	op92823,S3Q900,250,,,1,1,water	✓
106	3q65908.d	P3-A1	op93054-bs	537_ID.m	Sample		op93054,S3Q900,250,,,1,1,water	bad injection. RR batch.
107	3q65909.d	P3-A2	op93054-mb	537_ID.m	Sample		op93054,S3Q900,250,,,1,1,water	⬇
108	3q65910.d	P3-A3	fa98181-21	537_ID.m	Sample		op93054,S3Q900,125,,,1,1,water	⬇
109	3q65911.d	P3-A4	fa98211-1	537_ID.m	Sample		op93054,S3Q900,250,,,1,1,water	⬇
110	3q65912.d	P3-A5	fa98211-1	537_ID.m	Sample	50/500	op93054,S3Q900,250,,,1,10,water	⬇
111	3q65913.d	P3-A6	fa98211-1	537_ID.m	Sample	10/400	op93054,S3Q900,250,,,1,40,water	⬇
112	3q65914.d	P3-A7	JD50167-1	537_ID.m	Sample		op93054,S3Q900,250,,,1,1,water	⬇

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113	3q65915.d	P3-A8	JD50167-2	537_ID.m	Sample		op93054,S3Q900,270,,,1,1,water	↓
114	3q65916.d	P3-A9	JD50167-2	537_ID.m	Sample	250/500	op93054,S3Q900,270,,,1,2,water	↓
115	3q65917.d	P3-B1	JD50167-3	537_ID.m	Sample		op93054,S3Q900,270,,,1,1,water	↓
116	3q65918.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	↓
117	3q65919.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	↓
118	3q65920.d	P3-B2	fa98238-2	537_ID.m	Sample		op93054,S3Q900,40,,,1,1,water	↓
119	3q65921.d	P3-B3	fa98238-2	537_ID.m	Sample	50/500	op93054,S3Q900,40,,,1,10,water	↓
120	3q65922.d	P3-B4	fa98238-2	537_ID.m	Sample	10/400	op93054,S3Q900,40,,,1,40,water	↓
121	3q65923.d	P3-B5	fa98250-1	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
122	3q65924.d	P3-B6	fa98250-2	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
123	3q65925.d	P3-B7	fa98250-3	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
124	3q65926.d	P3-B8	fa98250-4	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
125	3q65927.d	P3-B9	fa98250-5	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
126	3q65928.d	P3-C1	fa98250-6	537_ID.m	Sample		op93054,S3Q900,280,,,1,1,water	↓
127	3q65929.d	P3-C2	fa98288-3	537_ID.m	Sample		op93054,S3Q900,110,,,1,1,water	↓
128	3q65930.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	↓
129	3q65931.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	↓
130	3q65932.d	P3-C3	fa98288-4	537_ID.m	Sample		op93054,S3Q900,125,,,1,1,water	↓
131	3q65933.d	P3-C4	fa98288-4	537_ID.m	Sample		op93054,S3Q900,125,,,1,10,water	↓
132	3q65934.d	P3-C5	fa98288-4	537_ID.m	Sample		op93054,S3Q900,125,,,1,100,water	↓
133	3q65935.d	P3-C6	fa98288-5	537_ID.m	Sample		op93054,S3Q900,125,,,1,1,water	↓
134	3q65936.d	P3-C7	fa98706-2	537_ID.m	Sample		op93054,S3Q900,50,,,1,1,water	↓
135	3q65937.d	P3-C8	fa98706-6	537_ID.m	Sample		op93054,S3Q900,50,,,1,1,water	↓
136	3q65938.d	P3-C9	fa98706-7	537_ID.m	Sample		op93054,S3Q900,50,,,1,1,water	↓
137	3q65939.d	P3-D1	fa98706-8	537_ID.m	Sample		op93054,S3Q900,50,,,1,1,water	↓
138	3q65940.d	P1-A7	ecc900-20	537_ID.m	QC	100/500	op92823,S3Q900,250,,,1,1,water	✓
139	3q65941.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
140	3q65942.d	P1-A1	ccb	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
141	3q65943.d	P1-A9	High Std	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
142	3q65944.d	P1-A1	IBLK	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
143	3q65945.d	P1-B3	RT	537_ID.m	Sample		op92823,S3Q900,250,,,1,1,water	✓
144	3q65946.d	P1-A3	cc900-1.0LL	537_ID.m	QC	5/500	op92823,S3Q900,250,,,1,1,water	✓
145	3q65947.d	P3-D2	op92824-bs	537_ID.m	Sample		op92824,S3Q900,250,,,1,1,water	rr batch, no middle ccv
146	3q65948.d	P3-D3	op92824-mb	537_ID.m	Sample		op92824,S3Q900,250,,,1,1,water	↓
147	3q65949.d	P3-D4	fa98310-1	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	↓
148	3q65950.d	P3-D5	op92824-ms	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	↓
149	3q65951.d	P3-D6	fa98310-2	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	↓
150	3q65952.d	P3-D7	op92824-dup	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	↓
151	3q65953.d	P3-D8	fa98310-3	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	rr1x + 10x matrix
152	3q65954.d	P3-D9	fa98310-4	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	↓

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LCMS3-3Q ANALYSIS LOG

153	3q65955.d	P3-E1	fa98312-1	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
154	3q65956.d	P3-E2	fa98312-2	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
155	3q65957.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92824,S3Q900,250,,,1,1,water	bad injection. RR batch.
156	3q65958.d	P1-A1	ccb	537_ID.m	Sample		op92824,S3Q900,250,,,1,1,water	⬇
157	3q65959.d	P3-E3	fa98312-3	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
158	3q65960.d	P3-E4	JD50448-1Q	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
159	3q65961.d	P3-E5	JD50448-2Q	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
160	3q65962.d	P3-E6	JD50449-1Q	537_ID.m	Sample		op92824,S3Q900,270,,,1,1,water	⬇
161	3q65963.d	P3-E7	fa98304-21	537_ID.m	Sample		op92824,S3Q900,125,,,1,1,water	⬇
162	3q65964.d	P3-E8	fa98331-1	537_ID.m	Sample		op92824,S3Q900,125,,,1,1,water	⬇
163	3q65965.d	P3-E9	fa98331-2	537_ID.m	Sample		op92824,S3Q900,125,,,1,1,water	⬇
164	3q65966.d	P3-F1	fa98331-3	537_ID.m	Sample		op92824,S3Q900,125,,,1,1,water	⬇
165	3q65967.d	P1-A7	cc900-20	537_ID.m	QC	100/500	op92824,S3Q900,250,,,1,1,water	Pass
166	3q65968.d	P1-A1	ccb	537_ID.m	Sample		op92824,S3Q900,250,,,1,1,water	ND

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LCMS2-2Q ANALYSIS LOG

DATE:	09/14/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091422_S5Q71
CAL DATE:	09/14/22
ANALYST:	AL
RUN BATCH:	S5Q71

ELUENT A LOT #:	217582 w/0.1% AA 194003
ELUENT B LOT #:	216542 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS1913
ICV STD LOT #:	10947/11202
ISTD/ID STD LOT #:	LCMS1916

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q4525.d	P1-A1	ccb	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	nd
2	5Q4526.d	P1-A1	ccb	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	nd
3	5Q4527.d	P1-A9	High Std	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	pass
4	5Q4528.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
5	5Q4529.d	P1-B3	RT	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	pass
6	5Q4530.d	P1-A7	cc68-20	537_ID.m	QC	100/500	OP91789,S5Q71,250,,,1.0,1,water	pass
7	5Q4531.d	P1-A3	cc68-1.0LL	537_ID.m	QC	5/500	OP91789,S5Q71,250,,,1.0,1,water	pass
8	5Q4532.d	P4-D4	op92743-bs	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
9	5Q4533.d	P4-D5	op92743-mb	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
10	5Q4534.d	P4-D6	fa98216-1	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
11	5Q4535.d	P4-D7	fa98216-2	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
12	5Q4536.d	P4-D8	fa98216-3	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
13	5Q4537.d	P4-D9	fa98216-4	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
14	5Q4538.d	P4-E1	fa98216-5	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
15	5Q4539.d	P4-E2	fa98216-6	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
16	5Q4540.d	P4-E3	fa98219-1	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	rr after recalibrating
17	5Q4541.d	P1-A7	cc68-20	537_ID.m	QC	100/500	OP91789,S5Q71,250,,,1.0,1,water	surrs failing low -recal
18	5Q4542.d	P1-A1	ccb	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	surrs failing low -recal
19	5Q4543.d	P4-E4	fa98219-2	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	surrs failing low -recal
20	5Q4544.d	P4-E5	op92743-ms	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	surrs failing low -recal
21	5Q4545.d	P4-E6	op92743-msd	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	surrs failing low -recal
22	5Q4546.d	P1-A6	ic71-10	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	surrs failing low -recal
23	5Q4547.d	P1-A6	test	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	surrs failing low -recal
24	5Q4548.d	P1-A6	test	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	surrs failing low -recal
25	5Q4549.d	P1-A6	test	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	surrs failing low -recal
26	5Q4550.d	P1-A6	test	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	surrs failing low -recal
27	5Q4551.d	P1-A7	test	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	surrs failing low -recal
28	5Q4552.d	P1-A7	test	537_ID.m	Sample		OP91789,S5Q71,250,,,1.0,1,water	surrs failing low -recal
29	5Q4553.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
30	5Q4554.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
31	5Q4555.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
32	5Q4556.d	P1-A1	ic71-0	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	check tune file
33	5Q4557.d	P1-A2	ic71-0.5	537_ID.m	Calibration	2.5/500	OP92656,S5Q71,250,,,1.0,1,water	pass
34	5Q4558.d	P1-A3	ic71-1.0	537_ID.m	Calibration	5/500	OP92656,S5Q71,250,,,1.0,1,water	pass
35	5Q4559.d	P1-A4	ic71-2	537_ID.m	Calibration	10/500	OP92656,S5Q71,250,,,1.0,1,water	pass

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36	5Q4560.d	P1-A5	ic71-5	537_ID.m	Calibration	25/500	OP92656,S5Q71,250,,,1.0,1,water	pass
37	5Q4561.d	P1-A6	ic71-10	537_ID.m	Calibration	50/500	OP92656,S5Q71,250,,,1.0,1,water	pass
38	5Q4562.d	P1-A7	icc71-20	537_ID.m	Calibration	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
39	5Q4563.d	P1-A8	ic71-50	537_ID.m	Calibration	250/500	OP92656,S5Q71,250,,,1.0,1,water	pass
40	5Q4564.d	P1-A9	ic71-100	537_ID.m	Calibration	1x	OP92656,S5Q71,250,,,1.0,1,water	pass
41	5Q4565.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
42	5Q4566.d	P1-B1	icv71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
43	5Q4567.d	P1-B2	icv71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
44	5Q4568.d	P1-B3	RT	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	pass
45	5Q4569.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
46	5Q4570.d	P1-A3	cc71-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q71,250,,,1.0,1,water	pass
47	5Q4571.d	P4-D4	op92743-bs	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
48	5Q4572.d	P4-D5	op92743-mb	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
49	5Q4573.d	P4-D6	fa98216-1	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
50	5Q4574.d	P4-D7	fa98216-2	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
51	5Q4575.d	P4-D8	fa98216-3	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
52	5Q4576.d	P4-D9	fa98216-4	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
53	5Q4577.d	P4-E1	fa98216-5	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
54	5Q4578.d	P4-E2	fa98216-6	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
55	5Q4579.d	P4-E3	fa98219-1	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
56	5Q4580.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
57	5Q4581.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
58	5Q4582.d	P4-E4	fa98219-2	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
59	5Q4583.d	P4-E5	op92743-ms	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
60	5Q4584.d	P4-E6	op92743-msd	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
61	5Q4585.d	P4-E7	fa98219-3	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
62	5Q4586.d	P4-E8	fa98219-4	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
63	5Q4587.d	P4-E9	fa98219-5	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
64	5Q4588.d	P4-F1	fa98219-6	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
65	5Q4589.d	P4-F2	fa98219-7	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
66	5Q4590.d	P4-F3	fa98219-8	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
67	5Q4591.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
68	5Q4592.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
69	5Q4593.d	P4-F4	fa98219-9	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
70	5Q4594.d	P4-F5	fa98219-10	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
71	5Q4595.d	P4-F6	fa98219-11	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
72	5Q4596.d	P4-F7	fa98219-12	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
73	5Q4597.d	P4-F8	fa98219-13	537_ID.m	Sample		OP92743,S5Q71,125,,,1.0,1,water	✓
74	5Q4598.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
75	5Q4599.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
76	5Q4600.d	P1-A3	cc71-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q71,250,,,1.0,1,water	pass
77	5Q4601.d	P1-B4	op92794-bs	537_ID.m	Sample		OP92794,S5Q71,250,,,1.0,1,water	✓
78	5Q4602.d	P1-B5	op92794-mb	537_ID.m	Sample		OP92794,S5Q71,250,,,1.0,1,water	✓

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79	5Q4603.d	P1-B6	fa98286-48	537_ID.m	Sample		OP92794,S5Q71,125,,,1.0,1,water	✓
80	5Q4604.d	P1-B7	fa98286-49	537_ID.m	Sample		OP92794,S5Q71,125,,,1.0,1,water	✓
81	5Q4605.d	P1-B8	fa98296-1	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 40x hits over
82	5Q4606.d	P1-B9	fa98296-2	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 40x, 100x hits over
83	5Q4607.d	P1-C1	fa98296-3	537_ID.m	Sample		OP92794,S5Q71,255,,,1.0,1,water	rr 5x, 40x, 100x hits over
84	5Q4608.d	P1-C2	op92794-ms	537_ID.m	Sample		OP92794,S5Q71,255,,,1.0,1,water	rr 100x hits over
85	5Q4609.d	P1-C3	fa98296-4	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 20x, 100x hits over
86	5Q4610.d	P1-C4	fa98296-5	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 20x, 100x hits over
87	5Q4611.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	mefosaa surr high
88	5Q4612.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
89	5Q4613.d	P1-C5	fa98296-6	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 20x hits over
90	5Q4614.d	P1-C6	fa98296-7	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x hits over
91	5Q4615.d	P1-C7	op92794-dup	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x hits over
92	5Q4616.d	P1-C8	fa98296-8	537_ID.m	Sample		OP92794,S5Q71,265,,,1.0,1,water	rr 5x hits over
93	5Q4617.d	P1-C9	fa98297-1	537_ID.m	Sample		OP92794,S5Q71,255,,,1.0,1,water	rr 5x, 40x hits over
94	5Q4618.d	P1-D1	fa98297-2	537_ID.m	Sample		OP92794,S5Q71,255,,,1.0,1,water	rr 20x hits over
95	5Q4619.d	P1-D2	fa98297-3	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 10x hits over
96	5Q4620.d	P1-D3	fa98297-4	537_ID.m	Sample		OP92794,S5Q71,255,,,1.0,1,water	rr 10x hits over
97	5Q4621.d	P1-D4	fa98297-5	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 20x, 100x, 500x hits
98	5Q4622.d	P1-D5	fa98297-6	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 40x, 100x hits over
99	5Q4623.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
100	5Q4624.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
101	5Q4625.d	P1-D6	fa98297-7	537_ID.m	Sample		OP92794,S5Q71,260,,,1.0,1,water	rr 5x, 40x hits over
102	5Q4626.d	P1-D7	fa98297-8	537_ID.m	Sample		OP92794,S5Q71,265,,,1.0,1,water	rr 5x, 40x hits over
103	5Q4627.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
104	5Q4628.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
105	5Q4629.d	P1-A3	cc71-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q71,250,,,1.0,1,water	pass
106	5Q4630.d	P1-D8	op92763-bs	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
107	5Q4631.d	P1-D9	op92763-mb	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
108	5Q4632.d	P1-E1	fa98286-1	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
109	5Q4633.d	P1-E2	op92763-ms	537_ID.m	Sample		OP92763,S5Q71,120,,,1.0,1,water	✓
110	5Q4634.d	P1-E3	fa98286-2	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
111	5Q4635.d	P1-E4	op92763-dup	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
112	5Q4636.d	P1-E5	fa98286-3	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
113	5Q4637.d	P1-E6	fa98286-4	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 5x, 40x, 250x, 500x
114	5Q4638.d	P1-E7	fa98286-5	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 5x, 20x, and 250x
115	5Q4639.d	P1-E8	fa98286-6	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 5x hits over
116	5Q4640.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
117	5Q4641.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
118	5Q4642.d	P1-E9	fa98286-7	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 10x hits over
119	5Q4643.d	P1-F1	fa98286-8	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 1x for c/o
120	5Q4644.d	P1-F2	fa98286-9	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
121	5Q4645.d	P1-F3	fa98286-10	537_ID.m	Sample		OP92763,S5Q71,120,,,1.0,1,water	rr 5x fosa low

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SGS ORLANDO LCMS2-2Q ANALYSIS LOG

122	5Q4646.d	P1-F4	fa98286-11	537_ID.m	Sample		OP92763,S5Q71,120,,,1.0,1,water	rr 5x fosa low
123	5Q4647.d	P1-F5	fa98286-12	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
124	5Q4648.d	P1-F6	fa98286-13	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
125	5Q4649.d	P1-F7	fa98286-14	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
126	5Q4650.d	P1-F8	fa98286-15	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
127	5Q4651.d	P1-F9	fa98286-16	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	✓
128	5Q4652.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
129	5Q4653.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd
130	5Q4654.d	P2-A1	fa98286-17	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 40x hits over
131	5Q4655.d	P2-A2	fa98286-18	537_ID.m	Sample		OP92763,S5Q71,110,,,1.0,1,water	rr 1x for c/o
132	5Q4656.d	P2-A3	fa98286-19	537_ID.m	Sample		OP92763,S5Q71,120,,,1.0,1,water	✓
133	5Q4657.d	P2-A4	fa98286-20	537_ID.m	Sample		OP92763,S5Q71,125,,,1.0,1,water	rr 5x low eis
134	5Q4658.d	P1-A7	ecc71-20	537_ID.m	QC	100/500	OP92656,S5Q71,250,,,1.0,1,water	pass
135	5Q4659.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q71,250,,,1.0,1,water	nd

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LCMS2-2Q ANALYSIS LOG

DATE:	09/15/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091422_S5Q71
CAL DATE:	09/14/22
ANALYST:	AL
RUN BATCH:	S5Q72

ELUENT A LOT #:	217582 w/0.1% AA 194003
ELUENT B LOT #:	216542 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS1913
ICV STD LOT #:	10947/11202
ISTD/ID STD LOT #:	LCMS1916

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q4660.d	P1-A7	test	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	pass
2	5Q4661.d	P1-A7	test	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	pass
3	5Q4662.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	surrs low
4	5Q4663.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	surrs low
5	5Q4664.d	P1-A9	High Std	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	some surr low
6	5Q4665.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
7	5Q4666.d	P1-B3	RT	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	pass
8	5Q4667.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	11cl hi/mefosaa low
9	5Q4668.d	P1-A3	cc71-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q72,250,,,1.0,1,water	etfosaa low
10	5Q4669.d	P3-A1	fa98296-1	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
11	5Q4670.d	P3-A2	fa98296-1	537_ID.m	Sample	12.5/500	OP92794,S5Q72,260,,,1.0,40,water	✓
12	5Q4671.d	P3-A3	fa98296-2	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
13	5Q4672.d	P3-A4	fa98296-2	537_ID.m	Sample	12.5/500	OP92794,S5Q72,260,,,1.0,40,water	✓
14	5Q4673.d	P3-A5	fa98296-2	537_ID.m	Sample	5/500	OP92794,S5Q72,260,,,1.0,100,water	✓
15	5Q4674.d	P3-A6	fa98296-3	537_ID.m	Sample	100/500	OP92794,S5Q72,255,,,1.0,5,water	✓
16	5Q4675.d	P3-A7	fa98296-3	537_ID.m	Sample	12.5/500	OP92794,S5Q72,255,,,1.0,40,water	✓
17	5Q4676.d	P3-A8	fa98296-3	537_ID.m	Sample	5/500	OP92794,S5Q72,255,,,1.0,100,water	✓
18	5Q4677.d	P3-A9	op92794-ms	537_ID.m	Sample	5/500	OP92794,S5Q72,255,,,1.0,100,water	✓
19	5Q4678.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
20	5Q4679.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
21	5Q4680.d	P3-B1	fa98296-4	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
22	5Q4681.d	P3-B2	fa98296-4	537_ID.m	Sample	25/500	OP92794,S5Q72,260,,,1.0,20,water	✓
23	5Q4682.d	P3-B3	fa98296-4	537_ID.m	Sample	5/500	OP92794,S5Q72,260,,,1.0,100,water	✓
24	5Q4683.d	P3-B4	fa98296-5	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
25	5Q4684.d	P3-B5	fa98296-5	537_ID.m	Sample	25/500	OP92794,S5Q72,260,,,1.0,20,water	✓
26	5Q4685.d	P3-B6	fa98296-5	537_ID.m	Sample	5/500	OP92794,S5Q72,260,,,1.0,100,water	✓
27	5Q4686.d	P3-B7	fa98296-6	537_ID.m	Sample	25/500	OP92794,S5Q72,260,,,1.0,20,water	✓
28	5Q4687.d	P3-B8	fa98296-7	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
29	5Q4688.d	P3-B9	op92794-dup	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
30	5Q4689.d	P3-C1	fa98296-8	537_ID.m	Sample	100/500	OP92794,S5Q72,265,,,1.0,5,water	✓
31	5Q4690.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
32	5Q4691.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
33	5Q4692.d	P3-C2	fa98297-1	537_ID.m	Sample	100/500	OP92794,S5Q72,255,,,1.0,5,water	✓
34	5Q4693.d	P3-C3	fa98297-1	537_ID.m	Sample	12.5/500	OP92794,S5Q72,255,,,1.0,40,water	✓
35	5Q4694.d	P3-C4	fa98297-2	537_ID.m	Sample	25/500	OP92794,S5Q72,255,,,1.0,20,water	✓

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SGS ORLANDO LCMS2-2Q ANALYSIS LOG

36	5Q4695.d	P3-C5	fa98297-3	537_ID.m	Sample	50/500	OP92794,S5Q72,260,,,1.0,10,water	✓
37	5Q4696.d	P3-C6	fa98297-4	537_ID.m	Sample	50/500	OP92794,S5Q72,255,,,1.0,10,water	✓
38	5Q4697.d	P3-C7	fa98297-5	537_ID.m	Sample	25/500	OP92794,S5Q72,260,,,1.0,20,water	✓
39	5Q4698.d	P3-C8	fa98297-5	537_ID.m	Sample	5/500	OP92794,S5Q72,260,,,1.0,100,water	✓
40	5Q4699.d	P3-C9	fa98297-5	537_ID.m	Sample	1/500	OP92794,S5Q72,260,,,1.0,500,water	✓
41	5Q4700.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
42	5Q4701.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
43	5Q4668.d	P1-A3	cc71-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q72,250,,,1.0,1,water	instrument skipped inj
44	5Q4703.d	P3-D1	fa98297-6	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
45	5Q4704.d	P3-D2	fa98297-6	537_ID.m	Sample	12.5/500	OP92794,S5Q72,260,,,1.0,40,water	✓
46	5Q4705.d	P3-D3	fa98297-6	537_ID.m	Sample	5/500	OP92794,S5Q72,260,,,1.0,100,water	✓
47	5Q4706.d	P3-D4	fa98297-7	537_ID.m	Sample	100/500	OP92794,S5Q72,260,,,1.0,5,water	✓
48	5Q4707.d	P3-D5	fa98297-7	537_ID.m	Sample	12.5/500	OP92794,S5Q72,260,,,1.0,40,water	✓
49	5Q4708.d	P3-D6	fa98297-8	537_ID.m	Sample	100/500	OP92794,S5Q72,265,,,1.0,5,water	✓
50	5Q4709.d	P3-D7	fa98297-8	537_ID.m	Sample	12.5/500	OP92794,S5Q72,265,,,1.0,40,water	✓
51	5Q4710.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
52	5Q4711.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
53	5Q4712.d	P3-D8	fa98286-4	537_ID.m	Sample	100/500	OP92763,S5Q72,125,,,1.0,5,water	✓
54	5Q4713.d	P3-D9	fa98286-4	537_ID.m	Sample	50/500	OP92763,S5Q72,125,,,1.0,10,water	✓
55	5Q4714.d	P3-E4	fa98286-4	537_ID.m	Sample	2/500	OP92763,S5Q72,125,,,1.0,250,water	✓
56	5Q4715.d	P3-E5	fa98286-4	537_ID.m	Sample	1/500	OP92763,S5Q72,125,,,1.0,500,water	✓
57	5Q4716.d	P3-E1	fa98286-5	537_ID.m	Sample	100/500	OP92763,S5Q72,125,,,1.0,5,water	✓
58	5Q4717.d	P3-E2	fa98286-5	537_ID.m	Sample	25/500	OP92763,S5Q72,125,,,1.0,20,water	✓
59	5Q4718.d	P3-E6	fa98286-5	537_ID.m	Sample	2/500	OP92763,S5Q72,125,,,1.0,250,water	✓
60	5Q4719.d	P3-E3	fa98286-6	537_ID.m	Sample	100/500	OP92763,S5Q72,125,,,1.0,5,water	✓
61	5Q4720.d	P3-E7	fa98286-7	537_ID.m	Sample	50/500	OP92763,S5Q72,125,,,1.0,10,water	rr 250x, 500x 6:2 surr
62	5Q4721.d	P1-F1	fa98286-8	537_ID.m	Sample		OP92763,S5Q72,125,,,1.0,1,water	✓
63	5Q4722.d	P1-A7	cc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
64	5Q4723.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd
65	5Q4724.d	P3-E8	fa98286-10	537_ID.m	Sample	100/500	OP92763,S5Q72,120,,,1.0,5,water	✓ fosa low
66	5Q4725.d	P3-E9	fa98286-11	537_ID.m	Sample	100/500	OP92763,S5Q72,120,,,1.0,5,water	✓fosa low
67	5Q4726.d	P3-F1	fa98286-17	537_ID.m	Sample	12.5/500	OP92763,S5Q72,125,,,1.0,40,water	✓
68	5Q4727.d	P2-A2	fa98286-18	537_ID.m	Sample		OP92763,S5Q72,110,,,1.0,1,water	✓
69	5Q4728.d	P3-F2	fa98286-20	537_ID.m	Sample	100/500	OP92763,S5Q72,125,,,1.0,5,water	✓
70	5Q4729.d	P3-F3	fa98129-1	537_ID.m	Sample	5/500	OP92956,S5Q72,0.5,,,1.0,100,water	✓
71	5Q4730.d	P1-A7	ecc71-20	537_ID.m	QC	100/500	OP92656,S5Q72,250,,,1.0,1,water	pass
72	5Q4731.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q72,250,,,1.0,1,water	nd

SGS ORLANDO

DATE:	09/17/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS5-5Q

LCMS2-2Q ANALYSIS LOG

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091722_S5Q73
CAL DATE:	09/17/22
ANALYST:	AL
RUN BATCH:	S5Q73

ELUENT A LOT #:	217582 w/0.1% AA 194003
ELUENT B LOT #:	216542 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS1913
ICV STD LOT #:	10947/11202
ISTD/ID STD LOT #:	LCMS1916

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q4809.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
2	5Q4810.d	P1-A2	test	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	pass
3	5Q4811.d	P1-A2	test	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	pass
4	5Q4812.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
5	5Q4813.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
6	5Q4814.d	P1-A1	ic73-0	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	check tune file
7	5Q4815.d	P1-A2	ic73-0.5	537_ID.m	Calibration	2.5/500	OP92656,S5Q73,250,,,1.0,1,water	pass
8	5Q4816.d	P1-A3	ic73-1	537_ID.m	Calibration	5/500	OP92656,S5Q73,250,,,1.0,1,water	pass
9	5Q4817.d	P1-A4	ic73-2	537_ID.m	Calibration	10/500	OP92656,S5Q73,250,,,1.0,1,water	pass
10	5Q4818.d	P1-A5	ic73-5	537_ID.m	Calibration	25/500	OP92656,S5Q73,250,,,1.0,1,water	pass
11	5Q4819.d	P1-A6	ic73-10	537_ID.m	Calibration	50/500	OP92656,S5Q73,250,,,1.0,1,water	pass
12	5Q4820.d	P1-A7	icc73-20	537_ID.m	Calibration	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
13	5Q4821.d	P1-A8	ic73-50	537_ID.m	Calibration	250/500	OP92656,S5Q73,250,,,1.0,1,water	pass
14	5Q4822.d	P1-A9	ic73-100	537_ID.m	Calibration	1x	OP92656,S5Q73,250,,,1.0,1,water	pass
15	5Q4823.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
16	5Q4824.d	P1-B1	icv73-20	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	pass
17	5Q4825.d	P1-B2	icv73-20	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	pass
18	5Q4826.d	P1-B3	RT	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	pass
19	5Q4827.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
20	5Q4828.d	P1-A3	cc73-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q73,250,,,1.0,1,water	pass
21	5Q4829.d	P4-F8	fa98286-7	537_ID.m	Sample		OP92763,S5Q73,125,,,1.0,250,water	✓
22	5Q4830.d	P4-F9	fa98286-7	537_ID.m	Sample		OP92763,S5Q73,125,,,1.0,500,water	✓
23	5Q4831.d	P4-F4	fa98286-7	537_ID.m	Sample	12.5/500	OP92763,S5Q73,125,,,1.0,40,water	✓
24	5Q4832.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
25	5Q4833.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
26	5Q4834.d	P4-A1	op92830-bs	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
27	5Q4835.d	P4-A2	op92830-mb	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
28	5Q4836.d	P4-A3	fa98312-4	537_ID.m	Sample		OP92830,S5Q73,1.02,,,1.0,1,soil	✓
29	5Q4837.d	P4-A4	fa98312-5	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
30	5Q4838.d	P4-A5	fa98312-6	537_ID.m	Sample		OP92830,S5Q73,1.03,,,1.0,1,soil	✓
31	5Q4839.d	P4-A6	fa98312-7	537_ID.m	Sample		OP92830,S5Q73,1.01,,,1.0,1,soil	✓
32	5Q4840.d	P4-A7	fa98312-8	537_ID.m	Sample		OP92830,S5Q73,0.98,,,1.0,1,soil	✓
33	5Q4841.d	P4-A8	fa98312-9	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
34	5Q4842.d	P4-A9	fa98312-10	537_ID.m	Sample		OP92830,S5Q73,1.02,,,1.0,1,soil	✓
35	5Q4843.d	P4-B1	fa98312-11	537_ID.m	Sample		OP92830,S5Q73,1.04,,,1.0,1,soil	✓

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SGS ORLANDO LCMS2-2Q ANALYSIS LOG

36	5Q4844.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
37	5Q4845.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
38	5Q4846.d	P4-B2	fa98312-12	537_ID.m	Sample		OP92830,S5Q73,1.01,,,1.0,1,soil	✓
39	5Q4847.d	P4-B3	fa98312-13	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
40	5Q4848.d	P4-B4	fa98312-14	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
41	5Q4849.d	P4-B5	op92830-ms	537_ID.m	Sample		OP92830,S5Q73,0.99,,,1.0,1,soil	✓
42	5Q4850.d	P4-B6	op92830-msd	537_ID.m	Sample		OP92830,S5Q73,1.02,,,1.0,1,soil	✓
43	5Q4851.d	P4-B7	fa98312-15	537_ID.m	Sample		OP92830,S5Q73,1.02,,,1.0,1,soil	✓
44	5Q4852.d	P4-B8	fa98312-16	537_ID.m	Sample		OP92830,S5Q73,1.01,,,1.0,1,soil	✓
45	5Q4853.d	P4-B9	fa98312-17	537_ID.m	Sample		OP92830,S5Q73,0.97,,,1.0,1,soil	✓
46	5Q4854.d	P4-C1	fa98312-18	537_ID.m	Sample		OP92830,S5Q73,0.99,,,1.0,1,soil	✓
47	5Q4855.d	P4-C2	fa98312-19	537_ID.m	Sample		OP92830,S5Q73,1.01,,,1.0,1,soil	✓
48	5Q4856.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
49	5Q4857.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
50	5Q4858.d	P4-C3	fa98312-20	537_ID.m	Sample		OP92830,S5Q73,1.04,,,1.0,1,soil	✓
51	5Q4859.d	P4-C4	fa98312-21	537_ID.m	Sample		OP92830,S5Q73,1.00,,,1.0,1,soil	✓
52	5Q4860.d	P4-C5	fa98312-22	537_ID.m	Sample		OP92830,S5Q73,1.02,,,1.0,1,soil	✓
53	5Q4861.d	P4-C6	fa98312-24	537_ID.m	Sample		OP92830,S5Q73,1.01,,,1.0,1,soil	✓
54	5Q4862.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
55	5Q4863.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
56	5Q4864.d	P1-A3	cc73-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q73,250,,,1.0,1,water	pass
57	5Q4865.d	P4-C7	op92825-bs	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	✓
58	5Q4866.d	P4-C8	op92825-mb	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	✓
59	5Q4867.d	P4-C9	fa98304-1	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 2x pfos hit
60	5Q4868.d	P4-D1	fa98304-2	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	1x c/o
61	5Q4869.d	P4-D2	fa98304-3	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	✓
62	5Q4870.d	P4-D3	fa98304-4	537_ID.m	Sample		OP92825,S5Q73,120,,,1.0,1,water	✓
63	5Q4871.d	P4-D4	fa98304-5	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x low eis
64	5Q4872.d	P4-D5	fa98304-6	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x low eis
65	5Q4873.d	P4-D6	fa98304-7	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x hit
66	5Q4874.d	P4-D7	fa98304-8	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	1x c/o
67	5Q4875.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
68	5Q4876.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
69	5Q4877.d	P4-D8	fa98304-9	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x low eis
70	5Q4878.d	P4-D9	fa98304-10	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x low eis
71	5Q4879.d	P4-E1	fa98304-11	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x teda low
72	5Q4880.d	P4-E2	fa98304-12	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x teda low
73	5Q4881.d	P4-E3	op92825-ms	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	waiting for sample
74	5Q4882.d	P4-E4	op92825-msd	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	waiting for sample
75	5Q4883.d	P4-E5	fa98304-13	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	✓
76	5Q4884.d	P4-E6	fa98304-14	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x eis low
77	5Q4885.d	P4-E7	fa98304-15	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 10x hits
78	5Q4886.d	P4-E8	fa98304-16	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 20x hits

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SGS ORLANDO LCMS2-2Q ANALYSIS LOG

79	5Q4887.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
80	5Q4888.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd
81	5Q4889.d	P4-E9	fa98304-17	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x low eis
82	5Q4890.d	P4-F1	fa98304-18	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x, 10x eis low
83	5Q4891.d	P4-F2	fa98304-19	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	rr 5x teda low
84	5Q4892.d	P4-F3	fa98304-20	537_ID.m	Sample		OP92825,S5Q73,125,,,1.0,1,water	✓
85	5Q4893.d	P4-F7	fa98286-48	537_ID.m	Sample	250/500	OP92794,S5Q71,125,,,1.0,2,water	✓
86	5Q4894.d	P1-A7	ecc73-20	537_ID.m	QC	100/500	OP92656,S5Q73,250,,,1.0,1,water	pass
87	5Q4895.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q73,250,,,1.0,1,water	nd

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LCMS2-2Q ANALYSIS LOG

DATE:	09/19/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS5-5Q

METHODS:	537 ID
PROC. METH:	ID_091722_S5Q73
CAL DATE:	09/17/22
ANALYST:	AL
RUN BATCH:	S5Q74

ELUENT A LOT #:	217582 w/0.1% AA 194003
ELUENT B LOT #:	216542 w/0.1% AA 194003
IC/CC STD LOT #:	LCMS1913
ICV STD LOT #:	10947/11202
ISTD/ID STD LOT #:	LCMS1916

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	5Q4896.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
2	5Q4897.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
3	5Q4898.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
4	5Q4899.d	P1-A9	hi std	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	hi conc - istd's low - rr
5	5Q4900.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	rr w/ new hi std
6	5Q4901.d	P1-B3	RT	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	rr w/ new hi std
7	5Q4902.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	rr w/ new hi std
8	5Q4903.d	P1-A3	cc73-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q74,250,,,1.0,1,water	rr w/ new hi std
9	5Q4904.d	P1-E1	fa98286-4	537_ID.m	Sample		OP92763,S5Q74,125,,,1.0,40,water	rr w/ new hi std
10	5Q4905.d	P1-E2	fa98304-1	537_ID.m	Sample		OP92825,S5Q74,125,,,1.0,2,water	rr w/ new hi std
11	5Q4906.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
12	5Q4907.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
13	5Q4908.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
14	5Q4909.d	P1-A9	hi std	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	int stds low
15	5Q4910.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
16	5Q4911.d	P1-B3	RT	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	pass
17	5Q4912.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	pass
18	5Q4913.d	P1-A3	cc73-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q74,250,,,1.0,1,water	pass
19	5Q4914.d	P1-E1	fa98286-4	537_ID.m	Sample	12.5/500	OP92763,S5Q74,125,,,1.0,40,water	✓
20	5Q4915.d	P1-E2	fa98304-1	537_ID.m	Sample	250/500	OP92825,S5Q74,125,,,1.0,2,water	✓
21	5Q4916.d	P4-D1	fa98304-2	537_ID.m	Sample		OP92825,S5Q74,125,,,1.0,1,water	✓
22	5Q4917.d	P1-E3	fa98304-5	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	redo
23	5Q4918.d	P1-E4	fa98304-6	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	redo
24	5Q4919.d	P1-E5	fa98304-7	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	✓
25	5Q4920.d	P4-D7	fa98304-8	537_ID.m	Sample		OP92825,S5Q74,125,,,1.0,1,water	✓
26	5Q4921.d	P1-E6	fa98304-9	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	✓
27	5Q4922.d	P1-E7	fa98304-10	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	✓
28	5Q4923.d	P1-E8	fa98304-11	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	✓
29	5Q4924.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	pass
30	5Q4925.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
31	5Q4926.d	P1-E9	fa98304-12	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	tied to ms/msd ✓
32	5Q4927.d	P1-F1	fa98304-14	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	redo
33	5Q4928.d	P1-F2	fa98304-15	537_ID.m	Sample	50/500	OP92825,S5Q74,125,,,1.0,10,water	✓
34	5Q4929.d	P1-F3	fa98304-16	537_ID.m	Sample	25/500	OP92825,S5Q74,125,,,1.0,20,water	✓
35	5Q4930.d	P1-F4	fa98304-17	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	redo

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SGS ORLANDO LCMS2-2Q ANALYSIS LOG

36	5Q4931.d	P1-F5	fa98304-18	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	redo
37	5Q4932.d	P1-F6	fa98304-18	537_ID.m	Sample	50/500	OP92825,S5Q74,125,,,1.0,10,water	redo
38	5Q4933.d	P1-F7	fa98304-19	537_ID.m	Sample	100/500	OP92825,S5Q74,125,,,1.0,5,water	✓
39	5Q4934.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	mefosaa surr hi
40	5Q4935.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	nd
41	5Q4936.d	P1-A3	cc73-1.0LL	537_ID.m	QC	5/500	OP92656,S5Q74,250,,,1.0,1,water	mefosaa surr hi
42	5Q4937.d	P1-B4	op92848-bs	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
43	5Q4938.d	P1-B5	op92848-mb	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
44	5Q4939.d	P1-B6	fa98312-23	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
45	5Q4940.d	P1-B7	op92848-ms	537_ID.m	Sample		OP92848,S5Q74,0.98,,,1.0,1,soil	rr w/ passing ccvs
46	5Q4941.d	P1-B8	op92848-msd	537_ID.m	Sample		OP92848,S5Q74,1.04,,,1.0,1,soil	rr w/ passing ccvs
47	5Q4942.d	P1-B9	fa98312-25	537_ID.m	Sample		OP92848,S5Q74,1.02,,,1.0,1,soil	rr w/ passing ccvs
48	5Q4943.d	P1-C1	fa98312-26	537_ID.m	Sample		OP92848,S5Q74,1.01,,,1.0,1,soil	rr w/ passing ccvs
49	5Q4944.d	P1-C2	fa98312-27	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
50	5Q4945.d	P1-C3	fa98312-28	537_ID.m	Sample		OP92848,S5Q74,0.99,,,1.0,1,soil	rr w/ passing ccvs
51	5Q4946.d	P1-C4	fa98312-29	537_ID.m	Sample		OP92848,S5Q74,0.98,,,1.0,1,soil	rr w/ passing ccvs
52	5Q4947.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	mefosaa/etfosaa surr hi
53	5Q4948.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	rr w/ passing ccvs
54	5Q4949.d	P1-C5	fa98345-2	537_ID.m	Sample		OP92848,S5Q74,1.01,,,1.0,1,soil	rr w/ passing ccvs
55	5Q4950.d	P1-C6	fa98345-3	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
56	5Q4951.d	P1-C7	fa98345-4	537_ID.m	Sample		OP92848,S5Q74,1.03,,,1.0,1,soil	rr w/ passing ccvs
57	5Q4952.d	P1-C8	fa98345-5	537_ID.m	Sample		OP92848,S5Q74,1.01,,,1.0,1,soil	rr w/ passing ccvs
58	5Q4953.d	P1-C9	fa98345-6	537_ID.m	Sample		OP92848,S5Q74,1.04,,,1.0,1,soil	rr w/ passing ccvs
59	5Q4954.d	P1-D1	fa98345-7	537_ID.m	Sample		OP92848,S5Q74,1.02,,,1.0,1,soil	rr w/ passing ccvs
60	5Q4955.d	P1-D2	fa98345-8	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
61	5Q4956.d	P1-D3	fa98345-9	537_ID.m	Sample		OP92848,S5Q74,1.00,,,1.0,1,soil	rr w/ passing ccvs
62	5Q4957.d	P1-D4	fa98345-10	537_ID.m	Sample		OP92848,S5Q74,1.01,,,1.0,1,soil	rr w/ passing ccvs
63	5Q4958.d	P1-D5	fa98345-11	537_ID.m	Sample		OP92848,S5Q74,0.98,,,1.0,1,soil	rr w/ passing ccvs
64	5Q4959.d	P1-A7	cc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	mefosaa/etfosaa surr hi
65	5Q4960.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	rr w/ passing ccvs
66	5Q4961.d	P1-D6	fa98345-14	537_ID.m	Sample		OP92848,S5Q74,1.02,,,1.0,1,soil	rr w/ passing ccvs
67	5Q4962.d	P1-D7	fa98345-15	537_ID.m	Sample		OP92848,S5Q74,1.04,,,1.0,1,soil	rr w/ passing ccvs
68	5Q4963.d	P1-D8	fa98345-16	537_ID.m	Sample		OP92848,S5Q74,1.01,,,1.0,1,soil	rr w/ passing ccvs
69	5Q4964.d	P1-D9	fa98345-17	537_ID.m	Sample		OP92848,S5Q74,1.02,,,1.0,1,soil	rr w/ passing ccvs
70	5Q4965.d	P1-A7	ecc73-20	537_ID.m	QC	100/500	OP92656,S5Q74,250,,,1.0,1,water	mefosaa/etfosaa surr hi
71	5Q4966.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S5Q74,250,,,1.0,1,water	rr w/ passing ccvs

SGS ORLANDO

LCMS6-6Q ANALYSIS LOG

DATE:	09/14/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091022_S6Q82
CAL DATE:	09/09/22
ANALYST:	JB AL
RUN BATCH:	S6Q85

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS1945A
ICV STD LOT #:	11040/11202
ISTD/ID STD LOT #:	LCMS1933-N

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q4609.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	DNR
2	6Q4610.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	DNR
3	6Q4611.d	P1-A9	High Standard	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	DNR
4	6Q4612.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	DNR
5	6Q4613.d	P1-B3	RT	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	DNR
6	6Q4614.d	P1-A7	cc82-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	ND
7	6Q4615.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
8	6Q4616.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
9	6Q4617.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
10	6Q4618.d	P1-A1	ic85-0	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	✓
11	6Q4619.d	P1-A2	ic85-0.5	537_ID.m	Calibration	2.5/500	OP92656,S6Q85,250,,,1.0,1,water	✓
12	6Q4620.d	P1-A3	ic85-1	537_ID.m	Calibration	5/500	OP92656,S6Q85,250,,,1.0,1,water	✓
13	6Q4621.d	P1-A4	ic85-2	537_ID.m	Calibration	10/500	OP92656,S6Q85,250,,,1.0,1,water	✓
14	6Q4622.d	P1-A5	ic85-5	537_ID.m	Calibration	25/500	OP92656,S6Q85,250,,,1.0,1,water	✓
15	6Q4623.d	P1-A6	ic85-10	537_ID.m	Calibration	50/500	OP92656,S6Q85,250,,,1.0,1,water	✓
16	6Q4624.d	P1-A7	icc85-20	537_ID.m	Calibration	100/500	OP92656,S6Q85,250,,,1.0,1,water	✓
17	6Q4625.d	P1-A8	ic85-50	537_ID.m	Calibration	250/500	OP92656,S6Q85,250,,,1.0,1,water	✓
18	6Q4626.d	P1-A9	ic85-100	537_ID.m	Calibration	500	OP92656,S6Q85,250,,,1.0,1,water	✓
19	6Q4627.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
20	6Q4628.d	P1-B3	RT	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	Pass
21	6Q4629.d	P1-B1	icv85-20	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	Pass
22	6Q4630.d	P1-B2	icv85-20	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	Pass
23	6Q4631.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
24	6Q4632.d	P1-A3	cc85-1.0LL	537_ID.m	QC	5/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
25	6Q4633.d	P4-C7	FA98256-20	537_ID.m	Sample	100/500	OP92803,S6Q85,1.01,,,1.0,5,soil	Low EIS -> REDO
26	6Q4634.d	P4-C8	FA98256-20	537_ID.m	Sample	50/500	OP92803,S6Q85,1.01,,,1.0,10,soil	Low EIS -> REDO
27	6Q4635.d	P4-C9	op93012-bs	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
28	6Q4636.d	P4-D1	op93012-mb	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
29	6Q4637.d	P4-D2	fa98059-3	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
30	6Q4638.d	P4-D3	fa98059-6	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
31	6Q4639.d	P4-D4	fa98059-8	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	Re reported due to better results
32	6Q4640.d	P4-D5	fa98059-12	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
33	6Q4641.d	P4-D6	fa98059-13	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
34	6Q4642.d	P4-D7	fa98070-1	537_ID.m	Sample		OP93012,S6Q85,120,,,1.0,1,water	✓
35	6Q4643.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass

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LCMS6-6Q ANALYSIS LOG

36	6Q4644.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
37	6Q4645.d	P4-D8	fa98114-2	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
38	6Q4646.d	P4-D9	fa98114-4	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
39	6Q4647.d	P4-E1	fa98131-1	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	RR 5x E
40	6Q4648.d	P4-E2	fa98131-2	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	RR 5x E
41	6Q4649.d	P4-E3	fa98131-3	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	RR 5x E
42	6Q4650.d	P4-E4	fa98131-4	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
43	6Q4651.d	P4-E5	fa98131-5	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
44	6Q4652.d	P4-E6	fa98131-6	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
45	6Q4653.d	P4-E7	fa98131-7	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
46	6Q4654.d	P4-E8	fa98131-8	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
47	6Q4655.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
48	6Q4656.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
49	6Q4657.d	P4-E9	fa98131-9	537_ID.m	Sample		OP93012,S6Q85,125,,,1.0,1,water	✓
50	6Q4658.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
51	6Q4659.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
52	6Q4660.d	P1-A3	cc85-1.0LL	537_ID.m	QC	5/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
53	6Q4661.d	P4-F1	op93042-bs	537_ID.m	Sample		OP93042,S6Q85,2.00,,,1.0,1,soil	Pass
54	6Q4662.d	P4-F2	op93042-mb	537_ID.m	Sample		OP93042,S6Q85,2.00,,,1.0,1,soil	ND
55	6Q4663.d	P4-F3	fa98198-8	537_ID.m	Sample		OP93042,S6Q85,2.02,,,1.0,1,soil	RR 5x E
56	6Q4664.d	P4-F4	op93042-ms	537_ID.m	Sample		OP93042,S6Q85,1.99,,,1.0,1,soil	RR 5x E
57	6Q4665.d	P4-F5	op93042-msd	537_ID.m	Sample		OP93042,S6Q85,2.04,,,1.0,1,soil	RR 5x E
58	6Q4666.d	P4-F6	fa98198-11	537_ID.m	Sample		OP93042,S6Q85,2.03,,,1.0,1,soil	RR 1x c/o
59	6Q4667.d	P4-F7	fa98198-12	537_ID.m	Sample		OP93042,S6Q85,2.00,,,1.0,1,soil	RR 5x E
60	6Q4668.d	P4-F8	fa98198-16	537_ID.m	Sample		OP93042,S6Q85,1.98,,,1.0,1,soil	RR 1x c/o
61	6Q4669.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
62	6Q4670.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
63	6Q4671.d	P5-D7	op92764-bs	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	Pass
64	6Q4672.d	P5-D8	op92764-mb	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	ND
65	6Q4673.d	P5-D9	fa98286-21	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
66	6Q4674.d	P5-E1	op92764-ms	537_ID.m	Sample		OP92764,S6Q85,120,,,1.0,1,water	✓
67	6Q4675.d	P5-E2	fa98286-22	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
68	6Q4676.d	P5-E3	op92764-dup	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
69	6Q4677.d	P5-E4	fa98286-23	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
70	6Q4678.d	P5-E5	fa98286-24	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
71	6Q4679.d	P5-E6	fa98286-25	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
72	6Q4680.d	P5-E7	fa98286-26	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
73	6Q4681.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
74	6Q4682.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
75	6Q4683.d	P5-E8	fa98286-27	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
76	6Q4684.d	P5-E9	fa98286-28	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
77	6Q4685.d	P5-F1	fa98286-29	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
78	6Q4686.d	P5-F2	fa98286-30	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓

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LCMS6-6Q ANALYSIS LOG

79	6Q4687.d	P5-F3	fa98286-31	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
80	6Q4688.d	P5-F4	fa98286-32	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
81	6Q4689.d	P5-F5	fa98286-33	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x E
82	6Q4690.d	P5-F6	fa98286-34	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 1x c/o, 5x E
83	6Q4691.d	P5-F7	fa98286-35	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
84	6Q4692.d	P5-F8	fa98286-36	537_ID.m	Sample		OP92764,S6Q85,120,,,1.0,1,water	RR 40x E
85	6Q4693.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
86	6Q4694.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND
87	6Q4695.d	P5-F9	fa98286-37	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
88	6Q4696.d	P6-C3	fa98286-38	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x E
89	6Q4697.d	P6-C4	fa98286-39	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	RR 5x Low Surr
90	6Q4698.d	P6-C5	fa98286-40	537_ID.m	Sample		OP92764,S6Q85,125,,,1.0,1,water	✓
91	6Q4699.d	P1-A7	ecc85-20	537_ID.m	QC	100/500	OP92656,S6Q85,250,,,1.0,1,water	Pass
92	6Q4700.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q85,250,,,1.0,1,water	ND

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LCMS6-6Q ANALYSIS LOG

DATE:	09/15/22
COLUMN TYPE:	Poroshell EC18
AMOUNT INJ:	4 ul
INSTRUMENT:	LCMS6-6Q

METHODS:	537MOD MS014 MS019
PROC. METH:	ID_091022_S6Q82
CAL DATE:	09/09/22
ANALYST:	JB
RUN BATCH:	S6Q86

ELUENT A LOT #:	219210 W/0.1%AA 194003
ELUENT B LOT #:	218157 W/0.1%AA 194003
IC/CC STD LOT #:	LCMS1945A
ICV STD LOT #:	11040/11202
ISTD/ID STD LOT #:	LCMS1933-N

	Data File	Sample	Sample Name	Method	Sample Type	Level	Misc. Info	Comments
1	6Q4701.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
2	6Q4702.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
3	6Q4703.d	P1-A9	High Standard	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	Pass
4	6Q4704.d	P1-A1	iblk	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
5	6Q4705.d	P1-B3	RT	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	Pass
6	6Q4706.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
7	6Q4707.d	P1-A3	cc85-1.0LL	537_ID.m	QC	5/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
8	6Q4708.d	P6-D1	op92841-BS	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	Pass
9	6Q4709.d	P6-D2	op92841-MB	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	ND
10	6Q4710.d	P6-D3	FA98335-1	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
11	6Q4711.d	P6-D4	FA98335-2	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 5x E
12	6Q4712.d	P6-D5	FA98335-3	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 1x c/o, 5x E
13	6Q4713.d	P6-D6	FA98335-4	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 1x c/o, 5x E
14	6Q4714.d	P6-D7	FA98335-5	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 1x c/o
15	6Q4715.d	P6-D8	op92841-MS	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
16	6Q4716.d	P6-D9	op92841-MSD	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
17	6Q4717.d	P6-E1	FA98335-6	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
18	6Q4718.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
19	6Q4719.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
20	6Q4720.d	P6-E2	FA98335-7	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
21	6Q4721.d	P6-E3	FA98335-8	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
22	6Q4722.d	P6-E4	FA98335-9	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,2.5,water	✓
23	6Q4723.d	P6-E5	FA98335-10	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
24	6Q4724.d	P6-E6	FA98335-11	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
25	6Q4725.d	P6-E7	FA98335-12	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,2.3,water	✓
26	6Q4726.d	P6-E8	FA98335-13	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
27	6Q4727.d	P6-E9	FA98335-14	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 5x E
28	6Q4728.d	P6-F1	FA98335-15	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 5x Low Surr
29	6Q4729.d	P6-F2	FA98335-16	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	RR 5x Low Surr
30	6Q4730.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
31	6Q4731.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
32	6Q4732.d	P6-F3	FA98335-17	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
33	6Q4733.d	P6-F4	FA98335-18	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
34	6Q4734.d	P6-F5	FA98335-20	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓
35	6Q4735.d	P6-F6	FA98335-21	537_ID.m	Sample		OP92841,S6Q86,125,,,1.0,1,water	✓

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LCMS6-6Q ANALYSIS LOG

36	6Q4736.d	P2-A1	FA98131-1	537_ID.m	Sample	100/500	OP93012,S6Q86,125,,,1.0,5,water	✓
37	6Q4737.d	P2-A2	FA98131-2	537_ID.m	Sample	100/500	OP93012,S6Q86,125,,,1.0,5,water	✓
38	6Q4738.d	P2-A3	FA98131-3	537_ID.m	Sample	100/500	OP93012,S6Q86,125,,,1.0,5,water	✓
39	6Q4739.d	P2-A4	FA98131-3	537_ID.m	Sample	50/500	OP93012,S6Q86,125,,,1.0,10,water	✓
40	6Q4740.d	P2-A5	fa98198-8	537_ID.m	Sample	100/500	OP93042,S6Q86,2.02,,,1.0,5,soil	✓
41	6Q4741.d	P2-A6	op93042-ms	537_ID.m	Sample	100/500	OP93042,S6Q86,1.99,,,1.0,5,soil	✓
42	6Q4742.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
43	6Q4743.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
44	6Q4744.d	P2-A7	op93042-msd	537_ID.m	Sample	100/500	OP93042,S6Q86,2.04,,,1.0,5,soil	✓
45	6Q4745.d	P4-F6	fa98198-11	537_ID.m	Sample		OP93042,S6Q86,2.03,,,1.0,1,soil	✓
46	6Q4746.d	P2-A8	fa98198-12	537_ID.m	Sample	100/500	OP93042,S6Q86,2.00,,,1.0,1,soil	✓
47	6Q4747.d	P4-F8	fa98198-16	537_ID.m	Sample		OP93042,S6Q86,1.98,,,1.0,1,soil	✓
48	6Q4748.d	P2-B1	fa98286-21	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
49	6Q4749.d	P2-B2	fa98286-25	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	Low EIS -> REDO
50	6Q4750.d	P2-B3	fa98286-31	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
51	6Q4751.d	P2-B4	fa98286-33	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
52	6Q4752.d	P5-F6	fa98286-34	537_ID.m	Sample		OP92764,S6Q86,125,,,1.0,1,water	✓
53	6Q4753.d	P2-B5	fa98286-34	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
54	6Q4754.d	P1-A7	cc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
55	6Q4755.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND
56	6Q4756.d	P2-B6	fa98286-35	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	Low EIS -> REDO
57	6Q4757.d	P2-B7	fa98286-36	537_ID.m	Sample	10/400	OP92764,S6Q86,120,,,1.0,40,water	✓
58	6Q4758.d	P2-B8	fa98286-37	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
59	6Q4759.d	P2-B9	fa98286-38	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	✓
60	6Q4760.d	P2-C1	fa98286-39	537_ID.m	Sample	100/500	OP92764,S6Q86,125,,,1.0,5,water	Low EIS -> REDO
61	6Q4761.d	P1-A7	ecc85-20	537_ID.m	QC	100/500	OP92656,S6Q86,250,,,1.0,1,water	Pass
62	6Q4762.d	P1-A1	ccb	537_ID.m	Sample		OP92656,S6Q86,250,,,1.0,1,water	ND

SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 08/26/22 09:30 {mm/dd/yy 24:00}

Date/Time Finished: 8/29/22 8:45 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: 537 (QSM)

Batch# OP92762 Ext. By AG Conc By JM Vialed By _____

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP92762 MB	/	250	7	N/A	20		1.0ml	B	
OP92762 BS	/	250				50			
FA98246-1	1	260							
-2		265							
-3		270							
FA98247-1		260							
-2		260							
FA98248-1		260							
-2		270							
FA98280-1		255						B	
-2		270						D	
-3		270							
FA98281-1		260							
-2		260							
-3		270							
FA98286-41		125							
-42		120							
-43		110							
-44		110							
-45		110							
-46	↓	120						↓	
-47	1	110						D	
FA98281-2 MS	2	270	↓	↓	↓	50	↓	B	
-2 MSD	3	260	7	N/A	20	50		B	
DUP									

Comments:

Surr 1 ID: LCMS 1933-L Conc: 1.0 ppm Exp. Date: 02/15/23 Inj. By: AG Ver. By: GH

Spk 1 ID: LCMS 1930 Conc: 480 ppb Exp. Date: 02/08/23 Inj. By: AG Ver. By: GH

Spk 2 ID: _____ Conc: _____ Exp. Date _____ Inj. By: _____ Ver. By _____

Spk 3 ID: _____ Conc: _____ Exp. Date: _____ Inj. By _____ Ver. By _____

TurboVap Temp (Therm ID): XcelVap-1

Observed Temp °C: 55 Corr. Temp °C: _____

N-Evap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot # 221020

Acetonitrile Lot # _____

Water Lot# OP96963

Solvent# _____

SPE Lot # 6659867-02

Syringe filter Lot # _____

Pre-filter Lot# _____

Carbon Lot# 153731

pH Paper # 2266621

Reagent # PF87 (10%) NH_4OH

Reagent # 221020 (MeOH)

Other _____

Relinquished By _____ Date 8/29/22

Accepted By _____ Date 8/29/22

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 08/26/22 10:35 {mm/dd/yy 24:00}

Date/Time Finished: 8/29/22 10:50 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: 537 (asm)

Batch#: OP92763 Ext. By: CM Conc. By: JM Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP92763 MB	/	125	7	N/A	20		1.0ml	A1	
OP92763 BS	/	125	7	N/A	20	50			
FA98286-1	1	125	7	N/A	20				
-2									
-3									
-4									
-5									
-6									
-7									
-8								A1	
-9		125						A2	
-10		120							
-11		120							
-12		125							
-13									
-14									
-15									
-16									
-17		125							
-18		110							
-19		120							
-20	1	125						A2	
FA98286-1 MS	2	120	7	N/A	20	50		A1	
MSD									
FA98286-2 DUP	2	125	7	N/A	20		1.0ml	A1	

Comments:

Surr.1 ID: LCMS 1933-M Conc: 1.0 PPM Exp. Date: 02/15/23 02/15/24 CM 8/26/22 Inj. By: CM Ver. By: AG

Spk.1 ID: LCMS 1930 Conc: 400 PPB Exp. Date: 02/08/23 Inj. By: CM Ver. By: AG

Spk.2 ID: Conc: Exp. Date: Inj. By: Ver. By:

Spk.3 ID: Conc: Exp. Date: Inj. By: Ver. By:

TurboVap Temp (Therm ID): XCEVAP-1

Observed Temp °C: 55 Corr. Temp °C:

N-Evap Temp (Therm ID):

Observed Temp °C: Corr. Temp °C:

Methanol Lot # 221020

Acetonitrile Lot #

Water Lot# OP90963

Solvent#

SPE Lot # 659867-02

Syringe filter Lot #

Pre-filter Lot#

Carbon Lot# 153731

pH Paper # 226621

Reagent # PF82 (1% NH4 (H)

Reagent # 221020 (MeOH)

Other

Relinquished By: JM Date: 8/29/22

Accepted By: Date: 8/29/22

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 08/26/22 10:40 {mm/dd/yy 24:00}

Date/Time Finished: 8/29/22 10:35 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: 537 (a5M)

Batch#: OP92764 Ext. By: CM Conc. By: JM Vialed By:

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP 92764 MB		125	7	N/A	20		1.0ml	G	
OP 92764 BS		125	7	N/A	20	50			
FA98286-21	1	125	7	N/A	20				
-22									
-23									
-24									
-25									
-26									
-27									
-28								G	
-29								H	
-30									
-31									
-32									
-33									
-34									
-35		125							
-36	1	120	7	N/A	20			H	
-37	1	125	7	N/A	20			H	
-38									
-39									
-40	1	125	7	N/A	20			H	
FA98286-21 MS	2	120	7	N/A	20	50		G	
MSD									
FA98286-22DUP	2	125	7	N/A	20		1.0ml	G	

Comments:

Surr.1 ID: LCMS1933-M Conc: 1.0 PPM Exp. Date: 02/15/23 Inj. By: CM Ver. By AG

Spk.1 ID: LCMS1930 Conc: 400 PPB Exp. Date: 02/08/23 Inj. By: CM Ver. By AG

Spk.2 ID: Conc: Exp. Date: Inj. By: Ver. By

Spk.3 ID: Conc: Exp. Date: Inj. By: Ver. By

TurboVap Temp (Therm ID): TCTurbovap-1

Observed Temp °C: 55 Corr. Temp °C:

N-Evap Temp (Therm ID):

Observed Temp °C: Corr. Temp °C:

Methanol Lot # 221020

Acetonitrile Lot #

Water Lot# OP90963

Solvent#

SPE Lot #

Syringe filter Lot #

Pre-filter Lot#

Carbon Lot# 153731

pH Paper # 226621

Reagent # PF87 (1% NH4OH)

Reagent # 221020 (MeOH)

Other

Relinquished By: JM Date: 8/29/22

Accepted By: Date: 8/29/22

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SGS - ORLANDO

SPE LIQUID SAMPLE PREP REPORT

Date/Time Started: 08/29/22 11:17 {mm/dd/yy 24:00}

Date/Time Finished: 8/30/22 8:45 {mm/dd/yy 24:00}

Prep Method: 3535A or 537 or 537MOD (circle)

Analytical Method: 537 (QSM)

Batch#: OP92794 Ext. By: AG Conc By: JM Vialed By: _____

AG 8/29/22

Sample ID	Bottle Number	Amount Extracted (ml)	Initial pH	Adjusted pH	Surrogate Amount	Spike Amount	Final Volume (ml)	Manifold ID	Comments
OP92794 MB		250	7	N/A	20		1.0ml	B	
OP92794 BS		250				50			
FA98286-48	1	125							
FA98286-49		125							
FA98296-1		260							
-2		260							
-3		255							
-4		260							
-5		260						B	
-6		260						D	
-7		260							
-8		265							
FA98297-1		255							
-2		255							
-3		260							
-4		255							
-5		260							
-6		260							
-7		260							
-8	1	265	7	N/A	20		1.0ml	D	
FA98296-3 MS	2	255	7	N/A	20	50	1.0ml	B	
MSD									
FA98296-7 DUP	2	260	7	N/A	20		1.0ml	B	

Comments:

Surr.1 ID: LCMS 1933-0 1942-A Conc: 1.0ppm Exp. Date: 02/15/23 02/24/23 Inj. By: AG Ver. By: GH

Spk.1 ID: LCMS 1930 Conc: 400ppb Exp. Date: 02/08/23 Inj. By: AG Ver. By: GH

Spk.2 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____

Spk.3 ID: _____ Conc: _____ Exp. Date: _____ Inj. By: _____ Ver. By: _____

TurboVap Temp (Therm ID): Xcelvap-1

Observed Temp °C: 55 Corr. Temp °C: _____

N-Evap Temp (Therm ID): _____

Observed Temp °C: _____ Corr. Temp °C: _____

Methanol Lot #: 221020

Acetonitrile Lot #: _____

Water Lot#: OP90963

Solvent#: _____

SPE Lot #: 6659867-02

Syringe filter Lot #: _____

Pre-filter Lot#: _____

Carbon Lot#: 153731

pH Paper #: 226621

Reagent #: PF90 (1%) NH_4OH

Reagent #: 221020 ($MeOH$)

Other: _____

Relinquished By: JM Date: 8/30/22

Accepted By: MW Date: 8/30/22

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